SPECIFICATIONS

FOR

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150
BOROUGHS OF ROSELLE & ROSELLE PARK
COUNTY OF UNION, NEW JERSEY
BA# 1-2021
UNION COUNTY ENGINEERING PROJECT #2011-051

DECEMBER 2020

UNION COUNTY OFFICIALS
BOARD OF CHOSEN FREEHOLDERS

Alexander Mirabella, Chairman
Angela R. Garretson, Freeholder
Sergio Granados, Freeholder
Christopher Hudak, Freeholder
Bette Jane Kowalski, Freeholder
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Andrea Staten, Freeholder
Rebecca Williams, Freeholder

CLERK OF THE BOARD
James E. Pellettiere, RMC

COUNTY MANAGER
Edward T. Oatman

DEPARTMENT OF ENGINEERING, PUBLIC WORKS AND FACILITIES MANAGEMENT
Joseph A. Graziano, Sr., CPWM
Director, Department of Engineering, Public Works and Facilities Management

COUNTY ENGINEER
DIVISION OF ENGINEERING
Thomas O. Mineo, P.E.

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Revised: 2020.02.19

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COUNTY OF UNION
NOTICE TO BIDDERS

Sealed bids will be received by the Assistant Director of the Division of Purchasing, or her designee, at the County of Union, New Jersey on**, January 14, 2021 at 11:30 a.m**., prevailing time, in the **3rd Floor Conference Room**, U.C. Administration Building, 10 Elizabethtown Plaza, Elizabeth, New Jersey for:

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150
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Bid Packages may be obtained at no charge by registering and downloading at http://ucnj.org/bid-specs. Bid Packages may also be obtained in person from the Division of Engineering at 2325 South Avenue, Scotch Plains, New Jersey 07076 between 8:30 a.m. and 4:00 p.m. weekdays upon payment of a non-refundable money order or bank check in the amount of $275.00 made payable to the County of Union. No Personal / Company checks will be accepted. Requests for mailing of specifications will not be honored. For further information please call 908-789-3675.

The County reserves the right to reject any and all bids and to waive any and all informalities in the bid in accordance with the New Jersey Local Public Contracts Law.

***Public access to the County of Union Administration Building is currently restricted during the statewide public health emergency. Accordingly there will not be an in-person public opening but instead will be conducted live and streamed via the County of Union live streaming platform which will feature both audio and video capabilities. A link will be provided on the day of the opening at https://ucnj.org/.

Bids shall be submitted in a sealed envelope and clearly marked with the subject of the bid, name and address of the bidder, phone & fax number, and date of the bid opening. Each bid must be delivered to reach the Division of Purchasing prior to the stated time of the opening of the bids. The County will not be responsible for late delivery by the U.S. Mail or any other carrier. Hand delivery of proposals are strongly discouraged due to public restrictions. If delivered by hand, you will not receive confirmation of delivery. **No** late bids will be accepted.

DBE/SBE/ESBE Utilization/Participation Plan and ALL Commitment Forms Must Be Submitted by all Bidders within Five (5) days after bid opening.

- Be sure to include ALL required forms and documentation as follows:
- CR-266 "Schedule of DBE/ESBE/SBE Participation"
- CR-273 "Confirmation of DBE/ESBE/SBE Firm"
- CR-272 "DBE/ESBE/SBE Regular Dealer/Supplier Verification" – if applicable
- CR-274 "DBE/ESBE/SBE Trucking Verification" – if applicable

The Small Business Enterprise goal is 6 %. These requirements are indicated on State Attachment No. 1.

Bidders are required to comply with the requirements of N.J.S.A. 10:5-31 et seq. and N.J.A.C. 17:27.

***Entire bid packages received will be scanned and available for public inspection on the portal, http://ucnj.org/itb, as they would be available for public inspection after an in-person bid opening. Bidders are reminded to review their submissions for any information they consider to be confidential. The County will not be responsible for the release of any information contained in the bid package which may be subject to confidentiality.

MICHELLE HAGOPIAN, ASSISTANT DIRECTOR OF PURCHASING

UNION COUNTY BOARD OF CHOSEN FREEHOLDERS
We're Connected to You!

UNION COUNTY BOARD OF CHOSEN FREEHOLDERS
INSTRUCTIONS TO BIDDERS AND FORMS

DEFINITIONS

Wherever reference is made to the County, Title of Project, Bidder, or Vendor/Contractor they shall be as follows:

OWNER/COUNTY:
Union County Board of Chosen Freeholders
UC Administration Building, 6th Floor
10 Elizabethtown Plaza
Elizabeth, New Jersey 07207

ADDRESS INQUIRIES TO:
Union County Division of Purchasing
UC Administration Building, 3rd Floor
10 Elizabethtown Plaza
Elizabeth, NJ 07207
Attn: Michelle Hagopian, Assistant Director, Division of Purchasing
Telephone: 908-527-4130
Facsimile: 908-558-2548
ucbids@ucnj.org

ADDRESS BIDS AND SUBMIT TO:
Union County Division of Purchasing
UC Administration Building, 3rd Floor
10 Elizabethtown Plaza
Elizabeth, NJ 07207
Attn: Michelle Hagopian, Assistant Director, Division of Purchasing
Telephone: 908-527-4130
Facsimile: 908-558-2548
ucbids@ucnj.org

TITLE OF PROJECT:
REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL
STRUCTURE NO. 2050150
BOROUGHS OF ROSELLE & ROSELLE PARK
COUNTY OF UNION, NEW JERSEY
BA# 1-2021 UNION COUNTY ENGINEERING PROJECT #2011-051

BIDDER: Bidder shall be a single overall contract bidder

ENGINEER: HARDESTY & HANOVER

COUNTY ENGINEER AND/OR CONSTRUCTION MANAGER (as applicable):
COUNTY ENGINEER:
Thomas O. Mineo, P.E.
Union County
Division of Engineering

CONSTRUCTION MANAGER:

GENERAL SPECIFICATIONS

1. BID FORM

Bids for this Work will be enclosed in a sealed envelope addressed to the Purchasing Division, County of Union, New Jersey, Union County Administration Building, 10 Elizabethtown Plaza, Elizabeth, New Jersey 07207, with the full name of the Project clearly marked on the outside. Refer to the sheet marked "Notice of Bid (Advertisement)" for the correct name of the Project. Bidders must submit their bids on the attached pricing sheet (Bid Form), in a sealed envelope addressed to the County and bearing on the outside: the name of the Bidder, Bidder's business address, and the title of the Project.

The Division of Purchasing will receive the bids for this Work at the Union County Administration Building, 10 Elizabethtown Plaza, Elizabeth, New Jersey on the date and time noted on the sheet marked "**Notice of Bid (Advertisement)**".

The County will not assume responsibility for bids forwarded by mail. It is the individual's responsibility to see that the bids are presented to the Purchasing Division at the time and at the place designated.

Bids will be accepted only on the Bid Form supplied. Bids on forms other than the original supplied herein will be rejected. The "complete" Bid Documents includes the Bid Bond, Bid Form, Bidder's Checklist, Consent of Surety, Ownership Disclosure Certification, Non-Collusion Affidavit, and any other documents noted in these Instructions to Bidders or Contract Document to be submitted with this Bid.

The bidder will state in the bidding sheet the price per unit of measure for each scheduled Item of Work for which he will agree to carry out the Work, and the Total Bid Price for the construction of the Project.

The prices in the Bid Form shall be typed or written in pen and ink. Erasures or alterations must be initialed by the bidder in ink.

The bidding sheet for this Project may include a fixed amount as a Bid Allowance. If applicable, all bidders are required to add this fixed amount to their base bid and to include this additional amount in their Bid Bond. This sum will be included in the Contract as well as the performance, labor and materials bond. Payment by the County will be made to the Contractor from these funds only upon the completion of extra Work pursuant to a written Change Order(s) signed by the County's Engineer or his designee and the Contractor, prior to the commencement of such Work. Work commenced prior to written approval by the County shall be done at Contactor's risk. Such payment will only be in the amount agreed to by the parties, in writing in the Change Order(s). See Section 37, Change Orders, of these general specifications for further details.

Refer to Bid Document Submission Checklist for all required documents.

In the event there is a discrepancy between the unit price given and the extended total, the unit price will govern. Any discrepancies will be mathematically adjusted.

Insert applicable alternates, if any have been specified, applicable to the Bidder's Work. All alternates MUST be bid upon. Any Bidder's failure to do so will be deemed a material, non-waivable defect and shall render the bid nonresponsive. The Bidder shall clearly designate whether the change in price is an addition or subtraction, by using either a "+" sign or the word "addition", or in the alternative, a "-"sign or the word "minus". If there is no other change in price, the Bidder shall insert "NC" or "No Charge".

When two or more low bids are equal in all respects, awards will be made according to the provisions of N.J.S.A. 40A:11-6.1(d).

Where unit prices have already been established by the Contract Documents, the Bidder agrees that such unit prices shall prevail. All unit prices, whether filled in by the Bidder or established by the Contract Documents, shall become part of the Contract. No bid will be considered or award made, unless applicable unit prices, as required, are filled in.

The County reserves the right to reject any or all bids and also reserves the right to waive any minor informalities or non-material exceptions in the bids.

The County of Union has the right to reject any and all bids from any bidder that is in, or contemplates bankruptcy of any chapter of nature. Said bidder shall notify the County, in writing, of any condition or knowledge of the same.

Conditional bids will not be accepted. Bids may be withdrawn prior to the advertised time for the opening of bids or authorized postponement thereof or in accordance with the provisions of N.J.S.A. 40A:11-23.3 discussed below. Bids received after the advertised time shall not be considered. Bidders shall be solely responsible for premature opening or late delivery of bids not properly marked, addressed, or directed.

2. WITHDRAWAL OF BID DUE TO MISTAKE

N.J.S.A. 40A:11-23.3 authorizes a bidder to request withdrawal of a public works bid due to a mistake on the part of the bidder. A mistake is defined by N.J.S.A. 40A:11-2(42) as a clerical error that is an **unintentional and substantial computational error** or **an unintentional omission of a substantial quantity of labor, material, or both, from the final bid computation.**

A bidder claiming a mistake under N.J.S.A. 40A:11-23.3 must submit a request for withdrawal, **in writing,** by certified or registered mail to Michele Hagopian, Assistant Director, Division of Purchasing, County of Union, New Jersey, Union County Administration Building, 10 Elizabethtown Plaza, Elizabeth, New Jersey 07207. The

bidder must request withdrawal of a bid due to a mistake, as defined by the law, within five business days after the receipt and opening of the bids. Since the bid withdrawal request shall be effective as of the postmark of the certified or registered mailing, Michele Hagopian, Assistant Director of the Division of Purchasing or his designee may contact all bidders, after bids are opened, to ascertain if any bidders wish to, or already have exercised a request to withdraw their bid pursuant to N.J.S.A. 40A:11-23.3.

A bidder's request to withdraw the bid **shall** contain evidence, including any pertinent documents, demonstrating that a mistake was made. Such documents and relevant written information shall be reviewed and evaluated by the County's designated staff pursuant to the statutory criteria of N.J.S.A. 40A:11-23.3.

The County will not consider any written request for a bid withdrawal for a mistake, as defined by N.J.S.A. 40A:11-2(42), by a bidder in the preparation of a bid proposal unless the postmark of the certified or registered mailing is within the five business days following the opening of bids.

3. QUALIFICATIONS OF BIDDERS AND REQUIRED SUBMISSIONS

The County may make such investigation as it deems necessary to determine the ability of the Bidders to perform the Work, which includes investigation of any and all subcontractors listed with the bid. The Bidder shall furnish any information and data for this purpose as the County may request.

4. INTERPRETATIONS AND ADDENDA

Any explanation desired by a bidder regarding the meaning or interpretation of the Contract Documents must be requested in writing to the Assistant Director, Division of Purchasing at ucbids@ucnj.org with reasonable time allowed for a reply to reach bidders before submission of their bids. Any interpretation or instruction made by the County Engineer will be in the form of an addendum to the Contract Documents or clarification and will be furnished to all prospective bidders. Oral explanations or instructions given before the award of the Contract will not be binding. Bidders are required to bring to the attention of the Assistant Director, Division of Purchasing at ucbids@ucnj.org, the discovery of any apparent ambiguity, inconsistency, error, discrepancy, omission in the Contract Documents for interpretation and correction at least ten (10) working days before opening of bids with the exception of Saturdays, Sundays and holidays.

All Addenda issued through the Office of the Division of Purchasing are amendments to the Contract Documents and shall be considered in preparing bids. Same shall become part of the Contract Documents.

Addenda take precedence over all earlier documents and over each other according to the latest date. Addenda unless themselves interpretive remain subject to interpretation the same as any other document incorporated in the Contract.

Addenda may be issued by the Assistant Director, Division of Purchasing up to seven (7) working days prior to the opening of bids. Failure of any bidder to receive an addendum shall not relieve such bidder from the obligation imposed by such addendum. Bidders are to keep themselves currently acquainted with the Contract Documents during the entire bidding period and make inquiry on their own initiative as to issuance of any Addenda. Receipts of all Addenda shall be acknowledged on the "*Acknowledgement of Receipt of Changes*" included in the bid package and must be submitted with the bid.

5. OBLIGATION OF BIDDER TO INSPECT SITE AND CONTRACT DOCUMENTS

At the time of the opening of bids, each Bidder will be presumed to have inspected the site(s) and to have read, and be thoroughly familiar with the Contract Documents. The failure or neglect of any Bidder to receive or examine any form, instrument, or document shall in no way relieve any Bidder from any obligation in respect to its bid.

The Bidder shall examine the contents of the Project Manual and the set of Drawings and assure itself that all pages of the Specifications, Drawings, and other Contract Documents are included in the documents obtained for bidding purposes. Should the Specifications, Drawings, and other Contract Documents be incomplete, the Bidder shall notify the County Engineer in writing, who will supply the Bidder with any missing pages of Specifications, Drawings, or other Contract Documents. The lack of such written notification by the Bidder will be construed as evidence that the Specifications, Drawings, or other Contract Documents supplied it for bidding purposes are full and complete and as a waiver of any subsequent claim to the contrary.

6. BID AND PERFORMANCE GUARANTEE

Each bidder must furnish a Bid Bond, Certified Check or Bank Cashier's Check in the amount of ten percent (10%) of the Bid. Checks shall be drawn to the order of the County of Union, New Jersey, not to exceed $20,000.

Each bidder must furnish with the bid a certificate from a Surety Company, i.e. Consent of Surety, stating that in the event of the contract being awarded to said bidder, such Surety Company will provide the Contractor with bonds guaranteeing the faithful performance of the Work in accordance with the plans and specifications, and the payment for labor, materials, and all other indebtedness which may accrue on the account of this Work. A Performance, Labor and Materials Bond will be furnished by the Contractor upon an award of Contract, and will be in the amount of 100% of the contract price.

A one-year Maintenance Bond will be required upon acceptance of the Project by the County in the amount as stated in Section 15 of the General Specifications. Bonds

will be written by a firm authorized to issue the bonds under the laws of the State of New Jersey and be in a form acceptable to the County Counsel.

N.J.S.A. 40A:11-1 *et seq*. allows the prime Contractor to furnish the Performance Security for his Subcontractors. The County of Union requires Performance Security to be furnished by the prime contractor for the entire job in the total amount of the contract.

The County will return all certified checks or cashier's checks after the proposals have been opened, tabulated and reviewed except those of the three (3) bidders lowest responsible bidders. The County will return the checks of these bidders when a contract is awarded to the successful bidder within ten (10) days after the award of the contract.

If the successful bidder refuses or neglects to sign an agreement and furnish the required bonds, the Bid Bond will be held and used by the County to offset any damages for such refusal or neglect.

7. COMMENCEMENT AND COMPLETION

Work will not commence until a Notice to Proceed is received from the County Engineer.

Upon substantial completion of the Project, the Contractor must request a joint inspection with the County Engineer. Upon completion of this inspection, the County Engineer will prepare a list of incomplete or incorrect items (punch list) and have Contractor initial and date same. The Contractor shall rectify all deficiencies noted on the punch list within 30 calendar days of receipt of the list. The County Engineer may approve extensions for extenuating circumstances.

8. BIDDER AFFIDAVIT

All Bidders are required to complete, sign, and submit with their Bid, the attached "Affidavit Regarding List of Debarred, Suspended or Disqualified Bidders". (See form enclosed)

9. LABOR AND MATERIALS

The prices will cover all costs of any nature incident to and growing out of the Work, including all labor, material, equipment, transportation, loss by damage or destruction of the Project, settlement of damages, and for replacement of defective work or materials. N.J.S.A. 54:32B-1 et seq. exempts all materials sold to the County of Union from sales or use taxes and should not be included in the prices provided on the Bidding Sheet.

10. INSURANCE REQUIREMENTS

The County of Union requires all contractors to be able to comply with the following insurance requirements. In the event a bid is accepted by the County, the contractor

must accept the applicable insurance requirements, as set forth below, as part of any contract awarded to it by the County.

Contractor shall carry and maintain at all times while the contract is in full force and effect, the following insurance coverage with an insurance company or companies acceptable to the County, with limits not less than those shown below. A Certificate of Insurance shall be filed with the County prior to commencement of any Work indicating the following:

a) Commercial General Liability (CGL): Coverage for all operations including, but not limited to, contractual, products and completed operations, and personal injury with limits no less than $5,000,000 per occurrence/$10,000,000 aggregate. The County of Union, its Board of Chosen Freeholders, officers, employees, agents and servants shall be included as an additional insured. Coverage is provided on a primary and non-contributory basis to the County of Union, et al.

b) Automobile Liability: Coverage for all owned, non-owned and hired vehicles with limits not less than $5,000,000 per occurrence, combined single limits (CSL) or its equivalent.

c) Workers Compensation: As required by the State of New Jersey and Employers Liability with limits not less than $1,000,000 per accident for bodily injury or disease.

d) Professional Liability (if design/build): Coverage with limits not less than $1,000,000 per occurrence or claim, $2,000,000 aggregate

e) Contractor's Pollution Legal Liability and/or Asbestos Legal Liability and/or Errors & Omissions (if project involves environmental hazards): Coverage with limits no less than $1,000,000 per occurrence or claim/$2,000,000 aggregate.

f) Builders Risk (for major renovations): During the course of construction utilizing an "All Risk" coverage form with limits equal to the completed value of the project and no coinsurance penalty provisions.

Where applicable, a waiver of subrogation in favor of the County of Union, its Board of Chosen Freeholders, officers, employees, agents, servants and the State of New Jersey is to be included in those policies of insurance where permitted by law.

Notice of Cancellation: Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to the Entity.

Special Risks or Circumstances: The County reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

11. INDEMNIFICATION REQUIREMENTS

The County of Union requires all bidders to accept the following indemnification requirements in the event the County accepts their bid. The Contract awarded by the County to the successful bidder will contain the following provision:

> "To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the owner and the owner's consultants, agents, representatives, and employees from and against any and all claims, damages, losses, costs, and expenses, including, but not limited to attorneys' fees, legal costs and legal expenses arising out of or resulting from the performance of the Contractor's work under this contract, provided that such claim, damage, loss, cost, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) caused or alleged to be caused by the negligent acts, negligent omissions, and/or fault of the Contractor, anyone directly or indirectly employed or retained by the Contractor, or anyone for whose acts the Contractor may be liable regardless of whether caused in part by the negligent act or omission of a party indemnified hereunder provided it is not caused by the sole negligence of a party indemnified hereunder. Contractor shall further indemnify and hold harmless the County and the County's consultants, agents, representative, and employees from and against any and all claims, damages, losses, costs, and expenses, including, but not limited to attorneys' fees, legal costs and legal expenses, arising out of or resulting from performance of the work, provided that such claim, damage, loss, cost, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) caused or alleged to be caused by the negligent acts, negligent omissions, and/or fault of the County or the County's consultants, agents, representatives, or employees and arises out of this project and provided such claim, damage, loss, cost, or expense is not caused by the sole negligence of a party indemnified hereunder."

12. ROYALTIES AND PATENTS

The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall hold the County harmless from loss on account thereof.

13. PLANS AND SPECIFICATIONS

In carrying out the Work, the plan(s) and the specifications will be followed by the Contractor. Minor alterations in the plan may be made or permitted by the County Engineer from time to time and, if no additional Work is necessary, there will be no additional charge for carrying out such minor alterations.

The Contractor shall provide the County Engineer a set of reproducible as-built drawings upon completion of the Project. The Contractor shall maintain an updated construction progress plan in the Project field office at all times.

When applicable, The New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction, as amended, and Supplemental Specifications for State Aid Projects, herein after referred to as the "Standard Specifications", are made a part of these specifications and contract for the improvements, and will govern the construction of this Project, the material used and the execution of this Project, except as revised and modified herein. The references to these specifications are given herein for the purpose of aiding in the rapid location of the description of the various items herein specified. The entire Work must be carried on and completed to the satisfaction of the County. The Standard Specifications are amended as follows:

"Any reference to the Commissioner, Department, Department Laboratory, Engineer or Inspector should be redefined to be the County of Union".

14. GUARANTEE AGAINST DEFECTIVE WORK

Prior to final payment being made or before the release of the performance security required by Section 3 above, the Contractor and Surety shall execute and deliver to the County an original Maintenance Bond with an original signature and seal having a penal sum equal to:

A) One hundred percent (100%) of the final adjusted Contract amount, if such amount is $50,000.00 or less;
B) Fifty percent (50%) of the final adjusted Contract amount, if such amount be greater than $50,000.00 but less than $250,000.00; and,
C) Twenty-five percent (25%) of the final adjusted contract amount, if such amount is $250,000.00 or more.

The Bond and Surety shall be satisfactory to the Union County Counsel. The Surety shall hold a Certificate of Authorization to do business in the State of New Jersey and shall conform to P.L. 1995 c.384, codified as N.J.S.A. 2A:44-143, 144. The Surety Disclosure Statement and Certification required by N.J.S.A. 2A: 44-143, 144, shall be attached to the Bond. Such Maintenance Bond shall remain in full force and effect for a period of one (1) year from the date of Final Completion. Such Maintenance Bond shall also provide that the Contractor and the Surety guarantee to replace for the said period of one (1) year from the date of Final Completion, all Work performed and/or all materials furnished that were not performed or were not furnished in accordance to the terms and performance requirements of the Contract Documents, and will make good any defects thereof which become apparent before the expiration of one (1) year. If, during that period, any part of the Project, in the judgment of the Engineer, is found defective, the

Contractor will repair or replace same within five (5) days of receipt of notice from the County Engineer. If the Contractor refuses or neglects to do such Work in the time specified, the County Engineer may have the Work done by others and the Contractor or his Surety thereof will pay the cost.

The Contractor will furnish the County a Maintenance Bond for a percentage of the final adjusted contract price, as stated above. The one (1) year period will start the day of Final Completion of Project by the County. Final payment is conditional on the receipt of a maintenance bond in a form acceptable to County Counsel.

15. TRAFFIC AND STREET MAINTENANCE

The Work must be started and performed by the Contractor in such a manner as to minimize delays to the traveling public. It must be completed in a timely fashion, with little or no inconvenience to traffic and pedestrians, where such inconvenience may be avoided.

All municipal, county, and state roadways shall remain open to traffic unless otherwise provided for in the technical specifications.

If modified traffic patterns are authorized in order to provide a safe working or traveling environment, the Contractor is responsible for providing all equipment, barrels, cones, signs, and barricades to implement the work zone and detours, unless otherwise specified in the technical specifications. All work zones and detours shall be established in accordance with the technical plans and specifications if provided or in strict compliance with the current version of the Manual for Uniform Traffic Control Devices (MUTCD). The Contractor shall obtain approval for these work zones and detour plans from the Municipal Police or applicable police agency and the Union County Bureau of Traffic Maintenance prior to implementation.

All traffic control plans shall provide for safe movement of vehicular, bicycle, and pedestrian traffic. Particular attention shall be given to requirements of the Americans with Disabilities Act.

No portion of any street or alleyway may be used for the storage of any materials or equipment without the approval of the Municipal Police or other applicable police agency. Sidewalks, gutters, drains, fire hydrants and private drives shall be maintained for their intended use unless specifically approved by the County Engineer.

Upon suspension of Work, at the end of the day or for protracted periods, the Contractor shall remove all rubbish and materials from the Work site to the approved storage/staging location. All road cuts, saw cuts, and trenches that may pose hazard to vehicular, pedestrian, or bicycle traffic, to include handicapped users, shall be filled to the surface of the roadway or sidewalk. At no time will steel plates or settled trenches be

allowed at the daily suspension of Work, unless specifically approved by the County Engineer.

Use of Traffic Control Officers shall be determined by the County in accordance with the provisions of N.J.S.A. 40A:11-23.1(c). If applicable to the Project, the County shall have provided an allowance for same as set forth in the Bid Form.

With respect to pedestrian traffic, the Contractor shall install signs restricting access of the general public and, as necessary, Union County employees to the area of construction. The Contractor shall provide safe access to required areas and place physical barriers to restricted areas. These barriers may range from caution tape to actual barriers, at the direction of the County Engineer.

16. CONTRACTOR'S EMPLOYEES

The Contractor must employ only suitable and competent labor in the Work, and must remove from the Work any incompetent, unsuitable, or disorderly person upon complaint from the County Engineer.

The parties to any contract resulting from this proposal do hereby agree that the provisions of N.J.S.A. 10:2-1 through 10:2-4 (discrimination in employment on public works contracts): 34:11-56.25 et seq. (payment of prevailing rate of wages determined pursuant to N.J.S.A. 34:11-56.30 by the Commissioner), and the Rules and Regulations promulgated pursuant thereto, are hereby made a part of any contract and are binding upon them.

There will be no discrimination against any employee who is employed in the Work to be covered by any contract resulting from this bid because of age, race, creed, color, national origin, ancestry, marital status or sex.

Any person, firm, or corporation violating the provisions of this Section will be deemed and judged a disorderly person.

17. OWNERSHIP DISCLOSURES REQUIRED

Pursuant to P.L. 2016, c. 43, codified as N.J.S.A. 52:25-24.2.no corporation, partnership, or limited liability company shall be awarded any contract nor shall any agreement be entered into for the performance of any work or the furnishing of any materials or supplies the County unless prior to the receipt of the bid or accompanying the bid, of said corporation, said partnership, or said limited liability company there is submitted a statement setting forth the names and addresses of all stockholders in the corporation who own ten percent (10%) or more of its stock, of any class, or of all individual partners in the partnership who own a ten percent (10%) or greater interest therein, or of all members in the limited liability company who own a ten percent (10%) or

greater interest therein, as the case may be. If one or more such stockholder or partner or member is itself a corporation or partnership or limited liability company, the stockholders holding ten percent (10%) or more of that corporation's stock, or the individual partners owning ten percent (10%) or greater interest in that partnership, or the members owning ten percent (10%) or greater interest in that limited liability company, as the case may be, shall also be listed. The disclosure shall be continued until names and addresses of every non corporate stockholder, and individual partner, and member, exceeding the ten percent (10%) ownership criteria has been listed.

To comply with this section, a bidder with any direct or indirect parent entity which is publicly traded may submit the name and address of each publicly traded entity and the name and address of each person that holds a ten percent (10%) or greater beneficial interest in the publicly traded entity as of the last annual filing with the federal Securities and Exchange Commission ("SEC") or the foreign equivalent, and, if there is any person that holds a ten percent (10%) or greater beneficial interest, also shall submit links to the websites containing the last annual filings with the federal SEC or the foreign equivalent and the relevant page numbers of the filings that contain the information on each person that holds a ten percent (10%) or greater beneficial interest.

(See forms attached)

18. NON-COLLUSION AFFIDAVIT

The Bidder shall submit with its bid either the attached completed "Non-Collusion Affidavit" or a statement of non-collusion with verbiage similar to same.

19. EQUAL EMPLOYMENT OPPORTUNITY COMPLIANCES

The successful bidder shall be required to complete and submit an Initial Project Workforce Report, New Jersey Department of Treasury Form AA-201, upon notification of award. Failure to submit this completed form may result in the Contract being terminated.

The successful bidder shall also be required to submit a copy of its Monthly Project Workforce Report, New Jersey Department of Treasury Form AA-202, to the New Jersey Department of Treasury's Division of Public Contracts Equal Employment Opportunity Compliance and to the Board.

20. COMPLIANCE WITH NEW JERSEY PREVAILING WAGE ACT

The County of Union, in order to fulfill the requirements of N.J.S.A. 34:11-56.25 et seq, requires that the following additional conditions be strictly followed. The bidders represent that he is not listed or is not on record in the Office of the Commissioner or the Department of Labor and Workforce Development as one who failed to pay prevailing

wages in accordance with the provisions of this Act. The bidder agrees to the inclusion of a contract provision upon award which specifically requires said Contractor to fully comply with each and all of the requirements of the aforesaid Act as it relates to prevailing rates of wages on public contracts as set forth in the New Jersey Prevailing Wage Act, P.L. 1963, Chapter 150 and P.L. 1974, Chapter 64.

A Copy of the Prevailing Wage Rates is attached for your reference. Applicable rates are those wages and fringe benefit rates in effect on the date the contract is awarded. All predetermined rate increases listed at the time the contract award must also be paid, beginning on the dates specified. Rates may change between the time of issuance of this determination and the award of the public works contract. Therefore, prior to the award of the contract, verification must be made with the Public Contracts section, to insure that the rates contained in this determination are still prevailing.

The Contractor agrees to abide and be bound by each and all of the said statutory provisions with respect to the payment of prevailing rates of wages, and acknowledges that the County reserves the right to terminate the Contractor's (or his subcontractors') right to proceed with the scope of Work, or such portion thereof that relates to the failure to pay prevailing rates of wages. In such event or under the terms of N.J.S.A. 34:11-56.27, the Contractor and his surety will be liable to the County of Union for any excess costs occasioned by such a violation.

The Contractor or subcontractors for this Project will post the Prevailing Wage Rates for each craft and classification involved as determined by the Commissioner of Labor and Industry, including the effective date of any changes thereof, in prominent and easily accessible places at the site of the Work or at such place or places as are used by them to pay workmen their wages.

The County of Union requires a copy of payroll records from the Contractor and subcontractors. Payroll records shall be submitted with each voucher request for payment. Prevailing wage rates may be obtained from the New Jersey Labor, Division of Workplace Standards, Public Contracts Section, (609-292-2259).

In addition to compliance with the New Jersey Prevailing Wage Act, the County requires compliance with procedures established by Resolution No. 2014-0408 adopted by the Union County Board of Chosen Freeholders on May 8, 2014. The resolution is furnished in Section 51 of these General Specifications.

UNION LABOR IS PREFERRED ON ALL COUNTY WORK

The foregoing reference to specific laws will not be deemed to be a limitation of obligation of the Contractor to perform his obligations in full compliance with the provisions and requirements of all federal and state statues and local ordinances applicable to the Work to be done under the contract.

It is agreed and understood that any contracts and/or orders placed as a result of this proposal will be governed and construed and the rights and obligations of the parties hereto will be determined in accordance with the laws of the State of New Jersey.

Upon completion of the Work, the Contractor will furnish a Certification of Compliance with the New Jersey Prevailing Wage Act. The certificate in a form acceptable to County Counsel is a condition of the final payment. (See form attached)

21. BRAND NAME OR EQUAL

When the Specifications, Forms, and other Contract Documents use "brand name or equivalent" or similar language, the listed brand name shall serve as a reference or point of comparison for the functional or operational characteristic desired for the goods or services being requested. Where a bidder attempts to submit an equivalent product for a brand name, it shall be the responsibility of the bidder to fully describe and document the product to be provided with the bid in order to establish the equivalence claim.

A. If the Bidder proposes to offer substitute goods as an equal to those specified herein, the bidder shall so indicate with the Bid Proposal. For the purposes of this paragraph, a proposed item shall be considered equal to goods specified herein if:

1. The County, in its sole discretion, determines that: (i) the goods conform substantially, even with deviations, to the brand name goods specified herein; (ii) the goods are equal to or greater than the brand name goods specified herein in terms of quality, durability, functionality, appearance, strength and design; (iii) the goods are capable, at least as well as the brand name goods specified herein, or performing with existing equipment; and (iv) the goods do not cost the County more than the brand name goods specified herein costs the County.

B. To offer substitute goods as an equal to those specified herein, it is necessary that:

1. The Bidder submits sufficient information with its bid to permit the County to determine that the goods are equivalent to the brand name goods specified herein, including, but not necessarily limited to the brand, catalog number and specifications/data sheets;

2. The Bidder fully identifies and describes the variations of the goods from the brand name goods specified herein on a separate sheet that is to be submitted with the bid proposal. Bidder's literature WILL NOT suffice in explaining exceptions to these specifications.

3. The Bidder certifies that the goods (i) are similar in substance to the brand name goods specified, and (ii) are suited to the same use as the item specified;

C. The County shall be allowed a reasonable time within which to evaluate the Bidder's proposal to offer substitute goods as an equal to those specified herein. The County shall be the sole judge of acceptability. No "or-equal" goods shall be ordered, delivered, assembled, set-up or utilized until the County's evaluation is complete. The County's determination as to equivalency shall be deemed final and absolute.

In the event the Bidder does not provide sufficient supporting documentation with the bid, it will be presumed and required that the brand name goods and services as described in the specifications will be provided.

22. LINES AND GRADES

Normally, horizontal and vertical control points will be provided in the technical specifications. All other surveying will be the responsibility of the Contractor unless otherwise noted.

23. NUMBER OF WORKING DAYS

In accordance with N.J.S.A. 40A:11-17, the Work for the within Project shall be completed as specified on the Time of Completion Form. See form attached

There shall be taken a deduction from the contract price, or any wages paid by the County, to any inspector(s) necessarily employed by it on the Work, for any number of days in excess of the number allowed in the specifications.

24. PROMPT PAYMENT OF CONSTRUCTION CONTRACTS (NJ Prompt Payment Act)

Pursuant to N.J.S.A. 2A:30A-1 et seq., payment to the Contractor, other than for Work done pursuant to a contact allowance, where applicable, shall be processed and paid as follows:

1. All contractor bills shall be either approved for payment, or notice provided as to why the bill or any portion of it will not be approved by the representative(s) of the governing body no later than the public meeting following 20 calendar days of the billing date as defined in the statute.

2. If the billing is approved, said bill shall be paid in the payment cycle following the meeting.

25. STOPPING WORK ON ACCOUNT OF BAD WEATHER

Work must only be performed in weather suitable for the type of construction planned or underway. Extremes in temperature, humidity, precipitation, evaporation, etc. can detrimentally affect the constructed product. Refer to the Standard and Technical Specifications for specific items.

26. ACCESS FOR OTHER CONTRACTORS

The Contractor for this Work will give proper access to other contractors who may be employed upon the Project and must not hinder or delay unnecessarily any Work that may be progressing under other contracts.

27. CONDEMNED MATERIALS AND WORK

Any materials and or part of the Work that may be condemned by the County Engineer will be removed and replaced by the Contractor or otherwise rectified, as may be directed by the County Engineer. No payment will be made upon the Work until such faulty work has been made good as may be directed. In the event the Contractor refuses or neglects to make good such faulty work, he will be deemed to have abandoned the contract and proceedings may be taken against him as provided herein.

28. STORAGE

In the event that it is necessary for the Contractor to stockpile or store materials or equipment on the job site, the Contractor shall inform the County of such necessity and the County may offer available space, if any, for storage of such materials or equipment. The Contractor shall use said space only for such purpose. Any and all materials which may be stored in such space or which may be brought onto the job site at any time by the Contractor will be at the Contractor's sole risk. The County will not be responsible for loss of or damage to said materials or equipment for any cause whatsoever. The Contractor shall take necessary measures to protect any such storage area and shall be responsible for any and all damages.

29. FINAL CLEAN UP

Upon completion of the Work, the Contractor will remove all equipment, unused materials, rubbish, etc., and will repair, or replace in an a manner acceptable to the County Engineer, all areas that may have been damaged in the prosecution of the Work. Same shall be a condition precedent to final payment. Should said Contractor fail to comply with this requirement, the County shall undertake the clean-up with its own forces and charge the cost of same against the Contractor's contract balance.

30. SUB-LETTING OF WORK

Except for the List of Subcontractors, pursuant to N.J.S.A. 40A:11-16 (See form attached), no portion of the Work will be sublet by the Contractor to any other entities, except with the consent of the County Engineer. A complete list of subcontractors must be submitted to the County Engineer at the preconstruction meeting. If the job does not warrant a preconstruction meeting, the Contractor must submit such list prior to the start of Work.

All Subcontractors will be subject to N.J.S.A. 34:11-56 et al.

N.J.S.A. 40A:11-16 requires the bidder to list in the bid sheets the name or names of all subcontractors involved in the following types of Work: plumbing and gas fitting and all kindred work, steam and hot water heating, ventilating apparatus, steam power plants and kindred work, electrical work, ornamental iron work, and structural steel. In addition, the County may require the identification of specific additional subcontractors. If these trades are expected to be part of the contract, such subcontractors should be listed on the "Subcontractor Identification Statement List of Subcontractors" and Bidder shall certify same on the accompanying sheet titled "Subcontractor Identification Certification". (See forms attached) **Bidder's failure to submit these two forms shall be considered a material defect and result in rejection of Bidder's bid.** Substitutions of any listed subcontractors pursuant to N.J.S.A. 40A:11-16 will not be permitted except with the consent of the County Engineer.

31. SAFETY

The Contractor shall observe all rules and regulations of the Federal, State, and local health officials. Attention is directed to Federal, State, and local laws, rules, and regulations concerning construction safety and health standards. The Contractor shall not require any worker to work in surroundings or under conditions that are unsanitary, hazardous, or dangerous to the worker's health or safety.

The Contractor shall admit to the site, without delay and without the presentation of an inspection warrant, any inspector of OSHA or other legally responsible agency involved in safety and health administration upon presentation of proper credentials.

The Contractor shall make available to the Contractor's employees, subcontractors, the County Engineer, and the public, all information pursuant to OSHA 29 CFR Part 1926.59 of The Hazard Communication Standard 29 CFR 1910.1200, and shall also maintain a file on each job site containing all Material Safety Data Sheets (MSDS) for products in use at the Project. These Material Safety Data Sheets shall be made available to the Engineer upon request.

The Contractor shall at all times conduct the Work to provide for the safety and convenience of the general public and protection of persons and property. The safety provisions of applicable laws, OSHA regulations, building and construction codes, and the rules and regulations of the New Jersey Department of Labor and Workforce Development shall be observed.

32. QUALITY, SAFETY AND PERFORMANCE STANDARDS

All goods and services must be constructed and provided with the highest quality materials and workmanship. It is the intent of these specifications that only equipment equal to, or exceeding, the standard specified will be acceptable in order to protect the safety of the occupants of the Building.

33. MATTERS NOT MENTIONED IN CONTRACT DOCUMENTS

Any Work, material, or method, not specifically described in these specifications, but shown upon the plans of the Work, will be carried out as shown on said plan.

34. PERMITS

The Contractor will obtain all necessary permits required by law and provide the County with necessary approvals prior to commencement of permitted Work.

35. CONTRACTOR TO PROVIDE PROOF OF PAYMENT

Upon the completion of the Work, the Contractor will furnish a General Release as proof that all claims for labor, materials, etc., have been settled by the Contractor. The General Release, in a form acceptable to County Counsel, is a condition of final payment.

36. CHANGE ORDERS

The applicability of change orders and change order procedures shall comply with *N.J.S.A.* 40A:11-16.7 and *N.J.A.C.* 5:30-11.1 *et seq.*, “Change Orders and Open End Contracts”.

37. SUPPLEMENTAL WORK

In case any supplemental work is necessary, it will be performed by the Contractor at a price fixed by agreement between the Contractor and the County Engineer and

approved by the County as specified in Section 36. The Contractor will do no supplemental work on any character, for which the Contractor will demand pay, except upon the written order of the County.

38. FORM OF CONTRACT

The Contract will be subject to all statutory provisions on the matter of Public Works, Public Contracts, The Law Against Discrimination, the Laws Governing Affirmative Action and Prevailing Rates of Wages under the laws of New Jersey.

The Agreements shall be executed by both parties not later than twenty-one (21) days from the date of the award by the County (Sundays and holidays excluded); however, such time frame may be extended by agreement of the parties.

39. PROGRESS PAYMENTS

Monthly progress payments will be made based on the value of labor and materials incorporated in the Work and of materials suitably stored at the site. An itemized schedule of values shall be submitted with each Application for Payment.

(Refer to the Owner/Contractor Agreement for Retainage and other conditions pertaining to payment and the application of N.J.S.A. 2A:30A-1 et seq.)

All Applications for Payment shall be accompanied by paid invoices for materials incorporated in the Work and for materials suitably stored at the site, and affidavit(s) by Subcontractors whose Work was included in the next to the last application to the effect such Work and such materials have been paid for.

No payment shall be made without Contractor having provided all submittals set forth in this Section, and the approval of same by the County.

For contracts exceeding $100,000.00, monthly payments will be made on the Work to the extent of 98% of the value of the Work done which is considered to be retainage.

For contracts less than $100,000.00, monthly payments will be on the Work to the extent of 90% of the value of the Work done. In lieu of the retainage, the Contractor will, at his option, deposit with the County Counsel negotiable bearer bonds of the State of New Jersey or any political subdivision thereof, equal to the amount otherwise withheld as retainage.

When the Project is completed, the final cost of the Project will be based on actual quantities of authorized Work done under each item scheduled in the bidding sheet and approved Change Orders, if any. The money due to the Contractor as determined by said final certificate after deduction of previous monthly payments on account, will be paid to

the Contractor in accordance with the terms of the contract dealing with Prompt Payment, providing, however that before such final payment is made, all outstanding claims against the Contractor must be satisfied. Before final payment is released, the Contractor must furnish: a**)** Maintenance Bond (see Section 6 of these general specifications); **b)** Certification of Compliance, New Jersey Prevailing Wage Act (see Sections 21 and 51); and **c)** General Release (see Section 36) in a form satisfactory to County Counsel; **d)** complete set of as-built plans in the latest AutoCad on compact disc; and e) a complete set of in-progress photos in jpg, jpeg, or bmp digital format on a compact disc.

40. INSPECTION

The Work must be done in accordance with the plans and specifications, and will be inspected by the County Engineer. An inspector may be placed upon the Work at any time by the County Engineer to see that the plans, specifications, and instructions of the County Engineer are carried out. In connection herewith, bidders are referred to N.J.S.A. 40A:11-17.

41. DAMAGES

The Contractor will be held responsible for all damages that may occur to Work, or to persons or property by reason of the nature of the Work or from the elements, or by reason of inadequate protection of the Work, or from any carelessness or negligence on his part or on the part of his employees. The County will withhold payments on the Work until all suits or claims for damages sustained on, or by reason of, this Work will have been settled by the Contractor.

The construction and final completion of this Work will be guaranteed by the Contractor. Any damages that may be done to the Work or any part thereof, by the elements or otherwise, during its construction, will be made good by the Contractor.

42. LIQUIDATED DAMAGES

If the Project is not completed within the time specified herein or within such further time as may have been granted by the County Engineer, then the Contractor hereby agrees to pay to the County as liquidated damages, but not as a penalty, $1,000.00 per day for each and every calendar day that he is in default on time to complete the Work. The said sum will be deducted from moneys due the Contractor and if the damages exceed this amount, then the Contractor or his Surety Company will pay the excess. These damages may be waived at the option of the County.

43. AFFIRMATIVE ACTION REQUIREMENTS

EXHIBIT B
(Revised 4/10)

MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE
N.J.S.A. 10:5-31 et seq. (P.L. 1975, C. 127)
N.J.A.C. 17:27

CONSTRUCTION CONTRACTS

During the performance of this contract, the contractor agrees as follows:

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the contractor will ensure that equal employment opportunity is afforded to such applicants in recruitment and employment, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such equal employment opportunity shall include, but not be limited to the following: employment, up-grading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.

The contractor or subcontractor will send to each labor union, with which it has a collective bargaining agreement, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer, pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

When hiring or scheduling workers in each construction trade, the contractor or subcontractor agrees to make good faith efforts to employ minority and women workers in each construction trade consistent with the targeted employment goal prescribed by N.J.A.C. l7:27-7.2; provided, however, that the Division may, in its discretion, exempt a contractor or subcontractor from

compliance with the good faith procedures prescribed by the following provisions, A, B and C, as long as the Division is satisfied that the contractor or subcontractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the Division, that its percentage of active "card carrying" members who are minority and women workers is equal to or greater than the targeted employment goal established in accordance with N.J.A.C. l7:27-7.2. The contractor or subcontractor agrees that a good faith effort shall include compliance with the following procedures:

(A) If the contractor or subcontractor has a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor shall, within three business days of the contract award, seek assurances from the union that it will cooperate with the contractor or subcontractor as it fulfills its affirmative action obligations under this contract and in accordance with the rules promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et. seq., as supplemented and amended from time to time and the Americans with Disabilities Act. If the contractor or subcontractor is unable to obtain said assurances from the construction trade union at least five business days prior to the commencement of construction work, the contractor or subcontractor agrees to afford equal employment opportunities minority and women workers directly, consistent with this chapter. If the contractor's or subcontractor's prior experience with a construction trade union, regardless of whether the union has provided said assurances, indicates a significant possibility that the trade union will not refer sufficient minority and women workers consistent with affording equal employment opportunities as specified in this chapter, the contractor or subcontractor agrees to be prepared to provide such opportunities to minority and women workers directly, consistent with this chapter, by complying with the hiring or scheduling procedures prescribed under (B) below; and the contractor or subcontractor further agrees to take said action immediately if it determines that the union is not referring minority and women workers consistent with the equal employment opportunity goals set forth in this chapter.

(B) If good faith efforts to meet targeted employment goals have not or cannot be met for each construction trade by adhering to the procedures of (A) above, or if the contractor does not have a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor agrees to take the following actions:

(l) To notify the public agency compliance officer, the Division, and minority and women referral organizations listed by the Division pursuant to N.J.A.C. 17:27-5.3, of its workforce needs, and request referral of minority and women workers;

(2) To notify any minority and women workers who have been listed with it as awaiting available vacancies;

(3) Prior to commencement of work, to request that the local construction trade union refer minority and women workers to fill job openings, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade;

(4) To leave standing requests for additional referral to minority and women workers with the local construction trade union, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, the State Training and Employment Service and other approved referral sources in the area;

(5) If it is necessary to lay off some of the workers in a given trade on the construction site, layoffs shall be conducted in compliance with the equal employment opportunity and non-discrimination standards set forth in this regulation, as well as with applicable Federal and State court decisions;

(6) To adhere to the following procedure when minority and women workers apply or are referred to the contractor or subcontractor:

(i) The contactor or subcontractor shall interview the referred minority or women worker.

(ii) If said individuals have never previously received any document or certification signifying a level of qualification lower than that required in order to perform the work of the construction trade, the contractor or subcontractor shall in good faith determine the qualifications of such individuals. The contractor or subcontractor shall hire or schedule those individuals who satisfy appropriate qualification standards in conformity with the equal employment opportunity and non-discrimination principles set forth in this chapter. However, a contractor or subcontractor shall determine that the individual at least possesses the requisite skills, and experience recognized by a union, apprentice program or a referral agency, provided the referral agency is acceptable to the Division. If necessary, the contractor or subcontractor shall hire or schedule minority and women workers who qualify as trainees pursuant to these rules. All of the requirements, however, are limited by the provisions of (C) below.

(iii) The name of any interested women or minority individual shall be maintained on a waiting list, and shall be considered for employment as described in (i) above, whenever vacancies occur. At the request of the Division, the contractor or subcontractor shall provide evidence of its good faith efforts to employ women and minorities from the list to fill vacancies.

(iv) If, for any reason, said contractor or subcontractor determines that a minority individual or a woman is not qualified or if the individual qualifies as an advanced trainee or apprentice, the contractor or subcontractor shall inform the individual in writing of the reasons for the determination, maintain a copy of the determination in its files, and send a copy to the public agency compliance officer and to the Division.

(7) To keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract, on forms made available by the Division and submitted promptly to the Division upon request.

(C) The contractor or subcontractor agrees that nothing contained in (B) above shall preclude the contractor or subcontractor from complying with the union hiring hall or apprenticeship policies in any applicable collective bargaining agreement or union hiring hall arrangement, and, where required by custom or agreement, it shall send journeymen and trainees to the union for referral, or to the apprenticeship program for admission, pursuant to such agreement or arrangement. However, where the practices of a union or apprenticeship program will result in the exclusion of minorities and women or the failure to refer minorities and women consistent with the targeted county employment goal, the contractor or subcontractor shall consider for employment persons referred pursuant to (B) above without regard to such agreement or arrangement; provided further, however, that the contractor or subcontractor shall not be required to employ women and minority advanced trainees and trainees in numbers which result in the employment of advanced trainees and trainees as a percentage of the total workforce

for the construction trade, which percentage significantly exceeds the apprentice to journey worker ratio specified in the applicable collective bargaining agreement, or in the absence of a collective bargaining agreement, exceeds the ratio established by practice in the area for said construction trade. Also, the contractor or subcontractor agrees that, in implementing the procedures of (B) above, it shall, where applicable, employ minority and women workers residing within the geographical jurisdiction of the union.

After notification of award, but prior to signing a construction contract, the contractor shall submit to the public agency compliance officer and the Division an initial project workforce report (Form AA 201) electronically provided to the public agency by the Division, through its website, for distribution to and completion by the contractor, in accordance with N.J.A.C. 17:27-7. The contractor also agrees to submit a copy of the Monthly Project Workforce Report once a month thereafter for the duration of this contract to the Division and to the public agency compliance officer.

The contractor agrees to cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job and/or off-the-job programs for outreach and training of minorities and women.

(D) The contractor and its subcontractors shall furnish such reports or other documents to the Division of Public Contracts Equal Employment Opportunity Compliance as may be requested by the Division from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Division of Public Contracts Equal Employment Opportunity Compliance for conducting a compliance investigation pursuant to **Subchapter l0 of the Administrative Code (NJAC 17:27).**

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44. INVESTMENT ACTIVITIES IN IRAN

Pursuant to *N.J.S.A.* 52:32-55 *et seq*., prohibits State and local public contracts with persons or entities engaging in certain investment activities in energy or finance sectors of Iran.

45. COMPLIANCE WITH THE PUBLIC WORKS CONTRACTOR REGISTRATION ACT - (N.J.S.A. 34:11-56.48 et. seq.)

Pursuant to the above-referenced law, Bidders are required to be registered with the New Jersey Department of Labor and Workforce Development and to possess a current certificate by said Department indicating compliance with the Act prior to the time and date that bids are received. Bidders are notified of this requirement of their compliance. Such certificates or applications shall also be provided for each Subcontractor furnishing plumbing and gas fitting, steam and hot water heating and ventilating apparatus, and all kindred work, steam power plants and kindred work, electrical work, structural steel and ornamental iron work, and such other subcontractors as the specifications require relative to prior identification.

46. UTILITIES

Attention of the bidder is directed to the fact that the approximate locations of known utility structures and facilities that may be encountered within and adjacent to the limits of the Work are shown on the plans and described herein. The accuracy and completeness of this information is not guaranteed by the County Engineer and the bidder is advised to ascertain for himself all the facts concerning the location of these and other utilities.

The Contractor will not proceed with his Work until he has made diligent inquiries of all public utility and municipal officials to determine the exact location of all-underground structures and pipes within the site of the Project. The Contractor will notify utility owners not less than ten (10) days in advance of the time he proposes to perform any Work that will endanger or affect their facilities in compliance with **New Jersey One-Call.** In excavating in any part of the Work, care must be taken not to remove or damage any gas, water, sewer, or other pipe, conduit, or structure, - public or private - without the concurrence of the owner and the County Engineer. The Contractor will, at his own expense, shore up, secure and maintain a continuous flow in such structures, and will keep them in repair until final acceptance of the Work.

When pipes or other structures are encountered or when the removal, relocation or protection of these utilities are necessary in carrying out the Project as planned, the Contractor will cooperate with the owner of said utilities and will permit the owners or their agents access to the site of the Work in order to relocate or protect their facilities and not hinder or delay unnecessarily the Work of the owners in moving same. No extra allowance

of payment will be made to the Contractor for the use of any materials, equipment, etc., or for the performance of any Work in connection with the moving of said structures unless the Contractor is specifically ordered by the County Engineer to furnish such materials, equipment, or services. If directed by the County Engineer to do any Work or furnish any materials or equipment, payment will be allowed the Contractor in accordance with the unit prices bid for such Work, or, if such items are not scheduled in the proposal, such Work shall be allowed "Supplemental Work" as provided in Section 39 of these general specifications. The corporations, companies, agencies or municipalities owning or controlling the utilities, and the name, and telephone numbers are listed in the beginning of the Technical Specifications.

47. MATERIAL COMPLIANCE AND SHOP DRAWINGS

The Contractor will require the manufacturer or supplier to furnish three (3) copies of Certification of Compliance with each delivery of materials, components and manufactured items for the Project. Two (2) copies will be furnished to the County Engineer; one copy will be retained by the Contractor. Certificates of Compliance will contain the following information:

1. Project to which material is consigned;
2. Name of the Contractor to which the material is supplied;
3. Kind of material supplied;
4. Quantity of material represented by the Certificate;
5. Means of identifying the consignment, such as label marking, seal number, etc.;
6. Date and method of shipment;
7. That the material is in conformity with the pertinent specifications stated in the certificate; and
8. Signature of a person having legal authority to bind the supplier.

The Contractor will submit to the County Engineer for his approval five (5) copies of complete and fully detailed shop or working drawings for those items listed in the beginning of the technical specifications.

Each drawing will identify the name of the job, location and Contractor.

All drawings will be approved in accordance with the standard specifications. Refer to the Technical Specifications for specific items.

All materials or articles used in the Work will be of American manufacture, insofar as same are available, in conformance with N.J.S.A. 40A:11-18.

48. PRECONSTRUCTION

In order to provide full coordination of this Project among the parties concerned, the County Engineer will arrange for a preconstruction meeting between the Contractor, County Engineer and other interested parties as soon as possible after the contract is executed. At this meeting the Contractor will present his proposed schedule of Work which shall be subject to review and approval of the County through its designated representatives.

49. DISPUTES UNDER THE CONTRACT

A dispute arising under the Contract shall be submitted in writing to the County Engineer with all facts and supporting data. The County Engineer will review the dispute and issue his decision or request additional facts or documentation after which he will render his decision.

In the event the dispute is not then resolved, the matter shall, pursuant to law, be submitted to mediation before being submitted to a court of competent jurisdiction venued in Union County.

The County Engineer will notify the County Counsel when a matter is to be submitted to mediation. The County Counsel will communicate with the parties and inform them of the procedures to be followed in making such a submission.

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50. CONTRACTOR BUSINESS REGISTRATION CERTIFICATE

Pursuant to N.J.S.A. 52:32-44, the County of Union is prohibited from entering into a contract with an entity unless the bidder/proposer/contractor, and each subcontractor that is required by law to be named in a bid/proposal/contract has a valid Business Registration Certificate on file with the Division of Revenue and Enterprise Services within the Department of the Treasury.

Prior to contract award or authorization, the contractor shall provide the County of Union with its proof of business registration and that of any named subcontractor(s).

Subcontractors named in a bid or other proposal shall provide proof of business registration to the bidder, who in turn, shall provide it to the County of Union prior to the time a contract, purchase order, or other contracting document is awarded or authorized.

During the course of contract performance:

1) the contractor shall not enter into a contract with a subcontractor unless the subcontractor first provides the contractor with a valid proof of business registration.

2) the contractor shall maintain and submit to the County of Union a list of subcontractors and their addresses that may be updated from time to time.

3) the contractor and any subcontractor providing goods or performing services under the contract, and each of their affiliates, shall collect and remit to the Director of the Division of Taxation in the Department of the Treasury, the use tax due pursuant to the Sales and Use Tax Act, (N.J.S.A. 54:32B-1 et seq.) on all sales of tangible personal property delivered into the State. Any questions in this regard can be directed to the Division of Taxation at (609)292-6400. Form NJ-REG can be filed online at http://www.state.nj.us/treasury/revenue/busregcert.shtml.

Before final payment is made under the contract, the contractor shall submit to the County of Union a complete and accurate list of all subcontractors used and their addresses.

Pursuant to N.J.S.A. 54:49-4.1, a business organization that fails to provide a copy of a business registration as required, or that provides false business registration information, shall be liable for a penalty of $25 for each day of violation, not to exceed $50,000, for each proof of business registration not properly provided under a contract with a contracting agency.

51. BID PROTEST – LEGAL FEES AND COSTS

In the event a Bidder unsuccessfully challenges a Bid Submission by filing an action in a court of law concerning same, said Bidder shall be responsible for payment of reasonable legal costs and fees incurred by the County relating to said protest.

52. AMERICAN GOODS AND PRODUCTS WHERE POSSIBLE

Bidder shall comply with the requirements of N.J.S.A. 40A:11-18 and use only manufactured and farm products of the United States, wherever available, for the Project.

53. NEW JERSEY PAY-TO-PLAY REQUIREMENTS

This Contract is required by law to be publicly advertised for bids. As such, lists of political contributions pursuant to N.J.S.A. 19:44A-1 et seq. are NOT REQUIRED to be provided with the bids.

54. STATEMENT OF EQUIPMENT TO BE USED IN CONSTRUCTION

Pursuant to N.J.S.A. 40A:11-20 entitled Certificate of Bidder Showing Ability to Perform Contract, the County requires a Certification from all bidders submitting a bid showing that the Bidder owns, leases, or controls all necessary equipment required by the Project Plans and Specifications. All bidders shall provide this information at the time of the bid opening using the attached form entitled, “CERTIFICATE OF BIDDER SHOWING ABILITY TO PERFORM CONTRACT’.

If the Bidder is not the actual owner of the equipment, it shall state the source from which the equipment will be obtained and shall attach a certificate from the owner or person in control of the equipment demonstrating that the equipment owner has granted the Bidder control of the requisite equipment during such time as may be necessary for completion of the portion of the contract for which the equipment is necessary.

55. NEW JERSEY SALES AND USE TAX REQUIREMENTS,

Contractors are required to comply with the following:

> New Jersey Sales and Use Tax Requirements: All contractors with subcontractors, or any of their affiliates, who enter into contracts for the provision of goods or services with or for New Jersey local government entities, are required to collect and remit to the New Jersey Director of Taxation in the Department of the Treasury the use tax due on all of their sales of tangible personal property delivered into the State of New Jersey pursuant to the “Sales and Use Tax Act,” (N.J.S.A. 54:32B-1 et seq.), regardless of whether the tangible personal property is intended for a

contract with the contracting agency. This tax shall be remitted for the term of the Contract.

For purposes herein “affiliate” shall mean any entity that: (a) directly, indirectly, or constructively controls another entity, (b) is directly, indirectly, or constructively controlled by another entity, or (c) is subject to the control of a common entity. For purposes of the immediately preceding sentence, an entity controls another entity if it owns, directly or indirectly, more than fifty percent (50%) of the ownership interest in that entity. NJSA 52:32-44(g)(3).

Bidder's Name_____

EDWARD T. OATMAN
COUNTY MANAGER

MICHELLE HAGOPIAN, ASSISTANT DIRECTOR
DIRECTOR / DIVISION OF PURCHASING

BID DOCUMENT SUBMISSION CHECKLIST
ALL SIGNATURES AND SEALS SHALL BE ORIGINALS UNLESS OTHERWISE SPECIFIED
BID SHEETS SHOULD NOT BE SUBMITTED DOUBLE SIDED PAGES, (SINGLE SIDE ONLY)

EACH BIDDER SHOULD COMPLETE THIS FORM AND INITIAL EACH ENTRY.
DATE COMPLETED: _____

PLEASE SUBMIT BID DOCUMENTS ON SINGLE SIDED PAPER ONLY, WITH THE EXCEPTION OF THE SURETY AND BID BOND DOCUMENTS.

IN ACCORDANCE WITH THE BID SPECIFICATIONS I HAVE REVIEWED, COMPLETED / EXECUTED AND INCLUDED THE FOLLOWING FORMS:

_____ Bid Form Page **(Signed, Dated and Bid on all alternatives applicable to the Work)**.

_____ Security in the form of:
____ Bid bond in an amount equal to 10% of the total amount of this bid not to exceed $20,000.00; or
____ Certified check or cashier's check in the amount of 10% of this bid not to exceed $20,000.00

_____ Consent of Surety form signed by a Surety Company if the total amount of your Bid is over $36,000.00. If your bid is accepted, the Surety Company that provided the Consent shall be required to furnish a Performance, Labor and Materials Bond in the amount of 100% of the award of the contract. The County of Union has provided its Consent of Surety form for your use. The use of this form by your Surety Company will expedite the bid review process and eliminate the possibility of having your bid rejected. If, however, you should need to use another form, please use language similar to that used on the Union County form and avoid making any additions or deletions to the Union County form language. In lieu of the Consent of Surety you may submit a Certified Check in the full amount of the bid.

_____ STATEMENT OF BIDDER OWNERSHIP. Pursuant to N.J.S.A. 52:25-24.2, which includes **BOTH** of the following documents:

- Bidder Signature Page
- Bidder Disclosure Statement **(Fill out 2 pages completely)**

_____ SUBCONTRACTOR IDENTIFICATION. Pursuant to N.J.S.A. 40A:11-16, which includes **BOTH** of the following documents:

- Subcontractor Identification Statement: List of Subcontractors **(only for certain types of work)**
- Subcontractor Identification Certification

_____ Acknowledgement of Addendum form**: (This form is to be used only when an addendum has been added to the specifications)**.

_____ A copy of the State of New Jersey Department of the Treasury, Division of Revenue, **Business Registration Certificate ("BRC")** may be included with the bids to expedite the contract process because the bidder is required to provide the County of Union with its proof of business registration and that of any named subcontractor(s) prior to contract award or authorization.

Bidder's Name_____

_____ A copy of the State of New Jersey Department of the Treasury, Division of Revenue, **Business Registration Certificate ("BRC")** of all named or listed subcontractors (List of Subcontractors) in a Construction bid may be included with the bid as the BRC(s) for each named or listed subcontractors in order to expedite the contract process. Subcontractors named in a bid or other proposal shall provide proof of business registration to the bidder, who in turn, shall provide it to the County of Union prior to the time a contract, purchase order, or other contracting document is awarded or authorized.

_____ Affirmative Action Requirement

_____ Experience Statement

_____ Certificate of Bidder showing ability to perform Contract

_____ Non-Collusion Affidavit – Fill out completely and notarize

_____ Certificates from New Jersey Department of Labor and Workforce Development – Public Works Contractor Registration Act. **(Only for certain types of work)**

_____ Federal Attachments **(If applicable)**

_____ NJDPMC Certificate / Notice of Classification **(If applicable)**

_____ Americans with Disabilities Act

_____ Statement of Bidder's Qualifications

_____ Contractor Performance Record

_____ Affidavit Regarding List of Debarred, Suspended or Disqualified Bidders

_____ Prior Negative Experience Questionnaire

_____ Contractor's Certification of Compliance – New Jersey Prevailing Wage Act

_____ Uncompleted Contracts Affidavit **(For Bidder, if applicable) MUST ALSO PROVIDE DPMC FORM 701**

_____ Certificate of Insurance Statement

_____ Collection of Use Tax on Sales to Local Government Statement

_____ Time of Completion

_____ Disclosure of Investment Activities in Iran Certification Form

I HAVE TAKEN THE FOLLOWING ACTIONS:

_____ Visited the site and attended the Pre-Bid Meeting **(Where applicable)**

_____ Reviewed the Contract Documents (including any permits the County or its professionals may have obtained), Work, Site, Locality, and Local Conditions and Laws and Regulations that in any manner may affect Cost, Progress, Performance or Furnishing of Work.

_____ Reviewed Bond Requirements

_____ Provided Proof of Compliance with New Jersey Prevailing Wage Act

_____ Reviewed Form of Owner/Contractor Agreement and General Conditions to the Contract

NOTE: QUESTIONS PERTAINING TO THIS BID ARE TO BE DIRECTED TO THE DIVISION OF PURCHASING AT ucbids@ucnj.org.

BIDDING DOCUMENTS

The Bidding Documents consist of the following items:

- **ADDENDA, if issued**
- **CLARIFICATIONS, if issued**
- **INSTRUCTION TO BIDDERS**
- **BID FORM**
- **SPECIFICATIONS: As outlined in the Table of Contents and included in the Project Manual.**
- **DRAWINGS: As per List of Drawings, indicated on the Project Title Sheet.**

Bidder's Name_____

BID FORM

I/We have carefully examined the plans, specifications, and advertisement for bid for the

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150
BOROUGHS OF ROSELLE & ROSELLE PARK
COUNTY OF UNION, NEW JERSEY
BA# 1-2021
UNION COUNTY ENGINEERING PROJECT #2011-051

that is on file in the Union County Division of Engineering. I/We have inspected the site of the work and will contract to do all the work and furnish all materials mentioned in said plans and specifications. Work will be accomplished in the manner prescribed therein.

BASE BID ITEMS:

ITEM NO	NJDOT Item No.	DESCRIPTION	UNIT	CONTRACT QUANTITY	UNIT PRICE	AMOUNT
1	151006M	PERFORMANCE BOND AND PAYMENT BOND	DOLL	DOLL		
2	152004P	OWNER'S AND CONTRACTOR'S PROTECTIVE LIABILITY INSURANCE	DOLL	DOLL		
3	152012P	RAILROAD PROTECTIVE LIABILITY INSURANCE	DOLL	DOLL		
4	152015P	POLLUTION LIABILITY INSURANCE	DOLL	DOLL		
5	153003P	PROGRESS SCHEDULE	LS	LUMP SUM		
6	153005M	PROGRESS SCHEDULE UPDATE	U	21		
7	154003P	MOBILIZATION	LS	LUMP SUM		
8	155003M	FIELD OFFICE TYPE A SET UP	U	1		
9	155021M	FIELD OFFICE TYPE A MAINTENANCE	MO	26		
10	157004M	CONSTRUCTION LAYOUT	DOLL	DOLL		
11	157006M	MONUMENT	U	5		
12	158006M	SILT FENCE	LF	1403		
13	158015M	HAYBALE	U	25		
14	158030M	INLET FILTER TYPE 2, 2' X 4'	U	6		
15	158060M	CONSTRUCTION DRIVEWAY	T	170		
16	158063P	CONCRETE WASHOUT SYSTEM	LS	LUMP SUM		
17	158072M	OIL ONLY EMERGENCY SPILL KIT, TYPE 1	U	2		
18	158084M	EROSION CONTROL SEDIMENT REMOVAL	CY	166		
19	158089M	PREFABRICATED DRAINAGE COMPOSITE	SY	893		
20	159003M	BREAKAWAY BARRICADE	U	50		
21	159006M	DRUM	U	130		
22	159009M	TRAFFIC CONE	U	33		
23	159012M	CONSTRUCTION SIGNS	SF	907		
24	159015M	CONSTRUCTION IDENTIFICATION SIGN, 4' X 8'	U	2		
25	159027M	FLASHING ARROW BOARD, 4' X 8'	U	3		
26	159030M	PORTABLE VARIABLE MESSAGE SIGN	U	2		
27	159141M	TRAFFIC DIRECTOR, FLAGGER	HOUR	500		
28	160004M	FUEL PRICE ADJUSTMENT	DOLL	DOLL		
29	160007M	ASPHALT PRICE ADJUSTMENT	DOLL	DOLL		
30	161003P	FINAL CLEANUP	LS	LUMP SUM		
31	162006P	VIBRATION AND MOVEMENT MONITORING	DOLL	DOLL		
32	201003P	CLEARING SITE	LS	LUMP SUM		
33	202015P	EXCAVATION, REGULATED MATERIAL	CY	10476		

Bidder's Name_____

BID FORM (CONTINUED)

ITEM NO	NJDOT Item No.	DESCRIPTION	UNIT	CONTRACT QUANTITY	UNIT PRICE	AMOUNT
34	202021P	REMOVAL OF PAVEMENT	SY	1529		
35	202024M	DISPOSAL OF REGULATED MATERIAL	T	5833		
36	202027M	DISPOSAL OF REGULATED MATERIAL, HAZARDOUS	T	141		
37	202030M	SOIL SAMPLING AND ANALYSES, REGULATED	U	4		
38	203009P	I-9 SOIL AGGREGATE	CY	1817		
39	203040M	GEOTEXTILE	SY	841		
40	203041P	GEOTEXTILE, ROADWAY STABILIZATION	SY	2023		
41	301006P	SUBBASE (DESIGNATION I-3)	CY	62		
42	302042P	DENSE-GRADED AGGREGATE BASE COURSE, 8" THICK	SY	1544		
43	302060P	COARSE AGGREGATE, SIZE NO. 57	CY	359		
44	401009P	HMA MILLING, 3" OR LESS	SY	5289		
45	401027M	POLYMERIZED JOINT ADHESIVE	LF	600		
46	401030M	TACK COAT	GAL	670		
47	401036M	PRIME COAT	GAL	360		
48	401042M	HOT MIX ASPHALT 9.5 M 64 SURFACE COURSE	T	251		
49	401049M	HOT MIX ASPHALT 9.5 M E SURFACE COURSE	T	445		
50	401066M	HOT MIX ASPHALT 9.5 M 64 INTERMEDIATE COURSE	T	249		
51	401079M	HOT MIX ASPHALT 12.5 M E INTERMEDIATE COURSE	T	591		
52	401108M	CORE SAMPLES, HOT MIX ASPHALT	U	5		
53	601122P	15" REINFORCED CONCRETE PIPE	LF	60		
54	601404P	SUBBASE OUTLET DRAIN	LF	148		
55	601668M	CLEANING EXISTING PIPE, 10" DIAMETER	LF	132		
56	601670M	CLEANING EXISTING PIPE, 12" TO 24" DIAMETER	LF	210		
57	601681M	18" DUCTILE IRON PIPE	LF	4		
58	602012M	INLET, TYPE B	U	1		
59	602018M	INLET, TYPE E	U	1		
60	602039M	INLET, TYPE E-2	U	1		
61	602105M	SET INLET TYPE B, CASTING	U	3		
62	602153M	RECONSTRUCTED INLET, TYPE B, USING NEW CASTING	U	1		
63	605039P	CHAIN-LINK FENCE, 4' HIGH	LF	146		
64	605045P	CHAIN-LINK FENCE, 6' HIGH	LF	411		
65	605141M	GATE, CHAIN-LINK FENCE, 6' WIDE	U	2		
66	605193P	HANDRAIL	LF	20		
67	605212P	RESET FENCE	LF	15		
68	606012P	CONCRETE SIDEWALK, 4" THICK	SY	411		
69	606028P	RESET PRECAST CONCRETE PAVERS	SY	9		
70	606075P	CONCRETE ISLAND, 4" THICK	SY	39		
71	606084P	DETECTABLE WARNING SURFACE	SY	31		
72	606109P	CONCRETE STEPS, REINFORCED	SY	6		
73	607017P	CONCRETE CURB (TYPE 1)	LF	372		
74	607021P	9" X 18" CONCRETE VERTICAL CURB	LF	875		
75	607034P	9" X 14" CONCRETE VERTICAL CURB	LF	79		
76	608003P	NONVEGETATIVE SURFACE, HOT MIX ASPHALT	SY	115		
77	609003M	BEAM GUIDE RAIL	LF	105		
78	609027M	TANGENT GUIDE RAIL TERMINAL	U	1		

Bidder's Name_____

BID FORM (CONTINUED)

ITEM NO	NJDOT Item No.	DESCRIPTION	UNIT	CONTRACT QUANTITY	UNIT PRICE	AMOUNT
79	609039M	BEAM GUIDE RAIL ANCHORAGE	U	2		
80	609042M	BEAM GUIDE RAIL POST	U	3		
81	609058M	APPROACH GUIDE RAIL TRANSITION TL-2	U	3		
82	609075M	REMOVAL OF BEAM GUIDE RAIL	LF	643		
83	610003M	TRAFFIC STRIPES, 4"	LF	2900		
84	610009M	TRAFFIC MARKINGS	SF	300		
85	610014M	TRAFFIC MARKING LINES, 8"	LF	1000		
86	610015M	RPM, BI-DIRECTIONAL, WHITE LENS	U	8		
87	610017M	TRAFFIC MARKING LINES, 24"	LF	1100		
88	610018M	RPM, MONO-DIRECTIONAL, AMBER LENS	U	8		
89	610021M	RPM, BI-DIRECTIONAL, AMBER LENS	U	9		
90	610045M	BOLLARD	U	4		
91	611300M	CRASH CUSHION, COMPRESSIVE BARRIER, TYPE 2, WIDTH NARROW	U	1		
92	612003P	REGULATORY AND WARNING SIGN	SF	340		
93	612033P	SPECIALIZED SIGN	U	2		
94	651255M	RESET WATER VALVE BOX	U	1		
95	652432M	RESET MANHOLE, SANITARY SEWER, USING EXISTING CASTING	U	3		
96	654003P	ELECTRICAL CONDUIT	LF	294		
97	654004P	ELECTRICAL SERVICE	LS	LUMP SUM		
98	654007P	ELECTRICAL UTILITY RELOCATION	LS	LUMP SUM		
99	701015P	2" RIGID METALLIC CONDUIT	LF	720		
100	701021P	3" RIGID METALLIC CONDUIT	LF	1830		
101	701102M	18" X 36" JUNCTION BOX	U	20		
102	701123M	FOUNDATION, TYPE SFT	U	2		
103	701132M	FOUNDATION, TYPE P-MC	U	2		
104	701135M	FOUNDATION, TYPE SPF	U	2		
105	701138M	FOUNDATION, TYPE STF	U	8		
106	701144M	FOUNDATION, TYPE SFK	U	2		
107	701171M	METER CABINET, TYPE TL	U	2		
108	701192P	GROUND WIRE, NO. 8 AWG	LF	2300		
109	701201P	MULTIPLE LIGHTING WIRE, NO. 8 AWG	LF	2500		
110	701213P	SERVICE WIRE, NO. 6 AWG	LF	552		
111	701352P	TRANSFORMER REMOVAL	LS	LUMP SUM		
112	702009M	CONTROLLER, 8 PHASE	U	2		
113	702012M	TRAFFIC SIGNAL STANDARD, ALUMINUM	U	4		
114	702015M	TRAFFIC SIGNAL STANDARD, STEEL	U	8		
115	702018M	PEDESTRIAN SIGNAL STANDARD	U	2		
116	702021M	TRAFFIC SIGNAL MAST ARM, ALUMINUM	U	4		
117	702024M	TRAFFIC SIGNAL MAST ARM, STEEL	U	8		
118	702027P	TRAFFIC SIGNAL CABLE, 2 CONDUCTOR	LF	4025		
119	702030P	TRAFFIC SIGNAL CABLE, 5 CONDUCTOR	LF	4054		
120	702033P	TRAFFIC SIGNAL CABLE, 10 CONDUCTOR	LF	8127		
121	702036M	TRAFFIC SIGNAL HEAD	U	36		
122	702038M	PUSH BUTTON INSTALLATION	U	6		
123	702039M	PEDESTRIAN SIGNAL HEAD	U	16		

Bidder's Name_____

BID FORM (CONTINUED)

ITEM NO	NJDOT Item No.	DESCRIPTION	UNIT	CONTRACT QUANTITY	UNIT PRICE	AMOUNT
124	702042M	PUSH BUTTON	U	16		
125	702046M	RADAR DETECTOR	U	10		
126	702054M	TEMPORARY TRAFFIC SIGNAL SYSTEM, LOCATION	LS	LUMP SUM		
127	702060M	CONTROLLER TURN-ON	U	2		
128	702100M	UNINTERRUPTIBLE POWER SOURCE UNIT WITH CONTROLLER CABINET REVISIONS	U	2		
129	703012M	LIGHTING MAST ARM ALUMINUM	U	1		
130	703015M	LIGHTING MAST ARM STEEL	U	4		
131	703018M	LUMINAIRE	U	6		
132	802021M	TREE REMOVAL, OVER 6" TO 12" DIAMETER	U	3		
133	802024M	TREE REMOVAL, OVER 12" TO 18" DIAMETER	U	3		
134	802027M	TREE REMOVAL, OVER 18" TO 24" DIAMETER	U	3		
135	802030M	TREE REMOVAL, OVER 24" TO 30" DIAMETER	U	2		
136	802033M	TREE REMOVAL, OVER 30" TO 36" DIAMETER	U	1		
137	804006P	TOPSOILING, 4" THICK	SY	757		
138	804015P	BORROW TOPSOIL	CY	67		
139	806006P	FERTILIZING AND SEEDING, TYPE A-3	SY	757		
140	806018P	FERTILIZING AND SEEDING, TYPE F	SY	76		
141	809003M	STRAW MULCHING	SY	833		
142	201006P	CLEARING SITE, BRIDGE (2050-150)	LS	LUMP SUM		
143	501003P	TEMPORARY SHEETING	SF	1946		
144	504006P	REINFORCEMENT STEEL, EPOXY COATED	LB	181410		
145	504015P	CONCRETE FOOTING	CY	504		
146	504018P	CONCRETE WINGWALL	CY	143		
147	504024P	CONCRETE ABUTMENT WALL	CY	370		
148	504030P	CONCRETE PIER SHAFT	CY	180		
149	504036P	EPOXY WATERPROOFING	SY	115		
150	504037P	SPRAY APPLIED WATERPROOFING MEMBRANE	SF	8282		
151	506003P	STRUCTURAL STEEL (138,550 LBS)	LS	LUMP SUM		
152	506003P	STRUCTURAL STEEL, PRE-ENGINEERED TRUSS BRIDGE (310,000 LBS)	LS	LUMP SUM		
153	506006P	REINFORCED ELASTOMERIC BEARING ASSEMBLY	U	16		
154	506012P	SHEAR CONNECTOR	U	3420		
155	507015P	STRIP SEAL EXPANSION JOINT ASSEMBLY	LF	144		
156	507024P	CONCRETE BRIDGE DECK, HPC	CY	268		
157	507033P	CONCRETE BRIDGE SIDEWALK, HPC	CY	28		
158	507039P	CONCRETE BRIDGE PARAPET, HPC	LF	714		
159	507050M	CONCRETE SLEEPER SLAB	CY	13		
160	507051P	CONCRETE BRIDGE APPROACH	CY	106		
161	509108P	CHAIN-LINK FENCE, TYPE III, ALUMINUM ALLOY, BRIDGE, 6'-3" HIGH, CURVED TOP	LF	180		
162	513006P	RETAINING WALL, CAST-IN-PLACE, LOCATION NO. 2	SF	1085		
163	513006P	RETAINING WALL, CAST-IN-PLACE, LOCATION NO. 3	SF	550		
164	513006P	RETAINING WALL, CAST-IN-PLACE, LOCATION NO. 4	SF	890		
165	513006P	RETAINING WALL, CAST-IN-PLACE, LOCATION NO. 5	SF	1990		

Bidder's Name_____

TOTAL BASE BID ITEMS AMOUNT:

_____ _____

Written Figures

Bidder's Name_____

CONSENT OF SURETY
TO ACCOMPANY PROPOSAL (BID)

_____ (hereinafter called Surety), organized and existing under the laws of the State of _____ duly authorized and qualified to transact business in the State of New Jersey, in consideration of the sum of One Dollar ($1.00), lawful money of the United States of America, to it in hand paid, receipt whereof is hereby acknowledged, and in consideration, hereby certifies and agrees that if the contract for which the attached proposal is made be awarded to _____ (hereinafter called Contractor) for the performance of certain work and labor or the supplying of certain materials, or both, as more particularly set forth in said proposal and described for purposes of this instrument as a proposal for _____ to the COUNTY OF UNION and if Contractor shall enter into the contract, Surety will become bound as surety for its faithful performance, labor and material payment and will provide the Contractor with a performance, labor and material payment bond in the full amount of the contract price.

NOTE:
Expiration date
Needed if Annual
Surety

_____

_____
NAME OF INSURANCE COMPANY

ADDRESS: _____
_____
_____

_____
ORIGINAL SIGNATURE
ATTORNEY-IN-FACT FOR INSURANCE CO.

NOTE: PROOF OF AUTHORITY OF OFFICERS OF SURETY COMPANY TO EXECUTE THIS DOCUMENT MUST BE SUBMITTED.

Bidder's Name_____

BIDDER SIGNATURE PAGE

THE BIDDER MUST READ THE FOLLOWING INSTRUCTIONS TO COMPLETE THIS PAGE:

1. If doing business under a **trade name, partnership or a sole proprietorship**, you must submit the bid under exact title of the trade name, partnership, or proprietorship, and the bid must be signed by either the **owner**, or a **partner** and **witnessed** by a **notary public**.

2. If a **Corporation**, the bid must be signed by the **President** or **Vice President** and **witnessed** by a **Corporate Secretary** (corporate title must be exact) and **affix corporate seal**. If a Corporate Secretary does not exist, President or Vice President's signature shall be witnessed by a Notary Public.

3. Other persons **authorized** by **corporate resolution** to execute agreements in its behalf may also sign the bid documents (pages). **Copy of a resolution must accompany the bid**.

4. The person who signs this bid form **must also** sign the **Non-Collusion Affidavit**.

5. You **cannot** witness your own signature.

_____
NAME OF BIDDER

_____
_____
_____
ADDRESS OF BIDDER

_____
ORIGINAL SIGNATURE
CORPORATE SECRETARY

_____
PRINT NAME AND TITLE
CORPORATE SECRETARY

TEL: _____
FAX: _____
E-Mail: _____

BY: _____
ORIGINAL SIGNATURE

Corporate Seal

_____

_____
PRINT OR TYPE NAME AND TITLE

WARNING: IF YOU FAIL TO FULLY, ACCURATELY, AND COMPLETELY SUPPLY THE INFORMATION REQUESTED ON THIS PAGE, YOUR BID MAY BE REJECTED.

Bidder's Name_____

STATEMENT OF OWNERSHIP DISCLOSURE

N.J.S.A. 52:25-24.2 (P.L. 1977, c.33, as amended by P.L. 2016, c.43)

This statement shall be completed, certified to, and included with all bid and proposal submissions. Failure to submit the required information is cause for automatic rejection of the bid or proposal.

Name of Organization:_____

Organization Address:_____

Part I **Check the box that represents the type of business organization:**

☐ Sole Proprietorship (skip Parts II and III, execute certification in Part IV)

☐ Non-Profit Corporation (skip Parts II and III, execute certification in Part IV)

☐ For-Profit Corporation (any type) ☐ Limited Liability Company (LLC)

☐ Partnership ☐ Limited Partnership ☐ Limited Liability Partnership (LLP)

☐ Other (be specific): _____

Part II

☐ The list below contains the names and addresses of all stockholders in the corporation who own 10 percent or more of its stock, of any class, or of all individual partners in the partnership who own a 10 percent or greater interest therein, or of all members in the limited liability company who own a 10 percent or greater interest therein, as the case may be. (**COMPLETE THE LIST BELOW IN THIS SECTION**)

OR

☐ No one stockholder in the corporation owns 10 percent or more of its stock, of any class, or no individual partner in the partnership owns a 10 percent or greater interest therein, or no member in the limited liability company owns a 10 percent or greater interest therein, as the case may be. (**SKIP TO PART IV**)

(Please attach additional sheets if more space is needed):

Name of Individual or Business Entity	Home Address (for Individuals) or Business Address

Part III DISCLOSURE OF 10% OR GREATER OWNERSHIP IN THE STOCKHOLDERS, PARTNERS OR LLC MEMBERS LISTED IN PART II

If a bidder has a direct or indirect parent entity which is publicly traded, and any person holds a 10 percent or greater beneficial interest in the publicly traded parent entity as of the last annual federal Security and Exchange Commission (SEC) or foreign equivalent filing, ownership disclosure can be met by providing links to the website(s) containing the last annual filing(s) with the federal Securities and Exchange Commission (or foreign equivalent) that contain the name and address of each person holding a 10% or greater beneficial interest in the publicly traded parent entity, along with the relevant page numbers of the filing(s) that contain the information on each such person. **Attach additional sheets if more space is needed**.

Website (URL) containing the last annual SEC (or foreign equivalent) filing	Page #'s

Please list the names and addresses of each stockholder, partner or member owning a 10 percent or greater interest in any corresponding corporation, partnership and/or limited liability company (LLC) listed in Part II **other than for any publicly traded parent entities referenced above**. The disclosure shall be continued until names and addresses of every noncorporate stockholder, and individual partner, and member exceeding the 10 percent ownership criteria established pursuant to N.J.S.A. 52:25-24.2 has been listed. **Attach additional sheets if more space is needed.**

Stockholder/Partner/Member and Corresponding Entity Listed in Part II	Home Address (for Individuals) or Business Address

Part IV Certification

I, being duly sworn upon my oath, hereby represent that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I acknowledge: that I am authorized to execute this certification on behalf of the bidder/proposer; that the ***County of Union*** is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the completion of any contracts with ***County of Union*** to notify the ***County of Union*** in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the, permitting the ***County of Union*** to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print):		Title:	
Signature:		Date:	

Bidder's Name_____

SUBCONTRACTOR IDENTIFICATION STATEMENT

LIST OF SUBCONTRACTORS

This form is ONLY required for plumbing and gas fitting, steam and hot water heating and ventilating apparatus, steam power plants, electrical work, structural steel, ornamental iron work, and any other trades required to be identified by the specifications (including, but not limited, to satisfying any DPMC Classification requirements).

☐ **CHECK THIS BOX IF NONE OF THE ABOVE LISTED TRADES OR THOSE REQUIRED TO BE IDENTIFIED IN THE SPECIFICATIONS ARE TO BE USED TO PERFORM THE WORK**

In compliance with N.J.S.A. 40A:11-16 and the bid specifications, the undersigned hereby lists the name or names of the following subcontractors:

Company Name:_____

Address:_____

Telephone: _____ Subcontract Amount: $_____

Specific Scope of Work Subcontracted: _____

_____

License No. _____

Company Name:_____

Address: _____

Telephone: _____ Subcontract Amount: $_____

Specific Scope of Work Subcontracted: _____

_____

License No. _____

Company Name:_____

Address: _____

Telephone: _____ Subcontract Amount: $_____

Specific Scope of Work Subcontracted: _____

_____

License No. _____

IF MORE THAN THREE SUBCONTRACTORS, PLEASE COPY THIS SHEET AS NECESSARY AND ATTACH TO THE BID PACKAGE.

(Continued on following page)

Bidder's Name_____

SUBCONTRACTOR IDENTIFICATION CERTIFICATION

Note the law does not permit the listing of alternate subcontractors. However, multiple subcontractors for the same trade are permitted to be named provided the bidder meets the following requirements:

- Bidder identifies each subcontractor named for that category;
- Bidder states the scope of work, goods and services (the portion of the work) to be performed by each subcontractor; and
- Bidder provides the price quote provided by each subcontractor.

The bidder is advised that any change of subcontractor(s) from ones listed herein is subject to the County's approval. Change of subcontractor(s) will be approved only if made for good cause and not as a result of an arbitrary purpose.

The undersigned Bidder certifies and declares that the subcontractors listed above shall be used as subcontractors to complete certain portions of the work in this project as set forth in N.J.S.A. 40A: 11-16.

_____ _____

Witness **NAME OF BIDDER**

_____

Date _____

_____

ADDRESS

By: _____

ORIGINAL SIGNATURE ONLY

_____

_____

PRINT NAME AND TITLE

Bidder's Name_____

ACKNOWLEDGMENT OF ADDENDUM

COUNTY OF UNION

_____ _____

(Name of Construction /Public Works Project) **(Project or Bid Number)**

Pursuant to N.J.S.A. 40A:11-23.1a., the undersigned bidder, hereby acknowledges receipt of the following notices, revisions, or addenda to the bid advertisement, specifications or bid documents. By indicating date of receipt, bidder acknowledges the submitted bid takes into account the provisions of the notice, revision or addendum. Note that the County of Union's record of notice to bidders shall take precedence and that failure to include provisions of changes in a bid proposal may be subject for rejection of the bid.

Local Unit Reference Number or Title of Addendum/Revision	How Received (mail, fax, pick-up, etc.)	Date Received

ACKNOWLEDGMENT BY BIDDER:

NAME OF BIDDER: _____

ORIGINAL SIGNATURE: _____

PRINTED NAME AND TITLE:_____

DATE: _____

Bidder's Name_____

CONTRACTOR BUSINESS REGISTRATION CERTIFICATE

New Mandatory Requirement - Effective 1/18/2010

The recently enacted **P.L. 2009, c.315**, requires that effective January 18, 2010; a contracting agency must receive proof of the bidder's business registration prior to the award of a contract. However, the proof must show that the bidder was in fact registered with the State of New Jersey Department of the Treasury, Division of Revenue and obtained the business registration prior to the receipt of bids.

If subcontractors are named on the bid, proof of the business registration for each subcontractor must be provided prior to the award of bid. Similarly to the bidder, the proof must show that each subcontractor was registered with the State of New Jersey Department of the Treasury, Division of Revenue and obtained the business registration prior to the receipt of bids.

Proof of business registration shall be

- ☐ A copy of a Business Registration Certificate issued by the Department of the Treasury, Division of Revenue; or
- ☐ A copy of the web version provided by the NJ Division of Revenue, or

Register online at www.nj.gov/treasury/revenue/taxreg.htm. Click the "online" link and then select "Register for Tax and Employer Purposes or call the Division at 609-292-1730.
Note: A NJ Certificate of Authority is <u>not</u> acceptable.

FAILURE to submit proof of registration of the bidder or any subcontractor named on the bid prior to the award of a contract shall be cause to reject the bids.

FAILURE of the bidder or any subcontractor named on the bid to be <u>registered</u> prior to the receipt of bids is cause for a **MANDATORY REJECTION** of bids. (A NON-WAIVABLE DEFECT). This covers construction work as well as non-construction bids.

IN ADDITION:

The contractor shall provide written notice to all **subcontractors and suppliers** not specifically named on the bid of the responsibility to register and submit proof of business registration to the contractor. The requirement of proof of business registration extends down through all levels (tiers) of the project.

Before final payment on the contract is made by the contracting agency, the contractor shall submit an accurate list and the proof of business registration of each subcontractor or supplier used in the fulfillment of the contract, or shall attest that no subcontractors were used.

For the term of the contract, the contractor and each of its affiliates and a subcontractor and each of its affiliates [N.J.S.A. 52:32-44(g)(3)] shall collect and remit to the Director, New Jersey Division of Taxation, the use tax due pursuant to the Sales and Use Tax Act on all sales of tangible personal property delivered into this State, regardless of whether the tangible personal property is intended for a contract with a contracting agency.

A business organization that fails to provide a copy of a business registration as required pursuant to section 1 of P.L.2001,c.134 (C.52:32-44 et al.) or subsection e. or f. of section 92 of P.L.1977,c.110 (C.5:12-92), or that provides false business registration information under the requirements of either of those sections, shall be liable for a penalty of $25 for each day of violation, not to exceed $50,000 for each business registration copy not properly provided under a contract with a contracting agency.

Bidder's Name_____

BUSINESS REGISTRATION

Pursuant to N.J.S.A. 52:32-44, the County of Union is prohibited from entering into a contract with an entity unless the bidder/proposer/contractor, and each subcontractor that is required by law to be named in a bid/proposal/contract has a valid Business Registration Certificate on file with the Division of Revenue and Enterprise Services within the Department of the Treasury.

Prior to contract award or authorization, the contractor shall provide the County of Union with its proof of business registration and that of any named subcontractor(s).

Subcontractors named in a bid or other proposal shall provide proof of business registration to the bidder, who in turn, shall provide it to the County of Union prior to the time a contract, purchase order, or other contracting document is awarded or authorized.

During the course of contract performance:

(1) the contractor shall not enter into a contract with a subcontractor unless the subcontractor first provides the contractor with a valid proof of business registration.

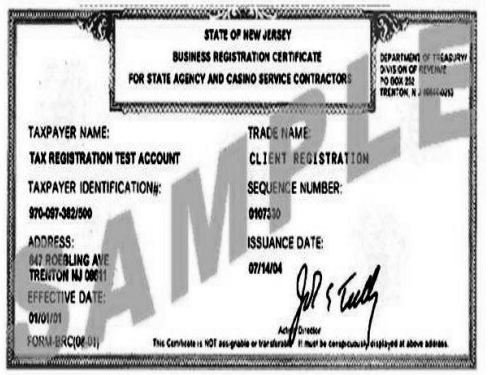
(2) the contractor shall maintain and submit to the County of Union a list of subcontractors and their addresses that may be updated from time to time.

(3) the contractor and any subcontractor providing goods or performing services under the contract, and each of their affiliates, shall collect and remit to the Director of the Division of Taxation in the Department of the Treasury, the use tax due pursuant to the Sales and Use Tax Act, (N.J.S.A. 54:32B-1 et seq.) on all sales of tangible personal property delivered into the State. Any questions in this regard can be directed to the Division of Taxation at (609)292-6400. Form NJ-REG can be filed online at http://www.state.nj.us/treasury/revenue/busregcert.shtml.

Before final payment is made under the contract, the contractor shall submit to the County of Union a complete and accurate list of all subcontractors used and their addresses.

Pursuant to N.J.S.A. 54:49-4.1, a business organization that fails to provide a copy of a business registration as required, or that provides false business registration information, shall be liable for a penalty of $25 for each day of violation, not to exceed $50,000, for each proof of business registration not properly provided under a contract with a contracting agency.

Bidder's Name_____


STATE OF NEW JERSEY
BUSINESS REGISTRATION CERTIFICATE
FOR STATE AGENCY AND CASINO SERVICE CONTRACTORS

TAXPAYER NAME:
TAX REGISTRATION TEST ACCOUNT

TRADE NAME:
CLIENT REGISTRATION

TAXPAYER IDENTIFICATION#:
970-007-382/000

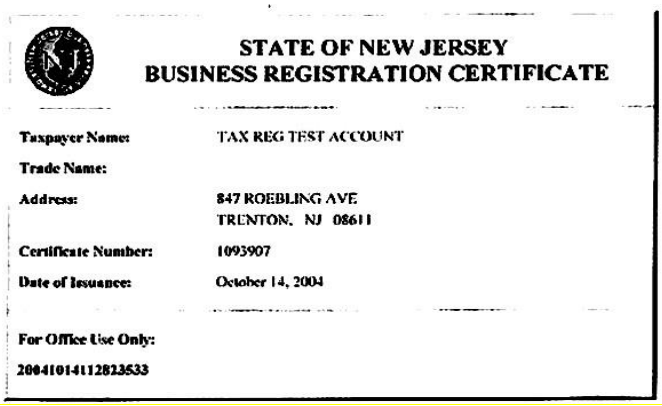
SEQUENCE NUMBER:
0107330

ADDRESS:
847 ROEBLING AVE
TRENTON NJ 08611

ISSUANCE DATE:
07/14/04

EFFECTIVE DATE:
01/01/01

SAMPLE


STATE OF NEW JERSEY
BUSINESS REGISTRATION CERTIFICATE

Taxpayer Name: TAX REG TEST ACCOUNT
Trade Name:
Address: 847 ROEBLING AVE
TRENTON, NJ 08611
Certificate Number: 1093907
Date of Issuance: October 14, 2004

For Office Use Only:
20041014112823533

ATTACH BRC HERE

Bidder's Name_____

AFFIRMATIVE ACTION REQUIREMENT

REQUIRED AFFIRMATIVE ACTION EVIDENCE

General Requirements of P.L. 1975, c. 127: You are hereby put on notice that:

CONSTRUCTION CONTRACTS: The successful contractor must submit within three (3) days of the notice of intent to award or the signing of the contract the initial project manning report (A.A.201). This report should be submitted at the time the signed contract is returned to the County of Union. Attention: *Affirmative Action Officer.*

If the successful contract does not submit the initial project manning report (A.A.201) within the three (3) days from the time the signed contract is returned to the County of Union, the County of Union WILL declare the contractor non-responsive and award the contract to the next lowest responsible bidder.

_____
NAME OF BIDDER

_____
ORIGINAL SIGNATURE

_____
PRINT OR TYPE NAME AND TITLE

_____
DATE THIS FORM IS COMPLETED

Bidder's Name_____

EXPERIENCE STATEMENT

I hereby certify that my company has performed the following private or public work, which is relevant to this bid. I further certify that my company has never defaulted under any contract. Should you not sign this form due to prior defaults, please provide details on an attached sheet.

_____
Witness

_____
Date

_____
NAME OF BIDDER

_____
_____
_____
ADDRESS

By: _____
ORIGINAL SIGNATURE ONLY

_____

_____
PRINT NAME AND TITLE

YOU MAY ATTACH ADDITIONAL SHEETS, BUT YOU MUST SIGN AND WITNESS THIS SHEET.

Bidder's Name_____

CERTIFICATE OF BIDDER SHOWING ABILITY TO PERFORM CONTRACT

STATE OF NEW JERSEY / _____)
Specify, if Other) SS:
COUNTY OF _____)

I, _____, of the (City, Town, Borough, etc.) of ___ _____ State of _____, of full age, being duly sworn according to law on my oath depose and say that:

I am _____ of the firm of _____, the Bidder making the proposal for the above named Project ("Contractor'), and that I executed said proposal with full authority to do so; and that said Contractor, pursuant to N.J.S.A. 40A:11-20, certifies that it owns, leases or controls all the necessary equipment required by the Plans, Specifications and Advertisements under this Bids are asked for.

If the Bidder is not the actual owner or lessee of any such equipment, then the Bidder shall attach to this Certificate information identifying the source from which the equipment will be obtained, and such information shall be accompanied by a certificate from the owner or person in control of the equipment definitively granting to the Bidder the control of the equipment required during such time as may be necessary for the completion of that portion of the contract.

_____
(Also type or print name of affiant under signature)

By:_____

Bidder's Name_____

NON-COLLUSION AFFIDAVIT

(N.J.S.A. 52:34-15)

STATE OF _____)
) **SS:**_____
COUNTY OF _____)

I _____, of the City of _____, in the County of _____, and the State of _____, of full age, being duly sworn according to law, on my oath depose and say that: I am _____ of the firm of _____, the bidder making the proposal for the above named project, and that I executed the said proposal for the above named project, and that I executed the said proposal with full authority to do so; that said bidder has not, directly or indirectly, entered into any agreement, participation in any collusion, or otherwise taken any action in restraint of free, competitive bidding in connection with the above named project; and that all statements contained in said proposal and in this Affidavit are true and correct, and made with full knowledge that the COUNTY OF UNION, NEW JERSEY relies upon the truth of the statements contained in said proposal and in the statements contained in the affidavit in awarding the contract for the said project.

I further warrant that no person or selling agency has been employed or retained to solicit or secure such contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except bona fide employees or bonafide established commercial or selling agencies maintained by _____ (N.J.S.A. 52:34-15).

_____

NAME OF BIDDER

_____

ORIGINAL SIGNATURE ONLY

NOTE: The person who signed the bidder signature page for the bidder should sign this form also.

Subscribed and sworn to before me

this _____ day of_____, 20__.

_____

(Seal) Notary Public of New Jersey/_____
Specify Other State

My Commission Expires _____, 20__.

WARNING: IF YOU FAIL TO FULLY, ACCURATELY, AND COMPLETELY FILL OUT THIS AFFIDAVIT OF NON-COLLUSION, YOUR BID MAY BE REJECTED.

Bidder's Name_____

Contractor Registration Advisement

For Public Works Projects

A new law, known as "The Public Works Contractor Registration Act" (P.L. 1999, c.238), became effective April 11, 2000. Under the Act, no contractor/subcontractor will be permitted to bid on or engage in any contract for public work, as defined in Section 2 of P.L. 1963, c.150 (C:34:11-56.26), unless that contractor/subcontractor is registered with the New Jersey Department of Labor and Workforce Development. The Act provides that upon registration with the Department, a public works contractor/subcontractor will be issued a certificate by the Department indicating compliance with the Act's requirements. The registration fee has been set at $300.00 per year. Upon the effective date of the Act, public bodies will be expected to request production of such a certificate from those bidding on or engaging in public works projects.

It is important to note that the term "contractor," is defined in the, Act as, "a person, partnership, association, joint stock company, trust, corporation or other legal business entity or successor thereof who enters into a contract which is subject to the provision of the "New Jersey Prevailing Wage Act," P.L. 1963, c.150 (C.34:11-56.25, et seq.) for the construction, reconstruction, demolition, alteration, repair or maintenance of a public building regularly open to and used by the general public or a public institution, and includes any subcontractor or lower tier subcontractor as defined herein: except that, for the purposes of the act, no pumping station, treatment plant or other facility associated with utility and environmental construction, reconstruction, demolition, alteration, repair or maintenance shall be regarded as a public building regularly open to and used by the general public or a public institution."

Registration forms, copies of the Act, and other relevant information can be obtained by contacting:

Contractor Registration Unit
New Jersey Department of Labor and Workforce Development
Division of Wage & Hour Compliance
PO Box 389
Trenton, New Jersey 08625-0389
Telephone: 609-292-9464
Fax: 609-633-8591
E-mail: contreg@dol.state.nj.us

Bidder's Name_____

AMERICANS WITH DISABILITIES ACT

EQUAL OPPORTUNITY FOR INDIVIDUALS WITH DISABILITIES

The contractor and the County of Union (hereafter "Owner") do hereby agree that the provisions of Title II of the Americans With Disabilities Act of 1990 (the "Act") (42 US.C. S12101 et seq.), which prohibits discrimination on the basis of disability by public entities in all services, programs and activities provided or made available by public entities, and the rules and regulations promulgated pursuant thereunto, are made a part of this contract. In providing any aid, benefit, or service on behalf of the Owner pursuant to this contract, the contractor agrees that the performance shall be in strict compliance with the Act. In the event the contractor, its agents, servants, employees, or subcontractors violate or are alleged to have violated the Act during the performance of this contract, the contractor shall defend the Owner in any action or administrative proceeding commenced pursuant to this Act. The contractor shall indemnify, protect, and save harmless the Owner, its agents, servants, and employees from and against any and all suits, claims, losses, demands, or damages of whatever kind or nature arising out of or claimed to arise out of the alleged violation. The contractor shall, at its own expense, appear, defend, and pay any and all charges for legal services and any and all costs and other expenses arising from such action or administrative proceeding or incurred in connection therewith. In any and all complaints brought pursuant to the Owner's grievance procedure, the contractor agrees to abide by any decision of the Owner which is rendered pursuant to said grievance procedure. If any action or administrative proceeding results in an award of damages against the Owner, or if the Owner incurs any expense to cure a violation of the ADA which has been brought pursuant to its grievance procedure, the contractor shall satisfy and discharge the same at its own expense.

The Owner shall, as soon as practicable after a claim has been made against it, give written notice thereof to the contractor along with full and complete particulars of the claim. If any action or administrative proceeding is brought against the Owner or any of its agents, servants, and employees, the Owner shall expeditiously forward or have forwarded to the contractor every demand, complaint, notice, summons, pleading, or process received by the Owner or its representatives.

It is expressly agreed and understood that any approval by the Owner of the services provided by the contractor pursuant to this contract will not relieve the contractor of the obligation to comply with the Act and to defend, indemnify, protect, and save harmless the Owner pursuant to this paragraph.

It is further agreed and understood that the Owner assumes no obligation to indemnify or save harmless the contractor, its agents, servants, employees and subcontractors for any claim which may arise out of their performance of this Agreement. Furthermore, the contractor expressly understands and agrees that the provisions of this indemnification clause shall in no way limit the contractor's obligations assumed in this Agreement, nor shall they be construed to relieve the contractor from any liability, nor preclude the Owner from taking any other actions available to it under any other provisions of this Agreement or otherwise at law.

Name _____ **(Please print or type)**

Signature _____**Date** _____

Bidder's Name_____

STATEMENT OF BIDDER'S QUALIFICATIONS

All questions must be answered and the data given must be clear and comprehensive. This statement must be notarized. Questions may be answered on separate attached sheets. The Bidder may submit any additional information it desires.

1. _____
   (Name of Bidder)

2. _____
   (Permanent Main Office Address)

3. _____
   (When Organized)

4. _____
   (If a Corporation, where incorporated)

5. Number of years your organization has been engaged in construction or contracting business under present firm or trade name? _____

6. How many years of experience in construction work has your organization had (a) as a general contractor? And/or (b) As a subcontractor? _____

7. Contracts on hand: (Attach a list or table showing gross amounts of each Contract and the appropriate dates of completion)_____

   _____

   _____

   _____

8. General character of work performed by you._____

   _____

9. Have you ever failed to complete any work awarded to you? _____

   _____

10. Have you ever defaulted on a Contract?_____ If so, complete details, including where and why?

    _____

    _____

Bidder's Name_____

STATEMENT OF BIDDER'S QUALIFICATIONS - (continued)

11. Has any officer or partner of your organization ever failed to complete a construction contract handled in its own name? If so, state name of individual, name of owner, location and type of project, and reason for the failure to complete._____

_____

_____

12. List your major equipment available for this Contract.

_____

_____

13. Experience in the construction work similar in importance to this Project.

_____

_____

14. Have you had any material adverse changes from the trades as listed in NJ Notice of Classification within last five (5) years? _____. If so, list prior classification.

15. Background and experience of the principal members of your organization, including the officers.

Individual's Name	Present Position or Office	Yrs. of Construction Experience	Magnitude & Type of Work	In What Capacity

16. Bank Reference. (Name, Address, Phone, Representative) _____

17. Will you, upon request, fill out a detailed financial statement? _____

18. The undersigned, hereby authorizes and requests any person, firm or corporation to furnish any information requested by the proper agency in verification of the responses comprising this Statement of Bidder's Qualifications.

19. Bidder's telephone number, fax number and e-mail address (if applicable).

    Phone _____

    Fax _____

    E-mail_____

    Mobile _____

Dated at _____ this _____ day of _, 20__.

_____
BIDDER (Signature)

_____
BIDDER (Print Name)

Subscribed and sworn to before me

this _____ day of_____, 20__.

_____
(Seal) Notary Public of New Jersey/_____
Specify Other State

My Commission Expires _____, 20__.

NOTE: FAILURE TO COMPLETE AND SUBMIT THIS DOCUMENT WITH YOUR PROPOSAL MAY RESULT IN A REJECTION OF YOUR BID.

Bidder's Name_____

CONTRACTOR PERFORMANCE RECORD

List all contracts completed by you below or provide separate form.

Name of Owner	Name & Location of Project: Type Of Work	Prime or Sub-Cont.	Engineer or Architect in Charge for Owner	Contract Price (Omit Cost)	Date Completed	Was Time* Extension Necessary	Were Any Penalties Imposed	Were Liens* Claims or Stop Notice Filed

* If answer is YES, provide explanation of details in connection with non-completion of contracts, time extensions, penalties imposed, labor troubles, liens, claims and notices filed against contracts listed in preceding item "Performance Record" on an attached sheet.

NOTE: FAILURE TO COMPLETE AND SUBMIT THIS DOCUMENT WITH YOUR PROPOSAL MAY RESULT IN A REJECTION OF YOUR BID.

Bidder's Name_____

CONTRACTOR PERFORMANCE RECORD CERTIFICATION

The information above is true and complete to the best of my knowledge and belief.

_____
(Name of Organization)

_____
(Signature)

_____
(Title)

Subscribed and sworn to before me

this _____ day of_____, 20__.

_____
(Seal) Notary Public of New Jersey/_____
Specify Other State

My Commission Expires _____, 20__.

Bidder's Name_____

AFFIDAVIT REGARDING LIST OF DEBARRED, SUSPENDED OR DISQUALIFIED BIDDERS

STATE OF NEW JERSEY / _____)
Specify, if Other) SS:
COUNTY OF _____)

I, _____, of the (City, Town, Borough, etc.) of ___ _____ State of _____, of full age, being duly sworn according to law on my oath depose and say that:

I am _____ of the firm of _____, the Bidder making the Proposal for the above named Project. I have executed the said Proposal with full authority to do so. Said Bidder is not at the time of the making this bid included on the New Jersey State Treasurer's or the Federal Government's List of Debarred, Suspended or Disqualified Bidders as a result of action taken by any State or Federal Agency.

_____
Name of Contractor

By:_____
(Signature of Authorized Representative)

Subscribed and sworn to before me

this _____ day of_____, 20__.

_____
(Seal) Notary Public of New Jersey/_____
Specify Other State

My Commission Expires _____, 20__.

NOTE: FAILURE TO COMPLETE AND SUBMIT THIS DOCUMENT WITH YOUR PROPOSAL MAY RESULT IN A REJECTION OF YOUR BID.

Bidder's Name_____

PRIOR NEGATIVE EXPERIENCE QUESTIONNAIRE

(N.J.S.A. 40A:11-4)

1. Within the past ten (10) years, have you been found, through either court adjudication, arbitration, mediation, or other contractually stipulated alternate dispute resolution mechanism, to have: failed to provide or perform goods or services; or failed to complete a contract in a timely manner; or otherwise performed unsatisfactorily under a prior contract with a public entity?

   _____ yes _____ no If yes, please provide full, detailed explanation.

   _____
   _____
   _____
   _____

2. Within the past ten (10) years, have you defaulted on a contract, thereby requiring a public entity to utilize the services of another contractor to provide the goods or perform the services or to correct or complete the contract?

   _____ yes _____ no If yes, please provide full, detailed explanation.

   _____
   _____
   _____
   _____

3. Within the past ten (10) years, have you defaulted on a contract, thereby requiring a public entity to look to your surety for completion of the contract or tender of the costs of completion?

   _____ yes _____ no If yes, please provide full, detailed explanation.

   _____
   _____
   _____
   _____

4. Within the past ten (10) years, have you been debarred or suspended from contracting with any of the agencies or department of the executive branch of the State of New Jersey at the time of the contract award, where the action was based on failure to perform a contact for goods or services with a public entity?

   _____ yes _____ no If yes, please provide full, detailed explanation.

   _____
   _____
   _____
   _____

Bidder's Name_____

PRIOR NEGATIVE EXPERIENCE CERTIFICATION

I hereby certify that the above statements are true and accurate as of this _____ day of _____, 20__.

_____
Name of Contractor

By_____
(Signature of Authorized Representative)

Subscribed and sworn to before me

this _____ day of_____, 20__.

_____
(Seal) Notary Public of New Jersey/_____
Specify Other State

My Commission Expires _____, 20__.

NOTE: FAILURE TO COMPLETE AND SUBMIT THIS DOCUMENT WITH YOUR PROPOSAL MAY RESULT IN A REJECTION OF YOUR BID.

Bidder's Name_____

TO BE COMPLETED ONLY WHEN FINAL PAYMENT IS REQUESTED

CONTRACTOR'S CERTIFICATION OF COMPLIANCE - NEW JERSEY PREVAILING WAGE ACT

TO: County of Union
Division of Engineering
2325 South Avenue
Scotch Plains, New Jersey 07076

CONTRACT:

PROJECT: _____

In accordance with the requirements of the New Jersey Prevailing Wage Act, N.J.S.A. 34:11-56 et al *****, the undersigned contractor on the public work being performed for:

COUNTY OF UNION

hereby certifies that he/she has complied with the contract requirements regarding the payment of the minimum prevailing wages established under "The New Jersey Prevailing Wage Act" N.J.S.A. 34:11-56 et al.

CONTRACTOR: _____
ADDRESS: _____
_____
BY: _____
ORIGINAL SIGNATURE ONLY

STATE OF NEW JERSEY
COUNTY OF _____

Being by me duly sworn according to law, on his oath deposes and says that _____is _____ of _____the above named contractor, and that the facts set forth in the above statement are true.

Subscribed and sworn to before me

this _____ day of_____, 20__.

_____
(Seal) Notary Public of New Jersey/_____
Specify Other State

My Commission Expires _____, 20__.

***** N.J.S.A. 34:11-56.33 requires the contractor and subcontractor to file written statements with the public body in form satisfactory to the Commissioner certifying to the amounts then due and owing from such contractor and subcontractor filing such statement to any and all workmen for wages due on account of the public work, setting forth therein the names of the persons whose wages are unpaid and the amount due to each respectively. Union County will withhold the amount so deducted for the benefit of the workmen whose wages are unpaid as shown by the verified statement filed, and will pay directly to any workman the amount shown by such statement to be due to him for such wages. Such payment shall thereby discharge the obligation of the contractor to the person receiving such payment to the extent of the amount thereof.

Bidder's Name_____

UNCOMPLETED CONTRACTS AFFIDAVIT

(To be Submitted with DPMC Form 701)

PURSUANT TO N.J.A.C. 17:19-2.13, BIDDER DECLARES THE FOLLOWING WITH RESPECT TO ITS UNCOMPLETED CONTRACTS, ON ALL WORK, FROM WHATEVER SOURCE (PUBLIC AND PRIVATE), BOTH IN NEW JERSEY AND FROM OTHER GOVERNMENTAL JURISDICTIONS				
ENTITY	**PROJECT TITLE**	**ORIGINAL CONTRACT AMOUNT**	**UNCOMPLETED AMOUNT AS OF BID OPENING DATE**	**NAME AND TELEPHONE NUMBER OF PARTY TO BE CONTACTED FROM ENTITY FOR VERIFICATION**

TOTAL AMOUNT OF UNCOMPLETED CONTRACTS $_____

BIDDER:

_____
(Signature)

_____
(Print Name)

Subscribed and sworn to before me

this _____ day of_____, 20__.

_____
(Seal) Notary Public of New Jersey/_____
Specify Other State

My Commission Expires _____, 20__.

NOTE: **FAILURE TO COMPLETE AND SUBMIT THIS DOCUMENT WITH YOUR PROPOSAL MAY RESULT IN A REJECTION OF YOUR BID.**

Bidder's Name_____

CERTIFICATE OF INSURANCE STATEMENT

The Bidder fully understands the County of Union insurance requirements as stated in the Instructions to Bidders as well as the Owner/Contractor Agreement and agrees to provide all insurance required by these documents prior to the issuance of the Notice to Proceed.

_____
BIDDER (Signature)

_____
BIDDER (Print Name)

NOTE: FAILURE TO COMPLETE AND SUBMIT THIS DOCUMENT WITH YOUR PROPOSAL MAY RESULT IN A REJECTION OF YOUR BID.

Bidder's Name_____

COLLECTION OF USE TAX ON SALES TO LOCAL GOVERNMENTS STATEMENT

The Bidder fully understands the requirements of the use tax on sales to local governments as stated in the General Conditions to the Contract for Construction and the Instructions to Bidders, and agrees at all times to comply with the "Contractor Use Tax Collection Legislation", as defined therein, and the terms relating thereto contained in the Contract Documents.

_____
BIDDER (Signature)

_____
BIDDER (Print Name)

NOTE: FAILURE TO COMPLETE AND SUBMIT THIS DOCUMENT WITH YOUR PROPOSAL MAY RESULT IN A REJECTION OF YOUR BID.

Bidder's Name_____

TIME OF COMPLETION

The undersigned proposed that if awarded the Contract, the scope of work will be started within ten (10) calendar days and will be substantially completed within ____**600**___ **calendar days** from the date of the notice to proceed.

I, _____of _____
NAME (Print or type) COMPANY

Agree to complete work in the time frame specified _____
SIGNATURE

SITE VISIT – GENERAL CONTRACTOR

I, _____of _____
NAME (Print or type) COMPANY

Visited the site of the work on _____ _____
SIGNATURE

Bidder's Name_____

COUNTY OF UNION NEW JERSEY
Division of Purchasing
DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN FORM

Solicitation Number: _____ Vendor/Bidder: _____

PART 1

CERTIFICATION
VENDOR/BIDDER MUST COMPLETE PART 1 BY CHECKING ONE OF THE BOXES
FAILURE TO CHECK ONE OF THE BOXES WILL RENDER THE PROPOSAL NON-RESPONSIVE

Pursuant to Public Law 2012, c. 25, any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must complete the certification below to attest, under penalty of perjury, that neither the person nor entity, nor any of its parents, subsidiaries, or affiliates, is identified on the State of New Jersey, Department of the Treasury's Chapter 25 list as a person or entity engaged in investment activities in Iran. The Chapter 25 list is found on the Department's website at http://www.state.nj.us/treasury/pdf/Chapter25List.pdf. Vendors/Bidders **must** review this list prior to completing the below certification. **Failure to complete the certification will render a Vendor's/Bidder's proposal non-responsive.** If the Director of the Division of Purchase and Property finds a person or entity to be in violation of the law, s/he shall take action as may be appropriate and provided by law, rule or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party.

CHECK THE APPROPRIATE BOX

☐ A. I certify, pursuant to Public Law 2012, c.25, that neither the Vendor/Bidder listed above nor any of its parents, subsidiaries, or affiliates is listed on the N.J. Department of Treasury's list of entities determined to be engaged in prohibited activities in Iran pursuant to P.L. 2012, c. 25 ("Chapter 25 List"). Disregard Part 2 and complete and sign the Certification below.

OR

☐ B. I am unable to certify as above because the Vendor/Bidder and/or one or more of its parents, subsidiaries, or affiliates is listed on the Department's Chapter 25 list. I will provide a detailed, accurate and precise description of the activities in Part 2 below and sign and complete the Certification below. Failure to provide such information will result in the proposal being rendered as non-responsive and appropriate penalties, fines and/or sanctions will be assessed as provided by law.

PART 2

PLEASE PROVIDE ADDITIONAL INFORMATION RELATED TO INVESTMENT ACTIVITIES IN IRAN

If you checked Box "B" above, provide a detailed, accurate and precise description of the activities of the Vendor/Bidder, or one of its parents, subsidiaries or affiliates, engaged in investment activities in Iran by completing the information below.

ENTITY NAME: _____
RELATIONSHIP TO VENDOR/BIDDER: _____
DESCRIPTION OF ACTIVITIES: _____
DURATION OF ENGAGEMENT: _____
ANTICIPATED CESSATION DATE: _____
VENDOR/BIDDER CONTACT NAME: _____
VENDOR/BIDDER CONTACT PHONE#: _____
Attach Additional Sheets If Necessary

CERTIFICATION

I, the undersigned, certify that I am authorized to execute this certification on behalf of the Vendor/Bidder, that the foregoing information and any attachments hereto, to the best of my knowledge are true and complete. I acknowledge that the County of Union, New Jersey is relying on the information contained herein, and that the Vendor/Bidder is under a continuing obligation from the date of this certification through the completion of any contract(s) with the County of Union to notify the County of Union in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification. If I do so, I will be subject to criminal prosecution under the law, and it will constitute a material breach of my agreement(s) with the County of Union, permitting the County of Union to declare any contract(s) resulting from this certification void and unenforceable.

_____ _____
Signature Date

_____
Print Name and Title

Revised 10/19/17

STANDARD SPECIFICATIONS

The Standard Specifications for Road and Bridge Construction of New Jersey Department of Transportation, 2007 Edition; is added to and/or amended elsewhere herein by the Notice to Contractors (Advertisement), Proposal, Information for Bidders, General Conditions, Special Provisions, Project Plans, and Supplementary Specifications; shall, insofar as technical requirements are involved, govern in the execution of this project.

Such Standard Specifications are made a part of these Specifications by this reference and will not be repeated herein. It is the responsibility of prospective bidders to familiarize themselves with these Standard Specifications, copies of which may be examined at the office of the Engineer and may be obtained, upon payment of the cost thereof, from:

Department of Transportation
State of New Jersey
1035 Parkway Avenue
Trenton, New Jersey 08625

The Notice to Bidders (Advertisement), Proposal, General Conditions, Instructions to Bidders, Special Provisions, Project Plans and/or Technical Specifications shall govern and prevail in the case of conflict between them and the Standard Specifications.

In these Standard Specifications the words "COMMISSIONER" or "DEPARTMENT" shall refer to and mean the person, persons, body, board or agent legally empowered to enter into contracts and otherwise legally act for the Owner. The words "RESIDENT ENGINEER (RE)", "ENGINEER" or "STATE" shall refer to and mean the professional engineering representative of the Owner as hereinbefore defined and the word "INSPECTOR" shall mean the authorized project representative of the Engineer with the authority as hereinbefore defined. The word "LABORATORY" shall mean and refer to the Engineer who may, at his discretion, and with the consent of the Owner, employ qualified technical personnel or testing laboratories to assist him in fulfilling the duties normally assigned to the "LABORATORY" in these Standard Specifications.

When reference is made herein to the bulletins, standards, specifications, publications or requirements of the Manual on Uniform Traffic Control Devices (MUTCD), Institute of Traffic Engineers (ITE), Federal Highway Administration (FHWA), American Association of State Highway Officials (AASHO), the American Concrete Institute (ACI), the American Society of Civil Engineers (ASCE) or similar national or regional societies, associations, institutes or organizations; the requirements of the bulletins, specifications, publications or requirements referred to shall be considered a part of these Specifications by such reference and shall not be repeated herein but shall have the same import and be as binding as if herein set forth in full.

STATE OF NEW JERSEY
Department of Labor and Workforce Development
Division of Wage and Hour Compliance - Public Contracts Section
PO Box 389
Trenton, NJ 08625-0389

PREVAILING WAGE RATE DETERMINATION

The New Jersey Prevailing Wage Act (N.J.S.A. 34:11-56.25 et seq.) requires that the Department of Labor and Workforce Development establish and enforce a prevailing wage level for workers engaged in public works in order to safeguard their efficiency and general well being and to protect them as well as their employers from the effects of serious and unfair competition.

Prevailing wage rates are wage and fringe benefit rates based on the collective bargaining agreements established for a particular craft or trade in the locality in which the public work is performed. In New Jersey, these rates vary by county and by the type of work performed.

Applicable prevailing wage rates are those wages and fringe benefits in effect on the date the contract is awarded. All pre-determined rate increases listed at the time the contract is awarded must also be paid, beginning on the dates specified. Rates that have expired will remain in effect until new rates are posted.

Prevailing Wage Rate

The prevailing wage rate for each craft will list the effective date of the rate and the following information:

W = Wage Rate per Hour **B** = Fringe Benefit Rate per Hour* **T** = Total Rate per Hour

* Fringe benefits are an integral part of the prevailing wage rate. Employers not providing such benefits must pay the fringe benefit amount directly to the employee each payday. Employers providing benefits worth less than the fringe benefit amount must pay the balance directly to the employee each payday.

Unless otherwise stated in the Prevailing Wage Rate Determination, the fringe benefit rate for overtime hours remains at the straight time rate.

When the Overtime Notes in the Prevailing Wage Rate Determination state that the overtime rates are "inclusive of benefits," the benefit rate is increased by the same factor as the wage rate (i.e. multiplied by 1.5 for time and one-half, multiplied by 2 for double time, etc.).

Apprentice Rate Schedule

An “apprentice” is an individual who is registered with the United States Department of Labor - Office of Apprenticeship and enrolled in a certified apprenticeship program during the period in which they are working on the public works project.

The apprentice wage rate is a percentage of the journeyman wage rate, unless otherwise indicated. The apprentice benefit rate is the full journeyman benefit rate, unless otherwise indicated.

If there is no apprentice rate schedule listed, the individual must be paid at least the journeyman rate even if that individual is in a certified apprentice program for that trade.

If there is no ratio of apprentices to journeymen listed for a particular craft, then the ratio shall be one (1) apprentice to every four (4) journeymen.

Comments/Notes

For each craft listed there will be comments/notes that cover the definition of the regular workday, shift differentials, overtime, recognized holidays, and any other relevant information.

Public Works Contractor Registration

The Public Works Contractor Registration Act (N.J.S.A. 34:11-56.48, et seq.) requires that **all** contractors, subcontractors, or lower tier subcontractors who are working on or who bid on public works projects register with the Department of Labor and Workforce Development. Applications are available at *www.nj.gov/labor* (click on Wage & Hour and then go to Registration & Permits).

Pursuant to N.J.S.A. 34:11-56.51:

No contractor shall bid on any contract for public work as defined in section 2 of P.L.1963, c. 150 (C.34:11-56.26) unless the contractor is registered pursuant to this act. No contractor shall list a subcontractor in a bid proposal for the contract unless the subcontractor is registered pursuant to P.L.1999, c.238 (C.34:11-56.48 et seq.) at the time the bid is made. No contractor or subcontractor, including a subcontractor not listed in the bid proposal, shall engage in the performance of any public work subject to the contract, unless the contractor or subcontractor is registered pursuant to that act.

Snow Plowing

Snow plowing contracts are <u>not</u> subject to the New Jersey Prevailing Wage Act or the Public Works Contractor Registration Act.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Air Conditioning & Refrigeration - Service and Repair **PREVAILING WAGE RATE**

	03/01/20
Journeyman (Mechanic)	W40.33 B25.67 T66.00

Craft: Air Conditioning & Refrigeration - Service and Repair **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
As Shown	1st Year	2nd Year	3rd Year	4th Year	5th Year	Wage = %	of Jnymn	Wage		
Wage and Bene	40%	50%	60%	70%	80%	Bene = %	of Jnymn	Bene		

Ratio of Apprentices to Journeymen - 1:4

Craft: Air Conditioning & Refrigeration - Service and Repair **COMMENTS/NOTES**

THESE RATES MAY BE USED FOR THE FOLLOWING:
- Service/Repair/Maintenance Work to EXISTING facilities.
- Replacement or Installation of air conditioning and refrigeration equipment when the combined tonnage does not exceed 15 tons for refrigeration, or 25 tons for air conditioning.
- Replacement or Installation of "packaged" or "unitary" rooftop-type units when the combined tonnage of the units does not exceed 75 tons.

NOTE: These rates may NOT be used for any work in new construction (including work on new additions).

The regular workday shall consist of 8 hours, starting between 6:00 AM and 10:00 AM, Monday through Friday.

SHIFT DIFFERENTIALS:
- The second and third shifts shall be paid an additional 15% of the hourly rate.
- All shifts must run for a minimum of 5 consecutive days.

OVERTIME:
Hours worked in excess of 8 per day or before or after the regular workday, that are not shift work, and all hours on Saturday shall be paid at time and one-half the hourly rate, inclusive of benefits. All hours on Sunday and holidays shall be paid at double the hourly rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Boilermaker **PREVAILING WAGE RATE**

	01/01/20
Foreman	W50.88 B45.21 T96.09
General Foreman	W52.88 B46.22 T99.10
Journeyman	W45.88 B43.54 T89.42

Craft: Boilermaker **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
1000 Hours	65%	70%	75%	80%	85%	90%	95%			
Benefit =	37.08	37.99	39.49	39.84	40.78	41.70	42.61			

Ratio of Apprentices to Journeymen - *

* 1 apprentice will be allowed for the first 5 journeymen, 1 apprentice for the next 10 journeymen and 1 apprentice for each succeeding 20 journeymen up to a maximum of 5 apprentices per contractor on any one job.

Craft: Boilermaker **COMMENTS/NOTES**

HIGH WORK: All apprentices working on the erection, repair, or dismantling of smoke stacks, standpipes, or water towers shall be paid the Journeyman rate.

The regular workday shall consist of 8 hours, between 8:00 AM and 4:30 PM.

SHIFT DIFFERENTIALS:
- The second shift shall work 7½ hours and receive 8 hours pay, at a rate equal to the regular hourly rate plus 10%.
- The third shift shall work 7 hours and receive 8 hours pay, at a rate equal to the regular hourly rate plus 20%.
- For "Municipal Water Works" projects only, the following shall apply: Two, four day, 10 hour shifts may be worked at straight time Monday through Thursday. The day shift shall work four days, at 10 hours, for 10 hours pay. The second shift shall work four days, at nine and a half hours, for 10 hours pay, plus 10% the hourly rate for new work and .25 cents on repair work. Friday may be used as a make-up day at straight time, due to weather conditions, hoilday or any other circumstances beyond the employer's control.

OVERTIME:
- Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays (except Labor Day) shall be paid at double the hourly rate. All hours on Labor Day shall be paid at four times the hourly rate.
- If any other craft employed by the same contractor, or a subcontractor thereof, receives double time in lieu of time and one-half, then the Boilermaker shall receive double time in lieu of time and one-half.
- For "Municipal Water Works" projects only, the following shall apply: Four 10 hour days may be worked Monday through Thursday at straight time. Friday may be used as a make-up day for a day lost to inclement weather, holiday or other conditions beyond the control of the employer. Overtime shall be paid for any hours that exceed 10 hours per day or 40

hours per week.

RECOGNIZED HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Boilermaker - Minor Repairs **PREVAILING WAGE RATE**

	01/01/20
Foreman	W33.62 B16.47 T50.09
General Foreman	W34.12 B16.47 T50.59
Mechanic	W32.12 B16.47 T48.59

Craft: Boilermaker - Minor Repairs **COMMENTS/NOTES**

NOTE: These rates apply to MINOR REPAIR WORK ONLY (repair work in the field for which the contract amount does not exceed $125,000.00), for boilers that do not produce electric or are not used in the heating of petroleum products.

OVERTIME:
Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays (except Labor Day) shall be paid at double the hourly rate. All hours on Labor Day shall be paid at four times the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Washington's Birthday, Good Friday, Memorial Day, July 4th, Labor Day, Presidential Election Day, Thanksgiving Day, day after Thanksgiving, Christmas Day. Saturday holidays observed the preceding Friday, Sunday holidays observed the following Monday.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Bricklayer, Stone Mason **PREVAILING WAGE RATE**

	10/01/20
Deputy Foreman	W47.45 B33.73 T81.18
Foreman	W50.45 B33.73 T84.18
Journeyman	W44.45 B33.73 T78.18

Craft: Bricklayer, Stone Mason **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
6 Months	40%	50%	55%	60%	65%	70%	75%	80%		
Benefits	4.00	5.00	5.50	6.00	22.17	23.66	25.14	26.62		

Ratio of Apprentices to Journeymen - 1:5

Craft: Bricklayer, Stone Mason **COMMENTS/NOTES**

The regular workday shall consist of 8 hours, between 6:00 AM and 4:30 PM.

SHIFT DIFFERENTIALS:
- When a 2 shift schedule (including a day shift) is established, the first, or day shift, shall be established on an 8 hour basis. The second shift shall be established on an 8 hour basis, and receive the regular rate plus 10%, inclusive of benefits.
- When a three shift schedule is established, the first shift shall be established on an 8 hour basis, the second shift on a 7.5 hour basis, and the third shift on a 7 hour basis. The first shift shall receive the regular hourly rate, the second shift shall receive the regular rate plus 10%, inclusive of benefits, and the third shift shall receive the regular rate plus 15%, inclusive of benefits.
- When there is no day shift, and a second or third shift is established, it shall be established on an 8 hour basis. The second shift shall receive the regular rate plus 10%, inclusive of benefits, and the third shift shall receive the regular rate plus 15%, inclusive of benefits.
- When an irregular shift must be established, this shift shall receive the regular rate plus 10%, inclusive of benefits.

OVERTIME:
- The first 2 hours in excess of 8 per day, or before or after the regular workday that are not shift work, Monday through Friday, shall be paid at time and one-half the regular rate, inclusive of benefits. Any additional overtime shall be paid at double the regular rate, inclusive of benefits. The first 10 hours on Saturday shall be paid at time and one-half the regular rate, inclusive of benefits. Any additional overtime shall be paid at double the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.
- Saturday may be used as a make-up day for hours lost to inclement weather.
- When Bricklayers/Stone Masons work on Saturday with Laborers, and no other crafts are working on the project for the day, benefits may be paid at straight time. If other crafts are present, the applicable overtime rate for benefits shall be paid.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Carpenter **PREVAILING WAGE RATE**

	05/07/20
Foreman	W59.06 B34.29 T93.35
Journeyman	W51.36 B29.90 T81.26

Craft: Carpenter **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
Yearly	40%	55%	65%	80%	90%					
Benefit	57% of	Appren	tice	Wage Rate	for all	intervals	+ $0.63			

Ratio of Apprentices to Journeymen - 1:3

Craft: Carpenter **COMMENTS/NOTES**

FOREMAN REQUIREMENTS:
- When there are 2 or more Carpenters on a job, 1 shall be designated as a Foreman.
- When there are 21 or more Carpenters on a job, 2 shall be designated as Foremen.

The regular workday shall consist of 8 hours, starting between 6:00 AM and 9:00 AM.

SHIFT DIFFERENTIALS:
- When a 2 shift schedule (including a day shift) is established, the day shift shall be established on an 8 hour basis. The second shift shall be established on an 8 hour basis, and receive the regular rate plus 10%, inclusive of benefits.
- When a three shift schedule is established, the first shift shall be established on an 8 hour basis, the second shift on a 7.5 hour basis, and the third shift on a 7 hour basis. The first shift shall receive the regular hourly rate, the second shift shall receive the regular rate plus 10% and the third shift shall receive the regular rate plus 15%, inclusive of benefits.
- When there is no day shift, and a second or third shift is established, it shall be established on an 8 hour basis. The second shift shall receive the regular rate plus 10% and the third shift shall receive the regular rate plus 15%, inclusive of benefits.
- When an irregular shift must be established, this shift shall receive the regular rate plus 15%, inclusive of benefits.

OVERTIME:
- All hours in excess of 8 per day, or before or after an established shift that are not shift work, and all hours on Saturdays shall be paid at time and one-half the hourly rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the hourly rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday to Thursday, at straight time. Friday may be used as a make-up day for a day lost due to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans' Day may be substituted for the day after Thanksgiving.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Carpenter - Resilient Flooring **PREVAILING WAGE RATE**

	05/05/20
Foreman	W59.06 B34.20 T93.26
Journeyman	W51.36 B29.81 T81.17

Craft: Carpenter - Resilient Flooring **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
Yearly	40%	55%	65%	80%	90%					
Benefit	57%	of	Appren	tice	Wage Rate	for all	intervals	+ $0.54		

Ratio of Apprentices to Journeymen - *

* 1 apprentice shall be allowed to every 2 journeymen or major fraction therof. No more than 3 apprentices on any one job or project.

Craft: Carpenter - Resilient Flooring **COMMENTS/NOTES**

FOREMAN REQUIREMENTS:
- On any job where there are 4 or more Carpenters of Resilient Flooring, 1 must be designated a Foreman.

FOR SYNTHETIC TURF INSTALLATION ONLY:
- The rate shall be 90% of the wage and benefit rate.

The regular workday consists of 8 hours, starting between 6:00 AM and 9:00 AM.

SHIFT DIFFERENTIALS:
- When a 2 shift schedule (including a day shift) is established, the day shift, shall be established on an 8 hour basis. The second shift shall be established on an 8 hour basis, and receive the regular wage rate plus 10%.
- When a three shift schedule is established, the first shift shall be established on an 8 hour basis, the second shift on a 7.5 hour basis, and the third shift on a 7 hour basis. The first shift shall receive the regular wage rate, the second shift shall receive the regular wage rate plus 10% and the third shift shall receive the regular wage rate plus 15%.
- When there is no day shift, and a second or third shift is established, it shall be established on an 8 hour basis. The second shift shall receive the regular wage rate plus 10% and the third shift shall receive the regular wage rate plus 15%.
- When an irregular shift must be established, this shift shall receive the regular rate plus 15%, inclusive of benefits.

OVERTIME:
- Hours in excess of 8 per day or 40 per week, or before or after the regular workday, Monday through Friday, shall be paid at time and one-half the wage rate. Saturday may be used as a make-up day, at straight time, up to 8 hours, for hours lost to reasons beyond the control of the employer, up to a total of 40 hours per week; hours in excess of 8 on Saturday shall then be paid at time and one-half the wage rate. If Saturday is not a make-up day, all hours on Saturday shall be paid at time and one-half the wage rate. All hours on Sundays and holidays shall be paid at double the wage rate.
- Four 10-hour days may be worked, Monday to Thursday, at straight time. Friday may be used as a make-up day for hours lost to reasons beyond the control of the employer. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the wage rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday. Veterans' Day may be substituted for the day after Thanksgiving.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Cement Mason **PREVAILING WAGE RATE**

See "Bricklayer, Stone Mason" Rates

Craft: Cement Mason **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									

Ratio of Apprentices to Journeymen - 1:4

Craft: Cement Mason **COMMENTS/NOTES**

See "Bricklayer, Stone Mason" Rates

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Commercial Painter- New Construction **PREVAILING WAGE RATE**

	09/24/20
Foreman	W45.05 B27.06 T72.11
General Foreman	W49.14 B27.55 T76.69
Journeyman	W40.95 B26.56 T67.51

Craft: Commercial Painter- New Construction **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
6 Months	40%	45%	55%	65%	70%	75%	80%	80%		
Benefits	8.05	8.05	10.05	10.05	11.05	11.05	14.05	14.05		

Ratio of Apprentices to Journeymen - 1:4

Craft: Commercial Painter- New Construction **COMMENTS/NOTES**

* Commercial Painters perform work on all commercial structures such as offices, schools, hotels, shopping malls, restaurants, condominiums, etc.

Spraying, sandblasting, lead abatement work on commercial buildings, work performed above 3 stories or 30 feet in height, or using swing scaffolds requires an additional 10% of the wage rate.

FOREMEN REQUIREMENTS:
- When there are 4 or more Painters on a job, 1 shall be designated a Foreman.
- When there are 15 or more Painters on a job, 1 shall be designated a General Foreman.

The regular workday shall consist of 8 hours between 7:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:
- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.

OVERTIME:
- Hours in excess of 8 per day, or before or after the regular workday, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the regular rate. All hours on Sundays and holidays shall be paid at double the regular rate.
- Saturday or Sunday may be used to make up a day lost to inclement weather, at straight time.
- Four 10-hour days may be worked, at straight time, Monday through Friday.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, General Election Day,

Veterans' Day, Thanksgiving Day, Christmas Day.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Commercial Painter- Repainting **PREVAILING WAGE RATE**

	09/24/20
Foreman	W33.11 B20.66 T53.77
General Foreman	W34.61 B20.66 T55.27
Journeyman	W30.10 B20.66 T50.76

Craft: Commercial Painter- Repainting **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
	SEE	COMMER	CIAL	PAINTER	NEW	CONSTRUC	TION			

Ratio of Apprentices to Journeymen - 1:4

Craft: Commercial Painter- Repainting **COMMENTS/NOTES**

* Commercial Painters perform work on all commercial structures such as offices, schools, hotels, shopping malls, restaurants, condominiums, etc.

NOTE: These rates may only be used on jobs where no major alterations (only doing painting and carpeting with nothing else being changed in the commercial building) occur, and where not more than 3 other trades are present on the job, but may NOT, under any circumstances, be used for work on bridges, stacks, tanks, or generating stations.

Spraying, sandblasting, lead abatement work on commercial buildings, work performed above 3 stories or 30 feet in height, or using swing scaffolds requires an additional 10% of the wage rate.

FOREMEN REQUIREMENTS:
- When there are 4 or more Painters on a job, 1 shall be designated a Foreman.
- When there are 15 or more Painters on a job, 1 shall be designated a General Foreman.

OVERTIME:
- Hours in excess of 8 per day and 40 per week shall be paid at time and one-half the regular rate. All hours on Sundays and holidays shall be paid at double the regular rate.
- Four 10-hour days may be worked, at straight time, Monday through Sunday.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, General Election Day, Veterans' Day, Thanksgiving Day, Christmas Day.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Diver **PREVAILING WAGE RATE**

	05/05/20
Diver	W60.24 B48.47 T108.71
Tender	W48.50 B48.47 T96.97

Craft: Diver **COMMENTS/NOTES**

NOTE: All dive crews must consist of a Tender, a Diver, and a standby Diver (standby Diver is the same rate as a Diver).

DEPTH & PENETRATION RATES: Divers shall be paid the following depth and penetration rates, in addition to the regular hourly rate, when applicable:

AIR DIVES:
0-59 feet: No additional wage
60-74 feet: + $0.25 per foot
75-125 feet: + $0.78 per foot

MIXED GAS DIVES:
0-74 feet: No additional wage
75-125 feet: + $1.00 per foot
126-200 feet: + $2.00 per foot

PENETRATION DIVES:
126-200 feet: + $1.50 per foot
201-275 feet: + $1.75 per foot
276-350 feet: + $2.00 per foot
351-425 feet: + $2.50 per foot

OVERTIME:
Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Presidential Election Day, Thanksgiving Day, Christmas Day. Veterans' Day may be switched with the day after Thanksgiving.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Dockbuilder **PREVAILING WAGE RATE**

	05/05/20
Foreman	W55.78 B48.47 T104.25
Foreman (Concrete Form Work)	W54.97 B35.36 T90.33
Journeyman	W48.50 B48.47 T96.97
Journeyman (Concrete Form Work)	W47.80 B35.36 T83.16

Craft: Dockbuilder **APPRENTICE RATE SCHEDULE**

INTERVAL	**PERIOD AND RATES**									
Yearly	19.40	24.25	31.53	38.80						
Benefit	32.07	for all	intervals							

Ratio of Apprentices to Journeymen - *

* When there are 4 or fewer Dockbuilders on a job, no more than 1 may be an apprentice. When there are 5 or more Dockbuilders, there may be 1 apprentice for every 5 Dockbuilders.

Craft: Dockbuilder **COMMENTS/NOTES**

APPRENTICE RATE SCHEDULE FOR CONCRETE FORM WORK ONLY:

INTERVAL PERIOD AND RATES
Yearly 19.12 23.90 31.07 38.24
Benefits 24.16 for all intervals

CREOSOTE HANDLING:
When handling creosote products on land piledriving, floating marine construction, and construction of wharves, the worker shall receive an additional $0.25 per hour.

HAZARDOUS WASTE WORK:
- Hazardous waste removal work on a state or federally designated hazardous waste site where Level A, B, or C personal protection is required: an additional 20% of the hourly rate, per hour.
- Hazardous waste removal work in Level D, or where personal protection is not required: an additional $1.00 per hour.

CERTIFIED WELDER: When required on the job by the project owner, a Certified Welder shall receive an additional $1.00 per hour.

FOREMAN REQUIREMENTS:
The first Dockbuilder on the job shall be designated a Foreman.

OVERTIME:
Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Presidential Election Day, Thanksgiving Day, Christmas Day. Veterans' Day may be switched with the day after Thanksgiving.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Drywall Finisher **PREVAILING WAGE RATE**

	09/24/20
Foreman	W44.43 B27.06 T71.49
General Foreman	W46.45 B27.06 T73.51
Journeyman	W40.39 B27.06 T67.45

Craft: Drywall Finisher **APPRENTICE RATE SCHEDULE**

INTERVAL	**PERIOD AND RATES**									
6 Months	40%	50%		60%	70%		80%	90%		
Benefits	Intervals	1 to 2 =	10.65	Intervals	3 to 4 =	13.41	Intervals	5 to 6 =	16.63	

Ratio of Apprentices to Journeymen - 1:4

Craft: Drywall Finisher **COMMENTS/NOTES**

The regular workday shall consist of 8 hours between 7:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:
- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.
- When 3 shifts are worked, the second shift shall receive 8 hours pay for 7.5 hours of work, and the third shift shall receive 8 hours pay for 7 hours of work.
- Shift work must run for a minimum of 5 consecutive workdays.

OVERTIME:
- Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.
- Saturday or Sunday may be used to make up a day lost to inclement weather, at straight time.

RECOGNIZED HOLIDAYS: New Year's Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Saturday holiday observed the preceding Friday. Sunday holiday observed the following Monday.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Electrician **PREVAILING WAGE RATE**

	06/01/20	05/31/21
Cable Splicer	W63.83 B37.99 T101.82	W64.92 B39.29 T104.21
Foreman (11-20 Journeymen)	W67.90 B40.41 T108.31	W69.05 B41.78 T110.83
Foreman (1-3 Journeymen)	W63.83 B37.99 T101.82	W64.92 B39.29 T104.21
Foreman (4-10 Journeymen)	W66.74 B39.72 T106.46	W67.87 B41.07 T108.94
General Foreman (21-30 Journeymen)	W69.64 B41.44 T111.08	W70.82 B42.85 T113.67
General Foreman (31-60 Journeymen)	W75.44 B44.89 T120.33	W76.72 B46.42 T123.14
General Foreman (61+ Journeymen)	W76.60 B45.58 T122.18	W77.90 B47.13 T125.03
Journeyman	W58.03 B34.54 T92.57	W59.02 B35.72 T94.74
Sub-Foreman	W66.16 B39.37 T105.53	W67.28 B40.71 T107.99

Craft: Electrician **APPRENTICE RATE SCHEDULE**

INTERVAL	**PERIOD AND RATES**									
Yearly	40%	49%	58%	68%	80%		of Jour	neyman	Wage	Rate
Benefit	40%	49%	58%	68%	80%		of Jour	neyman	Benefit	Rate

Ratio of Apprentices to Journeymen - 2:3

Craft: Electrician **COMMENTS/NOTES**

THESE RATES ALSO APPLY TO THE FOLLOWING:
-All burglar and fire alarm work.
-All fiber optic work.
-Teledata work in new construction.
-Teledata work involving 16 Voice/Data Lines or more.

The regular workday shall be 8 hours, between 8:00 AM and 4:30 PM.

FOREMAN REQUIREMENTS:
- 1 to 3 Journeymen- 1 must be a Foreman (Foreman/1-3 Journeymen rate).
-4 to 10 Journeymen- 1 must be a Foreman (Foreman/4-10 Journeymen rate).
-11 to 20 Journeymen- 1 must be Foreman (Foreman/11-20 Journeymen rate) and 1 must be a Sub-Foreman.
-21 to 30 Journeymen- 1 must be a General Foreman (General Foreman/21-30 Journeymen rate) and 2 must be a Sub-Foreman.
-31 to 40 Journeymen- 1 must be a General Foreman (General Foreman/31-40 Journeymen rate) and 3 must be a Sub-Foreman.
-41 to 50 Journeymen- 1 must be a General Foreman (General Foreman/31-60 Journeymen rate) and 4 must be a Sub-Foreman.
-51 to 60 Journeymen- 1 must be a General Foreman (General Foreman/31-60 Journeymen rate) and 5 must be a Sub-Foreman.
-61+ Journeymen- 1 must be a General Foreman (General Foreman/61+ Journeymen rate) and 6 must be a Sub-Foreman.

SHIFT DIFFERENTIALS:
- Shift work must run for a minimum of 5 consecutive workdays.
- 2nd Shift (4:30 PM to 12:30 AM) shall receive 8 hours pay for 7.5 hours work + an additional 10% of the regular rate, per hour, inclusive of benefits.
- 3rd Shift (12:30 AM to 8:00 AM) shall receive 8 hours pay for 7 hours work + an additional 15% of the regular rate, per hour, inclusive of benefits.

OVERTIME:
Hours in excess of 8 per day, or outside of the regular workday, Monday through Friday, and all hours on Saturdays, shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Electrician - Teledata (15 Voice/Data Lines & Less) **PREVAILING WAGE RATE**

	11/02/20
Master Technician/General Foreman	W57.42 B31.58 T89.00
Senior Technician/Lead Foreman (21-30 Workers on Job)	W52.56 B28.91 T81.47
Technician A/Foreman (11-20 Workers on Job)	W50.35 B27.69 T78.04
Technician B/Working Foreman (4-10 Workers on Job)	W48.15 B26.47 T74.62
Technician C/Journeyman (1-3 Workers on Job)	W44.17 B24.29 T68.46

Craft: Electrician - Teledata (15 Voice/Data Lines & Less) **APPRENTICE RATE SCHEDULE**

INTERVAL	**PERIOD AND RATES**									
6 Months					66%	72%	79%	86%		
Benefits					11.81	12.89	14.14	15.40		

Ratio of Apprentices to Journeymen - 2:3

Craft: Electrician - Teledata (15 Voice/Data Lines & Less) **COMMENTS/NOTES**

APPRENTICE RATE SCHEDULE FOR THOSE APPRENTICES ENTERING PROGRAM AFTER 10-31-14:

INTERVAL	PERIOD AND RATES									
6 Months	35%	35%	40%	43%	48%	54%	61%	67%	74%	81%
Benefits	6.76	6.76	7.16	7.70	8.59	9.66	10.82	11.99	13.25	14.51

NOTES:
- These rates are for service, maintenance, moves, and/or changes affecting 15 Voice/Data (teledata) lines or less. These rates may NOT be used for any teledata work in new construction (including additions) or any fiber optic work.
- The number of Teledata workers on the jobsite is the determining factor for which Foreman category applies .

The regular workday shall be 8 hours, between 8:00 AM and 4:30 PM.

SHIFT DIFFERENTIALS:
- Shift work must run for a minimum of 5 consecutive workdays.

- 2nd Shift (4:30 PM to 12:30 AM) shall receive 8 hours pay for 7.5 hours work + an additional 10% of the regular rate, per hour, inclusive of benefits.
- 3rd Shift (12:30 AM to 8:00 AM) shall receive 8 hours pay for 7 hours work + an additional 15% of the regular rate, per hour, inclusive of benefits.

OVERTIME:
Hours in excess of 8 per day, or outside of the regular workday, Monday through Friday, and all hours on Saturdays, shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day.

County - UNION

Craft: Electrician - Teledata (16 Instruments & More) **PREVAILING WAGE RATE**

See "Electrician" Rates

Craft: Electrician - Teledata (16 Instruments & More) **COMMENTS/NOTES**

See ELECTRICIAN Rates

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Electrician- Outside Commercial **PREVAILING WAGE RATE**

	06/01/20	05/31/21
Cable Splicer	W64.14 B37.69 T101.83	W65.22 B38.97 T104.19
Certified Welder	W61.22 B35.97 T97.19	W62.26 B37.21 T99.47
Equipment Operator	W58.31 B34.26 T92.57	W59.29 B35.43 T94.72
Foreman (1-3 Journeymen workers on job)	W64.14 B37.69 T101.83	W65.22 B38.97 T104.19
Foreman (4-10 Journeymen workers on job)	W67.06 B39.40 T106.46	W68.19 B40.75 T108.94
General Foreman (11-20 Journeymen workers on job)	W68.22 B40.08 T108.30	W69.37 B41.45 T110.82
General Foreman (21-30 Journeymen workers on job)	W69.97 B41.11 T111.08	W71.16 B42.52 T113.68
General Foreman (31-60 Journeymen workers on job)	W75.80 B44.54 T120.34	W77.08 B46.06 T123.14
General Foreman (61+ Journeymen workers on job)	W76.96 B45.22 T122.18	W78.27 B46.77 T125.04
Groundman	W34.99 B20.56 T55.55	W35.58 B21.26 T56.84
Journeyman Lineman/Technician	W58.31 B34.26 T92.57	W59.29 B35.43 T94.72
Sub-Foreman	W66.47 B39.06 T105.53	W67.60 B40.40 T108.00

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Electrician- Outside Commercial **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
1000 Hours	60%	65%	70%	75%	80%	85%	90%			
Benefits	57.75% of	Journey	man	wage	+ $.01					

Craft: Electrician- Outside Commercial **COMMENTS/NOTES**

EFFECTIVE 6-1-20- The apprentice benefit rate shall be 58.75% + $.01.
EFFECTIVE 5-31-21- The apprentice benefit rate shall be 59.75% + $.01.

* FOR UTILITY WORK PLEASE SEE STATEWIDE RATES

The regular worday shall be 8 hours, between 8:00 AM and 4:30 PM.

FOREMAN REQUIREMENTS:
- 1 to 3 Journeymen- 1 must be a Foreman (Foreman/1-3 Journeymen rate).
-4 to 10 Journeymen- 1 must be a Foreman (Foreman/4-10 Journeymen rate).
-11 to 20 Journeymen- 1 must be Foreman (Foreman/11-20 Journeymen rate) and 1 must be a Sub-Foreman.
-21 to 30 Journeymen- 1 must be a General Foreman (General Foreman/21-30 Journeymen rate) and 2 must be a Sub-Foreman.
-31 to 40 Journeymen- 1 must be a General Foreman (General Foreman/31-40 Journeymen rate) and 3 must be a Sub-Foreman.
-41 to 50 Journeymen- 1 must be a General Foreman (General Foreman/31-60 Journeymen rate) and 4 must be a Sub-Foreman.
-51 to 60 Journeymen- 1 must be a General Foreman (General Foreman/31-60 Journeymen rate) and 5 must be a Sub-Foreman.
-61+ Journeymen- 1 must be a General Foreman (General Foreman/61+ Journeymen rate) and 6 must be a Sub-Foreman.

SHIFT DIFFERENTIALS:
Shift work must run for a minimum of 5 consecutive workdays.
2nd Shift (4:30 PM to 12:30 AM): 8 hrs. pay for 7.5 hrs. work + an additional 10% of the regular rate, inclusive of benefits.
3rd Shift (12:30 AM to 8:00 AM): 8 hrs. pay for 7 hrs. work + an additional 15% of the regular rate per hour, inclusive benefits.

OVERTIME:
Hours in excess of 8 per day, or outside of the regular workday, Monday through Friday, and all hours on Saturdays, shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS:
New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day and Christmas Day.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Electrician-Utility Work (North) **PREVAILING WAGE RATE**

Rates are located in the "Statewide" rate package

Craft: Electrician-Utility Work (North) **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
* 6 Months	60%	65%	70%	75%	80%	85%	90%			
Benefits	69% of	Appren	tice	Wage	Rate	for all	intervals			

Craft: Electrician-Utility Work (North) **COMMENTS/NOTES**

Electrician-Utility Work (North) rates are located in the "Statewide" rate package.

* The apprentice wage rate is paid at the percentage of the Journeyman Lineman wage rate located in the "Statewide" rate package.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Electrician-Utility Work (South) **PREVAILING WAGE RATE**

Rates are located in the "Statewide" rate package

Craft: Electrician-Utility Work (South) **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
6 Months	29.11	31.54	33.96	36.39	38.82	41.24	43.67			
Benefits	25.61	27.04	28.46	29.90	31.33	32.79	34.23			

Craft: Electrician-Utility Work (South) **COMMENTS/NOTES**

Electrician-Utility Work (South) rates are located in the "Statewide" rate package.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Elevator Constructor **PREVAILING WAGE RATE**

	03/17/20	03/17/21	03/17/22	03/17/23
Journeyman	W69.56 B41.92 T111.48	W72.29 B42.92 T115.21	W75.14 B43.91 T119.05	W77.49 B45.57 T123.06

Craft: Elevator Constructor **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
Yearly	29.85	36.82	43.52	50.21						
Benefits	32.71	33.51	34.80	36.09						

Ratio of Apprentices to Journeymen - 1:1

Craft: Elevator Constructor **COMMENTS/NOTES**

APPRENTICE RATE SCHEDULE AS OF 3-17-20:
INTERVAL PERIOD AND RATES
Yearly 31.03 38.26 45.21 52.17
Benefits 33.38 34.20 35.55 36.89

APPRENTICE RATE SCHEDULE AS OF 3-17-21:
INTERVAL PERIOD AND RATES
Yearly 32.27 39.76 46.99 54.22
Benefits 34.05 34.91 36.30 37.70

APPRENTICE RATE SCHEDULE AS OF 3-17-22:
INTERVAL PERIOD AND RATES
Yearly 33.56 41.33 48.84 56.36
Benefits 34.72 35.61 37.05 38.50

APPRENTICE RATE SCHEDULE AS OF 3-17-23:
INTERVAL PERIOD AND RATES
Yearly 34.60 42.62 50.37 58.12
Benefits 36.02 36.94 38.50 39.95

The regular workday shall consist of either 7 or 8 hours to be established at the beginning of the project, between 7:00 AM and 4:30 PM.

OVERTIME:
For all hours worked before or after the regular workday, Monday through Friday, and all hours on Saturday and Sunday , shall be paid at double the hourly rate. Holiday pay is one days wages (8 hours) plus double the hourly rate for all hours worked.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Good Friday, Memorial Day, July 4th, Labor Day, Columbus

Day, Veterans' Day, Thanksgiving Day and the day after, Christmas Day. Saturday holidays shall be observed on the previous Friday and Sunday holidays shall be observed on the following Monday.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Elevator Modernization & Service **PREVAILING WAGE RATE**

	03/17/20	03/17/21	03/17/22	03/17/23
Journeyman	W54.56 B40.86 T95.42	W56.77 B41.82 T98.59	W59.09 B42.79 T101.88	W60.89 B44.41 T105.30

Craft: Elevator Modernization & Service **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
Yearly	29.85	28.84	34.09	39.33						
Benefits	32.66	33.13	34.36	35.58						

Ratio of Apprentices to Journeymen - 1:1

Craft: Elevator Modernization & Service **COMMENTS/NOTES**

APPRENTICE RATE SCHEDULE AS OF 3-17-20:
INTERVAL PERIOD AND RATES
Yearly 31.03 30.01 35.46 40.92
Benefits 33.33 33.82 35.09 36.36

APPRENTICE RATE SCHEDULE AS OF 3-17-21:
INTERVAL PERIOD AND RATES
Yearly 32.27 31.22 36.90 42.58
Benefits 34.00 34.50 35.83 37.15

APPRENTICE RATE SCHEDULE AS OF 3-17-22:
INTERVAL PERIOD AND RATES
Yearly 33.56 32.50 38.41 44.32
Benefits 34.67 34.20 35.20 37.94

APPRENTICE RATE SCHEDULE AS OF 3-17-23:
INTERVAL PERIOD AND RATES
Yearly 34.60 33.49 39.58 45.67
Benefits 35.97 36.53 37.95 39.38

MODERNIZATION (addition, replacement, refurbishing, relocation, or changes in design or appearance, of elevator equipment in existing buildings):

- The regular workday consists of 8 hours, between 7:00 AM and 4:30 PM.

- Overtime:
Hours in excess of 8 per day, or before or after the regular workday, Monday through Friday, and all hours on Saturday and Sunday shall be paid at time and one-half the hourly rate. Holiday pay is one days wages (8 hours) plus time and one-half the hourly rate for all hours worked.

SERVICE (repair or replacement of parts for the purpose of maintaining elevator equipment in good operating condition):

- The regular workday consists of 8 hours, between 6:00 AM and 6:00 PM.

- Overtime:
Hours in excess of 8 per day, or before or after the regular workday, Monday through Friday, and all hours on Saturday shall be paid at time and one-half the hourly rate. All hours on Sunday and holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS (Modernization and Service): New Year's Day, Presidents' Day, Good Friday, Memorial Day, July 4th, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day and the day after, Christmas Day. Saturday holidays shall be observed on the previous Friday and Sunday holidays shall be observed on the following Monday.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Glazier **PREVAILING WAGE RATE**

	09/24/20
* Leadman	W48.80 B27.31 T76.11
Foreman	W50.80 B27.55 T78.35
General Foreman	W52.80 B27.79 T80.59
Journeyman	W46.80 B27.07 T73.87

Craft: Glazier **APPRENTICE RATE SCHEDULE**

INTERVAL	**PERIOD AND RATES**									
6 Months	50%	55%		60%	65%		70%	75%		
Benefits	Intervals	1 to 2 =	9.50	Intervals	3 to 4 =	12.11	Intervals	5 to 6 =	15.60	

Ratio of Apprentices to Journeymen - 1:4

Craft: Glazier **COMMENTS/NOTES**

Hazard/Height Pay: +$1.00 per hour

* When there are three (3) men working on a jobsite for three (3) days or longer, 1 Journeyman may be designated as a Leadman for the duration of the job, provided he has his OSHA certification.

FOREMAN REQUIREMENTS:
- When there are 4 or more Glaziers on a job, 1 must be designated a Foreman.
- When there are 15 or more Glaziers on a job, 1 must be designated a General Foreman.

The regular workday shall consist of 8 hours, between 7:00 AM and 5:30 PM, Monday to Friday.

SHIFT DIFFERENTIALS:
- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.
- When 3 shifts are worked, the second shift shall receive 8 hours pay for 7.5 hours of work, and the third shift shall receive 8 hours pay for 7 hours of work.

OVERTIME:
Hours in excess of 8 per day, or before or after the regular workday Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the regular rate. All hours on Sundays and holidays shall be paid at double the regular

rate.

RECOGNIZED HOLIDAYS: New Year's Day, Memorial Day, July 4th, Labor Day, General Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Saturday holiday observed the preceding Friday. Sunday holiday observed the following Monday.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Heat & Frost Insulator **PREVAILING WAGE RATE**

	09/21/20
Foreman	W58.52 B33.42 T91.94
General Foreman	W60.86 B34.53 T95.39
Journeyman	W56.74 B32.86 T89.60

Craft: Heat & Frost Insulator **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
Yearly	26.55	31.49	37.95	44.36						
Benefits	19.44	23.03	25.44	27.76						

Ratio of Apprentices to Journeymen - 1:3

Craft: Heat & Frost Insulator **COMMENTS/NOTES**

NOTE: These rates apply to the installing of insulation on hot and cold mechanical systems.

The regular workday shall be 8 hours between 7:00 AM and 3:30 PM. In addition, the regular workday may also be 8 hours between 6:00 AM and 2:30 PM.

SHIFT DIFFERENTIAL:
- Shift work must run for a minimum of 5 consecutive workdays.
- Second Shift shall work 7.5 hours and receive 8 hours pay, at the regular rate, plus 25% per hour.
- Third Shift shall work 7 hours and receive 8 hours pay, at the regular rate, plus 30% per hour.

OVERTIME:
The first 2 hours in excess of 8 per day, hours outside of the regular workday Monday through Friday that are not shift work, and the first 10 hours on Saturday, shall be paid at time and one-half the regular rate, inclusive of benefits. All hours in excess of 10 per day, and all hours on Sunday and holidays (except Labor Day) shall be paid at double the regular rate, inclusive of benefits. All hours on Labor Day shall be paid at triple the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Presidential Election Day, Thanksgiving Day and Christmas Day. Sunday holidays observed the following Monday.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Heat & Frost Insulator - Asbestos Worker **PREVAILING WAGE RATE**

	09/24/19
Asbestos Helper Abatement	W36.89 B24.92 T61.81

Craft: Heat & Frost Insulator - Asbestos Worker **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
	SEE	HEAT &	FROST	INSULATOR						

Ratio of Apprentices to Journeymen - 1:3

Craft: Heat & Frost Insulator - Asbestos Worker **COMMENTS/NOTES**

NOTE: These rates apply only to the removal of insulation materials/asbestos from mechanical systems, including containment erection and demolition, and placing material in appropriate containers.

The regular workday shall be 8 hours between 7:00 AM and 3:30 PM. In addition, the regular workday may also be 8 hours between 6:00 AM and 2:30 PM.

SHIFT DIFFERENTIALS:
- Shift work must run for a minimum of 5 consecutive workdays.
- The second shift shall work 7.5 hours and receive 8 hours pay at the regular rate, plus 25% per hour.
- The third shift shall work 7 hours and receive 8 hours pay at the regular rate, plus 30% per hour.

OVERTIME: The first 2 hours in excess of 8 per day, hours outside of the regular workday Monday through Friday that are not shift work, and the first 10 hours on Saturday, shall be paid at time and one-half the regular rate, inclusive of benefits. All hours in excess of 10 per day, and all hours on Sunday and holidays (except Labor Day) shall be paid at double the regular rate, inclusive of benefits. All hours on Labor Day shall be paid at triple the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Presidential Election Day, Thanksgiving Day and Christmas Day. Sunday holidays observed the following Monday.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Industrial Painter- Bridges **PREVAILING WAGE RATE**

	07/28/20
Foreman	W62.18 B28.99 T91.17
General Foreman	W64.18 B28.99 T93.17
Journeyman	W57.18 B28.99 T86.17

Craft: Industrial Painter- Bridges **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
6 Months	40%	50%			60%	70%		80%	90%	
Benefits	Intervals	1 to 2 =	10.28	Intervals	3 to 4 =	12.55	Intervals	5 to 6 =	15.56	

Ratio of Apprentices to Journeymen - 1:4

Craft: Industrial Painter- Bridges **COMMENTS/NOTES**

* Industrial Painters perform work on all industrial structures, such as bridges, water tanks, waste water facilitites , refineries, any structural steel work, etc.

These rates apply to: All bridges that span waterways, roadways, railways and canyons. All tunnels, overpasses, viaducts and all appurtenances.

FOREMEN REQUIREMENTS:
- When there are 4 or more Painters on a job, 1 shall be designated a Foreman.
- When there are 15 or more Painters on a job, 1 shall be designated a General Foreman.

The regular workday shall consist of 8 hours between 7:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:
- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.

OVERTIME:
- Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays and Sundays shall be paid at time and one-half the regular rate. All hours on holidays shall be paid at double the regular rate.
- Saturday or Sunday may be used to make up a day lost to inclement weather, at straight time.
- Four 10-hour days may be worked, at straight time, Monday through Friday.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Saturday holiday observed the preceding Friday. Sunday holiday

observed the following Monday.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Industrial Painter- Structural Steel **PREVAILING WAGE RATE**

	07/28/20
Foreman	W50.92 B26.64 T77.56
General Foreman	W52.92 B26.64 T79.56
Journeyman	W45.92 B26.64 T72.56

Craft: Industrial Painter- Structural Steel **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
	SEE	PAINTER	BRIDGES							

Ratio of Apprentices to Journeymen - 1:4

Craft: Industrial Painter- Structural Steel **COMMENTS/NOTES**

* Industrial Painters perform work on all industrial structures, such as bridges, water tanks, waste water facilitites , refineries, any structural steel work, etc.

These rates apply to: All work in power plants (any aspect). On steeples, on dams, on hangers, transformers, substations, on all open steel, in refineries, tank farms, water/sewerage treatment facilities and on pipelines.

FOREMEN REQUIREMENTS:
- When there are 4 or more Painters on a job, 1 shall be designated a Foreman.
- When there are 15 or more Painters on a job, 1 shall be designated a General Foreman.

The regular workday shall consist of 8 hours between 7:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:
- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.

OVERTIME:
- Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays and Sundays shall be paid at time and one-half the regular rate. All hours on holidays shall be paid at double the regular rate.
- Saturday or Sunday may be used to make up a day lost to inclement weather, at straight time.
- Four 10-hour days may be worked, at straight time, Monday through Friday.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Saturday holiday observed the preceding Friday. Sunday holiday observed the following Monday.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Industrial Painter- Water Tanks **PREVAILING WAGE RATE**

	07/28/20
Foreman	W51.97 B26.29 T78.26
General Foreman	W53.97 B26.29 T80.26
Journeyman	W46.97 B26.29 T73.26

Craft: Industrial Painter- Water Tanks **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
	SEE	PAINTER	BRIDGES							

Ratio of Apprentices to Journeymen - 1:4

Craft: Industrial Painter- Water Tanks **COMMENTS/NOTES**

* Industrial Painters perform work on all industrial structures, such as bridges, water tanks, waste water facilitites , refineries, any structural steel work, etc.

These rates apply to: All new and repaint water tanks (interior and exterior).

FOREMEN REQUIREMENTS:
- When there are 4 or more Painters on a job, 1 shall be designated a Foreman.
- When there are 15 or more Painters on a job, 1 shall be designated a General Foreman.

The regular workday shall consist of 8 hours between 7:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:
- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.

OVERTIME:
- Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays and Sundays shall be paid at time and one-half the regular rate. All hours on holidays shall be paid at double the regular rate.
- Saturday or Sunday may be used to make up a day lost to inclement weather, at straight time.
- Four 10-hour days may be worked, at straight time, Monday through Friday.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Saturday holiday observed the preceding Friday. Sunday holiday observed the following Monday.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Industrial Painter-Containment **PREVAILING WAGE RATE**

	07/28/20
Journeyman	W38.23 B26.04 T64.27

Craft: Industrial Painter-Containment **COMMENTS/NOTES**

Note: These rates shall require no painting, but used in a supporting capacity only, such as wrapping, boxing, fencing, etc. on tanks.

The regular workday shall consist of 8 hours between 7:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:
- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.
- When 3 shifts are worked, the second shift shall receive 8 hours pay for 7.5 hours of work, and the third shift shall receive 8 hours pay for 7 hours of work.

OVERTIME:
- Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the regular rate. All hours on Sundays and holidays shall be paid at double the regular rate.
- Saturday or Sunday may be used to make up a day lost to inclement weather, at straight time.
- Four 10-hour days may be worked, at straight time, Monday through Friday.

RECOGNIZED HOLIDAYS: New Year's Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Ironworker **PREVAILING WAGE RATE**

	07/24/20
Rod /Fence Foreman	W46.14 B48.12 T94.26
Rod/Fence Journeyman	W43.14 B48.12 T91.26
Structural Foreman	W48.44 B48.12 T96.56
Structural Journeyman	W45.44 B48.12 T93.56

Craft: Ironworker **APPRENTICE RATE SCHEDULE**

INTERVAL	**PERIOD AND RATES**									
6 Months	50%	60%		Yearly	70%	80%	90%			

Ratio of Apprentices to Journeymen - 1:4

Craft: Ironworker **COMMENTS/NOTES**

HAZARDOUS WASTE WORK: On hazardous waste removal work on a state or federally designated hazardous waste site where the Ironworker is required to wear Level A,B, or C personal protection: + $3.00 per hour

The regular workday consists of 8 hours between 6:00 AM and 4:30 PM.

FOREMAN REQUIREMENTS:
When there are 2 or more Ironworkers on a job, 1 shall be designated a Foreman.

SHIFT DIFFERENTIALS:
- When a 2 shift schedule is established, the first, or day shift , shall be established on an 8 hour basis .The second shift shall be established on an 8 hour basis, and receive the regular rate plus 15%.
- When a three shift schedule is established, the first shift shall be established on an 8 hour basis, the second shift on a 7.5 hour basis, and the third shift on a 7 hour basis. The first shift shall receive the regular hourly rate, the second shift shall receive the regular rate plus 15%, and the third shift shall receive the regular rate plus 20%.
- When there is no day shift, and a second or third shift is established, it shall be established on an 8 hour basis.
- When an irregular shift is established for the Ironworker (Structural) classification, the rate shall be paid at time and one-half the regular rate, inclusive of benefits. When an irregular shift is established for the Rod /Fence classification, the shift shall be established on an 8 hour basis and receive the regular rate, plus 20%.

OVERTIME:

- All hours in excess of 8 per day, or before or after an established shift that are not shift work, and all hours on Saturday, shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sunday and holidays shall be paid at double the hourly rate, inclusive of benefits. Saturday may be used as a make-up day for a day lost to inclement weather. If Saturday is not a make-up day, all hours on Saturday shall be paid at time and one-half the hourly rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday to Thursday, at straight time. Friday may be used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Laborer - Asbestos & Hazardous Waste Removal **PREVAILING WAGE RATE**

	10/20/20
Journeyman (Handler)	W32.98 B23.66 T56.64

Craft: Laborer - Asbestos & Hazardous Waste Removal **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
Yearly	19.79	23.09	26.38	29.68						
Benefits	21.51	for	all	intervals						

Ratio of Apprentices to Journeymen - *

* Ratio of apprentices to journeymen shall not be more than one apprentice for the first journeyman and no more than (1) apprentice for each additional three (3) journeymen.

Craft: Laborer - Asbestos & Hazardous Waste Removal **COMMENTS/NOTES**

NOTE: These rates apply to work in connection with Asbestos, Radiation, Hazardous Waste, Lead, Chemical, Biological, Mold Remediation and Abatement.

The regular workday shall be 8 hours.

OVERTIME:
- Hours in excess of 8 per day, Monday through Saturday, and all hours on Sunday and holidays shall be paid at time and one-half the regular rate.
- Benefits on ALL overtime hours shall be paid at straight time.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Good Friday, Easter, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. (Holidays start at 12:00 am).

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Laborer - Building **PREVAILING WAGE RATE**

	05/12/20
Class A Journeyman	W34.85 B30.27 T65.12
Class B Journeyman	W34.10 B30.27 T64.37
Class C Journeyman	W28.99 B30.27 T59.26
Foreman	W39.21 B30.27 T69.48
General Foreman	W43.56 B30.27 T73.83

Craft: Laborer - Building **APPRENTICE RATE SCHEDULE**

INTERVAL	**PERIOD AND RATES**									
6 Months	60%	70%	80%	90%						
Benefit	27.02	27.02	27.02	27.02						

Ratio of Apprentices to Journeymen - *

* Ratio of apprentices to journeymen shall not be more than one apprentice for the first journeyman and no more than (1) apprentice for each additional three (3) journeymen.

Craft: Laborer - Building **COMMENTS/NOTES**

CLASS A: Specialist laborer including mason tender or concrete pour crew; scaffold builder (scaffolds up to 14 feet in height); operator of forklifts, Bobcats (or equivalent machinery), jack hammers, tampers, motorized tampers and compactors, vibrators, street cleaning machines, hydro demolition equipment, riding motor buggies, conveyors, burners; and nozzlemen on gunite work.
CLASS B: Basic laborer - includes all laborer work not listed in Class A or Class C.
CLASS C: Janitorial-type light clean-up work associated with the TURNOVER of a project, or part of a project, to the owner. All other clean-up work is Class B.

The regular workday shall be 8 hours between 6:00 AM and 6:00 PM.

SHIFT DIFFERENTIALS:
- Shift work must run for a minimum of 5 consecutive workdays.
- When a 2-shift schedule is worked, including a day shift, both shifts shall be established on the basis of 8 hours pay for 8 hours worked. The second shift shall receive the regular rate plus an additional 10%.
- When a 3-shift schedule is worked, the day shift shall be established on the basis of 8 hours pay for 8 hours worked, the second shift shall be established on the basis of 8 hours pay for 7.5 hours worked, and the third shift shall be established

on the basis of 8 hours pay for 7 hours worked. The day shift shall receive the regular rate, the second shift shall receive the regular rate plus an additional 10%, and the third shift shall receive the regular rate plus an additional 15%.
- When a second or third shift is worked with no day shift, the second or third shift shall be established on the basis of 8 hours pay for 8 hours worked. The second shift shall receive the regular rate plus an additional 10%, and the third shift shall receive the regular rate plus an additional 15%.

OVERTIME:
- Hours in excess of 8 per day, or outside the regular workday that are not shift work, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the regular rate. Saturday may be used as a make-up day (paid at straight time) for a day lost to inclement weather, or for a holiday that is observed during the work week, Monday through Friday. All hours on Sundays and holidays shall be paid at double the regular rate.
- Four 10-hour days may be worked Monday to Thursday, at straight time, with Friday used a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the regular rate.
- Benefits on ALL overtime hours shall be paid at time and one-half.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Laborer - Heavy & General **PREVAILING WAGE RATE**

Rates are located in the
"Statewide" rate package

Craft: Laborer - Heavy & General **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
1000 Hours	60%	70%	80%	90%						
Benefit	21.78	for	all	intervals						

Ratio of Apprentices to Journeymen - *

* No more than 1 apprentice for the first journeyman and no more than 1 apprentice for each additional 3 journeymen.

Craft: Laborer - Heavy & General **COMMENTS/NOTES**

Heavy & General Laborer rates are located in the "Statewide" rate package.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Laborer-Residential and Modular Construction **PREVAILING WAGE RATE**

	04/01/20
* Skilled Tradesman (only applies to Modular Construction)	W26.55 B5.45 T32.00
Foreman (person directing crew, regardless of his skill classification)	W30.55 B5.45 T36.00
Laborer	W22.55 B5.45 T28.00
Laborer (for single family and stand-alone duplex owned by single owner)	W17.05 B2.95 T20.00

Craft: Laborer-Residential and Modular Construction **APPRENTICE RATE SCHEDULE**

INTERVAL	**PERIOD AND RATES**									
As shown	800 hours	600 hours	600 hours							
wage & benefits	70%	80%	90%							

Ratio of Apprentices to Journeymen-

One (1) apprentice shall be allowed for the first journeyman on site and no more than one (1) additional apprentice for each additional three (3) journeymen on site.

Craft: Laborer-Residential and Modular Construction **COMMENTS/NOTES**

* SKILLED TRADESMAN-
any worker doing work not typically done by a Building Laborer. Some examples are installing interior doors, sheet rock, hooking up appliances, installing light fixtures, installing railing systems, etc. Please note where local building codes require that certain work be performed under the supervision of a licensed tradesman (i.e. Plumber, Electrician, etc.) Laborers shall work under such supervision.

RESIDENTIAL CONSTRUCTION- All residential construction (not commercial), single-family, stand-alone duplex houses, townhouses and multi-family buildings of not more than four (4) floors. Each housing unit must be fully and independently functional; each housing unit must have its own kitchen and bathroom. The definition includes all incidental items such as site work, parking areas, utilities, streets and sidewalks. Please note the construction must be Residential in nature. A First Floor at or below grade may contain commercial space not to exceed 50% square footage of the floor; at least 50% of the First Floor must contain living accommodations or related nonresidential uses (e.g. laundry space, recreation/hobby rooms, and/or corridor space). Basement stories below grade used for storage, parking, mechanical systems/equipment, etc., are considered basement stories which are not used in determining the building's height. An attic is an unfinished space located immediately below the roof. Such space is not used in determining a building's height even if used for storage purposes. In addition, barracks and dormitories are not considered residential projects.

MODULAR RESIDENTIAL CONSTRUCTION- all aspects of modular residential construction (not commercial) at the site of installation of structures of no more than four (4) stories, including all excavation and site preparation, footings and

foundation systems whether poured on-site or prefabricated, all underground waterproofing, underground utilities, concrete slabs, sidewalks, driveways, paving, hardscape and landscaping. Please note the construction must be Residential as defined above. All work performed by the Set Crew (the crew of workers who set the modular boxes on the foundation), including the rigging, setting, attaching and assembly of all modules and structural members, preparation of the foundation to accept modules, such as sill plates, connection of all in-module and under-module connections including, but not limited to, plumbing, electrical, HVAC, fire suppression, CATS, telephone, television/internet, and fiber optic, the building or installation of any porches or decks regardless of material or method of construction, the on-site installation of, or completion of any roof system, doors, windows and fenestrations, including flashing, gutter and soffit systems, waterproofing, insulation and interior and exterior trim work, and painting. Please note that modular construction does not include on-site stick built construction, tip up construction or panel built construction.

The regular workday shall be 8 hours between 6:00 AM and 6:00 PM.

OVERTIME:
Hours worked in excess of 8 per day/40 per week, Monday through Saturday, and all hours worked on Sunday and holidays shall be paid at time and one-half the hourly rate.

RECOGNIZED HOILDAYS:
New Year's Day, Martin Luther King Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Millwright **PREVAILING WAGE RATE**

	05/01/20
Foreman	W59.32 B35.01 T94.33
Journeyman	W51.58 B30.52 T82.10

Craft: Millwright **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
6 Months	40%	55%	65%	80%	90%					
Benefits	58% of	Appren	tice	Wage	Rate	for all	intervals	+ $.60		

Ratio of Apprentices to Journeymen - 1:3

Craft: Millwright **COMMENTS/NOTES**

FOREMAN REQUIREMENTS:
- When there are 2 or more Millwrights on a job, 1 shall be designated as a Foreman.
- When there are 21 or more Millwrights on a job, 2 shall be designated as Foremen.

The regular workday shall consist of 8 hours, starting between 6:00 AM and 9:00 AM.

SHIFT DIFFERENTIALS:
- When a 2 shift schedule (including a day shift) is established, the day shift shall be established on an 8 hour basis. The second shift shall be established on an 8 hour basis, and receive the regular rate plus 15%, inclusive of benefits.
- When a three shift schedule is established, the first shift shall be established on an 8 hour basis, the second shift on a 7.5 hour basis, and the third shift on a 7 hour basis. The first shift shall receive the regular hourly rate, the second shift shall receive the regular rate plus 15% and the third shift shall receive the regular rate plus 20%, inclusive of benefits.
- When there is no day shift, and a second or third shift is established, it shall be established on an 8 hour basis. The second shift shall receive the regular rate plus 15% and the third shift shall receive the regular rate plus 20%, inclusive of benefits.
- When an irregular shift must be established, this shift shall receive the regular rate plus 15%, inclusive of benefits.

OVERTIME:
- All hours in excess of 8 per day, or before or after an established shift that are not shift work, and all hours on Saturdays shall be paid at time and one-half the hourly rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the hourly rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday to Thursday, at straight time. Friday may be used as a make-up day for a day lost due to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday. Veterans' Day may be

substituted for the day after Thanksgiving.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Operating Engineer **PREVAILING WAGE RATE**

Rates are located in the
"Statewide" rate package

Craft: Operating Engineer **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
Yearly	60%	70%	80%	90%						

Ratio of Apprentices to Journeymen - *

* 1 apprentice for each piece of heavy equipment. At least 10 pieces of heavy equipment or a minimum of 5 Operating Engineers must be on site.

Craft: Operating Engineer **COMMENTS/NOTES**

Operating Engineer rates are located in the "Statewide" rate package.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Operating Engineer - Field Engineer **PREVAILING WAGE RATE**

Rates are located in the
"Statewide" rate package

Craft: Operating Engineer - Field Engineer **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
Yearly	70%	75%	of Rod/	Chainman	Wage					
Yearly			80%	90%	Transit/	Instrument	man	Wage		

Ratio of Apprentices to Journeymen - *

* No more than 1 Field Engineer Apprentice per Survey Crew.

Craft: Operating Engineer - Field Engineer **COMMENTS/NOTES**

Operating Engineer - Field Engineer rates are located in the "Statewide" rate package.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Painter - Line Striping **PREVAILING WAGE RATE**

	01/23/20
Apprentice (1st year)	W27.50 B11.90 T39.40
Apprentice (2nd year)	W31.50 B20.60 T52.10
Foreman (Charge Person)	W40.15 B21.38 T61.53
Journeyman 1 (at least 1 year of working exp. as a journeyman)	W35.38 B21.38 T56.76
Journeyman 2 (at least 2 years of working exp. as a journeyman)	W39.15 B21.38 T60.53

Craft: Painter - Line Striping **COMMENTS/NOTES**

OVERTIME:
Hours in excess of 8 per day, Monday through Saturday, and all hours on Sundays and holidays shall be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans Day, Thanksgiving Day and Christmas Day. Veterans Day may be substituted for the day after Thanksgiving.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Paperhanger - New Construction **PREVAILING WAGE RATE**

	09/24/20
Foreman	W45.05 B26.56 T71.61
Journeyman	W40.95 B26.56 T67.51

Craft: Paperhanger - New Construction **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
	SEE	COMMER	CIAL	PAINTER	NEW	CONSTRUC	TION			

Ratio of Apprentices to Journeymen - 1:4

Craft: Paperhanger - New Construction **COMMENTS/NOTES**

FOREMEN REQUIREMENTS:
- When there are 4 or more Paperhangers on a job, 1 shall be designated a Foreman.

The regular workday shall consist of 8 hours between 7:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:
- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.

OVERTIME:
- Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the regular rate. All hours on Sundays and holidays shall be paid at double the regular rate.
- Saturday or Sunday may be used to make up a day lost to inclement weather, at straight time.
- Four 10-hour days may be worked, at straight time, Monday through Friday.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, General Election Day, Veterans' Day, Thanksgiving Day, Christmas Day.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Paperhanger - Renovation **PREVAILING WAGE RATE**

	09/24/20
Foreman	W33.94 B20.70 T54.64
Journeyman	W30.86 B20.70 T51.56

Craft: Paperhanger - Renovation **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
		SEE	COMMER	CIAL	PAINTER	NEW	CONSTRUC	TION		

Ratio of Apprentices to Journeymen - 1:4

Craft: Paperhanger - Renovation **COMMENTS/NOTES**

NOTE: These rates may only be used on jobs where no major alterations occur, and where not more than 3 other trades are present on the job, but may NOT, under any circumstances, be used for work on bridges, stacks, elevated tanks, or generating stations.

FOREMEN REQUIREMENTS:
- When there are 4 or more Paperhangers on a job, 1 shall be designated a Foreman.

OVERTIME:
- Hours in excess of 8 per day and 40 per week shall be paid at time and one-half the regular rate.
- Four 10-hour days may be worked, at straight time, Monday through Sunday.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Pipefitter **PREVAILING WAGE RATE**

	05/01/20
Foreman	W54.76 B45.83 T100.59
Journeyman	W51.01 B42.70 T93.71

Craft: Pipefitter **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
Yearly	35%	45%	55%	65%	75%					
Benefit	21.63	24.20	26.79	29.36	31.94					

Ratio of Apprentices to Journeymen - 1:5

Craft: Pipefitter **COMMENTS/NOTES**

FOREMAN REQUIREMENTS:
- When there are 2 or more Journeyman Pipefitters on a job, 1 shall be designated a Foreman.
- There shall be a Foreman for every 8 Journeyman Pipefitters on a job.

The regular workday shall be 8 hours between 7:00 AM and 3:30 PM.

SHIFT DIFFERENTIAL:
- 2nd Shift (3:30 PM-11:30 PM) shall work 7.5 hours and receive 8 hours pay at the regular rate, plus 10% per hour on the total rate.
- 3rd Shift (11:30 PM-7:00 AM) shall work 7 hours and receive 8 hours pay at the regular rate, plus 15% per hour on the total rate.

OVERTIME:
- All hours worked in excess of 8 per day, Monday through Friday, and all hours worked on Saturday, shall be paid at time and one-half, inclusive of benefits. All hours on Sunday and holidays shall be paid at double time, inclusive of benefits.
- By mutual agreement, employees may work four 10-hour days, Monday to Thursday, at straight time rate. Friday may be used as a make-up day for a day lost to inclement weather, and may be paid at straight time. If Friday is not a make-up day, the first 8 hours shall be paid at time and one-half, inclusive of benefits; hours in excess of 8 shall be paid at double time, inclusive of benefits.

SHIFT DIFFERENTIAL (Maintenance Work Only):
- 2nd Shift (3:30 PM-11:30 PM) shall work 7.5 hours and receive 8 hours pay at the regular rate, plus 10% per hour on the total rate.
- 3rd Shift (11:30 PM-7:00 AM) shall work 7 hours and receive 8 hours pay at the regular rate, plus 15% per hour on the total rate.

OVERTIME (Maintenance Work Only):
- All hours in excess of 8 per day, Monday through Saturday, shall be paid at time and one-half, inclusive of benefits. All

hours on Sundays and holidays shall be paid at double time, inclusive of benefits.

NOTE: Maintenance work is work to repair, restore, or improve the efficiency of existing facilities. This does NOT apply to ANY new construction.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays are observed the following Monday.

County - UNION

Craft: Plasterer **PREVAILING WAGE RATE**

See Bricklayer, Stone Mason Rates

Craft: Plasterer **COMMENTS/NOTES**

See BRICKLAYER, STONE MASON Rates

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Plumber **PREVAILING WAGE RATE**

	05/01/20
Foreman	W60.69 B37.32 T98.01
General Foreman	W64.62 B37.32 T101.94
Journeyman	W56.19 B37.32 T93.51

Craft: Plumber **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
Yearly	30%	45%	55%	65%	75%					
Benefits	14.31	20.83	22.72	24.52	26.50					

Ratio of Apprentices to Journeymen - *

* Employers may employ 1 apprentice on any job where 1 or 2 journeymen are employed. Thereafter, 1 apprentice may be employed for every 4 journeymen.

Craft: Plumber **COMMENTS/NOTES**

FOREMAN REQUIREMENTS:
- On any job having 2 or more Plumbers, 1 must be designated a Foreman.
- On any job having 9 or more Plumbers, 2 shall be designated as Foremen.

The regular workday shall consist of 8 hours between 7:00 AM and 4:30 PM.

SHIFT DIFFERENTIALS:
- Shift work must continue for a minimum of 5 consecutive workdays.
- When two shifts are worked, the second shift shall work 7.5 hours and receive 8 hours pay, at a rate equal to the hourly rate plus 10%, inclusive of benefits.
- When a third shift is worked, the third shift shall work 7 hours and receive 8 hours pay, at a rate equal to the hourly rate plus 15%, inclusive of benefits.

OVERTIME:
- All hours in excess of 8 per day, or before of after the regular workday that are not shift work, Monday through Friday, and all hours on Saturday, shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sunday and holidays, shall be paid at double the hourly rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday to Thursday, at straight time. Friday may be used as a make-up day for a day lost due to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Roofer **PREVAILING WAGE RATE**

	06/04/20
Foreman	W42.77 B28.03 T70.80
Journeyman	W39.77 B28.03 T67.80

Craft: Roofer **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
6 Months	15.90	19.89	23.86	27.84	31.82	35.79				
Benefits	2.10	2.10	25.28	25.28	25.28	25.28				

Ratio of Apprentices to Journeymen - *

* A) For roofing jobs that are of the 1 or single ply nature: 1:2 or fraction thereof
B) For roofing jobs on new built up roofs: 1:3 or fraction thereof
C) For roofing jobs that are of a tear-off nature: 1:2 or fraction thereof
D) For roofing jobs {not requiring complete removal of existing systems, installation done over existing roof}: 1:3 or fraction thereof

Craft: Roofer **COMMENTS/NOTES**

APPRENTICE RATE SCHEDULE FOR THOSE APPRENTICES ENTERING PROGRAM AFTER 4-1-17:

INTERVAL	PERIOD AND RATES							
6 Months	15.90	19.89	23.86	25.85	27.84	29.83	31.82	35.79
Benefits	2.10	2.10	25.28	25.28	25.28	25.28	25.28	25.28

Pitch: +.50 per hour

Mop Man: +.30 per hour

The regular workday consists of 8 hours between 8:00 AM and 4:30 PM.

OVERTIME:
Hours in excess of 8 per day, or before or after the regular workday, Monday through Friday, and all hours on Saturdays, Sundays, and holidays shall be paid at time and one-half the regular rate.

RECOGNIZED HOLIDAYS: New Year's Day, Good Friday, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Sheet Metal Sign Installation **PREVAILING WAGE RATE**

	04/16/20
Foreman	W38.29 B35.55 T73.84
Journeyman	W36.79 B35.55 T72.34

Craft: Sheet Metal Sign Installation **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
1000 hours	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%
Benefits	12.03	13.71	15.39	17.09	19.21	20.92	22.65	24.38	26.10	27.82

Ratio of Apprentices to Journeymen - 1:3

Craft: Sheet Metal Sign Installation **COMMENTS/NOTES**

FOREMAN REQUIREMENT:
When there are 6 or more Sheet Metal Sign Installers on a job, 1 shall be designated a Foreman.

The regular workday consists of 8 hours, between 7:00 AM and 3:30 PM.

OVERTIME:
Hours before or after the regular workday, Monday though Friday, and all hours worked on Saturday shall be paid at time and one-half the hourly rate. All hours on Sunday and holidays shall be paid at double the hourly rate.

Four(4) 10 hour days may be worked, Monday through Friday, at straight time, for projects lasting at least one week in duration. The fifth day may be used as a make-up day at straight time for a day lost due to inclement weather. However, if the fifth day is not a make-up day, all hours worked will be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Good Friday, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day and the day after, Christmas Day. Saturday holidays observed the preceding Friday, Sunday holidays observed the following Monday.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Sheet Metal Worker **PREVAILING WAGE RATE**

	06/09/20
Foreman	W53.62 B46.85 T100.47
General Foreman	W54.62 B46.85 T101.47
Journeyman	W50.12 B46.85 T96.97

Craft: Sheet Metal Worker **APPRENTICE RATE SCHEDULE**

INTERVAL	**PERIOD AND RATES**									
Yearly	35%	45%	55%	65%	of	Journey	man	Wage	Rate	
Benefit	35%	45%	55%	65%	of	Journey	man	Benefit	Rate	

Ratio of Apprentices to Journeymen - 1:4

Craft: Sheet Metal Worker **COMMENTS/NOTES**

FOREMAN REQUIREMENTS:
- When there are 2 or more Sheet Metal Workers on a project, 1 must be designated a Foreman.
- When there are 17 or more Sheet Metal Workers on a project, 1 must be designated a General Foreman.
- When there is only 1 Sheet Metal Worker (1 Journeyman) on a project, he/she shall receive $1.00 more than the regular Journeyman's rate.

The regular workday is 8 hours between 7:00 AM and 4:30 PM.

SHIFT DIFFERENTIAL:
- 2nd Shift (3:30 PM - 12:00 AM) : +17% of regular hourly rate
- Shift work must run for a minimum of 5 consecutive workdays.

OVERTIME:
- Hours in excess of 8 per day, or before or after the regular workday, that are not shift work, and the first 10 hours on Saturdays shall be paid at time and one-half of the regular rate, inclusive of benefits. Hours in excess of 10 per day on Saturday, and all hours on Sundays and holidays shall be at double the regular rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday through Friday, at straight time, with hours in excess of 10 per day, and hours in excess of 40 per week paid at the overtime rates listed above.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Good Friday, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Sprinkler Fitter **PREVAILING WAGE RATE**

	07/01/20
Foreman	W66.89 B32.13 T99.02
General Foreman	W70.15 B32.13 T102.28
Journeyman	W62.64 B32.13 T94.77

Craft: Sprinkler Fitter **APPRENTICE RATE SCHEDULE**

INTERVAL	**PERIOD AND RATES**									
1000 Hours									80%	85%
Benefits							Intervals	9 to 10	Jourymn	Ben.

APPRENTICE RATE SCHEDULE FOR THOSE APPRENTICES REGISTERED AS OF 7-1-13:

INTERVAL			PERIOD AND RATES							
1000 hours	25%	30%	40%	45%	55%	60%	70%	75%	85%	90%
Benefits	12.33	12.33	25.63	25.63	25.63	25.63	Intervals 7 to 10 receive Journeyman Ben.			

Craft: Sprinkler Fitter **COMMENTS/NOTES**

The regular workday consists of 8 consecutive hours between 6:00 AM and 4:30 PM.

FOREMAN REQUIREMENTS:
- The first Sprinkler Fitter on the job must be designated a Foreman.
- On any job having 12 or more Sprinkler Fitters, one must be designated a General Foreman.

SHIFT DIFFERENTIALS:
- Shift work must run for a minimum of 2 consecutive workdays.
- 2nd and 3rd shift shall receive an additional 15% of the regular rate, per hour.
- Any "off hours" shift starting at 8:00 PM or later shall receive an additional 25% of the regular rate, per hour.

OVERTIME:
The first 2 hours in excess of 8 per day, after the regular workday that are not shift work, Monday through Friday, shall be paid at time and one-half the regular rate. Hours worked in excess of 10 per day, Monday through Friday, and all hours on Saturday, Sunday and holidays, shall be paid double the regular rate.
Four 10 hour days may be worked, Monday through Friday, at straight-time.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Good Friday, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Tile Finisher-Marble **PREVAILING WAGE RATE**

	06/02/20
Finisher	W47.92 B35.14 T83.06

Craft: Tile Finisher-Marble **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
750 Hours	40%	45%	50%	55%	60%	65%	70%	75%	85%	95%

Ratio of Apprentices to Journeymen - 1:4

Craft: Tile Finisher-Marble **COMMENTS/NOTES**

OVERTIME:
Hours in excess of 7 per day, Monday through Friday, and the first 7 hours on Saturdays shall be paid at time and one half the regular rate, inclusive of benefits. Hours in excess of 7 on Saturdays and all hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Good Friday, Memorial Day, July 4th, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day and the day after, Christmas Day. Sunday holidays observed the following Monday.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Tile Setter - Ceramic **PREVAILING WAGE RATE**

	06/02/20
Finisher	W46.21 B31.31 T77.52
Setter	W60.09 B34.63 T94.72

Craft: Tile Setter - Ceramic **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
750 Hours	35%	40%	50%	55%	60%	65%	70%	75%	80%	90%

Ratio of Apprentices to Journeymen - 1:4

Craft: Tile Setter - Ceramic **COMMENTS/NOTES**

OVERTIME:
Hours in excess of 7 per day, and the first 10 hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Saturdays after 10 hours shall be paid double the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day, Christmas Day.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Tile Setter - Marble **PREVAILING WAGE RATE**

	06/02/20
Tile Setter	W60.35 B37.39 T97.74

Craft: Tile Setter - Marble **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
750 Hours	40%	45%	50%	55%	60%	65%	70%	75%	85%	95%

Ratio of Apprentices to Journeymen - 1:4

Craft: Tile Setter - Marble **COMMENTS/NOTES**

OVERTIME:
Hours in excess of 7 per day, Monday through Friday, and the first 7 hours on Saturdays shall be paid at time and one-half the regular rate, inclusive of benefits. Hours in excess of 7 on Saturdays, and all hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Good Friday, Memorial Day, July 4th, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day and the day after, Christmas Day. Sunday holidays observed the following Monday.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Tile Setter - Mosaic & Terrazzo **PREVAILING WAGE RATE**

	07/09/20
Grinder or Assistant	W55.82 B37.31 T93.13
Mechanic	W57.42 B37.33 T94.75
Terrazzo Resinous Worker	W47.92 B30.24 T78.16

Craft: Tile Setter - Mosaic & Terrazzo **APPRENTICE RATE SCHEDULE**

INTERVAL	PERIOD AND RATES									
750 Hours	50%	55%	60%	65%	70%	75%	85%	95%	100%	

Ratio of Apprentices to Journeymen - 1:5

Craft: Tile Setter - Mosaic & Terrazzo **COMMENTS/NOTES**

APPRENTICE RATE SCHEDULE FOR THOSE APPRENTICES ENTERING PROGRAM AFTER 7-1-17:

INTERVAL PERIOD AND RATES
1500 Hours 35% 45% 60% 70% 80% 90% 100%

The regular workday consists of 7 hours, between 8:00 AM and 3:30 PM.

OVERTIME:
- Hours in excess of 7 per day, or before or after the regular workday, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Good Friday, Monday after Easter, Memorial Day, July 4th, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day and the day after, Christmas Day. Sunday holidays observed the following Monday.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Truck Driver **PREVAILING WAGE RATE**

	05/01/20
Bucket, Utility, Pick-up, Fuel Delivery trucks	W39.21 B38.05 T77.26
Dump truck, Asphalt Distributor, Tack Spreader	W39.21 B38.05 T77.26
Euclid-type vehicles (large, off-road equipment)	W39.31 B38.05 T77.36
Helper on Asphalt Distributor truck	W39.21 B38.05 T77.26
Slurry Seal, Seeding/Fertilizing/ Mulching truck	W39.21 B38.05 T77.26
Straight 3-axle truck	W39.21 B38.05 T77.26
Tractor Trailer (all types)	W39.31 B38.05 T77.36
Vacuum or Vac-All truck (entire unit)	W39.21 B38.05 T77.26
Winch Trailer	W39.41 B38.05 T77.46

Craft: Truck Driver **COMMENTS/NOTES**

BLENDED RATE:
When a truck driver is performing work on the site and also serving as a material delivery driver, the driver shall be paid a "blended rate" which shall be 80% of the above-listed wage rates, plus the full benefit rate. This rate shall be used when the driver "round robins" for a minimum of 6 hours during the work day.

HAZARDOUS WASTE REMOVAL:
- On hazardous waste removal work on a State designated hazardous waste site where the driver is in direct contact with hazardous materials and when personal protective equipment is required for respiratory, skin, and eye protection, the driver shall receive an additional $3.00 per hour (with or without protective gear).
- A hazardous waste related certified worker at a designated hazardous waste site who is not working in a zone requiring level A, B or C personal protection shall receive an additional $1.00 per hour.

TRUCK FOREMAN: $.75 cents per hour above regular rate. Overtime shall be increased accordingly.

The regular workday shall be 8 hours, starting between 6:00 AM and 8:00 AM.

SHIFT DIFFERENTIAL:
- Shifts starting at 4:00 PM (2nd Shift): + $3.00 per hour.
- Shifts starting at 12:00 AM (midnight/3rd Shift): time and one-half the hourly rate.
- Shifts starting at a time other than from 6:00 AM to 8:00 AM, when such hours are mandated by the project owner: + $3.00 per hour.

OVERTIME:
- Hours in excess of 8 per day, or before or after the regular workday, Monday through Friday, that are not shift work, and all hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Employees may work four 10-hour days at straight time, Monday through Thursday, with Friday used as a make-up day for a lost day. If Friday is not a make-up day, then all hours on Friday shall be paid at time and one-half the hourly rate.
-Benefits on overtime shall be $36.80.
As of 5-1-20, benefits on overtime shall be $37.80.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day (Decoration Day), July 4th, Labor Day, Presidential Election Day, Veteran's Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday. The day after Thanksgiving may be substituted for Veteran's Day.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Truck Driver-Material Delivery Driver **PREVAILING WAGE RATE**

	04/01/20
Driver	W25.60 B15.71 T41.31

Craft: Truck Driver-Material Delivery Driver **COMMENTS/NOTES**

BLENDED RATE:
When a truck driver is performing work on the site and also serving as a material delivery driver, the driver shall be paid a "blended rate". See the "Truck Driver" craft for the blended rates.

Truck Foreman/Shop Steward: +$0.25 per hour

SHIFT DIFFERENTIALS:
- 2nd Shift shall receive an additional $0.50 per hour
- 3rd Shift shall receive time and one-half the hourly rate.

OVERTIME:
- Hours in excess of 8 per day, or before or after the regular workday that are not shift work, Monday through Friday, and all hours on Saturday shall be paid at time and one-half the hourly rate. All hours on Sunday and holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day (Decoration Day), July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday. The day after Thanksgiving may be substituted for Veterans' Day.

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION

County - UNION

Craft: Welder **PREVAILING WAGE RATE**

Welder

Craft: Welder **COMMENTS/NOTES**

Welders rate is the same as the craft to which the welding is incidental.

STATEWIDE RATES

TERRITORY

ENTIRE STATE

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

OPERATING ENGINEERS **Rates Expiration Date :**

{For apprentice rates refer to "Operating Engineers" apprentice rates in any county rate package}

The regular workday consists of 8 hours, Monday to Friday, between 6:00 AM and 4:30 PM.

SHIFT DIFFERENTIALS:
- Shift work must run for 5 consecutive workdays.
- When 2 shifts are worked, the second shift shall receive an additional 10% of the regular rate inclusive of benefits, per hour.
- When 3 shifts are worked, the second shift shall receive 8 hours pay for 7.5 hours of work, plus an additional 10% of the regular rate inclusive of benefits, per hour. The third shift shall receive 8 hours pay for 7 hours of work, plus an additional 15% of the regular rate inclusive of benefits, per hour.
- When such hours are mandated by the project owner, a shift that starts between 8:00 PM and midnight and ends by 6:00 AM Saturday, or that starts after 8:00 PM on Sunday, provided there are consecutive hours of work within the shift, shall receive an additional 15% of the regular rate, inclusive of benefits.
- On Highway, Road, Street, and Sewer projects irregular shifts starting between 5:00 PM and 12:00 AM may be worked Monday through Friday, and shall receive an additional 15% of the regular rate, inclusive of benefits. When working with other trades that receive a higher irregular shift rate, the Operating Engineer shall also receive the higher irregular shift rate.

OVERTIME:
- Hours in excess of 8 per day, or outside of the regular workday, Monday through Friday, that are not shift work, and all hours on Saturdays shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with all hours on Friday paid at time and one-half the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. When all trades on a particular job site agree, the day after Thanksgiving may be substituted for Veteran's Day.

On hazardous waste removal work or asbestos removal work, on a state or federally designated hazardous waste site, where the operating engineer is in direct contact with hazardous material and when personal protective equipment is required for respiratory, skin, and eye protection, the operating engineer shall receive an additional 20% of the hourly wage, per hour.

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	07/01/2020		**07/01/2021**	**07/01/2022**
Rate	Fringe	Total	Total	Total
53.23	34.50	87.73	90.03	92.28

CLASSIFICATIONS:

A-Frame

Backhoe (combination)

Boom Attachment on loaders (Except pipehook)

Boring & Drilling Machine

Brush Chopper, Brush Shredder, Tree Shredder, Tree Shearer

Bulldozer, finish grade

Cableway

Carryall

Concrete Pump

Concrete Pumping System (Pumpcrete & similar types)

Conveyor, 125 feet or longer

Drill Doctor (Duties include dust collector and maintenance)

Front End Loader (2 cu. yds. but less than 5 cu. yds.)

Grader, finish

Groove Cutting Machine (ride-on type)

Heater Planer

Hoist: Outside Material Tower Hoist (all types including steam, gas, diesel, electric, air
hydraulic, single and double drum, concrete, brick shaft caisson,
snorkle roof, and other similar types, Except Chicago-boom type) * receives an addtional $1.00 per hour on 100 ft. up to 199 ft. total height, and an additional $2.00 per hour on 200 ft. and over total height.

Hydraulic Crane (10 tons & under)

Hydraulic Dredge

Hydro-Axe

Hydro-Blaster

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	07/01/2020		**07/01/2021**	**07/01/2022**
Rate	Fringe	Total	Total	Total
53.23	34.50	87.73	90.03	92.28

CLASSIFICATIONS:

Jack (screw, air hydraulic, power-operated unit, or console type, Except hand jack or pile load test type)

Log Skidder

Pan

Paver, concrete

Plate & Frame Filter Press

Pumpcrete (unit type)

Pumpcrete, Squeezecrete, or Concrete Pumping machine (regardless of size)

Scraper

Side Boom

Straddle Carrier (Ross and similar types)

Whiphammer

Winch Truck (hoisting)

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	07/01/2020		**07/01/2021**	**07/01/2022**
Rate	Fringe	Total	Total	Total
51.32	34.50	85.82	88.12	90.37

CLASSIFICATIONS:

Asphalt Curbing Machine

Asphalt Plant Engineer

Asphalt Spreader

Autograde Curb Trimmer & Sidewalk Shoulder Slipform (CMI & similar types)

Autograde Curecrete Machine (CMI & similar types)

Autograde Tube Finisher & Texturing Machine (CMI & similar types)

Bar Bending Machines (Power)

Batcher, Batching Plant, & Crusher [On Site]

Belt Conveyor System

Boom-Type Skimmer Machine

Bridge Deck Finisher

Bulldozer (all sizes)

Captain (Power Boats)

Car Dumper (railroad)

Compressor & Blower unit for loading/unloading of concrete, cement, fly ash, or similar type materials (used independently or truck-mounted)

Compressor (2 or 3 battery)

Concrete Breaking Machine

Concrete Cleaning/Decontamination Machine

Concrete Finishing Machine

Concrete Saw or Cutter (ride-on type)

Concrete Spreader (Hetzel, Rexomatic & similar types)

Concrete Vibrator

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	07/01/2020		**07/01/2021**	**07/01/2022**
Rate	Fringe	Total	Total	Total
51.32	34.50	85.82	88.12	90.37

CLASSIFICATIONS:

Conveyors - under 125 feet

Crane Signalman

Crushing Machine

Directional Boring Machine

Ditching Machine - Small (Ditchwitch, Vermeer or similar types)

Dope Pot - Mechanical (with or without pump)

Dumpster

Elevator

Fireman

Fork Lift (Economobile, Lull & similar types)

Front End Loader (1 cu. yd. and over but less than 2 cu. yds.)

Generator (2 or 3 battery)

Giraffe Grinder

Goldhofer/Hydraulic Jacking Trailer

Grader & Motor Patrols

Grout Pump

Gunnite Machine (Excluding nozzle)

Hammer - Vibratory (in conjunction with generator)

Heavy Equipment Robotics - Operator/Technician

Hoist (roof, tugger, aerial platform hoist, house car)

Hopper

Hopper Doors (power operated)

Ladder (motorized)

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	07/01/2020		07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
51.32	34.50	85.82	88.12	90.37

CLASSIFICATIONS:

Laddervator

Locomotive (Dinky-type)

Maintenance Utility Man

Master Environmental Maintenance Technician

Mechanic

Mixer (Except paving mixers)

Pavement Breaker (truck-mounted or small self-propelled ride-on type)

Pavement Breaker - maintenance of compressor or hydraulic unit

Pipe Bending Machine (power)

Pitch Pump

Plaster Pump (regardless of size)

Post Hole Digger (post pounder, auger)

Rod Bending Machines

Roller (black top)

Scale (power)

Seamen Pulverizing Mixer

Shoulder Widener

Silo

Skimmmer Machine (boom type)

Steel Cutting Machine (service & maintenance)

Tamrock Drill

Tractor

Transfer Machines

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	07/01/2020		07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
51.32	34.50	85.82	88.12	90.37

CLASSIFICATIONS:

Tug Captains

Tug Master (Power Boats)

Ultra High Pressure Waterjet Cutting Tool System - Operator/Maintenance Technician

Vacuum Blasting Machine - Operator/Maintenance Technician

Vibrating Plant (used with unloading)

Welder & Repair Mechanic

Effective Dates:

	07/01/2020		07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
47.98	34.50	82.48	84.78	87.03

CLASSIFICATIONS:

Assistant Engineer/Oiler

Driller's Helper

Field Engineer - Transit man or Instrument man

Maintenance Apprentice (Deckhand)

Maintenance Apprentice (Oiler)

Mechanic's Helper

Off Road Back Dump

Tire Repair & Maintenance

Effective Dates:

	07/01/2020		07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
45.40	34.50	79.90	82.20	84.45

CLASSIFICATIONS:

Field Engineer - Rodman or Chainman

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	07/01/2020		**07/01/2021**	**07/01/2022**
Rate	Fringe	Total	Total	Total
55.56	34.50	90.06	92.36	94.61

CLASSIFICATIONS:

Lead Engineer, Foreman Engineer, Safety Engineer (minimum)

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	07/01/2020		07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
54.82	34.50	89.32	91.62	93.87

CLASSIFICATIONS:

Autograde Pavement Profiler (CMI & similar types)

Autograde Pavement Profiler - Recycle Type (CMI & similar types)

Autograde Placer/Trimmer/Spreader Combination (CMI & similar types)

Autograde Slipform Paver (CMI & similar types)

Backhoe (Excavator)

Central Power Plant

Concrete Paving Machine

Cranes, Derricks, Pile Drivers (all types), under 100 tons with a boom (including jib and/or leads) under 100 ft.

Draglines

Drill, Bauer, AMI and similar types

Drillmaster, Quarrymaster

Drillmaster/Quarrymaster (down-the-hole drill), rotary drill, self-propelled hydraulic drill, self-powered drill

Elevator Grader

Field Engineer-Chief of Party

Front End Loader (5 cu. yards or larger)

Gradall

Grader, Rago

Helicoptor Co-Pilot

Helicoptor Communications Engineer

Juntann Pile Driver

Locomotive (large)

Mucking Machine

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	07/01/2020		**07/01/2021**	**07/01/2022**
Rate	Fringe	Total	Total	Total
54.82	34.50	89.32	91.62	93.87

CLASSIFICATIONS:

Pavement & Concrete Breaker (Superhammer & Hoe Ram)

Pile Driver

Prentice Truck

Roadway Surface Grinder

Scooper (loader & shovel)

Shovel (Excavator)

Trackhoe (Excavator)

Tree Chopper with boom

Trenching Machine (cable plow)

Tunnel Boring Machine

Vacuum Truck

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	07/01/2020		**07/01/2021**	**07/01/2022**
Rate	Fringe	Total	Total	Total
49.69	34.50	84.19	86.49	88.74

CLASSIFICATIONS:

Chipper

Compressor (single)

Concrete Spreader (small type)

Conveyor Loader (Except elevator graders)

Engines, Large Diesel (1620 HP) & Staging Pump

Farm Tractor

Fertilizing Equipment (operation & maintenance)

Fine Grade Machine (small type)

Form Line Grader (small type)

Front End Loader (under 1 cubic yard)

Generator (single)

Grease, Gas, Fuel, & Oil Supply Trucks

Heaters (Nelson or other type)

Lights - portable generating light plant

Mixer, Concrete (small)

Mulching Equipment (operation & maintenance)

Power Broom or Sweeper

Pump (diesel engine & hydraulic - regardless of power)

Pump (larger than 2 inch suction, including submersible pumps)

Road Finishing Machine (small type)

Roller - grade, fill, or stone base

Seeding Equipment (operation & maintenance)

Sprinkler & Water Pump Trucks

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	07/01/2020		07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
49.69	34.50	84.19	86.49	88.74

CLASSIFICATIONS:

Steam Generator or Boiler

Stone Spreader

Tamping Machine (vibrating ride-on type)

Temporary Heating Plant (Nelson or other type, including proprane, natural gas, and flow-type units)

Water or Sprinkler Truck

Welding Machine (gas, diesel, or electric convertor, of any type)

Welding System - Multiple (rectifier transformer type)

Wellpoint Systems (including installation by bull gang and maintenance)

Effective Dates:

	07/01/2020		07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
56.64	34.50	91.14	93.44	95.69

CLASSIFICATIONS:

Helicoptor Pilot/Engineer

Effective Dates:

	07/01/2020		07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
61.32	34.50	95.82	98.12	100.37

CLASSIFICATIONS:

Cranes, Derricks, Pile Driver (all types), 100 tons and over and TOWER CRANE with boom (including jib and/or leads) 140 ft. and over

Effective Dates:

	07/01/2020		07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
60.32	34.50	94.82	97.12	99.37

CLASSIFICATIONS:

Cranes, Derricks, Pile Driver (all types), 100 tons and over and TOWER CRANE with boom (including jib and/or leads) from 100 ft. to 139 ft.

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	07/01/2020		**07/01/2021**	**07/01/2022**
Rate	Fringe	Total	Total	Total
56.82	34.50	91.32	93.62	95.87

CLASSIFICATIONS:

Cranes, Derricks, Pile Driver (all types) , under 100 tons with a boom (including jib and/or leads) 140 ft. and over

Effective Dates:

	07/01/2020		**07/01/2021**	**07/01/2022**
Rate	Fringe	Total	Total	Total
59.32	34.50	93.82	96.12	98.37

CLASSIFICATIONS:

Cranes, Derricks, Pile Driver (all types), 100 tons and over and TOWER CRANE with a boom (including jib and/or leads) under 100 ft.

Effective Dates:

	07/01/2020		**07/01/2021**	**07/01/2022**
Rate	Fringe	Total	Total	Total
55.82	34.50	90.32	92.62	94.87

CLASSIFICATIONS:

Cranes, Derricks, Pile Driver (all types), under 100 tons with a boom (including jib and/or leads) from 100 ft. to 139 ft.

STRUCTURAL STEEL ERECTION **Rates Expiration Date :**

{For apprentice rates refer to "Operating Engineers" apprentice rates in any county rate package}

The regular workday consists of 8 hours, Monday to Friday, between 6:00 AM and 4:30 PM.

SHIFT DIFFERENTIALS:
- Shift work must run for 5 consecutive workdays.
- When 2 shifts are worked, the second shift shall receive an additional 10% of the regular rate inclusive of benefits, per hour.
- When 3 shifts are worked, the second shift shall receive 8 hours pay for 7.5 hours of work, plus an additional 10% of the regular rate inclusive of benefits, per hour. The third shift shall receive 8 hours pay for 7 hours of work, plus an additional 15% of the regular rate inclusive of benefits, per hour.
- When such hours are mandated by the project owner, a shift that starts between 8:00 PM and midnight and ends by 6:00 AM Saturday, or that starts after 8:00 PM on Sunday, provided there are consecutive hours of work within the shift, shall receive an additional 15% of the regular rate, inclusive of benefits.
- On Highway, Road, Street, and Sewer projects irregular shifts starting between 5:00 PM and 12:00 AM may be worked Monday through Friday, and shall receive an additional 15% of the regular rate, inclusive of benefits. When working with other trades that receive a higher irregular shift rate, the Operating Engineer shall also receive the higher irregular shift rate.

OVERTIME:
- Hours in excess of 8 per day, or outside of the regular workday, Monday through Friday, that are not shift work, and all hours on Saturdays shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with all hours on Friday paid at time and one-half the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. When all trades on a particular job site agree, the day after Thanksgiving may be substituted for Veteran's Day.

On hazardous waste removal work or asbestos removal work, on a state or federally designated hazardous waste site, where the operating engineer is in direct contact with hazardous material and when personal protective equipment is required for respiratory, skin, and eye protection, the operating engineer shall receive an additional 20% of the hourly wage, per hour.

Effective Dates:

	07/01/2020		**07/01/2021**	**07/01/2022**
Rate	Fringe	Total	Total	Total
58.45	34.50	92.95	95.25	97.50

CLASSIFICATIONS:

Helicopter Co-Pilot & Communications Engineer

STRUCTURAL STEEL ERECTION **Rates Expiration Date :**

Effective Dates:

07/01/2020			07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
54.39	34.50	88.89	91.19	93.44

CLASSIFICATIONS:

A-Frame

Cherry Picker -10 tons or less (Over 10 tons use crane rate)

Hoist (all types Except Chicago-boom)

Jack (screw, air hydraulic, power-operated unit or console type, Except hand jack or pile load test type)

Side Boom

Straddle Carrier

STRUCTURAL STEEL ERECTION **Rates Expiration Date :**

Effective Dates:

07/01/2020			07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
51.73	34.50	86.23	88.53	90.78

CLASSIFICATIONS:

Aerial Platform Used On Hoists

Apprentice Engineer/Oiler with Compressor or Welding Machine

Captain (Power Boats)

Compressor (2 or 3 in battery)

Concrete Cleaning/Decontamination Machine Operator

Conveyor or Tugger Hoist

Directional Boring Machine

Elevator or House Car

Fireman

Forklift

Generator (2 or 3)

Heavy Equipment Robotics, Operator/Technician

Maintenance Utility Man

Master Environmental Maintenance Technician

Tug Master (Power Boats)

Ultra High Pressure Waterjet Cutting Tool System Operator/Maintenance Technician

Vacuum Blasting Machine Operator/Maintenance Technician

Welding Machines, Gas or Electric Converters on any type-2 or 3 in battery including diesels

STRUCTURAL STEEL ERECTION **Rates Expiration Date :**

Effective Dates:

07/01/2020			07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
50.20	34.50	84.70	87.00	89.25

CLASSIFICATIONS:

Compressor (Single)

Generators

Welding Machines, Gas, Diesel, Or Electric Converters of any type-single

Welding System, Multiple (Rectifier Transformer Type)

Effective Dates:

07/01/2020			07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
48.44	34.50	82.94	85.24	87.49

CLASSIFICATIONS:

Assistant Engineer/Oiler

Drillers Helper

Field Engineer - Transit/Instrument Man

Maintenance Apprentice (Deckhand)

Maintenance Apprentice (Oiler)

Off Road Back Dump

Effective Dates:

07/01/2020			07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
56.01	34.50	90.51	92.81	95.06

CLASSIFICATIONS:

Lead Engineer, Foreman Engineer, Safety Engineer (Minimum)

Effective Dates:

07/01/2020			07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
45.40	34.50	79.90	82.20	84.45

CLASSIFICATIONS:

Field Engineer - Rodman or Chainman

STRUCTURAL STEEL ERECTION **Rates Expiration Date :**

Effective Dates:

07/01/2020			07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
55.15	34.50	89.65	91.95	94.20

CLASSIFICATIONS:

Field Engineer-Chief of Party

Vacuum Truck

Effective Dates:

07/01/2020			07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
63.34	34.50	97.84	100.14	102.39

CLASSIFICATIONS:

Cranes (all cranes, land or floating with booms, including jib, 140 ft. and over, above ground). Derricks (all derricks, land, floating or Chicago Boom type with booms including jib, 140 ft. and over, above ground), and Pile Drivers (all types) 100 tons and over and Tower Cranes.

Effective Dates:

07/01/2020			07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
61.68	34.50	96.18	98.48	100.73

CLASSIFICATIONS:

Cranes (all cranes, land or floating with booms including jib, less than 140 ft. abovr ground), Derricks (all derricks. land, floating or Chicago Boom type with booms including jib, less than 140 ft. above ground), Pile Drivers (all types), 100 tons and over and Tower Crane.

Effective Dates:

07/01/2020			07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
58.84	34.50	93.34	95.64	97.89

CLASSIFICATIONS:

Cranes (all cranes, land or floating with booms including jib, 140 ft. and over, above ground), Derricks (all derricks, land, floating or Chicago Boom type with booms including jib, 140 ft. and over, above ground), Pile Drivers (all types), under 100 tons.

Effective Dates:

07/01/2020			07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
57.18	34.50	91.68	93.98	96.23

CLASSIFICATIONS:

Cranes (all cranes, land or floating with booms including jib, less than 140 ft. above ground), Derricks (all derricks, land, floating or Chicago Boom type with booms including jib, less than 140 ft. above ground), Pile Drivers (all types), under 100 tons.

STRUCTURAL STEEL ERECTION **Rates Expiration Date :**

Effective Dates:

07/01/2020			07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
58.84	34.50	93.34	95.64	97.89

CLASSIFICATIONS:

Helicopter Pilot & Engineer

TEST BORING PRELIMINARY TO CONSTRUCTION-SOUTH/WEST **Rates Expiration Date :**

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:
Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Hunterdon, Mercer, Monmouth, Ocean, Salem, Sussex, Warren

The regular workday consists of 8 hours, Monday to Friday, between 6:00 AM and 4:30 PM.

SHIFT DIFFERENTIALS:
- Shift work must run for 5 consecutive workdays.
- When 2 shifts are worked, the second shift shall receive an additional 10% of the regular rate inclusive of benefits, per hour.
- When 3 shifts are worked, the second shift shall receive 8 hours pay for 7.5 hours of work, plus an additional 10% of the regular rate inclusive of benefits, per hour. The third shift shall receive 8 hours pay for 7 hours of work, plus an additional 15% of the regular rate inclusive of benefits, per hour.
- When such hours are mandated by the project owner, a shift that starts between 8:00 PM and midnight and ends by 6:00 AM Saturday, or that starts after 8:00 PM on Sunday, provided there are consecutive hours of work within the shift, shall receive an additional 15% of the regular rate, inclusive of benefits.
- On Highway, Road, Street, and Sewer projects irregular shifts starting between 5:00 PM and 12:00 AM may be worked Monday through Friday, and shall receive an additional 15% of the regular rate, inclusive of benefits. When working with other trades that receive a higher irregular shift rate, the Operating Engineer shall also receive the higher irregular shift rate.

OVERTIME:
- Hours in excess of 8 per day, or outside of the regular workday, Monday through Friday, that are not shift work, and all hours on Saturdays shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with all hours on Friday paid at time and one-half the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. When all trades on a particular job site agree, the day after Thanksgiving may be substituted for Veteran's Day.

On hazardous waste removal work or asbestos removal work, on a state or federally designated hazardous waste site, where the operating engineer is in direct contact with hazardous material and when personal protective equipment is required for respiratory, skin, and eye protection, the operating engineer shall receive an additional 20% of the hourly wage, per hour.

Effective Dates:

07/01/2020			07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
54.82	34.50	89.32	91.62	93.87

CLASSIFICATIONS:

Driller

Effective Dates:

07/01/2020			07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
47.98	34.50	82.48	84.78	87.03

CLASSIFICATIONS:

Driller's Helper

FREE AIR TUNNEL JOBS **Rates Expiration Date :**

{For apprentice rates refer to "Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:
- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional $3.00 per hour.

OVERTIME:
- Hours in excess of 8 per day, Monday through Friday, or outside of the regular workday that are not shift work, and all hours on Saturdays, shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with Friday used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:
-where Level A, B, or C protection is required: + $3.00/hr
-other Hazardous Waste site: + $1.00/hr

.

Effective Dates:

03/01/2020

Rate	Fringe	Total
45.75	32.53	78.28

CLASSIFICATIONS:

Walking Boss & Superintendent

Effective Dates:

03/01/2020

Rate	Fringe	Total
45.45	32.53	77.98

CLASSIFICATIONS:

Heading Foreman, Shaft Foreman, Rod Foreman, Electrician Foreman, Rigging Foreman

FREE AIR TUNNEL JOBS **Rates Expiration Date :**

Effective Dates:

03/01/2020

Rate	Fringe	Total
44.95	32.53	77.48

CLASSIFICATIONS:

Iron Foreman, Caulking Foreman, Form Foreman, Cement Finishing Foreman, Concrete Foreman, Track Foreman, Cleanup Foreman, Grout Foreman

Effective Dates:

03/01/2020

Rate	Fringe	Total
47.45	32.53	79.98

CLASSIFICATIONS:

Blaster

Effective Dates:

03/01/2020

Rate	Fringe	Total
44.40	32.53	76.93

CLASSIFICATIONS:

Top Labor Foreman

Effective Dates:

03/01/2020

Rate	Fringe	Total
44.05	32.53	76.58

CLASSIFICATIONS:

Skilled Men (including Caulker, Powder Carrier, all other skilled men)

Skilled Men (including Miner, Drill Runner, Iron Man, Conveyor Man, Manitenance Man, Safety Miner, Rigger, Block Layer, Cement Finisher, Tod Man)

Effective Dates:

03/01/2020

Rate	Fringe	Total
43.90	32.53	76.43

CLASSIFICATIONS:

Semi-Skilled Men (including Bell or Signal Man Top or Bottom, Form Worker & Mover, Concrete Worker, Shaft Man, Tunnel Laborer, Caulker's Helper, all other semi-skilled)

Semi-Skilled Men (including Miner's Helper, Chuck Tender, Track Man, Nipper, Brake Man, Derail Man, Cable Man, Hose Man, Gravel Man, Form Man)

FREE AIR TUNNEL JOBS **Rates Expiration Date :**

Effective Dates:

03/01/2020

Rate	Fringe	Total
43.50	32.53	76.03

CLASSIFICATIONS:

All Others (including Powder Watchman, Change House Attendant, Top Laborer)

DRILL FOR GROUND WATER SUPPLY **Rates Expiration Date :**

The well driller and/or helper may perform all work relative to the construction, finishing, and servicing of wells, pumps and borings for ground water supply. The present methods of well drilling entailing as they do, many diverse job operations calling for drilling, pump discharge, piping, and the operation of various types of related power equipment, shall all be within the job duties and functions of the well driller and/or helper. In the event that an extension of work should occur beyond water well drilling functions, into the field of general construction work, such extension of work would come under the appropriate rates listed elsewhere in this wage determination.

- For Work Hours, Shift Differentials, Overtime Rates, and Recognized Holidays see the "Operating Engineers" section of this wage determination.

Effective Dates:

07/01/2020			07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
53.57	34.50	88.07	90.37	92.62

CLASSIFICATIONS:

Driller

Effective Dates:

07/01/2020			07/01/2021	07/01/2022
Rate	Fringe	Total	Total	Total
47.33	34.50	81.83	83.53	85.78

CLASSIFICATIONS:

Driller's Helper

OPERATING ENGINEERS MARINE-DREDGING **Rates Expiration Date :**

NOTE: These wage rates only apply to dredging and other marine construction activities occurring in navigable waters and their tributaries.
Boat crews carrying explosive material (dynamite, pourfex, and other similar materials) shall be paid at 120% of the hourly wage rate for hours engaged in handling of said materials. Employees required to possess a Hazardous Material Certification as a condition of employment shall be compensated at 120% of the hourly wage rate.
OVERTIME:
Hours in excess of 40 per week, and all hours on Saturdays and Sundays, shall be paid at time and one-half the hourly rate. All hours on holidays shall be paid at double the hourly rate.
RECOGNIZED HOLIDAYS: New Year's Day, Martin Luther King Day, Good Friday, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday.

Effective Dates:

	10/01/2020	
Rate	Fringe	Total
41.42	15.29	56.71

CLASSIFICATIONS:

Lead Dredgerman, Operator, Leverman

Licensed Tug Operator (over 1000 HP)

Effective Dates:

	10/01/2020	
Rate	Fringe	Total
35.82	14.84	50.66

CLASSIFICATIONS:

Derrick Operator, Spider/Spill Barge Operator

Engineer, Electrician, Chief Welder, Chief Mate

Fill Placer, Operator II

Licensed Boat Operator

Maintenance Engineer

Effective Dates:

	10/01/2020	
Rate	Fringe	Total
33.72	14.67	48.39

CLASSIFICATIONS:

Certified Welder

OPERATING ENGINEERS MARINE-DREDGING **Rates Expiration Date :**

Effective Dates:

10/01/2020

Rate	Fringe	Total
32.80	14.30	47.10

CLASSIFICATIONS:

Mate, Drag Barge Operator, Steward, Assistant Fill Placer

Welder

Effective Dates:

10/01/2020

Rate	Fringe	Total
31.74	14.21	45.95

CLASSIFICATIONS:

Boat Operator

Effective Dates:

10/01/2020

Rate	Fringe	Total
26.37	13.48	39.85

CLASSIFICATIONS:

Shoreman, Deckhand, Rodman, Scowman

Effective Dates:

10/01/2020

Rate	Fringe	Total
36.91	14.93	51.84

CLASSIFICATIONS:

Crane Operator

TERRITORY

ENTIRE STATE

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT

PREVAILING WAGE RATE DETERMINATION

MICROSURFACING/SLURRY SEAL **Rates Expiration Date :**

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:
Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Mercer, Ocean, Salem
IN ALL OTHER COUNTIES use the Heavy and General Laborers - North "Slurry Seal Laborer" rates.

SHIFT DIFFERENTIALS:
Any shift starting at 3:30 PM or later shall receive an additional $0.35/hr

OVERTIME:
Hours in excess of 8 per day or 40 per week shall be paid at time and one-half the hourly rate. All hours on holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day.

Effective Dates:

03/01/2017

Rate	Fringe	Total
36.50	21.27	57.77

CLASSIFICATIONS:

Foreman

Effective Dates:

03/01/2017

Rate	Fringe	Total
33.80	21.27	55.07

CLASSIFICATIONS:

Box man

Effective Dates:

03/01/2017

Rate	Fringe	Total
31.75	21.27	53.02

CLASSIFICATIONS:

Microsurface/Slurry Preparation

Effective Dates:

03/01/2017

Rate	Fringe	Total
31.75	21.27	53.02

CLASSIFICATIONS:

Squeegee man

MICROSURFACING/SLURRY SEAL **Rates Expiration Date :**

Effective Dates:

03/01/2017

Rate	Fringe	Total
30.30	21.27	51.57

CLASSIFICATIONS:

Cleaner, Taper

ASPHALT LABORERS - SOUTH **Rates Expiration Date :**

"THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY: Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Mercer, Ocean, Salem
{For apprentice rates refer to "Laborer - Heavy & General" apprentice rates in any county rate package}
The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.
SHIFT DIFFERENTIALS:
- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional $3.00 per hour.
OVERTIME:
- Hours in excess of 8 per day, Monday through Friday, or outside of the regular workday that are not shift work, and all hours on Saturdays, shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with Friday used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate.
RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.
Hazardous Waste Work:
-where Level A, B, or C protection is required: + $3.00/hr
-other Hazardous Waste site: + $1.00/hr

Effective Dates:

03/01/2020

Rate	Fringe	Total
45.25	32.53	77.78

CLASSIFICATIONS:

Paving Foreman

Effective Dates:

03/01/2020

Rate	Fringe	Total
43.80	32.53	76.33

CLASSIFICATIONS:

Head Raker

Effective Dates:

03/01/2020

Rate	Fringe	Total
43.65	32.53	76.18

CLASSIFICATIONS:

Raker, Screedman, Luteman

ASPHALT LABORERS - SOUTH **Rates Expiration Date :**

Effective Dates:

03/01/2020

Rate	Fringe	Total
43.40	32.53	75.93

CLASSIFICATIONS:

Tampers, Smoothers, Kettlemen,
Painters, Shovelers, Roller Boys

Effective Dates:

03/01/2020

Rate	Fringe	Total
43.50	32.53	76.03

CLASSIFICATIONS:

Milling Controller

Effective Dates:

03/01/2020

Rate	Fringe	Total
43.70	32.53	76.23

CLASSIFICATIONS:

Traffic Control Coordinator

TEST BORING PRELIMINARY TO CONSTRUCTION-NORTH **Rates Expiration Date :**

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:
Bergen, Essex, Hudson, Middlesex, Morris, Passaic, Somerset, Union

SHIFT DIFFERENTIAL:
Employees on a shift other than between the hours of 8:00 AM and 5:00 PM shall receive an additional $2.00 per hour.

OVERTIME:
Hours in excess of 8 per day, Monday through Friday, and all hours on Saturday shall be paid at time and one-half the regular rate. All hours on Sundays and holidays shall be paid at double the regular rate.

RECOGNIZED HOLIDAYS: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day, and Christmas Day. Sunday holidays observed the following Monday.

Hazardous Waste Pay (for Levels A, B, and C): an additional 15% of the hourly rate, per hour.

A newly hired Helper with no experience in the industry shall be paid as follows:
1st year on the job - 70% of Helper wage rate
2nd year on the job - 80% of Helper wage rate
3rd year on the job - 90% of Helper wage rate
All helpers receive full fringe benefit rate.

Effective Dates:

10/18/2020			10/18/2021	10/18/2022
Rate	Fringe	Total	Total	Total
32.92	29.50	62.42	64.17	65.92

CLASSIFICATIONS:

Helper (4th year helper)

Effective Dates:

10/18/2020			10/18/2021	10/18/2022
Rate	Fringe	Total	Total	Total
41.74	29.50	71.24	73.24	75.24

CLASSIFICATIONS:

Driller

Effective Dates:

10/18/2020			10/18/2021	10/18/2022
Rate	Fringe	Total	Total	Total
47.78	29.50	77.28	79.28	81.28

CLASSIFICATIONS:

Foreman

HEAVY & GENERAL LABORERS - NORTH **Rates Expiration Date :**

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:
Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Passaic, Somerset, Sussex, Union, Warren

{For apprentice rates refer to "Laborer - Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:
- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional $3.00 per hour.

OVERTIME:
- Hours in excess of 8 per day, Monday through Friday, or outside of the regular workday that are not shift work, and all hours on Saturdays, shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with Friday used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:
-where Level A, B, or C protection is required: + $3.00/hr
-other Hazardous Waste site: + $1.00/hr

Effective Dates:

03/01/2020

Rate	Fringe	Total
43.00	32.53	75.53

CLASSIFICATIONS:

"D" Rate:
basic, landscape, asphalt, slurry seal, or railroad track laborer; utility meter installer; flagman; salamander tender; pitman; dumpman; rakers or tampers on cold patch work; wrappers or coaters of pipe; waterproofer; timberman; wagon drill or drill master helper; powder carrier; magazine tender; signal man; power buggy operator; tree cutter; operator of basic power tools

Effective Dates:

03/01/2020

Rate	Fringe	Total
43.70	32.53	76.23

CLASSIFICATIONS:

"C" Rate:
pipe layer; laser man; conduit or duct line layer; operator of jack hammer, chipping hammer, pavement breaker, concrete cutter, asphalt cutter, sheet hammer, or walk-behind saw cutter; sandblaster; acetylene cutting or burning; wagon drill, directional drill, or hydraulic drill operator; drill master; core driller; traffic control coordinator; asphalt raker or lute man

HEAVY & GENERAL LABORERS - NORTH **Rates Expiration Date :**

Effective Dates:

03/01/2020

Rate	Fringe	Total
43.95	32.53	76.48

CLASSIFICATIONS:

"B" Rate:
concrete finisher; setter of brick or stone pavers; stone cutter; form setter; manhole, catch basin, or inlet builder; asphalt screedman; rammer; hardscaping; gunite nozzle man

Effective Dates:

03/01/2020

Rate	Fringe	Total
47.50	32.53	80.03

CLASSIFICATIONS:

"A" Rate:
blaster

Effective Dates:

03/01/2020

Rate	Fringe	Total
45.25	32.53	77.78

CLASSIFICATIONS:

"FOREMAN" Rate:
labor foreman, asphalt foreman, drill foreman, pipe foreman, grade foreman, finisher foreman, concrete foreman

Effective Dates:

03/01/2020

Rate	Fringe	Total
46.25	32.53	78.78

CLASSIFICATIONS:

"GENERAL FOREMAN" Rate

HEAVY & GENERAL LABORERS - SOUTH **Rates Expiration Date :**

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:
Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Mercer, Ocean, Salem

{For apprentice rates refer to "Laborer - Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:
- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional $3.00 per hour.

OVERTIME:
- Hours in excess of 8 per day, Monday through Friday, or outside of the regular workday that are not shift work, and all hours on Saturdays, shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with Friday used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:
-where Level A, B, or C protection is required: + $3.00/hr
-other Hazardous Waste site: + $1.00/hr

Effective Dates:

	03/01/2020	
Rate	Fringe	Total
43.00	32.53	75.53

CLASSIFICATIONS:

basic, landscape, or railroad track laborer; utility meter installer; flagman; salamander tender; pitman; dumpman; rakers or tampers on cold patch work; wrappers or coaters of pipe; waterproofers; tree cutter, timberman

Effective Dates:

	03/01/2020	
Rate	Fringe	Total
43.00	32.53	75.53

CLASSIFICATIONS:

wagon drill or drill master helper; powder carrier; magazine tender; signal man

HEAVY & GENERAL LABORERS - SOUTH **Rates Expiration Date :**

Effective Dates:

03/01/2020

Rate	Fringe	Total
43.70	32.53	76.23

CLASSIFICATIONS:

pipe layer; laser man; conduit or duct line layer; operator of jack hammer, chipping hammer, pavement breaker, concrete cutter, asphalt cutter, sheet hammer, or walk-behind saw cutter; sandblaster; acetylene cutting or burning

Effective Dates:

03/01/2020

Rate	Fringe	Total
43.70	32.53	76.23

CLASSIFICATIONS:

wagon or directional drill operator; drill master

Effective Dates:

03/01/2020

Rate	Fringe	Total
47.50	32.53	80.03

CLASSIFICATIONS:

blaster

Effective Dates:

03/01/2020

Rate	Fringe	Total
45.25	32.53	77.78

CLASSIFICATIONS:

labor foreman, drill foreman, pipe foreman, grade foreman, finisher foreman, concrete foreman

Effective Dates:

03/01/2020

Rate	Fringe	Total
46.25	32.53	78.78

CLASSIFICATIONS:

general foreman

HEAVY & GENERAL LABORERS - SOUTH **Rates Expiration Date :**

Effective Dates:

03/01/2020

Rate	Fringe	Total
43.95	32.53	76.48

CLASSIFICATIONS:

concrete finisher; setter of brick or stone pavers; stone cutter; form setter; manhole, catch basin, or inlet builder; rammer; gunite nozzle man

PIPELINE - MAINLINE TRANSMISSION **Rates Expiration Date :**

These rates apply to the following: welding on Transportation Mainline pipe lines (cross-country pipe lines, or any segments thereof, transporting coal, gas, oil, water or other transportable materials, vapors or liquids, including portions of such pipe lines within private property boundaries up to the final metering station or connection - the point where a valve, consumer connection, or town border station divides mainline transmission lines or higher pressure lateral and branch lines from lower pressure distribution systems).

PER DIEM PAYMENT:
In addition to the total wage rate paid for each craft, the following per diem (per day) amounts must also be paid - Pipeline Journeyman: $80.50; Pipeline Journeyman Welder: $140.50; and Pipeline Helper: $64.50. Note: in order to receive the per diem payment an employee must work a minimum of 8 hours in a 24 hour period.

NOTES:
- Journeymen employed as "stringer bead" welders and journeymen who are regularly employed as "hot-pass" welders shall receive $1.00 per hour more than other journeymen.
- Welders running "stringer bead" or "hot-pass" on "cutouts" or "tie-ins" on a production basis shall be paid $1.00 per hour above the journeymen rate.
- Whenever a welder helper is employed using a power buffer or power grinder immediately behind the stringer bead and/or hot-pass welders, and the pipe gang is set on a production basis, the helper shall be paid $2.00 per hour above the helper rate.
- If back welding is performed inside a pipe under either or both of the following conditions, the welder engaged in the welding will receive $3.00 per hour above the regular rate for the job only for the days on which such back welding is performed:
  - The employer elects, as a regular procedure, to back weld each line-up. This condition is not intended to apply to occasional back welding performed by the pipe gang to repair a bead, to rectify a "high-lo" condition or wall thickness, etc.
  - A welder is required to back weld a completed weld behind the firing line.
- If the welder helper is required to go inside the pipe for the purpose of brushing, buffing and grinding the weld, they shall receive a wage rate $1.00 per hour above the regular
helper rate for the days involved.
- Welders working on "hot work" shall be paid $2.00 per hour above the regular rate for each day engaged in such work. "Hot work' is defined as work on lines in service where there is the danger of fire or explosion.

The regular workday shall be 8 hours, between 8:00 AM and 4:30 PM.

OVERTIME:
Hours in excess of 8 per day, and all hours on Sundays shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on holidays shall be paid at double the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, July 4th, Labor Day, Thanksgiving Day, and Christmas Day. Sunday holidays observed the following Monday.

Effective Dates:

06/09/2020

Rate	Fringe	Total
54.58	32.80	87.38

CLASSIFICATIONS:

Pipeline Journeyman Welder

PIPELINE - MAINLINE TRANSMISSION **Rates Expiration Date :**

Effective Dates:

06/09/2020

Rate	Fringe	Total
54.58	32.80	87.38

CLASSIFICATIONS:

Pipeline Journeyman

Effective Dates:

06/09/2020

Rate	Fringe	Total
33.27	22.42	55.69

CLASSIFICATIONS:

Pipeline Helper

PIPELINE - GAS DISTRIBUTION **Rates Expiration Date :**

These rates apply to the following: welding on gas line distribution systems (that portion of the gas distribution system placed in streets, roads, subways, tunnels, viaducts, highways and easements which serves the users of gas).

SHIFT DIFFERENTIALS:
An "irregular" shift may start any time from 5:00 PM to 12:00 AM, Monday through Friday, and shall receive an additional 15% of the regular rate per hour, inclusive of benefits.

OVERTIME:
Hours in excess of forty per week, and all hours on Saturdays shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day, and Christmas Day. Sunday holidays observed the following Monday.

Effective Dates:

11/02/2020			11/01/2021	11/01/2022
Rate	Fringe	Total	Total	Total
61.50	27.23	88.73	91.23	93.73

CLASSIFICATIONS:

Pipeline Journeyman Welder

Effective Dates:

11/02/2020			11/01/2021	11/01/2022
Rate	Fringe	Total	Total	Total
61.50	27.23	88.73	91.23	93.73

CLASSIFICATIONS:

Pipeline Journeyman

Effective Dates:

11/02/2020			11/01/2021	11/01/2022
Rate	Fringe	Total	Total	Total
39.46	19.88	59.34	61.01	62.68

CLASSIFICATIONS:

Pipeline Helper

ASPHALT LABORERS- NORTH **Rates Expiration Date :**

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:
Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Passaic, Somerset, Sussex, Union, Warren
{For apprentice rates refer to "Laborer - Heavy & General" apprentice rates in any county rate package}
The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.
SHIFT DIFFERENTIALS:
- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional $3.00 per hour.
OVERTIME:
- Hours in excess of 8 per day, Monday through Friday, or outside of the regular workday that are not shift work, and all hours on Saturdays, shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with Friday used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate.
RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.
Hazardous Waste Work:
-where Level A, B, or C protection is required: + $3.00/hr
-other Hazardous Waste site: + $1.00/hr

Effective Dates:

03/01/2020

Rate	Fringe	Total
45.25	32.53	77.78

CLASSIFICATIONS:

Asphalt Foreman

Effective Dates:

03/01/2020

Rate	Fringe	Total
43.95	32.53	76.48

CLASSIFICATIONS:

Asphalt Screedman

Effective Dates:

03/01/2020

Rate	Fringe	Total
43.70	32.53	76.23

CLASSIFICATIONS:

Asphalt Raker or Lute Man

ASPHALT LABORERS- NORTH **Rates Expiration Date :**

Effective Dates:

03/01/2020

Rate	Fringe	Total
43.00	32.53	75.53

CLASSIFICATIONS:

Asphalt Laborer

ELECTRICIAN- UTILITY WORK (NORTH) **Rates Expiration Date :**

Electrician-Utility Work (North)
(For apprentice rates refer to Electrician-Utility Work (North) in any county rate package).
These rates apply to work contracted for by the following utility companies:
Public Service Electric & Gas Co. of NJ, GPU Energy, Borough of Madison Electric Department, Sussex Rural Electric Cooperative, Rockland Utilities, and Butler Municipal Electric Co.
These rates do not apply to work on substations or switching stations.
For Utility work contracted for by a utility company other than those listed above or those listed under "Electrician-Utility Work (South), see the "Outside Commercial Rates" for the county in which the jobsite is located.

* FOR OUTSIDE COMMERCIAL RATES PLEASE SEE COUNTY RATES

The regular workday is 8 hours, between 6:00 AM and 6:00 PM.
FOR EMERGENCY WORK ONLY: (emergency work is defined as work caused by storm, catastrophe, act of god, and circumstances beyond the control of the employer)-all hours of work shall be paid at double the hourly rate.
SHIFT DIFFERENTIALS:
Shift work must run for a minimum of 5 consecutive workdays.
2nd shift (between the hours of 4:30 PM and 1:00 AM): 8 hours of work + 17.3% of the regular rate, inclusive of benefits.
3rd shift (between the hours of 12:30 AM and 9:00 AM): 8 hours of work + 31.4% of the regular rate per hour, inclusive of benefits.

OVERTIME:
Hours in excess of 8 per day, or before or after the regular wokday Monday through Friday, that is not shift work, and all hours on Saturday shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the hourly rate, inclusive of benefits.
Four 10-hour days may worked, at straight time, between 7:00 AM and 6:30 PM, Monday through Thursday.

RECOGNIZED HOLIDAYS:
New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day and Christmas Day, or day on which they are legally observed.

Effective Dates:

	12/30/2019		**11/29/2020**
Rate	Fringe	Total	Total
55.89	38.56	94.45	96.84

CLASSIFICATIONS:

Chief Lineman

Effective Dates:

	12/30/2019		**11/29/2020**
Rate	Fringe	Total	Total
52.73	36.38	89.11	91.36

CLASSIFICATIONS:

Journeyman Lineman

ELECTRICIAN- UTILITY WORK (NORTH) **Rates Expiration Date :**

Effective Dates:

12/30/2019			11/29/2020
Rate	Fringe	Total	Total
52.73	36.38	89.11	91.36

CLASSIFICATIONS:

Special License Operator

Effective Dates:

12/30/2019			11/29/2020
Rate	Fringe	Total	Total
52.20	36.02	88.22	90.44

CLASSIFICATIONS:

Transit Man

Effective Dates:

12/30/2019			11/29/2020
Rate	Fringe	Total	Total
50.62	34.91	85.53	87.70

CLASSIFICATIONS:

Line Equipment Operator

Effective Dates:

12/30/2019			11/29/2020
Rate	Fringe	Total	Total
44.29	30.55	74.84	76.73

CLASSIFICATIONS:

Dynamite Man

Effective Dates:

12/30/2019			11/29/2020
Rate	Fringe	Total	Total
65.91	45.47	111.38	114.19

CLASSIFICATIONS:

General Foreman

Effective Dates:

12/30/2019			11/29/2020
Rate	Fringe	Total	Total
60.64	41.83	102.47	105.05

CLASSIFICATIONS:

Assistant General Foreman

ELECTRICIAN- UTILITY WORK (NORTH) **Rates Expiration Date :**

Effective Dates:

12/30/2019			11/29/2020
Rate	Fringe	Total	Total
59.06	40.73	99.79	102.32

CLASSIFICATIONS:

Line Foreman

Effective Dates:

12/30/2019			11/29/2020
Rate	Fringe	Total	Total
42.71	29.46	72.17	73.99

CLASSIFICATIONS:

Street Light Mechanical Leader

Effective Dates:

12/30/2019			11/29/2020
Rate	Fringe	Total	Total
40.60	28.02	68.62	70.34

CLASSIFICATIONS:

Groundman Winch Operator

Effective Dates:

12/30/2019			11/29/2020
Rate	Fringe	Total	Total
40.60	28.02	68.62	70.34

CLASSIFICATIONS:

Groundman Truck Operator

Effective Dates:

12/30/2019			11/29/2020
Rate	Fringe	Total	Total
40.07	27.64	67.71	69.43

CLASSIFICATIONS:

Street Light Mechanic

Effective Dates:

12/30/2019			11/29/2020
Rate	Fringe	Total	Total
40.07	27.64	67.71	69.43

CLASSIFICATIONS:

Line Equipment Mechanic

ELECTRICIAN- UTILITY WORK (NORTH) **Rates Expiration Date :**

Effective Dates:

12/30/2019			11/29/2020
Rate	Fringe	Total	Total
34.27	23.64	57.91	59.38

CLASSIFICATIONS:

Groundman 2nd Year

Effective Dates:

12/30/2019			11/29/2020
Rate	Fringe	Total	Total
31.64	21.83	53.47	54.80

CLASSIFICATIONS:

Groundman 1st Year

Effective Dates:

12/30/2019			11/29/2020
Rate	Fringe	Total	Total
52.20	36.02	88.22	90.44

CLASSIFICATIONS:

Line Equipment Foreman

ELECTRICIAN- UTILITY WORK (SOUTH) **Rates Expiration Date :**

Electrician-Utility Work (South)
(For apprentice rates refer to Electrician-Utility Work (South) in any county rate package).
These rates apply to work contracted for by the following utility company:
Atlantic City Electric.
These rates do not apply to work on substations or switching stations.
For utility work contracted for by a utility company other than the one listed above or those listed under "Electrician-Utility Work (North), see the "Outside Commercial Rates" for the county in which the jobsite is located.

* FOR OUTSIDE COMMERCIAL RATES PLEASE SEE COUNTY RATES

The regular workday is 8 hours, between 7:00 AM and 4:30 PM.
FOR EMERGENCY WORK ONLY: (emergency work is defined as work caused by storm, catastrophe, act of god, and circumstances beyond the control of the employer)- all hours of work shall be paid at double the hourly rate.
SHIFT DIFFERENTIALS:
Shift work must run for a minimum of 5 consecutive workdays.
When two (2) or three (3) shifts are worked the following shall apply:
1st shift (between the hours of 8:00 AM and 4:30 PM)
2nd shift (between the hours of 4:30 PM and 12:30 AM): 8 hours of work + 10% of the regular rate of pay for 7.5 hours worked.

3rd shift (between the hours of 12:30 AM and 8:00 AM): 8 hours of work + 15% of the regular rate of pay for 7 hours worked.

OVERTIME:
Hours in excess of 8 per day, or before or after the regular wokday Monday through Friday, that is not shift work, and all hours on Saturday shall be paid at time and one-half the regular rate. All hours on Sundays and Holidays shall be paid double the hourly rate.

Four 10-hour days may be worked, at straight time, between 6:00 AM and 6:00 PM, Monday through Thursday with Friday used as a make-up day.

RECOGNIZED HOLIDAYS:
New Year's Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day and Christmas Day or on days celebrated.

WORKING RULES:
There shall be a Foreman in charge of each work crew. No crews are to exceed twelve (12) men, including Foremen.

There shall be a General Foreman designated for transmission work when three (3) or more crews are on the same job and for distribution work where there are are more than twenty (20) employees on site.
A small job crew shall consist of five (5) or less employees, one (1) of the Journeyman Linemen in the crew shall be designated as a Small Job Foreman.
Work performed from ladders and/or mechanical lift equipment shall be the work of Linemen and/or Apprentices.
On new construction, fitting and framing poles, towers or structures may be done by Journeymen and/or Apprentices. Groundmen may assist, but may not perform any work which would be performed by Linemen if assembled in the air.
There shall be a Journeyman Lineman in each pole setting, erection, grounding, wire and cable-pulling crew of more than three (3) men.

Effective Dates:

12/01/2019

Rate	Fringe	Total
62.11	49.53	111.64

CLASSIFICATIONS:

General Foreman

ELECTRICIAN- UTILITY WORK (SOUTH) **Rates Expiration Date :**

Effective Dates:

12/01/2019

Rate	Fringe	Total
55.31	45.49	100.80

CLASSIFICATIONS:

Foreman

Effective Dates:

12/01/2019

Rate	Fringe	Total
52.40	43.78	96.18

CLASSIFICATIONS:

Small Job Foreman

Effective Dates:

12/01/2019

Rate	Fringe	Total
48.52	41.48	90.00

CLASSIFICATIONS:

Heavy Equipment Operator

Effective Dates:

12/01/2019

Rate	Fringe	Total
48.52	41.48	90.00

CLASSIFICATIONS:

Cable Splicer

Effective Dates:

12/01/2019

Rate	Fringe	Total
48.52	41.48	90.00

CLASSIFICATIONS:

Journeyman Lineman

Effective Dates:

12/01/2019

Rate	Fringe	Total
48.52	41.48	90.00

CLASSIFICATIONS:

Journeyman Welder

ELECTRICIAN- UTILITY WORK (SOUTH) **Rates Expiration Date :**

Effective Dates:

12/01/2019

Rate	Fringe	Total
48.52	41.48	90.00

CLASSIFICATIONS:

Journeyman Painter

Effective Dates:

12/01/2019

Rate	Fringe	Total
38.82	35.73	74.55

CLASSIFICATIONS:

Light Equipment Operator

Effective Dates:

12/01/2019

Rate	Fringe	Total
33.96	32.86	66.82

CLASSIFICATIONS:

Groundman Truck Driver

Effective Dates:

12/01/2019

Rate	Fringe	Total
31.54	31.44	62.98

CLASSIFICATIONS:

Groundman 3rd Year

Effective Dates:

12/01/2019

Rate	Fringe	Total
29.11	30.01	59.12

CLASSIFICATIONS:

Groundman 2nd Year

Effective Dates:

12/01/2019

Rate	Fringe	Total
26.69	28.57	55.26

CLASSIFICATIONS:

Groundman 1st Year

ELECTRICIAN- UTILITY WORK (SOUTH) **Rates Expiration Date :**

Effective Dates:

12/01/2019

Rate	Fringe	Total
21.35	25.41	46.76

CLASSIFICATIONS:

Flagman

HEAVY & GENERAL LABORERS- NEW TRANS HUDSON TUNNELS **Rates Expiration Date :**

THESE RATES APPLY TO CONSTRUCTION ON NEW TRANS HUDSON TUNNELS ONLY

{For apprentice rates refer to "Laborer - Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:
- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional $3.00 per hour.

OVERTIME:
- Hours in excess of 8 per day, Monday through Friday, or outside of the regular workday that are not shift work, and all hours on Saturdays, shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with Friday used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:
-where Level A, B, or C protection is required: + $3.00/hr
-other Hazardous Waste site: + $1.00/hr

Effective Dates:

03/01/2020

Rate	Fringe	Total
68.63	32.53	101.16

CLASSIFICATIONS:

Walking Boss & Superintendent

Effective Dates:

03/01/2020

Rate	Fringe	Total
68.18	32.53	100.71

CLASSIFICATIONS:

Heading Foreman, Shaft Foreman, Rod Foreman, Electrical Foreman, Rigging Foreman

HEAVY & GENERAL LABORERS- NEW TRANS HUDSON TUNNELS **Rates Expiration Date :**

Effective Dates:

03/01/2020

Rate	Fringe	Total
67.43	32.53	99.96

CLASSIFICATIONS:

Iron Foreman, Caulking Foreman, Form Foreman, Cement Finishing Foreman, Concrete Foreman, Track Foreman, Clean-up Foreman, Grout Foreman

Effective Dates:

03/01/2020

Rate	Fringe	Total
71.18	32.53	103.71

CLASSIFICATIONS:

Blaster

Effective Dates:

03/01/2020

Rate	Fringe	Total
66.60	32.53	99.13

CLASSIFICATIONS:

Top Labor Foreman

Effective Dates:

03/01/2020

Rate	Fringe	Total
66.08	32.53	98.61

CLASSIFICATIONS:

Skilled Men (including Caulker, Powder Carrier, all other skilled men)
Skilled Men (including Miner, Drill Runner, Iron Man, Conveyor Man, Maintenance Man, Safety Miner, Rigger, Block Layer, Cement Finisher, Rod Man)

Effective Dates:

03/01/2020

Rate	Fringe	Total
65.85	32.53	98.38

CLASSIFICATIONS:

Semi-Skilled Men (including Bell or Signal Man top or bottom, Form Worker & Mover, Concrete Worker, Shaft Man, Tunnel Laborer, Caulker's Helper, all other semi-skilled)
Semi-Skilled Men (including Miner's Helper, Chuck Tender, Track Man, Nipper, Brake Man, Derail Man, Cable Man, Hose Man, Gravel Man, Form Man)

HEAVY & GENERAL LABORERS- NEW TRANS HUDSON TUNNELS **Rates Expiration Date :**

Effective Dates:

	03/01/2020	
Rate	Fringe	Total
65.25	32.53	97.78

CLASSIFICATIONS:

All others (including Powder Watchman, Change House Attendant, Top Laborer, Job Steward)

SPECIAL PROVISIONS

FOR THE REPLACEMENT OF

GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL

IN THE BOROUGHS OF ROSELLE and ROSELLE PARK

COUNTY OF UNION

AUTHORIZATION OF CONTRACT

The Contract is authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements thereto.

SPECIFICATIONS TO BE USED

The 2007 Standard Specifications for Road and Bridge Construction, of the New Jersey Department of Transportation as amended herein will govern the construction of this Project and the execution of the Contract.

These Special Provisions consist of the following:

Pages 1 to 262 inclusive.

State wage rates may be obtained from the New Jersey Department of Labor & Workforce Development (Telephone: 609-292-2259) or by accessing the Department of Labor & Workforce Development's website at https://www.state.nj.us/labor/wagehour/wagerate/prevailing_wage_determinations.html. The State wage rates in effect at the time of award are part of this Contract, pursuant to Chapter 150, Laws of 1963 (N.J.S.A. 34:11-56.25 et seq.).

If an employee of the Contractor or subcontractor has been paid a rate of wages less than the prevailing wage, the Department may suspend the Work, and declare the Contractor in default.

The following information is located at the end of these Special Provisions:

1. Small Business Enterprise Utilization on Wholly State Funded Projects. (State Funded Project Attachment 1)

2. State of New Jersey Equal Employment Opportunity Special Provisions for Wholly State Funded Projects. (State Funded Project Attachment 2)

3. Requirements for Affirmative Action to Ensure Equal Employment Opportunity on Wholly State Funded Projects. (State Funded Project Attachment 3)

4. Investigating, Reporting and Resolving Employment Discrimination and Sexual Harassment Complaints on Wholly State Funded Projects. (State Funded Project Attachment 4)

5. Payroll Requirements for Wholly State Funded Projects. (State Funded Project Attachment 5)

6. Americans with Disabilities Act Requirements for Wholly State Funded Contracts. (State Funded Project Attachment 6)

The following additional project specific Appendices are located at the end of these Special Provisions:

A. Environmental Permits:

1. NJDEP Land Use Permit

2. Somerset-Union Soil Conservation District Permit

B. Memorandum of Agreement (MOA) between the County of Union and the State Historic Preservation Office (SHPO)

C. Excavated Material and Groundwater Management Plan

D. NJDOT Major Access permits

E. Additional Civil Rights Requirements

All awards shall be made subject to the approval of the New Jersey Department of Transportation. No construction shall start before approval of said award by the New Jersey Department of Transportation. Prior to the start of construction the contractor must submit a Material Questionnaire (SA-11) listing all sources of materials. Any materials used on the project from a non-approved New Jersey Department of Transportation source will be considered non-participating. The contractor is also notified that the District Office, Division of Local Aid and Economic Development must be notified of the construction commencement date at least three (3) calendar days prior to the start of construction.

Award of contract and subletting will not be permitted to, materials will not be permitted from, and use of equipment will not be permitted that is owned and/or operated by, firms and individuals included in the report of suspensions, debarments and disqualifications of firms and individuals as maintained by the Department of the Treasury, General Services Administration, CN-039, Trenton NJ 08625 (609-292-5400).

Payment for a pay item in the proposal includes all the compensation that will be made for the work of that item as described in the contract documents unless the "measurement and payment" clause provides that certain work essential to that item will be paid for under another pay item.

Whenever any section, subsection, subpart or subheading is amended by such terms as changed to, deleted or added it is construed to mean that it amends that section, subsection, subpart or subheading of the 2007 Standard Specifications unless otherwise noted.

Whenever reference to page number is made, it is construed to refer to the 2007 Standard Specifications unless otherwise noted.

Henceforth in this special provision whenever reference to the State, Department, ME, RE or Inspector is made, it is construed to mean the particular municipality or county executing this contract. For this contract, it is Union County Division of Engineering

Whenever reference to Title 27 is made, it is construed to mean Title 40.

DIVISION 100 – GENERAL PROVISIONS

SECTION 101 – GENERAL INFORMATION

101.01 INTRODUCTION

THE FOLLOWING IS ADDED:

Pursuant to NJSA 27:1B-21.6, the Department intends to enter into a contract for the advancement of the Project. However, sufficient funds for the Project may not have been appropriated, and only amounts appropriated by law may be expended. Payment under the Contract is restricted to the amounts appropriated for a fiscal year (FY).

Governing bodies have no legal obligation to make such an appropriation. There is no guarantee that additional funds will be appropriated. Failure by governing bodies to appropriate additional funds will not constitute a default under, or a breach of, the Contract. However, if the Department terminates the Contract or suspends work because funds have not been appropriated, the parties to the Contract will retain their rights for suspension and termination as provided in 108.13, 108.14 and 108.15; except as indicated below.

Do not expend or cause to be expended any sum in excess of the amount allocated in the current fiscal year's Capital Program (as specified below). The Department will notify the Contractor when additional funding has been appropriated. Any expenditure by the Contractor which exceeds the amount appropriated is at the Contractor's risk and the Contractor waives its right to recover costs in excess of that appropriated amount.

Pursuant to the DIANE B. ALLEN EQUAL PAY ACT, N.J.S.A. 34:11-56.14.b., the Department Contractor shall provide to the Commissioner of the New Jersey Department of Labor and Workforce Development, through certified payroll records required pursuant to P.L.1963, c.150 (C.34:11-56.25 et seq.), information regarding the gender, race, job title, occupational category, and rate of total compensation of every employee of the employer employed in the State in connection with the contract. The Contractor shall provide the Commissioner, throughout the duration of the contract, with an update to the information whenever payroll records are required to be submitted pursuant to P.L.1963, c.150 (C.34:11-56.25 et seq.)

Information regarding the Diane B. Allen Equal Pay Act and its requirements may be obtained from the New Jersey Department of Labor and Workforce Development (LWD) website at: https://nj.gov/labor/equalpay/equalpay.html.

LWD forms may be obtained from the online web site at:
https://nj.gov/labor/forms_pdfs/equalpayact/MW-562withoutfein.pdf.

101.02 ABBREVIATIONS

THE FOLLOWING ABBREVIATIONS ARE ADDED:

ADA	Americans with Disabilities Act
CFR	Code of Federal Regulations
CUF	Commercially Useful Function
DCR/AA	New Jersey Department of Transportation, Division of Civil Rights and Affirmative Action
EEO	Equal Employment Opportunity
GFE	Good Faith Effort
OJT	On-The-Job-Training
USC	United States Code
USDOL	United States Department of Labor

101.03 TERMS

THE FOLLOWING TERMS ARE CHANGED.

Contractor. The individual, firm, partnership, corporation, joint venture, or any acceptable combination thereof contracting with the Department for performance of the Contract. For the purpose of carrying out the Contract, it also means the Contractor's representative.

pavement structure. The combination of pavement, base courses, and when specified, a subbase course, placed on a subgrade to support the traffic load and distribute it to the roadbed (see Figure 101-1). These various courses are defined as follows:

1. **pavement.** One or more layers of specified material of designed thickness at the top of the pavement structure.
2. **base course.** One or more layers of specified material of designed thickness placed on the subgrade or subbase.
3. **subbase.** One or more layers of specified material of designed thickness placed on the subgrade.

Subcontractor. An individual, firm, partnership, corporation, joint venture, or any acceptable combination thereof, to which the Contractor subcontracts part of the Work pursuant to 108.01.

THE FOLLOWING TERMS ARE ADDED.

Commercially Useful Function. Occurrences in which the subcontractor is be responsible for the execution of a distinct element of the work of a contract and carrying out its responsibilities by actually performing, managing, and supervising the work involved., and with respect to materials and supplies used on the contract, prepares the estimate, negotiates price, determines quality and quantity, orders the material, arranges delivery, installs (where applicable), and pays for the material and supplies itself for the project.

Discrimination. That act (or action) whether intentional or unintentional, through which a person in the United States, solely because of race, creed, color, national origin, age, ancestry, nationality, sex (including pregnancy and sexual harassment), marital status, domestic partnership or civil union status, affectional or sexual orientation, gender identity or expression, atypical hereditary cellular or blood trait, genetic information, liability for military service, or disability has been otherwise subjected to unequal treatment.

Federal Aid Project. Any agreement or modification thereof between NJDOT and any applicant and a person for construction work which is paid for in whole or in part with funds obtained from the Federal government or borrowed on the credit of the Federal government pursuant to any program involving a grant, contract, loan, insurance or guarantee under which the NJDOT itself participates in the construction work.

Federal Aid Project Attachments. Attachments to the Contract Special Provision document, used for Federal aid projects.

ITS commissioning. Completion of Level A testing of an Intelligent Transportation System per 704.03.01. This does not constitute Acceptance by the Department of the work.

101.04 INQUIRIES REGARDING THE PROJECT

1. Before Award of Contract.

THIS SUBSECTION IS DELETED IN ITS ENTIRETY AND IS REPLACED AS FOLLOWS:

Inquiries regarding the various type of work of this contract shall be directed to the following representatives of the Union County Engineering Division, having offices at 2325 South Ave, Scotch Plains, New Jersey, 07076, or such other individual as may be designated:

Raymond Sullivan
Project Manager
908-789-3687
RSulivan@ucnj.org

Thomas E. Mineo, P.E.
County Engineer
908-789-3675

THE SECOND PARAGRAPH IS CHANGED TO:

The deadline for submitting inquiries is 12:00 noon, 10 days before the opening of bids.

2. After Award of Contract.

Union County Engineer's Office
2325 South Avenue
Scotch Plains, NJ 0706
908-789-3675
Fax: 908-789-3674

SECTION 102 – BIDDING REQUIREMENTS AND CONDITIONS

102.01 QUALIFICATION TO BID

SECOND CRITERIA IS CHANGED TO:

2. Before the receipt of the bid or accompanying the bid, the Bidder has disclosed ownership as required by N.J.S.A. 52:25-24.2.

THE FOLLOWING IS DELETED:

6. For wholly State Funded Projects, the Bidder has a valid business registration with the Division of Revenue in the New Jersey Department of Treasury as required by N.J.S.A. 52:32-44.

102.04 EXAMINATION OF CONTRACT AND PROJECT LIMITS

THE FIRST PARAGRAPH IS CHANGED TO:

The Bidder shall carefully examine the Contract and the Project Limits of the proposed Project before submitting a bid. The Bidder shall provide written notice to the Project Manager, as specified in the Special Provisions, at least 48 hours in advance of any visits to the Project Limits. The Bidder shall ensure that staff visiting the Project Limits have proper identification.

Project Manager:
E-mail Address:
Mailing Address:

THE FOLLOWING IS ADDED AFTER THE SECOND PARAGRAPH:

The structures and the location(s) of lead paint, if any, are listed in the Special Provisions.

The following is a list of structures and the location(s) of lead paint:

Structure #/Location	Lead Paint Location(s)

1. Evaluation of Subsurface and Surface Conditions.

THE FOLLOWING IS ADDED:

International Roughness Index (IRI) values of the existing roadway				
Route	Direction	Mile Post		Existing IRI Value
		From	To	

This information is the latest available IRI data of the right most through lane from the Pavement Management Unit. The pavement information shown herein was obtained by the Department and is made available to the authorized users so that they may have access to the same information available to the Department. It is presented in good faith, but is not intended as a substitute for investigations, interpretation or judgment of such authorized users.

NEW JERSEY DEPARTMENT OF TRANSPORTATION
PAVEMENT CORE RECORD

PROJECT/ROUTE & SECTION: _____ Gordon St_____

DRILLER: _____ Craig Geotechnical Drilling Co., Inc_____

INSPECTOR: _____R. Rolwood_____

COUNTY/TOWNSHIP: _____Union, Roselle & Roselle Park_____

DATE STARTED: ____1/6/2015_____ **DATE COMPLETED: ____1/10/2015_____**

CORE NUMBER	**1**	**2**	**3**	**4**	**5**
ROUTE	Gordon			Parking Lot	Gordon
DIRECTION (N, E, S, W)	N				S
MILE POST (MP or Station)	21+25				19+10
LANE NO. (Left to Right)	1				1
SHOULDER (Inside or Outside)					
CORE DIAMETER (Inches)	4			4	4
TOTAL CORE DEPTH (Inches)					
CORE DRILLED TO					
SURFACE TYPE (AC/PC)	AC			AC	AC
AC THICKNESS (Inches)	6			5	6
PC THICKNESS (Inches)					

* Lane 1 is the left lane in the direction of travel.

The pavement information shown herein was used by the Department for design and estimate purposes.

2. Utility Agreements.

THE LAST SENTENCE IS DELETED.

3. Existing Plans and As-Builts.

ENTIRE PART IS CHANGE TO:

The Department will provide a list of existing structures bearing structure numbers within the Project on the Plans. The Department will list the existing plans including structural plans, contour maps and as-built plans used in the development of the Contract in the Special Provisions. The Bidder may download the existing plans including structural plans, contour maps and as-built plans of Department-owned facilities through the electronic bidding process along with the Proposal documents. The Bidder shall obtain plans of municipality-owned or county-owned facilities through the municipality or county. The Bidder shall verify information obtained from the existing documents with regard to its application to bidding and performing the Contract.

Existing Plans including structural plans, contour maps and as-built plans used are as follows:

a. None on record

102.07 PREPARATION OF THE BID

THE FOLLOWING IS ADDED AFTER THE FIFTH PARAGRAPH:

On Federal aid projects, all Bidders shall keep records of all DBE and non-DBE firms that provide a bid or quote to the Bidder for the Contract for use in providing the information to the Department in the development of a Bidder's List. The records will include the name, address, phone number, E-mail address, DBE/ESBE status of the firm, NAICS Code(s) applicable to the kind of work the firm would perform on the project and type of work for subcontracted work for each DBE and non-DBE firm that provides a bid or quote for the Contract. This information shall be made available to the Department upon request.

For each Federal aid contract that they submit a Bid, each Bidder shall prepare a CR-261 - DBE and non-DBE Firms Providing a Bid or Quote for the Contract form. All Bidders are required to submit this information on a yearly basis to the Department, with the information submitted to the Division of Civil Rights and Affirmative Action by September 30 of each year.

102.09 PROPOSAL BOND

THE FIFTH PARAGRAPH IS CHANGED TO:

The Department will not accept Proposal Bonds that do not comply in all respects with the provisions of N.J.A.C. 16:44-7.3(e) and that are not substantiated by a valid power of attorney executed by the Surety.

102.10 SUBMISSION OF BIDS

THE SECOND PARAGRAPH IS CHANGED TO:

The Bidder shall ensure delivery of its bid with all required components and attachments, including, but not limited to the following:

1. Schedule of Items.
2. Proposal Electronic Bidding File with Bidder's Certification.
3. For wholly State funded contracts, acknowledgement of compliance with the registrations specified in 102.01.
4. For wholly State funded contracts, acknowledgement of compliance with N.J.S.A. 19:44A-20.13, et seq.
5. Proposal Bond form.
6. Other related documents as specified in the Contract.
7. On the Disclosure of Investment Activities in Iran (Form DC-16) provided by the Department, certify pursuant to N.J.S.A. 52:32-58, that neither the bidder, nor one of its parents, subsidiaries, and/or affiliates (as defined in N.J.S.A. 52:32-56(e)(3)), is listed on the Department of the Treasury's List of Persons or Entities Engaging in Prohibited Investment Activities in Iran and that neither is involved in any of the investment activities set forth in N.J.S.A. 52:32-56(f). If the bidder is unable to so certify, the bidder shall provide a detailed and precise description of such activities to the Department.
8. For Federal Aid Projects exceeding a bid amount of $100,000 or more, Bidder shall certify to the Byrd Anti-Lobbying Act requirements under 31 USC 1352.

THE FOLLOWING IS ADDED AFTER THE SECOND PARAGRAPH:

A directory of certified Disadvantaged Small Businesses Enterprise firms can be found in the New Jersey Unified Certification Program Vendor Certification database, online at https://njucp.dbesystem.com/.

A directory of certified Emerging Small Business Enterprise firms can be found in the Emerging Small Business Program online directory at http://www.state.nj.us/transportation/business/civilrights/pdf/ESBEDirectory.pdf.

A directory of registered Small Businesses Enterprise firms can be found in the New Jersey Selective Assistance Vendor Information (NJSAVI) database online at https://www20.state.nj.us/TYTR_SAVI/vendorSearch.jsp.

All of the above directories are to be used as a source of information only and does not relieve the Bidder of their responsibility to seek out Enterprises not listed, prior to bidding.

102.13 CONSIDERATION OF BIDS
THE FOLLOWING SUBPART IS ADDED:

102.13.01 Bidder Pre-Award Requirements

A. Federal Aid Projects

1. **Contract DBE Goal.** On projects having a Contract DBE goal, all Bidders shall ensure that DBEs have an equal opportunity to receive and participate in the performance of contracts and subcontracts in Federal aid projects with the Department. All Bidders shall take all necessary and reasonable steps in accordance with 49 CFR, Part 26 to ensure that DBEs are given equal opportunity to compete for and to perform on the Department's Federal aid projects. All Bidders shall not discriminate in the award and performance of any Contract obligation including, but not limited to, their performance of their obligations on USDOT assisted contracts as specified in Section 107.

   a. All Bidders shall demonstrate commitment of meeting the Contract DBE goal that is specified in the Contract.

      (1) Submit to DCR/AA at time of Bid, or within 5 days after bid opening as a matter of responsibility:

         (i) a completed and signed Form CR-266 – Schedule of DBE/ESBE/SBE Participation listing each DBE firm being used to meet the Contract goal. Revisions to the CR-266 will not be accepted after its initial submission and before award of the Contract.
         (ii) a completed and signed Verification of DBE/ESBE/SBE Firm (Form CR-273) for each firm listed on the CR-266 to demonstrate direct written confirmation from each DBE firm of willingness to participate on the Contract, confirming the kind and amount of work that was provided on the Contractor's CR-266, and, if applicable,
         (iii) a completed and signed DBE/ESBE/SBE Regular Dealer/Supplier Verification (Form CR-272) for all Regular Dealers/Suppliers listed on the CR-266 form, and, if applicable,
         (iv) a completed and signed DBE/ESBE/SBE Trucking Verification (Form CR-274) for all DBE trucking firms listed on the CR-266.

      Firms listed on the CR-266 will not be counted toward the Contract DBE goal unless completed and signed CR-273 form(s), and applicable CR-272 and CR-274 form(s) are submitted to the DCR/AA within the 5 days after bid opening. The CR-273, CR-272, and CR-274 forms must be completed and signed by each respective DBE firm. The Bidder shall not complete any portion of the CR-273, CR-272 and CR-274 forms.

      These forms must be submitted through a designated email - DOT-CR.Verifications@dot.nj.gov.

      If the last day for a Bidder's submission of the CR-266, CR-273, and applicable CR-272 and CR-274 forms falls on a Saturday, Sunday or Federal holiday, the CR-266, CR-273, and applicable CR-272 and CR-274 forms are due on the next day that is not a Saturday, Sunday or Federal holiday. In circumstances where the Department is closed for all or part of the day the forms are due, the submission of the forms is due on the next day.

      (2) If, at time of Submission, the commitment to meet the Contract DBE goal is not shown on the CR-266, the Bidder must submit at time of Bid, or within 5 days after bid opening, documented evidence

of good faith effort(s) to attain the Contract DBE goal, for review and approval by the DCR/AA. Submittal of such information does not imply DCR/AA approval. The Department's DCR/AA has sole authority to determine whether the Bidder met the Contract DBE goal or made adequate good faith efforts to do so.

(i) Good faith efforts are actions taken to achieve a DBE goal or other requirement of the DBE Program which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement, including affirmative action measures designed to implement the established objectives of an affirmative action plan that a Bidder may utilize to obtain DBE participation. Efforts to include firms not certified as DBEs in New Jersey are consequently not good faith efforts to meet the DBE Contract goal. A promise to use DBEs after contract award is not considered to be responsive and does not constitute good faith efforts. Good faith effort actions include, but are not limited to:

(a) Conducting market research to identify small business contractors and suppliers and soliciting through all reasonable and available means the interest of all certified DBEs that have the capability to perform the work of the Contract. This may include attendance at pre-bid and business matchmaking meetings and events, advertising and/or written notices, posting of Notices of Sources Sought and/or Requests for Proposals, written notices or emails to all DBEs listed in the New Jersey Unified Certification Program Vendor Certification database of transportation firms that specialize in the areas of work desired (as identified by North American Industry Classification system (NAICS) code) noted in the New Jersey Unified Certification Program Vendor Certification database) and which are located in the area or surrounding areas of the project. The Bidder shall solicit this interest as early in the bidding process as practicable to allow the DBEs to respond to the solicitation and submit a timely offer for the subcontract. The Bidder should determine with certainty if the DBEs are interested by taking appropriate steps to follow up initial solicitations.

(b) Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out Contract work items into economically feasible units (for example, smaller tasks or quantities) to facilitate DBE participation, even when the Bidder might otherwise prefer to perform these work items with its own forces. This may include, where possible, establishing flexible timeframes for performance and delivery schedules in a manner that encourages and facilitates DBE participation.

(c) Providing interested DBEs with adequate information about the Plans, specifications, and requirements of the Contract in a timely manner to assist them in responding to a solicitation with their offer for the subcontract.

(d)i Negotiating in good faith with interested DBEs. It is the Bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional Agreements could not be reached for DBEs to perform the work.

(d)ii Bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as Contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for a Bidder's failure to meet the Contract DBE goal, as long as such costs are reasonable. Also, the ability or desire of a Bidder to perform the work of a Contract with its own organization does not relieve the Bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.

(e)i Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The contractor's standing within its industry,

membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union status) are not legitimate causes for the rejection or non-solicitation of bids in the Bidder's efforts to meet the Contract DBE goal. Another practice considered an insufficient good faith effort is the rejection of the DBE because its quotation for the work was not the lowest received. However, nothing in this paragraph shall be construed to require the Bidder to accept unreasonable quotes in order to satisfy the Contract goals.

(e)ii A Bidder's inability to find a replacement DBE at the original price is not alone sufficient to support a finding that good faith efforts have been made to replace the original DBE. The fact that the Bidder has the ability and/or desire to perform the Contract work with its own forces does not relieve the Bidder of the obligation to make good faith efforts to find a replacement DBE, and it is not a sound basis for rejecting a prospective replacement DBE's reasonable quote.

(f) Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or Bidder.

(g) Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services, but not directly or indirectly providing equipment, supplies or materials to the DBE.

(h) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, State, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.

(3) If the Department determines that the apparent lowest responsive Bidder has failed to commit to meet the Contract DBE Goal and made adequate good faith efforts to do so, the Department must, before awarding the Contract, provide the Bidder an opportunity for Administrative Reconsideration.

The apparent lowest responsive Bidder will have the opportunity to provide written documented evidence or argument concerning the issue of whether it met the Contract DBE goal or made adequate good faith efforts to do so to an official who did not take part in the original determination that the Bidder failed to meet the Contract DBE goal or made adequate good faith effort to do so, pursuant to 49 C.F.R. 26.53(d). The apparent lowest responsive bidder has the opportunity to meet in person with the Reconsideration Official to discuss the issue of whether it met the Contract DBE goal or made adequate good faith efforts to do so.

Within 1 working day of being notified by the Department that it is not a responsible bidder because it failed to meet the Contract DBE goal and made adequate good faith efforts to do so, a Bidder may make a request for administrative reconsideration in writing to the New Jersey Department of Transportation, Director, Division of Procurement, PO Box 605, Trenton, New Jersey, 08625-0605. The Bidder must specify one of the following types of administrative reconsideration in its request:

(i) Written Review by the Department. If the Bidder seeks written review by the Department it must submit written documented evidence or argument proving the Bidder met the Contract DBE goal at time of Bid, or submitted adequate good faith efforts to do so within 5 days after bid opening, to the Department within 2 working days of the Bidder's request for Administrative Reconsideration.

(ii) In-Person Meeting. If the Bidder seeks an in-person meeting by the Department it must submit written documented evidence or argument proving the Bidder met the Contract DBE goal at time of Bid, or submitted adequate good faith efforts to do so within 5 days after bid opening, to the Department within 2 working days of the Bidder's request for Administrative Reconsideration. The in-person meeting will be scheduled by the Department as soon as time permits.

If the timeframe for a Bidder's request for Administrative Reconsideration, or submission of written documented evidence or argument proving the Bidder met the Contract DBE goal or submitted adequate good faith effort to do so falls on a weekend or holiday, the written requests are due to the Department on the next working day. The Department, at its discretion, may not review or consider

any documentation or argument in its administrative reconsideration that was not contained in the Bidder's request for written review or in-person meeting with the Department.

Once the Reconsideration Official has made a determination, the Department will send the Bidder a written decision on reconsideration, explaining the basis for finding that the Bidder did or did not meet the DBE goal or make an adequate good faith effort to do so.

Failure to follow this request procedure may result in the Bidder's waiver of the right for Administrative Reconsideration under this Section.

The result of the reconsideration process is not administratively appealable to the USDOT.

2. **Contract ESBE Goal.** Where a Contract ESBE goal is set, the Bidder shall follow all requirements and the same administrative reconsideration procedures of Section 102.13.

B. State Funded Projects

1. **Contract SBE Goal.** On wholly State funded contracts having a Contract SBE goal, all Bidders shall ensure that SBEs have an equal opportunity to receive and participate in the performance of contracts and subcontracts financed in whole with state funds in performing work with the Department. All Bidders shall take all necessary and reasonable steps to ensure that SBEs are given equal opportunity to compete for and to perform on the Department's wholly state funded projects. All Bidders shall not discriminate in the award and performance of any Contract obligation including, but not limited to, their performance of their obligations on wholly state funded contracts as specified in Section 107.

   a. All Bidders shall demonstrate commitment of meeting the Contract SBE goal that is specified in the Contract.

      (1) Submit to DCR/AA at time of Bid, or within 5 days after bid opening as a matter of responsibility:

         (i) a completed and signed Form CR-266 - Schedule of DBE/ESBE/SBE Participation listing each SBE firm being used to meet the Contract goal. Revisions to the CR-266 will not be accepted after its initial submission and before award of the Contract.
         (ii) a completed and signed Verification of DBE/ESBE/SBE Firm (Form CR-273) for each firm listed on the CR-266 to demonstrate direct written confirmation from each SBE firm of willingness to participate on the Contract, confirming the kind and amount of work that was provided on the Contractor's CR-266, and, if applicable,
         (iii) a completed and signed DBE/ESBE/SBE Regular Dealer/Supplier Verification (Form CR-272) for all Regular Dealers/Suppliers listed on the CR-266 form, and, if applicable,
         (iv) a completed and signed DBE/ESBE/SBE Trucking Verification (Form CR-274) for all SBE trucking firms listed on the CR-266.

      Firms listed on the CR-266 will not be counted toward the Contract SBE goal unless completed and signed CR-273 form(s), and applicable CR-272 and CR-274 form(s) are submitted to the DCR/AA within the 5 days after bid opening. The CR-273, CR-272, and CR-274 forms must be completed and signed by each respective SBE firm. The Bidder shall not complete any portion of the CR-273, CR-272 and CR-274 forms.

      These forms must be submitted through a designated email: DOT-CR.Verifications@dot.nj.gov.

      If the last day for a Bidder's submission of the CR-266, CR-273, and applicable CR-272 and CR-274 forms falls on a Saturday, Sunday or Federal holiday, the CR-266, CR-273, and applicable CR-272 and CR-274 forms are due on the next day that is not a Saturday, Sunday or Federal holiday. In circumstances where the Department is closed for all or part of the day the forms are due, the submission of the forms is due on the next day.

      (2) If, at time of Submission, commitment to meet the Contract SBE goal is not shown on the CR-266, the Bidder must submit at time of Bid, or within 5 days after bid opening, documented evidence of good faith effort(s) to attain the Contract SBE goal, for review and approval by the DCR/AA. Submittal of such information does not imply DCR/AA approval. The Department's DCR/AA has sole authority to determine whether the Bidder met the Contract SBE goal or made adequate good faith efforts to do so.

(i) Good faith efforts are actions taken to achieve a SBE goal or other requirement of the SBE Program which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement, including affirmative action measures designed to implement the established objectives of an affirmative action plan that a Bidder may utilize to obtain SBE participation. Efforts to include firms not registered as SBEs in New Jersey are consequently not good faith efforts to meet the SBE Contract goal. A promise to use SBEs after contract award is not considered to be responsive and does not constitute good faith efforts. Good faith effort actions include, but are not limited to:

(a) Conducting market research to identify small business contractors and suppliers and soliciting through all reasonable and available means the interest of all certified SBEs that have the capability to perform the work of the Contract. This may include attendance at pre-bid and business matchmaking meetings and events, advertising and/or written notices, posting of Notices of Sources Sought and/or Requests for Proposals, written notices or emails to all SBEs listed in the New Jersey Selective Assistance Vendor Information (NJSAVI) database of transportation firms that specialize in the areas of work desired (as identified in the NJSAVI database) and which are located in the area or surrounding areas of the project. The Bidder shall solicit this interest as early in the bidding process as practicable to allow the SBEs to respond to the solicitation and submit a timely offer for the subcontract. The Bidder should determine with certainty if the SBEs are interested by taking appropriate steps to follow up initial solicitations.

(b) Selecting portions of the work to be performed by SBEs in order to increase the likelihood that the SBE goals will be achieved. This includes, where appropriate, breaking out Contract work items into economically feasible units (for example, smaller tasks or quantities) to facilitate SBE participation, even when the Bidder might otherwise prefer to perform these work items with its own forces. This may include, where possible, establishing flexible timeframes for performance and delivery schedules in a manner that encourages and facilitates SBE participation.

(c) Providing interested SBEs with adequate information about the Plans, specifications, and requirements of the Contract in a timely manner to assist them in responding to a solicitation with their offer for the subcontract.

(d)i Negotiating in good faith with interested SBEs. It is the Bidder's responsibility to make a portion of the work available to SBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available SBE subcontractors and suppliers, so as to facilitate SBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of SBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional Agreements could not be reached for SBEs to perform the work.

(d)ii A Bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including SBE subcontractors, and would take a firm's price and capabilities as well as Contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using SBEs is not in itself sufficient reason for a Bidder's failure to meet the Contract SBE goal, as long as such costs are reasonable. Also, the ability or desire of a Bidder to perform the work of a Contract with its own organization does not relieve the Bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from SBEs if the price difference is excessive or unreasonable.

(e)i Not rejecting SBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union status) are not legitimate causes for the rejection or non-solicitation of bids in the Bidder’s efforts to meet the Contract SBE goal. Another practice considered an insufficient good faith effort is the rejection of the SBE because its quotation for the work was not the lowest received. However, nothing in this

paragraph shall be construed to require the Bidder to accept unreasonable quotes in order to satisfy the Contract goals.

(e)ii A Bidder's inability to find a replacement SBE at the original price is not alone sufficient to support a finding that good faith efforts have been made to replace the original SBE. The fact that the Bidder has the ability and/or desire to perform the Contract work with its own forces does not relieve the Bidder of the obligation to make good faith efforts to find a replacement SBE, and it is not a sound basis for rejecting a prospective replacement SBE's reasonable quote.

(f) Making efforts to assist interested SBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.

(g) Making efforts to assist interested SBEs in obtaining necessary equipment, supplies, materials, or related assistance or services, but not directly or indirectly providing equipment, supplies or materials to the SBE.

(h) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, State, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of SBEs.

The above pre-award requirements shall be followed on projects where a Contract SBE goal is set.

THE FOLLOWING IS ADDED:

C **All Projects.** Prior to the time of contract award, submit proof of business registration with the Division of Revenue and Enterprise Services in the New Jersey Department of Treasury as required by N.J.S.A. 52:32-44. Information on how a business can register and obtain proof of business registration can be accessed on the internet at www.nj.gov/njbgs.

102.15 DISQUALIFICATION OF BIDDERS

THE ENTIRE SUBSECTION IS CHANGED TO:

The Department will disqualify a Bidder and reject a bid submitted by that Bidder if the Bidder is determined by the Department to lack responsiveness. Failure of a Bidder to follow the requirements of 102.10 demonstrates a lack of responsiveness.

The Department will disqualify a Bidder and reject a bid submitted by that Bidder if the Bidder is determined by the Department to lack responsibility. Factors demonstrating a lack of responsibility include, but are not limited to:

1. Evidence of collusion among Bidders.
2. Uncompleted work, which in the opinion of the Department, might hinder or prevent completion of additional work if awarded.
3. Failure to submit at time of bid or within 5 days of bid opening, a completed and signed CR-266 – Schedule of Disadvantaged Business Enterprise/Emerging Small Business Enterprise/Small Business Enterprise Participation.
4. Failure to submit within 5 days of bid opening, proof of documented evidence of good faith efforts to meet the Contract goal, if the Bidder fails to meet the Contract DBE, ESBE or SBE goal.
5. Failure to submit within 5 days of bid opening, a completed and signed Confirmation of DBE/ESBE/SBE Firm (Form CR-273) for each DBE/ESBE/SBE firm listed on the CR-266. The Bidder shall not complete any portion of the CR-273 form.
6. Failure to submit within 5 days of bid opening, a completed and signed DBE/ESBE/SBE Trucking Verification (Form CR-274) for each DBE/ESBE/SBE firm listed on the CR-266, if applicable. The Bidder shall not complete any portion of the CR-274 form.
7. Failure to submit within 5 days of bid opening, a completed and signed DBE/ESBE/SBE Regular Dealer/Supplier Verification (Form CR-272) for each DBE/ESBE/SBE Regular Dealer/Supplier listed on the CR-266, if applicable. The Bidder shall not complete any portion of the CR-272 form.
8. Failure of the bidder to meet the Contract DBE, ESBE or SBE goal as determined by the DCR/AA, or make adequate good faith efforts to do so.
9. Submission of a materially unbalanced bid. A materially unbalanced bid is a bid where there is a reasonable doubt that award to the Bidder submitting a mathematically unbalanced bid, which is structured on the basis of

nominal prices for some work and inflated prices for other work, will result in the lowest ultimate cost to the Department.

10. Lack of competency or lack of adequate machinery, plant, or other equipment.
11. Unsatisfactory performance on previous or current contracts.
12. Questionable moral integrity as determined by the Attorney General of New Jersey or the Department.
13. Any other outward actions or lack of action that demonstrates the Bidder is not responsible.
14. Disqualification, suspension, or debarment of an individual, firm, partnership, corporation, joint venture, or any combination as required by N.J.A.C. 16:44-11.1 for state projects.
15. Disqualification, suspension, or debarment of an individual firm, partnership, corporation, joint venture, or any combination as required by N.J.A.C. 16:44-11.1 or Federal Government's System for Award Management (SAM), located at https://www.sam.gov/portal/SAM/#1 for federally assisted contracts.

SECTION 104 – SCOPE OF WORK

104.03.01 Authority to Make Changes

THE FOLLOWING PARAGRAPHS ARE ADDED AFTER THE THIRD PARAGRAPH:

DBE, ESBE or SBE goals apply to work performed through Field Orders and Change Orders. On Federal aid projects, the Contractor is responsible for complying with the DBE program, rules and regulations of 49 CFR Part 26, the requirements as specified in 105.02.05, Federal Aid Project Attachments 1 through 11 for this work. On State funded projects, the Contractor is responsible for complying with SBE program rules and regulations, the requirements as specified in 105.02.05, and State Funded Project Attachments 1 through 6 for this work.

Contractor resubmission of CR-266, CR-273, CR-272 and CR-274 may be required on the work performed through Field Orders and Change Orders.

THE LAST PARAGRAPH IS DELETED.

104.03.03 Types of Changes

1. Quantity Increases and Decreases.

THE FIRST PARAGRAPH UNDER PART 1 IS CHANGED TO:

The Department has the right to increase or decrease the quantities of work to be performed. If the quantity of an Item is cumulatively increased or decreased by 25 percent or less from the Proposal quantity, the Department will consider the quantity adjustment to be a minor change in quantity. If the quantity of an Item is cumulatively increased or decreased by more than 25 percent from the Proposal quantity, the Department will consider the quantity adjustment a major change in quantity. For the purpose of this subsection, the term "Proposal quantity" is the quantity indicated in the Proposal less the quantities designated on the Plans as "if and where directed." Also for the purpose of this subsection, the term "Proposal Quantity" is the quantity indicated in the proposal for TRAFFIC STRIPES, LATEX and TRAFFIC STRIPES.

THE LAST TWO PARAGRAPHS UNDER PART 1 ARE CHANGED TO:

When the entire quantity of an Item is designated "if and where directed," with the exception of TRAFFIC STRIPES, LATEX and TRAFFIC STRIPES, and is increased by more than 100 percent of the Proposal quantity, the Department or the Contractor may request to renegotiate payment for the quantity in excess of 200 percent of the Proposal quantity. If a mutual agreement for a renegotiated price cannot be achieved, the Department will make payment by force account as specified in 104.03.08.

When the entire quantity of an Item is designated "if and where directed," with the exception of TRAFFIC STRIPES, LATEX and TRAFFIC STRIPES, and is decreased by any amount, the Department will make payment for work performed at the rate of the bid price. When the entire quantity of an Item is designated "if and where directed," and is deleted, the Department will not make a modification, and will not make payment for the quantity of the Item performed at the bid price.

3. Changes in the Character of Work.

a. Differing Site Condition.

THE SECOND PARAGRAPH IS CHANGED TO:

The Department will make payment for increased costs resulting from a Type 1 or Type 2 Differing Site Condition as a change in the character of work; however, the Department will not consider making payment for a differing site condition unless the resulting change in cost exceeds $7,500. Except, if the Contractor incurs cost as the result of multiple differing site conditions, with the cost of each separate differing site condition having a value of at least $1,500 but not more than $7,500, the Department will consider making payment for such costs if the aggregate cost of the multiple differing site conditions exceeds $7,500. If the change in cost exceeds these amounts, the Department will base the modification on the total cost of the change, and the Department will not deduct the threshold amount of $7,500 from the cost of the change.

104.03.04 Contractual Notice

THE SECOND PARAGRAPH IS CHANGED TO:

Immediately provide written notice to the RE of a circumstance that is believed to be a change to the Contract. If notice is not provided on Contractual Notice (Form DC-161), include the following in the initial written notice:

1. A statement that this is a notice of a change.
2. The date when the circumstances believed to be a change were discovered.
3. A detailed and specific statement describing the nature and circumstances of the change.
4. If the change will or could affect costs to the Department.
5. If the change will or could affect Contract Time as specified in 108.11.01.C.

In addition to the hard copy of the notice, email the notice to the RE. It is not necessary to attach listed documents to the email.

104.03.08 Force Account

7. Equipment.

a. Contractor-Owned Equipment.

PART 1 IS CHANGED TO:

1 The Department will calculate the "rental" hourly rates by dividing the monthly rate by 176. The Department will not use weekly, daily, or hourly rates. The Department will apply rental hourly rates for every hour the equipment is in active use, except that for any 30-day period, the Department will limit the total amount paid for each piece of equipment to a maximum of the monthly rate.

THE FOLLOWING PART IS ADDED:

6. The Department will make payment for costs for transporting equipment to and from the work site, if said costs are solely required as a direct result of the Force Account activity.

THE SECOND PARAGRAPH IS CHANGED TO:

The payment established is full payment for all equipment costs, including the cost of fuel, repairs, maintenance, depreciation, storage and incidentals.

10. Subcontractors.

THE SECOND PARAGRAPH IS CHANGED TO:

The Department will make payment for markup on subcontracted work at the rate of 5 percent applied on the total amount of all costs for subcontracted force account work up to $500,000 and 2% applied on the total amount of all costs for subcontracted force account work over $500,000.

104.03.09 Delay Damages

1. Non-Productive Activity.

e. Equipment.

THE FIRST SENTENCE IS CHANGED TO:

If as the result of the delay, equipment cannot be used for any active work, and is directed by the RE to remain on the work site during the delay, the Department will make payment as specified in 104.03.08.7.a.5.

SECTION 105 – CONTROL OF WORK

105.01 AUTHORITY OF THE DEPARTMENT

105.01.01 RE

THE LAST PARAGRAPH IS CHANGED TO:

The RE has the authority to suspend the Work wholly or in part and to suspend Estimates, as specified in 109.05, for failure of the Contractor to correct conditions unsafe for the workers or the general public, for failure to carry out provisions of the Contract, including but not limited to DBE/ESBE/SBE program regulations in the administration of the Contract, or for failure to comply with RE direction. The RE also has the authority to suspend the Work wholly or in part for unsuitable weather, for conditions considered unsuitable for the prosecution of the Work or portion of the Work, or for any other condition or reason deemed to be in the interest of the public.

THE FOLLOWING NEW SUBPART IS ADDED:

105.01.03 Contractor Performance Evaluation

Pursuant to N.J.A.C. 16:44-1 et seq., the Department will assign Performance Evaluation ratings to determine the Contractor's Work Classification Limit.

The RE will perform a Contractor Performance Evaluation using the Department's form DC-83 that is current at the time of bid. The Department's form DC-83 is available at https://www.state.nj.us/transportation/eng/forms/. The RE will perform the Contractor Performance Evaluation at the end of the annual rating period, which extends from January 1 through December 31, if the value of work performed is at least 25% of the Total Adjusted Contract Price or has a value of more than $1 million. If a Project is completed prior to the end of the regular annual rating period, the RE will perform the Contractor Performance Evaluation when the Department initiates a Certificate of Completion. The Department may extend the rating period or decide to not perform a Contractor Performance Evaluation Rating at its sole discretion, and will provide the Contractor with written notification of a decision to extend a rating period or to not perform a Contractor Performance Evaluation Rating. The RE will provide the Contractor with the breakdown and weighting of the Quality/Contract Compliance subcategories at the preconstruction conference. The Contractor Performance Evaluation process is not an administrative process and is contractual in nature.

Meet with the RE to review the Contractor Performance Evaluation rating when requested by the RE. A protest regarding the Performance Evaluation rating will be resolved through the Rating Review meeting process specified in this Subpart and not through the Contractual Claim Resolution Process specified in Subsection 107.12.

The Contractor may only protest a Contractor Performance Evaluation rating of less than 70. If the Contractor receives a Contractor Performance Evaluation rating of less than 70, the Contractor may protest the assigned rating by submitting a request for a Rating Review meeting with the Department Manager as specified in Subsection 101.04 (2) of the Special Provisions, responsible for the administration of the construction. Submit a written request for a Rating Review meeting to the Department Manager within 15 days of receiving the Contractor Performance Evaluation Rating from the RE. Provide with the request for a Rating Review Meeting a specific and detailed statement of the reasons for the protest and provide a copy of any documents that the Contractor wants the Department to consider. The Contractor waives its right to protest a Contractor Performance Evaluation Rating if it does not submit a written request for a Rating Review meeting within 15 days of the Contractor's receipt of the Contractor Performance Evaluation Rating.

The Department Manager will schedule and hold a meeting to review the Contractor's Performance Evaluation with the Contractor and hear the Contractor's protest within 30 days of receiving the Contractor's request for a Rating Review meeting. The Department Manager will issue a written decision upholding or adjusting the Performance Evaluation rating within 10 days of conducting the Rating Review meeting.

105.02 RESPONSIBILITIES OF THE CONTRACTOR

105.02.01 Labor and Equipment

THE FIRST PARAGRAPH OF PART 1 IS CHANGED TO:

1. **Labor.** Employ workers that have sufficient skill and experience to properly perform the work assigned to them. Do not engage or employ current Department employees or workers that would cause the worker to be in violation of N.J.S.A. 52:13D-17. Do not engage or employ any former federal, state, or municipal worker who has been personally or individually debarred or subject to a forfeiture of public office pursuant to N.J.S.A. 2C:51-2.

THE FOLLOWING SUBPART IS ADDED:

105.02.05 Civil Rights Requirements

The Contractor is obligated to comply with Title VI of the Civil Rights Act of 1964, 49 CFR Part 21 and 28 CFR Section 50.3, 2 C.F.R. Part 200 and 2 C.F.R. Part 200 Appendix II and any other Rules relative to Nondiscrimination as they may be amended from time to time, which are herein and incorporated by reference and made part of the Contract. The Contractor in the performance of the Contract agrees to comply with nondiscrimination regulations and other requirements as specified in Section 107. Failure of a Contractor to comply with the nondiscrimination provisions of the Contract may result in the actions as set forth as specified in Sections 105, 108 and 109.

The source of funding determines which EEO regulations and goals (Federal and/or State goals) apply to a specific project.

1. **Federal Aid Projects.** On contracts containing Federal funding, Federal EEO regulations and goals apply as specified in Federal Aid Project Attachments 1 through 11. The DCR/AA monitors and reviews these projects on behalf of the Federal Highway Administration (FHWA), under Federal statutes (23 USC 140) and rules (23 CFR 230, 2 CFR Part 200).

   Comply with the DBE/ESBE program, rules and regulations of 49 CFR Part 26 in the administration of the Contract. Failure to do so is a material breach of the Contract and may result in termination of the Contract, or other such actions that the Department or the FHWA deem appropriate which may include, but are not limited to, rejection of bids, denial or limit of credit toward the Contract goal, payment being delayed or withheld as specified in Section 105, assessing sanctions as set forth in 49 CFR Part 26, and default as specified in Section 108. Deliberate attempts by the Contractor or subcontractors to circumvent or commit fraud in the DBE/ESBE program may result in termination of the Contract as specified in Section 108, investigation by the Department's Inspector General or the U.S. Department of Transportation, or both, and prosecution by the State Attorney General's Office or the U.S. Department of Justice, or both.

   Ensure compliance with the labor standards provisions of the Contract. Submit weekly certified payrolls and Statement of Compliance as required in the Contract. Monitor and verify the owner-operator status of all DBE and non-DBE truckers working on Federal aid projects used for the Contract. Submit the DBE Trucking Verification (Form CR-274) to the Department. Failure of a Contractor to meet the requirements of this paragraph may result in payment being delayed or withheld as specified in Section 105, default as specified in Section 108, disqualifying the Contractor from future bidding as non-responsible, or termination of the Contract as specified in Section 108.

   Obtain executed subcontract agreements as specified in Section 108. Failure of a Contractor to meet this requirement may result in payment being delayed or withheld as specified in Section 105, default as specified in Section 108, disqualifying the Contractor from future bidding as non-responsible, or termination of the Contract as specified in Section 108.

   The Contractor is responsible for compliance by any subcontractor, lower tier subcontractor as specified in Section 108. On Federal aid construction contracts, utilize a DBE that performs a commercially useful function (CUF) and performs the work committed to at the time of Contract award. Monitor and report DBE participation on the Contract, on a monthly basis utilizing the CR-267 - Monthly Report of Utilization of DBE/ESBE or SBE form. Failure of a subcontractor or lower tier subcontractor may result in denial or limit of credit toward the Contract DBE goal, payment being delayed or withheld as specified in Section 105; default as specified in Section 108, or termination of the Contract as specified in Section 108.

The Contractor is required to make good faith effort as defined in 23 CFR Part 230 and 41 CFR Part 60 in meeting the Equal Employment Opportunity, Affirmative Action, on-the-job training and female and minority work hour goals. Ensure compliance by subcontractors and lower tier subcontractors. Failure of the Contractor, subcontractor or lower tier subcontractor to meet these requirements may result in payment being delayed or withheld as specified in Section 105; default as specified in Section 108, or termination of the Contract as specified in Section 108.

Utilize the specific DBEs listed to perform the work, manufacturer the materials or goods, and furnish or supply the equipment, materials, supplies or services for which each is listed on the CR-266 unless prior written consent from the DCR/AA is obtained. Unless prior DCR/AA consent is provided, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE.

The Contractor is responsible for Equal Employment Opportunity requirements of the Contract, including Affirmative Action, EEO workforce and On-The-Job Training. Failure by the Contractor to meet the requirements of the Affirmative Action Program for Equal Employment Opportunity may result in payment being delayed or withheld as specified in Section 105 pending corrective and appropriate measures by the Contractor to the satisfaction of the Department.

The Contractor is responsible for compliance with the Trainee program. Failure to meet this requirement may result in payment being delayed or withheld as specified in Section 105, default as specified in Section 108, disqualifying the Contractor from future bidding as non-responsible, or termination of the Contract as specified in Section 108.

The Contractor and subcontractors are required to provide all information and reports as specified in Section 107.

a. Disadvantaged Business Enterprise/Emerging Small Business Enterprise Goals for this Contract

This Contract includes a goal of awarding a percentage of the Total Contract Price to subcontractors, transaction expeditors, regular dealers, manufacturers and truckers qualifying as certified DBEs/ESBEs as specified in Federal Aid Project Attachment 1 – Disadvantaged Business Enterprise Utilization on Federal Aid Projects or Federal Aid Project Attachment 1 – Emerging Small Business Enterprise Utilization on Federal Aid Projects, of the Special Provisions.

To receive DBE credit toward meeting a contract goal in the context of the contract award process, a DBE firm must be certified before the due date for bids or offers on the Contract, as stated in 49 CFR Part 26.81(c). There may be situations after the award of the Contract, however, in which it is appropriate to count DBE credit for the use of a DBE firm certified after the contract is executed. To be eligible to obtain DBE credit, a DBE firm must be certified before the subcontract on which it is working is executed.

A Contractor is deemed to have satisfied the requirements of the DBE Program if the Contractor meets the Contract DBE goal or the approved DBE commitment utilizing the approved, certified DBEs for the kind and type of work shown on the most recent approved CR-266 – Schedule of Disadvantaged Business Enterprise/Emerging Small Business Enterprise/Small Business Enterprise Participation form, or demonstrates an adequate GFE. DCR/AA will determine whether or not the Contractor met the Contract DBE goal or demonstrated adequate GFE. Failure to meet the Contract DBE goal or the approved DBE commitment, without demonstrating an adequate GFE, is considered a material breach of the Contract.

The Contract DBE goal may be changed by the Department based on changes in the Work that increase or decrease work assigned to approved DBEs, or to create potential DBE subcontracting opportunities regarding the Contract. The Department's DCR/AA will evaluate these changes in the Work in the same manner that the original Contract DBE goal or the approved DBE commitment was established. When the Contract DBE goal or the approved DBE commitment is increased or decreased due to changes in firms, type of work, work items or subcontract value, submit to DCR/AA:

(i) a completed and signed Form CR-266 – Schedule of DB/ESBE/SBE Participation listing each DBE firm being used to meet the Contract goal.
(ii) a completed and signed Verification of DBE/ESBE/SBE Firm (Form CR-273) for each firm listed on the CR-266 to demonstrate direct written confirmation from each DBE firm of willingness to participate on the Contract, confirming the kind and amount of work that was provided on the Contractor's CR-266, and, if applicable,

(iii) a completed and signed DBE/ESBE/SBE Regular Dealer/Supplier Verification (Form CR-272) for all Regular Dealers/Suppliers listed on the CR-266 form, and, if applicable,
(iv) a completed and signed DBE/ESBE/SBE Trucking Verification (Form CR-274) for all DBE trucking firms listed on the CR-266.
(v) a written explanation of each revision, and why

In such circumstances, do not complete any portion of the CR-273, CR-272 or CR-274 forms, and the Contractor shall meet the Modified DBE goal or demonstrate an adequate GFE.

If the Contractor fails to meet the Contract DBE goal, without demonstrating an adequate GFE, the Department will make a payment reduction from the total amount of payments made to the Contractor equal to the value of the DBE goal not attained as follows:

DBE Goal Payment Reduction = (CG – AG) x CP

Where:
CG = Contract DBE Goal percentage, or approved DBE commitment, or if modified by the Department, the Modified DBE Contract Goal percentage.
AG = Attained DBE Goal percentage = (total dollar amount paid to DBE suppliers and DBE subcontractors divided by CP) plus the percent value attributed to the Contractor's GFE approved by the Department.
CP = Total Adjusted Contract Price less the payment adjustments for FINAL LAYOUT, PERFORMANCE BOND AND PAYMENT BOND, and DBE Goal Payment Reduction.

b. Trainees

This Contract includes a trainee goal which is part of the Contractor's equal employment opportunity affirmative action program, on-the-job training aimed at developing full journey people in the type of craft or job classification involved on the project as specified in Section H of Federal Aid Project Attachment 2 – Specific Equal Employment Opportunity Responsibilities on NJDOT Federal Aid Projects, of the Special Provisions.

2. Wholly State Funded Contracts. On contracts containing wholly State funding, State EEO regulations and goals apply as specified in State Funded Project Attachments 1 to 6 of the Special Provisions. The DCR/AA monitors and reviews these projects in conjunction with the New Jersey Department of Labor under New Jersey Statutes N.J.S.A. 10:5-31 et seq. and P.L. 1975 Chapter 27 and their accompanying rules.

Comply with the SBE program, rules and regulations in the administration of the Contract. Failure to do so is a material breach of the Contract and may result in termination of the Contract, or other such actions that the Department deems appropriate which may include, but is not limited to, rejection of bids, denial or limit of credit toward the Contract SBE goal, payment being delayed or withheld as specified in Section 105, assessing sanctions, liquidated damages as specified in Section 108, default as specified in Section 108, disqualifying the Contractor from future bidding as non-responsible, or termination of the Contract as specified in Section 108. Deliberate attempts by the Contractor or subcontractor to circumvent or commit fraud in the SBE program may result in termination of the Contract as specified in Section 108, investigation by the Department's Inspector General, and prosecution by the State Attorney General's Office.

Ensure compliance with the labor standards provisions of the Contract. Submit weekly certified payrolls and Statement of Compliance as required in the Contract. Monitor and verify the status of all SBE truck owner-operators working on wholly State funded highway construction projects used for the Contract. Failure of a Contractor may result in payment being delayed or withheld as specified in Section 105; default as specified in Section 108, or termination of the Contract as specified in Section 108.

Obtain executed subcontract agreements as specified in Section 108. Failure of a Contractor to meet this requirement may result in payment being delayed or withheld as specified in Section 105, default as specified in Section 108, disqualifying the Contractor from future bidding as non-responsible, or termination of the Contract as specified in Section 108.

The Contractor is responsible for compliance by any subcontractor, lower tier subcontractor as specified in Section 108. Utilize a SBE that performs a commercially useful function (CUF) and performs the work

committed to at the time of contract award. Monitor and report SBE participation on the Contract, on a monthly basis utilizing the CR-267 – Monthly Report of Utilization of DBE/ESBE or SBE form. Failure of a subcontractor or lower tier subcontractor may result in denial or limit of credit toward the Contract SBE goal, payment being delayed or withheld as specified in Section 105; default as specified in Section 108, or termination of the Contract as specified in Section 108.

The Contractor is required to make good faith effort as defined in N.J.A.C. 17:27-1.1, et seq. in meeting the Equal Employment Opportunity, Affirmative Action, on-the-job training and female and minority work hour goals. Failure of a subcontractor or lower tier subcontractor may result in, payment being delayed or withheld as specified in Section 105; default as specified in Section 108, or termination of the Contract as specified in Section 108.

Utilize the specific SBEs listed to perform the work, manufacturer the materials or goods, and furnish or supply the equipment, materials, supplies or services for which each is listed on the CR-266 unless prior written consent from the DCR/AA is obtained. Unless prior DCR/AA consent is provided, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed SBE.

The Contractor is responsible for Equal Employment Opportunity requirements of the Contract, including Affirmative Action. EO workforce and On-The-Job Training. Failure by the Contractor to meet the requirements of the Affirmative Action Program for Equal Employment Opportunity may result in payment being delayed or withheld as specified in Section 105 pending corrective and appropriate measures by the Contractor to the satisfaction of the Department.

The Contractor and subcontractors are required to provide all information and reports as specified in Section 107.

a. Small Business Goals for This Project

NOTE: SUBCONTRACTING GOALS ARE NOT APPLICABLE IF THE CONTRACTOR IS A REGISTERED SMALL BUSINESS ENTERPRISE (SBE) FIRM.

This Contract includes a goal of awarding a percentage of the Total Contract Price to subcontractors, transaction expeditors, regular dealers, manufacturers and truckers qualifying as SBEs as specified in State Funded Project Attachment 1 – Small Business Enterprise Utilization Attachment for Wholly State Funded Projects, of the Special Provisions.

To receive SBE credit toward meeting a contract goal in the context of the contract award process, a SBE firm must be registered before the due date for bids or offers on the Contract. There may be situations after the award of the Contract, however, in which it is appropriate to count SBE credit for the use of a SBE firm registered after the contract is executed. To be eligible to obtain SBE credit, a SBE firm must be registered before the subcontract on which it is working is executed.

If a prospective Small Business Enterprise fails to meet the eligibility standards for participation the department's Small Business Program, the Contractor shall, make reasonable outreach efforts to replace that ineligible subcontractor with a registered Small Business whose participation is sufficient to meet the goal for the contract.

Prospective Small Businesses whose registration applications are denied or rejected by the New Jersey Commerce and Growth Commission are ineligible for participation on the project to meet Small Business goals, regardless of any pending appeal action in progress.

A Contractor is deemed to have satisfied the requirements of the SBE Program if the Contractor meets the Contract SBE goal utilizing the approved, certified SBEs for the kind and type of work shown as the SBE commitment on the most recent approved CR-266 – Schedule of Disadvantaged Business Enterprise/Emerging Small Business Enterprise/Small Business Enterprise Participation form, or demonstrates an adequate GFE. DCR/AA will determine whether or not the Contractor met the Contract SBE goal or demonstrated adequate GFE. Failure to meet the Contract SBE goal or the approved SBE commitment, without demonstrating an adequate GFE, is considered a material breach of the Contract.

The Contract SBE goal may be changed by the Department based on changes in the Work that increase or decrease work assigned to approved SBEs, or to create potential SBE subcontracting opportunities regarding the Contract. The Department's DCR/AA will evaluate these changes in the Work in the same

manner that the original Contract SBE goal was established. When the Contract SBE goal or the approved SBE commitment is revised due to changes in firms, type of work, work items or subcontract amounts, submit to DCR/AA:

(i) a completed and signed Form CR-266 – Schedule of DB/ESBE/SBE Participation listing each SBE firm being used to meet the Contract goal. Revisions to the CR-266 will not be accepted after its initial submission and before award of the Contract.
(ii) a completed and signed Verification of DBE/ESBE/SBE Firm (Form CR-273) for each firm listed on the CR-266 to demonstrate direct written confirmation from each SBE firm of willingness to participate on the Contract, confirming the kind and amount of work that was provided on the Contractor's CR-266, and, if applicable,
(iii) a completed and signed DBE/ESBE/SBE Regular Dealer/Supplier Verification (Form CR-272) for all Regular Dealers/Suppliers listed on the CR-266 form, and, if applicable,
(iv) a completed and signed DBE/ESBE/SBE Trucking Verification (Form CR-274) for all SBE trucking firms listed on the CR-266.
(v) a written explanation of each revision, and why

In such circumstances do not complete any portion of the CR-273, CR-272 or CR-274 forms, and, the Contractor shall meet the Modified SBE goal or demonstrate an adequate GFE.

If the Contractor fails to meet the Contract SBE goal, without demonstrating an adequate GFE, the Department will make a payment reduction from the total amount of payments made to the Contractor equal to the value of the SBE goal not attained as follows:

SBE Goal Payment Reduction = (CG – AG) x CP

Where:
CG = Contract SBE Goal percentage, or approved SBE commitment, or if modified by the Department, the Modified SBE Contract Goal percentage
AG = Attained SBE Goal percentage = (total dollar amount paid to SBE suppliers and SBE subcontractors divided by CP) plus the percent value attributed to the Contractor's GFE approved by the Department.
CP = Total Adjusted Contract Price less the payment adjustments for FINAL LAYOUT, PERFORMANCE BOND AND PAYMENT BOND, and SBE Goal Payment Reduction.

105.05 WORKING DRAWINGS

THE SECOND PARAGRAPH IS CHANGED TO:

Ensure that working drawing submissions also conform to the Department design manuals and other Department standards for the proposed work. After Award, the Department will provide additional formatting information, the number of copies required, and the address of the receiving designated design unit.

THE THIRD PARAGRAPH IS CHANGED TO:

Submit working drawings on 22 × 36-inch sheets. The Department may approve the use of 8-1/2 x 11 inch sheet on a case by case basis. Submit design calculations required for the working drawings on 8-1/2 × 11-inch paper. Submit 7 copies of the working drawings to the designated design unit for review with a copy of the transmittal letter to the RE. For railroad-carrying structures, submit 4 additional copies to the designated design unit. Submit an additional copy for each outside testing agency or authority involved in the Project.

THE NINTH PARAGRAPH IS CHANGED TO:

Submit working drawings for certification or approval as specified in Table 105.05-1. This list is not all inclusive. Ensure that the working drawings submitted for approval are signed and sealed by a Professional Engineer. The working drawings submitted for certification are not required to be signed and sealed by a Professional Engineer unless they alter the original Contract

TABLE 105.05-1 IS CHANGED TO:

Table 105.05 1 – Working Drawing Submission Category

Certified	Approved
Breakaway I-Beam GA Sign Support Posts	Catalog Cuts (related to landscape Items)
Bridge Drainage	Change in Structural Steel Details
Bridge Railing and Fencing Anchorage System	Change of Prestressed Concrete Strand Patterns
Catalog Cuts	Demolition Plans
Composite Piles	Erection Plans
DMS Sign Support Structure	High Load Multi-Rotational (HLMR) Bearings
DMS Standard Ground Mounted	Isolation Bearings
Elastomeric Bearings Pads	ITS System Drawings, including Block Diagrams
Electrical Items Not Pre-Qualified	Machinery and Electrical Items for Movable Bridges
Expansion Deck Joint Assembly Systems	Mechanically Stabilized Earth (MSE) Walls
Modular Expansion Joint Assembly	Other work shown on the Plans as conceptual
Precast Prestressed Concrete Beams and Piles Fabrication	Precast Concrete Arch Structures
Reinforced Elastomeric Bearings	Precast Concrete Box Culverts
Sign Legends	Prefabricated Modular Walls
Sign Support Structures	Stay-In-Place Forms
Structural Steel Fabrication	Temporary Sheeting and Cofferdams
Handrail	Temporary Shielding
Structural Steel, Pre-Engineered Truss Bridge	Temporary Structures
	Value Engineering Plans
	Bollard
	Concrete Steps, Reinforced

THE FIRST PARAGRAPH UNDER PART 1 OF TENTH PARAGRAPH IS CHANGED TO:

1. Certified Working Drawings. For working drawings requiring certification, include 2 blank blocks directly above the title block. Designate one block for design unit certification, and designate the other block for the Contractor's approval stamp and a signed statement stating that the Contract has not been altered. The Department will require 30 days for review and certification or rejection and return of certified working drawings.

1. Certified Working Drawings.

THE LAST SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

The Department will require 30 days for review and certification or rejection and return of certified working drawings.

2. Approved Working Drawings.

THE LAST SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

The Department will require 45 days for review and approval or rejection and return of working drawings.

105.07.01 Working in the Vicinity of Utilities

A. Initial Notice.

PSE&G (Electric)
472 Weston Canal Road
Somerset, NJ 08873
John Grabenstien (John.Grabenstein@pseg.com)
Telephone: 732-764-3067

PSE&G (Gas)
Len A. Pannucci, PMP len.pannucci@pseg.com
Program Manager, 3rd Party Relocation
Delivery Projects & Construction
4000 Hadley Road
South Plainfield, NJ 07080
Phone (908) 412-2228

Comcast Cable
800 Rahway Avenue
Union, NJ 07083
George Palyca
Telephone: 908-851-8858

Verizon (Telephone/Cable)
6000 Haley Road
South Plainfield, NJ 07080
Telephone: 908-412-6160
Frank Antisell (frank.t.antisell@verizon.com)

Zayo Group (Fiber optic)
1101 E. Linden Ave
Linden, NJ 07036
Jim Jacobsen (james.jacobsen@zayo.com)
Telephone: 212-803-5031
Cell: 973-214-6393

Borough of Roselle Park (Sewer)
180 West Webster Ave
Roselle Park, NJ 07204
Mark Pasquali (mpasquali@rosellepark.net)
Telephone: 908-245-7676
Fax: 908-241-6927

NJDOT (Traffic Signals)
Bureau of Electrical Maintenance, North Region
200 Stierli Court
Mt. Arlington, NJ 07856-1322
Telephone: 973-770-5065

Consolidated Rail Corporation
1000 Howard Boulevard
Mount Laurel, NJ 08054
William Kaeser (William.Kaeser@Conrail.com)
Telephone: 856-231-2450

B. Locating Existing Facilities.

PART (2) IS CHANGED TO:

2. For the Department's fiber optic network, Obtain and complete the fiber optic markout request form as specified in the Special Provisions. Submit a fiber optic markout request form to the Traffic Operations location specified in the Special Provisions for the markout. The Traffic Operations will complete the markout within 15 days of the receipt. Provide the RE a copy of the markout, and maintain the markout until construction operations in the vicinity of the Department's fiber optic network are completed.

   Fiber Optic Markout Form is available at:
   http://www.state.nj.us/transportation/eng/elec/ITS/requests.shtm

   Bureau of Traffic Operations, North Region (TOCN)
   670 River Drive
   Elmwood Park, NJ 07407-1347
   Telephone: 732-697-7360

3.

   Bureau of Electrical Maintenance, North Region
   200 Stierli Court
   Mt. Arlington, NJ 07856-1322
   Telephone: 973-770-5065

C. Protection of Utilities.

Location	Speed	Number Per Day	Time
Out of Service Conrail	0	0	0

THE SECOND PARAGRAPH IS CHANGED TO:

Protect and support existing Department electrical and ITS facilities and ensure that there is no interruption of service. Use hand tools only while working within two feet of the fiber optic network. At least 30 days before beginning the work, submit a plan to the RE for approval showing the method of support and protection. When access to Traffic Operation Centers, communication hubs, ITS cabinets or any other ITS facilities is required to perform work, submit a request for access to ITS facilities. Ensure that the request for access is made at least five working days before any work is scheduled, using the online form as specified in the Special Provisions.

https://www.state.nj.us/transportation/eng/elec/ITS/access.shtm

THE FOURTH PARAGRAPH IS CHANGED TO:

Access within railroad right-of-way is restricted. Before beginning work within the railroad ROW or on railroad facilities, obtain the railroad's written approval for access, the method of construction, and the schedule of the work. Provide a copy of the submittal and approval to the RE. Comply with the railroad's requirements for working within the railroad right-of-way.

THE FOLLOWING IS ADDED TO THE SIXTH PARAGRAPH

Ensure that the work is performed following the railroad's access and safety restrictions.

105.07.02 Work Performed by Utilities

Company Name & Address	Contact Person	Number of Day/s Advance Notice
PSE&G Electric	472 Weston Canal Road Somerset, NJ 08873	15

	John Grabenstien (John.Grabenstein@pseg.com) Telephone: 732-764-3067	
Comcast Cable	800 Rahway Avenue Union, NJ 07083 George Palyca Telephone: 908-851-8858	15
Verizon	6000 Haley Road South Plainfield, NJ 07080 Telephone: 908-412-6160 Frank Antisell (frank.t.antisell@verizon.com)	15

Stage # 1

Utility Company Name	Work Description	Work Duration (Day/s)	Restrictions
PSE&G Electric	Install switches and re-establish commercial service to 490 W. 1st Avenue and 470 W. 1st Avenue. Install temporary facilities and portion of permanent facilities.		
	Stage Total	30	

Stage # 2

Utility Company Name	Work Description	Work Duration (Day/s)	Restrictions
PSE&G Electric	De-energize as needed for HVPA compliance.		
	Stage Total	As Needed	

Stage # 4

Utility Company Name	Work Description	Work Duration (Day/s)	Restrictions
PSE&G Electric	Install temporary pole and temporary overhead wires. Remove Stage 1 temporary facilities. De-energize as needed for HVPA compliance.		
Comcast Cable	Construct utility on temporary utility western alignment		
Comcast Cable	Remove existing cable utilities		
	Stage Total	60	

Stage # 5

Utility Company Name	Work Description	Work Duration (Day/s)	Restrictions
PSE&G Electric	De-energize as needed for HVPA compliance.	As Needed	
	Stage Total	As Needed	

Stage # 6

Utility Company Name	Work Description	Work Duration (Day/s)	Restrictions

PSE&G Electric	De-energize as needed for HVPA compliance.	As Needed	
	Stage Total	As Needed	

Stage # 7

Utility Company Name	Work Description	Work Duration (Day/s)	Restrictions
PSE&G Electric	De-energize as needed for HVPA compliance.	As Needed	
	Stage Total	As Needed	

Stage # 8

Utility Company Name	Work Description	Work Duration (Day/s)	Restrictions
PSE&G Electric	Construct permanent facilities	15	
PSE&G Electric	De-energize as needed for HVPA compliance.	As Needed	
PSE&G Electric	Remove temporary overhead facilities	15	
	Stage Total	30	

Stage # 9

Utility Company Name	Work Description	Work Duration (Day/s)	Restrictions
PSE&G Electric	De-energize as needed for HVPA compliance.	45 to 60	
	Stage Total	45 to 60	

SECTION 106 – CONTROL OF MATERIAL

106.01 SOURCE OF SUPPLY AND QUALITY REQUIREMENTS
THE FIRST PARAGRAPH IS CHANGED TO:

Ensure that materials furnished for the Project are new, unless otherwise specified in the contract. Comply with 2 CFR 200.322 Procurement of Recovered Materials "to the highest percentage of recovered materials practicable" where the purchase price of the covered item listed exceeds $10,000. Use materials that conform to the requirements of the contract. When required by the Contract, use only products and suppliers listed on the QPL. Use sources of materials that have been approved by the Department on a Materials Questionnaire as specified in 106.04.

F106.02 DEPARTMENT-FURNISHED MATERIAL

106.03 FOREIGN MATERIALS

1. Wholly State-Funded Projects

THE FOLLOWING IS ADDED AFTER THE FIRST PARAGRAPH:

For steel and iron products incorporated into the Project, provide a certification from the manufacturer stating the country where the steel or iron product was melted and manufactured including application of coatings which protect or enhance the value of the material. Ensure that 4 copies of the manufacturer's certification are provided with each delivery of steel and iron products. Retain 1 copy and submit 3 copies to the RE. Ensure that the certification includes, materials description, quantity of material represented by the certification, country of manufacture, and notarized signature of a person having legal authority to bind the supplier. If a Certification of Compliance as specified in 106.07 contains a statement regarding the country of manufacture, a separate certification is not necessary.

106.04 MATERIALS QUESTIONNAIRE
THE LAST SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

For ITS systems as specified in Section 704, obtain approval of system working drawings including individual components and Electrical material instead of submitting a materials questionnaire.

106.07.01 Certification of Compliance
THE ENTIRE TEXT IS CHANGED TO:

Submit manufacturer's Certifications of Compliance stating that the materials and/or assemblies fully comply with the requirements of the Contract when required by the Contract or requested by the Department.

Ensure that Manufacturer's Certification of Compliance contains the following information:

1. Project Name.
2. Name of the Contractor.
3. Material description.
4. Quantity of material represented by the certification.
5. Means of identifying the consignment, such as label marking or seal number.
6. Date and method of shipment.
7. A statement that the material conforms to the Contract material requirements and that representative samples have been sampled and tested.
8. If the submission is for an assembly of materials, a statement that the assembly conforms to the Contract.
9. Signature of a person having legal authority to bind the supplier.
10. Typed or printed name of the person who signed the certification.

Before incorporating the materials into the Project, obtain 3 copies of the manufacturer's Certifications of Compliance for materials, components, and manufactured items that are accepted by certification. Retain 1 copy and submit 2 copies to the RE. With the Certification of Compliance, provide a transmittal identifying the Item for which it is submitted. For products that contain steel or iron, attach additional documents as required by the certification procedures as specified in 106.07.02. The Contractor may submit the Certifications of Compliance electronically to the RE in a scanned document. Include the transmittal and all backup documentation in the scanned document.

The Department has the right to sample and test materials or assemblies accepted on the basis of Certifications of Compliance at any time. The Department will reject materials or assemblies, whether in place or not, if found not to be in conformance with the Contract requirements.

The Department will not make payment for an Item for which material is accepted on the basis of a Certification of Compliance until the RE has received the required Certification of Compliance and has inspected and accepted the material or assembly.

106.07.02 Certification for Iron and Steel
THE ENTIRE TEXT IS CHANGED TO:

A. Precast Concrete Steel and Concrete Pipe Certification of Compliance. For precast concrete and concrete pipe items, a Buy America Compliance Plan is required to confirm that the material meets the Buy America requirements as specified in 106.03. The ME will periodically audit compliance with the program at the precast plant. If the precast concrete item is not inspected by ME, submit a Certification of Compliance for the precast concrete item as required in 106.07.01. When a Certification of Compliance is submitted, ensure that the Certification of Compliance contains a statement that the reinforcing steel used in the precast concrete item complies with the Buy America requirements as specified in 106.03

B. Step Certification of Compliance. For products that contain steel or iron components and are not covered in 106.07.02.A, step Certification of Compliance is required to confirm that the item meets the Buy America requirements as specified in 106.03. A step certification is a process under which each handler (e.g., supplier, fabricator, manufacturer, processor, coating facility) of the iron and steel components certifies that the steel and iron components were of domestic origin and that their step in the process was domestically performed.

Every step in the process from melting to coating must be performed in the United States in order for the steel or iron component to be considered domestic and must be documented by step certification. If a domestic source for a steel

or iron component cannot be found, submit a request for waiver to the Department. Do not purchase non-domestic steel or iron components without the express written consent of the Department.

Ensure that 3 copies of the Contractor's Certification of Compliance (Form DC-17) and the step Certifications of Compliance are provided for items containing steel or iron. Retain 1 copy and submit 2 copies to the RE. The Contractor may submit the DC-17 and the step certifications electronically in a scanned document.

Ensure that step Certifications of Compliance contain the following information:

1. Name of the Company supplying the material.
2. Name and location of the Company the material was shipped to.
3. Material description.
4. Quantity of material represented by the Certification.
5. Means of identifying the consignment, such as label marking or seal number.
6. Date and method of shipment.
7. A statement that the material conforms to the Contract material requirements and to the Buy America requirements in 106.03.
8. A statement that all steel or iron components in the material or assembly were "melted and manufactured in the US", unless there is non-domestic steel or iron in the material or assembly.
9. If there is non-domestic steel or iron in the assembly, describe in detail the non-domestic steel or iron material and the quantity. Attach a copy of the Department's approval for the use of non-domestic steel or iron components.
10. Signature of a person having legal authority to bind the supplier.
11. Typed or printed name of the person who signed the certification.

The Department will not make payment for work containing steel or iron materials until the RE has received the required DC-17 and step Certifications of Compliance, has inspected and accepted the material or assembly.

106.09 SUBSTITUTES FOR PROPRIETARY ITEMS

THE FOLLOWING NEW SECTION IS ADDED:

106.10 USE OF UNITED STATES FLAG VESSELS

For Federal-Aid projects, comply with the Cargo Preference Act of 1954 as amended (46 U.S.C. 1241(b)) and the requirements of 46CFR381. Use privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liner and tankers) whenever shipping any equipment, material or commodities pursuant to this contract to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels, and ensure that within 20 days following the date of loading for shipments originating within the United States, or within 30 working days following the date of loading for shipments originating outside the United States, submit a legible copy of a rated "on-board" commercial ocean bill-of-lading in English for each shipment of cargo to the RE and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590 in accordance with 46 CFR 381.7(a)-(b).

SECTION 107 – LEGAL RELATIONS

107.02 DISCRIMINATION IN EMPLOYMENT ON PUBLIC WORKS
THE TITLE AND ENTIRE SUBSECTION IS CHANGED TO:

107.02 NONDISCRIMINATION

It is the policy of the Department that anyone performing work under any program, activity, or Contract with the Department, shall not discriminate on the basis of race, creed, color, national origin, age, ancestry, nationality, marital or domestic partnership status, gender, disability, affectional or sexual orientation, gender identity or expression, religion, liability for military service, veteran's status, income level or ability to read, write or speak English.

Pursuant to N.J.S.A. 10:2-1, the Contractor agrees that in the hiring of persons for the performance of work under this Contract or any subcontract hereunder, or for the procurement, manufacture, assembling, or furnishing of any such

materials, equipment, supplies, or services to be acquired under this Contract, no contractor, nor any person acting on their behalf of such contractor or subcontractor, shall by reason of race, creed, color, national origin, ancestry, marital status, gender identity or expression, affectional or sexual orientation or sex, discriminate against any person who is qualified and available to perform the work to which the employment relates;

No Contractor, subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee engaged in the performance of work under this contract or any subcontract hereunder, or engaged in the procurement, manufacture, assembling, or furnishing of any such materials, equipment, supplies, or services to be acquired under such contract, on account of race, creed, color, national origin, ancestry, marital status, gender identity or expression, affectional or sexual orientation or sex.

There may be deducted from the amount payable to the contractor by the contracting public agency, under this contract, a penalty of $50.00 for each person for each calendar day during which such person is discriminated against or intimidated in violation of the provisions of the contract; and this contract may be terminated by the Department, and all money due or to become due hereunder may be forfeited, for any violation of this section of the contract occurring after notice to the Contractor from the Department of any prior violation of this section of the contract.

Standard Title VI Assurance. During the performance of this Contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "Contractor"), in accordance with Title VI /Nondiscrimination Assurance – Appendix A, USDOT Order 1050.2A agrees as follows:

1. **Compliance with Regulations:** The Contractor will comply with the Acts and Regulations relative to Nondiscrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration (FHWA), as they may be amended from time to time, which herein incorporated by reference and made a part of this Contract.

2. **Nondiscrimination:** The Contractor, with regard to the Work performed by it during the Contract, will not discriminate on the grounds race, creed, color, national origin, age, ancestry, nationality, marital or domestic partnership status, gender, disability, affectional or sexual orientation, gender identity or expression, religion, liability for military service, veteran's status, income level or ability to read, write or speak English in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The Contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and Regulations, including employment practices when the Contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

3. **Solicitations for Subcontracts, Including Procurement of Materials and Equipment:** In all solicitations, either by competitive bidding, negotiation made by the Contractor for Work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the Contractor of the Contractor's obligations under this Contract and the Acts and Regulations relative to nondiscrimination on the grounds of race, creed, color, national origin, age, ancestry, nationality, marital or domestic partnership status, gender, disability, affectional or sexual orientation, gender identity or expression, religion, liability for military service, veteran's status, income level or ability to read, write or speak English.

4. **Information and Reports:** The Contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the FHWA, to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish the information, the Contractor will so certify to the Recipient or the FHWA, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Non-Compliance:** In the event of a Contractor's noncompliance with the Nondiscrimination provisions of this Contract, the Recipient will impose such Contract sanctions as it or the FHWA may determine to be appropriate, including, but not limited to:

    1. Withholding payments to the Contractor under the Contract until the Contractor complies; and/or
    2. Cancelling, terminating, or suspending a Contract, in whole or in part.

6. **Incorporation of Provisions:** The Contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the

Regulations and directives issued pursuant thereto. The Contractor will take action with respect to any subcontract or procurement as the Recipient or the FHWA may direct as a means of enforcing such provisions including sanctions for non-compliance. Provided, that if the Contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the Contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the Contractor may request the United States to enter into the litigation to protect the interest of the United States.

During the performance of this Contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "Contractor") in accordance with the Title VI /Nondiscrimination Assurance – Appendix E, USDOT Order 1050.2A, agrees to comply with the following nondiscrimination statutes and authorities; including but not limited to:

1. Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq.., 78 stat. 252); and 49 CFR Part 21.
2. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601);
3. Section 162(a) of the Federal Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.);
4. Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended; and 49 C.F.R. Part 27;
5. The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.);
6. Airport and Airway Improvement Act of 1982, (49 U.S.C. § 471, Section 47123), as amended;
7. The Civil Rights Restoration Act of 1987, (PL 100-209);
8. Title II and III of the Americans with Disabilities Act (42 U.S.C. § 12131- - 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
9. The Federal Aviation Administration's Nondiscrimination statute (49 U.S.C. § 47123);
10. Executive Order 12898, Federal Actions to address Environmental Justice in Minority Populations and Low Income Populations;
11. Executive Order 13166, Improving Access to services for Persons with Limited English Proficiency (70 Fed. Reg. at 74087 to 74100);
12. 23 CFR Part 230 (EEO, Affirmative Action & OJT)
13. 49 CFR Part 26
14. Executive Order 11246 as amended
15. Section 503 of the Rehabilitation Act of 1973 as amended
16. Section 4212 of the Vietnam Era Veteran's Readjustment Assistance Act, as amended
17. New Jersey Statutes N.J.S.A. 10:5-31 et seq.
18. New Jersey P.L. 1975 Chapter 27

107.03 AFFIRMATIVE ACTION, DISADVANTAGED BUSINESS ENTERPRISES, OR EMERGING SMALL BUSINESS ENTERPRISE
THE TITLE AND ENTIRE SUBSECTION IS CHANGED TO:

107.03 AFFIRMATIVE ACTION, DISADVANTAGED BUSINESS ENTERPRISES OR EMERGING SMALL BUSINESS ENTERPRISES, AND SMALL BUSINESS ENTERPRISES

It is the public policy of the State and of the United States that no individual, group, firm, corporation or joint venture working on or seeking to work on a Public Works Project should be discriminated against on the basis of race, creed, color, national origin, age, ancestry, nationality, marital or domestic partnership status, gender, disability, liability for military service, affectional or sexual orientation, atypical cellular or blood trait, or genetic information (including the refusal to submit to genetic testing). The Department has developed Affirmative Action, Disadvantaged Business Enterprise, or Emerging Small Business Enterprise Programs to implement this policy, and the regulations and requirements applicable to the Contract are contained in the Special Provisions. The Department will resolve conflicts between these regulations and requirements and the other provisions of the Contract to further the above stated public policy.

Contract Assurance. The Contractor, sub-recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this Contract, which may result in the termination of this contract or such other remedy as the Department deems appropriate, which may include, but is not limited to:

1. Withholding monthly progress payments;
2. Assessing sanctions;

3. Liquidated damages; and/or
4. Disqualifying the Contractor from future bidding as non-responsive.

107.04 NEW JERSEY CONTRACTUAL LIABILITY ACT
THE FOURTH PARAGRAPH IS CHANGED TO:

For purposes of determining the date of "completion of the contract" pursuant to N.J.S.A. 59:13-5, "completion of the contract" occurs on the date that the Contractor provides written notice to the Department of acceptance of the Proposed Final Certificate or conditional acceptance of the Proposed Final Certificate or the 30th day after the Department issues the Proposed Final Certificate, whichever event occurs first.

107.09 INDEPENDENT CONTRACTOR
THE ENTIRE SUBSECTION IS CHANGED TO:

The relationship of the Contractor to the State is that of an independent contractor. Conduct business consistent with such status. Do not hold out or claim to be an officer or employee of the Department by reason hereof. Do not make a claim, demand, or application to or for the rights or privileges applicable to an officer or employee of the Department, including, but not limited to, Workers Compensation Insurance, unemployment insurance benefits, social security coverage, or retirement membership or credit.

107.11 RISKS ASSUMED BY THE CONTRACTOR

1. Damage Caused by the Contractor.
THE FOLLOWING IS ADDED:

107.12.01 Satisfying the Notice Requirements
THE FOLLOWING IS ADDED TO THE SECOND PARAGRAPH:

Upon request, provide the RE with 3 copies of all documentation submitted in support of the claim.

107.12.02 Steps
THE FOURTH PARAGRAPH IS CHANGED TO:

The Contractual Claims Resolution Process is sequential in nature and is composed of the following steps:
1. Step I – Review by the RE.
2. Step II – Review by the Regional Claims Review Board.
3. Step III – Review by the Claims Committee.
4. Step IV – Non-Binding Mediation.

THE EIGHTH PARAGRAPH IS CHANGED TO:

When the value of the claim submitted by the Contractor is $20,000 or less, the Step II review will be the final step in the Contractual Claims Resolution Process. For such claims, the decision of the Regional Claims Review Board is final and terminates the Contractual Claims Resolution Process.

THE ELEVENTH PARAGRAPH PART 2 AND 3 ARE CHANGED TO:

2. Step II, Dispute Review Board (DRB).
THE HEADING AND ENTIRE TEXT IS CHANGED TO:

2. Step II, Regional Claims Review Board (RCRB). The RCRB is comprised of 3 delegated members of the Department.

If the Contractor provides a timely written rejection of the RE's decision and a timely request to forward the claim to Step II, the RE will forward the claim and supporting information previously submitted by the Contractor to the RCRB within 7 days of receipt of the Contractor's request to forward the claim to the next step. The RCRB will schedule and hold a meeting to review the claim with the Contractor within 30 days of receipt of the claim information from the RE. This time limit may be extended by mutual agreement of the parties. The RCRB will issue a written decision regarding the claim within 20 days of the meeting.

Within 15 days of the receipt of the decision by the RCRB, the Contractor shall either accept or reject the decision in writing; or upon failure to accept or reject the decision in writing, the Department will terminate the Contractual Claims Resolution Process. If the Contractor rejects the decision and intends to proceed to a Step III review, the Contractor must request a Step III review within 15 days of receipt of the RCRB's decision. Submit the request to the Secretary of the Department Claims Committee, P.O. Box 600, Trenton, New Jersey 08625-0600 or e-mail to DOT-Secretary.ClaimsCommittee@DOT.NJ.GOV.

3. Step III, Claims Committee.

THE SECOND PARAGRAPH AS IT APPEARS IN THE SI IS CHANGED TO:

The Claims Committee will not review a claim or combination of claims valued less than $250,000 or 1 percent of the adjusted Contract Price, whichever is greater, until after the receipt of conditional release as specified in 109.11. If the Contract is 75 percent complete or greater as measured by Contract Time or Total Adjusted Contract Price, the Claims Committee will not review a claim or combination of claims valued more than $250,000 until after receipt of conditional release as specified in 109.11. If the Claims Committee does not review a claim or combination of claims before Completion, the Claims Committee will review the claim or combination of claims at a single session of the Claims Committee after the receipt of the conditional release as specified in 109.11 and all claims have been reviewed at Steps I and II of the Claims Resolution Process. When reviewing a combination of claims, the Claims Committee will not review any individual claim valued less than $20,000.

107.14 PATENTED DEVICES, MATERIALS, AND PROCESSES

THE FOLLOWING IS ADDED

Observe 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts, and Cooperative Agreements" and any implementing regulations set forth by the USDOT, FHWA or FAA if State contract is for the performance of experimental, developmental, or research work funded under a Federal Aid Project.

THE FOLLOWING SUBSECTION IS ADDED

107.17 COMMUNICATION WITH THE NEWS MEDIA

Do not communicate with the news media or issue a news release without obtaining a prior written approval from the Department.

SECTION 108 – PROSECUTION AND COMPLETION

108.01 SUBCONTRACTING

THE ENTIRE SUBSECTION IS CHANGED TO:

Do not discriminate on the grounds of race, creed, color, national origin, age, ancestry, nationality, marital/domestic partnership/civil union status, gender, disability, religion, affectional or sexual orientation, gender identity or expression, family status, atypical cellular or blood trait, genetic information, military service, or veterans status, in the selection and retention of subcontractors, including procurement of materials and leases of equipment. In all solicitations, either by competitive bidding, or negotiation made by the Contractor for work to be performed under a subcontract, including procurement of materials, leases of equipment, or, professional services, each potential subcontractor or firm will be notified by the Contractor of the Contractor's obligations under this Contract and the Acts and Regulations relative to Nondiscrimination.

The Department will not permit subcontracting without Department approval. The Contractor is responsible for the work performed by subcontractors. Ensure that no work is performed by a subcontractor before receiving written approval for each subcontractor from the Department. Ensure that DBEs/ESBEs have an equal opportunity to receive and participate in the performance of contracts and subcontracts financed in whole or in part with Federal funds in performing work with the Department. Ensure that SBEs have an equal opportunity to receive and participate in the performance of contracts financed in whole with State funds in performing work with the Department. Utilize the specific DBEs, ESBEs or SBEs listed to perform work and supply materials for which each is listed unless the written consent of DRR/AA is provided. Ensure that work reserved for a subcontractor designated as a DBE, ESBE, or SBE, is not performed by any other firm,

including the Contractor's own organization. Submit requests for approval to subcontract on Department forms to the Department at least 20 days before the anticipated start of the work with the following:

1. A certified copy of the executed subcontract agreement between the Contractor and the subcontractor.
2. Proof of the subcontractor's valid business registration with the Department of Treasury, Division of Revenue according to N.J.S.A. 52:32-44.
3. Proof of the subcontractor's valid Public Works Contractor Registration with the Department of Labor, Division of Wage and Hour Compliance according to N.J.S.A. 34:11-56.18.

Make available on request, a copy of all DBE, ESBE and SBE subcontracts. Ensure that all subcontracts or agreements with DBEs or ESBEs to supply labor or materials require that the subcontract and all lower tier subcontractors be performed in accordance with 49 CFR 26.53.

On Federal aid projects, the Contractor shall not terminate a DBE subcontractor, lower tier DBE subcontractor, DBE transaction expeditor, DBE regular dealer, DBE supplier, DBE manufacturer and DBE trucker or an approved substitute DBE firm without good cause as listed in 49 CFR 26.53(f)(1)(ii)(3), and prior written consent of DCR/AA. Prior to replacement of the DBE or ESBE firm, the Contractor shall in writing, notify the DBE or ESBE firm and the DCR/AA of its intent to request to terminate and/or substitute a DBE or ESBE firm, the reason for the request, and that the DBE/ESBE has 5 days to respond to the Contractor's notice and advise the DCR/AA and the Contractor of reasons why, if any, it objects to the proposed termination of its subcontract and why the Department should not approve the Contractor's action. Give the DBE or ESBE 5 days to respond to the Contractor's notice and advise the DCR/AA and the Contractor of reasons why, if any, it objects to the proposed termination of its subcontract and why the Department should not approve the Contractor's action. If required in a particular case as a matter of public necessity (e.g., safety), the DCR/AA may provide a response period shorter than five days. At the time the Contractor requests termination or replacement of a DBE or ESBE firm, the Contractor must submit to the DCR/AA, documented evidence of its good faith efforts in accordance with 49 CFR Part 26.53 if they are replacing the terminated DBE orESBE with a non-DBE or non-ESBE firm. The DCR/AA must approve the termination and substitution of all DBE or ESBE subcontractors, lower tier subcontractors, transaction expeditors, regular dealers, suppliers, manufacturers and truckers. The Contractor needs to show they began good faith efforts to replace or substitute with another DBE or ESBE well in advance of the request to terminate or substitute. The Department's DCR/AA has sole authority to approve the termination, replacement or substitution of DBE and ESBE subcontractors, lower tier subcontractors, transaction expeditors, regular dealers, suppliers, manufacturers and truckers.

On wholly state funded projects, the Contractor shall not terminate a SBE subcontractor, lower tier SBE subcontractor, SBE transaction expeditor, SBE regular dealer, SBE manufacturer and SBE trucker, or an approved substitute SBE firm, without good cause and prior written consent of DCR/AA. Prior to replacement of the SBE firm, the Contractor shall in writing, notify the SBE firm and the DCR/AA of its intent to request to terminate and/or substitute a SBE firm, the reason for the request, and that the SBE has 5 days to respond to the Contractor's notice and advise the DCR/AA and the Contractor of reasons why, if any, it objects to the proposed termination of its subcontract and why the Department should not approve the Contractor's action. Give the SBE 5 days to respond to the Contractor's notice and advise the Department and the Contractor of reasons why, if any, it objects to the proposed termination of its subcontract and why the Department should not approve the Contractor's action. If required in a particular case as a matter of public necessity (e.g., safety), the DCR/AA may provide a response period shorter than 5 days. At the time the Contractor requests termination or replacement of a SBE firm, the Contractor must submit to the DCR/AA, documented evidence of its good faith efforts if they are replacing the terminated SBE firm with a non-SBE firm. The DCR/AA must approve the termination and substitution of all SBE subcontractors, lower tier subcontractors, transaction expeditors, regular dealers, suppliers, manufacturers and truckers. The Contractor needs to show they began good faith efforts to replace with another SBE well in advance of the request to terminate or substitute. The Department's DCR/AA has sole authority to approve the termination, replacement or substitution of SBE subcontractors, lower tier subcontractors, transaction expeditors, regular dealers, suppliers, manufacturers and truckers.

If requesting approval for a third tier subcontract, submit a letter from the subcontractor permitting subcontracting to a third tier, and submit the request for approval to subcontract, completed by the second tier subcontractor. Ensure that no work is performed by a third tier subcontractor before receiving written approval from the Department.

The Department will allow the Contractor to subcontract work as follows:

1. **Values and Quantities.** The total value of the work subcontracted may not exceed 50 percent of the Total Contract Price, except as follows:

1. The Contractor may deduct the value of work for Items designated as Specialty Items as specified in the Special Provisions from the value of the Total Contract Price.

There are no Specialty Items in this Project.

Specialty Items are as listed below:

Drilling and blasting.

Above ground highway lighting items.

Above ground sign lighting items.

Above and below bridge deck lighting items.

Electrical wire items.

ITS items, except for foundations, standards, and junction boxes.

2. The Contractor may deduct the value of work subcontracted to certified DBE, ESBE, and SBE firms indicated on the original DBE/ESBE/SBE Form A approved by the Department from the value of work subcontracted.

The total value of the work subcontracted may not exceed 70 percent of the Total Contract Price less the value of Specialty Items as noted above.

If a partial quantity of work for a unit price Item is subcontracted, the Department will determine the value of the work subcontracted by multiplying the price of the Item by the quantity of units to be performed by the subcontractor.

If only a portion of work of an Item is subcontracted, the Department will determine the value of work subcontracted based on the value of the work subcontracted as indicated in the subcontract agreement and as shown in a breakdown of cost submitted by the Contractor.

If a portion of a lump sum Item, an Item that includes specialty work, or a sign support structure is subcontracted, the Department will determine the value of work subcontracted based on the value of the work subcontracted as indicated in the subcontract agreement and as shown in a breakdown of cost submitted by the Contractor.

2. Limits and Restrictions. The Department will permit subcontracting of work with the following restrictions:

1. The Contractor is barred from subcontracting MOBILIZATION.
2. The Contractor may only subcontract electrical, blasting, asbestos removal, landscaping, and lead paint abatement work to subcontractors having the required certificates and licenses. Submit copies of required certificates and licenses with the request for approval to subcontract.
3. The Contractor is barred from subcontracting to firms and individuals suspended or debarred by the Department or included in the State of New Jersey Consolidated Debarment Report maintained by the Department of the Treasury, Division of Building and Construction, Bureau of Contractor Prequalification. The Contractor must certify that neither the individual, partnership, corporation, joint venture, or limited liability corporation applying to do subcontract work nor any of its corporate officers, stockholders, partners, or members are collectively or individually suspended, debarred, proposed for debarment, disqualified, declared ineligible, or voluntarily excluded from doing business by this or any other State or sub-division thereof or listed in the Federal Government's System for Award Management (SAM), located at: https://www.sam.gov/portal/SAM/#1.
4. Subcontractors are barred from making claims against the Department, its agents, officers, or employees.

3. Subcontract Requirements. Ensure that subcontract agreements include the following Contract provisions:

a. Federal Aid Projects. When subcontracting work on a Federal Aid project, physically incorporate the following in the subcontract agreement, and inform subcontractors of their requirement to physically incorporate the information in lower tier subcontract agreements.

1. Disadvantaged Business Enterprise Utilization (Federal Aid Project Attachment 1), or Emerging Small Business Enterprise Utilization (Federal Aid Project Attachment 1).

2. Specific Equal Employment Opportunity Responsibilities on NJDOT Federal Aid Projects (Federal Aid Project Attachment 2).
3. Requirements for Affirmative Action to Ensure Equal Employment Opportunity on NJDOT Federal Aid Projects (Federal Aid Project Attachment 3).
4. Federal Equal Employment Opportunity Contract Specifications for NJDOT Federal Aid Projects (Federal Aid Project Attachment 4).
5. State of New Jersey Mandatory Equal Employment Opportunity Language on NJDOT Federal Aid Projects (Federal Aid Project Attachment 5).
6. Investigating, Reporting, and Resolving Employment Discrimination and Sexual Harassment Complaints on NJDOT Federal Aid Projects (Federal Aid Project Attachment 6).
7. Payroll Requirements for NJDOT Federal Aid Projects (Federal Aid Project Attachment 7).
8. FHWA-1273 Required Contract Provisions, Federal Aid Construction Contracts as amended or supplemented (Federal Aid Project Attachment 8).
9. State Mandatory Addendum to FHWA-1273 Required Contract Provisions, Federal Aid Construction Contracts as Amended or Supplemented (Federal Aid Project Attachment 9).
10. Federal Mandatory Equal Opportunity Language on Federal Aid Projects (Federal Aid Project Attachment 10).
11. Byrd Anti-Lobbying Certification (Federal Aid Project Attachment 11).
12. The Standard Title VI Assurance found in Subsection 107.02, as amended or supplemented.
13. General Wage Determinations Issued Under the Davis-Bacon and Related Acts.
14. New Jersey Department of Labor Prevailing Wage Rate Determination.
15. New Jersey Department of Transportation Code of Ethics for Vendors.
16. Subsection 107.04 as amended or supplemented.
17. Subsection 106.10 as amended or supplemented.
18. The Contract Assurance found in Subsection 107.03, as amended or supplemented.

b. Wholly State Funded Projects. When subcontracting work on a wholly State funded project, physically incorporate the following in the subcontract agreement, and inform subcontractors of their requirement to physically incorporate the information in lower tier subcontract agreements.

1. Small Business Enterprise Utilization on Wholly State Funded Projects (State Funded Project Attachment 1).
2. State of New Jersey Equal Employment Opportunity Special Provisions for Wholly State Funded Projects (State Funded Project Attachment 2).
3. Requirements for Affirmative Action to Ensure Equal Employment Opportunity on Wholly State Funded Projects (State Funded Project Attachment 3)
4. Investigating, Reporting and Resolving Employment Discrimination and Sexual Harassment Complaints on Wholly State Funded Projects (State Funded Project Attachment 4)
5. Payroll Requirements for Wholly State Funded Projects (State Funded Project Attachment 5).
6. Americans with Disabilities Act Requirements for Wholly State Funded Projects (State Funded Project Attachment 6).
7. New Jersey Department of Labor Prevailing Wage Rate Determination.
8. New Jersey Department of Transportation Code of Ethics for Vendors.
9. Subsection 107.04 as amended or supplemented.
10. The Standard Title VI Assurance found in Subsection 107.02, as amended or supplemented.

108.02 COMMENCEMENT OF WORK

THE SUBPART 4 IN THE FIRST PARAGRAPH IS CHANGED TO:

4. Progress schedule as specified in 153.03

108.06 NIGHT OPERATIONS

2. Visibility Requirements for Workers and Equipment.

THE FIRST PARAGRAPH IS CHANGED TO:

Ensure that workers wear a 360° high-visibility retroreflective safety garment meeting ANSI/ISEA Class 3, Level 2 standards.

108.07.02 Changes to the Traffic Control Plan (TCP)
THE FIRST SENTENCE IN THE FIRST PARAGRAPH IS CHANGED TO:

Submit requests for changes to the TCP to the RE for approval at least 30 days before the change is needed.

THE FOLLOWING NEW SUBPART IS ADDED:

108.07.03 Lane Rental

Lane and shoulder closures are restricted to the schedule provided in the Traffic Control Details of the plans, and as specified in Subpart 108.07.01. The Contractor may extend the allowable hours for lane and shoulder occupancy as provided by Table 108.07.03-1 with the RE's written approval. Submit a written request to the RE to rent lanes and shoulders for an extended period at least 14 days prior to the anticipated use. In the request, provide the following information:

1. Route, Direction and milepost limits
2. Closure Description (Lane type/shoulder):
3. Date(s)/Days
4. Start Time(s)
5. Finish Time(s)
6. Reason
7. Calculation of Lane Rental Cost for each closure

108.08 LANE OCCUPANCY CHARGES
THE SECOND PARAGRAPH IS CHANGED TO:

The RE will keep record of each occurrence as well as the cumulative amount of time that a lane is kept closed beyond the lane closure schedule and provide the record to the Contractor. The Department will calculate the lane occupancy charge by multiplying the length of time of the delayed opening, in minutes, by the rate of $10 per minute per lane, unless otherwise specified in the Special Provisions. The total amount per day for the lane occupancy charge that the Department will collect will not exceed $10,000.00.

THE FOLLOWING IS ADDED:

The rate to calculate the Lane Occupancy Charge is as follows:

Description	**Rate**
Route 28 EB & WB - Overrun of "One Lane Maintained" AM Time Limit	$10/minute
Route 28 EB & WB - Overrun of "One Lane Maintained" PM Time Limit	$20/minute

108.09 MAINTENANCE WITHIN THE PROJECT LIMITS
THE FOLLOWING IS ADDED TO THE FIRST PARAGRAPH:

6. Access to ITS devices and their respective controllers and meter cabinets is maintained throughout the duration of the project.

108.10 CONTRACT TIME

A. Complete all work required for Substantial Completion on or before: refer to Union County Bid Sheet B-38.

B. Achieve Completion on or before: 60 days after "A" above.

108.11.01 Extensions to Contract Time

B. Types of Delays.

1. Non-Excusable Delays.

THE FOLLOWING IS ADDED:

For work performed by Utilities, delays up to 30 percent of the estimated duration specified in 105.07.02 are considered non-excusable. The duration includes both the advance notice and the completion of the work by the Utility.

For delays caused by Railroads, delays up to 30 percent of the estimated availability specified in 105.07 are considered non-excusable.

2. Excusable, Non-Compensable Delays.

b. Utilities.

THE FOLLOWING IS ADDED:

For delays caused by Railroads, when the availability to access is reduced by more than 30 percent greater than the estimated availability specified in 105.07.

THE LAST PARAGRAPH IS CHANGED TO:

If approved excusable, non-compensable delays exceed a total of 90 days, the time in excess of 90 days will become excusable and compensable as specified in 108.11.01.B.3.

108.12 RIGHT-OF-WAY RESTRICTIONS

108.14 DEFAULT AND TERMINATION OF CONTRACTOR'S RIGHT TO PROCEED

LIST (1) OF THE FIRST PARAGRAPH IS CHANGED TO:

1. Fails to begin construction operations within 40 days of execution of the Contract.

THE FOLLOWING IS ADDED AFTER THE 2ND PARAGRAPH:

If the Department directs the Surety to complete the Contract, and the Surety elects to use a completion-contractor to perform the Work, the Surety must promptly submit to the Department a request for approval of the proposed completion-contractor as a subcontractor as per Section 108.01. The Department has the right to reject a request by the Surety to use the Contractor as the completion-contractor, either directly or under the direction of a consultant to the Surety. In addition, the Department has the right to reject a request by the Surety to contract with employees of the Contractor, directly or under the direction of a consultant to the Surety, to complete the Contract. The Department's right to reject contained in this paragraph is based on the sole discretion of the Department.

108.19 COMPLETION AND ACCEPTANCE

THE FOLLOWING IS ADDED:

No Incentive Payment for Early Completion is specified for this project.

108.20 LIQUIDATED DAMAGES

Liquidated damages are as follows:

C. For each day that the Contractor fails to achieve Completion as specified in Subsection 108.10 of these Special Provisions, the Department will assess liquidated damages in the amount of $1,000.00_____.

THE FOLLOWING IS ADDED:

When the Contractor may be subjected to more than one rate of liquidated damages established in this Section, the Department will assess liquidated damages at the higher rate.

SECTION 109 – MEASUREMENT AND PAYMENT

109.01 MEASUREMENT OF QUANTITIES
THE SECOND PARAGRAPH IS CHANGED TO:

The Department will designate Items as Measured Items or as Proposal Items by having a suffix of M or P in the Item number respectively. The Department will measure quantities of Measured Items for payment.
THE LAST SENTENCE OF THE LAST PARAGRAPH IS CHANGED TO:

The Department will measure quantities for Proposal Items that are designated on the Plans as "if and where directed" for payment when the RE directs work using the "if and where directed" quantity.

109.02 SCOPE OF PAYMENT
THE THIRD SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

The Department will not make additional or separate payment for work or portion of work unless specifically provided for in the "Measurement and Payment" Subsection.

109.05 ESTIMATES
THE ENTIRE SUBSECTION IS CHANGED TO:

The Department will make monthly payments to the Contractor for work performed and for materials delivered, as specified in 109.06. The RE will calculate the payment in an Estimate consistent with the provisions of the Contract. If not otherwise described in the Contract, the RE will be the sole judge of the amount of progress payment due for partially completed work. The quantities provided in the Estimate may be approximations and may not be based on as-built quantity measurements. The Department will establish the date of the month that the Estimate is processed.

Pay subcontractors and suppliers for satisfactory performance of their work no later than 10 days from receipt of each payment made by the Department.

Pay subcontractors and suppliers the full amount of retainage no later than 10 days from receipt of payment made by the Department for the subcontractor's or supplier's work.

The RE will provide a summary of the Estimate to the Contractor. Before the issuance of each payment, certify, on forms provided by the Department, whether:

1. Each subcontractor or supplier has been paid the amount due, including retainage, from the previous progress payment and will be paid the amount due from the current progress payment, including retainage, for the subcontractor or supplier's work that was paid by the Department; or
2. There exists a valid basis under the terms of the subcontractor's or supplier's contract to withhold payments from the subcontractor or supplier, and therefore payment is withheld.

If the certification indicates that the Contractor has withheld or will withhold payment from a subcontractor or supplier, provide written notice, according to N.J.S.A. 52:32-40 and N.J.S.A. 52:32-41, of such non-payment to the subcontractor or supplier. Provide a copy of the notice to the Department and to the Surety that holds the performance bond. Include the reason for withholding payment and state the amount of payment withheld in the notice.

The date that the Department receives the certification will initiate the 20-day approval period under N.J.S.A. 2A:30A-1, *et seq*. The Department will not accept the certification before being requested by the RE.

If the Contractor fails to pay the subcontractor or supplier within 30 days after the subcontractor or supplier satisfactorily completes the specified work, the Department may withhold progress payments from the Contractor, until the Contractor pays the subcontractor or supplier all delinquent amounts due, or the Contract is terminated, or the matter is resolved under N.J.S.A. 52:32-40 and N.J.S.A. 52:32-41.

If the Department receives an allegation from a subcontractor or a supplier that the Contractor has not paid the subcontractor or supplier the amount due from a previous progress payment, including retainage, submit to the RE within 10 days of a request made by the RE, evidence that payment has been made.

If no valid basis exists for withholding payment, N.J.S.A. 52:32-40 and N.J.S.A. 52:32-41 authorize any subcontractor or supplier from whom payment is withheld to receive from the Contractor, in addition to any amount due, interest at a rate equal to the prime rate plus one percent if the subcontractor or supplier is not paid within 10 days after receipt by the Contractor of payment by the Department for completed work that is the subject of a subcontract or a material supply agreement. This interest begins to accrue on the tenth day after receipt of payment by the Contractor.

If court action is taken by a subcontractor or supplier to collect payments withheld by a Contractor and it is determined that a valid basis existed for the withholding of those payments, the subcontractor or supplier shall be liable for any court costs incurred by the Contractor in connection with the action.

The Department will not make payment for an Estimate having a value less than $5000, unless it is for the Final Certificate.

From the total Estimate amount, excluding amounts for subcontracted work on Federal aid projects, the Department will deduct and retain 2 percent until Substantial Completion.

In the first Estimate following Substantial Completion, the Department will reduce the retainage withheld to one percent of the Total Adjusted Contract Price, excluding subcontracted work on Federal aid projects, unless it has been determined by the Department that the withholding of additional retainage is required. If retainage is held in cash withholdings, the reduction is to be accomplished by payment under the next Estimate. If retainage is held in bonds, the Department will authorize a reduction in the escrow account.

THE THIRTEENTH PARAGRAPH IS CHANGED TO:

In the first Estimate following installation of all landscape work, the Department will reduce the retainage withheld to one percent of the Total Adjusted Contract Price, excluding subcontracted work on Federal aid projects, unless it has been determined by the Department that the withholding of additional retainage is required. If retainage is held in cash withholdings, the reduction is to be accomplished by payment under the next Estimate. If retainage is held in bonds, the Department will authorize a reduction in the escrow account.

The RE has the right to not process an Estimate when, in the judgment of the RE, the Work is not performed or proceeding as specified in the Contract or following the Department giving the Contractor and Surety notice of default as specified in 108.14.

The Department's processing or payment of an Estimate is not an approval of defective or improper work. The Department, upon determining that any payment under a previous Estimate was improper or unwarranted for any reason, has the right to recover erroneous payment from the Contractor.

109.06 MATERIALS PAYMENTS AND STORAGE

THE TEXT BEFORE THE LIST UNDER THE FIRST PARAGRAPH IS CHANGED TO:

The Contractor may request payment for the cost of materials, including the storage cost, not incorporated into the Work. If approved by the RE, the Department will make payment for the cost of materials, including storage costs if such payment exceeds $25,000; however, the amount of payment may not exceed 85 percent of the bid price for the associated Item. The Department will not make payment for such materials until the RE is satisfied that:

109.07 BONDS POSTED IN LIEU OF RETAINAGES

THE FIRST PARAGRAPH IS CHANGED TO:

The Contractor may deposit negotiable bonds of the State or any of its political subdivisions, which have been approved by the Department, in an escrow account to secure release of all or a portion of the retainage withheld as specified in 109.05. Establish the account under the provisions of an escrow agreement to be entered into between the Contractor, the Department, and a bank located in the State that is an authorized depository with a trust department. Pay the charges of the bank for services rendered according to the terms and conditions of the escrow agreement.

109.08 AS-BUILT QUANTITIES

THE FOLLOWING IS ADDED:

If prior to the issuance of the Final Certificate, the Department determines there is an error in the provided as-built quantities, the Department will provide a revised list to the Contractor for review. Accept or reject the revised as-built quantities as described above.

109.09 AUDITS

THE FOLLOWING IS ADDED:

Pursuant to N.J.S.A. 52:15C-14(d), relevant records of private vendors or other persons entering into contracts with the Department are subject to audit or review by the New Jersey Office of the State Comptroller. Therefore, the Contractor shall maintain all documentation related to products, transactions or services under the Contract for a period of five years from the date of final payment. Such records shall be made available to the New Jersey Office of the State Comptroller upon request.

DIVISION 150 – CONTRACT REQUIREMENTS

SECTION 151 – PERFORMANCE BOND AND PAYMENT BOND

151.03.01 Performance Bond and Payment Bond
THE LAST SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

Submit the broker's fees, the certified rate schedule, paid invoices and the report of execution for the bond to the RE.

151.04 MEASUREMENT AND PAYMENT
THE FOLLOWING ITEM'S PAY UNIT IS REVISED TO:

Item	*Pay Unit*
PERFORMANCE BOND AND PAYMENT BOND	DOLLAR

SECTION 152 – INSURANCE

152.03.01 Owner's and Contractor's Protective Liability Insurance

A. Policy Requirements.
THE FOURTH SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

Ensure that policies are underwritten by companies with a current A.M. Best rating of A- with a Financial Size Category of VII or better.

B. Types

1. Comprehensive General Liability Insurance.

2. Comprehensive Automobile Liability Insurance.

3. Owner's and Contractor's Protective Liability Insurance.
THE ENTIRE TEXT IS CHANGED TO:

Procure a separate Owner's and Contractor's Protective Liability Insurance Policy with a minimum limit of liability in the amount of $4,000,000 per occurrence as a combined single limit for bodily injury and property damage. Ensure the policy is endorsed to include Severability of Interest/Separation of Insureds clause. Ensure the policy names the State, its officers, employees, and agents as additional insured. Provide documentation from the insurance company that indicates the cost of the Owner's and Contractor's Protective Liability Insurance Policy.

Ensure the policy is endorsed to include per project aggregate.

5. Excess Liability Insurance.

6. Marine Liability Insurance.
THE ENTIRE TEXT IS CHANGED TO:

If construction operations require the Contractor to use a boat, procure Marine Liability Insurance with a minimum limit of liability in the amount of $2,000,000 per occurrence. Ensure the policy is endorsed to include:

1. Personal injury.
2. Contractual liability.
3. Waiver of Subrogation for all claims and suits, including recovery of any applicable deductibles.
4. Per project aggregate.

Ensure the policy names the State, its officers, employees, and agents as additional insured.

152.03.02 Railroad Protective Liability Insurance
THE FOLLOWING IS ADDED TO THE FIRST PARAGRAPH:

Ensure the policy is endorsed to include per project aggregate.

THE THIRD PARAGRAPH IS CHANGED TO:

Ensure the policy is endorsed to include Severability of Interest/Separation of Insureds clause. Submit the policy for railroad protective liability insurance and endorsements to the Comprehensive General Liability Insurance to the railroad company for approval. The Department will list the name and address of the railroad company representative in the Special Provisions. Construction operations will not be permitted on railroad property before approval of insurance by the railroad company. Reconcile all policy requirements to the satisfaction of the railroad company and the RE.

Procure and maintain insurance coverage for the following railroad(s):

Consolidated Rail Corporation (CONRAIL)

It is estimated that _50_ percent of the Project cost is located within or adjacent to the railroad right-of-way.

152.03.03 Pollution Liability Insurance
SUBPART 9 IS ADDED TO THE THIRD PARAGRAPH:

9. Per project aggregate.

152.04 MEASUREMENT AND PAYMENT
THE FOLLOWING ITEMS' PAY UNITS ARE REVISED TO:

Item	*Pay Unit*
OWNER'S AND CONTRACTOR'S PROTECTIVE LIABILITY INSURANCE	DOLLAR
RAILROAD PROTECTIVE LIABILITY INSURANCE	DOLLAR
POLLUTION LIABILITY INSURANCE	DOLLAR

THE LAST PARAGRAPH IS CHANGED TO:

The Department will make initial payment for OWNER'S AND CONTRACTOR'S PROTECTIVE LIABILITY INSURANCE, RAILROAD PROTECTIVE LIABILITY INSURANCE, and POLLUTION LIABILITY INSURANCE at the lesser of the bid amount, or actual costs as documented from paid invoices. If the Bid amount is greater than the amount indicated on the documented paid invoices, the Department will make payment for any remainder, up to the Bid amount, with the final monthly Estimate.

SECTION 153 – PROGRESS SCHEDULE

153.03.01 CPM PROGRESS SCHEDULE
THE THIRD PARAGRAPH IS CHANGED TO:

The Contractor may propose alternate staging. Ensure that proposed alternate staging does not interfere with work done by Others without written concurrence from the affected Others. The Department may reject the proposed alternate staging if it causes an increase to the cost of work done by Others. The Contractor is responsible for the cost of changes or additional work required as a result of completing the work according to the proposed alternate staging.

1. Preliminary Schedule Submission.
THE SECOND PARAGRAPH IS CHANGED TO:

The RE may require 3 color paper copies of the preliminary schedule, Gantt Chart, as specified in 153.03.02.2.e, and a network diagram (PERT) printed on 36 × 22-inch plans detailing the activity relationships.

2. Baseline Schedule Submission.
THE LAST SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

The RE may require the Contractor to submit 3 color paper copies of the baseline schedule.

THE SECOND PARAGRAPH PART 3 IS CHANGED TO:

3. The RE may require 3 color paper copies of the tabular reports, as specified in 153.03.02.2, and a printed network diagram (PERT) on 36 × 22-inch sheets detailing the activity relationships.

153.03.02 CPM Progress Schedule Updates
THE LAST PARAGRAPH IS CHANGED TO:

If the project falls behind schedule for nonexcusable delays, so that the schedule indicates that the Work will not be completed by the Completion date, as specified in 108.10, take the necessary steps to improve progress. Under such circumstances, the RE may direct the Contractor to increase the number of shifts, begin overtime operations, work extra days including weekends and holidays, and supplement its construction plant. Furthermore, the RE may require the Contractor to submit for approval a recovery schedule showing how the Contractor proposes to meet the directed acceleration.

2. Tabular Reports.
THE FIRST SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

The RE may require 3 color paper copies of the longest path sort, total float sort, responsibility sort, area sort, and Gantt chart.

153.03.03 Bar Chart Progress Schedule and Updates

A. Schedule.
THE THIRD SENTENCE OF THE THIRD PARAGRAPH IS CHANGED TO:

Provide 3 color paper copies of a bar chart progress schedule or similar type that is acceptable to the RE for approval as follows:
THE FOLLOWING IS ADDED:

If the project falls behind schedule for nonexcusable delays, so that the schedule indicates that the Work will not be completed by the Completion date, as specified in 108.10, take the necessary steps to improve progress. Under such circumstances, the RE may direct the Contractor to increase the number of shifts, begin overtime operations, work extra days including weekends and holidays, and supplement its construction plant. Furthermore, the RE may require the Contractor to submit for approval a recovery schedule showing how the Contractor proposes to meet the directed acceleration.

153.04 MEASUREMENT AND PAYMENT
THE THIRD PARAGRAPH IS CHANGED TO:

If the Contractor's CPM Progress Schedule update is not approved by the date of the progress meeting for the following update, the Department will assess liquidated damages to recover the Department's increased administrative costs. The Department will assess damages for each delinquent update as follows:

SECTION 155 – CONSTRUCTION FIELD OFFICE

155.03.01 Field Office

4. Communication Equipment.

a. Telephones. Provide _1__ cordless phones with auto-switching.

c. Cell Phones. Provide _1__ cellular phones. Ensure the cellular phone plan provides for unlimited mobile to mobile in-network usage, unlimited push-to-talk/ walkie-talkie usage and an anticipated monthly usage of 900 any-time minutes for each phone. Ensure the phones are on the same plan. Ensure the cellular phone plan has a home rate with no roaming charges within the state. Ensure each cellular phone has the following features:

1. ~~Push to Talk / Walkie-Talkie capable~~
2. Camera with 1 megapixel picture capability
3. Battery life capable of 180 minutes of continuous use and 72 hours of standby use
4. Equipped with a hands-free headset

5. Base charger and car charger

The Department will maintain possession of the cell phones at the end of the Project.

d. Computer System. Provide a computer system meeting the following requirements:

__1_ computer configurations each meeting the following:

1. Processor having a clock speed of _2__ GHz or faster, __8_ GB RAM, _1__ MB Video RAM, _450__ Gigabyte hard drive designated as drive C, one DVD (+/-) Writer Drive, one CD-R Recordable Drive. Ensure the system is USB 2.0 compatible and has at least two front USB ports Include Keyboard, optical mouse and 2 piece desktop speakers.
2. Wired Router with appropriate number of ports and cables and a print server. Ensure there is at least one wired Ethernet switch.
3. High-speed broad band connection and service with a minimum speed of ___ Megabits per second (mbps) with dynamic IP address for the duration of the project.
4. 19 inch or larger Flat Screen LCD monitor with tilt/swivel capabilities.
5. _450__ Gigabyte or larger external drive with backup software for MS-Windows, and fifteen corresponding formatted data cartridges corresponding to the tape drive size.
6. _1__ Flatbed USB version 2.0 or greater Color Scanner with automatic document feed.
7. Uninterruptible power supply (UPS).
8. Surge protector for the entire computer configuration to be used in conjunction with the UPS.
9. Computer workstation, chair, printer stand, and/or table having both appropriate surface and chair height.
10. One can of compressed air and screen cleaning solution every other month of the duration of the contract.

If more than one computer configuration is specified, provide one network interface card for the base computer configuration and hardwire connections between computer configurations as directed by the RE.

Also provide:
_4__ USB _4__ GB Flash/Jump memory drives
___ CD-R ___ MB (or larger) recordable CD's compatible with the CD drive and ___ recordable DVD's.
___ CD/DVD Holder (each holds 50)

_1__ color laser printers and supplies as follows:

1. Minimum of 192 Megabytes of expanded memory, printer cable, and legal size paper tray.
2. One set of printer ink cartridges every other month for the duration of the construction project for each printer.

Software as follows:

1. Microsoft Windows, latest version with future upgrades for the duration of the entire project.
2. Microsoft Office Professional, latest version.
3. Norton's System Works for Windows, latest version, or compatible software package with future upgrades and latest virus patches.
4. Anti-Virus software, latest version with monthly updates for the duration of the contract.
5. Visio Professional Graphics Software for Windows, latest version
6. Primavera Project Management, latest version
7. Adobe Acrobat Professional, latest version, or compatible software for Scanner

THE THIRD PARAGRAPH IS CHANGED TO:

When the computer system is no longer required by the RE, the Department will remove and retain the hard drive, and return the computer system to the Contractor. The Department will retain other data storage media.

6. Office Equipment. Provide the following:

PART (1) IS CHANGED TO:

1. A copier with automatic document feed, 15 pages per minute copy speed, variable reduce/enlarge capability, and letter, legal, and ledger size capabilities. Erase the copier hard drive before removing the copier from the field office and provide the RE with a certification stating that the copier hard drive has been erased.

2. __1_ digital camera(s). Ensure each digital camera has auto-focus, with rechargeable batteries and charger, _16_ MB memory card, USB Memory Card Reader compatible with camera and field office computer, 1.5 inch LCD monitor, _16__ mega pixel resolution, _4_ X optical zoom lens, built in flash, image stabilization, computer connections, and a carrying case
3. ___ video camcorder(s). Ensure each video camcorder is a mini DVD camcorder with ___ optical zoom, 2" LCD monitor, USB 2.0 compatible and includes USB 2.0 connections.

7. Inspection Equipment.

1. _1_ Calculators with trigonometric capability
2. _1_ Date/ Received stamp and ink pad
3. __ Electronic Smart level, 4 foot
4. _1_ Electronic Smart level, 2 foot
5. _1_ Carpenter rulers
6. _1_ Steel tape, 100 feet
7. __ Cloth tape, 100 feet
8. __ Illuminated measuring wheel
9. __ Plumb bob and cord
10. __ Line level and cord
11. _1_ Surface thermometer
12. _1_ Concrete thermometer
13. _1_ Digital infrared asphalt thermometer
14. __ Direct Tension Indicator (DTI) Feeler Gage, 0.005 inch
15. __ Sledge hammer, 8lb
16. _1_ Self leveling laser level with range of 100 feet and an accuracy of ¼ inch per 100 feet
17. _4_ Hard hats - orange, reflectorized hard hats according to ANSI Z89.1.
18. _2_ Safety garments – orange, reflectorized, 360º high visibility safety garments according to ANSI/ISEA Class 3, Level 2 standards. To be replaced yearly for the duration of the contract.
19. _1_ Sets of rain gear with reflective sheeting
20. _2_ Sets of hearing protection with a NRR rating of 22 dB
21. _2_ Sets of eye protection according to ANSI Z87.1
22. _1_ Sets of fall arrest equipment according to ANSII Z359.1 standards consisting of a full body harness, lanyard and anchor.
23. __ Light meter - capable of measuring the level of luminance in foot-candles
24. __ Lantern flashlight, 6V with monthly battery replacements
25. __ Digital Psychrometer
26. __ Chain Drag according to ASTM D4580-86
27. __ Testing equipment and apparatus conforming to AASHTO T23, T119, T152
28. _10_ Hard Bound Daily Diaries, 5-½" X 8" minimum with one day per page. To be provided yearly for the duration of the contract.
29. _50_ Legal size hanging folders
30. _100_ Legal size manila file folders – three tab

155.03.03 Telephone Service

THE CONTENT OF THIS SUBSECTION IS DELETED

155.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEM IS DELETED:

Item	*Pay Unit*
TELEPHONE SERVICE	LUMP SUM

THE THIRD PARAGRAPH IS DELETED.

SECTION 156 – MATERIALS FIELD LABORATORY AND CURING FACILITY

156.03 PROCEDURE

156.03.01 Materials Field Laboratory

4. Communication Equipment.

c. Cell Phones. Provide ____ cellular phones. Ensure the cellular phone plan provides for unlimited mobile to mobile in-network usage, unlimited push-to-talk/ walkie-talkie usage and an anticipated monthly usage of 900 any-time minutes for each phone. Ensure the phones are on the same plan. Ensure the cellular phone plan has a home rate with no roaming charges within the state. Ensure each cellular phone has the following features:

1. Push to Talk / Walkie-Talkie capable
2. Camera with 1 megapixel picture capability
3. Battery life capable of 180 minutes of continuous use and 72 hours of standby use
4. Equipped with a hands-free headset
5. Base charger and car charger

The Department will maintain possession of the cell phones at the end of the Project.

d. Computer System. Provide a computer system meeting the following requirements:

___ computer configurations each meeting the following:

1. Processor having a clock speed of ___ GHz or faster, ___ GB RAM, ___ MB Video RAM, ___ Gigabyte hard drive designated as drive C, one DVD (+/-) Writer Drive, one CD-R Recordable Drive. Ensure the system is USB 2.0 compatible and has at least two front USB ports.
2. Wireless Ethernet Hub Switch with appropriate number of ports and cables and a print server.
3. High-speed broad band connection and service with a minimum speed of ___ Megabytes per second (mbps) with dynamic IP address for the duration of the project.
4. 19 inch or larger Flat Screen LCD monitor with tilt/swivel capabilities.
5. ___ Gigabyte or larger external drive with backup software for MS-Windows, and fifteen corresponding formatted data cartridges corresponding to the tape drive size.
6. ___ Flatbed USB version 2.0 Color Scanner with automatic document feed.
7. Uninterruptible power supply (UPS).
8. Surge protector for the entire computer configuration to be used in conjunction with the UPS.
9. ___ computer workstations, chair, printer stand, and/or table having both appropriate surface and chair height.
10. One can of compressed air and screen cleaning solution every other month of the duration of the contract.

If more than one computer configuration is specified, provide one wireless network card for the base computer configuration and hardwire connections between computer configurations as directed by the RE.

Also provide:
___ USB ___ GB Flash/Jump memory drives
___ CD-R ___ MB (or larger) recordable CD's compatible with the CD drive and ___ recordable DVD's.
___ CD/DVD Holder (each holds 50)

___ color laser printers and supplies as follows:

1. Minimum of 192 Megabytes of expanded memory, printer cable, and legal size paper tray.
2. One set of printer ink cartridges every other month for the duration of the construction project for each printer.

THE THIRD PARAGRAPH IS CHANGED TO:

When the computer system is no longer required by the ME, the Department will remove and retain the hard drive, and return the computer system to the Contractor. The Department will retain other data storage media.

6. Office Equipment. Provide the following:

PART (1) IS CHANGED TO:

1. A copier with automatic document feed, 15 pages per minute copy speed, variable reduce/enlarge capability, and letter, legal, and ledger size capabilities. Erase the copier hard drive before removing the copier from the field office and provide the RE with a certification stating that the copier hard drive has been erased.

THE FOLLOWING IS ADDED:

9. Inspection Equipment.

1. __ Hard hats - orange, reflectorized hard hats according to ANSI Z89.1.
2. __ Safety garments – orange, reflectorized, 360º high visibility safety garments according to ANSI/ISEA Class 3, Level 2 standards. To be replaced yearly for the duration of the contract.
3. __ Sets of rain gear with reflective sheeting
4. __ Sets of hearing protection with a NRR rating of 22 dB
5. __ Sets of eye protection according to ANSI Z87.1
6. __ Lantern flashlight, 6V with monthly battery replacements

156.03.05 Nuclear Density Gauge

THE LAST PARAGRAPH IS CHANGED TO:

Provide a nuclear density gauge for the exclusive use of the ME using one of the following methods:

1. Purchase a nuclear density gauge under the Contractor's New Jersey Department of Environmental Protection (NJDEP) License or the Contractors United States Nuclear Regulatory Commission (USNRC) license.
2. Lease a nuclear density gauge from a New Jersey Department of Environmental Protection (NJDEP) or United States Nuclear Regulatory Commission (USNRC) licensed third party on the Department's New Jersey Department of Environmental Protection (NJDEP) License.

The Contractor is barred from purchasing gauges on the Department's New Jersey Department of Environmental Protection (NJDEP) license. Perform calibration and servicing of the gauge, other than routine wipe tests, every 24 months. The ME may direct additional calibrations, when necessary. Supply a replacement gauge for the Department's use during the calibration and servicing period.

SECTION 157 – CONSTRUCTION LAYOUT AND MONUMENTS

157.03.01 Construction Layout

THE SEVENTH PARAGRAPH IS CHANGED TO:

Provide the Utilities with the layout needed to install relocated utility facilities and coordinate the Work. Ensure that relocated facilities do not conflict with proposed construction, including High Voltage Proximity Act conflicts.

THE FOLLOWING IS ADDED AFTER THE NINTH PARAGRAPH:

For each bridge and sign structure within the Project Limits, provide the RE as-built measurements of the vertical under clearance at each lane line, shoulder line, curb line and edge of pavement line under a structure to the nearest inch. For each bridge structure, provide vertical under clearance measurements at each fascia beam.

157.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEM'S PAY UNIT IS REVISED TO:

Item	*Pay Unit*
CONSTRUCTION LAYOUT	DOLLAR

THE SECOND PARAGRAPH IS CHANGED TO:

The Department will adjust payment for CONSTRUCTION LAYOUT based on the final contract amount and will calculate as follows:

$$CL = \frac{CL_B \times (C_F - E_F)}{C_O - E_O}$$

Where:
CL = Adjusted payment for CONSTRUCTION LAYOUT.
CL_B = Bid price for CONSTRUCTION LAYOUT.
C_O = Original Contract Price.
C_F = Final Contract Price.
E_F = Total of CL_B and the final cost for PERFORMANCE BOND AND PAYMENT BOND, Incentive/Disincentives for completion/interim completion, and claim settlements.
E_O = Total of CL_B, and PERFORMANCE AND PAYMENT BOND.

SECTION 158 – SOIL EROSION AND SEDIMENT CONTROL AND WATER QUALITY CONTROL

158.03.02 SESC Measures

8. Inlet Filters. Provide Type 1 and Type 2 inlet filters as follows:

a. Type 1.

THE ENTIRE TEXT IS CHANGED TO:

For a new inlet structure without a casting, mold welded steel wire fabric around the inlet walls. Extend the welded steel wire a minimum of 6 inches down each side of the structure. Secure geotextile to the welded wire fabric. Place No. 2 coarse aggregate against the inlet structure to hold the inlet filter in place.

For an inlet structure with a casting and exposed exterior walls, place geotextile under the casting and extend it a minimum of 6 inches below the top of the exposed walls. Place No. 2 coarse aggregate around the drain hole opening.

For an existing inlet structure without exposed exterior walls, place geotextile under the grate and extend the geotextile for a minimum of 6 inches beyond the grate.

For an inlet with a curb piece and without exposed exterior walls, ensure that the opening in the curb piece has a height of 2 inches. If the opening is greater than 2 inches, achieve the 2-inch opening size by wrapping the geotextile around an appropriately sized piece of lumber. Place the lumber against the vertical opening.

12. Dewatering Basin.

THE ENTIRE TEXT IS CHANGED TO:

At least 10 days before installation, submit to the RE for approval a plan, signed and sealed by a professional engineer licensed in the State of New Jersey, detailing the size, materials, and location for all dewatering basins. Size dewatering basins to contain the expected discharge of water and sediment based on the flow rate of the pump to be used and the volume of area to be dewatered. Contain the turbid discharge from dewatering activities in a dewatering basin to control sediment and provide water filtration. Ensure that the outfall of the basin does not cause erosion to or scour of the area onto which the water is being discharged.

At the end of dewatering operations, remove the dewatering basin. Restore the disturbed area to the original condition.

Groundwater is not to be discharged through wetlands, surface waters, storm sewers, paved or unpaved surfaces, or other adjacent areas, and shall not cause flooding or ponding on the site or adjacent areas.

Groundwater can be discharged by one of three methods.

1. Groundwater can be discharged to the sanitary sewer system if approval from the Rahway Valley Sewerage Authority and the Engineer is obtained.
2. Groundwater can be discharged at a licensed off-site disposal facility if approved by the Engineer.
3. Groundwater can be discharged from one excavation to another provided that the receiving excavation intersects the groundwater table and is on site and in close proximity to the excavation being dewatered. For on-site discharge the Contractor must obtain a NJDEP pre-approval for a NJPDES Discharge to Groundwater Permit-By Rule and approval from the Engineer.

Groundwater is known to be contaminated at the project site. If more recent data is required to obtain the necessary water disposal approvals it will be the Contractor's responsibility collect such data.

19. Oil-Only Emergency Spill Kit.

THE SECOND SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

Include Oil-only Emergency Spill Kit, Type 1 consisting of the following:

SECTION 159 – TRAFFIC CONTROL

159.02.01 Materials

THE FOLLOWING IS ADDED TO THE LIST OF MATERIALS REFERENCES:

Box Beam for Construction Barrier Curb 913.04

THE FOLLOWING IS ADDED:

Provide temporary crash cushions, inertial barrier systems as specified in 611.02. Provide temporary compressive crash cushions as specified for compressive crash cushions in 611.02.

159.02.02 Equipment

159.03.02 Traffic Control Devices

2. Construction Barrier Curb.

THE ENTIRE TEXT IS CHANGED TO:

Alternate A or B construction barrier curb may be used interchangeably in any location. The Contractor may use construction barrier curb that is constructed using gray or white concrete. Do not place different colors of construction barrier curb in a continuous run. Do not use construction barrier curb having any of the following deficiencies:

1. Exposed steel at the connector flangeway.
2. Exposed reinforcement steel.
3. Cracking through the cross section.
4. An area of concrete missing larger than a 3-inch by 3-inch right triangle.
5. Debris in the keyway.
6. Non-functioning anchor bolt holes.
7. Non-functioning anchor rod hole.
8. Paint applied to the surface.
9. Objects protruding from the surface.
10. Previous repairs.
11. Do not use damaged, kinked or bent connection key or box beam stiffener.

At least 30 days before delivering construction barrier curb to the Project Limits, provide the RE notice that the barrier curb is available for inspection. The RE will inspect the barrier curb, along with a Contractor

representative, to determine what pieces are not approved for delivery to the Project Limits. Final determination of construction barrier approval will be made at the time of placement at the Project.

Ensure that anchor pins do not project above the plane of the barrier curb. Install the Construction Barrier Curb stiffened with box beams as indicated in the contract documents.

Replace construction barrier curb that does not meet the specified requirements. Do not patch or repair construction barrier curb.

Provide top and side mounted flexible delineators on the construction barrier curb. For delineators located on the right side when facing in the direction of traffic, ensure that the retroreflective sheeting is white. For delineators located on the left side when facing in the direction of traffic, ensure that the retroreflective sheeting is yellow. Attach flexible delineators according to the manufacturer's recommendations.

Starting at the beginning of the construction barrier curb section mount top delineators at 100-foot intervals on tangent sections, or curves of radii greater than 1,910 feet, and at 50-foot intervals on curves of radii of 1,910 feet or less.

Mount side delineators at the lead end of each barrier segment with the top of the delineator 3 inches from the top of the barrier.

5. Temporary Crash Cushion

THE SECOND SENTENCE IS CHANGED TO:

Install temporary compressive crash cushions as specified for compressive crash cushions in 611.03.02.

6. Traffic Control Truck with Mounted Crash Cushions.

THE LAST SENTENCE IS CHANGED TO:

Submit drawings to the RE detailing the manner of securing the ballast, signed and sealed by a Professional Engineer, certifying that it is capable of withstanding the impact forces for which the impact attenuator is rated.

THE FOLLOWING IS ADDED TO THE SECOND PARAGRAPH:

8. Portable Variable Message Sign with Remote Communication (PVMSRC). Place the PVMSRC at the locations directed by the RE for the duration of the project. Ensure that a designated representative familiar with the operation and programming of the unit is available on the Project for On-Site Configuration. Only display messages on the PVMSRC authorized by the Department for the Project in accordance with the plans or as directed by the RE and make the signs available for use remotely from the Traffic Operation Center (TOC) specified in 105.07.01.B. Program within 8 hours, any message requested by the RE to be displayed on the PVMS at a scheduled time and verify that the message is displayed correctly and notify the RE. If the PVMSRC fails to function, repair the equipment within 48 hours of receiving notice from the Department that the PVMSRC is not functioning.

Integrate the PVMSRC for remote operation from TOC using Vanguard DMS software or the Department's central DMS control software at the time of installation as directed by the RE.

Provide for one week of testing by the TOC for remotely operating the PVMSRC before the start of construction operations that require lane or shoulder closures, or other impacts to traffic. At least 10 days before testing, submit to the RE for approval a plan for any work to be completed in the TOC. Submit a request to the RE at least 4 days in advance to access the TOC for any work.

9. Portable Trailer Mounted CCTV Camera Assembly (PTMCCA).

Place the PTMCCA at the location directed by the RE. Ensure that a designated representative familiar with the operation and programming of the unit is available on the Project for initial installation. If the PTMCCA fails to function, repair the equipment within 48 hours of receiving notice from the Department that the PTMCCA is not functioning.

Provide a system that includes a robotic network camera remotely controllable, including Pan, Tilt and Zoom (PTZ). Provide broadband internet service connection and On-Site Camera Configuration for remote operation

and control of the camera via the Department's existing Head-End Camera Control System, Genetec. No other Head-End Camera Control System substitution is permitted. A Management user system is also to be provided for remote system programming to the camera sites. This includes a website that is to be provided and hosted by the vendor. This website is to have secure authentication and is to show the current devices with their location, status, and display links for each device. Provide continuous viewable image at a minimum of 320H x 240V resolution and 1 frame per sec (fps) through the website. As directed by the Traffic Operation Center (TOC) specified in 105.07.01.B, establish password level designations, camera presets, and camera image displays. Provide all incidental equipment and material required for successful remote operation and communications.

Provide for one week of testing by the TOC for remotely operating the PTMCCA before the start of construction operations that require lane or shoulder closures, or other impacts to traffic.

159.03.06 Temporary Traffic Stripes and Temporary Traffic Markings
THE SUBPART HEADING AND THE ENTIRE TEXT IS CHANGED TO:

159.03.06 Traffic Stripes, Latex ,Traffic Markings Lines, Latex and Traffic Markings Symbols, Latex

Apply latex traffic stripes and latex markings when they are required for 14 days or less. Apply epoxy traffic stripes and thermoplastic markings as specified in 610.03.01 and 610.03.02 when they are required for more than 14 days. Apply latex traffic stripes and latex markings when the ambient and surface temperatures are at least 45 °F and rising and the surface temperature is no more than 140 °F. Apply the latex paint in a wet film thickness of 6 ± 1 mil. Apply glass beads to the wet paint in a uniform pattern and at the rate of 12 pounds per gallon of paint.

159.03.08 Traffic Direction

A. Flagger.
THE LAST SENTENCE IS CHANGED TO:

Ensure that the flagger is equipped with a STOP/SLOW paddle and follows MUTCD flagging procedures.

B. Police.
THE FOURTH PARAGRAPH IS DELETED.

159.04 MEASUREMENT AND PAYMENT
THE FOLLOWING ITEMS ARE ADDED:

Item	*Pay Unit*
PORTABLE VARIABLE MESSAGE SIGN WITH REMOTE COMMUNICATION	UNIT
PORTABLE TRAILER MOUNTED CCTV CAMERA ASSEMBLY	UNIT
TEMPORARY CRASH CUSHION, COMPRESSIVE BARRIER, TYPE___, WIDTH___	UNIT
TEMPORARY CRASH CUSHION, LOW MAINTENANCE COMPRESSIVE BARRIER, TYPE___, WIDTH___	UNIT
TRAFFIC STRIPES, LATEX ___"	LINEAR FOOT
TRAFFIC MARKINGS LINES, LATEX ___"	LINEAR FOOT
TRAFFIC MARKINGS SYMBOLS, LATEX	SQUARE FOOT

THE FOLLOWING ITEMS ARE DELETED:

Item	*Pay Unit*
TEMPORARY TRAFFIC STRIPES, ___"	LINEAR FOOT
TEMPORARY TRAFFIC MARKINGS	SQUARE FOOT
TEMPORARY CRASH CUSHION, ___	UNIT

THE SECOND PARAGRAPH IS CHANGED TO:

For traffic control devices measured by the linear foot or unit basis that are specified in 159.03.02, the Department will make payment for the maximum quantity in service at one time as required by the Contract. For CONSTRUCTION SIGNS, the Department will make payment for the maximum quantity of specific sign types in service at one time as required by the Contract. If a particular sign type has more than one unique text, each sign with a unique text will be considered to be a specific sign type. The Department will make payment for 50 percent of the Contract bid price for

traffic control devices specified in 159.03.02 that are measured on a linear foot, square foot or unit basis upon approved placement. The Department will prorate the balance of payment over the duration of the Contract.

THE FOLLOWING IS ADDED

If after being notified by the Department that the PORTABLE VARIABLE MESSAGE SIGN WITH REMOTE COMMUNICATION or PORTABLE TRAILER MOUNTED CCTV CAMERA ASSEMBLY has failed to function and the equipment has not been restored to good working order within 48 hours, the Department will make payment reductions as follows:

For each occasion the equipment was not restored within 48 hours the Department will assess a liquidated damage of $250 for every 48 hours period the equipment is not functioning.

The Department will not include payment for epoxy traffic stripes and thermoplastic traffic markings and symbols under TRAFFIC STRIPES LATEX, TRAFFIC MARKINGS LINES, LATEX and TRAFFIC MARKINGS SYMBOLS, LATEX. The Department will make payment for epoxy traffic stripes and thermoplastic traffic markings under TRAFFIC STRIPES, TRAFFIC MARKINGS LINES, and TRAFFIC MARKINGS SYMBOLS as specified in 610.04.

SECTION 160 – PRICE ADJUSTMENTS

160.03.01 Fuel Price Adjustment

THROUGHOUT THIS SUBPART, TABLE 161.03.01-1 IS CHANGED TO TABLE 160.03.01-1

THE THIRD PARAGRAPH IS CHANGED TO:

If the as-built quantity of an Item listed in Table 160.03.01-1 differs from the sum of the quantities in the monthly Estimates, and the as-built quantity cannot be readily distributed among the months that the Item listed in Table 160.03.01-1 was constructed, then the Department will determine fuel price adjustment by distributing the difference in the same proportion as the Item's monthly Estimate quantity is to the total of the Item's monthly estimates.

THE 13 TH AND 15 TH LINE IN THE TABLE 160.03.01-1 IS CHANGED TO:

SOIL AGGREGATE BASE COURSE, ___ " THICK	1 Gallon per Cubic Yard
DENSE-GRADED AGGREGATE BASE COURSE, ___ " THICK	1 Gallon per Cubic Yard

THE 25 TH LINE IN THE TABLE 160.03.01-1 IS CHANGED TO:

HOT MIX ASPHALT ___ ___ ___ BASE COURSE	2.50 Gallons per Ton

THE FOLLOWING ARE ADDED TO TABLE 160.03.01-1

Items	**Fuel Usage Factor**
NON-VEGETATIVE SURFACE, HOT MIX ASPHALT	2.50 Gallons per Ton
COLOR-COATED NON-VEGETATIVE SURFACE, HOT MIX ASPHALT	2.50 Gallons per Ton

160.03.02 Asphalt Price Adjustment

NOTE 1 OF THE THIRD PARAGRAPH IS CHANGED TO:

1. The Department will determine the weight of asphalt binder for price adjustment by multiplying the percentage of new asphalt binder in the approved job mix formula by the weight of the item containing asphalt binder. If a Hot Mix Asphalt item has a payment unit other than ton, the Department will apply an appropriate conversion factor to determine the number of tons used.

THE FOURTH PARAGRAPH IS CHANGED TO:

For TACK COAT and PRIME COAT, the Department will calculate asphalt price adjustments by the following formula:

$$A = B \times [(MA - BA)/BA] \times C \times M \times G$$

Where:
A = Asphalt Price Adjustment
B = Bid Price for Tack Coat/Prime Coat
MA = Monthly Asphalt Price Index
BA = Basic Asphalt Price Index
C = Petroleum Content of the Tack Coat and Prime Coat in Percent by Volume:
Use 100% for cutbacks and Tack Coat 64-22
60% for Polymer Modified Tack Coat
60% for RS or similar type emulsions
M = Percentage of Bid Price Applicable to Materials Only: Use 82%
G = Gallons of Tack Coat and Prime Coat Furnished and Applied

160.04 MEASUREMENT AND PAYMENT
THE FOLLOWING ITEMS' PAY UNITS ARE REVISED TO:

Item	*Pay Unit*
FUEL PRICE ADJUSTMENT	DOLLAR
ASPHALT PRICE ADJUSTMENT	DOLLAR

SECTION 162 – VIBRATION AND MOVEMENT MONITORING

162.01 DESCRIPTION

This work shall consist of performing a preconstruction and post-construction inspection survey, vibration and movement monitoring during the construction to measure vibration levels and movements at any adjacent buildings and/or structures and/or substructures and/or utilities within 300 feet from any construction and demolition operations, including (but not limited to) installations and removals of excavation support systems, demolitions of the existing bridges and/or structures, excavations or any other construction activities that has the potential to have significant impact on any adjacent buildings, structures, substructures, and/or utilities.

This work shall consist of the following:
1. Inspect the existing buildings, structures, substructures and/or utilities within 300 feet from any construction operations (affected area), both pre-construction and post-construction.
2. Develop a program to limit the construction vibrations in the affected area to the acceptable level as specified in Section 162.03 – B and to preclude damage to any adjacent buildings, structures, substructures and/or utilities.
3. Vibration monitoring using seismographs (accelerometers) and on visual basis during work, including (but not limited to) installations and removals of excavation support systems, demolitions of the existing bridges and/or structures, excavations or any other construction activities.
4. Establish survey targets on adjacent buildings, structures, substructures and /or utilities in close proximity to the work area, and monitor vertical and horizontal movements.
5. Develop a program to monitor the ambient and construction vibrations and movement in the area within 300 feet of any construction and demolition activities, including (but not limited to) installations and removals of excavation support systems, demolitions of the existing bridges and/or structures, excavations or any other construction activities.

162.02 QUALITY ASSURANCE

Hire a vibration specialist for the purpose of Vibration and Movement Monitoring and Control who is capable of installing, operating, reading and interpreting seismographs on the existing structures for the purpose of monitoring vibrations. Select a vibration specialist who has performed at least 3 previous projects on which similar services were provided. Perform all work under the direct supervision of a Professional Engineer registered in the State of New Jersey. Submit the resume of the seismologist along with the preconstruction survey report for approval at least 20 calendar days before the start of work.

162.03 MONITORING REQUIREMENT

Notify the property owner and obtain a release (if required) to access the buildings, structures, substructures and /or utilities within 300 feet from any construction operations (affected area) for the purpose of pre-, during- and post-construction vibration and movement inspection and monitoring.

A. Preconstruction Inspection

Perform a detailed preconstruction inspection of the adjacent existing buildings, structures, substructures and/or utilities in the affected area at least 20 working days before commencing any construction operations that has the potential to have significant impact on adjacent buildings/structures/substructures/utilities and report the findings to the RE. Using photographs, videos and sketches, the preconstruction inspection report should be submitted in a 8 1/2 x 11 inch format including an index, names and responsibilities of the inspection party, notes and 4"x6" color prints of photographs with date and location captions, along with a video or CD documenting the existing condition of the structures. The scope and detail of the survey should be sufficient to serve as a reference for comparison should evidence of damage be observed during construction. The preconstruction inspection report shall include detailed dimensioned written notes for all cracks, displacements, and other existing damages or structural deficiencies; the notes indicating the apparent condition of the buildings, structures, substructures and/or utilities and other information as required to access vibration susceptibility; close-up photos and videos of existing cracks, damages and/or other conditions of the inside and outside of the buildings, structures, substructures and/or utilities in the affected area. The preconstruction inspection report shall also include a comprehensive plan for the vibration and movement control and monitoring of the existing units. The plan shall include, but not be limited to, all of the provisions described in these specifications. Among others, the plan shall include materials, installation procedures, schedule of installation, and drawings indicating the location of the monitoring points.

Before commencing any construction and demolition activities including (but not limited to) installations and removals of excavation support systems, demolitions of the existing bridges and/or structures, excavations or any other construction activities in the affected area, the Contractor shall establish survey targets along the side of the existing buildings, structures, substructures and/or utilities at convenient locations closest to the proposed construction locations or at the locations the most susceptible to the potential vibration. Provide the locations of the proposed survey targets on working drawings and submit to the Engineer for approval. These survey targets shall be monitored vertically and horizontally on a daily basis for a period of 5 days before commencing the any construction operations to establish ambient baseline data.

Prior to commencing any construction and demolition activities including (but not limited to) installations and removals of excavation support systems, demolitions of the existing bridges and/or structures, excavations or any other construction activities in the affected area, the Contractor shall take seismograph (accelerometer) readings at one or more representative elements of the any adjacent buildings, structures, substructures and/or utilities within 300 feet of the potential vibration sources for 48 continuous hours to establish ambient baseline data. Before a seismograph being used, furnish a certificate of calibration, dated in the last twelve months, with the calibration being directly traceable to the US Bureau of Standards. A seismograph shall be capable of measuring and recording 3 components of ground vibration, and has both a visual and paper (or electronic) readout. Protect the seismograph from vandals and from the elements and maintain it in proper working order throughout the operations. The Contractor's vibration specialist should interpret the readings and submit a vibration report to the Engineer prior to commencing any construction operations adjacent to any buildings, structures, substructures and/or utilities within 300 feet of the potential vibration source. The report should show the seismograph locations and results of the ambient vibration readings at the investigated elements. A distinction should be made in the report between vibrations caused with and without vehicular traffic or any other daily regular vibration sources.

Deliver two copies of all preconstruction survey documentation, baseline survey point monitoring data, and baseline vibration data and reports to the RE before commencing any construction and demolition operations.

B. Vibration and Movement Monitoring and Control Program

Prepare a vibration and movement monitoring program such that the any adjacent buildings, structures, substructures and/or utilities in the affected area to be monitored by at least 3 monitoring points located at least 10 feet apart. Whenever installations of excavation support systems, demolitions of the existing bridges and/or structures, excavations or any other construction activities in the affected area are being first conducted, a designated representative of the Contractor should visually inspect the affected buildings, structures, substructures and/or utilities with the

Engineer in order to document baseline conditions. Place seismograph(s) at the points on the said buildings, structures, substructures and/or utilities closest to the ongoing construction operations, and vibrations should be recorded continuously during work hours and evaluated full-time by the on-site vibration specialist during the first day of operations, and reviewed once daily thereafter. In addition, the pre-established survey targets should be surveyed vertically and horizontally on a twice-daily basis. The pre-established survey targets on the critical portions of the existing units deemed very susceptible to the vibration should be monitored and surveyed all the time during the installations and removals of excavation support systems, demolitions of the existing bridges and/or structures, excavations, or any other construction activities in the affected area. A copy of all data and evaluations shall be provided daily to the RE.

Limit the peak particle velocity to a threshold of 0.5 in/second and vertical and horizontal movement threshold of 1/8 inches on the monitored and surveyed targets all the time during any constructions and demolitions including (but not limited to) installations and removals of excavation support systems, demolitions of the existing bridges and/or structures, excavations or any other construction activities. Assess the vibration and movement susceptibility of the buildings, structures, substructures and/or utilities in the affected area, including estimates for the damage Threshold Particle Velocity (TPV). If the Contractor's findings and the recommendations by the qualified vibration specialist during the preconstruction inspection warrant a peak particle velocity less than 0.5 in/second, then include this peak particle velocity in the report and limit vibrations to this more restrictive value.

Do not use driving or any other construction techniques causing excessive vibration and movement to any adjacent buildings, structures, substructures and/or utilities in the affected area, especially the adjacent building on the north-east side of the proposed bridge. Design and install the excavation support system near the building on the north-east side of the proposed bridge such that the building will not be undermined and/or damaged due to the induced vibration and ground movement. During the installation of the excavation support system, excavation and demolition near the building on the north-east side of the bridge, a full time on-site vibration specialist is required to monitor, interpret and evaluate the vibration, and the vertical and horizontal movements of the critical portions of the building is required to be surveyed and/or monitored all the time during the constructions and demolitions.

If the vibration levels monitored by the accelerometers during any construction operations exceed the threshold limit, and/or any survey target is observed to move more than 1/8" vertically or 1/8" horizontally, cease operations and inform the RE. The RE will then perform an initial inspection of the portions of the buildings, structures, substructures and/or utilities adjacent to the Contractor's operations. If no indication of significant damage is found, i.e. noticeable deformation or cracking of structural members, the Contractor may resume operations while the representative of the Contractor and the RE simultaneously monitor and observe the unit to evaluate if it is sustaining damage or excessive deformation. If no significant damage or excessive deformation is observed during the initial operations, the Contractor may continue the construction activities; however, the Contractor and the RE should visually monitor the susceptible units in the affected area continuously during the constructions and demolitions for signs of all cracks, spalls, chips, or other signs of movement, and the Contractor should appoint a Professional Engineer to perform daily inspections of the portions of the buildings, structures, substructures and/or utilities in the affected area.

If it is determined within 48 hours of conducting any construction and demolition operations that there is imminent or actual observed damage to the existing buildings, structures, substructures and/or utilities, cease the operations in the vicinity of the said units. Evaluate and propose modifications to the operations to mitigate damage to the said units, and submit the proposed changes to the Engineer for review and acceptance before resuming operations at no additional cost to the Client.

Perform vibration and movement monitoring daily for the full duration of the construction operations or as otherwise directed by the RE. The results of the monitoring shall be reported to the RE daily or as otherwise directed by the RE.

Any repairs or modifications to the existing buildings, structures, substructures and/or utilities necessitated as a result of the Contractor's construction operations, and/or required to mitigate against further damage due to the Contractor's construction operations, should be approved by the Engineer before such repairs and modifications are commenced.

In the event that the Contractor does not follow the vibration and movement monitoring and control provisions described above, then he will be held responsible for the cost of any necessary repairs to the damaged units in addition to damages caused by the loss of use for the public.

The aforementioned provisions remain in effect until all construction and demolition activities in the affected area, including (but not limited to) installations and removals of excavation support systems, demolitions of the existing bridges and/or structures, excavation or any other construction activities, are completed.

C. Post-Construction Inspection

The Contractor shall prepare detailed post-construction inspection of the existing buildings, structures, substructures and/or utilities and report the findings to the Engineer. The post-construction inspection report should be 8 1/2 x 11 in format including an index, names and responsibilities of the inspection party, notes and 4”x6” color prints of photographs with date and location captions, along with either a video or a CD documenting the post-construction condition of the structures.

The report shall include all the results of the monitoring program. Seven color copies of the report shall be submitted to the Engineer a maximum of ten days after completion of installations and removals of excavation support systems, demolitions of the existing bridges and/or structures, excavations or any other construction activities in the affected area. The Contractor will be responsible for any damage caused by his activities at no additional cost to the Client.

162.04 MEASUREMENT AND PAYMENT

Item	*Pay Unit*
VIBRATION AND MOVEMENT MONITORING	DOLLAR

Separate payment will not be made for any survey work necessary to measure the lateral and vertical movement.

DIVISION 200 – EARTHWORK

SECTION 201 – CLEARING SITE

201.03.01 Clearing Site

201.01 DESCRIPTION

This Section describes the requirements for clearing site; clearing site for bridges and other structures; removing underground storage tanks; removing electrical transformers containing PCBs, sampling soils for contamination, installing monitoring wells; sealing abandoned wells; and demolishing buildings.

201.02 MATERIALS
THE FIRST IN THE LIST IS CHANGED TO:

Coarse Aggregate (No. 57, or 67).....901.03

B. Clearing and Grubbing.
THE FOLLOWING IS ADDED:

Dispose of material and debris as specified in 201.03.09.

201.03.02 Clearing Site, Bridge and Clearing Site, Structure
THE FOLLOWING IS ADDED TO THE FIRST PARAGRAPH.

Only the following equipment is permitted for the work:

1. **Pneumatic or Electric Equivalent Hand Operated Hammers.**
   a. When demolishing concrete not closer than 6 inches to structural members: hammers weighing no more than 90 lbs (exclusive of bit), equipped only with chisel point bits.
   b. When demolishing concrete within 6 inches of structural members: hammers weighing no more than 30 lbs (exclusive of bit).
2. **Saw Cutters.**
   a. When cutting concrete within 6 inches of structural members: concrete cutters and concrete saws. While using water in the cutting operation, provide shielding beneath the cutting operation to prevent water leakage. Continuously collect slurry and dispose of as specified in 201.03.09. Ensure that the slurry does not enter the structure or highway drainage system.
3. **Hydraulic Breakers.** Ram-hoe type breakers, hydraulic breakers, and demolition shears may be used with the following restrictions:
   a. Submit required data to the RE for Department's analysis of stresses induced to the girders.
   b. Delineate the centerline and limits of the top flange of girders before the equipment operation.
   c. Do not use equipment within 6 inches of the delineated flanges.
   d. Do not pull or twist the reinforcement steel.
4. **Hydraulic Splitters.** Hydraulic splitters.
5. **Other Equipment.** Obtain RE approval before use.

THE FOLLOWING IS ADDED:

The procedure is described below:

1. **Prestressed Concrete Stringers and Concrete Diaphragms.** Repair damage to prestressed concrete stringers and concrete diaphragms using nonshrink grout conforming to Subsection 903.08 before deck placement.

2. **Steel Stringers, Floorbeams, Cross Frames, and Diaphragms.**

    a. Repair procedures to tensile components in conformance with ASTM A 6/A 6M and the following:

        1 Repair gouges up to 1/8 inch by grinding flush in the direction of principal stress.
        2 Repair gouges deeper than 1/8 inch by first grinding; then, depositing weld metal and grinding flush with the surface of the metal in the direction of principal stress. Weld using low hydrogen electrodes conforming to current AWS Specifications A5.1 and A5.5.
        3 Repair kinks and deformations by flame straightening or a combination of flame straightening and jacking. Ensure flame straightening is performed by personnel having a minimum of three years of documented experience. Submit the names of the personnel to the RE for review and approval prior to performing the work.

    b. Repair procedures to compression components for kinks and deformations as outlined in 2.a (3) above. Where more than five percent of the cross-sectional area of the member is damaged, submit a repair procedure to the RE for review and approval.

Clean and paint exposed existing top flanges of beams with prime coat as specified in Subsection 554.03.

Bonding and Grounding for Electrified Railroad. For the required materials, submit a list to the RE for approval 21 days before construction operation. In the list, include: material description, manufacturer and catalog number. After obtaining the RE's approval, submit the list to the railroad for review and approval. Do not order the materials prior to obtaining the railroad's approval. Furnish and deliver the materials to the railroad. Obtain a receipt for the materials from the railroad and provide a copy to the RE.

List of Materials

Description	Quantity Required
U-bolt, ⅞-inch diameter by 4-inch, BS fastener	--------
Strap, clevis, 1¼ by 2 inches stock, 12-inch connecting length, 1-inch diameter hole, ⅝-inch diameter bolt, ultimate strength 25 psi, Brewer Tilchener Corp.-3074 C	--------
Dead end eye bolt, compression type steel, use DIE 6010SH, compression tool, 60A ALCOA 9190-332	--------
Jumper cable, compression type aluminum, use DIE 6020AH, compression tool 60A ALCOA 5120-781	--------
Terminal - Bundy AK2C39B1 to 336400 Cable (1)	--------
Ground terminal - Bundy AK2C39B1 to 336400 Cable (2)	--------
Terminal - solid barrier to 0.17 square inch cable Bundy KC28B1	--------
Compound, aluminum to copper connection (ALNOX) CANS	--------
Termination, dead end strand clamp, ALCO 336 4 KCM	--------
Clip, bronze, complete type BC, Ohio brass	--------
Thimble-Bronx 336 4 KCM	--------
U-bolt, 1¼-inch diameter by 1½-inch loop 336 4 KCM 11, 30/7 STR ACSR, ANACONDA insulated aluminum cable having a diameter of 0.17 square inches, ANACONDA	--------

201.03.04 Removing Underground Storage Tanks

THE THIRD PARAGRAPH, SUBPART 2, LAST PARAGRAPH IS CHANGED TO:

Before backfilling, remove and dispose of contaminated water not associated with ground water. If directed, immediately backfill the excavated hole as required per N.J.A.C. 7:26E and obtain documentation for the quality of the fill. In addition, provide certification stating that it is virgin material from a commercial or noncommercial source or decontaminated recycled soil. Backfill the excavation as specified in 201.03.07.5 but use certified clean fill as noted above.

201.03.08 Asbestos Removal

201.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEMS ARE ADDED:

Item	*Pay Unit*
POST EXCAVATION SOIL SAMPLING AND ANALYSES	UNIT

THE FOLLOWING IS ADDED:

The Department will not make payment for the Item CLEARING SITE in excess of $_____ until Completion.

The Department will not make payment for the Item CLEARING SITE, BRIDGE (___) in excess of $_____ until Substantial Completion.

SECTION 202 – EXCAVATION

202.02 MATERIALS

THE FIRST IN THE LIST IS CHANGED TO:

Coarse Aggregate (No. 57, or 67).....901.03

202.03.03 Excavating Unclassified Material

A. Excavating.

THE FIRST PARAGRAPH IS CHANGED TO:

The Department, as the generator, is solely responsible for the designation of excavated material. Unclassified excavation consists of excavation and management of material of whatever nature encountered, except for regulated material, pavement removal and acid producing soil.

B. Temporarily Storing.

THE FOLLOWING SENTENCE IS ADDED AFTER THE SECOND SENTENCE OF THE FIRST PARAGRAPH:

Do not commingle different types or classifications of material.

202.03.04 Excavating Regulated Material

THE ENTIRE SUBSECTION IS CHANGED TO:

The Department, as the generator, is solely responsible for the designation of excavated material. Regulated material excavation consists of excavation and management of material of whatever nature encountered that is classified as regulated or hazardous in the NJDEP Solid Waste Regulations, N.J.A.C 7:26-1 et seq. or N.J.A.C 7:26-8.

All soil encountered as part of this project should be considered historic fill/non-hazardous contaminated soil and may be used as backfill on the site or managed as regulated material. Handle regulated material according to applicable Federal, State, and local laws, rules, and regulations; and as specified herein. Dispose of regulated material as specified in 202.03.08. If upon removal, excess/non-conforming material is generated and/or obvious staining, odor, or deleterious materials are observed, the soil shall be stockpiled for sampling and analysis to determine proper handling, disposal and/or reuse procedures if approved by the Engineer and NJ Licensed Site Remediation Professional (LSRP).

1. **Pre-Excavation Plans**. Submit 4 copies of the following plans to the RE 30 days before beginning construction operations. Update and resubmit plans to identify changes in the condition or operation of the Work. If the Contractor fails to follow the pre-excavation plans, the RE will suspend the Work.

    a. **Site-Specific Health and Safety Program (HASP).** Perform a hazard assessment of each proposed work task, and make independent evaluations regarding the appropriate level of health and safety requirements.

    Employ a Certified Industrial Hygienist (CIH) or Certified Safety Professional (CSP) to develop and oversee the Site-Specific HASP. The CIH/CSP shall prepare the Site-Specific HASP to protect the Contractor's employees, the subcontractor's employees, the Department's employees and consultants, and the public from contamination present in the areas requiring excavation as shown on the Plans. Ensure that

the Site-Specific HASP complies with Federal, State, and local laws, rules, and regulations, including the health and safety requirements of OSHA 29 CFR 1910 and 29 CFR 1926. Implement the Site-Specific HASP, as approved by the RE, at the beginning of construction operations.

Ensure that the CIH/CSP reviews site-specific data and addresses the proposed activities to the level of detail needed to ensure that site-specific data, appropriate regulations, and a description of the site conditions are incorporated into the Site-Specific HASP.

Describe workplace and emergency procedures so that the Project is constructed in a safe manner. The Site-Specific HASP shall govern all facets of the Project and encompass the activities of all persons who enter or work on the Project. Incorporate procedures that conform to Federal, State, and local laws, rules, and regulations pertaining to employee working conditions where appropriate, National Institute for Occupational Safety and Health, OSHA, USCG, EPA, and NJDEP.

Include requirements for a health and safety coordinator to monitor the working conditions during excavation procedures and during the handling of regulated material to ensure conformance with the approved Site-Specific HASP. The CIH/CSP shall evaluate the need for air monitoring during excavation and loading operations of regulated material. If deemed necessary, the CIH/CSP or an assigned coordinator, suitably trained and approved by the CIH/CSP for the work required, shall implement the air-monitoring program. The CIH/CSP shall include in the Site-Specific HASP applicable training and qualifications documentation for each health and safety coordinator.

The Contractor shall provide initial and annual training and medical monitoring for Contractor employees scheduled to work in or with regulated material and, per the RE's request, up to 10 Department employees or their authorized representatives as specified in OSHA 29 CFR 1910. Provide the initial training for State employees or their authorized representatives 30 days before excavating.

b. Materials Handling Plan. Develop a Materials Handling Plan (MHP) for regulated material encountered, moved, and disposed of or recycled during construction. Ensure the MHP includes the following:

1. Techniques to be used in managing regulated material to protect adjoining properties and workers and visitors to the Project Limits against exposure to regulated material and to prevent release of regulated material to the environment.
2. Standard operating procedures for excavation, stockpiling, transporting, measurement, and disposal of regulated material.
3. Current receiving facility certification and permits.
4. Qualifications of the licensed hauler.
5. Proposed routes to receiving facilities and weighing facilities.
6. Waste characterization forms.
7. A sampling and analysis protocol for characterizing the regulated material for on-site reuse and off-site disposal. Include the name, address, and telephone number of the contact for the proposed environmental laboratory and the name and experience of the proposed environmental sampling technician. The proposed environmental laboratory and proposed environmental sampling technician are subject to the RE's review and approval.
8. Requirements of the receiving facility to accept the regulated material.

Implement the MHP, as approved by the RE, at the beginning of excavation. Perform planning, administrative, and control functions required to implement the MHP.

c. Pollution Prevention and Control Plan. Develop a Pollution Prevention and Control (PPC) Plan describing the methods of preventing discharge of regulated stormwater, ground water, sediments, and free product during stormwater control, excavation, and dewatering operations. Prepare the PPC Plan according to Federal, State, and local laws, rules, and regulations relative to regulated discharges. Implement the RE approved PPC Plan before beginning excavation.

Detail methods, personnel, equipment, and reporting requirements on how to discharge regulated stormwater, groundwater, sediments, and free product during stormwater control, excavation, and

dewatering operations into a dewatering basin, storm/sewer system, or other approved system. Specify methods and equipment for collecting, pumping, treating, monitoring, and disposing of liquids generated by stormwater control. Specify measures to prevent stormwater run-on and runoff and measures for dewatering of excavations, dewatering of sediments, decontaminating personnel and equipment, and storing fuels and chemicals. Include detailed water collection, treatment, monitoring, discharge activities, and reporting requirements. Provide daily construction reports to identify water collection, treatment, monitoring, and discharge activities; personnel and equipment; and relevant quantities. When dewatering in areas of petroleum contamination, provide an oil-water separator with the dewatering basin or sediment control tank as specified in 158.03.02.

2. **Excavating**. Excavate regulated material as specified in 202.03.03 and as shown on the Plans.

3. **Temporarily Storing.** Temporarily store regulated material in stockpiles within the Project Limits and as shown on the Plans. Construct stockpiles on polyethylene sheeting. Contain stockpiles with haybales or silt fence placed continuously at the perimeter of the stockpiles. For hazardous material, stockpiling is not an acceptable method for management. Hazardous materials and should be, sampled and analyzed in-situ for disposal. Excavate and place the hazardous regulated material directly into trucks or drums, as applicable and haul it directly to the approved disposal facility.

   Cover stockpiles with polyethylene sheeting. Secure the cover in place at all times. Overlap joints in the polyethylene sheeting a minimum of 12 inches, and place securing materials along the joints. Maintain the cover, and replace damaged polyethylene sheeting as needed.

   Clean equipment used for the movement of excavated material at the end of each working day or before removing it from the Project Limits. Install non-vegetative erosion control features to limit the movement of the excavated material from equipment cleaning areas. Temporarily store the excavated material from equipment cleaning in stockpiles.

   If regulated material is not designated for reuse on-site, dispose of regulated material within 180 days of being stockpiled as specified in 202.03.08.

   Do not reuse hazardous regulated material. Dispose of hazardous regulated material as specified in 202.03.09 within 90 days of being stored in stockpiles.

4. **Sampling and Analysis.** Collect, transport, and analyze environmental samples required for facility acceptance of the material. Perform sampling, testing, and inspections conducted in areas containing regulated material according to the Site-Specific HASP.

   Perform sampling, testing, and data management procedures according to *NJDEP Field Sampling Procedures Manual*, *NJDEP Technical Requirements for Site Remediation*, *NJDEP Management of Excavated Soils Guidelines*, Appendix 1 of the *NJDEP Waste Classification Form*, and EPA requirements.

   Do not sample or analyze any part of the Project Limits for purposes of re-delineating designations of excavation.

5. **Document Control.** Provide the following items:
   a. **Soil/Sediment Usage Tracking Log.** Complete a tracking log for each working day involving excavation, stockpile, transport, and disposal of regulated material. Monitor and record the following information on the tracking log:

      1. Date.
      2. Location maps showing excavation and placement, including depth, of material.
      3. Type, volume, and characteristics of regulated material removed.
      4. Names and signatures of personnel responsible for preparing and executing the tracking log.

   Submit copies of daily tracking logs to the RE on a weekly basis.

   b. **Materials and Handling Reports.** Submit weekly reports to the RE documenting the excavation, stockpiling, sampling, off-site management, and on-site placement of regulated material. Indicate the location and dates of excavation, stockpiling, sampling, off-site management, and on-site placement of regulated material. Explain changes to or variations from the MHP. Additionally, include dates of planned excavation, sampling, and off-site management of regulated material for the coming months.

Provide a final report documenting the management of regulated material, including the location and dates of excavation, stockpiling, sampling, off-site management, and on-site placement of regulated material. Include plans depicting placement of regulated material. Submit 4 copies of the final report to the RE within 30 days of completing excavations of regulated material, off-site management of regulated material, and embankment/ backfill operations reusing regulated material.

c. Sampling Logs and Analytical Reports. Submit to the RE 2 copies of the sampling logs, chain of custody, and analytical reports after each soil analysis is performed within 10 days of analysis.

d. PPC Logs. Maintain a PPC log for water collection, monitoring, and handling activities, and make the log available to the RE upon request. In the PPC log, note daily water removal, treatment and discharge volumes, effluent sampling activities and results, discharge or spill incidents, and sampling and reporting activities.

202.03.07 Reuse or Disposal of Excess Material
THE ENTIRE SUBSECTION IS CHANGED TO:

A. Reuse. Before using other excess materials, reuse regulated material as shown on the Plans or with RE approval.

The Contractor may use excavated material, if the requirements specified in 901.11 are met, to construct Items requiring soil aggregates. Submit written notification at least 15 days before reuse.

Upon RE's approval, reuse excavated soil to widen or flatten slopes of embankment, to fade embankments into cuts, or as approved at other locations. Ensure that the excess material is not reused within a wetland, a transition area, a riparian zone, a flood hazard area or other regulated area without obtaining an appropriate NJDEP permit.

The Contractor may reuse broken concrete, HMA pieces, and millings in the lower portion of I-14 soil aggregate. Spread out pieces in layers, with the pieces lying flat and not arching, with spaces between the pieces filled with soil. Use pieces with a maximum individual size of 2 cubic feet, with a 2-foot maximum dimension on any side. Do not place the broken concrete, HMA pieces and milling within 2 feet of the final subgrade, less than 2 feet above the highest seasonal high ground water table or within 2 feet of any underground utility. Compact material using the directed method as specified in 203.03.02.C.

Dispose of excavated material that will not be reused as specified in 202.03.07.B.

B. Disposal. Dispose of excess regulated material as specified in 202.03.08. Dispose of excess APS at approved landfills according to applicable Federal, State, and local laws, rules, and regulations. For excavation not designated as regulated material or APS, provide the following before removing the excess excavation from the Project Limits.

1. At least 10 days before disposing, submit the disposal procedure and location to the RE for approval. Do not dispose of excavation on property proposed to be or used for parks, playgrounds, and other recreational purposes; residential facilities; educational facilities; environmentally sensitive areas such as wetlands; historic sites; or within sight of a State highway during all seasons.
2. Obtain the potential owner's notarized authorization of the acceptance of the excess material. If the potential owner requires environmental material sampling, obtain RE's approval at least 7 days before sampling for oversight only. Approval of the sampling does not imply agreement with the sampling results and the Department reserves the right to sample the material for classification. Provide the RE all testing results and documentation associated with the sampling.
3. Load and transport excess material that the RE determines to be excess, unusable or unsuitable for the project according to Federal, State, and local law, rules and regulations.

Once material leaves the Project Limits, the Contractor is responsible for ensuring that the handling procedures, placement method, and disposal location are according to applicable Federal, State, and local laws, rules, and requirements, including permits that may be issued for the Project. If the disposal of excess material results in a violation notice from any governmental authority, immediately correct the violation. Indemnify and defend the Department for any violation incurred, penalty assessed, or any claims, suits, losses, demands or damages of whatever kind or nature arising out of, or claimed to arise out of, the improper disposal of excess materials.

If the Contractor does not correct the violation to the satisfaction of the governmental authority that issued the violation notice, the Contractor is responsible for assessed penalties including costs incurred by the Department to remedy the violations.

Dispose of other material or debris as specified in 201.03.09.

202.03.08 Disposal of Regulated Material
THE ENTIRE SUBSECTION IS CHANGED TO:

Load, transport, and dispose of regulated material that the RE determines to be excess, unusable, or unsuitable for the Project according to Federal, State, and local laws, rules, and regulations and as specified in 202.03.07.B. Pay fees associated with removal and disposal of regulated materials.

Submit the results of material sampling and analysis, waste facility applications and acceptance documentation, and fee payment requirements to the RE at least 15 days before planned removal of regulated material. Submit to the RE a bill of lading for each truckload of regulated material removed from the Project Limits. Ensure that the bill of lading and waste manifest include the following information:

1. Transport subcontractor name, address, permit number, and telephone number.
2. Type and quantity of material removed.
3. Weight of vehicle with weigh slip.
4. Recycling or disposal facility name, address, permit number, and telephone number.
5. Date removed from the Project Limits.
6. Signature of transport vehicle operator.

The RE will sign the bills of lading for the Department as the generator of the Project Limits. Submit 1 copy of the bill of lading to the RE by the end of each working day that the transport vehicle leaves the site.

The licensed hauler shall transport the regulated material to the disposal/recycling facility with no unauthorized stops in between, except as required by regulatory authority. The hauler shall use appropriate vehicles and operating practices to prevent spillage or leakage from occurring during transport. Remove excess soil adhering to the wheels or under carriage of the vehicles before leaving the Project Limits. If soil or water escapes to the public roads, immediately clean the road to restore it to the original condition and immediately notify the RE. Do not transport regulated material over public roads if they contain free liquid or are sufficiently wet to be potentially flowable during transport.

Submit 1 copy of the documentation of the disposal facility's acceptance of the regulated material, including the weight ticket slips, to the RE and the county of origin within 15 days of acceptance at the disposal facility.

Immediately submit written notification to the RE if problems arise, regarding the facility chosen to accept the regulated material for off-site management, that would require the return of waste, or if the chosen facility has violated any environmental regulation that may result in regulatory enforcement action. Propose an alternate disposal facility and obtain the RE's written approval of off-site management at such facility.

SECTION 203 – EMBANKMENT

203.01 DESCRIPTION

THE FOLLOWING IS ADDED:
This section also describes the requirements for preparing embankment areas to receive geotextile paving fabrics used beneath paving courses and beneath coarse aggregates.

203.02.01 Materials
THIS SUBPART IS CHANGED TO:

Provide materials as specified:

Soil Aggregate (I-7, I-9, I-10, I-11, I-13, and I-14) 901.11

THE FOLLOWING ITEM IS ADDED TO THE LIST OF MATERIALS:

Geotextiles.....919.01

203.03.01 Constructing Embankment

THE FOLLOWING IS ADDED TO THE FIRST PARAGRAPH:

The ME will determine the classification of the subgrade material specified in Table 203.03.02-1. Compact the subgrade using the directed method as specified in 203.03.02.C for the classification of the subgrade material.

THE FOURTH PARAGRAPH IS CHANGED TO:

Before placing embankment or any other unbound aggregate material, such as subbase or dense graded aggregate, on existing pavement, break the pavement into pieces that are a maximum of 12 inches in all dimensions.

203.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEMS ARE ADDED:

Item	*Pay Unit*
GEOTEXTILE, ROADWAY STABILIZATION	SQUARE YARD

DIVISION 300 – SUBBASE AND BASE COURSES

SECTION 303 – ASPHALT-STABILIZED DRAINAGE COURSE

303.03.01 Asphalt-Stabilized Drainage Course

D. Spreading and Grading

THE SECOND SENTENCE IS CHANGED TO:

Place asphalt-stabilized drainage course at a laydown temperature between 210 °F and 275 °F.

DIVISION 400 – PAVEMENTS

SECTION 401 – HOT MIX ASPHALT (HMA) COURSES

401.02.01 Materials
THE FIRST PARAGRAPH IS CHANGED TO:

Provide materials as specified:

Tack Coat 64-22, PG 64-22 ..... 902.01.01
Prime Coat, Grade CSS-1 ..... 902.01.03
Tack Coat:
Emulsified Asphalt, Grade RS-1, RS-1h, CRS-1, or CRS-1h 902.01.03
Polymer Modified Tack Coat:
Polymer Modified Emulsified Asphalt 902.01.04
HMA 902.02
HMA HIGH RAP 902.13
Joint Sealer, Hot-Poured 914.02
Polymerized Joint Adhesive 914.03

401.02.02 Equipment
THE LAST PARAGRAPH IS CHANGED TO:

When an MTV is used, install a paver hopper with a minimum capacity of 14 tons in the hopper of the HMA paver.
THE FOLLOWING IS ADDED AT THE END:

NOTE: A Spray Paver as specified in 1003.04 may be used in lieu of a HMA Paver.

401.03.01 Preparing Existing Pavement

A. Milling of HMA.

Stage	Max. time interval allowed

THE FOLLOWING IS ADDED TO THE THIRD PARAGRAPH:

If unbound aggregate material is encountered within the specified milling depth, mill unbound aggregate material without damaging the underlying material.
THE FOLLOWING IS ADDED AFTER THE FOURTH PARAGRAPH:

Sawcut at the limit of paving in driveways and at other limits requiring a neat edge between new and existing HMA.

B. Milling of Concrete
THE FOLLOWING IS ADDED TO THE FIRST PARAGRAPH:

If reinforcement steel becomes exposed or dislodged, cut off the exposed reinforcement at the concrete surface as directed by the RE.

THE FOLLOWING IS ADDED TO THE FIFTH PARAGRAPH:

Ensure that no reinforcement steel is protruding from the surface.

D. Repairing HMA Pavement.
THE ENTIRE TEXT IS CHANGED TO:

Arrange a meeting with the RE at the project site to establish the limits of HMA pavement repair. Additional repairs, not delineated on the plans or by the RE during the project site meeting, may be required if the need is established by the RE.

If potholes are discovered, notify the RE immediately. The RE may immediately direct repairs of small areas. The RE may require further evaluation of a large area to determine the need for additional milling and paving.

Perform HMA repairs as a separate operation before milling, paving and other surface treatments. The Contractor may request approval of the RE to perform the repair work as one operation with the paving or surface treatment.

HMA repairs may be performed on full depth HMA pavement or on composite pavement (HMA over concrete pavement). For full depth HMA pavement, sawcut existing HMA pavement to a depth of 8 inches. For composite pavement sawcut existing HMA to a depth of 8 inches or up to the top of concrete, whichever is less. Sawcut lines parallel and perpendicular to the roadway baseline and 3 inches away, at the closest point, from the damaged area to be repaired.

Remove damaged and loose material within the boundary of the sawcuts to form rectangular openings with vertical sides to a depth of 8 inches for HMA pavement, or to the top of concrete for composite pavement. A milling machine may be used to remove damaged pavement and form the repair areas if approved by the RE.

After the existing damaged HMA and loose material has been removed, the RE will examine underlying material to determine its condition.

If the base of the repair area is unbound material then shape and compact the unbound material to produce a firm and level base.

If water exists in the area, remove the underlying material to the depth specified by the RE. Place geotextile, then place and compact coarse aggregate to required grade to provide for a minimum 8 inch thick HMA pavement repair. Compact coarse aggregate as specified in 203.03.02.C. If the base of the repair is HMA or concrete pavement then ensure that the remaining pavement is cleaned and dry prior to applying tack coat.

Apply tack coat at an application rate of 0.15 gallons per square yard to the vertical surfaces and base of the opening. Spread and grade HMA surface course mix in the opening as specified for the roadway surface or a HMA surface course mix approved by the RE. Ensure that the temperature of the HMA when placed is at least 250 °F, and compact as specified in 401.03.03.F. Compact areas not accessible to rollers with a flat face compactor. Compact until the top of the patch is flush with, or 1/8 inch higher than, the adjacent pavement surface.

Reuse removed material as specified in 202.03.07.A.

THE FOLLOWING PART IS ADDED:

E. Micro-Milling.

Stage	Max. time interval allowed

Ensure that pavement repairs are performed prior to micro-milling. Ensure that joint and crack sealing is performed after micro-milling.

Micro-mill pavement surfaces to the required depth, profile, and cross slope. The micro milling depth is not to exceed 1 1/2 inch depth. Operate the micro-milling machine at a speed recommended by the manufacturer, not greater than 50 feet per minute. Use automatic grade controls to control the line and grade of the milling machine. Use either a stringline or ski reference system. Replace teeth in the milling drum that become dislodged, broken, or unevenly worn. Perform the work in a manner that prevents dust and other particulate matter from escaping into the air.

Ensure positive drainage is maintained. When micro-milling to improve the profile, ensure that at least 95 percent of the surface is micro-milled and textured. Ensure that the micro-milled area is free from gouges, continuous grooves, ridges, and delaminated areas and has a uniform texture consisting of discontinuous longitudinal striations. If during micro-milling the pavement surface becomes damaged, then correct the damaged areas as approved by the RE. Ensure that the micro-milling produces a final surface texture with a mean texture depth of not greater than 4mm when tested according to ASTM E 965.

Ensure that the vertical differential in the surfaces across transverse joints and cracks is less than 1/4 inch after micro-milling. The RE will use a 10 feet long straight edge to evaluate the vertical differential at transverse joints and cracks by centering the straightedge perpendicular to and across the transverse joints or cracks. If the vertical differential exceeds 1/4 inch as measured from the bottom of the straight edge to the top of the pavement surface at any point, perform corrective action until the differential is 1/4 inch or less.

When micro-milling to correct profile and cross slope, ensure the cutting depth is sufficient to remove ruts and corrugations and to scarify the remaining surface. If the depth required to remove ruts and corrugations exceeds a depth of 1 1/2 inches, then notify the RE. The RE may direct additional milling to correct these areas.

Using a mechanical sweeper, clean the area before opening to traffic and before subsequent construction or resurfacing. Reuse millings and sweepings as specified in 202.03.07.A.

The RE will visually inspect the micro-milled surface. The RE may reject micro-milled areas that are unsatisfactory based on visual inspection. Improper micro-milling that produces excess surface damage or a surface which does not meet the requirements of this specification may be rendered unsatisfactory as determined by the RE. Correct areas of the micro-milling that the RE rejects. Visual inspection by the RE is considered sufficient grounds for such rejection.

401.03.02 Tack Coat and Prime Coat
THE ENTIRE TEXT IS CHANGED TO:

Clean the surface where the HMA is to be placed of foreign and loose material. Immediately before beginning paving operations, ensure that the surface is dry. Do not place tack coat or prime coat unless the weather restrictions, as specified in 401.03.03.B, are met.

Do not apply tack coat or prime coat to asphalt-stabilized drainage course.

For curbs, gutters, manholes, and other similar structures, do not apply tack coat or prime coat. Clean the exposed surfaces of these structures and apply a uniform coating of polymerized joint adhesive to contact surfaces before paving.

A spray paver may be used to apply tack coat, or polymer modified tack coat, and HMA in a single operation. When paving HMA with a spray paver, use tack coat. When paving polymer modified HMA with a spray paver, use polymer modified tack coat. When using a spray paver then apply tack coat at a rate of 0.10 to 0.15 gallons per square yard and at a temperature as specified in Table 401.03.02-1.

In areas inaccessible to distributor spray bars, use hand spraying equipment for tack and prime coat. Do not allow traffic on tack coated or prime coated surfaces. Treat surfaces as follows:

1. **Tack Coat.** Uniformly spray tack coat when placing HMA on paved surfaces. Apply tack coat only to areas to be paved in the same day. Apply tack coat as specified in Table 401.03.02-1:

Table 401.03.02-1 Tack Coat Application

Material	Spraying Temp, °F	Gallons per Square Yard	Season
Emulsified Asphalt:			
RS-1, RS-1h	125 to 185	0.05 to 0.15	All year
CRS-1, CRS-1h	125 to 185	0.05 to 0.15	All year

Correct uncoated or lightly coated areas. Blot areas showing an excess of tack coat with sand or other similar material. Remove blotting material before paving. Ensure that the material is not streaked or ribboned.

Before paving, allow tack coat to cure to a condition that is tacky to the touch.

2. **Tack Coat 64-22.** When precipitation has occurred within 24 hours before application, the RE will determine whether to allow the work to proceed, or to wait until the surface is completely dry. Only apply tack coat that can be paved over in the same day. Apply tack coat 64-22 at a rate of 0.06 to 0.14 gallons per square yard and at a spraying temperature of 325 °F. Adjust the spraying temperature and application rate to produce a uniform coating, with no excess material.

   Correct uncoated or lightly coated areas and remove excess tack coat from affected areas. Ensure that the material is not streaked or ribboned.

3. **Polymer Modified Tack Coat**. When paving polymer modified HMA, apply polymer modified tack coat with a spray paver at a temperature of 140 to 185 °F. Continuously monitor rate of spray, ensuring a uniform application rate over entire width to be overlaid. Apply at the rate of 0.10 to 0.15 gallons per square yard. For ultra-thin friction course, modified open-graded friction course and asphalt-rubber open-graded friction course, apply at a rate of 0.20 to 0.25 gallons per square yard. For Bridge Deck Waterproof Surface

Course, apply at a rate of 0.15 to 0.20 gallons per square yard. Do not allow traffic, equipment, tools, or any other disturbance to the polymer modified tack coat before placing the HMA material.

4. **Prime Coat.** Clean the surface of foreign and loose material where the HMA is to be placed. Immediately before beginning paving operations, ensure that the surface is dry. Do not place prime coat unless the weather restrictions, as specified in 401.03.03.B, are met.

   Do not apply prime coat to asphalt-stabilized drainage course.

   For curbs, gutters, manholes, and other similar structures, do not apply prime coat. Clean the exposed surfaces of these structures and apply a uniform coating of polymerized joint adhesive to contact surfaces before paving.

   In areas inaccessible to distributor spray bars, use hand spraying equipment for. Do not allow traffic on prime coated surfaces. Treat surfaces as follows:

   Apply prime coat of emulsified asphalt on unpaved surfaces as follows:

Table 401.03.02-2 Prime Coat Application

Material	Spraying Temp, °F	Gallons per Square Yard	Season
Emulsified Asphalt:			
CSS-1	70 to 140	0.1 to 0.50	All year

   Apply prime coat at least 12 hours before placement of the HMA and when the base courses are not saturated or frozen. Unless the prime coat is under asphalt-stabilized drainage course, the RE may waive the application of prime coat if more than 5 inches of HMA is placed on the unbound aggregate course before the roadway is opened to traffic. Take measures to prevent prime coat from entering into the drainage system or extending beyond the area to be paved.

401.03.03 HMA Courses

A. Paving Plan.

THE FIRST PARAGRAPH IS CHANGED TO:

At least 20 days before beginning placing HMA, submit a detailed plan of operation to the RE for approval that includes the following:

THE PARTS 3, 5 & 9 ARE CHANGED TO:

3. Number, type, and model of equipment. Innovative equipment features to be utilized such as but not limited to intelligent compaction rollers, paver mounted infrared thermal profile system, and other Global Position System (GPS) located construction equipment.
5. Longitudinal joint layout plan, quality control and construction practices.
9. Paving sequence and paver automation use plan. Ensure that the HMA surface course is constructed for the full width of the traveled way, shoulder, and auxiliary lanes as a single paving operation.

THE FOLLOWING IS ADDED AT THE END OF THE FIRST PARAGRAPH:

15. If applicable, the warm mix asphalt additive or process being used.
16. Proposed location for test strip.

THE FOLLOWING PARAGRAPH IS ADDED:

When using HMA HIGH RAP submit for Department approval a plan of the location for the HMA HIGH RAP on the project.

C. Test Strip.

Construct a test strip for each HMA mix for contracts with more than a total of 5500 tons of HMA. For HMA HIGH RAP, construct the test strip at least 14 days prior to production. Test strips are not necessary for temporary pavement. Ensure that the tack coat or prime coat has been placed as specified in 401.03.02, before placing HMA. Transport and deliver, spread and grade, and compact as specified in 401.03.03.D, 401.03.03.E, and 401.03.03.F, respectively, and according to the approved paving plan. Construct a test strip for the first 700 to 1200 square yards placed for each job mix formula. While constructing the test strip, record the following information and submit to the RE:

1. **Ambient Temperature.** Measure ambient temperature at the beginning and end of each day's paving operation.

2. **Base Temperature.** Measure the surface temperature of the existing base before paving.

3. **HMA Temperature.** Measure the temperature of the HMA immediately after placement.

4. **Roller Pattern.** Provide details on the number of rollers, type, and number of passes used on the test strip.

5. **Nuclear Density Gauge Readings.** Obtain the maximum density from the plant, and input it into the nuclear density gauge. Use the nuclear density gauge to read the bulk density and percent air voids.

6. **Quality Control Core Density Test Results.** Take 5 randomly selected quality control cores to test for the bulk specific gravity and the maximum specific gravity.

   Use drilling equipment with a water-cooled, diamond-tipped, masonry drill bit that shall produce 6-inch nominal diameter cores for the full depth of the pavement. Remove the core from the pavement without damaging it. After removing the core, remove all water from the hole. Fill the hole with HMA or cold patching material, and compact the material so that it is 1/4 inch above the surrounding pavement surface.

   Compare the nuclear density gauge readings and the core test results to establish a correlation. Use this correlation as a guide for the continued use of the nuclear density gauge for density control.

7. **Warm Mix Asphalt.** Note the warm mix asphalt additive or process, if used.

When a spray paver is used, during the test strip or prior to starting the paving operation, operate spray paver without mix to verify tack coat application rate and demonstrate full tack coat coverage to the RE for the project. Only after the RE approves the tack coat application and coverage, then proceed with the test strip.

Upon completion of the test strip, the Contractor may continue paving except when paving HMA HIGH RAP. If the Contractor does not continue paving, the Department will accept the test strip as the first lot regardless of size.

If the test strip does not meet requirements, make adjustments and construct a second test strip. If the second test strip does not meet requirements, suspend paving operations until written approval to proceed is received.

Before making adjustments to the paving operations, notify the RE in writing. If any changes are made to the paving plan after the beginning of the paving operation, construct an additional test strip.

D. Transportation and Delivery of HMA.

THE ENTIRE TEXT IS CHANGED TO:

Deliver HMA using HMA trucks in sufficient quantities and at such intervals to allow continuous placement of the material. Do not allow trucks to leave the plant within 1 hour of sunset unless nighttime lighting is provided as specified in 108.06. The RE will reject HMA if the HMA trucks do not meet the requirements specified in 1009.02. The RE will suspend construction operations if the Contractor fails to maintain a continuous paving operation. Before the truck leaves the plant, obtain a weigh ticket from a fully automatic scale. Before unloading, submit for each truckload a legible weigh ticket that includes the following:

1. Name and location of the HMA plant.
2. Contractor
3. Project title.
4. Load time and date.
5. Truck number.
6. Mix designation.
7. Item name and number
8. Plant lot number.
9. Tare, gross, and net weight.

Ensure that weigh tickets are signed and sealed by a certified weighmaster.

In the event of breakdown of an automatic printer system, the RE will accept weigh tickets showing the tare, gross, and net weight of each truck, as entered and certified by a weighmaster for a period not exceeding the necessary repair time as certified by a licensed repairman.

When using an automated batching plant, obtain weigh tickets from the printer used in conjunction with an automated batching and mixing system. Ensure the printed ticket shows the individual weights of the various components of the HMA in a batch, the total weight of each batch, and the sum of all batch weights in the truckload. At the completion of each day's work provide certification from the weighmaster that the total net weight supplied was correct.

E. Spreading and Grading.

THE ENTIRE TEXT IS CHANGED TO:

Use a stringline or other linear reference system to ensure proper line and grade when spreading material. Ensure that the system is in place and approved by the RE before placing HMA. Ensure that the underlying surface meets line and grade as specified in 202.03.03.C. Before placing HMA, ensure that the tack coat or prime coat has been placed as specified in 401.03.02 to the full width of the HMA. Obtain RE approval of the underlying surface far enough in advance of spreading HMA to allow 1 day's paving operations.

Ensure that the certified APCT is present during paving operations.

Ensure that an MTV independently delivers HMA from the HMA trucks to the HMA paver.

Before beginning, ensure that the temperature of the screed on the HMA paver is heated to at least the laydown temperature of the HMA. Using the MTVs and HMA pavers, construct paving courses in lifts of at least 4 times the nominal maximum aggregate size of the HMA being constructed. Ensure the paver vibratory screed is on when paving and that the paver automation is used as per the paving plan. Ensure the paver and auger speed are coordinated and operated at the proper speed to allow for a uniform head of material across the entire width of the paver. Ensure that the proper paver and auger speed are maintained. Ensure that the grade and profile are maintained.

Use HMA having a nominal maximum aggregate size of 3/8 inch or less in transition (run out) areas. On areas where irregularities or unavoidable obstacles make use of a paver impractical, spread, rake, and lute HMA with hand tools. For these areas, dump, spread, and screed the HMA to obtain the required compacted thickness.

When paving HMA HIGH RAP record the laydown temperature (temperature immediately behind the paver) at least once per hour during paving. Submit the temperatures to the RE and the HMA Plant producing the HMA HIGH RAP.

Construct joints as follows:

1. **Longitudinal Joints.** Perform paving with the spring-loaded end plates of the paver in the "down" position and ensure that they are firmly seated on the pavement surface. Ensure augers and tunnels are extended to within 12 to 18 inches of the end plates and that a continual supply of hot material flows out to the end plates and the material is not segregating. Ensure the longitudinal joint in 1 lift offsets that in the lift immediately below by approximately 6 inches. Offset the joint in the surface course from the lane lines by 6 inches. When constructing a joint between lanes of opposing traffic, offset the joint by 6 inches into either lane.

    a. **Echelon Paving.** If a single paver does not spread the HMA the entire width of the roadway, use 2 or more pavers in echelon. Ensure that the trailing paver follows within 300 feet of the lead paver. Extend the screed and end gate of the trailing paver 1 inch over the uncompacted HMA placed by the lead paver. Ensure that the uncompacted HMA elevation from the trailing paver is equal to that from the lead paver at the joint. The Contractor may construct either a butt joint or a wedge joint. Do not rake the joint.

    b. **Cold Joint Paving.** If echelon paving is not possible, construct the pavement using cold longitudinal joints. When constructing the first lane, compact so the line and grade of the edges of the HMA are not displaced. Construct longitudinal joints parallel to the centerlines within a tolerance of ±1 inches per 100 linear feet. If this tolerance is not met, trim or mill the edge of the HMA mat as necessary. Before paving the abutting lane, ensure longitudinal joints are straight, and free from dust and debris.

    For surface course only, uniformly apply polymerized joint adhesive to longitudinal cold joint. Apply a 1/8 inch thick coating of polymerized joint adhesive over the entire joint face. Apply slowly to ensure an even coating thickness. Apply polymerized joint adhesive to the vertical faces, curb and utility structures.

    When maintaining traffic with a lift thickness greater than 2 inches, construct a wedge joint. The RE will permit a butt joint for lift thickness 2 inches or less when maintaining traffic, or for lift thickness greater than 2 inches when maintaining traffic is not required. Maintain a uniform width and depth of overlapped material at all times. Position the paver so that the HMA overlaps the edge of the lane previously placed

by 1/2 to 1 inch. Leave the material sufficiently high to allow for compaction. Do not lute the HMA material. Do not broadcast HMA material at the joint across the new HMA mat..

When compacted, ensure that the new mat at the joint is even or slightly higher (maximum 1/8 inch) than the previously placed adjoining mat. If the newly compacted mat results in a depression at the joint of more than1/8 inch, suspend paving operations until corrective action is taken to prevent reoccurrence.

2. **Transverse Joints.** Construct transverse joints to provide a smooth riding surface. When using a bulkhead to form the joint, ensure that the bulkhead forms a straight line and vertical face. If a bulkhead is not used to form the joint, make the joint by sawing the compacted HMA for a sufficient distance behind the end of the placement to ensure full thickness and a smooth surface at the joint. Remove the full lift thickness of HMA ahead of the sawed joint. In either case, paint the joint face with polymerized joint adhesive before the fresh material is placed against it. Unless prohibited by field conditions, cross roll to obtain thorough compaction of these joints.

F. Compacting.

THE FOURTH SENTENCE OF THE LAST PARAGRAPH IS CHANGED TO:

On a daily basis, provide results of both the nuclear density and core testing to the RE.

G. Opening to Traffic.

THE ENTIRE TEXT IS CHANGED TO:

Remove loose material from the traveled way, shoulder, and auxiliary lanes before opening to traffic. Open HMA courses to traffic or construction equipment, including paving equipment, only after the surface temperature has cooled to less than 140 °F.

When using Warm Mix Asphalt, do not allow traffic or construction equipment on the HMA course until the surface temperature is less than 120 °F.

H. Air Void Requirements.

THE FIRST PARAGRAPH IS CHANGED TO:

Mainline lots are defined as the area covered by a day's paving production of the same job mix formula for the traveled way and auxiliary lanes. The RE may combine daily production areas less than 1000 tons with previous or subsequent production areas. If a day's production is greater than 4000 tons, the RE may divide the area of HMA placed into 2 lots with approximately equal areas.

THE FOLLOWING IS ADDED TO THE THIRD PARAGRAPH:

Inside shoulders less than 6 feet in width will not be included in other lots unless requested by the RE.

THE FOLLOWING IS ADDED AFTER THE THIRD PARAGAPH:

If areas of existing shoulders are found to be insufficient to support the proposed HMA pavement and the required compaction cannot be achieved, notify the RE immediately. The RE may either direct additional milling and paving to provide a suitable base to pave the proposed HMA or waive coring and air void requirements in such shoulder areas.

SUBPART 5 & 7 ARE CHANGED TO:

5 Outlier Detection. If PD < 10, the ME will not screen for outliers. If PD ≥ 10, the ME will screen acceptance cores for outliers using a statistically valid procedure. The following procedure applies only for a sample size of 5 or 10.

1. The ME will arrange the core results in ascending order, in which X_1 represents the smallest value and X_N represents the largest value.
2. If X_N is suspected of being an outlier, the ME will calculate:

$$R = \frac{X_N - X_{(N-1)}}{X_N - X_1}$$

3. If X_1 is suspected of being an outlier, the ME will calculate:

$$R = \frac{X_2 - X_1}{X_N - X_1}$$

4. For N=5 if R > 0.642, the value is judged to be statistically significant and the core is excluded. For N = 10 if R > 0.412, the value is judged to be statistically significant and the core is excluded.

If an outlier is detected for N = 5 and no retest is warranted, the contractor may replace that core by taking an additional core at the same offset and within 5 feet of the original station. If an outlier is detected and a retest is justified, take a replacement core for the outlier at the same time as the 5 additional retest cores are taken. If the outlier replacement core is not taken within 15 days, the ME will use the initial core results to determine PPA.

If an outlier is detected for N = 10, the Contractor may replace that core by taking an additional core at the same offset and within 5 feet of the original station. If the outlier replacement core is not taken within 15 days, the ME will use the initial core results to determine PPA.

6. Retest. If the initial series of 5 cores produces a percent defective value of PD ≥ 30 for mainline or ramp lots, or PD ≥ 50 for other pavement lots, the Contractor may elect to take an additional set of 5 cores at random locations chosen by the ME. Notify the RE within 15 days of receipt of the initial core results to take the additional cores. If the RE is not notified within the 15 days, the ME will use the initial core results to determine the PPA. If the additional cores are taken, the ME will recalculate the PPA using the combined results from the 10 cores.

7 Removal and Replacement. If the final lot PD ≥ 75 (based on the combined set of 10 cores or 5 cores if the Contractor does not take additional cores), remove and replace the lot and all overlying work. The replacement work is subject to the same requirements as the initial work.

For shoulder lots, instead of removal and replacement, the Department will assess the calculated PPA, and the Contractor shall perform a fog seal of the lot as specified in 422.03.01.

I. Thickness Requirements.

1. Total Thickness.

THE ENTIRE TEXT IN PART E IS CHANGED TO:

e. Retest. If the initial series of 5 cores produces a percent defective value of PD ≥ 30, the Contractor may elect to take an additional set of 5 cores at random locations chosen by the RE. Notify the RE within 15 days of receipt of the initial core results to take the additional cores. If the RE is not notified within the 15 days, the ME will use the initial core results to determine the PPA. If the additional cores are taken, the ME will recalculate the PPA using the combined results from the 10 cores.

2. Surface Course Thickness.

THE ENTIRE TEXT IN PART D IS CHANGED TO:

d. Retest. If the initial series of 5 cores produces a percent defective value of PD > 10, the Contractor may take an additional 5 cores at random locations determined by the ME. Notify the RE within 15 days of receipt of the initial core results to take the additional cores. If the RE is not notified within the 15 days, the ME will use the initial core results to determine the PPA. When the additional cores are taken, the ME will recalculate the PPA using the combined results from the 10 cores to obtain the total PD.

J. Ride Quality Requirements.

THE ENTIRE TEXT IS CHANGED TO

The Department will evaluate the ride quality of the final riding surface of all constructed pavement on the project using the International Roughness Index (IRI) according to ASTM E 1926. The final riding surface is defined as the last lift of the pavement structure where traffic will be allowed. The pavement will be evaluated using the target IRI (T) determined from Table 401.03.03-8.

For projects paving on mainline travel lanes equal to or greater than 2,500 feet length and any lane within the project of at least 1,000 feet length, the Department will evaluate the ride quality of the final riding surface of the mainline travel lanes using IRI. The Department will use the measured IRI to calculate the pay adjustment (PA) using pay

adjustment equation (PAE) type PA1 as specified in Table 401.03.03-7. PA will be based on lots of 0.01 mile length. The PA will be positive for superior quality work or negative for inferior quality work.

For projects paving on mainline travel lanes of less than 2,500 feet length, the RE will visually inspect the final riding surface. Based on visual inspection, if the RE determines that the work may not conform to the ride quality requirements, then the Department will evaluate the ride quality of the final riding surface using IRI. Visual inspection by the RE is considered sufficient grounds for such evaluation. The Department will use the measured IRI to calculate the PA using pay equation type PA1 as specified in Table 401.03.03-7.

For paving on ramps and shoulders, the RE will visually inspect the final riding surface. Based on visual inspection, if the RE determines that the work may not conform to the ride quality requirements, then the Department will evaluate the ride quality of the final riding surface using IRI. Visual inspection by the RE is considered sufficient grounds for such evaluation. The Department will use the measured IRI to calculate the pay adjustment using pay equation type PA2 as specified in Table 401.03.03-7.

When paving over bridge structures, the Department will use the measured IRI to calculate the pay adjustment using pay equation type PA3 as specified in Table 401.03.03-7.

1. **Smoothness Measurement.** The Department will test the longitudinal profile of the final riding surface for ride quality with a Class 1 Inertial Profiling System according to NJDOT R-1. If project conditions preclude the use of the Class 1 Inertial Profiling System, the Department will use a Class 1 Walking Profiler or lightweight profiler.

2. **Quality Control Testing.** Perform quality control testing during lift placement to ensure compliance with the ride quality requirements specified in Table 401.03.03-8.

3. **Preparation for IRI Testing.** Notify the RE when all paving is complete and the RE will request IRI testing by Pavement & Drainage Management & Technology (PDMT) unit. Provide traffic control when the Department performs IRI testing. Perform mechanical sweeping of the surface before IRI testing. To facilitate auto triggering on laser profilers, place a single line of temporary pavement marking tape perpendicular to the roadway baseline at the beginning and end of each lane, shoulder, and ramp to be tested or at the direction of the Department. Submit the actual stationing for each temporary pavement marking tape location to the RE.

4. **Quality Acceptance.** The Department will determine acceptance and provide PA based on the following:

   a. **Pay Adjustment.** The acceptable IRI for the roadway pavement will be the target IRI (T) from Table 401.03.03-8 for which full payment will be made and will be determined using the latest available existing current average IRI (C) data of the right most travel lane specified in 102.04 or from PDMT. The number of lots for final pay adjustment will be reduced by the number of lots excluded for each segment shown in Table 401.03.03-7. Lots excluded from final PA will be those with the highest recorded IRI numbers for respective roadway and bridge deck segments. A single average IRI value and the corresponding PA for each 0.01 mile lot will be reported. IRI units are in inches per mile.

Table 401.03.03-7 Pay Adjustment Equations (PAE) for Ride Quality

Pay Equation Type	Exclusions		Pay Equations
PA1	As shown in the Special Provisions Table 401.03.03-9	IRI≤170	PA1=PAE
		IRI>170	PA1= -A or Corrective action
PA2	Will include, if tested	IRI ≤ 120	PA2 =$0
		120 < IRI ≤ 170	PA2 = (IRI − 120) x (−$10.00)
		IRI>170	Maximum Negative Pay or Corrective action
PA3	Will include, if tested	IRI<T	PA3=PAE
		T≤IRI≤120	PA3=0
		120<IRI≤170	PA3=PAE
		IRI>170	PA3= -A or Corrective action

$$PAE = \frac{\mathrm{A}}{-37.75347 \times \log_e(T) + 194.87} - \frac{\mathrm{A}}{-37.75347 \times \log_e(IRI) + 194.87}$$

$$\mathrm{A} = 1267.2\left[\frac{\mathrm{M}}{9} + \frac{\mathrm{PD}}{150}\right]$$

P = Bid price of last lift of the pavement structure to be evaluated or price listed in Table 401.03.03-7A as shown in the Special Provisions, whichever is higher, per Ton
D^1 = Design thickness of last lift to be evaluated, Inch
M = Bid price of Milling, per Square Yard
T = Target IRI

1. For various design thicknesses of last lift to be evaluated within a segment, calculate the thickness using the following equation:

$$\text{Design thickness of last lift to be evaluated (D)} = \frac{\mathrm{D_1N_1 + D_2N_2 + \cdots D_NN_N}}{\mathrm{N_1 + N_2 + N_3 + \cdots N_N}}$$

Where:
D_N = Design thickness of the last lift to be evaluated of N sections having same mix, Inch
N_N = Number of lots of N section with design thickness D_N of last lift to be evaluated

FOLLOWING TABLE IS ADDED

Table 401.03.03-7A Minimum Value of P

Surface Course Mix	P

Table 401.03.03-8 Target IRI for Resurfacing or Reconstruction (T)[3]

Roadway Type	Current average IRI (C)	New Construction or Reconstruction	Number of Operation for other than New Construction or Reconstruction[5]			
			One[4]	Two[4]	Three[4]	Four or More[4]
			Target IRI (T)			
Freeways or Limited Access Highways	≤ 60	50	50	50	50	50
	61 to ≤95		53	50	50	50
	96 to ≤170		55	53	50	50
	171 to≤200			55	53	50
	201 to ≤285		0.64C[7]	58	55	50
	>286[8]			60	58	53
Other than Freeways or Limited Access Highways with speed limit > 35 MPH	≤ 60	60	60	60	60	60
	61 to ≤95		63	60	60	60
	96 to ≤170		66	63	60	60
	171 to≤200			66	63	60
	201 to ≤285		0.64C[7]	69	66	60
	>286[8]			72	69	63
Other than Freeways or Limited Access Highways with speed limit ≤ 35 MPH	≤ 60	70	70	70	70	70
	61 to ≤95		74	70	70	70
	96 to ≤170		77	74	70	70
	171 to≤200			77	74	70
	201 to ≤285		0.64C[7]	81	77	70
	>286[8]			84	81	74

1. The Department will determine target IRI (T) of roadways containing multiple speed limits of greater than 35 MPH and less than or equal to 35 MPH based on the following equation:

$$\text{Target IRI of a roadway consists of N Roadway type (T)} = \frac{T_1L_1 + T_2L_2 + \cdots \ldots T_NL_N}{L_{1+}L_{2+}L_{3+} \ldots . L_N}$$

   Where TN is the Target IRI of N section and LN is the length of N section in miles to the nearest 0.01 mile
2. Current average IRI (C) is the average of the latest available preconstruction network level IRI data of right most travel lane from PDMT.
3. Target IRI (T) is the lowest of Current average IRI (C) and T determined from the table.
4. Multiply T with 1.05 for HMA over Concrete, if total HMA after proposed treatment is less than 8 inch thick.
5. Milling is one operation. Paving each layer of asphalt mix is an individual operation unless plans specify paving a mix in two lifts. In such case, each lift is considered as an operation.
6. Construction or reconstruction of full pavement box on subgrade is new construction or reconstruction.
7. Use Pay Equation as below:

   IRI≤T PA=0

   IRI>T PA=PAE

8. For paving over rubblized concrete, use C >286 to determine target IRI, then multiply T with 1.05 if total HMA after proposed treatment is less than 8-inch thick.

FOLLOWING TABLE IS ADDED

Table 401.03.03-9 Exclusions for Resurfacing or Reconstruction

Roadway	Lane Number	Exclusions

Lane designation is by increasing numbers from left to right in the direction of traffic with left lane being Lane 1.

b. Corrective Action. If the average IRI is greater than 170 inches per mile after testing is performed, the Department may require corrective action or assess the maximum negative pay adjustment as computed in Table 401.03.03-7. If the Department requires corrective action submit a plan for corrective action. If the plan for corrective action is approved and the lot is corrected, the Department will retest and evaluate the corrected area as a new lot that must meet the same requirements as the initial work. If the plan for corrective action is not approved, the Department may require removal and replacement. The replacement work is subject to the same requirements as the initial work.

401.03.04 Sawcutting and Sealing of Joints in HMA Overlays

THE TEXT OF THIS SUBPART IS DELETED.

THIS SUBPART IS INTENTIONALLY LEFT BLANK

401.03.05 Core Samples

THE LAST SENTENCE OF THE 2ND PARAGRAPH IS CHANGED TO THE FOLLOWING:

Apply an even coating of tack coat to sides of the hole. Place HMA in maximum lifts of 4 inches in the hole and compact each lift. Ensure that the final surface is 1/4 inch above the surrounding pavement surface.

THE FIFTH PARAGRAPH IS CHANGED TO:

At least 24 hours prior to coring, provide a tamper proof core sample box for the RE's inspection and approval. Ensure that the core sample box can be locked and sealed and is tamper proof in such a manner that it cannot be opened without removing the seals. Ensure that the core sample box provides protection for the cores from being disturbed or damaged during transit. Mark the Department assigned core number on the side of the sample. Place core samples and corresponding forms, including a completed and signed Form DC-286 Contractor's certificate of compliance Core sample delivery, in the core sample box. Ensure Form DC-286 is also signed by a Department witness. Before sealing the core sample box, ensure that the RE has recorded the seal number on the laboratory form. Transport the sealed core sample boxes to the Department Laboratory. The RE at his discretion may decide to deliver the core samples as indicated above.

THE SIXTH PARAGRAPH IS CHANGED TO:

The Department will not accept damaged core samples for testing. If the core sample box exhibits indications of tampering, the core samples will be rejected. If the Department rejects any core samples, drill a replacement core at the same offset and within 5 feet of the original station and deliver to the laboratory as specified above within 48 hours.

401.04 MEASUREMENT AND PAYMENT
THE FOLLOWING ITEM IS DELETED:

Item	*Pay Unit*
SAWING AND SEALING JOINTS IN HOT MIX ASPHALT OVERLAY	LINEAR FOOT

THE FOLLOWING ITEM IS ADDED:

Item	*Pay Unit*
POLYMER MODIFIED TACK COAT	GALLON
MICRO-MILLING	SQUARE YARD
HOT MIX ASPHALT ___ ___ ___ SURFACE COURSE HIGH RAP	TON
HOT MIX ASPHALT ___ ___ ___ INTERMEDIATE COURSE HIGH RAP	TON
HOT MIX ASPHALT ___ ___ ___ BASE COURSE HIGH RAP	TON

THE FOURTH PARAGRAPH IS CHANGED TO:

The Department will measure TACK COAT, TACK COAT 64-22, PRIME COAT and POLYMER MODIFIED TACK COAT by the volume delivered, converted to the number of gallons at 60 °F as calculated by the temperature-volume correction factors specified in 902.01.

THE FOLLOWING IS ADDED:

The Department will make a payment adjustment for HMA air void quality by the following formula:

Pay Adjustment = Q x BP x PPA

Where:
BP = Bid Price
Q= Air Void Lot Quantity
PPA= air void PPA as specified in 401.03.03H.

The Department will make a payment adjustment for HMA thickness quality by the following formula:

Pay Adjustment = Q x BP x PPA

Where:
BP = Bid Price
Q= Thickness Lot Quantity
PPA= thickness PPA as specified in 401.03.03I

The Department will make a payment adjustment for HMA ride quality, as specified in 401.03.03J.

SECTION 402 – HMA FRICTION COURSE

402.01 DESCRIPTION
THE ENTIRE TEXT IS CHANGED TO:

This Section describes the requirements for constructing open-graded friction courses (OGFC), modified open-graded friction courses (MOGFC) and asphalt-rubber open-graded friction courses (AR-OGFC).

402.02.01 Materials
THE FOLLOWING IS ADDED TO LIST OF MATERIALS

Asphalt-Rubber Open-Graded Friction Course 902.07
Polymer Modified Emulsified Asphalt, Grade CRS-1P 902.01.04

402.02.02 Equipment

THE FOLLOWING IS ADDED TO LIST OF EQUIPMENT

Asphalt-Rubber Binder Blending Equipment..... 1009.03

THE FOLLOWING IS ADDED AT THE END:

NOTE: A Spray Paver as specified in 1003.04 may be used in lieu of a HMA Paver.

402.03 CONSTRUCTION

402.03.01 Installing OGFC and MOGFC

E. Spreading and Grading.

THE ENTIRE TEXT IS CHANGED TO:

Apply tack coat 64-22 as specified in 401.03.02.2. When using a spray paver, apply the tack coat as specified in 401.03.02. Place OGFC at a laydown temperature of 225 °F. Place MOGFC at the laydown temperature recommended by the binder manufacturer. Ensure that the OGFC and MOGFC meet the thickness and tolerance requirements specified in Tables 902.03.03-1 and 902.03.03-2. Spread and grade OGFC and MOGFC as specified in 401.03.03.E. Do not apply polymerized joint adhesive or tack coat to longitudinal joints.

I. Ride Quality Requirements.

THE ENTIRE TEXT IS CHANGED TO:

The Department will evaluate the ride quality of the final riding surface of all constructed pavement on the project as specified in 401.03.03.J.

THE FOLLOWING SUBPART IS ADDED AFTER 402.03.01:

402.03.02 AR-OGFC

A. Paving Plan. At least 20 days before beginning placing the AR-OGFC, submit to the RE for approval a detailed plan of operation as specified in 401.03.03.A.

B. Weather Limitations. If within the 12 hours before paving, the National Weather Service locally forecasts a 50 percent chance or greater of precipitation during the scheduled placement, postpone the placement of AR-OGFC. Do not place AR-OGFC if it is precipitating and do not allow trucks to leave the plant when precipitation is imminent. The Contractor may resume paving operations when the chance of precipitation is less than 50 percent and the surface is dry.

Do not pave if the surface temperature of the underlying pavement is below 50 F.

C. Test Strip. Construct a test strip as specified in 401.03.03.C. The Department will not require quality control cores or nuclear density testing.

D. Transportation and Delivery of AR-OGFC. Transport and deliver AR-OGFC as specified in 401.03.03.D.

E. Spreading and Grading.

Apply tack coat 64-22 as specified in 401.03.02. When using a spray paver, apply the polymer modified tack coat as specified in 401.03.02. Place AR-OGFC at a laydown temperature between 275 °F and 330 °F maximum. Spread and grade AR-OGFC as specified in 401.03.03.E, except do not apply polymerized joint adhesive or tack coat to longitudinal joints.

F. Compacting. Immediately after spreading and strike-off, compact AR-OGFC with a minimum of 1 pass of a non-vibratory, 2-axle roller. The RE may direct additional passes to eliminate roller marks. The Contractor may use a vibratory roller if it is operated in static mode.

Orient the drive axles of the roller towards the paver during the compaction operation. Operate rollers at a slow, uniform speed not exceeding 2-1/2 miles per hour. If necessary to prevent adhesion of the AR-OGFC to the rollers, keep the wheels moistened with water mixed with small quantities of detergent or fabric softener.

Remove and replace AR-OGFC that becomes loose, broken, or otherwise defective or that shows an excess or deficiency of asphalt-rubber binder material.

When paving in echelon, keep the rollers for the first lane approximately 6 inches from the unconfined edge adjacent to the second paving operation. After AR-OGFC from the second paver is placed against the uncompacted edge of the mat from the first paver, compact the AR-OGFC on both sides of the joint.

Prevent lateral or vertical displacement of the unconfined edge during the compaction operation. Ensure that the edge of the drums of the rollers extends over the free edge of the mat by at least 6 inches.

When compacting the butt joint, while paving the adjacent lane, place the roller on the newly placed AR-OGFC and overlap the joint by approximately 6 inches.

G. Curing. Following compaction, spray 1 to 3 applications of lime water (a minimum of 50 pounds of pulverized limestone per 2,000 gallons of water) to prevent material pick-up. Apply lime water in a manner that uniformly covers the entire surface of the paving pass. Prior to applying the lime water, do not allow traffic on the AR-OGFC, including the lime water applicator.

H. Opening to Traffic. Remove loose material from the traveled way, shoulder, and auxiliary lanes before opening to traffic. Before opening AR-OGFC to traffic or construction equipment, ensure that the lime water has been applied, the surface is tack free and the surface temperature is less than 140 °F.

I. Ride Quality Requirements. The Department will evaluate the AR-OGFC as specified in 401.03.03.J.

The Department will evaluate the ride quality of the final riding surface of all constructed pavement on the project as specified in 401.03.03.J.

402.04 MEASUREMENT AND PAYMENT
THE FOLLOWING IS ADDED:
THE ENTIRE SUSPART IS CHANGED TO:

The Department will measure and make payment for Items as follows:

Item	*Pay Unit*
OPEN-GRADED ___ FRICTION COURSE	TON
MODIFIED OPEN-GRADED ___ FRICTION COURSE	TON
ASPHALT-RUBBER OPEN-GRADED FRICTION COURSE	TON

The Department will measure Open-Graded ___ Friction Course, Modified Open-Graded Friction ___ Course and ASPHALT-RUBBER OPEN-GRADED FRICTION COURSE by the ton as indicated on the certified weigh tickets, excluding unused material.

2The Department will not include payment for TACK COAT, POLYMER MODIFIED TACK COAT, TACK COAT 64-22 and HMA CORE SAMPLES in the various Items of this Section.

The Department will make payment for tack coat as specified in 401.04.

The Department will make payment for TACK COAT 64-22 as specified in 401.04.

The Department will make payment for Core Samples, Hot Mix Asphalt as specified in 401.04.

The Department will make a payment adjustment for HMA thickness quality by the following formula:

Pay Adjustment = Q x BP x PPA

Where:
BP = Bid Price
Q= Thickness Lot Quantity
PPA= thickness PPA as specified in 401.03.03.I

The Department will make a payment adjustment for HMA ride quality, as specified in 401.03.03.J.

SECTION 403 – ULTRA-THIN FRICTION COURSE

403.02.01 Materials
THE ENTIRE TEXT IS CHANGED TO:

Provide materials as specified:

Polymer Modified Emulsified Asphalt, Grade CRS-1P 902.01.04
Ultra-Thin HMA 902.04

403.02.02 Equipment
THE ENTIRE TEXT IS CHANGED TO:

Provide equipment as specified:

Materials Transfer Vehicle (MTV) 1003.01
Spray Paver 1003.04
HMA Compactor 1003.05
Vibratory Drum Compactor 1003.06
HMA Plant 1009.01
HMA Trucks 1009.02

403.03.01 Ultra-Thin Friction Course
THE ENTIRE TEXT IS CHANGED TO:

A. Paving Plan. At least 20 days before the start of placing the ultra-thin friction course, submit a detailed plan of operation to the RE for approval as specified in 401.03.03.A.

B. Weather Limitations. Do not place ultra-thin friction course if it is precipitating. Do not allow trucks to leave the plant when precipitation is imminent. The Contractor may resume operations when the precipitation has stopped and the surface is free of water.

Do not pave if the base temperature is below 50 °F.

C. Test Strip. Construct a test strip for the first 700 to 1200 square yards placed of ultra-thin friction course. Operate spray paver without mix to determine tack coat application rate for the project. Ensure that the polymer modified tack coat has been placed as specified in 401.03.02. Transport and deliver, spread and grade, and compact as specified in 403.03.02.D, 403.03.02.E, and 403.03.02.F, respectively, and according to the approved paving plan. While constructing the test strip, record the following information and submit to the RE:

1. **Ambient Temperature.** Measure ambient temperature at the beginning and end of each day's paving operation.
2. **Base Temperature.** Measure the surface temperature of the existing base before paving.
3. **Polymer Modified Tack Coat**. Measure to verify the proper application of tack coat and the rate for compliance.
4. **HMA Temperature.** Measure the temperature of the ultra-thin HMA immediately after placement.
5. **Roller Pattern.** Provide details on the number of rollers, type, and number of passes used on the test strip.
6. **Quality Control Cores for Yield and Thickness.** Take 3 randomly selected quality control cores to test for compliance to the specified yield in 403.03.02.E.

   Use drilling equipment with a water-cooled, diamond-tipped, masonry drill bit that shall produce 6-inch nominal diameter cores for the full depth of the pavement. Remove the core from the pavement without damaging it. After removing the core, remove all water from the hole. Fill the hole with HMA or cold patching material, and compact the material so that it is 1/4 inch above the surrounding pavement surface.

Submit test strip results to the RE. The RE will analyze the test strip results in conjunction with the ME's results from the HMA plant to approve the test strip. Do not proceed with production paving until receiving written permission from the RE.

If the test strip does not meet requirements, make adjustments and construct a second test strip. If the second test strip does not meet requirements, suspend paving operations until written approval to proceed is received.

Before making adjustments to the paving operations, notify the RE in writing.

D. Transportation and Delivery of HMA. Transport and deliver HMA as specified in 401.03.03.D.

E. Spreading and Grading. Use of an MTV is required for the construction of ultra-thin friction course. Ensure that the surface where the ultra-thin friction course is placed is clean of foreign and loose material. Clean the surface of existing pavement using a self-propelled power broom equipped with a vacuum collection system before placing the ultra-thin friction course. Ensure that the surface is dry when the paving operations are about to start.

Apply polymer modified tack as specified in 401.03.02. Do not allow traffic, equipment, tools, or any other disturbance to the polymer modified tack coat before placing the ultra-thin friction course.

Ensure that the temperature of the ultra-thin friction course behind the screed is between 280 °F and 325 °F. Within 3 seconds of applying the polymer modified tack coat, place ultra-thin friction course at a rate of 65 to 95 pounds per square yard.

Construct longitudinal joints as specified in 401.03.03.E.1. If constructing a cold longitudinal joint, construct a butt joint and do not use polymerized joint adhesive. Construct transverse joints as specified in 401.03.03.E.2.

F. Compacting. Compact ultra-thin friction course as specified in 401.03.03.F. Use a minimum of two 10-ton steel-wheel rollers. If vibratory compaction causes aggregate breakdown or forces liquid asphalt binder to the surface, operate rollers in static mode only.

G. Opening to Traffic. Remove loose material from the traveled way before opening to traffic. Do not allow construction equipment or traffic on the ultra-thin friction course until the mat cools to a temperature of less than 140 °F.

H. Thickness Requirements. When required for thickness determination, drill cores as specified in 401.03.05. The Department will calculate total thickness as specified in 401.03.03.I. The Department will not evaluate surface thickness.

I. Ride Quality Requirements.

The Department will evaluate the ride quality of the final riding surface of all constructed pavement on the project as specified in 401.03.03.J.

403.04 MEASUREMENT AND PAYMENT

THE FOLLOWING IS ADDED:

The Department will make payment for POLYMER MODIFIED TACK COAT as specified in 401.04.

The Department will make a payment adjustment for HMA thickness quality, by the following formula:

$$\text{Pay Adjustment} = Q \times BP \times PPA$$

Where:
BP = Bid Price
Q= Thickness Lot Quantity
PPA= thickness PPA as specified in 401.03.03I

The Department will make a payment adjustment for HMA ride quality, as specified in 401.03.03J.

SECTION 404 – STONE MATRIX ASPHALT (SMA)

404.02.01 Materials

THE ENTIRE TEXT IS CHANGED TO:

Provide materials as specified:

Tack Coat 902.01.03
Polymer Modified Emulsified Asphalt, Grade CRS-1P 902.01.04

SMA 902.05

404.02.02 Equipment
THE FOLLOWING IS ADDED AT THE END:

NOTE: A Spray Paver as specified in 1003.04 may be used in lieu of a HMA Paver

404.03.01 SMA

E. Spreading and Grading.
THE ENTIRE TEXT IS CHANGED TO:

Apply tack coat as specified in 401.03.02. Place SMA at a laydown temperature of at least 285 °F. Spread and grade SMA as specified in 401.03.03.E. Ensure that the screed is operated in the vibratory mode. If constructing a cold longitudinal joint, construct a butt joint. Do not rake the joint.

H. Air Void Requirements.
THE ENTIRE PART IS CHANGED TO:

Drill cores as specified in 401.03.05.

Mainline lots are defined as the area covered by a day's paving production of the same job mix formula for the traveled way and auxiliary lanes. The RE may combine daily production areas less than 1000 tons with previous or subsequent production areas. If a day's production is greater than 4000 tons, the RE may divide the area of HMA placed into 2 lots with approximately equal areas.

Ramp pavement lots are defined as approximately 10,000 square yards of pavement in ramps. The RE may combine ramps with less than the minimum area into a single lot. If 2 or more ramps are included in a single lot, the RE will require additional cores to ensure that at least 1 core is taken from each ramp.

Other pavement lots are defined as approximately 10,000 square yards of pavement in shoulders and other undefined areas.

The ME will calculate the percent defective (PD) as the percentage of the lot outside the acceptable range of 1 percent air voids to 7 percent air voids. The acceptable quality limit is 10 percent defective. For lots in which PD < 10, the Department will award a positive pay adjustment. For lots in which PD > 10, the Department will assess a negative pay adjustment.

The ME will determine air voids from 5 cores taken from each lot in random locations. The ME will determine air voids of cores from the values for the maximum specific gravity of the mix and the bulk specific gravity of the core. The ME will determine the maximum specific gravity of the mix according to NJDOT B-3 and AASHTO T 209, except that minimum sample size may be waived in order to use a 6-inch diameter core sample. The ME will determine the bulk specific gravity of the compacted mixture by testing each core according to AASHTO T 166.

The ME will calculate pay adjustments based on the following:

1. Sample Mean ($\overline{X}$) and Standard Deviation (S) of the N Test Results (X_1, X_2,..., X_N).

$$\overline{X} = \frac{(X_1 + X_2 + ... + X_N)}{N}$$

$$S = \sqrt{\frac{(X_1 - \overline{X})^2 + (X_2 - \overline{X})^2 + ... + (X_N - \overline{X})^2}{N - 1}}$$

2. Quality Index (Q).

$$Q_L = \frac{\left(\overline{X} - 1.0\right)}{S}$$

$$Q_U = \frac{\left(7.0 - \overline{X}\right)}{S}$$

3. **Percent Defective (PD).** Using NJDOT ST for the appropriate sample size, the Department will determine PD_L and PD_U associated with Q_L and Q_U, respectively. $PD = PD_L + PD_U$

4. **Percent Pay Adjustment (PPA).** Calculate the PPA for traveled way and ramp lots as specified in Table 401.03.03-3.

Table 404.03.01-1 PPA for Mainline Lots and Ramp Lots

	Quality	PPA
Surface	PD < 10	PPA = 4 − (0.4 PD)
	10 ≤ PD < 30	PPA = 1 − (0.1 PD)
	PD ≥ 30	PPA = 40 − (1.4 PD)
Intermediate and Base	PD < 30	PPA = 1 − (0.1 PD)
	PD ≥ 30	PPA = 40 − (1.4 PD)

Calculate the PPA for other pavement lots as specified in Table 401.03.03-4.

Table 404.03.01-2 PPA for Other Pavement Lots

	Quality	PPA
All Courses	PD < 50	PPA = 1 − (0.1 PD)
	PD ≥ 50	PPA = 92 − (1.92 PD)

5. **Outlier Detection.** If PD < 10, the ME will not screen for outliers. If PD ≥ 10, the ME will screen all acceptance cores for outliers using a statistically valid procedure. The following procedure applies only for a sample size of 5 or 10.

    1. The ME will arrange the core results in ascending order, in which X_1 represents the smallest value and X_N represents the largest value.

    2. If X_N is suspected of being an outlier, the ME will calculate:

$$R = \frac{X_N - X_{(N-1)}}{X_N - X_1}$$

    3. If X_1 is suspected of being an outlier, the ME will calculate:

$$R = \frac{X_2 - X_1}{X_N - X_1}$$

    4. For N=5 if R > 0.642, the value is judged to be statistically significant and the core is excluded. For N = 10 if R > 0.412, the value is judged to be statistically significant and the core is excluded.

    If an outlier is detected for N = 5 and no retest is warranted, the contractor may replace that core by taking an additional core at the same offset and within 5 feet of the original station. If an outlier is detected and a retest is justified, take a replacement core for the outlier at the same time as the 5 additional retest cores are taken. If the outlier replacement core is not taken within 15 days, the ME will use the initial core results to determine PPA.

    If an outlier is detected for N = 10, the Contractor may replace that core by taking an additional core at the same offset and within 5 feet of the original station. If the outlier replacement core is not taken within 15 days, the ME will use the initial core results to determine PPA.

6. Retest. If the initial series of 5 cores produces a percent defective value of PD ≥ 30 for mainline or ramp lots, or PD ≥ 50 for other pavement lots, the Contractor may elect to take an additional set of 5 cores at random locations chosen by the ME. Notify the RE within 15 days of receipt of the initial core results to take the additional cores. If the RE is not notified within the 15 days, the ME will use the initial core results to determine the PPA. If the additional cores are taken, the ME will recalculate the PPA using the combined results from the 10 cores.

7. Removal and Replacement. If the final lot PD ≥ 75 (based on the combined set of 10 cores or 5 cores if the Contractor does not take additional cores), remove and replace the lot and all overlying work. The replacement work is subject to the same requirements as the initial work.

For shoulder lots, instead of removal and replacement, the Department will assess the calculated PPA, and the Contractor shall perform a fog seal of the lot as specified in 422.03.01.

J. Ride Quality Requirements.
THE ENTIRE TEXT IS CHANGED TO:

The Department will evaluate the ride quality of the final riding surface of all constructed pavement on the project as specified in 401.03.03.J.

404.04 MEASUREMENT AND PAYMENT
THE FOLLOWING IS ADDED:

The Department will make a payment adjustment for HMA air void quality by the following formula:

Pay Adjustment = Q x BP x PPA

Where:
BP = Bid Price
Q= Air Void Lot Quantity
PPA= air void PPA as specified in 401.03.03H.

The Department will make a payment adjustment for HMA thickness quality by the following formula:

Pay Adjustment = Q x BP x PPA

Where:
BP = Bid Price
Q= Thickness Lot Quantity
PPA= thickness PPA as specified in 401.03.03I

The Department will make a payment adjustment for HMA ride quality, as specified in 401.03.03J

The Department will make payment for POLYMER MODIFIED TACK COAT as specified in 401.04.

SECTION 405 – CONCRETE SURFACE COURSE

405.03.02 Concrete Surface Course

I. Thickness Requirements.
THIS PART IS CHANGED TO:

I. Thickness Requirements. The ME will divide the concrete pavement into lots of approximately 5000 square yards. The ME will divide each lot into 5 equal sections. The RE will direct the Contractor to drill 1 core, as specified in 405.03.03, from a randomly selected location within each section. The ME will test these cores for thickness as specified in ASTM C 174.

The Department will determine conformance with thickness requirements as follows and will either assess the greater of the pay reduction for average core thickness or individual core thickness, or the Department will direct the Contractor to remove and replace the lot:

1. **Average Core Thickness**. If the average core thickness is greater than or equal to the specified core thickness, the Department will not apply a payment reduction. If the average thickness is less than the specified thickness, but is greater than or equal to the specified thickness minus 1/2 inch, the Department will determine payment reduction by the following formula:

$$\text{Payment Reduction} = Q \times BP \times PPR$$

Where:
Q = Thickness Lot Quantity
BP = Bid Price
T_S = Specified Thickness.
T_A = Average Thickness

$$PPR = \text{Percent Payment Reduction} = \frac{T_S - T_A}{T_S}$$

2. **Individual Core Thickness**. When more than 2 individual cores in the lot are less than the specified thickness minus 1/4 inch, the Department will determine the payment reduction using for the above noted formula and using a PPR = 2 percent.

3. **Remove and Replace.** If the average thickness is less than the specified thickness minus 1/2 inch, the RE will require that the lot be removed and replaced.

THE ENTIRE TEXT IS CHANGED TO:

Ensure that diamond grinding is completed before testing ride quality.

The Department will evaluate the ride quality of the concrete surface course on the project using the International Roughness Index (IRI) according to ASTM E 1926. The concrete surface course will be evaluated using the target IRI (T) determined from Table 405.03.02-2.

The Department will evaluate the ride quality of the final riding surface of the mainline travel lanes. The Department will use the measured IRI to calculate the pay adjustment (PA) using pay adjustment equation (PAE) type PA1 as specified in Table 405.03.02-1. PA will be based on lots of 0.01 mile length. The PA will be positive for superior quality work or negative for inferior quality work.

For paving on ramps and shoulders, the RE will visually inspect the final riding surface. Based on visual inspection, if the RE determines that the work may not conform to the ride quality requirements, then the Department will evaluate the ride quality of the final riding surface using IRI. Visual inspection by the RE is considered sufficient grounds for such evaluation. The Department will use the measured IRI to calculate the PA using pay equation type PA2 as specified in Table 405.03.02-1

1. **Smoothness Measurement.** The Department will test the longitudinal profile of the final riding surface for ride quality with a Class 1 Inertial Profiling System according to NJDOT R-1. If project conditions preclude the use of the Class 1 Inertial Profiling System, the Department will use a Class 1 Walking Profiler or lightweight profiler.

2. **Quality Control Testing.** Perform quality control testing during lift placement to ensure compliance with the ride quality requirements specified in Table 405.03.02-2.

3. **Preparation for IRI Testing.** Notify the RE when all paving is complete and the RE will request IRI testing by Pavement & Drainage Management & Technology (PDMT) unit. Provide traffic control when the Department performs IRI testing. Perform mechanical sweeping of the surface before IRI testing. To facilitate auto triggering on laser profilers, place a single line of temporary pavement marking tape perpendicular to the roadway baseline at the beginning and end of each lane, shoulder, and ramp to be tested or at the direction of the Department. Submit the actual stationing for each temporary pavement marking tape location to the RE.

4. **Quality Acceptance.** The Department will determine acceptance and provide PA based on the following:

    a. **Pay Adjustment.** The acceptable IRI for the roadway pavement will be the target IRI (T) from Table 405.03.02-2 for which full payment will be made and will be determined using the latest available existing current average IRI (C) data of the right most travel lane specified in 102.04 or from PDMT. The number

of lots for final pay adjustment will be reduced by the number of lots excluded for each segment shown in Table 405.03.02-1. Lots excluded from final PA will be those with the highest recorded IRI numbers for respective roadway and bridge deck segments. A single average IRI value and the corresponding PA for each 0.01 mile lot will be reported. IRI units are in inches per mile.

Table 405.03.02-1 Pay Equations for Ride Quality

Pay Equation Type	Excluded Lots	Pay Equation(s)	
PA1	As shown in the Special Provisions Table 405.03.02-3	IRI<(T-25)	PA1= $50
		(T-25)≤IRI<(T-5)	PA1=(T-IRI-5) x 2.5
		(T-5)≤IRI≤(T+5)	PA1=0
		(T+5)<IRI≤(T+75)	PA1=-(IRI-T-5)x7.1429
		IRI>(T+75)	PA=-$500
PA2	Will include, if tested	IRI ≤ 120	PA2=$0
		120 < IRI ≤ 170	PA2 = (IRI − 120) x (−$10.00)
		IRI>170	Maximum Negative Pay or Corrective action

Table 405.03.02-2 Target IRI for Concrete Surface Course (T)

Roadway Type	Target IRI (T)
Freeways or Limited Access Highways	50
Other than Freeways or Limited Access Highways with speed limit > 35 MPH	60
Other than Freeways or Limited Access Highways with speed limit ≤ 35 MPH	70

Following Table is added

Table 405.03.02-3 Exclusions for Concrete Surface Course

Roadway	Lane Number	Exclusions

Lane designation is by increasing numbers from left to right in the direction of traffic with left lane being Lane 1.

b. Corrective Action. If the average IRI is greater than T+75 inches per mile after testing is performed, the Department may require corrective action or assess the maximum negative pay adjustment as computed in Table 405.03.02-1. If the Department requires corrective action submit a plan for corrective action. If the plan for corrective action is approved and the lot is corrected, the Department will retest and evaluate the corrected area as a new lot that must meet the same requirements as the initial work. If the plan for corrective action is not approved, the Department may require removal and replacement. The replacement work is subject to the same requirements as the initial work.

405.04 MEASUREMENT AND PAYMENT

THE FOLLOWING IS ADDED:

The Department will make a payment adjustment for Concrete Surface thickness quality, as specified in 405.03.02.

The Department will make a payment adjustment for HMA ride quality, as specified in 401.03.03J

THE FOLLOWING SECTION IS ADDED TO DIVISION 400:

SECTION 406 – HIGH PERFORMANCE THIN OVERLAY (HPTO)

406.01 DESCRIPTION

This Section describes the requirements for constructing high performance thin overlay (HPTO).

406.02 MATERIALS

406.02.01 Materials

Provide materials as specified:

Tack Coat	902.01.03
Polymer Modified Emulsified Asphalt, Grade CRS-1P	902.01.04
HPTO	902.08

406.02.02 Equipment

THE ENTIRE TEXT IS CHANGED TO:

Provide equipment as specified:

Materials Transfer Vehicle (MTV)	1003.01
HMA Paver	1003.03
Spray Paver	1003.04
HMA Compactor	1003.05
HMA Plant	1009.01
HMA Trucks	1009.02

Provide a thin-lift nuclear density gauge according to ASTM D 2950.

406.03 CONSTRUCTION

406.03.01 High Performance Thin Overlay (HPTO)

A. Paving Plan. At least 20 days before the start of placing the HPTO, submit a detailed plan of operation to the RE for approval as specified in 401.03.03.A.

B. Weather Limitations. If within the 3 hours before paving the National Weather Service locally forecasts a 50 percent chance or greater of precipitation during the scheduled placement, postpone the placement of HPTO. Do not place HPTO if it is precipitating and do not allow trucks to leave the plant when precipitation is imminent. The Contractor may resume paving operations when the chance of precipitation is less than 50 percent and the surface is dry.

Do not pave if the surface temperature of the underlying pavement is below 50 °F.

C. Test Strip. At least 14 days prior to production of the HPTO, construct a test strip as specified in 401.03.03.C except for the allowance to continue paving. Submit test strip results to the RE. The RE will analyze the test strip results in conjunction with the ME's results from the HMA plant to approve the test strip. Do not proceed with production paving until receiving written permission from the RE.

D. Transportation and Delivery of HMA. Transport and deliver HMA as specified in 401.03.03.D.

E. Spreading and Grading.

Use of a MTV is required for the construction of HPTO. If HPTO is only for bridge deck paving, the use of a MTV is optional. Ensure that the surface where the HPTO is placed is clean of foreign and loose material. Clean the surface of existing pavement using a self-propelled power broom equipped with a vacuum collection system before placement. Ensure that the surface is dry before paving begins. Do not start paving of the HPTO until the RE has approved the underlying surface. In areas where the existing pavement is not being milled, remove traffic stripes and traffic markings as specified in 610.03.08. Apply tack coat as specified in 401.03.02. Place HPTO at the laydown temperature recommended by the supplier of the asphalt binder or the supplier of the asphalt modifier without exceeding 330 ºF maximum discharge temperature. Spread and grade HPTO as specified in 401.03.03.E.

F. Compacting.

Compact as specified in 401.03.03.F. If vibratory compaction causes aggregate breakdown, or forces liquid asphalt to the surface or both, operate rollers in static mode only. If compacting HPTO on a bridge deck, operate rollers in static mode only.

G. Opening to Traffic. Remove loose material from the traveled way before opening to traffic. Do not allow construction equipment or traffic on the HPTO until the mat cools to a temperature of less than 140 °F.

H. Air Void Requirements on Roadway.

THE ENTIRE PART IS CHANGED TO:

Drill cores as specified in 401.03.05. Mainline lots are defined as the area covered by a day's paving production of the same job mix formula for the traveled way and auxiliary lanes. The RE may combine daily production areas less than 500 tons with previous or subsequent production areas. If a day's production is greater than 2000 tons, the RE may divide the area of HMA placed into 2 lots with approximately equal areas.

Ramp pavement lots are defined as approximately 10,000 square yards of pavement in ramps. The RE may combine ramps with less than the minimum area into a single lot. If 2 or more ramps are included in a single lot, the RE will require additional cores to ensure that at least 1 core is taken from each ramp.

Other pavement lots are defined as approximately 10,000 square yards of pavement in shoulders and other undefined areas.

The ME will calculate the percent defective (PD) as the percentage of the lot outside the acceptable range of 1 percent air voids to 7 percent air voids. The acceptable quality limit is 10 percent defective. For lots in which PD<10, the Department will award a positive pay adjustment. For lots in which PD > 10, the Department will assess a negative pay adjustment.

The ME will determine air voids from 5 cores taken from each lot in random locations. The ME will determine air voids of cores from the values for the maximum specific gravity of the mix and the bulk specific gravity of the core. The ME will determine the maximum specific gravity of the mix according to NJDOT B-3 and AASHTO T 209, except that minimum sample size may be waived in order to use a 6-inch diameter core sample. The ME will determine the bulk specific gravity of the compacted mixture by testing each core according to AASHTO T 166.

The ME will calculate pay adjustments based on the following:

1. Sample Mean ($\overline{X}$) and Standard Deviation (S) of the N Test Results (X1, X2,..., XN).

$$\overline{X} = \frac{(X_1 + X_2 + ... + X_N)}{N}$$

$$S = \sqrt{\frac{(X_1 - \overline{X})^2 + (X_2 - \overline{X})^2 + ... + (X_N - \overline{X})^2}{N - 1}}$$

2. Quality Index (Q).

$$Q_L = \frac{(\overline{X} - 1.0)}{S}$$

$$Q_U = \frac{(7.0 - \overline{X})}{S}$$

3. Percent Defective (PD). Using NJDOT ST for the appropriate sample size, the Department will determine PD_L and PD_U associated with Q_L and Q_U, respectively. $PD = PD_L + PD_U$

4. Percent Pay Adjustment (PPA). Calculate the PPA for traveled way and ramp lots as specified in Table 401.03.03-3.

Table 406.03.01-1 PPA for Mainline Lots and Ramp Lots

	Quality	PPA
Surface	PD < 10	PPA = 4 − (0.4 PD)

	$10 \le PD < 30$	PPA = 1 − (0.1 PD)
	PD ≥ 30	PPA = 40 − (1.4 PD)
Intermediate and Base	PD < 30	PPA = 1 − (0.1 PD)
	PD ≥ 30	PPA = 40 − (1.4 PD)

Calculate the PPA for other pavement lots as specified in Table 401.03.03-4.

Table 406.03.01-2 PPA for Other Pavement Lots

	Quality	PPA
All Courses	PD < 50	PPA = 1 − (0.1 PD)
	PD ≥ 50	PPA = 92 − (1.92 PD)

5. Outlier Detection. If PD < 10, the ME will not screen for outliers. If PD ≥ 10, the ME will screen all acceptance cores for outliers using a statistically valid procedure. The following procedure applies only for a sample size of 5 or 10.

1. The ME will arrange the core results in ascending order, in which X_1 represents the smallest value and X_N represents the largest value.
2. If X_N is suspected of being an outlier, the ME will calculate:

$$R = \frac{X_N - X_{(N-1)}}{X_N - X_1}$$

3. If X_1 is suspected of being an outlier, the ME will calculate:

$$R = \frac{X_2 - X_1}{X_N - X_1}$$

4. For N = 5 if R > 0.642, the value is judged to be statistically significant and the core is excluded. For N = 10 if R > 0.412, the value is judged to be statistically significant and the core is excluded.

If an outlier is detected for N = 5 and no retest is warranted, the contractor may replace that core by taking an additional core at the same offset and within 5 feet of the original station. If an outlier is detected and a retest is justified, take a replacement core for the outlier at the same time as the 5 additional retest cores are taken. If the outlier replacement core is not taken within 15 days, the ME will use the initial core results to determine PPA.

If an outlier is detected for N = 10, the Contractor may replace that core by taking an additional core at the same offset and within 5 feet of the original station. If the outlier replacement core is not taken within 15 days, the ME will use the initial core results to determine PPA.

6. Retest.

If the initial series of 5 cores produces a percent defective value of PD ≥ 30 for mainline or ramp lots, or PD ≥ 50 for other pavement lots, the Contractor may elect to take an additional set of 5 cores at random locations chosen by the ME. Notify the RE within 15 days of receipt of the initial core results to take the additional cores. If the RE is not notified within the 15 days, the ME will use the initial core results to determine the PPA. If the additional cores are taken, the ME will recalculate the PPA using the combined results from the 10 cores.

7. Removal and Replacement. If the final lot PD ≥ 75 (based on the combined set of 10 cores or 5 cores if the Contractor does not take additional cores), remove and replace the lot and all overlying work. The replacement work is subject to the same requirements as the initial work.

For shoulder lots, instead of removal and replacement, the Department will assess the calculated PPA, and the Contractor shall perform a fog seal of the lot as specified in 422.03.01.

I. Air Void Requirements on Bridge Deck. The RE may waive the coring of HPTO constructed on a bridge deck or may require that the Contractor to test bridge decks with the thin lift nuclear density gauge. If required by RE, perform nuclear density gauge testing according to ASTM D 2950 at 5 random locations per bridge deck. Use the maximum specific gravity determined at the HMA plant according to AASHTO T 209 to determine percent air voids.

If the average air voids for the bridge deck are 8 percent or greater, the RE will require a revised paving plan for any subsequent bridge deck placement of HPTO and may require the HPTO to be removed and replaced.

J. Ride Quality Requirements.

The Department will evaluate the ride quality of the final riding surface of all constructed pavement on the project as specified in 401.03.03.J.

406.04 MEASUREMENT AND PAYMENT

The Department will measure and make payment for Items as follows:

Item	*Pay Unit*
HIGH PERFORMANCE THIN OVERLAY	TON

The Department will measure HIGH PERFORMANCE THIN OVERLAY by the ton as indicated on the certified weigh tickets, excluding unused material.

The Department will make payment for TACK COAT as specified in 401.04.

The Department will make payment for CORE SAMPLES, HOT MIX ASPHALT as specified in 401.04.

The Department will make payment for POLYMER MODIFIED TACK COAT as specified in 401.04.
THE FOLLOWING SECTION IS ADDED:

SECTION 407 - BINDER RICH INTERMEDIATE COURSE

407.01 DESCRIPTION

This Section describes the requirements for constructing binder rich intermediate course (BRIC).

407.02 MATERIALS

407.02.01 Materials

Provide materials as specified:

Tack Coat:
Emulsified Asphalt, Grade RS-1, RS-1h, CRS-1, or CRS-1h 902.01.03
Polymer Modified Emulsified Asphalt, Grade CRS-1P 902.01.04

Binder Rich Intermediate Course 902.11

Use an approved HMA surface course to fill core holes, maintaining the material hot enough to compact. The Contractor may use a commercial type of cold mixture as patching material for filling core holes if HMA surface course is not being produced when coring.

407.02.02 Equipment

Provide equipment as specified:

Materials Transfer Vehicle (MTV) 1003.01
HMA Paver 1003.03
HMA Compactor 1003.05
Bituminous Material Distributor 1003.07
HMA Plant 1009.01
HMA Trucks 1009.02

Provide a thin-lift nuclear density gauge according to ASTM D 2950.

NOTE: A Spray Paver as specified in 1003.04 may be used in lieu of a HMA Paver.

407.03 CONSTRUCTION

407.03.01 BRIC

A. Paving Plan. At least 20 days before the start of placing the BRIC, submit to the RE for approval a detailed plan of operation as specified in 401.03.03.A. Include in the paving plan a proposed location for the test strip.

B. Weather Limitations. If within 12 hours before paving the National Weather Service locally forecasts a 40 percent chance or greater of precipitation during the scheduled placement, postpone the placement of BRIC. Do not place BRIC if it is precipitating and do not allow trucks to leave the plant when precipitation is imminent. Do not resume paving operations until the chance of precipitation is less than 40 percent and the surface is dry.

Do not pave if the base temperature is below 50 °F.

C. Test Strip. At least two weeks prior to production of BRIC, construct a test strip as specified in 401.03.03.C except for the allowance to continue paving. Ensure that the test strip is at least 100 tons. Submit test strip results to the RE. The RE will analyze the test strip results in conjunction with the ME's results from the HMA plant to approve the test strip. Do not proceed with production paving until receiving written permission from the RE. The Contractor may need to construct multiple test strips in order to produce material that meets both the plant production requirements and the field density requirements as directed by the RE.

D. Transportation and Delivery of HMA. Transport and deliver BRIC as specified in 401.03.03.D.

E. Spreading and Grading.

Do not start paving of the BRIC until the RE has approved the underlying surface. Apply tack coat as specified in 401.03.02. Place BRIC at the laydown temperature recommended by the supplier of the asphalt binder or the supplier of the asphalt modifier without exceeding 330ºF maximum discharge temperature at the HMA plant. Spread and grade BRIC as specified in 401.03.03.E.

F. Compacting. Compact as specified in 401.03.03.F. If vibratory compaction causes aggregate breakdown, forces liquid asphalt to the surface or creates a surface with undesirable ride quality, then operate rollers in static mode only.

G. Opening to Traffic. Remove loose material from the traveled way, shoulder, and auxiliary lanes before opening to traffic. Do not allow traffic or construction equipment on the BRIC until the surface temperature is less than 120 °F. Ensure that traffic is not allowed on the BRIC for more than 7 days.

H. Air Void Requirements. Drill Cores as specified in 401.03.04.

Mainline lots are defined as the area covered by a day's paving production of the same job mix formula for the traveled way and auxiliary lanes. The RE may combine daily production areas less than 500 tons with previous or subsequent production areas. If a day's production is greater than 2000 tons, the RE may divide the area of HMA placed into 2 lots with approximately equal areas.

Ramp pavement lots are defined as approximately 10,000 square yards of pavement in ramps. The RE may combine ramps with less than the minimum area into a single lot. If 2 or more ramps are included in a single lot, the RE will require additional cores to ensure that at least 1 core is taken from each ramp.

Other pavement lots are defined as approximately 10,000 square yards of pavement in shoulders and other undefined areas.

The ME will calculate the percent defective (PD) as the percentage of the lot outside the acceptable range of 0 percent air voids to 6 percent air voids. The acceptable quality limit is 10 percent defective. For lots in which PD < 10, the Department will award a positive pay adjustment. For lots in which PD > 10, the Department will assess a negative pay adjustment.

The ME will determine air voids from 5 cores taken from each lot in random locations. The ME will determine air voids of cores from the values for the maximum specific gravity of the mix and the bulk specific gravity of the core. The ME will determine the maximum specific gravity of the mix according to NJDOT B3 and AASHTO T 209, except that minimum sample size may be waived in order to use a 6 inch diameter core sample. The ME will determine the bulk specific gravity of the compacted mixture by testing each core according to AASHTO T 166.

The ME will calculate pay adjustments based on the following:

1. **Sample Mean ($\overline{X}$) and Standard Deviation (S) of the N Test Results (X_1, X_2,..., X_N).**

$$\overline{X} = \frac{(X_1 + X_2 + ... + X_N)}{N}$$

$$S = \sqrt{\frac{(X_1 - \overline{X})^2 + (X_2 - \overline{X})^2 + ... + (X_N - \overline{X})^2}{N - 1}}$$

2. **Quality Index (Q).**

$$Q_L = \frac{(\overline{X} - 0)}{S}$$

$$Q_U = \frac{(6.0 - \overline{X})}{S}$$

3. **Percent Defective (PD).** Using NJDOT ST for the appropriate sample size, the Department will determine PD_L and PD_U associated with Q_L and Q_U, respectively. $PD = PD_L + PD_U$

4. **Percent Pay Adjustment (PPA).** Calculate the PPA for traveled way and ramp lots as specified in Table 407.03.01-1.

Table 407.03.01-1 PPA for BRIC Lots

	Quality	PPA
BRIC	PD < 30	PPA = 1 − (0.1 PD)
	PD ≥ 30	PPA = 40 − (1.4 PD)

Calculate the PPA for other pavement lots as specified in Table 401.03.03-4.

5. **Outlier Detection.** If PD < 10, the ME will not screen for outliers. If PD ≥ 10, the ME will screen all acceptance cores for outliers using a statistically valid procedure. The following procedure applies only for a sample size of 5 or 10.

    1. The ME will arrange the core results in ascending order, in which X_1 represents the smallest value and X_N represents the largest value.
    2. If X_N is suspected of being an outlier, the ME will calculate:

$$R = \frac{X_N - X_{(N-1)}}{X_N - X_1}$$

    3. If X_1 is suspected of being an outlier, the ME will calculate:

$$R = \frac{X_2 - X_1}{X_N - X_1}$$

    4. For N = 5 if R > 0.642, the value is judged to be statistically significant and the core is excluded. For N = 10 if R > 0.412, the value is judged to be statistically significant and the core is excluded.

    If an outlier is detected for N=5 and no retest is warranted, the Contractor may replace that core by taking an additional core at the same offset and within 5 feet of the original station as directed by the RE. If an outlier is detected and a retest is justified, take a replacement core for the outlier at the same time as the 5 additional retest cores are taken. If the outlier replacement core is not taken within 15 days, the ME will use the initial core results to determine PPA.

If an outlier is detected for N = 10, the Contractor may replace that core by taking an additional core at the same offset and within 5 feet of the original station as directed by the RE. If the outlier replacement core is not taken within 15 days, the ME will use the initial core results to determine PPA.

6. Retest. If the initial series of 5 cores produces a percent defective value of PD ≥ 30 for mainline or ramp lots, or PD ≥ 50 for other pavement lots, the Contractor may elect to take an additional set of 5 cores at random locations chosen by the ME. Notify the RE within 15 days of receipt of the initial core results to take the additional cores. If the RE is not notified within the 15 days, the ME will use the initial core results to determine the PPA. If the additional cores are taken, the ME will recalculate the PPA using the combined results from the 10 cores.

7. Removal and Replacement. If the final lot PD ≥ 75 (based on the combined set of 10 cores or 5 cores if the Contractor does not take additional cores), remove and replace the lot and all overlying work. The replacement work is subject to the same requirements as the initial work.

I. Thickness Requirements. When required for thickness determination, drill core holes as specified in 401.03.05. The Department will evaluate thickness as specified in 401.03.03.I.

407.04 MEASUREMENT AND PAYMENT

The Department will measure and make payment for Items as follows:

Item	*Pay Unit*
BINDER RICH INTERMEDIATE COURSE, 4.75MM	TON

The Department will measure BINDER RICH INTERMEDIATE COURSE, 4.75MM by the ton as indicated on the certified weigh tickets, excluding unused material.

The Department will make payment for CORE SAMPLES, HOT MIX ASPHALT as specified in 401.04

The Department will make payment for TACK COAT as specified in 401.04.

The Department will make payment for POLYMER MODIFIED TACK COAT as specified in 401.04.

THE FOLLOWING SECTION IS ADDED:

SECTION 408 – ASPHALT RUBBER GAP GRADED COURSES

408.01 DESCRIPTION

This Section describes the requirements for constructing Asphalt Rubber Gap Graded (ARGG) Surface Course and Asphalt Rubber Gap Graded Intermediate Course.

408.02 MATERIALS

408.02.01 Materials

Provide materials as specified:

Tack Coat:
- Emulsified Asphalt, Grade RS-1, RS-1h, CRS-1, or CRS-1h 902.01.03
- Polymer Modified Emulsified Asphalt, Grade CRS-1P 902.01.04

Asphalt Rubber Gap Graded Course 902.12

Polymerized Joint Adhesive 914.03

408.02.02 Equipment

Provide equipment as specified:

Materials Transfer Vehicle (MTV) 1003.01
HMA Paver 1003.03
HMA Compactor 1003.05
Bituminous Material Distributor 1003.07
HMA Plant 1009.01
HMA Trucks 1009.02
Asphalt-Rubber Binder Blending Equipment 1009.03

Provide a thin-lift nuclear density gauge according to ASTM D 2950.

NOTE: A Spray Paver as specified in 1003.04 may be used in lieu of a HMA Paver.

408.03 CONSTRUCTION

408.03.01 ARGG COURSE

A. Paving Plan. At least 20 days before beginning placing the ARGG course, submit to the RE for approval a detailed plan of operation as specified in 401.03.03.A. Include in the paving plan a proposed location for the test strip.

B. Weather Limitations. If within the 12 hours before paving, the National Weather Service locally forecasts a 50 percent chance or greater of precipitation during the scheduled placement, postpone the placement of ARGG course. Do not place ARGG course if it is precipitating and do not allow trucks to leave the plant when precipitation is imminent. The Contractor may resume paving operations when the chance of precipitation is less than 50 percent and the surface is dry.

Do not pave if the surface temperature of the underlying pavement is below 50 °F.

C. Test Strip. Construct a test strip as specified in 401.03.03.C except for the allowance to continue paving. Submit test strip results to the RE. The RE will analyze the test strip results in conjunction with the ME's results from the HMA plant to approve the test strip. Do not proceed with production paving until receiving written permission from the RE.

D. Transportation and Delivery of ARGG Course. Transport and deliver ARGG course as specified in 401.03.03.D.

E. Spreading and Grading. Do not start paving until the RE has approved the underlying surface. Apply tack coat as specified in 401.03.02. Spread and grade ARGG course as specified in 401.03.03.E.

F. Compacting. Compact ARGG course as specified in 401.03.03.F, but use a minimum of three rollers and ensure fabric softener is added to the roller water to prevent material pick-up on the roller drum. One pint of fabric softener per fill-up of the roller water has been shown to be adequate in preventing material pick-up. Ensure that the compaction is completed before the mix cools down to 240°F. If vibratory compaction causes aggregate breakdown or forces liquid asphalt binder to the surface, operate rollers in static mode only.

G. Opening to Traffic. Remove loose material from the traveled way, shoulder, and auxiliary lanes before opening to traffic. Before opening ARGG course to traffic or construction equipment, ensure that the lime water has been applied, the surface is tack free and the surface temperature is less than 140 °F.

H. Air Void Requirements. Drill cores as specified in 401.03.05.

Mainline lots are defined as the area covered by a day's paving production of the same job mix formula for the traveled way and auxiliary lanes. The RE may combine daily production areas less than 1000 tons with previous or subsequent production areas. If a day's production is greater than 4000 tons, the RE may divide the area of HMA placed into 2 lots with approximately equal areas.

Ramp pavement lots are defined as approximately 10,000 square yards of pavement in ramps. The RE may combine ramps with less than the minimum area into a single lot. If 2 or more ramps are included in a single lot, the RE will require additional cores to ensure that at least 1 core is taken from each ramp.

Other pavement lots are defined as approximately 10,000 square yards of pavement in shoulders and other undefined areas. Inside shoulders less than 6 feet in width will not be included in other lots unless requested by the RE.

If areas of existing shoulders are found to be insufficient to support the proposed HMA pavement and the required compaction cannot be achieved, notify the RE immediately. The RE may either direct additional milling and paving to provide a suitable base to pave the proposed HMA, or waive coring and air void requirements in such shoulder areas.

The ME will calculate the percent defective (PD) as the percentage of the lot outside the acceptable range of 1 percent air voids to 7 percent air voids. The acceptable quality limit is 10 percent defective. For lots in which PD<10, the Department will award a positive pay adjustment. For lots in which PD>10, the Department will assess a negative pay adjustment.

The ME will determine air voids from 5 cores taken from each lot in random locations. The ME will determine air voids of cores from the values for the maximum specific gravity of the mix and the bulk specific gravity of the core. The ME will determine the maximum specific gravity of the mix according to NJDOT B-3 and AASHTO T 209, except that minimum sample size may be waived in order to use a 6-inch diameter core sample. The ME will determine the bulk specific gravity of the compacted mixture by testing each core according to AASHTO T166.

The ME will calculate pay adjustments based on the following:

1. Sample Mean ($\overline{X}$) and Standard Deviation (S) of the N Test Results (X_1, X_2,..., X_N).

$$\overline{X} = \frac{(X_1 + X_2 + ... + X_N)}{N}$$

$$S = \sqrt{\frac{(X_1 - \overline{X})^2 + (X_2 - \overline{X})^2 + ... + (X_N - \overline{X})^2}{N - 1}}$$

2. Quality Index (Q).

$$Q_L = \frac{(\overline{X} - 1.0)}{S}$$

$$Q_U = \frac{(7.0 - \overline{X})}{S}$$

3. **Percent Defective (PD).** Using NJDOT ST for the appropriate sample size, the Department will determine PD_L and PD_U associated with Q_L and Q_U, respectively. $PD = PD_L + PD_U$

4. **Percent Pay Adjustment (PPA).** Calculate the PPA for traveled way and ramp lots as specified in Table 408.03.01-1.

Table 408.03.01-1 PPA for Mainline Lots and Ramp Lots

	Quality	PPA
Surface	PD < 10	PPA = 4 − (0.4 PD)
	10 ≤ PD < 30	PPA = 1 − (0.1 PD)
	PD ≥ 30	PPA = 40 − (1.4 PD)
Intermediate and Base	PD < 30	PPA = 1 − (0.1 PD)
	PD ≥ 30	PPA = 40 − (1.4 PD)

Calculate the PPA for other pavement lots as specified in Table 408.03.01-2.

Table 408.03.01-2 PPA for Other Pavement Lots

	Quality	PPA
All Courses	PD < 50	PPA = 1 − (0.1 PD)
	PD ≥ 50	PPA = 92 − (1.92 PD)

5. **Outlier Detection.** If PD < 10, the ME will not screen for outliers. If PD ≥ 10, the ME will screen all acceptance cores for outliers using a statistically valid procedure. The following procedure applies only for a sample size of 5 or 10.

   1. The ME will arrange the core results in ascending order, in which X_1 represents the smallest value and X_N represents the largest value.
   2. If X_N is suspected of being an outlier, the ME will calculate:

$$R = \frac{X_N - X_{(N-1)}}{X_N - X_1}$$

   3. If X_1 is suspected of being an outlier, the ME will calculate:

$$R = \frac{X_2 - X_1}{X_N - X_1}$$

   4. For N = 5 if R > 0.642, the value is judged to be statistically significant and the core is excluded. For N = 10 if R > 0.412, the value is judged to be statistically significant and the core is excluded.

   If an outlier is detected for N=5, and no retest is warranted, the Contractor may replace that core by taking an additional core at the same offset and within 5 feet of the original station. If an outlier is detected and a retest is justified, take a replacement core for the outlier at the same time as the 5 additional retest cores are taken. If the outlier replacement core is not taken within 15 days, the ME will use the initial core results to determine PPA.

   If an outlier is detected for N = 10, the Contractor may replace that core by taking an additional core at the same offset and within 5 feet of the original station. If the outlier replacement core is not taken within 15 days, the ME will use the initial core results to determine PPA.

6. **Retest.** If the initial series of 5 cores produces a percent defective value of PD ≥ 30 for mainline or ramp lots, or PD ≥ 50 for other pavement lots, the Contractor may elect to take an additional set of 5 cores at random locations chosen by the ME. Notify the RE within 15 days of receipt of the initial core results to take the additional cores. If the RE is not notified within the 15 days, the ME will use the initial core results to determine the PPA. If the additional cores are taken, the ME will recalculate the PPA using the combined results from the 10 cores.

7. **Removal and Replacement.** If the final lot PD ≥75 (based on the combined set of 10 cores or 5 cores if the Contractor does not take additional cores), remove and replace the lot and all overlying work. The replacement work is subject to the same requirements as the initial work.

I. Thickness Requirements. When required for thickness determination, drill cores as specified in 401.03.05. The Department will evaluate thickness as specified in 401.03.03.I.

J. Ride Quality Requirements. The Department will evaluate the ARGG course as specified in 401.03.03.J.

408.04 MEASUREMENT AND PAYMENT

Item	*Pay Unit*
ASPHALT RUBBER GAP GRADED SURFACECOURSE	TON
ASPHALT RUBBER GAP GRADED INTERMEDIATE COURSE	TON

The Department will measure ASPHALT RUBBER GAP GRADED SURFACE COURSE and ASPHALT RUBBER GAP GRADED INTERMEDIATE COURSE by the ton as indicated on the certified weigh tickets, excluding unused material.

The Department will make payment for CORE SAMPLES, HOT MIX ASPHALT as specified in 401.04.

The Department will make payment for POLYMERIZED JOINT ADHESIVE as specified in 401.04.

The Department will make payment for TACK COAT as specified in 401.04.

The Department will make payment for POLYMER MODIFIED TACK COAT as specified in 401.04.

THE FOLLOWING DIVISION IS ADDED:

DIVISION 420 – PAVEMENT PRESERVATION TREATMENTS

THE FOLLOWING SECTION IS ADDED:

SECTION 421 – MICRO SURFACING AND SLURRY SEAL

421.01 DESCRIPTION

This section describes the requirements for micropaving joints, micro surfacing and slurry seal.

421.02 MATERIALS

421.02.01 Materials

Provide materials as specified:

Tack Coat:
Emulsified Asphalt, Grade RS-1, RS-1h, CRS-1, or CRS-1h 902.01.03
Micro Surfacing 902.09
Slurry Seal 902.10

421.02.02 Equipment

Provide equipment as specified:

Bituminous Material Distributor 1003.07
Pneumatic-Tired Compactor 1002.01
Mechanical Sweeper 1008.03
Micro Surfacing and Slurry Seal Paver 1012.01

Provide hand squeegees, shovels, and other equipment necessary to perform the work. Provide cleaning equipment such as power brooms, air compressors, water flushing equipment, and hand brooms adequate for surface preparation.

421.03 CONSTRUCTION

421.03.01 Micro Surfacing Rut Filling.

Fill ruts in the wheel paths and restore the designed profile of the pavement cross section as shown on the Plans and as directed by the RE. Fill ruts which are 1/2" or less with a single full lane micro surfacing operation. Fill ruts which are greater than 1/2" in depth with a separate rut filling operation. Fill ruts which are greater than 1 1/2" in depth with multiple applications utilizing a rut filling equipment. Do not over fill rut areas. Cure rut filling and level-up material for at least twenty-four (24) hours before additional material is placed.

421.03.02 Micropaving Joints.

THE SUBPART IS CHANGED TO:

Clean the joint, removing unsound patches and loose material. Use micro surfacing Type II as specified in 902.09 and rut filling equipment or slurry seal paver equipment modified to provide a 2 feet to 5 feet wide application of material to fill in open longitudinal joints and rumble strips in one pass as shown on the plans and as directed by the RE. For joint filling greater than 2 inches deep and less than 6 inches wide, perform multiple applications to even out settlement of the material after curing. For joints greater than 2 inches deep and greater than 6 inches wide, perform HMA pavement repair as specified in 401.03.03. Avoid excess crowning and over filling of joints and rumble strips. Cure each pass of material under traffic for at least 24 hours before additional material is placed.

421.03.03 Micro Surfacing

A. Micro Surfacing Plan. At least 20 days before beginning placement of material, submit a detailed plan of operation to the RE for approval that includes the following:

1. Paving contractor's superintendent qualifications with a list of at least 5 successful projects, including project owner contact information.
2. Size and description of crew.
3. Number, type, model of equipment and material control/metering devices along with the current calibration documentation.
4. Lighting plan for nighttime operations as specified in 108.06 for milling and paving.
5. Method of locating, protecting and maintaining manholes, inlets, other utilities and RPM's.
6. Paving procedures for maintaining continuous operation as specified.
7. Paving sequence. Indicate that the surface is to be constructed for the full lane width as a single paving operation.
8. Schedule, hours of operation, and production rates for the Project.
9. Plant and stockpile locations for aggregate, emulsion, mineral filler and additives.
10. Method of maintaining modified emulsion temperature during transportation.
11. Method of constructing joints.
12. Quality control plan outlining the material testing, number and frequency planned in order to ensure compliance.
13. Mix design of the mixture, the AASHTO accredited laboratory used and the test results of the mixture.

Do not begin paving until the RE approves this plan. Submit an adjusted plan before making adjustments to the paving operation.

B. Weather Limitations. Do not place material if the surface temperature of the underlying pavement is below 50 °F or if the National Weather Service is forecasting temperatures below 50 °F during installation or within 3 hours after installation.

Do not place material if the existing surface is wet. Do not place material if it is precipitating and when precipitation is imminent. If within the 3 hours of placement, the National Weather Service locally forecasts a 50 percent chance, or greater, of precipitation during the scheduled placement, then postpone the placement of material. The Contractor may resume operations when the chance of precipitation is less than 50 percent, and the surface is dry.

PART C IS CHANGED TO:

C. Test Strip. Construct a test strip of at least 500 feet in length on the roadway before initial placement commences. Ensure that the mixing unit has been calibrated according to the International Slurry Surfacing Association Inspector's Manual or as recommended by the manufacturer. Ensure that the tack coat has been placed as specified in 401.03.05. Ensure the test strip is performed during weather and sunlight conditions, which represents project production placement of the material. While constructing the test strip, record the following information and submit to the RE:

1. **Ambient Temperature.** Measure the ambient temperature at the beginning and end of each day's operation.
2. **Base Temperature.** Measure the surface temperature of the existing pavement at the beginning and end of each day's operation.
3. **Weather Conditions.** Document the wind speed, weather conditions, time of day, and humidity at the time of placement.
4. **Tack Coat**. Measure to verify the proper application rate, coverage, and temperature of tack coat for compliance.
5. **Material Quantities.** Measure to verify the proper proportions of emulsion, cement, aggregate, additives (if any), and temperature of the mixture during placement. Measure to verify the proper application rate of the mixture for compliance.
6. **Roller Pattern.** Provide details on the number of rollers, type, and number of passes used on the test strip.
7. **Initial Set Time.** Record the initial time of placement. Verify that the mixture has achieved initial set within 30 minutes of placement.
8. **Performance Under Traffic.** Verify that the surface shows no visual signs of distress when exposed to traffic after curing for 1 hour.
9. **Calibration.** Measure to verify that the gate opening is what was determined during calibration.

Submit test strip results to the RE. The RE will analyze the test strip results in conjunction with the approved mix design to approve the test strip. Do not proceed with production placement until receiving written permission from the RE.

If the test strip does not meet requirements, make adjustments and construct a second test strip. If the second test strip does not meet requirements, suspend operations until written approval to proceed is received from the RE.

Before making adjustments to the operations, notify the RE in writing. The RE may require a new test strip to verify the performance of the adjusted operations.

D. Surface Preparation. Ensure repairs are completed prior to beginning installation. Ensure rut filling and micropave joints have cured for at least 24 hours prior to applying material.

Ensure that manholes, inlets, utilities, curbs, RPM's, structures, rumble strips, traffic striping and traffic markings to remain are protected by methods approved by the RE. Do not proceed with placement until the RE approves the prepared surface.

Clean the surface of the pavement to remove all dust, debris, oil, and any other materials that may prevent bonding of the treatment to the existing surface. Ensure that the surface is clean and dry.

Apply tack coat prior to application of the treatment as specified in 401.03.02.

E. Micro Surfacing Application. Apply the mixture over the full lane width as specified in table 421.03.03-1.

Table 421.03.03-1 Job Mix Types and Application

Aggregate Type (See Table 902.09.03-1)	Location	Application Rate (lbs./yd^2)
Type II	Surface Course	16 – 22
	Intermediate Course	10 – 20
Type III	Rut filling	20 – 40 (See ISSA[1] A143)

1. International Slurry Seal Association (ISSA)

Operate equipment to prevent the loss of the mixture on super-elevated curves. Spread the mixture to fill cracks and minor surface irregularities and leave a uniform high-skid resistant application of aggregate and asphalt on the

surface. Operate spreader box so a uniform consistency is achieved without causing skips, lumps or tears in the finished surface.

Carry a sufficient amount of material, at all times, in all parts of the spreader box, so complete coverage is obtained. Water may be sprayed into spreader box to facilitate spreading without harming the mix. No lumping, balling or unmixed aggregate is permitted in the finished surface.

Adjustments to the additive may be required for slow setting where hand spreading is needed. Use squeegees and lutes to spread the mixture in areas inaccessible to the spreader box and areas requiring hand spreading. When hand spreading, pour the mixture in a small windrow along one edge of the surface to be covered and then spread uniformly by a hand squeegee or lute. Make a neat appearing seam where two passes join. Ensure transverse joints of micro surfacing are made straight, clean, and perpendicular to the direction of travel. The maximum overlap of longitudinal lane line joints is 3 inches. Ensure micro surfacing longitudinal joints are parallel to, and not offset by more than 3 inches maximum from, the final traffic striping. Immediately remove excess material from ends of each run.

Do not leave streaks in the finished surface. If streaking develops, stop the operation and submit a corrective action plan to the RE. Do not resume operations until the RE approves the plan.

F. Compaction. Do not roll until the material has cured sufficiently to avoid damage by the roller. Use a pneumatic-tired compactor as specified in 1002.01, except ensure the roller is equipped with a water-spray system. Roll the material with a minimum of at least 2 passes of the pneumatic-tired compactor. The RE may direct additional passes to eliminate roller marks or facilitate compaction of rut filled areas.

G. Opening to Traffic. Allow the material sufficient curing time before opening to traffic. Remove loose material from the traveled way before opening to traffic. If the material becomes damaged replace the damaged area.

H. Applying Striping and Traffic Markings. Allow material to cure for at least 2 weeks before applying permanent traffic striping and traffic markings. Use temporary traffic striping and markings as directed by the RE until the material has cured.

I. Surface Quality Requirements. Ensure that there is no excess buildup, uncovered areas, or rough areas on the pavement surface including the longitudinal and transverse joints. The RE will visually inspect the pavement for approval. The RE may reject areas of pavement that are unsatisfactory based on visual inspection. Correct areas of the pavement that the RE rejects. Visual inspection by the RE is considered sufficient grounds for such rejection.

The RE may use a 10 foot straightedge to verify transverse profiles of finished surfaces. Correct areas that have more than 1/4 inch deviation between any 2 contact points of the straightedge in a manner approved by the RE. Following correction, retest the area to verify conformance with this requirement.

J. Ride Quality Requirements.

THE ENTIRE TEXT IS CHANGED TO:

The Department will evaluate the ride quality of the final riding surface of all constructed pavement on the project using the International Roughness Index (IRI) according to ASTM E 1926. The final riding surface is defined as the last lift of the pavement structure where traffic will be allowed. The pavement will be evaluated using the target IRI (T) determined from Table 421.03.03-3.

For projects paving on mainline travel lanes equal to or greater than 2,500 feet length and any lane within the project of at least 1,000 feet length, the Department will evaluate the ride quality of the final riding surface of the mainline travel lanes using IRI. The Department will use the measured IRI to calculate the pay adjustment (PA) using pay adjustment equation (PAE) type PA1 as specified in Table 421.03.03-2. PA will be based on lots of 0.01 mile length. The PA will be positive for superior quality work or negative for inferior quality work.

For projects paving on mainline travel lanes of less than 2,500 feet length, the RE will visually inspect the final riding surface. Based on visual inspection, if the RE determines that the work may not conform to the ride quality requirements, then the Department will evaluate the ride quality of the final riding surface using IRI. Visual inspection by the RE is considered sufficient grounds for such evaluation. The Department will use the measured IRI to calculate the PA using pay adjustment equation (PAE) type PA1 as specified in Table 421.03.03-2.

For paving on ramps and shoulders, the RE will visually inspect the final riding surface. Based on visual inspection, if the RE determines that the work may not conform to the ride quality requirements, then the Department will evaluate the ride quality of the final riding surface using IRI. Visual inspection by the RE is considered sufficient

grounds for such evaluation. The Department will use the measured IRI to calculate the pay adjustment using pay equation type PA2 as specified in Table 421.03.03-2.

1. **Smoothness Measurement.** The Department will test the longitudinal profile of the final riding surface for ride quality with a Class 1 Inertial Profiling System according to NJDOT R-1. If project conditions preclude the use of the Class 1 Inertial Profiling System, the Department will use a Class 1 Walking Profiler or lightweight profiler.

2. **Quality Control Testing.** Perform quality control testing during lift placement to ensure compliance with the ride quality requirements specified in Table 421.03.03-3.

3. **Preparation for IRI Testing.** Notify the RE when all paving is complete and the RE will request IRI testing by Pavement & Drainage Management & Technology (PDMT) unit. Provide traffic control when the Department performs IRI testing. Perform mechanical sweeping of the surface before IRI testing. To facilitate auto triggering on laser profilers, place a single line of temporary pavement marking tape perpendicular to the roadway baseline at the beginning and end of each lane, shoulder, and ramp to be tested or at the direction of the Department. Submit the actual stationing for each temporary pavement marking tape location to the RE.

4. **Quality Acceptance.** The Department will determine acceptance and provide PA based on the following:

   a. **Pay Adjustment.** The acceptable IRI for the roadway pavement will be the target IRI (T) from Table 421.03.03-3 for which full payment will be made and will be determined using the latest available existing current average IRI (C) data of the right most travel lane specified in 102.04 or from PDMT. The number of lots for final pay adjustment will be reduced by the number of lots excluded for each segment shown in Table 421.03.03-2. Lots excluded from final PA will be those with the highest recorded IRI numbers for respective roadway and bridge deck segments. A single average IRI value and the corresponding PA for each 0.01 mile lot will be reported. IRI units are in inches per mile.

Table 421.03.03-2 Pay Equations for Ride Quality

Pay Equation Type	Excluded Lots	Pay Equation(s)	
PA1	As shown in the Special Provision Table 421.03.03-4	IRI<(T-25)	PA1= $10
		(T-25)≤IRI<(T-5)	PA1=$(T-IRI-5) x0.5
		(T-5)≤IRI≤(T+5)	PA1=0
		(T+5)<IRI≤(T+75)	PA1=-$(IRI-T-5)x1.4286
		IRI>(T+75)	PA=-$100
PA2	Will include, if tested	IRI ≤ 120	PA2=$0
		120 < IRI ≤ 170	PA2 = (IRI − 120) x (−$10.00)
		IRI>170	Maximum Negative Pay or Corrective action

Table 421.03.03-3 Target IRI for Microsurfacing or Slurry Seal (T)[1]

Roadway Type	Excluded Lots	Current average IRI (C)	Target IRI (T)
Freeways or Limited Access Highways	As shown in the Special Provisions Table 421.03.03-9	≤ 50	50
		>50	C[1]
Other than Freeways or Limited Access Highways with speed limit > 35 MPH		≤ 60	60
		>60	C[1]
Other than Freeways or Limited Access Highways with speed limit ≤ 35 MPH		≤ 70	70
		>70	C[1]

1. Current average IRI (C) is the average of the latest available preconstruction network level IRI data of right most travel lane from PDMT.

Following Table is added

Table 421.03.03-4 Exclusions for Microsurfacing or Slurry Seal

Roadway	Lane Number	Exclusions

Lane designation is by increasing numbers from left to right in the direction of traffic with left lane being Lane 1.

b. Corrective Action. If the average IRI is greater than T+75 inches per mile after testing is performed, the Department may require corrective action or assess the maximum negative pay adjustment as computed in Table 421.03.03-2. If the Department requires corrective action submit a plan for corrective action. If the plan for corrective action is approved and the lot is corrected, the Department will retest and evaluate the corrected area as a new lot that must meet the same requirements as the initial work. If the plan for corrective action is not approved, the Department may require removal and replacement. The replacement work is subject to the same requirements as the initial work.

421.03.04 Slurry Seal

A. Slurry Seal Plan. At least 20 days before beginning placement of slurry seal, submit a detailed plan of operation to the RE for approval as specified in 421.03.03.A

B. Weather Limitations. Place slurry seal in weather as specified in 421.03.03.B.

C. Test Strip. Construct a test strip as specified in 421.03.03.C.

D. Surface Preparation. Prior to starting slurry seal, prepare the existing surface as specified in 421.03.03.D.

E. Slurry Seal Application. Apply the slurry seal mixture as specified in 421.03.03.E, except that application rate should be as specified in table 421.03.04-1.

Table 421.03.04-1 Job Mix Types and Application

Aggregate Type (See Table 902.10.03-1)	Location	Application Rate (lbs./yd^2)
Type I	Surface Course Intermediate Course	10 - 14
Type II	Surface Course Intermediate Course	16 – 20

1. International Slurry Seal Association (ISSA)

F. Compaction. Roll slurry seal as specified in 421.03.03.F.

G. Opening to Traffic. Open to traffic as specified in 421.03.03.G.

H. Applying Striping and Traffic Markings. Apply traffic striping and traffic markings as specified in 421.03.03.H.

I. Surface Quality Requirements. The Department will evaluate the surface quality of slurry seal as specified in 421.03.03.I.

J. Ride Quality Requirements.

THE ENTIRE TEXT IS CHANGED TO:

The Department will evaluate the ride quality of the final riding surface of all constructed pavement on the project as specified in 421.03.03.J.

421.04 MEASUREMENT AND PAYMENT

THE ENTIRE SUBSECTION IS CHANGED TO:

The Department will measure and make payment for Items as follows:

Item	*Pay Unit*
MICRO SURFACING AGGREGATE, TYPE III RUT-FILLING	TON
MICROPAVING JOINTS	LINEAR FOOT
MICRO SURFACING AGGREGATE, TYPE II	TON
MICRO SURFACING AGGREGATE, TYPE III	TON
MICRO SURFACING EMULSION	GALLON
SLURRY SEAL AGGREGATE, TYPE I	TON
SLURRY SEAL AGGREGATE, TYPE II	TON
SLURRY SEAL EMULSION	GALLON

The Department will make payment for TACK COAT as specified in 401.04.

The Department will not include payment for removal of traffic stripes, removal of traffic makings, epoxy traffic stripes, epoxy traffic marking, lines, epoxy traffic markings, symbols and epoxy traffic markings, route symbols in the various Items of this Section. The Department will pay for removal of traffic stripes, removal of traffic makings, epoxy traffic stripes, epoxy traffic marking, lines, epoxy traffic markings, symbols and epoxy traffic markings, route symbols under REMOVAL OF TRAFFIC STRIPES, REMOVAL OF TRAFFIC MARKINGS, TRAFFIC STRIPES EPOXY, TRAFFIC MARKINGS LINES, EPOXY, TRAFFIC MARKINGS SYMBOLS, EPOXY and TRAFFIC MARKINGS ROUTE SYMBOLS, EPOXY as specified in 610.04 respectively.

The Department will not include payment for latex traffic stripes, latex traffic markings lines and latex traffic markings symbols in the various Items of this Section. The Department will pay for latex traffic stripes, latex traffic markings lines and latex traffic markings symbols under TRAFFIC STRIPES, LATEX, TRAFFIC MARKINGS LINES, LATEX and TRAFFIC MARKINGS SYMBOLS, LATEX as specified in 159.04 respectively.

The Department will measure MICRO SURFACING EMULSION and SLURRY SEAL EMULSION by the gallon on the certified weigh tickets, excluding unused material, with the exception that micro surfacing emulsion required for micropaving joints is included in the price per linear foot of MICROPAVING JOINTS.

The Department will measure MICRO SURFACING AGGREGATE TYPE II, MICRO SURFACING AGGREGATE TYPE III, MICRO SURFACING AGGREGATE TYPE III RUT-FILLING, SLURRY SEAL AGGREGATE TYPE I, and SLURRY SEAL AGGREGATE TYPE II by the ton as indicated on the certified weigh tickets, excluding unused material.

THE FOLLOWING SECTION IS ADDED:

SECTION 422–FOG SEAL

422.01 DESCRIPTION

This section describes the requirements for furnishing and applying a fog seal surface treatment with a fine aggregate cover. This section also describes the requirements for applying a fog seal strip over centerline rumble strips (CLRS) and HMA longitudinal cold joints.

422.02 MATERIALS

422.02.01 Materials

Provide materials as specified:

Fine Aggregate for Fog Seal 901.07.02

1 **Asphalt Emulsion.** For fog seal surface treatment, fog seal of centerline rumble strips and HMA longitudinal cold joint provide emulsified asphalt of grades RS-1 or RS-2 in accordance with AASHTO M 140; or provide cationic emulsified asphalt of grades CRS-1 or CRS-2 in accordance with AASHTO M 208; and ensure all emulsified asphalts are provided as specified in 902.01.03.

2 **Polymerized Maltene Emulsion.** As an alternative for asphalt emulsion specified above for fog seal strip of centerline rumble strips and HMA longitudinal cold joints, provide JOINTBOND® emulsion. JOINTBOND® is proprietary to Pavement Technology, Inc. of Westlake, OH, telephone number (800)333-6309. For new pavements, use JOINTBOND®. For pavements that are more than 12 months old, use JOINTBOND® PM.

All dilution must be done at the place of manufacture.

Other emulsified asphalt designed specifically for fog sealing may be used if approved by the Bureau of Materials. Determine the application rate by the amount of residual asphalt required as specified in 422.03.01.E.

422.02.02 Equipment

Provide equipment as specified:

Bituminous Material Distributor 1003.07
Mechanical Sweeper 1008.03
Mechanical Fine Aggregate Spreader 1012.02

422.03 CONSTRUCTION

422.03.01 Fog Seal Surface Treatment

A. Fog Sealing Plan. At least 20 days before beginning placement of fog sealing, submit a detailed plan of operation to the RE for approval that includes the following:

1. Fog sealing contractor's superintendent's qualifications with a list of at least 5 successful projects, including project owner contact information.
2. Size and description of crew.
3. Number, type, model of equipment and material control/metering devices along with the current calibration documentation.
4. Fog seal material type, dilution amount, manufacturer, MSDS, handling and installation guidelines, weather limitations and Quality Control plan.
5. Lighting plan for nighttime operations as specified in 108.06 for paving.
6. Schedule, hours of operation, and production rates for the Project.
7. Plant or storage locations for fog sealing emulsion, sand and additives.
8. Method of maintaining fog-sealing emulsion temperature during transportation and operation.
9. Quality control plan outlining the material testing, number and frequency planned in order to ensure compliance.
10. Method of protecting manholes, valve boxes, drop inlets and other service entrances are protected from the fog sealing.
11. Method of protecting RPMs from fog sealing

Do **not** begin fog sealing until the RE approves the plan. Submit an adjusted fog sealing plan to the RE for approval before making adjustments to the fog sealing operation.

B. Weather Limitations. If within the 3 hours of fog sealing, the National Weather Service locally forecasts a 40 percent chance or greater of precipitation during the scheduled placement, postpone the placement of fog seal. Do not fog seal if it is precipitating or when precipitation is imminent. The Contractor may resume fog sealing operations when the chance of precipitation is less than 40 percent, and the surface is dry.

Do not place fog sealing if the surface temperature of the underlying pavement is below 50 °F.

C. Test Strip. Construct a test strip of at least 100 feet in length on the roadway before initial placement commences. Ensure the test strip is performed during weather and sunlight conditions which will represent project production placement of the fog sealing mixture. While constructing the test strip, record the following information and submit to the RE:

1. **Ambient Temperature.** Measure the ambient temperature at the beginning and end of the fog sealing operation.
2. **Base Temperature.** Measure the surface temperature of the existing pavement at the beginning and end of the fog sealing operation.
3. **Weather Conditions.** Document the wind speed, weather conditions, time of day, and humidity at the time of placement.
4. **Emulsion Temperature**. Measure the temperature of the emulsion in the distributor truck. Ensure that the emulsion is heated to the optimum application temperature as per the manufacturer prior to starting.
5. **Application Rate Verification.** With the RE present, check the application rate setting in the bituminous material distributor. With the RE present, verify the temperature of the fog sealing mixture during placement. With the RE present, verify application rate calibration using ASTM test method D2995 except that the tiles should be 3 feet by 3 feet in dimension. After the emulsion has completely cured, weigh the tiles again to verify asphalt residual.
6. **Set Time.** Record the initial time of placement. Notify the RE when the material has completely set and is ready to be opened to traffic.
7. **Performance Under Traffic.** Do not allow traffic on the fog seal until it has completely cured. Verify that the

fog sealing shows no visual signs of distress when exposed to traffic.

Upon completion of the test strip, submit test strip documentation to the RE. The RE will review the test strip documentation and visually assess the coverage of the fog seal application. Do not proceed with production fog sealing until receiving approval from the RE.

Before making adjustments to the fog sealing operations, notify the RE in writing. The RE may require a new test strip to verify the performance of the adjusted fog sealing operations.

D. Surface Preparation. Ensure all repairs and rumble strips are completed prior to beginning fog seal installation. Clean the surface of existing pavement to remove all dust debris, oil and any other materials that may prevent bonding of the fog seal. Ensure that the surface is clean and dry. Remove traffic stripes and traffic markings as specified in 610.03.08.

Ensure that manholes, inlets, utilities, curbs, RPM's, structures, traffic striping, and traffic markings to remain are protected from the fog seal by methods approved by the RE. Do not proceed with placement of the fog seal until the RE approves the prepared surface.

E. Fog Sealing Application. Ensure that the temperature of the emulsion prior to starting is at the application temperature recommended by the manufacturer but not exceeding 160 °F. Apply the fog seal uniformly at the rate determined during the test strip to provide a residual asphalt of between 0.06 to 0.10 gallons per square yard using a bituminous distributer.

Ensure that the fog seal material completely covers the pavement surface and is not streaked or ribboned. Ensure that the distribution is even with no uncoated areas or puddles of excess emulsion. Correct uncoated or lightly coated areas by applying additional fog seal emulsion. Blot areas showing an excess of fog seal with sand approved by the RE. Remove excess sand and emulsion material. In areas inaccessible to distributor spray bars, use hand spraying equipment.

The RE may reject areas where fog seal has been applied that is uncoated, ribboned, streaked or has excess emulsion material and rendered unsatisfactory. Visual inspection by the RE is considered sufficient grounds for such rejection.

F. Fine Aggregate Application. Immediately after the fog seal has been applied, apply fine aggregate at a rate of 0.25 to 0.5 pounds per square yard. Ensure sand is applied uniformly over the area where fog seal has been applied. Remove excess material by sweeping prior to opening to traffic.

The RE may reject areas where fine aggregate has been applied that is not sufficiently covered or has excess fine aggregate material and rendered unsatisfactory. Visual inspection by the RE is considered sufficient grounds for such rejection.

G. Opening to Traffic. Allow the material sufficient curing time, as recommended by the manufacturer, before opening to traffic. Sweep to remove loose and excess aggregate by methods approved by and to the satisfaction of the RE before opening to traffic.

H. Applying Striping and Traffic Markings. Allow fog seal to cure for at least 2 weeks before applying permanent traffic striping and traffic markings. Use temporary traffic striping and markings as directed by the RE until the fog seal has cured.

I. Surface Quality Requirements. Ensure that there is no excess buildup, uncovered areas, or rough areas on the fog seal. The RE will visually inspect the fog seal for approval. The RE may reject areas of fog seal that are unsatisfactory based on visual inspection. Areas where fog seal has been applied that do not have sufficient aggregate cover or have excess aggregate material may be rendered unsatisfactory. Correct areas of the fog seal that the RE rejects. Visual inspection by the RE is considered sufficient grounds for such rejection.

422.03.02 Fog Seal Strip

A. Fog Sealing Plan. At least 20 days before beginning placement of fog sealing, submit a detailed plan of operation to the RE for approval as specified in 422.03.01.A.

B. Weather Limitations. Fog seal in weather as specified in 422.03.01.B.

C. Test Strip. Construct a test strip of at least 100 feet in length on the roadway before initial placement commences as specified in 422.03.01.C, except that the tiles as specified in 422.03.01.C.5 should be 2 feet by 2 feet in dimension.

D. Surface Preparation. Prepare the existing surface as specified in 422.03.01.D. When using polymerized maltene emulsion, the Contractor may leave the existing traffic stripes and traffic markings in place and may install new traffic stripes and markings as specified in 610.03 prior to fog seal.

E. Fog Sealing Application. Ensure that the temperature of the asphalt emulsion prior to starting is at the application temperature recommended by the manufacturer but not exceeding 160 °F. If using asphalt emulsion, apply the fog seal uniformly at the rate determined during the test strip to provide a residual asphalt of between 0.06 to 0.10 gallons per square yard using a bituminous distributer. If using polymerized maltene emulsion, apply according to manufacturer's recommendations.

Apply fog seal in a 2 feet wide strip centered over the center line rumble strip or HMA longitudinal cold joint, ensuring complete coverage of the rumble strip or HMA longitudinal cold joint. Ensure that the fog seal material completely covers the pavement surface and is not streaked or ribboned. Ensure that the distribution is even with no uncoated areas or puddles of excess emulsion. Correct uncoated or lightly coated areas by applying additional fog seal emulsion. Blot areas showing an excess of fog seal with sand approved by the RE. Remove excess sand and emulsion material. In areas inaccessible to distributor spray bars, use hand spraying equipment.

The RE may reject areas where fog seal has been applied that is uncoated, ribboned, streaked or has excess emulsion material and rendered unsatisfactory. Visual inspection by the RE is considered sufficient grounds for such rejection.

F. Applying Striping and Traffic Markings. If using asphalt emulsion, place striping as specified in 159.03.06 prior to opening to traffic. If permanent striping was not applied prior to fog sealing, allow fog seal to cure for at least 2 weeks before applying permanent traffic striping and traffic markings.

G. Opening to Traffic. Open to traffic as specified in 422.03.01.G.

H. Surface Quality Requirements. Ensure fog seal strip meets the requirements specified in 422.03.01.I.

422.04 MEASUREMENT AND PAYMENT

The Department will measure and make payment for Items as follows:

Item	*Pay Unit*
FOG SEAL SURFACE TREATMENT	GALLON
FOG SEAL STRIP	LINEAR FOOT

The Department will not include payment for removal of traffic stripes, removal of traffic makings, epoxy traffic stripes, epoxy traffic marking, lines, epoxy traffic markings, symbols and epoxy traffic markings, route symbols in FOG SEAL SURFACE TREATMENT and FOG SEAL STRIP. The Department will pay for removal of traffic stripes, removal of traffic makings, epoxy traffic stripes, epoxy traffic marking, lines, epoxy traffic markings, symbols and epoxy traffic markings, route symbols under REMOVAL OF TRAFFIC STRIPES, REMOVAL OF TRAFFIC MARKINGS, TRAFFIC STRIPES EPOXY, TRAFFIC MARKINGS LINES, EPOXY, TRAFFIC MARKINGS SYMBOLS, EPOXY and TRAFFIC MARKINGS ROUTE SYMBOLS, EPOXY as specified in 610.04 respectively.

The Department will not include payment for latex traffic stripes, latex traffic markings lines and latex traffic markings symbols in FOG SEALSURFACE TREATMENT and FOG SEAL STRIP. The Department will pay for latex traffic stripes, latex traffic markings lines and latex traffic markings symbols under TRAFFIC STRIPES, LATEX, TRAFFIC MARKINGS LINES, LATEX and TRAFFIC MARKINGS SYMBOLS, LATEX as specified in 159.04 respectively.

The Department will measure FOG SEAL SURFACE TREATMENT by volume of residual asphalt by converting the quantity of emulsion to the number of gallons at 60 °F as calculated by the temperature-volume correction factors specified in 902.01 and then multiplying by the percent residual asphalt in the emulsion from the certificate of compliance from the manufacturer.

DIVISION 450 – CONCRETE PAVEMENT REHABILITATION

SECTION 453 – FULL DEPTH CONCRETE PAVEMENT REPAIR

453.03.01 Full Depth Repair Using Concrete

A. Preparation.
THE FOLLOWING IS ADDED AS THE FIRST PARAGRAPH:

Arrange a meeting with the RE at the project site to establish the limits of repair. Additional repairs, not delineated by the RE during the project site meeting with the Contractor, may be required if the need for them is established by the RE.

C. Setting Forms, Joint Ties, and Dowels.
THE THIRD SENTENCE OF THE SEVENTH PARAGRAPH IS CHANGED TO:

Slowly withdraw the tube as the hole is filled.

453.03.02 Full Depth Repair Using HMA

A. Preparation.
THE ENTIRE TEXT IS CHANGED TO:

Arrange a meeting with the RE at the project site to establish the limits of repair. Additional repairs, not delineated by the RE during the project site meeting with the Contractor, may be required if the need for them is established by the RE.

If milling and paving is also specified within the areas requiring full depth repair, then perform the repair work first and as a separate operation from the milling and paving. Ensure that the top of the repaired concrete surface is flush with the existing unrepaired pavement. The Contractor may request approval of the RE to perform the repair work, milling and paving as one operation.

Sawcut full depth at the limits of the repair. Remove existing concrete or composite pavement using the lift out method. Do not use in-place breaking to remove concrete. Ensure that spalling of the remaining concrete does not occur during the lifting. Reuse removed pavement as specified in 202.03.07.A. The Contractor may sawcut the slab and drill the lift out holes up to 5 days before the concrete removal. Only remove concrete that can be replaced during the workday. Repair any damage to remaining pavements.

After the existing concrete has been removed, the RE will examine underlying material to determine its condition. If water or excess moisture exists in the area, remove the underlying material to the depth specified by the RE. Place and compact coarse aggregate using the directed method as specified in 203.03.02.C. Grade the underlying surface so that the thickness of the repair matches the existing slab thickness.

B. Weather Limitations.
THE HEADING AND THE ENTIRE TEXT IS CHANGED TO:

B. Placing Limitations. Comply with the limitations as specified in 453.03.01.B.

C. HMA Placement.
THE ENTIRE TEXT IS CHANGED TO:

Apply tack coat at an application rate of 0.15 gallons per square yard to the vertical surfaces and base of the opening. Spread, and grade HMA surface course mix in the opening as specified for the roadway surface or a HMA surface course mix approved by the RE. Ensure that the temperature of the HMA when placed is at least 250 °F, and compact as specified in 401.03.03.F. Compact areas not accessible to rollers with a flat face compactor. Compact until the top of the repair is flush with, or 1/8 inch higher than, the adjacent pavement surface.

DIVISION 500 – BRIDGES AND STRUCTURES

SECTION 501 – SHEETING AND COFFERDAMS

501.01 DESCRIPTION

Add the following paragraph at the end of this section:

This section also include the requirements for designing, constructing and removing temporary sheeting at the locations as shown on the Contract plans. Temporary sheeting shall be steel sheet pile wall, soldier pile and lagging wall, temporary MSE wall, tangent/secant pile wall or any other acceptable wall approved by the Engineer.

501.02 MATERIALS

Add the following paragraph at the end of this section:

To design and construct the temporary sheeting, the Contractor may use any material or combination of materials that are approved with the working drawings.

501.03 CONSTRUCTION

501.03.01 Temporary Sheeting

Add the following paragraph:

Design and install the temporary sheeting such that any adjacent buildings, structures, substructures and/or utilities will not be undermined and/or damaged due to the induced excessive vibration and ground movement. Follow Section 162 of this project's specifications for the vibration and movement monitoring and control.

A. Working Drawings.

Add the following paragraph at the end of this section:

1. The maximum anticipated vertical settlement and lateral deflection of the temporary sheeting.
2. Method for removing, overcoming or penetrating through obstructions or existing substructures or existing foundation upon approval.

B. Construction. This Section is changed to:

Construct the temporary sheeting to ensure the stability of the excavation and to keep the excavation free of water. Construct the temporary sheeting with interior dimensions that allow clearance for the construction and inspection of forms and for the handling and pumping of water outside of the footing area if needed. Extend the temporary sheeting below the bottom of the footings and ensure that they are maintained free of water until the subsequent work has been completed. Brace the temporary sheeting in all directions if needed to minimize lateral deflection and avoid damaging any adjacent buildings, structures, substructures and/or utilities due to excessive lateral deflections. Remove, overcome or penetrate through obstructions or existing substructures or existing foundations using the approved methods. Excavate and remove materials as specified in 202.03. Do not install within 200 feet of concrete that is being placed or has been placed within the previous 24 hours unless approved by the RE. Ensure that the temporary sheeting has no gaps and is continuous for its entire length.

Do not use driving or any other construction techniques causing excessive vibration and movement to any adjacent buildings, structures, substructures and/or utilities, especially the adjacent building on the north-east side of the proposed bridge, to install temporary sheeting.

C. Dewatering. This Section is changed to:

Provide dewatering if necessary. Continue dewatering operations until the temporary sheeting is removed or approved by the RE.

D. Removal. This Section is changed to:

Do not remove the temporary sheeting specified as left-in-place sheeting on the contract plans. Remove the temporary sheeting when it is no longer required to be left in place. Backfill voids left from temporary sheeting to provide uniform finish grades. Upon the approval of the RE, the Contractor may left the temporary sheeting in place not specified on the Contract plans. When the temporary sheeting is left in place, remove the upper portion to at least 3 feet below finish ground.

501.04 MEASUREMENT AND PAYMENT

The following paragraphs are added:

No separate payment will be made for removing, overcoming or penetrating through obstructions or existing substructures or existing foundations. Include all the associated cost in the bid price of Pay Item, "TEMPORARY SHEETING".

No separate payment will be made for dewatering. Include all the associated cost in the bid price of Pay Item, "TEMPORARY SHEETING".

THE FOLLOWING IS ADDED AFTER THE LAST PARAGRAPH:

The Department will measure the square footage of TEMPORARY SHEETING by multiplying the average height and length of sheeting that is driven. The Department will determine the average height by extending a line from the bottom of the excavation in cuts or the existing ground line in fills to a vertical plane of the top of sheeting, not to exceed 3 feet above finished grade.

SECTION 502 – LOAD BEARING PILES

502.03.03 Driving Piles

B. Methods of Driving.
THE FOLLOWING IS ADDED TO THE LAST PARAGRAPH:

4. Cast-In-Place Piles. Ensure that reinforcement steel is installed as specified in 504.03.01. Place concrete as specified in 504.03.02. Clean out open end piles to the elevation shown on Plans. Weld closure plates for closed-end pipe piles as shown on Plans.

C. Test Piles.

1. Static Pile Load Test.

2. Dynamic Pile Load Tests.

502.04 MEASUREMENT AND PAYMENT
THE EIGTH PARAGRAPH IS CHANGED TO:

The Department will make payment for splices within the pile order length if the order length is greater than 80 feet under SPLICE (___). The Department will not make payment for splices in piles that are less than or equal to 80 feet unless directed by the RE.

SECTION 504 – STRUCTURAL CONCRETE

504.02.01 Materials
THE FOLLOWING MATERIAL REFERENCE IS CHANGED TO:

Grit for Epoxy Waterproofing 901.07.01

504.03.02 Constructing Concrete

D. Placing and Consolidating Concrete.
THE FIRST SENTENCE OF THE FIFTH PARAGRAPH IS DELETED

G. Removal of Forms and Falsework.

Do not remove forms and false work until the concrete obtains a compressive strength of 3000 psi.

SECTION 505 – PRECAST AND PRESTRESSED STRUCTURAL CONCRETE

505.03.01 Prestressed Concrete Structures

C. Erection Plan.
THE FIRST SENTENCE IS CHANGED TO:

Submit working drawings for certification regarding the plan of operations to the RE at least 30 days before the pre-erection meeting.

SECTION 506 – STRUCTURAL STEEL

506.01 DESCRIPTION

PRE-ENGINEERED TRUSS BRIDGE

THE FOLLOWING IS ADDED:
This section also describes the requirements for providing all engineering, design, fabrication transportation and field erection for a single-span truss bridge as described herein. Drawings prepared by the Manufacturer that represent the intended engineering design including criteria and general notes. These drawings typically depict the Bridge's framing plan, elevation, member sizes, transverse section(s), end-of-bridge section(s), field assemblies, and installation notes. The work to be performed in accordance with these specifications will consist of timely furnishing of structural steel design, and shop drawings; and manufacture of the Bridge pursuant to the Applicable Codes and Standards, and transportation to the location indicated in the Contract Documents. Perform the engineering design of the bridge under the direct supervision of a Licensed Professional Engineer in the State of New Jersey, and complete it in accordance with recognized engineering principles and design practices and with a standard of care commensurate indicated in the contract documents.

506.02 MATERIALS

A. Manufacturer's Qualifications

AISC Certification: The Manufacturer must be certified by the American Institute of Steel Construction (AISC) (Major Steel Bridges), including Fracture Critical and Sophisticated Paint System endorsements, for a period of at least five (5) continuous years immediately preceding the bid opening.

SSPC Qualifications: Provide painters trained and certified under the Structural Steel Paint Council, SSPC QP3 Standard Procedure for Evaluating Qualifications of Shop Painting Applicators and familiar with material safety data sheets (MSDS), product data sheets, painting tools and equipment and quality procedures.

Experience: Provide proof of experience on at least ten (10) permanent premanufactured steel truss or rolled beam bridges of approximately the same size and configuration as the proposed Bridge during a period of not more than five (5) continuous years immediately preceding the bid opening. Have experience designing and manufacturing bridges with all-bolted component connections using Computer Numerically Controlled (CNC) drilling equipment and shop bolting operations.

B. Governing Codes and Standards

Design and fabricate the bridge in accordance with current, recognized and accepted specifications for bridge design and construction, including all interims, and as stipulated by the Owner below. Currently, within the United States, the American Association of State Highway and Transportation Officials (AASHTO) publishes two sets of bridge design and construction specifications: the 1) Standard Specifications for Highway Bridges, 17th Edition (2002), Division I & II and AASHTO LRFD Bridge Design Specifications for Highway Bridges, 5th Edition (2010) and 2) AASHTO LRFD Bridge Construction Specifications 3rd Edition (2010).

C. Span(s): Single-span pony truss (Warren truss) as indicated in the drawings

D. Deck and Wearing Surface: As indicated in the drawings

E. Railings: As indicated in the drawings

F. Bearings: To be designed and provided by the truss manufacturer.

G. Expansion Joints: As indicated in the drawings. The truss manufacturer must notify the engineer of any modification to the expansion joint required to accommodate the truss.

H. Fencing: As indicated in the drawings

I. Bridge Style: Provide a truss design consisting of a bolted half through-truss (a.k.a. "pony" truss). The truss design is a bolted Warren truss configured as shown in the contract documents, and as further described in these specifications. Provide horizontal top chords, two diagonal members in each truss panel, and a vertical member at each interior bottom chord panel point. The bottom (tension) chord of each truss consists of two equal-sized members with adequate section properties to provide redundancy. Design and fabricate the trusses using gusset plates on each side of the chord member and high strength structural fasteners (bolts) to connect web (diagonal and vertical) members to the chord members. Use shim or fill plates where web members do not dimensionally fit up with the larger chord members. Design the gusset plates to transfer member forces in accordance with governing sections of the Design Specifications and FHWA Publication Number IF-09-014. Provide all gusset plates with one-inch radiused corners, except for the lower corners aligned toward the mid-line of the bridge. Shop welding on truss members is strictly prohibited unless their use can be justified to the owner and submitted in writing for approval, prior to commencing design

The final design will be subject to architectural approval by the New Jersey State Historic Preservation Officer.

J. Design Specification: In accordance with these contract documents, drawings and specifications. Truck and pedestrian live loads, and load combinations, shall be as indicate don the drawings.

K. Analysis and Load Rating: Perform a structural analysis that includes, at a minimum, a two-dimensional analysis for gravity dead loads and moving live (truck) loads on transverse and longitudinal members, as applicable. Location of axle loads, lane loads, wheel loads; and the distribution of wheel loads to be applied as such to produce the maximum stress (or applied force) in the member or members under consideration. Fabricator must perform an analysis of the half-through trusses, to confirm the top chord's stability by computing the relative stiffness of the Bridge's cross-sectional members to determine the resistance of the top chord members to buckling. Supply a final load rating of the Bridge's superstructure to the Owner upon written request, after the bridge's fabrication is complete. Convey the requirements for the Load Rating to the Manufacturer at the time of request. All applicable dead and live loads must be applied and combined as specified in the Design Specification. Include the weight of a future wearing surface of 35 psf to be applied as a dead load in anticipation of possible future paving overlays. Longitudinal forces from thermal expansion and contraction, and vehicles; along with lateral forces from wind, flood or seismic events must be computed and combined as applicable and in accordance with the Design Specification. Calculation of the Bridge's dead and live load deflection is required. Live load deflection of the primary members should be limited AASHTO requirements for maximum live load deflection. Accommodate dead load deflection by forming camber into the unloaded geometry of the members. Account for profile grade curvature when determining the fabricated (or induced)

camber of the members. Concrete Deck Slab: Design the concrete deck slab in accordance with the Design Specifications indicated on the Drawings. Design railings to provide a continuous, snag-free alignment along the bridge's edge of roadway. Transition them smoothly to a ground mounted railing system eventually terminating as directed or planned by the Owner, unless otherwise stipulated in the Agreement. Design the railing system to meet the dimensional requirements of the Design Specification and to resist vehicular impact loads in accordance with the Design Specification:

Design the bicycle and pedestrian rails for sidewalks for the dimensional and load requirements of the selected Design Specification.

L. Drawing Submittals: Design the prefabricated bridge(s) and prepare Drawings and calculations in accordance with the NJDOT submittal requirements and procedures. Engineering Drawings and Calculations, sealed by a Registered Professional Engineer in the state of New Jersey.

506.02 CONSTRUCTION

THE FOLLOWING IS ADDED:

A. **Cleaning and Surface Preparation**: Clean all steel that is to be fabricated by solvent or hand tools, or shot blasted, as needed to clean and remove rust and mill scale that might impede accuracy of fit-up or quality of fabrication prior to processing. Blast weathering steel to provide a uniform surface appearance. Prepare steel to be galvanized in accordance with the galvanizers recommendations. Follow the Contract Documents and paint manufacturer's recommendations and as specified below.

B. **Cambering:** provide camber in accordance with the Contract Documents and the design computations to offset the predicted total dead load deflection and to accommodate the profile grade indicated in the Contract Documents. Mechanical (cold) cambering may be used where permitted by NJDOT specifications and customary practices. Heat cambering by experienced workers may be employed, as an optional method.

C. **Welding:** Conform to the AASHTO/AWS D1.5 Bridge Welding Code.

D. **Plate & Shape Cutting**: Conform to methods specified in AASHTO/AWS D1.5 Bridge Welding Code Section 3 Workmanship.

E. **High-Strength Bolting**: Conform to the workmanship requirements of the Research Council on Structural Connections (RCSC) Specifications for Structural Joint Using A325 or A490 Bolts.

F. **Galvanized Steel Components:** Fabricated truss elements and bolted beam connections must be individually hot dip galvanized prior to assembly to ensure corrosion protection has been achieved between assembled elements and within truss joint plies.

G. **Shop Assembly**: Conform to AASHTO Construction Specifications and AASHTO/NSBA S2.1 Guide Specifications. For bridges such as trusses, shop assemble the entire span, to conform to the camber and blocking requirements shown in the Engineering Drawings in an unloaded, laydown process. If the span is too long for a complete shop assembly, check-assemble a minimum of three adjacent shippable units of the bridge, in a sequential manner, to ensure that an accurate fit-up of assemblies are possible in the field. Complex framing members such as skewed floor beams must be check - assembled in the shop, to ensure geometric accuracy and fit-up has been achieved. Stringers, beams, transverse bracing and accessory pieces are not required to be check- assembled to their primary members unless specified in the Contract Documents.

H. **Shop Inspection:** Make a thorough inspection to ensure that all mating parts are properly aligned and match marked as necessary for filed erection. Confirm that all shop bolting and welding (where permitted) has been

inspected and fully documented. Provide access and sufficient notifications to Department personnel for the purpose of shop inspection of fabricated elements, components, and sub-components.

I. **Surface Preparation for Painting**: Use abrasive blast clean as a minimum to the standard SSPC-SP10, Near White Blast Finish. Additional blast cleaning may be required if the resulting blast profile does not comply with the specific paint requirements.

J. **Shop Painting**: Provide color to be specified by the Owner and as acceptable to the State Historic Preservation Officer at the time of the shop drawing approval. The specified paint system will be applied by brush, roller, or air-less spray methods unless otherwise recommended by the paint manufacturer. Provide touch up paint of the same color and by the same manufacturer to the contractor to cover areas where the coating has been damaged during the assembly and installation process or if required for final inspection.

K. **Painted Structural Steel**: Conform to NJDOT Standards

L. **Paint over Galvanized Steel Components**: Provide a duplex system as listed in the NJDOT Standards.

M. **Paint Inspection**: Monitor the environmental conditions to ensure that the paint system is properly applied. Obtain dry film thickness measurements to ensure that the required minimum coating thickness has been achieved for each coat.

N. **Material Certification**: Maintain a program to receive, inspect, record and trace materials used in the Bridge. Material Test Reports to prove domesticity, and document chemistry and physical test records. Certificates of Conformance to be used to document compliance with specifications. Trace by heat and lot numbers records from the producing mill or supplier. Maintain evidence of the Manufacturer's AISC Certification and a written copy found in the Manufacturer's AISC Certification Manual.

O. **Truss Assembly Records**: Complete and maintain a record of assembly for each truss bridge, documenting specific pieces, heat numbers and positions for truss girder members, in accordance with the Manufacturer's AISC Certification Manual.

506.03.01 Structural Steel

B. Erection Plan.

THE ENTIRE TEXT IS CHANGED TO:

At least 30 days before the pre-erection meeting, submit working drawings for certification regarding the plan of operations to the RE. Include, at a minimum, the following in the plan:

1. Number and type of manpower and equipment.
2. Shipping procedures.
3. Lifting procedures.
4. Beam erecting sequence, including method of setting bearings and diaphragms.
5. Temporary bracing.
6. Manufacturer's recommendations.
7. Procedures for employee safety.
8. Traffic control and protection.

E. Installing High-Strength Steel Bolts.

THE ENTIRE TEXT IS CHANGED TO:

Check galvanized bolts and nuts to verify that a visible lubricant is on the threads. Check black bolts and nuts to verify that they are oily to the touch.

Before beginning bolt installation, provide on the project site a Skidmore-Wilhelm calibrator or an acceptable equivalent tension measuring device. Ensure that the manufacturer's representative is present during the first full day of tensioning work to provide technical assistance.

Test assemblies as follows:

1. For bolt assemblies that do not require Direct Tension Indicators (DTI's), perform the rotational capacity test in accordance with 908.02.02.C, on 2 assemblies from each rotational-capacity lot.
2. For bolt assemblies requiring DTI's, install in accordance with the following, and perform the rotational-capacity test as specified in NJDOT S-3 on 3 assemblies from each rotational-capacity lot.

   Ensure that the bolt, nut, and washer are from the same rotational-capacity lot. If the DTI is used under the nut, place an additional washer between the nut and the protrusions on the DTI. If recommended by the bolt manufacturer, the Contractor may use wax lubricant, beeswax, or a water wax emulsion to aid in installation. Hold the bolt head stationary while tightening the nut.

   Install bolts in all of the holes of the connection and tighten to a snug-tight condition to compact the joint. Ensure that the number of spaces on DTIs in which a 0.005-inch feeler gauge is refused after snugging does not exceed the maximum snug-tight refusals as specified in Table 506.03.01-1. If the number of refusals exceeds the maximum, remove the assembly, insert a new DTI, and resnug.

   Tighten the assemblies successively from the most rigid part of the connection to the free edges by turning the nuts while holding the bolts stationary. Tension the assemblies until the number of spaces in which the 0.005-inch thickness gauge is refused meets or exceeds the minimum final tension refusals specified in Table 506.03.01-1.

Table 506.03.01-1 Criteria for DTI Spaces for A 325 Bolts

Bolt Diameter, Inches	1/2	5/8	3/4	7/8	1	1-1/8	1-1/4	1-3/8	1-1/2
Number of Spaces on DTIs	4	4	5	5	6	6	7	7	8
Maximum Snug Tight Refusals[1]	1	1	2	2	2	2	3	3	3
Minimum Final Tension Refusals[2]	2	2	3	3	3	3	5	6	7

1. If the DTI is coated and under the nut, the maximum snug tight refusals is the number of spaces on the DTI minus one.
2. If the DTI is coated and under the nut, the minimum final tension refusals is the number of spaces on the DTI.

   If an assembly is tightened so that there are no visible gaps remaining in any of the spaces on the DTI, the assembly has been over-tightened. Remove and replace over-tightened assemblies.

If assemblies do not meet the above rotational capacity requirements when tested at the work site, the Contractor may clean and relubricate the bolt assemblies in the rotational-capacity lot. After cleaning and relubricating, retest the assemblies for compliance to the above rotational capacity requirements.

For painted steel, apply 3 coats of an organic paint system, supplied by the same manufacturer as the originally applied inorganic zinc system, to the field bolted connections.

506.03.02 Bearings

C. Installing Bearings. Install bearings as follows:

1. Anchor Bolts.

THE SECOND SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

If using anchor bolt sleeves, ensure that they are circumferentially corrugated and are galvanized steel or plastic.

506.03.03 Shear Connectors

THE FIRST PARAGRAPH IS CHANGED TO:

Ensure that shear connectors conform to Section 7 of the ANSI/AWS D1.5 Bridge Welding Code.

506.03.06 Repair Galvanizing

THE LAST SENTENCE OF THE SECOND PARAGRAPH IS CHANGED TO:

If painting is directed, treat the galvanized surface according to the manufacturer's recommendations, then apply the epoxy intermediate and urethane finish coats only.

506.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEM IS DELETED:

Item	*Pay Unit*
SHEAR CONNECTOR, GALVANIZED	UNIT

THE FOLLOWING ITEMS ARE ADDED:

Item	*Pay Unit*
STRUCTURAL STEEL, PRE-ENGINEERED TRUSS BRIDGE	LUMP SUM

SECTION 507 – CONCRETE BRIDGE DECK AND APPROACHES

THIS SECTION IS RENAMED TO:

SECTION 507 – CONCRETE BRIDGE DECK, BRIDGE PARAPET AND APPROACHES

507.02.01 Materials

THE FOLLOWING IS DELETED FROM MATERIALS LIST:

4-Bar Open Steel Parapet 906.07

THE FOLLOWING ARE ADDED TO MATERIALS LIST:

Steel Bar Bridge Railing 906.07

Anchor Bolts……..…908.01.03

507.03.01 Joint Assemblies

A. Working Drawings

THE SECOND PARAGRAPH IS CHANGED TO:

In addition, for modular expansion joint systems, incorporate the following requirements:

1. Provide the expansion joint system to accommodate all expected longitudinal movements as well as vertical and horizontal rotations. Incorporate strip seal glands with a maximum movement range of 3.15 inches per seal. Support each separation/center beam with an independent support bar that is welded to the separation beam. Suspend the support bars over the joint opening by sliding elastomeric bearings. Incorporate an equidistant control system that develops its maximum compressive force when the joint is at its maximum opening. Do not use bolted connections between the separator beams and support bars unless approved by the Designer. If bolted connections are approved, lock them into position after tightening. Provide tightening procedure for Designer's approval to ensure all bolts cannot loosen during the service life.
2. Provide continuous separation/center beams without any field splice unless approved by the Designer. If a field splice is inevitable due to a manufacturing constraint, provide a fatigue resistant field splice (welded or bolted, and located away from potential wheel paths) and installation procedure. Installation is to be supervised by the Manufacturer and Contractor. If bolted connections are used, provide a bolt tightening procedure and ensure bolt loosening does not happen during service life. However, provide continuous strip seals even if separate/center beams are spliced.
3. Fatigue design the modular joint system according to Section 14 of the AASHTO LRFD Bridge Design Specifications. Fatigue test the modular joint system, including the transverse separation/center beams, support bars, and other structural elements and connections, according to Section 19/A19 of *AASHTO LRFD Construction Specifications.*
4. Perform prequalification tests, Open Movement and Vibration (OMV) testing and Seal Pushout (SPO) testing as specified in 914.04.03 for review and approval by the Designer.
5. Provide the elastomeric springs and bearings to be removable and replaceable in the event maintenance is necessary.

507.03.02 Constructing Bridge Decks

A. Forms. Construct forms as follows:

2. Removable Forms.

THIS PART IS CHANGED TO:

Construct removable forms as specified in 504.03.02.B. Do not use shoring to support stringers along the span length where the superstructure, under live load and impact loads, is designed for composite action. Do not weld attachments required for placement of the removable forms to the beam.

L. Saw Cut Grooved Surfacing.

THE FOLLOWING IS ADDED TO THE FIRST PARAGRAPH:

Do not saw cut until after the Department performs Acceptance Testing as specified in Subsection 507.03.02 N.

N. Concrete Deck Surface Requirements

1. Acceptance Testing.

THE FIRST PARAGRAPH IS CHANGED TO:

Construct deck slabs so that less than 9 percent of the measured length of the lot exceeds 1/8 inch tolerance in 10 feet. The ME will test the surface of concrete bridge deck slabs with a Class I Walking Profiler prior to the performance of saw cut grooved surfacing. The ME will calculate the percent defective using a rolling straight edge simulator analysis of the profiler data.

THE FOLLOWING IS ADDED TO TABLE 507.03.02-02:

Table 507.03.02-2 Reduction Per Lot of Deck Slab Concrete Due to Nonconformance with Surface Requirements

Lot Percent Defective Length	Reduction Per Lot, Percent
25.0 – 34.9 (Manually finished deck)	12.0

507.03.05 Concrete Parapet and Barrier Curb

THE SECOND PARAGRAPH IS CHANGED TO:

Cure using curing compound as specified 504.03.02.F. If drilling is required for subsequent construction, allow the concrete to cure for a minimum of 14 days before drilling.

507.03.06 4-Bar Open Steel Parapet

SUBPART IS RENAMED AND CHANGED TO:

507.03.06 Steel Bar Bridge Railing

Ensure that the deck has cured for at least 14 days before placing concrete for steel bar bridge railing. Place concrete as specified in 504.03.02.D. Install as shown on the Plans. Construct anchor bolt system as specified in 509.03.01-1.

507.03.07 Concrete Bridge Approach

THE FOLLOWING IS ADDED:

Ensure the concrete conforms to the surface requirements as specified in 507.03.02 N, except each lot will be equal to the number of cubic yards of approach concrete placed in the lane.

507.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEM IS DELETED:

4-BAR OPEN STEEL PARAPET	LINEAR FOOT

THE FOLLOWING ITEM IS ADDED:

STEEL ___BAR BRIDGE RAILING	LINEAR FOOT
CONCRETE SLEEPER SLAB	CUBIC YARD

THE SECOND PARAGRAPH IS CHANGED TO:

The Department will include payment for epoxy coated reinforcement steel for the concrete bridge approach under the item CONCRETE BRIDGE APPROACH. The Department will include payment for epoxy coated reinforcement steel for the concrete sleeper slabs under the item CONCRETE SLEEPER SLAB. The Department will include payment for epoxy coated reinforcement steel for the concrete bridge parapets under the item CONCRETE BRIDGE PARAPET, HPC; for other concrete items, the Department will make payment for reinforcement steel under REINFORCEMENT STEEL, REINFORCEMENT STEEL, EPOXY-COATED, and REINFORCEMENT STEEL, GALVANIZED as specified in 504.04.

THE FOLLOWING IS ADDED:

The Department will make a payment adjustment for concrete surface requirement quality in deck slabs and approach, by the following formula:

Pay Adjustment = Q x BP x PR

Where:
BP = Bid Price
Q= Surface Requirement Lot Quantity
PR= percent reduction as specified in Table 507.03.02-2

SECTION 508 – BRIDGE DRAINAGE

508.02 MATERIALS
THE FOLLOWING IS ADDED TO LIST OF MATERIALS:

Fiberglass Pipe 909.02.09

THE FOLLOWING SUBPART IS ADDED:

508.03.03 Fiberglass Pipe and Fittings

Ensure that pipe supports are located at spacings that do not exceed the pipe manufacturer's recommendations. Avoid supports that have point contact or narrow supporting areas. Standard sling, clamp, and clevis hangers and shoe supports designed for use with steel pipe may be used. Ensure that the minimum strap width of all pipe hangers meets the pipe manufacturer's recommendations. Ensure that straps have a minimum of 120 degrees of contact with the pipe. On pipe supported on surface with less than 120 degrees of contact use a split fiberglass pipe protective sleeve bonded in place with adhesive.

Ensure that all connections of pipes and fittings shown on the plans to facilitate future removal for maintenance cleanout or flushing are made with a threaded, gasketed coupler or a bolted gasketed flange system. Use only female – male threaded plugs for cleanouts.

508.04 MEASUREMENT AND PAYMENT
THE FOLLOWING ITEM IS ADDED:

Item	*Pay Unit*
___" FIBERGLASS PIPE	LINEAR FOOT

SECTION 509 – BRIDGE RAILING AND FENCE

THIS SECTION IS RENAMED TO:

SECTION 509 – BRIDGE COMBINATION RAILING, MISCELLANEOUS RAILINGS AND FENCE

509.01 DESCRIPTION
THE ENTIRE SUBSECTION IS CHANGED TO:

This Section describes the requirements for constructing metal railing, fence, and guide rail on bridges. Metal railing includes metal railing components for combination traffic railing system, combination non-traffic railing system, non-traffic pedestrian or bicycle railing, ornamental railing and other railing not subject to vehicular impact.

509.03.01 Bridge Railing
THE THIRD PARAGRAPH IS CHANGED TO WITHOUT PARTS 1 & 2:

Ensure that the railing is fabricated to allow for minor adjustments in both horizontal and vertical directions. Install 1 or 2-rail aluminum or steel railing on top of the concrete parapet as shown on the Plans. Install other types of metal railing on concrete sidewalk or deck as shown on the Plans. Do not use expansion type anchor bolts.

THE THIRD PARAGRAPH SUBPART 2 IS CHANGED TO:

2. **Adhesive Type.** Do not drill for installation until the concrete has cured for at least 14 days. Install adhesive anchors according to the manufacturer's recommendations. When drilling, ensure that spalling does not occur and existing utilities are not damaged. Repair damage to the existing concrete, utilities, and reinforcement steel as a result of drilling. Clean and dry drill holes before and during installation of the adhesive anchors.

509.03.02 Chain-Link Fence for Bridge
THE ENTIRE SUBPART IS CHANGED TO:

At least 30 days before beginning the work, submit working drawings for certification. Indicate material specifications for adhesive, anchors, washers, and nuts on the working drawings.

Base the design embedment of the adhesive anchor bolts on a concrete compressive strength of 4000 pounds per square inch. Ensure that the embedment depth of the adhesive anchors shown on the working drawings is sufficient to obtain the required pullout strength as required for the proof load testing as specified in 908.01.04.

Do not use expansion type anchor bolts. Place anchors using one of the following:

1. **Cast-in-Place Type.** Set anchor bolts before placing concrete using a rigid template for each anchor assembly. When placing concrete, ensure that bolts do not move and spacing is maintained between the rigid templates. Ensure that the exposed threaded ends of the anchor bolts remain clean and protected from concrete. Clean the anchor bolts before installing the specified hardware.
2. **Adhesive Type.** Do not drill for installation until the concrete has cured for at least 14 days. Install adhesive anchors according to the manufacturer's recommendations. When drilling, ensure that spalling does not occur and existing utilities are not damaged. Repair damage to the existing concrete, utilities, and reinforcement steel as a result of drilling. Clean and dry drill holes before and during installation of the adhesive anchors.

Erect fencing as shown on the Plans.

509.04 MEASUREMENT AND PAYMENT
THE ENTIRE SUBSECTION IS CHANGED TO:

The Department will measure and make payment for Items as follows:

Item	*Pay Unit*
BRIDGE COMBINATION RAILING (___RAIL, ALUMINUM)	LINEAR FOOT
BRIDGE COMBINATION RAILING (___RAIL, STEEL)	LINEAR FOOT
CHAIN-LINK FENCE, TYPE I, ZINC-COATED STEEL, BRIDGE, __'__" HIGH	LINEAR FOOT
CHAIN-LINK FENCE, TYPE II, ALUMINUM-COATED STEEL, BRIDGE, __'__" HIGH	LINEAR FOOT
CHAIN-LINK FENCE, TYPE III, ALUMINUM ALLOY, BRIDGE, __'__" HIGH	LINEAR FOOT
CHAIN-LINK FENCE, TYPE IV, PVC-COATED STEEL, BRIDGE, __'__" HIGH	LINEAR FOOT
CHAIN-LINK FENCE, TYPE I, ZINC-COATED STEEL, BRIDGE, __'__" HIGH, CURVED TOP	LINEAR FOOT

CHAIN-LINK FENCE, TYPE II, ALUMINUM-COATED STEEL, BRIDGE, __'__" HIGH, CURVED TOP	LINEAR FOOT
CHAIN-LINK FENCE, TYPE III, ALUMINUM ALLOY, BRIDGE, __'__" HIGH, CURVED TOP	LINEAR FOOT
CHAIN-LINK FENCE, TYPE IV, PVC-COATED STEEL, BRIDGE, __'__" HIGH, CURVED TOP	LINEAR FOOT

SECTION 510 – TIMBER STRUCTURES

510.03.02 Sheeting and Wales

510.04 METHOD OF MEASUREMENT
THIS SUBSECTION HEADING IS CHANGED TO:

510.04 MEASUREMENT AND PAYMENT

SECTION 511 – BULKHEAD, FENDER, AND DOLPHIN SYSTEMS

511.02.01 Materials
14 TH ON THE LIST IS CHANGED TO:

Fiberglass Reinforced Plastic Lumber (FRPL)..... 916.01

511.03.01 Bulkhead, Fender, and Dolphin Systems
C. Coating Steel
THE SECOND PARAGRAPH PART 1 IS CHANGED TO:

1. Immediately after blast cleaning, apply 2 coats of coal tar epoxy paint at a maximum coverage rate of 125 square feet per gallon. Ensure that the total dry film thickness of the 2 coats is not less than 16 mils at any point. Apply the coating by brush, roller, or spray. The Contractor may thin the first coat with a maximum of 10 percent of solvent according to the coating manufacturer; however, the Contractor may not thin the second coat. Allow the first coat to thoroughly dry before applying the second coat. Allow the second coat to dry and harden before handling the steel.

SECTION 512 – SIGN SUPPORT STRUCTURES

512.04 MEASUREMENT AND PAYMENT
THE FOLLOWING ITEMS ARE ADDED:

Item	*Pay Unit*
CANTILEVER SIGN SUPPORT, DMS STRUCTURE NO. ____	UNIT.
BUTTERFLY SIGN SUPPORT, DMS STRUCTURE NO. ____	UNIT.

THE FOLLOWING IS ADDED:

The Department will make payment for drilled shaft foundations for sign supports under DRILLED SHAFT FOR SIGN STRUCTURE FOUNDATION as specified in 51X.04.

SECTION 513 – RETAINING WALLS

513.02.01 Materials
THE FOLLOWING IS ADDED:

For MSE Walls, use either Soil Aggregate, I-15 or Coarse Aggregate, No. 57. For Prefabricated Modular Retaining Walls and T-Wall, use either Soil Aggregate, I-9 or Coarse Aggregate, No. 57.

513.03.01 Proprietary Retaining Walls

F. Backfilling.
THE HEADING AND FIRST PARAGRAPH UNDER SUBPART (1) ARE CHANGED TO:

1. Soil Aggregate.

G. Compacting.
THE HEADING AND FIRST PARAGRAPH UNDER SUBPART (1) ARE CHANGED TO:

1. Soil Aggregate. With the exception of the 5-foot zone directly behind the units, compact soil aggregate with large, smooth drum, vibratory rollers using the density control method as specified in 203.03.02.D.

513.04 MEASUREMENT AND PAYMENT
THE FOLLOWING IS ADDED AFTER THE FIRST PARAGRAPH:

The Department will make payment for reinforcement steel under REINFORCEMENT STEEL, and REINFORCEMENT STEEL, EPOXY-COATED as specified in 504.04 for reinforcement steel in cast-in-place retaining walls.

DIVISION 550 – STRUCTURE REHABILITATION

SECTION 554 – PAINTING EXISTING BRIDGES

554.04 MEASUREMENT AND PAYMENT
THE SECOND PARAGRAPH IS CHANGED TO:

The Department will base payment for TESTING, IF AND WHERE DIRECTED on the actual cost as evidenced by paid receipts from the testing laboratory.
THE FOLLOWING NEW SECTION IS ADDED:

SECTION 555 - BRIDGE DECK WATERPROOF SURFACE COURSE

555.01 DESCRIPTION

This Section describes the requirements for constructing bridge deck waterproof surface course (BDWSC) and retrofit strip seal joint system.

555.02 MATERIALS

555.02.01 Materials

Provide materials as specified:

Tack Coat PG 64E-22	902.01.01
Polymer Modified Emulsified Asphalt, Grade CRS-1P	902.01.04
Bridge Deck Waterproof Surface Course (BDWSC)	902.14
Retrofit Strip Seal Joint System	902.15
Joint Sealer, Hot-Poured	914.02
Polymerized Joint Adhesive	914.03

555.02.02 Equipment

Provide equipment as specified:

Materials Transfer Vehicle (MTV)	1003.01
HMA Paver	1003.03
HMA Compactor	1003.05
Vibratory Drum Compactor	1003.06
Bituminous Material Distributor	1003.07
Sealer Application System	1003.08
Milling Machine	1008.01
Mechanical Sweeper	1008.03
Hot-Air Lance	1008.06
HMA Plant	1009.01
HMA Trucks	1009.02

Provide a thin-lift nuclear density gauge according to ASTM D 2950.

NOTE: A Spray Paver as specified in 1003.04 may be used in lieu of a HMA Paver.

555.03 CONSTRUCTION

555.03.01 BDWSC

A. Paving Plan. At least 20 days before the start of placing the BDWSC, submit to the RE for approval a detailed plan of operation as specified in 401.03.03.A. Include in the paving plan a proposed location for the test strip.

B. Weather Limitations. Do not place BDWSC if it is precipitating. Do not allow trucks to leave the plant when precipitation is imminent. The Contractor may resume operations when the precipitation has stopped and the surface is free of water.

Do not pave if the base temperature is below 50 °F.

C. Test Strip. At least 14 days prior to the production of BDWSC, construct a test strip of the BDWSC at a location agreed upon with the RE. Ensure that the tack coat has been placed as specified in 555.03.01.D before placing BDWSC. Transport and deliver, spread and grade, and compact as specified in 555.03.01.E, 555.03.01.F, and 555.03.01.G, respectively, and according to the approved paving plan. Construct a test strip of at least 60 tons. While constructing the test strip, record the following information and submit to the RE:

1. **Ambient Temperature.** Measure ambient temperature at the beginning and end of each days' paving operation.
2. **Base Temperature.** Measure the surface temperature of the existing base before paving.
3. **HMA Temperature.** Measure the temperature of the HMA immediately after placement.
4. **Roller Pattern.** Provide details on the number of rollers, type, and number of passes used on the test strip.
5. **Nuclear Density Gauge Readings.** Obtain the maximum density from the plant, and input it into the nuclear density gauge. Use the nuclear density gauge to read the bulk density and percent air voids.
6. **Quality Control Core Density Test Results.** Take 5 randomly selected quality control cores to test for the bulk specific gravity and the maximum specific gravity.

   Use drilling equipment with a water-cooled, diamond-tipped, masonry drill bit that produces 6 inch nominal diameter cores for the full depth of the pavement. Remove the core from the pavement without damaging it. After removing the core, remove all water from the hole. Fill the hole with HMA or cold patching material, and compact the material so that it is 1/4 inch above the surrounding pavement surface.

   Compare the nuclear density gauge readings and the core test results to establish a correlation. Use this correlation as a guide for the continued use of the nuclear density gauge for density control.

When a spray paver is used, during the test strip or prior to starting the paving operation, operate spray paver without mix to verify tack coat application rate and demonstrate full tack coat coverage as specified in 401.03.02 to the RE. Only after the RE approves the tack coat application and coverage, then proceed with the test strip.

If the test strip does not meet requirements, make adjustments and construct a second test strip. If the second test strip does not meet requirements, suspend paving operations until written approval to proceed is received.

Before making adjustments to the paving operations, notify the RE in writing.

D. Tack Coat. Clean the surface where the BDWSC is to be placed of foreign and loose material. Immediately before beginning paving operations, ensure that the surface is completely dry. Use propane torches or other methods acceptable to the RE to dry the surface. Only apply tack coat that can be paved over in the same day. Apply tack coat 64E-22 at a rate of 0.25 ± 0.05 gallons per square yard and at a spraying temperature of 325 °F ± 25 °F. When using a spray paver for BDWSC, apply polymer modified tack coat as specified in 401.03.02. Adjust the spraying temperature and application rate to produce a uniform coating with no excess material. Ensure that the tack coat is fully cured prior to placing the BDWSC. To prevent tracking of the tack coat onto the HMA paver and HMA truck tires, spread a small amount of clean dry sand over the tack coat prior to opening to construction equipment traffic. Apply a 1/8 inch thick, uniform coating of polymerized joint adhesive to vertical contact surfaces of curbing, gutters, scuppers, parapets, and other structures before the placing of the BDWSC against them. Apply the polymerized joint adhesive slowly to ensure an even coating thickness.

E. Transportation and Delivery of HMA. Transport and deliver BDWSC as specified in 401.03.03.D.

F. Spreading and Grading. Ensure that required deck repairs have been completed before placing the BDWSC. Place BDWSC at the lay down temperature recommended by the supplier of the asphalt binder or the supplier of the asphalt modifier if the dry mix modified process is used. Spread and grade BDWSC as specified in 401.03.03.E.

G. Compacting. Compact the BDWSC as specified in 401.03.03.F. Operate rollers in static mode only.

H. Opening to Traffic. Remove loose material from the traveled way, shoulder, and auxiliary lanes before opening to traffic. Do not allow traffic or construction equipment on the BDWSC until the surface temperature is less than 170 °F.

I. Air Void Requirements. Use a thin-lift nuclear density gauge to measure in-place bulk specific gravity. Correct the reading using correction factor developed during the test strip. Calculate the air voids using the maximum specific gravity supplied by the QC technician at the HMA plant. Compact the mixture so that the air voids are a maximum of 3 percent.

J. Ride Quality Requirements. The Department may evaluate the surface course placed in the traveled way as specified in 401.03.03.J using the equations in Table 401.03.03-7.

K. Treatment of Fixed-End Deck Joints. Verify that the fixed-end joint and the type of header.

1. If there is an existing header repair the end of the deck and header and retrofit the joint with neoprene sealing element using elastomeric or polymer concrete as per manufacturer's requirements.

2. If there is no existing header and joint width is 1 1/2 inch or more, repair the end of the deck, and retrofit the joint with neoprene sealing element using elastomeric or polymer concrete as per manufacturer's requirements.

3. If there is no existing header and the joint width is less than 1 1/2 inch, repair the end of the deck before the BDWSC overlay. After the BDWSC overlay, sawcut 3/4 inches wide by 3/4 inches deep and seal with hot-poured sealer at interface between the end of the deck and the approach roadway.

   Before paving over existing pavement, identify joint locations and maintain references throughout the paving operations. Perform sawcutting between 1 and 5 days after placement of the BDWSC overlay. Ensure that the transverse joints are sawcut from curb to curb.

   After sawcutting, immediately collect the slurry from the sawcut cavity and surrounding pavement surface and dispose of as specified in 201.03.09. Clean sawcuts with a 150 pounds per square inch water blast to remove remaining debris in the sawcut cavity, and then blow sawcuts with a hot-air lance to provide a dry surface. Immediately after blowing, seal the joint with hot-poured joint sealer prepared according to the manufacturer's recommendations. Do not heat joint sealer at the pouring temperature for more than 6 hours and do not reheat. Fill the sawcuts so that after cooling the level of the sealer is not more than 1/4 inch above, or less than 1/8 inch below, the surface. Do not spread sand or other fine material on the sealed joints. Allow joint sealer to cure to prevent pickup before opening to traffic.

555.03.03 Retrofit Strip Seal Joint System

A. Working Drawings. Submit working drawings for certification for the retrofit strip seal joint system as per section 105.05. As a minimum, include the following information of the working drawings:

1. Manufacturer's requirements for materials in the joint system.
2. Method of installation including sequence of installation, temperature restrictions, and materials handling requirements.
3. Ensure that the removal and reinstallation of the strip seal can be accomplished from above the joint without full closure of the roadway.
4. Method to be used to ensure that the strip seal does not protrude above the top of the joint.

B Manufacturer's Representative and Recommendations. Submit two copies of written installation procedures and material certifications 14 days prior to the first scheduled installation to the RE. Arrange with the manufacturer of the joint system to assign a representative who is completely knowledgeable and competent in all aspects with the joint systems materials and installation procedures.

Ensure that the representative is present during each joint system installation to assure proper construction, material preparation, installation, and curing. The representative is responsible to advise the RE and the Contractor that the correct installation methods are being followed, to train assigned personnel in the correct methods of installation, and to verify proper installation of the joint in writing to the RE.

C. Weather Limitations. Follow the manufacturer's instructions regarding weather limitations.

D. Preparation. Center the joint installation over the existing expansion joint gap and to the width determined by the manufacturer. Variation in the width of the joint may be necessary to accommodate site conditions.

Sawcut the pavement transversely at the determined width along the joint to a 2 inch minimum depth. To permit the new joint system to be installed, remove all material, including wearing surface, masking or covering material, waterproofing membrane, concrete header, and old joint material between the sawcuts. If it is necessary to remove concrete, use only hand held tools. Remove existing materials without damaging existing sound concrete that is to remain. Use elastomeric or polymer concrete to repair any damage to sound concrete.

Grit blast all joint surfaces, dry and free of dust, dirt, grease, loose materials, and any other matter that will inhibit bonding. Clean the concrete surface to the satisfaction of the manufacturer's representative.

E. Installation Elastomeric or Polymer Concrete. Form the joint and install hardware, if necessary. If hardware is installed to mechanically hold the strip seal gland, ensure that it is placed at the proper depth for the joint. Mix and place the elastomeric or polymer concrete according to the manufacturer's recommendations. Open to traffic according to the manufacturer's recommendations.

F. Installation Strip Seal Gland. Prepare the surfaces and the strip seal gland. Install the strip seal gland according to the manufacturer's recommendations. Ensure that the strip seal gland is installed to the proper depth and does not protrude above the top of the joint. Open to traffic according to the manufacturer's recommendations.

555.04 MEASUREMENT AND PAYMENT

The Department will measure and make payment for Items as follows:

Item	*Pay Unit*
BRIDGE DECK WATERPROOF SURFACE COURSE	TON
RETROFIT STRIP SEAL JOINT SYSTEM	LINEAR FOOT
TACK COAT 64E-22	GALLON

The Department will measure BRIDGE DECK WATERPROOF SURFACE COURSE by the ton as indicated on the certified weigh tickets, excluding unused material.

The Department will measure TACK COAT 64E-22 by the volume delivered, converted to the number of gallons at 60 °F as calculated by the temperature-volume correction factors specified in 902.01.

The Department will make payment for POLYMERIZED JOINT ADHESIVE as specified in 401.04.

The Department will measure RETROFIT STRIP SEAL JOINT SYSTEM in linear feet from curb to curb along the bridge deck joint.

The Department will make payment for POLYMER MODIFIED TACK COAT as specified in 401.04.

DIVISION 600 – MISCELLANEOUS CONSTRUCTION

SECTION 601 – PIPE

THE FOLLOWING IS ADDED:

601.02.01 Materials.

Ductile Iron Water Pipe.....909.02.08

601.04 MEASUREMENT AND PAYMENT

HE FOLLOWING ITEM IS ADDED:

Item	*Pay Unit*
___" DUCTILE IRON PIPE	LINEAR FOOT

THE FOLLOWING IS ADDED:

The Department will make payment for restoring the pavement structure for trenches in the traveled way and shoulder under various Items of the Contract.

SECTION 605 – FENCE

605.01 DESCRIPTION

THE FOLLOWING IS CHANGED TO:

This Section describes the requirements for constructing fence and gates, removing and resetting fence, resetting fence gates, and repairing chain-link fence, including replacing damaged fabric.

THE FOLLOWING IS ADDED:

This section also describes the requirements for constructing pedestrian handrails.

605.02 MATERIALS

THE FOLLOWING IS ADDED:

605.02.01 Materials

Stainless Steel Bolting Materials.....908.04
Aluminum Alloy Bolting Materials.....908.05
Aluminum Railing.....913.03.02

605.03 CONSTRUCTION

THE FOLLOWING IS ADDED:

605.03.05 Handrail

Ensure dimensions, geometry, and surfaces comply with the current International Building Code as modified by local building codes. At least 10 days before beginning the work and fabricating the railing assembly, submit working drawings for certification that include design calculations, fastener and connection details, and splice details if required.

605.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEMS ARE ADDED:

Item	*Pay Unit*
HANDRAIL	LINEAR FOOT

RESET FENCE LINEAR FOOT

The Department will measure HANDRAIL by the linear foot. Concrete foundations, anchor bolting, splices, and miscellaneous hardware required for the HANDRAIL will not be measured for separate payment.

SECTION 606 – SIDEWALKS, DRIVEWAYS, AND ISLANDS

606.01 DESCRIPTION

THE FOLLOWING IS ADDED:

This section also describes the requirements for constructing cast-in-place concrete, reinforced steps and landings.

606.02 MATERIALS

THE FOLLOWING IS ADDED:

606.02.01 Materials

Non-Structural Precast Concrete 904.01

606.03 CONSTRUCTION

606.03.01 HMA Sidewalks, Driveways, and Islands

THE THIRD AND FOURTH PARAGRAPHS ARE CHANGED TO:

For sidewalks and islands, construct the base course using DGA as specified in 302.03.01. Construct the HMA course, as specified in 401.03.03. Compact using at least 1/2 ton rollers.

For driveways, if directed by the RE, construct a base course using DGA as specified in 302.03.01 to the thickness directed by the RE. Construct the HMA course, as specified in 401.03.03. Compact using at least 1/2 ton rollers.

606.03.02 Concrete Sidewalks, Driveways, and Islands

F. Placing Concrete.

THE ENTIRE PART F. IS CHANGED TO:

Obtain RE approval of forms and joint placement before placing concrete. Place concrete according to the limitations specified in 504.03.02.C. To place concrete between November 1 and March 15, submit to RE for approval a plan detailing the method of protecting the concrete from salt for at least 30 days after placing. Do not begin placing concrete until this plan is approved. Place concrete across the formed area to minimize rehandling. Ensure that concrete is not discharged into windrows or piles. Continuously place concrete between transverse joints without the use of intermediate bulkheads. To prevent bowing or misalignment of the transverse joints, place concrete simultaneously on both sides of transverse joints without disturbing the joints. Consolidate the concrete by hand spading or using internal mechanical vibrators. If a slab is not completed from transverse joint to transverse joint, remove the incomplete slab and replace. Terminate each day's placement at a transverse joint. If concrete becomes segregated during placement, cease operations and correct handling operations. Protect concrete as specified in 504.03.02.I.

H. Protection and Curing.

THE LAST SENTENCE IS CHANGED TO:

> Ensure vehicles and other loads are not placed on sidewalks, islands, and driveways until the concrete has attained compressive strength of 3000 pounds per square inch, as determined from 2 concrete cylinders field cured according to AASHTO T 23.

606.03.04 Concrete Steps, Reinforced

The requirements specified under 606.03.02 A. through I. are required for the construction of cast in place concrete steps.

Ensure treads and riser dimensions and surfaces comply with the current International Building Code as modified by local building codes. At least 20 days before beginning the work, submit working drawings to the RE for approval and coordination with local building code officials.

Dispose of unusable materials as specified in 201.03.09.

Where floor drains are located within landings, pitch landing surface to drain at no more than 1/4" per foot and no less than 1/8" per foot.

Where landings meet ingress/egress points, ensure door sweeps and thresholds maintain operation and functionality.

606.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEMS ARE ADDED:

Item	*Pay Unit*
CONCRETE STEPS, REINFORCED	SQUARE YARD
RESET PRECAST CONCRETE PAVERS	SQUARE YARD

The Department will measure CONCRETE STEPS, REINFORCED by the square yard. Bedding layers, and excavation for CONCRETE STEPS will not be measured for separate payment. When the RE directs undercutting of unstable material in the excavation area, the Department will make payment, as specified in 104.03.03, for the additional excavation. The Department will also make payment, as specified in 104.03.03, for the additional bedding if there is not an excess of excavation available.

The Department will measure RESET PRECAST CONCRETE PAVERS by the square yard.

SECTION 607 – CURB

607.03.01 Concrete Barrier Curb

D. Placing Concrete.

THE THIRD SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

To place concrete between November 1 to March 15, submit to RE for approval a plan detailing the method of protecting the concrete from salt for at least 30 days after placing.

607.03.02 Concrete Vertical Curb and Concrete Sloping Curb

D. Placing Concrete.

THE ENTIRE TEXT IS CHANGED TO:

Place concrete for vertical curb and sloping curb as specified in 607.03.01.D, except that consolidation may be achieved by hand spading or internal mechanical vibrators.

607.03.04 Concrete Vertical Curb and Concrete Sloping Curb, Dowelled

D. Placing Concrete.

THE ENTIRE TEXT IS CHANGED TO:

Place concrete for vertical and sloping curb as specified in 607.03.02.D.

607.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEMS ARE ADDED:

Item	*Pay Unit*
__" X __" F SHAPE CONCRETE BARRIER CURB	LINEAR FOOT
__" X __" F SHAPE CONCRETE BARRIER CURB, DOWELLED	LINEAR FOOT

__" X VARIABLE HEIGHT F SHAPE CONCRETE BARRIER CURB, DOWELLED	LINEAR FOOT
__" X __" HEIGHT F SHAPE CONCRETE BARRIER CURB, DOWELLED	LINEAR FOOT
VARIABLE WIDTH X VARIABLE HEIGHT F SHAPE CONCRETE BARRIER CURB	LINEAR FOOT
VARIABLE WIDTH X VARIABLE HEIGHT CONCRETE BARRIER CURB	LINEAR FOOT
CONCRETE CURB (TYPE 1)	LINEAR FOOT

SECTION 608 – NON-VEGETATIVE SURFACES

THE ENTIRE SECTION IS CHANGED TO:

608.01 DESCRIPTION

This Section describes the requirements for constructing non-vegetative surfaces of HMA; color-coated HMA; porous HMA; broken stone, and polyester matting.

608.02 MATERIALS

608.02.01 Materials

Provide materials as specified:

Broken Stone, Coarse Aggregate No. 3……..901.03
HMA (9.5M64)……...902.02
Asphalt-Stabilized Drainage Course……902.06
Non-Vegetative Surface Coating……...912.02.04
Herbicide……917.11.03
Polyester Matting……..919.15
Emulsified Asphalt.....902.01.03
Coarse Aggregate (No. 57) 901.03

Provide Non-Vegetative Surface, Porous HMA conforming to the requirements of Asphalt-Stabilized Drainage Course.

608.02.02 Equipment

Provide equipment as specified:

HMA Compactor……..1003.05
Vibratory Drum Compactor……..1003.06
HMA Plant……1009.01
HMA Trucks……....1009.02

608.03 CONSTRUCTION

608.03.01 Non-Vegetative Surface, HMA

THE ENTIRE TEXT IS CHANGED TO:

Excavate as specified in 202.03.03. Shape and compact the underlying material to produce a firm, even surface. Obtain RE approval before finishing excavation. If the RE determines that the bottom of the excavation is unstable, undercut, backfill, and compact as directed by the RE.

Construct the non-vegetative surface, HMA before installing guide rail. Provide a leave out at each post location. Fill the leave outs by one of the following two methods:

1. Fill with Coarse Aggregate No. 57. Hand tamp the aggregate and seal with Emulsified Asphalt at a rate of 0.3 to 0.4 gallons per square yard.
2. Fill with Coarse Aggregate No. 57 in the base of the leave out and top with Non-Vegetative Surface, HMA 2 inch thick. Hand tamp the leave out surface.

Obtain RE approval for alternate methods of construction.

Deliver HMA as specified in 401.03.03.D. Construct non-vegetative surfaces 4 inches thick. Place and compact the material to produce a surface free of roller marks and ridges. Spread and grade the HMA as specified in 401.03.03.E. Ensure that the finished surface is smooth, even, and graded to drain away from the guide rail. Compact HMA as specified in 401.03.03.F. Spread, rake, and lute areas not accessible to pavers and rollers with hand tools and compact with dynamic compactors.

608.03.02 Color-Coated Non-Vegetative Surface, HMA

Construct color-coated non-vegetative surfaces as specified in 608.03.01.

Uniformly apply the final color at the rate of 0.3 to 0.5 gallons per square yard by spraying, brushing, or squeegeeing over the HMA surface course. Ensure that the surface is clean and dry at the time of application. Reapply the coating to any missed spots or areas to obtain a uniform coating.

Avoid spilling the color coating on adjacent surfaces. If the color coating spills, immediately clean it with water before the coating dries. If the coating dries, repair as directed by the RE.

The RE will not allow traffic on the color-coated surface until it is dry.

608.03.03 Non-Vegetative Surface, Broken Stone

Ensure that areas to receive non-vegetative surface, Broken Stone, are free from vegetation. Vegetation removal may require manual removal, herbicide treatment as specified in 608.03.06 or both.

Apply a pre-emergent herbicide to the area before placement of broken stone. Spread broken stone, aggregate size No. 3, in a uniform layer, to prescribed thickness.

608.03.04 Non-Vegetative Surface, Porous HMA

Ensure that areas to receive non-vegetative surface, Porous HMA, are free from vegetation. Vegetation removal may require manual removal, herbicide treatment as specified in 608.03.06 or both. Excavate as specified in 202.03.03. Shape and compact the underlying material to produce a firm, even surface. Obtain RE approval before finishing excavation. If the RE determines that the bottom of the excavation is unstable, undercut, backfill, and compact as directed by the RE.

Construct the non-vegetative surface, porous HMA before installing guide rail. Obtain RE approval for alternate methods of construction.

Construct porous HMA surface course to prescribed thickness according to the requirements of Section 303 except for the application of prime coat. Repair non-vegetative surface damaged by guide rail installation with porous HMA. Use hand tampers around posts and other obstacles where mechanical compactors are not accessible.

608.03.05 Non-Vegetative Surface, Polyester Matting

Install polyester matting according to the manufacturer's requirements by manufacturer certified workers.

Ten days before installation, submit to the RE a list of manufacturer certified workers and one copy of the "engineering package" including demonstration compact discs and samples of product components; such as foot prints, finished seams, etc. The manufacturer may elect to train the workers and Department inspectors on a test section on the worksite.

Ensure that the surface areas to receive the matting are smooth, firm, stable and free of rocks, clods, foliage, roots or other material which might prevent the matting from lying in direct contact with the ground surface, free of wrinkles or bulges. Existing non-vegetative surface or HMA that is in the same location as proposed polyester matting may be left in place as long as its surface area is properly prepared as previously stated. Mow grass as low as possible prior to installation of matting. Install the matting immediately following installation of guide rail posts and prior to installation of the guide rail hardware by lifting the matting above the posts and allowing it to drop to the ground with the posts passing through prefabricated openings.

Stake the matting along its edges in accordance with the manufacturer's recommendations.

Seal matting openings with a separate prefabricated piece of matting that will provide a snug fit around the post and completely cover the opening. Ensure that seams are sealed.

Ensure that the matting surface is vegetation-free from installation until final acceptance. Vegetation removal may require herbicide treatment, mechanical removal, or both, as specified in 608.03.06.

608.03.06 Post-Emergent Weed Control of Non-Vegetative Surfaces

Manually remove or spray vegetation growing on the non-vegetative surface with a post-emergent non-selective herbicide treatment for total control of vegetation on the non-vegetative surface area, as directed by the RE. Select post-emergent herbicides for control of targeted vegetation based on the manufacturer's recommendations and product label. Begin the work associated with vegetation removal as early as the conditions permit. Herbicides must be applied by, or under the direct supervision of, a Certified Commercial Pesticide Applicator, according to the manufacturer's recommendations. Restore areas where herbicide has been applied and not intended to its prior existing condition at no cost to the State. Do not apply herbicide in the rain or when wet weather is expected within 24 hours. Do not apply herbicide after rain until approved by the RE.

The RE will notify the ME after Acceptance for inclusion of the non-vegetative surface in its herbicide spraying program including the date that the herbicide was last applied on the project section.

608.04 MEASUREMENT AND PAYMENT

The Department will measure and make payment for Items as follows:

Item	*Pay Unit*
NON-VEGETATIVE SURFACE, HOT MIX ASPHALT	SQUARE YARD
COLOR-COATED NON-VEGETATIVE SURFACE, HOT MIX ASPHALT	SQUARE YARD
NON-VEGETATIVE SURFACE, BROKEN STONE,___THICK	SQUARE YARD
NON-VEGETATIVE SURFACE, POROUS HOT MIX ASPHALT,___THICK	SQUARE YARD
NON-VEGETATIVE SURFACE, POLYESTER MATTING	SQUARE YARD

When the RE directs undercutting of unstable material in the excavation area, the Department will make payment, as specified in 104.03.03, for the additional excavation. The Department will also make payment, as specified in 104.03.03, for the additional bedding if there is not an excess of excavated material available for use as bedding.

SECTION 609 – BEAM GUIDE RAIL

609.01 DESCRIPTION

THE FOLLOWING IS ADDED:

Attention is called to a requirement to modify the slotted holes on the Thrie Beam Rail Splice as detailed on CD-609-18. See plan notes for modification requirements.

609.02 MATERIALS

THE FOLLOWING IS ADDED:

Coarse Aggregate (No. 57) 901.03
Hot Mix Asphalt (9.5M64) 902.02

609.03.01 Beam Guide Rail
THE FIFTH PARAGRAPH IS DELETED.

THE FIRST SENTENCE OF THE SIXTH PARAGRAPH IS CHANGED TO:

Attach the beam guide rail element to the blockout at every post.

THE SEVENTH PARAGRAPH IS CHANGED TO:

Install flexible delineators with white retroreflective sheeting on the right side of the direction of traffic. Install flexible delineators with yellow retroreflective sheeting on the left side of the direction of traffic. Mount flexible delineators on

the blockout of beam guide rail using either a “U” channel base on the I-beam blockout or a flat base attached to a wood timber or synthetic routed blockout. Attach the base to the I-beam, wood timber blockout or synthetic routed blockout using an adhesive recommended by the manufacturer of the base and panel. In addition to adhesive, mount flat base to a wood timber or synthetic routed blockout with two #10 x 3/4" long sheet metal screws.

609.03.03 Terminals and Anchorages
THE FOLLOWING IS ADDED:

Excavate cut slope as specified in 202.03.03 within the limits of the buried guide rail terminal. Drive beam guide rail posts for buried guide rail terminal to the required position. Ensure that posts are driven plumb, properly spaced, and to the line and grade shown. Attach the beam guide rail element to the spacer at every post. Attach the beam guide rail element and plate to the terminal posts. Align the top edge of the beam guide rail element in a straight line. Where a vertical transition is required, ensure that the top edge of the beam guide rail element forms the chords of a smooth vertical curve. Backfill with excavated material as specified in 203.03.02C.
THE FOLLOWING NEW SUBPARTS ARE ADDED:

609.03.07 Beam Guide Rail Post, ___' Long

Install beam guide rail posts of various lengths in excess of 6 feet long as specified in 609.03.01.

609.03.08 Beam Guide Rail on Bridge

A. Beam Guide Rail and Thrie Beam Guide Rail Attachment to Sidewalk. Install beam guide rail consisting of steel double rail elements, steel blockouts and steel posts welded to a base plate and mounted on bridge structure sidewalk, safety walk or roadway sidewalk utilizing epoxy-grouted anchors approved by the Department. Install the required attachments as shown on the plans.

Core drill the holes in the bridge structure sidewalk for anchor bolts with a core drill bit. Ensure core drill bit sizes for anchor bolt holes conform to manufacture’s recommendations. Space holes and locate to clear existing deck reinforcement, deck joints, conduits, and junction boxes. Fasten anchor bolts to the concrete according to the manufacturer’s recommendations.

Ensure concrete and existing utility conduits are not damaged during the drilling for anchor bolts. Repair damage to the existing concrete caused by construction operations at no additional compensation.

Furnish Certification as specified in 106.07 that the 7/8-inch diameter anchor bolt has a minimum pullout strength of 24 kips.

B. Beam Guide Rail Attachment to Existing Balustrade. Install beam guide rail consisting of double rail elements and steel blockouts tack welded to mounting plates and attached to balustrade using mounting plates and steel bolts, nuts and washers. Install the required attachments as shown on the plans.

609.03.09 Approach Guide Rail Transitions

Install the required approach guide rail transition as shown on the plans.

609.04 MEASUREMENT AND PAYMENT
THE FOLLOWING ITEMS ARE ADDED

Item	*Pay Unit*
BURIED GUIDE RAIL TERMINAL	UNIT
APPROACH GUIDE RAIL TRANSITION TL-2	UNIT
APPROACH GUIDE RAIL TRANSITION TL-3	UNIT

THE FOLLOWING ARE ADDED AT THE END OF THE SUBSECTION:

The Department will make payment for BEAM GUIDE RAIL POST, ___' LONG by the unit. A unit consists of the length of post beyond 6 feet in length and blockout.

The Department will make payment for BEAM GUIDE RAIL POST by the unit including the blockout.

The Department will not measure leave-outs and fill materials for separate payment. Include payment leave-out requirements in unit bid prices for other related beam guide rail items.

SECTION 610 – TRAFFIC STRIPES, TRAFFIC MARKINGS, AND RUMBLE STRIPS

610.01 DESCRIPTION

THE FOLLOWING IS ADDED:

This section also describes the construction of bollards used to protect entities from incidental vehicular contact in commercial parking areas.

610.02 MATERIALS

THE FOLLOWING IS ADDED:

Furnish all materials required to construct the guard bollards as shown on the plans. Bollards are to be A36 steel and filled and founded within with NJDOT Class B concrete. Reference concrete for fence post footings as specified in 903.03. Prime and Paint with an exterior, commercial grade compatible paint and primer system, topcoat *Safety Yellow*.

610.02.01 Materials

Concrete 903
Structural Steel 906
Paint and Primer 912

610.02.01 Materials

THE FOLLOWING MATERIALS ARE RENAMED TO:

Traffic Stripes.....912.03.01
Traffic Markings.....912.03.02

610.02.02 EQUIPMENT

Vibrator 1005.04
Concrete Batching Plans.....1010.01
Concrete Trucks 1010.02

610.03 CONSTRUCTION

610.03.01 Long-Life Traffic Stripes

THE SUBPART HEADING AND THE ENTIRE TEXT IS CHANGED TO:

610.03.01 Traffic Stripes

A. Striping Plan. At least 20 days before beginning the work, submit to the RE for approval a striping plan that includes:

1. Schedule of operations for applying traffic stripes.
2. Number and type of equipment.
3. Manufacturer's recommendations for use of the materials, including, but not limited to, mixing ratios and application temperatures.
4. Details on the means and methods for surface preparation
5. Details on the means and methods for premarking
6. Details on the proposed test strip such as location, length etc.

B. Surface Preparation. Immediately before striping the pavement surface, clean the surface of dirt, oil, grease, and foreign material, including curing compound on new concrete. Clean the surface 2 inches beyond the perimeter of the stripes to be placed.

C. Striping Test Strip. Before beginning striping operations, construct 1 or more striping test strips to demonstrate the Contractor's ability to meet the requirements specified in 610.03.01.D. For each striping test strip, apply striping to approximately 500 linear feet of pavement with the same striping procedure that will be used for the Project. Construct a test strip for each applicator unit and epoxy resin material used. Provide the RE with 50 test cards made of heavy stock paper measuring 8 inches by 2 inches, and two wet film thickness gauges. Construct additional test strips when major equipment repairs or adjustments are made or when the traffic stripes are determined to be defective. Construct additional test strips when traffic striping operations are performed on multiple, non-continuous occasions. Perform additional test strips as requested by the RE. When the test strip is in compliance, as determined by the RE, proceed with striping operations. Each test strip may remain in place and become part of the finished stripes subject to the requirements of 610.03.01.E.

D. Applying Striping. Mix epoxy resin with an automatic proportioning and mixing machine, and hot-spray the compound at a temperature of between 100 and 130 °F onto dry surfaces. Apply the compound with a wet film thickness of 20 ± 1 mil. Apply the material during dry weather conditions when the ambient temperature is a minimum of 45 °F and the surface temperature is a minimum of 50 °F. Adjust operations as required for the prevailing ambient and surface conditions to achieve a no-track drying time of 30 minutes or less**.**

Immediately after, or in conjunction with, the compound application, uniformly apply 12 pounds of large glass beads per gallon of epoxy resin to the compound. After applying the large glass beads, uniformly apply 12 pounds of small glass beads per gallon of epoxy resin to the compound.

Remove all compound that has been tracked or spilled outside of the intended placement areas.

E. Performance. Ensure that the traffic Stripes, show no fading, lifting, cracking, chipping for any reason including but not limited to traffic wear, maintenance activities including snow plowing, until Acceptance. Ensure that 60 days after application, traffic stripes have a minimum retroreflectance value of:

375 millicandelas per square meter per lux for white traffic stripe

250 millicandelas per square meter per lux for yellow traffic stripe

F. Defective work.
THE FIRST SENTENCE IN THE FOURTH PARAGRAPH IS CHANGED TO:

Replace traffic stripes that are determined by the RE before Acceptance to be defective or that are damaged during construction. Remove defective stripes as specified in 610.03.08.

Replace an entire 10-foot skip line if the RE determines the stripe to have a deficiency.

If the RE determines, based upon calculated and measured yields, that the striping has a wet film thickness of less than 19 mils, restripe the entire length with 20 mils of new compound.

Provide the RE with a Reflectometer that meets a 30-meter geometry as specified in ASTM E 1710, capable of measuring wet and dry conditions as specified in ASTM E 2176 and ASTM E 2177, and that has been certified by the manufacturer as being calibrated within the last two years. The RE will test the retroreflectance of traffic stripes. Replace traffic stripes that do not meet the retroreflectance values indicated in 610.03.01.E. Replace the entire length of striping where improper curing or discoloration has occurred. Discoloration is localized areas or patches of brown or grayish colored compound. Where improper curing or discoloration occurs intermittently in intervals of 100 feet or less throughout the striping length, replace the entire length of striping from the beginning of the first occurrence until the end of the last occurrence, plus 5 feet on each end.

Replace the entire length of striping that has failed to bond to the pavement, or has chipped or cracked. Where more than 25 spots of chipping, cracking, or poor bonding have occurred within 1000 linear feet of striping, replace the entire 1,000- foot length of striping as indicated in 610.03.01.E.

G. Opening to Traffic. Complete each application of all types of traffic stripes and allow to thoroughly dry before opening to traffic. At a minimum, delineate center lines on undivided roadways and broken lines between lanes before the traveled way is opened. The RE will determine when the traveled way can be opened to traffic.

610.03.02 Thermoplastic Traffic Markings
THE SUBPART HEADING AND THE ENTIRE TEXT IS CHANGED TO:

610.03.02 Traffic Markings Lines, Traffic Markings Symbols and Traffic Markings Route Symbols

A. Marking Plan. At least 20 days before beginning the work, submit to the RE for approval a marking plan that includes:

1. Schedule of operations for applying traffic markings,
2. Number and type of equipment,
3. Manufacturer's recommendations for use of the materials, including mixing ratios and application temperatures.
4. Details on the means and methods for surface preparation
5. Details on the means and methods for premarking

B. Surface Preparation. Immediately before marking the pavement surface, clean the surface of dirt, oil, grease, and foreign material, including curing compound on new concrete. Clean the surface 2 inches beyond the perimeter of the marking to be placed.

C. Applying Traffic Markings. Place preformed thermoplastic or hot extruded thermoplastic traffic markings on thoroughly dry surfaces and during dry weather conditions. Apply using equipment and procedures that produce markings of the specified color, width, and thickness with well-defined edges, uniform retroreflectivity, and proper bonding to the pavement. Apply the thermoplastic material as follows:

1. Preformed Thermoplastic. Melt the preformed thermoplastic tape to bond the traffic markings permanently in position according to the manufacturer's recommendations.

Meet the minimum initial retroreflectance value, as specified in 610.03.01.D for thermoplastic tape, by applying additional glass beads to the hot-wet material in a uniform pattern as necessary.

2. Extruded Thermoplastic. Uniformly heat the thermoplastic material. When the ambient and surface temperatures are at least 50 °F, apply the melted material at a temperature of between 400 and 425 °F. Extrude the thermoplastic traffic markings on the HMA or concrete pavement ensuring a thickness of 90 ± 1 mils.

Immediately after, or in conjunction with the thermoplastic extrusion, uniformly apply glass beads to the wet material at a minimum rate of 10 pounds per 100 square feet of markings. Apply glass beads by mechanical means only.

D. Performance. Ensure that the traffic markings show no fading, lifting, cracking, chipping for any reason including but not limited to traffic wear, maintenance activities including snow plowing, until Acceptance. Ensure that 60 days after application, traffic markings have a minimum retroreflectance value of:

375 millicandelas per square meter per lux for white traffic markings

250 millicandelas per square meter per lux for yellow traffic markings

E. Defective work.

THE FIRST SENTENCE IN THE FOURTH PARAGRAPH IS CHANGED TO:

Replace thermoplastic traffic markings that are determined by the RE before Acceptance to be defective or that are damaged during construction. Remove defective markings as specified in 610.03.08.

Replace the entire area of thermoplastic traffic markings determined to be less than the required thickness, to have incorrect color or width, to have failed to bond to the pavement, or to have chipped or cracked. The minimum replacement area is an individual word or symbol, or for longitudinal lines the entire length from where the deficiency first occurs to where it no longer exists.

The RE will determine initial retroreflectance as follows:

Provide the RE with a Reflectometer that meets a 30-meter geometry as specified in ASTM E 1710, capable of measuring wet and dry conditions as specified in ASTM E 2176 and ASTM E 2177, and that has been certified by the manufacturer as being calibrated within the last two years. The RE will test the retroreflectance of traffic markings. Replace traffic markings that do not meet the retroreflectance values indicated in 610.03.02.D.

F. Opening to Traffic. Complete each application of thermoplastic traffic markings and allow to thoroughly dry before opening to traffic. The RE will determine when the traveled way can be opened to traffic.

610.03.04 Removal of RPMs
THE ENTIRE TEXT IS CHANGED TO:

Remove RPMs as directed by the RE. Dispose of RPMs as specified in 201.03.09. If directed by the RE, fill the hole with HMA patch as specified in 159.03.07 except sawcutting is not required.

610.03.06 Ground Mounted Flexible Delineators
THE FIRST PARAGRAPH IS CHANGED TO:

Use white retroreflective sheeting for delineators located on the right side when facing in the direction of traffic. Use yellow retroreflective sheeting for delineators located on the left side when facing in the direction of traffic.

610.03.07 Rumble Strip
THE ENTIRE SUBPART IS CHANGED TO:

At least 20 days before constructing rumble strips, submit a plan for cutting rumble strips and debris collection/removal to the RE for approval.

Construct rumble strips on newly constructed pavement after it has cooled sufficiently to allow the cutting to be done cleanly without causing damage to the adjacent pavement.

Clean the area where rumble strips are to be constructed. Construct rumble strips by cutting indentations into the pavement perpendicular to the traveled way without disturbing the surrounding pavement. Collect cuttings and reuse or dispose of as specified in 202.03.07.

Ensure that the centerline rumble strips are constructed before placing TRAFFIC STRIPES. After cutting centerline rumble strips and collecting the debris, apply Fog Seal over the centerline rumble strip as specified in 422.03.02.

Do not construct rumble strips 200 feet linear feet before and after the approximate midpoint of Weigh-in-Motion (WIM) systems in the roadway as listed in the Special Provisions.

Route	**Weigh-in-Motion (WIM) Systems Midpoint Station**

THE FOLLOWING IS ADDED:

610.03.09 Bollard

Consult with the RE and property owner for location of bollards.

At least 45 days prior to beginning work, submit working drawings for approval. Include the following:

1. Size and shape of footing.
2. Size, location, and spacing of any reinforcement. Ensure the reinforcement is corrosion protected.
3. Size, thickness, and material of the bollard.
4. Size, thickness and material of any plates.
5. Size and material of hardware. Ensure the hardware is stainless steel.

Excavate as specified in Section 202. Install bollards and footings as recommended by the manufacturer.

610.04 MEASUREMENT AND PAYMENT
THE FOLLOWING ITEMS ARE DELETED:

Item	*Pay Unit*
RPM, BI-DIRECTIONAL, WHITE LENS	UNIT

THE FOLLOWING ITEMS ARE DELETED:

TRAFFIC STRIPES, LONG-LIFE, EPOXY RESIN ___"	LINEAR FOOT

TRAFFIC MARKINGS, THERMOPLASTIC	SQUARE FOOT

THE FOLLOWING ITEMS ARE ADDED:

Item	*Pay Unit*
TRAFFIC STRIPES, ___"	LINEAR FOOT
TRAFFIC MARKINGS LINES, ___"	LINEAR FOOT
TRAFFIC MARKINGS SYMBOLS	SQUARE FOOT
TRAFFIC MARKINGS ROUTE SYMBOLS	SQUARE FOOT
BOLLARD	UNIT

THE SECOND PARAGRAPH IS CHANGED TO:

The Department will measure TRAFFIC STRIPES and TRAFFIC MARKINGS LINES by the linear foot for each specified width of stripe. The Department will not measure gaps in striping.

THE FOLLOWING IS ADDED AT THE END OF THE SUBSECTION:

The Department will measure rumble strip by the linear foot measured in the longitudinal direction of the rumble strip without deducting the interval spacing between rumble strips and the gaps for RPM placement and make payment under the Item RUMBLE STRIP.

The Department will not include payment for traffic stripes in RUMBLE STRIP. The Department will make payment for traffic stripes placed in conjunction with constructing a centerline rumble strip under TRAFFIC STRIPES as specified in 610.04.

The Department will not include payment for fog seal in RUMBLE STRIP. The Department will measure and make payment for FOG SEAL STRIP as specified in 422.04.

The Department will not measure the gaps such as WIM locations in the Rumble Strip.

SECTION 611 – CRASH CUSHIONS

611.01 DESCRIPTION

THE FIRST SENTENCE IS CHANGE TO:

This section describes the requirements for providing and constructing inertial barrier systems and compressive crash cushions.

611.02 MATERIALS

THE SECOND PARAGRAPH IS CHANGED TO:

Ensure that the sand has a dry density of 90 to 100 pounds per cubic foot and a 3 percent maximum allowable moisture content. The RE may require the Contractor to test the moisture content of the sand according to AASHTO T 255 and to submit certified test results.

THE THIRD PARAGRAPH IS CHANGED TO:

Provide an inertial barrier system listed on the QPL. Provide a compressive crash cushion as shown on the Plans.

The list of the manufacturers / suppliers is as follows:

QuadGuard	Energy Absorption Systems, Inc.
QuadGuard Elite	Energy Absorption Systems, Inc.
QuadGuard Cz	Energy Absorption Systems, Inc.
REACT 350	Energy Absorption Systems, Inc.
REACT 350 WZ	Energy Absorption Systems, Inc.
SCI	SCI Products Inc.
TAU II	Barrier Systems Inc.
TRACC	Trinity Highway Products

611.03.02 Crash Cushion
THE TITLE OF THE SUBSECTION IS CHANGED TO:

611.03.02 Compressive Crash Cushion
THE SECOND SENTENCE IS CHANGED TO:

Install compressive crash cushions including foundations, backup supports and transitions according to the manufacturer's recommendations and as shown on the Plans.

611.04 MEASUREMENT AND PAYMENT
THE FOLLOWING ITEM IS DELETED:

Item	*Pay Unit*
CRASH CUSHION, ___	UNIT

THE FOLLOWING ITEMS ARE ADDED:

Item	*Pay Unit*
CRASH CUSHION, COMPRESSIVE BARRIER, TYPE___, WIDTH___	UNIT
CRASH CUSHION, LOW MAINTENANCE COMPRESSIVE BARRIER, TYPE___, WIDTH___	UNIT

SECTION 612 – SIGNS

612.04 DESCRIPTION

THE FOLLOWING IS ADDED:

This Section also describes the requirements for constructing and erecting special signs, including signs required for Historic Preservation requirements, as detailed on the plans.

612.02 MATERIALS
THE FOLLOWING IS DELETED FROM THE MATERIALS LIST.

Non-Breakaway Sign Supports 911.02.03

THE SECOND PARAGRAPH IS DELETED.

612.03.02 Type GA Breakaway and Non-Breakaway Support Guide Signs
THE SUBPART HEADING IS CHANGED TO:

612.03.02 Type GA Breakaway Support Guide Signs

C. Constructing Pedestals
THE SUBPART IS CHANGED TO:

Place reinforcement steel as specified in 504.03.01 before placing the concrete. Ensure that concrete placement complies with the limitations as specified in 504.03.02.C. Place concrete as specified in 504.03.02.D. Cure concrete as specified in 504.03.02.F.

D. Erecting Posts
THE SUBPART IS CHANGED TO:

Erect posts as specified in 512.03.01.G.

THE FOLLOWING IS ADDED:

F. Constructing Anchor, Hinge, Bracket and Coupling Assemblies. At least 10 days before beginning the work, submit the manufacturer's installation guide and installer's certification to the RE.

Ensure that the installer is certified by the manufacturer.

Ensure that the manufacturer's representative is present during the foundation pour and the installation of the first sign. Install anchor, hinge, bracket and coupling assemblies according to the manufacturer's recommendations. The RE may require the system manufacturer's representative to be present at all times during the installation to provide on-site technical support.

THE FOLLOWING IS ADDED:

612.03.04 Specialized Signs

A. Working Drawings. Coordinate with the RE to obtain final specialized sign text prior to working drawing submittal. Submit a sample of the sign panel showing the coloring and surface finish to the RE for approval. Ensure that the sign is cast true and straight in a single unit that includes anchors. Ensure that the arrises are clean and accurate. Install the date panel into the concrete pedestal using epoxy grout.

612.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEM IS DELETED:

Item	*Pay Unit*
GUIDE SIGN, TYPE GA, NON-BREAKAWAY SUPPORTS	SQUARE FOOT

THE FOLLOWING ITEMS ARE ADDED:

Item	*Pay Unit*
SPECIALIZED SIGN	UNIT

The Department will make payment for SPECIALIZED SIGN by the unit, inclusive of foundation, pedestal, and plaque as detailed in the plans.

DIVISION 650 – UTILITIES

SECTION 651 – WATER

651.02 MATERIALS

651.03.02 Water Pipe, Bridge

651.04 MEASUREMENT AND PAYMENT
THE LAST PARAGRAPH IS DELETED.

SECTION 652 – SANITARY SEWERS

652.01 DESCRIPTION

This Section describes the requirements for installing sanitary sewer gravity and force mains, sewer lining, sanitary sewer manholes, sanitary sewer connections, miscellaneous fittings, and testing.

THE FOLLOWING IS ADDED:

This Section also describes the requirements for resetting the Bell Telephone electrical manhole casting that is within the project limits.

652.02 MATERIALS

652.03.01 Sewer Pipe

F. Thrust Blocks.

THE THIRD SENTENCE IS CHANGED TO:

Ensure that thrust blocks do not come in contact with other utilities or structures without the approval of the RE.

G. Sewer Pipe Testing.

1. Gravity Main Sewer Testing.

652.03.02 Sanitary Sewer Pipe, Bridge

652.04 MEASUREMENT AND PAYMENT

The Department will measure resetting the Bell Telephone electrical manhole utilizing the pay item entitled: RESET MANHOLE, SANITARY SEWER, USING EXISTING CASTING.

THE LAST PARAGRAPH IS DELETED.

SECTION 653 – GAS

653.03.01 Gas Main

A. Prequalification.

List of pre-qualified subcontractors is as follows:

C. Handling and Storing.

J. Air-Pressure Test.

653.04 MEASUREMENT AND PAYMENT
THE LAST PARAGRAPH IS DELETED.

THE FOLLOWING SECTION IS ADDED:

SECTION 654 – UTILITY

654.01 DESCRIPTION

This section describes the requirements for providing electrical service to adjacent properties that are disrupted by the Work. This section also describes the requirements for coordinating and reimbursing PSE&G for utility relocation work required to accommodate the work.

654.02 MATERIALS
Furnish all materials required to re-establish electrical service from the utility pole drop provided by the utility company to the electrical transformers at the properties as shown on the plans. Ensure materials and method of construction are acceptable to the electrical service company and the municipal building code official.

654.02.01 Materials

Miscellaneous Hardware 908
Pipe Bending 909.01
Coal Tar Epoxy Paint 912.01.03
Conduit and Fittings 918.01
Multiple Lighting Wire and Service Wire 918.02.03
Bonding and Grounding Materials 918.03
Electrical Tape.....918.06

Follow the accepted standards of ANSI, NEMA, UL, NEC, ITE, and ASTM for materials not specified in the contract. Provide nylon cable ties with a tensile strength of 120 pounds. Provide true tape with a tensile strength of 130 pounds.

654.03 CONSTRUCTION
Construct electrical conduit in accordance with the provisions specified in 701.03.02, 701.03.02, and 701.03.04 and in accordance with the local municipal building codes.

654.04 MEASUREMENT AND PAYMENT

The Department will measure and make payment for items as follows:

Item	*Pay Unit*
ELECTRICAL CONDUIT	LINEAR FOOT
ELECTRICAL SERVICE	LUMP SUM
ELECTRICAL UTILITY RELOCATION, PSE&G	LUMP SUM

The Department will measure ELECTRICAL CONDUIT by the linear foot. The Department will not measure ELECTRICAL SERVICE for partial payment and will make payment on a LUMP SUM basis. Ensure the LUMP SUM bid item includes all material, labor, and incidental costs for providing electrical service, securing municipal building permits, inspections and approvals, and coordination with affected electrical utility service provider, property owner, and municipal officials. The Department will not measure ELECTRICAL UTILITY RELOCATION, PSE&G for partial payment and will make payment on a LUMP SUM based on the actual audited cost of the relocation work as detailed in the utility agreement.

DIVISION 700 – ELECTRICAL

SECTION 701 – GENERAL ITEMS

701.01 DESCRIPTION
THE FOLLOWING IS ADDED:

This Section also describes the requirements for removal of existing transformers containing hazardous materials.

701.03.01 Existing Systems
THE FOLLOWING IS ADDED:

Install and energize operational image detectors at the signalized intersections before any roadway work commences unless otherwise directed by the engineer. Coordinate installation and connections to the controller cabinet as directed by NJDOT Regional Electrical Maintenance supervisors. Maintain the signalization as per the direction of the Regional Electrical Maintenance supervisor.

THE FOLLOWING ALSO IS ADDED:
Decommission, remove and dispose of the existing pad mounted transformers. It is known that the transformers contain polychlorinated biphenyl (PCB). The transformer oil was tested and reported to contain oil with more than 500 ppm of PCBs, are subject to Federal regulations and considered PCB-Contaminated Electrical Equipment.

The Contractor shall verify that the electrical equipment is de-energized prior to proceeding with any work.

The contractor shall furnish all labor, supervision, materials, equipment, and transportation necessary for the proper removal and disposal of PCB contaminated fluid and transformers. Ensure the personnel performing the work have expertise in removing and disposing of mineral oils and electrical equipment in accordance with 40 CFR 761. Submit the qualifications of the personnel performing the work to the RE. The RE will be the sole judge of the qualifications.

Submit a Spill Control Plan and a Spill Prevention Plan and a copy of all plans required by the EPA to the RE 30 days before beginning the work. Include a list of emergency contact telephone numbers in the plans. The plans shall include details concerning sequencing, oil draining and flushing procedures, methods for removing the transformers from the mounting structure, transportation to disposal, final disposal and procedures for chain of custody confirmation. The RE shall meet with the contractor prior to beginning the work to discuss and obtain acceptance of the plans.

Conduct an evaluation of the concrete and soil below the transformers to determine whether a discharge occurred from their historic use. The results of the investigation will be used to ensure that proper health and safety procedures are implemented during the Project. Samples should be collected around the concrete pad, of the concrete if present, or immediately adjacent to the transformers if no pad is identified.

When performing activities related to the existing transformer to be removed, comply with 40 CFR Part 761 Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions. Comply with Federal, State and local laws, rules and regulations; and as specified herein.

While performing the work, limit personnel from the immediate area to those directly involved in the work. The area should be barricaded to keep out unauthorized personnel. Construct a temporary holding area for drums and empty equipment. The holding area should be leak proof and consist of a 6 mil polyethylene.

Transformers drained on-site shall be flushed with a non-PCB contaminated solvent and rinsed in accordance with 40 CFR 761.60 (b)(1)(i)(B). During connecting and disconnection of hoses, spill collection pans shall be positioned to capture any liquid drips.

Empty the transformer of all free flowing oil for immediate removal and disposal. The drained and rinsed equipment shall be placed in a leak tight package, consisting of PCB impermeable plastic and wooden crating. The crated equipment shall be properly labeled and sent for disposal at an EPA-approved PCB disposal facility. Do not send the carcass or drained oil

to a landfill, the PCB transformers will need to be disposed at an approved Toxic Substance Control Act (TSCA) chemical waste landfill after removing all free-flowing liquid and flushing with a solvent per §761.60(b)(1).

Dispose of the drained oil and rinse solution according to EPA regulations. The drained oil and rinse solution shall be properly labeled and sent for disposal at an EPA-approved PCB incineration facility.

Provide the appropriate protective clothing to the RE, including but not limited to overalls, goggles and gloves for the duration of the work.

Provide proof of all requisite licenses, permits, training and insurance for the waste transporters to transport material wastes. The Contractor shall establish and maintain a waste tracking system which will contain the following information: equipment identification, volume of oil, PCB contamination level, drum number (if applicable), date filled, date transported, manifest number(s), transporter, vehicle designation, destination and date arrived at destination for disposal, and a letter of destruction. The Contractor shall furnish all the above to the RE within 48-hours of receipt.

Pay fees associated with removal and disposal. Submit a Certificate of Disposal to the RE. Submit to the RE all documentation required according to EPA rules and state and local laws.

THE FIFTH PARAGRAPH IS CHANGED TO:

If removal of existing above ground electrical material is required, deliver salvaged materials to the nearest Department electrical maintenance yard and unload the salvaged materials as directed. Dispose of salvaged materials rejected by the Department from the Project Limits as specified in 201.03.09.

Deliver and unload salvaged ITS materials to:

Mobility Management North (MMN)- ITS Maintenance
670 River Drive
Elmwood Park, NJ 07407-1347
Telephone: 732-697-7360

Mobility Management South (MMS) – ITS Maintenance
One Executive Suite Route 70 West
Cherry Hill, NJ 08002-4106
Telephone: 856-486-6615

THE FOLLOWING IS ADDED:

If new cable or wire is designated to be installed into existing conduit systems, clean and swab the conduit system prior to installing the cable or wire. After cleaning, test each conduit by pulling through a metal ball with a diameter at least 85 percent of the nominal inside diameter of the conduit to ensure the conduit is free of any obstruction or foreign material. If the ball fails to pass through the conduit, repair or replace the defective conduit as directed by the RE. Restore disturbed areas to original condition.

701.03.02 Rigid Metallic Conduit (Earth)

B. Installation.

THE FOLLOWING IS ADDED:

In rigid metallic conduit used exclusively for fiber optic cable, install a tracer wire continuously for the entire run of conduit, including through the junction boxes, mounting it on the wall. Splice the tracer wire only in the junction box. Seal the ends of rigid metallic conduit carrying the tracer wire. If wire or cable is not scheduled to be installed within 6 months of conduit installation, cap and seal the other conduits leaving the true tape inside. Install warning tape in the trench above the conduit.

701.03.03 Rigid Metallic Conduit (Roadway)

THE FOLLOWING IS ADDED:

Ensure that jacking or drilling and receiving pits are not within 2 feet from the edge of the pavement.

In rigid metallic conduit used exclusively for fiber optic cable, install a tracer wire continuously for the entire run of conduit, including through the junction boxes, mounting it on the wall. Splice the tracer wire only in the junction box.

Seal the ends of rigid metallic conduit carrying the tracer wire. If wire or cable is not scheduled to be installed within 6 months of conduit installation, cap and seal the other conduits leaving the true tape inside. Install warning tape in the trench above the conduit.

701.03.05 Rigid Nonmetallic Conduit

B. Installation.
THE LAST PARAGRAPH IS CHANGED TO:

Install true tape marked in 1-foot increments for the length of the rigid non-metallic conduit. Install a tracer wire continuously for the entire run of conduit, including through the junction boxes, mounting it on the wall. Splice the tracer wire only in the junction box. Seal the ends of rigid nonmetallic conduit carrying the tracer wire. If wire or cable is not scheduled to be installed within 6 months of conduit installation, cap and seal the other conduits leaving the true tape inside. Install warning tape in the trench above the conduit.

701.03.06 Flexible Metallic Conduit
THE ENTIRE SUBSECTION TEXT IS CHANGED TO:

Install liquid tight flexible metallic conduit according to NEC requirements. Cut liquid tight flexible metallic conduit according to manufacturer's recommendations. Ensure that conduit used for fiber optic cables meets the minimum bend and radius requirements as specified in the Contract and according to the fiber optic cable manufacturer. Utilize NEMA-4X weather-tight hubs for conduit connections to ITS and electrical enclosures.

701.03.07 Flexible Nonmetallic Conduit

B. Installation.
THE SECOND PARAGRAPH IS DELETED.

THE THIRD PARAGRAPH IS CHANGED TO:

Construct flexible nonmetallic conduit runs so that there are no joints or splices in the conduit between adjacent junction boxes. Ensure flexible nonmetallic conduit runs are terminated in the junction boxes according to manufacturer's recommendations.

THE LAST PARAGRAPH IS CHANGED TO:

Install true tape marked in 1-foot increments for the length of the flexible non-metallic conduit. Install a tracer wire continuously for the entire run of conduit, including through the junction boxes, mounting it on the wall. Splice the tracer wire only in the junction box. Seal the ends of flexible nonmetallic conduit carrying the tracer wire. If wire or cable is not scheduled to be installed within 6 months of conduit installation, cap and seal the other conduits leaving the true tape inside. Install warning tape in the trench above the conduit.

701.03.15 Cable and Wire

A. Installing.
THE FOLLOWING IS ADDED

Test the existing tracer wire in the conduit for continuity. If there is no existing tracer wire in any of the conduits in the same trench, then install a continuous tracer wire between the adjacent junction boxes without any splice when installing the cable and wire as directed by the RE.

C. Connection and Coordination with Utility Services.
THE FOLLOWING IS ADDED:

Obtain and provide for utility services required for testing and operation of ITS systems until interim acceptance of each system or device. Utility Services may be governed by differing Authorities Having Jurisdiction (AHJ). Along with Utility Requirements, comply with all AHJ requirements. Upon successful completion of level C testing and acceptance of any device, provide the RE with a letter requesting transfer of utility services providing the latest copy of the utility bill from each utility company. Such transfers are to be effective beginning the next monthly billing cycle after completion of successful ITS system testing as specified in Section 704 and interim acceptance of the device or as directed by the RE.

Once new utility services have been energized or activated and the utility company has de-energized and unhooked the old service connection; remove existing pole risers and service heads, cut back one foot below grade, and plug the conduits.

Service Requests

Device Site No.	Primary Route	Final MP	Direction	Location	Township	County	Utility Territory	Job No.	Utility Contact Person	Utility Pole No.

701.04 MEASUREMENT AND PAYMENT
THE FOLLOWING ITEMS ARE ADDED:

Item	*Pay Unit*
TRANSFORMER REMOVAL	LUMP SUM

The Department will make payment for removal and disposal of the transformer from the load center under TRANSFORMER REMOVAL. The Department will include payment for removal, abandonment, and decommissioning of electrical equipment and foundations other than the transformers under the Item CLEARING SITE as specified in 201.04.

THE FOLLOWING IS ADDED:

The Department will not include payment for restoring disturbed areas in the various Items of this Section. The Department will pay for restoring disturbed areas (pavement, curb, sidewalk, driveway or island) as specified in 104.03.03.

The Department will not include payment when the RE directs the installation of a new conduit or a repair to the defective conduit in the various Items of this Section. The Department will pay for the installation, when directed by the RE, of a new conduit or a repair to the defective conduit as specified in 104.03.03

The Department will not include payment when the RE directs the installation of a tracer wire in existing conduit in the various Items of this Section. The Department will pay for the installation, when directed by the RE, of a tracer wire in existing conduit as specified in 104.03.03.

SECTION 702 – TRAFFIC SIGNALS

702.02.01 MATERIALS
THE FOLLOWING IS ADDED:

Provide radar detectors that meet or exceed the Wavetronix Smartsensor Matrix Radar unit with Smartsensor 6 conductor cable or approved equal.

702.03 CONSTRUCTION
THE FOLLOWING IS ADDED:

After placing a new, temporary or interim traffic signal system into operation, inspect the traffic signal system every 2 months. Fill out a Contractor Maintenance Traffic Signal Inspection Report (Form EL-16C) when the traffic signal system becomes operational, when the traffic signal system is modified, and at every 2-month inspection.

Maintain as-built drawings of each signal modification. Place copies of the as-built drawings for each traffic signal system modification, Forms EL-16C, and Forms EL-11C in a plastic pocket mounted inside the cabinet door of each controller cabinet. Also provide a copy of all forms and as-built drawings to the RE.

If a new, temporary or interim traffic signal system fails or becomes damaged, repair and restore the traffic signal system to normal operation. Begin repair of the traffic signal system within 2 hours of receiving notice of damage or malfunction from the Department, State police, or local authorities. Ensure that workers assigned to such repair work continuously until the traffic signal resumes normal signal operation.

For each response to a system failure or damage, fill out a Contractor Maintenance Emergency Call Record (Form EL-11C) and place it in a plastic pocket mounted inside the cabinet door of each controller cabinet.

If the Contractor fails to respond to a failure or damage notification and begin work within 2 hours of notification, or does not continue to work until the traffic signal system resumes normal operation, the Department, in the interest of safety, will respond with its own forces to restore normal operation. If the Department mobilizes its forces to effect repairs, the Contractor agrees to pay the Department a sum of $3000 for costs of mobilizing its forces and equipment. In addition, the Contractor must pay the Department the actual cost of material used for the repair and pay the actual costs of police traffic protection.

702.03.01 Controller
THE FOLLOWING IS ADDED:

Install the controller on an 18" aluminum skirt with adjustable shelves. Ensure that the 18" aluminum skirt is of the same manufacturer as the controller cabinet.

Include an uninterruptible power source (UPS) unit in each controller cabinet installed. Ensure that the UPS unit conforms to the following criteria:

1. Ensure that all interconnecting harnesses are heavy duty with military type connectors.
2. Ensure that the UPS units are programmed to maintain FULL normal signal operation for 50% of the total calculated run time of the unit under full load, and revert to emergency flash operation for the duration of the battery reserve or until utility power is restored.
3. Ensure that the each UPS unit is warranted for a minimum of 2 years.
4. Ensure that the UPS unit provides full power conditioning, filtering and surge protection.

Shelf mount the UPS unit in the controller cabinet and shelf mount the battery packs on the side wall of the controller cabinet skirt.

Provide an external 30 amp twist-lock generator male input plug in a lockable door, similar to the police panel door, mounted on the power panel side of the controller cabinet constructed with the same material as the cabinet.

Provide full generator bypass components with an internal means of disconnect for the generator plug cord from the input plug.

Weld a heavy duty handle/fastener on the lower side of controller cabinet to secure a chain to deter theft of a generator when in use.

In the field, install a "battery backup power-on" LED indicator light on the controller cabinet as directed.

Submit catalog cuts and provide a fully wired and equipped controller cabinet with UPS equipment, battery packs, generator panel, and generator bypass components for final approval prior to installation.

Provide the following:

1. 18" skirt for controller cabinets.
2. Full battery backup system.
3. Full generator auto-bypass system.
4. Heavy Duty handle/fastener welded on lower side of controller cabinet (meter service cabinet side) in order to secure a generator with a chain.
5. External 30 amp twist-lock generator male input plug (in a lockable door similar to police panel door) mounted on power panel side of controller cabinet.
6. Internal means of disconnect for the generator plug cord from the input plug.
7. Battery backup power-on indicator light located on controller cabinet at a place determined in the field, color of the indicator to be determined.

702.03.11 Temporary and Interim Traffic Signal Systems
THE FIRST THROUGH FIFTH PARAGRAPHS ARE DELETED:

THE FIRST PARAGRAPH IS CHANGED TO:

1. A temporary traffic signal system includes, but is not limited to, temporary wiring, span and tether wire, signal heads, relamping, mast arms, re-aiming and/or rotating signal faces, poles, traffic signal cables, junction boxes, foundations, conduit, detectors, controllers and timing sequences, disconnecting and re-aiming video detection, cabinets, associated lighting units, providing and maintaining electric services, and necessary hardware.

702.03.13 Push Button Installation
THE FOLLOWING SUBSECTION IS ADDED:

Excavate as specified in 202.03.03. Shape and compact the underlying material for the tee drain to produce a firm even surface. Install the geotextile. If sections of the geotextile need to be joined, overlap the sections a minimum of 18 inches. Permanently cover the geotextile within 48 hours of placement. Construct RMC Conduit as specified in 701.03.02. Place and grade coarse aggregate, size No. 67 without damaging the geotextile. Construct the concrete foundation as specified in 701.03.12. Ensure the conduit riser is plumb and secured to the foundation coupling. Construct ground wire as specified in 701.03.15. Construct traffic signal cable as specified in 702.03.04. Construct RMC conduit, traffic signal cable and ground wire from push button to the junction box as shown on the plans.

Install push button as specified in 702.03.07.

Install the 3 inch conduit riser, cap, T-drain and concrete foundation including gravel as shown on detail. Ensure the conduit riser is straight and secured tightly to the foundation coupling,

702.03.14 Radar Detector
THE FOLLOWING IS ADDED:

Install a radar detector mounted to a traffic signal standard with a control unit and all materials needed to provide accurate vehicle detection at the specified location as shown on the Plans. Mount and install according to the manufacturer's recommendation, including all cable and cable connections to the control unit without splices.

702.04 MEASUREMENT AND PAYMENT
THE FOLLOWING ITEM IS ADDED.

Item	*Pay Unit*
PUSH BUTTON INSTALLATION	UNIT
TEMPORARY TRAFFIC SIGNAL SYSTEM, LOCATION NO. _	LUMP SUM
RADAR DETECTOR	UNIT

All materials, equipment and labor required to complete this work consistent with the details shown in the plans except push button and push button sign are included in the pay item Push Button Installation.

SECTION 703 – HIGHWAY LIGHTING

703.03 CONSTRUCTION
THE FOLLOWING IS ADDED:

Maintain up-to-date as-built drawings of the highway lighting system and temporary highway lighting system. Place copies of the as-built drawings in a plastic pocket mounted inside the meter cabinet, and provide a copy to the RE

After placing the highway lighting system or temporary highway lighting system into operation, inspect the lighting system every 2 months. If the temporary lighting system fails or becomes damaged, inform the RE, repair and restore the system to normal operation. Ensure workers assigned to such repair work continuously until the lighting system is restored to normal operation.

If it is determined that the highway lighting system or temporary highway lighting system fails or becomes damaged in between inspections, repair and restore the system to normal operation. Begin repair of the signal system within 2 hours of receiving notice of damage or malfunction from the Department, State police, or local authorities. Ensure workers assigned to such repair work continuously until the lighting system is restored to normal operation.

For each response to a system failure or damage, fill out a Contractor Maintenance Emergency Call Record (Form EL-11C) and place it in a plastic pocket mounted inside the cabinet door of each controller cabinet.

If the Contractor fails to respond to a failure or damage notification and begin work within 2 hours of notification, or does not continue to work until the lighting system is restored to normal operation, the Department, in the interest of safety, will respond with its own forces to restore normal operation. If the Department mobilizes its forces to effect repairs, the Contractor agrees to pay the Department a sum of $3000 for costs of mobilizing its forces and equipment. In addition, the Contractor must pay the Department the actual cost of material used for the repair and pay the actual costs of police traffic protection.

703.03.07 Temporary Highway Lighting System

Deliver and unload salvaged materials to:
THE SIXTH PARAGRAPH IS DELETED:
THE EIGHTH THROUGH TENTH PARAGRAPHS ARE DELETED:

SECTION 704 – INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

THE ENTIRE SECTION TEXT IS CHANGED TO:

704.01 DESCRIPTION

This Section describes the requirements for providing, installing, configuring, calibrating, testing and placing into operation Advanced Traveler Information Systems (ATIS) and Advanced Traffic Management Systems (ATMS).

704.02 MATERIALS

704.02.01 Materials

Provide materials as specified in:

Coarse Aggregate (No. 57)	901.03
Concrete	903.03
Grout	903.08.02.A
Precast Concrete	904.01
Reinforcement Steel	905.01
Anchor Bolts	908.01.03
Miscellaneous Hardware	908
Coal Tar Epoxy Paint	912.01.03
Guide Rail, Fence, and Railing	913
Landscaping Materials	917
Conduit and Fittings	918.01
Cable and Wire	918.02
Loop Detector Lead	918.02.01
Loop Wire	918.02.02
Bonding and Grounding Materials	918.03
Resin Splicing Kits	918.05
Electrical Tape	918.06
Cable Racks	918.07
Cabinets	918.09
Panel Boards and Circuit Breakers	918.10
Standards	918.12

Follow the accepted standards of ANSI, NEMA, UL, NEC, ITE, and ASTM for materials not specified in the Contract.

For fittings and mounting hardware not specified, follow the manufacturer's recommendations.

Provide materials as specified in the Contract and in the New Jersey Electrical Materials Specifications that are available on the Department's website. A listing of pre-qualified materials is also available on the QPL.

Submit the system working drawings in a complete package for approval. The complete package of the system working drawings includes but is not limited to the ITS System Block Diagrams, Fiber Assignment Diagrams, and Rack/Cabinet Equipment Layout Diagrams; Certified Structural Details & Calculations. All components must be approved in the system working drawings before use on the Contract. List the ITS and EE approval numbers of each component in the equipment list on the system block diagram when a pre-approved product from the QPL is proposed to be used. For all components that are proposed without a pre-approved number, submit eight copies of catalog cut sheets along with the working drawings. Submit all structural components that are not listed on QPL separately for structural review and approval with the required certification and include a copy of all approvals when submitting the system working drawings to meet the complete package requirement. For materials furnished and installed, provide a minimum 2-year warranty from the date of Completion against any imperfections in workmanship, components and materials. Submit a warranty certificate to the RE from each material manufacturer, with the Department named as holder of the certificate.

704.02.02 Equipment

Provide equipment as specified in:

Traffic Control Equipment 1001
Vibrator 1005.04
Pavement Saw 1008.04
Hot-Air Lance 1008.06
Concrete Batching Plant 1010.01
Concrete Trucks 1010.02

704.03 CONSTRUCTION

704.03.01 General System (GS)

A. Components. A GS consists of the specified Items needed to modify an existing system or construct a proposed system. The system includes, but is not limited to, electronic and electrical devices, cabinets, wiring, programming, configuration, communication and electric service connections, service charges, utility software, grounding, and surge protection

B. Installation. Before beginning the work and during the work, comply with the requirements of **Error! Hyperlink reference not valid.**. The allowable time frame for existing system shutdown will begin at 10 P.M. daily and continue through to 4 A.M. on weekdays, 5 A.M. on Saturdays, and 6 A.M. on Sunday mornings unless otherwise noted in the Special Provisions. The Department will recover the cost of damages for exceeding the allowable time frames as specified in **Error! Hyperlink reference not valid.**. When installing a new system or modifying an existing system, ensure the respective manufacturer's certified field representative of ITS components and related equipment is on site to commission the equipment into operation. Restore the operation of the overall system to its original condition, the conditions specified in the Contract, or as directed by the RE.

When leased services are specified to be used, provide advance notice to Internet Service Providers to verify current status of service requests for all required ISP services. Perform necessary coordination required to re-establish and revise any service requests that may have expired due to time constraints, or due to a change in the system requirements.

1. Junction Box ITS.

a. Installation. Excavate as specified in 202.03.02. Install junction boxes only in areas where the slope is not less than 22H:1V. Place junction boxes on 10 inches of coarse aggregate No. 57. With each junction box, provide six (6) coiling brackets, inserts and fasteners, and a ground rod and clamp. Backfill and compact using the directed method as specified in 203.03.02.C. Restore disturbed areas to the original conditions, the conditions specified in the Contract, or as directed by the RE.

b. Relocation. Submit plans showing the proposed method of relocation of junction box including provisions for maintaining network operation and/or cut-over during the process to the RE for approval.

Remove existing ITS junction box by excavating around the junction box, cutting back conduits, pulling the cable slack equally to adjacent junction boxes and notching the portion of junction box below the conduits sufficient to slide the fiber optic cable. After removal of the junction box, re-couple the conduit(s), and terminate them using approved conduit repair kits and backfill with approved material and compact using the directed method as specified in 203.03.02.C. Install the Junction Box after approval by the RE. Ensure that the cut conduit ends are terminated at the entrance of the junction box wall using a manufacturer recommended kit depending upon the type of conduits. Ensure that the fiber optic cable is pulled back from the adjacent junction boxes in equal length to maintain the required slack for immediate and future splicing. Ensure that a ground rod and clamp are installed.

2. **Communication Cable.** Install communication cable from the utility pole or manhole to the controller. Provide and install the material necessary to provide a complete installation, including a weather-tight terminal block enclosure on the utility pole as required by the Utility, cable ties, cable tags, labels, clamps, jumpers, and connectors. Ensure that there are no splices in the section of cable between the terminal block and the devices.

   Provide the standard allowable slack for cable and wire, as specified in 701.03.15.A, within the in-ground rectangular junction boxes. Provide 3 feet of slack with an appropriate connector in the cabinet for connection to devices and utility service. Provide 10 feet of slack to allow for the Utility to make their connections in the manholes or on utility poles.

3. **Foundation ITS.** Construct the foundation as specified in 701.03.12.

4. **Controller ITS.** At least 30 days before beginning the work, submit working drawings for approval that include a block wiring diagram illustrating the interconnections of the system components from the field location to the designated control center. Identify each component by manufacturer and model number.

   Securely bolt the controller, equipped with communications and electronic devices for a fully functional and operational system, to the foundation in a vertical position using stainless steel hardware.

5. **Communication Hub.** At least 30 days before beginning the work, submit working drawings for approval that include a block wiring diagram illustrating the interconnections of the system components from the field location to the designated communication hub or control center or both. Identify each component by manufacturer and model number. Procure technicians that are certified by the existing operating system providers to integrate the ITS devices into existing operating systems. Coordinate with NJ Office of Information Technology (NJOIT) through the RE to establish Firewall/Network/IP addresses as required. Ensure that a fully functional and operational system is provided.

6. **Control Center System.** At least 30 days before beginning the work, submit working drawings for approval that include a block wiring diagram illustrating the interconnections of the system components from the field location to the designated communication hub or control center or both. Identify each component by manufacturer and model number. Procure technicians that are certified by the existing operating system providers to integrate the ITS devices into existing operating systems. Coordinate with NJOIT through the RE to establish Firewall/Network/IP addresses as required. Ensure that a fully functional and operational system is provided.

   Ensure the ITS System Network working drawing is submitted in a format acceptable to the Department. Sample ITS Working Drawings are available at:

   https://www.state.nj.us/transportation/eng/elec/ITS/pdf/sampledrawings.pdf

   Ensure the working drawing contains the following information:

   1. Affected network nodes are shown in nodal format with Latitude/Longitude.
   2. Each node shows equipment type and the proposed communication links between them.
   3. Distances between Ethernet switches and calculated dB loss between them.
   4. A Communication Network Assignment Table specifying Equipment Location (Node, Site ID, Lat/Long, Plan sheet reference, Route, Mile Post), Equipment Information (Item No., Description, Function, VLAN No., Subnet Mask, and IP Address).

   Supply and install equipment, software, software revisions, firmware, miscellaneous wiring and cabling, at the specified Control Centers to ensure the remote operation and control of all ITS field devices from the Traffic Operation Centers. Comply with building installation requirements, restrictions, access, and security

requirements in the performance of work. The material and work required for the integration of the various ITS installations into the various existing operating systems or subsystems used by the Department includes, but is not limited to, the following:

a. At least 5 (five) business days in advance of requiring access to the designated Control Center, submit a Facility Daily Access Request Form available on Department's ITS website.
b. Ensure complete functionality with field devices. Coordinate with the Department for access, rack space, and LAN connections to Client Workstations, respectively.
c. Ensure CCTV encoders are compatible with approved camera system especially for PTZ and focus control and CCTV Controller Software.
d. Ensure CCTV Controller Software is updated by integrating new cameras installed and ensure video and control is available to all necessary Traffic Operations personnel.
e. Ensure DMS signs are integrated and remotely operable by the DMS Controller Software.
f. Ensure TTS Devices are integrated and operational in accordance with Contract requirements. Develop the required travel time routes and the appropriate travel time sign messages as directed by the Department.
g. Ensure CTSS components are fully integrated and all the necessary functionality is demonstrated in the designated CTSS Controller Software.
h. Secure and provide all necessary Network configurations and assignments as directed by the Department.
i. Provide and install other electronic equipment that may become necessary as a result of network protocol translation, electrical signal transmission degradation or communications media translation (fiber optic, coax, DSL interface, network interface, etc.)
j. Provide for software support to integrate new ITS devices into new and existing platforms for workstations and servers utilized by DOT operators. This includes work required from each of the software suppliers for workstations located remotely from the Traffic Operation Centers. The Department will provide information regarding the respective system, on particulars for authorized remote users.
k. Provide for the installation of network assignments for field devices as well as enabling the network and device management protocols as directed by the Department.
l. Ensure that network support requests through the RE to the Department are made at least 60 days prior to the installation of all devices to be included in the network.
m. For RWIS, integrate weather station(s) into the appropriate password protected website as directed by the Department.
n. For WIMS, integrate the system for live data retrieval by the designated staff with password protected website as directed by the Department.

7. Meter Cabinet ITS. Install cabinets, meters, control and distribution systems, including the grounding of all materials, and internal wire and wiring. Install the metering systems as required by the Utility.

8. ITS Conduits. Install Flexible Nonmetallic Conduits as specified in 701.03.07 with the following exceptions:

a. Do not install mechanical joints on conduit runs between junction boxes.
b. Obtain RE approval for fusion joints that may be permitted under special circumstances on conduit runs between junction boxes.
c. Provide an as-built list indicating the location of all joints to the RE.
d. Install a continuous tracer wire without any splice in the conduits and from junction box to a termination point in the field cabinet.
e. Ensure that conduits and ducts entering a junction box, foundation, cabinet, hub, or building are terminated based on manufacturer's recommendation and are rodent proofed and sealed around cables, or plugged if conduit is built for future use.
f. Ensure that the ITS Conduits facilitate the various means of cable and wire installations including but not limited to pulling, jetting, and blowing of fiber optic cable and electrical wires.
g. Install conduits simultaneously with proposed curb work and prior to constructing resurfacing courses.
h. Install true tape marked in 1-foot increments for the length of the ITS Conduit.
i. Install warning tape in the trench above the conduit.
j. Restore disturbed areas to the original conditions, the conditions specified in the Contract, or as directed by the RE.

9. **Fiber Cross-Connect Cabinet.** Submit working drawings for approval that include a block wiring diagram illustrating the interconnection of the system components within the cabinet. Identify each component by manufacturer and model number. Install a Fiber Cross Connect Cabinet on Foundation ITS Type A with concrete pads on front and back of the cabinet. Ensure all fiber optic cables entering this cabinet are terminated into individual patch panels. Provide and install jumpers between multiple patch panels as required to complete the fiber network continuity.

10. **ITS Integration.** Procure the services of a Systems Integrator to ensure ITS systems and individual components are integrated as shown on the plans and in the specifications. Submit proof of the integrator's qualifications demonstrating 3 years of experience on similar ITS construction projects and on similar magnitude to the RE for review and approval. Provide certifications and credentials demonstrating the integrator is certified as a Professional and authorized by Cisco® to provide the services required for the network devices. Ensure that all ITS network drawings are prepared and certified by the Systems Integrator.

C. Testing. Perform wiring and cable testing, as specified in 701.03.15.D, before performing other testing. Complete the device and system testing as indicated on the Department provided forms and instructions. Provide trained personnel to test the system and subsystems. This includes providing manufacturer certified representatives to ensure complete functionality of said systems and subsystems. The period of testing under this section and in the various testing forms available from the Department's website are in terms of working days. The test will be extended if there are state holidays during the designated testing period. When a device fails during any phase of the testing period, the testing period will be rescheduled to progress again starting from day one of that phase after the problem is addressed for the testing time period specified.

1. **Device Testing.** Before beginning system testing, complete individual device testing as follows:

   a. **Level A.** Demonstrate that the individual devices at each work site are fully operational.

   b. **Level B.** Demonstrate that each device is fully operational from the designated control center to the work site with the original equipment manufacturer software. The Department will operate and monitor the device for a minimum of 7 working days to observe its functionality.

   c. **Level C.** Demonstrate that each device is fully operational from the designated control center to the device work site after integration into the designated control center software management systems. Conduct a test to verify that the device and communications meet the specified requirements of the Contract. After the Contractor's verification test, the Department will conduct a 14-day observational and functional test period. Provide support as needed during this testing, including adjustments to or replacements of the equipment and materials installed, modified, or otherwise disturbed until the full 14-day observation period is completed without failure as determined by the Department.

   Upon successful completion of level C testing of a device, the Department will accept the device on an interim basis and will pick up the cost of associated utility services for that device from the next billing cycle as specified in 701.03.15.

2. **Project Testing.** After completion of device testing, verify the operation of the individual devices from all locations interconnected and functioning as a complete and integrated system by exercising control with the central control software of Level C. In the presence of the RE, ensure that the manufacturer's authorized technician is present to assist with installation, configuration, and testing of system hardware and software.

   After the Contractor's verification test, the Department will conduct a 14-day observational and functional test period of all systems on the Project. Provide support including adjustments to or replacements of equipment and materials until the 14-day observation and functional test period is completed.

   In the event of a failure as determined by the RE, the RE will suspend the observation and functional test period until corrective action is completed. After the corrective action is completed, the RE will resume the observation and functional test period.

D. Maintenance. Perform maintenance as follows:

1. **Regular Maintenance.** Perform regular maintenance and repairs as specified in 108.09 after interim acceptance of a device or project testing or both until acceptance of the project and as follows:

   1. Troubleshoot malfunctioning equipment within 48 hours of failure notification by the RE.

2. If the Contractor cannot complete the repairs in the time specified by the RE, the Department may repair the equipment and recover the cost as specified in 107.16. The Department will assess liquidated damages at a minimum of $1000 per hour for each hour after the specified time until the completion of the repair.
3. Record the work performed and submit the record to the RE. Include an explanation of the exact repairs made and identification of parts replaced by part number and circuit number.

If the Contractor fails to respond to a failure or damage notification and begin work within 2 hours of notification, the Department may respond with its own forces to restore normal operation. If the Contractor begins the work but does not finish the work within a reasonable time period as determined by the RE, the Department will also respond with its own forces to restore normal operation. If the Department mobilizes its forces to perform repairs, the Contractor agrees to pay the Department's cost of performing the work including the cost of material and labor used for the repair and the actual costs for police traffic protection and maintenance and protection of traffic.

2. Operational Maintenance. If an Item has completed system device testing before Substantial Completion, perform operational maintenance in 6 month intervals as follows:

1. Exercise the equipment functionality, including uploads, downloads, fans, lights, and sensors.
2. Replace filters, clean lenses, and check communications.
3. Run diagnostics.
4. Record all work and submit it to the RE.

E. Final Documentation. Submit 2 sets of the complete schematics and maintenance manuals of the equipment for each type of device provided. Include a complete sub-component parts list with each maintenance manual. Place one complete set of manuals of each device in the respective controller cabinet installed in the field, and provide a set to the RE. Also, send an electronic set to the RE. Provide documentation listed under this section at or prior to Substantial Completion of the project.

Submit as-built documentation showing the function and detail of each individual fiber and termination connection installed. Submit as-built drawings for each subsystem, including wiring and set up configurations, and software versions.

Provide drawings and diagrams in the Department's CADD format in accordance with the file structure and standards of the Department. Provide reports in MS Word format.

At a minimum, also include the following documentation:

1. Controller equipment layout and wiring.
2. System wiring diagram that illustrates the connections and cross-connections between equipment components from the field device through to the designated control center equipment and rack profiles. Include work site and designated control center set up configurations and firmware versions installed.
3. Licensed copies of the software needed for complete operation and testing of the system. Include software necessary to read the electronic files of the test results and documentation and needed to program and configure devices for any software not covered by an existing Department license. Ensure software is compatible with the Department's current operating software.
4. Controller communication protocol and System Development Kit.
5. As-Built (GPS) Inventory Report on forms provided by the Department and in the required format.
6. The original signature certification from an independent laboratory that the devices have been tested and comply with the NTCIP protocol requirements of this Contract.
7. 2 CD-R copies of the final documentation and 2 paper copies. Compile and organize the test results in 3-ring binders.
8. Troubleshooting guidelines that identify symptoms, rank their possible causes in order of highest probability, and recommend remedial actions and the required testing equipment.
9. Installation, operation, configuration, programming, maintenance, data, and schematic manuals.
10. Certification of successful deployment of ITS components from the respective equipment manufacturers with complete details of any repair work performed under warranty.
11. Commissioning reports.
12. Warranty certificates.

F. Equipment Training. Provide, for use by the Department, equipment necessary for proper instruction, demonstration, and testing of the system materials. Submit software used for testing to the Department for use in equipment maintenance. The software will become the property of the Department.

Provide training for installation, control, testing, and maintenance of the systems for ten (10) Department personnel. Schedule the training with the designated control center personnel to avoid interruption of daily Department operations. If necessary, conduct the training over several sessions or in multiple groups.

G. Warranty. In addition to the provisions set forth in 108.21, procure a service agreement for parts and labor to cover the period between the commissioning of the device by the manufacturer and Completion. Document the repairs made, by the manufacturer or its designated representative, to the device prior to Completion. Include an explanation of the exact repairs made and identification of parts replaced by part number and circuit number. Provide the necessary equipment for safe access to the installed device along with traffic control promptly upon request by the manufacturer to perform the repairs under the service agreement during this period. Provide the Department with a complete record of the repairs made to each device as part of the Final Documentation. Ensure that a minimum two-year warranty certificate by the manufacturer is provided and transferred to the Department with documentation as set forth in 704.02.01 for any repairs to be performed by the manufacturer after the date of Completion. Ensure that the start and end dates of the warranty are clearly stated on the certificate. Ensure the warranty includes shipping costs, a statement for the repair or replacement of all failed components or both to be performed by a factory authorized depot repair facility located in the United States, and that the components are returned to the Department within two weeks of the date of receipt at the repair depot. Ensure that unlimited technical support from the manufacturer or authorized dealer is provided within 4 hours of the time a call is made by the Department.

H. Networking Requirements. Provide ITS network devices as directed by both the Department and the State Office of Information Technology (OIT) to ensure the efficient operation, security and diagnostic capability of the ITS network being installed or modified. Provide trained personnel with the proper credentials (specifically with a Cisco Certified Network Professional certification) to properly interface and configure the ITS network to the State's network and to also interface with OIT and the Department's IT staff. Ensure the Cisco Certified Network Professional (CCNP) has at least three 3 years of experience on similar ITS networks with similar in size, complexity, and scope of this contract. Provide credentials of the CCNP to the Department for approval. Obtain a Virtual Private Network (VPN) into the Department's network to set up and monitor the network under construction by CCNP. This includes, but is not limited to the following:

1. Providing necessary Layer 3 configurations
2. Obtaining and installing network assignments
3. Security provisions
4. Multiple Virtual Local Area Network's (VLAN's) for IP switches, routers and ITS devices as directed
6. Enabling Rapid Spanning Tree protocols
7. Internet Group Management Protocol (IGMP)
8. Setting up VPNs, White lists, and Black lists
9. NATting, multicasting,
10. Configuring routers for broadband services
11. Other settings as deemed necessary by the Department
12. Other hardware configurations that are required at the behest of the Department and OIT

Ensure the correct Fiber Optic Transceiver is utilized for each switch and the correct transceiver power is used based on distance and dB loss

Ensure all Internetwork Operating System (IOS) and protocols for the network devices are compatible across the network.

Ensure that the default IP addresses and passwords set from the manufacturer are changed for all electronic devices where applicable and forward that information to the RE for each device. This includes but is not limited to ITS devices, IP switches, routers, modems and wireless equipment.

Provide an Ethernet Networking Block Diagram along with an Excel spreadsheet that includes the networking devices and the descriptions of device type, Network Assignment, and corresponding switch port and other requirements as it pertains to Ethernet networking.

I. IT Requirements. At least three (3) months prior to systems roll-out supply the RE with the software systems installation CD/DVDs, End User License Agreement (EULA) & other applicable licenses, instructions and configurations/settings that are required. Turn over the licenses indicating NJDOT as being the licensee at the time of acceptance.

Provide the above information in an acceptable way for NJDOT's Division of Information Technology's Security and Services personnel to perform the Server-side and Client-side installation, support and troubleshoot of the application without the need of a third-party. Refer to 704.03.01.F Equipment Training for the required training.

Failure to comply with this time-constraint will result in delayed Substantial and Final Completion. The Department reserves the right to seek Liquidated Damages, as specified in 108.20 of the Special Provisions, for each day delayed for Substantial and Final Completion.

704.03.02 Camera Surveillance System (CSS)

A. Components. CSS consists of the specified components in order to provide a complete system capable of processing video and control data to and from the designated control center. The system also includes but is not limited to wiring, communication and power connections, network equipment, encoder/decoder, service charges, software, grounding, and surge protection.

B. Installation. Before beginning the work and during the work, comply with the requirements of 701.03.01. The allowable time frame for existing system shutdown and cost of damages for exceeding the allowable time frames will be as specified in 704.03.01.B. If directed by the RE, provide a bucket truck with safety equipment that can reach the height of the camera. Operate the bucket truck for the Department to use to determine the camera's final location and orientation, and for testing

Construct components as follows:

1. Foundation CSS. Construct the foundation as specified in 701.03.12.

Ensure that the anchor bolts are placed after verifying the orientation of the camera lowering system to minimize the obstruction of desired camera view by the Camera Standard.

2. Camera Standard. Bolt the standard securely to the foundation, and erect the standard with sufficient rake to assume a vertical position after all attachments and appurtenances are in place. Install a ground wire that extends to the ground rod from the standard.

At least 30 days before beginning construction, submit working drawings for approval that include structural calculations meeting the specified criteria. Ensure the calculations are signed and sealed by a Professional Engineer.

3. Camera. Mount the camera housing and camera according to the manufacturer's recommendation. Ensure that the camera's field of view is unobstructed. Perform tree trimming and site clearing to provide an unobstructed field of view as directed by the RE. Set up "On Screen Display" to indicate the quadrant views with directional titles (e.g. NB view, EB view, SB view, WB view) displayed in the bottom right corner of the screen for each camera. Leave the display blank for any quadrant not representing any highway view. For a camera with multiple highway views, include route and directional title (e.g. Rt 1 NB view). Also, establish a pan and tilt zones system and set up 4 presets for quick pan-tilt-zoom views prior to level B testing. At least 6 days prior to Level C testing, submit a request to the RE for the Department to integrate each camera into the designated control center CSS control software management system in use at the time of construction.

Ensure the camera is equipped with video and control cables that have weatherproof connectors and strain relief. Ensure cables are factory assembled and tested according to the camera manufacturer's recommendations. Make all wire and cable camera connections to the camera controller.

Apply a polymer spray recommended by the camera manufacturer to enhance rainwater sheeting and runoff on the dome and positional housing.

4. Controller, Camera. Submit working drawings for approval that include a block wiring diagram illustrating the interconnections of the required CSS components for successful transmission of video from the field location to the designated control center and the remote operation from TOC using central CSS software. Identify each component by manufacturer and model number.

Mount the camera controller cabinet to a foundation as specified in 704.03.01.B.4. Ensure that the conduit entry points are properly closed off with duct sealing compound. Install the controller according to the manufacturer's recommendations. Provide and install all required components.

C. Testing. Perform testing as specified in 704.03.01.C.

D. Maintenance. Perform maintenance as specified in 704.03.01.D.

E. Final Documentation. Provide the documentation specified in 704.03.01.E.

F. Equipment Training. Provide training as specified in 704.03.01.F and in the Special Provisions.

G. Warranty. Perform repairs under warranty and provide documentation as specified in 704.03.01.G.

H. Networking Requirements. Comply with the networking requirements and perform work as specified in 704.03.01.H.

I. IT Requirements. Comply with the IT requirements and perform work as specified in 704.03.01.I and in the Contract documents.

704.03.03 Fiber Optic Cable

A. Components. When installing fiber optic cable, provide a complete communications path between 2 or more ITS devices. Installing fiber optic cable includes, but is not limited to, providing and installing conduit, junction boxes, cables, splicing, communication and power connections, service charges, terminations, software, and grounding.

At least 30 days before beginning work, submit to the RE for approval a fiber optic installation plan that lists the following items and includes a brief narrative on each:

1. Cable layout with splice locations and linear distances between splice points.
2. Fiber specific connection assignments to devices.
3. Catalog cut of the cable lubricant.
4. The manufacturer's minimum allowable cable and fiber strand bending radii.
5. Pulley wheel sizes.
6. Manufacturer's maximum outer jacket pulling tensions and monitoring device.
7. If using an air pressure system, list the blowing pressures applied to each cable size and conduit type.
8. Provide certifications from the fiber optic splice unit, OTDR, and power meter equipment manufacturer that verify the qualifications of each individual employed to perform the work.

B. Installation. Before beginning the work and during the work, comply with the requirements of 701.03.01. The allowable time frame for existing system shutdown and cost of damages for exceeding the allowable time frames will be as specified in 704.03.01.B.

Provide and install the material necessary for a complete, functional installation including cables, cable ties, jumpers, cable identification tags, pigtails, breakout kits, connectors, patch panels, splices, splice enclosures, testing, end caps, consumables, attenuators, and related documentation. Ensure that cable tags follow the industry standard CLEI GR-485-CORE format and nomenclature for communications and electronic components.

After the connections are completed, provide the minimum amount of slack for each cable that enters a junction box or termination enclosure as specified in Table 701.03.15-1. Provide additional slack as required to meet the proposed installation as follows:

1. For an ITS Junction Box provide a total of sixty (60) feet of slack (30 feet from each entry point.)
2. For a Hub provide 10 feet of slack
3. For a Cabinet provide 3 feet of slack

Attach cable tags to cables at junction boxes that contain multiple cables and at all cabinets. Secure them with nylon cable ties.

For armored cables, install a ground rod, ground and bond all armor casings at any existing or proposed junction box at which electrical power conductors are also present.

Before installing the tracer wire, obtain RE approval of the installation locations of the tracer wire. Install a continuous tracer wire in the conduit. Do not splice tracer wire in the conduit. Provide 10 feet of slack in each

junction box. If approved by the RE, the Contractor may splice the tracer wire in the junction box. If more than one conduit is installed in a single trench, the Contractor may install the tracer wire in only one conduit. When installing fiber optic cable in existing conduits, install a tracer wire as specified in 701.03.15.A. Perform testing of existing tracer wires for continuity and perform splicing as required in junction boxes to ensure access to the tracer wire from cabinet to cabinet.

Ensure that splices are fusion splices. Install splices only in ITS junction boxes or ITS cabinets. Use splice enclosures for splices made in junction boxes. For mid-span termination cable entry, cut only those individual fiber bundle/strands needed (ring cut) for connection to the devices. For those fibers designated for trunk line communications, do not cut the fibers or install cables that require splices at lengths less than 2500 feet.

Splice a manufacturer recommended fiber optic breakout kit with connectors to each end of the strands for a cable that terminates at a device cabinet. Label each strand using machine-printed, laminated, self-adhesive labels. Fully document the connections and individual splices in the as-built drawings.

C. Testing. Perform wiring and cable testing as specified in 701.03.15.D before performing any other testing. The Department will provide forms detailing the testing requirements for the following tests:

1. Level 1. Test each splice with the fusion splicing unit at the time the splice is made. Record each splice decibel value electronically with the splicing machine at 1310 nanometers. Provide 2 paper copies and 1 electronic copy of the results immediately to the RE for review and approval. Clearly identify each fiber on the report. Ensure that the maximum splice loss does not exceed 0.05 decibels. If the 0.05-decibel value cannot be reached in 3 attempts, the RE may employ a third party vendor to redo the work. The Department will recover the cost as specified in 107.16. Provide the RE with certification from the equipment manufacturer that the splice machine was calibrated within 3 months of its use on the Contract. Recalibrate the splice machine at 6-month intervals from the initial calibration by the manufacturer.

2. Level 2. Perform the following Level 2 tests:

a. OTDR. Test each individual fiber after completion of splicing and connections. Perform the testing at 1310 and 1550 nanometers in both directions. Ensure that the maximum decibel loss for any single event is not greater than 0.3 decibels at 1310 nanometers; however, ensure that the OTDR machine threshold is set to record events greater than or equal in absolute value to 0.05 decibels along the positive and negative axes. Events revealed by the OTDR machine bi-directional trace average to exceed 0.3 decibels are cause for the rejection of the cable. If directed, remove and replace the cable.

Ensure that the net result of the bi-directional trace average at 1310 nanometers across a splice event is not greater than 0.15 decibels. Redo splices revealed by the OTDR machine to be greater than 0.15 decibels up to 2 additional times in order to achieve 0.15 decibels or less. If the 0.15-decibels value cannot be reached in 3 attempts, the RE may employ a third party vendor to redo the work. The Department will recover the cost as specified in 107.16.

Ensure that reflectance at each connector is better than (−55) decibels. Ensure the fiber loss across each fiber segment is not greater than 0.4 decibels per kilometer when tested at 1310 nanometers.

Also test, and include in the report, the dark fiber segments that are not being utilized by the signal transmission equipment. Provide connectors as necessary to test unterminated fibers.

Provide 2 paper copies and 1 electronic copy of the results immediately to the RE for review and approval. Clearly identify each fiber on the report. Provide the RE with certification from the equipment manufacturer that the OTDR was calibrated within 3 months of its use on the Contract. Recalibrate the OTDR at 6-month intervals.

b. Power Meter. Measure and record fiber segment optical budgets including each end connector, according to the meter manufacturer instructions. Compile the test results in a binder and submit 2 copies with the final documentation. Perform power meter tests at 1310 nanometers and 1550 nanometers in both directions after completion of cable and connector splicing. Ensure that the maximum connector loss tested at 1310 nanometers is 0.8 decibels with the average of all connectors in the tested fiber segment being 0.5 decibels.

Provide 2 paper copies and 1 electronic copy of the results immediately to the RE for review and approval. Clearly identify each fiber on the report and the work site location of the end points. Provide the RE with

a certification from the equipment manufacturer that the power meters were calibrated within 3 months of their use on the Contract. Recalibrate at 6-month intervals.

After completion of Level 1 and 2 tests, perform network communication system testing and demonstrate that the communication system is fully operational to meet the material specifications and project requirements. Complete the testing as specified on the Department provided forms and instructions.

D. Maintenance. Perform maintenance as specified in 704.03.01.D.

E. Final Documentation. Provide the following:

1. Individual splice connection as-built drawings in the format specified by the Department.
2. Splice machine, OTDR, and power meter readings with manufacturer's software disks to read the test results. Include power meter test results for each individual fiber section showing the optical budget between the termination point connectors. Include all unused fibers. Include OTDR electronic trace files and computer software so that the user can set any threshold values desired for all parameters and can view all ranges of events.
3. Cable identification key sheet.
4. Spreadsheets that identify the file names of the same fiber shot in both directions. Identify the individual common events and calculate the true event loss by averaging the point value of the fiber traces from each direction. Include this calculation in the spreadsheet tables. Supply 2 CD-R copies of the final documentation and 2 paper copies. Compile and organize the test results in 3-ring binders.
5. Licensed copies of splice and test equipment software. Ensure that the software is compatible with Windows XP operating system.
6. Communications system equipment fiber optic interconnections, including patch panel cross connections.
7. Inventory Report on the form provided by the Department.

F. Equipment Training. Provide training as specified in 704.03.01.F and in the Special Provisions.

704.03.04 Controlled Traffic Signal System (CTSS)

A. Components. CTSS consists of the Items needed to provide a complete system that is capable of controlling a series of interconnected signalized intersections and processing control data to and from the designated control center. The system also includes, but is not limited to, electronic and electrical devices, network equipment, servers, cabinet, wiring, programming, configuration, communication and electric service, service charges, connections, software, grounding, and surge protection.

B. Installation. Before beginning the work and during the work, comply with the requirements of 701.03.01. The allowable time frame for existing system shutdown and cost of damages for exceeding the allowable time frames will be as specified in 704.03.01.B. Prior to beginning any work, coordinate with Traffic Operations and NJOIT to confirm the system architecture and placement of the specified servers.

Construct components as follows:

1. Controller, CTSS. Submit working drawings for approval that include a block wiring diagram that illustrates the interconnections of the CTSS components from the field location to the designated control center. Identify each component by manufacturer and model number.

Construct as specified in 702.03.01 and configure the CTSS software.

Configuration of the CTSS software includes the following at a minimum:

a. Setup of intersection parameters, coordination parameters, system parameters, and graphics including all GIS shape files and aerials
b. Configuration of control operations and coordination
c. Development of intersection operational databases
d. Configuring and programming local traffic controllers
e. Inputting the timing plans into the CTSS software and traffic controller software to be utilized as a fallback backup for intersections that are not running in the adaptive mode
f. Integration of the CTSS server, workstations and local traffic controllers with the communication network
g. Integration of the Image Detection units and System Detection units with traffic controller.

h. Configuration and calibration of Image Detection units
i. Configuration and calibration of System Detection units
j. Integration of the Image Detection server and Image Detection units with the communication network
k. Configuration of Image Detection System
l. Integration of the System Detection server and System Detection units with the communication network
m. Configuration of System Detection System

2. **CTSS Controller Unit.** Submit working drawings that include a block wiring diagram that illustrates the interconnections of the CTSS components from the field location to the designated control center. Identify each component by manufacturer and model number.

   Provide and install a traffic controller unit, NEMA "D" panel and harness to maintain compatibility in the existing traffic signal controller cabinet. Perform: the required wiring; CTSS software configuration, programming and testing; and remove the existing controller unit from the traffic signal control cabinet. Provide and install traffic signal controller module hardware and software necessary to satisfy the communications and manufacturer requirements of the requested type of CTSS. Clean dust, dirt, and debris from the inside of the cabinet and replace air filters and light fixtures. Employ a manufacturer's certified representative to program and configure the controllers with the timing plan directive parameters. Place the intersection into cabinet flash during installation of the CTSS controller unit.

   Configure the CTSS software as specified in 704.03.04.B.1. Controller, CTSS.

3. **Controller, CTSS Turn On.** Controller CTSS Turn On consists of supplying a technician authorized by the controller manufacturer at the work site when each controller is placed into flash mode and into final operation. Provide the RE a letter at least 48 hours in advance of the work, from the controller manufacturer, stating the technician is authorized and qualified to perform the work. Ensure that the technician is available at all times during flash mode testing. Ensure that traffic signals complete a successful flash period for 3 consecutive days as part of the required testing. The Department will allow the signal to be on flash mode between 11:00 pm and 4:00 am. Program the Department's existing signal timing directives as a fallback for when the system is not running in adaptive operation.

4. **System Detector, Type Radar.** At least 30 days before beginning construction, submit working drawings for approval that include structural calculations for the pole-mounted System Detector equipment. Ensure the calculations are signed and sealed by a NJ-licensed Professional Engineer. Submit a block wiring diagram and cabinet layout diagram for integration of the System Detectors in the applicable traffic signal cabinet back panels, the existing Department Traffic Management System, and the CTSS. Identify each component by manufacturer and model number. Provide and install a local disconnect switch and grounding components in accordance with NEC requirements. Ensure that the work conforms to the NEC and does not violate the High Voltage Proximity Act.

   Mount the radar detectors as displayed on the Plans. Provide and install the required components at the System Detector locations and in the CTSS controller cabinets, including but not limited to communications components, firmware, contact closures, and applicable network components.

   Provide and install pole-mounted cabinet enclosures and hardware required to house equipment at System Detector locations. Provide and install material, equipment, and wiring required to control and power the equipment.

   Obtain and provide software licensing required to successfully interface and integrate the radar detectors with NJDOT's head-end traffic data storage server, existing Traffic Management System, and CTSS. Provide for the transmission of detector-collected data to the NJDOT storage server. Coordinate with NJOIT and the Department to determine and verify data port assignments in the field and at the server to automatically transmit the archived data to an FTP server.

C. Testing. Perform testing as specified in 704.03.01.C and in accordance with the Verification Plan and Department Testing and Certification Procedures using the forms found at the following link:

http://www.state.nj.us/transportation/eng/elec/ITS/testing.shtm

After the Contractor's verification testing of the Adaptive CTSS is completed in accordance the Verification Plan and the Department's CTSS Testing and Certification forms, the Department will conduct an observational and functional "burn-in" test period of the systems on the Project which may last up to 6 months. During this period the Department will validate the CTSS in accordance with the Validation Plan with the contractor providing assistance and support where necessary.

Also, before delivery to the Project Limits, perform a 168-hour burn in test period for the assembled, programmed and configured CTSS controller and CTSS controller unit following the requirements of 702.03.01 for continuous operation without failure.

D. Maintenance. Perform maintenance as specified in 704.03.01.D.

E. Final Documentation. Provide the documentation specified in 704.03.01.E and the following:

1. For CTSS controller, provide a detailed drawing of the controller back panel and subpanel wiring and equipment layout. For CTSS controller unit, provide the detailed "D" harness wiring drawing and the connections to the back panel.
2. Original signature certification of the CTSS controller and CTSS controller unit to verify that the equipment has been programmed, configured, wired, functions, and operates as specified in the Contract.
3. For Image Detectors and System Detectors, provide configuration and calibration parameters for each detector.
4. Provide documents and information related to installation of CTSS devices, servers and workstations communicating on the NJDOT network as required by OIT and IT.

F. Equipment Training. Provide training as specified in 704.03.01.F and in the Special Provisions.

G. Warranty. Perform repairs under warranty and provide documentation as specified in 704.03.01.G.

H. Networking Requirements. Comply with the networking requirements and perform work as specified in 704.03.01.H and in the Special Provisions.

I. IT Requirements. Comply with the IT requirements and perform work as specified in 704.03.01.I and in the Special Provisions.

704.03.05 Travel Time Systems (TTS)

A. Components. A TTS consists of the specified components needed to provide a complete system that is capable of measuring traffic speed, time, and volume, can process data to and from the designated control center and is integrated into the central control system for the purpose of determining and reporting travel time information. The system also includes, but is not limited to, the electronic and electrical equipment, wiring, central system database configurations, communication and electric service connections, service charges, software, grounding, and surge protection.

B. Installation. Before beginning the work and during the work, comply with the requirements of 701.03.01. The allowable time frame for existing system shutdown and cost of damages for exceeding the allowable time frames will be as specified in 704.03.01.B.

Construct components as follows:

1. Foundation, TTS. Construct the foundation as specified in 701.03.12.

2 Detector Standard. Bolt the standard securely to the foundation, and erect the standard with sufficient rake to assume a vertical position after the attachments and appurtenances are in place. Install a ground wire that extends to the ground rod from the standard.

3 Controller, TTS. Submit working drawings for approval that include a block wiring diagram that illustrates the interconnections of the TTS components from the field location to the designated control center. Identify each component by manufacturer and model number.

Securely bolt the controller cabinet to the foundation in a vertical position using stainless steel hardware. Seal the underground conduit entrance to the controller with a sealing compound.

4 **TTS Detector.** Submit working drawings for approval that include a block wiring diagram that illustrates the interconnections of the TTS components from the field location to the designated control center. Identify each component by manufacturer and model number.

Install the detector according to the manufacturer's recommendations.

Mark wire and cable detector connections to the controller.

C. Testing. Perform testing as specified in 704.03.01.C. Ensure that the system demonstrates accurate posting of travel times during AM, Midday, and PM peaks in accordance with TTS test forms and specified requirements.

D. Maintenance. Perform maintenance as specified in 704.03.01.D.

E. Final Documentation. Provide the documentation specified in 704.03.01.E, including configuration data and parameters with channel assignments per traveled lane.

F. Equipment Training. Provide training as specified in 704.03.01.F and in the Special Provisions.

G. Warranty. Perform repairs under warranty and provide documentation as specified in 704.03.01.G.

H. Networking Requirements. Comply with the networking requirements and perform work as specified in 704.03.01.H and in the Contract documents.

I. IT Requirements. Comply with the IT requirements and perform work as specified in 704.03.01.I and in the Contract documents.

704.03.06 Road Weather Information System (RWIS)

A. Components. A RWIS consists of the specified components needed to provide a complete system that is capable of processing sensor and control data to and from the designated control center for wind speed and direction, gusts, precipitation, visibility, humidity, pavement surface, and subsurface temperature. The system also includes, but is not limited to, the electronic and electrical equipment, cabinet, wiring, configuration, communication and power connections, service charges, software, grounding, and surge protection.

B. Installation. Before beginning the work and during the work, comply with the requirements of 701.03.01. The allowable time frame for existing system shutdown and cost of damages for exceeding the allowable time frames will be as specified in 704.03.01B.

Construct components as follows:

1. **Weather Station.** Construct the foundation as specified in 701.03.12.

   Submit working drawings for approval that include a block wiring diagram that illustrates the interconnections of the RWIS components from the field location to the designated control center. Identify each component by manufacturer and model number.

   Install RWIS devices and materials, including cabinet enclosure, camera, electric power devices, remote microprocessor controlled unit, software, back panel, main power disconnect, surge suppression, communication modems, atmospheric sensors, road, subsurface and bridge sensors, sensor leads, grounding, and wires and incidental material. Aim the camera for proper functioning of the system. Follow the manufacturer's recommended installation, calibration, and configuration instructions.

   Install sensors embedded in the pavement according to the manufacturer's recommendations. Sawcut the pavement, pressure wash, and dry the sawcut before installing the sensors. Install each cable from the sensor in a separate individual sawcut to the conduit at the curb leading to the nearest junction box. Install bridge sensors according to the manufacturer's recommendations.

   Do not splice cables and sensor leads.

   If not connected into the fiber optic network, obtain and provide communications with a utility service provider from the field microprocessor to the existing Department RWIS designated control center.

2. **Weather Station, Roadway Devices.** Install sensors embedded in the pavement and on bridges according to the manufacturer's requirements for connections into existing weather stations. Sawcut the pavement, pressure wash, and dry the sawcut before installing the sensors.

Install each cable from the sensor in a separate individual sawcut to the conduit at the curb leading to the nearest junction box. Do not splice cables and sensor leads.

C. Testing. Perform testing as specified in 704.03.01.C.

D. Maintenance. Perform maintenance as specified in 704.03.01.D.

E. Final Documentation. Provide the documentation specified in 704.03.01.E and the following:

1. Configuration data and parameters, port and channel assignments for each traveled lane.
2. Calibration coefficient data for each sensor.

F. Equipment Training. Provide training as specified in 704.03.01.F and in the Special Provisions.

G. Warranty. Perform repairs under warranty and provide documentation as specified in 704.03.01.G.

H. Networking Requirements. Comply with the networking requirements and perform work as specified in 704.03.01.H and in the Contract documents.

I. IT Requirements. Comply with the IT requirements and perform work as specified in 704.03.01.I and in the Contract documents.

704.03.07 Dynamic Message System (DMS)

A. Components. DMS consists of the specified components needed to provide a complete system that is capable of processing control data to and from the designated control center. The system also includes, but is not limited to, wiring, communication and power connections, networking equipment, service charges, software, grounding, and surge protection.

The following are the Model numbers for the various DMS to be provided and installed in this project:

Location	Communication Type	DMS Type	Manufacturer/Model No.

Ensure that the designated Model numbers for the various DMS signs are provided as specified in the Contract documents.

Ensure that Controller, DMS is purchased with pre-installed controller, pre-wired with the equipment listed below along with specialized communications cables (minimum 120′ Fiber Optic Cable with Connectors for each sign).

As part of the specified model numbers, ensure the DMS manufacturer supplies the cabinet and controller for each DMS sign with pre-installed uninterruptable power supply (UPS), a media converter and a TCP/IP wireless modem conforming to the wireless provider requirements. Provide other equipment not listed here but required for the remote operation of the DMS.

Ensure that the installation of DMS is coordinated with the power service company in such a manner that the DMS sign is powered up within two weeks of installation. If this is not achieved, provide a generator on site for electrical power along with needed maintenance of the generator and refueling until the electrical service by the power company is installed.

When the final communication using fiber or other leased ISP services is delayed by more than two weeks upon initial installation of DMS sign, activate the wireless service for temporary or interim use until final communications service is installed so the TOC can use the DMS during this delay beyond two weeks.

For DMS sign that will be communicating over fiber optic communication media, provide and install an Ethernet Switch Type B and a fiber optic cable patch panel with interconnecting cables for each DMS controller.

For DMS sign that will be communicating over leased ISP services, provide and install a Router as specified in the Special Provisions and in the Contract Documents.

B. Installation. Before beginning the work and during the work, comply with the requirements of 701.03.01. The allowable time frame for existing system shutdown and cost of damages for exceeding the allowable time frames will be as specified in 704.03.01.B.

Construct the DMS sign mounting structure and foundation as specified in Division 500.

Construct components as follows:

1. DMS Sign. At least 30 days before beginning construction, submit working drawings for approval that include sign mounting and lifting calculations. Ensure the calculations are signed and sealed by a Professional Engineer. Mount the sign on the standard or structure and install the controller according to the manufacturer's recommendations. Securely bolt the controller to the foundation in a vertical position using stainless steel hardware. Seal the underground conduit entrance to the controller with a sealing compound. Install cables and wire connections between the sign and controller according to the manufacturer's recommendations. Ensure that the conduit entry points are properly closed off with duct sealing compound. Provide sign manufacturer technician for commissioning the sign and coordinate with the sign manufacturer by providing access and support during commissioning and for any warranty work covered by the DMS manufacturer.

Ensure control cables are factory assembled and tested according to the sign manufacturer's recommendations. Make wire and cable connections to the DMS sign controller according to the sign manufacturer's recommendations.

Perform tree trimming and site clearing to provide an unobstructed field of view up to 1000 feet from the sign as directed by the RE.

2. Controller, DMS.

At least 30 days before beginning construction, submit working drawings for approval that include a block wiring diagram that illustrates the interconnections of the DMS components from the field location to the designated control center. Identify each component by manufacturer and model number.

Securely bolt the controller to the foundation in a vertical position using stainless steel hardware. Seal the underground conduit entrance to the controller with a sealing compound.

Install cables and wire connections between the sign and controller according to the manufacturer's recommendations. Ensure that the conduit entry points are properly closed off with duct sealing compound.

C. Testing. Perform testing as specified in 704.03.01.C.

For DMS, perform both Level B and Level C Testing after integration into the Central DMS control software system.

D. Maintenance. Perform maintenance as specified in 704.03.01.D.

E. Final Documentation. Provide the documentation specified in 704.03.01.E.

F. Equipment Training. Provide training as specified in 704.03.01.F and in the Special Provisions.

G. Warranty. Perform repairs under warranty and provide documentation as specified in 704.03.01.G.

H. Networking Requirements. Comply with the networking requirements and perform work as specified in 704.03.01.H and in the Contract documents.

I. IT Requirements. Comply with the IT requirements and perform work as specified in 704.03.01.I and in the Contract documents.

704.03.08 Weigh in Motion System (WIMS)

A. Components. A WIMS consists of the specified components needed to provide a complete system that is capable of processing pavement sensor and control data to and from the control center in Trenton. The WIMS is composed of electronic and electrical equipment, pavement sensors, cables, wiring, control cabinet, site processor, remote communication modems, operating software, and software used to process and generate reports on the collected raw vehicle record files. The system also includes, but is not limited to, wiring, cabinet, foundation, communication and power connections, service charges, software, grounding, and surge protection.

B. Installation. Before beginning the work and during the work, comply with the requirements of 701.03.01. The allowable time frame for existing system shutdown will begin at 10 P.M. daily and continues through to 4 A.M. on weekdays, 5 A.M. on Saturdays, and 6 A.M. on Sunday mornings unless otherwise noted in the Special Provisions and the cost of damages for exceeding the allowable time frames is specified in the Special Provisions. The Department will recover the cost as specified in 107.16.

If not connected into the fiber optic network, obtain and provide communications with a Utility service provider from the field microprocessor to the Department WIMS control center in Trenton.

Make operational electronic and electrical components to monitor volume, speed, length, gap, headway, vehicle type classification by axle configuration, and axle weights. The roadway sensors are composed of inductive loop detectors, loop leads, weight sensors, and temperature sensor. The WIMS electronics are installed at each work site with electrical power and communications for remote station programming, monitoring and failure diagnosis, and data retrieval.

Construct components as follows:

1. **Controller, WIMS.** Construct the foundation as specified in 701.03.12.

   At least 30 days before beginning construction, submit working drawings for approval that include a block wiring diagram that illustrates the interconnections of the WIMS components from the field location to the control center in Trenton. Identify each component by manufacturer and model number.

   Securely bolt the controller cabinet to the foundation in a vertical position using stainless steel hardware. Seal the underground conduit entrance to the controller with a sealing compound.

2. **WIM Roadway Devices.** Install the devices according to the manufacturer's requirements. Pressure wash and dry the sawcut as recommended by the manufacturer. Ensure that sensors, loop detector wires, and cables are installed in separate conduit per type of device and that conduit is waterproofed and sealed. Ensure that the temperature sensor is installed in a schedule 80 PVC conduit in the shoulder of the roadway. Maintain at least 3 feet of space between the sawcut loops and the sensors. After completion of the HMA, re-establish the location of each loop edge to facilitate and mark for cutting of the slot for the axle weight sensor. Ensure that the lengths of weight sensors do not exceed the width of the lanes. Do not splice cables. Grind the top of the encapsulation material flushed with the road.

   Ensure that the piezoelectric sensors are installed perpendicular to the flow of traffic and are without twists or curls. Position shorter sensors (6 feet length) to one side in a wheel path, not in the center of the lane; position longer sensors in the center of the lane. Cut a slot for the sensor that is 8 inches longer than the sensor. Do not mix or place the epoxy until the RE has approved the cleaning operations.

C. Testing. Perform testing as specified in 704.03.01.C, except do not perform Level B as specified in 704.03.01.C.1.b. Also perform the testing as follows:

Use an LCR Meter to measure the capacitance, resistance, and dissipation factor of each sensor. When the lane is opened to traffic, perform a functional test on the sensor using an oscilloscope.

Provide a 5-axle tractor-trailer combination (3-axle tractor and 2-axle semi-trailer) and driver for calibration of the WIM system. Weigh the calibration truck on a certified, multi-draft public scale. Also weigh the steering axle, drive tandem axles, and trailer tandem axles. Record and provide the weight data to the RE at the start of the test. Include the total gross weight of the combination. Ensure that the truck has an air-ride suspension and is in good mechanical condition. Ensure that the trailer is a dry van type and loaded with a non-shifting load so that the gross weight of the tractor-trailer combination is between 75,000 and 80,000 pounds. Ensure that the axle-loads do not exceed New Jersey Title 39 limits, and do not violate the Federal Bridge Formula.

Drive the truck over each lane a minimum of 5 times and record the axle and gross weights as determined by the WIM system by each sensor for each pass. Use the average values among the 5 passes to calculate a calibration factor for each sensor. Perform this test twice.

After the calibration, ensure that the average values recorded by the WIM system are within 10 percent of each axle weight (average axle weight of each axle group) and within 5 percent of the gross weight of the combination of the weights recorded at the public scale.

If the system cannot be properly calibrated after 3 attempts, the RE may employ a third-party vendor to redo the work. The Department will recover the cost as specified in 107.16.

D. Maintenance. Perform maintenance as specified in 704.03.01.D.

E. Final Documentation. Provide the documentation specified in 704.03.01.E and the following:

1. Configuration data and parameters, port and channel assignments for each traveled lane.
2. Calibration coefficient data for each sensor.

F. Equipment Training. Provide training as specified in 704.03.01.F and in the Special Provisions.

G. Warranty. Perform repairs under warranty and provide documentation as specified in 704.03.01.G.

H. Networking Requirements. Comply with the networking requirements and perform work as specified in 704.03.01.H and in the Contract documents.

I. IT Requirements. Comply with the IT requirements and perform work as specified in 704.03.01.I and in the Contract documents.

704.03.09 Traffic Volume System (TVS)

A. Components. A TVS consists of the specified components needed to provide a complete system that is capable of processing traffic control data to and from the control center in Trenton including pavement loop and vehicle detectors, electronic devices to measure and record vehicle volume, speed, length, gap, and headway in each lane connected to the respective monitoring devices in a cabinet. The system also includes wiring, cabinet, foundation, communication and power connections, service charges, software, grounding, and surge protection.

B. Installation. Before beginning the work and during the work, comply with the requirements of 701.03.01. The allowable time frame for existing system shutdown will begin at 10 P.M. daily and continues through to 4 A.M. on weekdays, 5 A.M. on Saturdays, and 6 A.M. on Sunday mornings unless otherwise noted in the Special Provisions and the cost of damages for exceeding the allowable time frames is specified in the Special Provisions. The Department will recover the cost as specified in 107.16.

If not connected into the fiber optic network, obtain and provide communications with a Utility service provider from the field microprocessor to the Department TVS control center in Trenton.

Construct components as follows:

1. Controller, TVS. Construct the foundation as specified in 701.03.12.

Submit working drawings for approval that include a block wiring diagram that illustrates the interconnections of the TVS components from the field location to the control center in Trenton. Identify each component by manufacturer and model number.

Make operational electronic and electrical components to monitor volume, speed, length, gap, and headway. Ensure the roadway sensors are composed of inductive loops and loop leads. Ensure the TVS electronics are installed at each work site with electrical power and communications for remote station programming, monitoring and failure diagnosis, and data retrieval.

Securely bolt the controller cabinet to the foundation in a vertical position using stainless steel hardware. Seal the underground conduit entrance to the controller with a sealing compound.

2. TVS Roadway Devices. Sawcut the pavement. Pressure wash then dry the sawcut according to the manufacturer's recommendations. Ensure that sensors, loop detector wires, and cables are installed in separate conduit per type of device and that the conduit is waterproofed and sealed. Maintain at least 3 feet of space between the sawcut loops and the sensors. Do not splice cables. Grind the top of the encapsulation material flush with the road.

C. Testing. Perform testing as specified in 704.03.01.C, except do not perform Level B as specified in 704.03.01.C.1.b. Also perform the testing as follows:

Use an LCR Meter to measure the capacitance, resistance, and dissipation factor of each sensor. When the lane is opened to traffic, perform a functional test on the sensor using an oscilloscope.

Measure the ratio of loop inductance to lead inductance and ensure it is within the requirements of the sensor manufacturer.

D. Maintenance. Perform maintenance as specified in 704.03.01.D.

E. Final Documentation. Provide the documentation specified in 704.03.01.E and the following:

1. Configuration data and parameters, port and channel assignments.
2. Calibration data for each sensor.

F. Equipment Training. Provide training as specified in 704.03.01.F and in the Special Provisions.

G. Warranty. Perform repairs under warranty and provide documentation as specified in 704.03.01.G.

H. Networking Requirements. Comply with the networking requirements and perform work as specified in 704.03.01.H and in the Contract documents.

I. IT Requirements. Comply with the IT requirements and perform work as specified in 704.03.01.I and in the Contract documents.

704.03.10 Variable Speed Limit System (VSLS)

A. Components. A VSLS consists of the specified components needed to provide a complete system that is capable of processing traffic speed data to and from the control center, including electronic devices to measure and record vehicle speed in each lane connected to the respective monitoring devices in a cabinet. The system also includes wiring, cabinet, foundation, communication and power connections, service charges, software, grounding, and surge protection.

Ensure that the designated Model numbers for the various VSLS signs are provided as specified in the Special Provisions and the Contract Plans.

Procure VSLS auxiliary control panel with the speed limit sign from the VSLS manufacturer. Install VSLS auxiliary control panel inside VSLS, Controller. Provide Ethernet cables from VSLS sign to controller, VSLS (length as required per contract plans). Provide other equipment not listed here but required for the remote operation of the VSLS.

B. Installation. Before beginning the work and during the work, comply with the requirements of 701.03.01. The allowable time frame for existing system shutdown and cost of damages for exceeding the allowable time frames will be as specified in 704.03.01.B.

Construct components as follows:

1. VSLS Sign. Submit working drawings for approval that include a block wiring diagram that illustrates the interconnections of the VSLS components from the field location to the control center. Identify each component by manufacturer and model number. Mount the sign on the VSLS sign support structure as specified in the contract documents and install the controller according to the manufacturer's recommendations. Construct the foundation for Controller VSLS as specified in 701.03.12 and as per contract documents. Securely bolt the controller to the foundation in a vertical position using stainless steel hardware. Seal the underground conduit entrance to the controller with a sealing compound. Install cables and wire connections between the sign and controller according to the manufacturer's recommendations. Ensure that the conduit entry points are properly closed off with duct sealing compound. Provide a manufacturer technician for commissioning the VSLS and coordinate with the manufacturer by providing access and support during commissioning and for warranty work covered by the VSLS manufacturer under their service agreement with the contractor.

Make operational electronic and electrical components of VSLS to display the desirable speed limit based on field conditions collected by roadway sensors and as per specific information provided by NJDOT during designated times of the day and based on other criteria specified in the contract documents. Ensure that the VSLS signs are installed at the designated locations with power and communications for remote operation of programming, monitoring, failure diagnosis, and data retrieval.

2. Controller, VSLS.

At least 30 days before beginning construction, submit working drawings for approval that include a block wiring diagram that illustrates the interconnections of the VSLS components from the field location to the designated control center. Identify each component by manufacturer and model number.

Securely bolt the controller to the foundation in a vertical position using stainless steel hardware. Seal the underground conduit entrance to the controller with a sealing compound.

Install cables and wire connections between the sign and controller according to the manufacturer's recommendations. Ensure that the conduit entry points are properly closed off with duct sealing compound.

C. Testing. Perform testing as specified in 704.03.01.C and in the Special Provisions.

D. Maintenance. Perform maintenance as specified in 704.03.01.D.

E. Final Documentation. Provide the documentation specified in 704.03.01.E.

F. Equipment Training. Provide training as specified in 704.03.01.F and in the Special Provisions.

G. Warranty. Perform repairs under warranty and provide documentation as specified in 704.03.01.G.

H. Networking Requirements. Comply with the networking requirements and perform work as specified in 704.03.01.H and in the contract documents.

I. IT Requirements. Comply with the IT requirements and perform work as specified in 704.03.01.I and in the Contract document.

704.04 MEASUREMENT AND PAYMENT

The Department will measure and make payment for Items as follows:

Item	*Pay Unit*
JUNCTION BOX ITS TYPE ___	UNIT
JUNCTION BOX ITS, RELOCATION	UNIT
COMMUNICATION CABLE	LINEAR FOOT
FOUNDATION ITS TYPE ___	UNIT
CONTROLLER, ITS	UNIT
COMMUNICATION HUB	UNIT
CONTROL CENTER SYSTEM, LOCATION ___	LUMP SUM
METER CABINET ITS	UNIT
ITS CONDUITS, TYPE _____	LINEAR FOOT
FIBER CROSS CONNECT CABINET	UNIT
FOUNDATION CSS	UNIT
CAMERA STANDARD TYPE ___	UNIT
CAMERA	UNIT
CONTROLLER, CAMERA	UNIT
FIBER OPTIC CABLE TYPE ___	LINEAR FOOT
CONTROLLER, CTSS	UNIT
CTSS CONTROLLER UNIT	UNIT
CONTROLLER, CTSS TURN ON	UNIT
SYSTEM DETECTOR, TYPE ___	UNIT
FOUNDATION TTS TYPE ___	UNIT
DETECTOR STANDARD	UNIT
CONTROLLER, TTS	UNIT
TTS DETECTORS TYPE _____	UNIT
WEATHER STATION	UNIT
WEATHER STATION ROADWAY DEVICES ____ LANES	UNIT
DMS SIGN	UNIT
CONTROLLER DMS	UNIT
CONTROLLER, WIM	UNIT
WIM ROADWAY DEVICES ____ LANES	UNIT
CONTROLLER, TVS	UNIT
TVS ROADWAY DEVICES ____ LANES	UNIT
VSLS SIGN	UNIT
CONTROLLER, VSLS	UNIT

The Department will consider ITS CONDUITS, TYPE ____ as a single conduit comprised of multiple individual conduits as shown in details along with a tracer wire and will be measured as one pay unit.

The Department will make payment for each item, except for FIBER OPTIC CABLE, TYPE___, STANDARDS, JUNCTION BOXES, and FOUNDATIONS, as follows:

Work Completed	**Payment**
Installing the Item	60% of Total Contract Price
Successful completion of Level A testing	10% of Total Contract Price
Successful completion of Level B testing	10% of Total Contract Price
Successful completion of Level C testing	10% of Total Contract Price
Successful completion of Project testing	10% of Total Contract Price

If a level of testing is not required, the Department will include the percentage specified for that level of payment in the Installing the Item percentage.

The Department will make payment for FIBER OPTIC CABLE, TYPE___, as follows:

Work Completed	**Payment**
Installing the fiber optic cable	80% of Total Contract Price
Successful completion of Level 1 testing	10% of Total Contract Price
Successful completion of Level 2 testing	10% of Total Contract Price

DIVISION 800 – LANDSCAPING

SECTION 811 – PLANTING

811.03.01 Planting

E. Excavation for Plant Pits and Beds.
THE LAST SENTENCE OF THE SECOND PARAGRAPH IS CHANGED TO:

Obtain RE approval before reusing topsoil from the excavated pits.

I. Watering.
THE FIRST PARAGRAPH IS CHANGED TO:

Water plants with sufficient frequency and quantity to ensure that the soil surrounding the root system remains moist but not saturated.

811.03.02 Plant Establishment Period

2. Maintenance Bond.

DIVISION 900 – MATERIALS

SECTION 901 – AGGREGATES

THE ENTIRE SUBSECTION IS CHANGED TO:

901.07 GRIT

901.07.01 Grit for Epoxy Waterproofing. Use grit for spreading over the epoxy waterproofing that is a subangular, natural, 98 percent silica sand. Ensure that 90 percent of the total sample by weight falls between the No. 4 and No. 30 sieves, with 0 percent passing the No. 30 sieve.

901.07.02 Fine Aggregate for Fog Seal. Use fine aggregate for spreading over fog seal that conforms to 901.05.02 and the gradation requirements in Table 901.07.02-1:

Table 901.07.02-1 Gradation Requirements for Fine Aggregate used on Fog Seal

Sieve Size	Percent Passing
No. 8	100
No. 16	90 - 100
No. 50	70- 100
No. 200	0 - 2

901.11 SOIL AGGREGATE

1. Composition of Soil Aggregate.

THE FOLLOWING IS ADDED TO THE LAST PARAGRAPH:

For Designation I-14, the Contractor may use up to 30 percent steel slag by weight of the coarse aggregate portion of the soil aggregate. Obtain steel slag from a source listed on the QPL as specified in 901.01. Use steel slag that was produced as a co-product of the steel making process. Ensure that the steel slag consists of tough, durable pieces that are uniform in density and quality. Stockpile steel slag as specified in 901.02. Ensure steel slag for blending with I-14 Soil Aggregate does not exceed 0.50 percent expansion from hydration when tested according to ASTM D 4792.

SECTION 902 – ASPHALT

902.01 BITUMINOUS MATERIALS

THE ENTIRE TEXT IS CHANGED TO:

Use the following temperature-volume correction (TVC) factors to convert the volume of bituminous materials, measured at the temperature at the point of use, to the volume at 60 °F:

1. For PG Binder, use the following equation:

$$TVC = 1.0211326242 - 3.548988118 \times 10^{-4} [T (°F)] + 4.49881 \times 10^{-8} [T (°F)]^2$$

2. For emulsified asphalts, use Table 902.01-1.

Table 902.01-1 TVC Factors for Emulsified Asphalt Material (40 – 103 °F)

Temp (°F)	Factor	Temp (°F)	Factor	Temp (°F)	Factor	Temp (°F)	Factor
40	1.0050	56	1.0010	72	0.9970	88	0.9930
41	1.0048	57	1.0008	73	0.9968	89	0.9928
42	1.0045	58	1.0005	74	0.9965	90	0.9925
43	1.0043	59	1.0003	75	0.9953	91	0.9923
44	1.0040	60	1.0000	76	0.9960	92	0.9920

Table 902.01-1 TVC Factors for Emulsified Asphalt Material (40 – 103 °F)							
Temp (°F)	**Factor**	**Temp (°F)**	**Factor**	**Temp (°F)**	**Factor**	**Temp (°F)**	**Factor**
45	1.0038	61	0.9998	77	0.9958	93	0.9918
46	1.0035	62	0.9995	78	0.9955	94	0.9915
47	1.0033	63	0.9993	79	0.9953	95	0.9913
48	1.0030	64	0.9990	80	0.9950	96	0.9910
49	1.0028	65	0.9988	81	0.9948	97	0.9908
50	1.0025	66	0.9985	82	0.9945	98	0.9905
51	1.0023	67	0.9983	83	0.9943	99	0.9903
52	1.0020	68	0.9980	84	0.9940	100	0.9901
53	1.0018	69	0.9978	85	0.9938	101	0.9899
54	1.0015	70	0.9975	86	0.9935	102	0.9896
55	1.0013	71	0.9973	87	0.9933	103	0.9884
104	0.9891	123	0.9845	142	0.9799	161	0.9754
105	0.9889	124	0.9843	143	0.9797	162	0.9751
106	0.9886	125	0.9840	144	0.9794	163	0.9749
107	0.9884	126	0.9838	145	0.9792	164	0.9747
108	0.9881	127	0.9835	146	0.9790	165	0.9744
109	0.9879	128	0.9833	147	0.9787	166	0.9742
110	0.9876	129	0.9830	148	0.9785	167	0.9739
111	0.9874	130	0.9828	149	0.9782	168	0.9737
112	0.9872	131	0.9826	150	0.9780	169	0.9735
113	0.9869	132	0.9823	151	0.9778	170	0.9732
114	0.9867	133	0.9821	152	0.9775	171	0.9730
115	0.9864	134	0.9818	153	0.9773	172	0.9728
116	0.9862	135	0.9816	154	0.9770	173	0.9725
117	0.9860	136	0.9814	155	0.9768	174	0.9723
118	0.9857	137	0.9811	156	0.9766	175	0.9721
119	0.9855	138	0.9809	157	0.9763	176	0.9718
120	0.9852	139	0.9806	158	0.9761	177	0.9716
121	0.9850	140	0.9804	159	0.9758	178	0.9713
122	0.9847	141	0.9802	160	0.9756	179	0.9711

902.01.01 Asphalt Binder
THE SECOND PARAGRAPH IS CHANGED TO:

When specified, use PG 64E-22 asphalt binder that is a storage-stable and conforms to AASHTO M 332 including compliance with the elastic response requirement in Appendix X1.1.

902.01.02 Cutback Asphalts
THE ENTIRE SUBPART IS DELETED.

902.01.03 Emulsified Asphalts
THE ENTIRE TEXT IS CHANGED TO:

Use undiluted anionic emulsified asphalts of the rapid-setting (RS) and medium-setting (MS) types conforming to AASHTO M 140. Use undiluted cationic emulsified asphalts of the rapid-setting (CRS), quick-setting (CQS), and medium-setting (CMS) types conforming to AASHTO M 208.

For prime coats, use an anionic emulsified asphalt of the slow-setting (SS) type conforming to AASHTO M140 or cationic emulsified asphalt of the slow-setting (CSS) type confirming to AASHTO M 208.

The emulsified asphalt producer shall provide the emulsified asphalt quality control plan annually to the ME for approval. Ensure that the quality control plan conforms to AASHTO R77.

Submit to the ME a certification of compliance, as specified in 106.07, for the emulsified asphalt. The ME will perform quality assurance sampling and testing of each emulsified asphalt lot as defined in the approved quality control plan.

902.01.04 Polymer Modified Tack Coat
THE TITLE AND ENTIRE TEXT IS CHANGED TO:

902.01.04 Polymer Modified Emulsified Asphalt

Use undiluted polymer modified emulsified asphalt of the rapid-setting (RS), cationic rapid-setting (CRS), medium-setting (MS), and cationic quick-setting (CQS) types conforming to AASHTO M 316. The polymer modified emulsified asphalt producer shall provide the polymer modified emulsified asphalt quality control plan annually to the ME for approval. Ensure that the quality control plan conforms to AASHTO R77.

Submit to the ME a certification of compliance, as specified in 106.07, for the polymer modified emulsified asphalt. The ME will perform quality assurance sampling and testing of each polymer modified emulsified asphalt lot as defined in the approved quality control plan.

THE FOLLOWING SUBPART IS ADDED:

902.01.05 Warm Mix Asphalt (WMA) Additives and Processes

Use a WMA additive or process that is listed on the Northeast Asphalt User/Producer Group (NEAUPG) Qualified WMA Technologies List which can be found at the following website: http://www.neaupg.uconn.edu/

If an approved HMA mix design is used, a separate mix design with WMA additives or processes is not required.

Submit information on the WMA additive or process with the Paving Plan required in 401.03.03.A. For controlled foaming systems, also submit the operating parameters of the system including accuracy of the meter, operating range, and temperature of the binder. Provide the target and operating tolerances for the percent water injection and temperatures for the binder. Provide a method for validating this with changing production rates.

Ensure that a technical representative of the manufacturer is on-site or available for consultation for the first day or night of production.

902.02.01 Mix Designations
THE ENTIRE SUBPART IS CHANGED TO:

The requirements for specific HMA mixtures are identified by the abbreviated fields in the Item description as defined as follows:

HOT MIX ASPHALT 12.5ME SURFACE COURSE

1. **"HOT MIX ASPHALT"** "Hot Mix Asphalt" is located in the first field in the Item description for the purpose of identifying the mixture requirements.
2. **"12.5"** The second field in the Item description designates the nominal maximum size aggregate (in millimeters) for the job mix formula (sizes are 4.75, 9.5, 12.5, 19, 25, and 37.5 mm).
3. **"M"** The third field in the Item description designates the design compaction level for the job mix formula based on traffic forecasts as listed in Table 902.02.03-2 (levels are L=low and M=medium).
4. **"E"** The fourth field in the Item description designates the high temperature designation of the performance-graded binder. Options are "64" for PG 64-22 and "E" for PG 64E-22.
5. **"SURFACE COURSE"** The last field in the Item description designates the intended use and location within the pavement structure (options are surface, intermediate, or base course).

902.02.02 Composition of Mixtures
THE ENTIRE SUBPART IS CHANGED TO:

Provide materials as specified:

Aggregates for Hot Mix Asphalt 901.05

Asphalt Binder 902.01.01
Warm Mix Additives and Processes (optional) 902.01.05

If a WMA additive is pre-blended in the asphalt binder, ensure that the asphalt binder meets the requirements of the specified grade after the addition of the WMA additive. If a WMA additive is added at the HMA plant, ensure that the addition of the additive will not negatively impact the grade of asphalt binder. Follow the manufacturer's recommendations for percentage of WMA additive needed.

Mix HMA in a plant that is listed on the QPL and conforms to the requirements for HMA Plants as specified in 1009.01.

Composition of the mixture for HMA surface course is coarse aggregate, fine aggregate, and asphalt binder, and may also include mineral filler, WMA additive, and up to 15 percent Reclaimed Asphalt Pavement (RAP). For controlled asphalt foaming system WMA, the Department may require an anti-stripping additive. Ensure that the finished mix does not contain more than a total of 1 percent by weight contamination from Crushed Recycled Container Glass (CRCG).

The composition of the mixture for HMA base or intermediate course is coarse aggregate, fine aggregate, and asphalt binder, and may also include mineral filler, WMA additive and up to 35 percent of recycled materials. For controlled asphalt foaming system WMA, the Department may require an anti-stripping additive. The 35 percent of recycled materials may consist of a combination of RAP, CRCG, Ground Bituminous Shingle Material (GBSM), and RPCSA, with the following individual limits:

Table 902.02.02-1 Use of Recycled Materials in HMA Base or Intermediate Course

Recycled Material	Maximum Percentage
RAP	25
CRCG	10
GBSM	5
RPCSA	20

Combine the aggregates to ensure that the resulting mixture meets the grading requirements specified in Table 902.02.03-1. In determining the percentage of aggregates of the various sizes necessary to meet gradation requirements, exclude the asphalt binder.

Ensure that the combined coarse aggregate, when tested according to ASTM D 4791, has less than 10 percent flat and elongated pieces retained on the No. 4 sieve and larger. Measure aggregate using the ratio of 5:1, comparing the length (longest dimension) to the thickness (smallest dimension) of the aggregate particles.

Ensure that the combined fine aggregate in the mixture conforms to the requirements specified in Table 902.02.02-2. Ensure that the material passing the No. 40 sieve is non-plastic when tested according to AASHTO T 90.

Table 902.02.02-2 Additional Fine Aggregate Requirements for HMA

Tests	Test Method	Minimum Percent
Uncompacted Void Content of Fine Aggregate	AASHTO T 304, Method A	45
Sand Equivalent	AASHTO T 176	45

902.02.03 Mix Design

TABLES 902.02.03-2, AND 902.02.03-3 ARE CHANGED TO:

Table 902.02.03-2 Gyratory Compaction Effort for HMA Mixtures

Compaction Level	ESALs[1] (millions)	N_{des}	N_{max}
L	< 0.3	50	75
M	≥ 0.3	75	115

1. Design ESALs (Equivalent (80kN) Single-Axle Loads) refer to the anticipated traffic level expected on the design lane over a 20-year period.

Table 902.02.03-3 HMA Requirements for Design										
Compaction Levels	Required Density (% of Theoretical Max. Specific Gravity)		Voids in Mineral Aggregate (VMA), % (minimum)						Voids Filled With Asphalt (VFA)1 %	Dust-to-Binder Ratio
			Nominal Max. Aggregate Size, mm							
	@N_{des}[2]	@N_{max}	37.5	25.0	19.0	12.5	9.5	4.75		
L	96.0	≤ 98.0	11.0	12.0	13.0	14.0	15.0	16.0	70 - 80	0.6 - 1.2
M	96.0	≤ 98.0	11.0	12.0	13.0	14.0	15.0	16.0	65 - 78	0.6 - 1.2

1. For 37.5-mm nominal maximum size mixtures, the specified lower limit of the VFA is 64 percent for all design traffic levels.
2. As determined from the values for the maximum specific gravity of the mix and the bulk specific gravity of the compacted mixture. Maximum specific gravity of the mix is determined according to AASHTO T 209. Bulk specific gravity of the compacted mixture is determined according to AASHTO T 166. For verification, specimens must be between 95.0 and 97.0 percent of maximum specific gravity at N_{des}.

THE FOURTH PARAGRAPH IS CHANGED TO:

At the ME's request, test the mix design to ensure that it meets a minimum tensile strength ratio of 80 percent, when tested according to AASHTO T 283. The ME will require tensile strength ratio testing for new aggregate sources and for aggregates or mixes suspected of stripping susceptibility.

902.02.04 Sampling and Testing

THE ENTIRE TEXT IS CHANGED TO:

A. General Acceptance Requirements. The RE or ME may reject and require disposal of any batch or shipment that is rendered unfit for its intended use due to contamination, segregation, improper temperature, lumps of cold material, or incomplete coating of the aggregate. For other than improper temperature, visual inspection of the material by the RE or ME is considered sufficient grounds for such rejection.

For PG 64-22, ensure that the temperature of the mixture at discharge from the plant or surge and storage bins is at least 290 °F when the ambient temperature is less than 50 °F or is at least 275 °F when the ambient temperature is greater than or equal to 50 °F. For PG 64E-22, ensure that the temperature of the mixture at discharge from the plant or surge and storage bins is at least 10 °F above the manufacturer's recommended laydown temperature. For mixes produced using a WMA additive or process, ensure that the temperature of the mixture at discharge from the plant or surge and storage bins is at least 10 °F above the WMA manufacturer's recommended laydown temperature.

Do not allow the mixture temperature to exceed 330 °F at discharge from the plant.

Combine and mix the aggregates and asphalt binder to ensure that at least 95 percent of the coarse aggregate particles are entirely coated with asphalt binder as determined according to AASHTO T 195. If the ME determines that there is an on-going problem with coating, the ME may obtain random samples from 5 trucks and will determine the adequacy of the mixing on the average of particle counts made on these 5 test portions. If the requirement for 95 percent coating is not met on each sample, modify plant operations, as necessary, to obtain the required degree of coating.

If used, ensure that the equipment for controlled asphalt foaming system is running according to the manufacturer's recommendations. Ensure that the metering of water to foam the asphalt is controlled to produce a uniform mixture.

B. Sampling. The ME will take a random sample from each 700 tons of production for volumetric acceptance testing and to verify composition. The ME will perform sampling according to AASHTO T 168, NJDOT B-2, or ASTM D 3665. During production at the plant, a sample of asphalt binder will be taken once every 3500 tons or as directed by the ME.

C. Quality Control Testing. The HMA producer shall provide a quality control (QC) technician who is certified by the Society of Asphalt Technologists of New Jersey as an Asphalt Technologist, Level 2. The QC technician may substitute equivalent technician certification by the Mid-Atlantic Region Technician Certification Program (MARTCP). Ensure that the QC technician is present during periods of mix production for the sole purpose of quality control testing and to assist the ME. The ME will not perform the quality control testing or other routine test functions in the absence of, or instead of, the QC technician.

The QC technician shall perform sampling and testing according to the approved quality control plan, to keep the mix within the limits specified for the mix being produced. The QC technician may use acceptance test results or perform additional testing as necessary to control the mix.

To determine the composition, perform ignition oven testing according to AASHTO T 308 and aggregate gradation according to AASHTO T 30.

For each acceptance test, perform maximum specific gravity testing according to AASHTO T 209 on a test portion of the sample taken by the ME. Sample and test coarse aggregate, fine aggregate, mineral filler, and RAP according to the approved quality control plan for the plant.

When using RAP, ensure that the supplier has in operation an ongoing daily quality control program to evaluate the RAP. As a minimum, this program shall consist of the following:

1. An evaluation performed to ensure that the material conforms to 901.05.04 and compares favorably with the design submittal.
2. An evaluation of the RAP material performed using a solvent or an ignition oven to qualitatively evaluate the aggregate components to determine conformance to 901.05.
3. Quality control reports as directed by the ME.

D. Acceptance Testing and Requirements. The ME will determine volumetric properties at Ndes for acceptance from samples taken, compacted, and tested at the HMA plant. The ME will compact HMA to the number of design gyrations (Ndes) specified in Table 902.02.03-2, using equipment according to AASHTO T 312. The ME will determine bulk specific gravity of the compacted sample according to AASHTO T 166. The ME will use the most current QC maximum specific gravity test result in calculating the volumetric properties of the HMA.

The ME will determine the dust-to-binder ratio from the composition results as tested by the QC technician.

Ensure that the HMA mixture conforms to the requirements specified in Table 902.02.04-1, and to the gradation requirements in Table 902.02.03-1. If 2 samples in 5 consecutive samples fail to conform to the gradation or volumetric requirements, immediately initiate corrective action.

The ME will test a minimum of 1 sample per 3500 tons for moisture, basing moisture determinations on the weight loss of an approximately 1600-gram sample of mixture heated for 1 hour in an oven at 280 ± 5°F. Ensure that the moisture content of the mixture at discharge from the plant does not exceed 1.0 percent.

Table 902.02.04-1 Hot Mix Asphalt Requirements for Control

Compaction Levels	Required Density (% of Theoretical Max. Specific Gravity)	Voids in Mineral Aggregate (VMA), % (minimum)						Dust-to-Binder Ratio
		Nominal Max. Aggregate Size, mm						
	@Ndes[1]	37.5	25.0	19.0	12.5	9.5	4.75	
L, M	95.0 – 97.0	11.0	12.0	13.0	14.0	15.0	16.0	0.6 - 1.3

1. As determined from the values for the maximum specific gravity of the mix and the bulk specific gravity of the compacted mixture. Maximum specific gravity of the mix is determined according to AASHTO T 209. Bulk specific gravity of the compacted mixture is determined according to AASHTO T 166.

902.03.01 Composition of Mixtures
THE ENTIRE TEXT IS CHANGED TO:

Mix OGFC and MOGFC in a plant that is listed on the QPL and conforms to the requirements for HMA plants as specified in 1009.01.

Composition of mixture for OGFC and MOGFC is coarse aggregate, fine aggregate and asphalt binder and may include a WMA additive. Ensure that the mixture conforms to the following requirements:

1. Use aggregate for OGFC and MOGFC that conforms to 901.05, except, for coarse aggregate, use broken stone of gneiss, granite, quartzite, or trap rock. Do not use RAP, CRCG, GBSM, or RPCSA.
2. Use asphalt binder for OGFC and MOGFC that is PG 64E-22 as specified in 902.01.01.
3. If used, ensure that WMA additives or processes conform to 902.01.05. If a WMA additive is pre-blended in the asphalt binder, ensure that the asphalt binder meets the requirements of the specified grade after the addition of the WMA additive. If a WMA additive is added at the HMA plant, ensure that the addition of the

additive will not negatively impact the grade of asphalt binder. Follow the manufacturer's recommendations for percentage of WMA additive needed. For controlled asphalt foaming system WMA, the Department may require an anti-stripping additive.

4. For MOGFC, add a stabilizing additive consisting of mineral fiber or cellulose fiber to the mix. Use a stabilizing additive that conforms to the requirements for stabilizing additives in AASHTO M 325. Use only 1 type per mix design. If using mineral fibers, use a dosage rate of 0.4 percent by weight of total mix. If using cellulose fibers, use a dosage rate of 0.3 percent by weight of total mix. The dosage rate may be increased, as necessary, to prevent draindown as measured by the visual draindown determination of asphalt content in NJDOT B-8. Accurately control proportioning the fibers into the mixture within ±10 percent of the required weight, and use equipment that ensures uniform dispersion of the fibers. Store fibers in a dry location with a storage temperature not to exceed 120 °F. The supplier of the cellulose or mineral fibers shall provide a certification of compliance, as specified in 106.07, that the material supplied conforms to AASHTO M 325. Ensure that a technical representative from the additive supplier is at the work site for the first full day of construction for technical assistance.

902.03.02 Mix Design

THE FOURTH PARAGRAPH IS CHANGED TO:

The ME will test 2 specimens to verify that the final JMF produces a mixture that has a minimum void content as specified in Table 902.03.03-1. The ME will determine percent air voids according to AASHTO T 209, and either NJDOT B-6 or AASHTO T 331.

902.03.03 Sampling and Testing

THE FOLLOWING IS ADDED TO THE FIRST PARAGRAPH:

Ensure that the mix meets the requirements as specified in 902.02.04.A, otherwise the RE or ME will reject the material.

THE SECOND PARAGRAPH IS CHANGED TO:

During production, the ME will take one random acceptance sample from each 700 tons of production to verify composition. Conduct air voids and draindown tests as directed by the ME.

THE THIRD AND FOURTH PARAGRAPH ARE CHANGED TO:

If the composition testing results are outside of the production control tolerances specified in Table 902.03.03-2 for an acceptance sample, immediately run a quality control sample. If the quality control sample is also outside of the control tolerances in Table 902.03.03-2, determine if a plant adjustment is needed and take corrective action to bring the mix into compliance. Take additional quality control samples after the corrective action to ensure that the mix is within the production control tolerances. If 2 consecutive acceptance samples are outside the tolerances specified in Table 902.03.03-2, immediately stop production. Obtain ME approval of a plant correction plan before resuming production. Upon restarting production, do not transport mixture to the Project Limits before the results of a QC sample from the mixture indicate that the mixture meets JMF tolerances. The ME will reject mixture produced at initial restarting that does not meet tolerances.

The ME will perform sampling according to NJDOT B-2 or ASTM D 3665, and will perform testing for composition according to AASHTO T 308 or NJDOT B-5. Perform testing for air voids according to AASHTO T 209 and either NJDOT B-6 or AASHTO T 331. Perform testing for draindown according to NJDOT B-7 or NJDOT B-8. During production at the plant, a sample of asphalt binder will be taken once every 3500 tons or as directed by the ME.

TABLE 902.03.03-2 IS CHANGED TO:

Table 902.03.03-2 Production Control Tolerances for OGFC and MOGFC Mixtures

Sieve Sizes	Production Control Tolerances from JMF[1]
1/2"	±3.0
3/8"	±4.0
No. 4	±3.0

No. 8	±1.0
No. 200	±1.0
Asphalt Binder Content, % (AASHTO T 308)[2]	±0.40
Asphalt Binder Content, % (NJDOT B-5)[2]	±0.15
Minimum % Air Voids	1.0% less than design requirement

1. Production tolerances may not fall outside of the wide band gradation limits in Table 902.03.03-1.
2. The asphalt binder content may not be lower than the minimum after the production tolerance is applied.

902.04 ULTRA-THIN HMA

THE ENTIRE SUBSECTION IS CHANGED TO:

902.04.01 Composition of Mixture

Mix ultra-thin HMA in a plant listed on the QPL conforming to the requirements for HMA plants specified in 1009.01.

Use ultra-thin HMA that consists of coarse aggregate, fine aggregate, and polymer modified asphalt binder and that may contain mineral filler or a WMA additive. Do not add RAP, CRCG, GBSM, or RPCSA. Combine the material in such proportions that the total aggregate and asphalt binder conform to the composition percentages specified in Table 902.04.02-1.

To produce the ultra-thin HMA, use aggregates and asphalt binder that conforms to the following:

1. For asphalt binder, use PG 64E-22 conforming to the requirements of 902.01.01.
2. If used, ensure that WMA additives or processes conform to 902.01.05. If a WMA additive is pre-blended in the asphalt binder, ensure that the asphalt binder meets the requirements of the specified grade after the addition of the WMA additive. If a WMA additive is added at the HMA plant, ensure that the addition of the additive will not negatively impact the grade of asphalt binder. Follow the manufacturer's recommendations for percentage of WMA additive needed. For controlled asphalt foaming system WMA, the Department may require an anti-stripping additive.
3. For fine aggregate, use 100 percent stone sand conforming to 901.05.02. Ensure that the gradation conforms to Table 902.04.01-1 and that the sand equivalent is more than 45 percent when tested according to AASHTO T 176.

Table 902.04.01-1 Fine Aggregate Gradation

Sieve Size	Total % Passing By Mass
3/8″	100
No. 4	95-100
No. 8	70-90
No. 16	50-70
No. 30	45-55
No. 50	25-40
No. 100	15-28
No. 200	10.0-17.0

4. Use coarse aggregate that conforms to 901.05.01 and Table 902.04.01-2. Permissible geologic classifications for coarse aggregate are, gneiss, granite, quartzite, or trap rock. Ensure that the gradation conforms to Table 902.04.01-3.

Table 902.04.01-2 Coarse Aggregate Properties

Tests	Test Method	Minimum Percent	Maximum Percent
Percentage of wear, Los Angeles Abrasion Test	AASHTO T 96		25
Flakiness Index	NJDOT A-8		20
Clay Lumps and Friable Particles	ASTM C 142		2
Asphalt Affinity[1]	ASTM D 3625	95	

1. Anti-stripping agents may be required to provide resistance to stripping.

Table 902.04.01-3 Coarse Aggregate Gradation

Sieve Size	Total % Passing By Mass
1/2″	100
3/8″	85-100
1/4″	0-15
No. 4	0-5
No. 200	0.0-3.0

5. Use mineral filler, if necessary, that conforms to 901.05.03.

902.04.02 Mix Design

Design the ultra-thin HMA as specified in NJDOT Test Method B-13 and ensure the JMF meets the requirements in Table 902.04.02-1.

Size, uniformly grade, and combine aggregate fractions in proportions so that the grading of total aggregate and asphalt binder in the JMF conform to the composition by mass percentages specified in Table 902.04.02-1.

Table 902.04.02-1 JMF Requirements for Ultra-Thin Friction Course

Sieve Size	Percent Passing[1]	Production Control Tolerances[2]
1/2″	100	0.0
3/8″	85-100	±3.0
1/4″	30-50	±4.0
No. 4	24-40	±3.0
No. 8	21-32	±3.0
No. 16	16-26	±3.0
No. 30	12-20	±2.0
No. 50	8-16	±2.0
No. 100	5-10	±1.0
No. 200	4.0-7.0	±1.0
Asphalt Binder Content (Ignition Oven)[3]	4.9 - 6.0	±0.30

1. Aggregate percent passing to be determined based on dry aggregate weight.
2. Production tolerances are for the approved JMF and may not fall outside of the wide band gradation limits.
3. The asphalt binder content may not be lower than the minimum after the production tolerance is applied.

Design the ultra-thin HMA to meet the requirements in Table 902.04.02-2.

Table 902.04.02-2 UTFC Mix Properties

Tests	Test Method	Minimum	Maximum
Draindown	AASHTO T 305		0.3 %
Film Thickness	NJDOT B-13	10 micron	
Cantabro Loss	NJDOT B-8		30 %
Air Voids (@ 75 gyrations)	NJDOT B-13		8.0 %

When tested for moisture sensitivity according to AASHTO T 283, ensure that the ultra-thin HMA has a tensile strength ratio of at least 80 percent. Prepare specimens according to AASHTO T 312, and test according to AASHTO T 283 except for the following:

1. Before compaction, condition the mixture for 2 hours according to AASHTO R 30, Section 7.1.
2. Compact specimens with 75 gyrations.
3. Extrude specimens as soon as possible without damaging.
4. Use NJDOT Test Method B-13 to determine void content.

5. Record the void content of the specimens.
6. If less than 55 percent saturation is achieved, repeat the procedure, unless the difference in tensile strength between duplicate specimens is greater than 25 pounds per square inch.
7. If visual stripping is detected, modify or readjust the mix.

At least 30 days before the initial production date, submit the mix design to the ME for approval on forms supplied by the Department, including JMF for the ultra-thin HMA. Include a statement naming the source of each component and a report with the results for the criteria specified in Tables 902.04.01-1, 902.04.01-2 and 902.04.02-1.

If the source of any component material changes, submit a new JMF and obtain ME approval before using the new material. When unsatisfactory results or other conditions make it necessary, the ME may require a new JMF.

During the construction of the test strip, take samples to confirm that the plant mixed material meets the requirements of the mix design. The ME will not grant final approval of the mix design until a successful verification of the plant produced mix and construction test strip.

902.04.03 Sampling and Testing

Ensure that the mix meets the requirements as specified in 902.02.04.A, otherwise the RE or ME will reject the material. Maintain the temperature of the mix between 300 °F and 330 °F. Perform and meet requirements for quality control testing as specified in 902.02.04.C.

Ensure that a technical representative from the lab which designed the mix is present during the first night of production to make adjustments as needed for mix compliance. During production, the ME will take one random acceptance sample from each 700 tons of production to verify composition. Conduct draindown tests as directed by the ME.

If the composition testing results are outside of the production control tolerances specified in Table 902.04.02-1 for an acceptance sample, immediately run a quality control sample. If the quality control sample is also outside of the control tolerances in Table 902.04.02-1, determine if a plant adjustment is needed and take corrective action to bring the mix into compliance. Take additional quality control samples after the corrective action to ensure that the mix is within the production control tolerances. If 2 consecutive acceptance samples are outside the tolerances specified in Table 902.04.02-1, immediately stop production. Obtain ME approval of a plant correction plan before resuming production. Upon restarting production, do not transport mixture to the Project Limits before the results of a QC sample from the mixture indicate that the mixture meets JMF tolerances. The ME will reject mixture produced at initial restarting that does not meet tolerances.

The ME will perform sampling according to NJDOT B-2 or ASTM D 3665, and will perform testing for composition according to AASHTO T 308. Perform testing for draindown according to AASHTO T 305 for every 3500 tons or as directed by the RE. The ME may require testing and calculations of film thickness according to NJDOT B-13. The ME may require adjustment or re-design of the UTFC for failure of draindown or film thickness based on the requirements in Table 902.04.02-2. During production at the plant, the ME will take a sample of the asphalt binder once every 3500 tons or as directed by the ME.

902.05.01 Composition of Mixture
THE ENTIRE TEXT IS CHANGED TO:

Mix SMA in a plant that is listed on the QPL and conforms to the requirements for HMA plants as specified in 1009.01.

The composition of the SMA mixture is coarse aggregate, fine aggregate, mineral filler, mineral fibers or cellulose fibers, and polymer modified asphalt binder and may include a WMA additive.

Use asphalt binder for SMA that is PG 64E-22 as specified in 902.01.01.

For coarse aggregate in SMA, use crushed stone conforming to 901.05.01 and Table 902.05.01-1. Use at least 2 stockpiles of crushed stone with differing gradations to allow adjustments to meet the JMF.

Table 902.05.01-1 Coarse Aggregate Properties for SMA

Tests	Test Method	Maximum Percent
Percentage of wear, Los Angeles Abrasion Test	AASHTO T 96	30
Flat and Elongated, 5 to 1 (Material Retained on the No. 4 Sieve)	ASTM D 4791	5

Flat and Elongated, 3 to 1 (Material Retained on the No. 4 Sieve)	ASTM D 4791	20

For fine aggregate, use 100 percent stone sand conforming to 901.05.02. Ensure that the combined fine aggregate in the mixture conforms to the requirements in Table 902.02.02-2.

For mineral filler, use rock dust or crushed limestone conforming to AASHTO M 17. Ensure that the mineral filler has a plasticity index of less than 4 percent when tested according to AASHTO T 90.

Do not add RAP, CRCG, GBSM, or RPCSA to the mixture.

Add stabilizing fibers consisting of mineral fiber or cellulose fiber conforming to AASHTO M 325. Use only one type per mix design. If using mineral fibers, use between 0.4 and 0.6 percent by weight of total mix. If using cellulose fibers, use between 0.3 and 0.4 percent by weight of total mix. Provide control to accurately proportion the fibers into the mixture within ±10 percent of the required weight, and use equipment that ensures uniform dispersion of the fibers. If using pre-packaged bags of fibers added to the pugmill during the dry mix cycle, follow the manufacturer's recommendations for the dry and wet mixing time. Store fibers in a dry location with a storage temperature not to exceed 120 °F. The supplier of the cellulose or mineral fibers shall provide a certification of compliance, as specified in 106.07, for the fibers. Ensure that a technical representative from the fiber supplier is at the HMA plant for the first full day of production for technical assistance.

If used, ensure that WMA additives or processes conform to 902.01.05. If a WMA additive is pre-blended in the asphalt binder, ensure that the asphalt binder meets the requirements of the specified grade after the addition of the WMA additive. If a WMA additive is added at the HMA plant, ensure that the addition of the additive will not negatively impact the grade of asphalt binder. Follow the manufacturer's recommendations for percentage of WMA additive needed. For controlled asphalt foaming system WMA, the Department may require an anti-stripping additive.

902.05.02 Mix Design

THE ENTIRE TEXT IS CHANGED TO:

Design the SMA to meet the requirements in Table 902.05.02-1 and Table 902.05.02-2. Prepare the JMF according to AASHTO R 46. Determine the JMF at 4 percent air voids and 75 gyrations of the Superpave gyratory compactor.

Table 902.05.02-1 SMA Specification Band (% passing) nominal-maximum aggregate size

Production Control Tolerances from JMF[1]	Sieve Size	19 mm % Passing	12.5 mm % Passing	9.5 mm % Passing
0%	1"	100	100	100
±2%	3/4"	90-100	100	100
±5%	1/2"	50-88	90-100	100
±5%	3/8"	25-60	50-80	70-95
±3%	No. 4	20-28	20-35	30-50
±2%	No. 8	16-24	16-24	20-30
±4%	No. 16	–	–	0-21
±3%	No. 30	–	–	0-18
±3%	No. 50	–	–	0-15
±2%	No. 200	8.0-11.0	8.0-11.0	8.0-12.0
	Coarse Aggregate Fraction	Portion Retained on No. 4 Sieve	Portion retained on No. 4 Sieve	Portion retained on No. 8 Sieve
	Minimum Lift Thickness	2 inches	1 1/2 inch	1 inch

1. Production tolerances may fall outside of the wide band gradation limits.

Table 902.05.02-2 SMA Mixtures Volumetrics For Design and Plant Production		
Property	**Production Control Tolerances**	**Requirement**
Air Voids	±1%	3.5%
Voids in Mineral Aggregate (VMA)	–	17.0% minimum
VCA_{mix}	–	Less than VCA_{dry}
Draindown @ production temperature	–	0.30% maximum
Asphalt Binder Content (AASHTO T 308)[1]	±0.40%	6% minimum
Tensile Strength Ratio (AASHTO T 283)	–	80% minimum

1. Asphalt binder content may not be lower than the minimum after the production tolerance is applied.

902.05.03 Sampling and Testing

THE ENTIRE TEXT IS CHANGED TO:

Perform quality control testing as specified in 902.02.04.C. Ensure that the mix meets the requirements as specified in 902.02.04.A, otherwise the RE or ME will reject the material.

During production at the plant, the ME will take a sample from each 700 tons of production to verify composition and air voids. Conduct draindown, VCAmix, VCAdry, and VMA testing as directed by the ME. Perform tests according to AASHTO R 46.

If the testing results are outside of the production control tolerances specified in Table 902.05.02-1 and Table 902.05.02-2 for an acceptance sample, immediately run a quality control sample. If the quality control sample is also outside of the control tolerances in Table 902.05.02-1, determine if a plant adjustment is needed and take corrective action to bring the mix into compliance. Take additional quality control samples after completing the corrective action to ensure that the mix is within tolerances. If 2 consecutive acceptance samples are outside the tolerances specified in Table 902.05.02-1 and Table 902.05.02-2, immediately stop production. Obtain ME approval of a plant correction plan before resuming production. Upon restarting production, do not transport mixture to the Project Limits before the results of a QC sample from the mixture indicate that the mixture meets JMF tolerances. The ME will reject mixture produced at initial restarting that does not meet tolerances.

The ME will perform sampling according to NJDOT B-2 or ASTM D 3665, and will perform testing for composition according to AASHTO T 308. The ME will determine bulk specific gravity of the compacted sample according to AASHTO T 166 or AASHTO T 331. The ME will use the most current QC maximum specific gravity test result, obtained according to AASHTO T 209, in calculating the volumetric properties of the SMA. Perform testing for draindown according to AASHTO T 305. During production at the plant, a sample of asphalt binder will be taken once every 3500 tons or as directed by the ME.

902.06.01 Composition

THE ENTIRE TEXT IS CHANGED TO:

Mix ASDC in a plant that is listed on the QPL and conforms to the requirements specified in 1009.01.

The mixture shall consist of asphalt binder and aggregate and may contain a WMA additive. Use asphalt binder that is PG 64-22 as specified in 902.01.01. Use aggregate that conforms to 901.05.01 or 901.05.02 and the gradation requirements specified in Table 902.06.01-1.

If used, ensure that WMA additives or processes conform to 902.01.05. If a WMA additive is pre-blended in the asphalt binder, ensure that the asphalt binder meets the requirements of the specified grade after the addition of the WMA additive. If a WMA additive is added at the HMA plant, ensure that the addition of the additive will not negatively impact the grade of asphalt binder. Follow the manufacturer's recommendations for percentage of WMA additive needed. For controlled asphalt foaming system WMA, the Department may require an anti-stripping additive.

Table 902.06.01-1 Gradation Requirements and Tolerances for ASDC		
Production Tolerance (Variation From JMF)	**Sieve Size**	**JMF (Percent Passing)**
	1"	100

±1.0	3/4"	95 - 100
±3.0	1/2"	85 - 100
±6.0	3/8"	60 - 90
±2.0	No. 4	15 - 25
±2.0	No. 8	2 - 10
±1.0	No. 200	2 - 5

Design the mixture to have an asphalt binder content of 3 ± 1/2 percent by weight of dry aggregate.

902.06.03 Sampling and Testing
THE ENTIRE TEXT IS CHANGED TO:

Perform quality control testing as specified in 902.02.04.C. Ensure that the mix meets the requirements as specified in 902.02.04.A, except that the temperature of the mix at discharge is required to be between 230 °F and 275 °F, otherwise the RE or ME will reject the material. For mixes produced using a WMA additive or process, ensure that the temperature of the mixture at discharge from the plant or surge and storage bins is at least 10 °F above the WMA manufacturer's recommended laydown temperature.

During production, the ME will take one random acceptance sample from each 700 tons of production to verify composition. Conduct draindown tests as directed by the ME.

If the composition testing results are outside of the production control tolerances specified in Table 902.06.01-1 for an acceptance sample, immediately run a quality control sample. If the quality control sample is also outside of the control tolerances specified in Table 902.06.01-1, determine if a plant adjustment is needed and take corrective action to bring the mix into compliance. Take additional quality control samples after the corrective action to ensure that the mix is within tolerances. If 2 consecutive acceptance samples are outside the tolerances specified in Table 902.06.01-1, immediately stop production. Obtain ME approval of a plant correction plan before resuming production. Upon restarting production, do not transport mixture to the Project before the results of a QC sample from the mixture indicate that the mixture meets JMF tolerances. The ME will reject mixture produced at initial restarting that does not meet tolerances.

The ME will perform sampling according to NJDOT B-2 or ASTM D-3665 and will perform testing for composition according to AASHTO T 308. If directed by the ME, perform testing for draindown according to AASHTO T 305. During production at the plant, a sample of asphalt binder will be taken once every 3500 tons or as directed by the ME.

THE FOLLOWING SUBSECTIONS ARE ADDED

902.07 ASPHALT-RUBBER OPEN-GRADED FRICTION COURSE (AR-OGFC)

902.07.01 Composition of Mixture

Mix AR-OGFC in a plant listed on the QPL and conforming to the requirements for HMA plants specified in 1009.01. Ensure the HMA plant is equipped with asphalt-rubber binder blending equipment as specified in 1009.03.

Composition of mixture for AR-OGFC is coarse aggregate, fine aggregate and asphalt-rubber binder. Ensure that the mixture conforms to the following requirements:

1. Use aggregates that conform to 901.05. Use fine aggregate that is 100 percent stone sand and conforms to Table 902.02.02-2.
2. Do not use RAP, CRCG, GBSM, or RPCSA.
3. Use asphalt-rubber binder that conforms to 902.07.02.

902.07.02 Asphalt-Rubber Binder

A. Materials. Use the following materials:

1. Ground Crumb Rubber. Ensure that the ground crumb rubber has a specific gravity of 1.15 ± 0.05, is free of wire or other contaminating materials, and contains not more than 0.5 percent fabric. Use crumb rubber that is ambient ground and conforms to the gradation requirements specified in Table 902.07.02-1. Ensure that the

moisture content is less than 0.75 percent. The Contractor may add up to four percent calcium carbonate by weight of the granulated rubber, to prevent the particles from sticking together.

Table 902.07.02-1 Ground Crumb Rubber Gradation

Sieve Size	Percent Passing[1, 2]
No. 8	100
No. 16	65 – 100
No. 30	20 – 100
No. 50	0 – 45
No. 200	0 – 5

1. Perform gradation according to AASHTO T 27 using a minimum 50 gram sample.
2. Ensure that the gradation is performed as specified in NJDOT B-11.

Submit to the ME a certification of compliance, as specified in 106.07, for the ground crumb rubber. In addition, ensure that the certificates confirm that the rubber is a crumb rubber, derived from processing whole scrap tires or shredded tire materials; and the tires from which the crumb rubber is produced are taken from automobiles, trucks, or other equipment owned and operated in the United States. Include with the certifications verifications that the processing did not produce, as a waste product, casings, or other round tire material that can hold water when stored or disposed of above ground.

2. Asphalt Binder.

a. Use asphalt binder that conforms to AASHTO M 320, Table 1; PG 64-22, PG 58-28 or an approved blend of both grades. The asphalt binder producer is required to provide the asphalt binder quality control plan annually to the ME for approval. Ensure that the quality control plan conforms to AASHTO R 26. Submit to the ME a certification of compliance, as specified in 106.07, for the asphalt binder. The ME will perform quality assurance sampling and testing of each asphalt binder lot as defined in the approved quality control plan.

b. Use one or more of the following types of warm mix asphalt (WMA) additives or processes:

1. Organic additives such as a paraffin wax or a low molecular weight esterified wax.

2. Chemical additive that acts as a surfactant or dispersing agent.

Do not use controlled asphalt foaming systems or any other steam injection processes or steam introducing additives. WMA is a method of producing asphalt pavement at a mixing and compaction temperatures at least 30 ºF lower than Hot Mix Asphalt (HMA) by using one or more of the types of WMA additives listed above. Submit information on the WMA additive or process with the Paving Plan required in 402.03.02.A. Include in the submission, the name and description of the additive or process, the manufacturer's recommendations for usage of the additive or process, recommendations for mixing and compaction temperatures, and details on at least one project on which the additive was successfully used in the United States on a crumb rubber modified asphalt mixture. In the details of a project, include tonnage, type of mix, dosage, mixing and compaction temperatures, available test results, and contact information for project. If a WMA additive is pre-blended in the asphalt binder, ensure that the asphalt binder meets the requirements of the specified grade after the addition of the WMA additive. If a WMA additive is added at the HMA plant, ensure that the addition of the additive will not negatively impact the grade of asphalt binder. The ME will evaluate the impacts to performance grade of the asphalt binder based upon certification from manufacturer in conjunction with laboratory data indicating the effects of the additive on the asphalt binder properties. Follow the manufacturer's recommendations for the dosage of WMA additive needed and approved blending method(s).

Ensure that a technical representative of the WMA additive manufacturer is on-site or available for consultation during the production and placement of the AR-OGFC with the warm mix additive.

B. Mixing. Using the asphalt-rubber binder blending equipment in 1009.03, produce the asphalt-rubber binder to contain at least 17 percent ground rubber by the weight of total asphalt binder (asphalt + crumb rubber). Ensure that the temperature of the asphalt cement is between 350 and 400 °F at the time of addition of the ground rubber. Ensure

that there are no agglomerations of rubber particles in excess of two inches in the least dimension in the mixing chamber.

Document that the proportions are accurate and that the rubber has been uniformly incorporated into the mixture. Report as directed by the ME. Ensure that the crumb rubber and asphalt-cement are thoroughly mixed before beginning the one-hour reaction period. Rubber floating on the surface or agglomerations of rubber particles is evidence of insufficient mixing. Maintain the temperature of the asphalt-rubber binder immediately after mixing between 325 and 375 °F. Maintain the temperature of the asphalt-rubber binder for at least one hour before using.

C. Properties. Prepare asphalt-rubber binder using the "wet process." Physical properties are required to comply with the requirements of ASTM D 6114, Type II, except for the properties specified in Table 902.07.02-2.

Table 902.07.02-2 Asphalt-Rubber Binder Properties

Property	Test Procedure	Requirement
Resilience: 77 °F; %, minimum	ASTM D 5329	25
Rotational Viscosity[1] 350 °F; cP	NJDOT B-12	2000 – 4000

1. The viscotester used must be correlated to a Rion (formerly Haake) Model VT-04 viscotester using the No. 1 Rotor. The Rion viscotester rotor, while in the off position, is required to be completely immersed in the binder at a temperature from 350 ± 3 °F for a minimum heat equilibrium period of 60 seconds, and the average viscosity determined from three separate constant readings (± 500 cP) taken within a 30 second time frame with the viscotester level during testing and turned off between readings. Continuous rotation of the rotor may cause thinning of the material immediately in contact with the rotor, resulting in erroneous results.

D. Handling and Testing. Once the asphalt-rubber binder has been mixed, thoroughly agitate during periods of use to prevent settling of the rubber particles. During production, maintain asphalt-rubber binder between 325 and 375 °F. Ensure that asphalt-rubber binder is not held at 325 °F or higher for more than 16 hours. Allow asphalt-rubber binder held for more than 16 hours to cool. To reuse, gradually reheat to between 325 and 375 °F. Do not cool and reheat more than one time. Do not store asphalt-rubber binder above 250 °F for more than four days.

For each load or batch of asphalt-rubber binder, provide the RE with the following:

1. The source, grade, amount, and temperature of the asphalt cement before the addition of rubber.
2. The source and amount of rubber and the rubber content expressed as percent by the weight of the asphalt cement.
3. Times and dates of the rubber additions and resultant viscosity test.
4. A record of the temperature, with time and date reference for each load or batch. The record begins at the time of the addition of rubber and continue until the load or batch is completely used. Take readings and record every temperature change in excess of 20 °F, and as needed to document other events that are significant to batch use and quality.

902.07.03 Mix Design

Submit binder and mix designs including JMF for each mixture performed by an AASHTO accredited lab with at least five successfully completed asphalt-rubber open-graded friction course projects greater than 5,000 tons each. Include a statement naming the source of each component and a report with the results for the criteria specified in Table 902.07.03-1. Include a report detailing the rotational viscosity of the asphalt-rubber binder at 60, 90, 135, 240, and 1440 minutes. Submit lab qualifications and references to the ME for approval prior to beginning work.

Design the mix to meet the criteria in Table 902.07.03-1.

Table 902.07.03-1 JMF Master Ranges and Mixture Requirements AR-OGFC

	Mixture Designations (% Passing[1])
Sieve Sizes	**AR-OGFC**
1/2"	100

3/8"	90 – 100
No. 4	20 – 40
No. 8	5 – 10
No. 200	0 – 3.0
Minimum asphalt-rubber binder, %[2]	8.4
Minimum % Air Voids, design	15

1. Aggregate percent passing to be determined based on dry aggregate weight.
2. Asphalt-rubber binder content to be determined based on total weight of mix.

Determine and verify the JMF according to NJDOT B-8. Ensure that the JMF is within the master range specified in Table 902.07.03-1.

Prepare compacted test specimens for submittal to the ME at least 30 days before the initial production date. Prepare these specimens from material mixed according to the final JMF, using 50 gyrations of the Superpave gyratory compactor according to AASHTO T 312.

The ME will test 2 specimens to verify stone-on-stone contact according to NJDOT B-8 and that the final JMF produces a mixture that has a minimum void content as specified in Table 902.07.03-1. The ME will determine percent air voids according to AASHTO T 209 and AASHTO T 331.

The ME will test 2 test specimens for abrasion and impact resistance using a modified L.A. Abrasion Test according to NJDOT B-8. The maximum allowable loss as calculated by this method is 30 percent.

Do not modify, which includes changing the asphalt cement supplier, the JMF unless the ME approves the modification.

902.07.04 Sampling and Testing

A. General Acceptance Requirements. General Acceptance Requirements. The RE or ME may reject and require disposal of any batch or shipment that is rendered unfit for its intended use due to contamination, segregation, improper temperature, lumps of cold material, or incomplete coating of the aggregate. For other than improper temperature, visual inspection of the material by the RE or ME is considered sufficient grounds for such rejection.

For AR-OGFC with WMA additive, ensure that the temperature of the mixture at discharge from the plant or surge and storage bins meets the WMA additive manufacturer's recommendations. Do not allow the mixture temperature to exceed 300 °F at discharge from the plant. For mixes produced using a WMA additive or process, ensure that the temperature of the mixture at discharge from the plant or surge and storage bins is at least 10 °F above the WMA manufacturer's recommended laydown temperature.

Combine and mix the aggregates and asphalt-rubber binder to ensure that at least 95 percent of the coarse aggregate particles are entirely coated with asphalt-rubber binder as determined according to AASHTO T 195. If the ME determines that there is an on-going problem with coating, the ME may obtain random samples from 5 trucks and will determine the adequacy of the mixing on the average of particle counts made on these 5 test portions. If the requirement for 95 percent coating is not met on each sample, modify plant operations, as necessary, to obtain the required degree of coating.

B. Quality Control Testing. The HMA producer is required to provide a quality control (QC) technician who is certified by the Society of Asphalt Technologists of New Jersey as an Asphalt Technologist, Level 2. The QC technician may substitute equivalent technician certification by the Mid-Atlantic Region Technician Certification Program (MARTCP). Ensure that the QC technician is present during periods of mix production for the sole purpose of quality control testing and to assist the ME. The ME will not perform the quality control testing or other routine test functions in the absence of, or instead of, the QC technician.

The QC technician is required to perform sampling and testing according to the approved quality control plan, to keep the mix within the limits specified for the mix being produced. The QC technician may use acceptance test results or perform additional testing as necessary to control the mix.

For each acceptance test, perform maximum specific gravity testing according to AASHTO T 209 on a test portion of the sample taken by the ME. Sample and test coarse aggregate, fine aggregate and mineral filler according to the approved quality control plan for the plant.

C. Acceptance Testing. During production, the ME will take one random acceptance sample from each 700 tons of production to verify composition. The ME will perform sampling according to NJDOT B-2 or ASTM D 3665, and will perform testing for composition according to AASHTO T 308. Perform testing for air voids according to T 209 and either B-6 or T 331. Perform testing for draindown according to NJDOT B-8. During production at the plant, a sample of asphalt binder will be taken once every 3500 tons or as directed by the ME.

Conduct air voids and draindown tests as directed by the ME.

If the composition testing results are outside of the production control tolerances specified in Table 902.07.04-1 for an acceptance sample, immediately run a quality control sample. If the quality control sample is also outside of the control tolerances in Table 902.07.04-1, determine if a plant adjustment is needed and take corrective action to bring the mix into compliance. Take additional quality control samples after the corrective action to ensure that the mix is within the production control tolerances. If two consecutive acceptance samples are outside the tolerances specified in Table 902.07.04-1, immediately stop production. Obtain ME approval of a plant correction plan before resuming production. Upon restarting production, do not transport mixture to the Project Limits before the results of a QC sample from the mixture indicate that the mixture meets JMF tolerances. The ME will reject mixture produced at initial restarting that does not meet tolerances.

Table 902.07.04-1 Production Control Tolerances for AR-OGFC Mixtures

Sieve Sizes	Production Control Tolerances from JMF[1]
1/2"	±6.0
3/8"	±2.0
No. 4	±4.0
No. 8	±1.0
No. 200	±1.0
Asphalt-rubber binder, % (AASHTO T 308)[2]	±0.40
Minimum % Air Voids	1.0% less than design requirement

1. Production tolerances may fall outside of the wide band gradation limits in Table 902.07.03-1.
2. Asphalt-rubber binder content may not be lower than the minimum in Table 902.07.03-1 after the production tolerance is applied.

902.08 HIGH PERFORMANCE THIN OVERLAY (HPTO)

902.08.01 Composition of Mixture

THE ENTIRE TEXT AS APPEARS IN THE SI IS CHANGED TO:

Mix HPTO in a plant that is listed on the QPL and conforms to the requirements for HMA Plants as specified in 1009.01. The composition of the mixture for HPTO is coarse aggregate, fine aggregate, and asphalt binder, and may also include mineral filler and a WMA additive. Do not use Reclaimed Asphalt Pavement (RAP), Ground Bituminous Shingle Material, Remediated Petroleum Contaminated Soil Aggregate, or Crushed Recycled Container Glass (CRCG). Use asphalt binder and aggregates that meet the following requirements:

1. Use polymer modified asphalt binder that is specially formulated for meeting the mix performance criteria in this specification. Consult with the asphalt binder supplier to obtain the appropriate material for the specific mix design. Submit a certificate of analysis (COA) showing the PG continuous grading (AASHTO R 29) for the asphalt binder used in the mix design.

   For quality assurance testing of the asphalt binder, the ME may sample the asphalt binder during production of the mix and compare the results with the COA submitted at the time of test strip. To analyze the binder the ME will test the binder at the nearest standard PG temperature then compare the results with the COA. If the high ($G^*/\sin\delta$) and low (stiffness and m value) temperature passing test results are within 5 percent of the results from the passing temperature on the COA, then the ME will consider the asphalt binder comparable to the binder used during test strip.

2. WMA additives may be used in the mix and must conform to 902.01.05. If a WMA additive is pre-blended in the asphalt binder or added at the HMA plant, ensure that the mix meets the mix performance criteria in this specification and will not be negatively impacted by the WMA additive. Follow the manufacturer's recommendations for percentage of WMA additive needed. Controlled asphalt foaming system WMA is prohibited for use in this mixture.
3. Use coarse aggregate that is gneiss, granite, quartzite, or trap rock and conforms to 901.05.01.
4. For fine aggregate, use 100 percent stone sand conforming to 901.05.02 and having an uncompacted void content of at least 45 percent when tested according to AASHTO T 304, Method A. In addition, the minimum sand equivalent is 45 percent when tested according to AASHTO T 176.
5. If necessary, use mineral filler as specified in 901.05.03.

902.08.02 Mix Design
THE ENTIRE TEXT IS CHANGED TO:

At least 45 days before initial production, submit a job mix formula for the HPTO on forms supplied by the Department. Include a statement naming the source of each component and a report showing the results meet the criteria specified in Tables 902.08.02-1 and 902.08.02-2.

For the job mix formula for the HPTO mixture, establish the percentage of dry weight of aggregate passing each required sieve size and an optimum percentage of asphalt binder based upon the weight of the total mix. Determine the optimum percentage of asphalt binder according to AASHTO R 35 and M 323 with an Ndes of 50 gyrations. Before maximum specific gravity testing or compaction of specimens, condition the mix for 2 hours according to the requirements for conditioning for volumetric mix design in AASHTO R 30, Section 7.1. If the absorption of the combined aggregate is more than 1.5 percent according to AASHTO T 84 and T 85, condition the mix for 4 hours according to AASHTO R 30, Section 7.2 prior to compaction of specimens (AASHTO T 312) and determination of maximum specific gravity (AASHTO T 209). Ensure that the job mix formula is within the master range specified in, Table 902.08.02-1.

Table 902.08.02-1 JMF Requirements for HPTO

Sieve Sizes	Percent Passing1	Production Control Tolerances2
3/8"	100	±0.0%
No. 4	65-85	±4.0%
No. 8	33-55	±4.0%
No. 16	20-35	±3.0%
No. 30	15-30	±3.0%
No. 50	10-20	±2.0%
No. 100	5-15	±2.0%
No. 200	5.0-8.0	±1.0%
Asphalt Binder Content (Ignition Oven)[3]	7.4 % minimum	±0.30%

1. Aggregate percent passing to be determined based on dry aggregate weight.
2. Production tolerances are for the approved JMF and may not fall outside of the wide band gradation limits.
3. The asphalt binder content may not be lower than the minimum after the production tolerance is applied.

Design the HPTO to meet the requirements in Table 902.08.02-2.

Table 902.08.02-2 Volumetric Requirements for Design and Control of HPTO					
	Required Density (% of Max. Sp. Gr.)		Voids in Mineral Aggregate	Dust to Binder Ratio	Draindown AASHTO T 305
	N_{des} (50 gyrations)	N_{max} (100 gyrations)	(VMA)		
Design Requirements	96.5	≤ 99.0	≥ 18.0 %	0.6 - 1.2	≤ 0.1 %
Control Requirements	95.5 - 97.5	≤ 99.0	≥ 18.0 %	0.6 – 1.3	≤ 0.1 %

Ensure that the job mix formula provides a mixture that meets a minimum tensile strength ratio (TSR) of 85 percent when prepared according to AASHTO T 312 and tested according to AASHTO T 283 with the following exceptions:

1. Before compaction, condition the mixture for 2 hours according to AASHTO R 30 Section 7.1.
2. Compact specimens with 40 gyrations.
3. Extrude specimens as soon as possible without damaging.
4. Use AASHTO T 269 to determine void content.
5. Record the void content of the specimens.
6. If less than 55 percent saturation is achieved, the procedure does not need to be repeated, unless the difference in tensile strength between duplicate specimens is greater than 25 pounds per square inch.
7. If visual stripping is detected, modify or readjust the mix.

For each mix design, submit 3 gyratory specimens and one loose sample corresponding to the composition of the job mix formula, including the design asphalt content. The ME will use these samples for verification of the properties of the job mix formula. Compact the specimens to the design number of gyrations (Ndes). To be acceptable all three gyratory specimens must comply with the gradation and asphalt content requirements in Table 902.08.02-1 and with the control requirements in Table 902.08.02-2. The ME reserves the right to be present at the time of molding the gyratory specimens.

In addition, submit 11 gyratory specimens and two 5 gallon buckets of loose mix to the ME. The ME will use these additional gyratory samples for performance testing of the HPTO mix. The ME reserves the right to be present at the time of molding the gyratory specimens. Ensure that the additional gyratory specimens are compacted according to AASHTO T 312. Compact 6 of the specimens to 77 millimeters in height and an air void content of 5.0 ± 0.5 percent. The ME will test the six 77 millimeter specimens using an Asphalt Pavement Analyzer (APA) according to AASHTO T 340 at 64 °C, 100 pound per square inch hose pressure, and 100 pound wheel load. Compact the other 5 specimens to 115 millimeter in height. These 5 specimens will be cut, from the middle of each 115 millimeter in height specimen, to 38 millimeter in height test specimens. The air void content of the 5 cut specimen will be determined to ensure compliance with the target air void content of 5.0 ± 0.5 percent. The ME will use the five 38 millieter in height specimens to test using an Overlay Tester (NJDOT B-10) at 25 °C and a joint opening of 0.025 inch. The ME will eliminate the high and low Overlay test results then average and report the middle 3 test results. The ME will ensure that all submitted specimens are within the target air void content as tested at the Material's Central Lab. The ME will not accept specimens lower than the target air void content, but may accept and test specimens higher than the target air void content.

The ME will approve the JMF if the average rut depth for the 6 specimens in the Asphalt Pavement Analyzer testing is not more than 4 millimeter in 8,000 loading cycles and the average number of cycles to failure in the Overlay Tester is not less than 600. If the JMF does not meet the APA and Overlay Tester criteria, redesign the HPTO mix and submit for retesting. The JMF for the HPTO mixture is in effect until modification is approved by the ME. If required, the ME may use the 5 gallon buckets of the loose HPTO mix to compact additional gyratory specimens for performance testing and the performance test results may be used for approval of the JMF.

When unsatisfactory results for any specified characteristic of the work make it necessary, the Contractor may establish a new JMF for approval. In such instances, if corrective action is not taken, the ME may require an appropriate adjustment to the JMF.

Should a change in sources or changes in the properties of materials occur, the ME will require that a new JMF be established and approved before production can continue.

The ME may verify a mix on an annual basis rather than on a project-to-project basis if the properties and proportions of the materials do not change. If written verification is submitted by the HMA supplier that the same source and character of materials are to be used, the ME may waive the requirement for the design and verification of previously approved mixes.

902.08.03 Sampling and Testing

THE ENTIRE TEXT IS CHANGED TO:

A. General Acceptance Requirements. The RE or ME may reject and require disposal of any batch or shipment that is rendered unfit for its intended use due to contamination, segregation, improper temperature, lumps of cold material, or incomplete coating of the aggregate. For other than improper temperature, visual inspection of the material by the RE or ME is considered sufficient grounds for such rejection.

Ensure that the temperature of the HPTO at discharge from the plant or surge and storage bins is maintained between 300 and 330 °F. For mixes produced using a WMA additive or process, ensure that the temperature of the mixture at discharge from the plant or surge and storage bins is at least 10 °F above the WMA manufacturer's recommended laydown temperature.

Combine and mix the aggregates and asphalt binder to ensure that at least 95 percent of the coarse aggregate particles are entirely coated with asphalt binder as determined according to AASHTO T 195. If the ME determines that there is an on-going problem with coating, the ME may obtain random samples from 5 trucks and will determine the adequacy of the mixing on the average of particle counts made on these 5 test portions. If the requirement for 95 percent coating is not met on each sample, modify plant operations, as necessary, to obtain the required degree of coating.

B. Sampling. The ME will take a sample of HPTO for volumetric acceptance testing from each 700 tons of a mix. The ME will perform sampling according to AASHTO T 168, NJDOT B-2, or ASTM D 3665. During production at the plant, a sample of asphalt binder will be taken once every 3500 tons or as directed by the ME.

C. Quality Control Testing. The HMA producer is required to provide a quality control (QC) technician who is certified by the Society of Asphalt Technologists of New Jersey as an Asphalt Technologist, Level 2. The QC technician may substitute equivalent technician certification by the Mid-Atlantic Region Technician Certification Program (MARTCP). Ensure that the QC technician is present during periods of mix production for the sole purpose of quality control testing and to assist the ME. The ME will not perform the quality control testing or other routine test functions in the absence of, or instead of, the QC technician.

The QC technician is required to perform sampling and testing according to the approved quality control plan, to keep the mix within the limits specified for the HPTO mix being produced. The QC technician may use acceptance test results or perform additional testing as necessary to control the mix.

To determine the composition, perform ignition oven testing according to AASHTO T 308. For each acceptance test, perform maximum specific gravity testing according to AASHTO T 209 on a test portion of the sample taken by the ME. Sample and test coarse aggregate, fine aggregate, mineral filler, and asphalt binder according to the approved quality control plan for the plant.

D. Acceptance Testing and Requirements. The ME will determine volumetric properties at N_{des} for acceptance from samples taken, compacted, and tested at the HMA plant. The ME will compact HPTO to 50 gyrations, using equipment according to AASHTO T 312. The ME will determine bulk specific gravity of the compacted sample according to AASHTO T 166. The ME will use the most current QC maximum specific gravity test result in calculating the volumetric properties of the HPTO.

The ME will determine the dust-to-binder ratio from the composition results as tested by the QC technician.

Ensure that the HMA mixture conforms to the requirements specified in Table 902.08.02-2, and to the gradation requirements in Table 902.08.02-1. If 2 samples in 5 consecutive samples fail to conform to the gradation or volumetric requirements, immediately initiate corrective action.

The ME will test a minimum of 1 sample per 3500 tons for moisture, basing moisture determinations on the weight loss of an approximately 1600 gram sample of mixture heated for 1 hour in an oven at 280 ± 5 °F. Ensure that the moisture content of the mixture at discharge from the plant does not exceed 1.0 percent.

E. Performance Testing. Provide 11 gyratory specimens that are compacted according to AASHTO T 312 and 2 boxes of loose mix. Compact 6 of the specimens to 77 millimeter in height and an air void content of 5.0 ± 0.5 percent. Compact the other 5 specimens to 115 millimeter in height. These 5 specimens will be cut, from the middle of each 115 millimeter in height specimen, to 38 millimeter in height test specimens. The air void content of the 5 cut test specimens will be determined to ensure compliance with the target air void content of 5.0 ± 0.5 percent.

The ME will use the boxes of loose mix to determine the maximum specific gravity of the mix according to AASHTO T 209. The ME will use the gyratory samples for performance testing of the HPTO mix. The ME will test six 77 millimeter in height specimens using an Asphalt Pavement Analyzer (APA) according to AASHTO T 340 at 64 °C, 100 pound per square inch hose pressure, and 100 pound wheel load. The ME will use the five 38 millimeter in height specimens to test using an Overlay Tester (NJDOT B-10) at 25 °C and a joint opening of 0.025 inch. The ME will eliminate the high and low Overlay test result then average and report the middle 3 test results. The ME will ensure that all submitted specimens are within the target air void content as tested at the Material's Central Lab. The ME will not accept specimens lower than the target air void content, but may accept and test specimens higher than the target air void content.

Ensure that the first sample is taken during the construction of the test strip as specified in 406.03.01.C. Thereafter, sample every lot or as directed by the ME. If the test strip is done within the project limits and the performance testing results are acceptable to the ME, the results will be included into the first lot. A lot is defined as material placed on the traveled way within the project limits.

If a sample does not meet the criteria for performance testing as specified in Table 902.08.03-1, the Department will assess a pay adjustment as specified. The Department will calculate the pay adjustment by multiplying the percent pay adjustment (PPA) by the quantity in the lot and the bid price for the HPTO item. If APA rutting is greater than 12 millimenters or Overlay cycles is less than 400 or both, the Department will assess the maximum pay adjustment of PPA = -100 percent or may require removal and replacement. PPA for both APA and Overlay are cumulative and may not exceed -100 percent in total. If samples received are lower than the target air void range, 5.0 ± 0.5 percent, the Department will consider the samples un-testable and assess a PPA of -100 percent or may require removal and replacement of the lot. If the Department requires removal and replacement, then the replacement work is subject to the same requirements as the initial work.

Table 902.08.03-1 Performance Testing Pay Adjustments for HPTO

Test	Requirement	Test Result	PPA
APA @ 8,000 loading cycles, mm (AASHTO T 340)	5.0 maximum	$t \leq 5.0$ $5.0 < t \leq 12.0$ $t > 12.0$	0 -50(t-5)/7 -100 or Remove & Replace
Overlay Tester, cycles (NJDOT B-10)	600 minimum	$t \geq 600$ $600 > t \geq 400$ $t < 400$	0 -(600-t)/4 -100 or Remove & Replace

THE FOLLOWING SUBSECTIONS ARE ADDED

902.09 MICRO SURFACING

902.09.01 Composition of the Mixture

Ensure that the micro surfacing mixture components conform to the following:

1. **Micro Surfacing Emulsion.** Use polymer modified emulsified asphalt. Ensure that the emulsified asphalt and emulsified asphalt residue is a quick set polymer modified asphalt emulsion conforming to the requirements of AASHTO M 208 for a CQS-1h emulsion and the following:

    a. Use a minimum of 3 percent polymer material, by weight of asphalt.

    b. Ensure that the polymer material is milled or blended into the asphalt prior to the emulsification process by an emulsion manufacturer approved by the ME.

    c. Ensure that the polymer modifier and any additives enable the micro surfacing material to receive normal traffic within one hour without causing damage to the surface. The cement mixing test is waived for this emulsion.

    d. Ensure that the emulsified asphalt and the emulsified asphalt residue meet all of the quality test criteria in section 4.1.2 of the International Slurry Surfacing Association (ISSA) "Recommended Performance Guideline for Micro Surfacing"; A 143

2. **Aggregate.** Use only manufactured stone sand and crushed stone that conform to 901.05. Ensure that the fine

aggregate has a Sand Equivalent value of 65 percent minimum when tested according to AASHTO T 176.

3. **Mineral Filler.** Use mineral filler that conforms to ASTM D 242 and is free of lumps.

4. **Water.** Use water that conforms to 919.08.

5. **Other Additives.** The Contractor may use other additives to provide control of the break/set time in the field. Ensure that the type of additive is specified in the mix design.

902.09.02 Mix Design of Micro Surfacing Mixture

A. Mix Design Requirements. Ensure that an AASHTO accredited lab, with at least five successfully completed micro surfacing projects greater than 5,000 square yards each, performs the mix design. Submit the mix design and certified test results of the micro surfacing mixture for approval in accordance with the provisions of ASTM D 6372, Standard Practice for Design, Testing, and Construction of Micro Surfacing and the following:

1. Ensure that the aggregate used in the job mix formula is from the same source and representative of the material proposed for use on the project.
2. Ensure that the compatibility of the aggregate, micro surfacing emulsion, water, mineral filler, and other additives is evaluated in the mix design. Perform the mix design using materials consistent with those supplied by the contractor for the project. Ensure the micro surfacing mix conforms to the requirements as specified in Table 902.09.02-1.

902.09.02-1 Micro Surfacing Mixture Requirements

Tests	ISSA Test Method	Specification
Mix Time @ 77 °F Mix Time @ 100 °F	TB 113	Controllable to 120 seconds minimum Controllable to 35 seconds minimum
Wet Cohesion @ 30 minutes minimum (set) @ 60 minutes minimum (traffic)	TB 139	 12 kg-cm minimum 20 kg-cm or near spin minimum
Wet Stripping	TB 114	90 % minimum
Wet-Track Abrasion Loss One-hour soak Six-day soak	TB 100	 50 g/ft^2 (538 g/m^2) maximum 75 g/ft^2 (807 g/m^2) maximum
Lateral Displacement	TB 147	5% maximum
Specific Gravity after 1,000 cycles of 125 pounds (56.71 kg)	TB 147	2.10 maximum
Excess Asphalt by LWT Sand Adhesion	TB 109	50 g/ft^2 (538 g/m^2) maximum
Classification Compatibility	TB 144	11 grade points minimum (AAA, BAA)

3. Ensure proportioning of the mix design is within the limits in Table 902.09.02-2:

Table 902.09.02-2 Mix Design Proportion Requirements

Component Materials	Limits
Residual asphalt	5.5 to 11.5% by dry weight of aggregates
Mineral filler	0.0 to 3% by dry weight of aggregates
Polymer-based modifier	min. of 3% polymer solids based on bitumen weight content
Additives	as needed
Water	as required to ensure proper mix consistency

4. Ensure that the proportions of aggregate and mineral filler are provided and within the limits of Table 902.09.03-1.

B. Mix Design Report. Submit the final mix design in the following format:

1. Source of each individual material.
2. Aggregate:
   a. Gradation
   b. Sand Equivalent

c. Abrasion Resistance
d. Soundness

3. Field Simulation Tests:
   a. Wet Stripping Test
   b. Wet Track Abrasion Loss
   c. Classification Compatibility
   d. Trial Mix Time @ 77 °F and 100 °F

4. Interpretation of Results and the Determination of a Job Mix Formula (JMF):
   a. Percentage of Mineral Filler (minimum and maximum)
   b. Percentage of Water, including aggregate moisture (minimum and maximum)
   c. Percentage of Mix Set Additive (if required)
   d. Percentage of Modified Emulsion
   e. Residual Content of Modified Emulsion
   f. Percentage of Residual Asphalt
   g. Combined Aggregate Gradation (JMF)

5. Signature and date

902.09.03 Sampling and Testing

The ME will perform sampling and testing of the aggregate at least 10 days prior to the start of work. The ME will sample aggregate from stockpiles designated and constructed for each mixture type on the project. The ME will sample the aggregate according to AASHTO T 2 and test according to AASHTO T 11 and T 27 using the following sampling frequency:

1. When the project quantity for the specified mixture type is less than 500 tons, designate the entire quantity as one lot and divide into three equal sublots for sampling. Obtain one sample from each sublot and submit to the ME for testing. The ME will randomly select only one of the three samples and test for compliance with Table 902.09.03-1. If the sample tested meets the specification, the entire lot is acceptable for use on the project. If the sample fails, the ME will test the remaining two samples. If the two samples both meet specification, the entire lot is acceptable for use on the project. If either of the two additional samples fails to meet the specification, the entire lot is rejected.

2. When the project quantity for the specified mixture type is 500 tons or greater, divide the aggregate into equal lots at the discretion of the ME, but in no case is the lot size to exceed 1,000 tons. Divide each lot into three equal sublots and obtain one sample for each sublot. The ME will randomly select only one of the three samples and test for compliance with Table 902.09.03-1. If the sample tested meets the specification, the entire lot is acceptable for use on the project. If the sample fails, the ME will test the remaining two samples. If the two samples both meet specification, the entire lot is acceptable for use on the project. If either of the two additional samples fails to meet the specification, the entire lot is rejected.

Take precautions to ensure that approved stockpiles of aggregate do not become contaminated at the jobsite. Screen oversize aggregate or foreign materials from the aggregate prior to delivery to the mixer.

During the micro surfacing application, in the presence of the inspector, sample the mixture twice daily or as directed from the pug mill discharge chute. Use a rectangular non-absorptive container, such as a loaf pan, of sufficient size to obtain a sample from the entire cross section of the mixture being discharged. Ensure that an AASHTO accredited lab, with at least five successfully completed micro surfacing projects greater than 5,000 square yards each, analyzes the mix for binder content and compliance with specifications. Submit certified results to the ME. The ME may perform independent testing.

Ensure that the asphalt content is within ± 0.40 of the JMF. If the asphalt content is outside of the allowable tolerance, recalibrate or adjust the mixing machine. The RE may stop the micro surfacing operation if two or more samples fail to conform to the tolerance. Take corrective action or re-design the micro surfacing mixture. Resume operations only after RE has approved the corrective action.

Use aggregate, including mineral filler, which conforms to the gradation in Table 902.09.03-1.

Table 902.09.03-1 Gradation Requirements for Aggregate and Mineral Filler

Sieve Size	Type II Percent Passing	Type III Percent Passing	Stockpile Tolerances from JMF
3/8”	100	100	-
No. 4	90-100	70-90	±5%
No. 8	65-90	45-70	±5%
No. 16	45-70	28-50	±5%
No. 30	30-50	19-34	±5%
No. 50	18-30	12-25	±4%
No. 100	10-21	7-18	±3%
No. 200	5-15	5-15	±2%

902.10 SLURRY SEAL

902.10.01 Composition of the Mixture

Ensure that the slurry seal mixture components conform to the following:

1. **Slurry Seal Emulsion.** Use polymer modified emulsified asphalt. Ensure that the emulsified asphalt and emulsified asphalt residue is a quick set polymer modified asphalt emulsion conforming to the requirements of AASHTO M 208 for a CQS-1h emulsion and the following:
    a. Use a minimum of 3 percent polymer material, by weight of asphalt.
    b. Ensure that the polymer material is milled or blended into the asphalt prior to the emulsification process by an emulsion manufacturer approved by the ME.
    c. Ensure that the polymer modifier and any additives enable the slurry seal material to receive normal traffic within one hour without causing damage to the surface.
    d. Ensure that the emulsified asphalt and the emulsified asphalt residue material conform to the requirements in table 902.10.01-1.

902.10.01-1 Emulsified Asphalt and Residue Requirements

Tests	Test Method	Specification
Tests on Emulsified Asphalt		
Storage Stability, 24 hours, percent	AASHTO T 59	1 % maximum
Residue by Distillation[1], percent	AASHTO T 59	62 % minimum
Tests on Asphalt Residue		
Softening Point by Ring and Ball	AASHTO T 53	135 °F minimum

1. Test temperature held at 350 °F for 20 minutes.

2. **Aggregate.** Use only manufactured stone sand and crushed stone that conform to 901.05. Ensure that the fine aggregate has a Sand Equivalent value of 45 percent minimum when tested according to AASHTO T 176.

3. **Mineral Filler.** Use mineral filler that conforms to ASTM D 242 and is free of lumps.

4. **Water.** Use water that conforms to 919.08.

5. **Other Additives.** The Contractor may use other additives to provide control of the break/set time in the field. Ensure that the type of additive is specified in the mix design.

902.10.02 Mix Design of Slurry Seal Mixture

A **Mix Design Requirements.** Ensure that an AASHTO accredited lab, with at least five successfully completed slurry seal projects greater than 5,000 square yards each, performs the mix design. Submit the mix design and certified test results of the slurry seal mixture for approval in accordance with the provisions of ASTM D 3910, Standard Practice for Design, Testing, and Construction of Slurry Seal and the following:

1. Ensure that the aggregate used in the job mix formula is from the same source and representative of the material proposed for use on the project.
2. Ensure that the compatibility of the aggregate, slurry seal emulsion, water, mineral filler, and other additives is evaluated in the mix design. Perform the mix design using materials consistent with those supplied by the contractor for the project. Ensure the slurry seal mix conforms to the requirements as

specified in Table 902.10.02-1.

902.10.02-1 Slurry Seal Mixture Requirements

Tests	ISSA Test Method	Specification
Mix Time @ 77 °F Mix Time @ 100 °F	TB 113	Controllable to 120 seconds minimum Controllable to 35 seconds minimum
Slurry Seal Consistency	TB 106	0.79 to 1.18 inches
Wet Cohesion @ 30 minutes minimum (set) @ 60 minutes minimum (traffic)	TB 139	 12 kg-cm minimum 20 kg-cm or near spin minimum
Wet Stripping	TB 114	90 % minimum
Wet-Track Abrasion Loss One-hour soak Six-day soak	TB 100	 50 g/ft^2 (538 g/m^2) maximum 75 g/ft^2 (807 g/m^2) maximum
Lateral Displacement	TB 147	5% maximum
Specific Gravity after 1,000 cycles of 125 pounds (56.71 kg)	TB 147	2.10 maximum
Excess Asphalt by LWT Sand Adhesion	TB 109	50 g/ft^2 (538 g/m^2) maximum
Classification Compatibility	TB 144	11 grade points minimum (AAA, BAA)

3. Ensure proportioning of the mix design is within the limits in Table 902.10.02-2:

Table 902.10.02-2 Mix Design Proportion Requirements

Component Materials	Limits
Residual asphalt	7.5 to 13.5% by dry weight of aggregates
Mineral filler	0.0 to 3% by dry weight of aggregates
Polymer-based modifier	min. of 3% polymer solids based on bitumen weight content
Additives	as needed
Water	as required to ensure proper mix consistency

4. Ensure that the proportions of aggregate and mineral filler are provided and within the limits of Table 902.10.03-1.

B Mix Design Report. Submit the final mix design in the following format:

1. Source of each individual material.
2. Aggregate:
   a. Gradation
   b. Sand Equivalent
   c. Abrasion Resistance
   d. Soundness
3. Field Simulation Tests:
   a. Wet Stripping Test
   b. Wet Track Abrasion Loss
   c. Classification Compatibility
   d. Trial Mix Time @ 77 °F and 100 °F
4. Interpretation of Results and the Determination of a Job Mix Formula (JMF):
   a. Percentage of Mineral Filler (minimum and maximum)
   b. Percentage of Water, including aggregate moisture (minimum and maximum)
   c. Percentage of Mix Set Additive (if required)
   d. Percentage of Modified Emulsion
   e. Residual Content of Modified Emulsion
   f. Percentage of Residual Asphalt
   g. Combined Aggregate Gradation (JMF)
5. Signature and date

902.10.03 Sampling and Testing

The ME will perform sampling and testing of the aggregate at least 10 days prior to the start of work. The ME will sample aggregate from stockpiles designated and constructed for each mixture type on the project. The ME will sample the aggregate according to AASHTO T 2 and test according to AASHTO T 11 and T 27 using the following sampling frequency:

1. When the project quantity for the specified mixture type is less than 500 tons, designate the entire quantity as one lot and divide into three equal sublots for sampling. Obtain one sample from each sublot and submit to the ME for testing. The ME will randomly select only one of the three samples and test for compliance with Table 902.10.03-1. If the sample tested meets the specification, the entire lot is acceptable for use on the project. If the sample fails, the ME will test the remaining two samples. If the two samples both meet specification, the entire lot is acceptable for use on the project. If either of the two additional samples fails to meet the specification, the entire lot is rejected.
2. When the project quantity for the specified mixture type is 500 tons or greater, divide the aggregate into equal lots at the discretion of the ME, but in no case is the lot size to exceed 1,000 tons. Divide each lot into three equal sublots and obtain one sample for each sublot. The ME will randomly select only one of the three samples and test for compliance with Table 902.10.03-1. If the sample tested meets the specification, the entire lot is acceptable for use on the project. If the sample fails, the ME will test the remaining two samples. If the two samples both meet specification, the entire lot is acceptable for use on the project. If either of the two additional samples fails to meet the specification, the entire lot is rejected.

Take precautions to ensure that approved stockpiles of aggregate do not become contaminated at the jobsite. Screen oversize aggregate or foreign materials from the aggregate prior to delivery to the mixer.

During the slurry seal application, in the presence of the inspector, sample the mixture twice daily or as directed from the pug mill discharge chute. Use a rectangular non-absorptive container, such as a loaf pan, of sufficient size to obtain a sample from the entire cross section of the mixture being discharged. Ensure that an AASHTO accredited lab, with at least five successfully completed slurry seal projects greater than 5,000 square yards each, analyzes the mix for binder content and compliance with specifications. Submit certified results to the ME. To ensure mix compliance, the ME may perform independent testing.

Ensure that the asphalt content is within ± 0.40% of the JMF. If the asphalt content is outside of the allowable tolerance, recalibrate or adjust the mixing machine. The RE may stop the slurry seal operation if two or more samples fail to conform to the tolerance. Take corrective action or re-design the slurry seal mixture. Resume operations only after RE has approved the corrective action.

Use aggregate, including mineral filler, which conforms to the gradation in Table 902.10.03-1.

Table 902.09.03-1 Gradation Requirements for Aggregate and Mineral Filler

Sieve Size	Type II Percent Passing	Type III Percent Passing	Stockpile Tolerances from JMF
3/8″	100	100	-
No. 4	90-100	70-90	±4%
No. 8	65-90	45-70	±5%
No. 16	45-70	28-50	±4%
No. 30	30-50	19-34	±3%
No. 50	18-30	12-25	±3%
No. 100	10-21	7-18	±2%
No. 200	5-15	5-15	±2%

THE FOLLOWING SUBSECTION IS ADDED:

902.11 BINDER RICH INTERMEDIATE COURSE (BRIC)

902.11.01 Composition of Mixture.

Mix BRIC in a plant that is listed on the QPL and conforms to the requirements for HMA plants as specified in 1009.01. The composition of the BRIC mixture is coarse aggregate, fine aggregate, polymer modified asphalt binder, and may also include mineral filler, and crumb rubber. Do not add Reclaimed Asphalt Pavement (RAP), Crushed Recycled Container

Glass (CRCG), Ground Bituminous Shingle Material (GBSM), or Remediated Petroleum Contaminated Soil Aggregate (RPCSA). Use asphalt binder and aggregates that meet the following requirements:

1. Use polymer modified asphalt binder that is specially formulated for meeting the mix performance criteria in this specification. Consult with the asphalt binder supplier to obtain the appropriate material for the specific mix design. Submit a certificate of analysis (COA) showing the PG continuous grading (AASHTO R 29) for the asphalt binder used in the mix design.

   For quality assurance testing of the asphalt binder, the ME may sample the asphalt binder during production of the mix and compare the results with the COA submitted at the time of test strip. To analyze the binder the ME will test the binder at the nearest standard PG temperature then compare the results with the COA. If the high ($G^*/\sin\delta$) and low (stiffness and m value) temperature passing test results are within 5 percent of the results from the passing temperature on the COA, then the ME will consider the asphalt binder comparable to the binder used during test strip.

2. For coarse aggregate in BRIC, use crushed stone conforming to 901.05.01.

3. For fine aggregate, use stone sand conforming to 901.05.02. Ensure that the combined fine aggregate in the mixture conforms to the requirements for compaction level M as specified in Table 902.02.02-2.

4. Use mineral filler, if necessary, that conforms to 901.05.03.

902.11.02 Mix Design

At least 45 days before initial production, submit a job mix formula for the BRIC on forms supplied by the Department, to include a statement naming the source of each component and a report showing that the results meet the criteria specified in Tables 902.11.03-1 and 902.11.03-2.

The job mix formula for the BRIC mixture establishes the percentage of dry weight of aggregate passing each required sieve size and an optimum percentage of asphalt binder based upon the weight of the total mix. Determine the optimum percentage of asphalt binder according to AASHTO R 35 and M 323 with an Ndes of 50 gyrations. Before maximum specific gravity testing or compaction of specimens, condition the mix for 2 hours according to the requirements for conditioning for volumetric mix design in AASHTO R 30, Section 7.1. If the absorption of the combined aggregate is more than 1.5 percent according to AASHTO T 84 and T 85, ensure that the mix is short term conditioned for 4 hours according to AASHTO R 30, Section 7.2 prior to compaction of specimens (AASHTO T 312) and determination of maximum specific gravity (AASHTO T 209). Ensure that the job mix formula is within the master range specified in Table 902.11.03-1.

Ensure that the job mix formula provides a mixture that meets a minimum tensile strength ratio (TSR) of 85 percent when prepared according to AASTHO T 312 and tested according to AASHTO T 283 with the following exceptions:

1. Before compaction, condition the mixture for 2 hours according to AASHTO R 30 Section 7.1.
2. Compact specimens with 40 gyrations.
3. Extrude specimens as soon as possible without damaging.
4. Use AASHTO T 269 to determine void content.
5. Record the void content of the specimens.
6. If less than 55 percent saturation is achieved, the procedure does not need to be repeated, unless the difference in tensile strength between duplicate specimens is greater than 25 pounds per square inch.
7. Report any visual stripping in accordance with AASHTO T 283 Section 11, modify or readjust the mix if stripping is evident.

For each mix design, submit with the mix design forms 3 gyratory specimens and 1 loose sample corresponding to the composition of the JMF. The ME will use these to verify the properties of the JMF. Compact the specimens to the design number of gyrations (Ndes). For the mix design to be acceptable, all gyratory specimens must comply with the requirements specified in Tables 902.11.03-1 and 902.11.03-2. The ME reserves the right to be present at the time the gyratory specimens are molded.

In addition, submit 11 gyratory specimens and two 5 gallon buckets of loose mix to the ME. The ME will use these additional gyratory samples for performance testing of the BRIC mix. The ME reserves the right to be present at the time of molding the gyratory specimens. Ensure that the 6 gyratory specimens are compacted according to AASHTO T 312, are 77 millimeters high, and have an air void content of 3.5 ± 0.5 percent. The ME will test 6 specimens using an Asphalt

Pavement Analyzer (APA) according to AASHTO T 340 at 64 °C, 100 pound per square inch hose pressure, and 100 pound wheel load. Compact the other 5 specimens to 115 millimemters in height. These 5 specimens will be cut, from the middle of each 115 millimeters in height specimen, to 38 millimeters in height test specimens. The air void content of the 5 cut specimen will be determined to ensure compliance with the target air void content of 3.5 ± 0.5 percent. The ME will use the five 38 millimeters in height specimens to test using an Overlay Tester (NJDOT B-10) at 25 °C and a joint opening of 0.025 inch. The ME will eliminate the high and low Overlay test results then average and report the middle 3 test results. The ME will ensure that all submitted specimens are within the target air void content as tested at the Material's Central Lab.

The ME will approve the JMF if the average rut depth for the 6 specimens in the asphalt pavement analyzer testing is not more than 6 mm in 8,000 loading cycles and the number of cycles to failure in the Overlay Tester is not less than 700. If the JMF does not meet the APA and Overlay Tester criteria, redesign the BRIC mix and submit for retesting. The JMF for the BRIC mixture is in effect until modification is approved by the ME.

When unsatisfactory results for any specified characteristic of the work make it necessary, the Contractor may establish a new JMF for approval. In such instances, if corrective action is not taken, the ME may require an appropriate adjustment to the JMF.

Should a change in sources be made or any changes in the properties of materials occur, the ME will require that a new JMF be established and approved before production can continue.

The ME may verify a mix on an annual basis rather than on a project-to-project basis if the properties and proportions of the materials do not change. If written verification is submitted by the HMA supplier that the same source and character of materials are to be used, the ME may waive the requirement for the design and verification of previously approved mixes.

902.11.03 Sampling and Testing

A. General Acceptance Requirements. The RE or ME may reject and require disposal of any batch or shipment that is rendered unfit for its intended use due to contamination, segregation, improper temperature, lumps of cold material, or incomplete coating of the aggregate. For other than improper temperature, visual inspection of the material by the RE or ME is considered sufficient grounds for such rejection.

For BRIC, ensure that the temperature of the mixture at discharge from the plant or surge and storage bins is at least 10 °F above the manufacturer's recommended laydown temperature. Do not allow the mixture temperature to exceed 330 °F at discharge from the plant.

Combine and mix the aggregates and asphalt binder to ensure that at least 95 percent of the coarse aggregate particles are entirely coated with asphalt binder as determined according to AASHTO T 195. If the ME determines that there is an on-going problem with coating, the ME may obtain random samples from 5 trucks and will determine the adequacy of the mixing on the average of particle counts made on these 5 test portions. If the requirement for 95 percent coating is not met on each sample, modify plant operations, as necessary, to obtain the required degree of coating.

B. Sampling. The ME will take a sample of BRIC for volumetric acceptance testing from each 700 tons. The ME will perform sampling according to AASHTO T 168, NJDOT B-2, or ASTM D 3665. During production at the plant, a sample of asphalt binder will be taken once every 3500 tons or as directed by the ME.

C. Quality Control Testing. The HMA producer shall provide a quality control (QC) technician who is certified by the Society of Asphalt Technologists of New Jersey as an Asphalt Technologist, Level 2. The QC technician may substitute equivalent technician certification by the Mid-Atlantic Region Technician Certification Program (MARTCP). Ensure that the QC technician is present during periods of mix production for the sole purpose of quality control testing and to assist the ME. The ME will not perform the quality control testing or other routine test functions in the absence of, or instead of, the QC technician.

The QC technician shall perform sampling and testing according to the approved quality control plan, to keep the mix within the limits specified in Tables 902.11.03-1, 902.11.03-2, and 902.11.03-4. The QC technician may use acceptance test results or perform additional testing as necessary to control the mix.

To determine the composition, perform ignition oven testing according to AASHTO T 308. For fully automated plants, the QC technician may determine composition using hot bin analysis according to NJDOT B-5. Use only one method for determining composition within a lot.

D. Acceptance Testing and Requirements. The ME will determine volumetric properties at N_{des} for acceptance from samples taken, compacted, and tested at the HMA plant. The ME will compact HMA to the number of design gyrations (N_{des}) of 50 gyrations, using equipment according to AASHTO T 312. The ME will determine bulk specific gravity of the compacted sample according to AASHTO T 166. The ME will use the most current QC maximum specific gravity test result in calculating the volumetric properties of the HMA.

The ME will determine the dust-to-binder ratio from the composition results as tested by the QC technician.

Ensure that the HMA mixture conforms to the requirements specified in Table 902.11.03-2 and to the gradation requirements in Table 902.11.03-1. If 2 samples in a lot fail to conform to the gradation or volumetric requirements, immediately initiate corrective action.

The ME will test a minimum of 1 sample per lot for moisture, basing moisture determinations on the weight loss of an approximately 1600 gram sample of mixture heated for 1 hour in an oven at 280 ± 5 °F. Ensure that the moisture content of the mixture at discharge from the plant does not exceed 1.0 percent.

E. Performance Testing. Provide 11 gyratory specimens and 2 box samples of loose mix to the ME. The ME will use these additional gyratory samples for performance testing of the BRIC mix. The ME reserves the right to be present at the time of molding the gyratory specimens. Ensure that the 6 gyratory specimens are compacted according to AASHTO T 312, are 77 millimeters high, and have an air void content of 3.5 ± 0.5 percent. The ME will test 6 specimens using an Asphalt Pavement Analyzer (APA) according to AASHTO T 340 at 64 °C, 100 pound per square inch hose pressure, and 100 pound wheel load. Compact the other 5 specimens to 115 millimeters in height. These 5 specimens will be cut, from the middle of each 115 millimeters height specimen, to 38 millimeters in height test specimens. The air void content of the 5 cut specimen will be determined to ensure compliance with the target air void content of 3.5 ± 0.5 percent. The ME will use the five 38 millimeters in height specimens to test using an Overlay Tester (NJDOT B-10) at 25 °C and a joint opening of 0.025 inch. The ME will eliminate the high and low Overlay test results then average and report the middle 3 test results. The ME will use the boxes of loose mix to determine the maximum specific gravity of the mix according to AASHTO T 209. The ME will ensure that all submitted specimens are within the target air void content as tested at the Material's Central Lab.

Ensure that the first sample is taken during the construction of the test strip as specified in 409.03.01.C. Thereafter, sample every second lot or as directed by the ME. If a sample does not meet the design criteria for performance testing as specified in Table 902.11.03-4, the ME may stop production of BRIC until corrective action is taken. If the BRIC mix exceeds the APA criteria of 12 millimeters in 8,000 loading cycles, the RE may require removal and replacement of the lot of BRIC.

Table 902.11.03-1 JMF Requirements for BRIC

Sieve Sizes	Percent Passing[1]	Production Control Tolerances[2]
3/8"	100	±0%
No. 4	90-100	±2%
No. 8	55-90	±4%
No. 30	20-55	±4%
No. 200	4-10	±2%
Asphalt Binder Content (Ignition Oven)[3]	7.4 % minimum	±0.40%
Maximum Lift Thickness	1.5 inch	

1. Aggregate percent passing to be determined based on dry aggregate weight.
2. Production tolerances are for the approved JMF and may fall outside of the wide band gradation limits.
3. The asphalt binder content may not be lower than the minimum after the production tolerance is applied.

Table 902.11.03-2 Volumetric Requirements for Design and Control of BRIC

	Required Density (% of Max Sp. Gr.)	Voids in Mineral Aggregate	Dust to Binder Ratio	Draindown AASHTO T 305

	@ Ndes (50 gyrations)	@ Nmax (100 gyrations)	(VMA)		
Design Requirements	97.5	≤ 99.0	≥ 18.0 %	0.6 – 1.2	≤ 0.1 %
Control Requirements	96.5 – 98.5	≤ 99.0	≥ 18.0 %	0.6 – 1.3	≤ 0.1 %

Table 902.11.03-3 Mix Design Performance Testing Requirements for BRIC

Test	Requirement
Asphalt Pavement Analyzer (AASHTO T 340)	≤ 6 mm@ 8,000 loading cycles
Overlay Tester (NJDOT B-10)	≥700 cycles

Table 902.11.03-4 Production Performance Testing Requirements for BRIC

Test	Requirement
Asphalt Pavement Analyzer (AASHTO T 340)	≤ 7 mm@ 8,000 loading cycles
Overlay Tester (NJDOT B-10)	≥ 650 cycles

THE FOLLOWING SUBSECTIONS ARE ADDED:

902.12 ASPHALT RUBBER GAP GRADED COURSE

902.12.01 Composition of Mixture

Mix ARGG course in a plant listed on the QPL and conforming to the requirements for HMA plants specified in 1009.01. Ensure the HMA plant is equipped with asphalt-rubber binder blending equipment as specified in 1009.03.

Composition of mixture for ARGG surface course is coarse aggregate, fine aggregate and asphalt-rubber binder. Do not use RAP, CRCG, GBSM, or RPCSA in ARGG surface course.

Composition of mixture for ARGG intermediate course is coarse aggregate, fine aggregate and asphalt-rubber binder. ARGG intermediate course may contain up to 10 percent RAP.

Use aggregates that conform to 901.05. Use coarse aggregate that is crushed stone conforming to 901.05.01 and Table 902.12.01-1.

Table 902.12.01-1 Coarse Aggregate Properties for ARGG

Tests	Test Method	Maximum Percent
Percentage of wear, Los Angeles Abrasion Test	AASHTO T 96	30
Flat and Elongated, 5 to 1 (Material Retained on the No. 4 Sieve)	ASTM D 4791	5
Flat and Elongated, 3 to 1 (Material Retained on the No. 4 Sieve)	ASTM D 4791	20

Use fine aggregate that is manufactured stone sand and conforms to Table 902.02.02-2.

Use asphalt-rubber binder that conforms to 902.07.02.

902.12.02 Mix Design

At least 45 days before initial production, submit job mix formula(s) for each ARGG mixture performed by an AASHTO accredited lab with at least five successfully completed ARGG course projects greater than 5,000 tons each. Include a statement naming the source of each component and a report with the results for the criteria specified in Table 902.12.02-1 and 902.12.02-2. Include a report detailing the rotational viscosity of the asphalt-rubber binder at 60, 90, 135, 240, and 1440 minutes. Submit lab qualifications and references to the ME for approval prior to beginning work.

Design the mix to meet the criteria in Table 902.12.02-1 and Table 902.12.02-2. Prepare the JMF according to AASHTO R 46. Determine the JMF at 4 percent air voids and 75 gyrations of the Superpave gyratory compactor.

Table 902.12.02-1 JMF Master Ranges and Mixture Requirements ARGG Course		
Mixture Designations (% Passing[1])		
Sieve Sizes	**ARGG Course**	**Production Control Tolerances[2]**
3/4"	100	±0%
1/2"	90-100	±2%
3/8"	83-87	±1%
No. 4	28-42	±3%
No. 8	14-22	±2%
No. 200	0-6	±2%
Coarse Aggregate Fraction	Portion retained on No. 4 Sieve	
Minimum Lift Thickness	1.5 inch	

1. Aggregate percent passing to be determined based on dry aggregate weight.
2. Production tolerances are for the approved JMF and may fall outside of the wide band gradation limits.

Table 902.12.02-2 ARGG Course Mixtures Volumetrics For Design and Plant Production		
Property	**Production Control Tolerances**	**Design Requirement**
Air Voids	±1%	4%
Voids in Mineral Aggregate (VMA)	–	18.0% minimum
Voids in Coarse Aggregate of Mix(VCA_{mix})	–	Less than VCA_{dry}
Draindown @ production temperature	–	0.30% maximum
Asphalt Binder Content (Ignition Oven)[1, 2]	±0.40%	7.6% minimum
Tensile Strength Ratio	–	80% minimum

1. Asphalt-rubber binder content to be determined based on total weight of mix.
2. The asphalt binder content may not be lower than the minimum after the production tolerance is applied.

902.12.03 Sampling and Testing

Perform quality control testing as specified in 902.02.04.C. Ensure that the mix meets the requirements as specified in 902.02.04.A, otherwise the RE or ME will reject the material. Ensure that the temperature of the mixture at discharge from the plant or surge and storage bins meets the WMA additive manufacturer's recommendations. Do not allow the mixture temperature to exceed 300 °F at discharge from the plant.

During production at the plant, the ME will take a sample from each 700 tons of production to verify composition and air voids. Conduct draindown, VCA_{mix}, VCA_{dry}, and VMA testing every 3500 Tons or as directed by the ME. Perform tests according to AASHTO R 46.

If the testing results are outside of the production control tolerances specified in Table 902.12.02-1 and Table 902.12.02-2 for an acceptance sample,immediately run a quality control sample. If the quality control sample is also outside of the control tolerances in Table 902.12.02-1, determine if a plant adjustment is needed and take corrective action to bring the mix into compliance. Take additional quality control samples after completing the corrective action to ensure that the mix is within tolerances. If 2 consecutive acceptance samples are outside the tolerances specified in Table 902.12.02-1 and Table 902.12.02-2, immediately stop production. Obtain ME approval of a plant correction plan before resuming production. Upon restarting production, do not transport mixture to the Project Limits before the results of a QC sample from the mixture indicate that the mixture meets JMF tolerances. The ME will reject mixture produced at initial restarting that does not meet tolerances.

The ME will perform sampling according to NJDOT B-2 or ASTM D 3665, and will perform testing for composition according to AASHTO T 308, or NJDOT B-5. The ME will determine bulk specific gravity of the compacted sample according to AASHTO T 166. The ME will use the most current QC maximum specific gravity test result, obtained according to AASHTO T 209, in calculating the volumetric properties of the ARGG. Perform testing for draindown according to AASHTO T 305. During production at the plant, the ME will take a sample of the asphalt binder once every 3500 tons or as directed by the ME.

902.13 HOT MIX ASPHALT HIGH RAP

902.13.01 Mix Designations

The requirements for specific HMA mixtures with required minimum amounts of RAP are identified by the abbreviated fields in the Item description as defined as follows:

HOT MIX ASPHALT 12.5ME SURFACE COURSE HIGH RAP

1. **"HOT MIX ASPHALT"** "Hot Mix Asphalt" is located in the first field in the Item description for the purpose of identifying the mixture requirements.
2. **"12.5"** The second field in the Item description designates the nominal maximum size aggregate (in millimeters) for the job mix formula (sizes are 4.75, 9.5, 12.5, 19, 25, and 37.5 mm).
3. **"M"** The third field in the Item description designates the design compaction level for the job mix formula based on traffic forecasts as listed in Table 902.02.03-2 (levels are L=low and M=medium).
4. **"E"** The fourth field in the Item description designates the high temperature designation of the performance-graded binder. Options are "64" for PG 64-22 and "E" for PG 64E-22.
5. **"SURFACE COURSE"** The last field in the Item description designates the intended use and location within the pavement structure (options are surface, intermediate, or base course).
6. **"HIGH RAP"** This additional field designates that there will be a minimum percentage of RAP required for the mixture in 902.13.02.

902.13.02 Composition of Mixture

Provide materials as specified:

Aggregates for Hot Mix Asphalt 901.05

Use a virgin asphalt binder that will result in a mix that meets the performance requirements specified in Table 902.13.03-2. Ensure that the virgin asphalt binder meets the requirements of 902.01.01 except the performance grade. Use a performance grade of asphalt binder as determined by the mix design and mix performance testing. Submit a certificate of analysis (COA) showing the PG continuous grading (AASHTO R 29) for the asphalt binder used in the mix design.

For quality assurance testing of the asphalt binder, the ME may sample the asphalt binder during production of the mix and compare the results with the COA submitted during test strip approval. To analyze the binder the ME will test the binder at the nearest standard PG temperature then compare the results with the COA. If the high ($G^*/\sin\delta$) and low (stiffness and m value) temperature passing test results are within 5 percent of the results from the passing temperature on the COA, then the ME will consider the asphalt binder comparable to the binder used during the test strip.

Mix HMA HIGH RAP in a plant that is listed on the QPL for HMA Plants and conforms to the requirements for HMA Plants as specified in 1009.01.

Composition of the mixture for HMA HIGH RAP surface course is coarse aggregate, fine aggregate, asphalt binder, and a minimum of 20 percent Reclaimed Asphalt Pavement (RAP), and may also include mineral filler, asphalt rejuvenator and Warm Mix Asphalt (WMA) additives or processes as specified in 902.01.05. When WMA is used it must meet the requirements as specified in 902.10. Ensure that the finished mix does not contain more than a total of 1 percent by weight contamination from Crushed Recycled Container Glass (CRCG).

The composition of the mixture for HMA HIGH RAP base or intermediate course is coarse aggregate, fine aggregate, asphalt binder, and a minimum of 30 percent Reclaimed Asphalt Pavement (RAP), and may also include mineral filler, up to 10 percent of additional recycled materials, asphalt rejuvenator, and Warm Mix Asphalt (WMA) additives or processes as specified in 902.01.05. When WMA is used it must meet the requirements as specified in 902.10. The recycled materials may consist of a combination of RAP, CRCG, Ground Bituminous Shingle Material (GBSM), and RPCSA, with the following individual limits:

Table 902.13.02-1 Use of Recycled Materials in Base or Intermediate Course

Recycled Material	Minimum Percentage	Maximum Percentage
RAP	30	

CRCG	10
GBSM	5
RPCSA	20

Combine the aggregates to ensure that the resulting mixture meets the grading requirements specified in Table 902.02.03-1. In determining the percentage of aggregates of the various sizes necessary to meet gradation requirements, exclude the asphalt binder.

Ensure that the combined coarse aggregate, when tested according to ASTM D 4791, has less than 10 percent flat and elongated pieces retained on the No. 4 sieve and larger. Measure aggregate using the ratio of 5:1, comparing the length (longest dimension) to the thickness (smallest dimension) of the aggregate particles.

Ensure that the combined fine aggregate in the mixture conforms to the requirements specified in Table 902.02.02-2. Ensure that the material passing the No. 40 sieve is non-plastic when tested according to AASHTO T 90.

902.13.03 Mix Design

At least 45 days before initial production, submit a job mix formula for the HMA HIGH RAP on forms supplied by the Department, to include a statement naming the source of each component and a report showing that the results meet the criteria specified in Tables 902.02.03-1 and 902.13.03-1.

Include in the mix design the following based on the weight of the total mixture:

1. Percentage of RAP or GBSM.
2. Percentage of asphalt binder in the RAP or GBSM.
3. Percentage of new asphalt binder.
4. Total percentage of asphalt binder.
5. Percentage of each type of virgin aggregate.

Table 902.13.03-1 HMA HIGH RAP Requirements for Design

Compaction Levels	Required Density (% of Theoretical Max. Specific Gravity)		Voids in Mineral Aggregate (VMA)[2], % (minimum)					Voids Filled With Asphalt (VFA) %	Dust-to-Binder Ratio
			Nominal Max. Aggregate Size, mm						
	@N_{des}[1]	@N_{max}	25.0	19.0	12.5	9.5	4.75		
L	96.0	≤ 98.0	13.0	14.0	15.0	16.0	17.0	70 - 85	0.6 - 1.2
M	96.0	≤ 98.0	13.0	14.0	15.0	16.0	17.0	65 - 85	0.6 - 1.2

1. As determined from the values for the maximum specific gravity of the mix and the bulk specific gravity of the compacted mixture. Maximum specific gravity of the mix is determined according to AASHTO T 209. Bulk specific gravity of the compacted mixture is determined according to AASHTO T 166. For verification, specimens must be between 95.0 and 97.0 percent of maximum specific gravity at N_{des}.
2. For calculation of VMA, use bulk specific gravity of the combined aggregate include aggregate extracted from the RAP.

The job mix formula for the HMA HIGH RAP mixture establishes the percentage of dry weight of aggregate, including the aggregate from the RAP, passing each required sieve size and an optimum percentage of asphalt binder based upon the weight of the total mix. Determine the optimum percentage of asphalt binder according to AASHTO R 35 and M 323 with an N_{des} as required in Table 902.02.03-2. Before maximum specific gravity testing or compaction of specimens, condition the mix for 2 hours according to the requirements for conditioning for volumetric mix design in AASHTO R 30, Section 7.1. If the absorption of the combined aggregate is more than 1.5 percent according to AASHTO T 84 and T 85, ensure that the mix is short term conditioned for 4 hours according to AASHTO R 30, Section 7.2 prior to compaction of specimens (AASHTO T 312) and determination of maximum specific gravity (AASHTO T 209). Ensure that the job mix formula is within the master range specified in Table 902.02.03-1.

Ensure that the job mix formula provides a mixture that meets a minimum tensile strength ratio (TSR) of 80 percent when prepared according to AASHTO T 312 and tested according to AASHTO T 283. Submit the TSR results with the mix design.

Determine the correction factor of the mix including the RAP by using extracted aggregate from the RAP in the proposed proportions when testing is done to determine the correction factor as specified in AASHTO T 308. Use extracted aggregate from the RAP in determining the bulk specific gravity of the aggregate blend for the mix design.

For each mix design, submit with the mix design forms 3 gyratory specimens and 1 loose sample corresponding to the composition of the JMF. Ensure that the samples include the percentage of RAP that is being proposed for the mix. The ME will use these to verify the properties of the JMF. Compact the specimens to the design number of gyrations (N_{des}). For the mix design to be acceptable, all gyratory specimens must comply with the requirements specified in Tables 902.02.03-1 and 902.13.03-1. The ME reserves the right to be present at the time the gyratory specimens are molded.

In addition, submit 11 gyratory specimens and two 5 gallon buckets of loose mix to the ME. The ME will use these additional gyratory samples for performance testing of the HMA HIGH RAP mix. The ME reserves the right to be present at the time of molding the gyratory specimens. Ensure that the additional gyratory specimens are compacted according to AASHTO T 312. Compact 6 of the specimens to 77 millimeter height, and have an air void content of 6.5 ± 0.5 percent. The ME will test 6 specimens using an Asphalt Pavement Analyzer (APA) according to AASHTO T 340 at 64 ºC, 100 pound per square inch hose pressure, and 100 pound wheel load. Compact the other 5 specimens to 115 mm height. These 5 specimens will be cut, from the middle of each 115 millimeter height specimen, to 38 millimeter height test specimens. The air void content of the 5 cut specimen will be determined to ensure compliance with the target air void content of 6.5 ± 0.5 percent. The ME will use the five 38 millimeter height specimens to test using an Overlay Tester (NJDOT B-10) at 25 °C and a joint opening of 0.025 inch. The ME will eliminate the high and low Overlay test results then average and report the middle 3 test results. The ME will ensure that all submitted specimens are within the target air void content as tested at the Material's Central Lab.

The ME will approve the JMF if the results meet the criteria in Table 902.13.03-2.

Table 902.13.03-2 Performance Testing Requirements for HMA HIGH RAP Design

Test	Requirement			
	Surface Course		Intermediate and Base Course	
	PG 64-22	PG 64E-22	PG 64-22	PG 64E-22
APA @ 8,000 loading cycles (AASHTO T 340)	≤ 7 mm	≤ 4 mm	≤ 7 mm	≤ 4 mm
Overlay Tester (NJDOT B-10)	≥ 200 cycles	≥ 275 cycles	≥ 100 cycles	≥ 150 cycles

If the JMF does not meet the APA and Overlay Tester criteria, redesign the HMA HIGH RAP mix and submit for retesting. The JMF for the HMA HIGH RAP mixture is in effect until modification is approved by the ME.

When unsatisfactory results for any specified characteristic of the work make it necessary, the Contractor may establish a new JMF for approval. In such instances, if corrective action is not taken, the ME may require an appropriate adjustment to the JMF.

Should a change in sources be made or any changes in the properties of materials occur, the ME will require that a new JMF be established and approved before production can continue.

902.13.04 Sampling and Testing

A. General Acceptance Requirements. The RE or ME may reject and require disposal of any batch or shipment that is rendered unfit for its intended use due to contamination, segregation, improper temperature, lumps of cold material, or incomplete coating of the aggregate. For other than improper temperature, visual inspection of the material by the RE or ME is considered sufficient grounds for such rejection.

Ensure that the temperature of the mix at discharge from the plant or storage silo meets the recommendation of the supplier of the asphalt binder, supplier of the asphalt modifier and WMA manufacturer. For HMA, do not allow the mixture temperature to exceed 330 °F at discharge from the plant. For WMA, do not allow the mixture temperature to exceed 300 °F at discharge from the plant.

Combine and mix the aggregates and asphalt binder to ensure that at least 95 percent of the coarse aggregate particles are entirely coated with asphalt binder as determined according to AASHTO T 195. If the ME determines that there is an on-going problem with coating, the ME may obtain random samples from 5 trucks and will determine the adequacy of the mixing on the average of particle counts made on these 5 test portions. If the requirement for 95 percent coating is not met on each sample, modify plant operations, as necessary, to obtain the required degree of coating.

B. Sampling. The ME will take 5 stratified random samples of HMA HIGH RAP for volumetric acceptance testing from each lot of approximately 3500 tons of a mix. When a lot of HMA HIGH RAP is less than 3500 tons, the ME will take samples at random for each mix at the rate of one sample for each 700 tons. The ME will perform sampling according to AASHTO T 168, NJDOT B-2, or ASTM D 3665. During production at the plant, a sample of asphalt binder will be taken once every 3500 tons or as directed by the ME.

Use a portion of the samples taken for volumetric acceptance testing for composition testing.

C. Quality Control Testing. The HMA HIGH RAP producer shall provide a quality control (QC) technician who is certified by the Society of Asphalt Technologists of New Jersey as an Asphalt Technologist, Level 2. The QC technician may substitute equivalent technician certification by the Mid-Atlantic Region Technician Certification Program (MARTCP). Ensure that the QC technician is present during periods of mix production for the sole purpose of quality control testing and to assist the ME. The ME will not perform the quality control testing or other routine test functions in the absence of, or instead of, the QC technician.

The QC technician shall perform sampling and testing according to the approved quality control plan, to keep the mix within the limits specified for the mix being produced. The QC technician may use acceptance test results or perform additional testing as necessary to control the mix.

To determine the composition, perform ignition oven testing according to AASHTO T 308.

For each acceptance test, perform maximum specific gravity testing according to AASHTO T 209 on a test portion of the sample taken by the ME. Sample and test coarse aggregate, fine aggregate, mineral filler, and RAP according to the approved quality control plan for the plant.

Ensure that the supplier has in operation an ongoing daily quality control program to evaluate the RAP. As a minimum, this program shall consist of the following:

1. An evaluation performed to ensure that the material conforms to 901.05.04 and compares favorably with the design submittal.
2. An evaluation of the RAP material performed using a solvent or an ignition oven to qualitatively evaluate the aggregate components to determine conformance to 901.05.
3. Quality control reports as directed by the ME.

D. Acceptance Testing and Requirements. The ME will determine volumetric properties at N_{des} for acceptance from samples taken, compacted, and tested at the HMA plant. The ME will compact HMA HIGH RAP to the number of design gyrations (N_{des}) specified in Table 902.02.03-2, using equipment according to AASHTO T 312. The ME will determine bulk specific gravity of the compacted sample according to AASHTO T 166. The ME will use the most current QC maximum specific gravity test result in calculating the volumetric properties of the HMA HIGH RAP.

The ME will determine the dust-to-binder ratio from the composition results as tested by the QC technician.

Ensure that the HMA HIGH RAP mixture conforms to the requirements specified in Table 902.13.04-1, and to the gradation requirements in Table 902.02.03-1. If 2 samples in a lot fail to conform to the gradation or volumetric requirements, immediately initiate corrective action.

The ME will test a minimum of 1 sample per lot for moisture, basing moisture determinations on the weight loss of an approximately 1600 gram sample of mixture heated for 1 hour in an oven at 280 ± 5 °F. Ensure that the moisture content of the mixture at discharge from the plant does not exceed 1.0 percent.

Table 902.13.04-1 HMA HIGH RAP Requirements for Control

Compaction Levels	Required Density (% of Theoretical Max. Specific Gravity)	Voids in Mineral Aggregate (VMA), % (minimum)					Dust-to-Binder Ratio
		Nominal Max. Aggregate Size, mm					
	@Ndes[1]	25.0	19.0	12.5	9.5	4.75	
L, M	95.0 – 98.5	13.0	14.0	15.0	16.0	17.0	0.6 - 1.3

1. As determined from the values for the maximum specific gravity of the mix and the bulk specific gravity of the compacted mixture. Maximum specific gravity of the mix is determined according to AASHTO T 209. Bulk specific gravity of the compacted mixture is determined according to AASHTO T 166.

E. Performance Testing for HMA HIGH RAP. Provide 11 gyratory specimens that are compacted according to AASHTO T 312 and 2 boxes of loose mix. Compact 6 of the specimens to 77 millimeter height and an air void content of 6.5 ± 0.5 percent. Compact the other 5 specimens to 115 millimeter height. These 5 specimens will be cut, from the middle of each 115 millimeter height specimen, to 38 millimeter height test specimens. The air void content of the 5 cut test specimens will be determined to ensure compliance with the target air void content of 6.5 ± 0.5 percent.

The ME will use the boxes of loose mix to determine the maximum specific gravity of the mix according to AASHTO T 209. The ME will use the gyratory samples for performance testing of the HMA HIGH RAP mix. The ME will test six 77 millimeter height specimens using an Asphalt Pavement Analyzer (APA) according to AASHTO T 340 at 64 °C, 100 pound per square inch hose pressure, and 100 pound wheel load. The ME will use the five 38 millimeter height specimens to test using an Overlay Tester (NJDOT B-10) at 25 °C and a joint opening of 0.025 inch. The ME will eliminate the high and low Overlay test result then average and report the middle 3 test results. The ME will ensure that all submitted specimens are within the target air void content as tested at the Material's Central Lab.

Ensure that the first sample is taken during the construction of the test strip as specified in 406.03.01.C. Thereafter, sample every lot or as directed by the ME. If the test strip is done within the project limits and the performance testing results are acceptable to the ME, the results will be included into the first lot. A lot is defined as material placed on the traveled way within the project limits.

If a sample does not meet the criteria for performance testing as specified in Table 902.13.03-2, the Department will assess a pay adjustment as specified in Table 902.13.04-2 and 902.13.04-3. If a lot fails to meet requirements for both APA and Overlay Tester, the Department will assess pay adjustments for both parameters or may require removal and replacement of the lot. The Department will calculate the pay adjustment by multiplying the percent pay adjustment (PPA) by the quantity in the lot and the bid price for the HMA HIGH RAP item. If samples received are not within the target air void range, 6.5 ± 0.5 percent, the Department will consider the samples un-testable and asses a PPA of -100 percent for APA specimens and/or Overlay specimens or may require removal and replacement of the lot. PPA for both APA and Overlay are cumulative and may not exceed -100 percent in total. If the Department requires removal and replacement, then the replacement work is subject to the same requirements as the initial work.

Table 902.13.04-2 Surface Course Performance Testing Pay Adjustments for HMA HIGH RAP

	Surface Course		PPA
	PG 64-22	PG 64E-22	
APA @ 8,000 loading cycles, mm (AASHTO T 340)	$t \leq 7$	$t \leq 4$	0
	$7 < t \leq 10$	$4 < t \leq 7$	PG 64-22: -50(t-7)/3 PG 64E-22: -50(t-4)/3
	$t > 10$	$t > 7$	-100 or Remove & Replace
Overlay Tester, cycles (NJDOT B-10)	$t \geq 200$	$t \geq 275$	0
	$200 > t \geq 150$	$275 > t \geq 200$	Surface PG 64-22: -(200-t) Surface PG 64E-22: -(275-t)/1.5
	$t \leq 150$	$t \leq 200$	-100 or Remove & Replace

Table 902.13.04-3 Intermediate and Base Course Performance Testing Pay Adjustments for HMA HIGH RAP

	Intermediate and Base Course		PPA
	PG 64-22	PG 64E-22	
APA @ 8,000 loading cycles, mm (AASHTO T 340)	$t \leq 7$	$t \leq 4$	0
	$7 < t \leq 10$	$4 < t \leq 7$	PG 64-22: -50(t-7)/3 PG 64E-22: -50(t-4)/3
	$t > 10$	$t > 7$	-100 or Remove & Replace
Overlay Tester, cycles (NJDOT B-10)	$t \geq 100$	$t \geq 150$	0
	$100 > t \geq 75$	$150 > t \geq 110$	Intermediate PG 64-22: -(2t-200) Intermediate PG 64E-22: -1.25(150-t)
	$t \leq 75$	$t \leq 110$	-100 or Remove & Replace

THE FOLLOWING SUBSECTIONS AND SUBPARTS ARE ADDED:

902.14 BRIDGE DECK WATERPROOF SURFACE COURSE (BDWSC)

902.14.01 Composition of the Mixture

Provide BDWSC mixture that is produced at an HMA plant that is listed on the QPL and meets the requirements specified in 1009.01. Composition of the mixture for BDWSC is coarse aggregate, fine aggregate, and asphalt binder, and may also include mineral filler and crumb rubber. Do not use Reclaimed Asphalt Pavement (RAP), Ground Bituminous Shingle Material, Remediated Petroleum Contaminated Soil Aggregate, or Crushed Recycled Container Glass (CRCG) in BDWSC.

1. Use polymer modified asphalt binder that is specially formulated for meeting the mix performance criteria in this specification. Consult with the asphalt binder supplier to obtain the appropriate material for the specific mix design. Submit a certificate of analysis (COA) showing the PG continuous grading (AASHTO R 29) for the asphalt binder used in the mix design.

   For quality assurance testing of the asphalt binder, the ME may sample the asphalt binder during production of the mix and compare the results with the COA submitted during test strip approval. To analyze the binder the ME will test the binder at the nearest standard PG temperature then compare the results with the COA. If the high ($G^*/\sin\delta$) and low (stiffness and m value) temperature passing test results are within 5 percent of the results from the passing temperature on the COA, then the ME will consider the asphalt binder comparable to the binder used during the test strip.

2. Use coarse aggregate that conforms to 901.05.01 and is classified as argillite, gneiss, granite, quartzite, or trap rock as defined in 901.03.01.

3. Use fine aggregate that is stone sand as specified in 901.05.02 and has an uncompacted void content of at least 45 percent when tested according to AASHTO T 304, Method A. Ensure that the minimum sand equivalent of the fine aggregate is 45 percent when tested according to AASHTO T 176.

4. Ensure that mineral filler, if used, conforms to 901.05.03.

902.14.02 Mix Design

At least 45 days before initial production, submit a JMF for the BDWSC on forms supplied by the Department. Include a statement naming the source of each component and a report confirming the results meet the criteria specified in Table 902.14.02-1 and Table 902.14.02-2.

Table 902.14.02-1 Job Mix Formula Requirements for BDWSC

Sieve Size	Percent Passing[1]	Production Control Tolerances[2]
1/2″	100	± 0.0%
3/8″	80-100	± 4.0%
#4	55-85	± 6.0%
#8	32-42	± 2.0%
#16	20-30	± 2.0%
#30	12-22	± 2.0%
#50	7-16	± 2.0%
#100	3-12	± 2.0%
#200	2.0-6.0	± 1.0%
Asphalt Binder Content (Ignition Oven)[3]	7.0 % minimum	± 0.30%
Lift Thickness	1.5 – 3.0 inch	

1. Aggregate percent passing to be determined based on dry aggregate weight.
2. Production tolerances are for the approved JMF and may not fall outside of the wide band gradation limits.
3. The asphalt binder content may not be lower than the minimum after the production tolerance is applied.

Table 902.14.02-2 Volumetric Requirements for Design and Control of BDWSC					
	Required Density (% of Max Sp. Gr.)	**Voids Filled with Asphalt**	**Voids in Mineral Aggregate**	**Dust to Binder Ratio**	**Draindown AASHTO T 305**
	N_{des} (50 gyrations)	**(VFA)**	**(VMA)**		
Design Requirements	99	90 - 100	≥ 18.0 %	0.3 – 0.9	≤ 0.1 %
Control Requirements	98 - 100	90 - 100	≥ 18.0 %	0.3 – 0.9	≤ 0.1 %

Establish the percentage of dry weight of aggregate passing each required sieve size and an optimum percentage of asphalt binder based upon the weight of the total mix. Determine the optimum percentage of asphalt binder according to AASHTO R 35 and M 323 with an N_{des} of 50 gyrations. Before maximum specific gravity testing or compaction of specimens, condition the mix for 2 hours according to the requirements for conditioning for volumetric mix design in AASHTO R 30, Section 7.1. If the absorption of the combined aggregate is more than 1.5 percent according to AASHTO T 84 and T 85, short term condition the mix for 4 hours according to AASHTO R 30, Section 7.2 prior to compaction of specimens (AASHTO T 312) and determination of maximum specific gravity (AASHTO T 209). Ensure that the JMF is within the master range specified in Table 902.14.02-1.

Ensure that the mixture meets a minimum tensile strength ratio (TSR) of 90 percent when tested according to AASHTO T 283 with the following exceptions:

1. Before compaction, condition the mixture for 2 hours according to AASHTO R 30 Section 7.1.
2. Compact specimens with 40 gyrations according to AASHTO T 312.
3. Extrude specimens as soon as possible without damaging.
4. Use AASHTO T 269 to determine void content.
5. Record the void content of the specimens.
6. If less than 55 percent saturation is achieved, the procedure does not need to be repeated, unless the difference in tensile strength between duplicate specimens is greater than 25 pounds per square inch.
7. If visual stripping is detected, modify or readjust the mix.

For each mix design, submit 3 gyratory specimens and one loose sample corresponding to the composition of the JMF, including the design asphalt content, with the mix design forms. The ME will use these samples for verification of the properties of the job mix formula. Compact the specimens to the design number of gyrations (N_{des}). To be acceptable, all 3 gyratory specimens must comply with the gradation and asphalt content requirements in Table 902.14.02-1 and with the control requirements in Table 902.14.02-2. The ME reserves the right to be present at the time of molding the gyratory specimens.

In addition, submit 6 gyratory specimens and 12 boxes of loose mix to the ME. The ME will use these additional samples for performance testing of the BDWSC mix. Ensure that the additional gyratory specimens are compacted according to AASHTO T 312, are 77 millimeters high, and have a maximum air void content of 3.0 percent. The ME will test the specimens using an Asphalt Pavement Analyzer according to AASHTO T 340 at 64 °C, 100 pounds per square inch hose pressure, and 100 pound wheel load. The ME will use the supplied loose mix to compact 2 samples to a maximum air void content of 3.0 percent for Flexural Beam Fatigue testing. The ME will test the fatigue specimens according to AASHTO T 321 at 15 °C, 10 Hertz loading frequency, and 1,500 micro-strains. The ME will approve the JMF if the average rut depth for the 6 specimens in the Asphalt Pavement Analyzer testing is not more than 3 millimeters in 8,000 loading cycles and the fatigue life, as determined by AASHTO T 321, is not less than 100,000 cycles. If the JMF does not meet the APA and Flexural Beam Fatigue criteria, redesign the BDWSC mix and submit for retesting. The ME will ensure that all submitted specimens are within the target air void content as tested at the Material's Central Lab.

The JMF for the BDWSC mixture is in effect until modification is approved by the ME. If required, the ME may use the 12 boxes of loose BDWSC mix to compact additional gyratory specimens for performance testing and the performance test results may be used for approval of the JMF.

When unsatisfactory results for any specified characteristic of the work make it necessary, the Contractor may establish a new JMF for approval. In such instances, if corrective action is not taken, the ME may require an appropriate adjustment to the JMF.

Should a change in sources be made or a change in the properties of materials occurs, the ME will require that a new JMF be established and approved before production can continue.

902.14.03 Sampling and Testing

A. General Acceptance Requirements. The RE or ME may reject and require disposal of any batch or shipment that is rendered unfit for its intended use due to contamination, segregation, improper temperature, lumps of cold material, or incomplete coating of the aggregate. For other than improper temperature, visual inspection of the material by the RE or ME is considered sufficient grounds for such rejection.

Ensure that the temperature of the mix at discharge from the plant or storage silo meets the recommendation of the supplier of the asphalt binder or supplier of the asphalt modifier.

Combine and mix the aggregates and asphalt binder to ensure that at least 95 percent of the coarse aggregate particles are entirely coated with asphalt binder as determined according to AASHTO T 195. If the ME determines that there is an on-going problem with coating, the ME may obtain random samples from 5 trucks and will determine the adequacy of the mixing on the average of particle counts made on these 5 test portions. If the requirement for 95 percent coating is not met on each sample, modify plant operations, as necessary, to obtain the required degree of coating.

B. Sampling. Perform sampling as specified in 902.02.04.B.

C. Quality Control Testing. Perform quality control testing as specified in 902.02.04.C.

D. Acceptance Testing and Requirements. The ME will determine volumetric properties at N_{des} for acceptance from samples taken, compacted, and tested at the HMA plant. The ME will compact HMA to the 50 design gyrations (N_{des}), using equipment according to AASHTO T 312. The ME will determine bulk specific gravity of the compacted sample according to AASHTO T 166. The ME will use the most current QC maximum specific gravity test result in calculating the volumetric properties of the BDWSC.

The ME will determine the dust-to-binder ratio from the composition results as tested by the QC technician.

Ensure that the HMA mixture conforms to the requirements specified in Table 902.14.02-1 and Table 902.14.02-2. If 2 samples in a lot fail to conform to the gradation or volumetric requirements, immediately initiate corrective action.

The ME will test a minimum of 1 sample per lot for moisture, basing moisture determinations on the weight loss of an approximately 1600 gram sample of mixture heated for 1 hour in an oven at 280 ± 5 °F. Ensure that the moisture content of the mixture at discharge from the plant does not exceed 1.0 percent.

E. Performance Testing. Provide 6 gyratory specimens that are compacted according to AASHTO T 312 and 12 boxes of loose mix. Compact the 6 gyratory specimens to 77 millimeters high and maximum air void content of 3.0 percent. The ME will test the specimens using an Asphalt Pavement Analyzer according to AASHTO T 340 at 64°C, 100 pound per square inch hose pressure, and 100 pound wheel load. The ME will use the supplied loose mix to determine the maximum specific gravity of the mix according to AASHTO T 209 and to compact 2 samples to a maximum air void content of 3.0 percent for Flexural Beam Fatigue testing. The ME will test the fatigue specimens according to AASHTO T 321 at 15°C, 10 Hertz loading frequency, and 1,500 micro-strains. The ME will ensure that all submitted specimens are within the target air void content as tested at the Material's Central Lab.

Ensure that the first sample is taken in the first lot of production. Thereafter, sample every second lot. The ME may stop production of BDWSC if a sample does not meet the design criteria for performance testing as detailed in Table 902.14.03-1.

Table 902.14.03-1 Performance Testing Requirements for BDWSC

Test	Requirement
APA @ 8,000 loading cycles (AASHTO T 340)	≤ 3 mm
Flexural Fatigue Life (AASHTO T 321)	≥ 100,000 cycles

902.15 RETROFIT STRIP SEAL JOINT SYSTEM

Use a strip seal joint system that builds up the joint using elastomeric or polymer concrete and seals the joint using a strip seal expansion joint. Ensure that the joint system includes a method for securing the strip seal with the elastomeric or polymer concrete.

Ensure that the strip seal joint system is capable of being constructed within the allowable lane closure hours for the project and compatible with installation in an asphalt overlay.

Use strip seal gland that is a neoprene strip seal gland according to 914.04.02.B or a preformed silicon strip seal meeting the criteria in Table 902.15-1.

Table 902.15-1 Requirements for Preformed Silicon Strip Seal

Property	Test Method	Requirement
Durometer (Shore A)	ASTM D 2240	55 ± 5
Tensile (psi)	ASTM D 412	550 minimum
Elongation	ASTM D 412	350% minimum
Tear (die B ppi)	ASTM D 624	80 minimum
Compression Set @ 350 °F, 22 hrs.	ASTM D 395	30% maximum
Operating Temperature Range 1		– 60 °F to + 450 °F
Specific Gravity		1.51
Color		Black

1. The heat age data at temperatures above 300 °F does not apply in this application but in general, tested at 302 °F and 437 °F, no degradation occurs causing functional concern. The operating temperature range indicates the material remains elastomeric in nature at the above temperatures.

SECTION 903 – CONCRETE

903.02.01 Air-Entraining Admixtures

THE ENTIRE SUBPART IS CHANGED TO:

Use air-entraining admixtures for concrete that are listed on the QPL and conform to AASHTO M 154, except that the tests for bleeding and volume change are not required.

The ME will test for uniformity through the use of infrared spectrophotometry, pH values, solids content, and specific gravity for liquid admixtures.

For pH test of non-liquid admixture, dissolve 1.28 grams of powder in 128 milliliter of distilled water. Keep all bulk storage tanks inside a heated area with an ambient temperature of not less than 32 °F. Do not reuse air-entraining admixture that has been allowed to freeze until it has been agitated and retested.

903.02.04 Viscosity Modifying Admixture

THE FIRST SENTENCE IS CHANGED TO:

Use a viscosity modifying admixture that is listed on the QPL and that, when evaluated according to the test methods and mix design proportions in AASHTO M 194, conforms to the following physical requirements:

903.03.05 Control and Acceptance Testing Requirements

E. Acceptance Testing for Strength for Pay-Adjustment Items.

Concrete Items which are subject to pay adjustment and the base prices are as follows:

ITEMS	DESCRIPTION	UNIT	BASE PRICE
507021P	CONCRETE BRIDGE DECK	CY	$500.00
507036P	CONCRETE BRIDGE PARAPET	LF	$305.00
505039P	PRESTRESSED CONCRETE SLAB BEAM, (TYPE SII-36), 36" X 15"	LF	$125.00
505042P	PRESTRESSED CONCRETE SLAB BEAM, (TYPE SIII-36), 36" X 18"	LF	$130.00
505015P	PRESTRESSED CONCRETE BOX BEAM, (TYPE BI-36), 36" X 27"	LF	$170.00
505045P	PRESTRESSED CONCRETE SLAB BEAM, (TYPE SIV-36), 36" X 21"	LF	$160.00

505018P	PRESTRESSED CONCRETE BOX BEAM, (TYPE BII-36), 36" X 33"	LF	$170.00
505021P	PRESTRESSED CONCRETE BOX BEAM, (TYPE BIII-36), 36" X 39"	LF	$175.00
505024P	PRESTRESSED CONCRETE BOX BEAM, (TYPE BIV-36), 36" X 42"	LF	$185.00
505003P	PRETENSIONED PRESTRESSED CONCRETE BEAM, 45"	LF	$155.00
505006P	PRETENSIONED PRESTRESSED CONCRETE BEAM, 54"	LF	$155.00
505048P	PRESTRESSED CONCRETE SLAB BEAM, (TYPE SII-48), 48" X 15"	LF	$160.00
505051P	PRESTRESSED CONCRETE SLAB BEAM, (TYPE SIII-48), 48" X 18"	LF	$135.00
505009P	PRETENSIONED PRESTRESSED CONCRETE BEAM, 63"	LF	$185.00
505027P	PRESTRESSED CONCRETE BOX BEAM, (TYPE BI-48), 48" X 27"	LF	$215.00
505054P	PRESTRESSED CONCRETE SLAB BEAM, (TYPE SIV-48), 48" X 21"	LF	$215.00
505030P	PRESTRESSED CONCRETE BOX BEAM, (TYPE BII-48), 48" X 33"	LF	$185.00
505033P	PRESTRESSED CONCRETE BOX BEAM, (TYPE BIII-48), 48" X 39"	LF	$220.00
505036P	PRESTRESSED CONCRETE BOX BEAM, (TYPE BIV-48), 48" X 42"	LF	$230.00
505012P	PRETENSIONED PRESTRESSED CONCRETE BEAM, 72"	LF	$200.00
502045M	CAST-IN-PLACE CONCRETE PILE, DRIVEN, 12" DIAMETER	LF	$50.00
502090M	PRECAST CONCRETE PILE, DRIVEN, 12" X 12"	LF	$90.00
502132M	PRESTRESSED CONCRETE PILE, DRIVEN, 12" X 12"	LF	$50.00
502135M	PRESTRESSED CONCRETE PILE, DRIVEN, 14" X 14"	LF	$50.00
502138M	PRESTRESSED CONCRETE PILE, DRIVEN, 16" X 16"	LF	$50.00
502141M	PRESTRESSED CONCRETE PILE, DRIVEN, 18" X 18"	LF	$50.00
502144M	PRESTRESSED CONCRETE PILE, DRIVEN, 20" X 20"	LF	$75.00
502147M	PRESTRESSED CONCRETE PILE, DRIVEN, 22" X 22"	LF	$75.00
502150M	PRESTRESSED CONCRETE PILE, DRIVEN, 24" X 24"	LF	$75.00
502151M	PRESTRESSED CONCRETE PILE, DRIVEN, 30" X 30"	LF	$75.00
502156M	PRESTRESSED CONCRETE PILE, DRIVEN, 54" DIAMETER	LF	$200.00

4. Compute Percent Pay Adjustment (PPA).

THE FIFTH PARAGRAPH IS CHANGED TO:

If the Department elects not to core, the Contractor may accept the PPA calculated by Equation 1 or 2, as appropriate, or, when approved by the Department, the Contractor may take cores as specified in Table 903.03.06-4. Take the cores within 90 days from the date of concrete placement. The Department will not award a positive pay adjustment based on core samples taken more than 90 days from the date of concrete placement. If electing to core, perform the coring as directed by the ME, and provide the cores to the ME for testing.

F. Acceptance Testing for Strength for Non-Pay-Adjustment Items.

THE FIFTH PARAGRAPH IS CHANGED TO:

If cores are taken, the Department will use the core results to determine the final disposition of the lot. If, based on the core results, the lot is determined to be at a quality level of PD < 75, the Department will compute the pay-adjustment as specified in 903.03.05.E. The Department will not award positive pay adjustment for non-pay-adjustment Items. If the lot is confirmed to be at a quality level of PD ≥ 75, the ME will reject the lot and the RE may do one of the following:

1. Require the Contractor to remove and replace the defective lot
2. Allow the Contractor to leave the defective lot in place and receive a PPA computed by Equation 2.
3. Allow the Contractor to submit a plan, for approval, for corrective action.

903.03.06 Tables

Table 903.03.06-2 Requirements for Structural Concrete Items

THE SEVENTH LINE UNDER CAST-IN-PLACE ITEMS IS CHANGED TO:

Table 903.03.06-2 Requirements for Structural Concrete Items				
	Concrete Class	Slump[1] (inches)	Percent Air Entrainment for Coarse Aggregate[1]	
			No. 57 & No. 67	No. 8
Decks, Sidewalks, Curbs, Parapets, Concrete Patch	A	3 ± 1	6.0 ± 1.5	7.0 ± 1.5

903.05.02 Mix Design and Verification

THE ENTIRE TABLE 903.05.02-1 IS CHANGED TO:

Table 903.05.02-1 Design and Verification Requirements for HPC			
		Requirements	
Performance Characteristic	Test Method	HPC-1	HPC-2
Scaling Resistance[1]@ 50 cycles (visual rating of the surface, maximum)	ASTM C 672	3	–
Abrasion Resistance (average depth of wear in inches, maximum)	ASTM C 944	–	0.04
Freeze-Thaw Durability (relative dynamic modulus of elasticity after 300 cycles, minimum)	ASTM C 666 Proc. A	80%	80%
Surface Resistivity[2] @ 56 days (kΩ-cm, minimum)	AASHTO T 358	36	36
Compressive Strength[3] @ 56 days (pounds per square inch, minimum)	AASHTO T 22	5400	5400
Water-Cement Ratio (maximum)	–	0.40	0.40

1. For the scaling resistance testing, moist cure specimens for 14 days and then air cure for 14 days.
2. If the surface resistivity requirement has been achieved in 28 days, consider the surface resistivity acceptable. If the required surface resistivity is not achieved in 28 days, test the HPC sample at 56 days.
3. If the compressive strength requirement has been achieved in 28 days, consider the strength acceptable. If the required compressive strength is not achieved in 28 days, test the HPC samples at 56 days.

THE THIRD PARAGRAPH IS CHANGED TO:

In addition to verifying the compressive strength of the HPC mix, the ME will verify the surface resistivity according to AASHTO T358. Submit 4 additional cylindrical samples, having a 4-inch diameter and a length of at least 8 inches, to the ME for this verification testing. The ME will average the values of tests on 2 specimens for each mix design.

903.05.04 Control and Acceptance Testing Requirements

THE ENTIRE SUBPART IS CHANGED TO:

With the exception that the ME may perform compression testing at 56 days, the ME will enforce the requirements specified in 903.03.05 for control and acceptance testing of non-pay adjustment Class A concrete in the fabrication of the HPC elements.

Produce HPC that conforms to the acceptance testing criteria in Table 903.05.04-1.

Table 903.05.04-1 Acceptance Requirements for HPC		
Performance Characteristic	Test Method	Requirement
Percent Air Entrainment[1]	AASHTO T 152	6.0 ± 1.5 (No. 57/67 Aggregate) 7.0 ± 1.5 (No. 8 Aggregate)
Slump (inches)[1, 2]	AASHTO T 119	3 ± 1
Surface Resistivity @ 56 days[3, 4] (kΩ-cm, minimum)	AASHTO T 358	19
Compressive Strength @ 56 days[5] (pounds per square inch, minimum)	AASHTO T 22	4400

1. If using a Type F or G admixture, change the Slump and Air Content values for the HPC as follows:
   1.1 Slump: 6 ± 2 inches
   1.2 Air Content: increase both the target value and tolerance percentages by 0.5
2. For slip-formed parapet, design and produce a mix with a slump of 1 ± 1/2 inch.
3. The ME will not test for the surface resistivity requirements for HPC used for Items other than bridge decks.
4. For surface resistivity, the ME will mold 4 additional cylinders, taking 2 cylinders each from 2 randomly selected delivery trucks for testing at 56 days.
5. For compressive strength testing, the initial rate for the HPC is 6 per lot. The retest limit is 4400 pounds per square inch.

The ME will test 2 specimens for surface resistivity and will average the results of the 2 specimens to determine the test result. The ME will perform 2 tests on each lot from samples taken from 2 randomly selected delivery trucks. The lot is eligible for 100 percent payment provided that the test results are equal to or above 19 kilo-ohm centimeter.

If, upon testing at 56 days, 1 or more individual test results is below 19 kilo-ohm centimeter, the RE may do one of the following:

1. Require that the Contractor remove and replace the defective lot.
2. Allow the Contractor to submit a corrective action plan for approval.

903.06.02 SCC For Precast Concrete
THE ENTIRE PART B. IS CHANGED TO:

B. Mix Design and Verification. Design the mix, as specified in 903.03.02 or 903.05.02, to conform to the strength, water-cement ratio, and air content requirements for the specified class of concrete for the item that is being cast. In addition, ensure that the SCC conforms to the requirements specified in Table 903.06.02-1.

Table 903.06.02-1 Requirements for SCC for Precast Concrete

Property	Test Method	Requirement
Slump Flow	NJDOT C-4	16 to 24 inches
Visual Stability Index		
Plastic Concrete	NJDOT C-4	1 maximum
Hardened Concrete	NJDOT C-5	1 maximum

Perform mix design verification as specified in 903.03.02 or 903.05.02. For the verification batch, ensure that the air content is in the top half of the allowable range and the slump flow is between 22 and 24 inches. Perform air content, slump flow, and visual stability index (plastic concrete) testing on the verification batch. Make concrete cylinders for compression testing as specified in 903.03.02 or 903.05.02 and make 2 additional 4 × 8 inch cylinders for visual stability index on the hardened concrete. Saw the additional cylinders length-wise according to NJDOT C-5. The ME will perform the compressive strength testing and the visual evaluation to assign a visual stability index in order to approve the mix.

SECTION 904 – PRECAST AND PRESTRESSED CONCRETE

904.01.01 Component Materials
THE FOLLOWING SENTENCE IS ADDED AT THE END:

For Precast Concrete, the minimum cement content specified in Table 903.03.06-3 is not required for Class A or Class B concrete.

904.01.02 Fabrication
THE ENTIRE SUBPART IS CHANGED TO:

Fabricate precast concrete at a plant as specified in 1011.01 and listed on the QPL.

1. **Placing Reinforcement Steel.** Before placing the concrete, place reinforcement steel in position as shown on the approved working drawings and as specified in 504.03.01. Firmly tie the reinforcement to prevent displacement during placing of the concrete.

2. **Placing Concrete.** Place concrete as specified in 504.03.02.B, 504.03.02.C, 504.03.02.D, and 504.03.02.E. Before placing concrete, ensure that reinforcement steel and any other embedded materials are free of loose rust, frost, dirt, oil, or contaminants that may prevent a bond with the concrete. Consolidate concrete with internal vibrators. The fabricator may use external vibration to supplement internal vibration. If using SCC, minimize or eliminate the use of vibrators to prevent segregation.

904.01.06 Quality Control and Acceptance Requirements
THE FOLLOWING IS ADDED AFTER THE SECOND PARAGRAPH:

Follow the Department approved Buy America Compliance Plan. Provide documentation of compliance when requested by the ME.

904.02.01 Component Materials
THE FOLLOWING SENTENCE IS ADDED AT THE END:

For Precast Concrete, the minimum cement content specified in Table 903.03.06-3 is not required for Class A or Class B concrete.

904.02.02 Fabrication
THE FIRST SENTENCE IN THE FIRST PARAGRAPH IS CHANGED TO:

Place concrete as specified in 504.03.02.C, 504.03.02.D, and 504.03.02.E.
THE SECOND SENTENCES IN THE FIRST PARAGRAPH IS CHANGED TO:

Fabricate precast concrete at a plant as specified in 1011.01 and listed on the QPL.

904.02.06 Quality Control and Acceptance Requirements
THE FOLLOWING IS ADDED AFTER THE SECOND PARAGRAPH:

Follow the Department approved Buy America Compliance Plan. Provide documentation of compliance when requested by the ME.

STEP 2 IN THE THIRD PARAGRAPH IS CHANGED TO:

2. Dimensions not conforming to the tolerances specified in Table 904.02.02-1.

904.03.01 Component Materials
THE FOLLOWING IS ADDED AT THE END:

For Precast Concrete, the minimum cement content specified in Table 903.03.06-3 is not required for Class A or Class B concrete.

904.03.02 Fabrication
THE FIRST SENTENCE IN THE FIRST PARAGRAPH IS CHANGED TO:

Fabricate precast concrete at a plant as specified in 1011.01 and listed on the QPL.

2. Placing Concrete.
THE FIRST SENTENCE IN THE FIRST PARAGRAPH IS CHANGED TO:

Place concrete as specified in 504.03.02.B, 504.03.02.C, 504.03.02.D, and 504.03.02.E.

904.03.06 Quality Control and Acceptance Requirements
THE FOLLOWING IS ADDED AFTER THE SECOND PARAGRAPH:

Follow the Department approved Buy America Compliance Plan. Provide documentation of compliance when requested by the ME.

THE FOLLOWING IS ADDED AFTER THE LAST PARAGRAPH:

If the ME does not inspect the precast concrete item, submit certifications of compliance as specified in 106.07.

904.04.02 Fabrication
THE FIRST SENTENCE IN THE FIRST PARAGRAPH IS CHANGED TO:

Fabricate prestressed concrete at a plant as specified in 1011.02 and listed on the QPL.

3. Placing Concrete.
THE SECOND SENTENCE IN THE FIRST PARAGRAPH IS CHANGED TO:

Place concrete as specified in 504.03.02.B, 504.03.02.C, 504.03.02.D, and 504.03.02.E.

904.04.06 Quality Control, Quality Assurance, and Acceptance Requirements
THE FOLLOWING IS ADDED AFTER THE SECOND PARAGRAPH:

Follow the Department approved Buy America Compliance Plan. Provide documentation of compliance when requested by the ME.

THE FOLLOWING IS ADDED AFTER THE LAST PARAGRAPH:

If the ME does not inspect the precast concrete item, submit certifications of compliance as specified in 106.07.

SECTION 905 – REINFORCEMENT METALS

905.01 REINFORCEMENT STEEL
THE ENTIRE SUBPART IS CHANGED TO:

Provide reinforcement steel manufactured at an AASHTO NTPEP (National Transportation Product Evaluation Program) certified mill. For a list of NTPEP certified mills, see the following webpage:

https://data.ntpep.org/REBAR/Audits/

For reinforcement steel, submit a certification of compliance as specified in 106.07. Attach copies of the mill certifications for each heat of reinforcement steel. The ME will randomly sample and test heats of reinforcement steel for quality assurance. The ME will randomly inspect and sample galvanized and epoxy coated reinforcement steel for quality assurance.

905.01.03 Welded Wire Reinforcement
THE FIRST PARAGRAPH IS CHANGED TO:

Use plain or deformed steel welded wire reinforcement according to ASTM A1064. When used for concrete pavement, use welded wire reinforcement mats at least 5 feet in width.
THE SECOND PARAGRAPH IS CHANGED TO:

When approved as an alternate to galvanized reinforcement bars, use galvanized welded wire reinforcement that meets the requirements of ASTM A 641, Table 1, Class 1.

905.01.05 Dowels
THE ENTIRE SUBPART IS CHANGED TO:

Use plain reinforcement bars according to ASTM A 615, Grade 60. Galvanize according to ASTM A 123.

905.03.03 Dowel Bars
THE FIRST PARAGRAPH IS CHANGED TO:

For dowel bars in transverse joints, use epoxy-coated, Grade 60, plain reinforcement steel according to ASTM A 615. If shown on the Plans, use dowel bars fitted with end caps. Ensure that the end caps are non-metallic and designed to prevent the entrance of grout or mortar into the expansion void.

SECTION 906 – STRUCTURAL STEEL

906.01 STRUCTURAL STEEL MATERIALS

THE ENTIRE SUBSECTION IS CHANGED TO:

Provide structural steel materials conforming to the requirements in Table 906.01-1 and as shown on the Plans.

Table 906.01-1 Structural Steel Materials Requirements

Product	Test Method	Type/Grade/Class
Structural Steel Plate1	ASTM A 709	Grade 36, 50, 50W, or HPS70W2
Tie rods, plate washers, tie backs, turnbuckles, plates, shapes, and shims	ASTM A 709	Grade 36
Steel tube and pipe for Sign Structures 3, 4, 5	ASTM A 53 or ASTM A 500	Type S, Grade B or Type E, Grade B Grade B or C
Steel Piles		
Steel H-piles	ASTM A 572	Grade 50
Steel sheet piles	ASTM A 572	Grade 50
Steel pipe piles	ASTM A 252	Grade 2
Casings for Drilled Shafts6	ASTM A 252	Grade 2
Flooring		
Grid Flooring	ASTM A 709	Grade 36
Formed Steel Flooring	ASTM A 1011	Grade 30
Steel Forgings	ASTM A 668	Class C
Shear Connector Studs7	ASTM A 108	Grades G1015, 1018, or 1020
Stay-In-Place (SIP) Forms8	ASTM A 653	Grades 33, 37, 40, 49, or 80

1. For steel used in tension zones, ensure that the steel conforms to Zone 2 impact testing requirements.
2. For the manufacture of Grade HPS70W, the Department will allow the use of the Thermo-Mechanical Controlled Process.
3. For sizes less than or equal to 24 inches in diameter, only use electric resistance welded single seam pipe.
4. For pipe with wall thickness greater than 1/2 inch, the fabricator may substitute API Specification 5L, Grade B.
5. ASTM A 500 Grade B or C is approved for use only with equivalent tensile and yield strengths as that specified for ASTM A 53 Grade B, Type E or S, with additional CVN testing for materials with wall thickness ½ inch or greater. Provide mill certs for approval by the ME prior to fabrication.
6. For casings, use smooth, non-corrugated steel pipe.
7. For shear connector studs, use cold-drawn bars that are killed or semi-killed.
8. For SIP, use a galvanized coating designation G235 or Z700.

Before using, submit to the ME a representative sample of each size for material testing and approval. Provide a mill certification that indicates the chemical and physical properties for each heat of material. For SIP forms, steel forgings and shear connector studs, submit certifications of compliance, as specified in 106.07, with the mill certifications attached.

906.03 STEEL CASINGS FOR DRILLED SHAFTS

THE SECOND PARAGRAPH IS CHANGED TO:

For permanent casings, used as a structural component within the drilled shaft, clean and coat the exterior surfaces with prime coat of an inorganic zinc coating system as specified in 906.06.

906.04.01 AISC Certification

THE ENTIRE SUBPART IS CHANGED TO:

Ensure that the structural steel fabricating plant is certified under the AISC Quality Certification Program in the applicable categories by the type of work performed. See the following web page: https://www.aisc.org/certification/

906.04.05 Quality Control and Acceptance
THE FOURTH PARAGRAPH IS CHANGED TO:

Inspect and test structural steel bridge members according to ANSI/ AASHTO/ AWS D1.5 Bridge Welding Code, as modified by the following:

1. Assembly and fabrication may not continue until completed work has been inspected and accepted by the ME.
2. Grind flush complete-penetration butt welds scheduled for ultrasonic testing.
3. Test 100 percent of complete joint penetration groove and butt welds, including butt welds in longitudinal stiffeners.

906.07 4-BAR OPEN STEEL PARAPET
SUBSECTION IS RENAMED AND CHANGED TO:

906.07 STEEL BAR BRIDGE RAILING

For steel bar bridge railing, including NJDOT standard steel 4-bar bridge railing, provide anchor bolts, washers, and exposed bolts as specified in 908.01.03, and all other bolts and nuts as specified in 908.01.01 and 908.01.02. Provide rail bars according to ASTM A 500 Grade B, rail post according to ASTM A 709, Grade 50, and all other shapes and plates according to ASTM A 709, Grade 36.

Fabricate steel bar bridge railing according to 906.04 and paint according to 906.06 or galvanize according to 912.02.01. Prohibit welded splices for steel rail tubes.

SECTION 908 – BOLTS AND BOLTING MATERIAL

908.02.01 Material Requirements
THE FIRST PARAGRAPH IS CHANGED TO:

For structural steel erection and for steel to steel chord splices of sign structures, using high-strength steel bolts, including nuts and plain hardened washers according to ASTM F 3125, Grade A 325 or Grade A 490.

THE THIRD PARAGRAPH IS CHANGED TO:

Use ASTM F 3125, Grade A 325, Type 3 high-strength steel bolts for bolting unpainted corrosion resistant (weathering) steel.

908.02.02 Sampling and Testing Requirements for Bolt Assemblies

B. Tensile, Proof Load, Hardness, and Coating Thickness Tests.
THE FIRST PARAGRAPH IS CHANGED TO:

For each lot, the manufacturer shall perform tensile, proof load, and hardness tests and shall measure galvanized coating according to ASTM F 3125, Grade A 325.

908.03 DIRECT TENSION INDICATORS (DTI)
THE ENTIRE SUBSECTION IS CHANGED TO:

Use direct tension indicators conforming to ASTM F 959. If galvanizing of the bolt assembly is required, mechanically galvanize DTIs according to ASTM B 695, Class 50. Test DTIs according to ASTM F 959 and verify according to NJDOT S-3.

Provide manufacturer's certification and attach test results.

SECTION 909 – DRAINAGE

909.02.01 Reinforced Concrete Pipe

THE FOLLOWING IS ADDED BEFORE THE FIRST SENTENCE:

Manufacture reinforced concrete pipe at a plant listed on the QPL.

THE LAST PARAGRAPH IS CHANGED TO:

Follow the Department approved Buy America Compliance Plan. Provide documentation of compliance when requested by the ME.

For concrete pipe that is less than 60 inches in diameter, submit a certification of compliance as specified in 106.07. The ME will randomly inspect and test small-diameter concrete pipe for quality assurance.

For concrete pipe that is 60 inches or more in diameter, notify the ME at least 2 weeks before shipping pipe to the Project. The ME will inspect and approve large-diameter pipe in the supplier's yard after manufacture. Perform 3-point loading in the supplier's yard as directed by the ME. If the ME does not inspect the concrete pipe, submit certifications of compliance as specified in 106.07.

909.02.02 HDPE Pipe
THE SECOND PARAGRAPH IS CHANGED TO:

Use HDPE pipe from a manufacturer who is an AASHTO NTPEP (National Transportation Product Evaluation Program) certified manufacturer. For a list of NTPEP certified manufacturer, see the following webpage: http://data.ntpep.org/Module/PIPE/Overview.aspx .

909.02.03 Plastic Drainage Pipe
THE ENTIRE SUBPART IS CHANGED TO:

Use corrugated polyethylene drainage pipe according to AASHTO M 252, or use PVC drainage pipe according to AASHTO M 304.

Use plastic drainage pipe from a manufacturer who is an AASHTO NTPEP (National Transportation Product Evaluation Program) certified manufacturer. For a list of NTPEP certified manufacturer, see the following webpage: https://data.ntpep.org/.

Submit a certification of compliance, as specified in 106.07, for plastic drainage pipe.

THE FOLLOWING SUBPART IS ADDED:

909.02.09 Fiberglass Pipe for Bridge Storm Drainage

Fabricate fiberglass pipe conforming to ASTM D2996, RTRP-12EA1-2122 and fiberglass pipe fittings conforming to ASTM D3840.

Ensure that all fiberglass pipe, fittings and adhesives use pigmented resin throughout the wall and the color is concrete gray or designated color with UV stabilized resin. Painted gel-coat or exterior coating is not acceptable.

Ensure that adhesives are in accordance with the pipe manufacturer and adhesive manufacturer's recommendations.

SECTION 910 – MASONRY UNITS

910.04 STONE CURB

910.05 STONE FACING FOR PIER SHAFTS

910.06 STONE PAVING BLOCK

SECTION 911 – SIGNS, SIGN SUPPORTS, AND DELINEATORS

911.02.02 Breakaway Sign Supports for Ground Mounted Signs
THE ENTIRE SUBPART IS CHANGED TO:

Fabricate and construct breakaway sign supports for ground mounted signs using materials conforming to the requirements in Table 911.02.02-1.

Table 911.02.02-1 Materials for Breakaway Sign Supports

Item	Test Method	Type or Grade	Galvanizing
Aluminum Materials (other than bracket)	911.01.01		
Bracket	B308	6061-T6	
Structural steel shapes	ASTM A709	Grade 36	ASTM A123
Steel Sheet	ASTM A1011	Grade 36	ASTM A 653
Bolts (except special bolt for coupling)	ASTM F3125	Grade A 325	ASTM A153
Special bolt for coupling	ASTM A449		ASTM A153
Cap Screw	ASTM A307		ASTM A153
Lock Washer	ANSI B18-21-1		ASTM A153
Nut	ASTM A563	Grade DH	ASTM A153
Coupling	AMS 6378 F		ASTM A153
Steel Hinge Plate	AISI 4130		ASTM 123
Anchor Rod	AISI 1045		
Anchor Coil	AISI 1008		
Anchor Washer	908.04		
Anchor Ferrule	908.04		

Submit mill certificates for the component materials.

911.02.03 Non-Breakaway Sign Supports for Ground Mounted Signs
THE TEXT OF THIS SUBPART IS DELETED.

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911.03 FLEXIBLE DELINEATORS

1. Delineator Dimensions.

b. Guide Rail Mounted.
THE ENTIRE TEXT IS CHANGED TO:

Ensure that the unit for beam guide rail mounted flexible delineators has a minimum width of 3 inches and a minimum thickness of 0.100 inch. Use units of a height that will ensure that the top of the reflective area is 5 ± 2 inches above the top of post.

Design the base of the unit to mount over the I-beam blockout or to the top of a wood or synthetic blockout, of the beam guide rail.

c. Barrier Curb Mounted.

THE ENTIRE TEXT IS CHANGED TO:

For barrier curb mounted flexible delineators, use a delineator that is 3-1/2 × 3-1/2 inches, with a minimum thickness of 0.100 inch, and that has a base that forms a "T" shape with the panel for mounting on the side of the barrier curb, and is flexible or hinged so as to return to its original position after being struck.

THE FOLLOWING IS ADDED:

d. Construction Barrier Curb Mounted. For construction barrier curb top mounted flexible delineators, use a delineator that is 6 x 12 inches with a minimum thickness of 0.100 inch. For construction barrier curb side mounted flexible delineators, use a delineator that is 3-1/2 x 3-1/2 inches with a minimum thickness of 0.100 inch, and that has a base that forms a "T" shape with the panel for mounting on the barrier curb and is flexible or hinged so as to return to its original position after being struck.

4. Retroreflective Sheeting.

b. Guide Rail Mounted.

THE ENTIRE TEXT IS CHANGED TO:

Ensure that the sheeting is a minimum of 3 inches square and is mounted on the upper portion of the delineator.

THE FOLLOWING IS ADDED:

d. Construction Barrier Curb Mounted. Ensure that the sheeting for top mounted flexible delineators is 6 x 12 inches and the sheeting for side mounted flexible delineators is 3-1/2 x 3-1/2 inches.

Submit a certification of compliance, as specified in 106.07, for delineators.

SECTION 912 – PAINTS, COATINGS, TRAFFIC STRIPES, AND TRAFFIC MARKINGS

912.03.01 Epoxy Traffic Stripes

THE SUBPART HEADING IS CHANGED TO:

912.03.01 Traffic Stripes

A. Epoxy Resin.

THE FIRST SENTENCE IS CHANGED TO:

For pavement striping, use an epoxy resin that is a 2 component, 100 percent solids formulation conforming to the following requirements:

B. Glass Beads.

THE FIRST PARAGRAPH IS CHANGED TO:

Submit certifications of compliance as specified in 106.07 for each lot of glass beads used on the Contract. For each lot of glass beads, submit test results indicating the parts per million of lead, antimony and arsenic as determined by testing according to Environmental Protection Agency testing method 3052 and testing method 6010B or 6010C. Ensure that glass beads do not contain more than 200 ppm of lead, 200 ppm of antimony, or 100 ppm of arsenic.

912.03.02 Thermoplastic Traffic Markings

THE SUBPART HEADING IS CHANGED TO:

912.03.02 Traffic Markings

THE ENTIRE SUBPART TEXT IS CHANGED TO:

For traffic markings, use either preformed or hot extruded thermoplastic conforming to AASHTO M 249, except that for preformed thermoplastic, the minimum thickness requirement is 90 mils. Use beads conforming to AASHTO M 247, Type 1, with a moisture resistant coating. Ensure that glass beads do not contain more than 200 ppm of lead, 200 ppm of antimony, or 100 ppm of arsenic.

Submit certifications of compliance, as specified in 106.07, for each batch of materials used on the Contract. For each lot of glass beads, submit test results indicating the parts per million of lead, antimony and arsenic as determined by testing according to Environmental Protection Agency testing method 3052 and testing method 6010B or 6010C.

912.04.01 Latex Paint
THE ENTIRE SUBPART TEXT IS CHANGED TO:

For temporary traffic stripes, use latex traffic paint that is a fast-drying white, or non-lead yellow, ready-mixed pigmented binder emulsified in water and capable of anchoring reflective glass beads that are separately applied. Ensure that the color matches FED-STD-595B color chip No. 33538 for yellow and No. 37886 for white. Ensure that the paint has a maximum no-track time of 120 seconds when applied in a wet film. In addition, ensure that the finished product meets the following:

1. Volume of solids is a minimum 61 percent.
2. Total solids are a minimum of 77.5 percent total non-volatiles by weight, when tested according to ASTM D 2369.
3. Weight per gallon is a minimum 14 ± 0.2 pounds per gallon for each color.
4. Hegman Grind is a minimum of 2 Hegman when tested according to ASTM D 1210.
5. Viscosity is between 70 and 95 Krebs Units at 77 °F, when tested according to ASTM D 562.

Use glass beads conforming to AASHTO M247, Type 1, with a moisture resistance coating. Ensure that glass beads do not contain more than 200 ppm of lead, 200 ppm of antimony, or 100 ppm of arsenic.

Submit a certification of compliance, as specified in 106.07, for latex and glass beads. For each lot of glass beads, submit test results indicating the parts per million of lead, antimony and arsenic as determined by testing according to Environmental Protection Agency testing method 3052 and testing method 6010B or 6010C.

SECTION 913 – GUIDE RAIL, FENCE, AND RAILING

THIS SECTION IS RENAMED TO:

SECTION 913 – GUIDE RAIL, FENCE, RAILING AND BOX BEAM

913.01.01 Rail Element
THE SECOND PARAGRAPH IS CHANGED TO:

Submit a certification of compliance as specified in 106.07.

913.01.02 End Treatments
THE ENTIRE SUBPART IS CHANGED TO:

For 27 1/4″ high guide rail, use non-gating guide rail end treatment that is NCHRP 350 test level 3 (TL-3) tested, approved and are listed on the QPL.

For 31″ high Midwest Guardrail System (MGS), use non-gating guide rail end treatment that is MASH test level 3 (TL-3) tested, approved and are listed on the QPL.

Submit a certification of compliance as specified in 106.07.

913.01.03 Posts and Blockouts
THE ENTIRE SUBPART IS CHANGED TO:

For steel posts and blockouts, use structural steel conforming to ASTM A 709, Grade 36, that is galvanized according to ASTM A 123.

Use wood timber blockouts and posts as specified in 915.01.

For 27 1/4″ high guide rail, use synthetic routed blockouts that are NCHRP 350 test level 3 (TL-3) tested, approved and are listed on the QPL. Ensure that the name of the manufacturer and model number are stamped on each blockout and that the blockouts are of the same material and dimensions as the spacers that were NCHRP tested.

For 31″ high Midwest Guardrail System (MGS), use synthetic routed blockouts that are MASH test level 3 (TL-3) tested, approved and are listed on the QPL. Ensure that the name of the manufacturer and model number are stamped on each blockout and that the blockouts are of the same material and dimensions as the spacers that were MASH tested.

Provide certifications of compliance, as specified in 106.07.

913.01.04 Rub Rail
THE SECOND PARAGRAPH IS CHANGED TO:

Submit a certification of compliance as specified in 106.07.

913.01.05 Miscellaneous Hardware
SUBPART 3 OF THE FIRST PARAGRAPH IS CHANGED TO:

3. Use plates for guide rail on bridges and buried guide rail terminals conforming to ASTM A 36 and galvanized according to ASTM A 123.

THE SECOND PARAGRAPH IS CHANGED TO:

Submit a certification of compliance as specified in 106.07. The ME may randomly inspect hardware for quality assurance.

913.03.01 Steel Railing
THE ENTIRE SUBPART IS CHANGED TO:

Fabricate steel bar bridge railing and steel railing components of combination railing system from structural steel as specified in 906.01 and 906.04. For non-traffic steel railing, construct welds according to the requirements of AWS D1.1 Structural Welding Code. Use bolts and bolting materials as specified in 908.01. When specified, paint as specified in 906.06 or galvanize as specified in 912.02.01. Submit certifications of compliance, as specified in 106.07 and copies of mill certifications.

THE FOLLOWING IS ADDED:

913.03.02 Aluminum Railing.

For aluminum railing not expected to be subject to automotive impacts or overloading conditions, such as pedestrian railings: Extruded Bars, Rods, Shapes, and Pipe may be of Alloy and Temper 6105-T5, test method ASTM B-221.

THE FOLLOWING SUBSECTION IS ADDED

913.04 BOX BEAM FOR CONSTRUCTION BARRIER CURB

Ensure that the box beam is made of cold-formed welded and seamless structural tubing. Ensure that the box beam conforms to ASTM A500, Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes, Grade B.

Ensure that the box beam is tested in accordance with ASTM E436 on a 2 x 9-inch galvanized specimen at -0.4 °F and provide certified test result to the ME.

The Department will reject the material if the average percent shear area falls below 50.

Ensure that the identification number/information is placed on the material at an interval of 4 feet or less.

Ensure plates conform to ASTM A36 and are galvanized according to ASTM A123.

Ensure that the box beam is galvanized in accordance with ASTM A123. Fasteners are galvanized and conform to the following unless specified otherwise in the contract documents:

1. Bolts: ASTM A307 Grade A.
2. Nuts: ASTM A563 Grade A.
3. Washers: ASTM F844.
4. Hot Dip Galvanizing: ASTM A153.

SECTION 914 – JOINT MATERIALS

914.03 POLYMERIZED JOINT ADHESIVE
TABLE 914.03-1 IS CHANGED TO:

Table 914.03-1 Requirements for Polymerized Joint Adhesive

Property	Test Method	Requirement
Cone Penetration, 25 °C	ASTM D 5329	60-100
Flow, 60 °C	ASTM D 5329	5 mm maximum
Resilience, 25 °C	ASTM D 5329	30% minimum
Ductility, 4 °C	ASTM D 113	30 cm minimum
Tensile Adhesion, 25 °C[1]	ASTM D 5329	500% minimum
Softening Point	ASTM D 36	77 °C minimum
Asphalt Compatibility	ASTM D 5329	Pass

1. A precision estimate for this standard has not been developed, so it should not be used for acceptance or rejection of a material during product approval.

914.04.01 Preformed Elastomeric (Compression Type)

B. Joint Sealer.
THE LAST SENTENCE OF THE SECOND PARAGRAPH IS CHANGED TO:

If splicing of a sealer is allowed, ensure that the sealer at the splice point has no significant misalignment at its sides or top and that misalignment at the bottom does not exceed half of the bottom wall thickness.

914.04.03 Modular Joints
THE ENTIRE SUBPART IS CHANGED TO:

A. Manufacturer. Manufacturer is to be AISC certified for "Bridge and Highway Components (CPT)", have a minimum of 3 years experience in Modular Bridge Joint System (MBJS) fabrication, and has completed fatigue testing of the designed structural elements and connections or splice details per AASHTO LRFD Construction Specifications.

B. Materials. Use materials that conform to the following requirements:

1. Use structural steel conforming to the requirements of AASHTO M 270M/M 270 (ASTM A709/A709M), Grade 50, or Grade 50W with Zone 2 CVN requirements. Do not use aluminum components.
2. Use stainless steel conforming to ASTM A240/A240M, Type 304.
3. Use PTFE that is 100 percent virgin material, woven PTFE fabric, or dimpled PTFE conforming to the material requirements in Section 18 of the AASHTO LRFD Bridge Design Specifications, and Section 19 of AASHTO LRFD Bridge Construction Specifications.
4. Use neoprene strip seals conforming to the requirements in Table 914.06-1 and that have a maximum movement range of 3.15 inches per seal. Provide water tightness of strip seals at connection to steel beams and field splice(s). Do not use box seals or seals utilizing double webs.

Table 914.06-1 Tests for Neoprene Strip Seals		
Property	**Test Method**	**Requirement**
Tensile strength, minimum psi	ASTM D 412	2000
Elongation at break, minimum %	ASTM D 412	250
Hardness, Type A durometer	ASTM D 2240	55 to 70
Compression Set at 72 hr at 212 °F, maximum %	ASTM D 395	40

5. Use bolts and other hardware conforming to the requirements of AASHTO M 164 (ASTM F3125/F3125M Grade A325) and galvanized according to AASHTO M232 (ASTM A153/A153M) or ASTM B695.
6. Fabricate slide bearings and precompressed springs as steel reinforced elastomeric pads with a PTFE sliding surface. Do not manufacture components from polyurethane compounds.

Perform prequalification tests, Open Movement and Vibration (OMV) testing and Seal Pushout (SPO) testing, according to AASHTO LRFD Construction Specifications Section 19/A19 and provide testing report.

C. Fabrication. Fabricate the structural steel components of the modular joint assembly as specified in 906.04 and according to AWS D1.5 and as shown on the Plans and approved working drawings. Hot-dip galvanize the assembly according to AASHTO M111 (ASTM A123/A123M).

Perform field splices according to the details and procedures included in the approved working drawings.

D. Shipping, Handling, and Certification. The RE will reject joint systems damaged during shipping or handling. The Contractor may repair minor damage to the galvanizing according to ASTM A780/A780M. Store the expansion joint system according to the manufacturer's recommendations.

Submit a certification of compliance, as specified in 106.07, for the modular joint assembly. With the certification, submit test results for neoprene strip seal and mill certifications for the structural steel components.

SECTION 915 – TIMBER AND TIMBER TREATMENT

915.05 TIMBER TREATMENT

THE ENTIRE SUBSECTION IS CHANGED TO:

Treat wood species according to AASHTO M 133 and AWPA Standards U1-11 and T1-11 as summarized in Table 915.05-1, Table 915.05-2, and Table 915.05-3.

915.05-1 Treatment for Sawn Timber Posts			
Type of Wood	**Location/Environment**	**AASHTO Treatments**	**AWPA Standard Reference for Minimum Retention Level**
Southern Pine	Soil or Fresh Water	CCA or Pentachlorophenol	UC4A
Douglas Fir	Soil or Fresh Water	ACZA	UC4A

915.05-2 Treatment for Round Timber Piles			
Type of Wood	**Location/Environment**	**AASHTO Treatments**	**AWPA Standard Reference for Minimum Retention Level**
Southern Pine	Soil or Fresh Water	CCA	UC4C
Southern Pine	Marine	CCA	UC5B
Douglas Fir	Soil or Fresh Water	ACZA	UC4C
Douglas Fir	Marine	ACZA	UC5B

915.05-3 Treatment for Timber Sheet Piling and Timber for Structures			
Type of Wood	**Location/Environment**	**AASHTO Treatments**	**AWPA Standard Reference for Minimum Retention Level**
Southern Pine	Soil or Fresh Water	CCA, or Pentachlorophenol	UC4B

Southern Pine	Marine	CCA	UC5B
Douglas Fir	Soil or Fresh Water	ACZA	UC4B
Douglas Fir	Marine	ACZA	UC5B

Notify the ME at least 14 days before treating timber. If directed by the ME, perform an assay to determine the retention of preservative according to AASHTO M 133. Submit certification of compliance as specified in 106.07. Attach the assay report to the certification.

The use of uncoated pressure-treated timber using the above timber treatments, as specified in Tables 915.05-1, 915.05-2, and 915.05-3, may not be permitted in areas containing shellfish or submerged aquatic vegetation, or in other environmental sensitive areas. Alternative materials, such as plastic, natural cedar or other untreated wood, polymer coated pressure-treated wood, concrete or other inert products, may be required by regulatory agencies. Prior to using treated timber products, contact the NJDOT Bureau of Landscape Architecture and Environmental Solutions or the Division of Environmental Resources, as appropriate.

Lumber products smaller than 5 inch by 5 inch, as specified in Tables 915.05-1, 915.05-2, and 915.05-3, must be pressure treated according to current AWPA or AASHTO M 133 standards. Preservatives are subject to EPA Guidelines 2004 with restricted use of CCA preservatives.

SECTION 917 – LANDSCAPING MATERIALS

917.10 PLANT MATERIALS

H. Inspection.

THE SECOND PARAGRAPH IS CHANGED TO:

The Department may inspect plant materials before delivery to the Project Limits and upon delivery to the Project Limits before installation. The Department may seal the inspected plant materials. For plant material originating from nurseries farther than 100 miles from the Project Limits, stock plant material at a Contractor-provided holding yard that is acceptable to the Department. The Department may inspect plant material originating from nurseries within 100 miles of the Project Limits at the nursery. Ensure that all plant material is untied and located so that trunk or stem and branch structure can be easily inspected. Provide sufficient notice to allow Department inspection at the nursery or holding yard and to allow time for Contractor reordering of rejected material. Notify the RE at least ____(hours or days)___ in advance of delivery to the Project Limits for installation. The Department will reject materials arriving with broken or missing seals, broken or loose balls, broken or pruned leaders, insufficient protection, or that have been damaged in transit. The Department may randomly inspect the root system of the plant material by breaking open the earth balls. Provide necessary assistance during Department inspections.

SECTION 918 – ELECTRICAL MATERIALS

918.01 CONDUIT AND FITTINGS

4. Flexible Nonmetallic Conduit.

THIS PART IS CHANGED TO:

Use coil able HDPE conduit made from virgin HDPE resin as per the minimum standard of PE345440E according to ASTM D3350. Ensure conduit is circular and of uniform cross-sectional area and dimensions in accordance with ASTM F2160. Ensure conduit is of continuous length containing no welds or joints coiled on a reel. Additionally, conduit's inner and outer walls are to be smooth and the inner wall is to be lubricated with manufacturer's recommended lubricant. Conduit colors are to be integrally extruded throughout the conduit in the manufacturing process. Ensure conduit is permanently marked with a laser ink imprinter or heat embossed white lettering showing the diameter, size, sequential length marks, owners name, ASTM, SDR, and/or Schedule rating. Additional markings of date-of-manufacture, time, and batch-of-resin are to be identified and referenced to certifications and quality control test results. Ensure manufacturer provides certification of the properties specified and mark/label the reels with purchase order, project name and/or other information for tracking and receiving. Applicable material standards are required based on the following applications:

a. Direct Burial. Use conduit material with a rating of Schedule 80 conforming to ASTM F2160, NEMA TC-7 EPEC-80 and certified for its intended use.

b. Innerduct. Use conduit material with a rating of Schedule 40 conforming to ASTM F2160, NEMA TC-7 EPEC-40.

ITS conduits used for the installation of Fiber Optic Cable including tracer wire, are to be extruded integrally colored orange to indicate its use for Communications.

ITS conduits designated for electrical use are to be extruded integrally colored red to indicate its use for Electrical wiring.

Submit a certificate of compliance, as specified in 106.07, for all materials, components, and assemblies.

918.12 PEDESTALS, POLES, TRANSFORMER BASES, AND MAST BRACKET ARMS

THE FIRST SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

Fabricate pedestals, poles, transformer bases, and mast bracket arms for traffic signal, highway lighting, and camera standards with materials according to the appropriate ASTM standard and the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals.

SECTION 919 – MISCELLANEOUS

THE FOLLOWING IS ADDED:

919.15 POLYESTER MATTING

Provide polyester matting of commercial quality that is a composite of polyester base fiber and vinyl chloride resin and is permeable to air and water, but shall prevent sunlight from reaching the soil. Ensure that the matting resists ultraviolet light, mildew and algae. Ensure that the matting is self-extinguishing when removed from flame. Ensure that the matting has a minimum thickness of 1/4 inch.

DIVISION 1000 – EQUIPMENT

SECTION 1001 – TRAFFIC CONTROL EQUIPMENT

THE FOLLOWING SUBSECTION IS ADDED:

1001.04 PORTABLE VARIABLE MESSAGE SIGN WITH REMOTE COMMUNICATION

THE ENTIRE SUBSECTION IS CHANGED TO:

Provide a NTCIP compliant portable variable message sign as described under 1001.02 with the exceptions noted below and each equipped with broadband cellular modem.

Ensure that the sign panel is color full matrix model that displays a combination of letters and graphic images.

Ensure that the sign panel is capable of displaying three lines of text with variable size characters.

Ensure nine characters are displayed per line for posting travel times. For this nine character requirement, smaller size characters may be allowed that meets MUTCD guidelines.

Ensure that the panel is also capable of displaying eight (8) characters per line with a minimum character height of eighteen (18) inches.

Ensure that the PVMSRC can be integrated with the Department's central DMS control software for remote operation.

1001.05 PORTABLE TRAILER MOUNTED CCTV CAMERA ASSEMBLY

Provide a Portable Trailer Mounted CCTV Camera Assembly (PTMCCA) with the following:

A. Trailer Platform

1. Maximum size, including tongue, 14 feet long by 7 feet wide by 8 feet high.
2. NJDOT approved lighting package to include electrical brake and marker lights with wire connections.
3. Primed and painted with powder coated orange color.
4. Fitted with manual telescoping outriggers with adjustable jacks sized to counter full mast extension.
5. Four 3500 pounds, drop leg, top wind screw jacks.
6. All equipment secured to prevent theft or separation from platform.
7. 24/7 operation in all weather conditions.
8. One locking NEMA-4 equipment box for operational controls.
9. Removable wheels (with wheel locks) when trailer is in deployed position.
10. Operation manual with a copy placed in the storage bin.

B. Mast

1. 150 pounds payload capacity.
2. 29 feet to 32 feet of extension with capability to mount antenna at 20 feet, 25 feet or at the top, 10 feet maximum nested length of mast - 3 to 9 sections.
3. Un–guyed.
4. Driven by galvanized steel cable.
5. Spiral conduit for cables.
6. Compactly retractable when nested into storage container at the bottom & foldable for easy transport.
7. Operated by a power winch with a safety brake.
8. Capable of being raised or lowered during sustained wind speeds of 30 miles per hour.

C. Power Source

Equip the PTMCCA with either a diesel charged or a solar charged battery system. Ensure that the PTMCCA is also capable of operating on 120-volt AC electrical service. The Department may require a solar charged battery system in noise sensitive areas. Provide the power with a battery backup system capable of providing continuous operation when the primary power source fails. Ensure that the power source meets the following requirements:

1. Diesel. Ensure that the fuel tank is capable of operating the sign for a period of 72 hours without refueling. Equip with an exhaust muffler and a United States Department of Forestry approved spark arrester. Ensure that the engine is shock mounted to reduce vibration and locked in a ventilated enclosure.
2. Solar. Provide solar panels capable of recharging the batteries at a rate of 4 hours of sun for 24 hours of camera usage. Ensure that the battery capacity is capable of operating the sign for a period of 18 days without sunlight.

D. Electronics

1. Cellular (CDMA), microwave, or 802.11 bandwidth option.
2. Work lights in all cabinets.
3. Remote trailer diagnostics (battery level, charging output, etc.).

E. Camera and Software

Ensure that the camera has the following characteristics:

1. Dome Camera in a heavy-duty plastic dome or with a weather resistant case.
2. Impact resistant viewing window.
3. Minimum resolution of NTSC 704 (H) x 480 (V).
4. Backlight compensation.
5. Image stabilization.
6. Light Sensitivity 0.02 lux NIR Mode.
7. Auto Focus with Manual Focus capability.
8. Auto White Balance with Manual White Balance capability.
9. Motorized Zoom up to 16x optical, 10x digital.
10. Motorized Pan-Tilt, pan 360°, tilt 180°.
11. Thermostatically controlled heater and defroster -50° to 140°F operating range.
12. Windshield wiper.
13. 24/7 operation in all weather conditions.
14. Time and date stamp.

Ensure the software provides the following functionality:

1. Remote control of pan, tilt and zoom.
2. Display of streaming video in MPEG format, motion-JPEG, and single snapshot JPEG images, remotely interchangeable by using central software.
3. Preset controls of pan/tilt/zoom combinations. Ensure all presets are accessible from a drop-down menu with descriptive name of preset. Set first 8 presets with quick- launch icons with graphical representation of the preset views.
4. Display of all the project's web cams in a single view screen.
5. Display of local time and weather conditions including temperature and humidity.
6. Saving images and sending e-mail images.

7. Viewing archived images via a graphical calendar control and storing archived images at least every five minutes.
8. Three levels of password protection: administrator, user, and guest, individual user accounts.
9. Monitoring and controlling the cameras using web access.

SECTION 1003 – HMA SITE EQUIPMENT

1003.03 HMA PAVER

THE FOLLOWING IS ADDED AT THE END:

NOTE: A Spray Paver as specified in 1003.04 may be used in lieu of a HMA Paver.

1003.04 ULTRA-THIN LIFT PAVER

THE HEADING AND THE ENTIRE SUBSECTION TEXT IS CHANGED TO:

1003.04 SPRAY PAVER

Provide a self-propelled spray paver that meets the requirements in 1003.03 and is specifically designed and manufactured for applying tack coat and polymer modified tack coat immediately in front of, and just prior to applying, hot mix asphalt in a single operation without trafficking and tracking of the tack coat. Ensure the spray paver is insulated and equipped with a heater to evenly heat, maintain and apply the tack coat at the proper temperature recommended by the manufacturer. Ensure the spray paver can apply tack coat in a controlled manner which automatically adjusts the rate of tack coat application based on the speed of the paver to provide a uniform and complete tack coat coverage of the paving surface. Ensure that the spray paver is capable of spreading tack coat and HMA to the width, thickness, and application rates required without tearing, shoving, or gouging the mixture, to produce a smooth and homogeneous surface. Ensure the spray paver is capable of operation at forward speeds of at least 70 feet per minute. Ensure that the spray paver is equipped and operated using a heated vibratory screed or tamper bar to ensure material is capable of being placed and compacted to the required density and smoothness. Ensure that the paver is equipped with an automatic reverse signal alarm that is audible above the surrounding noise.

SECTION 1008 – MISCELLANEOUS EQUIPMENT

1008.01 MILLING MACHINE

THE ENTIRE SUBSECTION IS CHANGED TO:

A **Standard Milling Machine.** Provide a self-propelled planing, grinding, or cutting milling machine with variable operating speeds that is capable of removing HMA or concrete without the use of heat. Ensure that the milling machine is equipped with automatic grade controls. Use either a stringline or ski type reference system. If a ski type reference system is used, ensure that the ski has a minimum length of 20 feet. Ensure that the milling machine is equipped with an automatic audible warning signal when operating in reverse. The RE may not require use of the automatic grade controls at intersections and other locations.

Immediately replace teeth in the milling drum that become dislodged, broken, or unevenly worn with teeth of the same length as the remaining teeth in that row.

B **Micro Milling Machine.** Provide a standard milling machine as specified in 1008.01.A that is equipped with a cutting mandrel designed specifically for cold planing and texturing asphalt and concrete pavement surfaces to close tolerances as defined herein. Ensure that the cutting mandrel is equipped with four wraps of flighting with blocks that bolt in, each accepting 3 to 4 carbide or polycrystalline diamond (PCD) tipped cutting bits on the wear side of the flight. The cutting bits on the wraps at 0 degrees and 180 degrees repeat each other. Likewise the cutting bits at 90 degrees and 270 degrees also repeat each other, creating a double hit cutting mandrel. Ensure that tips of the cutting bits, on any given wrap, are spaced at a maximum of 1/4 inch axial distance between the tips of each bit, plus or minus of 1/32 inch. Repeat the cutting bits on the second wrap to the proceeding wrap at 1/4 inch maximum.

Ensure that the cutting bits and height of the holder blocks are uniform so that the cutting radius of the mandrel is within plus or minus of 0.02 inch. Ensure that the blocks are completely machined and capable of being easily removed from the cutting mandrel to check tolerance and height of the holders.

Ensure that the equipment used does not cause strain or damage to the underlying pavement surface course, causes excessive ravel, aggregate fractures, spalls or disturbance of the transverse or longitudinal joints.

Replace cutting bits that become dislodged, broken, or unevenly worn. When only changing intermittent cutting bits, remove an existing "sample" cutting bit from the machine and measure amount of wear and gage height. Ensure that replacement bit is matched to existing height of the "sample" cutting bit, plus or minus of 1/32 inch, to insure even micro-milling.

SECTION 1009 – HMA PLANT EQUIPMENT

1009.01 HMA PLANT

A. Requirements for HMA Mixing Plants.

THE FOLLOWING IS ADDED AFTER THE SECOND PARAGRAPH:

The HMA producer is required to have a quality control (QC) program plan approved annually by the ME as per Materials Approval Procedure MAP-102. The HMA producer is required to ensure that the QC plan conforms to the requirements outlined in the report entitled "Hot Mix Asphalt Quality Control Program Plan" prepared by the Department of Transportation and New Jersey Asphalt Paving Association. Failure to follow these requirements will result in rejection of HMA materials supplied by the HMA producer and removal of the HMA supplier from the QPL.

1. Plant Laboratory.

a. General Equipment.

THE PART NUMBER 1 IS CHANGED TO:

1. An office for the exclusive use of the ME with a floor area of at least 100 square feet, excluding the plant lab area.

THE FOLLOWING SUBSECTION IS ADDED AFTER 1009.02:

1009.03 ASPHALT-RUBBER BINDER BLENDING EQUIPMENT

Provide equipment for preparation of Asphalt-Rubber Binder. Ensure that the unit is equipped with a crumb rubber feed system capable of continuously supplying the asphalt cement feed system, and is capable of fully blending the individual crumb rubber particles with the asphalt cement. Use an asphalt-rubber binder storage tank that is equipped with a heating system capable of maintaining the temperature of the binder between 325 and 375 °F during the reaction. Ensure the asphalt-rubber binder storage tank is also equipped with an internal auger mixing device, oriented horizontally in the tank, capable of maintaining a uniform mixture of the asphalt-rubber binder.

Ensure that the tanks for storage of asphalt-rubber binder are equipped to uniformly heat the material to the required temperature under effective and positive control at all times. Ensure that heating is accomplished so that no flame comes in contact with the heating tank.

Provide a circulating system of sufficient capacity for the binder to ensure continuous circulation between the storage tank and proportioning units during the entire operating period. Ensure that the discharge end of the binder circulating pipe is maintained below the surface of the binder in the storage tank to prevent discharge of hot binder into the open air.

Ensure that pipe lines and fittings are steam or oil jacketed, electrically or otherwise heated, and insulated to prevent heat loss.

Provide valves according to AASHTO T 40, except ensure that a sampling valve is also located in the lowest third of each storage tank.

If the plant has been equipped with a water injection type asphalt foaming system, ensure that the system will allow the proper amount of asphalt rubber binder to be supplied continuously or provide a by-pass to ensure that the proper amount of asphalt rubber binder is supplied to the mix.

SECTION 1011 – PRECAST AND PRESTRESSED CONCRETE PLANT EQUIPMENT

1011.03 ME'S OFFICE

THE SECOND PARAGRAPH SUBPART 2 &3 ARE CHANGED TO:

2. One high-speed broad band connection with a minimum speed of 3 megabits per second (mbps) with dynamic IP address (DSL, Cable, etc.).
3. Two desks and 2 chairs.

THE FOLLOWING SECTION IS ADDED:

SECTION 1012 – PAVEMENT PRESERVATION EQUIPMENT

1012.01 Micro Surfacing and Slurry Seal Paver

Provide fully automated self-propelled continuous flow type equipment that is specifically designed, equipped, calibrated, and operated for mixing and spreading slurry seal and micro surfacing conforming to the approved mix design and application rate. Immediately correct defects that adversely affect the functioning of the equipment or quality of the mixture. Perform calibration in the presence of the ME. Ensure that the documentation includes an individual calibration of each material at various settings that can be related to the machine metering devices. Any component replacement affecting material proportioning requires that the machine be recalibrated. Do not use a machine on the project until the calibration has been completed and accepted. Ensure the paver is equipped with the following:

1. **Mixing Equipment.** Ensure that the machine is specifically designed and manufactured to mix micro surfacing and slurry seal materials. Mix the material in an automatic-sequenced, self-propelled, micro surfacing and slurry seal mixing machine. Ensure that it is a continuous-flow mixing unit that accurately proportions and delivers the mix components, within 2 % of the required amount as per the mix design, into a revolving multi-blade double-shafted mixer. Sufficient storage capacity for all mix components is required to maintain an adequate supply to the proportioning controls.

   Ensure that the machine is capable of loading materials while continuing to apply micro surfacing and slurry seal. Ensure that the continuous-run machine is equipped to provide the operator with full control of the forward and reverse speeds during application and is equipped with opposite-side driver stations to assist in alignment. Ensure that the self-loading device, opposite-side driver stations, and forward and reverse speed controls are of original-equipment-manufacturer design.

   Provide material control devices, readily accessible and so placed that the inspector may determine the amount of each material used at any time.

   Provide machine with a water pressure system and nozzle type spray bar to provide a water spray ahead of and outside the spreader box.

   Locate mineral filler feed so the proper amount of mineral filler is dropped on the aggregate before discharge into mixer.

2. **Spreading Equipment.** Provide spreading equipment that agitates and spreads the mixture uniformly in the surfacing box by means of twin shafted paddles or spiral augers fixed in the spreader box. Ensure that a front seal is provided such that there is no loss of the mixture at the road contact point. Ensure that there is an adjustable rear seal which will act as a final strike-off. Ensure that the spreader box and rear strike-off is designed and operated so that a uniform consistency is achieved and a free flow of material is provided to the rear strike-off.

Ensure that the spreader box has suitable means provided to side shift the box to compensate for variations in the pavement geometry.

Ensure that a secondary strike-off is provided to improve surface texture. Ensure that the secondary strike-off is adjustable to match the width of the spreader box and allows for varying pressures to control the surface texture.

3. **Electronic Mix Control and Diagnostic (EMCAD) System.** Ensure the paver is equipped with a computer mix control and diagnostic system that records, displays, and prints the following:

    1. Individual sensor counts for emulsion, aggregate, mineral filler, water, and additive.
    2. Aggregate, emulsion and mineral filler output in pounds per minute.
    3. Spread rate in pounds per square yard.
    4. Percentages of emulsion, mineral filler, water, and additive.
    5. Cumulative total quantities of aggregate. Emulsion, mineral filler, water, and additive.
    6. Scale factor for all materials.

    Ensure the computer system is functional and capable of printing reports.

4. **Rut, Longitudinal Joint and Rumble Strip Filling Equipment.** Provide rut filling equipment with a steel V-configuration screed rut box commercially designed and manufactured to fill ruts as required. Ensure that the rut box can be adjusted to provide a mixture spread width of between 2 feet to 6 feet and have a moveable steel strike-off to control crown.

1012.02 Mechanical Fine Aggregate Spreader

Provide fully automated self-propelled fine aggregate spreading equipment with positive controls that is specifically designed, equipped, calibrated, and operated for spreading fine aggregate uniformly at the required width and application rate. Immediately correct defects that adversely affect the functioning of the equipment or quality of the fine aggregate application. Perform calibration in the presence of the ME. Ensure that the calibration documentation includes the fine aggregate at various application rate settings that can be related to the machine metering devices. Any component replacement affecting application rate requires that the machine be recalibrated. Do not use a machine on the project until the calibration has been completed and accepted.

NJDOT TEST METHODS

THE FOLLOWING TEST METHOD IS ADDED:

NJDOT A-7 – DETERMINING FLAKINESS INDEX

A. Scope. Use this test method to determine the percentage of particles in a coarse aggregate material that have a thickness (smallest dimension) of less than approximately one-half of the nominal size.

Note: For purposes of test method, only NJDOT specified #8 or approximately equivalent NJDOT *8 for use in UTFCand Chip Seal are to be considered for this test method.

B. Apparatus

1. Standard U.S. sieves meeting the requirements of AASHTO M 92, in the following sizes:
   a. 1/2 in. (12.6 mm)
   b. 3/8 in. (9.5 mm)
   c. 1/4 in. (6.3 mm)
2. Metal thickness gauge, made of 12 gauge carbon steel sheet.
3. Scoop, brass wire brush, bristle brush, and other miscellaneous laboratory equipment.
4. Sample splitter, quartering machine, quartering cloth, or shovel and a smooth surface.
5. Forced draft oven, capable of maintaining the temperatures specified in the test procedure.

C. Procedure

1. Obtain a representative sample of processed aggregates in accordance with AASHTO T 248.
2. Place aggregate sample in an oven and dry between 100 – 300 °F (38 – 150 °C) until sufficiently dry for testing.
3. Quarter the aggregate sample of approximately 1,000 grams passing the 1/2 in. (12.6 mm) sieve and retained on the 1/4 in. (6.3 mm) sieve.
4. Sieve the quartered sample through the 1/2 in. (12.6 mm), 3/8 in. (9.5 mm) and 1/4 in. (6.3 mm) sieves. Discard the material retained on the 1/2 in. (12.6 mm) sieve and passing the 1/4 in. (6.3 mm) sieve.
5. Count the aggregate particles obtained in Step 4. The total sample count must be a minimum of 200 particles with at least 100 particles from the portion passing the 1/2 in. (12.6 mm) and retained on the 3/8 in. (9.5 mm) and at least 100 particles from the portion passing the 3/8 in. (9.5 mm) and retained on the 1/4 in. (6.3 mm) sieve.
6. Try to pass each of the particles of the sample through the 1/4 in. (6.3 mm) slot of the thickness gauge. Separate the particles passing through the gauge from those retained on the gauge.
7. Combine all particles retained on the gauge and count. The total is Retained Sample.
8. Combine all particles passing through the slot and count. The total is the Passing Sample.

D. Calculations. Use the following calculations to determine Flakiness Index:

$$\text{Flakiness Index} = \frac{\textit{Passing Sample Particle Count}}{\textit{Retained Sample Particle Count} + \textit{Passing Sample Particle Count}} \; x \; 100$$

Report the Flakiness Index to the nearest whole number.

NJDOT B-3 – SELECTING CORES FOR MAXIMUM SPECIFIC GRAVITY TESTING IN AIR VOIDS DETERMINATION

B. **Procedure.**

THE FOLLOWING NOTE IS ADDED AFTER STEP 3:

NOTE: For Recore Lots and Statistical Outlier Lots, do not randomly select a core for maximum specific gravity testing. The entire core lot must be tested for maximum specific gravity.

THE FOLLOWING STEP IS ADDED AFTER STEP 9:

10. If the lot has an outlier or is a recore lot, the entire lot must be tested for maximum specific gravity. Calculate air voids using each individual core maximum specific and bulk specific gravity.

NJDOT B-8 – DETERMINING JOB MIX FORMULA FOR MODIFIED OPEN-GRADED FRICTION COURSE MIXES

C. Procedure.

3. Relative VMA Asphalt Content.

THE FOURTH SENTENCE IN THE FIRST PARAGRAPH IS CHANGED TO:

Determine the bulk specific gravity, Gmb from each specimen according to NJDOT B-6 or AASHTO T 331.

THE FOOTNOTE FOR GMB IN THE SECOND EQUATION IS CHANGED TO:

Gmb = the bulk specific gravity of the specimen as determined by NJDOT B-6 or AASHTO T 331.

THE FOLLOWING TEST METHODS ARE ADDED:

NJDOT B-10 – OVERLAY TEST FOR DETERMINING CRACK RESISTANCE OF HMA

A. Scope. This test method is used to determine the susceptibility of HMA specimens to fatigue or reflective cracking. This test method measures the number of cycles to failure.

B. Apparatus. Use the following apparatus:

1. Overlay Tester. An electro-hydraulic or electro-pneumatic system that applies repeated direct tension loads to specimens. The machine features two blocks, one is fixed and the other slides horizontally. The device automatically measures and records a time history of load versus displacement every 0.1 sec at a selected test temperature.

   The sliding block applies tension in a cyclic triangular waveform to a constant maximum displacement of 0.06 cm (0.025 in.). This sliding block reaches the maximum displacement and then returns to its initial position in 10 sec. (one cycle).

2. Temperature Control System. The temperature chamber must be capable of controlling the test temperature with a range of 50 to 95 ^{o}F (10 to 35 ^{o}C).

3. Measurement System. Fully automated data acquisition and test control system. Load, displacement, and temperature are simultaneously recorded every 0.1 sec.
4. Linear Variable Differential Transducer (LVDT). Used to measure the horizontal displacement of the specimen (+/- 0.25 in.). Refer to manufacturer for equipment accuracy for LVDT.
5. Electronic Load Cell. Used to measure the load resulting from the displacement (5000 lb capacity). Refer to manufacturer for equipment accuracy for load cell.
6. Specimen Mounting System. Used two stainless steel base plates to restrict shifting of the specimen during testing. The mounting jig holds the two stainless steel base plates for specimen preparation.
7. Cutting Template.
8. Two Part Epoxy. Two-part epoxy with a minimum 24-hour tensile strength of 600 psi (4.1 MPa) and 24 hour shear strength of 2,000 psi (13.8 MPa).
9. 10 lb weight (4.5 kg). Used to place on top of specimens while being glued to specimen platens**.**
10. ¼ inch Width Adhesive Tape. Placed over gap in plates to prevent the epoxy from bonding the plates together.
11. Paint or Permanent Marker. Used to outline specimens on platens for placement of epoxy.
12. 3/8-in. Socket Drive Handle with a 3-in. (7.6 cm) extension.

C. Procedure. Perform the following steps:

1. **Sample Preparation.**

   a. **Laboratory Molded Specimens -** Use cylindrical specimens that have been compacted using the gyratory compactor (AASHTO T 312). Specimen diameter must be 6 inches (150 mm) and a specimen height must be 4.5 inches +/- 0.2 inches (115 +/- 5 mm).

      Note 1 - Experience has shown that molded laboratory specimens of a known density usually result in a greater density (or lower air voids) after being trimmed. Therefore, it is recommended that the laboratory technician produce molded specimens with an air void level slightly higher than the targeted trimmed specimen. Determine the density of the final trimmed specimen in accordance with AASHTO T 166.

   b. **Core Specimens –** Specimen diameter must be 6 inches +/- 0.1 inch (150 mm +/- 2 mm). Determine the density of the final trimmed specimen in accordance with AASHTO T166.

2. **Trimming of Cylindrical Specimen.** Before starting, refer to the sawing device manufacturer's instructions for cutting specimens.

   a. Place the cutting template on the top surface of the laboratory molded specimen or roadway core. Trace the location of the first two cuts by drawing lines using paint or a permanent maker along the sides of the cutting template.

   b. Trim the specimen ends by cutting the specimen perpendicular to the top surface following the traced lines. Discard specimen ends.

   c. Trim off the top and bottom of the specimen to produce a sample with a height of (1.5 inches +/- 0.02 inches (38 mm +/- 0.5 mm).

   d. Measure the density of the trimmed specimen in accordance with AASHTO T 166. If the specimen does not meet the density requirement as specified for performance testing for the mix being tested, then discard it and prepare a new specimen.

   e. Air dry the trimmed specimen to constant mass, where constant mass is defined as the weight of the trimmed specimen not changing by more than 0.05% in a 2-hour interval.

3. **Mounting Trimmed Specimen to Base Plates (Platens).**

   a. Mount and secure the base plates (platens) to the mounting jig. Cut a piece of adhesive tape approximately 4.0 inches (102 mm) in length. Center and place the piece of tape over the gap between the base plates.

   b. Prepare the epoxy following manufacturer's instructions.

   c. Cover a majority of the base plates (platens) with epoxy, including the tape. Glue the trimmed specimen to the base plates.

   d. Place a 10 lb (4.5 kg) weight on top of the glued specimen to ensure full contact of the trimmed specimen to the base plates. Allow the epoxy to cure for the time recommended by the manufacturer. Remove the weight from the specimen after the epoxy has cured.

   e. Turn over the glued specimen so the bottom of the base plates faces upward. Using a hacksaw, cut a notch through the epoxy which can be seen through the gap in the base plates. The notch should be cut as evenly as possible and should just begin to reach the specimen underneath the epoxy. Great care should be taken not to cut more than 1/16 inch (1.58 mm) into the specimen.

   f. Place the test sample assembly in the Overlay Tester's environmental chamber for a minimum of 1 hour before testing.

4. **Start Testing Device.** Please refer to manufacturer's equipment manual prior to operating equipment.

   a. Turn on the Overlay Tester. Turn on the computer and wait to ensure communication between the computer and the Overlay Tester occurs.

   b. Turn on the hydraulic pump using the Overlay Tester's software. Allow the pump to warm up for a minimum of 20 minutes.

   c. Turn the machine to load control mode to mount the sample assembly.

5. **Mounting Specimen Assembly to Testing Device.** Enter the required test information into the Overlay Tester software for the specimen to be tested.

   a. Mount the specimen assembly onto the machine according to the manufacturer's instructions and the following procedural steps.

      1. Clean the bottom of the base plates and the top of the testing machine blocks before placing the specimen assembly into the blocks. If all four surfaces are not clean, damage may occur to the machine, the specimen, or the base plates when tightening the base plates.
      2. Apply 15 lb-in of torque for each screw when fastening the base plates to the machine.

6. **Testing Specimen.**

   a. Perform testing at a constant temperature recommended by the New Jersey Department of Transportation for the mixture in question. This is typically either 59 °F (15 °C) or 77 °F (25 °C).

      Note 3 – Ensure the trimmed specimen has also reached the constant temperature required.

   b. Start the test by enabling the start button on the computer control program. Perform testing until a 93% reduction or more of the maximum load measured from the first opening cycle occurs. If 93% is not reached, run the test until a minimum of 1,200 cycles.

   c. After the test is complete, remove the specimen assembly from the Overlay Tester machine blocks.

D. Report. Include the following items in the report:

1. Date and time molded or cored.
2. NJDOT mixture identification.
3. Trimmed specimen density.
4. Starting Load.
5. Final Load.
6. Percent decline (or reduction) in Load.
7. Number of cycles until failure.
8. Test Temperature

NJDOT B-11- DETERMINING GRADATION OF CRUMB RUBBER FOR ASPHALT MODIFICATION

A. Scope. This method is used to determine the gradation of the crumb rubber for asphalt-rubber binder

B. Apparatus. Use the following apparatus:

1. Oven capable of maintaining a temperatures of 140 ± 10 °F for drying sample to a constant weight.
2. Rubber balls having a weight of 8.5 ± 0.5 grams, a diameter of 24.5 ± 0.5 mm, and a Shore Durometer "A" hardness of 50 ± 5 per ASTM Designation D 224
3. No. 8, 16, 30, 50, 100, and 200 sieves conforming to AASHTO M 92.
4. Mechanical sieve shaker conforming to AASHTO T 27.
5. Balance conforming to AASHTO M 231 and having a minimum capacity of 100 grams with a precision of 0.1 gram.

C. Procedure. The crumb rubber for asphalt rubber binder is required to conform to the gradations specified below when tested in accordance with ASTM Designation C 136 except as follows:

1. Obtain 100 ± 5 grams from the crumb rubber sample and dry to a constant weight at a temperature of not less than 135 °F nor more than 145 °F and record the dry sample weight.
2. Place the crumb rubber sample and 5.0 grams of talc in a one pint jar, then shake it by hand for a minimum of one minute to mix the crumb rubber and the talc. Continue shaking or open the jar and stir until the particle agglomerates and clumps are broken and the talc is uniformly mixed.
3. Place one rubber ball on each sieve. After sieving the combined material for 10 ± 1 minutes, disassemble the sieves. Brush remaining material adhering to the bottom of a sieve into the next finer sieve. Weigh and record the weight of the material retained on the No. 8 sieve and leave this material (do not discard)

on the scale or balance. Ensure that observed fabric balls remain on the scale or balance and are placed together on the side of the scale or balance to prevent the fabric balls from being covered or disturbed when placing the material from finer sieves on to the scale or balance. Add the material retained on the next finer sieve (No. 16 sieve) to the scale or balance. Weigh and record that weight as the accumulative weight retained on that sieve (No. 16 sieve). Continue weighing and recording the accumulated weights retained on the remaining sieves until the accumulated weight retained in the pan has been determined. Before discarding the crumb rubber sample, separately weigh and record the total weight of the fabric balls in the sample.

4. Determine the weight of material passing the No. 200 sieve (or weight retained in the pan) by subtracting the accumulated weight retained on the No. 200 sieve from the accumulated retained weight in the pan. If the material passing the No. 200 sieve (or weight retained in the pan) has a weight of 5 grams or less, cross out the recorded number for the accumulated weight retained in the pan and copy the number recorded for the accumulated weight retained on the No. 200 sieve and record that number (next to the crossed out number) as the accumulated weight retained in the pan. If the material passing the No. 200 sieve (or weight retained in the pan) has a weight greater than 5 grams, cross out the recorded number for the accumulated weight retained in the pan, subtract 5 grams from that number and record the difference next to the crossed out number. The adjustment to the accumulated with retained in the pan is made to account for the 5 grams of the talc added to the sample. For calculation purposes, the adjusted accumulated weight is the same as the adjusted accumulated weight retained in the pan. Determine the percent passing based on the adjusted total sample weight and recorded to the nearest 0.1 percent.

D. Report. Report all test results on ME provided forms.

NJDOT B-12 – DETERMINING ROTATIONAL VISCOSITY OF ASPHALT RUBBER BINDER

A. Scope. This method presents procedures for sampling and testing of asphalt-rubber binder in the field using a hand held portable rotational analog or digital viscometer.

B. Apparatus. Use the following apparatus:

1. **Viscometer.** A hand held high range rotational viscometer. Analog models with indicator needles and scaled dial displays or digital read out viscometers may be used. Analog models that have been found acceptable include Rion Model VT-04E and Haake Model, VT-02. Digital models that have been found acceptable include Haake VT 2 Plus.
2. **Rotor.** A cylinder with a diameter of 24 ± 1.1 millimeters, height of 53 ± 0.1 millimeters, and a vent hole attached to a spindle or shaft with length of 87 ± 2 millimeters that is compatible with the selected viscometer. Acceptable rotors include Rion No. 1, Haake No 1, or an equivalent.
3. **Thermometer.** Digital with metal jacket probe accurate to 1 °F.
4. **Sample Containers.** Clean 1 gallon metal cans with lids and wire bale.
5. **Viscosity Standard Oils.** Fluids calibrated in absolute viscosity centipoise (cP).
6. **Viscometer Holder.** Clean metal container or stand for safely storing the viscometer between tests.
7. **Level Surface.** Level surface not directly on the ground.
8. **Heat Source.** A controllable heat source (i.e. a hot plate, gas stove, or burner) to maintain the temperature of the asphalt-rubber sample at 350 ± 3 °F while measuring viscosity.
9. **Personal Equipment.** Eye protection and heat resistant gloves.

C. Procedure. Perform the following steps:

1. **Calibration of Equipment.** Calibrate the equipment as follows:

   a. Verify the accuracy of the viscometer by comparing the viscosity results obtained with the hand held viscometer to 3 separate calibration fluids of known viscosities ranging from 1000 cP to 5000 cP. The known viscosity value are based on the fluid manufacturer's standard test temperature or based on the test temperature versus viscosity correlation table provided by the fluid manufacturer.

   b. The viscometer is considered accurate if the values obtained are within 300 cP of the known viscosity.

   c. Verify the calibration of the rotational viscometer using viscosity standards before use at each site.

2. **Sampling Asphalt-Rubber Binder.** Provide new sample containers and ensure that they are clean before using. Before sampling, draw at least 1 gallon from an appropriate sample valve on the interaction tank and discard. Then reopen the sample valve and draw at least 3/4 of a gallon for testing.

3. **Preparing Asphalt-Rubber Binder Samples for Testing.** Prepare the asphalt-rubber binder as follows:

   a. Immediately transport the sample to the testing area. Ensure that the testing area is close to the sampling location to reduce the potential for temperature loss.

   b. Set the open asphalt-rubber binder sample container on the level surface on or over the heat source.

   c. To prevent scorching or burning, manually stir the asphalt-rubber binder sample using a metal stir rod or the temperature probe.

   d. Continue stirring until a consistent asphalt-rubber binder temperature of 350 ± 3 °F is achieved. Record the actual test temperature with the corresponding viscosity measurement.

   e. Insert the viscometer spindle and rotor into the hot asphalt-rubber binder sample near the edge of the can. Ensure that the spindle and rotor are not inserted deeper than the immersion depth mark on the shaft and are not plugging the vent hole. During insertion, the spindle and rotor may be tilted slightly to keep the vent hole clear.

   f. Allow the rotor to acclimate to the temperature of the asphalt-rubber binder for approximately 1 minute. During acclimation, stir the sample thoroughly and measure the temperature.

   g. Orient the sample and the rotor so that the rotor is near the center of the sample, align the depth mark on the shaft with the asphalt-rubber binder surface, and level the viscometer in order to measure viscosity.

4. **Testing.** Analog viscometers include a level bubble to help orient the device to ensure that the rotor and shaft remain vertical. Digital viscometers may not include a level bubble. If a level bubble is not included, attach a small adhesive bubble to the viscometer or use a framework with a level bubble.

   Test the asphalt-rubber binder as follows:

   a. As soon as the viscometer is leveled and the depth mark is even with the asphalt-rubber binder surface, begin rotor rotation. When using a digital viscometer, activate the continuous digital display according to the manufacturer's recommendations. Read and record the peak viscosity value (The peak measurement typically represents the viscosity of the asphalt-rubber binder; report and log that value. As the rotor continues to turn, it "drills" into the sample and spins rubber particles out of its measurement area. This may cause thinning of the material in contact with the rotor erroneously indicating a drop in the apparent viscosity of the asphalt-rubber binder) from the graduated scale labeled with the corresponding rotor number or from the digital display.

   b. After completing the first measurement, move the viscometer rotor away from the center of the sample can without removing it from the asphalt-rubber binder sample. Turn off the rotor rotation.

   c. Stir the asphalt-rubber binder sample thoroughly.

   d. Repeat Steps 1, 2, and 3. Take 3 measurements and average the results to determine the viscosity.

   e. Return the viscometer to its holder with the rotor suspended in a suitable solvent. Before using the rotor again, wipe off the solvent and dry the rotor to avoid solvent contamination of the next sample.

D. Calculations. Some meters read in units of mPa·s (0.001 Pascal·seconds) or dPa·s (0.1 Pa·s), while others may read in centipoise (cPs) units. The conversion is 1 Pa·s = 1000 cPs.

E. Report. Include the following items in the report:

1. Date and time sampled.
2. Location of asphalt-rubber binding blending plant.
3. Test temperature and viscosity.
4. Rotor designation.
5. Viscometer model and serial n

THE FOLLOWING TEST METHOD IS ADDED:

NJDOT B-13 – DESIGN OF ULTRA-THIN FRICTION COURSE (UTFC)

A. Scope. This test method determines the proper proportions by weight of approved aggregates and asphalt, which, when combined, will produce a UTFC mixture that will satisfy the specification requirements.

B. Apparatus. Use the following apparatus:

1. Equipment as needed for Superpave mix design as specified in AASHTO T 312
2. Equipment as needed for AASHTO T 209
3. Ovens capable of maintaining temperatures as specified in this method.
4. L.A. Abrasion Machine conforming to AASHTO T 96.
5. Equipment as needed for AASHTO T 84 and T 85.
6. Equipment as needed for AASHTO T 331.

C. Procedure. Perform the following steps:

1. Selecting Materials:

   a. Select the necessary type and source for each aggregate. Obtain representative samples consisting of a minimum of 23 kg (50 lb.) of each aggregate. Sample the aggregates in accordance with AASHTO T 2.
   b. Obtain an adequate quantity of the asphalt binder and additives (if necessary).
   c. Dry the aggregate to constant weight at a minimum temperature of 38 °C (100 °F)
   d. If the stockpile gradation is unknown, obtain the average washed gradation of each proposed aggregate stockpile in accordance with AASHTO T 11 and T 27. Enter the stockpile gradations on the 'Combined Gradation' worksheet.
   e Check the aggregate gradations for compliance with the applicable specifications. Check the individual aggregate stockpiles for compliance with applicable specifications.
   f. Check asphalt and additives for compliance with the applicable specifications.
   g. If the specific gravity values for aggregate sources are unknown, determine the 24 hr. water absorption, the bulk specific gravity, and the apparent specific gravity of the individual sizes of each aggregate in accordance with AASHTO T 84 and T 85. Enter the results or the known values from previous history on the 'Bulk Gravity' worksheet.
   h. Calculate the bin percentages with the proposed aggregate so that the blended combination will fall within the specified gradation ranges for the specified mixture type.
   Note 1- Consider material availability, mixture strength, handling, compaction, pavement texture, and durability as the primary factors of the combination to be tested.
   i. Determine the sand equivalent value of the combined virgin aggregates in accordance with AASHTO T 176.
   j. Plot the combined gradation and specification limits using the 'Power 45 Curve'. Confirm that the blend meets the specification requirements.

2. Preparing laboratory Mixed Samples:

   a. Separate the materials larger than the # 8 (2.36 mm) sieve into individual sizes for each stockpile for preparation of laboratory mixtures. Separate the material passing the # 8 (2.36 mm) sieve into individual sizes if it is prone to segregation.
   b Select two asphalt contents around the anticipated Optimum Asphalt Content (OAC). Select the asphalt contents within the allowed tolerances in accordance with specifications.
   Note 2- Select the asphalt contents to determine the OAC depending on experience and knowledge of materials used.
   c. Calculate individual aggregates and asphalts weights to produce two laboratory-molded samples and one Gmm sample for each asphalt content selected.
   d. Prepare the asphalt mixtures in accordance with AASHTO T 312. Determine the mixing and compaction temperatures in accordance with manufacturer's recommendations. Oven-cure the mixture for Gmm for 2 hr. at the selected compaction temperature.
   e. Determine the Gmm of the two mixtures in accordance with AASHTO T 209.
   f. Mold two specimens at each asphalt content selected in accordance with AASHTO T 312. Mold specimens to 75 gyrations.
   g. Determine the Gmb of the specimens using the Corelok device in accordance with AASHTO T 331.

h. Calculate the air voids and VMA of the molded samples.

3. Determining the OAC:

a. Calculate the surface area (SA) and film thickness (FT) of the mixtures.
b. The mixture at the OAC must meet the air voids and film thickness requirements, while staying within the limits for asphalt content as outlined in the specification. If it is not possible according to the predicted estimates, redesign by assuming another combination of aggregates or by obtaining different materials.
c. Calculate individual aggregate and asphalt weights to produce two laboratory-molded samples and one Gmm sample at the OAC.
d. Prepare the asphalt mixture in accordance with AASHTO T 312. Oven-cure the mixture for Gmm for 2 hr. at the selected compaction temperature.
e. Determine the Gmm at the OAC in accordance with AASHTO T 209.
f. Mold two specimens at the OAC in accordance with AASHTO T 312. Mold specimens to 50 gyrations or as shown in the plans
g. Determine the Gmb of the specimens in accordance with AASHTO T 331.
h. Calculate the G_{me}. Calculate the air voids of the molded samples and the FT for the combined aggregate at the OAC. The calculated air voids and FT must meet the specifications.
i. If the air voids or the FT does not meet the specifications, modify the OAC and repeat procedure.

4. Evaluating the Mixture at the OAC:

a. Evaluate the draindown of the mixture in accordance with the AASHTO T 305. Use 300± 5°F (149 ± 3°C) for testing temperature.
b. Evaluate the moisture resistance of the mixture in accordance with AASHTO T 283.
c. Evaluate the abrasion and impact resistance of the mixture in accordance with NJDOT B-8 Cantabro Test. Mold two specimens at the OAC to 75 gyrations. The air voids of the specimens must meet the specifications.
d. If any of the test results do not meet specifications, redesign by using another combination of aggregates, by obtaining different materials, or by a different OAC.

D. Calculations

1. Calculate G_{me}:

$$G_{me} = \frac{(100 - P_b)}{\left[\left(\frac{100}{G_{mm}}\right) - \left(\frac{P_b}{G_b}\right)\right]}$$

Where:
Gme = effective specific gravity of mix
Pb = asphalt content, %
Gmm = theoretical maximum specific gravity
Gb = specific gravity of the asphalt binder

2. Calculate SA:

$$SA = \frac{0.41+(\%P\#4)0.41+(\%P\#8)0.82+(\%P\#16)1.64+(\%P\#30)2.87+(\%P\#50)6.14+(\%P\#100)12.29+(\%P\#200)32.77}{100}$$

Where:
SA = surface area, m2/kg
% Pi = Aggregate passing sieve # i, %.

3. Calculate FT:

$$P_{ba} = 100 * G_b\left(\frac{G_{me} - G_{sb}}{G_{sb} * G_{me}}\right)$$

$$P_{be} = P_b - P_{ba}\left(\frac{100 - P_b}{100}\right)$$

$$FT = \frac{\left(\frac{P_{be}/100}{1 - P_{be}/100}\right)}{SA * G_b * 1000} * 10^6$$

Where:
Pba = absorbed asphalt in mixture, %
Gsb = bulk specific gravity of combined aggregates
Pbe = effective asphalt in mixture, %
FT = film thickness of asphalt binder in mixture, microns

NJDOT C-2 – QUICK-SETTING PATCH MATERIALS

C. Procedure.

2. Tests. Test materials according to the following:

THE B. IS CHANGED TO:

b. Strength Development. For Type 1 and 2, test 2 cubes per test according to AASHTO T 106. For Type 1A and 1B, make two 4 × 8-inch cylinders per test according to AASHTO R 39. Cure specimens covered with a plastic cover over the cylinder for 3 hours and then cure without the plastic cover at 70.4 to 76.4 °F and 50 percent relative humidity until testing. Test according to AASHTO T 22

NJDOT R-1 – OPERATING INERTIAL PROFILER SYSTEMS FOR EVALUATING PAVEMENT PROFILES

THE TITLE AND ENTIRE TEXT IS CHANGED TO:

NJDOT R-1 – DETERMINING RIDE QUALITY OF PAVEMENT SURFACES

A. Scope. This test method is used to determine the ride quality of a pavement surface using a Class 1 Inertial Profiler System (IPS). If any part of this test procedure is in conflict with the referenced documents, such as ASTM or AASHTO standards, this test procedure takes precedence for its purpose.

B. Apparatus. Use the following apparatus:

1. Class 1 IPS that meets the requirements of ASTM E 950, Sections 4.0, 5.0 and 6.0 of AASHTO M 328, and the following:
   a. Valid certification approved by the Department.
   b. The data system provides the raw profile data in an ASCII format acceptable to the Department.
   c. Current version of *ROADRUF*, *ProVal*, or other Department approved pavement profile analysis software installed on the IPS computer to compute the IRI.
2. Base plate and gauge blocks, of 1 inch and 2 inch thickness, provided by the manufacturer to verify daily vertical calibration.
3. Retro-reflective traffic marking tape or other approved mechanism to automatically trigger the start and stop of profile measurements.

C. Procedure. Perform the following steps:

1. Turn on the inertial profiler and warm up all electronic equipment in accordance with the manufacturer recommendations in advance of testing.

2. Perform Block and Bounce tests each day prior to collecting data. Record the results in the calibration log. Ensure tolerances are within the certified limits.
3. Ensure retro-reflective traffic marking tape or other approved mechanism is placed at the beginning and end of each direction of travel lane.
4. Enter project information in the system.
5. Make provisions to start and stop recording profile at the beginning and end of testing. If automatic trigger mechanism is not install, make provision to initiate start and end data recording manually by pressing a specific key on the computer.
6. Ensure that the required speed is achieved and system is collecting profile data prior to recording profile.
7. For each test section, perform three test runs to collect data of both wheel paths of each lane in the longitudinal direction of travel. The wheel path is defined as being located approximately 3 feet on each side of the centerline of the lane and extending for the full length of the lane. Lanes are defined by striping.
8. Save data from each run separately prior to subsequent run or lane testing, clearly identifying each test section, lane identification, and run number.

D. Report. Generate an electronic report in excel format, compatible with the Department's version, of continuous IRI for each 0.01 mile lot after applying 300 feet high-pass filter. The report shall contain the following information:

1. Date of testing, IPS identification number used for testing, and name of operator.
2. Route, milepost location, direction, lane identification, run number, IRI of each wheel path, and average speed.

STATE FUNDED PROJECT ATTACHMENT 1

SMALL BUSINESS ENTERPRISE UTILIZATION ON WHOLLY STATE FUNDED PROJECTS

A. Utilization of Small Business Enterprises Businesses as Subcontractors, Transaction Expeditors, Regular Dealers, Manufacturers and Truckers. The Department advises the Contractor and subcontractor that failure to carry out the requirements set forth in this attachment constitutes a material breach of Contract and, after notification to the applicable State agency, may result in termination of the agreement or Contract by the Department or such remedy as the Department deems appropriate. Requirements set forth in this section shall also be physically included in all subcontract agreements in accordance with State of New Jersey requirements.

B. Policy. It is the policy of the Department that Small Business Enterprises (SBE), as defined in N.J.A.C. 12A: 10A-1.2 et seq., and N.J.A.C. 17:14-1.2 et seq., shall have the maximum opportunity to participate in the performance of contracts financed wholly with State funds. In this regard, the Department and all Contractors shall take all necessary and reasonable steps to ensure that registered Small Business Enterprises are utilized on, compete for, and perform on NJDOT construction contracts.

C. Definitions

1. Small Business Enterprise. A businesses which has its principal place of business in the State of New Jersey; is independently owned and operated; has no more than 100 full-time employees; has gross revenues that do not exceed the applicable Federal revenue standards referenced at N.J.A.C. 17:14-2.1; and satisfies any additional eligibility standards under this chapter.

Small businesses with no more than 100 full-time employees will be registered in one of the following three categories:

a. Small business with gross revenues that do not exceed $3 million.
b. Small businesses with gross revenues that do not exceed 50 percent of the applicable annual revenue standards set forth in federal regulation at 13 CFR 121.201, incorporated herein by reference, and as may be adjusted periodically.
c. Small business with gross revenues that do not exceed the applicable annual revenue standards set forth in federal regulation at 13 CFR 121.201, incorporated herein by reference, as may be adjusted periodically.

The business must be independently owned and operated, with management being responsible for both its daily and long-term operation, as well as owning at least 51 percent interest in the business.

Businesses must be incorporated or registered with the Division of Revenue & Enterprise Services to do business in the State and have its principal place of business in New Jersey, defined when:

a. 51 percent or more of its employees work in New Jersey supported by paid New Jersey unemployment taxes or;
b. 51 percent or more of its business operations/activities occur in New Jersey supported by income and/or business tax returns.
c. The business must be a sole proprietorship, partnership, limited liability company or corporation with 100 or fewer employees in full-time positions, not including:

    1. Seasonal and part-time employees employed for less than 90 days, if seasonal and casual part-time employment are common to that industry and
    2. Consultants employed under contracts for which the business wants to be eligible as a small business.

2. Commercially Useful Function (CUF). A SBE performs a commercially useful function when it is responsible for execution of a distinct element of the work of a contract and carrying out its responsibility by actually performing, managing and supervising the work involved. To perform a commercially useful function, the SBE must also be responsible, with respect to materials and supplies used on the contract, for preparing the estimate, negotiating price, determining quality and quantity, ordering the material, arranging delivery, installing (where applicable), and paying for the material and supplies itself for the project.

3. Transaction expeditor (broker). A SBE who arranges or expedites transactions and who arranges for material drop shipments.

4. **SBE regular dealers**. A firm that must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question. In addition, a regular dealer must own, operate or maintain a store, warehouse, or other establishment in which the materials, supplies, articles or equipment required under this Contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business.
5. **SBE manufacturer.** A firm that operates or maintains a factory or establishment that produces on the premises, the materials, supplies, articles, or equipment required for the Contract.
6. **Good faith effort (GFE).** Efforts to achieve a SBE goal or other requirement of N.J.A.C. 12A: 10A-1.2 et seq., and N.J.A.C. 17:14-1.2 et seq., which by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement. Efforts to include firms not certified as SBEs in the state where the contract is being let are consequently not good faith efforts to meet a SBE contract goal.

D. Compliance. The Contractor is responsible for compliance as specified in Section 105.

E Contractor SBE Goal Obligations. Ensure that SBEs have an equal opportunity to receive and participate in contracts and subcontracts financed in whole with State funds in performing work with the Department. Take all necessary and reasonable steps in accordance with the Contract to ensure that SBEs are given equal opportunity to compete for and to perform on the Department's wholly State funded projects. Do not discriminate in the award and performance of any Contract obligation including, but not limited to, performance of obligations on wholly State funded contracts, as specified in Section 107.

1. Post Award Obligations

   a. Give SBEs equal consideration with non-small business firms in negotiation for any subcontracts, purchase orders or leases.
   b. Attempt to obtain qualified SBEs to perform the work. A directory of registered Small Businesses Enterprise firms can be found in the New Jersey Selective Assistance Vendor Information (NJSAVI) database online at: https://www20.state.nj.us/TYTR_SAVI/vendorSearch.jsp

2. Affirmative Action After Award of the Contract

   a. Subletting. If at any time following the award of the Contract, the Contractor intends to sublet any portion(s) of the work under said Contract, or intends to purchase material or lease equipment not contemplated during preparation of bids, take affirmative action:

      (1) Notify the RE, in writing, of the type and approximate value of the work which the Contractor intends to accomplish by such subcontract, purchase order or lease.
      (2) Submit the Post-Award SBE Certification Form to the Regional Supervising Engineer with the application to sublet, or prior to purchasing material or leasing equipment. Obtain Post Award SBE Certification forms from the RE.
      (3) Efforts made to identify and retain a SBE as a replacement subcontractor, lower tier subcontractor, transaction expeditor, regular dealer, supplier, manufacturer or trucker when the arrangements with the original SBE prove unsuccessful, shall be followed as specified for SBE subcontractors in Section 108. Work in the category concerned shall not begin until such approval is granted in writing by the Department.
      (4) Notification of a SBE subcontractor's termination will be the same as for SBE subcontractors, specified in Section 108. Send notice in writing to the Department through the RE, with a copy to DCR/AA. Said termination notice will include the firm's ethnic classification, whether the firm is a SBE and the detailed reason(s) for termination.

   b. Selection and Retention of Subcontractors. Do not discriminate in the selection and retention of subcontractors, including procurement of materials and leases of equipment as specified in 108.01. Provide the RE with a listing of firms, organizations or enterprises solicited and those utilized as subcontractors on the proposed project. Such listing shall clearly delineate which firms are classified as SBEs. Provide the RE with subcontract agreements for all subcontractors performing work on the Contract as specified in Section 108.

      (1) Efforts made to identify and retain a SBE as a replacement subcontractor, lower tier subcontractor, transaction expeditor, regular dealer, supplier, manufacturer or trucker when the arrangements with the original SBE prove unsuccessful, shall be the same as for SBE subcontractors and submitted as

specified in Section 108. Work in the category concerned shall not begin until such approval is granted in writing by the Department.

(2) Notification of a SBE firm's termination will be as specified in Subsection 108.01. Send notice in writing to the Department through the RE. Said termination notice will include the firm's ethnic classification, whether the firm is a SBE and the detailed reason(s) for termination.

c. Meeting Contract SBE Goal. Report attainment toward meeting the Contract SBE goal by submittingg monthly, all SBE participation, to the Department's RE and DCR/AA Contract Compliance Unit using the CR-267 – Monthly Report of Utilization of DBE/ESBE or SBE form. The form is due by the 5th of the month, and must list all SBEs used on the Contract to meet the Contract goal, the specific Contract work items each SBE is performing, whether the SBE is performing full or partial work on the items, and the amount paid to each SBE each month. Failure to report the information, and accurately report it may result in payment being delayed or withheld as specified in Section 105, assessing sanctions, or termination of the Contract as specified in Section 108.

d. Termination, Substitution or Replacement of SBEs. Make good faith efforts to replace a SBE that is terminated or has otherwise failed to complete its work on the Contract with another registered SBE, to the extent needed to meet the Contract SBE goal. Notify the DCR/AA immediately of the SBE's inability or unwillingness to perform and provide reasonable documented evidence. Prior to termination, substitution or replacement of a SBE subcontractor, lower-tier subcontractor, transaction expeditor, regular dealer, supplier, manufacturer or trucker, submit a Revised CR-266 – Schedule of DBE.ESBE/SBE Participation form to the Department naming the replacement SBE firm(s), type of work performed, specific Contract work items, whether the SBE is performing full or partial work on the items, dollar value and percent of total Contract for each SBE firm. Submit detailed written explanation of why each change is being made, including documented evidence of good faith effort(s) with the submission of the revised Form CR- 266. Submit along with the revised CR-266: 1) a completed Confirmation of SBE Firm (Form CR-273) to demonstrate direct written confirmation from each SBE firm participaupdate of ting on the Contract, confirming the kind and amount of work that was provided on the Contractor's CR-266, and if applicable; 2) a completed SBE Regular Dealer/Supplier Verification (Form CR-272) for all SBE Regular Dealers/Suppliers listed on the revised CR-266; and if applicable, 3) a completed SBE Trucking Verification (Form CR-274) for all SBE truckers listed on the revised CR-266 form. The Contractor is not permittedto complete any portion of the CR-273, CR-272 or CR-274 forms. Termination, substitution or replacement of SBEs shall be made as specified in Section 108. Termination or replacement of SBE cannot be made without prior written approval of the Department as per 108.01.

e. Submission of Good Faith Effort Documentation. If the Contractor is unable to meet the Contract goal for SBE participation, submit to the DCR/AA for review and approval, documented evidence of good faith efforts along with the monthly CR-267 form. This submission must include written details addressing each of the good faith efforts outlined in the Contract. Submittal of such information does not imply DCR/AA approval.

F. SBE Goals for this Contract. This Contract includes a goal of awarding ___6___ percentage of the Total Contract Price to subcontractors qualifying as SBEs**.**

NOTE: SUBCONTRACTING GOALS ARE NOT APPLICABLE IF THE PRIME CONTRACTOR IS A REGISTERED SMALL BUSINESS ENTERPRISE (SBE) FIRM.

The Department's DCR/AA has sole authority to determine whether the Contractor met the Contract goal or made adequate good faith efforts to do so. If the DCR/AA determines that the Contractor has failed to meet the Contract SBE goal or made adequate good faith efforts to do so, the Department will follow Section 105.

G. Counting SBE Participation.

1. Each SBE is subject to a registration procedure to ensure its SBE eligibility status prior to the award of Contract. All SBEs working on the Contract must be registered SBEs. Only Small Business Enterprises registered prior to the date of bid, or prospective Small Business Enterprises that have submitted to the New Jersey Commerce and Economic Growth Commission on or before the day of bid, a completed "State of New Jersey Small Business Vendor Registration Form" and all the required support documentation, will be considered in determining whether the Contractor has met the established Contract SBE goal. Early submission of required documentation is encouraged.

2. The Department determines the percentage of SBE participation that will be counted toward the Contract SBE goal. Once a firm is determined to be a bona fide SBE by the New Jersey Commerce and Growth Commission, the total dollar value of the contract awarded to the SBE is counted toward the applicable goal.
3. The Contractor will count SBE participation toward the Contract SBE goal only the value of the work actually performed by a SBE when that SBE performs a commercially useful function in the work of a contract as per Section H of this Special Provision Attachment.
4. If a Contractor is part of a Joint Venture and one or more of the Sole Proprietorships, Partnerships, Limited Liability companies or Corporations comprising the Joint Venture is a registered SBE, the actual payments made to the Joint Venture for work performed by the SBE member, will be applied toward the Contract SBE goal. Payments made to the Joint Venture for work performed by a non-small business firm will not be applied toward the Contract SBE goal.
5. If the Contractor is a registered SBE, payments made to the Contractor for work that the Contractor is registered to perform, and performed by the Contractor will be applied toward the Contract SBE goal. Payments made to the Contractor for work performed by non-SBEs will not be applied toward the Contract SBE goal.
6. When a SBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted towards the SBE goal only if the subcontractor itself is a SBE. Work that a SBE subcontracts to a non-SBE firm does not count toward the Contract SBE goal.

H. Commercially Useful Function

1. Performance of Work. The SBE must perform the work with their own permanent employees, or employees recruited through traditional recruitment and/or employment centers. SBEs must employ and control their own workforce, and cannot share employees with the Contractor, other subcontractors on the present project, or the renter-lessor of equipment being used on the present project. The SBE firm must be responsible for all payroll and labor compliance requirements for all of their employees performing work on the Contract. Direct or indirect payments by any other contractor are not allowed.

2. Managing Work. The SBE must manage the work themselves including the scheduling of work operations, ordering of equipment and materials, hiring/firing of employees, including supervisory employees, and preparing and submitting certified payrolls. The SBE must supervise their portion of daily work operations of the project. With respect to materials and supplies used on the Contract, the SBE must be responsible for preparing the estimate, negotiating price, determining quantity and quality, ordering the material, arranging delivery, installing, (where applicable), and paying for the material and supplies for the project.

3. Responsibility of Work. A SBE must perform or exercise responsibility for at least 30 percent of the total cost of its contract with its own workforce. The SBE must not subcontract a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved.

4. Equipment of SBE. The SBE must perform the work stated in the subcontract with their own equipment, whether owned or leased and operated on a long term agreement, not an ad hoc or contract by contract agreement. The equipment must be owned by the SBE firm, or leased/rented from traditional equipment lease/rental sources. The equipment will not belong to the Contractor, any other subcontractor or lower tier subcontractors on the current project, or supplier of materials being installed by the SBE firm.

5. Lease of Equipment. A SBE firm may lease specialized equipment from a contractor, but not from the Contractor, if it is consistent with normal industry practices and at rates competitive for the area. Rental agreements must be for short periods of time, specify the terms of the agreement and involve specialty equipment to be used at the job site. The lease may allow the operator to remain on the lessor's payroll, if it is the generally accepted industry practice but the operation of the equipment must be subject to full control by the SBE. The SBE shall provide the operator for non-specialized equipment, and is responsible for all payroll and labor compliance requirements. A separate lease agreement is required.

6. SBE Trucking. SBE trucking companies must perform a commercially useful function. Contrived arrangements for the purpose of meeting SBE goals will not be allowed. The SBE must be responsible for the management and supervision of the entire trucking operation on a contract-by-contract basis, and must own and operate at least one fully, licensed, insured and operational truck used on the Contract.

The SBE trucking firm is not permitted to obtain trucks from the Contractor to perform work on the project. The SBE may lease trucks from a subcontractor working on the project, provided the trucks are obtained from the subcontractor prior to the project letting. Bona fide lease agreements must be for the length of time needed by the SBE on the Contract and signed by both the SBE and the firm(s), either certified SBE or non-SBE, from which the trucks will be leased. Leases must indicate that the SBE has exclusive use and control over the truck.

All leased trucks must display the name and USDOT identification number issued for interstate commerce, of the SBE firm, on the outside of the truck. SBE firms are expected to use the same trucks for SBE credit on all projects so use of leased vehicles on a project-by-project basis is not permitted.

The Contractor shall have signed Hiring Agreements. Submit copies of these signed Hiring Agreements, and copies of all signed lease agreements to the RE prior to the trucking firm's commencing work on the project. Prior to the SBE trucking firm beginning work on the Contract, SBE Trucking firms will be required to complete the SBE Trucking Verification (Form CR-274). The SBE and Contractor must sign the form and the Contractor submit the original CR-274 form directly to the Department's RE, with a copy submitted to the DCR/AA. The Contractor is not permitted to complete any portion of the CR-274 form. The Contractor must prepare, sign and submit along with the CR-267 – Monthly Report of Utilization of DBE/ESBE or SBE form, a Monthly Trucking Verification form (CR-271), identifying each truck owner, SBE Certification number, company name and address, truck number, and commission or amount paid for all SBE and non-SBE truckers performing work on the project. Also, submit the form to the Department as per Section E of this Special Provision for the DCR/AA's review, approval and determination of credit toward the Contract goal. Failure to submit the forms may result in denial or limit of credit toward the Contract SBE goal, payment being delayed or withheld as specified in Section 105, assessing sanctions or termination of the Contract as specified in Section 108.

7. **SBE Regular Dealers.** SBE regular dealers must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question. In addition, a regular dealer must own, operate or maintain a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under this Contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business.
8. **SBE Manufacturers.** SBE manufacturers must be a firm that operates or maintains a factory or establishment that produces on the premises, the materials, supplies, articles, or equipment required for this Contract.
9. The Contractor shall not use a SBE solely for the purpose of acting as an extra participant in a transaction, a contract or the Contract through which funds are passed in order to obtain the appearance of SBE participation.

I. Good Faith Effort. To demonstrate good faith efforts to meet the Contract SBE goal, a Contractor shall, on an ongoing basis, adequately document the steps it takes to obtain SBE participation, including but not limited to the following:

1. Conducting market research to identify qualified potential small business subcontractors and suppliers and soliciting through all reasonable and available means, the interest of registered SBEs that have the capability to perform the work of the Contract. This may include attendance at pre-bid and business matchmaking meetings and events, advertising and/or written notices, posting of Notices of Sources Sought and/or Requests for Proposals, written notices or emails to all registered SBEs listed in the New Jersey Selective Assistance Vendor Information (NJSAVI) database that specialize in the areas of work desired (as noted in SAVI) and which are located in the area or surrounding areas of the project.

   Solicit this interest as early in the acquisition process as practicable to allow the SBEs to respond to the solicitation and submit a timely offer for the subcontract. Determine with certainty if the SBEs are interested by taking appropriate steps to follow up initial solicitations.

   Request a listing of small businesses from the New Jersey Department of the Treasury, Division of Property Management and Construction if none are known to the Contractor

2. Selecting portions of the work to be performed by SBEs in order to increase the likelihood that the SBE goals will be achieved. This includes, where appropriate, breaking out Contract work items into economically feasible units (for example, smaller tasks or quantities) to facilitate SBE participation, even when the Contractor might otherwise prefer to perform these work items with its own forces. This may include, where possible, establishing flexible timeframes for performance and delivery schedules in a manner that encourages and facilitates SBE participation.
3. Providing all potential SBE subcontractors with detailed information about the plans, specifications, and requirements of the Contract in a timely manner to assist them in responding to a solicitation with their offer for the subcontract. Attempt to contact all potential subcontractors on the same day and use similar methods to contact them.

4. Negotiating in good faith with interested SBEs. Make a portion of the work available to SBE subcontractors and suppliers and select those portions of the work or material needs consistent with the available SBE subcontractors and suppliers, so as to facilitate SBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of SBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional Agreements could not be reached for SBEs to perform the work.

   Consider a number of factors in negotiating with subcontractors, including SBE subcontractors. Take a firm's price and capabilities as well as Contract goals into consideration. The fact that there may be some additional costs involved in finding and using SBEs is not in itself sufficient reason for failure to meet the Contract SBE goal, as long as such costs are reasonable. The ability or desire of a Contractor to perform the work of a Contract with its own organization does not relieve the responsibility to make good faith efforts. Contractors are not, however, required to accept higher quotes from SBEs if the price difference is excessive or unreasonable.

5. Not rejecting SBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union status) are not legitimate causes for the rejection or non-solicitation of bids in the Contractor's efforts to meet the Contract SBE goal. Another practice considered an insufficient good faith effort is the rejection of the SBE because its quotation for the work was not the lowest received. However, nothing in this paragraph shall be construed to require the Bidder to accept unreasonable quotes in order to satisfy the Contract SBE goal.

   Inability to find a replacement SBE at the original price is not alone sufficient to support a finding that good faith efforts have been made to replace the original SBE. The fact that the Contractor has the ability and/or desire to perform the contract work with its own forces does not relieve the Contractor of the obligation to make good faith efforts to find a replacement SBE, and it is not a sound basis for rejecting a prospective replacement SBE's reasonable quote. Attempt, wherever possible, to negotiate prices with potential subcontractors which submitted higher than acceptable price quotes.

   Keep a record of efforts, including the names of businesses contacted and the means and results of such contacts.

6. Making efforts to assist interested SBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.
7. Making efforts to assist interested SBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.

If the Contractor fails to meet the Contract SBE goal, they must submit documented evidence of good faith effort(s) to meet the goal with the CR-268 final SBE Report to the DCR/AA for review and approval. Submittal of such information does not imply DCR/AA approval. The Department's DCR/AA has sole authority to determine whether the Contractor met the Contract SBE goal or made adequate good faith efforts to do so. If the DCR/AA determines that the Contractor has failed to meet the Contract SBE goal or made adequate good faith effort to do so, the Department will follow Section 105.

J. Submission of Affirmative Action Program

Contractors, subcontractors and professional service firms performing work for the Department are required to submit their company's Affirmative Action Program annually to the DCR/AA. Contractors must have an **approved** Affirmative Action Program on file in the DCR/AA no later than seven (7) State business days after the date of bid opening. No recommendations to award will be made without an approved Affirmative Action Program on file in the DCR/AA. Ensure subcontractors and professional service firms have an approved Affirmative Action Plan on file in the DCR/AA prior to their beginning work on a particular project.

The Annual Affirmative Action Program will include, but is not limited to the following:

1. Copy of company's comprehensive EEO/Affirmative Action Plan, with a cover page that includes the company name and address, and signature of the Chief Excutive or EEO Officer.
2. Copy of document designating the company's corporate EEO Officer, including the name, address and contact telephone number for the officer, and signature of the Chief Executive or President, on company letterhead.
3. Copy of the company's EEO Policy Statement on company letterhead, dated and signed by the Chief Excutive and the EEO Officer.
4. Copy of the company's Sexual Harassment Policy on company letterhead.

5. EEO Legend such as letterhead, envelope, or published advertisement showing the company is an equal opportunity employer.
6. Copy of document designating the company's SBE Liaison Officer to administer the firm's Small Business Program.
7. SBE Affirmative Action Plan which is an explanation of affirmative action methods intended to be used to seek out and consider SBEs as subcontractors, material suppliers or equipment lessors. This refers to the Contractor's ongoing responsibility, i.e., Small Business Enterprise/Affirmative Action activities after the award of the Contract and for the duration of the Contract.

K. SBE Liaison Officer. Designate a SBE Liaison Officer who shall be responsible for the administration of your SBE program in accordance with the Contract, and ensuring that the Contractor complies with all provisions of the SBE Program.

L. Consent by Department to Subletting. The Department will not approve any subcontract proposed by the Contractor unless and until said Contractor has complied with the terms of the Contract.

M. Conciliation. In cases of alleged discrimination regarding these and all equal employment opportunity provisions and guidelines, investigations and conciliation will be undertaken by the DCR/AA.

N. Documentation

1. Requiring of Information. The Department or the State funding agencies may at any time require information as specified in Section 107.02 and deemed necessary in the judgment of the Department to ascertain the compliance of any Bidder, Contractor or subcontractor with the terms of the Contract.

2. Record and Reports. The Contractor, subcontractors and other sub-recipients will keep such records as are necessary to determine compliance with its SBE obligations. These records kept will be designed to indicate:

a. The names of SBE contractors, subcontractors, transaction expeditors and material suppliers contacted for work on the Contract, including when and how contacted, and the specific Contract work items and other information provided to each.
b. Work, services and materials which are not performed or supplied by the Contractor.
c. The actual dollar value of work subcontracted and awarded to SBEs, including specific Contract work items and cost of each work item.
d. The progress being made and efforts taken in seeking out and utilizing SBEs to include: solicitations, specific Contract work items and the quotes and bids regarding those specific Contract work items, supplies, leases, or other contract items, etc.
e. Detailed written documentation of all correspondence, contacts, telephone calls, etc., including names and dates/times, to obtain the services of SBEs on the Contract.
f. Records of all SBEs and non-SBEs who have submitted quotes/bids to the Contractor on the Contract.
g. Monthly CR-267 – Monthly Report, Utilization of DBE/ESBE or SBE, and other reports required for submission to the Department, hiring agreements, subcontracts, lease agreements, equipment rental agreements, supply tickets, delivery slips, payment information, and other records documenting SBE utilization on the Contract.
h. Documentation outlining EEO workforce information for the Contract.
i. Documentation outlining EEO and Affirmative Action efforts made in the administration and performance of the Contract.

3. Submission of Reports, Forms and Documentation. Submit reports, forms and documentation, as required by the Department, on those contracts and other business transactions executed with SBEs in such form and manner as may be prescribed by the Department. Failure to submit the required forms, reports or other documentation as required may result in payment being delayed or withheld as specified in Section 105, assessing sanctions, or termination of the contract as specified in Section 108. Submission of falsified forms, reports or other required documentation may result in termination of the Contract as specified in Section 108, investigation by the Department's Inspector General, and prosecution by the State Attorney General's Office.

4. Maintaining Records. All records must be maintained for a period of three (3) years following acceptance of final payment and will be available for inspection by the Department, or the State funding agencies.

O. Prompt Payment to Subcontractors. Payment to subcontractors, equipment lessors, suppliers and manufacturers is made in accordance with Section 109.

P. Non-Compliance. Failure by the Contractor to comply with the SBE program, rules and regulations in the administration of the Contract may result in denial or limit of credit toward the Contract SBE goal, payment being delayed or withheld as specified in Section 105, assessing sanctions, liquidated damages as specified in Section 108, default as specified in Section 108, debarment, or termination of the Contract as specified in Section 108. The Contractor may further be declared ineligible for future Department contracts.

STATE FUNDED PROJECT ATTACHMENT 2

STATE OF NEW JERSEY EQUAL EMPLOYMENT OPPORTUNITY SPECIAL PROVISIONS FOR WHOLLY STATE FUNDED PROJECTS

A. General. It is the policy of the New Jersey Department of Transportation (hereafter "NJDOT") that its contracts should create a workforce that reflects the diversity of the State of New Jersey. Therefore, contractors engaged by the Department to perform under a construction contract shall put forth a good faith effort to engage in recruitment and employment practices that further the goal of fostering equal opportunities to minorities and women.

The Contractor must demonstrate to the Department's satisfaction that a good faith effort was made to ensure that minorities and women have been afforded equal opportunity to gain employment under the Department's contract with the Contractor. Payment may be withheld from a Contractor's contract for failure to comply with these provisions.

Evidence of a "good faith effort" includes, but is not limited to:

1. The Contractor shall recruit prospective employees through the New Jersey career connections website, managed by the Department of Labor and Workforce Development, available online at http://careerconnections.nj.gov/careerconnections/for_businesses.shtml
2. The Contractor shall keep detailed documented evidence of its efforts, including records of all individuals interviewed and hired, including the specific numbers of minorities and women;
3. The Contractor shall actively solicit and shall provide the Department with proof of solicitations for employment, including but not limited to advertisements in general circulation media, professional service publications and electronic media;
4. The Contractor shall provide evidence of efforts described at 2 above to the Department no less frequently than once every 12 months; and
5. The Contractor shall comply with the requirements set forth at N.J.A.C. 17:27-1.1 et seq.

The Contractor is required to implement and maintain a specific Affirmative Action Compliance Program of Equal Employment Opportunity in support of the New Jersey "Law Against Discrimination", N.J.S.A. 10:5-31 et seq., and according to the Affirmative Action Regulations set forth at N.J.A.C. 17:27-1.1 et seq.

The provisions of N.J.S.A. 10:2-1 through 10:2-4 and N.J.S.A. 10:5-31 et seq., as amended and supplemented) dealing with discrimination in employment on public contracts, and the rules and regulations promulgated pursuant thereunto, are hereby made a part of this contract and are binding upon the Contractor.

Noncompliance by the Contractor with the requirements of the Affirmative Action program for Equal Employment Opportunity may be cause for delaying or withholding monthly and final payments pending corrective and appropriate measures by the Contractor to the satisfaction of the Department.

The Contractor will cooperate with the State agencies in carrying out its Equal Employment Opportunity obligations and in their review of its activities under the contract.

The Contractor and all its subcontractors, not including material suppliers, holding subcontracts of $2,500 or more, will comply with the following minimum specific requirement activities of Equal Opportunity and Affirmative Action set forth in these special provisions. The Contractor will include the following mandatory equal employment opportunity language in every subcontract of $2,500 or more with such modification of language in the provisions of such contracts as is necessary to make them binding on the subcontractor.

During the performance of this Contract, the contractor agrees as follows:

1. The Contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. The Contractor will ensure that equal employment opportunity is afforded to such applicants in recruitment and employment, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, veteran's status, disability, nationality or sex. Such equal employment opportunity shall include, but not be limited to the following: employment,

upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

2. The Contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.
3. The Contractor or subcontractor will send to each labor union, with which it has a collective bargaining agreement, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. The Contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer, pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.
5. When hiring or scheduling workers in each construction trade, the Contractor or subcontractor agrees to make good faith efforts to employ minority and women workers in each construction trade consistent with the targeted employment goal prescribed by N.J.A.C. l7:27-7.2; provided, however, that the NJ Department of Labor and Workforce Development, Construction EEO Monitoring Program, may, in its discretion, exempt a contractor or subcontractor from compliance with the good faith procedures prescribed by the following provisions, a, b, and c, as long as the NJ Department of Labor and Workforce Development, Construction EEO Monitoring Program is satisfied that the Contractor or subcontractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the NJ Department of Labor and Workforce Development, Construction EEO Monitoring Program, that its percentage of active "card carrying" members who are minority and women workers is equal to or greater than the targeted employment goal established in accordance with N.J.A.C. 17:27-7.2. The Contractor or subcontractor agrees that a good faith effort shall include compliance with the following procedures:

    a. If the Contractor or subcontractor has a referral agreement or arrangement with a union for a construction trade, the Contractor or subcontractor shall, within three business days of the contract award, seek assurances from the union that it will cooperate with the Contractor or sub-contractor as it fulfills its affirmative action obligations under this contract and in accordance with the rules promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et. seq., as supplemented and amended from time to time and the Americans with Disabilities Act. If the Contractor or subcontractor is unable to obtain said assurances from the construction trade union at least five business days prior to the commencement of construction work, the Contractor or sub-contractor agrees to afford equal employment opportunities minority and women workers directly, consistent with this chapter. If the Contractor's or subcontractor's prior experience with a construction trade union, regardless of whether the union has provided said assurances, indicates a significant possibility that the trade union will not refer sufficient minority and women workers consistent with affording equal employment opportunities as specified in this chapter, the Contractor or subcontractor agrees to be prepared to provide such opportunities to minority and women workers directly, consistent with this chapter, by complying with the hiring or scheduling procedures prescribed under (B) below; and the Contractor or subcontractor further agrees to take said action immediately if it determines that the union is not referring minority and women workers consistent with the equal employment opportunity goals set forth in this chapter.

    b. If good faith efforts to meet targeted employment goals have not or cannot be met for each construction trade by adhering to the procedures of (a.) above, or if the Contractor does not have a referral agreement or arrangement with a union for a construction trade, the Contractor or subcontractor agrees to take the following actions:

        (1) To notify the public agency compliance officer, the NJ Department of Labor and Workforce Development, Construction EEO Monitoring Program, and minority and women referral organizations listed by the Division pursuant to N.J.A.C. 17:27-5.3, of its workforce needs, and request referral of minority and women workers;
        (2) To notify any minority and women workers who have been listed with it as awaiting available vacancies;

(3) Prior to commencement of work, to request that the local construction trade union refer minority and women workers to fill job openings, provided the Contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade;
(4) To leave standing requests for additional referral to minority and women workers with the local construction trade union, provided the Contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, the State Training and Employment Service and other approved referral sources in the area;
(5) If it is necessary to lay off some of the workers in a given trade on the construction site, layoffs shall be conducted in compliance with the equal employment opportunity and non-discrimination standards set forth in this regulation, as well as with applicable Federal and State court decisions;
(6) To adhere to the following procedure when minority and women workers apply or are referred to the Contractor or subcontractor:

i. The Contactor or subcontractor shall interview the referred minority or women worker.
ii. If said individuals have never previously received any document or certification signifying a level of qualification lower than that required in order to perform the work of the construction trade, the Contractor or subcontractor shall in good faith determine the qualifications of such individuals. The Contractor or subcontractor shall hire or schedule those individuals who satisfy appropriate qualification standards in conformity with the equal employment opportunity and non-discrimination principles set forth in this chapter. However, a Contractor or subcontractor shall determine that the individual at least possesses the requisite skills, and experience recognized by a union, apprentice program or a referral agency, provided the referral agency is acceptable to the NJ Department of Labor and Workforce Development, Construction EEO Monitoring Program. If necessary, the Contractor or subcontractor shall hire or schedule minority and women workers who qualify as trainees pursuant to these rules. All of the requirements, however, are limited by the provisions of (c) below.
iii. The name of any interested women or minority individual shall be maintained on a waiting list, and shall be considered for employment as described in 6(1) above, whenever vacancies occur. At the request of the NJ Department of Labor and Workforce Development, Construction EEO Monitoring Program, the Contractor or subcontractor shall provide evidence of its good faith efforts to employ women and minorities from the list to fill vacancies.
iv. If, for any reason, said Contractor or subcontractor determines that a minority individual or a woman is not qualified or if the individual qualifies as an advanced trainee or apprentice, the Contractor or subcontractor shall inform the individual in writing of the reasons for the determination, maintain a copy of the determination in its files, and send a copy to the public agency compliance officer and to the NJ Department of Labor and Workforce Development, Construction EEO Monitoring Program.

(7) To keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract, on forms made available by the NJ Department of Labor and Workforce Development, Construction EEO Monitoring Program and submitted promptly to the NJ Department of Labor and Workforce Development, Construction EEO Monitoring Program upon request.

c. The Contractor or subcontractor agrees that nothing contained in (b.) above shall preclude the Contractor or subcontractor from complying with the union hiring hall or apprentice-ship policies in any applicable collective bargaining agreement or union hiring hall arrangement, and, where required by custom or agreement, it shall send journeymen and trainees to the union for referral, or to the apprenticeship program for admission, pursuant to such agreement or arrangement. However, where the practices of a union or apprenticeship program will result in the exclusion of minorities and women or the failure to refer minorities and women consistent with the targeted county employment goal, the Contractor or subcontractor shall consider for employment persons referred pursuant to (b) above without regard to such agreement or arrangement; provided further, however, that the Contractor or subcontractor shall not be required to employ women and minority advanced trainees and trainees in numbers which result in the employment of advanced trainees and trainees as a percentage of the total workforce for the construction trade, which percentage significantly exceeds the apprentice to journey worker ratio specified in the applicable collective bargaining agreement, or in the absence of a collective bargaining agreement, exceeds the ratio established by practice in the area for said construction trade. Also, the Contractor or

subcontractor agrees that, in implementing the procedures of (b) above, it shall, where applicable, employ minority and women workers residing within the geographical jurisdiction of the union.

The Contractor agrees to cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job and/or off-the-job programs for outreach and training of minorities and women.

The Contractor and its subcontractors shall furnish such reports or other documents to the NJ Department of Labor and Workforce Development, Construction EEO Monitoring Program as may be requested by the NJ Department of Labor and Workforce Development, Construction EEO Monitoring Program from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the NJ Department of Labor and Workforce Development, Construction EEO Monitoring Program for conducting a compliance investigation pursuant to N.J.A.C. 17:27-1.1 et seq..

The Contractor agrees to cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job and off-the-job programs for outreach and training of minority and female trainees employed on the construction projects.

B. Equal Employment Opportunity Policy. The Contractor agrees that it will accept and implement during the performance of this contract as its operating policy the following statement which is designed to further the provision of Equal Employment Opportunity to all persons without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex and to promote the full realization of Equal Employment Opportunity through a positive continuing program:

"It is the policy of this company that it will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex and that it will take Affirmative Action to ensure that applicants are recruited and employed and that employees are treated during employment without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship."

C. Equal Employment Opportunity Officer. Designate and make known to the Department's contracting officers, an Equal Employment Opportunity Officer (hereafter "EEO Officer") who will have the responsibility for and must be capable of effectively administering and promoting an active Equal Employment Opportunity program and be assigned adequate authority and responsibility to do so.

D. Dissemination of Policy.

1. Implementation. All members of the Contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, will be made fully cognizant of, and will implement, the Contractor's Equal Employment Opportunity Policy and contractual responsibilities to provide Equal Employment Opportunity in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Initial Project Site Meeting. Conduct an initial project site meeting with supervisory and personnel office employees before the start of work and then not less often than once every 6 months, at which time the Contractor's Equal Employment Opportunity Policy and its implementation will be reviewed and explained. The EEO Officer will conduct the meetings.

b. EEO Obligations. Give all new supervisory or personnel office employees a thorough indoctrination by the EEO Officer covering all major aspects of the Contractor's Equal Employment Opportunity obligations within 30 days following their reporting for duty with the Contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the Contractor's procedures for locating and hiring minority and women workers.

2. Take the following actions in order to make the Contractor's Equal Employment Opportunity Policy known to all employees, prospective employees and potential sources of employees, i.e., schools, employment agencies, labor unions (where appropriate), college placement officers, etc.,:

a. Place notices and posters setting forth in the Contractor's Equal Employment Opportunity policy, as set forth in Section 2 of these Equal Employment Opportunity Special Provisions in conspicuous places readily accessible to employees, applicants for employment and potential employees.

b. Bring the Contractor's Equal Employment Opportunity Policy and the procedures to implement such policy to the attention of employees by means of meetings, employee handbooks, or other appropriate channels.

E. Recruitment

1. In all solicitations and advertisements for employees placed by or on behalf of the Contractor, the Contractor will state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, veterans' status, disability, nationality or sex. All such advertisements will be published in newspapers or other publications having a large circulation among minorities and women in the area from which the project workforce would normally be derived.
2. Unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority and women applicants, including, but not limited to state employment agencies, schools, colleges and minority and women organizations. Through their EEO Officer, identify sources of potential minority and women employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the Contractor for employment consideration.
3. In the event the Contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the Contractor's compliance with Equal Employment Opportunity contract provisions. (The US Department of Labor has held that where implementations of such agreements have the effect of discriminating against minorities or women, or obligates the Contractor to do the same; such implementation violates Executive Order 11246, as amended).
4. In the event that the process of referrals established by such a bargaining agreement fails to provide the Contractor with a sufficient number of minority and women referrals within the time period set forth in such an agreement, the Contractor shall comply with the provisions of "Section I Unions" of this "State Of New Jersey Equal Employment Opportunity for Wholly State Funded Projects" Special Provision Attachment.

F. Personnel Actions. Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to age, race, color, creed, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, veterans status, disability, nationality or sex. The following procedures shall be followed:

1. Conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
2. Periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
3. Periodically review selected personnel actions in-depth to determine whether there is evidence of discrimination. Where evidence is found, the Contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
4. Promptly investigate all complaints of alleged discrimination made to the Contractor in connection with his/her obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the Contractor will inform every complainant of all of their avenues of appeal.

G. Training and Promotions.

1. Assist in locating, qualifying, and increasing the skills of minority group and women workers, and applicants for employment.
2. Consistent with the Contractor's workforce requirements and as permissible under State regulations, make full use of training programs, i.e., apprenticeship, and on-the-job training programs, for the geographical area of

contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

3. Advise employees and applicants for employment of available training programs and entrance requirements for each.

4. Periodically review the training and promotion potential of minority group and women workers and encourage eligible employees to apply for such training and promotion.

H. Unions. If the Contractor relies in whole or in part upon unions as a source of employees, the Contractor will use their good faith efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and women workers. Actions by the Contractor either directly or through a Contractor's association acting, as agent will include the procedures set forth below:

1. The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract of understanding, a notice advising the labor union or workers' representative of the Contractor's commitments under both the law against discrimination and this contract and shall post copies of the notice in conspicuous places readily accessible to employees and applicants for employment. Further, the notice will request assurance from the union or worker's representative that such union or worker's representative will cooperate with the Contractor in complying with the Contractor's Equal Employment Opportunity and Affirmative Action obligations.
2. The Contractor will use their best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.
3. The Contractor will use their best efforts to incorporate an Equal Employment Opportunity clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their age, race, color, creed, sex, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, or nationality.
4. The Contractor is to obtain information as to the referral practices and policies of the labor union except to the extent that such information is within the exclusive possession of the labor union and such labor unions refuse to furnish this information to the Contractor, certify to the Department and shall set forth what efforts have been made to obtain this information.
5. In the event the union is unable to provide the Contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the Contractor will, through independent recruitment efforts, fill the employment vacancies without regard to age, race, color, creed, sex, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, or nationality making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The US Department of Labor has held that it shall be no excuse that the union with which the Contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees). In the event the union referral practice prevents the Contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these Special Provisions, such Contractor shall immediately notify the Department.

I. Subcontracting. The Contractor will use his best efforts to solicit bids from and to utilize minority group and women subcontractors or subcontractors with meaningful minority group and women representation among their employees. Contractors may use lists of minority owned and women owned construction firms as issued by the NJDOT and/or the New Jersey Unified Certification Program (NJUCP).

Ensure subcontractor compliance with the Contract's Equal Employment Opportunity obligations.

J. Records and Reports

1. Keep such records as are necessary to determine compliance with the Contractor's Equal Employment Opportunity obligations. Records kept will be designed to indicate:

   a. The work hours of minority and non-minority group members and women employed in each work classification on the project;

b. The progress and efforts being made in cooperation with unions to increase employment opportunities for minorities and women (applicable only to Contractors who rely in whole or in part on unions as a source of their workforce);
c. The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and women workers; and
d. The progress and efforts being made in securing the services of minority group and women subcontractors or subcontractors with meaningful minority and women representation among their employees.

2. All such records must be retained for a period of 3 years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the NJDOT.
3. Submit monthly reports to the NJDOT after construction begins for the duration of the project, indicating the work hours of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on a form supplied by the NJDOT.

STATE FUNDED PROJECT ATTACHMENT 3

REQUIREMENTS FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY ON WHOLLY STATE FUNDED PROJECTS

A. Minority and Women Employment Goal Obligations. The Department has established, pursuant to N.J.A.C. 17:27-7.2, the minority and women goals for each construction contractor and subcontractor based on availability statistics as reported by the New Jersey Department of Labor, Division of Planning and Research, in its report, "EEO Tabulation - Detailed Occupations by Race/Hispanic Groups." The goals for minority and women participation, in the covered area, expressed in percentage terms for the Contractor's aggregate work force in each trade, on all construction work are:

Minority and Women Employment Goal Obligations for Construction Contractors and Subcontractors on Wholly State Funded Projects		
County	**Minority % Participation Percent**	**Women % Participation Percent**
Atlantic	18	6.9
Bergen	22	6.9
Burlington	15	6.9
Camden	19	6.9
Cape May	5	6.9
Cumberland	27	6.9
Essex	53	6.9
Gloucester	9	6.9
Hudson	60	6.9
Hunterdon	3	6.9
Mercer	30	6.9
Middlesex	24	6.9
Monmouth	15	6.9
Morris	16	6.9
Ocean	7	6.9
Passaic	36	6.9
Salem	10	6.9
Somerset	20	6.9
Sussex	4	6.9
Union	45	6.9
Warren	5	6.9

The NJ Department of Labor and Workforce Development, Construction EEO Monitoring Program has interpreted Section 7.2 of the State of New Jersey Affirmative Action Regulations as applicable to work hour goals for minority and women participation.

If a project is located in more than one county, the minority work hour goal will be determined by the county which serves as the primary source of hiring or, if workers are obtained equally from one or more counties, the single minority goal shall be the average of the individual goal for the affected counties.

The NJ State Department of Labor and Workforce Development, Construction EEO Monitoring Program may designate a regional goal for minority membership for a union that has regional jurisdiction. No regional goals shall apply to this project unless specifically designated elsewhere herein.

When hiring workers in the construction trade, the Contractor and/or subcontractor agree to attempt, in good faith, to employ minority and women workers in each construction trade, consistent with the applicable county or, in special cases, regional goals.

It is understood that the goals are not quotas. If the Contractor or subcontractor has attempted, in good faith, to satisfy the applicable goals, they will have complied with their obligations under these EEO Special Provisions. It is further understood that if the Contractor shall fail to attain the goals applicable to this project, it will be the Contractor's obligation to establish to the satisfaction of the Department that it has made a good faith effort to satisfy such goals. The Contractor or subcontractor agrees that a good faith effort to achieve the goals set forth in these special provisions shall include compliance with the following procedures:

B. Requests for Referrals from Unions to Meet Contract Workforce Goals. Requests shall be made by the Contractor or subcontractor to each union or collective bargaining unit with which the Contractor or subcontractor has a referral agreement or arrangement for the referral of minority and women workers to fill job openings. Requests shall also be made for assurances for the referral of minority and women workers to fill job openings. Requests shall also be made for assurances from such unions or collective bargaining units that they will cooperate with the Contractor or subcontractor in fulfilling the Affirmative Action obligations of the Contractor or subcontractor under this contract. Such requests shall be made prior to the commencement of construction under the contract.

1. The Contractor and its subcontractors shall comply with Section I, Unions of these EEO Special Provisions and, in particular, with Section I, Paragraph D, if the referral process established in any collective bargaining arrangement is failing to provide the Contractor or subcontractor with a sufficient number of minority and women referrals.
2. The Contractor and its subcontractors shall notify the Department's Compliance Officer, the NJ Department of Labor and Workforce Development, Construction EEO Monitoring Program and at least one approved minority referral organization of the Contractor's or subcontractors work force needs and of the Contractor's or subcontractor's desire for assistance in attaining the goals set forth herein. The notifications should include a request for referral of minority and women workers.
3. The Contractor and its subcontractors shall notify the Department's Compliance Officer and the NJ Department of Labor and Workforce Development, Construction EEO Monitoring Program in the event that a union or collective bargaining unit is not making sufficient minority and women referrals to enable the Contractor or subcontractor to attain the workforce goals for the Contract.
4. The Contractor and its subcontractors shall make standing requests to all local construction unions, the State's training and employment service and other approved referral sources for additional referrals of minority and women workers until such time as the project workforce is consistent with the work hour goals for the Contract.

C. In the event that it is necessary to lay off some of the workers in a given trade on the construction site, the Contractor and its subcontractors shall ensure that fair layoff practices are followed regarding minority, women and other workers.

D. Comply with the other requirements of these EEO Special Provisions.

E. Reporting Requirements.

1. Directly provide the NJ Department of Labor and Workforce Development, Office of Diversity Compliance, Construction Contract Compliance Unit with workforce data for the Contract.

    a. After notification of award, but prior to signing the Contract, submit to the Department and the Department of Labor and Workforce Development, Construction EEO Monitoring Program an AA-201 – Initial Project Workforce Report Construction form in accordance with N.J.A.C. 17:27-7. Also, submit the info within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the Contract. This form is available online at the New Jersey Department of the Treasure's website at: http://www.nj.gov/treasury/contract_compliance/pdf/aa201.pdf. Instructions for

completing the form can be found online at: http://www.state.nj.us/treasury/contract_compliance/pdf/aa201ins.pdf .

b. Monthly, complete and submit an AA 202 - Monthly Project Workforce Report – Construction form for the duration of the Contract. This form may be completed:

(1) Manually and mailed to the Department of Labor & Workforce Development, Construction & EEO Monitoring Program, P.O. Box 209, Trenton, NJ 08625-0209, or:

(2) Input electronically directly onto the AA-202 form via the Department of the Treasury's Premier Business Services Online Forms web application, located at: http://www.nj.gov/treasury/contract_compliance/. Instructions for setting up online access to the web application can be found at: http://www.nj.gov/treasury/contract_compliance/pdf/PBS-Introduction-Page.pdf. Follow all instructions to set up online access to the web application.

(3) Submit a printed copy of the AA-202 form to the Department along with the hard copy of the CC-257R and confirmation e-mail of the successful submission of Monthly Employment Utilization Report.

2. Directly provide the Department with employment workforce data of the number and work hours of minority and non-minority group members and women employed in each work classification for the Contract. The Contractor, subcontractors, professional service firms and others working on the project must submit this information via a web-based application through the New Jersey portal, Vendor Workforce Reporting Manager. Instructions on how to complete Form CC-257R are provided within the web application. Instructions for registering and receiving the authentication code to access the web based application can be found at the Contractor Manpower Project Reporting CC-257R website at: http://www.state.nj.us/transportation/business/civilrights/pdf/cc257.pdf.

a. On a monthly basis, submit Form CC-257R through the web based application within 10 days following the end of each reporting month.

b. In addition to the above, submit a hard copy of the electronic Form CC-257R to the RE within 10 days following the end of each reporting month

c. Submit a copy of the confirmation e-mail of the successful submission of Monthly Employment Utilization Report to the RE within 10 days following the end of each reporting month.

3. All employment data must be accurate and consistent with certified payroll records. The Contractor is responsible for ensuring compliance with these reporting requirements. Failure of the Contractor, subcontractors, professional service firms and others working on the Contract to report monthly employment and wage data may result in payments being delayed or withheld as per 105.01, or impact the Contractor's prequalification rating with the Department.

STATE FUNDED PROJECT ATTACHMENT 4

INVESTIGATING, REPORTING AND RESOLVING EMPLOYMENT DISCRIMINATION AND SEXUAL HARASSMENT COMPLAINTS ON WHOLLY STATE FUNDED PROJECTS

The Contractor hereby agrees to the following requirements in order to implement fully the nondiscrimination provisions of the Supplemental Specifications:

The Contractor agrees that in instances when it receives from any person working on the project site a verbal or written complaint of employment discrimination, prohibited under N.J.S.A. 10:5-1 et seq. 10:2-1 et seq., 42 U.S.C. 2000 (d) et seq., 42 U.S.C. 2000(e) et seq. and Executive Order 11246, it shall take the following actions:

A. Within one (1) working day commence an investigation of the complaint, which will include but not be limited to interviewing the complainant, the respondent, and all possible witnesses to the alleged act or acts of discrimination or sexual harassment.

B. Prepare and keep for its use and file a detailed written investigation report which includes the following information:

   1. Investigatory activities and findings.
   2. Dates and parties involved and activities involved in resolving the complaint.
   3. Resolution and corrective action taken if discrimination or sexual harassment is found to have taken place.
   4. A signed copy of resolution of complaint by complainant and Contractor.

   (In addition to keeping in its files the above-noted detailed written investigative report, the Contractor shall keep for possible future review by the Department, all other records, including, but not limited to, interview memos and statements.)

C. Upon the request of the Department, provides to the Department within ten (10) calendar days a copy of its detailed written investigative report and all other records on the complaint investigation and resolution.

D. Take appropriate disciplinary actions against any Contractor employee, official or agent who has committed acts of discrimination or sexual harassment against any Contractor employee or person working on the project. If the person committing the discrimination is a subcontractor employee, then the Contractor is required to attempt to effectuate corrective and/or disciplinary action by the subcontractor in order to establish compliance with the Contract.

E. Take appropriate disciplinary action against any Contractor employee, official or agent who retaliates, coerces or intimidates any complainant and/or person who provides information or assistance to any investigation of complaints of discrimination or sexual harassment. If the person retaliating, coercing or intimidating a complainant or other person assisting in an investigation is a subcontractor's employee, then the Contractor is required to attempt to effectuate corrective and/or disciplinary action taken by the subcontractor in order to establish compliance with the Contract.

F. Ensure to the maximum extent possible that the privacy interests of all persons who give confidential information in aid of the Contractor's employment discrimination investigation are protected.

G. In conjunction with the above requirements, the Contractor herein agrees to develop and post a written sexual harassment policy for its workforce.

H. The Contractor also agrees that its failure to comply with the above requirements may be cause for the Department to institute against the Contractor any and all enforcement proceedings and/or sanctions authorized by the Contract or by State and/or Federal law.

STATE FUNDED PROJECT ATTACHMENT 5

PAYROLL REQUIREMENTS FOR WHOLLY STATE FUNDED PROJECTS

A. Payroll Reports. Each Contractor and subcontractor shall furnish the RE with payroll reports for each week of contract work. Such reports shall be submitted within 10 days of the date of payment covered thereby and shall contain the following information:

1. Each employee's full name and address of each such employee.
2. The ethnicity and gender of each employee.
3. Each employee's specific work classification (s).
4. Entries indicating each employee's basis hourly wage rate(s) and, where applicable, the overtime hourly wage rate(s). Any fringe benefits paid to approved plans, funds or programs on behalf of the employee must be indicated. Any fringe benefits paid to the employee in cash must be indicated.
5. Each employee's daily and weekly hours worked in each classification, including actual overtime hours worked (not adjusted).
6. Each employee's gross wage.
7. The itemized deductions made.
8. The net wages paid.

B. Statement of Wages. Each Contractor or subcontractor shall furnish a statement each week to the RE with respect to the wages paid each of its employees engaged in contract work covered by the New Jersey Prevailing Wage Act during the preceding weekly payroll period. The statement shall be executed by the Contractor or subcontractor or by an authorized officer or employee of the Contractor or subcontractors who supervises the payment of wages. Contractors and subcontractors must use the certification set forth on NJ Department of Labor Payroll Certification for Public Works Project (R-08-12-08), or any form with identical wording.

C. Maintaining Records. Contractor and subcontractor shall maintain complete social security numbers and home address for employees. Government agencies are entitled to request or review all relevant payroll information, including social security numbers and addresses of employees. Contractors and subcontractors are required to provide such information upon request.

D. Lack of Compliance. Failure of the Contractor or subcontractor to comply with the payroll requirements may result in payment being delayed or withheld as specified in Section 105, default as specified in Section 108 or termination of the Contract as specified in Section 108.

E. Diane B. Allen Equal Pay Act, N.J.S.A. 34:11-56.14b. Pursuant to the DIANE B. ALLEN EQUAL PAY ACT, N.J.S.A. 34:11-56.14.b., the Contractor shall provide to the Commissioner of the New Jersey Department of Labor and Workforce Development, through certified payroll records required pursuant to P.L.1963, c.150 (C.34:11-56.25 et seq.), information regarding the gender, race, job title, occupational category, and rate of total compensation of every employee of the employer employed in the State in connection with the Contract. The Contractor shall provide the Commissioner, throughout the duration of the Contract, with an update to the information whenever payroll records are required to be submitted pursuant to P.L.1963, c.150 (C.34:11-56.25 et seq.). Completed forms should be emailed to: equalpayact@dol.nj.gov. If online submission is not possible, the form should be mailed to: Equal Pay Act, New Jersey Department of Labor and Workforce Development, P.O. Box 110, Trenton, NJ 08625-110.

Information regarding the Diane B. Allen Equal Pay Act and its requirements may be obtained from the New Jersey Department of Labor and Workforce Development (LWD) website at: https://nj.gov/labor/equalpay/equalpay.html

LWD forms may be obtained from the online web site at:
https://nj.gov/labor/forms_pdfs/equalpayact/MW-562withoutfein.pdf

STATE FUNDED PROJECT ATTACHMENT 6

AMERICANS WITH DISABILITIES ACT REQUIREMENTS FOR WHOLLY STATE FUNDED PROJECTS

Equal Opportunity for Individuals with Disabilities.

The CONTRACTOR and the STATE do hereby agree that the provisions of Title II of the American With Disabilities Act of 1990 (the "ACT") (42 U.S.C. Section 12101 et seq.), which prohibits discrimination on the basis of disability by public entities in all services, programs, and activities provided or made available by public entities, and the rules and regulations promulgated pursuant thereunto, are made a part of this contract. In providing any aid, benefit, or service on behalf of the STATE pursuant to this contract, the CONTRACTOR, agrees that the performance shall be in strict compliance with the Act. In the event that the CONTRACTOR, its agents, servants, employees, or subcontractors violate or are alleged to have violated the Act during the performance of this contract, the CONTRACTOR shall defend the STATE in any action or administrative proceeding commenced pursuant to this Act. The CONTRACTOR shall indemnify, protect, and save harmless the STATE, its agents, servants, and employees from and against any and all suits, claims, losses, demands, or damages of whatever kind or nature arising out of or claimed to arise out of the alleged violation. The CONTRACTOR shall, at its own expense, appear, defend, and pay any and all charges for legal services and all costs and other expenses arising from such action or administrative proceeding or incurred in connection therewith. In any and all complaints brought pursuant to the STATE'S grievance procedure, the CONTRACTOR agrees to abide by any decision of the STATE which is rendered pursuant to said grievance procedure. If any action or administrative proceeding results in an award of damages against the STATE or if the STATE incurs any expense to cure a violation of the ADA which has been brought pursuant to its grievance procedure, the CONTRACTOR shall satisfy and discharge the same at its own expense.

The STATE shall, as soon as practicable after a claim has been made against it, give written notice thereof to the CONTRACTOR along with full and complete particulars of the claim. If any action or administrative proceeding is brought against the STATE or any of its agents, servants, and employees, the STATE shall expeditiously forward or have forwarded to the CONTRACTOR every demand, complaint, notice, summons, pleading, or other process received by the STATE or its representatives.

It is expressly agreed and understood that any approval by the STATE of the services provided by the CONTRACTOR pursuant to this contract will not relieve the CONTRACTOR of the obligation to comply with the Act and to defend, indemnify, protect, and save harmless the STATE pursuant to this paragraph.

It is further agreed and understood that the STATE assumes no obligation to indemnify or save harmless the CONTRACTOR, its agents, servants, employees and subcontractors for any claim which may arise out of their performance of this Agreement. Furthermore, the CONTRACTOR expressly understands and agrees that the provisions of this indemnification clause shall in no way limit the CONTRACTOR'S obligations assumed in this Agreement, nor shall they be construed to relieve the CONTRACTOR from any liability, nor preclude the STATE from taking any other actions available to it under any other provisions of this Agreement or otherwise at law.

APPENDIX A

Environmental Permits

New Jersey Natural Resources Conservation Program

SOMERSET - UNION SOIL CONSERVATION DISTRICT
Somerset County 4-H Center
308 Milltown Road • Bridgewater, NJ 08807
(908) 526-2701 Fax (908) 575-3977

June 21, 2016

County of Union
Thomas Mineo, PE
2325 South Avenue
Scotch Plains, NJ 07076

RE: Repl.of Gordon St.Bridge overservice Conrail
(plan dated 4/1/2016)
Block N/A, Lot N/A
Roselle Borough
Application #2016-2219

Dear Sir or Madam:

The Somerset-Union Soil Conservation District has reviewed the above erosion control plan and certifies that the plan is in accordance with the N.J. Erosion and Sediment Control Act, Chapter 251, P.L. 1975.

This approval is limited to the soil erosion and sedimentation controls specified in this plan. It is not authorization to engage in the proposed land use unless such use has been previously approved by the municipality or other controlling agency.

All revisions and municipal renewals of this project will require resubmission and approval by the District. Any conveyance of the project (or portion thereof) will transfer full responsibility for compliance to subsequent owner(s). The District must be notified in writing of any change of ownership.

The District requires written notification prior to the start of land disturbance. Please be advised that failure to do so is considered a violation of State Law and a fine will be imposed.

If there are any questions, please feel free to call our office.

Very truly yours,

SOMERSET-UNION S.C.D.

Mark Kirby
District Supervisor

MK/FC/JK J:\Access\MASTERS\CertLet-35-SU.doc
Enclosure
cc: Borough of Roselle Const. Off
Mun. Planning Board
Mun. Engineer
Hardesty and Hanover

New Jersey Natural Resources Conservation Program

SOMERSET - UNION SOIL CONSERVATION DISTRICT
Somerset County 4-H Center
308 Milltown Road • Bridgewater, NJ 08807
(908) 526-2701 Fax (908) 575-3977

STORMWATER CONSTRUCTION ACTIVITY (5G3) E-PERMIT CERTIFICATION CODES

Date Issued: June 21, 2016

Applicant's Information:

Name: County of Union

Address: 2325 South Avenue, Scotch Plains, NJ 07076

Project Information:

Project Name: Repl. Of Gordon St. Bridge over service Conrail

Block: N/A Lot: N/A Municipality: Roselle

Chapter 251 Application #: 2016-2219 SCD Certification Code: P8TMZ2508I Acres: 1.6

Your proposed project requires a Stormwater Construction General Permit (5G3) pursuant to N.J.S.A. 4:24-39 et seq. Effective October 1, 2009, this permit should no longer be filed through the District office. As the applicant, you are now required to submit applications and payment electronically utilizing the NJDEP Stormwater Construction Activity E-Permitting System or via paper application to NJDEP-DWQ, Bureau of Permits Management, P.O. Box 029, Trenton, NJ 08625-0029.

In order to access the E-permitting system, you must first become a registered user of NJDEP Online at http://www.nj.gov/dep/online. Once registered, the following information is required to complete the E-Permit, Stormwater Construction General Permit Request for Authorization (RFA).

1. The Application/Project name.
2. The location of the site – Physical Address, NJ State Plane Coordinates, Block(s) and Lot(s).
3. Highlands Area Approval/Exemption (*if site is located within the Highlands*).
4. Contact information (*address, email, and phone*) for – Fees/Billing contact, Owner, and Permittee.
5. Chapter 251 Application Number and SCD Certification Code - (***provided above****)

   *These codes are unique to your stormwater RFA and Chapter 251 approval. Enter these codes in the E-permitting system, on the screen titled "SCD Certified Plan." The codes are **case sensitive** and each code may only be used once.
6. Area of land disturbance (***provided above***)
7. The date activity will commence.
8. Identification number of all existing NJPDES permits for the facility.
9. A project description and description of current land use.
10. Certification PIN (*this PIN is generated and emailed to you when registering a NJDEP online account*).
11. A method of payment – checking/savings account, voucher payment, credit card.

If you have any questions regarding this information or any other aspect of the E-Permitting system, please contact Daniel Kuti, NJDEP Bureau of Nonpoint Pollution Control at (609) 633-7021 or via email at PortalComments@dep.state.nj.us

New Jersey Natural Resources Conservation Program

SOMERSET - UNION SOIL CONSERVATION DISTRICT
Somerset County 4-H Center
308 Milltown Road • Bridgewater, NJ 08807
(908) 526-2701 Fax (908) 575-3977

April 19, 2018

County of Union
Thomas Mineo, PE
2325 South Avenue
Scotch Plains, NJ 07076

RE: Repl. of Gordon St.Bridge overservice Conrail
Revised 4/2/18
Block N/A, Lot N/A
Twp. of Roselle
App# 2016-2219

To Whom It May Concern:

The Somerset-Union Soil Conservation District has reviewed the revised plan for the above referenced project and finds the plan remains certified in accordance with the N.J. Soil Erosion and Sediment Control Act, Chapter 251, 1975 as stated in our letter dated June 21, 2016.

This approval is limited to the soil erosion and sedimentation controls specified in this plan. It is not authorization to engage in the proposed land use unless such use has been previously approved by the municipality or other controlling agency.

If there are any questions, please feel free to call our office.

Very truly yours,

SOMERSET-UNION S.C.D.

Frank Calo

Frank Calo
District Manager

FC/js J:\Remains Certified\REMAINS CERTIFIED-SUSCD-40-MASTER-.doc
Enclosures
cc: Construction Official
Municipal Planning Board
Municipal Engineer
Hardesty & Hanover, LLC

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF LAND USE REGULATION

Mail Code 501-02A, P.O. Box 420, Trenton, New Jersey 08625-0420
Telephone: (609) 777-0454 or Fax: (609) 777-3656
www.state.nj.us/dep/landuse

PERMIT

In accordance with the laws and regulations of the State of New Jersey, the Department of Environmental Protection hereby grants this permit to perform the activities described below. This permit is revocable with due cause and is subject to the limitations, terms and conditions listed below and on the attached pages. For the purpose of this document, "permit" means "approval, certification, registration, authorization, waiver, etc." Violation of any term, condition or limitation of this permit is a violation of the implementing rules and may subject the permittee to enforcement action.

Approval Date
OCT 05 2016

Expiration Date
OCT 04 2021

Permit Number(s):	Type of Approval(s):	Enabling Statute(s):
2000-16-0001.1; FWW160001	Freshwater Wetlands General Permit No. 7 (fill manmade ditch/swale HW) and Water Quality Certificate	NJSA 13:9B FWPA NJSA 58:10A WPCA

RECEIVED OCT 11 2016

Permittee:

Mr. Thomas Mineo
Union County Engineering Department
2325 South Avenue
Scotch Plains, NJ 07076

Site Location:

Block & Lot: N/A
Municipality: Boroughs of Roselle and Roselle Park
County: Union

Description of Authorized Activities:

This permit authorizes the permanent disturbance of 1,504 s.f. (0.035 acre) of freshwater wetlands for the replacement of an existing vehicular bridge (Gordon Street), which connects West 1st Avenue (County Route 610) in the Borough of Roselle to Westfield Avenue (State Highway 28) in the Borough of Roselle Park in Union County.

Prepared by:

Joslin Tamagno

THIS PERMIT IS NOT EFFECTIVE AND NO CONSTRUCTION APPROVED BY THIS PERMIT, OR OTHER REGULATED ACTIVITY, MAY BE UNDERTAKEN UNTILTHE APPLICANT HAS SATISFIED ALL PRE-CONSTRUCTION CONDITIONS AS SET FORTH HEREIN.

Received and/or Recorded by County Clerk:

This permit is not valid unless authorizing signature appears on the last page.

STANDARD CONDITIONS:

1. The issuance of a permit shall in no way expose the State of New Jersey or the Department to liability for the sufficiency or correctness of the design of any construction or structure(s). Neither the State nor the Department shall, in any way, be liable for any loss of life or property that may occur by virtue of the activity or project conducted as authorized under a permit;

2. The issuance of a permit does not convey any property rights or any exclusive privilege;

3. The permittee shall obtain all applicable Federal, State, and local approvals prior to commencement of regulated activities authorized under a permit;

4. A permittee conducting an activity involving soil disturbance, the creation of drainage structures, or changes in natural contours shall obtain any required approvals from the Soil Conservation District having jurisdiction over the site;

5. The permittee shall take all reasonable steps to prevent, minimize, or correct any adverse impact on the environment resulting from activities conducted pursuant to the permit, or from noncompliance with the permit;

6. The permittee shall immediately inform the Department of any unanticipated adverse effects on the environment not described in the application or in the conditions of the permit. The Department may, upon discovery of such unanticipated adverse effects, and upon the failure of the permittee to submit a report thereon, notify the permittee of its intent to suspend the permit, pursuant to the regulations;

7. The permittee shall immediately inform the Department by telephone at (877) 927-6337 (Warn DEP Hotline) of any noncompliance that may endanger public health, safety, and welfare, or the environment. The permittee shall inform the Division of Land Use Regulation by telephone at (609) 292-0060 of any other noncompliance within two working days of the time the permittee becomes aware of the noncompliance, and in writing within five working days of the time the permittee becomes aware of the noncompliance. Such notice shall not, however, serve as a defense to enforcement action if the project is found to be in violation of this chapter. The written notice shall include:
   i. A description of the noncompliance and its cause;
   ii. The period of noncompliance, including exact dates and times;
   iii. If the noncompliance has not been corrected, the anticipated length of time it is expected to continue; and
   iv. The steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance;

8. Any noncompliance with a permit constitutes a violation of this chapter and is grounds for enforcement action, as well as, in the appropriate case, suspension and/or termination of the permit;

9. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the authorized activity in order to maintain compliance with the conditions of the permit;

10. The permittee shall employ appropriate measures to minimize noise where necessary during construction, as specified in N.J.S.A. 13:1G-1 et seq. and N.J.A.C. 7:29;

11. The issuance of a permit does not relinquish the State's tidelands ownership or claim to any portion of the subject property or adjacent properties;

12. The issuance of a permit does not relinquish public rights to access and use tidal waterways and their shores;

13. The permittee shall allow an authorized representative of the Department, upon the presentation of credentials,
to:
    i. Enter upon the permittee's premises where a regulated activity is located or conducted, or where records must be kept under the conditions of the permit;
    ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit; and
    iii. Inspect at reasonable times any facilities, equipment, practices, or operations regulated or required under the permit. Failure to allow reasonable access under this paragraph shall be considered a violation of this chapter and subject the permittee to enforcement action under;

14. The permittee and its contractors and subcontractors shall comply with all conditions, site plans, and supporting documents approved by the permit;

15. All conditions, site plans, and supporting documents approved by a permit shall remain in full force and effect so long as the regulated activity or project, or any portion thereof, is in existence, unless the permit is modified;

16. For Coastal Permits, Flood Hazard Permits and Flood Hazard Verifications, the permittee shall record the permit, including all conditions listed therein, with the Office of the County Clerk (the Registrar of Deeds and Mortgages, if applicable) of each county in which the site is located. The permit shall be recorded within 30 calendar days of receipt by the permittee, unless the permit authorizes activities within two or more counties, in which case the permit shall be recorded within 90 calendar days of receipt. Upon completion of all recording, a copy of the recorded permit shall be forwarded to the Division of Land Use Regulation at the address set forth in the rules;

17. The permittee shall perform any mitigation required under the permit prior to or concurrently with regulated activities;

18. If any condition or permit is determined to be legally unenforceable, modifications and additional conditions may be imposed by the Department as necessary to protect public health, safety, and welfare, or the environment;

19. Any permit condition that does not establish a specific timeframe within which the condition must be satisfied (for example, prior to commencement of construction) shall be satisfied within six months of the effective date of the permit;

20. A copy of the permit and all approved site plans and supporting documents shall be maintained at the site at all times and made available to Department representatives or their designated agents immediately upon request;

21. The permittee shall provide monitoring results to the Department at the intervals specified in the permit;

22. A permit shall be transferred to another person only in accordance with the regulations;

23. A permit can be suspended or terminated by the Department for cause;

24. The submittal of a request to modify a permit by the permittee, or a notification of planned changes or anticipated noncompliance, does not stay any condition of a permit;

25. Where the permittee becomes aware that it failed to submit any relevant facts in an application, or submitted incorrect information in an application or in any report to the Department, it shall promptly submit such facts or information; and

26. The permittee shall submit written notification to the Bureau of Coastal and Land Use Compliance and Enforcement, 401 East State Street, 4th Floor, P.O. Box 420, Mail Code 401-04C, Trenton, NJ 08625, at least three working days prior to the commencement of regulated activities.

27. The permittee shall not cause or allow any unreasonable interference with the free flow of a regulated water by placing or dumping any materials, equipment, debris, or structures within or adjacent to the channel while the regulated activity(ies) is being undertaken. Upon completion of the regulated activity(ies), the permittee shall remove and dispose of in a lawful manner, all excess materials, debris, equipment, and silt fences and other temporary soil erosion and sediment control devices from all regulated areas.

28. The regulated activity shall not destroy, jeopardize, or adversely modify a present or documented habitat for threatened or endangered species, and shall not jeopardize the continued existence of any local population of a threatened or endangered species;

ADDITIONAL CONDITIONS FOR A FRESHWATER WETLANDS PERMIT:

29. The regulated activities shall not occur in the proximity of a public water supply intake;

30. The activity shall not adversely affect properties which are listed or are eligible for listing on the New Jersey or National Register of Historic Places unless the applicant demonstrates to the Department that the proposed activity avoids or minimizes impacts to the maximum extent practicable or the Department determines that any impact to the affected property would not impact the property's ability to continue to meet the criteria for listing at N.J.A.C. 7:4-2.3 or otherwise negatively impact the integrity of the property or the characteristics of the property that led to the determination of listing or eligibility.
    i. If the permittee, before or during the work authorized, encounters a possible historic property, as described at N.J.A.C. 7:7A-12.2(l), that is or may be eligible for listing in the New Jersey or National Register, the permittee shall preserve the resource, immediately notify the Department and proceed as directed.

31. Any discharge of dredged or fill material shall consist of clean, suitable material free from toxic pollutants (see 40 CFR 401) in toxic amounts, and shall comply with all applicable Department rules and specifications regarding use of dredged or fill material;

32. Any structure or fill authorized shall be maintained as specified in the construction plans;

33. The activity will not result in a violation of the Flood Hazard Area Control Act, N.J.S.A. 58:16A-50 or implementing rules at N.J.A.C. 7:13

34. If activities under the general permit meet the definition of "major development" at N.J.A.C. 7:8-1.2, then the project of which the activities area a part shall comply in its entirety with the Stormwater Management Rules at N.J.A.C. 7:8.

35. If activities under the general permit involve excavation or dredging, the applicant shall use an acceptable disposal site for the excavated or dredged material. No material shall be deposited or dewatered in freshwater wetlands, transition areas, State open waters or other environmentally sensitive areas. The Department may require testing of dredged material if there is reason to suspect that the material is contaminated. If any dredged material is contaminated with toxic substances, the dredged material shall be removed and disposed of in accordance with Department-approved procedures;

36. The amount of rip-rap or other energy dissipating material shall not exceed the minimum necessary to prevent erosion, as calculated under the Standards for Soil Erosion and Sediment Control in New Jersey at N.J.A.C. 2:90;

37. Best management practices shall be followed whenever applicable;

38. The timing requirements at N.J.A.C. 7:7A-4.3(c) shall be met.

APPROVED PLANS:

The drawing hereby approved is one (1) sheet prepared by Hardesty & Hanover, undated, unrevised, entitled: "Environmental Plan, Union County Division of Engineering, Replacement of Gordon Street Bridge Over "Out Of Service" Conrail, Structure No. 2050150"

If you need clarification on any section of this permit or conditions, please contact the Division of Land Use Regulation's Technical Support Call Center at (609) 777-0454.

Approved by:

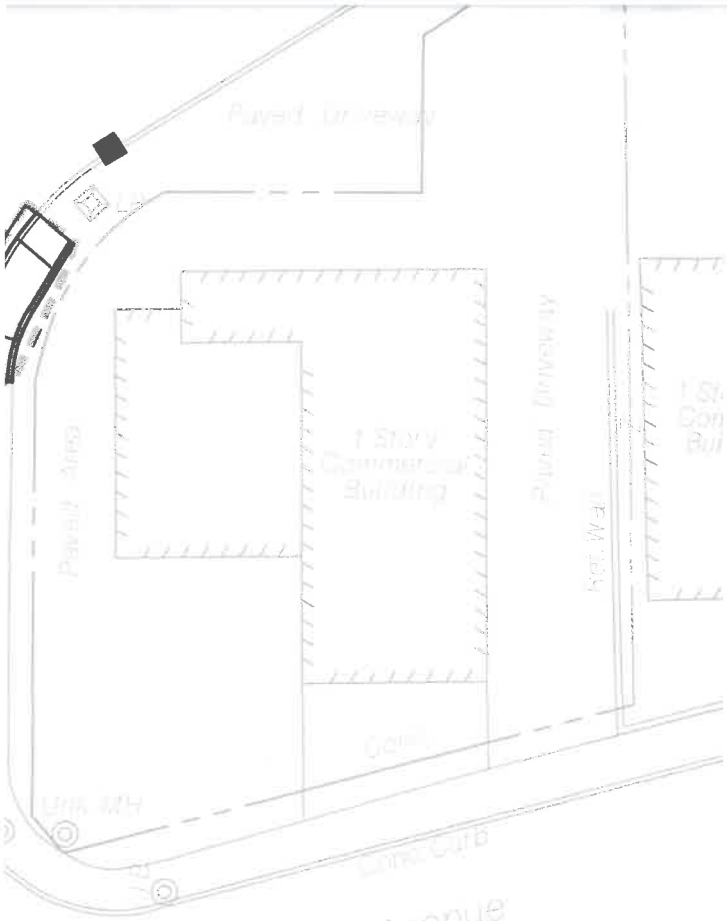
R. Langbein

Richard Langbein, Section Chief
Division of Land Use Regulation

10.05.2016.

Date

Original sent to Agent to record
c: Mr. T. Mineo, Union Co. Eng. Dept., Permittee
Mr. L. Adams, Hardesty & Hanover, Agent



FWW 160001
2000-16-0001.1

Land Use Regulation Program

30 20 10 0 30 60

SCALE IN FEET
1" = 30'

EP-3
EP-4

ALL DIMENSIONS SHOWN ARE IN FEET UNLESS OTHERWISE NOTED

UNION COUNTY DIVISION OF ENGINEERING

ENVIRONMENTAL PLAN

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC

CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.

NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

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RECEIVED
OCT 11 2016
J.L. Adams (H&H)

APPENDIX B

Memorandum of Agreement

AMENDED
MEMORANDUM OF AGREEMENT

BETWEEN THE FEDERAL HIGHWAY ADMINISTRATION
AND
THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICE
REGARDING
THE RECONSTRUCTION OF THE GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL
BOROUGHS OF ROSELLE AND ROSELLE PARK
UNION COUNTY, NEW JERSEY

WHEREAS, the County of Union ("Union County") proposed to replace the Gordon Street Bridge over "Out of Service" Conrail in the Boroughs of Roselle and Roselle Park, using funds provided by the Federal Highway Administration ("FHWA") via the New Jersey Department of Transportation ("NJDOT") and the North Jersey Transportation Planning Authority ("NJTPA"); and

WHEREAS, the FHWA, the New Jersey State Historic Preservation Office ("SHPO"), the Advisory Council on Historic Preservation (the "Council"), and the NJDOT executed a Programmatic Agreement in November of 1996 which stipulates how FHWA's Section 106 responsibilities for NJDOT-administrated federal aid projects will be satisfied; and

WHEREAS, in accordance with that agreement, the NJDOT initiated consultation with the SHPO in order to determine the Area of Potential Effects (APE), identify consulting parties, and discuss the public outreach plan (SHPO concurrence dated June 9, 2005); and

WHEREAS, NJDOT continued consultation with the SHPO in April 2009 in order to identify significant National Register eligible and listed properties, and to assess effects of the project on both eligible and listed properties within the APE pursuant to the requirements of 36 CFR Part 800, the regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 4700; and

WHEREAS, consultation has resulted in a determination that the following properties within the project's area of potential effects are eligible for inclusion in the National Register of Historic Places:

- Gordon Street Bridge over "Out of Service" Conrail (SHPO Opinion: September 3, 1993)
- Central Railroad of New Jersey (CRRNJ) Main Line Corridor Historic District (SHPO Opinion: July 19, 1991; DOE: November 30, 1995)
- Marconi-Karagheusian Manufacturing Complex (SHPO Opinion: April 2, 2009)

WHEREAS, the purpose of the project is to correct the structural deficiencies and inadequate deck geometry of the Gordon Street Bridge and to improve the substandard safety features of the bridge and approach roadways; and

WHEREAS, the main improvements to the Gordon Street Bridge include removal and replacement of the existing truss span, the five-span timber superstructure and the substructure, constructing retaining walls on both sides of Gordon Street, and widening the approach roadways; and

WHEREAS, the FHWA has determined in consultation with the SHPO that the replacement of the Gordon Street Bridge is not in conformance with the Secretary of the Interior's Standards for the Treatment of Historic Properties and have an adverse effect on the Gordon Street Bridge; and

WHEREAS, the FHWA has determined in consultation with the SHPO that the construction of this project as proposed will have an adverse effect on the CRRNJ Main Line Corridor Historic District due to the removal of the existing Gordon Street Bridge, a contributing resource of the CRRNJ Main Line Corridor Historic District; and

WHEREAS, the FHWA has determined in consultation with the SHPO that the construction of this project as proposed will have an adverse effect on the Marconi-Karagheusian Manufacturing Complex due to the widening of the new bridge and roadway, and the construction of retaining walls that will obstruct the views of the buildings; and

WHEREAS, the County, the NJDOT and FHWA have considered alternatives to avoid or minimize the adverse effects and found that avoidance alternatives are not feasible, and have incorporated strategies to minimize impacts into the project design; and

WHEREAS, the FHWA has consulted with the NJTPA, the NJDOT, the SHPO, and the Union County Department of Engineering & Public Works to develop a plan to mitigate the adverse effect; and

WHEREAS, public information centers were held on November 28, 2007 and November 30, 2011 to solicit comment from the public and local historic organizations, and no cultural resources issues were raised nor comments pertinent to cultural resources issues were made by attendees; and

WHEREAS, copies of the cultural resource survey report were sent to the consulting and local historic preservation groups by letter on March 12, 2009, and no replies were received; and

WHEREAS, the cultural resources consultant contacted the Union County Cultural and Heritage Office, Union County Historical Society, Roselle Park Historical Society, Roselle Park Historian, Roselle Historical Society, Jersey Central Railway Historical Society, Jersey Central Railroad Historical Society in 2005 during the course of their research and no opposition to the project based on cultural resources issues was raised during any of these outreach efforts; and

WHEREAS, the NJDOT has participated in the consultation and has been invited to be a signatory to this MOA; and

WHEREAS, the Council was notified of the adverse effect by letter on May 12, 2010 and afforded an opportunity to participate in the consultation process; the Council has declined to participate in the consultation process in a letter dated June 1, 2010; and

WHEREAS, a July 2020 review of the status of satisfaction of the stipulations of the MOA (executed in March of 2012) indicated that many of the stipulations had not yet been satisfied; and

WHEREAS, discussion amongst the NJDOT, the FHWA and the SHPO resulted in agreement that Stipulation IV *Education Document* could be satisfied through the creation of a *Cultural Resources Digest* volume (using NJDOT's template for such documents) that focuses on the technological significance of the Gordon Street Bridge and its historic relationship within the CRRNJ Main Line Corridor; and

WHEREAS, discussion amongst the NJDOT, the FHWA and the SHPO has resulted in agreement that lesson plans as required by former Stipulation VI have generally yielded curriculum materials that are of limited utility due, in part, to the evolving educational standards that guide curriculum choices in the State of New Jersey; and

WHEREAS, NJDOT has been advised by educators involved in developing social studies curricula that the contents required by the *Cultural Resources Digest* template provide primary source materials and content in both length and format that can easily be used by social studies teachers teaching to the Common Core Standards; and

WHEREAS, the FHWA, the NJDOT and the SHPO are in agreement that preparation of a second *Cultural Resources Digest* volume conforming to the requirements of the NJDOT template and focusing on the history, development and significance of the Marconi-Karagheusian Complex and Marconi Wireless Telegraph Company of America would satisfy the intent of former Stipulation VI to provide materials for use in a classroom setting, and would also serve to educate a larger segment of the public about this historic property; and

WHEREAS, the executed March 2012 MOA did not include provisions for amending the agreement, and did not include other "administrative" stipulations recommended by the Advisory Council in their *Template Agreement Documents*; and

WHEREAS, this agreement replaces the March 2012 agreement in its entirety; and

NOW THEREFORE, the FHWA and the SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

STIPULATIONS

The FHWA shall ensure that the following measures are carried out:

I. DESIGN CONSIDERATIONS

The design, character, materials, quality, and workmanship of the bridge replacement and project components shall be compatible with the historic and architectural character, significance, and setting of the Gordon Street Bridge and CRRNJ Main Line Corridor Historic District. The design of the replacement bridge shall be responsive to the guidance and recommendations in the Secretary of the Interior's Standards for the Treatment of Historic Properties (Standards) to fullest extent feasible. The parameters for determining the historic compatibility of the replacement bridge shall include the materials, configuration, shape, color, texture, and workmanship of the superstructure and substructure components, including abutments, retaining walls, parapets, and fences.

Union County, in consultation with consulting parties, shall develop an appropriate and compatible design for the replacement structure. Consultation shall include consideration of:

A. The design will consist of replacing the existing Warren through truss span of the Gordon Street Bridge with a wider pre-engineered pony truss.

B. The five-span timber glulam approach structure south of the Warren through truss will be replaced with a single span multi-steel stringer bridge with a reinforced concrete deck. This timber glulam approach structure does not contribute to the significance of the Gordon Street Bridge.

C. The retaining wall along Gordon Street parallel to the Marconi-Karagheusian Manufacturing Complex will have architectural treatments that will be approved by SHPO, NJDOT and Union County. Architectural treatments will be compatible to the Central Railroad of New Jersey (CRRNJ) Main Line Corridor Historic District.

D. Final plans and specifications will be submitted to the SHPO for review and comment as soon as possible, but at least prior to seeking construction authorization for the project. The purpose of the review will be to determine if the proposed design is appropriate according to the Secretary of the Interior's Standards for the Treatment of Historic Properties.

II. BRIDGE RELOCATION

Union County shall investigate relocation of the existing Warren through truss span of the Gordon Street Bridge for use as a vehicular or pedestrian bridge. A relocation site search will be performed within Union County. The site search will be documented and submitted to NJDOT and SHPO for review prior to the start of construction. If a relocation site is found, the cost of relocating the existing truss span will be estimated. Costs associated with the relocation of the existing truss may include, but are not limited to, moving the truss, design and construction of rehabilitating the truss (presently posted for 3 tons for

vehicles), design and construction of a foundation to support the truss, approach roadway work or pedestrian path to get to the bridge and any permits that may be required. After costs are estimated, a decision regarding the relocation will be made between all signatory parties.

If a suitable location for the bridge is not identified within one year of execution of this document, Union County, the County shall consult with NJDOT and SHPO to re-evaluate the viability of future storage and/or disposition of the bridge.

III. RECORDATION

Union County shall record the existing conditions of the Gordon Street Bridge and its setting within the context of the CRRNJ Main Line Corridor Historic District and the Marconi-Karagheusian Manufacturing Complex consistent with the standards of the Historic American Engineering Record (HAER). The specific scope, format, quality, and content of the written and photographic documentation shall be determined through consultation between the NJDOT and the SHPO.

The recordation shall compile and present information from primary and secondary sources relevant to understanding and illustrating the history, significance, and design of the Gordon Street Bridge within the CRRNJ Main Line Corridor Historic District, the historic relationship among the Boroughs of Roselle and Roselle Park, and the engineering and operations of the CRRNJ. Primary and secondary sources to be used in this effort shall include local histories, historic maps, historic engineering literature (for example Engineering News-Record, Railway Age, and Railway Gazette), any available CRRNJ drawings, documents, and reports, and other archival material (for example New Jersey Department of Treasury and Interstate Commerce Commission valuation records and New Jersey Highway Commission records).

The recordation should describe and illustrate the distinctive features of the Gordon Street Bridge, discuss why it was built using the chosen structural and architectural elements, and examine how both the physical environment (setting) and railroad and roadway operations may have influenced the engineering and design employed.

As part of this recordation, Union County, in consultation with the SHPO, shall actively solicit from the public and obtain from other accessible archival sources, printed, graphic, and photographic information regarding the Gordon Street Bridge, its setting, and the CRRNJ Main Line Corridor Historic District in the Boroughs of Roselle and Roselle Park. The compiled information will be evaluated and (as deemed appropriate during consultation) archivally duplicated as part of the recordation document. Union County will also, in accordance with archival standards and in consultation with the SHPO, photo-duplicate selected plans for the bridge (if available).

The SHPO shall receive a draft copy of the recordation document for review and comment. Completion of the photographic recordation will occur within two (2) months of letting the construction contract and prior to the initiation of any demolition or construction activity. Completion of all other elements of the recordation will occur within one (1) year of letting the construction contract.

Copies of the recordation documentation will be provided to the NJDOT, SHPO, Union County, Rutgers University Special Collections Library, Union County Cultural and Heritage Office, Union County Historical Society, Jersey Central Railway Historical Society, Jersey Central Railroad Historical Society, Roselle Park Historical Society, and Roselle Historical Society. The SHPO and Rutgers copies will be archivally stable.

IV. PUBLIC OUTREACH DOCUMENTS

Using the services of a qualified consultant who meets the Secretary of the Interior's Professional Qualifications Standards [48 FR 44738-9] in History or Architectural History, NJDOT shall prepare two *Cultural Resources Digest* (CRD) volumes in conformance with the NJDOT CRD template. The SHPO will be provided the opportunity to review and comment on draft CED documents in sufficient time that any comments provided may be considered for inclusion in subsequent revisions. The volumes shall be posted on NJDOT's web site and will remain there for a minimum of five years from the date of posting, and may be linked to or posted on appropriate websites hosted by the County and others, as determined in consultation with the SHPO.

Gordon Street Bridge and CRRNJ Main Line

A. Using primarily research and documents compiled during the HAER recordation of the Gordon Street Bridge, NJDOT shall prepare a Cultural Resources Digest (CRD) volume that examines and illustrates the history, significance, and engineering character of the Gordon Street Bridge and the CRRNJ Main Line Corridor Historic District in the Boroughs of Roselle and Roselle Park.
B. Using information included in cultural resources reports compiled for Section 106 consultation, supplemented by additional research sufficient to address the topic, NJDOT, using the services of a qualified consultant shall prepare a CRD volume that addresses the history, of the Marconi-Karagheusian Complex within the context of the history, development and significance of the Marconi Wireless Telegraph Company of America

V. INTERPRETIVE SIGN

Union County shall ensure that one or more interpretive sign is designed using information collected during HAER documentation and preparation of the public outreach documents. The interpretive sign(s) shall be installed on or at the bridge, or at locations in proximity to the bridge. The sign(s) shall be accessible to the public and should inform local residents, visitors to the area, students, and others of the technological significance of the Gordon Street Bridge and its historic relationship within the CRRNJ Main Line Corridor Historic District, as well as the historic significance of the Marconi-Karagheusian Complex.

The number, location, format and content of the signs shall be determined through consultation among the NJDOT, the SHPO, Union County, the Roselle Park Historical Society, the Roselle Historical Society, and the Boroughs of Roselle and Roselle Park. Plans showing the proposed text and location

shall be submitted to the SHPO and NJDOT for review and comment prior to letting the construction contract.

VI. PROFESSIONAL QUALIFICATIONS

Union County, on behalf of the FHWA, shall ensure that all work carried out pursuant to Stipulation 2 of this agreement will be carried out in accordance with the Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation [48 FR 44730-44734] and by or under the direct supervision of a person or persons meeting at a minimum the Secretary of the Interior's Professional Qualifications Standards [48 FR 4473844739].

VII. DESIGN CHANGES

If any major changes to the proposed replacement of the Gordon Bridge over "Out of Service" Conrail project occur, the FHWA shall consult with the SHPO in accordance with the provisions of 36 CFR Part 800. For any such changes, Union County will submit a plan sheet or design sketch showing the proposed change; a written description of why the change is needed; and a description of alternatives considered to achieve the same goals. If formal consultation is initiated, the SHPO will provide written comments to Union County, FHWA and NJDOT [Local Aid and Environmental Units] within fifteen (15) working days of receipt of the documents.

VIII. DURATION

This MOA will expire if its terms are not carried out within ten (10) years from the date of its execution. Prior to such time FHWA may consult with the other signatories to reconsider the terms of the MOA and amend it in accordance with Stipulation XI below.

IX. POST-REVIEW DISCOVERIES

If properties are discovered that may be historically significant or unanticipated effects on historic properties found, FHWA shall consult with the SHPO and consulting parties to determine ways to avoid, minimize, or mitigate adverse effects.

X. PROJECT COMPLETION, MONITORING AND REPORTING

A. Project Completion

Design Work required by Stipulation I will be completed prior to seeking federal authorization to advertise the project. All construction items that result from the work in Stipulation I will be completed prior to final acceptance from the contractor.

B. Monitoring and Reporting

Each six (6) months following the execution of this MOA until the work is completed and accepted by the SHPO, the MOA expires or is terminated, Union County shall provide all parties to this MOA a summary report detailing work undertaken pursuant to its terms. Such report shall include any scheduling changes proposed, any problems encountered and any

disputes and objections received in Union County's efforts to carry out the terms of this MOA. The final report shall document satisfaction of all stipulations of this agreement and shall be submitted within ninety (90) days of completion of construction.

XI. DISPUTE RESOLUTION

Should any signatory to this MOA object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, FHWA shall consult with such party to resolve the objection. If FHWA determines that such objection cannot be resolved, FHWA will:

A. Forward all documentation relevant to the dispute, including the FHWA's proposed resolution, to the ACHP. The ACHP shall provide FHWA with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, FHWA shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories and concurring parties, and provide them with a copy of this written response. FHWA will then proceed according to its final decision.
B. If the ACHP does not provide its advice regarding the dispute within the thirty (30)day time period FHWA may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, FHWA shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to the MOA, and provide them and the ACHP with a copy of such written response.
C. FHWA's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

XII. AMENDMENTS

This MOA may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date a copy signed by all of the signatories is filed with the ACHP.

XIII. TERMINATION

If any signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other signatories to attempt to develop an amendment per Stipulation XI above. If within thirty (30) days an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatories.

Once the MOA is terminated and prior to work continuing on the undertaking, FHWA must either (a) execute an MOA pursuant to 36 CFR 800.6 or (b) request, take into account, and respond to the comments of the Advisory Council under 36 CFR 800.7. FHWA shall notify the signatories as to the course of action it will

Execution of this Memorandum of Agreement and implementation by the FHWA, the SHPO, the NJDOT and Union County and the implementation of its terms, is terms evidence that FHWA has afforded the Council an opportunity to comment on the Gordon Street Bridge over "Out of Service" Conrail project and its effects on historic properties, and that FHWA has taken into account the effects of the undertaking on historic properties.

Signatories:

FEDERAL HIGHWAY ADMINISTRATION

By:_____Date: _____
Robert Clark
Division Administrator, New Jersey Division Office

Amended Memorandum of Agreement
between the
Federal Highway Administration
and the
New Jersey State Historic Preservation Office
regarding
The Reconstruction of The Gordon Street Bridge Over "Out Of Service" Conrail
Boroughs of Roselle And Roselle Park
Union County, New Jersey

Signatory

NEW JERSEY STATE HISTORIC PRESERVATION OFFICE

By:_____Date: _____
Katherine J. Marcopul, PhD
Deputy State Historic Preservation Officer

Memorandum of Agreement
between the
Federal Highway Administration
and the
New Jersey State Historic Preservation Office
Regarding
Bridge and Intersection Improvements to
Market Street, Essex Street and Rochelle Avenue/Main Street
Saddlebrook Township, Lodi Borough and Rochelle Park Township
Bergen County, New Jersey

Invited Signatory:

NEW JERSEY DEPARTMENT OF TRANSPORTATION

By:_____Date: _____
Laine Rankin
Director, Local Aid and Economic Development

Memorandum of Agreement
between the
Federal Highway Administration
and the
New Jersey State Historic Preservation Office
Regarding
Bridge and Intersection Improvements to
Market Street, Essex Street and Rochelle Avenue/Main Street
Saddlebrook Township, Lodi Borough and Rochelle Park Township
Bergen County, New Jersey

Invited Signatory:

UNION COUNTY

By:_____Date: _____

APPENDIX C

Excavated Material and Groundwater Management Plan

EXCAVATED MATERIAL AND GROUNDWATER MANAGEMENT PLAN

April 28, 2016

Prepared at the Request of:

Consolidated Rail Corporation
Mt. Laurel, NJ

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APPENDICES

1.0 INTRODUCTION

Brinkerhoff Environmental Services, Inc. (Brinkerhoff) prepared this Excavated Material and Groundwater Management Plan (the Plan) to address planned construction activities associated with the _Gordon Street Bridge Replacement on Consolidated Rail Corporation (Conrail) right-of-way (ROW) in _Roselle/Roselle Park NJ. This Plan contains project-specific procedures for the planned construction activities and was prepared at the request of Conrail prior to the issuance of excavation permits along its ROW.

The purpose of the Plan is to provide general guidance for the field screening, classification, and proper handling of soil and/or groundwater encountered during the field work. The guidelines outlined herein were developed to ensure the materials are properly managed for use as backfill, off-site disposal or recycling, or decanting (as appropriate) based on observations and screening conducted during the construction activities.

2.0 PROJECT DESCRIPTION

Union County and their contractors will mobilize to the site and complete the following:

- Complete the one call mark out.
- Material, equipment or supplies requiring staging overnight or for longer durations will be located in an area approved by the Conrail Project Engineer, and will be staged only for so long as determined to be reasonably necessary by both _Brinkerhoff_ and the Conrail Project Engineer. Every attempt will be made to conduct work outside the fouling limit along Conrail's tracks. No staging of equipment or excavated materials will occur within the fouling limit or in access roads, except with the specific approval of Conrail's Project Engineer and only for so long as determined to be reasonably necessary by both Union County and the Conrail Project Engineer. The fouling limit of the track is fifteen (15) feet from the closest rail. Work in close proximity to Conrail track will be conducted in close coordination with Conrail Engineering Department representatives and the flagman assigned to the project. Union County's contractor will not foul track without appropriate track protection in place arranged in advance with Conrail and in accordance with Conrail and Federal Railroad Administration (FRA) requirements.

3.0 PROJECT APPROACH

Union County and their contractors will be replacing the existing Gordon Street Bridge with a new wider bridge. The existing 94 foot long Warren through truss north span will be replaced with a 94 foot long wider pre-engineered pony truss with a reinforced concrete deck. The existing south approach which consists of a five span glulam timber deck panel structure 81 feet long will be replaced with a 60 foot long wider single span multi-steel stringer structure with a reinforced concrete deck. The bridge will provide a 38 foot roadway width consisting of a 13 foot lane in each direction and a 12 foot center transition area to a left turn lane on each approach. A two foot, 10-inch high concrete parapet with barrier club will be constructed on the bridge and approaches on the west side of Gordon Street and on the truss span along the east side of Gordon Street. A sidewalk will be constructed on the truss span and the north approach roadway. A pedestrian railing consisting of two foot, 4-inch high concrete parapet with a four foot high aluminum picket fence mounted on top of the parapet will be constructed on the south span of the bridge and on top of the southeast and northeast retaining walls along the approach roadways. A 6 foot high aluminum picket fence will be mounted on the fascia side of the sidewalk truss span. The substructure units of the new bridge will consist of reinforced concrete abutments and center pier supported on reinforced concrete spread footings.

The approach roadways will be widened to meet the curb-to-curb width of the pre-engineered pony truss span and the new single span south of the truss span. The Gordon Street Bridge and approach roadways were widened primarily to the west of the existing Gordon Street centerline along the same alignment as the existing Gordon

Street bridge and roadway. Retaining walls will be constructed along the approach roadways to keep the widened roadway within the limits of existing right-of-way. The retaining wall along Gordon Street parallel to the Marconi-Karagheusian Manufacturing Complex will have an architechtural treatment that will be approved by SHPO, NJDOT, and Union County. The vertical profile of the roadway across the bridge will be raised slightly to maintain the existing vertical clearance of 21 foot, 5-inches over the "Out of Service" Conrail tracks. Gordon Street will be closed and vehicular traffic detoured during construction.

3.1 Project Background

The Gordon Street Bridge is an orphan bridge maintained by the New Jersey Department of Transportation (NJDOT). The bridge supports Gordon Street over the "Out of Service" Conrail tracks. Based on the latest Bridge Re-evaluation Survey Report dated August 2010, the bridge is classified as structurally deficient due to the poor conditions of the superstructure and the low inventory ratings and functionally obsolete due to its narrow deck width and poor approach roadway alignment. This project has two primary concerns. The first concern is the structural deficiencies. The second concern is the inadequate bridge deck geometry which will require a wider bridge to eliminate the bridge's classification as a Functionally Obsolete and improve safety.

Union County elected to take the lead on improving the condition of the Gordon Street Bridge by taking it through the NJTPA scoping process. Gordon Street is a 520 foot tangent section of roadway between the intersections of Westfield Avenue to the north in the Borough of Roselle Park and West First Avenue to the south in the Borough of Roselle. Gordon Street is a two lane road and is classified by NJDOT as an urban minor arterial roadway. The roadway width varies from 22 feet at the West First Avenue intersection to 26 feet north of the bridge at the Westfield Avenue intersection. The roadway provides one lane of traffic in each direction and a sidewalk on the east side of the roadway. The traffic analysis indicated that a third lane for left turns at the intersections at both ends of the project is warranted.

3.2 Health and Safety

Union County personnel and its contractors will have the required training for the planned work. This may include Occupational Safety and Hazard Administration (OSHA) Hazwoper training in accordance with 29 CFR 1910. FRA On-Track Worker Safety Training will be provided to workers as appropriate for their tasks and compliance with FRA regulations. Conrail specific training will also be required for workers. This training is to be coordinated with the Conrail project engineer.

A Daily Work Permit or equivalent will be completed and a Job Safety Hazard Analysis be performed for each excavation/ work site. In addition, daily tailgate meetings shall be performed before the start of each work day to address specific health and safety concerns. Air monitoring will be the responsibility of Union County's personnel to evaluate the potential for organic vapors, hydrogen sulfide, unacceptable oxygen levels, and explosive atmospheres prior to excavation entry or hot work. Excavation areas will

be allowed to vent and/or be evacuated with air movers until acceptable excavation action levels are attained.

Excavations will be shored or sloped, as necessary, in accordance with OSHA regulations and Conrail construction specifications for both worker safety and protection of the surrounding utilities or structures. Trained and experienced excavation equipment operators will be used to complete the work. Hand excavation will be completed, as necessary, to minimize the potential for injury to site workers and/or damage to the pipeline, adjacent track structure, or adjacent utilities. Open excavation areas will be surrounded with orange safety fence throughout the construction activities to alert vehicular traffic along the ROW and to secure the area from third party trespassers at the end of each day. Flagman or watchman will be stationed where and when necessary as determined in coordination with Conrail. Contingent upon the excavation depths, ladders will be staged along the excavation sidewalls and tied off in accordance with OSHA requirements.

3.3 Soil Observation, Screening and Classification

Field personnel will use visual observation, olfactory senses, and potentially photoionization detector (PID) readings as indicators of the potential presence of soil/material that is not suitable for use as backfill or a release of petroleum constituents. Examples of the initial indicators that may warrant further evaluation include the following:

Visual

- An oily, tar-like or stained appearance or sheen on the surface of the material.
- Debris or waste in form of wooden pallets, bags of plastic, paper, metal, etc.
- An oily sheen or free product floating on ponded water in the excavation.
- The presence of drums or other waste containers.
- The presence of seeping petroleum, sludge or other contaminated aqueous material from the excavation sidewall.

Olfactory

- The soil or water may have a sulfur (rotten egg), petroleum or chemical odor.
- A petroleum odor coupled with visual confirmation of oil, or stained or tar-like appearance. Soil or water with chemical odor may not exhibit visual signs of impacts.

PID Readings

- A PID will be used to field screen for volatile organic compound (VOC) vapors in soil, debris, waste and water encountered during the pipeline excavation.
- In conjunction with the visual and olfactory observations, PID readings will be evaluated to make determinations with regard to the proper management of excavated material and water generated during the excavation activities.

Based on field observations, soil screening results, and site conditions, to the extent reasonably possible, excavated soil/material will be classified as one of the following:

- No environmental concerns – material suitable for backfill;
- No environmental concerns – material not suitable as backfill due to non-environmental issues, e.g. trash and debris;
- Potential environmental concerns – not suitable as backfill.

The appropriate material, soil and/or water handling and management decision processes will be initiated as described in the following section.

3.4 Soil Handling and Management

Regardless of the classification of the excavated material, soil excavated will be staged on plastic at a designated area within the approved workspace and covered by plastic at the end of each work day or stored in a covered roll-off container. The stockpile location will typically be near the excavation in the swing zone of the excavating equipment, if practical and if permitted by Conrail's Project Engineer. Prior to transfer to the stockpile, excavated material will be allowed to drain of any free liquid over the excavation trench. Soil erosion and sediment control best management practices (e.g., silt fence and hay bales) will be used and maintained, as necessary, to secure the work area and soil stockpile. Based on the classification of the material, the following additional handling and management procedures will be employed. Regardless of the classification that applies to particular excavated materials, Brinkerhoff shall promptly make that determination and promptly move any such soils off-site or use it as backfill in accordance with this Section.

3.4.1 No Environmental Concern, Suitable Backfill

If field observations and screening indicate the stockpiled soil is not impacted and is of sufficient engineering quality to be used as backfill, it will be returned to the excavation as backfill and compacted in the reverse order of excavation (last out, first in).

3.4.2 No Environmental Concern, Unsuitable Backfill

In the event that field observations and screening indicate that excavated material has no environmental impacts, but contains debris or material unsuitable for backfill, the debris (i.e., wooden pallets, plastic, paper, etc.) will be segregated into a separate pile, staged on and covered by plastic, and transported off site for disposal. The use of a roll-off box or direct load into a truck for off-site transport will be field determined in conjunction with Conrail's Project Engineer, based on site access and the volume and nature of the material. No excavation debris will remain along the Conrail ROW. The other stockpiled material may be used as backfill, as detailed in Section 3.4.1. Union County's contractor will manage the disposal of, and pay all fees associated with, any material identified for off-site disposal consistent with this section.

3.4.3 Potential Environmental Concerns, Unsuitable Backfill

If field observations and screening indicate a current or historical release or discharge related to operations adjacent to Conrail's tracks, the material will be staged on plastic and covered by plastic and surrounded by hay bales or stored in covered roll-off boxes pending classification for off-site recycling or disposal at a New Jersey Department of Environmental Protection (NJDEP)-approved facility or a United States Environmental Protection Agency (USEPA)-approved facility, if the former is inapplicable. The use of a lined roll-off box or direct load into a truck for off-site transport will be field determined in conjunction with Conrail's Project Engineer based on site access and the volume of the material excavated.

The NJDEP Hotline and Conrail will immediately be notified. The Company will retain a qualified environmental firm to evaluate the nature and extent of such impacts in accordance with New Jersey regulations. With consideration of the safety guidelines outlined in Section 3.2 and standard work practices, the work will be completed, and the excavation will be backfilled with certified clean fill (see Section 3.7).

Union County's contractor will confer with Conrail regarding the appropriate manner for proceeding with remediation of the area of concern (AOC) in order to achieve applicable remediation standards and to ensure that Conrail is not adversely impacted by the selected remedy. Union County's contractor will manage the disposal of, and pay all fees associated with, any material identified for off-site disposal consistent with this section.

3.5 Construction Dewatering/Water Management

Groundwater infiltrating into the planned excavations will be field screened by Union County's contractor during construction dewatering. Dewatering by the County's contractor will in all cases comply with New Jersey's permitting requirements and may include surface discharge or discharge to groundwater consistent with such requirements. The County's contractor will secure all permits and assume responsibility for compliance. If field screening and observations indicate the water is suitable for discharge, it will be conveyed away from the excavation and discharged through a silt bag. The discharge area will include hay bales for energy dissipation. Consistent with BMPs, the water will be discharged along the easement in the Conrail ROW but will not be discharged onto the Conrail roadbed or track structure. The County's contractor will manage the discharged groundwater to prevent direct runoff into a water body or residential property.

If a sheen or petroleum product is observed on the water, or the water is otherwise impacted or has been in contact with impacted media, the County's contractor will use a vacuum truck or a pump hosed to a frac tank in the staging area, to dewater the excavation. The water removed from the excavation, and will be disposed at a permitted recycling facility. The County's contractor will be responsible for management and fees associated with water treatment and/ or disposal. Manifesting for off-site disposal of dewatering materials and the selection of the off-site disposal facility will be in accordance with the applicable provisions of Sections 3.4.3, hereof.

3.6 Conrail and NJDEP Notifications

In the event that environmental concerns are identified during the construction activities, the County will contact Conrail to confer on an appropriate course of action and path forward.

If through field screening and observation it appears that environmental concerns are a result of a release of petroleum to the environment by _____ or from the property of _____, or any discharge of hazardous substances related to the construction, operation and/or maintenance activities of _____, the NJDEP will be notified immediately.

3.7 Site Restoration and Backfill Requirements

Based on the field observations and screening, excavated material and/or clean certified fill material will be placed in the excavation and properly compacted to grade. In areas critical to the stability of Conrail structures backfill and compaction will be in accordance with Conrail's CE-8 Specifications (Section 5.1.2) with the exception that the existing excavated material may be used for fill in lieu of crushed stone. Stone or topsoil will be placed over the excavation to restore the area to the pre-work conditions. Areas outside of the Theoretical Railroad Embankment Line will be backfilled and compacted as follows: The backfill under, around, and to a point 6 inches above the top of the pipe or casing shall be of loose earth, free of clods or rocks, and shall be placed in mechanically compacted layers not to exceed 6 inches in thickness. Each succeeding layer, to a point 12 inches below the normal road surface, shall be placed in 6" layers, each layer being thoroughly compacted and watered if necessary. On graded dirt roads, the top 12 inches of backfill shall be well-graded crushed rock or gravel mix. If appropriate, seed and straw and/or seed mats will be placed over the work area to minimize erosion. Soil erosion and sediment control structures (i.e., silt fence) will be temporarily installed (and subsequently removed), as necessary to minimize soil erosion and stabilize the work zone during the restoration period.

A clean fill certification (See e.g. Appendix A) will be obtained from the supplier for imported fill material. Decontaminated or recycled soil will not be used on Conrail property.

3.8 Disposal

The County's contractor will, at its own cost, properly transport and dispose/recycle trash, debris, material unsuitable for re-use as fill or impacted soils or waste generated through the work or remediation of an AOC in accordance with the applicable provisions of this Plan. Properly licensed and permitted waste haulers will be used. All federal, state, and local rules and regulations will be adhered to including county solid waste flow control rules. The County's contractor will be responsible for obtaining all waste acceptance and approval for disposal, and will be the generator of record for all waste. The County's contractor will coordinate for the disposal of these materials, in accordance with Conrail's waste management program, through a designated Conrail

representative familiar with that program. The County shall use appropriately licensed disposal facilities, approved by Conrail, for off-site disposal. To the extent Conrail has an approved list of disposal facilities, it shall provide such list fourteen (14) days in advance of the commencement of excavation work.

In addition, the County's contractor will be responsible for performing the required waste sampling, and will obtain all the required paperwork for shipment of waste material including the bill-of-lading or manifest, except as provided for above. The County will provide Conrail copies of all waste characterization data and shipping records upon request.

3.9 NJDEP Permitting Authority

The County's contractor will be responsible for obtaining the necessary New Jersey Pollutant Discharge Elimination System (NJPDES) Discharge to Groundwater Permit-by Rule or Linden Roselle Sewerage Authority sanitary sewer discharge approval. In addition, the County's contractor will obtain all the required paperwork for shipment of waste material including the bill-of-lading or manifest and provide Conrail copies of all waste characterization data and shipping records upon request.

FIGURES

APPENDIX A

CLEAN FILL CERTIFICATION BOILERPLATE

CERTIFICATE OF CLEAN FILL

This certificate is being provided to document that the quality of the fill being used to backfill and/or cap the site meets applicable standards, does not contain extraneous debris or solid waste, does not contain free liquids, and is otherwise in compliance with the definition of Clean Fill in New Jersey's Management of Fill Policy. The signatory below further states that the fill provided does not consist of decontaminated or recycled material. The following information is related to the material being provided for the project in question.

Name of Material Supplier: _____

Relationship to the Source of the Fill: _____

Location Where Fill was Obtained:

Street: _____
Town: _____
State: _____
Lot: _____
Block: _____
County: _____

Brief History of the Source of the Fill:

_____
_____
_____
_____
_____
_____

"To the best of my knowledge and belief, the fill provided for this project is not contaminated pursuant to any applicable remediation standards."

Name: _____
Company: _____

APPENDIX D

NJDOT Major Access Permit

FORM MT-32X

ACCESS STREET INTERSECTION **(Local Aid Project)**
PERMIT NUMBER: S-28-N-7918-2016

The rights accorded and obligations imposed by this permit are binding upon all successors in interest in the lot(s) referenced below.

PERMITTOR: NEW JERSEY DEPARTMENT OF TRANSPORTATION

PERMITTEE:	Union County 2325 South Avenue Scotch Plains, NJ, 07076	PERMIT CATEGORY: PERMIT TYPE:	Minor Street Intersection

LOCATION: Westfield Ave. (Route 28)/Gordon St.
MUNICIPALITY: Roselle Park Borough COUNTY: Union
ROUTE: 28 SUFFIX : DIRECTION: EB MILEPOST: 23.61

Block/Lot: N/A

The Permittee is hereby granted the right to construct, maintain and use access connecting to the State highway system under the terms and conditions of this permit and attached plan, which is made a part hereof.

This permit addresses traffic which accesses the State highway system and is valid for the traffic volumes listed below, which are based upon the expected volumes. The actual volumes generated by this street may differ from those listed.

TRAFFIC VOLUMES:

PEAK HOUR VOLUME:	N/A AM	N/A PM	N/A WEEKEND
DAILY TRAFFIC VOLUME	N/A WEEKDAY		N/A WEEKEND

PERMIT CONDITIONS: Additional permit conditions are attached hereto and incorporated herein.

Permittee	9/26/19 Date	County Engineer Title

Approved By: _____ Date: 4/24/2020
PinakinTank

CONDITIONS

1 This Permit shall expire if;

a. the Permittee violates any permit condition.

b. the Permittee:

- changes the width of the street intersection by more than 5 feet during construction.
- changes the location of the street intersection by more than 10 feet during construction.
- changes the materials which comprise the street intersection.

c. work is not started within two years of the date this permit was issued unless stated otherwise in this permit. When the construction work under this permit is started within two years of the date of permit issuance but cannot be completed in the indicated time, the permit shall expire or the Permittee shall request an extension of time in writing from the appropriate Regional Maintenance Office and submit the required renewal fee in the form of a check or money order. The Department may approve one one-year extension.

2 The Permittee shall defend, indemnify, protect and save harmless the State and its agents, servants, and employees from and against any and all suits, claims, losses, demands, or damages of whatever kind or nature arising out of or claimed to arise out of, any negligent act, error, or omission of the Permittee, its agents, servants, and employees in the performance of the work covered by this permit.

3 The Permittee shall properly safeguard all work performed under this permit and when necessary, maintain sufficient warning lights, and Department approved signs and safety devices for the protection of the general public until all work has been completed.

4 There shall be no interference with structures on, over, or under the highway. Interference with drainage installations shall be avoided. The existing cross section and drainage of the highway shall not be disturbed. The longitudinal flow of water along the gutter line shall not be interrupted. The Permittee is responsible to make adequate provision for all transverse, lateral, and longitudinal drainage affected by construction.

5 The street intersection shall be constructed in accordance with locations, dimensions, and material shown on the attached plans.

6 There shall be no parking on unpaved portions of Department right of way.

7 Materials and workmanship used in construction within Department right of way shall be in accordance with the Department's Standard Specifications and are subject to inspection and approval of the Department. Where conditions warrant, the Department may assign an inspector to the project at the expense of the Permittee. The Department shall reserve the right to demand from the Permittee as a condition of this permit, a bond or certified check in an amount sufficient to guarantee or insure the proper maintenance or restoration of the area disturbed.

8 Any damages to Department traffic signal detection equipment or other electrical facilities will be repaired by the Department and the Permittee shall pay for the costs of the repairs.

9 The Permittee authorizes Department representatives to enter upon the street for the purpose of performing a site investigation. Furthermore, there are no objections in parking of a Department vehicle on the street, if necessary, while taking field measurements and other data.

10 Ground cover within Department right of way shall consist of topsoil, fertilizer, and seeding or topsoil and sodding. No shrubs, gravel, or railroad ties are permitted.

11 The Permittee shall remove all existing curb to the nearest expansion joint and replace it with new standard and depressed curb conforming to the approved plan. Curb, apron gutter or sidewalk shall be poured monolithically. Depressed curbing shall not be constructed as an integral part of concrete ramps. When transition from 8" to 6" curb face is required, this will be accomplished within not less than 10 feet, but not more than 20 ft., as field conditions permit, or as directed by the permit inspector. Curb, sidewalk, and other concrete facilities shall not be constructed within the Department right of way between November 1 and March 15.

12 This permit is issued in accordance with the State Highway Access Code, and is based upon the information submitted by Permittee. Any changes in traffic volumes, drainage, type of traffic or other operational aspects may cause this permit to expire, requiring a new permit to be issued based upon existing conditions. This permit is only for the use and purpose stated in the application and permit.

13 When proposed sidewalk is to be placed adjacent to areas that have 8" curb face, the transition of the sidewalk will be at the same rate as the transition from the 8" to 6"curb face, or as directed by the permit inspector. Sidewalk shall be Class B air entrained concrete, four inches thick, except at the driveway apron. This concrete shall be six inches thick on a properly prepared subbase and in accordance with Department specifications and the attached detail. Sidewalk disturbed by work related to this permit shall be replaced to match the adjacent existing sidewalk in width and color, and shall be Class B concrete at a minimum of four inches thick.

14 No additional surface water will be accepted on the Department right of way. Surface water shall continue to follow its existing flow pattern.

15 Excavations within the existing roadway or shoulder shall be sawcut on a line parallel to the curb prior to final restoration.

16 Existing cross slopes and gutter grades shall be maintained except where specifically approved to be changed.

17 All bituminous surfaces disturbed during the construction of curb shall be restored to original conditions or better.

18 In the event of a snow alert, the Permittee shall be required to take whatever steps are necessary to secure the traveled way for snow removal operations.

19 The Department may restrict the hours of work on or immediately adjacent to a State highway due to peak-hour traffic demands or other pertinent roadway operations. The Permittee shall not interfere with the normal flow of traffic, reduce the number of traffic lanes, or change any traffic pattern prior to 9:00 AM or beyond 3:30 PM on weekdays and all day on weekends and holidays. If work is performed during other than the normal weekday working day (8 am to 4:30 pm), the Permittee shall deposit sufficient funds with the Department to pay all costs for the time that is required to be spent on the job by the Department's Permit Inspector.

20 Competent uniformed traffic directors shall be employed at every location where equipment is working immediately adjacent to, or is entering, leaving, or crossing active traffic lanes. Traffic directors shall be utilized while all such conditions exist.

21 Access Points with radius curbing within an area which has existing or proposed sidewalks shall be constructed or reconstructed to provide ramps for the handicapped conforming the Department's standard detail.

22 The Permittee shall reimburse the Department for all costs incurred for the relocation and/or replacement of its utility lines and equipment.

23 All work shall be done to the satisfaction of the Department. No work in connection with this permit shall be started until the permit is effective. The Permittee shall notify the Department's Regional Permits Office at least 2 weeks prior to beginning any work authorized by this permit.

24 The Permittee shall provide sufficient advance warning signs, lights, cones, barricades, and other approved safety devices in accordance with "The Manual on Uniform Traffic Control Devices." Two-way traffic shall be maintained at all times. Not more than one-half of the State highway shall be occupied at any time. No portion of trench over 2 inches in depth shall be left open overnight, on weekends, or holiday. Any trench or excavation within 30 feet of the traveled way shall have escape ramps at 6:1 slope provided overnight. Uniformed trained traffic directors are to be provided, as required or requested by Department representatives.

25 The Department has no objection to the removal of the tree(s) as shown on the plans at the Permittee's cost and expense.

26 The Permittee will properly restore to the satisfaction of the Department any portion of the State highway which it may have disturbed, and will maintain it to the satisfaction of the Department from any settlement or depression resulting from this work for a period of one year after approval of such restoration by the Department. If settlement occurs during the one-year period of time the Department will require that the necessary restoration be made by the Permittee.

27 The Department will hold the Permittee responsible for a period of two years to guarantee the life of the trees which are encountered within the limits of construction. Any tree that is destroyed shall be replaced by type of species. The size of the tree will be determined by the Department landscape forces.

28 The Permittee is responsible for maintenance of the access point to the longitudinal gutterline of the State highway.

29 The Permittee shall maintain any drainage facilities outside the Department right of way.

30 The Permittee will not be permitted to store material or park equipment within Department right of way or within 30 feet of the edge of the traveled way except as necessary during actual working operations and then only by permission of the Permit Inspector. All work is subject to inspection by Department personnel to insure that adequate traffic protection devices are being used and are properly placed and maintained. If it is found that insufficient traffic protection is provided, the Permit Inspector will advise the Permittee of the deficiencies. If the deficiencies are not immediately corrected, the Permit Inspector will advise the Permittee that he is prohibited from further work within the Department's jurisdiction until such time as approved and adequate traffic protection is provided. Trenches shall not be left open overnight. Steel plating shall not be utilized between November 1st and April 30, inclusive. The Permittee shall contact all utilities for location and mark out.

31 All work shall conform to the plans on file with the Department (if discrepancies arise, this permit shall take precedence over plans). The Department plan review is only for the general conformance with the Department design and Access Code requirements. The Department is not responsible for errors, omissions, or the accuracy adequacy of the design, of dimensions, and elevations which shall be confirmed and correlated at the site. The Department through the approval of the permit, assumes no responsibility other than stated above and completeness and/or accuracy of the plans.

32 The work shall follow the applicable construction specifications set forth by the Department in the latest "Standard Specifications for Road and Bridge Construction", and the M.U.T.C.D. Construction signs, when not in use, shall be covered as specified in the Standard Specifications.

33 Any damage to any present highway facilities shall be repaired immediately and prior to continuing other work. Any mud or other material tracked or otherwise deposited on the roadway shall be removed daily or as ordered by the Inspector.

34 This permit is for only the street noted above. The Permittee is responsible for all traffic crossing the frontage of the street regardless of the origin or destination of the traffic. The Permittee agrees to comply with the rules and regulations of the New Jersey Department of Transportation as set forth in the State Highway Access Code, N.J.A.C. 16:47, and the conditions included on this permit. In addition, the Permittee understands N.J.S.A. 27:7-44.1 makes any violation of the provisions of this permit subject to a fine (not exceeding $100 per day) and civil action for the costs of prosecution as well as civil action for trespass to remove any access which does not meet these requirements. This permit is granted subject to the covenants, premises, terms and conditions set forth herein and made a part of this revocable permission or privilege. This permit cancels and supersedes any and all permits that may have been previously issued for this lot. This permit does not relieve the Permittee from obtaining necessary permits from other agencies or governments. All conditions of this permit are subject to modification by the Department to suit any unforeseen traffic and/or field conditions. When work authorized herein is not performed in

conformance with the required conditions of this permit, the Department may order the Permittee and his contractor to cease work and remove his equipment from Department right of way.

35 If, at any time after the date of issuance of this permit, the Commissioner, in his sole discretion, determines that public safety or highway efficiency warrants the installation of a traffic signal at any access point that is the subject of the permit, the Permittee shall allow the placement of any component associated with such a traffic signal on the lot to which this permit pertains. If any such components are placed on the subject lot, the Permittee shall maintain its roadway pavement and property in a manner conducive with the satisfactory operation of the components and the signal. Further, prior to the installation of any such signal, the Permittee shall enter into an agreement with the Department incorporating other conditions pertaining to the cost, installation, and maintenance.

36 The Permittee shall provide a bond or certified check to New Jersey Department of Transportation in the amount of $___N/A___ to guarantee or to insure proper maintenance or restoration of the area disturbed by the Permittee for a period of one year after the Department's acceptance of the construction. If it becomes necessary for Department forces or contractors to make such repairs, for any reason, the cost of such work shall be borne by the Permittee.

37 The issuance of this permit in no way constitutes permission to maintain the sign shown on the plans attached hereto, since said sign constitutes an illegal encroachment prohibited by N.J.S.A. 27:7-44.1 and N.J.S.A. 27:7A-12 et seq.

38 A certified check, money order, or bond, in the amount of $__N/A____, shall be secured in the name of the New Jersey Department of Transportation to guarantee that all work (including restoration) will be in accordance with Department specifications. The Restoration Guarantee will be released upon the Department's acceptance of the construction.

39 All utility poles shall be relocated behind the proposed curbline prior to the construction of new curb.

40 All traffic stripes to be removed or changed are to be removed by the grinding method only. Blacking out with paint is unacceptable.

41 If traffic is diverted from normal travel lanes during the hours of darkness, raised pavement markers within the limits of the diversion shall be deactivated.

42 The Permittee shall maintain the uninterrupted flow of traffic at all times and no operation which will interfere with traffic or restrict the available pavement width shall be performed. On roadway widths of 40 feet or greater, two lanes of traffic will be maintained at a minimum of 10 feet each. On roadway widths of less than 40 feet, when construction work necessitates the closing of one lane of traffic, thereby causing vehicles travelling in both directions to alternately use one lane, the Permittee shall insure that said vehicles will be delayed for a period not to exceed five minutes. The Permittee shall be responsible for maintaining approved construction warning signs in each direction of travel. All signs and other protective devices provided by the Permittee, unless otherwise directed by the permit inspector, shall comply with the requirements of the "Manual on

Uniform Traffic Control Devices for Streets and Highways", published by U.S.D.O.T, Federal Highway Administration. Competent uniformed traffic directors shall be employed at every location where the Permittee's equipment is working immediately adjacent to, where entering, leaving or crossing active traffic lanes. The traffic directors shall be employed continuously for the full time such conditions exist. Should it become necessary to leave a project unfinished, it shall be protected during the hours of darkness by flashing warning lights to be maintained by the Permittee at each location where it is necessary to warn oncoming traffic of any existing danger area. Lights shall also be used to define the edge of usable pavement throughout the construction area. In addition, standard barricades or drums shall be utilized as required. When battery operated flashing warning lights are used, they shall conform to Department Standard Specifications. Inspection and cleaning shall be conducted daily to provide for optimum efficiency. When work is in progress during hours of darkness, special traffic protection precautions shall be in effect as deemed necessary by the permit inspector. In substance, the Permittee shall provide special signs approved by the permit inspector with a legend warning motorists that night work is in progress, and such shall be displayed in conjunction with high intensity flashing warning lights. Special signs applying only to night time work shall be covered during the daytime hours.

43 If future traffic volumes could warrant installing a traffic signal at an access pointcovered by this permit and signalized spacing requirements cannot be met, the Department may, at such time as future traffic volumes are reached, close the left-turn access in accordance with N.J.A.C. 16:47-4.33(b).If an undivided highway becomes divided, the Department may at such time close the left-turn in accordance with N.J.A.C. 16:47-4.33(b).

44 Any proposed or relocated utilities within the State's R.O.W. will require separate utility permits. The Utility permits can be obtained from the Regional Maintenance Office.

45 The Permittee may perform maintenance and in-kind replacement of the street. Maintenance work may be done anytime within daylight hours as long as no interference to traffic is caused. No changes or alterations to street may be made at any time without permission from the Department. The Permittee shall be responsible for perpetual maintenance of curb and sidewalk and for landscape maintenance including irrigation, litter removal, weed control and mowing from edge of pavement to the right-of-way line.

46 This permit is not valid until the confirmation number obtained from the one call system is supplied to the Regional Permits Office in accordance with P.L. 1994, Chapter 118, Item #11 of the Underground Facility Protection Act.

47 Please address all correspondence and notifications to: New Jersey Department of Transportation Major Access Permits 1035 Parkway Avenue P.O. Box 600 Trenton, NJ 08625-0600

48 Adequate advance warning for motorists approaching the construction site is required at all times during access construction, in conformance with the "NJDOT Standard Roadway Construction/Traffic Control/Bridge Construction Details" and the "Manual on Uniform Traffic Control Devices for Streets and Highways". This may include the use of signs, flashers, barricades, drums, and flaggers.

49 The Permittee shall make a copy of this permit available for review at the construction site

50 The Department may revoke this permit; reconstruct, remove, or replace the access; and then issue a new permit, all without cost to the owner of the street.

51 The cost of construction work and material shall be entirely at the Permittee's expense. The Department will not share in any expense whatsoever or do any construction work pertaining to the street intersection.

The Following Additional Conditions have been established for this permit:

1. The following plans are hereby made part of this permit.
   The plans entitled "Replacement of Gordon Street Bridge over Out of Service Conrail Structure No. 2050150, Borough of Roselle, Borough of Roselle Park, Union County" prepared by Hardesty & Hanover.

2. This permit is not valid until the plans mentioned in 1. Above are approved by the Department.

3. All improvements shown on the plans for this project shall be completed in accordance with the provisions of this permit. Failure to comply with those provisions will cause this permit to expire and along with all rights granted by this permit.

4. If a lane along Route 28 has to be closed during construction, Traffic Operations North will have to be notified to determine the hours of lane closure.

5. Any proposed or relocated utilities within the Department ROW will require separate utility permits. These utility permits can be obtained from the Operation Permits Unit.

6. Before any work commences within the Department ROW, a pre-construction meeting is required with Operation Unit. The permittee shall contact Mr. Paul Menz of the Operation Permits Unit, telephone number (609) 963-1492, at least 2 weeks prior to the construction.

7. At the Permittee's expense, perform all engineering and inspections necessary and required to ensure the project is constructed in compliance with the plans and specifications. The construction engineering and inspection shall be performed by independent consultant staff, contracted by the Permittee, from consultant firms duly prequalified by the STATE for construction inspection services. Prequalification may be achieved through the STATE's Bureau of Professional Services Procurement. The Permittee also recognizes the STATE's right to inspect and test all materials and methods of construction on or over the STATE's ultimate right of way.

8. The Permittee is required to contact the Office of Traffic Signal & Safety Engineering in writing a minimum of four weeks prior to commencing work on the Route 28 traffic signals. Also, it is required that a traffic signal agreement delineating the maintenance and operation responsibilities with the traffic signal be signed and executed by all affected parties. This agreement shall be prepared by the Office of Traffic Signal & Safety Engineering.

9/26/19

DATE

SIGNATURE OF PERMITTEE

APPENDIX E

Additional Civil Rights Goal Requirements

ADVISORY NOTICE TO ALL BIDDERS

TOPIC: CIVIL RIGHTS GOAL REQUIREMENTS

Federal - Disadvantaged Business Enterprise (DBE) /

Emerging Small Business Enterprise (ESBE) and

State - Small Business Enterprise (SBE) Goals

The following guidance is provided to help insure your bid is not rejected for being non-responsive and/or not responsible due to State and Federal Civil Rights Goal Requirements.

If the project you will be bidding on has a Federal DBE / ESBE or State SBE Goal, please make note of the following:

- ✓ ***DBE/SBE/ESBE Utilization/Participation Plan and ALL Commitment Forms Must Be Submitted by all Bidders within Five (5) days after bid opening.***

- ✓ ***Be sure to include ALL required forms and documentation as follows:***

  - ***CR-266 "Schedule of DBE/ESBE/SBE Participation"***
  - ***CR-273 "Confirmation of DBE/ESBE/SBE Firm"***
  - ***CR-272 "DBE/ESBE/SBE Regular Dealer/Supplier Verification" – if applicable***
  - ***CR-274 "DBE/ESBE/SBE Trucking Verification" – if applicable***

- ✓ ***Make sure that all required forms are PROPERLY, ACCURATELY and FULLY COMPLETED***

Please note that the following, common errors can cause a bid to be rejected:

- Bidder fails to sign the CR-266;
- Bidder fails to submit ***COMPLETED*** and ***SIGNED*** CR-273 confirming agreement for each DBE/ESBE/SBE firm listed on the CR-266
- Not verifying and confirming the proper NAICS Code(s) in the NJUCP directory for the classification of work the DBE is certified for, and committed to perform;
- Bidder completes and signs the CR-273 for the DBE/ESBE/SBE subcontractor;
- Failing to identify the correct item numbers, work descriptions and NAICS codes on the CR-266 and CR-273;
- Bidder fails to submit a ***COMPLETED*** and ***SIGNED*** CR-272 (Dealer/Supplier Verification) and/or CR-274 (Trucking Verification) from each DBE/ESBE/SBE dealer/supplier or trucker listed on the CR-266 – when applicable;
- Item Numbers and Contract Amounts on CR-266 and CR-273 don't correspond or match;
- DBE/SBE subcontractor listed on the CR-266 is not in good standing (i.e., not currently certified as a DBE or registered as a SBE);
- Identifying SBE subcontractors on the CR-266 for a Federally funded, DBE goal project and vice-versa; and

- Failure to submit adequate documentation to support Good Faith Efforts (GFE) when the DBE/ESBE/SBE goal is not met.

If you have any questions or need clarification concerning the above forms, please contact the Division of Civil Rights/Affirmative Action's Contractor Compliance Unit at 609-963-2047 or by email at DOT-CR.Verifications@dot.nj.gov.

All serious bidders should submit DBE/ESBE/SBE Participation Plan/Commitment Forms. It is in the best interest of the New Jersey Department of Transportation as well as the contracting community.

NOTE: If the apparent low bidder fails to meet the DBE/ESBE/SBE Goal and does not provide adequate documentation of its Good Faith Efforts, the NJDOT may go to the next lowest and responsive and responsible bidder.

New Jersey Department of Transportation
Division of Civil Rights & Affirmative Action

Pathway to Civil Rights Compliance on Federally Assisted & State Funded Contracts
DBE/ESBE/SBE Confirmation/Verification Checklist

Checklist of Items to Address/Actions to Take

On contracts having a DBE, ESBE or SBE goal, as a condition of award, each bidder must demonstrate their commitment to utilize DBE, ESBE or SBE firms to meet the contract goal, or, if they fail to demonstrate a commitment to meet the goal, submit documented evidence of their good faith efforts to meet the goal. A bidder demonstrates their commitment through NJDOT's CR-266 – Schedule of DBE, ESBE or SBE Participation form.

Also, every DBE, ESBE or SBE firm being used to meet a contract goal, must confirm their intent to perform the kind and type of work that the bidder intends to utilize them for, if the bidder is awarded the contract.

A DBE, ESBE and SBE firm confirms intent to participate in the contract in the type and kind of work each bidder is committing them to perform via several of NJDOT's forms, specifically the: CR-273, and applicable CR-272 and CR-274 forms.

NOTE: Each DBE, ESBE or SBE firm must complete <u>all</u> portions of the confirmation/verification forms. Bidders/Prime Contractors are not permitted to complete <u>any</u> portion of the CR-273, CR-272 and CR-274 forms (including the contract name, dollar value or specific work items). Each form must be signed by the respective DBE, ESBE or SBE.

Every DBE, ESBE or SBE firm being used to meet a contract DBE, ESBE or SBE goal must complete the confirmation/verification forms, and return them to the bidder/contractor:

Form CR-273 – Confirmation of DBE/ESBE/SBE Firm

Each DBE, ESBE or SBE must complete the following:		
1.	Full Name and contact information of the DBE, ESBE or SBE Firm	☐
2.	Complete name of project	☐
3.	DP Number (to be provided by the Bidder)	☐
4.	Bidder's Name	☐
5.	Proposed Date that DBE, ESBE or SBE firm's Work	☐
6.	Proposed DBE, ESBE or SBE work items, specifically the Item(sequence) number and full item descriptions	☐
7.	Provide answers to the questions on the form.	☐
8.	Provide the title of the person signing the form.	☐
9	Sign & date the form, and include the name of the DBE, ESBE, SBE firm, where indicated.	☐

When a DBE, ESBE or SBE's role on the contract will be one of a regular dealer/supplier, in addition to completing a CR-273 form, the firm must complete a:

Form CR-272 – DBE/ESBE/SBE Regular Dealer/Supplier Verification

1.	Provide the project name and DP Number, if applicable	☐
2.	Provide name of Bidder/Prime Contractor	☐

Form CR-272 – DBE/ESBE/SBE Regular Dealer/Supplier Verification (continued)

3.	Provide name, address and phone number of the DBE, ESBE or SBE firm.	☐
4.	Provide an answer to each of the two questions.	☐
5.	Sign and date the form. Print the signatory's name and phone number.	☐
6.	Return the completed form to the bidder/contractor.	☐

When a DBE, ESBE or SBE's role on the contract will be one of a trucker/hauler, in addition to completing a CR-273 form, must complete a:

Form CR-274 – DBE, ESBE/SBE Trucking Verification

1.	Provide the complete project name and DP Number, if applicable.	☐
2.	Provide name, address, phone number and email of the bidder/contractor	☐
3.	Provide name, address and phone number of the DBE, ESBE or SBE trucking firm/hauler	☐
4.	Provide the specific bid items, item description, unit, unit price, quantity and total for each item the DBE, ESBE or SBE trucking firm/hauler will perform on the contract.	☐
5.	Indicate the total number of operational DBE, ESBE or SBE owned trucks to be used on the contract.	☐
5a	Provide the specific VIN number, year, make and model for each first tier DBE, ESBE or SBE owned trucks to be/being used on the contract.	☐
6.	If the first tier DBE, ESBE, SBE is supplementing their fleet, provide the VIN number, year, make and model for each truck that is supplementing the 1st tier DBE, ESBE or SBE trucker/hauler.	☐
7.	Indicate the total number of operational trucks to be **leased** from a DBE, ESBE or SBE.	☐
7a.	Submit copies of lease agreements for each trucking firm from which trucks are being leased.	☐
8.	Indicate the total number of operational trucks to be **leased** from a non-DBE, non-ESBE or non-SBE.	☐
8a.	Submit copies of lease agreements for each trucking firm from which trucks will be leased.	☐
9.	First tier DBE, ESBE or SBE is to print name, sign and date form.	☐

Note: Timely completion and submission of the forms to bidders is critical, as all bidders are required to submit them as part of their bid package.

New Jersey Department of Transportation
Division of Civil Rights & Affirmative Action

Pathway to Civil Rights Compliance on Federally Assisted & State Funded Contracts
Bidder Pre-Bid Checklist

Checklist of Items to Address/Actions to Take

On contracts having a DBE, ESBE or SBE goal, as a condition of award, all bidders must demonstrate their commitment of utilizing DBE, ESBE or SBE firms to meet the contract goal, or, if they fail to show a commitment to meet the goal, submit documented evidence of their good faith efforts to meet the goal. In addition, every DBE, ESBE or SBE firm being used to meet the goal, must confirm their intent to perform the kind and type of work on the project, if the bidder wins the award of the contract.

A bidder demonstrates their commitment through NJDOT's CR-266 – Schedule of DBE, ESBE or SBE Participation form.

NOTE: Only certified DBEs can be used to meet DBE goals. Both ESBEs and DBEs can be used to meet an ESBE goal. Only registered SBEs can be used to meet a SBE goal.

In order to avoid situations where a bid could be deemed as non-responsive, review the Advisory Notice to Bidders, and ensure the following:

CR-266 – Schedule of DBE, ESBE or SBE Participation

Federally Funded Contracts		
1.	On projects with DBE goals, make sure that each firm listed is a certified DBE, listed in the NJ UCP Directory, found at: https://njucp.dbesystem.com On projects with ESBE goals, make sure that each firm listed is a certified ESBE, listed in NJDOT's ESBE Directory, found at: https://www.nj.gov/transportation/business/civilrights/pdf/ESBEDirectory.pdf	☐
2.	Ensure each firm is certified in each specific NAICS (North American Industry Classification System) code for the type of work the DBE or ESBE will be performing on the contract. Check the NAICS codes listed for each DBE or ESBE firm. Visit the NAICS website, https://www.naics.com/search/ to search each code the DBE or ESBE is certified in to determine whether the type of work you want them to perform is listed under the specific code.	☐

State Funded Contracts		
1.	On projects with SBE goals, make sure that each firm listed is a registered SBE, listed in the NJSAVI Directory, found at: https://www20.state.nj.us/TYTR_SAVI/vendorSearch.jsp	☐
2.	Ensure each firm is registered to perform the for type of work the SBE will be performing on the contract. Search by Craft or Commodity Code.	☐

CR-266 Form – The Bidder is to complete the following for each firm the bidder lists on the form.		
3.	Indicate the correct classification for the type of role the firm will perform on the contract. i.e: Subcontractor, supplier, regular dealer, trucker/hauler, broker or manufacturer	☐
4.	Indicate whether the firm is a DBE, ESBE or SBE	☐
5.	List the firm's complete name, address, phone number and email as found in the corresponding directory.	☐

For each firm being listed on the CR-266 form (continued)		
6.	List the specific NAICS code(s) that the firm has that correspond to the firm's performance on the contract.	
7.	Describe the specific type of work each firm will be performing (i.e. supply of *XXX*; furnish & install *XXX*; hauling of *XXX*; manufacture *XXX*; Engineering drawings for *XXX*; etc.)	☐
8.	List each specific contract item (sequence number) and associated item description that the firm will perform on the contract	☐
9.	List the proposed subcontract dollar value. This should be the price that each bidder and the DBE, ESBE or SBE firm have mutually agreed upon for the DBE, ESBE or SBE's work on the contract. **NOTE: Once this is listed on the CR-266 and approved by NJDOT Civil Rights, there can be no revisions to this amount unless Civil Rights provides prior written approval.**	☐
10.	List the projected start and completion dates of the proposed DBE, ESBE or SBE's work on the contract.	☐
11.	List the Bidder's Name and bid amount.	☐
12.	List the complete formal project name, including DP number, as shown on plans.	☐
13.	Check the box indicating the type of goal set on the contract.	☐
14.	Sign and date the form.	☐

DBE, ESBE and SBE firms show confirmation of their intent to participate in the contract in the type and kind of work each bidder is committing them to perform via several of NJDOT's forms, specifically the: CR-273 and applicable CR-272 and CR-274. Bidders should provide these forms to each respective DBE, ESBE or SBE firm, and request the firm to complete and return them to the bidder.

NOTE: Each DBE, ESBE or SBE must complete <u>all</u> portions of the confirmation/verification forms. Bidders are not permitted to complete <u>any</u> portion (including the contract name, dollar value or specific work items). Each form must be signed by the respective DBE, ESBE or SBE.

1. **A CR-273 is needed for every firm a bidder lists on the CR-266.**
2. **In addition to the CR-273, a CR-272 is needed from every regular dealer/supplier the bidder lists on the CR-266.**
3. **In addition to the CR-273, a CR-274 form is needed from every trucker/hauler the bidder lists on the CR-266.**

If a bidder fails to demonstrate a commitment to meet the contract goal, they must submit documented evidence of good faith efforts they made to meet the goal.

All Civil Rights documentation is required either at time of bid, or within 5 days of bid opening, and is required to be submitted to: DOT-CR.Verifications@dot.nj.gov

All questions concerning NJDOT project lettings should be directed through BidX.

All questions for Locally Administered projects, should be directed to the Sponsor/Grantee.

New Jersey Department of Transportation
Division of Civil Rights & Affirmative Action

Pathway to Civil Rights Compliance on Federally Assisted & State Funded Contracts

Commercially Useful Function

Contractor's Checklist - Key Questions to Ask the DBE, ESBE or SBE

An element that can impact the ability of the prime contractor to meet its contract goal is commercially useful function (CUF). A prime contractor and NJDOT receive credit toward the goal (contract and overall) only when a DBE, ESBE or SBE working on a contract performs a CUF.

It is the prime contractor's responsibility to ensure the firm is performing a CUF.

A DBE, ESBE or SBE generally performs work on a contract either as a prime or subcontractor, a trucker, a regular dealer, a manufacturer or a service provider.

Each of these categories is evaluated differently when determining whether the firm has performed a CUF, there is one guiding principle that must be followed, the firm must be:

> ***"Responsible for execution of the work of the contract or a distinct element of the work…by actually performing, managing, and supervising the work involved."***

Key Factors to Analyze when Determining whether CUF is being performed:

- Evaluation of the amount of work subcontracted & whether it is consistent with normal industry practice
- Whether the amount the firm is paid under the contract is commensurate with the work that is actually being performed to be credited towards the goal
- With respect to materials, who negotiated the price of the material; who determined the quality & quantity, who ordered it, and who paid for it?
- Whether the firm's role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of participation.

Five Distinct Operations to Consider to Determine Whether CUF is Being Performed

1. **Management** – Schedule work operations; order equipment & materials; prepare & submit certified payrolls; hire and fire employees
2. **Workforce** – Keep a regular workforce; perform work with employees normally employed by and under DBE, ESBE or SBE control, and not the prime or affiliates. All work performed by workforce under DBE, ESBE or SBE control, with a **minimum** of 30% of the work performed by the DBE, ESBE or SBE's regular employees, or those hired by the DBE, ESBE or SBE for the project from a source such as a labor union.
3. **Equipment** – May lease specialized equipment from a contractor (excluding the prime & affiliates) if consistent with normal industry practice; the DBE, ESBE or SBE provides operator for non-specialized equipment, and is responsible for all payroll requirements.
4. **Materials** – When DBE, ESBE or SBE has a furnish and install contract, they must perform these four functions: negotiate price; determine quality & quantity of materials; order materials; pay for the materials themselves.
5. **Performance** – DBE, ESBE or SBE must be responsible for the performance, management and supervision of a distinct element of the work, in accordance with normal industry practice (except where such practices are inconsistent with the regulations).

New Jersey Department of Transportation
Division of Civil Rights & Affirmative Action

Pathway to Civil Rights Compliance on Federally Assisted & State Funded Contracts

Commercially Useful Function

Contractor's Checklist - Key Questions to Ask the DBE, ESBE or SBE

☐ Is there a written executed agreement for the firm to perform a distinct element of work?

Management:

☐ Who does your on-site representative report to?
☐ Has this individual ever shown up on any other contractor's payroll?
☐ Has your owner been present on the jobsite?

Workforce:

☐ Who prepares the firm's certified payroll?
☐ Who does your on-site representative contact for hiring, firing or to modify the contract due to site condition changes or change orders?
☐ Do the firm's employees appear on anyone else's payroll on this contract?

Equipment:

☐ Take note of the major self-propelled (engine) equipment used by the DBE, ESBE or SBE. Does the equipment belong to your firm? Is it owned or leased?
☐ If leased, is there an agreement identifying the terms and parties? Who signed the lease? (Is it the DBE, ESBE or SBE owner?)
☐ Does the equipment have the firm's markings or emblems?
☐ Is the equipment under the firm's direct supervision?
☐ Is the operator of the leased equipment an employee of the firm?
☐ If the equipment is leased, is the payment for the equipment deducted from the work performed?

Materials:

☐ Is the work to be performed by your firm "furnish and install" work?
☐ Who makes arrangements for delivery of materials?
☐ Who are the material invoices made out to?
☐ Who scheduled delivery of materials?
☐ In whose name are materials shipped?
☐ Who actually delivered the materials?
☐ Where specifically were the materials delivered to?

Performance:

☐ Do you have control over methods of work on your contract items?
☐ Do you actually schedule work activities, material deliveries and other related actions required for execution of your work?
☐ Will anyone other than your firm be performing any amount of work specified in your contract?
☐ If so, whom? Do you have an executed agreement with that person/firm?

Pathway to Civil Rights Compliance on Federally Assisted & State Funded Contracts

Commercially Useful Function

Contractor's Checklist - Key Questions to Ask the DBE, ESBE or SBE

Trucking:

- ☐ Do the trucks you use belong to you or your firm?
- ☐ Are you supplementing your fleet?
- ☐ If so, is/are the leased truck(s) from an established equipment leasing business open to the general public?
- ☐ If the trucks are leased, do you have a formal lease identifying the terms and parties?
- ☐ Do/does the leased truck(s) display your firm's name and identification number?
- ☐ Is there an approved subcontract? If so, who are the parties?
- ☐ Do you submit certified payrolls?

Regular Dealers:

- ☐ Are you an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question?
- ☐ Do you own, operate, or maintain a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business?
- ☐ What is the address of the store, warehouse or other establishment where the materials are located?
- ☐ Who is delivering the materials?
- ☐ Where will the materials be delivered to? What specific location/address?
- ☐ Will the trucks making the delivery belong to your firm?
- ☐ Are you supplementing your fleet?
- ☐ If so, is/are the leased truck(s) from an established equipment leasing business open to the general public?
- ☐ If the trucks are leased, do you have a formal lease identifying the terms and parties?
- ☐ Do/does the leased truck(s) display your firm's name and identification number?
- ☐ For dealers in bulk items such as petroleum products, steel, cement, gravel, stone, or asphalt, do you own and operate distribution equipment required for those products?
- ☐ Is the distribution equipment used to deliver the product, owned or leased, long term by your firm?
- ☐ For bulk items, where does the material come from? Do you have a distribution agreement?

Manufacturers:

- ☐ Is the business's primary function to manufacture construction products?
- ☐ Does the business stock the product altered for this project as a normal stock item?
- ☐ Do you control the quality of the materials?
- ☐ Do you purchase the raw material used in the plant?

COUNTY OF UNION

BOARD OF CHOSEN FREEHOLDERS

PLANS OF

REPLACEMENT OF GORDON STREET BRIDGE OVER
"OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

BRIDGE REPLACEMENT **PROJECT NO. 2011-051**

BOROUGH OF ROSELLE **UNION COUNTY**
BOROUGH OF ROSELLE PARK

SCALES AS INDICATED **DECEMBER 2020**

UTILITIES	
PUBLIC SERVICE ELECTRIC AND GAS- PSE&G	(GAS MAINS)
PUBLIC SERVICE ELECTRIC AND GAS- PSE&G	(POLES, AERIAL LINES, CONDUIT)
VERIZON - NEW JERSEY, INC.	(POLES, AERIAL LINES, CONDUIT)
COMCAST CABLE	(POLES, AERIAL LINES)
ZAYO GROUP	(FIBEROPTIC)
UNITED WATER NEW JERSEY	(WATER MAINS)
BOROUGH OF ROSELLE PARK	(SEWER MAINS)
NEW JERSEY DEPARTMENT OF TRANSPORTATION- NJDOT	(TRAFFIC SIGNAL)
CONSOLIDATED RAIL CORPORATION- CONRAIL	

STRUCTURES IN THIS CONTRACT		
NO.	DESCRIPTION	STRUCTURE NO.
1	GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL	2050-150

WALLS IN THIS CONTRACT	
NO.	DESCRIPTION
2	SOUTHEAST RET. WALL AT GORDON ST. NB
3	NORTHEAST RET. WALL AT GORDON ST. NB
4	SOUTHEAST RET. WALL AT GORDON ST. SB
5	NORTHEAST RET. WALL AT GORDON ST. SB

DESIGN TRAFFIC DATA - GORDON ST.		
A.D.T. (2015) - 2 WAY	=	12,107
A.D.T. (2035) - 2 WAY	=	14,773
D.H.V. (2035) - 2 WAY	=	x,xxx
D	=	50/50%
T	=	2%
V (DESIGN)	=	30 M.P.H.

811 Know what's below. Call 811 before you dig.

"CHANGES MADE TO THESE PLANS SINCE SIGNATURE BY THE CONSULTANT MAY BE DETERMINED BY COMPARISON OF THE PLANS FILED AT THE DEPARTMENT WITH THOSE FILED AT THE OFFICE OF THE CONSULTANT."

HARDESTY & HANOVER, LLC

CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.

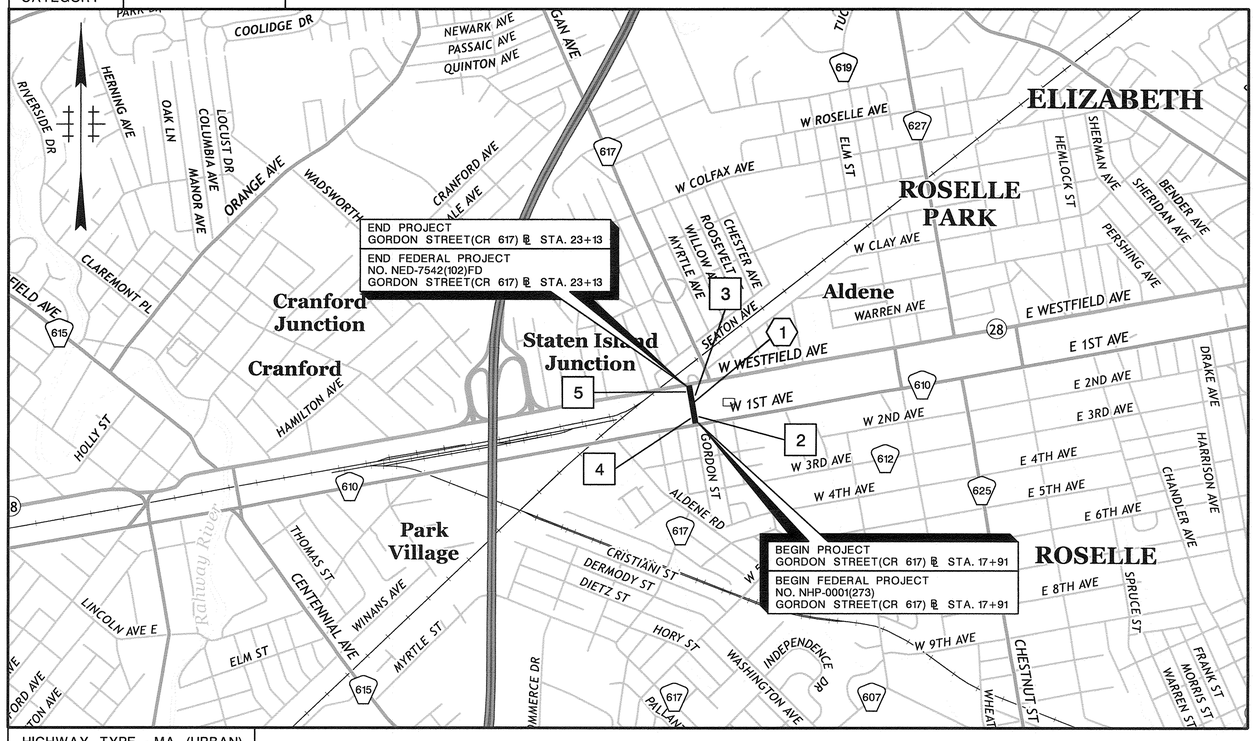
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover engineering that moves you
Mount Laurel, NJ

10/27/2020 KEY_2893.dgn

PROJECT CATEGORY	NON-NHS (STP)



HIGHWAY TYPE - MA (URBAN)

KEY MAP

1000' 0 1000' 2000'

SCALE IN FEET
1" = 1000'

NJDOT PERMIT NO. S-28-N-7918-2016
M.P. 23.61 & 26.66

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	KEY MAP
2-3	ESTIMATE - DISTRIBUTION OF QUANTITIES
4-5	TYPICAL SECTIONS
6-7	CONSTRUCTION PLANS
8-9	SOIL EROSION & SEDIMENT CONTROL PLAN
10-11	ENVIRONMENTAL PLAN
12	DRAINAGE AND UTILITY PLANS
13-14	UTILITY CONSTRUCTION PLAN
15	PROFILES
16	TIES
17	GRADES
18-23	TRAFFIC CONTROL AND STAGING PLANS
24-30	ELECTRICAL PLANS / DETAILS / REMOVAL
31-32	TRAFFIC SIGNAL PLANS
33	HIGHWAY LIGHTING PLANS /DETAILS
34-35	TRAFFIC SIGNING AND STRIPING PLANS
36	SIGN TEXT DETAILS
37	METHOD OF CROSS SECTIONS
38-41	CROSS SECTIONS
42-44	CONSTRUCTION DETAILS
45	KEY PLAN TO STRUCTURES
46	ESTIMATE OF QUANTITIES - STRUCTURES
47-85	BRIDGE PLANS

STANDARD ROADWAY CONSTRUCTION – TRAFFIC CONTROL – BRIDGE CONSTRUCTION DETAILS BOOKLET 2016, AND STANDARD ELECTRICAL DETAILS BOOKLET, 2007, ARE APPLICABLE TO THIS PROJECT EXCEPT FOR THOSE DETAILS CONTAINED HEREIN.

MID-POINT OF PROJECT
LATITUDE: 40° 39' 32" N
LONGITUDE: 74° 16' 37" W

Recommended for Approval — 2/18/2020 Date
CARL P. O'BRIEN, P.E., Engineer Roselle

Approved — 2/13/2020 Date
CHRISTINE DANSEREAU, Mayor Roselle

Recommended for Approval — 2/10/2020 Date
THOMAS R. SOLFARO, P.E., Engineer Roselle Park

Approved — 2/13/20 Date
JOSEPH SIENKIEWICZ, III, Mayor Roselle Park

Recommended for Approval — 2/28/2020 Date
THOMAS O. MINEO, P.E., County of Union Engineer

Approved — 3/12/2020 Date
EDWARD T. OATMAN, County Manager

TOTAL LENGTH OF THE PROJECT = 522 LIN. FT. OR 0.10 MILES

2007 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION TO GOVERN

SEQ. NO.	ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY	PLAN SHEET TOTALS	IF AND WHERE DIRECTED	AS–BUILT QUANTITY	STATE QUANTITY	DISTRIBUTION: PLAN SHEET QUANTITY
1	151006M	PERFORMANCE BOND AND PAYMENT BOND	DOLL	DOLL					
2	152004P	OWNER'S AND CONTRACTOR'S PROTECTIVE LIABILITY INSURANCE	DOLL	DOLL					
3	152012P	RAILROAD PROTECTIVE LIABILITY INSURANCE	DOLL	DOLL					
4	152015P	POLLUTION LIABILITY INSURANCE	DOLL	DOLL					
5	153003P	PROGRESS SCHEDULE	LS	LUMP SUM		LUMP SUM			
6	153005M	PROGRESS SCHEDULE UPDATE	U	21		21			
7	154003P	MOBILIZATION	LS	LUMP SUM		LUMP SUM			
8	155003M	FIELD OFFICE TYPE A SET UP	U	1		1			
9	155021M	FIELD OFFICE TYPE A MAINTENANCE	MO	26		26			
10	157004M	CONSTRUCTION LAYOUT	DOLL	DOLL					
11	157006M	MONUMENT	U	5	5				C–2 5
12	158006M	SILT FENCE	LF	1,403	1,002	401			EP–2 1002
13	158015M	HAYBALE	U	25		25			
14	158030M	INLET FILTER TYPE 2, 2' X 4'	U	6	6				EP–2 6
15	158060M	CONSTRUCTION DRIVEWAY	T	170	162	8			EP–2 162
16	158063P	CONCRETE WASHOUT SYSTEM	LS	LUMP SUM		LUMP SUM			
17	158072M	OIL ONLY EMERGENCY SPILL KIT, TYPE 1	U	2		2			
18	158084M	EROSION CONTROL SEDIMENT REMOVAL	CY	166		166			
19	158089M	PREFABRICATED DRAINAGE COMPOSITE	SY	893	893				B–11 97 B–16 189 B–17 132 B–18 104 B–20 59 B–21 253 B–22 59
20	159003M	BREAKAWAY BARRICADE	U	50		50			
21	159006M	DRUM	U	130		130			
22	159009M	TRAFFIC CONE	U	33		33			
23	159012M	CONSTRUCTION SIGNS	SF	907		907			
24	159015M	CONSTRUCTION IDENTIFICATION SIGN, 4' X 8'	U	2		2			
25	159027M	FLASHING ARROW BOARD, 4' X 8'	U	3		3			
26	159030M	PORTABLE VARIABLE MESSAGE SIGN	U	2		2			
27	159141M	TRAFFIC DIRECTOR, FLAGGER	HOUR	500		500			
28	160004M	FUEL PRICE ADJUSTMENT	DOLL	DOLL					
29	160007M	ASPHALT PRICE ADJUSTMENT	DOLL	DOLL					
30	161003P	FINAL CLEANUP	LS	LUMP SUM		LUMP SUM			
31	162006P	VIBRATION AND MOVEMENT MONITORING	DOLL	DOLL					
32	201003P	CLEARING SITE	LS	LUMP SUM		LUMP SUM			
33	202015P	EXCAVATION, REGULATED MATERIAL	CY	10,476	9,523	953			C–2 258 X–4 7618 B–11 550 B–16 335 B–22 240 B–26 510 B–40 12
34	202021P	REMOVAL OF PAVEMENT	SY	1,529	1,529				C–2 1529
35	202024M	DISPOSAL OF REGULATED MATERIAL	T	5,833	5,302	531			X–4 5302
36	202027M	DISPOSAL OF REGULATED MATERIAL, HAZARDOUS	T	141	128	13			X–4 128
37	202030M	SOIL SAMPLING AND ANALYSES, REGULATED	U	4		4			
38	203009P	I–9 SOIL AGGREGATE	CY	1,817	1,817				B–11 206 B–16 492 B–17 241 B–18 189 B–20 105 B–21 472 B–22 112
39	203040M	GEOTEXTILE	SY	841	841				B–11 84 B–16 142 B–17 142 B–18 103 B–20 63 B–21 249 B–22 58
40	203041P	GEOTEXTILE, ROADWAY STABILIZATION	SY	2,023	1,882	141			C–2 1354 EP–2 528
41	301006P	SUBBASE (DESIGNATION I–3)	CY	62	62				B–11 21 B–16 21 B–40 20
42	302042P	DENSE–GRADED AGGREGATE BASE COURSE, 8" THICK	SY	1,544	1,403	141			C–2 1403
43	302060P	COARSE AGGREGATE, SIZE NO. 57	CY	359	359				B–11 36 B–16 47 B–17 49 B–18 42 B–20 26 B–21 88 B–22 19 B–26 36 B–40 16
44	401009P	HMA MILLING, 3" OR LESS	SY	5,289	5,289				C–2 5289
45	401027M	POLYMERIZED JOINT ADHESIVE	LF	600		600			
46	401030M	TACK COAT	GAL	670		670			
47	401036M	PRIME COAT	GAL	360		360			
48	401042M	HOT MIX ASPHALT 9.5 M 64 SURFACE COURSE	T	251	251				C–2 251
49	401049M	HOT MIX ASPHALT 9.5 M E SURFACE COURSE	T	445	404	41			C–2 404
50	401066M	HOT MIX ASPHALT 9.5 M 64 INTERMEDIATE COURSE	T	249	249				C–2 249
51	401079M	HOT MIX ASPHALT 12.5 M E INTERMEDIATE COURSE	T	591	537	54			C–2 537
52	401108M	CORE SAMPLES, HOT MIX ASPHALT	U	5		5			
53	601122P	15" REINFORCED CONCRETE PIPE	LF	60	60				DU–1 60
54	601404P	SUBBASE OUTLET DRAIN	LF	148	148				B–19 148
55	601668M	CLEANING EXISTING PIPE, 10" DIAMETER	LF	132	132				DU–1 132
56	601670M	CLEANING EXISTING PIPE, 12" TO 24" DIAMETER	LF	210	210				DU–1 210
57	601681M	18" DUCTILE IRON PIPE	LF	4	4				DU–1 4
58	602012M	INLET, TYPE B	U	1	1				DU–1 1
59	602018M	INLET, TYPE E	U	1	1				DU–1 1
60	602039M	INLET, TYPE E–2	U	1	1				DU–1 1
61	602105M	SET INLET TYPE B, CASTING	U	3	3				DU–1 3
62	602153M	RECONSTRUCTED INLET, TYPE B, USING NEW CASTING	U	1	1				DU–1 1
63	605039P	CHAIN–LINK FENCE, 4' HIGH	LF	146	146				C–2 146
64	605045P	CHAIN–LINK FENCE, 6' HIGH	LF	411	411				C–2 411
65	605141M	GATE, CHAIN–LINK FENCE, 6' WIDE	U	2	2				C–2 2
66	605193P	HANDRAIL	LF	20	20				C–2 20
67	605212P	RESET FENCE	LF	15	15				C–2 15
68	606012P	CONCRETE SIDEWALK, 4" THICK	SY	411	411				C–2 407 E–1 2 E–3 2
69	606028P	RESET PRECAST CONCRETE PAVERS	SY	9	9				C–2 9
70	606075P	CONCRETE ISLAND, 4" THICK	SY	39	39				C–2 39
71	606084P	DETECTABLE WARNING SURFACE	SY	31	31				C–2 31
72	606109P	CONCRETE STEPS, REINFORCED	SY	6	6				C–2 6
73	607017P	CONCRETE CURB (TYPE 1)	LF	372	372				C–2 372
74	607021P	9" X 18" CONCRETE VERTICAL CURB	LF	875	875				C–2 875
75	607034P	9" X 14" CONCRETE VERTICAL CURB	LF	79	79				C–2 79
76	608003P	NONVEGETATIVE SURFACE, HOT MIX ASPHALT	SY	115	115				C–2 115
77	609003M	BEAM GUIDE RAIL	LF	105	105				C–2 105
78	609027M	TANGENT GUIDE RAIL TERMINAL	U	1	1				C–2 1
79	609039M	BEAM GUIDE RAIL ANCHORAGE	U	2	2				C–2 2
80	609042M	BEAM GUIDE RAIL POST	U	3	3				C–2 3
81	609058M	APPROACH GUIDE RAIL TRANSITION TL–2	U	3	3				C–2 3
82	609075M	REMOVAL OF BEAM GUIDE RAIL	LF	643	643				C–2 643
83	610003M	TRAFFIC STRIPES, 4"	LF	2,900		2,900			
84	610009M	TRAFFIC MARKINGS	SF	300		300			
85	610014M	TRAFFIC MARKING LINES, 8"	LF	1,000		1,000			
86	610015M	RPM, BI–DIRECTIONAL, WHITE LENS	U	8		8			

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
Mount Laurel, NJ

Union County Division of Engineering

ESTIMATE-DISTRIBUTION OF QUANTITIES

PROJECT: REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

EDQ-1
EDQ-2

1/27/2020 EDQ1_2893.dgn

SEQ. NO.	ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY	PLAN SHEET TOTALS	IF AND WHERE DIRECTED	AS-BUILT QUANTITY	STATE QUANTITY	DISTRIBUTION: PLAN SHEET QUANTITY
87	610017M	TRAFFIC MARKING LINES, 24"	LF	1,100		1,100			
88	610018M	RPM, MONO-DIRECTIONAL, AMBER LENS	U	8		8			
89	610021M	RPM, BI-DIRECTIONAL, AMBER LENS	U	9		9			
90	610045M	BOLLARD	U	4		4			
91	611300M	CRASH CUSHION, COMPRESSIVE BARRIER, TYPE 2, WIDTH NARROW	U	1	1				C-2 1
92	612003P	REGULATORY AND WARNING SIGN	SF	340		340			
93	612033P	SPECIALIZED SIGN	U	2	2				EP-3 2
94	651255M	RESET WATER VALVE BOX	U	1	1				DU-1 1
95	652432M	RESET MANHOLE, SANITARY SEWER, USING EXISTING CASTING	U	3	3				DU-1 3
96	654003P	ELECTRICAL CONDUIT	LF	294	294				DU-1 294
97	654004P	ELECTRICAL SERVICE	LS	LUMP SUM		LUMP SUM			
98	654007P	ELECTRICAL UTILITY RELOCATION	LS	LUMP SUM		LUMP SUM			
99	701015P	2" RIGID METALLIC CONDUIT	LF	720	720				DU1 320 E-1 70 E-3 140 B-4 78 B-5 112
100	701021P	3" RIGID METALLIC CONDUIT	LF	1,830	1,830				E-1 344 E-3 1486
101	701102M	18" X 36" JUNCTION BOX	U	20	20				DU-1 2 E-1 6 E-3 12
102	701123M	FOUNDATION, TYPE SFT	U	2	2				E-3 2
103	701132M	FOUNDATION, TYPE P-MC	U	2	2				E-1 1 E-3 1
104	701135M	FOUNDATION, TYPE SPF	U	2	2				E-1 1 E-3 1
105	701138M	FOUNDATION, TYPE STF	U	8	8				E-1 3 E-3 5
106	701144M	FOUNDATION, TYPE SFK	U	2	2				E-1 1 E-3 1
107	701171M	METER CABINET, TYPE TL	U	2	2				E-1 1 E-3 1
108	701192P	GROUND WIRE, NO. 8 AWG	LF	2,300	2,300				DU-1 400 E-1 344 E-3 1556
109	701201P	MULTIPLE LIGHTING WIRE, NO. 8 AWG	LF	2,500	2,500				E-1 510 E-3 1990
110	701213P	SERVICE WIRE, NO. 6 AWG	LF	552	552				E-1 261 E-3 291
111	701352P	TRANSFORMER REMOVAL	LS	LUMP SUM		LUMP SUM			
112	702009M	CONTROLLER, 8 PHASE	U	2	2				E-1 1 E-3 1
113	702012M	TRAFFIC SIGNAL STANDARD, ALUMINUM	U	4	4				E-1 1 E-3 3
114	702015M	TRAFFIC SIGNAL STANDARD, STEEL	U	8	8				E-1 3 E-3 5
115	702018M	PEDESTRIAN SIGNAL STANDARD	U	2	2				E-1 1 E-3 1
116	702021M	TRAFFIC SIGNAL MAST ARM, ALUMINUM	U	4	4				E-1 1 E-3 3
117	702024M	TRAFFIC SIGNAL MAST ARM, STEEL	U	8	8				E-1 3 E-3 5
118	702027P	TRAFFIC SIGNAL CABLE, 2 CONDUCTOR	LF	4,025	4,025				E-1 904 E-3 3121
119	702030P	TRAFFIC SIGNAL CABLE, 5 CONDUCTOR	LF	4,054	4,054				E-1 944 E-3 3110
120	702033P	TRAFFIC SIGNAL CABLE, 10 CONDUCTOR	LF	8,127	8,127				E-1 2259 E-3 5868
121	702036M	TRAFFIC SIGNAL HEAD	U	36	36				E-1 12 E-3 24
122	702038M	PUSH BUTTON INSTALLATION	U	6	6				E-1 2 E-3 4
123	702039M	PEDESTRIAN SIGNAL HEAD	U	16	16				E-1 6 E-3 10
124	702042M	PUSH BUTTON	U	16	16				E-1 6 E-3 10
125	702046M	RADAR DETECTOR	U	10	10				E-1 3 E-3 7
126	702054M	TEMPORARY TRAFFIC SIGNAL SYSTEM, LOCATION NO. 1	LS	LUMP SUM		LUMP SUM			1
127	702060M	CONTROLLER TURN-ON	U	2	2				E-1 1 E-3 1
128	702100M	UNINTERRUPTIBLE POWER SOURCE UNIT WITH CONTROLLER CABINET REVISIONS	U	2	2				1 E-3 1
129	703012M	LIGHTING MAST ARM ALUMINUM	U	1	1				E-3 1
130	703015M	LIGHTING MAST ARM STEEL	U	4	4				E-1 2 E-3 2
131	703018M	LUMINAIRE	U	6	6				E-1 2 E-3 4
132	802021M	TREE REMOVAL, OVER 6" TO 12" DIAMETER	U	3		3			
133	802024M	TREE REMOVAL, OVER 12" TO 18" DIAMETER	U	3		3			
134	802027M	TREE REMOVAL, OVER 18" TO 24" DIAMETER	U	3		3			
135	802030M	TREE REMOVAL, OVER 24" TO 30" DIAMETER	U	2		2			
136	802033M	TREE REMOVAL, OVER 30" TO 36" DIAMETER	U	1		1			
137	804006P	TOPSOILING, 4" THICK	SY	757	757				X-4 757
138	804015P	BORROW TOPSOIL	CY	67	67				X-4 67
139	806006P	FERTILIZING AND SEEDING, TYPE A-3	SY	757	757				X-4 757
140	806018P	FERTILIZING AND SEEDING, TYPE F	SY	76	76				X-4 76
141	809003M	STRAW MULCHING	SY	833	833				X-4 833

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Union County Division of Engineering

ESTIMATE-DISTRIBUTION OF QUANTITIES

PROJECT: REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

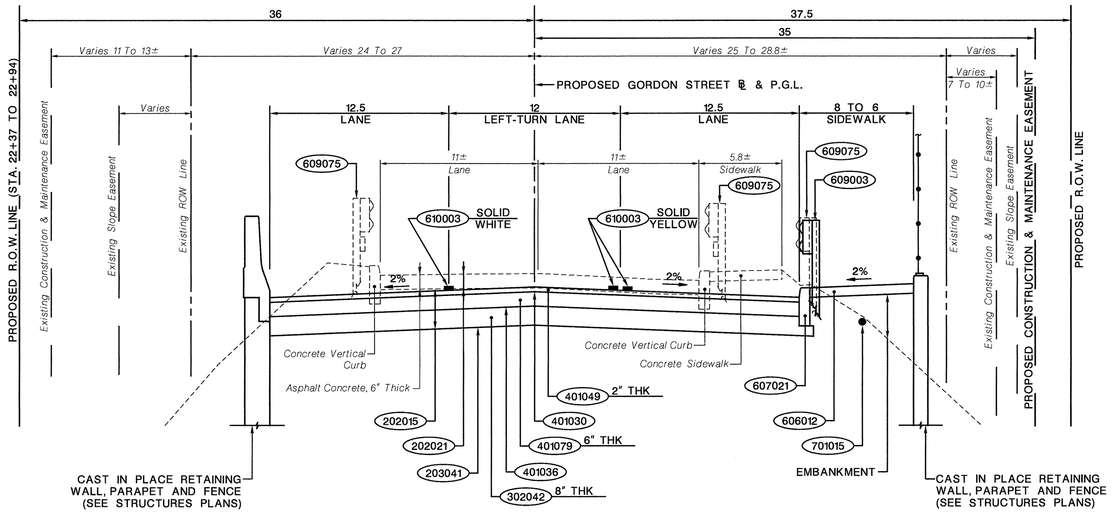
HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

EDQ-2
EDQ-2

1/27/2020 EDQ2_2893.dgn

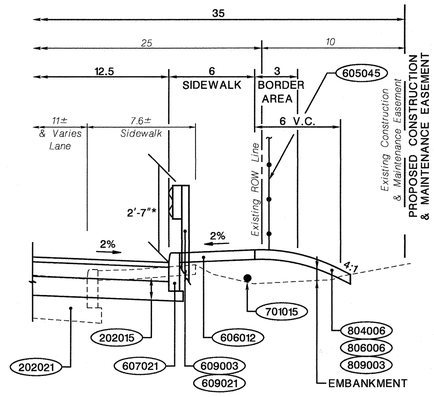
GENERAL NOTES:

1. SURVEY CONTROL: HORIZONTAL DATUM IS NAD83 AND VERTICAL DATUM IS NAVD88.
2. ALL CLEARING ITEMS (TREES, BRUSH, STUMPS, ETC.) SHALL BE REMOVED FROM PROJECT AND DISPOSED OF IN A LAWFUL MANNER.
3. ALL CONSTRUCTION DEBRIS (ASPHALT, CONCRETE, ETC.) SHALL BE REMOVED FROM PROJECT SITE PRIOR TO END OF EACH DAY'S WORK TO ELIMINATE ANY POTENTIAL HAZARDS. NO SEPARATE PAYMENT SHALL BE MADE FOR THIS REQUIREMENT.
4. THE CONTRACTOR SHALL PROPERLY BACKFILL AND COMPACT ALL TRENCHES, NO TRENCHES SHALL BE LEFT OPEN AFTER END OF A DAY'S WORK.
5. ALL CONCRETE CURB AND SIDEWALK DESIGNATED FOR REMOVAL SHALL BE TAKEN TO THE NEAREST JOINT AS NECESSARY, OR SAWCUT AS DIRECTED BY THE ENGINEER, TO CONSTRUCT PROPOSED IMPROVEMENTS.
6. INSPECTIONS OR FAILURES TO INSPECT ANY MATERIALS OR WORKMANSHIP BY MUNICIPAL, COUNTY OR STATE OFFICIALS SHALL IN NO WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES TO PERFORM THE WORK IN ACCORDANCE WITH APPLICABLE PLANS, SPECIFICATIONS AND LAWS.
7. THE CONTRACTOR SHALL BE REQUIRED TO COORDINATE HIS WORK WITH ANY AND ALL UTILITY COMPANIES AND/OR OTHER CONTRACTORS IN ORDER TO ELIMINATE ANY CONFLICTS AND/OR DELAYS. NO COMPENSATION WILL BE MADE FOR ANY DELAYS DUE TO COORDINATION DIFFICULTIES.
8. ALL RELOCATED UTILITY POLES MUST BE OFFSET A MINIMUM OF 18" FROM FACE OF CURB (EDGE OF PAVEMENT) TO FACE OF POLE.
9. ALL MANHOLE RIMS AND INLET GRATES WITHIN ROADWAY TO BE CONSTRUCTED OR RESET SHALL BE SET AT PROPOSED PAVEMENT GRADE AND CROSS SLOPE 24 HOURS PRIOR TO FINAL TOP COURSE PAVING.
10. ALL REINFORCED CONCRETE CULVERT PIPE SHALL BE CLASS III UNLESS OTHERWISE NOTED.
11. ALL STREET APPURTENANCES REMOVED WITHIN THE RIGHT-OF-WAY SHALL BE PLACED IN KIND.
12. THE CONTRACTOR SHALL ADHERE TO THE NJDOT STANDARD SPECIFICATIONS, 2007, INCLUDING ALL APPLICABLE AMENDMENTS FOR ALL PROPOSED ROADWAY CONSTRUCTION.
13. SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THESE PLANS AND THE COUNTY SOIL CONSERVATION DISTRICT.
14. ALL TIES SHOWN ON PLANS ARE TO SURVEY BASELINE.
15. ALL TRAFFIC CONTROL ITEMS SHALL BE PLACED IN ACCORDANCE WITH AND SHALL CONFORM TO STANDARD SPECIFICATION SECTION 159.
16. THE CONTRACTOR SHALL PREPARE A MAINTENANCE AND PROTECTION OF TRAFFIC PLAN WHICH SHALL BE SUBMITTED TO THE UNION COUNTY ENGINEER DEPARTMENT AND THE AFFECTED MUNICIPAL POLICE DEPARTMENTS FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK.
17. ALL SUBGRADE MATERIAL SHALL BE PREPARED AND COMPACTED IN ACCORDANCE WITH NJDOT SPECIFICATIONS AND THE TOWNSHIP ENGINEER.
18. UNLESS OTHERWISE NOTED, ALL INLET GRATE ELEVATIONS INCLUDE A 2" DEPRESSION IN THE PROPOSED GUTTER LINE PROFILE AND A 8" INLET CURB PIECE. SEE DETAIL "METHOD OF DEPRESSING INLETS AT SHOULDERS".



TYPICAL SECTION - GORDON STREET

GORDON STREET ℄ STA. 17+91 TO STA. 19+39
GORDON STREET ℄ STA. 19+99 TO STA. 21+46.50
GORDON STREET ℄ STA. 21+77.50 TO 23+13
(SEE BRIDGE PLANS FOR LIMITS OF BRIDGE APPROACH AND STRUCTURAL SLABS)



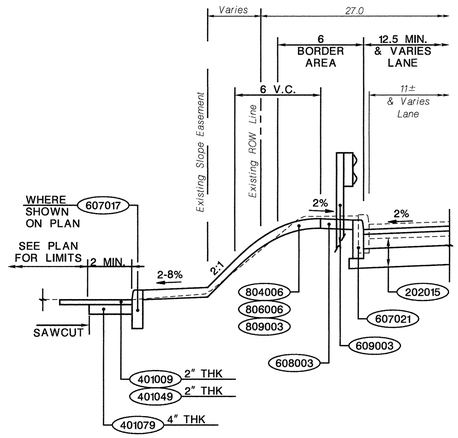
PARTIAL SECTION - GORDON STREET

GORDON STREET ℄ STA. 21+56± TO STA. 23+13

*GUIDE RAIL MOUNTING HEIGHT 2'-7", TYP.
SEE CD 609-8A FOR "LEAVE OUT" DIMENSIONS.

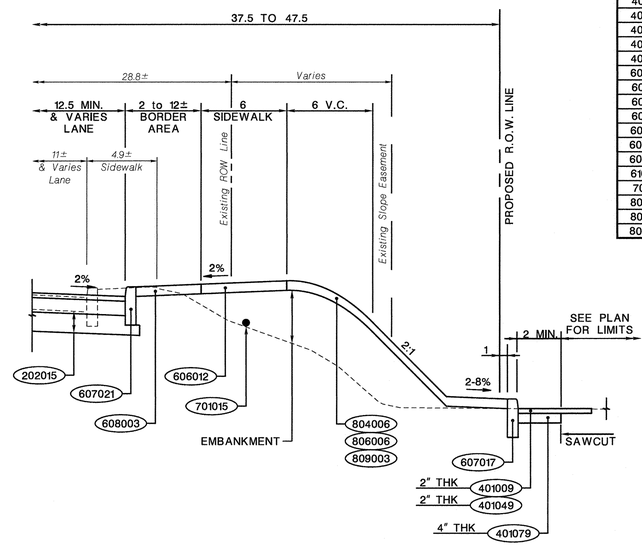
PROPOSED MATERIALS

ITEM NO.	DESCRIPTION
202015P	EXCAVATION, REGULATED MATERIAL
202021P	REMOVAL OF PAVEMENT
203041P	GEOTEXTILE, ROADWAY STABILIZATION
302042P	DENSE-GRADED AGGREGATE BASE COURSE, 8" THICK
401009P	HMA MILLING, 3" OR LESS
401030M	TACK COAT
401036M	PRIME COAT
401049M	HOT MIX ASPHALT 9.5 M E SURFACE COURSE
401079M	HOT MIX ASPHALT 12.5 M E INTERMEDIATE COURSE
605045P	CHAIN-LINK FENCE, 6' HIGH
606012P	CONCRETE SIDEWALK, 4" THICK
607017P	CONCRETE CURB (TYPE 1)
607021P	9" X 18" CONCRETE VERTICAL CURB
608003P	NONVEGETATIVE SURFACE, HOT MIX ASPHALT
609003M	BEAM GUIDE RAIL
609075M	REMOVAL OF BEAM GUIDE RAIL
610003M	TRAFFIC STRIPES, 4"
701015P	2" RIGID METALLIC CONDUIT
804006P	TOPSOILING, 4" THICK
806006P	FERTILIZING AND SEEDING, TYPE A-3
809003M	STRAW MULCHING



PARTIAL SECTION - GORDON STREET

GORDON STREET ℄ STA. 17+91 TO STA. 18+50



PARTIAL SECTION - GORDON STREET

GORDON STREET ℄ STA. 17+91 TO STA. 18+30

HORIZONTAL 5 0 5 10
1" = 5'

VERTICAL 2.5 0 2.5 5
1" = 2.5'
SCALE IN FEET

ALL DIMENSIONS SHOWN ARE IN FEET UNLESS OTHERWISE NOTED

TS-1 / TS-2

UNION COUNTY DIVISION OF ENGINEERING

TYPICAL SECTIONS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

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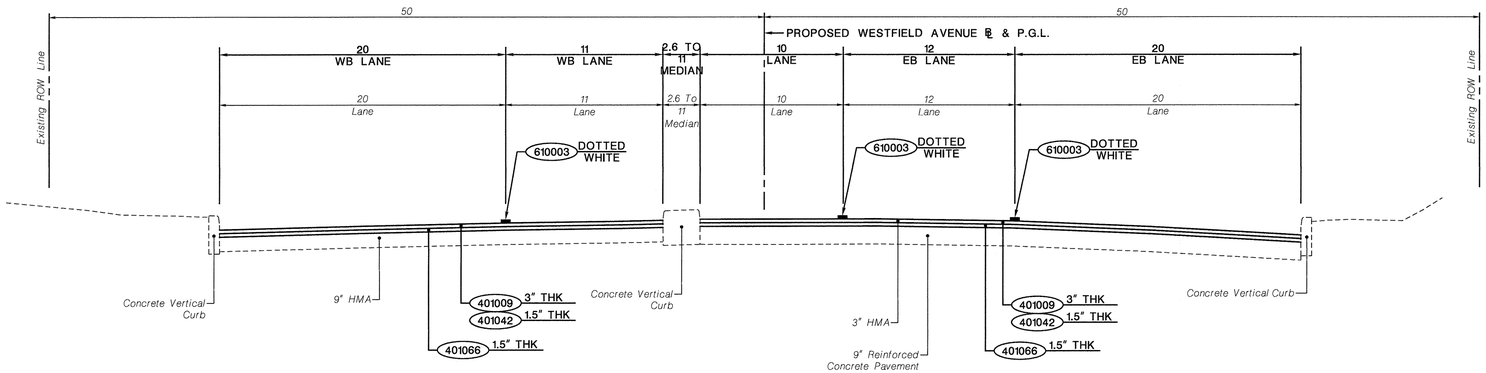

PROPOSED MATERIALS

ITEM NO.	DESCRIPTION
401009P	HMA MILLING, 3" OR LESS
401042M	HOT MIX ASPHALT 9.5 M 64 SURFACE COURSE
401066M	HOT MIX ASPHALT 9.5 M 64 INTERMEDIATE COURSE
610003M	TRAFFIC STRIPES, 4"

TYPICAL SECTION - WESTFIELD AVENUE (ROUTE 28)

WESTFIELD AVENUE (ROUTE 28) ℄ STA. 10+52 TO STA. 14+41

HORIZONTAL 5 0 5 10
1" = 5'

VERTICAL 2.5 0 2.5 5
1" = 2.5'
SCALE IN FEET

ALL DIMENSIONS SHOWN ARE IN FEET UNLESS OTHERWISE NOTED

TS-2 / TS-2

UNION COUNTY DIVISION OF ENGINEERING

TYPICAL SECTIONS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC

CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

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NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD LEGEND

Linear Features

Existing	PROPOSED	
W	W	Water Main (Size)
G	G	Gas Main (Size)
T	T	Telephone Conduit
E	E	Electric Conduit (Highway or Utility)
CTV	CTV	Cable TV
FO	FO	Fiber Optic
(Size & Type) (Over 30" - Draw to Size)	(SIZE & TYPE)	Sanitary Sewers or Storm Drains
		Pipe To Be Removed Or Abandoned
		Pavements (Concrete or Bituminous)
		Shoulders
		Curbs
(F), (C)	(C), (F)	Slopes (Cut & Fill)
5+00 ℄	℄ 10+00	Base Line
		Twp., City, County Lines
Existing R.O.W. Line	PROPOSED R.O.W. LINE	Right of Way Lines (Access Permitted)
Existing R.O.W. & No Access Line	PROP. R.O.W. & NO ACCESS LINE	Right of Way Lines (No Access)
		Easements
℄		Property Line
- x — x — x — x — x -		Fence (Size & Type)
		Reset Fence
		Beam Guide Rail
		Reset Beam Guide Rail
		Noise Walls
		Wetland Limit Line
		Silt Fence
Ditch	DITCH	Ditches
		Railroad Tracks
	PRESERVE EXISTING VEGETATION	
		Tree Line
		Mean High Water Line
tdl		Tidelands Line

Topographical Features

Existing	PROPOSED	
		Inlets (Label Type)
"ES"	"ES"	Inlets (Type ES)
		Manholes (Label Type or Utility)
		Reset (Inlets or Manholes)
		Reconstructed (Inlets or Manholes)
		Cast Iron Extension (Frame or Ring) (Inlet or Manhole)
		New Manhole Casting, Square Frame, Circular Cover
		R.C. End Section or C.M. Headwall
		Headwalls
		Headwalls & Aprons
WV		Water Gate Valves
		Reset Water Gate Valves
GV		Gas Gate Valves
		Reset Gas Gate Valves
Hyd.		Hydrants
		Reset Hydrants
		Utility Pole (Type & Number)
	TEMP	Temporary Utility Pole
TS	TS	Traffic Signal
J.B.	J.B.	Junction Box
Ⓕ	Ⓕ	Fiber Optic Junction Box
J.B. & Light		Junction Box Foundation
		Signs
		Vertical Panels
		Beam Guide Rail Anchorage's

Topographical Features

Existing	PROPOSED	
		Guide Rail Controlled Release Terminals
		Guide Rail Extruder Terminal
Mon.		Monuments
		ROW Monument (ROW Control Points)
	TEST PIT NUMBER	Test Pit
Boring Number	BORING NUMBER	Borings (Boring Number)
		Deciduous Tree (Size, Kind)
		Evergreen Tree (Size,Kind)
		Shrub
		Hedge
		Wetland

Double Reference Codes

EDQ	ESTIMATE AND DISTRIBUTION OF QUANTITIES - ROADWAY
TS	TYPICAL SECTIONS
PSI	PLAN SHEET INDEX
C	CONSTRUCTION PLANS
EP	ENVIRONMENTAL PLANS & SOIL EROSION & SEDIMENT CONTROL PLANS
DU	DRAINAGE AND UTILITY PLANS
UC	UTILITY CONSTRUCTION PLANS
P	PROFILES
T	TIES
G	GRADES
TC	TRAFFIC CONTROL AND STAGING PLANS
E	ELECTRICAL PLANS
ELD	ELECTRICAL DETAILS
ER	ELECTRICAL REMOVAL PLANS
TSP	TRAFFIC SIGNAL PLANS
HL	HIGHWAY LIGHTING PLANS
TSS	TRAFFIC SIGNING AND STRIPING PLANS
STD	SIGN TEXT DETAILS
MS	METHOD OF CROSS SECTIONS
X	CROSS SECTIONS
DTL	CONSTRUCTION DETAILS
EQB	ESTIMATE OF QUANTITIES - BRIDGE
B	BRIDGE PLANS

Miscellaneous Symbols

- Items With No Alternate
- Alternate Items OR — For Alternate Pipe Items (C) = Concrete (M) = Metal
- Milling
- Building to be Demolished
- Removal of Concrete Base Course & Concrete Surface Courses
- Building to be Removed & Paid for Under Clearing Site
- PARCEL — Demolition No. & Parcel No. of Building to be Demolished
- PROFILE / LEVEL LINE (+ % / - %)
- High Point
- Low Point
- B.M. — Bench Mark

GENERAL NOTES:

1. SEE SHEET TS-1 FOR GENERAL NOTES.

ABBREVIATIONS USED IN THIS CONTRACT

AH., BK.	AHEAD, BACK	INV.	INVERT	R	RADIUS
AUX.	AUXILIARY, AUXILIARY LANE	IP	IRON PIN	RCCP, R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE
℄, B.L.	BASELINE	J.B.	JUNCTION BOX	RCP, R.C.P.	REINFORCED CONCRETE PIPE
B.M.	BENCH MARK	LT., RT.	LEFT, RIGHT	RMC, R.M.C.	RIGID METALLIC CONDUIT
B.T.	BELL TELEPHONE	LOP, L.O.P.	LIMIT OF PAVEMENT (PAVING)	RNMC, R.N.M.C.	RIGID NON-METALLIC CONDUIT
BGRA	BEAM GUIDE RAIL ANCHORAGE	LOM, L.O.M.	LIMIT OF MILLING	ROW, R.O.W.	RIGHT OF WAY
BIT., BITUM.	BITUMINOUS	MB, M.B.	MAILBOX	R.R.	RAILROAD
BLDG.	BUILDING	M.P.	MILE POST	RTE., RT.	ROUTE
℄, C.L.	CENTERLINE	MAX. / MIN.	MAXIMUM / MINIMUM	SAN.	SANITARY
CAAP, C.A.A.P.	CORRUGATED ALUMINUM ALLOY PIPE	MEP, M.E.P.	MEET EXISTING PAVING	SDWK.	SIDEWALK
CIP, C.I.P. / DIP, D.I.P.	CAST IRON PIPE / DUCTILE IRON PIPE	MW, M.W.	MONITORING WELL	S.H.D.	STATE HIGHWAY DEPARTMENT
CMP, C.M.P.	CORRUGATED METAL PIPE	NO.	NUMBER	SHLD.	SHOULDER
CONC.	CONCRETE	N.T.S.	NOT TO SCALE	℄, S.L.	SURVEY LINE
CRT	CONTROLLED RELEASE TERMINAL	PAV'T. / E.O.P.	PAVEMENT / EDGE OF PAVEMENT	S.O.D.	SUBBASE OUTLET DRAIN
CT / DC	CURB TRANSITION / DEPRESSED CURB	PERF.	PERFORATED	STY.	STORY
CULV.	CULVERT	P.G.L.	PROFILE GRADE LINE	T	TANGENT
D, DIA.	DIAMETER	ℙ, P.L.	PROPERTY LINE, PROFILE LINE	TBA	TO BE ABANDONED
DWY	DRIVEWAY	PK	PARKER KAYLON MASONRY NAIL	TBR	TO BE REMOVED
EB, WB, NB, SB	EASTBOUND, WESTBOUND NORTHBOUND, SOUTHBOUND	POC, P.O.C.	POINT ON CURVE	TEL.	TELEPHONE
		POL, P.O.L.	POINT ON LINE	TEMP.	TEMPORARY
EL., ELEV.	ELEVATION	POT, P.O.T.	POINT ON TANGENT	TGRT	TELESCOPING GUIDE RAIL END TERMINAL
EXIST.	EXISTING	PRC, P.R.C.	POINT OF REVERSE CURVE	THK., TH.	THICK
GR, GR.	GRATE	PROP.	PROPOSED	TYP.	TYPICAL
GRET	GUIDE RAIL EXTRUDER TERMINAL	PT, P.T.	POINT OF TANGENCY	UD_, U.D._.	UNDERDRAIN (_- TYPE F OR X)
HC	A.D.A. COMPLIANT CURB RAMP	PVC, P.V.C.	POLYVINYL CHLORIDE PIPE, POINT OF VERTICAL CURVATURE	UP, U.P.	UTILITY POLE
HT.	HEIGHT			VAR.	VARIABLE, VARIES
HW, H.W.	HEADWALL	PVI, P.V.I.	POINT OF VERTICAL INTERSECTION	WM	WATER METER
HYD.	HYDRANT	PVT, P.V.T.	POINT OF VERTICAL TANGENCY, PAVEMENT	X-SECT	CROSS SECTION

ELECTRICAL PLAN ABBREIVIATIONS

CF	CUTOFF LUMINAIRE, TYPE _____
E	EXPRESSWAY LUMINAIRE
ID	IMAGE DETECTOR
IDC	IMAGE DETECTOR CABLE
JBF	JUNCTION BOX FOUNDATION
L	LUMINAIRE
LMA-A	LIGHTING MAST ARM, ALUMINUM
LMA-S	LIGHTING MAST ARM, STEEL
LSA	LIGHTING STANDARD, ALUMINUM
LSF	LIGHTING STANDARD, FIBERGLASS
LSS	LIGHTING STANDARD, STEEL
MAS	MAST ARM SIGN
MSC II	MEDIUM SEMI-CUTOFF LUMINAIRE, TYPE 2
MSC III	MEDIUM SEMI-CUTOFF LUMINAIRE, TYPE 3
PB	PUSH BUTTON
PSH	PEDESTRIAN SIGNAL HEAD
PSS	PEDESTRIAN SIGNAL STANDARD
TSH	TRAFFIC SIGNAL HEAD
TSMA-A	TRAFFIC SIGNAL MAST ARM, ALUMINUM
TSMA-S	TRAFFIC SIGNAL MAST ARM, STEEL
TSS-C	TRAFFIC SIGNAL STANDARD, ALUMINUM "C"
TSS-K	TRAFFIC SIGNAL STANDARD, ALUMINUM "K"
TSS-S	TRAFFIC SIGNAL STANDARD, STEEL
TSS-SC	TRAFFIC SIGNAL STANDARD, STEEL COMBINATION
TSS-T	TRAFFIC SIGNAL STANDARD, ALUMINUM "T"
UL-P	UNDERDECK LIGHTING, TYPE "P"
UL-W	UNDERDECK LIGHTING, TYPE "W"
V	VERTICAL LUMINAIRE

Proposed Bridge

Concrete Bridge Approach

N.J. Plane Coordinate System

North Arrow To Be Used On Standard Construction Sheets Where Bearings Refer To NJ. . Plane Coordinate System

N.T.S.

C-1 / C-2

UNION COUNTY DIVISION OF ENGINEERING

CONSTRUCTION PLANS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC

CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.

NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

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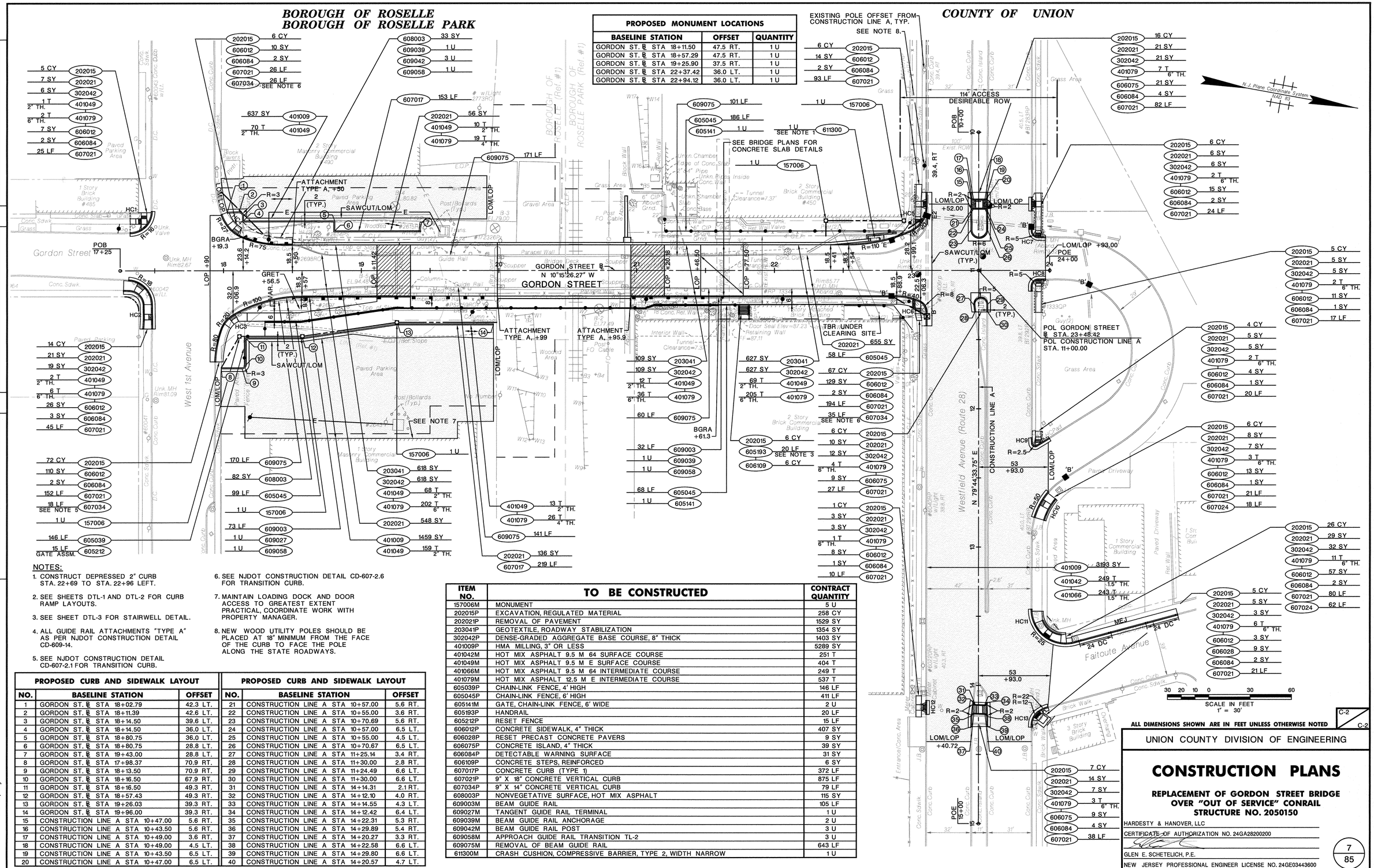

PROPOSED MONUMENT LOCATIONS		
BASELINE STATION	OFFSET	QUANTITY
GORDON ST. B STA 18+11.50	47.5 RT.	1 U
GORDON ST. B STA 18+57.29	47.5 RT.	1 U
GORDON ST. B STA 19+25.90	37.5 RT.	1 U
GORDON ST. B STA 22+37.42	36.0 LT.	1 U
GORDON ST. B STA 22+94.12	36.0 LT.	1 U

NOTES:

1. CONSTRUCT DEPRESSED 2" CURB STA. 22+69 TO STA. 22+96 LEFT.
2. SEE SHEETS DTL-1 AND DTL-2 FOR CURB RAMP LAYOUTS.
3. SEE SHEET DTL-3 FOR STAIRWELL DETAIL.
4. ALL GUIDE RAIL ATTACHMENTS "TYPE A" AS PER NJDOT CONSTRUCTION DETAIL CD-609-14.
5. SEE NJDOT CONSTRUCTION DETAIL CD-607-2.1 FOR TRANSITION CURB.
6. SEE NJDOT CONSTRUCTION DETAIL CD-607-2.6 FOR TRANSITION CURB.
7. MAINTAIN LOADING DOCK AND DOOR ACCESS TO GREATEST EXTENT PRACTICAL, COORDINATE WORK WITH PROPERTY MANAGER.
8. NEW WOOD UTILITY POLES SHOULD BE PLACED AT 18" MINIMUM FROM THE FACE OF THE CURB TO FACE THE POLE ALONG THE STATE ROADWAYS.

PROPOSED CURB AND SIDEWALK LAYOUT			PROPOSED CURB AND SIDEWALK LAYOUT		
NO.	BASELINE STATION	OFFSET	NO.	BASELINE STATION	OFFSET
1	GORDON ST. B STA 18+02.79	42.3 LT.	21	CONSTRUCTION LINE A STA 10+57.00	5.6 RT.
2	GORDON ST. B STA 18+11.39	42.6 LT.	22	CONSTRUCTION LINE A STA 10+55.00	3.6 RT.
3	GORDON ST. B STA 18+14.50	39.6 LT.	23	CONSTRUCTION LINE A STA 10+70.69	5.6 RT.
4	GORDON ST. B STA 18+14.50	36.0 LT.	24	CONSTRUCTION LINE A STA 10+57.00	6.5 LT.
5	GORDON ST. B STA 18+80.75	36.0 LT.	25	CONSTRUCTION LINE A STA 10+55.00	4.5 LT.
6	GORDON ST. B STA 18+80.75	28.8 LT.	26	CONSTRUCTION LINE A STA 10+70.67	6.5 LT.
7	GORDON ST. B STA 19+43.00	28.8 LT.	27	CONSTRUCTION LINE A STA 11+25.14	3.4 RT.
8	GORDON ST. B STA 17+98.37	70.9 RT.	28	CONSTRUCTION LINE A STA 11+30.00	2.8 RT.
9	GORDON ST. B STA 18+13.50	70.9 RT.	29	CONSTRUCTION LINE A STA 11+24.49	6.6 LT.
10	GORDON ST. B STA 18+16.50	67.9 RT.	30	CONSTRUCTION LINE A STA 11+30.00	6.6 LT.
11	GORDON ST. B STA 18+16.50	49.3 RT.	31	CONSTRUCTION LINE A STA 14+14.31	2.1 RT.
12	GORDON ST. B STA 18+57.43	49.3 RT.	32	CONSTRUCTION LINE A STA 14+12.10	4.0 RT.
13	GORDON ST. B STA 19+26.03	39.3 RT.	33	CONSTRUCTION LINE A STA 14+14.55	4.3 LT.
14	GORDON ST. B STA 19+96.00	39.3 RT.	34	CONSTRUCTION LINE A STA 14+12.42	6.4 LT.
15	CONSTRUCTION LINE A STA 10+47.00	5.6 RT.	35	CONSTRUCTION LINE A STA 14+22.31	5.3 RT.
16	CONSTRUCTION LINE A STA 10+43.50	5.6 RT.	36	CONSTRUCTION LINE A STA 14+29.89	5.4 RT.
17	CONSTRUCTION LINE A STA 10+49.00	3.6 RT.	37	CONSTRUCTION LINE A STA 14+20.27	3.3 RT.
18	CONSTRUCTION LINE A STA 10+49.00	4.5 LT.	38	CONSTRUCTION LINE A STA 14+22.58	6.6 LT.
19	CONSTRUCTION LINE A STA 10+43.50	6.5 LT.	39	CONSTRUCTION LINE A STA 14+29.80	6.6 LT.
20	CONSTRUCTION LINE A STA 10+47.00	6.5 LT.	40	CONSTRUCTION LINE A STA 14+20.57	4.7 LT.

ITEM NO.	TO BE CONSTRUCTED	CONTRACT QUANTITY
157006M	MONUMENT	5 U
202015P	EXCAVATION, REGULATED MATERIAL	258 CY
202021P	REMOVAL OF PAVEMENT	1529 SY
203041P	GEOTEXTILE, ROADWAY STABILIZATION	1354 SY
302042P	DENSE-GRADED AGGREGATE BASE COURSE, 8" THICK	1403 SY
401009P	HMA MILLING, 3" OR LESS	5289 SY
401042M	HOT MIX ASPHALT 9.5 M 64 SURFACE COURSE	251 T
401049M	HOT MIX ASPHALT 9.5 M E SURFACE COURSE	404 T
401066M	HOT MIX ASPHALT 9.5 M 64 INTERMEDIATE COURSE	249 T
401079M	HOT MIX ASPHALT 12.5 M E INTERMEDIATE COURSE	537 T
605039P	CHAIN-LINK FENCE, 4' HIGH	146 LF
605045P	CHAIN-LINK FENCE, 6' HIGH	411 LF
605141M	GATE, CHAIN-LINK FENCE, 6' WIDE	2 U
605193P	HANDRAIL	20 LF
605212P	RESET FENCE	15 LF
606012P	CONCRETE SIDEWALK, 4" THICK	407 SY
606028P	RESET PRECAST CONCRETE PAVERS	9 SY
606075P	CONCRETE ISLAND, 4" THICK	39 SY
606084P	DETECTABLE WARNING SURFACE	31 SY
606109P	CONCRETE STEPS, REINFORCED	6 SY
607017P	CONCRETE CURB (TYPE 1)	372 LF
607021P	9" X 18" CONCRETE VERTICAL CURB	875 LF
607034P	9" X 14" CONCRETE VERTICAL CURB	79 LF
608003P	NONVEGETATIVE SURFACE, HOT MIX ASPHALT	115 SY
609003M	BEAM GUIDE RAIL	105 LF
609027M	TANGENT GUIDE RAIL TERMINAL	1 U
609039M	BEAM GUIDE RAIL ANCHORAGE	2 U
609042M	BEAM GUIDE RAIL POST	3 U
609058M	APPROACH GUIDE RAIL TRANSITION TL-2	3 U
609075M	REMOVAL OF BEAM GUIDE RAIL	643 LF
611300M	CRASH CUSHION, COMPRESSIVE BARRIER, TYPE 2, WIDTH NARROW	1 U

ALL DIMENSIONS SHOWN ARE IN FEET UNLESS OTHERWISE NOTED

C-2 / C-2

UNION COUNTY DIVISION OF ENGINEERING

CONSTRUCTION PLANS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC

CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.

NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

7 / 85

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engineering that moves you
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8/6/2019 C2_2893.dgn

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. THE SOMERSET -UNION SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED IN WRITING 48 HOURS IN ADVANCE OF ANY LAND DISTURBING ACTIVITY.
2. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCES, OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
3. NEW JERSEY DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", 2007 AND CURRENT DETAILS WILL BE USED FOR THIS PROJECT. IF THERE IS A CONFLICT, THIS PLAN WILL GOVERN.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMEDIATING ANY EROSION OR SEDIMENT PROBLEMS THAT ARISE AS A RESULT OF ONGOING CONSTRUCTION AT THE REQUEST OF THE SOMERSET -UNION SOIL CONSERVATION DISTRICT.
5. ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN 30 DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF A TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF TWO (2) TONS PER ACRE, ACCORDING TO NJ STATE STANDARDS.
6. PERMANENT VEGETATION SHALL BE SEEDED OR SODDED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING. MULCH WILL BE USED FOR PROTECTION UNTIL SEEDING IS ESTABLISHED.
7. ALL WORK SHOWN ON THE CERTIFIED PLAN SHALL BE DONE IN ACCORDANCE WITH THE "NJ STATE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY".
8. A SUB- BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS IN ORDER TO STABILIZE STREETS, ROADS, DRIVEWAYS AND PARKING AREAS. IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUB- BASE SHALL BE INSTALLED WITHIN 15 DAYS OF PRELIMINARY GRADING.
9. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING ALL CRITICAL AREAS SUBJECT TO EROSION (I.E.: STEEP SLOPES, ROADWAY EMBANKMENTS) WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AT A RATE OF TWO (2) TONS PER ACRE, ACCORDING TO THE NJ STATE STANDARDS.
10. ANY STEEP SLOPES RECEIVING PIPELINE INSTALLATION WILL BE BACK FILLED AND STABILIZED DAILY, AS THE INSTALLATION PROCEEDS (I.E.: SLOPES GREATER THAT 3:1) .
11. STABILIZED CONSTRUCTION ACCESS WILL BE INSTALLED AT ALL CONSTRUCTION ACCESS POINTS, IMMEDIATELY AFTER INITIAL SITE DISTURBANCE. RUNOFF TO BE DIVERTED WAY FROM STABILIZED CONSTRUCTION ACCESS.
12. AT THE TIME WHEN THE SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS GOING TO BE ACCOMPLISHED, ANY SOIL THAT WILL NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROUND COVER, SHALL BE REMOVED OR TREATED IN SUCH A WAY THAT WILL PERMANENTLY ADJUST THE SOIL CONDITIONS AND RENDER IT SUITABLE FOR VEGETATIVE GROUND COVER. IF THE REMOVAL OR TREATMENT OF THE SOIL WILL NOT PROVIDE SUITABLE CONDITIONS, NON -VEGETATIVE MEANS OF PERMANENT GROUND STABILIZATION WILL HAVE TO BE EMPLOYED.
13. CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.
14. ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN WILL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE DISTRICT FOR RE -CERTIFICATION. THE REVISED PLANS MUST MEET ALL CURRENT SESC STANDARDS
15. THE SOMERSET -UNION SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED OF ANY CHANGES IN OWNERSHIP.
16. MULCHING TO THE NJ STANDARDS IS REQUIRED FOR OBTAINING A CONDITIONAL REPORT OF COMPLIANCE. CONDITIONALS ARE ONLY ISSUED WHEN THE SEASON PROHIBITS SEEDING.
17. CONTRACTOR IS RESPONSIBLE FOR KEEPING ALL ADJACENT ROADS CLEAN DURING LIFE OF CONSTRUCTION PROJECT.
18. HYDRO SEEDING IS A TWO- STEP PROCESS. THE FIRST STEP INCLUDES SEED, FERTILIZER, LIME, ETC. UPON COMPLETION OF SEEDING OPERATION, HYDROMULCH SHOULD BE APPLIED AT A RATE OF 1500 LBS. PER ACRE IN A SECOND STEP. THE USE OF HYDROMULCH, AS OPPOSED TO STRAW, IS LIMITED TO OPTIMUM SEEDING DATES AS LISTED IN THE NJ STANDARDS. FOR ALL SLOPES 3:1 OR GREATER HYDROMULCH WILL BE MECHANICALLY BONDED FIBER MATRIX ACCORDING TO NJDOT SPECIFICATIONS.
19. SOIL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE LEFT IN PLACE UNTIL THE AREAS THEY ARE PROTECTING BECOME STABILIZED.
20. CONTRACTOR WILL INSPECT AND MAINTAIN ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES ON A REGULAR BASIS AND AFTER EVERY STORM EVENT.
21. NJDOT SEED TYPE "A" WILL BE USED FOR PERMANENT SEEDING, AND TYPE "F" FOR TEMPORARY SEEDING.
22. FOR DEWATERING ACTIVITIES, CONTRACTOR WILL USE SILT BAGS INSTALLED IN A SEDIMENT FILTER AREA FOR DEEP OR RESTRICTED EXCAVATIONS. OTHERWISE USE SUMP PITS CONSTRUCTED AND OPERATED IN ACCORDANCE WITH THE SOIL EROSION AND SEDIMENT CONTROL STANDARDS IN AREAS TO BE DEWATERED. DEWATERING AREAS TO COMPLY WITH NJDOT STANDARDS AND PROJECT SPECIFICATIONS.
23. A COPY OF THE SOIL EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE PROJECT SITE DURING CONSTRUCTION.
24. ALL SOIL TO BE EXPOSED OR STOCKPILED FOR A PERIOD OF GREATER THAN 14 DAYS, AND NOT UNDER ACTIVE CONSTRUCTION, WILL BE TEMPORARILY SEEDED AND HAY MULCHED OR OTHERWISE PROVIDED WITH VEGETATIVE COVER. THIS TEMPORARY COVER SHALL BE MAINTAINED UNTIL SUCH TIME WHEREBY PERMANENT RESTABILIZATION IS ESTABLISHED. HOWEVER, PERMANENT EROSION CONTROL BALLASTED WITHIN THE RAILROAD RIGHT OF WAY DO NOT HAVE TO BE TOP SOILED OR MULCHED EXCEPT WETLAND AREAS TO BE RESTORED IN ACCORDANCE WITH WETLAND PERMITS.
25. DUST MUST BE CONTROLLED ON THE SITE IN ACCORDANCE WITH NJDOT SOIL EROSION AND SEDIMENT CONTROL STANDARDS.
26. CONTRACTOR WILL MINIMIZE EXPOSED SURFACES IN ACCORDANCE WITH STAGE CONSTRUCTION PLANS.
27. DURING THE COURSE OF CONSTRUCTION, SOIL COMPACTION MAY OCCUR WITHIN HAUL ROUTES, STAGING AREAS AND OTHER PROJECT AREAS. IN ACCORDANCE WITH THE STANDARD FOR TOPSOILING, COMPACTED SURFACES SHOULD BE SCARIFIED 6" TO 12" IMMEDIATELY PRIOR TO TOPSOIL APPLICATION. THIS WILL HELP ENSURE A GOOD BOND BETWEEN THE TOPSOIL AND SUBSOIL. THIS PRACTICE IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.).
28. THE CONTRACTOR MUST DESIGNATE A CONCRETE WASHOUT SYSTEM CONFORMING TO THE SPECIFICATIONS IF ANY CONCRETE IS TO BE PERFORMED ON THE SITE.

SOIL STABILIZATION COVER

1. FOR ALL AREAS TO BE SEEDED, CLEAR THE SURFACE OF THE EXISTING SOIL OF ALL STUMPS, BRUSH, WEEDS, STONES 2 INCHES OR LARGER IN ANY DIMENSION AND OTHER DEBRIS SUCH AS WIRES, CABLES, TREE ROOTS, PIECES OF CONCRETE, CLODS, AND LUMPS. CULTIVATE THE SOIL TO A DEPTH OF 3 TO 4 INCHES TO PREPARE A SEED BED FREE FROM ANY DEPRESSIONS THAT WOULD COLLECT WATER.
2. USE FERTILIZER THAT HAS A COMMERCIAL DESIGNATION OF 10-20-10, OR USE ANY 1-2-1 RATIO FERTILIZER CONTAINING A MINIMUM OF 5 PERCENT NITROGEN, 10 PERCENT AVAILABLE PHOSPHORIC ACID, AND 5 PERCENT SOLUBLE POTASH. TO BE APPLIED AT A RATE TO YIELD 30 LBS NITROGEN PER ACRE.
3. LIMESTONE SHALL BE APPLIED TO SOILS WITH PH BELOW 5.8 AT A RATE OF TOTAL OXIDES PER SOIL CLASS POUNDS PER ACRE SHOWN BELOW. LIMESTONE EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDES SHALL BE USED.

RECOMMENDED QUANTITIES OF TOTAL OXIDES PER SOIL CLASS (POUNDS PER ACRE)

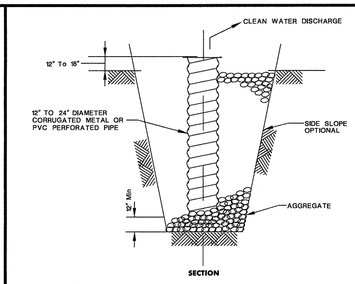
SOIL (PH)	LOAMY SAND	SANDY LOAM	LOAM	SILTY LOAM
5.7	300	600	900	1200
5.3 to 5.6	600	1035	1500	1800
4.9 to 5.2	900	1500	2100	2400
4.5 to 4.8	1200	1800	2700	3000
4.1 to 4.4	1500	2100	3300	3600

4. LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRINGTOOTH HARROW, OR OTHER SUITABLE EQUIPMENT.
5. MULCHING SHALL BE APPLIED AFTER SEEDING.
6. STRAW MULCH MATERIALS SHALL BE UNROTTED, SMALL GRAIN STRAW, HAY FREE OF SEEDS, OR SALT HAY TO BE APPLIED AT THE RATE OF 1½#2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 S.F.), EXCEPT THAT WHERE CRIMPER IS USED INSTEAD OF A LIQUID MULCH- BINDER (TACKIFYING OR ADHESIVE AGENT), THE RATE OF APPLICATION SHALL BE DOUBLED. MULCH SHALL BE SPREAD UNIFORMLY SO THAT APPROXIMATELY 75% TO 95% OF THE SOIL SURFACE WILL BE COVERED.
7. STRAW MULCH SHALL BE ANCHORED IMMEDIATELY AFTER PLACEMENT BY:
   - **A.** FIBER MULCH. APPLY FIBER MULCH AS RECOMMENDED BY THE MANUFACTURER BUT NOT LESS THAN 400 POUNDS OF THE DRY PRODUCT PER ACRE.
   - **B.** SYNTHETIC PLASTIC EMULSION. APPLY SYNTHETIC AT A RATE OF 30 GALLONS (264 POUNDS) OF UNDILUTED MATERIAL PER ACRE. DILUTE THE EMULSION WITH WATER AT A RATIO OF 1:15.
   - C. VEGETABLE -BASED GELS. APPLY VEGETABLE -BASED GELS AS RECOMMENDED BY THE MANUFACTURER, EXCEPT THOROUGHLY MIX AT LEAST 40 POUNDS OF THE DRY MATERIAL WITH 750 GALLONS OF WATER PER ACRE.
8. IF HYDROMULCH IS PLACED ON SLOPES 3:1 OR GREATER, IT WILL BE MECHANICALLY BONDED FIBER MATRIX ACCORDING TO NJDOT SPECIFICATIONS.
9. SEEDING FOR TEMPORARY AND PERMANENT APPLICATION WILL BE AS SHOWN ON THIS PLAN.
10. SPREAD TOPSOIL AND SMOOTH TO GRADE TO PRODUCE THE REQUIRED THICKNESS (4 INCHES MINIMUM). FOR SLOPES OF 2H:1V OR STEEPER, CREATE RIDGES (SUCH AS BY A DOZER TRACK) IN THE TOPSOIL SURFACE PARALLEL TO THE BOTTOM OF THE SLOPE TO HOLD THE SEED IN PLACE AND TO RETAIN MOISTURE.
11. SEEDING SHALL BE COMPLETED WHENEVER POSSIBLE FROM MARCH 1 TO MAY 15 AND FROM AUGUST 15 TO OCTOBER 15.

SCHEDULE OF SEED MIXES FOR SOIL STABILIZATION

KIND OF SEED	PURITY	GERM.	BY WEIGHT
TYPE A	%	%	%
KENTUCKY BLUEGRASS	85	75	20
RED FESCUES (CREEPING OR CHEWINGS)	95	80	35
KENTUCKY 31	95	80	20
REDTOP	92	85	10
PERENNIAL RYEGRASS	98	85	10
WHITE CLOVER	97	90	5
TYPE F (TEMP)			
PERENNIAL RYEGRASS	95	90	100

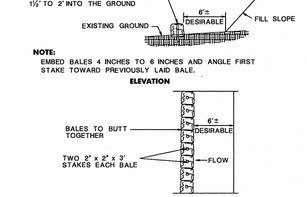
ALL SEED MIX TO BE APPLIED AT 100 LBS/ACRE MINIMUM.



SECTION

NOTES:
1. PIT DIMENSIONS ARE VARIABLE.
2. THE STANDPIPE WILL BE CONSTRUCTED BY PERFORATING A 12"-24" DIAMETER CORRUGATED METAL OR PVC PIPE WILL BE WRAPPED WITH ½"- ½"HARDWARE CLOTH AND FILTER FABRIC BEFORE INSTALLATION.
3. A BASE OF 2" AGGREGATE WILL BE PLACED IN THE PIT TO A MINIMUM DEPTH OF 12". AFTER INSTALLING THE STANDPIPE, THE PIT SURROUNDING THE STANDPIPE WILL THEN BE BACKFILLED WITH CLEAN AGGREGATE MAXIMUM SIZE WILL BE ASTM C33 (2"MAX) AGGREGATE.
4. THE STANDPIPE WILL EXTEND 12" TO 18" ABOVE THE LIP OF THE PIT.

SUMP PIT DETAIL



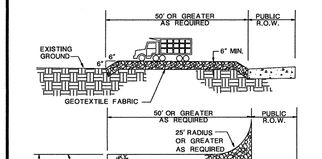
NOTE: EMBED BALES 4 INCHES TO 6 INCHES AND ANGLE FIRST STAKE TOWARD PREVIOUSLY LAID BALE.

ELEVATION

PLAN

NOTE: TO BE USED WHERE THE EXISTING GROUND SLOPES AWAY FROM THE HIGHWAY EMBANKMENT AS CALLED FOR ON PLANS.

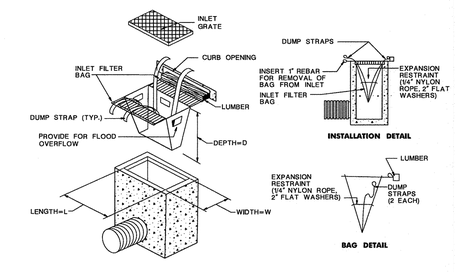
HAYBALES



NOTE: PROVIDE TRANSITION BETWEEN THE STABILIZED CONSTRUCTION ENTRANCE AND THE PUBLIC RIGHT OF WAY.

PROFILE AND PLAN VIEW

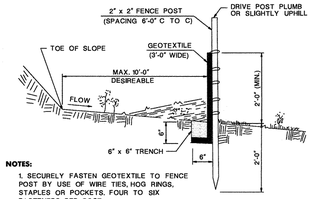
STABILIZED CONSTRUCTION DRIVEWAY



INSTALLATION DETAIL

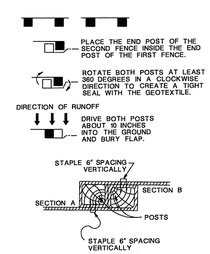
BAG DETAIL

INLET FILTERS, TYPE 2



NOTES:
1. SECURELY FASTEN GEOTEXTILE TO FENCE POST BY USE OF WIRE TIES, HOG RINGS, STAPLES OR POCKETS. FOUR TO SIX FASTENERS PER POST.
2. BURY BOTTOM 1'-0" OF GEOTEXTILE AND TAMP IN PLACE.
3. SECURELY FASTEN ENDS OF INDIVIDUAL ROLLS OF GEOTEXTILE TO A POST BY WRAPPING EACH END OF THE GEOTEXTILE AROUND THE POST TWICE AND ATTACHING AS SPECIFIED IN NOTE 1 ABOVE. SPLICING OF INDIVIDUAL ROLLS SHALL NOT OCCUR AT LOW POINTS.
4. SET SILT FENCE WITHIN PROJECT LIMITS. 10'-0" IS DESIREABLE.

SILT FENCE



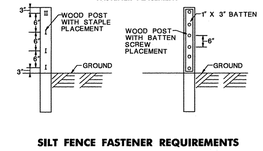
ATTACHING TWO SILT FENCES

FASTENERS FOR WOOD POSTS

	GAUGE	CROWN	LEGS	STAPLES/POST
WIRE STAPLES	17 MIN.	¾" WIDE	¾" LONG	5 MIN.
	LENGTH	PHILLIPS HEADS	SCREW/POST	
SCREWS	2"	2"	6 MIN.	

SOURCE: GA SWCC

FASTENER PLACEMENT

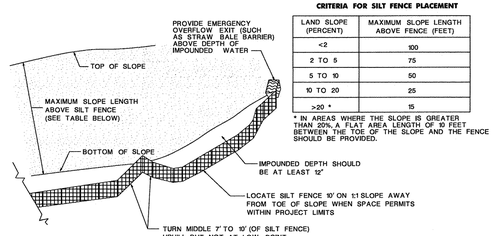


SILT FENCE FASTENER REQUIREMENTS

CRITERIA FOR SILT FENCE PLACEMENT

LAND SLOPE (PERCENT)	MAXIMUM SLOPE LENGTH ABOVE FENCE (FEET)
<2	100
2 TO 5	75
5 TO 10	50
10 TO 20	25
>20 *	15

* IN AREAS WHERE THE SLOPE IS GREATER THAN 20%, A FLAT AREA LENGTH OF 10 FEET BETWEEN THE TOE OF THE SLOPE AND THE FENCE SHOULD BE PROVIDED.



SILT FENCE ON A STEEP OR LONG GRADE

30 20 10 0 30 60

SCALE IN FEET
1" = 30'

EP-1
EP-4

ALL DIMENSIONS SHOWN ARE IN FEET UNLESS OTHERWISE NOTED

UNION COUNTY DIVISION OF ENGINEERING

SOIL EROSION & SEDIMENT CONTROL PLAN

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC

CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.

NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

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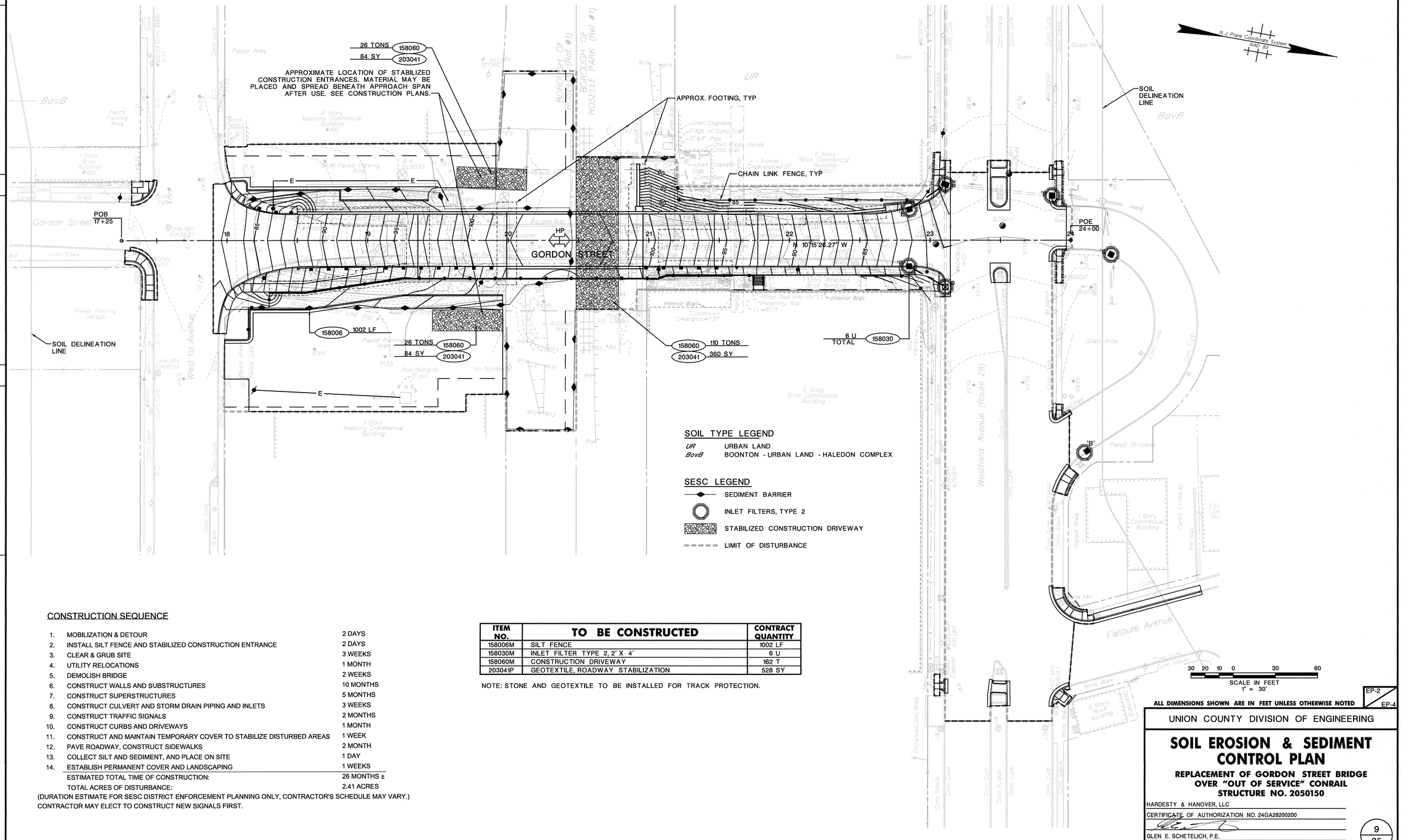
BOROUGH OF ROSELLE
BOROUGH OF ROSELLE PARK

COUNTY OF UNION



SOIL TYPE LEGEND

UR	URBAN LAND
BovB	BOONTON - URBAN LAND - HALEDON COMPLEX

SESC LEGEND

- SEDIMENT BARRIER
- INLET FILTERS, TYPE 2
- STABILIZED CONSTRUCTION DRIVEWAY
- LIMIT OF DISTURBANCE

CONSTRUCTION SEQUENCE

1.	MOBILIZATION & DETOUR	2 DAYS
2.	INSTALL SILT FENCE AND STABILIZED CONSTRUCTION ENTRANCE	2 DAYS
3.	CLEAR & GRUB SITE	3 WEEKS
4.	UTILITY RELOCATIONS	1 MONTH
5.	DEMOLISH BRIDGE	2 WEEKS
6.	CONSTRUCT WALLS AND SUBSTRUCTURES	10 MONTHS
7.	CONSTRUCT SUPERSTRUCTURES	5 MONTHS
8.	CONSTRUCT CULVERT AND STORM DRAIN PIPING AND INLETS	3 WEEKS
9.	CONSTRUCT TRAFFIC SIGNALS	2 MONTHS
10.	CONSTRUCT CURBS AND DRIVEWAYS	1 MONTH
11.	CONSTRUCT AND MAINTAIN TEMPORARY COVER TO STABILIZE DISTURBED AREAS	1 WEEK
12.	PAVE ROADWAY, CONSTRUCT SIDEWALKS	2 MONTH
13.	COLLECT SILT AND SEDIMENT, AND PLACE ON SITE	1 DAY
14.	ESTABLISH PERMANENT COVER AND LANDSCAPING	1 WEEKS
	ESTIMATED TOTAL TIME OF CONSTRUCTION:	26 MONTHS ±
	TOTAL ACRES OF DISTURBANCE:	2.41 ACRES

(DURATION ESTIMATE FOR SESC DISTRICT ENFORCEMENT PLANNING ONLY, CONTRACTOR'S SCHEDULE MAY VARY.)
CONTRACTOR MAY ELECT TO CONSTRUCT NEW SIGNALS FIRST.

ITEM NO.	TO BE CONSTRUCTED	CONTRACT QUANTITY
158006M	SILT FENCE	1002 LF
158030M	INLET FILTER TYPE 2, 2' X 4'	6 U
158060M	CONSTRUCTION DRIVEWAY	162 T
203041P	GEOTEXTILE, ROADWAY STABILIZATION	528 SY

NOTE: STONE AND GEOTEXTILE TO BE INSTALLED FOR TRACK PROTECTION.

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EP-2
EP-4

ALL DIMENSIONS SHOWN ARE IN FEET UNLESS OTHERWISE NOTED

UNION COUNTY DIVISION OF ENGINEERING

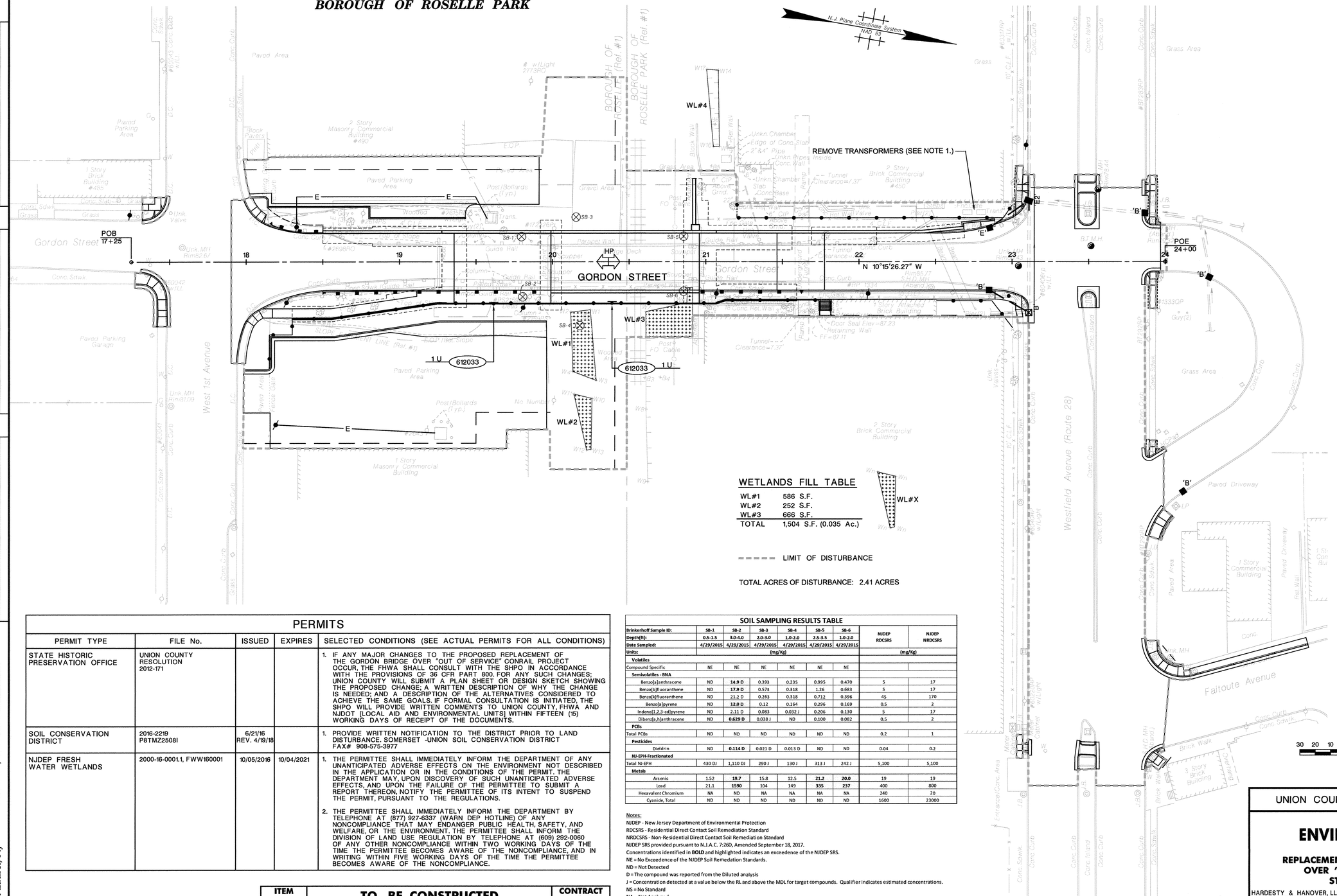
SOIL EROSION & SEDIMENT CONTROL PLAN

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

BOROUGH OF ROSELLE
BOROUGH OF ROSELLE PARK

COUNTY OF UNION



WETLANDS FILL TABLE

WL#1	586 S.F.
WL#2	252 S.F.
WL#3	666 S.F.
TOTAL	1,504 S.F. (0.035 Ac.)

WL#X

LIMIT OF DISTURBANCE

TOTAL ACRES OF DISTURBANCE: 2.41 ACRES

PERMITS

PERMIT TYPE	FILE No.	ISSUED	EXPIRES	SELECTED CONDITIONS (SEE ACTUAL PERMITS FOR ALL CONDITIONS)
STATE HISTORIC PRESERVATION OFFICE	UNION COUNTY RESOLUTION 2012-171			1. IF ANY MAJOR CHANGES TO THE PROPOSED REPLACEMENT OF THE GORDON BRIDGE OVER "OUT OF SERVICE" CONRAIL PROJECT OCCUR, THE FHWA SHALL CONSULT WITH THE SHPO IN ACCORDANCE WITH THE PROVISIONS OF 36 CFR PART 800. FOR ANY SUCH CHANGES; UNION COUNTY WILL SUBMIT A PLAN SHEET OR DESIGN SKETCH SHOWING THE PROPOSED CHANGE; A WRITTEN DESCRIPTION OF WHY THE CHANGE IS NEEDED; AND A DESCRIPTION OF THE ALTERNATIVES CONSIDERED TO ACHIEVE THE SAME GOALS. IF FORMAL CONSULTATION IS INITIATED, THE SHPO WILL PROVIDE WRITTEN COMMENTS TO UNION COUNTY, FHWA AND NJDOT (LOCAL AID AND ENVIRONMENTAL UNITS) WITHIN FIFTEEN (15) WORKING DAYS OF RECEIPT OF THE DOCUMENTS.
SOIL CONSERVATION DISTRICT	2016-2219 P8TMZ2508I	6/21/16 REV. 4/19/18		1. PROVIDE WRITTEN NOTIFICATION TO THE DISTRICT PRIOR TO LAND DISTURBANCE. SOMERSET -UNION SOIL CONSERVATION DISTRICT FAX# 908-575-3977
NJDEP FRESH WATER WETLANDS	2000-16-0001.1, FWW160001	10/05/2016	10/04/2021	1. THE PERMITTEE SHALL IMMEDIATELY INFORM THE DEPARTMENT OF ANY UNANTICIPATED ADVERSE EFFECTS ON THE ENVIRONMENT NOT DESCRIBED IN THE APPLICATION OR IN THE CONDITIONS OF THE PERMIT. THE DEPARTMENT MAY, UPON DISCOVERY OF SUCH UNANTICIPATED ADVERSE EFFECTS, AND UPON THE FAILURE OF THE PERMITTEE TO SUBMIT A REPORT THEREON, NOTIFY THE PERMITTEE OF ITS INTENT TO SUSPEND THE PERMIT, PURSUANT TO THE REGULATIONS. 2. THE PERMITTEE SHALL IMMEDIATELY INFORM THE DEPARTMENT BY TELEPHONE AT (877) 927-8337 (WARN DEP HOTLINE) OF ANY NONCOMPLIANCE THAT MAY ENDANGER PUBLIC HEALTH, SAFETY, AND WELFARE, OR THE ENVIRONMENT. THE PERMITTEE SHALL INFORM THE DIVISION OF LAND USE REGULATION BY TELEPHONE AT (609) 292-0060 OF ANY OTHER NONCOMPLIANCE WITHIN TWO WORKING DAYS OF THE TIME THE PERMITTEE BECOMES AWARE OF THE NONCOMPLIANCE, AND IN WRITING WITHIN FIVE WORKING DAYS OF THE TIME THE PERMITTEE BECOMES AWARE OF THE NONCOMPLIANCE.

ITEM NO.	TO BE CONSTRUCTED	CONTRACT QUANTITY
612033P	SPECIALIZED SIGN	2 U

SOIL SAMPLING RESULTS TABLE

Brinkerhoff Sample ID:	SB-1	SB-2	SB-3	SB-4	SB-5	SB-6	NJDEP RDCSRS	NJDEP NRDCSRS
Depth(ft):	0.5-1.5	3.0-4.0	2.0-3.0	1.0-2.0	2.5-3.5	1.0-2.0		
Date Sampled:	4/29/2015	4/29/2015	4/29/2015	4/29/2015	4/29/2015	4/29/2015		
Units:	(mg/Kg)						(mg/Kg)	
Volatiles								
Compound Specific	NE	NE	NE	NE	NE	NE		
Semivolatiles - BNA								
Benzo[a]anthracene	ND	**14.9 D**	0.393	0.235	0.995	0.470	5	17
Benzo[b]fluoranthene	ND	**17.9 D**	0.573	0.318	1.26	0.683	5	17
Benzo[k]fluoranthene	ND	21.2 D	0.263	0.318	0.712	0.396	45	170
Benzo[a]pyrene	ND	**12.0 D**	0.12	0.164	0.296	0.169	0.5	2
Indeno[1,2,3-cd]pyrene	ND	2.11 D	0.083	0.032 J	0.206	0.130	5	17
Dibenz[a,h]anthracene	ND	**0.829 D**	0.038 J	ND	0.100	0.082	0.5	2
PCBs								
Total PCBs	ND	ND	ND	ND	ND	ND	0.2	1
Pesticides								
Dieldrin	ND	**0.114 D**	0.021 D	0.013 D	ND	ND	0.04	0.2
NJ-EPH-Fractionated								
Total NJ-EPH	430 DJ	1,110 DJ	290 J	130 J	313 J	242 J	5,100	5,100
Metals								
Arsenic	1.52	**19.7**	15.8	12.5	**21.2**	**20.0**	19	19
Lead	21.1	**1590**	104	149	**335**	**237**	400	800
Hexavalent Chromium	NA	ND	NA	NA	NA	NA	240	20
Cyanide, Total	ND	ND	ND	ND	ND	ND	1600	23000

Notes:
NJDEP - New Jersey Department of Environmental Protection
RDCSRS - Residential Direct Contact Soil Remediation Standard
NRDCSRS - Non-Residential Direct Contact Soil Remediation Standard
NJDEP SRS provided pursuant to N.J.A.C. 7:26D, Amended September 18, 2017.
Concentrations identified in **BOLD** and highlighted indicates an exceedence of the NJDEP SRS.
NE = No Exceedence of the NJDEP Soil Remediation Standards.
ND = Not Detected
D = The compound was reported from the Diluted analysis
J = Concentration detected at a value below the RL and above the MDL for target compounds. Qualifier indicates estimated concentrations.
NS = No Standard
NA = Not Analyzed

NOTES:
1. TRANSFORMER REMOVAL TO BE PAID UNDER LUMP SUM ITEM 701352P. SEE SPECIAL PROVISIONS FOR REQUIREMENTS.
2. SEE BRIDGE SHEET B-41 FOR LOCATION OF "SPECIALIZED SIGN".

SCALE IN FEET
30 20 10 0 30 60
1" = 30'

EP-3
EP-4

UNION COUNTY DIVISION OF ENGINEERING

ENVIRONMENTAL PLAN

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

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85

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
Mount Laurel, NJ

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CONTAMINATED MATERIAL MANAGEMENT NOTES

1. ENGINEER HAS TESTED THE SITE AND HAS ENCOUNTERED SOIL AND GROUNDWATER CONTAMINATION ABOVE MOST STRINGENT CLEANUP LEVELS. A SITE SPECIFIC MATERIAL HANDLING PLAN (MHP) AND POLLUTION PREVENTION AND CONTROL PLAN (PPC) MUST BE PREPARED BY THE CONTRACTOR'S LSRP PRIOR TO COMMENCEMENT OF CONSTRUCTION IN ACCORDANCE WITH NJDEP LINEAR CONSTRUCTION GUIDANCE.

2. ALL SOIL ENCOUNTERED AS PART OF THIS PROJECT SHOULD BE CONSIDERED HISTORIC FILL/NON-HAZARDOUS CONTAMINATED SOIL AND MAY BE USED AS BACKFILL. HOWEVER, IF UPON REMOVAL, EXCESS/NON-CONFORMING MATERIAL IS GENERATED AND/OR OBVIOUS STAINING, ODOR, OR DELETERIOUS MATERIALS ARE OBSERVED, THE SOIL SHALL BE STOCKPILED FOR SAMPLING AND ANALYSIS TO DETERMINE PROPER HANDLING, DISPOSAL AND/OR REUSE PROCEDURES IF APPROVED BY THE ENGINEER AND NJ LICENSED SITE REMEDIATION PROFESSIONAL (LSRP).

3. ENGINEER MUST ACCEPT A SITE SPECIFIC HEALTH AND SAFETY PLAN (HASP) PREPARED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF ANY EXCAVATION TRANSFORMER REMOVAL ACTIVITIES.

4. SUITABLE ON-SITE SOIL TO BE REUSED MUST BE PLACED IN STOCKPILES LOCATED IN A DRY PLACE UPON SUITABLE PLASTIC SHEETING TO PREVENT COMINGLING OF MATERIAL WITH EXISTING SOIL AND APPROVED BY THE ENGINEER. STOCKPILES TO BE COVERED WITH PROPERLY ANCHORED AND SUITABLE SHEETING TO PREVENT SOIL FROM ERODING. EXCESS SOILS MUST BE DISPOSED OF OFFSITE AT LOCATIONS APPROVED BY THE ENGINEER IN ACCORDANCE WITH THE MHP.

5. DEWATERING MUST COMPLY WITH SCD AND NJDEP REGULATIONS AND THE MHP. USED SEDIMENT FILTER BAGS WILL BE DISPOSED OF AS CONTAMINATED MATERIAL.

6. SURFACE WATER IN WETLANDS MAY BE PERCHED. CONTRACTOR TO AVOID CONSTRUCTION AND DEWATERING METHODS THAT WILL DRAW DOWN THE HYDROLOGY IN THE WETLANDS OUTSIDE OF LIMIT OF DISTURBANCE.

7. SEE PROJECT SPECIFICATIONS SECTION 158 AND 202 FOR ADDITIONAL REQUIREMENTS REGARDING DEWATERING AND REGULATED MATERIALS MANAGEMENT.

8. ENSURE ALL PERSONNEL, EQUIPMENT, AND ANCILLARY SERVICES ARE PROVIDED TO COLLECT, ANALYZE, AND TRANSPORT ENVIRONMENTAL SAMPLES REQUIRED TO CHARACTERIZE CONTAMINATED MATERIAL IN ACCORDANCE WITH THE CURRENT VERSIONS OF THE NJDEP FIELD SAMPLING PROCEDURES MANUAL, NJDEP MANAGEMENT OF EXCAVATED SOILS GUIDELINES, APPENDIX I OF THE NJDEP WASTE CLASSIFICATION FORM AND ACCORDING TO THE RECYCLING OR DISPOSAL FACILITY ACCEPTING THE WASTE.

9. ENSURE ALL PERSONNEL, MATERIALS AND EQUIPMENT ARE PROVIDED TO PROPERLY STORE AND PROTECT CONTAMINATED MATERIAL AT THE EXCAVATION AND IN TEMPORARY STOCKPILES. LOCATE TEMPORARY STOCKPILES IN DRY AREAS SELECTED BY THE CONTRACTOR AND APPROVED BY THE RE. PLACE STOCKPILES ON PLASTIC SHEETING TO PREVENT MIGRATION OF CONTAMINANTS INTO ADJACENT SOILS, SURFACE WATER, AND GROUNDWATER.

10. ENSURE A POLLUTION PREVENTION AND CONTROL PLAN IS DEVELOPED AND IMPLEMENTED TO MANAGE CONTAMINATED WATER AND GROUNDWATER. DO NOT DISCHARGE CONTAMINATED STORMWATER, GROUNDWATER, SEDIMENTS OR FREE PRODUCT TO LOCAL STORM SEWER SYSTEMS OR WATERWAYS EXCEPT AS AUTHORIZED BY A DISCHARGE APPROVAL OR PERMIT.

11. ENSURE ALL PERSONNEL, MATERIALS AND EQUIPMENT ARE PROVIDED TO MOBILIZE, OPERATE AND MAINTAIN AN OIL- WATER SEPARATOR FOR REMOVAL OF FREE PRODUCT AND CONTAMINATED SEDIMENTS GENERATED DURING DEWATERING ACTIVITIES IN AREAS OF PETROLEUM -CONTAMINATED GROUNDWATER. ENSURE THE OIL- WATER SEPARATOR IS A SELF -CONTAINED, FACTORY ASSEMBLED UNIT CAPABLE OF MEETING ALL DISCHARGE APPROVALS OR PERMITS OBTAINED BY THE CONTRACTOR.

12. THE CONTRACTOR SHALL PERFORM REQUIRED SOIL SAMPLING AND TESTING FOR SOIL CHARACTERIZATION IN ACCORDANCE WITH DISPOSAL FACILITY REQUIREMENTS. WITHIN 45 DAYS OF SAMPLING, THE CONTRACTOR WILL PROVIDE THE ENGINEER WITH A COPY OF THE LABORATORY REPORT CONTAINING SOIL CHARACTERIZATION RESULTS, AS WELL AS DISPOSAL FACILITY REQUIREMENTS/APPROVAL(S).

13. NON-HAZARDOUS CONTAMINATED SOIL SHALL BE DISPOSED OF OFF- SITE OR, UPON ENGINEER'S AND LSRP APPROVAL, MAY BE CONSIDERED FOR BENEFICIAL REUSE (ON -SITE OR OFF-SITE) AS RESTRICTED FILL. BENEFICIAL REUSE AS TOPSOIL OR FINAL COVER SHALL NOT BE CONSIDERED.

14. SOIL SAMPLES OF EXCAVATED SOIL OR IMPORTED FILL WILL BE COLLECTED AT THE FREQUENCY REQUIRED PURSUANT TO THE FILL MATERIAL GUIDANCE FOR SRP SITES PRIOR TO EXCAVATION AND PLACEMENT AT THE REMEDIATION LOCATION TO CONFIRM MATERIAL IS ACCEPTABLE. THE FINAL PLACEMENT OF SOIL MUST BE DOCUMENTED (QUANTIFIED AND QUALIFIED) AND APPROVED BY THE LSRP.

15. FOR OFF-SITE BENEFICIAL REUSE, THE NON-HAZARDOUS SOIL SHALL BE REUSED ONLY AT SITES THAT ARE REGULATED BY A STATE AGENCY (E.G. BROWNFIELD, LANDFILL) AND HAVE A MATERIAL ACCEPTANCE PROTOCOL FOR SOIL OR A PERMIT APPROVED BY THE STATE AGENCY. THE APPROVED PROTOCOL SHALL INCLUDE APPLICATION FORMS, CERTIFICATION FORMS, SAMPLING REQUIREMENTS AND ALLOWABLE CONCENTRATION LIMITS FOR ALL REGULATED PARAMETERS. SUBMIT THE PERMIT OR APPROVED MATERIAL ACCEPTANCE PROTOCOL WITH THE STATE REGULATORY AGENCY'S APPROVAL LETTER FOR THE PROTOCOL, INCLUDING THE COSTS FOR TRANSPORTATION AND DISPOSAL OF NON-HAZARDOUS SOIL, TO THE ENGINEER FOR APPROVAL. DISPOSAL OR REUSE FACILITIES PERMITTED TO ACCEPT "CLEAN FILL" ONLY ARE NOT ACCEPTABLE.

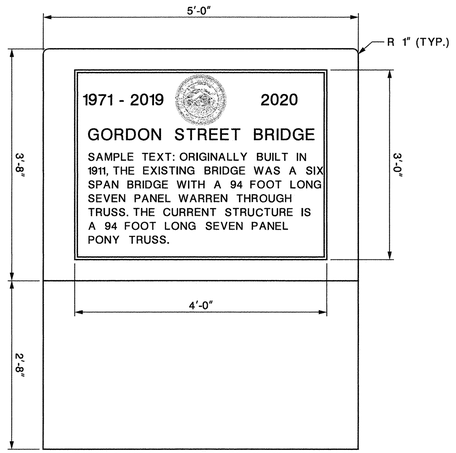
16. FOR ON-SITE BENEFICIAL REUSE OF EXCAVATED SOIL, THE NON-HAZARDOUS SOIL WITH LIKE CONTAMINANTS AT EQUAL OR LESS CONCENTRATIONS WITH NO OBVIOUS STAINING, ODOR OR DELETERIOUS MATERIALS, SHALL BE PLACED BELOW THE NECESSARY DEMARCATION BARRIER AND IN A MANNER IN WHICH ADEQUATE COVER CAN BE MAINTAINED IN ACCORDANCE WITH THE APPROVED CAPPING PLAN AND APPROVAL OF THE LSRP.

17. IF ANALYTICAL RESULTS INDICATE THAT THE MATERIAL IS CHARACTERIZED AS A HAZARDOUS WASTE, THE SOIL SHALL BE HANDLED AND TRANSPORTED OFF-SITE FOR DISPOSAL, IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS, TO A LICENSED FACILITY, AS APPROVED BY THE ENGINEER.

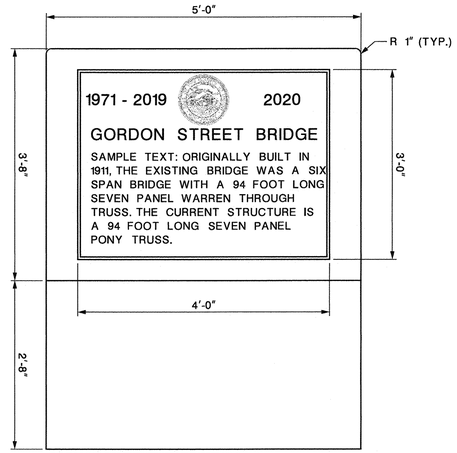
18. SUBMIT DOCUMENTATION FOR THE OFF-SITE DISPOSAL OR OFF-SITE BENEFICIAL REUSE OF CONTAMINATED SOIL DETAILING THE EXECUTION OF MANIFESTS OR BILLS OF LADING FOR ALL SOIL MATERIAL REMOVED AND TRANSPORTED OFF-SITE. DOCUMENTS SHALL BE SIGNED BY THE ENGINEER PRIOR TO THE REMOVAL OF SOIL OFF-SITE. EXECUTED MANIFESTS OR BILLS OF LADING SHALL BE SIGNED BY THE RECEIVING FACILITY AND COPIES PROVIDED TO THE ENGINEER WITHIN 72 HOURS.

19. FURNISH CLEAN BACKFILL IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS THAT WOULD APPLY IF THE AUTHORITY WERE A PRIVATE CORPORATION. CONTRACTOR MUST SUBMIT ANALYTICAL DATA DOCUMENTING THE QUALITY AND SOURCE OF THE BACKFILL MATERIAL TO THE ENGINEER AND LSRP FOR APPROVAL AT LEAST 2 WEEKS PRIOR TO USE. THE CONTRACTOR SHALL BE COMPENSATED FOR TRANSPORTATION AND REUSE OR DISPOSAL, EXCLUDING LOADING FOR TRANSPORT, OF SOIL MATERIALS OFF AUTHORITY PROPERTY ON A NET COST BASIS.

20. SUBMIT SOIL TRANSPORTERS DOCUMENTATION INCLUDING CURRENT APPLICABLE STATE ISSUED WASTE TRANSPORTER'S PERMITS TO THE ENGINEER FOR APPROVAL AT LEAST 2 WEEKS PRIOR TO THE COMMENCEMENT OF TRUCKING ACTIVITIES.



SPECIALIZED SIGN DETAIL
TRUSS SPAN
SCALE: ½" = 1'-0"



SPECIALIZED SIGN DETAIL
APPROACH SPAN
SCALE: ½" = 1'-0"

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
Mount Laurel, NJ

8/6/2019 EP4_2893.dgn

EP-4
EP-4

UNION COUNTY DIVISION OF ENGINEERING

ENVIRONMENTAL PLAN

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC

CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.

NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

BOROUGH OF ROSELLE
BOROUGH OF ROSELLE PARK

COUNTY OF UNION

NOTE:
1. SEE ALSO ITEM NO. 654004P-ELECTRICAL SERVICE.

ITEM NO.	TO BE CONSTRUCTED	CONTRACT QUANTITY
601122P	15" REINFORCED CONCRETE PIPE	60 LF
601681M	18" DUCTILE IRON PIPE	4 LF
601668M	CLEANING EXISTING PIPE, 10" DIAMETER	132 LF
601670M	CLEANING EXISTING PIPE, 12" TO 24" DIAMETER	210 LF
602012M	INLET, TYPE B	1 U
602018M	INLET, TYPE E	1 U
602039M	INLET, TYPE E-2	1 U
602105M	SET INLET TYPE B, CASTING	3 U
602153M	RECONSTRUCTED INLET, TYPE B, USING NEW CASTING	1 U
651255M	RESET WATER VALVE BOX	1 U
652432M	RESET MANHOLE, SANITARY SEWER, USING EXISTING CASTING	3 U
654003P	ELECTRICAL CONDUIT	294 LF
701015P	2" RIGID METALLIC CONDUIT	320 LF
701102M	18" X 36" JUNCTION BOX	2 U
701192P	GROUND WIRE, NO. 8 AWG	400 LF

ALL DIMENSIONS SHOWN ARE IN FEET UNLESS OTHERWISE NOTED

DU-1 / DU-1

UNION COUNTY DIVISION OF ENGINEERING

DRAINAGE AND UTILITY PLANS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

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engineering that moves you
Mount Laurel, NJ

8/16/2019 DU1_2893.dgn

STATE	FEDERAL PROJECT NO.
N.J.	NED-7542(102)FD

GENERAL NOTES

1. PSE&G SHALL PERFORM THE RELOCATION OF OVERHEAD ELECTRIC LINES INCLUDING INSTALLATION OF POLES, UNDERGROUND CABLES, SPLICES, PERFORM INSPECTION, REMOVAL OF EXISTING OVERHEAD ELECTRIC LINES AND POLES.
2. ALL DISTANCES, STATIONS, OFFSETS AND LENGTHS ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY ALL STATIONS AND LENGTHS PRIOR TO COMMENCING WORK.
3. CONTRACTOR SHALL COORDINATE WITH THE OTHER UTILITY COMPANIES WITHIN PROJECT LIMITS.
4. PSE&G IS RESPONSIBLE FOR ALL CUSTOMER NOTIFICATIONS REQUIRED DUE TO ANY POWER OUTAGES.
5. PSE&G SHALL COORDINATE WITH CONTRACTOR FOR MAINTENANCE AND PROTECTION OF TRAFFIC AS PER NJDOT REQUIREMENTS.
6. POLE LOCATIONS ARE SUBJECT TO CHANGE BASED UPON FIELD CONDITIONS AND PSE&G/VERIZON REQUIREMENTS.
7. THE CONTRACTOR WILL PROVIDE PSE&G WITH SURVEY CONTROL.
8. THE CONTRACTOR AND PSE&G WILL JOINTLY VERIFY THE LOCATION OF THE FACILITIES PRIOR TO INSTALLATION.
9. THE CONTRACTOR SHALL COORDINATE WITH PSE&G AND THE OTHER UTILITIES TO ENSURE THE PROPOSED FACILITIES DO NOT CONFLICT HORIZONTALLY OR VERTICALLY WITH OTHER PROPOSED OR EXISTING UTILITIES.
10. PROPOSED LIGHTING UNITS ARE 100W HIGH PRESSURE SODIUM, TYPE III, CUTOFF LUMINAIRES.
11. LUMINAIRES ARE TO BE MOUNTED AT A HEIGHT OF 26 FEET ABOVE THE PAVEMENT.
12. EACH UTILITY OWNER SHALL SECURE THEIR OWN ANY REQUIRED NJDOT PERMITS FOR ALL WORK ALONG ROUTE 28.

SEQUENCING NOTES FOR RELOCATING PSE&G (ELECTRIC) FACILITIES:

STAGE 1:
- a. PSE&G AND CONTRACTOR TO RE-ESTABLISH COMMERCIAL POWER TO TWO (2) ADJACENT PROPERTIES ON WEST FIRST AVENUE.
- b. PSE&G TO REMOVE EXISTING OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES (SERVICE CABLES).
- c. PSE&G TO INSTALL FOUR (4) PERMANENT POLES (EAST SIDE), SWITCHES ON TWO POLES (EAST SIDE) AND TWO (2) PERMANENT POLES ON WEST SIDE (WEST FIRST AVENUE).
- d. PSE&G TO INSTALL TEMPORARY OVERHEAD FACILITIES AND TWO (2) TEMPORARY POLES WITH GUY ANCHORS (WEST SIDE).
- e. PSE&G TO INSTALL 155 LF OF PROPOSED OVERHEAD ELECTRIC FACILITIES.
- f. PSE&G TO REMOVE EXISTING OVERHEAD ELECTRIC FACILITIES ON EAST SIDE.
- g. PSE&G TO REMOVE EIGHT (8) EXISTING POLES ON EAST SIDE AND TWO (2) EXISTING POLES ON WEST SIDE.

STAGE 2:
- a. PSE&G TO DE-ENERGIZE THE 4KV OVERHEAD ELECTRIC LINE AS REQUIRED (FOR DEMOLITION).
- b. CONTRACTOR TO DEMOLISH TRUSS, APPROACH SPAN AND PIER.

STAGE 3:
- a. CONTRACTOR TO INSTALL TEMPORARY SHEETING AT THE NORTH ABUTMENT (EAST SIDE).

STAGE 4:
- a. PSE&G TO DE-ENERGIZE THE 4KV OVERHEAD ELECTRIC LINE AS REQUIRED.
- b. CONTRACTOR TO PERFORM CONSTRUCTION ACTIVITIES AT SOUTH ABUTMENT.
- c. CONTRACTOR TO PERFORM DEMOLITION AND CONSTRUCTION ACTIVITIES AT NORTH ABUTMENT.
- d. PSE&G TO INSTALL ONE TEMPORARY POLE AND 235 LF OF TEMPORARY OVERHEAD 4kV AND 26kV (AERIAL CABLES) ELECTRIC FACILITIES ON EAST SIDE.
- e. CONTRACTOR TO REMOVE THE WESTERN MOST TEMPORARY SHEETING.
- f. PSE&G TO REMOVE THE TEMPORARY FACILITIES SPANNING THE BRIDGE AND TWO TEMPORARY POLES FROM WEST SIDE.

STAGE 5:
- a. PSE&G TO DE-ENERGIZE THE 4KV OVERHEAD ELECTRIC LINE AS REQUIRED.
- b. CONTRACTOR TO PERFORM DEMOLITION ACTIVITIES AND PERFORM CONSTRUCTION ON WEST SIDE OF GORDON STREET.

STAGE 6:
- a. PSE&G TO DE-ENERGIZE THE 4KV OVERHEAD ELECTRIC LINE AS REQUIRED (FOR CONSTRUCTION).
- b. CONTRACTOR TO PERFORM CONSTRUCTION OF BRIDGE PIER AND APPROACH SPAN.
- c. CONTRACTOR TO REMOVE THE REMAINING TEMPORARY SHEETING AND BACKFILL WALLS.

STAGE 7:
- a. PSE&G TO DE-ENERGIZE THE 4KV OVERHEAD ELECTRIC LINE AS REQUIRED.
- b. CONTRACTOR TO CONSTRUCT TRUSS SPAN AND COMPLETE CONSTRUCTION.

STAGE 8:
- a. PSE&G TO INSTALL 235 LF OF PERMANENT OVERHEAD ELECTRIC FACILITIES, THREE (3) PERMANENT POLES AND REMOVE ONE (1) EXISTING POLE.
- b. PSE&G TO INSTALL FOUR (4) PROPOSED LIGHTING MAST ARMS & LUMINAIRES ON PROPOSED POLES.
- c. REMOVE TEMPORARY AERIAL ELECTRIC FACILITIES FROM EAST SIDE.
- d. CONTRACTOR TO PERFORM RESTORATION OF PARKING LOT.
- e. CONTRACTOR TO PERFORM RESTORATION OF CONRAIL PROPERRTY.

STAGE 9:
- a. CONTRACTOR TO PERFORM CONTRUCTION OF CURBS, SIDEWALKS, PAVING AND STRIPING.
- b. CONTRACTOR TO PERFORM INTERSECTION SIGNAL WORK.
- c. PSE&G TO REMOVE FOUR (4) EXISTING LIGHTING MAST ARMS AND LUMINAIRES ON WEST FIRST AVENUE AND WESTFIELD AVENUE.

WORK TO BE PERFORMED BY COMCAST

1. INSTALL 565 LF OF PROPOSED OVERHEAD CABLE FACILITIES ON EAST SIDE.
2. REMOVE 565 LF OF EXISTING OVERHEAD CABLE FACILITIES ON EAST SIDE.

SCHEDULE

1. TASK 1: COMCAST REQUIRES TWO (2) DAYS TO COMPLETE THE WORK.
2. TASK 2: COMCAST REQUIRES TWO (2) DAYS TO COMPLETE THE WORK.

WORK TO BE PERFORMED BY VERIZON

1. RELOCATE EXISTING OVERHEAD TELEPHONE FACILITIES ON WESTFIELD AVENUE FROM EXISTING POLE #60316RP TO PROPOSED POLE.
2. REMOVE EXISTING POLE #60316RP.

SCHEDULE

1. TASK 1: VERIZON REQUIRES ONE (1) DAY TO COMPLETE THE WORK.

WORK TO BE PERFORMED BY PSE&G

1. a. RE-ESTABLISH COMMERCIAL POWER TO TWO (2) ADJACENT PROPERTIES ON WEST FIRST AVENUE AND MAINTAIN ELECTRIC SERVICE TO EXISTING WOOD POLE FLOOD LIGHTS.
   b. REMOVE EXISTING OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES (SERVICE CABLES).
   c. INSTALL FOUR (4) PERMANENT POLES (EAST SIDE), SWITCHES ON TWO POLES (EAST SIDE) AND TWO (2) PERMANENT POLES ON WEST SIDE (WEST FIRST AVENUE).
   d. INSTALL 285 LF OF TEMPORARY OVERHEAD ELECTRIC FACILITIES AND TWO TEMPORARY POLES WITH GUY ANCHORS ON WEST SIDE.
   e. INSTALL 155 LF OF PROPOSED OVERHEAD ELECTRIC FACILITIES ON WEST SIDE.
   f. INSTALL 465 LF OF PROPOSED OVERHEAD ELECTRIC FACILITIES ON EAST SIDE (SEE NOTE 2 ON SHEET 2).
   g. REMOVE 565 LF OF EXISTING OVERHEAD ELECTRIC FACILITIES ON EAST SIDE.
   h. REMOVE EIGHT (8) EXISTING POLES ON EAST SIDE AND TWO (2) EXISTING POLES ON WEST SIDE.
2. b. DE-ENERGIZE THE 4KV OVERHEAD ELECTRIC LINE AS REQUIRED.
3. (BY CONTRACTOR).
4. a. INSTALL ONE (1) TEMPORARY POLE AND 235 LF OF TEMPORARY OVERHEAD ELECTRIC FACILITIES ON EAST SIDE.
   b. REMOVE THE TEMPORARY ELECTRIC FACILITIES SPANNING THE BRIDGE AND TEMPORARY POLES (WEST SIDE).
   c. DE-ENERGIZE THE 4KV OVERHEAD ELECTRIC LINE AS REQUIRED.
5. DE-ENERGIZE THE 4KV OVERHEAD ELECTRIC LINE AS REQUIRED.
6. DE-ENERGIZE THE 4KV OVERHEAD ELECTRIC LINE (FOR CONSTRUCTION).
7. DE-ENERGIZE THE 4KV OVERHEAD ELECTRIC LINE AS REQUIRED.
8. a. INSTALL 235 LF OF PERMANENT OVERHEAD ELECTRIC FACILITIES AND THREE (3) PROPOSED POLES.
   b. INSTALL FOUR (4) PROPOSED LIGHTING MAST ARMS AND LUMINAIRES.
   c. REMOVE TEMPORARY AERIAL ELECTRIC FACILITIES FROM EAST SIDE.
   d. REMOVE EXISTING POLE ON WESTFIELD AVENUE.
9. a. REMOVE FOUR (4) EXISTING LIGHTING MAST ARMS AND LUMINAIRES ON WEST FIRST AVENUE AND WESTFIELD AVENUE.

SCHEDULE

1. TASK 1: PSE&G REQUIRES TEN (10) DAYS TO COMPLETE THE WORK.
2. TASK 2: PSE&G REQUIRES TWO (2) DAYS TO COMPLETE THE WORK.
3. (BY CONTRACTOR)
4. TASK 4: PSE&G REQUIRES TWO (2) DAYS TO COMPLETE THE WORK.
5. TASK 5: PSE&G REQUIRES ONE (1) DAY TO COMPLETE THE WORK.
6. TASK 6: PSE&G REQUIRES ONE (1) DAY TO COMPLETE THE WORK.
7. TASK 7: PSE&G DE-ENERGIZES AS NECESSARY.
8. TASK 8: PSE&G REQUIRES THREE (3) DAYS TO COMPLETE THE WORK.
9. TASK 9: PSE&G REQUIRES ONE (1) DAY TO COMPLETE THE WORK.

WORK TO BE PERFORMED BY CONTRACTOR

1. a. INSTALL 104 LF 5" PVC CONDUITS FROM PROPOSED POLE TO EXISTING PRIVATELY OWNED TRANSFORMER ON EAST SIDE OF THE BRIDGE.
   b. INSTALL 125 LF 5" PVC CONDUITS FROM PROPOSED POLE TO EXISTING PRIVATELY OWNED TRANSFORMER ON WEST SIDE OF THE BRIDGE.
2. a. DEMOLISH TRUSS, APPROACH SPAN AND PIER.
   b. DEMOLISH ABANDONED ELECTRICAL FACILTIIES AT STA. 22+55.
3. INSTALL TEMPORARY SHEETING AT NORTH ABUTMENT (EAST SIDE).
4. a. CONSTRUCT SOUTH ABUTMENT AND RETAINING WALLS.
   b. DEMOLISH 50% NORTH ABUTMENT.
   c. CONSTRUCT 50% NORTH ABUTMENT AND RETAINING WALL.
   d. CONTRUCT TUNNEL PLATFORM.
   e. DEMOLISH STAIRS ON THE EAST SIDE.
   f. REMOVE TEMPORARY SHEETING.
5. a. DEMOLITION & CONSTRUCTION OF THE REMAINING NORTH ABUTMENT.
   b. DEMOLITION & CONSTRUCTION ON WEST SIDE OF THE GORDON STREET.
6. a. REMOVE TEMPORARY SHEETING AND BACKFILL RETAINING WALLS AT SOUTH ABUTMENT.
   b. CONSTRUCT THE BRIDGE PIER AND APPROACH SPAN.
7. CONSTRUCT TRUSS SPAN AND COMPLETE CONSTRUCTION.
8. a. PARKING LOT RESTORATION WORK.
   b. RESTORE CONRAIL PROPERTY.
9. a. CONSTRUCTION OF CURBS, SIDEWALK, PAVING AND STRIPING.
   b. INTERSECTION SIGNAL WORK.

SCHEDULE

1. TASK 1: CONTRACTOR REQUIRES TWO (2) WEEKS ADVANCE NOTICE TO PSE&G AND ONE (1) DAY TO COMPLETE THE WORK.
2. TASK 2: CONTRACTOR REQUIRES THIRTY EIGHT (38) DAYS TO COMPLETE THE WORK.
3. TASK 3: CONTRACTOR REQUIRES SEVENTEEN (17) DAYS TO COMPLETE THE WORK.
4. TASK 4: CONTRACTOR REQUIRES ONE HUNDRED AND FORTY (140) DAYS TO COMPLETE THE WORK.
5. TASK 5: CONTRACTOR REQUIRES EIGHTY (80) DAYS TO COMPLETE THE WORK.
6. TASK 6: CONTRACTOR REQUIRES SEVENTY FIVE (75) DAYS TO COMPLETE THE WORK.
7. TASK 7: CONTRACTOR REQUIRES HUNDRED (100) DAYS TO COMPLETE THE WORK.
8. TASK 8: CONTRACTOR REQUIRES TWENTY FIVE (25) DAYS TO COMPLETE THE WORK.
9. TASK 9: CONTRACTOR REQUIRES EIGHTY (80) DAYS TO COMPLETE THE WORK.

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UC-01
UC-02

UNION COUNTY DIVISION OF ENGINEERING

UTILITY CONSTRUCTION PLAN

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

NAIK CONSULTING GROUP, P.C.
RONALD R. ROTUNNO, P.E.
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03479900

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

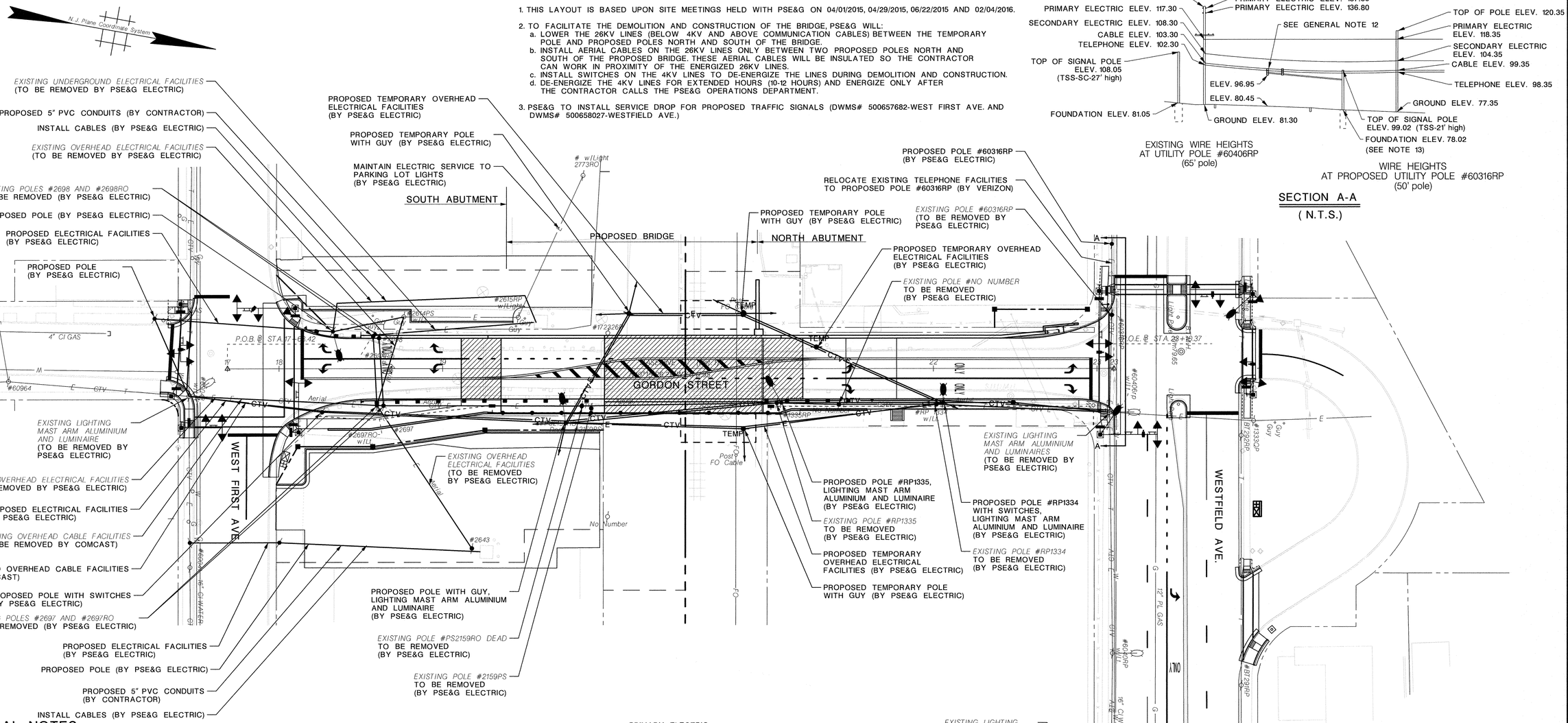
BOROUGH OF ROSELLE
BOROUGH OF ROSELLE PARK

COUNTY OF UNION

STATE	FEDERAL PROJECT NO.
N.J.	NED-7542(102)FD

NOTE:

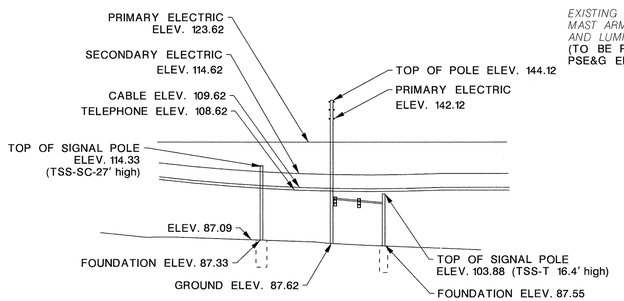
1. THIS LAYOUT IS BASED UPON SITE MEETINGS HELD WITH PSE&G ON 04/01/2015, 04/29/2015, 06/22/2015 AND 02/04/2016.
2. TO FACILITATE THE DEMOLITION AND CONSTRUCTION OF THE BRIDGE, PSE&G WILL:
   a. LOWER THE 26KV LINES (BELOW 4KV AND ABOVE COMMUNICATION CABLES) BETWEEN THE TEMPORARY POLE AND PROPOSED POLES NORTH AND SOUTH OF THE BRIDGE.
   b. INSTALL AERIAL CABLES ON THE 26KV LINES ONLY BETWEEN TWO PROPOSED POLES NORTH AND SOUTH OF THE PROPOSED BRIDGE. THESE AERIAL CABLES WILL BE INSULATED SO THE CONTRACTOR CAN WORK IN PROXIMITY OF THE ENERGIZED 26KV LINES.
   c. INSTALL SWITCHES ON THE 4KV LINES TO DE-ENERGIZE THE LINES DURING DEMOLITION AND CONSTRUCTION.
   d. DE-ENERGIZE THE 4KV LINES FOR EXTENDED HOURS (10-12 HOURS) AND ENERGIZE ONLY AFTER THE CONTRACTOR CALLS THE PSE&G OPERATIONS DEPARTMENT.
3. PSE&G TO INSTALL SERVICE DROP FOR PROPOSED TRAFFIC SIGNALS (DWMS# 500657682-WEST FIRST AVE. AND DWMS# 500658027-WESTFIELD AVE.)



EXISTING WIRE HEIGHTS AT UTILITY POLE #60406RP (65' pole)

WIRE HEIGHTS AT PROPOSED UTILITY POLE #60316RP (50' pole)

SECTION A-A
(N.T.S.)



WIRE HEIGHTS AT UTILITY POLE #60220RP (65' pole)

SECTION B-B
(N.T.S.)

GENERAL NOTES

1. PSE&G SHALL PERFORM THE RELOCATION OF OVERHEAD ELECTRIC LINES INCLUDING INSTALLATION OF POLES, UNDERGROUND CABLE, SPLICES, PERFORM INSPECTION, REMOVAL OF EXISTING OVERHEAD ELECTRIC LINES AND POLES.
2. ALL DISTANCES, STATIONS, OFFSETS AND LENGTHS ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY ALL STATIONS AND LENGTHS PRIOR TO COMMENCING WORK.
3. CONTRACTOR SHALL COORDINATE WITH THE OTHER UTILITY COMPANIES WITHIN PROJECT LIMITS.
4. PSE&G IS RESPONSIBLE FOR ALL CUSTOMER NOTIFICATIONS REQUIRED DUE TO ANY POWER OUTAGES.
5. PSE&G SHALL COORDINATE WITH CONTRACTOR FOR MAINTENANCE AND PROTECTION OF TRAFFIC AS PER NJDOT REQUIREMENTS.
6. POLE LOCATIONS ARE SUBJECT TO CHANGE BASED UPON FIELD CONDITIONS AND PSE&G/VERIZON REQUIREMENTS.
7. THE CONTRACTOR WILL PROVIDE PSE&G WITH SURVEY CONTROL.
8. THE CONTRACTOR AND PSE&G WILL JOINTLY VERIFY THE LOCATION OF THE FACILITIES PRIOR TO INSTALLATION.
9. THE CONTRACTOR SHALL COORDINATE WITH PSE&G AND THE OTHER UTILITIES TO ENSURE THE PROPOSED FACILITIES DO NOT CONFLICT HORIZONTALLY OR VERTICALLY WITH OTHER PROPOSED OR EXISTING UTILITIES.
10. PROPOSED LIGHTING UNITS ARE 100W HIGH PRESSURE SODIUM, TYPE III, CUTOFF LUMINAIRES.
11. LUMINAIRES ARE TO BE MOUNTED AT A HEIGHT OF 26 FEET ABOVE THE PAVEMENT.
12. PSE&G AND VERIZON WILL RAISE THEIR CABLES SO THAT THE PROPOSED SIGNAL HEADS ARE NOT OBSCURED. CONTRACTOR SHALL ENSURE THAT THE PROPOSED SIGNAL HEADS ARE NOT OBSCURED WITH VERIZON CABLES.
13. THE TRAFFIC SIGNAL FOUNDATIONS ARE 8 FEET FROM THE UTILITY POLE LINE

30 20 10 0 30 60
SCALE IN FEET
1" = 30'

UC-02
UC-02

UNION COUNTY DIVISION OF ENGINEERING

UTILITY CONSTRUCTION PLAN

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

NAIK CONSULTING GROUP, P.C.
RONALD R. ROTUNNO, P.E.
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03479900

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

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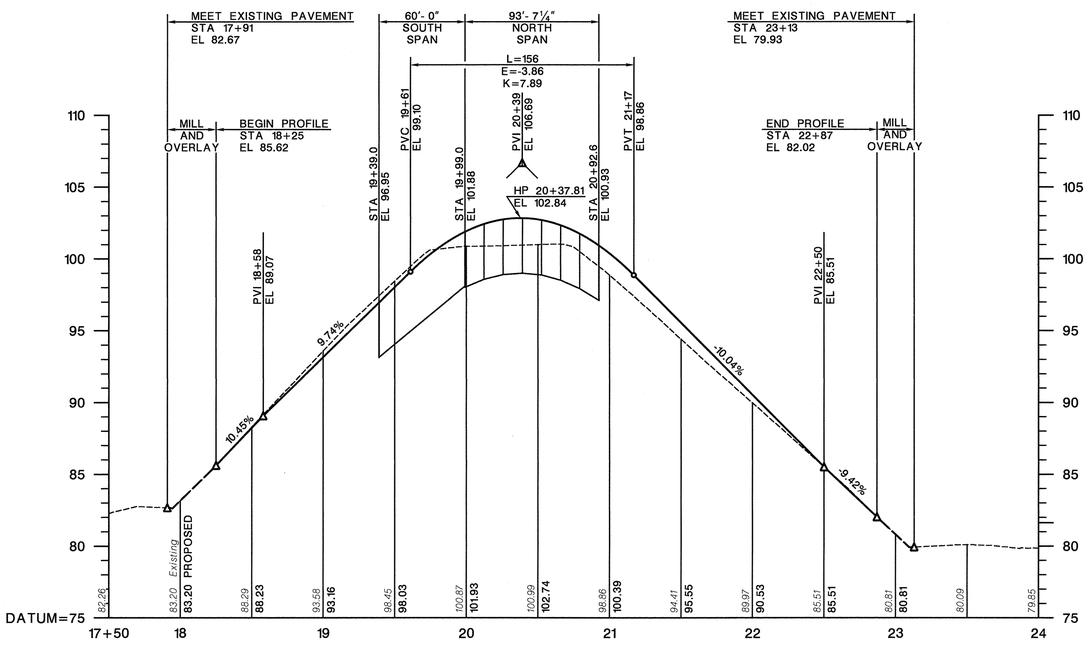

GORDON STREET

DESIGN SPEED - 20 MPH

HORIZONTAL 50 0 50 100
1" = 50'

VERTICAL 5 0 5 10
1" = 5'
SCALE IN FEET

NOTE:
E = THE DIFFERENCE BETWEEN THE PVI ELEVATION AND THE VERTICAL CURVE ELEVATION AT THE PVI STATION

P-1
P-1

UNION COUNTY DIVISION OF ENGINEERING

PROFILES

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC
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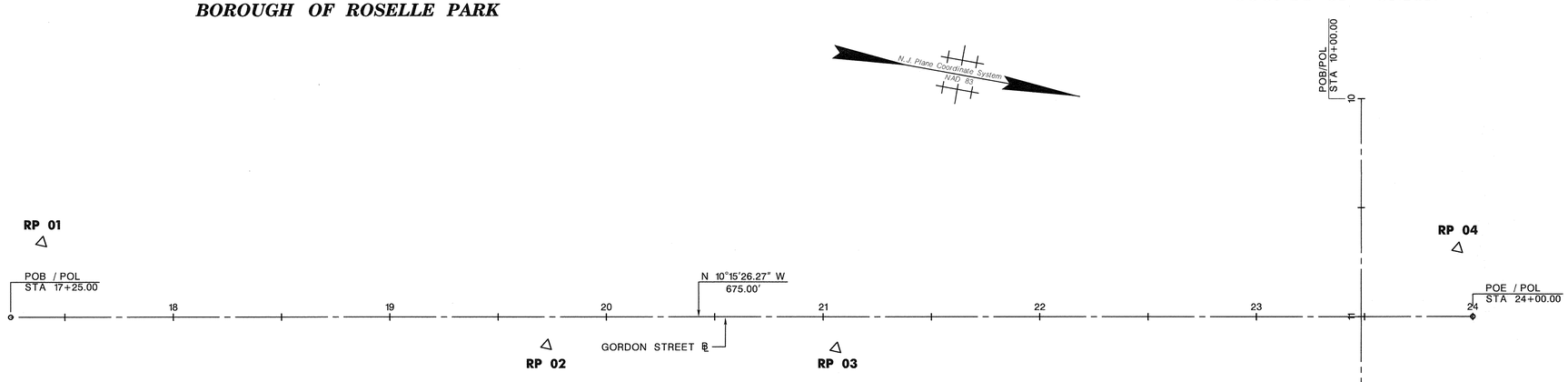
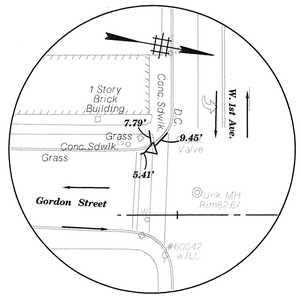
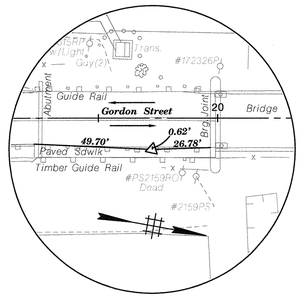
BOROUGH OF ROSELLE
BOROUGH OF ROSELLE PARK

COUNTY OF UNION

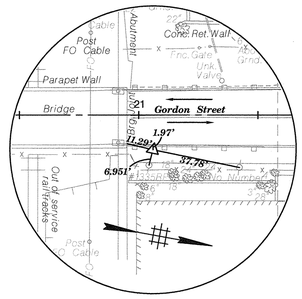




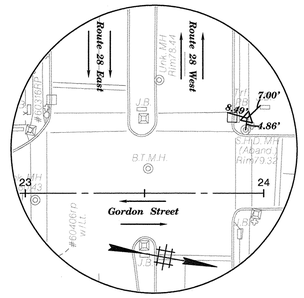
Control Point "RP 01"
Dock Spike



Control Point "RP 02"
PK Nail



Control Point "RP 03"
PK Nail



Control Point "RP 04"
Cross Cut

CONTROL POINT DATA

DESC.	STATION	OFFSET	BASELINE	COORDINATES		REMARKS	ELEV.
				NORTH	EAST		
RP–01	17+39.34	34.38' LT	GORDON STREET	664751.0241	553968.0152	Dock Spike	82.60
RP–02	19+72.48	12.95' RT	GORDON STREET	664988.8802	553973.0702	PK Nail	100.42
RP–03	21+06.01	14.41' RT	GORDON STREET	665120.5175	553950.7520	PK Nail	98.47
RP–04	23+93.05	31.37' LT	GORDON STREET	665394.8210	553854.5809	Cross Cut	79.31

ALIGNMENT DATA

POINT	BASELINE		COORDINATES	
	OFFSET (FT)	STATION	NORTH	EAST
GORDON STREET PROPOSED BASELINE				
POB / POL	0	17+25.00	664743.0269	554004.3707
POE / POL	0	24+00.00	665407.2391	553884.1743
CONSTRUCTION LINE A				
POB / POL	0	10+00.00	665338.6765	553794.9573
POE / POL	0	15+00.00	665427.7109	554286.9663

HORIZONTAL DATUM

NEW JERSEY STATE PLANE COORDINATE SYSTEM NORTH AMERICAN DATUM OF 1983 (NAD83)

VERTICAL DATUM

NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

30 20 10 0 30 60
SCALE IN FEET
1" = 30'

T-1
T-1

UNION COUNTY DIVISION OF ENGINEERING

TIES

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC

CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.

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BOROUGH OF ROSELLE
BOROUGH OF ROSELLE PARK

COUNTY OF UNION

N.J. Plane Coordinate System NAD 83

Gordon Street

West 1st Avenue

Westfield Avenue (Route 28)

Faitoute Avenue

POB 17+25

POB 10+00

POE 24+00

POE 15+00

HC1 HC2 HC3 HC5 HC6 HC7 HC8 HC9 HC10 HC11 HC12

M.E.P. +90 M.E.P. +52 M.E.P. +14 M.E.P. +93 M.E.P. +93 M.E.P. +40.72

HP +37.81
EL 102.84

GORDON STREET

N 10°15'26.27" W

N 79°44'33.75" E

CONSTRUCTION LINE A

83.31 83.35 83.35 83.05 82.81 82.88 +82.02 82.25 81.00 80.91 x80.48 80.25 83.83

82.85 82.34 85.14 82.13 82.22 82.02 82.01 81.85 81.80 81.40 80.91 80.75 80.22 78.49 78.22 78.15

77.74 GR 77.83 79.87 GR 81.75 81.84 'B' 81.47 RIM 80.45 80.83 80.65 'B' GR 80.65

'B'

POL GORDON STREET
@ STA. 23+48.42
POL CONSTRUCTION LINE A
STA. 11+00.00

NOTE:
SEE SHEETS DTL-1 AND DTL-2 FOR CURB RAMP GRADING.

SCALE IN FEET
1" = 30'
30 20 10 0 30 60

ALL DIMENSIONS SHOWN ARE IN FEET UNLESS OTHERWISE NOTED

G-1 / G-1

UNION COUNTY DIVISION OF ENGINEERING

GRADES

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC

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GENERAL NOTES:

1. ADVANCE WARNING SIGNS DISTANCES, AND TAPER LENGTHS MAY BE EXTENDED, AT DIRECTION OF THE DEPARTMENT, TO ADJUST FOR REDUCED VISIBILITY DUE TO HORIZONTAL AND VERTICAL CURVATURE OF THE ROADWAY.

2. THE APPROXIMATE LOCATIONS OF THE ILLUMINATED FLASHING ARROW BOARDS ARE SHOWN ON THE TRAFFIC CONTROL PLANS. THESE LOCATIONS MAY BE MODIFIED AS APPROVED BY THE RESIDENT ENGINEER TO ADJUST FOR VISIBILITY DUE TO HORIZONTAL OR VERTICAL CURVATURE OF THE ROADWAY OR TO POSITION AT A SAFER LOCATION. ILLUMINATED FLASHING ARROW BOARDS ARE TO BE USED FOR TEMPORARY LANE CLOSINGS AND AT LOCATIONS SHOWN ON THE TRAFFIC CONTROL PLANS.

3. PRIOR TO ANY ROAD CONSTRUCTION, TRAFFIC CONTROL SIGNS AND DEVICES SHALL BE IN PLACE.

4. RAMPS AND/OR SIDE STREETS ENTERING THE ROADWAY AFTER THE FIRST ADVANCE WARNING SIGN SHALL BE PROVIDED WITH AT LEAST ONE W20-IF SIGN (ROAD WORK AHEAD) AS A MINIMUM.

5. ALL EXISTING ROAD SIGNS, PAVEMENT MARKINGS AND/OR PLOWABLE PAVEMENT REFLECTORS WHICH CONFLICT WITH THE PROPOSED TRAFFIC CONTROL PLAN SHALL BE COVERED, REMOVED OR RELOCATED AS DIRECTED BY THE RESIDENT ENGINEER.

6. CONFLICTING OR NON-OPERATING SIGNAL INDICATIONS ON EITHER THE EXISTING, TEMPORARY,OR PROPOSED TRAFFIC SIGNAL SYSTEMS SHALL BE BAGGED OR COVERED.

7. MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES - PART VI "STANDARDS AND GUIDES FOR TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE, UTILITY, AND INCIDENT MANAGEMENT OPERATIONS", UNLESS OTHERWISE NOTED IN THE PLANS AND SPECIFICATIONS.

8. CONSTRUCTION SIGN W99-2 (GIVE US A BRAKE) SHALL BE LOCATED 200 FEET IN ADVANCE OF PROJECT LIMITS.

9. A W1-6 (ARROW) SIGN MOUNTED ON A BREAKAWAY BARRICADE AND CENTERED ON THE CLOSED WIDTH SHALL BE LOCATED 100 FEET BEYOND EACH INTERSECTION OR MAIN ACCESS POINT WITHIN THE AREA OF A LANE OR SHOULDER CLOSURE.

10. CONSTRUCTION SIGNS R11-4 (ROAD CLOSED TO THRU TRAFFIC) SHALL BE PLACED AT THE INTERSECTING STREETS WHICH ARE CLOSED TO TRAFFIC BECAUSE OF CONSTRUCTION.

11. CONSTRUCTION SIGNS W8-9A (SYMBOL FOR UNEVEN PAVEMENT) AND W8-14A (GROOVED PAVEMENT) SHALL BE USED WHEN SUCH PAVEMENT CONDITIONS EXIST. THE PLACEMENT OF THESE SIGNS SHALL BE AS DIRECTED BY THE RESIDENT ENGINEER.

12. MOVING WORK AREAS IN A LANE CLOSURE REQUIRE A TRAILER MOUNTED ILLUMINATED FLASHING ARROW TO REMAIN AT THE END OF THE TAPER, THE TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION THAT SHALL MOVE WITH THE WORK AREAS TO KEEP A 70 FEET MIN. AND 150 FEET MAX. BUFFER IN ADVANCE OF EACH WORK AREA.

13. THE CONTRACTOR SHALL SUBMIT A PLAN FOR THE SAFE ACCESS OF CONSTRUCTION VEHICLES THROUGHOUT THE WORK SITE WHERE SPACE CONSTRAINTS PREVENT THE USE OF LANE CLOSURES. THE PLAN SHALL BE SUBMITTED TO THE RESIDENT ENGINEER IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

14. ALL EXCAVATED AREAS WITHIN OR ADJACENT TO THE ROADWAY SHALL BE BACKFILLED AND PLACED ON AT LEAST 6H : 1V SLOPE BEFORE THE END OF EACH WORK DAY. OTHER EXCAVATED AREA WITHIN THE CLEAR ZONE SHALL BE BACKFILLED.

15. WHERE REQUIRED, THE CONTRACTOR SHALL MAKE PROVISIONS FOR MAINTAINING PEDESTRIAN CROSSING LOCATIONS AND TYPE AS DIRECTED BY THE RESIDENT ENGINEER.

16. BITUMINOUS CONCRETE PLACED DURING THE VARIOUS CONSTRUCTION STAGES SHALL BE TRANSITIONED ON A MINIMUM 20H : 1V SLOPE TO MEET THE ADJACENT EXISTING GRADE AT THE LONGITUDINAL AND TRANSVERSE LIMITS OF THE STAGE CONSTRUCTION AREAS UNLESS OTHERWISE NOTED ON THE STAGE CONSTRUCTION PLANS.

17. THE PLACEMENT AND OR RELOCATION OF PRECAST CONCRETE CURB, CONSTRUCTION BARRIER SHALL BE DONE DURING APPROVED OFF-PEAK HOURS WHEN TRAFFIC MAY BE REDUCED TO ONE LANE IN EACH DIRECTION.

18. CONSTRUCTION ZONE SPEED LIMIT WILL BE DETERMINED BY THE TRAFFIC SIGNAL & SAFETY ENGINEERING, REGIONAL TRAFFIC ENGINEER - WORK ZONE, AT THE TIME OF OR DURING CONSTRUCTION, AS REQUESTED BY THE RESIDENT ENGINEER.

19. THE SPEED LIMIT, R2-1 (BLACK ON WHITE) WITH ADDED WORK ZONE PLATE (BLACK ON ORANGE) SIGNS SHALL BE LOCATED THROUGH WORK AREAS AS DIRECTED BY THE TRAFFIC SIGNAL & SAFETY ENGINEERING REGIONAL TRAFFIC ENGINEER - WORK ZONE.

20. THE REDUCED SPEED AHEAD SIGN, W3-5(S) (BLACK ON ORANGE) SHALL BE LOCATED IN ADVANCE OF SPEED LIMIT R2-1 SIGNS WHICH REDUCE THE NORMAL POSTED SPEED LIMIT THROUGH THE CONSTRUCTION ZONE.

21. TRAFFIC FINES DOUBLED IN WORK AREA R(NJ)5-17(S) , 4 FEET BY 2.5 FEET SIGN SHALL BE LOCATED 500 FEET AFTER THE FIRST ADVANCE WARNING SIGN, (W20 SERIES) AT EACH WORK AREA LOCATED WITHIN URBAN AREAS. THIS SIGN SHALL ALSO BE USED ON PROJECTS REQUIRING MOVING OPERATIONS IN WHICH CASE THE SIGN SHALL BE MOUNTED ON A SLOW MOVING CONSTRUCTION VEHICLE.

22. THE FINAL HA SURFACE PAVEMENT SHALL NOT BE CONSTRUCTED UNTIL THE FINAL STAGE OF THE PROJECT UNLESS OTHERWISE DIRECTED BY THE RESIDENT ENGINEER OR INDICATED ON THE PLANS. MANHOLES AND INLETS SHALL BE SET TO FINISHED GRADE AND TEMPORARY PAVEMENT RAMPS ARE TO BE CONSTRUCTED AROUND THEM WITH A MINIMUM 20H : 1V SLOPE IN ALL DIRECTIONS USING HOT MIX ASPHALT PAVEMENT. THIS TEMPORARY MATERIAL WILL BE REMOVED IMMEDIATELY PRIOR TO PLACING THE SURFACE COURSE.

23. TRAFFIC CONTROL DEVICES FOR LANE CLOSURES INCLUDING SIGNS, CONES, BARRICADES, ETC. SHALL BE PLACED AS SHOWN ON PLANS. SIGNS SHALL NOT BE PLACED WITHOUT ACTUAL LANE CLOSURES AND SHALL BE IMMEDIATELY REMOVED UPON REMOVAL OF THE CLOSURES.

24. CONES MAY BE SUBSTITUTED FOR DRUMS AND INSTALLED UPON THE APPROVAL OF THE RESIDENT ENGINEER.

25. LANE CLOSURES MUST BE COORDINATED THROUGH THE RESIDENT ENGINEER WITH OTHER PROJECTS THAT MAY BE UNDERWAY AT THE SAME TIME IN THE PROJECT AREA.

26. TRAFFIC IMPACT NOTICES AND CHANGES

A. TERMS:
WHEN THE FOLLOWING TERMS ARE USED, THE INTENT AND MEANING SHALL BE AS FOLLOWS:

i. IMPACTS TO NORMAL TRAFFIC FLOW - WORK THAT REQUIRES A PORTION OF THE PAVED ROADWAY BEING BLOCKED OR CLOSED WITH SAFETY DEVICES OR VEHICLES, INCLUDING, BUT NOT LIMITED TO, FULL OR PARTIAL LANE CLOSURES, FULL OR PARTIAL RAMP CLOSURES, SHOULDER CLOSURES, MOVING OPERATIONS SUCH AS TRAFFIC STRIPING OR SWEEPING, LANE SHIFTS, OR ALTERNATING TRAFFIC. THIS APPLIES EVEN WHEN DETOURS ARE PROVIDED.

ii. TEMPORARY LANE CLOSURES - WORK DESCRIBED UNDER "IMPACTS TO NORMAL TRAFFIC FLOW" WHICH IS ROUTINELY SET UP AND REMOVED ON A DAILY BASIS.

iii. PERMANENT LANE CLOSURES - WORK DESCRIBED UNDER "IMPACTS TO NORMAL TRAFFIC FLOW" WHICH REMAINS IN PLACE CONTINUOUSLY FOR 24 HOURS OR MORE.

iv. TIC - TRAFFIC IMPACT COORDINATOR.

B. ADVANCE NOTICES

FOR THE INITIAL START OF WORK THAT REQUIRES "IMPACTS TO NORMAL TRAFFIC FLOW", THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER IN WRITING, ON THE ADVANCE FORM TO-103 PROVIDED BY THE DEPARTMENT, OF THE PROPOSED DATE. THE NOTICE SHALL BE SUBMITTED AT LEAST TWENTY-EIGHT CALENDAR DAYS, BUT NOT MORE THAN SIXTY CALENDAR DAYS, BEFORE THE PROPOSED DATE. START OF WORK THAT IMPACTS NORMAL TRAFFIC FLOW WILL NOT BE PERMITTED PRIOR TO THE DATE STATED IN THE NOTICE. THE CONTRACTOR SHALL CONFIRM, IN WRITING TO THE RESIDENT ENGINEER, THE PROPOSED DATE SEVEN (AND/OR FOURTEEN) CALENDAR DAYS BEFORE STARTING THE ESTABLISHMENT OF THE TRAFFIC CONTROL MEASURES FOR THE TRAFFIC IMPACT. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE RESIDENT ENGINEER IF THE PROPOSED ESTABLISHMENT CAN NOT BE COMPLETED ON THE PROPOSED DATE.

FOR A "PERMANENT LANE CLOSURE", THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER IN WRITING, ON ADVANCE FORM TO-103, OF THE PROPOSED DATE A NEW TRAFFIC PATTERN WILL BE ESTABLISHED. THE NOTICE SHALL BE SUBMITTED AT LEAST TWENTY-EIGHT CALENDAR DAYS, BUT NOT MORE THAN SIXTY CALENDAR DAYS, IN ADVANCE OF THE PROPOSED DATE. START OF A NEW TRAFFIC PATTERN WILL NOT BE PERMITTED PRIOR TO THE DATE STATED IN THE NOTICE. THE CONTRACTOR SHALL CONFIRM, IN WRITING TO THE RESIDENT ENGINEER, THE PROPOSED DATE OF THE NEW TRAFFIC PATTERN SEVEN (AND/OR FOURTEEN) DAYS BEFORE STARTING TRAFFIC CONTROL MEASURES FOR THE ESTABLISHMENT OF THE NEW PATTERN. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE RESIDENT ENGINEER IF THE PROPOSED ESTABLISHMENT CAN NOT BE COMPLETED ON THE PROPOSED DATE.

STARTING THE ESTABLISHMENT OF A NEW PERMANENT TRAFFIC PATTERN SHALL BEGIN NO EARLIER THAN 11:00 PM FRIDAY AND SHALL BE COMPLETED AND READY FOR OPERATIONS BY 6:00 PM THE FOLLOWING SUNDAY. THE ESTABLISHMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE LANE CLOSURE HOURS SPECIFIED IN THE CONTRACT.

ADVANCE NOTICES SENT PRIOR TO THE PRE- CONSTRUCTION MEETING SHALL BE ADDRESSED TO THE CONTACT PERSON AS SPECIFIED IN SUBSECTION 101.04 OF THE SPECIAL PROVISIONS.

C. PROGRESS NOTICES

ALL "IMPACTS TO NORMAL TRAFFIC FLOW" SCHEDULED FOR THE SEVEN DAY PERIOD STARTING ON THE FOLLOWING MONDAY SHALL BE SUBMITTED TO THE RESIDENT ENGINEER BY 9:00 AM OF EACH FRIDAY ON WEEKLY FORM TO-101 PROVIDED BY THE DEPARTMENT.

EACH DAY OF "TEMPORARY LANE CLOSURES" SHALL BE SUBMITTED TO THE RESIDENT ENGINEER BY 9:00 AM THE DAY IN ADVANCE OF THE START OF THOSE OPERATIONS ON DAILY FORM TO-102 PROVIDED BY THE DEPARTMENT.

"TEMPORARY LANE CLOSURES" FOR WEEKENDS SHALL BE SUBMITTED TO THE RESIDENT ENGINEER BY 9:00 AM ON THE IMMEDIATELY PRECEDING FRIDAY ON THE DAILY FORM TO-102 PROVIDED BY THE DEPARTMENT.

D. CHANGES TO THE SCHEDULED CLOSURES

REQUEST FOR A CHANGE TO THE TRAFFIC CONTROL REQUIREMENTS IN THE CONTRACT DOCUMENTS SHALL BE SUBMITTED IN WRITING TO THE RESIDENT ENGINEER AS FOLLOWS:

CHANGES TO THE SCHEDULED HOURS FOR "TEMPORARY LANE CLOSURES" SHALL BE SUBMITTED TO THE RESIDENT ENGINEER AT LEAST EIGHT CALENDAR DAYS IN ADVANCE OF WHEN THE CHANGE IS PROPOSED TO START.

OTHER PROPOSED CHANGES TO "TEMPORARY LANE CLOSURES" AND ALL CHANGES TO "PERMANENT LANE CLOSURES" SHALL BE SUBMITTED TO THE RESIDENT ENGINEER AS SPECIFIED IN THE SPECIFICATIONS.

27. ACCESS TO ALL DRIVEWAYS AND FIRELANES MUST BE MAINTAINED AT ALL TIMES DURING BUSINESS HOURS AND ONE DRIVEWAY AND ALL FIRE LANES MUST BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION

28. FOR TRAFFIC SHIFTS DURING CONSTRUCTION, SIGNS WILL BE NEEDED TO DESIGNATE BUSINESS DRIVEWAYS TO MINIMIZE CONFUSION.

29. THE UNION COUNTY ENGINEERING DEPARTMENT SHALL BE NOTIFIED BY THE CONTRACTOR A MINIMUM OF 48 HOURS PRIOR TO THE INSTALLATION OF DETOUR SIGNING. THE CONTRACTOR SHALL NOTIFY THE BOROUGH OF ROSELLE AND ROSELLE PARK POLICE AND FIRE DEPARTMENTS 24 HOURS PRIOR TO IMPLEMENTATION OF THE DETOUR.

LANE CLOSURE SCHEDULE FOR NON–HOLIDAYS

ROUTE 28, EB/WB, MP: 23.61 & 23.66 (TWO TRAVEL LANE SECTION) AND WEST FIRST AVE (CR 610)

ALL LANES MAINTAINED (EACH DIRECTION)

MONDAY THROUGH FRIDAY	06:00 AM TO 09:00 AM and 03:00 PM TO 08:00 PM
SATURDAY	07:00 AM TO 09:00 PM
SUNDAY	08:00 AM TO 09:00 PM

ONE LANE MAINTAINED - ONE LANE CLOSED

MONDAY THROUGH THURSDAY	09:00 AM TO 03:00 PM and 08:00 PM TO 06:00 AM (NEXT DAY)
FRIDAY	09:00 AM TO 03:00 PM and 08:00 PM TO 07:00 AM (SATURDAY)
SATURDAY	09:00 PM TO 08:00 AM (SUNDAY)
SUNDAY	09:00 PM TO 06:00 AM (MONDAY)

LANE CLOSURE SCHEDULE FOR HOLIDAYS

NO LANE, SHOULDER, RAMP CLOSURES, OR TRAFFIC SHIFTS WILL BE PERMITTED ON THE FOLLOWING HOLIDAYS:

* EASTER SUNDAY (INCLUDING 6:00 AM SATURDAY UNTIL NOON MONDAY)
* MEMORIAL DAY (SEE TABLE BELOW)
* JULY 4TH (SEE TABLE BELOW)
* LABOR DAY (SEE TABLE BELOW)
* ELECTION DAY (6:00 AM UNTIL 8:00 PM THE DAY OF)
* THANKSGIVING DAY (SEE TABLE BELOW)
* CHRISTMAS DAY (SEE TABLE BELOW)
* NEW YEARS DAY (SEE TABLE BELOW)

IF HOLIDAY FALLS ON	NO LANE CLOSURES PERMITTED
SUNDAY OR MONDAY	6:00 AM FRIDAY UNTIL NOON TUESDAY
TUESDAY	6:00 AM FRIDAY UNTIL NOON WEDNESDAY
WEDNESDAY	6:00 AM TUESDAY UNTIL NOON THURSDAY
THURSDAY	6:00 AM WEDNESDAY UNTIL NOON MONDAY
FRIDAY OR SATURDAY	6:00 AM THURSDAY UNTIL NOON MONDAY

CHANNELIZATION DEVICES

DEVICE	CONTRACT QUANTITY
BREAKAWAY BARRICADE	41 UNIT
DRUM	83 UNIT
CONSTRUCTION BARRIER CURB	189 LF
FLASHING ARROW BOARD, 4' X 8'	3 UNIT
PORTABLE VARIABLE MESSAGE SIGN	2 UNIT
TEMPORARY CRASH CUSHION, INERTIAL BARRIER SYSTEM, 10 MODULES	1 UNIT
TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION	2 UNIT
REMOVABLE BLACK LINE MASKING TAPE, 6"	1304 LF
TEMPORARY PAVEMENT MARKING TAPE, 4"	1441 LF

LEGEND

- BREAKAWAY BARRICADES
- BREAKAWAY BARRICADES WITH SIGN
- CONSTRUCTION SIGNS
- DRUMS
- CONE
- PRECAST CONCRETE CURB CONSTRUCTION BARRIER (TYPE SPECIFIED)
- DIRECTION OF TRAFFIC FLOW
- TRAFFIC DIRECTOR, FLAGGER
- TRAILER MOUNTED ARROW BOARD SHOWING CAUTION MODE
- ILLUMINATED FLASHING ARROW MOUNTED ON TOWING VEHICLE, SHOWING ARROW PATTERN (Left, Right, Both)
  LEFT RIGHT BOTH
- TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION AND ARROW BOARD SHOWING CAUTION MODE
- TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION AND ARROW BOARD, SHOWING ARROW PATTERN (Left, Right, Both)
  LEFT RIGHT BOTH
- TEMPORARY CRASH CUSHION, INERTIAL BARRIER SYSTEM
- TEMPORARY CRASH CUSHION, (all other approved)
- TEMPORARY PAVEMENT
- BUFFER ZONE
- WORK AREA
- PAINT STRIPING TRUCK OR OTHER OPERATING VEHICLE

30 20 10 0 30 60
SCALE IN FEET
1" = 30'

ALL DIMENSIONS SHOWN ARE IN FEET UNLESS OTHERWISE NOTED

TC-1
TC-6

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
Mount Laurel, NJ

8/16/2019 TC1_2893.dgn

TRAFFIC
NAIK CONSULTING GROUP, P.C.
(CERTIFICATE OF AUTHORIZATION NO. OR PROF. ASSOCIATION)
(SUBCONSULTANT'S SIGNATURE)
(SUBCONSULTANT'S NAME PRINTED)

(NAME OF SUBCONSULTANT, If different from consultant)
(CERTIFICATE OF AUTHORIZATION NO. OR PROF. ASSOCIATION)
(LAND SURVEYOR'S SIGNATURE)
(LAND SURVEYOR'S NAME PRINTED)
NEW JERSEY PROFESSIONAL LAND SURVEYOR LICENSE NO.

UNION COUNTY DIVISION OF ENGINEERING

TRAFFIC CONTROL AND STAGING PLANS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

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85

CONSTRUCTION SIGN TABLE

SIGN DESIGNATION	MESSAGE	SIZE IN X IN	AREA IN SF	REQUIRED PLAN SHEET NUMBER TC-1	TC-2	TC-3	TC-4	TC-5	TC-6	POST STAGE	TOTAL NUMBER REQUIRED	TOTAL AREA IN SF
G20-2A	END ROAD WORK	48 X 24	8.0				4	4	4	4	4	32.0
M4-8A	END DETOUR	24 X 18	3.0			2					2	6.0
M4-9L	DETOUR (WITH LEFT ARROW)	30 X 24	5.0			1					1	5.0
M4-9R	DETOUR (WITH RIGHT ARROW)	30 X 24	5.0			3					3	15.0
M4-9X	DETOUR (WITH UP ARROW)	30 X 24	5.0			6					6	30.0
M4-10L	(DETOUR ARROW LEFT)	48 X 18	6.0			1	1	1	1		1	6.0
M4-10R	(DETOUR ARROW RIGHT)	48 X 18	6.0			1	1	1	1		1	6.0
R3-1	(RIGHT TURN PROHIBITED)	24 X 24	4.0			2					2	8.0
R(NJ)3-7L	LANE FOR LEFT TURN ONLY	30 X 24	5.0						1		1	5.0
R(NJ)5-17(S)	TRAFFIC FINES DOUBLED IN WORK AREA	48 X 30	10.0								2	20.0
R9-9	SIDEWALK CLOSED	24 X 12	2.0				1	6	2		6	12.0
R9-11L	SIDEWALK CLOSED AHEAD, CROSS HERE	24 X 18	3.0			3					3	9.0
R9-11R	SIDEWALK CLOSED AHEAD, CROSS HERE	24 X 18	3.0			2	2	1			2	6.0
R9-11AL(MOD.)	SIDEWALK CLOSED USE LOCUST ST.	48 X 24	8.0				1				1	8.0
R9-11AR(MOD.)	SIDEWALK CLOSED USE LOCUST ST.	48 X 24	8.0				1				1	8.0
R11-2B	BRIDGE CLOSED	48 X 30	10.0	2		4	2	2	2		4	40.0
W1-4BR	TWO LANE REVERSE CURVE (SYMBOL)	48 X 48	16.0						2		2	32.0
W1-6L	(ONE DIRECTION LARGE ARROW-LEFT)	48 X 24	8.0				3	3	6	4	6	48.0
W1-6R	(ONE DIRECTION LARGE ARROW-RIGHT)	48 X 24	8.0						6	4	6	48.0
W4-2L	(LANE ENDS-LEFT)	48 X 48	16.0							1	1	16.0
W4-2R	(LANE ENDS-RIGHT)	48 X 48	16.0							1	1	16.0
W5-1(S)	ROAD NARROWS	48 X 48	16.0				1	2	3		3	48.0
W5-4	RAMP NARROWS	48 X 48	16.0				1	1	1		1	16.0
W20-1A	ROAD WORK 1500 FT	48 X 48	16.0				3	4	4		4	64.0
W20-1D(1/2)	ROAD WORK 1/2 MILE	48 X 48	16.0				3	4	4	2	4	64.0
W20-1F	ROAD WORK AHEAD	48 X 48	16.0				1				1	16.0
W20-2	DETOUR ___FT	48 X 48	16.0			3					3	48.0
W20-3	ROAD CLOSED ___FT	48 X 48	16.0			1					1	16.0
W20-5A	LEFT LANE CLOSED 1500 FT	48 X 48	16.0							1	1	16.0
W20-5A	RIGHT LANE CLOSED 1500 FT	48 X 48	16.0							1	1	16.0
W20-5B	LEFT LANE CLOSED 1000 FT	48 X 48	16.0							1	1	16.0
W20-5B	RIGHT LANE CLOSED 1000 FT	48 X 48	16.0							1	1	16.0
W20-10C	SHOULDER CLOSED 500 FT	48 X 48	16.0				1	1			1	16.0
W99-2	GIVE US A BRAKE SLOW DOWN	48 X 48	16.0								2	32.0
SIGN A	GORDON ST.	36 X 12	3.0			13					13	39.0
SIGN B	GORDON STREET BRIDGE CLOSED	48 X 30	10.0			5					5	50.0
SIGN C	ON OR ABOUT THIS BRIDGE TO BE CLOSED	84 X 42	24.5	2		2					2	49.0
											CONSTRUCTION SIGN TOTAL =	907.0

MODIFIED CONSTRUCTION SIGN LEGEND

LANE FOR LEFT TURN ONLY — *5"C, *5"C, 5"C
R(NJ)3-7L, 30" x 24"
ARROW: WIDTH: 5" LENGTH: 7½" ANGLE: 45°
*REDUCE SPACING TO FIT PANEL WIDTH
COLORS: TEXT - BLACK BACKGROUND - WHITE

SIDEWALK CLOSED / USE LOCUST ST. — 4"C, 4"C
R9-11AL(MOD.), 48" x 24"
COLORS: TEXT - BLACK BACKGROUND - WHITE

SIDEWALK CLOSED / USE LOCUST ST. — 4"C, 4"C
R9-11AR(MOD.), 48" x 24"
COLORS: TEXT - BLACK BACKGROUND - WHITE

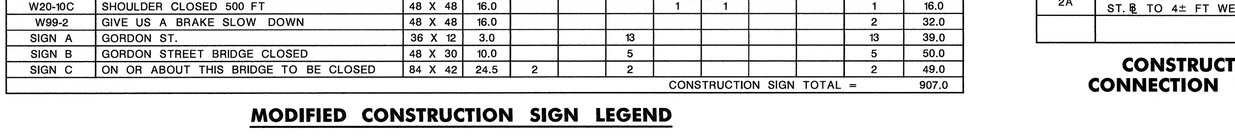
TRAFFIC FINES DOUBLED IN WORK AREA — 5"C, 7"D, 5"C
R(NJ)5-17, 48" x 30"
COLORS: TEXT - BLACK BACKGROUND - WHITE

GORDON ST. — 4"C
SIGN A, 36" x 12"
COLORS: TEXT - BLACK BACKGROUND - ORANGE

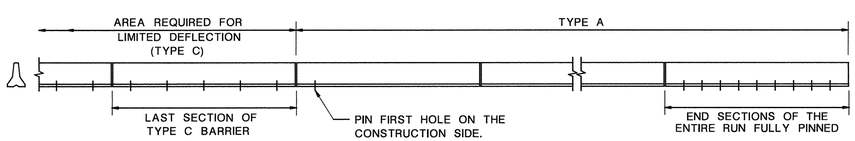
GORDON STREET BRIDGE CLOSED / FOLLOW DETOUR — 4"C, 4"C, 4"C, 4"C
SIGN B, 48" x 30"
COLORS: TEXT - BLACK BACKGROUND - ORANGE

ON OR ABOUT ___ / THIS BRIDGE TO BE CLOSED FOR REPAIR / PLAN ALT. ROUTE — 4"C, 6"C, 6"C, 6"C
SIGN C, 84" x 42"
COLORS: TEXT - BLACK BACKGROUND - ORANGE

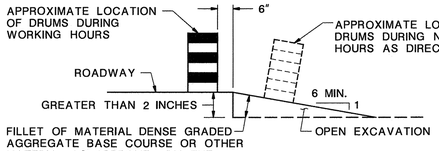
NOTES:
- INSTALL 2 WEEKS PRIOR TO CLOSURE
- REMOVE ONCE BRIDGE IS CLOSED



CONNECTION TYPE B TRANSITION

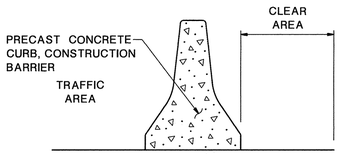


CONNECTION TYPE C TRANSITION



NOTE:
ESCAPE RAMPS MUST BE CONSTRUCTED AND MAINTAINED DURING NON-WORKING HOURS WHERE A VERTICAL DROP GREATER THAN 2 INCHES EXISTS ADJACENT TO TRAVELED LANE.

ESCAPE RAMP DETAIL

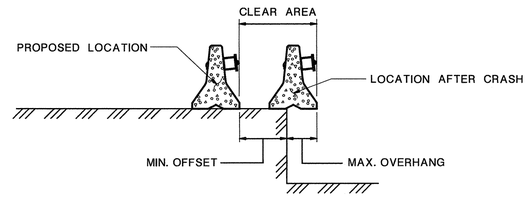


CONNECTION TYPE	CLEAR AREA
A	41 INCHES
B	28 INCHES
C	11 INCHES

NOTES:
1. CHANGES TO THE PROPOSED CONNECTION TYPE AT ANY LOCATION MUST BE APPROVED BY THE DEPARTMENT.
2. NO ROADWAY DROP OFFS, OBSTRUCTIONS, STORAGE OF MATERIALS, OR WORK WILL BE PERMITTED IN THE CLEAR AREA UNLESS APPROVED BY THE RE. EXCEPT ROADWAY DROP OFFS ARE PERMITTED ONLY WHEN USING THE OPTIONAL CONNECTION TYPE B TREATMENT AT VERTICAL DROP OFF.

STAGE	LOCATION	CONNECTION TYPE
1	ALONG ROUTE 28 EB, 144± FT WEST OF GORDON ST. TO 4± FT WEST OF GORDON ST.	B
2A	ALONG ROUTE 28 EB, 144± FT WEST OF GORDON ST. TO 4± FT WEST OF GORDON ST.	B

CONSTRUCTION BARRIER CURB CONNECTION TYPE AND CLEAR AREA



STAGE	LOCATION	CONNECTION TYPE
	RTE. STA. TO STA.	

CONNECTION TYPE	MIN. OFFSET	MAX. OVERHANG	CLEAR AREA
B	12"	16"	28"

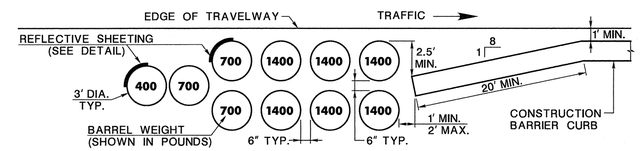
OPTIONAL CONNECTION TYPE B TREATMENT AT VERTICAL DROP OFF

RECOMMENDED TAPER LENGTH AND SPACING FOR CHANNELIZING TAPERS					RECOMMENDED SPACING ALONG TANGENTS
REGULATORY APPROACH SPEED OF TRAFFIC MILES/HOUR	MINIMUM TAPER RATIO IN LENGTH PER FOOT OF WIDTH	MINIMUM TAPER LENGTH L – FOR LANE WIDTHS 10′	11′	12′	MAXIMUM DEVICE (B) SPACING ALONG TAPERS IN FEET	MAXIMUM DEVICE (D) SPACING ALONG TANGENTS IN FEET
25	10.5:1	105	115	125	25	50
30	15:1	150	165	180	30	60
35	20.5:1	205	225	245	35	70
40	27:1	270	300	325	40	80
45	45:1	450	495	540	45	90
50	50:1	500	550	600	50	100
55	55:1	550	605	660	55	110
60	60:1	600	660	720	60	120
65	65:1	650	715	780	65	130

NOTE:
THE MAXIMUM DEVICE SPACING ALONG CURVES SHALL BE AS DEFINED FOR TAPERS (B) IN THE ABOVE TABLE.

REGULATORY APPROACH SPEED OF TRAFFIC MILES/HOUR	RECOMMENDED SIGHT DISTANCE TO BEGINNING OF CHANNELIZING TAPERS DESIRABLE RURAL FEET	DESIRABLE URBAN FEET	MINIMUM RURAL AND URBAN FEET
25	375	525	150
30	450	625	200
35	525	725	250
40	600	825	325
45	675	925	400
50	750	1025	475
55	875	1150	550
60	1000	1275	650
65	1050		725

NOTES:
1. AVOIDANCE MANEUVER IS FOR A SPEED, PATH, AND/OR DIRECTION CHANGE PRIOR TO THE BEGINNING OF CHANNELIZING TAPERS.
2. RECOMMENDED DISTANCES BETWEEN TWO SEPARATE LANE CLOSURES ARE DOUBLE THE VALUES SHOWN ABOVE.
3. RURAL AND URBAN ROAD DESIGNATIONS ARE AS DEFINED IN THE NJDOT STATE HIGHWAY STRAIGHT LINE DIAGRAMS.
4. PROVIDE DESIRABLE VALUES WHEREVER POSSIBLE. IF IT IS NOT FEASIBLE OR PRACTICAL TO PROVIDE DESIRABLE VALUES BECAUSE OF HORIZONTAL OR VERTICAL CURVATURE OR IF RELOCATION OF THE TAPER IS NOT POSSIBLE, THEN MINIMUM VALUES CAN BE APPLIED. WHEN MINIMUM VALUES ARE USED, PAY SPECIAL ATTENTION TO THE USE OF SUITABLE TRAFFIC CONTROL DEVICES WHEN PROVIDING ADVANCED WARNING OF THE CONDITIONS THAT ARE LIKELY TO BE ENCOUNTERED.
5. LOCATE TAPERS TO MAXIMIZE THE VISIBILITY OF THEIR TOTAL LENGTH.



NOTE:
MODULES SHALL BE PLACED ON PAVEMENT SLOPES NOT TO EXCEED 5%, EXACT LOCATIONS SHALL BE DIRECTED BY THE ENGINEER AND MANUFACTURE'S REPRESENTATIVE.

TEMPORARY CRASH CUSHION INERTIAL BARRIER SYSTEM, 10 MODULES

NOTE:
AT ALL LOCATIONS WHERE CRASH CUSHIONS ARE USED, ON THE SMOOTH SURFACE OF THE "BELLY BAND" OF HYDRACELL, QUADGUARD TYPES AND ENERGY BARRELS, INSTALL 30" X 30" PIECE OF HIGH INTENSITY COLD APPLICATION, HITACK OR SUPER HITACK SHEETING WITH EITHER OF THE THREE APPROPRIATE CROSS HATCHING SCHEMES SHOWN ABOVE ON EACH TYPE BARRELS. DUE TO RIDGED SURFACE, THE SHEETING MAY HAVE TO BE MOUNTED ON "LIGHT" STOCK AND BE POP-RIVETED ONTO THE LEAD DRUM. THESE PANELS MAY ALSO BE USED ON BEAM GUIDE RAIL ENDS.

REFLECTIVE SHEETING DETAILS

30 20 10 0 30 60
SCALE IN FEET
1" = 30'

TC-2
TC-6

UNION COUNTY DIVISION OF ENGINEERING

TRAFFIC CONTROL AND STAGING PLANS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC

CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.

NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

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85

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
Mount Laurel, NJ

8/6/2019 TC2_2893.dgn

DETOUR SIGN LEGEND

SIGN NO.	MESSAGE	SIGN DESIGNATION	SIZE IN. X IN.	AREA IN S.F.	NUMBER REQUIRED	TOTAL AREA IN S.F.
1	GORDON ST	SIGN A	36 X 12	3	13	39
2	DETOUR ←	M4-9L	30 X 24	5	1	5
3	DETOUR →	M4-9R	30 X 24	5	3	15
4	DETOUR ↑	M4-9X	30 X 24	5	6	30
5	END DETOUR	M4-8A	24 X 18	3	2	6
6	DETOUR	M4-10L	48 X 18	6	1	6
7	DETOUR	M4-10R	48 X 18	6	1	6
8		R3-1	24 X 24	4	2	8
9	SIDEWALK CLOSED AHEAD ← CROSS HERE	R9-11L	24 X 18	3	3	9
10	SIDEWALK CLOSED AHEAD → CROSS HERE	R9-11R	24 X 18	3	2	6
11	BRIDGE CLOSED	R11-2B	48 X 30	10	4	40
12	DETOUR __ FT	W20-2	48 X 48	16	3	48
13	GORDON STREET BRIDGE CLOSED FOLLOW DETOUR	SIGN B	48 X 30	10	5	50
14	ROAD CLOSED __ FT	W20-3	48 X 48	16	1	16

SIGN LETTERS:
SPECIAL SIGNS SHALL HAVE BLACK TEXT MESSAGES ON ORANGE RETROSPECTIVE SHEETING FOR VISUAL IMPACT PERFORMANCE BACKGROUND. REFERENCE IS MADE TO THE PUBLICATION ENTITLED "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BY THE FEDERAL HIGHWAY ADMINISTRATION FOR LETTER STROKE AND DESIGN AND SPACING BETWEEN LETTERS IN A WORD. SPACING BETWEEN WORDS IN A LINE, BETWEEN LINES OF A MESSAGE, AND BORDER REQUIREMENTS SHOULD BE DETERMINED BY GOOD SIGN -PAINTING PRACTICES.

SIGN FACES:
SIGN FACES SHALL BE ASTM D 4956 TYPE VII OR VIII FLUORESCENT ORANGE SHEETING.

BACKING MATERIAL:
ALUMINUM SHALL BE FLAT SHEET ALLOY 5052-H38 OR 6061-T6 ALLOY, 0.10 GAUGE.

FASTENING:
ALL SIGNS SHALL BE SECURELY FASTENED TO THEIR SUPPORTS WITH BOLTS, NUTS AND WASHERS IN ACCORDANCE WITH THE SPECIFICATIONS.

TEMPORARY SIGN SUPPORTS:
SIGN SUPPORTS SHALL BE OF WELL SEASONED LUMBER, S4S, FREE OF SPLITS, KNOTS, AND WARPS, OR OF STEEL COMPONENTS.

WOOD POSTS SHALL HAVE A UNIFORM CROSS -SECTION AND SHALL NOT EXCEED THE FOLLOWING DIMENSIONS FOR:
SINGLE POST = 4" X 6"
TWO POSTS = 3" X 6" OR 4" X 5"
THREE POSTS = 3" X 5" OR 4" X 4"

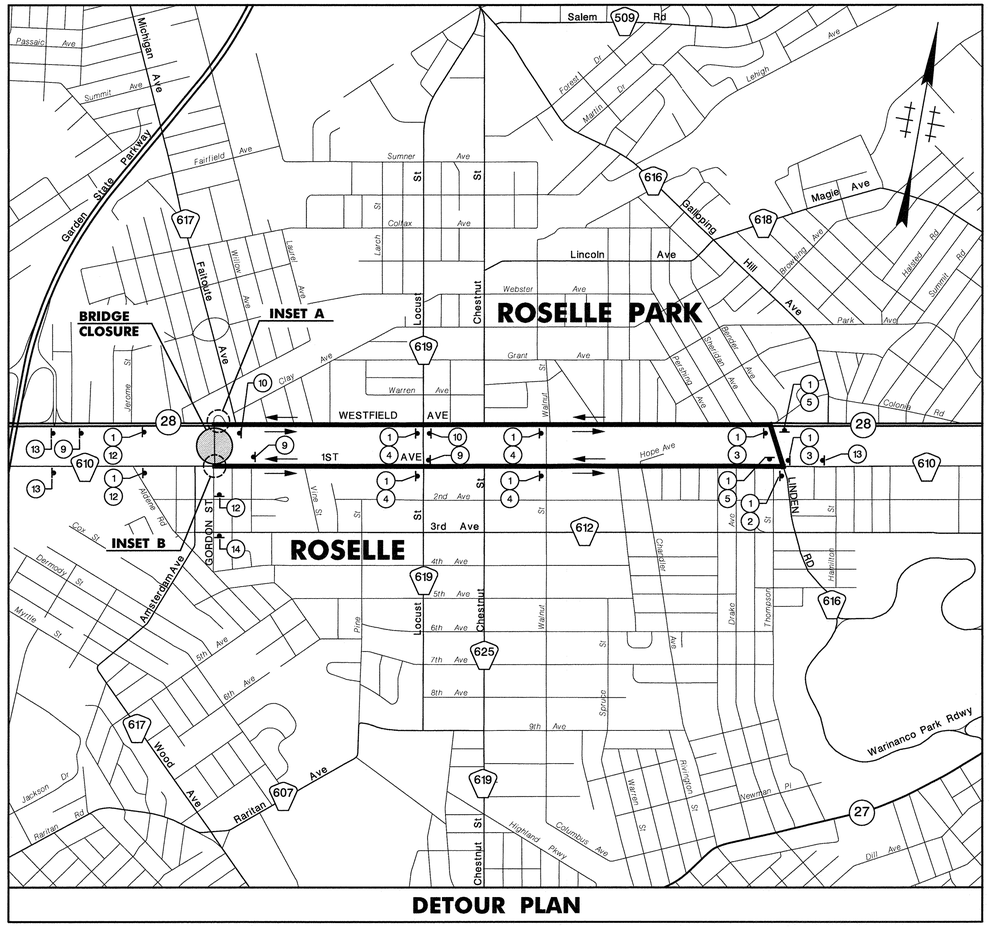
4" X 6" WOOD POSTS SHALL BE MODIFIED BY DRILLING 1-1/2 INCH DIAMETER HOLES 4 INCHES AND 18 INCHES ABOVE THE GROUND LINE AND PERPENDICULAR TO THE ROADWAY CENTERLINE. NO BRACING IS PERMITTED. VERTICAL CLEARANCES FOR SIGNS MOUNTED ON WOOD SUPPORTS SHALL BE 7 FOOT MINIMUM. EMBEDMENT DEPTH FOR THE WOOD POST SHALL NOT EXCEED 3.5 FEET.

TEMPORARY STEEL POSTS SHALL BE IN ACCORDANCE WITH THE STANDARD DETAIL FOR U-POST SIGN SUPPORT.

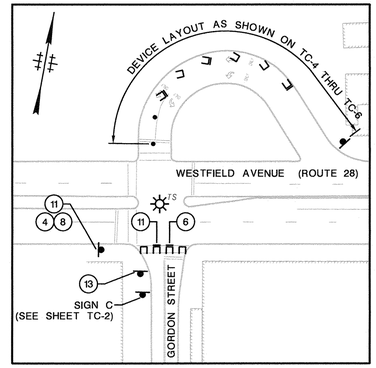
TEMPORARY SIGN SUPPORTS NOT MEETING THIS CRITERIA SHALL BE SHIELDED BY LONGITUDINAL BARRIER OR CRASH CUSHIONS.

CONSTRUCTION SIGNS AND THEIR PLACEMENT SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS," (MUTCD).

REFERENCE IS MADE TO THE CURRENT PUBLICATION ENTITLED "STANDARD HIGHWAY SIGNS" BY THE FEDERAL HIGHWAY ADMINISTRATION, BUREAU OF PUBLIC WORKS, WASHINGTON, D.C.

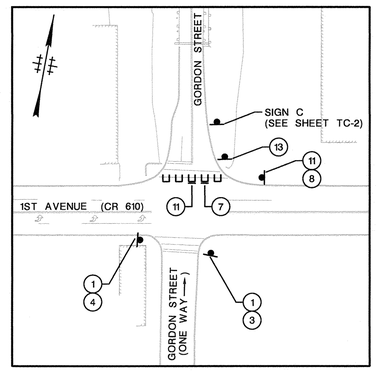


DETOUR PLAN



INSET A

INTERSECTION OF GORDON STREET AND
WESTFIELD AVENUE (ROUTE 28)
(NOT TO SCALE)



INSET B

INTERSECTION OF GORDON STREET AND
1ST AVENUE (CR 610)
(NOT TO SCALE)

GENERAL NOTES

1. THE CONTRACTOR SHALL NOTIFY THE UNION COUNTY ENGINEERING DEPARTMENT A MINIMUM OF 48 HOURS PRIOR TO THE INSTALLATION OF DETOUR SIGNING.
2. THE CONTRACTOR SHALL NOTIFY THE BOROUGHS OF ROSELLE AND ROSELLE PARK POLICE AND FIRE DEPARTMENTS 24 HOURS PRIOR TO IMPLEMENTATION OF THE DETOUR.
3. ALL EXISTING ROAD SIGNS PAVEMENT MARKINGS AND/OR PLOWABLE PAVEMENT REFLECTORS WHICH CONFLICT WITH THE PROPOSED DETOUR PLAN SHALL BE COVERED, REMOVED OR RELOCATED AS DIRECTED BY THE ENGINEER.
4. THE REQUIRED CONSTRUCTION WARNING SIGNS SHALL BE MAINTAINED BY THE CONTRACTOR. CONSTRUCTION SIGNS SHALL BE REMOVED OR COVERED WITH AN OPAQUE MATERIAL WHEN THE MESSAGE IS NOT APPLICABLE FOR A PARTICULAR STAGE.
5. THE CONTRACTOR SHALL COMPLY WITH LOCAL ORDINANCES FOR NOISE AND PERMISSABLE WORKING HOURS.
6. ADVANCE WARNING SIGNS, DISTANCES, AND TAPER LENGTHS MAY BE EXTENDED, AT DIRECTION OF THE ENGINEER, TO ADJUST FOR REDUCED VISIBILITY DUE TO HORIZONTAL AND VERTICAL CURVATURE OF THE ROADWAY.
7. PRIOR TO IMPLEMENTATION OF THE DETOUR, TRAFFIC CONTROL SIGNS AND DEVICES SHALL BE IN PLACE.
8. FLASHING WARNING LIGHTS SHALL NOT BE AFFIXED TO ANY SIGN OR BARRICADE.
9. ALL SIGNS AND BARRICADES SHALL BE FURNISHED AND PLACED BY THE CONTRACTOR AT THE LOCATIONS DESIGNATED BY THE ENGINEER, UNLESS OTHERWISE NOTED.
10. IF AND WHEN DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL SUPPLY AND PLACE ADDITIONAL SIGNS AND BARRICADES AT THE UNIT BID PRICE.

1000 500 0 1000 2000
SCALE IN FEET
1" = 1000'

TC-3
TC-6

UNION COUNTY DIVISION OF ENGINEERING

TRAFFIC CONTROL AND STAGING PLANS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

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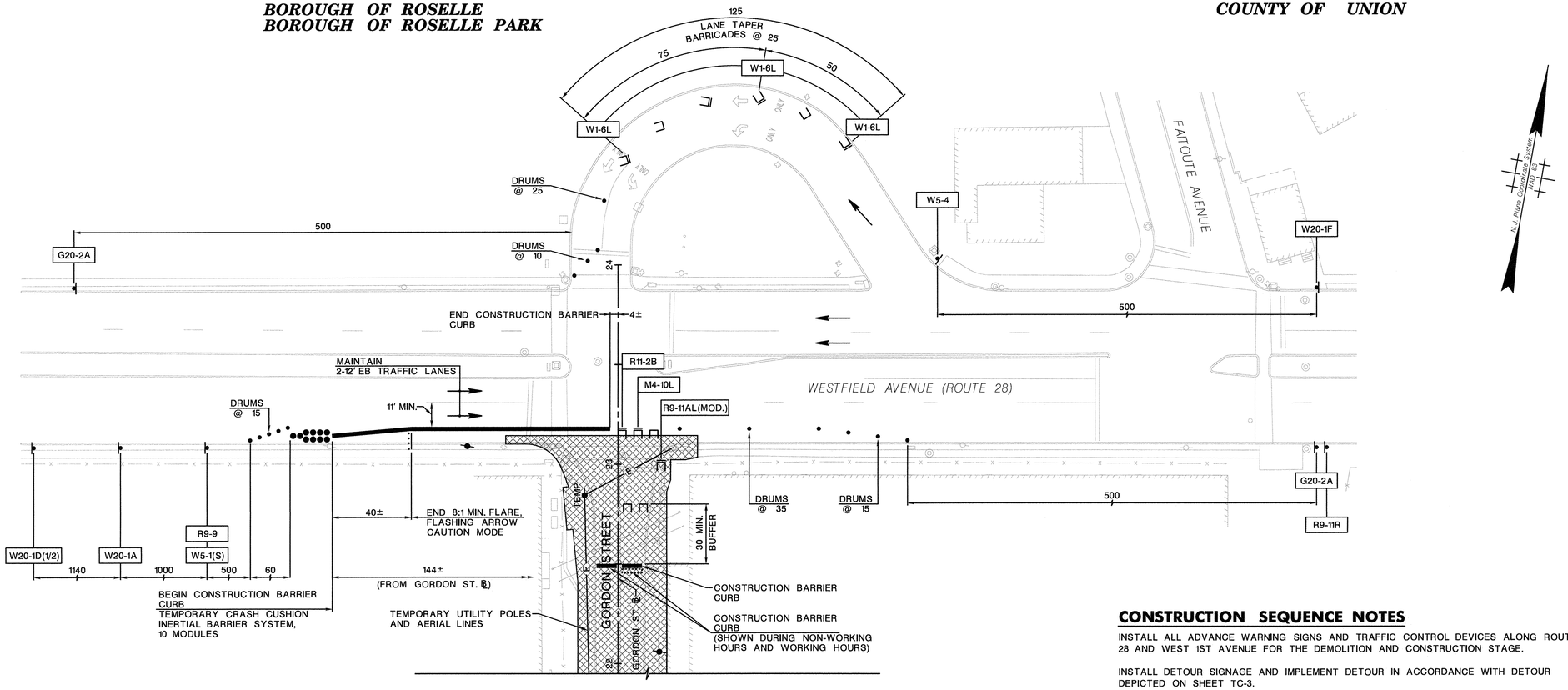
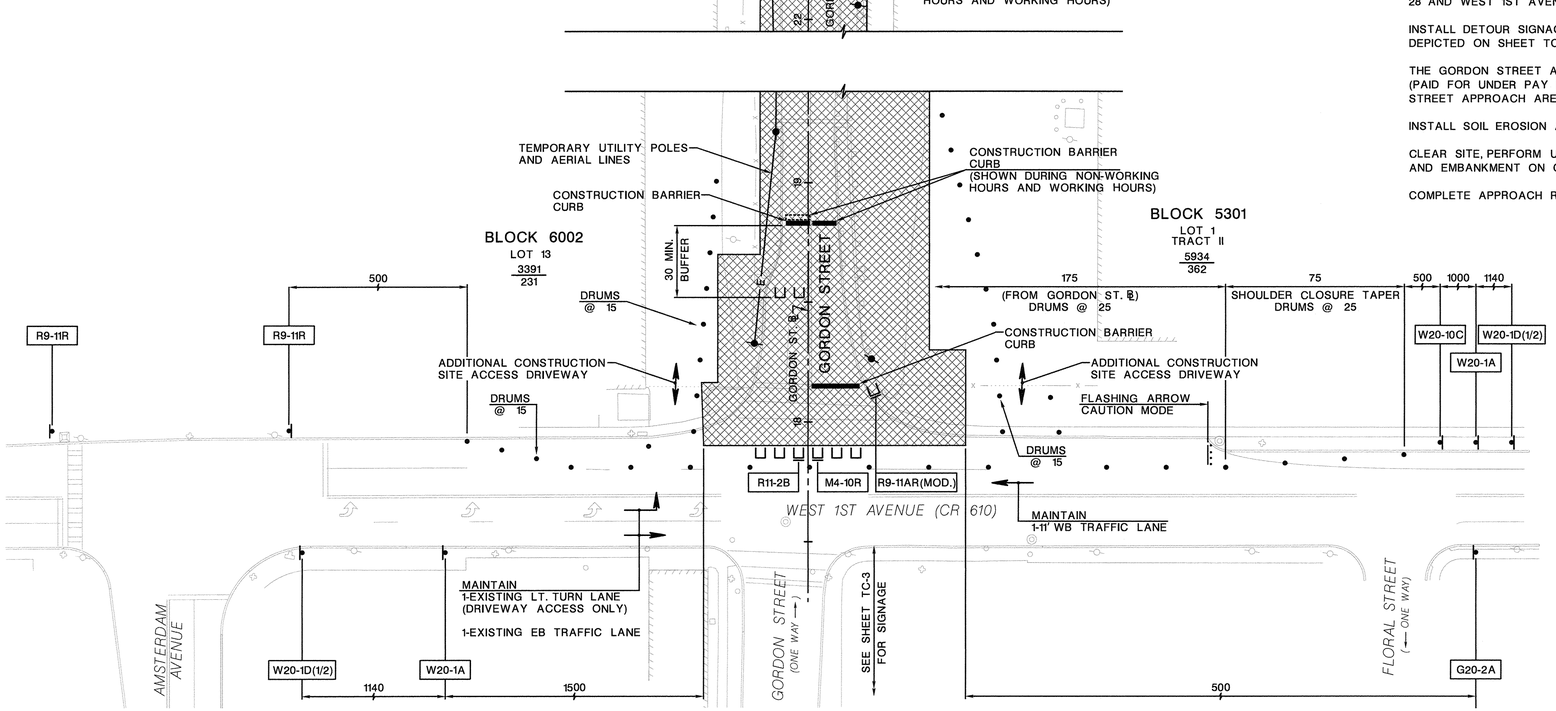
BOROUGH OF ROSELLE
BOROUGH OF ROSELLE PARK

COUNTY OF UNION





CONSTRUCTION SEQUENCE NOTES

INSTALL ALL ADVANCE WARNING SIGNS AND TRAFFIC CONTROL DEVICES ALONG ROUTE 28 AND WEST 1ST AVENUE FOR THE DEMOLITION AND CONSTRUCTION STAGE.

INSTALL DETOUR SIGNAGE AND IMPLEMENT DETOUR IN ACCORDANCE WITH DETOUR DEPICTED ON SHEET TC-3.

THE GORDON STREET APPROACH TO ROUTE 28 VIDEO DETECTION IS TO BE DISCONNECTED. (PAID FOR UNDER PAY ITEM TEMPORARY TRAFFIC SIGNAL SYSTEM LOCATION 1 SIGNAL FACES FACING THE GORDON STREET APPROACH ARE TO BE BAGGED AND DISCONNECTED.)

INSTALL SOIL EROSION AND SEDIMENT CONTROL DEVICES AS REQUIRED.

CLEAR SITE, PERFORM UTILITY RELOCATIONS, DEMOLISH AND RECONSTRUCT STRUCTURES AND EMBANKMENT ON GORDON STREET.

COMPLETE APPROACH ROADWAY WORK ON GORDON STREET.

DEMOLITION & CONSTRUCTION OF GORDON STREET BRIDGE AND APPROACH ROADWAY

30 20 10 0 30 60
SCALE IN FEET
1" = 30'

ALL DIMENSIONS SHOWN ARE IN FEET UNLESS OTHERWISE NOTED

TC-4
TC-6

UNION COUNTY DIVISION OF ENGINEERING

TRAFFIC CONTROL AND STAGING PLANS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC

CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.

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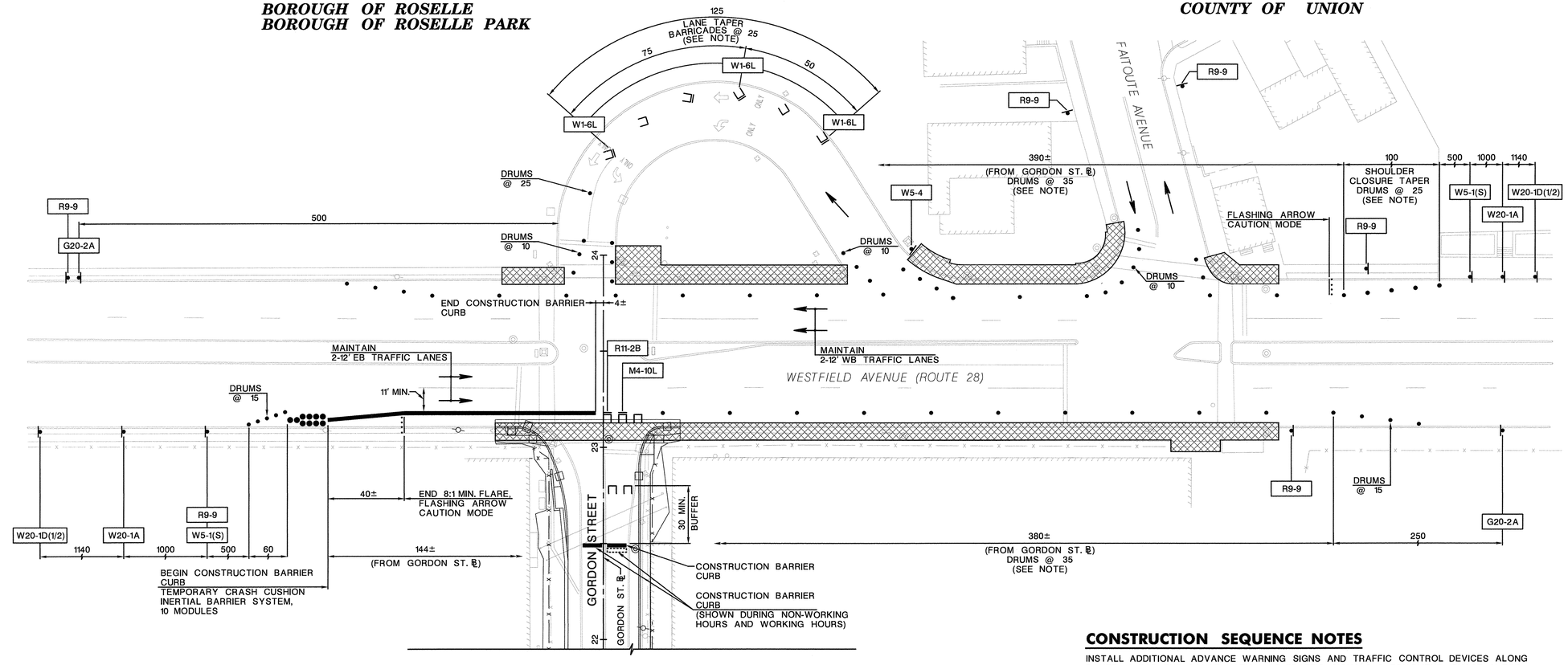
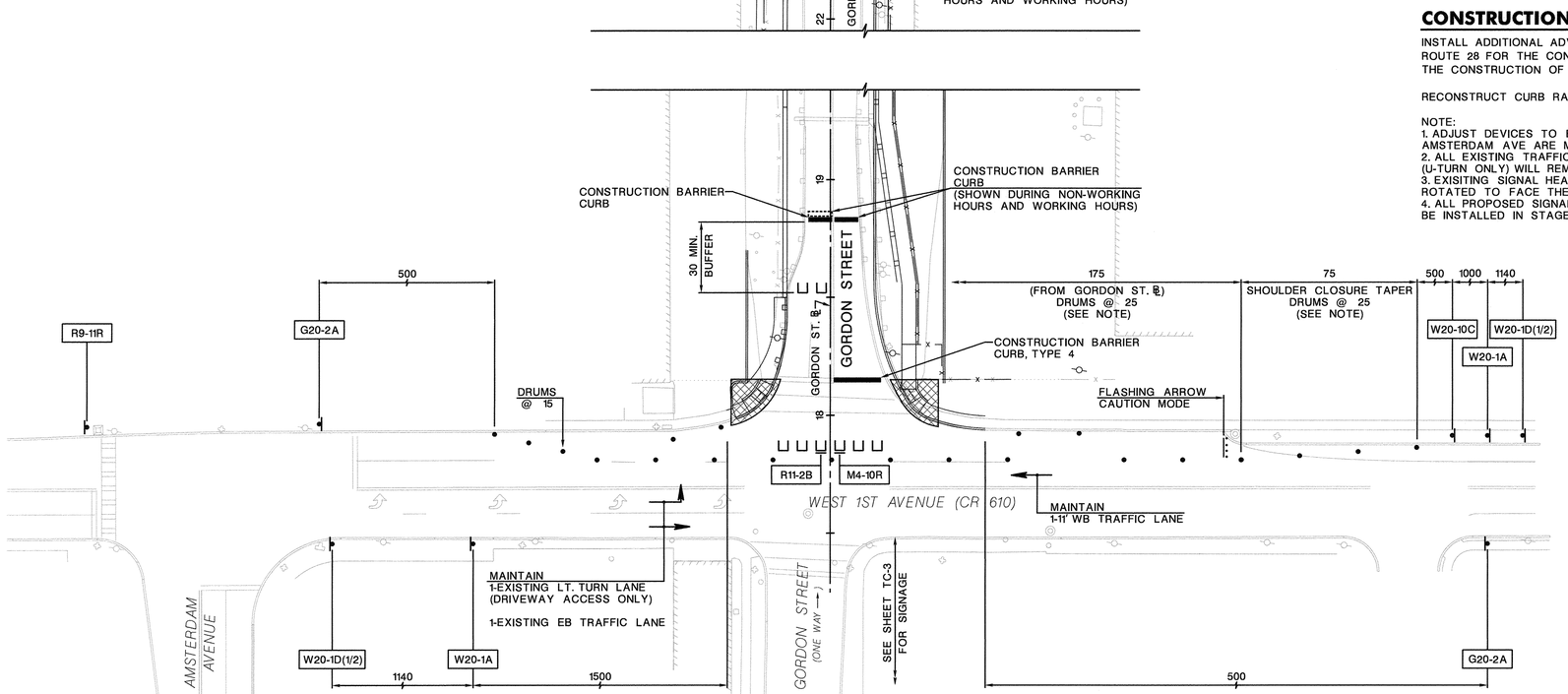
BOROUGH OF ROSELLE
BOROUGH OF ROSELLE PARK

COUNTY OF UNION





CONSTRUCTION SEQUENCE NOTES

INSTALL ADDITIONAL ADVANCE WARNING SIGNS AND TRAFFIC CONTROL DEVICES ALONG ROUTE 28 FOR THE CONSTRUCTION OF TRAFFIC SIGNALS & EQUIPMENT (PHASE A) FOR THE CONSTRUCTION OF NEW SIGNAL HARDWARE.

RECONSTRUCT CURB RAMPS AT ROUTE 28 AND WEST 1ST AVENUE INTERSECTIONS.

NOTE:
1. ADJUST DEVICES TO ENSURE DRIVEWAY ACCESS AND TURNING MOVEMENTS AT AMSTERDAM AVE ARE MAINTAINED.
2. ALL EXISTING TRAFFIC SIGNALS ALONG ROUTE 28, FAITOUTE AVENUE AND JUGHANDLE (U-TURN ONLY) WILL REMAIN OPERATIONAL.
3. EXISITING SIGNAL HEAD (FAR RIGHT) FACING GORDON STREET APPROACH WILL BE ROTATED TO FACE THE U-TURN APPROACH.
4. ALL PROPOSED SIGNALS (TRAFFIC AND PEDESTRIAN) INCLUDING THE CONTROLLER WILL BE INSTALLED IN STAGE A. PROPOSED SIGNALS WILL BE BAGGED AND DISCONNECTED.

CONSTRUCTION OF PROPOSED TRAFFIC SIGNALS & EQUIPMENT (PHASE A)

30 20 10 0 30 60
SCALE IN FEET
1" = 30'

ALL DIMENSIONS SHOWN ARE IN FEET UNLESS OTHERWISE NOTED

TC-5 / TC-6

UNION COUNTY DIVISION OF ENGINEERING

TRAFFIC CONTROL AND STAGING PLANS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
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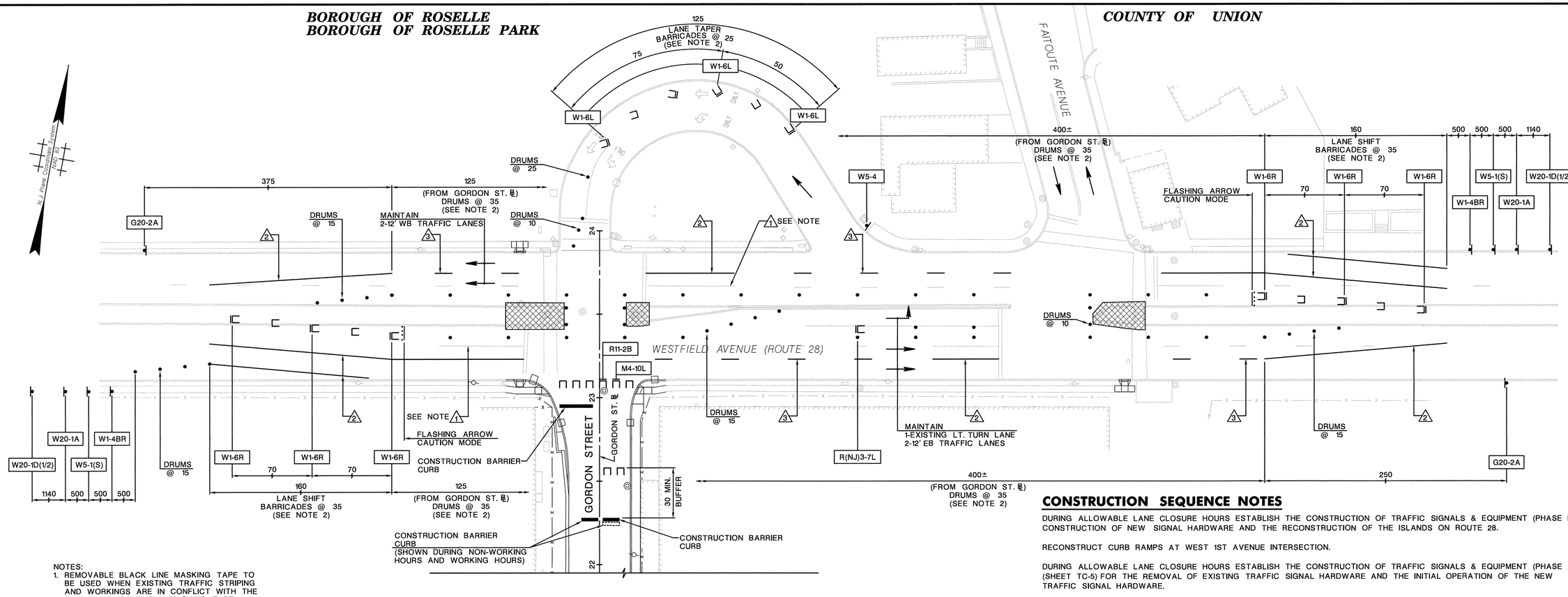
BOROUGH OF ROSELLE
BOROUGH OF ROSELLE PARK

COUNTY OF UNION



NOTES:
1. REMOVABLE BLACK LINE MASKING TAPE TO BE USED WHEN EXISTING TRAFFIC STRIPING AND WORKINGS ARE IN CONFLICT WITH THE TEMPORARY PAVEMENT MARKING TAPE.
2. ADJUST DEVICES TO ENSURE DRIVEWAY ACCESS AND TURNING MOVEMENTS AT AMSTERDAM AVE ARE MAINTAINED.

TEMPORARY PAVEMENT MARKING LEGEND

1. 6" REMOVABLE BLACK LINE MASKING TAPE
2. 4" WHITE TEMPORARY PAVEMENT MARKING TAPE
3. 4" BROKEN WHITE TEMPORARY PAVEMENT MARKING TAPE

CONSTRUCTION SEQUENCE NOTES

DURING ALLOWABLE LANE CLOSURE HOURS ESTABLISH THE CONSTRUCTION OF TRAFFIC SIGNALS & EQUIPMENT (PHASE B) FOR CONSTRUCTION OF NEW SIGNAL HARDWARE AND THE RECONSTRUCTION OF THE ISLANDS ON ROUTE 28.

RECONSTRUCT CURB RAMPS AT WEST 1ST AVENUE INTERSECTION.

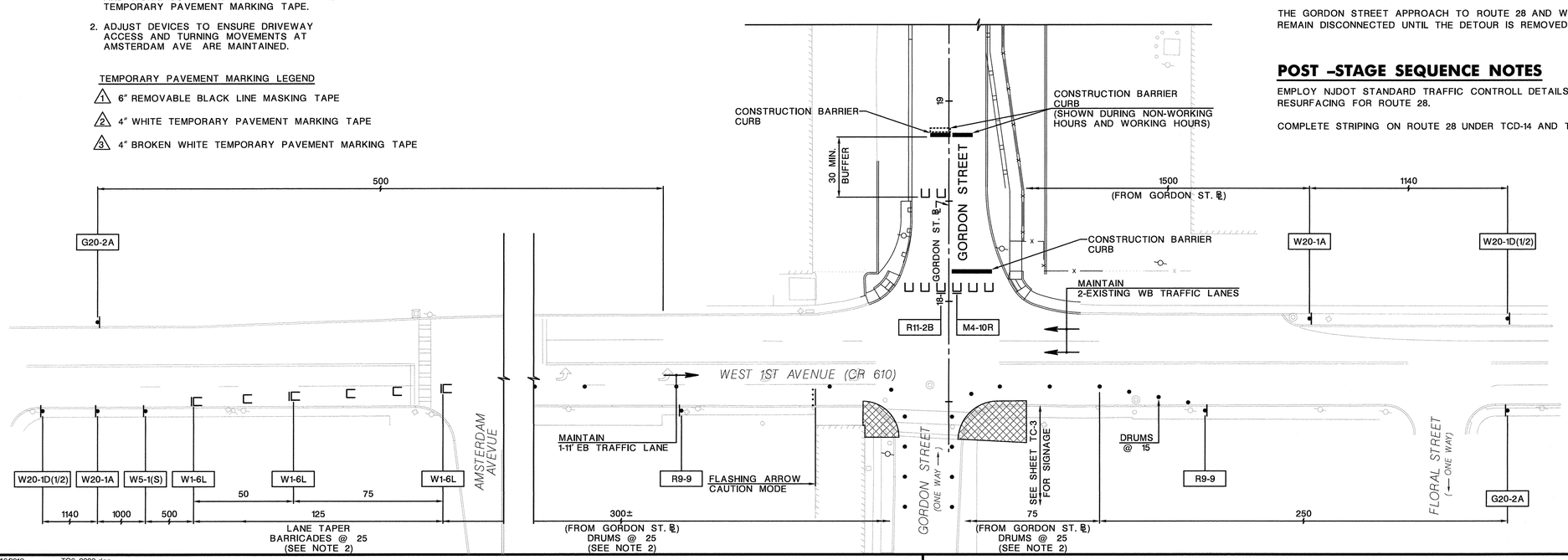
DURING ALLOWABLE LANE CLOSURE HOURS ESTABLISH THE CONSTRUCTION OF TRAFFIC SIGNALS & EQUIPMENT (PHASE A) (SHEET TC-5) FOR THE REMOVAL OF EXISTING TRAFFIC SIGNAL HARDWARE AND THE INITIAL OPERATION OF THE NEW TRAFFIC SIGNAL HARDWARE.

THE GORDON STREET APPROACH TO ROUTE 28 AND WEST 1ST AVENUE VIDEO DETECTION IS TO REMAIN DISCONNECTED UNTIL THE DETOUR IS REMOVED.

POST –STAGE SEQUENCE NOTES

EMPLOY NJDOT STANDARD TRAFFIC CONTROLL DETAILS TCD-14 AND TCD-15 TO COMPLETE MILLING AND RESURFACING FOR ROUTE 28.

COMPLETE STRIPING ON ROUTE 28 UNDER TCD-14 AND TCD-15.



CONSTRUCTION OF PROPOSED TRAFFIC SIGNALS & EQUIPMENT (PHASE B)

30 20 10 0 30 60
SCALE IN FEET
1" = 30'

ALL DIMENSIONS SHOWN ARE IN FEET UNLESS OTHERWISE NOTED

TC-6 / TC-6

UNION COUNTY DIVISION OF ENGINEERING

TRAFFIC CONTROL AND STAGING PLANS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

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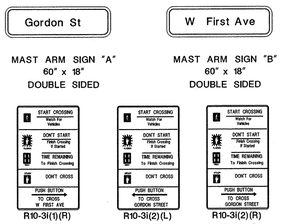
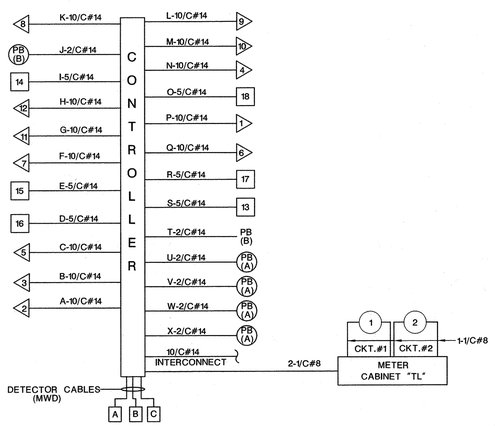
STATE	FEDERAL PROJECT NO.
N.J.	NED-7542(102)FD

ITEM NUMBER	TO BE CONSTRUCTED	CONTRACT QUANTITY
606012P	CONCRETE SIDEWALK, 4" THICK	2 SY
701015P	2" RIGID METALLIC CONDUIT	70 LF
701021P	3" RIGID METALLIC CONDUIT	344 LF
701102M	18" x 36" JUNCTION BOX	6 UNITS
701132M	FOUNDATION, TYPE P-MC	1 UNIT
701135M	FOUNDATION, TYPE SPF	1 UNIT
701138M	FOUNDATION, TYPE STF	3 UNITS
701144M	FOUNDATION, TYPE SFK	1 UNIT
701171M	METER CABINET, TYPE TL	1 UNIT
701192P	GROUND WIRE, NO. 8 AWG	344 LF
701201P	MULTIPLE LIGHTING WIRE, NO. 8 AWG	510 LF
701213P	SERVICE WIRE, NO. 6 AWG	261 LF
702009M	CONTROLLER, 8 PHASE	1 UNIT
702012M	TRAFFIC SIGNAL STANDARD, ALUMINUM	1 UNIT
702015M	TRAFFIC SIGNAL STANDARD, STEEL	3 UNITS
702018M	PEDESTRIAN SIGNAL STANDARD	1 UNIT
702021M	TRAFFIC SIGNAL MAST ARM, ALUMINUM	1 UNIT
702024M	TRAFFIC SIGNAL MAST ARM, STEEL	3 UNITS
702027P	TRAFFIC SIGNAL CABLE, 2 CONDUCTOR	904 LF
702030P	TRAFFIC SIGNAL CABLE, 5 CONDUCTOR	944 LF
702033P	TRAFFIC SIGNAL CABLE, 10 CONDUCTOR	2259 LF
702036M	TRAFFIC SIGNAL HEAD	12 UNITS
702038M	PUSH BUTTON INSTALLATION	2 UNITS
702039M	PEDESTRIAN SIGNAL HEAD	6 UNITS
702042M	PUSH BUTTON	6 UNITS
702046M	RADAR DETECTOR	3 UNITS
702060M	CONTROLLER TURN-ON	1 UNIT
702100M	UPS UNIT WITH CONTROLLER CABINET REVISIONS	1 UNIT
703015M	LIGHTING MAST ARM STEEL	2 UNITS
703018M	LUMINAIRE	2 UNITS

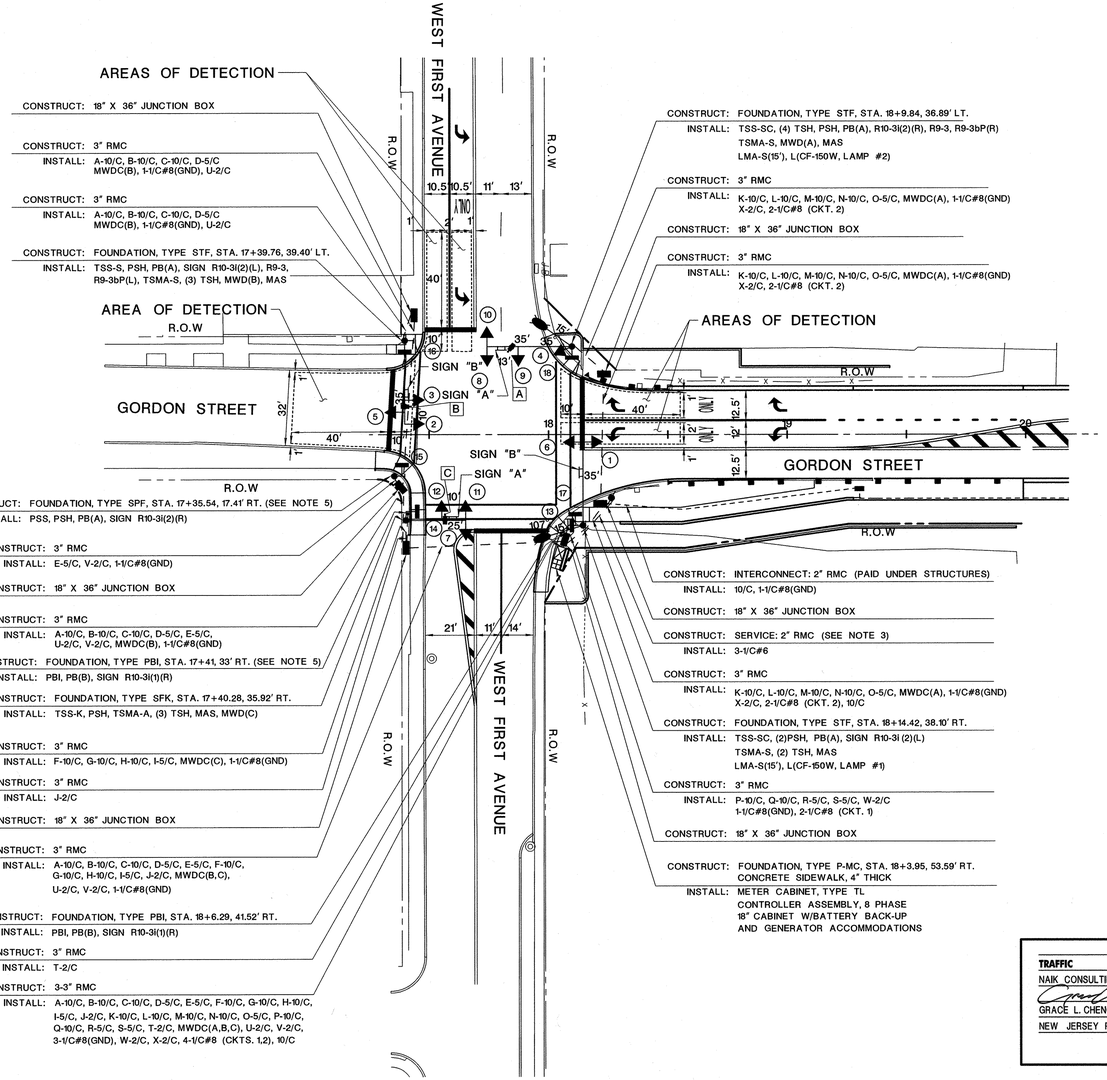
SIGN LEGEND



BLOCK WIRING DIAGRAM

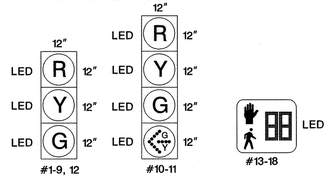


NOTE:
UNLESS OTHERWISE NOTED, ALL LUMINAIRES ARE TYPE III



N.J. Plane Coordinate System NAD 83

SIGNAL LEGEND



NOTE:
1. SIGNAL HEAD #4 SHALL BE MOUNTED AT A HEIGHT 12 FEET ABOVE THE PAVEMENT.
2. THE PUSH BUTTONS MUST BE HORIZONTALLY 10" OF THE LANDING AND VERTICALLY 42" FROM THE LANDING ELEVATION.

GENERAL NOTES:
1. GROUND WIRE(GND), 1/C#8 AWG, INSULATED (COLOR GREEN) SHALL BE INSTALLED CONTINUOUSLY THROUGHOUT THE TRAFFIC SIGNAL SYSTEM AND SECURED TO ALL GROUND RODS, CABINETS, TRAFFIC SIGNAL BASES AND LIGHTING BASES AS NOTED.
2. ALL PEDESTRIAN PUSH BUTTONS ARE ADA COMPLIANT.
3. COORDINATE WITH PSE&G (DWMS# 500657682) FOR ELECTRIC SERVICE CONNECTION.
4. SEE SHEET ELD-1 FOR PUSH BUTTON INSTALLATION DETAIL.
5. THE PUSH BUTTONS MUST BE HORIZONTALLY WITHIN 10" OF THE LANDING AND VERTICALLY 42" FROM THE LANDING ELEVATION.

30 20 10 0 30 60
SCALE IN FEET
1" = 30'

E-1
E-5

TRAFFIC
NAIK CONSULTING GROUP, P.C.
GRACE L. CHENG
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE05450500

UNION COUNTY DIVISION OF ENGINEERING

ELECTRICAL PLANS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

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8/2/2019 $FILES$

STATE	FEDERAL PROJECT NO.
N.J.	NED-7542(102)FD

WEST FIRST AVENUE (CR 610) & GORDON STREET

BOROUGH OF ROSELLE

UNION COUNTY

SIGNAL INDICATIONS

WITHOUT PEDESTRIAN ACTUATION

	1-6	7-9	10-11	12	13-14	15-18	TIME (SECONDS) (100)
A) West First Avenue EB Left Turn	R	R	<-G-	G	DW	DW	7-22
Change	R	R	<-Y-	G	DW	DW	3
B) West First Avenue ROW	R	G	G	G	DW	DW	78-33
Change	R	Y	Y	Y	DW	DW	3
Clearance	R	R	R	R	DW	DW	2
C) Gordon Street ROW	G	R	R	R	DW	DW	7-32
Change	Y	R	R	R	DW	DW	3
Clearance	R	R	R	R	DW	DW	2
Emergency Flash	R	Y	Y	Y	DARK	DARK	

WITH PEDESTRIAN ACTUATION

	1-6	7-9	10-11	12	13-14	15-18	TIME (SECONDS) (100)
A) West First Avenue EB Left Turn	R	R	<-G-	G	DW	DW	7-22
Change	R	R	<-Y-	G	DW	DW	3
B) West First Avenue ROW	R	G	G	G	DW	W	40-17
Pedestrian Clearance	R	G	G	G	DW	FDW	16
Change	R	Y	Y	Y	DW	DW	3
Clearance	R	R	R	R	DW	DW	2
C) Gordon Street ROW	G	R	R	R	W	DW	7
Pedestrian Clearance	G	R	R	R	FDW	DW	17
Vehicle Extension	G	R	R	R	DW	DW	0-8
Change	Y	R	R	R	DW	DW	3
Clearance	R	R	R	R	DW	DW	2
Emergency Flash	R	Y	Y	Y	DARK	DARK	

NOTES:

1. Memory is to be connected.
2. The manual control is to be removed.
3. Vehicle extension is to be set at 4 seconds.
4. Phase 'B' is to be set on maximum recall.
5. If Phase 'A' is activated, it shall be followed by Phase 'B'.
6. PB(A) shall call Phase "B". PB(B) shall call Phase "C".

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E-2
E-5

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UNION COUNTY DIVISION OF ENGINEERING

ELECTRICAL PLANS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

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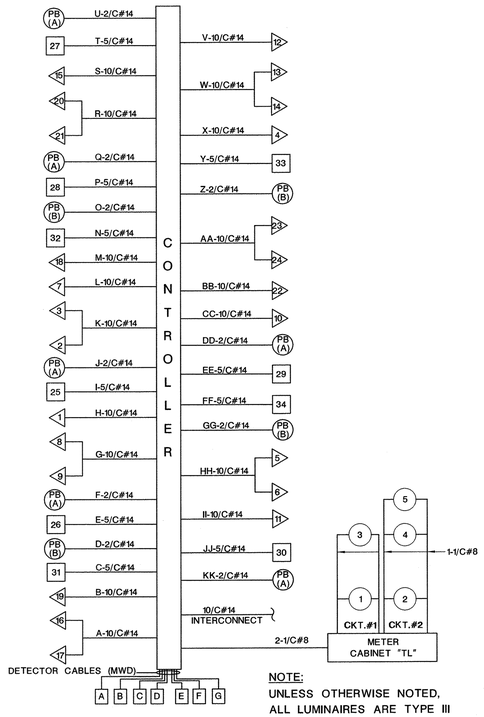
STATE	*
N.J.	*

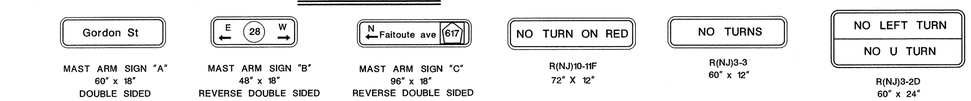
ITEM NUMBER	TO BE CONSTRUCTED	CONTRACT QUANTITY
606012P	CONCRETE SIDEWALK, 4" THICK	2 SY
701015P	2" RIGID METALLIC CONDUIT	140 LF
701021P	3" RIGID METALLIC CONDUIT	1486 LF
701102M	18" x 36" JUNCTION BOX	12 UNITS
701123M	FOUNDATION, TYPE SFT	2 UNITS
701132M	FOUNDATION, TYPE P-MC	1 UNIT
701135M	FOUNDATION, TYPE SPF	1 UNIT
701138M	FOUNDATION, TYPE STF	5 UNITS
701144M	FOUNDATION, TYPE SFK	1 UNIT
701171M	METER CABINET, TYPE TL	1 UNIT
701192P	GROUND WIRE, NO. 8 AWG	1556 LF
701201P	MULTIPLE LIGHTING WIRE, NO. 8 AWG	1990 LF
701213P	SERVICE WIRE, NO. 6 AWG	291 LF
702009M	CONTROLLER, 8 PHASE	1 UNIT
702012M	TRAFFIC SIGNAL STANDARD, ALUMINUM	3 UNITS
702015M	TRAFFIC SIGNAL STANDARD, STEEL	5 UNITS
702018M	PEDESTRIAN SIGNAL STANDARD	1 UNIT
702021M	TRAFFIC SIGNAL MAST ARM, ALUMINUM	3 UNITS
702024M	TRAFFIC SIGNAL MAST ARM, STEEL	5 UNITS
702027P	TRAFFIC SIGNAL CABLE, 2 CONDUCTOR	3121 LF
702030P	TRAFFIC SIGNAL CABLE, 5 CONDUCTOR	3110 LF
702033P	TRAFFIC SIGNAL CABLE, 10 CONDUCTOR	5868 LF
702036M	TRAFFIC SIGNAL HEAD	24 UNITS
702038M	PUSH BUTTON INSTALLATION	4 UNITS
702039M	PEDESTRIAN SIGNAL HEAD	10 UNITS
702042M	PUSH BUTTON	10 UNITS
702046M	RADAR DETECTOR	7 UNITS
702054M	TEMPORARY TRAFFIC SIGNAL SYSTEM, LOCATION NO. 1	1 LS
702060M	CONTROLLER TURN-ON	1 UNIT
702100M	UPS UNIT WITH CONTROLLER CABINET REVISIONS	1 UNIT
703012M	LIGHTING MAST ARM ALUMINUM	1 UNIT
703015M	LIGHTING MAST ARM STEEL	2 UNITS
703018M	LUMINAIRE	4 UNITS

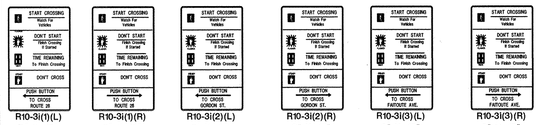
BLOCK WIRING DIAGRAM

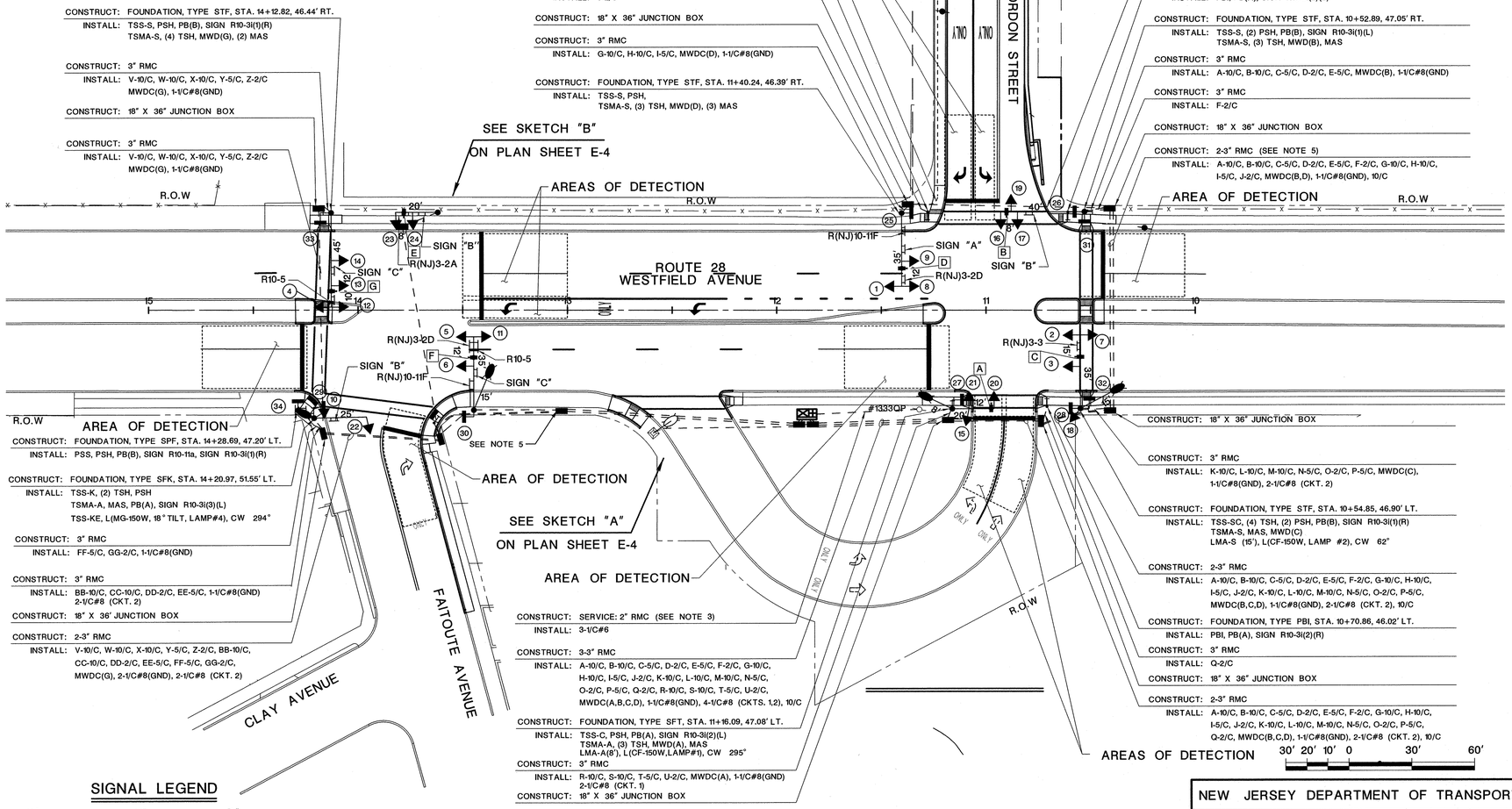


NOTE:
UNLESS OTHERWISE NOTED, ALL LUMINAIRES ARE TYPE III

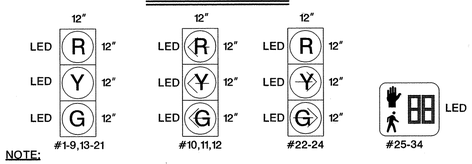
SIGN LEGEND







SIGNAL LEGEND



NOTE:
1. SIGNAL HEADS #10 AND #18 SHALL BE MOUNTED AT 12 FEET HEIGHT ABOVE THE PAVEMENT.
2. SIGNAL HEADS #1 THROUGH 14 SHALL BE EQUIPPED WITH BACKPLATES WITH A YELLOW RETROREFLECTIVE STRIP ON THE OUTSIDE BORDER.

GENERAL NOTES:
1. GROUND WIRE(GND), 1/C#8 AWG, INSULATED (COLOR GREEN) SHALL BE INSTALLED CONTINUOUSLY THROUGHOUT THE TRAFFIC SIGNAL SYSTEM AND SECURED TO ALL GROUND RODS, CABINETS, TRAFFIC SIGNAL BASES AND LIGHTING BASES AS NOTED.
2. ALL PEDESTRIAN PUSH BUTTONS ARE ADA COMPLIANT.
3. COORDINATE WITH PSE&G (DWMS# 500658027) FOR ELECTRIC SERVICE CONNECTION.
4. SEE SHEET ELD-1 FOR PEDESTRIAN PUSH BUTTON INSTALLATION DETAIL.
5. ALL NEW CONDUITS CROSSING ROUTE 28 MUST BE INSTALLED VIA A TRENCHLESS METHOD.
6. REFER TO TRAFFIC CONTROL AND STAGING PLANS FOR OPERATION OF EXISTING AND PROPOSED TRAFFIC SIGNALS DURING CONSTRUCTION.

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL PLANS

ROUTE 28

MUNICIPALITY BOROUGH OF ROSELLE PARK COUNTY UNION

ROUTE 28 (WESTFIELD AVENUE) & GORDON STREET

Naik Consulting Group, PC
GRACE L. CHENG
N.J.P.E. LIC. NO. 24GE05450500

CONTROL SECTION NO. 2008108

26 / 85

E-3 / E-5

REVISION DESCRIPTION	BY	CHECKED	DATE

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REFERENCE
date =
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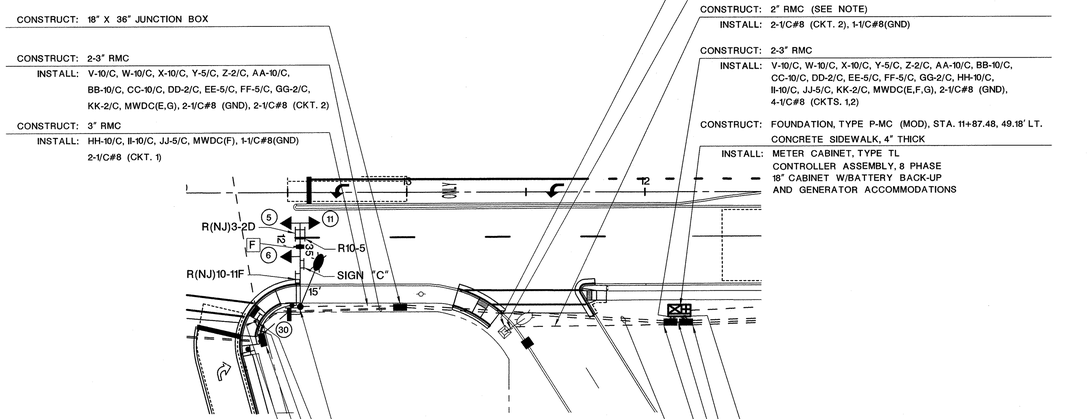
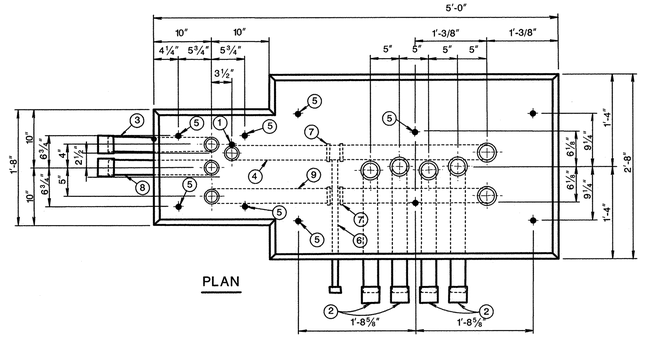


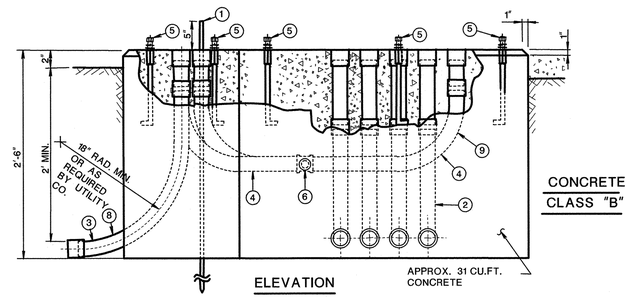
SKETCH "A"

NOTE:

CONNECT PROPOSED 2" RMC TO EXISTING 2" RMC FOLLOWING REMOVAL OF EXISTING CABLES AND WIRES, BUT PRIOR TO INSTALLATION OF NEW CABLES AND WIRES



PLAN



ELEVATION

FOUNDATION TYPE "P-MC" (MODIFIED)

(N.T.S.)

THIS SPECIAL DETAIL WAS DEVELOPED BY DEWBERRY AND IS A MODIFICATION OF NJDOT STANDARD DETAIL "FOUNDATION TYPE "P-MC". THE MODIFICATION IS THE ADDITION OF A FOURTH 3" DIA. RIGID METALLIC CONDUIT, SEE ITEM (2)

ITEM NOTES FOR FOUNDATIONS

(1) ⅝" BY 12' LG. GROUND ROD.

(2) 3" DIA. RIGID METALLIC CONDUIT. (ALL SHALL EXTEND TO JUNCTION BOX). CONDUIT SHALL BE POSITIONED TO AIM TOWARDS JUNCTION BOX(S) AS SHOWN ON THE PLANS.

(3) RIGID METALLIC CONDUIT (SERVICE CONDUIT). SEE GENERAL PLAN FOR DIRECTION AND SIZE.

(4) 2" DIA. RIGID METALLIC CONDUIT (SERVICE CONDUIT)

(5) ¾" DIA. ANCHOR BOLTS (SEE "MCF" FOUNDATION NJDOT STANDARD ELECTRICAL DETAILS. SHEET T-1694 FOR DETAILS OF ANCHOR BOLTS).

(6) DRAIN 1" DIA. RIGID METALLIC CONDUIT (PITCH TO JUNCTION BOX).

(7) 2" BY 2" BY 1" GALV. TEE FITTING.

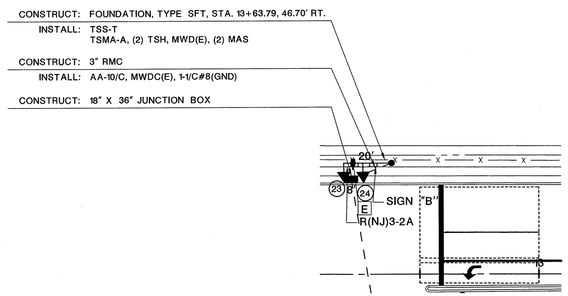
(8) RIGID METALLIC CONDUIT (INTERCONNECT. SEE GENERAL PLAN FOR DIRECTION AND SIZE IF NOT SPECIFIED 2" DIA. RMC SHALL BE INSTALLED.

(9) 2" DIA. RIGID METALLIC CONDUIT (INTERCONNECT).

NOTES:

1. ALL CONDUIT SHALL BE INSTALLED SO THAT COUPLINGS ARE EMBEDDED PLUMB AND FLUSH WITH TOP OF CONCRETE FOUNDATION.
2. J-BOLT MUST BE INSERTED 1½" ±1/16" INTO 3" COUPLINGS.
3. ALL FOUNDATIONS SHALL BE POURED MONOLITHIC.

NOTE: ALL DIMENSIONS SHOWN FOR THIS DETAIL ARE IN INCHES UNLESS OTHERWISE NOTED. CAST-IN-PLACE ITEMS MAY VARY BY ±1/8".



SKETCH "B"

30' 20' 10' 0 30' 60'

E-4 / E-5

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL PLANS

ROUTE 28

MUNICIPALITY BOROUGH OF ROSELLE PARK COUNTY UNION

ROUTE 28 (WESTFIELD AVENUE) & GORDON STREET

Naik Consulting Group, PC

GRACE L. CHENG

N.J.P.E. LIC. NO. 24GE05450500

CONTROL SECTION NO. 2008108

27 / 85

REFERENCE

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ROUTE 28 AND GORDON STREET / FAITOUTE AVENUE
BOROUGH OF ROSELLE PARK
UNION COUNTY

SIGNAL INDICATIONS

WITHOUT PEDESTRIAN ACTUATION

	1,2,3 7,8,9	15-21	10,11,12	4,5,6 13,14	22-24	25-28	29,30	31-32	33,34	TIME SECONDS (100)	OFFSET
A) Route 28 ROW	G	R	<-R-	G	R	DW	DW	DW	DW	68-54	
Change	Y	R	<-R-	Y	R	DW	DW	DW	DW	4	54*
Clearance	R	R	<-R-	R	R	DW	DW	DW	DW	3	
B) Route 28 EB Left Turn Faitoute Avenue ROW Gordon Street ROW	R	G	<-G-	R	-G->	DW	DW	DW	DW	20-34	
Change	R	Y	<-Y-	R	-Y->	DW	DW	DW	DW	3	
Clearance	R	R	<-R-	R	R	DW	DW	DW	DW	2	
Emergency Flash	Y	R	<-R-	Y	R	DW	DW	DW	DW	-	

WITH PEDESTRIAN ACTUATION

	1,2,3 7,8,9	15-21	10,11,12	4,5,6 13,14	22-24	25-28	29,30	31-32	33,34	TIME SECONDS (100)	OFFSET
A) Route 28 ROW	G	R	<-R-	G	R	W	W	DW	DW	43-38	
Pedestrian Clearance	G	R	<-R-	G	R	FDW	FDW	DW	DW	16	
Change	Y	R	<-R-	Y	R	DW	DW	DW	DW	4	54*
Clearance	R	R	<-R-	R	R	DW	DW	DW	DW	3	
B) Route 28 EB Left Turn Faitoute Avenue ROW Gordon Street ROW	R	G	<-G-	R	-G->	DW	DW	W	W	7	
Pedestrian Clearance	R	G	<-G-	R	-G->	DW	DW	FDW	FDW	22	
Vehicle Extension	R	G	<-G-	R	-G->	DW	DW	DW	DW	0-5	
Change	R	Y	<-Y-	R	-Y->	DW	DW	DW	DW	3	
Clearance	R	R	<-R-	R	R	DW	DW	DW	DW	2	
Emergency Flash	Y	R	<-R-	Y	R	DW	DW	DW	DW	-	

* The offset is to be measured from the beginning of yellow to Route 28 at Locust Street to the beginning of yellow to Route 28 traffic at this intersection.

The vehicular memory is to be connected and the extension set at 4.0 seconds.

The manual control is to be removed.

PB(A) shall call Phase "A". PB(B) shall call Phase "B".

E-5
E-5

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL PLANS

ROUTE 28

MUNICIPALITY BOROUGH OF ROSELLE PARK COUNTY UNION

ROUTE 28 (WESTFIELD AVENUE) & GORDON STREET

Naik Consulting Group, PC

GRACE L. CHENG
N.J. P.E. LIC. NO. 24GE05450500

CONTROL SECTION NO. 2008108

28
85

Naik Consulting Group, PC

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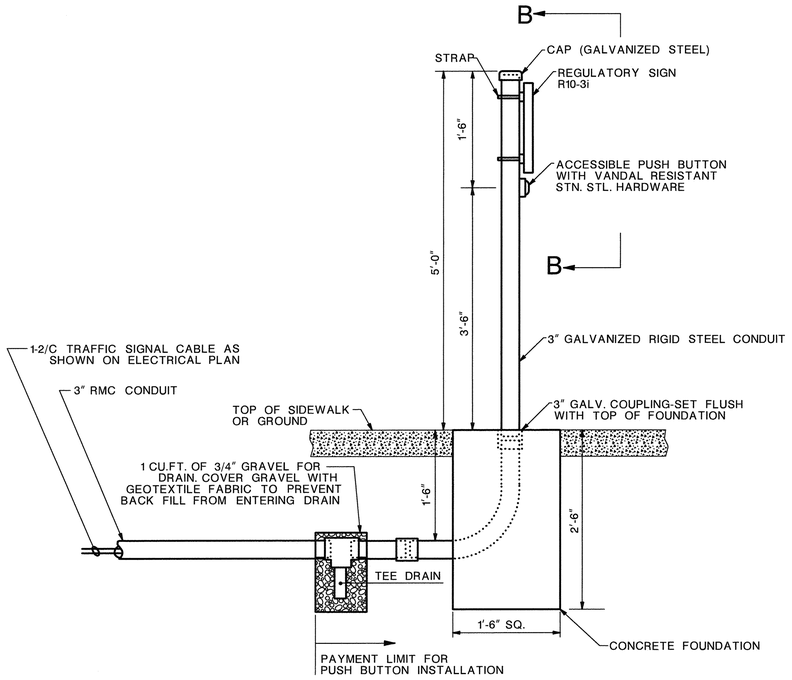
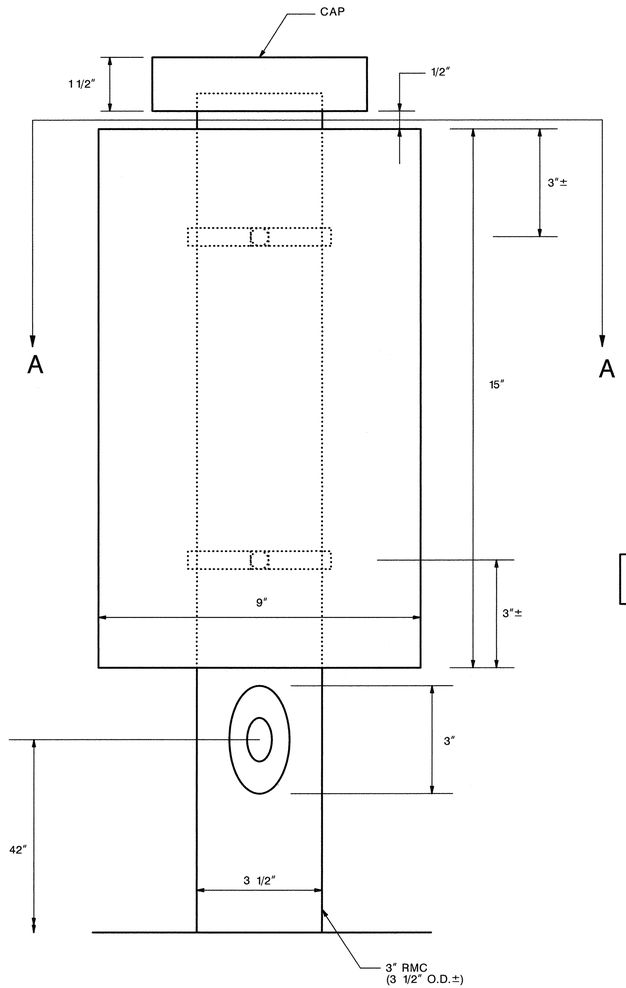


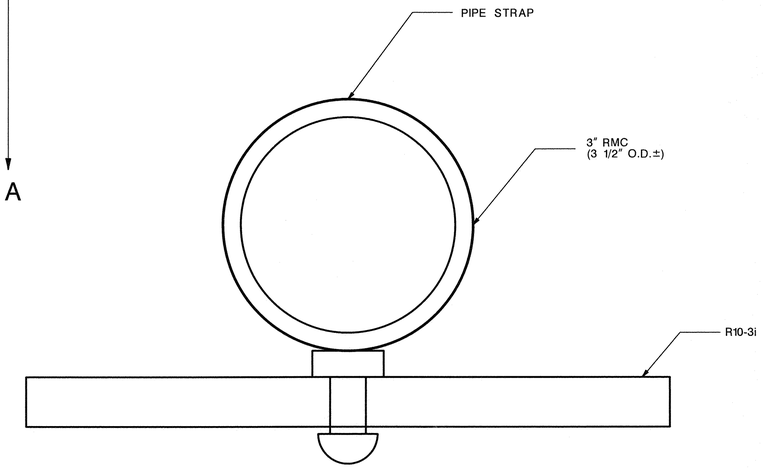
PUSH BUTTON INSTALLATION
SCALE = 1"=2'

NOTES:

1. CONSTRUCT INSTALLATION OF 3 INCH CONDUIT AS SHOWN IN THE DETAIL, THE CAP, T-DRAIN, GRAVEL, CONCRETE FOUNDATION, AND ASSOCIATE HARDWARE. INSTALL PUSH BUTTON ASSEMBLY AND SIGN R10-3i AS SHOWN IN THE DETAIL AND ON THE ELECTRICAL PLANS.
2. ALL SIGNS AND PUSH BUTTONS SHALL BE ADA COMPLIANT.
3. REGULATORY SIGN TO BE RIGIDLY FIXED TO METAL PLATE FASTENED TO POST AT A MINIMUM OF TWO POINTS.
4. DISTANCE BETWEEN FULLY DEPRESSED PUSH BUTTON AND FACE OF GUIDE RAIL OR OTHER OBSTRUCTION SHALL BE A MAXIMUM OF 10". CONDUIT RISER MAY BE OFFSET UP TO 4" FROM CENTER OF THE FOUNDATION TO ACHIEVE THE 10" MAXIMUM.
5. PUSH BUTTON SHALL BE INSTALLED 3'6" (42") ABOVE FINISHED GRADE.
6. WHEN THIS INSTALLATION IS IN EARTH WITHOUT SIDEWALK, SET TOP OF FOUNDATION 1" ABOVE EXISTING GROUND.
7. FOUNDATION TO BE 1'6"x1'6"x2'6" OF CLASS "B" CONCRETE.
8. LOCATE PUSH BUTTON NEXT TO FLAT SIDEWALK OR RAMP WITH 2% OR LESS SLOPE UNLESS OTHERWISE DIRECTED.
9. ALL COSTS SHALL BE INCLUDED AS PART OF THE SINGLE PAY ITEM "PUSH BUTTON INSTALLATION" EXCEPT TRAFFIC SIGNAL CABLE, CONDUIT FROM PBI TO NEAREST JUNCTION BOX, PUSH BUTTON, AND PUSH BUTTON SIGN WHICH SHALL BE INCLUDED UNDER THEIR RESPECTIVE ITEMS.
10. MAXIMUM REACH FROM EDGE OF SIDEWALK OR RAMP TO PUSH BUTTON IS 10".
11. THE PUSH BUTTON IS TO BE NO MORE THAN 5' FROM THE CROSSWALK LINE EXTENDED.
12. THE PUSH BUTTON IS TO BE LOCATED BETWEEN 1.5' AND 6' FROM THE EDGE OF CURB, SHOULDER, OR PAVEMENT, UNLESS OTHERWISE DIRECTED.
13. THE FACE OF THE PUSH BUTTON IS TO BE PARALLEL TO THE DIRECTION OF THE CORRESPONDING CROSSWALK TO BE USED.
14. THE PUSH BUTTON IS TO BE UNOBSTRUCTED, ADJACENT TO AN ALL-WEATHER SURFACE AND A WHEELCHAIR ACCESSIBLE PAD AT LEAST 4' X 4'.



ELEVATION VIEW
SCALE 1"=2'



SECTION AA
TOP VIEW
SCALE 1"=1'

REVISION DESCRIPTION	BY	CHECKED	DATE

ELD-1
ELD-1

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL DETAILS

ROUTE 28

MUNICIPALITY BOROUGH OF ROSELLE COUNTY UNION

ROUTE 28 (WESTFIELD AVENUE) & GORDON STREET

Naik Consulting Group, PC

GRACE L. CHENG

N.J.P.E. LIC. NO. 24GE05450500

CONTROL SECTION NO. 2008108

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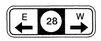
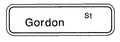
N.J.	*

SIGN LEGEND

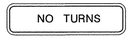


MAST ARM SIGN "A"
48" x 18"
REVERSE DOUBLE SIDED

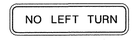
MAST ARM SIGN "B"
72" x 18"
REVERSE DOUBLE SIDED



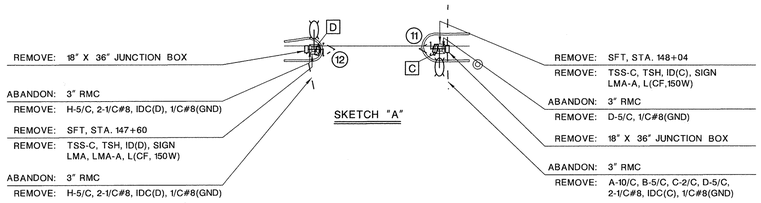
MAST ARM SIGN "C"
48" x 18"
DOUBLE SIDED



R(NJ)3-3
60" x 12"

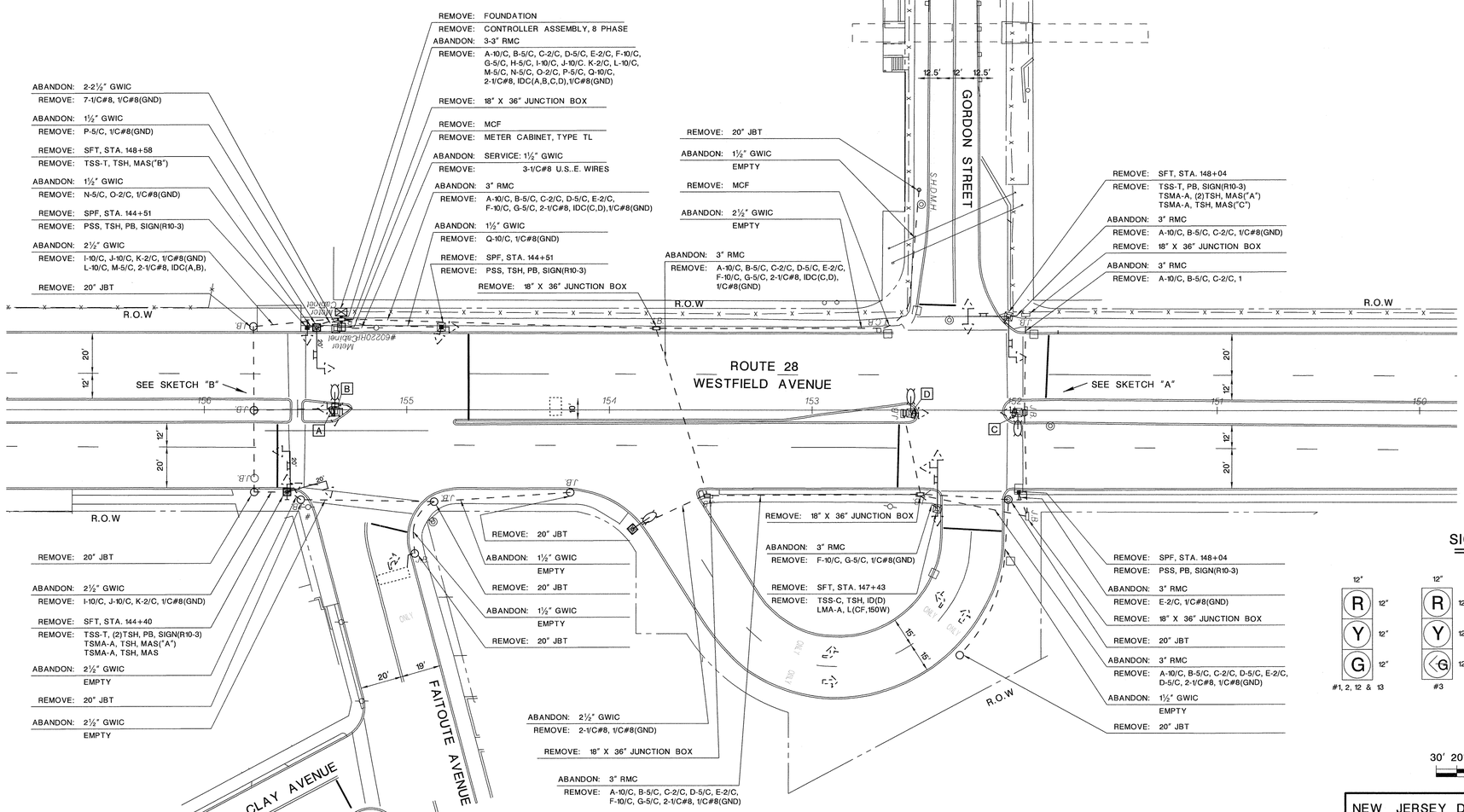


R(NJ)3-2A
60" x 12"

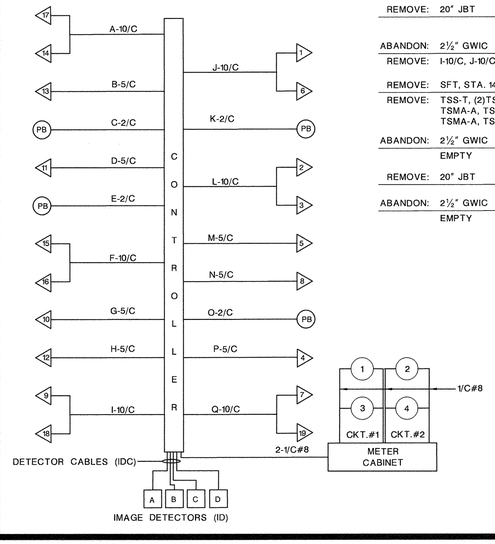


SKETCH "A"

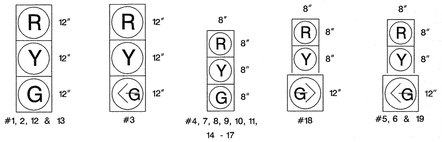
SKETCH "B"



BLOCK WIRING DIAGRAM



SIGNAL LEGEND



30' 20' 10' 0 30' 60'

NOTES:

1. REMOVE ALL CABLES AND WIRES.
2. REMOVE ANY EXISTING CONDUITS TO BE ABANDONED IF THEY INTERFERE WITH THE PROPOSED SYSTEM.

ER-1
ER-1

NEW JERSEY DEPARTMENT OF TRANSPORTATION

ELECTRICAL REMOVAL PLAN

ROUTE 28

MUNICIPALITY BOROUGH OF ROSELLE PARK COUNTY UNION

ROUTE 28 (WESTFIELD AVENUE) & GORDON STREET

Naik Consulting Group, PC

GRACE L. CHENG
N.J.P.E. LIC. NO. 24GE05450500

CONTROL SECTION NO. 2008108

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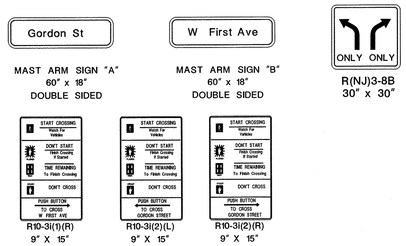
STATE	FEDERAL PROJECT NO.
N.J.	NED-7542(102)FD

SIGN LEGEND

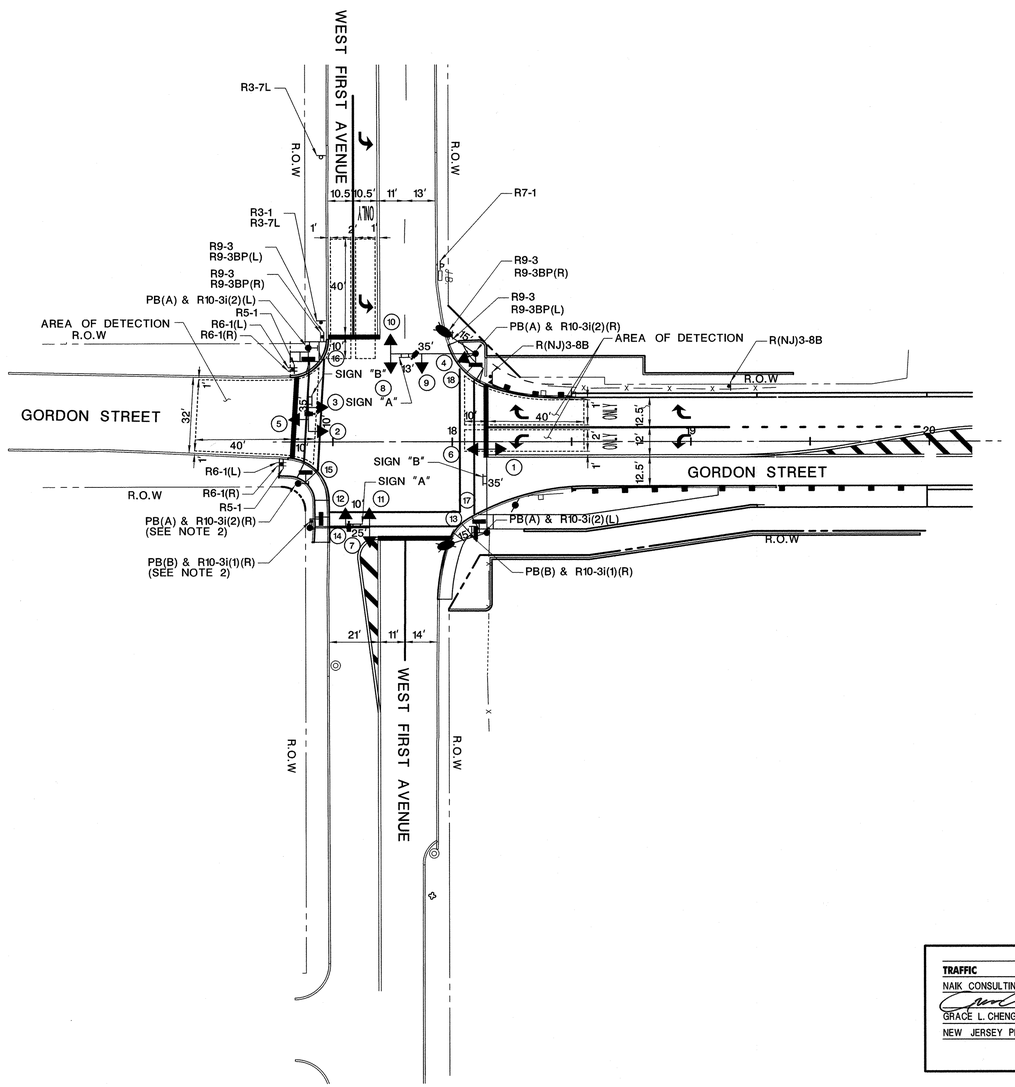
R3-1	NO RIGHT TURN (SYMBOL)	24" x 24"
R3-7L	LEFT LANE MUST TURN LEFT	30" x 30"
R5-1	DO NOT ENTER	30" x 30"
R6-1(L/R)	ONE WAY (LEFT/RIGHT)	36" x 12"
R7-1	NO PARKING ANY TIME	12" x 18"
R9-3	NO PEDESTRIAN CROSSING (SYMBOL)	18" x 18"
R9-3BP(L)	USE CROSSWALK LEFT ARROW (PLAQUE)	18" x 12"
R9-3BP(R)	USE CROSSWALK RIGHT ARROW (PLAQUE)	18" x 12"

SIGN LEGEND



NOTE:

ALL MAST ARM SIGNS ARE FREE-SWINGING.



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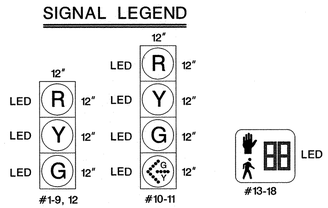


NOTE:

1. SIGNAL HEAD #4 SHALL BE MOUNTED AT A HEIGHT 12 FEET ABOVE THE PAVEMENT.
2. THE PUSH BUTTONS MUST BE HORIZONTALLY 10" OF THE LANDING AND VERTICALLY 42" FROM THE LANDING ELEVATION.

30 20 10 0 30 60
SCALE IN FEET
1" = 30'

TSP-1
TSP-2

TRAFFIC
NAIK CONSULTING GROUP, P.C.
GRACE L. CHENG
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE05450500

UNION COUNTY DIVISION OF ENGINEERING

TRAFFIC SIGNAL PLANS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

31
85

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
Mount Laurel, NJ

8/14/2019 $FILES$

STATE	*
N.J.	*

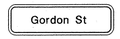
SIGN LEGEND

R3-2	NO LEFT TURN (SYMBOL)	24" x 24"
R3-3	NO TURNS	24" x 24"
R3-4	NO U-TURN	24" x 24"
R3-5R	RIGHT TURN ONLY	30" x 36"
R3-7L	LEFT LANE MUST TURN LEFT	30" x 30"
R3-18	NO U-TURN & LEFT TURN (SYMBOL)	24" x 24"
R3-24	ALL TURNS WITH ARROW	72" x 18"
R4-7	KEEP RIGHT (SYMBOL)	24" x 30"
R5-1	DO NOT ENTER	30" x 30"
R6-1(L)	ONE WAY (LEFT)	36" x 12"
R6-1(R)	ONE WAY (RIGHT)	36" x 12"
R9-3	NO PEDESTRIAN CROSSING (SYMBOL)	18" x 18"
R9-3BP(L)	USE CROSSWALK LEFT ARROW (PLAQUE)	18" x 12"
R9-3BP(R)	USE CROSSWALK RIGHT ARROW (PLAQUE)	18" x 12"
R10-5	LEFT ON GREEN ARROW ONLY	30" x 36"
R10-11A	NO TURN ON RED	30" x 36"
R(NJ)10-11F	NO TURN ON RED	72" x 12"
W1-6(R)	ONE DIRECTION LARGE ARROW	48" x 24"

R(NJ)3-8I
30" x 30"

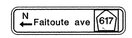
R(NJ)3-8B
30" x 30"

SIGN LEGEND

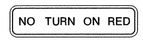


MAST ARM SIGN "A"
60" x 18"
DOUBLE SIDED

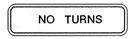
MAST ARM SIGN "B"
48" x 18"
REVERSE DOUBLE SIDED



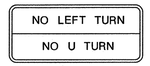
MAST ARM SIGN "C"
96" x 18"
REVERSE DOUBLE SIDED



R(NJ)10-11F
72" X 12"



R(NJ)3-3
60" x 12"



R(NJ)3-2D
60" x 24"

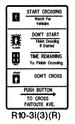
R10-3i(1)(L)
9" X 15"

R10-3i(1)(R)
9" X 15"

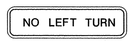
R10-3i(2)(L)
9" X 15"

R10-3i(2)(R)
9" X 15"

R10-3i(3)(L)
9" X 15"

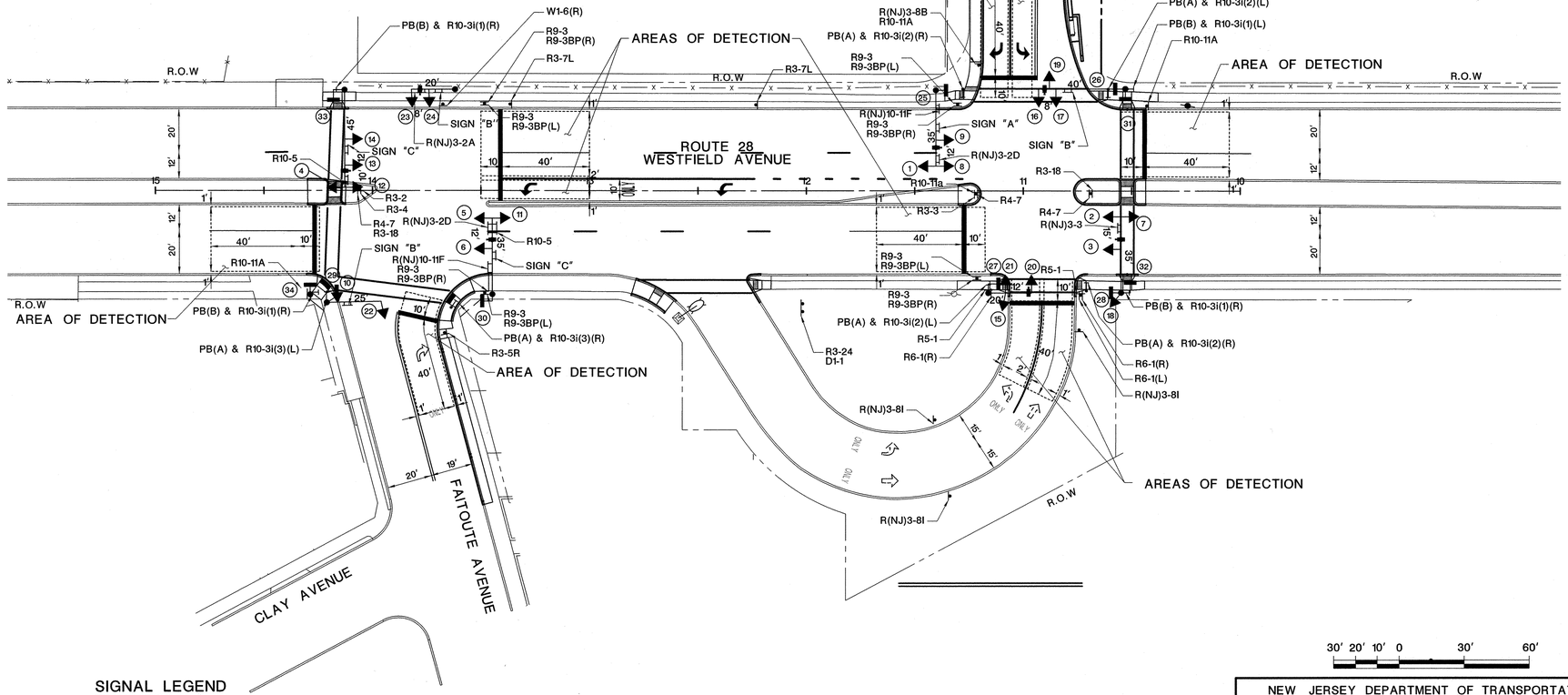


R10-3i(3)(R)
9" X 15"

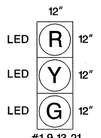


R(NJ)3-2A
60" x 12"

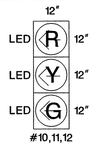
NOTE:
ALL MAST ARM SIGNS ARE FREE-SWINGING.



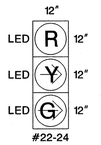
SIGNAL LEGEND



#1-9,13-21



#10,11,12



#22-24

#25-34

NOTE:
1. SIGNAL HEADS #10 AND #18 SHALL BE MOUNTED AT 12 FEET HEIGHT ABOVE THE PAVEMENT.
2. SIGNAL HEADS #1 THROUGH 14 SHALL BE EQUIPPED WITH BACKPLATES WITH A YELLOW RETROREFLECTIVE STRIP ON THE OUTSIDE BORDER.

30' 20' 10' 0 30' 60'

TSP-2
TSP-2

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF TRAFFIC ENGINEERING
TRAFFIC SIGNAL INSTALLATION

ROUTE 28 (WESTFIELD AVENUE) AND FAITOUTE AVENUE/ GORDON STREET

MUNICIPALITY ROSELLE PARK COUNTY UNION

DESIGN AUTHORIZED - BUREAU OF TRAFFIC ENGINEERING DATE

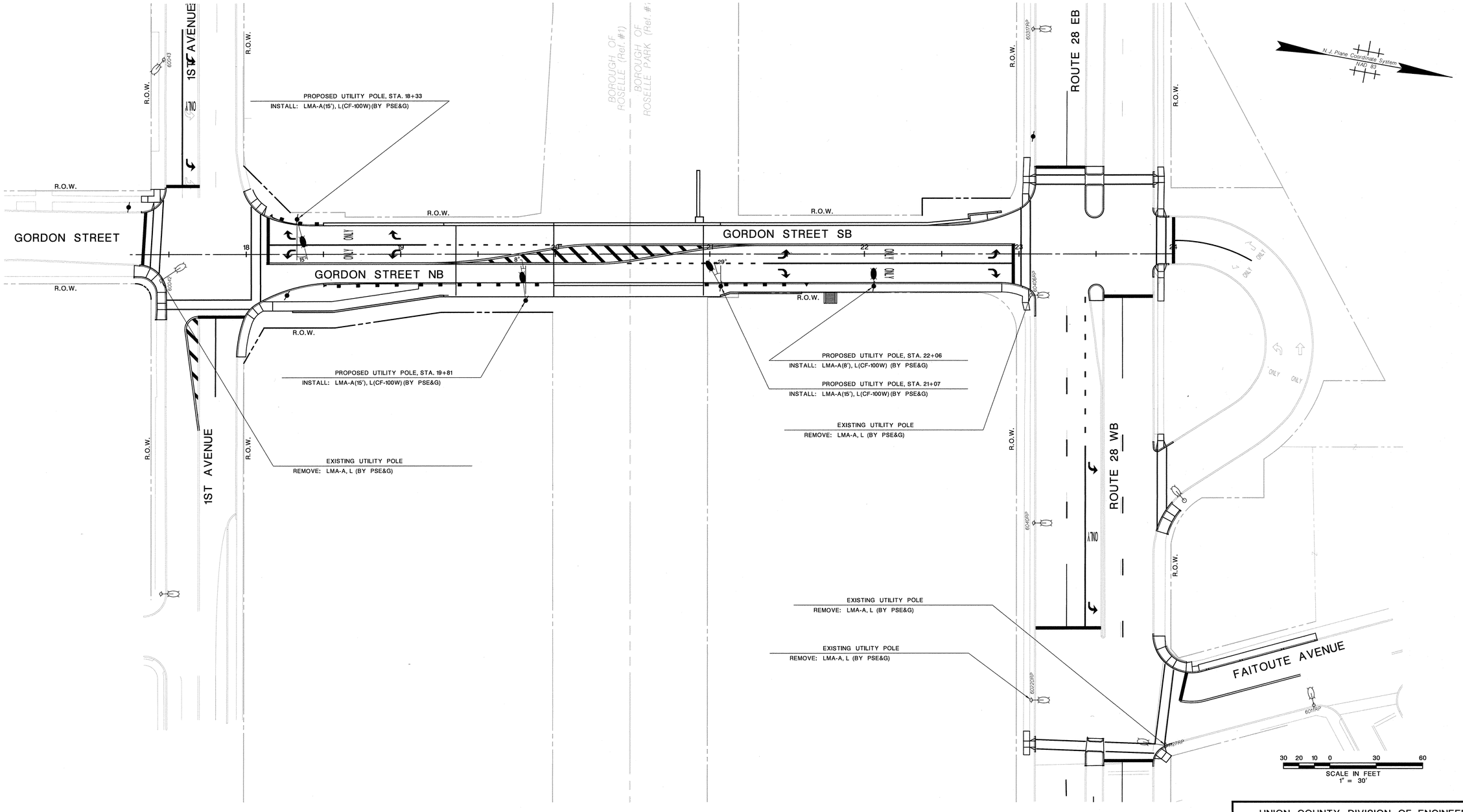
SUBMITTED
CHECKED
AUTHORIZED
DRAWN
CHECKED
SCALE:

TS

32
85

REVISION DESCRIPTION	CADD	BY	C'K'D	DATE

REFERENCE
pen table =
date =
file =
ID =



NOTES:

1. PROPOSED LIGHTING UNITS ARE 100 W HIGH PRESSURE SODIUM, TYPE III, CUTOFF LUMINAIRE'S.
2. LUMINAIRE'S ARE TO BE MOUNTED AT A HEIGHT OF 26 FEET ABOVE THE PAVEMENT.
3. FOR INTERSECTION LIGHTING, SEE ELECTRICAL PLANS.
4. CONTRACTOR TO COORDINATE ALL UTILITY POLE LIGHTING INSTALLATIONS AND REMOVALS WITH UTILITY COMPANY.
5. REMOVAL OF UTILITY POLE LIGHTING IS TO BE PERFORMED FOLLOWING INSTALLATION AND ENERGIZATION OF PROPOSED TRAFFIC SIGNALS.

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED LUMINAIRE
	EXISTING LUMINAIRE
	PROPOSED UTILITY POLE
	EXISTING UTILITY POLE

HL-1
HL-1

UNION COUNTY DIVISION OF ENGINEERING

HIGHWAY LIGHTING PLANS

ROUTE GORDON STREET (CR 617)

MUNICIPALITY ROSELLE BOROUGH
ROSELLE PARK BOROUGH
COUNTY UNION

HARDESTY & HANOVER, LLC

GLEN E. SCHETELICH, P.E.

N.J.P.E. LIC. NO. 24GE03443600

33
85

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Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
Mount Laurel, NJ

8/16/2019 HL1_2893.dgn

REGULATORY AND WARNING SIGN TABLE

SIGN DESIGNATION	SHEET NO.	MESSAGE	SIZE (IN x IN)	AREA (SF)	REQUIRED QUANTITY	TOTAL AREA (SF)
R3-1	TSP-1, TSS-1	NO RIGHT TURN (SYMBOL)	24 x 24	4.0	1	4.0
R3-2	TSP-2, TSS-1	NO LEFT TURN (SYMBOL)	24 x 24	4.0	1	4.0
R3-3	TSP-2, TSS-1	NO TURNS	24 x 24	4.0	1	4.0
R3-4	TSP-2, TSS-1	NO U TURN (SYMBOL)	24 x 24	4.0	1	4.0
R3-5(R)	TSP-2, TSS-1	RIGHT TURN ONLY (SYMBOL)	30 x 36	7.5	1	7.5
R3-7(L)	TSP-1, TSP-2, TSS-1	LEFT LANE MUST TURN LEFT	30 x 30	6.3	3	18.9
R3-18	TSP-2, TSS-1	NO LEFT OR U TURN	24 x 24	4.0	2	8.0
R4-7	TSP-2, TSS-1	KEEP RIGHT (SYMBOL)	24 x 30	5.0	3	15.0
R5-1	TSP-1, TSP-2, TSS-1	DO NOT ENTER	30 x 30	6.3	2	12.6
R6-1(L)	TSP-1, TSP-2, TSS-1	ONE WAY (LEFT)	36 x 12	3.0	2	6.0
R6-1(R)	TSP-1, TSP-2, TSS-1	ONE WAY (RIGHT)	36 x 12	3.0	2	6.0
R9-3	TSP-1, TSP-2, TSS-1	NO PEDESTRIAN CROSSING (SYMBOL)	18 x 18	2.3	12	27.6
R9-3BP(L)	TSP-1, TSP-2, TSS-1	USE CROSSWALK (ARROW LEFT)	18 x 12	1.5	6	9.0
R9-3BP(R)	TSP-1, TSP-2, TSS-1	USE CROSSWALK (ARROW RIGHT)	18 x 12	1.5	6	9.0
R10-3I(L)	E-1, TSP-1, TSS-1	PED.TRF. SIG.(ARROW LEFT) W FIRST AVE	9 x 15	0.9	1	0.9
R10-3I(R)	E-1, TSP-1, TSS-1	PED.TRF. SIG.(ARROW RIGHT) W FIRST AVE	9 x 15	0.9	1	0.9
R10-3I(1)(L)	E-3, TSP-2, TSS-1	PED.TRF. SIG.(ARROW LEFT) WESTFIELD AVE	9 x 15	0.9	1	0.9
R10-3I(1)(R)	E-3, TSP-2, TSS-1	PED.TRF. SIG.(ARROW RIGHT) WESTFIELD AVE	9 x 15	0.9	2	1.8
R10-3I(2)(L)	E-3, TSP-2, TSS-1	PED.TRF. SIG.(ARROW LEFT) GORDON ST	9 x 15	0.9	1	0.9
R10-3I(2)(R)	E-3, TSP-2, TSS-1	PED.TRF. SIG.(ARROW RIGHT) GORDON ST	9 x 15	0.9	3	2.7
R10-3I(3)(L)	E-3, TSP-2, TSS-1	PED.TRF. SIG.(ARROW LEFT) FAITOUTE AVE	9 x 15	0.9	1	0.9
R10-3I(3)(R)	E-3, TSP-2, TSS-1	PED.TRF. SIG.(ARROW RIGHT) FAITOUTE AVE	9 x 15	0.9	2	1.8
R10-5	E-3, TSP-2	LEFT ON GREEN ARROW ONLY	30 x 36	7.5	2	15.0
R10-11A	E-3, TSP-2, TSS-1	NO TURN ON RED	30 x 36	7.5	3	22.5
R(NJ)3-2A	E-3, TSP-2	NO LEFT TURN	60 x 12	5.0	1	5.0
R(NJ)3-2D	E-3, TSP-2	NO LEFT TURN / NO U TURN	60 x 24	10.0	2	20.0
R(NJ)3-3	E-3, TSP-2	NO TURNS	60 x 12	5.0	1	5.0
R(NJ)3-8B	TSP-2, TSS-1	LANE USE (DIRECTIONAL ARROWS)	30 x 30	6.3	4	25.2
R(NJ)3-8I	TSP-2, TSS-1	LANE USE (DIRECTIONAL ARROWS)	30 x 30	6.3	1	6.3
R(NJ)10-11F	TSS-2, TSS-1	NO TURN ON RED	72 x 12	6.0	2	12.0
W1-6(R)	TSP-2, TSS-1	ONE DIRECTION LARGE ARROW	48 x 24	8.0	1	8.0
*SIGN "A"	E-1, E-3, TSP-1, TSP-2	GORDON ST	60 x 18	7.5	3	22.5
*SIGN "B"	E-1, TSP-1	W FIRST AVE	60 x 18	7.5	2	15.0
*SIGN "B"	E-3, TSP-2	ROUTE 28 (MARKER SYMBOL)	48 x 18	6.0	3	18.0
*SIGN "C"	E-3, TSP-2	FAITOUTE AVE (COUNTY MARKER SYMBOL)	96 x 18	12.0	2	24.0
				REGULATORY AND WARNING SIGN TOTAL		340.0

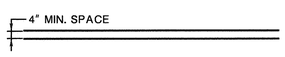
* - SEE PLAN SHEET STD-1 FOR SIGN PANELS

TRAFFIC SIGNING AND STRIPING NOTES

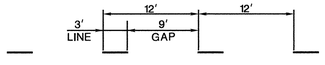
1. ALL EXISTING OR TEMPORARY TRAFFIC STRIPES IN CONFLICT WITH PROPOSED TRAFFIC STRIPES SHALL BE REMOVED PRIOR TO THE APPLICATION OF PERMANENT STRIPES, TO BE PAID FOR UNDER ITEM 610036M, REMOVAL OF TRAFFIC STRIPES.
2. PROPOSED TRAFFIC MARKINGS TO FOLLOW STANDARDS IN THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", UNLESS NOTED OTHERWISE.
3. RAISED PAVEMENT MARKERS (RPM'S) ARE TO BE INSTALLED ON ALL PROPOSED PAVEMENT WITHIN THE PROJECT AS SPECIFIED IN SECTION 610.03 OF THE NJDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2016 AND AS DETAILED ON CD-610-1 THRU CD-610-3 OF THE CONSTRUCTION DETAILS.
4. EXISTING SIGNS DISTURBED DURING CONSTRUCTION SHALL BE RESET TO ORIGINAL LOCATION UNLESS OTHERWISE INDICATED.
5. DIMENSIONS, COLORS AND DETAILS OF VARIOUS SIZE SIGNS, SHIELDS AND ACCESSORY PANELS TO FOLLOW STANDARDS IN THE CURRENT "STANDARD HIGHWAY SIGNS PUBLICATION" AND THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
6. FOR STEEL U-POST SIGN SUPPORTS, SEE NJDOT STANDARD ROADWAY CONSTRUCTION DETAILS BOOKLET 2016. DETAILS CD612-4 AND CD612-5.

TYPICAL STRIPING DETAILS

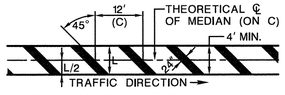
NOT TO SCALE



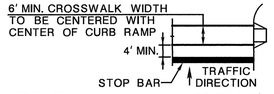
4" DOUBLE SOLID STRIPE



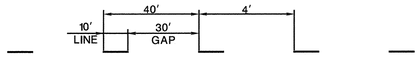
8" DOTTED STRIPE



TRAVERSABLE MEDIAN STRIPES



PEDESTRIAN (STANDARD) CROSSWALK



4" DOTTED STRIPE

STANDARD SIGN LEGEND


R3-1
24" x 24"


R3-2
24" x 24"

R3-3
24" x 24"


R3-4
24" x 24"

R3-5(R)
30" x 36"

R3-7(L)
30" x 30"


R3-18
24" x 24"


R4-7
24" x 30"

R5-1
30" x 30"

R6-1(L)
36" x 12"

R6-1(R)
36" x 12"


R9-3
18" x 18"

R9-3BP(L)
18" x 12"

R9-3BP(R)
18" x 12"

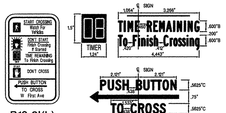
R10-5
30" x 36"

R10-11A
30" x 36"

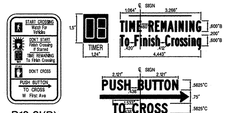

W1-6(R)
48" x 24"

MODIFIED SIGN LEGEND

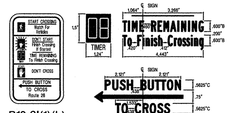
NOTE: ALL MODIFIED SIGNS TO USE TYPE III-A (HIGH INTENSITY) RETRO REFLECTIVE SHEETING. LEGENDS AND BORDERS TO BE TYPE B.



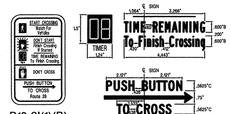
R10-3I(L)
9" x 15"
COLORS:
TEXT - BLACK
BACKGROUND - WHITE
08, HAND SYMBOL - ORANGE



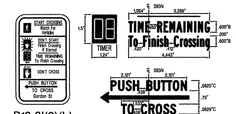
R10-3I(R)
9" x 15"
COLORS:
TEXT - BLACK
BACKGROUND - WHITE
08, HAND SYMBOL - ORANGE



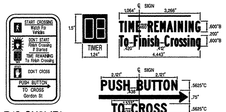
R10-3I(1)(L)
9" x 15"
COLORS:
TEXT - BLACK
BACKGROUND - WHITE
08, HAND SYMBOL - ORANGE



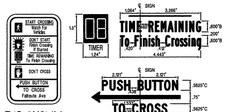
R10-3I(1)(R)
9" x 15"
COLORS:
TEXT - BLACK
BACKGROUND - WHITE
08, HAND SYMBOL - ORANGE



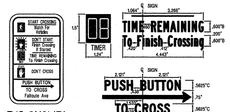
R10-3I(2)(L)
9" x 15"
COLORS:
TEXT - BLACK
BACKGROUND - WHITE
08, HAND SYMBOL - ORANGE



R10-3I(2)(R)
9" x 15"
COLORS:
TEXT - BLACK
BACKGROUND - WHITE
08, HAND SYMBOL - ORANGE

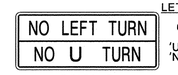


R10-3I(3)(L)
9" x 15"
COLORS:
TEXT - BLACK
BACKGROUND - WHITE
08, HAND SYMBOL - ORANGE



R10-3I(3)(R)
9" x 15"
COLORS:
TEXT - BLACK
BACKGROUND - WHITE
08, HAND SYMBOL - ORANGE

LETTERS 6"C
R(NJ)3-2A
60" x 12"
COLORS:
TEXT - BLACK
BACKGROUND - WHITE

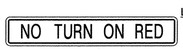


LETTERS
6"C
'U' - 6"E
'NO', 'TURN'- 6"C
R(NJ)3-2D
60" x 24"
COLORS:
TEXT - BLACK
BACKGROUND - WHITE

LETTERS 6"D
R(NJ)3-3
60" x 12"
COLORS:
TEXT - BLACK
BACKGROUND - WHITE

LETTERS 4"C
R(NJ)3-8B
30" x 30"
COLORS:
TEXT & ARROW- BLACK
BACKGROUND - WHITE

LETTERS 4"C
R(NJ)3-8I
30" x 30"
COLORS:
TEXT & ARROW- BLACK
BACKGROUND - WHITE



LETTERS 6"C
R(NJ)10-11F
72" x 12"
COLORS:
TEXT - BLACK
BACKGROUND - WHITE

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Detail Checked by

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Mount Laurel, NJ

8/6/2019 TSS1_2893.dgn

TSS-1
TSS-2

UNION COUNTY DIVISION OF ENGINEERING

TRAFFIC SIGNING AND STRIPING PLANS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC

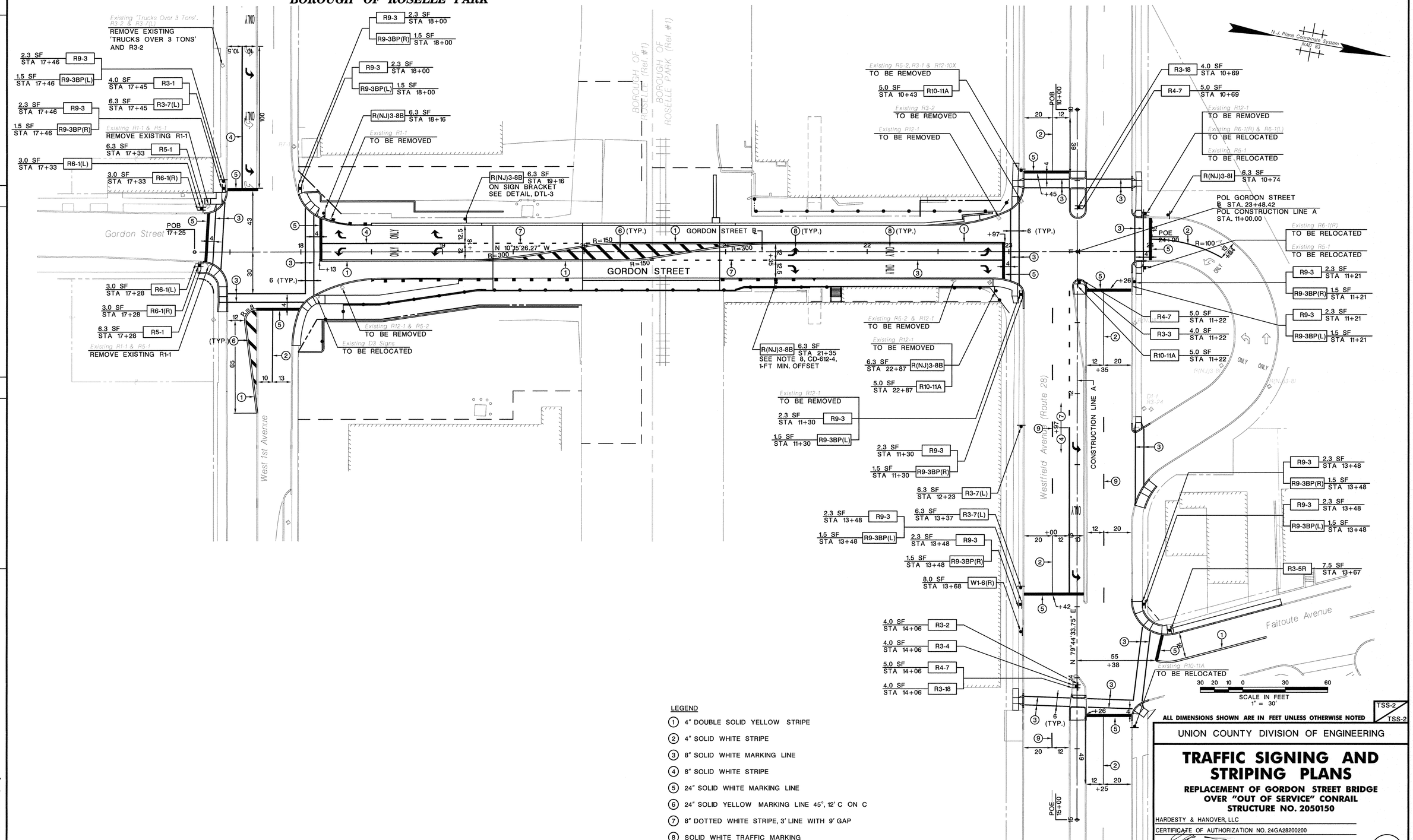
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.

NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

BOROUGH OF ROSELLE
BOROUGH OF ROSELLE PARK

COUNTY OF UNION



LEGEND

1. 4" DOUBLE SOLID YELLOW STRIPE
2. 4" SOLID WHITE STRIPE
3. 8" SOLID WHITE MARKING LINE
4. 8" SOLID WHITE STRIPE
5. 24" SOLID WHITE MARKING LINE
6. 24" SOLID YELLOW MARKING LINE 45°, 12' C ON C
7. 8" DOTTED WHITE STRIPE, 3' LINE WITH 9' GAP
8. SOLID WHITE TRAFFIC MARKING
9. 4" DOTTED WHITE STRIPE, 10' LINE WITH 30' GAP

ALL DIMENSIONS SHOWN ARE IN FEET UNLESS OTHERWISE NOTED

TSS-2 / TSS-2

UNION COUNTY DIVISION OF ENGINEERING

TRAFFIC SIGNING AND STRIPING PLANS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

35 / 85

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Design Checked by
Detailed by
Detail Checked by

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Mount Laurel, NJ

8/6/2019 TSS2_2893.dgn

TRAFFIC SIGNAL MAST ARM SIGNS

IDENT. NO.	STATION	LEGEND	U.C.	L.C.	CAPS	NO. SIZE	SHIELD SIZE	ARROW SIZE	VERTICAL SPACE (IN IN.)	SIZE (INCLUDES BORDER)	WORK TO BE PERFORMED
SIGN "A" (E-1 &TSP-1) (E-3 &TSP-2)	GORDON STREET ℄ STA 17+60, RT. STA 17+80, LT. STA 23+19, RT.	Gordon St	6" C 8" C	4.5" C 6" C					5.0 8.0 5.0	60" x 18" (7.5 SF) COLORS: LEGEND - WHITE BACKGROUND - GREEN BORDER - WHITE	MESSAGE ON BOTH SIDES OF SIGN TO BE MOUNTED ON TRAFFIC SIGNAL MAST ARM AS SHOWN ON PLAN SHEETS E-1, E-3, TSP-1 AND TSP-2. USE ASTM D 4956 TYPE VIII OR IX RETROREFLECTIVE SHEETING. LEGENDS, BORDERS AND ACCESSORIES TO BE TYPE A.
SIGN "B" (E-1 &TSP-1)	GORDON STREET ℄ STA 17+40, LT. STA 18+12, RT.	W First Ave	6" C 8" C	4.5" C 6" C					5.0 8.0 5.0	60" x 18" (7.5 SF) COLORS: LEGEND - WHITE BACKGROUND - GREEN BORDER - WHITE	MESSAGE ON BOTH SIDES OF SIGN TO BE MOUNTED ON TRAFFIC SIGNAL MAST ARM AS SHOWN ON PLAN SHEETS E-1 AND TSP-1. USE ASTM D 4956 TYPE VIII OR IX RETROREFLECTIVE SHEETING. LEGENDS, BORDERS AND ACCESSORIES TO BE TYPE A.
SIGN "B" (E-3 &TSP-2)	GORDON STREET ℄ STA 23+01, LT. CONSTRUCTION LINE A STA 13+70, RT. STA 14+12, LT.	W 28 E			6" C	8" C	16" x 16" M1-5(28) COLORS: BLACK ON WHITE	5" x 7.5" (TYPE D) ANGLE=180° 5" x 7.5" (TYPE D) ANGLE=0°	2.5 6.0 2.0 5.0 2.5	48" x 18" (6.0 SF) COLORS: LEGEND - WHITE BACKGROUND - GREEN BORDER - WHITE	MESSAGE ON BOTH SIDES OF SIGN TO BE MOUNTED ON TRAFFIC SIGNAL MAST ARM AS SHOWN ON PLAN SHEETS E-3 AND TSP-2. USE ASTM D 4956 TYPE VIII OR IX RETROREFLECTIVE SHEETING. LEGENDS, BORDERS AND ACCESSORIES TO BE TYPE A. NOTE: SIGN LEGEND TO BE "REVERSED" ON REVERSE SIDE OF SIGN.
SIGN "C" (E-3 &TSP-2)	CONSTRUCTION LINE A STA 13+45, LT. STA 14+13, RT.	N Faitoute Ave 617	6" C 8" C	4.5" C 6" C	6" C	5.5" C	16" x 16" M1-6(617) COLORS: YELLOW ON BLUE YELLOW BACKGROUND	5" x 7.5" (TYPE D) ANGLE=180°	2.5 6.0 5.0 2.0 8.0 5.0 5.0 2.5	96" x 18" (12.0 SF) COLORS: LEGEND - WHITE BACKGROUND - GREEN BORDER - WHITE	MESSAGE ON BOTH SIDES OF SIGN TO BE MOUNTED ON TRAFFIC SIGNAL MAST ARM AS SHOWN ON PLAN SHEETS E-3 AND TSP-2. USE ASTM D 4956 TYPE VIII OR IX RETROREFLECTIVE SHEETING. LEGENDS, BORDERS AND ACCESSORIES TO BE TYPE A. NOTE: SIGN LEGEND TO BE "REVERSED" ON REVERSE SIDE OF SIGN.

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8/6/2019 STD1_2893.dgn

STD-1
STD-1

UNION COUNTY DIVISION OF ENGINEERING

SIGN TEXT DETAILS

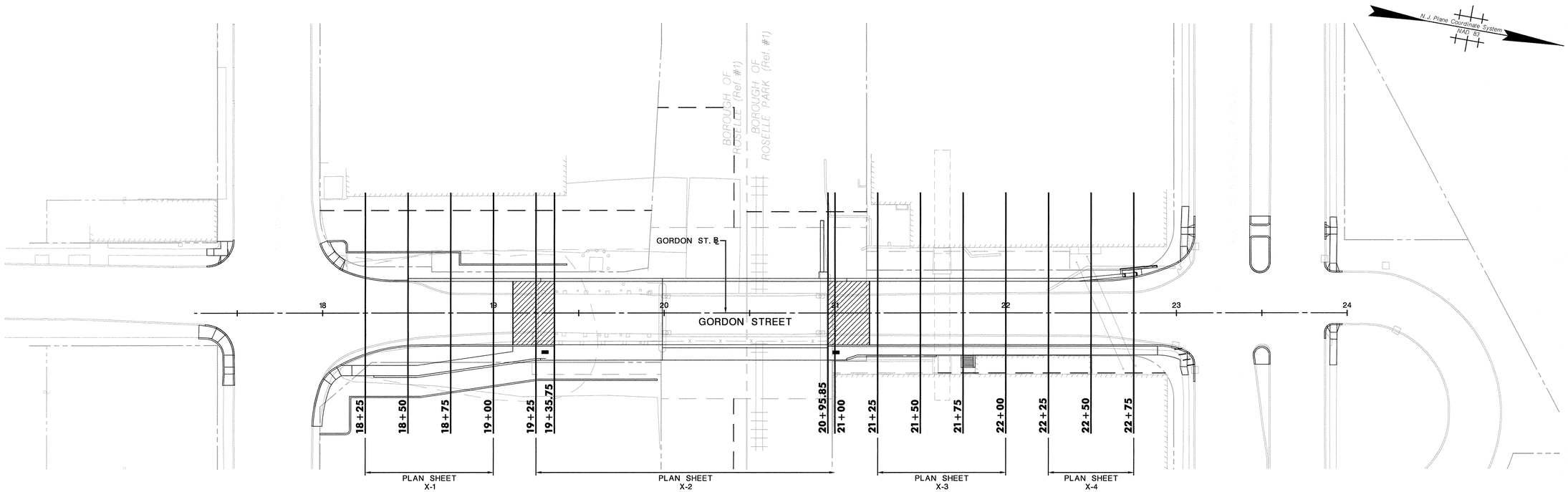
REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

BOROUGH OF ROSELLE
BOROUGH OF ROSELLE PARK

COUNTY OF UNION



30 20 10 0 30 60
SCALE IN FEET
1" = 30'

MS-1
MS-1

UNION COUNTY DIVISION OF ENGINEERING

METHOD OF CROSS SECTIONS

REPLACEMENT OF GORDON STREET BRIDGE
OVER "OUT OF SERVICE" CONRAIL
STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC

CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.

NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

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85

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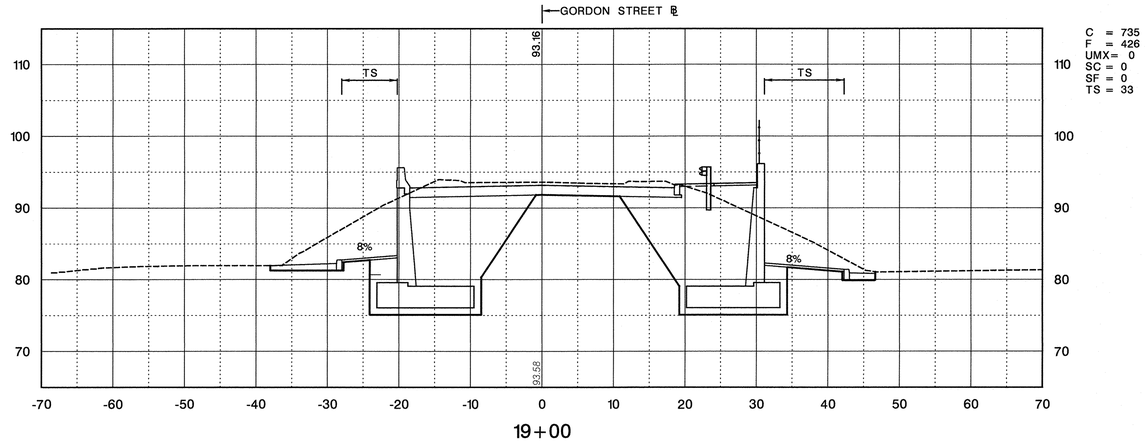
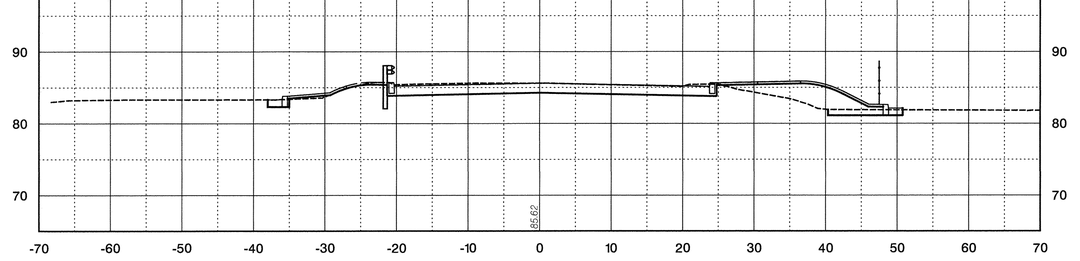
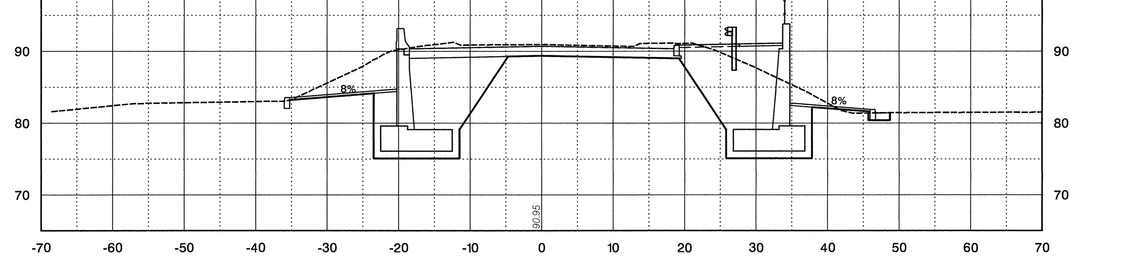
18+50



19+00



18+25



18+75

LEGEND

C = CUT	SQ. FT.
F = FILL	SQ. FT.
UMX = UNSUITABLE MATERIAL	SQ. FT.
SC = STRIPPING IN CUT	LIN. FT.
TS = TOPSOILING, 4 INCH THICK	LIN. FT.
SF = STRIPPING IN FILL	LIN. FT.

HORIZONTAL 10 0 10 20 — 1" = 10'

VERTICAL 10 0 10 20 — 1" = 10'

SCALE IN FEET

GORDON ST. ℄ STA. 18+25 TO STA. 19+00

X-1 / X-4

ALL DIMENSIONS SHOWN ARE IN FEET UNLESS OTHERWISE NOTED

UNION COUNTY DIVISION OF ENGINEERING

CROSS SECTIONS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC

CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

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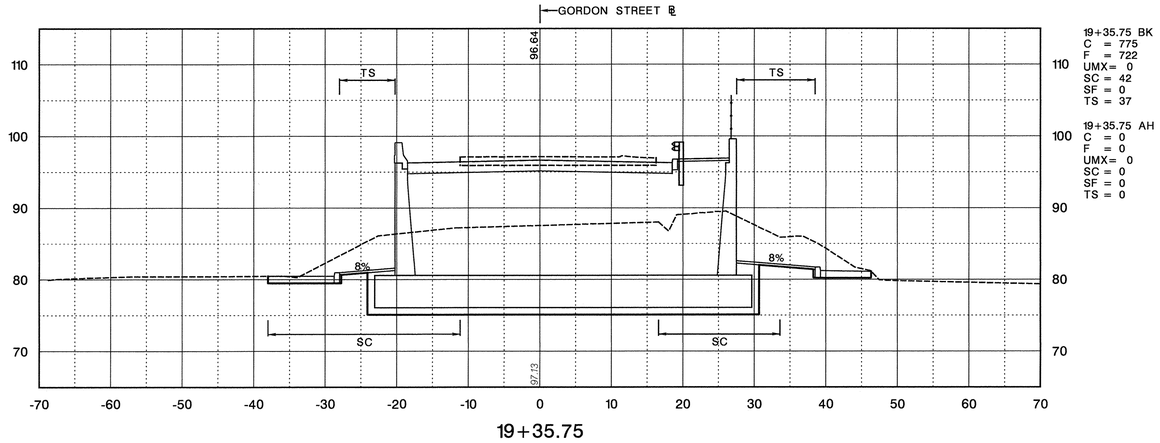
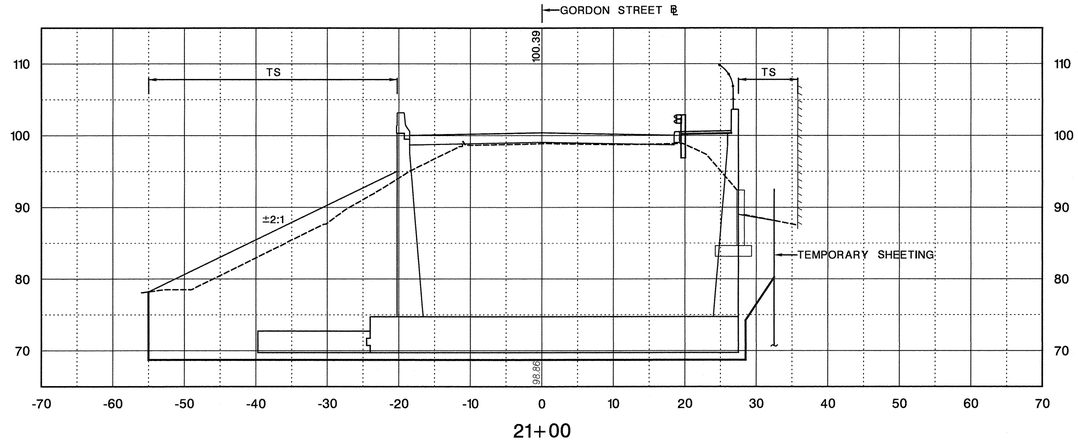


19+35.75 BK
C = 775
F = 722
UMX= 0
SC = 42
SF = 0
TS = 37

19+35.75 AH
C = 0
F = 0
UMX= 0
SC = 0
SF = 0
TS = 0

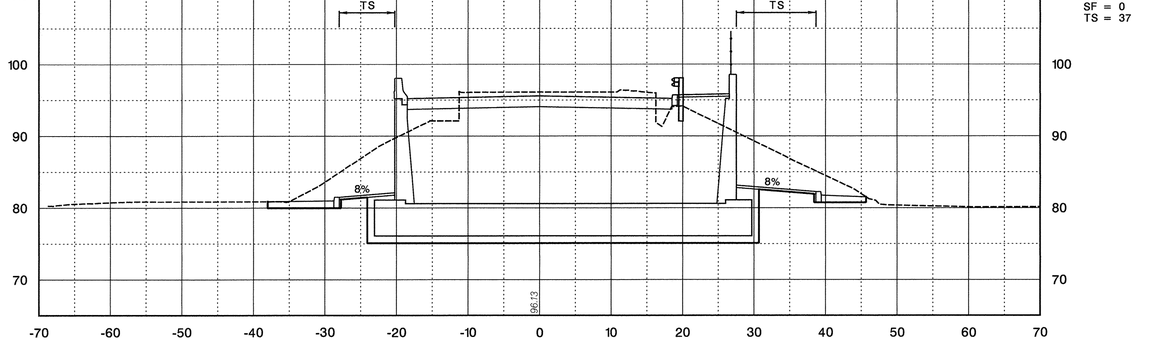
19+35.75



C = 2012
F = 1705
UMX= 0
SC = 0
SF = 0
TS = 43

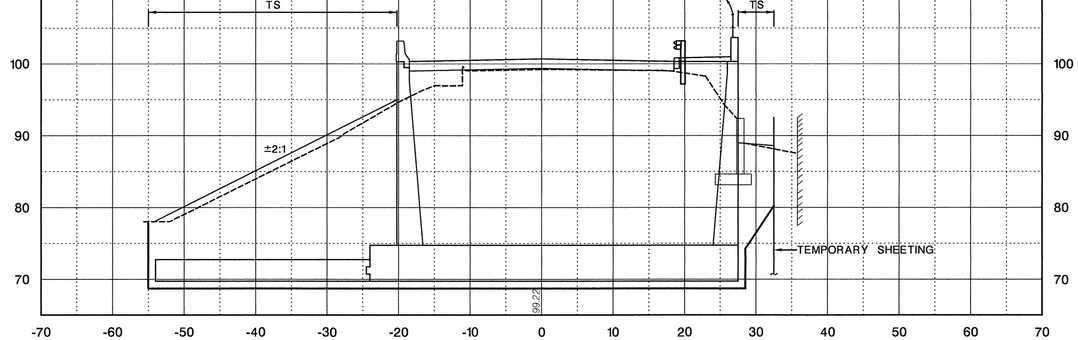
21+20 BK
C = 2012
F = 1705
UMX= 0
SC = 0
SF = 0
TS = 43

21+00



C = 1120
F = 675
UMX= 0
SC = 0
SF = 0
TS = 37

19+25



20+95.85 BK
C = 0
F = 0
UMX= 0
SC = 0
SF = 0
TS = 0

20+95.85 AH
C = 2050
F = 1665
UMX= 0
SC = 0
SF = 0
TS = 40

20+95.85

NOTE:
SIZE AND DEPTH OF EXISTING WALL FOUNDATIONS TO BE REMOVED IS APPROXIMATE.

GORDON ST. ℄ STA. 19+25 TO STA. 21+00

ALL DIMENSIONS SHOWN ARE IN FEET UNLESS OTHERWISE NOTED

X-2 / X-4

HORIZONTAL 10 0 10 20 — 1" = 10'

VERTICAL 10 0 10 20 — 1" = 10'

SCALE IN FEET

UNION COUNTY DIVISION OF ENGINEERING

CROSS SECTIONS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC

CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.

NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

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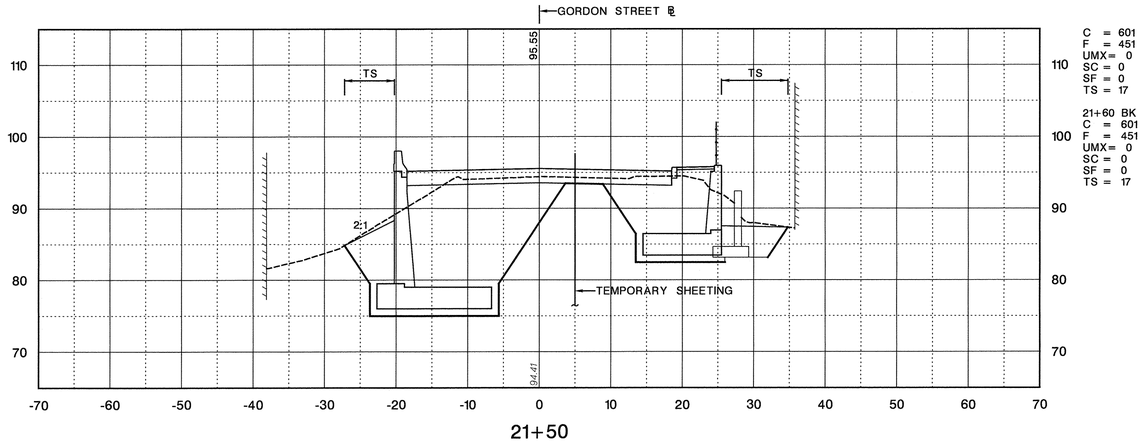
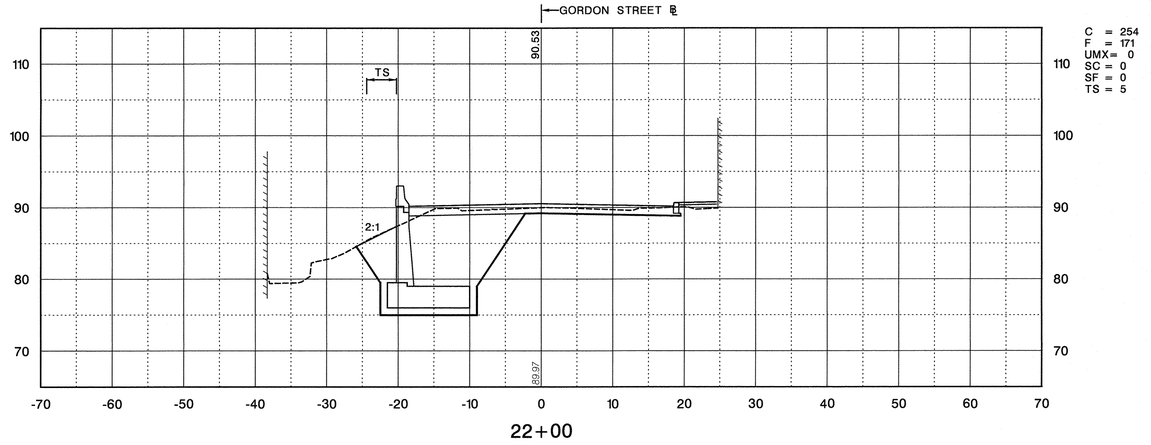
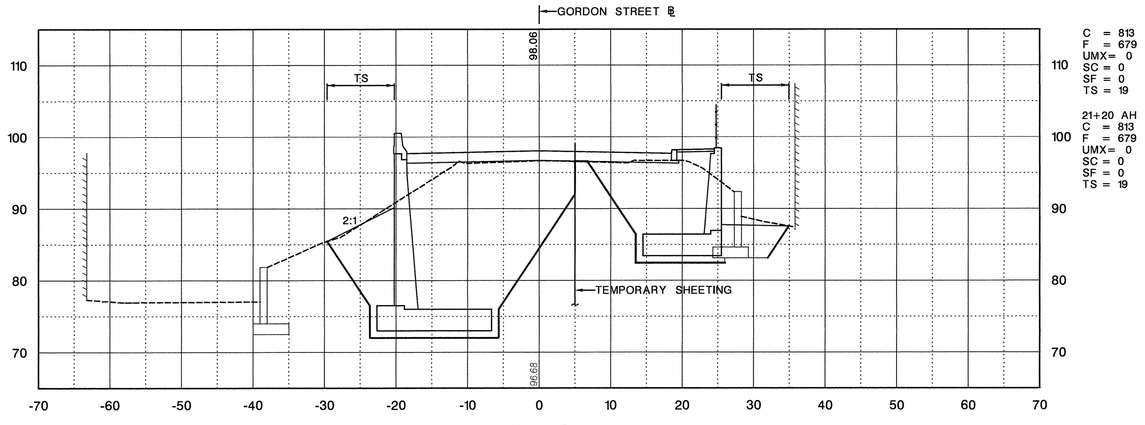


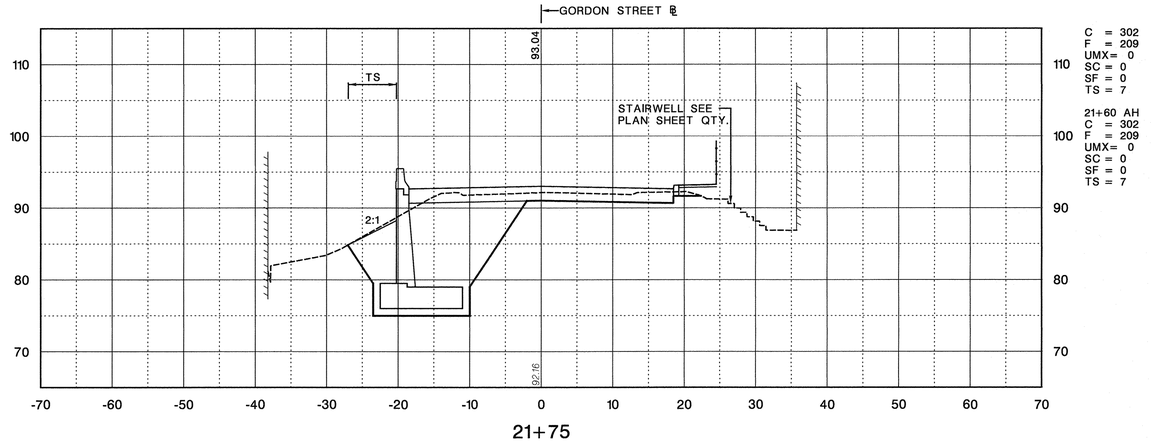
21+50



22+00



21+25



21+75

NOTE:
SIZE AND DEPTH OF EXISTING WALL FOUNDATIONS TO BE REMOVED IS APPROXIMATE.

GORDON ST. ℄ STA. 21+25 TO STA. 22+00

X-3 / X-4

ALL DIMENSIONS SHOWN ARE IN FEET UNLESS OTHERWISE NOTED

HORIZONTAL 10 0 10 20
1" = 10'

VERTICAL 10 0 10 20
1" = 10'
SCALE IN FEET

UNION COUNTY DIVISION OF ENGINEERING

CROSS SECTIONS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC

CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

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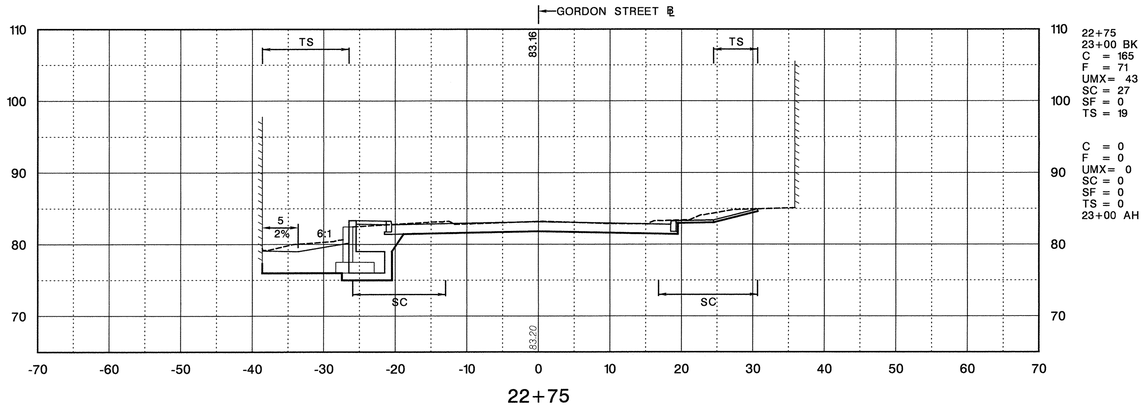
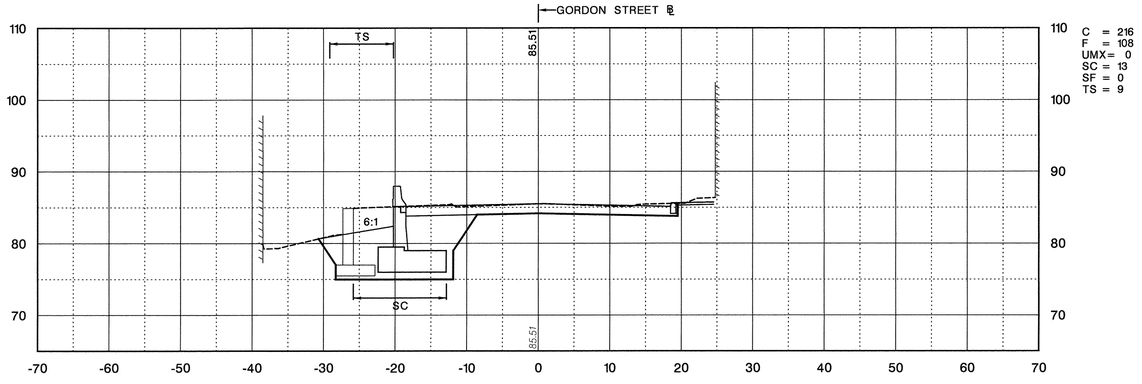
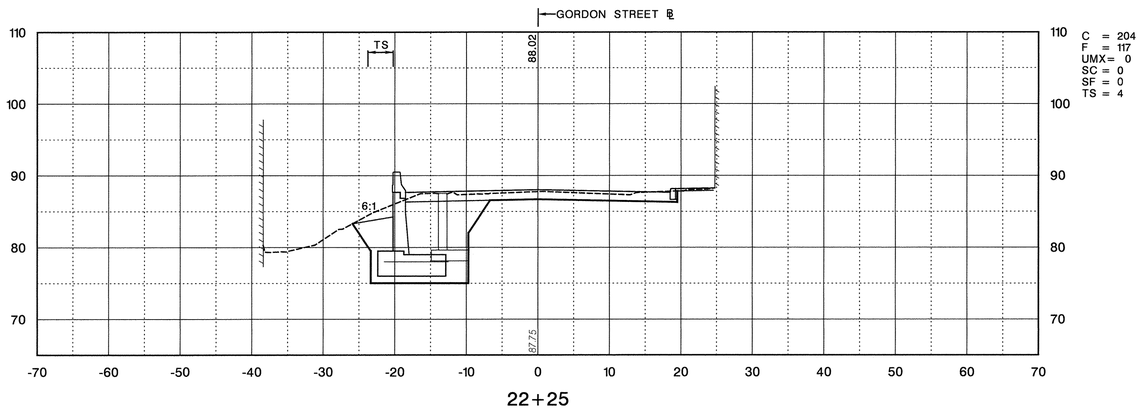


22+75



22+50



22+25

EARTHWORK SUMMARY

Description	Contract Quantity
EXCAVATION	
(A) Excavated Materials	
(1) **Excavation, Unclassified available for I-14 Embankment**	
EXCAVATION, FROM CROSS SECTIONS	0 CY
EXCAVATION, FROM PLAN SHEETS	0 CY
Less STRIPPING IN CUTS: 4 INCH THICKNESS	-20 CY
REMOVAL OF PAVEMENT (1529 SY x 6 INCHES THK)	-255 CY
TOTAL EXCAVATION UNCLASSIFIED	-275 CY
Removal of Pavement	255 CY
Less UNSUITABLE EXCAVATION UNCLASSIFIED	0 CY
UNSUITABLE PAVEMENT	0 CY
TOTAL	-20 CY
(2) **Excavation, Regulated Material, available for I-14 Embankment**	
EXCAVATION, REGULATED FROM CROSS SECTIONS	7,618 CY
EXCAVATION, REGULATED FROM PLAN SHEETS	258 CY
EXCAVATION, REGULATED FROM PIPES, INLETS, OTHER STRUCTURES	1,647 CY
TOTAL EXCAVATION, REGULATED MATERIAL	9,523 CY
Less UNSUITABLE EXCAVATED REGULATED MATERIAL, HAZARDOUS	73 CY
UNSUITABLE EXCAVATED REGULATED MATERIAL	0 CY
TOTAL	9,596 CY
DISPOSAL OF REGULATED MATERIAL, HAZARDOUS (73 x 1.755 TON/CY)	128 TONS
DISPOSAL OF REGULATED MATERIAL (5302 x 1.755 TON/CY)	9,305 TONS
(3) **Excavation, Acid Producing Soil available for I-14 Embankment**	
EXCAVATION, ACID PRODUCING SOIL FROM CROSS SECTIONS	0 CY
EXCAVATION, ACID PRODUCING SOIL FROM PLAN SHEETS	0 CY
EXCAVATION, ACID PRODUCING SOIL FROM PIPES, INLETS, OTHER STRUCTURES	0 CY
TOTAL EXCAVATION, ACID PRODUCING SOIL	0 CY
Less UNSUITABLE EXCAVATED ACID PRODUCING SOIL	0 CY
TOTAL	0 CY
DISPOSAL OF ACID PRODUCING SOIL (0 x 1.755 TON/CY)	0 TONS
EXCAVATION UNCLASSIFIED	**9,576 CY**
LESS 10% SHRINKAGE	-958 CY
TOTAL EXCAVATION AVAILABLE FOR EMBANKMENT (Total of 1+2+3)	**8,618 CY**
(B) EMBANKMENT	
EMBANKMENT FROM CROSS SECTIONS	5,554 CY
EMBANKMENT FROM PLAN SHEETS	0 CY
Less SUBBASE	-62 CY
I-9 SOIL AGGREGATE	-1,817 CY
COARSE AGGREGATE, SIZE NO. 57	-359 CY
STRIPPING IN FILL: 4 INCH THICKNESS	0 CY
TOTAL EMBANKMENT REQUIRED	**3,316 CY**
BORROW FILL	
TOTAL EMBANKMENT REQUIRED	3,316 CY
TOTAL EXCAVATION AVAILABLE FOR EMBANKMENT (Total of 1+2+3)	8,618 CY
EXCAVATED MATERIALS EXCESS (Suitable for I-14 Embankment)	5,302 CY
EXCAVATED MATERIALS TO BE BORROWED (Suitable for I-14 Embankment)	0 CY
STRIPPING	
STRIPPING IN CUT: FROM CROSS SECTIONS	174 SY
STRIPPING IN FILL: FROM CROSS SECTIONS	0 SY
TOTAL STRIPPING AREA: SQUARE YARD	174 SY
TOTAL STRIPPING: ACRES	0 AC
TOPSOILING	
(A) TOPSOIL AVAILABLE	
TOTAL STRIPPING AREA: SQUARE YARD	174 SY
TOPSOIL VOLUME AVAILABLE	**20 CY**
(B) TOPSOIL REQUIRED	
TOPSOILING, 4" THK FROM CROSS SECTIONS	757 SY
TOPSOILING, 4" THK FROM PLANS	25 SY
TOPSOIL VOLUME REQUIRED	**87 CY**
BORROW TOPSOIL	
TOPSOIL VOLUME REQUIRED	87 CY
TOPSOIL VOLUME AVAILABLE	20 CY
BORROW TOPSOIL	**67 CY**
FERTILIZING AND SEEDING	
FERTILIZING AND SEEDING: FROM CROSS SECTIONS	757 SY
FERTILIZING AND SEEDING, TYPE A-3	**757 SY**
FERTILIZING AND SEEDING,TYPE F = 10% OF PROJECT SEEDING	**76 SY**
STRAW MULCHING	
STRAW MULCHING: FROM CROSS SECTIONS	757 SY
STRAW MULCHING OF TYPE F SEEDING: IF & WHERE DIRECTED	76 SY
TOTAL STRAW MULCHING	**833 SY**

NOTE:
SIZE AND DEPTH OF EXISTING WALL FOUNDATIONS TO BE REMOVED IS APPROXIMATE.

HORIZONTAL 10 0 10 20 — 1" = 10'

VERTICAL 10 0 10 20 — 1" = 10'

SCALE IN FEET

GORDON ST. ℄ STA. 22+25 TO STA. 22+75

X-4 / X-4

ALL DIMENSIONS SHOWN ARE IN FEET UNLESS OTHERWISE NOTED

UNION COUNTY DIVISION OF ENGINEERING

CROSS SECTIONS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC

CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.

NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

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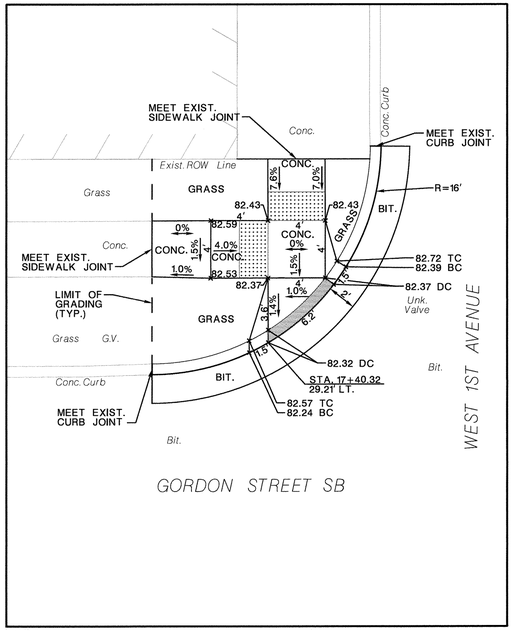
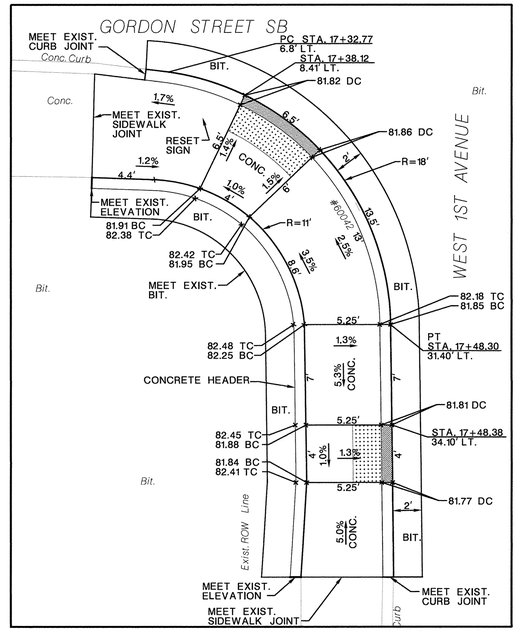
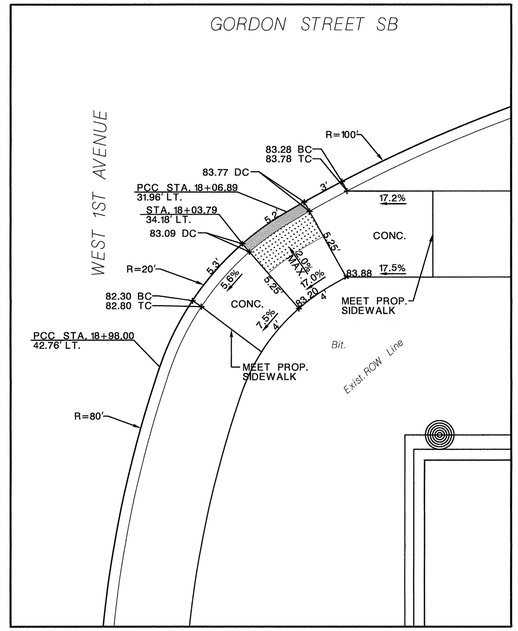


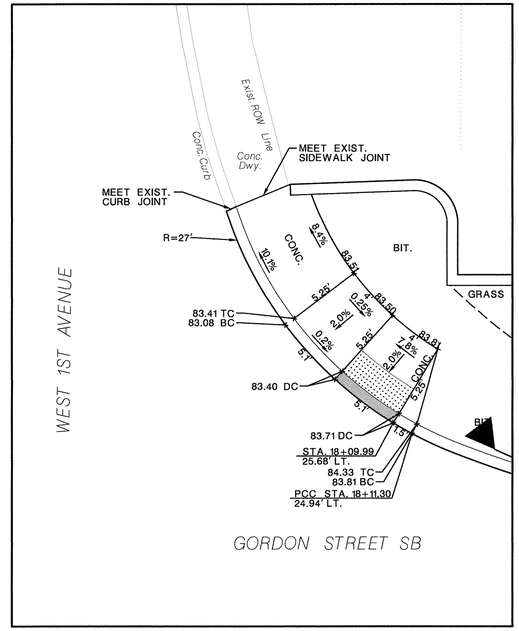
HC1 – TYPE 6



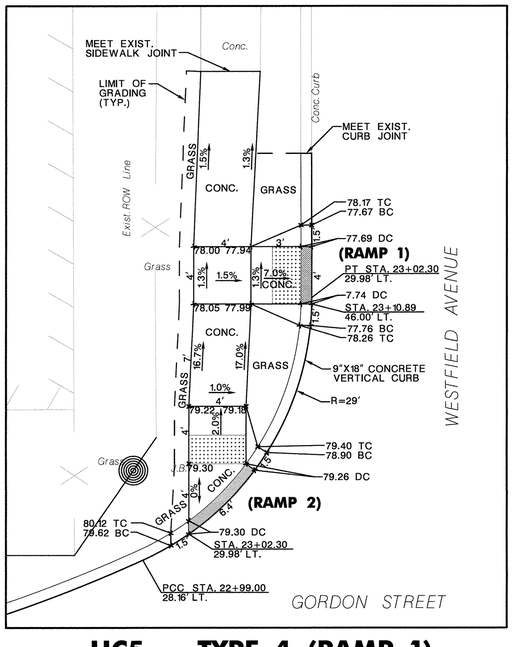
HC2 – TYPE 7



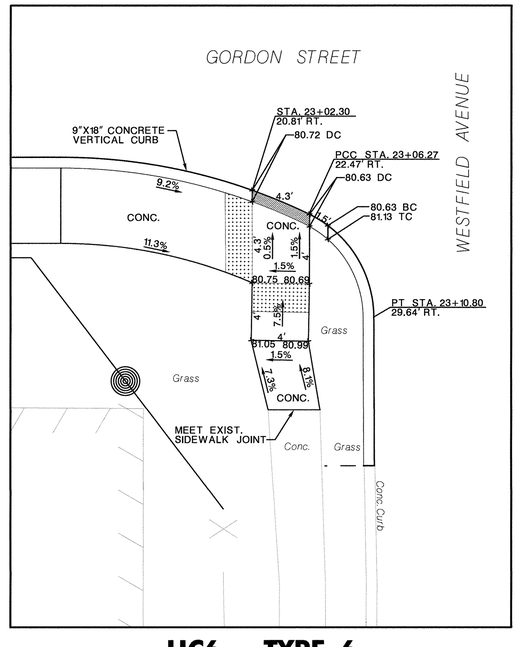
HC3 – TYPE 7 MOD.



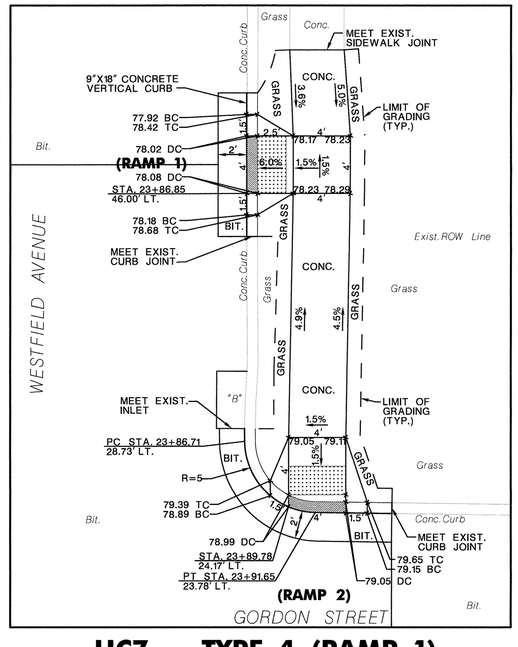
HC4 – TYPE 7 MOD.



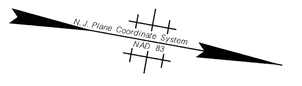
HC5 – TYPE 4 (RAMP 1)
TYPE 5 (RAMP 2)

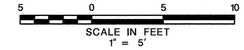


HC6 – TYPE 6



HC7 – TYPE 4 (RAMP 1)
TYPE 5 (RAMP 2)





ALL DIMENSIONS SHOWN ARE IN FEET UNLESS OTHERWISE NOTED

DTL-1
DTL-3

UNION COUNTY DIVISION OF ENGINEERING

CONSTRUCTION DETAILS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC

CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.

NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

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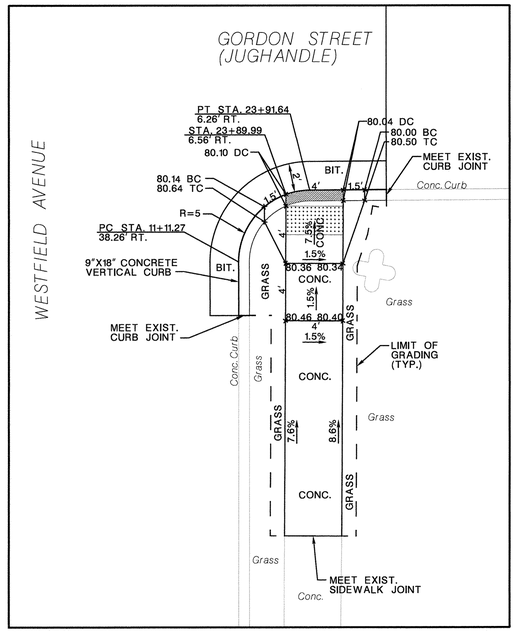
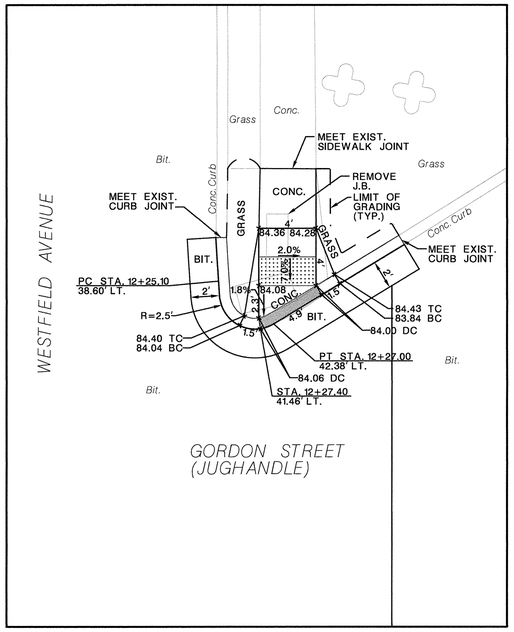


HC8 – TYPE 5



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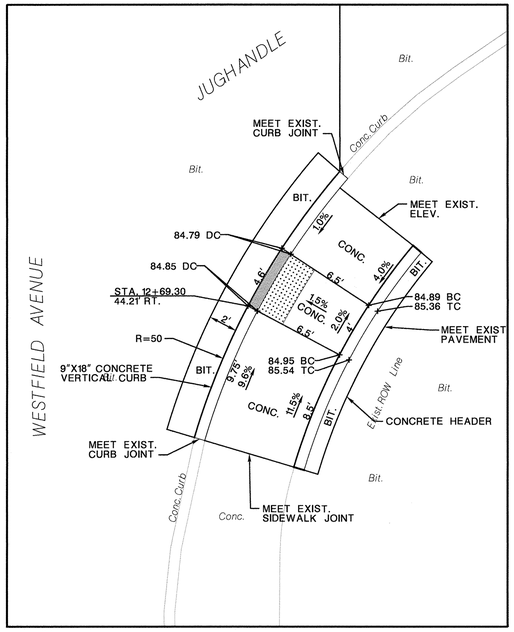
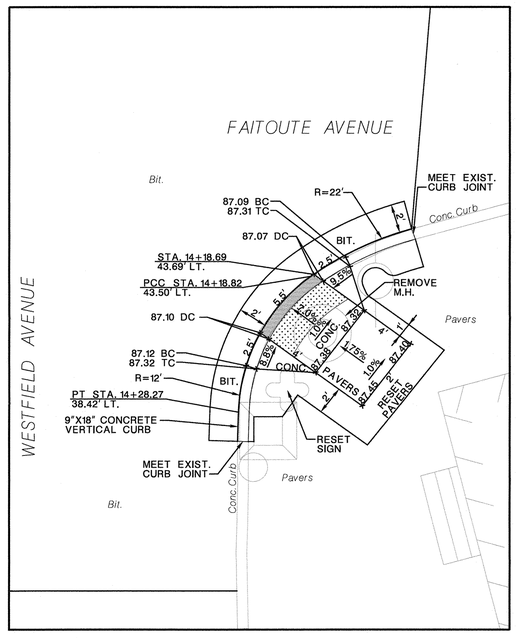
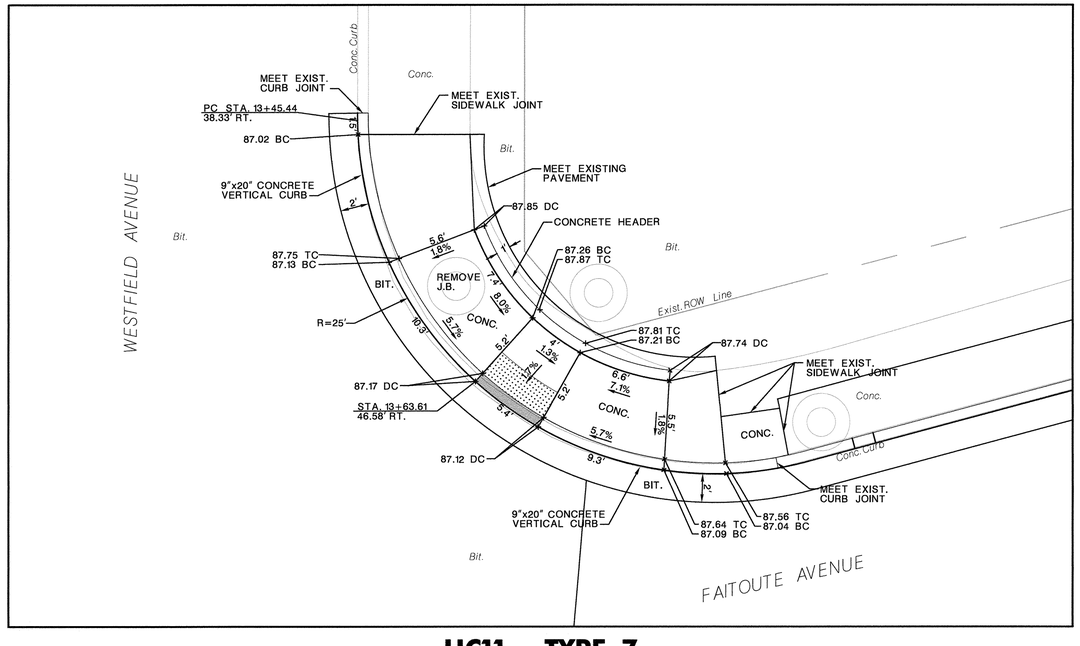


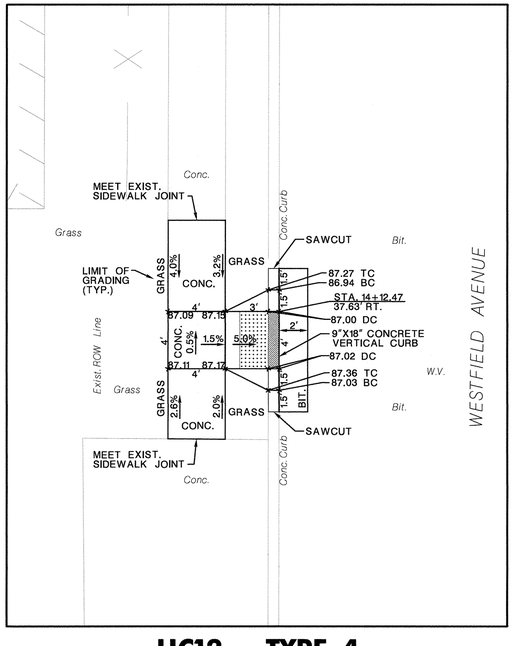
HC10 – TYPE 7



HC13 – TYPE 7



HC11 – TYPE 7



HC12 – TYPE 4

N.J. Plane Coordinate System
NAD 83

5 0 5 10
SCALE IN FEET
1" = 5'

ALL DIMENSIONS SHOWN ARE IN FEET UNLESS OTHERWISE NOTED

DTL-2
DTL-3

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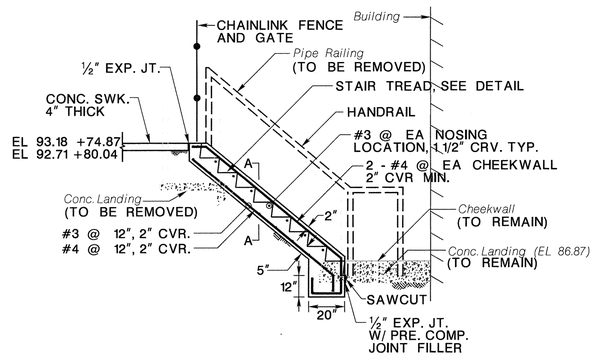
8/6/2019 DTL2_2893.dgn

UNION COUNTY DIVISION OF ENGINEERING

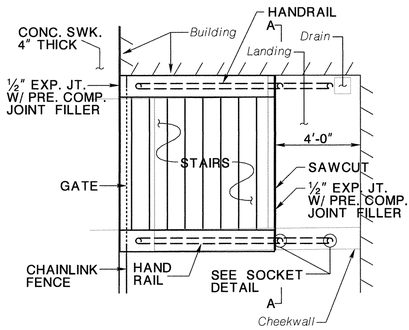
CONSTRUCTION DETAILS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

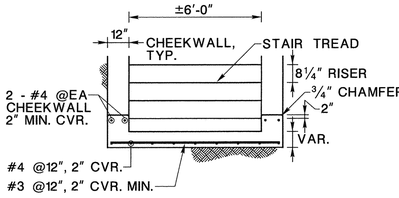
HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600



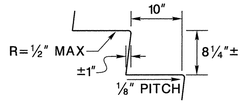
ELEVATION



PLAN



SECTION A–A



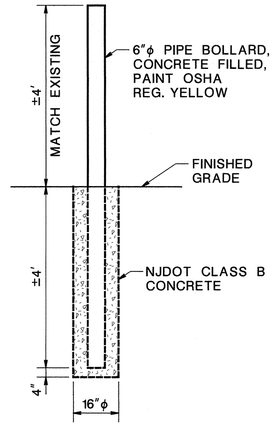
STAIR TREAD AND RISER DETAIL

NOTES:

1. CONCRETE: NJDOT CLASS B. (AIR ENTRAINED)
2. REINFORCING STEEL: GRADE 60, ASTM A615, EPOXY COATED.
3. TREAD FINISH: BROOM FINISH PARALLEL TO STEPS.
4. PEDESTRIAN RAILING.
5. CAST OF CONCRETE STEPS, LANDINGS, REINFORCEMENT AND CHEEKWALLS SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR CONCRETE STEPS, REINFORCED.

CONCRETE STEPS, REINFORCED DETAILS

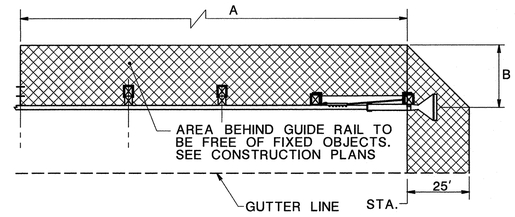
NOT TO SCALE



BOLLARD DETAIL

NOT TO SCALE

ROADSIDE RECOVERY AREA		
STATION	A	B
GORDON ST. ℄ 18+52	50	14



NOTE:
NO FIXED OBJECTS IN FRONT OF THE GUIDE RAIL FOR ITS ENTIRE LENGTH ARE PERMITTED.

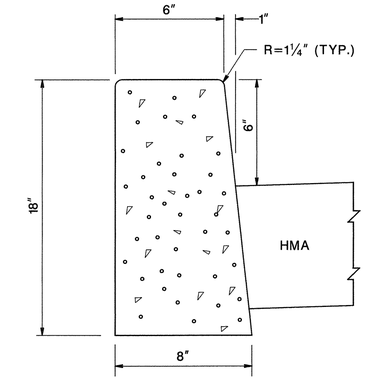
RECOVERY AREA AT FLARED AND TANGENT GUIDE RAIL TERMINALS

NOT TO SCALE CD-609-10.2

CRASH CUSHION COMPRESSIVE BARRIER SUMMARY TABLE						
ITEM NO.	DESCRIPTION	DESIGN SPEED	ROUTE & STATION	PRODUCT	FOUNDATION	BACKUP SYSTEM
611300M	CRASH CUSION, COMPRESSIVE BARRIER, TYPE 2, WIDTH NARROW	25	GORDON ST. ℄ 22+78	Quad Guard II	Concrete Pad	Tension Strut

CRASH CUSHION COMPRESSIVE BARRIER SUMMARY TABLE

NOT TO SCALE CD-611-1

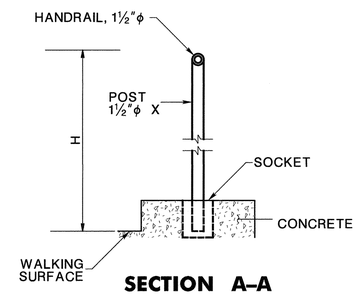


NOTES:

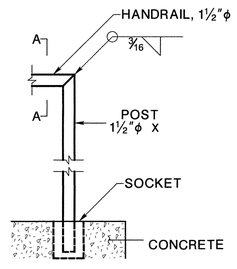
1. CONCRETE TO BE NJDOT CLASS "B" (AIR ENTRAINED)
2. SEE NJDOT STANDARD DETAIL CD-601 FOR ADDITIONAL APPLICABLE NOTES.
3. SEE STANDARD SPECIFICATIONS 607.03.02 FOR CONSTRUCTION REQUIREMMENTS.

CONCRETE VERTICAL CURB (TYPE 1)

NOT TO SCALE



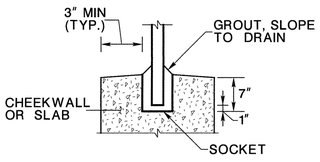
SECTION A–A



ELEVATION

NOTES:

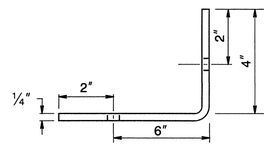
1. FIELD VERIFY DIMENSIONS PRIOR TO FABRICATION.
2. H=36" ON STEPS, H=42" ON LANDINGS.
3. HANDRAIL MAY BE 1½" STANDARD STEEL PIPE OR 1½" ALUMINUM PIPE, SCH. 40, ALLOY 6063-Tb.
4. FINISH FOR STEEL: GALVANIZED FINISH FOR ALUMINUM: C22-A41, ARCH. CLASS 1 CLEAR (NATURAL) ANODIC COATING, 0.7MIN OR GREATER.
5. SET POSTS IN RECTANGULAR OR CIRCULAR SOCKETS, 4" MIN, 5" MAX. IN ANY DIMENSION.

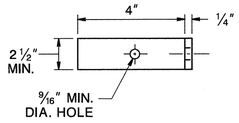


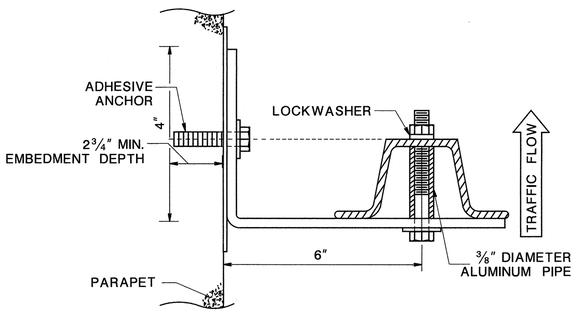
SOCKET DETAIL

HANDRAIL DETAIL

NOT TO SCALE

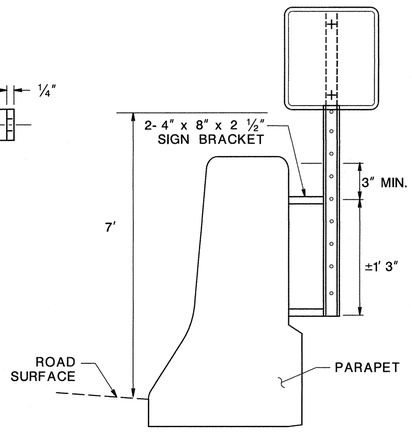






4" X 8" X 2 1/2" SIGN BRACKET

NOT TO SCALE



DTL-3 / DTL-3

UNION COUNTY DIVISION OF ENGINEERING

CONSTRUCTION DETAILS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL STRUCTURE NO. 2050150

HARDESTY & HANOVER, LLC

CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.

NEW JERSEY PROFESSIONAL ENGINEER LICENSE NO. 24GE03443600

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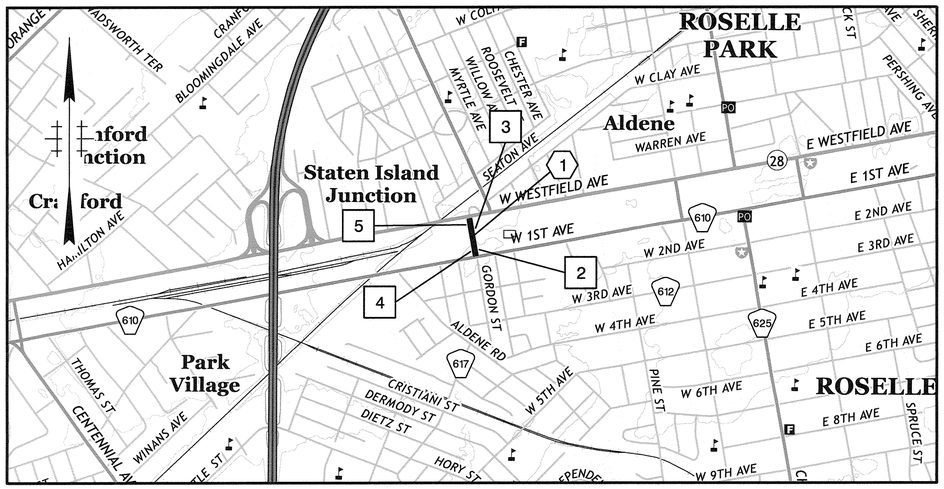
8/16/2019 DTL3_2893.dgn



1000′ 0 1000′ 2000′

KEY PLAN TO STRUCTURES

SCALE: 1" = 1000′

INDEX OF DRAWINGS

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B4	APPROACH SPAN TYPICAL SECTION
B5	TRUSS SPAN TYPICAL SECTION
B6	DEMOLITION PLAN
B7	SOUTH ABUTMENT ELEVATION
B8	SOUTH ABUTMENT SECTIONS 1 OF 2
B9	SOUTH ABUTMENT SECTIONS 2 OF 2
B10	SOUTH ABUTMENT DETAILS 1 OF 2
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B19	NORTH RETAINING WALL LAYOUT PLAN
B20	NORTHEAST RETAINING WALL
B21	NORTHWEST RETAINING WALL
B22	NORTHWEST WINGWALL
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B24	PROPOSED PIER SECTIONS 1 OF 2
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B26	PROPOSED PIER DETAILS
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B30	APPROACH SPAN STRUCTURAL STEEL DETAILS
B31	DECK JOINT PLAN
B32	JOINT LOCATION PLAN
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B34	JOINT DETAILS 2 OF 2
B35	BEARING DETAILS
B36	HAUNCH TABLE
B37	BAR SCHEDULE - 1
B38	BAR SCHEDULE - 2
B39	BAR SCHEDULE - 3
B40	TUNNEL RELIEVING SLAB
B41	HISTORICAL SIGN DETAILS

STRUCTURES IN THIS CONTRACT

NO.	DESCRIPTION	STRUCTURE NO.
	BRIDGES	
1	GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL	2050-150
	RETAINING WALLS	
2	SOUTHEAST RETAINING WALL GORDON STREET NB	-
3	NORTHEAST RETAINING WALL GORDON STREET NB	-
4	SOUTHWEST RETAINING WALL GORDON STREET SB	-
5	NORTHWEST RETAINING WALL GORDON STREET SB	-

ABBREVIATIONS

APPROX	APPROXIMATE
ABUT.	ABUTMENT
BOT	BOTTOM
BRG.	BEARING
BTWN.	BETWEEN
CF	CUBIC FOOT
CY	CUBIC YARD
CIP	CAST IN PLACE
CLR.	CLEAR COVER
CONC	CONCRETE
DIA.	DIAMETER
DWG	DRAWING
EA.	EACH
EF	EACH FACE
EL, ELEV	ELEVATION
ES	EQUALLY SPACED
EW	EACH WAY
EXIST.	EXISTING
EXP.	EXPANSION
FF	FRONT FACE
FIN	FINISHED
FTG	FOOTING
J.B.	JUNCTION BOX
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
N.	NORTH
OD	OUTER DIAMETER
PROP.	PROPOSED
R, RAD	RADIUS
REQ'D	REQUIRED
RET	RETAINING
RF	REAR FACE
REINF.	REINFORCEMENT, REINFORCED
RT	RIGHT
S.	SOUTH
SCH	SCHEDULE
STA.	STATION
TEMP	TEMPORARY
THK	THICK
TYP	TYPICAL
T&B	TOP AND BOTTOM

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CONTROL SECTION			JOB NO.
DES. BY	S. TRELLES	CHK. BY	S. DIAZ
DWN. BY	S. TRELLES		
EST. BY	----	CHK. BY	----
SPECS. BY	----	CHK. BY	----

IN CHARGE OF B. RIEGEL

$DATE$ $FILE$

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

KEY PLAN TO STRUCTURES AND SHEET INDEX

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

BRIDGE
SHEET NO. B-1 OF B-41

45
85

PROJECT: REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL

STATE	FEDERAL PROJECT NO.	SHEET	TOTAL SHEETS
NJ			

SEQ. NO.	ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY	AS-BUILT QUANTITY	SEQ. NO.	ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY	AS-BUILT QUANTITY
142	201006P	CLEARING SITE, BRIDGE (2050-150)	LS	1							
143	501003P	TEMPORARY SHEETING	SF	1946							
144	504006P	REINFORCEMENT STEEL, EPOXY COATED	LB	181410							
145	504015P	CONCRETE FOOTING	CY	504							
146	504018P	CONCRETE WINGWALL	CY	143							
147	504024P	CONCRETE ABUTMENT WALL	CY	370							
148	504030P	CONCRETE PIER SHAFT	CY	180							
149	504036P	EPOXY WATERPROOFING	SY	115							
150	504037P	SPRAY APPLIED WATERPROOFING MEMBRANE	SF	8282							
151	506003P	STRUCTURAL STEEL (138,550 LBS)	LS	1							
152	506003P	STRUCTURAL STEEL, PRE-ENGINEERED TRUSS BRIDGE (310,000 LBS)	LS	1							
153	506006P	REINFORCED ELASTOMERIC BEARING ASSEMBLY	U	16							
154	506012P	SHEAR CONNECTOR	U	3420							
155	507015P	STRIP SEAL EXPANSION JOINT ASSEMBLY	LF	144							
156	507024P	CONCRETE BRIDGE DECK, HPC	CY	268							
157	507033P	CONCRETE BRIDGE SIDEWALK, HPC	CY	28							
158	507039P	CONCRETE BRIDGE PARAPET, HPC	LF	714							
159	507050M	CONCRETE SLEEPER SLAB	CY	13							
160	507051P	CONCRETE BRIDGE APPROACH	CY	106							
161	509108P	CHAIN-LINK FENCE, TYPE III, ALUMINUM ALLOY, BRIDGE, 6'-3" HIGH, CURVED TOP	LF	180							
162	513006P	RETAINING WALL, CAST-IN-PLACE, LOCATION NO. 2 (SOUTHEAST WALL)	SF	1085							
163	513006P	RETAINING WALL, CAST-IN-PLACE, LOCATION NO. 3 (NORTHEAST WALL)	SF	550							
164	513006P	RETAINING WALL, CAST-IN-PLACE, LOCATION NO. 4 (SOUTHWEST WALL)	SF	890							
165	513006P	RETAINING WALL, CAST-IN-PLACE, LOCATION NO. 5 (NORTHWEST WALL)	SF	1990							

ESTIMATE OF QUANTITIES - BRIDGE

HARDESTY & HANOVER, LLC

GLEN E. SCHETELICH, P.E.

N.J. P.E. LIC. NO. 24GE03443600

BRIDGE SHEET NO. B-2 OF B-41

46
85

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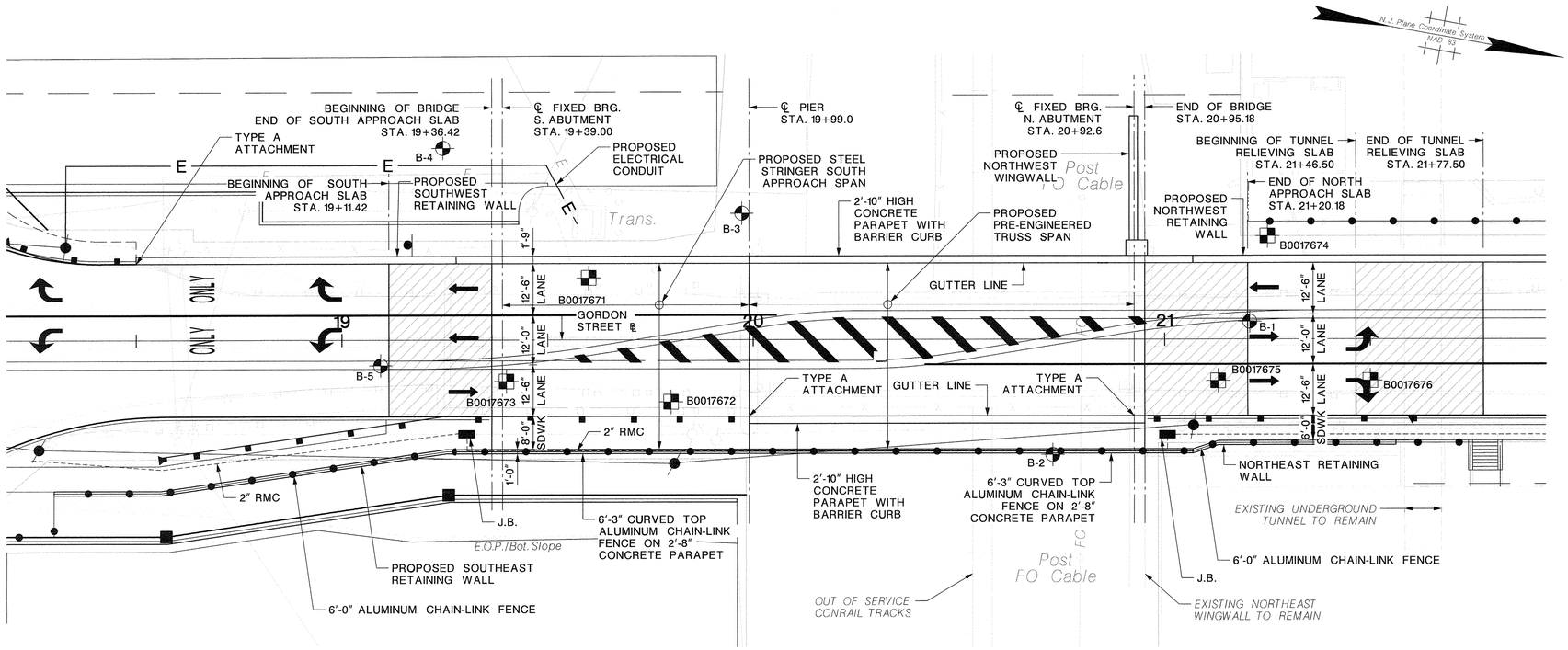
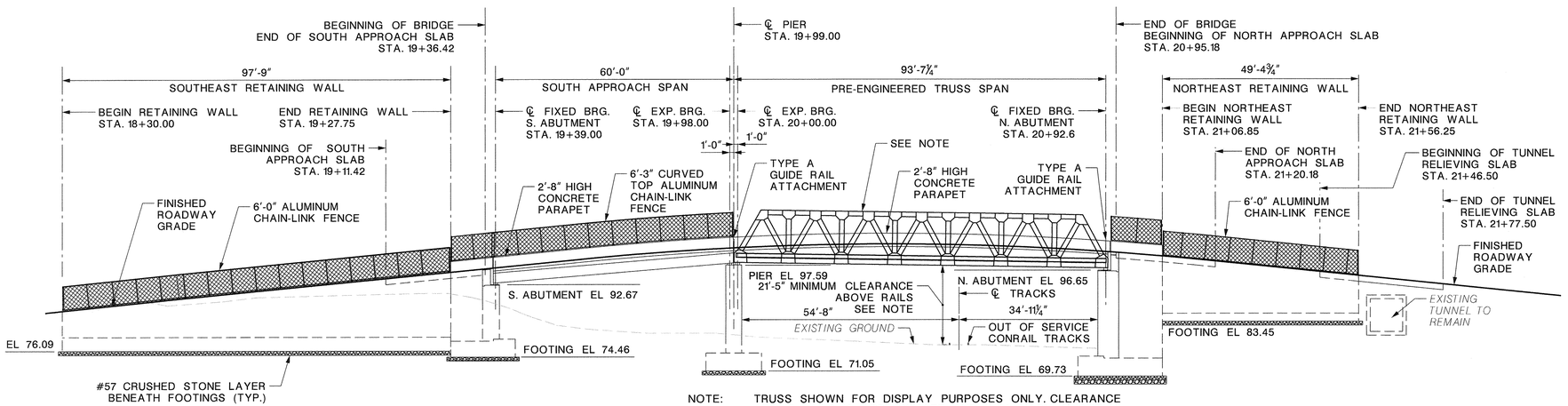


GENERAL PLAN

SCALE: 1/16" = 1'-0"



NOTE: TRUSS SHOWN FOR DISPLAY PURPOSES ONLY. CLEARANCE ABOVE RAILS IS APPROXIMATE AND WILL VARY SLIGHTLY AS PER TRUSS MANUFACTURER.

EAST ELEVATION

SCALE: 1/16" = 1'-0"

1/16" = 1'-0"

10 2'4' 8' 16' 32'

GENERAL NOTES:

1. DESIGN SPECIFICATIONS:
2017 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS WITH CURRENT INTERIMS AS MODIFIED BY NJDOT DESIGN MANUAL FOR BRIDGES AND STRUCTURES.

2. CONSTRUCTION SPECIFICATIONS:
2007 NJDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AS MODIFIED BY THE SPECIAL PROVISIONS.

3. LIVE LOAD:
AASHTO LRFD HL-93 VEHICLE LIVE LOADING OR NJDOT PERMIT VEHICLE, WHICHEVER GOVERNS.

4. SEISMIC DESIGN:
(A) SEISMIC DESIGN CATEGORY: A
(B) SITE CLASS DEFINITION: D

5. CONCRETE:
(A) DESIGN COMPRESSIVE STRENGTH (f'c):
HPC-1.....4,000 PSI
CLASS A.....4,000 PSI

(B) CLASS MIX DESIGN STRENGTH (f'c) IN ACCORDANCE WITH TABLE 903.03.06-3 OF THE NJDOT STANDARD SPECIFICATION AS MODIFIED BY THE SPECIAL PROVISION:
HPC-1.....5,400 PSI
CLASS A.....4,600 PSI

(C) VERIFICATION STRENGTH (f'c) IN ACCORDANCE WITH TABLE 903.03.06-3 OF THE NJDOT STANDARD SPECIFICATION AS MODIFIED BY THE SPECIAL PROVISION:
HPC-1.....5,400 PSI
CLASS A.....5,400 PSI

(D) HPC-1: BRIDGE DECK, BRIDGE SIDEWALK, PARAPETS, TUNNEL RELIEVING SLAB AND HAUNCHES

(E) CLASS A: ALL SUBSTRUCTURES, WINGWALLS, APPROACH SLABS AND SIDEWALKS

6. REINFORCEMENT STEEL (NON PRESTRESSED):
ASTM A615, GRADE 60 (EPOXY COATED AS PER ASTM A775)

7. SUPERSTRUCTURE:

(A) DEAD INCLUDES A 25 PSF PROVISION FOR A FUTURE 2 INCH THICK CONCRETE OVERLAY PROTECTIVE SYSTEM ON THE BRIDGE DECK.

(B) STRUCTURAL STEEL SHALL BE ASTM M 270 (AASHTO A 709, GRADE 50) WITH SUPPLEMENTARY REQUIREMENTS FOR NOTCH TOUGHNESS FOR ALL MEMBERS COMPONENTS MARKED (T).

(C) SEE THE FRAMING PLAN FOR CLEANING AND PAINTING SYSTEMS, AND FINISH COAT COLOR.

(D) SEE THE SPECIAL PROVISIONS FOR FRACTURE CRITICAL MEMBER REQUIREMENTS.

8. CONSTRUCTION NOTES:
(A) THE CONTRACTOR SHALL EXAMINE AND VERIFY IN THE FIELD, ALL EXISTING INFORMATION, CONDITIONS AND DIMENSIONS OF THE EXISTING STRUCTURE SHOWN IN THESE PLANS, WHICH ARE FOR GENERAL REFERENCE ONLY. THE CONTRACTOR SHALL TAKE ALL NECESSARY FIELD MEASUREMENTS TO ASSURE PROPER FIT OF THE FINISHED WORK AND CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR THEIR ACCURACY. IF FIELD CONDITIONS AND DIMENSIONS DIFFER FROM THOSE SHOWN ON THE PLANS, THE CONTRACTOR SHALL USE THE FIELD DIMENSIONS AND MAKE THE APPROPRIATE CHANGES TO THOSE SHOWN ON THE PLANS, AS APPROVED BY THE ENGINEER. WHEN SHOP DRAWINGS BASED ON FIELD MEASUREMENTS ARE SUBMITTED FOR APPROVAL, THE FIELD MEASUREMENTS MADE SHALL BE INDICATED ON THE SHOP DRAWINGS SUBMITTED FOR REFERENCE OF THE REVIEWER.

9. FOUNDATION CONSTRUCTION CRITERIA:

(A) THE STABILITY OF ALL EXCAVATIONS IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL EXCAVATIONS SHALL CONFORM TO THE CURRENT OSHA REGULATIONS.

(B) TEMPORARY SUPPORTS, SHORING, AND SHIELDING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY.

10. ANY DAMAGE TO EXISTING STRUCTURES, SUBSTRUCTURES, OR UTILITIES THAT ARE SPECIFIED TO REMAIN SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE COUNTY.

11. ELEVATIONS SHOWN REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988.

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CONTROL SECTION		JOB NO.	
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. TRELLES		
EST. BY	S. TRELLES	CHK. BY	S. DIAZ
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ 03_GPE.dgn

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

BRIDGE GENERAL PLAN AND ELEVATION

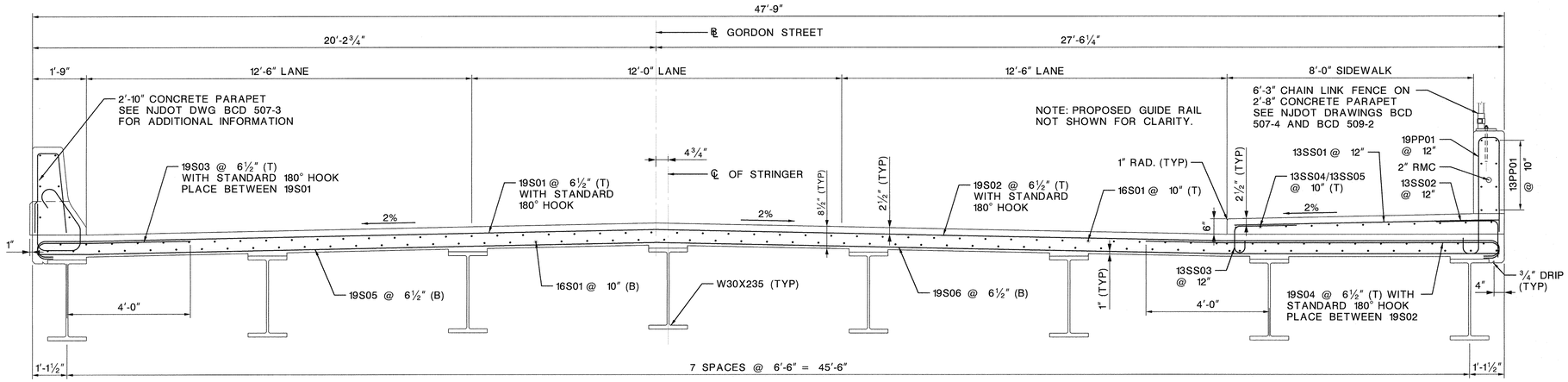
REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

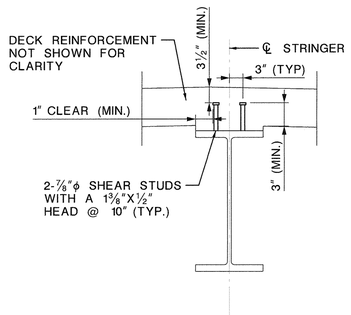
BRIDGE
SHEET NO. B-3 OF B-41

47
85



APPROACH SPAN TYPICAL SECTION (LOOKING NORTH)

SCALE: ½" = 1'-0"



SHEAR STUD DETAIL

SCALE: ¾" = 1'-0"

SHEAR STUDS DIMENSIONS

LOCATION	DESCRIPTION	HEIGHT (IN)	SPACING (IN)	CONTRACT QUANTITY	REMARKS
END DIAPHRAGMS	⅞"ϕ SHEAR STUDS	7	VARIES	84	SEE B-30
STA. 19+38.50 TO 19+43.50	⅞"ϕ SHEAR STUDS	5	VARIES	112	SEE B-30
STA. 19+44.33 TO 19+49.33	⅞"ϕ SHEAR STUDS	6	10	112	SEE B-30
STA. 19+50.17 TO 19+56.00	⅞"ϕ SHEAR STUDS	7	10	128	SEE B-30
STA. 19+56.83 TO 19+61.00	⅞"ϕ SHEAR STUDS	8	10	96	SEE B-30
STA. 19+61.83 TO 19+83.50	⅞"ϕ SHEAR STUDS	9	10	432	SEE B-30
STA. 19+84.33 TO 19+88.50	⅞"ϕ SHEAR STUDS	8	10	96	SEE B-30
STA. 19+89.33 TO 19+91.83	⅞"ϕ SHEAR STUDS	7	10	64	SEE B-30
STA. 19+92.67 TO 19+94.33	⅞"ϕ SHEAR STUDS	6	10	48	SEE B-30
STA. 19+95.16 TO 19+98.50	⅞"ϕ SHEAR STUDS	5	VARIES	80	SEE B-30
END DIAPHRAGMS	⅞"ϕ SHEAR STUDS	7	VARIES	84	SEE B-30
TOTAL				1336	

QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY
504006P	REINFORCEMENT STEEL, EPOXY-COATED	LBS	31300
507024P	CONCRETE BRIDGE DECK, HPC	CY	80
507033P	CONCRETE BRIDGE SIDEWALK, HPC	CY	13
507039P	CONCRETE BRIDGE PARAPET, HPC	LF	123
509108P	CHAIN-LINK FENCE, TYPE III, ALUMINUM ALLOY, BRIDGE, 6'-3" HIGH, CURVED TOP	LF	62
701015P	2" RIGID METALLIC CONDUIT	LF	78

NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. FOR APPROACH SPAN FRAMING PLAN, SEE SHEET B-27.
3. FOR APPROACH SPAN DECK REINFORCEMENT PLAN, SEE SHEET B-28.
4. FOR HAUNCH DETAILS, SEE SHEET B-36.
5. FOR BAR SCHEDULE, SEE SHEET B-39.
6. REINFORCEMENT STEEL SHALL ASTM A615, GRADE 60 AND SHALL BE EPOXY COATED IN ACCORDANCE WITH ASTM A775.
7. UNLESS OTHERWISE NOTED, PROVIDE 2" MINIMUM SIDE COVER FOR THE REINFORCEMENT STEEL.
8. UNLESS OTHERWISE NOTED, PROVIDE 2" MINIMUM COVER FOR THE REINFORCEMENT STEEL AT CONTRACTION JOINTS.
9. PERMANENT STAY-IN-PLACE FORMS ARE NOT PERMITTED IN EXTERIOR BAYS.
10. PAINT PROPOSED STEEL IN ACCORDANCE WITH STANDARD SPECIFICATIONS, AND AS MAY BE MODIFIED BY SPECIAL PROVISIONS. USE AN INORGANIC ZINC, EPOXY, URETHANE (IEUJ PAINT SYSTEM). FINISH COAT COLOR: FEDERAL CHIP NUMBER 24172 (FOLIAGE GREEN). APPLY ONLY A PRIME COAT OF PAINT TO THE TOP FLANGES OF STRINGERS AND END DIAPHRAGMS, AND TO THE SHEAR STUDS.
11. PROVIDE A DEFLECTION FITTING FOR THE 2" RMC AT THE NORTH AND SOUTH ABUTMENTS, AND AN EXPANSION AND DEFLECTION FITTING AT THE PIER. PAYMENT FOR THE FITTINGS SHALL BE CONSIDERED INCIDENTAL TO ITEM 701015P "2" RIGID METALLIC CONDUIT".
12. FOR HISTORICAL SIGN DETAIL, SEE SHEET B-41.

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Design Checked by
Detailed by
Detail Checked by

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engineering that moves you
West Trenton, NJ

CONTROL SECTION		JOB NO.	
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. DIAZ	CHK. BY	S. TRELLES
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ 04_Approach Span Typical Section.dgn

3/4" = 1'-0"
1' 0 1' 2' 4'

1/2" = 1'-0"
1' 0 1' 2' 4'

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

APPROACH SPAN TYPICAL SECTION

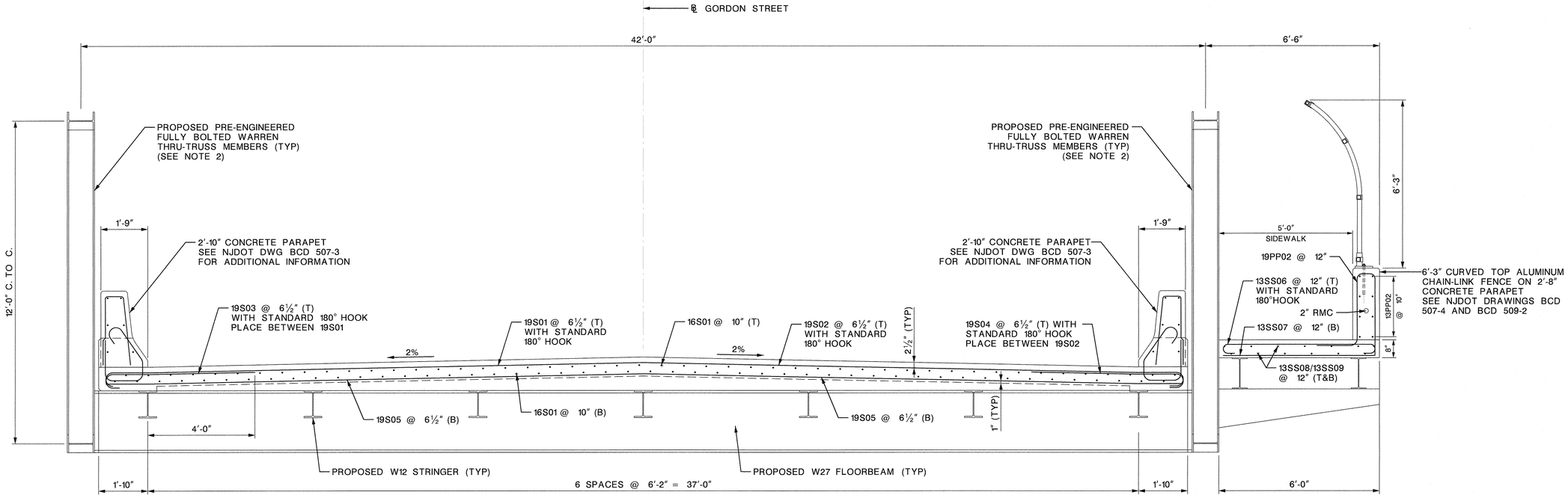
REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

BRIDGE
SHEET NO. B-4 OF B-41

48
85



TRUSS SPAN TYPICAL SECTION (LOOKING NORTH)

SCALE: ½" = 1'-0"

NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. SUBMIT FULL ENGINEERING DOCUMENTATION FOR THE DESIGN OF THE TRUSS BRIDGE IN ACCORDANCE WITH THE SPECIAL PROVISION. DO NOT PROCEED WITH FABRICATION UNLESS AND UNTIL THE DESIGN IS FULLY ACCEPTED.
3. FOR TRUSS SPAN DECK REINFORCEMENT PLAN, SEE SHEET B-29.
4. FOR HAUNCH DETAILS, SEE SHEET B-36.
5. REINFORCEMENT STEEL SHALL ASTM A615, GRADE 60 AND SHALL BE EPOXY COATED IN ACCORDANCE WITH ASTM A775.
6. UNLESS OTHERWISE NOTED, PROVIDE 2" MINIMUM SIDE COVER FOR THE REINFORCEMENT STEEL.
7. UNLESS OTHERWISE NOTED, PROVIDE 2" MINIMUM COVER FOR THE REINFORCEMENT STEEL AT CONTRACTION JOINTS.
8. PERMANENT STAY-IN-PLACE FORMS ARE NOT PERMITTED IN EXTERIOR BAYS.
9. PAINT PROPOSED STEEL IN ACCORDANCE WITH STANDARD SPECIFICATIONS, AND AS MAY BE MODIFIED BY SPECIAL PROVISIONS. USE AN INORGANIC ZINC, EPOXY, URETHANE (IEUJ PAINT SYSTEM). FINISH COAT COLOR: FEDERAL CHIP NUMBER 24172 (FOLIAGE GREEN). APPLY ONLY A PRIME COAT OF PAINT TO THE TOP FLANGES OF STRINGERS AND END DIAPHRAGMS, AND TO THE SHEAR STUDS.
10. PROVIDE A DEFLECTION FITTING FOR THE 2" RMC AT THE NORTH AND SOUTH ABUTMENTS, AND AN EXPANSION AND DEFLECTION FITTING AT THE PIER. PAYMENT FOR THE FITTINGS SHALL BE CONSIDERED INCIDENTAL TO ITEM 701015P "2" RIGID METALLIC CONDUIT".
11. FOR HISTORICAL SIGN DETAIL, SEE SHEET B-41.

QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY
504006P	REINFORCEMENT STEEL, EPOXY-COATED	LBS	40000
507024P	CONCRETE BRIDGE DECK, HPC	CY	120
507033P	CONCRETE BRIDGE SIDEWALK, HPC	CY	15
507039P	CONCRETE BRIDGE PARAPET, HPC	LF	285
509108P	CHAIN-LINK FENCE, TYPE III, ALUMINUM ALLOY, BRIDGE, 6'-3" HIGH, CURVED TOP	LF	95
701015P	2" RIGID METALLIC CONDUIT	LF	112

PRE-ENGINEER TRUSS BRIDGE - ITEMS

FOR INFORMATION PURPOSES ONLY

DESCRIPTION	UNIT	APPROXIMATE QUANTITY
STRUCTURAL STEEL, PRE-ENGINEERED TRUSS BRIDGE (310,000 LBS)	LS	1
SHEAR CONNECTORS	UNIT	2044
BEARING ASSEMBLY	UNIT	4

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CONTROL SECTION		JOB NO.	
DES. BY	S. DIAZ	CHK. BY	S. DIAZ
DWN. BY	S. TRELLES		
EST. BY	S. DIAZ	CHK. BY	S. TRELLES
SPECS. BY	T. FARANDA	CHK. BY	S. DIAZ

IN CHARGE OF B. RIEGEL

$DATE$ 05_Truss Span Typical Section.dgn

1/2" = 1'-0"

1' 0 1' 2' 4'

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

TRUSS SPAN TYPICAL SECTION

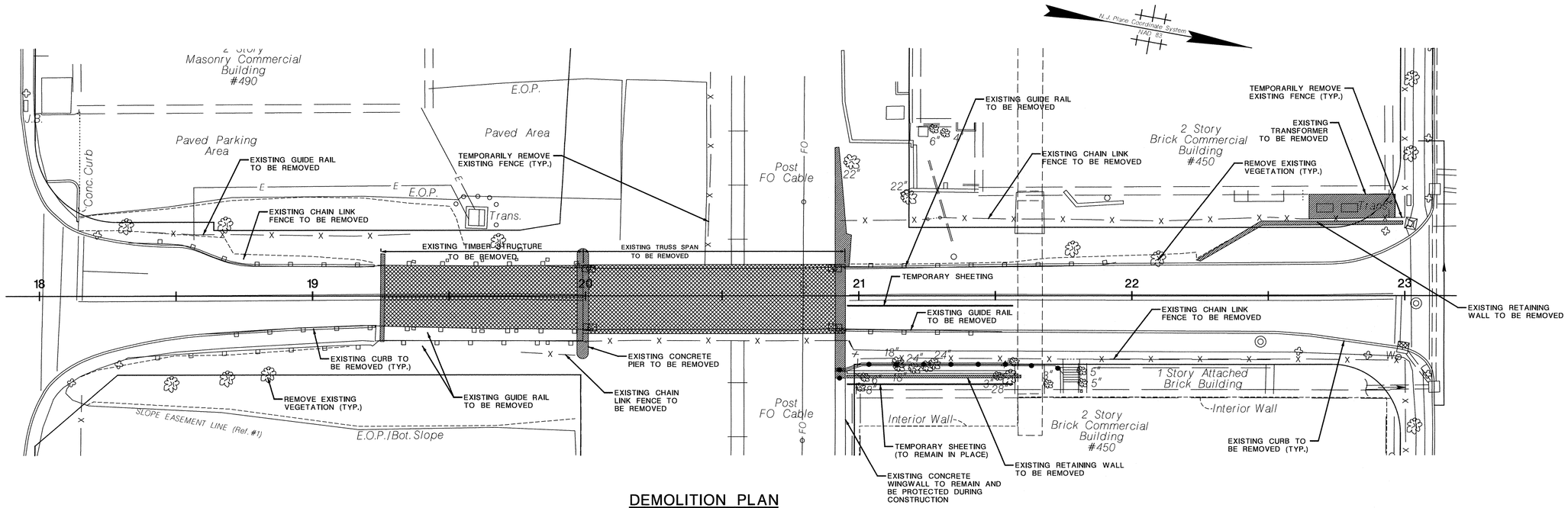
REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

BRIDGE
SHEET NO. B-5 OF B-41

49
85



DEMOLITION PLAN

SCALE: 1" = 20'

NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. PROVIDE TEMPORARY SUPPORTS UNDER THE TRUSS SPAN PRIOR TO ANY DEMOLITION.
3. PROVIDE TEMPORARY SHIELDING MEETING THE REQUIREMENTS OF SECTION 201.03.03 OF THE NJDOT STANDARD SPECIFICATION FOR THE PROTECTION OF CONSTRUCTION PERSONNEL, RAILROAD TRACKS, ADJACENT UTILITY STRUCTURES AND ENVIRONMENTAL SENSITIVE AREAS FROM FALLING DEBRIS, CONSTRUCTION MATERIALS, OR OTHER OBJECTS.
4. INSTALL TEMPORARY SHEETING AS INDICATED ON THE CONTRACT PLANS. AVOID DAMAGING THE EXISTING BUILDINGS AND TUNNEL THROUGH VIBRATIONS AND EXCESSIVE SETTLEMENT. SUBMIT MEANS AND METHODS TO THE RE FOR APPROVAL.
5. REMOVE ALL EXISTING VEGETATION WITHIN THE PROJECT LIMITS. REMOVAL, STORAGE, AND DISPOSAL PROCEDURES SHALL COMPLY WITH THE TOWNSHIP REQUIREMENTS.
6. REMOVE THE EXISTING MOUNTED BEAM GUIDE RAILS UNDER THE PAY ITEM "REMOVAL OF BEAM GUIDE RAIL". SEE CONSTRUCTION PLANS FOR QUANTITIES AND LIMITS.
7. RELOCATE EXISTING CHAIN LINK FENCES AS NECESSARY TO FACILITATE REMOVAL AND CONSTRUCTION.
8. REMOVE THE EXISTING PAVEMENT, SIDEWALK AND TIMBER STRUCTURES AT THE SOUTH END, FROM STA 17+90.03 TO STA 19+99.00. REMOVE THE EXISTING PAVEMENT AND SIDEWALK AT THE NORTH END, FROM STA. 20+95.13 TO STA. 21+14.40.

1" = 20'

20' 10' 0 20' 40'

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West Trenton, NJ

CONTROL SECTION		JOB NO.	
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. TRELLES	CHK. BY	S. DIAZ
SPECS. BY	Y. LIN	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ $FILE$

UNION COUNTY DIVISION OF ENGINEERING

DEMOLITION PLAN

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

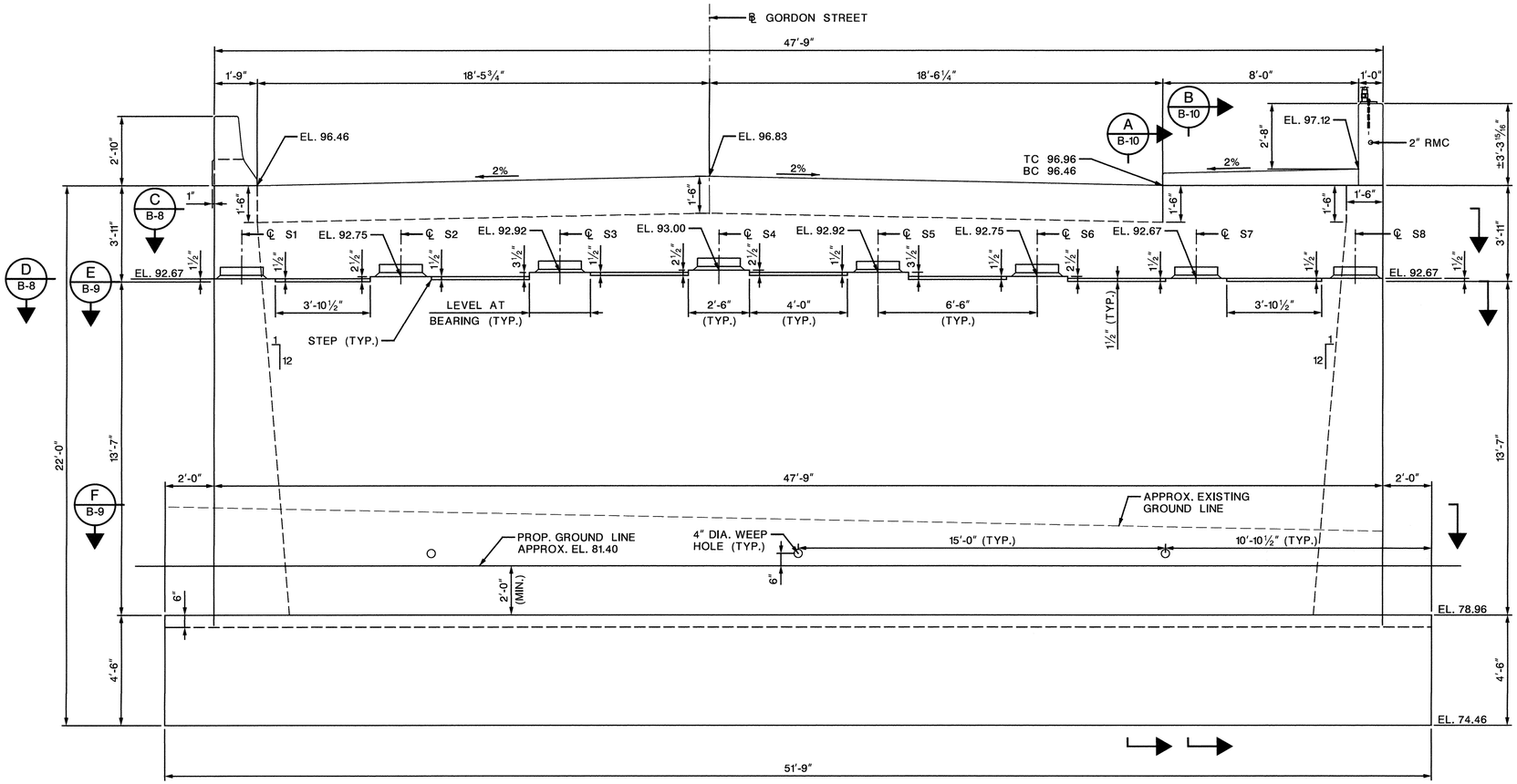
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

REVISION	BY	C'K'D	DATE

SCALE : AS SHOWN

BRIDGE
SHEET NO. B-6 OF B-41

50
85



SOUTH ABUTMENT ELEVATION

SCALE: ⅜" = 1'-0"

NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. FOR SOUTH ABUTMENT SECTIONS, SEE SHEETS B-8 AND B-9.
3. FOR SOUTH ABUTMENT DETAILS, SEE SHEETS B-10 AND B-11.
4. SEE SHEET B-6 FOR DEMOLITION PLAN AND ELEVATION.

3/8" = 1'-0"

1' 0 2' 4' 8'

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Design Checked by
Detailed by
Detail Checked by

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CONTROL SECTION		JOB NO.	
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. DIAZ	CHK. BY	S. TRELLES
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ $FILES$

UNION COUNTY DIVISION OF ENGINEERING

SOUTH ABUTMENT ELEVATION

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

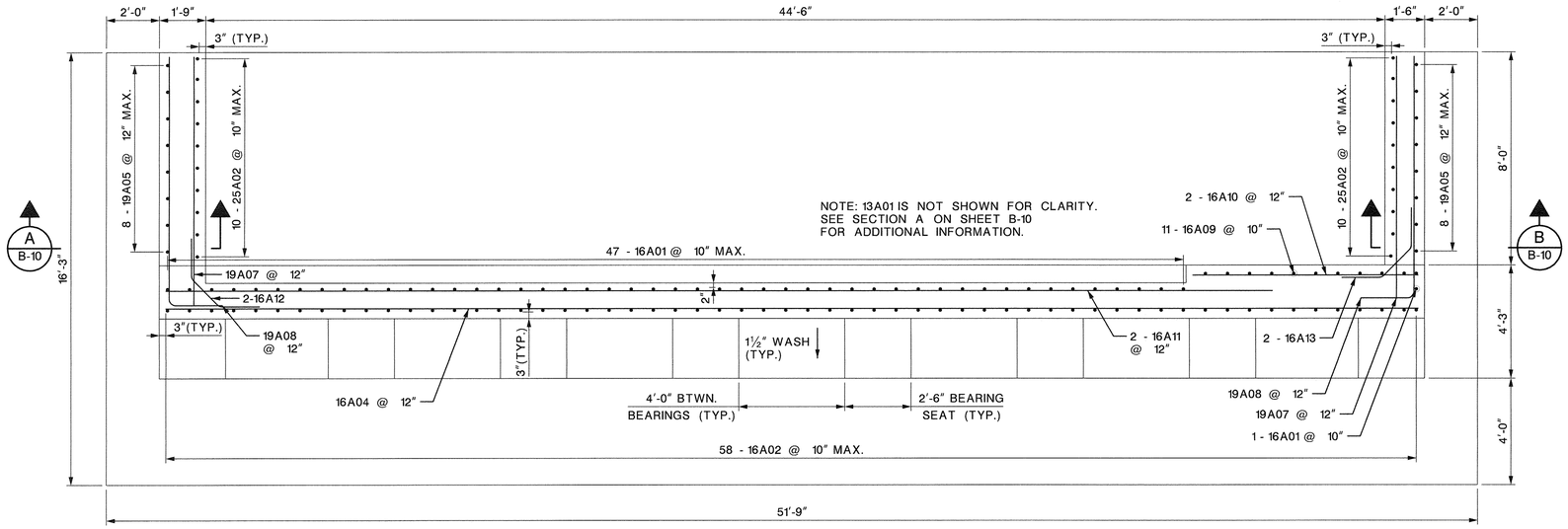
REVISION	BY	C'K'D	DATE

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

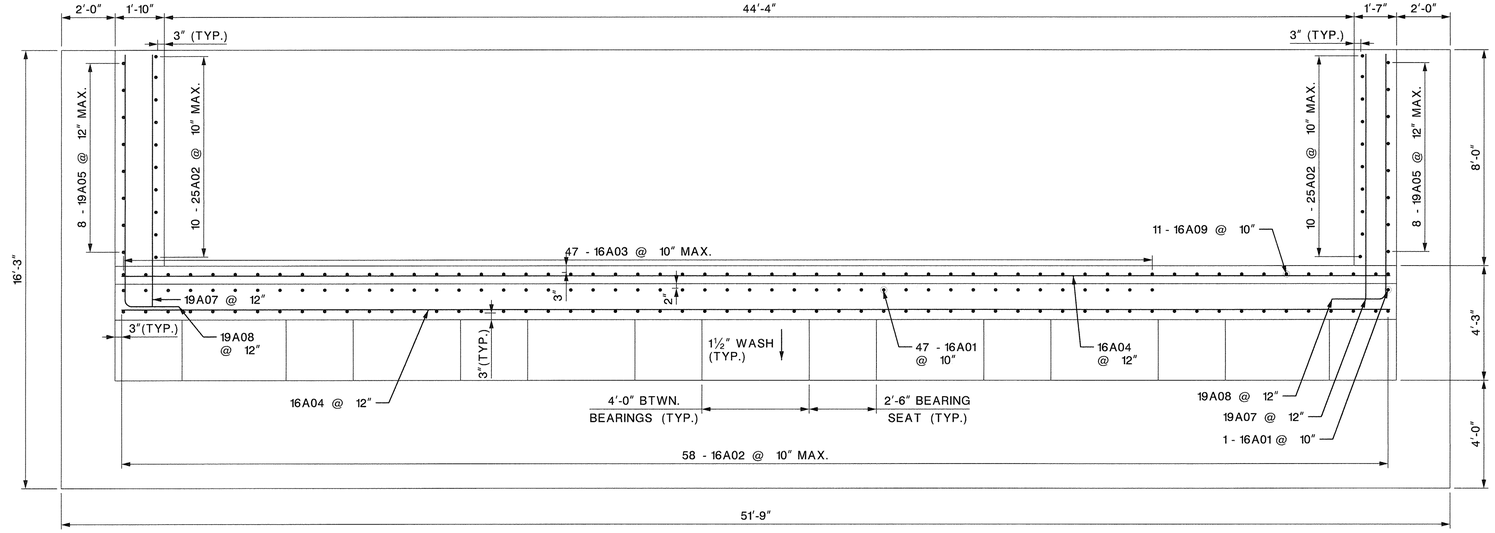
SCALE : AS SHOWN

BRIDGE SHEET NO. B-7 OF B-41

51
85



SECTION C (B-7)
SCALE: ⅜" = 1'-0"



SECTION D (B-7)
SCALE: ⅜" = 1'-0"

NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. FOR SOUTH ABUTMENT DETAILS, SEE SHEET B-10.
3. SEE SHEET B-6 FOR DEMOLITION PLAN.
4. REINFORCEMENT STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH ASTM A775.
5. UNLESS OTHERWISE NOTED, PROVIDE 1½" MINIMUM SIDE COVER FOR THE REINFORCEMENT STEEL AT CONSTRUCTION JOINTS.
6. PROVIDE A WATERSTOP AT THE CONSTRUCTION JOINTS. SEE NJDOT DRAWING BCD-504-2 AND THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
7. WEEPHOLE PIPING SHALL BE PLACED AS TO AVOID CONTACT WITH STEEL REINFORCEMENT.
8. CONTRACTOR SHALL ADJUST REINFORCING STEEL SPACING, AS REQUIRED, TO ACCOMMODATE THE ANCHOR BOLT LAYOUT.

3/8" = 1'-0"
1' 0 2' 4' 8'

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CONTROL SECTION			JOB NO.
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. DIAZ	CHK. BY	S. TRELLES
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ 08_South Abutment Sections 1.dgn

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

SOUTH ABUTMENT SECTIONS 1 OF 2

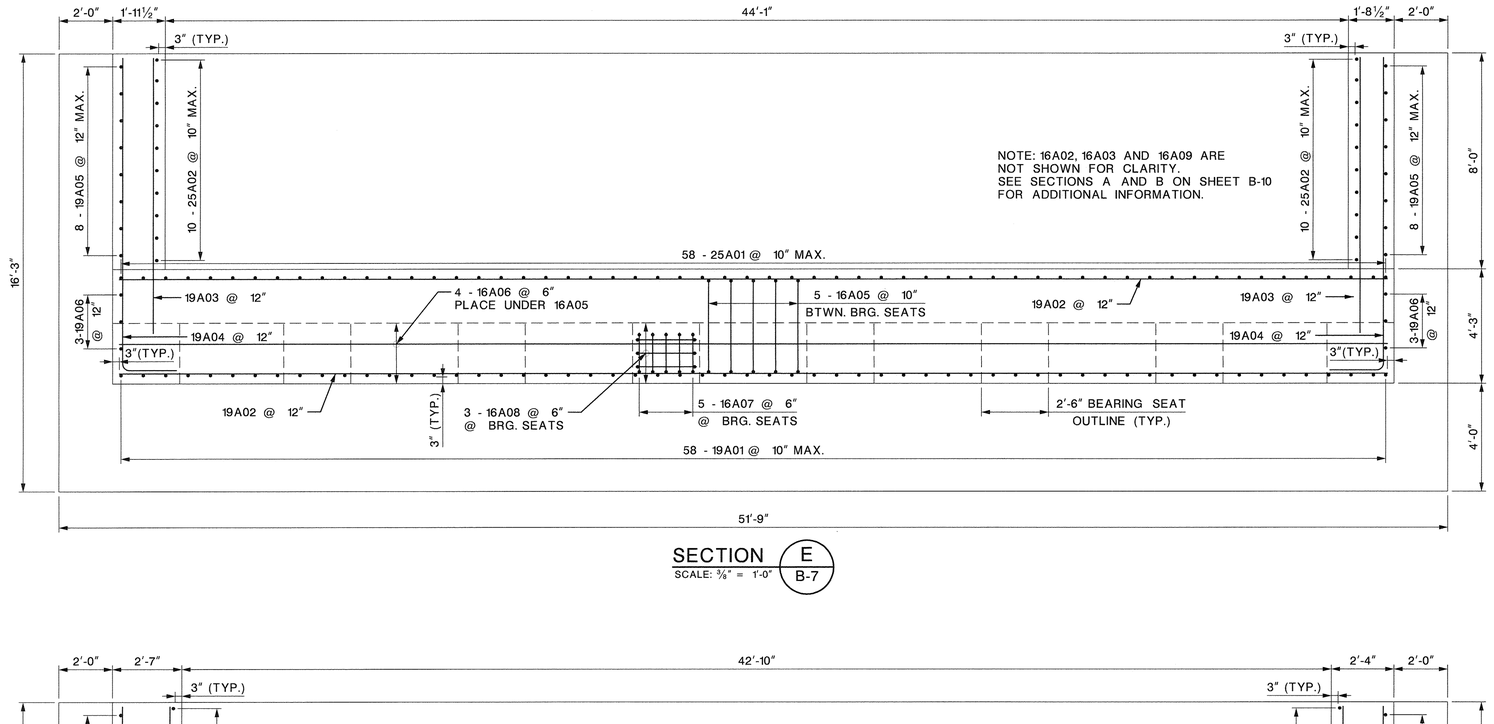
REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

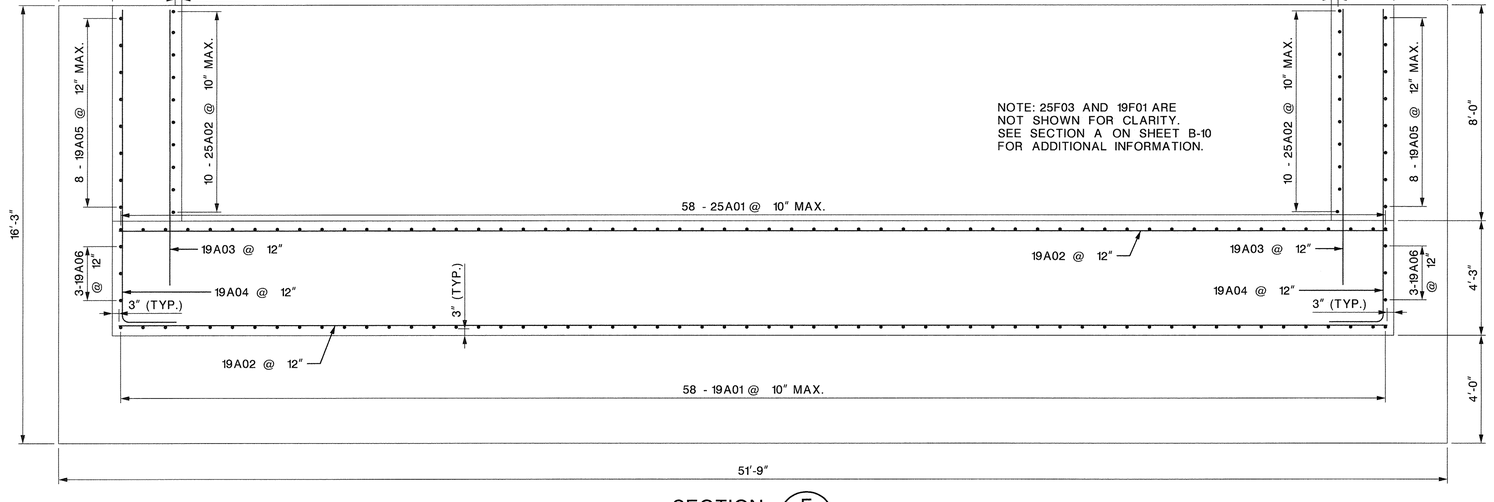
SCALE : AS SHOWN

BRIDGE
SHEET NO. B-8 OF B-41

52
85



SECTION E
SCALE: ⅜" = 1'-0"
B-7



SECTION F
SCALE: ⅜" = 1'-0"
B-7

NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. FOR SOUTH ABUTMENT DETAILS, SEE SHEET B-10.
3. SEE SHEET B-6 FOR DEMOLITION PLAN.
4. REINFORCEMENT STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH ASTM A775.
5. UNLESS OTHERWISE NOTED, PROVIDE 1½" MINIMUM SIDE COVER FOR THE REINFORCEMENT STEEL AT CONSTRUCTION JOINTS.
6. PROVIDE A WATERSTOP AT THE CONSTRUCTION JOINTS. SEE NJDOT DRAWING BCD-504-2 AND THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
7. WEEPHOLE PIPING SHALL BE PLACED AS TO AVOID CONTACT WITH STEEL REINFORCEMENT.
8. CONTRACTOR SHALL ADJUST REINFORCING STEEL SPACING, AS REQUIRED, TO ACCOMMODATE THE ANCHOR BOLT LAYOUT.

3/8" = 1'-0"
1' 0 2' 4' 8'

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
West Trenton, NJ

CONTROL SECTION			JOB NO.
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. DIAZ	CHK. BY	S. TRELLES
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ 09_South Abutment Sections 2.dgn

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

SOUTH ABUTMENT SECTIONS 2 OF 2

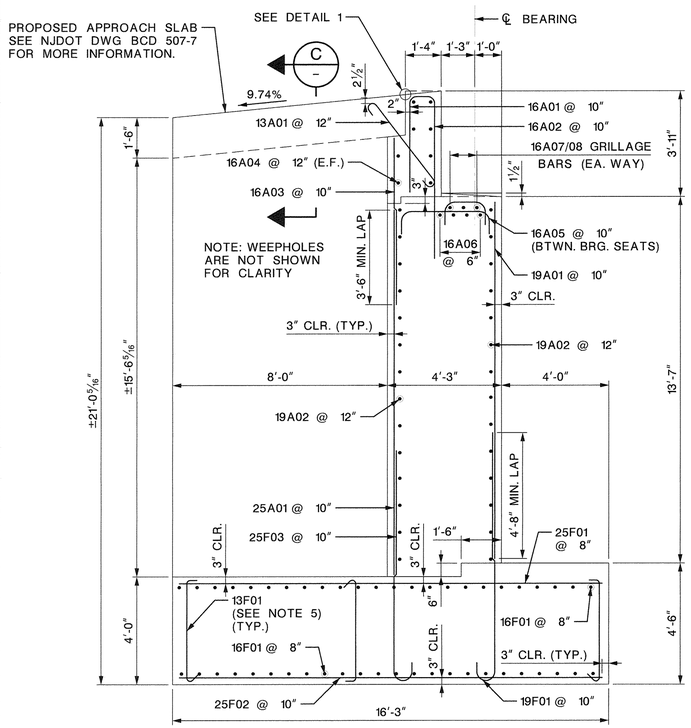
REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

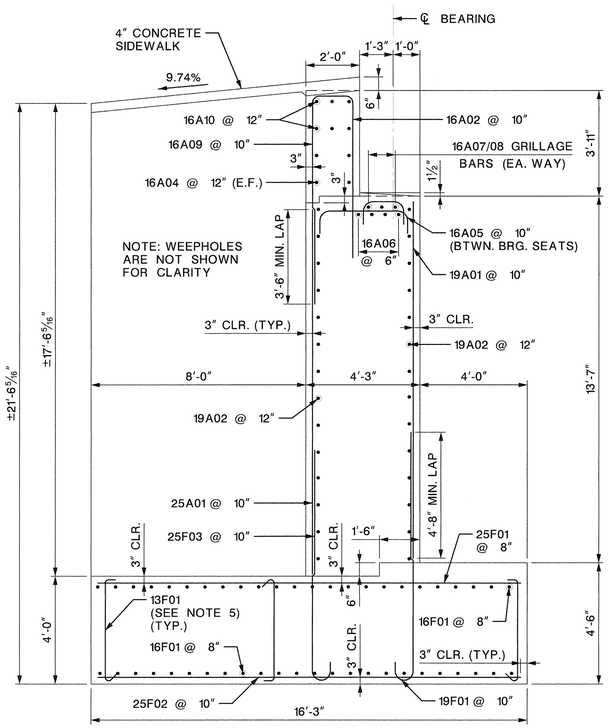
SCALE : AS SHOWN

BRIDGE
SHEET NO. B-9 OF B-41

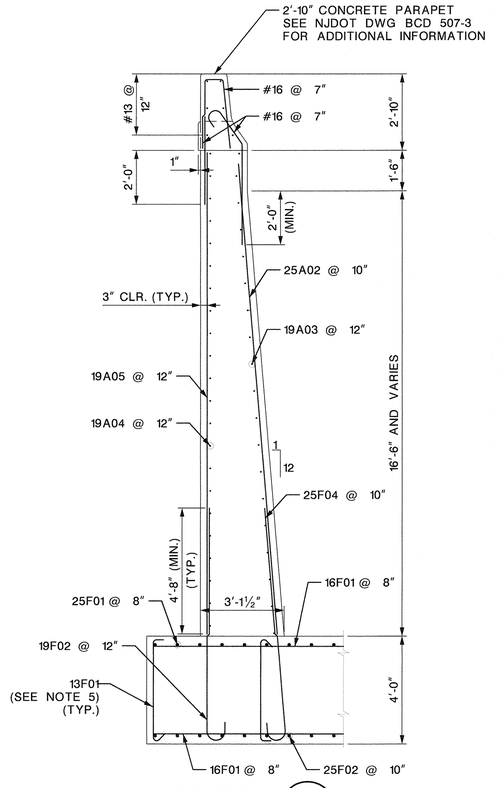
53
85



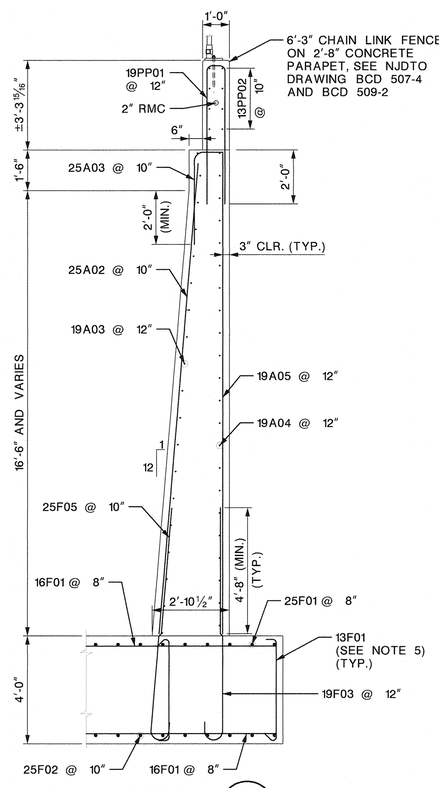
SECTION A (B-7)
SCALE: ⅜" = 1'-0"



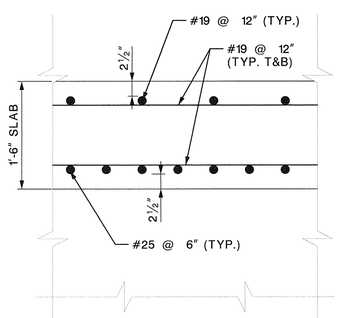
SECTION B (B-7)
SCALE: ⅜" = 1'-0"



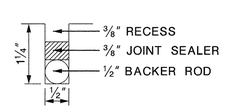
SECTION A (B-8)
SCALE: ½" = 1'-0"



SECTION B (B-8)
SCALE: ½" = 1'-0"



SECTION C (–)
SCALE: 1" = 1'-0"



DETAIL 1 (–)
SCALE: N.T.S.

NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. FOR SOUTH ABUTMENT ELEVATION, SEE SHEET B-7.
3. FOR SOUTH ABUTMENT SECTIONS, SEE SHEETS B-8 AND B-9.
4. REINFORCEMENT STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH ASTM A775.
5. TIE TOP AND BOTTOM MATS OF REINFORCING STEEL WITH #4 TIE BAR AT A MAXIMUM SPACING OF 4'-0" IN BOTH DIRECTIONS. PROVIDE TIE BARS WITH 90° HOOK AT ONE END AND 135° HOOK AT THE OTHER END. ALTERNATE 90° AND 135° HOOKS AT TOP IN ALTERNATE TIES.
6. UNLESS OTHERWISE NOTED, PROVIDE 2" MINIMUM COVER FOR THE REINFORCEMENT STEEL AT CONTRACTION JOINTS.
7. SEE SHEET B-6 FOR DEMOLITION PLAN.

QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY
504006P	REINFORCEMENT STEEL, EPOXY-COATED	LBS	22300
504015P	CONCRETE FOOTING	CY	130
504018P	CONCRETE WINGWALL	CY	23
504024P	CONCRETE ABUTMENT WALL	CY	130
507039P	CONCRETE BRIDGE PARAPET, HPC	LF	20
507051P	CONCRETE BRIDGE APPROACH	CY	53
509108P	CHAIN-LINK FENCE, TYPE III, ALUMINUM ALLOY, BRIDGE, 6'-3" HIGH, CURVED TOP	LF	10

3/8" = 1'-0"
1" = 1'-0"
1/2" = 1'-0"

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

SOUTH ABUTMENT DETAILS 1 OF 2

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

BRIDGE SHEET NO. B-10 OF B-41

54
85

CONTROL SECTION		JOB NO.	
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. DIAZ	CHK. BY	S. TRELLES
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

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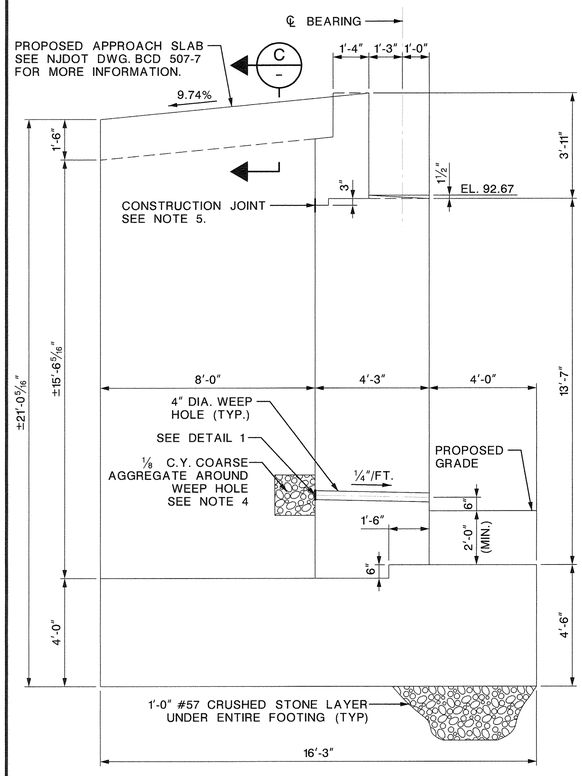
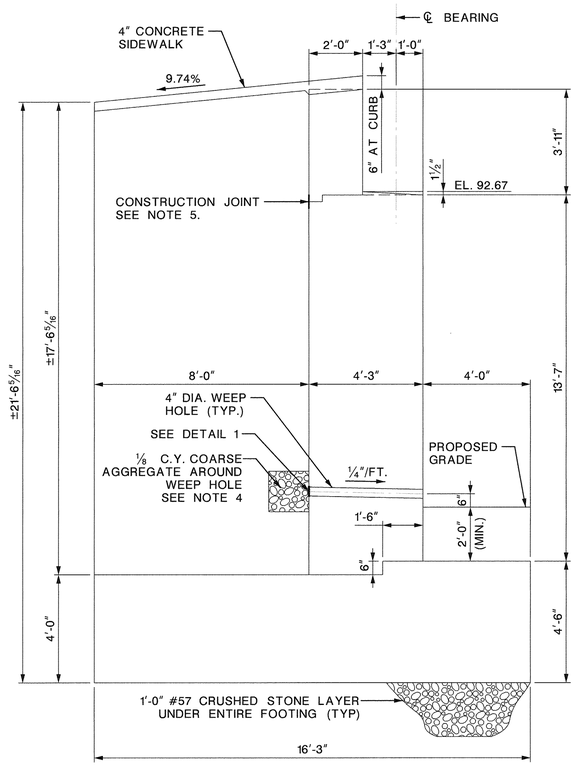
West Trenton, NJ

$DATE$ 10_South Abutment Details 1.dgn



SECTION A / B-7
SCALE: ⅜" = 1'-0"



SECTION B / B-7
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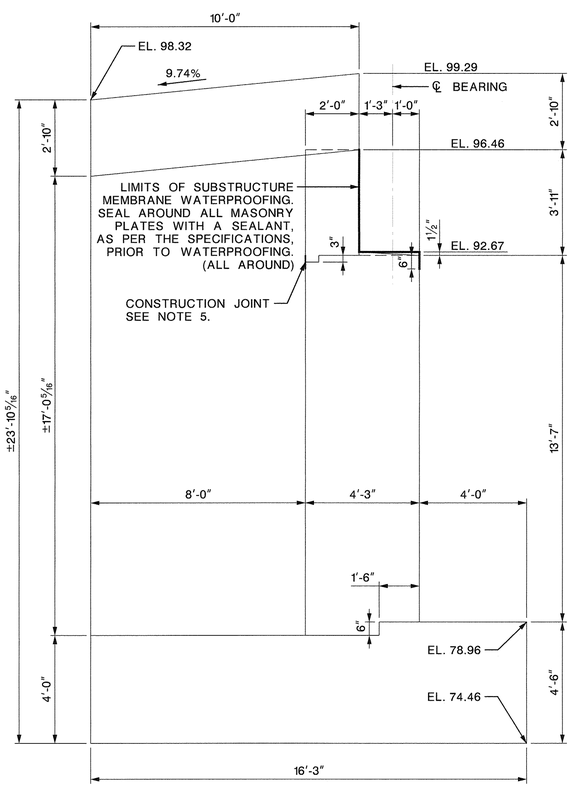
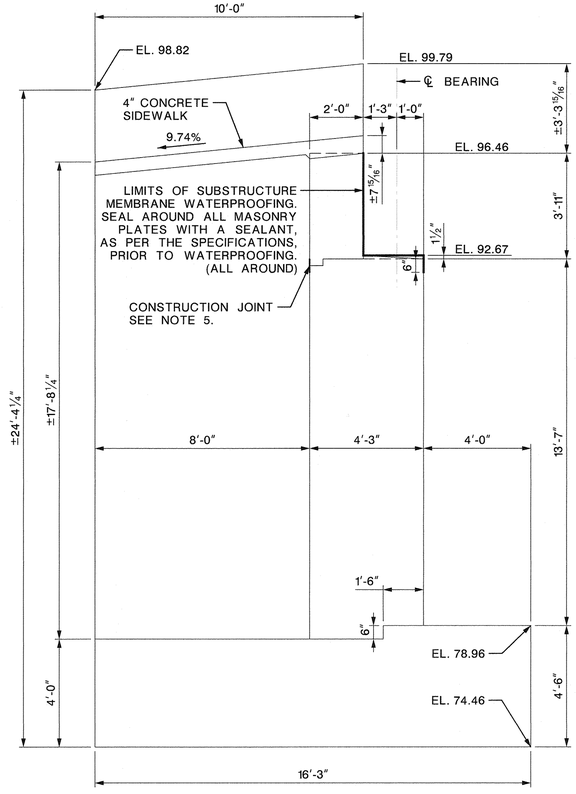


SECTION A / B-7
SCALE: ⅜" = 1'-0"



SECTION B / B-7
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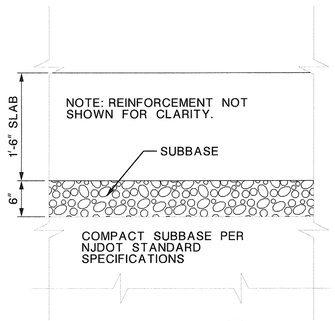

SECTION C / -
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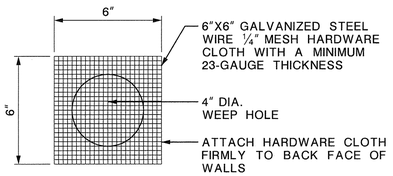
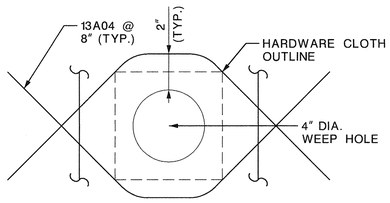


DETAIL 1 / -
SCALE: 3" = 1'-0"



DETAIL 2 / -
SCALE: 3" = 1'-0"

NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. FOR SOUTH ABUTMENT ELEVATION, SEE SHEET B-7.
3. SEE SHEET B-6 FOR DEMOLITION PLAN.
4. WEEPHOLE PIPING SHALL BE PLACED AS TO AVOID CONTACT WITH STEEL REINFORCEMENT.
5. PROVIDE A WATERSTOP AT THE CONSTRUCTION JOINTS. SEE NJDOT DRAWING BCD 504-2 AND THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
6. SEE SHEET B-16 FOR NOTES REGARDING DAMPPROOFING THE REAR OF THE ABUTMENTS AND WINGWALLS.

QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY
158089M	PREFABRICATED DRAINAGE COMPOSITE	SY	97
202015P	EXCAVATION, REGULATED MATERIAL	CY	550
203009P	I-9 SOIL AGGREGATE	CY	206
203040M	GEOTEXTILE	SY	84
301006P	SUBBASE (DESIGNATION I-3)	CY	21
302060P	COARSE AGGREGATE, SIZE NO. 57	CY	36
504036P	EPOXY WATERPROOFING	SY	35
504037P	SPRAY APPLIED WATERPROOFING MEMBRANE	SF	1060

3/8" = 1'-0" 1' 0 2' 4' 8'
1" = 1'-0" 1' 6" 0 1' 2'
3" = 1'-0" 0 3" 6" 9" 12"

REVISION	BY	C'K'D	DATE

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

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engineering that moves you
West Trenton, NJ

CONTROL SECTION			JOB NO.
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. DIAZ	CHK. BY	S. TRELLES
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

UNION COUNTY DIVISION OF ENGINEERING

SOUTH ABUTMENT DETAILS 2 OF 2

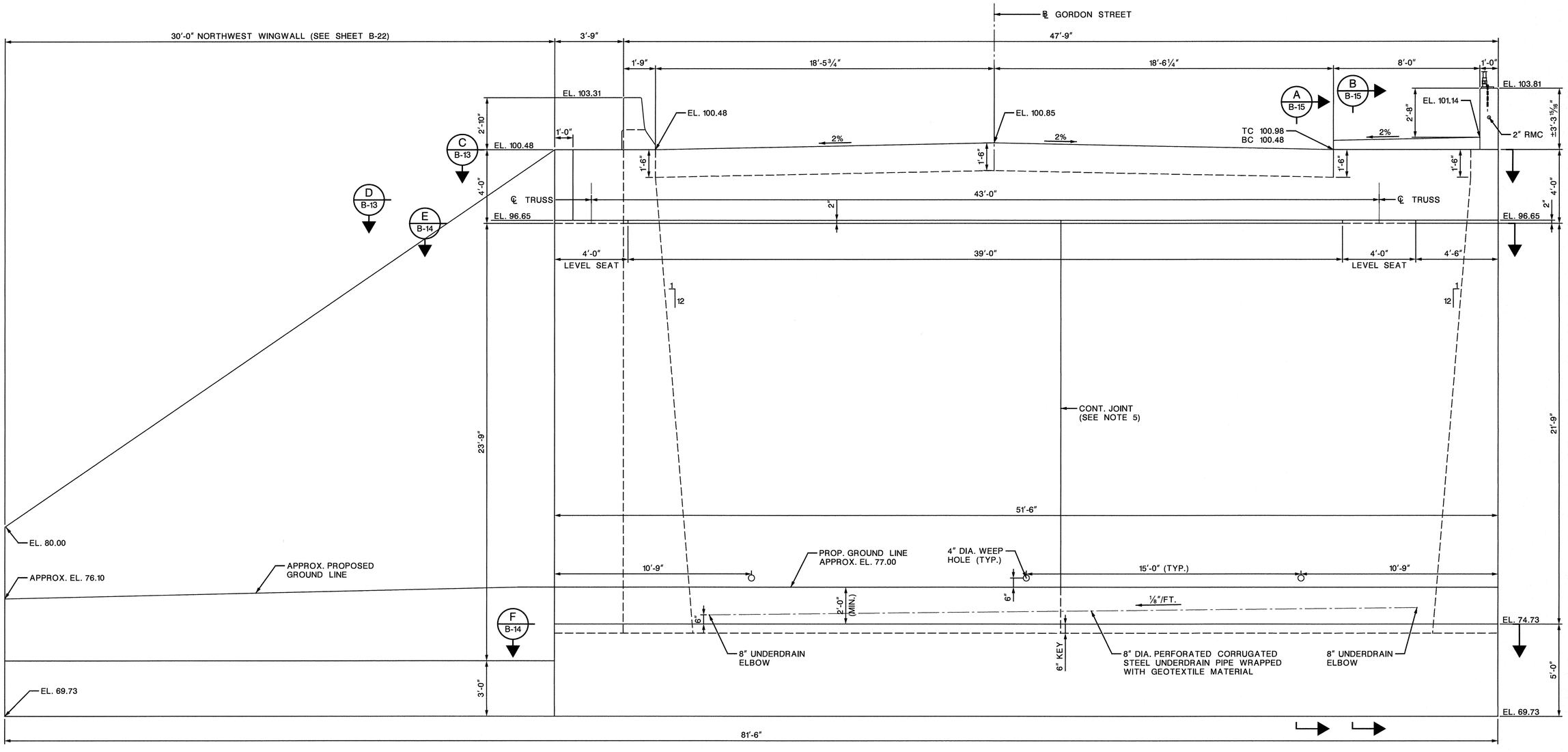
REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN
BRIDGE
SHEET NO. B-11 OF B-41

55
85

$DATE$ 11_South Abutment Details 2.dgn



NORTH ABUTMENT ELEVATION

SCALE: ⅜" = 1'-0"

3/8" = 1'-0"

1' 0 2' 4' 8'

NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. FOR NORTH ABUTMENT SECTIONS, SEE SHEETS B-13 AND B-14.
3. FOR NORTH ABUTMENT DETAILS, SEE SHEETS B-15 AND B-16.
4. SEE SHEET B-6 FOR DEMOLITION PLAN AND ELEVATION.
5. THE CONTRACTOR SHALL DETERMINE THE LOCATION OF THE CONSTRUCTION JOINT AFTER THE TEMPORARY SHEETING HAS BEEN APPROVED. PROVIDE A MINIMUM 3'-0" LAP FOR #16 BARS AND A MINIMUM 3'-6" LAP FOR #19 BARS. SEE B-19.

QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY
504006P	REINFORCEMENT STEEL, EPOXY-COATED	LBS	40350
504015P	CONCRETE FOOTING	CY	190
504018P	CONCRETE WINGWALL	CY	65
504024P	CONCRETE ABUTMENT WALL	CY	240
507039P	CONCRETE BRIDGE PARAPET, HPC	LF	26
507051P	CONCRETE BRIDGE APPROACH	CY	53
509108P	CHAIN-LINK FENCE, TYPE III, ALUMINUM ALLOY, BRIDGE, 6'-3" HIGH, CURVED TOP	LF	13

REVISION	BY	C'K'D	DATE

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Design Checked by
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CONTROL SECTION			JOB NO.
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. DIAZ	CHK. BY	S. TRELLES
SPECS. BY	S. DIAZ	CHK. BY	S. TRELLES

IN CHARGE OF B. RIEGEL

$DATE$ $FILES$

UNION COUNTY DIVISION OF ENGINEERING

NORTH ABUTMENT ELEVATION

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

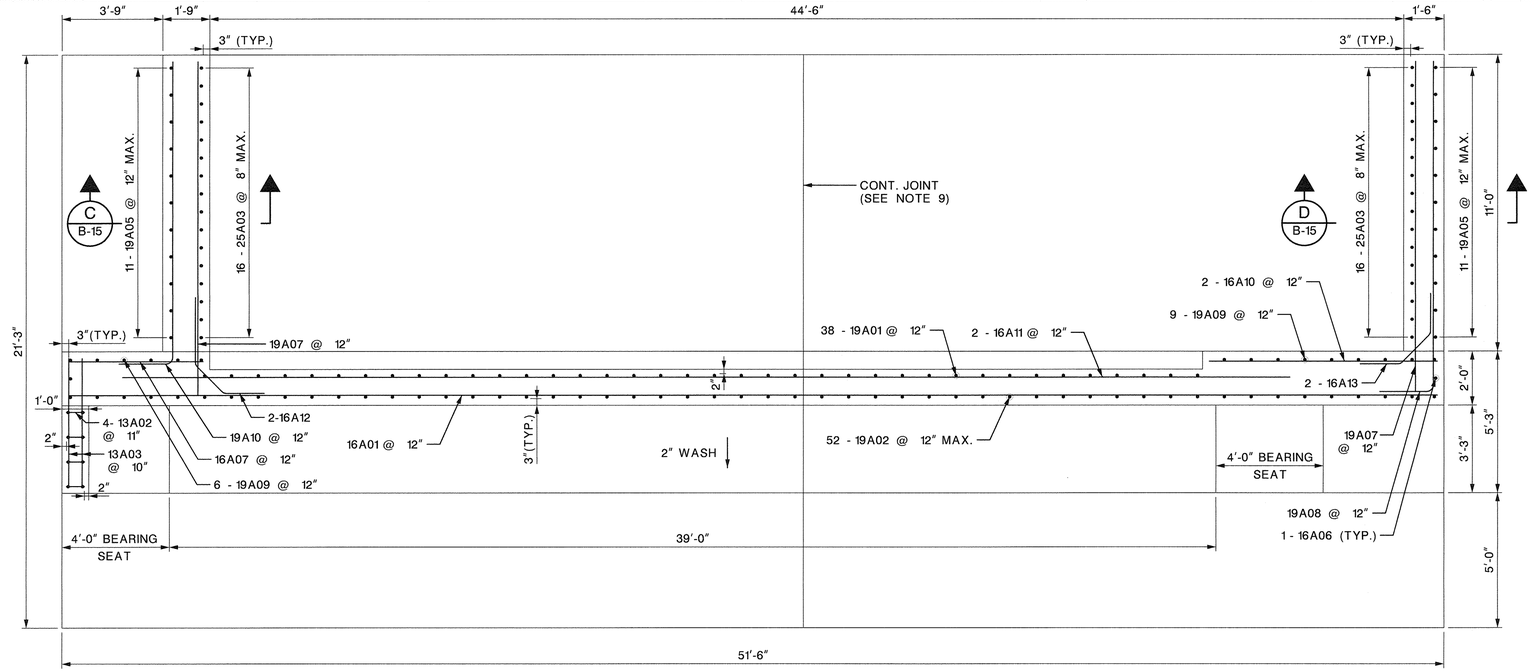
HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

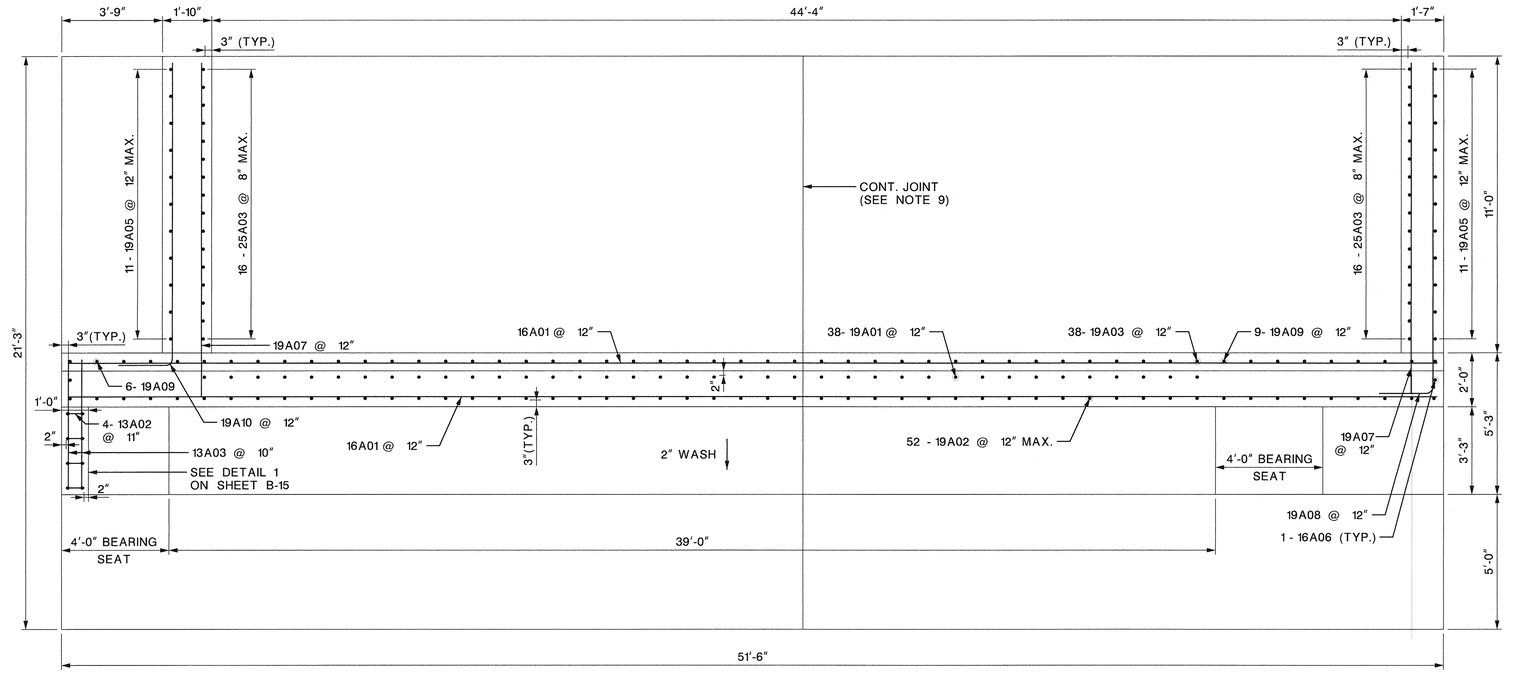
SCALE : AS SHOWN

BRIDGE
SHEET NO. B-12 OF B-41

56
85



SECTION C
SCALE: 3/8" = 1'-0"
B-12



SECTION D
SCALE: 3/8" = 1'-0"
B-12

NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. FOR NORTH ABUTMENT DETAILS, SEE SHEET B-15.
3. SEE SHEET B-6 FOR DEMOLITION PLAN.
4. REINFORCEMENT STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH ASTM A775.
5. UNLESS OTHERWISE NOTED, PROVIDE 1½" MINIMUM SIDE COVER FOR THE REINFORCEMENT STEEL AT CONSTRUCTION JOINTS.
6. PROVIDE A WATERSTOP AT THE CONSTRUCTION JOINTS. SEE NJDOT DRAWING BCD-504-2 AND THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
7. WEEPHOLE PIPING SHALL BE PLACED AS TO AVOID CONTACT WITH STEEL REINFORCEMENT.
8. CONTRACTOR SHALL ADJUST REINFORCING STEEL SPACING, AS REQUIRED, TO ACCOMMODATE THE ANCHOR BOLT LAYOUT.
9. THE CONTRACTOR SHALL DETERMINE THE LOCATION OF THE CONSTRUCTION JOINT AFTER THE TEMPORARY SHEETING HAS BEEN APPROVED. PROVIDE A MINIMUM 3'-0" LAP FOR #16 BARS AND A MINIMUM 3'-6" LAP FOR #19 BARS. SEE B-19.

3/8" = 1'-0"
1' 0 2' 4' 8'

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

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engineering that moves you
West Trenton, NJ

CONTROL SECTION		JOB NO.	
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. DIAZ	CHK. BY	S. TRELLES
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ 13_North Abutment Sections 1.dgn

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

NORTH ABUTMENT SECTIONS 1 OF 2

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

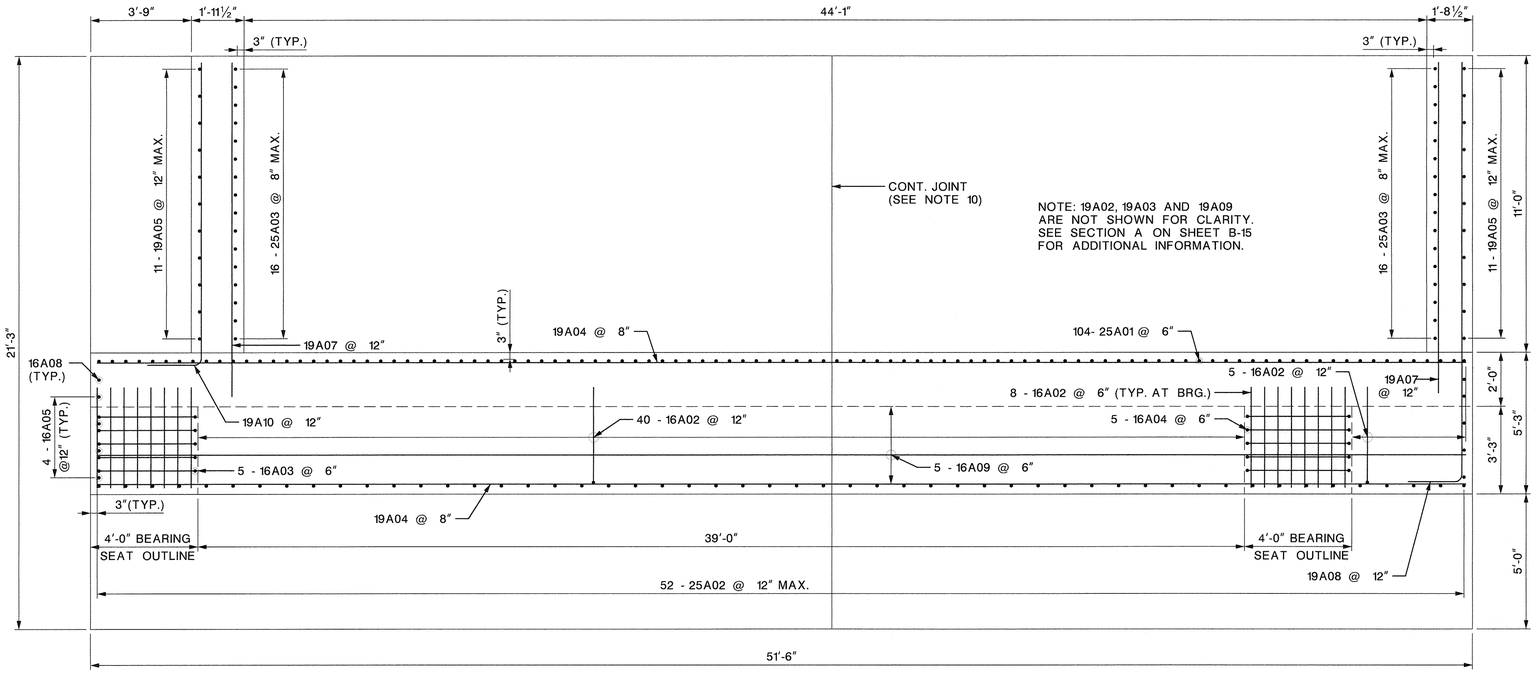
HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

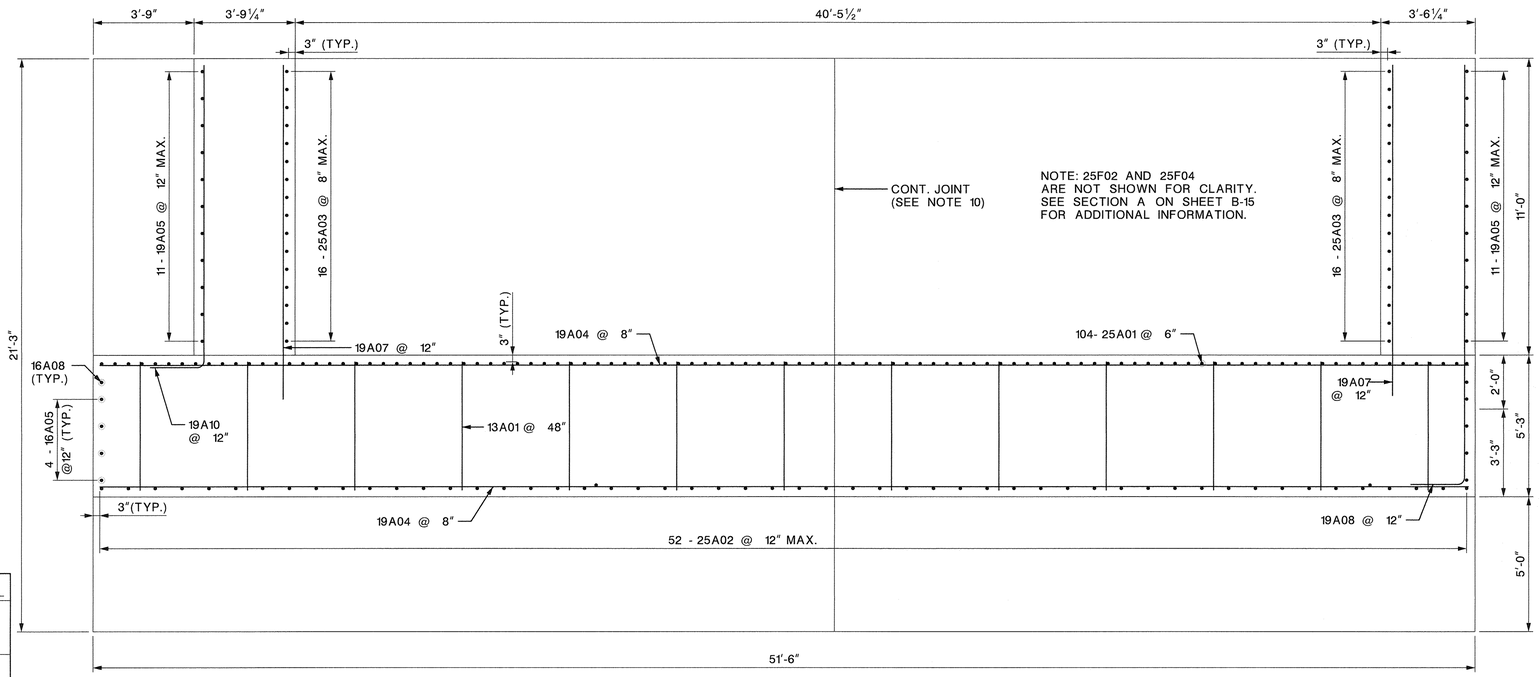
SCALE : AS SHOWN

BRIDGE
SHEET NO. B-13 OF B-41

57
85



SECTION E
SCALE: ⅜" = 1'-0"
B-12



SECTION F
SCALE: ⅜" = 1'-0"
B-12

NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. FOR NORTH ABUTMENT ELEVATION, SEE SHEET B-12.
3. FOR NORTH ABUTMENT DETAILS, SEE SHEETS B-15 AND B-16.
4. SEE SHEET B-6 FOR DEMOLITION PLAN.
5. REINFORCEMENT STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH ASTM A775.
6. UNLESS OTHERWISE NOTED, PROVIDE 2" MINIMUM COVER FOR THE REINFORCEMENT STEEL AT CONTRACTION JOINTS.
7. PROVIDE A WATERSTOP AT THE CONSTRUCTION JOINTS. SEE NJDOT DRAWING BCD-504-2 AND THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
8. WEEPHOLE PIPING SHALL BE PLACED AS TO AVOID CONTACT WITH STEEL REINFORCEMENT.
9. CONTRACTOR SHALL ADJUST REINFORCING STEEL SPACING, AS REQUIRED, TO ACCOMMODATE THE ANCHOR BOLT LAYOUT.
10. THE CONTRACTOR SHALL DETERMINE THE LOCATION OF THE CONSTRUCTION JOINT AFTER THE TEMPORARY SHEETING HAS BEEN APPROVED. PROVIDE A MINIMUM 3'-0" LAP FOR #16 BARS AND A MINIMUM 3'-6" LAP FOR #19 BARS. SEE B-19.

3/8" = 1'-0"
1' 0 2' 4' 8'

In Charge of
Designed by
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Detail Checked by

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West Trenton, NJ

CONTROL SECTION			JOB NO.
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. DIAZ	CHK. BY	S. TRELLES
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ 14_North Abutment Sections 2.dgn

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

NORTH ABUTMENT SECTIONS 2 OF 2

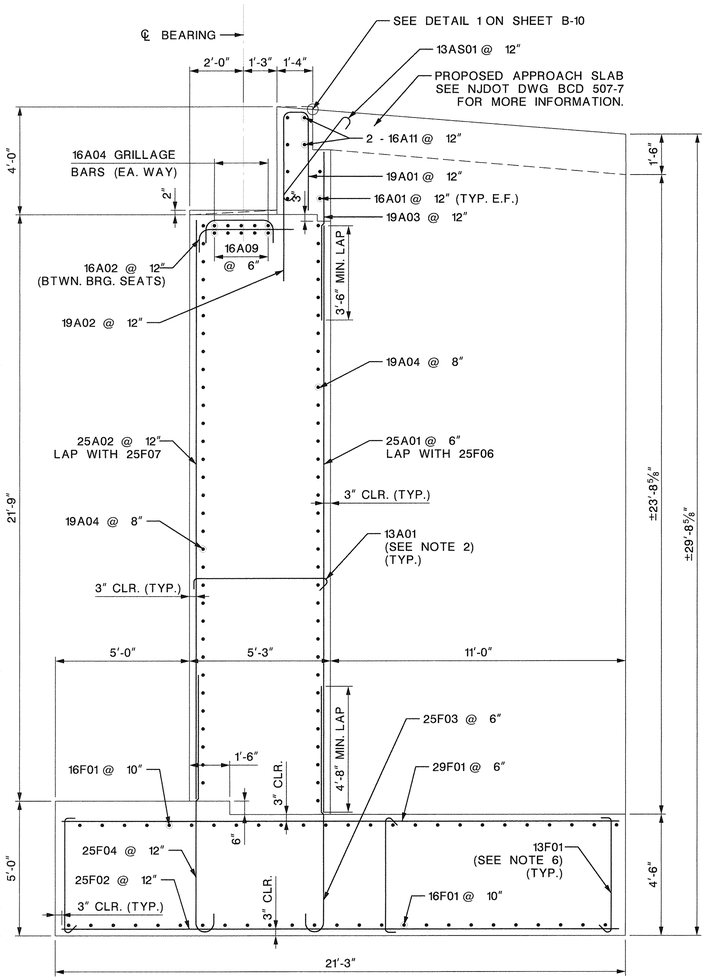
REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

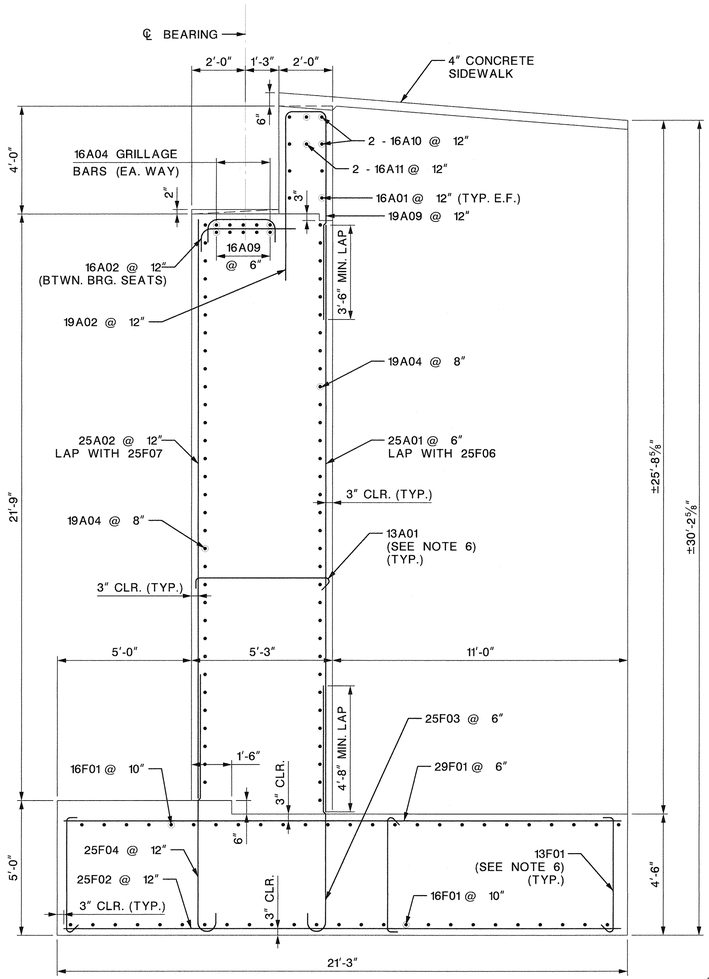
SCALE : AS SHOWN

BRIDGE
SHEET NO. B-14 OF B-41

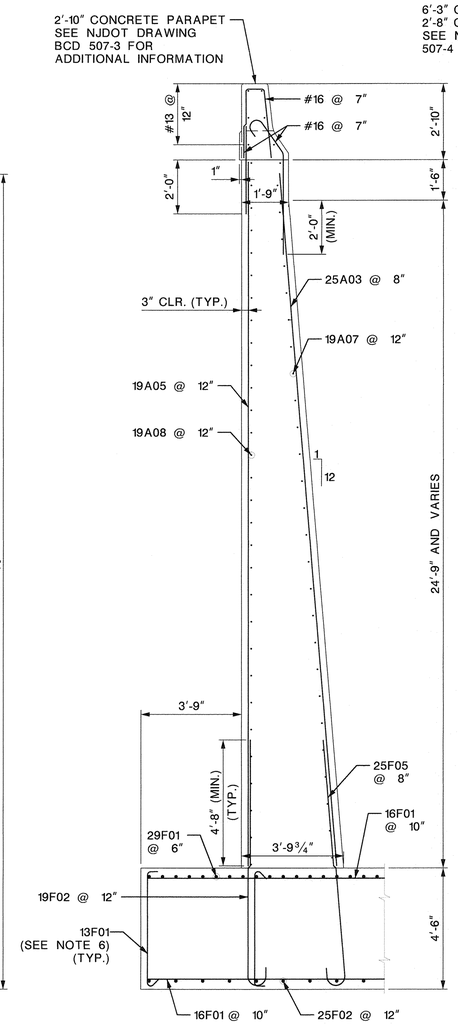
58
85



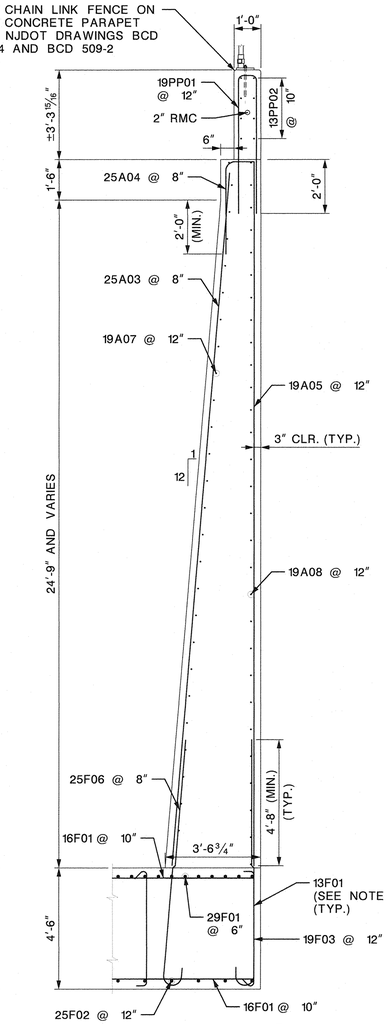
SECTION A
SCALE: ⅜" = 1'-0"
B-12



SECTION B
SCALE: ⅜" = 1'-0"
B-12



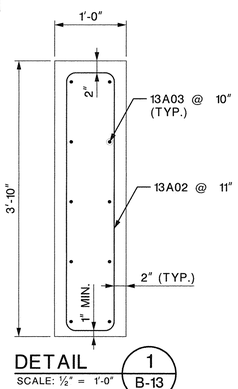
SECTION C
SCALE: ⅜" = 1'-0"
B-13



SECTION D
SCALE: ⅜" = 1'-0"
B-13

NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. FOR NORTH ABUTMENT ELEVATION, SEE SHEET B-12.
3. SEE SHEET B-6 FOR DEMOLITION PLAN.
4. REINFORCEMENT STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH ASTM A775.
5. UNLESS OTHERWISE NOTED, PROVIDE 2" MINIMUM COVER FOR THE REINFORCEMENT STEEL AT CONSTRUCTION JOINTS.
6. TIE TOP AND BOTTOM MATS OF REINFORCING STEEL WITH #4 TIE BAR AT A MAXIMUM SPACING OF 4'-0" IN BOTH DIRECTIONS. PROVIDE TIE BARS WITH 90° HOOK AT ONE END AND 135° HOOK AT THE OTHER END. ALTERNATE 90° AND 135° HOOKS AT TOP IN ALTERNATE TIES.
7. WEEPHOLE PIPING SHALL BE PLACED AS TO AVOID CONTACT WITH STEEL REINFORCEMENT.



DETAIL 1
SCALE: ½" = 1'-0"
B-13

1/2" = 1'-0"
1' 0 1' 2' 4'

3/8" = 1'-0"
1' 0 2' 4' 8'

CONTROL SECTION		JOB NO.	
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. DIAZ	CHK. BY	S. TRELLES
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

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Designed by
Design Checked by
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Detail Checked by

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West Trenton, NJ

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

NORTH ABUTMENT DETAILS 1 OF 2

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

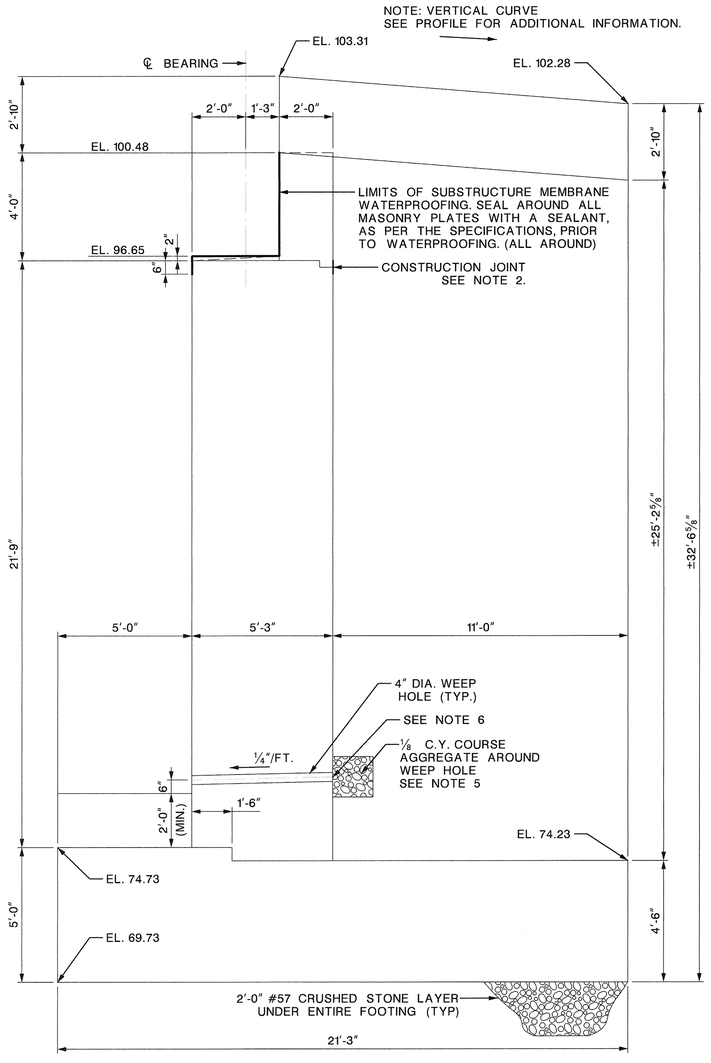
HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

BRIDGE
SHEET NO. B-15 OF B-41

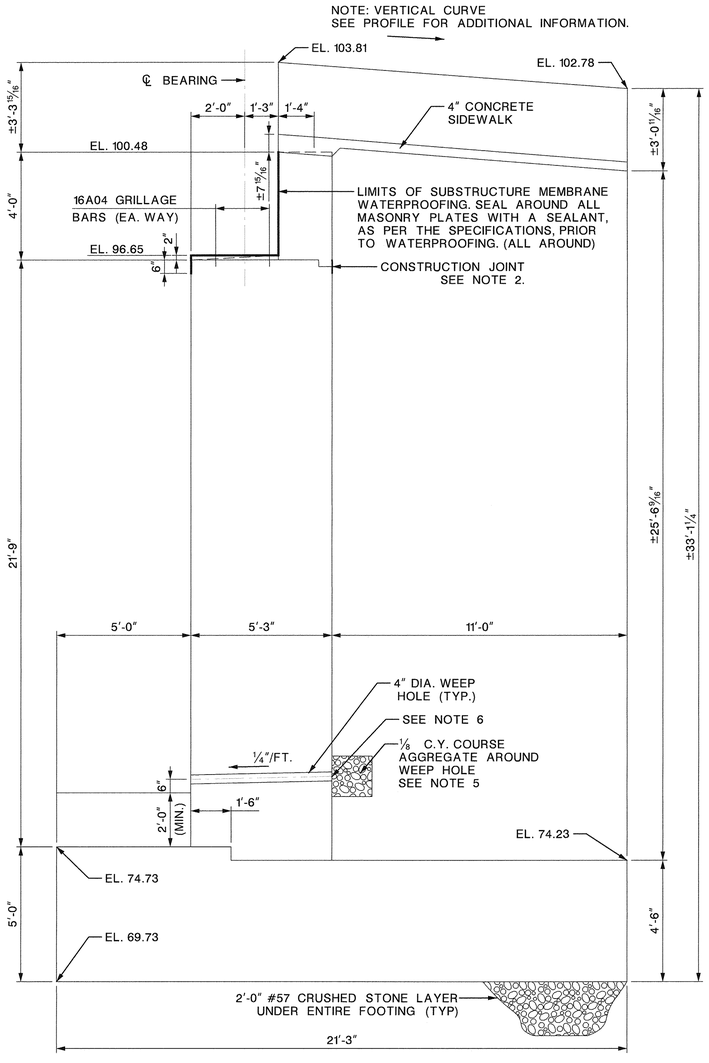
59
85

$DATE$ 15_North Abutment Details 1.dgn



NORTH ABUTMENT TYPICAL SECTION

SCALE: ⅜" = 1'-0"



NORTH ABUTMENT SECTION AT SIDEWALK

SCALE: ⅜" = 1'-0"

NOTES:

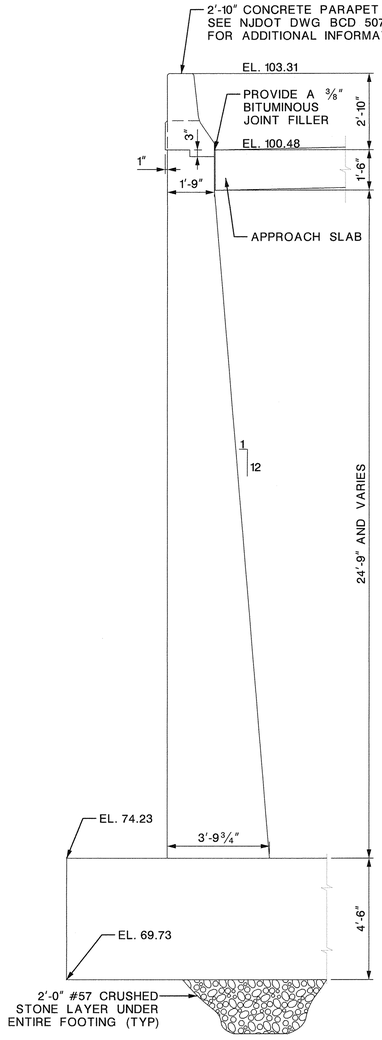
1. THE REAR FACE OF THE ABUTMENTS AND WINGWALL SHALL BE DAMPPROOFED. SURFACE TO BE DAMPPROOFED SHALL BE THOROUGHLY CLEAN AND DRY BEFORE PRIMER IS APPLIED. ONE (1) COAT OF PRIMER AND ONE (1) COAT OF SEALER SHALL BE APPLIED FOR USING METHODS, APPLICATION RATES AND TEMPERATURE CONSTRAINS AS RECOMMENDED BY THE MANUFACTURER OF EACH PRODUCT. MATERIALS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

   ASPHALT FOR PRIMER: ASTM D 41
   ASPHALT FOR SEAL COAT SHALL MEET ONE OF THE FOLLOWING:
   A. HOT APPLIED ASPHALT SEAL COAT - ASTM D449, TYPE 1
   B. COLD APPLIED ASPHALT SEAL COAT - ASTM D4479, TYPE 1 (ASBESTOS FREE)
   C. COLD APPLIED EMULSIFIED ASPHALT SEAL COAT - ASTM D1227, TYPE III OR IV.

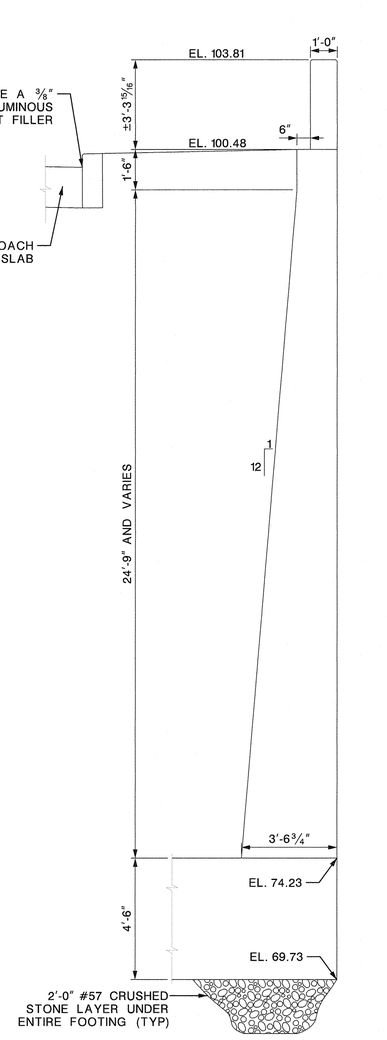
2. PROVIDE A WATERSTOP AT THE CONSTRUCTION JOINTS. SEE NJDOT DRAWING BCD-504-2 AND THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
4. FOR NORTH ABUTMENT ELEVATION, SEE SHEET B-12.
5. PROVIDE GEOTEXTILE FILTER FABRIC AROUND COURSE AGGREGATE.
6. 6"X6" GALVANIZED STEEL WIRE 1#4" MESH HARDWARE CLOTH. ANCHOR FIRMLY TO BACK FACE OF ABUTMENT. SEE SHEET B-11 FOR DETAILS.

3/8" = 1'-0" 1' 0 2' 4' 8'

1/2" = 1'-0" 1' 0 1' 2' 4'



SECTION C (B-13)
SCALE: ½" = 1'-0"



SECTION D (B-13)
SCALE: ½" = 1'-0"

QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY
158089M	PREFABRICATED DRAINAGE COMPOSITE	SY	189
202015P	EXCAVATION, REGULATED MATERIAL	CY	335
203009P	I-9 SOIL AGGREGATE	CY	492
203040M	GEOTEXTILE	SY	142
301006P	SUBBASE (DESIGNATION I-3)	CY	21
302060P	COARSE AGGREGATE, SIZE NO. 57	CY	47
504036P	EPOXY WATERPROOFING	SY	43
504037P	SPRAY APPLIED WATERPROOFING MEMBRANE	SF	1746

REVISION	BY	C'K'D	DATE

In Charge of
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Design Checked by
Detailed by
Detail Checked by

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CONTROL SECTION		JOB NO.	
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. DIAZ	CHK. BY	S. TRELLES
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ 16_North Abutment Details 2.dgn

UNION COUNTY DIVISION OF ENGINEERING

NORTH ABUTMENT DETAILS 2 OF 2

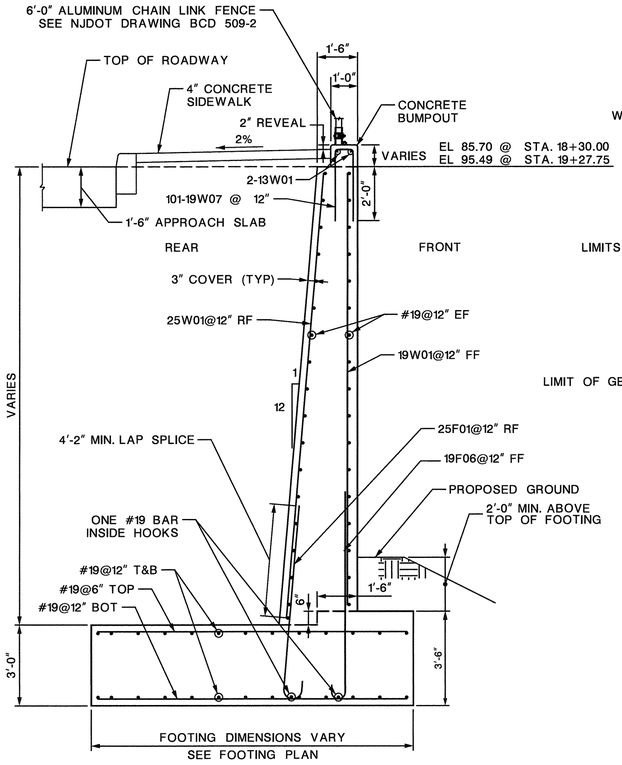
REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

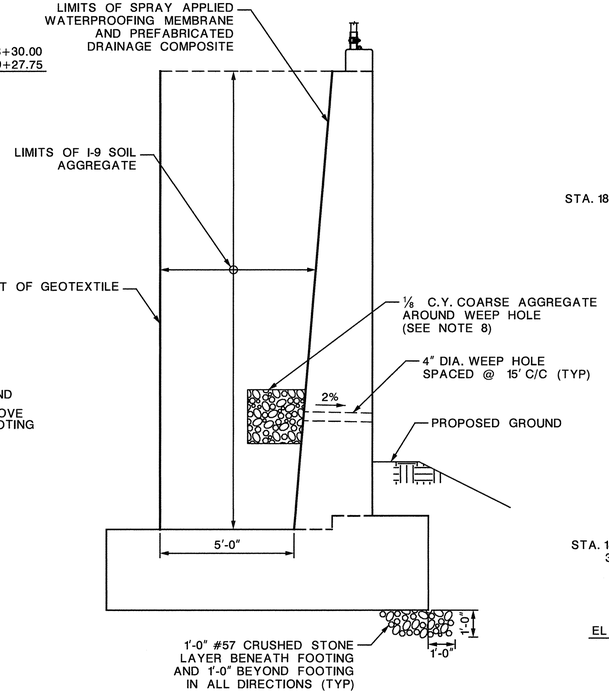
BRIDGE
SHEET NO. B-16 OF B-41

60
85



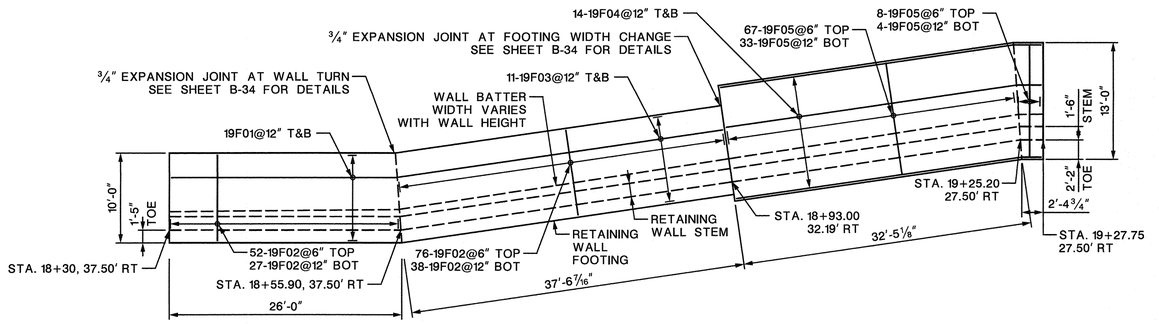
SECTION
SOUTHEAST RETAINING WALL

SCALE: ⅜" = 1'-0"



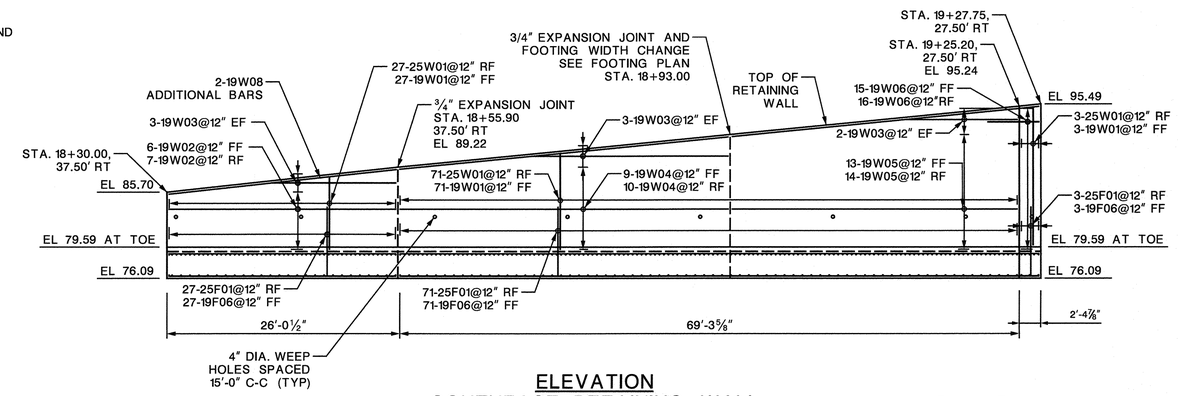
TYPICAL RETAINING WALL
DETAILS & PAY ITEM LIMITS

SCALE: ⅜" = 1'-0"



FOOTING PLAN
SOUTHEAST RETAINING WALL

SCALE: ⅛" = 1'-0"



ELEVATION
SOUTHEAST RETAINING WALL

SCALE: ⅛" = 1'-0"

NOTE: ELEVATION OF CONCRETE BUMPOUT AND REINFORCEMENT IN CONCRETE BUMPOUT NOT SHOWN FOR CLARITY

RETAINING WALL GENERAL NOTES

1. FOR GENERAL NOTES AND GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. FOR DEMOLITION NOTES, SEE SHEET B-6.
3. FOR REINFORCEMENT SCHEDULE, SEE SHEET B-37.
4. FOR RETAINING WALL EXCAVATION DETAIL, SEE SHEET B-18.
6. REINFORCEMENT STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH ASTM A775.
7. UNLESS OTHERWISE NOTED, PROVIDE 3" COVER TO ALL REINFORCMENT STEEL IN RETAINING WALLS. PROVIDE 2½" MINIMUM SIDE COVER FOR THE REINFORCEMENT STEEL AT CONSTRUCTION JOINTS.
8. PROVIDE GEOTEXTILE FABRIC AROUND CRUSHED STONE POCKETS SURROUNDING WALL DRAINAGE.
9. BARS POSITIONED AROUND WALL BENDS TO BE TRIMMED IN FIELD AS NECESSARY.

QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY
158089M	PREFABRICATED DRAINAGE COMPOSITE	SY	132
203009P	I-9 SOIL AGGREGATE	CY	241
203040M	GEOTEXTILE	SY	142
302060P	COARSE AGGREGATE, SIZE NO. 57	CY	49
504037P	SPRAY APPLIED WATERPROOFING MEMBRANE	SF	1187
513006P	RETAINING WALL, CAST-IN-PLACE, LOCATION NO. 2 (SOUTHEAST WALL)	SF	1085

WORK ITEMS - SOUTHEAST RETAINING WALL
FOR INFORMATION PURPOSES ONLY (PRICE TO BE INCLUDED IN WALL ITEMS)

DESCRIPTION	UNIT	APPROXIMATE QUANTITY
REINFORCEMENT STEEL, EPOXY-COATED	LBS	21010
CONCRETE FOOTING	CY	122

1/8" = 1'-0"
1'0 2' 4' 8' 16'

3/8" = 1'-0"
1' 0 2' 4' 8'

REVISION	BY	C'K'D	DATE

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
West Trenton, NJ

CONTROL SECTION			JOB NO.
DES. BY	S. TRELLES	CHK. BY	S. DIAZ
DWN. BY	S. TRELLES		
EST. BY	S. TRELLES	CHK. BY	S. DIAZ
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ $FILE$

UNION COUNTY DIVISION OF ENGINEERING

SOUTHEAST RETAINING WALL

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

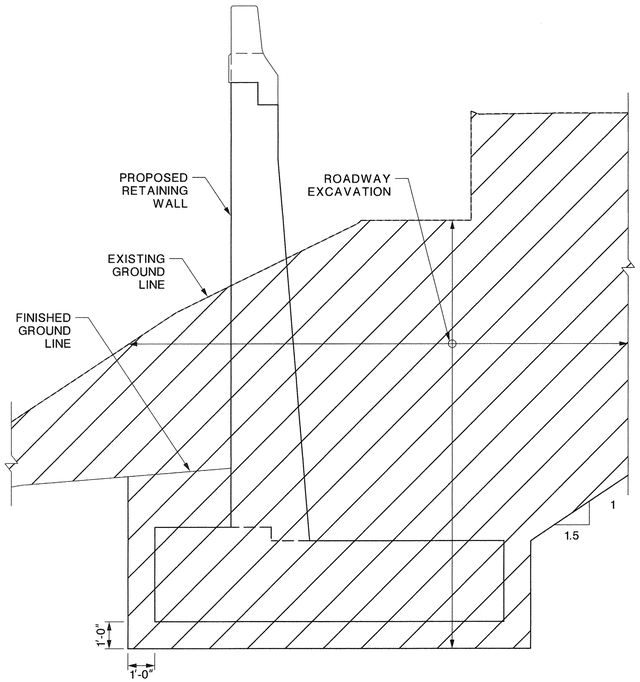
HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

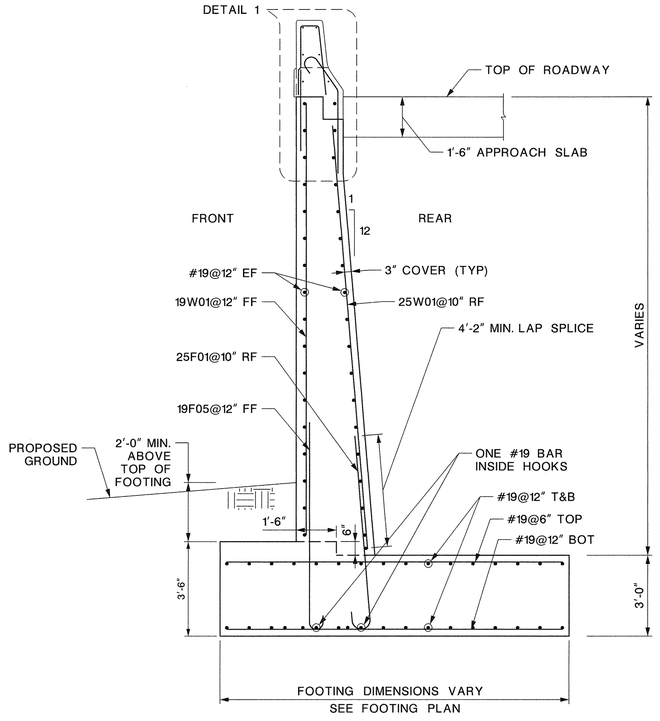
BRIDGE
SHEET NO. B-17 OF B-41

61
85



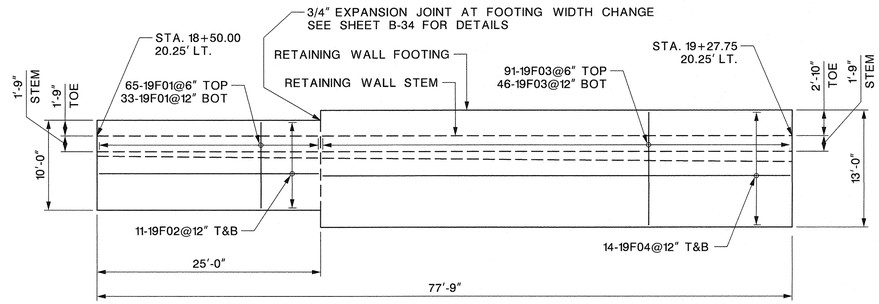
RETAINING WALL TYPICAL EXCAVATION DETAIL

SCALE: ⅜" = 1'-0"



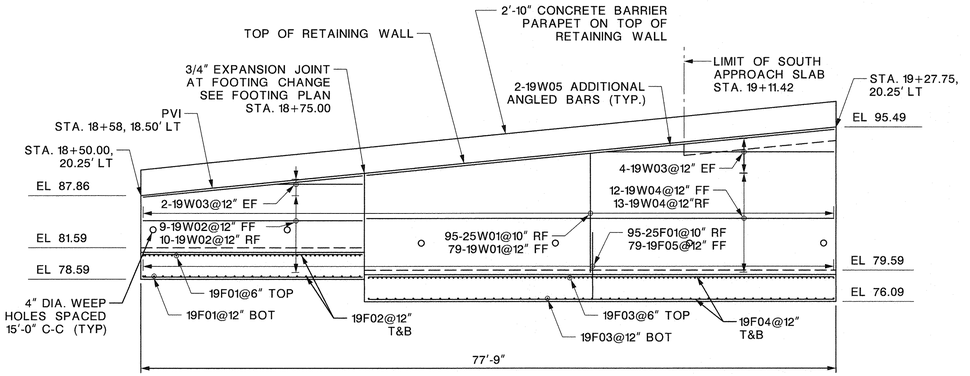
SECTION SOUTHWEST RETAINING WALL

SCALE: ⅜" = 1'-0"



FOOTING PLAN SOUTHWEST RETAINING WALL

SCALE: ⅛" = 1'-0"



ELEVATION SOUTHWEST RETAINING WALL

SCALE: ⅛" = 1'-0"

NOTES

1. FOR RETAINING WALL GENERAL NOTES, SEE SHEET B-17
2. FOR RETAINING WALL TYPICAL DETAILS AND PAY ITEM LIMITS, SEE SHEET B-17.

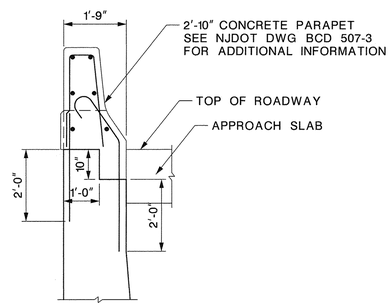
QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY
158089M	PREFABRICATED DRAINAGE COMPOSITE	SY	104
203009P	I-9 SOIL AGGREGATE	CY	189
203040M	GEOTEXTILE	SY	103
302060P	COARSE AGGREGATE, SIZE NO. 57	CY	42
504037P	SPRAY APPLIED WATERPROOFING MEMBRANE	SF	923
509108P	CONCRETE BRIDGE PARAPET, HPC	LF	78
513006P	RETAINING WALL, CAST-IN-PLACE, LOCATION NO. 4 (SOUTHWEST WALL)	SF	890

WORK ITEMS - SOUTHWEST RETAINING WALL

FOR INFORMATION PURPOSES ONLY (PRICE TO BE INCLUDED IN WALL ITEMS)

DESCRIPTION	UNIT	APPROXIMATE QUANTITY
REINFORCEMENT STEEL, EPOXY-COATED	LBS	17750
CONCRETE FOOTING	CY	105



NOTE: WALL REINFORCEMENT NOT SHOWN FOR CLARITY

DETAIL 1

SCALE: ½" = 1'-0"

1/8" = 1'-0" (1'0 2' 4' 8' 16')

3/8" = 1'-0" (1' 0 2' 4' 8')

1/2" = 1'-0" (1' 0 1' 2' 4')

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
West Trenton, NJ

CONTROL SECTION		JOB NO.	
DES. BY	S. TRELLES	CHK. BY	S. DIAZ
DWN. BY	S. TRELLES		
EST. BY	S. TRELLES	CHK. BY	S. DIAZ
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ 18_Retaining Wall – Southwest.dgn

UNION COUNTY DIVISION OF ENGINEERING

SOUTHWEST RETAINING WALL

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

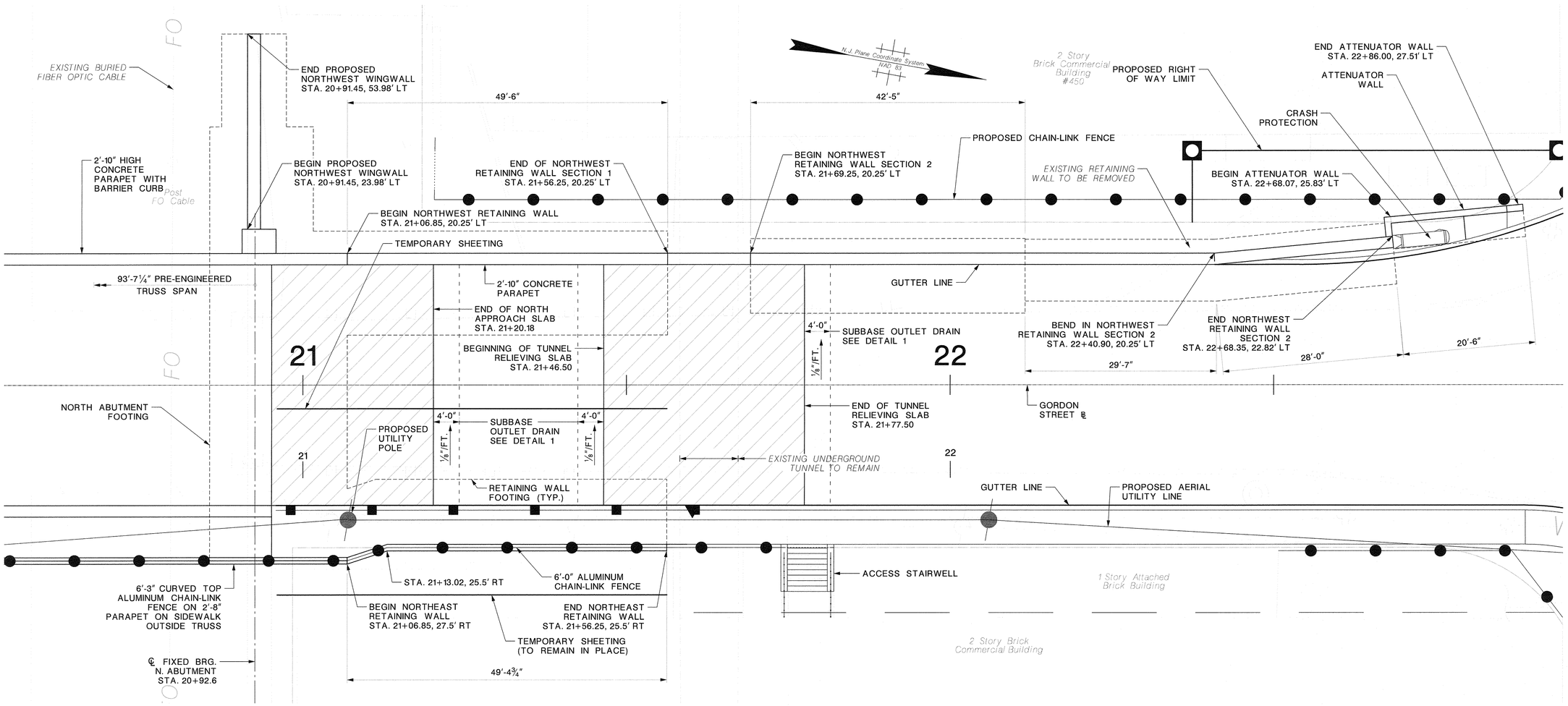
REVISION	BY	C'K'D	DATE

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

BRIDGE
SHEET NO. B-18 OF B-41

62
85



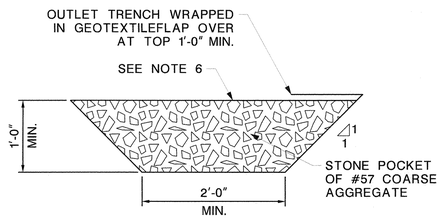
PLAN

SCALE: ⅛" = 1'-0"

NOTES:

1. STATIONS AND OFFSETS SHOWN ARE TO FRONT FACE OF WALLS.
2. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
3. FOR DEMOLITION PLANS, SEE SHEET B-6.
4. FOR DETAILS AND QUANTITIES REGARDING NORTHEAST AND NORTHWEST RETAINING WALLS, SEE SHEETS B-20 AND B-21 RESPECTIVELY. FOR DETAILS AND QUANTITIES REGARDING NORTHWEST WINGWALL, SEE SHEET B-22.
5. FOR LOCATIONS OF JOINTS IN RETAINING WALLS AND PARAPETS MOUNTED ON RETAINING WALL STEMS, SEE SHEET B-34.
6. SUBBASE OUTLET DRAIN SHALL BE PLACED AT ALL CONCRETE PAVEMENT AND FLEXIBLE PAVEMENT INTERFACES. SOUTH APPROACH SLAB SUBBASE OUTLET DRAIN SIMILAR TO THAT SHOWN HEREIN FOR NORTH APPROACH SLAB. SUBBASE OUTLET DRAIN TO BE SLOPED DOWNARD A MINIMUM OF ⅛" PER LF TOWARDS THE NORTHWEST RETAINING WALL.

QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY
501003P	TEMPORARY SHEETING	SF	1946
601404P	SUBBASE OUTLET DRAIN	LF	148



DETAIL 1
SCALE: N.T.S.

1/8" = 1'-0"
1'0 2' 4' 8' 16'

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover engineering that moves you
West Trenton, NJ

CONTROL SECTION		JOB NO.	
DES. BY	S. TRELLES	CHK. BY	S. DIAZ
DWN. BY	S. TRELLES		
EST. BY	S. TRELLES	CHK. BY	S. DIAZ
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

NORTH RETAINING WALL LAYOUT PLAN

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL

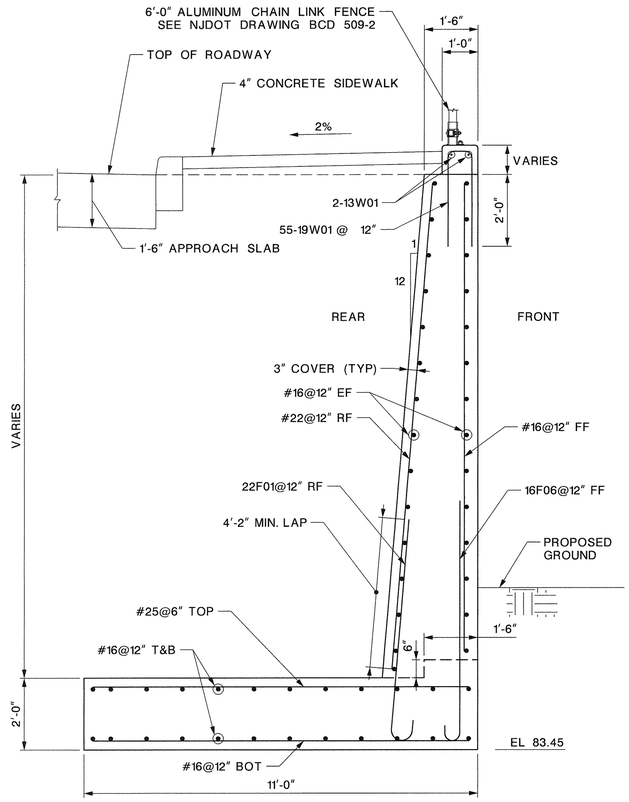
HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

BRIDGE SHEET NO. B-19 OF B-41

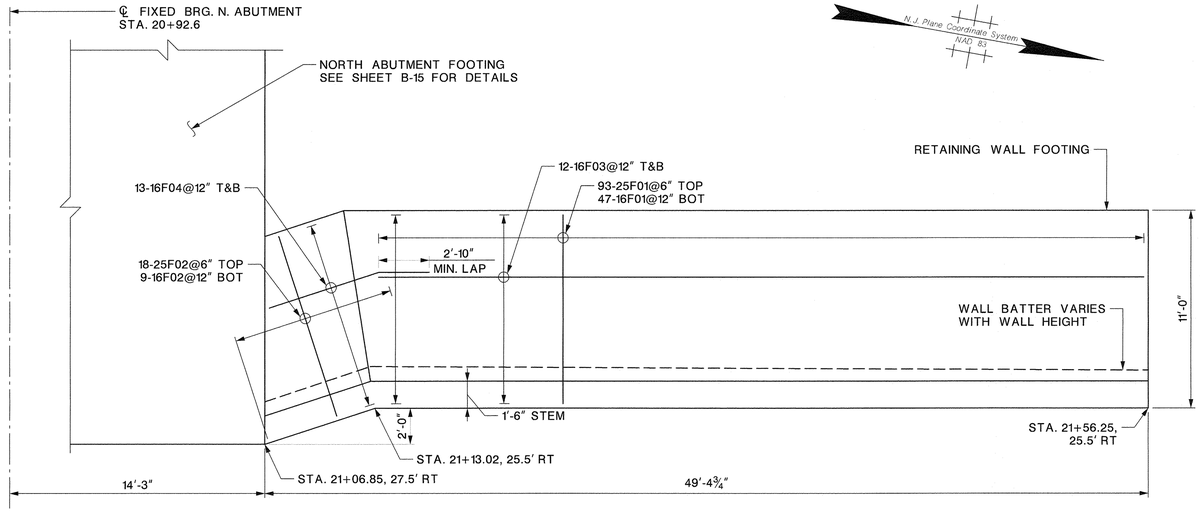
63
85

$DATE$ 19_Retaining Wall – North Layout Plan.dgn



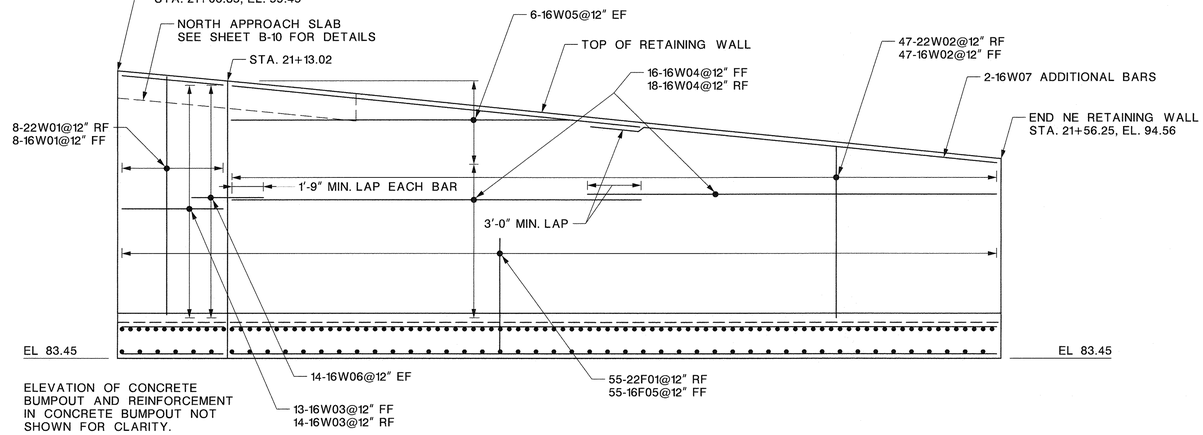
SECTION
NORTHEAST RETAINING WALL

SCALE: ½ " = 1'-0"



FOOTING PLAN
NORTHEAST RETAINING WALL

SCALE: ¼" = 1'-0"



NOTE: ELEVATION OF CONCRETE BUMPOUT AND REINFORCEMENT IN CONCRETE BUMPOUT NOT SHOWN FOR CLARITY.

ELEVATION
NORTHEAST RETAINING WALL

SCALE: ¼" = 1'-0"

1/4" = 1'-0" (1' 0 2' 4' 8')

1/2" = 1'-0" (1' 0 1' 2' 4')

QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY
158089M	PREFABRICATED DRAINAGE COMPOSITE	SY	59
203009P	I-9 SOIL AGGREGATE	CY	105
203040M	GEOTEXTILE	SY	63
302060P	COARSE AGGREGATE, SIZE NO. 57	CY	26
504037P	SPRAY APPLIED WATERPROOFING MEMBRANE	SF	569
513006P	RETAINING WALL, CAST-IN-PLACE, LOCATION NO. 3 (NORTHEAST WALL)	SF	550

WORK ITEMS - NORTHEAST RETAINING WALL

FOR INFORMATION PURPOSES ONLY (PRICE TO BE INCLUDED IN WALL ITEMS)

DESCRIPTION	UNIT	APPROXIMATE QUANTITY
REINFORCEMENT STEEL, EPOXY-COATED	LBS	10000
CONCRETE FOOTING	CY	43

NOTES

1. FOR RETAINING WALL GENERAL NOTES, SEE SHEET B-17
2. FOR RETAINING WALL TYPICAL DETAILS AND PAY ITEM LIMITS, SEE SHEET B-17.
3. FOR RETAINING WALL EXCAVATION DETAILS, SEE SHEET B-18.

CONTROL SECTION			JOB NO.
DES. BY	S. TRELLES	CHK. BY	S. DIAZ
DWN. BY	S. TRELLES		
EST. BY	S. TRELLES	CHK. BY	S. DIAZ
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

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Designed by
Design Checked by
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Detail Checked by

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West Trenton, NJ

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

NORTHEAST RETAINING WALL

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

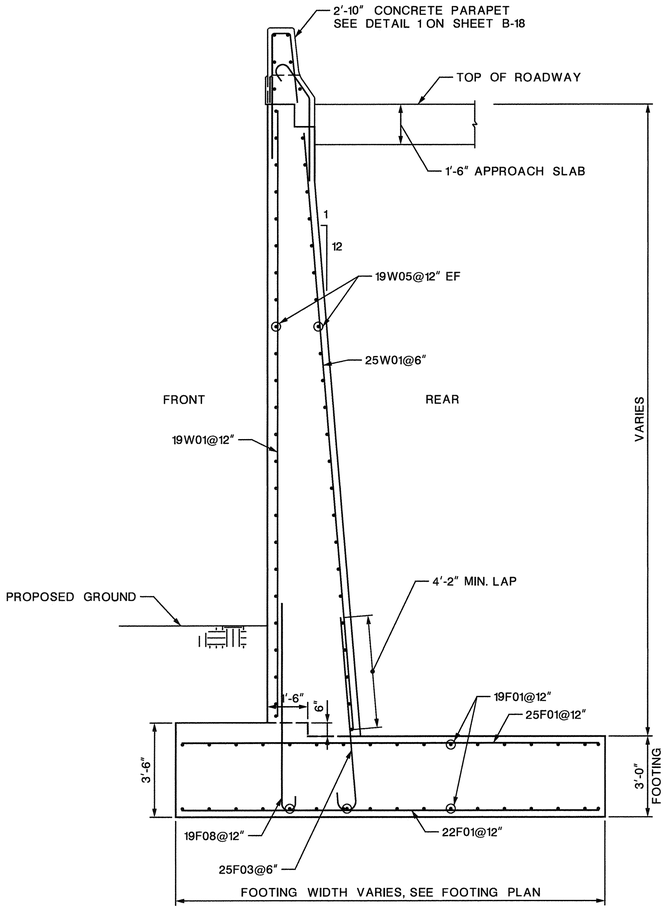
HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

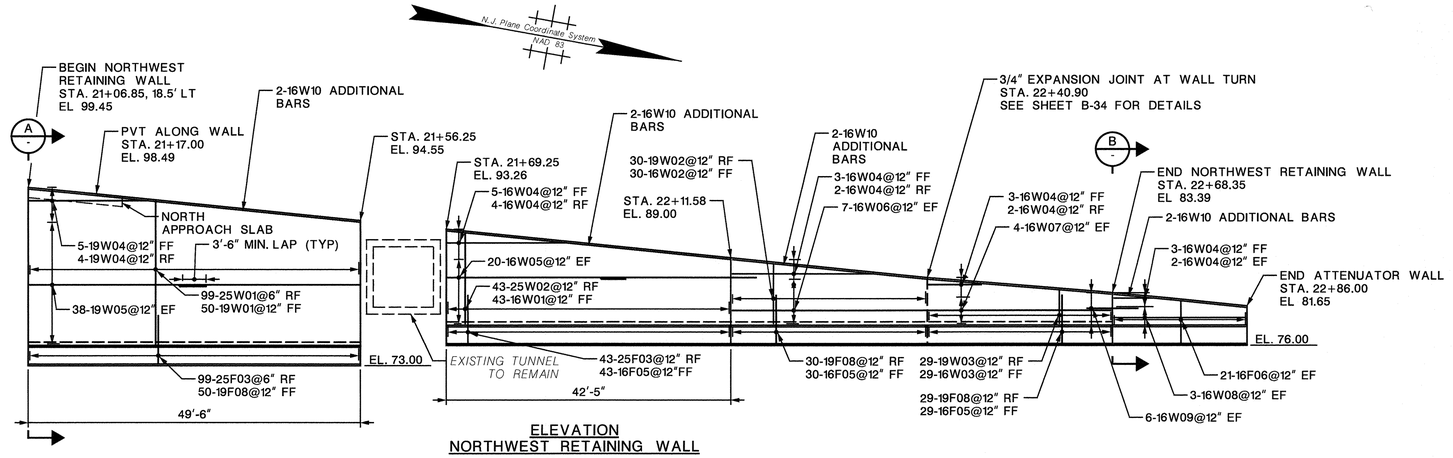
BRIDGE
SHEET NO. B-20 OF B-41

64
85

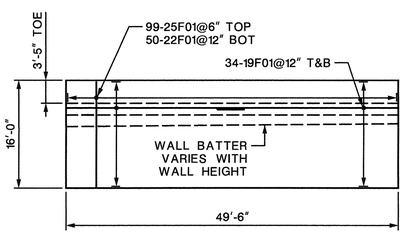
$DATE$ 20_Retaining Wall – Northeast Wall.dgn

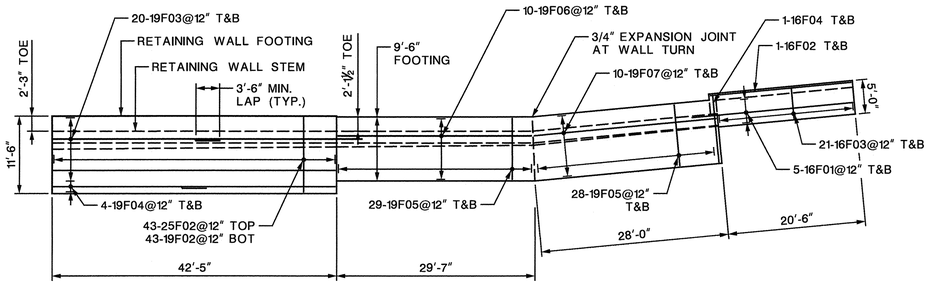


SECTION A
SCALE: ⅜" = 1'-0"

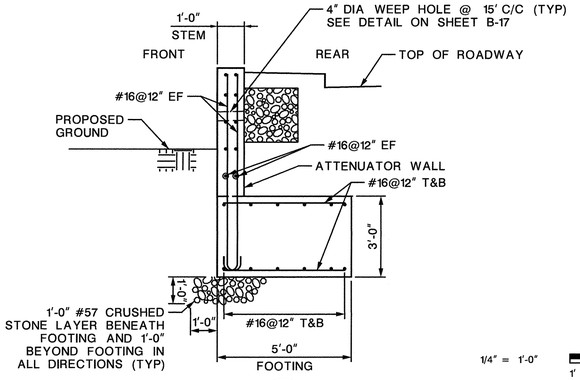


ELEVATION
NORTHWEST RETAINING WALL
SCALE: ⅛" = 1'-0"

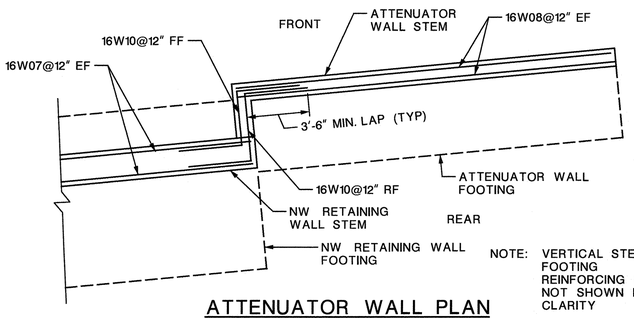




FOOTING PLAN
NORTHWEST RETAINING WALL
SCALE: 3/32" = 1'-0"



SECTION A
SCALE: ⅜" = 1'-0"



NOTE: VERTICAL STEM AND FOOTING REINFORCING BARS NOT SHOWN FOR CLARITY

ATTENUATOR WALL PLAN
SCALE: ¼" = 1'-0"

QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY
158089M	PREFABRICATED DRAINAGE COMPOSITE	SY	253
203009P	I-9 SOIL AGGREGATE	CY	472
203040M	GEOTEXTILE	SY	249
302060P	COARSE AGGREGATE, SIZE NO. 57	CY	88
504037P	SPRAY APPLIED WATERPROOFING MEMBRANE	SF	2269
507039P	CONCRETE BRIDGE PARAPET, HPC	LF	182
513006P	RETAINING WALL, CAST-IN-PLACE, LOCATION NO. 5 (NORTHWEST WALL)	SF	1990

WORK ITEMS - NORTHWEST RETAINING WALL FOR INFORMATION PURPOSES ONLY (PRICE TO BE INCLUDED IN WALL ITEMS)		
DESCRIPTION	UNIT	APPROXIMATE QUANTITY
REINFORCEMENT STEEL, EPOXY-COATED	LBS	38100
CONCRETE FOOTING	CY	220

NOTES

1. FOR RETAINING WALL GENERAL NOTES, SEE SHEET B-17
2. FOR RETAINING WALL TYPICAL DETAILS AND PAY ITEM LIMITS, SEE SHEET B-17.
3. FOR RETAINING WALL EXCAVATION DETAILS, SEE SHEET B-18.

1/4" = 1'-0"
3/32" = 1'-0"
3/8" = 1'-0"

REVISION	BY	C'K'D	DATE

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
West Trenton, NJ

CONTROL SECTION		JOB NO.	
DES. BY	S. TRELLES	CHK. BY	S. DIAZ
DWN. BY	S. TRELLES		
EST. BY	S. TRELLES	CHK. BY	S. DIAZ
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ $FILE$

UNION COUNTY DIVISION OF ENGINEERING

NORTHWEST RETAINING WALL PLAN AND ELEVATION

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

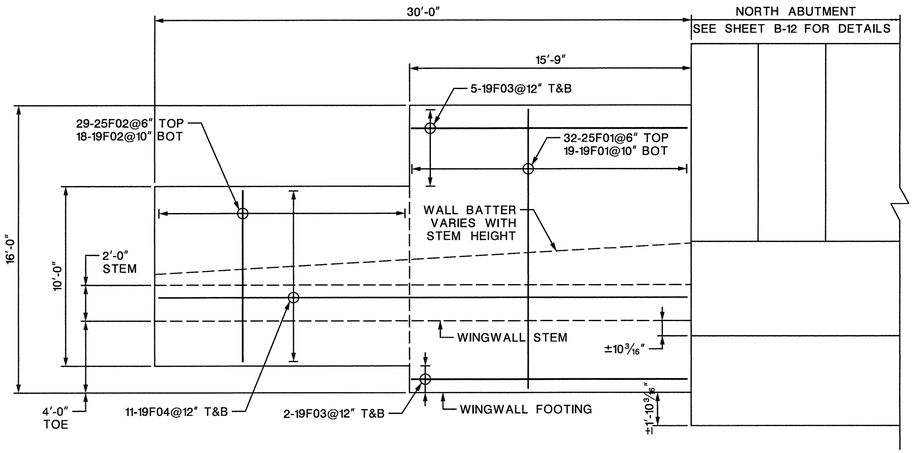
HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

BRIDGE
SHEET NO. B-21 OF B-41

65
85



NOTE: REINFORCEMENT IN FOOTING SHOWN ONLY. FOR REINFORCEMENT IN WINGWALL, SEE WINGWALL SECTION AND ELEVATION.

PLAN
NORTHWEST WINGWALL

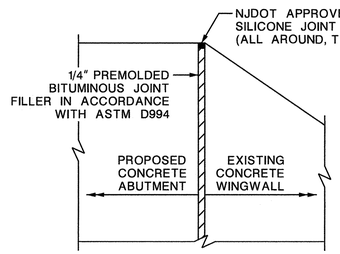
SCALE: 1/4" = 1'-0"

QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY
158089M	PREFABRICATED DRAINAGE COMPOSITE	SY	59
202015P	EXCAVATION, REGULATED MATERIAL	CY	240
203009P	I-9 SOIL AGGREGATE	CY	112
203040M	GEOTEXTILE	SY	58
302060P	COARSE AGGREGATE, SIZE NO. 57	CY	19
504006P	REINFORCEMENT STEEL, EPOXY-COATED	LB	10650
504015P	CONCRETE FOOTING	CY	44
504018P	CONCRETE WINGWALL	CY	55
504037P	SPRAY APPLIED WATERPROOFING MEMBRANE	SF	528

NOTE: REINFORCEMENT IN NORTH ABUTMENT NOT SHOWN FOR CLARITY. FOR NORTH ABUTMENT GEOMETRY AND DETAILS, SEE SHEET B-15.

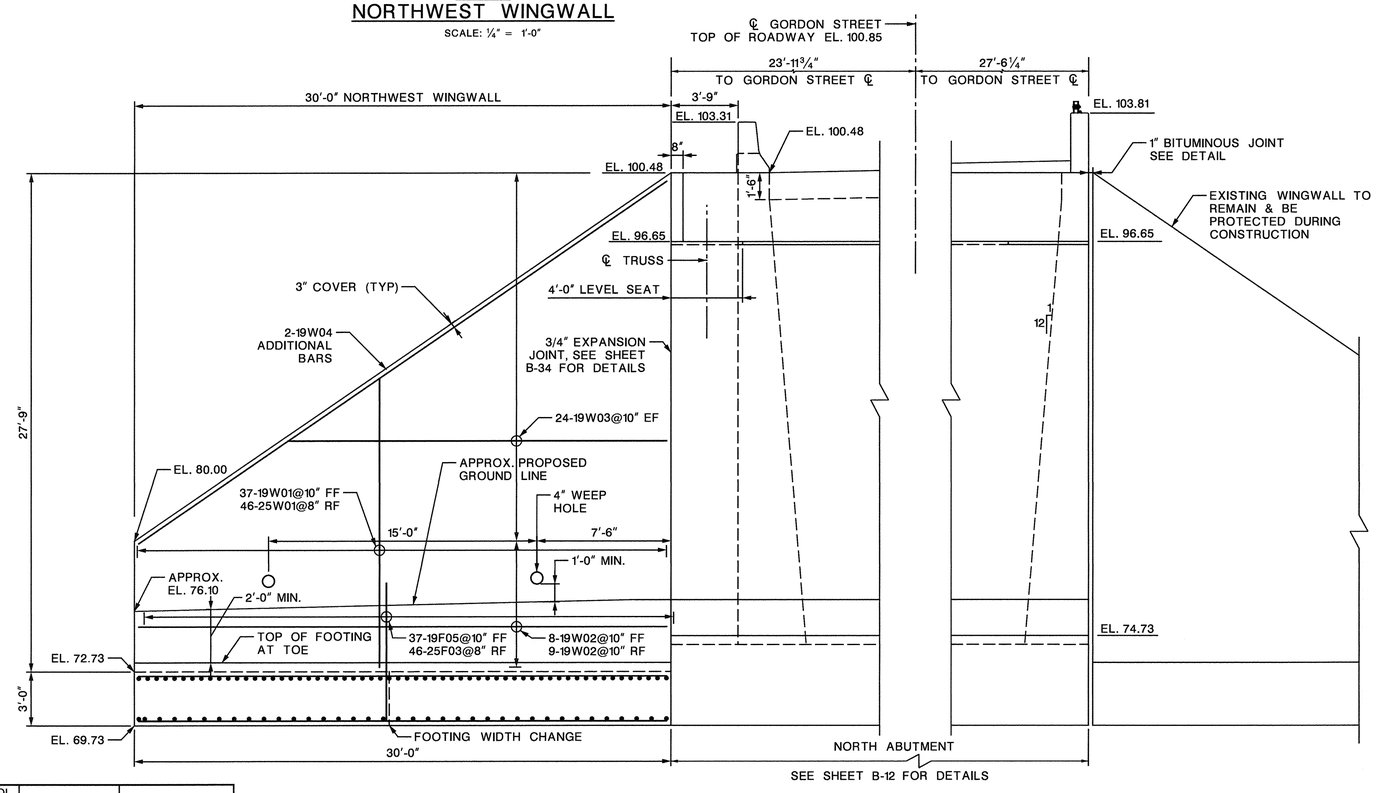
NOTES

1. FOR RETAINING WALL GENERAL NOTES, SEE SHEET B-17
2. FOR RETAINING WALL TYPICAL DETAILS AND PAY ITEM LIMITS, SEE SHEET B-17.
3. FOR RETAINING WALL EXCAVATION DETAILS, SEE SHEET B-18.
4. PROVIDE AN ADHESIVE WATERSTOP AT THE EXISTING TO PROPOSED JOINT. THE WATERSTOP SHALL BE 6" MIN. IN WIDTH, CENTERED ON THE JOINT. INSTALL THE WATERSTOP PER THE MANUFACTURER'S SPECIFICATION. SUBMIT WATERSTOP SPECIFICATIONS TO THE RE FOR APPROVAL. PAYMENT FOR THE WATERSTOP SHALL BE CONSIDERED INCIDENTAL TO ITEM 504024P "CONCRETE ABUTMENT WALL".



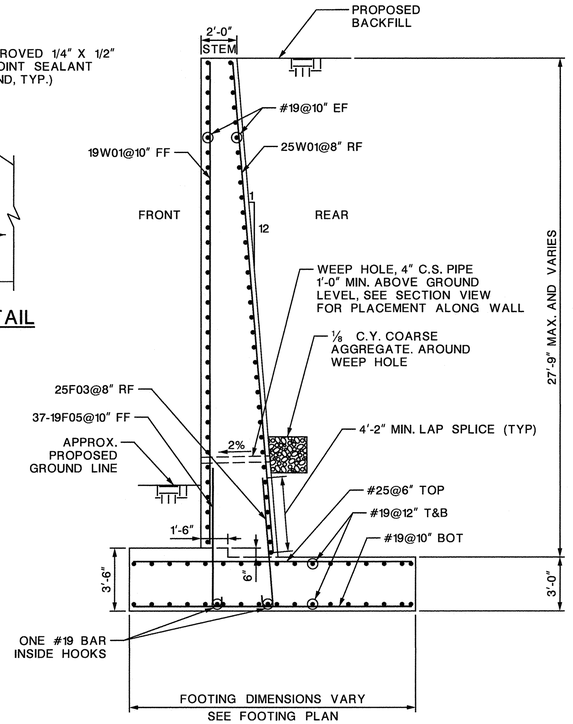
BITUMINOUS JOINT DETAIL

SCALE: N.T.S.



ELEVATION
NORTHWEST WINGWALL

SCALE: 1/4" = 1'-0"



SECTION
NORTHWEST WINGWALL

SCALE: 1/4" = 1'-0"

1/4" = 1'-0"
1' 0 2' 4' 8'

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
West Trenton, NJ

CONTROL SECTION			JOB NO.
DES. BY	S. TRELLES	CHK. BY	S. DIAZ
DWN. BY	S. TRELLES		
EST. BY	S. TRELLES	CHK. BY	S. DIAZ
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ $FILES$

UNION COUNTY DIVISION OF ENGINEERING

NORTHWEST WINGWALL

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

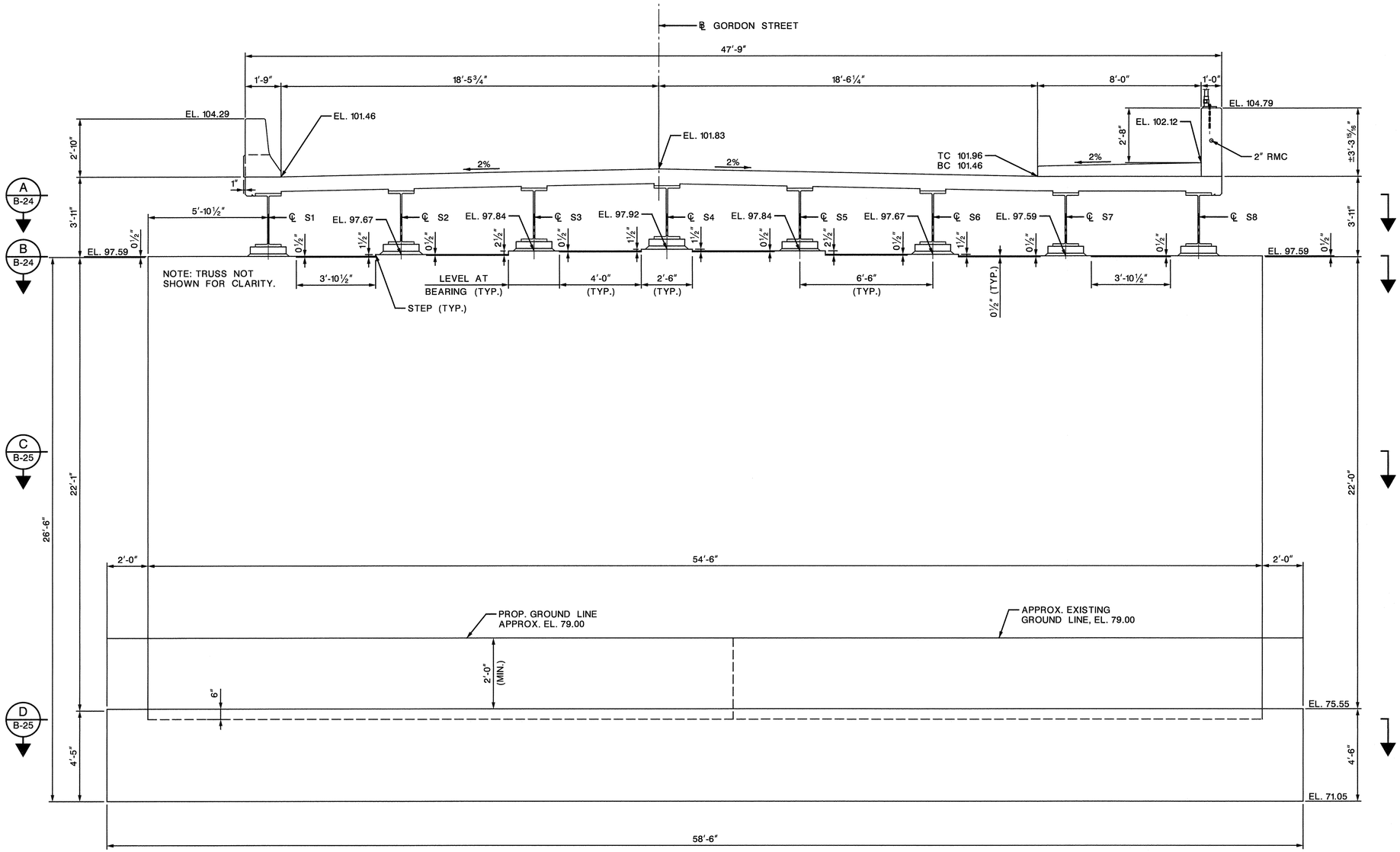
REVISION	BY	C'K'D	DATE

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

BRIDGE
SHEET NO. B-22 OF B-41

66
85



PROPOSED PIER ELEVATION
LOOKING NORTH
SCALE: ⅜" = 1'-0"

NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. FOR PIER SECTIONS, SEE SHEETS B-24 AND B-25.
3. FOR PIER DETAILS, SEE SHEET B-26.

3/8" = 1'-0"
1' 0 2' 4' 8'

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
West Trenton, NJ

CONTROL SECTION		JOB NO.	
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. DIAZ	CHK. BY	S. TRELLES
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ $FILES$

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

PROPOSED PIER ELEVATION AT SOUTH END

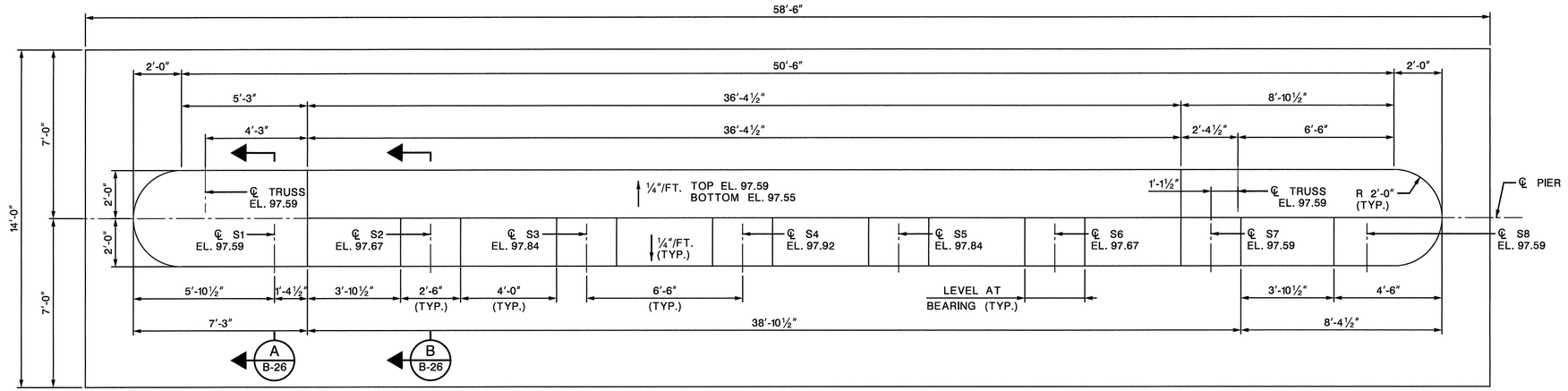
REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

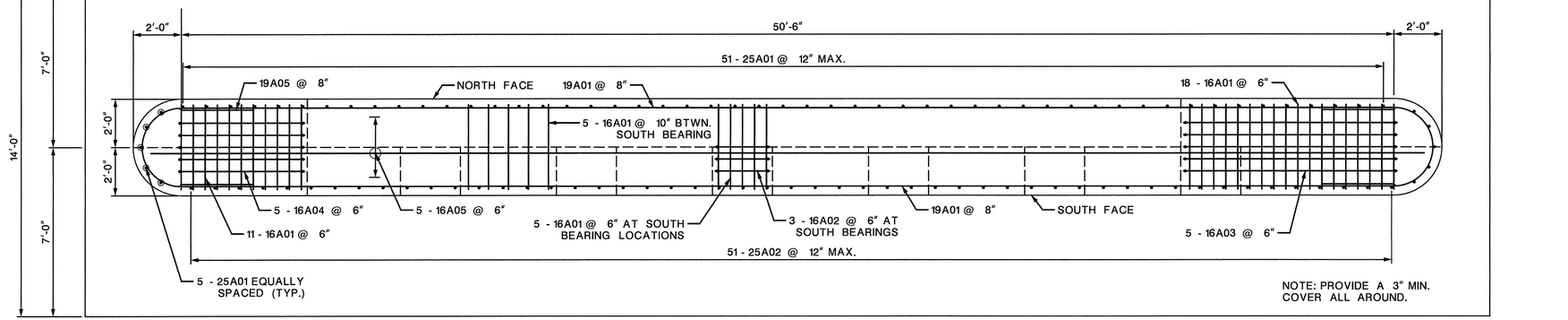
SCALE : AS SHOWN

BRIDGE
SHEET NO. B-23 OF B-41

67
85



SECTION A / B-23
SCALE: ⅜" = 1'-0"



SECTION B / B-23
SCALE: ⅜" = 1'-0"

NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. FOR PIER ELEVATION, SEE SHEET B-23.
3. FOR PIER DETAILS, SEE SHEET B-26.
4. REINFORCEMENT STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH ASTM A775.
5. UNLESS OTHERWISE NOTED, PROVIDE 2" MINIMUM COVER FOR THE REINFORCEMENT STEEL AT CONSTRUCTION JOINTS.
6. CONTRACTOR SHALL ADJUST REINFORCING STEEL SPACING, AS REQUIRED, TO ACCOMMODATE THE ANCHOR BOLT LAYOUT.

3/8" = 1'-0"
1' 0 2' 4' 8'

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
West Trenton, NJ

CONTROL SECTION		JOB NO.	
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. DIAZ	CHK. BY	S. TRELLES
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ $FILES$

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

PROPOSED PIER SECTIONS 1 OF 2

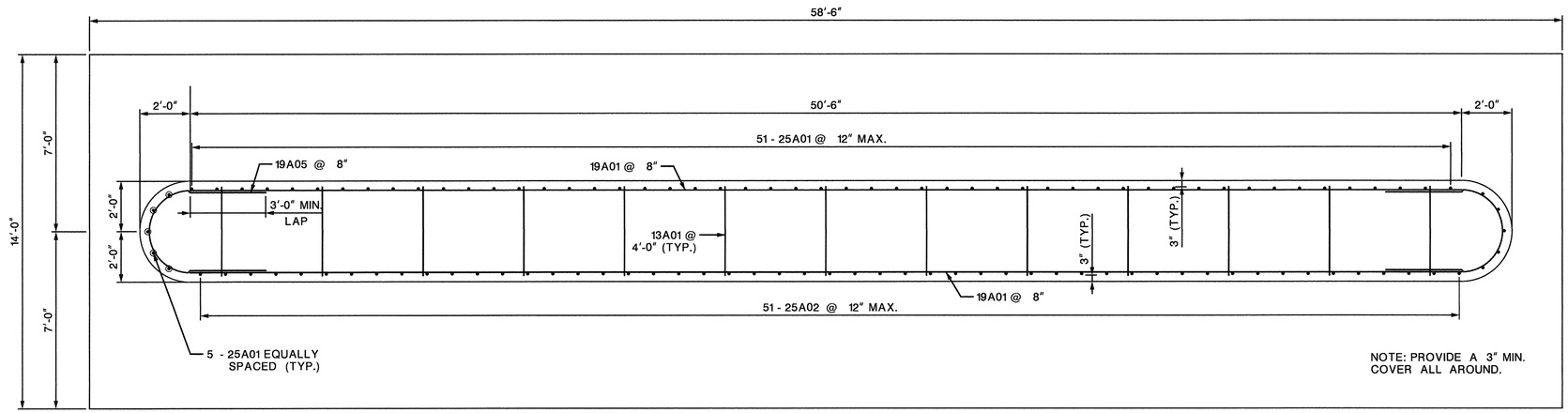
REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

BRIDGE SHEET NO. B-24 OF B-41

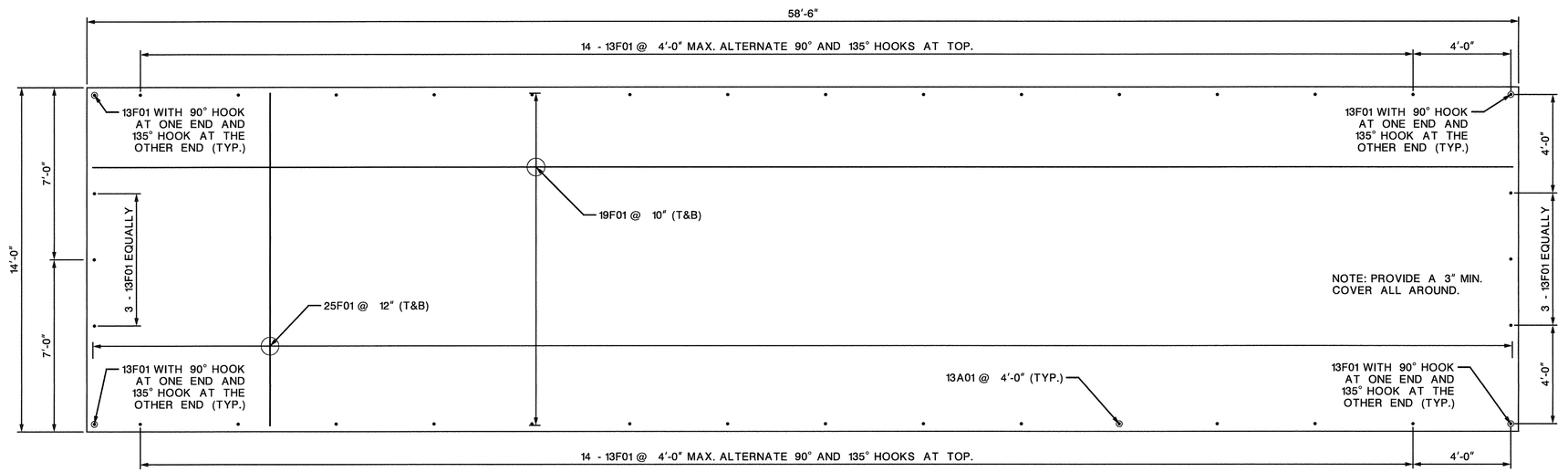
68
85



SECTION C
SCALE: 3/8" = 1'-0"
B-23

NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. FOR PIER ELEVATION, SEE SHEET B-23.
3. FOR PIER DETAILS, SEE SHEET B-26.
4. REINFORCEMENT STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH ASTM A775.
5. UNLESS OTHERWISE NOTED, PROVIDE 2" MINIMUM COVER FOR THE REINFORCEMENT STEEL AT CONSTRUCTION JOINTS.
6. CONTRACTOR SHALL ADJUST REINFORCING STEEL SPACING, AS REQUIRED, TO ACCOMMODATE THE ANCHOR BOLT LAYOUT.



SECTION D
SCALE: 3/8" = 1'-0"
B-23

3/8" = 1'-0"
1' 0 2' 4' 8'

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
West Trenton, NJ

CONTROL SECTION		JOB NO.	
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. DIAZ	CHK. BY	S. TRELLES
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ $FILES$

UNION COUNTY DIVISION OF ENGINEERING

PROPOSED PIER SECTIONS 2 OF 2

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

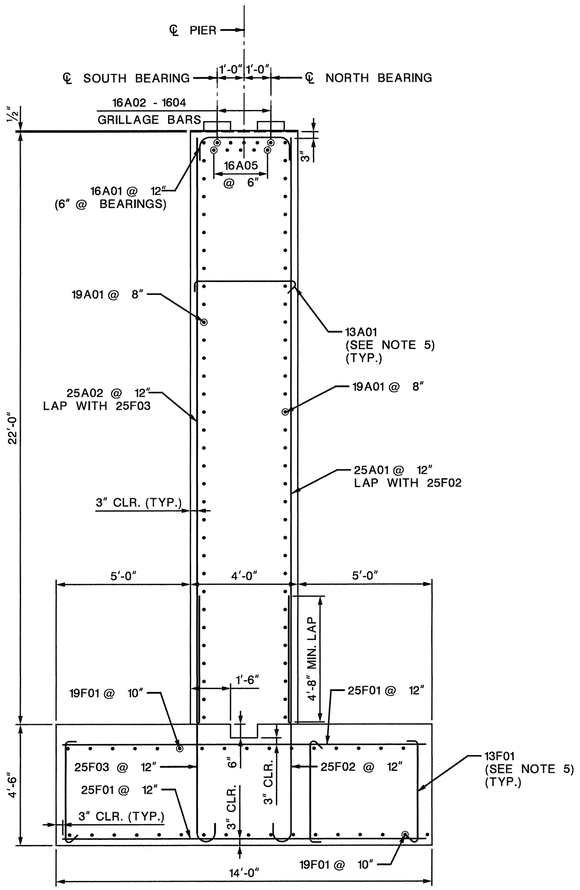
REVISION	BY	C'K'D	DATE

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

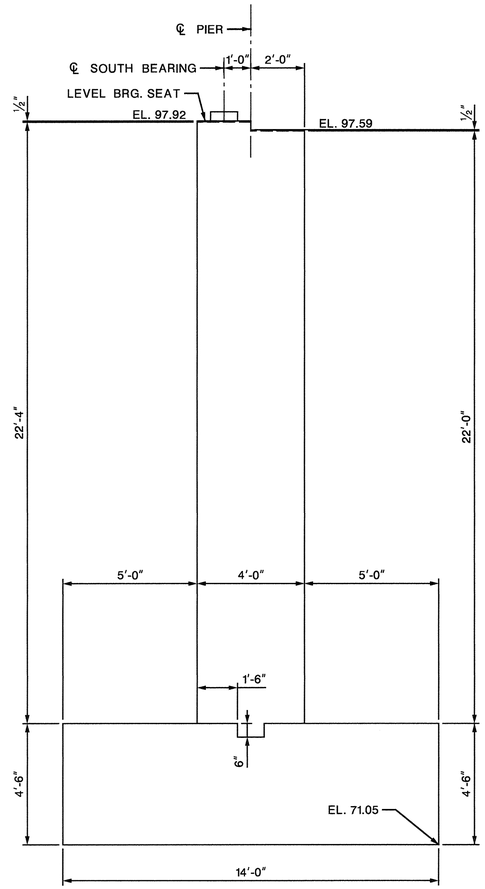
SCALE : AS SHOWN

BRIDGE
SHEET NO. B-25 OF B-41

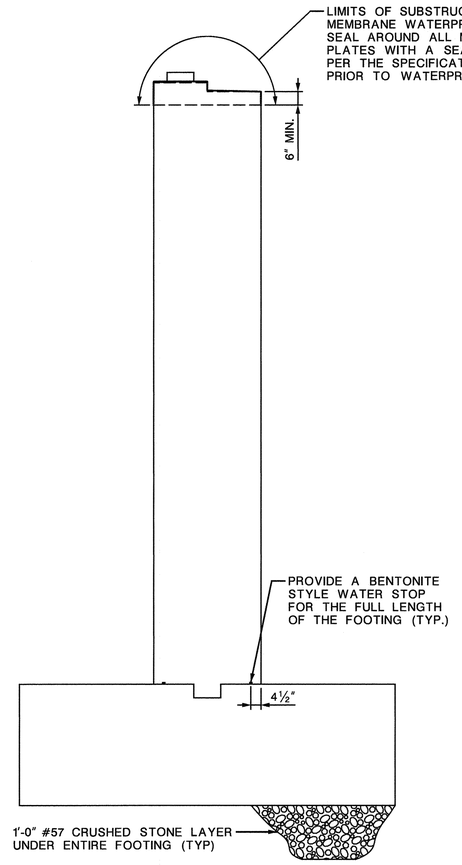
69
85



SECTION A (B-24)
SCALE: ⅜" = 1'-0"



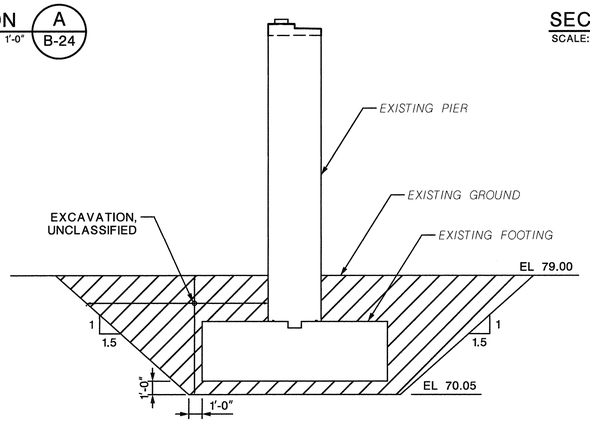
SECTION B (B-24)
SCALE: ⅜" = 1'-0"



DETAIL 1 (B-26)
SCALE: ⅜" = 1'-0"

NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. FOR PIER ELEVATION, SEE SHEET B-23.
3. FOR PIER SECTIONS, SEE SHEETS B-24 AND B-25.
4. REINFORCEMENT STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH ASTM A775.
5. TIE TOP AND BOTTOM MATS OF REINFORCING STEEL WITH #4 TIE BAR AT A MAXIMUM SPACING OF 4'-0" IN BOTH DIRECTIONS. PROVIDE TIE BARS WITH 90° HOOK AT ONE END AND 135° HOOK AT THE OTHER END. ALTERNATE 90° AND 135° HOOKS AT TOP IN ALTERNATE TIES.
6. UNLESS OTHERWISE NOTED, PROVIDE 2" MINIMUM COVER FOR THE REINFORCEMENT STEEL AT CONSTRUCTION JOINTS.



NOTE: EXISTING PIER, WALL AND FOOTING DIMENSIONS UNKNOWN, ASSUMED TO BE SIMILAR TO PROPOSED INSTALLATIONS

PIER EXCAVATION DETAILS
N.T.S.

QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY
202015P	EXCAVATION, REGULATED MATERIAL	CY	510
302060P	COARSE AGGREGATE, SIZE NO. 57	CY	36
504006P	REINFORCEMENT STEEL, EPOXY-COATED	LBS	24100
504016P	CONCRETE FOOTING, HPC	CY	140
504030P	CONCRETE PIER SHAFT, HPC	CY	180
504036P	EPOXY WATERPROOFING	SY	37

3/8" = 1'-0"
1' 0 2' 4' 8'

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
West Trenton, NJ

CONTROL SECTION		JOB NO.	
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. TRELLES	CHK. BY	S. DIAZ
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ $FILES$

UNION COUNTY DIVISION OF ENGINEERING

PROPOSED PIER DETAILS

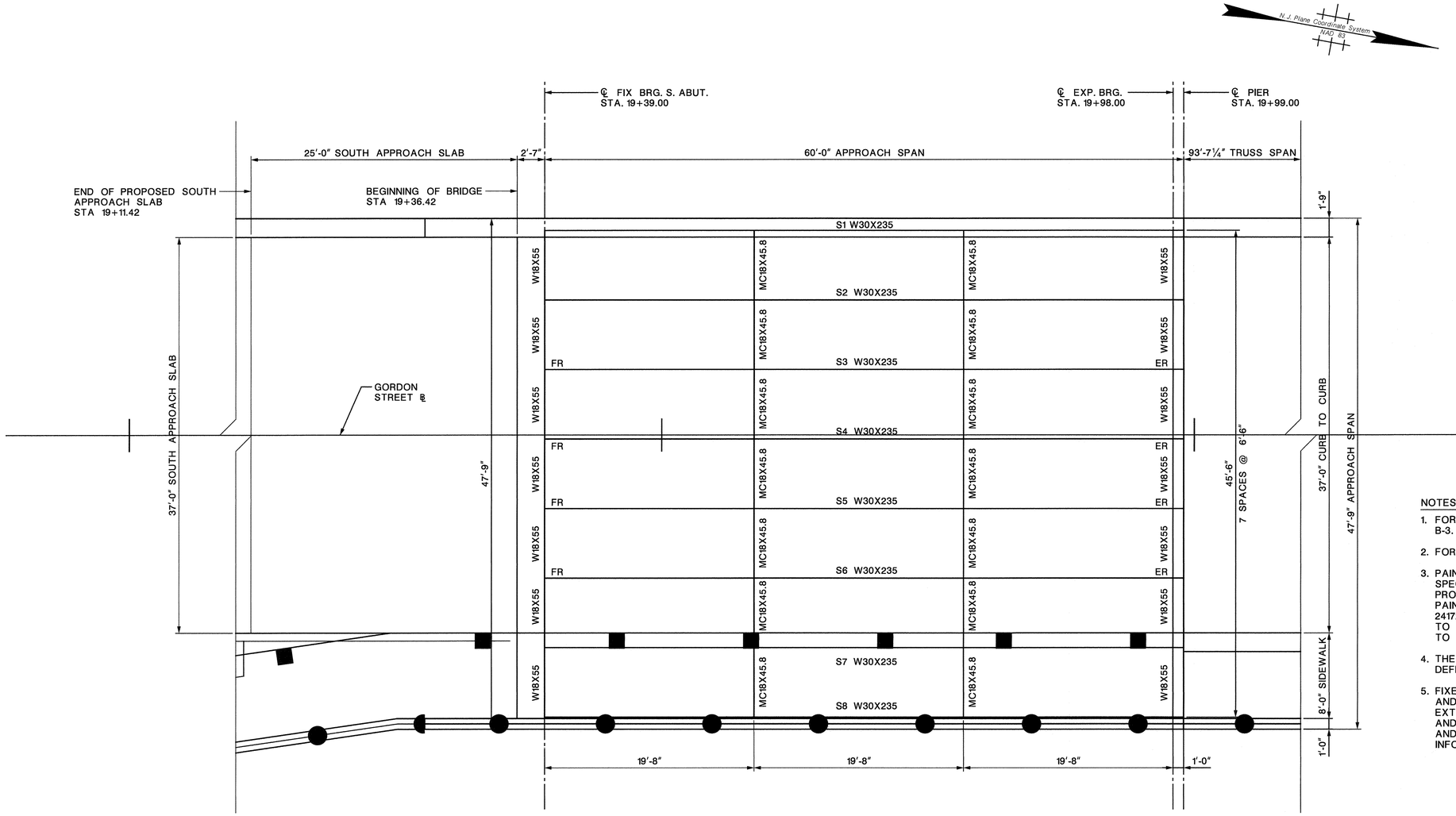
REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

REVISION	BY	C'K'D	DATE

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN
BRIDGE
SHEET NO. B-26 OF B-41

70
85



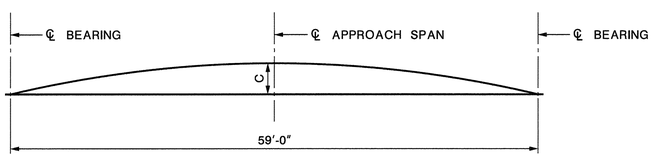
FRAMING PLAN

SCALE: ⅜" = 1'-0"

TOP ELEVATION AT CENTER LINE OF BEAM		
BEAM NO.	ELEVATION AT ℄ BRG SOUTH ABUTMENT	ELEVATION AT ℄ BRG PIER
S1	95.79	100.66
S2	95.90	100.78
S3	96.03	100.91
S4	96.15	101.02
S5	96.02	100.89
S6	95.89	100.76
S7	95.78	100.66
S8	95.78	100.66

NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. FOR STRUCTURAL STEEL DETAILS, SEE SHEET B-30.
3. PAINT PROPOSED STEEL IN ACCORDANCE WITH STANDARD SPECIFICATIONS, AND AS MAY BE MODIFIED BY SPECIAL PROVISIONS. USE AN INORGANIC ZINC, EPOXY, URETHANE (IEUJ PAINT SYSTEM). FINISH COAT COLOR: FEDERAL CHIP NUMBER 24172 (FOLIAGE GREEN). APPLY ONLY A PRIME COAT OF PAINT TO THE TOP FLANGE OF STRINGERS AND END DIAPHRAGMS, AND TO SHEAR STUDS.
4. THE DIMENSION "C" IN THE CAMBER TABLE ACCOUNTS FOR THE DEFLECTION DUE TO THE SELF WEIGHT OF THE BEAM.
5. FIXED AND EXPANSION BEARINGS BENEATH STRINGERS S3, S4, S5, AND S6 SHALL BE RESTRAINED IN THE LATERAL DIRECTION WITH EXTENDED SOLE PLATES AND EXTENDED ANCHOR RODS. FIXED AND EXPANSION BEARINGS WITH RESTRAINS ARE DENOTED FR AND ER RESPECTIVELY. SEE DETAILS ON SHEET B-35 FOR MORE INFORMATION.



NOTE: POSITIVE VALUES INDICATE UPWARD DEFLECTION. THE ERECTION CAMBER SHALL BE CHECKED BY THE CONTRACTOR IN THE FIELD TO ESTABLISH PROPER DECK ELEVATIONS.

CAMBER DIAGRAM

SCALE: N.T.S.

CAMBER TABLE	
BEAM NO.	DIMENSION (C) AT ℄ SPAN (IN)
S1	1
S2	1⅛
S3	1⅛
S4	1⅛
S5	1⅛
S6	1⅛
S7	1⅛
S8	1

3/16" = 1'-0"

1' 0 2' 4' 8' 16'

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
West Trenton, NJ

CONTROL SECTION		JOB NO.	
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. DIAZ	CHK. BY	S. TRELLES
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ $FILE$

UNION COUNTY DIVISION OF ENGINEERING

APPROACH SPAN FRAMING PLAN

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

REVISION	BY	C'K'D	DATE

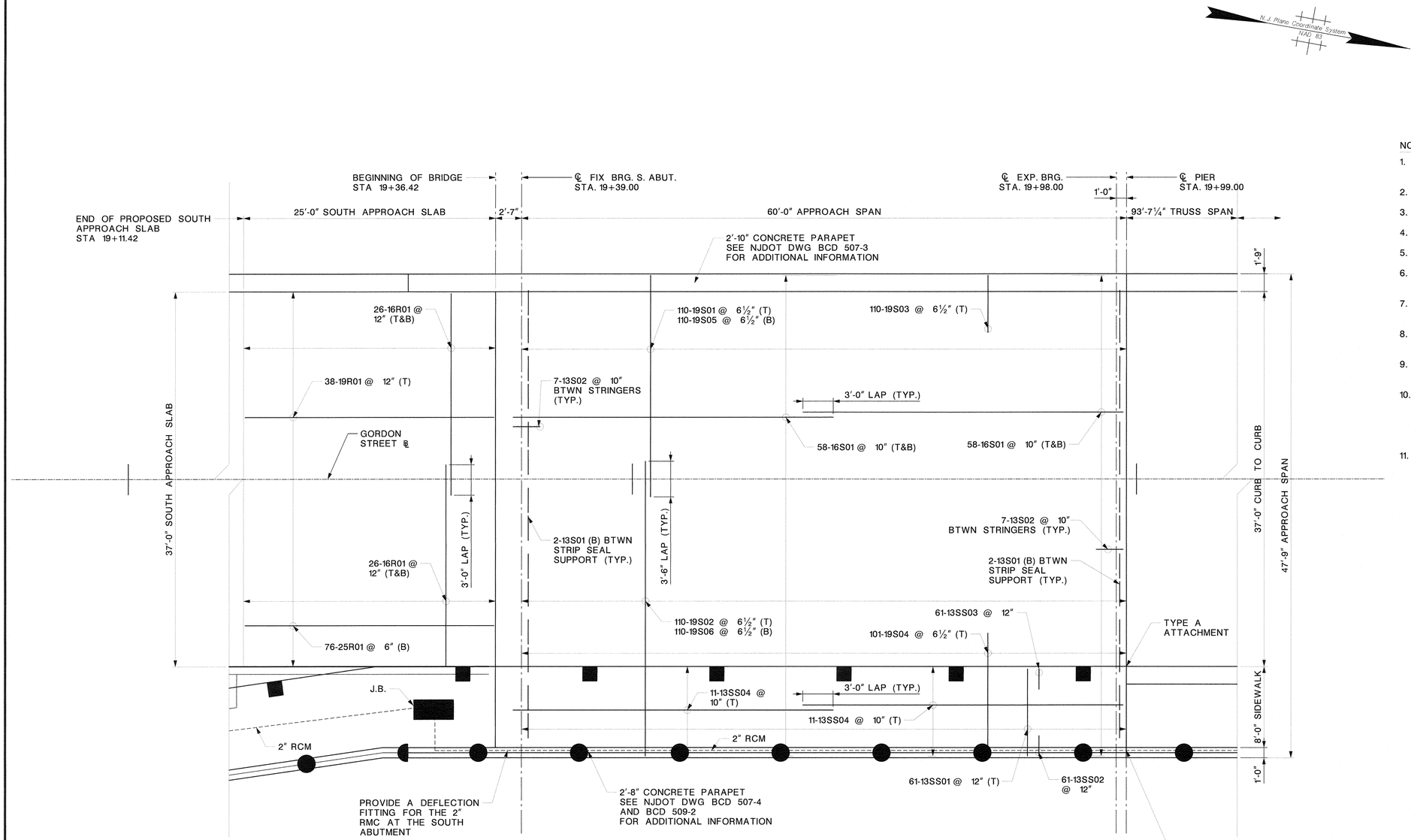
HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

BRIDGE SHEET NO. B-27 OF B-41

71
85



APPROACH SPAN
DECK REINFORCEMENT PLAN

SCALE: 3/16" = 1'-0"

NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. FOR DECK REINFORCEMENT SECTION, SEE SHEET B-4.
3. FOR FRAMING PLAN, SEE SHEET B-27.
4. FOR HAUNCH DETAILS, SEE SHEET B-36.
5. FOR BAR SCHEDULE, SEE SHEET B-39.
6. REINFORCEMENT STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH ASTM A775.
7. UNLESS OTHERWISE NOTED, PROVIDE 2" MINIMUM SIDE COVER FOR THE REINFORCEMENT STEEL.
8. UNLESS OTHERWISE NOTED, PROVIDE 2" MINIMUM COVER FOR THE REINFORCEMENT STEEL AT CONTRACTION JOINTS.
9. PERMANENT STAY-IN-PLACE FORMS ARE NOT PERMITTED IN EXTERIOR BAYS.
10. 3/16" OPEN DEFLECTION JOINTS SHALL BE PROVIDED IN THE PARAPETS AT INTERVALS NOT EXCEEDING 20'-0", AND CONTRACTION JOINTS SHALL BE PROVIDED AT THE MIDPOINT BETWEEN THE OPEN JOINTS. SEE NJDOT DWG. BCD 507-3 FOR ADDITIONAL INFORMATION.
11. CONTRACTION JOINTS SHALL BE PROVIDED IN SIDEWALKS AT LOCATION OF THE 3/16" OPEN PARAPET DEFLECTION JOINTS. CONTRACTION JOINTS SHALL BE PARAFFIN COATED AND COPED AS PER NJDOT BCD 507-5. OPEN JOINTS SHALL BE COPED AS PER NJDOT BCD 507-5.

3/16" = 1'-0"
1' 0 2' 4' 8' 16'

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
West Trenton, NJ

CONTROL SECTION		JOB NO.	
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. DIAZ	CHK. BY	S. TRELLES
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ 28_Deck Reinforcement Plan.dgn

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

APPROACH SPAN DECK REINFORCEMENT PLAN

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

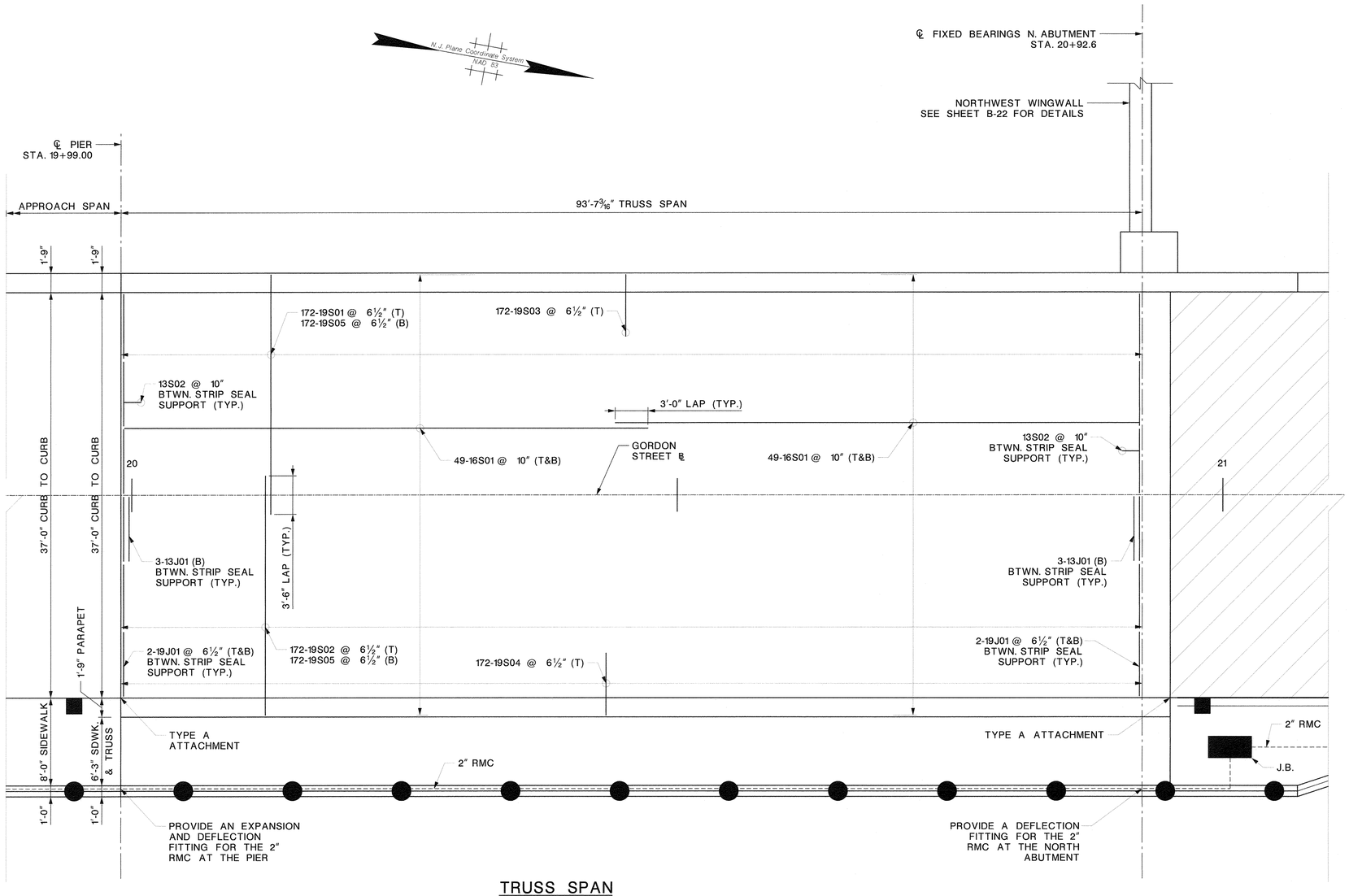
HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

BRIDGE SHEET NO.B-28OFB-41

72
85



TRUSS SPAN
DECK REINFORCEMENT PLAN

SCALE: 3/16" = 1'-0"

NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. FOR DECK REINFORCEMENT SECTION, SEE SHEET B-5.
3. REINFORCEMENT STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH ASTM A775.
4. UNLESS OTHERWISE NOTED, PROVIDE 2" MINIMUM SIDE COVER FOR THE REINFORCEMENT STEEL.
5. UNLESS OTHERWISE NOTED, PROVIDE 2" MINIMUM COVER FOR THE REINFORCEMENT STEEL AT CONTRACTION JOINTS.
6. PERMANENT STAY-IN-PLACE FORMS ARE NOT PERMITTED IN EXTERIOR BAYS.
7. 3/16" OPEN DEFLECTION JOINTS SHALL BE PROVIDED IN THE PARAPETS AT INTERVALS NOT EXCEEDING 20'-0", AND CONTRACTION JOINTS SHALL BE PROVIDED AT THE MIDPOINT BETWEEN THE OPEN JOINTS. SEE NJDOT DWG. BCD 507-3 FOR ADDITIONAL INFORMATION.
8. CONTRACTION JOINTS SHALL BE PROVIDED IN SIDEWALKS AT LOCATION OF THE 3/16" OPEN PARAPET DEFLECTION JOINTS. CONTRACTION JOINTS SHALL BE PARAFFIN COATED AND COPED AS PER NJDOT BCD 507-5. OPEN JOINTS SHALL BE COPED AS PER NJDOT BCD 507-5.
9. THE GUIDE RAIL ON THE APPROACH SPAN SHALL BE MODIFIED AS FOLLOWS: THE ¾"X2½" RAIL BOLT SLOTS OF THE THRIE BEAM RAIL SPLICE AT THE FIRST POST, NEAR THE EXPANSION JOINT, SHALL BE REPLACED WITH ¾"X3½" RAIL BOLT SLOTS.

3/16" = 1'-0"
1' 0 2' 4' 8' 16'

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
West Trenton, NJ

CONTROL SECTION		JOB NO.	
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. DIAZ	CHK. BY	S. TRELLES
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ 29_Truss Plan.dgn

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

TRUSS SPAN DECK REINFORCEMENT PLAN

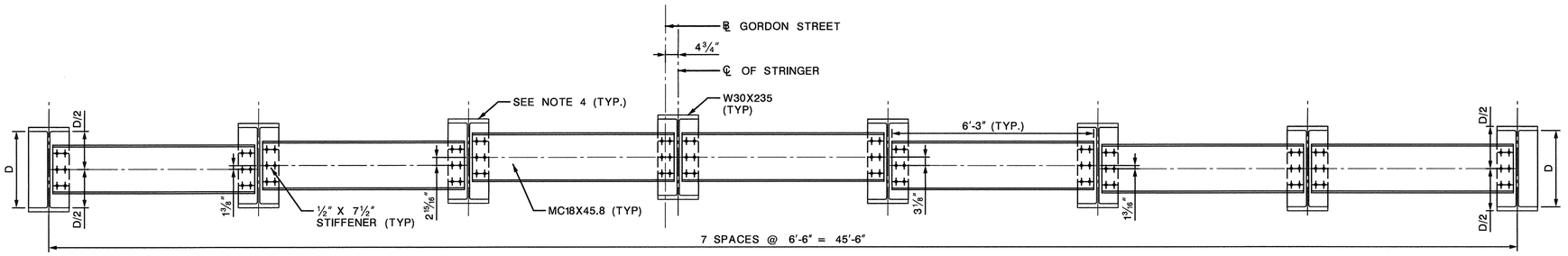
REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

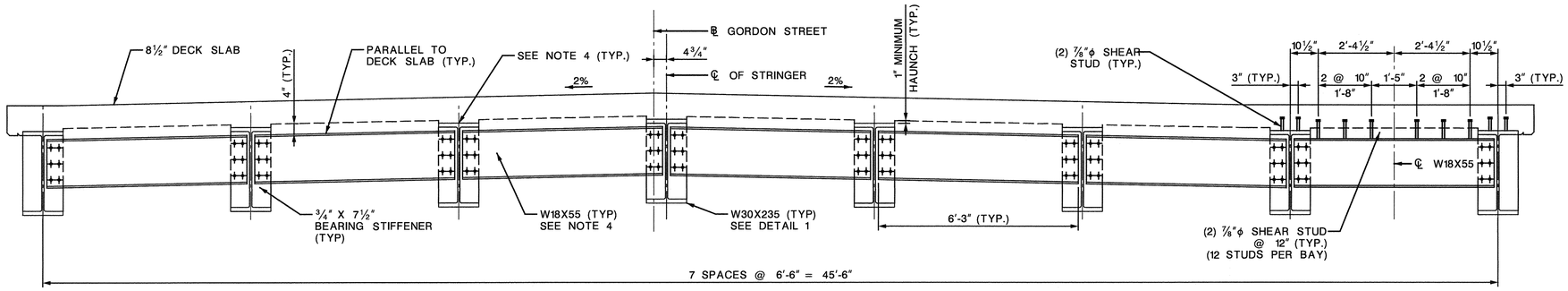
BRIDGE
SHEET NO. B-29 OF B-41

73
85



INTERMEDIATE DIAPHRAGMS

SCALE: ½" = 1'-0"

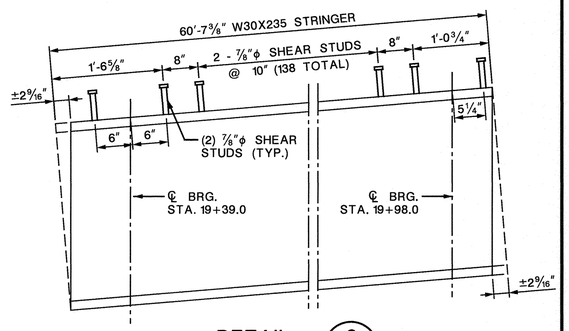


END DIAPHRAGMS

SCALE: ½" = 1'-0"

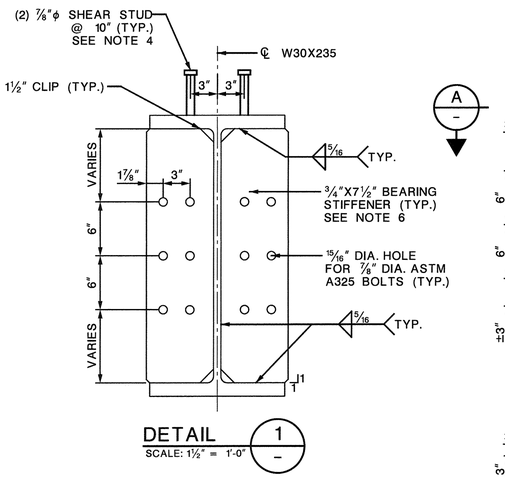
NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
2. FOR FRAMING PLAN, SEE SHEET B-27.
3. FOR JOINT DETAILS, SEE SHEET B-33.
4. THE STRUCTURAL MEMBERS AND CONNECTIONS SHALL BE PAINTED AS PER THE SPECIFICATIONS. APPLY ONLY A PRIME COAT OF PAINT TO THE TOP FLANGE OF STRINGERS AND END DIAPHRAGMS, AND TO SHEAR STUDS.
5. UNLESS OTHERWISE NOTED, ALL BOLTS SHALL BE ⅞"ϕ ASTM A325.
6. BEAM ENDS AND BEARING STIFFENERS SHALL BE NORMAL TO THE BEAM FLANGE.
7. ALL STUDS TO BE AASHTO M169 (ASTM-A-108) STEEL AND SHALL BE ELECTRIC ARC END-WELD WITH COMPLETE FUSION.
8. SEE B-4 FOR SHEAR STUDS DIMENSIONS ALONG THE STRINGERS.



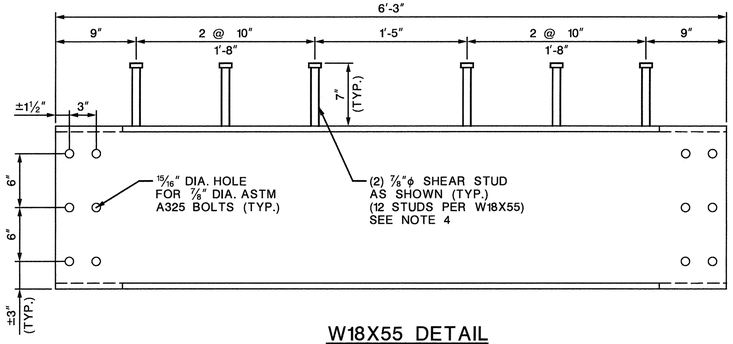
DETAIL 2

SCALE: N.T.S.



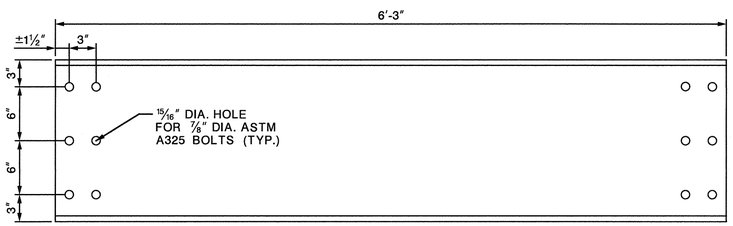
DETAIL 1

SCALE: 1½" = 1'-0"



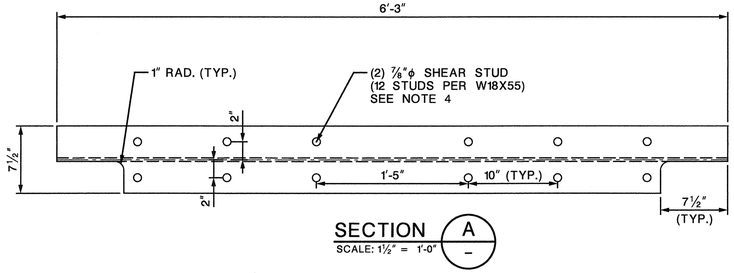
W18X55 DETAIL

SCALE: 1½" = 1'-0"



MC18X45.8 DETAIL

SCALE: 1½" = 1'-0"



SECTION A

SCALE: 1½" = 1'-0"

QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY
506003P	STRUCTURAL STEEL (138,550 LBS)	LS	1
506012P	SHEAR CONNECTORS	UNIT	1336

1 1/2" = 1'-0" (1' 6" 0 1')

1/2" = 1'-0" (1' 0 1' 2' 4')

REVISION	BY	C'K'D	DATE

In Charge of
Designed by
Design Checked by
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Detail Checked by

Hardesty & Hanover
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West Trenton, NJ

CONTROL SECTION		JOB NO.	
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. DIAZ	CHK. BY	S. TRELLES
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ $FILES$

UNION COUNTY DIVISION OF ENGINEERING

APPROACH SPAN STRUCTURAL STEEL DETAILS

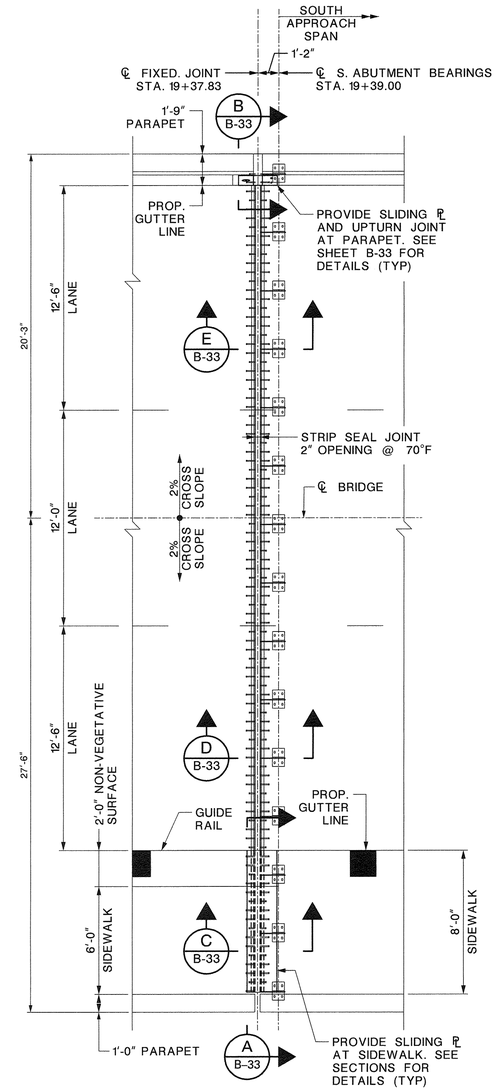
REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

BRIDGE SHEET NO. B-30 OF B-41

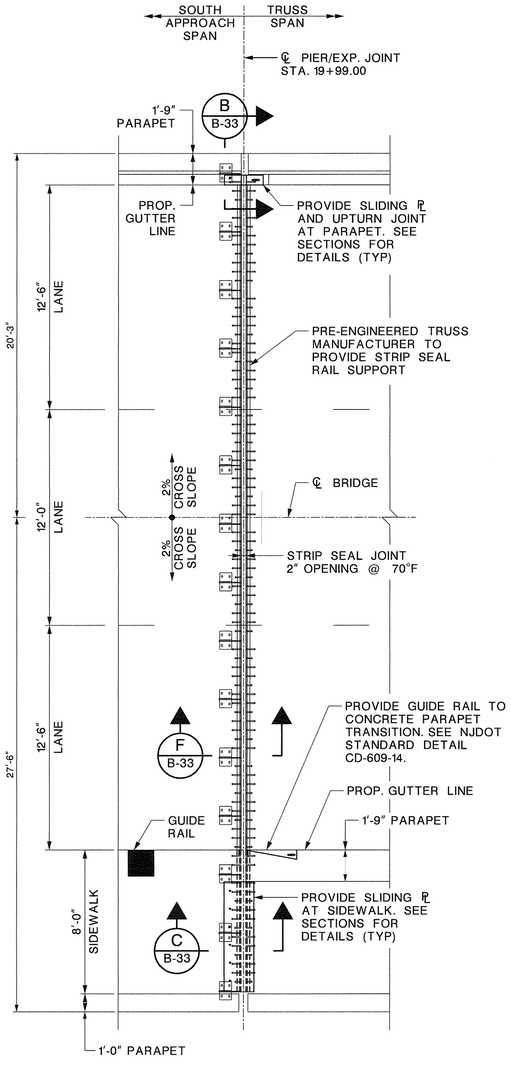
74
85



NOTE: CHAIN-LINK FENCE ON PARAPET NOT SHOWN FOR CLARITY

FIXED JOINT - SOUTH ABUTMENT

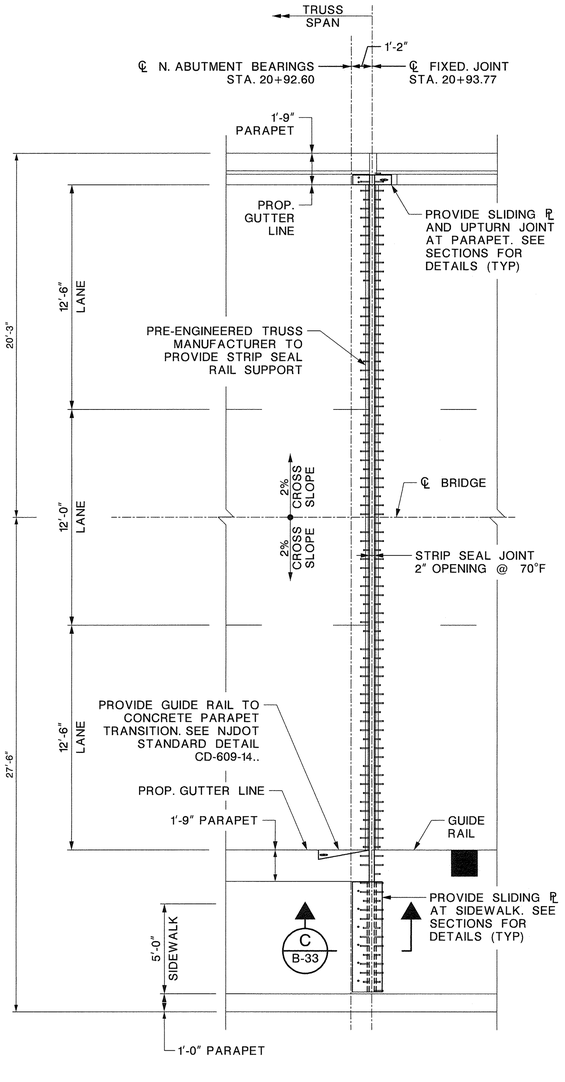
SCALE: ¼" = 1'-0"



NOTE: CHAIN-LINK FENCE ON PARAPET NOT SHOWN FOR CLARITY

EXPANSION JOINT - PIER

SCALE: ¼" = 1'-0"



NOTE: CHAIN-LINK FENCE ON PARAPET NOT SHOWN FOR CLARITY

FIXED JOINT - NORTH ABUTMENT

SCALE: ¼" = 1'-0"

NOTES:

1. VERIFY ALL DIMENSIONS TO INSURE ACCURACY OF THE EXPANSION JOINT PRIOR TO FABRICATION.
2. STEEL RAIL MATERIAL SHALL CONFORM TO AASHTO M270 GRADE 36 OR 50. HOT DIP GALVANIZE ALL ASSEMBLIES IN ACCORDANCE WITH ASTM-A123 AFTER FABRICATION.
3. INSTALL STRIP SEAL EXPANSION JOINT ASSEMBLY TO MATCH ROADWAY GRADE AND CROSS SLOPES.
4. NEOPRENE SEAL TO BE CONTINUOUS WITH NO SPLICES PERMITTED OVER THE ENTIRE WIDTH OF THE SUPERSTRUCTURE. BOND NEOPRENE STRIP SEAL TO STEEL EXTRUSION WITH APPROVED ADHESIVE.
5. INSTALLATION OPENINGS AT VARIOUS TEMPERATURES SHALL BE SUBMITTED ON FABRICATOR'S SHOP DRAWINGS.
6. ALL COSTS INCLUDING BUT NOT LIMITED TO STEEL EXTRUSIONS, ENTIRE LENGTH OF NEOPRENE STRIP SEAL, STRUCTURAL STEEL, CONNECTIONS, AUTOMATIC END WELDED STUDS, GALVANIZATION, AND ANY INCIDENTAL ITEMS SHALL BE INCLUDED IN THE PAY ITEM "STRIP SEAL EXPANSION JOINT ASSEMBLY".
7. FOR TYPICAL SUPPORT SPACING, DETAILS, AND STUD ARRANGEMENT, SEE SHEET B-33.
8. FOR ADDITIONAL DETAILS AND NOTES RELATED TO STRIP SEAL DECK JOINTS NOT SHOWN, REFER TO NJDOT STANDARD BRIDGE CONSTRUCTION DETAILS, STRIP SEAL DECK JOINTS, BCD-507-2 AND NJDOT STANDARD DRAWING PLATES 2.6-1, 2.7-1 THRU 2.7-5.

QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY
507015P	STRIP SEAL EXPANSION JOINT ASSEMBLY	LF	144

1/4" = 1'-0"

1' 0 2' 4' 8'

CONTROL SECTION		JOB NO.	
DES. BY	S. TRELLES	CHK. BY	S. DIAZ
DWN. BY	S. TRELLES		
EST. BY	S. TRELLES	CHK. BY	S. DIAZ
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

REVISION	BY	C'K'D	DATE

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

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engineering that moves you
West Trenton, NJ

UNION COUNTY DIVISION OF ENGINEERING

DECK JOINT PLAN

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL

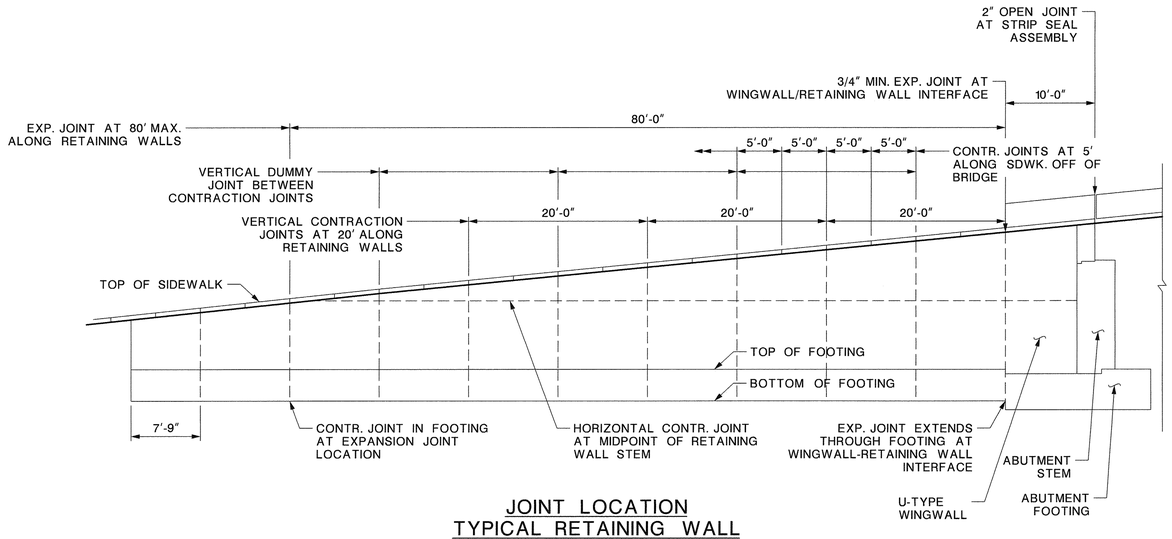
HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

BRIDGE SHEET NO. B-31 OF B-41

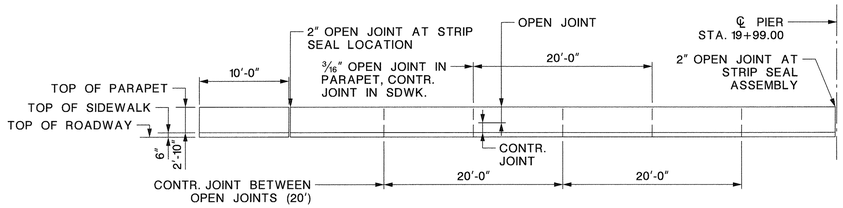
75
85

$DATE$ 31_Joint Plan.dgn



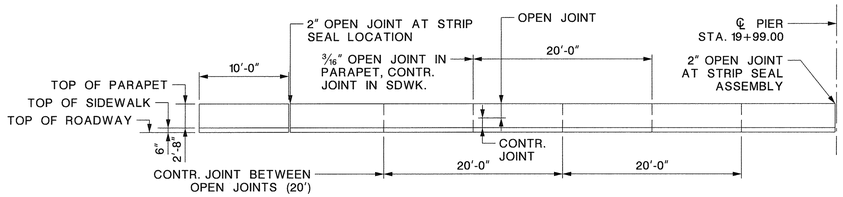
JOINT LOCATION
TYPICAL RETAINING WALL

SCALE: 1/8" = 1'-0"



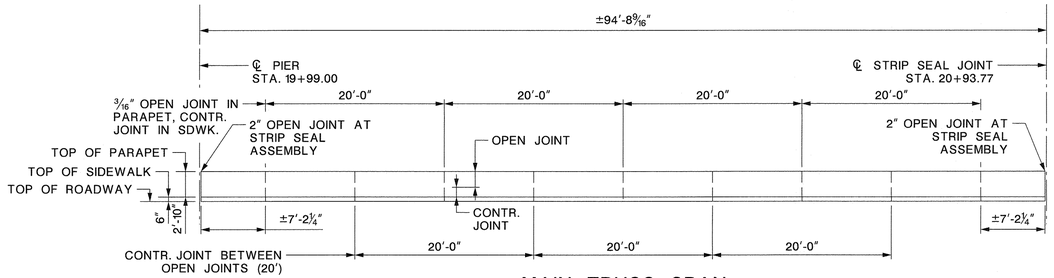
APPROACH SPAN
WEST PARAPET ELEVATION

SCALE: 1/8" = 1'-0"



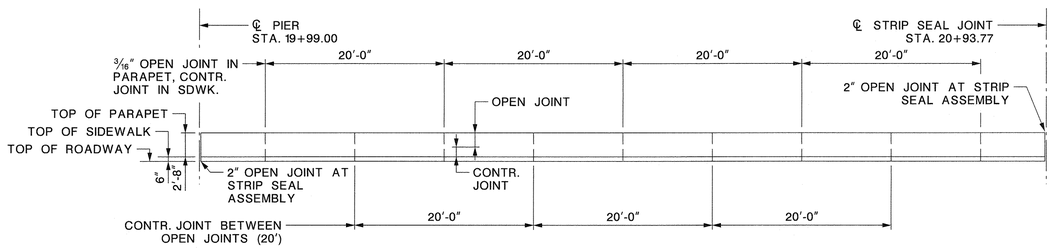
APPROACH SPAN
EAST PARAPET ELEVATION

SCALE: 1/8" = 1'-0"



MAIN TRUSS SPAN
WEST PARAPET ELEVATION

SCALE: 1/8" = 1'-0"



MAIN TRUSS SPAN
EAST PARAPET ELEVATION

SCALE: 1/8" = 1'-0"

1/8" = 1'-0"

1'0 2' 4' 8' 16'

NOTES:

1. FOR DETAILS REGARDING EXPANSION, CONTRACTION, AND CONSTRUCTION JOINTS, SEE SHEET B-34.
2. TYPICAL RETAINING WALL JOINT LOCATION PLAN SHALL APPLY TO ALL RETAINING WALLS. EXPANSION JOINTS SHALL BE INSTALLED ALONG WALLS AS SHOWN ON SHEETS B-17 THROUGH B-22.
3. MEASURE LENGTHS FOR SPACING OF JOINTS ON RETAINING WALLS ALONG FRONT FACE OF WALL STEM.
4. JOINT SPACING ALONG WALLS SHALL FOLLOW LAYOUT SHOWN ON THIS SHEET UNLESS NOTED ELSEWHERE.
5. 3/16" OPEN DEFLECTION JOINTS SHALL BE PROVIDED IN THE PARAPETS AT INTERVALS NOT EXCEEDING 20'-0", AND CONTRACTION JOINTS SHALL BE PROVIDED AT THE MIDPOINT BETWEEN THE OPEN JOINTS. SEE NJDOT DWG. BCD 507-3 FOR ADDITIONAL INFORMATION.
6. CONTRACTION JOINTS SHALL BE PROVIDED IN SIDEWALKS AT THE LOCATION OF THE 3/16" OPEN PARAPET DEFLECTION JOINTS. CONTRACTION JOINTS SHALL BE PARAFFIN COATED AND COPED AS PER NJDOT BCD 507-5. OPEN JOINTS SHALL BE COPED AS PER NJDOT 507-5.

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
West Trenton, NJ

CONTROL SECTION		JOB NO.	
DES. BY	S. TRELLES	CHK. BY	S. DIAZ
DWN. BY	S. TRELLES		
EST. BY	S. TRELLES	CHK. BY	S. DIAZ
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ 32_Joint Location Plan.dgn

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

JOINT LOCATION PLAN

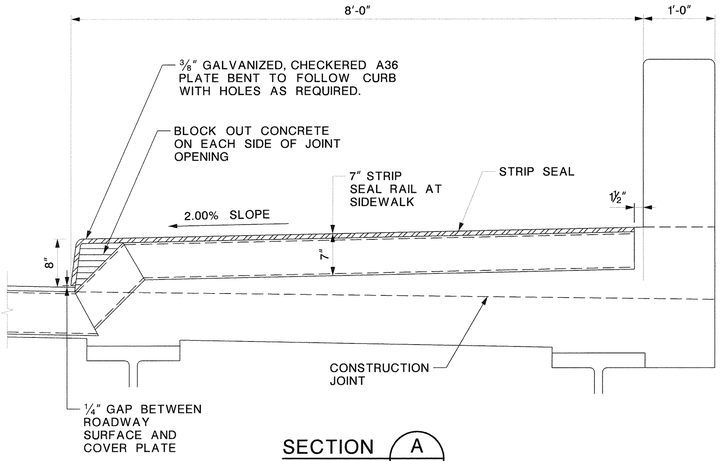
REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

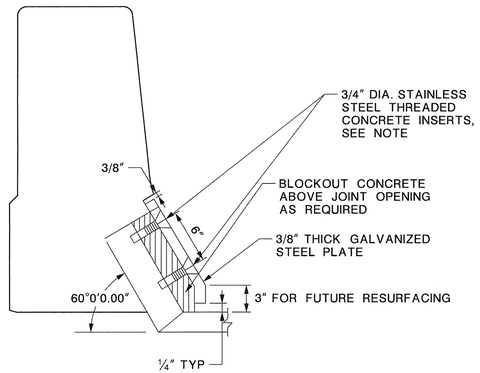
SCALE : AS SHOWN

BRIDGE
SHEET NO. B-32 OF B-41

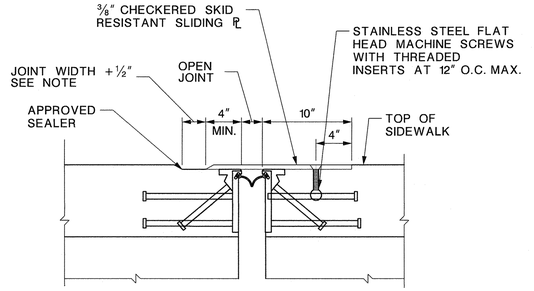
76
85



SECTION A
SCALE: 1" = 1'-0"
B-31

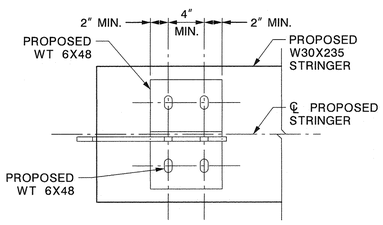


SECTION B
SCALE: 1½" = 1'-0"
B-31



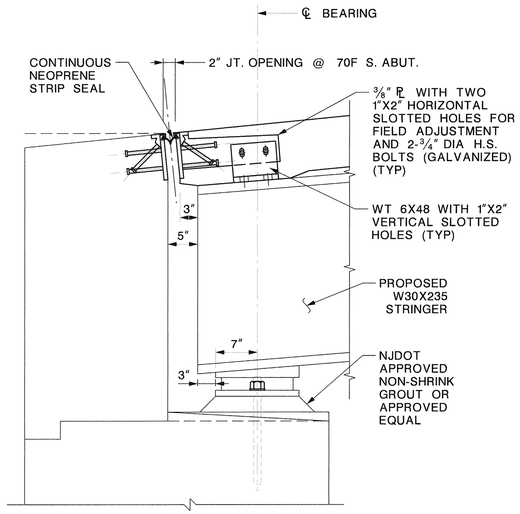
NOTE: PROPOSED CONCRETE DECK AND SIDEWALK REINFORCEMENT NOT SHOWN FOR CLARITY.

SECTION C
SCALE: 1½" = 1'-0"
B-31

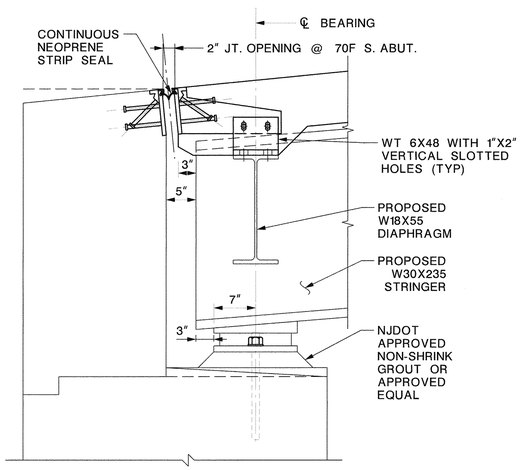


TYPICAL WT SUPPORT PLAN

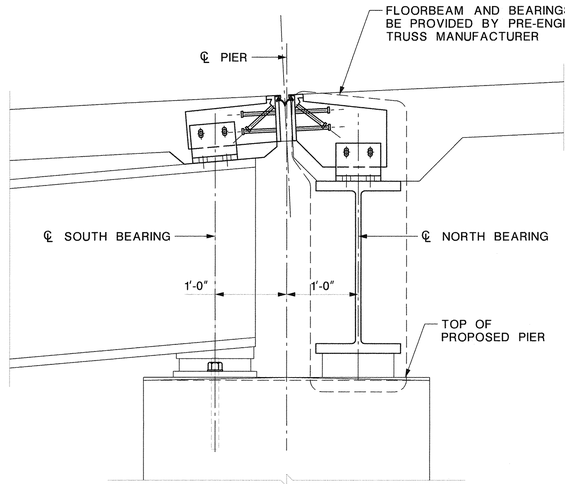
SCALE: 1½" = 1'-0"



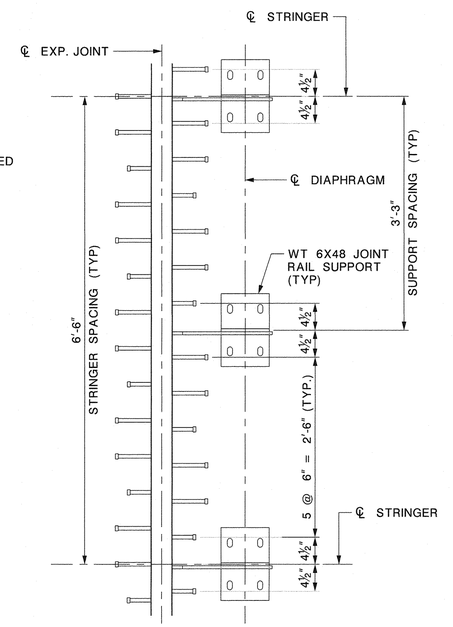
SECTION D
SCALE: 1" = 1'-0"
B-31



SECTION E
SCALE: 1" = 1'-0"
B-31



SECTION F
SCALE: 1" = 1'-0"
B-31



NOTE: SUPPORTS AT SOUTH ABUTMENT SHOWN, SPACING AT NORTH AND PIER SIMILAR.

TYPICAL SUPPORT SPACING PLAN

SCALE: 1" = 1'-0"

NOTES:

1. VERIFY ALL DIMENSIONS TO ENSURE ACCURACY OF THE EXPANSION JOINT PRIOR TO FABRICATION.
2. ALL STUDS TO BE ASTM-A108 STEEL AND SHALL BE ELECTRIC ARC END-WELD WITH COMPLETE FUSION.
3. HOT DIP GALVANIZE ALL ASSEMBLIES IN ACCORDANCE WITH ASTM-A123 AFTER FABRICATION.
4. FORM JOINT OPENING AS DIRECTED BY THE FIELD ENGINEER.
5. NEOPRENE SEAL TO BE CONTINUOUS WITH NO SPLICES PERMITTED OVER THE ENTIRE WIDTH OF THE SUPERSTRUCTURE AND FIELD INSTALLED BY CONTRACTOR USING DELASTIBOND LUBRICANT/ADHESIVE.
6. FOR TYPICAL GLAND FORM, RAIL SHAPE, STUD ARRANGEMENT, AND SUPPORT DETAILS NOT SPECIFIED HEREIN, REFER TO NJDOT BCD-507-2.
7. REINFORCEMENT IN DECK, PARAPETS, AND ABUTMENTS NOT SHOWN FOR CLARITY.
8. APPROACH SPAN DECK BARS 13S01 AND 13S02 ARE NOT SHOWN FOR CLARITY. SEE BAR SCHEDULE FOR ADDITIONAL INFORMATION.

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
West Trenton, NJ

CONTROL SECTION		JOB NO.	
DES. BY	S. TRELLES	CHK. BY	S. DIAZ
DWN. BY	S. TRELLES		
EST. BY	S. TRELLES	CHK. BY	S. DIAZ
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ 33_Joint Details 1.dgn

1" = 1'-0"
1' 6" 0 1' 2'

1 1/2" = 1'-0"
1' 6" 0 1'

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

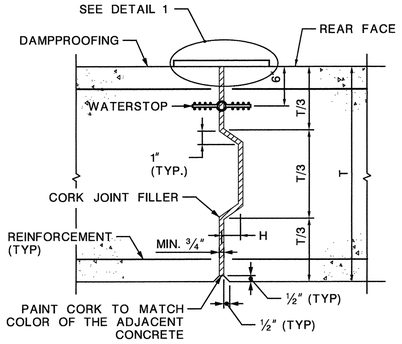
JOINT DETAILS 1 OF 2

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

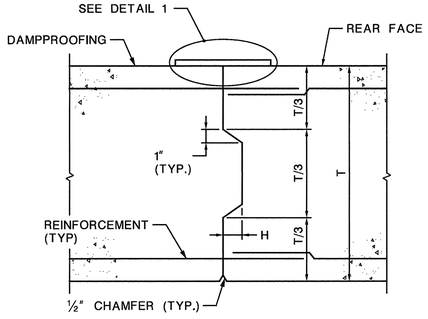
HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN
BRIDGE
SHEET NO. B-33 OF B-41

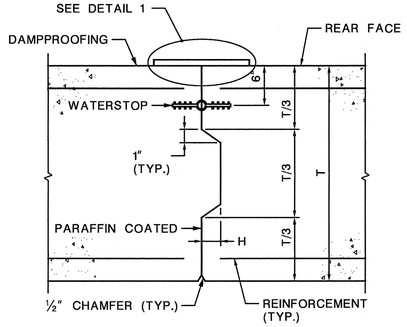
77
85



EXPANSION JOINT DETAIL
N.T.S.



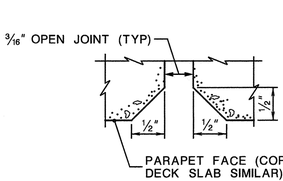
CONSTRUCTION JOINT
N.T.S.



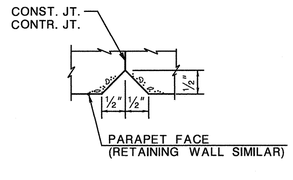
CONTRACTION JOINT
N.T.S.

NOTE:

H = 2" FOR JOINTS BELOW HEADBLOCK AND 3" FOR ALL OTHER JOINTS

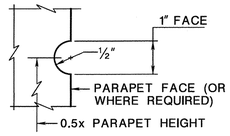


OPEN JOINT

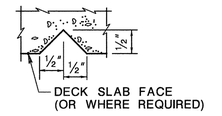


CONTR. OR CONST. JOINT
(CONTRACTION JOINT PARAFFIN COATED)

PARAPET SCORING DETAILS
N.T.S.

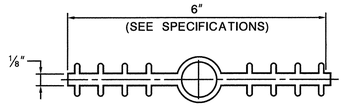


HORIZONTAL DUMMY JOINT



VERTICAL DUMMY JOINT

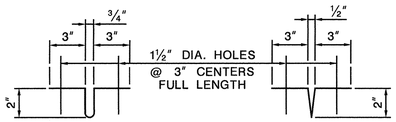
PARAPET SCORING DETAILS
N.T.S.



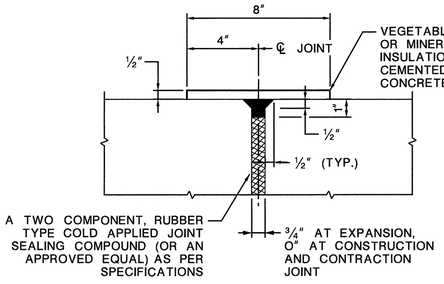
PLASTIC WATER STOP
N.T.S.

NOTE:

DIMENSIONS OF WATER STOPS ARE NOMINAL AND MAY VARY BY MANUFACTURER.



16 OZ. COPPER WATER STOP - 10" WIDE
N.T.S.



DETAIL 1
N.T.S.

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
West Trenton, NJ

CONTROL SECTION		JOB NO.	
DES. BY	S. TRELLES	CHK. BY	S. DIAZ
DWN. BY	S. TRELLES		
EST. BY	S. TRELLES	CHK. BY	S. DIAZ
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA
IN CHARGE OF B. RIEGEL			

$DATE$ $FILES$

UNION COUNTY DIVISION OF ENGINEERING

JOINT DETAILS 2 OF 2

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

REVISION	BY	C'K'D	DATE

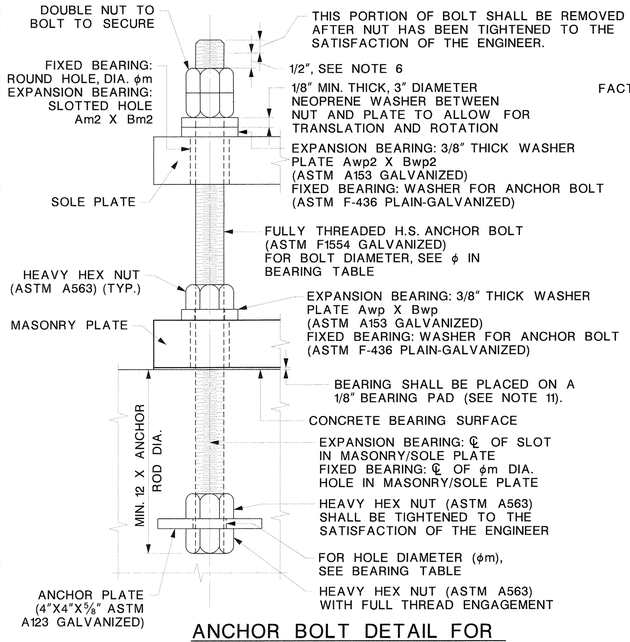
HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

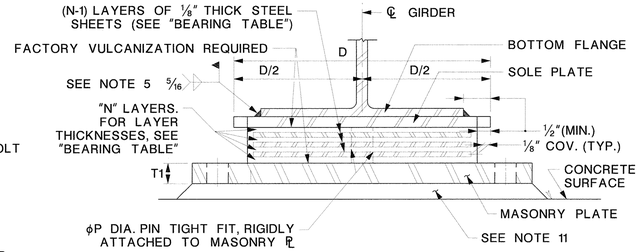
BRIDGE
SHEET NO. B-34 OF B-41

78
85

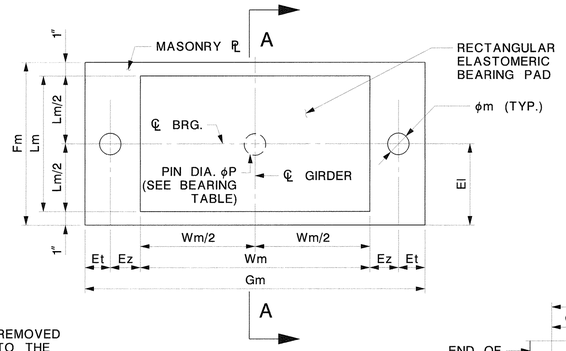


ANCHOR BOLT DETAIL FOR BEARINGS WITH SIDE RESTRAINT

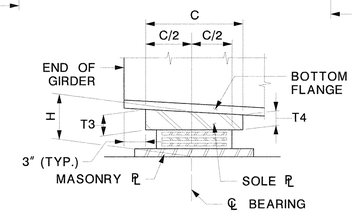
N.T.S.



ELEVATION

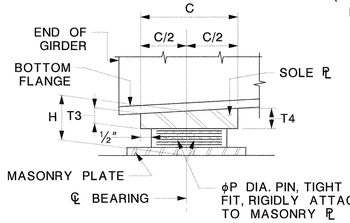


PLAN FIXED BEARINGS



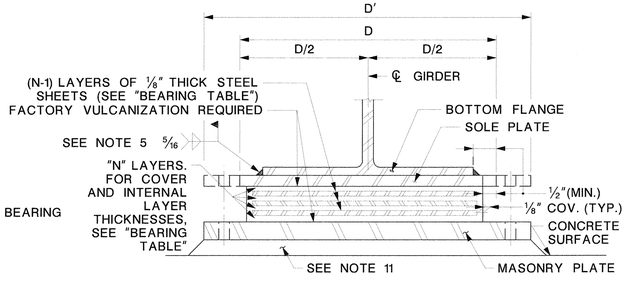
SECTION B-B

N.T.S.

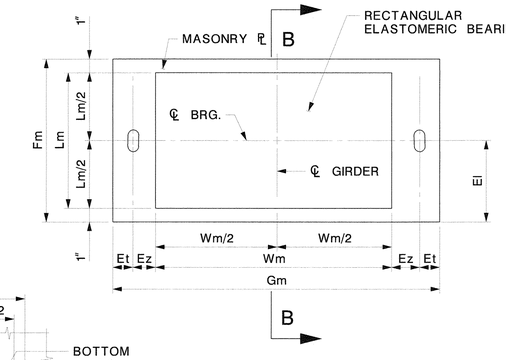


SECTION A-A

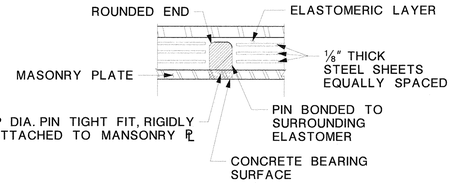
N.T.S.



ELEVATION

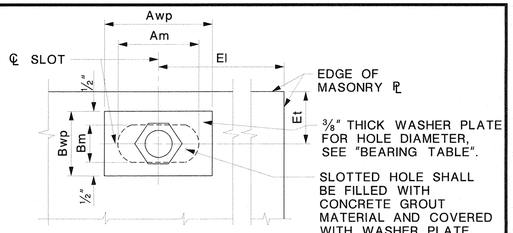


PLAN EXPANSION BEARINGS



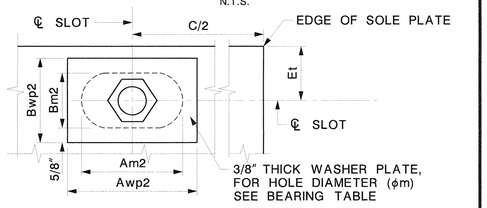
PIN DETAIL FOR FIXED BEARINGS

N.T.S.



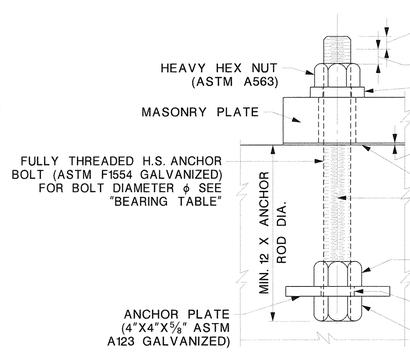
TYPICAL SLOTTED HOLE DETAIL MASONRY PLATE

(FOR EXPANSIONS BEARINGS ONLY)
N.T.S.



TYPICAL SLOTTED HOLE DETAIL SOLE PLATE

(FOR EXPANSIONS BEARINGS ONLY)
N.T.S.



ANCHOR BOLT DETAIL FOR BEARINGS WITHOUT SIDE RESTRAINT

N.T.S.

NOTES:

1. MANUFACTURE ELASTOMERIC BEARINGS PAD ASSEMBLIES IN CONFORMANCE WITH NJDOT STANDARD SPECIFICATIONS, SUBSECTION: 506.03 AND THE CONTRACT DRAWINGS AND SPECIAL PROVISIONS FOR THIS PROJECT.
2. PROVIDE ELASTOMERIC BEARINGS WITH A NOMINAL HARDNESS 60 ON THE SHORE A SCALE.
3. PROVIDE EXTERNAL STEEL PLATES, ANCHOR PIN AND ANCHOR BOLTS AS PER ASTM 709, GR 50. PROVIDE INTERNAL STEEL LAMINATES AS PER ASTM A36.
4. PLACE A 1/8" ELASTOMERIC BEARING PAD OR PREFORMED FABRIC PAD BETWEEN THE MASONRY PLATE AND THE CONCRETE BEARING SURFACE IN CONFORMANCE WITH SECTION: 506.03 OF THE NJDOT STANDARD SPECIFICATION. SEE NOTE 11.
5. ALLOW THE CONTINUOUS WELD CONNECTING THE GIRDER BOTTOM FLANGE TO THE SOLE PLATE TO COOL AFTER EACH PASS. HOWEVER THE TEMPERATURE OF THE STEEL ADJACENT TO THE ELASTOMER MAY NOT EXCEED 200° F TEMPERATURE. CONTROL TEMPERATURE THROUGH THE WELDING PROCEDURE.
6. ANCHOR BOLTS SHALL BE THREADED AS SHOWN IN ANCHOR BOLT DETAILS ON THIS SHEET. TIGHTEN THE NUT TO THE SATISFACTION OF THE ENGINEER AND REMOVE THE ANCHOR BOLT TIP 1/2" ABOVE THE TOP OF THE NUT. PROVIDE ANCHOR BOLTS, PLATES, WASHER PLATES, AND NUTS CONFORMING TO THE REQUIREMENTS OF NJDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
7. ANCHOR BOLTS SHALL BE CAST INTO CONCRETE BRIDGE SEAT.
8. THE COST OF THE REINFORCED ELASTOMERIC BEARING ASSEMBLY INCLUDES THE COST OF BEARING PAD, MASONRY AND SOLE PLATES, ANCHOR BOLTS, ANCHOR PINS, WASHERS, WASHER PLATES, NUTS, GROUT, AND SHIM PLATES.
9. MARK ALL BEARINGS PRIOR TO SHIPPING. INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A DIRECTION ARROW THAT POINTS UP-STATION ON THE BEARING MARKS. ALL MARKS SHALL BE PERMANENT AND VISIBLE AFTER THE BEARING IS INSTALLED.
10. EDGE THICKNESS OF TAPERED SOLE PLATES ARE GIVEN BY DIMENSION T3 AND T4. T3 IS THE THICKNESS AT THE DOWN-STATION EDGE OF THE PLATE AND T4 IS THE THICKNESS AT THE UP-STATION EDGE.

ELASTOMERIC BEARING TABLE

LOCATION	FIX / EXP	QTY. REQ.	MAX. DESIGN REACTION (KIPS)	SHAPE FACTOR	ONE WAY LONG. MOVEMENT * (IN)	ELASTOMER LAYERS				MASONRY ℄										BRG.	ANCHOR BOLTS		WELD SIZE	SOLE ℄							WASHER @ MASONRY ℄		WASHER @ SOLE ℄		DL + SDL (KIPS)	LL W/O IMP (KIPS)	HOLE DIA. FOR PIN (IN)	ϕP PIN DIA. (IN)
						INTERNAL THICKNESS (IN)	N LAYERS	Lm (IN)	Wm (IN)	T1 (IN)	Fm (IN)	Gm (IN)	Am (IN)	Bm (IN)	Et (IN)	EI (IN)	Ez (IN)	ϕm (IN)	H (IN)	ϕ (IN)	BOLTS PER BRG.	W (IN)	C (IN)	D (IN)	D'** (IN)	T3 (IN)	T4 (IN)	Am2 (IN)	Bm2 (IN)	Awp (IN)	Bwp (IN)	Awp2 (IN)	Bwp2 (IN)				
S. ABUT. (S1, S2, S7, S8)	FIX	4	125	8.615	1.382	3/8	4	12	14	1 1/4	14	24	-	-	2	7	3	1 3/8	4 5/8	1	2	5/16	13	17	-	1	2	-	-	-	-	-	-	46	79	2 1/4	2 1/4
S. ABUT. (S3, S4, S5, S6)	FIX	4	125	8.615	1.382	3/8	4	12	14	1 1/4	14	24	-	-	2	7	3	1 3/8	4 5/8	1	2	5/16	13	-	24	1	2	-	-	-	-	-	-	46	79	2 1/4	2 1/4
PIER (S1, S2, S7, S8)	EXP	4	125	8.615	1.382	3/8	4	12	14	1 1/4	14	24	2 1/2	1 3/8	2	7	3	-	4 5/8	1	2	5/16	13	17	-	2	1	-	-	3 1/2	2 3/8	-	-	46	79	2 1/4	2 1/4
PIER (S3, S4, S5, S6)	EXP	4	125	8.615	1.382	3/8	4	12	14	1 1/4	14	24	2 1/2	1 3/8	2	7	3	-	4 5/8	1	2	5/16	13	-	24	2	1	3 1/2	2 3/8	3 1/2	2 3/8	4 1/2	3 3/8	46	79	2 1/4	2 1/4

*ONE WAY LONGITUDINAL MOVEMENT IS THE MAXIMUM MOVEMENT (EXPANSION OR CONTRACTION) OF THE SUPERSTRUCTURE WHEN BEARINGS ARE SET AT 68° F. THIS INCLUDES 1" OF TOLERANCE WHEN THE BEARINGS ARE TO BE SET AT TEMPERATURES OTHER THAN 68°, REFERENCE AASHTO LRFD DESIGN SPECIFICATIONS, ARTICLES 3.12.2.1 AND 3.12.2.2 FOR GUIDANCE FOR SETTING TEMPERATURES AND BEARING MOVEMENT.

**BEARINGS BENEATH STRINGERS S3, S4, S5, AND S6 SHALL BE RESTRAINED IN THE LATERAL DIRECTION WITH EXTENDED SOLE PLATES (D' X C) AND EXTENDED ANCHOR RODS IN ACCORDANCE WITH THE DETAILS PROVIDED HEREIN.

QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY
506006P	REINFORCED ELASTOMERIC BEARING ASSEMBLY	UNIT	16

NOTES (CONTINUED):

11. ADDITIONAL THICKNESS VARYING FROM 3/4" TO 1 7/8" HAS BEEN PROVIDED TO ALLOW FOR ADDITIONAL ADJUSTMENT IN THE FIELD AS NECESSARY. THE CONTRACTOR MAY PROVIDE STEEL SHIM PLATES, OR AN NJDOT APPROVED NON-SHRINK GROUT (OR APPROVED EQUAL), IN WHICH CASE THE 1/8" BEARING PAD CAN BE OMITTED.

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
West Trenton, NJ

CONTROL SECTION		JOB NO.	
DES. BY	S. TRELLES	CHK. BY	S. DIAZ
DWN. BY	S. TRELLES		
EST. BY	S. TRELLES	CHK. BY	S. DIAZ
SPECS. BY	S. TRELLES	CHK. BY	S. DIAZ

IN CHARGE OF B. RIEGEL

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

BEARING DETAILS

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

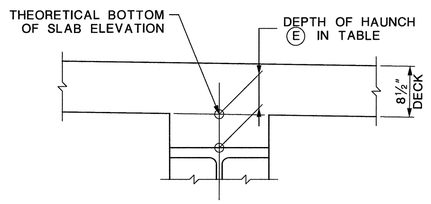
SCALE : AS SHOWN

BRIDGE
SHEET NO. B-35 OF B-41

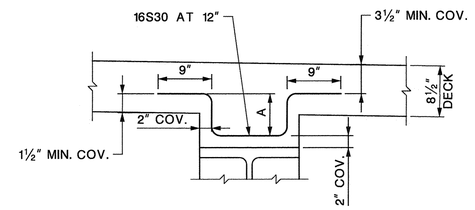
79
85

$DATE$ 35_Bearing Details.dgn

HAUNCH TABLE			℄ BRG.	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ BRG.
SOUTH APPROACH SPAN	S1	Ⓐ REQ'D BOTTOM OF SLAB ELEVATION	95.88	96.46	97.03	97.61	98.18	98.72	99.21	99.67	100.07	100.44	100.76
		Ⓑ TOP OF STEEL EL. (FIELD MEASURE)											
		Ⓒ = Ⓐ -Ⓑ											
		Ⓓ CONCRETE + S.D.L. DEFLECTION	0.00	0.19	0.36	0.49	0.57	0.60	0.57	0.49	0.36	0.19	0.00
		Ⓔ DEPTH OF HAUNCH REQ'D = Ⓒ + Ⓓ											
	S2	Ⓐ REQ'D BOTTOM OF SLAB ELEVATION	96.00	96.57	97.15	97.72	98.29	98.83	99.33	99.78	100.19	100.56	100.88
		Ⓑ TOP OF STEEL EL. (FIELD MEASURE)											
		Ⓒ = Ⓐ -Ⓑ											
		Ⓓ CONCRETE + S.D.L. DEFLECTION	0.00	0.25	0.47	0.64	0.75	0.79	0.75	0.64	0.47	0.25	0.00
		Ⓔ DEPTH OF HAUNCH REQ'D = Ⓒ + Ⓓ											
	S3	Ⓐ REQ'D BOTTOM OF SLAB ELEVATION	96.13	96.70	97.28	97.85	98.42	98.96	99.46	99.91	100.32	100.69	101.01
		Ⓑ TOP OF STEEL EL. (FIELD MEASURE)											
		Ⓒ = Ⓐ -Ⓑ											
		Ⓓ CONCRETE + S.D.L. DEFLECTION	0.00	0.25	0.47	0.64	0.75	0.79	0.75	0.64	0.47	0.25	0.00
		Ⓔ DEPTH OF HAUNCH REQ'D = Ⓒ + Ⓓ											
	S4	Ⓐ REQ'D BOTTOM OF SLAB ELEVATION	96.24	96.82	97.39	97.97	98.54	99.08	99.58	100.03	100.44	100.80	101.12
		Ⓑ TOP OF STEEL EL. (FIELD MEASURE)											
		Ⓒ = Ⓐ -Ⓑ											
		Ⓓ CONCRETE + S.D.L. DEFLECTION	0.00	0.25	0.47	0.64	0.75	0.79	0.75	0.64	0.47	0.25	0.00
		Ⓔ DEPTH OF HAUNCH REQ'D = Ⓒ + Ⓓ											
	S5	Ⓐ REQ'D BOTTOM OF SLAB ELEVATION	96.11	96.69	97.26	97.84	98.41	98.95	99.45	99.90	100.31	100.67	100.99
		Ⓑ TOP OF STEEL EL. (FIELD MEASURE)											
		Ⓒ = Ⓐ -Ⓑ											
		Ⓓ CONCRETE + S.D.L. DEFLECTION	0.00	0.25	0.47	0.64	0.75	0.79	0.75	0.64	0.47	0.25	0.00
		Ⓔ DEPTH OF HAUNCH REQ'D = Ⓒ + Ⓓ											
	S6	Ⓐ REQ'D BOTTOM OF SLAB ELEVATION	95.98	96.56	97.13	97.71	98.28	98.82	99.32	99.77	100.18	100.54	100.86
		Ⓑ TOP OF STEEL EL. (FIELD MEASURE)											
		Ⓒ = Ⓐ -Ⓑ											
		Ⓓ CONCRETE + S.D.L. DEFLECTION	0.00	0.25	0.47	0.64	0.75	0.79	0.75	0.64	0.47	0.25	0.00
		Ⓔ DEPTH OF HAUNCH REQ'D = Ⓒ + Ⓓ											
	S7	Ⓐ REQ'D BOTTOM OF SLAB ELEVATION	95.88	96.46	97.03	97.60	98.18	98.72	99.21	99.66	100.07	100.44	100.76
		Ⓑ TOP OF STEEL EL. (FIELD MEASURE)											
		Ⓒ = Ⓐ -Ⓑ											
		Ⓓ CONCRETE + S.D.L. DEFLECTION	0.00	0.25	0.47	0.64	0.75	0.79	0.75	0.64	0.47	0.25	0.00
		Ⓔ DEPTH OF HAUNCH REQ'D = Ⓒ + Ⓓ											
	S8	Ⓐ REQ'D BOTTOM OF SLAB ELEVATION	95.88	96.46	97.03	97.60	98.18	98.72	99.21	99.66	100.07	100.44	100.76
		Ⓑ TOP OF STEEL EL. (FIELD MEASURE)											
		Ⓒ = Ⓐ -Ⓑ											
		Ⓓ CONCRETE + S.D.L. DEFLECTION	0.00	0.19	0.36	0.49	0.57	0.60	0.57	0.49	0.36	0.19	0.00
		Ⓔ DEPTH OF HAUNCH REQ'D = Ⓒ + Ⓓ											



STRINGER HAUNCH DETAIL
NOT TO SCALE



REINFORCED STRINGER HAUNCH DETAIL
NOT TO SCALE

NOTES:

1. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH THE COMPLETED HAUNCH TABLE PRIOR TO SETTING THE BOTTOM FORMWORK OF THE DECK.
2. THE REINFORCED GIRDER HAUNCH DETAIL SHALL BE USED ONLY WHERE CONCRETE PORTION OF HAUNCH EXCEEDS 4 INCHES. THE DIMENSION NOTED AS "A" SHOULD BE SUCH THAT THE SAME BAR CAN BE USED WHEN THE HAUNCH DEPTH VARIES.

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
West Trenton, NJ

CONTROL SECTION		JOB NO.	
DES. BY	S. TRELLES	CHK. BY	S. DIAZ
DWN. BY	S. TRELLES		
EST. BY	S. TRELLES	CHK. BY	S. DIAZ
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ $FILE$

UNION COUNTY DIVISION OF ENGINEERING

HAUNCH TABLE

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

REVISION	BY	C'K'D	DATE

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

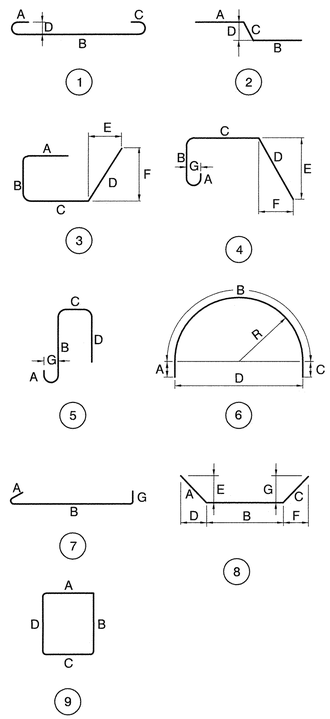
SCALE : AS SHOWN

BRIDGE
SHEET NO. B-36 OF B-41

80
85

MARK	TYPE	LENGTH FT.	LENGTH IN.	NO. OF UNITS	NO. OF BARS/ UNIT	TOTAL NO. OF BARS	CORR. PROT.	REMARKS A FT.	A IN.	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	G FT.	G IN.
SOUTHWEST RETAINING WALL																					
19F01	STR	9'-6"		1	98	98	E														
19F02	STR	24'-6"		2	11	22	E														
19F03	STR	12'-6"		1	137	137	E														
19F04	STR	52'-3"		2	14	28	E														
19F05	1	8'-4"		1	79	79	E	0'-8"		7'-8"		0'-0"		0'-6"							
25F01	1	8'-0 3/4"		1	95	95	E	0'-11"		7'-1 3/4"		0'-0"		0'-8"							
19W01	STR	VARIES		1	79	79	E	VARIES		7'-5 5/8"		TO		15'-1 1/2"							
19W02	STR	24'-6"		1	19	19	E														
19W03	STR	VARIES		1	12	12	E	VARIES		3'-10"		TO		52'-3"							
19W04	STR	52'-3"		1	25	25	E														
19W05	STR	VARIES		1	4	4	E	VARIES		24'-6"		TO		52'-3"							
25W01	STR	VARIES		1	95	95	E	VARIES		7'-9 3/8"		TO		15'-4 7/8"							
SOUTHEAST RETAINING WALL																					
19F01	STR	VARIES		2	11	22	E	VARIES		25'-1 5/8"		TO		25'-6 3/4"							
19F02	STR	9'-6"		1	193	193	E														
19F03	STR	VARIES		2	11	22	E	VARIES		36'-8"		TO		37'-6 1/4"							
19F04	2	VARIES		2	14	28	E	VARIES		0'-0"		VARIES		VARIES							
19F05	STR	9'-6"		1	112	112	E														
19F06	1	8'-4"		1	101	101	E	0'-8"		7'-8"		0'-0"		0'-6"							
25F01	1	8'-0 3/4"		1	101	101	E	0'-11"		7'-1 3/4"		0'-0"		0'-8"							
13W01	STR	VARIES		3	2	6	E	VARIES		25'-4"		TO		36'-10"							
19W01	STR	VARIES		1	101	101	E	VARIES		5'-7 5/8"		TO		15'-4 1/2"							
19W02	STR	25'-4"		1	13	13	E														
19W03	STR	VARIES		1	16	16	E	VARIES													
19W04	STR	36'-10"		1	19	19	E														
19W05	STR	32'-2"		1	27	27	E														
19W06	2	VARIES		1	31	31	E	VARIES		0'-6 1/4"		3'-6									
19W07	3	6'-3"		1	101	101	E	2-9 1/2"		0'-8"		2'-9 1/2"									
19W08	STR	VARIES		3	2	6	E	VARIES		25'-4"		TO		36'-10"							
25W01	STR	VARIES		1	101	101	E	VARIES		6'-1 7/8"		TO		15'-11 1/8"							
NORTHWEST WINGWALL																					
19F01	STR	15'-6"		1	19	19	E														
19F02	STR	9'-6"		1	18	18	E														
19F03	STR	15'-4 1/2"		1	14	14	E														
19F04	STR	29'-6"		1	22	22	E														
19F05	1	8'-4"		1	37	37	E	0'-8"		7'-8"		0'-0"		0'-6"							
25F01	STR	15'-6"		1	32	32	E														
25F02	STR	9'-6"		1	29	29	E														
25F03	1	8'-0 3/4"		1	46	46	E	0'-11"		7'-1 3/4"		0'-0"		0'-8"							
19W01	STR	VARIES		1	37	37	E	VARIES		6'-4 5/8"		TO		26'-6 3/8"							
19W02	STR	29'-6"		1	17	17	E														
19W03	STR	VARIES		1	48	48	E	VARIES		1'-0 1/4"		TO		29'-1 1/8"							
19W04	STR	35'-8 5/8"		1	4	4	E														
25W01	STR	VARIES		1	46	46	E	VARIES		7'-5"		TO		27'-7 1/2"							
NORTHEAST RETAINING WALL																					
16F01	STR	10'-6"		1	47	47	E														
16F02	STR	VARIES		1	9	9	E	VARIES		2'-0 1/4"		TO		10'-6"							
16F03	STR	42'-9 1/2"		2	12	24	E														
16F04	2	VARIES		2	13	26	E	6'-2 1/2"				2'-10"		10 1/2"							
16F05	1	7'-3"		1	55	55	E	0'-7"		6'-8"		0'-0"		0'-3 3/4"							
22F01	1	7'-2"		1	55	55	E	0'-10"		6'-2"		0'-0"		0'-5 1/4"							
25F01	STR	10'-6"		1	93	93	E														
25F02	STR	VARIES		1	18	18	E	VARIES		2'-0 1/4"		TO		10'-6"							

MARK	TYPE	LENGTH FT.	LENGTH IN.	NO. OF UNITS	NO. OF BARS/ UNIT	TOTAL NO. OF BARS	CORR. PROT.	REMARKS A FT.	A IN.	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	G FT.	G IN.
13W01	STR	VARIES		3	2	6	E	VARIES		6'-1 3/4"		TO		22'-11"							
16W01	STR	VARIES		1	8	8	E	VARIES		12'-5 1/2"		TO		12'-11 1/2"							
16W02	STR	VARIES		1	47	47	E	VARIES		7'-9 3/4"		TO		12'-5"							
16W03	STR	5'-11"		1	27	27	E														
16W04	STR	22'-10"		1	34	34	E														
16W05	STR	VARIES		2	6	12	E	VARIES		4'-2"		TO		34'-0 1/2"							
16W06	2	4'-1 1/2"		2	14	28	E	2'-0"		0'-0"		2'-1 1/2"		0'-7 1/2"							
16W07	STR	VARIES		3	2	6	E	VARIES		6'-1 3/4"		TO		22'-11"							
19W01	3	6'-3"		1	55	55	E	2-9 1/2"		0'-8"		2'-9 1/2"									
22W01	STR	VARIES		1	8	8	E	VARIES		13'-0"		TO		13'-6 1/4"							
22W02	STR	VARIES		1	47	47	E	VARIES		8'-4 1/8"		TO		12'-11 1/2"							
NORTHWEST RETAINING WALL																					
16F01	STR	24'-0"		2	5	10	E														
16F02	STR	21'-0"		2	1	2	E														
16F03	STR	4'-6"		2	21	42	E														
16F04	STR	9'-10 3/4"		1	1	1	E														
16F05	1	8'-3"		2	102	204	E	0'-7"		7'-8"		0'-0"		0'-5"							
16F06	1	VARIES		2	21	42	E	0'-7"		VARIES		0'-0"		0'-5"							
19F01	STR	26'-3"		2	34	68	E														
19F02	STR	11'-0"		1	43	43	E														
19F03	STR	24'-8 1/2"		2	20	40	E														
19F04	STR	22'-8 1/2"		2	4	8	E														
19F05	STR	9'-0"		1	114	114	E														
19F06	STR	28'-9 1/4"		2	10	20	E														
19F07	STR	27'-6"		2	10	20	E														
19F08	1	8'-4"		1	109	109	E	0'-8"		7'-8"		0'-0"		0'-6"							
22F01	STR	15'-6"		1	50	50	E														
25F01	STR	15'-6"		1	99	99	E														
25F02	STR	11'-0"		1	43	43	E														
25F03	1	8'-0 3/4"		1	142	142	E	0'-11"		7'-1 3/4"		0'-0"		0'-8"							
16W01	STR	VARIES		1	43	43	E	VARIES		9'-0 1/4"		TO		13'-2 3/4"							
16W02	STR	VARIES		1	30	30	E	VARIES		6'-1"		TO		8'-11 3/4"							
16W03	STR	VARIES		1	29	29	E	VARIES		3'-7"		TO		6'- 3/8"							
16W04	STR	VARIES		1	33	33	E	VARIES		2'-3 3/4"		TO		32'-2 3/8"							
16W05	STR	22'-11 1/2"		2	20	40	E														
16W06	STR	28'-9 3/4"		2	7	14	E														
16W07	STR	27'-1 3/8"		2	4	8	E														
16W08	STR	21'-0"		2	3	6	E														
16W09	2	10'-0"		2	6	12	E	3'-6"		3'-0 1/4"		3'-6"		3'-0 1/4"							
16W10	STR	VARIES		7	2	14	E														
19W01	STR	VARIES		1	50	50	E	VARIES		17'-6 3/4"		TO		22'-5"							
19W02	STR	VARIES		1	30	30	E	VARIES		5'-9 1/4"		TO		8'-8"							
19W03	STR	VARIES		1	29	29	E	VARIES		3'-3"		TO		5'-8 3/8"							
19W04	STR	VARIES		1	9	9	E	VARIES		10'-6 1/2"		TO		40'-5 1/4"							
19W05	STR	26'-3"		2	38	76	E														
25W01	STR	VARIES		1	99	99	E	VARIES		18'-1 1/2"		TO		23'-0"							
25W02	STR	VARIES		1	43	43	E	VARIES		8'-6 1/2"		TO		12'-9 1/4"							



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engineering that moves you
West Trenton, NJ

CONTROL SECTION		JOB NO.	
DES. BY	S. TRELLES	CHK. BY	S. DIAZ
DWN. BY	S. TRELLES		
EST. BY	S. TRELLES	CHK. BY	S. DIAZ
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

NOTES:

1. ALL REINFORCEMENT BENDS SHALL CONFORM TO THE LATEST ACI REQUIREMENTS.
2. ANY DAMAGE TO CORROSION PROTECTION OF REINFORCEMENT BARS SHALL BE REPAIRED AS PER SPECIFICATIONS.
3. EPOXY COAT ALL REINFORCEMENT STEEL IN ACCORDANCE WITH ASTM A775.

STRUCTURE UNIT:

A - ABUTMENT OR PIER
F - FOOTING
PP - PARAPET
S - DECK SLAB
SS - SIDEWALK, CURB
W - WINGWALL, RETAINING WALL

BAR SIZE
STRUCTURE UNIT
BAR NUMBER
16 A 22

EXAMPLE: 16B22 = A SIZE 16 BAR, NUMBER 22, PLACED IN THE ABUTMENT.

CORROSION PROTECTION:

E - EPOXY COATED
G - GALVANIZED

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

BAR SCHEDULE - 1

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

BRIDGE
SHEET NO. B-37 OF B-41

81
85

$DATE$ 37_Bar Schedule - 1.dgn

NORTH ABUTMENT

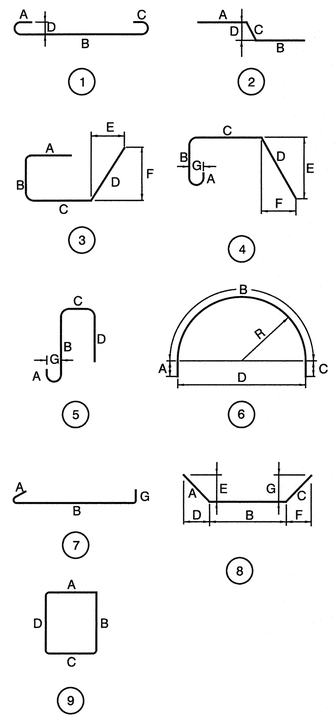
MARK	TYPE	LENGTH FT.	LENGTH IN.	NO. OF UNITS	NO. OF BARS/ UNIT	TOTAL NO. OF BARS	CORR. PROT.	REMARKS A FT.	A IN.	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	G FT.	G IN.
13F01	7	5'-0	1/2"	6	13	78	E	0'-4	1/2"	4'-0"		0'-8"									
16F01	STR	51'-0"		2	25	50	E														
19F02	1	9'-9"		1	11	11	E	0'-8"		9'-1"		0'-0"		0'-6"							
19F03	1	9'-9"		1	11	11	E	0'-8"		9'-1"		0'-0"		0'-6"							
25F02	STR	20'-9"		1	52	52	E														
25F03	1	10'-0"		1	104	104	E	0'-11"		9'-1"		0'-0"		0'-8"							
25F04	1	10'-6"		1	52	52	E	0'-11"		9'-7"		0'-0"		0'-8"							
25F05	1	10'-0"		1	16	16	E	0'-11"		9'-1"		0'-0"		0'-8"							
25F06	1	10'-0"		1	16	16	E	0'-11"		9'-1"		0'-0"		0'-8"							
29F01	STR	20'-9"		1	104	104	E														
13AS01	1	4'-9	1/2"	1	37	37	E	0'-6"		3'-9	1/2"	0'-6"		0'-4"							
13A01	7	5'-9	1/2"	6	13	78	E	0'-4	1/2"	4'-9"		0'-8"								0'-8"	
13A02	9	8'-6"		1	4	4	E	0'-8"		3'-7"		0'-8"		3'-7"							
13A03	STR	4'-9"		1	10	10	E														
16A01	STR	51'-0"		1	6	6	E														
16A02	2	4'-9"		1	61	61	E	3'-11"		0'-0"		0'-10"		0'-10"							
16A03	3	5'-7"		1	5	5	E	0'-10"		3'-11"		0'-10"									
16A04	3	5'-7"		1	5	5	E	0'-10"		3'-11"		0'-10"									
16A05	STR	21'-5"		1	8	8	E														
16A06	STR	7'-9"		1	2	2	E														
16A07	STR	5'-0"		1	2	2	E														
16A08	STR	25'-3	1/2"	1	2	2	E														
16A09	STR	51'-0"		1	5	5	E														
16A10	STR	8'-6"		1	2	2	E														
16A11	STR	43'-6"		1	2	2	E														
16A12	8	5'-6"		1	2	2	E	2'-6"		1'-6"		1'-6"		1'-9	1/4"	1'-9	1/4"	1'-0	3/4"	1'-0	3/4"
16A13	8	4'-7"		1	2	2	E	1'-6"		1'-8"		1'-5"		1'-0	3/4"	1'-0	3/4"	1'-0"		1'-0"	
19A01	3	4'-6	1/2"	1	38	38	E	3'-6	1/2"	1'-0"											
19A02	3	7'-2"		1	52	52	E	6'-3"		1'-0"											
19A03	STR	6'-3"		1	38	38	E														
19A04	STR	51'-0"		1	66	66	E														
19A05	STR	VARIES		2	11	22	E	VARIES		26'-1"		TO		25'-6	1/2"						
19A07	STR	12'-4	1/2"	2	33	66	E														
19A08	3	17'-9"		1	33	33	E	15'-9"		2'-0"											
19A09	3	9'-1	1/2"	1	15	15	E	7'-7	1/2"	1'-6"											
19A10	3	15'-1"		1	33	33	E	11'-2	1/2"	3'-10	1/2"										
25A01	STR	21'-5"		1	104	104	E														
25A02	STR	21'-5"		1	52	52	E														
25A03	STR	VARIES		2	16	32	E														
25A04	3	4'-6	1/2"	1	16	16	E	3'-6"		1'-0	1/2"										

PIER

MARK	TYPE	LENGTH FT.	LENGTH IN.	NO. OF UNITS	NO. OF BARS/ UNIT	TOTAL NO. OF BARS	CORR. PROT.	REMARKS A FT.	A IN.	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	G FT.	G IN.
13A01	7	4'-6	1/2"	5	13	65	E	0'-4	1/2"	3'-6"										0'-8"	
16A01	3	5'-2"		1	84	84	E	0'-10"		3'-6"		0'-10"									
16A02	3	3'-11"		3	5	15	E	0'-10"		2'-3"		0'-10"									
16A03	3	10'-6	1/2"	1	5	5	E	0'-10"		8'-10	1/2"	0'-10"									
16A04	3	6'-11"		1	5	5	E	0'-10"		5'-3"		0'-10"									
16A05	3	53'-9	1/2"	1	5	5	E	0'-10"		52'-1	1/2"	0'-10"									
19A01	STR	50'-6"		2	33	66	E														
19A05	6	11'-1	1/4"	2	33	66	E	3'-0"		5'-1	1/4"	3'-0"		3'-3"		R = 1'-7	1/2"				
25A01	STR	21'-8"		1	61	61	E														
25A02	STR	21'-8"		1	51	51	E														
13F01	7	4'-6	1/2"	1	38	38	E	0'-4	1/2"	3'-6"		0'-8"								0'-8"	
19F01	STR	58'-0"		2	17	34	E														
25F01	STR	13'-6"		2	60	120	E														
25F02	1	9'-11"		1	61	61	E	0'-11"		9'-0"		0'-0"		0'-8"							
25F03	1	9'-11"		1	51	51	E	0'-11"		9'-0"		0'-0"		0'-8"							

SOUTH ABUTMENT

MARK	TYPE	LENGTH FT.	LENGTH IN.	NO. OF UNITS	NO. OF BARS/ UNIT	TOTAL NO. OF BARS	CORR. PROT.	REMARKS A FT.	A IN.	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	G FT.	G IN.
13F01	7	4'-6	1/2"	1	70	70	E	0'-4	1/2"	3'-6"		0'-8"								0'-8"	
16F01	STR	51'-3"		2	24	48	E														
19F01	1	9'-10"		1	58	58	E	0'-8"		9'-2"		0'-0"		0'-6"							
19F02	1	9'-4"		1	8	8	E	0'-8"		8'-8"		0'-0"		0'-6"							
19F03	1	9'-4"		1	8	8	E	0'-8"		8'-8"		0'-0"		0'-6"							
25F01	STR	15'-9"		1	79	79	E														
25F02	STR	15'-9"		1	63	63	E														
25F03	1	9'-7"		1	58	58	E	0'-11"		8'-8"		0'-0"		0'-8"							
25F04	1	9'-7"		1	10	10	E	0'-11"		8'-8"		0'-0"		0'-8"							
25F05	1	9'-7"		1	10	10	E	0'-11"		8'-8"		0'-0"		0'-8"							
13A01	1	4'-9	1/2"	1	37	37	E	0'-6"		3'-9	1/2"	0'-6"		0'-4"							
16A01	3	4'-5"		1	48	48	E	3'-6"		0'-11"											
16A02	3	6'-11"		1	58	58	E	6'-0"		0'-11"											
16A03	STR	6'-2	1/2"	1	47	47	E														
16A04	STR	47'-3"		1	6	6	E														
16A05	3	5'-1	1/2"	1	35	35	E	0'-10"		3'-5	1/2"	0'-10"									
16A06	STR	47'-3"		1	4	4	E														
16A07	3	3'-2"		1	40	40	E	0'-10"		1'-6"		0'-10"									
16A08	3	3'-10"		1	24	24	E	0'-10"		2'-2"		0'-10"									
16A09	3	9'-2	1/2"	1	11	11	E	1'-6"		7'-8	1/2"										
16A10	STR	8'-6"		1	2	2	E														
16A11	STR	41'-9"		1	2	2	E														
16A12	8	4'-6"		1	2	2	E	1'-6"		1'-6"		1'-6"		1'-0	3/4"	1'-0	3/4"	1'-0	3/4"	1'-0	3/4"
16A13	8	4'-6	7/8"	1	2	2	E	1'-6		1'-6	7/8"	1'-6"		1'-0	3/4"	1'-0	3/4"	1'-0	3/4"	1'-0	3/4"
19A01	STR	13'-2"		1	58	58	E														
19A02	STR	47'-3"		2	14	28	E														
19A03	STR	10'-2	1/2"	2	15	30	E														
19A04	3	13'-7"		2	15	30	E	11'-7"		2'-0"											
19A05	STR	VARIES		2	8	16	E	VARIES		17'-10"		TO		17'-4	1/4"						
19A06	STR	13'-2"		2	3	6	E														
19A07	STR	9'-0"		2	4	8	E														
19A08	3	11'-0	7/8"	2	4	8	E	2'-0"		9'-0	7/8"										
25A01	STR	13'-6"		1	58	58	E	VARIES													
25A02	STR	VARIES		2	10	20	E	VARIES		17'-10"		TO		17'-4	1/4"						
25A03	3	4'-6	1/2"	1	10	10	E	3'-6"		1'-0	1/2"										



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CONTROL SECTION		JOB NO.	
DES. BY	S. TRELLES	CHK. BY	S. DIAZ
DWN. BY	S. TRELLES		
EST. BY	S. TRELLES	CHK. BY	S. DIAZ
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

$DATE$ $FILES$

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STRUCTURE UNIT:

A - ABUTMENT STEM
F - FOOTING
P - PIER
PP - PARAPET
S - DECK SLAB
SC - SCUPPER
SS - SIDEWALK, CURB
W - WINGWALL, RETAINING WALL

BAR SIZE
STRUCTURE UNIT
BAR NUMBER
16 A 22

EXAMPLE: 16B22 = A SIZE 16 BAR, NUMBER 22, PLACED IN THE ABUTMENT STEM.

CORROSION PROTECTION:

E - EPOXY COATED
G - GALVANIZED

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

BAR SCHEDULE - 2

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

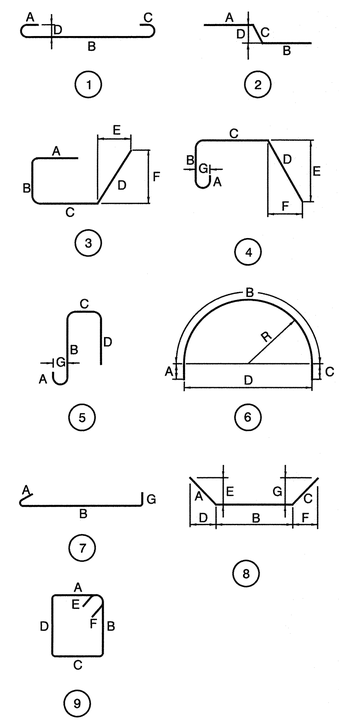
SCALE : AS SHOWN

BRIDGE
SHEET NO. B-38 OF B-41

82
85

MARK	TYPE	LENGTH FT.	LENGTH IN.	NO. OF UNITS	NO. OF BARS/ UNIT	TOTAL NO. OF BARS	CORR. PROT.	REMARKS A FT.	A IN.	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	G FT.	G IN.
APPROACH SPAN DECK																					
13SS01	STR	8'-7 1/8"		1	61	61	E														
13SS02	3	3'-1 1/2"		1	61	61	E	2'-0"		1'-1 1/2"		0'-0"									
13SS03	4	3'-4 1/8"		1	61	61	E	0'-6"		0'-10 1/2"		2'-0"		0'-0"		0'-0"		0'-0"		0'-4"	
13SS04	STR	9'-8"		5	11	55	E														
13SS05	STR	10'-0"		2	11	22	E														
13S01	STR	2'-5"		14	4	56	E														
13S02	3	5'-3 3/8"		14	7	98	E	2'-8"		0'-8"		1'-0"		0'-11 3/8"		0'-8"		0'-8"			
16S01	STR	31'-9"		4	58	232	E														
19S01	1	22'-6 1/4"		1	110	110	E	0'-8"		21'-10 1/4"		0'-0"		0'-6"							
19S02	1	29'-9"		1	110	110	E	0'-8"		29'-9"		0'-0"		0'-6"							
19S03	1	5'-7 1/2"		1	110	110	E	0'-8"		4'-11 1/2"		0'-0"		0'-6"							
19S04	1	12'-1 1/2"		1	110	110	E	0'-8"		11'-5 1/2"		0'-0"		0'-6"							
19S05	STR	21'-10 1/4"		1	110	110	E														
19S06	STR	29'-9"		1	110	110	E														
TRUSS DECK SLAB																					
13SS06	1	6'-8"		1	98	98	E	0'-5"		5'-8"		0'-5"		0'-4"							
13SS07	STR	5'-8"		1	98	98	E														
13SS08	STR	9'-8"		8	14	112	E														
13SS09	STR	6'-10"		2	14	28	E														
13S02	3	5'-8 1/8"		2	36	72	E	2'-8"		0'-10"		1'-0"		1'-2 1/8"		0'-10"		0'-10"			
13J01	STR	2'-5"		3	12	36	E														
19J01	STR	2'-5"		4	12	48	E														
16S01	STR	48'-11"		4	49	196	E														
19S01	1	22'-7"		1	172	172	E	0'-8"		21'-11"		0'-0"		0'-6"							
19S02	1	22'-7"		1	172	172	E	0'-8"		21'-11"		0'-0"		0'-6"							
19S03	1	6'-4"		1	172	172	E	0'-8"		5'-8"		0'-0"		0'-6"							
19S04	1	6'-4"		1	172	172	E	0'-8"		5'-8"		0'-0"		0'-6"							
19S05	STR	21'-11"		2	172	344	E														
TUNNEL RELIEVING SLAB																					
13S01	STR	4'-0"		2	4	8	E														
16S01	9	10'-9"		2	38	76	E	2'-6"		2'-6"		2'-6"		2'-6"		5 1/2"		5 1/2"			
16S02	STR	36'-6"		4	3	12	E														
19S01	STR	36'-6"		2	20	40	E														
19S02	STR	38'-3"		1	24	24	E														
19S03	STR	30'-6"		1	38	38	E														
19S04	STR	12'-6"		1	2	2	E														
25S01	STR	2'-6"		4	38	152	E														
29S01	STR	30'-6"		1	74	74	E														
29S02	STR	12'-6"		1	3	3	E														

MARK	TYPE	LENGTH FT.	LENGTH IN.	NO. OF UNITS	NO. OF BARS/ UNIT	TOTAL NO. OF BARS	CORR. PROT.	REMARKS A FT.	A IN.	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	G FT.	G IN.



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CONTROL SECTION		JOB NO.	
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STRUCTURE UNIT
BAR NUMBER
16 A 22

EXAMPLE: 16B22 = A SIZE 16 BAR, NUMBER 22, PLACED IN THE ABUTMENT.

CORROSION PROTECTION:

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G - GALVANIZED

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

BAR SCHEDULE - 3

REPLACEMENT OF GORDON STREET
BRIDGE OVER "OUT OF SERVICE" CONRAIL

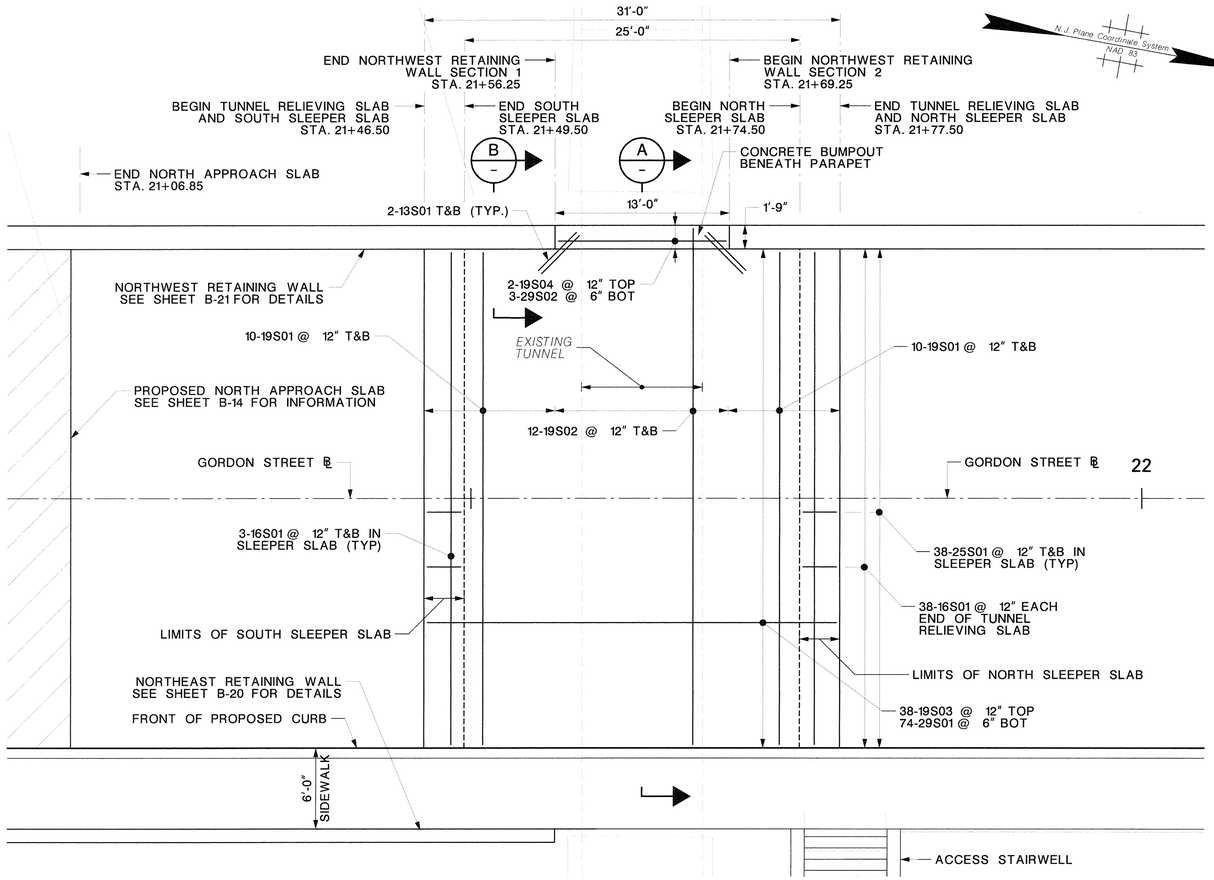
HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200

GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

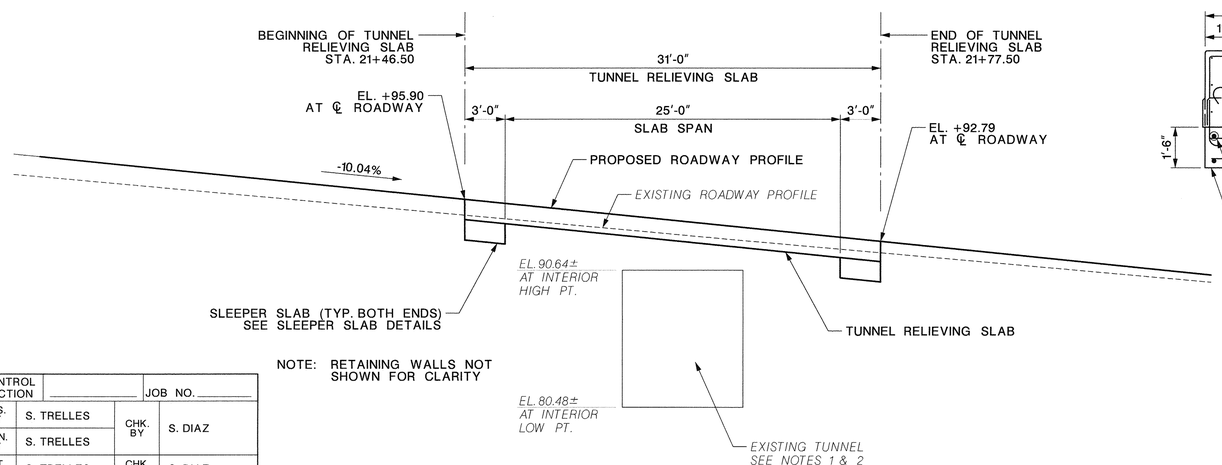
BRIDGE
SHEET NO. B-39 OF B-41

83
85



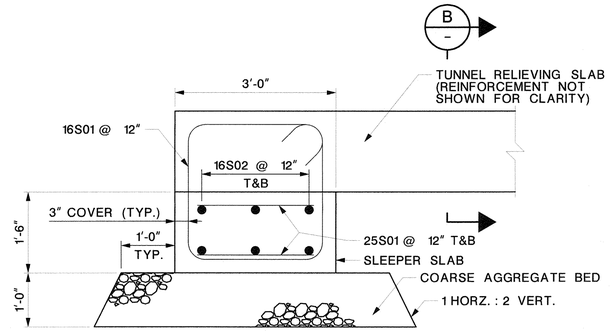
TUNNEL RELIEVING SLAB PLAN

SCALE: 3/16" = 1'-0"



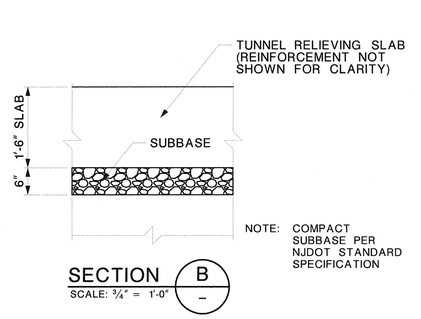
TUNNEL RELIEVING SLAB ELEVATION

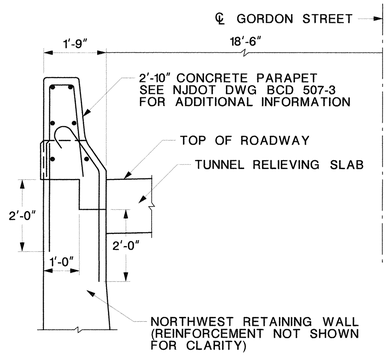
SCALE: 3/16" = 1'-0"



SLEEPER SLAB DETAILS

SCALE: 3/4" = 1'-0"





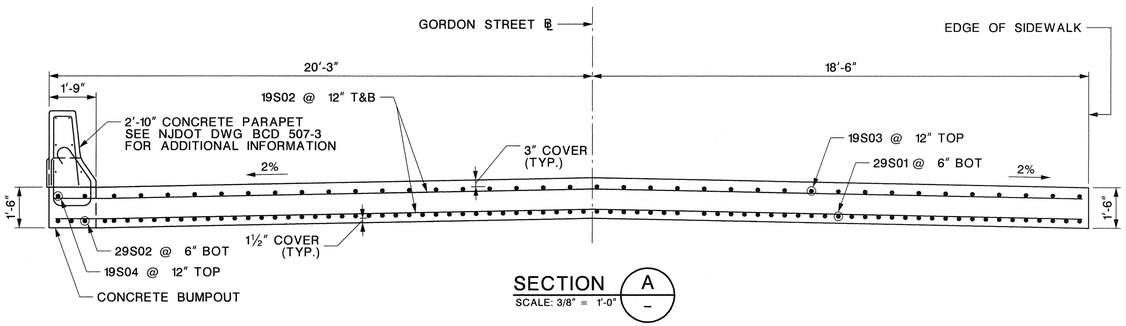
SECTION B
SCALE: ½" = 1'-0"

NOTES:

1. TUNNEL ELEVATIONS SHOWN REPRESENT SURVEYED INTERIOR ELEVATIONS AT THE HIGHEST AND LOWEST POINTS ALONG THE TUNNEL'S PROFILE BENEATH THE PROPOSED ROADWAY. THICKNESS OF CONCRETE CEILING AND FLOOR SLABS ARE UNKNOWN. PRECAUTIONARY MEASURES SHALL BE TAKEN TO ENSURE THAT THE TUNNEL IS NOT DISTURBED DURING CONSTRUCTION OF THE TUNNEL RELIEVING SLAB. FIELD CONDITIONS THAT DIFFER FROM WHAT IS SHOWN SHALL BE REPORTED TO THE ENGINEER, AND MAY REQUIRE MODIFICATIONS TO THE TUNNEL RELIEVING SLAB DESIGN TO FACILITATE INSTALLATION.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MAINTAINING THE STRUCTURAL INTEGRITY OF THE EXISTING PEDESTRIAN TUNNEL THROUGHOUT CONSTRUCTION AND IS ADVISED THAT UNDERPINNING OF THE TUNNEL IN THE GENERAL VICINITY OF THE NORTHWEST RETAINING WALL MAY BE REQUIRED BASED ON EXISTING CONDITIONS. CONTRACTOR TO PROVIDE FULLY DOCUMENTED, SIGNED AND SEALED WORKING DRAWINGS FOR REVIEW BY THE ENGINEER.
3. CONCRETE FOR THE TUNNEL RELIEVING SLAB SHALL BE PAID FOR UNDER ITEM 507024P "CONCRETE BRIDGE DECK, HPC".

QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY
202015P	EXCAVATION, REGULATED MATERIAL	CY	12
301006P	SUBBASE (DESIGNATION I-3)	CY	20
302060P	COARSE AGGREGATE, SIZE NO 57	CY	16
504006P	REINFORCEMENT STEEL, EPOXY COATED	LB	12540
507024P	CONCRETE BRIDGE DECK, HPC	CY	67
507050M	CONCRETE SLEEPER SLAB	CY	13



1/2" = 1'-0"
1' 0 1' 2' 4'

3/16" = 1'-0"
1' 0 2' 4' 8' 16'

3/8" = 1'-0"
1' 0 2' 4' 8'

3/4" = 1'-0"
1' 0 1' 2' 4'

CONTROL SECTION		JOB NO.	
DES. BY	S. TRELLES	CHK. BY	S. DIAZ
DWN. BY	S. TRELLES		
EST. BY	S. TRELLES	CHK. BY	S. DIAZ
SPECS. BY	S. DIAZ	CHK. BY	T. FARANDA

IN CHARGE OF B. RIEGEL

REVISION	BY	C'K'D	DATE

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
West Trenton, NJ

UNION COUNTY DIVISION OF ENGINEERING

TUNNEL RELIEVING SLAB

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL

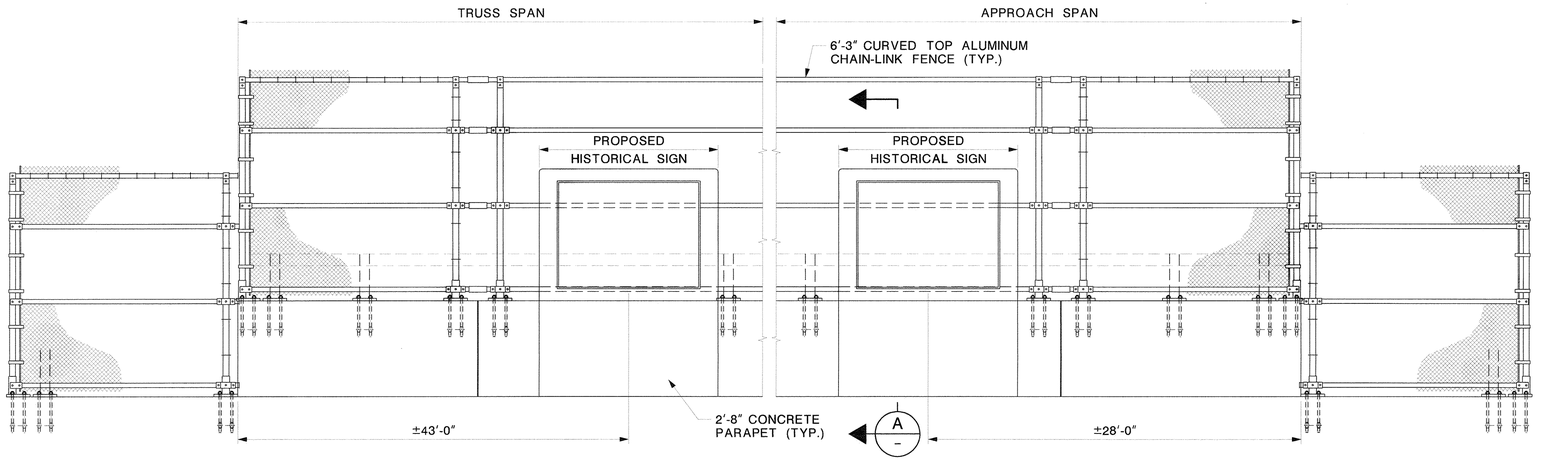
HARDESTY & HANOVER, LLC
CERTIFICATE OF AUTHORIZATION NO. 24GA28200200
GLEN E. SCHETELICH, P.E.
N.J. P.E. LIC. NO. 24GE03443600

SCALE : AS SHOWN

BRIDGE SHEET NO. B-40 OF B-41

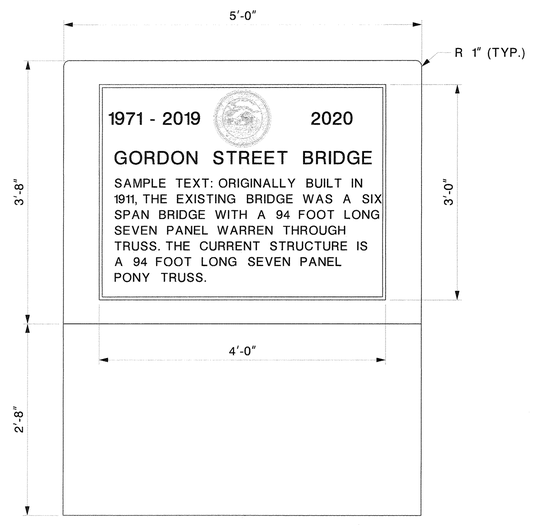
84
85

$DATE$ 40_Tunnel Relieving Slab.dgn



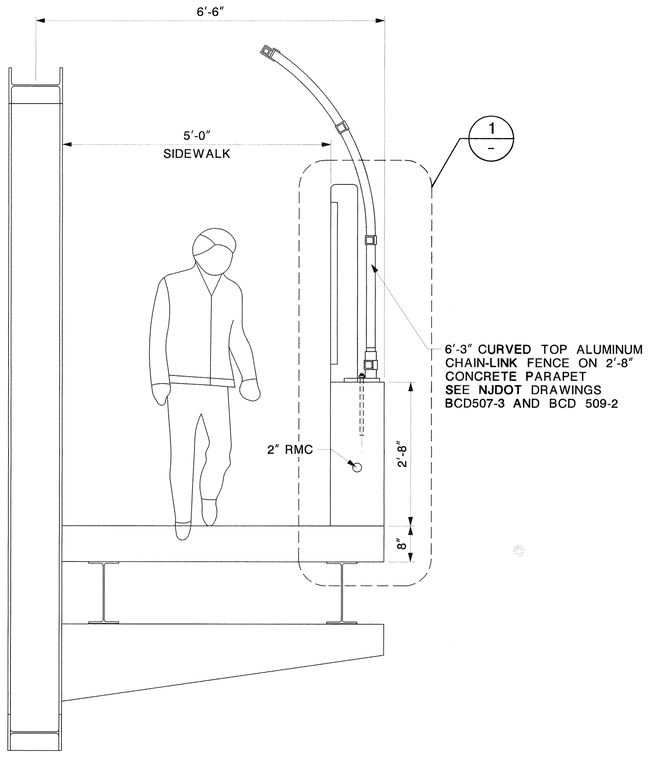
PROPOSED PARAPET ELEVATION

SCALE: ½" = 1'-0"



HISTORICAL SIGN DETAIL

SCALE: ½" = 1'-0"



SECTION A

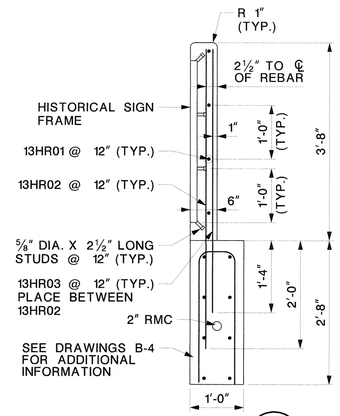
SCALE: ¾" = 1'-0"

NOTES:

1. FOR GENERAL NOTES, GENERAL PLAN AND ELEVATION, SEE SHEET B-3.
3. FOR APPROACH SPAN TYPICAL SECTION, SEE SHEET B-4.
2. FOR TRUSS SPAN TYPICAL SECTION, SEE SHEET B-5.
3. FOR APPROACH SPAN DECK REINFORCEMENT PLAN, SEE SHEET B-28.
4. REINFORCEMENT STEEL SHALL ASTM A615, GRADE 60 AND SHALL BE EPOXY COATED IN ACCORDANCE WITH ASTM A775.
5. UNLESS OTHERWISE NOTED, PROVIDE 1" MINIMUM SIDE COVER FOR THE REINFORCEMENT STEEL.
6. CONCRETE FOR THE HISTORICAL SIGN SHALL BE PAY UNDER ITEM 507024P, "CONCRETE BRIDGE DECK, HPC".
7. ALL STUDS TO BE AASHTO M169 (ASTM A-108) STEEL AND SHALL BE ELECTRIC ARC END-WELD WITH COMPLETE FUSION. APPLY ONLY A PRIME COAT OF PAINT TO THE SHEAR STUDS.

QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	CONTRACT QUANTITY
504006P	REINFORCEMENT STEEL, EPOXY-COATED	LBS	170
506012P	SHEAR CONNECTORS	U	40
507024P	CONCRETE BRIDGE DECK, HPC	CY	1



DETAIL 1

SCALE: ¾" = 1'-0"

In Charge of
Designed by
Design Checked by
Detailed by
Detail Checked by

Hardesty & Hanover
engineering that moves you
West Trenton, NJ

CONTROL SECTION			JOB NO.
DES. BY	S. DIAZ	CHK. BY	S. TRELLES
DWN. BY	S. DIAZ		
EST. BY	S. DIAZ	CHK. BY	S. TRELLES
SPECS. BY	T. FARANDA	CHK. BY	S. DIAZ

IN CHARGE OF B. RIEGEL

$DATE$ 41_Historical Sign Detail.dgn

1/2" = 1'-0"

1' 0 1' 2' 4'

REVISION	BY	C'K'D	DATE

UNION COUNTY DIVISION OF ENGINEERING

HISTORICAL SIGN DETAILS

REPLACEMENT OF GORDON STREET BRIDGE OVER "OUT OF SERVICE" CONRAIL

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GLEN E. SCHETELICH, P.E.
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SCALE : AS SHOWN

BRIDGE SHEET NO. B-41 OF B-41

85
85