



COUNTY OF UNION

DEPARTMENT OF ENGINEERING, PUBLIC WORKS & FACILITIES MANAGEMENT
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Clerk of the Board

THOMAS O. MINEO, P.E.
*County Engineer,
Director, Division of Engineering*

MEMO TO: TO ALL POTENTIAL BIDDERS

FROM: Thomas O. Mineo, P.E., County Engineer

DATE: May 6, 2019

RE: ADDENDUM NUMBER 1

BA#18-2019 – MADISON AVENUE TURF FIELD
IMPROVEMENTS
CITY OF RAHWAY, COUNTY OF UNION, NEW JERSEY
UNION COUNTY ENGINEERING PROJECT #2013-016

The following are responses to questions received for the above referenced project:

1. **Question:** On the bid form there are item numbers 15, 16, 17. The site plan calls for Item # 17 which is 6" thick Traffic Markings Lines. On drawing 10 of 13 there's details for the HC striping parking stalls and typical parking stall detail that indicate 4" Painted lines. There is nothing on the plans or details to indicate line items # 16, 17 or the locations they would be. Please clarify.

Answer: The quantities for Traffic Stripes, 4" (Item 15) and Traffic Markings Lines, 6" (Item 16) have been updated in the bid. Please note that Traffic Stripes, 4" and/or Traffic Markings, 4" will be paid under Item #15, Traffic Stripes, 4" only.

- Traffic Stripes, 4" (Item 15) shall be for all parking stall striping within the new and resurfaced parking lots, ancillary striping such as no parking or handicapped aisle stripes, as well as centerline striping in the entrance drive off of Westfield Avenue.
- Traffic Markings Lines, 6" (Item 16) shall be for the crosswalk striping.

DIVISION OF ENGINEERING

ADDNENDUM NUMBER 1: May 6, 2019

- Traffic Markings Lines, 24" (Item 17) shall be for the stop bars.
- Traffic Marking Symbols (Item 18) shall be for arrows and other standard symbols.

The revised bid proposal quantities shall prevail in the case of any inconsistency between the plan quantity call outs and the bid proposal. Quantities for Items #15 and #16 have been updated in the Proposal Bid Form accordingly.

PLEASE NOTE THAT THE ATTACHED REVISED BID PROPOSAL FORM MUST BE SUBMITTED WITH THE BID AND THAT BIDDERS MUST COMPLETE THE ACKNOWLEDGEMENT OF ADDENDUM FORM WITHIN THE BID ACCORDINGLY.

2. **Question:** Are there specifications for the sports equipment?

Answer: Yes, there are specifications under Section 617 – Goal Systems that cover the combination football goal post/soccer goal as well as the lacrosse goal.

3. **Question:** Can you please provide where the 8" x 18" concrete vertical curb is on the site plan. It's item #14 on the bid form. Please clarify.

Answer: The 8" x 18" vertical Curb is for the edges of the proposed parking lot, for the widened driveway access aisle and the ADA ramps at the Westfield Avenue driveway. The quantity has not changed.

BID FORM

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

**MADISON AVENUE TURF FIELD IMPROVEMENTS
CITY OF RAHWAY, COUNTY OF UNION, NEW JERSEY
BA#18-2019; Union County Engineering Project #2013-016**

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	DESCRIPTION	UNIT	CONTRACT QUANTITY	UNIT PRICE	AMOUNT
1	MOBILIZATION	LS	1		
2	CLEARING	LS	1		
3	FUEL PRICE ADJUSTMENTS	LS	1	\$5,000	\$5,000
4	ASPHALT PRICE ADJUSTMENTS	LS	1	\$2,000	\$2,000
5	EXCAVATION, BORROW EXCAVATION AND GRADING, UNCLASSIFIED	LS	1		
6	TEMPORARY CONSTRUCTION FENCE	LS	1		
7	PLAYGROUND DEMOLITION AND SITE PREPARATION	LS	1		
8	HMA MILLING, 3" OR LESS	SY	9,370		
9	DENSE-GRADED AGGREGATE BASE COURSE, 6" THICK	SY	1,400		
10	HOT MIX ASPHALT 19M64 BASE COURSE, 4" THICK	TON	340		
11	HOT MIX ASPHALT 9.5M64 SURFACE COURSE, 2" THICK	TON	1,785		
12	CONCRETE DRIVEWAY, REINFORCED, 6" THICK	SY	30		
13	DETECTABLE WARNING SURFACE	SY	5		
14	8" X 18" CONCRETE VERTICAL CURB	LF	1,470		
15	TRAFFIC STRIPES, 4"	LF	4,500		
16	TRAFFIC MARKINGS LINES, 6"	LF	110		
17	TRAFFIC MARKINGS LINES, 24"	LF	15		
18	TRAFFIC MARKINGS SYMBOLS	SF	595		
19	HANDICAPPED PARKING SIGNS WITH POST	UN	2		
20	REGULATORY AND WARNING SIGN	SF	35		
21	CONCRETE TURF FOOTING (12" X 18") WITH NAILER BOARD	LF	2,600		
22	CONCRETE SIDEWALK, 4" THICK	SY	2,125		
23	CONCRETE PAD, REINFORCED, 6" THICK	SY	270		
24	SINGLE GATE, 4' WIDE, BLACK VINYL CHAIN-LINK FENCE, 4' HIGH	UN	8		
25	DOUBLE GATE, 12' WIDE, BLACK VINYL CHAIN-LINK FENCE, 4' HIGH	UN	5		

26	BLACK VINYL CHAIN-LINK FENCE, 4' HIGH	LF	1,565		
27	BLACK VINYL CHAIN-LINK FENCE, 8' HIGH	LF	905		
28	BLEACHER SYSTEM	UN	4		
29	15' LONG TEAM BENCH	UN	4		
30	BALL SAFETY NETTING SYSTEM, 20' HIGH	LF	745		
31	BALL SAFETY NETTING SYSTEM, 40' HIGH X 40' WIDE	UN	4		
32	COMBINATION FOOTBALL GOAL POST/SOCCER GOAL (NOTE: ONE (1) SET SHALL EQUAL TWO FOOTBALL GOAL POSTS AND TWO SOCCER GOALS)	SET	2		
33	LACROSSE GOALS (NOTE: ONE (1) SET SHALL EQUAL TWO GOALS)	SET	1		
34	¼" FINISHING STONE, 2" THICK	CY	1,085		
35	COARSE AGGREGATE, NO. 57, VARIABLE THICKNESS	CY	11,920		
36	1" X 12" PERFORATED HIGH DENSITY POLYETHYLENE PIPE	LF	10,320		
37	6" PERFORATED HIGH DENSITY POLYETHYLENE PIPE (INCLUDING PIPE BEDDING AND BACKFILL)	LF	2,845		
38	10" PERFORATED HIGH DENSITY POLYETHYLENE PIPE (INCLUDING PIPE BEDDING AND BACKFILL)	LF	185		
39	12" PERFORATED HIGH DENSITY POLYETHYLENE PIPE (INCLUDING PIPE BEDDING AND BACKFILL)	LF	330		
40	24" PERFORATED HIGH DENSITY POLYETHYLENE PIPE (INCLUDING PIPE BEDDING AND BACKFILL)	LF	4,205		
41	12" DUCTILE IRON PIPE (INCLUDING PIPE BEDDING AND BACKFILL)	LF	130		
42	15" CLASS IV REINFORCED CONCRETE PIPE (INCLUDING PIPE BEDDING AND BACKFILL)	LF	330		
43	INLET, TYPE E	UN	2		
44	MANHOLE, 4' DIAMETER	UN	8		
45	OUTLET CONTROL STRUCTURE	UN	1		
46	BACKFLOW PREVENTER, 12"	UN	1		
47	30" X 30" YARD INLET	UN	16		
48	TOPSOILING, 6" THICK	SY	3,405		
49	FERTILIZING AND SEEDING	SY	3,405		
50	STRAW MULCHING	SY	3,405		
51	UTILITY UPGRADES – ELECTRIC SERVICE	LS	1		
52	SPORTSFIELD LIGHTING SYSTEM	LS	1		

Bidder's Name _____

Written

Figures

BID CONTINGENCY: (To be used if and when directed by the County)

TWO-HUNDRED SEVENTY-FIVE THOUSAND DOLLARS
Written

\$275,000.00
Figures

TOTAL BASE BID ITEMS PLUS BID CONTINGENCY AMOUNT:

Written

Figures

NOTE: Bid Contingency may include one-half of one percent of contract amount set aside for local training if and when directed by the County.

Bidder's Name: _____

ACKNOWLEDGMENT OF ADDENDUM

ADDENDUM NUMBER 1

May 6, 2019

COUNTY OF UNION

**MADISON AVENUE TURF FIELD IMPROVMENTS
CITY OF RAHWAY, COUNTY OF UNION, NEW JERSEY**

**BA#18-2019
UC ENGINEERING PROJECT #2013-016**

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
ADDENDUM NUMBER 1: Cover Memo with responses to questions received for this project. Revised Bid Sheets B4 through B-6.		

ACKNOWLEDGMENT BY BIDDER:

NAME OF BIDDER: _____

ORIGINAL SIGNATURE: _____

PRINTED NAME AND TITLE: _____

DATE: _____

**SPECIFICATIONS
FOR
MADISON AVENUE TURF FIELD IMPROVEMENTS
CITY OF RAHWAY
COUNTY OF UNION, NEW JERSEY
BA#18-2019; UNION COUNTY ENGINEERING PROJECT #2013-016
APRIL 2019**

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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.
2325 South Avenue
Scotch Plains, New Jersey 07076
Telephone: (908) 789-3675
Fax: (908) 789-3674

Prepared by:
Maser Consulting, P.A.
331 Newman Springs Road, Suite 203
Red Bank, New Jersey 07701
T: 732-383-1950
F: 732-383-1984

**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 BIDS AND SUBMIT TO:

Union County Division of Purchasing
UC Administration Building, 3rd Floor
10 Elizabethtown Plaza
Elizabeth, NJ 07207
Attn: Laura M. Scutari, QPA, MPA, Director, Division of Purchasing
Telephone: 908-527-4130
Facsimile: 908-558-2548

**TITLE OF PROJECT: MADISON AVENUE TURF FIELD IMPROVEMENTS
CITY OF RAHWAY, COUNTY OF UNION, NEW JERSEY
BA#18-2019; UC ENGINEERING PROJECT #2013-016**

BIDDER: Bidder shall be a single overall contract bidder

ENGINEER: Maser Consulting, P.A.
331 Springs Road, Suite 203
Red Bank, New Jersey 07701
T: 732-383-1950

COUNTY ENGINEER AND/OR CONSTRUCTION MANAGER (as applicable):

COUNTY ENGINEER:

Thomas O. Mineo, P.E.
Union County
Division of Engineering
2325 South Avenue
Scotch Plains, NJ 07076
Office: (908) 789-3675
Facsimile: (908) 789-3674
Email: tmineo@ucnj.org

CONSTRUCTION MANAGER: Maser Consulting, P.A.

AL 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 informality in the bids received so long as said waiver is not of a response which is considered to be material and non-waivable pursuant to law.

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 Laura M. Scutari, QPA, MPA, 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, Laura M. Scutari, QPA, 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 County Engineer or Design Professional as the case may be and 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 County Engineer, 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 Offices of the County Engineer 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 County Engineer 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:11-1.1 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 of Union shall award the contract or reject all bids within sixty (60) days; except that the bids of any bidders who consent thereto may, at the request of the County be held for consideration for such longer periods as may be agreed.

The County will return all certified checks or cashier's checks after the proposals have been opened, read, tabulated and checked except those of the three (3) bidders who have bid the lowest total price for carrying out the Project. 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 the said 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. BID SECURITY

All Bidders are required to submit a form of Bid Security with their bids.
(Bid Bond or Certified Funds)

The Bid Security shall be in the amount of ten percent (10%) of the Bid, but not in excess of Twenty Thousand Dollars (\$20,000.00), and payable to the order of the "County of Union."

10. 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.

11. 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.

12. 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.”

13. 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.

14. 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".

15. 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.

16. 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.

17. 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.

18. OWNERSHIP DISCLOSURES REQUIRED

Pursuant to P.L. 1977, N.J.S.A. 52:25-24.2, the Bidder shall submit with its Bid, or prior to receipt of bids, a statement setting forth the names and addresses of all stockholders in the corporation or partnership bidding who own ten percent (10%) or greater interest therein. (See forms attached)

19. 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.

20. 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.

21. 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 Industry 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)

22. 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.

23. 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.

24. 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.

25. 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.

26. 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.

27. 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.

28. 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.

29. 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.

30. 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.

31. 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.

32. 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 and Commerce shall be observed.

33. 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.

34. 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.

35. PERMITS

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

36. 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.

37. CHANGE ORDERS

Change Order Procedures shall comply with N.J.A.C. 5:30-11.1 et seq., "Change Orders and Open End Contracts" and subsequent provisions of the New Jersey Administrative Code.

38. 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.

39. 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.

40. 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.

41. 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.

42. 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.

43. 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.

44. 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. 17:27-7.2; 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. 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 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:

(1) 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 contractor 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 10 of the Administrative Code (NJAC 17:27)**.

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45. INVESTMENT ACTIVITIES IN IRAN

Pursuant to P.L. 2012, c.25, codified as N.J.S.A. 2:32-55 et seq., prohibits State and local public contracts with persons or entities engaging in certain investment activities in energy or finance sectors of Iran.

46. 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.

47. 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.

48. 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.

49. 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.

50. 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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51. 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 <http://www.state.nj.us/treasury/revenue/busregcert.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 not acceptable.

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

FAILURE of the bidder or any subcontractor named on the bid to be registered 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:

N.J.S.A. 52:32-44 imposes the following requirements on Contractors and all subcontractors that knowingly provide goods or perform services for a Contractor fulfilling this contract:

- 1) the Contractor shall provide written notice to its subcontractors and suppliers to submit proof of business registration to the Contractor;
- 2) subcontractors through all tiers of a project must provide written notice to their subcontractors and suppliers to submit proof of business registration and subcontractors shall collect such proofs of business registration and maintain them on file;

- 3) prior to receipt of final payment from a contracting agency, the Contractor must submit to the contacting agency an accurate list of all subcontractors and suppliers or attest that none was used; and,
- 4) during the term of this contract, the Contractor and its affiliates shall collect and remit, and shall notify all subcontractors and their affiliates that they must collect and remit, to the Director, New Jersey Division of Taxation, 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 this State.

A Contractor, subcontractor or supplier who fails to provide proof of business registration or provides false business registration information shall be liable to a penalty of \$25 for each day of violation, not to exceed \$50,000 for each business registration copy not properly provided or maintained under a contract with a contracting agency. Information on the law and its requirements are available by calling (609) 292-9292.

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52. 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.

53. 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.

54. 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.

55. 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.

56. 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).

**COUNTY OF UNION
NOTICE TO BIDDERS**

Sealed bids will be received by the director of the Division of Purchasing, or her designee, at the County of Union, New Jersey on May 16, 2019 at 10:30 a.m., prevailing time, in the 3rd Floor Conference Room, U.C. Administration Building, 10 Elizabethtown Plaza, Elizabeth, New Jersey for:

**MADISON AVENUE TURF FIELD IMPROVEMENTS
CITY OF RAHWAY
COUNTY OF UNION, NEW JERSEY
BA#18-2019; UNION COUNTY ENGINEERING PROJECT #2013-016**

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.

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. If hand delivered, please note that parking and security access at the County Complex may cause delays and bidders should take them into consideration in order to submit a timely bid. **No** late bids will be accepted.

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.

LAURA M. SCUTARI, QPA, MPA, DIRECTOR OF PURCHASING

**UNION COUNTY BOARD
OF CHOSEN FREEHOLDERS**

We're Connected to You!

**MADISON AVENUE TURF FIELD IMPROVEMENTS
CITY OF RAHWAY, COUNTY OF UNION, NEW JERSEY
BA#18-2019; Union County Engineering Project #2013-016**

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- Contractor Business Registration Certificate
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- Experience Statement
- Certificate of Bidder Showing Ability to Perform Contract
- Non-Collusion Affidavit
- Contractor Registration Advisement
- Americans with Disabilities Act
- Statement of Bidder's Qualifications
- Contractor Performance Record
- Affidavit Regarding List of Disbarred, Suspended or Disqualified Bidders
- Prior Negative Experience Questionnaire-Certification
- Contractor's Certification of Compliance - New Jersey Prevailing Wage Act
- Uncompleted Contracts Affidavit
- Certificate of Insurance Statement
- Collection of Use Tax on Sales to Local Governments Statement
- Time of Completion
- Disclosure of Investment Activities in Iran

STANDARD SPECIFICATION FORM - SS-1

NEW JERSEY PREVAILING WAGE DETERMINATION DOCUMENTS

NJDOT SPECIAL PROVISIONS

REPORT OF SUBSURFACE EXPLORATION

Bidder's Name _____

EDWARD T. OATMAN
COUNTY MANAGER

LAURA M. SCUTARI, QPA, MPA
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")** should be included with the bids as it must be received by the County prior to the award of the contract. The BRC provided must show that the Bidder was registered at the time of receipt of bids or the bid will be rejected.

_____ 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 should be included with the bid as the BRC(s) must be received by the County prior to the award of the contract. Each subcontractor's certificate provided must show that the subcontractor was registered at the time of the receipt of bids or the bid will be rejected.

Bidder's Name _____

- _____ 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 DIVISION OF ENGINEERING AT 908-789-3675

Bidder's Name _____

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

**MADISON AVENUE TURF FIELD IMPROVEMENTS
CITY OF RAHWAY, COUNTY OF UNION, NEW JERSEY
BA#18-2019; Union County Engineering Project #2013-016**

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	DESCRIPTION	UNIT	CONTRACT QUANTITY	UNIT PRICE	AMOUNT
1	MOBILIZATION	LS	1		
2	CLEARING	LS	1		
3	FUEL PRICE ADJUSTMENTS	LS	1	\$5,000	\$5,000
4	ASPHALT PRICE ADJUSTMENTS	LS	1	\$2,000	\$2,000
5	EXCAVATION, BORROW EXCAVATION AND GRADING, UNCLASSIFIED	LS	1		
6	TEMPORARY CONSTRUCTION FENCE	LS	1		
7	PLAYGROUND DEMOLITION AND SITE PREPARATION	LS	1		
8	HMA MILLING, 3" OR LESS	SY	9,370		
9	DENSE-GRADED AGGREGATE BASE COURSE, 6" THICK	SY	1,400		
10	HOT MIX ASPHALT 19M64 BASE COURSE, 4" THICK	TON	340		
11	HOT MIX ASPHALT 9.5M64 SURFACE COURSE, 2" THICK	TON	1,785		
12	CONCRETE DRIVEWAY, REINFORCED, 6" THICK	SY	30		
13	DETECTABLE WARNING SURFACE	SY	5		
14	8" X 18" CONCRETE VERTICAL CURB	LF	1,470		
15	TRAFFIC STRIPES, 4"	LF	310		
16	TRAFFIC MARKINGS LINES, 6"	LF	4,240		
17	TRAFFIC MARKINGS LINES, 24"	LF	15		
18	TRAFFIC MARKINGS SYMBOLS	SF	595		
19	HANDICAPPED PARKING SIGNS WITH POST	UN	2		
20	REGULATORY AND WARNING SIGN	SF	35		
21	CONCRETE TURF FOOTING (12" X 18") WITH NAILER BOARD	LF	2,600		
22	CONCRETE SIDEWALK, 4" THICK	SY	2,125		
23	CONCRETE PAD, REINFORCED, 6" THICK	SY	270		
24	SINGLE GATE, 4' WIDE, BLACK VINYL CHAIN-LINK FENCE, 4' HIGH	UN	8		
25	DOUBLE GATE, 12' WIDE, BLACK VINYL CHAIN-LINK FENCE, 4' HIGH	UN	5		

Bidder's Name _____

26	BLACK VINYL CHAIN-LINK FENCE, 4' HIGH	LF	1,565		
27	BLACK VINYL CHAIN-LINK FENCE, 8' HIGH	LF	905		
28	BLEACHER SYSTEM	UN	4		
29	15' LONG TEAM BENCH	UN	4		
30	BALL SAFETY NETTING SYSTEM, 20' HIGH	LF	745		
31	BALL SAFETY NETTING SYSTEM, 40' HIGH X 40' WIDE	UN	4		
32	COMBINATION FOOTBALL GOAL POST/SOCCER GOAL (NOTE: ONE (1) SET SHALL EQUAL TWO FOOTBALL GOAL POSTS AND TWO SOCCER GOALS)	SET	2		
33	LACROSSE GOALS (NOTE: ONE (1) SET SHALL EQUAL TWO GOALS)	SET	1		
34	1/4" FINISHING STONE, 2" THICK	CY	1,085		
35	COARSE AGGREGATE, NO. 57, VARIABLE THICKNESS	CY	11,920		
36	1" X 12" PERFORATED HIGH DENSITY POLYETHYLENE PIPE	LF	10,320		
37	6" PERFORATED HIGH DENSITY POLYETHYLENE PIPE (INCLUDING PIPE BEDDING AND BACKFILL)	LF	2,845		
38	10" PERFORATED HIGH DENSITY POLYETHYLENE PIPE (INCLUDING PIPE BEDDING AND BACKFILL)	LF	185		
39	12" PERFORATED HIGH DENSITY POLYETHYLENE PIPE (INCLUDING PIPE BEDDING AND BACKFILL)	LF	330		
40	24" PERFORATED HIGH DENSITY POLYETHYLENE PIPE (INCLUDING PIPE BEDDING AND BACKFILL)	LF	4,205		
41	12" DUCTILE IRON PIPE (INCLUDING PIPE BEDDING AND BACKFILL)	LF	130		
42	15" CLASS IV REINFORCED CONCRETE PIPE (INCLUDING PIPE BEDDING AND BACKFILL)	LF	330		
43	INLET, TYPE E	UN	2		
44	MANHOLE, 4' DIAMETER	UN	8		
45	OUTLET CONTROL STRUCTURE	UN	1		
46	BACKFLOW PREVENTER, 12"	UN	1		
47	30" X 30" YARD INLET	UN	16		
48	TOPSOILING, 6" THICK	SY	3,405		
49	FERTILIZING AND SEEDING	SY	3,405		
50	STRAW MULCHING	SY	3,405		
51	UTILITY UPGRADES – ELECTRIC SERVICE	LS	1		
52	SPORTSFIELD LIGHTING SYSTEM	LS	1		

Bidder's Name _____

Written

Figures

BID CONTINGENCY: (To be used if and when directed by the County)

TWO-HUNDRED SEVENTY-FIVE THOUSAND DOLLARS
Written

\$275,000.00
Figures

TOTAL BASE BID ITEMS PLUS BID CONTINGENCY AMOUNT:

Written

Figures

NOTE: Bid Contingency may include one-half of one percent of contract amount set aside for local training if and when directed by the County.

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.

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):

Bidder's Name _____

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.**

Bidder's Name _____

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:	

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

Date _____

NAME OF BIDDER

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: _____

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 not 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 registered 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.

BUSINESS REGISTRATION
Mandatory Requirement

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 must be provided prior to the award of a contract. 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 Treasury, Division of Revenue; or
- A copy of the web printed version provided by the NJ Division of Revenue

STATE OF NEW JERSEY BUSINESS REGISTRATION CERTIFICATE FOR STATE AGENCY AND CASINO SERVICE CONTRACTORS	
TAXPAYER NAME: TAX REGISTRATION TEST ACCOUNT	TRACE NAME: CLIENT REGISTRATION
TAXPAYER IDENTIFICATION: 090-007-082000	SEQUENCE NUMBER: 0107200
ADDRESS: 847 ROEBLING AVE TRENTON NJ 08611	ISSUANCE DATE: 07/14/04
EFFECTIVE DATE: 01/01/01	<i>John S. Eudy</i> Assistant Director

FORM BR(C)06(01) This Certificate is NOT assignable or transferable. It must be conspicuously displayed at above address.

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 _____

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

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 U.S.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 thereto, 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 _____

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?

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

Bidder's Name _____

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__.

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.

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 before me
this ____ day of _____, 200__.

Notary Public: _____
My Commission Expires: _____

* 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 \$ _____

Sworn and Subscribed to Before me

This _____ day of _____, 20____

Notary Public

BIDDER:

(Signature)

(Print Name)

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 **One-Hundred and Eighty (180) 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 _____

**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 (AASHTO), 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.

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:

01/01/2019		07/01/2019	
Rate	Fringe	Total	Total
50.18	32.85	83.03	85.38

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 additional \$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:

01/01/2019		07/01/2019	
Rate	Fringe	Total	Total
50.18	32.85	83.03	85.38

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:

01/01/2019		07/01/2019	
Rate	Fringe	Total	Total
48.27	32.85	81.12	83.47

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 (Hetzl, Rexomatic & similar types)
- Concrete Vibrator

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

01/01/2019		07/01/2019	
Rate	Fringe	Total	Total
48.27	32.85	81.12	83.47

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, tigger, aerial platform hoist, house car)
- Hopper
- Hopper Doors (power operated)
- Ladder (motorized)

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	01/01/2019		07/01/2019
Rate	Fringe	Total	Total
48.27	32.85	81.12	83.47

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

Skimmer Machine (boom type)

Steel Cutting Machine (service & maintenance)

Tamrock Drill

Tractor

Transfer Machines

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
48.27	32.85	81.12	83.47

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:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
44.93	32.85	77.78	80.13

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:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
42.35	32.85	75.20	77.55

CLASSIFICATIONS:

Field Engineer - Rodman or Chainman

TERRITORY
ENTIRE STATE

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

OPERATING ENGINEERS Rates Expiration Date :

Effective Dates:

		01/01/2019	07/01/2019
Rate	Fringe	Total	Total
52.51	32.85	85.36	87.71

CLASSIFICATIONS:

Lead Engineer, Foreman Engineer, Safety Engineer (minimum)

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

01/01/2019		07/01/2019	
Rate	Fringe	Total	Total
51.77	32.85	84.62	86.97

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
- Helicopter Co-Pilot
- Helicopter Communications Engineer
- Juntann Pile Driver
- Locomotive (large)
- Mucking Machine

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
51.77	32.85	84.62	86.97

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:

01/01/2019		07/01/2019	
Rate	Fringe	Total	Total
46.64	32.85	79.49	81.84

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:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
46.64	32.85	79.49	81.84

CLASSIFICATIONS:

Steam Generator or Boiler

Stone Spreader

Tamping Machine (vibrating ride-on type)

Temporary Heating Plant (Nelson or other type, including propane, 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:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
53.59	32.85	86.44	88.79

CLASSIFICATIONS:

Helicopter Pilot/Engineer

Effective Dates:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
58.27	32.85	91.12	93.47

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:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
57.27	32.85	90.12	92.47

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:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
53.77	32.85	86.62	88.97

CLASSIFICATIONS:

Cranes, Derricks, Pile Driver (all types) , under 100 tons with a boom (including jib and/or leads) 140 ft. and over

Effective Dates:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
56.27	32.85	89.12	91.47

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:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
52.77	32.85	85.62	87.97

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:

	01/01/2019		07/01/2019
Rate	Fringe	Total	Total
55.40	32.85	88.25	90.60

CLASSIFICATIONS:

Helicopter Co-Pilot & Communications Engineer

TERRITORY
ENTIRE STATE

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

STRUCTURAL STEEL ERECTION Rates Expiration Date :

Effective Dates:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
51.34	32.85	84.19	86.54

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:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
48.68	32.85	81.53	83.88

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:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
47.15	32.85	80.00	82.35

CLASSIFICATIONS:

Compressor (Single)

Generators

Welding Machines, Gas, Diesel, Or Electric Converters of any type-single

Welding System, Multiple (Rectifier Transformer Type)

Effective Dates:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
45.39	32.85	78.24	80.59

CLASSIFICATIONS:

Assistant Engineer/Oiler

Drillers Helper

Field Engineer - Transit/Instrument Man

Maintenance Apprentice (Deckhand)

Maintenance Apprentice (Oiler)

Off Road Back Dump

Effective Dates:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
52.96	32.85	85.81	88.16

CLASSIFICATIONS:

Lead Engineer, Foreman Engineer, Safety Engineer (Minimum)

Effective Dates:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
42.35	32.85	75.20	77.55

CLASSIFICATIONS:

Field Engineer - Rodman or Chainman

STRUCTURAL STEEL ERECTION **Rates Expiration Date :**

Effective Dates:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
52.10	32.85	84.95	87.30

CLASSIFICATIONS:

Field Engineer-Chief of Party

Vacuum Truck

Effective Dates:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
60.29	32.85	93.14	95.49

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:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
58.63	32.85	91.48	93.83

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), 100 tons and over and Tower Crane.

Effective Dates:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
55.79	32.85	88.64	90.99

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:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
54.13	32.85	86.98	89.33

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.

TERRITORY
ENTIRE STATE

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

STRUCTURAL STEEL ERECTION Rates Expiration Date :

Effective Dates:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
55.79	32.85	88.64	90.99

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:

	01/01/2019		07/01/2019
Rate	Fringe	Total	Total
51.77	32.85	84.62	86.97

CLASSIFICATIONS:

Driller

Effective Dates:

	01/01/2019		07/01/2019
Rate	Fringe	Total	Total
44.93	32.85	77.78	80.13

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:

	03/01/2019		03/01/2020
Rate	Fringe	Total	Total
44.25	31.53	75.78	78.28

CLASSIFICATIONS:

Walking Boss & Superintendent

Effective Dates:

	03/01/2019		03/01/2020
Rate	Fringe	Total	Total
43.95	31.53	75.48	77.98

CLASSIFICATIONS:

Heading Foreman, Shaft Foreman, Rod Foreman, Electrician Foreman, Rigging Foreman

FREE AIR TUNNEL JOBS **Rates Expiration Date :**

Effective Dates:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
43.45	31.53	74.98	77.48

CLASSIFICATIONS:

Iron Foreman, Caulking Foreman, Form Foreman, Cement Finishing Foreman, Concrete Foreman, Track Foreman, Cleanup Foreman, Grout Foreman

Effective Dates:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
45.95	31.53	77.48	79.98

CLASSIFICATIONS:

Blaster

Effective Dates:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
42.90	31.53	74.43	76.93

CLASSIFICATIONS:

Top Labor Foreman

Effective Dates:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
42.55	31.53	74.08	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:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
42.40	31.53	73.93	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)

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FREE AIR TUNNEL JOBS Rates Expiration Date :

Effective Dates:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
42.00	31.53	73.53	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:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
50.52	32.85	83.37	85.72

CLASSIFICATIONS:

Driller

Effective Dates:

01/01/2019			07/01/2019
Rate	Fringe	Total	Total
43.68	32.85	76.53	78.88

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:

10/01/2017

Rate	Fringe	Total
38.18	14.33	52.51

CLASSIFICATIONS:

Lead Dredgerman, Operator, Leverman

Licensed Tug Operator (over 1000 HP)

Effective Dates:

10/01/2017

Rate	Fringe	Total
33.03	13.92	46.95

CLASSIFICATIONS:

Derrick Operator, Spider/Spill Barge Operator

Engineer, Electrician, Chief Welder, Chief Mate

Fill Placer, Operator II

Licensed Boat Operator

Maintenance Engineer

Effective Dates:

10/01/2017

Rate	Fringe	Total
31.09	13.77	44.86

CLASSIFICATIONS:

Certified Welder

OPERATING ENGINEERS MARINE-DREDGING **Rates Expiration Date :**

Effective Dates:

10/01/2017

Rate	Fringe	Total
30.24	13.40	43.64

CLASSIFICATIONS:

Mate, Drag Barge Operator, Steward, Assistant Fill Placer

Welder

Effective Dates:

10/01/2017

Rate	Fringe	Total
29.26	13.32	42.58

CLASSIFICATIONS:

Boat Operator

Effective Dates:

10/01/2017

Rate	Fringe	Total
24.30	12.62	36.92

CLASSIFICATIONS:

Shoreman, Deckhand, Rodman, Scowman

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

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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:

	03/01/2019		03/01/2020
Rate	Fringe	Total	Total
43.75	31.53	75.28	77.78

CLASSIFICATIONS:

Paving Foreman

Effective Dates:

	03/01/2019		03/01/2020
Rate	Fringe	Total	Total
42.30	31.53	73.83	76.33

CLASSIFICATIONS:

Head Raker

Effective Dates:

	03/01/2019		03/01/2020
Rate	Fringe	Total	Total
42.15	31.53	73.68	76.18

CLASSIFICATIONS:

Raker, Screedman, Luteman

ASPHALT LABORERS - SOUTH **Rates Expiration Date :**

Effective Dates:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
41.90	31.53	73.43	75.93

CLASSIFICATIONS:

Tampers, Smoothers, Kettlemen,
Painters, Shovelers, Roller Boys

Effective Dates:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
42.00	31.53	73.53	76.03

CLASSIFICATIONS:

Milling Controller

Effective Dates:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
42.20	31.53	73.73	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 \$1.00 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 10% 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:

10/17/2017

Rate	Fringe	Total
31.62	25.55	57.17

CLASSIFICATIONS:

Helper (4th year helper)

Effective Dates:

10/17/2017

Rate	Fringe	Total
39.69	25.55	65.24

CLASSIFICATIONS:

Driller

Effective Dates:

10/17/2017

Rate	Fringe	Total
45.73	25.55	71.28

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:

	03/01/2019		03/01/2020
Rate	Fringe	Total	Total
41.50	31.53	73.03	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:

	03/01/2019		03/01/2020
Rate	Fringe	Total	Total
42.20	31.53	73.73	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:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
42.45	31.53	73.98	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:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
46.00	31.53	77.53	80.03

CLASSIFICATIONS:

"A" Rate:

blaster

Effective Dates:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
43.75	31.53	75.28	77.78

CLASSIFICATIONS:

"FOREMAN" Rate:

labor foreman, asphalt foreman, drill foreman, pipe foreman, grade foreman, finisher foreman, concrete foreman

Effective Dates:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
44.75	31.53	76.28	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:

	03/01/2019		03/01/2020
Rate	Fringe	Total	Total
41.50	31.53	73.03	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:

	03/01/2019		03/01/2020
Rate	Fringe	Total	Total
41.50	31.53	73.03	75.53

CLASSIFICATIONS:

wagon drill or drill master helper; powder carrier; magazine tender; signal man

HEAVY & GENERAL LABORERS - SOUTH **Rates Expiration Date :**

Effective Dates:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
42.20	31.53	73.73	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:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
42.20	31.53	73.73	76.23

CLASSIFICATIONS:

wagon or directional drill operator; drill master

Effective Dates:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
46.00	31.53	77.53	80.03

CLASSIFICATIONS:

blaster

Effective Dates:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
43.75	31.53	75.28	77.78

CLASSIFICATIONS:

labor foreman, drill foreman, pipe foreman, grade foreman, finisher foreman, concrete foreman

Effective Dates:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
44.75	31.53	76.28	78.78

CLASSIFICATIONS:

general foreman

TERRITORY
ENTIRE STATE

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

HEAVY & GENERAL LABORERS - SOUTH Rates Expiration Date :

Effective Dates:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
42.45	31.53	73.98	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: \$42.50; Pipeline Journeyman Welder: \$102.50; and Pipeline Helper: \$42.50. 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:

06/08/2018

Rate	Fringe	Total
54.61	29.59	84.20

CLASSIFICATIONS:

Pipeline Journeyman Welder

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ENTIRE STATE

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PREVAILING WAGE RATE DETERMINATION

PIPELINE - MAINLINE TRANSMISSION Rates Expiration Date :

Effective Dates:

06/08/2018

Rate	Fringe	Total
54.61	29.59	84.20

CLASSIFICATIONS:

Pipeline Journeyman

Effective Dates:

06/08/2018

Rate	Fringe	Total
33.55	20.42	53.97

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:

11/01/2018			11/01/2019
Rate	Fringe	Total	Total
60.00	23.73	83.73	86.23

CLASSIFICATIONS:

Pipeline Journeyman Welder

Effective Dates:

11/01/2018			11/01/2019
Rate	Fringe	Total	Total
60.00	23.73	83.73	86.23

CLASSIFICATIONS:

Pipeline Journeyman

Effective Dates:

11/01/2018			11/01/2019
Rate	Fringe	Total	Total
38.46	17.54	56.00	57.67

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:

	03/01/2019		03/01/2020
Rate	Fringe	Total	Total
43.75	31.53	75.28	77.78

CLASSIFICATIONS:

Asphalt Foreman

Effective Dates:

	03/01/2019		03/01/2020
Rate	Fringe	Total	Total
42.45	31.53	73.98	76.48

CLASSIFICATIONS:

Asphalt Screedman

Effective Dates:

	03/01/2019		03/01/2020
Rate	Fringe	Total	Total
42.20	31.53	73.73	76.23

CLASSIFICATIONS:

Asphalt Raker or Lute Man

TERRITORY
ENTIRE STATE

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

ASPHALT LABORERS- NORTH Rates Expiration Date :

Effective Dates:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
41.50	31.53	73.03	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 workday 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:

	12/02/2018		12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total
55.13	36.93	92.06	94.45	96.84

CLASSIFICATIONS:

Chief Lineman

Effective Dates:

	12/02/2018		12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total
52.01	34.84	86.85	89.11	91.36

CLASSIFICATIONS:

Journeyman Lineman

ELECTRICIAN- UTILITY WORK (NORTH) **Rates Expiration Date :**

Effective Dates:

12/02/2018			12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total
52.01	34.84	86.85	89.11	91.36

CLASSIFICATIONS:

Special License Operator

Effective Dates:

12/02/2018			12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total
51.49	34.49	85.98	88.22	90.44

CLASSIFICATIONS:

Transit Man

Effective Dates:

12/02/2018			12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total
49.93	33.45	83.38	85.53	87.70

CLASSIFICATIONS:

Line Equipment Operator

Effective Dates:

12/02/2018			12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total
43.69	29.27	72.96	74.84	76.73

CLASSIFICATIONS:

Dynamite Man

Effective Dates:

12/02/2018			12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total
65.01	43.55	108.56	111.38	114.19

CLASSIFICATIONS:

General Foreman

Effective Dates:

12/02/2018			12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total
59.81	40.07	99.88	102.47	105.05

CLASSIFICATIONS:

Assistant General Foreman

ELECTRICIAN- UTILITY WORK (NORTH) **Rates Expiration Date :**

Effective Dates:

12/02/2018			12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total
58.25	39.02	97.27	99.79	102.32

CLASSIFICATIONS:

Line Foreman

Effective Dates:

12/02/2018			12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total
42.13	28.22	70.35	72.17	73.99

CLASSIFICATIONS:

Street Light Mechanical Leader

Effective Dates:

12/02/2018			12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total
40.05	26.83	66.88	68.62	70.34

CLASSIFICATIONS:

Groundman Winch Operator

Effective Dates:

12/02/2018			12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total
40.05	26.83	66.88	68.62	70.34

CLASSIFICATIONS:

Groundman Truck Operator

Effective Dates:

12/02/2018			12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total
39.53	26.48	66.01	67.71	69.43

CLASSIFICATIONS:

Street Light Mechanic

Effective Dates:

12/02/2018			12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total
39.53	26.48	66.01	67.71	69.43

CLASSIFICATIONS:

Line Equipment Mechanic

ELECTRICIAN- UTILITY WORK (NORTH) **Rates Expiration Date :**

Effective Dates:

12/02/2018			12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total
33.81	22.65	56.46	57.91	59.38

CLASSIFICATIONS:

Groundman 2nd Year

Effective Dates:

12/02/2018			12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total
31.21	20.91	52.12	53.47	54.80

CLASSIFICATIONS:

Groundman 1st Year

Effective Dates:

12/02/2018			12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total
51.49	34.49	85.98	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 workday 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 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:

12/02/2018

Rate	Fringe	Total
60.86	48.05	108.91

CLASSIFICATIONS:

General Foreman

ELECTRICIAN- UTILITY WORK (SOUTH) **Rates Expiration Date :**

Effective Dates:

12/02/2018

Rate	Fringe	Total
54.21	44.12	98.33

CLASSIFICATIONS:

Foreman

Effective Dates:

12/02/2018

Rate	Fringe	Total
51.35	42.44	93.79

CLASSIFICATIONS:

Small Job Foreman

Effective Dates:

12/02/2018

Rate	Fringe	Total
47.55	40.18	87.73

CLASSIFICATIONS:

Heavy Equipment Operator

Effective Dates:

12/02/2018

Rate	Fringe	Total
47.55	40.18	87.73

CLASSIFICATIONS:

Cable Splicer

Effective Dates:

12/02/2018

Rate	Fringe	Total
47.55	40.18	87.73

CLASSIFICATIONS:

Journeyman Lineman

Effective Dates:

12/02/2018

Rate	Fringe	Total
47.55	40.18	87.73

CLASSIFICATIONS:

Journeyman Welder

ELECTRICIAN- UTILITY WORK (SOUTH) Rates Expiration Date :

Effective Dates:

12/02/2018

Rate	Fringe	Total
47.55	40.18	87.73

CLASSIFICATIONS:

Journeyman Painter

Effective Dates:

12/02/2018

Rate	Fringe	Total
38.04	34.55	72.59

CLASSIFICATIONS:

Light Equipment Operator

Effective Dates:

12/02/2018

Rate	Fringe	Total
33.29	31.73	65.02

CLASSIFICATIONS:

Groundman Truck Driver

Effective Dates:

12/02/2018

Rate	Fringe	Total
30.91	30.31	61.22

CLASSIFICATIONS:

Groundman 3rd Year

Effective Dates:

12/02/2018

Rate	Fringe	Total
28.53	28.91	57.44

CLASSIFICATIONS:

Groundman 2nd Year

Effective Dates:

12/02/2018

Rate	Fringe	Total
26.15	27.51	53.66

CLASSIFICATIONS:

Groundman 1st Year

TERRITORY
ENTIRE STATE

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

ELECTRICIAN- UTILITY WORK (SOUTH) Rates Expiration Date :

Effective Dates:

12/02/2018

Rate	Fringe	Total
20.92	24.41	45.33

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:

	03/01/2019		03/01/2020
	Rate	Fringe	Total
	66.38	31.53	97.91
			101.16

CLASSIFICATIONS:

Walking Boss & Superintendent

Effective Dates:

	03/01/2019		03/01/2020
	Rate	Fringe	Total
	65.93	31.53	97.46
			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:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
65.18	31.53	96.71	99.96

CLASSIFICATIONS:

Iron Foreman, Caulking Foreman, Form Foreman, Cement Finishing Foreman, Concrete Foreman, Track Foreman, Clean-up Foreman, Grout Foreman

Effective Dates:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
68.93	31.53	100.46	103.71

CLASSIFICATIONS:

Blaster

Effective Dates:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
64.35	31.53	95.88	99.13

CLASSIFICATIONS:

Top Labor Foreman

Effective Dates:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
63.83	31.53	95.36	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:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
63.60	31.53	95.13	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)

TERRITORY
ENTIRE STATE

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

HEAVY & GENERAL LABORERS- NEW TRANS HUDSON TUNNELS Rates Expiration Date :

Effective Dates:

03/01/2019			03/01/2020
Rate	Fringe	Total	Total
63.00	31.53	94.53	97.78

CLASSIFICATIONS:

All others (including Powder Watchman, Change House Attendant, Top Laborer, Job Steward)

NJDOT SPECIAL PROVISIONS

NJDOT SPECIAL PROVISIONS
FOR
MADISON AVENUE PARK FIELD IMPROVEMENTS
IN THE CITY OF RAHWAY
COUNTY OF UNION

The Contractor is made aware that regular text denotes the Supplementary changes made by the NJDOT. Paragraphs and Pay Items in bold text denote revisions and additions made by the Engineer to be project specific.

WAGE RATES

The contractor shall pay the minimum wage rates determined by the New Jersey Department of Labor.

State wage rates may be obtained from the New Jersey Department of Labor (Telephone: 609-292-2259) or by accessing the Department of Labor's web site at http://lwd.dol.state.nj.us/labor/wagehour/wagerate/prevailing_wage_determinations.html The State wage rates in effect at the time of award will be made a part of this Contract, pursuant to Chapter 150, Laws of 1963 (NJSA 34:11-56.25, *et seq.*).

In the event it is found that any employee of the contractor or any subcontractor covered by the contract, has been paid a rate of wages less than the minimum wage required to be paid by the contract, the contracting agency may terminate the contractor's or subcontractor's right to proceed with the work, or such part of the work, as to which there has been a failure to pay required wages and to prosecute the work to completion or otherwise. The contractor and his sureties shall be liable to the contracting agency for any excess costs occasioned thereby.

GENERAL

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 five (5) 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 (609-633-3990).

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 "basis of 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 supplementary specification whenever reference to the State, Commissioner, Department, Engineer or Inspector is made, it is construed to mean the particular municipality or county executing this contract.

Whenever reference to Title 27 is made, it is construed to mean Title 40.

SPECIAL PROVISIONS

AUTHORIZATION OF CONTRACT

The Contract is authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements thereto, and Title 23 of the United States Code - Highways.

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 SP1 to SP62 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 web site at http://lwd.dol.state.nj.us/labor/wagehour/wagehour_index.html The State wage rates in effect at the time of award are part of this Contract, pursuant to Chapter 150, Laws of 1963 (NJSA 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.

DIVISION 100 – GENERAL PROVISIONS

IN CASE OF DISCREPANCY BETWEEN THE NJDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2007 U.S. CUSTOMARY ENGLISH UNITS AND THE INSTRUCTION TO BIDDERS, BID FORM(S), AGREEMENT, AND GENERAL CONDITIONS OF THIS CONTRACT, THE INSTRUCTION TO BIDDERS, BID FORM(S), AGREEMENT AND GENERAL CONDITIONS OF THIS CONTRACT SHALL GOVERN.

SECTION 101 - GENERAL INFORMATION

THIS SECTION IS NOT APPLICABLE TO THIS CONTRACT

SECTION 102 - BIDDING REQUIREMENTS AND CONDITIONS

THIS SECTION IS NOT APPLICABLE TO THIS CONTRACT

SECTION 103 - AWARD AND EXECUTION OF CONTRACT

THIS SECTION IS NOT APPLICABLE TO THIS CONTRACT

SECTION 104 - SCOPE OF WORK

THIS SECTION IS NOT APPLICABLE TO THIS CONTRACT

SECTION 105 - CONTROL OF WORK

THIS SECTION IS NOT APPLICABLE TO THIS CONTRACT

SECTION 106 - CONTROL OF MATERIAL

THIS SECTION IS NOT APPLICABLE TO THIS CONTRACT

SECTION 107 - LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

THIS SECTION IS NOT APPLICABLE TO THIS CONTRACT

SECTION 108 - PROSECUTION AND PROGRESS

THIS SECTION IS NOT APPLICABLE TO THIS CONTRACT

SECTION 109 - MEASUREMENT AND PAYMENT

THIS SECTION IS NOT APPLICABLE TO THIS CONTRACT

DIVISION 150 – CONTRACT REQUIREMENTS

IN CASE OF DISCREPANCY BETWEEN THE NJDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2007 U.S. CUSTOMARY ENGLISH UNITS AND THE INSTRUCTION TO BIDDERS, BID FORM(S), AGREEMENT, AND GENERAL CONDITIONS OF THIS CONTRACT, THE INSTRUCTION TO BIDDERS, BID FORM(S), AGREEMENT AND GENERAL CONDITIONS OF THIS CONTRACT SHALL GOVERN.

SECTION 152 – INSURANCE

THIS SECTION IS NOT APPLICABLE TO THIS JOB.

SECTION 153 – PROGRESS SCHEDULE

THIS SECTION IS NOT APPLICABLE TO THIS JOB.

SECTION 154 – MOBILIZATION

154.01 DESCRIPTION

THE FOLLOWING IS ADDED:

MOBILIZATION shall include the cost of initiating the Contract, and such portions of the following that are required for the Project: setting up the CONTRACTOR's general plant, offices, shops, storage areas, sanitary and other facilities as required; providing access to the project sites; obtaining necessary permits and licenses, and payment of fees; protecting existing utilities; lighting work areas; providing working drawings; sampling and testing of materials; providing required insurance and bonds.

Mobilization shall also include all traffic control devices and personnel required for the project, except Uniformed Traffic Directors, as specified in Section 159.

154.02 MATERIALS

THE FOLLOWING IS ADDED:

Materials shall include, but not be limited to, all items necessary to prevent public entry to the site of work. These items shall include: fence, lights, barricades, or other means necessary to prevent entry of the public to the site of work.

154.03 PROCEDURE

THE FOLLOWING IS ADDED:

Prior to the start of work, it is the responsibility of the CONTRACTOR to notify the owners of the overhead and underground utilities that may be encountered during all construction operations.

Prior to any excavation, the CONTRACTOR shall have all utilities marked out. If applicable, the CONTRACTOR shall arrange for any necessary utility work and shall reschedule his operations appropriately.

The CONTRACTOR shall take care and caution to preserve and protect all existing pavements, curbs, landscape areas, sidewalk, private and public property along and adjacent to the lines of work. Any destruction to any of the above, beyond the limits of work or caused by careless construction procedures shall be replaced by the CONTRACTOR at no additional cost to the OWNER.

The CONTRACTOR shall notify all property owners affected by the proposed work at least seventy-two (72) hours prior to the commencement of construction. This notification shall be done by door-hangers or letters and should indicate the anticipated starting and completion dates.

CONTRACTOR shall provide barricades to protect the public from injury from the CONTRACTOR's work. Barricades shall be placed so as to prevent unauthorized persons from entering the work area. Barricades shall consist of snow fence, lights or other means necessary to prevent entry to the work area.

154.04 MEASUREMENT AND PAYMENT

Measurement and Payment will be made for Mobilization. Contractor is to perform work as required and include payment for this work in the lump sum price.

Mobilization shall also include all traffic control devices and personnel required for the project, except Uniformed Traffic Directors, as specified in Section 159.

THE FOLLOWING IS ADDED TO THE PAY ITEMS:

<i>Item</i> MOBILIZATION	<i>Pay Item</i> LUMP SUM
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SECTION 157 – CONSTRUCTION LAYOUT AND MONUMENTS

157.01 DESCRIPTION

The Following Is Added:

Construction layout shall be performed by a New Jersey Licensed Professional Land Surveyor.

Contractor shall be responsible for establishing and maintaining all lines and grades as required to complete the work described on the project plans and herein the project specifications.

Contractor shall protect, preserve and/or replace existing benchmarks, monuments, and other reference points, if any.

157.04 MEASUREMENT AND PAYMENT

The Entire Subsection Is Replaced By The Following:

Construction Layout and Monuments will not be measured for payment. No separate payment will be made for construction layout and monuments. The contractor shall perform all work described in this section and include costs under the various pay items in the proposal.

**SECTION 158 – SOIL EROSION AND SEDIMENT CONTROL
AND WATER QUALITY CONTROL**

158.03.02 SESC MEASURES

The Following Is Added:

Soil Erosion and Sediment Control measures (SESC measures) shall be provided and maintained in accordance with the standards for soil erosion and sediment control in New Jersey and also in accordance with the standards of the Somerset-Union Soil Conservation District.

The Contractor shall adhere to the approved soil erosion and sediment control plan and the soil erosion and sediment control details. The soil erosion and sediment control plan and soil erosion and sediment control details have been made a part of the project plans.

158.04 MEASUREMENT AND PAYMENT

The Entire Subsection Is Replaced By The Following:

Payment for all costs associated with Soil Erosion And Sediment Control And Water Quality Control Measures, as delineated on the plans and/or directed in the field by the Engineer and as required by the Somerset-Union Soil Conservation District, shall be measured for payment per the following items scheduled in the proposal.

It is the Contractors responsibility to notify the Somerset-Union Soil Conservation District in advance of disturbance in compliance with the Soil Conservation District (SCD) certification. The Contractor must copy Maser Consulting P.A. on the written notice to the SCD. Any costs or effort associated with SCD coordination and complying with the SCD certification should be included in the lump sum pay item “Soil Erosion and Sediment Control Measures”.

The Following Pay Item is Described:

<u>Item</u>	<u>Pay Unit</u>
Soil Erosion and Sediment Control Measures	Lump Sum

SECTION 159 – TRAFFIC CONTROL

159.01 DESCRIPTION

THE FOLLOWING IS ADDED AFTER THE FIRST SENTENCE:

The Contractor shall be responsible for the proper notification of residences, businesses, emergency services, busing services and all other parties affected by the traffic control implemented on the project.

159.03 PROCEDURE

SUBSECTION 159.03.09 EMERGENCY TOWING SERVICE

THIS SUBSETCTION IS DELETED.

SUBSECTION 159.04 MEASUREMENT AND PAYMENT:

THE FOLLOWING IS ADDED:

ALL TRAFFIC CONTROL ITEMS IN SECTION 159 SHALL BE ACCOUNTED FOR IN THE LUMP SUM COST FOR MOBILIZATION IN THE PROPOSAL.

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
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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:

- 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:

$$A = B \times [(MA - BA)/BA] \times C \times M \times G$$

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:

<i>Item</i>	<i>Pay Unit</i>
FUEL PRICE ADJUSTMENT	ALLOWANCE
ASPHALT PRICE ADJUSTMENT	ALLOWANCE

SECTION 161 – FINAL CLEANUP

THE FOLLOWING IS ADDED:

161.03.02 Restoration

Restoration not specifically called out with construction notes, such as grading, concrete and paver walks, lawn, fencing, railings, curb, driveway restoration, pavement restoration, trench restoration, signage, survey monuments, water and gas valves, cleanouts, roof leaders or similar piping, benches, and any other items disturbed or removed during construction shall be restored and reset to their original condition and location. The Contractor shall reset items at their preconstruction locations, unless otherwise directed by the Engineer. Amenities which are anchored to the ground shall be reset utilizing footing sizes, anchoring methods and materials as specified by the product's manufacturer or as approved by the Engineer. Survey monuments shall be reset by a professional land surveyor licensed in the state of New Jersey. All costs associated with site restoration shall be included in the various pay items scheduled in the proposal.

All fences, decorative landscaping, sign posts, street marking posts, receptacles, benches, and all other features that interfere with construction operations shall be removed and reset in order to perform work. Any material damaged during construction shall be replaced and installed in its original location. All costs associated with site restoration shall be included in the various pay items scheduled in the proposal.

In areas where existing paver walkways are to be removed and replaced with concrete sidewalk, the Contractor shall reset pavers at the limits of construction to meet the location and grades of the new sidewalk. If a paver soldier course surrounds the existing pavers, the Contractor shall reset the existing paver soldier course, supplementing with additional pavers, at the limits of concrete sidewalk construction. All costs associated with resetting paver sidewalks at the limits of concrete sidewalk construction shall be included in the various pay items scheduled in the proposal.

161.04 MEASUREMENT AND PAYMENT

RESTORATION WILL NOT BE MEASURED FOR PAYMENT. NO SEPARATE PAYMENT WILL BE MADE FOR RESTORATION. THE CONTRACTOR SHALL PERFORM ALL WORK DESCRIBED IN THIS SECTION AND INCLUDE COSTS UNDER THE VARIOUS PAY ITEMS IN THE PROPOSAL.

DIVISION 200 – EARTHWORK

SECTION 201 – CLEARING SITE

201.03.01 Clearing Site

THE FOLLOWING IS ADDED:

Work for CLEARING SITE shall include but is not limited to sawcutting existing pavement, removal and disposal of concrete curb, sidewalk, driveways, bituminous pavement, pavers, pipe, inlets, sanitary sewer manholes, pipes & laterals, miscellaneous debris, lawn, trees, tree stumps, landscaping, and any other work required to prepare the site for construction.

Before any clearing site work or mobilization is performed at the project site, the Contractor is to film a pre-construction video of the entire existing site. The video should be common DVD standard formatting found in any home. One copy should be given to the Owner and the other copy to the Engineer at the Pre-Construction Meeting or soon thereafter. The notice to proceed will not be issued until the ENGINEER has received the pre-con video. All existing driveways, aprons, sidewalks and other private property shall be specifically included in the video. Special attention shall be taken to these items to insure accurate restoration.

Unless otherwise directed, all excess material, including soil shall be removed from the site and disposed of by the CONTRACTOR. Should the OWNER wish to retain portions of the excess material, the CONTRACTOR shall deliver said material to the required location as determined by the OWNER at no additional cost to the OWNER.

CONTRACTOR shall also remove and dispose of all construction debris. All debris shall be cleaned up on a daily basis and placed in containers or trucks. The materials shall be removed from the site of work and disposed of by the CONTRACTOR at no additional cost to the OWNER.

The CONTRACTOR, during the construction of the project, shall not stockpile materials or his equipment on any private property; except in areas designated on the plans or as directed by the ENGINEER. Areas for stockpiling and staging shall be approved by the ENGINEER prior to the commencement of construction.

The Item CLEARING SITE shall include all carefully removing, storing and reinstalling any materials as depicted within the “Existing Conditions and Demolition Plan” and as directed in the field by the Engineer.

201.04 MEASUREMENT AND PAYMENT

THE FOLLOWING IS ADDED TO THE END OF THE SECTION:

The CONTRACTOR is responsible to clear any and all items required to build the project as shown on the plans. The notes shown on the plans may not be all-inclusive. Any items not specifically shown for removal on the plans, but required to build the proposed improvements shall be removed and disposed of under CLEARING SITE.

The CONTRACTOR is required to remove and dispose of off-site any excavated soil material that is in excess of that required for the project as per NJDOT Section 202.03.07.

SECTION 202 – EXCAVATION

202.01 DESCRIPTION.

The Following Is Added:

This work shall also include the removal of all materials deemed unsuitable for re-use. Material that is observed to weave or pump during construction operations shall be deemed unsuitable for re-use and

excavated per the direction of the Engineer. No separate payment shall be made for the excavation and off-site removal of material that is observed to be unsuitable for re-use and all costs shall be included in the various Items in the Proposal.

This work shall also include the cost for all excavation and site grading required for the installation and construction of all proposed improvements described on the project plans, regardless of the material encountered, in conformance with the final grades provided on the project plans.

This work shall also consist of all work necessary to excavate in a manner which complies with the Occupation Safety and Health Administration (OSHA) requirements. The Contractor shall coordinate excavations with the Engineer. All excavations must be filled or plated prior to end of work shift. No open excavations are permitted at any time that work is not in progress. Plating of open excavations must be specifically approved by the Engineer.

This work shall also include the removal of rock due the need to install proposed underground improvements as indicated and as directed by the Engineer. The manner of rock excavation shall be examined on a case by case basis but shall include removal by hand or machine, the use of blasting is not permitted on this project.

All excavation and disposal including cutting, rock removal, etc., as required shall be included herein. Materials to be excavated are unclassified. Contractor shall be responsible for removal of any and all excessive and unsuitable materials encountered, without additional cost to the Owner.

Following the site clearing and stripping, excavation within the grading limits of the project shall be performed to establish the sub-grade for the site, as needed and determined in the field by the Engineer. Cost for disposal of all material shall be the responsibility of the contractor. Payment will be made under the Lump Sum item Excavation, Borrow Excavation and Grading, Unclassified.

Any excess subsoil shall be kept separate from topsoil and/or other excavated materials and properly stored in stockpiles so that it shall not be subject to abnormal erosion and loss and does not interfere with subsequent construction, material storage and/or contamination from construction activities. Material removed below grade shall be replaced with approved material, thoroughly compacted to a density equal to adjacent areas using suitable equipment, as approved by the Engineer.

Contractor shall carry excavation to lines and grades required, to dimensions and depths shown, with sufficient working space to permit placing, protection, inspection, and completion of all contract work. Materials of every nature encountered shall be loosened and removed manually or with power equipment. Excavated material shall be stockpiled on the construction site, if needed for the work; otherwise it shall be disposed of properly off site. The sides of all excavations shall be free of undercuts and properly sloped or braced to prevent slides and caving. Provide barriers, snow fence, markings and guarding lighting as required at all open excavations for working and public safety. Remove protective materials when no longer required. All excavations shall be maintained free of water and protected at all times from frost.

1. **Critical Areas of Existing Utilities:** Hand excavation of such areas shall be required to insure that utilities are not damaged.
2. **Inspection:** Contractor shall not begin work until bearing surfaces have been cleared, and Engineer's authorization given to proceed. Contractor is required to give ample advance notice to permit the Engineer to arrange for proper field inspection of conditions. The Engineer shall approve the sub-grade before permission is granted to proceed.
3. **Timing:** Contractor shall schedule excavation, construction, protection, inspection, and completion so as to minimize length of time that any excavation remains open.

Site grading shall include grading, preparation, and compacting all material required to bring the site to grade, as shown on the plans or as directed by the Engineer, and all incidental work to the satisfaction of the Engineer.

The spreading of the existing material to meet the sub-grade requirements shall be paid for under the Excavation, Borrow Excavation and Grading, Unclassified item. The importing of the fill material (borrow excavation) and

spreading of the borrowing excavation, shall be paid for on a percentage complete basis. All material shall be certified clean by the contractor and/or contractor’s representative or be virgin material as certified by a commercial quarry. The contractor shall install the material in lifts and compact the material to 95% compaction so that settling of the site does not occur. The contractor shall utilize the services of a geotechnical engineer in areas of fill that are greater than four feet.

Compaction shall be performed in accordance with Section 203 of the NJDOT Standard Specification. Costs of compaction and compaction testing shall be included in the pay item Excavation, Borrow Excavation and Grading, Unclassified.

Playground Demolition and Site Preparation will include all material and labor for the removal of the existing playground equipment and meeting the existing grade with Dense Graded Aggregate.

202.04 MEASUREMENT AND PAYMENT.

The Entire Subsection Is Replaced By The Following:

No separate payment for excavation and grading shall be measured and all costs associated with the work described above shall be included in the lump sum bid price for Excavation, Borrow Excavation and Grading, Unclassified. These costs shall include, but not be limited to, all costs associated with unclassified excavation, importing of material, disposal of material off-site, vehicle costs, stakeout and movement of all material to meet the final grades as described on the project plans and to the satisfaction of the Engineer, and unclassified excavation for installation of all proposed athletic fields, pavement, buildings, sidewalks, utilities, curb, bleachers, etc. The contractor shall account for all soil movement activity within the allotted lump sum bid price.

No separate payments shall be made for excavation related to the installation of conduit or junction boxes sidewalks, driveways, light pole foundations, trees, or benches, etc. cost should be included various Pay Items scheduled in the Proposal.

Costs of compaction and compaction testing shall be included in the pay item Excavation, Borrow Excavation and Grading, Unclassified.

Excavation, Borrow Excavation and Grading, Unclassified shall include the cost of testing soil that is to be exported from the site as required by federal, state or local regulations or a receiving facility. All soil sampling shall be conducted in the presence of the engineer. Any soil sampling not conducted in the presence of the engineer shall not be considered valid.

No separate payments shall be made for excavation related to the installation of conduit or junction boxes sidewalks, driveways, light pole foundations, trees, or benches, etc. Cost should be included in the various Pay Items scheduled in the Proposal.

Playground Demolition and Site Preparation will include all costs for the removal of the existing playground equipment and meeting the existing grade with Dense Graded Aggregate. Playground equipment and surfacing installation will be done separate from this project.

The Following Pay Item is Described:

<u>Item</u>	<u>Pay Unit</u>
Excavation, Borrow Excavation and Grading, Unclassified	Lump Sum
Playground Demolition and Site Preparation	Lump Sum

DIVISION 300 – SUBBASE AND BASE COURSE

SECTION 301 – SUBBASE

301.04 MEASUREMENT AND PAYMENT.

The Entire Subsection Is Replaced By The Following:

Separate payment for preparing, spreading, and grading all SUBBASE COURSES, as necessary to comply with the construction details provided on the plans, is not included in the proposal, include costs in the various Items scheduled in the Proposal.

SECTION 302 – AGGREGATE BASE COURSE

302.01 DESCRIPTION.

The Following Is Added:

This work shall also consist of placing and preparing a dense-graded aggregate base course as specified on the construction details.

The Following Is Added:

This work shall also consist of placement of Imported Granular Fill as described herein and as shown on the project plans.

302.02 MATERIALS.

The Following Is Added:

Imported fill and clean stone shall be free from pieces coated with clay, caked stone dust and other objectionable materials. It shall not contain more than 5% of weathered and decomposed rock, not more than 5% of stone of types other than the type being used, in accordance with the specifications, and not more than 7%, by weight of flat or elongated pieces. A flat piece shall be one in which the ratio of the width to thickness of its circumscribing rectangular prism is greater than 5:1, and an elongated piece shall be one in which the ratio of the length to width of its circumscribing rectangular prism is greater than 5:1. The percentage of wear shall be determined in accordance with A.A.S.H.T.O. Designation T3.

302.03 CONSTRUCTION

The Engineer shall inspect the soil condition after initial excavation operations. After the Engineer has accepted the soil condition, the contractor shall place Imported Granular Fill, where shown on the project plans. The contractor shall level the existing soil and place and grade imported granular fill at consistent thicknesses.

The Imported Granular Fill To Be Placed Shall Conform To The Following Gradation:

Allowable Gradation Envelope Imported Granular Fill	
U.S. Standard Sieve Size	Percent Finer By Weight
2"	100
1"	80-100

3/8"	70-100
No. 10	50-100
No. 30	30-85
No. 60	15-65
No. 200	5-15

302.04 MEASUREMENT AND PAYMENT.

The entire subsection is replaced by the following:

COURSE AGGREGATE, NO. 57, Variable Thickness shall be measured by the cubic yard of stone installed within the synthetic turf field. Any No. 57 Clean Stone installed as a part of the trench or subgrade detention system cross section for proposed drainage pipes, sidewalk or concrete pad shall not be measured for payment and shall be included in the related pay item.

IMPORTED GRANULAR FILL shall not be measured but shall be included in the cost of the "Excavation, Borrow Excavation and Grading, Unclassified" pay item. The contractor shall monitor the quantity of imported granular fill placed and notify the Engineer prior to placing additional material above the grading depicted on the plan set.

Fill materials incidental for the construction of other items shall not be measured for payment. This includes, but is not limited to, base materials for sidewalks, concrete slabs, paver walks, walls, stairs, curbs and grade beams. Such incidental fill material shall be included in the appropriate construction item.

The Following Pay Items Are Described:

<u>Item</u>	<u>Pay Unit</u>
Course Aggregate, No. 57, Variable Thickness	Cubic Yard
¼" Finishing Stone, 2" Thick	Cubic Yard

DIVISION 400 – PAVEMENTS

SECTION 401 – HOT MIX ASPHALT (HMA) COURSES

401.02.01 Materials

EMULSIFIED ASPHALT UNDER TACK COAT IS REVISED TO:

Emulsified Asphalt, Grade RS-1, CRS-1, SS-1, SS-1h, Grade CSS-1 or CSS-1h 902.01.03

401.02.02 Equipment

THE LAST PARAGRAPH IS CHANGED TO:

When an MTV is used, install a paver hopper insert with a minimum capacity of 14 tons in the hopper of the HMA paver.

401.03.01 Preparing Existing Pavement

A. Milling of HMA.

Stage	Max. time interval allowed

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.

D. Repairing HMA Pavement.

THE ENTIRE TEXT IS CHANGED TO:

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.

Sawcut existing HMA pavement to a maximum depth of 10 inches, or to the full depth of bound layers, 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 to a depth of at least 3 and no more than 10 inches below the level of milling within the boundary of the sawcuts to form rectangular openings with vertical sides. Shape and compact the underlying surface to produce a firm, level base. Ensure that the remaining pavement is not damaged.

Apply polymerized joint adhesive or tack coat to the vertical surfaces of the openings. Spread and grade HMA in the opening as directed 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 the adjacent pavement surface.

Reuse removed material as specified in 202.03.07.A.

401.03.02 Tack Coat and Prime Coat

TABLE 401.03.02-1 IS CHANGED TO:

Table 401.03.02-1 Tack Coat Application			
Material	Spraying Temp, °F	Gallons per Square Yard	Season
Cut-Back Asphalt:			
RC-70	120 to 190	0.05 to 0.15	Oct 15 to Apr 15
Emulsified Asphalt:			
RS-1	70 to 140	0.05 to 0.15	All year
CRS-1	125 to 185	0.05 to 0.15	All year

SS-1, SS-1h	70 to 140	0.05 to 0.15	All year
CSS-1, CSS-1h	70 to 140	0.05 to 0.15	All year

TABLE 401.03.02-2 IS CHANGED TO:

Table 401.03.02-2 Prime Coat Application			
Cut-Back Asphalt	Spraying Temp, °F	Gallons per Square Yard	Season
MC-30	85 to 150	0.1 to 0.5	Oct 15 to Apr 15
MC-70	120 to 190	0.1 to 0.5	Oct 15 to Apr 15
Emulsified Asphalt:			
CSS-1	70 to 140	0.1 to 0.50	All year

401.03.03 HMA Courses

D. Transportation and Delivery of HMA.

THE FIRST PARAGRAPH 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. Project title.
3. Load time and date.
4. Truck number.
5. Mix designation.
6. Plant lot number.
7. Tare, gross, and net weight.

E. Spreading and Grading.

THE THIRD PARAGRAPH IS CHANGED TO:

The use of an MTV is optional for the construction of intermediate and surface course in the traveled way. If an MTV is used, ensure that the MTV independently delivers HMA from the HMA trucks to the HMA paver. Operate the MTV to ensure that the axle loading does not damage structures, roadway, or other infrastructure.

THE THIRD PARAGRAPH IS CHANGED TO:

Use an MTV for the construction of intermediate and surface course in the traveled way. Ensure that the MTV independently delivers HMA from the HMA trucks to the HMA paver. Operate the MTV to ensure that the axle loading does not damage structures, roadway, or other infrastructure.

Use an MTV for the construction of surface course in the traveled way. Ensure that the MTV independently delivers HMA from the HMA trucks to the HMA paver. Operate the MTV to ensure that the axle loading does not damage structures, roadway, or other infrastructure.

H. Air Void Requirements.

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.

J. Ride Quality Requirements.

THE FIRST PARAGRAPH IS CHANGED TO:

The Department will evaluate the HMA surface course using the International Roughness Index (IRI) according to ASTM E 1926. The Department will use the measured IRI to compute the appropriate pay adjustment (PA). The PA may be positive for superior quality work or negative for defective work. The Department may exclude certain area as specified in the Special Provisions.

SUBPART 3 OF SECOND PARAGRAPH IS CHANGED TO:

3. Preparation for IRI Testing. Provide the necessary traffic control when the Department performs IRI testing. Perform required mechanical sweeping of the surface course before IRI testing. To facilitate auto triggering on laser profilers, place a single line of preformed traffic marking tape perpendicular to the roadway baseline 300 feet before the beginning of each lane, shoulder, and ramp to be tested. Submit the actual stationing for each traffic marking tape location to the RE.

4. Acceptance.

a. Pay Adjustment.

THE FOLLOWING IS ADDED:

Route	Type	Number of Lift	Mile Post	
			From	To

401.04 MEASUREMENT AND PAYMENT

THE FOLLOWING IS ADDED:

The Department will make a payment adjustment for HMA air void quality by the following formula:

$$\text{Pay Adjustment} = Q \times \text{BP} \times \text{PPA}$$

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:

$$\text{Pay Adjustment} = Q \times \text{BP} \times \text{PPA}$$

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 quantity of various courses of HMA, in tons, used for payment shall be the lesser of the following:

- a. **The total of all Delivery Slips.**
- b. **Pavement Area (SY) x 115 Pounds/S.Y. x Specified Thickness Inches**
2000 POUNDS

All milling and paving of the existing parking lot within the project limits as shown on the Contract Documents shall be completed prior to September 1st, 2019. The Contractor will need written permission from the County should this not be attainable. No separate payment shall be made for re-mobilization paving of the new parking lot.

DIVISION 600 – MISCELLANEOUS CONSTRUCTION

SECTION 601 - PIPES

601.01 DESCRIPTION.

The Following Is Added:

Pipes shall include 1” x 12” perforated underdrain pipe, High Density Polyethylene (HDPE) pipes of various sizes, and reinforced concrete pipes of various sizes. This specification covers the requirements and methods of testing for oblong corrugated polyethylene pipe, HDPE pipe, couplings, and fittings for use in subsurface drainage applications. Nominal panel heights of 12 inch and 24 inch shall be as specified by the manufacturers stated herein. Oblong corrugated polyethylene pipe is intended for subsurface drainage applications where its major use is to collect and convey drainage water by gravity flow. The values stated in inch-pound units are to be regarded as the standard.

601.02 MATERIALS.

The Following is Specified:

Materials shall conform to the following Subsections:

Ductile Iron Culvert Pipe.....	913.02
Ductile Iron Water Pipe.....	913.03
Concrete Pipe.....	913.04
Corrugated Aluminum Alloy Culvert Pipe and Pipe Arches	913.05
Corrugated Steel Culvert Pipe and Pipe Arches.....	913.07
Corrugated Steel Sewer Pipe and Pipe Arches	913.08
High Density Polyethylene (HDPE) pipe	913.11
Mortar and Grout.....	914.03
Gaskets	919.08

Portland cement concrete for pipe plugs, encasements, or saddles shall conform to Section 914.

Where corrugated metal culvert pipe is designated, corrugated aluminum alloy culvert pipe or corrugated steel culvert pipe may be used.

Where corrugated metal culvert pipe arch is designated, corrugated aluminum alloy culvert pipe arch or corrugated steel culvert pipe arch may be used.

End sections shall be of the same material as the pipe or pipe arch to which the end sections are attached, except that end sections for HDPE pipe for outfall systems shall be concrete.

For jacked pipe, reinforced concrete culvert pipe shall conform to Subsection 913.04 except that the pipe shall be Class V, Wall B, tongue and groove type.

The tube material shall conform to the requirements of ASTM F 1216. The tube shall be fabricated to a size that, when installed, conforms to the internal circumference and length of the original pipe.

The wall color of the interior tube surface after installation shall not be of a dark or non-reflective nature that could inhibit proper closed-circuit television inspection.

All HDPE pipe shall be type S (smooth interior with annular corrugations), with gasketed water-tight joints according to AASHTO M330.

All HDPE pipes shall be in compliance with the requirements of the National Transportation Product Evaluation Program’s (NTPEP) evaluation of HDPE and thermoplastic pipe. NTPEP test results shall be furnished to the Engineer and to the Bureau of Materials Engineering and Testing before construction operation.

The Following Is Added:

The HDPE pipe shall be N-12 pipe as manufactured by Advanced Drainage Systems, Inc. 4640 Trueman Boulevard, Hilliard, OH 43026 Tel: 800-821-6710 or approved equal.

The ADS perforated pipe shall be AdvanEDGE pipe as manufactured by Advanced Drainage Systems, Inc. 4640 Trueman Boulevard, Hilliard, OH 43026 Tel: 800-821-6710 or approved equal.

General:

Polyethylene compounds that conform to the requirements of the minimum cell classification of 323410C or 333410C as defined and described in ASTM D3350. The compound ingredients may consist of lubricants, stabilizers, nonpoly (ethylene) resin modifiers, and pigments essential for processing, property control, and coloring.

The aggregate for underdrains shall be 3/4" clean stone and shall be approved by the engineer prior to installation.

Deadends of pipe underdrains and collector drains shall be plugged with a pipe cap or a riser where indicated.

Reprocessed Material:

Clean reprocessed material may be used provided that the oblong corrugated polyethylene pipe, AdvanEDGE pipe or approved equal and fittings produced meet all the requirements of this specification.

Workmanship:

The oblong corrugated pipe and fittings shall be free of foreign inclusions and visible defects. Ends shall be cut squarely and cleanly so as not to adversely affect joining.

Visible Defects:

Cracks, creases, unpigmented or nonuniformly pigmented pipe are not permissible.

Dimensions:

Nominal Size – The nominal sizes of the oblong corrugated pipe shall be 12" wide and 1" thick.

Inside and Outside Dimensions:

The inside and outside dimensions and tolerances for the 12" oblong pipe is as follows:

OUTSIDE DIMENSIONS		
<u>Nominal Size</u>	<u>Width</u>	<u>Thickness</u>
12" (305 mm)	13" (330 mm) + 3%	1.5" (38 mm) + 3%

INSIDE DIMENSIONS		
<u>Nominal Size</u>	<u>Width</u>	<u>Thickness</u>
12" (305 mm)	12" (330 mm) + 3.0/-1.5%	0.750" (19 mm) + 3.0/1.5%

Length:

AdvanEDGE pipe is an extruded product and may be sold in any length agreeable to the user. Lengths shall not be less than 99 percent of the stated quantity.

Perforations:

Unless otherwise specified, the perforations shall be cleanly cut and uniformly spaced along both sides of the oblong pipe. The perforation specifications are as follows:

Slot Length (Max.)	-	1.125" (29mm)
Slot Width (Max.)	-	0.150" (4mm)
Water Inlet Area (Min.)		15.0 aq. In/ft.

Compressive Strength:

The oblong corrugated pipe shall have a minimum compressive strength of 3000 lbs. for 12" (305 mm) and 6000 lbs. for 18" (455mm) pipe at 20% deflections when tested.

Environmental Stress Cracking:

There shall be no cracking of the pipe when tested.

Brittleness:

Samples shall not crack or split when tested. Five non-failures out of six impacts will be acceptable.

In-Plane Flow:

The oblong corrugated pipe shall have minimum hydraulic transmissivity of 17.5 gallons per minute per foot when tested in accordance with these specifications.

Fittings Requirements:

Standard fittings include in-line couplings, end outlets, side outlet and end caps.

Fittings shall not reduce the inside open flow area of the oblong pipe.

Couplings shall be corrugated to match the corrugations of the oblong pipe and shall provide sufficient longitudinal strength to assure alignment and prevent separation at the joints.

FILTER FABRIC

Filter fabric shall be laid between the 1" x 12" Perforated Underdrain Pipe (Synthetic Turf) and the properly compacted subgrade. The filter fabric shall be Mirafi 140N as manufactured by Tencate Geosynthetics, or approve equal. Include costs of filter fabric within the 1" x 12" Perforated Underdrain Pipe.

601.03 INSTALLATION.

The Following Is Added:

1. Trench openings shall not remain open overnight, unless adequately protected, within or adjacent to roadways on which traffic is being maintained or within the normal limits of pedestrian access.
2. When installing storm drains across private property, the topsoil and sod disturbed by excavation operations shall be salvaged for use in restoring the area to its original condition.
3. Except where necessary to maintain flow, drains shall not be placed in embankment until it has been constructed to a height of at least 3 feet above the top of the pipe or to the top of the embankment, whichever is lower, and then a trench shall be excavated for placing of the pipe.
4. Before the installation of HDPE pipe, and at the discretion of the Engineer, a technical representative from the pipe manufacturer shall be on site for the first day of pipe installation to validate proper installation procedures.
5. Existing drainage flow during construction shall be maintained until proposed drainage facilities are completed and put into service.
6. Pipe shall be handled and stored carefully in order to prevent damage such as cracking, denting and breaking. Pipe shall be lifted off of the delivery vehicle in order to avoid damage while unloading. Pipe shall not be dragged off the vehicle. Pipe shall be stored in an area where it will not be damaged during

construction operations. When pipe is stacked, it shall be properly blocked or strapped, and the bell and spigots shall alternate to reduce the load on the bells. Pipe that is damaged, bowed or considered unacceptable for other reasons will be rejected by the Engineer and shall not be used on the Project.

7. If heavy construction equipment (100 kips axle load) will be used in or over the vicinity of HDPE pipe or corrugated aluminum alloy culvert pipe, a temporary compacted cover of a minimum of 4 feet shall be placed over the top of the pipe. The materials for the temporary cover shall be excavated material free from stones larger than 2 inch for concrete pipe, 1½ inch for HDPE and 1 inch for corrugated steel pipe.
8. Sections of pipe damaged during construction shall be removed and replaced at no additional cost to the Owner.
9. Retest and Rejection: If any failure to conform to these specifications occurs, the pipe or fittings may be retested to establish conformity in accordance with agreement between the purchaser and seller. Individual results, not averages, constitute failure.
10. A manufacturer's certification that the product was manufactured, tested, and supplied in accordance with this specification, together with a report of the test results, and the date each test was completed, shall be signed by a personal authorized by the manufacturer.
11. 1" x 12" Perforated Underdrain Pipe (Synthetic Turf) must be installed on a well compacted subgrade. A geotextile fabric shall be used between the subsoil and the drainage pipe.
12. Positive pitch must be maintained in all main lines and lateral lines.
13. Joints shall be made using manufacturer fittings including couplers, wyes, tees, end caps, and round pipe adapters. Pull sock back to make joint connections then replace the sock over the joint and secure with manufacturer tape. The split couplers should be secured with metal pins.
14. The 1" x 12" perforated underdrain pipe should be anchored to the subgrade over 10-15 feet using 60 penny nails, sod staples, etc., to prevent movement during the installation of gravel and/or root zone layers.
15. The 1" x 12" perforated underdrain drainage system should be adapted to a 4" or 6" single wall non-perforated pipe at the connection point. An appropriate ADS AdvanEDGE, or approved equal, flat pipe adapter should be used.
16. Joint Integrity: Assemble in-line coupling fittings to oblong corrugated pipe sections in accordance with the manufacturer's recommendations. Using pipe sections at least 6 in. (150 mm) in length, an assembled test sample shall be suspended with its longitudinal axis vertical. A load consisting of tare weight of 100 pounds shall be hung from the lower end of the specimen, without separating.
17. Inspection: Inspection of the material shall be made agreed upon by the purchase and the seller as part of the purchase order.
18. Retest and Rejection: If any failure to conform to these specifications occurs, the pipe or fittings may be retested to establish conformity in accordance with agreement between the purchaser and seller. Individual results, not averages, constitute failure.
19. Pipe will be inspected before and during backfilling operations. Any pipe found to be out of alignment, excessively settled, lifted, or damaged shall be removed and re-laid or replaced.
20. Joints for rigid pipe shall be made with mortar, grout, or gaskets. Other types of joints recommended by the pipe manufacturer may be permitted as approved by the Engineer. Corrugated metal pipe shall be joined by coupling bands.

21. The use of split couplings for HDPE pipe shall not be permitted unless approved by the Engineer for use in joining field cuts. All joints shall be of the bell and spigot, or bell and spigot type with a gasket according to ASTM F 477 to provide a silt-tight seal. Pipe connections shall be constructed according to the manufacturer's recommendations for assembly of joint components, lubrications and making of joints. The pipe fittings shall be free of inclusions and visible defects. The ends of the pipe shall be cut squarely so as not to adversely affect joining.

601.04 MEASUREMENT AND PAYMENT.

The Following Is Added:

The cost of all work associated with the complete installation of various types of pipes, including, but not limited to, trenching, NJDOT No. 57 aggregate, filter fabric, filter fabric sleeve, sand, backfill material and compaction shall be included in the linear foot price bid for the related pipe item.

Payment for the installation of storm sewer pipe (HDPE, RCP, etc.) shall include all sawcutting, excavation, bedding, backfill, filter fabric, pipe and full depth pavement repair. Any pipe connections to existing storm structures shall be not be paid separately, and be included under the various pipe pay items. Any connections to existing manholes shall include core drilling and repair of the existing manhole where necessary.

The Perforated High Density Polyethylene Pipe shall be perforated as depicted on the construction details. The HDPE perforated pipe shall consist of drainage trenches filled with clean stone and surrounded in filter fabric throughout the project site. The work as described within the construction documents shall be paid for by the linear foot of pipe installed.

The Watertight High Density Polyethylene Pipe shall not be perforated and shall include an integral built-in bell and factory installed gasket. The joint shall meet or exceed ASTM 3212 and ASTM C969. The pipe shall be bedded in sand as indicated within the construction documents. The work as described within the construction documents shall be paid for by the linear foot of pipe installed.

The Following Pay Items are Described:

<u>Item</u>	<u>Pay Unit</u>
1" x 12" Perforated Underdrain Pipe	Linear Foot
6" Perforated High Density Polyethylene Pipe (Including Pipe Bedding and Backfill)	Linear Foot
10" Perforated High Density Polyethylene Pipe (Including Pipe Bedding and Backfill)	Linear Foot
12" Perforated High Density Polyethylene Pipe (Including Pipe Bedding and Backfill)	Linear Foot
24" Perforated High Density Polyethylene Pipe (Including Pipe Bedding and Backfill)	Linear Foot
12" Ductile Iron Pipe (Including Pipe Bedding and Backfill)	Linear Foot
15" Class IV Reinforced Concrete Pipe	Linear Foot

The linear foot price bid for the above pay items shall include all costs associated with layout and construction as recommended by the manufacturer, as shown on the construction details and as stated within these specifications. The bid price shall also include the construction as illustrated within the construction details. No separate payment shall be made for the cost to restore the site. All costs for said restoration, including, but not limited to asphalt, dense graded aggregate, line striping, curb, concrete, etc., shall be included in the linear foot price for the particular pipe item.

Dead ends of pipe runs that do not end with a riser shall be plugged with a pipe cap. Dead ends of rows of detention piping shall dead end with a manifold that connects the ends of the pipes. The cost for pipe cap or manifold shall be included in the price bid for the various sizes shown above. Costs for all connections to the manholes, inlets and drainage structures shall be included in the linear foot price bid for the particular pipe item.

SECTION 602 – DRAINAGE STRUCTURES

602.02 MATERIALS.

The Following Is Added:

Prior to installation, the Contractor shall submit shop drawings for review and approval for all storm sewer structures in the proposal.

The Outlet Control Structures shall be utilized where depicted on the plans. The contractor should refer to the construction details for size and construction materials. The cost for the successful installation of the outlet control structure unit shall be included in the particular pay item. The contractor shall provide shop drawings for review and approval to the Engineer prior to ordering and constructing each item. No separate payment shall be made for weir or orifice grates, NJDOT No. 57 stone, sluice gate, aluminum access cover, railing, railing gate, interior or exterior coating or any other appurtenances depicted within the construction plans and details and shall be included in the Outlet Control Structure Pay Items.

The contractor shall submit shop drawings for all inlets, manholes, outlet structure, and drainage structures to be installed. Cost for the shop drawings and the successful installation of the various drainage structures shall be included in the unit price bid for that particular pay item.

All frames and grates for each pay item (inlets, outlet control structures, manholes, etc.) shall be included within the cost for that particular pay item. No separate payment shall be made for any grate or frame.

The Backflow preventer shall be the Tideflex Series 37G Backflow Preventer as manufactured by Tideflex Technologies or approved equal.

602.04 MEASUREMENT AND PAYMENT.

The Following Is Added:

All necessary machinery, tools, plants, equipment, supplies, materials, labor, and all else necessary for a complete installation, including but not limited to: excavation and backfill, disposal of excavated material, all jointing material, sheeting, stay bracing, use of steel trench box, trench dewatering, well point systems, foundation bedding, dense graded aggregate base course, trench consolidation, trench maintenance, by-pass pumping, pavement restoration (Hot Mix Asphalt Base and Surface Courses), compaction, restoration of other surface areas, cleanup, testing of sewers, connections to existing sewers and all work of any kind in connection therewith will not be measured for payment, but shall be included in the unit bid price for various storm sewer items.

The Backflow Preventer shall be installed in the location depicted on the plans and in accordance with manufacturer requirements. The unit price cost for the installation of the Backflow Preventer shall include all materials, equipment, and labor necessary to install the backflow preventer within the drainage.

The Following Pay Items are Described:

<u>Item</u>	<u>Pay Unit</u>
Inlet Type 'E'	Unit
30" x 30" Yard Inlet	Unit
Outlet Control Structure	Unit
Backflow Preventer, 12"	Unit

SECTION 605 – FENCE

605.02 MATERIALS

THE FOLLOWING IS ADDED:

605.03 CONSTRUCTION

THE FOLLOWING IS ADDED:

605.03.01 Chain-Link Fence

Contractor shall be responsible to locate all utilities and drainage structures in area of installation.

Proposed layout shall be submitted for review and approval by the Engineer which will include proposed foundation locations.

Contractor is to place foundations for fence posts as to not impact any utilities, drainage structures, proposed features, existing features or each other.

Any damage to existing features due to installation of foundations for fencing shall be repaired in kind at no additional cost to the owner.

All components of the proposed fence shall be built in accordance with the Contract Documents.

605.03.02 Gates

Contractor shall be responsible to locate all utilities and drainage structures in area of installation.

Proposed layout shall be submitted for review and approval by the Engineer which will include proposed foundation locations.

Contractor is to place foundations for Gate posts as to not impact any utilities, drainage structures, proposed features, existing features or each other.

Any damage to existing features due to installation of foundations for fencing shall be repaired in kind at no additional cost to the owner.

All components of the proposed gates shall be built in accordance with the Contract Documents.

605.04 MEASUREMENT AND PAYMENT

THE FOLLOWING IS ADDED TO THE PAY ITEMS:

All work associated with the construction of Fencing and Gates, where shown on the plans and as described by the construction details, including, but not limited to, sawcutting, excavation, forming, placement of concrete, installation of foundations, and test pits shall be included in the price bid for the Item described below as stated in the Bid Form:

CHAIN-LINK FENCE, PVC-COATED STEEL, 4' HIGH, BLACK	L.F.
CHAIN-LINK FENCE, PVC-COATED STEEL, 8' HIGH, BLACK	L.F.
SINGLE GATE, CHAIN-LINK FENCE, PVC-COATED STEEL, 4' WIDE, 4' HIGH, BLACK	UNIT
DOUBLE GATE, CHAIN-LINK FENCE, PVC-COATED STEEL, 12' WIDE, 4' HIGH, BLACK	UNIT

All costs related to labor and material of Fence and Gate foundations shall be included in the bid form price for the appropriate fence and gate line item within the Bid Form.

SECTION 606 – SIDEWALKS, DRIVEWAYS, AND ISLANDS

606.01 DESCRIPTION

THE FOLLOWING IS ADDED:

606.01 DESCRIPTION.

The Following Is Added:

This work shall also include all labor and materials necessary to construct various sidewalks and pads as depicted on the plans and details and as directed in the field by the Engineer.

This work shall also include the construction of scored concrete sidewalks. Scored concrete sidewalks shall be scored using the London scoring patten as depicted in the construction details.

Concrete Pad, Reinforced, 6” Thick shall consist of the installation of concrete in the area surrounding the reinforced concrete bleacher pad in the base bid.

Concrete Sidewalk, 4” thick, shall consist of the installation of concrete sidewalk where depicted within the construction plans.

All Curb Ramps are to meet all current ADA Requirements. The dimensions and slopes presented in the detail sheets are the minimum to comply with the ADA and NJDOT Standards. Any deviation less than the minimum width or greater than the maximum slope from these standards must be documented with the standards being met to the greatest extent practicable and consistent with the most current DOJ and PROWAG regulations. Curb Ramps will require installation of Detectable Warning Surfaces.

Protection and Curing.

Concrete surfaces shall be applied with the concrete curing and sealing compound Silensure as manufactured by ChemMasters or approved equal. Approved equals must provide a clear, non-yellowing seal to protect concrete from salt and water penetration. The approved concrete curing and sealing compound must be applied in accordance with the manufacturer’s installation procedure.

ChemMasters

300 Edwards Street, Madison, Ohio 44057

Phone 440.428.2105 - 800.486.7866; Fax 440.428.7091

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.

606.02 MATERIALS:

THE FOLLOWING IS ADDED:

606.02.02 Materials:

Detectable Warning Surfaces:

Detectable Warning Surfaces shall be 24”x48” cast-in-place truncated dome detectable warning systems as manufactured by ADA Solutions, Inc., Armor-Tile Tactile Systems, Detectible or an approved equal. Color shall be determined by the Owner.

606.03 CONSTRUCTION:

606.03.02 Concrete Sidewalks, Driveways, and Islands

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.

THE FOLLOWING IS ADDED:

Handicap ramps shall be constructed in accordance with handicap ramp details. The concrete sidewalk shall be sloped to the depressed curb and shall comply with the grades and cross-slopes specified in the technical requirements of Section 4 (Accessible Design) of the U.S. Department of Justice’s 2010 ADA Standards for Accessible Design Guidelines.

606.04 MEASUREMENT AND PAYMENT.

The Entire Subsection Is Replaced By The Following:

Cast-in-place detectable warning surfaces and surface mounted detectable warning surfaces shall be installed as delineated on the project plans. All detectable warning surfaces shall be measured for payment on a per unit basis.

All costs associated with the construction of various sidewalk types: concrete, reinforced concrete, hot mix asphalt sidewalk, brick area including removal of existing walks, excavation, subbase preparation, dense-graded aggregate base course, clean stone, reinforcement, sand beddings, and joint filling shall be included in the unit prices for the Items described below.

The Concrete sidewalk pay item shall include a wood nailer for the turf footing, where applicable. No separate payment shall be made for any wood turf nailer.

Various sidewalks shall be constructed in accordance with the plans and details.

The Following Pay Items are Described:

<i>Item</i>	<i>Pay Unit</i>
Concrete Sidewalk, 4" Thick	Square Yard
Concrete Pad, Reinforced, 6" Thick	Square Yard

SECTION 607 – CURB

607.01 DESCRIPTION

THE FOLLOWING IS ADDED:

All excavation and backfill that is required for construction shall conform to the requirements of the Excavation within these supplemental specifications. The backfill and curb foundation shall be well compacted by means of flat-faced mechanical tampers, or by other means to be approved by the Engineer. Class B concrete shall be used throughout.

The construction of the Concrete Turf Footing (12" x 18") with Nailer Board around the outside of the synthetic fields shall include, but is not limited to the excavation and removal of all earth, rock, boulders, brick, stone and concrete masonry, including small structures and other materials encountered of whatever nature, required for the

construction of concrete turf footing as specified within these specifications (including a wood nailer for the Concrete Turf Footing), construction plans and construction details. It shall also include the transportation of the excavated materials; the construction of embankments with the materials excavated; the disposal of unsuitable and surplus materials; and other work as shown on the plans or specified herein.

607.03 INSTALLATION

The Following Is Added:

Concrete curb shall not be constructed from November 1 to March 15 except as approved by the Engineer.

607.04 MEASUREMENT AND PAYMENT.

The Entire Subsection Is Replaced By The Following:

All work associated with the construction of Concrete Curb, where shown on the plans and as described by the construction details, including, but not limited to, sawcutting, excavation, forming, placement of concrete, finishing of concrete, installation of nailer board, and placement and compaction of dense-graded aggregate, shall be included in the price bid for the Item described below as stated in the Bid Form:

The Following Pay Items are Described:

<u>Item</u>	<u>Pay Unit</u>
Concrete Turf Footing (12" x 18") With Nailer Board	Linear Foot

SECTION 610 – TRAFFIC STRIPES, TRAFFIC MARKINGS, AND RUMBLE STRIPS

610.01 DESCRIPTION.

The following is added:

This work shall also consist of replacing traffic stripes, traffic markings and traffic paint through the proposed parking area.

610.02.01 Materials

THE FOLLOWING MATERIALS ARE RENAMED TO:

Traffic Stripes.....	912.03.01
Traffic Markings.....	912.03.02

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. 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 an LTL-X Reflectometer 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 1000 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

- 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.** 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 an LTL-X Reflectometer 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.

610.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEM IS DELETED:

<i>Item</i>	<i>Pay Unit</i>
RPM, BI-DIRECTIONAL, WHITE LENS	UNIT

THE FOLLOWING ITEMS ARE ADDED:

<i>Item</i>	<i>Pay Unit</i>
TRAFFIC STRIPES, 4" THICK	LINEAR FOOT
TRAFFIC MARKINGS LINES, 6" THICK	LINEAR FOOT
TRAFFIC MARKINGS LINES, 24" THICK	LINEAR FOOT
TRAFFIC MARKINGS SYMBOLS	SQUARE FOOT

All Traffic Striping and Marking Items shall be Long-Life Thermoplastic.

SECTION 612 – SIGNS

612.01 DESCRIPTION

Furnish handicapped parking signs with posts as per the Accessible Parking Sign Detail within the Contract Documents. Install sign where noted on the plans.

612.04 MEASUREMENT AND PAYMENT

The Following Pay Item Has Been Added:

The Contractor is to install the handicapped parking signs with posts as per the manufacturers recommendation as well as the construction details.

All items such as sign post, foundation, New Jersey Penalty Sign, R7-8P Sign, and R7-8 Sign shall be paid for through the unit price for Handicapped Parking Signs with Post.

<u><i>Item</i></u>	<u><i>Pay Unit</i></u>
Handicapped Parking Signs with Post	Unit

SECTION 613 – BLEACHERS

613.01 DESCRIPTION

Furnish non-elevated, transportable bleachers as manufactured by Dant Clayton Corporation., or approved equal.

613.02 MATERIALS

613.02.01 Small Bleachers

ITEM: 5 row x 21' portable bleacher having a seating capacity of 54 net seats, Dant Clayton Model No. 5RNE SCD

MANUFACTURER: Dant Clayton Corporation, 1500 Bernheim Labe, Louisville, KY 40210, Ph (502) 634- 3626, or approved equal

REQUIREMENTS: This model is designed to meet the requirements of the ICC/ ANSI 300 National Standard.

613.03 CONSTRUCTION

Installation:

- A. Installation: Shall be handled directly by the manufacturer or by a factory certified installation subcontractor.
- B. Erect per plans, shop drawings and specifications.

Cleaning:

- A. Clean all surfaces according to manufacturer’s recommendations.
- B. Remove all packaging and construction debris.

The Contractor is to install the bleachers as per the manufacturers recommendation as well as the construction details.

613.04 MEASUREMENT AND PAYMENT

The Following Pay Item Has Been Added:

<u>Item</u>	<u>Pay Unit</u>
Bleacher System	Unit

SECTION 616 – MISCELLANEOUS EQUIPMENT

616.01 DESCRIPTION

This item shall include all labor, material and equipment for furnishing and the complete installation of miscellaneous field equipment as shown on the project plans and details, including all hardware, in accordance with the manufacturer’s installation specifications. It shall include the construction of footings and foundations as required and as depicted on the construction details. It shall include the transportation and/or delivery of the equipment, the disposal of any surplus materials, as required and other work as herein described.

616.02 MATERIALS

A. WORK INCLUDED

Provide all equipment and materials, and do all work necessary to furnish and install the athletic equipment, as indicated on the drawings and as specified herein.

B. RELATED WORK

Examine contract documents for requirements that affect work of this section. Other specification sections that directly relate to the work of this section include, but are not limited to:

1. Earthwork; Excavation and Backfill and establishment of sub-grade elevations.
2. Asphalt, Concrete, and Pavement
3. Synthetic Grass & Turf
4. Cast-in-Place Concrete

C. REFERENCES

Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.

1. National Federation of State High School Associations (NFHS)
2. National Collegiate Athletic Association (NCAA)
3. International Amateur Athletic Association (IAAF)
4. American Sports Builders Association (ASBA)
5. Manufacturers Data and Recommended Installation Requirements

D. SUBMITTALS

1. **Manufacturers Product Data**
 - a. Provide manufacturers product data prior to actual field installation work, for Architects or Owners representatives review.
2. **Shop Drawings**
 - a. Provide drawings of the manufacturers recommended installation and foundation requirements prior to actual field installation work, for Architects or Owners representatives review.

E. QUALITY ASSURANCE

Manufacturers warranties shall pass to the Owner and certification made that the product materials meet all applicable grade trademarks or conform to industry standards and inspection requirements.

F. PRODUCT DELIVERY AND STORAGE

Materials delivered to the site shall be examined for damage or defects in shipping. Any defects shall be noted and reported to the Owners representative. Replacements, if necessary, shall be immediately re-ordered, so as to minimize any conflict with the construction schedule. Sound materials shall be stored above ground under protective cover or indoors so as to provide proper protection.

616.02.01 Ball Safety Netting System, 20' High

- A. **BASE: BSS420 StormGuard® Professionally Pre-Engineered 20' Straight Pole Break-Away Ball Safety Netting System and Accessories as Manufactured and/or Supplied by:**

Sportsfield Specialties, Inc.
P.O. Box 231
41155 State Highway 10
Delhi, NY 13753
p. 888-975-3343
f. 607-746-8481
www.sportsfieldspecialties.com

B. COMPONENTS:

1. **BSS420 StormGuard® Professionally Pre-Engineered Break-Away Ball Safety Netting System Straight Poles:**
 - a. 3-1/2" Schedule 40 Aluminum Pipe (4" O.D.), 23'-6"L
 - b. Standard Powder Coated Black Finish, Various Standard and Custom Powder Coat Finish Color Options Available
2. **StormGuard® Professionally Pre-Engineered Break-Away Ball Safety Netting System (United States Patents #9,017,190, Issued April 28, 2015 and #9,586,123, Issued March 7, 2017):**
3. **Ground Sleeves with Welded Base Plates:**
 - a. 30"L Ground Sleeves
 - b. Aluminum Tube with Alignment Bolt
4. **Net with Perimeter Rope Binding:**
 - a. Overall Dimensions Specified by Customer
 - b. 1-3/4" Square Mesh
 - c. #36 Black Nylon
 - d. Sewn 1/4" Diameter Braided Rope Binding on Perimeter Edges
 - e. Standard Color is Black
5. **Included Accessories:**
 - a. Stainless Steel and/or Galvanized Steel Assembly Hardware
 - b. Fixed Welded Upper Tab and Adjustable Lower Bracket with Tensioned Vertical Slide Cable System
 - c. Secure Snap Clips for Net Attachment
 - d. 3/16" Diameter Galvanized Wire Rope Black Vinyl Coated to 1/4" Diameter
 - e. Black Plastic Friction Fit Ground Sleeve Caps
 - f. Model Specific Hardware Kit and Installation Instructions
6. **Optional Accessories:**
 - a. Base Plate Mount Ball Safety Netting Systems
 - b. Custom Ball Safety Netting System Sizes and Designs Available Upon Request
 - c. Custom Net Mesh Sizes and Colors Available Upon Request
 - d. Stamped and Sealed Drawings and Calculations by a Licensed Professional Engineer of Record in the State of Project Location

616.02.03 Ball Safety Netting System, 40' High x 40' Wide

A. BASE: GPFNS6440P - Ball Safety Netting System as manufactured by:

Sportsfield Specialties Inc.
P.O. Box 231
41155 State Highway 10
Delhi, NY 13753
p. 888-975-3343
f. 607-746-8481
www.sportsfieldspecialties.com
or approved equal

B. COMPONENTS:

1. Uprights:
 - A. Upright Posts Fabricated of 6.625 in Schedule 80 Aluminum:
 - a. Length: 40 ft, 4010 ft Above Ground
 - b. Black Powder Coat Finish
2. Ground Sleeves:
 - A. #GS-04-30 Ground Sleeves Fabricated of 4 in OD Steel Pipe
 - a. Length: 30.0 in
 - b. Aluminum Ground Sleeve Caps
3. Safety Net:
 - A. #Safety Net, 40.0 ft H
 - a. .25" black vinyl coated galvanized wire rope
4. Accessories:
 - A. Hardware Kit
 - a. Stainless Steel Assembly Bolts
 - b. Wire Rope

616.03 CONSTRUCTION

All athletic equipment shall be installed as recommended with manufacturer's written directions, and as indicated on the drawings.

616.05 MEASUREMENT AND PAYMENT.

The foundations for the ball safety netting shall be designed by a Professional Engineer licensed in the State of New Jersey. The design shall be submitted to the engineer. Include costs in the below pay item.

All netting is to be black, and all netting poles are to be powder coated black as per manufacturer's recommendations. Include costs for powder coating within the respective netting pay item.

The Following Pay Item are Described:

<u>Item</u>	<u>Pay Unit</u>
Ball Safety Netting System, 20' High	Linear Foot
Ball Safety Netting System, 40' High x 40' Wide	Unit

SECTION 617 – GOAL SYSTEMS

617.01 DESCRIPTION.

Furnish all labor, materials, tools and equipment necessary to supply and install football goal posts and soccer goal netting systems as indicated on the plans and as specified herein. The two sets of goals (football and soccer combo systems) shall be paid for as one complete unit. One unit will be required for this project. The installation of all new materials shall be performed in strict accordance with the manufacturers written installation instructions, and in accordance with all approved shop drawings and requirements of the synthetic turf manufacturer. The contractor must comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.

1. National Federation of State High School Assoc. (NFHS)
2. International Amateur Athletic Association (IAAF)
3. American Sports Builders Association (ASBA)
4. American Wood Preserver's Association (AWPA)
5. Manufacturers Data and Recommended Installation Requirements

617.02 MATERIALS.

ACCEPTABLE MANUFACTURERS

Equipment shall be Sportsfield Specialties Inc., P.O. Box 231, 41155 State Highway 10, Delhi, NY 13753; phone 888-975-3343 as shown in their latest catalog or approved equal.

GP4985HS Combination “H” Style High School Football/Soccer Goal Line Equipment and Accessories SG618R – Round Faced Soccer Goal, Youth Size

617.02.01 WORK INCLUDED

- A. Provide all equipment and materials, and do all work necessary to furnish and install the athletic equipment, as indicated on the drawings and as specified herein. Athletic equipment shall include, but not be limited to:
 - 1. GP4985HS Combination “H” Style High School Football/Soccer Goal Line Equipment and Accessories
 - 2. SG618R – Round Faced Soccer Goal, Youth Size

617.02.02 REFERENCES

- A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.
 - 1. National Federation of State High School Associations (NFHS)
 - 2. International Amateur Athletic Association (IAAF)
 - 3. American Sports Builders Association (ASBA)
 - 4. National Collegiate Athletic Association (NCAA)
 - 5. Manufacturers Data and Recommended Installation Requirements

617.02.03 SUBMITTALS

- A. Manufacturers Product Data
 - 1. Provide manufacturers product data prior to actual field installation work, for Architects or Owners representatives review.
- B. Shop Drawings
 - 1. Provide drawings of the manufacturers recommended installation and foundation requirements prior to actual field installation work, for Architects or Owners representatives review.

617.02.04 QUALITY ASSURANCE

- A. Manufacturers warranties shall pass to the Owner and certification made that the product materials meet all applicable grade trademarks or conform to industry standards and inspection requirements.

617.02.05 PRODUCT DELIVERY AND STORAGE

- A. Materials delivered to the site shall be examined for damage or defects in shipping. Any defects shall be noted and reported to the Owners representative. Replacements, if necessary, shall be immediately re-ordered, so as to minimize any conflict with the construction schedule. Sound materials shall be stored above ground under protective cover or indoors so as to provide proper protection.

617.02.06 PRODUCTS

617.02.06.01 Combination Football/Soccer System

- A. **BASE: GP4985 Combination “H” Style High School Football/Soccer Goal Line Equipment and Accessories as Manufactured and/or Supplied by:**

Sportsfield Specialties Inc.
P.O. Box 231
41155 State Highway 10
Delhi, NY 13753
p. 888-975-3343
f. 607-746-8481
www.sportsfieldspecialties.com

- B. **COMPONENTS: GP4985 Combination “H” Style High School Football/Soccer Goal Line Equipment and Accessories**

GP4900 H-Style High School Combination Football/Soccer Goal Posts:

- a. Height: 21-3” Above Ground
- b. Inside Dimensions: 24’ Between Soccer Upright Posts 23’-4” Between Football Uprights High School
- c. Soccer Crossbar: 3.5” Schedule 40 Aluminum Pipe (4” O.D.), 24’L, 8’ Above Finish Grade
- d. Football Crossbar: 3.5” Schedule 40 Aluminum Pipe (4” O.D.), 23’-4”L (High School) or 18’- 6” (College), 10’ Above Finish Grade
- e. Soccer Uprights: 3.5” Schedule 40 Aluminum Pipe (4” O.D.), 8’ Above Finish Grade
- f. Football Uprights: 4” O.D. x 0.125” Thick Wall Aluminum Tubing, 11’-3” Above Football Goal Post Crossbar
- g. Ground Sleeve: 4.3” O.D., 4.1” I.D. Aluminum Pipe with Welded Base Plate, 4’L (48”L)
- h. Stainless Steel Assembly Hardware
- i. Welded Aluminum Net Clips with Lifetime Guarantee
- j. Powder Coated White Finish
- k. 8’H x 24’W x 4’D x 10’B 6mm High Tenacity Braided, Knotted White Polyethylene Soccer Net with Rope Bound Perimeter, 4” Square Mesh, Orange Net Also Available
- l. 4’L (48”L) 1” Schedule 40 6063-T6 Aluminum Pipe (1.32” O.D.) Rear Net Stays
- m. Model Specific Hardware Kit and Installation Instructions

617.02.06.02 Lacrosse Goal

- C. **BASE: LGC Lacrosse Goal as manufactured by:**

Sportsfield Specialties Inc.
P.O. Box 231
41155 State Highway 10
Delhi, NY 13753
p. 888-975-3343
f. 607-746-8481
www.sportsfieldspecialties.com

617.02.06.03 15’ Long Team Bench

The Contractor shall also install two (2) 15' long aluminum frame benches Model No. LG-STAL-BRSP-15 as manufactured by Sportsfield Specialties or approved equal. This item shall include all labor, material and equipment for furnishing and the complete installation as shown on the project plans and details, including all hardware, in accordance with the manufacturer's installation specifications. The benches are to be "Red Baron" in color or approved equal. color to be confirmed by the Owner during shop drawing review process prior to purchase.

617.03 CONSTRUCTION.

All athletic equipment shall be installed as recommended with manufacturer's written directions, and as indicated on the drawings. The cost for the football goal post pads shall be included in the unit price bid for the football goal post system and soccer goal system. Color shall be chosen by the owner during the shop drawing review process.

The football goal post access frame kit and plugs shall be wrapped with synthetic turf as specified by the manufacturer. The site contractor shall coordinate with the synthetic turf sub-contractor regarding this portion of the project. The contractor shall not be paid additional for the work, but will be included in the price bid for various items of the project.

617.04 MEASUREMENT AND PAYMENT.

All work associated with the construction of Combination Football Goal Post/Soccer Goal, where shown on the plans and as described by the construction details, including, but not limited to, sawcutting, excavation, forming, placement of concrete, installation of foundations, and test pits shall be included in the price bid for the Item described below as stated in the Bid Form.

The Following Pay Item Has Been Added:

<u>Item</u>	<u>Pay Item</u>
Combination Football Goal Post/Soccer Goal	Set
Lacrosse Goals	Set
15' Long Team Bench	Unit

DIVISION 650 – UTILITIES

SECTION 651 – WATER

651.03 Construction.

THE FOLLOWING IS ADDED TO THIS SUBSECTION:

The CONTRACTOR shall take care to maintain the existing condition of the various valve boxes to be reset. Any damage to the existing valve boxes by the CONTRACTOR shall be replaced with an equivalent to the existing and to the satisfaction of the ENGINEER at no additional cost to the OWNER.

651.04 MEASUREMENT AND PAYMENT

THE FOLLOWING IS ADDED:

No separate payment will be made for resetting water valves or cleanouts.

SECTION 652 – SANITARY SEWERS

652.04 MEASUREMENT AND PAYMENT

THE FOLLOWING IS ADDED:

No separate payment will be made for resetting manholes or cleanouts.

SECTION 653 – GAS

653.02 Materials.

THE FOLLOWING IS ADDED TO THIS SUBSECTION:

The CONTRACTOR shall reset the existing gas valve boxes. Any damage to the existing valve boxes by the CONTRACTOR shall be replaced with an equivalent to the existing and to the satisfaction of the ENGINEER at no additional cost to the OWNER.

653.03 Construction.

THE FOLLOWING IS ADDED TO THIS SUBSECTION:

The CONTRACTOR shall take care to maintain the existing condition of the various valve boxes specified to be reset. Any damage to the existing valve by the CONTRACTOR shall be replaced with an equivalent to the existing and to the satisfaction of the ENGINEER at no additional cost to the OWNER.

653.04 MEASUREMENT AND PAYMENT

THE FOLLOWING IS ADDED:

No separate payment will be made for resetting gas valves.

DIVISION 700 – ELECTRICAL

SECTION 701 – COMMON PROVISIONS

701.01 DESCRIPTION.

THIS CONTRACT INCLUDES ALL WORK ASSOCIATED WITH THE FURNISHING OF ALL LABOR, MATERIALS AND EQUIPMENT FOR THE COMPLETE INSTALLATION OF ELECTRICAL SERVICE TO THE SITE.

THIS WORK SHALL INCLUDE ALL UTILITY COORDINATION AND RESTORATION OF ALL DISTURBED SURFACES.

THIS WORK SHALL INCLUDE PROVIDING DESIGNS FOR LIGHT POLE FOUNDATIONS (SPORTSFIELD LIGHTING) SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY.

THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE BUILDING AND ELECTRICAL CODES AND OBTAINING ALL APPLICABLE PERMITS. THE CONTRACTOR IS RESPONSIBLE FOR PREPARING ANY PLANS OR DOCUMENTS REQUIRED FOR OBTAINING THE AFOREMENTIONED PERMITS.

THE PAY ITEM UTILITY UPGRADES - ELECTRIC SHALL INCLUDE THE FOLLOWING :

ALL MATERIALS, LABOR AND EQUIPMENT NECESSARY TO PROVIDE ELECTRICAL SERVICE TO ALL SITE AMENITIES REQUIRING ELECTRICAL SERVICE.

THE PAY ITEM SPORTSFIELD LIGHTING SYSTEM SHALL INCLUDE ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO PURCHASE THE SPORTSFIELD LIGHTING, COMPLETE AND OPERABLE AND CONSTRUCT THE SPORTSFIELD LIGHTING, COMPLETE AND OPERABLE INCLUDING OFFLOADING AND SAFE AND SECURE STORAGE OF POLES, FIXTURES, PRECAST CONCRETE BASES, CONTROLLERS, ETC.

SECTION 707.01 - ELECTRICAL

PART 1 - GENERAL

1.01 APPLICATION

- A. This Section applies to all sections of Division 700 of this project, except as specified otherwise in the individual sections.

1.02 SCOPE OF WORK

- A. This specification and accompanying drawings are intended to illustrate the nature of work to be performed in a diagrammatic manner. All labor, material, and equipment necessary for a complete electrical installation shall be included by the Contractor in the submission of his bid.
- B. Appliances, materials or equipment obviously a part of the system necessary for its satisfactory operation, although not specifically mentioned herein nor indicated on the drawings shall be provided by this Contractor without extra cost to the Owner

- C. Material and equipment mentioned and described in this specification shall be supplied complete in all details. Contractors bidding on this project shall insure themselves that the quotations that they use for equipment have been quoted in accordance with the specifications and the drawings. Errors by manufacturer's representatives shall not relieve the Contractor, to provide the proper equipment of the obligation.
- D. Without intending to limit or restrict the volume of work provided by this section of the contract documents, the work is to generally comprise of the following.
 - 1. Installation of new light fixtures as shown on contract drawings.
 - 2. Furnish and install all wire, conduit, light fixtures, panel and all necessary material and equipment for a complete and operating system.

1.03 LAWS, PERMITS, AND REGULATIONS

- A. Obtain and pay for all licenses, certificates and permits required by law, State County, and all Authorities having jurisdiction. Comply with the rules and requirements of the National Board of Fire Underwriters and the National Electric Code (1993 as amended) and with all governing laws, orders, regulations, and building codes. Any deviation shall be reported to the Owner or its representative in writing, for approval.
- B. Certificates of approval from the above authorities shall be delivered to the Owner before final payment may be made. This Contractor shall pay the necessary fees for all inspections and certificates.

1.04 CODES, LISTINGS AND STANDARDS:

- A. All electrical work covered by the Contract Documents shall conform to the Requirements of the National Electrical Code.
- B. All equipment and materials for which Underwriters' Laboratories, Inc. provides product listing service shall be Underwriter laboratories' approved and bear the U.L. Label.
- C. Equipment and materials wherever applicable shall conform to the following standards:
 - 1. Federal Specifications (Fed. Spec.).
 - 2. Illuminating Engineering Society (IES).
 - 3. National Electrical Manufacturers Association (NEMA).
 - 4. Institute of Electrical and Electronic Engineers (IEEE).
 - 5. American National Standards Institute (ANSI).
 - 6. Insulated Cable Engineers Associations (ICEA).

1.05 PROTECTION OF WORK AND MATERIALS

- A. This Contractor shall be responsible for the proper care and protection of all portions of materials delivered and work prepared by him until completion and acceptance of the work and the issue of certificates in final payment.

1.06 MATERIALS AND WORKMANSHIP

- A. All materials shall be new, recently manufactured and of the best quality.

- B. All work shall be performed in a first-class, neat and workman-like manner by mechanics skilled in their trades.
- C. Where the words "provide" and "supply" are used in the specifications or on the drawings, they shall be understood to mean the complete work in connection therewith, that is, furnishing, installing, testing, connecting, and warranties of the items specified.

1.07 SHOP DRAWINGS

- A. After contract award, the Contractor shall submit all shop drawings for approval within two (2) weeks.

1.08 PERFORMANCE OF EQUIPMENT

- A. All materials, equipment, and appurtenances of any kind shown on the drawings, hereinafter specified, or required for the completion of the work in accordance with the intent of these specifications, shall be completely satisfactory and acceptable as regards operation, performance and capacity.
- B. No acceptance, written or verbal, of any drawings, descriptive data or samples of such material, equipment and/or appurtenances shall relieve the Contractor of his responsibility to turn over the complete heating, ventilating, and air conditioning installation to the Owner in perfect working order and in complete conformance with the drawings and specifications at the completion of the work.
- C. Operation, capacity or performance of which does not comply with the requirements of the drawings or specifications, or which is damaged prior to acceptance by the Owner will be held to be defective material and shall be removed and replaced with proper and acceptable materials, equipment and/or appurtenances, or put in proper working order, satisfactory to the Engineer without additional cost to the Owner.
- D. All moving parts of equipment and appurtenances, shall be properly lubricated by the Contractor and shall be started up and tested by him.
- E. All equipment shall operate without objectionable noise or vibration as determined by the Engineer. If such objectionable noise or vibration should be produced and transmitted to occupied portions of the building by apparatus, piping, ducts or other parts of the work, any necessary changes, as approved, shall be made without cost to the Owner.

1.09 DELIVERY AND STORAGE

- A. Equipment and materials shall be properly stored, adequately protected and carefully handled to prevent damage before and during installation. Equipment and materials shall be handled, stored and protected in accordance with the manufacturer's recommendations and as approved by the Engineer. Electrical conduit shall be stored to provide protection from the weather and accidental damage. Cables shall be sealed, stored and handled carefully to avoid damage to the outer covering or insulation and damage from moisture and weather. Outdoor storage of cable will not be permitted. Damaged or defective items, in the opinion of the Owner's representative, shall be replaced with new items at no additional cost to the Owner.

1.10 CATALOGED PRODUCTS

- A. Materials and equipment shall be the cataloged products of manufacturers regularly engaged in production of such materials or equipment and shall be manufacturer's latest standard design that complies with the specification requirements.

B.

1.11 MANUFACTURER'S RECOMMENDATION

- A. Where installation procedures are specified to comply with the recommendations of the manufacturer of the material or equipment being installed, printed copies of these recommendations shall be furnished to the Owner prior to installation. Installation of the item will not be allowed to proceed until the recommendations are received. Failure to furnish these recommendations can be cause for rejection of the material.

1.12 MECHANICAL REQUIREMENTS

- A. Conduit and cables as indicated on the drawings/specifications for mechanical equipment, supplied by others, shall be included under this division.

1.13 COORDINATION

- A. Electrical work shall be coordinated with Owner's representative and other trades involved in the construction project. Electrical components of mechanical equipment, such as motors, motor starters, control or pushbuttons stations, floats or pressure devices and other devices functioning to control mechanical equipment which are not explicitly shown on the contract drawings but specified in the appropriate sections shall be installed and wired under Division 16 work. All work shall be carefully laid out in advance, coordinating electrical features with architectural, structural and mechanical features of construction. The conduit layout proposed on the utility plan is for bidding purposed only. The contractor shall submit shop drawings for their proposed final layout prior to construction.

1.14 COORDINATION WITH UTILITIES AND OWNER:

- A. Contractor shall comply with all local Power Company requirements.
- B. Contractor shall contact the local Telephone Company and arrange for the installation of a voice grade line suitable for use with the remote alarm dialer.

1.15 ENCLOSURES

- A. Furnish NEMA enclosures to suit location classification, unless otherwise shown on the drawings, or referenced in the specifications. The outdoor area shall be considered as requiring NEMA 4X rated equipment.

PART 2 - PRODUCTS

2.01 MATERIALS AND EQUIPMENT

- A. All materials, equipment, and devices shall, as a minimum, meet the requirements of UL where UL Standards are established for those items, and the requirements of NFPA 70. All items shall be new unless specified or indicated otherwise.

2.02 CONDUITS AND FITTINGS

- A. Conduit shall be P.V.C. in accordance with all necessary Electrical Codes and requirements. The minimum conduit size shall be 3/4". If utilized, flexible metal conduit shall be in accordance with UL.1
- B. Fittings for metal conduits, electrical metallic tubing and flexible metal conduit shall be in accordance with UL 514. All ferrous fittings shall be cadmium- or zinc-coated in accordance with UL 514. All P.V.C. fittings shall be in accordance with all necessary Electrical Codes and requirements.
- C. Split couplings are not acceptable.

2.03 OUTLET BOXES AND COVERS

- A. Outlet boxes and covers shall be cadmium- or zinc-coated if of ferrous metal and shall conform to UL 514
- B. Cabinets, junction boxes, and pull boxes (with volume greater than 100 cubic inches) shall conform to UL 50. Cabinets, junction boxes, and pull boxes shall be hot-dip zinc-coated if of sheet steel.

2.04 WIRES AND CABLES

- A. Wires and cables shall meet the applicable requirements of NFPA 70 and UL for the type of insulation, jacket, and conductor specified or indicated. Wires and cables manufactured more than 12 months prior to date of delivery to the site shall not be used.

2.05 CONDUCTORS

- A. Conductors No. 10 AWG and smaller shall be solid, and those No. 8 AWG and larger shall be stranded. Unless indicated otherwise, conductor sizes shown are based on copper. All conductors indicated to be No. 6 AWG and smaller shall be copper. All conductors indicated to be No. 4 AWG and larger shall be either copper or aluminum, at the Contractor's option, unless the type of conductor material is specifically indicated, specified, or required by equipment manufacturer.

2.06 EQUIPMENT MANUFACTURER REQUIREMENTS

- A. Where Contractor provides equipment whose manufacturer requires copper conductors at the terminations, or requires that only copper conductors be provided between components of equipment, it shall be the Contractor's responsibility to provide copper conductors, or all necessary splices, splice boxes, and other work required to satisfy manufacturer's requirements.

2.07 MINIMUM CONDUCTOR SIZES

- A. Minimum size for branch circuits shall be No. 12 AWG; for Class 1 remote control and signal circuits, No. 14 AWG; and for Class 2 low-energy remote control and signal circuits, No. 16 AWG.
- B. Provide for all service, feeder, branch, control, and signaling circuit conductors. Color shall be green for grounding conductors, and white for neutrals, except where neutrals of more than one system are installed in same raceway or box, the other neutral shall be white with a colored (not green) stripe. The color of the undergrounded conductors in different voltage systems shall be as follows:

<u>3-phase systems</u>	<u>120/208 volts</u>	<u>277/480 volts</u>
Phase A:	black	yellow
Phase B:	red	brown
Phase C:	blue	orange
<u>1-phase systems</u>	<u>120/240 volts</u>	
phase:	black	
phase:	red	

2.08 INSULATION

- A. Unless specified or indicated otherwise, or required to be otherwise by NFPA 70, all power wires shall be 600 volt, type THW, THWN, XHHW, or RHW, except that grounding wire may be type TW; remote control and signal circuits shall be type TW, THW or TF.

2.09 SPLICES AND TERMINATION COMPONENTS

- A. Splices and termination components shall conform to UL 486A and UL 486B, as applicable for wire connectors, and UL 510 for insulating tapes. Connectors for wires No. 10 AWG and smaller shall be insulated pressure-type in accordance with UL 486A or UL 486C (twist-on splicing connector). Provide solderless terminal lugs on stranded conductors.

2.10 SWITCHES

- A. Switches serving as motor-disconnect means shall be horsepower rated. Provide heavy duty type switches where indicated, where switches are rated higher than 208 volts, and for double throw switches. Fused switches shall utilize Class R fuseholders and fuses, unless indicated otherwise.

2.11 FUSES

- A. Provide a complete set of fuses for each fusible switch. Time-current characteristics curves of fuses serving motors or connected in series with circuit breakers or other circuit protective devices shall be coordinated for proper operation; submit coordination data for approval. Fuses shall have a voltage rating not less than the circuit voltage.

1. Fuses shall conform to UL 198C, Class J for 0 to 600 Amps and Class L for 601 to 6000 Amps.

2.12 MOTORS

- A. Motors shall be NEMA MG1, except sealed (hermetic type) motor compressors shall meet UL 984. Determine specific motor characteristics to insure provision of correctly sized starters and overload heaters. Motors shall be designed to operate at full capacity with a voltage variation of plus or minus 10 percent of the motor voltage rating.

2.13 PANELBOARDS

- A. Panelboards for use as service disconnecting means shall additionally conform to UL 869. Panelboards shall be circuit breaker equipped. Design shall be such that any individual breaker can be removed without disturbing adjacent units or without loosening or removing supplemental insulation supplied as a means of obtaining clearances as required by UL. Where "spare" is indicated, make provisions for the future installation of a breaker sized as indicated. All panelboards locks included in the project shall be keyed alike. Directories shall be typed to indicate load served by each circuit and mounted in a holder behind transparent protective covering.

2.14 PANELBOARD BUSES

- A. Support bus bars on bases independent of the circuit breakers. Main buses and back pans shall be designed so that breakers may be changed without machining, drilling, or tapping. Provide an isolated neutral bus in each panel for connection of circuit neutral conductors. Provide a separate ground bus marked with a green stripe along its front and bonded to the steel cabinet for connecting grounding conductors. Buses shall be copper.

2.15 CIRCUIT BREAKERS

- A. Circuit breakers shall be ambient compensated thermal magnetic type with interrupting capacity of 22,000 amperes symmetrical minimum. Breaker terminals shall be UL listed as suitable for the type of conductor provided. Plug-in circuit breakers are acceptable.

2.16 MULTIPOLE BREAKERS

- A. Provide common-trip type with a single operating handle. Breaker design shall be such that an overload in one pole automatically causes all poles to open. Maintain phase sequence throughout each panel so that any three adjacent breaker poles are connected to Phases A, B, and C, respectively.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

- A. Electrical installation shall conform to the requirements of NFPA 70, State and Local Codes, and to the requirements specified herein.

3.02 WIRING METHODS

- A. Wiring method shall be insulated conductors installed in conduit, except where specifically indicated or specified otherwise, or required by NFPA 70 to be installed otherwise. An insulated equipment grounding conductor shall be provided in all feeder and branch circuits, including lighting circuits.

3.03 CONDUIT INSTALLATION

- A. Keep conduit at least 6 inches away from parallel runs of flues and steam or hot water pipes. Install conduit parallel with or at right angles to ceilings, walls, and structural members where located above accessible ceilings and where conduit will be visible after completion of project.

3.04 CONDUIT SUPPORT

- A. Support conduit by pipe straps, wall brackets, hangers or ceiling trapeze. Fasten by wood screws to wood; by toggle bolts on hollow masonry units; by concrete inserts of expansion bolts on concrete or brick; by machine screws, welded threaded studs, or spring-tension clamps on steel work. Threaded C-clamps may be used on rigid steel conduit only. Do not weld conduits or pipe straps to steel structures. The load applied to fasteners shall not exceed one-fourth of the proof test load. Fasteners attached to concrete ceiling shall be vibration and shock resistant. Holes cut to a depth of more than 1-1/2-inches in reinforced concrete beams or to a depth of more than 3/4-inch in concrete joints shall not cut the main reinforcing bars. Fill holes that are not used.
- B. Make changes in direction of runs with symmetrical bends or cast-metal fittings. Make field-made bends and offsets with a hickey or conduit-bending machine. Do not install crushed or deformed conduits. Avoid trapped conduits. Prevent plaster, dirt, or trash from lodging in conduits, boxes, fittings, and equipment during construction. Free clogged conduits of all observations.
- C. Install pull wires in empty conduits in which wire is to be installed by others. The pull wire shall be No. 14 AWG zinc-coated steel or plastic having not less than 200 pounds tensile strength. Leave not less than 12 inches of slack at each end of the pull wire.
- D. Fasten conduits to sheet metal boxes and cabinets with two locknuts where required by NFPA 70. Where insulated bushings are used, and where bushings cannot be brought into firm contact with the box; otherwise, use at least a single locknut and bushing. Locknuts shall be the type with sharp edges for digging into the wall of metal enclosures. Install bushings on the ends of conduits and provide insulating type where required by NFPA 70.
- E. Flexible connections of short length shall be provided for equipment subject to vibration, noise transmission, or movement; and for all motors. Liquid-tight flexible conduit shall be used in wet locations. A separate ground conductor shall be provided across flexible connections.

3.05 BOXES, OUTLETS, AND SUPPORTS

- A. Provide boxes in the wiring or raceway systems wherever required for pulling of wires, making connections, and mounting of devices or fixtures. Boxes for metallic raceways shall be of cast-metal hub type when located in normally wet locations, when surface mounted on outside of exterior surfaces or when exposed up to 7 feet above interior floors and walkways, and when installed in hazardous areas. Boxes in other locations shall be sheet steel. Each box shall have the volume required by NFPA 70 for the number of conductors enclosed in the box. Boxes for use in masonry block or tile walls shall be square-cornered tile-type, or standard boxes having square-cornered tile-type covers. Provide gaskets for cast-metal boxes installed in wet locations and boxes installed flush with the outside of exterior surfaces. Fasten boxes and supports with wood screws on wood, with bolts and expansion shields on concrete or brick, with toggle bolts on hollow masonry units, and with machine screws or welded studs on steel work. Threaded studs driven in by power charge and provided with lockwashers and nuts or nail-type nylon anchors may be used in lieu of wood screws, expansion shield, or machine screws.

- B. In open overhead spaces, cast boxes threaded to raceways need not be separately supported except where used for fixture support. Support sheet metal boxes directly from the building structure or by bar hangers. Where bar hangers are used, attach the bar to raceway on opposite sides of the box and support the raceway with any approved type fasteners not more than 24 inches from the box. When penetrating reinforced-concrete members, avoid cutting any reinforcing steel.
- C. Construct of not less than the minimum size required by NFPA 70 of code-gauge aluminum or galvanized sheet steel, except where cast-metal boxes are required in locations specified above, Furnish boxes with screw-fastened covers. Where several feeders pass through a pull box, tag the feeders to indicate clearly the electrical characteristics, circuit number, and panel designation.

3.06 CONDUCTOR IDENTIFICATION

- A. Provide conductor identification within each enclosure where a tap, splice, or termination is made. For conductors No. 6 or smaller, color coding shall be by factory-applied color-impregnated insulation. For conductors No. 4 and larger, color coding shall be by plastic-coated self-sticking markers. Colored nylon cable ties and plates, or heat-shrink type sleeves. Identify control circuit terminations.

3.07 SPLICES

- A. Make splices in accessible locations. Make splices in conductors No. 10 AWG and smaller with an insulated pressure type connector. Make splices in conductors No. 8 AWG and larger with a solderless connector and cover with an insulation material equivalent to the conductor insulation.

3.08 COVERS AND DEVICE PLATES

- A. Install with all four edges in continuous contact with finished wall surfaces without the use of mats or similar devices. Plaster fillings will not be permitted. Plates shall be installed with an alignment tolerance of 1/16-inch. The use of sectional type device plates will not be permitted. Plates installed in wet locations shall be gasketed.

3.09 GROUNDING AND BONDING

- A. Ground all exposed non-current-carrying metallic parts of electrical equipment, metallic raceway systems, grounding conductor in non-metallic raceways, and neutral conductor or wiring systems. Make ground connection at the main service equipment and extend grounding conductor to the point of entrance of the metallic water service. Make connection to the water pipe by a suitable ground clamp or lug connection to a plugged Tee. If flanged pipes are encountered, make connection with the lug bolted to the street side of the flanged connection. Supplement the metallic water service grounding system with an additional make electrode in compliance with NFPA 70. Where ground fault protection is employed, take care that the connection of ground and neutral does not interfere with the correct operation of the fault protection.

3.10 GROUNDING CONDUCTOR

- A. Provide an insulated, green colored equipment grounding conductor in all feeder and branch circuits. This conductor shall be separate from the electrical system neutral conductor.

3.11 REPAIR OF EXISTING WORK

- A. Lay out the work carefully in advance. Where cutting, channeling, chasing, or drilling of floors, walls partitions, not ceilings, or other surfaces is necessary for the proper installation, support, or anchorage of the conduit, raceways, or other electrical work, do this work carefully. Repair any damage to buildings, piping, or equipment using mechanics of the trades involved.

3.12 TESTING

- A. The Contractor shall provide all test equipment and personnel and submit written copies of all test results.
- B. Test all 600-Volt wiring to verify that no short circuits or accidental grounds exist. Perform 25 insulation resistance tests on all wiring No. 6 AWG and larger using an instrument which applies a voltage of approximately 500 Volts to provide a direct reading of resistance; minimum resistance shall be 250,000 Ohms.
- C. Test the grounding system to assure continuity and that the resistance to ground is not excessive.
- D. Tests as required for all component parts of the complete installation shall be performed by the contractor to demonstrate the satisfactory functioning of all electrically operated equipment and wiring and the adequacy of the entire electrical system.
- E. Any equipment or materials furnished and/or installed under this contract which fails under tests shall be repaired or replaced and then retested until satisfactory results are obtained, entirely at the expense of the contractor. He shall assume full responsibility for the proper functioning and quality of all electrical installations to the extent that any breakdowns, deficiencies or deteriorations caused by poor workmanship, inferior equipment furnished by the contractor, materials or method of installation shall be promptly remedied, replaced or repaired by the contractor.

SECTION 707.02 - CODES AND FEES

PART 1 - GENERAL

1.01 APPLICABLE CODES AND REQUIREMENTS

- A. Conformance:
 - 1. All work, equipment and materials furnished shall conform with the existing rules, requirements and specifications of the Insurance Rating Organization having jurisdiction, the National Electrical Code(NEC), the National Electric Manufacturers Association(NEMA), the Institute of Electrical Engineers(IEEE), the Insulated Cable Engineers Association (ICEA), the American Society of Testing Materials(ASM), the American National Standards Institute(ANSI), the IllumEngineering Society(IES), the requirements of the Occupational Safety Hazards Act(OSHA) and all other applicable Federal, State and local laws and/or ordinances.
- B. All material and equipment shall bear the UL inspection labels if the material and equipment is of the class inspected by said laboratories.
- C. Non-Conformance:
 - 1. Any paragraph of requirements in these Specifications, or Drawings, deviating from the rules, requirements and specifications of the above organizations shall be invalid and their requirements shall hold precedent thereto. The CONTRACTOR shall be held responsible for adherence to all rules, requirements and specifications as set forth above. Any additional work or material necessary for adherence will not be allowed as an extra, but shall be included in the bid price. Ignorance of any rule, requirement or specification shall not be allowed as an excuse for nonconformity. Acceptance by the ENGINEER does not relieve the CONTRACTOR from the expense involved for the correction of any errors which may exist in the Drawings submitted or in the satisfactory operation of any equipment.
- D. Certification:

1. Upon completion of the work, the CONTRACTOR shall obtain certificates of inspection and approval from the National Board of Fire Underwriters or similar inspection origination having jurisdiction and shall deliver same to the Owner's representative.

1.02 FEES

- A. The contractor is responsible for obtaining all applicable permits for the project and preparing any documents required to obtain those permits.

SECTION 707.03 - TESTS

PART 1 - GENERAL

1.01 CONTRACTOR'S RESPONSIBILITIES

- A. Performance and Witness of Tests. The CONTRACTOR shall furnish all instruments and a qualified technician to properly perform all tests required. Written notice of all tests shall be given the Owner's representative at least one week in advance.
- B. Unless waived in writing by the Owner's representative, all tests shall be made in the presence of a duly authorized representative of the Owner. When the presence of such representative is so waived, sworn statements, in duplicate, of the tests made and the results thereof shall be furnished to the Owner's representative by the CONTRACTOR.
- C. All electrical circuits shall be tested to insure circuit continuity, insulation resistance, proper rotation, proper splicing and freedom from improper grounds.
- D. Necessary adjustments shall be made in cooperation with the respective manufacturers and other contractors when necessary. All tests shall be made in accordance with the latest standards of the ANSI, ICEA, IEEE and NEMA.
- E. Cost of all tests shall be borne by the CONTRACTOR and shall be included in the bid price.

1.02 PROCEDURE

- A. 600 Volt and Below Equipment. Each panel shall be tested with mains disconnected from the feeder, branches connected, branch circuit breakers closed, all fixtures in place and permanently connected, lamps removed or omitted from the sockets, and all wall switches closed. Feeders shall be tested with the feeders disconnected from the panels. Each individual power circuit shall be tested at the panel or motor control center with the power equipment connected for proper operation.
- B. "Megger" tests of the insulation resistance of rotating machines and power feeders shall be conducted. The results will be accepted when the megger shows the insulation resistance to be not less than one megohm per 1000 volts at 20°C using a 1,000 volt megger.
- C. The grounding system shall have a resistance to ground of three ohms or less when measured by a "megger" or equivalent device.

1.03 DOCUMENTATION

- A. The work of this Section is in addition to and does not supersede testing and adjusting specified in other sections of the Specifications.
- B. The CONTRACTOR shall submit to the Owner's representative, test records and reports for all testing.

- C. Meggering (Insulation Resistance Test) of all incoming and outgoing cables, distribution and power panels, motor controls, etc., shall be done after the cables are in place, and just prior to final termination.
- D. The CONTRACTOR shall furnish all test equipment as required for testing as specified herein. All equipment shall be calibrated and carry current calibration labels from an agency regularly engaged in such work.
- E. No portion of the power system shall be energized until all tests are made and results are acceptable to the Owner and his representative.

SECTION 707.04 - IDENTIFICATION

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. The types of electrical identification specified in this Section include, but are not limited to, the following:
 - 1. Wiring numbering
 - 2. Operational instructions and warnings
 - 3. Danger signs
 - 4. Equipment/system identification signs

1.02 NAMEPLATES

- A. All of electrical equipment such as panelboards, control panels, switches and similar devices shall be provided with a nameplate permanently mounted in an appropriate location.

1.03 WIRING LABELS

- A. Each wire and cable shall be identified and tagged with a unique number using wire markers.

PART 2 - PRODUCTS

2.01 NAMEPLATES

- A. Material: Nameplates shall be made of engraved laminated plastic with black letters on white background. Wire markers shall be cloth type similar to Brady markers.
- B. Manufacturer's data, electrical identification: The CONTRACTOR shall submit product specifications and installation instructions for each identification material and device required.
- C. Identification samples: The CONTRACTOR shall submit samples of each color, lettering style and other graphic representation required for each identification material or system.

2.02 LETTERING AND GRAPHICS

- A. General: The CONTRACTOR shall coordinate names, abbreviations and other designations used in the electrical identification work, with the corresponding designations shown, specified or scheduled. The CONTRACTOR shall provide numbers, lettering and wording as indicated or, if not otherwise indicated, as

recommended by manufacturers or as required for proper identification and operation/maintenance of the electrical systems and equipment.

PART 3 - EXECUTION

3.01 NAMEPLATES

- A. Installation: Nameplates shall be securely screwed to equipment with brass or stainless steel screws. The utilization of glue and adhesives will not be permitted.

3.02 WIRING LABELS

- A. Each wire and cable shall be identified with a unique number on each end, at each termination, at each splice point, and wherever wiring passes through panels, junction/pull boxes. Identification labels shall completely encircle wires/cables and shall be firmly attached.

3.03 OPERATIONAL IDENTIFICATION AND WARNINGS

- A. General: Wherever necessary to ensure safe and efficient operation/maintenance of the electrical systems, and/or equipment, install special instruction/warnings via plastic signs or nameplates. Where detailed instructions or explanations are needed, the CONTRACTOR shall provide plastic tags with clearly written messages adequate for the intended purposes.

SECTION 707.05 - CONDUITS

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Under this Section, the CONTRACTOR shall furnish and install all conduits and conduit fittings to complete the installation of all electrically operated equipment, as shown, specified, or required.
- B. All exposed conduits shall be P.V.C. except as otherwise shown. Concrete encased or conduits shall be rigid galvanized steel. Direct burial conduits shall be P.V.C.
- C. All conduit connections to motors, transformers, solenoids, equipment with vibration/movement considerations shall be made with flexible watertight conduit.

1.02 CONDUIT LAYOUTS DIAGRAMMATIC

- A. The Contract Drawings indicate the general location of conduits both exposed and concealed; however, the CONTRACTOR shall install these conduits in such a manner to avoid all interferences.

PART 2 - PRODUCTS

2.01 PLASTIC COATED CONDUITS AND FITTINGS

- A. Plastic coated steel conduits and fittings shall consist of rigid galvanized steel conduit covered with bonded 40 mil minimum PVC jacket as manufactured by Robroy Industries "Plasti-Bond", Occidental coating Co. "Ocal-40", or equal.
- B. Plastic coated conduits shall be installed in conjunction with plastic 40 mil coated fittings, boxes, unions, control stations, supports, clamps etc.

- C. Field application of plastic coatings shall not be permitted

PART 3 - EXECUTION

3.01 RIGID CONDUITS AND FITTINGS

- A. Installation: Except as shown, the minimum size conduit permitted is 3/4 inch for exposed work and one inch for conduit encased in concrete or mortar.
- B. All bolts and hardware for fastening, etc., shall be cadmium plated.
- C. Each piece of conduit installed shall be free from blisters and other defects. Each piece installed shall be cut square, taper reamed and a coat of conductive sealing compound (T&B Kopr-shield) applied to threads. Conduit connections shall be screwed tight with only incomplete threads exposed. All conduit joints shall be made with standard couplings and the ends of the conduit shall butt tightly into the couplings. In exposed work only, where standard couplings cannot be used, only Erickson couplings will be permitted, or as otherwise accepted by the ENGINEER.
- D. Conduit threaded in the field shall have standard sizes and lengths.
- E. Conduits shall not contain the equivalent of four 90-degree bends without the use of a pull/junction box approved for the purpose and in accordance with National Electric Code.
- F. Factory bent elbows or field bent elbows with approved tools may be used. Heating of conduit to facilitate bending is prohibited with the exception of PVC conduit where nonstandard bends are required.
- G. All exposed conduit shall be installed, either parallel or perpendicular to structural members, unless impractical, and shall be grouped wherever possible. Conduit shall be attached to structural components with approved supports spaced a minimum of 6 feet apart and shall form a neat rigid installation. Conduit supported from building walls shall be installed with at least 1/4-inch clearance from the walls to prevent the accumulation of dirt and moisture behind the conduit.
- H. PVC coated rigid galvanized steel conduit shall be installed using leather strap wrenches and vise approved for the purpose.
- I. Conduit and/or conduit fittings shall not be welded together or to any steel structure; however, conduit supports may be welded to flanges of steel beams, columns, etc., in accordance with approved welding techniques and engineering practice.
- J. Approved conduit expansion joints shall be provided wherever conduit crosses a structural expansion joint, is attached between two separate structures, and wherever the conduit run is 100 ft. or more in a single straight length.
- K. All conduit extending through the floor behind panels or into control centers or similar equipment shall extend a minimum of six inches above the floor elevations, with no couplings at floor elevations.
- L. Conduit installed in concrete or other masonry shall be so arranged that a minimum of three inches of covering is obtained. Spacing between conduits shall be sufficient to permit a complete filling with concrete or mortar without voids.
- M. Conduits runs shall be installed in such locations as to avoid steam, hot water, or equipment exhaust pipes. A minimum separation of 12 inches shall be maintained where conduit crosses/parallels surfaces with temperatures exceeding 104 degrees F (40 degrees C). Where it is impractical to maintain 12 inches of separation, the contractor shall insulate the source of high temperature as approved by the Engineer.

- N. All cutting, channeling and drilling of holes through walls, floors, foundations, and ceilings, required for the correct installation of the electrical work, shall be done by and repaired by the Contractor. The cost of cutting and patching shall be included in the bid. All work shall be finish painted (prime coat and two (2) finish coats) to match the existing finishes. All incidental damage to existing wall, structures etc. shall be refinished to the satisfaction of the owner representative.
- O. The cutting of walls or floors for conduit shall be kept to a minimum. Where such cutting is absolutely necessary, care shall be taken so as not to weaken the walls or floor involved. Beams or other structural supports shall not be cut under any condition, except as approved in writing by the Engineer.
- P. Conduit shall be protected immediately after installation by installing flat non-corrosive metallic discs and steel bushings, designed for this purpose, at each end. Discs shall not be removed until it is necessary to clean the conduit and pull wire and cable. Before wire or cable is pulled, insulated bushings shall be installed at each end of the conduit.
- Q. Where all thread nipples are used between fittings and electrical equipment, they shall be so installed that no threads are exposed.
- R. Connections from rigid conduit to motors, limit switches, solenoid valves, level controls, etc., shall be made with short lengths of liquid-tight flexible neoprene jacketed metal conduit. These lengths shall be provided with appropriate connectors with devices which will provide an excellent electrical connection between equipment and the rigid conduit for the flow of ground current.
- S. Conduit buried in the earth shall be a minimum of 24 in. below grade and shall be encased in "red" concrete with a minimum of three in. of cover over the conduit.
- T. Conduit passing through the walls of buildings below grade shall be installed with appropriate watertight fittings to prevent the entrance of groundwater around the periphery of the conduits and shall terminate with waterseal fittings to preclude the entrance of water into the termination device/box/enclosure via the conduit. Conduits shall be sloped away from the buildings to provide drainage away from the building wall.
- U. Conduit attachment to electrical equipment, such as sheet steel junction boxes, pullboxes, switches, etc., shall be made with double steel locknuts. Threaded insulated bushings shall be used on the end of each conduit terminating in such equipment. All other termination such as cast boxes shall use threaded hubs.
- V. Conduits passing through sleeves in interior walls and floors shall be tightly sealed with an NFPA approved fire rated caulk.

3.02 HAZARDOUS LOCATIONS

- A. All conduit work in hazardous locations shall be performed in accordance with Article 500 of the National Electric Code, as shown on the contract drawings and as specified herein.
- B. Conduit entering/exiting any hazardous Class I Division II areas shall have seal fittings installed for the purpose at the barrier between the two areas. A sealing compound ("Chico") shall be poured into fitting(s) after all wiring has been installed and accounted for.
- C. Seal fittings shall also be installed at all devices, control stations, lighting fixtures, etc. which are not factory sealed and UL listed for hazardous locations.
- D. Flexible conduit, solenoid valves, control stations, fittings, junction boxes, etc. utilized in hazardous locations shall be UL listed for use in hazardous areas.
- E. Conduit sleeves/penetrations through floors and walls of hazardous areas shall be thoroughly sealed around the outside with non-shrink grout across the entire floor or wall thickness.

SECTION 707.06 – EXTERIOR ATHLETIC LIGHTING

PART 1 – GENERAL

1.1 SUMMARY

- A. Work covered by this section of the specifications shall conform to the contract documents, engineering plans as well as state and local codes.
- B. The purpose of these specifications is to define the lighting system performance and design standards for Madison Hill Avenue in Rahway, NJ using an LED Lighting source. The manufacturer / contractor shall supply lighting equipment to meet or exceed the standards set forth in these specifications.
- C. The sports lighting will be for the following venues:
 - 1. Soccer 1, 360' x 195'
 - 2. Soccer 1, 360' x 195'
- E. The primary goals of this sports lighting project are:
 - 1. **Guaranteed Light Levels:** Selection of appropriate light levels impact the safety of the players and the enjoyment of spectators. Therefore light levels are guaranteed to not drop below specified target values for a period of 25 years.
 - 2. **Environmental Light Control:** It is the primary goal of this project to minimize spill light to adjoining properties and glare to the players, spectators and neighbors. The LED design should provide better control than a good HID design.
 - 3. **Life-cycle Cost:** In order to reduce the operating budget, the preferred lighting system shall be energy efficient and cost effective to operate. All maintenance costs shall be eliminated for the duration of the warranty.
 - 4. **Control and Monitoring:** To allow for optimized use of labor resources and avoid unneeded operation of the facility, customer requires a remote on/off control system for the lighting system. Fields should be proactively monitored to detect luminaire outages over a 25-year life cycle. All communication and monitoring costs for 25-year period shall be included in the bid.
- F. All lighting designs shall comply with local ordinances.

2.1 LIGHTING PERFORMANCE

- A. **Illumination Levels and Design Factors:** Playing surfaces shall be lit to an average target illumination level and uniformity as specified in the chart below. Lighting calculations shall be developed and field measurements taken on the grid spacing with the minimum number of grid points specified below. Appropriate light loss factors shall be applied and submitted for the basis of design. Average illumination level shall be measured in accordance with the IESNA LM-5-04 (IESNA Guide for Photometric Measurements of Area and Sports Lighting Installations). Illumination levels shall not to drop below desired target values in accordance to IES RP-6-15, Page 2, Maintained Average Illuminance and shall be guaranteed for the full warranty period.

Area of Lighting	Average Target Illumination Levels	Maximum to Minimum Uniformity Ratio	Grid Points	Grid Spacing
Soccer 1	50 footcandles	2.0:1.0	84	30' x 30'

Soccer 2	50 footcandles	2.0:1.0	84	30' x 30'
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B. Hours of usage: Designs shall be based on the following hours of usage

Area of Lighting	Annual Usage Hours	25 year Usage Hours
Soccer 1	300	7,500
Soccer 2	300	7,500

C. Color: The lighting system shall have a minimum color temperature of 5700K and a CRI of 75.

D. Mounting Heights: To ensure proper aiming angles for reduced glare and to provide better playability, minimum mounting heights shall be as described below. Higher mounting heights may be required based on photometric report and ability to ensure the top of the field angle is a minimum of 10 degrees below horizontal.

# of Poles	Pole Designation	Pole Height
6	S1, S2, S3, S4, S5, S6	70'

3.1 ENVIRONMENTAL LIGHT CONTROL

A. Light Control Luminaires: All luminaires shall utilize spill light and glare control devices including, but not limited to, internal shields, louvers and external shields. No symmetrical beam patterns are accepted.

B. Glare Control: Maximum candela at a distance of 150' should be better than that of a comparable HID design. These values are defined for typical sports fields listed below.

Typical Field Type	Maximum Candela at 150'
Soccer	<12,000 candela

C. The first page of a photometric report for all luminaire types proposed showing horizontal and vertical axial candle power shall be provided to demonstrate the capability of achieving the specified performance. Reports shall be certified by a qualified independent testing laboratory with a minimum of five years experience or by a manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products. A summary of the horizontal and vertical aiming angles for each luminaire shall be included with the photometric report.

4.1 LIFE-CYCLE COSTS

A. Manufacturer shall submit a 25-year life cycle cost calculation as outlined in the required submittal information.

B. Preventative and Spot Maintenance: Manufacturer shall provide all preventative and spot maintenance, including parts and labor for 25 years from the date of equipment shipment. Individual outages shall be repaired when the usage of any field is materially impacted. Owner agrees to check fuses in the event of a luminaire outage.

PART 2 – PRODUCT

2.1 SPORTS LIGHTING SYSTEM CONSTRUCTION

A. Manufacturing Requirements: All components shall be designed and manufactured as a system. All luminaires, wire harnesses, drivers and other enclosures shall be factory assembled, aimed, wired and tested.

- B. Durability: All exposed components shall be constructed of corrosion resistant material and/or coated to help prevent corrosion. All exposed carbon steel shall be hot dip galvanized per ASTM A123. All exposed aluminum shall be powder coated with high performance polyester or anodized. All exterior reflective inserts shall be anodized, coated, and protected from direct environmental exposure to prevent reflective degradation or corrosion. All exposed hardware and fasteners shall be stainless steel of 18-8 grade or better, passivated and coated with aluminum-based thermosetting epoxy resin for protection against corrosion and stress corrosion cracking. Structural fasteners may be carbon steel and galvanized meeting ASTM A153 and ISO/EN 1461 (for hot dipped galvanizing), or ASTM B695 (for mechanical galvanizing). All wiring shall be enclosed within the cross-arms, pole, or electrical components enclosure.
- C. System Description: Lighting system shall consist of the following:
1. Galvanized steel poles and cross-arm assembly. Alternate: Concrete pole with a minimum of 8,000 psi and installed with concrete backfill will be an acceptable alternative provided building code, wind speed and foundation designs per specifications are adhered to.
 2. Non-approved pole technology:
 - a. Square static cast concrete poles will not be accepted.
 - b. Direct bury steel poles which utilize the extended portion of the steel shaft for their foundation will not be accepted due to potential for internal and external corrosive reaction to the soils and long term performance concerns.
 3. Lighting systems shall use concrete foundations. See Section 2.3 for details.
 - a. For a foundation using a pre-stressed concrete base embedded in concrete backfill the concrete shall be air-entrained and have a minimum compressive design strength at 28 days of 3,000 PSI. 3,000 PSI concrete specified for early pole erection, actual required minimum allowable concrete strength is 1,000 PSI. All piers and concrete backfill must bear on and against firm undisturbed soil.
 - b. For anchor bolt foundations or foundations using a pre-stressed concrete base in a suspended pier or re-inforced pier design pole erection may occur after 7 days. Or after a concrete sample from the same batch achieves a certain strength.
 4. Manufacturer will supply all drivers and supporting electrical equipment
 - a. Remote drivers and supporting electrical equipment shall be mounted approximately 10 feet above grade in aluminum enclosures. The enclosures shall be touch-safe and include drivers and fusing with indicator lights on fuses to notify when a fuse is to be replaced for each luminaire. Disconnect per circuit for each pole structure will be located in the enclosure.
 - b. Alternate: Integral drivers mounted at the top of the pole will require a pole mounted enclosure approximately 10 feet above grade. The enclosure shall include a disconnect per circuit and surge protection.
 5. Manufacturer shall provide surge protection at the pole equal to or greater than 40 kA for each line to ground (Common Mode) as recommended by IEEE C62.41.2_2002.
 6. Wire harness complete with an abrasion protection sleeve, strain relief and plug-in connections for fast, trouble-free installation.
 7. All luminaires, visors, and cross-arm assemblies shall withstand 150 mph winds and maintain luminaire aiming alignment.
 8. Control cabinet to provide remote on-off control and monitoring of the lighting system. See Section 2.4 for further details.
 9. Manufacturer shall provide lightning grounding as defined by NFPA 780 and be UL Listed per UL 96 and UL 96A.
 - a. Integrated grounding via concrete encased electrode grounding system.
 - b. If grounding is not integrated into the structure, the manufacturer shall supply grounding electrodes, copper down conductors, and exothermic weld kits. Electrodes and conductors shall be sized as required by NFPA

780. The grounding electrode shall be minimum size of 5/8 inch diameter and 8 feet long, with a minimum of 10 feet embedment. Grounding electrode shall be connected to the structure by a grounding electrode conductor with a minimum size of 2 AWG for poles with 75 feet mounting height or less, and 2/0 AWG for poles with more than 75 feet mounting height.

- D. System Description: Parking Lot Lighting System shall consist of the following:
 - 1. Five (5) 20' soft square poles with one (1) luminaire per pole.
 - 2. Average maintained horizontal footcandles of 4.
 - 3. 300 annual usage hours.
- E. Safety: All system components shall be UL listed for the appropriate application.

2.2 ELECTRICAL

- A. Electric Power Requirements for the Sports Lighting Equipment:
 - 1. Electric power: Voltage and phasing to be confirmed.
 - 2. Maximum total voltage drop: Voltage drop to the disconnect switch located on the poles shall not exceed three (3) percent of the rated voltage.
- B. Energy Consumption: The kW consumption for the sport's field lighting system shall be 101.2 kW. The kW consumption for the for the parking lot lighting system shall be 0.65 kW.
- C. Contractor Responsibilities

The Contractor shall be responsible for providing all labor, materials, and equipment necessary for the installation of a complete and operational sports lighting system. It is the intent of these specifications to be performance oriented with respect to the design of the electrical service and distribution. All items necessary and incidental to complete the work and provide an operational sports lighting system are to be included and shall be considered as part of this Contract.

Prior to bidding, Contractor shall visit the site to become familiar with the existing conditions. The Contractor shall be familiar with all issues relating to the provision of electric service to the lighting system.

The Contractor shall coordinate the locations of the service, transformer and switchgear, as well as identifying the voltage and phase of the service, with the local power company and the Owner's representative before any equipment is installed.

- D. System Design
 - 1. The electrical system equipment shall consist of the following:
 - 2. Electrical Service and Transformer from existing facilities to the site. Coordinate this work with the local Utility company.
 - 3. New Meter Housing, if required by Code or the Utility.
 - 4. Conductors and conduit from the main service transformer to the service entrance panel board.

5. The Service Entrance Panel Board with appropriate individual circuit over-current protection. The panel board shall meet local and National Electrical Code (NEC) requirements for the size of the service, AIC rating, and the type of the environment to which it will be exposed. All feeder breakers shall be bolt on type.

6. Conductors and conduit for the feeder and control circuits from the service entrance panel board to the lighting control contactors and wireless control system. Lighting control contactors and wireless control system, supplied by the sports lighting manufacturer, shall be sized per local codes and the NEC according to the circuit amperage. Provide 120V either via step down transformer or from service to power the Lighting control contactors and wireless control system. The contactors shall be rated for lighting applications and shall be housed in a NEMA 4 enclosure.

7. Conductors and conduit for the feeder circuit from the service entrance panel board and from the contactor panel to the safety disconnect mounted in the electrical enclosure on each lighting pole 10' above grade.

8. Grounding conductors and grounding methods for the following:

- a. The main service entrance panel board. (per NEC or local codes)
- b. The lighting contactor enclosure and wireless control box. (per NEC or local)
- c. Each electrical component enclosure mounted on the lighting poles. (Equipment Grounding System) (per NEC or local codes)

9. Lightning Protection: Manufacturer shall provide integrated lightning grounding via concrete encased electrode grounding system as defined by NFPA 780 and be UL Listed per UL 96 and UL 96A.

10. If grounding is not integrated into the structure, the Manufacturer shall supply grounding electrodes, copper down conductors and exothermic weld kits. Electrodes and conductors shall be sized as required by NFPA 780. The grounding electrode shall be not less than 5/8 inch diameter and 8 feet long, with a minimum of 10 feet embedment. Grounding electrode shall be connected to the structure by a grounding electrode conductor with a minimum size of 2 AWG for poles with 75 feet mounting height or less, and 2/0 AWG for poles with more than 75 feet mounting height.

C. Trenching or Directional Boring

1. The installing contractor shall be responsible for locating all underground utilities including, but not limited to, natural gas, electric, water, sewer, cable TV and telephone.

2. The owner shall be responsible for locating and staking any underground facilities that are not utility related. Owner accepts responsibility for damage to such facilities that are not properly located or staked.

3. Trenching depth and width shall be adequate to install appropriately sized conduit and to meet local and National Electrical Codes.

4. Trenches shall be back-filled with excavated soil and compacted to approximately the same density of the surrounding soil to minimize settlement.

5. No trench line or feeder circuit shall cross the playing area.

D. Design Standards

1. All circuits shall be designed so as not to exceed a 3% voltage drop at the safety disconnect in the electrical enclosure near the base of each pole.
2. All work shall meet local and National Electrical Codes. It shall be the installing contractors' responsibility to correct any work deemed unacceptable by local electrical inspectors.
3. Each pole shall be on a dedicated circuit. If common poles are to be used, or a pole is to have fixtures on a separate circuit, another dedicated circuit shall be ran to that pole. Consult lighting equipment specifications and lighting manufacturer for special circuitry information.

E. Submittal Information

The successful contractor shall provide an electrical plan/schematic, detailing all of the equipment described above, to the owner prior to commencing work. This electrical plan/schematic shall bear the stamp of an Electrical Engineer with P.E. status within the State of New Jersey.

2.3 STRUCTURAL PARAMETERS

- A. Wind Loads: Wind loads shall be based on the 2015 International Building Code. Wind loads to be calculated using ASCE 7-10, an ultimate design wind speed of 115 mph and exposure category C.
- B. Pole Structural Design: The stress analysis and safety factor of the poles shall conform to 2013 AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals (LTS-6).
- C. Foundation Design: The foundation design shall be based on soil parameters as outlined in the geotechnical report. If no geotechnical report exists, the foundation design shall be based on soils that meet or exceed those of a Class 5 material as defined by 2015 IBC Table 1806.2.

2.4 CONTROL

- A. Instant On/Off Capabilities: System shall provide for instant on/off of luminaires.
- B. Lighting contactor cabinet(s) constructed of NEMA Type 4 aluminum, designed for easy installation with contactors, labeled to match field diagrams and electrical design. Manual off-on-auto selector switches shall be provided.
- C. Remote Lighting Control System: System shall allow owner and users with a security code to schedule on/off system operation via a web site, phone, fax or email up to ten years in advance. Manufacturer shall provide and maintain a two-way TCP/IP communication link. Trained staff shall be available 24/7 to provide scheduling support and assist with reporting needs.

The owner may assign various security levels to schedulers by function and/or fields. This function must be flexible to allow a range of privileges such as full scheduling capabilities for all fields to only having permission to execute "early off" commands by phone. Scheduling tool shall be capable of setting curfew limits.

Controller shall accept and store 7-day schedules, be protected against memory loss during power outages, and shall reboot once power is regained and execute any commands that would have occurred during outage.

- D. Remote Monitoring System: System shall monitor lighting performance and notify manufacturer if individual luminaire outage is detected so that appropriate maintenance can be scheduled. The controller shall determine switch position (manual or auto) and contactor status (open or closed).

- E. Management Tools: Manufacturer shall provide a web-based database and dashboard tool of actual field usage and provide reports by facility and user group. Dashboard shall also show current status of luminaire outages, control operation and service. Mobile application will be provided suitable for IOS, Android and Blackberry devices.

Hours of Usage: Manufacturer shall provide a means of tracking actual hours of usage for the field lighting system that is readily accessible to the owner.

- 1. Cumulative hours: shall be tracked to show the total hours used by the facility
 - 2. Report hours saved by using early off and push buttons by users.
- F. Communication Costs: Manufacturer shall include communication costs for operating the controls and monitoring system for a period of 25 years.

PART 3 – EXECUTION

3.1 SOIL QUALITY CONTROL

- A. It shall be the Contractor's responsibility to notify the Owner if soil conditions exist other than those on which the foundation design is based, or if the soil cannot be readily excavated. Contractor may issue a change order request / estimate for the Owner's approval / payment for additional costs associated with:
 - 1. Providing engineered foundation embedment design by a registered engineer in the State of New Jersey for soils other than specified soil conditions;
 - 2. Additional materials required to achieve alternate foundation;
 - 3. Excavation and removal of materials other than normal soils, such as rock, caliche, etc.

3.2 DELIVERY TIMING

- A. Delivery Timing Equipment On-Site: The equipment must be on-site 6 to 8 weeks from receipt of approved submittals and receipt of complete order information.

3.3 FIELD QUALITY CONTROL

- A. Illumination Measurements: Upon substantial completion of the project and in the presence of the Contractor, Project Engineer, Owner's Representative, and Manufacturer's Representative, illumination measurements shall be taken and verified. The illumination measurements shall be conducted in accordance with IESNA LM-5-04.
- B. Field Light Level Accountability
 - 1. Light levels are guaranteed not to fall below the target maintained light levels for the entire warranty period of 25 Years.
 - 2. The contractor/manufacturer shall be responsible for an additional inspection one year from the date of commissioning of the lighting system and will utilize the owner's light meter in the presence of the owner.
 - 3. The contractor/manufacturer will be held responsible for any and all changes needed to bring these fields back to compliance for light levels and uniformities. Contractor/Manufacturer will be held responsible for any damage to the fields during these repairs.
- C. Correcting Non-Conformance: If, in the opinion of the Owner or his appointed Representative, the actual performance levels including footcandles and uniformity ratios are not in conformance with the requirements of the performance specifications and submitted information, the Manufacturer shall be required to make adjustments to meet specifications and satisfy Owner.

3.4 WARRANTY AND GUARANTEE

- A. 25-Year Warranty: Each manufacturer shall supply a signed warranty covering the entire sports lighting system for 25 years from the date of shipment. Warranty shall guarantee specified light levels. Manufacturer shall maintain specifically-funded financial reserves to assure fulfillment of the warranty for the full term. Warranty does not cover weather conditions events such as lightning or hail damage, improper installation, vandalism or abuse, unauthorized repairs or alterations, or product made by other manufacturers.
- B. Maintenance: Manufacturer shall monitor the performance of the lighting system, including on/off status, hours of usage and luminaire outage for 25 years from the date of equipment shipment. Parts and labor shall be covered such that individual luminaire outages will be repaired when the usage of any field is materially impacted. Owner agrees to check fuses in the event of a luminaire outage.
- C. 10-Year Warranty: Each manufacturer shall supply a signed warranty cover the parking lot lighting system for 10 years from the date of shipment.

PART 4 – DESIGN APPROVAL

4.0 PRE-BID SUBMITTAL REQUIREMENTS (Non-Musco)

- A. Design Approval: The owner / engineer will review pre-bid submittals per section 4.0.B from all the manufacturers to ensure compliance to the specification 10 days prior to bid. If the design meets the design requirements of the specifications, a letter and/or addendum will be issued to the manufacturer indicating approval for the specific design submitted.
- B. Approved Product: Musco’s Light-Structure System™ with TLC for LED™ is the approved product. All substitutions must provide a complete submittal package for approval as outlined in Submittal Information at the end of this section at least 10 days prior to bid. Special manufacturing to meet the standards of this specification may be required. An addendum will be issued prior to bid listing any other approved lighting manufacturers and designs.
- C. All listed manufacturers not pre-approved shall submit the information at the end of this section at least 10 days prior to bid. An addendum will be issued prior to bid; listing approved lighting manufacturers and the design method to be used.
- D. Bidders are required to bid only products that have been approved by this specification or addendum by the owner or owner’s representative. Bids received that do not utilize an approved system/design, will be rejected.

The Following Pay Items Have Been Added:

<i>Item</i>	<i>Pay Unit</i>
Utility Upgrades – Electric Service	Lump Sum
Sportsfield Lighting System	Lump Sum

DIVISION 800 – LANDSCAPING
SECTION 802 – TRIMMING AND REMOVING
TREES

802.01 DESCRIPTION.

The Following Is Added:

This work shall also consist of trimming trees, if & where directed in the field by the Engineer.

802.04 MEASUREMENT AND PAYMENT.

No separate payment shall be measured for the tree trimming of existing trees. All costs associated with the removal of existing trees shall be included in the Item CLEARING SITE.

No separate payment shall be measured for the removal of existing trees and stumps. All costs associated with the removal of existing trees and stumps shall be included in the Item CLEARING SITE.

SECTION 804 – TOPSOILING

804.04 MEASUREMENT AND PAYMENT.

The entire subsection is replaced by the following:

All grassed areas disturbed by construction activities shall be restored by topsoiling, fertilizing and seeding. No separate payment shall be made for the restoration of grassed areas disturbed outside the limit of disturbance as delineated on the construction plans.

The following pay Item is described:

<u><i>Item</i></u>	<u><i>Pay Unit</i></u>
Topsoiling, 6" Thick	Square Yard

SECTION 806 – FERTILIZING AND SEEDING

806.04 MEASUREMENT AND PAYMENT.

The entire subsection is replaced by the following:

All grassed areas disturbed by construction activities shall be restored by topsoiling, fertilizing and seeding in accordance with these specifications. No separate payment shall be made for the restoration of grassed areas disturbed outside the limit of disturbance as delineated on the construction plans.

The Following Pay Item is Described:

<u><i>Item</i></u>	<u><i>Pay Unit</i></u>
Fertilizing and Seeding	Square Yard

The contractor shall be responsible for the first five (5) mowings of the lawn areas in order to assure the Owner that the lawn root system has become well established. Cost of the mowings shall be included in cost of various items of the bid proposal. The seeded areas that are not lawn areas shall not be mowed.

The contractor shall be responsible to maintain the seeded areas, including, but not limited to watering for a period of 90 days after acceptance of the seeded areas in order for a root system to develop. Should seeded areas fail to establish during this time period, the contractor shall replace at his own cost. Please note that at the prior to the end of the maintenance bond period, if seeded areas are not actively growing and maintaining a health, the Owner reserves the right to request to have the seeded areas be replaced at no additional cost to the Owner.

DIVISION 900 – MATERIALS

SECTION 912 – PAINTS, COATINGS, TRAFFIC STRIPES, AND TRAFFIC MARKINGS

912.03.01 Epoxy Traffic Stripes

B. Glass Beads.

The following is added to this section:

Ensure that glass beads do not contain more than 200 ppm of lead, 200 ppm of antimony, or 200 ppm of arsenic.

912.03.02 Thermoplastic Traffic Markings

The following is added to this section:

Ensure that glass beads do not contain more than 200 ppm of lead, 200 ppm of antimony, or 200 ppm of arsenic.

912.04.01 Latex Paint

The following is added to this section:

Ensure that glass beads do not contain more than 200 ppm of lead, 200 ppm of antimony, or 200 ppm of arsenic.

REPORT OF SUBSURFACE EXPLORATION



Report of Subsurface Exploration

Union County
Madison Avenue Park Synthetic Turf Field
Project #2013-016
Block 189, Lot 1
City of Rahway, Union County, New Jersey

September 12, 2018

Prepared For
Union County Division of Engineering
2325 South Avenue
Scotch Plains, NJ 07076

Prepared By
Maser Consulting P.A.
Corporate Headquarters
331 Newman Springs Road, Suite 203
Red Bank, NJ 07701
732.383.1950

A handwritten signature in black ink that reads 'Michael Carnivale III'.

Michael Carnivale, III, P.E.
Senior Project Manager, Geotechnical Services
Professional Engineer
New Jersey License No. 45357

MC Project No. 13001580A





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FIGURES

Exploration Location Plan Figure No. 1

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APPENDIX ATest Pit Logs



1.0 INTRODUCTION

This report presents the results of our geotechnical evaluation of the site with respect to the proposed stormwater management areas and infiltration rates for use in design. Maser Consulting P.A. understands that the applicant proposes to install a synthetic turf field. No infiltration testing was performed on any of the soils collected as part of this subsurface exploration.

2.0 SITE DESCRIPTION

The subject project site is Madison Avenue Park located on Madison Avenue in the City of Rahway, Union County, New Jersey and is referred to as Block 189, Lot 1 on the City of Rahway Tax Maps. The subject property is surrounded by a parking lot to the west, Westfield Avenue to the north, and Madison Avenue to the east.

The project consists of engineering design and construction administration and inspection services necessary for the installation of a synthetic turf field system, totaling approximately six (6) acres in size to accommodate two soccer fields, including site lighting at the County Park commonly known as Madison Avenue Park in Rahway.

3.0 SCOPE OF SERVICES

To evaluate the subsurface conditions within the influence of the proposed stormwater management areas and to subsequently provide consultation regarding anticipated subsurface infiltration rates and design estimated seasonal high-water levels (ESHWL), we performed the following scope of services:

- a) Coordinated the services of the excavation operator provided by the Department of Public Works to excavate test pits for exploration of subsurface soil and groundwater conditions within the proposed stormwater management areas;
- b) Provided full-time technical observation of the excavation work;



- c) Obtained representative soil samples encountered within the zone of influence of the proposed construction; and
- d) Evaluated the field data and prepared test pit logs showing the types of soils observed, depths to groundwater, and depths to estimated seasonal high groundwater.

4.0 SUBSURFACE EXPLORATION

The subsurface conditions were evaluated on August 9, 2018, through the excavation of a total of ten (10) test pits, labeled TP-1 through TP-10. Test pits were excavated at the locations shown on the Exploration Location Plan, Figure No.1. Test pits were excavated to depths ranging from approximately 6 to 10 feet below the existing ground surface.

Representatives from Maser Consulting's Geotechnical Department observed the test pit excavations. Soils encountered were classified in the field in accordance with N.J.A.C. 7:9A, Subchapter 5.3, Terminology Required for Soil Logs. The Burmister Soil Classification System was also used. Representative soil samples of strata encountered were collected and returned to Maser Consulting's Red Bank laboratory facilities for further evaluation and analyses. Details pertaining to the subsurface conditions encountered are presented on the Test Pit Logs in Appendix A.

The depth of groundwater was measured from the ground surface to the point of observed seepage or consistent soil moisture. Groundwater seepage was encountered in one (1) test pit excavated as part of this exploration, TP-3. Groundwater was observed at a depth of approximately 108 inches below existing grade within this test pit. Groundwater was not encountered in the remaining test pits within the depths excavated.

The subsurface strata were also evaluated with respect to mottling and soil staining to determine if seasonal high groundwater levels extended into the test pit depths. Staining and mottling within a soil stratum can indicate seasonal high-water level fluctuations, but is also found along wormholes, as a result of prior farming practices, or as an indication of geologic depositional factors. Potential indications of seasonal high groundwater were not detected in nine (9) of the test



**MADISON AVENUE PARK SYNTHETIC TURF FIELD
MC PROJECT NO. 13001580A**

pits excavated as part of this exploration, the only exception being TP-3, where the ESHWL corresponds with the groundwater seepage observed at 108 inches below existing ground surface.

Perched water levels were encountered at depths ranging from 6 to 72 inches below existing grade within the test pits, as indicated by staining. These are not indicators of seasonal high water levels but are the result of water infiltrating through the soil mass.

Please refer to Table 1 for a summary of depths to the groundwater table and to the estimated seasonal high water level (ESHWL). Soil moisture and groundwater conditions should be expected to fluctuate with season, precipitation amounts, and other on-site and off-site factors including site utilization.

TABLE 1 DEPTH TO GROUNDWATER AND ESHWL SUMMARY			
Test Pit ID	Ground Surface Elev. (ft)	Depth to Groundwater Water Table, GWT (in)	Depth to Estimated Seasonal High Water Level, ESHWL (in)
TP-1	33.6	N.E.	N.E.
TP-2	33.6	N.E.	N.E.
TP-3	32.7	108	108
TP-4	33.5	N.E.	N.E.
TP-5	33.3	N.E.	N.E.
TP-6	33.1	N.E.	N.E.
TP-7	33.2	N.E.	N.E.
TP-8	31.9	N.E.	N.E.
TP-9	32.5	N.E.	N.E.
TP-10	33.1	N.E.	N.E.

*N.E.: Not Encountered/Detected

5.0 SUBSURFACE CONDITIONS

Test pits disclosed a topsoil layer consisting of dark reddish-brown, dark brown, and brown silt loam and sandy loam ranging in thickness from approximately 3 to 8 inches.



**MADISON AVENUE PARK SYNTHETIC TURF FIELD
MC PROJECT NO. 13001580A**

Underlying the topsoil layer are layers of reddish brown and brown silt to sandy loam, which are mostly fill with occasional debris and gravel content up to 25%. This layer ranges in thickness from 4 to 32 inches and terminating at depths between 14 and 35 inches.

Underlying the fill layer is a reddish brown and yellowish-brown silt to sandy loam layer. This layer has prominent and distinct soil staining and up to 30% gravel and 25% cobbles. The thickness of this layer ranges from 26 to 91 inches. In TP-1, TP-4, TP-5, TP-6, TP-8, TP-9, and TP-10, this layer reaches termination depths. TP-2, TP-3, and TP-7 have a yellowish red, reddish brown, brown loamy sand and sand layer encountered at depths ranging from 33 to 96 inches extending to the termination depths.

7.0 GENERAL CONSTRUCTION DISCUSSION

Groundwater was encountered in only one test pit at approximately 108 inches. It is not expected that a static groundwater table would be encountered at a shallower depth during excavation.

The presence of the perched water level would most likely result in seepage entering the stormwater management basin during the wet season (January to April) and after large precipitation events.

Excavated soils with high silt and clay contents are unsuitable for use as structural fill throughout the site. Soils containing significant quantities of organic materials may need to be removed from the site and disposed in a manner consistent with local, state and federal regulations. Stripped topsoil and cohesive materials may be used to raise site grades in lawn areas but may be difficult to re-handle and place in a manner that will minimize post-construction subsidence. During periods of inclement weather, placing and compaction difficulties will also occur since the materials, in general, will be moisture sensitive. Granular materials encountered during site earthwork operations should be segregated for reuse as general fills for this project.



8.0 CLOSING

Successful construction of the project will require competent field observation of the construction operations. Earthwork, including clearing and grubbing, subgrade identification, grading and fill placement should be observed by a competent individual familiar with the recommendations contained herein. We are available to perform construction observation services, if requested.

The recommendations contained herein are contingent upon the actual field conditions being consistent with those encountered during our field exploration. Should any variation in the anticipated conditions be encountered or site regrading be proposed, Maser Consulting P.A. should be notified immediately to determine what impact the changed conditions may have upon the presented recommendations.


9.0 LIMITATIONS

Services performed by Maser Consulting P.A. during this project have been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. No other representation, expressed or implied, and no warranty or guarantee is included or intended in the services provided. This is not an Environmental Assessment.

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LEGEND:

TP-0  INDICATES THE NUMBERS AND APPROXIMATE LOCATIONS OF TEST PITS PERFORMED.

NOTES:

- 1.) THIS DRAWING IS PART OF MASER'S REORT (PROJECT NO. 13001580A) DATED SEPTEMBER 2018 AND SHOULD ONLY BE USED IN CONJUNCTION WITH THE REPORT.
- 2.) EXPLORATION LOCATIONS ARE APPROXIMATE BASED UPON EXISTING SITE FEATURES AND BASE MAP INFORMATION AVAILABLE AT THE TIME OF OUR FIELD EXPLORATIONS.



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New Jersey New York Pennsylvania Virginia
Customer Loyalty through Client Satisfaction

TITLE: EXPLORATION LOCATION PLAN		
PROJECT: MADISON AVENUE PARK SYNTHETIC TURF FIELD		
CITY OF RAHWAY UNION COUNTY, NEW JERSEY		
DRAWN BY: MVN	CHECKED BY: MC	PROJECT NO.: 13001580A
SCALE: N.T.S.	DATE: 9/12/18	FIGURE NO.: 1



**APPENDIX A
TEST PIT LOGS**

VISUAL IDENTIFICATION OF SAMPLES
(Burmister Soil Classification System)

I. Definition of Soil Components and Fractions

<u>Material</u>	<u>Symbol</u>	<u>Fraction</u>	<u>Sieve Size</u>	<u>Definition</u>
Boulders	Bldr	-----	9" +	Material retained on 9" sieve.
Cobbles	Cbl	----	3" to 9"	Material passing the 9" sieve and retained on the 3" sieve.
Gravel	G	coarse (c) medium (m) fine (f)	1" to 3" 3/8" to 1" No. 10 to 3/8"	Material passing the 3" sieve and retained on the No. 10 sieve.
Sand	S	coarse (c) medium (m) fine (f)	No. 30 to No. 10 No. 60 to No. 30 No. 200 to No. 60	Material passing the No. 10 sieve and retained on the No. 200 sieve.
Silt	\$	---	Passing No. 200 (0.075 mm)	Material passing the No. 200 sieve that is non-plastic in character and exhibits little or no strength when air dried.
Clayey SILT	Cy\$	Slight (SL)	1 to 5	Clay - Soil
SILT & CLAY	\$ & C	Low (L)	5 to 10	Material passing the No. 200 which can be made to exhibit plasticity and clay qualities within a certain range of moisture content, and which exhibits considerable strength when air-dried.
CLAY & SILT	C & \$	Medium (M)	10 to 20	
Silty CLAY	\$yC	High (H)	20 to 40	
CLAY	C	Very High (VH)	40 Plus	
Organic Silt	(O\$)			Material passing the No. 200 sieve which exhibits plastic properties within a certain range of moisture content, and exhibits fine granular and organic characteristics.

II. Definition of Component Proportions

<u>Component</u>	<u>Written</u>	<u>Proportions</u>	<u>Symbol</u>	<u>Percentage Range by Weight*</u>
Principal	CAPITALS	---		50 or more
Minor	Lower Case	and	a.	35 to 50
		some	s.	20 to 35
		little	l.	10 to 20
		trace	t.	1 to 10

* Minus sign (-) lower limit, plus sign (+) upper limit, no sign middle range.



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TEST PIT No. TP-1

DATE EXCAVATED: 8/9/18
SURFACE ELEVATION: 33.6

Project: Madison Avenue Park
Location: Rahway City, Union County, NJ
Job Number: 13001580A

EXCAVATED BY: Hannibal
EQUIPMENT USED: JD 310 S3
INSPECTED BY: Austin Young

DEPTH (ft)	DEPTH (in)	DESCRIPTION	REMARKS
0	0		
	3	(5YR 3/3) Dark Reddish-Brown Silt Loam. Granular, Very Friable. Abrupt/Smooth Boundary. (Topsoil, Moist). 4"	
	6		
	12	(5YR 4/3) Reddish Brown Silt Loam. Subangular-Blocky, Friable. 25% Gravel. Abrupt/Wavey Boundary. Occasional Trash Debris. (Fill, Moist). 32"	
	24		
	36	(5YR 5/4) Reddish Brown Silt Loam to Loam. Subangular-Blocky, Friable. Clear/Wavey Boundary with (5YR 5/8) Yellowish Red Many Coarse Prominent Staining. (Moist)	
	48		
5	60	(5YR 5/4) Reddish Brown Sandy Loam to Loam, Subangular-Blocky, Friable. Clear Wavey Boundary with (5YR 5/8) Yellowish Red Many Coarse Distinct Staining. (Moist).	
	72		
	84	END OF TEST PIT AT 72 INCHES	
	96		
	108		
10	120		
	132		
	144		
	156		
	168		
15	180		
	192		
	204		
	216		
	228		
20	240		

GROUNDWATER:	DEPTH (ft.)	DATE	ESTIMATED DEPTH TO SEASONAL HIGH GROUNDWATER: <u>N.E.</u>
First Encountered	<u>∇</u> <u>N.E.</u>	<u>8/9/18</u>	
At Completion (0 hrs.)	<u>▼</u> <u>N.E.</u>	<u>8/9/18</u>	
After Completion (>24 hrs.)	<u>▼</u> _____	_____	

TEST PIT No. TP-1



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TEST PIT No. TP-2

DATE EXCAVATED: 8/9/18
SURFACE ELEVATION: 33.6

Project: Madison Avenue Park
Location: Rahway City, Union County, NJ
Job Number: 13001580A

EXCAVATED BY: Hannibal
EQUIPMENT USED: JD 310 S3
INSPECTED BY: Austin Young

DEPTH (ft)	DEPTH (in)	DESCRIPTION	REMARKS
0	0		
	3	(5YR 5/4) Reddish Brown Loamy Sand. Platy Parting to Subangular-Blocky, Firm. Abrupt/Smooth Boundary. (Topsoil, Moist).	6"
	6		
	12	(5YR 4/3) Reddish Brown Sandy Loam. 5% Gravel. Subangular-Blocky, Friable. Abrupt/Wavey Boundary. (Topsoil, Moist).	10"
	24		
	36		
	48	(5YR 4/6) Yellowish Red Loam. Subangular-Blocky, Firm. 15% Gravel, 15% Cobbles. Clear Wavey Boundary. (Moist).	
5	60	(5YR 4/6) Yellowish Red Loamy Sand, Subangular-Blocky to Single Grain, Friable to Loose. 20% Gravel, 25% Cobbles. Clear Wavey Boundary. (Moist).	
	72		
	84		
	96		
	108	(7.5YR 4/2) Brown Sand. Single Grain, Loose. 25% Gravel, 15% Cobbles. (Moist).	
10	120	END OF TEST PIT AT 120 INCHES	
	132		
	144		
	156		
	168		
15	180		
	192		
	204		
	216		
	228		
20	240		

GROUNDWATER: DEPTH (ft.) DATE
 First Encountered N.E. 8/9/18
 At Completion (0 hrs.) N.E. 8/9/18
 After Completion (>24 hrs.) _____ _____

ESTIMATED DEPTH TO SEASONAL HIGH GROUNDWATER: N.E.

TEST PIT No. TP-2



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TEST PIT No. TP-3

DATE EXCAVATED: 8/9/18
SURFACE ELEVATION: 32.7

Project: Madison Avenue Park
Location: Rahway City, Union County, NJ
Job Number: 13001580A

EXCAVATED BY: Hannibal
EQUIPMENT USED: JD 310 S3
INSPECTED BY: Austin Young

DEPTH (ft)	DEPTH (in)	DESCRIPTION	REMARKS
0	0	(7.5YR 3/2) Brown Silt Loam. Granular, Very Friable. Abrupt Smooth Boundary. (Topsoil, Moist).	6"
	6	(7.5YR 3/2) Brown Silt Loam. Subangular-Blocky, Friable. 10% Gravel. Abrupt Wavy Boundary. (Fill, Moist).	
	12	(10YR 5/6) Yellowish Brown Silt Loam. Subangular-Blocky, Friable. Clear Wavy Boundary. (Moist).	22"
	18	(5YR 5/6) Yellowish Red Silt Loam. Subangular-Blocky, Friable to Firm. Clear Wavy Boundary with (7.5YR 5/6) Yellowish Red Many Coarse Prominent Staining. (Moist).	32"
5	24	(5YR 5/4) Reddish Brown Sandy Loam. Subangular-Blocky, Friable. 10% Gravel, 5% Cobble. Clear Wavy Boundary with (7.5YR 5/6) Strong Brown Few Coarse Faint Staining. (Moist).	39"
	30	(5YR 5/4) Reddish Brown Sandy Loam. Subangular Blocky, Friable. 10% Gravel, 5% Cobble. Clear Wavy Boundary. (Moist).	
	36	(5YR 5/4) Reddish Brown Loamy Sand. Single Grain, Loose. 20% Gravel, 15% Cobble. (Very Moist to Wet)	
10	42	END OF TEST PIT AT 108 INCHES	
15	48		
20	54		

GROUNDWATER: DEPTH (ft.) DATE	ESTIMATED DEPTH TO SEASONAL HIGH GROUNDWATER: <u>N.E.</u>
First Encountered <u>▽</u> <u>9.0</u> <u>8/9/18</u>	
At Completion (0 hrs.) <u>▼</u> <u>9.0</u> <u>8/9/18</u>	
After Completion (>24 hrs.) <u>▼</u> _____ _____	

TEST PIT No. TP-3



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TEST PIT No. TP-4

DATE EXCAVATED: 8/9/18
SURFACE ELEVATION: 33.5

Project: Madison Avenue Park
Location: Rahway City, Union County, NJ
Job Number: 13001580A

EXCAVATED BY: Hannibal
EQUIPMENT USED: JD 310 S3
INSPECTED BY: Austin Young

DEPTH (ft)	DEPTH (in)	DESCRIPTION	REMARKS
0	0		
	3	(7.5YR 3/2) Dark Brown Silt Loam. Subangular-Blocky, parting to Granular, Firm to Friable. Abrupt Smooth Boundary. (Topsoil, Moist).	6"
	6		
	9		
	12	(7.5YR 5/4) Brown Silt Loam to Loam. Subangular-Blocky, Friable. 10% Gravel. Clear Wavy Boundary with Few Fine Faint (7.5YR 5/6) Strong Brown Staining. (Fill, Moist).	18"
	24		
	36		
	48	(5YR 4/4) Reddish Brown Loam. Subangular-Blocky, Friable. 15% Gravel. Clear Wavy Boundary with Few Fine Faint (7.5YR 5/6) Strong Brown Staining. (Moist).	29"
5	60		
	72		
	84	(5YR 4/4) Reddish Brown Sandy Loam to Loam. Subangular-Blocky, Firm to Friable. 20% Gravel, 25% Cobbles. Moisture and Cobble Content Increase with Depth. (Moist).	
	96		
	108		
	120		
10	120	END OF TEST PIT AT 120 INCHES	
	132		
	144		
	156		
	168		
15	180		
	192		
	204		
	216		
	228		
20	240		

GROUNDWATER:	DEPTH (ft.)	DATE	ESTIMATED DEPTH TO SEASONAL HIGH GROUNDWATER: <u>N.E.</u>
First Encountered	<u>▽</u> <u>N.E.</u>	<u>8/9/18</u>	
At Completion (0 hrs.)	<u>▼</u> <u>N.E.</u>	<u>8/9/18</u>	
After Completion (>24 hrs.)	<u>▼</u> _____	_____	

TEST PIT No. TP-4



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TEST PIT No. TP-5

DATE EXCAVATED: 8/9/18
SURFACE ELEVATION: 33.3

Project: Madison Avenue Park
Location: Rahway City, Union County, NJ
Job Number: 13001580A

EXCAVATED BY: Hannibal
EQUIPMENT USED: JD 310 S3
INSPECTED BY: Austin Young

DEPTH (ft)	DEPTH (in)	DESCRIPTION	REMARKS
0	0		
	3	(10YR 3/2) Very Dark Grayish Brown Loamy Sand. Granular, Very Friable. Abrupt Smooth Boundary. (Topsoil, Moist).	3"
	6		
	9	(7.5YR 4/4) Brown Loam. Massive parting to Subangular-Blocky, Friable to Firm. 20% Gravel, 15% Cobble. Clear Wavy Boundary. Occasional Metal Fragments. (Fill, Moist).	35"
	12		
	24		
	36		
	48	(7.5YR 5/6) Silt Loam to Loam. Massive, Firm. Clear Wavy Boundary with (10YR 5/2) Grayish Brown Many Coarse Prominent Staining. (Moist).	56"
5	60		
	72	Alternating Layers of (5YR 4/6) Yellowish Red Silt Loam. Massive, Friable. (Wet). & (5YR 4/4) Reddish Brown Loamy Sand. Single Grain, Loose. (Wet).	
	84		
	96		
	108		
10	120		
	132		
	144	END OF TEST PIT AT 120 INCHES	
	156		
	168		
15	180		
	192		
	204		
	216		
	228		
20	240		

GROUNDWATER: DEPTH (ft.) DATE	ESTIMATED DEPTH TO SEASONAL HIGH GROUNDWATER: <u>N.E.</u>
First Encountered <input type="checkbox"/> <u>N.E.</u> <u>8/9/18</u>	
At Completion (0 hrs.) <input type="checkbox"/> <u>N.E.</u> <u>8/9/18</u>	
After Completion (>24 hrs.) <input type="checkbox"/> _____ _____	

TEST PIT No. TP-5



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TEST PIT No. TP-6

DATE EXCAVATED: 8/9/18
SURFACE ELEVATION: 33.1

Project: Madison Avenue Park
Location: Rahway City, Union County, NJ
Job Number: 13001580A

EXCAVATED BY: Hannibal
EQUIPMENT USED: JD 310 S3
INSPECTED BY: Austin Young

DEPTH (ft)	DEPTH (in)	DESCRIPTION	REMARKS
0	0		
	3	(7.5YR 3/2) Dark Brown Sandy Loam. Granular, Very Friable. Abrupt Smooth Boundary. (Topsoil, Moist). 3"	
	6		
	9		
	12	(7.5YR 4/3) Brown Sandy Loam to Loam. Subangular-Blocky, Friable. 10% Gravel. Clear Wavy Boundary. (Fill, Moist). 17"	
	24		
	36	(10YR 3/2) Very Dark Grayish Brown Sandy Loam to Loam. Subangular-Blocky, Friable. Abrupt Wavy Boundary with (7.5YR 5/6) Strong Brown Few Fine Faint Staining. (Buried Topsoil, Moist). 26"	
	48		
5	60	(7.5YR 5/6) Strong Brown Loam. Subangular-Blocky, Friable to Firm. Clear Wavy Boundary with (7.5YR 6/8) Reddish Yellow Many Coarse Prominent Staining. (Moist).	
	72		
	84	(5YR 4/6) Yellowish Red Sandy Loam to Loam. Subangular-Blocky, Friable. 30% Gravel, 20% Cobble. (Moist).	
	96		
	108	END OF TEST PIT AT 96 INCHES	
10	120		
	132		
	144		
	156		
	168		
15	180		
	192		
	204		
	216		
	228		
20	240		

GROUNDWATER: DEPTH (ft.) DATE
 First Encountered N.E. 8/9/18
 At Completion (0 hrs.) N.E. 8/9/18
 After Completion (>24 hrs.) _____ _____

ESTIMATED DEPTH TO SEASONAL HIGH GROUNDWATER: N.E.

TEST PIT No. TP-6



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TEST PIT No. TP-7

DATE EXCAVATED: 8/9/18
SURFACE ELEVATION: 33.2

Project: Madison Avenue Park
Location: Rahway City, Union County, NJ
Job Number: 13001580A

EXCAVATED BY: Hannibal
EQUIPMENT USED: JD 310 S3
INSPECTED BY: Austin Young

DEPTH (ft)	DEPTH (in)	DESCRIPTION	REMARKS
0	3	(7.5YR 3/2) Dark Brown Sandy Loam. Granular, Very Friable. Abrupt Smooth Boundary. (Topsoil, Moist). 5"	
	6		
	9	(7.5YR 4/3) Brown Loam. ????, Friable. 10% Gravel, 15% Cobble. Clear Wavy Boundary. (Fill, Moist). 14"	
	12		
	24	(7.5YR 5/4) Brown Loam. Subangular-Blocky, ????. Clear Wavy Boundary with (7.5YR 5/6) Strong Brown Many Coarse Prominent Staining. (Moist). 33"	
	36		
	48		
5	60	(5YR 4/6) Yellowish Red Loamy Sand. Massive, Very Friable. (7.5YR 5/6) Strong Brown Few Fine Faint Staining. (Moist). 57"	
	72	(5YR 4/6) Yellowish Red Loamy Sand. Massive parting to Subangular-Blocky, Friable. 10% Gravel, 25% Cobble. Clear Wavy Boundary. (Moist). 93"	
	84		
	96		
	108	(10YR 4/2) Dark Grayish Brown Sand Loamy to Sand. Single Grain, Loose. 20% Gravel, 15% Cobble. (Moist).	
10	120	END OF TEST PIT AT 108 INCHES	
	132		
	144		
	156		
	168		
15	180		
	192		
	204		
	216		
	228		
20	240		

GROUNDWATER:	DEPTH (ft.)	DATE
First Encountered	<u>∇</u> N.E.	<u>8/9/18</u>
At Completion (0 hrs.)	<u>▼</u> N.E.	<u>8/9/18</u>
After Completion (>24 hrs.)	<u>▼</u>	

ESTIMATED DEPTH TO SEASONAL HIGH GROUNDWATER: N.E.

TEST PIT No. TP-7



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TEST PIT No. TP-8

DATE EXCAVATED: 8/9/18
SURFACE ELEVATION: 31.9

Project: Madison Avenue Park
Location: Rahway City, Union County, NJ
Job Number: 13001580A

EXCAVATED BY: Hannibal
EQUIPMENT USED: JD 310 S3
INSPECTED BY: Austin Young

DEPTH (ft)	DEPTH (in)	DESCRIPTION	REMARKS
0	0		
	3	(10YR 3/2) Very Dark Grayish Brown Loamy Sand. Granular, Very Friable. Abrupt Smooth Boundary. (Topsoil, Moist).	5"
	6		
	9	(10YR 4/3) Brown Loam. Subangular-Blocky, Friable. 15% Gravel, 10% Cobble. Clear Wavy Boundary. (Fill, Moist).	18"
	12		
	24	(10YR 5/4) Yellowish Brown Loam. Subangular-Blocky, Friable. 10% Gravel. Clear Wavy Boundary with (10YR 6/8) Brownish Yellow Many Coarse Prominent Staining. (Moist).	
	36		
5	48	(5YR 4/4) Reddish Brown Sandy Loam to Loam. Subangular-Blocky, Firm to Friable. 20% Gravel, 25% Cobbles. Moisture and Cobble Content Increase with Depth. (Moist).	
	60		
	72		
	84		
	96	END OF TEST PIT AT 96 INCHES	
	108		
10	120		
	132		
	144		
	156		
	168		
	180		
15	192		
	204		
	216		
	228		
20	240		

GROUNDWATER:	DEPTH (ft.)	DATE
First Encountered	<u>▽</u> N.E.	<u>8/9/18</u>
At Completion (0 hrs.)	<u>▼</u> N.E.	<u>8/9/18</u>
After Completion (>24 hrs.)	<u>▼</u>	

ESTIMATED DEPTH TO SEASONAL HIGH GROUNDWATER: N.E.

TEST PIT No. TP-8



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TEST PIT No. TP-9

DATE EXCAVATED: 8/9/18
SURFACE ELEVATION: 32.5

Project: Madison Avenue Park
Location: Rahway City, Union County, NJ
Job Number: 13001580A

EXCAVATED BY: Hannibal
EQUIPMENT USED: JD 310 S3
INSPECTED BY: Austin Young

DEPTH (ft)	DEPTH (in)	DESCRIPTION	REMARKS
0	3	(10YR 3/2) Very Dark Grayish Brown Loam. Granular, Very Friable. Abrupt Smooth Boundary. (Topsoil, Moist). 8"	
	9		
	12	(5YR 5/4) Reddish Brown Silt Loam to Loam. Subangular-Blocky, Friable. Clear Wavy Boundary with (5YR 5/8) Yellowish Red Many Coarse Prominent Staining. (Moist). 33"	
	24		
	36	(5YR 5/4) Reddish Brown Loam to Silt Loam, Very Firm. Prismatic. Clear Wavy Boundary with (5YR 5/6) Yellowish Red & (10YR 6/1) Gray Many Coarse Prominent Staining. (Moist).	
	48		
5	60	(5YR 4/4) Reddish Brown Sandy Loam. Subangular-Blocky, Friable to Loose. 20% Gravel, 15% Cobbles. (Very Moist).	
	72		
	84		
	96		
	108	END OF TEST PIT AT 102 INCHES	
10	120		
	132	Lt. SEEPAGE AT 60 INCHES	
	144		
	156		
	168		
15	180		
	192		
	204		
	216		
	228		
20	240		

GROUNDWATER: DEPTH (ft.) DATE
 First Encountered N.E. 8/9/18
 At Completion (0 hrs.) N.E. 8/9/18
 After Completion (>24 hrs.) _____ _____

ESTIMATED DEPTH TO SEASONAL HIGH GROUNDWATER: N.E.

TEST PIT No. TP-9



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TEST PIT No. TP-10

DATE EXCAVATED: 8/9/18
SURFACE ELEVATION: 33.1

Project: Madison Avenue Park
Location: Rahway City, Union County, NJ
Job Number: 13001580A

EXCAVATED BY: Hannibal
EQUIPMENT USED: JD 310 S3
INSPECTED BY: Austin Young

DEPTH (ft)	DEPTH (in)	DESCRIPTION	REMARKS
0	0		
	3	(5YR 3/3) Dark Reddish Brown Silt Loam. Granular, Very Friable. Abrupt Smooth Boundary. (Topsoil, Moist). 4"	
	6		
	9	(5YR 4/3) Reddish Brown Silt Loam. Subangular-Blocky, Friable. 25% Gravel. Abrupt Wavy Boundary. Occasional Trash Debris. (Fill, Moist). 32"	
	12		
	24	(5YR 5/4) Reddish Brown Silt Loam to Loam. Subangular-Blocky, Friable. Clear Wavy Boundary with (5YR 5/8) Yellowish Red Many Coarse Prominent Staining. (Moist).	
	36		
	48	(5YR 5/4) Reddish Brown Silt Loam to Loam. Subangular-Blocky, Friable. Clear Wavy Boundary with (5YR 5/8) Yellowish Red Many Coarse Distinct Staining. (Moist).	
5	60		
	72		
	84		
	96		
	108		
10	120		
	132		
	144		
	156		
	168		
15	180		
	192		
	204		
	216		
	228		
20	240		

END OF TEST PIT
AT 72 INCHES

GROUNDWATER:	DEPTH (ft.)	DATE	ESTIMATED DEPTH TO SEASONAL HIGH GROUNDWATER: <u>N.E.</u>
First Encountered	<u>∇</u> <u>N.E.</u>	<u>8/9/18</u>	
At Completion (0 hrs.)	<u>▼</u> <u>N.E.</u>	<u>8/9/18</u>	
After Completion (>24 hrs.)	<u>▼</u> _____	_____	

TEST PIT No. TP-10

SOMERSET-UNION SOIL CONSERVATION DISTRICT

- ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY, AND WILL BE IN PLACE PRIOR TO ANY MAJOR SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
- ANY DISTURBED AREA THAT WILL BE LEFT EXPOSED FOR MORE THAN THIRTY (30) DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING, IF THE SEASON PERMITS. TEMPORARY SEEDING SHALL BE MULCHED WITH STRAW OR HAY AND TACKLED IN ACCORDANCE WITH THE NEW JERSEY STANDARDS. SEE NOTE 21 BELOW.
- PERMANENT VEGETATION IS TO BE ESTABLISHED ON EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING. MULCH IS TO BE USED FOR PROTECTION UNTIL VEGETATION IS ESTABLISHED. SEE NOTE 21 BELOW.
- IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL DISTURBED AREAS (STEEP SLOPES, SANDY SOILS, WEST CONDITIONS) SUBJECT TO EROSION WILL RECEIVE A TEMPORARY SEEDING IN ACCORDANCE WITH NOTE 21 BELOW.
- TEMPORARY EROSION BARRIERS ARE TO BE INSTALLED ON ALL CLEARED ROADWAYS AND EASEMENT AREAS. SEE THE DISTURBANCE CERTIFICATE OF COMPLIANCE FOR DETAILS.
- PERMANENT SEEDING AND STABILIZATION TO BE IN ACCORDANCE WITH THE STANDARDS FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION COVER. SPECIFIED RATES AND LOCATIONS SHALL BE ON THE APPROVED SOIL EROSION AND SEDIMENT CONTROL PLAN.
- THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SO THAT ALL STORM WATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
- ALL SEDIMENTATION STRUCTURES (SILT FENCE, INLET FILTERS, AND SEDIMENT BASINS) WILL BE INSPECTED AND MAINTAINED DAILY.
- STOCKPILES SHALL NOT BE LOCATED WITHIN 50' OF A FLOODPLAIN, SLOPE, DRAINAGE FACILITY, OR ROADWAY. ALL STOCKPILE BASES SHALL HAVE A SILT FENCE PROPERLY ENTRENCHED AT THE TOE OF SLOPE.
- A STABILIZED CONSTRUCTION ACCESS WILL BE INSTALLED, WHENEVER AN EARLIER ROAD INTERSECTS WITH A PAVED ROAD. SEE THE STABILIZED CONSTRUCTION ACCESS DETAIL FOR DIMENSIONS.
- ALL NEW ROADWAYS WILL BE TREATED WITH SUITABLE SUBBASE UPON ESTABLISHMENT OF FINAL GRADE ELEVATIONS.
- PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.

- BEFORE DISCHARGE POINTS BECOME OPERATIONAL, ALL STORM DRAINAGE OUTLETS WILL BE STABILIZED WITH PERMANENT VEGETATIVE COVER.
- ALL Dewatering operations must be discharged directly into a sediment filter area. THE FILTER SHOULD BE COMPOSED OF A FABRIC OR APPROVED MATERIAL, SEE THE Dewatering DETAIL.
- ALL SEDIMENT BASINS WILL BE CLEANED WHEN THE CAPACITY HAS BEEN REDUCED BY 50%. A CLEAN OUT ELEVATION WILL BE IDENTIFIED ON THE PLAN AND A MARKER INSTALLED ON THE SITE.
- DURING AND AFTER CONSTRUCTION, THE APPLICANT WILL BE RESPONSIBLE FOR THE MAINTENANCE AND UPRKEEP OF THE DRAINAGE STRUCTURES, VEGETATION COVER, AND ANY OTHER MEASURES DEEMED APPROPRIATE BY THE DISTRICT. SAID RESPONSIBILITY WILL END WHEN COMPLETED WORK IS APPROVED BY THE MORRIS COUNTY SOIL CONSERVATION DISTRICT.

- ALL TREES OUTSIDE THE DISTURBANCE LIMIT INDICATED ON THE SUBJECT PLAN OR THOSE TREES WITHIN THE DISTURBANCE AREA WHICH ARE DESIGNATED TO REMAIN AFTER CONSTRUCTION ARE TO BE PROTECTED WITH TREE PROTECTION DEVICES. SEE THE TREE PROTECTION DETAIL.
- THE UNION COUNTY SOIL CONSERVATION DISTRICT MAY REQUEST ADDITIONAL MEASURES TO MINIMIZE ON SITE OR OFF SITE EROSION PROBLEMS DURING CONSTRUCTION.

- UNION COUNTY SOIL CONSERVATION DISTRICT MUST BE NOTIFIED, IN WRITING, AT LEAST 72 HOURS PRIOR TO ANY LAND DISTURBANCE, AND A PRE-CONSTRUCTION MEETING HELD.
- CONTRACTOR TO SET UP A MEETING WITH THE INSPECTOR FOR PERIODIC INSPECTIONS OF THE TEMPORARY SEDIMENT BASIN PRIOR TO AND DURING ITS CONSTRUCTION.

20. SOIL STOCKPILE PROTECTION
 - APPLY GROUND LIMESTONE AT A RATE OF 90 LBS PER 1000 SQ. FT.
 - APPLY FERTILIZER (10-20-10) AT A RATE 1 LBS PER 1000 SQ. FT.
 - APPLY PERENNIAL RYEGRASS SEED AT 1 LB. PER 1000 SQ. FT. AND ANNUAL RYEGRASS SEED AT 1 LB. PER 1000 SQ. FT.
 - MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS PER 1000 SQ. FT.
 - APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.
 - PROPERLY ENTRENCH A SILT FENCE AT THE BOTTOM OF THE STOCKPILE.

21. TEMPORARY STABILIZATION SPECIFICATIONS
 - APPLY GROUND LIMESTONE AT A RATE OF 90 LBS PER 1000 SQ. FT.
 - APPLY FERTILIZER (10-20-10) AT A RATE 1 LBS PER 1000 SQ. FT.
 - APPLY PERENNIAL RYEGRASS SEED AT 1 LB. PER 1000 SQ. FT. AND ANNUAL RYEGRASS SEED AT 1 LB. PER 1000 SQ. FT.
 - MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS PER 1000 SQ. FT.
 - APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.

22. PERMANENT STABILIZATION SPECIFICATIONS
 - APPLY TOPSOIL TO A DEPTH OF 5 INCHES (UNSETTLED)
 - APPLY GROUND LIMESTONE AT A RATE OF 90 LBS PER 1000 SQ. FT.
 - APPLY FERTILIZER (10-20-10) AT A RATE 1 LBS PER 1000 SQ. FT.
 - APPLY PERENNIAL RYEGRASS SEED AT 1 LB. PER 1000 SQ. FT. AND ANNUAL RYEGRASS SEED AT 1 LB. PER 1000 SQ. FT.
 - MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS PER 1000 SQ. FT.
 - APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.

- NOTE: 72 HOURS PRIOR TO ANY SOIL DISTURBANCE, NOTICE IN WRITING, SHALL BE GIVEN TO THE UNION COUNTY SOIL CONSERVATION DISTRICT AND A PRE-CONSTRUCTION MEETING HELD.

MITIGATION NOTES FOR ACIDIC SOIL

- LIMIT THE EXCAVATION AREA AND EXPOSURE TIME WHEN HIGH ACID PRODUCING SOILS ARE ENCOUNTERED.
- TOPSOIL STRIPPED FROM THE SITE SHALL BE STORED SEPARATELY FROM TEMPORARILY STOCKPILED HIGH ACID PRODUCING SOILS.
- STOCKPILES OF HIGH ACID PRODUCING SOIL SHOULD BE LOCATED ON LEVEL LAND TO MINIMIZE ITS MOVEMENT, ESPECIALLY WHEN THE MATERIAL IS HIGH CLAY CONTENT.
- TEMPORARILY STOCKPILED HIGH ACID PRODUCING SOIL MATERIAL TO BE EXPOSED MORE THAN 30 DAYS SHOULD BE COVERED WITH PROPERLY ANCHORED, HEAVY GRADE SHEETS OF POLYETHYLENE WHERE POSSIBLE. IF NOT POSSIBLE, STOCKPILES SHALL BE COVERED WITH A MINIMUM OF 10" TO 4 INCHES OF WOOD CHIPS TO MINIMIZE EROSION OF THE STOCKPILE. SILT FENCE SHALL BE INSTALLED AT THE TOE OF SLOPE TO CONTAIN MOVEMENT OF THE STOCKPILED MATERIAL. TOPSOIL SHALL NOT BE APPLIED TO THE STOCKPILES TO PREVENT TOPSOIL CONTAMINATION WITH HIGH ACID PRODUCING SOIL.
- HIGH ACID PRODUCING SOILS WITH A PH OF 4 OR LESS, OR CONTAINING IRON SULFIDE, INCLUDING BORROW FROM CUTS SHALL BE ULTIMATELY PLACED OR BURIED WITH LIMESTONE APPLIED AT A RATE OF 4 TONS PER ACRE (OR 75 POUNDS PER 1000 SQUARE FEET OF SURFACE AREA) AND COVERED WITH A MINIMUM OF 12 INCHES OF SETTLED SOIL WITH A PH OF 5 OR MORE EXCEPT AS FOLLOWS:
 - AREAS WHERE TREES OR SHRUBS ARE TO BE PLANTED SHALL BE COVERED WITH A MINIMUM OF 24 INCHES OF SOIL WITH A PH OF 5 OR MORE.
 - DISPOSAL AREAS SHALL NOT BE LOCATED WITHIN 24 INCHES OF ANY SURFACE OF A SLOPE OR BANK, SUCH AS BERMS, STREAM BANKS, DITCHES AND OTHERS TO PREVENT POTENTIAL LATERAL LEACHING DAMAGES.

- EQUIPMENT USED FOR MOVEMENT OF HIGH ACID PRODUCING SOILS SHOULD BE CLEANED AT THE END OF EACH DAY TO PREVENT SPREADING OF HIGH ACID SOIL MATERIALS TO OTHER PARTS OF THE SITE, INTO STREAMS OR STORMWATER CONVEYANCES AND TO PROTECT MACHINERY FROM ACCELERATED RUSTING.
- NON VEGETATIVE EROSION CONTROL PRACTICES (STONE TRACKING PADS, STRATEGICALLY PLACED LIMESTONE CHECK DAM, SILT FENCE, WOOD CHIPS) SHOULD BE INSTALLED TO LIMIT THE MOVEMENT OF HIGH ACID PRODUCING SOILS FROM AROUND AND UNDER STOCKPILES.
- FOLLOWING BURIAL OR REMOVAL OF HIGH ACID PRODUCING SOIL, TOPSOILING AND SEEDING OF THE SITE, MONITORING SHOULD CONTINUE FOR APPROXIMATELY 6 TO 12 MONTHS TO ASSURE THERE IS ADEQUATE STABILIZATION AND THAT NO HIGH ACID SOIL PROBLEMS EMERGE. IF PROBLEMS STILL EXIST THE AFFECTED AREA MUST BE TREATED AS A CONTAMINATED AREA TO CORRECT THE PROBLEM.
- MONITORING OF AREAS WHERE HIGH ACID PRODUCING SOIL HAS BEEN PLACED OR BURIED SHOULD BE PERFORMED FOR AT LEAST 2 YEARS OR LONGER IF PROBLEMS OCCUR, TO ASSURE THERE IS NO MIGRATION OF POTENTIAL ACID LEACHATE.

DUST CONTROL

DUST CONTROL METHODS:

- APPLY MULCHES OR VEGETATIVE COVER AS PER NJ SOIL EROSION AND SEDIMENT CONTROL STANDARDS.
- TILL AND ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS A TEMPORARY EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN FLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART AND SPRING-TOOTHED HARROWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.
- SPRINKLE THE SITE UNTIL THE SURFACE IS WET.
- ERECT BARRIERS SUCH AS SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, CHASTE WALLS, BALES OF HAY AND SIMILAR MATERIAL TO CONTROL AIR CURRENTS AND SOIL BLOWING.
- APPLY CALCIUM CHLORIDE IN THE FORM OF LOOSE, DRY GRANULES OR FLAKES FINE ENOUGH TO FEED THROUGH COMMONLY USED SPREADERS AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE. NOT SUITABLE ON STEEPER SLOPES NEAR THE STREAMS OR POTENTIALLY ACCUMULATE AROUND PLANTS.
- COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.
- USE SPRAY-ON ADHESIVE ON MINERAL SOILS (NOT EFFECTIVE ON CLAY SOILS). KEEP TRAFFIC OFF THESE AREAS. MATERIALS AS FOLLOWS:

MATERIAL	WATER DILUTION	TYPE OF NOZZLE	APPLY GALLONS/ACRE
ANIONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1300
LATEX RESIN	12.5:1	FINE SPRAY	235
RESIN IN WATER	4:1	FINE SPRAY	300
POLYACRYLAMIDE (PAM)-SPRAY ON			
POLYACRYLAMIDE (PAM)-DRY SPREAD			
ACICULATED SOY BEAN SOAP STICK	SUNDED	COARSE SPRAY	1200

SOIL DE-COMPACTION AND TESTING REQUIREMENTS

SOIL COMPACTION TESTING REQUIREMENTS

1. SITE PREPARATION
 - GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDING, PREPARATION, SEEDING, MULCH APPLICATION AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARD FOR LAND GRADING.
 - IMMEDIATELY PRIOR TO SEEDING AND TOPSOIL APPLICATION, THE SUBSOIL SHALL BE EVALUATED FOR COMPACTION IN ACCORDANCE WITH THE STANDARD FOR LAND GRADING.
 - TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING THE SOIL STRUCTURE TO A UNIFORM APPLICATION TO AN AVERAGE DEPTH OF 5 INCHES, MINIMUM OF 4 INCHES. FIRMS IN PLACE IS REQUIRED. ALTERNATIVE DEPTHS MAY BE CONSIDERED WHERE SPECIAL REGULATORY AND/OR INDUSTRY DESIGN STANDARDS ARE APPLICABLE SUCH AS ON GOLF COURSES, SPORTS FIELDS, LANDFILL CAPPING ETC. TOPSOIL SHALL BE APPLIED WITH ORGANIC MATTER, AS NEEDED, IN ACCORDANCE WITH THE STANDARD FOR TOPSOILING.
2. INSTALLED NEEDED EROSION CONTROL FACILITIES SUCH AS DIVERSIONS, GRADS-STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.
3. SEEDING PREPARATION
 - UNIFORMLY APPLY GROUND LIMESTONE AND FERTILIZER TO TOPSOIL WHICH HAS BEEN SPREAD AND FIRMS, ACCORDING TO SITE SPECIFIC SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY Rutgers CO-OPERATIVE EXTENSION, SOIL COMPACTION TESTING IS NOT REQUIRED. WHEN SUBSOIL COMPACTION REIGATION (SCARIFICATION) (MINIMUM DEPTH) OR (SIMILAR) IS PROPOSED AS PART OF THE SEQUENCE OF CONSTRUCTION.

COMPACTION TESTING METHODS

- PROBING WIRE TEST (SEE DETAIL)
- HAND-HELD PENETROMETER TEST (SEE DETAIL)
- TUBE BULK DENSITY TEST (LICENSED PROFESSIONAL ENGINEER REQUIRED)
- NUCLEAR DENSITY TEST (LICENSED PROFESSIONAL ENGINEER REQUIRED)

NOTE: ADDITIONAL TESTING METHODS WHICH CONFORM TO ASTM STANDARDS AND SPECIFICATIONS, AND WHICH PRODUCE A DRY WEIGHT, SOIL BULK DENSITY MEASUREMENT MAY BE ALLOWED SUBJECT TO DISTRICT APPROVAL. SOIL COMPACTION TESTING IS NOT REQUIRED. WHEN SUBSOIL COMPACTION REIGATION (SCARIFICATION) (MINIMUM DEPTH) OR (SIMILAR) IS PROPOSED AS PART OF THE SEQUENCE OF CONSTRUCTION.

PROCEDURES FOR SOIL COMPACTION MITIGATION

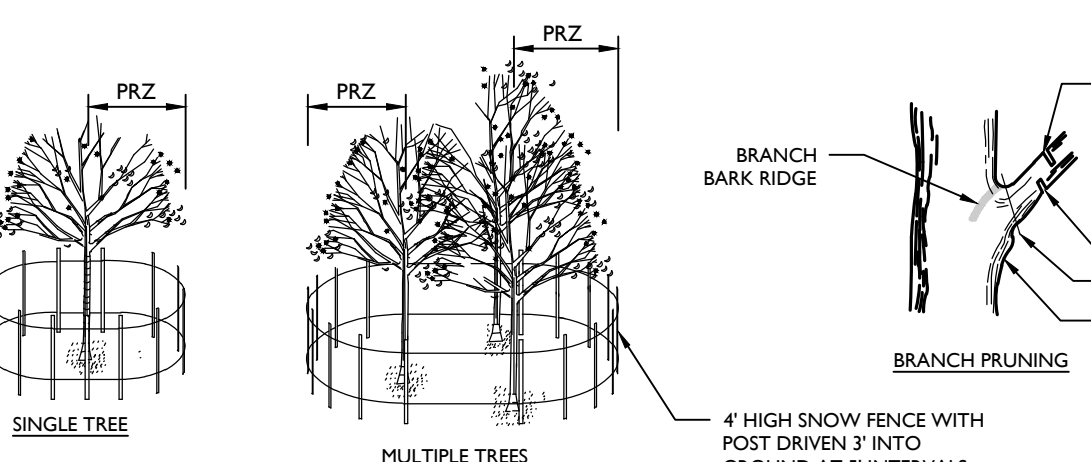
PROCEDURES SHALL BE USED TO MITIGATE EXCESSIVE SOIL COMPACTION PRIOR TO PLACEMENT OF TOPSOIL AND ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.

RESTORATION OF COMPACTED SOILS SHALL BE THROUGH DEEP SCARIFICATION/TILLAGE (6" MINIMUM DEPTH) WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.) IN THE ALTERNATIVE, ANOTHER METHOD AS SPECIFIED BY A NEW JERSEY LICENSED PROFESSIONAL ENGINEER MAY BE SUBSTITUTED SUBJECT TO DISTRICT APPROVAL.

SOIL COMPACTION EXEMPTION NOTE

AS DETERMINED BY THE STATE POLICY MAP, THE PROJECT AREA FALLS WITHIN THE METROPOLITAN PLANNING AREA (PMA), UNDER EXISTING CONDITIONS, THE SITE IS NOT COVERED IN WOODY VEGETATION (CABLES, IRRIGATION SYSTEMS, ETC.) IN THE ALTERNATIVE, ANOTHER METHOD AS SPECIFIED BY A NEW JERSEY LICENSED PROFESSIONAL ENGINEER MAY BE SUBSTITUTED SUBJECT TO DISTRICT APPROVAL.

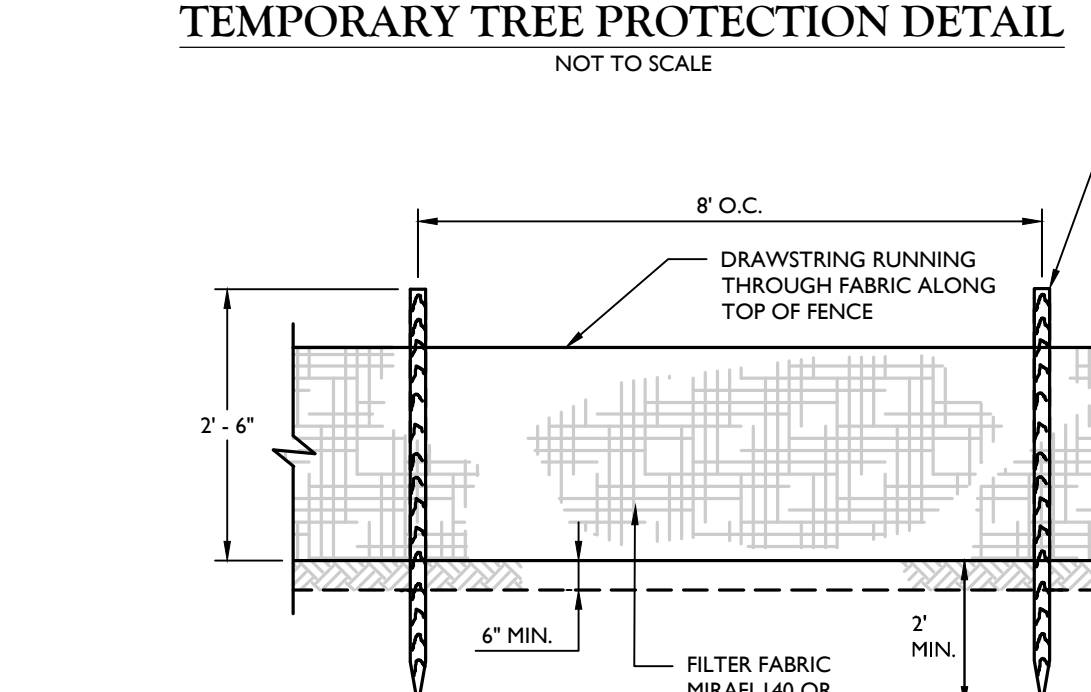
ACCORDANCE WITH THE NEW JERSEY STANDARD FOR LAND GRADING (REVISED 2017), NON WOODY VEGETATED PA1 AREAS FALL UNDER THE SOIL COMPACTION EXEMPTION LIST AS A "URBAN REDEVELOPMENT" AND IS DEFINED BY NJDEP AS "PREVIOUSLY DEVELOPED".



1. PROTECTIVE FENCING IS TO BE ERRECTED PRIOR TO CONSTRUCTION AND MAINTAINED DURING CONSTRUCTION AS DIRECTED BY THE LANDSCAPE ARCHITECT, SOIL CONSERVATION DISTRICT AND/OR MUNICIPAL ENGINEER.
2. NO CONSTRUCTION ACTIVITY IS PERMITTED WITHIN THE PROTECTIVE FENCING.
3. AS CONSTRUCTION NEARS COMPLETION THE FENCING WILL BE REMOVED AS DIRECTED.
4. AT THE COMPLETION OF CONSTRUCTION, ALL TREES WILL BE PRUNED AS NECESSARY TO CORRECT ANY DAMAGE RESULTING FROM CONSTRUCTION ACTIVITY.
5. GENERAL MECHANICAL DAMAGE - SEE CRITICAL ROOT ZONE CALCULATION (CRZ) FOR CORRECT PLACEMENT OF TREE PROTECTION.
6. BOX TREES WITHIN 25 FEET OF A BUILDING SITE TO PREVENT MECHANICAL INJURY. FENCING OR OTHER BARRIER SHOULD BE INSTALLED BEYOND THE CRITICAL ROOT ZONE.
7. BOARDS WILL NOT BE NAILED TO TREES DURING BUILDING OPERATIONS.
8. FEEDER ROOTS SHOULD NOT BE CUT IN AN AREA INSIDE THE PROTECTED ROOT ZONE (PRZ) OR CRITICAL ROOT ZONE (CRZ). TREE ROOT SYSTEM COMMONLY EXTENDS BEYOND THE DRAIN LINE.
9. DAMAGED TRUNKS OR EXPOSED ROOTS SHOULD HAVE DAMAGED BARK REMOVED IMMEDIATELY AND NO PAINT SHALL BE APPLIED. EXPOSED ROOTS SHOULD BE COVERED WITH TOPSOIL IMMEDIATELY AFTER EXCAVATION IS COMPLETE. ROOTS SHALL BE PRUNED TO GIVE A CLEAN, SHARP SURFACE APPEARANCE TO HEALING. ROOTS EXPOSED DURING HOT WEATHER SHOULD BE IRRIGATED TO PREVENT PERMANENT TREE INJURY. CARE FOR SHOULDS INJURY SHOULD BE PRESCRIBED BY A PROFESSIONAL FORESTER OR CERTIFIED TREE EXPERT.
10. TREE REMOVAL WHERE NECESSARY, WILL BE DONE AS NATURAL TARGET PRUNING TO REMOVE THE DESIRED BRANCH COLLAR. THERE SHOULD BE NO FLUSH CUTS. FLUSH CUTS DESTROY A MAJOR DEFENSE SYSTEM OF THE TREE. NO TREE PAINT SHALL BE APPLIED. ALL CUTS SHALL BE MADE AT THE OUTSIDE EDGE OF THE BRANCH COLLAR. CUTS MADE TOO FAR BEYOND THE BRANCH COLLAR MAY LEAD TO EXCESS SPROUTING, CRACKS AND ROOT REMOVAL OF A "Y" CROTCH SHOULD BE CONSIDERED FOR FREE STANDING SPECIMEN TREES TO AVOID FUTURE SPLITTING DAMAGE.
11. CRITICAL ROOT ZONE (CRZ) OR PROTECTED ROOT ZONE (PRZ) CALCULATION:
 - A. TEMPORARY SEEDING SPECIFICATIONS - TEMPORARY VEGETATIVE COVER SHALL CONSIST OF PERENNIAL RYEGRASS APPLIED UNIFORMLY AT A RATE OF 1.0 POUNDS PER 100 SQ.FT. (10 LBS/ACRE), OR A MIXTURE FROM TABLE 7.2 OF THE STANDARDS APPROVED BY THE SOIL CONSERVATION DISTRICT.

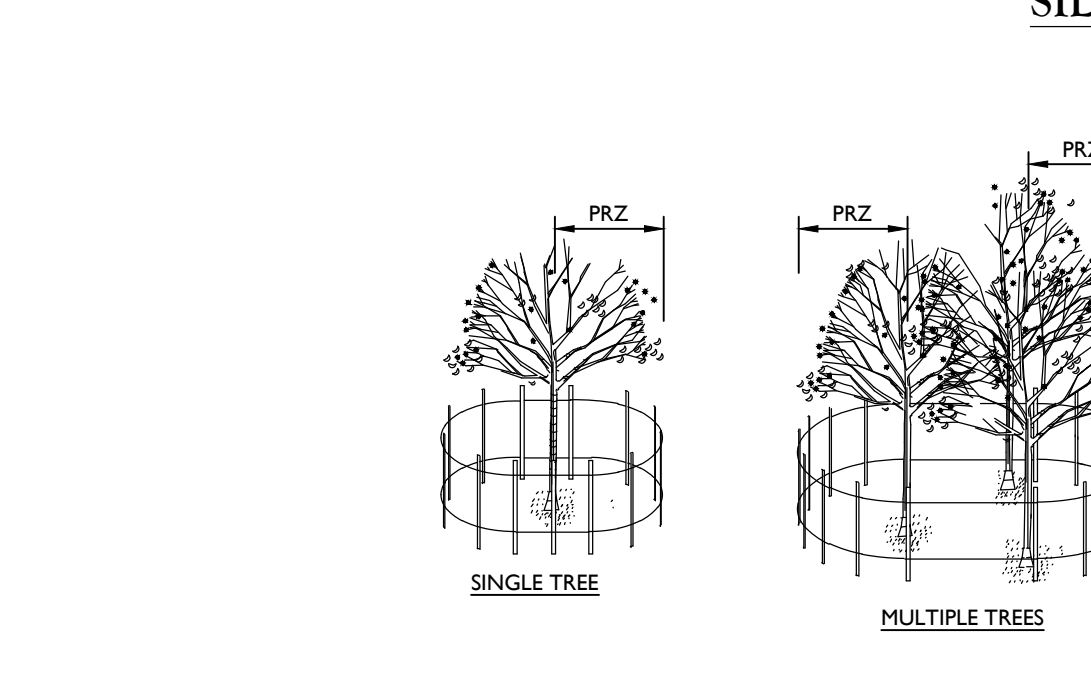
1. CRITICAL ROOT ZONE (CRZ) OR PROTECTED ROOT ZONE (PRZ) CALCULATION:
 - AS SHOWN ON THE TREE DIAMETER OF TREE IN BRANCH HEIGHT OR 1/2 ABOVE GROUND ON THE UPHILL SIDE IN INCHES. CRZ OR PRZ = DBH TIMES 1.5 (FOR OLD/UNHEALTHY/SENSITIVE TREES) OR DBH X 1.0 (FOR YOUNG/HEALTHY/TOLERANT TREES), EXPRESS IN FEET.

TEMPORARY TREE PROTECTION DETAIL



1. GEOTECHNICAL TO BE FASTENED SECURELY TO FENCE POST BY USING WIRE TIES OR HOG RINGS. USE 4 TO 4 FASTENERS PER POST.
2. SPLICES OF INDIVIDUAL ROLLS SHALL NOT OCCUR AT FLOW POINTS.
3. ALL SILT FENCE TO BE INSPECTED AND REMEDIAL MAINTENANCE PERFORMED BY THE CONTRACTOR WITHIN 24 HOURS AFTER EACH RAINFALL REMOVE THE SILT ACCUMULATION WHEN IT REACHES 6" OF THE FENCE FABRIC HEIGHT.
4. FOR EVERY 100 FEET OF SILT FENCE, OR 1/4 ACRE OF DRAINAGE AREA, PROVIDE AN OVERFLOW POINT TO REDUCE PONDING IN FRONT OF THE FENCE.
5. IF SPACE PERMITTED, LOCATE SILT FENCE 10' AWAY FROM TOE OF SLOPE IF THE SLOPE IS STEEPER THAN 1:1.

SILT FENCE DETAIL



1. PROTECTIVE FENCING IS TO BE ERRECTED PRIOR TO CONSTRUCTION AND MAINTAINED DURING CONSTRUCTION AS DIRECTED BY THE LANDSCAPE ARCHITECT, SOIL CONSERVATION DISTRICT AND/OR MUNICIPAL ENGINEER.
2. NO CONSTRUCTION ACTIVITY IS PERMITTED WITHIN THE PROTECTIVE FENCING.
3. AS CONSTRUCTION NEARS COMPLETION THE FENCING WILL BE REMOVED AS DIRECTED.
4. AT THE COMPLETION OF CONSTRUCTION, ALL TREES WILL BE PRUNED AS NECESSARY TO CORRECT ANY DAMAGE RESULTING FROM CONSTRUCTION ACTIVITY.
5. GENERAL MECHANICAL DAMAGE - SEE CRITICAL ROOT ZONE CALCULATION (CRZ) FOR CORRECT PLACEMENT OF TREE PROTECTION.
6. BOX TREES WITHIN 25 FEET OF A BUILDING SITE TO PREVENT MECHANICAL INJURY. FENCING OR OTHER BARRIER SHOULD BE INSTALLED BEYOND THE CRITICAL ROOT ZONE.
7. BOARDS WILL NOT BE NAILED TO TREES DURING BUILDING OPERATIONS.
8. FEEDER ROOTS SHOULD NOT BE CUT IN AN AREA INSIDE THE PROTECTED ROOT ZONE (PRZ) OR CRITICAL ROOT ZONE (CRZ). TREE ROOT SYSTEM COMMONLY EXTEND BEYOND THE DRAIN LINE.
9. DAMAGED TRUNKS OR EXPOSED ROOTS SHOULD HAVE DAMAGED BARK REMOVED IMMEDIATELY AND NO PAINT SHALL BE APPLIED. EXPOSED ROOTS SHOULD BE COVERED WITH TOPSOIL IMMEDIATELY AFTER EXCAVATION IS COMPLETE. ROOTS SHALL BE PRUNED TO GIVE A CLEAN, SHARP SURFACE APPEARANCE TO HEALING. ROOTS EXPOSED DURING HOT WEATHER SHOULD BE IRRIGATED TO PREVENT PERMANENT TREE INJURY. CARE FOR SHOULDS INJURY SHOULD BE PRESCRIBED BY A PROFESSIONAL FORESTER OR CERTIFIED TREE EXPERT.
10. TREE REMOVAL WHERE NECESSARY, WILL BE DONE AS NATURAL TARGET PRUNING TO REMOVE THE DESIRED BRANCH COLLAR. THERE SHOULD BE NO FLUSH CUTS. FLUSH CUTS DESTROY A MAJOR DEFENSE SYSTEM OF THE TREE. NO TREE PAINT SHALL BE APPLIED. ALL CUTS SHALL BE MADE AT THE OUTSIDE EDGE OF THE BRANCH COLLAR. CUTS MADE TOO FAR BEYOND THE BRANCH COLLAR MAY LEAD TO EXCESS SPROUTING, CRACKS AND ROOT REMOVAL OF A "Y" CROTCH SHOULD BE CONSIDERED FOR FREE STANDING SPECIMEN TREES TO AVOID FUTURE SPLITTING DAMAGE.
11. CRITICAL ROOT ZONE (CRZ) OR PROTECTED ROOT ZONE (PRZ) CALCULATION:
 - MEASURE DBH OF THE TREE (DIAMETER OF TREE IN BRANCH HEIGHT OR 1/2 ABOVE GROUND ON THE UPHILL SIDE) IN INCHES. CRZ OR PRZ = DBH TIMES 1.5 (FOR OLD/UNHEALTHY/SENSITIVE TREES) OR DBH X 1.0 (FOR YOUNG/HEALTHY/TOLERANT TREES), EXPRESS IN FEET.

TEMPORARY TREE PROTECTION DETAIL



STANDARD FOR VEGETATIVE COVER

MCHJ-SOIL-NOTE-1100

1. PERMANENT SEEDING SPECIFICATIONS - SELECT AN APPROVED MIXTURE FROM THOSE LISTED BELOW. AN APPROVED MIXTURE FROM TABLE 4.3 OF THE STANDARDS, OR USE A MIXTURE RECOMMENDED BY Rutgers CO-OPERATIVE EXTENSION OR NATURAL RESOURCES CONSERVATION SERVICE WHICH IS APPROVED BY THE SOIL CONSERVATION DISTRICT. SEED GERMINATION SHALL HAVE BEEN TESTED WITHIN 12 MONTHS OF THE PLANTING DATE. NO SEED SHALL BE ACCEPTED WITH A GERMINATION TEST DATE MORE THAN 12 MONTHS OLD UNLESS RETESTED. SEED SHALL BE APPLIED AS NOTED BELOW WITHIN THE DATES SPECIFIED IN THE STANDARDS.

1. LAWN AREAS	MIX #10 (POORLY DRAINED SOIL)	PERENNIAL RYE GRASS
	TALL FESCUE (TURF-TYP)	245 LBS/ACRE
		20 LBS/ACRE

OPTIMUM SEEDING DATES:
8/15 - 10/15 (ZONE 6)

ACCEPTABLE SEEDING DATES:
3/1 - 4/30 (ZONE 6)
SUMMER SEEDING DATES *:
5/1 - 8/14 (ZONE 6)

* NOTE: SUMMER SEEDING MUST ONLY BE CONDUCTED WHEN THE SITE IS IRIGATED, MIXES INCLUDING WHITE CLOVER REQUIRE THAT AT LEAST SIX WEEKS OF GROWING SEASON REMAIN AFTER SEEDING TO ENDURE ESTABLISHMENT BEFORE FREEZING CONDITIONS.

2. DETENTION BASINS:	MIX #9
DEERTONGUE	20 LBS/ACRE
REITOP	2 LBS/ACRE
WILD RYE (ELYMUS)	11 LBS/ACRE
SWITCHGRASS	25 LBS/ACRE

OPTIMUM SEEDING DATES:
(Zone 6b): 2/1 - 4/30

3. CONVENTIONAL SEEDING IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLOE (CENTRIFUGAL) SEEDER, DRIP SEEDER, DRILL OR CULTIPACKER SEEDER, EXCEPT FOR DRILLED, HYDROSEEDER OR CULTIPACKER SEEDING. SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDING PREPARATION TO A DEPTH OF 1/4 TO 1/2 INCH BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COARSE-TEXTURED SOIL.

4. AFTER SEEDING, FIRING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOD. WHEN PERFORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.

5. HYDROSEEDING IS A BROADCAST SEEDING METHOD USUALLY INVOLVING A TRUCK, OR TRAILER-MOUNTED TANK, WITH AN AGITATION SYSTEM AND HYDRAULIC PUMP FOR MIXING SEED, WATER AND FERTILIZER AND SPRAYING THE MIX ONTO THE PREPARED SEEDBED. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH SEED. SHORT-FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. ALSO SEE SECTION 4 - MULCHING BELOW. HYDROSEEDING IS NOT A PREFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL. WHEN POOR SEED TO SOIL CONTACT OCCURS, THERE IS A REDUCED SEED GERMINATION AND GROWTH.

6. MULCHING
 - MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL PROTECT AGAINST EROSION BEFORE GRASS IS ESTABLISHED AND WILL PROMOTE FASTER AND EARLIER ESTABLISHMENT. THE EXISTENCE OF VEGETATION SUFFICIENT TO CONTROL SOIL EROSION SHALL BE DEEMED COMPLIANCE WITH THIS MULCHING REQUIREMENT.

7. STRAW OR HAY - UNROTTED SMALL GRASS STRAW, HAY FREE OF SEEDS, TO BE APPLIED AT THE RATE OF 1.0 TO 2.0 TONS PER ACRE TO 90 POUNDS PER 1,000 SQUARE FEET. EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER (TACKIFYING OR ADHESIVE AGENT), THE RATE OF APPLICATION IS 3 TONS PER ACRE. MULCH CHOPPER-BLOWERS MUST NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE PRESENCE OF WEED SEED.

8. APPLICATION - SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT AT LEAST 85% OF THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE TO 70 TO 90 POUNDS WITH EACH SECTION.

9. ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:
 - ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:

10. ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:
 - ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:

11. ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:
 - ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:

12. ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:
 - ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:

13. ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:
 - ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:

14. ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:
 - ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:

15. ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:
 - ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:

16. ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:
 - ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:

17. ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:
 - ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:

18. ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:
 - ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:

19. ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:
 - ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:

20. ANCHORING SHALL BE ACCOMPLISHED

