

COUNTY OF UNION

DEPARTMENT OF ENGINEERING, PUBLIC WORKS & FACILITIES MANAGEMENT
Joseph A. Graziano Sr., Director

To: All Prospective Bidders

From: Thomas O. Mineo, P.E.

Date: May 17, 2017

Re: **ADDENDUM NUMBER 1**
Cedar Brook Park Artificial Turf
City of Plainfield, County of Union, New Jersey
BA#2-2017; Union County Engineering Project #2014-020

*Also see long sheet
5/17/17*

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The following summarizes revisions to the Bid Documents for the above reference project:

- Remove Supplemental Specification Section 924 – Monofilament Synthetic Turf Including Infill, Part 1 through Part 3, starting at the bottom of page SS-63 and ending on page SS-71. Part 4 on page SS-71 shall remain.
- Insert the attached specification section immediately prior to the aforementioned Part 4 found on page SS-71.
- All locations in the bid documents, including but not limited to, plans, specifications, details, bid proposal form, etc., that refer to a 2.5" turf pile height, shall be construed to mean a nominal 2" turf pile height.

Please sign the attached Acknowledgement of Addendum form and include it in your bid packet submission.

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

DIVISION OF ENGINEERING

Bidder's Name: _____

ACKNOWLEDGMENT OF ADDENDUM

ADDENDUM NUMBER 1

MAY 17, 2017

COUNTY OF UNION

Cedar Brook Park Artificial Turf
City of Plainfield, County of Union, New Jersey

(Name of Construction /Public Works Project)

BA#2-2017
UC Engineering Project #2014-020

(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
<u>Addendum Number 1:</u> <ul style="list-style-type: none">• Remove Supplemental Specification Section 924 – Monofilament Synthetic Turf Including Infill, Part 1 through Part 3, starting at the bottom of page SS-63 and ending on page SS-71. Part 4 on page SS-71 shall remain.• Insert the attached specification section immediately prior to the aforementioned Part 4 found on page SS-71.• All locations in the bid documents, including but not limited to, plans, specifications, details, bid proposal form, etc., that refer to a 2.5" turf pile height, shall be construed to mean a nominal 2" turf pile height.		

ACKNOWLEDGMENT BY BIDDER:

NAME OF BIDDER: _____

ORIGINAL SIGNATURE: _____

PRINTED NAME AND TITLE: _____

DATE: _____

SECTION 924 - SYNTHETIC TURF

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division I Specification Sections apply to this section.

1.2 SUMMARY

- A. The work under this section shall consist of furnishing all labor, materials, and equipment necessary to install, in place, all synthetic turf and other materials as indicated on the plans and as specified herein. The installation of all new materials shall be performed in strict accordance with these specifications, the manufacturer's instructions and in accordance with all details and shop drawings.

1.3 SUBMITTALS

- A. Substitutions: Products other than "AstroTurf® 3D3" are acceptable if in compliance with all requirements of these specifications. Submit alternate products with the bid proposal and provide the following:
- B. Items C, D, E, F, H, I and J must be submitted with the bid.
- C. Product Data: For each type of product indicated. Includes product cut-sheets and 3rd party ASTM testing proving compliance with this specification.
- D. The contractor shall provide the following samples of the artificial turf system for this project:
 - 1. A 12-inch x 12-inch minimum infilled sample of the exact synthetic turf system that conforms to this specification (Section 2.1 Materials) with a texturized thatch layer and blended polyethylene tall fibers.
 - 2. Infill mix in accordance with product specifications.
 - 3. A 12-inch x 12-inch non-infilled sample of the exact synthetic turf specification that conforms to this specification.
- E. Synthetic turf system shall be approved as ADA Handicap accessible as determined by Test Method ASTM 1951-99 (Standard Specification for determination of accessibility of surface under and around playground equipment).
- F. All components of the synthetic turf system must indicate detection levels below those levels established in Table 1A - Residential Direct Contact Health Based Criteria and Soil Remediation Standards (mg/kg) N.J.A.C. 7:26D (Remediation Standards).

- G. Shop Drawings: Show fabrication and installation details for synthetic turf including, but not limited to:
- a. Proposed locations of all seams in fabric surfacing.
 - b. Field lining and marking - Submit a complete scale and dimensional drawing of inlaid or tufted-in field lines and marking boundaries. Include graphics for end zones and center logo artwork for approval as well.
 - c. This shall be submitted prior to field fabrication for approval.
- H. Manufacturer Certificates: Certified list of twenty-five (25) existing installations of a synthetic turf and infill system that meets the specification for this project in the last three years, including Owner Representative and telephone number, attesting compliance with quality assurance information. These fields must fully comply with the materials section of this specification (Section 2.1). All must be located within the continental United States.
- I. Qualification Data: The turf contractor/manufacturer must have 100 full-sized fields that have been in use for a minimum of three years all being located in the Continental United States in locations similar in climate to the Northeast United States.
- J. Sample Warranty & Sample 3rd Party Insurance Policy: Provide a sample pre-paid third party insured warranty & sample manufacturer's warranty with the bid. Policy must be in force at the time of bid. Submission must comply with Section 1.5 Warranties.
- K. Maintenance and Operations Data: At the completion of the project submit 3 complete sets, in manual form, of all the manufacturer's recommended procedures and materials for, but not limited to general maintenance, line/marketing installation, small repair procedures, cleaning, etc.
- L. Pre-fabrication – Must show the ability & experience of at least 10 fields that were pre-fabricated, meaning all permanent sport lines will be either inlaid or tufted prior to shipment to the job-site. No on-site addition of lines is acceptable.

1.4 QUALITY ASSURANCE

- A. All components and their installation method shall be designed and manufactured for use on outdoor athletic fields. The materials as hereinafter specified, should be able to withstand full climatic exposure in the Northeast USA, be resistant to insect infestation, rot, fungus and mildew; to ultra-violet light and heat degradation, and shall have the basic characteristic of flow-through drainage allowing free movement of surface run-off through the turf and directly into prepared granular base and into the field drainage system.

- B. The synthetic turf and components shall be of national reputation with previous use at all levels of competition, including professional and collegiate levels of football and soccer and shall have been in use for a period of not less than three years. The turf fabric shall be produced by the manufacturer and installed by factory-authorized distributors directly employing the installation crew.
- C. The turf manufacturer must be experienced in the manufacture of synthetic turf. The turf manufacturer shall have completed installations in the United States and have completed at least two hundred (200) installations within the last two (2) years in the Continental United States.
- D. The turf manufacturer must have installed at least 25 fields of tufted polyethylene fiber with a secondary texturized thatch layer tufted through a porous secondary backing with silica sand & SBR rubber infill. Only fields with a texturized secondary fiber & polyethylene primary fiber (meeting all other published specifications) shall be counted towards the mandatory 25 field minimum. At least 15 of these fields must be at least 2 years old.
- E. Prior to approval of a specified synthetic turf system, the company shall specify in writing that their turf system does not violate any other manufacturer's patents allowed or patents pending.

1.5 WARRANTIES

- A. The Contractor shall provide a manufacturer's warranty to the Owner that covers defects in materials and installation workmanship of the turf for a period of ten (10) years from the date of substantial completion. The turf manufacturer must verify that their representative has inspected the installation and that the work conforms to the manufacturer's requirements and any written directives. The manufacturer's warranty shall include general wear and damage caused from UV degradation. Other items that must be addressed include the following:
 - 1. Acceptable uses for the field.
 - 2. Fading.
 - 3. Color match within specifications.
 - 4. Excessive fiber wear.
 - 5. Wrinkling and panel movement.
 - 6. Shock absorbency (Gmax) not to exceed 175.
 - 7. Drainage (through the turf only).
 - 8. Flammability.
- B. The manufacturer's warranty shall be fully third party insured, through a pre-paid policy of 8 years and be non-prorated. Warranties that include language which pro-rates benefits shall cause the provider's bid to be rejected. Prior to final payment for the synthetic turf,

the Contractor shall submit to the Owner, this policy guaranteeing the warranty to the Owner. Insurance must reflect the following values:

1. Must provide coverage for \$10 million dollars per claim of total installed turf for removal, disposal and replacement of new synthetic turf.
2. Must have a minimum of a \$15 million dollar annual aggregate towards repairs/replacements in a given policy year. The annual aggregate shall be applied only to policies executed in the 12 month policy window. Every annual policy year, another \$15 million worth of annual aggregate shall be set aside for the policies executed in that policy year.
3. Policy must be in-force at time of bid.
4. Policy must be issued by an A-rated or greater A.M. Best Rating
5. Must be pre-paid for the entire 8 years.
6. Policies that include self-insurance or self-retention clauses shall not be considered.
7. Sample copy of this policy must be provided with the bid detailing compliance with policy limits as described.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Approved Products

a. Astroturf 3D3

i. Astroturf – Contact Matt Olds – 732-677-0484 or 706-277-8873

b. Or Approved Equal – all products will be approved post bid and all paperwork, samples required must be submitted with the bid.

2.2 MATERIALS

- A. A complete synthetic turf system consisting of a combination of high micron thickness monofilament polyethylene fibers and 10,000 denier XP Plus parallel slit film fibers along with an extruded nylon monofilament RootZone™ (or approved equal). Pile height shall be nominal 2". Fibers shall be tufted to a primary backing and a mechanically applied adhesive secondary backing.
- B. The tufted fiber shall not weigh less than 60 ounces per square yard. The tufted rows of fiber are to be spaced no more than 3/8" apart. ASTM tests proving the fiber meets these qualifications must be provided with the bid. Turf systems that do not meet this specification will be disqualified.
- C. The carpet's primary backing shall be comprised of three layers (18 pic polypropylene, 13 pic polypropylene, reinforced by a non-woven PET cap fiber layer). This backing is to have a minimum weight of 8 oz per square yard. The carpet shall then be coated with a secondary backing of Biocel™ (or approved equal) Polyurethane synthetic coating material with a minimum application rate of 20 ounces per square yard and then perforated for adequate drainage. Carpets that are not perforated for adequate drainage shall not be acceptable.

- D. The carpet shall be delivered in 15' wide rolls. The rolls shall be of sufficient length to go from sideline to sideline.
- E. The pile surface shall provide good traction in all types of weather with the use of conventional sneaker type shoes, composition sole athletic shoes, baseball spikes and screw-on football spikes.
- F. The pile surface shall be suitable for both temporary and permanent line markings using acrylic paint, as per the manufacturer's recommendations.
- G. All synthetic turf seams shall be glued.
- H. Pre-fabricated Line, Logo & Lettering Markings
 - a. Inlaid markings, logo's, lettering shall be pre-fabricated at the manufacturing plant prior to the shipment to the field installation.
 - b. Any lines not tufted into the field shall be installed through laying out at an indoor facility that is climate controller prior to shipment to the job-site.
 - c. The lines shall be inlaid with hot melt fusion & seaming tape, no lines will be allowed to be sheared.
 - d. No markings shall be added once shipped to the job-site.

2.2 FABRIC SURFACE

- A. The pile surface shall resemble freshly mown natural grass in appearance, texture and color.
- B. The pile surface shall be nominally uniform in length.
- C. The pile fiber angle shall be 90 degrees + 15 degrees, measured from the horizontal after installation of the infill material.
- D. The synthetic turf system shall have a nominal fiber length of 2".
- E. Each roll shall be minimum 15' wide.
- F. Synthetic turf system shall be perforated at 4-6" on center. Systems that are not perforated for maximum drainage shall not be acceptable.

2.3 PILE YARN SPECIFICATIONS

- A. Yarn shall be proved athletic quality yarn designed specifically for outdoor use and stabilized to resist the effects of ultraviolet degradation, heat, foot traffic, water and airborne pollutants. The fabric shall possess the following minimum physical characteristics. ASTM testing shall be provided with the bid and any products not meeting the minimum characteristics will be rejected.

1. Monofilament Polyethylene	12,000
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Yarn Denier (minimum)	
2. Slit-Film Polyethylene Yarn Denier (minimum)	10,000
3. Nylon Texturized Yarn Denier (minimum)	5,000
4. Pile Height (nominal)	2"
5. Pile Ribbon Face Weight	60 oz/sy
6. Tufting Gauge	3/8" maximum
7. Fiber Thickness	360 microns
8. Primary Backing Weight	8 oz/sy
9. Secondary Backing Weight	20 oz/sy
10. Total System Weight	88 oz/sy
11. Tuft Bind	8 lbs minimum
12. Carpet Percolation Rate	>30 in/hr
13. Grab Tear Strength	>200 lbs/force

2.4 INFILL MATERIAL

- A. Infill particles shall be mix of organic & silica sand materials only. Product is Greenplay or approved equal. Mixes shall conform to synthetic turf manufacturer specifications.

2.5 SYNTHETIC TURF GROOMER:

- A. Groomer - Contractor shall supply a Manufacturer recommended grooming system as part of the price for the synthetic turf. The groomer shall include a deep rake that penetrates the infill and sweep away debris. This should include all necessary equipment to properly clean and maintain the turf. The equipment should be capable of being pulled behind a standard tractor or utility vehicle. No additional payment will be made for providing the equipment.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for maximum moisture content, installation tolerances, and other conditions affecting performance of work. Proceed with installation only after satisfactory conditions have been corrected.
- B. Certification of prior work: The synthetic turf manufacturer and/or installation contractor shall perform an inspection of the field base onto which the synthetic turf system is to be installed and to examine the finished surface for required compaction, permeability and grade tolerances (through string line testing). After any discrepancies between the required materials, application and tolerance requirements noted have been corrected, the synthetic turf installer should submit a written certification of VISUAL acceptance of the base for installation of the synthetic turf system. Any tests other than VISUAL tests

(string line, water hose, etc.) shall be the responsibility of the General Contractor or Design Professional.

- C. Installation of all materials shall be performed in full compliance with approved project shop drawings. Only factory trained technicians skilled in the installation of athletic caliber synthetic turf systems, working under the direct supervision of the manufacturer's supervisors, shall undertake the placement of the turf system. The designated Supervisory personnel on the project must be certified, in writing by the turf manufacturer as competent in the installation of these materials, including sewing seams and proper installation of the infill mixture. The manufacturer shall certify the installation and warranty compliance.
- D. Inspect delivered field surface fabric and components immediately prior to installation. Any damaged or defective items shall be rejected. Installed artificial system shall be inspected for, but not limited to, the following:
 - i. Uniformity of product and color.
 - ii. Surface bubbles.
 - iii. Field markings.
 - iv. Field Edge installation.
 - v. Pile height of each roll shall be measured. Any material(s) that does not meet minimum height and thickness specifications shall be rejected.
 - vi. Pile height shall be measured in its finished positions.
- E. All installation shall be completed in strict accordance with the manufacturer's current printed installation instructions as approved by the Engineer.
- F. Environmental Conditions: Weather conditions are important for the successful installation of the systems. No work under this section will proceed when:
 - a. Ambient temperatures are below 45 degrees F.
 - b. Material temperatures are below 45 degrees F.
 - c. Surfaces are wet or damp.
 - d. Rain is imminent or falling.
 - e. Conditions exist or are imminent, which will be unsuitable to installation requirements of the systems specified herein. Humidity levels will be inside the limits recommended by the adhesive manufacturer to obtain optimum bonding characteristics of the surfaces.
- G. The carpet rolls are to be installed directly over the properly prepared base stone. Extreme care should be taken to avoid disturbing the base stone both in regard to compaction and planarity. A 2-5 ton static roller shall be on site and available to repair and properly compact any disturbed areas of the base stone.
- H. The full width rolls shall be laid out across the field. Utilizing standard state of

the art gluing procedures, each roll shall be attached to the next. Each seam will be glued. When all of the rolls of the playing surface have been installed, the sideline areas will be installed at right angles to the playing field turf. All work shall be such that seams shall remain as required for the duration of the warranty period at a minimum. All seam widths are to be held to a minimum and shall be traverse to the field direction. Seams shall be flat, tight and permanent, with no separation or fraying.

- I. The contractor shall utilize NORDOT ® Adhesive #34S-3 (Plus) (or an approved equivalent) to permanently bond the synthetic turf to the porous hot mix asphalt. Please note that this is a total glue down project with the seams both sewn and glued. The synthetic turf shall be both nailed and glued at the perimeter of the field at the concrete turf nailers for the life of the warranty.
- J. Resilient Infill: The infill material shall be spread evenly with a large spreader (minimum 5-foot wide). Between applications the infill area shall be brushed with a motorized rotary texturized broom.
 - a. Inlays shall conform to the manufacturer's specifications, directions and recommendations for the best results.
 - b. Striping layout shall be accurately surveyed by the Contractor before installation of inlaid filed markings.
 - c. Install inlays only when the surface is completely dry. Adhere all inlays securely into place. Never loose-lay and sew an inlay into place.

3.2 PREPARATION

- A. Preparation of Subgrade: All topsoil, organic, and non-compactable materials need to be removed.
- B. The soil bed must be compacted in both directions to attain the specified compaction rate of 95% standard Proctor.
- C. The soil bed must be prepared to tolerances of not more than 1/2 inch from design grade to allow for even drainage.
- D. A geotextile fabric is required to cover the soil bed.

3.3 INSTALLATION

- A. Underdrain System: Install as detailed on the drawings and as recommended by the manufacturer of the synthetic turf system.

B. Perimeter Edge: The synthetic turf shall be both nailed and glued at the perimeter of the field at the concrete turf nailers.

C. Base Stone

- a. The base stone must be laid without damaging the soil bed, geotextile liner or drains. It is very important to not create any depressions with heavy equipment. The specified stone or aggregate supplied must conform to the recommended specifications. The finished crushed stone or aggregate base supplied must be stable and permeable. The contractor should adhere to the construction details and manufacturers' specifications.
- b. If the required compacted depth of the base course exceeds 6 inches, the base shall be constructed in 2 or more layers or lifts of approximate equal thickness. Each layer must be compacted in both directions to attain the specified compaction rate.
- c. The base course must be sloped as specified within the grading plan.
- d. The grade of the base course shall not vary from the specified grade by more than 1/2 inch from design grade.
- e. The base course must be compacted in both directions to attain the specified compaction rate of 95% standard Proctor.
- f. Prior to the beginning of installation, the installer of the synthetic turf shall inspect the stone subbase and supply a certificate of stone subbase acceptance for the purpose of obtaining manufacturer's warranty for the finished synthetic turf. A copy of this certificate shall be provided to the engineer.

D. Porous Asphalt

- a. The final grade material must be sloped 0.35% from the northern axis towards the side lines unless otherwise specified.
- b. The base stone must be compacted in both directions to attain the specified compaction rate of 95% standard Proctor.
- c. Upon completion of the installation of the porous asphalt and prior to the installation of the synthetic turf, the contractor, Owner and Engineer shall witness a rain event (natural or artificial) in order to determine that the stone subbase drains vertically. Synthetic turf shall not be installed until this rain event takes place.

3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. Testing Services: Testing and inspecting of completed applications of synthetic turf system shall take place in suggestive states, in areas of extent and using methods that are industry standard. Do not proceed with application of next stages until test results for previously completed applications show compliance.

- C. Remove and replace items where test results indicate that it does not comply with specified requirements.

3.5 FINAL ACCEPTANCE

- A. Prior to final acceptance, the Contractor shall submit to the Owner three (3) copies of Maintenance Manual, which will include all necessary instructions for the proper care and preventative maintenance of the synthetic turf system, including painting and striping.
- B. The Contractor shall provide evidence that the turf can be plowed with conventional rubber bladed snow removal equipment.
- C. The finished playing surface shall appear as mowed grass with no irregularities and shall afford excellent traction for conventional athletic shoes for all types. The finished surface shall resist abrasion and cutting from normal use.

3.6 CLEANING

- A. Contractor shall provide the labor, supplies and equipment as necessary for final cleaning of surfaces and installed items. All usable remnants of new material shall become the property of the Owner. The Contractor shall keep the area clean throughout the project and clear of debris. Surfaces, recesses, enclosures, etc. shall be cleaned, as necessary, to leave the work area in a clean, immaculate condition ready for immediate occupancy and use by the Owner.

SPECIFICATIONS
FOR
CEDAR BROOK PARK ARTIFICIAL TURF
CITY OF PLAINFIELD, COUNTY OF UNION, NEW JERSEY
BA#2-2017; UNION COUNTY ENGINEERING PROJECT #2014-020

MAY 2017

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Alfred J. Faella

DEPARTMENT OF ENGINEERING, PUBLIC WORKS AND
FACILITIES MANAGEMENT

Joseph A. Graziano, Sr., CPWM
Director, Department of Engineering, Public Works and
Facilities Management

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DIVISION OF ENGINEERING
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**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 31, 2017 at 10:30 a.m., prevailing time, in the 3rd Floor Conference Room, U.C. Administration Building, 10 Elizabethtown Plaza, Elizabeth, New Jersey for:

**CEDAR BROOK PARK ARTIFICIAL TURF
CITY OF PLAINFIELD, COUNTY OF UNION, NEW JERSEY
BA#2-2017; UNION COUNTY ENGINEERING PROJECT #2014-020**

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.

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.S.A.C. 17:27.

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

**UNION COUNTY BOARD
OF CHOSEN FREEHOLDERS**

We're Connected to You!

NB-1

**CEDAR BROOK PARK ARTIFICIAL TURF
CITY OF PLAINFIELD, COUNTY OF UNION, NEW JERSEY
BA#2-2017; Union County Engineering Project #2014-020**

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STANDARD SPECIFICATION FORM - SS-1

PROJECT TECHNICAL SPECIFICATIONS

**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: Cedar Brook Park Artificial Turf
City of Plainfield, County of Union, New Jersey
BA#2-2017; Union County Engineering Project #2014-020

BIDDER: Bidder shall be a single overall contract bidder

ENGINEER: Maser Consulting P.A.
331 Newman Springs Road, Suite 203
Red Bank, New Jersey 07701

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:

GENERAL SPECIFICATIONS

1. BID FORM

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

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

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

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

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

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

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

Refer to Bid Document Submission Checklist for all required documents.

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

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

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

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

The County reserves the right to reject any or all bids and also reserves the right to waive any 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 Michael M. Yuska, QPA,

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, Michael M. Yuska, 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. 34:11-56a.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 statutes 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 NJSA 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 NJSA 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 NJSA 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 NJSA 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 NJSA 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 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 NJSA 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 NJSA 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 - (NJSA 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 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 NJSA 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 NJSA 19A:44A-1 et. seq. are NOT REQUIRED to be provided with the bids.

55. STATEMENT OF EQUIPMENT TO BE USED IN CONSTRUCTION

Pursuant to NJSA 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," (NJSA 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).

ALFRED J. FAELLA
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.

- _____ 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 – 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 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

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

**CEDAR BROOK PARK ARTIFICIAL TURF
CITY OF PLAINFIELD, COUNTY OF UNION, NEW JERSEY
BA#2-2017; UNION COUNTY ENGINEERING PROJECT #2014-020**

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	SOIL EROSION AND SEDIMENT CONTROL MEASURES	LS	1		
2	FUEL PRICE ADJUSTMENT	ALLOW.	8,600.00	1	8,600.00
3	ASPHALT PRICE ADJUSTMENT	ALLOW.	1,300.00	1	1,300.00
4	CLEARING SITE	LS	1		
5	EXCAVATION, BORROW EXCAVATION AND GRADING, UNCLASSIFIED	LS	1		
6	COARSE AGGREGATE, NO. 57, 4" THICK	CY	1510		
7	COARSE AGGREGATE, NO. 57, 6" THICK	CY	55		
8	MODIFIED OPEN GRADED 9.5 MM FRICTION COURSE, 3" THICK	TON	2500		
9	MODIFIED OPEN GRADED 9.5 MM FRICTION COURSE, 2" THICK	TON	40		
10	ASPHALT STABILIZED DRAINAGE COURSE, 4" THICK	TON	80		
11	1"X12" PERFORATED UNDERDRAIN HIGH DENSITY POLYETHYLENE PIPE	LF	6400		
12	15" PERFORATED HIGH DENSITY POLYETHYLENE PIPE (INCLUDING PIPE BEDDING AND BACKFILL)	LF	707		
13	18" PERFORATED HIGH DENSITY POLYETHYLENE PIPE (INCLUDING PIPE BEDDING AND BACKFILL)	LF	273		
14	24" PERFORATED HIGH DENSITY POLYETHYLENE PIPE (INCLUDING PIPE BEDDING AND BACKFILL)	LF	6691		
15	15" HIGH DENSITY POLYETHYLENE PIPE (INCLUDING PIPE BEDDING AND BACKFILL)	LF	66		
16	38" X 24" HORIZONTAL ELLIPTICAL REINFORCED CONCRETE PIPE (INCLUDING PIPE BEDDING AND BACKFILL)	LF	226		
17	INLET TYPE 'A'	UNIT	7		

ITEM NO	DESCRIPTION	UNIT	CONTRACT QUANTITY	UNIT PRICE	AMOUNT
18	INLET TYPE 'E'	UNIT	3		
19	OUTLET CONTROL STRUCTURE	UNIT	1		
20	2' DIAMETER RISER WITH SOLID COVER	UNIT	6		
21	BACKFLOW PREVENTER	UNIT	1		
22	TINTED CONCRETE SIDEWALK, 4" THICK	SY	550		
23	TINTED CONCRETE PAD, REINFORCED, 6" THICK	SY	150		
24	DETECTABLE WARNING SURFACE	UNIT	1		
25	CONCRETE TURF FOOTING (6" X 12") WITH NAILER BOARD	LF	770		
26	BELGIAN BLOCK CURB	LF	500		
27	TRAFFIC STRIPES, LONG LIFE, EPOXY RESIN 4" WIDE	LF	350		
28	BLEACHERS	UNIT	2		
29	BALL SAFETY NETTING SYSTEM, 25' HIGH	LF	300		
30	BALL SAFETY NETTING SYSTEM, 40' HIGH X 40' WIDE	UNIT	2		
31	COMBINATION FOOTBALL GOAL POST/SOCCER GOAL	UNIT	2		
32	YOUTH SOCCER GOALS	UNIT	2		
33	15' LONG TEAM BENCH	UNIT	2		
34	UTILITY UPGRADES - ELECTRIC SERVICE TO THE SITE	LS	1		
35	SPORTSFIELD LIGHTING SYSTEM	LS	1		
36	TOPSOILING, 6" THICK	SY	2500		
37	FERTILIZING AND SEEDING	SY	2500		
38	EROSION CONTROL BLANKET	SY	2000		
39	STRAW MULCHING	SY	500		
40	SHADE TREE, ACER RUBRUM 'AUTUMN FLAME', AUTUMN FLAME RED MAPLE, 3"-31/2", B&B	UNIT	10		
41	SHADE TREE, QUERCUS ACUTISSIMA, SAWTOOTH OAK, 3"-31/2", B&B	UNIT	10		
42	SHADE TREE, QUERCUS RUBRA, NORTHERN RED OAK, 3"-31/2", B&B	UNIT	16		
43	EVERGREEN SHRUB, ILEX HYBRID LITTLE RASCAL 'MONDO', LITTLE RASCAL HOLLY, 36"-40", 20 GAL	UNIT	72		
44	SHREDDED HARDWOOD BARK MULCH, TRIPLE SHREDDED, 4" THICK	SY	530		
45	MONOFILAMENT SYNTHETIC TURF, 2.5" PILE	SF	122,000		

Written

Figures

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

ONE HUNDRED THOUSAND DOLLARS AND NO CENTS

Written

\$100,000.00

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 SIGNATURE PAGE

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

1. If doing business under a **trade name, partnership or a sole proprietorship**, you must submit the bid under exact title of the trade name, partnership, or proprietorship, and the bid must be signed by either the **owner**, or a **partner** and **witnessed** by a **notary public**.
2. If a **Corporation**, the bid must be signed by the **President** or **Vice President** and **witnessed** by a **Corporate Secretary** (corporate title must be exact) and **affix corporate seal**. If a Corporate Secretary does not exist, President or Vice President's signature shall be witnessed by a Notary Public.
3. Other persons **authorized** by **corporate resolution** to execute agreements in its behalf may also sign the bid documents (pages). **Copy of a resolution must accompany the bid.**
4. The person who signs this bid form **must also** sign the **Non-Collusion Affidavit**.
5. You **cannot** witness your own signature.

NAME OF BIDDER

ADDRESS OF BIDDER

**ORIGINAL SIGNATURE
CORPORATE SECRETARY**

**PRINT NAME AND TITLE
CORPORATE SECRETARY**

TEL: _____
FAX: _____
E-Mail: _____

BY: _____
ORIGINAL SIGNATURE

Corporate Seal

PRINT OR TYPE NAME AND TITLE

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

Bidder's Name _____

STATEMENT OF OWNERSHIP DISCLOSURE

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

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

Name of Organization: _____

Organization Address: _____

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

- Sole Proprietorship (skip Parts II and III, execute certification in Part IV)
- Non-Profit Corporation (skip Parts II and III, execute certification in Part IV)
- For-Profit Corporation (any type) Limited Liability Company (LLC)
- Partnership Limited Partnership Limited Liability Partnership (LLP)
- Other (be specific): _____

Part II

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

OR

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

STATEMENT OF OWNERSHIP DISCLOSURE - CONTINUED

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

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

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

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

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

STATEMENT OF OWNERSHIP DISCLOSURE - CONTINUED

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

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

Part IV Certification

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

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

Bidder's Name _____

SUBCONTRACTOR IDENTIFICATION STATEMENT

LIST OF SUBCONTRACTORS

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

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

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

Company Name: _____

Address: _____

Telephone: _____ Subcontract Amount: \$ _____

Specific Scope of Work Subcontracted: _____

License No. _____

Company Name: _____

Address: _____

Telephone: _____ Subcontract Amount: \$ _____

Specific Scope of Work Subcontracted: _____

License No. _____

Company Name: _____

Address: _____

Telephone: _____ Subcontract Amount: \$ _____

Specific Scope of Work Subcontracted: _____

License No. _____

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

(Continued on following page)

Bidder's Name _____

SUBCONTRACTOR IDENTIFICATION CERTIFICATION

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

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

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

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

Witness

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.

Bidder's Name _____

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	TRADE NAME: CLIENT REGISTRATION
TAXPAYER IDENTIFICATION: 070-007-382/000	SEQUENCE NUMBER: 0107510
ADDRESS: 847 ROEBLING AVE TRENTON NJ 08611	ISSUANCE DATE: 07/14/04
EFFECTIVE DATE: 01/01/01	<i>John S. Tully</i> Accepted for use
FORM BRC(04/01) 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:	
	20041014112623533

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

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.

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

Bidder's Name _____

AMERICANS WITH DISABILITIES ACT
EQUAL OPPORTUNITY FOR INDIVIDUALS WITH DISABILITIES

The contractor and the County of Union (hereafter "Owner") do hereby agree that the provisions of Title II of the Americans With Disabilities Act of 1990 (the "Act") (42 U.S.C.S12.101 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 _____

Bidder's Name _____

STATEMENT OF BIDDER'S QUALIFICATIONS

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

1. _____
(Name of Bidder)

2. _____
(Permanent Main Office Address)

3. _____
(When Organized)

4. _____
(If a Corporation, where incorporated)

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

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

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

8. General character of work performed by you. _____

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

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

Bidder's Name _____

STATEMENT OF BIDDER'S QUALIFICATIONS - (continued)

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

12. List your major equipment available for this Contract.

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

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

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

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

16. Bank Reference. (Name, Address, Phone, Representative) _____
17. Will you, upon request, fill out a detailed financial statement and furnish any other information that may be required by the proper agency? _____
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.
17. 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 contract for goods or services with a public entity?

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

Bidder's Name _____

PRIOR NEGATIVE EXPERIENCE CERTIFICATION

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

Name of Contractor

By _____
(Signature of Authorized Representative)

Subscribed and sworn to before me
this _____ day of _____, 20__.

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

My Commission Expires _____, 20__.

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

Bidder's Name _____

TO BE COMPLETED ONLY WHEN FINAL PAYMENT IS REQUESTED

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

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

CONTRACT:

PROJECT:

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

COUNTY OF UNION

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

CONTRACTOR: _____
ADDRESS: _____

BY: _____
ORIGINAL SIGNATURE ONLY

STATE OF NEW JERSEY
COUNTY OF _____

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

Subscribed and sworn 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 twenty (120)** 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

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

Solicitation Number: _____ Bidder/Offeror: _____

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 the person or entity, or one of the person or entity's parents, subsidiaries, or affiliates, is not identified on a list created and maintained by the Department of the Treasury as a person or entity engaging in investment activities in Iran. If the Director finds a person or entity to be in violation of the principles which are the subject 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 person or entity.

I certify, pursuant to Public Law 2012, c. 25, that the person or entity listed above for which I am authorized to bid/renew:

is not providing goods or services of \$20,000,000 or more in the energy sector of Iran, including a person or entity that provides oil or liquefied natural gas tankers, or products used to construct or maintain pipe lines used to transport oil or liquefied natural gas, for the energy sector of Iran,
AND

is not a financial institution that extends \$20,000,000 or more in credit to another person or entity, for 45 days or more, if that person or entity will use the credit to provide goods or services in the energy sector in Iran.

In the event that a person or entity is unable to make the above certification because it or one of its parents, subsidiaries, or affiliates has engaged in the above-referenced activities, a detailed, accurate and precise description of the activities must be provided in part 2 below to the Division of Purchase under penalty of perjury. Failure to provide such 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 FURTHER INFORMATION RELATED TO INVESTMENT ACTIVITIES IN IRAN. You must provide, accurate and precise description of the activities of the bidding person/entity, or one of its parents, subsidiaries or affiliates, engaging in the investment activities in Iran outlined above by completing the boxes below.

Name _____ Relationship to Bidder/Offeror _____

Description of Activities _____

Duration of Engagement _____ Anticipated Cessation Date _____

Bidder/Offeror Contact Name _____ Contact Phone Number _____

Certification: I, being duly sworn upon my oath, hereby represent and state that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I attest that I am authorized to execute this certification on behalf of the above referenced person or entity. I acknowledge that Union County is relying on the information contained herein and hereby acknowledge that I am under a continuing obligation from the date of this certification through the completion of any contracts with the County to notify the County in writing of any changes to the answers of information contained herein. I acknowledge 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 recognize that I am subject to criminal prosecution under the law and that it will also constitute a material breach of my agreement(s) with Union County, New Jersey and that the County at its option may declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print) _____ Signature _____

Title _____ Date _____

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.



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

PREVAILING WAGE RATE DETERMINATION

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

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

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

Prevailing Wage Rate

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

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

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

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

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

Apprentice Rate Schedule

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

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

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

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

Comments/Notes

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

Public Works Contractor Registration

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

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

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

Snow Plowing

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

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

County - UNION

Craft: Air Conditioning & Refrigeration - Service and Repair

PREVAILING WAGE RATE

	03/01/17
Journeyman (Mechanic)	W37.48 B22.91 T60.39

Craft: Air Conditioning & Refrigeration - Service and Repair

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	Mo. 1-3	Mo. 4-12	2nd Year	3rd Year	4th Year	5th Year		Wage = %	of Jnymn	Wage
As Shown										
Wage and Bene	50%	55%	60%	65%	75%	85%		Bene = %	of Jnymn	Bene

Ratio of Apprentices to Journeymen - 1:4

APPRENTICE RATE SCHEDULE FOR THOSE APPRENTICES ENTERING PROGRAM AFTER 3-1-13:

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

Craft: Air Conditioning & Refrigeration - Service and Repair

COMMENTS/NOTES

THESE RATES MAY BE USED FOR THE FOLLOWING:

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

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

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

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

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

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

County - UNION

Craft: Boilermaker PREVAILING WAGE RATE

	01/01/17
Foreman	W48.70 B41.32 T90.02
General Foreman	W50.70 B42.30 T93.00
Journeyman	W43.70 B39.72 T83.42

Craft: Boilermaker APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
1000 Hours	65%	70%	75%	80%	85%	90%	95%			
Benefit =	33.58	34.50	35.38	36.24	37.12	37.49	38.85			

Ratio of Apprentices to Journeymen - *

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

Craft: Boilermaker COMMENTS/NOTES

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

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

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

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

County - UNION

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

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

County - UNION

Craft: Boilermaker - Minor Repairs

PREVAILING WAGE RATE

	01/01/17
Foreman	W32.54 B16.17 T48.71
General Foreman	W33.04 B16.17 T49.21
Mechanic	W31.04 B16.17 T47.21

Craft: Boilermaker - Minor Repairs

COMMENTS/NOTES

NOTE: These rates apply to MINOR REPAIR WORK ONLY (repair work in the field for which the contract amount does not exceed \$125,000.00).

OVERTIME:

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

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

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

County - UNION

Craft: Bricklayer, Stone Mason

PREVAILING WAGE RATE

	11/01/16	05/01/17	05/01/18
Deputy Foreman	W43.00 B30.91 T73.91	W44.10 B31.94 T76.04	W0.00 B0.00 T78.23
Foreman	W46.00 B30.91 T76.91	W47.10 B31.94 T79.04	W0.00 B0.00 T81.23
Journeyman	W40.00 B30.91 T70.91	W41.10 B31.94 T73.04	W0.00 B0.00 T75.23

Craft: Bricklayer, Stone Mason

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	40%	50%	55%	60%	65%	70%	75%	80%		
6 Months										
Benefits	3.72	4.65	5.12	5.58	20.48	21.83	23.18	24.52		

Ratio of Apprentices to Journeymen - 1:5

Craft: Bricklayer, Stone Mason

COMMENTS/NOTES

APPRENTICE RATE SCHEDULE AS OF 5-1-17:

INTERVAL	PERIOD AND RATES							
6 Months	40%	50%	55%	60%	65%	70%	75%	80%
Benefits	3.80	4.75	5.23	5.70	21.16	22.55	23.95	25.33

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

SHIFT DIFFERENTIALS:

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

OVERTIME:

- The first 2 hours in excess of 8 per day, or before or after the regular workday that are not shift work, Monday through Friday, shall be paid at time and one-half the regular rate, inclusive of benefits. Any additional overtime shall be paid at double the regular rate, inclusive of benefits. The first 10 hours on Saturday shall be paid at time and one-half the

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

County - UNION

regular rate, inclusive of benefits. Any additional overtime shall be paid at double the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.

- Saturday may be used as a make-up day for hours lost to inclement weather.

- When Bricklayers/Stone Masons work on Saturday with Laborers, and no other crafts are working on the project for the day, benefits may be paid at straight time. If other crafts are present, the applicable overtime rate for benefits shall be paid.

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

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

County - UNION

Craft: Carpenter PREVAILING WAGE RATE

	11/01/16	05/01/17	11/01/17	05/01/18	11/01/18
Foreman	W53.42	W54.37	W0.00	W0.00	W0.00
	B30.44	B31.00	B0.00	B0.00	B0.00
	T83.86	T85.37	T86.04	T87.29	T88.54
Journeyman	W46.45	W47.28	W0.00	W0.00	W0.00
	B26.48	B26.95	B0.00	B0.00	B0.00
	T72.93	T74.23	T75.23	T76.48	T77.73

Craft: Carpenter APPRENTICE RATE SCHEDULE

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

Ratio of Apprentices to Journeymen - 1:3

Craft: Carpenter COMMENTS/NOTES

FOREMAN REQUIREMENTS:

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

The regular workday shall consist of 8 hours, starting between 7:00 AM and 9:00 AM.

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

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

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

County - UNION

Craft: Carpenter - Resilient Flooring

PREVAILING WAGE RATE

	11/01/16	05/01/17	11/01/17	05/01/18	11/01/18
Foreman	W53.42	W54.37	W0.00	W0.00	W0.00
	B30.44	B31.00	B0.00	B0.00	B0.00
	T83.86	T85.37	T86.04	T87.29	T88.54
Journeyman	W46.45	W47.28	W0.00	W0.00	W0.00
	B26.48	B26.95	B0.00	B0.00	B0.00
	T72.93	T74.23	T75.23	T76.48	T77.73

Craft: Carpenter - Resilient Flooring

APPRENTICE RATE SCHEDULE

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

Ratio of Apprentices to Journeymen - *

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

Craft: Carpenter - Resilient Flooring

COMMENTS/NOTES

FOREMAN REQUIREMENTS:

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

FOR SYNTHETIC TURF INSTALLATION ONLY:

- The rate shall be 90% of the wage and benefit rate.

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

SHIFT DIFFERENTIALS:

- When a 2 shift schedule (including a day shift) is established, the day shift, shall be established on an 8 hour basis. The second shift shall be established on an 8 hour basis, and receive the regular wage rate plus 15%.

- When a three shift schedule is established, the first shift shall be established on an 8 hour basis, the second shift on a 7.5 hour basis, and the third shift on a 7 hour basis. The first shift shall receive the regular wage rate, the second shift shall receive the regular wage rate plus 15% and the third shift shall receive the regular wage rate plus 20%.

- When there is no day shift, and a second or third shift is established, it shall be established on an 8 hour basis. The second shift shall receive the regular wage rate plus 15% and the third shift shall receive the regular wage rate plus 20%.

OVERTIME:

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

- Four 10-hour days may be worked, Monday to Thursday, at straight time. Friday may be used as a make-up day for hours lost to reasons beyond the control of the employer. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the wage rate.

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

County - UNION

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

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

County - UNION

Craft: Cement Mason

PREVAILING WAGE RATE

See "Bricklayer, Stone Mason" Rates

Craft: Cement Mason

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									

Ratio of Apprentices to Journeymen - 1:4

Craft: Cement Mason

COMMENTS/NOTES

See "Bricklayer, Stone Mason" Rates

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

County - UNION

Craft: Dockbuilder PREVAILING WAGE RATE

	11/29/16	05/01/17	11/01/17	05/01/18	11/01/18
Foreman	W51.29 B44.37 T95.66	W0.00 B0.00 T96.79	W0.00 B0.00 T97.99	W0.00 B0.00 T99.24	W0.00 B0.00 T100.49
Foreman (Concrete Form Work)	W50.14 B31.56 T81.70	W0.00 B0.00 T82.90	W0.00 B0.00 T84.10	W0.00 B0.00 T85.35	W0.00 B0.00 T86.60
Journeyman	W44.60 B44.37 T88.97	W0.00 B0.00 T90.17	W0.00 B0.00 T91.37	W0.00 B0.00 T92.62	W0.00 B0.00 T93.87
Journeyman (Concrete Form Work)	W43.60 B31.56 T75.16	W0.00 B0.00 T76.36	W0.00 B0.00 T77.56	W0.00 B0.00 T78.81	W0.00 B0.00 T80.06

Craft: Dockbuilder APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
Yearly	17.84	22.30	28.99	35.68						
Benefit	29.95	for all	intervals		Concrete	Form Work	Only Ben.	= 21.81	for all	intervals

Ratio of Apprentices to Journeymen - *

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

Craft: Dockbuilder COMMENTS/NOTES

CREOSOTE HANDLING:

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

HAZARDOUS WASTE WORK:

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

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

FOREMAN REQUIREMENTS:

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

OVERTIME:

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

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

County - UNION

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

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

County - UNION

Craft: Drywall Finisher

PREVAILING WAGE RATE

	05/01/16	05/01/17
Foreman	W42.55 B23.10 T65.65	W43.45 B23.60 T67.05
General Foreman	W44.45 B23.10 T67.55	W45.43 B23.60 T69.03
Journeyman	W38.75 B23.10 T61.85	W39.50 B23.60 T63.10

Craft: Drywall Finisher

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	30%	40%	50%	60%	70%	75%	80%	85%	90%	
4 Months										
Benefits	Intervals	1 to 3 =	9.85	Intervals	4 to 6 =	12.28	Intervals	7 to 9 =	14.95	

Ratio of Apprentices to Journeymen - 1:4

Craft: Drywall Finisher

COMMENTS/NOTES

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

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

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

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

County - UNION

Craft: Electrician

PREVAILING WAGE RATE

	05/30/16	05/29/17	05/28/18
Cable Splicer	W58.71 B33.74 T92.45	W60.08 B34.53 T94.61	W61.52 B35.35 T96.87
Foreman	W59.77 B34.34 T94.11	W61.17 B35.15 T96.32	W62.64 B35.98 T98.62
Journeyman	W53.37 B30.67 T84.04	W54.62 B31.39 T86.01	W55.93 B32.13 T88.06

Craft: Electrician

APPRENTICE RATE SCHEDULE

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

Ratio of Apprentices to Journeymen - 2:3

Craft: Electrician

COMMENTS/NOTES

THESE RATES ALSO APPLY TO THE FOLLOWING:

- All burglar and fire alarm work.
- All fiber optic work.
- Teledata work in new construction.
- Teledata work involving 16 Voice/Data Lines or more.

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

FOREMAN REQUIREMENTS:

- On any job where there are 1 to 10 Journeymen electricians, 1 shall be designated a Foreman.

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

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

County - UNION

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

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

County - UNION

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

PREVAILING WAGE RATE

	11/01/16
Master Technician/General Foreman	W52.18 B28.69 T80.87
Senior Technician/Lead Foreman (21-30 Workers on Job)	W47.77 B26.26 T74.03
Technician A/Foreman (11-20 Workers on Job)	W45.76 B25.16 T70.92
Technician B/Working Foreman (4-10 Workers on Job)	W43.75 B24.06 T67.81
Technician C/Journeyman (1-3 Workers on Job)	W40.14 B22.07 T62.21

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

APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
6 Months	20.14	21.48	23.72	26.41	29.54	32.23	35.36	38.49		
Benefits	7.85	8.38	9.25	10.29	11.52	12.56	13.79	15.01		

Ratio of Apprentices to Journeymen - 2:3

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

COMMENTS/NOTES

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

INTERVAL	PERIOD AND RATES								
6 Months	17.90	19.25	21.48	24.17	27.30	29.99	33.12	36.26	
Benefits	6.98	7.51	8.38	9.42	10.65	11.69	12.92	14.13	

NOTES:

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

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

SHIFT DIFFERENTIALS:

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

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

County - UNION

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

OVERTIME:

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

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

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

County - UNION

Craft: Electrician - Teledata (16 Instruments & More)

PREVAILING WAGE RATE

See "Electrician" Rates

Craft: Electrician - Teledata (16 Instruments & More)

COMMENTS/NOTES

See ELECTRICIAN Rates

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

County - UNION

Craft: Electrician- Outside Commercial

PREVAILING WAGE RATE

	05/30/16	05/29/17	05/28/18
Cable Splicer	W58.99 B33.46 T92.45	W60.37 B34.24 T94.61	W61.82 B35.06 T96.88
Certified Welder	W56.31 B31.94 T88.25	W57.62 B32.68 T90.30	W59.01 B33.47 T92.48
Equipment Operator	W53.63 B30.42 T84.05	W54.88 B31.13 T86.01	W56.20 B31.88 T88.08
Foreman (1-10 Journeyman workers on job)	W60.07 B34.07 T94.14	W61.47 B34.86 T96.33	W62.94 B35.70 T98.64
Foreman (11-20 Journeyman workers on job)	W61.67 B34.98 T96.65	W63.11 B35.79 T98.90	W64.63 B36.66 T101.29
General Foreman (21-30 Journeyman workers on job)	W63.28 B35.89 T99.17	W64.76 B36.73 T101.49	W66.32 B37.61 T103.93
General Foreman (31-60 Journeyman workers on job)	W68.65 B38.94 T107.59	W70.25 B39.84 T110.09	W71.94 B40.80 T112.74
General Foreman (61+ Journeyman workers on job)	W69.72 B39.54 T109.26	W71.34 B40.46 T111.80	W73.06 B41.44 T114.50
Groundman	W32.18 B18.26 T50.44	W32.93 B18.68 T51.61	W33.72 B19.13 T52.85
Journeyman Lineman/Technician	W53.63 B30.42 T84.05	W54.88 B31.13 T86.01	W56.20 B31.88 T88.08
Sub-Foreman	W60.07 B34.07 T94.14	W61.47 B34.86 T96.33	W62.94 B35.70 T98.64

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

County - UNION

Craft: Electrician- Outside Commercial

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
1000 Hours	60%	65%	70%	75%	80%	85%	90%			
Benefits	56.4% of	Journey	man	wage	+	\$.01				

Craft: Electrician- Outside Commercial

COMMENTS/NOTES

EFFECTIVE 5-30-16- The apprentice benefit rate shall be 56.7% + \$.01.
 EFFECTIVE 5-29-17- The apprentice benefit rate shall be 56.7% + \$.01.
 EFFECTIVE 5-28-18- The apprentice benefit rate shall be 56.7% + \$.01.

* FOR UTILITY WORK PLEASE SEE STATEWIDE RATES

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

FOREMAN REQUIREMENTS:

On jobs where there are 2 Journeymen, one shall be a Foreman. The following number of Foreman, General Foreman, Assistant General Foreman and Sub-Foreman shall be required with respect to number of Journeymen on site:

- 2-10 Journeymen (1 Foreman)
- 11-20 Journeymen (1 Foreman and 1 Sub-Foreman)
- 21-30 Journeymen (1 Foreman and 2 Sub-Foremen)

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

RECOGNIZED HOLIDAYS:

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

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

County - UNION

Craft: Electrician-Utility Work (North)

PREVAILING WAGE RATE

Rates are located in the "Statewide" rate package

Craft: Electrician-Utility Work (North)

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
6 Months	60%	65%	70%	75%	80%	85%	90%			
Benefits	62.5% of	Appren	tice	Wage	Rate	for all	intervals			

Craft: Electrician-Utility Work (North)

COMMENTS/NOTES

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

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

County - UNION

Craft: Electrician-Utility Work (South)

PREVAILING WAGE RATE

Rates are located in the "Statewide" rate package

Craft: Electrician-Utility Work (South)

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
6 Months	27.37	29.65	31.93	34.21	36.49	38.77	41.05			
Benefits	24.01	25.34	26.73	28.09	29.43	30.80	32.18			

Craft: Electrician-Utility Work (South)

COMMENTS/NOTES

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

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

County - UNION

Craft: Elevator Constructor PREVAILING WAGE RATE

	03/17/17	03/17/18
Journeyman	W62.64 B41.56 T104.20	W64.48 B43.36 T107.84

Craft: Elevator Constructor APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	27.22	33.53	39.62	45.72						
Benefits	31.75	32.88	34.41	35.93						

Ratio of Apprentices to Journeymen - 1:1

Craft: Elevator Constructor COMMENTS/NOTES

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

OVERTIME:

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

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

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

County - UNION

Craft: Elevator Modernization & Service

PREVAILING WAGE RATE

	03/17/17	03/17/18
Journeyman	W49.14	W50.49
	B39.91	B41.66
	T89.05	T92.15

Craft: Elevator Modernization & Service

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	27.22	26.35	31.14	35.93						
Benefits	31.68	31.99	33.37	34.74						

Ratio of Apprentices to Journeymen - 1:1

Craft: Elevator Modernization & Service

COMMENTS/NOTES

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

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

- Overtime:

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

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

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

- Overtime:

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

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

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

County - UNION

Craft: Glazier PREVAILING WAGE RATE

	06/20/16
Foreman	W47.39 B23.26 T70.65
General Foreman	W49.39 B23.50 T72.89
Journeyman	W43.39 B22.78 T66.17

Craft: Glazier APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	30%	40%	50%	60%	70%	75%	80%	85%	90%	
4 Months										
Benefits	Intervals	1 to 3 =	6.51	Intervals	4 to 6 =	9.33	Intervals	7 to 9 =	11.67	

Ratio of Apprentices to Journeymen - 1:4

Craft: Glazier COMMENTS/NOTES

APPRENTICE RATE SCHEDULE FOR THOSE APPRENTICES ENTERING PROGRAM AS OF 5-1-14:

INTERVAL	PERIOD AND RATES							
6 Months	50%	55%	60%	65%	70%	75%	80%	90%
Benefits	8.10	8.10	10.34	10.34	11.51	11.51	14.62	14.62

Hazard/Height Pay: +\$1.00 per hour

FOREMAN REQUIREMENTS:

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

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

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

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

County - UNION

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

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

County - UNION

Craft: Heat & Frost Insulator

PREVAILING WAGE RATE

	10/17/16
Foreman	W52.52 B30.17 T82.69
General Foreman	W55.07 B31.28 T86.35
Journeyman	W51.24 B29.61 T80.85

Craft: Heat & Frost Insulator

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	23.77	28.19	34.05	39.96						
Benefits	17.83	21.08	23.21	25.16						

Ratio of Apprentices to Journeymen - 1:3

Craft: Heat & Frost Insulator

COMMENTS/NOTES

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

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

SHIFT DIFFERENTIAL:

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

OVERTIME:

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

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

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

County - UNION

Craft: Heat & Frost Insulator - Asbestos Worker

PREVAILING WAGE RATE

	10/17/16
Asbestos Helper Abatement	W33.52 B22.69 T56.21
Firestop/Hazmat	W26.93 B9.25 T36.18
Foreman	W52.52 B30.17 T82.69

Craft: Heat & Frost Insulator - Asbestos Worker

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	SEE	HEAT &	FROST	INSULAT OR						

Ratio of Apprentices to Journeymen - 1:3

Craft: Heat & Frost Insulator - Asbestos Worker

COMMENTS/NOTES

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

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

SHIFT DIFFERENTIALS:

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

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

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

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

County - UNION

Craft: Ironworker PREVAILING WAGE RATE

	08/02/16	07/01/17
Rod /Fence Foreman	W42.24 B44.27 T86.51	W0.00 B0.00 T88.51
Rod/Fence Journeyman	W39.24 B44.27 T83.51	W0.00 B0.00 T85.51
Structural Foreman	W44.54 B44.27 T88.81	W0.00 B0.00 T90.56
Structural Journeyman	W41.54 B44.27 T85.81	W0.00 B0.00 T87.56

Craft: Ironworker APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
6 Months	50%	60%		Yearly	70%	80%	90%			

Ratio of Apprentices to Journeymen - 1:4

Craft: Ironworker COMMENTS/NOTES

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

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

FOREMAN REQUIREMENTS:

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

SHIFT DIFFERENTIALS:

- When a 2 shift schedule is established, the first, or day shift , shall be established on an 8 hour basis .The second shift shall be established on an 8 hour basis, and receive the regular rate plus 15%.

- When a three shift schedule is established, the first shift shall be established on an 8 hour basis, the second shift on a 7.5 hour basis, and the third shift on a 7 hour basis. The first shift shall receive the regular hourly rate, the second shift shall receive the regular rate plus 15%, and the third shift shall receive the regular rate plus 20%.

- When there is no day shift, and a second or third shift is established, it shall be established on an 8 hour basis.

- When an irregular shift is established for the Ironworker (Structural) classification, the rate shall be paid at time and one-half the regular rate, inclusive of benefits. When an irregular shift is established for the Rod/Fence classification, the shift shall be established on an 8 hour basis and receive the regular rate, plus 20%.

OVERTIME:

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

County - UNION

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

- Four 10-hour days may be worked, Monday to Thursday, at straight time. Friday may be used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate, inclusive of benefits.

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

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

County - UNION

Craft: Laborer - Asbestos & Hazardous Waste Removal

PREVAILING WAGE RATE

	01/26/17
Journeyman (Handler)	W30.88 B21.91 T52.79

Craft: Laborer - Asbestos & Hazardous Waste Removal

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	18.53	21.62	24.70	27.79						
Benefits	20.26	for	all	intervals						

Ratio of Apprentices to Journeymen - *

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

Craft: Laborer - Asbestos & Hazardous Waste Removal

COMMENTS/NOTES

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

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

OVERTIME:

- Hours in excess of 8 per day, Monday through Saturday, and all hours on Sunday and holidays shall be paid at time and one-half the regular rate.
- When the owner (Public Body) mandates that work is to be performed on Sunday, those hours may be worked at straight time, up to 8 hours per day, up to 40 hours per week.
- Benefits on ALL overtime hours shall be paid at straight time.

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

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

County - UNION

Craft: Laborer - Building

PREVAILING WAGE RATE

	11/01/16	05/01/17	11/01/17	05/01/18
Class A Journeyman	W31.55	W0.00	W0.00	W0.00
	B27.22	B0.00	B0.00	B0.00
	T58.77	T59.67	T60.72	T62.57
Class B Journeyman	W31.05	W0.00	W0.00	W0.00
	B27.22	B0.00	B0.00	B0.00
	T58.27	T59.17	T60.22	T62.07
Class C Journeyman	W26.43	W0.00	W0.00	W0.00
	B27.22	B0.00	B0.00	B0.00
	T53.65	T54.55	T55.60	T57.45
Foreman	W35.46	W0.00	W0.00	W0.00
	B27.22	B0.00	B0.00	B0.00
	T62.68	T63.58	T64.63	T66.48
General Foreman	W39.38	W0.00	W0.00	W0.00
	B27.22	B0.00	B0.00	B0.00
	T66.60	T67.50	T68.55	T70.40

Craft: Laborer - Building

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	60%	70%	80%	90%						
6 Months										
Benefit	23.97	23.97	23.97	23.97						

Ratio of Apprentices to Journeymen - *

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

Craft: Laborer - Building

COMMENTS/NOTES

CLASS A: Specialist laborer including mason tender or concrete pour crew; scaffold builder (scaffolds up to 14 feet in height); operator of forklifts, Bobcats (or equivalent machinery), jack hammers, tampers, motorized tampers and compactors, vibrators, street cleaning machines, hydro demolition equipment, riding motor buggies, conveyors, burners; and nozzlemen on gunite work.

CLASS B: Basic laborer - includes all laborer work not listed in Class A or Class C.

CLASS C: Janitorial-type light clean-up work associated with the TURNOVER of a project, or part of a project, to the owner. All other clean-up work is Class B.

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

SHIFT DIFFERENTIALS:

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

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

County - UNION

on the basis of 8 hours pay for 7 hours worked. The day shift shall receive the regular rate, the second shift shall receive the regular rate plus an additional 10%, and the third shift shall receive the regular rate plus an additional 15%.

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

OVERTIME:

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

- Four 10-hour days may be worked Monday to Thursday, at straight time, with Friday used a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the regular rate.

- Benefits on ALL overtime hours shall be paid at time and one-half.

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

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

County - UNION

Craft: Laborer - Heavy & General

PREVAILING WAGE RATE

Rates are located in the
"Statewide" rate package

Craft: Laborer - Heavy & General

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
1000 Hours	60%	70%	80%	90%						
Benefit	19.53	for	all	intervals						

Ratio of Apprentices to Journeymen - *

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

Craft: Laborer - Heavy & General

COMMENTS/NOTES

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

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

County - UNION

Craft: Laborer-Residential and Modular Construction

PREVAILING WAGE RATE

	04/01/17
* Skilled Tradesman (only applies to Modular Construction)	W25.55 B5.45 T31.00
Foreman (person directing crew, regardless of his skill classification)	W25.55 B5.45 T31.00
Laborer	W21.55 B5.45 T27.00
Laborer (for single family and stand-alone duplex owned by single owner)	W17.05 B2.95 T20.00

Craft: Laborer-Residential and Modular Construction

APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
	As shown	800 hours	600 hours	600 hours						
wage & benefits	70%	80%	90%							

Ratio of Apprentices to Journeymen-

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

Craft: Laborer-Residential and Modular Construction

COMMENTS/NOTES

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

RESIDENTIAL CONSTRUCTION- All residential construction (not commercial), single-family, stand-alone duplex houses, townhouses and multi-family buildings of not more than four (4) floors, including basement levels. Please note the construction must be residential in nature for ALL FLOORS at an elevation of no more than FOUR (4) FLOORS, INCLUDING BASEMENT. In addition, barracks and dormitories are not considered residential projects.

MODULAR RESIDENTIAL CONSTRUCTION- all aspects of modular residential construction (not commercial) at the site of installation of structures of no more than four (4) stories, including all excavation and site preparation, footings and foundation systems whether poured on-site or prefabricated, all underground waterproofing, underground utilities, concrete slabs, sidewalks, driveways, paving, hardscape and landscaping. Please note the construction must be residential in nature for ALL STORIES at an elevation of no more than FOUR (4) STORIES. All work performed by the Set Crew (the crew of workers who set the modular boxes on the foundation), including the rigging, setting, attaching and assembly of all modules and structural members, preparation of the foundation to accept modules, such as sill plates, connection of all in-module and under-module connections including, but not limited to, plumbing, electrical, HVAC, fire suppression, CATS,

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

County - UNION

telephone, television/internet, and fiber optic, the building or installation of any porches or decks regardless of material or method of construction, the on-site installation of, or completion of any roof system, doors, windows and fenestrations, including flashing, gutter and soffit systems, waterproofing, insulation and interior and exterior trim work, and painting. Please note that modular construction does not include on-site stick built construction, tip up construction or panel built construction.

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

OVERTIME:

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

RECOGNIZED HOILDAYS:

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

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

County - UNION

Craft: Operating Engineer - Field Engineer

PREVAILING WAGE RATE

Rates are located in the
"Statewide" rate package

Craft: Operating Engineer - Field Engineer

APPRENTICE RATE SCHEDULE

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

Ratio of Apprentices to Journeymen - *

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

Craft: Operating Engineer - Field Engineer

COMMENTS/NOTES

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

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

County - UNION

Craft: Painter - Bridges

PREVAILING WAGE RATE

	05/01/16	05/01/17
Foreman	W57.38 B26.92 T84.30	W61.13 B25.67 T86.80
General Foreman	W59.38 B26.92 T86.30	W63.13 B25.67 T88.80
Journeyman	W52.38 B26.92 T79.30	W56.13 B25.67 T81.80

Craft: Painter - Bridges

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	40%	50%			60%	70%		80%	90%	
6 Months										
Benefits	Intervals	1 to 2 =	8.88	Intervals	3 to 4 =	10.81	Intervals	5 to 6 =	13.48	

Ratio of Apprentices to Journeymen - 1:4

Craft: Painter - Bridges

COMMENTS/NOTES

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

FOREMEN REQUIREMENTS:

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

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

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

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

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

County - UNION

Craft: Painter - Line Striping

PREVAILING WAGE RATE

	12/29/16
Apprentice (1st year)	W24.45 B10.75 T35.20
Apprentice (2nd year)	W28.45 B16.80 T45.25
Foreman (Charge Person)	W36.60 B17.08 T53.68
Journeyman 1 (at least 1 year of working exp. as a journeyman)	W32.33 B17.08 T49.41
Journeyman 2 (at least 2 years of working exp. as a journeyman)	W36.10 B17.08 T53.18

Craft: Painter - Line Striping

COMMENTS/NOTES

OVERTIME:

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

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

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

County - UNION

Craft: Painter - New Construction

PREVAILING WAGE RATE

	05/01/16	05/01/17
Foreman	W42.26 B22.94 T65.20	W44.39 B22.35 T66.74
General Foreman	W46.10 B23.40 T69.50	W48.43 B22.81 T71.24
Journeyman	W38.42 B22.49 T60.91	W40.36 B21.90 T62.26

Craft: Painter - New Construction

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	30%	40%	50%	60%	70%	75%	80%	85%	90%	
4 Months										
Benefits	Intervals	1 to 3 =	8.00	Intervals	4 to 6 =	10.00	Intervals	7 to 9 =	11.00	

Ratio of Apprentices to Journeymen - 1:4

Craft: Painter - New Construction

COMMENTS/NOTES

APPRENTICE RATE SCHEDULE FOR THOSE APPRENTICES ENTERING PROGRAM ON 5-1-14:

INTERVAL	PERIOD AND RATES							
6 Months	40%	45%	55%	65%	70%	75%	80%	90%
Benefits	8.00	8.00	10.00	10.00	11.00	11.00	14.00	14.00

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

FOREMEN REQUIREMENTS:

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

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

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

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

County - UNION

- Saturday or Sunday may be used to make up a day lost to inclement weather, at straight time.
- Four 10-hour days may be worked, at straight time, Monday through Friday.

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

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

County - UNION

Craft: Painter- Containment

PREVAILING WAGE RATE

	05/01/16	05/01/17
Journeyman	W33.43 B23.92 T57.35	W37.68 B22.92 T60.60

Craft: Painter- Containment

COMMENTS/NOTES

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

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

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

- Four 10-hour days may be worked, at straight time, Monday through Friday.

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

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

County - UNION

Craft: Painter-Elevated Water Tanks

PREVAILING WAGE RATE

	05/01/16	05/01/17
Foreman	W47.17 B24.17 T71.34	W50.92 B22.92 T73.84
General Foreman	W49.17 B24.17 T73.34	W52.92 B22.92 T75.84
Journeyman	W42.17 B24.17 T66.34	W45.92 B22.92 T68.84

Craft: Painter-Elevated Water Tanks

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	SEE	PAINTER	BRIDGES							

Craft: Painter-Elevated Water Tanks

COMMENTS/NOTES

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

FOREMEN REQUIREMENTS:

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

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

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

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

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

County - UNION

Craft: Painter-Structural Steel

PREVAILING WAGE RATE

	05/01/16	05/01/17
Foreman	W46.12 B24.51 T70.63	W49.87 B23.26 T73.13
General Foreman	W48.12 B24.51 T72.63	W51.87 B23.26 T75.13
Journeyman	W41.12 B24.51 T65.63	W44.87 B23.26 T68.13

Craft: Painter-Structural Steel

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	SEE	PAINTER	BRIDGES							

Craft: Painter-Structural Steel

COMMENTS/NOTES

These rates apply to: All work in power plants (any aspect). On steeples, on dams, on hangers, transformers, substations, etc. and on open steel, whether new or repaint. All new work (excluding traditional commercial painting work) in refineries, tank farms, water/sewerage treatment facilities and on pipelines.

FOREMEN REQUIREMENTS:

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

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

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

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

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

County - UNION

Craft: Paperhanger - New Construction

PREVAILING WAGE RATE

	05/01/16	05/01/17
Foreman	W43.25 B22.59 T65.84	W45.32 B21.44 T66.76
Journeyman	W39.32 B22.59 T61.91	W41.20 B22.01 T63.21

Craft: Paperhanger - New Construction

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
4 Months	30%	40%	50%	60%	70%	75%	80%	85%	90%	
Benefits	Intervals	1 to 3 =	8.00	Intervals	4 to 6 =	10.00	Intervals	7 to 9 =	11.00	

Ratio of Apprentices to Journeymen - 1:4

Craft: Paperhanger - New Construction

COMMENTS/NOTES

APPRENTICE RATE SCHEDULE FOR THOSE APPRENTICES ENTERING PROGRAM ON 5-1-14:

INTERVAL	PERIOD AND RATES								
6 Months	40%	45%	55%	65%	70%	75%	80%	90%	
Benefits	8.00	8.00	10.00	10.00	11.00	11.00	14.00	14.00	

FOREMEN REQUIREMENTS:

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

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

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

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

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

County - UNION

Craft: Paperhanger - Renovation

PREVAILING WAGE RATE

	05/01/16	05/01/17
Foreman	W32.39 B18.96 T51.35	W35.06 B18.53 T53.59
Journeyman	W29.45 B18.96 T48.41	W31.88 B18.53 T50.41

Craft: Paperhanger - Renovation

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	SEE	PAPER-	HANGER	NEW	CONSTR	TION				
					UC					

Ratio of Apprentices to Journeymen - 1:4

Craft: Paperhanger - Renovation

COMMENTS/NOTES

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

FOREMEN REQUIREMENTS:

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

OVERTIME:

- Hours in excess of 8 per day and 40 per week shall be paid at time and one-half the regular rate.

- Four 10-hour days may be worked, at straight time, Monday through Sunday.

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

County - UNION

ANY new construction.

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

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

County - UNION

Craft: Plasterer

PREVAILING WAGE RATE

See Bricklayer, Stone Mason Rates

Craft: Plasterer

COMMENTS/NOTES

See BRICKLAYER, STONE MASON Rates

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

County - UNION

Craft: Plumber PREVAILING WAGE RATE

	05/04/16
Foreman	W55.52 B32.99 T88.51
General Foreman	W59.12 B32.99 T92.11
Journeyman	W51.41 B32.99 T84.40

Craft: Plumber APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	30%	45%	55%	65%	75%					
Benefits	12.77	18.77	20.44	22.13	23.80					

Ratio of Apprentices to Journeymen - *

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

Craft: Plumber COMMENTS/NOTES

FOREMAN REQUIREMENTS:

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

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

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

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

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

County - UNION

Craft: Roofer PREVAILING WAGE RATE

	06/06/16
Foreman	W36.52 B25.03 T61.55
Journeyman	W35.52 B25.03 T60.55

Craft: Roofer APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
6 Months	14.21	17.76	21.31	24.86	28.42	31.97				
Benefits	2.10	2.10	22.28	22.28	22.28	22.28				

Ratio of Apprentices to Journeymen - *

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

Craft: Roofer COMMENTS/NOTES

Pitch: +.50 per hour

Mop Man: +.30 per hour

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

OVERTIME:

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

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

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

County - UNION

Craft: Sheet Metal Worker

PREVAILING WAGE RATE

	08/02/16	06/01/17
Foreman	W49.99 B38.73 T88.72	W0.00 B0.00 T91.22
General Foreman	W50.99 B38.73 T89.72	W0.00 B0.00 T92.22
Journeyman	W46.49 B38.73 T85.22	W0.00 B0.00 T87.72

Craft: Sheet Metal Worker

APPRENTICE RATE SCHEDULE

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

Ratio of Apprentices to Journeymen - 1:4

Craft: Sheet Metal Worker

COMMENTS/NOTES

FOREMAN REQUIREMENTS:

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

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

SHIFT DIFFERENTIAL:

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

OVERTIME:

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

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

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

County - UNION

Craft: Sprinkler Fitter

PREVAILING WAGE RATE

	01/01/17	07/01/17	01/01/18	07/01/18	01/01/19
Foreman	W62.93 B26.12 T89.05	W64.93 B26.12 T91.05	W64.38 B26.67 T91.05	W66.63 B26.67 T93.30	W66.08 B27.22 T93.30
General Foreman	W65.93 B26.12 T92.05	W67.93 B26.12 T94.05	W67.38 B26.67 T94.05	W69.63 B26.67 T96.30	W69.08 B27.22 T96.30
Journeyman	W58.83 B26.12 T84.95	W60.83 B26.12 T86.95	W60.28 B26.67 T86.95	W62.53 B26.67 T89.20	W61.98 B27.22 T89.20

Craft: Sprinkler Fitter

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	9.50	11.25	50%	55%	60%	65%	70%	75%	80%	85%
1000 Hours	9.50	11.25	50%	55%	60%	65%	70%	75%	80%	85%
Benefits	10.67	10.67	21.22	21.22	21.22	21.22	Intervals	7 to 10	Jourymn	Ben.

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

INTERVAL	PERIOD AND RATES									
1000 hours	25%	30%	40%	45%	55%	60%	70%	75%	85%	90%
Benefits	10.67	10.67	21.22	21.22	21.22	21.22	Intervals	7 to 10	receive	Journeyman Ben.

Craft: Sprinkler Fitter

COMMENTS/NOTES

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

FOREMAN REQUIREMENTS:

- The first Sprinkler Fitter on the job must be designated a Foreman.
- On any job having 12 or more Sprinkler Fitters, one must be designated a General Foreman.

SHIFT DIFFERENTIALS:

- Shift work must run for a minimum of 2 consecutive workdays.
- 2nd and 3rd shift shall receive an additional 15% of the regular rate, per hour.
- Any "off hours" shift starting at 8:00 PM or later shall receive an additional 25% of the regular rate, per hour.

OVERTIME:

The first 2 hours in excess of 8 per day, after the regular workday that are not shift work, Monday through Friday, shall be paid at time and one-half the regular rate. Hours worked in excess of 10 per day, Monday through Friday, and all hours on Saturday, Sunday and holidays, shall be paid double the regular rate.
Four 10 hour days may be worked, Monday through Thursday, at straight-time.

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

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

County - UNION

Craft: Tile Setter - Marble

PREVAILING WAGE RATE

	01/01/17	07/01/17	01/01/18
Tile Setter	W57.74	W58.18	W58.53
	B34.26	B35.27	B36.37
	T92.00	T93.45	T94.90

Craft: Tile Setter - Marble

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	50%	55%	65%	70%	75%	85%	90%	95%		
750 Hours										

Ratio of Apprentices to Journeymen - 1:4

Craft: Tile Setter - Marble

COMMENTS/NOTES

OVERTIME:

Hours in excess of 7 per day, Monday through Friday, and the first 7 hours on Saturdays shall be paid at time and one-half the regular rate, inclusive of benefits. Hours in excess of 7 on Saturdays, and all hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.

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

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

County - UNION

Craft: Tile Setter - Mosaic & Terrazzo

PREVAILING WAGE RATE

	01/01/17
Grinder or Assistant	W50.86 B34.14 T85.00
Mechanic	W52.46 B34.16 T86.62

Craft: Tile Setter - Mosaic & Terrazzo

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
750 Hours	50%	55%	65%	70%	75%	85%	90%	95%		

Ratio of Apprentices to Journeymen - 1:5

Craft: Tile Setter - Mosaic & Terrazzo

COMMENTS/NOTES

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

OVERTIME:

- Hours in excess of 7 per day, or before or after the regular workday, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.

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

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

County - UNION

Craft: Truck Driver

PREVAILING WAGE RATE

	11/01/16	05/01/17	11/01/17	05/01/18	11/01/18
Bucket, Utility, Pick-up, Fuel Delivery trucks	W36.40 B33.01 T69.41	W36.83 B33.78 T70.61	W36.83 B34.58 T71.41	W37.26 B35.40 T72.66	W37.66 B35.80 T73.46
Dump truck, Asphalt Distributor, Tack Spreader	W36.40 B33.01 T69.41	W36.83 B33.78 T70.61	W36.83 B34.58 T71.41	W37.26 B35.40 T72.66	W37.66 B35.80 T73.46
Euclid-type vehicles (large, off-road equipment)	W36.55 B33.01 T69.56	W36.98 B33.78 T70.76	W36.98 B34.58 T71.56	W37.41 B35.40 T72.81	W37.81 B35.80 T73.61
Helper on Asphalt Distributor truck	W36.40 B33.01 T69.41	W36.83 B33.78 T70.61	W36.83 B34.58 T71.41	W37.26 B35.40 T72.66	W37.66 B35.80 T73.46
Slurry Seal, Seeding/Fertilizing/ Mulching truck	W36.40 B33.01 T69.41	W36.83 B33.78 T70.61	W36.83 B34.58 T71.41	W37.26 B35.40 T72.66	W37.66 B35.80 T73.46
Straight 3-axle truck	W36.45 B33.01 T69.46	W36.88 B33.78 T70.66	W36.88 B34.58 T71.46	W37.31 B35.40 T72.71	W37.71 B35.80 T73.51
Tractor Trailer (all types)	W36.55 B33.01 T69.56	W36.98 B33.78 T70.76	W36.98 B34.58 T71.56	W37.41 B35.40 T72.81	W37.81 B35.80 T73.61
Vacuum or Vac-All truck (entire unit)	W36.40 B33.01 T69.41	W36.83 B33.78 T70.61	W36.83 B34.58 T71.41	W37.26 B35.40 T72.66	W37.66 B35.80 T73.46
Winch Trailer	W36.65 B33.01 T69.66	W37.08 B33.78 T70.86	W37.08 B34.58 T71.66	W37.51 B35.40 T72.91	W37.91 B35.80 T73.71

Craft: Truck Driver

COMMENTS/NOTES

BLENDED RATE:

When a truck driver is performing work on the site and also serving as a material delivery driver, the driver shall be paid a "blended rate" which shall be 80% of the above-listed wage rates, plus the full benefit rate. This rate shall be used when the driver "round robins" for a minimum of 6 hours during the work day.

HAZARDOUS WASTE REMOVAL:

- On hazardous waste removal work on a State designated hazardous waste site where the driver is in direct contact with hazardous materials and when personal protective equipment is required for respiratory, skin, and eye protection, the driver shall receive an additional \$3.00 per hour (with or without protective gear).
- A hazardous waste related certified worker at a designated hazardous waste site who is not working in a zone requiring level A, B or C personal protection shall receive an additional \$1.00 per hour.

TRUCK FOREMAN: \$.75 cents per hour above regular rate. Overtime shall be increased accordingly.

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

County - UNION

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

SHIFT DIFFERENTIAL:

- Shifts starting at 4:00 PM (2nd Shift): + \$2.50 per hour.
- Shifts starting at 12:00 AM (midnight/3rd Shift): time and one-half the hourly rate.
- Shifts starting at a time other than from 6:00 AM to 8:00 AM, when such hours are mandated by the project owner: + \$2.50 per hour.

OVERTIME:

- Hours in excess of 8 per day, or before or after the regular workday, Monday through Friday, that are not shift work, and all hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Employees may work four 10-hour days at straight time, Monday through Thursday, with Friday used as a make-up day for a lost day. If Friday is not a make-up day, then all hours on Friday shall be paid at time and one-half the hourly rate.

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

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

County - UNION

Craft: Truck Driver-Material Delivery Driver

PREVAILING WAGE RATE

	05/01/12
Driver	W22.90 B10.17 T33.07

Craft: Truck Driver-Material Delivery Driver

COMMENTS/NOTES

BLENDED RATE:

When a truck driver is performing work on the site and also serving as a material delivery driver, the driver shall be paid a "blended rate". See the "Truck Driver" craft for the blended rates.

Truck Foreman/Shop Steward: +\$0.25 per hour

SHIFT DIFFERENTIALS:

- 2nd Shift shall receive an additional \$0.50 per hour
- 3rd Shift shall receive time and one-half the hourly rate.

OVERTIME:

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

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day (Decoration Day), July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday. The day after Thanksgiving may be substituted for Veterans' Day.

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

County - UNION

Craft: Welder

PREVAILING WAGE RATE

Welder

Craft: Welder

COMMENTS/NOTES

Welders rate is the same as the craft to which the welding is incidental .

STATEWIDE RATES

OPERATING ENGINEERS **Rates Expiration Date : 06/30/2017**

{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, 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 : 06/30/2017**

Effective Dates:

02/15/2017

Rate	Fringe	Total
47.63	30.63	78.26

CLASSIFICATIONS:

- A-Frame
- Backhoe (combination)
- Boom Attachment on loaders (Except pipehook)
- Boring & Drilling Machine
- Brush Chopper, Brush Shredder, Tree Shredder
- 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 (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)
- Hydraulic Crane (10 tons & under)
- Hydro-Axe
- Hydro-Blaster
- Jack (screw, air hydraulic, power-operated unit, or console type, Except hand jack or pile load test type)
- Log Skidder

OPERATING ENGINEERS **Rates Expiration Date : 06/30/2017**

Effective Dates:

02/15/2017

Rate	Fringe	Total
47.63	30.63	78.26

CLASSIFICATIONS:

- 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)
- Vacuum Truck
- Whiphammer
- Winch Truck (hoisting)

OPERATING ENGINEERS **Rates Expiration Date : 06/30/2017**

Effective Dates:

02/15/2017

Rate	Fringe	Total
45.72	30.63	76.35

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 : 06/30/2017**

Effective Dates:

02/15/2017

Rate	Fringe	Total
45.72	30.63	76.35

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
- Grader & Motor Patrols
- Grout Pump
- Gunnite Machine (Excluding nozzle)
- Hammer - Vibratory (in conjunction with generator)
- Heavy Equipment Robotics - Operator/Technician
- Hoist (roof, tugger, aerial platform hoist, house car)
- Hopper
- Hopper Doors (power operated)
- Ladder (motorized)
- Laddervator

OPERATING ENGINEERS **Rates Expiration Date : 06/30/2017**

Effective Dates:

02/15/2017

Rate	Fringe	Total
45.72	30.63	76.35

CLASSIFICATIONS:

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)

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

Tug Captains

Tug Master (Power Boats)

OPERATING ENGINEERS **Rates Expiration Date : 06/30/2017**

Effective Dates:

02/15/2017

Rate	Fringe	Total
45.72	30.63	76.35

CLASSIFICATIONS:

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:

02/15/2017

Rate	Fringe	Total
42.38	30.63	73.01

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

Effective Dates:

02/15/2017

Rate	Fringe	Total
39.80	30.63	70.43

CLASSIFICATIONS:

Field Engineer - Rodman or Chainman

TERRITORY
ENTIRE STATE

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OPERATING ENGINEERS Rates Expiration Date : 06/30/2017

Effective Dates:

02/15/2017

Rate	Fringe	Total
49.96	30.63	80.59

CLASSIFICATIONS:

Lead Engineer, Foreman Engineer, Safety Engineer (minimum)

OPERATING ENGINEERS **Rates Expiration Date : 06/30/2017**

Effective Dates:

02/15/2017

Rate	Fringe	Total
49.22	30.63	79.85

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
- 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
- Pavement & Concrete Breaker (Superhammer & Hoe Ram)

OPERATING ENGINEERS **Rates Expiration Date : 06/30/2017**

Effective Dates:

02/15/2017

Rate	Fringe	Total
49.22	30.63	79.85

CLASSIFICATIONS:

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

OPERATING ENGINEERS **Rates Expiration Date : 06/30/2017**

Effective Dates:

02/15/2017

Rate	Fringe	Total
44.09	30.63	74.72

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 : 06/30/2017**

Effective Dates:

02/15/2017

Rate	Fringe	Total
44.09	30.63	74.72

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:

02/15/2017

Rate	Fringe	Total
51.04	30.63	81.67

CLASSIFICATIONS:

Helicopter Pilot/Engineer

Effective Dates:

02/15/2017

Rate	Fringe	Total
55.72	30.63	86.35

CLASSIFICATIONS:

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

Effective Dates:

02/15/2017

Rate	Fringe	Total
54.72	30.63	85.35

CLASSIFICATIONS:

Cranes, Derricks, Pile Driver (all types), over 100 tons and TOWER CRANE with boom (including jib and/or leads) from 100 ft. to 139 ft.

OPERATING ENGINEERS **Rates Expiration Date : 06/30/2017**

Effective Dates:

02/15/2017

Rate	Fringe	Total
51.22	30.63	81.85

CLASSIFICATIONS:

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

Effective Dates:

02/15/2017

Rate	Fringe	Total
53.72	30.63	84.35

CLASSIFICATIONS:

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

Effective Dates:

02/15/2017

Rate	Fringe	Total
50.22	30.63	80.85

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 : 06/30/2017

{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, 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:

02/15/2017

Rate	Fringe	Total
52.85	30.63	83.48

CLASSIFICATIONS:

Helicopter Pilot or Engineer

STRUCTURAL STEEL ERECTION **Rates Expiration Date : 06/30/2017**

Effective Dates:

02/15/2017

Rate	Fringe	Total
48.79	30.63	79.42

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

Effective Dates:

02/15/2017

Rate	Fringe	Total
46.13	30.63	76.76

CLASSIFICATIONS:

Aerial Platform Used On Hoists

Apprentice Engineer/Oiler with Compressor or Welding Machine

Captain (Power Boats)

Compressor (2 or 3 in battery)

Conveyor or Tugger Hoist

Elevator or House Car

Fireman

Forklift

Generator (2 or 3)

Maintenance Utility Man

Tug Master (Power Boats)

Welding Machines, Gas or Electric Converters on any type-2 or 3 in battery including diesels

STRUCTURAL STEEL ERECTION **Rates Expiration Date : 06/30/2017**

Effective Dates:

02/15/2017

Rate	Fringe	Total
44.60	30.63	75.23

CLASSIFICATIONS:

Compressor (Single)

Generators

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

Welding System, Multiple (Rectifier Transformer Type)

Effective Dates:

02/15/2017

Rate	Fringe	Total
42.84	30.63	73.47

CLASSIFICATIONS:

Assistant Engineer/Oiler

Drillers Helper

Field Engineer - Transit/Instrument Man

Maintenance Apprentice (Deckhand)

Maintenance Apprentice (Oiler)

Effective Dates:

02/15/2017

Rate	Fringe	Total
50.41	30.63	81.04

CLASSIFICATIONS:

Lead Engineer, Foreman Engineer, Safety Engineer (Minimum)

Effective Dates:

02/15/2017

Rate	Fringe	Total
39.80	30.63	70.43

CLASSIFICATIONS:

Field Engineer - Rodman or Chainman

STRUCTURAL STEEL ERECTION **Rates Expiration Date : 06/30/2017**

Effective Dates:

02/15/2017

Rate	Fringe	Total
49.55	30.63	80.18

CLASSIFICATIONS:

Field Engineer-Chief of Party

Effective Dates:

02/15/2017

Rate	Fringe	Total
57.74	30.63	88.37

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) over 100 tons and Tower Cranes.

Effective Dates:

02/15/2017

Rate	Fringe	Total
56.08	30.63	86.71

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), over 100 tons and Tower Crane.

Effective Dates:

02/15/2017

Rate	Fringe	Total
53.24	30.63	83.87

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:

02/15/2017

Rate	Fringe	Total
51.58	30.63	82.21

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.

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STRUCTURAL STEEL ERECTION Rates Expiration Date : 06/30/2017

Effective Dates:

02/15/2017

Rate	Fringe	Total
53.24	30.63	83.87

CLASSIFICATIONS:

Helicopter Co-Pilot

Helicopter Communications Engineer

TEST BORING PRELIMINARY TO CONSTRUCTION-SOUTH/WEST Rates Expiration Date : 06/30/2017

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, 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:

02/15/2017

Rate	Fringe	Total
49.22	30.63	79.85

CLASSIFICATIONS:

Driller

Effective Dates:

02/15/2017

Rate	Fringe	Total
42.38	30.63	73.01

CLASSIFICATIONS:

Driller's Helper

FREE AIR TUNNEL JOBS **Rates Expiration Date : 08/31/2017**

{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 \$2.50 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:

03/01/2017

Rate	Fringe	Total
41.50	29.03	70.53

CLASSIFICATIONS:

Walking Boss & Superintendent

Effective Dates:

03/01/2017

Rate	Fringe	Total
41.20	29.03	70.23

CLASSIFICATIONS:

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

FREE AIR TUNNEL JOBS **Rates Expiration Date : 08/31/2017**

Effective Dates:

03/01/2017

Rate	Fringe	Total
40.70	29.03	69.73

CLASSIFICATIONS:

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

Effective Dates:

03/01/2017

Rate	Fringe	Total
43.20	29.03	72.23

CLASSIFICATIONS:

Blaster

Effective Dates:

03/01/2017

Rate	Fringe	Total
40.15	29.03	69.18

CLASSIFICATIONS:

Top Labor Foreman

Effective Dates:

03/01/2017

Rate	Fringe	Total
39.80	29.03	68.83

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:

03/01/2017

Rate	Fringe	Total
39.65	29.03	68.68

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 : 08/31/2017

Effective Dates:

03/01/2017

Rate	Fringe	Total
39.15	29.03	68.18

CLASSIFICATIONS:

All Others (including Powder Watchman, Change House Attendant, Top Laborer)

DRILL FOR GROUND WATER SUPPLY **Rates Expiration Date : 06/30/2017**

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:

02/15/2017

Rate	Fringe	Total
47.97	30.63	78.60

CLASSIFICATIONS:

Driller

Effective Dates:

02/15/2017

Rate	Fringe	Total
41.13	30.63	71.76

CLASSIFICATIONS:

Driller's Helper

OPERATING ENGINEERS MARINE-DREDGING **Rates Expiration Date : 09/30/2018**

NOTE: 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:

10/01/2016			10/01/2017
Rate	Fringe	Total	Total
37.25	13.78	51.03	52.51

CLASSIFICATIONS:

Lead Dredgerman, Operator, Leverman

Licensed Tug Operator (over 1000 HP)

Effective Dates:

10/01/2016			10/01/2017
Rate	Fringe	Total	Total
32.22	13.38	45.60	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:

10/01/2016			10/01/2017
Rate	Fringe	Total	Total
30.33	13.23	43.56	44.86

CLASSIFICATIONS:

Certified Welder

OPERATING ENGINEERS MARINE-DREDGING **Rates Expiration Date : 09/30/2018**

Effective Dates:

10/01/2016			10/01/2017
Rate	Fringe	Total	Total
29.50	12.86	42.36	43.64

CLASSIFICATIONS:

Mate, Drag Barge Operator, Steward, Assistant Fill Placer

Welder

Effective Dates:

10/01/2016			10/01/2017
Rate	Fringe	Total	Total
28.54	12.78	41.32	42.58

CLASSIFICATIONS:

Boat Operator

Effective Dates:

10/01/2016			10/01/2017
Rate	Fringe	Total	Total
23.71	12.10	35.81	36.92

CLASSIFICATIONS:

Shoreman, Deckhand, Rodman, Scowman

MICROSURFACING/SLURRY SEAL Rates Expiration Date : 02/28/2018

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

TERRITORY
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MICROSURFACING/SLURRY SEAL Rates Expiration Date : 02/28/2018

Effective Dates:

03/01/2017

Rate	Fringe	Total
30.30	21.27	51.57

CLASSIFICATIONS:

Cleaner, Taper

ASPHALT LABORERS - SOUTH Rates Expiration Date : 08/31/2017

"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 \$2.50 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:

03/01/2017

Rate	Fringe	Total
41.00	29.03	70.03

CLASSIFICATIONS:

Paving Foreman

Effective Dates:

03/01/2017

Rate	Fringe	Total
39.55	29.03	68.58

CLASSIFICATIONS:

Head Raker

Effective Dates:

03/01/2017

Rate	Fringe	Total
39.40	29.03	68.43

CLASSIFICATIONS:

Raker, Screedman, Luteman

TERRITORY
ENTIRE STATE

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

ASPHALT LABORERS - SOUTH Rates Expiration Date : 08/31/2017

Effective Dates:

03/01/2017

Rate	Fringe	Total
39.15	29.03	68.18

CLASSIFICATIONS:

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

Effective Dates:

03/01/2017

Rate	Fringe	Total
39.25	29.03	68.28

CLASSIFICATIONS:

Milling Controller

Effective Dates:

03/01/2017

Rate	Fringe	Total
39.45	29.03	68.48

CLASSIFICATIONS:

Traffic Control Coordinator

TEST BORING PRELIMINARY TO CONSTRUCTION-NORTH **Rates Expiration Date : 10/16/2018**

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:

11/01/2016			10/17/2017
Rate	Fringe	Total	Total
30.96	24.76	55.72	57.17

CLASSIFICATIONS:

Helper (4th year helper)

Effective Dates:

11/01/2016			10/17/2017
Rate	Fringe	Total	Total
38.82	24.76	63.58	65.24

CLASSIFICATIONS:

Driller

Effective Dates:

11/01/2016			10/17/2017
Rate	Fringe	Total	Total
44.64	24.76	69.40	71.28

CLASSIFICATIONS:

Foreman

HEAVY & GENERAL LABORERS - NORTH Rates Expiration Date : 08/31/2017

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 \$2.50 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:

03/01/2017

Rate	Fringe	Total
38.75	29.03	67.78

CLASSIFICATIONS:

"D" Rate:

basic, landscape, asphalt, slurry seal, or railroad track laborer; utility meter installer; traffic director/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:

03/01/2017

Rate	Fringe	Total
39.45	29.03	68.48

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 : 08/31/2017**

Effective Dates:

03/01/2017

Rate	Fringe	Total
39.70	29.03	68.73

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:

03/01/2017

Rate	Fringe	Total
43.25	29.03	72.28

CLASSIFICATIONS:

"A" Rate:

blaster

Effective Dates:

03/01/2017

Rate	Fringe	Total
41.00	29.03	70.03

CLASSIFICATIONS:

"FOREMAN" Rate:

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

Effective Dates:

03/01/2017

Rate	Fringe	Total
42.00	29.03	71.03

CLASSIFICATIONS:

"GENERAL FOREMAN" Rate

HEAVY & GENERAL LABORERS - SOUTH **Rates Expiration Date : 08/31/2017**

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 \$2.50 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:

03/01/2017

Rate	Fringe	Total
38.75	29.03	67.78

CLASSIFICATIONS:

basic, landscape, or railroad track laborer; utility meter installer; traffic director/flagman; salamander tender; pitman; dumpman; rakers or tampers on cold patch work; wrappers or coaters of pipe; waterproofers

tree cutter, timberman

Effective Dates:

03/01/2017

Rate	Fringe	Total
39.45	29.03	68.48

CLASSIFICATIONS:

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

HEAVY & GENERAL LABORERS - SOUTH **Rates Expiration Date : 08/31/2017**

Effective Dates:

03/01/2017

Rate	Fringe	Total
39.45	29.03	68.48

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:

03/01/2017

Rate	Fringe	Total
39.45	29.03	68.48

CLASSIFICATIONS:

wagon or directional drill operator; drill master

Effective Dates:

03/01/2017

Rate	Fringe	Total
43.25	29.03	72.28

CLASSIFICATIONS:

blaster

Effective Dates:

03/01/2017

Rate	Fringe	Total
41.00	29.03	70.03

CLASSIFICATIONS:

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

Effective Dates:

03/01/2017

Rate	Fringe	Total
42.00	29.03	71.03

CLASSIFICATIONS:

general foreman

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

HEAVY & GENERAL LABORERS - SOUTH Rates Expiration Date : 08/31/2017

Effective Dates:

03/01/2017

Rate	Fringe	Total
39.70	29.03	68.73

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 : 06/04/2017

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:

06/01/2016

Rate	Fringe	Total
54.56	26.59	81.15

CLASSIFICATIONS:

Pipeline Journeyman Welder

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NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
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PIPELINE - MAINLINE TRANSMISSION Rates Expiration Date : 06/04/2017

Effective Dates:

06/01/2016

Rate	Fringe	Total
54.56	26.59	81.15

CLASSIFICATIONS:

Pipeline Journeyman

Effective Dates:

06/01/2016

Rate	Fringe	Total
32.99	18.73	51.72

CLASSIFICATIONS:

Pipeline Helper

PIPELINE - GAS DISTRIBUTION **Rates Expiration Date : 10/31/2017**

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:

11/01/2016

Rate	Fringe	Total
57.58	21.55	79.13

CLASSIFICATIONS:

Pipeline Journeyman Welder

Effective Dates:

11/01/2016

Rate	Fringe	Total
57.58	21.55	79.13

CLASSIFICATIONS:

Pipeline Journeyman

Effective Dates:

11/01/2016

Rate	Fringe	Total
37.16	15.74	52.90

CLASSIFICATIONS:

Pipeline Helper

ASPHALT LABORERS- NORTH **Rates Expiration Date : 08/31/2017**

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 \$2.50 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:

03/01/2017

Rate	Fringe	Total
41.00	29.03	70.03

CLASSIFICATIONS:

Asphalt Foreman

Effective Dates:

03/01/2017

Rate	Fringe	Total
39.70	29.03	68.73

CLASSIFICATIONS:

Asphalt Screedman

Effective Dates:

03/01/2017

Rate	Fringe	Total
39.45	29.03	68.48

CLASSIFICATIONS:

Asphalt Raker or Lute Man

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

ASPHALT LABORERS- NORTH Rates Expiration Date : 08/31/2017

Effective Dates:

03/01/2017

Rate	Fringe	Total
38.75	29.03	67.78

CLASSIFICATIONS:

Asphalt Laborer

ELECTRICIAN- UTILITY WORK (NORTH) **Rates Expiration Date : 12/03/2017**

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:

12/04/2016

Rate	Fringe	Total
52.26	35.01	87.27

CLASSIFICATIONS:

Chief Lineman

Effective Dates:

12/04/2016

Rate	Fringe	Total
49.31	33.03	82.34

CLASSIFICATIONS:

Journeyman Lineman

ELECTRICIAN- UTILITY WORK (NORTH) Rates Expiration Date : 12/03/2017

Effective Dates:

12/04/2016

Rate	Fringe	Total
49.31	33.03	82.34

CLASSIFICATIONS:

Special License Operator

Effective Dates:

12/04/2016

Rate	Fringe	Total
48.81	32.70	81.51

CLASSIFICATIONS:

Transit Man

Effective Dates:

12/04/2016

Rate	Fringe	Total
47.33	31.71	79.04

CLASSIFICATIONS:

Line Equipment Operator

Effective Dates:

12/04/2016

Rate	Fringe	Total
41.42	27.75	69.17

CLASSIFICATIONS:

Dynamite Man

Effective Dates:

12/04/2016

Rate	Fringe	Total
58.18	38.98	97.16

CLASSIFICATIONS:

General Foreman

Effective Dates:

12/04/2016

Rate	Fringe	Total
56.70	37.98	94.68

CLASSIFICATIONS:

Assistant General Foreman

ELECTRICIAN- UTILITY WORK (NORTH) Rates Expiration Date : 12/03/2017

Effective Dates:

12/04/2016

Rate	Fringe	Total
55.22	36.99	92.21

CLASSIFICATIONS:

Line Foreman

Effective Dates:

12/04/2016

Rate	Fringe	Total
39.94	26.75	66.69

CLASSIFICATIONS:

Straight Light Mechanical Leader

Effective Dates:

12/04/2016

Rate	Fringe	Total
37.97	25.43	63.40

CLASSIFICATIONS:

Groundman Winch Operator

Effective Dates:

12/04/2016

Rate	Fringe	Total
37.97	25.43	63.40

CLASSIFICATIONS:

Groundman Truck Operator

Effective Dates:

12/04/2016

Rate	Fringe	Total
37.47	25.10	62.57

CLASSIFICATIONS:

Straight Light Mechanic

Effective Dates:

12/04/2016

Rate	Fringe	Total
37.47	25.10	62.57

CLASSIFICATIONS:

Line Equipment Mechanic

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

ELECTRICIAN- UTILITY WORK (NORTH) Rates Expiration Date : 12/03/2017

Effective Dates:

12/04/2016

Rate	Fringe	Total
32.05	21.47	53.52

CLASSIFICATIONS:

Groundman 2nd Year

Effective Dates:

12/04/2016

Rate	Fringe	Total
29.58	19.81	49.39

CLASSIFICATIONS:

Groundman 1st Year

Effective Dates:

12/04/2016

Rate	Fringe	Total
48.81	32.70	81.51

CLASSIFICATIONS:

Line Equipment Foreman

ELECTRICIAN- UTILITY WORK (SOUTH) **Rates Expiration Date : 12/02/2017**

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:

12/04/2016

Rate	Fringe	Total
58.38	45.19	103.57

CLASSIFICATIONS:

General Foreman

ELECTRICIAN- UTILITY WORK (SOUTH) Rates Expiration Date : 12/02/2017

Effective Dates:

12/04/2016

Rate	Fringe	Total
52.00	41.37	93.37

CLASSIFICATIONS:

Foreman

Effective Dates:

12/04/2016

Rate	Fringe	Total
49.26	39.74	89.00

CLASSIFICATIONS:

Small Job Foreman

Effective Dates:

12/04/2016

Rate	Fringe	Total
45.61	37.54	83.15

CLASSIFICATIONS:

Heavy Equipment Operator

Effective Dates:

12/04/2016

Rate	Fringe	Total
45.61	37.54	83.15

CLASSIFICATIONS:

Cable Splicer

Effective Dates:

12/04/2016

Rate	Fringe	Total
45.61	37.54	83.15

CLASSIFICATIONS:

Journeyman Lineman

Effective Dates:

12/04/2016

Rate	Fringe	Total
45.61	37.54	83.15

CLASSIFICATIONS:

Journeyman Welder

ELECTRICIAN- UTILITY WORK (SOUTH) Rates Expiration Date : 12/02/2017

Effective Dates:

12/04/2016

Rate	Fringe	Total
45.61	37.54	83.15

CLASSIFICATIONS:

Journeyman Painter

Effective Dates:

12/04/2016

Rate	Fringe	Total
36.49	32.08	68.57

CLASSIFICATIONS:

Light Equipment Operator

Effective Dates:

12/04/2016

Rate	Fringe	Total
31.93	29.37	61.30

CLASSIFICATIONS:

Groundman Truck Driver

Effective Dates:

12/04/2016

Rate	Fringe	Total
29.65	27.99	57.64

CLASSIFICATIONS:

Groundman 3rd Year

Effective Dates:

12/04/2016

Rate	Fringe	Total
27.37	26.66	54.03

CLASSIFICATIONS:

Groundman 2nd Year

Effective Dates:

12/04/2016

Rate	Fringe	Total
25.09	25.29	50.38

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 : 12/02/2017

Effective Dates:

12/04/2016

Rate	Fringe	Total
20.07	22.27	42.34

CLASSIFICATIONS:

Flagman

HEAVY & GENERAL LABORERS- NEW TRANS HUDSON TUNNELS Rates Expiration Date : 08/31/2017

****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 \$2.50 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:

03/01/2017

Rate	Fringe	Total
62.25	29.03	91.28

CLASSIFICATIONS:

Walking Boss & Superintendent

Effective Dates:

03/01/2017

Rate	Fringe	Total
61.80	29.03	90.83

CLASSIFICATIONS:

Heading Foreman, Shaft Foreman, Rod Foreman, Electrical Foreman, Rigging Foreman

HEAVY & GENERAL LABORERS- NEW TRANS HUDSON TUNNELS **Rates Expiration Date : 08/31/2017**

Effective Dates:

03/01/2017

Rate	Fringe	Total
61.05	29.03	90.08

CLASSIFICATIONS:

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

Effective Dates:

03/01/2017

Rate	Fringe	Total
64.80	29.03	93.83

CLASSIFICATIONS:

Blaster

Effective Dates:

03/01/2017

Rate	Fringe	Total
60.23	29.03	89.26

CLASSIFICATIONS:

Top Labor Foreman

Effective Dates:

03/01/2017

Rate	Fringe	Total
59.70	29.03	88.73

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:

03/01/2017

Rate	Fringe	Total
59.48	29.03	88.51

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 : 08/31/2017

Effective Dates:

03/01/2017

Rate	Fringe	Total
58.73	29.03	87.76

CLASSIFICATIONS:

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

SUPPLEMENTAL SPECIFICATIONS

Supplemental Specifications

FOR

CEDAR BROOK PARK

IN THE CITY OF PLAINFIELD

COUNTY OF UNION

AUTHORIZATION OF CONTRACT

The contract for this project is authorized by the provisions of local public contracts law, NJSA 40A: 11-1 et seq.

SPECIFICATIONS TO BE USED

The 2007 Standard Specifications for Road and Bridge Construction, of the New Jersey Department of Transportation and as amended herein, shall govern the construction of this project.

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/wagehour_index.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

Award of contract and subletting will not be permitted to, materials will not be permitted from, and use of equipment will not be permitted that is owned and/or operated by, firms and individuals included in the report of suspensions, debarments and disqualifications of firms and individuals as maintained by the Department of the Treasury, General Services Administration, CN-039, Trenton NJ 08625 (609-292-5400).

Payment for a pay item in the proposal includes all the compensation that will be made for the work of that item as described in the contract documents unless the "measurement and payment" clause provides that certain work essential to that item will be paid for under another pay item.

Whenever any section, subsection, subpart or subheading is amended by such terms as changed to, deleted or added it is construed to mean that it amends that section, subsection, subpart or subheading of the 2007 Standard Specifications unless otherwise noted.

Whenever reference to page number is made, it is construed to refer to the 2007 Standard Specifications unless otherwise noted.

Henceforth in this supplementary specification whenever reference to the State, Department, ME, RE, Inspector, Engineer or Owner 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.

Schedule site visits with the Union County Engineer.

The contractor is responsible for site safety and for preventing and prohibiting access to the construction site by the general public. The contractor shall follow all applicable OSHA, federal, state and local safety requirements.

DIVISION 100 - GENERAL PROVISIONS

THE FOLLOWING SECTIONS OF THE STANDARD SPECIFICATIONS ARE DELETED:

SECTION 101 - GENERAL INFORMATION

SECTION 102 - BIDDING REQUIREMENTS AND CONDITIONS

SECTION 103 - AWARD AND EXECUTION OF CONTRACT

SECTION 104 - SCOPE OF WORK

SECTION 105 - CONTROL OF WORK

SECTION 106 - CONTROL OF MATERIAL

SECTION 107 - LEGAL RELATIONS AND

SECTION 108 - PROSECUTION AND COMPLETION

SECTION 109 - MEASUREMENT AND PAYMENT

THESE SECTIONS OF THE STANDARD SPECIFICATIONS ARE CHANGED TO THE REQUIREMENTS OF THE CONTRACTING AGENCY.

DIVISION 150 – CONTRACT REQUIREMENTS

THE FOLLOWING SECTIONS OF THE STANDARD SPECIFICATIONS ARE DELETED:

SECTION 151 – PERFORMANCE BOND AND PAYMENT BOND

SECTION 152 - INSURANCE

SECTION 153 – PROGRESS SCHEDULE

THESE SECTIONS OF THE STANDARD SPECIFICATIONS ARE CHANGED TO THE REQUIREMENTS OF THE CONTRACTING AGENCY.

SECTION 154 – MOBILIZATION

154.01 DESCRIPTION

The Following Is Added:

Prior to the commencement of construction, the contractor shall call the underground plant location service at toll free number (800) 272-1000 and request a utility mark-out seventy-two (72) hours in advance of any excavations. If a particular utility company does not participated with this service, then the contractor shall request a mark-out in writing with the affected utility company.

Mobilization shall also consist of examination and acceptance of site. The contractor shall accept the site as found upon commencement of work. The owner assumes no responsibility for the continuation of conditions existing at the time of examination by the contractor or thereafter.

Prior to any site disturbance the contractor shall field verify the existing topography and advise the supervising engineer in writing of any discrepancies. Should discrepancies arise, the engineer reserves the right to provide a change of plan within seven (7) working days of said notification. The contractor shall make no claims if a change of plan is necessary.

Prior to any site disturbance the contractor shall install temporary construction fencing, silt fencing, and construction driveway per the plans and as directed in the field by the Engineer.

154.04 MEASUREMENT AND PAYMENT.

The entire subsection is replaced by the following:

MOBILIZATION is not included in the Proposal, include costs in the various Items scheduled in the Proposal.

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 is not included in the Proposal, include costs in the various items scheduled 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 also 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.

The Entire Subsection Is Replaced By The Following:

15. Construction Driveway. To minimize tracking of dirt and other materials onto existing roadways, provide a construction driveway where shown on the approved Soil Erosion And Sediment Control Plan. The contractor shall only enter and exit the work site using the construction driveway as located on the approved soil erosion and sediment control plan. The construction driveway shall conform to the requirements for stabilized construction access provided in the Standards For Soil Erosion And Sediment Control In New Jersey. The construction access shall be a minimum of six inches (6”) thick and the stone shall be 1 ½” to 2 ½” crushed angular stone. The contractor shall maintain the construction driveway by top dressing or by excavating and top dressing as directed by the engineer. When the driveway is no longer required, remove the driveway, backfill to the adjacent ground elevation, and restore the disturbed area to the original condition.

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:

The Contractor shall coordinate with the local Police Department. The Contractor shall submit traffic control plans to the local Police Department for review and approval prior to the start of work. Traffic control plans shall include at a minimum, the following situations:

1. Road Closed
2. Lane Closed
3. Shoulder Closed

The Contractor is responsible for all traffic control on the project. No additional cost shall be incurred by the owner as a result of traffic control or police coordination. Cost for traffic control is not included in the Proposal, but included in the various items scheduled 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
-------------------------------------	----------------------

THE FOLLOWING ARE ADDED TO TABLE 160.03.01-1

Items	Fuel Usage Factor
NON-VEGETATIVE SURFACE, HOT MIX ASPHALT	2.50 Gallons per Ton
COLOR-COATED NON-VEGETATIVE SURFACE, HOT MIX ASPHALT	2.50 Gallons per Ton

160.03.02 Asphalt Price Adjustment

NOTE 1 OF THE THIRD PARAGRAPH IS CHANGED TO:

1. The Department will determine the weight of asphalt binder for price adjustment by multiplying the percentage of new asphalt binder in the approved job mix formula by the weight of the item containing asphalt binder. If a Hot Mix Asphalt item has a payment unit other than ton, the Department will apply an appropriate conversion factor to determine the number of tons used.

THE FOURTH PARAGRAPH IS CHANGED TO:

For TACK COAT and PRIME COAT, the Department will calculate asphalt price adjustments by the following formula:

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

Where:

A = Asphalt Price Adjustment

B = Bid Price for Tack Coat/Prime Coat

MA = Monthly Asphalt Price Index

BA = Basic Asphalt Price Index

C = Petroleum Content of the Tack Coat and Prime Coat in Percent by Volume:

Use 100% for cutbacks and Tack Coat 64-22

60% for Polymer Modified Tack Coat

60% for RS or similar type emulsions

M = Percentage of Bid Price Applicable to Materials Only: Use 82%

G = Gallons of Tack Coat and Prime Coat Furnished and Applied

160.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEMS' PAY UNITS ARE REVISED TO:

Item

FUEL PRICE ADJUSTMENT

ASPHALT PRICE ADJUSTMENT

Pay Unit

DOLLAR

DOLLAR

SECTION 161 – FINAL CLEANUP

161.04 MEASUREMENT AND PAYMENT.

The entire subsection is replaced by the following:

FINAL CLEANUP is not included in the proposal, but shall be included in the costs for various Items scheduled in the Proposal.

DIVISION 200 – EARTHWORK

SECTION 201 – CLEARING SITE

201.01 DESCRIPTION. The following is added:

The Item CLEARING SITE shall also include, but not be limited to, the following work: removal and proper disposal of the existing curbs, sidewalks, driveways, pavement, sub-base, slabs, concrete and hot mix asphalt materials, trees, tree stumps, roots, grass, root mat, bushes, flowers, fences, railroad ties and the removal, relocation and/or resetting of fences, signs, curb stops, water service boxes, water valves, gas valves, sanitary sewer cleanouts, etc., that are denoted on the plans to be reset or relocated and/or as directed in the field by the Engineer. The costs and work associated with the removal and disposal of timbers, cobble stones or rock/stone that may be encountered during excavation or other various improvements during this project, shall be included in clearing site.

The Item CLEARING SITE shall also include coordination with Utility Companies as necessary to reset, relocate, or removal utility structures as specified on the plans.

The Contractor is responsible for securing all site features that are to remain, and repair any damages at no additional cost to the Owner.

The Item CLEARING SITE shall also include all work depicted within the “Existing Conditions and Demolition Plan”

The Item CLEARING SITE shall also include the removal of all trees, roots, stumps, grass, root mat, and vegetation necessary to construct the proposed improvements.

The Item CLEARING SITE shall also include 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.

The Item CLEARING SITE shall also include all necessary measures to comply with the Flood Hazard Area Permit as shown in Appendix B.

The Item CLEARING SITE shall also include the transplanting of any trees delineated on the Construction Plans.

201.03.01 CLEARING SITE

A. Preparation.

The Following Is Added:

As stated in herein at section 154 – MOBILIZATION, prior to the commencement of construction, the contractor shall call the underground plant location service at toll free number (800) 272-1000 and request a utility mark-out seventy-two (72) hours in advance of any excavations.

The contractor shall assume all responsibility for existence and locations of all overhead and subsurface utilities. Their absence on drawings is not intended to permit interference or the lack of such items.

If inactive utility service connections are encountered, whether described on the project plans or not, the contractor shall remove, cap or plug or otherwise discontinue inactive services which interfere with the execution of proposed work. If underground utilities are removed, then all respective trenches shall be properly backfilled and compacted.

B. Clearing and Grubbing.

The Following Is Added:

The contractor will not be permitted to bury/or dispose of any debris resulting from clearing operations on-site. All materials and debris accumulated from the site clearing operation, including stumps and trees, shall be properly removed and disposed of by the contractor off-site.

Should any foundations/structures be encountered within the limits of the project, the contractor shall remove the same to a depth of two (2) feet below finished elevations and backfill excavation with suitable material. No additional compensation will be made for this work.

The contractor shall save and protect all existing trees and vegetation which are not to be disturbed. Prior to any excavation operation, the contractor shall inspect the site and take notice of trees to remain after construction. All trees to be saved shall be properly protected before machine excavation, grading and/or landscape operations commence. No machine grading operations shall be constructed within 6 feet of any tree that is to remain.

201.04 MEASUREMENT AND PAYMENT.

The Entire Subsection Is Replaced By The Following:

No separate payment shall be made for resetting existing signs with new posts and all costs associated with new posts and resetting of signs shall be included in the lump sum price bid for the Item described below.

All costs associated with work described under the Items CLEARING SITE shall be included in the lump sum price bid for the Items described below and will be paid in % of job completed.

The Following Pay Item is Described:

<u>Item</u>	<u>Pay Unit</u>
Clearing Site	Lump Sum

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.

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 various Pay Items scheduled in the Proposal.

The Following Pay Item is Described:

<u>Item</u>	<u>Pay Unit</u>
Excavation, Borrow Excavation and Grading, Unclassified	Lump Sum

DIVISION 300 – SUB-BASE AND BASE COURSES

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
No. 200

15-65
5-15

302.04 MEASUREMENT AND PAYMENT.

The entire subsection is replaced by the following:

DENSE-GRADED AGGREGATE BASE COURSE, 6" THICK, shall only be measured for payment where constructed in accordance with full depth asphalt pavement as directed on the plan set. No separate payment shall be made for aggregate courses not pertaining to full depth pavement repair, include various other aggregate course costs in various Items scheduled in the Proposal.

COURSE AGGREGATE, NO. 57, 4" THICK 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.

COARSE AGGREGATE NO. 57, 6" THICK shall be measured by the cubic yard of stone installed within the proposed parking area. Any No. 57" Clean Stone installed as a part of the trench or subgrade detention system cross section for proposed drainage pipes, shall not be measured for payment and shall be included in the related drainage 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:

<i>Item</i>	<i>Pay Unit</i>
Course Aggregate, No. 57, 4" Thick	Cubic Yard
Course Aggregate, No. 57, 6" Thick	Cubic Yard

DIVISION 400 - SURFACE COURSES

SECTION 401 – HOT MIX ASPHALT (HMA) COURSES

The following is added:

401.03.03 HMA Courses.

H. Air Void Requirements.

This subsection is renamed and replaced by the following:

H AIR VOIDS ACCEPTANCE PLAN

Pavement lots are defined as approximately 15,000 square yards of pavement in Surface area. If pavement lot area is less than 5000 square yards, the Regional District Local Aid Office may waive the air voids requirements.

The RE will designate an independent testing agency (Laboratory) to perform the quality assurance sampling, testing and analysis. The Laboratory is required to be accredited by the AASHTO Accreditation Program (www.amrl.net). The Laboratory's accreditation must include AASHTO T 166 and AASHTO T 209.

The Laboratory Technician who performs the quality assurance sampling shall be certified by the Society of Asphalt Technologists of New Jersey as an Asphalt Plant Technologist, Level 1.

The Laboratory will determine air voids from 5 (Five) 6 inch diameter cores taken from each lot in random locations within the traveled way and at least one core in each travel lane. The Laboratory will determine air voids of cores from the values for the maximum specific gravity of the mix and the bulk specific gravity of the core. The Laboratory will determine the maximum specific gravity of the mix according to NJDOT B-3 and AASHTO T 209, except that minimum sample size may be waived in order to use a 6-inch diameter core sample. The Laboratory will determine the bulk specific gravity of the compacted mixture by testing each core according to AASHTO T 166.

The Laboratory will calculate the in-place air voids of each completed lot outside the acceptable range of 2 percent air voids to 8 percent air voids.

The RE will assess a reduction in lot due to nonconformance to air voids according to the Table 401.03.03-3 on the following page.

Lot Average Air Void Value (Five Samples)	Reduction Per Lot (Percent of Lot)
0.0 to 1.9	10
2.0 to 8.0	0
8.1 to 9.0	5
9.1 to 10.0	15
10.1 to 12.0	30
Over 12.0	Remove & Replace

If the average air voids for the lot is greater than 12.0 percent, remove and replace the lot. The replacement work is subject to the same requirements as the initial work.

J. Ride Quality Requirements.

This subsection is renamed and replaced by the following:

J SURFACE COURSE RIDEABILITY REQUIREMENTS

The paving operation is acceptable if the surface course is in substantial conformity with 1/8 inch in 10 feet surface tolerance. Should the surface be found not in conformity, the Resident Engineer may direct that paving operations be discontinued until mutually acceptable paving methods or equipment is utilized. Additional compensation, extension of contract time, or other concession will not be permitted because of revised methods or equipment necessary to produce a hot mix asphalt surface in substantial conformity with a 1/8 inch in 10 feet surface tolerance.

I THICKNESS REQUIREMENTS

IN NO INSTANCE WILL A COMPACTED AVERAGE THICKNESS OF LESS THAN 1.25 INCHES BE ACCEPTABLE.

401.04 MEASUREMENT AND PAYMENT.

The entire subsection is replaced by the following:

Separate payment for HOT MIX ASPHALT (HMA) COURSES installed to provide a temporary surface is not included in the proposal, include costs in the various Items scheduled in the Proposal.

The surface course thickness may be thicker than 3” to meet grades depicted within the grading plan.

Existing area under the porous hot mix asphalt shall NOT be compacted or subject to excessive construction equipment traffic. It shall be proof rolled. Compaction of the surface course shall take place when the surface is cool enough to resist a 10-ton roller. One or two passes is all that will be required for proper compaction. Over compaction and/or rolling will damage the porous asphalt and will cause a reduction in the porosity of the base.

The surface will be tested for smoothness and even drainage using a ten-foot to centerline of paved area. Surface will not be accepted if gaps or ridges exceed 3/16 or an inch.

Contractor shall perform a water test on the finished surface by applying sufficient amounts of water to ascertain drainage patterns on the newly paved porous surface. Waster used for the test shall be clean, free of suspended solids and will be provided at no extra cost to the Owner. Any areas that retain water shall be corrected in an approved manner without additional costs to the Owner.

The Following Pay Items are Described:

<u>Item</u>	<u>Pay Unit</u>
Modified Open Graded 9.5 MM Friction Course, 3” Thick	Ton
Modified Open Graded 9.5 MM Friction Course, 2” Thick	Ton
Asphalt Stabilized Drainage Course, 4” Thick	Ton

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 ¾” 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
15" Perforated High Density Polyethylene Pipe (Including Pipe Bedding and Backfill)	Linear Foot
18" 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
15" High Density Polyethylene Pipe (Including Pipe Bedding and Backfill)	Linear Foot
38" x 24" Horizontal Elliptical Reinforced Concrete Pipe (Including Pipe Bedding and Backfill)	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 pay item “Concrete Headwall” shall include the cost of any scour hole or rip rap apron, filter fabric and trash rack as depicted on the Construction Plans and Details. No separate payment shall be made for any rip rap, filter fabric or trash rack.

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 ‘A’	Unit
Inlet Type ‘E’	Unit
Outlet Control Structure	Unit
2’ Diameter Riser With Solid Cover	Unit
Backflow Preventer	Unit

SECTION 606 – SIDEWALKS, CURB RAMPS, DRIVEWAYS, AND ISLANDS

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, 4" Thick shall consist of the installation of concrete in the area surrounding the reinforced concrete bleacher pad in the base bid. This pay item shall also include construction of any concrete sidewalk, 4" thick, 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.

606.04 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.

Concrete sidewalks and pad shall be tinted "Dark Gray". Provide Davis Colors pigment or approved equal. Submit color sample for review during shop drawing review for final approval. Separate payment will not be made for tinting, and shall be included within the respective concrete pay item.

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.

ALL DETECTABLE WARNING SURFACES shall be measured for payment on a per unit basis.

The Following Pay Items are Described:

<u>Item</u>	<u>Pay Unit</u>
Tinted Concrete Sidewalk, 4" Thick	Square Yard
Tinted Concrete Pad, Reinforced, 6" Thick	Square Yard
Detectable Warning Surface	Unit

SECTION 607 – CURBS

607.01 DESCRIPTION.

The Following Is Added:

Belgian Block Curb shall consist of installing the linear foot of curbing as depicted on the construction plans and in accordance with the construction details.

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 (6" x 12") 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 measured for payment per the linear foot price bid for the Item described below.

The Following Pay Items are Described:

<u>Item</u>	<u>Pay Unit</u>
Concrete Turf Footing (6" x 12") With Nailer Board	Linear Foot
Belgian Block Curb	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 existing parking and proposed parking area. All traffic striping that is removed or damaged, shall be replaced in kind.

610.04 MEASUREMENT AND PAYMENT.

The entire subsection is replaced by the following:

TRAFFIC STRIPES, LONG LIFE, EPOXY RESIN 4" WIDE shall be measured for payment per linear foot, per 4" wide.

The following Pay Item is described:

Item
Traffic Stripes, Long Life, Epoxy Resin 4" Wide

Pay Unit
Linear Foot

SECTION 613 – BLEACHERS

613.01 DESCRIPTION.

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

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 METHODS OF 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:

Item
Bleachers

Pay Unit
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.

616.03 PRODUCTS

616.03.01 Ball Safety Netting System, 25' High

- A. BASE: SGTFBSS-625P 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: 27.5 ft, 27.0 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, 25.0 ft H
 - a. .25" black vinyl coated galvanized wire rope
4. Accessories:
 - A. Hardware Kit
 - a. Stainless Steel Assembly Bolts
 - b. Wire Rope

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

- A. BASE: GPFSNS6440P - 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, 40.10 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

616.04 INSTALLATION

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, 25' 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**

PART 1 GENERAL

1.01 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

1.02 RELATED WORK

- A. Examine contract documents for requirements that affect work of this section.

1.03 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

1.04 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.

1.05 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.

1.06 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.

PART 2 PRODUCTS

2.01 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

- C. BASE: SG618R: Round Faced Soccer Goal, Youth Size 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

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.

Article I. PART 3 EXECUTION

3.01 INSTALLATION OF EQUIPMENT

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

617.03 METHODS OF 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.

The Following Pay Item Has Been Added:

<u>Item</u>	<u>Pay Unit</u>
Combination Football Goal Post/Soccer Goal	Unit
Youth Soccer Goals	Unit
15’ Long Team Bench	Unit

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 SITE 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.

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 under-grounded 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(ASTM), 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 Cedar Brooks Park Athletic Fields located in Plainfield, New Jersey. The manufacturer/contractor shall supply a lighting system using an HID (metal halide) light source to meet or exceed the standards set forth in these specifications.
- C. The sports lighting will be for the following fields:
 - 1. Multipurpose
 - 2. Practice
- D. 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. **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.
 - 3. **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.
 - 4. **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.

1.2 LIGHTING PERFORMANCE

- A. Performance Requirements: 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. 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. Hours of usage shall comply with the following:

Area of Lighting	Annual Usage Hours	25 Year Usage Hours
Multipurpose	300	7,500
Practice	300	7,500

- B. 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
2	S5, S6	60'
4	S1, S2, S3, S4	70'

- C. Lighting Methodology: There are two methods that will be considered for calculation of the lighting designs for this project. The approved Lighting Method #1 (Musco), automated timed power adjustments, as described in C.1 utilizes methodology that adjusts light levels through a series of programmed adjustments. The alternate Lighting Method #2 (Non-Musco), continuous depreciating light, as described in C.2 uses continuous lamp lumen depreciation which is recovered by relamping and cleaning lenses of the luminaires. Computer models shall reflect initial design lumens, end of life design lumens, recoverable light loss factor (RLLF of .65), and the Coefficient Utilization (CU) for the design. Both methods must be at or above target illumination levels throughout the 25 years of the contract/warranty provided by the manufacturer. A +/- 10% design/testing allowance is **not** permitted in the design logic.

1. **Lighting Method #1: Automated Timed Power Adjustments:**

- a. Approved Musco’s Green Generation Lighting® sports lighting system shall use automated timed power adjustments to achieve a lumen maintenance control strategy as described in the IESNA Lighting Handbook 10th Edition, Lighting Controls Section page 16-8: "Lumen maintenance involves adjusting lamp output over time to maintain constant light output as lamps age and dirt accumulation reduces luminaire output. With lumen maintenance control, either lamps are dimmed when new, or the lamp's current is increased as the system ages."
- b. Manufacturers, not pre-approved, bidding an automated timed power adjustment system must provide an independent test report certifying the system meets the lumen maintenance control strategy above and verifying the field performance of the system for the duration of the useful life of the lamp based on lamp replacement hours. Report shall be signed by a licensed professional engineer with outdoor lighting experience. If report is not provided at least 10 days prior to bid opening, the manufacturer shall provide the initial and maintained designs called for in this specification under Lighting Method #2: Alternate Manufacturers, section 1.2.C.2.
- c. Project References: Non-approved manufacturers bidding any form of Automated Timed Power Adjustment light system must provide a minimum of ten (10) project references within the state of New Jersey that have been completed within the last 12 months utilizing this exact technology. Manufacturer will include project name, project city, and if requested, contact name and contact phone number for each reference.

Area of Lighting	Average Constant Light Levels	Maximum to Minimum Uniformity Ratio	Grid Points	Grid Spacing
Multipurpose	50 foot-candles	2:1.0	84	30' x 30'
Practice	50 foot-candles	2:1.0	28	30' x 30'

2. **Lighting Method #2 – Continuous Depreciating Light:**

- a. The manufacturer bidding Lighting Method #2 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.
- b. The lighting system shall use continuous lamp lumen depreciation which is recovered by relamping and cleaning lenses of the luminaires. Manufacturer shall provide computer models for initial illumination level and target illumination levels on the field over 25 years. The specified maximum Recoverable Light Loss Factor (RLLF) .65 and maintenance/group relamping schedule shall be provided in accordance with recommendations in the Leukos Abstract Volume 6, Number 3, January 2010, page 183-201: “Light Loss Factors for Sports Lighting”, and presented at the 2009 IESNA Annual Conference

1500 Watt Metal Halide Luminaire
RLLF Requirements

Lamp Replacement Interval (hours)	Recoverable Light Loss Factor (RLLF)
3,000	.65

- c. Independent Test Report: If lamp replacement interval is greater than 3,000 hours for 1500 watt lamps, manufacturer shall supply an independent test report with lumen depreciation over proposed lamp life, initial lumens, and end of life lumens.
- d. Based on anticipated hours of usage listed below, Method #2 systems would require the following minimum group lamp replacements over the 25 years.

Area of Lighting	25 Year Usage Hours	25 Year Group Relamps Required
Multipurpose	7,500	1
Practice	7,500	1

Area of Lighting	Average Initial Illumination Levels	Average Target Illumination Levels	Maximum to Minimum Uniformity Ratio	Grid Points	Grid Spacing
Multipurpose	76.9 foot-candles	50 foot-candles	2:1.0	84	30' x 30'
Practice	76.9 foot-candles	50 foot-candles	2:1.0	28	30' x 30'

- e. Revised Electrical Distribution: Manufacturer shall provide revised electrical distribution plans to include changes to service entrance, panel, and wire sizing if increased power is required which exceeds specified design loads.

1.1 ENVIRONMENTAL LIGHT CONTROL

- A. Spill Light Control: All fixtures shall utilize maximum spill light and glare control devices including, but not limited to, internal shields, louvers and external shields.
- B. Spill Light Control: Maximum vertical footcandles taken with the meter aimed at the brightest light bank at a distance of 100 feet from the field perimeter to fence line shall not exceed 3fc. Average vertical footcandles at a distance of 100 feet from the perimeter of the field to fence line shall not exceed 2fc. Maximum horizontal footcandles at a distance of 100 feet from the perimeter of the field to fence line shall not exceed 1fc. Average horizontal footcandles at a distance of 100 feet from the perimeter of the field to fence line shall not exceed .5fc. Footcandle readings shall be taken at 30' intervals along the specified line. Average illumination level shall be measured in accordance with the IESNA LM-5-04 at the first 100 hours of operation.

1.2 LIFE CYCLE COSTS

- A. Manufacturer shall submit 25-year life cycle cost calculation as outlined in the required submittal information. Lamp replacement schedule per charts below:

Lighting Method 1 Lamp Replacement	Lighting Method 2 Lamp Replacement
5,000 hour intervals	3,000 hour intervals

- 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, ballast 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.
 - Powder Coat Painting of Poles: Poles are to be powder coat painted black after galvanizing. The pole will be lightly sanded or etched to ensure good adhesion, cleaned, primed with a self-bonding polyethylene primer and top coated with a black polyester powder coat paint. Color to be confirmed by the owner during shop drawing review.

3. Each pole section shall have appropriate grounding brackets and/or lugs welded or mechanically attached that adhere to National Electrical Code criteria to maintain grounding continuity. Additionally, the grounding system shall meet the Lightning Protection Code defined by the National Fire Protection Association (NFPA 780).
 4. The powder coat painting is not included in the 25 year warranty.
- C. System Description: Lighting system shall consist of the following:
1. Galvanized steel poles and cross-arm assemblies.
 2. Pre-stressed concrete base embedded in concrete backfill allowed to cure for 12-24 hours before pole stress is applied. Alternate may be an anchor bolt foundation designed such that the steel pole and any exposed steel portion of the foundation is located a minimum of 18 inches above final grade. The concrete for anchor bolt foundations shall be allowed to cure for a minimum of 28 days before the pole stress is applied unless shorter cure time approved by structural engineer of record. Direct bury steel poles and concrete poles are not allowed.
 3. All luminaires shall be constructed with a die-cast aluminum housing or external hail shroud to protect the luminaire reflector system.
 4. Manufacturer will remote all ballasts and supporting electrical equipment in aluminum enclosures mounted approximately 10 feet above grade. The enclosures shall be touch-safe and include ballast, capacitor 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. Integral ballast fixtures will not be accepted.
 5. Wire harness complete with an abrasion protection sleeve, strain relief and plug-in connections for fast, trouble-free installation.
 6. All luminaires, visors, and cross-arm assemblies shall withstand 150 mph winds and maintain luminaire aiming alignment.
 7. Control cabinet to provide remote on-off control and monitoring of the lighting system. Cabinet shall be constructed of aluminum and be rated NEMA Type 4. Communication method shall be provided by manufacturer. Cabinet shall contain custom configured contactor modules for 30, 60, and 100 amps, labeled to match field diagrams and electrical design. Manual off-on-auto selector switches shall be provided.
 8. 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. 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. 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: Contractor to determine voltage and phase
 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 average kW consumption for the field lighting system shall be 100.1 kW.
- C. Revised Electrical Distribution: Manufacturer shall provide, at their cost, revised electrical distribution plans to include changes to service entrance, panel, and wire sizing if using Lighting Method 2.

2.3

STRUCTURAL PARAMETERS

- A. Mounting Heights: To ensure proper aiming angles for reduced glare and to provide better playability, the minimum pole mounting heights from the playing field surface shall be as depicted on plans. Higher mounting heights may be required based on photometric performance of manufacturer's luminaires to meet spill and glare requirements.
- B. Support Structure Wind Load Strength: Poles and other support structures, brackets, arms, bases, anchorages and foundations shall be determined based on the 2015 IBC Building Code, wind speed of 115mph, exposure category C and an importance factor of 1.0. Luminaire, visor, and crossarm shall withstand 150 mph winds and maintain luminaire aiming.
- C. Pole Structural Design: The stress analysis and safety factor of the poles shall conform to 2009 AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals (LTS-5).

- D. Soil Conditions: The design criteria for these specifications are based on soil design parameters as outlined in the geotechnical report. If a geotechnical report is not provided by the owner, the foundation design shall be based on soils that meet or exceed those of a Class 5 material as defined by 2015 IBC.
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.
 2. Additional materials required to achieve alternate foundation.
 3. Excavation and removal of materials other than normal soils, such as rock, caliche, etc.
- E. Foundation Drawings: Project specific foundation drawings stamped by a registered engineer in the state where the project is located are required. The foundation drawings must list the moment, shear (horizontal) force, and axial (vertical) force at ground level for each pole. These drawings must be submitted at time of bid to allow for accurate pricing.

2.4 CONTROL AND MONITORING

- A. 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.
- B. 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).
- C. 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 lamp outages, control operation and service scheduling including relamping operations completed and scheduled. 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. Current lamp hours: shall be tracked separately to reflect the amount of hours on the current set of lamps being used, so relamping can be scheduled accurately.
 3. Report hours saved by using early off and push buttons by users.
- D. 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 DELIVERY TIMING

- A. Delivery Timing Equipment On-Site: The equipment must be on-site 8-10 weeks from receipt of approved submittals and receipt of complete order information due to powder coat painting.

3.2 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. For Lighting Method 1, Timed Power Adjustment systems, light levels must be measured and exceed the specified target levels. For Lighting Method 2, light levels must be measured and meet the specified initial light levels.
- 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 manufacturer will be held responsible for any and all changes needed to bring these fields back to compliance for light levels and uniformities. 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 foot-candles 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.

3.3 25-YEAR WARRANTY

- A. Each manufacturer shall supply a signed warranty covering the entire system for 25 years OR for the maximum hours of coverage based on the estimated annual usage, whichever occurs first. Warranty shall guarantee light levels will not fall below target maintained levels. A +/- 10% design/testing allowance will not be allowed. Warranty shall also cover: lamp replacements, system energy consumption, monitoring, maintenance and control services, spill light control, and structural integrity. Manufacturer shall maintain specifically-funded financial reserves to assure fulfillment of the warranty for the full term. Warranty may exclude fuses, storm damage, vandalism, abuse and unauthorized repairs or alterations.
- B. Preventative and Spot Maintenance: Manufacturer shall provide all preventative and spot maintenance, including parts and labor for 25 years from the date of the equipment shipment. Individual lamp 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 4 – DESIGN APPROVAL

4.0 PRE-BID SUBMITTAL REQUIREMENTS

- A. Approved Product: Musco’s Green Generation Lighting® sports lighting system is the approved “Lighting Method 1” product. All submittal information at the end of this section must be submitted at least 10 days prior to bid. An addendum will be issued prior to bid, listing any approved lighting manufacturers and the design method to be used.
- B. Design Approval: The owner / engineer will review pre-bid submittals per section 4.0.A 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.
- C. 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:

<u>Item</u>	<u>Pay Unit</u>
Utility Upgrades – Electric Service to Site	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>Item</u>	<u>Pay Unit</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>Item</u>	<u>Pay Unit</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.

SECTION 807 – TOPSOIL STABILIZATION

807.01 DESCRIPTION

The Following Is Added:

This work shall also consist of installing Erosion Control Blankets as per the construction details, manufacture’s recommendations, Somerset-Union Soil Conservation requirements and NJDOT requirements. Install biodegradable anchors for the erosion control blankets of the type indicated by the construction details and at the spacing recommended by the manufacturer for the slope of the area being stabilized.

807.04 MEASUREMENT AND PAYMENT

The following pay item is added:

<u>Item</u>	<u>Pay Unit</u>
Erosion Control Blanket	Square Yard

SECTION 809 – MULCHING

809.04 MEASUREMENT AND PAYMENT

The Entire Subsection is Replaced by the Following:

The Following Pay Item is Described:

<u>Item</u>	<u>Pay Unit</u>
Straw Mulching	Square Yard

SECTION 811 – PLANTING

811.01 DESCRIPTION.

The Following Is Added:

Final Plant List is provided on the landscape plans.

This work shall also consist of furnishing, delivering and planting of trees shrubs and groundcover as shown on the landscape plans and described on the plant list. Where proposed trees are shown on the plan, the Contractor shall verify with the Engineer as to whether such locations are final. The cost of excavation, saw cutting and removal & disposal of non-approved bedding material and the creation for an opening for tree well shall be included in the cost of the tree.

This work shall also consist of furnishing and installing 20 GALLON TREE GATOR BAGS, as shown on the construction details and at locations determined in the field by the Engineer.

The final locations of proposed trees and shrubs, as determined/approved by the Engineer, shall correspond.

Watering will not be measured for payment. Cost of the watering shall be included in cost of various items of the bid proposal. Plantings shall be spaced within the area that is depicted to be improved on the Landscape Plans or as approved by the Engineer.

All trees, evergreens, shrubs and groundcover shall be constructed and installed in accordance with the landscaping plans and details. Trees, shrubs and groundcover shall be measured for payment by the number of units installed.

No separate payment shall be made for correspondence with the Engineer to determine final locations for proposed trees. Tree gator bags shall not be paid separately, but will be included in the unit cost for the below pay items.

811.04 MEASUREMENT AND PAYMENT.

The following pay Item is described:

<u>Item</u>	<u>Pay Unit</u>
Shade Tree, Acer Rubrum ‘Autumn Flame’, Autumn Flame Red Maple, 3”-3½”, B&B	Unit
Shade Tree, Quercus Acutissima, Sawtooth Oak, 3”-3½”, B&B	Unit
Shade Tree, Quercus Rubra, Northern Red Oak, 3”-3½”, B&B	Unit
Evergreen Shrub, Ilex Hybrid Little Rascal ‘Mondo’, Little Rascal Holly, 36”-40”, 20 Gal	Unit
Shredded Hardwood Bark Mulch, Triple Shredded, 4” Thick	Squared Yard

The contractor shall be responsible to maintain the landscape for a period of 90 days after acceptance of the landscape improvements in order for a root system to develop. Should landscape elements begin to perish during this time period, the contractor shall replace at their own cost. Please note that at the prior to the end of the maintenance bond period, if landscaping elements are not actively growing and maintaining a health, the Owner reserves the right to request to have the landscape replaced at no additional cost to the Owner.

DIVISION 900 – MATERIALS

SECTION 902 – ASPHALT

902.02.03 Mix Design

The following is added to the first paragraph:

Unless otherwise approved by the Engineer, only one source of supply for hot mix asphalt surface course may be used on the project.

902.02.04 Sampling and Testing

B. Sampling.

This subsection is renamed and the following is added to the first.

paragraph: B. DRUM MIX PLANTS

When a lot is necessarily less than 350 tons no samples shall be taken. When a lot is greater 350 tons a minimum of 2 samples shall be taken.

C. Quality Control Testing.

This subsection is renamed and the following is added to the first

paragraph: C. FULLY AUTOMATED BATCH PLANTS

When a lot is necessarily less than 350 tons no samples shall be taken. When a lot is greater 350 tons a minimum of 2 samples shall be taken.

The following is added to this section:

ALTERNATE SECTION 902 – ASPHALT

902.02.04 Sampling and Testing

(ALTERNATE) The second paragraph is

changed to:

The producer's quality control technician shall be present during periods of mix production for the sole purpose of performing quality control and acceptance testing. The quality control technician shall be certified as an Asphalt Plant Technician, Level 2, by the Society of Asphalt Technologists of New Jersey. The quality control technician will perform all required volumetric acceptance testing and quality control composition testing. The test results will be submitted to the Engineer on a daily basis along with a certification of compliance.

The following is added to 902.02.04:

F. REQUIREMENTS FOR LABORATORY PERFORMING QUALITY ASSURANCE TESTING

Any independent testing agency and/or laboratory performing the services necessary for quality assurance sampling, testing and/or analysis shall be accredited by the AASHTO Accreditation Program.

Along with the test results submitted to the Engineer, the laboratory shall also submit the testing worksheets showing the test methods used, including the calculations. All results will be compared to the quality control test results for the project.

The technician who performs the quality assurance testing for the testing agency and/or laboratory shall be certified by the Society of Asphalt Technologists of New Jersey, as an Asphalt Plant Technologist, Level 2.

All testing agencies and/or laboratories must be in possession of a certificate of accreditation from the AASHTO Accreditation Program in order to provide the required services. The certificate of accreditation (on www.nist.gov/amrl) shall be for, at least, the following test methods:

AASHTO T30 – Mechanical analysis of extracted aggregate.

AASHTO T164 – Quantitative extraction of bitumen from bituminous paving mixtures or,
 AASHTO T308 – Determining the asphalt binder content of hot mix asphalt (HMA) by the ignition
 method. AASHTO T166 – Bulk specific gravity of compacted bituminous mixtures.

AASHTO T209 – Maximum specific gravity of bituminous.

G. QUALITY ASSURANCE SAMPLING AND TESTING

For quality assurance purposes the agency may take 8 inch diameter cores from the roadway for confirmation of the quality control composition results. The testing will be performed by an independent testing agency and/or laboratory.

Confirmation of the quality control composition results shall be determined on the basis of the average of five 8 inch diameter drilled cores taken from random locations in a lot. A lot should be a maximum of 10,000 square yards in area and will apply to all projects whether the project payment quantities for hot mix asphalt surface course, hot mix asphalt intermediate course or hot mix asphalt base course are measured on a square yard or ton basis.

When a drill fails to procure a whole core, the drill shall be moved a distance of not more than 5 feet and an alternate core obtained. When a project involves the improvement of several individual streets, or several sections of the same street, the lot shall be determined by the area of each street and if less than the required lot area, the next street or section paved shall be added to complete the approximate area of the lot. All lots shall be approximately equal in size. The number of lots for the project shall be based on the next higher whole number derived by dividing the total pavement square yardage by 10,000.

The average of the test results for the five sample of a lot shall be compared to the average quality control test results representative of the lot. The average quality assurance test results shall be within the applicable tolerances of Table

920.02.04-2 as compared to the quality control test results. Payment for any lot, which does not comply, with these requirements shall be reduced in accordance with Table 902.02.04-3. The Engineer may order removal of any lot subject to the maximum reduction.

TABLE 902.02.04-2 TOLERANCE FROM QUALITY CONTROL TEST RESULTS FOR AVERAGE OF FIVE SAMPLES

SIEVE SIZE PERCENTAGE (ALL PLANTS)	TOLERANCE (PLUS OR MINUS)
No. 8	
5.5	
No. 200	
1.6	
Asphalt	0.55

TABLE 902.02.04-3 REDUCTION PER LOT DUE TO NONCONFORMANCE OF QUALITY ASSURANCE TESTING AS COMPARED TO THE QUALITY CONTROL TESTING

**DEVIATION OF AVERAGE OF FIVE
 QUALITY ASSURANCE SAMPLES AS**

**COMPARED TO THE REPRESENTATIVE
QUALITY CONTROL SAMPLES BEYOND
APPLICABLE TOLERANCES IN**

TABLE 920-7 (PERCENT OF TOLERANCE ABOVE)	REDUCTION PER LOT
1 TO 50	2%
51 TO 100	5%
OVER 100	10%

SECTION 909 – LANDSCAPING MATERIALS

909.10 Topsoil.

A. Unacceptable topsoil sources.

Item 1. is changed to:

1. Soils having less than 4.1 pH value, or greater than 8.0 pH value.

SECTION 913 - PIPE

913.03 Ductile Iron Water Pipe.

the first sentence of the first paragraph is changed to:

Ductile iron water pipe shall conform to ANSI/AWWA C151/A21.51.

913.11 Plastic Drainage Pipe.

The subsection Heading and text are changed to:

913.11 High Density Polyethylene (HDPE), PVC Drainage Pipe.

Corrugated HDPE drainage pipe shall conform to AASHTO M 252 or AASHTO M 294M. PVC drainage pipe shall conform to ASTM D 2729.

SECTION 914 – PORTLAND CEMENT CONCRETE, MORTAR, AND GROUT

914.01 Composition of Portland Cement Concrete.

subsection is renamed and changed to:

914.01 Composition of Portland or Blended Hydraulic Cement Concrete.

Portland cement concrete shall be composed of Portland Cement or blended hydraulic cement, coarse aggregate, fine aggregate, admixtures, and water. Portland cement concrete except white concrete may include fly ash, Ground Granulated Blast Furnace Slag or Silica Fume. Materials shall conform to the following Subsections:

C.	
D.	Aggregates.....901.12
E.	
F.	Admixtures:
G.	Air-Entraining905.01
H.	Chemical905.02
I.	Mineral
J.	Fly Ash.....919.07
K.	Silica Fume.....919.10(b)
L.	Ground Granulated Blast Furnace Slag.....919.18
M.	Portland Cement.....919.11
N.	Water.....919.15

Chemical admixtures conforming to the requirements of Subsection 905.02 may be used in the mix design of structural concrete items.

914.02 Portland Cement Concrete Design, Control, and Acceptance Testing Requirements

subsection is renamed to:

914.02 Portland or Blended Hydraulic Cement Concrete Design, Control, and Acceptance Testing Requirements

B. Proportioning and Verification.

THE SECOND SENTENCE OF THE THIRD PARAGRAPH IS CHANGED TO:

At least six 4 by 8 inch test cylinders shall be prepared from each batch and cured according to AASHTO T 23 or AASHTO T 126.

THE FIRST sentence OF THE TENTH PARAGRAPH IS CHANGED TO:

Classes A and B concrete may be designed to achieve early strength requirements by increasing the Cement content.

C. Acceptance Testing Procedures for Slump and Air Entrainment.

THE FIRST SENTENCE OF THE FOURTH PARAGRAPH IS CHANGED TO:

Following any permitted additions, the drum shall be rotated at the recommended mixing speed for a minimum of 30 revolutions without exceeding 300 total revolutions, the original test results shall be disregarded, and a single test for both slump and air entrainment performed.

D. General Acceptance Testing Requirements for Strength.

THE FOLLOWING IS ADDED AFTER THE SECOND PARAGRAPH:

Concrete test specimens which are to be used for determination of early strengths for form removal, opening to traffic, or otherwise placing the concrete into service shall be cured according to the field curing provisions in AASHTO T-23.

E. Acceptance Testing for Strength for Pay-Adjustment Items.

THE ENTIRE TEXT OF THIS SUBPART IS CHANGED TO:

The list of concrete Pay Items, if any, which are subject to pay-adjustment and their base prices may be found in the Special Provisions.

The amount of pay-adjustment in dollars is the product of the Pay Item base price times the lot quantity times the percent pay-adjustment (expressed as a decimal) given by Equation 1 or Equation 2.

Equation 1 and Equation 2:

Quality	Pay-adjustment (Percent)	
PD < 50	PPA = 3.0 - 0.3 PD	Equation 1
PD ≥ 50	PPA = 26.0 - 0.76 PD	Equation 2

Where: PPA = Percent Pay-adjustment

PD = Percent Defective (Estimate of percent of lot below the class design strength by the use of Equation 3 and Subsection 914.05, Table 914-5)

Equation 3:

$$Q = (ALS - CDS) / S$$

Where: Q = Quality index for pay-adjustment computations
ALS = Average lot strength in psi
CDS = Class design strength in psi
S = Standard deviation of the strength test results in psi for the lot as computed by Equation 4

Equation 4:

$$S = \sqrt{\frac{\sum(Xi - ALS)^2}{N - 1}}$$

Where: \sum = Summation
Xi = Individual test result (average strength of a test cylinder pair)
N = Number of test results for the lot

Note: When only a single test result is available, the standard deviation "S" is assumed to equal 200 psi.

For lots having percent defective (PD) levels less than 10 percent, Equation 1 provides positive adjustments to the contract price. For lots having exactly 10 percent defective, there is no adjustment to the contract price. For lots having greater than 10 percent defective, Equations 1 or 2, as appropriate, subtract progressively larger amounts from the contract price.

If, based on the initial series of tests, the lot quality of a pay-adjustment item is estimated to be PD = 50 or greater, or if any individual test value (average of a cylinder pair) falls below the retest limit for non-pay-adjustment concrete in Subsection 914.05, Table 914-4, the Engineer has the option to reevaluate by coring or other suitable means. When this provision is applied to Class P concrete, each beam or pile in the steam bed will be evaluated separately.

If the Department elects not to core, the Contractor may accept the pay-adjustment of (PPA) calculated by Equation 2 or, when approved by the Engineer, may take cores according to Subsection 914.05, Table 914-4 at no cost to the Department. The Contractor must take the cores within 60 days from notification of the option to core. As an aid in making this decision, the Contractor will be permitted to perform nondestructive testing using a method or device approved by the Engineer.

When re-evaluation is accomplished by a method other than coring, the results will be used only to determine what further action is to be taken. If any of the non-core tests results are below the class design strength, the Engineer has the option to core. If this option is waived, the Contractor may elect to core, at no cost to the State and within 60 days after being presented with this option, or to accept the pay-adjustment computed from the initial test cylinder results. If the Contractor elects to core, the coring shall be performed as directed and the Department will test the cores. If none of the non-core test results is below the class design strength, the Engineer may elect either to core or to accept the lot at 100 percent payment.

If, based on the core results, the lot is determined to be at a quality level of PD < 75, the pay-adjustment shall be computed by Equation 1 or Equation 2, as appropriate. If the lot is confirmed to be at a quality level of PD = 75 or greater, the lot is considered to be rejectable and the Engineer may:

1. Require the Contractor to remove and replace the defective lot at no cost to the State,
2. Allow the Contractor to leave the defective lot in place and receive a percent pay-adjustment (PPA) computed by Equation 2, or
3. Allow the Contractor to submit a plan, for approval, for corrective action to be performed at no cost to the State. If the plan for corrective action is not approved, either option 1 or 2 above may be applied.

914.04 Sampling and Testing Methods.

THE FOLLOWING AASHTO TEST METHOD IS ADDED:

T303 Standard Test Method for Accelerated Detection of Potentially Deleterious Expansion of Mortar Bars Due to Alkali-Silica Reaction.

914.05 Tables
TABLES 914-1, 914-3, AND 914-4 ARE CHANGED TO:
Table 914-1 Requirements for Roadway Concrete Items

	Concrete Class	Slump (inch)	Percent Air Entrainment for Coarse Aggregate Size Numbers					
			357	467	57	67	8	
Cast-in-Place Items:								
Surface Course, Bridge Approach Slabs, Bridge Approach Transition Slabs	B	2±1	5.0±1.5	5.0±1.5	6.0±1.5	6.0±1.5	7.0±1.5	
Base Course	B	2±1	5.0±1.5	5.0±1.5	6.0±1.5	6.0±1.5	7.0±1.5	
Inlet and Manhole Walls, Headwalls, Miscellaneous Concrete	B	3±1	----	----	6.0±1.5	6.0±1.5	7.0±1.5	
Inlet and Manhole Top Slabs, Sidewalks, Driveways, Islands	B	3±1	----	----	6.0±1.5	6.0±1.5	7.0±1.5	
Slope Gutters, Vertical Curb, Sloping Curb, Barrier Curb and Base Concrete and White Concrete	B	4±1	----	----	6.0±1.5	6.0±1.5	7.0±1.5	
Vertical, Sloping and Barrier Curb, Concrete and White Concrete Islands	B	4±1	----	----	7.0±2.0	7.0±2.0	8.0±2.0	
Foundations for:								
Inlets and Manholes	B	3±1	6.5 max	6.5 max	7.5 max	7.5 max	8.5 max	
Electrical Items	B	3±1	----	----	7.5 max	7.5 max	8.5 max	
Signs	B	3±1	----	----	6.0±1.5	6.0±1.5	7.0±1.5	
Junction Boxes	B	3±1	----	----	7.5 max	7.5 max	8.5 max	
Footings for Fence Posts, Guide Rail End Treatment	B	3±1	----	----	7.5 max	7.5 max	8.5 max	
Culverts	A	3±1	----	----	6.0±1.5	6.0±1.5	7.0±1.5	
Monuments	A	3±1	----	----	7.5 max	7.5 max	8.5 max	
Slope Protection	B	2±1	----	----	6.0±1.5	6.0±1.5	7.0±1.5	
Precast Items:								
Culverts	A	3±1	----	----	6.0±1.5	6.0±1.5	7.0±1.5	
Inlets and Manholes, Junction Boxes, Headwalls, Reinforced Concrete End Sections (See note 2)	B	3±1	----	----	6.0±1.5	6.0±1.5	7.0±1.5	
Concrete and White Concrete Barrier Curb	B	3±1	----	----	7.0±2.0	7.0±2.0	8.0±2.0	

Note 1: According to Subsection 501.03, a Type F water-reducing, high range admixture will be permitted according to Subsection 905.02 and Subsection 914.02, Subparts B and C. When a Type F admixture is used, the table Slump and Air Content values for the given concrete item shall be changed as follows:

Slump: 6 ± 2 inches

Air Content: Increase both the target value and tolerance percentages by 0.5.

Note 2: For the items in this category, the slump may be reduced to zero (dry cast) provided that adequate consolidation, acceptable to the Engineer, is achieved.

Table 914-3 Mix Design Requirements

	Class of Concrete					
	A	B	S	P	P-1	P-2
Class Design Strength (28 days, psi Note 3)	4600	3700	2000	5500	6000	6500
Verification Strength (28 days, psi Note 3)	5400	4500	--	6000	6500	7000
Maximum Water/Cement Ratio (Note 2)						
lb/lb	0.443	0.488	0.577	Note 1	Note 1	Note 1
gals/bag	5.0	5.5	6.5	Note 1	Note 1	Note 1
Minimum Cement Content						
lb/cy	611	564	658	Note 1	Note 1	Note 1
Bags/cy	6.5	6.0	7.0	Note 1	Note 1	Note 1

- O. Note 1: According to PCI Manual, except as indicated in Note 2.
- Note 2: The maximum water/cement ratio for all classes of concrete except for Classes P, P-1 and P-2, when a Type F water-reducing, high range admixture is used according to Tables 914-1 and 914-2, shall be reduced by 0.043 lb/lb (4.5 gals/bag).
- Note 3: All concrete test results shall be recorded to the nearest 10 psi..
- Note 4: To successfully meet the requirements of this specification, the target production strength must be higher than the Class Design Strength by an amount proportional to the Producer's within-lot standard deviation.

Table 914-4 Lot Sizes, Sampling Rates and Retest Limits

	Class of Concrete					
	A	B	S	P	P-1	P-2
Lot Size (maximum)	One Day's Production			One Day's Production of a Single Steam Bed		
Pay-Adjustment Items						
Initial Sampling Rate	5/Lot	5/Lot	--	5/Lot	5/Lot	5/Lot
Retest Sampling Rate (minimum)	5/Lot	5/Lot	--	5/Unit or Load Test		
Non-Pay-Adjustment Items						
Initial Sampling Rate	3/Lot	2/Lot	1/Lot	3/Lot	3/Lot	3/Lot
Retest Limit (psi)	4400	3600	2000	5400	5900	6400
Retest Sampling Rate	5/Lot	5/Lot	5/Lot	5/Lot	5/Lot	5/Lot

- Note 1: The lot sizes are maximums and, at the option of the Engineer, any lot may be subdivided into two or more smaller lots. When such a subdivision is made, the specified sampling rate applies to each of the smaller lots.
- Note 2: An initial strength test result is defined as the average strength of two 4 inch by 8 inch compression test cylinders, cured for 28 days, and tested in the Department Laboratory except for Classes P, P-1, and P-2 cylinders which may be tested at the fabricator's plant under the supervision of the Engineer.
- Note 3: A retest result is defined as the strength of an individual test result obtained by coring or other suitable means. If retest is performed by coring, each retest result is defined as the corresponding nominal core strength divided by 0.85.
- Note 4: The specified sampling rates shall apply except that no more than one test per truckload or batch of concrete will be required (except for air and slump tests when retempering). It is expected that each

structural component will have a representative sample taken. At the option of the Engineer, nonstructural concrete lots consisting of 20 cubic yards or less may be accepted without strength tests.

- Note 5: No lot shall include more than one class of concrete nor include concrete of the same class having different specified levels of slump or air entrainment.
- Note 6: For prestressed concrete, if more than one bed is used or if more than 80 cubic yards of concrete are used, the production shall be subdivided as equally as possible into two or more lots.
- Note 7: Retest limit for non-pay-adjustment roadway and structural items requiring the use of Class B, white concrete, shall be 3000 psi.

SECTION 919 – MISCELLANEOUS

919.07 Fly Ash.

The First Paragraph Is Changed To:

Fly ash for Portland Cement concrete shall conform to ASTM C 618, Class C or Class F except that the loss on ignition shall not be more than three percent. Fly ash used to control alkali-silica reactivity shall be Class F. Before each source of fly ash is approved, certified results of tests conducted by a testing agency shall be submitted to and verified by the Department. Accompanying the certification shall be a statement from the supplier listing the source and type of coal, the methods used to burn, collect, and store the fly ash, and the quality control measures employed.

919.11 Portland Cement

subsection is renamed and changed to:

919.11 Portland or Blended Hydraulic Cement

Portland cement shall conform to the following:

Masonry Cement	ASTM C 91
Portland Cement, Type I, II, and Type III (see Note 1)	ASTM C 150
White Portland Cement, Type I and III (see Note 2)	ASTM C 150
Blended Hydraulic Cement (see Note 3).....	ASTM C 595

P.

Q. Note 1: Type III may be used only for prestressed or precast items.

R.

S. Note 2: Shall not contain more than 0.55 percent by weight of ferric oxide (Fe₂O₃).

Note 3: Only types IS, I(PM), and I(SM) may be used. Portland cement, may be pre-blended with a maximum of 15 percent fly ash, by weight, or a maximum of 10 % silica fume by weight, or with a maximum of 50% GGBFS by weight. If more than 30% GGBFS is used, a scaling test conforming to ASTM C 672 must be completed on the mix design and the concrete must have a visual rating less than 3 as based on ASTM C672 10.1.5 after 50 cycles.

When blended Portland Cement is used, no additional mineral admixtures shall be added.

Different brands of cement, the same brand of cement from different mills or different types of cement shall not be mixed.

Suitable means shall be provided for storing and protecting the cement against dampness. Cement which for any reason has become partially set or which contains lumps of caked cement will be rejected. The temperature of the cement at the time of delivery to the mixer shall not exceed 160 °F.

919.18 Ground, Granulated Blast Furnace Slag.

THE SECOND PARAGRAPH is CHANGED TO:

Ground, granulated blast furnace slag may be used as a replacement for Portland Cement as specified in Subsection 919.11 up to a maximum replacement level of 50 percent by weight. Replacement of Portland Cement greater than 30 percent will require a scaling test on the mix design conforming to ASTM C 672 with a visual rating less than 3.

919.19 Sampling and Testing Methods

Sampling and testing will be performed according to the following:

THE FOLLOWING IS ADDED:

- T.
- U. Mineral Admixtures8 pounds from each source
- Blended Hydraulic Cement.....ASTM C 595

THE FOLLOWING NEW SUBSECTION IS ADDED:

919.22 Controlled Low Strength Material (CLSM).

V. CLSM shall conform to the following:

- W.
- X. Fine Aggregate901.12
- Y. Chemical Admixtures.....905.02
- Z. Portland Cement, Type I, II, III.....919.11
- AA. Water919.15

CLSM shall consist of a mixture of Portland Cement, water, fine aggregate and chemical admixtures. Fly ash shall not be permitted in mixes intended for trench backfilling. The CLSM mixture shall be proportioned to provide a backfill material that is self-compacting and capable of being excavated with hand tools at a later date. CLSM shall be proportioned to produce a 28-day compressive strength of 50 to 150 pounds per square inch. An accelerating admixture shall be used to produce a fast setting flowable mixture as required. The CLSM shall have a permeability of $1.7 \times 10^{-3} \pm 0.2 \times 10^{-3}$ centimeters per second according to ASTM D5084 for backfilling of conduits and piping.

At least 45 days prior to the start of any CLSM placement, trial batches of CLSM shall be prepared of the same materials and proportions proposed for use on the project. Each mix design shall be submitted on Portland Cement concrete mix design forms furnished by the Department, naming the sources of materials and test data.

Department personnel will be present at the time of verification batching to confirm that the proportions and materials batched are according to the proposed mix designs. At least six 6 X 12 inch compression test cylinders shall be prepared for each batch according to ASTM 5971-96 for 28-day strengths except for fast setting mixes, which shall be tested at the specified cure time.

SECTION 924 - MONOFILAMENT SYNTHETIC TURF INCLUDING INFILL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Technical Specification, apply to this Section.

1.2 SUMMARY

- B. This Section includes the following:
 - 1. Furnishing all labor, materials, tools and equipment necessary to install, in place, all synthetic turf and infill materials as indicated on the plans and as specified herein. 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.

2. The turf contractor must provide competent workmen skilled in synthetic grass installation. The designated supervisory personnel on the project must be certified, in writing by the turf manufacturer, as competent in the installation of this material, including sewing seams, gluing seams, gluing striping/logos and proper installation of the infill mixture. The manufacturer shall certify the synthetic turf installation and provide a warranty.
3. The base must be perfectly clean as installation commences and shall be maintained in that condition throughout the process by the synthetic turf contractor.

1.3 SUBMITTALS (The following documents shall be submitted during shop drawing review)

- A. Product Data: Including full specification cut sheets of the product and the type of infill that shall be utilized for the infill. **Material Safety Data Sheets shall be provided. All products utilized for the playing surface shall be lead free.**
- B. Manufacturer Certificates: The bidding entity (contractor or subcontractor) shall provide a list of ten (10) existing installations of the synthetic turf infill system that is specified for this project within the last five (5) years, including Owner representative and telephone number, attesting compliance with quality assurance information. These fields must comply with the materials section of the specification. All must be located in the continental United States. The contractor must provide evidence from the turf manufacturer stating that they are certified by the manufacturer to install the proposed turf.
- C. The contractor must provide evidence from the turf manufacture stating that they are certified by the manufacturer to install the proposed turf.
- E. Warranties: The Contractor shall provide a warranty to the Owner that covers defects in materials and workmanship of the turf for a period of **8 years** from the date of substantial completion. The turf manufacturer must verify that their representative has inspected the installation and that the work conforms to the manufacturer's requirements. The manufacturer's warranty shall include general wear and damage caused from UV degradation. The warranty shall specifically exclude vandalism, and acts of God beyond the control of the Owner or the manufacturer. **The warranty shall be fully third (3rd) party, non-prorated, pre-paid for the entire 8 year term insured to the Owner.** The Contractor shall provide a warranty to the Owner that covers defects in the installation workmanship, and further warrant that the installation was done in accordance with both the manufacturer's recommendations and any written directives of the manufacturer's representative. Prior to final payment for the synthetic turf, the Contractor shall submit to owner an insurance policy, guaranteeing the warranty to the Owner. The insurance must reflect the following values:
 1. Minimum of five - million dollar annual aggregate (\$5,000,000).
 2. No maximum per claim coverage amount up to the minimum five million dollar annual aggregate.
 3. Must cover full 100% removal and replacement value of total square footage installed.
 4. Must warrant the materials installed meet or exceed the product specifications.
 5. Must have a provision to either make a cash refund, repair or replace such portions of the installed materials that are no longer serviceable to maintain a serviceable playing field.
 6. Warranty must not include a deductible. Owner shall not be responsible for deductible.
 7. Policy must be in place by the manufacturer at the time of the bid.
 8. Self Insurance, Umbrella Policies or Self Retention clauses shall not be considered for this project.
- F. Synthetic turf system shall be approved as ADA Handicap accessible as determined by Test Method - ASTM 1951-99 (Standard Specification for determination of accessibility of surface under and around playground equipment). Proof of passing must be submitted upon request by the Owner.
- G. Shop Drawings: Show fabrication and installation details for synthetic turf.
- H. Shop Drawings: Include plans, elevations, sections, seam layout, details (particularly those that differ from the construction details and specifications included in this bid package), and attachments to other Work. The shop drawings shall be prepared at the scale of the construction documents and contain all pertinent information

regarding installation. These drawings shall be submitted to the engineer for approval prior to the manufacturing and shipment of materials. The shop drawing shall depict the inlaid lines, markings and system to anchor the synthetic turf to the concrete turf footings.

I. Samples for Verification: For the following products, in manufacturer's standard sizes.

1. A 12-inch x 12-inch, minimum sample of the exact synthetic turf and infill system that is specified for this project, if different than specified.
2. Only cryogenic rubber shall be utilized. An all rubber mix or sand/rubber mix is permitted for this project as per the manufacturer's recommendations.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative of synthetic turf manufacturer for installation and maintenance of units required for this Project. The turf installer shall be either the turf company or a contractor who is certified by the turf company to install the synthetic turf system.
- B. Source Limitations: Obtain synthetic turf through one source from a single manufacturer.
- C. Pre-installation Conference: Conduct conference at Project site prior to installation of the synthetic turf as part of the Pre-Construction Meeting.
- D. All components and their installation method shall be designed and manufactured for use on outdoor athletic fields. The materials as hereinafter specified, should be able to withstand full climatic exposure in Northern, Central and Southern NJ, be resistant to insect infestation, rot, fungus and mildew; to ultra-violet light and heat degradation, and shall have the basic characteristic of flow through-drainage allowing free movement of surface run-off through turf and directly into the prepared granular base and into the field drainage system.
- E. The turf manufacturer must be experienced in the manufacture and installation of the specific type of synthetic infilled grass system proposed and must comply with this specification.

1.5 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit synthetic turf to be performed according to manufacturers' written instructions and warranty requirements.
- B. Field Measurements: Indicate measurements on Shop Drawings.

1.6 WARRANTY

- A. Special Warranty: Turf must maintain an ASTM F 355 G Max of less than 180 for the life of the warranty.
- B. Warranty Period: eight (8) years from date of Substantial Completion.

PART 2 - PRODUCTS

- 2.1 MATERIALS: All synthetic turf products, regardless of manufacturer, shall have a minimum pile height of 2.5".

Manufacturers: Subject to compliance with requirements, provide products by the following for the stated synthetic turf systems:

Astroturf: Root Zone 3D

800-723-8873

or

Or an approved equal that meets or exceeds the manufacturer’s requirements of the products stated above. All synthetic turf shall be installed within conformance of the manufacturer’s recommendation; with the exception that all rubber utilized as infill for this project shall be cryogenic rubber. Ambient material shall not be permitted for this project. The Contractor shall also supply a sample 3rd party warranty with the bid. A minimum pile height of 2.5” shall be utilized for this project.

At a minimum, the carpet shall consist of two (2) backings. The carpet's primary backing shall be a layered polypropylene fabric treated with UV inhibitors. The secondary backing shall consist of an application of porous, heat-activated material to permanently lock the fiber tufts in place. Tuft bind must be 9 lbs. or greater and testing data must be supplied at time of bid if other than specified herein.

The carpet shall be delivered in a minimum of fifteen (15) feet wide rolls. The rolls shall be of sufficient length to go from sideline to sideline. Head seams, other than at sidelines, will not be acceptable. Cord for sewing seams of turf shall be as recommended by the synthetic turf manufacturer. Perimeter edge details required for the system shall be as detailed and recommended by the manufacturer, and as approved by the manufacturer.

Carpet shall be tested by a certified 3rd party laboratory, after the installation, to show that all levels are below the residential soil-cleanup standard for lead. The testing shall be at no additional cost to the Owner.

Resilient Layered Infill: The cryogenic rubber/silica sand infill mix and installation process shall be a mix design and installation process as proposed by the manufacturer of the synthetic turf proposed for installation and shall consist of a minimum of 6 lbs of sand and 3 lbs of rubber for a total infill amount of 9 lbs per square foot. Infill shall be inserted into the carpet pile in a manner designed to guarantee that the top course of the infill remains rubber only, to prevent abrasive characteristics of sand particulates. Shop drawings regarding the material utilized and installation process is required prior to commencement of infilling. The Owner has the right to accept or deny the infill system proposed during the shop drawing process.

Ambient rubber shall not be permitted. Crambient rubber shall not be permitted.

For this application, the backing shall be perforated to allow vertical drainage through the turf after the gluing of the turf to the porous hot mix asphalt. Shop drawings shall be provided by the contractor that demonstrates this requirement is met

Base Stone: NJDOT Coarse Aggregate No. 57

RESTRICTIONS:

To ensure structural stability: $D_{60}/D_{10} > 5$ and $1 < \frac{D_{30}^2}{D_{10} D_{60}} < 3$

Fragmentation must be 100%.

To ensure separation of both stones: $\frac{D_{85} \text{ of finishing stone}}{D_{15} \text{ of base stone}} > 2$

and $3 < \frac{D_{50} \text{ of base stone}}{D_{50} \text{ of finishing stone}} < 6$

To ensure proper drainage:

- Permeability of base stone > 50 in/hr (3.5 x 10⁻² cm/sec)
- Permeability of finishing stone > 10 in/hr (7.0 x 10⁻³ cm/sec)
- Porosity of both stones > 25% (When stone is saturated and compacted to 95% Proctor.)

Underdrain System

ADS AdvanEdge

1 inch by 12 inch flat drain.

ADS AdvanEdge end connector with 4 inch ADS pipe.

Turf Groomer: The Contractor shall provide a turf grooming system, which consists of spiked wheels designed to penetrate the infill in order to loosen the infill without damaging the grass fibers and light raking tines attached to the rear of the unit designed to properly groom the exposed grass fibers to keep them from matting down excessively and place loose infill back into place. Multiple “V” front and rear brushes to move easily through infill. Physical dimensions are below:

- Overall width – 72.178”
- Length (Hitch to rear) – 154.457”
- Height (Jack Handle to Ground) – 40.670”

This equipment shall be approved by the turf manufacturer and the Owner to be used by the Owner as directed by the Manufacturer. No additional payment will be made for providing the equipment, but the costs for providing the equipment shall be included in the price bid for the synthetic turf.

The contractor shall be responsible for the maintenance associated with the field grooming for the first 120 days after the acceptance of the field at no additional cost to the Owner in order to properly train the municipality’s maintenance staff. Maintenance records shall be kept in accordance with the turf company’s warranty requirements. The contractor is also responsible to provide training seminars to the Owner and properly familiarize the maintenance staff of the upkeep requirements. A maintenance manual from the turf manufacturer shall be provided. Maintenance shall be in accordance with the requirements of the warranty. Coordination with the turf manufacturer shall be required.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, for compliance with requirements for maximum moisture content, installation tolerances, and other conditions affecting performance of work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. The surface to receive the synthetic turf shall be inspected as ready for the installation of the synthetic turf system and must be perfectly clean as installation commences and shall be maintained in that condition throughout the process.
- D. The installation shall be performed in full compliance with approved shop drawings. Only factory-trained technicians skilled in the installation of athletic caliber synthetic turf systems, working under the direct supervision of the manufacturer’s supervisors, shall undertake the placement of the system. The designated Supervisory personnel on the project must be certified, in writing by the turf manufacturer, as competent in the installation of this material, including sewing seams gluing seams, gluing striping/logos and proper installation of the infill mixture. The manufacturer shall certify the installation and warranty compliance. The surface to receive the synthetic turf shall be inspected and certified by the manufacturer as ready for the installation of the synthetic turf system and must be perfectly clean as installation commences and shall be maintained in that condition throughout the process.

3.2 PREPARATION

- A. Preparation of Subgrade: All topsoil, organic, and non-compactable materials need to be removed.

- B. The soil bed must have a minimum slope of 0.5% or more, depending on the soil analysis, from the longitudinal center of the field towards the sidelines or as depicted on the plans and specifications.
- C. The soil bed must be compacted in both directions to attain the specified compaction rate of 95% standard Proctor.
- D. The soil bed must be prepared to tolerances of not more than 1/2 inch from design grade to allow for even drainage.
- E. A geotextile fabric is required to cover the soil bed.

3.3 INSTALLATION

- A. Underdrain System: Install as detailed on the drawings and as recommended by the manufacturer of the synthetic turf system.
- B. Perimeter Edge: Install as detailed on the drawings and as recommended by the manufacturer of the synthetic turf system.
- C. Base Stone
 - a. The base stone must be laid without damaging the soil bed, geotextile liner or drains. It is very important to not create any depressions with heavy equipment. The specified stone or aggregate supplied must conform to the recommended specifications. The finished crushed stone or aggregate base supplied must be stable and permeable. The contractor should adhere to the construction details and manufacturers' specifications.
 - b. If the required compacted depth of the base course exceeds 6 inches, the base shall be constructed in 2 or more layers or lifts of approximate equal thickness. Each layer must be compacted in both directions to attain the specified compaction rate.
 - c. The base course must be sloped 0.5% from the center longitudinal axis towards the sidelines or as specified.
 - d. The grade of the base course shall not vary from the specified grade by more than 1/2 inch from design grade.
 - e. The base course must be compacted in both directions to attain the specified compaction rate of 95% standard Proctor.
 - f. Prior to the beginning of installation, the installer of the synthetic turf shall inspect the stone subbase and supply a certificate of stone subbase acceptance for the purpose of obtaining manufacturer's warranty for the finished synthetic turf. A copy of this certificate shall be provided to the engineer.
- D. Porous Asphalt
 - a. The final grade material must be sloped 0.35% from the northern axis towards the side lines unless otherwise specified.
 - b. The base stone must be compacted in both directions to attain the specified compaction rate of 95% standard Proctor.
 - c. Upon completion of the installation of the porous asphalt and prior to the installation of the synthetic turf, the contractor, Owner and Engineer shall witness a rain event (natural or artificial) in order to determine that the stone subbase drains vertically. Synthetic turf shall not be installed until this rain event takes place.
- E. Synthetic Turf
 - a. The full width rolls shall be laid out across the field. The turf contractor shall install the turf as per the manufacturer's recommendations.
 - b. Utilizing standard state of the art sewing and/or gluing procedures, each roll shall be attached as per the manufacturer's specifications. The striping and logos shall be glued as per the manufacturer's standard install practices as well.

- c. Turf panel seams shall be installed as per the manufacturer's standard practices. All seams shall be transverse to the field direction; i.e., run perpendicularly across the field. Seams shall be flat, tight, and permanent with no separation or fraying.
- d. Synthetic turf shall be installed across the field. Turf shall be of sufficient length to permit full cross-field installation. No head or cross seams will be allowed.
- e. The turf contractor shall thoroughly inspect all materials delivered to the site both for quality and quantity to assure that the entire installation shall have sufficient material to maintain proper mixing ratios and that the material delivered meets or exceeds the specifications for this particular project.
- f. After the seams are double sewn, the contractor shall utilize NORDOT® Adhesive #34S-3 (Plus) (or and approved equivalent) to permanently bond the synthetic turf to the porous hot mix asphalt. Please note that this is a total glue down project with the seams both sewn and glued. The synthetic turf shall be both nailed and glued at the perimeter of the field at the concrete turf nailers.

F. Resilient Layered Infill

- a. The infill material shall be spread evenly with a large spreader, (minimum 5-foot wide). Between applications the infill area shall be brushed with a motorized rotary nylon broom. Infill depth shall be such that a maximum of 3/4 inch of fiber is exposed.
- b. The infill system shall be the only acceptable cushioning system. E-layers and formed rubber pads shall be deemed unacceptable.

G. Miscellaneous

- a. The turf contractor shall thoroughly inspect all materials delivered to the site both for quality and quantity to assure that the entire installation shall have sufficient material to maintain proper mixing ratios.
- b. Infill materials shall be properly mixed on site and applied in numerous thin lifts using special broadcasting equipment. The turf shall be raked and brushed properly as the mixture is applied. The infill material shall be installed to an approximate depth of 2/3 of the fiber heights in order to comply with the initial G-MAX standards. The mixture can only be applied when dry.

H. Inlaid Lines

- a. The synthetic turf field shall have inlaid lines installed as per the manufacturer's standard practices. All required lines and markings, including football, soccer and logos shall be inlaid as per the project plans and specifications and as approved by the Owner.
- b. The inlaid lines shall be installed as per the manufacturers' recommendations of the color as approved by the Owner as depicted on the approved shop drawings.
- c. Inlaid line colors will be as follows:
 - Football – White (The synthetic turf contractor shall note that the perimeter border for the football field shall be 12" wide white turf)
 - Soccer – Yellow

3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Owner must approve the qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports for the turf contractor. The turf contractor shall receive no additional compensation for testing and inspection of the turf.
- B. Testing Services: Testing and inspecting of completed applications of synthetic turf system shall take place in successive stages, in areas of extent and using methods as follows. Do not proceed with application of the next stage until test results for previously completed applications show compliance with requirements.
- C. Remove and replace applications where test results indicate that it does not comply with specified requirements.
- D. Test Locations: The installed system will be tested for GMAX (by a company approved by the Owner) at locations defined in ASTM F1936 as modified. All test locations will be offset approximately 12-inches from any fabric seam, and all subsequent retesting will be performed at the exact same locations as previous test locations for comparisons. The Contractor is responsible for all costs associated with Testing.
- E. At substantial completion the G-MAX average shall not exceed 125 G's with no single location value in excess of 130. The testing company shall submit three (3) copies of the G-MAX test report to the engineer prior to the date of substantial completion.
- F. Four (4) additional retests are required. One retest at the first anniversary and the other three (3) as requested by the engineer. After the first anniversary and until the end of the 8 year anniversary period, the maximum G-MAX shall not exceed 180 at any location.
- G. Costs associated with G-MAX testing shall be the Contractor's responsibility and shall be included in the bid price for synthetic turf. The company utilized to perform the GMAX testing shall be selected by the Owner.
- H. If after a G-MAX test the surface exceeds a G-MAX rating of 130 in the first year after installation or exceeds a G-MAX of 180 from warranty years 2 through 8, the turf contractor will be required to provide procedures and a schedule to repair the field at no cost to the Owner. The Owner and the engineer on the project shall review the proposed remediation procedures prior to the contractor performing the repairs.
- I. If after two (2) attempts to repair the field the G-MAX rating exceeds the requirements noted above, the contractor shall replace the field at no cost to the Owner. If replacement is required, replacement of the field shall be completed within 90 days.

3.5 FINAL ACCEPTANCE

- A. Prior to Final Acceptance, the Contractor shall submit to the owner three (3) copies of Maintenance Manuals, which will include all necessary instructions for the proper care and preventative maintenance of the synthetic turf system, including painting and striping.

B. The Contractor shall provide evidence that the turf can be plowed with conventional rubber bladed snow removal equipment.

C. The finished playing surface shall appear as mowed grass with no irregularities and shall afford excellent traction for conventional athletic shoes of all types. The finished surface shall resist abrasion and cutting from normal use.

3.6 CLEANING

A. Contractor shall provide the labor, supplies and equipment as necessary for final cleaning of surfaces and installed items. All usable remnants of new material shall become the property of the Owner. The Contractor shall keep the area clean throughout the project and clear of debris. Surfaces, recesses, enclosures, etc., shall be cleaned, as necessary, to leave the work area in a clean, immaculate condition ready for immediate occupancy and use by the Owner.

PART 4 - PAYMENT

4.1 METHOD OF MEASUREMENT AND PAYMENT

Synthetic Turf will be measured by the square foot for the actual amount of turf installed. No payment will be made for infill, cut rolls or turf that is left on the site uninstalled. The square foot price shall include all work necessary to successfully install the proposed synthetic turf system on site including synthetic turf, infill, delivery, loading/unloading, and all materials, all equipment and cleanup.

The inlaid lines, inlaid markings, geotextile fabric, warranty, turf grooming equipment and G-MAX testing will not be measured for payment but the cost shall be included square foot price bid for the turf.

It is the responsibility of the contractor to coordinate with his/her subcontractors and the Engineer for the successful completion of this project. If at any time a concern arises with the construction or coordination of the site work and synthetic turf installation the Engineer shall be contacted immediately.

The center logo shall be included in the square footage price for the synthetic turf. Payment for the lettering, logo and inlaid lines shall not be measured separately for payment, but will be included in the square footage price for the synthetic turf.

The synthetic turf proposed by the contractor may be upgraded ONLY with permission and acceptance by the OWNER. The cost to upgrade the product shall be at NO ADDITIONAL EXPENSE to the OWNER. The contractor will be required to submit this request during the shop drawing review process.

Please note that all questions, concerns, comments and inquiries shall be conducted in accordance with the General Conditions section of these specifications.

924.04 MEASUREMENT AND PAYMENT

The Entire Subsection is Replaced by the Following:

The Following Pay Item is Described:

Item
Monofilament Synthetic Turf, 2.5" Pile

Pay Unit
Square Foot

APPENDIX A
TEST PIT LOGS

TEST PIT LOG TP#1

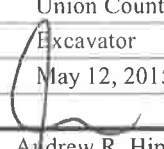


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Project Information
Project Name: Cedar Brook
Project Location: Plainfield, NJ
Project Number: 14000950A

Depth (ft)	Sample Number (depth, ft)	Test Results			Visual Description / Comments	Elev. (ft)
		PP (tsf)	HP (in.)	DCP (blows/1.75")		
0					4" Topsoil	71
					12" Historic Fill	
5					10YR4/2 Dark yellowish brown Sandy Loam, Spheroidal Structure, Moist, Coarse, Loose. Coarse Fragments (30% gravel, 9% cobbles, 1% stones)	66
					*Mottling at 77"	
					86" End of Test Pit	
10						61
15						56
20						51

Location Information	Elevation (ft):	70.6	General Information	Field Engineer:	Andrew Hipolit, PE
				Project Manager:	Joseph Venezia, PE
		Contractor:		Union County	
		Equipment:		Excavator	
Groundwater Data (ft)	ESHW (inches)	77" Mottling		Date Completed:	May 12, 2015
	Elevation (ft):	64.2		 Andrew R. Hipolit New Jersey Professional Engineer Lic. No. 39428	

Comments: No evidence of seepage or bedrock was observed.

Notes: PP - Pocket Penetrometer
HP - Hand Probe Penetration
DCP-Dynamic Cone Penetrameter (blows/1.75")

TEST PIT LOG TP#2

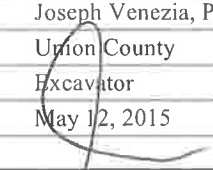


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					*Mottling at 77"	
					86" End of Test Pit	
10						61
15						56
20						51

Location Information	Elevation (ft):	71.0	General Information	Field Engineer:	Andrew Hipolit, PE
				Project Manager:	Joseph Venezia, PE
		Contractor:		Union County	
		Equipment:		Excavator	
Groundwater Data (ft)	ESHW (inches)	77" (mottling)		Date Completed:	May 12, 2015
	Elevation (ft):	64.6		 Andrew R. Hipolit New Jersey Professional Engineer Lic. No. 39428	

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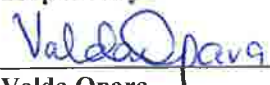
APPENDIX B
FLOOD HAZARD AREA PERMIT



**STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF LAND USE REGULATION**
Mail Code 501-02A, P.O. Box 420, Trenton, New Jersey 08625-0420
Telephone: (609) 777-0454 or Fax: (609) 777-3656
www.state.nj.us/dep/landuse



PERMIT

<p>In accordance with the laws and regulations of the State of New Jersey, the Department of Environmental Protection hereby grants this permit to perform the activities described below. This permit is revocable with due cause and is subject to the limitations, terms and conditions listed below and on the attached pages. For the purpose of this document, "permit" means "approval, certification, registration, authorization, waiver, etc." Violation of any term, condition or limitation of this permit is a violation of the implementing rules and may subject the permittee to enforcement action.</p>		Approval Date MAR 07 2016
		Expiration Date MAR 06 2021
Permit Number(s): 2012-04-0006.1 FHA 150001 2012-04-0006.1 FHA 150002	Type of Approval(s): Flood Hazard Area Individual Permit Flood Hazard Area Verification	Enabling Statute(s): NJSA 58:16A NJSA 58:10A NJSA 40:55D-93-99
Permittee: County of Union c/o Thomas O. Mineo, P.E. 2325 South Avenue Scotch Plains, NJ 07076	Site Location: Block(s) & Lot(s): [732, 1] Municipality: Plainfield City County: Union	
Description of Authorized Activities: <p>This permit verifies the limits of the flood hazard area and floodway on a portion of the site and authorizes the construction of a synthetic turf field and stormwater facility within the floodway and flood fringe of the Cedar Brook on a project site located northwesterly of the intersection of Arlington Avenue and Park Drive, within Lot No. 1 of Block No. 732 in the City of Plainfield, Union County, New Jersey.</p>		
Prepared by:  Valda Opara	Received and/or Recorded by County Clerk:	
<p>THIS PERMIT IS NOT EFFECTIVE AND NO CONSTRUCTION APPROVED BY THIS PERMIT, OR OTHER REGULATED ACTIVITY, MAY BE UNDERTAKEN UNTIL THE APPLICANT HAS SATISFIED ALL PRE-CONSTRUCTION CONDITIONS AS SET FORTH HEREIN.</p>		
<p>This permit is not valid unless authorizing signature appears on the last page.</p>		

SPECIAL CONDITIONS:

1. **Recording of Permit:** This permit shall be recorded in its entirety in the office of the County Clerk or the Registrar of Deeds and Mortgages for each county where this project is located. Verified notice of this action shall be forwarded to the Division immediately thereafter. **NOTE:** The following information is to be submitted to the clerk for all Flood Hazard Area Verifications:
 - a. The Department file number for the verification;
 - b. The approval and expiration dates of the verification;
 - c. A metes and bounds description of any flood hazard area limit and/or floodway limit approved under the verification;
 - d. The flood hazard area design flood elevation, or range of elevations if variable, approved under the verification; and
 - e. The following statement: "The State of New Jersey has determined that all or a portion of this lot lies in a flood hazard area. Certain activities in flood hazard areas are regulated by the New Jersey Department of Environmental Protection and some activities may be prohibited on this site or may first require a permit. Contact the Division of Land Use Regulation at (609) 777-0454 for more information prior to any construction onsite."
2. The applicant shall make specific arrangements to ensure the continuous maintenance and efficient operation of all proposed stormwater management measures onsite. This includes the inspection (and cleaning where necessary) of any and all constructed basins, inlets, and backflow system at least four times per year and after every major storm totaling 1 inch of rainfall or more, the use of appropriate soil conservation practices onsite, and any other reasonable effort required to maintain the stormwater management system in good working order.
3. The Department has determined that this project meets the requirements of the Stormwater Management rules at N.J.A.C. 7:8. Any future expansion or alteration of the approved stormwater management system, which would affect water quality, increase the rate or volume of stormwater leaving the site, affect the infiltration capacity on the site, or alter the approved low impact site design, shall be reviewed and approved by the Department prior to construction. This includes any proposed changes to the discharge characteristics of any basin, the construction of new inlets or pipes that tie into the storm sewer network and/or the replacement of existing inlets or pipes with structures of different capacity.
4. Construction equipment shall not be stored, staged or driven within any channel, freshwater wetland or transition area, unless expressly approved by this permit and/or described on the approved plans.
5. This verification establishes the flood hazard area design flood elevation, and the floodway limits onsite as shown on the approved plans. A flood hazard area permit is required prior to undertaking any regulated activity within the verified flood hazard area or floodway onsite. Please note that regulated activities may be prohibited or restricted within the floodway onsite. Regulated activities are defined in the Flood Hazard Area

Control Act rules at N.J.A.C. 7:13-2.4. Work outside both the verified flood hazard area and floodway does not require prior approval under N.J.A.C. 7:13. Please note that the verified limits of the flood hazard area and floodway is only for a portion of Lot No. 1 of Block No. 732.

6. **Material Disposal:** All excavated material and dredge material shall be disposed of in a lawful manner. The material shall be placed outside of any flood hazard area, riparian zone, regulated water, freshwater/coastal wetlands and adjacent transition area, and in such a way as to not interfere with the positive drainage of the receiving area.

STANDARD CONDITIONS:

1. **Responsibilities:**
 - a. The permittee, its contractors and subcontractors shall comply with all conditions of this permit, authorizing and/or supporting documents and approved plans and drawings.
 - b. A copy of this permit, other authorizing documents, records and information including all approved plans and drawings shall be maintained at the authorized site at all times and made available to Department representatives or their designated agents upon request.
2. **Permit modification:** Plans and specifications in the application and conditions imposed by this permit shall remain in full force and effect so long as the proposed development or any portion thereof is in existence, unless modified by the Department. No change in plans or specifications upon which this permit is issued shall be made except with the prior written permission of the Department. The filing of a request to modify an issued permit by the permittee, or a notification of planned changes or anticipated noncompliance does not stay any condition of this permit.
3. **Duty to minimize environmental impacts:** The permittee shall take all reasonable steps to prevent, minimize or correct any adverse impact on the environment resulting from activities conducted pursuant to the permit, or from noncompliance with the permit. The permittee shall immediately inform the Department of any unanticipated adverse effects on the environment not described in the application or in the conditions of this permit. The Department may, upon discovery of such unanticipated adverse effects, and upon the failure of the permittee to submit a report thereon, notify the permittee of its intent to suspend the permit
4. **Proper site maintenance:** While the regulated activities are being undertaken, neither the permittee, its contractors nor subcontractors shall cause or permit any unreasonable interference with the free flow of a regulated feature by placing or dumping any materials, equipment, debris or structures within or adjacent to the regulated area. Upon completion or abandonment of the work, the permittee, its contractors or subcontractors shall remove and dispose of in a lawful manner all excess materials, debris, equipment, silt fences and other temporary soil erosion and sediment control devices from all regulated areas. Only clean non-toxic fill shall be used where necessary.

5. **Sediment control:** Development which requires soil disturbance, creation of drainage structures, or changes in natural contours shall conduct operations in accordance with the latest revised version of “Standards for Soil Erosion Sediment Control in New Jersey,” promulgated by the New Jersey State Soil Conservation Committee, pursuant to the Soil Erosion and Sediment Control Act of 1975, N.J.S.A. 4:24-42 et seq. and N.J.A.C. 2:90-1.3-1.14.
6. **Rights of the State:**
 - a. This permit does not convey any property rights of any sort, or any exclusive privilege.
 - b. Upon notification and presentation of credentials, the permittee shall allow Department representatives or their designated agents, to enter upon the project site and/or where records must be kept under the conditions of this permit, inspect at reasonable times any facilities, equipment, practices or operations regulated or required under the permit, and sample or monitor for the purposes of determining compliance. Failure to allow reasonable access shall be considered a violation of this permit and subject the permittee to enforcement action.
 - c. The issuance of this permit shall in no way expose the State of New Jersey or the Department to liability for the sufficiency or correctness of the design of any construction, structure or structures. Neither the State nor the Department shall, in any way, be liable for the loss of life or property which may occur by virtue of the activity of development resulting from any permit.
7. **Duty to Reapply:** If the permittee wishes to continue an activity covered by the permit after the expiration date of the permit authorization, the permittee must apply for and obtain a new permit authorization.
8. **Transfer of Permit:** This permit may not be transferable to any person unless the transfer is approved by the Department. Please refer to the applicable rules for more information.
9. **Other Approvals:** The permittee must obtain any and all other Federal, State and/or Local approvals. Authorization to undertake a regulated activity under this permit does not indicate that the activity also meets the requirements of any other rule, plan or ordinance.
10. **Noncompliance:**
 - a. Any noncompliance with this permit constitutes a violation, and is grounds for enforcement action, as well as modification, suspension and/or termination of the permit.
 - b. The permittee shall immediately report to the Department by telephone at (877) 927-6337 any noncompliance that may endanger health or the environment. In

addition, the permittee shall report all noncompliance to Bureau of Coastal and Land Use Compliance and Enforcement, 401 E. State Street, 4th Floor, P.O. Box 420, Mail Code: 401-04C, Trenton, NJ 08625, in writing within five business days of the time the permittee becomes aware of the noncompliance. The written notice shall include: a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated length of time it is expected to continue; and steps taken or planned to reduce, eliminate and prevent recurrence of the noncompliance. Such notice shall not, however, serve as a defense to enforcement action if the project is found to be in violation of this chapter.

11. **Appeal of Permit:** In accordance with the applicable regulations, any person who is aggrieved by this decision or any of the conditions of this permit may request a hearing within 30 days after notice of the decision is published in the DEP Bulletin. This request must include a completed copy of the Administrative Hearing Request Checklist. The DEP Bulletin is available through the Department's website at <http://www.nj.gov/dep/bulletin> and the Checklist is available through the Division's website at http://www.nj.gov/dep/landuse/download/lur_024.pdf. In addition to your hearing request, you may file a request with the Office of Dispute Resolution to engage in alternative dispute resolution. Please see the website www.nj.gov/dep/odr for more information about this process.

APPROVED PLANS:

The drawings hereby approved are as follows:

Seven (7) sheets, prepared by Maser Consulting P.A, dated November 5, 2015, last revised February 22, 2016, unless otherwise noted, entitled:

“SITE PLANS FOR CEDAR BROOK PARK CITY OF PLAINFIELD BLOCK 732 LOT 1 CITY OF PLAINFIELD COUNTY OF UNION STATE OF NEW JERSEY”

- “GENERAL NOTES & QUANTITIES ”, sheet no. 2 of 10,
- “EXISTING CONDITIONS & DEMOLITION PLAN”, sheet no. 3 of 10,
- “GRADING AND DRAINAGE PLAN”, sheet no. 5 of 10,
- “SOIL EROSION & SEDIMENT CONTROL PLAN”, sheet no. 7 of 10,
- “SOIL EROSION & SEDIMENT CONTROL NOTES & DETAILS”, sheet no. 8 of 10,
- “CONSTRUCTION DETAILS”, sheet nos. 9 and 10 of 10,

And,

Ten (10) sheets prepared by Maser Consulting P.A, dated November 5, 2015, last revised February 19, 2016, unless otherwise noted, entitled:

“PROPOSED FLOOD VOLUMES FOR CEDAR BROOK PARK CITY OF PLAINFIELD
BLOCK 732 LOT 1 CITY OF PLAINFIELD COUNTY OF UNION STATE OF NEW
JERSEY”

- “EXISTING FLOOD VOLUME LAYOUT”, sheet no. 1 of 10,
- “PROPOSED FLOOD VOLUME LAYOUT”, sheet no. 2 of 10,
- “FLOOD VOLUME CROSS SECTIONS”, sheet nos. 3 – 6 of 10,
- “FLOODWAY CROSS SECTIONS”, sheet nos. 7 – 10 of 10.

If you need clarification on any section of this permit or conditions, please contact the Division of Land Use Regulation’s Technical Support Call Center at (609) 777-0454.

Approved By:

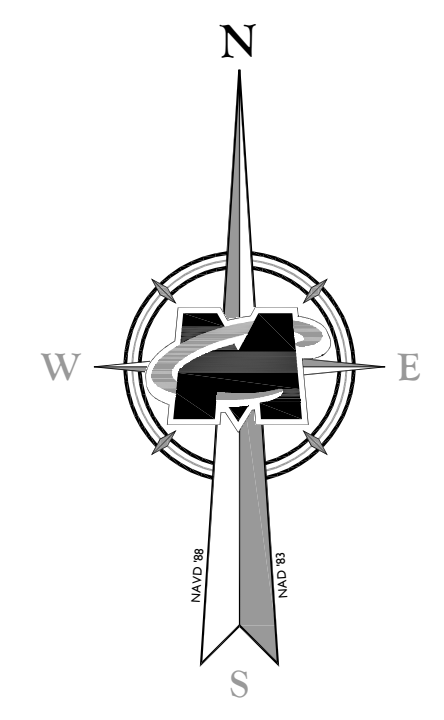


Nabil M. Andrews, Environmental Engineer 3
Division of Land Use Regulation

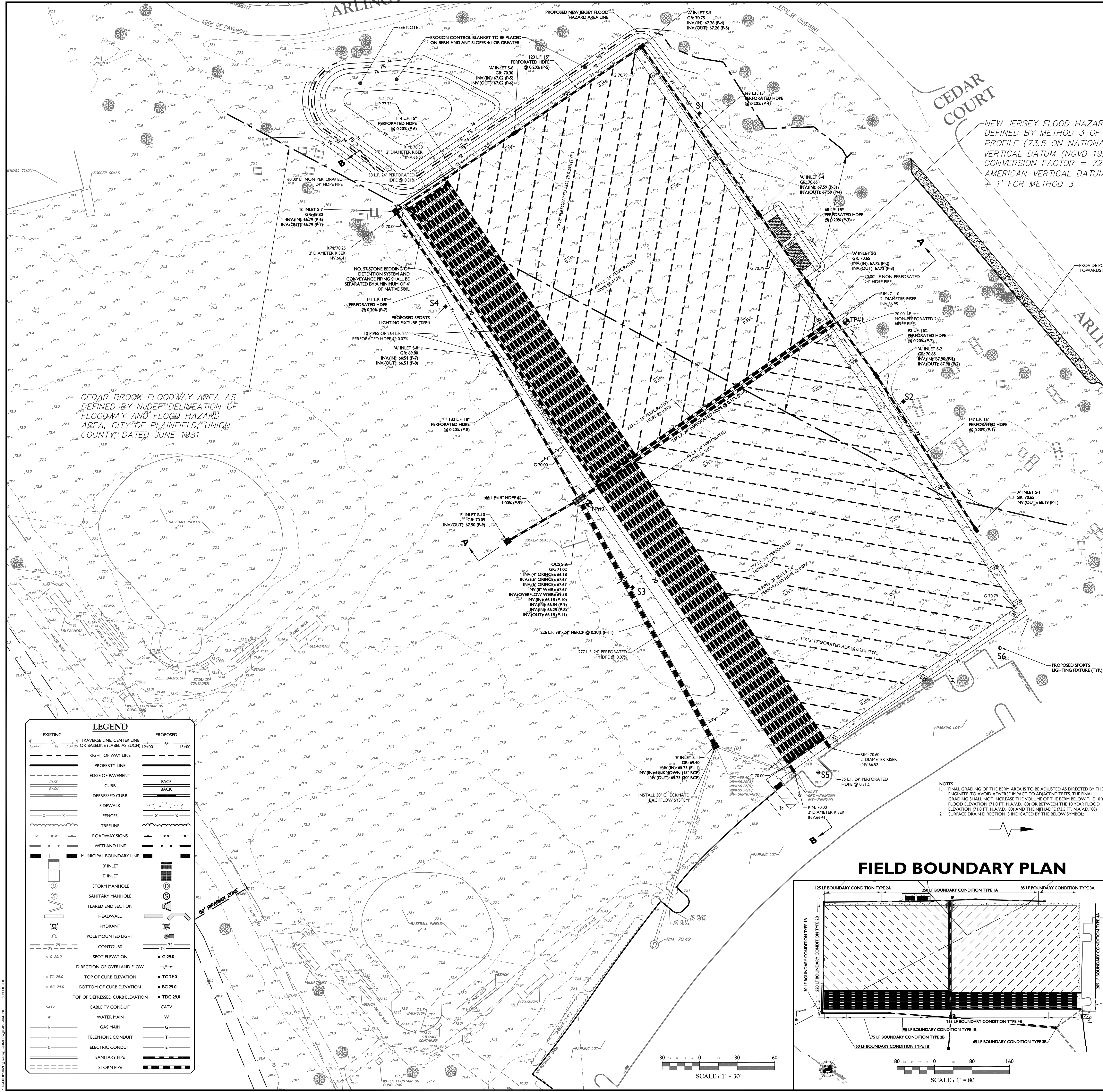


Date

Original sent to Agent to record
c: Permittee



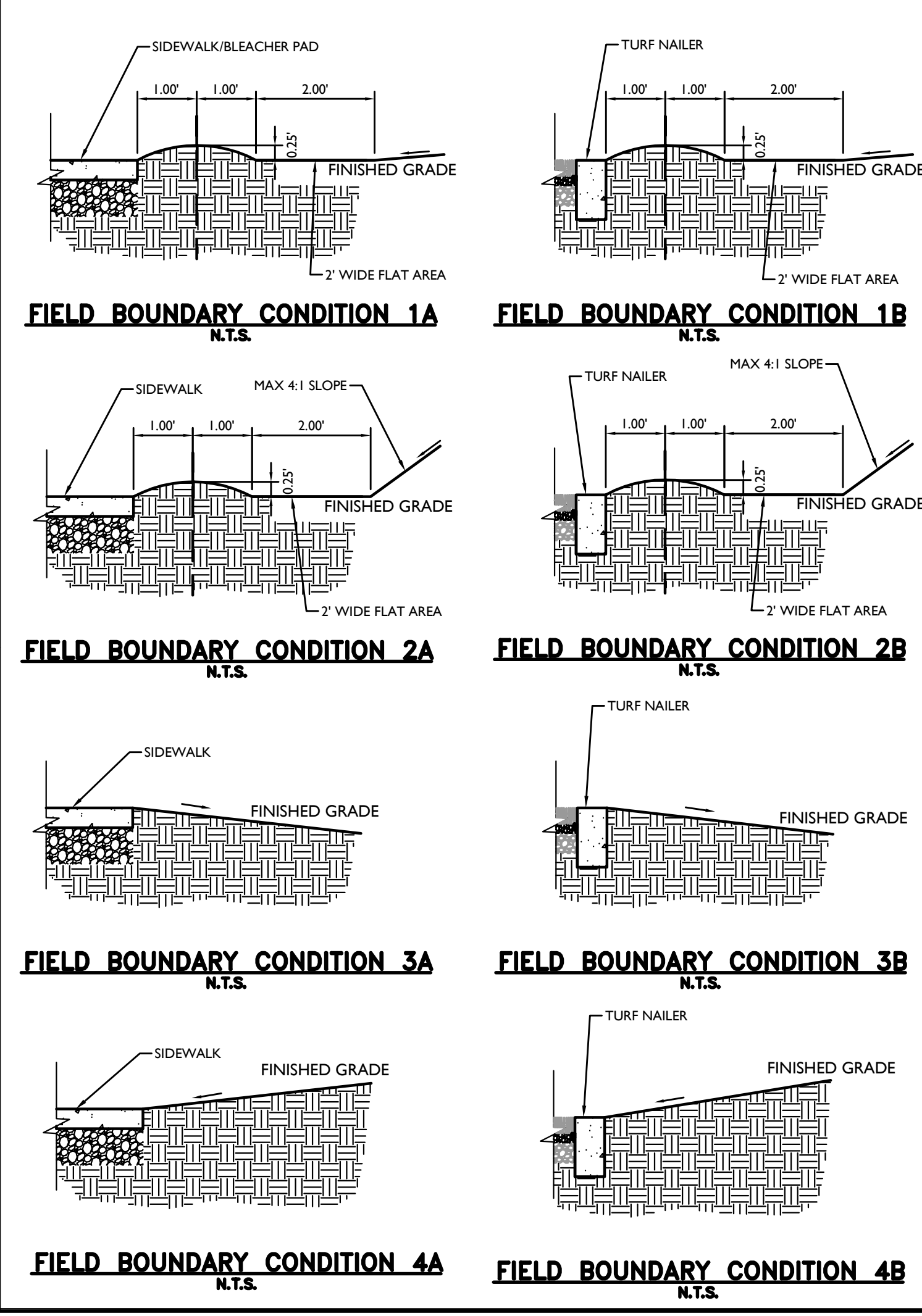
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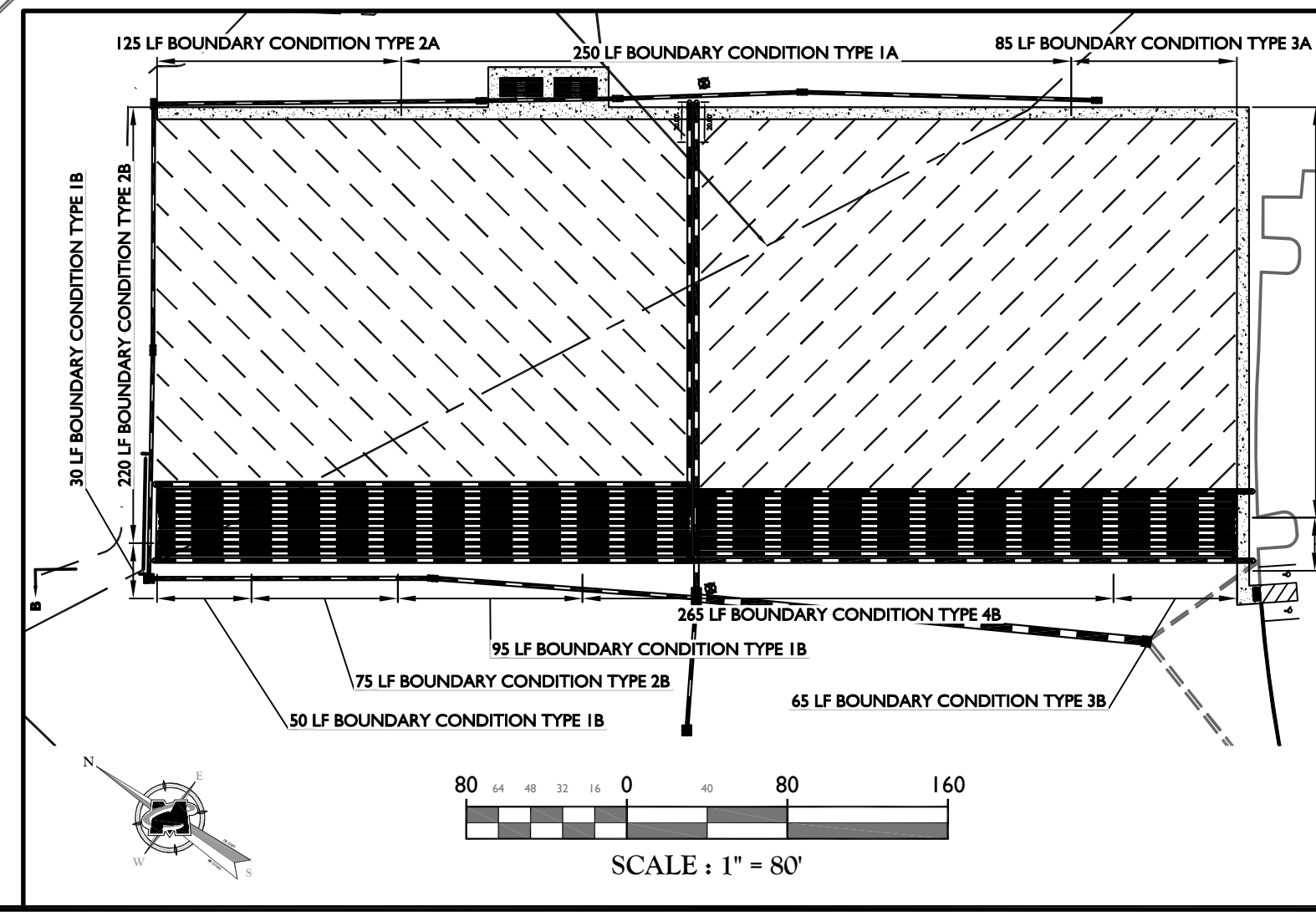
NEW JERSEY FLOOD HAZARD AREA AS DEFINED BY METHOD 3 OF THE FEMA FLOOD PROFILE (73.5 ON NATIONAL GEODETIC VERTICAL DATUM (NGVD 1929) - 1' CONVERSION FACTOR = 72.5 ON NORTH AMERICAN VERTICAL DATUM (NAVD 1988) + 1' FOR METHOD 3

CEDAR BROOK FLOODWAY AREA AS DEFINED BY NJDEP DELINEATION OF FLOODWAY AND FLOOD HAZARD AREA, CITY OF PLAINFIELD, UNION COUNTY, DATED JUNE 1981

FIELD BOUNDARY DETAILS



FIELD BOUNDARY PLAN



NOTES
 1. FINAL GRADING OF THE BERM AREA IS TO BE ADJUSTED AS DIRECTED BY THE ENGINEER TO AVOID ADVERSE IMPACT TO ADJACENT TREES. THE FINAL GRADING SHALL NOT INCREASE THE VOLUME OF THE BERM BEYOND THE 10 YEAR FLOOD ELEVATION (71.8 FT. N.A.V.D. '88) OR BETWEEN THE 10 YEAR FLOOD ELEVATION (71.8 FT. N.A.V.D. '88) AND THE 50-YEAR FLOOD (73.5 FT. N.A.V.D. '88)
 2. SURFACE DRAIN DIRECTION IS INDICATED BY THE BELOW SYMBOL

LEGEND

EXISTING	PROPOSED
TRaverse LINE, CENTER LINE OR BASELINE (LABEL AS SUCH) 1:2400	1:2400
RIGHT OF WAY LINE	PROPERTY LINE
EDGE OF PAVEMENT	FACE
CURB	BACK
DEPRESSED CURB	
SIDEWALK	
FENCES	
TREELINE	
ROADWAY SIGNS	
WETLAND LINE	
MUNICIPAL BOUNDARY LINE	
'B' INLET	
'E' INLET	
STORM MANHOLE	
SANITARY MANHOLE	
FLARED END SECTION	
HEADWALL	
HYDRANT	
POLE MOUNTED LIGHT	
CONTOURS	
SPOT ELEVATION	
DIRECTION OF OVERLAND FLOW	
TOP OF CURB ELEVATION	
BOTTOM OF CURB ELEVATION	
TOP OF DEPRESSED CURB ELEVATION	
CATV	
WATER MAIN	
GAS MAIN	
TELEPHONE CONDUIT	
ELECTRIC CONDUIT	
SANITARY PIPE	
STORM PIPE	

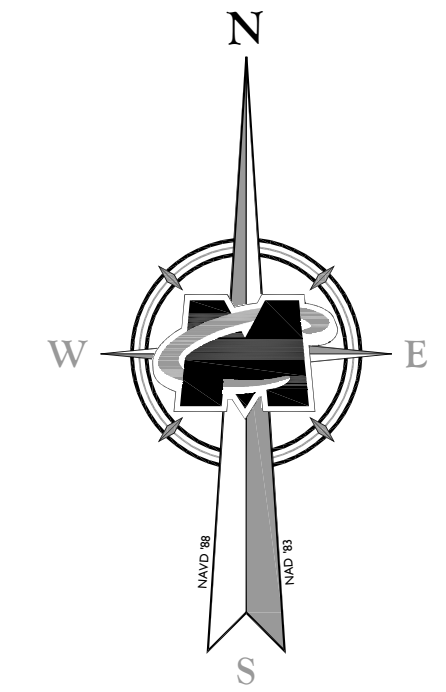
REV	DATE	DESCRIPTION
1	12/20/15	ISSUED PER NJDEP COMMENTS
2	2/20/16	BAK
3	2/17/17	BAK

Carl P. O'Brien
CARL P. O'BRIEN
 NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: 654154

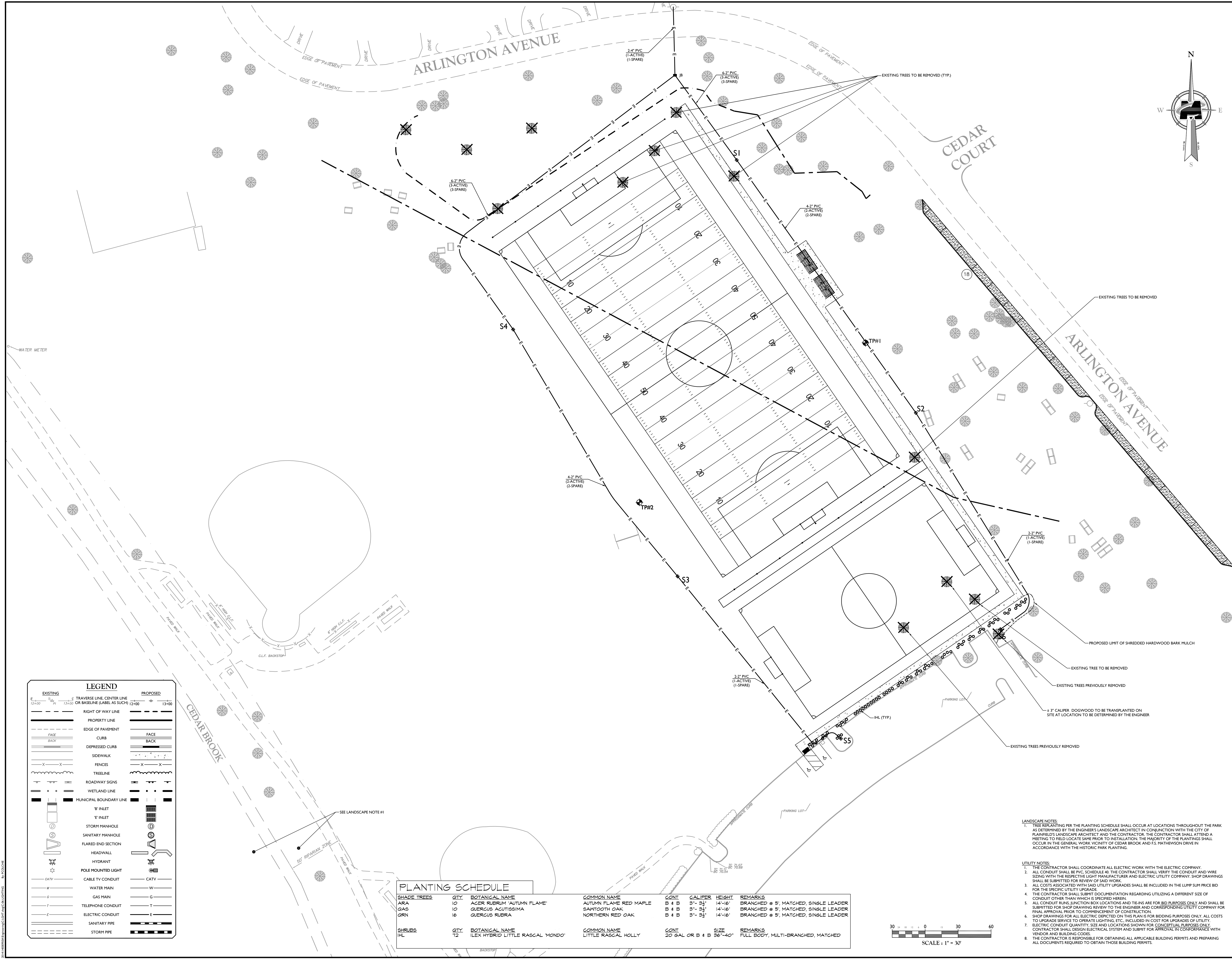
SITE PLANS
 FOR
CEDAR BROOK PARK
 CITY OF PLAINFIELD
 BLOCK 732 LOT 1
 CITY OF PLAINFIELD
 COUNTY OF UNION
 STATE OF NEW JERSEY

MT. ARLINGTON OFFICE
 400 Valley Road
 Suite 204
 Mount Arlington, NJ 07856
 Phone: 973.388.3110
 Fax: 973.388.3199
 email: solutions@maserconsulting.com

SCALE	DATE	DRAWN BY	CHECKED BY
AS SHOWN	11/05/2015	BAK	JMD
PROJECT NUMBER		DRAWING NAME	
10114100		C-GRAD	
GRADING & DRAINAGE PLAN			
5 of 12			



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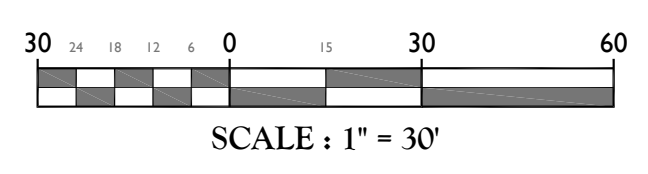
LEGEND

EXISTING	PROPOSED
--- TRAVERSE LINE CENTER LINE (12+00 OR BASELINE LABEL AS SHOWN)	--- TRAVERSE LINE CENTER LINE (12+00 OR BASELINE LABEL AS SHOWN)
--- RIGHT OF WAY LINE	--- RIGHT OF WAY LINE
--- PROPERTY LINE	--- PROPERTY LINE
--- EDGE OF PAVEMENT	--- EDGE OF PAVEMENT
--- CURB (FACE/BACK)	--- CURB (FACE/BACK)
--- DEPRESSION CURB	--- DEPRESSION CURB
--- SIDEWALK	--- SIDEWALK
--- FENCES	--- FENCES
--- TREELINE	--- TREELINE
--- ROADWAY SIGNS	--- ROADWAY SIGNS
--- WETLAND LINE	--- WETLAND LINE
--- MUNICIPAL BOUNDARY LINE	--- MUNICIPAL BOUNDARY LINE
--- 'B' INLET	--- 'B' INLET
--- 'E' INLET	--- 'E' INLET
--- STORM MANHOLE	--- STORM MANHOLE
--- SANITARY MANHOLE	--- SANITARY MANHOLE
--- FLARED END SECTION	--- FLARED END SECTION
--- HEADWALL	--- HEADWALL
--- HYDRANT	--- HYDRANT
--- POLE MOUNTED LIGHT	--- POLE MOUNTED LIGHT
--- CATV	--- CATV
--- WATER MAIN	--- WATER MAIN
--- GAS MAIN	--- GAS MAIN
--- TELEPHONE CONDUIT	--- TELEPHONE CONDUIT
--- ELECTRIC CONDUIT	--- ELECTRIC CONDUIT
--- SANITARY PIPE	--- SANITARY PIPE
--- STORM PIPE	--- STORM PIPE

PLANTING SCHEDULE

SHADE TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT.	CALIPER	HEIGHT	REMARKS
ARA	10	ACER RUBRUM 'AUTUMN FLAME'	AUTUMN FLAME RED MAPLE	B 4 B	3" - 3 1/2"	14'-16'	BRANCHED @ 5', MATCHED, SINGLE LEADER
GAS	10	QUERCUS ACUTISSIMA	SAWTOOTH OAK	B 4 B	3" - 3 1/2"	14'-16'	BRANCHED @ 5', MATCHED, SINGLE LEADER
GRN	16	QUERCUS RUBRA	NORTHERN RED OAK	B 4 B	3" - 3 1/2"	14'-16'	BRANCHED @ 5', MATCHED, SINGLE LEADER
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	CONT.	SIZE	REMARKS	
IHL	72	ILEX HYBRID 'LITTLE RASCAL MONDO'	LITTLE RASCAL HOLLY	20 GAL OR B 4 B	36"-40"	FULL BODY, MULTI-BRANCHED, MATCHED	

- LANDSCAPE NOTES:**
1. TREE REPLANTING PER THE PLANTING SCHEDULE SHALL OCCUR AT LOCATIONS THROUGHOUT THE PARK AS DETERMINED BY THE ENGINEER'S LANDSCAPE ARCHITECT IN CONJUNCTION WITH THE CITY OF PLAINFIELD'S LANDSCAPE ARCHITECT AND THE CONTRACTOR. THE CONTRACTOR SHALL ATTEND A MEETING TO FIELD LOCATE SAME PRIOR TO INSTALLATION. THE MAJORITY OF THE PLANTINGS SHALL OCCUR IN THE GENERAL WORK VICINITY OF CEDAR BROOK AND F.S. MATHEWS DRIVE IN ACCORDANCE WITH THE HISTORIC PARK PLANTING.
- UTILITY NOTES:**
1. THE CONTRACTOR SHALL COORDINATE ALL ELECTRIC WORK WITH THE ELECTRIC COMPANY.
 2. ALL CONDUIT SHALL BE PVC, SCHEDULE 40. THE CONTRACTOR SHALL VERIFY THE CONDUIT AND WIRE SIZING WITH THE RESPECTIVE LIGHT MANUFACTURER AND ELECTRIC UTILITY COMPANY. SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW OF SAID WORK.
 3. ALL COSTS ASSOCIATED WITH SAID UTILITY UPGRADES SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR THE SPECIFIC UTILITY UPGRADE.
 4. THE CONTRACTOR SHALL SUBMIT DOCUMENTATION REGARDING UTILIZING A DIFFERENT SIZE OF CONDUIT OTHER THAN WHICH IS SPECIFIED HEREIN.
 5. ALL CONDUIT RUNS, JUNCTION BOX LOCATIONS AND TIE-INS ARE FOR BID PURPOSES ONLY AND SHALL BE SUBMITTED FOR SHOP DRAWING REVIEW TO THE ENGINEER AND CORRESPONDING UTILITY COMPANY FOR FINAL APPROVAL PRIOR TO COMMENCEMENT OF CONSTRUCTION.
 6. SHOP DRAWINGS FOR ALL ELECTRIC DEPICTED ON THIS PLAN IS FOR BIDDING PURPOSES ONLY. ALL COSTS TO UPGRADE SERVICE TO OPERATE LIGHTING, ETC., INCLUDED IN COST FOR UPGRADES OF UTILITY.
 7. ELECTRIC CONDUIT QUANTITY, SIZE AND LOCATIONS SHOWN FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR SHALL DESIGN ELECTRICAL SYSTEM AND SUBMIT FOR APPROVAL IN CONFORMANCE WITH VENDOR AND BUILDING CODES.
 8. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL APPLICABLE BUILDING PERMITS AND PREPARING ALL DOCUMENTS REQUIRED TO OBTAIN THOSE BUILDING PERMITS.



REVISIONS

REV	DATE	DRAWN BY	DESCRIPTION

DATE: 12/28/15
 DRAWN BY: BAK
 CHECKED BY: BAK
 DATE: 12/28/15
 DRAWN BY: BAK
 CHECKED BY: BAK

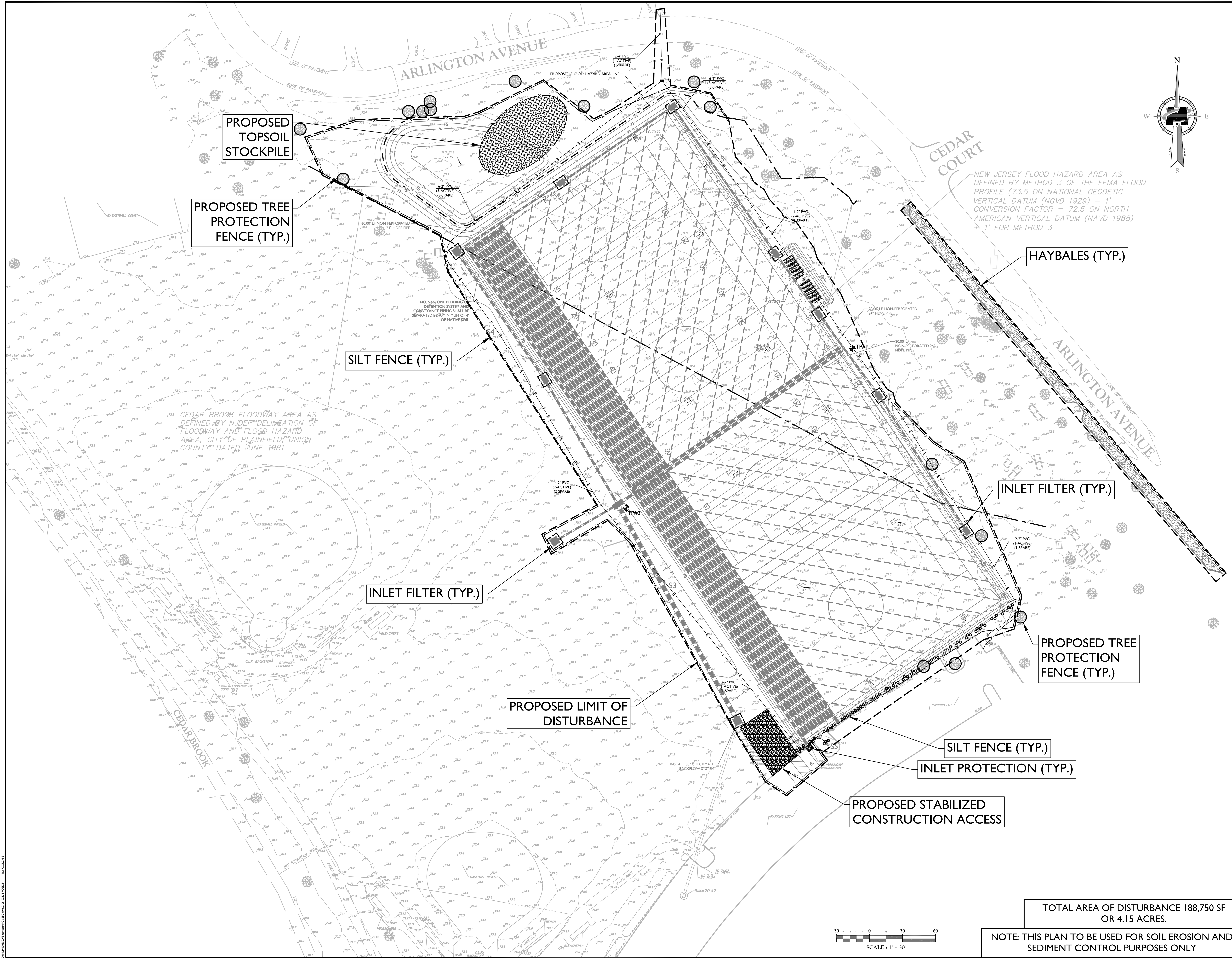
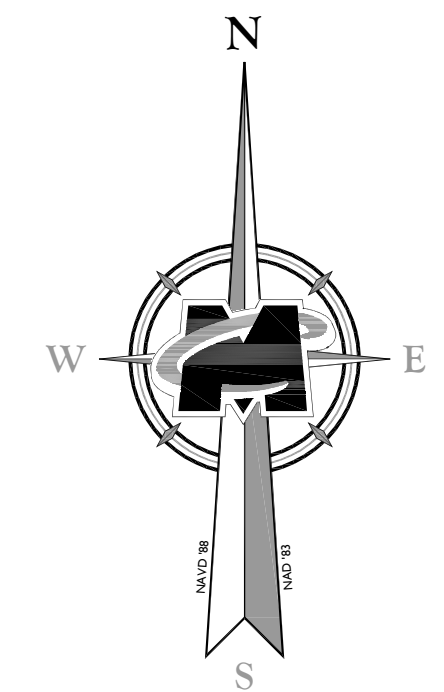
Carl P. O'Brien
CARL P. O'BRIEN
 NEW JERSEY PROFESSIONAL
 ENGINEER - LICENSE NUMBER: GE45154

SITE PLANS
 FOR
CEDAR BROOK PARK
CITY OF PLAINFIELD
BLOCK 732 LOT 1

CITY OF PLAINFIELD
COUNTY OF UNION
STATE OF NEW JERSEY

MT. ARLINGTON OFFICE
 400 Valley Road
 Suite 204
 Mount Arlington, NJ 07856
 Phone: 973.388.3110
 Fax: 973.388.3199
 email: solutions@maserconsulting.com

SCALE	DATE	DRAWN BY	CHECKED BY
AS SHOWN	11/05/2015	BAK	JSD
PROJECT NUMBER	DRAWING NAME	DATE	SCALE
201611400	CLIGHT		



NEW JERSEY FLOOD HAZARD AREA AS DEFINED BY METHOD 3 OF THE FEMA FLOOD PROFILE (73.5 ON NATIONAL GEODETIC VERTICAL DATUM (NGVD 1929) - 1' CONVERSION FACTOR = 72.5 ON NORTH AMERICAN VERTICAL DATUM (NAVD 1988) + 1' FOR METHOD 3

CEDAR BROOK FLOODWAY AREA AS DEFINED BY NJDEP DELINEATION OF FLOODWAY AND FLOOD HAZARD AREA, CITY OF PLAINFIELD, UNION COUNTY, DATED JUNE 1981

HAYBALES (TYP.)

PROPOSED TREE PROTECTION FENCE (TYP.)

SILT FENCE (TYP.)

INLET FILTER (TYP.)

INLET FILTER (TYP.)

PROPOSED TREE PROTECTION FENCE (TYP.)

PROPOSED LIMIT OF DISTURBANCE

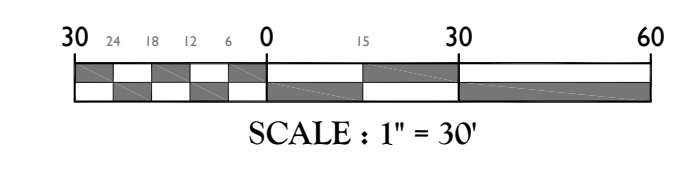
SILT FENCE (TYP.)

INLET PROTECTION (TYP.)

PROPOSED STABILIZED CONSTRUCTION ACCESS

TOTAL AREA OF DISTURBANCE 188,750 SF OR 4.15 ACRES.

NOTE: THIS PLAN TO BE USED FOR SOIL EROSION AND SEDIMENT CONTROL PURPOSES ONLY



REV	DATE	DRAWN BY	DESCRIPTION

REV	DATE	DRAWN BY	DESCRIPTION

Carl P. O'Brien
CARL P. O'BRIEN
 NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: 0645154

SITE PLANS
 FOR
CEDAR BROOK PARK
 CITY OF PLAINFIELD
 BLOCK 732 LOT 1
 CITY OF PLAINFIELD
 COUNTY OF UNION
 STATE OF NEW JERSEY

MT. ARLINGTON OFFICE
 400 Valley Road
 Suite 204
 Mount Arlington, NJ 07856
 Phone: 973.388.3110
 Fax: 973.388.3199
 email: solutions@maserconsulting.com

SCALE: AS SHOWN DATE: 11/05/2015 DRAWN BY: BAK CHECKED BY: JMS
 PROJECT NUMBER: 20141400 DRAWING NAME: C-85C

SOIL EROSION & SEDIMENT CONTROL PLAN

SOMERSET-UNION SOIL CONSERVATION DISTRICT

- 1. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY...
2. ANY DISTURBED AREA THAT WILL BE LEFT EXPOSED FOR MORE THAN THIRTY (30) DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC...
3. PERMANENT VEGETATION IS TO BE ESTABLISHED ON EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING...

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

- 1. LIMIT THE EXCAVATION AREA AND EXPOSURE TIME WHEN HIGH ACID PRODUCING SOILS ARE ENCOUNTERED.
2. TOPSOIL STRIPPED FROM THE SITE SHALL BE STORED SEPARATELY FROM TEMPORARILY STOCKPILED HIGH ACID PRODUCING SOILS.
3. STOCKPILES OF HIGH ACID PRODUCING SOIL SHOULD BE LOCATED ON LEVEL LAND TO MINIMIZE ITS MOVEMENT...

- 4. TEMPORARILY STOCKPILED HIGH ACID PRODUCING SOIL MATERIAL TO BE EXPOSED MORE THAN 30 DAYS SHOULD BE COVERED WITH PROPERLY ANCHORED HEAVY DUTY SHEETS OF POLYETHYLENE...
5. 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 6 TONS PER ACRE...

- 7. NON-VEGETATIVE EROSION CONTROL PRACTICES (STONE TRACKING PADS, STRATEGICALLY PLACED LIMESTONE CHECK DAMS, SILT FENCES, WOOD CHIPS) SHOULD BE INSTALLED TO LIMIT THE MOVEMENT OF HIGH ACID PRODUCING SOILS FROM, AROUND OR OFF THE SITE.
8. 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.

- 9. MONITORING OF AREAS WHERE HIGH ACID PRODUCING SOIL HAS BEEN PLACED OR BURIED SHOULD BE PERFORMED FOR AT LEAST 3 YEARS OR LONGER IF PROBLEMS OCCUR. TO ASSURE THERE IS NO MIGRATION OF POTENTIAL ACID LEACHATE.

PERMANENT SEEDING SPECIFICATIONS

- 1. SITE PREPARATION
A. INSTALL EROSION CONTROL MEASURES AND FACILITIES SUCH AS SILT FENCE, DIVERSIONS, SEDIMENT BAINS, CHANNEL STABILIZATION, ETC. SEE STANDARDS I THROUGH 42.
B. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION...
2. SEEDBED PREPARATION
A. APPLY A UNIFORM 5 INCHES (UNSETTLED) OF TOPSOIL IN ACCORDANCE WITH THE STANDARD FOR DISTURBED AREAS...

SPPP REQUIRED INSPECTIONS AND REPORTS

- 1. ROUTINE INSPECTIONS
A. THE PERMITTEE SHALL CONDUCT AND DOCUMENT ROUTINE INSPECTIONS OF THE FACILITY TO IDENTIFY AREAS CONTRIBUTING TO THE STORMWATER DISCHARGE AUTHORIZED BY THIS PERMIT...
2. ANNUAL REPORTS AND CERTIFICATIONS
A. THE PERMITTEE SHALL PREPARE AN ANNUAL REPORT SUMMARIZING EACH INSPECTION PERFORMED UNDER 1.A. ABOVE...

CONSTRUCTION SITE WASTE CONTROL COMPONENT OF THE STORMWATER POLLUTION PREVENTION PLAN (SPPP)

- 1. THE CONSTRUCTION SITE WASTE CONTROL COMPONENT OF THE SPPP CONSISTS OF THE REQUIREMENTS IN 2.3. AND 4 BELOW. THESE REQUIREMENTS BECAME OPERATIVE ON MARCH 3, 2004 AND APPLY TO CONSTRUCTION ACTIVITIES THAT COMMENCE ON OR AFTER MARCH 3, 2004...
2. MATERIAL MANAGEMENT TO PREVENT OR REDUCE WASTE: ANY PESTICIDES, FERTILIZERS, FUELS, LUBRICANTS, PETROLEUM PRODUCTS, ANTI-FREEZE, PAINTS AND PAINT THINNERS...
3. WASTE HANDLING: THE FOLLOWING REQUIREMENTS APPLY ONLY TO CONSTRUCTION SITE WASTE THAT HAS THE POTENTIAL TO BE TRANSPORTED BY THE STORMWATER DISCHARGE AUTHORIZED BY THIS PERMIT...

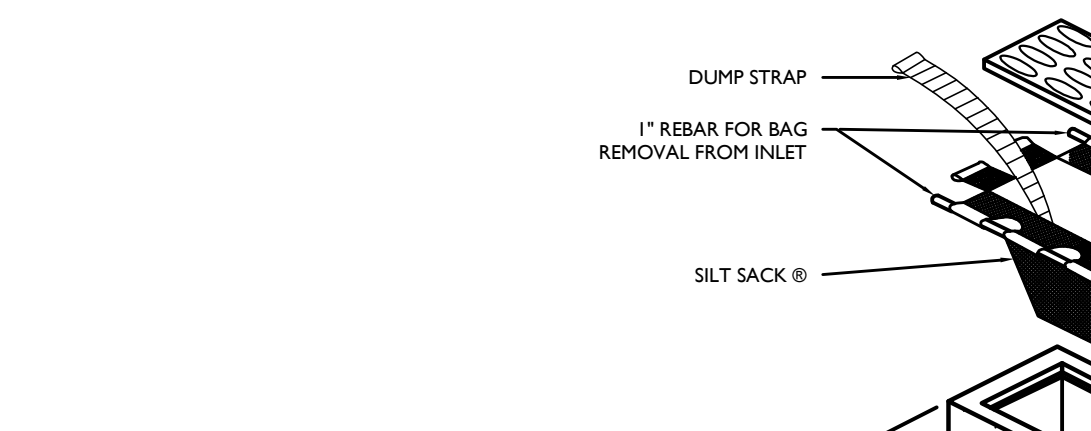
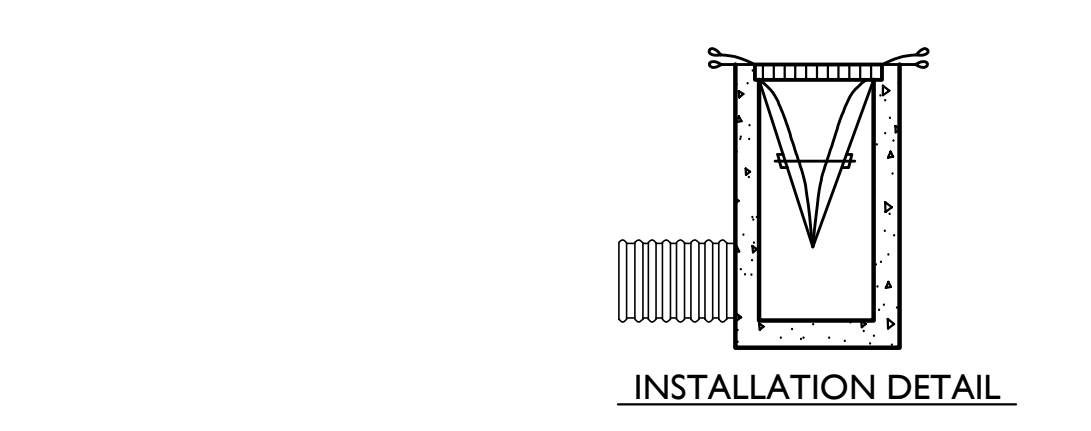
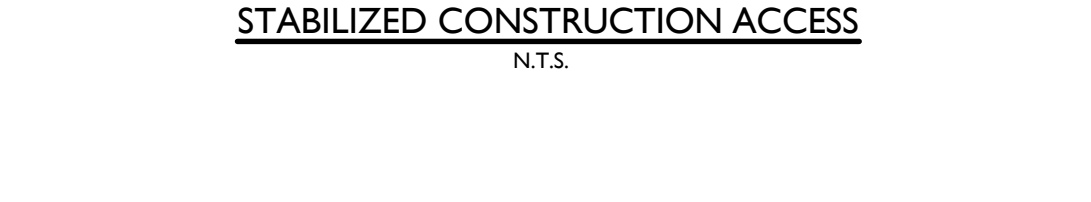
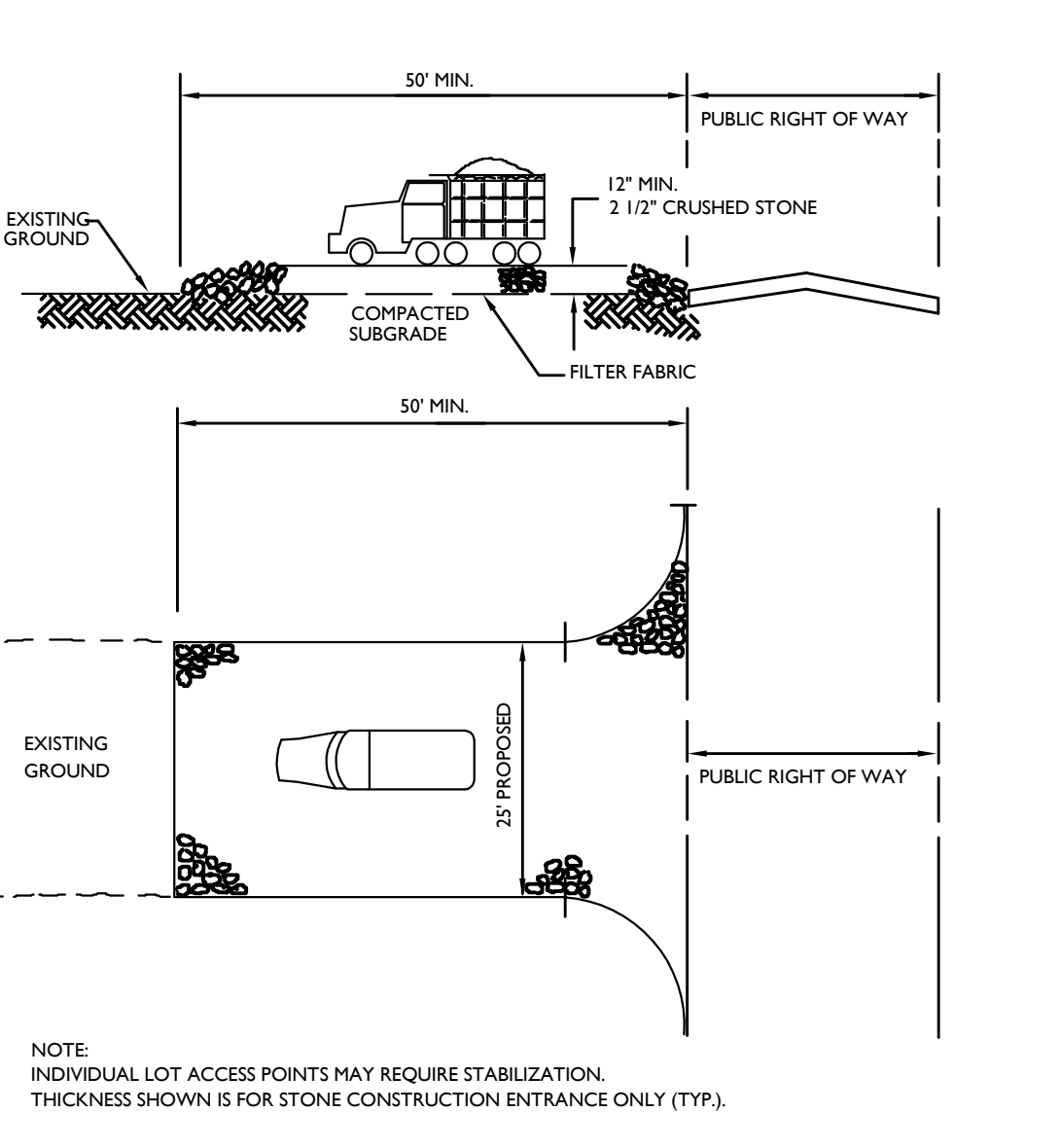
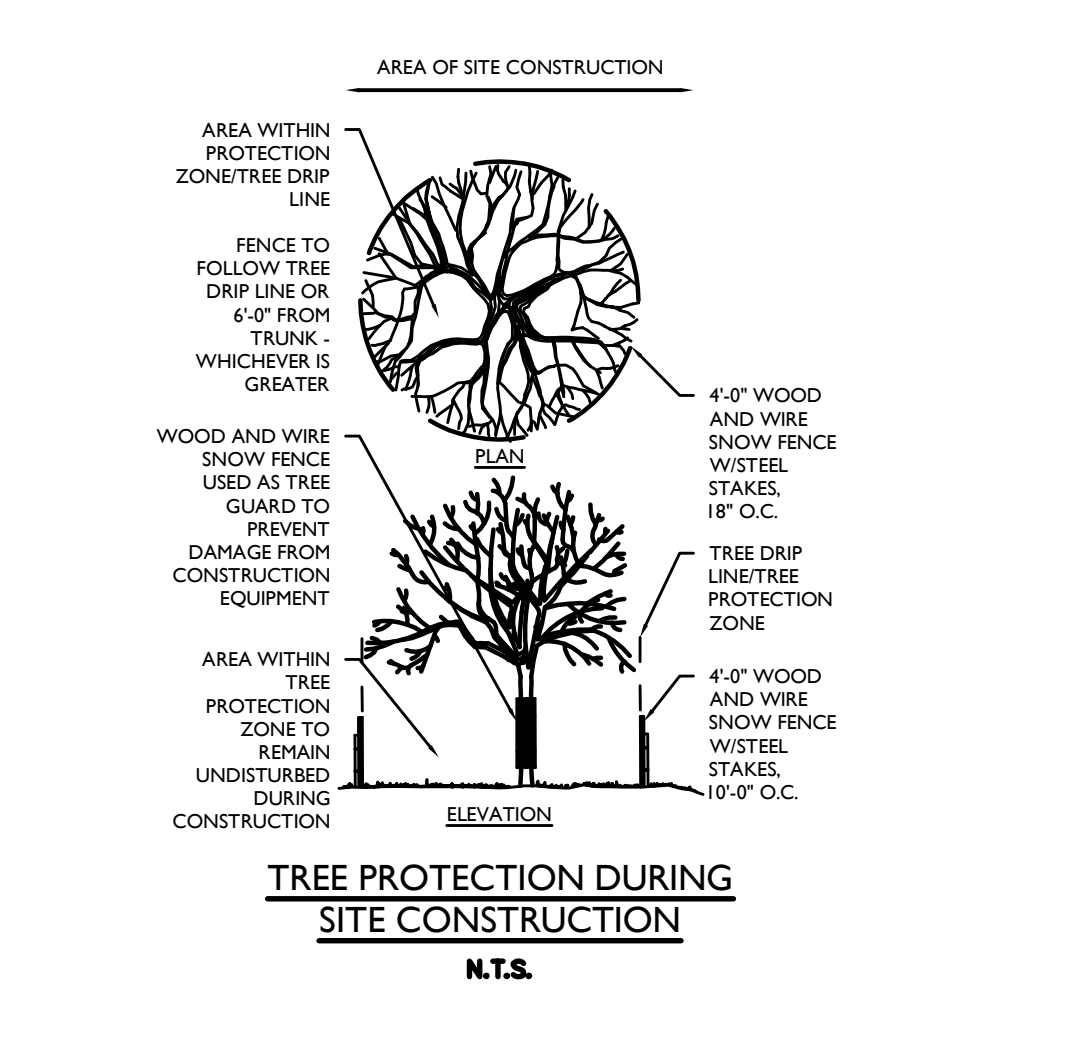
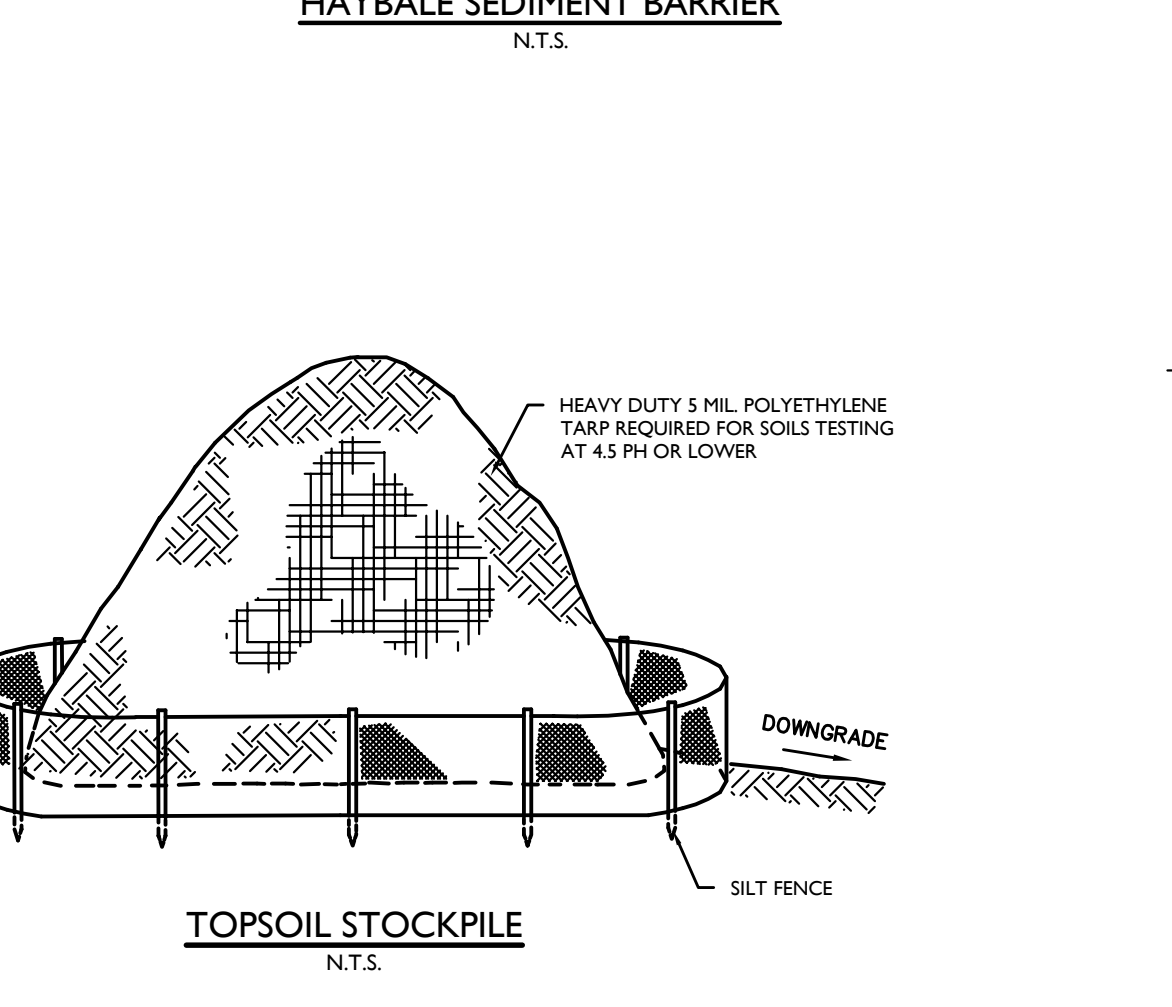
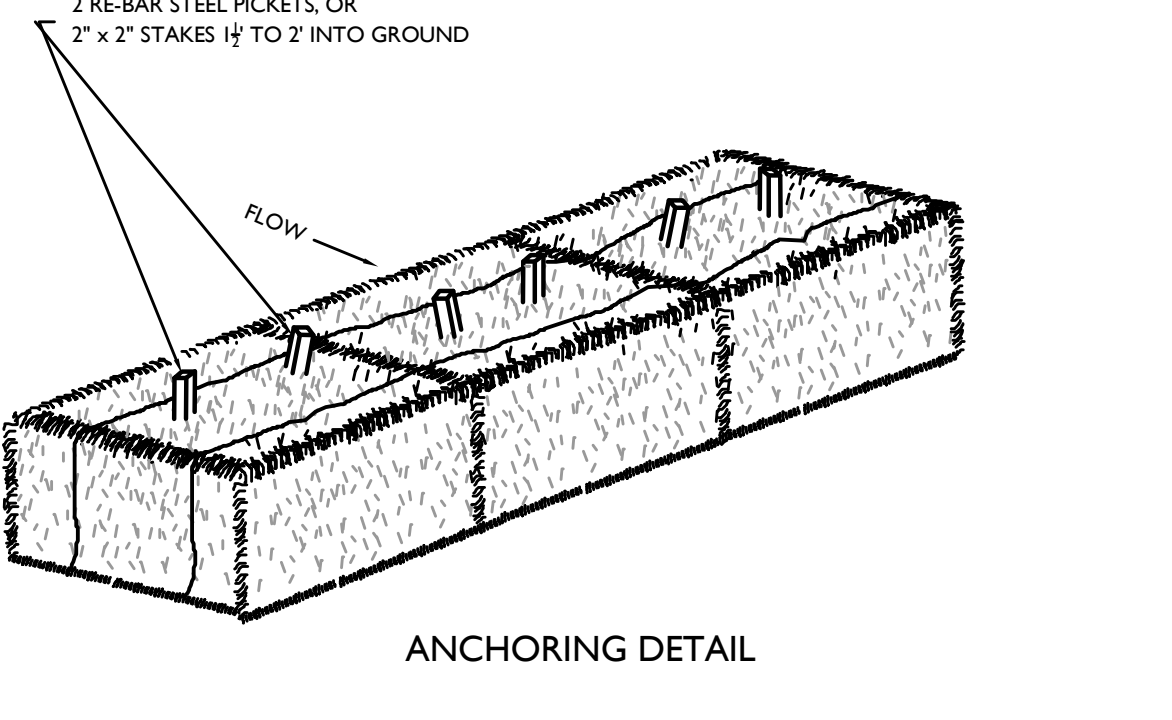
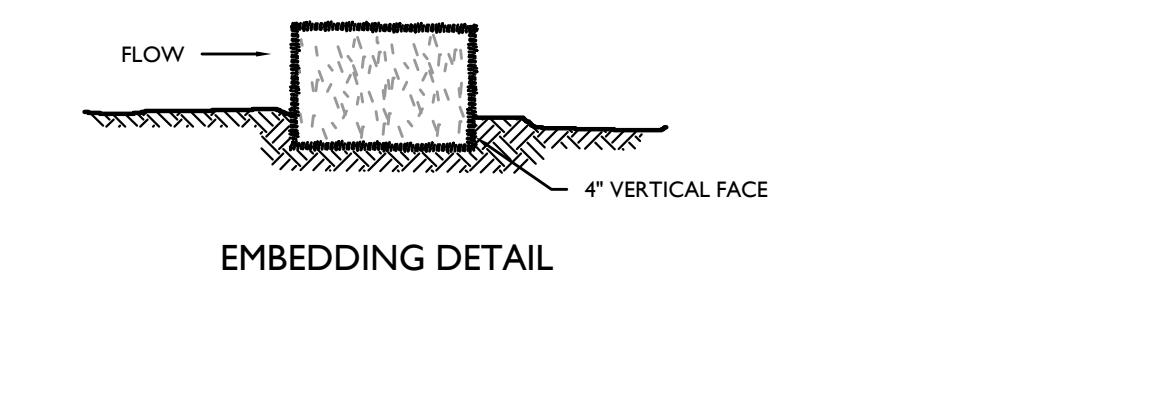
CONSTRUCTION SEQUENCE

- CONSTRUCT IMPROVEMENTS
- SITE CLEARING, GRADING AND EXCAVATION 2 WEEKS
- BERM CONSTRUCTION 1 WEEK
- INSTALL DRAINAGE IMPROVEMENTS 2 WEEKS
- INSTALL STONE 1 WEEK
- INSTALL ELECTRICAL CONDUIT 2 DAYS
- INSTALL TURF 3 DAYS
- TOPSOILING, FERTILIZING AND SEEDING, AND STRAW MULCHING 3 DAYS
- PERMANENT VEGETATIVE COVERAGE & SITE RESTORATION 2 DAYS
- REMOVAL OF SOIL EROSION & SEDIMENT CONTROL MEASURES 2 DAYS
TOTAL ESTIMATED PROJECT DURATION: 9 WEEKS

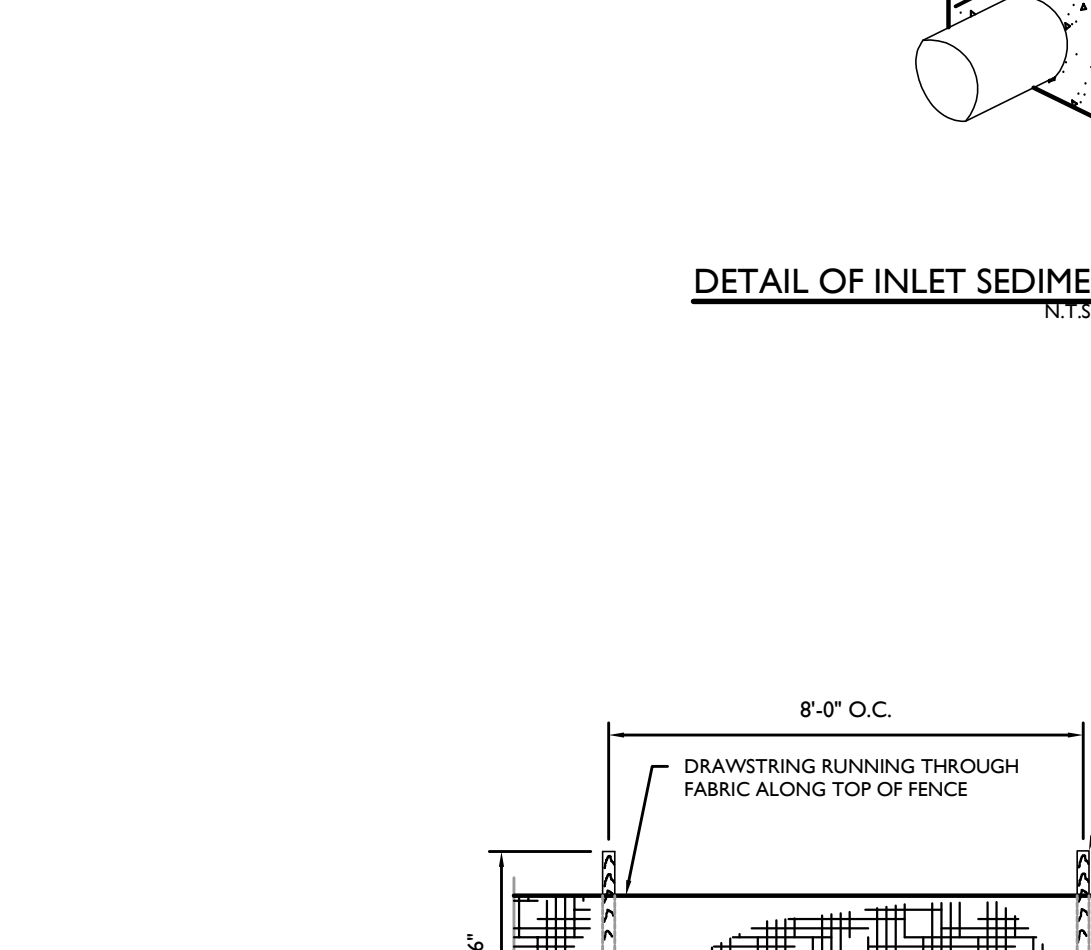
NOTE: THIS SEQUENCE OF CONSTRUCTION IS FOR SOIL EROSION AND SEDIMENT CONTROL PURPOSES ONLY AND SHALL NOT BE USED FOR ANY OTHER PURPOSE.

Table with 3 columns: Activity, Duration, and Remarks. Includes rows for 'CONSTRUCT IMPROVEMENTS' and 'TOTAL ESTIMATED PROJECT DURATION'.

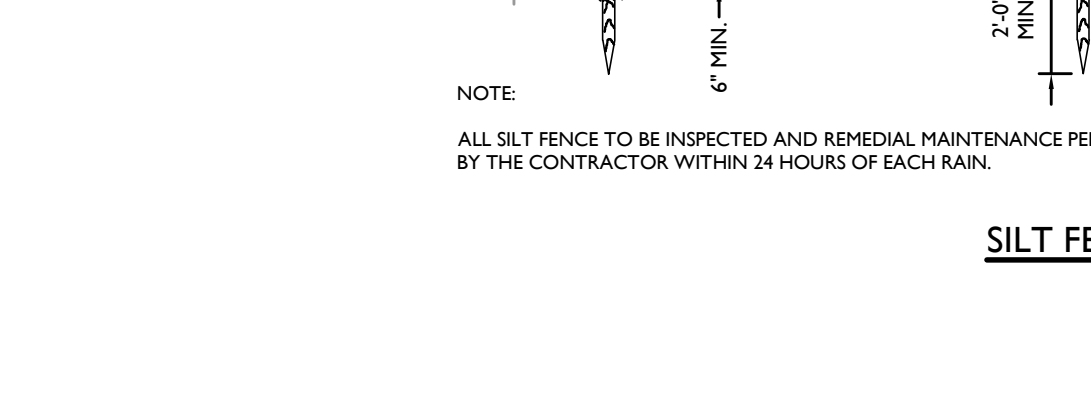
EMBEDDING DETAIL



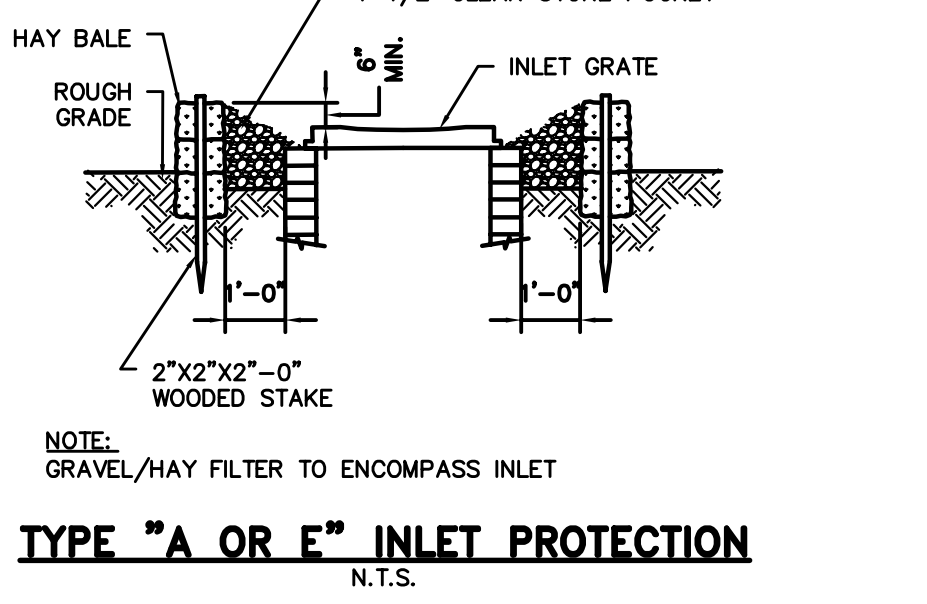
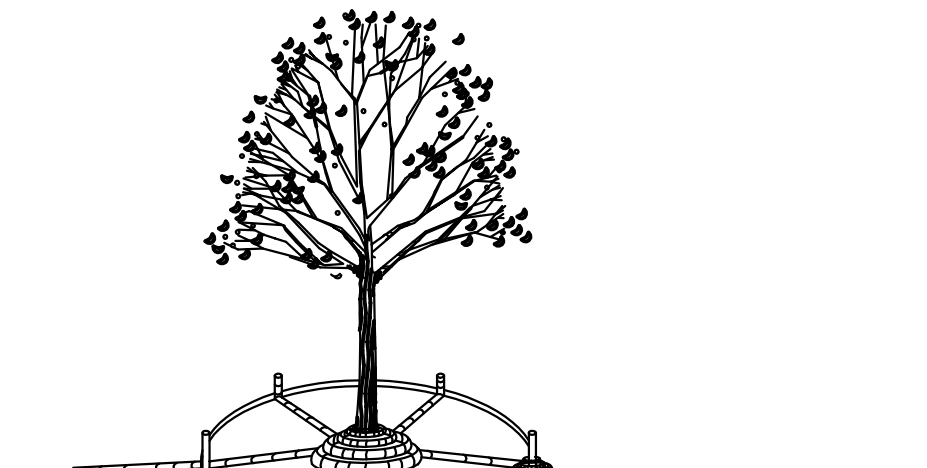
NOTE: ALL SILT FENCE TO BE INSPECTED AND MAINTENANCE PERFORMED BY THE CONTRACTOR WITHIN 24 HOURS OF EACH RAIN.



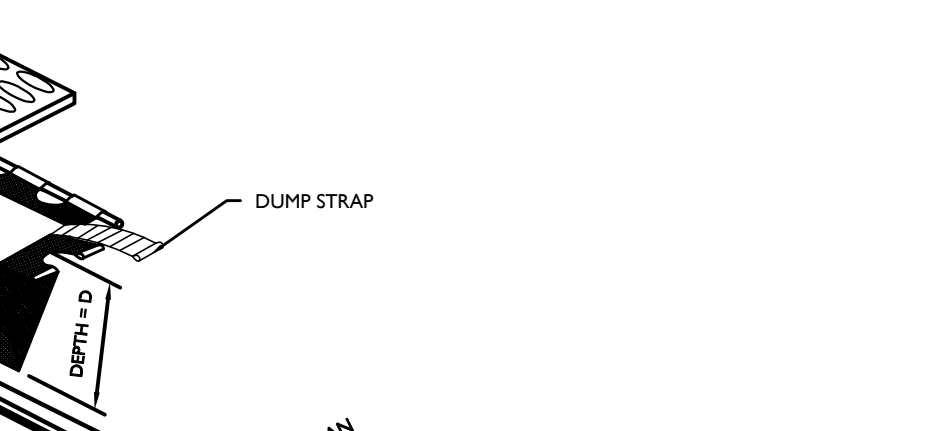
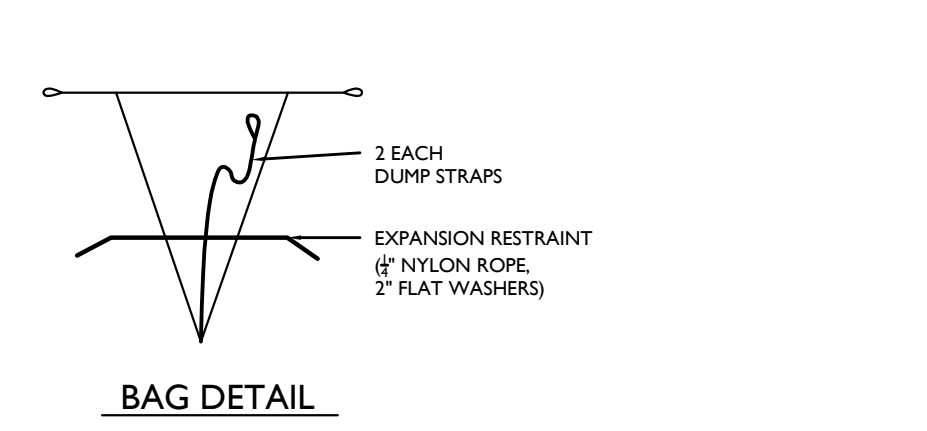
NOTE: ANCHORS FOR EROSION CONTROL BLANKETS SHALL BE 100% BIODEGRADABLE FROM MICROBIAL ACTIVITY IN ACCORDANCE WITH ASTM D3338 AND ASTM D5271.



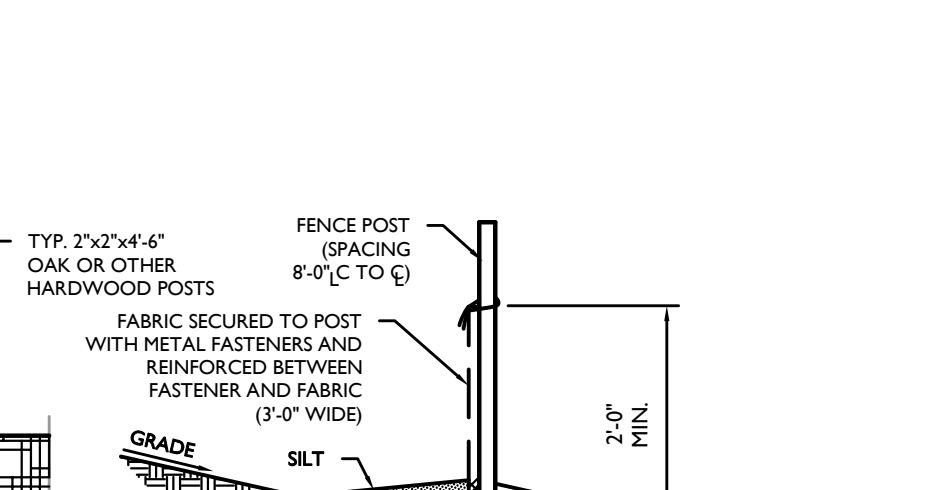
erosion control blankets shall be installed on proposed berm and slopes 4:1 or steeper.



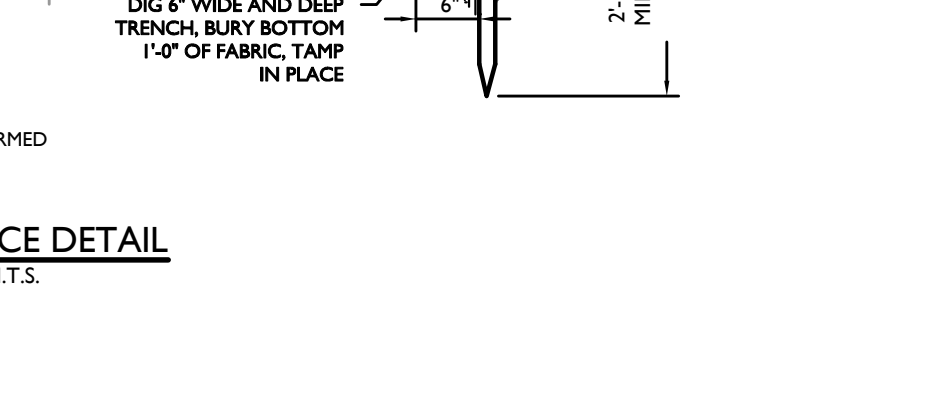
NOTE: INDIVIDUAL LOT ACCESS POINTS MAY REQUIRE STABILIZATION. THICKNESS SHOWN IS FOR STONE CONSTRUCTION ENTRANCE ONLY (TYP.).



NOTE: ALL SILT FENCE TO BE INSPECTED AND MAINTENANCE PERFORMED BY THE CONTRACTOR WITHIN 24 HOURS OF EACH RAIN.



NOTE: ANCHORS FOR EROSION CONTROL BLANKETS SHALL BE 100% BIODEGRADABLE FROM MICROBIAL ACTIVITY IN ACCORDANCE WITH ASTM D3338 AND ASTM D5271.



erosion control blankets shall be installed on proposed berm and slopes 4:1 or steeper.

MASER CONSULTING, L.P. Logo and contact information for services in New Jersey and Pennsylvania.

811 Call before you dig logo and information regarding utility marking services.

Revision table with columns for REV, DATE, DRAWN BY, and DESCRIPTION.

Table with columns for REV, DATE, DRAWN BY, and DESCRIPTION.

Handwritten signature 'Carl P. O'Brien' and printed name 'CARL P. O'BRIEN' with professional title.

SITE PLANS FOR CEDAR BROOK PARK, CITY OF PLAINFIELD, BLOCK 732 LOT 1. City of Plainfield logo and contact information.

MT. ARLINGTON OFFICE address and contact information.

SCALE, DATE, DRAWN BY, CHECKED BY, PROJECT NUMBER, DRAWING NAME, SHEET TITLE, and SHEET NUMBER information.

ROLLMAX™
ROLLED EROSION CONTROL

Specification Sheet - BioNet™ C125BN™ Erosion Control Blanket

DESCRIPTION
The long-term durable non-erosion control blanket shall be a machine-produced mat of 100% coconut fiber with a functional longevity of up to 24 months. (NOTE: Functional longevity may vary depending upon climatic conditions, soil, geographical location, and elevation). The blanket shall be of consistent thickness with the coconut evenly distributed over the entire area of the mat. The blanket shall be covered on the top and bottom sides with 100% biodegradable woven natural fiber mesh netting. The netting shall consist of machine directional strands formed from two intertwined areas with cross-directional strands intersecting through the the knitted machine strands (commonly referred to as Leno weave) to form an approximate 0.53 x 0.43 in. (1.37 x 2.64 cm) mesh. The blanket shall be woven together at 100 mm (3.94 in) ends with a single fold. The blanket shall be manufactured with a correct thread direction along with each edge (approximately 2 inches (5.08 cm) from the edge) as an overlap guide for adjacent mats.

The C125BN shall meet Type 1 specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) PP-10 Section 713.07.

Material Content	Uncompacted Shear Stress
100% Coconut Fiber	2.35 psf (0.11 kPa)
Low Weave 100% Biodegradable Leno	10.0 psf (0.45 kPa)

Material	Uncompacted Velocity
100% Coconut Fiber	10.0 ft/s (3.05 m/s)

Material	Uncompacted Velocity
100% Coconut Fiber	10.0 ft/s (3.05 m/s)

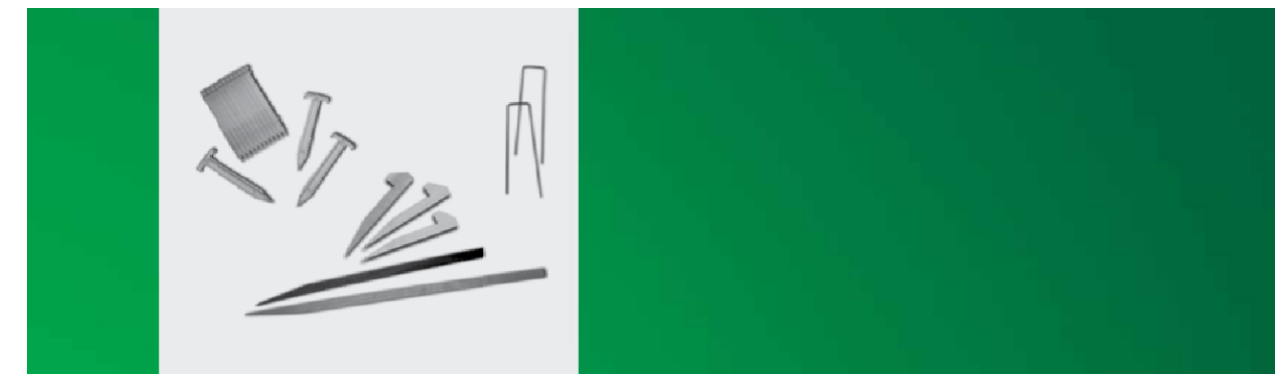
Standard Roll Size

Width	6.67 (2.02 m)	6.0 ft (1.83 m)
Length	169 ft (51.62 m)	152 ft (46.34 m)
Weight	52.00 (18.64 kg)	45.00 (12.70 kg)
Area	112.00 (3.41 m ²)	100.00 (3.05 m ²)

Notes:

- ANCHORS FOR EROSION CONTROL BLANKETS SHALL 100% BIODEGRADABLE FROM MICROBIAL ACTIVITY IN ACCORDANCE WITH ASTM D3258 AND ASTM D3257
- EROSION CONTROL BLANKET TO BE INSTALLED ON PROPOSED BERM AND ALL AREAS WITH SLOPED AT 4:1 OR STEEPER.

EROSION CONTROL BLANKET
N.T.S.



Installation Made Easy

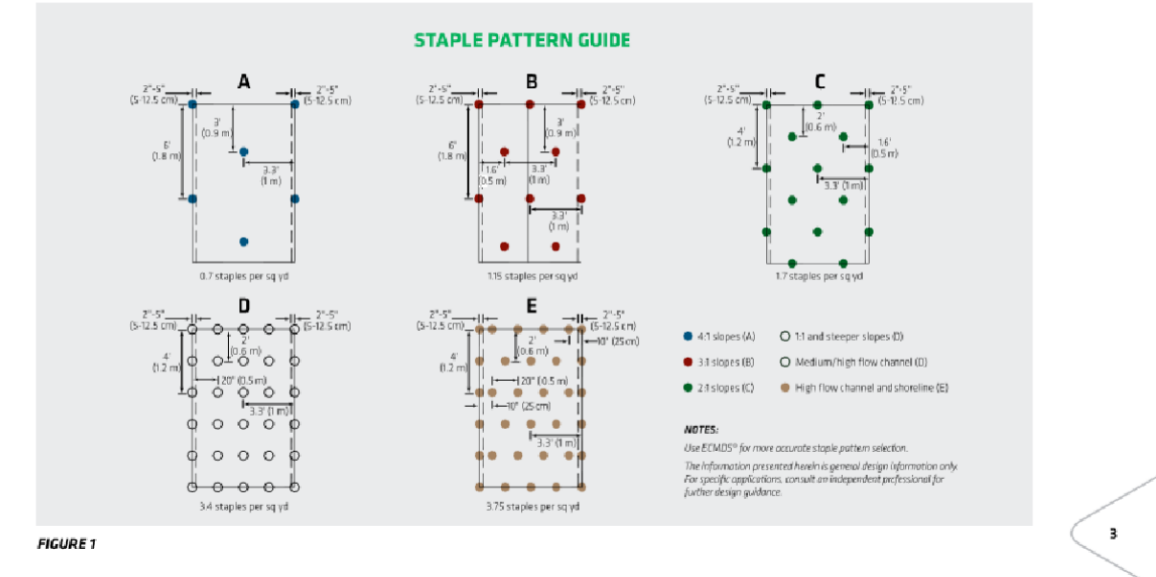
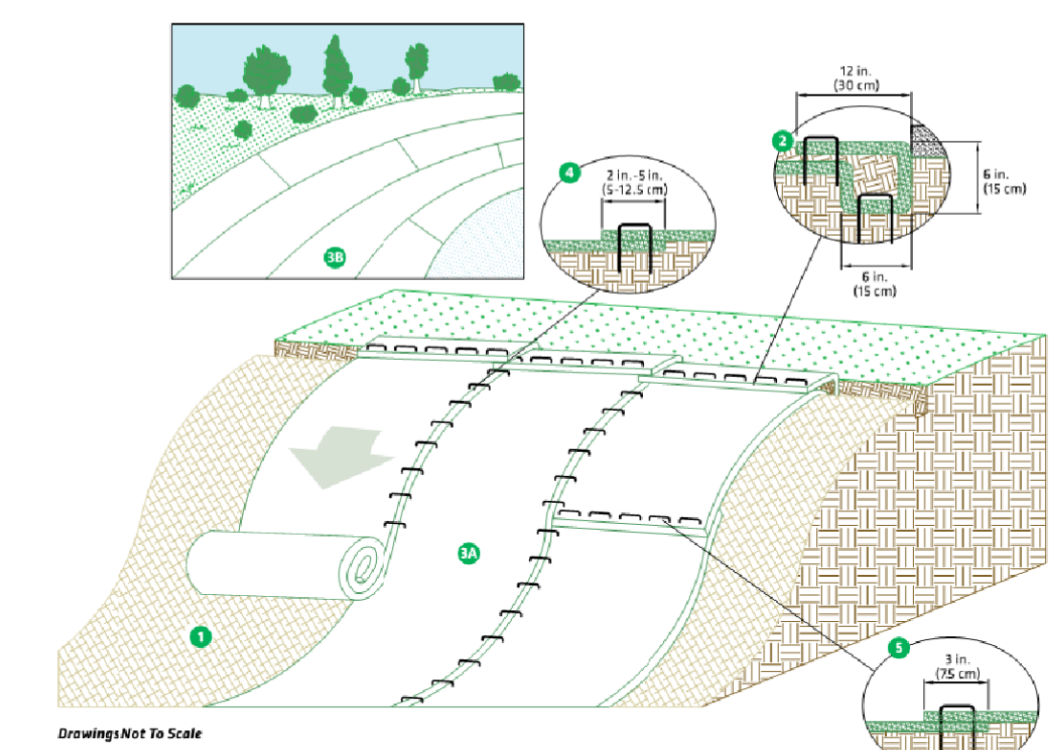
When under the pressure of severe conditions, even the best erosion control products can't function to their full potential without proper installation and anchoring. From American Green's rapid response to a wide variety of fastener options for nearly every application and soil type.

For use in cohesive soils, wire staples are a cost-effective means to secure RollMax™ System Rolled Erosion Control Products (RECPs). Available in 6 in., 8 in., 12 in., and 18 in. lengths, our U-shaped staples reach various depths to ensure adequate pull-out resistance. For installation using our ready-to-use Pin Hammer Installation Tool, 6 in. U-shaped staples or 6 in. circle-top staples are available.

Our biodegradable BioStaples™ are available in 6 in. and 6 in. lengths and provide an environmentally friendly alternative to metal staples. For an even more durable, deeper working set of natural anchoring options, our wood BioStaples™ are available in 6 in., 12 in., 18 in. and 24 in. lengths.

Slope Installation

The following slope guide outlines general recommendations for installing RollMax™ System temporary and/or permanent RECPs on sloping applications. Consult the staple pattern guide (Figure 1) for fastener spacing recommendations based on the slope severity.



SLOPING INSTALLATION STEPS

- Prepare soil before installing RECPs, including any necessary applications of lime, fertilizer and seed.
- Begin at the top of the slope by anchoring the RECPs in a 6 in. (15 cm) deep x 6 in. (15 cm) wide trench with approx. 12 in. (30 cm) of RECPs extending beyond the slope edge portion of the trench. Anchor the RECPs with a row of staples/staples approximately 12 in. (30 cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply sand to the compacted soil and fold the remaining 12 in. (30 cm) portion of RECPs back over the sand and compacted soil. Secure RECPs over compacted soil with a row of staples/staples spaced approximately 12 in. (30 cm) apart across the width of the RECPs.
- Roll the RECPs (24" down or 20" horizontally across the slope. RECPs will unroll with appropriate side against the soil surface. RECPs must be secured to soil surface by placing staples/staples in appropriate locations as shown in the staple pattern guide.
- The edges of grade RECPs must be stapled with an approximately 2 in. (5 in. (12.5 cm) overlap depending on the RECP type.
- Connect RECPs stapled down the slope must be end-over-end (single 18" roll with an approximate 3 in. (75 mm) overlap. Staple through overlapped area, approximately 12 in. (30 cm) apart across entire RECP width.

NOTE: In adverse soil conditions deeper staples/staples or earth anchors may be necessary to properly secure the RECPs.

EROSION CONTROL BLANKET INSTALLATION
N.T.S.

PRELIMINARY FOUNDATION AND POLE ASSEMBLY DRAWING

POLE ID	CONCRETE BASE WEIGHT (kg)	# OF LUMINAIRES	ASSEMBLED POLE WEIGHT (kg)
S1	5250 (2381)	11	3308 (1636)
S2	5250 (2381)	17	3928 (1781)
S3	5250 (2381)	17	3928 (1781)
S4	5250 (2381)	11	3308 (1636)
S5	1840 (835)	4	1211 (549)
S6	1840 (835)	4	1211 (549)

POLE ID	CONCRETE BASE WEIGHT (kg)	# OF LUMINAIRES	ASSEMBLED POLE WEIGHT (kg)
S1	5250 (2381)	16 (4.0)	1.6 (1.2)
S2	5250 (2381)	16 (4.0)	1.6 (1.2)
S3	5250 (2381)	16 (4.0)	1.6 (1.2)
S4	5250 (2381)	16 (4.0)	1.6 (1.2)
S5	1840 (835)	10 (2.0)	1.2 (0.9)
S6	1840 (835)	10 (2.0)	1.2 (0.9)

Foundation Notes:

- Concrete backfill is calculated to 2 ft (0.6m) below grade (no average included). Top 2 ft (0.6m) to be class 5 soil compacted to 95% density of surrounding undisturbed soil unless otherwise specified in stamped structural design.
- Concrete backfill required 3000 psi (20 MPa) minimum unless otherwise specified in stamped structural design.
- Foundation design per 2010 IBC, 115 mph exposure category C, vibration STD (Risk Category II).
- Assumes IBC class 5 soils.
- Standard bases include integrated lightning protection. If bases are cut, supplemental lightning protection is required. Contact Musco for materials and installation.
- Lighting protection is a manufacturer installed concrete encased electrode and connector. Ground connection is made when concrete base is installed and footing is poured. No additional steps required.

Lighting Pole Configuration Drawing

Lighting Assembly N.T.S.

Lighting Pole Configuration Drawing

POLE(S): S1 & S4
Musco 72FT Light Structure System™ pole
Green Generation™ Luminaires
x11 LSG 1500W Fixtures

POLE(S): S2 & S3
Musco 72FT Light Structure System™ pole
Green Generation™ Luminaires
x11 LSG 1500W Fixtures

POLE(S): S5 & S6
Musco 60FT Light Structure System™ pole
Green Generation™ Luminaires
x4 LSG 1500W Fixtures

Lighting Pole Configuration N.T.S.

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811
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REVISIONS:

NO.	DATE	BY	DESCRIPTION
1	12/28/15	BAK	ISSUED FOR PERMITS COMMENTS
2	3/23/16	BAK	ISSUED FOR PERMITS COMMENTS
3	2/17/17	BAK	ISSUED FOR PERMITS COMMENTS

PROJECT INFORMATION:

PROJECT: Cedar Brook Park Athletic Fields
LOCATION: Plainfield, NJ
DRAWING: Pole Configuration Drawing

DESIGNER: MUSECO Lighting

DATE: 01/19/2017

SCALE: 1" = 8' 0"

PROJECT NUMBER: 174318P1
DRAWING NAME: C-DT15

Cal P. O'Brien

CARL P. O'BRIEN
NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: GE45154

SITE PLANS

FOR
CEDAR BROOK PARK
CITY OF PLAINFIELD
BLOCK 732 LOT 1

CITY OF PLAINFIELD
COUNTY OF UNION
STATE OF NEW JERSEY

MT. ARLINGTON OFFICE
400 Valley Road
Suite 204
Mount Arlington, NJ 07856
Phone: 973.388.3110
Fax: 973.388.3199
email: solutions@maserconsulting.com

SCALE: AS SHOWN
DATE: 11/05/2015
DRAWN BY: BAK
CHECKED BY: JSD

PROJECT NUMBER: 20141400
DRAWING NAME: C-DT15

SHEET TITLE: CONSTRUCTION DETAILS

SHEET NUMBER: 12 of 12