

COUNTY OF UNION

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

MEMO TO: ALL PROSPECTIVE BIDDERS
FROM: Thomas O. Mineo, P.E., County Engineer
DATE: October 26, 2018
RE: **ADDENDUM NUMBER 1**
BA#50-2018 – PONDEROSA FARM PARK – TURF FIELDS
TOWNSHIP OF SCOTCH PLAINS, COUNTY OF UNION
NEW JERSEY
UNION COUNTY ENGINEERING PROJECT #2017-008

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CHOSEN FREEHOLDERS**

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Deputy County Manager

ROBERT E. BARRY, ESQ.
County Counsel

JAMES E. PELLETTIERE, RMC
Clerk of the Board

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

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

1. **Question:** Please see attached page B-34. It states that if awarded the contract, the scope of work will be started within ten (10) days and completed within One hundred and twenty (120) calendar days. The site work required in this project/bid cannot be performed as per industry standards in adverse winter weather conditions (freezing/thawing) or it will adversely affect the finished product. This will render the 120 day construction mandate extremely unlikely given the anticipated start date. Please advise.

Answer: It is the intent of the project for the work to begin within ten (10) calendar days of receipt of the notice to proceed. In the event that the weather is not permissible for the work to be performed, a written request to stop work due to inclement weather should be submitted in writing to the owner and/or engineer for consideration. In the event an extension is granted, it should be noted that this project should be made a priority and work resume immediately once the weather permits as determined by the owner and/or engineer.

2. **Question:** Do you have any soil boring information for this project, we need to know the depth of topsoil and or subsoil to be removed to get to a compactable elevation. This information is relevant to determine the amount of import fill required to bring the site to proposed grade. If there is no soil boring information then there should be a pay item for imported fill by the ton since bidders would be unable to determine the amount of import other than guessing at it.

Answer: Please see attached Boring Location Plan and Boring Logs (B-1 through B-6).

Attachment: Boring Location Plan and Boring Logs (B-1 through B-6)

ACKNOWLEDGMENT OF ADDENDUM

COUNTY OF UNION

ADDENDUM NUMBER 1

BA#50-2018 – PONDEROSA FARM PARK – TURF FIELDS
TOWNSHIP OF SCOTCH PLAINS, COUNTY OF UNION

BA#50-2018
UC ENGINEERING PROJECT #2017-008

(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
ADDENDUM NUMBER 1: Add: Boring Location Plan and Boring Logs (B-1 through B-6)		

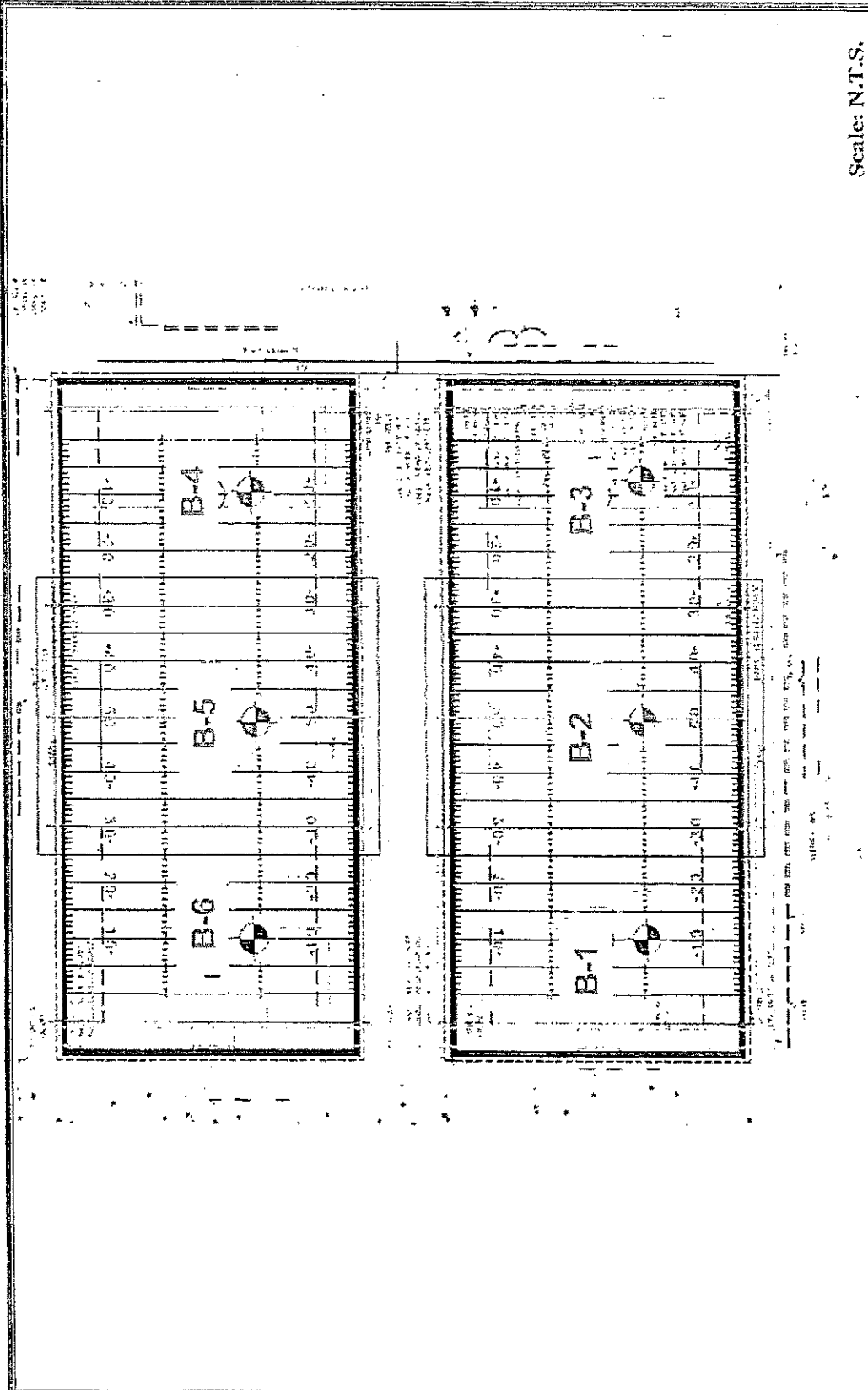
ACKNOWLEDGMENT BY BIDDER:

NAME OF BIDDER: _____

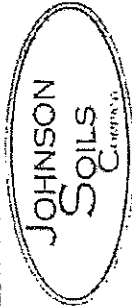
ORIGINAL SIGNATURE: _____

PRINTED NAME AND TITLE: _____

DATE: _____



Scale: N.T.S.

	<p>Boring Location Plan Ponderosa Park Scotch Plains, NJ</p>	<p>JSC #18-383 PLATE 2</p>
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LOG OF BORING
B-1

Sheet 1 of 1
JSC #18-283
Completed: 7/30/18
Water Level: 5'

Depth (Feet)	Sample #	Depth (Feet)	Sample/Spoon Blows/6"	Symbol USCS	Depth	Description
0	1	0-2	1-3-9-13	SM-ML	0-6"	Topsoil 6"-9": Fill- Light Brown Fine to Coarse Sand Brown Fine to Medium Sand and Silt trace Gravel (Moist, Dense) Grading to Medium Dense @ 6'
-	2	2-4	12-14-22-23			
-	3	4-6	12-10-9-8			
5	4	6-8	7-7-7-8			
-	5	8-10	8-9-10-9			
10						
-						
-						
-						
15						
-						
-						
-						
20						
-						
-						
-						
25						
-						
-						
30						
-						
-						
35						

Remarks: Boring 1 completed at 10' on 7/30/2018

Client: Neglia Engineering Associates Hollow Stem Auger

Site: Ponderosa Park, Scotch Plains, NJ Portable

Driller: RV Drilling Mud Rotary



LOG OF BORING
B-2

Sheet 1 of 1
JSC #18-383
Completed: 7/30/18
Water Level: Dry

Depth (Feet)	Sample #	Depth (Feet)	Sample/Spoon Blows/6"	Symbol USCS	Depth	Description
0	1	0-2	1-2-4-6	SM	0-6"	Topsoil 6"-9" Fill- Light Brown Fine to Coarse Sand
-	-	-	-		9"-4'	Brown Fine to Medium Sand, some Silt, trace Gravel (moist, medium dense)
-	2	2-4	9-9-8-12	SM-ML	4'-10'	Brown Fine to Medium Sand and Silt (moist, medium dense)
-	3	4-6	12-9-9-9			
-	4	6-8	7-6-7-8			
-	5	8-10	5-4-4-4			
10						
-						
-						
-						
-						
15						
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20						
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-						
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25						
-						
-						
-						
30						
-						
-						
-						
35						

Remarks: Boring 2 completed at 10' on 7/30/2018

Client: Neglia Engineering Associates Hollow Stem Auger

Site: Ponderosa Park, Scotch Plains, NJ Portable

Driller: RV Drilling Mud Rotary

PLATE 3B



LOG OF BORING
B-3

Sheet 1 of 1
JSC #18-383
Completed: 7/30/18
Water Level: Dry

Depth (Feet)	Sample #	Depth (Feet)	Sample/Spoon Blows/6"	Symbol USCS	Depth	Description
0	1	0-2	1-3-5-8	SM	0-6"	Topsoil; 6"-9": Fill- Light Brown Fine to Coarse Sand Brown Fine to Medium Sand some Silt, trace Gravel (Moist, Medium Dense)
-	2	2-4	7-7-8-7		9'-6'	
5	3	4-6	9-10-10-8			
-	4	6-8	6-6-6-7	SM-ML	6'-10'	Brown Fine to Medium Sand and Silt (Moist, Medium Dense)
-	5	8-10	5-4-4-5			
10						
-						
-						
-						
15						
-						
-						
-						
20						
-						
-						
-						
25						
-						
-						
-						
30						
-						
-						
-						
35						

Remarks: Boring 3 completed at 10' on 7/30/2018

Client: Neglia Engineering Associates Hollow Stem Auger

Site: Ponderosa Park, Scotch Plains, NJ Portable

Driller: RV Drilling Mud Rotary

PLATE 3C



LOG OF BORING
B-4

Sheet 1 of 1
JSC #18-383
Completed: 7/30/18
Water Level: Dry

Depth (Feet)	Sample #	Depth (Feet)	Sample/Spoon Blows/6"	Symbol USCS	Depth	Description
0	1	0-2	1-4-8-9	SM	0-6"	Topsoil: 6"-9": Fill- Light Brown Fine to Coarse Sand Brown Fine to Medium Sand, some Silt, trace Gravel (Moist, Medium Dense)
-	2	2-4	8-8-11-20			
-	3	4-6	12-6-6-6			
-	4	6-8	9-11-9-8			
-	5	8-10	10-9-10-11			
10						
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15						
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20						
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25						
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-						
-						
30						
-						
-						
-						
35						
Remarks:						Boring 4 completed at 10' on 7/30/2018
Client: Neglia Engineering Associates				<input checked="" type="checkbox"/>	Hollow Stem Auger	
Site: Ponderosa Park, Scotch Plains, NJ				<input type="checkbox"/>	Portable	
Driller: RV Drilling				<input type="checkbox"/>	Mud Rotary	
						PLATE 3D



LOG OF BORING
B-5

Sheet 1 of 1
JSC #18-383
Completed: 7/30/18
Water Level: Dry

Depth (Feet)	Sample #	Depth (Feet)	Sample/Spoon Blows/6"	Symbol USCS	Depth	Description	
0	1	0-2	1-3-5-6	SM	0-6"	Topsoil 16"-9"- Light Brown Fine to Coarse Sand	
-	2	2-4	7-8-11-10		9"-10'		Brown Fine to Medium Sand, some Silt trace Gravel and Clay
-	3	4-6	10-10-10-9				
5	4	6-8	9-11-12-9				
-	5	8-10	9-12-8-8				
10							
-							
-							
15							
-							
-							
20							
-							
-							
25							
-							
-							
30							
-							
-							
35							

Remarks: Boring 5 completed at 10' on 7/30/2018

Client: Neglia Engineering Associates Hollow Stem Auger

Site: Ponderosa Park, Scotch Plains, NJ Portable

Driller: RV Drilling Mud Rotary

PLATE 3E



LOG OF BORING
B-6

Sheet 1 of 1
JSC #18-383
Completed: 7/30/18
Water Level: 5'

Depth (Feet)	Sample #	Depth (Feet)	Sample/Spoon Blows/6"	Symbol USCS	Depth	Description
0	1	0-2	1-4-6-6	SM	0-6"	Topsoil 6"-9": Fill- Light Brown Fine to Coarse Sand Brown Fine to Medium Sand, some Silt (Moist, Medium Dense)
-	2	2-4	7-7-7-7		9"-6'	
-	3	4-6	7-6-5-6			
5	4	6-8	5-4-5-6	SM	6'-10'	Brown Fine to Coarse Sand, little Silt, trace Gravel (Moist, Medium Dense)
-	5	8-10	6-4-5-5			
10						
-						
-						
15						
-						
-						
20						
-						
-						
25						
-						
-						
30						
-						
-						
35						
Remarks:						Boring 6 completed at 10' on 7/30/2018
Client: Neglia Engineering Associates				<input checked="" type="checkbox"/>	Hollow Stem Auger	
Site: Ponderosa Park, Scotch Plains, NJ				<input type="checkbox"/>	Portable	
Driller: RV Drilling				<input type="checkbox"/>	Mud Rotary	
						PLATE 3F

**SPECIFICATIONS
FOR
PONDEROSA FARM PARK-TURF FIELDS
TOWNSHIP OF SCOTCH PLAINS
COUNTY OF UNION, NEW JERSEY
BA#50-2018; UNION COUNTY ENGINEERING PROJECT #2017-008**

OCTOBER 2018

**UNION COUNTY OFFICIALS
BOARD OF CHOSEN FREEHOLDERS**

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Angela R. Garretson, Freeholder
Christopher Hudak, Freeholder
Mohamed S. Jalloh, Freeholder
Alexander Mirabella, Freeholder
Rebecca Williams, Freeholder

CLERK OF THE BOARD
James E. Pellettiere, RMC

COUNTY MANAGER
Edward T. Oatman

**DEPARTMENT OF ENGINEERING, PUBLIC WORKS AND
FACILITIES MANAGEMENT**

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

**COUNTY ENGINEER
DIVISION OF ENGINEERING**
Thomas O. Mineo, P.E.
2325 South Avenue
Scotch Plains, New Jersey 07076
Telephone: (908) 789-3675
Fax: (908) 789-3674

Neglia Engineering Associates
1119 Raritan Road, Suite 2
Clark, New Jersey 07066
T: 201-939-8805
F: 732-943-7249

**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 November 8, 2018 at 10:30 a.m., prevailing time, in the 3rd Floor Conference Room, U.C. Administration Building, 10 Elizabethtown Plaza, Elizabeth, New Jersey for:

**PONDEROSA FARM PARK-TURF FIELDS
TOWNSHIP OF SCOTCH PLAINS
COUNTY OF UNION, NEW JERSEY
BA#50-2018; UNION COUNTY ENGINEERING PROJECT #2017-008**

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

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

Bids shall be submitted in a sealed envelope and clearly marked with the subject of the bid, name and address of the bidder, phone & fax number, and date of the bid opening. Each bid must be delivered to reach the Division of Purchasing prior to the stated time of the opening of the bids. The County will not be responsible for late delivery by the U.S. Mail or any other carrier. If hand delivered, please note that parking and security access at the County Complex may cause delays and bidders should take them into consideration in order to submit a timely bid. **No** late bids will be accepted.

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

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

**UNION COUNTY BOARD
OF CHOSEN FREEHOLDERS**

We're Connected to You!

PONDEROSA FARM PARK-TURF FIELDS
TOWSHIP OF SCOTH PLAINS, COUNTY OF UNION, NEW JERSEY
BA#50-2018; Union County Engineering Project #2017-008

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- Non-Collusion Affidavit
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- Contractor Performance Record
- Affidavit Regarding List of Disbarred, Suspended or Disqualified Bidders
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STANDARD SPECIFICATION FORM - SS-1

NEW JERSEY PREVAILING WAGE DETERMINATION DOCUMENTS

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:

**Ponderosa Farm Park-Turf Fields
Township of Scotch Plains, County of Union, New Jersey
BA#50-2018; Union County Engineering Project #2017-008**

BIDDER: Bidder shall be a single overall contract bidder

ENGINEER: Neglia Engineering Associates
1119 Raritan Road, Suite 2
Clark, New Jersey 07076

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 Laura M. Scutari, QPA, MPA,

Director, Division of Purchasing, County of Union, New Jersey, Union County Administration Building, 10 Elizabethtown Plaza, Elizabeth, New Jersey 07207. The bidder must request withdrawal of a bid due to a mistake, as defined by the law, within five business days after the receipt and opening of the bids. Since the bid withdrawal request shall be effective as of the postmark of the certified or registered mailing, Laura M. Scutari, QPA, Director of the Division of Purchasing or his designee may contact all bidders, after bids are opened, to ascertain if any bidders wish to, or already have exercised a request to withdraw their bid pursuant to N.J.S.A. 40A:11-23.3.

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

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

3. QUALIFICATIONS OF BIDDERS AND REQUIRED SUBMISSIONS

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

4. INTERPRETATIONS AND ADDENDA

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

All Addenda issued through the Offices of the County Engineer are amendments to the Contract Documents and shall be considered in preparing bids. Same shall become part of the Contract Documents.

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

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

5. OBLIGATION OF BIDDER TO INSPECT SITE AND CONTRACT DOCUMENTS

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

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

6. BID AND PERFORMANCE GUARANTEE

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

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

A one-year Maintenance Bond will be required upon acceptance of the Project by the County in the amount as stated in Section 15 of the General Specifications. Bonds will be written by a firm authorized to issue the bonds under the laws of the State of New Jersey and be in a form acceptable to the County Counsel.

N.J.S.A. 40A:11-1.1 et seq. allows the prime Contractor to furnish the Performance Security for his Subcontractors. The County of Union requires Performance Security to be furnished by the prime contractor for the entire job in the total amount of the contract.

The County of Union shall award the contract or reject all bids within sixty (60) days; except that the bids of any bidders who consent thereto may, at the request of the County be held for consideration for such longer periods as may be agreed.

The County will return all certified checks or cashier's checks after the proposals have been opened, read, tabulated and checked except those of the three (3) bidders who have bid the lowest total price for carrying out the Project. The County will return the checks of these bidders when a contract is awarded to the successful bidder within ten (10) days after the award of the contract.

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

7. COMMENCEMENT AND COMPLETION

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

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

8. BIDDER AFFIDAVIT

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

9. BID SECURITY

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

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

10. LABOR AND MATERIALS

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

11. INSURANCE REQUIREMENTS

The County of Union requires all contractors to be able to comply with the following insurance requirements. In the event a bid is accepted by the County, the contractor must accept the applicable insurance requirements, as set forth below, as part of any contract awarded to it by the County.

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

- a) Commercial General Liability (CGL): Coverage for all operations including, but not limited to, contractual, products and completed operations, and personal injury with limits no less than \$5,000,000 per occurrence/\$10,000,000 aggregate. The County of Union, its Board of Chosen Freeholders, officers, employees, agents and servants shall be included as an additional insured. Coverage is provided on a primary and non-contributory basis to the County of Union, et al.
- b) Automobile Liability: Coverage for all owned, non-owned and hired vehicles with limits not less than \$5,000,000 per occurrence, combined single limits (CSL) or its equivalent.
- c) Workers Compensation: As required by the State of New Jersey and Employers Liability with limits not less than \$1,000,000 per accident for bodily injury or disease.

- d) Professional Liability (if design/build): Coverage with limits not less than \$1,000,000 per occurrence or claim, \$2,000,000 aggregate
- e) Contractor's Pollution Legal Liability and/or Asbestos Legal Liability and/or Errors & Omissions (if project involves environmental hazards): Coverage with limits no less than \$1,000,000 per occurrence or claim/\$2,000,000 aggregate.
- f) Builders Risk (for major renovations): During the course of construction utilizing an "All Risk" coverage form with limits equal to the completed value of the project and no coinsurance penalty provisions.

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

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

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

12. INDEMNIFICATION REQUIREMENTS

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

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

cost, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) caused or alleged to be caused by the negligent acts, negligent omissions, and/or fault of the County or the County's consultants, agents, representatives, or employees and arises out of this project and provided such claim, damage, loss, cost, or expense is not caused by the sole negligence of a party indemnified hereunder."

13. ROYALTIES AND PATENTS

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

14. PLANS AND SPECIFICATIONS

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

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

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

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

15. GUARANTEE AGAINST DEFECTIVE WORK

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

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

The Bond and Surety shall be satisfactory to the Union County Counsel. The Surety shall hold a Certificate of Authorization to do business in the State of New Jersey and shall conform to P.L. 1995 c.384, codified as N.J.S.A. 2A:44-143, 144. The Surety Disclosure Statement and Certification required by N.J.S.A. 2A: 44-143, 144, shall be attached to the Bond. Such Maintenance Bond shall remain in full force and effect for a period of one (1) year from the date of Final Completion. Such Maintenance Bond shall also provide that the Contractor and the Surety guarantee to replace for the said period of one (1) year from the date of Final Completion, all Work performed and/or all materials furnished that were not performed or were not furnished in accordance to the terms and performance requirements of the Contract Documents, and will make good any defects thereof which become apparent before the expiration of one (1) year. If, during that period, any part of the Project, in the judgment of the Engineer, is found defective, the Contractor will repair or replace same within five (5) days of receipt of notice from the County Engineer. If the Contractor refuses or neglects to do such Work in the time specified, the County Engineer may have the Work done by others and the Contractor or his Surety thereof will pay the cost.

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

16. TRAFFIC AND STREET MAINTENANCE

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

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

If modified traffic patterns are authorized in order to provide a safe working or traveling environment, the Contractor is responsible for providing all equipment, barrels, cones, signs, and barricades to implement the work zone and detours, unless otherwise specified in the technical specifications. All work zones and detours shall be

established in accordance with the technical plans and specifications if provided or in strict compliance with the current version of the Manual for Uniform Traffic Control Devices (MUTCD). The Contractor shall obtain approval for these work zones and detour plans from the Municipal Police or applicable police agency and the Union County Bureau of Traffic Maintenance prior to implementation.

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

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

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

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

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

17. CONTRACTOR'S EMPLOYEES

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

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

promulgated pursuant thereto, are hereby made a part of any contract and are binding upon them.

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

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

18. OWNERSHIP DISCLOSURES REQUIRED

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

19. NON-COLLUSION AFFIDAVIT

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

20. EQUAL EMPLOYMENT OPPORTUNITY COMPLIANCES

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

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

21. COMPLIANCE WITH NEW JERSEY PREVAILING WAGE ACT

The County of Union, in order to fulfill the requirements of N.J.S.A. 34:11-56.25 et seq, requires that the following additional conditions be strictly followed. The bidders represent that he is not listed or is not on record in the Office of the Commissioner or the Department of Labor and Industry as one who failed to pay prevailing wages in accordance with the provisions of this Act. The bidder agrees to the inclusion of a contract provision upon award which specifically requires said Contractor to fully comply with each and all of the requirements of the aforesaid Act as it relates to prevailing rates

of wages on public contracts as set forth in the New Jersey Prevailing Wage Act, P.L. 1963, Chapter 150 and P.L. 1974, Chapter 64.

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

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

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

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

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

UNION LABOR IS PREFERRED ON ALL COUNTY WORK

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

It is agreed and understood that any contracts and/or orders placed as a result of this proposal will be governed and construed and the rights and obligations of the

parties hereto will be determined in accordance with the laws of the State of New Jersey.

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

22. BRAND NAME OR EQUAL

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

- A. If the Bidder proposes to offer substitute goods as an equal to those specified herein, the bidder shall so indicate with the Bid Proposal. For the purposes of this paragraph, a proposed item shall be considered equal to goods specified herein if:
 - 1. The County, in its sole discretion, determines that: (i) the goods conform substantially, even with deviations, to the brand name goods specified herein; (ii) the goods are equal to or greater than the brand name goods specified herein in terms of quality, durability, functionality, appearance, strength and design; (iii) the goods are capable, at least as well as the brand name goods specified herein, or performing with existing equipment; and (iv) the goods do not cost the County more than the brand name goods specified herein costs the County.

- B. To offer substitute goods as an equal to those specified herein, it is necessary that:
 - 1. The Bidder submits sufficient information with its bid to permit the County to determine that the goods are equivalent to the brand name goods specified herein, including, but not necessarily limited to the brand, catalog number and specifications/data sheets;
 - 2. The Bidder fully identifies and describes the variations of the goods from the brand name goods specified herein

on a separate sheet that is to be submitted with the bid proposal. Bidder's literature WILL NOT suffice in explaining exceptions to these specifications.

3. The Bidder certifies that the goods (i) are similar in substance to the brand name goods specified, and (ii) are suited to the same use as the item specified;
- C. The County shall be allowed a reasonable time within which to evaluate the Bidder's proposal to offer substitute goods as an equal to those specified herein. The County shall be the sole judge of acceptability. No "or-equal" goods shall be ordered, delivered, assembled, set-up or utilized until the County's evaluation is complete. The County's determination as to equivalency shall be deemed final and absolute.

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

23. LINES AND GRADES

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

24. NUMBER OF WORKING DAYS

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

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

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

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

1. All contractor bills shall be either approved for payment, or notice provided as to why the bill or any portion of it will not be approved by the representative(s) of the governing body no later than the

public meeting following 20 calendar days of the billing date as defined in the statute.

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

26. STOPPING WORK ON ACCOUNT OF BAD WEATHER

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

27. ACCESS FOR OTHER CONTRACTORS

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

28. CONDEMNED MATERIALS AND WORK

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

29. STORAGE

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

30. FINAL CLEAN UP

Upon completion of the Work, the Contractor will remove all equipment, unused materials, rubbish, etc., and will repair, or replace in an a manner acceptable to the

County Engineer, all areas that may have been damaged in the prosecution of the Work. Same shall be a condition precedent to final payment. Should said Contractor fail to comply with this requirement, the County shall undertake the clean-up with its own forces and charge the cost of same against the Contractor's contract balance.

31. SUB-LETTING OF WORK

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

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

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

32. SAFETY

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

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

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

products in use at the Project. These Material Safety Data Sheets shall be made available to the Engineer upon request.

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

33. QUALITY, SAFETY AND PERFORMANCE STANDARDS

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

34. MATTERS NOT MENTIONED IN CONTRACT DOCUMENTS

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

35. PERMITS

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

36. CONTRACTOR TO PROVIDE PROOF OF PAYMENT

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

37. CHANGE ORDERS

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

38. SUPPLEMENTAL WORK

In case any supplemental work is necessary, it will be performed by the Contractor at a price fixed by agreement between the Contractor and the County Engineer and approved by the County as specified in Section 36. The Contractor will do no supplemental work on any character, for which the Contractor will demand pay, except upon the written order of the County.

39. FORM OF CONTRACT

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

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

40. PROGRESS PAYMENTS

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

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

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

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

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

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

When the Project is completed, the final cost of the Project will be based on actual quantities of authorized Work done under each item scheduled in the bidding sheet and approved Change Orders, if any. The money due to the Contractor as determined by said final certificate after deduction of previous monthly payments on account, will be paid to the Contractor in accordance with the terms of the contract dealing with Prompt Payment, providing, however that before such final payment is

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

41. INSPECTION

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

42. DAMAGES

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

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

43. LIQUIDATED DAMAGES

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

44. AFFIRMATIVE ACTION REQUIREMENTS

EXHIBIT B (Revised 4/10)

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

CONSTRUCTION CONTRACTS

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

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

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

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

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

When hiring or scheduling workers in each construction trade, the contractor or subcontractor agrees to make good faith efforts to employ minority and women workers in each construction trade consistent with the targeted employment goal prescribed by N.J.A.C. 17:27-7.2; provided, however, that the Division may, in its discretion, exempt a contractor or subcontractor from

compliance with the good faith procedures prescribed by the following provisions, A, B and C, as long as the Division is satisfied that the contractor or subcontractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the Division, that its percentage of active "card carrying" members who are minority and women workers is equal to or greater than the targeted employment goal established in accordance with N.J.A.C. 17:27-7.2. The contractor or subcontractor agrees that a good faith effort shall include compliance with the following procedures:

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

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

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

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

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

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

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

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

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

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

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

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

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

(C) The contractor or subcontractor agrees that nothing contained in (B) above shall preclude the contractor or subcontractor from complying with the union hiring hall or apprenticeship policies in any applicable collective bargaining agreement or union hiring hall arrangement, and, where required by custom or agreement, it shall send journeymen and trainees to the union for referral, or to the apprenticeship program for admission, pursuant to such agreement or arrangement. However, where the practices of a union or apprenticeship program will result in the exclusion of minorities and women or the failure to refer minorities and women consistent with the targeted county employment goal, the contractor or subcontractor shall consider for employment persons referred pursuant to (B) above without regard to such agreement or arrangement; provided further, however, that the contractor or subcontractor shall

not be required to employ women and minority advanced trainees and trainees in numbers which result in the employment of advanced trainees and trainees as a percentage of the total workforce for the construction trade, which percentage significantly exceeds the apprentice to journey worker ratio specified in the applicable collective bargaining agreement, or in the absence of a collective bargaining agreement, exceeds the ratio established by practice in the area for said construction trade. Also, the contractor or subcontractor agrees that, in implementing the procedures of (B) above, it shall, where applicable, employ minority and women workers residing within the geographical jurisdiction of the union.

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

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

(D) The contractor and its subcontractors shall furnish such reports or other documents to the Division of Public Contracts Equal Employment Opportunity Compliance as may be requested by the Division from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Division of Public Contracts Equal Employment Opportunity Compliance for conducting a compliance investigation pursuant to **Subchapter 10 of the Administrative Code (NJAC 17:27)**.

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45. INVESTMENT ACTIVITIES IN IRAN

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

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

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

47. UTILITIES

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

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

When pipes or other structures are encountered or when the removal, relocation or protection of these utilities are necessary in carrying out the Project as planned, the Contractor will cooperate with the owner of said utilities and will permit the owners or their agents access to the site of the Work in order to relocate or protect their facilities

and not hinder or delay unnecessarily the Work of the owners in moving same. No extra allowance of payment will be made to the Contractor for the use of any materials, equipment, etc., or for the performance of any Work in connection with the moving of said structures unless the Contractor is specifically ordered by the County Engineer to furnish such materials, equipment, or services. If directed by the County Engineer to do any Work or furnish any materials or equipment, payment will be allowed the Contractor in accordance with the unit prices bid for such Work, or, if such items are not scheduled in the proposal, such Work shall be allowed "Supplemental Work" as provided in Section 39 of these general specifications. The corporations, companies, agencies or municipalities owning or controlling the utilities, and the name, and telephone numbers are listed in the beginning of the Technical Specifications.

48. MATERIAL COMPLIANCE AND SHOP DRAWINGS

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

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

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

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

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

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

49. PRECONSTRUCTION

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

50. DISPUTES UNDER THE CONTRACT

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

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

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

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51. CONTRACTOR BUSINESS REGISTRATION CERTIFICATE New Mandatory Requirement -Effective 1/18/2010

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

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

Proof of business registration shall be

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

Register online at <http://www.state.nj.us/treasury/revenue/busregcert.htm>. Click the "online" link and then select "Register for Tax and Employer Purposes or call the Division at 609-292-1730.

Note: A NJ Certificate of Authority is not acceptable.

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

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

IN ADDITION:

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

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

- 3) prior to receipt of final payment from a contracting agency, the Contractor must submit to the contacting agency an accurate list of all subcontractors and suppliers or attest that none was used; and,
- 4) during the term of this contract, the Contractor and its affiliates shall collect and remit, and shall notify all subcontractors and their affiliates that they must collect and remit, to the Director, New Jersey Division of Taxation, the use tax due pursuant to the Sales and Use Tax Act, (*N.J.S.A. 54:32B-1 et seq.*) on all sales of tangible personal property delivered into this State.

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

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52. BID PROTEST – LEGAL FEES AND COSTS

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

53. AMERICAN GOODS AND PRODUCTS WHERE POSSIBLE

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

54. NEW JERSEY PAY-TO-PLAY REQUIREMENTS

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

55. STATEMENT OF EQUIPMENT TO BE USED IN CONSTRUCTION

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

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

56. NEW JERSEY SALES AND USE TAX REQUIREMENTS,

Contractors are required to comply with the following:

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

regardless of whether the tangible personal property is intended for a contract with the contracting agency. This tax shall be remitted for the term of the Contract.

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

Bidder's Name _____

EDWARD T. OATMAN
COUNTY MANAGER

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

BID DOCUMENT SUBMISSION CHECKLIST

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

EACH BIDDER SHOULD COMPLETE THIS FORM AND INITIAL EACH ENTRY.

DATE COMPLETED: _____

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

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

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

_____ Security in the form of:

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

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

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

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

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

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

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

_____ A copy of the State of New Jersey Department of the Treasury, Division of Revenue, **Business Registration Certificate ("BRC")** should be included with the bids as it must be received by the County prior to the award of the contract. The BRC provided must show that the Bidder was registered at the time of receipt of bids or the bid will be rejected.

_____ A copy of the State of New Jersey Department of the Treasury, Division of Revenue, **Business Registration Certificate ("BRC")** of all named or listed subcontractors (List of Subcontractors) in a Construction bid should be included with the bid as the BRC(s) must be received by the County prior to the award of the contract. Each subcontractor's certificate provided must show that the subcontractor was registered at the time of the receipt of bids or the bid will be rejected.

Bidder's Name _____

- _____ Affirmative Action Requirement
- _____ Experience Statement
- _____ Certificate of Bidder showing ability to perform Contract
- _____ Non-Collusion Affidavit – Fill out completely and notarize
- _____ Certificates from New Jersey Department of Labor and Workforce Development – Public Works Contractor Registration Act. **(Only for certain types of work)**
- _____ Federal Attachments **(If applicable)**
- _____ NJDPMC Certificate / Notice of Classification **(If applicable)**
- _____ Americans with Disabilities Act
- _____ Statement of Bidder's Qualifications
- _____ Contractor Performance Record
- _____ Affidavit Regarding List of Debarred, Suspended or Disqualified Bidders
- _____ Prior Negative Experience Questionnaire
- _____ Contractor's Certification of Compliance – New Jersey Prevailing Wage Act
- _____ Uncompleted Contracts Affidavit **(For Bidder, if applicable) MUST ALSO PROVIDE DPMC FORM 701**
- _____ Certificate of Insurance Statement
- _____ Collection of Use Tax on Sales to Local Government Statement
- _____ Time of Completion
- _____ Disclosure of Investment Activities in Iran Certification Form

I HAVE TAKEN THE FOLLOWING ACTIONS:

- _____ Visited the site and attended the Pre-Bid Meeting **(Where applicable)**
- _____ Reviewed the Contract Documents (including any permits the County or its professionals may have obtained), Work, Site, Locality, and Local Conditions and Laws and Regulations that in any manner may affect Cost, Progress, Performance or Furnishing of Work.
- _____ Reviewed Bond Requirements
- _____ Provided Proof of Compliance with New Jersey Prevailing Wage Act
- _____ Reviewed Form of Owner/Contractor Agreement and General Conditions to the Contract

NOTE: QUESTIONS PERTAINING TO THIS BID ARE TO BE DIRECTED TO DIVISION OF ENGINEERING AT 908-789-3675

Bidder's Name _____

BIDDING DOCUMENTS

The Bidding Documents consist of the following items:

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

Bidder's Name _____

BID FORM

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

PROJECT TITLE

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

BASE BID ITEMS:

ITEM NO	DESCRIPTION	UNIT	CONTRACT QUANTITY	UNIT PRICE	AMOUNT
1	Mobilization and Demobilization	L.S.	1		
2	Site Clearing and Demolition	L.S.	1		
3	Construction Layout	L.S.	1		
4	Soil Erosion and Sediment Control Devices	L.S.	1		
5	Site Grading and Fill Import	L.S.	1		
6	Test Pits (If and Where Directed)	C.Y.	400		
7	Temporary Site Security Fence, 8' High	L.F.	1,850		
8	Temporary Site Security Fence, 8' High, Double Swing Gates	Unit	1		
9	Manhole, Precast Concrete Doghouse, 4' Dia.	Unit	1		
10	Manhole, PVC, Solid Cover, Buried	Unit	9		
11	Manhole, PVC, Solid Cover, At-Grade	Unit	3		
12	Inlet, PVC, Standard Inlet Grate	Unit	5		
13	Inlet, PVC, ADA Inlet Grate	Unit	1		
14	Outlet Control Structure, Complete	Unit	1		
15	Subsurface Pipe Detention Basin, Complete	L.S.	1		
16	Pipe, 8" HDPE	L.F.	200		
17	Pipe, 12" HDPE	L.F.	360		
18	Pipe, 12" HDPE, Perforated	L.F.	900		
19	Pipe, 15" HDPE	L.F.	1,020		
20	Pipe, 15" HDPE, Perforated	L.F.	700		
21	Pipe, 18" HDPE	L.F.	20		
22	Water Fountain with Hose Bib, Complete	Unit	3		
23	1" Domestic Water Service (Including Fittings, Thrust Blocks, Flushing, Disinfection, and Testing)	L.F.	475		
24	1" Water Valves (Including Valve Boxes)	Unit	4		
25	Wet Tap Connection to Existing Water Main (Including Fittings)	Unit	2		
26	Perimeter Turf Curb (12"x12", Flush)	L.F.	1,320		
27	Perimeter Turf Curb (12" Wide, Height Varies)	L.F.	430		
28	Hot Mix Asphalt, Surface Course, Mix 9.5M64, 1.5" Thick	Tons	75		
29	Hot Mix Asphalt, Base Course, Mix 19M64, 3.5" Thick	Tons	175		
30	Dense Graded Aggregate, 4" Thick	S.Y.	850		
31	Field Netting, 20' High	L.F.	180		

Bidder's Name _____

32	Field Netting, 10' High, with 10' High Chain-Link Fence, Black, Vinyl-Coated	L.F.	190		
33	Synthetic Turf Prep (incl. Underdrains, Stone, and Geotextile Fabric)	S.Y.	20,650		
34	Bleachers, 3-Row, 27' Wide	Unit	4		
35	Bench, 15'	Unit	8		
36	Football Field Yard Markers & End Zone Pylons, Set for 1 Complete Field	Unit	1		
37	Soccer Field Corner Flag, Set of 4 for 1 Complete Field	Unit	2		
38	Soccer Goal and Football Upright Combination	Unit	2		
39	Soccer Goal, Youth	Unit	2		
40	Field Hockey Goal, Portable	Unit	2		
41	Lacrosse Goal, Portable	Unit	4		
42	Evergreen Tree Planting	Unit	20		
43	Woodchips	S.Y.	1,500		
44	Final Clean-up and Site Restoration	L.S.	1		

Written

Figures

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

FOUR HUNDRED SEVENTY-FIVE THOUSAND DOLLARS
Written

\$475,000.00
Figures

TOTAL BASE BID ITEMS PLUS BID CONTINGENCY AMOUNT:

Written

Figures

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

Bidder's Name _____

CONSENT OF SURETY
TO ACCOMPANY PROPOSAL (BID)

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

NOTE:
Expiration date
Needed if Annual
Surety

NAME OF INSURANCE COMPANY
ADDRESS: _____

ORIGINAL SIGNATURE
ATTORNEY-IN-FACT FOR INSURANCE CO.

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

Bidder's Name _____

BIDDER SIGNATURE PAGE

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

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

NAME OF BIDDER

ADDRESS OF BIDDER

**ORIGINAL SIGNATURE
CORPORATE SECRETARY**

**PRINT NAME AND TITLE
CORPORATE SECRETARY**

TEL: _____
FAX: _____
E-Mail: _____

BY: _____
ORIGINAL SIGNATURE

Corporate Seal

PRINT OR TYPE NAME AND TITLE

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

STATEMENT OF OWNERSHIP DISCLOSURE

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

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

Name of Organization: _____

Organization Address: _____

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

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

Part II

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

OR

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

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

Bidder's Name _____

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

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

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

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

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

Bidder's Name _____

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

Part IV Certification

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

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

SUBCONTRACTOR IDENTIFICATION STATEMENT

LIST OF SUBCONTRACTORS

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

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

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

Company Name: _____

Address: _____

Telephone: _____ Subcontract Amount: \$ _____

Specific Scope of Work Subcontracted: _____

License No. _____

Company Name: _____

Address: _____

Telephone: _____ Subcontract Amount: \$ _____

Specific Scope of Work Subcontracted: _____

License No. _____

Company Name: _____

Address: _____

Telephone: _____ Subcontract Amount: \$ _____

Specific Scope of Work Subcontracted: _____

License No. _____

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

(Continued on following page)

Bidder's Name _____

SUBCONTRACTOR IDENTIFICATION CERTIFICATION

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

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

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

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

Witness

Date _____

NAME OF BIDDER

ADDRESS

By: _____
ORIGINAL SIGNATURE ONLY

PRINT NAME AND TITLE

Bidder's Name _____

ACKNOWLEDGMENT OF ADDENDUM

COUNTY OF UNION

(Name of Construction /Public Works Project)

(Project or Bid Number)

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

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

ACKNOWLEDGMENT BY BIDDER:

NAME OF BIDDER: _____

ORIGINAL SIGNATURE: _____

PRINTED NAME AND TITLE: _____

DATE: _____

CONTRACTOR BUSINESS REGISTRATION CERTIFICATE

New Mandatory Requirement - Effective 1/18/2010

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

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

Proof of business registration shall be

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

Register online at www.nj.gov/treasury/revenue/taxreg.htm. Click the "online" link and then select "Register for Tax and Employer Purposes or call the Division at 609-292-1730.

Note: A NJ Certificate of Authority is not acceptable.

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

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

IN ADDITION:

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

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

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

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

BUSINESS REGISTRATION
Mandatory Requirement

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

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

Proof of business registration shall be:

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

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

DEPARTMENT OF TREASURY
DIVISION OF REVENUE
1000202
TRENTON, NJ 08646

TAXPAYER NAME: TAX REGISTRATION TEST ACCOUNT
TRADE NAME: CLIENT REGISTRATION
TAXPAYER IDENTIFICATION#: 010-097-382/000
SEQUENCE NUMBER: 0107200
ADDRESS: 847 ROEBLING AVE, TRENTON NJ 08611
ISSUANCE DATE: 07/14/04
EFFECTIVE DATE: 01/01/01
FORM BR(C)0101

John S. Tully
Authorized Signatory

This Certificate is NOT assignable or transferable. It must be conspicuously displayed at above address.

STATE OF NEW JERSEY
BUSINESS REGISTRATION CERTIFICATE

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

For Office Use Only:
20041014112823533

ATTACH BRC HERE

Bidder's Name _____

AFFIRMATIVE ACTION REQUIREMENT

REQUIRED AFFIRMATIVE ACTION EVIDENCE

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

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

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

NAME OF BIDDER

ORIGINAL SIGNATURE

PRINT OR TYPE NAME AND TITLE

DATE THIS FORM IS COMPLETED

Bidder's Name _____

EXPERIENCE STATEMENT

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

Witness

Date

NAME OF BIDDER

ADDRESS

By: _____
ORIGINAL SIGNATURE ONLY

PRINT NAME AND TITLE

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

Bidder's Name _____

NON-COLLUSION AFFIDAVIT

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

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

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

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

NAME OF BIDDER

ORIGINAL SIGNATURE ONLY

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

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

Notary Public of the State of _____
My commission expires: _____

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

Bidder's Name _____

Contractor Registration Advisement
For Public Works Projects

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

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

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

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

AMERICANS WITH DISABILITIES ACT
EQUAL OPPORTUNITY FOR INDIVIDUALS WITH DISABILITIES

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

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

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

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

Name _____ (Please print or type)

Signature _____ Date _____

STATEMENT OF BIDDER'S QUALIFICATIONS

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

1. _____
(Name of Bidder)

2. _____
(Permanent Main Office Address)

3. _____
(When Organized)

4. _____
(If a Corporation, where incorporated)

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

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

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

8. General character of work performed by you. _____

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

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

STATEMENT OF BIDDER'S QUALIFICATIONS - (continued)

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

12. List your major equipment available for this Contract.

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

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

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

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

Bidder's Name _____

16. Bank Reference. (Name, Address, Phone, Representative) _____
17. Will you, upon request, fill out a detailed financial statement? _____
18. The undersigned, hereby authorizes and requests any person, firm or corporation to furnish any information requested by the proper agency in verification of the responses comprising this Statement of Bidder's Qualifications.
19. Bidder's telephone number, fax number and e-mail address (if applicable).
- Phone _____
- Fax _____
- E-mail _____
- Mobile _____

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

BIDDER (Signature)

BIDDER (Print Name)

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

(Seal) Notary Public of New Jersey/
Specify Other State
My Commission Expires _____, 20__.

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

Bidder's Name _____

CONTRACTOR PERFORMANCE RECORD

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

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

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

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

Bidder's Name _____

CONTRACTOR PERFORMANCE RECORD
CERTIFICATION

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

(Name of Organization)

(Signature)

(Title)

Subscribed and sworn to before me

this _____ day of _____, 20__.

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

My Commission Expires _____, 20__.

PRIOR NEGATIVE EXPERIENCE QUESTIONNAIRE

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

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

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

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

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

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

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

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

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

Bidder's Name _____

PRIOR NEGATIVE EXPERIENCE CERTIFICATION

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

Name of Contractor

By _____
(Signature of Authorized Representative)

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

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

My Commission Expires _____, 20__.

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

TO BE COMPLETED ONLY WHEN FINAL PAYMENT IS REQUESTED

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

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

CONTRACT:

PROJECT:

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

COUNTY OF UNION

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

CONTRACTOR: _____
ADDRESS: _____

BY: _____

ORIGINAL SIGNATURE ONLY

STATE OF NEW JERSEY
COUNTY OF _____

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

Subscribed and sworn before me
this ____ day of _____, 200__.

Notary Public: _____
My Commission Expires: _____

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

Bidder's Name _____

UNCOMPLETED CONTRACTS AFFIDAVIT
(To be Submitted with DPMC Form 701)

PURSUANT TO N.J.A.C. 17:19-2.13, BIDDER DECLARES THE FOLLOWING WITH RESPECT TO ITS UNCOMPLETED CONTRACTS, ON ALL WORK, FROM WHATEVER SOURCE (PUBLIC AND PRIVATE), BOTH IN NEW JERSEY AND FROM OTHER GOVERNMENTAL JURISDICTIONS

ENTITY	PROJECT TITLE	ORIGINAL CONTRACT AMOUNT	UNCOMPLETED AMOUNT AS OF BID OPENING DATE	NAME AND TELEPHONE NUMBER OF PARTY TO BE CONTACTED FROM ENTITY FOR VERIFICATION

TOTAL AMOUNT OF UNCOMPLETED CONTRACTS \$ _____

Sworn and Subscribed to Before me

This _____ day of _____, 20____

Notary Public

BIDDER:

(Signature)

(Print Name)

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

Bidder's Name _____

CERTIFICATE OF INSURANCE STATEMENT

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

BIDDER (Signature)

BIDDER (Print Name)

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

Bidder's Name _____

COLLECTION OF USE TAX ON SALES TO LOCAL GOVERNMENTS STATEMENT

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

BIDDER (Signature)

BIDDER (Print Name)

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

Bidder's Name _____

TIME OF COMPLETION

The undersigned proposed that if awarded the Contract, the scope of work will be started within ten (10) calendar days and will be substantially completed within **One Hundred and 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

Bidder's Name _____

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

Solicitation Number: _____

Vendor/Bidder: _____

PART 1

CERTIFICATION

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

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

CHECK THE APPROPRIATE BOX

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

OR

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

PART 2

PLEASE PROVIDE ADDITIONAL INFORMATION RELATED TO INVESTMENT ACTIVITIES IN IRAN

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

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

Attach Additional Sheets If Necessary

CERTIFICATION

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

Signature _____

Date _____

Print Name and Title _____

Revised 10/19/17

STANDARD SPECIFICATIONS

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

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

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

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

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

When reference is made herein to the bulletins, standards, specifications, publications or requirements of the Manual on Uniform Traffic Control Devices (MUTCD), Institute of Traffic Engineers (ITE), Federal Highway Administration (FHWA), American Association of State Highway Officials (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

	03/01/18
Journeyman (Mechanic)	W37.98 B23.93 T61.91

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

	01/01/18
Foreman	W49.50 B42.52 T92.02
General Foreman	W51.50 B43.50 T95.00
Journeyman	W44.50 B40.92 T85.42

Craft: Boilermaker APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	65%	70%	75%	80%	85%	90%	95%			
1000 Hours										
Benefit =	34.83	35.70	36.58	37.44	38.32	39.19	40.05			

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

	01/01/18
Foreman	W33.54 B16.17 T49.71
General Foreman	W34.04 B16.17 T50.21
Mechanic	W32.04 B16.17 T48.21

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

	05/01/18
Deputy Foreman	W45.20 B33.03 T78.23
Foreman	W48.20 B33.03 T81.23
Journeyman	W42.20 B33.03 T75.23

Craft: Bricklayer, Stone Mason

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	40%	50%	55%	60%	65%	70%	75%	80%		
6 Months										
Benefits	3.86	4.83	5.31	5.80	21.83	23.27	24.72	26.15		

Ratio of Apprentices to Journeymen - 1:5

Craft: Bricklayer, Stone Mason

COMMENTS/NOTES

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

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

**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: Carpenter - Resilient Flooring

PREVAILING WAGE RATE

	05/01/18	11/01/18
Foreman	W56.02	W0.00
	B31.94	B0.00
	T87.96	T88.54
Journeyman	W48.71	W0.00
	B27.77	B0.00
	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

	06/13/18	11/01/18
Foreman	W53.48 B46.12 T99.60	W0.00 B0.00 T100.49
Foreman (Concrete Form Work)	W52.67 B33.01 T85.68	W0.00 B0.00 T86.60
Journeyman	W46.50 B46.12 T92.62	W0.00 B0.00 T93.87
Journeyman (Concrete Form Work)	W45.80 B33.01 T78.81	W0.00 B0.00 T80.06

Craft: Dockbuilder APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
Yearly	18.60	23.25	30.23	37.20						
Benefit	30.86	for all	intervals							

Ratio of Apprentices to Journeymen - *

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

Craft: Dockbuilder COMMENTS/NOTES

APPRENTICE RATE SCHEDULE FOR CONCRETE FORM WORK ONLY:

INTERVAL	PERIOD AND RATES			
Yearly	18.32	22.90	29.77	36.64
Benefits	22.75 for all intervals			

CREOSOTE HANDLING:

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

HAZARDOUS WASTE WORK:

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

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

FOREMAN REQUIREMENTS:

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

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

County - UNION

OVERTIME:

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

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

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

County - UNION

Craft: Drywall Finisher

PREVAILING WAGE RATE

	07/16/18	11/01/18
Foreman	W43.95 B23.90 T67.85	W43.95 B24.40 T68.35
General Foreman	W45.94 B23.90 T69.84	W45.94 B24.40 T70.34
Journeyman	W39.95 B23.90 T63.85	W39.95 B24.40 T64.35

Craft: Drywall Finisher

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	40%	50%		60%	70%		80%	90%		
6 Months										
Benefits	Intervals	1 to 2 =	10.65	Intervals	3 to 4 =	13.17	Intervals	5 to 6 =	16.25	

Ratio of Apprentices to Journeymen - 1:4

Craft: Drywall Finisher

COMMENTS/NOTES

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

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

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

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

County - UNION

Craft: Electrician

PREVAILING WAGE RATE

	06/07/18
Cable Splicer	W61.52 B35.38 T96.90
Foreman	W62.64 B36.03 T98.67
Journeyman	W55.93 B32.17 T88.10

Craft: Electrician

APPRENTICE RATE SCHEDULE

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

Ratio of Apprentices to Journeymen - 2:3

Craft: Electrician

COMMENTS/NOTES

THESE RATES ALSO APPLY TO THE FOLLOWING:

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

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

FOREMAN REQUIREMENTS:

- 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

	11/15/17	10/29/18	10/28/19	11/02/20
Master	W53.52	W54.86	W56.16	W57.42
Technician/General	B29.43	B30.17	B30.89	B31.58
Foreman	T82.95	T85.03	T87.05	T89.00
Senior Technician/Lead Foreman (21-30 Workers on Job)	W48.99 B26.94 T75.93	W50.22 B27.62 T77.84	W51.41 B28.27 T79.68	W52.56 B28.91 T81.47
Technician A/Foreman (11-20 Workers on Job)	W46.93 B25.81 T72.74	W48.11 B26.46 T74.57	W49.25 B27.08 T76.33	W50.35 B27.69 T78.04
Technician B/Working Foreman (4-10 Workers on Job)	W44.88 B24.67 T69.55	W46.00 B25.30 T71.30	W47.09 B25.90 T72.99	W48.15 B26.47 T74.62
Technician C/Journeyman (1-3 Workers on Job)	W41.17 B22.64 T63.81	W42.20 B23.21 T65.41	W43.20 B23.76 T66.96	W44.17 B24.29 T68.46

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

APPRENTICE RATE SCHEDULE

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

Ratio of Apprentices to Journeymen - 2:3

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

COMMENTS/NOTES

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

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

NOTES:

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

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

SHIFT DIFFERENTIALS:

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

**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

	06/07/18
Cable Splicer	W61.82 B35.09 T96.91
Certified Welder	W59.01 B33.50 T92.51
Equipment Operator	W56.20 B31.90 T88.10
Foreman (1-10 Journeyman workers on job)	W62.94 B35.73 T98.67
Foreman (11-20 Journeyman workers on job)	W64.62 B36.68 T101.30
General Foreman (21-30 Journeyman workers on job)	W66.32 B37.65 T103.97
General Foreman (31-60 Journeyman workers on job)	W71.94 B40.84 T112.78
General Foreman (61+ Journeyman workers on job)	W73.06 B41.47 T114.53
Groundman	W33.72 B19.15 T52.87
Journeyman Lineman/Technician	W56.20 B31.90 T88.10
Sub-Foreman	W62.94 B35.73 T98.67

**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	56.75% 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	67% of	Appren	tice	Wage	Rate	for all	intervals			

Craft: Electrician-Utility Work (North)

COMMENTS/NOTES

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

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

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

County - UNION

Craft: Electrician-Utility Work (South)

PREVAILING WAGE RATE

Rates are located in the "Statewide" rate package

Craft: Electrician-Utility Work (South)

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
6 Months	28.24	30.60	32.95	35.30	37.66	40.01	42.36			
Benefits	24.29	25.67	27.03	28.40	29.77	31.13	32.51			

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

	03/17/18
Journeyman	W64.48 B43.36 T107.84

Craft: Elevator Constructor APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	28.74	35.46	41.91	48.36						
Benefits	34.88	36.07	37.69	39.30						

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

	03/17/18
Journeyman	W50.49 B41.66 T92.15

Craft: Elevator Modernization & Service

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	28.74	27.77	32.82	37.87						
Benefits	34.81	35.13	36.58	38.03						

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

	05/15/18	05/01/19
* Leadman	W47.11 B25.06 T72.17	W49.11 B25.06 T74.17
Foreman	W48.94 B25.23 T74.17	W52.81 B23.62 T76.43
General Foreman	W50.77 B25.40 T76.17	W54.81 B23.75 T78.56
Journeyman	W45.28 B24.89 T70.17	W48.81 B23.36 T72.17

Craft: Glazier APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
6 Months	50%	55%		60%	65%		70%	75%		
Benefits	Intervals	1 to 2 =	9.11	Intervals	3 to 4 =	11.71	Intervals	5 to 6 =	13.20	

Ratio of Apprentices to Journeymen - 1:4

Craft: Glazier COMMENTS/NOTES

Hazard/Height Pay: +\$1.00 per hour

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

FOREMAN REQUIREMENTS:

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

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

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

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

County - UNION

rate.

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

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

County - UNION

Craft: Heat & Frost Insulator

PREVAILING WAGE RATE

	09/19/18
Foreman	W55.77 B31.92 T87.69
General Foreman	W58.11 B33.03 T91.14
Journeyman	W53.99 B31.36 T85.35

Craft: Heat & Frost Insulator

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	25.15	29.84	36.00	42.16						
Benefits	18.71	22.13	24.41	26.56						

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

	09/19/18
Asbestos Helper Abatement	W36.00 B24.41 T60.41
Firestop/Hazmat	W25.68 B9.25 T34.93

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

	07/10/18
Rod /Fence Foreman	W44.39 B46.12 T90.51
Rod/Fence Journeyman	W41.39 B46.12 T87.51
Structural Foreman	W46.44 B46.12 T92.56
Structural Journeyman	W43.44 B46.12 T89.56

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

	08/01/18
Journeyman (Handler)	W31.48 B22.31 T53.79

Craft: Laborer - Asbestos & Hazardous Waste Removal

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	18.89	22.04	25.18	28.33						
Benefits	20.66	for	all	intervals						

Ratio of Apprentices to Journeymen - *

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

Craft: Laborer - Asbestos & Hazardous Waste Removal

COMMENTS/NOTES

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

The regular workday shall be 8 hours.

OVERTIME:

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

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

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

County - UNION

Craft: Laborer - Building

PREVAILING WAGE RATE

	05/15/18
Class A Journeyman	W33.45 B29.12 T62.57
Class B Journeyman	W32.95 B29.12 T62.07
Class C Journeyman	W28.01 B29.12 T57.13
Foreman	W37.63 B29.12 T66.75
General Foreman	W41.81 B29.12 T70.93

Craft: Laborer - Building

APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
	60%	70%	80%	90%						
6 Months										
Benefit	25.87	25.87	25.87	25.87						

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	20.28	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

As of 3-1-19, benefits shall be \$21.03.

As of 3-1-20, benefits shall be \$21.78.

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

	04/26/18
* Skilled Tradesman (only applies to Modular Construction)	W25.85 B5.45 T31.30
Foreman (person directing crew, regardless of his skill classification)	W29.85 B5.45 T35.30
Laborer	W21.85 B5.45 T27.30
Laborer (for single family and stand-alone duplex owned by single owner)	W16.35 B2.95 T19.30

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: Millwright PREVAILING WAGE RATE

	05/01/18
Foreman	W56.12 B33.14 T89.26
Journeyman	W48.80 B28.90 T77.70

Craft: Millwright APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
6 Months	40%	45%	50%	55%	60%	65%	70%	75%	85%	95%
Benefits	58% of	Appren	tice	Wage	Rate	for all	intervals	+ \$.60		

Ratio of Apprentices to Journeymen - 1:3

Craft: Millwright COMMENTS/NOTES

FOREMAN REQUIREMENTS:

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

The regular workday shall consist of 8 hours, starting between 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 will be observed the following Monday.

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

County - UNION

Craft: Operating Engineer PREVAILING WAGE RATE

Rates are located in the
"Statewide" rate package

Craft: Operating Engineer APPRENTICE RATE SCHEDULE

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

Ratio of Apprentices to Journeymen - *

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

Craft: Operating Engineer COMMENTS/NOTES

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

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

County - UNION

Craft: Operating Engineer - Field Engineer

PREVAILING WAGE RATE

Rates are located in the
"Statewide" rate package

Craft: Operating Engineer - Field Engineer

APPRENTICE RATE SCHEDULE

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

Ratio of Apprentices to Journeymen - *

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

Craft: Operating Engineer - Field Engineer

COMMENTS/NOTES

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

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

County - UNION

Craft: Painter - Bridges

PREVAILING WAGE RATE

	05/04/17
Foreman	W59.13 B27.67 T86.80
General Foreman	W61.13 B27.67 T88.80
Journeyman	W54.13 B27.67 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

	12/01/17
Apprentice (1st year)	W25.45 B11.00 T36.45
Apprentice (2nd year)	W29.45 B18.00 T47.45
Foreman (Charge Person)	W37.60 B18.17 T55.77
Journeyman 1 (at least 1 year of working exp. as a journeyman)	W33.33 B18.17 T51.50
Journeyman 2 (at least 2 years of working exp. as a journeyman)	W37.10 B18.17 T55.27

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

	05/17/18	05/01/19	05/01/20
Foreman	W43.80 B24.35 T68.15	W45.45 B24.35 T69.80	W47.45 B24.35 T71.80
General Foreman	W47.78 B24.67 T72.45	W49.43 B24.67 T74.10	W51.43 B24.67 T76.10
Journeyman	W39.82 B24.04 T63.86	W41.47 B24.04 T65.51	W43.47 B24.04 T67.51

Craft: Painter - New Construction

APPRENTICE RATE SCHEDULE

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

Ratio of Apprentices to Journeymen - 1:4

Craft: Painter - New Construction

COMMENTS/NOTES

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.
- 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 - Repainting

PREVAILING WAGE RATE

	05/17/18	05/01/19	05/01/20
Foreman	W32.27 B19.91 T52.18	W33.07 B19.95 T53.02	W33.92 B19.95 T53.87
General Foreman	W35.20 B20.06 T55.26	W36.00 B20.10 T56.10	W36.85 B20.10 T56.95
Journeyman	W29.34 B19.77 T49.11	W30.14 B19.77 T49.91	W30.99 B19.77 T50.76

Craft: Painter - Repainting

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	SEE	PAINTER	NEW	CONSTR	TION					
				UC						

Ratio of Apprentices to Journeymen - 1:4

Craft: Painter - Repainting

COMMENTS/NOTES

NOTE: These rates may only be used on jobs where no major alterations (only doing painting and carpeting with nothing else being changed in the office or on the project) 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 tank, or generating stations.

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.

OVERTIME:

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

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

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

County - UNION

Craft: Painter- Containment

PREVAILING WAGE RATE

	05/04/17
Journeyman	W35.18 B24.75 T59.93

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

	05/04/17
Foreman	W48.92 B24.92 T73.84
General Foreman	W50.92 B24.92 T75.84
Journeyman	W43.92 B24.92 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

	05/04/17
Foreman	W47.87 B25.27 T73.14
General Foreman	W49.87 B25.27 T75.14
Journeyman	W42.87 B25.27 T68.14

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

	05/17/18	05/01/19	05/01/20
Foreman	W45.82 B24.11 T69.93	W46.75 B24.11 T70.86	W47.68 B24.11 T71.79
Journeyman	W40.75 B24.11 T64.86	W41.68 B24.11 T65.79	W42.61 B24.11 T66.72

Craft: Paperhanger - New Construction

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES										
	SEE	PAINTER	NEW	CONSTR	UC	TION					

Ratio of Apprentices to Journeymen - 1:4

Craft: Paperhanger - New Construction

COMMENTS/NOTES

FOREMEN REQUIREMENTS:

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

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

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

- Saturday or Sunday may be used to make up a day lost to inclement weather, at straight time.

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

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

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

County - UNION

Craft: Paperhanger - Renovation

PREVAILING WAGE RATE

	05/17/18	05/01/19	05/01/20
Foreman	W33.11	W34.13	W35.15
	B19.81	B19.81	B19.81
	T52.92	T53.94	T54.96
Journeyman	W30.10	W31.03	W31.96
	B19.81	B19.81	B19.81
	T49.91	T50.84	T51.77

Craft: Paperhanger - Renovation

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
		SEE	PAINTER	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

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

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

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

**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

	05/01/18
Foreman	W58.41 B34.66 T93.07
General Foreman	W62.19 B34.66 T96.85
Journeyman	W54.08 B34.66 T88.74

Craft: Plumber APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	30%	45%	55%	65%	75%					
Benefits	10.15	15.23	18.61	22.00	25.38					

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

APPRENTICE RATE SCHEDULE AS OF 5-1-18:

INTERVAL	PERIOD AND RATES				
Yearly	30%	45%	55%	65%	75%
Benefits	13.35	19.71	21.51	23.34	25.13

FOREMAN REQUIREMENTS:

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

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

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

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

County - UNION

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

	06/07/18
Foreman	W39.52 B26.28 T65.80
Journeyman	W37.52 B26.28 T63.80

Craft: Roofer APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
6 Months	15.00	18.76	22.51	26.26	30.01	33.77				
Benefits	0.00	0.00	21.40	21.40	21.40	21.40				

Ratio of Apprentices to Journeymen - *

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

Craft: Roofer COMMENTS/NOTES

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

INTERVAL	PERIOD AND RATES							
6 Months	15.00	18.76	22.51	24.38	26.26	28.14	30.01	33.77
Benefits	0.00	0.00	21.40	21.40	21.40	21.40	21.40	21.40

Pitch: +.50 per hour

Mop Man: +.30 per hour

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

OVERTIME:

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

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

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

County - UNION

Craft: Sheet Metal Sign Installation

PREVAILING WAGE RATE

	04/01/18
Foreman	W35.79 B33.00 T68.79
Journeyman	W34.54 B33.00 T67.54

Craft: Sheet Metal Sign Installation

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
1000 hours	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%
Benefits	10.44	11.89	13.34	14.82	16.68	18.17	19.66	21.16	22.65	24.14

Ratio of Apprentices to Journeymen - 1:3

Craft: Sheet Metal Sign Installation

COMMENTS/NOTES

APPRENTICE RATE SCHEDULE AS OF 4-1-18:

INTERVAL	PERIOD AND RATES									
1000 Hours	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%
Benefits	11.17	12.73	14.30	15.86	17.82	19.43	21.03	22.63	24.23	25.82

FOREMAN REQUIREMENT:

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

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

OVERTIME:

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

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

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

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

County - UNION

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

	06/26/18	06/01/19	06/01/20
Foreman	W50.95 B43.27 T94.22	W0.00 B0.00 T97.22	W0.00 B0.00 T100.47
General Foreman	W51.95 B43.27 T95.22	W0.00 B0.00 T98.22	W0.00 B0.00 T101.47
Journeyman	W47.45 B43.27 T90.72	W0.00 B0.00 T93.72	W0.00 B0.00 T96.97

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

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

Ratio of Apprentices to Journeymen - 1:4

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

FOREMAN REQUIREMENTS:

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

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

SHIFT DIFFERENTIAL:

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

OVERTIME:

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

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

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

County - UNION

Craft: Sprinkler Fitter

PREVAILING WAGE RATE

	07/01/18
Foreman	W64.88 B28.42 T93.30
General Foreman	W68.07 B28.42 T96.49
Journeyman	W60.78 B28.42 T89.20

Craft: Sprinkler Fitter

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	10.50	12.25	50%	55%	60%	65%	70%	75%	80%	85%
1000 Hours	10.50	12.25	50%	55%	60%	65%	70%	75%	80%	85%
Benefits	11.52	11.52	23.17	23.17	23.17	23.17	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	11.52	11.52	23.17	23.17	23.17	23.17	Intervals	7 to 10	receive	Journeyman Ben.

Craft: Sprinkler Fitter

COMMENTS/NOTES

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

FOREMAN REQUIREMENTS:

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

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

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

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

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

County - UNION

Craft: Tile Finisher-Marble PREVAILING WAGE RATE

	07/26/18
Finisher	W46.96 B34.28 T81.24

Craft: Tile Finisher-Marble APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
750 Hours	40%	45%	50%	55%	60%	65%	70%	75%	85%	95%

Ratio of Apprentices to Journeymen - 1:4

Craft: Tile Finisher-Marble COMMENTS/NOTES

OVERTIME:

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

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

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

County - UNION

Craft: Tile Setter - Ceramic

PREVAILING WAGE RATE

	06/11/18
Finisher	W44.46 B30.16 T74.62
Setter	W57.71 B33.47 T91.18

Craft: Tile Setter - Ceramic

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
750 Hours	35%	40%	50%	55%	60%	65%	70%	75%	80%	90%

Ratio of Apprentices to Journeymen - 1:4

Craft: Tile Setter - Ceramic

COMMENTS/NOTES

OVERTIME:

Hours in excess of 7 per day, and the first 10 hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Saturdays after 10 hours shall be paid double the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.

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

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

County - UNION

Craft: Tile Setter - Marble

PREVAILING WAGE RATE

	07/26/18
Tile Setter	W58.91 B36.47 T95.38

Craft: Tile Setter - Marble

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
750 Hours	40%	45%	50%	55%	60%	65%	70%	75%	85%	95%

Ratio of Apprentices to Journeymen - 1:4

Craft: Tile Setter - Marble

COMMENTS/NOTES

OVERTIME:

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

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

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

County - UNION

Craft: Tile Setter - Mosaic & Terrazzo

PREVAILING WAGE RATE

	07/01/18
Grinder or Assistant	W53.78 B35.53 T89.31
Mechanic	W55.38 B35.55 T90.93
Terrazzo Resinous Worker	W46.28 B28.69 T74.97

Craft: Tile Setter - Mosaic & Terrazzo

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
750 Hours	50%	55%	60%	65%	70%	75%	85%	95%	100%	

Ratio of Apprentices to Journeymen - 1:5

Craft: Tile Setter - Mosaic & Terrazzo

COMMENTS/NOTES

APPRENTICE RATE SCHEDULE FOR THOSE APPRENTICES ENTERING PROGRAM AFTER 7-1-17:

INTERVAL	PERIOD AND RATES						
1500 Hours	35%	45%	60%	70%	80%	90%	100%

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

OVERTIME:

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

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

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

County - UNION

Craft: Truck Driver

PREVAILING WAGE RATE

	05/01/18	11/01/18
Bucket, Utility, Pick-up, Fuel Delivery trucks	W37.26 B35.40 T72.66	W37.66 B35.80 T73.46
Dump truck, Asphalt Distributor, Tack Spreader	W37.26 B35.40 T72.66	W37.66 B35.80 T73.46
Euclid-type vehicles (large, off-road equipment)	W37.41 B35.40 T72.81	W37.81 B35.80 T73.61
Helper on Asphalt Distributor truck	W37.26 B35.40 T72.66	W37.66 B35.80 T73.46
Slurry Seal, Seeding/Fertilizing/ Mulching truck	W37.26 B35.40 T72.66	W37.66 B35.80 T73.46
Straight 3-axle truck	W37.31 B35.40 T72.71	W37.71 B35.80 T73.51
Tractor Trailer (all types)	W37.41 B35.40 T72.81	W37.81 B35.80 T73.61
Vacuum or Vac-All truck (entire unit)	W37.26 B35.40 T72.66	W37.66 B35.80 T73.46
Winch Trailer	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

	08/24/18	04/01/19	04/01/20
Driver	W24.60	W25.10	W25.60
	B14.81	B15.25	B15.71
	T39.41	T40.35	T41.31

Craft: Truck Driver-Material Delivery Driver

COMMENTS/NOTES

BLENDED RATE:

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

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

SHIFT DIFFERENTIALS:

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

OVERTIME:

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

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

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

County - UNION

Craft: Welder

PREVAILING WAGE RATE

Welder

Craft: Welder

COMMENTS/NOTES

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

STATEWIDE RATES

OPERATING ENGINEERS **Rates Expiration Date : 03/31/2020**

{For apprentice rates refer to "Operating Engineers" apprentice rates in any county rate package}

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

SHIFT DIFFERENTIALS:

- Shift work must run for 5 consecutive workdays.
- When 2 shifts are worked, the second shift shall receive an additional 10% of the regular rate inclusive of benefits, per hour.
- When 3 shifts are worked, the second shift shall receive 8 hours pay for 7.5 hours of work, plus an additional 10% of the regular rate inclusive of benefits, per hour. The third shift shall receive 8 hours pay for 7 hours of work, plus an additional 15% of the regular rate inclusive of benefits, per hour.
- When such hours are mandated by the project owner, a shift that starts between 8:00 PM and midnight and ends by 6:00 AM Saturday, or that starts after 8:00 PM on Sunday, provided there are consecutive hours of work within the shift, shall receive an additional 15% of the regular rate, inclusive of benefits.
- On Highway, Road, Street, and Sewer projects irregular shifts starting between 5:00 PM and 12:00 AM may be worked Monday through Friday, and shall receive an additional 15% of the regular rate, inclusive of benefits. When working with other trades that receive a higher irregular shift rate, the Operating Engineer shall also receive the higher irregular shift rate.

OVERTIME:

- Hours in excess of 8 per day, or outside of the regular workday, Monday through Friday, that are not shift work, and all hours on Saturdays shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with all hours on Friday paid at time and one-half the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. When all trades on a particular job site agree, the day after Thanksgiving may be substituted for Veteran's Day.

On hazardous waste removal work or asbestos removal work, on a state or federally designated hazardous waste site, where the operating engineer is in direct contact with hazardous material and when personal protective equipment is required for respiratory, skin, and eye protection, the operating engineer shall receive an additional 20% of the hourly wage, per hour.

OPERATING ENGINEERS **Rates Expiration Date : 03/31/2020**

Effective Dates:

	07/01/2018		01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
50.18	31.85	82.03	83.03	85.38

CLASSIFICATIONS:

A-Frame

Backhoe (combination)

Boom Attachment on loaders (Except pipehook)

Boring & Drilling Machine

Brush Chopper, Brush Shredder, Tree Shredder, Tree Shearer

Bulldozer, finish grade

Cableway

Carryall

Concrete Pump

Concrete Pumping System (Pumpcrete & similar types)

Conveyor, 125 feet or longer

Drill Doctor (Duties include dust collector and maintenance)

Front End Loader (2 cu. yds. but less than 5 cu. yds.)

Grader, finish

Groove Cutting Machine (ride-on type)

Heater Planer

Hoist: Outside Material Tower Hoist (all types including steam, gas, diesel, electric, air hydraulic, single and double drum, concrete, brick shaft caisson, snorkle roof, and other similar types, Except Chicago-boom type) * receives an additional \$1.00 per hour on 100 ft. up to 199 ft. total height, and an additional \$2.00 per hour on 200 ft. and over total height.

Hydraulic Crane (10 tons & under)

Hydraulic Dredge

Hydro-Axe

Hydro-Blaster

OPERATING ENGINEERS **Rates Expiration Date : 03/31/2020**

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
50.18	31.85	82.03	83.03	85.38

CLASSIFICATIONS:

Jack (screw, air hydraulic, power-operated unit, or console type, Except hand jack or pile load test type)

Log Skidder

Pan

Paver, concrete

Plate & Frame Filter Press

Pumpcrete (unit type)

Pumpcrete, Squeezecrete, or Concrete Pumping machine (regardless of size)

Scraper

Side Boom

Straddle Carrier (Ross and similar types)

Whiphammer

Winch Truck (hoisting)

OPERATING ENGINEERS **Rates Expiration Date : 03/31/2020**

Effective Dates:

	07/01/2018		01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
48.27	31.85	80.12	81.12	83.47

CLASSIFICATIONS:

- Asphalt Curbing Machine
- Asphalt Plant Engineer
- Asphalt Spreader
- Autograde Curb Trimmer & Sidewalk Shoulder Slipform (CMI & similar types)
- Autograde Curecrete Machine (CMI & similar types)
- Autograde Tube Finisher & Texturing Machine (CMI & similar types)
- Bar Bending Machines (Power)
- Batcher, Batching Plant, & Crusher [On Site]
- Belt Conveyor System
- Boom-Type Skimmer Machine
- Bridge Deck Finisher
- Bulldozer (all sizes)
- Captain (Power Boats)
- Car Dumper (railroad)
- Compressor & Blower unit for loading/unloading of concrete, cement, fly ash, or similar type materials (used independently or truck-mounted)
- Compressor (2 or 3 battery)
- Concrete Breaking Machine
- Concrete Cleaning/Decontamination Machine
- Concrete Finishing Machine
- Concrete Saw or Cutter (ride-on type)
- Concrete Spreader (Hetzl, Rexomatic & similar types)
- Concrete Vibrator

OPERATING ENGINEERS **Rates Expiration Date : 03/31/2020**

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
48.27	31.85	80.12	81.12	83.47

CLASSIFICATIONS:

- Conveyors - under 125 feet
- Crane Signalman
- Crushing Machine
- Directional Boring Machine
- Ditching Machine - Small (Ditchwitch, Vermeer or similar types)
- Dope Pot - Mechanical (with or without pump)
- Dumpster
- Elevator
- Fireman
- Fork Lift (Economobile, Lull & similar types)
- Front End Loader (1 cu. yd. and over but less than 2 cu. yds.)
- Generator (2 or 3 battery)
- Giraffe Grinder
- Goldhofer/Hydraulic Jacking Trailer
- Grader & Motor Patrols
- Grout Pump
- Gunnite Machine (Excluding nozzle)
- Hammer - Vibratory (in conjunction with generator)
- Heavy Equipment Robotics - Operator/Technician
- Hoist (roof, tigger, aerial platform hoist, house car)
- Hopper
- Hopper Doors (power operated)
- Ladder (motorized)

OPERATING ENGINEERS **Rates Expiration Date : 03/31/2020**

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
48.27	31.85	80.12	81.12	83.47

CLASSIFICATIONS:

Laddervator

Locomotive (Dinky-type)

Maintenance Utility Man

Master Environmental Maintenance Technician

Mechanic

Mixer (Except paving mixers)

Pavement Breaker (truck-mounted or small self-propelled
ride-on type)

Pavement Breaker - maintenance of compressor or hydraulic unit

Pipe Bending Machine (power)

Pitch Pump

Plaster Pump (regardless of size)

Post Hole Digger (post pounder, auger)

Rod Bending Machines

Roller (black top)

Scale (power)

Seamen Pulverizing Mixer

Shoulder Widener

Silo

Skimmer Machine (boom type)

Steel Cutting Machine (service & maintenance)

Tamrock Drill

Tractor

Transfer Machines

OPERATING ENGINEERS Rates Expiration Date : 03/31/2020

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
48.27	31.85	80.12	81.12	83.47

CLASSIFICATIONS:

Tug Captains

Tug Master (Power Boats)

Ultra High Pressure Waterjet Cutting Tool System -
Operator/Maintenance Technician

Vacuum Blasting Machine - Operator/Maintenance Technician

Vibrating Plant (used with unloading)

Welder & Repair Mechanic

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
44.93	31.85	76.78	77.78	80.13

CLASSIFICATIONS:

Assistant Engineer/Oiler

Driller's Helper

Field Engineer - Transit man or Instrument man

Maintenance Apprentice (Deckhand)

Maintenance Apprentice (Oiler)

Mechanic's Helper

Off Road Back Dump

Tire Repair & Maintenance

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
42.35	31.85	74.20	75.20	77.55

CLASSIFICATIONS:

Field Engineer - Rodman or Chainman

TERRITORY
ENTIRE STATE

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

OPERATING ENGINEERS Rates Expiration Date : 03/31/2020

Effective Dates:

	07/01/2018		01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
52.51	31.85	84.36	85.36	87.71

CLASSIFICATIONS:

Lead Engineer, Foreman Engineer, Safety Engineer (minimum)

OPERATING ENGINEERS **Rates Expiration Date : 03/31/2020**

Effective Dates:

	07/01/2018		01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
51.77	31.85	83.62	84.62	86.97

CLASSIFICATIONS:

- Autograde Pavement Profiler (CMI & similar types)
- Autograde Pavement Profiler - Recycle Type (CMI & similar types)
- Autograde Placer/Trimmer/Spreader Combination (CMI & similar types)
- Autograde Slipform Paver (CMI & similar types)
- Backhoe (Excavator)
- Central Power Plant
- Concrete Paving Machine
- Cranes, Derricks, Pile Drivers (all types), under 100 tons with a boom (including jib and/or leads) under 100 ft.
- Draglines
- Drill, Bauer, AMI and similar types
- Drillmaster, Quarrymaster
- Drillmaster/Quarrymaster (down-the-hole drill), rotary drill, self-propelled hydraulic drill, self-powered drill
- Elevator Grader
- Field Engineer-Chief of Party
- Front End Loader (5 cu. yards or larger)
- Gradall
- Grader, Rago
- Helicopter Co-Pilot
- Helicopter Communications Engineer
- Juntann Pile Driver
- Locomotive (large)
- Mucking Machine

OPERATING ENGINEERS **Rates Expiration Date : 03/31/2020**

Effective Dates:

	07/01/2018		01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
51.77	31.85	83.62	84.62	86.97

CLASSIFICATIONS:

Pavement & Concrete Breaker (Superhammer & Hoe Ram)

Pile Driver

Prentice Truck

Roadway Surface Grinder

Scooper (loader & shovel)

Shovel (Excavator)

Trackhoe (Excavator)

Tree Chopper with boom

Trenching Machine (cable plow)

Tunnel Boring Machine

Vacuum Truck

OPERATING ENGINEERS **Rates Expiration Date : 03/31/2020**

Effective Dates:

	07/01/2018		01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
46.64	31.85	78.49	79.49	81.84

CLASSIFICATIONS:

- Chipper
- Compressor (single)
- Concrete Spreader (small type)
- Conveyor Loader (Except elevator graders)
- Engines, Large Diesel (1620 HP) & Staging Pump
- Farm Tractor
- Fertilizing Equipment (operation & maintenance)
- Fine Grade Machine (small type)
- Form Line Grader (small type)
- Front End Loader (under 1 cubic yard)
- Generator (single)
- Grease, Gas, Fuel, & Oil Supply Trucks
- Heaters (Nelson or other type)
- Lights - portable generating light plant
- Mixer, Concrete (small)
- Mulching Equipment (operation & maintenance)
- Power Broom or Sweeper
- Pump (diesel engine & hydraulic - regardless of power)
- Pump (larger than 2 inch suction, including submersible pumps)
- Road Finishing Machine (small type)
- Roller - grade, fill, or stone base
- Seeding Equipment (operation & maintenance)
- Sprinkler & Water Pump Trucks

OPERATING ENGINEERS Rates Expiration Date : 03/31/2020

Effective Dates:

	07/01/2018		01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
46.64	31.85	78.49	79.49	81.84

CLASSIFICATIONS:

Steam Generator or Boiler

Stone Spreader

Tamping Machine (vibrating ride-on type)

Temporary Heating Plant (Nelson or other type, including propane, natural gas, and flow-type units)

Water or Sprinkler Truck

Welding Machine (gas, diesel, or electric convertor, of any type)

Welding System - Multiple (rectifier transformer type)

Wellpoint Systems (including installation by bull gang and maintenance)

Effective Dates:

	07/01/2018		01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
53.59	31.85	85.44	86.44	88.79

CLASSIFICATIONS:

Helicopter Pilot/Engineer

Effective Dates:

	07/01/2018		01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
58.27	31.85	90.12	91.12	93.47

CLASSIFICATIONS:

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

Effective Dates:

	07/01/2018		01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
57.27	31.85	89.12	90.12	92.47

CLASSIFICATIONS:

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

OPERATING ENGINEERS **Rates Expiration Date : 03/31/2020**

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
53.77	31.85	85.62	86.62	88.97

CLASSIFICATIONS:

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

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
56.27	31.85	88.12	89.12	91.47

CLASSIFICATIONS:

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

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
52.77	31.85	84.62	85.62	87.97

CLASSIFICATIONS:

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

STRUCTURAL STEEL ERECTION **Rates Expiration Date : 03/31/2020**

{For apprentice rates refer to "Operating Engineers" apprentice rates in any county rate package}

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

SHIFT DIFFERENTIALS:

- Shift work must run for 5 consecutive workdays.
- When 2 shifts are worked, the second shift shall receive an additional 10% of the regular rate inclusive of benefits, per hour.
- When 3 shifts are worked, the second shift shall receive 8 hours pay for 7.5 hours of work, plus an additional 10% of the regular rate inclusive of benefits, per hour. The third shift shall receive 8 hours pay for 7 hours of work, plus an additional 15% of the regular rate inclusive of benefits, per hour.
- When such hours are mandated by the project owner, a shift that starts between 8:00 PM and midnight and ends by 6:00 AM Saturday, or that starts after 8:00 PM on Sunday, provided there are consecutive hours of work within the shift, shall receive an additional 15% of the regular rate, inclusive of benefits.
- On Highway, Road, Street, and Sewer projects irregular shifts starting between 5:00 PM and 12:00 AM may be worked Monday through Friday, and shall receive an additional 15% of the regular rate, inclusive of benefits. When working with other trades that receive a higher irregular shift rate, the Operating Engineer shall also receive the higher irregular shift rate.

OVERTIME:

- Hours in excess of 8 per day, or outside of the regular workday, Monday through Friday, that are not shift work, and all hours on Saturdays shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with all hours on Friday paid at time and one-half the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. When all trades on a particular job site agree, the day after Thanksgiving may be substituted for Veteran's Day.

On hazardous waste removal work or asbestos removal work, on a state or federally designated hazardous waste site, where the operating engineer is in direct contact with hazardous material and when personal protective equipment is required for respiratory, skin, and eye protection, the operating engineer shall receive an additional 20% of the hourly wage, per hour.

Effective Dates:

	07/01/2018		01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
55.40	31.85	87.25	88.25	90.60

CLASSIFICATIONS:

Helicopter Co-Pilot & Communications Engineer

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STRUCTURAL STEEL ERECTION **Rates Expiration Date : 03/31/2020**

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
51.34	31.85	83.19	84.19	86.54

CLASSIFICATIONS:

A-Frame

Cherry Picker -10 tons or less (Over 10 tons use crane rate)

Hoist (all types Except Chicago-boom)

Jack (screw, air hydraulic, power-operated unit or console type, Except hand jack or pile load test type)

Side Boom

Straddle Carrier

STRUCTURAL STEEL ERECTION **Rates Expiration Date : 03/31/2020**

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
48.68	31.85	80.53	81.53	83.88

CLASSIFICATIONS:

- Aerial Platform Used On Hoists
- Apprentice Engineer/Oiler with Compressor or Welding Machine
- Captain (Power Boats)
- Compressor (2 or 3 in battery)
- Concrete Cleaning/Decontamination Machine Operator
- Conveyor or Tugger Hoist
- Directional Boring Machine
- Elevator or House Car
- Fireman
- Forklift
- Generator (2 or 3)
- Heavy Equipment Robotics, Operator/Technician
- Maintenance Utility Man
- Master Environmental Maintenance Technician
- Tug Master (Power Boats)
- Ultra High Pressure Waterjet Cutting Tool System Operator/Maintenance Technician
- Vacuum Blasting Machine Operator/Maintenance Technician
- Welding Machines, Gas or Electric Converters on any type-2 or 3 in battery including diesels

STRUCTURAL STEEL ERECTION **Rates Expiration Date : 03/31/2020**

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
47.15	31.85	79.00	80.00	82.35

CLASSIFICATIONS:

Compressor (Single)

Generators

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

Welding System, Multiple (Rectifier Transformer Type)

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
45.39	31.85	77.24	78.24	80.59

CLASSIFICATIONS:

Assistant Engineer/Oiler

Drillers Helper

Field Engineer - Transit/Instrument Man

Maintenance Apprentice (Deckhand)

Maintenance Apprentice (Oiler)

Off Road Back Dump

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
52.96	31.85	84.81	85.81	88.16

CLASSIFICATIONS:

Lead Engineer, Foreman Engineer, Safety Engineer (Minimum)

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
42.35	31.85	74.20	75.20	77.55

CLASSIFICATIONS:

Field Engineer - Rodman or Chainman

STRUCTURAL STEEL ERECTION **Rates Expiration Date : 03/31/2020**

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
52.10	31.85	83.95	84.95	87.30

CLASSIFICATIONS:

Field Engineer-Chief of Party

Vacuum Truck

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
60.29	31.85	92.14	93.14	95.49

CLASSIFICATIONS:

Cranes (all cranes, land or floating with booms, including jib, 140 ft. and over, above ground). Derricks (all derricks, land, floating or Chicago Boom type with booms including jib, 140 ft. and over, above ground), and Pile Drivers (all types) 100 tons and over and Tower Cranes.

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
58.63	31.85	90.48	91.48	93.83

CLASSIFICATIONS:

Cranes (all cranes, land or floating with booms including jib, less than 140 ft. above ground), Derricks (all derricks, land, floating or Chicago Boom type with booms including jib, less than 140 ft. above ground), Pile Drivers (all types), 100 tons and over and Tower Crane.

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
55.79	31.85	87.64	88.64	90.99

CLASSIFICATIONS:

Cranes (all cranes, land or floating with booms including jib, 140 ft. and over, above ground), Derricks (all derricks, land, floating or Chicago Boom type with booms including jib, 140 ft. and over, above ground), Pile Drivers (all types), under 100 tons.

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
54.13	31.85	85.98	86.98	89.33

CLASSIFICATIONS:

Cranes (all cranes, land or floating with booms including jib, less than 140 ft. above ground), Derricks (all derricks, land, floating or Chicago Boom type with booms including jib, less than 140 ft. above ground), Pile Drivers (all types), under 100 tons.

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STRUCTURAL STEEL ERECTION Rates Expiration Date : 03/31/2020

Effective Dates:

07/01/2018			01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
55.79	31.85	87.64	88.64	90.99

CLASSIFICATIONS:

Helicopter Pilot & Engineer

TEST BORING PRELIMINARY TO CONSTRUCTION-SOUTH/WEST **Rates Expiration Date : 03/31/2020**

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:

Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Hunterdon, Mercer, Monmouth, Ocean, Salem, Sussex, Warren

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

SHIFT DIFFERENTIALS:

- Shift work must run for 5 consecutive workdays.
- When 2 shifts are worked, the second shift shall receive an additional 10% of the regular rate inclusive of benefits, per hour.
- When 3 shifts are worked, the second shift shall receive 8 hours pay for 7.5 hours of work, plus an additional 10% of the regular rate inclusive of benefits, per hour. The third shift shall receive 8 hours pay for 7 hours of work, plus an additional 15% of the regular rate inclusive of benefits, per hour.
- When such hours are mandated by the project owner, a shift that starts between 8:00 PM and midnight and ends by 6:00 AM Saturday, or that starts after 8:00 PM on Sunday, provided there are consecutive hours of work within the shift, shall receive an additional 15% of the regular rate, inclusive of benefits.
- On Highway, Road, Street, and Sewer projects irregular shifts starting between 5:00 PM and 12:00 AM may be worked Monday through Friday, and shall receive an additional 15% of the regular rate, inclusive of benefits. When working with other trades that receive a higher irregular shift rate, the Operating Engineer shall also receive the higher irregular shift rate.

OVERTIME:

- Hours in excess of 8 per day, or outside of the regular workday, Monday through Friday, that are not shift work, and all hours on Saturdays shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with all hours on Friday paid at time and one-half the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. When all trades on a particular job site agree, the day after Thanksgiving may be substituted for Veteran's Day.

On hazardous waste removal work or asbestos removal work, on a state or federally designated hazardous waste site, where the operating engineer is in direct contact with hazardous material and when personal protective equipment is required for respiratory, skin, and eye protection, the operating engineer shall receive an additional 20% of the hourly wage, per hour.

Effective Dates:

	07/01/2018		01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
51.77	31.85	83.62	84.62	86.97

CLASSIFICATIONS:

Driller

Effective Dates:

	07/01/2018		01/01/2019	07/01/2019
Rate	Fringe	Total	Total	Total
44.93	31.85	76.78	77.78	80.13

CLASSIFICATIONS:

Driller's Helper

FREE AIR TUNNEL JOBS **Rates Expiration Date : 02/28/2021**

{For apprentice rates refer to "Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:

- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional \$3.00 per hour.

OVERTIME:

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

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:

- where Level A, B, or C protection is required: + \$3.00/hr
- other Hazardous Waste site: + \$1.00/hr

Effective Dates:

	09/01/2018		03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
42.75	30.28	73.03	75.78	78.28

CLASSIFICATIONS:

Walking Boss & Superintendent

Effective Dates:

	09/01/2018		03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
42.45	30.28	72.73	75.48	77.98

CLASSIFICATIONS:

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

FREE AIR TUNNEL JOBS **Rates Expiration Date : 02/28/2021**

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
41.95	30.28	72.23	74.98	77.48

CLASSIFICATIONS:

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

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
44.45	30.28	74.73	77.48	79.98

CLASSIFICATIONS:

Blaster

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
41.40	30.28	71.68	74.43	76.93

CLASSIFICATIONS:

Top Labor Foreman

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
41.05	30.28	71.33	74.08	76.58

CLASSIFICATIONS:

Skilled Men (including Caulker, Powder Carrier, all other skilled men)

Skilled Men (including Miner, Drill Runner, Iron Man, Conveyor Man, Manintenance Man, Safety Miner, Rigger, Block Layer, Cement Finisher, Tod Man)

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
40.90	30.28	71.18	73.93	76.43

CLASSIFICATIONS:

Semi-Skilled Men (including Bell or Signal Man Top or Bottom, Form Worker & Mover, Concrete Worker, Shaft Man, Tunnel Laborer, Caulker's Helper, all other semi-skilled)

Semi-Skilled Men (including Miner's Helper, Chuck Tender, Track Man, Nipper, Brake Man, Derail Man, Cable Man, Hose Man, Gravel Man, Form Man)

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FREE AIR TUNNEL JOBS Rates Expiration Date : 02/28/2021

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
40.50	30.28	70.78	73.53	76.03

CLASSIFICATIONS:

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

DRILL FOR GROUND WATER SUPPLY **Rates Expiration Date : 03/31/2020**

The well driller and/or helper may perform all work relative to the construction, finishing, and servicing of wells, pumps and borings for ground water supply. The present methods of well drilling entailing as they do, many diverse job operations calling for drilling, pump discharge, piping, and the operation of various types of related power equipment, shall all be within the job duties and functions of the well driller and/or helper. In the event that an extension of work should occur beyond water well drilling functions, into the field of general construction work, such extension of work would come under the appropriate rates listed elsewhere in this wage determination.

- For Work Hours, Shift Differentials, Overtime Rates, and Recognized Holidays see the "Operating Engineers" section of this wage determination.

Effective Dates:

	07/01/2018		01/01/2019	07/01/2019
	Rate	Fringe	Total	Total
	50.52	31.85	82.37	83.37
				85.72

CLASSIFICATIONS:

Driller

Effective Dates:

	07/01/2018		01/01/2019	07/01/2019
	Rate	Fringe	Total	Total
	43.68	31.85	75.53	76.53
				78.88

CLASSIFICATIONS:

Driller's Helper

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

NOTE: These wage rates only apply to dredging and other marine construction activities occurring in navigable waters and their tributaries.

Boat crews carrying explosive material (dynamite, pourfex, and other similar materials) shall be paid at 120% of the hourly wage rate for hours engaged in handling of said materials. Employees required to possess a Hazardous Material Certification as a condition of employment shall be compensated at 120% of the hourly wage rate.

OVERTIME:

Hours in excess of 40 per week, and all hours on Saturdays and Sundays, shall be paid at time and one-half the hourly rate. All hours on holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Martin Luther King Day, Good Friday, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday.

Effective Dates:

10/01/2017

Rate	Fringe	Total
38.18	14.33	52.51

CLASSIFICATIONS:

Lead Dredgerman, Operator, Leverman

Licensed Tug Operator (over 1000 HP)

Effective Dates:

10/01/2017

Rate	Fringe	Total
33.03	13.92	46.95

CLASSIFICATIONS:

Derrick Operator, Spider/Spill Barge Operator

Engineer, Electrician, Chief Welder, Chief Mate

Fill Placer, Operator II

Licensed Boat Operator

Maintenance Engineer

Effective Dates:

10/01/2017

Rate	Fringe	Total
31.09	13.77	44.86

CLASSIFICATIONS:

Certified Welder

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

Effective Dates:

10/01/2017

Rate	Fringe	Total
30.24	13.40	43.64

CLASSIFICATIONS:

Mate, Drag Barge Operator, Steward, Assistant Fill Placer

Welder

Effective Dates:

10/01/2017

Rate	Fringe	Total
29.26	13.32	42.58

CLASSIFICATIONS:

Boat Operator

Effective Dates:

10/01/2017

Rate	Fringe	Total
24.30	12.62	36.92

CLASSIFICATIONS:

Shoreman, Deckhand, Rodman, Scowman

MICROSURFACING/SLURRY SEAL Rates Expiration Date : 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
ENTIRE STATE

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

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 : 02/28/2021

"THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY: Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Mercer, Ocean, Salem

{For apprentice rates refer to "Laborer - Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:

- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional \$3.00 per hour.

OVERTIME:

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

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:

- where Level A, B, or C protection is required: + \$3.00/hr
- other Hazardous Waste site: + \$1.00/hr

Effective Dates:

	09/01/2018		03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
42.25	30.28	72.53	75.28	77.78

CLASSIFICATIONS:

Paving Foreman

Effective Dates:

	09/01/2018		03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
40.80	30.28	71.08	73.83	76.33

CLASSIFICATIONS:

Head Raker

Effective Dates:

	09/01/2018		03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
40.65	30.28	70.93	73.68	76.18

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 : 02/28/2021

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
40.40	30.28	70.68	73.43	75.93

CLASSIFICATIONS:

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

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
40.50	30.28	70.78	73.53	76.03

CLASSIFICATIONS:

Milling Controller

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
40.70	30.28	70.98	73.73	76.23

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:

10/17/2017

Rate	Fringe	Total
31.62	25.55	57.17

CLASSIFICATIONS:

Helper (4th year helper)

Effective Dates:

10/17/2017

Rate	Fringe	Total
39.69	25.55	65.24

CLASSIFICATIONS:

Driller

Effective Dates:

10/17/2017

Rate	Fringe	Total
45.73	25.55	71.28

CLASSIFICATIONS:

Foreman

HEAVY & GENERAL LABORERS - NORTH **Rates Expiration Date : 02/28/2021**

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:

Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Passaic, Somerset, Sussex, Union, Warren

{For apprentice rates refer to "Laborer - Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:

- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional \$3.00 per hour.

OVERTIME:

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

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:

- where Level A, B, or C protection is required: + \$3.00/hr
- other Hazardous Waste site: + \$1.00/hr

Effective Dates:

	09/01/2018		03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
40.00	30.28	70.28	73.03	75.53

CLASSIFICATIONS:

"D" Rate:

basic, landscape, asphalt, slurry seal, or railroad track laborer; utility meter installer; flagman; salamander tender; pitman; dumpman; rakers or tampers on cold patch work; wrappers or coaters of pipe; waterproofer; timberman; wagon drill or drill master helper; powder carrier; magazine tender; signal man; power buggy operator; tree cutter; operator of basic power tools

Effective Dates:

	09/01/2018		03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
40.70	30.28	70.98	73.73	76.23

CLASSIFICATIONS:

"C" Rate:

pipe layer; laser man; conduit or duct line layer; operator of jack hammer, chipping hammer, pavement breaker, concrete cutter, asphalt cutter, sheet hammer, or walk-behind saw cutter; sandblaster; acetylene cutting or burning; wagon drill, directional drill, or hydraulic drill operator; drill master; core driller; traffic control coordinator; asphalt raker or lute man

HEAVY & GENERAL LABORERS - NORTH **Rates Expiration Date : 02/28/2021**

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
40.95	30.28	71.23	73.98	76.48

CLASSIFICATIONS:

"B" Rate:

concrete finisher; setter of brick or stone pavers; stone cutter; form setter; manhole, catch basin, or inlet builder; asphalt screedman; rammer; hardscaping; gunite nozzle man

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
44.50	30.28	74.78	77.53	80.03

CLASSIFICATIONS:

"A" Rate:

blaster

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
42.25	30.28	72.53	75.28	77.78

CLASSIFICATIONS:

"FOREMAN" Rate:

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

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
43.25	30.28	73.53	76.28	78.78

CLASSIFICATIONS:

"GENERAL FOREMAN" Rate

HEAVY & GENERAL LABORERS - SOUTH **Rates Expiration Date : 02/28/2021**

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:

Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Mercer, Ocean, Salem

{For apprentice rates refer to "Laborer - Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:

- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional \$3.00 per hour.

OVERTIME:

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

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:

- where Level A, B, or C protection is required: + \$3.00/hr
- other Hazardous Waste site: + \$1.00/hr

Effective Dates:

	09/01/2018		03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
40.00	30.28	70.28	73.03	75.53

CLASSIFICATIONS:

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

Effective Dates:

	09/01/2018		03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
40.00	30.28	70.28	73.03	75.53

CLASSIFICATIONS:

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

HEAVY & GENERAL LABORERS - SOUTH **Rates Expiration Date : 02/28/2021**

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
40.70	30.28	70.98	73.73	76.23

CLASSIFICATIONS:

pipe layer; laser man; conduit or duct line layer; operator of jack hammer, chipping hammer, pavement breaker, concrete cutter, asphalt cutter, sheet hammer, or walk-behind saw cutter; sandblaster; acetylene cutting or burning

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
40.70	30.28	70.98	73.73	76.23

CLASSIFICATIONS:

wagon or directional drill operator; drill master

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
44.50	30.28	74.78	77.53	80.03

CLASSIFICATIONS:

blaster

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
42.25	30.28	72.53	75.28	77.78

CLASSIFICATIONS:

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

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
43.25	30.28	73.53	76.28	78.78

CLASSIFICATIONS:

general foreman

HEAVY & GENERAL LABORERS - SOUTH **Rates Expiration Date : 02/28/2021**

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
40.95	30.28	71.23	73.98	76.48

CLASSIFICATIONS:

concrete finisher; setter of brick or stone pavers; stone cutter; form setter; manhole, catch basin, or inlet builder; rammer; gunite nozzle man

PIPELINE - MAINLINE TRANSMISSION Rates Expiration Date : 06/03/2019

These rates apply to the following: welding on Transportation Mainline pipe lines (cross-country pipe lines, or any segments thereof, transporting coal, gas, oil, water or other transportable materials, vapors or liquids, including portions of such pipe lines within private property boundaries up to the final metering station or connection - the point where a valve, consumer connection, or town border station divides mainline transmission lines or higher pressure lateral and branch lines from lower pressure distribution systems).

PER DIEM PAYMENT:

In addition to the total wage rate paid for each craft, the following per diem (per day) amounts must also be paid - Pipeline Journeyman: \$42.50; Pipeline Journeyman Welder: \$102.50; and Pipeline Helper: \$42.50. Note: in order to receive the per diem payment an employee must work a minimum of 8 hours in a 24 hour period.

NOTES:

- Journeymen employed as "stringer bead" welders and journeymen who are regularly employed as "hot-pass" welders shall receive \$1.00 per hour more than other journeymen.
- Welders running "stringer bead" or "hot-pass" on "cutouts" or "tie-ins" on a production basis shall be paid \$1.00 per hour above the journeymen rate.
- Whenever a welder helper is employed using a power buffer or power grinder immediately behind the stringer bead and/or hot-pass welders, and the pipe gang is set on a production basis, the helper shall be paid \$2.00 per hour above the helper rate.
- If back welding is performed inside a pipe under either or both of the following conditions, the welder engaged in the welding will receive \$3.00 per hour above the regular rate for the job only for the days on which such back welding is performed:
 - The employer elects, as a regular procedure, to back weld each line-up. This condition is not intended to apply to occasional back welding performed by the pipe gang to repair a bead, to rectify a "high-lo" condition or wall thickness, etc.
 - A welder is required to back weld a completed weld behind the firing line.
- If the welder helper is required to go inside the pipe for the purpose of brushing, buffing and grinding the weld, they shall receive a wage rate \$1.00 per hour above the regular helper rate for the days involved.
- Welders working on "hot work" shall be paid \$2.00 per hour above the regular rate for each day engaged in such work. "Hot work" is defined as work on lines in service where there is the danger of fire or explosion.

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

OVERTIME:

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

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

Effective Dates:

06/08/2018

Rate	Fringe	Total
54.61	29.59	84.20

CLASSIFICATIONS:

Pipeline Journeyman Welder

TERRITORY
ENTIRE STATE

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

PIPELINE - MAINLINE TRANSMISSION Rates Expiration Date : 06/03/2019

Effective Dates:

06/08/2018

Rate	Fringe	Total
54.61	29.59	84.20

CLASSIFICATIONS:

Pipeline Journeyman

Effective Dates:

06/08/2018

Rate	Fringe	Total
33.55	20.42	53.97

CLASSIFICATIONS:

Pipeline Helper

PIPELINE - GAS DISTRIBUTION **Rates Expiration Date : 10/31/2020**

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:

	11/05/2017		11/01/2018	11/01/2019
Rate	Fringe	Total	Total	Total
58.83	22.55	81.38	82.96	84.63

CLASSIFICATIONS:

Pipeline Journeyman Welder

Effective Dates:

	11/05/2017		11/01/2018	11/01/2019
Rate	Fringe	Total	Total	Total
58.83	22.55	81.38	82.96	84.63

CLASSIFICATIONS:

Pipeline Journeyman

Effective Dates:

	11/05/2017		11/01/2018	11/01/2019
Rate	Fringe	Total	Total	Total
37.68	16.74	54.42	56.00	57.67

CLASSIFICATIONS:

Pipeline Helper

ASPHALT LABORERS- NORTH **Rates Expiration Date : 02/28/2021**

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:

Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Passaic, Somerset, Sussex, Union, Warren

{For apprentice rates refer to "Laborer - Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:

- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional \$3.00 per hour.

OVERTIME:

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

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:

- where Level A, B, or C protection is required: + \$3.00/hr
- other Hazardous Waste site: + \$1.00/hr

Effective Dates:

	09/01/2018		03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
42.25	30.28	72.53	75.28	77.78

CLASSIFICATIONS:

Asphalt Foreman

Effective Dates:

	09/01/2018		03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
40.95	30.28	71.23	73.98	76.48

CLASSIFICATIONS:

Asphalt Screedman

Effective Dates:

	09/01/2018		03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
40.70	30.28	70.98	73.73	76.23

CLASSIFICATIONS:

Asphalt Raker or Lute Man

TERRITORY
ENTIRE STATE

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

ASPHALT LABORERS- NORTH Rates Expiration Date : 02/28/2021

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
40.00	30.28	70.28	73.03	75.53

CLASSIFICATIONS:

Asphalt Laborer

ELECTRICIAN- UTILITY WORK (NORTH) **Rates Expiration Date : 11/30/2021**

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:

	12/05/2017		12/02/2018	12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total	Total
53.70	35.97	89.67	92.06	94.45	96.84

CLASSIFICATIONS:

Chief Lineman

Effective Dates:

	12/05/2017		12/02/2018	12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total	Total
50.66	33.94	84.60	86.85	89.11	91.36

CLASSIFICATIONS:

Journeyman Lineman

ELECTRICIAN- UTILITY WORK (NORTH) **Rates Expiration Date : 11/30/2021**

Effective Dates:

12/05/2017			12/02/2018	12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total	Total
50.66	33.94	84.60	86.85	89.11	91.36

CLASSIFICATIONS:

Special License Operator

Effective Dates:

12/05/2017			12/02/2018	12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total	Total
50.16	33.60	83.76	85.98	88.22	90.44

CLASSIFICATIONS:

Transit Man

Effective Dates:

12/05/2017			12/02/2018	12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total	Total
48.64	32.58	81.22	83.38	85.53	87.70

CLASSIFICATIONS:

Line Equipment Operator

Effective Dates:

12/05/2017			12/02/2018	12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total	Total
42.56	28.51	71.07	72.96	74.84	76.73

CLASSIFICATIONS:

Dynamite Man

Effective Dates:

12/05/2017			12/02/2018	12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total	Total
63.33	42.43	105.76	108.56	111.38	114.19

CLASSIFICATIONS:

General Foreman

Effective Dates:

12/05/2017			12/02/2018	12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total	Total
58.26	39.03	97.29	99.88	102.47	105.05

CLASSIFICATIONS:

Assistant General Foreman

ELECTRICIAN- UTILITY WORK (NORTH) **Rates Expiration Date : 11/30/2021**

Effective Dates:

	12/05/2017		12/02/2018	12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total	Total
56.74	38.01	94.75	97.27	99.79	102.32

CLASSIFICATIONS:

Line Foreman

Effective Dates:

	12/05/2017		12/02/2018	12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total	Total
41.04	27.49	68.53	70.35	72.17	73.99

CLASSIFICATIONS:

Street Light Mechanical Leader

Effective Dates:

	12/05/2017		12/02/2018	12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total	Total
39.01	26.13	65.14	66.88	68.62	70.34

CLASSIFICATIONS:

Groundman Winch Operator

Effective Dates:

	12/05/2017		12/02/2018	12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total	Total
39.01	26.13	65.14	66.88	68.62	70.34

CLASSIFICATIONS:

Groundman Truck Operator

Effective Dates:

	12/05/2017		12/02/2018	12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total	Total
38.51	25.80	64.31	66.01	67.71	69.43

CLASSIFICATIONS:

Street Light Mechanic

Effective Dates:

	12/05/2017		12/02/2018	12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total	Total
38.51	25.80	64.31	66.01	67.71	69.43

CLASSIFICATIONS:

Line Equipment Mechanic

ELECTRICIAN- UTILITY WORK (NORTH) **Rates Expiration Date : 11/30/2021**

Effective Dates:

12/05/2017			12/02/2018	12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total	Total
32.93	22.06	54.99	56.46	57.91	59.38

CLASSIFICATIONS:

Groundman 2nd Year

Effective Dates:

12/05/2017			12/02/2018	12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total	Total
30.40	20.36	50.76	52.12	53.47	54.80

CLASSIFICATIONS:

Groundman 1st Year

Effective Dates:

12/05/2017			12/02/2018	12/01/2019	11/29/2020
Rate	Fringe	Total	Total	Total	Total
50.16	33.60	83.76	85.98	88.22	90.44

CLASSIFICATIONS:

Line Equipment Foreman

ELECTRICIAN- UTILITY WORK (SOUTH) Rates Expiration Date : 12/04/2021

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:

12/03/2017

Rate	Fringe	Total
60.25	46.05	106.30

CLASSIFICATIONS:

General Foreman

ELECTRICIAN- UTILITY WORK (SOUTH) **Rates Expiration Date : 12/04/2021**

Effective Dates:

12/03/2017

Rate	Fringe	Total
53.66	42.21	95.87

CLASSIFICATIONS:

Foreman

Effective Dates:

12/03/2017

Rate	Fringe	Total
50.84	40.58	91.42

CLASSIFICATIONS:

Small Job Foreman

Effective Dates:

12/03/2017

Rate	Fringe	Total
47.07	38.39	85.46

CLASSIFICATIONS:

Heavy Equipment Operator

Effective Dates:

12/03/2017

Rate	Fringe	Total
47.07	38.39	85.46

CLASSIFICATIONS:

Cable Splicer

Effective Dates:

12/03/2017

Rate	Fringe	Total
47.07	38.39	85.46

CLASSIFICATIONS:

Journeyman Lineman

Effective Dates:

12/03/2017

Rate	Fringe	Total
47.07	38.39	85.46

CLASSIFICATIONS:

Journeyman Welder

ELECTRICIAN- UTILITY WORK (SOUTH) **Rates Expiration Date : 12/04/2021**

Effective Dates:

12/03/2017

Rate	Fringe	Total
47.07	38.39	85.46

CLASSIFICATIONS:

Journeyman Painter

Effective Dates:

12/03/2017

Rate	Fringe	Total
37.66	32.92	70.58

CLASSIFICATIONS:

Light Equipment Operator

Effective Dates:

12/03/2017

Rate	Fringe	Total
32.95	30.18	63.13

CLASSIFICATIONS:

Groundman Truck Driver

Effective Dates:

12/03/2017

Rate	Fringe	Total
30.60	28.82	59.42

CLASSIFICATIONS:

Groundman 3rd Year

Effective Dates:

12/03/2017

Rate	Fringe	Total
28.24	27.44	55.68

CLASSIFICATIONS:

Groundman 2nd Year

Effective Dates:

12/03/2017

Rate	Fringe	Total
25.89	26.08	51.97

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 : 12/04/2021

Effective Dates:

12/03/2017

Rate	Fringe	Total
20.71	23.07	43.78

CLASSIFICATIONS:

Flagman

HEAVY & GENERAL LABORERS- NEW TRANS HUDSON TUNNELS Rates Expiration Date : 02/28/2021

****THESE RATES APPLY TO CONSTRUCTION ON NEW TRANS HUDSON TUNNELS ONLY****

{For apprentice rates refer to "Laborer - Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:

- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional \$3.00 per hour.

OVERTIME:

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

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:

- where Level A, B, or C protection is required: + \$3.00/hr
- other Hazardous Waste site: + \$1.00/hr

Effective Dates:

	09/01/2018		03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
64.13	30.28	94.41	97.91	101.16

CLASSIFICATIONS:

Walking Boss & Superintendent

Effective Dates:

	09/01/2018		03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
63.68	30.28	93.96	97.46	100.71

CLASSIFICATIONS:

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

HEAVY & GENERAL LABORERS- NEW TRANS HUDSON TUNNELS **Rates Expiration Date : 02/28/2021**

Effective Dates:

	09/01/2018		03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
62.93	30.28	93.21	96.71	99.96

CLASSIFICATIONS:

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

Effective Dates:

	09/01/2018		03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
66.68	30.28	96.96	100.46	103.71

CLASSIFICATIONS:

Blaster

Effective Dates:

	09/01/2018		03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
62.10	30.28	92.38	95.88	99.13

CLASSIFICATIONS:

Top Labor Foreman

Effective Dates:

	09/01/2018		03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
61.58	30.28	91.86	95.36	98.61

CLASSIFICATIONS:

Skilled Men (including Caulker, Powder Carrier, all other skilled men)

Skilled Men (including Miner, Drill Runner, Iron Man, Conveyor Man, Maintenance Man, Safety Miner, Rigger, Block Layer, Cement Finisher, Rod Man)

Effective Dates:

	09/01/2018		03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
61.35	30.28	91.63	95.13	98.38

CLASSIFICATIONS:

Semi-Skilled Men (including Bell or Signal Man top or bottom, Form Worker & Mover, Concrete Worker, Shaft Man, Tunnel Laborer, Caulker's Helper, all other semi-skilled)

Semi-Skilled Men (including Miner's Helper, Chuck Tender, Track Man, Nipper, Brake Man, Derail Man, Cable Man, Hose Man, Gravel Man, Form Man)

TERRITORY
ENTIRE STATE

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

HEAVY & GENERAL LABORERS- NEW TRANS HUDSON TUNNELS Rates Expiration Date : 02/28/2021

Effective Dates:

09/01/2018			03/01/2019	03/01/2020
Rate	Fringe	Total	Total	Total
60.75	30.28	91.03	94.53	97.78

CLASSIFICATIONS:

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

TECHNICAL SPECIFICATIONS

This project shall be governed by the “New Jersey of Transportation Standard Specifications for Road and Bridge Construction” 2007 using U.S. Customary English Units except as noted in the following specification.

Payment descriptions within the following specifications prevail over the “New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction” 2007

All unit prices shall be in accordance with the Bidder’s Proposal. Any unit prices not included in the Bidder’s Proposals shall be assumed distributed across all unit prices.

Any references in this specification to a specific product line or proprietary item, it is understood that the specification refers to that product or approved equal. The lack of the phrase “or approved equal” does not imply that the specified product is the only product that will be allowed. However, it will be the successful bidder’s burden to prove that an alternate product meets the specification called for.

Should there be a conflict between the plans and specifications, the items shall govern in the following order.

- Addendums to the bid to include changes to the plans

- Supplemental (Technical) Specifications

- Plans

MOBILIZATION AND DEMOBILIZATION

DESCRIPTION

Mobilization and Demobilization shall consist of the cost of initiating the contract, including preparatory work and operations, necessary for the movement of personnel, equipment, supplies and incidentals to the Project site, and other work performed or costs incurred prior to beginning work. In any case of inconsistencies with the N.J.A.C. 7:14-2.9, the New Jersey Administrative Code shall govern.

QUANTITY AND PAYMENT

Payment for mobilization will be made on a lump sum basis, which price shall include the cost of initiating the contract, regardless of the fact that the Contractor may have, for any reason, shut down his work on the Project or moved equipment away from the Project and back again, in accordance with the 2007 NJDOT Standard Specifications Section 154.04.

Payment will be made in accordance with the following schedule:

1. When 5% of the work is completed - 25% of the amount bid for mobilization or 2.5% of the Total Contract Price, whichever is less, will be paid.
2. When 10% of the work is completed - 50% of the amount bid for mobilization or 5% of the Total Contract Price, whichever is less, will be paid.
3. When 15% of the work is completed – 75% of the amount bid for mobilization or 7.5% of the Total Contract Price, whichever is less, will be paid.
4. When 20% of the work is completed – 100% of the amount bid for mobilization or 10% of the Total Contract Price, whichever is less, will be paid.

Upon completion of all work on the project, payment for the amount bid for mobilization in excess of 10% of the Total Contract Price will be made.

The percentage of work completed shall be the total of payments earned compared to the Total Contract Price. The total of payments earned excludes the amount paid for this item and the amount paid for materials furnished but not incorporated into the work in accordance with Subsection 109.06 – Materials Payments and Storage, as shown on the monthly estimates of the approximate quantities of work done, prepared in accordance with Subsection 109.05 – Estimates of the 2007 NJDOT Standard Specification.

(A) The lump sum price bid for mobilization is limited to the following maximum amounts:

Original Contract Amount
(Including Mobilization)

<u>For More Than</u>	<u>To and Including</u>	<u>Max. Amount for Item of Mobilization</u>
\$ 0	100,000	\$ 3,000
100,000	500,000	15,000

500,000	1,000,000	30,000
1,000,000	2,000,000	60,000
2,000,000	3,000,000	90,000
3,000,000	4,000,000	120,000
4,000,000	5,000,000	125,000
5,000,000	6,000,000	150,000
6,000,000	7,000,000	175,000
7,000,000	10,000,000	200,000
10,000,000		2.5% of amount bid

Quantity and Payment for Mobilization/Demobilization will be made in accordance with the Contract Documents on a lump sum basis at the price bid for the item **MOBILIZATION AND DEMOBILIZATION** in the Proposal, which shall include the cost of delivery, installation, storage, permitting, agreements, and all labor, tools, equipment and materials necessary therefore and incidental thereto or as directed by the Engineer.

-- END OF SECTION --

CONSTRUCTION LAYOUT

DESCRIPTION

Under this item the Contractor shall provide all work required in connection with the layout for construction of the project, using the control points and data furnished by the Engineer.

METHOD OF STAKEOUT

The Contractor shall submit all necessary computations to establish the exact position of all the work from the control points furnished by the Engineer, along with construction grade sheets, prepared by a licensed land surveyor, to the Engineer for approval prior to the start of construction.

The Contractor shall maintain the line and grade stakes furnished by the engineer for his/her use in staking out the work. If such control points are damaged, lost, displaced or removed, they shall be reset or replaced at a charge to the Contractor for the actual cost of the work at no additional cost to the Owner or Owner's Representatives.

The Contractor shall be responsible for maintaining the points he has established. Any error or apparent discrepancies found in the plans or specifications shall be called to the Engineers attention in writing for interpretation prior to proceeding with the work.

QUANTITY & PAYMENT

Construction Layout will not be measured. Payment for this item will be made on a lump sum basis for the item **CONSTRUCTION LAYOUT** as specified in the proposal.

--END OF SECTION--

PRE-CONSTRUCTION PHOTOGRAPHS

DESCRIPTION

The Contractor shall furnish photographs, taken by a professional photographer acceptable to the Engineer, to show the condition of the site prior to construction, as well as to show the progress of the work.

MATERIALS

Prints of pre-construction and construction photographs shall be 3 inch by 5 inch size, mounted on cardboard and provided with reinforced 1inch wide flap, punched with 2 holes for binding, spaced 4 ¼ inches apart. The binding flap shall be located along the 8-inch dimension, and at the lower right hand corner on the front. The title shall include the name of the photographer, name of the project, contract number, station or other description, direction of view and date the picture was taken. The photographs shall also be numbered consecutively. Negatives of all photographs shall be furnished to the Engineer.

MEHODS OF PHOTOGRAPHS

Pre-construction photographs shall be taken where directed by the Engineer to especially note the character of all easements and the condition of any structures, lawns, trees, streets, sidewalks, etc., which might be damaged, and shall average at least one photograph for each 50 feet of street or easement in the contract. The Engineer shall be provided with one matte print of each photograph. A minimum of thirty six construction photographs shall be taken each month at regular intervals while the work is in progress. Photographs shall be taken at such times and at such locations as may be determined by the Engineer. One matte print of each picture taken during the month shall be submitted to the Engineer at the time of submitting the periodic estimate for progress payment.

QUANTITY AND PAYMENT

No specific payment shall be made for the above item. The cost of the above described work shall be included in the overall price bid on the project.

Contractors are advised that damage claims by property owners, which cannot be disputed by pre-construction photographs, will be required to restore the claimed damage. Therefore, pre-construction photos will be required, and furnished to the engineer. Separate payment will not be made for pre-construction photos and shall be included in the various bid items.

Should the Contractor fail to take pre-construction photos, any property damage complaints received will be repaired by the contractor at no cost to the owner.

--END OF SECTION--

MAINTENANCE AND PROTECTION OF TRAFFIC

DESCRIPTION

Under this Contract this item shall mean that the Contractor shall provide for the safe passage of vehicles and pedestrians for safe ingress and egress to properties abutting the limits of construction, including but not limited to the use of flagmen, cones, barrels, etc. in any and all areas where contractor deems it necessary. The portions outside the limits of construction which are open to traffic shall be kept in pre-construction conditions to allow for the safe passage of vehicular and pedestrian traffic.

This item shall also include the maintenance and protection of off-site traffic (e.g. roadways, sidewalks, curbs, etc.) and shall include any and all materials necessary to provide for this passage, and that the Contractor shall abide to all of the rules and regulations as set forth in Section 110 - Traffic Control of the applicable New Jersey State Highway Department Standard Specifications as amended in the Standard Specifications of this project.

The contractor may utilize outside agencies (e.g. security company) to maintain traffic.

The contractor is responsible for all maintenance, safety and protection of traffic until the project is complete and turned over to the project owner. The contractor shall hold harmless the County of Union and its representatives, project construction managers and Neglia Engineering Associates for any safety incidents during the project construction period.

QUANTITY AND PAYMENT

It is the contractor's responsibility to maintain a safe working environment as well as protect pedestrian traffic from the construction site. Thus there is no specific pay item for the Maintenance & Protection of Traffic. The contractor shall include these costs within the bid item MOBILIZATION/DEMobilIZATION in the proposal which price shall include the cost of, any and all materials, all labor and equipment and all else necessary and incidental thereto.

--END OF SECTION--

SITE CLEARING AND DEMOLITION

DESCRIPTION

Under this item the Contractor shall remove and dispose of all fences, concrete pads, concrete foundations, clay mounds, clay, utility poles, asphalt, bleachers, benches, drainage structures, flagpoles, gates, boulders, drainage pipes, irrigation system components (as indicated on the plans), curb, sidewalk, grass, trees up to 36" diameter (as indicated on the plans), tree roots/stumps, shrubs, hedges, brush, stumps, roots, topsoil, dirt, stones, and all debris; the removal of which is required for carrying out the work of this project, shall be removed. Contractor shall perform test pits to locate any uncertainties in existing utilities to determine if these structures interfere or affect the proposed construction.

The Contractor shall remove and dispose of pipes, inlets, manholes, reinforced concrete pavement, bituminous pavement, concrete and bituminous sidewalk, and curb, as necessary for the proposed construction. Contractor shall remove and reset street and road signs, not otherwise paid for; remove and reset any monuments, shrubs and fences; remove and reset to grade manhole and catch basin frames, fire hydrants, guide rail, gas and water valves; and complete all other removals and relocations required for the work and not specifically covered elsewhere for payment.

The Contractor shall provide a closed environment with a ten (10) foot minimum height chain link construction fence, construction signage and gates provided by the Contractor. The temporary gates on-site for construction shall remain locked and secured during non-working hours. The temporary fence shall remain on-site until all project work is complete or as directed by Engineer.

METHODS OF CONSTRUCTION

The lights, signs, inlets, sidewalk, pavement, bollards, curb, slabs, runways, posts, fence, and excavation unclassified shall be disposed of off-site at no additional cost to the Owner or Owner's Representatives in accordance with all client, local, state, and federal solid waste removal regulations.

Trees up to 48" dia. and shrubs removed by the Contractor shall be cut and the roots and stumps removed by grubbing shall be refilled with suitable material which shall be solidly compacted so as to make the surface at these locations conform with the adjoining grade in elevation and alignment. No trees shall be trimmed, cut, or removed outside the limits of construction without the permission of the Engineer.

Trees to be pruned shall be cut clean and straight. Measures shall be taken to protect the remaining limbs from damage during the work.

Any and all clean soil that is excavated during site clearing/demolition shall be backfilled and compacted with suitable soil.

Manhole frames, catch basin frames, valves, and other structures shall be removed and carefully reset to match proposed grades.

QUANTITY AND PAYMENT

The quantity of Site Clearing/Demolition for which payment will be made, will be a lump sum covering all work of **SITE CLEARING AND DEMOLITION** specified above. Such price shall include removal of debris, disposal of materials, and all else necessary therefore and incidental thereto.

The Contractor shall abide by all of the rules and regulations as set forth in Section 201 – Clearing Site of the NJDOT State Standard Specifications and the respective amendments.

--END OF SECTION--

SOIL EROSION AND SEDIMENT CONTROL DEVICES

DESCRIPTION

The work performed under this item shall include construction of all Best Management Practices (BMPs) soil erosion measures (e.g. inlet filter protection, silt sacks, silt fence, temporary seeding or mulching, stockpile protection, and general soil stabilization).

The Contractor shall construct additional stone tracking pads not specifically shown on the plans as necessary to facilitate the mobilization of construction equipment on site.

Furthermore, the contractor shall notify the Somerset - Union Soil Conservation District, in writing, seventy-two (72) hours prior to the start of construction.

MATERIALS

Materials shall be in conformance with the Plan and Details, and shall include silt fences, gravel inlet filters, fertilizer and soil stabilization. All materials shall be approved by the Engineer. Permanent seeding shall not be paid for under this item.

METHODS OF CONSTRUCTION

State Standard Specifications and Regulations:

- A. All erosion and sedimentation control measures shall be in place prior to any grading operations or construction of proposed facilities and shall be maintained until construction is complete and the construction area is stabilized. After restoration is complete, temporary control measures shall be removed and disposed of properly.
- B. All erosion and sedimentation control measures shall be constructed and maintained in accordance with the "Standards for Soil Erosion and Sediment Control in New Jersey," prepared by the New Jersey State Soil Conservation Committee, 1987.
- C. Disturbed areas that will be exposed in excess of fourteen (14) days shall be temporarily seeded and/or mulched until proper weather conditions exist for establishment of a permanent vegetative cover except in areas where final restoration is expected to be completed within seven days after the completion of construction, in which case no temporary protective measures will be required. If final restoration is expected to begin more than seven days and completed more than thirty (30) days after the start of construction, seeding shall be required for temporary protection, except where seasonal conditions are not suitable for growing vegetation. In this case, mulch may be applied until conditions are suitable for establishing vegetative cover or until final restoration is implemented.

Somerset - Union Soil Conservation District soil erosion and sediment control procedures:

- A. All soil erosion and sediment control practices shall be installed prior to any major soil disturbance, or in their proper sequence and maintained until permanent protection is established.
- B. Any disturbed areas that will be left exposed more than thirty (30) days and not subject to construction traffic will immediately receive a temporary seeding. If the season prevents the establishment of a temporary cover, the disturbed areas will be mulched with straw or equivalent material, at a rate of two (2) tons per acre, according to state Standards.
- C. Permanent vegetation shall be seeded or sodded on all exposed areas within ten (10) days after final grading. Mulch will be used for protection until seeding is established.
- D. All work shall be done in accordance with the State Standards for Soil Erosion and Sediment Control in New Jersey.
- E. A sub-base course will be applied immediately following rough grading and installation of improvements in order to stabilize streets, roads, driveways and parking areas. In areas where no utilities are present, the sub-base shall be installed within 15 days of preliminary grading.
- F. Immediately following initial disturbance or rough grading, all critical areas subject to erosion (i.e. steep slopes, roadway embankments) will receive a temporary seeding in combination with straw mulch or a suitable equivalent, at a rate of two (2) tons per acre, according to the State Standards.
- G. Any steep slopes (i.e. slopes greater than 3:1) receiving pipeline installation will be backfilled and stabilized daily, as the installation proceeds.
- H. Traffic Control Standards require the installation of a 100'L x24'W x1" Thick pad of 1 ½ " or 2" stone, at all construction driveways, immediately after initial site disturbance.
- I. The Somerset-Union Soil Conservation District shall be notified in writing 72 hours in advance of any land disturbing activity.
- J. At the time when the site preparation for permanent vegetative stabilization is going to be accomplished, any soil that will not provide suitable environment to support adequate vegetative ground cover, shall be removed or treated in such a way that will permanently adjust the soil conditions and render it suitable for vegetative ground cover. If the removal or treatment of the soil will not provide suitable conditions, non-vegetative means or permanent ground stabilization will have to be employed.
- K. In that NJSA 4:24-39 et seq., requires that no Certificate of Occupancy be issued before the provisions of the Certified Plan for Soil Erosion and Sediment Control have been complied with for permanent measures, all site work for site plans and all work around individual lots in subdivisions, will have to be completed prior to the District issuing a Report of Compliance for the issuance of a Certificate of Occupancy by the Municipality.

- L. Conduit Outlet Protection must be installed at all required outfalls prior to the drainage system becoming operations.
- M. Any changes to the Certified Soil Erosion and Sediment Control Plan will require the submission of revised Soil Erosion and Sediment Control Plans to the District for recertification. The revised plans must meet all current State Soil Erosion and Sediment Control Standards.
- N. The Somerset-Union Soil Conservation District shall be notified of any changes in ownership.
- O. Mulching in the Standards is required for obtaining a conditional Report of Compliance. Conditions are only issued when the season prohibits seeding.
- P. The Contractor is responsible for keeping all adjacent roads clean during the life of the construction project.
- Q. The developer shall be responsible for remediating any erosion or sediment problems that arise as a result of ongoing construction at the request of the Somerset-Union soil Conservation District.
- R. Hydroseeding is a two-step process. The first step includes seed, fertilizer, lime, etc., along with minimal amounts of mulch to promote consistency, good seed to soil contact, and give a visual indication of coverage. Upon completion of the seeding operation, hydro-mulch should be applied at a rate of 1500 lbs. per acre in the second step. The use of hydro-mulch as opposed to straw, is limited to optimum seeding dates as listed in the Standards.

QUANTITY AND PAYMENT

The quantity of Soil Erosion and Sediment Control Devices, for which payment will be made, will be on a lump sum basis for the item **SOIL EROSION AND SEDIMENT CONTROL DEVICES** in the Proposal, which price shall include the cost of all BMPs, soil erosion measures, construction entrances, and general soil stabilization techniques.

Payment for this item shall include the furnishing of all materials, labor and equipment and all else necessary therefore and incidental thereto.

--END OF SECTION--

TEST PITS

DESCRIPTION

Test pits shall include the excavation of surface and subsurface materials for the location of subsurface utilities and backfill of all earth, rock, boulders, brick and removal of all materials encountered and all incidental work to the satisfaction of the engineer, and shall also include the restoration of all hardscape areas in accordance with the construction documents.

METHODS OF CONSTRUCTION

Prior to the excavation of Test Pits, all existing on-site and off-site subsurface items (e.g. utilities, drainage, conveyance networks, tunnels) shall be located which may be affected by or interfere with the proposed construction. Test pits shall be backfilled in accordance with Section 202 - Excavation in the 2007 New Jersey Department of Transportation Standard Specifications.

QUANTITY AND PAYMENT

Payment will be made for each cubic yard of excavated material for each Test Pit constructed in accordance with the Plans, or as directed by the Engineer at the unit price bid for the item **TEST PITS (IF & WHERE DIRECTED)** in the Proposal, which shall cover the cost of excavation, backfill, and pavement restoration, whether temporary or permanent in nature furnishing all materials, labor and equipment necessary to construct the Test Pits, as shown on the Plans or as directed by the Engineer.

--END OF SECTION--

SOIL TESTING

DESCRIPTION

Under this item, the contractor shall provide structural design drawings and calculations signed and sealed by a New Jersey Licensed Structural Engineer to be designed in accordance with manufacturer's specifications and local, state and federal codes for the construction of all structural footings, foundations, and concrete pads for, Football Goals, Bleachers, Benches, Field Netting, and Fences.

The contractor shall submit to the Project Engineer a signed and sealed copy of all structural footing, foundation, and slab designs prior to construction and installation for review.

METHODS OF CONSTRUCTION

NOT USED.

QUANTITY AND PAYMENT

Soils Testing will not be measured. Payment for this item, and all work related thereto, shall be included in the bid items, FOOTBALL GOALS, BENCHES, BLEACHERS, in the proposal.

--END OF SECTION--

DEWATERING

DESCRIPTION

The Contractor shall at all times provide ample means and equipment with which to promptly remove and dispose of all water and drainage entering the excavations or other parts of the work, and to keep such excavations dry until the structures to be built therein are completed. In no case will the laying of pipe or placing of masonry be permitted with water in the excavation or in unsuitable soils or as directed by the Engineer.

Dewatering methods and equipment shall be subject to the approval of the Engineer, and all water removed from the work shall be disposed of in a manner without damage to adjacent properties or off-site areas and shall meet the maximum turbidity requirements of the local soil conservation district and State regulations.

QUANTITY AND PAYMENT

No specific payment will be made for dewatering and the cost thereof shall be included in the prices bid for the installation of various sizes of the proposed pipe and other structures.

--END OF SECTION--

UTILITY COORDINATION

DESCRIPTION

This work shall consist of the resetting of all existing castings to finished grade during the resurfacing of the streets and walkways as shown on the Contract Drawings, the reconstruction of valve boxes, utility connections, and structures as required, in accordance with all utility provider requirements. The contractor shall coordinate the resetting of any castings and the reconstruction of any valves and utility connections with the respective utility company and the Engineer within the limits of construction in accordance with the Contract Drawings.

MATERIALS

Portland cement concrete shall conform to Section 903 – Concrete and Section 909 - Drainage of the 2007 NJDOT Standard Specifications for Road and Bridge Construction.

CONSTRUCTION

The Castings shall be reset in a manner covered under Division 650 – Utilities and Section 602 – Drainage Structures of the 2007 NJDOT Standard Specifications for Road and Bridge Construction.

Castings will be reset once for this project. They will be set flush with the asphalt base course for the settling period and then again in the final wearing course elevation.

QUANTITY AND PAYMENT

Utility Coordination will not be measured. Quantity and Payment for this item, and all costs related thereto, shall be included in the price for the various items within the Proposal, which shall cover the cost of excavation, backfill, stems, caps, covers, extensions, fittings, inlets, manholes, cleanouts, and all labor, tools, equipment and materials necessary therefore and incidental thereto or as directed by the Engineer.

-- END OF SECTION --

EARTHWORK

PART 1 - GENERAL

1.1 DEFINITIONS

A. The following terms shall have the meanings ascribed to them in this Article, wherever they appear in this Section.

1. Earth Excavation: The removal of all surface and subsurface material not classified as rock (as defined below).
2. Rock Excavation, Unclassified: Rock excavation, unclassified shall mean removal of all rock, boulders or pieces of concrete, and solid ledge rock and masonry, which in the opinion of The Engineer requires for its removal, drilling and blasting, wedging, sledging, barring, or breaking up with a power operated tool. Soft or disintegrated rock which can be removed with a pick or power operated excavator or shovel, loose, shaken or previously blasted rock, broken stone in rock fill or elsewhere, and rock exterior to the maximum limits allowed, or which may fall in the excavation, shall not be included as rock excavation. Pavements, curbs, gutters, sidewalks and driveways shall not be included as rock excavation.
3. Subgrade Surface: Surface upon which subbase or topsoil is placed.
4. Subbase: Select granular material or subbase course Type 2 which is placed immediately beneath pavement or concrete slabs.
5. Maximum Density: The dry unit weight in pounds per cubic foot of the soil at "Optimum Moisture Content" when determined by ASTM D 698 (Method C), and ASTM D 2922 (Method B).
6. Landscaped Areas: Areas not covered by structures, walks, roads, paving, or parking.
7. Unauthorized Excavation: The removal of material below required elevation indicated on the Drawings or beyond lateral dimensions indicated or specified without specific written direction by The Engineer.

1.2 SUBMITTALS

A. Product Data:

1. Filter Fabric: Manufacturer's catalog sheets, specifications, and installation instructions.

B. Samples: Submit samples as follows. Take the samples in the presence of the Engineer, and complete a Granular Material Sample Information Form for each sample. Forms and field sample designation numbers will be furnished by The Engineer.

1. Select Granular Material: 10 lb.
2. Selected Fill: 10 lb.
3. Subbase Course Type 2: 10 lb.

1.3 PROJECT CONDITIONS

- A. Protect existing trees and plants during performance of the Work unless otherwise indicated. Box trees and plants indicated to remain within the grading limit line with temporary steel fencing or solidly constructed wood barricades as required. Protect root systems from smothering. Do not store excavated material, or allow vehicular traffic or parking within the branch drip line. Restrict foot traffic to prevent excessive compaction of soil over root systems.
- B. Cold Weather Requirements:
1. When freezing temperatures are predicted, do not excavate to final required elevations for concrete Work unless concrete can be placed immediately. Retain enough earth over the bottom elevation of footings to prevent frost penetration. If excavation has progressed to final footing elevations and concrete cannot be placed immediately, cover the bottom of the excavations with protective material to adequately insulate the exposed earth surface from frost. Remove protective material immediately before placing concrete.
 2. Do not backfill between November 1 and April 1, except with written permission of the Engineer and/or the County of Union.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Select Granular Material: Stockpiled, sound, durable, sand, gravel, stone, or blends of these materials, free from organic and other deleterious materials. Comply with NJDOT Standard Specifications for subbase course material.

Sieve	Percent Passing
2 inch	100
1/4 inch	30-65
No. 40	5-40
No. 200	0-10

1. Magnesium Sulfate Soundness Test: 20 percent maximum loss by weight after 4 test cycles.
2. Plasticity Index: The plasticity index of the material passing the No. 40 mesh sieve shall not exceed 5.0.
3. Elongated Particles: Not more than 30 percent, by weight, of the particles retained on a 1/2 inch sieve shall consist of flat or elongated particles. A flat or elongated particle is defined as one which has its greatest dimension more than 3 times its least dimension.

- B. Selected Fill: Sound, durable, sand, gravel, stone, or blends of these materials, free from organic and other deleterious materials.

Sieve	Percent Passing
4 inch	100
No. 40	0-70
No. 200	0-15

- C. Subbase Course Type 2: Stockpiled, crushed ledge rock or approved blast furnace slag. Comply with NJDOT 2007 Standard Specifications for Subbase Course material.

Sieve	Percent Passing
2 inch	100
1/4 inch	25-60
No. 40	5-40
No. 200	0-10

1. Magnesium Sulfate Soundness Test: 20 percent maximum loss by weight after 4 test cycles.
2. Plasticity Index: The plasticity index of the material passing the No. 40 mesh sieve shall not exceed 5.0.
3. Elongated Particles: Not more than 30 percent, by weight, of the particles retained on a 1/2 inch sieve shall consist of flat or elongated particles. A flat or elongated particle is defined as one which has its greatest dimension more than 3 times its least dimension.

- D. Suitable Material (Fill and Backfill for Landscaped Areas): Material consisting of mineral soil (inorganic), blasted or broken rock and similar materials of natural or man-made origin, including mixtures thereof. Maximum particle size shall not exceed 2/3 of the specified layer thickness prior to compaction. NOTE: Material containing cinders, industrial waste, sludge, building rubble, land fill, muck, and peat shall be considered unsuitable for fill and backfill, except topsoil and organic silt may be used as suitable material in landscaped areas provided it is placed in the top layer of the subgrade surface.

- E. Filter Fabric (Separation, Drainage, Slope Protection): Amoco CEF 4545, CEF 4551; Exxon Chemical Co. GTF 150 EX; Mirafi Inc. 140N, 140NL; Nicolon Corp. Filterweave 70/06; Phillips Fibers Corp. Supac 4NP, 5NP, 7NP; Wellman Quline Inc. Q60, Q80, Q100 or approved equal.

- F. Filter Fabric (Stabilization): Amoco CEF 2002 & 2006; Exxon Chemical Co. GTF 350; Mirafi Inc. 500X, 600X, 700X; Nicolon Corp. 500; Phillips Fibers Corp. Supac 3WS, 4WS, 5WS, 6WS; Wellman Quline Inc. Q160 or approved equal.

- G. Light Weight Fill and Backfill: Contractor is advised to follow the specifications of lightweight fill and backfill material if proposed under this project. The placement of this and all fill material must meet the requirements of a geotechnical engineer.
- H. Geofoam: Contractor is advised to follow the specifications of Geofoam if proposed under this project. The placement of any Geofoam must meet the requirements of the Geotechnical Engineer and installed per manufacturer specifications.

PART 3 - EXECUTION

3.1 CLEARING AND GRUBBING

- A. Clear and grub the site of trees, shrubs, brush, other prominent vegetation, debris, and obstructions except for those items indicated to remain. Completely remove stumps and roots protruding through the ground surface.
- B. Fill depressions caused by the clearing and grubbing operations in accordance with the requirements for filling and backfilling, unless further excavation is indicated.

3.2 UNDERGROUND UTILITIES

- A. Locate existing underground utilities and service connections prior to commencing excavation Work. Determine exact utility locations by hand excavated test pits. Support and protect utilities to remain in place.
- B. Remove inactive, abandoned utilities within the limits of the areas to be excavated. Cap or plug open ends of abandoned utilities extending outside the excavation limits.

3.3 EXCAVATION

- A. Excavate earth as required for the Work.
- B. Maintain sides and slopes of excavations in a safe condition until completion of backfilling. Comply with Code of Federal Regulations Title 29 - Labor, Part 1926 (OSHA).
- C. Stockpile excavated materials classified as suitable material where directed, until required for fill. Place, grade, and shape stockpiles for proper drainage as approved by The Engineer and/or the County of Union.
- D. Excavation for Structures: Conform to elevations, lines, and limits indicated. Excavate to a vertical tolerance of plus or minus 1 inch. Extend excavation a sufficient lateral distance to provide clearance to execute the Work.
- E. Footings and Foundations: Trim bottoms to required lines and elevations. Excavate to final elevations by hand just prior to concrete placement. Leave solid undisturbed base for concrete.

- F. Slabs and Floors: Excavate to the following depths below bottom of concrete for addition of select granular material:
 - 1. Interior Floors: 6 inches unless otherwise indicated.
 - 2. Exterior Slabs and Steps: 12 inches unless otherwise indicated.
- G. Pipe Trenches: Open only enough trench length to facilitate laying pipe sections. Unless otherwise indicated on the Drawings, excavate trenches approximately 24 inches wide plus the outside pipe diameter, equally divided on each side of pipe centerline. Cut trenches to cross section, elevation, profile, line, and grade indicated. Accurately grade and shape trench bottom for uniform bearing of pipe.
- H. Pavement: Excavate to subgrade surface elevation.
- I. Unauthorized Excavations: Unless otherwise directed, backfill unauthorized excavation under footings, foundation bases, and retaining walls with compacted select granular material without altering the required footing elevation. Elsewhere, backfill and compact unauthorized excavation as specified for authorized excavation of the same classification, unless otherwise directed by The Engineer.

3.4 ROCK EXCAVATION

- A. No blasting shall be performed by the Contractor except upon written permission of the Engineer. Any request by the Contractor for permission to blast must be submitted to The Engineer at least 24 hours prior to start of said proposed blasting.
- B. If blasting permission is granted, the Contractor shall adhere strictly to all required Federal, State and Local safety regulations. In no case shall blasting caps or other exploders be kept at the same place where dynamite or other explosives are stored. A watchman shall be stationed at all times at the place of storage of explosives.
- C. The prepared blast shall be carefully covered with a heavy woven wire blasting mat, placed so that the area affected by the explosion is positively confined. Should a gas, water or any other conduit intersect the line of trench, the rock must be removed without blasting from a distance of ten (10) feet on each side of such pipe or conduit.
- D. The Contractor shall be responsible for any damage to adjacent structures and property caused by his operations. He shall inspect all structures adjacent to the site of blasting and, when ordered by the Engineer, he shall take clear, close-up photographs of these structures before and after blasting. Copies of these photographs shall be submitted to the Engineer and the County of Union. The Engineer or their representative must be present at all times during blasting operations.

3.5 DEWATERING

- A. Prevent surface and subsurface water from flowing into excavations and trenches and from flooding the site and surrounding area.

3.6 PLACING FILTER FABRIC

- A. Place and overlap filter fabric in accordance with the manufacturer's installation instructions, unless otherwise shown. Backfill over fabric in accordance with the manufacturer's instructions and in a manner to prevent damage to the fabric.

3.7 PLACING FILL AND BACKFILL

- A. Surface Preparation of Fill Areas: Strip topsoil, remaining vegetation, and other deleterious materials prior to placement of fill. Break up or scarify old pavements to a maximum of 2 square feet.
- B. Excavations: Backfill as promptly as practicable, but only after approval by the Engineer. Do not backfill with excavated material unless it meets the requirements of this Section.
- C. Place backfill and fill materials in layers not more than 8 inches thick in loose depth unless otherwise specified. Before compaction, moisten or aerate each layer as necessary to facilitate compaction to the required density. Do not place backfill or fill material on surfaces that are muddy, frozen, or covered with ice.
 - 1. Place fill and backfill against foundation walls, and in confined areas (such as trenches) not easily accessible by larger compaction equipment, in maximum 6 inch thick (loose depth) layers.
- D. Prevent wedging action of backfill against structures by placing backfill uniformly around structure to approximately same elevation in each layer. Place backfill against walls of structures containing basements or crawl spaces only after the first floor structural members are in place.
- E. Under Exterior Concrete Slabs and Steps:
 - 1. Up to Subgrade Surface Elevation: Place selected fill when fill or backfill is required.
 - 2. Subbase Material: Place 12 inches of select granular material over subgrade surface.
- F. Under Interior Concrete Slabs:
 - 1. Up to Subgrade Surface Elevation: Place selected fill when fill or backfill is required.
 - 2. Subbase Material: Place 6 inches of select granular material over subgrade surface.

G. Under Pavements and Walks:

1. Up to Subgrade Surface Elevation: Place selected fill when fill or backfill is required.
2. Subbase Material: Place as indicated.

H. Landscaped Areas: Place suitable material when required to complete fill or backfill areas up to subgrade surface elevation. Do not use material containing rocks over 4 inches in diameter within the top 12 inches of suitable material.

I. Plastic Pipe and Cement Water Pipe in Trenches: Place cushion material a minimum of 4 inches deep under pipe, 4 inches on both sides, and 4 inches over top of pipe. Complete balance of backfill as specified.

J. Copper Tubing and Steel Gas Pipe in Trenches: Place cushion material a minimum of 6 inches deep under pipe, 6 inches on both sides, and 4 inches over top of pipe. Complete balance of backfill as specified.

K. Rigid Non-Metallic Conduit: Except where concrete encasement is required, place cushion material a minimum of 4 inches deep under conduit, 4 inches on both sides, and 12 inches over top of conduit. Complete balance of backfill as specified.

3.8 COMPACTION

A. Compact each layer of fill and backfill for the following area classifications to the percentage of maximum density specified below and at a moisture content suitable to obtain the required densities, but at not less than 3 percent drier or more than 2 percent wetter than the optimum content as determined by ASTM D 698.

1. Structures: 95 percent.
2. Concrete Slabs and Steps: 95 percent.
3. Landscaped Areas: 90 percent.
4. Pavements and Walks: 95 percent.
5. Pipes: 95 percent.

3.9 GRADING

A. Rough Grading: Trim and grade area required by this Contract to a level of 4 inches below the finish grades indicated unless otherwise specified herein or where greater depths are indicated. Provide smooth uniform transition to adjacent areas.

B. Finish Grading: Finish surfaces free from irregular surface changes, and as follows:

1. Grassed Areas: Finish areas to receive topsoil to within 1 inch above or below the required subgrade surface elevations.
2. Walks and Pavements: Place and compact subbase material as specified. Shape surface of areas to required line, grade and cross section, with the

finish surface not more than 1/2 inch above or below the required subbase elevation.

3. Building Slabs: Grade subbase material smooth and even, free of voids, compacted as specified to within 1/4 inch above or below required subbase elevation.

C. Spread approved topsoil directly upon prepared subgrade surface to a depth measuring 4 inches after natural settlement of the topsoil has occurred in areas to be seeded or to receive sod. Place to greater depth when necessary to adjust grades to required elevations.

1. Approved existing topsoil within the Grading Limit Line may be used. Provide additional topsoil from outside sources as required.

D. Finish topsoil surface free of depressions which will trap water, free of stones over 1 inch in any dimension, and free of debris.

3.10 SUBGRADE SURFACE FOR WALKS AND PAVEMENT

A. Shape and grade subgrade surface as follows:

1. Walks: Shape the surface of areas under walks to required line, grade and cross section, with the finish surface not more than 1 inch above or below the required subgrade surface elevation.
2. Pavements: Shape the surface of areas under pavement to required line, grade and cross section, with the finish surface not more than 1/2 inch above or below the required subgrade surface elevation.

B. Grade Control: During construction, maintain lines and grades including crown and cross-slope of subbase course.

C. Thoroughly compact subgrade surface for walks and pavement by mechanical rolling, tamping, or with vibratory equipment as approved to the density specified.

3.11 RESTORATION

A. Restore pavements, walks, curbs, lawns, and other exterior surfaces damaged during performance of the Work to match the appearance and performance of existing corresponding surfaces as closely as practicable.

B. Topsoil and seed or sod damaged lawn areas outside of the project area as directed. Water as required until physical completion of the Work.

3.12 DISPOSAL OF EXCESS AND UNSUITABLE MATERIALS

A. Remove from the project site and dispose of excess and unsuitable materials, including materials resulting from clearing and grubbing and removal of existing improvements.

- B. Transport excess and unsuitable materials, including materials resulting from clearing and grubbing and removal of existing improvements, to spoil areas away from the project site.

3.13 FIELD QUALITY CONTROL

- A. Compaction Testing: Notify The Engineer at least 3 working days in advance of all phases of filling and backfilling operations. Compaction testing will be performed by an independent lab retained by the contractor to ascertain the compacted density of the fill and backfill materials. Compaction testing will be performed on certain layers of the fill and backfill as determined by a Geotechnical Engineer. If a compacted layer fails to meet the specified percentage of maximum density, the layer shall be recompacted and will be retested. No additional material may be placed over a compacted layer until the specified density is achieved.

3.14 PROTECTION

- A. Protect areas from traffic and erosion, and keep them free of trash and debris.

PART 4 – QUANTITY AND PAYMENT

- 4.1 Earthwork will not be measured as a separate item. Quantity and Payment for this item, and all costs related thereto, shall be distributed amongst the items specified in the Proposal or as directed by the Engineer

-- END OF SECTION --

SITE GRADING

DESCRIPTION

Site Grading shall include grading, excavation, backfill, preparing and compacting all material required for construction of the sub-grade of the entire disturbed area and all incidental work necessary to the satisfaction of the Engineer. Contractor shall be responsible for provided as built survey on site.

MATERIALS

Borrow and export material required for site grading shall conform to Section 200 of the 2007 NJDOT Standard Specifications. The Contractor shall provide the Engineer with certification attesting that the said material is free of contaminants and suitable for this application. The soil shall be smooth, soft and free of depressions, clods, mounds, stones, or other debris as approved by the Engineer.

METHODS OF CONSTRUCTION

The site shall be graded within the limits shown on the Plans or as directed by the Engineer. The Contractor shall grade the sub-grade according to the elevations shown on the Plans, taking into account the thickness of the layers above, and if necessary borrow materials as approved by the Engineer. The soil shall be placed uniformly in layers not to exceed twelve (12) inches loose thickness. Each layer shall be compacted to 95% density in accordance with Section 200 of the NJDOT Standard Specifications.

The contractor shall make provisions to implement approved dust control measures while performing this work as not to impact surrounding property (e.g. railways, roadways, sidewalks, parking areas, buildings, athletic fields, business, residences, trees, landscape areas, vehicles, conveyance systems, watercourses). Should the contractor fail to implement these measures, the Contractor shall be responsible to restore all off-site surrounding properties to its original condition prior to the commencement of construction at no additional cost to the Owner or Owner's Representatives.

QUANTITY AND PAYMENT

The quantity of Site Grading for which payment will be made on a lump sum basis in accordance with the Plans and Specifications or as directed by the Engineer.

Payment for Site Grading will be on a lump sum basis at the price bid for the item **SITE GRADING & FILL IMPORT** in the Proposal, which price shall include the cost of furnishing the equipment for excavation, placing backfill, compaction of soil and all else necessary therefore and incidental thereto.

Any material excavated from the site which is not suitable for backfill as determined by the Engineer or is an excess of needed material shall be hauled off the site and disposed of in a

suitable and timely manner and the cost thereof shall be included in the price bid for the item **SITE GRADING & FILL IMPORT** in the Proposal.

--END OF SECTION--

EXCAVATION, UNCLASSIFIED

DESCRIPTION

Roadway Excavation Unclassified shall consist of the excavation, removal, and disposal of all materials of whatever nature, waste, rock, boulders, brick, stone, and concrete masonry, small structures, removal of pipe where directed, removal of any other materials encountered of whatsoever nature, required for the proposed construction, disposal of all excavated materials, the transportation of the excavated material, the construction of embankments with the material excavated when so required, the disposal of unsuitable and surplus materials, and all other work as herein described.

MATERIALS

No materials are involved.

METHODS OF CONSTRUCTION

N. J. Department of Transportation Standard Specifications – Section 202 – Roadway Excavation.

QUANTITY AND PAYMENT

Payment for Excavation, Unclassified will not be made. The item EXCAVATION, UNCLASSIFIED shall be included in the various items within the Proposal; which price shall include the cost of excavation of the materials encountered, removal of small structures, embankment with the materials excavated, the removal of existing pipes, and other structures encountered, the disposal of all excess and unsuitable materials, cleaning payment, Roadway Excavation-Rock, Roadway Excavation-Regulated Waste, Wet Excavation, Removal of Concrete Base Course and Concrete Surface Courses, Joint Removal, all labor equipment and all else necessary thereof and incidental thereto.

--END OF SECTION--

BORROW EXCAVATION & PIPE BEDDING

DESCRIPTION

Borrow Excavation and pipe bedding shall include furnishing, transporting, placing and compacting all material required for embankment, bedding under pipes and backfill, and all incidental work as specified herein or as directed by the Engineer.

MATERIALS

Borrow Excavation and Pipe Bedding shall be of the various types as specified in proposal and shall conform to the applicable section of the NJDOT Standard Specifications for each designation. The Contractor shall provide certified testing results for all Borrow Excavation and Pipe Bedding brought to the site; all Borrow Excavation and Pipe Bedding must be approved by the engineer, prior to its use on this project.

METHODS OF CONSTRUCTION

The borrow material and pipe bedding shall be placed and compacted in accordance with Subsection 203.07 of the Standard Specification.

The final grade shall match the elevations shown on the Plans. Losses due to settlement, compaction or erosion are to be included under this item.

QUANTITY AND PAYMENT

No specific payment will be made for borrow excavation and pipe bedding and the cost thereof shall be included in the prices bid for the installation of various sizes of the proposed pipe and other structures.

--END OF SECTION--

MANHOLES, INLETS, AND CATCH BASINS

DESCRIPTION

Manholes, Inlets, and Catch Basins shall consist of the construction of these structures, stone bedding, backfilling and backfill material, and the furnishing and placing of new heads, castings, grates, and covers.

MATERIALS

Pre-cast Concrete Manholes and Inlets may be used as approved by the Engineer.

All materials used in the construction of Manholes, Inlets, and Catch Basins, shall conform to Section 602 – Drainage Structures of the NJDOT Standard Specifications.

Manufactured PVC or HDPE drainage inlets, including all covers, lids, grates and necessary appurtenances, manufactured by Advanced Drainage Systems, Inc. (ADS), or approved equal.

All castings shall have the name of the County, the date, and the words “Sanitary” or “Storm” stamped or cast clearly and legibly thereon. Units not so furnished will not be accepted for use on County projects. Concrete blocks shall conform to the compressive strength and absorption requirements of A.S.T.M. C -139.

Dense-Graded Aggregate (DGA) and Recycled Concrete Aggregate (RCA) shall conform to the requirements of Section 901.10; Course Aggregate shall be broken stone or washed gravel conforming to the requirements of Section 901.03 and Section 901.05, respectively of the NJDOT Standard Specifications.

METHODS OF CONSTRUCTION

Construction for Manholes, Inlets, and Catch Basins shall be in accordance with Section 602 – Drainage Structures. Particular attention should be brought to Section 602.03 – Construction, for precast concrete structures, the reconstruction of concrete or block drainage structures, the resetting and setting of castings, and the reconstruction and conversion of existing structures in compliance with NJDOT Standard Specifications.

Excavation shall be in accordance with Subsection 202 – Excavation; and Backfilling shall be in accordance with Division 200 – Earthwork; of the NJDOT Standard Specifications.

Concrete Outlet Control Structure, Complete, shall include the concrete chamber, weir wall with openings, pipe connections, manhole frames and covers, and all other associated appurtenances. Said structures shall be designed and constructed to withstand H-20 Loading.

QUANTITY AND PAYMENT

The quantity of Manholes, Inlets, and Catch Basins of the various categories herein above specified, for which payment will be made, will be the number of each type thereof constructed,

reconstructed, reset or installed, in accordance with the Contract Plans or as directed by the Engineer, for the line items listed below:

- **Manhole, Concrete, Doghouse, 4' Dia.** (Unit)
- **Manhole, PVC, Solid Cover, Buried** (Unit)
- **Manhole, PVC, Solid Cover, At – Grate** (Unit)
- **Inlet, PVC, Standard Inlet Grate** (Unit)
- **Inlet, PVC, ADA Inlet Grate** (Unit)
- **Outlet Control Structure, Complete** (Unit)

Payment for the above-reference bid items will be on a per unit basis, at the price bid for the above items in the Bid Proposal which price shall include the cost of furnishing the equipment, materials, labors, and all else necessary therefore and incidental there to.

--END OF SECTION--

INLINE STORMWATER CHECK VALVE

PART 1 - GENERAL

1.01 SUBMITTALS

- A. Submit product literature that includes information on the performance and operation of the valve, materials of construction, dimensions and weights, elastomer characteristics, headloss, flow data and pressure ratings.
- B. Upon request, provide shop drawings that clearly identify the valve materials of construction and dimensions.

1.02 QUALITY ASSURANCE

- A. Supplier shall have at least twelve (12) years experience in the design and manufacture of “CheckMate®” style elastomeric check valves or approved equal.
- B. Manufacturer shall have conducted independent hydraulic testing to determine headloss, jet velocity and vertical opening height characteristics on multiple sizes of CheckMate® valves ranging from 4” through 72”. The testing must have been conducted for free discharge (discharge to atmosphere) and submerged conditions.

PART 2 - PRODUCTS

2.1 “CHECKMATE®” ELASTOMERIC CHECK VALVES, OR APPROVED EQUAL;

- A. Check Valves are to be all rubber and the flow operated check type with slip-in cuff or flange connection. The entire CheckMate® Valve shall be ply reinforced throughout the body, disc and bill, which is cured and vulcanized into a one-piece unibody construction. A separate valve body or pipe used as the housing is not acceptable. The valve shall be manufactured with no metal, mechanical hinges or fasteners, which would be used to secure the disc or bill to the valve housing. The port area of the disc shall contour down, which shall allow passage of flow in one direction while preventing reverse flow. The entire valve shall fit within the pipe I.D. Once installed, the CheckMate® Valve shall not protrude beyond the face of the structure or end of the pipe.
- B. The downstream end of the valve must be circumferentially in contact with the pipe while in the closed positions.
- C. Slip-in style CheckMate® Valves will be furnished with a set of stainless steel expansion clamps. The clamps, which will secure the valve in place, shall be installed inside the cuff portion of the valve, based on installation orientation, and shall expand outwards by means of a turnbuckle. Each clamp shall be predrilled allowing for the valve to be pinned and secured into position in accordance with the manufacturer’s

installation instructions. Flange style CheckMate® Valves will be furnished with a stainless steel, ANSI 125/150 drilled, retaining ring unless specified otherwise.

- D. Manufacturer must have flow test data from an accredited hydraulics laboratory to confirm pressure drop and hydraulic data. Company name, plant location, valve size patent number, and serial number shall be bonded to the check valve.

2.2 FUNCTION

- A. When line pressure exceeds the backpressure, the line pressure forces the bill and disc of the valve open, allowing flow to pass. When the backpressure exceeds the line pressure, the bill and disc of the valve is forced closed, preventing backflow.

2.3 MANUFACTURER

- A. All valves shall be of the slip-in or flanged CheckMate® as manufactured by Tideflex Technologies®, A Division of Red Valve Company, Carnegie, PA 15106; or approved equal. All valves shall be manufactured in the U.S.A.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Valve shall be installed in accordance with manufacturer's written Installation and Operation Manual and approved submittals.

3.2 MANUFACTURER'S CUSTOMER SERVICE

- A. Manufacturer's authorized representative shall be available for customer service during installation and start-up, and to train personnel in the operation, maintenance and troubleshooting of the valve.
- B. If specified, the manufacturer shall also make customer service available directly from the factory in addition to authorized representatives for assistance during installation and start-up, and to train personnel in the operation, maintenance and troubleshooting of the valve.

PART 4 - QUANTITY AND PAYMENT

- A. Inline Check Valve price not specific. Price shall be included within price for Subsurface Pipe Detention Basin, Complete

- B. Quantity and Payment for Stormwater Check Valve will be made in accordance with the Contract Documents at the per unit price bid for the items, Inline Check Valve, 15” pipe and Inline Check Valve, 18” pipe in the Proposal, which shall cover the cost of the valve, clamp, gasket, installation, all labor, tools, equipment, and material necessary therefore and incidental thereto or as directed by the Engineer.

-- END OF SECTION --

TURF UNDERDRAINAGE PIPE

DESCRIPTION

This work shall consist of furnishing and installing perforated HDPE flat underdrains (1"x12") bellow the turf field.

SUBMITTALS

Submit samples and catalogue cuts of the proposed HDPE pipe, geogrid, and geotextile fabric.

MATERIALS

Flat Drains shall be AdvanEdge as manufactured by Advanced Drainage Systems, Inc., Tel. 800-821-6710, or approved equal.

Geotextile fabric shall Type 140N as manufactured by Mirafi, Tel. 706-693-2226, or approved equal.

Geogrid to be Mirafi Miragrid or approved equal.

CONSTRUCTION

Excavation, bedding, and backfilling shall conform to Division 200 – Earthwork; of the NJDOT Standard Specifications.

The underground drainage basins shall be installed in accordance with ASTM D2321 – Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.

QUANTITY AND PAYMENT

Drainage Pipe will not be measured. Payment for this item shall be included in the square yardage price for the “SYNTHETIC TURF FIELD PREPARATION (INCLUDING UNDERDTAINS, STONE LAYERS, AND GEOTEXTILE FABRIC” in the proposal, which shall include the furnishing of all materials, labor and equipment and all else necessary therefore and incidental thereto for completion of the work as shown and specified in accordance with the Contract Plans and Specifications or as directed by the Engineer.

--END OF SECTION--

HDPE DRAINAGE PIPE

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This work shall consist of furnishing and installing underground detention and pipe conveyance pipe systems composed of lengths of perforated and solid high-density polyethylene (HDPE) pipe varying in size as indicated on Contract Documents. It shall include the required excavation, clean stone, fabric and any other material, tools, equipment necessary to construct the underground detention basin and pipe conveyance systems and structures as shown on the Contract Drawings and shall conform to Division 200 – Earthwork of the NJDOT Standard Specifications for Road and Bridge Construction, latest revised.

- B. Clean Crushed Stone shall be furnished and placed above, around, and below the perforated recharge basin pipes, manifolds and fittings, and enclosed with geotextile filter fabric as specified and as shown on the Contract Drawings and as specified in this Section or as directed by the Engineer. 3/4" clean crushed stone shall be used.

1.2 SUBMITTALS

- A. Submit samples and catalogue cuts of the proposed HDPE pipe, risers, manifolds, fittings, covers/lids, geogrid, clean stone, cleanouts and geotextile fabric.

PART 2 - MATERIALS

- 2.1 High-Density Polyethylene Pipe (HDPE), perforated and solid, varying in size from 8" to 18" diameter, all risers and fittings of various sizes shall be Type N-12 as manufactured by Advanced Drainage Systems, Inc., Tel. 800-821-6710, or approved equal.

- 2.2 Geotextile Filter Fabric shall Type 140N as manufactured by Mirafi, Tel. 706-693-2226 or US Fabrics, Tel. 800-518-2290. Geogrid to be Mirafi Miragrid of US Fabrics, or approved equal.

- 2.3 Clean Crushed Stone shall be uniform in texture and quality and shall conform with Section 901 – Aggregates, Section 601 – Pipe, and Section 602 – Drainage Structures, of the 2007 NJDOT Standard Specifications, latest revised.

PART 3 - CONSTRUCTION

- 3.1 Excavation, bedding, and backfilling shall conform to the applicable Sections and/or Subsections of the 2007 NJDOT Standard Specifications.

- 3.2 All HDPE pipe shall be installed in accordance with ASTM D2321 – Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.

3.3 Pipe bedding shall be 18” minimum thickness for 15”, and 18” dia. perforated HDPE pipe.

3.4 Pipe bedding shall be 6” minimum thickness for all solid HDPE pipe for sizes 12” dia. up to 30” dia.

PART 4 – QUANTITY AND PAYMENT

4.1 Quantity and Payment for HDPE Drainage Pipe will be made in accordance with the Contract Documents at the linear foot price bid for items listed below:

- **Pipe, 8” HDPE (LF)**
- **Pipe, 12” HDPE (LF)**
- **Pipe, 12” Perforated HDPE (LF)**
- **Pipe, 15” HDPE (LF)**
- **Pipe, 15” Perforated HDPE (LF)**
- **Pipe, 18” HDPE (LF)**
- **Subsurface Pipe Detention Basin, Complete (L.S)**

GEOTEXTILE FILTER FABRIC RISERS and cleanouts shall not be measured and shall be included in the unit price for the various bid items in the Proposal, The above items price shall cover the cost of excavation, backfill, sheathing, shoring, bracing, pumping, dewatering, stone, geogrid, all bedding, fittings, risers, covers, compaction, testing, and all labor, tools, equipment and materials necessary therefore and incidental thereto or as directed by the Engineer.

-- END OF SECTION --

COPPER TUBING WATER PIPE (K-TYPE)

DESCRIPTION

This item shall consist of the installation of all water service pipe, fittings, thrust blocks, wet-tap, permits, road opening permits, and corporation stop for the water service connection to the three (3) new water fountains with hose bibs.

This item shall include the excavation, backfill, restoration and materials necessary to install the water service connection from the existing water line located on-site proximity to the new water fountains/hose bibs.

The Contractor is responsible for returning all curb, sidewalk, driveway and grass areas to pre-construction conditions and shall be included in the base bid for this item.

MATERIALS

The Contractor shall provide all water service materials in accordance with Section 651 – Water of the 2007 NJDOT Standard Specifications, latest revised.

The Contractor shall include in the price bid for this item 1” dia. K-Type Copper Tubing, corporation stops and appurtenances, wet tap service connections to the on-site water main, water service valves, boxes, and appurtenances, and shall furnish all material to construct a fully functional water service system design-build program from the proposed water fountains/ hose bibs on-site water service main. The Contractor shall submit all water design plans to the Engineer for review prior to the commencement of construction.

Copper tubing and fittings shall conform to the requirements of A.S.T.M. Designation B88, Type K, for underground service and Type L, for above ground / interior applications. Type K tube shall be annealed and used in conjunction with cast bronze flaired tube fittings. The tubing and fittings shall be installed in accordance with recommendations of the manufacturer.

All service connections shall be complete with Corporation Stop, Copper Service Lines, and Curb Stop and Box, with Curb Box Sleeve, where applicable.

A 1” Corporation Stop shall be Mueller H-15008, or as specified by the local utility company, and a 2” Curb Stop shall be Mueller H-15209, or as specified by the local utility company, **or** approved equal. A 2” curb box shall be H10316 manufactured by Mueller Company Inc., or as specified by the local utility company, **or approved equal**. Mueller Company Inc., equivalent to be utilized for 2” services and foot piece. All curb boxes shall include the foot piece as manufactured by Mueller Company Inc., or as specified by the local utility company, **or** approved equal.

Larger size threaded connections shall be made with the use of a double strap pipe saddle. The saddle is to have corporation stop threads with neoprene gaskets, a malleable iron body, a forged steel strap, and cadmium plated threads on straps and nuts. All service lines and connections

shall be made to all types of existing service lines. The corporation stop shall be Model H-15025 and the curb stop shall be Model H-10314, and the curb valve shall be Model H-15204 as manufactured by Mueller Company Inc., or approved equivalent.

All proposed and existing valves (to remain) within the proposed turf field area shall be constructed with a valve box, to be buried $\pm 8''$ below finished grade. Contractor shall provide painted visual indicator on top of stone to alert turf installer of valve locations. Contractor shall provide submittals for valve boxes and means of painted visual indicator to Engineer for review.

A curb box which does not fall within a grassed area shall be installed within a monument box.

METHODS OF CONSTRUCTION

The Contractor shall construct the water services in accordance with all local ordinances and Section 207 - Subsurface Structure Excavation of the N. J. Department of Transportation Standard Specifications, with the addition of the following paragraphs.

All work shall be inspected and approved by the local Municipal Water Department and Water Utility Provider.

No work shall be closed or covered up until it has been duly inspected and approved for proper and satisfactory construction and installation, and in compliance with the Contract Documents or as directed by the Engineer. Should uncompleted or unapproved work be covered, the Contractor shall, at his own expense, uncover all work so that it can be properly inspected and approved; and, after such inspection and approval, he will properly repair and replace all work found defective, unsatisfactory, and not in accordance with the Contract Documents. After such repair and replacement, he will bring all work to the completeness and status that it was before it was closed and covered; all at his own expense.

Service connections shall be made with an approved tapping machine in conformance with pipe manufacturer's recommendations, and the Municipality's and Water Utility Provider's rules and regulations, or as directed by the Engineer.

The Contractor shall provide and submit a domestic water service design and layout to the Engineer for review prior to the commencement of construction. The domestic water service design shall include, but not be limited to, water service connection to new water fountains/ hose bibs within the new turf field, coordination with the local water utility company, water service tap to existing water main, water service connections, fittings, valve boxes, valve stems, thrust blocks, water pipe, water fountain connections, for a complete 1" dia. k-type copper tubing water service system design and build program to connect the new water fountain / hose bibs to the on-site water main located under the existing field.

QUANTITY AND PAYMENT

Quantity and Payment for Copper Tubing Water Service (K-Type) will be made in accordance with the Contract Documents at the price bid for the items:

- 1" Domestic water service (including fittings, thrust blocks, flashing, disinfection and testing) – (LF)
- 1" Water valves (including valve boxes) - (Unit)
- Wet tap connection to existing water line (including all fittings, valves, boxes) – (Unit)

in the Proposal, which shall cover the cost of installation, excavation, backfill, dewatering, sheathing, shoring, bracing, restoration, compaction, testing, gaskets, pipe, fittings, meter, valve boxes, stems, caps, and all labor, tools, equipment and materials necessary therefore and incidental thereto or as directed by the Engineer.

-- END OF SECTION --

CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this section.

1.2 SUMMARY

- A. This Section specifies cast-in place concrete, including formwork, footings, walls, reinforcement, concrete materials, mix design, placement procedures, and finishes.
- B. Related Sections include: Section 310000 “Earthwork” for backfill.

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of fly ash, ground granulated blast-furnace slag, and silica fume.

1.4 SUBMITTALS

- A. Product Data: For each type of manufactured material and product indicated.
- B. Concrete Design Mixes: For each concrete mix, submit laboratory test reports for concrete materials and concrete mix design on the Concrete Mix Design Submittal Form attached to the end of this section. Each mix design shall be accompanied by either a standard deviation analysis or trial mixture analysis backup in accordance with ACI 318(08) section 5.3. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.
- C. Steel Reinforcement Shop Drawings: Submit for review shop drawings for all concrete work showing reinforcement, details of fabrication, bending, and placement, prepared according to ACI 315, "Details and Detailing of Concrete Reinforcement", and as shown on the drawings. Include material, grade, bar schedules, stirrup spacing, bent bar diagrams, arrangement, and supports of concrete reinforcement. Include special reinforcement required for openings through concrete structures.
- D. Material Certificates and/or Material Test Reports: Submit material certificates signed by manufacturers certifying that; or submit material test reports from a qualified testing agency indicating and interpreting test results showing that; each of the following items complies with requirements:
 - 1. Cementitious materials and aggregates.
 - 2. Steel reinforcement and reinforcement accessories.

3. Admixtures.
 4. Waterstops.
 5. Bonding agents.
 6. Adhesives.
 7. Repair materials.
- E. Concrete Delivery Tickets: Submit concrete delivery tickets to the field testing agency for each truckload discharged and used in the work, indicating project identification name and number, date, mix type, mix time, quantity, amount of water introduced, and admixtures used.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
1. Manufacturer must be certified according to the National Ready Mixed Concrete Association's Certification of Ready Mixed Concrete Production Facilities.
- B. Field Testing Agency Qualifications: An independent testing agency, acceptable to Engineer, qualified according to ASTM C 1077 and ASTM E 329 to conduct the testing indicated, as documented according to ASTM E 548.
1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1 (minimum), according to ACI CP-1.
- C. All admixtures and coatings shall comply with the requirements of the local and state codes regarding Volatile Organic Substances.
- D. Codes and Standards: Comply with the latest edition of the following, unless more stringent provisions are indicated:
1. AC301, "Specification for Structural Concrete."
 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
 3. ACI 318, "Building Code Requirements for Structural Concrete."
 4. ACI 347R, "Recommended Practice for Concrete Formwork."
 5. Concrete Reinforcing Steel Institute (CRSI), "Manual of Standard Practice."
 6. ASTM C94, "Specification for Ready-Mixed Concrete."
 7. ASTM C618, Standard Specification for Fly Ash and Raw or Calcined Natural Pozzolan for Uses as a Mineral Admixture in Portland Cement Concrete.
 8. ASTM C311, Standard Methods of Sampling and Testing Fly Ash and Natural Pozzolans for Use as a Mineral Admixture in Portland Cement Concrete.

9. ASTM C989, Ground Granulated Blast-Furnace Slag for Use in Concrete Mortars.
10. Standard Practice ACI 226.R1, Ground Granulated Blast-Furnace Slag as a Cementitious Constituent in Concrete.
11. ACI 303.1, “Specifications for Cast-in-Place Engineerural Concrete”

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle steel reinforcement to prevent bending and damage.
- B. Deliver materials to site at such intervals to insure uninterrupted progress of work.
- C. Store materials to permit easy access for inspection and identification. Keep reinforcing steel under cover and off the ground using supports. Protect reinforcing steel from rusting, oil, grease or distortion. The Contractor shall be responsible for any demurrage charges due to failure to unload or store material properly. Do not store materials on the structure in a manner that might cause distortion or damage to the members of the supporting structures. Store grout under cover in unopened bags.
- D. Protection: Use all means necessary to protect the materials of this section before, during, and after installation and to protect the installed work and materials of all other trades.
- E. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Engineer and at no additional cost to the Owner.

PART 2 – PRODUCTS

2.1 FORM-FACING MATERIALS

- A. Provide form material with sufficient thickness to withstand pressure of newly placed concrete without objectionable bow or deflection.
- B. Forms for Smooth Exposed Finished Concrete: New Form-facing panels that will provide continuous, straight, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints. Plywood grain ghosting on finish surfaces exposed to view is not acceptable.
 1. Plywood, metal, or other approved panel materials.
 2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
 - a. B-B (Concrete Form), Class 1, or better, mill oiled and edge sealed.
- C. Forms for Unexposed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

- D. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch (19 by 19 mm), minimum.
- E. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces. Selected form-release agent shall provide concrete surface as required.
 - 1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
- F. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
 - 1. Furnish units that will leave no corrodible metal closer than 1 inch (25 mm) to the plane of the exposed concrete surface.
 - 2. Furnish ties that, when removed, will leave holes not larger than 1 inch (25 mm) in diameter in concrete surface.
 - 3. Furnish ties with integral water-barrier plates to walls indicated to receive damp proofing or waterproofing.

2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A615/A 615M, Grade 60, deformed.
- B. Plain-Steel Welded Wire Reinforcement: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.
- C. Tie Wire: No 16 American Wire Gage or heavier, black annealed.

2.3 REINFORCEMENT ACCESSORIES

- A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete or fiber-reinforced concrete of greater compressive strength than concrete, and as follows:
 - 1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected or CRSI Class 2 stainless-steel bar supports.
- B. Joint Dowel Bars: Plain-steel bars, ASTM A 615/A 615M, Grade 60. Cut bars true to length with ends square and free of burrs.

2.4 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150, non-air-entraining. All cement shall be one brand, type and color and meet with the Engineer's approval. All cement shall be from the same source.
1. Provide cement of the following types: Type I/II
 2. The cement shall not contain any ingredients as shown by cement mill certificates which would cause more than 3 percent air to be entrained in the concrete when cement is used in the concrete mix.
 3. Cement shall be stored in such a manner as to prevent deterioration or intrusion of foreign matter.
 4. No foreign cement (non-domestic cement) shall be permitted in concrete.
 5. Brand of cement shall not be changed during progress of job unless approved in writing by Engineer.
- B. Fine Aggregate: Fine aggregate shall be clean and washed, natural siliceous sand, consisting of hard, strong, durable, uncoated particles, and shall conform to the requirements of ASTM C-33. Fine aggregate shall not contain deleterious substances, including materials that are deleteriously reactive with the alkalies in the cement.
- C. Normal-Weight Coarse Aggregate: Coarse aggregate for stone concrete shall consist of clean, hard, uncoated, strong, durable gravel, or crushed stone, and shall conform to the requirements of ASTM C33, class; Severe weathering region, but not less than 4S. Provide aggregate from a single source for exposed concrete. Provide uniformly graded aggregate and the maximum size of coarse aggregate shall not exceed one-fifth of minimum dimension between forms of member for which concrete is to be used, three-fourths of minimum clear spacing between reinforcing bars or 1 inch, whichever is smaller.
- D. Water: Clean, potable, free from all organic materials, strong acids or alkalies, and complying with ASTM C 94.
- E. Silica Fume: ASTM C 1240, amorphous silica.
- F. Fly Ash: ASTM C 618, Class F.
- G. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

2.5 ADMIXTURES

- A. General: No admixture shall be used in concrete unless specified herein, except with the permission of the Engineer. No changes of admixtures shall be made after design mix approval. Contractor shall provide the services (including any expenses) of the admixture manufacturer's representative to assure proper use of admixtures.
1. Prohibited Admixtures: Only the specified non-corrosive, non-chloride, noncorrosive accelerator shall be used. Calcium chloride, thiocynates, or admixtures containing more than 0.05 percent chloride ions are not permitted.

2. Certification: Written conformance to the above-mentioned requirements and the chloride ion content of the admixture is required from the admixture manufacturer prior to mix design review by the Engineer.
- B. Air-Entraining Admixture: ASTM C260, certified by manufacturer to be compatible with other required admixtures.
1. Products:
 - a. “Air-Mix” or “AEA-92”; Euclid Chemical Company
 - b. “Sika Aer”; Sika Corporation
 - c. “MB AE 90” or “Micro-Air”; Master Builders
 - d. “Daravair – 1000” or “Darex II”; W.R. Grace & Co.
 - e. Or approved equal
- C. Water-Reducing Admixture: ASTM C494, Type A, and containing not more than 0.05 percent chloride ions.
1. Water-Reducing Admixture: ASTM C494, Type A, and containing not more than 0.05 percent chloride ions.
 - a. “WRDA with Hycol”; W.R. Grace & Co.
 - b. “Eucon WR-75” or “Eucon WR-89”; Euclid Chemical Company
 - c. “Plastocrete 161”; Sika Chemical Corporation
 - d. “Polyheed 997” or “Pozzolith 220-N”; Master Builders
 - e. Or approved equal
- D. High-Range Water-Reducing Admixture (Super Plasticizer): ASTM C494, Type F or Type G and containing not more than 0.05 percent chloride ions.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. “Sikament – 300”; Sika Chemical Corporation
 - b. “Eucon 37”; Euclid Chemical Company
 - c. “Daracem-100” or “WRDA-19”; W.R. Grace & Co.
 - d. “Rheobuild 1000”; Master Builders
 - e. Or approved equal
- E. Water-Reducing, Non-Corrosive, Non-Chloride Accelerator Admixture: ASTM C494, Type C or E, and containing not more than 0.05 percent chloride ions. The admixture manufacturer must have long-term non-corrosive test data from an independent testing laboratory (of at least a year's duration) using an acceptable accelerated corrosion test method such as that using electrical potential measures.
1. Products: Subject to compliance with requirements, provide one of the following:

- a. "Accelguard 80"; Euclid Chemical Company
 - b. "Polarset"; W.R. Grace & Co.
 - c. "Pozzutec 20" or "Pozzolith NC-534"; Master Builders
 - d. "Plastocrete 161FL"; Sika Chemical Corporation
 - e. Or approved equal
- F. Water-Reducing, Retarding Admixture: ASTM C 494, Type D, and containing not more than 0.05 percent chloride ions.
- 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. "Eucon Retarder 75"; Euclid Chemical Company
 - b. "Daratard 17"; W.R. Grace & Co.
 - c. "Plastocrete 161R"; Sika Chemical Co.
 - d. "Pozzolith 122R"; Master Builders
 - e. Or approved equal

2.6 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) dry.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- F. Reglets: Where resilient or elastomeric sheet flashing or bituminous membranes are terminated in reglets, provide reglets of not less than 26 gage galvanized sheet steel. Fill reglet or cover face opening to prevent intrusion of concrete or debris.
- G. Reveals and Chamfer Strips: Polyvinyl chloride, wood, metal or rubber of sizes and at locations indicated.

2.7 WATERSTOPS

- A. Self-Expanding Rubber Strip Waterstops: Manufactured rectangular or trapezoidal strip, bentonite-free hydrophilic polymer modified chloroprene rubber, for adhesive bonding to concrete, 3/8 by 3/4 inch (10 by 19 mm).

1. Products: Subject to compliance with requirements, provide the following:
 - a. Adeka Ultra Seal/OCM, Inc.; Adeka Ultra Seal.
 - b. Greenstreak; Hydrotite
 - c. Vinylex Corp.; Swellseal
 - d. Or approved equal

2.8 REPAIR MATERIALS

- A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch (3.2 mm) and that can be feathered at edges to match adjacent floor elevations.
 1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
 2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
 3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3 to 6 mm) or coarse sand as recommended by underlayment manufacturer.
 4. Compressive Strength: Not less than 4100 psi (29 MPa) at 28 days when tested according to ASTM C 109/C 109M.

2.9 CONCRETE MIXES

- A. Prepare design mixes for each type and strength of concrete determined by either laboratory trial mix or field test data bases, as follows:
 1. Proportion normal-weight concrete according to ACI 211.1 and ACI 301.
- B. Use a qualified independent testing agency for preparing and reporting proposed mix designs for the laboratory trial mix basis.
- C. Submit mix designs for each mix required for use on this project. Each mix design shall be accompanied by a complete standard deviation analysis or trial mixture data and analysis. The mix shall be submitted on the mix design submittal form at the end of this specification section.
- D. Design mixes to provide concrete with the following properties, as indicated on the drawings and schedules.
 1. Foundations and structure not in direct contact with storm water: 4500 psi 28-day compressive strength: Minimum cement content: 600 lbs/cu.yd. Maximum Water/Cement Ratio: 0.44.
 2. All stormwater structures and pile caps in direct contact with storm water: 5000 psi 28-day compressive strength: Minimum cementitious content: 630 lbs/cu.yd, Maximum Water/Cement Ratio: 0.40. Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows: Combined Fly Ash, or Pozzolans, and Ground Granulated Blast-Furnace Slag: 50

percent with fly ash or pozzolans not exceeding 25 percent. Mix shall contain Fly Ash and/or Ground Granulated Blast-Furnace Slag.

- E. Air Content: All concrete exposed to freezing and thawing, deicer chemicals and/or required to be watertight or subjected to hydraulic pressure or soil shall have an air content of 4.5% to 7.5%.
- F. Limit water-soluble, chloride-ion content in hardened concrete to 0.10 percent by weight of cement.
- G. Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use water-reducing admixture or high-range water-reducing admixture (superplasticizer) in concrete, for placement and workability in all concrete.
 - 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
 - 3. Use high-range water-reducing admixture (superplasticizer) in all mixes.
 - 4. Use corrosion-inhibiting admixture in concrete mixes where indicated.
- H. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as follows:
 - 1. Reinforced foundation systems: Not less than 1" and not more than 4".
 - 2. Concrete containing HRWR admixture (superplasticizer): Between 5" and 9" after addition of HRWR to site-verified 2"-3" slump concrete. Other concrete: Not less than 1" nor more than 4".
- I. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant: Revisions to the mix design shall be made at no cost to the Owner and shall be subject to the Engineer's approval. Laboratory test data for revised mix design and strength results must be submitted to and approved by Engineer before being used in work.

2.10 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.11 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94 and ASTM C 1116 and as herein specified, and furnish batch ticket information.
 - 1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

2. Delete the reference for allowing additional water to be added to the batch for material with insufficient slump. Addition of water to the batch will not be permitted.
3. Provide batch ticket for each batch discharged and used in work, indicating project identification name and number, date, mix type, mix time, quantity, and amount of water introduced, cement content and admixture used.
4. Project-Site Mixing: Project-Site Mixing shall not be permitted without approval from the engineer.

PART 3 – EXECUTION

3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until concrete structure can support such loads.
- B. The design and engineering of formwork, as well as its construction, shall be the responsibility of the Contractor. It shall be the Contractor's total responsibility to insure safety to workmen, public and for the total structure at all times. The Contractor shall be responsible to use firm unyielding supports and provide adjustable devices for setting, wedging, and lending the finished forms in correct alignment and position with all work in conformity with governing building code requirements and these specifications. The Contractor shall be responsible to pay for all costs connected with design of this work (forms, shores, etc.), checking same and certification to Engineer and Building Department. Such form design shall be performed by a professional engineer licensed in the state of the project and experienced in such form design. When the load on the shores exceeds 150 pounds per square foot, or power buggies are used, the Contractor shall certify that the form, shore, and bracing design has been checked and approved by a professional engineer licensed in the state of the project with at least five (5) years experience and installation of this work has been done in conformity with the approved design. The design, tolerance of finished lines and camber to compensate for deflection due to weight of fresh concrete shall conform to ACI-347, "Guide to Formwork for Concrete." Construct forms to slopes, lines and dimensions shown, plumb and straight and sufficiently tight to prevent leakage, securely brace and shore forms to prevent displacement and to safely support construction loads. Provide access openings for cleaning and inspecting forms and reinforcing.
- C. Forms, shores, reshores and bracing shall be designed and installed to withstand all vibrations of the concrete when placing same and carry all dead and live loads to which they are subjected.
- D. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

- E. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:
 - 1. Class A, 1/8 inch for all exposed concrete work.
 - 2. Class B, 1/4 inch for all other concrete.
- F. Construct forms tight enough to prevent loss of concrete mortar.
- G. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical. Kerf wood inserts for forming keyways, reglets, recesses, and the like, for easy removal.
 - 1. Do not use rust-stained steel form-facing material.
- H. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- I. Chamfer exterior corners and edges of permanently exposed concrete as shown on drawings.
- J. Form openings, chases, offsets, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- K. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- L. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- M. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.
- N. Coat steel forms with a non-staining, rust-preventative form oil or otherwise protect against rusting. Rust-stained steel formwork is not acceptable.
- O. Do not allow excess form-coating material to accumulate in forms or to come into contact with in-place concrete surfaces against which fresh concrete will be placed. Apply in compliance with manufacturer's instructions.

3.2 REMOVING AND RESUING FORMS

- A. General: Formwork, for sides of beams, walls, columns, and similar parts of the Work, that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete

provided concrete is hard enough to not be damaged by form-removal operations and provided curing and protection operations are maintained.

- B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Engineer.

3.3 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
 - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials.
- C. Bars with kinks or bends not required shall not be used. The reinforcement shall not be bent or straightened in a manner which would injure the material. The heating of reinforcement for bending or straightening will not be permitted.
- D. Bends or hooks unless otherwise shown or required shall be cold formed around pins. Hooks shall be ACI Standard.
- E. Reinforcing steel shall be fabricated to the shapes and dimensions shown. Reinforcing steel shall not be spliced at point of maximum stress. Laps shall be wire-tied and not less than 40 diameters, unless otherwise shown. Splices in adjacent bars shall be staggered. Except as otherwise indicated, reinforcing details, the number, type and spacing of supports and minimum concrete covering over steel shall conform to ACI 318.
- F. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
 - 1. Shop- or field-weld reinforcement according to AWS D1.4, where indicated.
- G. After substantial delay in the work previously started, reinforcing steel shall be inspected and cleaned free from mortar prior to proceeding with the work.
- H. No concrete placement shall be allowed when, in Engineer's opinion, insufficient time is provided to review and correct misplaced reinforcing steel.
- I. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

- J. Install welded wire fabric in longest practicable lengths on bar supports spaced to minimize sagging (four feet maximum spacing). Lap edges and ends of adjoining sheets at least two mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.4 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Engineer.
 - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated.
 - 2. Form from bulkhead forms with keys, unless otherwise indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.
 - 3. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
 - 4. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
 - 5. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- C. Placement of concrete shall be at such rate that surface of concrete not carried to joint levels will not have attained initial set before additional concrete is placed thereon. The Contractor shall have a means at hand to bring any placement to an emergency construction joint; provide proper shear key and/or dowels, roughening of surface application to form as herein stated if an interruption in the supply of concrete or inclement weather makes such a procedure necessary.

3.5 CONVEYING CONCRETE

- A. Concrete shall be conveyed from the mixer to the forms as quickly as possible by methods which will prevent segregation and loss of materials.
- B. Delivery carts or buggies where used shall be kept on temporary runaways built over the construction. Runaway supports shall not bear upon reinforcing steel or fresh concrete.
- C. Conveyors and pumps shall be capable of expeditiously placing concrete at the rate most advantageous to good workmanship.
- D. Except as otherwise specifically approved by the Engineer, placing equipment requiring changes in the concrete materials or design mix for efficient operation shall not be used.

- E. Pumps shall be operated and maintained so that a continuous stream of concrete is delivered into the forms without air pockets, segregation or changes in slump. The initial charging slurry shall be wasted. When pumping is completed; concrete to be used remaining in the pipeline shall be ejected without contamination of concrete or segregation of ingredients. After each operation, equipment shall be thoroughly cleaned and the flushing water shall be wasted outside the forms. Pump lines shall have a minimum diameter of 5".
- F. Pumps, piping, and other conveying equipment so constructed to allow contact of concrete with aluminum during conveying and pumping shall not be used.
- G. All pumped concrete shall contain the specified high range water reducing admixture (superplasticizer).

3.6 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work.
- B. Before placing concrete, all debris, water and ice shall be removed from the spaces to be occupied by the concrete. Forms shall be treated as previously described and the reinforcement cleaned of ice or other coatings.
- C. Do not add water to concrete during delivery, at Project site, or during placement, unless approved by Engineer.
- D. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete to avoid segregation.
- E. Deposit concrete in forms in horizontal layers no deeper than 24 inches (600 mm) and in a manner to avoid inclined construction joints. Place each layer while preceding layer is still plastic, to avoid cold joints.
 - 1. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners. Use equipment and procedures for consolidation of concrete in accordance with ACI 309 "Guide for Consolidation of Concrete".
 - 2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations no farther than the visible effectiveness of the vibrator. Place vibrators to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mix constituents to segregate.

- F. Unless otherwise provided, concrete footings and foundations shall be placed directly on undisturbed or structurally compacted backfill surfaces that are thoroughly moistened but not muddy at time concrete is placed. There shall be no free water present at footing bottoms between time of final excavation to grade and concrete placement.
- G. Where established bottoms of footings for bearing as shown on drawings have not been maintained or have been disturbed, all loose material shall be removed to good bottom and the footings may be placed at the lower level with increase in length of vertical reinforcement required to reach the lowered footing or a plain concrete pad may be placed up to the former level of bottom of footing.
- H. Placing of concrete in supported elements shall not be started until the concrete previously placed in walls and columns is no longer plastic.
- I. Concrete shall not be allowed to drop freely where reinforcing will cause segregation nor shall it be dropped freely more than ten (10) feet for concrete containing the high range water reducing admixture (superplasticizer) or five (5) feet for other concrete.
- J. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
- K. It shall be the Contractor's complete responsibility to place and maintain concrete at the specified minimum internal temperature of at least 50° F, for as long as necessary to assure proper strength for safety, stripping and obtaining design strengths with non-excessive deflections. Cold weather requirements regarding class of protection, time period of heat, enclosures, coverings, etc., shall be as required to accomplish the above. When atmospheric temperatures are predicted to fall below 30 deg F, the Contractor shall obtain approval to pour from Engineer. Class of concrete protection and Contractor's ability to meet all Specification requirements shall determine approval or non-approval.
 - 1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
 - 2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 - 3. Only the specified non-corrosive non-chloride accelerator shall be used. Calcium chloride, thiocyanates or admixtures containing more than 0.05% chloride ions are not permitted.
 - 4. Heating Methods: All methods proposed for heating materials, and protecting the concrete shall be subject to approval by the Engineer. Concrete shall never be heated over 90 deg F will any overheating which would produce a flash set be permitted.
- L. Hot-Weather Placement: When hot weather conditions exist that would seriously impair the quality and strength of concrete, place concrete according to recommendations in ACI 305R and as follows:

1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water.
2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.
4. Use water-reducing retarding admixture (Type D) when required by high temperatures, low humidity, or other adverse placing conditions.
5. When high temperatures, low humidity and dry winds create conditions suitable for plastic cracking, the evaporation retarder may be required to be applied by spraying one or more times during the finishing operation.

3.7 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: For formed concrete surfaces not exposed-to-view in the finished work. As-cast concrete texture imparted by form-facing material with tie holes and defective areas repaired and patched. Remove fins and other projections exceeding ACI 347R limits for class of surface specified.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas with fins or other projections completely removed and smoothed.
 1. Apply to concrete surfaces exposed to public view or to be covered with a coating or covering material applied directly to concrete, such as waterproofing, dampproofing, veneer plaster, painting or similar system.
- C. Smooth Rubbed Finish: Apply smooth rubbed finish to concrete at all locations where concrete repairs are exposed to view, and at areas where the exposed concrete finishes are discolored or otherwise unacceptable to the Engineer. Smooth rubbed finish is to be applied to concrete which has received smooth form finish treatment, not later than one day after form removal.
 1. Smooth-Rubbed Finish - Moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
- D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.8 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete Work.

3.9 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with recommendations in ACI 305R for hot-weather protection during curing.
- B. Formed Surfaces: Cure formed concrete surfaces. If forms remain during curing period, moist cure after loosening forms.
- C. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
 - 1. Moisture Curing: Keep
 - a. Water.
 - b. Continuous water-fog spray.
 - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.

3.10 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Engineer. Remove and replace concrete that cannot be repaired and patched to Engineer's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 (1.2-mm) sieve, using only enough water for handling and placing.
- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
- D. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch (13 mm) in any dimension in solid concrete but not less than 1 inch (25 mm) in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar on bonding agent. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
- E. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding

color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.

- F. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Engineer.
- G. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
- H. After concrete has cured at least 14 days, correct high areas by grinding.
- I. Repair defective areas, except random cracks and single holes 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least 3/4 inch (19 mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mix as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
- J. Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar on bonding agent. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.
- K. All structural repairs shall be made with prior approval of the Engineer as to method and procedure, using the specified epoxy adhesive, epoxy mortar or a low shrinkage structural repair mortar. Where epoxy injection procedures must be used, an approved low viscosity epoxy made by the manufacturers previously specified shall be used.
- L. Repair materials and installation not specified above may be used, subject to Engineer's approval.

3.11 FIELD QUALITY CONTROL

- A. Except as otherwise indicated on drawings or specified herein, all work under this Section shall conform to applicable requirements of the local Building Code and regulations of all governmental authorities having jurisdiction and applicable State Code and ACI Code 318.
- B. The Owner will employ an inspection engineer and a testing agency to perform inspection and tests of concrete as hereinafter required and to submit reports.

- C. Inspection engineer shall be an engineer, trained and specializing in the field of structural engineering, and be under the direct supervision of the Field Inspection Professional Engineer. The Field Inspection Professional Engineer shall be legally licensed to practice in jurisdiction where Project is located (preferably the project's consulting engineer) and who is experienced in providing field inspection services. The inspection engineer shall perform the following services:
1. Inspect concrete reinforcement for quantity, size, type, spacing, and placement.
 2. Inspect formwork for ties, finishes and general tightness of joints. Contractor remains responsible for the design, construction and bracing of formwork.
 3. Inspect concrete accessories for quantity, size, manufacture, type, spacing, and placement.
 4. Inspect method of placing, vibration, and curing of concrete.
 5. Supervise the activities of the testing agency.
- D. Testing agency shall be an independent testing agency, acceptable to Engineer, qualified according to ASTM C 1077 and ASTM E 329 to conduct the testing indicated, as documented according to ASTM E 548. Personnel conducting field tests shall be qualified as an ACI Concrete Field Testing Technician, Grade 1 (minimum), according to ACI CP-1. Sampling and testing for quality control shall be performed as specified in this article.
- E. Inspection and testing at the concrete plant shall be performed to observe the facilities, materials, and batching operations to insure the quality of the concrete.
- F. Field Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
1. Testing Frequency:
 - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mix, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
 2. Slump: ASTM C 143; one test for each concrete load at point of discharge and one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.
 3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; ASTM C 173, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
 4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F (4.4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each composite sample.
 5. Unit Weight: ASTM C 567, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.

6. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of five standard cylinder specimens for each composite sample. Field-cured specimens below may be required to verify adequacy of curing and protection of concrete or to verify strength for removal of shoring and reshoring in multistory construction.
 - a. Cast and field cure one set of four standard cylinder specimens for each composite sample when required to verify strength for removal of shoring and reshoring in multistory construction.
7. Compressive-Strength Tests: ASTM C 39; test two laboratory-cured specimens at 7 days, two at 28 days and hold one specimen in reserve for later testing if required.
 - a. Test two field-cured specimens at 7 days and two at 28 days.
 - b. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at age indicated.
- G. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
- H. Strength of each concrete mix will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).
- I. Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing agency, concrete type, class and mix number, location of concrete batch in Work, design compressive strength at 28 days, concrete mix proportions and materials, slump, air content, temperature, unit weight, compressive breaking strength, and type of break for both 7- and 28-day tests. 28 day reports will contain corresponding 7 day tests for the same concrete batch. Reports of non-conforming concrete shall be printed on colored paper.
- J. Field inspection reports made by the inspecting engineer shall be reported in writing to Engineer and Contractor within 24 hours of inspection. Informal reports shall be given to the Contractor, with reports made available to the Engineer, at the time of the inspection. Reports of non-conforming concrete work shall be printed on colored paper.
- K. Contractor's Cooperation for Test Specimens: The Contractor shall cooperate in the making of tests, furnishing the concrete for test cylinders; also, suitable storage space at the job site where test specimens can be cast and left undisturbed until removed by the testing and inspection agency for testing.
- L. Contractor shall make use of test results and inspection reports as provided by the inspecting engineer and testing agency to regulate his controls of concrete operation

inclusive of making, transporting, placing, curing and protecting such concrete, all at his own responsibility. Contractor shall conform to all governing Code requirements, approved drawings and Specifications and use good, safe methods of construction at all times.

- M. If the results of tests and/or inspections indicate the concrete and/or steel reinforcement or construction techniques do not meet the requirements as set forth on the drawings or in these Specifications and as determined by Engineer, or is otherwise unsatisfactory to Owner and/or Engineer due to inadequate batching, placing, curing or protection as they determine, Contractor shall proceed as directed by Engineer. Any additional costs resulting from re-testing, load testing, replacement of concrete and/or damage to the work of other trades, inclusive of Engineer's costs for the investigation, field work, etc., shall be borne by Contractor. If, during the installation of the work, it is determined by Engineer that requirements of these Specifications have not been adhered to by either test results, observation of Engineer or his Consultants during inspections, then any investigation and/or tests as may be directed by Engineer to verify concrete requirements as related to drawings and Specifications shall be performed at Contractor's expense no matter whether final results meet or do not meet Specification requirements.
- N. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as sole basis for approval or rejection of concrete.
- O. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Engineer. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42 or by other methods as directed by Engineer.
- P. Report Copies and Timing: Immediately after tests or inspection have been made, and in no case later than seven (7) days after tests or inspection have been made, copies of all test and inspection reports shall be furnished as follows:
1. One (1) copy to the Engineer
 2. One (1) copy to the Contractor
 3. One (1) copy to the Owner
 4. One (1) copy to the Concrete Producer
- Q. Deficiency Reports: All reports which identify deficiencies shall be printed on a unique colored sheet and shall be issued no later than one (1) day after the tests have been made.

3.12 CONCRETE MIX DESIGN SUBMITTAL FORM

- A. Submit the following form for each type of concrete specified.

CONCRETE MIX DESIGN SUBMITTAL FORM:
(one for each required mix design)

PROJECT: _____ CITY: _____

GENERAL CONTRACTOR: _____

MIX DESIGN NO.: _____ CONCRETE GRADE: _____

USE (Footings, Columns, etc.) _____

Mix Design Preparation: Based on

Standard Deviation Analysis: ___ or Trial Mix Test Data: _____

DESIGN CHARACTERISTICS:

DENSITY: _____ pcf; STRENGTH _____ psi (28 days); Slump _____ In. (before adding superplasticizer); SLUMP _____ in. (after adding superplasticizer); AGGREGATES: (SIZE; TYPE; SOURCE; SPECIFICATION)

COARSE: _____

FINE: _____

OTHER MATERIALS: PRODUCT – MANUFACTURER (SOURCE)

CEMENT: Type: _____ : _____
(OTHER) _____ : _____

ADMIXTURES: Water Reducer: _____
Air Entraining: _____
HRWR (superplasticizer): _____
Non-Corrosive Accelerator: _____

RATIOS

MIX PROPORTIONS (per cy)

Water** _____ lb WEIGHT ABSOLUTE VOL. Cement _____ lb =
(lbs.) (cu. ft.)

CEMENT: _____ Fine Agg. _____ lb
Total Agg. _____ lb = _____ % FINE*

AGGREGATE: _____

SPECIFIC GRAVITIES

COARSE*

Fine Agg. _____ AGGREGATE: _____ Coarse
Agg. _____

WATER:**: _____

ADMIXTURES (per 100# cement)

HRWR _____ oz. AIR: _____
N-C Accelerator _____ oz. W.R. _____ oz. OTHER: _____

A.E. _____ oz.

_____ oz. TOTALS: _____

*Saturated surface dry weights

**Includes free water contained on aggregates

STANDARD DEVIATION ANALYSIS:

No. of Test Cylinders Evaluated: _____ Standard Deviation: _____
 Mix Designs Proportioned to Achieve $f'_{cr} = f'_c + 1200$ psi (use 1400 psi over design when f'_c exceeds 5,000 psi).

$$f'_{cr} = f'_c + 1.34s \quad \text{or} \quad f'_{cr} = f'_c + 2.33s - 500$$

TRIAL MIXTURE TEST DATA:

Age (days)	Mix #1 (comp. str.)	Mix #2 (comp. str.)	Mix #3 (comp. str.)	(comp. str.)
7	_____	_____	_____	_____
7	_____	_____	_____	_____
28	_____	_____	_____	_____
28	_____	_____	_____	_____
28 day avg	_____	_____	_____	_____

Slump = _____ in Air Content = _____%

Unit Wet Wt. = _____ pcf Unit Dry Wt., = _____ pcf

Mix Design Proportioned to Achieve: $f'_c + 1200$ psi

Initial Slump = ___ in; Final Slump = ___ in; Air Content = ___%

Unit Wet Wt. = _____ pcf; Unit Dry Wt. = _____ pcf

REMARKS:

NOTE: Fill in all blank spaces. Use -0- (Zero) or N/A (Not Applicable). See "Design and Control of Concrete Mixtures," 13th Edition by Portland Cement Association, for assistance in filling out this form.

Submitted by:

Ready Mix Supplier:

Name _____

Address _____

Phone Number _____

Date _____

PART 4 – QUANTITY AND PAYMENT

4.1 QUANTITY AND PAYMENT

- A. The quantity of Cast-In-Place Concrete for which payment will be made, will be a lump sum basis for the items **CONCRETE STEPS, COMPLETE** in the Proposal, which price shall include the cost of excavation, earthwork, concrete, reinforcement, dense graded aggregate, walls, materials, foundations, railings, labor and equipment, and all else necessary and incidental thereto for a complete system as specified herein and as shown on the plans or as directed by the Engineer. Any other bid item relative to the utilization of cast-in-place concrete shall be paid under the respective bid item as indicated on the plans or specifications, under the same terms and conditions.

END OF SECTION

DENSE GRADED AGGREGATE (DGA)

DESCRIPTION

This item shall include the placement of ¾” Dense Graded Aggregate (DGA), at the thickness shown on the plans including all necessary excavation and removal of all earth, rock, boulders, brick, stone and concrete masonry, including small structures and other materials encountered. It shall also include all necessary transportation, grading, placement and disposal of material in accordance with all Client, Local, State, and Federal regulations.

MATERIALS

The 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.

METHODS OF CONSTRUCTION

Excavation and backfill of the Dense Graded Aggregate shall be in accordance with Division 200 – Earthwork; of the NJDOT Standard Specifications.

QUANTITY AND PAYMENT

Payment will be made per square yard for the pay item **DENSE GRADED AGGREGATE 4” THICK** included within the proposal. The cost shall include all materials, labor, equipment and all else necessary to complete the work as directed by the Engineer.

--END OF SECTION--

HOT MIX ASPHALT SURFACE COURSE MIX 9.5M64

DESCRIPTION

Hot Mix Asphalt Surface Course shall be Mix HMA 9.5M 64, constructed in two lifts, and conforming to the lines and grades and at the thickness after compaction, as shown on the Contract Drawings. This surface course shall be installed on the dense graded aggregate base course, in accordance with the Contract Documents.

MATERIALS

The bituminous materials for Mix HMA 9.5M 64 shall consist of asphalt cement. The penetration grade shall be 85/100, conforming to the requirements specified therefore in SubSection 902 – Asphalt; of the NJDOT Standard Specifications unless otherwise directed by the Laboratory. All other materials shall be as shown in the Standard Specifications.

CONSTRUCTION

This article shall be as set forth in the "Standard Specifications", except that the following shall be included into the total price bid.

The Contractor shall be responsible for hiring an independent laboratory, which has been approved by the Engineer, for the purpose of taking pavement cores. These cores shall be tested to determine the conformance of the materials with the Specifications. Tests will be made for composition, air voids, and thickness.

The Contractor shall supply the Engineer with two (2) copies of all results.

QUANTITY AND PAYMENT

The quantity for which payment will be made, will be the actual tonnage delivered and used.

In computing the tonnage, proven truck weights shall govern. The net weight mixture delivered in each truckload shall be determined in the following manner.

Each truckload of material delivered shall be weighed by a certified weigh master, on certified scales approved by the Division of Weights and Measures, Department of Law and Public Safety. The weigh master shall furnish to the truck driver duplicate weight slips showing the gross, tare and net weight. To each weight slip shall be affixed his signature and official seal or approved commissioned stamp attesting that he is a duly constituted weigh master. One of these delivery slips shall be furnished to the Engineer's Representative on the project. No material will be accepted unless accompanied by such a delivery slip, which shall be completely legible and clearly indicate the title of the project for which delivery is intended.

The Engineer shall deduct the weight of all material lost, wasted, damaged or rejected, or laid in excess of the Engineer's direction or contrary to the Specifications, in determining the quantity for payment.

Payment for Hot Mix Asphalt, Mix HMA 9.5M 64 will be made for the quantity as above determined, at the price bid for **HOT MIX ASPHALT Surface Course, Mix 9.5M 64, 1.5” THICK, 2” THICK** in the Proposal, which shall include the cost of bituminous concrete, dense graded aggregate, tack coat, all materials, labor, equipment, testing of materials and all else necessary to complete the surface course as shown on the plans or as directed by the Engineer.

--END OF SECTION—

HOT MIX ASPHALT BASE COURSE MIX 9.5M64

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Hot Mix Asphalt Base Course shall be Mix 19M64, at the 6” thickness after compaction, as shown on the construction drawings. This work shall consist of the furnishing and placing of a 6” thick bituminous stabilized base course on the prescribed surfaces, locations, in accordance with the Plans, Details and Specifications.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. The composition of the Hot Mix Asphalt Mix 19M64 Course shall be coarse aggregate, fine aggregate, mineral filler and asphalt cement. These shall be as shown in the Standard Specifications, except that the materials shall conform to the requirements as shown for "Stone Mix". All reference to gravel mix is deleted.

PART 3 – EXECUTION

3.1 CONSTRUCTION

- A. After spreading and strike off, and while hot, each course shall be compacted thoroughly and uniformly by rolling. The rolling shall be done with a three-wheel ten (10) ton roller until the mixture is thoroughly compacted to the satisfaction of Neglia Engineering Associates.
- B. A tack coat shall be applied to any one or more layers of the Hot Mix Asphalt Mix 19M64, if in the opinion of the Engineer such layer or layers become coated with dust, dirt, or other foreign material sufficiently to prevent a good bond between the layers of Base Course or between the completed Base Course and Surface Course.

PART 4 – QUANTITY AND PAYMENT

4.1 QUANTITY AND PAYMENT

- A. The quantity of Hot Mix Asphalt Base Course for which payment will be made will be on a tonnage basis for the item **HMA BASE COURSE, 19M64, 4” THICK** in the **BASE BID** and **ALTERNATE BID** Proposal, which the price shall include the cost of any and all material, labor and equipment and all else necessary and incidental thereto.
- B. No specific payment will be made for Hot Mix Asphalt Base Course, 4” Thick, Mix 19M64, associated with concrete curb construction and drainage improvements, and the cost thereof shall be included in the prices bid for the

various items within the bid proposal which price shall include the cost of any and all material, labor and equipment and all else necessary and incidental thereto.

--END OF SECTION—

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 is shown for information purposes only. The contractor shall not be responsible for the furnishing and installation of the turf and associated striping, but shall be responsible to prepare the surface to finish grade for turf installation by others.** 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

Items A, B, F, G, and H must be submitted with the bid.

- A. Product Data: For each type of product indicated. Includes product cut-sheets proving compliance with this specification..
- B. 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 being proposed for this project.
 - 2. Infill mix in accordance with product specifications.
- C. 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).
- D. 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).
- E. 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.
 - d. 3rd party ASTM testing proving compliance with this specification.
- F. Manufacturer Certificates: Certified list of two (2) existing installations of a long pile synthetic turf and sand/rubber infill system with a nylon or polypropylene or polyethylene thatch layer in the last three years, including Owner Representative and telephone number, attesting compliance with quality assurance information. All must be located within the continental United States.
- G. Qualification Data: The turf contractor/manufacturer must have 100 full-sized sand/rubber infill 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.
- H. 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.
- I. 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.

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 manufacturer shall be of national reputation with systems that have been in 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 five (5) fields of tufted polyethylene fiber with a secondary nylon or polypropylene or polyethylene thatch layer tufted through a porous secondary backing with silica sand & SBR rubber infill.
- 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 eight (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 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 not be accepted. 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 \$7 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

“Not Used” – The phrase means no manufacturer is specified. Bidders are directed to provide a manufacturer which meets the specification requirements for the material.

2.2 MATERIALS

- A. Synthetic Turf System: A complete synthetic turf system consisting of a minimum of 2" 100% polyethylene with a combination of extruded spined monofilament & slit-film polyethylene fiber and shorter texturized nylon or polypropylene or polyethylene monofilament thatch fiber tufted to a minimum two -part woven backing primary backing. The spined monofilament shall be a minimum 10,000 denier. The fiber shall be specifically designed to virtually eliminate abrasion.
- B. The tufted fiber shall not weight less than 60 ounces per square yard. The tufted rows of fibers are to be spaced no more than ½” apart. The tufted carpet shall consist of both spined monofilament & slit-film polyethylene fibers and texturized monofilament thatch fiber.
- C. The carpets' primary backing shall be a minimum of 6.5 oz/sy thick and coated with a secondary backing of polyurethane at a minimum application rate of 22 oz/sy. Non-perforated carpet shall not be accepted.
- D. The carpet shall be delivered in 15' 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.
 1. 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.
 2. The pile surface shall be suitable for both temporary and permanent line markings using acrylic paint, as per the manufacturer's recommendations.
 3. All synthetic turf seams shall be glued.

2.3 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.

2.4 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. Polyethylene Yarn Denier (minimum)	10,000
2. Texturized Yarn Denier (minimum)	4,200
3. Pile Height (nominal)	2”
4. Pile Ribbon Face Weight	60 oz/sy
5. Tufting Gauge	1/2” maximum
6. Primary Backing Weight	6.5 oz/sy
7. Secondary Backing Weight	22oz/sy
8. Total System Weight	86 oz/sy
9. Tuft Bind	>9 lbs
10. Carpet Percolation Rate	>30 in/hr
11. Grab Tear Strength	>200 lbs/force

2.4 INFILL MATERIAL

- A. Infill particles shall be recycled granulates SBR rubber, free of belting fabric and/or wire, with a minimum fill height necessary to achieve the required shock absorbing properties and silica sand. Manufacturer shall provide a cross section indicating fill materials with specific system dimensions of materials to be used with a minimum of three and a half (3.5) pounds per square foot of rubber and a minimum of two and a half (2.5) pounds per square foot of silica sand.
- B. Infill materials: Infill materials are comprised of a base layer of silica sand (minimum of three and a half (3.5) pounds per square foot) and a top layer of SBR rubber (minimum of two and a half (2.5) pounds per square foot) placed on top of the synthetic turf backing and dressed between the synthetic surface fibers.

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 perimeter of the field shall be firmly secured to the edge anchors for the life of the warranty and in accordance to project details.
- 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 nylon 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 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.

3.3 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.

3.4 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 – QUANTITY AND PAYMENT

QUANTITY AND PAYMENT

The furnishing and installation of the Synthetic Turf will be performed by others. The Contractor is responsible to prepare the base material and header curb in preparation for others to install the turf.

-- END OF SECTION--

SYNTHETIC TURF BASE

DESCRIPTION

Furnish all labor, materials, tools and equipment necessary to install, in place, aggregate base, drainage and fabric for the synthetic turf as indicated on the plans and as specified herein. The installation of all new materials shall be performed in strict accordance with the manufacturer's written installation instructions, and in accordance with all approved shop drawings.

MATERIALS

The system shall consist of a vertical draining base consisting of the following:

GEOTEXTILE FABRIC

The entire field shall be underlain directly on subgrade by a continuous non-woven geotextile fabric, as manufactured by Tencate Mirafi, Mirafi 140N, approved or equal.

UNDERDRAIN SYSTEM

An underdrain system shall be installed as indicated on the plans and in accordance with all shop drawings. The underdrain system shall be connected to a perimeter drain as indicated on the plans.

POROUS STONE BASE

The 10" stone base shall consist of a large base stone and a porous "choking" finish aggregate material. The large stone base layer shall consist of a blended mix of clean, washed, No. 3 and No. 2 Crushed Stone or 3/4" clean stone as per turf manufacturer's recommendation (8" thick layer). The aggregate "choking" material shall consist of clean, washed, No. 1 Crushed Stone (2" thick layer). All stone must be approved in writing by the turf installer / supplier and must conform to the following gradations:

% PASSING		
<u>SIEVES</u>	<u>BASE STONE</u>	<u>FINISHING STONE</u>
3" or 75mm		
2" or 50mm	100	
1½" or 38mm	90-100	
1" or 25mm	75-100	
¾ or 19mm	65-95	
½" or 12.5mm	55-85	100
3/8" or 9.5mm	40-75	85-100
¼" or 6.3mm	25-65	75-100
US #4 or 4.75mm	15-60	60-90
US #8 or 2.36mm	0-40	35-75
US #16 or 1.18mm	0-20	10-55
US #30 or 600mm	0-7	0-40
US #60 or 250mm	0-5	0-15
US #100 or 150mm	0-3	0-8
US #200 or 75mm	0-2	0-2

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 > 500 in/hr (3.5×10^{-1} cm/sec)
Permeability of finishing stone > 20 in/hr (1.4×10^{-2} cm/sec)
Porosity of both stones $> 25\%$
(When stone is saturated and compacted to 95% Proctor.)

Depending on the type of rock present in the crushed stone mix, other mechanical characteristics might be necessary for approval

“Dx” is the size of the sieve (in mm) that lets pass x% of the stone. For example, D₆₀ is the size of the sieve that lets 60% of the stone pass. These sizes, for calculation purposes, may be obtained by interpolation on a semi-log graph of the sieve analysis.

CONSTRUCTION

All topsoil, organic, and non-compactable materials shall be removed. The sub-grade slope shall be between 0.5% to 1% from the center of the field to the sidelines. The base installer shall strictly adhere to the installation procedures outlined under this section. Any variance from these requirements must be approved in writing by the manufacturer's representative, and submitted to the Engineer, verifying that the changes do not in any way affect the warranty. The turf manufacturer and turf installer must accept the aggregate base prior to the installation of the synthetic grass system. The surface tolerance shall not exceed 1/4 inch over 10 feet when measured in any direction. Laser grading shall be utilized. The soil bed must be compacted in both directions to attain the specified compaction rate which is generally 95% standard Proctor.

The 8” crushed stone shall be laid without damaging the soil bed. If the required compacted depth of the base course exceeds 8”, the base shall be constructed in 2 or more layers or lifts of approximate equal thickness. Each layer shall be compacted in both directions to attain the specified compaction rate. The finished crushed stone base shall be sloped 0.5% from the center longitudinal axis towards the sidelines or as specified. The finished crushed stone base surface of the leveling course shall not vary from the specified grade by more than 1/4 inch over 10 feet when measured in any direction.

The final grade aggregate layer shall not be more than 2” thick. The final grade material shall be sloped 1.5% from the center longitudinal axis towards the sidelines unless otherwise specified. The final grade shall be compacted in both directions according to the specifications. Survey to be performed and submitted by Contractor within one week of completion of stone layer.

Contractor to make new grade adjustment immediately thereafter.

QUANTITY AND PAYMENT

Synthetic Turf Base will not be measured under a separate item. Quantity and Payment for this item, and all costs related thereto, shall be included in the square yard price bid for **SYNTHETIC TURF FIELD PREPARATION, UNDERDRAINS AND STONE (LAYERS, AND GEOTEXTILE FABRIC)** in the Proposal.

-- END OF SECTION --

TURF EDGE

DESCRIPTION

This item shall include the construction of 12" x 12" Concrete Curb and 12" high, variable height turf curb with attached nailer around the outside of the synthetic turf field, the attachment of the synthetic turf to the curb, 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 curb. 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.

MATERIALS

Class B concrete shall be used throughout.

CONSTRUCTION

Excavation and backfill shall conform to the requirements of NJDOT Specifications Section 202 - Excavation. 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.

Curbs shall be constructed in accordance with Section 607 – Curbs of the NJDOT specifications.

QUANTITY AND PAYMENT

Turf Edge shall be measured under a separate item. Quantity and Payment for this item, and all costs related thereto, shall be included in the linear foot price bid for PERIMETER TURF CURB (12"x12", FLUSH) and PERIMETER TURF CURB (12" WIDE, HEIGHT VARIES) in the Proposal.

-- END OF SECTION --

FIELD NETTING

PART 1 – GENERAL

1.1 DESCRIPTION

- A. This item shall include all labor, material and equipment for furnishing and the complete installation of sports field barrier netting, posts, sleeves and anchors, including all hardware, in accordance with the manufacturer's installation specifications. It shall include the construction of footings and foundations as required along the boundary of the Football/Soccer/Lacrosse field. 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.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Base: Model #BSS420 as manufactured by:

Sportsfield Specialties
41155 NY-10
Dehli, NY 13753
PH: (607) 746 - 8911
Or Approved Equal;

PART 3 – EXECUTION

3.1 METHODS OF CONSTRUCTION

- A. The contractor shall install the system in accordance with manufacturer's specifications. Netting shall be sized to comply with Lacrosse. The contractor shall submit shop drawings and designs, signed and sealed by a licensed professional, proving that the system is structurally sound and will withstand wind, ice, snow and other loads appropriate to this area including ice loads and wind loads together.
- B. Netting panel above the proposed 10 foot high, 10 foot wide double swing gates shall be installed to allow the netting system to be laterally moved along a top cable.
- C. Barrier netting systems shall be installed with ground kit sleeves and turf caps for removability.

PART 4 – QUANTITY AND PAYMENT

4.1 QUANTITY AND PAYMENT

- A. The quantities of Field Netting, for which payment will be made, will be the actual linear footage constructed in accordance with the Contract Plans, or as directed by the Engineer.
 - a. Payment for Field Netting will be made for the linear footage actually constructed, measured at the unit prices bid for the items **FIELD NETTING, 20' HIGH**
- B. in the Proposal, which shall include the furnishing of the net, posts, sleeves, footings, anchors, foundations and all materials, labor and equipment and all else necessary therefore and incidental thereto.
- C. The quantities of netting, for which payment will be made, will be the actual linear footage of fence constructed and installed in accordance with the Contract Plans, or as directed by the Engineer. Payment will be made at the price per linear foot bid for the following items:
 - a. **FIELD NETTING, 20' HIGH**
in the Proposals, which shall include the furnishing of all materials, foundations, labor and equipment and all else necessary therefore and incidental thereto.
- D. Excavation and backfill will not be measured as a separate item and must be included in the unit price for this item. If and where sawcutting is required, this must also be included in this item.

END OF SECTION

BLACK VINYL COATED CHAIN LINK FENCE

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Chain Link Fence shall include the furnishing of materials and the erection of Black Vinyl Coated Chain Link Fence, varying sized Swing Gates w/ Hardware in accordance with the Contract Plans, Specifications, and the direction of the Engineer.

PART 2 – PRODUCTS

2.1 MATERIALS

A. POSTS, RAILS, AND BRACES

All Structural and Roll-Formed shapes shall conform to provisions of ASTM A123 for galvanized coating. All tubular members shall comply with provisions of ASTM A120, Schedule 40, for weight and coating.

1. END, CORNER AND PULL POST

Fence - Up to and Including 12'-0" in Height: 3.00" O.D., Schedule 40 Pipe, with a minimum bending strength of 381 lbs.

2. LINE POSTS (10'-0" MAXIMUM SPACING)

Fabric - Up to 8'-0" in Height: "C" Section, Standard Roll-Formed, 2.50" O.D., Schedule 40 Pipe, with minimum bending strength of 117 lbs.

Fabric over 8'-0" in Height: "C" Section, Heavy Roll-form, 2.50" O.D., Schedule 40 Pipe, with minimum bending strength of 201 lbs.

3. GATE POSTS

Gate Leaves - Up to and Including 6'-0" Wide: Roll-Formed Section (2.50" O.D., Schedule 40 Pipe.)

Gate Leaves over 6'-0" and up to and Including 13'-0" wide: 2.50" O.D., Schedule 40 Pipe.

4. TOP RAIL & BOTTOM RAIL

1 5/8" O.D., Schedule 40 Pipe, with minimum bending strength of 202 lbs. Furnish in manufacturer's standard lengths of approximately 21'-0" with couplings approximately 6" long for each joint; one (1) coupling in each five (5) shall have expansion spring. Provide means for attaching top rail securely to each gate, corner, pull and end posts. Top rail shall form continuous brace from end-to-end to each run of fence.

5. POST BRACING ASSEMBLY

Shall match top rail. Brace rail assembly shall be complete with 3/8" diameter rod and adjustable take-up.

B. CHAIN-LINK FABRIC

One piece fabric widths for fences up to 12'-0" anti-climb mesh, #9 gauge, as indicated on Contract drawings. Fence Fabric shall be coated with Black PVC or polyolefin elastomer coating, 7 mil thickness minimum, thermally fused.

1. SELVAGE EDGES

Fabric in heights of 60" and under shall be knuckled at both selvages. Fabric 72" and over shall be knuckled at bottom selvage and twisted and barbed at top.

2. FINISHES

Black Vinyl Coated conforming to ASTM F 668 Class 2b fused and adhered.

C. ACCESSORIES

All accessories shall be black vinyl coated.

1. STRETCHER BARS

(For tubular end, corner, pull or gate posts only)

One piece lengths equal to full height of fabric with a minimum cross-section of 1" x 3/4". Provide one stretcher bar for each gate and end post, and two for each corner and pull post.

2. STRETCHER BAR BANDS

Heavy pressed steel, spaced not over 15" O.C. to secure stretcher bars to tubular end, corner pull and gate post.

PART 3 – QUANTITY AND PAYMENT

3.1 QUANTITY AND PAYMENT

A. The quantities of Field Netting, for which payment will be made, will be the actual linear footage constructed in accordance with the Contract Plans, or as directed by the Engineer.

b. Payment for Field Netting will be made for the linear footage actually constructed, measured at the unit prices bid for the items **FIELD NETTING, 10' HIGH, WITH 10' CHAIN-LINK FENCE, BLACK, VINYL-COATED** in the Proposal, which shall include the furnishing of the net, posts, sleeves, footings, anchors, foundations and all materials, labor and equipment and all else necessary therefore and incidental thereto.

- B. The quantities of netting, for which payment will be made, will be the actual linear footage of fence constructed and installed in accordance with the Contract Plans, or as directed by the Engineer. Payment will be made at the price per linear foot bid for the following items:
- a. **FIELD NETTING, 10' HIGH, WITH 10' CHAIN-LINK FENCE, BLACK, VINYL-COATED** in the Proposals, which shall include the furnishing of all materials, foundations, labor and equipment and all else necessary therefore and incidental thereto.
- C. Excavation and backfill will not be measured as a separate item and must be included in the unit price for this item. If and where sawcutting is required, this must also be included in this item.

--END OF SECTION--

WATER FOUNTAIN WITH HOSE BIB

PART 1 – GENERAL

1.1 DESCRIPTION

- A. This item shall include all labor, material and equipment for furnishing and the complete installation of the 400 series drinking fountain model #440SM. It shall include the construction of footings and foundations as required along the boundary of the soccer/lacrosse field. 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. This item is under Section 9, California Proposition 6 and the Federal Safe Drinking Water Act.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Base: Model #400SM as manufactured by:

Most Dependable Fountains Inc.
5705 Commander Drive
Arlington, Tennessee 38002
PH: (901) 867 - 0039
Or Approved Equal;

- B. Standard Pedestal or Stainless Steel Pedestal:

One piece weld construction with MDF standard 304 schedule 10 stainless steel.

- C. Receptor Bowl:

18 gauge electro-polished stainless steel bowl. Bowl overlaps pedestal, preventing build-up of residue in visual drinking area. Optional stainless steel Bowl Strainer recommended for areas with sand.

- D. Bubble Head:

Stainless steel anti-squirt head (weighing a pound and a half) mounted with a lock nut and washer to prevent tampering. Lock nut pin holds bubbler in locked position to prevent twisting or turning. The MDF bubbler head has a unique design that features a stead.

E. Push Bar:

304 stainless steel with circumference exceeding 8.6". Mushroom style push bar overlaps and prevents sand and other objects from sticking push bar in the ON position. Stainless steel bubbler housing standard. Self closing valve requires less than 5 lbs to operate.

F. Control Valve:

Self closing valve requires less than 5 lbs to operate. Non-cartridge O-ring valve delivers steady stream of water through an adjustable valve. This valve design is to operate and function at 30 to 80 PSI. Ideal operating pressure is 60 PSI.

G. Water Supply (Lead Free):

Maintenance free reinforced nylobraid tubing that is NSF-61 certified. **This tubing is not plastic.** It is supplied with a 1/2" MIP threaded inlet with stainless steel strainer. Union fittings at every connection. Supply line stops above grade.

H. Drain:

1 1/2" schedule 40 PVC pipe. Drain line stops above grade.

PART 3 – EXECUTION

3.1 FINISH, ACCESS, AND INSTALLATION

- A. Oven baked powder coat. Choice of colors are: green, blue, black, red, yellow, orange, and white. Textured color choices: emerald, sapphire, pyrite, text-black, burgundy, gold vein, copper and sandstone. Stainless steel models are powder coated for added
- B. Working parts accessible through bowl of fountain for easy service. Supply and waste connections are through the above grade access door. All access plates, brackets, vandal resistant bolts and screws are stainless steel.
- C. Surface Mount installation, is designed to be anchored on top of an existing surface (concrete, etc.) with anchor bolts through a mounting plate that is welded to the fountain. Surface Mount Fountains provide an access door with vandal resistant stainless steel screws. Surface mount carrier recommended for all surface mount installations. Access door standard on all pedestal fountains.

PART 4 – QUANTITY AND PAYMENT

4.1 QUANTITY AND PAYMENT

- A. Payment for Water Fountain with Hose Bib will be made for the units actually constructed, measured at the unit prices bid for the items **WATER FOUNTAIN WITH HOSE BIB, COMPLETE** in the Proposal, which shall include the furnishing the net, posts, sleeves, footings, anchors, foundations and all materials, labor and equipment and all else necessary therefore and incidental thereto.

END OF SECTION

PORTABLE PLAYER BENCH

PART ONE - GENERAL

1.1 DESCRIPTION

Portable Player Bench shall include all materials and labor necessary for the furnishing and installation of the above noted portable player shelter and bench as shown on the Plans or as directed by the Engineer.

PART TWO - MATERIALS

2.1 PRODUCTS

Portable Player Bench:
National Rec 15' (Seats 10) Aluminum Player Bench w/ Shelf, Lightweight and maintenance free, all aluminum, or approved equal, as Manufactured by National Recreation Systems Inc, 1300-d Airport North Office Park, Fort Wayne, Indiana 46825, (800-568-9064) or approved equal, to be approved by Union County and Engineer prior to ordering.

Benches shall be aluminum.

PART THREE – EXECUTION

3.1 METHODS OF CONSTRUCTION

Installation and assembly shall be according to manufacturer's specifications, the plans and as directed by the Engineer.

Color to be selected by Union County.

QUANTITY AND PAYMENT

Quantity and Payment for Portable Player Bench will be made for the actual portable shelter and bench units actually constructed in accordance with the Contract Documents at the unit price bid for the items "**PORTABLE PLAYER BENCH**," in the Proposal, which shall cover the cost of all labor, tools, equipment and materials necessary therefore and incidental thereto or as directed by the Engineer.

--END OF SECTION--

BLEACHERS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Design and fabrication of Non-Elevated aluminum angle frame bleachers.

QUALITY ASSURANCE

A. Manufacturer: Park Warehouse LLC.

5301 N Federal Hwy Suite 140 – Boca Raton FL 33487; **or approved equal.**

B. Manufacturer Qualifications: Manufacturer must have a minimum of ten years experience in the design and manufacture of bleachers.

C. Welders must conform to AWS standards.

D. Source Quality Control: Mill Test Certification.

E. Codes and Standards: 2009 International Building Code / ICC 300 2007.

1.2 WARRANTY

A. It is vital that you verify that you have received the correct product, count the number of pieces being delivered, and inspect for damages prior to signing this document. No claims for incorrect or missing merchandise can be made unless it is recorded on this delivery receipt. Park Warehouse LLC cannot be responsible for shipments not inspected by the customer at time of delivery. Damage, error, and shortage claims must be reported within 48 hours of delivery. Once you report a claim, you should keep all packaging and paperwork until the inspection process is completed. If you have a camera (preferably digital) at hand, please take a photograph of the damage. Our freight carriers and manufacturers will work expediently with us to replace or repair any damaged product. Photographs and the appropriate documentation will streamline the process.

B. Your complete satisfaction with Park Warehouse is very important to us. We will accept returns of unused products in their original containers up to 30 days from shipping date subject to the following terms and conditions: You will be responsible for ALL shipping charges, to and from site. **ALL SALES ARE FINAL FOR ALL CONCRETE AND ALUMINUM PRODUCTS.** Concrete and aluminum products are NOT eligible for returns.

1.3 PRODUCT LIABILITY INSURANCE

A. Product liability insurance is carried for the life of the product in the amount of \$ 2,000,000.

1.4 ENGINEERING

- A. Engineering certifications and calculations by a Registered Professional Engineer will be provided upon request.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURER

- A. Park Warehouse LLC

2.2 DESIGN

- A. Applicable Codes: INTERNATIONAL BUILDING CODE (IBC), 2009 EDITION / ICC 300 2007

- B. Design Loads:

1. Live Loads: Uniform loading - Structure = 100 psf
Uniform loading - Seat and Foot plank = 120 plf
2. Sway Loads: Perpendicular to seats = 10 plf
Parallel to seats = 24 plf
3. Guardrail Loads: Uniform vertical load = 100 plf
Uniform horizontal load = 50 plf
Concentrated horizontal load = 200 pounds
4. *Wind Loads: Basic design wind speed = 150 mph (exposure "B")

*Note: Bleacher must be anchored to reinforced concrete pad to meet wind loads above.

2.3 NON-ELEVATED ANGLE FRAME BLEACHERS

- A. Quantity and Size: Shall consist of
-1 unit 3 rows high x 21'-0" long. Net seating capacity per unit 417 + 6 HC (excluding aisles, based on 18" per seat).
- B. Framework: Prefabricated aluminum angle spaced at 6' - 0" intervals joined by means of aluminum angle cross bracing.
- C. Shop connections: Welded to meet AWS standards and local code requirement.
- D. Joint Sleeve Assembly: Internal splices, where required shall be two per joint, and shall penetrate the joint a minimum of 8" in each direction and be riveted at one end only to allow for contraction and expansion.
- E. Rise and Depth Dimensions: 6" vertical rise and 24" tread depth, Seat height is 10-1/2" above its respective tread.

- F. Seats: Nominal 2" x 12" anodized aluminum with anodized end caps.
- G. Treads: Nominal two (2) 2" x 10" mill finish aluminum with anodized end caps on rows 2 & up.
- H. Risers: Nominal two (2) 1" x 6" mill finish aluminum with mill finish end caps on top row.
 Nominal 1" x 6" mill finish aluminum with end caps on all other rows.
- I. Aisles: Aisle footboards shall be of aluminum alloy 6063-T6 and be of mill finish with contrasting aisle markings. Three aisle stiffener angles shall be used to strengthen the aisle step. There shall be 1 aisle(s) 54" wide.
- J. Aisle Handrail: Anodized aluminum pipe with intermediate rail.
- K. Guardrail: Rails shall be anodized aluminum tube with end plugs and elbows where required. All Rails shall be secured to angle supports with galvanized fasteners. Top rails at sides, rear and front shall be 42" above the leading edge of seat or walking surfaces. Rear rail support members shall be aluminum channel, side and front rail support s shall be aluminum angle.
 - 1. Chainlink System: Fencing shall consist of 9 gauge, 2" mesh galvanized chainlink fabric, heavy duty tension bands, tension bars, brace bands, combo rail endcaps, and wire ties.
- L. Handicapped Accessibility: Shall be provided as required by the code listed above.

2.4 MATERIALS / FINISHES

A. Framework:

- 1. Aluminum: Structural fabrication with aluminum alloy 6061-T6 mill finish. Each frame shall be unit-welded, using metal inert gas method, under guidelines by the American Welding Society. After fabrication all steel is hot dipped galvanized to ASTM A-123 specifications. All crossbracing and horizontal bracing shall be aluminum angle 6061-T6 mill finish.

B. Extruded Aluminum:

- 1. Seat planks: Aluminum alloy 6063-T6, clear anodized 204R1, AA-M10C22A31, Class II With a wall thickness nominally .078" for impact and deformation resistance.
- 2. Tread and Riser Planks: Aluminum alloy 6063-T6, mill finish. With a wall thickness nominally .078" for impact and deformation resistance.

3. Guardrail Pipe: 1-5/8 OD schedule 40 aluminum alloy 6105-T5, clear anodized 204R1, AA-M10C22A31, Class II.

C. Accessories:

1. Channel End Caps: Aluminum alloy 6063-T6, clear anodized 204R1, AA-M10C22A31, Class II.
2. Hardware: Bolts and Nuts shall be hot dipped galvanized.
3. Hold Down Clip Assembly: Aluminum alloy 6063-T6 mill finish.
4. Joint Sleeve Assembly: Aluminum alloy 6061-T6, mill finish.

D. Concrete Pad (Reinforced):

1. Concrete Pad: Shall be 6-inch thick reinforced concrete (4,000 PSI). The Contractor shall place concrete pad as shown on the Contract Drawings. The concrete pad shall meet and match the grade and alignment of the concrete walkway at two sides of the concrete pad, the other sides shall meet the elevation of the grass landscape area.
2. Reinforcement: Shall be 6x6 (#8/8 (W2.9/W2.9) wire mesh Reinforcement. Contractor shall position reinforcement at a clear distance of 2.5-inches from the surface (top) of the concrete pad. Contractor shall anchor each bleacher to the concrete pad as per the manufacturer's anchoring requirements.
3. Base: Shall be 6-inch thick dense graded aggregate (DGA), which all methods of construction shall be in accordance with Division 300 – Subbase and Base Courses, of the 2007 New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction, latest revised. Base material shall be compacted to
4. Subgrade: Shall be of suitable subgrade material compacted to 95% maximum density .

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install bleacher unit in accordance with manufacturer written instructions and shop drawings.

PART 4 - QUANTITY AND PAYMENT

- A. Quantity and Payment for Bleachers will be made in accordance with the Contract Documents at the per unit price bid for the item **BLEACHER, 10 ROW, 79'-6" LONG W/ CONCRETE PAD** and **BLEACHER, 10 ROW, 145'-6" LONG W/**

CONCRETE PAD in the Proposal, which shall cover the cost of excavation, backfill, grading, seeding, concrete, reinforcement, formwork, and all labor, tools, equipment and materials necessary therefore and incidental thereto or as directed by the Engineer.

Note: Building codes may vary from site to site. The Contractor shall be responsible for verification of local code requirements.

-- END OF SECTION --

FOOTBALL GOAL

PART 1 - GENERAL

1.1 RELATED WORK

- A. Review Contract Documents for requirements that affect work of this section. Specification sections that directly relate to work of this section include, but are not limited to:

Section 11 6601 – Athletic Equipment - Goal Post Pads

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product literature, technical specifications, and other data required to demonstrate compliance with specified requirements for all athletic equipment.

1.3 QUALITY ASSURANCE

- A. Fabrication and installation of site improvements by experienced craftsmen with excellent record of performance on completed projects of comparable size, scope, and quality.
- B. All materials, hardware and furnishings shall be new, first quality

1.4 FIELD MEASUREMENTS

- A. Contractor shall verify position and layout of all athletic field equipment. Verify dimensions by field measurements.

1.5 SYSTEM DESCRIPTION

- A. Football goals manufactured of All Aluminum with an 8' minimum offset, and 20' minimum length uprights. Assembly number SEF305.

PART 2 - PRODUCTS

2.1 FOOTBALL GOAL POST SOCCER GOAL COMBINATION

- B. Base: Model #GPKR20HS as manufactured by:

Sportsfield Specialties
41155 NY-10
Dehli, NY 13753
PH: (607) 746 - 8911

Or Approved Equal;

C. COMPONENTS

SUMMARY: Football goals shall be manufactured of all aluminum with an 8' (96") offset, and must meet the following criteria as a minimum.

1. Gooseneck support: fabricated of .25" thickness 6" SCH40 aluminum pipe, 6.625" OD minimum, 8' offset.
2. Crossbar: fabricated of .25" thickness 6" SCH40 aluminum pipe, (6.625 in) OD minimum.
 - a. Length: High School: 23'-4" between uprights.
3. Uprights: fabricated of aluminum tube, 4.0" OD minimum, Length: 20'-0"
4. Installation package consisting of the following components:
 - a. Ground Sleeve: Part # SEF30005, 8" SCH40 steel pipe, 5' long, 10"x10"x0.125" Steel Plate.
 - b. Access frame: fabricated of aluminum. Include cut-outs: fabricated of pressure treated plywood and artificial turf for grass field. Synthetic turf fields to have plywood cutouts wrapped on the job to match carpet.
5. Accessories:
 - a. 4 ea. - Directional wind flags.
 - b. Assembly bolts, nuts and spring (set) pins.
 - c. Soccer Goal and Football upright combination, complete shall include football upright pads, turf cover, and all else necessary.

PART 3 - EXECUTION

3.1 INSTALLATION OF EQUIPMENT

- A. All athletic equipment shall be installed as recommended by manufacturer, and as indicated on the drawings.

PART 4 - QUANTITY AND PAYMENT

- A. Quantity and Payment for Football Goal will be made in accordance with the Contract Documents at the per unit price bid for the item **SOCCER GOAL AND FOOTBALL UPRIGHT COMBINATION, COMPLETE** in the Proposal, which shall cover the cost of excavation, backfill, foundations, sleeves, caps, concrete, appurtenances, and all labor, equipment, and materials necessary therefore and incidental thereto or as directed by the Engineer.

-- END OF SECTION --

ATHLETIC EQUIPMENT – GOAL POST PADS

PART 1 - GENERAL

1.1 RELATED WORK

- A. Review Contract Documents for requirements that affect work of this section. Specification sections that directly relate to work of this section include, but are not limited to:

Football Goal

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product literature, technical specifications, and other data required to demonstrate compliance with specified requirements for all athletic equipment.

1.3 QUALITY ASSURANCE

- A. Fabrication and installation of site improvements by experienced craftsmen with excellent record of performance on completed projects of comparable size, scope, and quality.
- B. All materials, hardware and furnishings shall be new, first quality.

1.4 FIELD MEASUREMENTS

- A. Contractor shall verify position and layout of all athletic field equipment. Verify dimensions by field measurements.

1.5 DESCRIPTION

- A. Goal post pads, 6.0' height, Velcro closure.

PART 2 - PRODUCTS

2.1 GOAL POST PADS

- A. Base: Shall be Model #FB55CG by:

Bison, Inc.
603 L Street
Lincoln, Nebraska 68508
PH: 402-474-3353

or Approved Equal;

B. COMPONENTS

1. 18” thickness split cylindrical urethane foam core
2. Vinyl laminated polyester fabric, 18 oz. / square yard minimum weight.
3. Height of six feet (6.0’) 72”.
4. Full length Velcro closure strip.

C. ACCESSORIES:

1. Custom colors, logo, and lettering are optional.

PART 3 - EXECUTION

3.1 INSTALLATION OF EQUIPMENT

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

PART 4 - QUANTITY AND PAYMENT

- A. Athletic Equipment – Goal Post Pads will not be measured as a separate item. Quantity and Payment for this item, and all costs related thereto, shall be included in the lump sum price bid for the item **SOCCER GOAL AND FOOTBALL UPRIGHT COMBINATION, COMPLETE** in the Proposal.

-- END OF SECTION --

SOCCER GOAL

PART 1 - GENERAL

1.1 RELATED WORK

A. Review 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. Soccer Field Official Corner Flag

1.2 SUBMITTALS

A. Product Data: Submit manufacturer's product literature, technical specifications, and other data required to demonstrate compliance with specified requirements for all athletic equipment.

1.3 QUALITY ASSURANCE

A. Fabrication and installation of site improvements by experienced craftsmen with excellent record of performance on completed projects of comparable size, scope, and quality.

B. All materials, hardware and furnishings shall be new, first quality.

1.4 FIELD MEASUREMENTS

A. Contractor shall verify position and layout of all athletic field equipment. Verify dimensions by field measurements. Contractor shall verify dimension to meet youth size.

1.5 SYSTEM DESCRIPTION

A. Soccer Goals, all aluminum construction, meeting NCAA and NFSHSA specifications.

PART 2 - PRODUCTS

2.1 SOCCER GOALS

A. BASE: Shall be Model #SE700r as supplied by:

SportsEdge
P.O. Box 837
Troutman, NC 28166
P: 800-334-6057

info@sportsedge.com
www.sportsedge.com

Or Approved Equal;

B. COMPONENTS

SUMMARY: Model #SE700R Soccer Goals meeting NCAA and NFHS specifications; shall be all aluminum construction with White powder coated finish and must meet the following criteria as a minimum standard:

1. Frame: 8'H x 24'W x 4'B x 10'D.
 - a. SPECIFIER SELECT:
 - i. 4" Round aluminum tubing #SE700R
 - b. White powder coated finish
2. Backstays:
 - a. 2" O.D. Aluminum Backstays, 0.125" Wall thickness
 - b. White powder coated finish
3. Ground Bar:
 - a. 2" O.D. Aluminum, 0.125" Wall thickness
 - b. White powder coated finish
 - c. Must be adjustable & moveable
4. Net Attachments:
 - a. Crossbar & Uprights: Twist in nylon net clips
 - b. Backstays & Ground bar" Hoop & Loop strap
5. Nets: #SE755 3mm HTTP Nets, 4.0" square mesh.
6. Ground Anchors:
 - a. Natural Grass Field Applications: #SE752 16" Steel Spiral Anchor w/ Lanyards & quick clip attachment (Set of 4)
 - b. Synthetic Turf Field Applications: #SE753 (Set of 4) Heavy Duty Nylon Sand Bags (Holds 40 lbs.)
7. Wheel Kit: #SE751 rear mounted backstay wheel attachment (set of 4), 10" flat free polyurethane Marathon® tire with nylon bearing.

PART 3 - EXECUTION

3.1 INSTALLATION OF EQUIPMENT

- A. All athletic equipment shall be installed as recommended by manufacturer, and as indicated on the drawings.

PART 4 - QUANTITY AND PAYMENT

- A. Quantity and Payment will be made for Soccer Goal in accordance with the Contract Documents at the per unit price for 2 units of the item **SOCCER GOAL, YOUTH, PORTABLE, COMPLETE** in the Proposal, which shall cover the cost of wheel kits, corner flags, anchors, and all labor, tools, equipment, and materials necessary therefore and incidental thereto or as directed by the Engineer.

-- END OF SECTION --

Soccer Field Corner Flag

PART 1 - GENERAL

1.1 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. Soccer Field Corner Flag

1.2 RELATED WORK

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

- 1. Soccer Goal

1.3 REFERENCES

- A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive shall govern.
 - 1. National Federation of State High School Associations (NFSHSA)

1.4 SUBMITTALS

- A. Manufacturer's Product Data
 - 1. Provide manufacturer's product literature, technical specifications and other data prior to actual field installation work for architect or owner's representative review.
- B. Shop Drawings
 - 1. Provide drawings of manufacturer's recommended installation and foundation requirements prior to actual field installation work for architect or owner's representative review.

1.5 QUALITY ASSURANCE

- A. Manufacturer's 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.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Material delivered to the site shall be examined immediately for concealed damage or defects and noted on the carriers deliver receipt. If any damage is discovered after the initial delivery, you have 15 calendar days to notify S. If the damage is reported within 15 days, Kwik Goal, Ltd. Will replace any damaged parts at no charge. If damage is discovered after 15 calendar days, the parts will need to be purchased in full from Kwik Goal, Ltd.
- B. Replacements, if necessary, shall be immediately re-ordered, so as to minimize any conflict with the construction schedule.
- C. Sound materials shall be stored above the ground under protective cover or indoors so as to provide proper protection.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers and product selections named are provided to establish the minimum standard.
- B. BASE: Model: #SG6B1404 Soccer Field Corner Flag as manufactured by:

Sportsfield Specialties
41155 NY-10
Dehli, NY 13753
PH: (607) 746 - 8911
www.kwikgoalspecs.com

Or Approved Equal;

C. COMPONENTS:

- 1. Soccer Field Corner Flag
 - i. Pole fabricated of PVC, 1.05” outside diameter, having the following attributes:
 - a. Length: 60.00”
 - b. Round
 - c. 0.060” wall
 - d. White

- ii. 6B504 – flag fabricated of nylon, having the following attributes:
 - a. Height: 12.25”
 - b. Width: 19.5625”
 - c. 1.3125” pocket open at bottom end only
 - d. Red with white trim

- iii. 6B504 – ground peg, having the following attributes:
 - a. Base
 - 1) Steel
 - 2) 3.00” diameter
 - 3) 0.109” wall steel
 - 4) MIG weld to cup and peg
 - b. Cup
 - 1) Steel
 - 2) Height: 1.50”
 - 3) 1.06” inside diameter
 - 4) Riveted to PVC
 - c. Peg
 - 1) Steel
 - 2) Height: 5.75”
 - 3) 0.375” outside diameter

PART 3 - EXECUTION

3.1 INSTALLATION OF ATHLETIC FIELD EQUIPMENT

- A. All athletic field equipment shall be installed as recommended with manufacturer’s written directions, included with product or found at www.kwikgoalspecs.com, and as indicated on the drawings.

PART 4 - QUANTITY AND PAYMENT

- A. Soccer Field Corner Flag will not be measured as a separate item. Quantity and Payment for this item, and all costs related thereto, shall be included in the bid item **SOCCER FIELD CORNER FLAG, SET OF 4 FOR 1 COMPLETE FIELD** for 2 sets in the Proposal.

-- END OF SECTION --

LACROSSE GOAL

PART 1 - GENERAL

1.1 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.

1.2 RELATED WORK

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

1.3 REFERENCES

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

1. National Collegiate Athletic Association (NCAA)
2. National Federation of State High School Associations (NFHS)
3. International Amateur Athletic Federation (IAAF)

1.4 SUBMITTALS

- A. Manufacturer's Product Data

1. Provide manufacturer's product literature, technical specifications and other data prior to actual field installation work for architect or owner's representative review.

- B. Shop Drawings

2. Provide drawings of manufacturer's recommended installation and foundation requirements prior to actual field installation work for architect or owner's representative review.

1.5 QUALITY ASSURANCE

- A. Manufacturer's 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.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Material delivered to the site shall be examined immediately for concealed damage or defects and noted on the carriers deliver receipt. If any damage is discovered after the initial delivery, you have 15 calendar days to notify Kwik Goal, Ltd. If the damage is reported within 15 days, Kwik Goal, Ltd. Will replace any damaged parts at no charge. If damage is discovered after 15 calendar days, the parts will need to be purchased in full from Kwik Goal, Ltd.
- B. Replacements, if necessary, shall be immediately re-ordered, so as to minimize any conflict with the construction schedule.
- C. Sound materials shall be stored above the ground under protective cover or indoors so as to provide proper protection.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers and product selections named are provided to establish the minimum standard.
- B. BASE: 2E201 Official Lacrosse Goal as manufactured by:

Kwik Goal Ltd.
140 Pacific Drive
Quakertown, PA 18951
P: 800-531-4252
F: 800-778-8869
www.kwikgoalspecs.com

Or Approved Equal;

C. COMPONENTS:

2. 2E201 Official Lacrosse Goal

- iv. 2E201 – crossbar and front posts fabricated of Schedule 10 Steel pipe, 1.90” outside diameter, having the following attributes:
 - a. Height: 72.40”
 - b. Width: 75.80”

- c. Net rail MIG welded
 - d. Round
 - e. 0.109" wall steel
 - f. DuPont powder coated orange

- v. 2E201 – base fabricated of HR Steel, 0.5" x 3" x 91", having the following attributes:
 - a. Length: 91.00"
 - b. Width: 3.00"
 - c. Thickness: 0.5"
 - d. Flat
 - e. DuPont powder coated orange

- vi. 2E201 – connector plate fabricated of 6005 T5 extruded aluminum tube, 0.25" x 4.00".

- vii. Accessories:
 - a. White HTPP Soccer Net
 - 1) 3mm rope thickness
 - 2) 1.5" mesh
 - b. Hardware
 - 1) Zinc Plated Steel

PART 3 - EXECUTION

3.1 INSTALLATION OF ATHLETIC FIELD EQUIPMENT

- A. All athletic field equipment shall be installed as recommended with manufacturer's written directions, included with product or found at www.kwikgoalspecs.com, and as indicated on the drawings.

PART 4 - QUANTITY AND PAYMENT

- B. Quantity and Payment will be made for Lacrosse Goal in accordance with the Contract Documents at the per unit price bid for single goals for the item **PORTABLE LACROSSE GOALS**, in the Proposal, which shall cover the cost of sleeves, appurtenances, and all labor, tools, equipment and materials necessary therefore and incidental thereto or as directed by the Engineer.

-- END OF SECTION --

LANDSCAPING

DESCRIPTION

Landscaping shall consist of the furnishing and planting of all trees, as directed by the Municipality and all incidental work related thereto. It shall consist of the furnishing and planting of up to twenty (20) Pinus Strobus, White Pine 'Fall Fiesta' Sugar Maple, 3-1/2" to 4" Caliper, as shade trees at the locations as directed by the County and/or Engineer. It shall also consist of the furnishing of one (1) 20-Gallon Tree Watering Bag per tree that require refilling once or twice a week; the bags shall be suitable for the specified tree.

The plants shall be guaranteed in accordance with the construction drawings.

MATERIALS

N. J. Department of Transportation Standard Specifications.

Tree watering bags shall be made from heavy-duty, green coated polypropylene that is UV stabilized to last after long hours in the sun.

METHODS OF CONSTRUCTION

N. J. Department of Transportation Standard Specifications.

QUANTITY AND PAYMENT

The quantity of Landscaping for which payment will be made will be all of the various kinds of plant materials listed and planted in accordance with the Plans and Specifications or as directed by the Engineer.

Payment for Landscaping will be made on a lump sum basis for trees planted at the price bid for the item **LANDSCAPE RESTORATION OF EXISTING BUTTER** in the Proposal, which price shall include the cost of furnishing the plants and protection thereof before planting, excavation of holes, planting, mixing and placing backfill material, fertilizing, pruning tops and roots, supporting trees, wrapping, wood chip mulch, furnishing and applying anti-desiccant or fungicide, repairing ground surface, disposal of excess excavated and waste materials, one (1) 20-Gallon Tree Watering Bags per tree, maintenance, replacements, and all else necessary therefore and incidental thereto.

TOPSOILING & HYDROSEEDING

DESCRIPTION

Topsoil obtained from stripping within limits of the project, or furnished from outside the project, shall contain no stones, lumps, roots, or similar objects larger than 2 inches in any dimension, and shall have a pH value of not less than 5.8. When the pH value of the topsoil is less than 5.8, it shall be increased by applying ground limestone at a rate necessary to attain a pH value of 6.5.

Material from the following sources shall not be considered suitable for use as topsoil.

- A. Soils having a pH value less than 4.1
- B. Chemically contaminated soils.
- C. Areas from which the original surface has been stripped and/or covered over, such as borrow pits, open mines, demolition sites, dumps, and sanitary landfills.
- D. Wet excavation.
- E. Manufactured topsoil.

Topsoil furnished from sources outside the limits of the project shall have a minimum organic content of not less than 2.75 percent by weight. When the organic content of the topsoil furnished from sources outside the limits of the project is less than 2.75 percent, it shall be increased by adding peat at a rate necessary to attain this minimum organic content. The organic content of soils shall be determined by the Laboratory using the chromic acid titration method, as described in the United States Department of Agriculture's Circular 757.

The organic content of all topsoil used for planting shall conform to the requirements specified above.

The gradation of the topsoil furnished from sources outside the limits of the project shall be determined by the Laboratory, using the Bouyoucos Hydrometer Analysis conforming to the requirements of current A.A.S.H.O. Designation T88. The gradation of the topsoil shall be within the following ranges:

Sand (1.00 MM to 0.25 MM) 70% to 80%

Silt and Clay (less than .25 MM) 20% to 30%

A percolation rate of 1 inch/Hour to 2 inch/Hour is required after root growth by the sod has been established.

Provide topsoil and hydroseed as shown on the Contract Drawings and as directed by the Engineer.

MATERIALS

The materials to be used for topsoiling shall conform to the appropriate sections as follows:

FertilizerSec. 917.03 and further clarified

Preparation”	within	“Planting	Bed
Ground Limestone	Sec. 917.04 and further clarified		
	within	“Planting	Bed
Preparation”			
Mulch, Straw	Sec. 917.06		
Topsoil	Sec. 917.01 and further clarified herein		
Grass Seed Mixture.....	Hydroseed Lesco 3 Rye		

The hydroseed shall be furnished and delivered premixed. A manufacturer’s certificate of compliance to the specified mixes shall be submitted by the manufacturer

METHODS OF CONSTRUCTION

The topsoil shall be spread over the surface in a uniform layer that will produce the prescribed compacted thickness. When required, ground limestone which has been protected from moisture and is dry and free flowing, shall be evenly spread over the area to be seeded at a rate that will produce a pH value of the soil of 6.5. The area shall then be raked, disked or otherwise worked to incorporate the limestone into the upper 3 to 4 inches of soil to remove stones, roots, debris and other unsuitable material and to form an even surface. Fertilizer shall be applied at the rate of 1200 pounds per acre. The soil shall be in a pliable condition at the time of seeding.

If the quantity of topsoil obtained from stripping, or from storage piles when prescribed, or both, is insufficient for the requirements of the project, the Contractor shall furnish the required additional topsoil from other sources.

The contractor shall hydro-seed only on a calm day. No seeding shall be performed on frozen ground or when the temperature is 32 degrees Fahrenheit or lower. Schedules for fertilizing and seeding must be submitted to Neglia Engineering Associates for approval prior to the work. Hydroseeding shall be done within ten days following soil preparation.

Fertilizer shall be 5-10-5 and shall be applied at a rate of 325 lbs. per acre.

Virgin wood fiber mulch shall be applied at a rate of 1500 lbs. per acre.

ECT tackifier shall be applied at a rate of 5 lbs. per acre.

Hydroseed mix shall be Lesco 3 Rye.

QUANTITY AND PAYMENT

Quantity and Payment for Topsoiling & Hydroseeding will be made in accordance with the Contract Documents at the square yard price bid for the item **TOPSOIL AND HYDROSEED** in the Proposal, which shall cover the cost of planting, landscaping, trees, shrubs, excavating, backfilling, top-dressing, stabilization, seeding, spreading, watering, irrigating, fertilizer, raking, rolling, re-fertilizing, reseeding, and all labor, tools, equipment and materials necessary therefore and incidental thereto or as directed by the Engineer.

-- END OF SECTION --

PLANTING SOIL PREPARATION

DESCRIPTION

Work under this specification shall consist of furnishing the materials identified herein and mixing and installing the completed planting soil mix as specified within specification item Topsoiling and per recommendations of soil laboratory test reports for topsoil and planting soil mix.

DEFINITIONS

- A. Finished Grade: Elevation of finished surface of planting soil.
- B. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.
- C. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill immediately beneath planting soil.

SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Product Certificates: For soil amendments and fertilizers, signed by product manufacturer.
- C. Material Test Reports: For existing surface soil and imported topsoil.

QUALITY ASSURANCE

- A. Soil-Testing Laboratory Qualifications: An independent laboratory recognized by the NJ State Department of Agriculture or as approved by the Landscape Architect, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.
- B. Topsoil Analysis: Furnish soil analysis by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; deleterious material; pH; and mineral and plant-nutrient content of topsoil.
 - 1. Report suitability of topsoil for lawn and plant growth. State recommended quantities of nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory topsoil.

MATERIALS

Topsoil

A. Topsoil: Topsoil shall meet ASTM D 5268, pH range of 5.5 to 7.0, a minimum of 6 percent organic material content; free of stones 1 inch (25 mm) or larger in any dimension and other extraneous materials harmful to plant growth.

1. Topsoil Source:

- a. Reuse surface soil stockpiled on-site. Verify suitability of stockpiled surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.
- b. Supplement with imported topsoil from off-site sources when quantities are insufficient. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches (100 mm) deep; do not obtain from agricultural land, bogs or marshes.

Inorganic Soil Amendments

A. Lime: ASTM C 602, agricultural limestone containing a minimum 80 percent calcium carbonate equivalent and as follows:

1. Provide lime in form of dolomitic limestone.

- A. Sulfur: Granular, biodegradable, containing a minimum of 90 percent sulfur, with a minimum 99 percent passing through No. 6 (3.35-mm) sieve and a maximum 10 percent passing through No. 40 (0.425-mm) sieve.
- B. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.
- C. Aluminum Sulfate: Commercial grade, unadulterated.
- D. Agricultural Gypsum: Finely ground, containing a minimum of 90 percent calcium sulfate.
- E. Sand: Clean, washed, natural or manufactured, free of toxic materials.
- F. Water absorbing polymer, or approved equivalent.

Organic Soil Amendments

A. Transplant Inoculant (for all non-ericaceous trees and shrubs):

1. Mycorrhizal fungi transplant inoculate,
 - a. Form: pre-measured, 3 oz. Packets.

- b. Rate of Application: one (1) packet for each caliper-inch for trees, in accordance with manufacturer's recommendations for shrubs and planting beds.
- B. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8.0; moisture content 35 to 55 percent by weight; 100 percent passing through 1/2-inch (12.5-mm) sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
- 1. Organic Matter Content: 50-60 percent of dry weight.
 - 2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.
- C. Wood Derivatives: Decomposed, nitrogen-treated sawdust, ground bark, or wood waste; of uniform texture, free of chips, stones, sticks, soil, or toxic materials.
- 1. In lieu of decomposed wood derivatives, mix partially decomposed wood derivatives with at least 0.15 lb. (2.4 kg) of ammonium nitrate or 0.25 lb. (4 kg) of ammonium sulfate per cubic foot (cubic meter) of loose sawdust or ground bark.
- A. Manure: Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, and material harmful to plant growth.

Planting Soil Mix

A. Planting Soil Mix:

- 1. Planting Soil Mix: Shrub and groundcover areas (Type 1) and tree planting (Type 2).
 - a. Two parts native soil to one part organic matter and one part topsoil. (2:1:1 ratio)
 - b. Mix in fertilizers in amounts recommended in soil reports from a qualified soil-testing agency.
 - c. Water absorbing polymer and transplant inoculants.

Fertilizer

- A. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 1 percent nitrogen and 10 percent phosphoric acid.
- B. Superphosphate: Commercial, phosphate mixture, soluble; a minimum of 20 percent available phosphoric acid.
- C. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
- 1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.

D. Slow-Release Fertilizer: Granular or pelletized fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.

METHODS OF CONSTRUCTION

Examination

A. Ensure that grading and subbase will provide adequate subsurface drainage prior to placing planting soil mix.

B. Installation constitutes the Contractor's acceptance of existing conditions. If existing conditions are found to be unsatisfactory, contact Landscape Architect for resolution prior to installation.

General Preparation

A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by soil preparation operations.

B. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

Planting Bed Establishment

A. Loosen subgrade of planting beds to a minimum depth of 8 inches for perennial areas and 18 inches for shrub areas or as indicated on drawings. Remove stones larger than 1 inch (25 mm) in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

1. Apply fertilizer directly to subgrade before loosening.
2. Spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil mix to the depth indicated on the plans.
3. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
4. Mix lime with dry soil before mixing fertilizer.
5. Add water absorbing polymer to entire planting area for soil mix types 1, 2 & 3 and thoroughly mix into planting soil per manufacturer's written instructions, at the rate recommended by the manufacturer for this climatic zone and the soil types present on site.
6. Add transplant inoculants to soil mix by either
 - a. Mixing into entire planting area per manufacturer's written instructions, at the manufacturer's recommended rate for planting areas, or

- a. Adding to each shrub, groundcover, and perennial planting pit per the manufacturer's written instructions, at the manufacturer's recommended rate for individual planting pits.
 - 7. Add transplant inoculants to soil mix type 2 by adding to each tree planting pit per the manufacturer's written instructions, at the manufacturer's recommended rate for individual planting pits.
- B. Finish Grading: Grade planting beds to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.
- C. Restore planting beds if eroded or otherwise disturbed after finish grading and before planting.

Clean-up and Protection

- A. Promptly remove soil and debris created by soil preparation work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

QUANTITY AND PAYMENT

- A. Planting Soil Preparation will not be measured as a separate item. Quantity and Payment for this item, and all costs related thereto, shall be included in the square yard price bid for the item TOPSOIL AND HYDROSEED in the Proposal.

-- END OF SECTION --

SEEDING

DESCRIPTION

Seeding shall include furnishing and placing of turf grass seed all newly graded areas on the Contract Drawings or as directed by the Engineer.

SUBMITTALS

Product Data: For each type of product indicated.

Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name and percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of lawns during a calendar year. Submit before expiration of required maintenance periods.

MATERIALS

Seed

Deliver seed in original sealed, labeled, and undamaged containers. Seed shall be fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances

Seed Species: Seed of grass species as follows, with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed. Seed variety shall have endophytes.

Sun and Partial Shade: Proportioned by weight as follows:

- A. 80 percent Turf-type tall fescue (Three (3) varieties of Festuca sp. Such as Pennfine, Falcon, or Rebel).
- B. 10 percent Kentucky bluegrass (Poa pratensis).
- C. 10 percent perennial ryegrass (Lolium perenne).

Topsoil

Topsoil: Shall comply with the topsoil specified in item TOPSOILING

Inorganic Soil Amendments

Inorganic Soil Amendments: Shall comply with the inorganic soil amendments specified in item PLANTING SOIL PREPARATION

Organic Soil Amendments

Organic Soil Amendments: Shall comply with the organic soil amendments specified in item PLANTING SOIL PREPARATION

Fertilizer

Fertilizer: Shall comply with the fertilizer specified in item PLANTING SOIL PREPARATION.

Mulch

Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.

Planting Soil Mix

Planting Soil Mix: Planting soil mix shall conform to item PLANTING SOIL PREPARATION.

CONSTRUCTION METHODS

Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.

A. Spring Planting: March 15 – June 15

B. Fall Planting: August 15 to October 5

Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.

Examine areas to receive lawns and grass for compliance with requirements and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.

Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

Lawn Preparation

Limit lawn subgrade preparation to areas to be planted.

Newly Graded Subgrades: Loosen subgrade to a minimum depth of **6 inches (150 mm)** Remove stones larger than **1 inch (25 mm)** in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

A. Apply fertilizer directly to subgrade before loosening.

B. Thoroughly blend planting soil mix off-site before spreading or spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil mix. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.

Mix lime with dry soil before mixing fertilizer.

Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus **1/2 inch (13 mm)** of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit fine grading to areas that can be planted in the immediate future.

Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

Restore areas if eroded or otherwise disturbed after finish grading and before planting.

Seeding

Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds **5 mph (8 km/h)**. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other. Do not use wet seed or seed that is moldy or otherwise damaged.

Sow seed at the rate recommended by the supplier.

Rake seed lightly into top **1/8 inch (3 mm)** of planting soil mix, roll lightly, and water with fine spray.

Protect seeded areas by spreading straw mulch. Spread uniformly at a minimum rate of **90 lbs. per 1000 square feet** to form a continuous blanket **3/8" depth** over seeded areas. Spread by hand, blower, or other suitable equipment. Anchor straw mulch by crimping into topsoil with suitable mechanical equipment.

Lawn Maintenance

Begin maintenance immediately after each area is planted and continue until acceptable lawn is established, but for not less than 60 days from date of Substantial Completion. When full maintenance period has not elapsed before end of planting season, or if lawn is not fully established, continue maintenance during next planting season.

Maintain and establish lawn by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth lawn. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch. Anchor as required to prevent displacement.

Watering: Schedule watering by hand to prevent wilting, puddling, erosion, and displacement of seed or mulch. Water lawn evenly at a minimum rate of **1 inch (25 mm)** per week.

Mow lawn as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 40 percent of grass height. Remove no more than 40 percent of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height: Mow grass **2 to 3 inches (50 to 75 mm)** high.

Lawn Postfertilization: Apply fertilizer after initial mowing and when grass is dry. Use fertilizer that will provide actual nitrogen of at least **1 lb/1000 sq. ft. (0.45 kg/92.9 sq. m)** to lawn area. Adjust if necessary depending upon amount of fertilizer applied at initial planting.

Satisfactory Lawns

Satisfactory Seeded Lawn: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 95 percent over any 10 sq. ft. (0.92 sq. m) and bare spots not exceeding 2 by 2 inches (25 by 25 mm)]. Reestablish lawns that do not comply with requirements and continue maintenance until lawns are satisfactory.

Cleanup and Protection

Promptly remove soil and debris created by lawn work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

Erect barricades and warning signs as required to protect newly planted areas from traffic. Maintain barricades throughout maintenance period and remove after lawn is established.

Remove erosion-control measures after grass establishment period.

QUANTITY AND PAYMENT

Seeding will not be measured. Quantity and Payment for this item, and all work related thereto, shall be included in the square yard price bid for the item TOPSOIL AND HYDROSEED in the Proposal.

-- END OF SECTION --

FINAL CLEANUP/SITE RESTORATION

DESCRIPTION

Under this item the Contractor shall restore the work site and access area to its original condition including, but not limited to signage, existing monuments, fences, hedges, re-grading, seeding, landscape areas, trees, drainage structures and castings, repair of driveways, (both bituminous and concrete) sidewalks, roadways, curbs, cleaning and removal of stockpiles and equipment, any underground electrical conduit servicing lighting and all else not specifically covered elsewhere in these specifications.

MATERIALS

2007 NJDOT Standard Specifications for Road and Bridge Construction, latest revised.

METHODS OF CONSTRUCTION

The site shall be returned to its original condition. Fences shall be reinstalled with posts in concrete footings in accordance with specifications herein. Hedges shall be reinstalled where possible or replaced in kind and in the same locations as existing. Lawn areas disturbed by Contractor's activities shall be re-graded, hydroseeded and mulched as specified by the Engineer. Temporary safety fence shall be removed and the holes filled to meet finished grade and match the existing/ proposed surface material(s). Cleaning shall include hand brooming of sidewalk and pavement areas. Adjacent structures shall be cleaned, as necessary, by a method approved by the Engineer. Sidewalks shall be replaced with 4-inch thick concrete walk in evenly sized slabs, sawcut where necessary, only to the extent damaged by the construction. Both concrete and bituminous concrete shall be repaired as specified by the Engineer sawcut where necessary, only to the extent damaged by the construction. All construction equipment and stockpiles shall be removed from the site and disposed of by the Contractor in a suitable and timely manner.

QUANTITY AND PAYMENT

Payment for Final Cleanup/Site Restoration will be made at the lump sum price bid for the item **FINAL CLEANUP AND SITE RESTORATION** in the Proposal, which shall cover the cost of sweeping, washing, loading, hauling, removal, disposal, storage, landscaping, seeding, topsoiling, mulch, asphalt, concrete, striping, signage, structures, lighting and appurtenances, utilities and appurtenances, bleachers, drainage, and all labor, tools, equipment and materials necessary therefore and incidental thereto or as directed by the Engineer.

-- END OF SECTION --



PONDEROSA FARM PARK TURF FIELDS

1600 COOPER ROAD (BLOCK 12201, LOTS 27.07 & 28)
TOWNSHIP OF SCOTCH PLAINS, UNION COUNTY, NEW JERSEY

OCTOBER 2018



CONSTRUCTION NOTES:

- THE LOCATIONS OF UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL CONTACT THE RESPECTIVE UTILITY COMPANIES FOR THEIR EXACT LOCATIONS.
- TRENCHES OR AREAS EXCAVATED ARE TO BE BACK FILLED WITH DENSE GRADED AGGREGATE AT THE END OF EACH WORKING DAY AND PAVED AT THE END OF THE WORK WEEK. TRENCHES LEFT OPEN OVERNIGHT ARE NOT PERMITTED.
- THE 2007 NJDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AS AMENDED AND ADDED TO HEREIN, SHALL GOVERN IN THIS CONTRACT AND CONSTRUCTION, SHOULD THE SPECIFICATIONS NOT INCLUDE PARTICULAR CONSTRUCTION ITEMS.
- ANY MATERIAL THAT MAY BE DISTURBED DURING THE REMOVAL AND REPLACEMENT TO EXISTING CURBING AND SIDEWALKS, MUST BE RETURNED TO ITS ORIGINAL CONDITION. THE COST FOR THIS SHALL BE INCLUDED IN THE UNIT PRICE BID IN THE APPROPRIATE PAY ITEM.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAPERING PROPOSED WORK TO MEET EXISTING CONDITIONS IN A UNIFORM MANNER.
- THE CONTRACTOR SHALL RECEIVE ALL THE NECESSARY PERMITS & APPROVALS FROM ALL LOCAL, COUNTY, AND STATE GOVERNING AGENCIES, PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR ANY ASSOCIATED FEES, AND SAME TO BE INCLUDED IN THE VARIOUS BID ITEMS.
- THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE ONE CALL NUMBER (800) 272-1000 FOR MARK OUTS PRIOR TO START OF WORK. THE CONTRACTOR SHALL RECORD AND HAVE THE CONFIRMATION NUMBER ONSITE DURING CONSTRUCTION.
- THE CONTRACTOR SHALL VISIT THE SITE TO PERFORM HIS OWN DUE DILIGENCE, AND FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS PRIOR TO SUBMITTING HIS BID. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER.

GENERAL NOTES:

EXISTING CONDITIONS

- IT IS THE CONTRACTORS RESPONSIBILITY TO ASCERTAIN ALL UTILITY LOCATIONS PRIOR TO BIDDING.

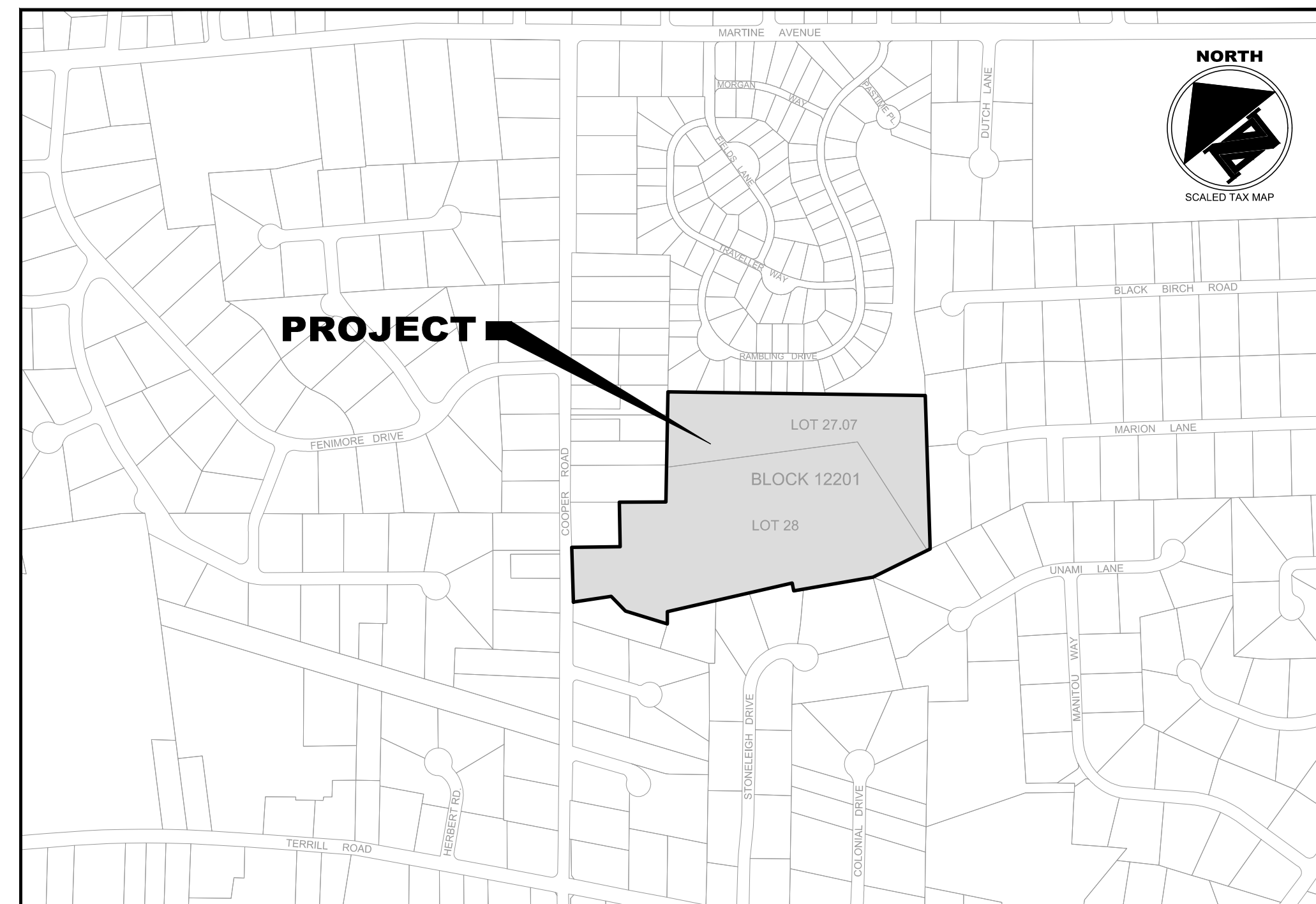
PROPOSED WORK

- MAINTENANCE AND PROTECTION OF PEDESTRIAN TRAFFIC CONTROL MUST CONFORM TO NJDOT AND MUTCD STANDARDS ALONG WITH THE REQUIREMENTS OF THE MUNICIPALITY. POLICE TRAFFIC DIRECTORS SHALL BE COORDINATED WITH THE MUNICIPALITY.
- ALL STORM DRAINS AND CATCH BASINS WILL BE PROTECTED AT ALL TIMES. ANY DAMAGE WILL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
- ALL FILL REMOVED FROM THE TRENCH IS TO BE DISCARDED BY THE CONTRACTOR IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS. THE TRENCH MUST BE OF SUITABLE WIDTH TO OBTAIN PROPER MECHANICAL COMPACTING, NOT TO EXCEED 4 FEET IN WIDTH. ALL BACKFILL IS TO BE DONE WITH QUARRY PROCESS STONE, TYPE I-5 OR DGA FOR THE FULL DEPTH OF THE TRENCH. FIRST LIFT OF FILL, TWELVE (12) INCHES ABOVE THE PIPE, SHALL BE COMPACTED USING A JUMPING JACK TAMPER. SUCCESSIVE LIFTS SHALL BE COMPACTED BY MECHANICAL MEANS SUCH AS TAMPING, VIBRATING OR ROLLING. A VIBRA PLATE TAMPER IS NOT ACCEPTABLE.
- SEE SITE PLAN FOR PROPOSED FINISHED SURFACE TREATMENTS.
- THE CONTRACTOR SHALL KEEP THE TRENCH FILLED TO THE LEVEL OF THE SURROUNDING GRADES UNTIL SETTLEMENT HAS CEASED.
- TRAFFIC CONTROL DEVICES AS NECESSARY TO BE INCLUDED IN THE VARIOUS BID ITEMS.
- TRAFFIC CONTROL TO BE IN ACCORDANCE WITH MUNICIPAL, UNION COUNTY, AND MUTCD STANDARDS.

RESTRICTIONS AND REQUIREMENTS

- WORKING HOURS SHALL BE IN ACCORDANCE WITH UNION COUNTY REQUIREMENTS.
- THE CONTRACTOR SHALL FURNISH AN APPROVED CONSTRUCTION SCHEDULE PRIOR TO MOBILIZATION.
- THE CONTRACTOR SHALL MAINTAIN ACCESS FOR EMERGENCY VEHICLES.
- THE CONTRACTOR SHALL PROVIDE PRE-CONSTRUCTION PHOTOGRAPHS OR VIDEOTAPES OF THE PROJECT AREA. PHOTOGRAPHS SHALL BE LABELED WITH DESCRIPTORS AND CORRESPONDING PHOTO LOCATION MAP AND MOUNTED INTO BINDERS. AUDIO SHALL BE USED ON VIDEOTAPES TO DESIGNATE THE PHOTO LOCATIONS AND DESCRIPTORS. THE CONTRACTOR SHALL PROVIDE THE PHOTOGRAPHS OR VIDEOTAPES PRIOR TO MOBILIZATION.
- THE CONTRACTOR SHALL OBSERVE ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES ILLUSTRATED WITHIN THESE CONSTRUCTION PLANS. A STAGING AREA HAS NOT BEEN DETERMINED FOR USE BY THE CONTRACTOR AT THE TIME THESE CONTRACT DRAWINGS WERE DRAWN. WHEN A STAGING AREA IS DETERMINED, THE CONTRACTOR SHALL CALL THE UNION COUNTY SOIL CONSERVATION DISTRICT (908-231-7000) FOR INSPECTION OF THE STAGING AREA. THE CONTRACTOR IS RESPONSIBLE TO IMPLEMENT ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AT THE STAGING AREA PRIOR TO INSPECTION. ALL COSTS TO BE INCLUDED IN THE VARIOUS ITEMS BID.

ALL WORK STATED IN THESE NOTES, PLANS AND SPECIFICATIONS SHALL BE INCLUDED IN THE VARIOUS BID ITEMS UNLESS SPECIFICALLY ITEMIZED ON THE PROPOSAL SHEET. THE CONTRACTOR IS NOT LIMITED TO THE REQUIREMENTS WITHIN THESE NOTES AND IS STRONGLY ADVISED TO REVIEW THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.



KEY MAP (N.T.S.)
SOURCE: REF. TAX MAPS

SHEET INDEX

DRAWING NO.	DRAWING TITLE
1.00	COVER SHEET
2.00	EXISTING CONDITIONS & DEMOLITION PLAN
3.00	SITE PLAN
3.01	DIMENSIONAL CONTROL PLAN
4.00	GRADING PLAN
4.01	ON-SITE SOIL DISPOSAL LOCATION PLAN
5.00	DRAINAGE PLAN
6.00	SOIL EROSION & SEDIMENT CONTROL PLAN
7.00	SOIL EROSION & SEDIMENT CONTROL DETAILS
8.00 - 8.07	CONSTRUCTION DETAILS I - VIII

EDWARD T. OATMAN
COUNTY MANAGER

BOARD OF CHOSEN FREEHOLDERS

SERGIO GRANADOS
CHAIR

BETTE JANE KOWALSKI
VICE CHAIR

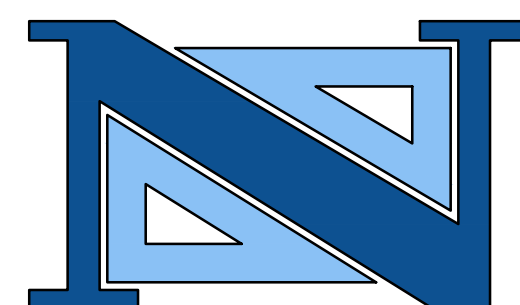
BRUCE H. BERGEN
ANGEL G. ESTRADA
ANGELA R. GARRETSON
CHRISTOPHER HUDAK
MOHAMED S. JALLOH
ALEXANDER MIRABELLA
REBECCA WILLIAMS



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NO.	DATE	DESCRIPTION			



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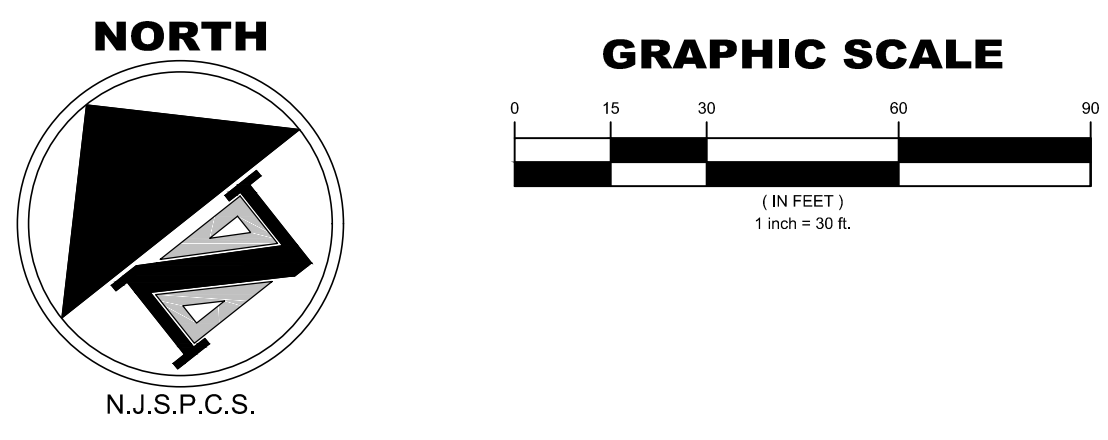
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N.J. LICENSE NO. 38604
PROFESSIONAL PLANNER
N.J. LICENSE NO. 33LU00569800

COVER SHEET
PONDEROSA FARM PARK - TURF FIELDS
BLOCK 12201 - LOTS 27.07 & 28
TOWNSHIP OF SCOTCH PLAINS
UNION COUNTY
NEW JERSEY

DRAWN BY: J.S./M.E.W. CHECKED BY: E.M.J. PROJECT NO: UNIOCTY17.016 SHEET NO: 1.00
DESIGNED BY: J.S. SCALE: N.T.S. FIELD BOOK NO: DATE: OCTOBER 5, 2018



PLANT SCHEDULE

Key	Quan.	Unit	Botanical Name	Common Name	Size	Spacing	Root
Trees							
PS	20	Unit	Pinus strobus	Eastern White Pine	6'-7'	as shown	B&B

SITE PLAN LEGEND

- TURF CURB LINE (SEE PLANS FOR HEIGHTS)
- PROPOSED ATHLETIC FIELD SAFETY ZONE
- FIELD NETTING (SEE PLAN FOR HEIGHTS)
- FIELD NETTING & FENCE (SEE PLAN FOR HEIGHTS)
- EXISTING WATER LINE (APPROXIMATE LOCATION)
- EXISTING WATER VALVE (APPROX. LOCATION)
- PROPOSED WATER LINE
- PROPOSED WATER VALVE
- PROPOSED WATER FOUNTAIN AND HOSE BIB
- PROPOSED WATER LINE CAP
- PROPOSED EVERGREEN TREE
- ARTIFICIAL TURF FIELD (PREP ONLY - TURF N.I.C.)
- ASPHALT WALKING PATH PAVEMENT

SYNTHETIC TURF FIELD NOTES:

- FURNISHING AND INSTALLATION OF SYNTHETIC TURF AND ASSOCIATED FIELD STRIPING TO BE DONE BY OTHERS AND IS NOT IN CONTRACT (N.I.C.).
- CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH THE OWNER, ENGINEER, TURF MANUFACTURER AND TURF INSTALLER REGARDING ALL DIMENSIONS FOR THE PROPOSED CONSTRUCTION.
- CONTRACTOR SHALL NOTIFY THE OWNER AND/OR ENGINEER ONE (1) MONTH IN ADVANCE OF COMPLETION OF THE SYNTHETIC TURF FIELD BASE PREPARATION SO THAT THE TURF INSTALLATION WORK MAY BE PROPERLY SCHEDULED.
- CONTRACTOR SHALL NOTE THAT UPON COMPLETION OF THE SYNTHETIC TURF FIELD BASE PREPARATION, A SURVEY WILL BE PERFORMED (BY OTHERS) TO VERIFY THE LOCATION AND ELEVATION OF THE VARIOUS SITE IMPROVEMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE ANY AND ALL ADJUSTMENTS IMMEDIATELY THEREAFTER.

GENERAL CONSTRUCTION NOTES:

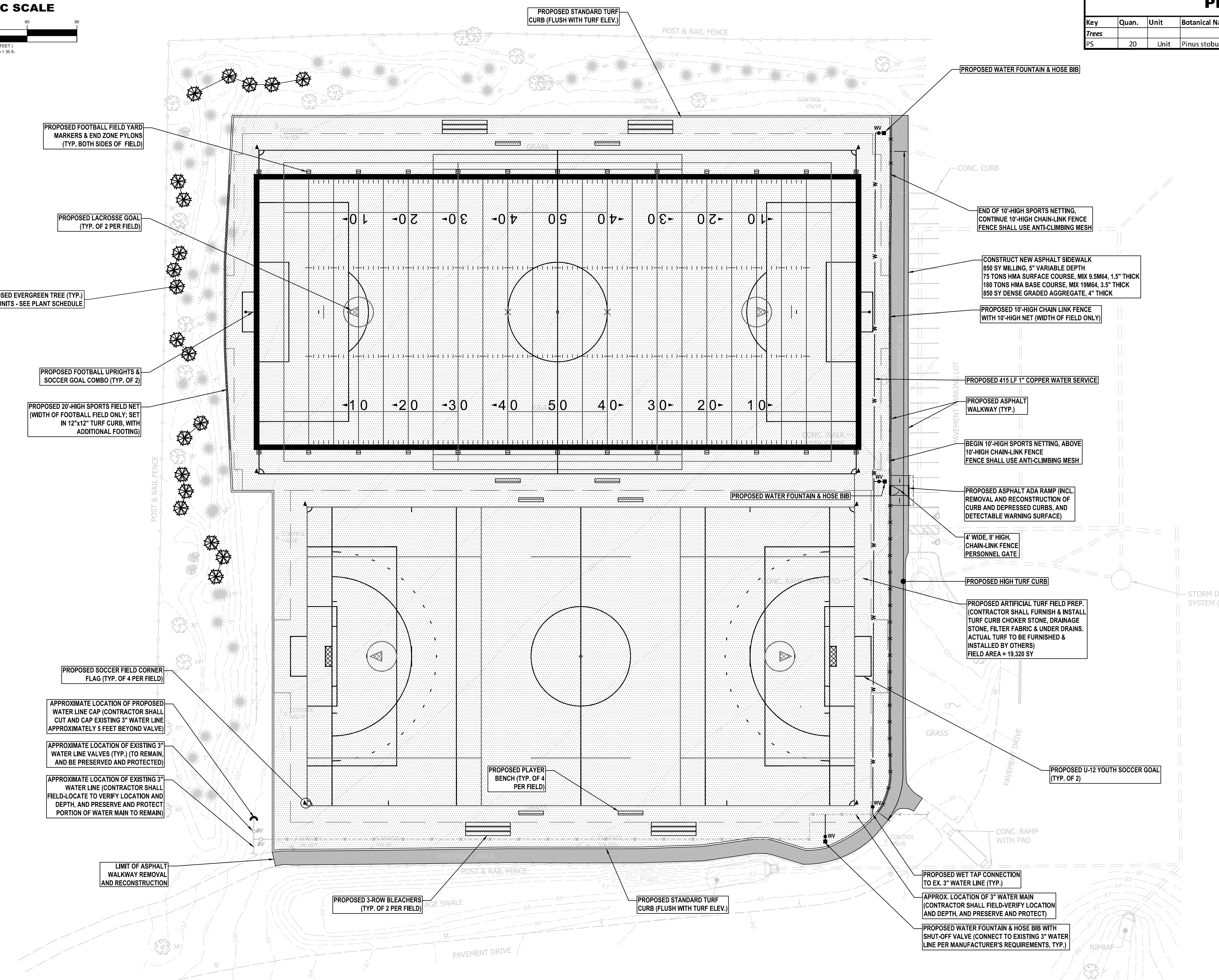
- CONTRACTOR SHALL PROVIDE SOIL EROSION CONTROL MEASURES AS PER NJAC 7:22-10.11, INCLUDING, BUT NOT LIMITED TO, SILT FENCE, INLET FILTER, STOCKPILE, STABILIZED CONSTRUCTION ENTRANCE, ETC. THE CONTRACTOR SHALL OBSERVE ALL APPLICABLE REGULATIONS AND MAINTAIN ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE SOMERSET-JUNION SOIL CONSERVATION DISTRICT.
- WORKING HOURS MUST BE KEPT BETWEEN THE HOURS OF 8:00 AM AND 4:00 PM. ALL WORKING HOURS TO BE CONFIRMED PRIOR TO BIDDING AND AT PRE-CONSTRUCTION MEETING.
- THE CONTRACTOR SHALL FURNISH AN APPROVED CONSTRUCTION SCHEDULE PRIOR TO MOBILIZATION. WORK WILL NOT BEGIN UNTIL THE SCHEDULE IS APPROVED BY ALL PARTIES.
- THE CONTRACTOR SHALL PROVIDE DIGITAL PHOTOGRAPHS OF THE PROJECT AREAS. IMAGES SHALL BE TAKEN AT ALL PROPERTY FRONTAGES. THE CONTRACTOR SHALL PROVIDE THE PHOTOGRAPHS TO UNION COUNTY PRIOR TO MOBILIZATION.
- ALL WORK NOTED IN THESE NOTES, PLANS, AND SPECIFICATIONS SHALL BE INCLUDED IN THE VARIOUS BID ITEMS UNLESS SPECIFICALLY ITEMIZED ON THE PROPOSAL SHEET. THE CONTRACTOR IS NOT LIMITED TO THE REQUIREMENTS WITHIN THESE NOTES AND IS STRONGLY ADVISED TO REVIEW THE SPECIFICATIONS FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL KEEP ALL SOIL MATERIAL ON-SITE, UNLESS OTHERWISE DIRECTED BY THE ENGINEER AND/OR UNION COUNTY.

GRADING, DRAINAGE, AND UTILITY NOTES:

- THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING A POSITIVE DRAINAGE PATTERN ACROSS ALL FIELDS OF PLAY AND ADJACENT LAWN AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE AND RECONSTRUCT ANY AREA THAT HAS BEEN CONSTRUCTED IN A MANNER WHICH NEGATIVELY IMPACTS THE EXISTING DRAINAGE PATTERN.

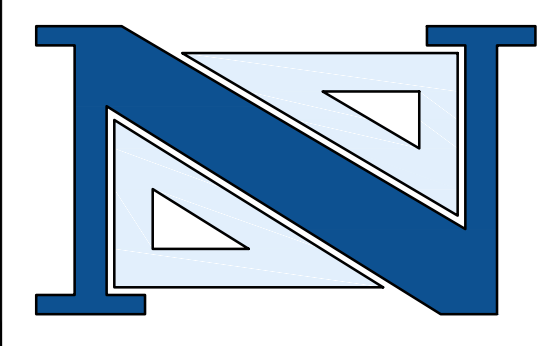
ATHLETIC FIELD & EQUIPMENT NOTES:

- ALL PROPOSED SPORTS FACILITIES AND EQUIPMENT FOR THIS PROJECT SITE MUST MEET ALL REQUIREMENTS OUTLINED IN THE NATIONAL FEDERATION OF STATE HIGH SCHOOL ASSOCIATION'S REQUIREMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MEET ALL OF THESE REQUIREMENTS. ANY DISCREPANCIES SHALL BE SUBMITTED TO THE PROJECT ENGINEER PRIOR TO CONSTRUCTION.



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NO.	DATE	DESCRIPTION			



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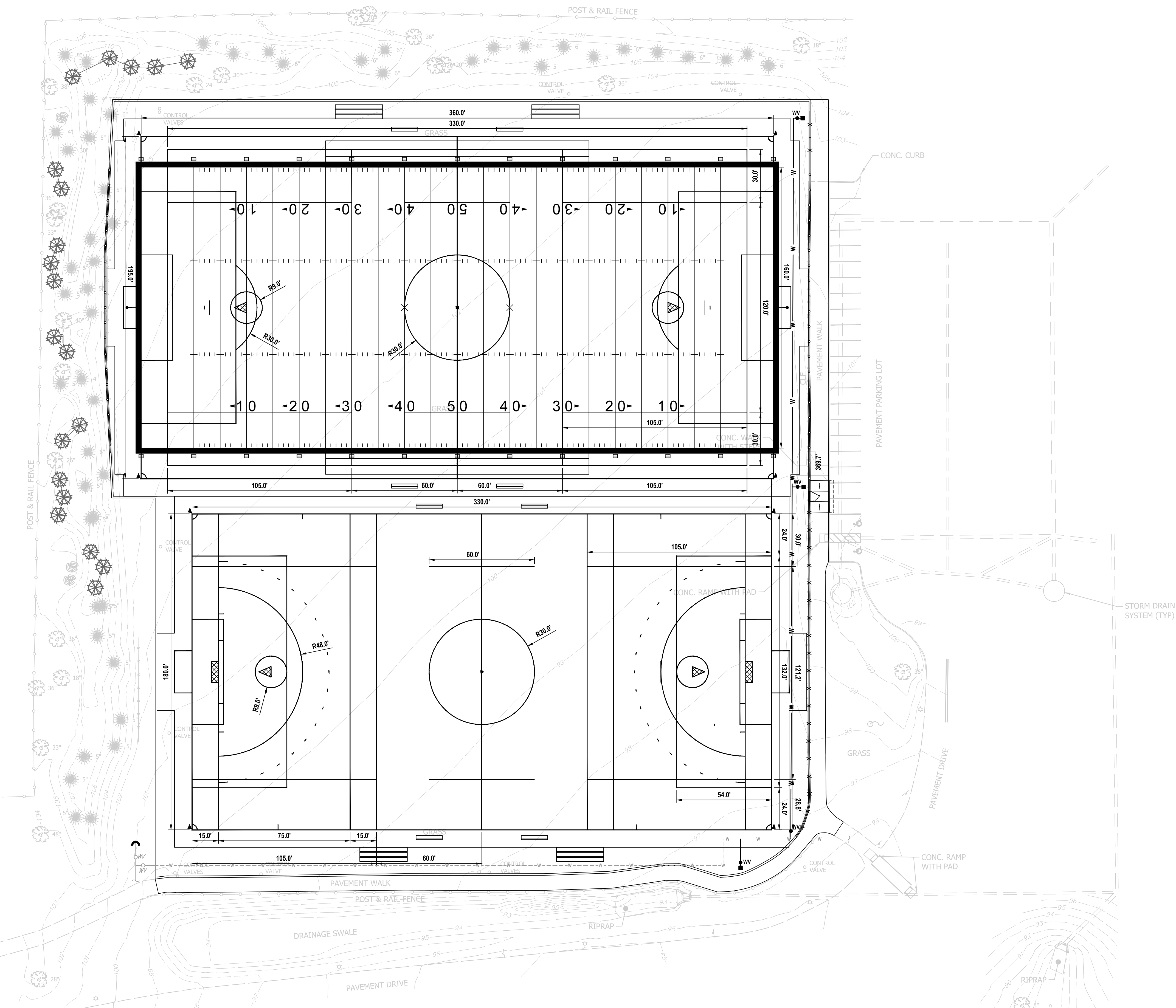
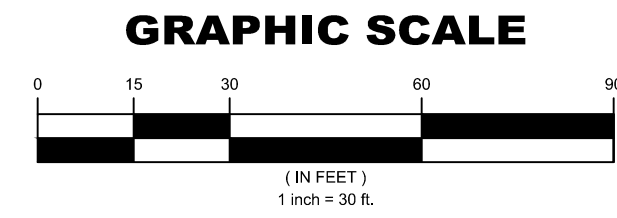
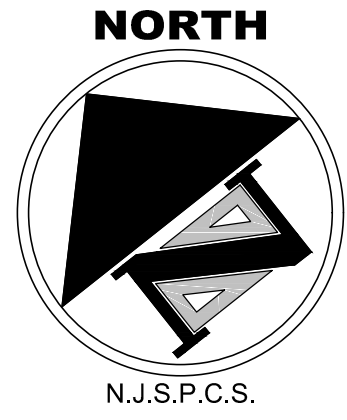
PROFESSIONAL LAND SURVEYOR
N.J. LICENSE NO. 38604

PROFESSIONAL PLANNER
N.J. LICENSE NO. 33LU00569800

SITE PLAN
PONDEROSA FARM PARK - TURF FIELDS
BLOCK 12201 - LOTS 27.07 & 28
TOWNSHIP OF SCOTCH PLAINS
UNION COUNTY
NEW JERSEY

PROJECT NO: UNIOCTY17.016
SHEET NO: 3.00
DATE: OCTOBER 5, 2018

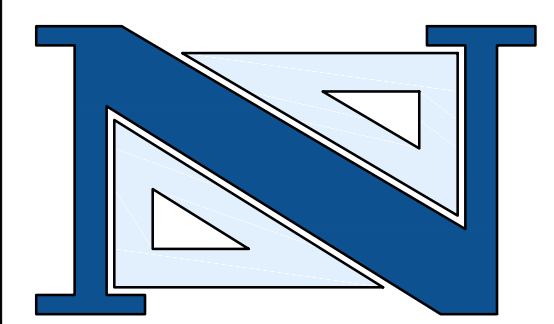
DRAWN BY: J.S./M.E.W. CHECKED BY: E.M.J.
DESIGNED BY: J.S. SCALE: 1" = 30'
FIELD BOOK NO: PAGE: PAGE:



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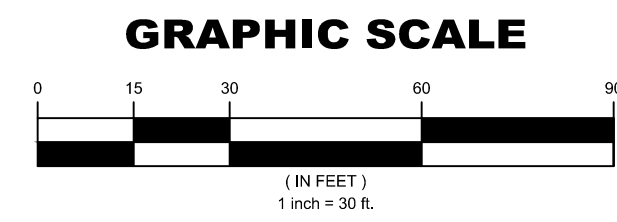
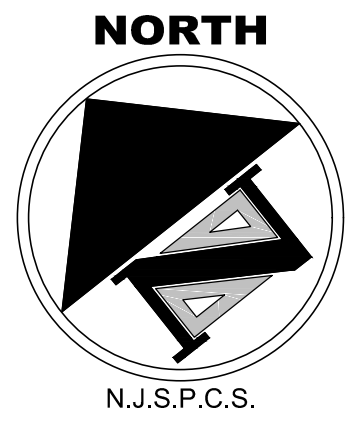
MICHAEL J. NEGLIA, P.E., P.L.S., P.P.
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PROFESSIONAL LAND SURVEYOR
N.J. LICENSE NO. 38604

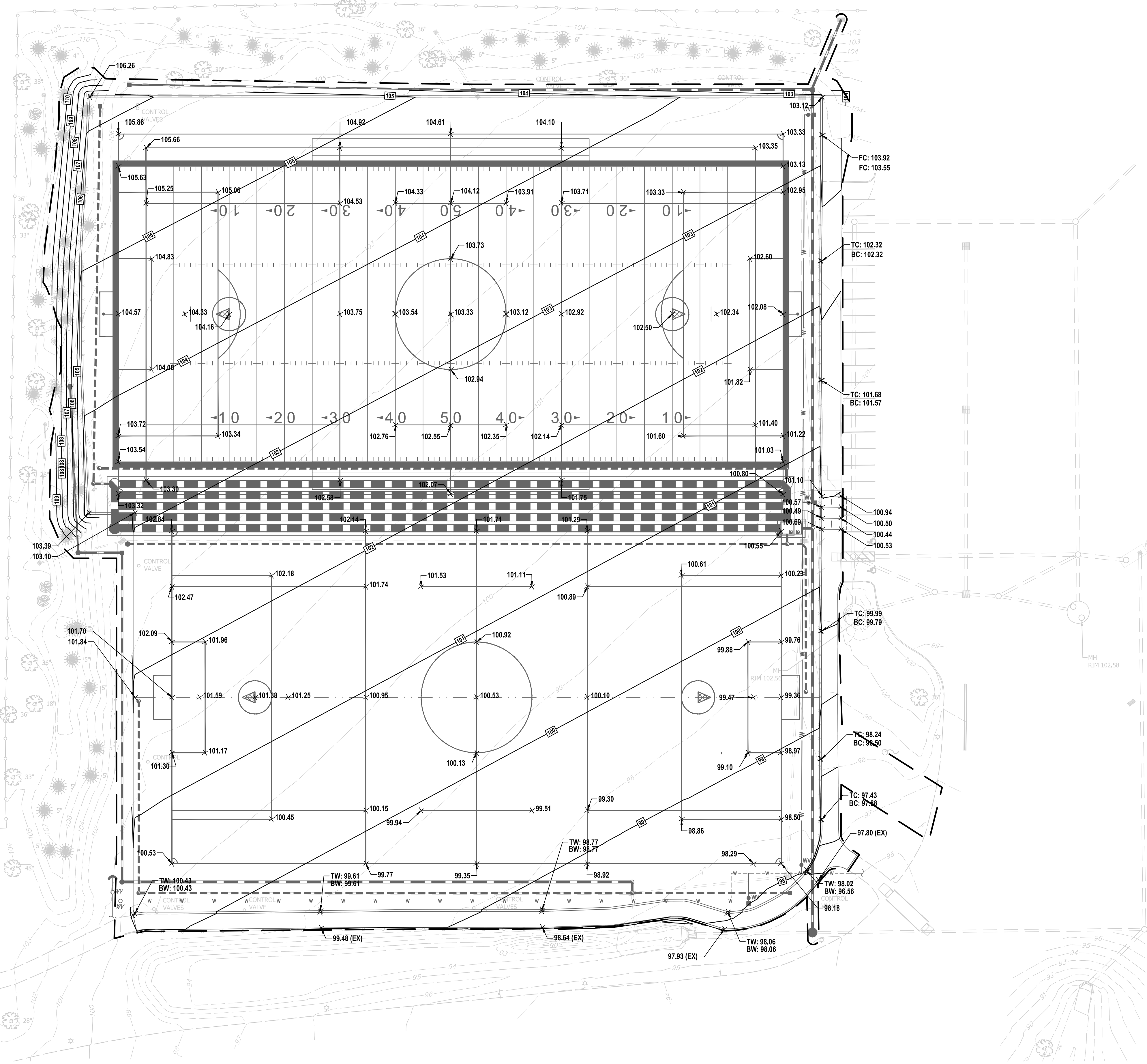
PROFESSIONAL PLANNER
N.J. LICENSE NO. 33U00569800

DIMENSIONAL CONTROL PLAN
PONDEROSA FARM PARK - TURF FIELDS
BLOCK 12201 - LOTS 27.07 & 28
TOWNSHIP OF SCOTCH PLAINS
UNION COUNTY
NEW JERSEY

DRAWN BY: J.S./M.E.W. CHECKED BY: E.M.J. PROJECT NO: UNIOCTY17.016 SHEET NO: 3.01
DESIGNED BY: J.S. SCALE: 1" = 30' DATE: OCTOBER 5, 2018



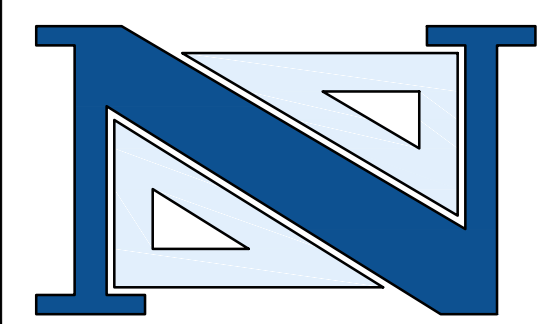
GRADING LEGEND	
— [117] —	PROPOSED CONTOUR LINE
× [TC 123.50] [BC 123.00]	TOP / BOTTOM OF CURB ELEVATION
× [27.50]	SPOT ELEVATION
---	PROPOSED LIMIT OF DISTURBANCE



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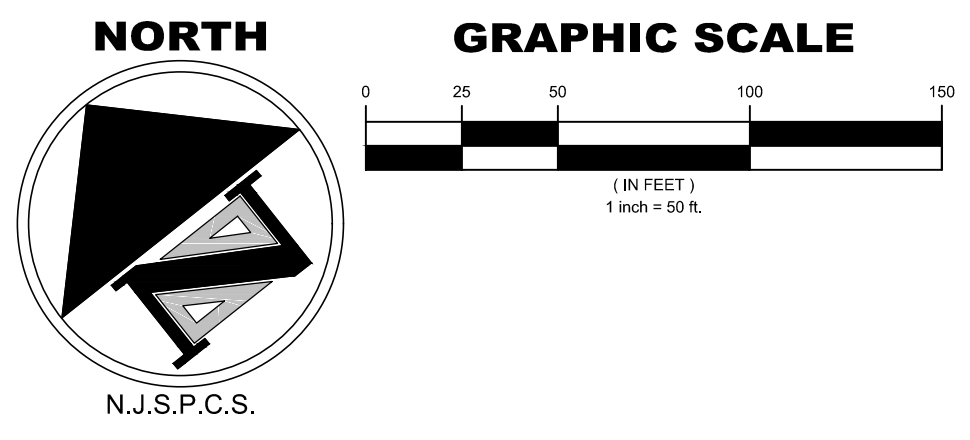
MICHAEL J. NEGLIA, P.E., P.L.S., P.P.
PROFESSIONAL ENGINEER
N.J. LICENSE NO. 38604

PROFESSIONAL LAND SURVEYOR
N.J. LICENSE NO. 38604

PROFESSIONAL PLANNER
N.J. LICENSE NO. 33U00569800

GRADING PLAN
PONDEROSA FARM PARK - TURF FIELDS
BLOCK 12201 - LOTS 27.07 & 28
TOWNSHIP OF SCOTCH PLAINS
UNION COUNTY
NEW JERSEY

DRAWN BY: J.S./M.E.W. CHECKED BY: E.M.J. PROJECT NO: UNIOCTY17.016 SHEET NO: 4.00
DESIGNED BY: J.S. SCALE: 1" = 30' FIELD BOOK NO: DATE: OCTOBER 5, 2018 PAGE:



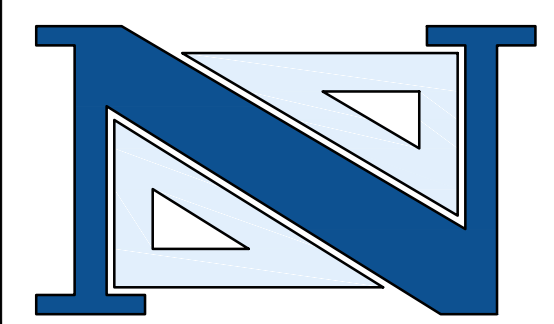
MAIN PROJECT WORK AREA

APPROXIMATE LOCATION OF ON-SITE SOIL DISPOSAL AREA (TO BE COORDINATED WITH ENGINEER AND UNION COUNTY). CONTRACTOR SHALL GRADE STOCKPILE AND STABILIZE SURFACE IN ACCORDANCE WITH APPLICABLE SOIL EROSION AND SEDIMENT CONTROL STANDARDS.

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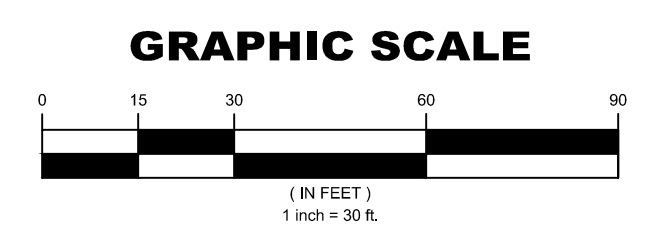
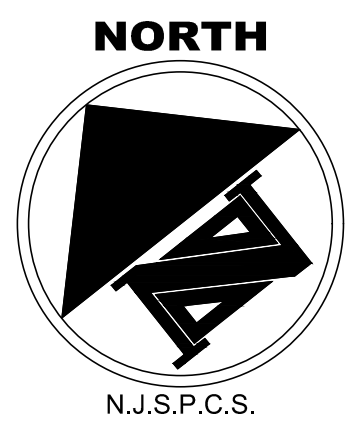
PROFESSIONAL LAND SURVEYOR
N.J. LICENSE NO. 38604

PROFESSIONAL PLANNER
N.J. LICENSE NO. 33LI00569800

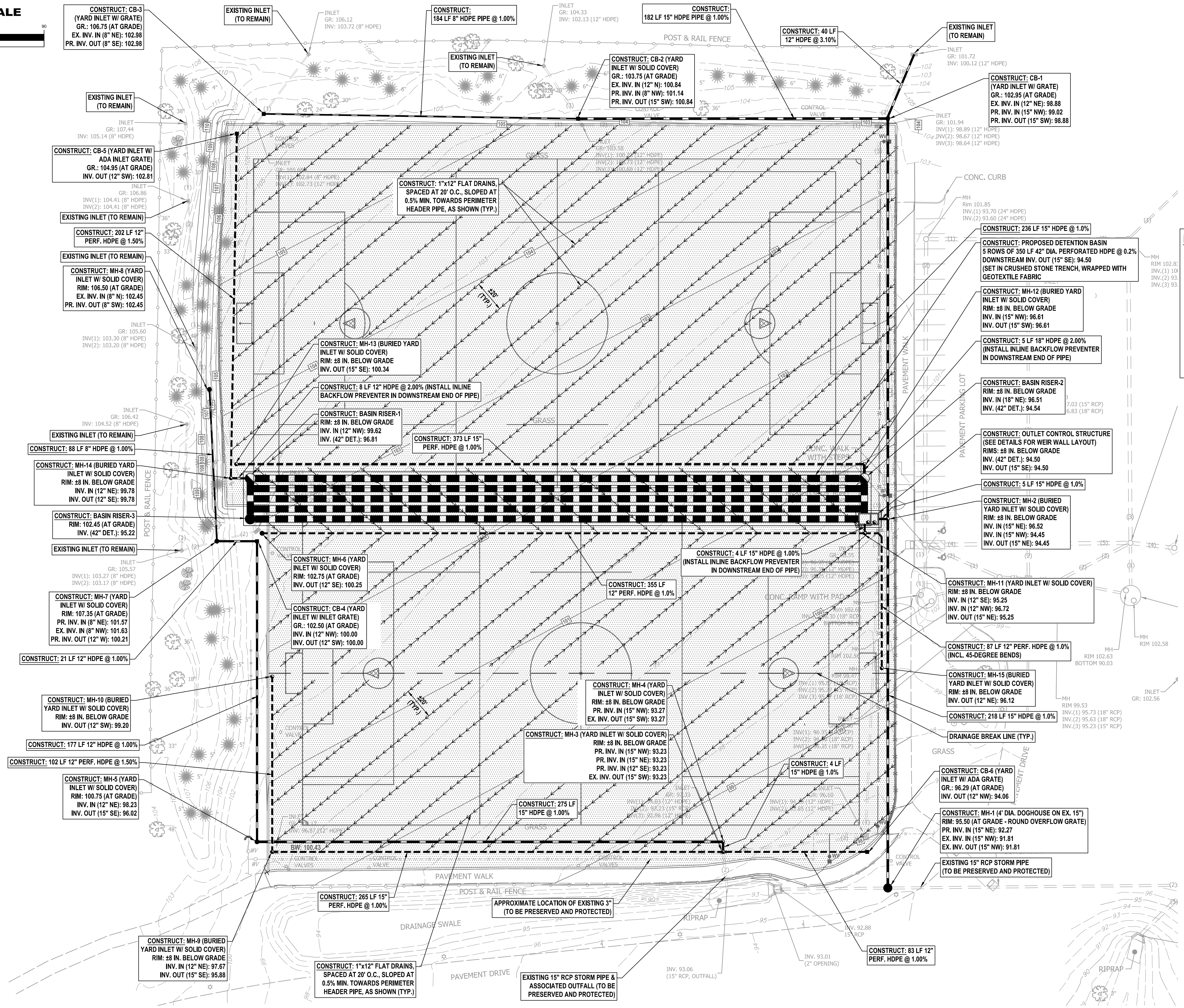
ON-SITE SOIL DISPOSAL LOCATION PLAN
PONDEROSA FARM PARK - TURF FIELDS
BLOCK 12201 - LOTS 27.07 & 28
TOWNSHIP OF SCOTCH PLAINS
UNION COUNTY NEW JERSEY

DRAWN BY: J.S./M.E.W.	CHECKED BY: E.M.J.	PROJECT NO:	SHEET NO:
DESIGNED BY: J.S.	SCALE: 1" = 50'	UNIOCTY17.016	4.01
FIELD BOOK NO:	PAGE:	DATE: OCTOBER 5, 2018	

in union county/university 7/018 (ponderosa farm park) on-site disposal location plan.dwg / Project: Ponderosa Farm Park, Lyndhurst, October 18, 2018 10:35:31 PM



DRAINAGE LEGEND	
	PERFORATED DRAINAGE PIPE (PERF.)
	SOLID WALL DRAINAGE PIPE
	TURF UNDERDRAIN PIPE (PERF. FLAT DRAIN)
	PVC MANHOLE (SOLID COVER AT GRADE)
	PVC MANHOLE (SOLID COVER 48" BELOW TURF)
	CONCRETE DOGHOUSE MANHOLE (4" DIA.)
	BASIN RISER (SOLID COVER 48" BELOW TURF)
	PVC INLET (INLET GRATE AT GRADE)

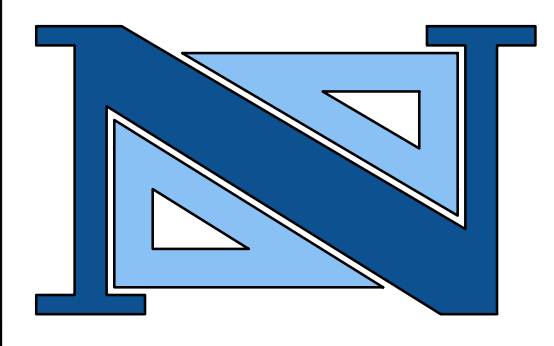


- NOTE:**
- CONTRACTOR SHALL CLEAN EXISTING PERIMETER SLOT DRAIN AT THE COMPLETION OF THE PROJECT. NO SEPARATE PAYMENT WILL BE MADE AND THE COST SHALL BE INCLUDED IN FINAL CLEANUP/SITE RESTORATION.
 - CONTRACTOR IS RESPONSIBLE TO CONNECT ALL EXISTING DRAIN PIPES INTO THE NEAREST MANHOLE. NO SEPARATE PAYMENT WILL BE MADE AND THE COST SHALL BE INCLUDED IN THE VARIOUS BID ITEMS.

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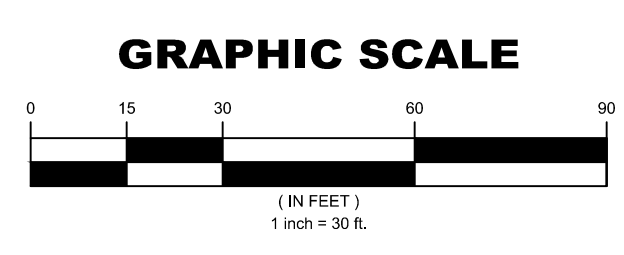
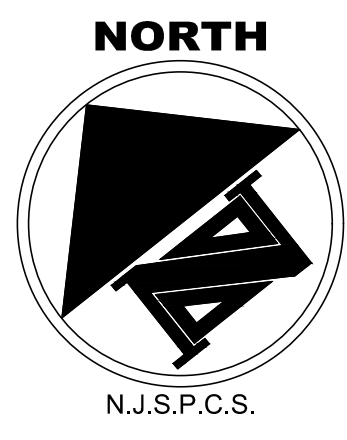
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DRAINAGE PLAN
PONDEROSA FARM PARK - TURF FIELDS
BLOCK 12201 - LOTS 27.07 & 28
TOWNSHIP OF SCOTCH PLAINS
UNION COUNTY
NEW JERSEY

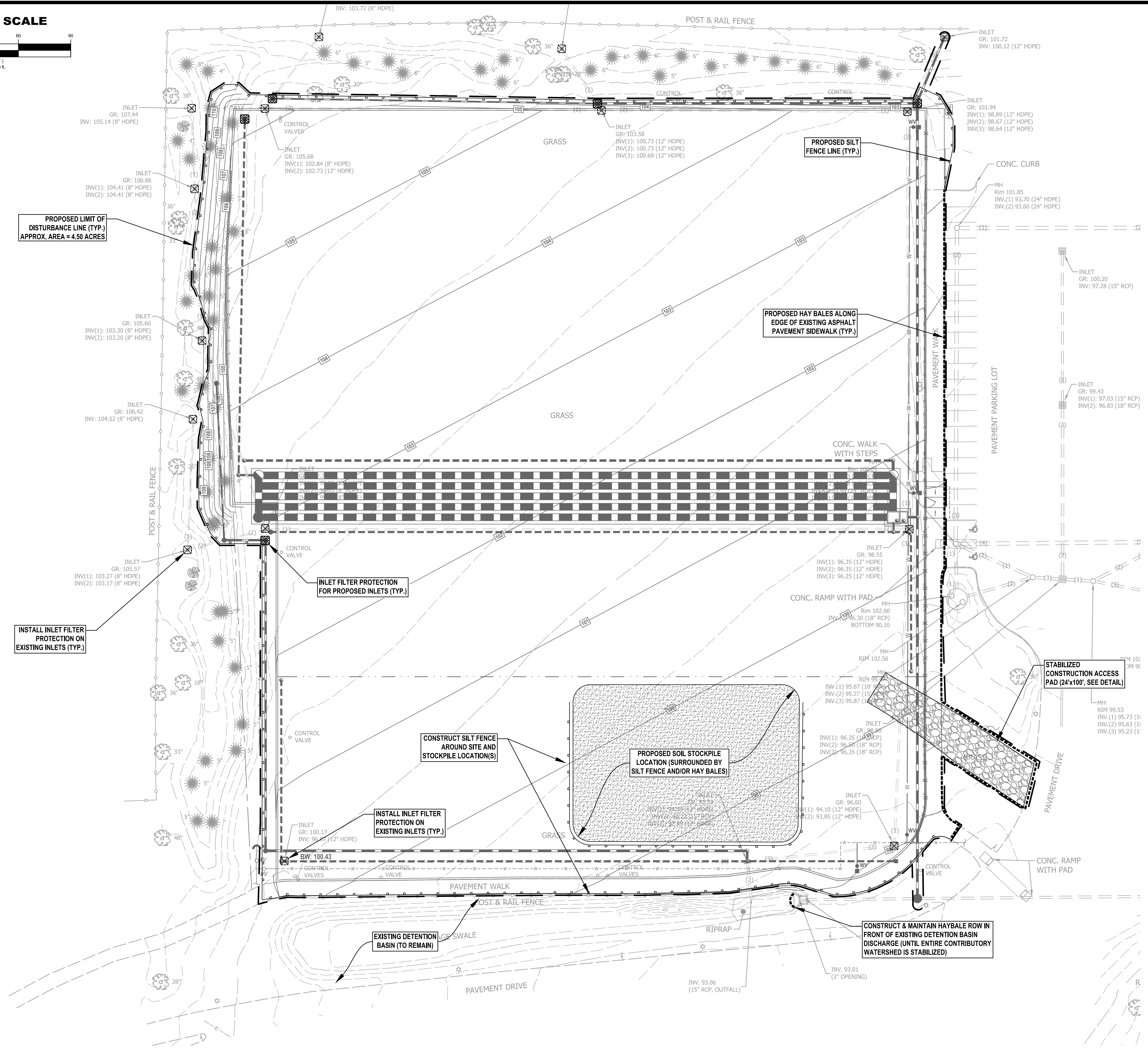
DRAWN BY: J.S./M.E.W. CHECKED BY: E.M.J. PROJECT NO: UNIOCTY17.016 SHEET NO: 5.00
DESIGNED BY: J.S. SCALE: 1" = 30' DATE: OCTOBER 5, 2018
FIELD BOOK NO: PAGE:



SOIL EROSION & SEDIMENT CONTROL LEGEND	
	LIMIT OF SOIL DISTURBANCE
	SILT FENCE LINE
	HAY BALES
	INLET PROTECTION FOR EXISTING INLET
	INLET PROTECTION FOR PROPOSED INLET
	SOIL STOCKPILE AREA
	STABILIZED CONSTRUCTION ACCESS PAD

SOIL DECOMPACTION NOTES

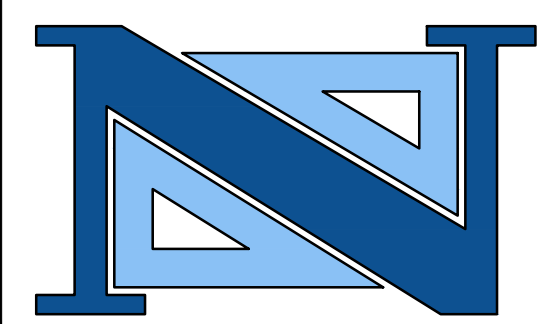
AS DETERMINED BY THE STATE POLICY MAP, THE PROJECT AREA FALLS WITHIN THE METROPOLITAN PLANNING AREA (PA1). UNDER EXISTING CONDITIONS, THE SITE IS NOT COVERED IN WOODY VEGETATION NOR REGROWTH. IN ACCORDANCE WITH NEW JERSEY STANDARD FOR LAND GRADING (REVISED 2017), NON-WOODY VEGETATED PA1 AREAS FALL UNDER THE SOIL COMPACTION EXEMPTION LIST AS AN "URBAN DEVELOPMENT" AND IS DEFINED BY NJDEP AS "PREVIOUSLY DEVELOPED".



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SOIL EROSION & SEDIMENT CONTROL PLAN
PONDEROSA FARM PARK - TURF FIELDS
BLOCK 12201 - LOTS 27.07 & 28
TOWNSHIP OF SCOTCH PLAINS
UNION COUNTY
NEW JERSEY

DRAWN BY: J.S./M.E.W. CHECKED BY: E.M.J. PROJECT NO: UNIOCTY17.016 SHEET NO: 6.00
DESIGNED BY: J.S. SCALE: 1" = 30' DATE: OCTOBER 5, 2018
FIELD BOOK NO: PAGE:

**SOMERSET-UNION COUNTIES SOIL CONSERVATION DISTRICT
SOIL EROSION & SEDIMENT CONTROL NOTES**

- ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCES, OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
- ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN 30 DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF A TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF TWO (2) TONS PER ACRE, ACCORDING TO NJ STATE STANDARDS
- PERMANENT VEGETATION SHALL BE SEEDING OR SODDED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING. MULCH WILL BE USED FOR PROTECTION UNTIL SEEDING IS ESTABLISHED
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE NJ STATE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.
- A SUB-BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS IN ORDER TO STABILIZE STREETS, ROADS, DRIVEWAYS AND PARKING AREAS. IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUB-BASE SHALL BE INSTALLED WITHIN 15 DAYS OR PRELIMINARY GRADING.
- IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING ALL CRITICAL AREAS SUBJECT TO EROSION (I.E.: STEEP SLOPES, ROADWAY EMBANKMENTS) WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AT A RATE OF TWO (2) TONS PER ACRE, ACCORDING TO THE NJ STATE STANDARDS.
- ANY STEEP SLOPES RECEIVING PIPELINE INSTALLATION WILL BE BACKFILLED AND STABILIZED DAILY, AS THE INSTALLATION PROCEEDS (I.E.: SLOPES GREATER THAN 3:1)
- TRAFFIC CONTROL STANDARDS REQUIRE THE INSTALLATION OF A 50'X30'X6" PAD OF 1 1/2" OR 2" STONE, AT ALL CONSTRUCTION DRIVEWAYS, IMMEDIATELY AFTER INITIAL SITE DISTURBANCE.
- THE SOMERSET-UNION SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED IN WRITING 48 HOURS IN ADVANCE OF ANY LAND DISTURBING ACTIVITY.
- AT THE TIME WHEN THE SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS GOING TO BE ACCOMPLISHED, ANY SOIL THAT WILL NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROUND COVER, SHALL BE REMOVED OR TREATED IN SUCH A WAY THAT WILL PERMANENTLY ADJUST THE SOIL CONDITIONS AND RENDER IT SUITABLE FOR VEGETATIVE GROUND COVER. IF THE REMOVAL OR TREATMENT OF THE SOIL WILL NOT PROVIDE SUITABLE CONDITIONS, NON-VEGETATIVE MEANS OF PERMANENT GROUND STABILIZATION WILL HAVE TO BE EMPLOYED.
- IN THAT N.J.S.A. 4:24-39 ET SEQ., REQUIRES THAT NO CERTIFICATE OF OCCUPANCY BE ISSUED BEFORE THE PROVISIONS OF THE CERTIFIED PLAN FOR SOIL EROSION AND SEDIMENT CONTROL HAVE BEEN COMPLIED WITH FOR PERMANENT MEASURES, ALL SITE WORK FOR SITE PLANS AND ALL WORK AROUND INDIVIDUAL LOTS IN SUBDIVISIONS, WILL HAVE TO BE COMPLETED PRIOR TO THE DISTRICT ISSUING A REPORT OF COMPLIANCE FOR THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY BY THE MUNICIPALITY.
- CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.
- ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN WILL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE DISTRICT FOR RE-CERTIFICATION. THE REVISED PLANS MUST MEET ALL CURRENT NJ STATE SOIL EROSION & SEDIMENT CONTROL STANDARDS.
- THE SOMERSET-UNION SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED OF ANY CHANGES IN OWNERSHIP.
- MULCHING TO THE NJ STANDARDS IS REQUIRED FOR OBTAINING A CONDITIONAL REPORT OF COMPLIANCE. CONDITIONALS ARE ONLY ISSUED WHEN THE SEASON PROHIBITS SEEDING.
- CONTRACTOR IS RESPONSIBLE FOR KEEPING ALL ADJACENT ROADS CLEAN DURING LIFE OF CONSTRUCTION PROJECT.
- THE DEVELOPER SHALL BE RESPONSIBLE FOR REMEDIATING ANY EROSION OR SEDIMENT PROBLEMS THAT ARISE AS A RESULT OF ONGOING CONSTRUCTION AT THE REQUEST OF THE SOMERSET-UNION SOIL CONSERVATION DISTRICT.
- HYDRO SEEDING IS A TWO-STEP PROCESS. THE FIRST STEP INCLUDES SEED, FERTILIZER, LIME, ETC., ALONG WITH MINIMAL AMOUNTS OF MULCH TO PROMOTE CONSISTENCY, GOOD SEED TO SOIL CONTACT, AND GIVE A VISUAL INDICATION OF COVERAGE. UPON COMPLETION OF SEEDING OPERATION, HYDRO-MULCH SHOULD BE APPLIED AT A RATE OF 1500 LBS. PER ACRE IN SECOND STEP. THE USE OF HYDRO-MULCH, AS OPPOSED TO STRAW, IS LIMITED TO OPTIMUM SEEDING DATES AS LISTED IN THE NJ STANDARDS.

DEFINITION
A TEMPORARY BARRIER AND SETTLING FACILITY INSTALLED AT A STORM SEWER INLET.

PURPOSE
THE PURPOSE OF STORM SEWER INLET PROTECTION IS TO INTERCEPT AND RETAIN SEDIMENT, THUS PREVENTING THE ENTRANCE OF SEDIMENT INTO THE STORM SEWER SYSTEM.

CONDITIONS WHERE PRACTICE APPLIES

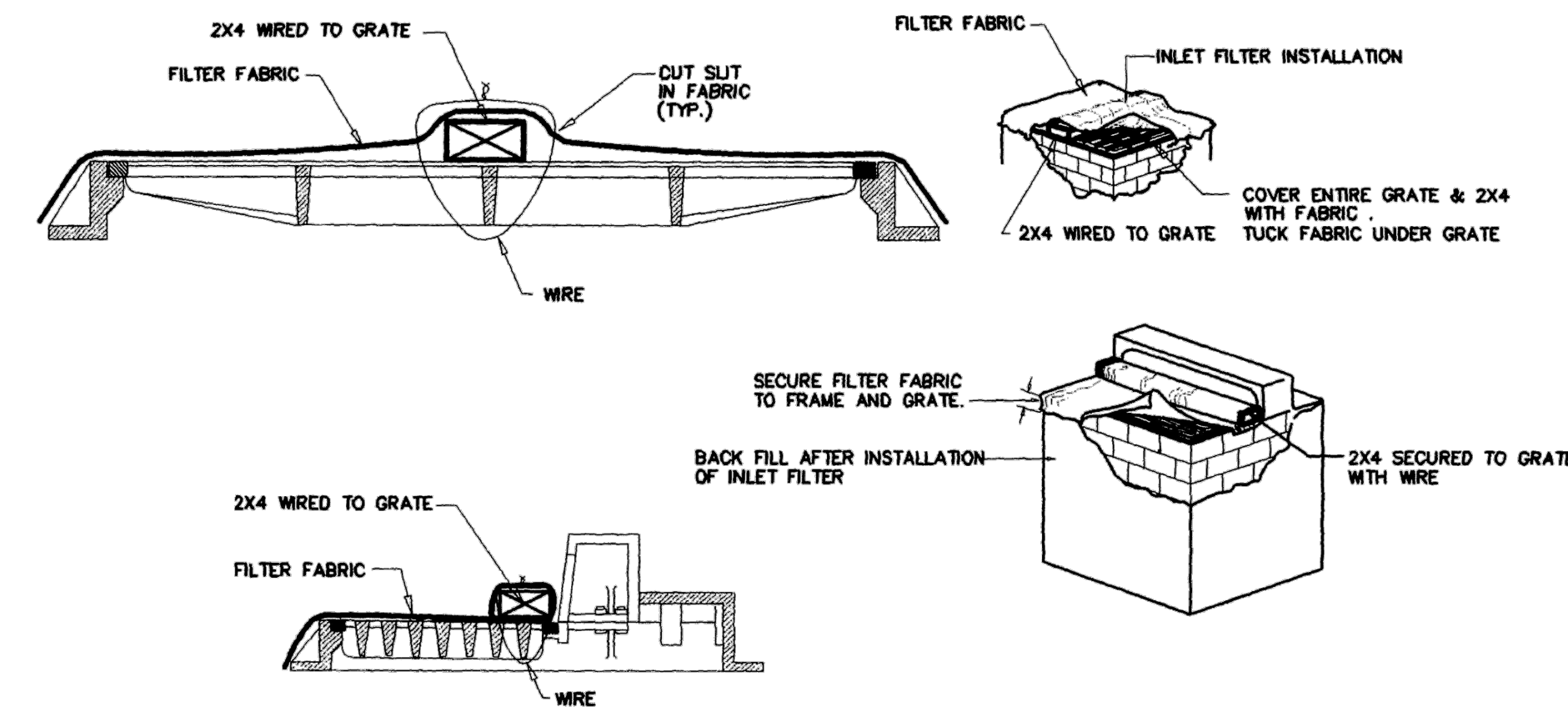
- CONTRIBUTING DRAINAGE AREA IS 3 ACRES OR LESS.
- A STORM SEWER OR THE OUTLET CHANNEL OF A STORM SEWER NEEDS PROTECTION FROM SEDIMENT.
- TRAFFIC WILL NOT DESTROY OR CAUSE CONSTANT MAINTENANCE OF THE STORM SEWER INLET PROTECTION.
- A TRAFFIC HAZARD WILL NOT BE CREATED.
- A FLOODING PROBLEM WILL NOT BE CREATED.

WATER QUALITY ENHANCEMENT
THE PRIMARY BENEFIT TO WATER QUALITY IS REMOVAL OF SEDIMENT FROM STORMWATER RUNOFF PRIOR TO ENTERING THE STORM SEWER SYSTEM. AS AN ADDED BENEFIT, OTHER FLOATABLE DEBRIS, SUCH AS VEGETATIVE MATTER AND LITTER MAY ALSO BE FILTERED OUT OF THE RUNOFF.

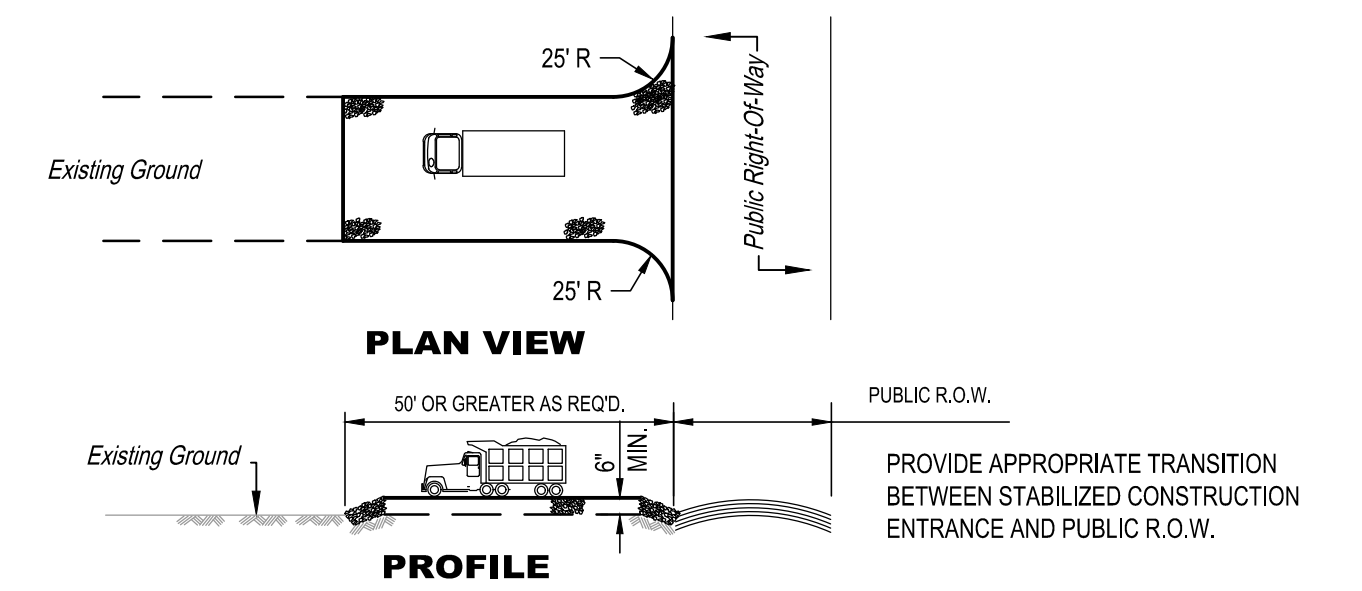
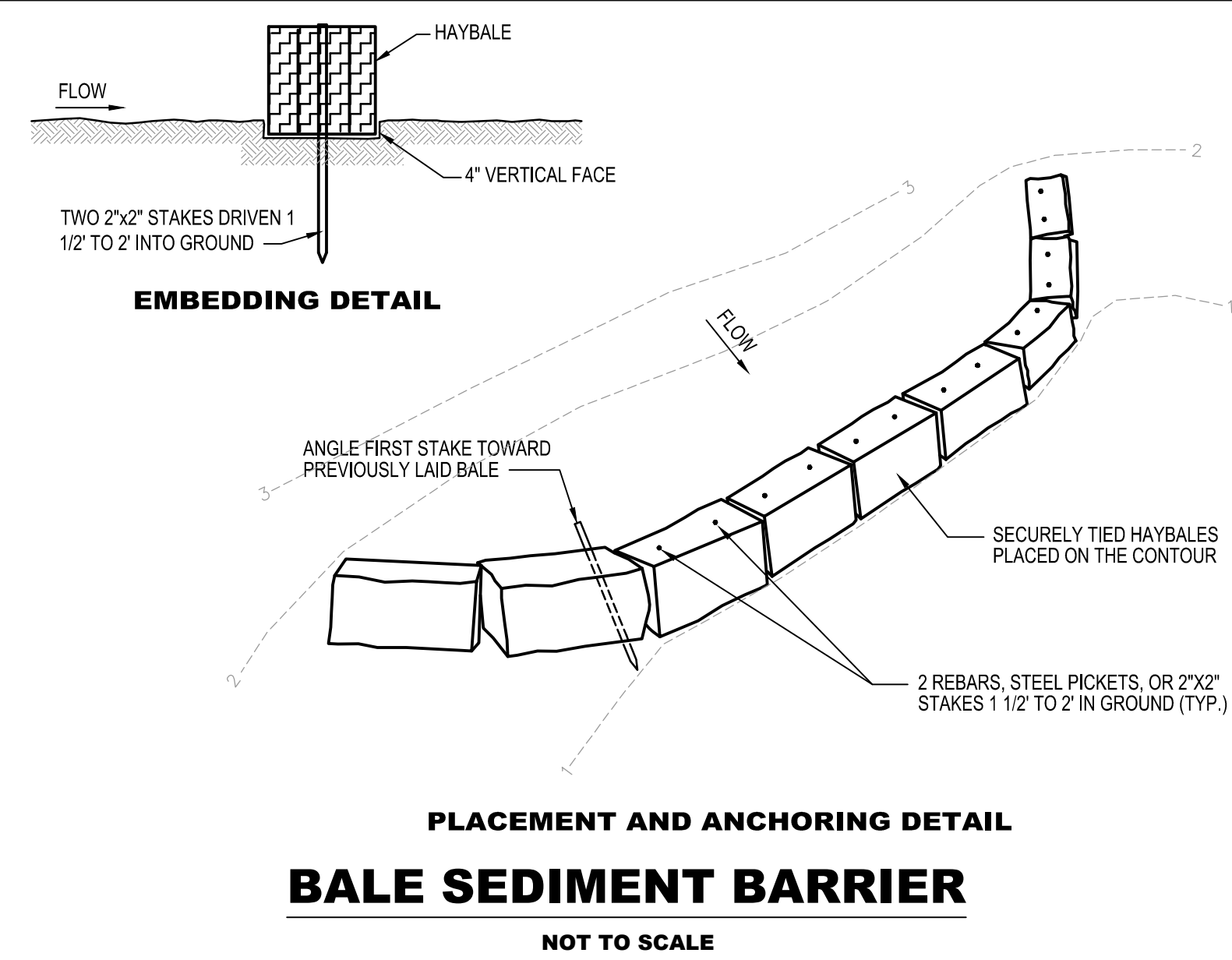
DESIGN CRITERIA
THE FOLLOWING APPLIES TO ALL METHODS OF STORM SEWER INLET PROTECTION:

- MUST SLOW THE STORM WATER, PROVIDE THE COARSE SEDIMENT PARTICLES A CHANCE TO SETTLE, AND PROVIDE AN AREA TO RETAIN THE PARTICLES THAT HAVE SETTLED.
- IN ALL CASES, THE INLET PROTECTION SHOULD NOT COMPLETELY CLOSE OFF THE INLET.
- THE PROTECTION DEVICE WILL BE DESIGNED TO CAPTURE OR FILTER RUNOFF FROM THE 1 YEAR, 24 HOUR STORM EVENT AND SHALL SAFELY CONVEY HIGHER FLOWS DIRECTLY INTO THE STORM SEWER SYSTEM.

OTHER METHODS THAT ACCOMPLISH THE PURPOSE OF STORM SEWER INLET PROTECTION MAY BE USED IF APPROVED BY THE SOIL CONSERVATION DISTRICT.
INSPECTIONS SHALL BE FREQUENT, MAINTENANCE, REPAIR, AND REPLACEMENT SHALL BE MADE PROMPTLY, AS NEEDED. THE BARRIER SHALL BE REMOVED WHEN THE AREA DRAINING TOWARD THE INLET HAS BEEN STABILIZED.



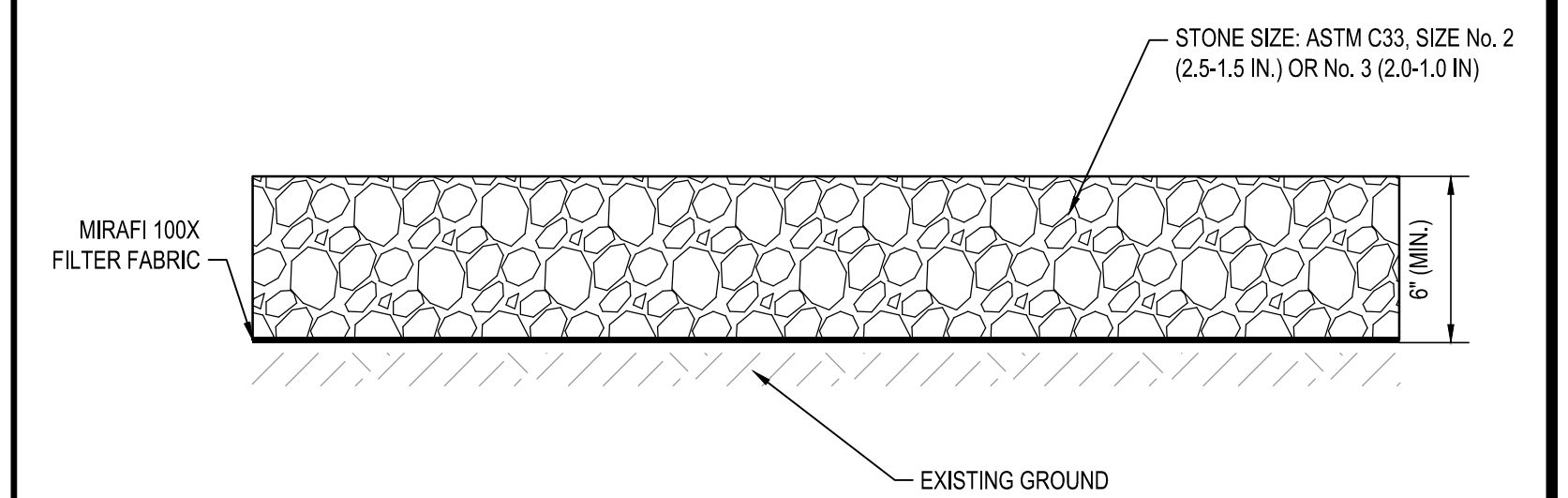
INLET FILTER PROTECTION
NOT TO SCALE



- NOTES:**
- PLACE STABILIZED CONSTRUCTION ENTRANCE AT LOCATION(S) AS SHOWN ON THE SOIL EROSION AND SEDIMENT CONTROL PLAN.
 - STONE SIZE SHALL BE ASTM C-33, SIZE NO. 2 OR 3, CRUSHED STONE.
 - THE THICKNESS OF THE STABILIZED CONSTRUCTION ENTRANCE SHALL NOT BE LESS THAN 6".
 - THE WIDTH AT THE EXIST. PAVEMENT SHALL NOT BE LESS THAN THE FULL WIDTH OF POINTS OF INGRESS AND EGRESS.
 - THE STAB. CONST. ENT. SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO THE R.O.W. PAVEMENT. THIS REQUIRES PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURE USED TO TRAP SEDIMENT.
 - ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO THE PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
 - APPROPRIATE TRANSITION BETWEEN STAB. CONST. ENT. & PUBLIC R.O.W. MUST BE PROVIDED.
 - THE RATIO OF STONE SIZE TO WIDTH MUST BE 9:27.

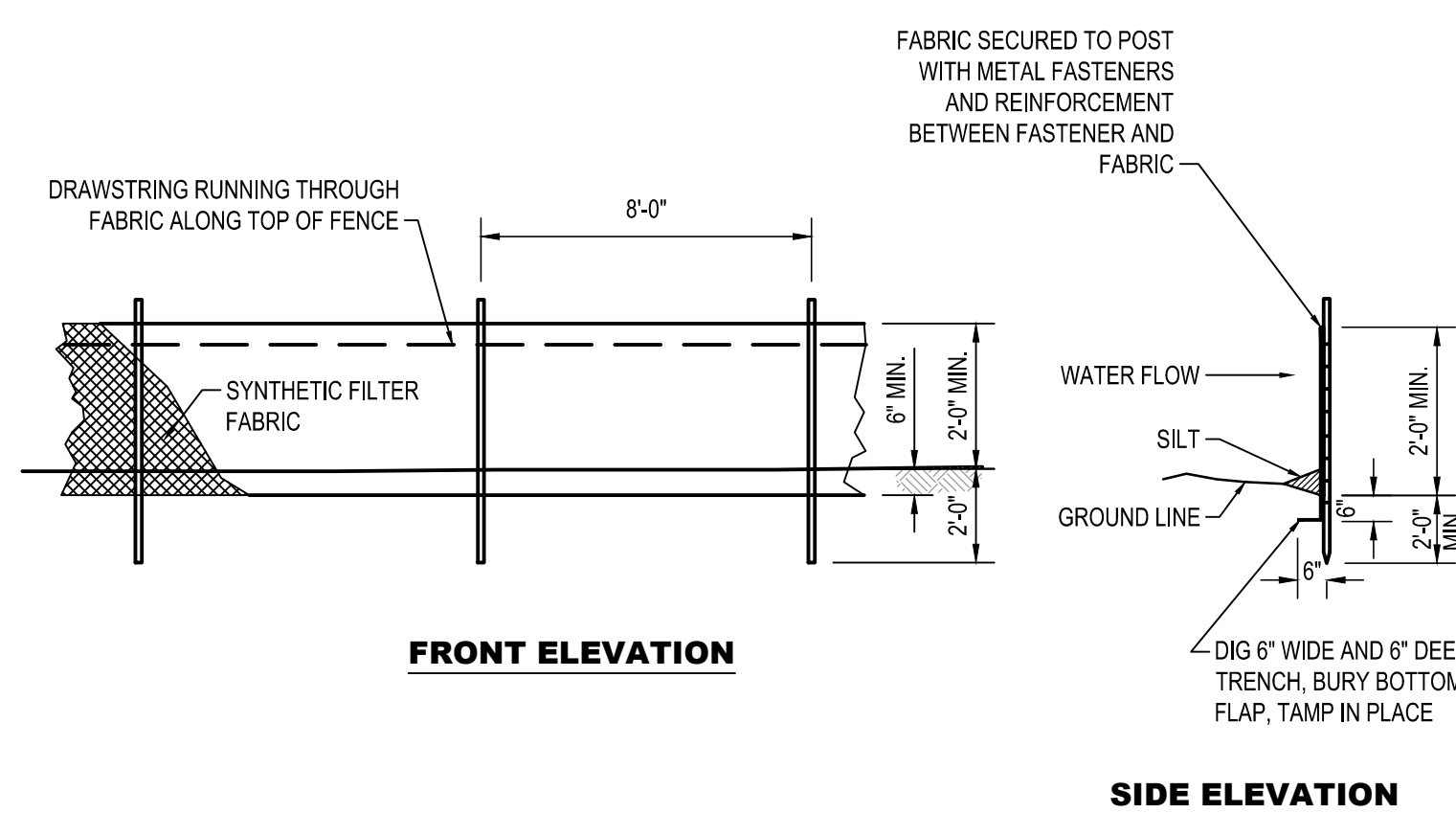
PERCENT SLOPE OF ROADWAY	LENGTH OF STONE REQUIRED	
	COARSE GRAINED SOILS	FINED GRAINED SOILS
0 TO 2%	50 FT.	100 FT.
2 TO 5%	100 FT.	200 FT.
>5%	ENTIRE SURFACE STABILIZED WITH FABC BASE COURSE*	

* AS PRESCRIBED BY LOCAL ORDINANCE OR OTHER GOVERNING AUTHORITY.



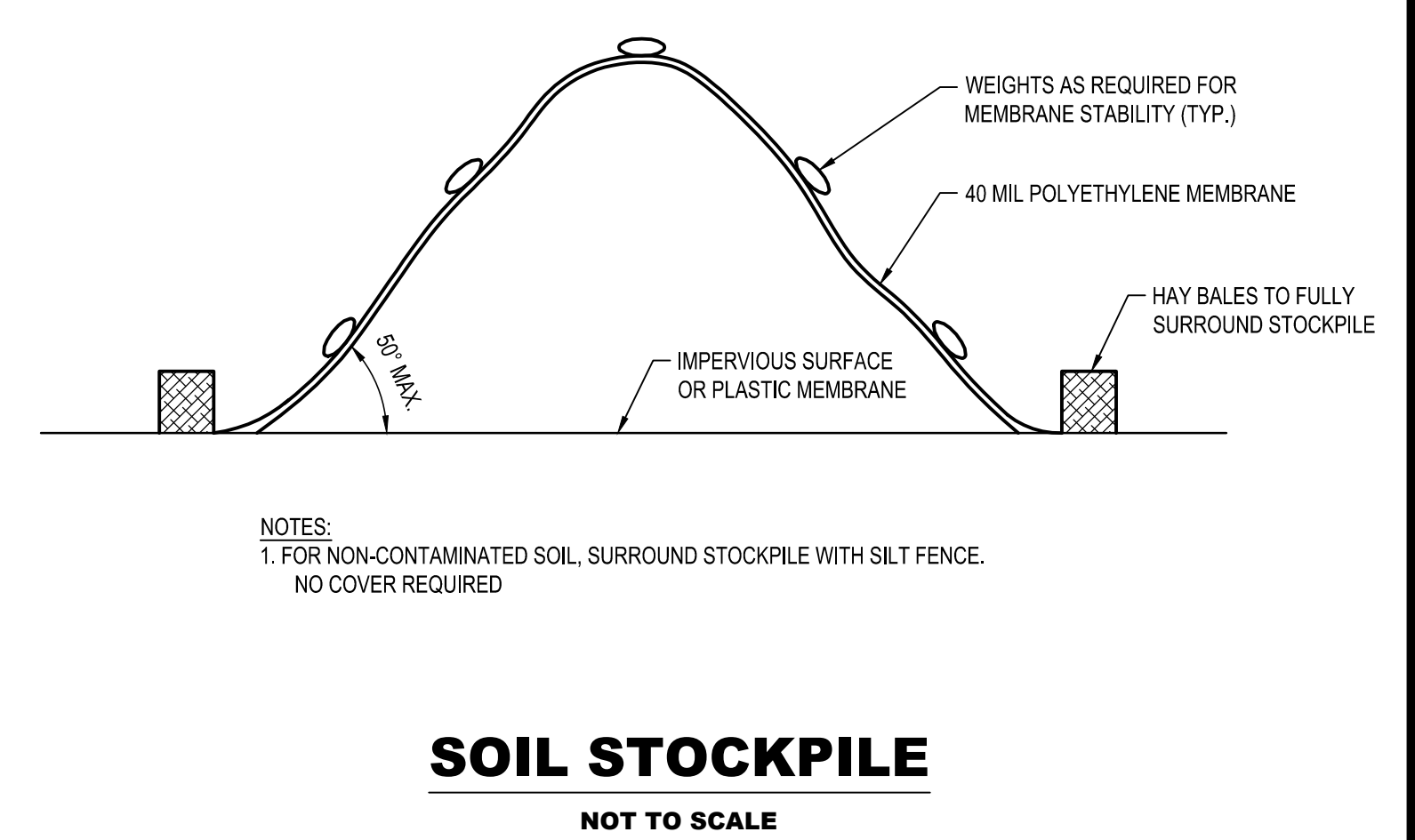
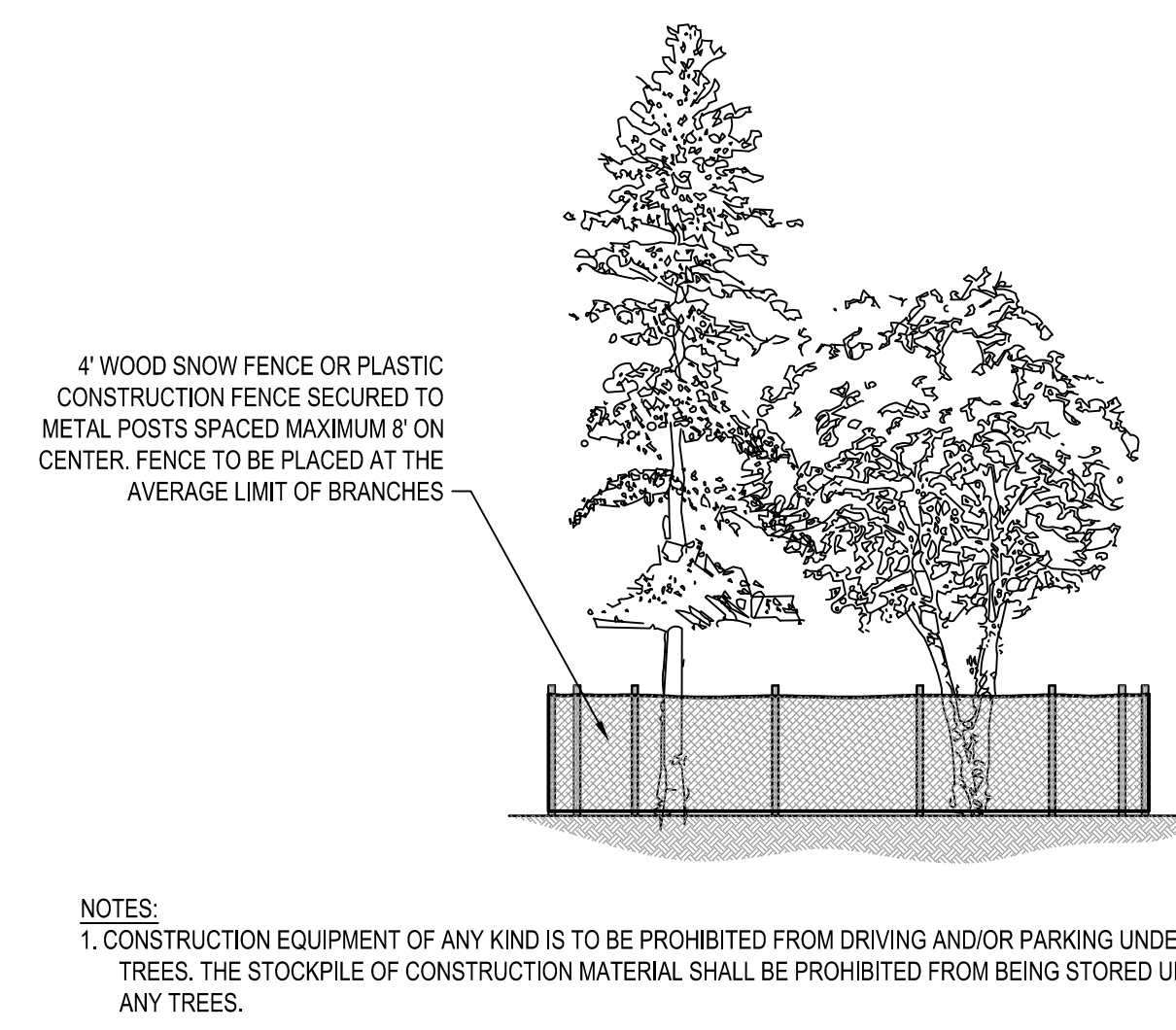
- NOTES:**
- APPROPRIATE TRANSITION BETWEEN STABILIZED CONSTRUCTION ENTRANCE AND PUBLIC R.O.W. MUST BE PROVIDED.
 - THE RATIO OF STONE SIZE TO WIDTH MUST BE 9:27.

STABILIZED CONSTRUCTION ACCESS PAD
NOT TO SCALE



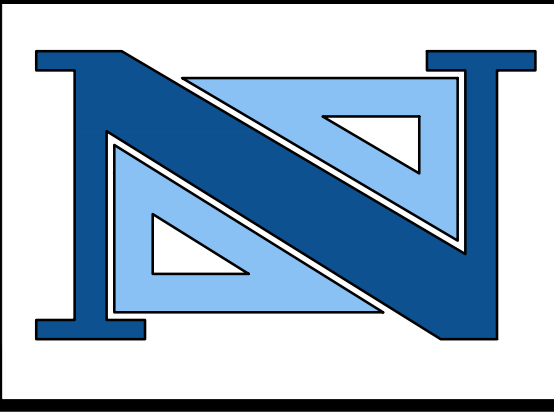
SEQUENCE OF CONSTRUCTION

1. INSTALL SILT FENCE & STABILIZED CONSTRUCTION ACCESS	(2 DAYS)
2. DEMOLISH EXISTING ITEMS	(2 WEEKS)
3. INSTALL NEW DRAINAGE & INLET PROTECTION	(4 WEEKS)
4. ROUGH GRADE SITE AND INSTALL RETAINING WALL	(4 WEEKS)
5. CONSTRUCT ARTIFICIAL TURF SYSTEM PREP	(3 WEEKS)
6. INSTALL FENCING & NETTING	(3 WEEKS)
7. INSTALL LANDSCAPING	(2 WEEKS)
8. FINAL GRADING OF SITE, AND TOPSOILING & SEEDING	(2 WEEKS)
9. STABILIZATION OF SITE	(1 MONTH)
10. REMOVE SOIL EROSION & SEDIMENT CONTROL DEVICES	(2 DAYS)
TOTAL	16 WEEKS



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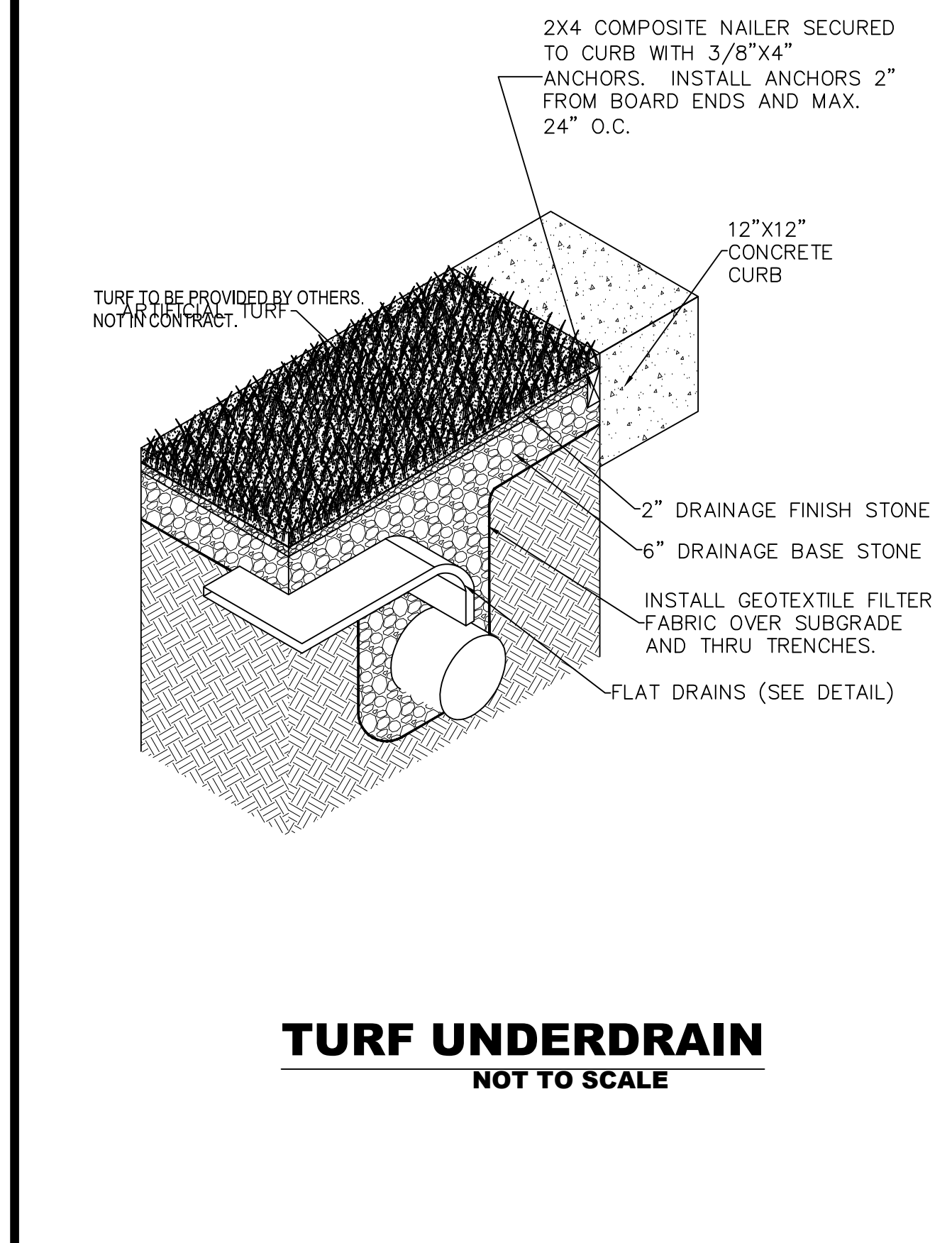
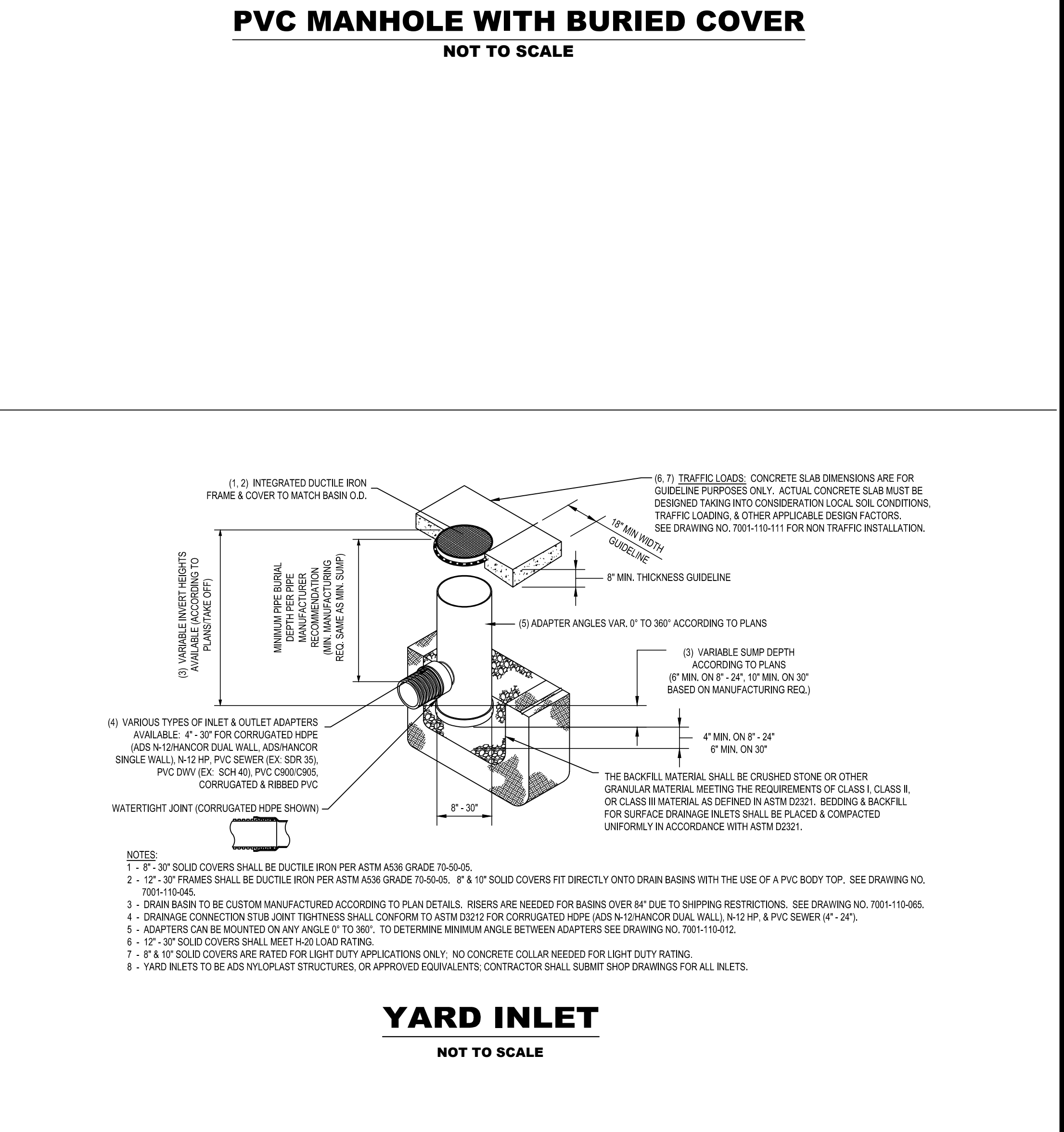
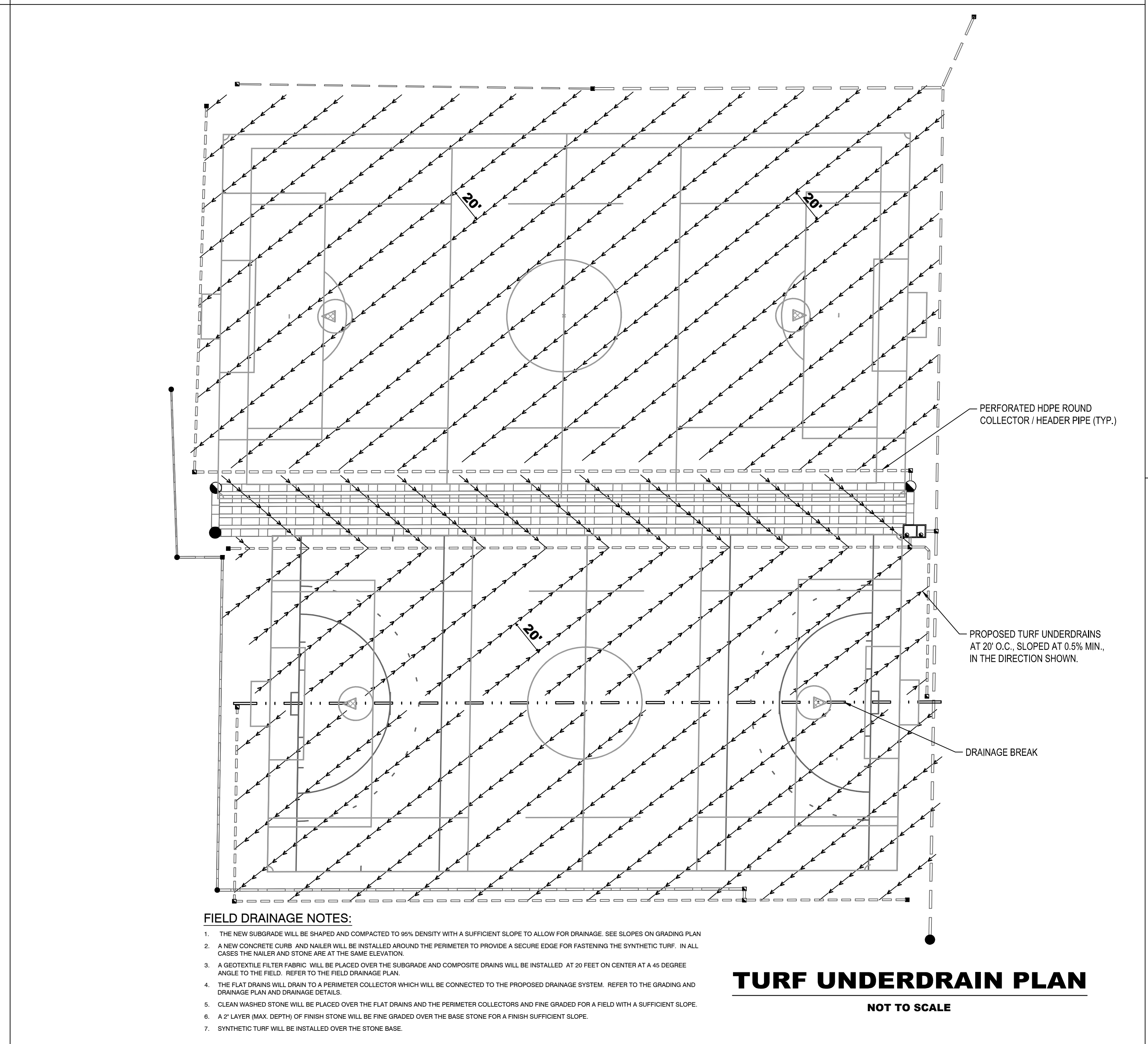
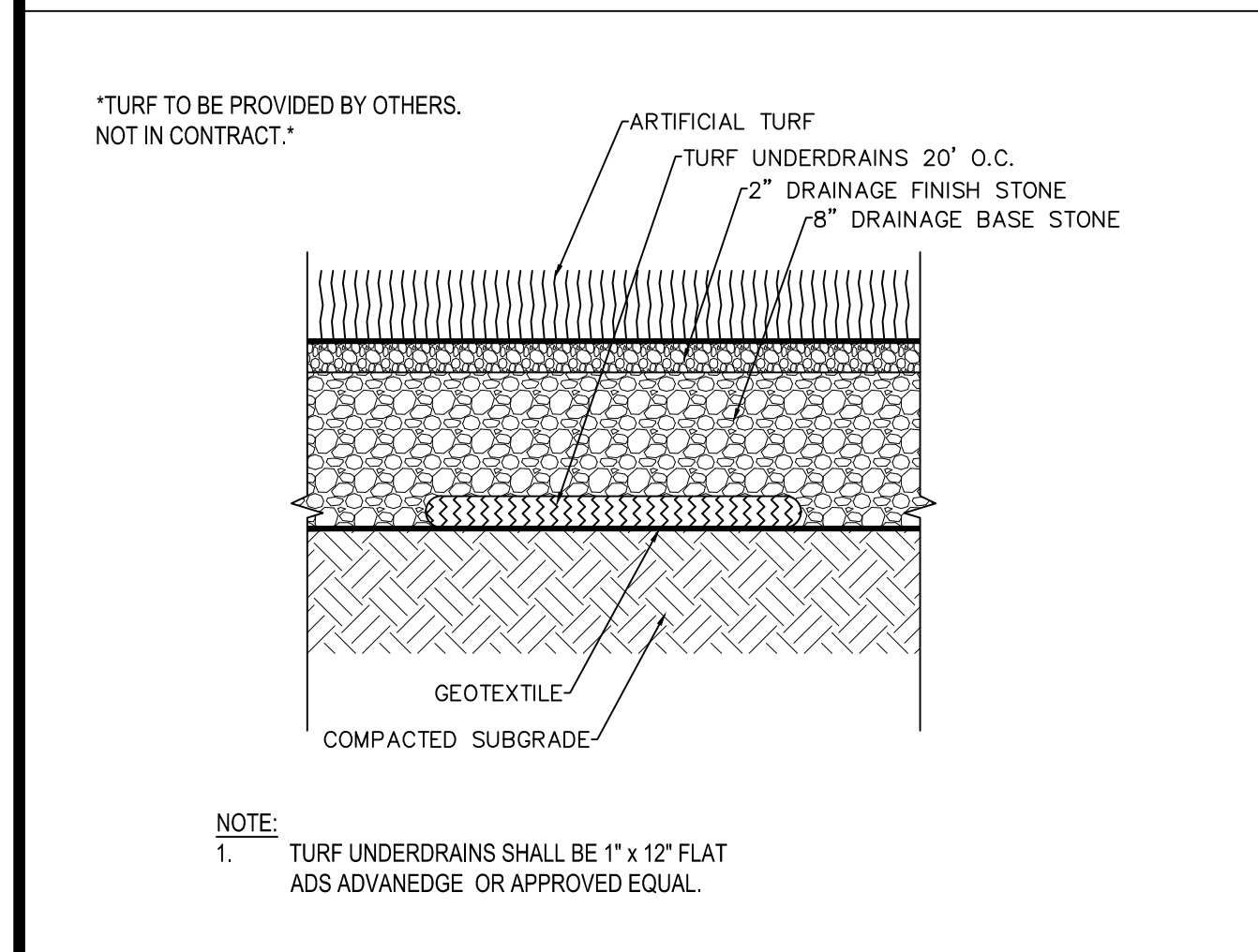
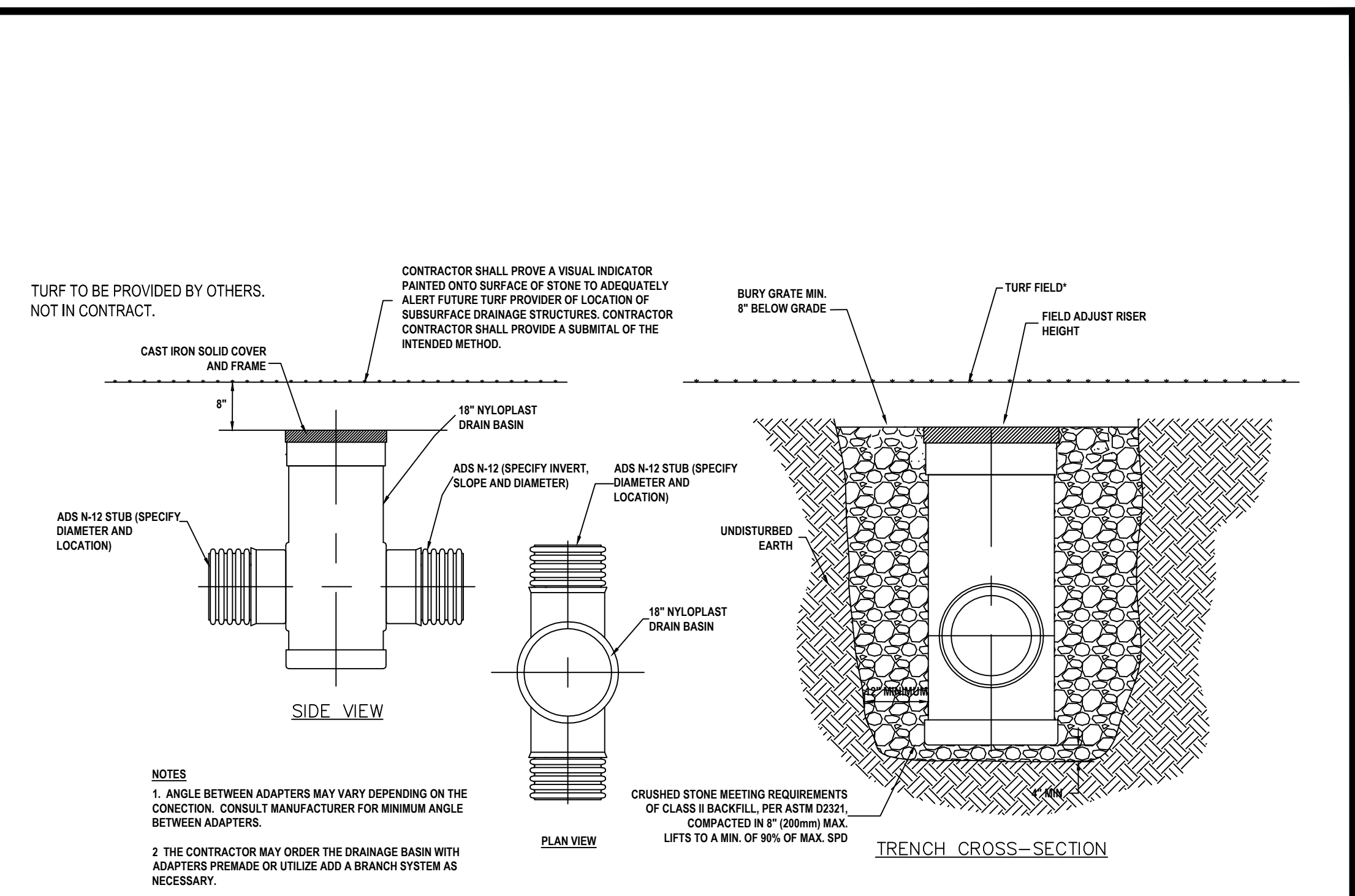
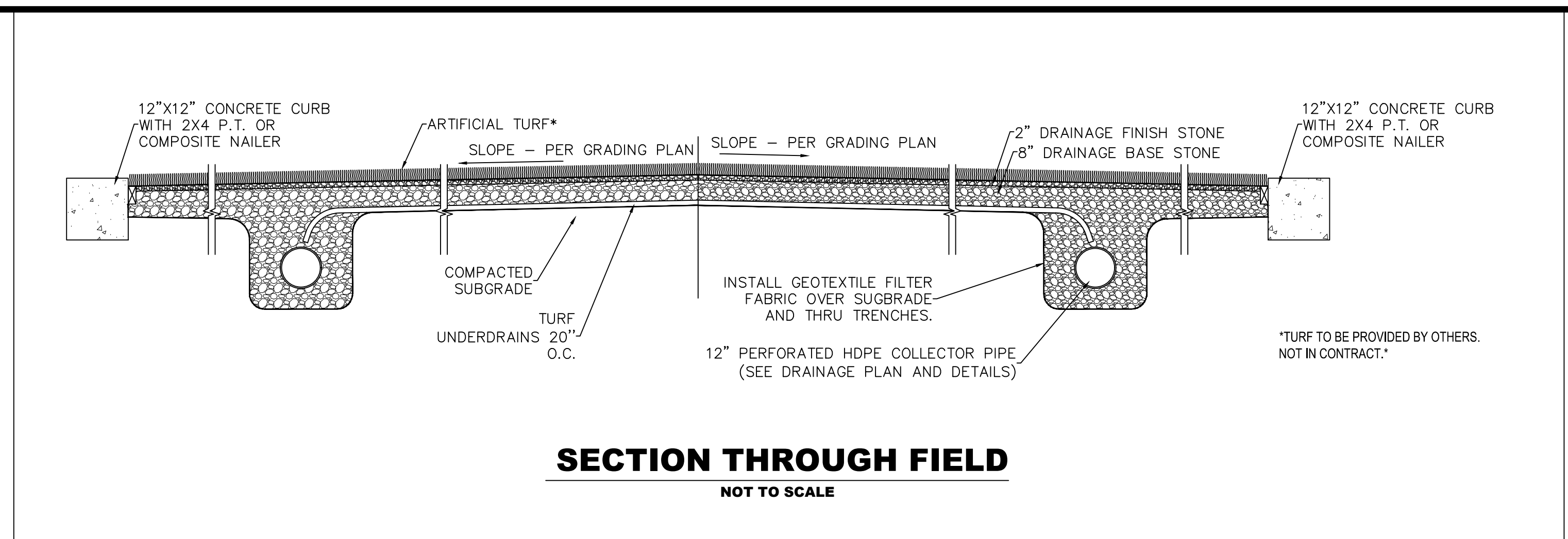
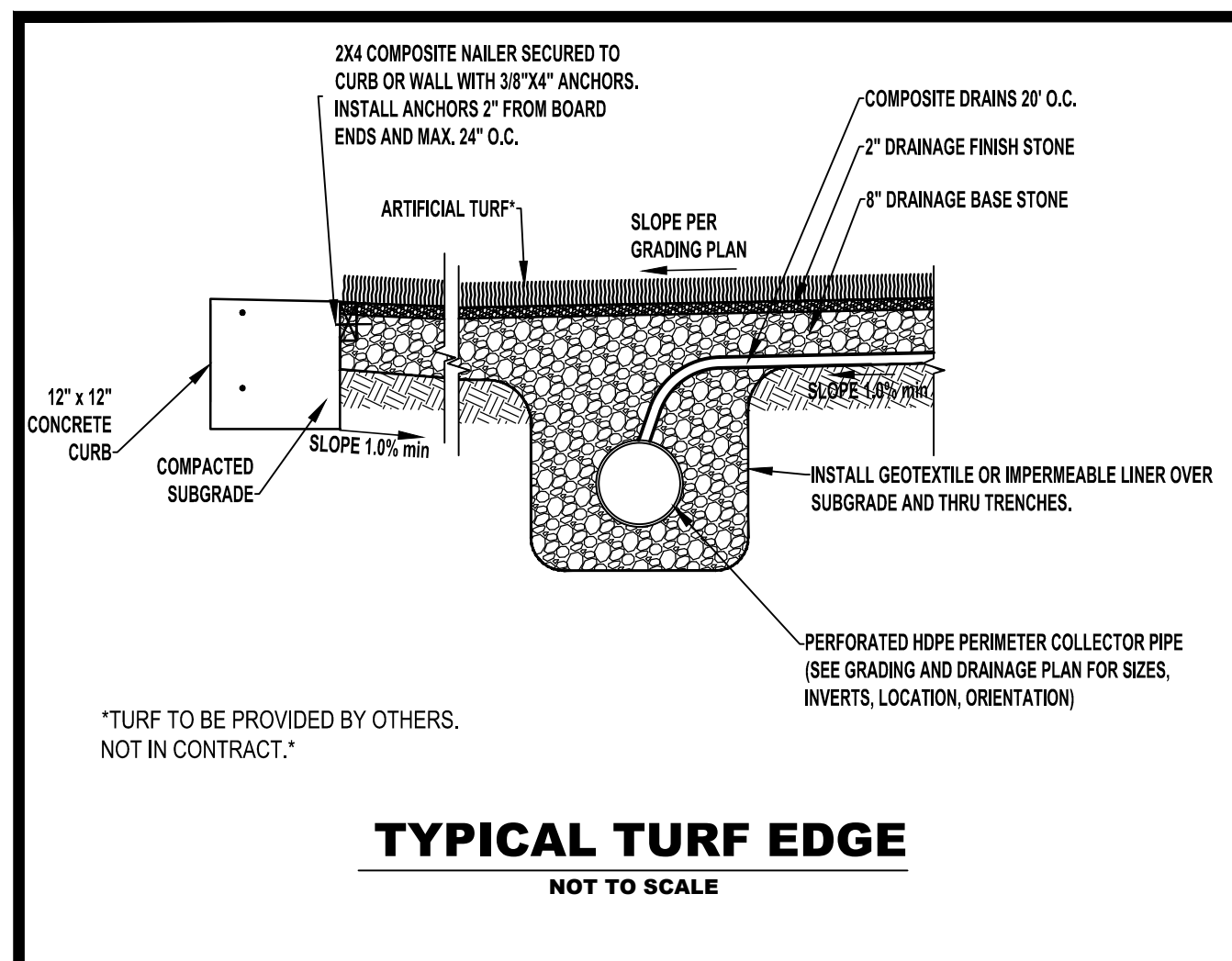
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CERTIFICATE OF AUTHORIZATION (N.J.S.A. 45:8-56) 24GA27927000

SOIL EROSION & SEDIMENT CONTROL DETAILS
PONDEROSA FARM PARK - TURF DETAILS
BLOCK 12201 - LOTS 27.07 & 28
TOWNSHIP OF SCOTCH PLAINS
UNION COUNTY
NEW JERSEY

DRAWN BY: J.S./M.E.W. CHECKED BY: E.M.J. PROJECT NO: UNIOCTY17.016 SHEET NO: 7.00
DESIGNED BY: J.S. SCALE: N.T.S. FIELD BOOK NO: DATE: OCTOBER 5, 2018 PAGE: 1



FIELD DRAINAGE NOTES:

1. THE NEW SUBGRADE WILL BE SHAPED AND COMPACTED TO 95% DENSITY WITH A SUFFICIENT SLOPE TO ALLOW FOR DRAINAGE. SEE SLOPES ON GRADING PLAN.
2. A NEW CONCRETE CURB AND NAILER WILL BE INSTALLED AROUND THE PERIMETER TO PROVIDE A SECURE EDGE FOR FASTENING THE SYNTHETIC TURF. IN ALL CASES THE NAILER AND STONE ARE AT THE SAME ELEVATION.
3. A GEOTEXTILE FILTER FABRIC WILL BE PLACED OVER THE SUBGRADE AND COMPOSITE DRAINS WILL BE INSTALLED AT 20 FEET ON CENTER AT A 45 DEGREE ANGLE TO THE FIELD. REFER TO THE FIELD DRAINAGE PLAN.
4. THE FLAT DRAINS WILL DRAIN TO A PERIMETER COLLECTOR WHICH WILL BE CONNECTED TO THE PROPOSED DRAINAGE SYSTEM. REFER TO THE GRADING AND DRAINAGE PLAN AND DRAINAGE DETAILS.
5. CLEAN WASHED STONE WILL BE PLACED OVER THE FLAT DRAINS AND THE PERIMETER COLLECTORS AND FINE GRADED FOR A FIELD WITH A SUFFICIENT SLOPE.
6. A 2" LAYER (MAX. DEPTH) OF FINISH STONE WILL BE FINE GRADED OVER THE BASE STONE FOR A FINISH SUFFICIENT SLOPE.
7. SYNTHETIC TURF WILL BE INSTALLED OVER THE STONE BASE.

NOTES:

- 1 - 8" - 30" SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
- 2 - 12" - 30" FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05. 8" & 10" SOLID COVERS FIT DIRECTLY ONTO DRAIN BASINS WITH THE USE OF A PVC BODY TOP. SEE DRAWING NO. 7001-10-04S.
- 3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-06S.
- 4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12 HANCOR DUAL WALL), N-12 HP & PVC SEWER (4" - 24").
- 5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.
- 6 - 12" - 30" SOLID COVERS SHALL MEET H-20 LOAD RATING.
- 7 - 8" & 10" SOLID COVERS ARE RATED FOR LIGHT DUTY APPLICATIONS ONLY. NO CONCRETE COLLAR NEEDED FOR LIGHT DUTY RATING.
- 8 - YARD INLETS TO BE ADS NYLOPLAST STRUCTURES, OR APPROVED EQUIVALENTS; CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL INLETS.

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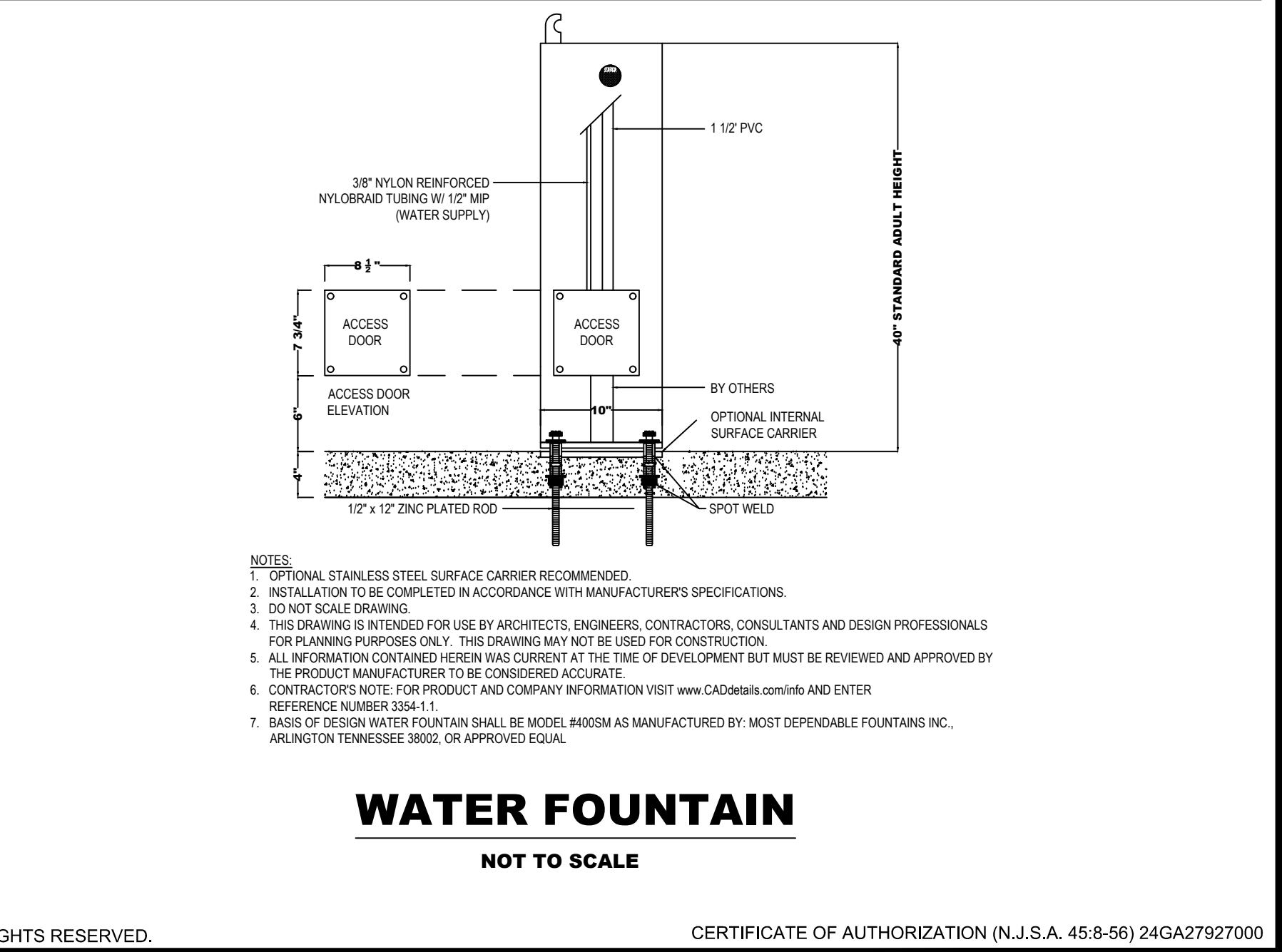
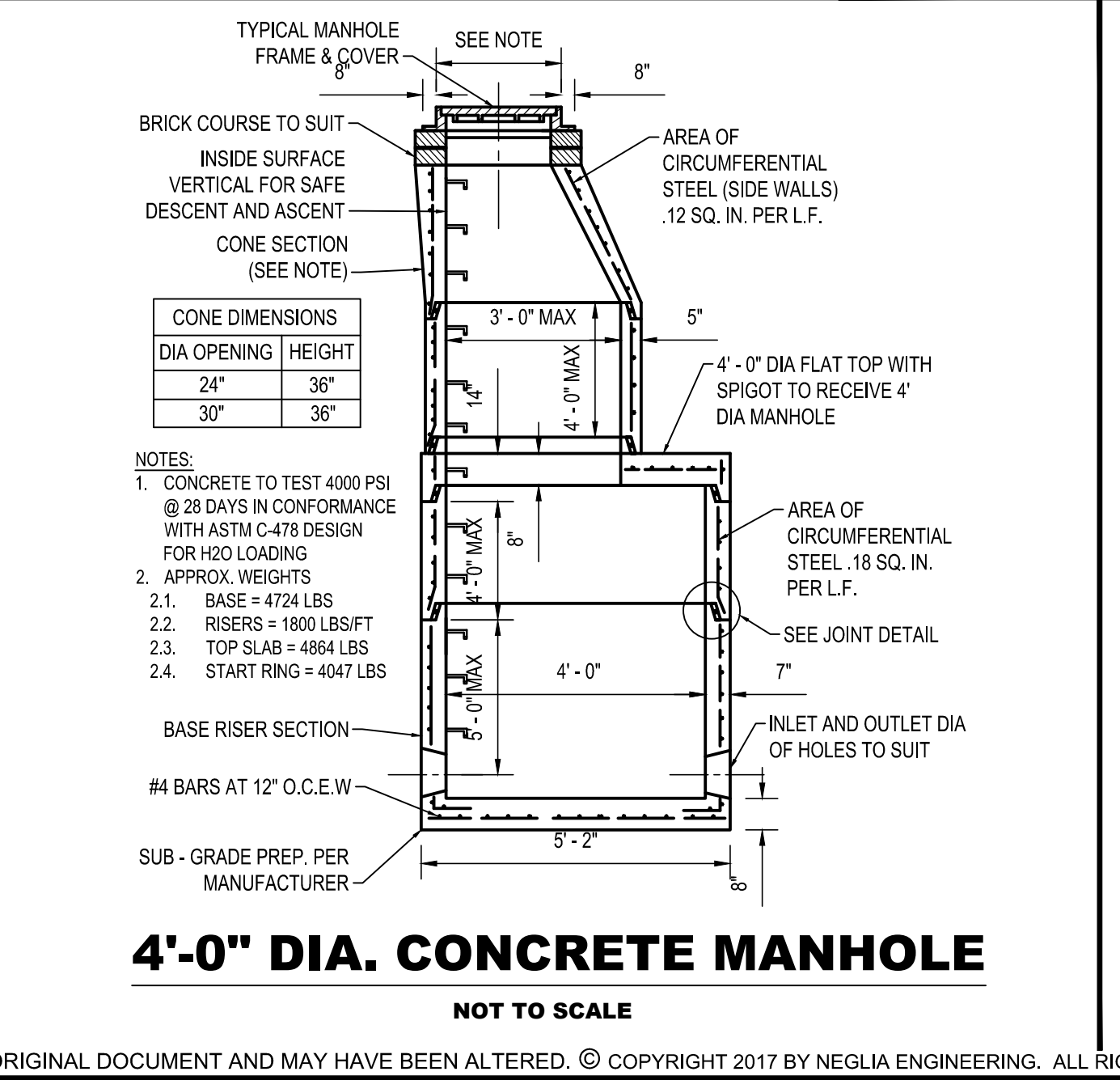
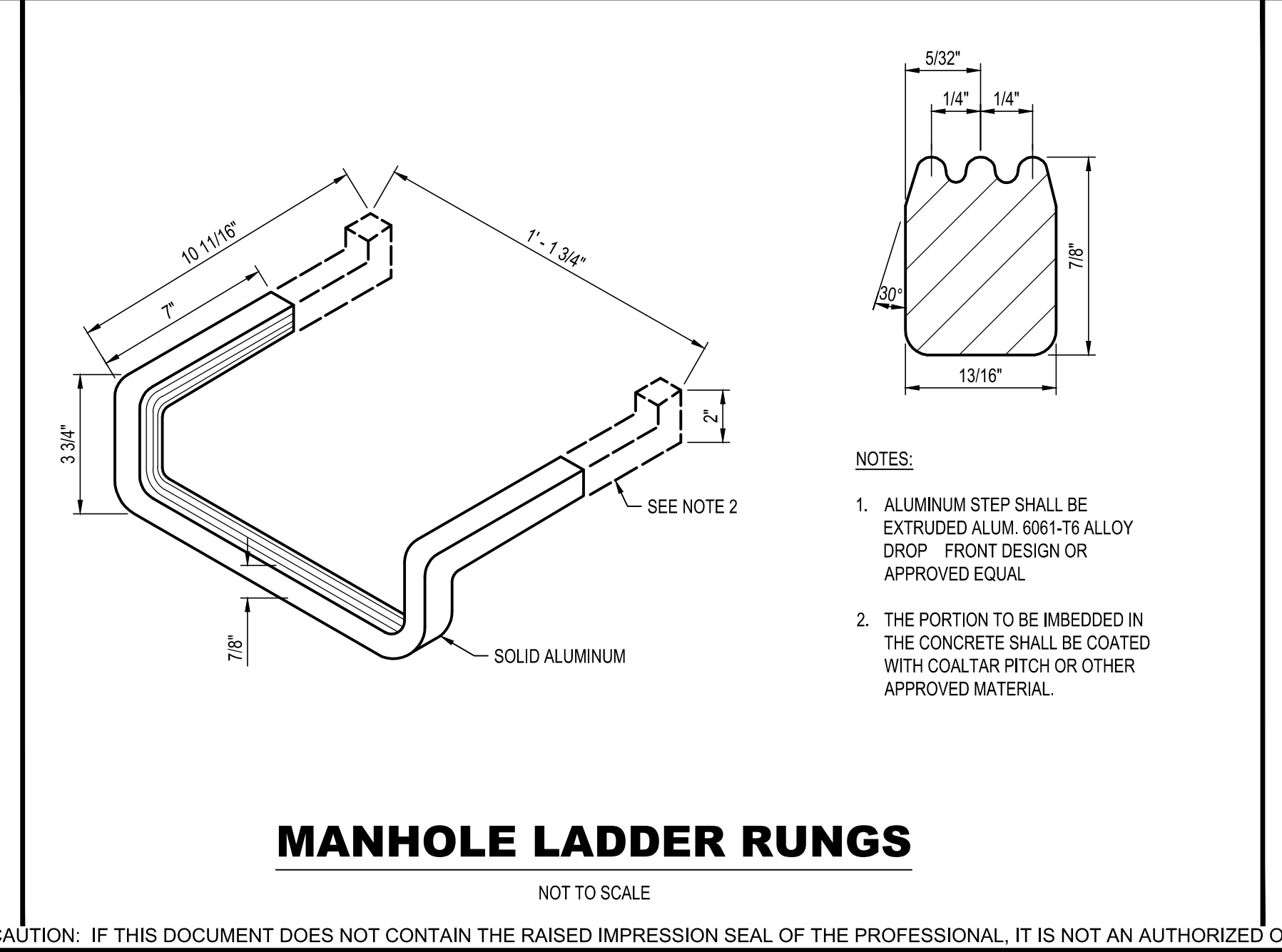
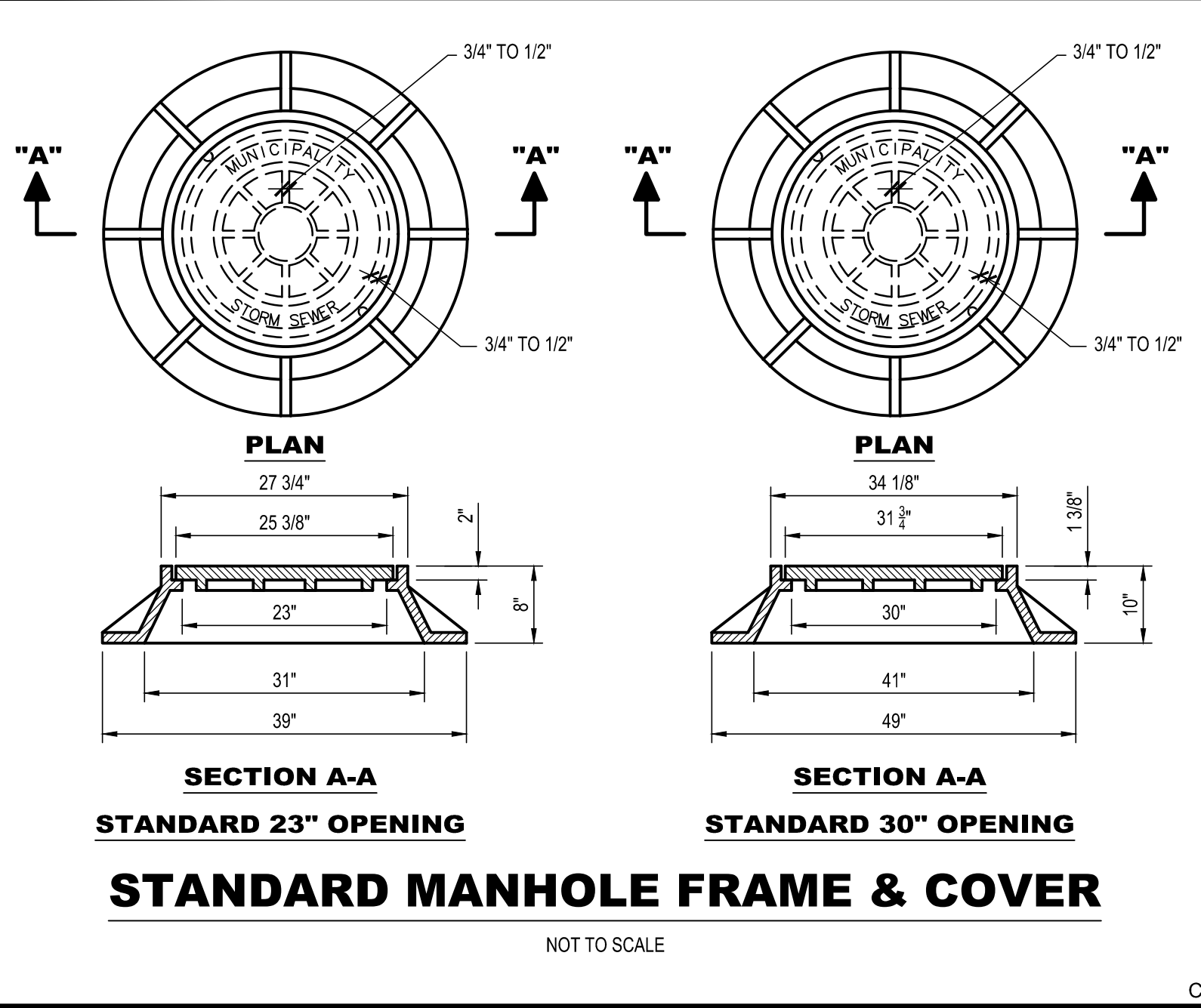
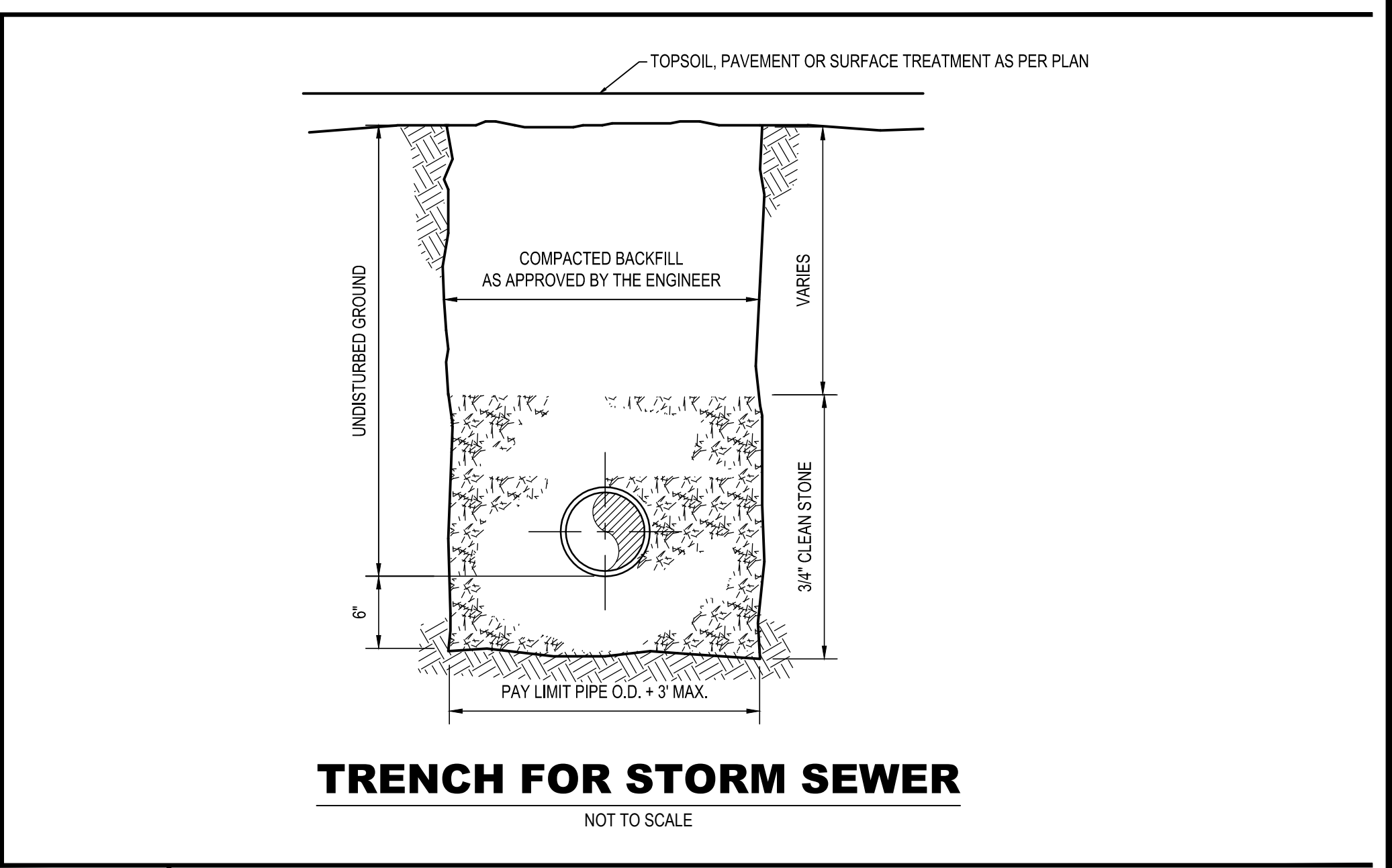
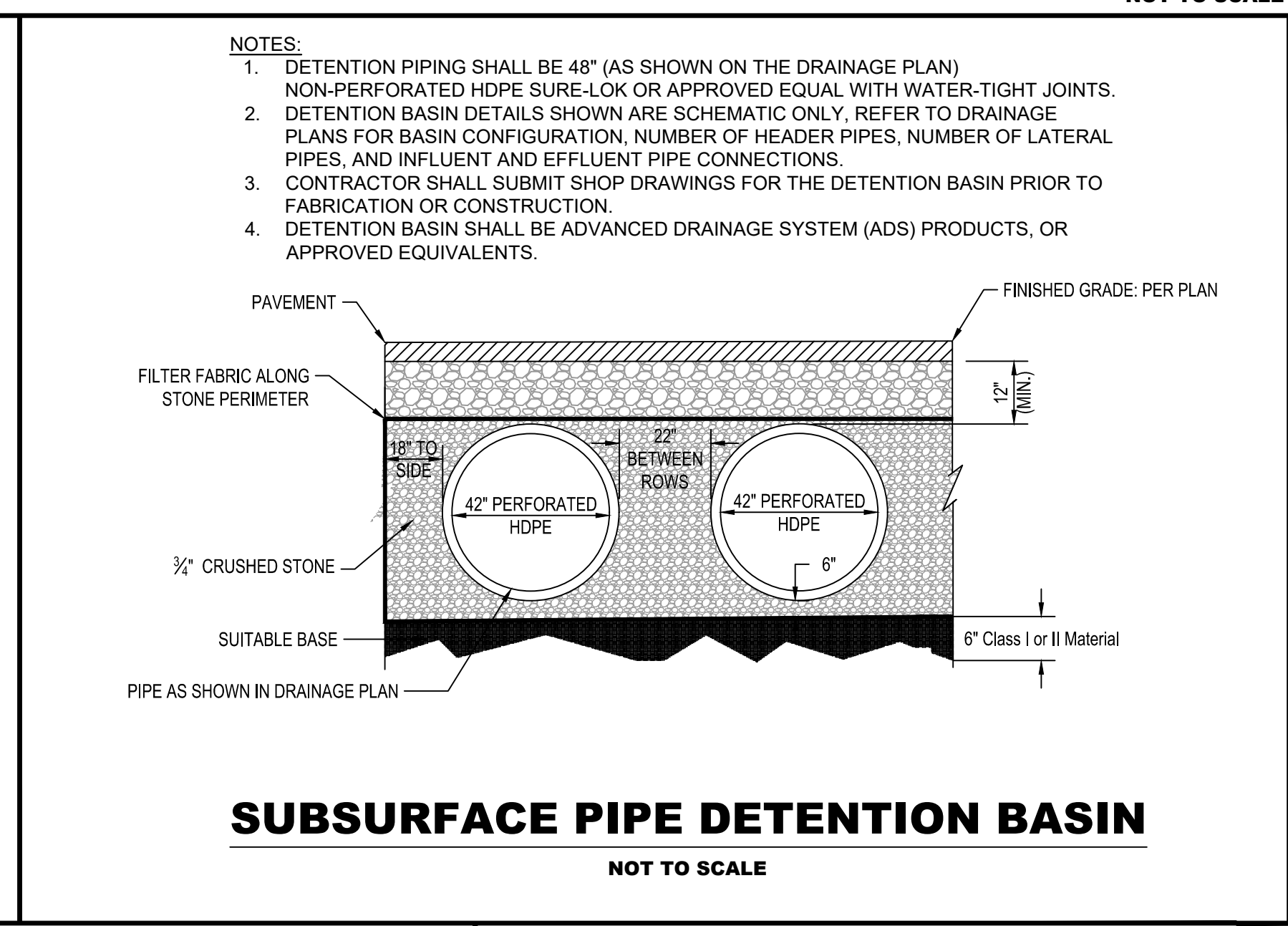
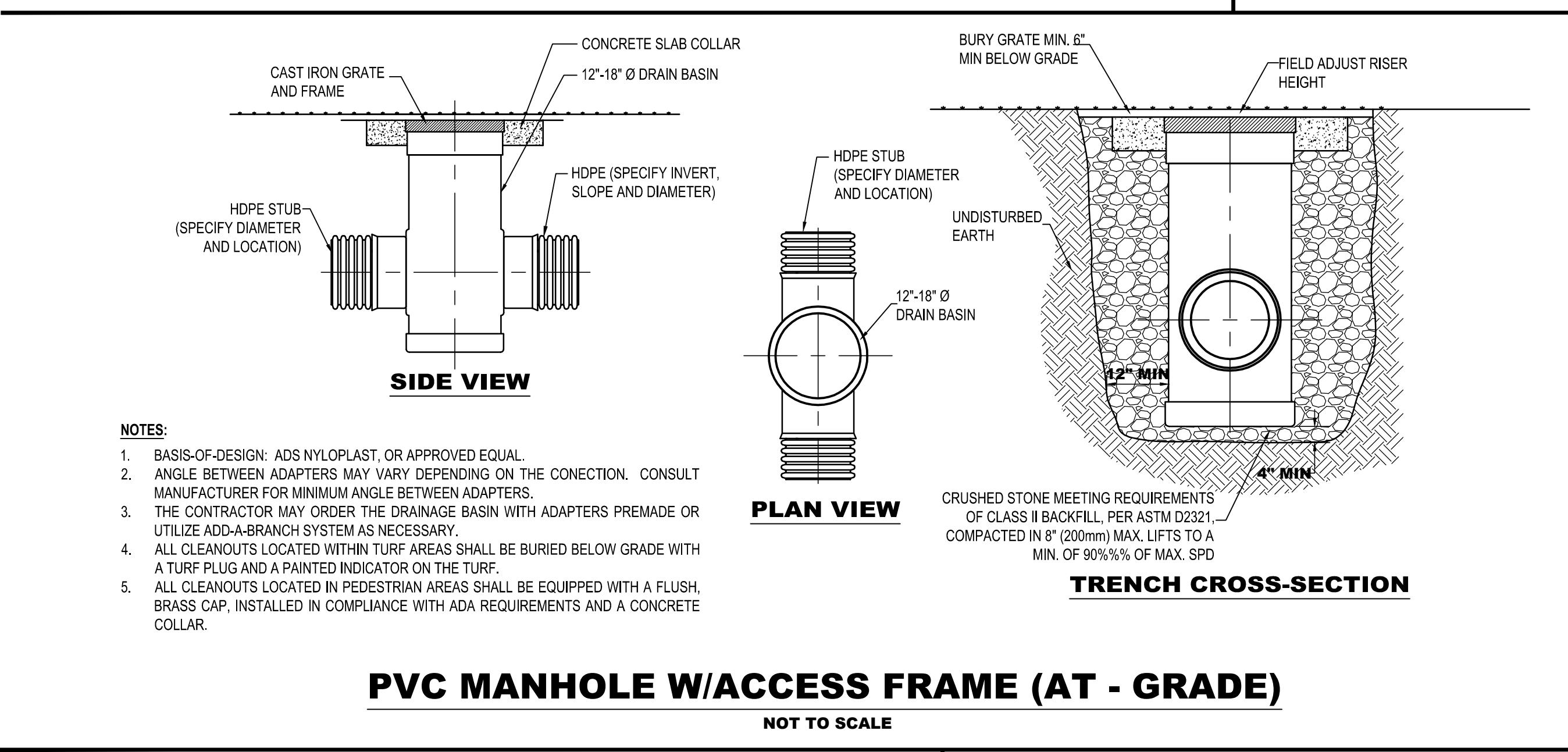
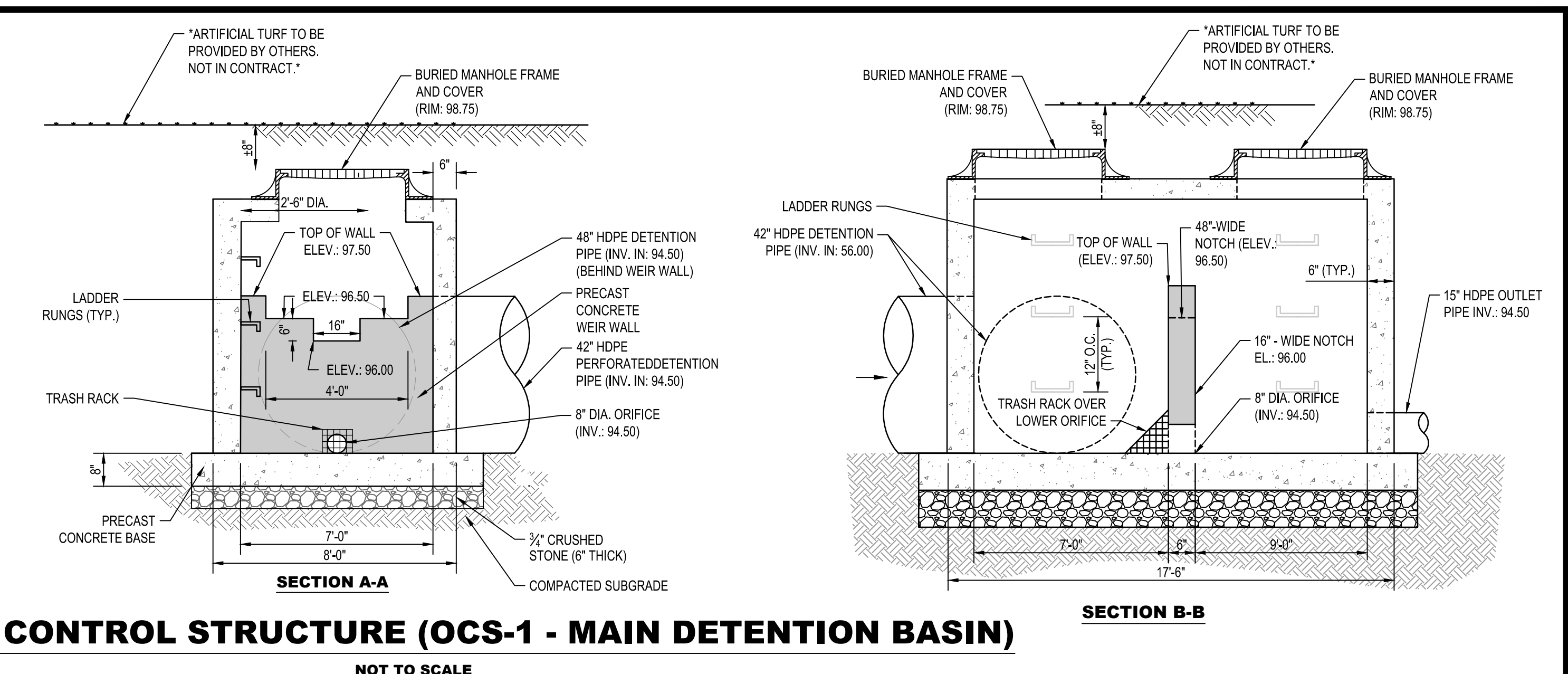
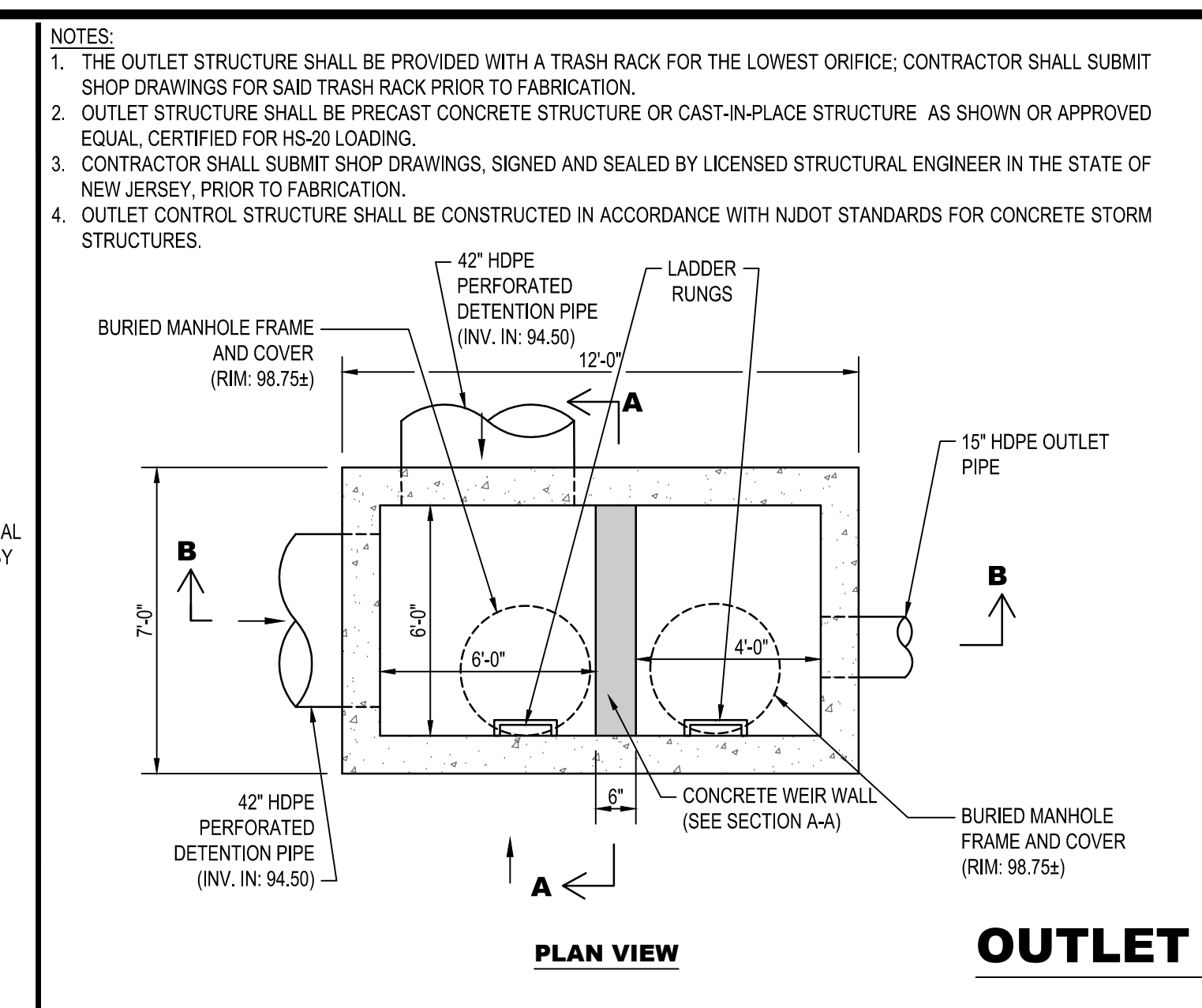
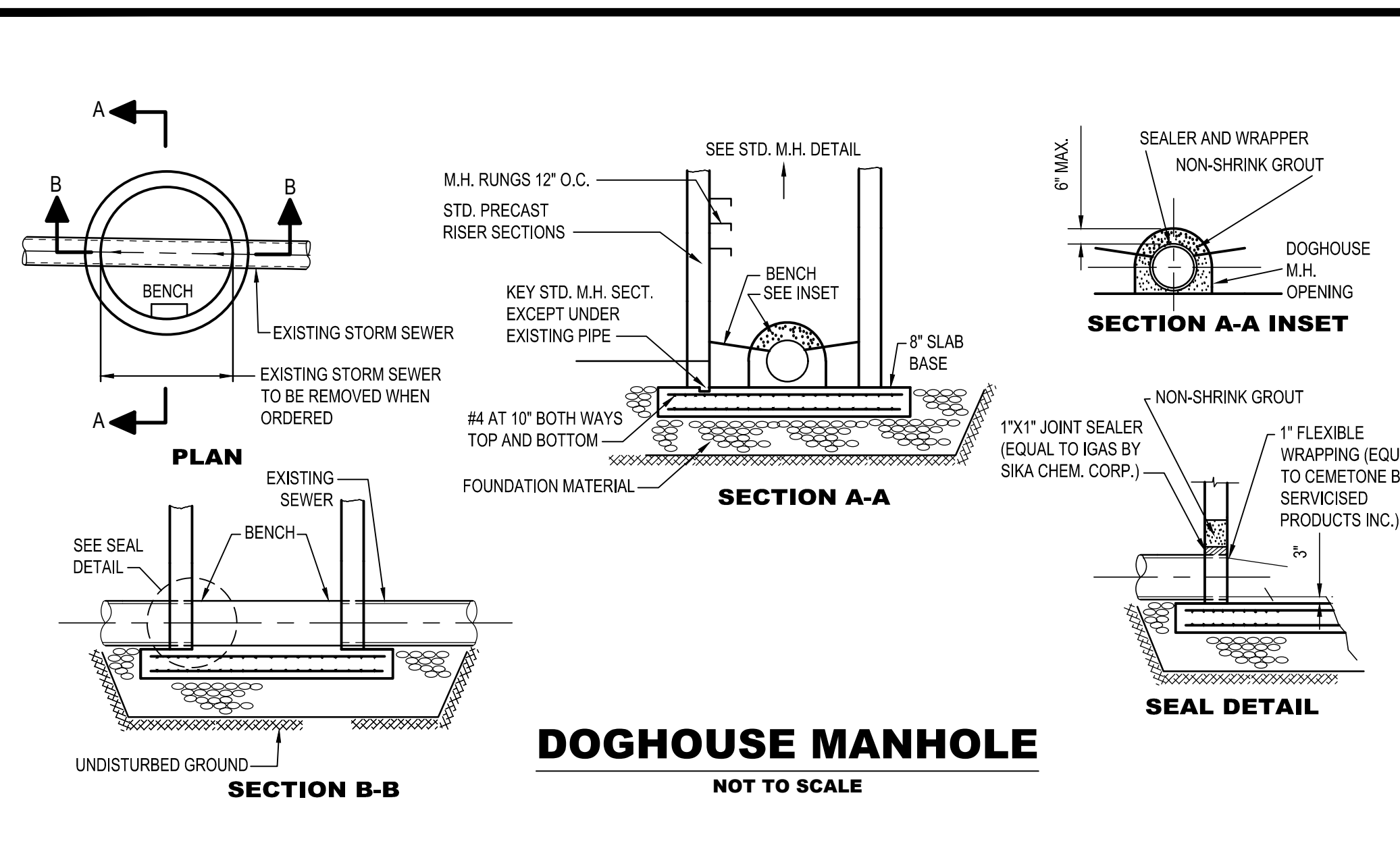
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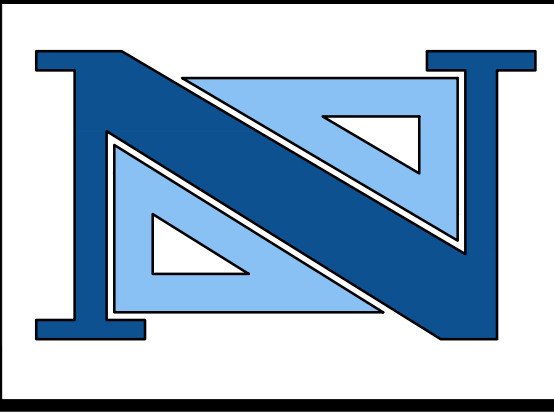
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CONSTRUCTION DETAILS I
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BLOCK 12201 - LOTS 27.07 & 28
TOWNSHIP OF SCOTCH PLAINS
UNION COUNTY
NEW JERSEY

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DESIGNED BY: J.S. SCALE: N.T.S. DATE: OCTOBER 5, 2018
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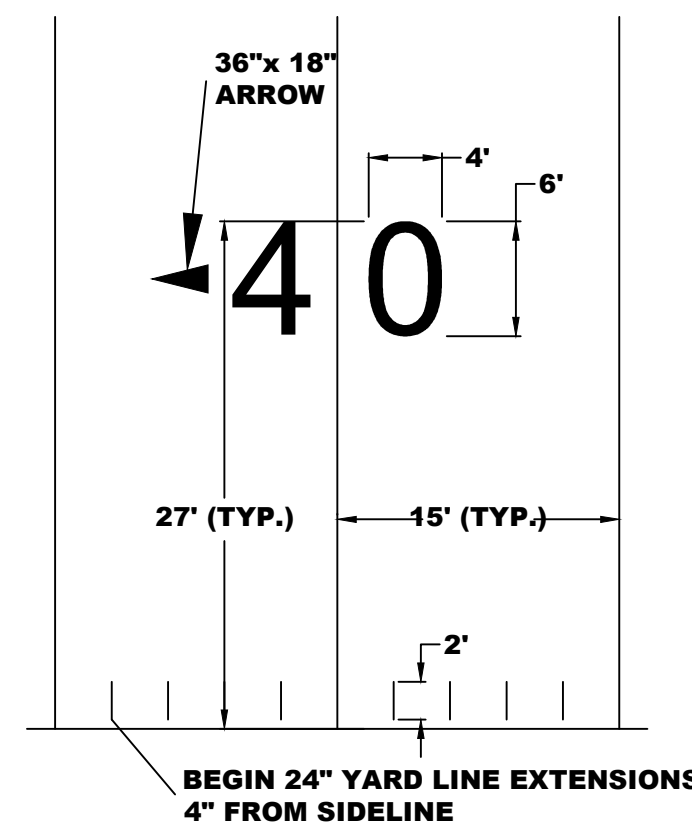
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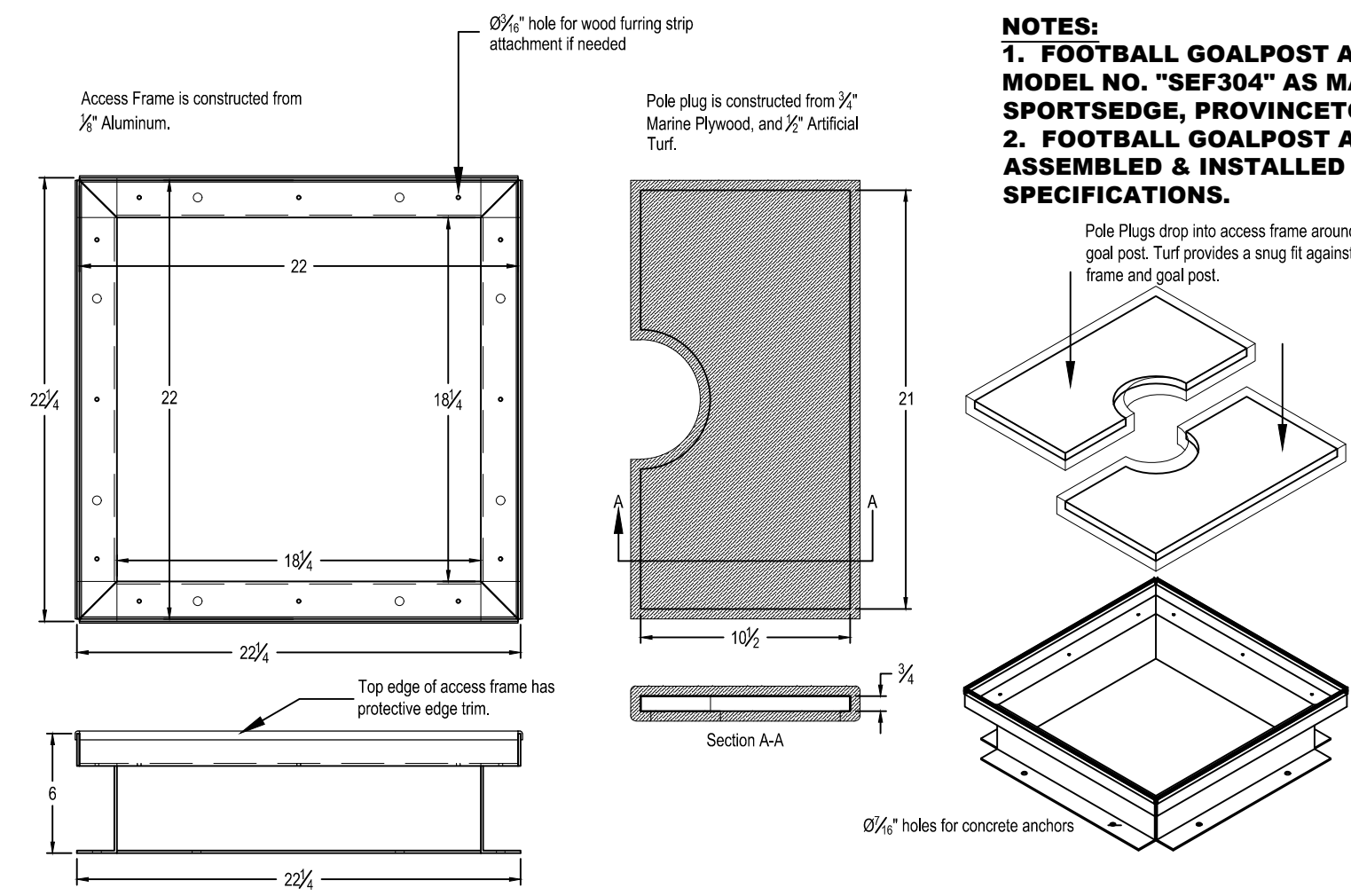
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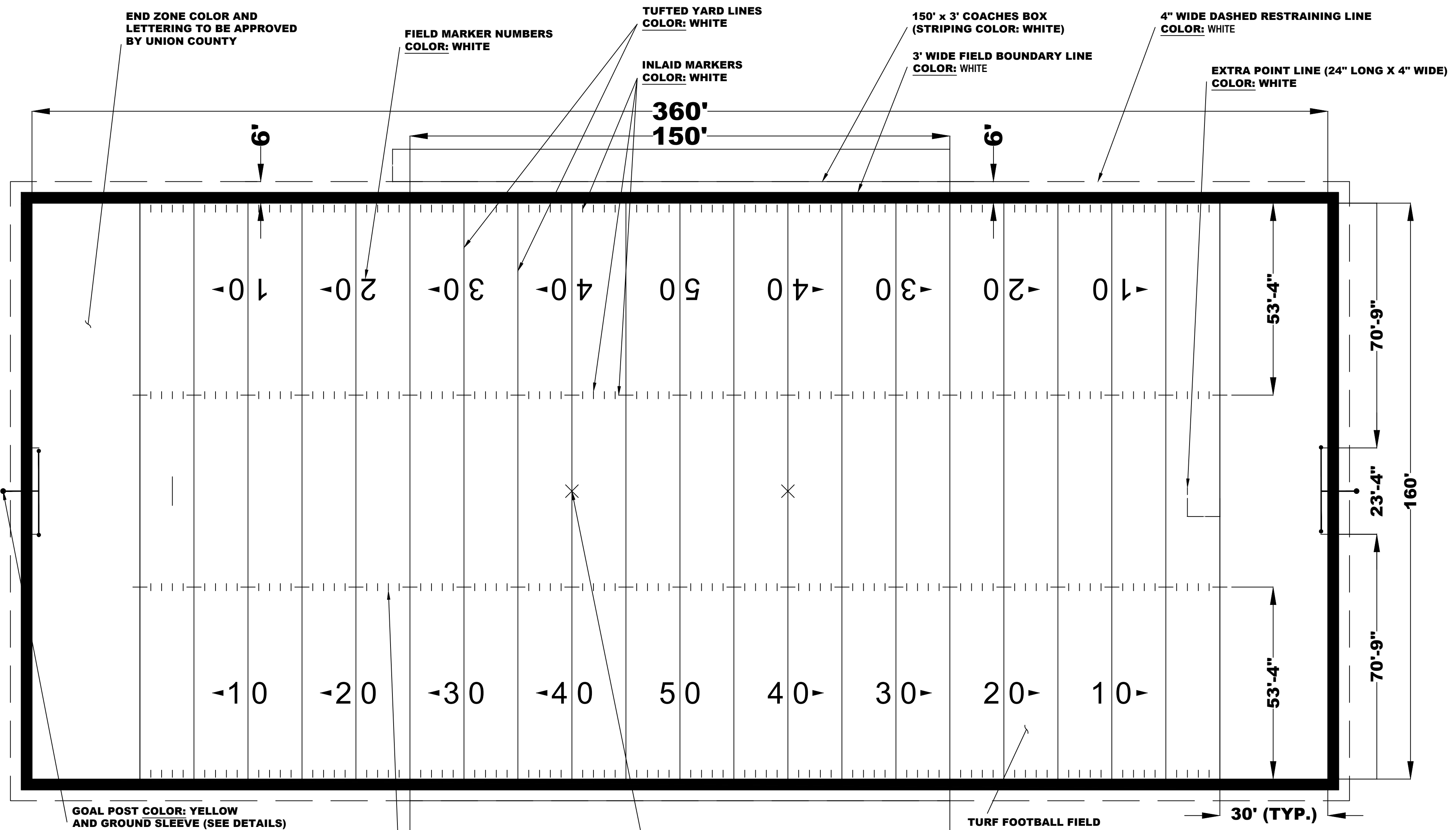
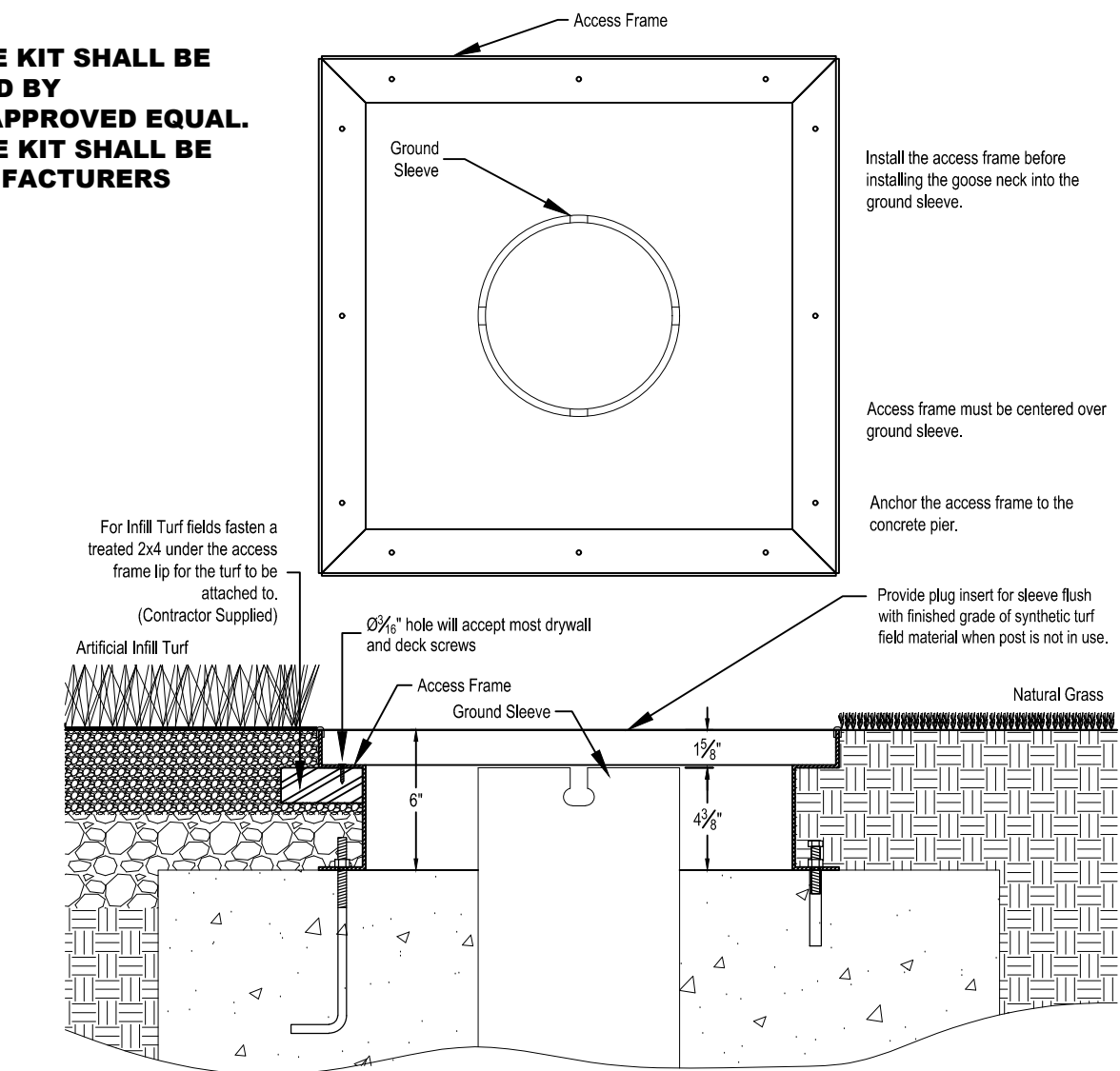
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PAINTED FOOTBALL YARD MARKER DETAIL
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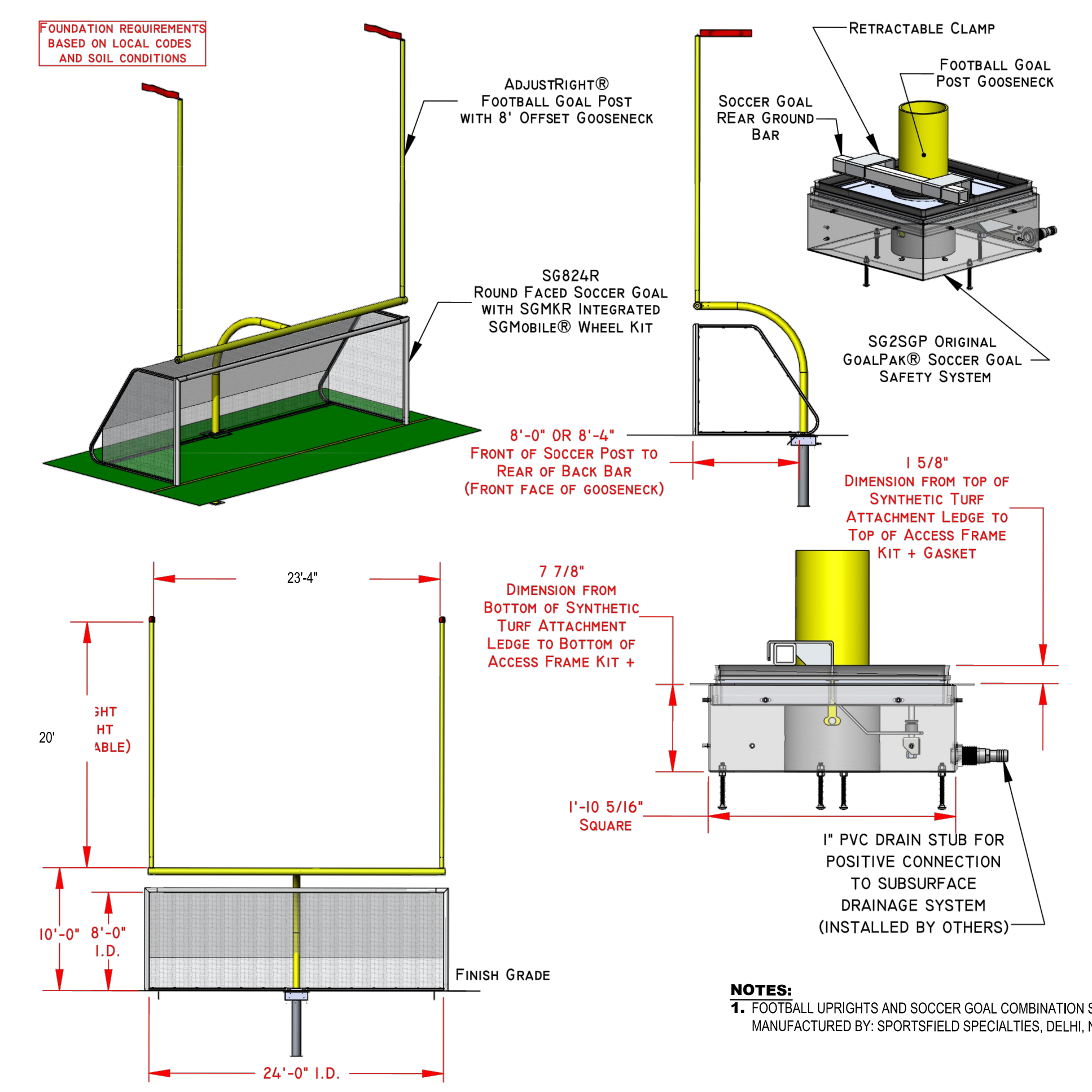


FOOTBALL GOAL ACCESS FRAME KIT DETAIL
NOT TO SCALE



FOOTBALL FIELD DETAIL LAYOUT
NOT TO SCALE

- NOTES:**
- FOOTBALL FIELD LAYOUT TO MEET ALL NFHS GUIDELINES AND REQUIREMENTS.
 - ALL MARKINGS TO BE TUFTED OR INLAID AS PER TURF MANUFACTURER'S SPECIFICATIONS.
 - COLOR SAMPLES FOR ALL MARKINGS TO BE PROVIDED TO OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.
 - CONTRACTOR TO PROVIDE COLOR RENDERING FOR APPROVAL BY OWNER PRIOR TO CONSTRUCTION.
 - CONTRACTOR TO VERIFY ALL DIMENSIONS.
 - PLEASE NOTE SOCCER, FIELD HOCKEY, LACROSSE TO BE OVERLAID.
- GENERAL NOTES:**
- SYNTHETIC TURF AND ALL STRIPING OF THE FIELD TO BE DONE BY OTHERS.
 - CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH OWNER/ENGINEER/TURF MANUFACTURER/INSTALLER REGARDING ALL DIMENSIONS FOR THE PROPOSED CONSTRUCTION.
 - CONTRACTOR SHALL NOTIFY THE OWNER AND/OR ENGINEER ONE MONTH IN ADVANCE OF COMPLETION OF THE SYNTHETIC TURF BASE SO THE TURF INSTALLATION WORK MAY BE PROPERLY SCHEDULED.
 - CONTRACTOR SHALL NOTE THAT UPON COMPLETION OF THE SYNTHETIC TURF BASE A SURVEY WILL BE PERFORMED BY OTHERS TO VERIFY THE GRADES AND LOCATION OF THE VARIOUS SITE IMPROVEMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE ANY AND ALL ADJUSTMENTS IMMEDIATELY THEREAFTER.

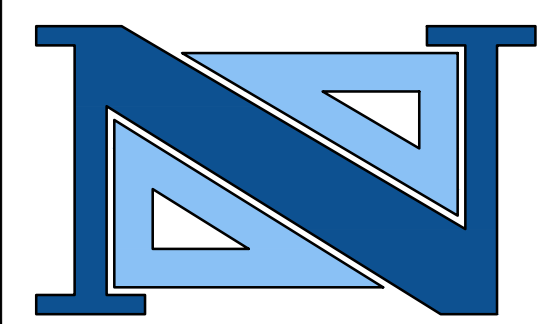


FOOTBALL UPRIGHTS AND SOCCER GOAL COMBINATION
NOT TO SCALE

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CERTIFICATE OF AUTHORIZATION (N.J.S.A. 45:8-56) 24GA27927000

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NO.	DATE	DESCRIPTION			



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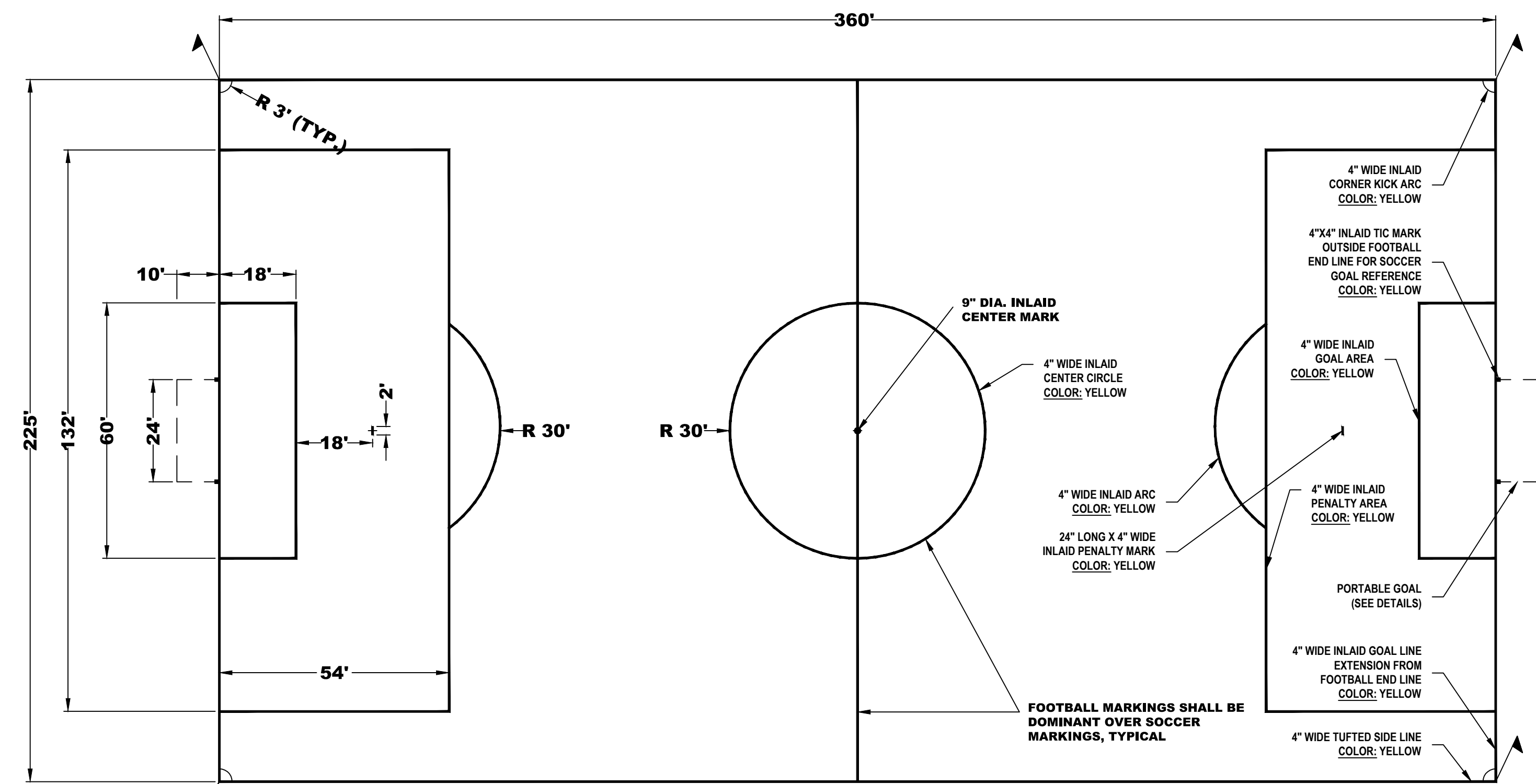
CONSTRUCTION DETAILS III
PONDEROSA FARM PARK - TURF FIELDS
BLOCK 12201 - LOTS 27.07 & 28
TOWNSHIP OF SCOTCH PLAINS
UNION COUNTY
NEW JERSEY

DESIGNED BY: J.S./M.E.W.
SCALE: N.T.S.

CHECKED BY: E.M.J.
SCALE: N.T.S.

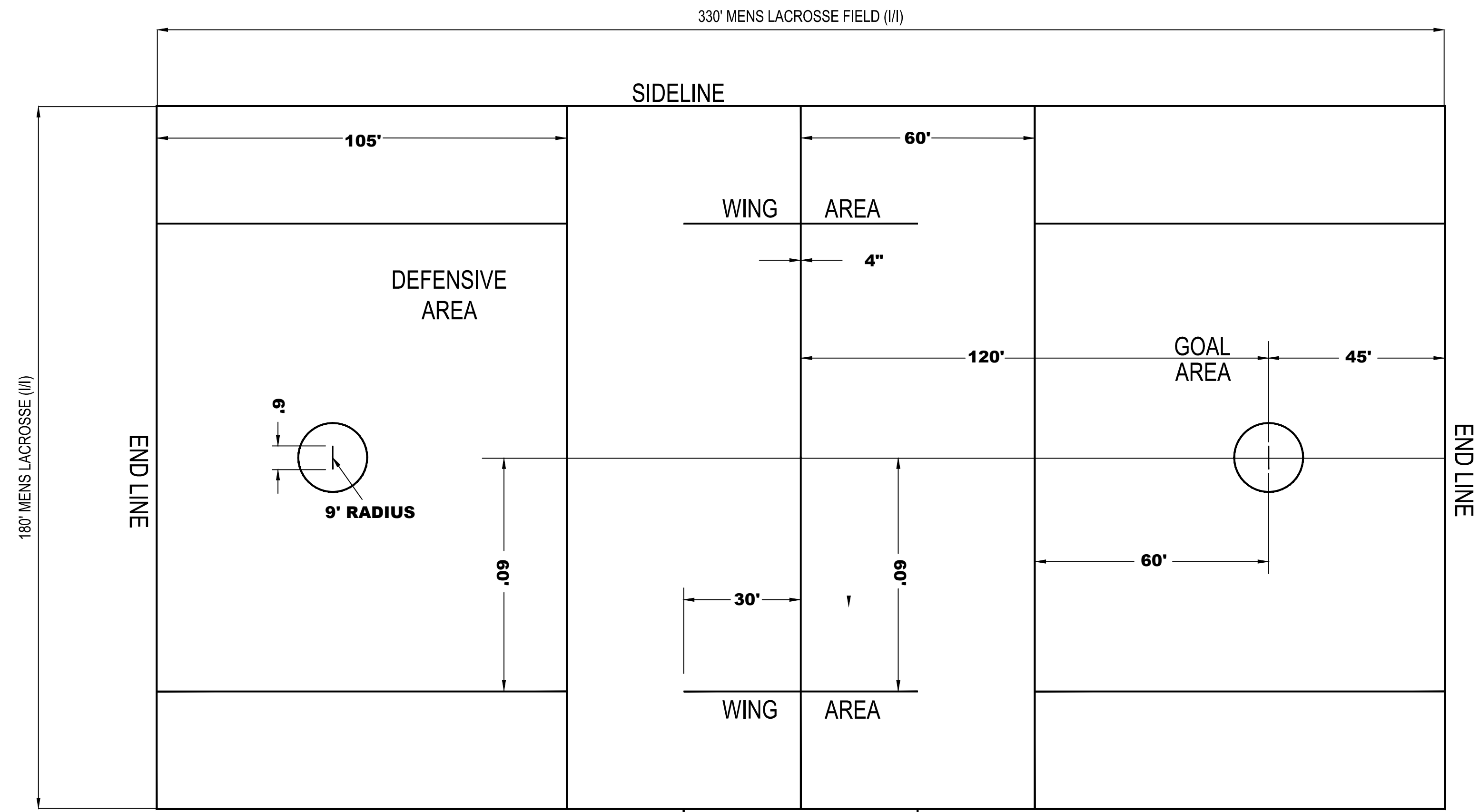
PROJECT NO: UNIOCTY17.016
SHEET NO: 8.02

DATE: OCTOBER 5, 2018



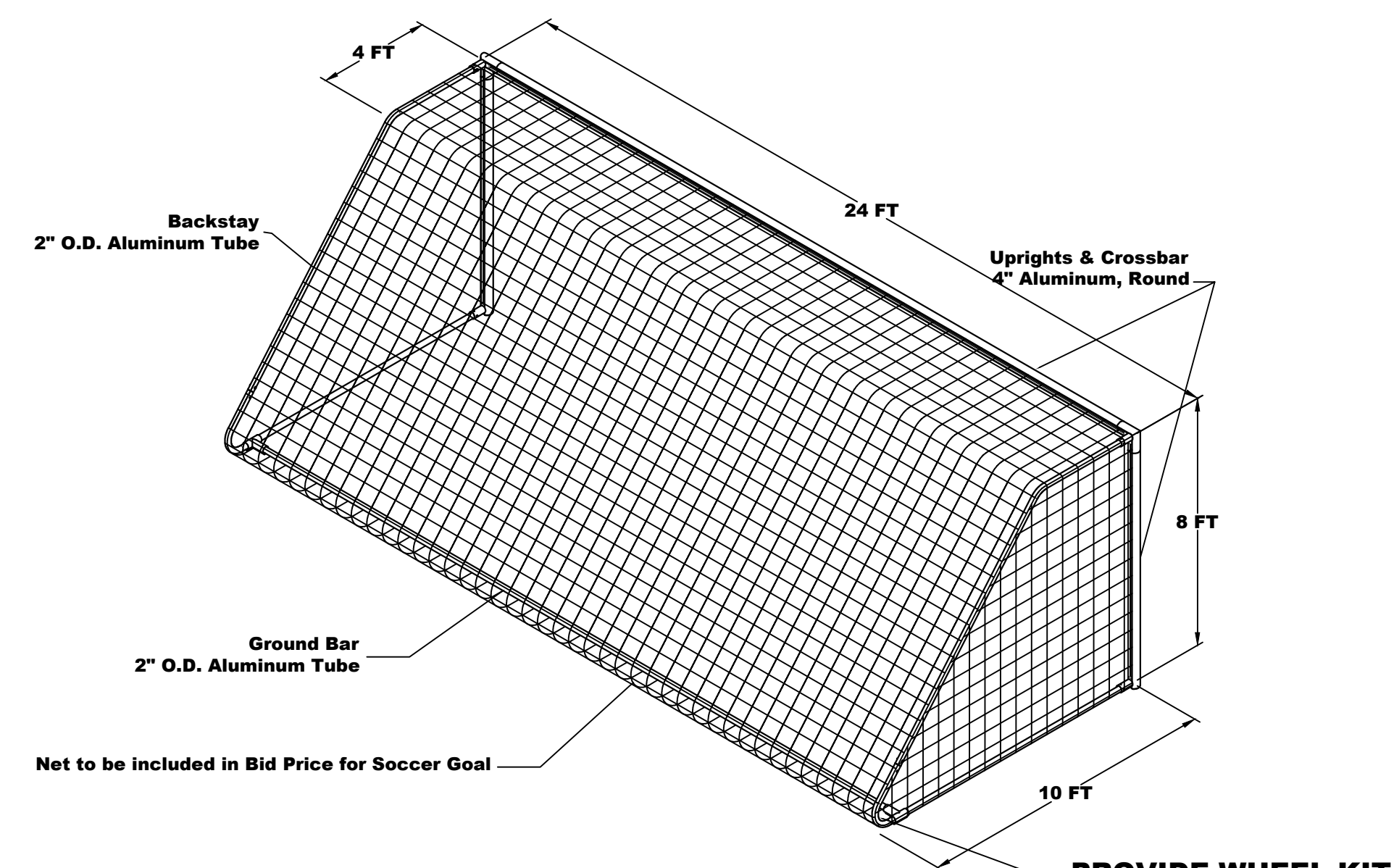
SOCCER FIELD NOTES:
 1. SOCCER FIELD MARKINGS ARE 4" YELLOW AND SHALL CONFORM TO NFSHS STANDARDS.
 2. CONTRACTOR TO VERIFY ALL DIMENSIONS AND MARKINGS ARE IN FULL COMPLIANCE/CONFORMANCE NFSHS STANDARDS.

SOCCER FIELD STRIPING/LAYOUT DETAIL
 NOT TO SCALE



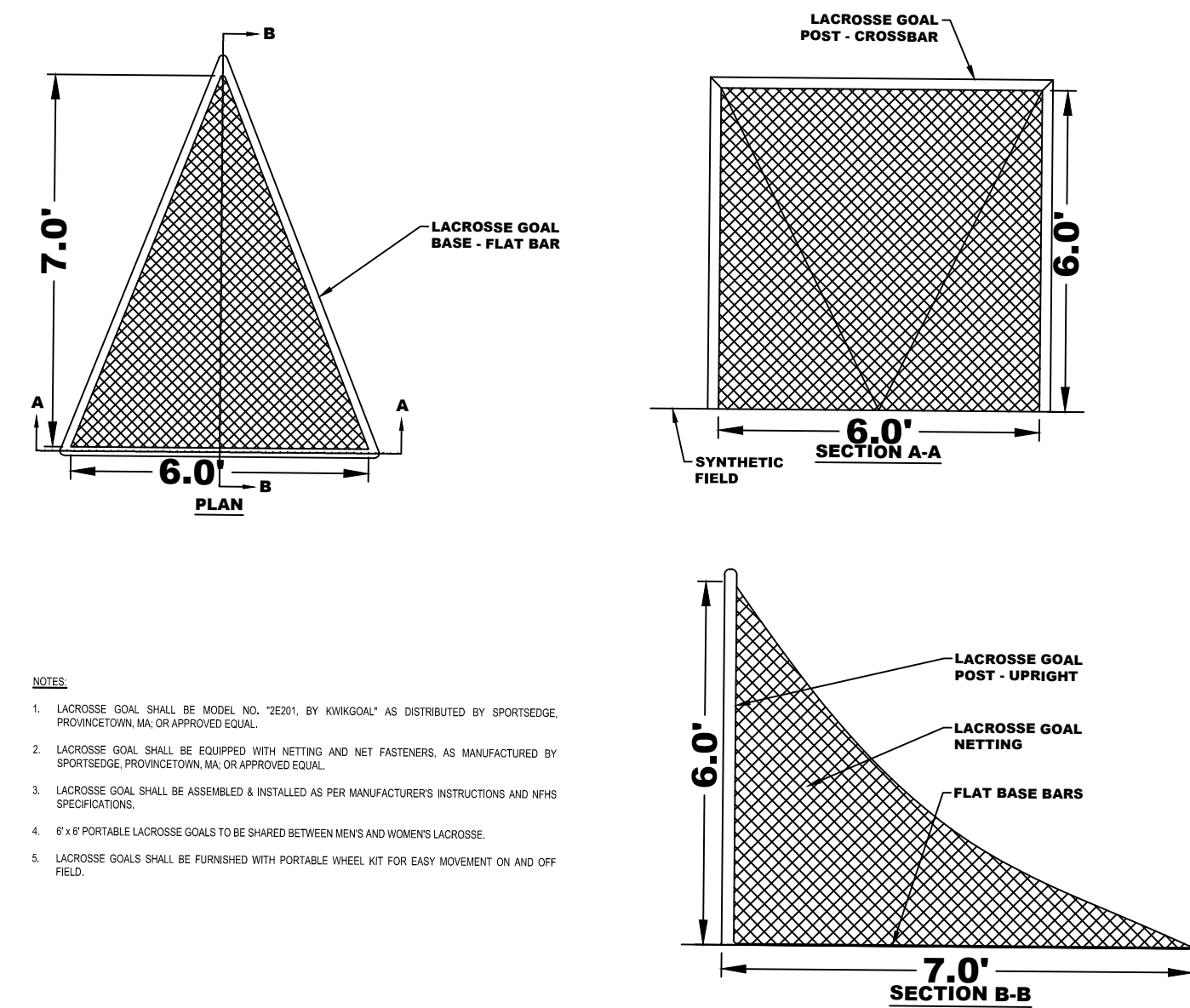
NOTES:
 1. LACROSSE MARKINGS ARE 4" RED AND SHALL CONFORM TO ALL NFSHS STANDARDS.
 2. CONTRACTOR TO VERIFY ALL DIMENSIONS AND MARKINGS ARE IN FULL COMPLIANCE/CONFORMANCE WITH ALL NCAA STANDARDS.

LACROSSE FIELD STRIPING/LAYOUT DETAIL
 NOT TO SCALE



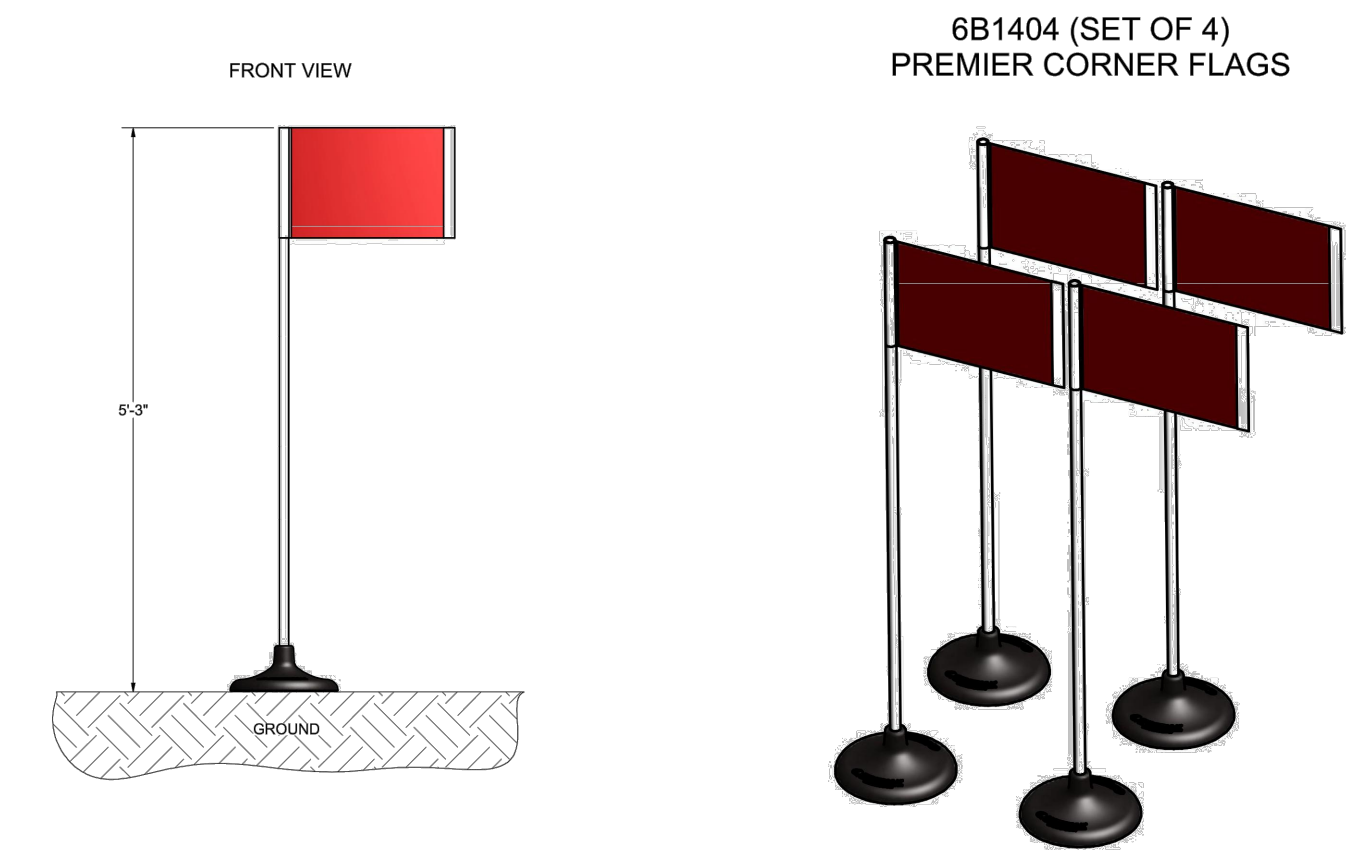
NOTES:
 1. SOCCER GOAL SHALL BE MODEL NO. "SE700R, SOCCER GOAL" AS MANUFACTURED BY SPORTSEDEGE, PROVINCETOWN, MA, OR APPROVED EQUAL.
 2. SOCCER GOAL SHALL BE EQUIPPED WITH MOBILITY WHEEL KIT, AS MANUFACTURED BY SPORTSEDEGE, PROVINCETOWN, MA, OR APPROVED EQUAL.
 3. SOCCER GOAL SHALL BE ASSEMBLED & INSTALLED AS PER MANUFACTURERS INSTRUCTIONS.

SOCCER GOAL DETAIL
 NOT TO SCALE



NOTES:
 1. LACROSSE GOAL SHALL BE MODEL NO. "2021" BY KIMCOAL" AS DISTRIBUTED BY SPORTSEDEGE, PROVINCETOWN, MA, OR APPROVED EQUAL.
 2. LACROSSE GOAL SHALL BE EQUIPPED WITH NETTING AND NET FASTENERS, AS MANUFACTURED BY SPORTSEDEGE, PROVINCETOWN, MA, OR APPROVED EQUAL.
 3. LACROSSE GOAL SHALL BE ASSEMBLED & INSTALLED AS PER MANUFACTURERS INSTRUCTIONS AND MFG SPECIFICATIONS.
 4. IF 4 PORTABLE LACROSSE GOALS TO BE SHARED BETWEEN MEN'S AND WOMEN'S LACROSSE.
 5. LACROSSE GOALS SHALL BE FURNISHED WITH PORTABLE WHEEL KIT FOR EASY MOVEMENT ON AND OFF FIELD.

SHARED PORTABLE LACROSSE GOAL
 NOT TO SCALE



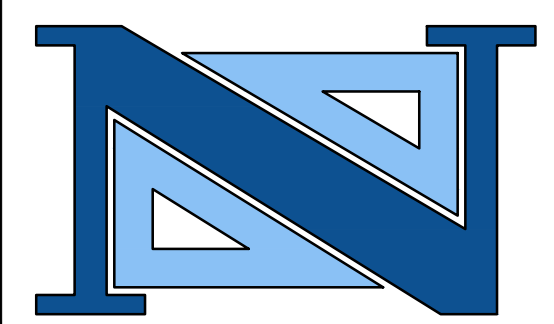
NOTES:
 1. CORNER FLAGS SHALL BE THE KIMCOAL CORNER FLAGS, MODEL NO. SG6B1404 AS MANUFACTURED BY SPORTSFIELD SPECIALTIES, INC. OR APPROVED EQUAL.
 2. ALL SOCCER FIELDS ARE TO BE EQUIPPED WITH ONE FULL SET OF FOUR (4) CORNER FLAGS, ONE PER EACH CORNER.
 3. FEATURES:
 3.1. HIGH IMPACT PVC CONSTRUCTION IDEAL FOR TURF, INDOOR/OUTDOOR USE.
 3.2. FINISH / COLOR: TO BE SELECTED BY OWNER (CONTRACTOR SHALL FURNISH COLOR SAMPLES TO OWNER PRIOR TO ORDERING)
 3.3. INCLUDED:
 3.3.1. 12" DIA. HIGH DENSITY, UV RESISTANT RUBBER, STACKABLE BASES
 4. ASSEMBLED WEIGHT: 34 LBS. PER SET; SINGLE FLAG POLE WEIGHT: 8.5 LBS.

SOCCER CORNER MARKER FLAGS
 NOT TO SCALE

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[Signature]

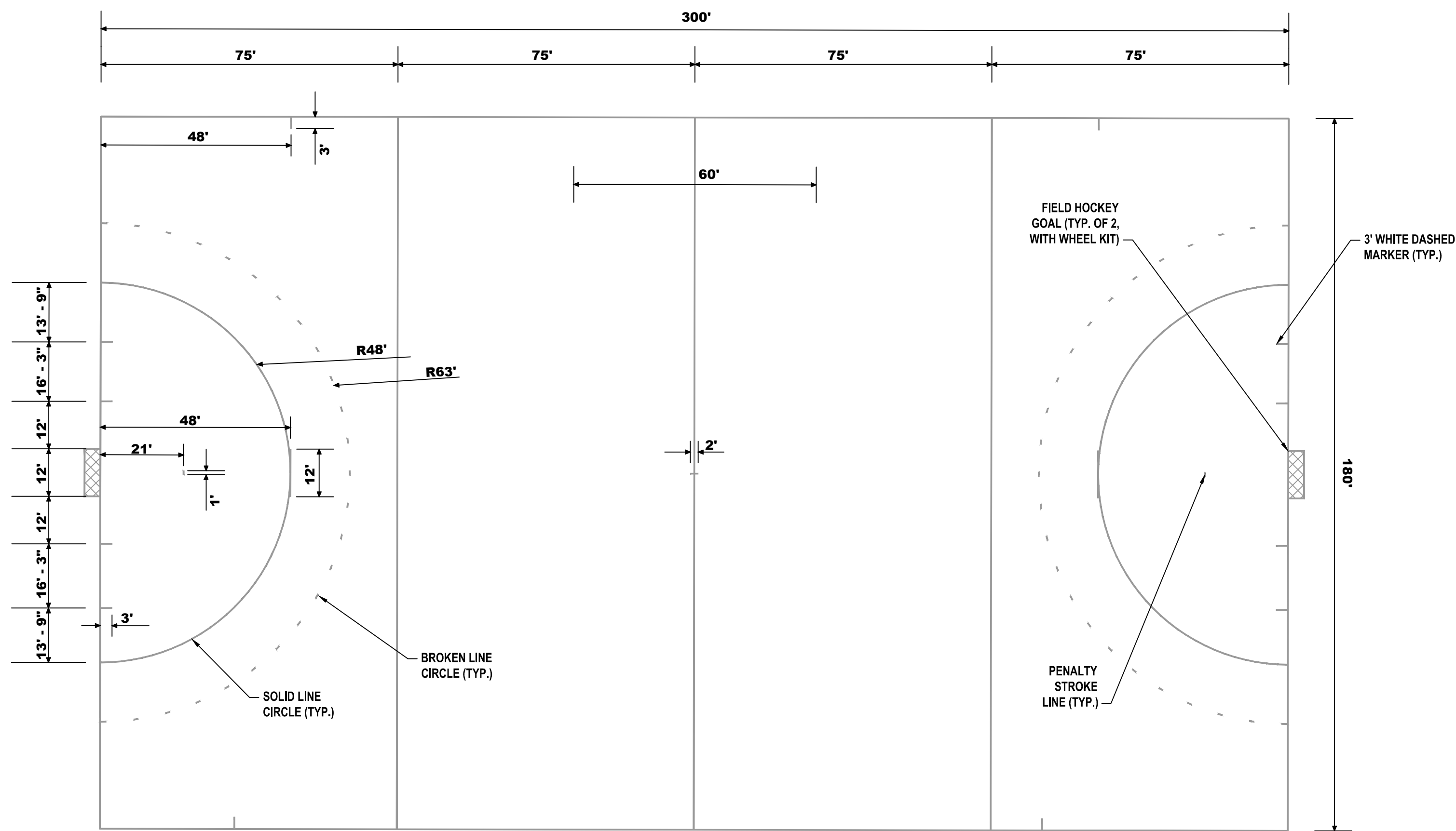
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[Signature]

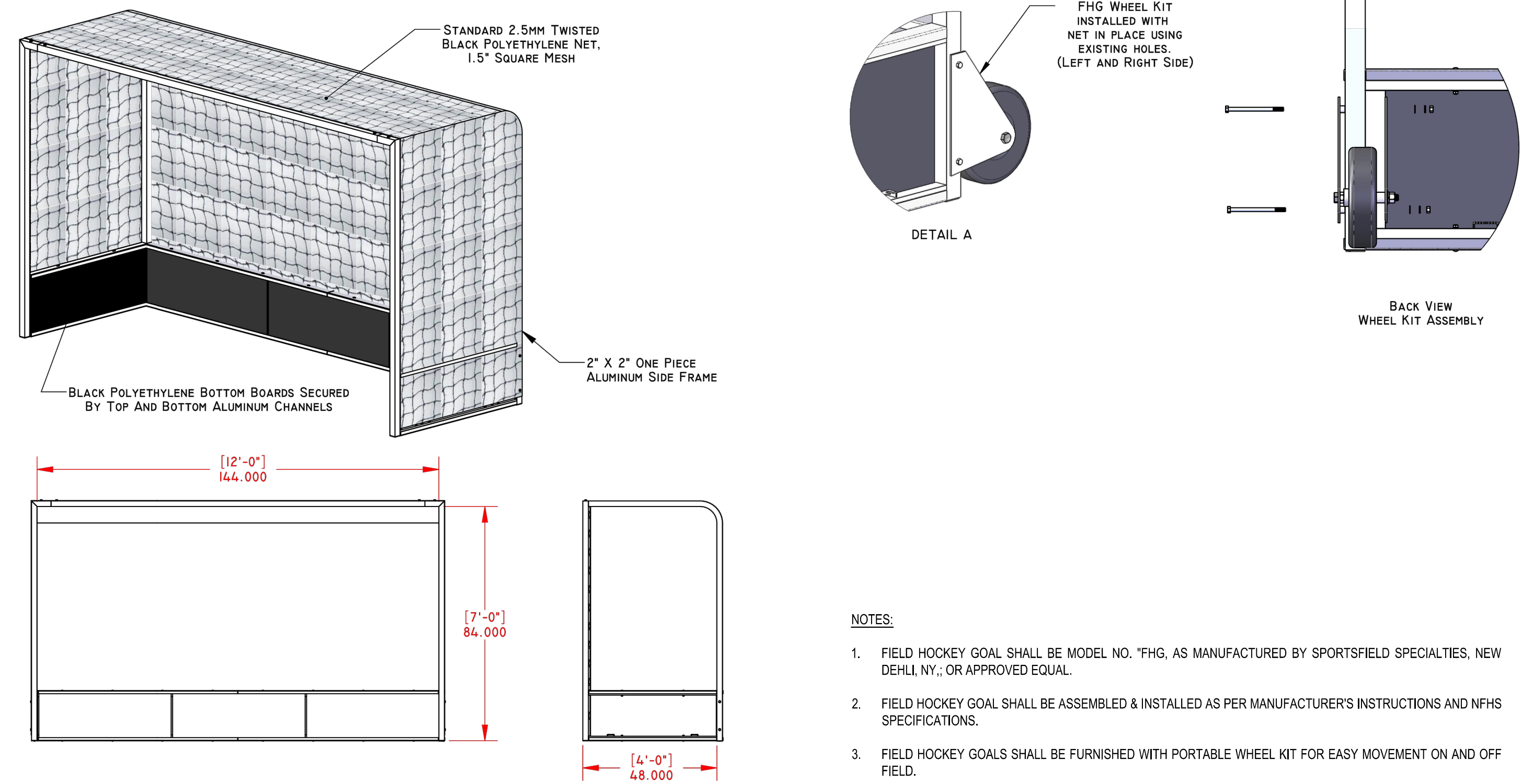
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CONSTRUCTION DETAILS IV
PONDEROSA FARM PARK - TURF FIELDS
BLOCK 12201 - LOTS 27.07 & 28
TOWNSHIP OF SCOTCH PLAINS
UNION COUNTY NEW JERSEY

DESIGNED BY: J.S. / M.E.W. CHECKED BY: E.M.J. PROJECT NO: UNIOCTY17.016 SHEET NO: 8.03
 SCALE: N.T.S. DATE: OCTOBER 5, 2018
 FIELD BOOK NO: PAGE:

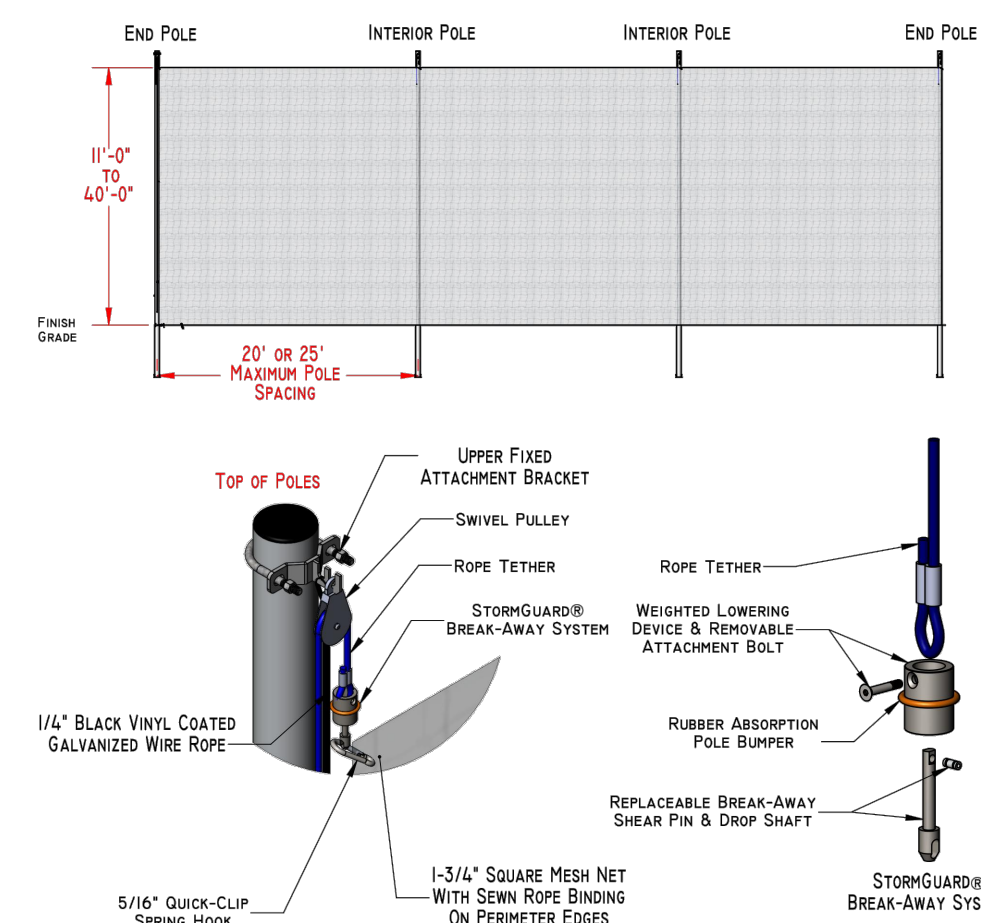


FIELD HOCKEY STRIPING & DIMENSION PLAN

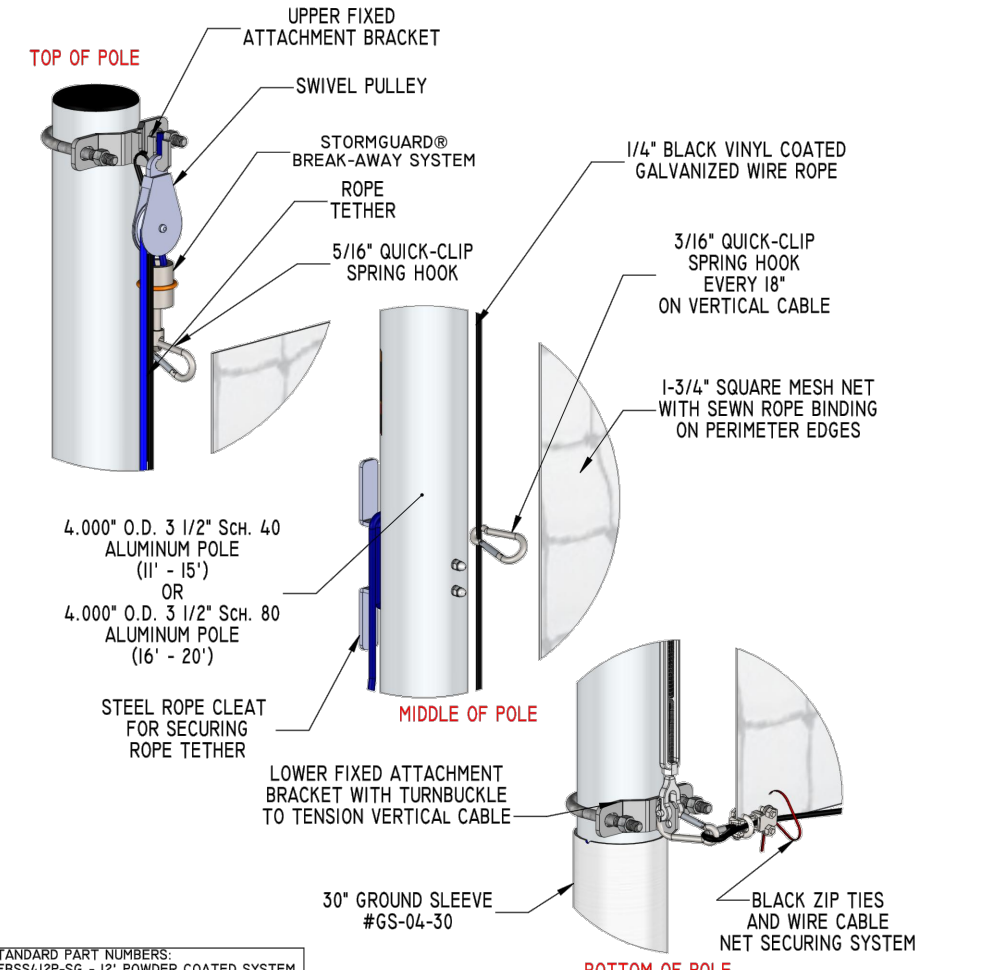


- NOTES:**
1. FIELD HOCKEY GOAL SHALL BE MODEL NO. "FHG, AS MANUFACTURED BY SPORTSFIELD SPECIALTIES, NEW DEHL, NY., OR APPROVED EQUAL.
 2. FIELD HOCKEY GOAL SHALL BE ASSEMBLED & INSTALLED AS PER MANUFACTURER'S INSTRUCTIONS AND NFHS SPECIFICATIONS.
 3. FIELD HOCKEY GOALS SHALL BE FURNISHED WITH PORTABLE WHEEL KIT FOR EASY MOVEMENT ON AND OFF FIELD.

PORTABLE FIELD HOCKEY GOAL
NOT TO SCALE

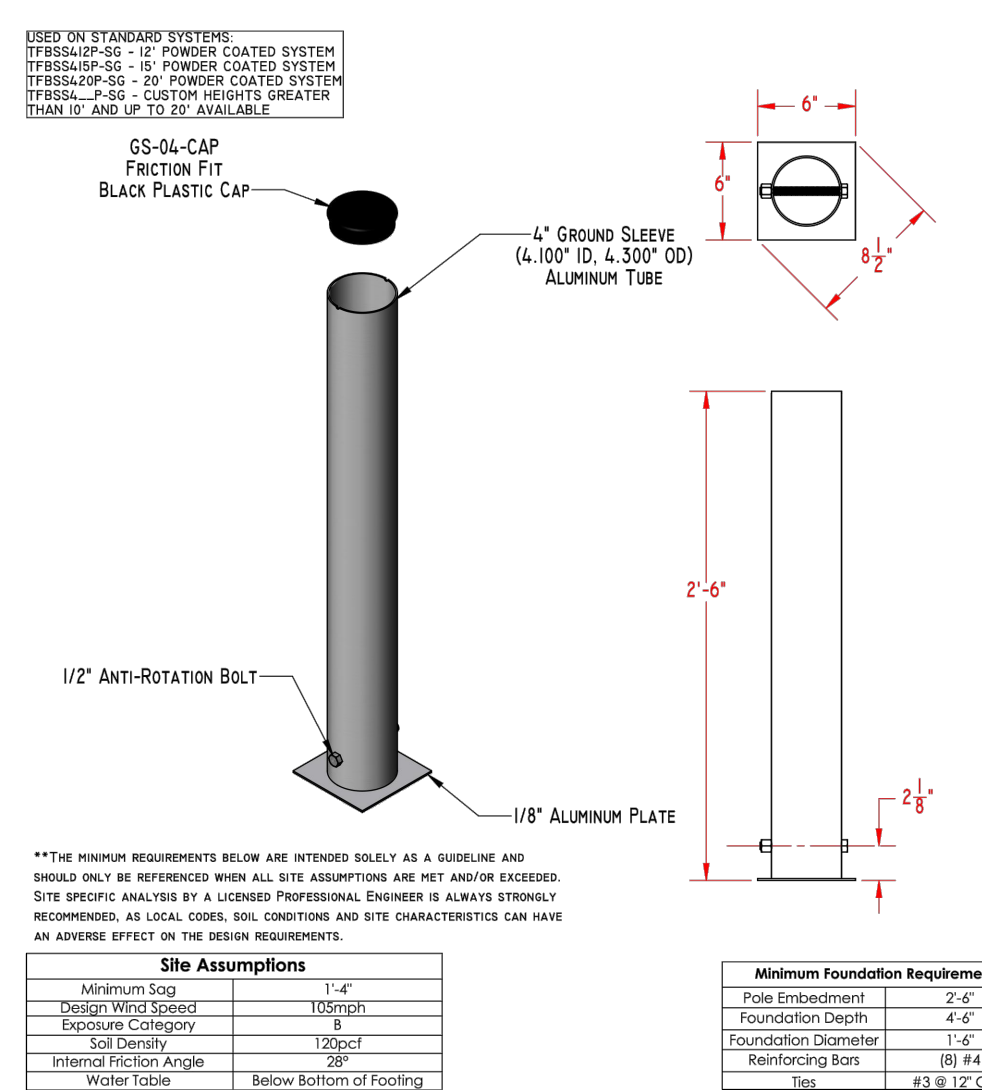


- NOTES:**
1. THE BASIS OF DESIGN FOR THE NETTING SYSTEM IS MODEL NO. 85540 POWDER COATED SYSTEM AS MANUFACTURED BY SPORTSFIELD SPECIALTIES, DELHI, NEW YORK, 10313, OR APPROVED EQUAL.
 2. ATHLETIC FIELD NETTING SYSTEM SHALL BE CONSTRUCTED AND MOUNTED ABOVE A CHAIN-LINK FENCE. REFER TO FENCING PLAN FOR TYP. NETTING AND FENCE HEIGHTS.
 3. CONCRETE FOOTING SHALL MEET 28-DAY STRENGTH OF 4000 PSI.
 4. SPORTS NET MESH SHALL BE RATED FOR APPLICATIONS ON A FOOTBALL FIELD, SOCCER FIELD, MEN'S AND WOMEN'S LACROSSE FIELD, AND FIELD HOCKEY FIELD.
 5. FOUNDATION INFORMATION SHOWN HEREON IS BASED ON ASSUMED SOIL CONDITIONS. CONTRACTOR SHALL VERIFY THE FOUNDATION OR FOOTING REQUIREMENTS WITH THE MANUFACTURER FOR THE SITE-SPECIFIC SOIL CONDITIONS. CONTRACTOR SHALL REFER TO THE GEOTECHNICAL ENGINEERING REPORT PREPARED FOR THIS SITE BY OTHERS.

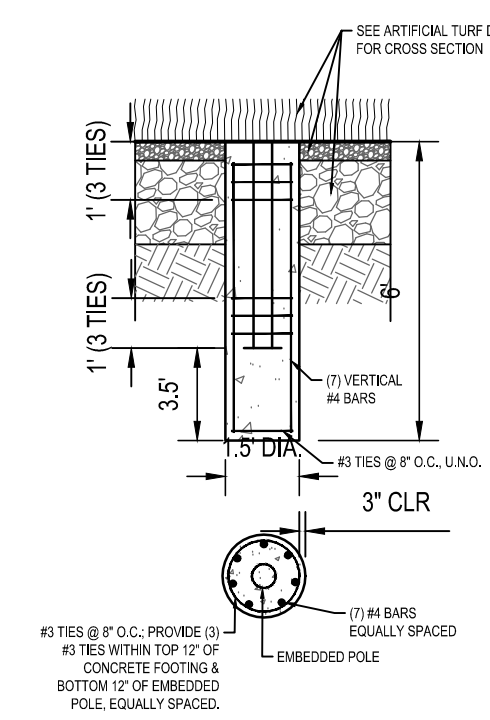


- STORMGUARD® FOOT REQUIREMENTS:**
 STRESSLAP-SS - 10" POWDER COATED SYSTEM
 STRESSLAP-SS - 10" POWDER COATED SYSTEM
 STRESSLAP-SS - 20" POWDER COATED SYSTEM
 THROUGH-PS-25 - CUSTOM HEIGHTS GREATER THAN 10' AND UP TO 25' AVAILABLE
- FOUNDATION REQUIREMENTS BASED ON LOCAL TYPICAL AND SOIL CONDITIONS:**
- PROFESSIONALLY PRE-ENGINEERED TO MEET (ASCE 7-05 WIND RATING UP TO 90 MPH)**
- FOUNDATION REQUIREMENTS BASED ON LOCAL TYPICAL AND SOIL CONDITIONS:**

ATHLETIC FIELD NETTING SYSTEM



- USED ON STANDARD SYSTEMS:**
 STRESSLAP-SS - 10" POWDER COATED SYSTEM
 STRESSLAP-SS - 10" POWDER COATED SYSTEM
 STRESSLAP-SS - 20" POWDER COATED SYSTEM
 THROUGH-PS-25 - CUSTOM HEIGHTS GREATER THAN 10' AND UP TO 25' AVAILABLE
- Site Assumptions**
- | | |
|-------------------------|-------------------------|
| Minimum Soil | 1" c" |
| Moisture Content | 15% |
| Exposure Category | 1B, C |
| Soil Density | 120 pcf |
| Internal Friction Angle | 28° |
| Water Table | Below Bottom of Footing |
- Minimum Foundation Requirements**
- | | |
|---------------------|---------------|
| Pole Embedment | 2'-0" |
| Foundation Depth | 4'-0" |
| Foundation Diameter | 1'-0" |
| Reinforcing Bars | #3 @ 12" O.C. |
| etc. | |



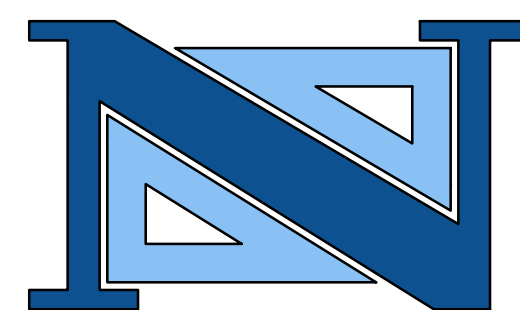
- NOTES:**
1. INSTALL THREE, EQUALLY SPACED, "TREE STAPLES" PER TREE, AS MANUFACTURED BY TREE STAPLE INC. OF NEW PROVIDENCE, N.J., MODEL NO. TS36-10-10, OR APPROVED EQUAL.
 2. INSTALL "TREE STAPLES" LONG PRONG AGAINST SIDE OF ROOTBALL, SHORT PRONG HALF WAY BETWEEN TRUNK AND EDGE OF ROOTBALL. UNTIE LACING AND PEEL BACK BURLAP AFTER "TREE STAPLES" ARE INSTALLED. SET "TREE STAPLES" ONE (1) TO TWO (2) INCHES INTO TOP OF ROOTBALL.

EVERGREEN TREE PLANTING
NOT TO SCALE

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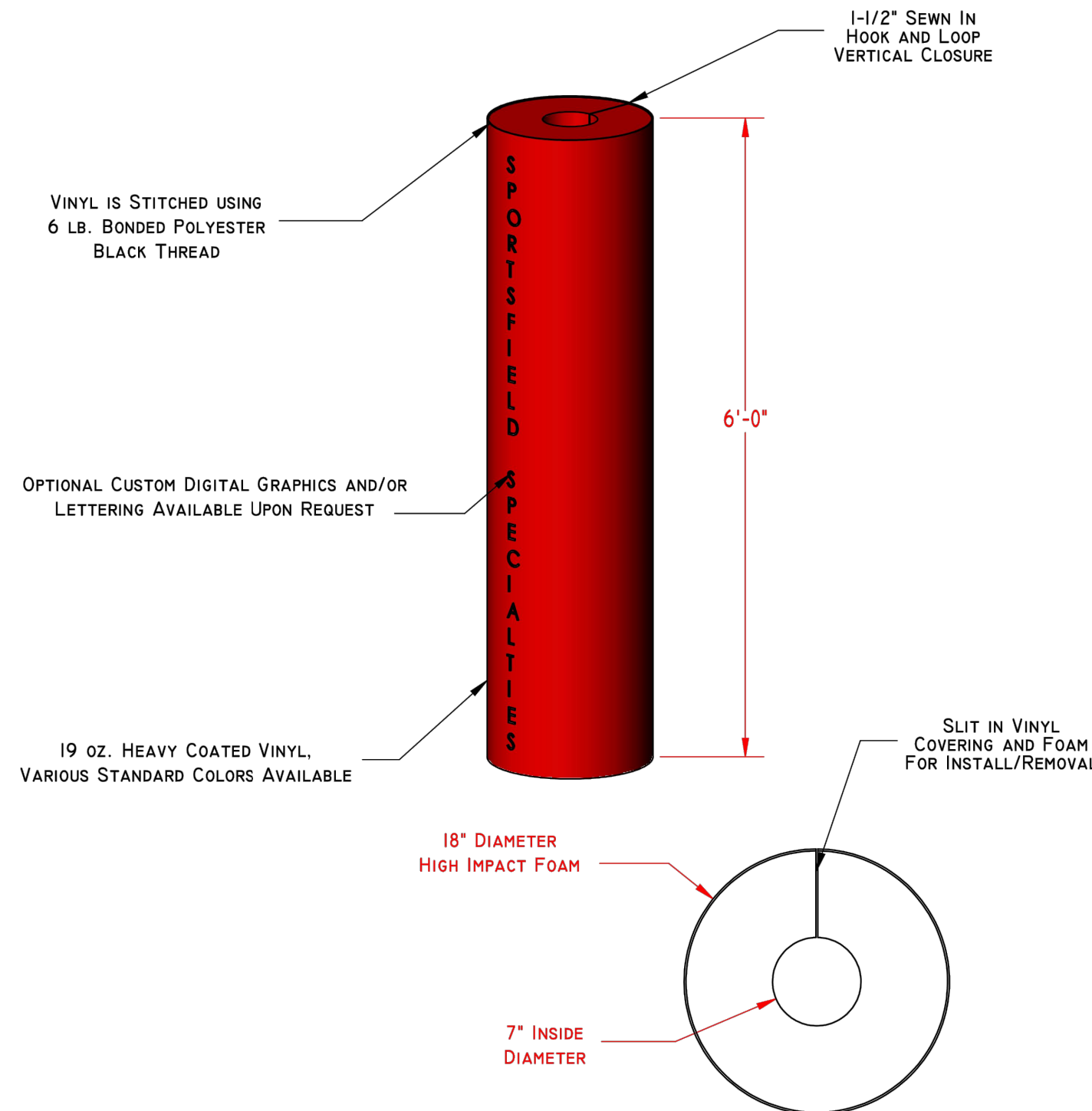
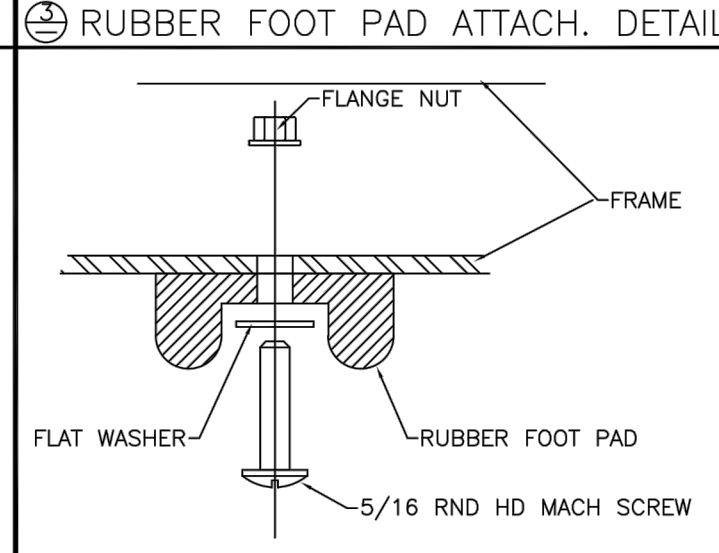
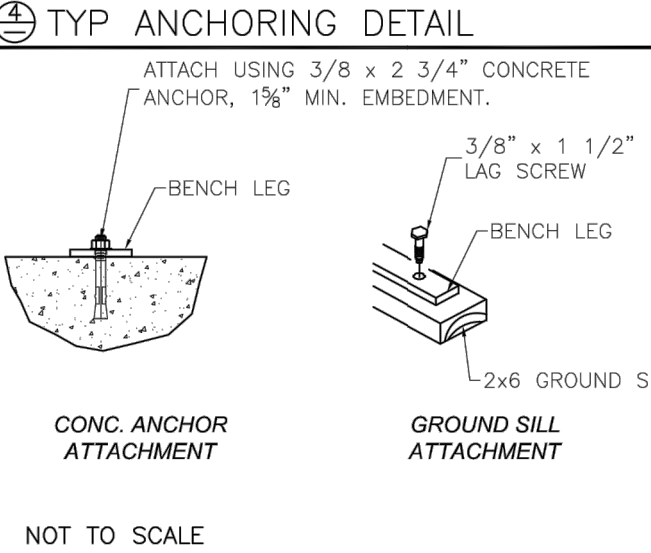
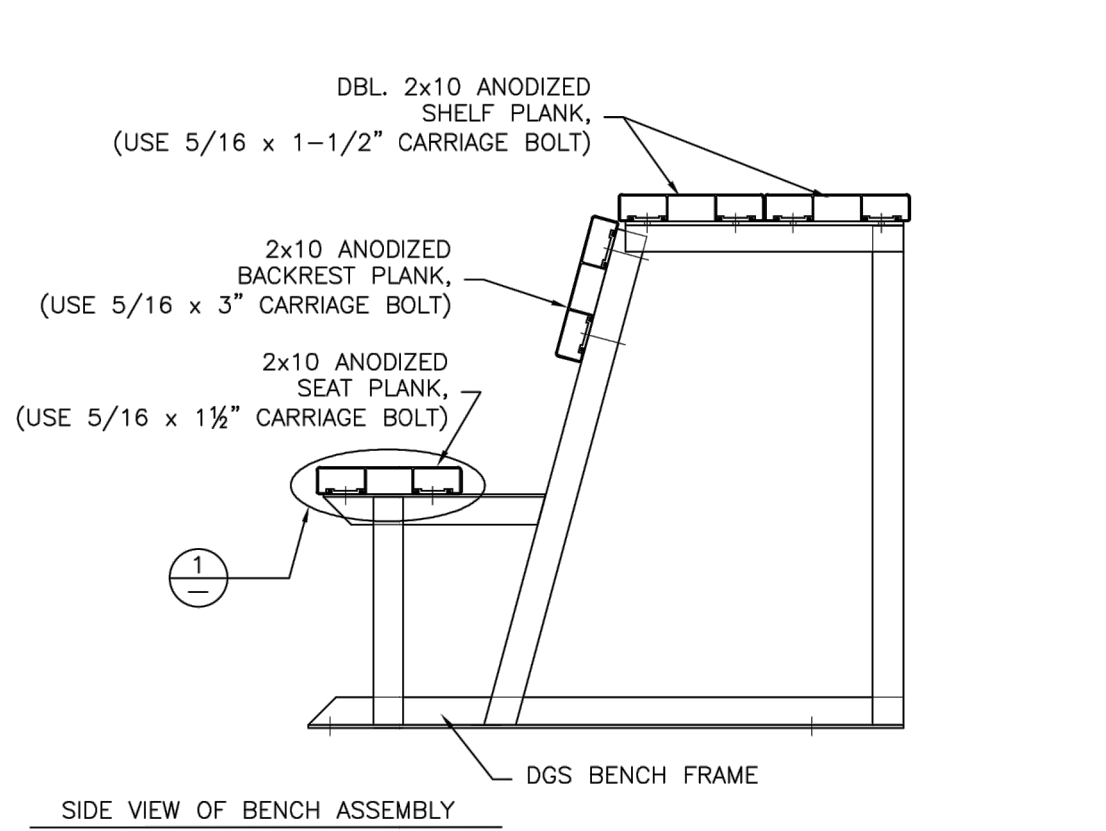
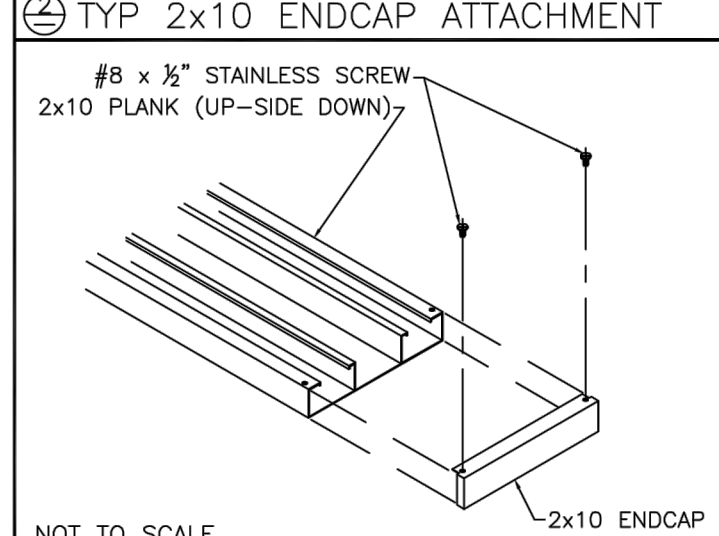
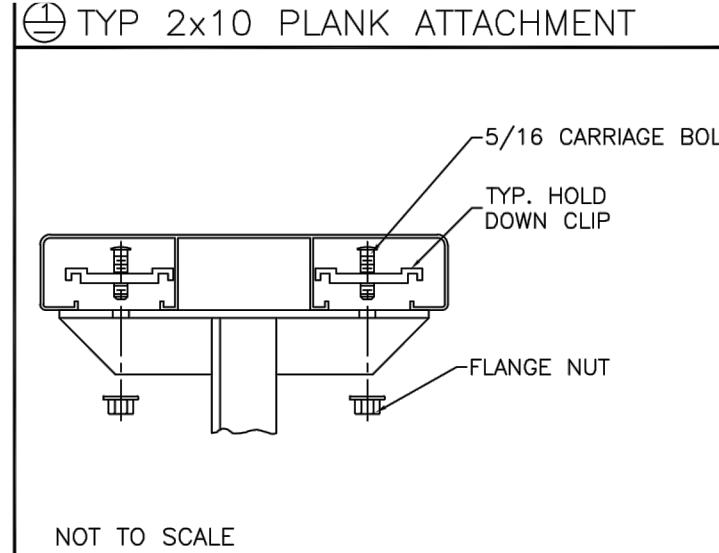
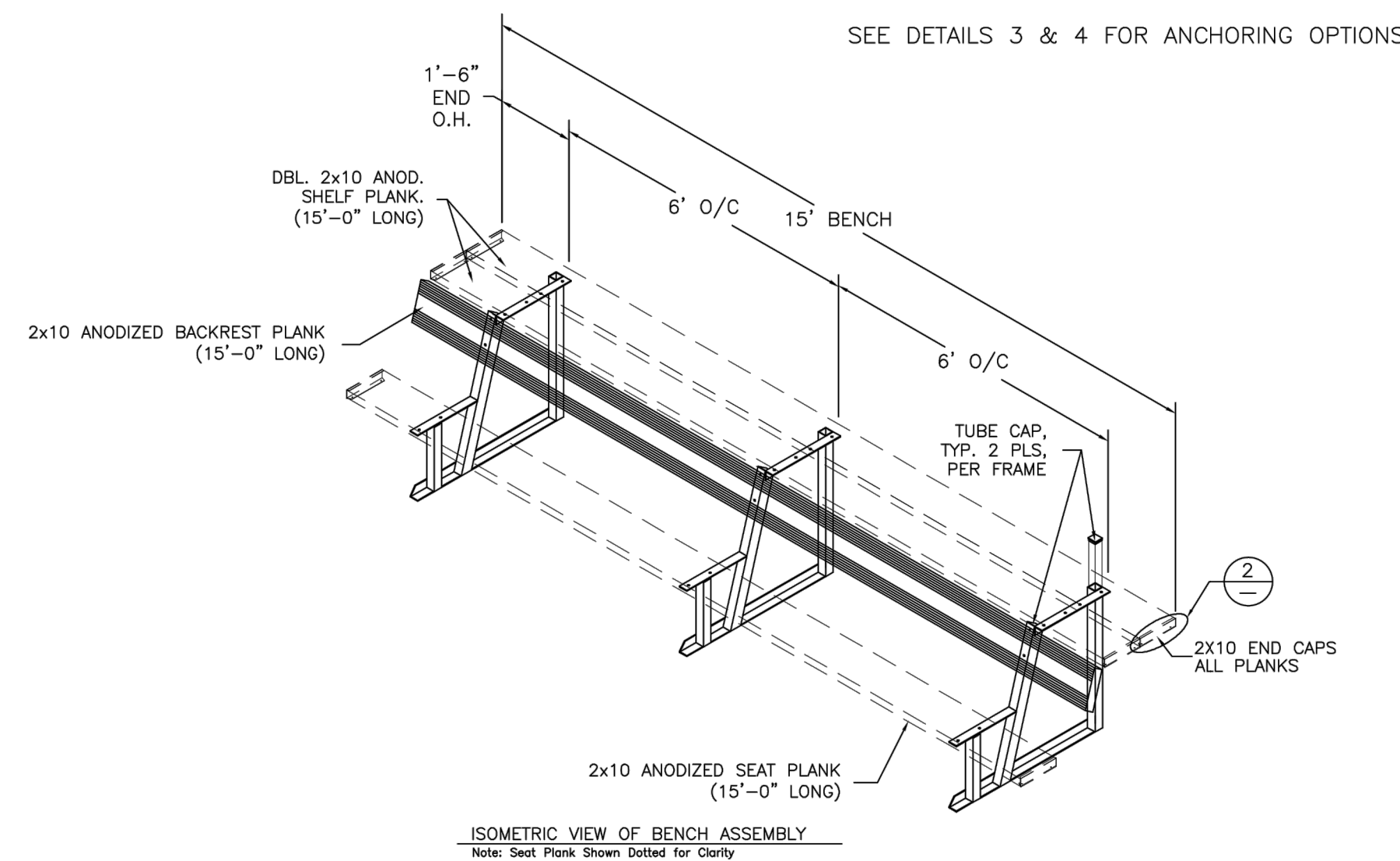
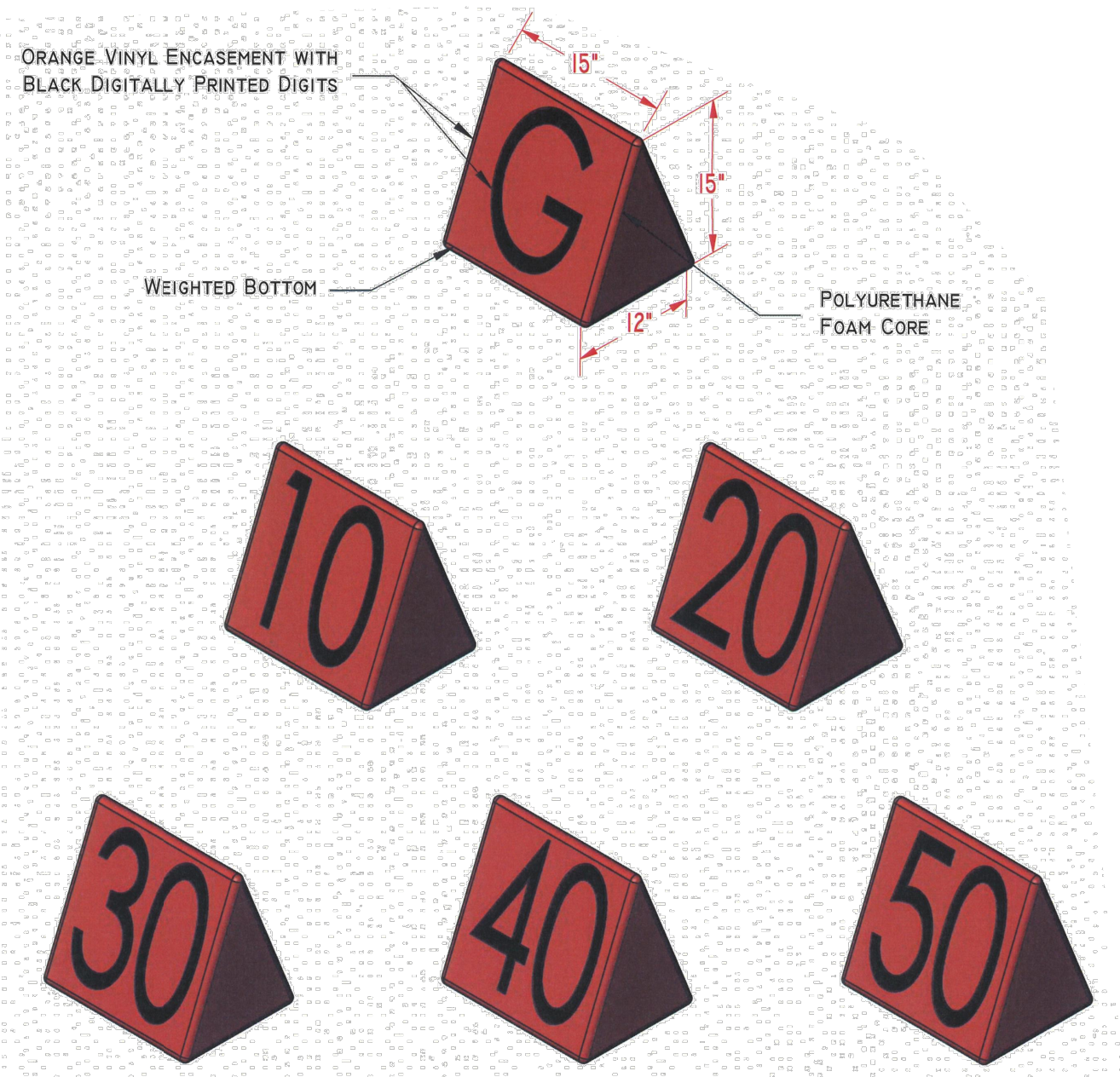
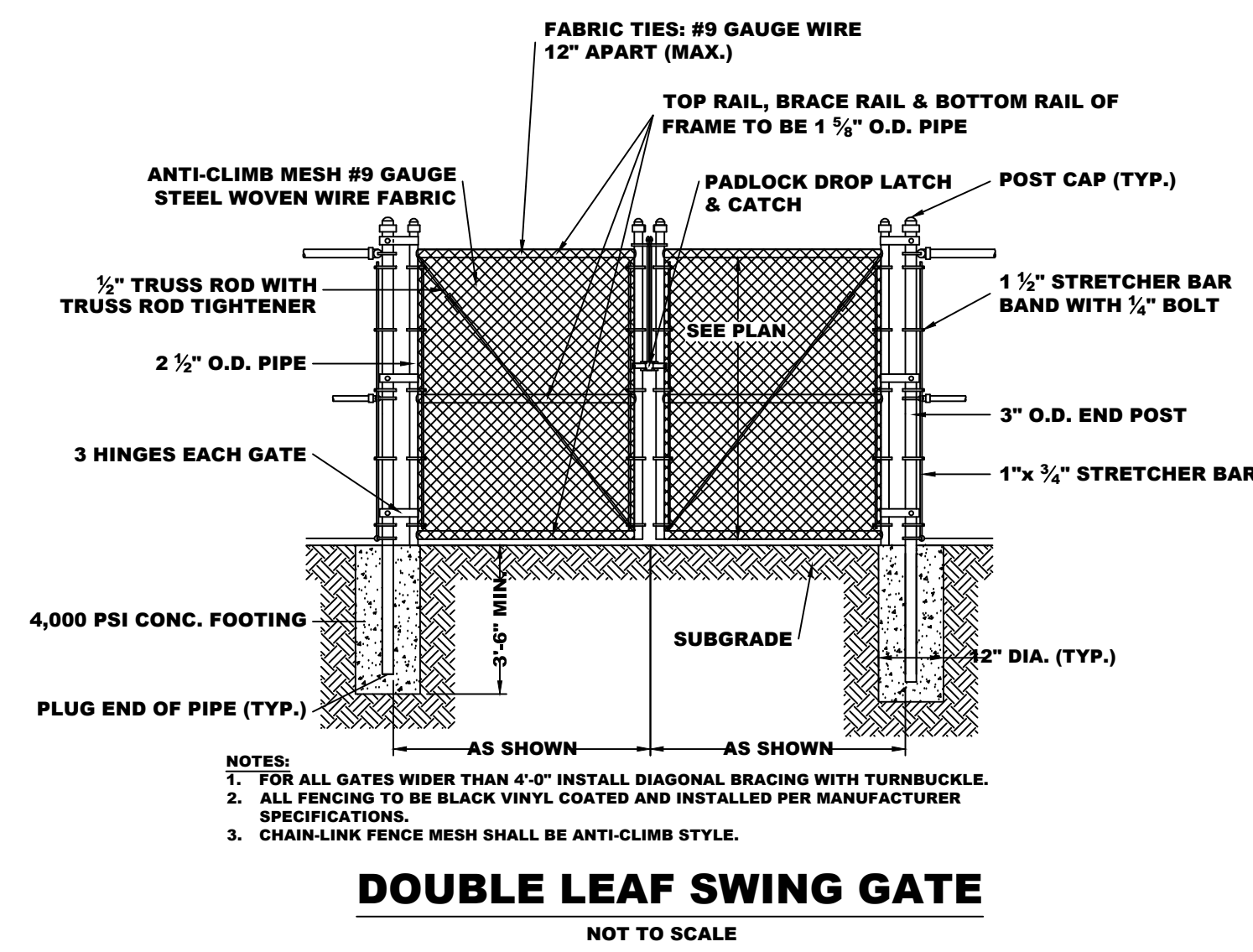
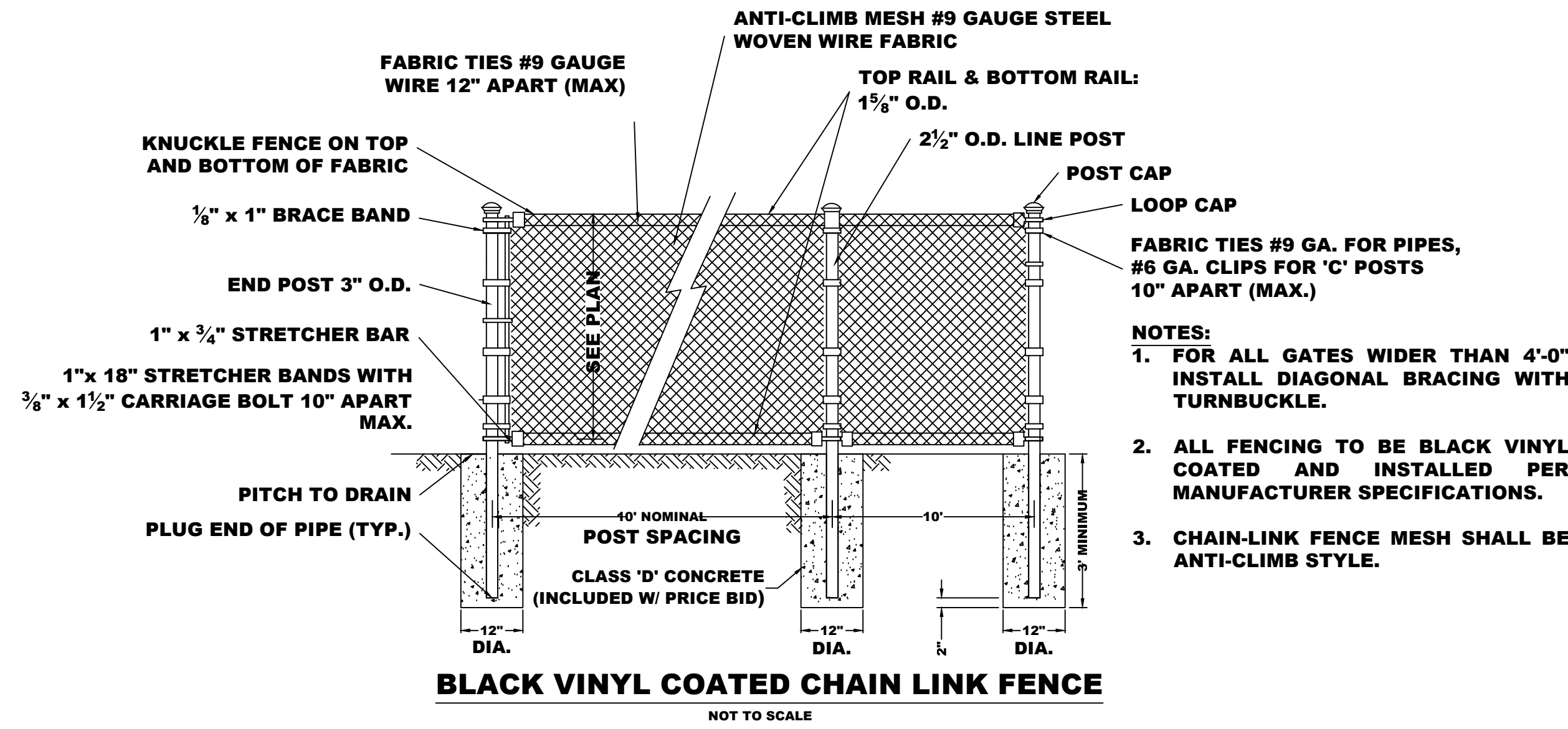
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 N.J. LICENSE NO. 38604
 PROFESSIONAL PLANNER
 N.J. LICENSE NO. 33LJ00569800

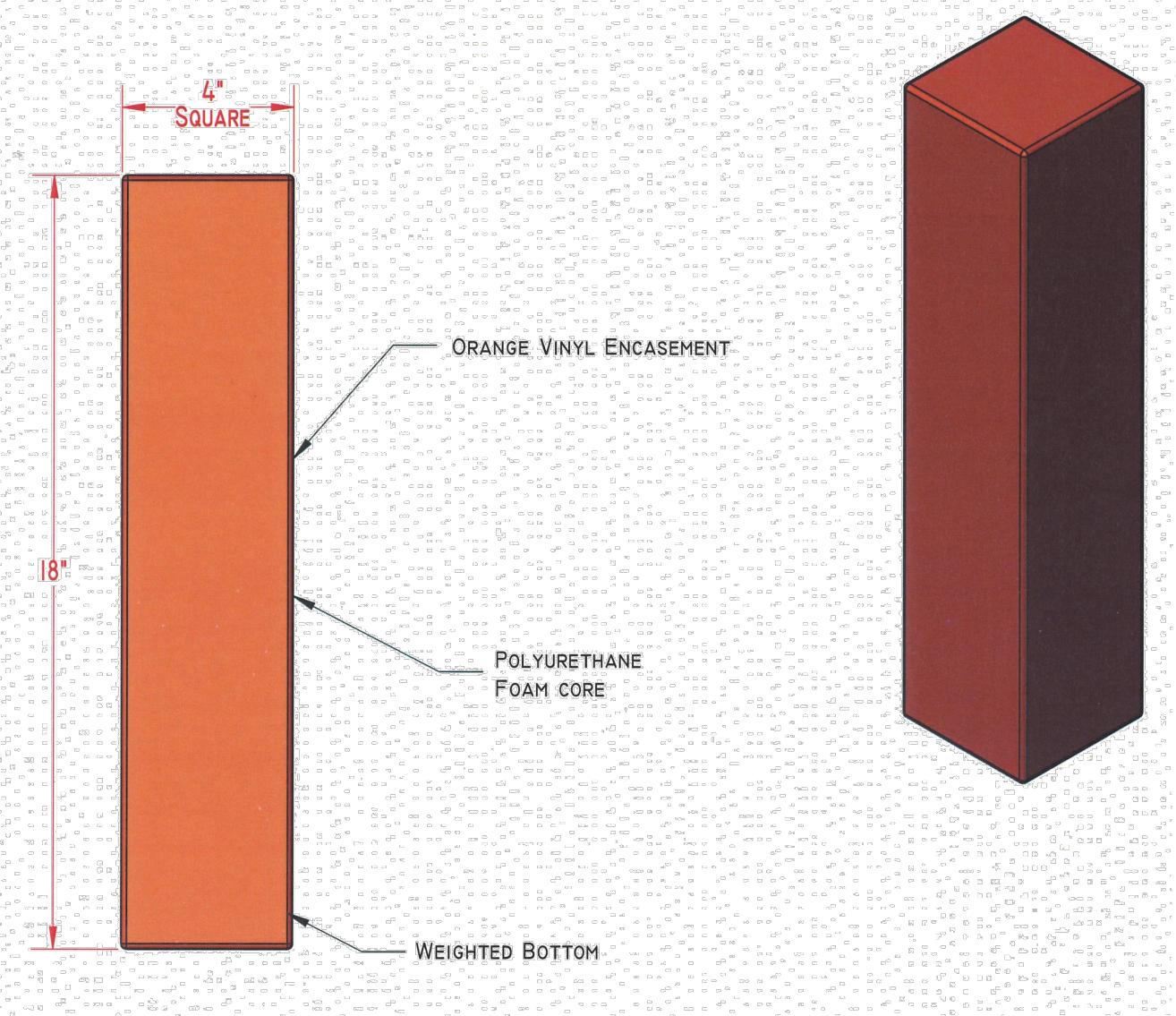
CONSTRUCTION DETAILS V
PONDEROSA FARM PARK - TURF FIELDS
BLOCK 12201 - LOTS 27.07 & 28
TOWNSHIP OF SCOTCH PLAINS
UNION COUNTY
NEW JERSEY

DRAWN BY: J.S./M.E.W. CHECKED BY: E.M.J. PROJECT NO: UNIOCTY17.016 SHEET NO.: 8.04
 DESIGNED BY: J.S. SCALE: N.T.S. DATE: OCTOBER 5, 2018
 FIELD BOOK NO.: PAGE:



NOTES:
 1. WEIGHTED SIDELINE YARDAGE MARKERS SHALL BE MODEL# FSYM22, AS MANUFACTURED BY SPORTSFIELD SPECIALTIES, DEHLI, NY, OR APPROVED EQUAL.
 2. EACH SIDELINE SHALL BE PROVIDED WITH ELEVEN (11) WEIGHTED SIDELINE YARDAGE MARKERS.
 3. FEATURES:
 3.1. WEIGHTED BOTTOM.
 3.2. POLYURETHANE FOAM CORE

WEIGHTED SIDELINE YARDAGE MARKERS
 NOT TO SCALE



NOTES:
 1. WEIGHTED END ZONE PYLON SHALL BE MODEL# FEZP4, AS MANUFACTURED BY SPORTSFIELD SPECIALTIES, DEHLI, NY, OR APPROVED EQUAL.
 2. EACH END ZONE SHALL BE INCLUDED WITH FOUR (4) WEIGHTED END ZONE PYLONS.
 3. FEATURES:
 3.1. WEIGHTED BOTTOM.
 3.2. POLYURETHANE FOAM CORE

WEIGHTED END ZONE PYLON
 NOT TO SCALE

NOTES:
 1. BASIS OF DESIGN BENCH SYSTEM SHALL BE MODEL #A07-260 AS MANUFACTURED BY: NATIONAL RECREATION SYSTEMS INC., FORT WAYNE, INDIANA, 46060, OR APPROVED EQUAL.
 2. BENCHES SHALL BE ALUMINUM.
 3. BENCHES TO INCLUDE ALL REQUIRED APPURTENANCES.
 4. BENCHES TO BE POWDER COATED. COLOR TO BE DETERMINED BY OWNER AND ARCHITECT. CONTRACTOR TO PROVIDE COLOR SAMPLES FOR APPROVAL.
 5. BENCHES SHALL BE PROVIDED WITH FOOT OR SKID APPROPRIATE FOR USE ON SYNTHETIC TURF FIELD.

PLAYER BENCH
 NOT TO SCALE

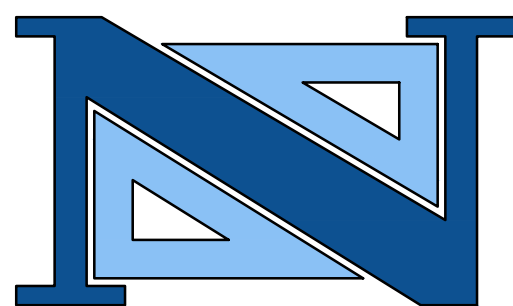
NOTES:
 1. ROUND FOOTBALL GOAL POST PADDING SHALL BE MODEL# GPPR, AS MANUFACTURED BY SPORTSFIELD SPECIALTIES, DEHLI, NY, OR APPROVED EQUAL.
 2. FEATURES:
 2.1. 18" DIAMETER HIGH IMPACT FOAM WITH 7" INSIDE DIAMETER.
 2.2. FINISH / COLOR: TO BE SELECTED BY OWNER (CONTRACTOR SHALL FURNISH COLOR SAMPLES TO OWNER PRIOR TO ORDERING)

ROUND FOOTBALL GOAL POST PADDING
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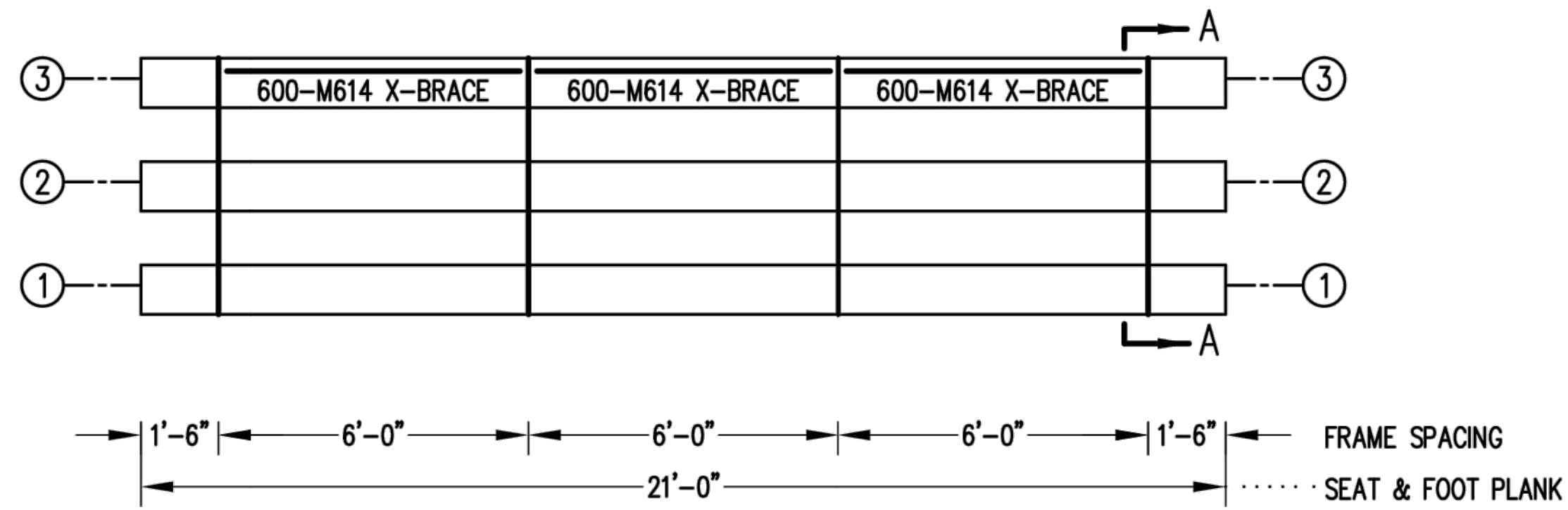
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 N.J. LICENSE NO. 38604

PROFESSIONAL PLANNER
 N.J. LICENSE NO. 33LJ00569800

CONSTRUCTION DETAILS VI
PONDEROSA FARM PARK - TURF FIELDS
BLOCK 12201 - LOTS 27.07 & 28
TOWNSHIP OF SCOTCH PLAINS
UNION COUNTY
NEW JERSEY

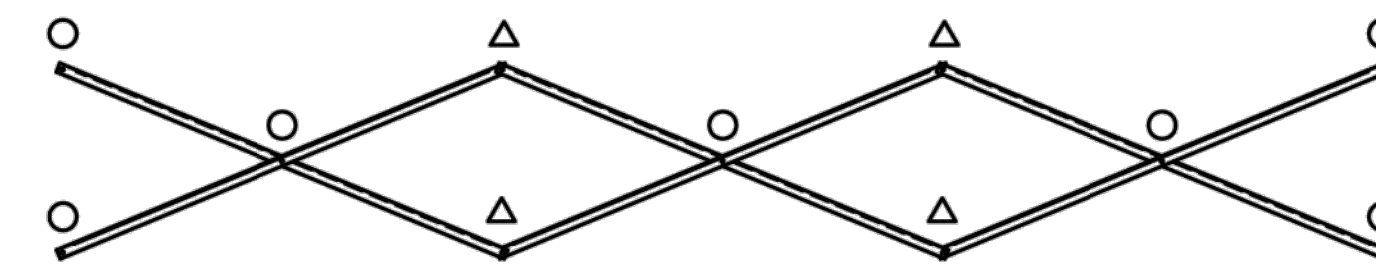
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 SHEET NO: 8.05
 DATE: OCTOBER 5, 2018

DESIGNED BY: J.S./M.E.W.
 CHECKED BY: E.M.J.
 SCALE: N.T.S.
 FIELD BOOK NO: [] PAGE: []



SEAT & FRAMING PLAN

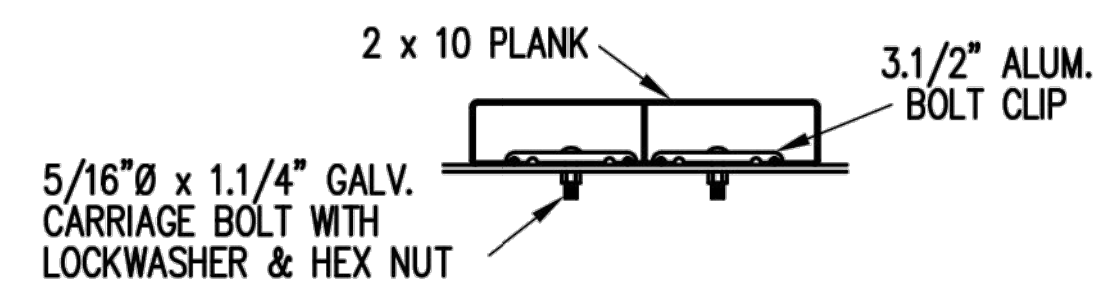
1/4" = 1'-0"
42 NET SEATS @ 18" PER SEAT



X-BRACE DETAIL

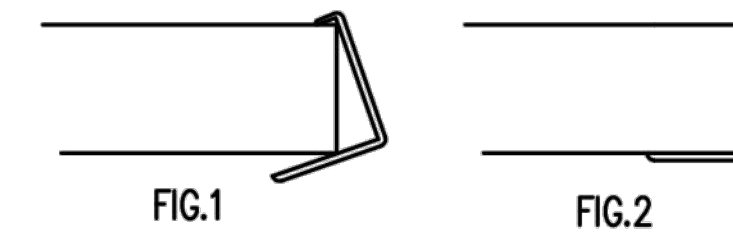
N.T.S.

- 7/16" X 1" GALV. MACH. BOLT
- △ 7/16" X 1.1/2" GALV. MACH. BOLT



BOLT CLIP DETAIL

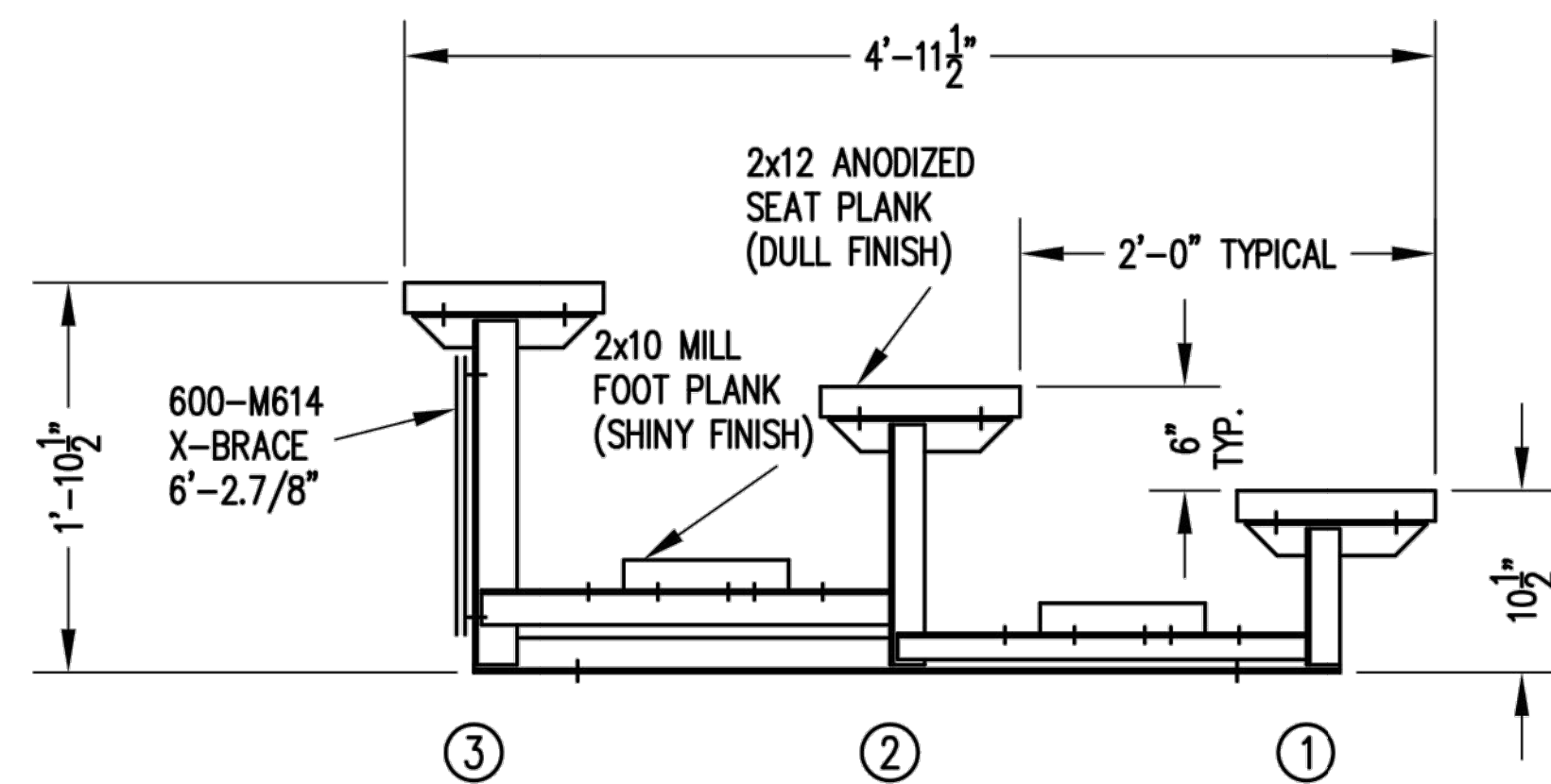
1.1/2" = 1'-0"



- 1) LOCATE THE CHANNEL END CAP AS SHOWN IN FIG. 1.
- 2) TAP END CAP INTO PLACE WITH RUBBER Mallet OR SOFT WOOD. FIG.2
- 3) DRILL TWO 5/32" HOLES THROUGH THE BOTTOM FLANGE AND THE BOTTOM OUTSIDE PLANK FLANGES. INSTALL TWO 3/16" DRIVE RIVETS. (2 PER PLANK)

END CAP DETAIL

N.T.S.



SECTION AA

3/4" = 1'-0"



BLEACHERS

NOT TO SCALE

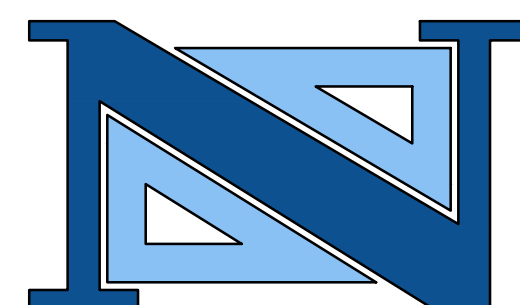
NOTES:

1. BASIS OF DESIGN BLEACHER SYSTEM SHALL BE MODEL #A07-330 AS MANUFACTURED BY: NATIONAL RECREATION SYSTEMS INC., FORT WAYNE, INDIANA, 46858, OR APPROVED EQUAL.
2. BLEACHERS SHALL BE ALUMINUM.
3. BLEACHERS TO INCLUDE ALL REQUIRED APPURTENANCES.
4. BLEACHERS TO BE POWDER COATED. COLOR TO BE DETERMINED BY OWNER AND ENGINEER. CONTRACTOR TO PROVIDE COLOR SAMPLES FOR APPROVAL.
5. BLEACHERS SHALL BE PROVIDED WITH APPROPRIATE FOOT OR SKID SUITABLE FOR USE ON A SYNTHETIC TURF FIELD.

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CERTIFICATE OF AUTHORIZATION (N.J.S.A. 45:8-56) 24GA27927000

REVISIONS		DRAWN	DESIGNED	CHECKED
NO.	DATE	DESCRIPTION		



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FAX: 201-939-0846
E-MAIL: NEA@NEGLIAENGINEERING.COM

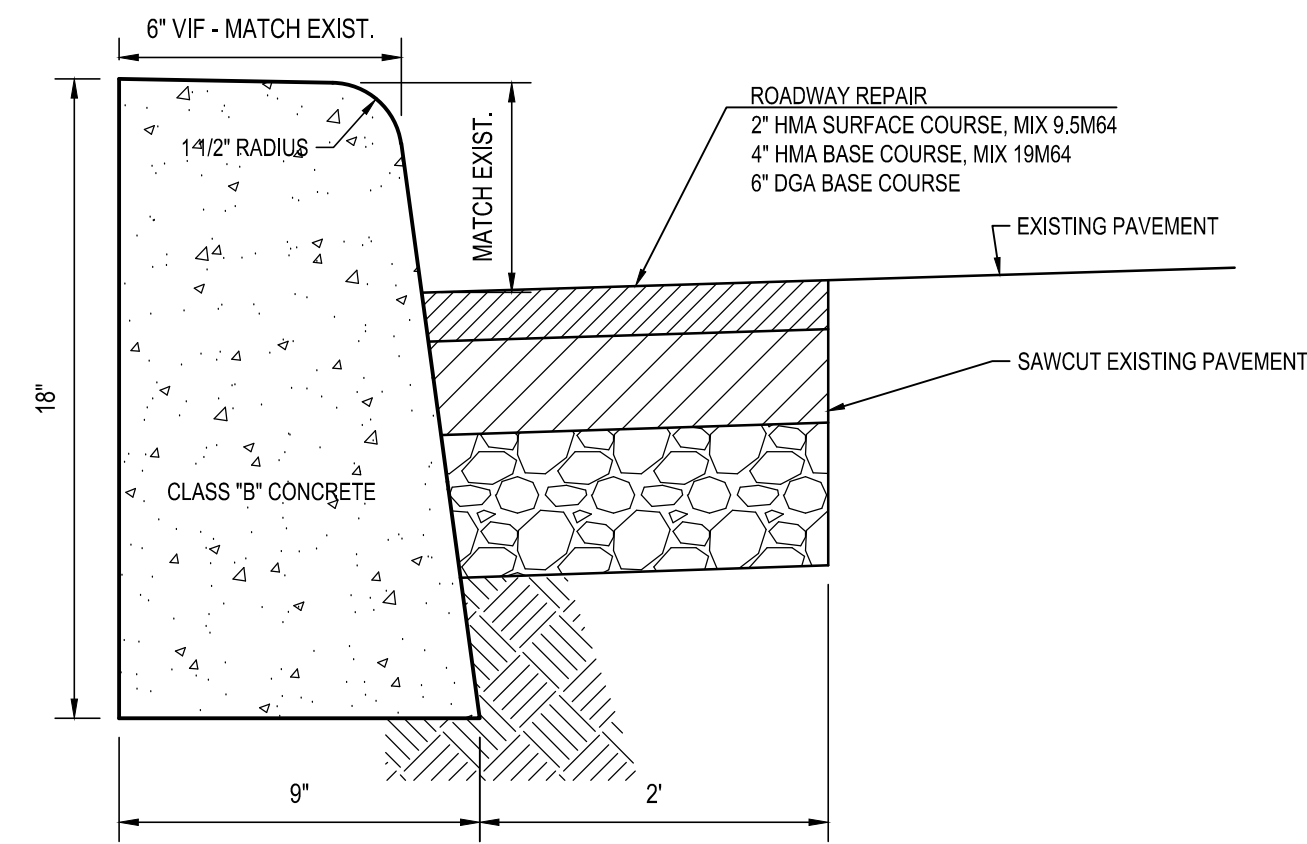
MICHAEL J. NEGLIA, P.E., P.L.S., P.P.
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CONSTRUCTION DETAILS VII
PONDEROSA FARM PARK - TURF FIELDS
BLOCK 12201 - LOTS 27.07 & 28
TOWNSHIP OF SCOTCH PLAINS
UNION COUNTY
NEW JERSEY

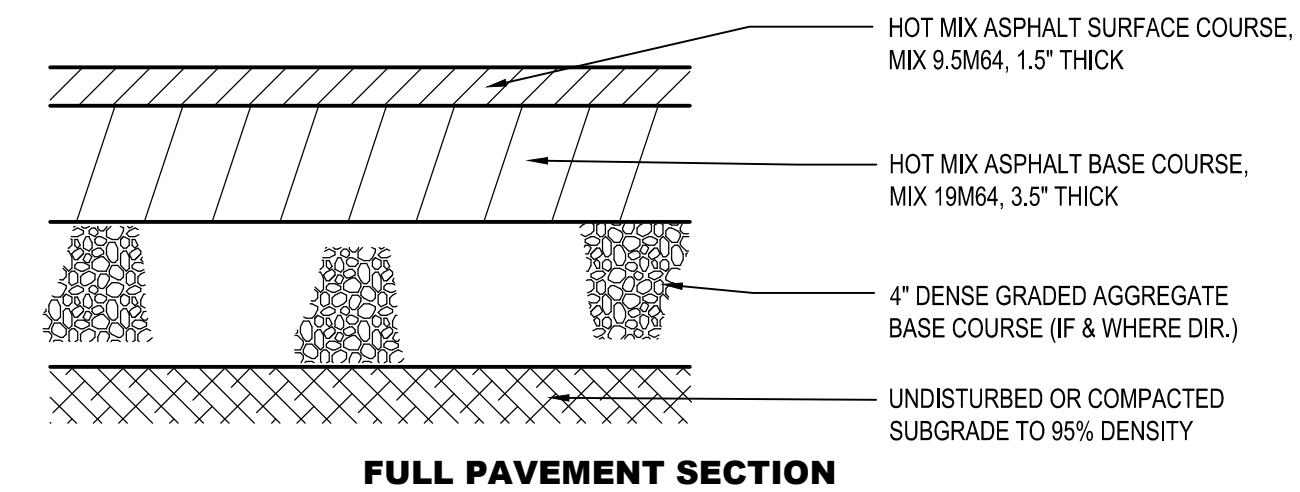
DRAWN BY: J.S./M.E.W. CHECKED BY: E.M.J. PROJECT NO: UNIOCTY17.016 SHEET NO: 8.06
DESIGNED BY: J.S. SCALE: N.T.S. FIELD BOOK NO: DATE: OCTOBER 5, 2018



NOTES:

TRANSVERSE JOINTS 1/2" WIDE SHALL BE INSTALLED IN THE CURB 20 FT. APART AND SHALL BE FILLED WITH PREFORMED BITUMINOUS-IMPREGNATED FIBER JOINT FILLER RECESSED 1/4" IN FROM FRONT FACE AND TOP OF CURB.
 EXPANSION JOINTS THRU AND ADJACENT TO THE CURB SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CURB.

9" X 18" CONCRETE VERTICAL CURB
 NOT TO SCALE



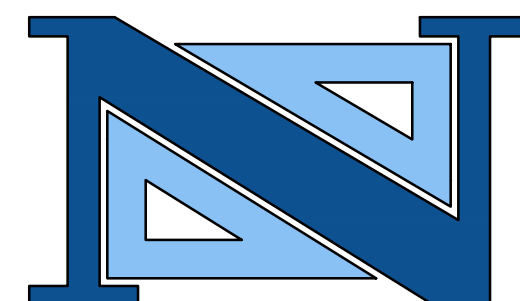
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CONSTRUCTION DETAILS VIII
PONDEROSA FARM PARK - TURF FIELDS
BLOCK 12201 - LOTS 27.07 & 28
TOWNSHIP OF SCOTCH PLAINS
UNION COUNTY NEW JERSEY

DRAWN BY: J.S./M.E.W.	CHECKED BY: E.M.J.	PROJECT NO:	SHEET NO:
DESIGNED BY: J.S.	SCALE: N.T.S.	UNI0CTY17.016	8.07
FIELD BOOK NO:	PAGE:	DATE: OCTOBER 5, 2018	

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