SITE PLAN
OEG BUILDING MATERIALS
BLOCK 9 LOT 1
SAYREVILLE BOROUGH, MIDDLESEX COUNTY, NEW JERSEY

OWNERS WITHIN 200'

BLOCK 8000 LOTS	1 1 & 1.01	Rodney & Lucy Alberto 949 Lacy Road Forked River, NJ 08731
BLOCK 8000 LOT	1 2	Ronald & Christine Osmond 43 Bordentown Avenue Old Bridge, NJ 08857
BLOCK 8000 LOTS	5 33 & 34	Michael Volovnik 305 Gordons Corner Road Manalapan, NJ 07726
BLOCK 8000 LOTS	5 35, 36.01, 36.02 & 37	NJDEP 401 East State Street Trenton, NJ 08625
BLOCK 8000 LOTS	5 155-159 & 38	Minteq International, Inc. 1 Highland Avenue Bethlehem, PA 18017
BLOCK 8000 LOTS	6 21, 22.01, 22.02 & 23	NJDEP 401 East State Street Trenton, NJ 08625
BLOCK 8000 LOT	6 24	Buland Singh & Saravjit Kaur 58 William Street Old Bridge, NJ 08857
BLOCK 8000 LOTS	6 25-30	NJDEP 401 East State Street Trenton, NJ 08625
BLOCK 8000 LOTS	6 145-147 & 150-154	Minteq International, Inc. 1 Highland Avenue Bethlehem, PA 18017
BLOCK 8000 LOTS	6 148-149	Francis DelDuca 55 Charles Street Old Bridge, NJ 08857
BLOCK 8000 LOTS	7 9-13	Sheran A. Applegate 28 William Street Old Bridge, NJ 08857
BLOCK 8000 LOTS	7 14-18 & 136-143.01	NJDEP 401 East State Street Trenton, NJ 08625
BLOCK 8000 LOTS	8 1-4	NJDEP 401 East State Street Trenton, NJ 08625
BLOCK 8000 LOT	9 1.02	Borough of Sayreville 167 Main Street Sayreville, NJ 08872
BLOCK 8000 LOT	10 1	Middlesex Realty Group, LLC 200 Central Avenue Mountainside, NJ 07092
EASEMENT		Borough of Sayreville 167 Main Street Sayreville, NJ 08872
RIGHT OF WAY		Middlesex County Utilities Authority P.O. Box 159 Sayreville, NJ 08872

OWNER & ADDRESS REPORT

OLD BRIDGE TWP. — PROPERTIES IS OLD BRIDGE TOWNSHIP WITHIN 200 FEET OF BLOCK 9 LOT 1 IN SAYREVILLE — 07/31/19 Page 1 of 1

BLOCK	LOT	QUAL	CLA	PROPERTY OWNER	PROPERTY LOCATION	Addt'l Lots
8000	29.11		15C	CNTY MIDDLESEX PO BOX 871 NEW BRUNSWICK NJ 08903	SANDFIELD RD	
8000	30		5A	CONSOLIDATED RAIL CORPORATION P.O. BOX 8699 PHILADELPHIA PA 19101	BORDENTOWN AVE	
8000	30	806	4A	CONSOLIDATED RAIL % G.OLIVER TAX DP THREE COMMERCIAL PL NORFOLK VA 23510	BORDENTOWN AVE	
8004	1		15C	TWP OLD BRIDGE 1 OLD BRIDGE PLZ OLD BRIDGE NJ 08857	SANDFIELD RD	
8004	7.11		15C	CNTY MIDDLESEX PO BOX 871 NEW BRUNSWICK NJ 08903	SANDFIELD RD	
8004	10		15C	CNTY MIDDLESEX PO BOX 871 NEW BRUNSWICK NJ 08903	SANDFIELD RD	
8004	11.11		5A	UNKJRR & CO C/O PENN CENTRAL 1700 MARKET ST PHILADELPHIA PA 19103	BORDENTOWN AVE	

UTILITIES

Water & Sewer
Old Bridge Municipal Utilities Authority
15 Throckmorton Lane
Old Bridge N. J. 08857
Att: Michael Roy

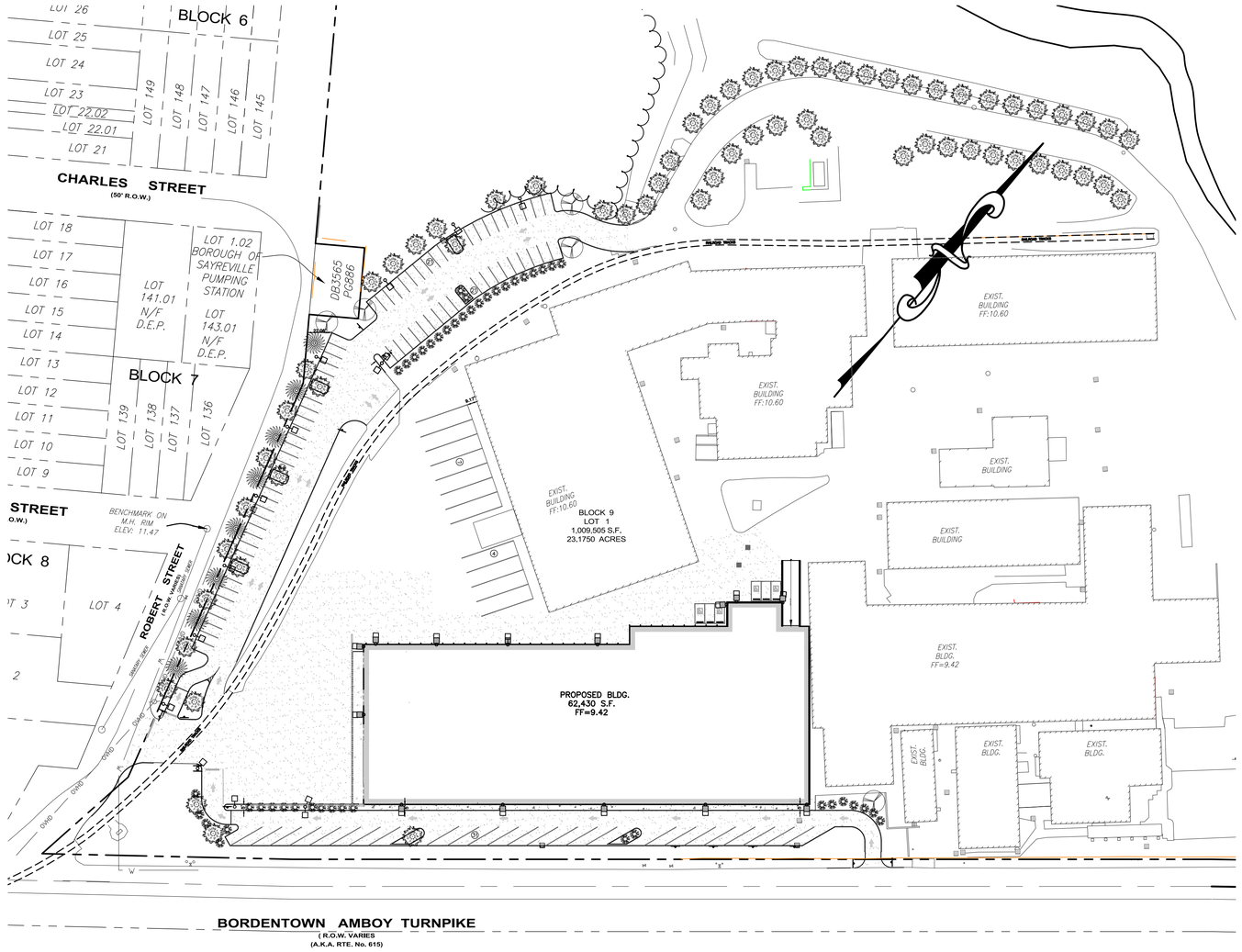
Gas
New Jersey Natural Gas Co
P. O. Box 1464
Wall, N. J. 07719
Att: John Wyckoff (Manager

PSE&G
150 How Lane
New Brunswick, N. J. 08901
Att: Ray Boyd

Telephone
Verizon
175 West Main Street
Freehold, N. J. 07728
Att: Engineering Group

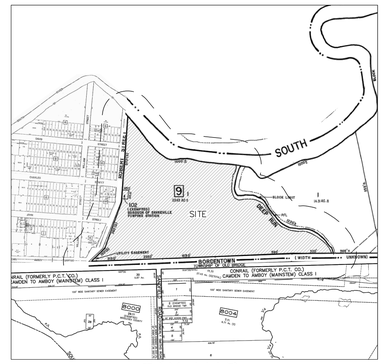
Cable
Cablevision of Raritan Valley
275 Centennial Avenue, CN 6805
Piscataway, N. J. 08854-6805
Att: Janine Prekeris
(Construction Supervisor)
Const. Official: Peter Mann

Electric
JCP&L Real Estate Department
300 Madison Ave
Morristown, N.J. 07960
Att: Jim Markey



TOWNSHIP OF OLD BRIDGE

ZONE MAP
N.T.S.



TAX MAP
N.T.S.

GENERAL NOTES

1. PROPERTY IS KNOWN AND DESIGNATED AS BLOCK 9 LOT 9 AS SHOWN ON SHEET 3 OF THE OFFICIAL TAX MAP OF THE BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY, NJ.
2. PROPERTY IS LOCATED IN THE SED ZONE.
3. OWNER/APPLICANT:

   OWNER: OEG BUILDING MATERIALS
   6001 BORDENTOWN AVENUE
   SAYREVILLE, N.J. 08872

   APPLICANT: OEG BUILDING MATERIALS
   6001 BORDENTOWN AVENUE
   SAYREVILLE, N.J. 08872

4. EXISTING USE: WAREHOUSE/MANUFACTURING
   PROPOSED USE: WAREHOUSE/MANUFACTURING
5. HORIZONTAL DATUM BASED ON NJSPCS NAD 1983 AND VERTICAL DATUM BASED ON NAVD 1988.
6. BENCHMARK ON MANHOLE RIM AT ELEVATION 11.47 LOCATED AT THE INTERSECTION OF JOHN STREET AND ROBERT STREET AS SHOWN ON MAP
7. ERROR OF CLOSURE IS GREATER THAN 1 IN 10000.
8. ALL ROADS WILL BE SWEPT DAILY THROUGHOUT THE DURATION OF THE PROJECT.
9. SITE PLAN IS BASED ON A SURVEY PREPARED BY NEWLINES ENGINEERING AND SURVEY, LLC DATED 5-6-19.
10. ALL TREES WITHIN LIMITS OF GRADING TO BE REMOVED EXCEPT AS NOTED.
11. NO GRADING WITHIN 5' OF PROPERTY LINES PERMITTED.
12. EXISTING UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR TO VERIFY WITH UTILITY COMPANIES AND ARCHITECT ON EXACT LOCATION OF UTILITIES.
13. DAMAGED CURB OR SIDEWALK TO BE REPLACED AT THE DISCRETION OF THE TOWNSHIP ENGINEER.
14. SOLID WASTE AND RECYCLING TO BE COLLECTED BY PRIVATE COLLECTOR.
15. CONTRACTOR TO CONNECT ALL ROOF LEADERS TO STORM DRAINAGE COLLECTION SYSTEM. ROOF LEADER LOCATIONS ARE TO BE SHOWN ON ARCHITECTURAL PLANS AND VERIFIED BY CONTRACTOR. PIPING SHALL BE A MINIMUM OF 6" PVC.
16. NO KNOWN ENVIRONMENTAL CONSTRAINTS EXIST ONSITE EXCEPT THOSE SHOWN PER AVAILABLE MAPPING.
17. TOTAL TRACT AREA IS 1,009,504.60 SF OR 23.18 ACRES.
18. ALL SITE IMPROVEMENTS WILL BE IN ACCORDANCE WITH THE BOROUGH OF SAYREVILLE CONSTRUCTION STANDARDS, WHERE APPLICABLE.
19. ALL GRADING IN PAVED AREAS WILL BE A MINIMUM OF 0.75% IN ACCORDANCE WITH BOROUGH STANDARDS.
20. ALL GRADING IN LAWN AND LANDSCAPED AREAS WILL BE A MINIMUM OF 2% IN ACCORDANCE WITH BOROUGH STANDARDS.

APPROVED BY BOROUGH OF SAYREVILLE PLANNING BOARD
ON _____ BY RESOLUTION # _____

CHAIRPERSON DATE

SECRETARY DATE

ENGINEER DATE

SHEET INDEX:

ZONING DATA

ZONE: SED (SPECIAL ECONOMIC DEVELOPMENT)

	REQUIRED	EXISTING	PROPOSED
MIN. LOT AREA	60,000 S.F.	1,009,504.60 S.F.	1,009,504.60 S.F.
MIN. FRONT YARD SETBACK	50'	0.57'*	0.57'*
MIN. FRONT YARD SETBACK	100'	145.7'	145.7'
MIN. REAR YARD SETBACK	40'	67.3'	67.3'
MIN. LOT WIDTH	150'	1142.95'	1142.95'
MIN. LOT DEPTH	100'	554.12'	554.12'
MAX. BUILDING COVERAGE	60%	16.35%	22.75%
MAX. IMPERVIOUS COVERAGE	85%	>46.67%	46.67%
MAX. BUILDING HEIGHT	50'	<=50'	<=50'
PARKING	SEE TABLE	65	154

* EXISTING NON-CONFORMITY
** VARIANCE REQUESTED

PARKING CALCULATIONS

PRE-EXISTING	65
REMOVED	28
REQUIRED:	
WAREHOUSE: 1 SPACE / 5,000 S.F.	23
CAFETERIA 1 SPACE / 3 SEATS	12
MANUFACTURING 1 SPACE / 1,000 S.F.	66
OFFICE 4 SPACE / 1,000 S.F.	46
TOTAL REQUIRED:	146
TOTAL PROPOSED:	113
TOTAL PARKING SPOTS:	150

CALL BEFORE YOU DIG
1-800-272-1000
It's THE LAW
NEW JERSEY ONE CALL Dig Safely.

CONTRACTOR TO CALL AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF EXCAVATION WORK.

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

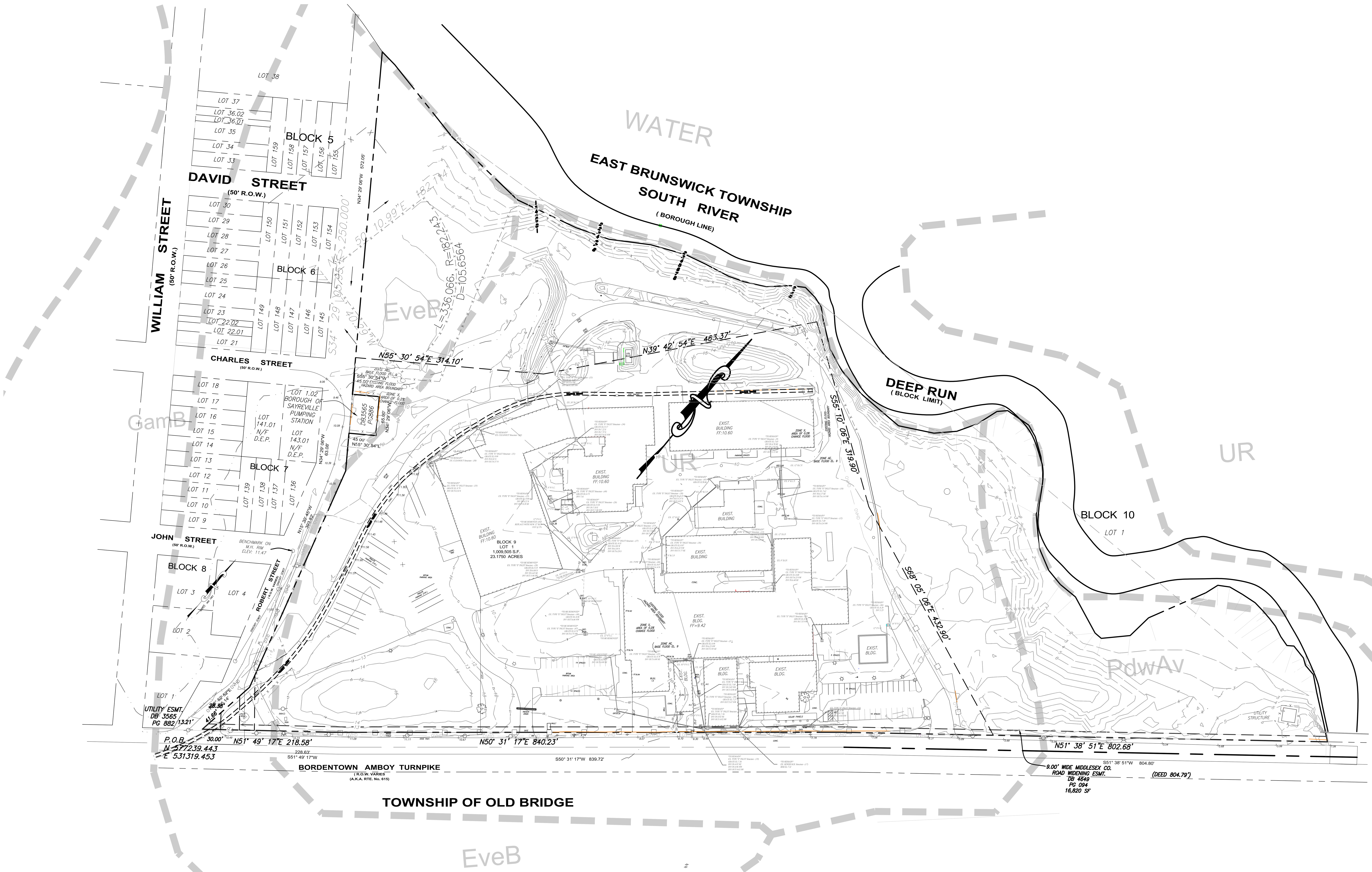
3/25/2020	REVISIONS PER ENGINEERING TECHNICAL REVIEW COMMENTS	ZEE

SITE PLAN
COVER SHEET
6001 BORDENTOWN AVENUE
BLOCK 9 LOT 1
BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY

NEWLINES ENGINEERING & SURVEY
CERTIFICATE #24GA28264200
315 Monmouth Avenue
Suite 205
Lakewood, New Jersey 08701
Phone (732) 994-4900
Fax (732) 994-4999

GLENN D. LINES, P.E., P.P.
LICENSED PROFESSIONAL ENGINEER AND PLANNER
STATE OF NEW JERSEY LICENSE NO. 33011 (P.E.) 4066 (P.P.)

PROJECT NO.	19111
DRAWN BY	ZEE
SCALE	AS SHOWN
DATE	7/10/19
SHEET	1 OF 16



SOILS LEGEND

UR – URBAN LAND COMPLEX

EveB – EVESBORO SAND

PdwAV – PAWCATUCK TRANSQUAKING COMPLEX

NOTES:

1. HORIZONTAL DATUM BASED ON NJSPCS NAD 1983 AND VERTICAL DATUM BASED ON NAVD 1988.
2. BENCHMARK ON MANHOLE RIM AT ELEVATION 11.47.

3/25/2020	REVISIONS PER ENGINEERING TECHNICAL REVIEW COMMENTS	ZEE

SITE PLAN
EXISTING CONDITIONS PLAN
6001 BORDENTOWN AVENUE
BLOCK 9 LOT 1
BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY

NEWLINES ENGINEERING & SURVEY
CERTIFICATE #24GA28264200
315 Monmouth Avenue
Suite 205
Lakewood, New Jersey 08701
Phone (732) 994-4900
Fax (732) 994-4999

GLENN D. LINES, P.E., P.P.
LICENSED PROFESSIONAL ENGINEER AND PLANNER
STATE OF NEW JERSEY LICENSE NO. 33011 (P.E.) 4066 (P.P.)
DATE

PROJECT NO.	19111
DRAWN BY	ZEE
SCALE	1" = 80'
DATE	7/10/19
SHEET	2 OF 16

ZONING DATA

ZONE: SED (SPECIAL ECONOMIC DEVELOPMENT)

	REQUIRED	EXISTING	PROPOSED
MIN. LOT AREA	60,000 S.F.	1,009,504.60 S.F.	1,009,504.60 S.F.
MIN. FRONT YARD SETBACK	50'	0.57'*	0.57'*
MIN. FRONT YARD SETBACK	100'	145.7'	145.7'
MIN. REAR YARD SETBACK	40'	67.3'	67.3'
MIN. LOT WIDTH	150'	1142.95'	1142.95'
MIN. LOT DEPTH	100'	554.12'	554.12'
MAX. BUILDING COVERAGE	60%	16.35%	22.75%
MAX. IMPERVIOUS COVERAGE	85%	>46.67%	46.67%
MAX. BUILDING HEIGHT	50'	<=50'	<=50'
PARKING	SEE TABLE	65	154

* EXISTING NON-CONFORMITY
** VARIANCE REQUESTED

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GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

PAVEMENT LEGEND
STANDARD PAVEMENT SECTION
HEAVY DUTY PAVEMENT SECTION

NOTE:
1. PROPOSED IMPROVEMENTS WILL BE BUILT IN COMPLIANCE TO ADA AND NJ BARRIER FREE REQUIREMENTS.

3/25/2020 | REVISIONS PER ENGINEERING TECHNICAL REVIEW COMMENTS | ZEE

SITE PLAN
LAYOUT & DIMENSION PLAN
6001 BORDENTOWN AVENUE
BLOCK 9 LOT 1
BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY

NEWLINES ENGINEERING & SURVEY
CERTIFICATE #24GA28264200
315 Monmouth Avenue
Suite 205
Lakewood, New Jersey 08701
Phone (732) 994-4900
Fax (732) 994-4999

GLENN D. LINES, P.E., P.P.
LICENSED PROFESSIONAL ENGINEER AND PLANNER
STATE OF NEW JERSEY LICENSE NO. 33011 (P.E.) 4086 (P.P.)

DATE

PROJECT NO.	19111
DRAWN BY	ZEE
SCALE	1" = 50'
DATE	7/10/19
SHEET	3 OF 16

SOIL BORING TABLE

	ELEVATION	DUG	ELEV. DUG TO	WATER SITUATION	PERM. RATE
BORING #1	11.00	78"	4.50	WATER ENCOUNTERED	33.83 IN/HR
BORING #2	11.40	82"	4.57	WATER ENCOUNTERED	37.29 IN/HR
BORING #3	13.50	90"	6.00	WATER ENCOUNTERED	43.76 IN/HR
BORING #4	9.20	88"	1.87	WATER ENCOUNTERED	36.06 IN/HR

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CONTRACTOR TO CALL AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF EXCAVATION WORK.

NOTE:

1. CONTRACTOR TO CONNECT ALL ROOF LEADERS TO STORM DRAINAGE COLLECTION SYSTEM. ROOF LEADER LOCATIONS ARE TO BE SHOWN ON ARCHITECTURAL PLANS AND VERIFIED BY CONTRACTOR. PIPING SHALL BE A MINIMUM OF 6" PVC.
2. POST-CONSTRUCTION SOIL PERMEABILITY TESTS SHALL BE CONDUCTED WITHIN THE MOST HYDRAULICALLY RESTRICTIVE SOIL HORIZON BETWEEN THE BOTTOM OF THE AS-BUILT INFILTRATION BASINS AND THE SEASONAL HIGH GROUNDWATER TABLE IN ACCORDANCE WITH THE CONSTRUCTION AND POST-CONSTRUCTION OVERSIGHT AND SOIL PERMEABILITY TESTING SECTION IN APPENDIX E OF THE BMP MANUAL. IF AS-BUILT TESTING SHOWS A LONGER DRAIN TIME THAN DESIGNED, CORRECTIVE ACTION WILL BE TAKEN.
3. INLETS #1, #3, #6, #7, AND #28 WILL BE PROVIDED WITH INLET FILTERS.

3/25/2020	REVISIONS PER ENGINEERING TECHNICAL REVIEW COMMENTS	ZEE

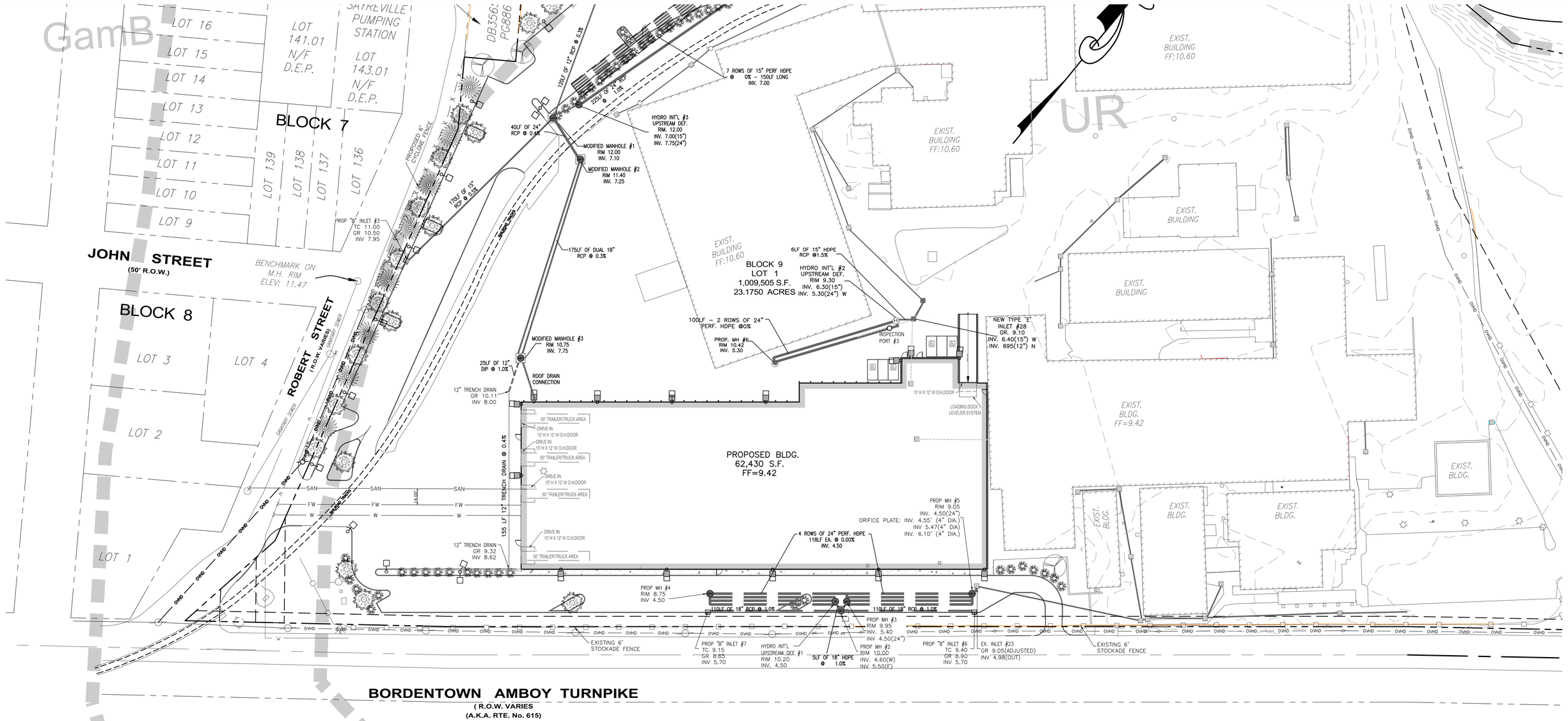
SITE PLAN
GRADING AND DRAINAGE PLAN
6001 BORDENTOWN AVENUE
BLOCK 9 LOT 1
BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY

NEWLINES ENGINEERING & SURVEY
CERTIFICATE #24GA28264200
315 Monmouth Avenue
Suite 205
Lakewood, New Jersey 08701
Phone (732) 994-4900
Fax (732) 994-4999

GLENN D. LINES, P.E., P.P.
LICENSED PROFESSIONAL ENGINEER AND PLANNER
STATE OF NEW JERSEY LICENSE NO. 33011 (P.E.) 4066 (P.P.)

DATE

PROJECT NO.	19111
DRAWN BY	ZEE
SCALE	1" = 40'
DATE	7/10/19
SHEET	4 OF 16



NOTES:

1. ALL EXISITNG UTILITIES SHALL BE UTILIZED FOR THE NEW BUILDING ADDITION.
2. SITE PLAN IS BASED ON A SURVEY PREPARED BY NEWLINES ENGINEERING AND SURVEY, LLC DATED 5-6-19.
3. BENCHMARK IS NAIL IN UTILITY POLE AT ELEVATION 60.00 LOCATED ON SOUTHWESTERN-MOST CORNER OF EXISTING LOT 21.
4. ALL WATER LATERALS MUST BE FOUR FEET BELOW GROUND SURFACE.
5. THE AUTHORITY MUST BE NOTIFIED AT LEAST 48 HOURS BEFORE CONSTRUCTION IS TO COMMENCE.
6. ALL LINES INCLUDING FIRE LINES MUST HAVE REDUCED PRESSURE BACKFLOW PREVENTERS INSTALLED.
7. TRACER WIRE MUST BE INSTALLED ABOVE ALL WATER SERVICES.
8. THE COST OF THE WATER METER AND EQUIPMENT WILL BE AT THE RATE LISTED IN THE AUTHORITY'S RATE SCHEDULE IN EFFECT AT THE TIME OF PURCHASE.
9. FIRE WATER SERVICE IS TO BE CLASS 52 CEMENT LINED DUCTILE IRON PIPE.
10. THE CONTRACTOR SHALL EXPOSE PRIOR TO CONSTRUCTION AND VERIFY THE ELEVATION OF ANY FACILITY WHOSE DEPTH IS NOT KNOWN.
11. IN ACCORDANCE WITH BOROUGH ORDINANCE; ALL STORM DRAINAGE CONCRETE PIPE SHALL CONFORM TO ASTM SPECIFICATION C76-61 CLASS IV.

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NEW JERSEY ONE CALL **Dig Safely.**

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GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

3/25/2020	REVISIONS PER ENGINEERING TECHNICAL REVIEW COMMENTS	ZEE

SITE PLAN
UTILITY PLAN
6001 BORDENTOWN AVENUE
BLOCK 9 LOT 1
BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY

NEWLINES ENGINEERING & SURVEY
CERTIFICATE #24GA28264200
315 Monmouth Avenue
Suite 205
Lakewood, New Jersey 08701
Phone (732) 994-4900
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GLENN D. LINES, P.E., P.P.
LICENSED PROFESSIONAL ENGINEER AND PLANNER
STATE OF NEW JERSEY LICENSE NO. 33011 (P.E.) 4066 (P.P.)

PROJECT NO.	19111
DRAWN BY	ZEE
SCALE	1" = 40'
DATE	7/10/19
SHEET	5 OF 16

Schedule

Symbol	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage	Lamp Height
A	11	RAB Lighting INC.	ALED4T 150-RWLED4T 150-RWLED4T 150SF-WPLED4T 150 (TYPE IV)	CAST FINNED METAL HOUSING, 6 CIRCUIT BOARDS EACH WITH 1 LED, MOLDED 2-PIECE PLASTIC REFLECTOR WITH SPECULAR FINISH AND 1 APERTURE PER LED, CLEAR FLAT GLASS LENS IN CAST BROWN PAINTED METAL LENS FRAME.	SIX WHITE MULTI-CHIP LIGHT EMITTING DIODES (LEDS),2 LEDS TILTED 56-DEGREES FROM VERTICAL BASE-UP POSITION AND CANTED 18-DEGREES FROM STRAIGHT AHEAD, 2 LEDS TILTED 57-DEGREES FROM VERTICAL BASE-UP POSITION AND CANTED 16-DEGREES FROM STRAIGHT AHEAD, 2 LEDS TILTED 57-DEGREES FROM VERTICAL BASE-UP POSITION AND CANTED 22-DEGREES FROM STRAIGHT AHEAD. ALED4T78V. ACTUAL PERFORMANCE MAY VARY. SPORTS, STREET, UTILITY, AUTOMOTIVE, HOTEL, ROADWAY DAMP LOCATION, WET LOCATION, OUTDOOR, COMMERCIAL	6	ALED4T150_D10_WS4 (1).ies	3077	1	155.8	20'
B	2					6 PER LAMP					
C	14					6					

Statistics

Description	Avg	Max	Min	Max/Min
Calc Zone #1	2.6 fc	9.3 fc	0.2 fc	36.5:1
Calc Zone #2	4.2 fc	15.7 fc	1.1 fc	14.8:1
Calc Zone #3	4.5 fc	11.2 fc	0.9 fc	12.9:1

ALED4T150/D10

RAB

Technical Specifications (continued)

Construction

For use on LEED Buildings:

IDA Dark Sky Approval means that this fixture can be used to achieve LEED Credits for Light Pollution Reduction

Other

Compatibility:

Compatible with Round Poles with a diameter of 2.5" to 6"

Replacement:

Replaces 400W Metal Halide

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish.

Buy American Act Compliance:

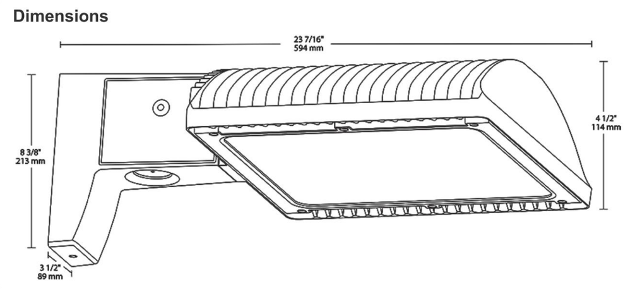
RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

Optical

BUG Rating:

B1 U0 G2

Dimensions



Features

66% energy cost savings vs. HID

100,000-hour LED lifespan

Type IV distribution

5-year, no-compromise warranty

Ordering Matrix

Family	Optics	Wattage	Mounting	Color Temp	Finish	Driver Options	Photocell Options
ALED	4T	150					/D10
	2T = Type II **3T** = Type III **4T** = Type IV	**50** = 50W **78** = 78W **105** = 105W **125** = 125W **150** = 150W	**Blank** = Pole mount **SF** = Slipfitter	**Blank** = 5000K (Cool) **N** = 4000K (Neutral) **Y** = 3000K (Warm)	**Blank** = Bronze **RG** = Roadway Gray **W** = White	**Blank** = 120-277V **/480** = 480V (not available for 150W) **/BL** = Bi-Level **/D10** = 0-10V Dimming	**Blank** = No Option **/PC** = 120V Button Photocell (Pole mount models only) **/PC2** = 277V Button Photocell (Pole mount models only) **/PCT** = 120-277V Twistlock Photocell (Pole mount models only) **/PCT4** = 480V Twistlock Photocell (Pole mount models only) **/PCS** = 120V Swivel Photocell **/PCS2** = 277V Swivel Photocell **/PCS4** = 480V Swivel Photocell **/WS2** = Multi-Level Motion Sensor 20 ft. (Only available 0-10V dimming models) **/WS4** = Multi-Level Motion Sensor 40 ft. (Only available 0-10V dimming models)

ALED4T150/D10

RAB

Specification grade area lights available in IES Type IV distributions. Suited for mounting on the sides of buildings and walls, and for illuminating the perimeter of parking areas. Patent pending management system. 5-year, no-compromise warranty.

Color: Bronze   Weight: 32.0 lbs

Project:	Type:
Prepared By:	Date:

Driver Info

Type:	Constant Current
120V:	1.31A
208V:	0.80A
240V:	0.69A
277V:	0.60A
Input Watts:	156W
Efficiency:	96%

LED Info

Watts:	150W
Color Temp:	5000K
Color Accuracy:	71 CRI
L70 Lifespan:	100000
Lumens:	18464
Efficacy:	119 LPW

Technical Specifications

Electrical

Dimming Driver:

Driver includes dimming control wiring for 0-10V dimming systems. Requires separate 0-10V DC dimming circuit. Dims as low as 10%.

Driver:

One Driver, Constant Current, Class 2, 2100mA 100-277V, 50-60Hz, Power Factor 99%

THD:

4.7% at 120V, 13.3% at 277V

Surge Protection:

4kV

Listings

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.
DLC Product Code: PPS5XY2A

UL Listing:

Suitable for wet locations

IESNA LM-79 & LM-80 Testing:

RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80.

Dark Sky Approved:

The International Dark Sky Association has approved this product as a full cutoff, fully shielded luminaire

LED Characteristics

Lifespan:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations

LEDs:

Multi-chip, high-output, long-life LEDs

Color Consistency:

7-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5 year period

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Construction

IES Classification:

The Type IV distribution (also known as a Forward Throw) is especially suited for mounting on the sides of buildings and walls, and for illuminating the perimeter of parking areas. It produces a semiCircular distribution with essentially the same candlepower at lateral angles from 90° to 270°.

Effective Projected Area:

EPA = 0.75

Maximum Ambient Temperature:

Suitable for use in 40°C (104°F) ambient temperatures

Cold Weather Starting:

Minimum starting temperature is -40°C (-40°F)

Thermal Management:

Superior thermal management with external "Air-Flow" fins

Lens:

Tempered glass lens

Housing:

Die-cast aluminum housing, lens frame and mounting arm

IP Rating:

Ingress Protection rating of IP66 for dust and water

Mounting:

Universal mounting arm compatible for hole spacing patterns from 1" to 5 1/2" center to center. Round Pole Adaptor plate included as a standard. Easy slide and lock to mount fixture with ease. Round pole diameter must be >4" to mount fixtures at 90° orientation.

Reflector:

Specular vacuum-metallized polycarbonate

Gaskets:

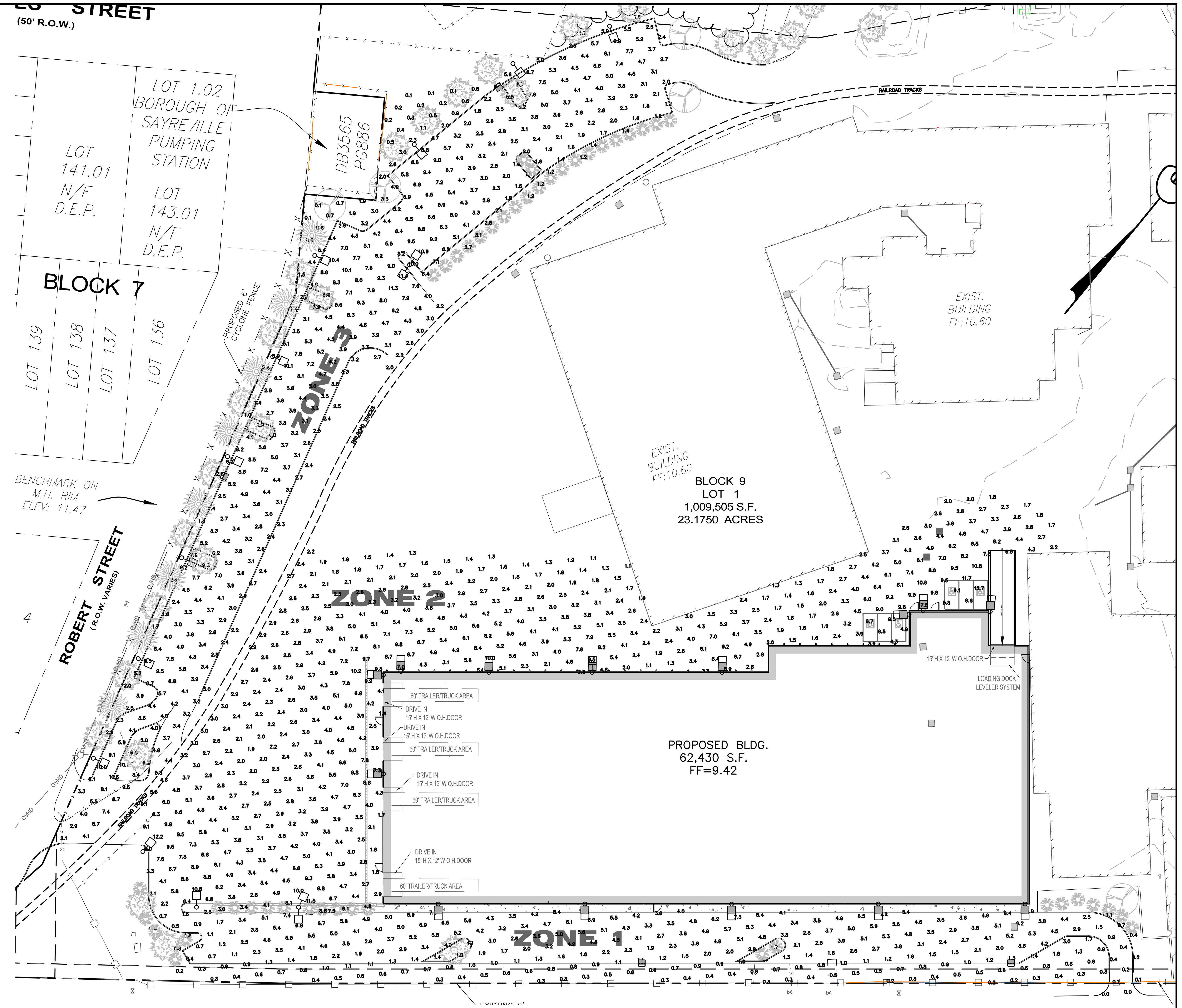
High-temperature silicone gaskets

Finish:

Formulated for high-durability and long lasting color

Green Technology:

Mercury and UV-free. RoHS compliant components. Polyester powder coat finish formulated without the use of VOCs or toxic heavy metals.

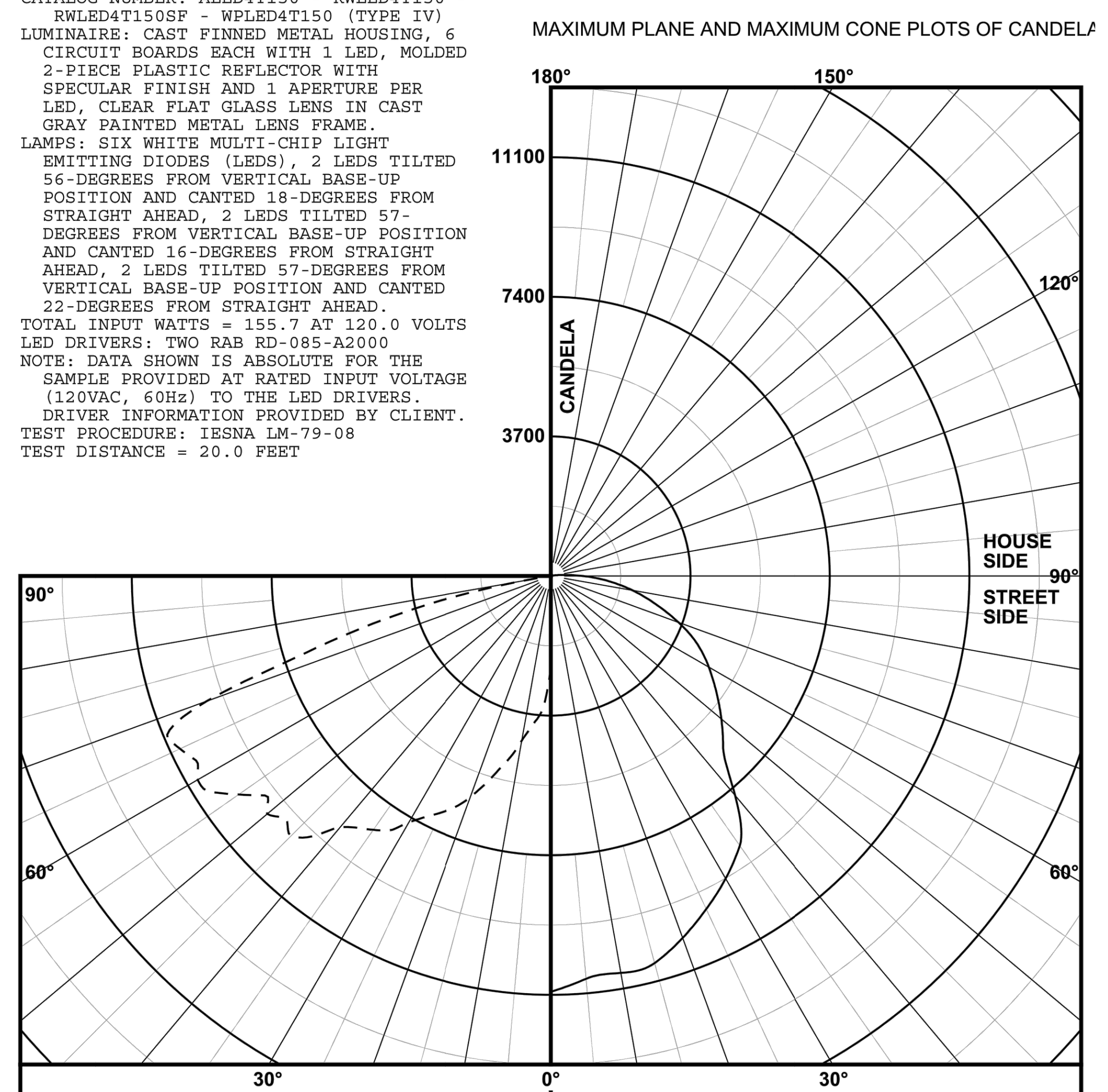


itl boulder
THE LIGHT CENTER OF THE INDUSTRY SINCE 1955
INDEPENDENT TESTING LABORATORIES, INC.
4066 CAMELOT CIRCLE, LONGMONT, CO 80504 USA
PHONE: (303) 442-1255 • FAX: (970) 535-3114 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

NVLAP LAB CODE: 200925-0

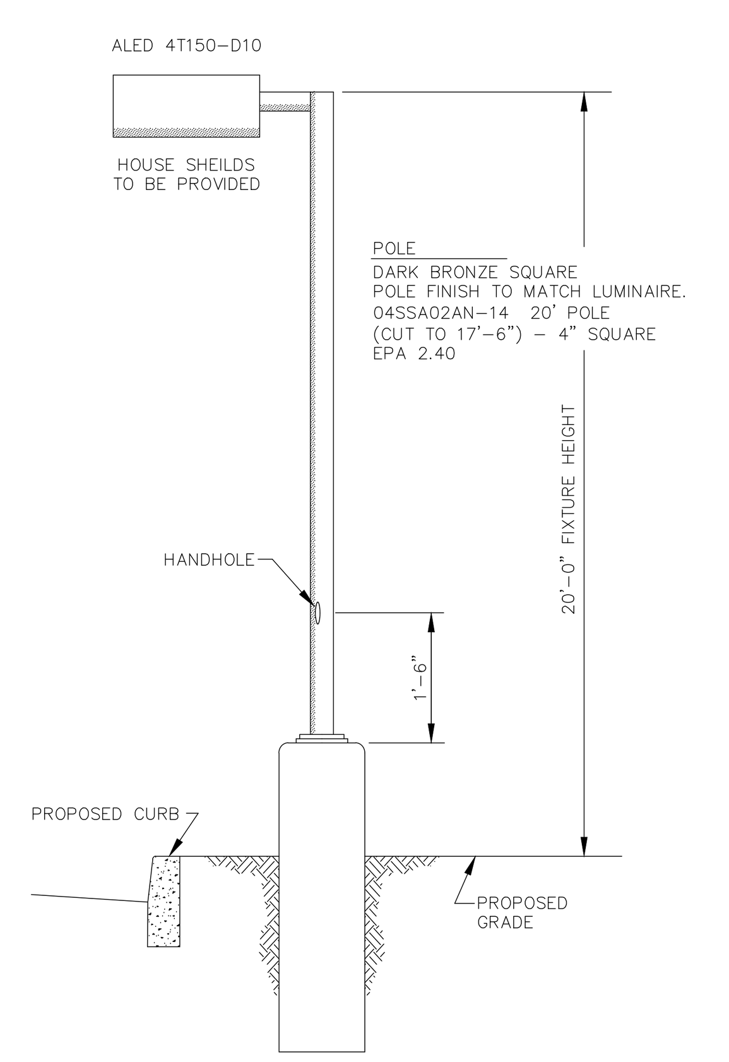
REPORT NUMBER: ITL79629
ISSUE DATE: 11/14/13 PAGE: 2 OF 8
PREPARED FOR: RAB LIGHTING, INC.
CATALOG NUMBER: ALED4T150 - RWLED4T150 - RWLED4T150SF - WPLED4T150 (TYPE IV)
LUMINAIRE: CAST FINNED METAL HOUSING, 6 CIRCUIT BOARDS EACH WITH 1 LED, MOLDED 2-PIECE PLASTIC REFLECTOR WITH SPECULAR FINISH AND 1 APERTURE PER LED, CLEAR FLAT GLASS LENS IN CAST GRAY PAINTED METAL LENS FRAME.
LAMPS: SIX WHITE MULTI-CHIP LIGHT EMITTING DIODES (LEDS), 2 LEDS TILTED 56-DEGREES FROM VERTICAL BASE-UP POSITION AND CANTED 18-DEGREES FROM STRAIGHT AHEAD, 2 LEDS TILTED 57-DEGREES FROM VERTICAL BASE-UP POSITION AND CANTED 16-DEGREES FROM STRAIGHT AHEAD, 2 LEDS TILTED 57-DEGREES FROM VERTICAL BASE-UP POSITION AND CANTED 22-DEGREES FROM STRAIGHT AHEAD.
TOTAL INPUT WATTS = 155.7 AT 120.0 VOLTS
LED DRIVERS: TWO RAB RD-085-A2000
NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE LED DRIVERS. DRIVER INFORMATION PROVIDED BY CLIENT.
TEST PROCEDURE: IESNA LM-79-08
TEST DISTANCE = 20.0 FEET

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA



VERTICAL PLANE THROUGH MAXIMUM CANDELA
67.0 (Degrees Vertical)

CONE THROUGH MAXIMUM CANDELA
0.0 (Degrees Horizontal) = 11025

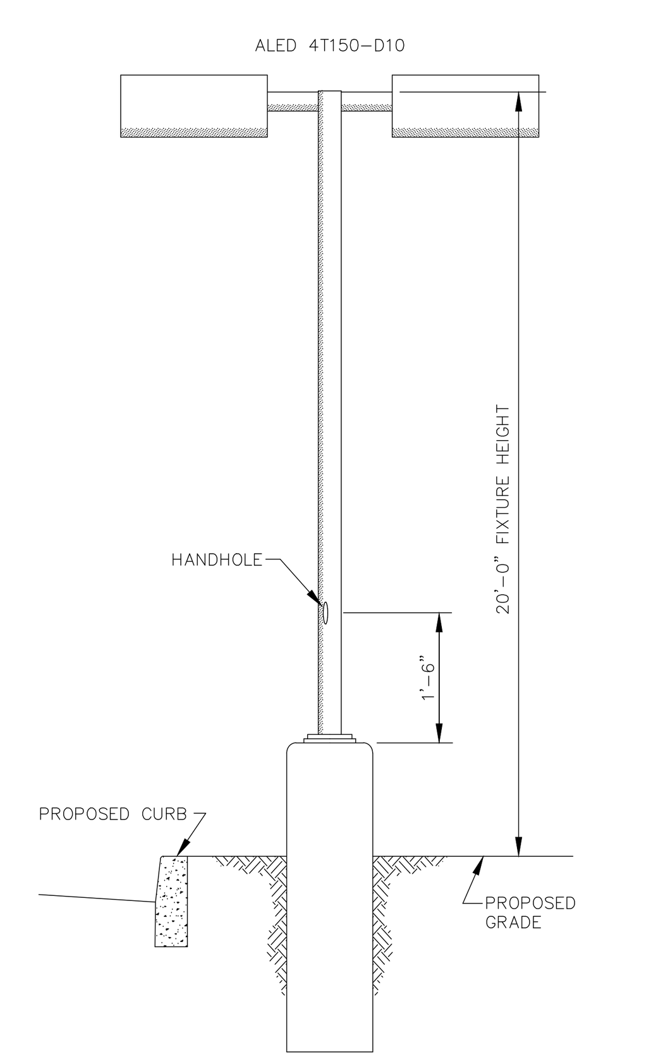


NOTES:

1. ALL LIGHTS MUST BE OPERATED BY TIMERS SO LIGHTS WILL TURN OFF AFTER BUSINESS HOURS.
2. ALL LIGHTS TO BE SHIELDED TO PREVENT GLARE ONTO ADJACENT PROPERTIES AND RESIDENTIAL AREAS.

ON SITE LIGHT POLE AND FIXTURE DETAIL

N.T.S.

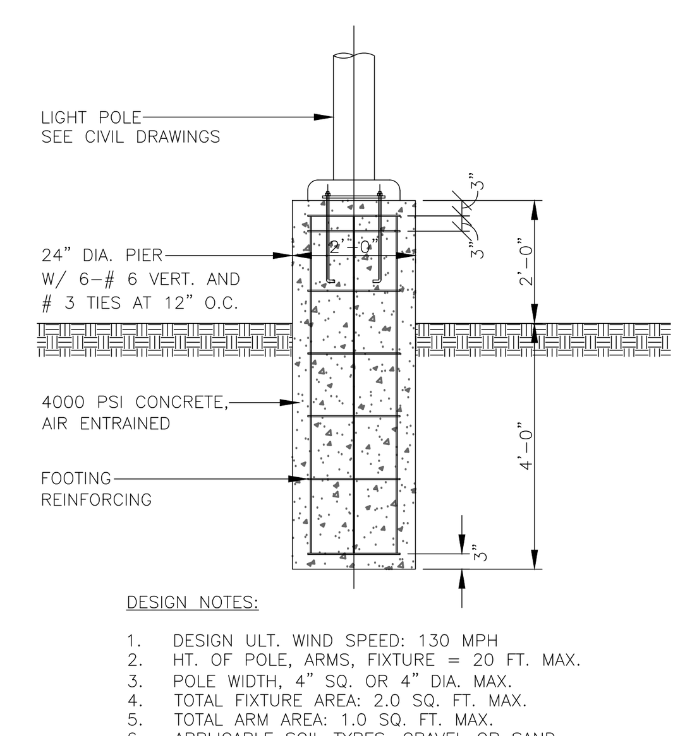


NOTES:

1. ALL LIGHTS MUST BE OPERATED BY TIMERS SO LIGHTS WILL TURN OFF AFTER BUSINESS HOURS.
2. ALL LIGHTS TO BE SHIELDED TO PREVENT GLARE ONTO ADJACENT PROPERTIES AND RESIDENTIAL AREAS.

ON SITE LIGHT POLE AND DOUBLE FIXTURE DETAIL

N.T.S.

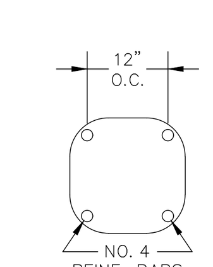


DESIGN NOTES:

1. DESIGN ULT. WIND SPEED: 130 MPH
2. HT. OF POLE, ARMS, FIXTURE = 20 FT. MAX.
3. POLE WIDTH, 4" SQ. OR 4" DIA. MAX.
4. TOTAL FIXTURE AREA: 2.0 SQ. FT. MAX.
5. TOTAL ARM AREA: 1.0 SQ. FT. MAX.
6. APPLICABLE SOIL TYPES: GRAVEL OR SAND

LIGHT POLE FOUNDATION

N.T.S.



FOOTING REINFORCING

N.T.S.

NOTES

1. ALL SITE LIGHTING HAS BEEN DESIGNED TO PROVIDE A MINIMUM OF 0.50 FOOTCANDLES AND A MAXIMUM TO MINIMUM ILLUMINATION RATIO NOT EXCEEDING 15:1. IN PARKING AREAS.
2. PROPERTY OWNER SHALL FIELD VERIFY ALL POLE/FIXTURE LOCATIONS IN ORDER TO ACCOMMODATE ALL UTILITIES.
3. ALL LIGHTING SHALL RECEIVE UNDERGROUND ELECTRICAL SERVICE.
4. ALL LIGHTING SHALL CONFORM TO THE REQUIREMENTS OF THE BOROUGH OF SAYREVILLE AND THE RECOMMENDATIONS OF THE ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IESNA).
5. PHOTOMETRIC PATTERNS ARE MADE USING ACCEPTED PROCEDURES OF THE ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA. VARIATIONS IN LAMP OUTPUT, BALLAST OUTPUT, LINE VOLTAGE AND DIRT DEPRECIATION MAY AFFECT ACTUAL RESULTS.
6. LIGHTING SHALL BE INSTALLED AND MAINTAINED BY PROPERTY OWNER.
7. LIGHTING AREA 1 HAS BEEN DESIGNED WITH A 15 DEGREE TILT DOWN AND TOWARD THE BUILDING TO MINIMIZE LIGHT POLLUTION OUTSIDE THE SITE
8. LIGHTING AREA 3 HAS BEEN DESIGNED WITH LIGHT SHIELDS TO PREVENT LIGHT POLLUTION OUTSIDE OF THE SITE

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

3/25/2020	REVISIONS PER ENGINEERING TECHNICAL REVIEW COMMENTS	ZEE

SITE PLAN
LIGHTING PLAN
6001 BORDENTOWN AVENUE
BLOCK 9 LOT 1
BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY

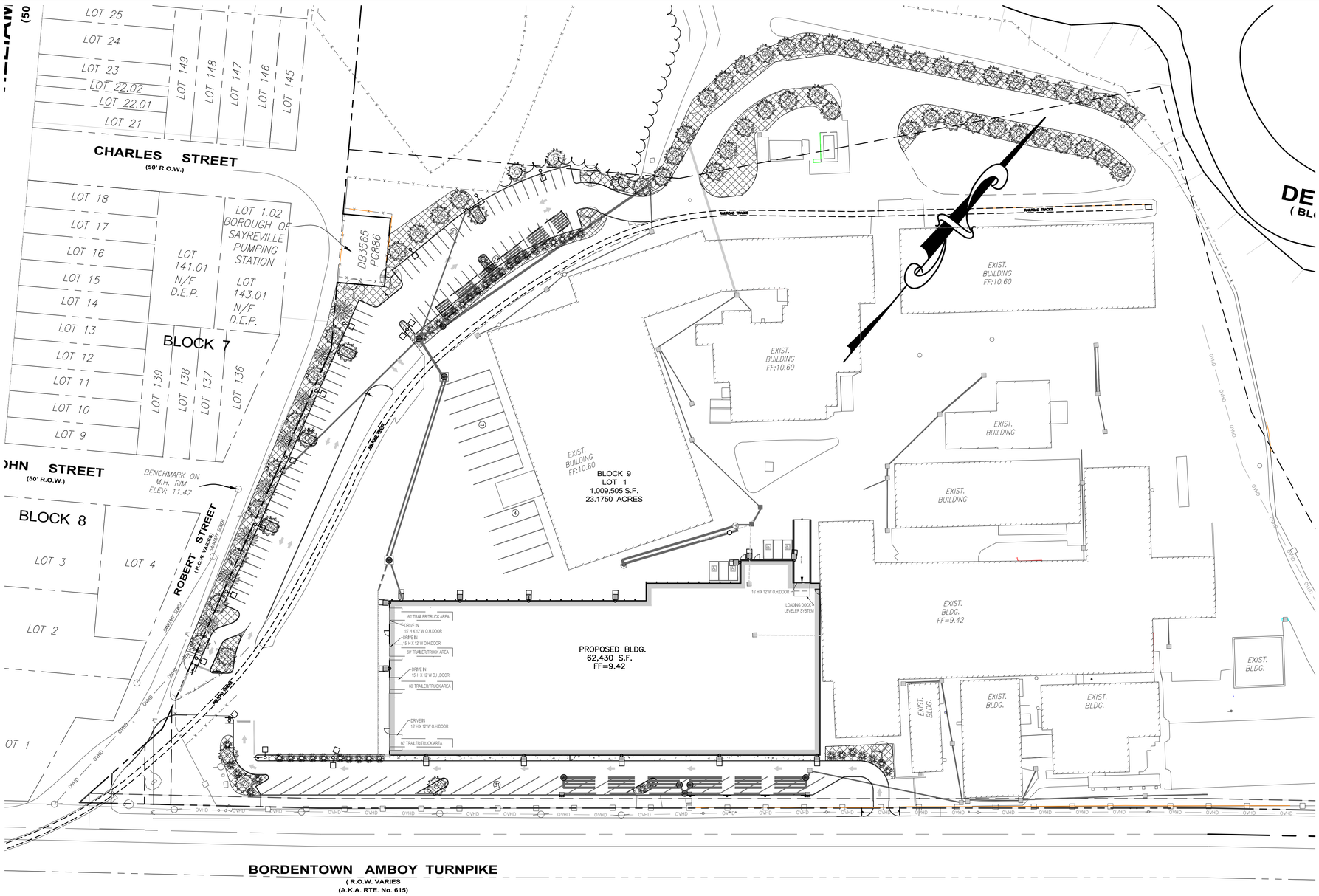
NEWLINES ENGINEERING & SURVEY
CERTIFICATE #24GA28264200
315 Monmouth Avenue
Suite 205
Lakewood, New Jersey 08701
Phone (732) 994-4900
Fax (732) 994-4999

GLENN D. LINES, P.E., P.P.

LICENSED PROFESSIONAL ENGINEER AND PLANNER
STATE OF NEW JERSEY LICENSE NO. 33011 (P.E.) 4066 (P.P.)

DATE

PROJECT NO.	19111
DRAWN BY	ZEE
SCALE	1" = 40'
DATE	7/10/19
SHEET	6 OF 16



TOWNSHIP OF OLD BRIDGE

PLANTING NOTES:

1. THE CONTRACTOR SHALL REVIEW ARCHITECTURAL/ENGINEERING PLAN TO BECOME THOROUGHLY FAMILIAR WITH GRADING AND SURFACE UTILITIES.
2. ALL EQUIPMENT AND TOOLS SHALL BE PLACED SO AS NOT TO INTERFERE OR HINDER THE PEDESTRIAN AND VEHICULAR TRAFFIC FLOW. SEE SEASONAL PLANT LIST FOR PLANTING TIMES OF BULBS AND SEASONAL PLANTS.
3. THE CONTRACTOR SHALL COORDINATE WITH LIGHTING AND IRRIGATION CONTRACTORS REGARDING TIMING OF INSTALLATION OF PLANT MATERIAL.
4. THE CONTRACTOR SHALL INSURE THAT HIS WORK DOES NOT INTERRUPT ESTABLISHED OR PROJECTED DRAINAGE PATTERNS.
5. DURING PLANTING OPERATIONS, EXCESS WASTE MATERIALS SHALL BE PROMPTLY AND FREQUENTLY REMOVED FROM THE SITE.
6. THE CONTRACTOR SHALL CALL N.J. UNDERGROUND UTILITY LOCATION SERVICE UTILITY A MINIMUM OF THREE DAYS PRIOR TO ANY EXCAVATION. THE CONTRACTOR IS ADVISED OF THE EXISTENCE OF UNDERGROUND UTILITIES ON THE SITE. THEIR EXACT LOCATION SHALL BE VERIFIED IN THE FIELD WITH THE OWNER OR GENERAL CONTRACTOR PRIOR TO COMMENCEMENT OF ANY DIGGING OPERATIONS. IN THE EVENT THEY ARE UNCOVERED, THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL DAMAGE TO UTILITIES AND SUCH DAMAGE SHALL NOT RESULT IN ANY ADDITIONAL EXPENSES TO THE OWNER. ANY DAMAGE OF UNREPORTED LINES SHALL NOT BE THE RESPONSIBILITY OF THE CONTRACTOR.
7. IF UTILITY LINES ARE ENCOUNTERED IN EXCAVATION OF TREE PITS, OTHER LOCATIONS FOR TREES SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COMPENSATION. NO CHANGES OF LOCATION SHALL BE MADE WITHOUT APPROVAL OF THE LANDSCAPE ARCHITECT.
8. MAINTAIN POSITIVE DRAINAGE OUT OF PLANTING BEDS AT A MINIMUM 2 % SLOPE. ALL GRADES, DIMENSIONS AND EXISTING CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR ON SITE BEFORE CONSTRUCTION BEGINS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT OR OWNER.
9. EVERY POSSIBLE SAFEGUARD SHALL BE TAKEN TO PROTECT BUILDING SURFACES, EQUIPMENT, AND FURNISHINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE OR INJURY TO PERSONS OR PROPERTY WHICH MAY OCCUR AS A RESULT OF HIS NEGLIGENCE IN THE EXECUTION OF THE WORK.
10. IN THE EVENT OF VARIATIONS BETWEEN WRITTEN QUANTITIES SHOWN ON THE PLAN AND THE PLANT LIST, THE PLANS SHALL CONTROL. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL PLANT QUANTITIES PRIOR TO THE COMMENCEMENT OF WORK. SOD AND SEED QUANTITY TAKE-OFFS ARE THE RESPONSIBILITY OF THE CONTRACTOR. ALL DISCREPANCIES SHALL BE REPORTED TO THE LANDSCAPE ARCHITECT FOR CLARIFICATION PRIOR TO BIDDING. THE CONTRACTOR SHALL FURNISH PLANT MATERIAL IN SIZES AS SPECIFIED IN PLANT LIST.
11. PLANTS SHALL BE LOCATED AS SHOWN ON THE DRAWINGS OR AS DESIGNATED IN THE FIELD. THE CONTRACTOR SHALL STAKE ALL MATERIAL LOCATED ON THE SITE FOR REVIEW AND/OR ADJUSTMENT BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING. ALL LOCATIONS ARE TO BE APPROVED BY THE LANDSCAPE ARCHITECT BEFORE EXCAVATION.
12. PLANTS SHALL CONFORM TO CURRENT "AMERICAN STANDARDS FOR NURSERY STOCK" BY AMERICAN ASSOCIATION OF NURSERYMEN (AAN), PARTICULARLY WITH REGARD TO SIZE, GROWTH, SIZE OF BALL, AND DENSITY OF BRANCH STRUCTURE. PLANT MATERIAL SHALL BE TAGGED AT THE SOURCE BY THE LANDSCAPE ARCHITECT UNLESS THIS REQUIREMENT IS SPECIFICALLY WAIVED.
13. ALL PLANTS (B&B OR CONTAINER) SHALL BE PROPERLY IDENTIFIED BY WEATHER-PROOF LABELS SECURELY ATTACHED THERETO BEFORE DELIVERY TO PROJECT SITE. LABELS SHALL IDENTIFY PLANTS BY NAME, SPECIES, AND SIZE. LABELS SHALL NOT BE REMOVED UNTIL THE FINAL INSPECTION BY THE LANDSCAPE ARCHITECT OR AGENT IN CHARGE.
14. ANY MATERIAL AND/OR WORK MAY BE REJECTED BY THE LANDSCAPE ARCHITECT IF IT DOES NOT MEET THE REQUIREMENTS OF THE SPECIFICATIONS. ALL REJECTED MATERIALS SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.
15. NO SUBSTITUTIONS ARE TO BE MADE WITHOUT THE APPROVAL OF THE TOWNSHIP ENGINEER.
16. THE LANDSCAPE ARCHITECT OR OWNER SHALL HAVE THE RIGHT, AT ANY STAGE OF THE OPERATIONS, TO REJECT ANY AND ALL WORK AND MATERIAL WHICH, IN HIS OPINION, DOES NOT MEET THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS.
17. THE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE FOR STABILITY AND CONDITIONS OF ALL TREES AND SHRUBS AND SHALL BE LEGALLY LIABLE FOR ANY DAMAGE CAUSED BY INSTABILITY OF ANY PLANT MATERIALS. STAKING OF ALL TREES SHALL BE DONE UTILIZING A METHOD AGREED UPON BY THE LANDSCAPE ARCHITECT, AS INDICATED ON THE DOCUMENTS.
18. ALL PROPOSED TREES TO BE INSTALLED EITHER ENTIRELY ON OR ENTIRELY OUT OF PLANTING BEDS. PLANTING BED LINES ARE NOT TO BE OBSTRUCTED. ALL SHRUBS AND GROUND COVER AREAS SHALL BE PLANTED IN CONTINUOUS PREPARED BED AND TOP DRESSED WITH 4-INCH SHREDDED HARDWOOD MULCH. MULCH SHALL HAVE BEEN SHREDDED WITHIN THE LAST SIX MONTHS.
19. ALL PLANTING BEDS ADJACENT TO LAWN, SOD, OR SEEDED AREAS SHALL BE SPADE EDGED.
20. MAINTENANCE SHALL BEGIN AFTER EACH PLANT HAS BEEN INSTALLED AND SHALL CONTINUE UNTIL 90 DAYS AFTER FINAL ACCEPTANCE BY THE ARCHITECT OR OWNER REPRESENTATIVE. MAINTENANCE INCLUDES WATERING, PRUNING, WEEDING, FERTILIZING, MULCHING, REPLACEMENT OF SICK OR DEAD PLANTS, AND ANY OTHER CARE NECESSARY FOR THE PROPER GROWTH OF THE PLANT MATERIAL. THE CONTRACTOR MUST BE ABLE TO PROVIDE CONTINUED MAINTENANCE IF REQUESTED BY THE OWNER.
21. UPON COMPLETION OF ALL LANDSCAPING, AN ACCEPTANCE OF THE WORK SHALL BE HELD. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OR OWNER FOR SCHEDULING THE INSPECTION AT LEAST SEVEN (7) DAYS PRIOR TO THE ANTICIPATED INSPECTION DATE.
22. ALL TREES, SHRUBS AND GROUNDCOVERS SHALL BE GUARANTEED FOR A PERIOD REQUIRED BY THE CLIENT AND MUNICIPALITY FROM THE DATE OF ACCEPTANCE. REPLACEMENT PLANTS USED SHALL BE GUARANTEED FOR AN ADDITIONAL 90 DAYS.
23. THE CONTRACTOR IS RESPONSIBLE FOR TESTING PROJECT SOILS. THE CONTRACTOR IS TO PROVIDE A CERTIFIED SOILS REPORT TO THE OWNER. THE CONTRACTOR SHALL VERIFY THAT THE SOILS ON THE SITE ARE ACCEPTABLE FOR THE PROPER GROWTH OF THE PROPOSED PLANT MATERIAL. SHOULD THE CONTRACTOR FIND POOR SOIL CONDITIONS, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE SOIL AMENDMENTS AS NECESSARY. THESE AMENDMENTS SHALL INCLUDE, BUT NOT BE LIMITED TO, FERTILIZERS, LIME, AND TOPSOIL. PROPER PLANTING SOILS MUST BE VERIFIED PRIOR TO PLANTING OF MATERIALS.
24. PLANTER SOILS (IF AND WHERE REQUIRED) SHALL BE WELL-DRAINING AND FERTILE. SOILS SHALL BE SANDY-LOAM, FRIABLE % SELECTED WELL- DRAINED MIX, FREE FROM DEBRIS, ROOKS, ETC. SOIL TO BE 20% TOPSOIL AND 20% PEAT MIXED WITH 50 SOILS FROM THE SITE. BACKFILL SOILS SHALL BE AS NOTED ON THE PLANTING DETAILS.
25. THE CONTRACTOR SHALL DISPOSE OF STUMPS AND MAJOR ROOTS OF ALL PLANTS TO BE REMOVED. ANY DEPRESSIONS CAUSED BY REMOVAL OPERATIONS SHALL BE REFILLED WITH FERTILE, FRIABLE SOIL PLACED AND COMPACTED SO AS TO REESTABLISH PROPER GRADE FOR NEW PLANTING AND/OR LAWN AREAS.
26. THE CONTRACTOR SHALL INSURE ADEQUATE VERTICAL DRAINAGE IN ALL PLANT BEDS AND PLANTERS.
27. ALL DISTRIBUTED AREAS OF THE SITE NOT PLANTED WITH SHRUBS OR GROUND COVER SHALL BE FINE GRADED AND SEEDED OR SODDED.
28. ALL SOD (IF AND WHERE REQUIRED) SHALL BE OBTAINED FROM AREAS HAVING GROWING CONDITIONS FAMILIAR TO AREAS TO BE COVERED. AREAS TO BE SODDED SHALL BE RAKED OF STONES AND DEBRIS. DEBRIS AND STONES OVER 1 INCH IN DIAMETER SHALL BE REMOVED FROM THE SITE. ALL DAMAGED SOD WILL BE REJECTED. ALL SOD MUST BE PLACED WITH STAGGERED JOINTS, TIGHTLY BUTTED, WITH NO INEQUALITIES IN GRADE. PLACE ALL SOD IN ROWS AR RIGHT ANGLES TO SLOPES (WHERE APPLICABLE).
29. BULBS (IF AND WHERE REQUIRED) SHALL BE IN CONFORMANCE WITH SECTION 11 OF THE AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS.
30. ALL PLANTING PROCEDURES SHALL CONFORM TO NJDOT SPECIFICATIONS.
31. SOME FIELD LOCATED PLANTS ARE NOT GRAPHICALLY SHOWN ON THIS PLAN BUT ARE WITHIN THE LIMIT OF CONSTRUCTION. ALL PLANTS (FIELD LOCATED PLANTS GRAPHICALLY SHOWN PLANTS) ARE NOTED ON THE PLANT LISTS. THIS PLAN IS TO BE USED FOR LANDSCAPING AND LIGHTING PURPOSES ONLY.
32. THE CONTRACTOR SHALL EXAMINE ALL ENGINEERING DRAWINGS AND FIELD CONDITIONS FOR EXACT LOCATIONS OF UTILITIES, DRAINS ETC., AND NOTIFY THE OWNER ABOUT ANY DISCREPANCIES BEFORE STARTING WORK.
33. ALL PLANT MATERIALS USED SHALL BE TRUE TO NAME AND SIZE IN CONFORMITY WITH THE AMERICAN STANDARD OF NURSERY STOCK (LATEST VERSION) AND SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY.
34. ALL PLANTS SHALL HAVE NORMAL, WELL-DEVELOPED BRANCHES & VIGOROUS ROOT SYSTEMS. THEY SHALL BE SOUND, HEALTHY, VIGOROUS, FREE FROM DEFECTS, DISFIGURING KNOTS, ABRASIONS OF THE BARK, SUNSCALD INJURIES, PLANT DISEASES, INSECT EGGS, BORERS AND ALL OTHER FORMS OF INFECTION. ALL PLANTS SHALL BE NURSERY GROWN. ALL PLANTS SHALL BE GRADE "A" NURSERY STOCK.
35. EXCAVATION NEAR EXISTING UTILITIES TO BE CAREFULLY PERFORMED BY HAND. ALL TREES SHALL NOT BE LOCATED CLOSER THAN 10' OF ANY EXISTING OR PROPOSED UNDERGROUND UTILITIES.
36. ALL PLANT MATERIAL SHALL BEAR THE SAME RELATION TO FINISH GRADE AS IT BORE TO EXISTING GRADE AT THE NURSERY. FIELD ADJUST ALL PROPOSED PLANTING LOCATIONS TO AVOID ANY DAMAGE TO EXISTING FACILITIES, AS WELL AS VEGETATION
37. ALL PLANTING MATERIAL IS TO BE GUARANTEED FOR A PERIOD OF 13 MONTHS FROM THE FINAL ACCEPTANCE OF THE PROJECT. IF ANY PLANTS ARE DEAD OR IN AN UNHEALTHY CONDITION BEFORE FINAL ACCEPTANCE OF THE PROJECT, THE LANDSCAPE CONTRACTOR SHALL REPLACE THEM AT HIS EXPENSE.
38. PRUNE NEWLY PLANTED TREES AS DIRECTED BY THE LANDSCAPE ARCHITECT. ALL PINES SHALL BE SHEARED AS DIRECTED BY THE LANDSCAPE ARCHITECT.
39. PLANTS SHALL ONLY BE INSTALLED WHEN THE SOIL IS FROST FREE.
40. UNDER NO CIRCUMSTANCES SHOULD THE MAIN LEADER OF A DECIDUOUS OR EVERGREEN TREE BE TOPPED.
41. ALL DISTURBED AREAS TO BE TOPSOILED 4" THICK, FERTILIZED, SEEDED AND MULCHED WITH SMALL GRAIN STRAW.
42. TOPSOIL SHALL BE NATURAL FRIABLE, FERTILE SOIL CHARACTERISTIC OF PRODUCTIVE SOIL IN THE VICINITY. IT SHALL BE FREE OF LUMPS OF CLAY, STONES, ROOTS AND OTHER FOREIGN MATTER. SHADE TREES LOCATED NEAR PEDESTRIAN OR VEHICULAR ACCESS SHOULD NOT BRANCH BELOW 7'.
43. ALL SHRUB MASSES SHALL FORM PLANTING BEDS AND SHALL BE MULCHED.
44. CUT AND REMOVE BURLAP FROM TOP ONE-THIRD OF BALL ONLY IF NON-JUTE ROPING IS USED.
45. THE DEPTH OF PLANTING PITS SHALL BE INCREASED BY 12" THROUGH THE ADDITION OF LOOSE
46. AGGREGATE (3/4" TO 1-1/2" DIAMETER) WHEREVER POOR DRAINAGE OCCURS OR WHERE DIRECTED BY THE LANDSCAPE ARCHITECT. GUY WIRES SHALL BE LOCATED SO THAT THEY WILL NOT PULL CROTCH APART. GUY WIRES TO SECOND
47. BRANCH (MINIMUM ONE-THIRD HEIGHT OF TREE). USE TWO GUYS PER TREE UNLESS OTHERWISE INDICATED. TREE STAKES AND GUY WIRES SHALL BE REMOVED AFTER ONE GROWING SEASON; PLANTS PLANTED IN ROWS SHALL BE MATCHED SPECIMENS AND BE UNIFORM IN SIZE AND FORM.
48. MULCH, 4" IN DEPTH, SHALL BE EITHER WOOD CHIPS, PINE BARK OR SHREDDED HARDWOOD BARK NOT EXCEEDING 2" IN GREATEST DIMENSION.
49. A WEED RETARDANT BARRIER SHALL BE USED IN ALL NON-GRASSED AREA.
50. ALL PLANTS WITHIN SIGHT TRIANGLE EASEMENTS SHALL NOT EXCEED A MATURE HEIGHT OF 30" ABOVE ELEVATION OF CURB.
51. THE CONTRACTOR SHALL FERTILIZE ALL PLANT MATERIAL WITH 5-10-5 FERTILIZER, OR APPROVED EQUAL AT THE RATE SPECIFIED BY THE MANUFACTURER. ALL TURF AREAS SHALL BE LIMED AND FERTILIZED APPROPRIATELY FOR THE TYPES OF SOILS ON THE SITE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE THE SOIL ACIDITY AND A SOIL TEST CONDUCTED BY THE COUNTY SOIL DISTRICT OR EXTENSION SERVICE TO ESTABLISH THE SOIL'S LIME AND FERTILIZER RATES.
52. ALL TREES OVER SIX FEET IN HEIGHT ARE TO BE STAKED AT TIME OF INSTALLATION.
53. ALL WATER APPLIED TO PLANTED OR TURF AREAS SHALL BE FREE FROM IMPURITIES HARMFUL TO VEGETATION AND APPLIED AT A RATE OF 5 GALLONS OF WATER PER SQUARE YARD OF PLANT PIT IMMEDIATELY AFTER PLANTING AND INSTALLATION. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ADEQUATE IRRIGATION TO ALL PLANT MATERIALS AND LAWN AREAS INSTALLED AS PART OF THIS CONTRACT DURING THE CONSTRUCTION TIME PERIOD UP TO AND INCLUDING THE TIME PERIOD ESTABLISHED FOR PLANT MATERIAL SURVIVAL GUARANTEE. WATER APPLIED DURING THE GUARANTEE PERIOD SHALL BE AT THE RATE OF 1 INCH OF WATER PER WEEK, WITH AN ALLOWANCE FOR NATURAL PERCIPITATION AND RAINFALL.
54. BACKFILL MATERIAL FOR RAISED PLANT BEDS SHALL SHALL CONSIST OF NATURAL LOAM TOPSOIL, FREE FROM SUBSOIL, AND SHALL BE OBTAINED FROM AN AREA WHICH HAS NEVER BEEN STRIPPED. TOPSOIL SHALL HAVE BEEN REMOVED FROM A DEPTH OF NO MORE THAN 1 FOOT, OR LESS IF SUBSOIL IS ENCOUNTERED. TOPSOIL SHALL BE OF UNIFORM QUALITY, FREE FROM HARD CLODS, STIFF CLAY HARD PAN, SODS, PARTIALLY DISINTEGRATED STONE, LIME CEMENT, TAR RESIDUES, CHIPS OR ANY OTHER UNDESIRABLE MATERIAL.
55. ALL PLANTS ARE SHOWN SEMI-MATURE SIZE ON PLANS. SIZES INDICATED IN PLANT LIST ARE SIZES AT
56. PLANT MATERIAL SHOWN IN A MASS OR TOUCHING EACH OTHER SHALL BE ALLOWED TO GROW TOGETHER TO PERFORM AS A SCREEN OR A HEDGE. DO NOT PRUNE OR SHEER INTO INDIVIDUAL FREE-STANDING PLANTS!

PLANTING LIST

QUANT.	SYMBOL	BOTANICAL NAME	COMMON NAME	MATURE HEIGHT X WIDTH	CALIPER/ROOT	PLANTING SIZE
5		ACER RUBRUM	'OCTOBER GLORY' RED MAPLE	40'-70' X 30'-50'	3" CAL.	B&B 8'H
65		PYRUS CALLERYAVA	REDSPIRE PEAR	35'-45' X 20'-25'	3" CAL.	B&B 8'H
46		EUONYMUS ALATUS	COMPACTUS 'BURNING BUSH'	9'-11" X 9'-11'	N/A	#3-#5 CAN.
8		PINUS STROBUS	EASTERN WHITE PINE WHITE PINE NORTHERN WHITE PINE	50'-80' X 20'-40'	3" CAL.	N/A

= AREA TO BE LANDSCAPED

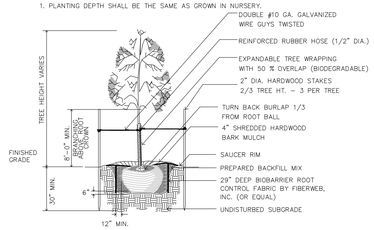
36,263 SF / 0.82 ACRES TO BE LANDSCAPED.

GRAPHIC SCALE

40 0 20 40 80 160

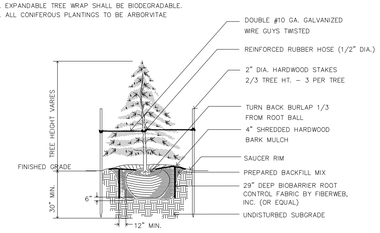
(IN FEET)
1 inch = 40 ft.

PLANTING NOTES:
1. PLANTING DEPTH SHALL BE THE SAME AS GROWN IN NURSERY.



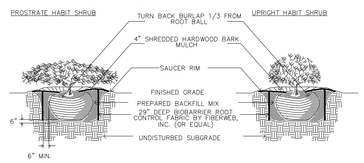
DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE

PLANTING NOTES:
1. PLANTING DEPTH SHALL BE THE SAME AS GROWN IN NURSERY.
2. EXPANDABLE TREE WRAP SHALL BE BIODEGRADABLE.
3. ALL CONIFEROUS PLANTINGS TO BE ARBORVITAE



CONIFEROUS TREE PLANTING DETAIL
NOT TO SCALE

PLANTING NOTE:
1. PLANTING DEPTH SHALL BE THE SAME AS GROWN IN NURSERY.



SHRUB PLANTING DETAIL
NOT TO SCALE

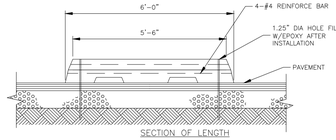
3/25/2020	REVISIONS PER ENGINEERING TECHNICAL REVIEW COMMENTS	ZEE

SITE PLAN
LANDSCAPING PLAN
6001 BORDENTOWN AVENUE
BLOCK 9 LOT 1
BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY

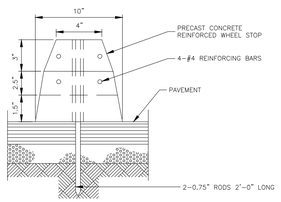
NEWLINES ENGINEERING & SURVEY
CERTIFICATE #24GA28264200
315 Monmouth Avenue
Suite 205
Lakewood, New Jersey 08701
Phone (732) 994-4900
Fax (732) 994-4999

GLENN D. LINES, P.E., P.P.
LICENSED PROFESSIONAL ENGINEER AND PLANNER
STATE OF NEW JERSEY LICENSE NO. 33011 (P.E.) 4066 (P.P.)

PROJECT NO.	19111
DRAWN BY	ZEE
SCALE	1" = 40'
DATE	7/10/19
SHEET	7 OF 16



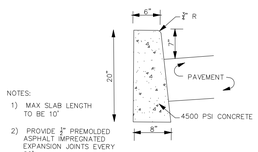
SECTION OF LENGTH



SECTION OF WIDTH

CONCRETE WHEEL STOP DETAIL

N.T.S.

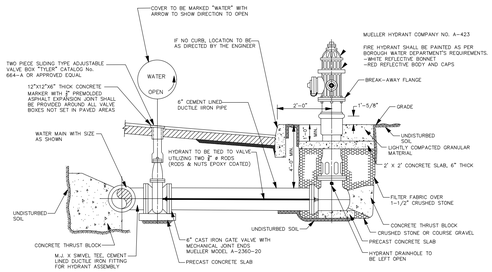


NOTES:
1) MAX SLAB LENGTH TO BE 10'
2) PROVIDE ½" PREMOLDED ASPHALT IMPREGNATED EXPANSION JOINTS EVERY 20'.

CONCRETE CURB

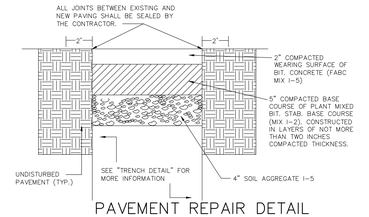
CONCRETE CURB DETAIL

N.T.S



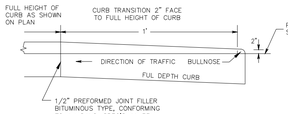
HYDRANT ASSEMBLY DETAIL

N.T.S



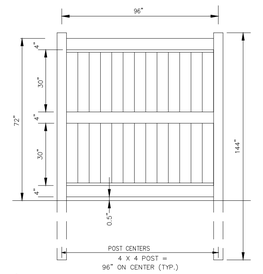
PAVEMENT REPAIR DETAIL

NOT TO SCALE



TYPICAL CURB TAPER

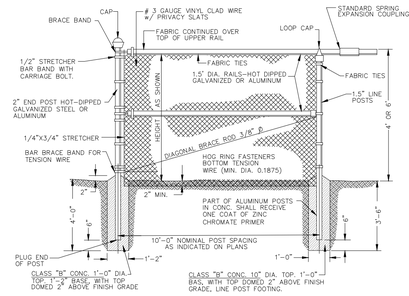
NOT TO SCALE



6' HIGH VINYL PRIVACY FENCE

NOT TO SCALE

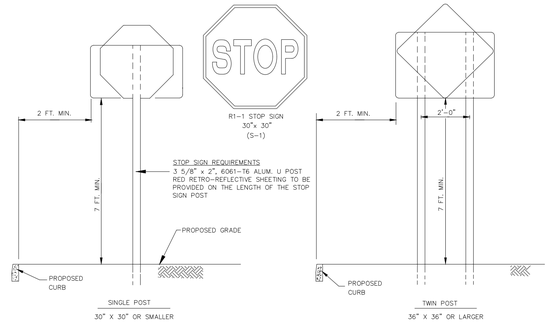
NOTE: FENCE TO BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS



4'-6' HIGH CHAIN LINK FENCE DETAIL

NOT TO SCALE

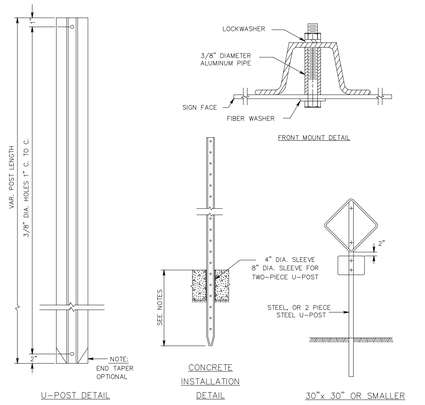
NOTE:
4 FOOT HIGH FENCE DOES NOT REQUIRE A MIDDLE POST OR A DIAGONAL WIRE.



TYPICAL TRAFFIC SIGN MOUNTING DETAIL

NOT TO SCALE

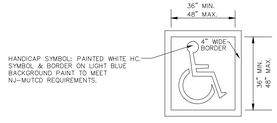
GENERAL NOTES:
1. ALL POSTS SHALL BE OF ADEQUATE LENGTH TO MEET THE REQUIREMENTS FOR ERECTION, AS STATED IN THE CURRENT MANUAL ON "UNIFORM TRAFFIC CONTROL DEVICES" FOR STREETS AND HIGHWAYS.
2. ALL POSTS SHALL BE EMBEDDED 4'-2" MINIMUM. ONE PIECE ALUM. OR STEEL POST SHALL BE EMBEDDED 3'-6" MAXIMUM.
3. POSTS MAY BE STEEL, ALUMINUM OR 2 PIECE U-POSTS IN CONFORMANCE WITH CURRENT A.S.T.M. SPECIFICATION A123.
4. ALL BOLTS SHALL BE GALVANIZED AND SHALL NOT PROTRUDE MORE THAN 3/4" BEYOND THE NUT WHEN TIGHT BUT SHALL ENGAGE ALL THREADS IN THE NUT.



TYPICAL TRAFFIC SIGN POST CONNECTION DETAILS

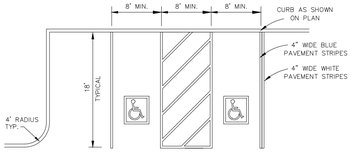
NOT TO SCALE

FRONT MOUNT DETAIL



HANDICAP PAVEMENT SYMBOL DETAIL

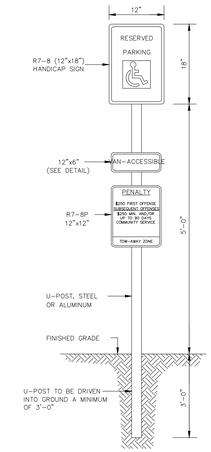
NOT TO SCALE



GENERAL NOTES:
ACCESS / LOADING AREA NEXT TO HANDICAP STALLS TO BE PAINTED WITH 4" WIDE LIGHT BLUE STRIPES AT A 45 DEGREE ANGLE TO STALL AT 3 FT. C. TO C. PAINT TO MEET NJ-MUTCD REQUIREMENTS.

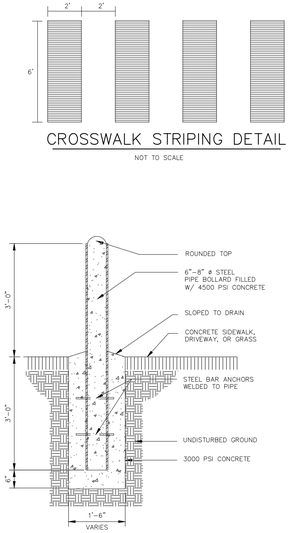
TYPICAL HANDICAPPED PARKING SPACE STRIPING DETAIL

NOT TO SCALE



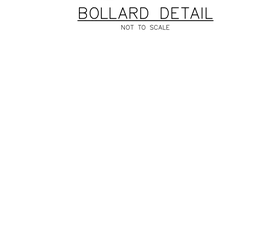
ACCESSIBLE PARKING SIGN

NOT TO SCALE



CROSSWALK STRIPING DETAIL

NOT TO SCALE



BOLLARD DETAIL

NOT TO SCALE

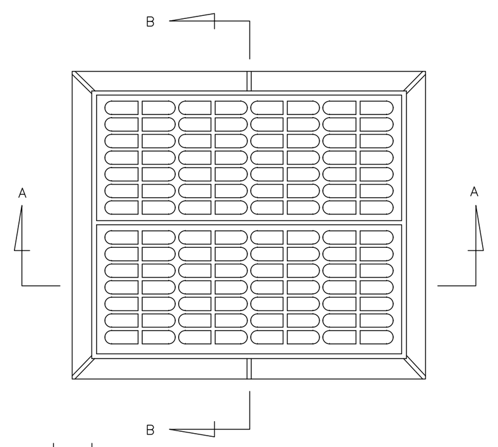
3/25/2020	REVISIONS PER ENGINEERING TECHNICAL REVIEW COMMENTS — ZEE

SITE PLAN
DETAIL SHEET #1
6001 BORDENTOWN AVENUE
BLOCK 9 LOT 1
BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY

NEWLINES ENGINEERING & SURVEY
CERTIFICATE #24GA28264200
315 Monmouth Avenue
Suite 205
Lakewood, New Jersey 08701
Phone (732) 994-4900
Fax (732) 994-4999

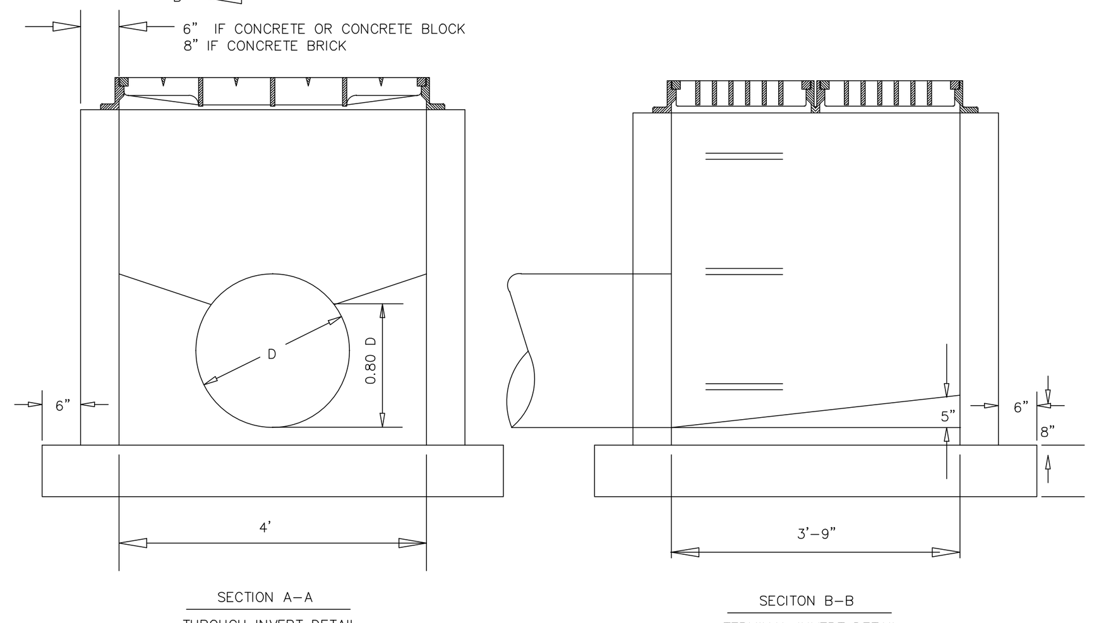
GLENN D. LINES, P.E., P.P.
LICENSED PROFESSIONAL ENGINEER AND PLANNER
STATE OF NEW JERSEY LICENSE NO. 33011 (P.E.) 4066 (P.P.)
DATE

PROJECT NO.	19111
DRAWN BY	ZEE
SCALE	AS SHOWN
DATE	7/10/19
SHEET	8 OF 16

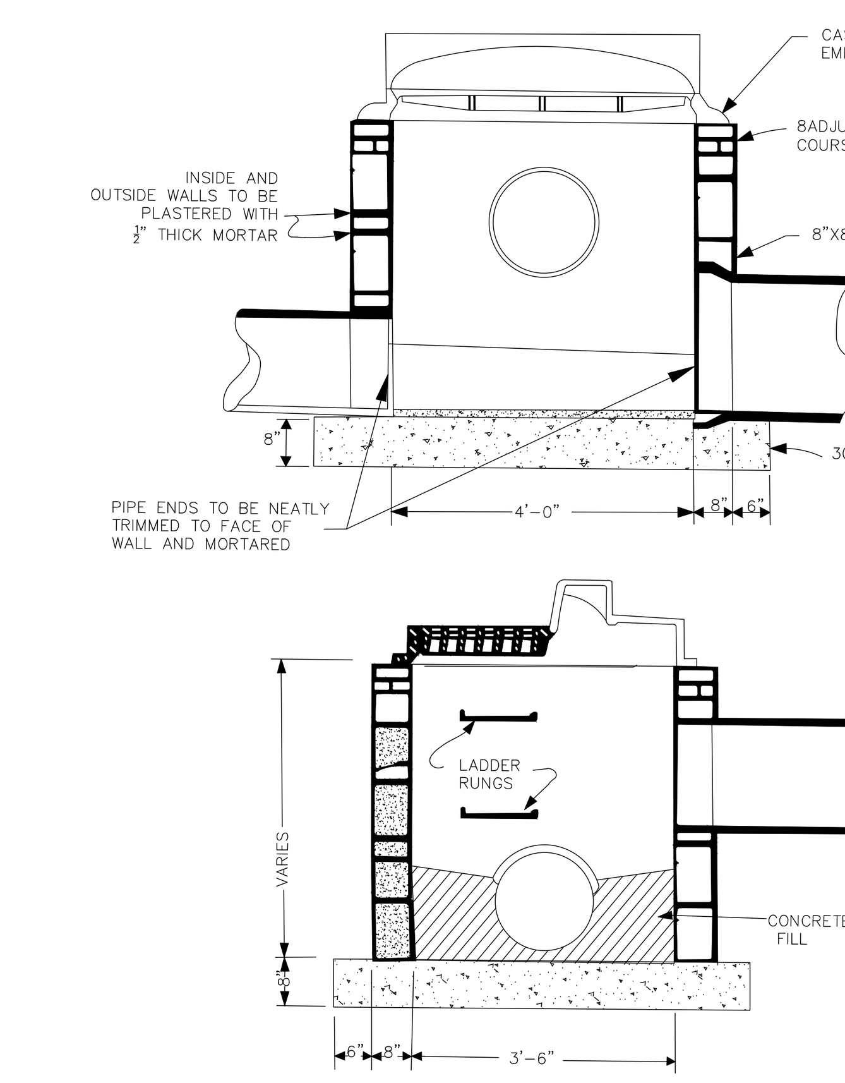


GENERAL NOTES

1. FOOTER AND INVERT TO BE NJDOT CLASS "B" CONCRETE.
2. IF WALL CONSTRUCTION OTHER THAN CONCRETE THE WALLS SHALL BE PLASTERED BOTH INSIDE AND OUTSIDE WITH 1/2" THICK CEMENT PLASTER.
3. CASTING TO BE CAMPBELL FOUNDRY NO. 3425 OR EQUIVALENT
4. PROVIDE ALUMINUM LADDER RUNGS 18" O.C.
5. WHEN ADDITIONAL DEPTH IS SCHEDULED WALLS BELOW THE DEPTH OF 8'-0" MEASURED FROM THE INLET GUTTER TO INVERT, SHALL BE 12" THICK IF CONCRETE OR DOUBLE BLOCK IF BLOCK. THE FOUNDATION DIMENSION SHALL BE INCREASED 12" IN WIDTH AND TO 12" IN DEPTH.
6. SLAB TO BE NJDOT CLASS "B" CONCRETE.
7. A CRUSHED STONE BASE FIRM TO SUBGRADE OF AT LEAST (6") SIX INCHES SHALL BE REMOVED UNDER DRAINAGE STRUCTURE.

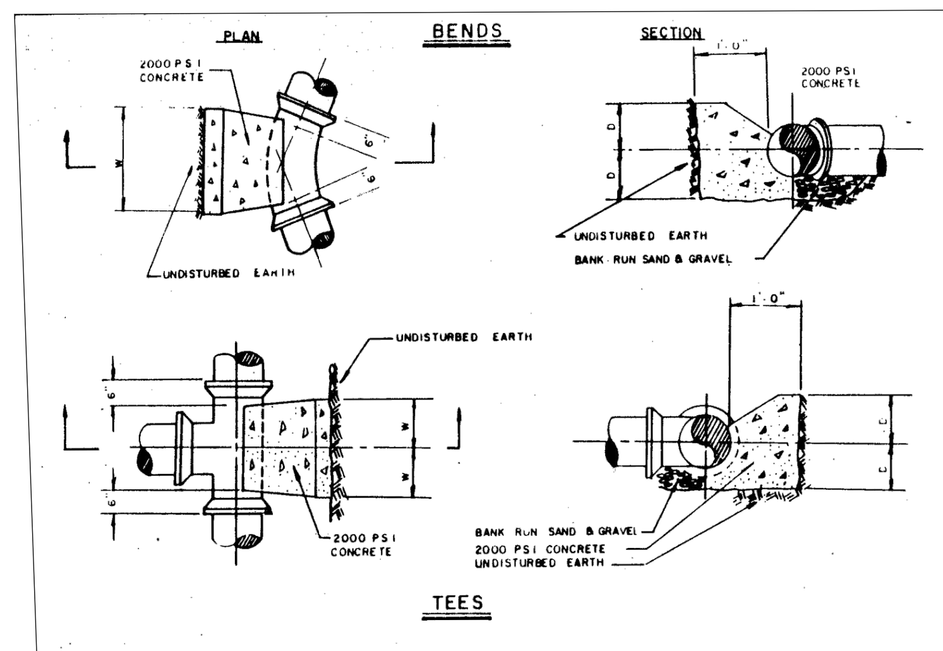


TYPE "E" INLET
NOT TO SCALE



NOTES:
1. CURB FACE TO BE 8"
2. CAMPBELL CASTING PATTERN NO. 2548 STREAM FLOW GRATING
3. DROP FRONT LADDER RUNGS TO BE ALCO NO. 14869 OR APPROVED EQUAL. SPACING TO BE 12" O.C. PORTION OF RUNGS EMBEDDED IN CONCRETE TO BE EPOXY COATED.
4. WHERE INLETS ARE GREATER THAN 8' DEEP, DOUBLE BLOCK WALLS ARE REQUIRED.

TYPE 'B' INLET DETAIL
N.T.S

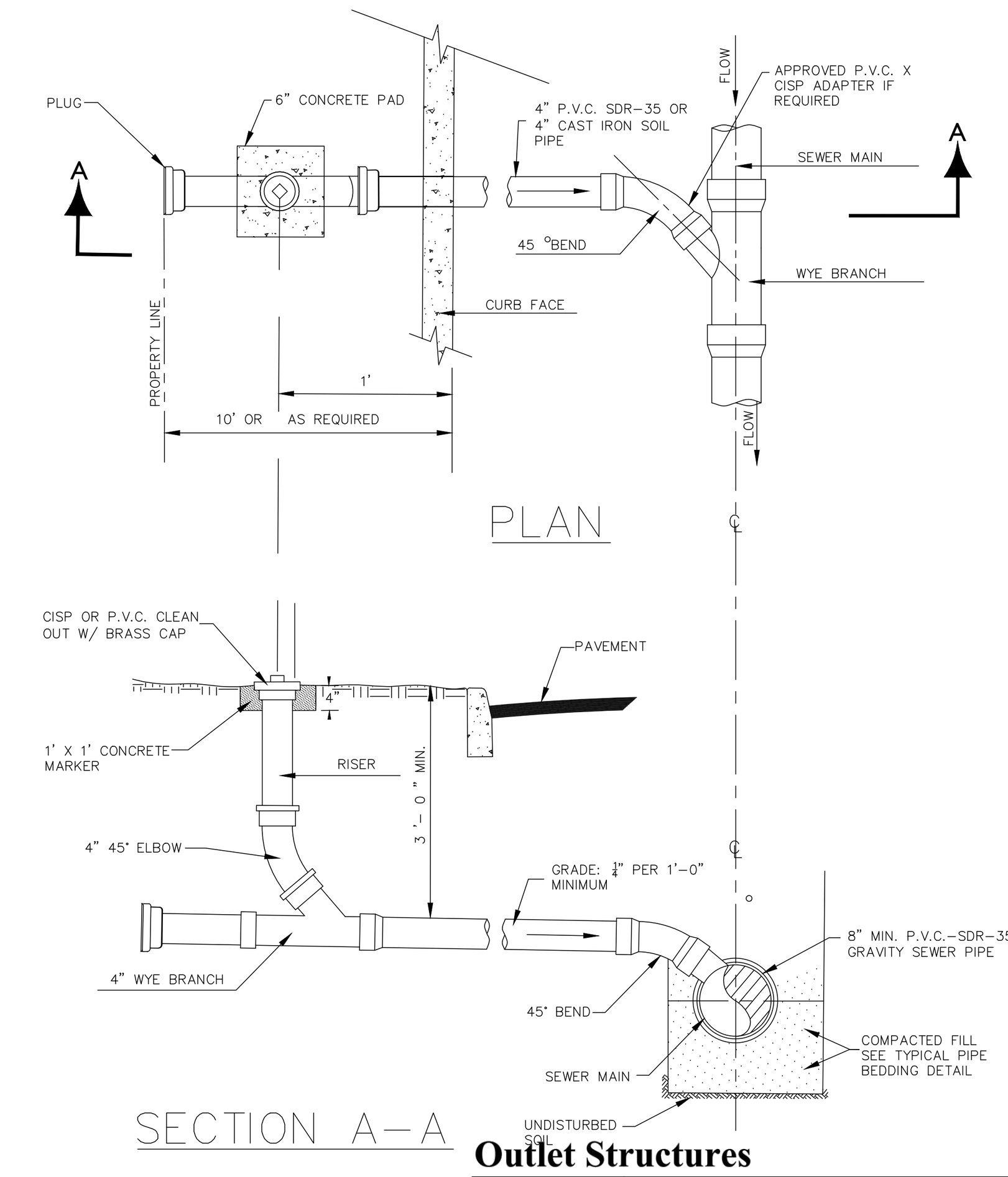


THRUST BLOCK SCHEDULE							
DESCRIPTION OF FITTINGS	MINIMUM DIMENSIONS (IN FEET)	DIAMETER OF PIPE					
		6"	8"	10"	12"	14"	16"
TEES	W	1.25	1.5	1.75	2.0	2.25	2.5
	D	1.25	2.0	2.25	2.5	2.75	3.0
90° BENDS	W	2.0	3.0	3.5	4.0	4.5	6.0
	D	1.5	2.0	2.25	2.5	3.0	3.5
45° BENDS	W	1.5	2.0	2.5	3.0	3.5	4.0
	D	1.0	1.25	1.75	2.0	2.5	2.75
22 1/2° BENDS	W	1.5	1.5	2.0	2.5	3.0	3.5
	D	1.0	1.0	1.5	1.5	2.0	2.0
11 1/4° BENDS	W	1.0	1.25	1.5	1.5	2.0	2.5
	D	1.0	1.0	1.25	1.25	1.5	1.5
CAPS	W	1.25	1.5	1.75	2.0	2.25	2.5
	D	1.25	2.0	2.25	2.5	2.75	3.0

NOTE ALL W&D DIMENSIONS IN FEET

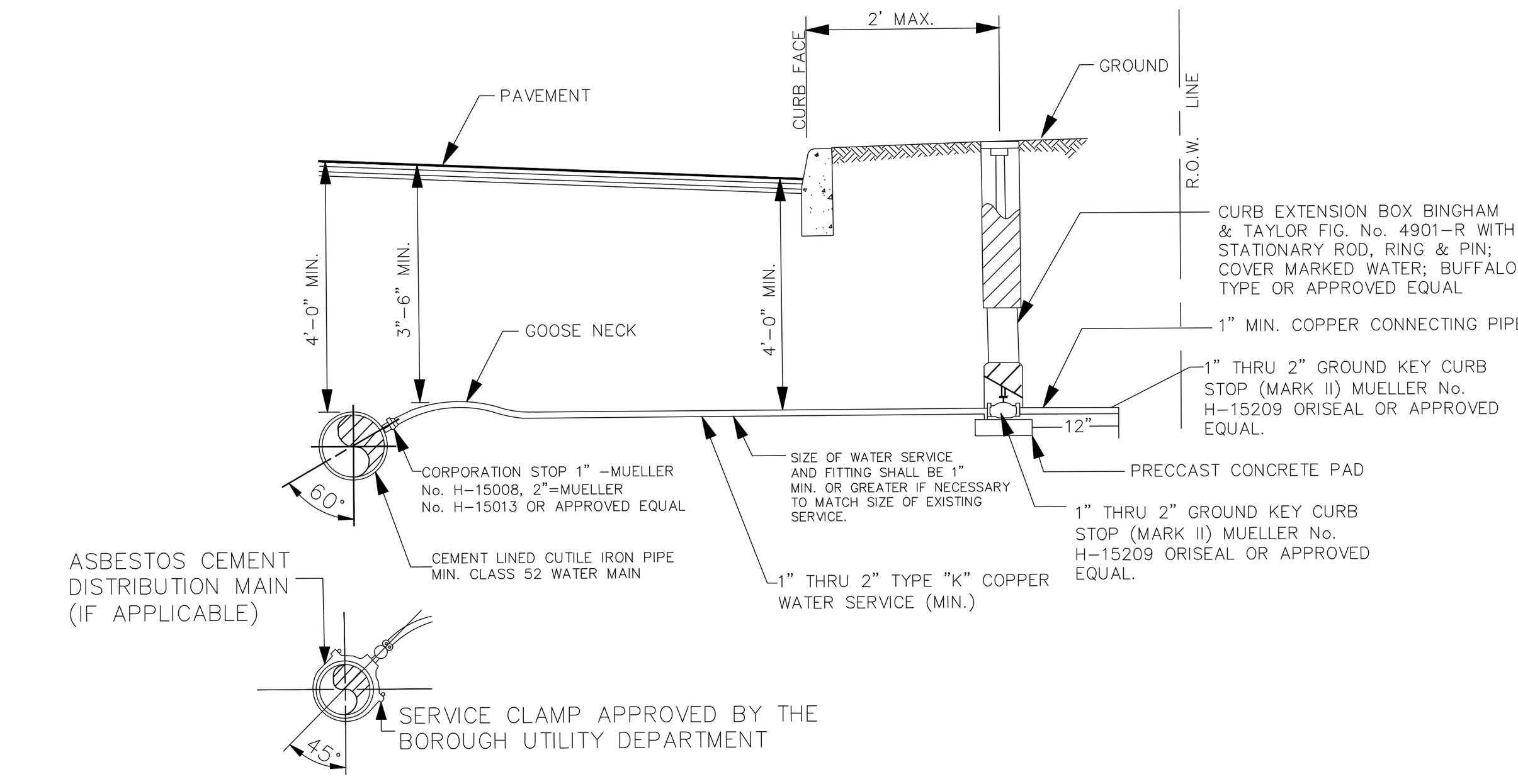
THRUST BLOCK NOTES
1. BEARING AREAS SHOWN ARE BASED ON 2000 PSF ALLOWABLE BEARING PRESSURE. WHERE SOILS ARE ENCOUNTERED WITH A POORER BEARING CAPACITY, THE CONTRACTOR SHALL INCREASE THE BEARING AREA AS MAY BE DIRECTED BY THE ENGINEER OF STRAP THE JOINTS IN A MANNER APPROVED BY THE ENGINEER.
2. ALL THRUST BLOCKS SHALL BE POURED DIRECTLY AGAINST UNDISTURBED EARTH.
3. NO JOINTS SHALL BE COVERED WITH CONCRETE
4. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI
5. ALL THRUST BLOCKS FOR VERTICAL BENDS SHALL INCLUDE STRAPS TO SECURE FITTING TO BLOCK AND CONCRETE QUANTITY SHALL BE INCREASED AS DIRECTED BY ENGINEER.
6. ALL THRUST BLOCKS WERE DESIGNED FOR 100 PSI NORMAL OPERATING PRESSURE. THE THRUST BLOCKS FOR HIGH PRESSURE LINES, IF ANY SHALL BE INCREASED IN SIZE AS DIRECTED BY THE ENGINEER.

THRUST BLOCKS DETAIL
N.T.S.

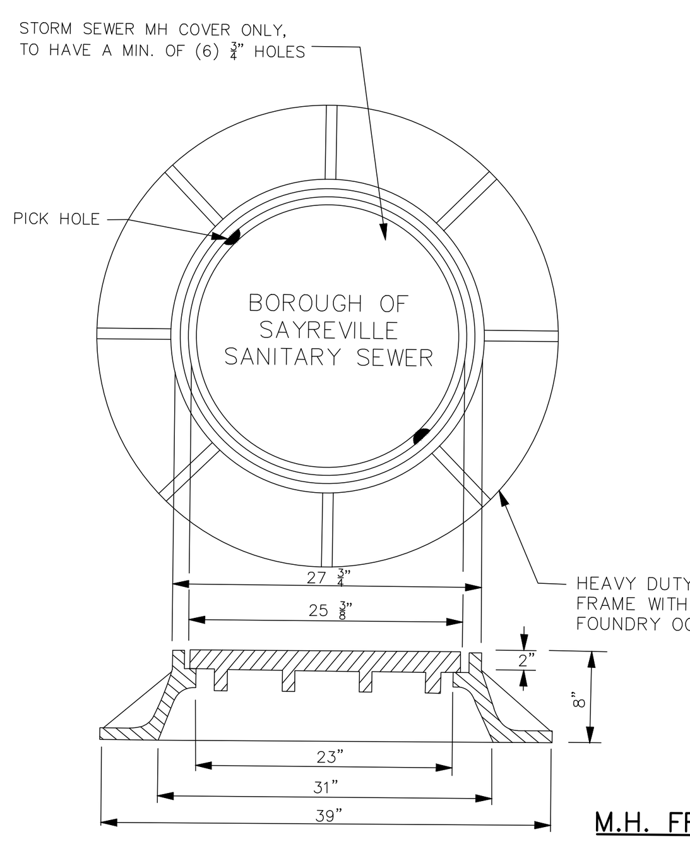


Outlet Structures **T-12**

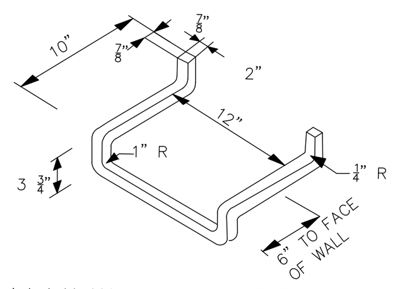
SANITARY SEWER LATERAL & CLEANOUT DETAIL
NOT TO SCALE



WATER SERVICE CONNECTION DETAIL
N.T.S



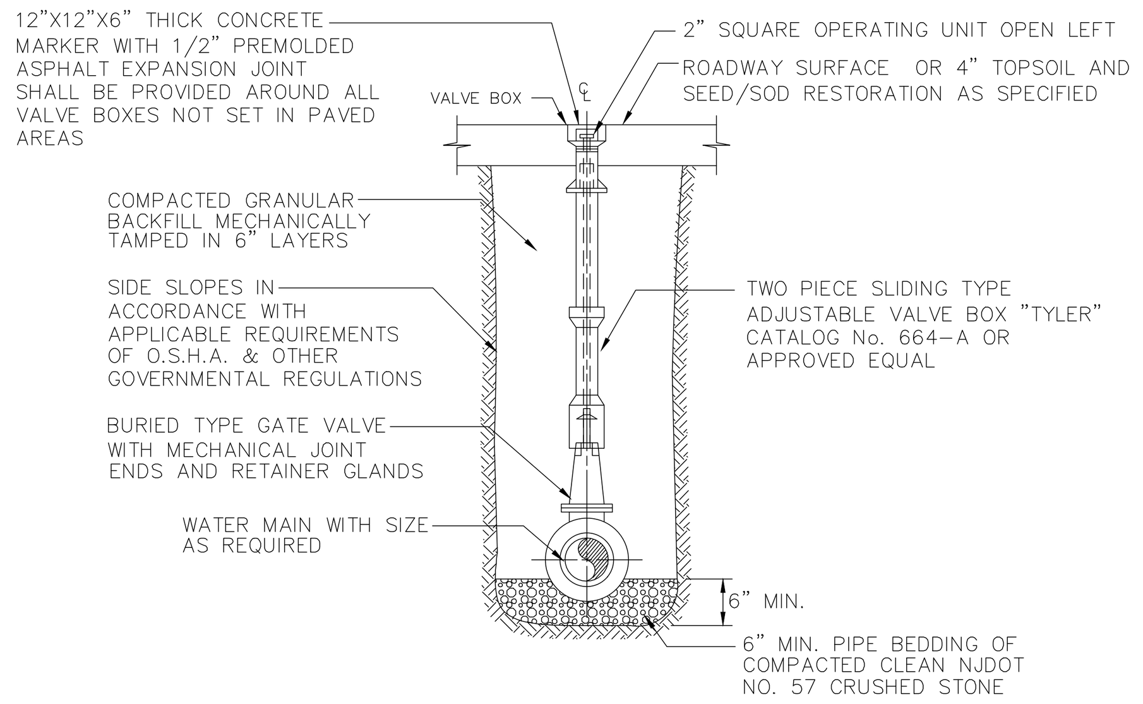
M.H. FRAME & COVER
N.T.S.



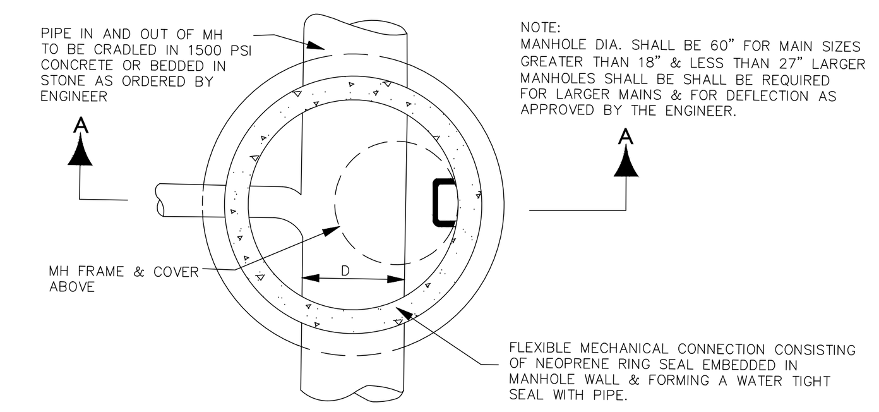
ALUMINUM LADDER RUNG
N.T.S.

NOTE: PORTION EMBEDDED IN MASONRY TO BE COATED WITH COAL TAR PITCH, VARNICH OR OTHER SPECIFIED MATERIAL

M.H. FRAME & COVER – ALUMINUM LADDER RUNG

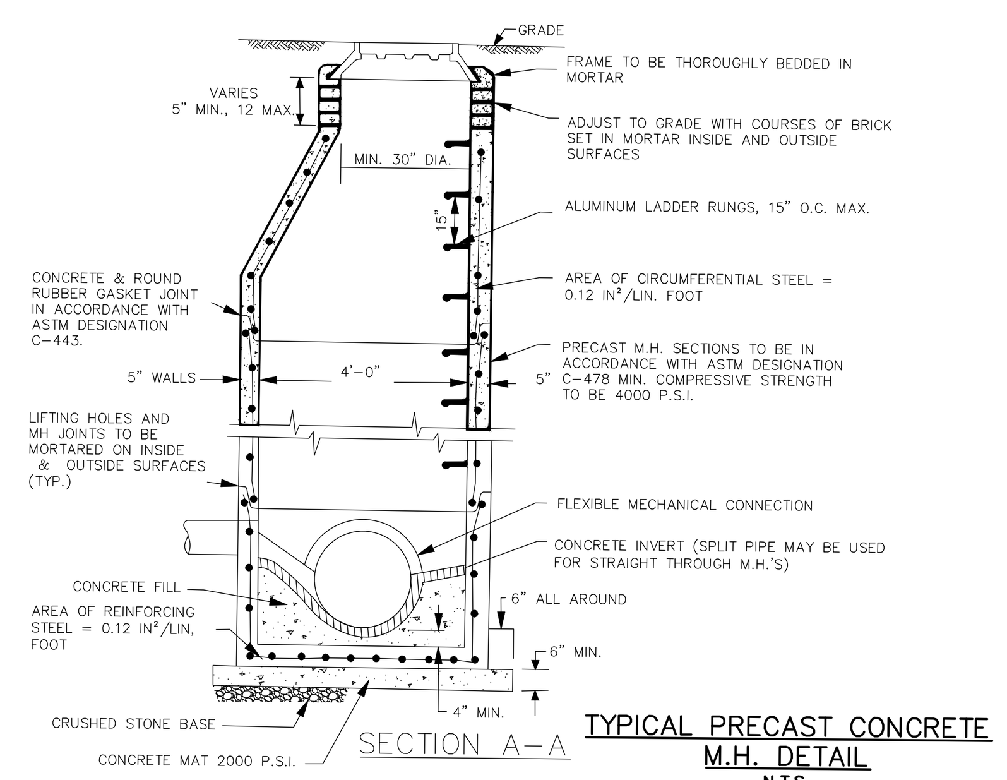


VALVES 3" TO 12" DIA.
STANDARD DETAIL
UNDERGROUND GATE VALVE DETAIL
N.T.S.

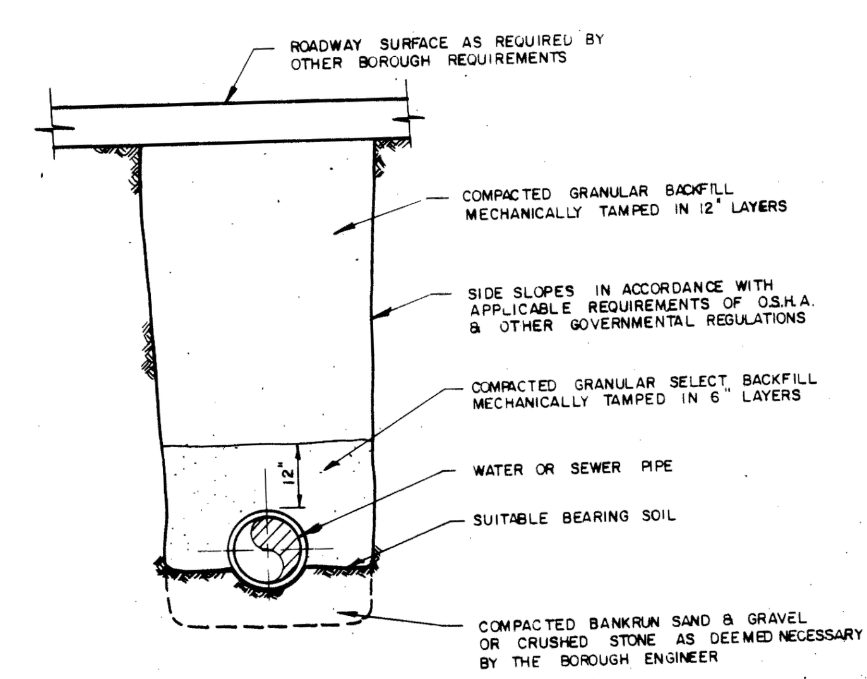


NOTE:
MANHOLE DIA. SHALL BE 60" FOR MAIN SIZES GREATER THAN 18" & LESS THAN 27" LARGER MANHOLES SHALL BE SHALL BE REQUIRED FOR LARGER MAINS & FOR DEFLECTION AS APPROVED BY THE ENGINEER.

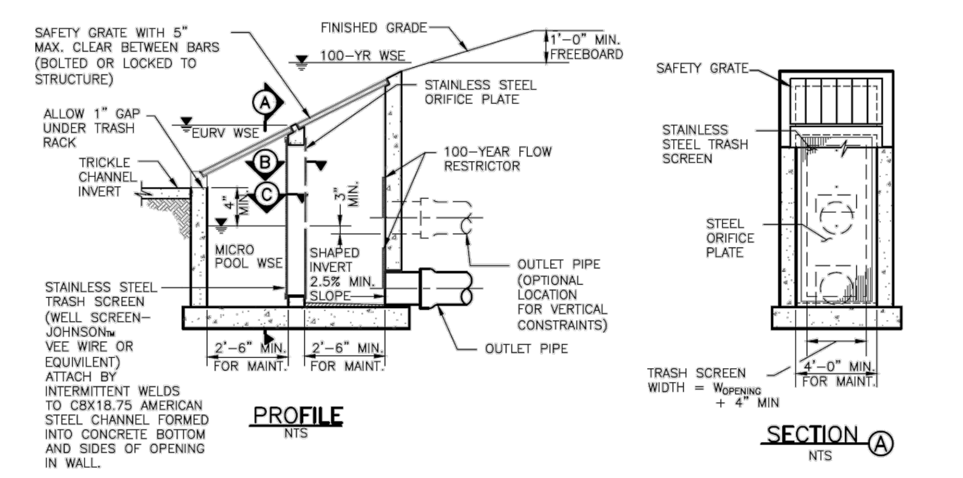
SECTIONAL PLAN

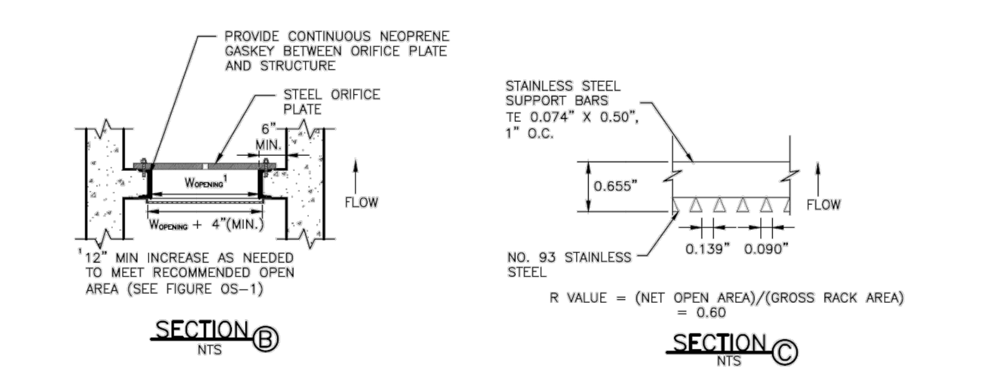


TYPICAL PRECAST CONCRETE M.H. DETAIL
N.T.S.



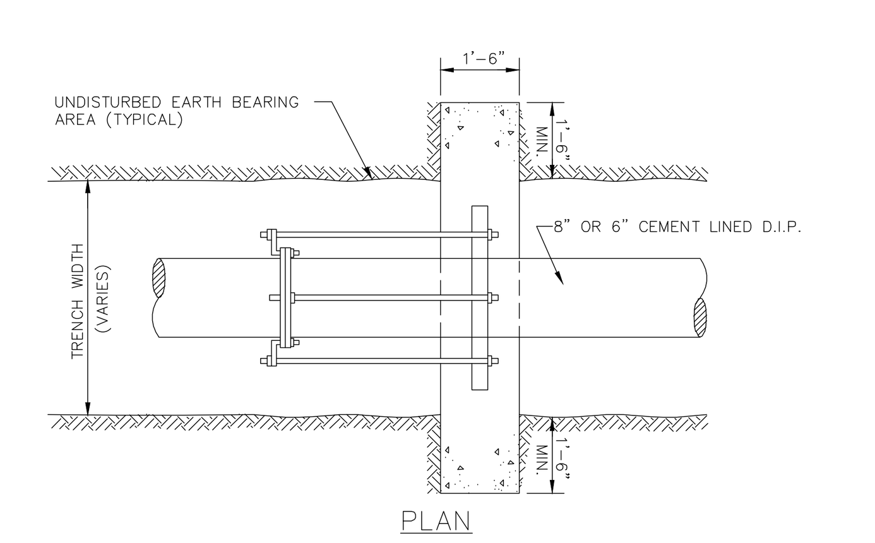
TYPICAL PIPE BEDDING DETAIL
N.T.S.



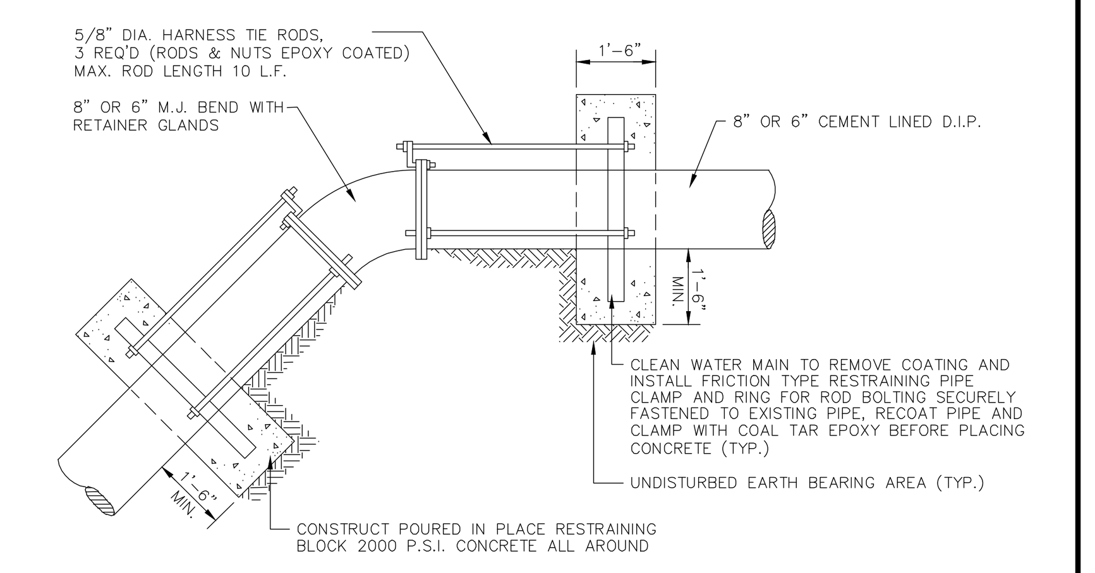


ORIFICE DETAIL
N.T.S.

Figure OS-7. Full spectrum detention outlet structure for 5-acre impervious area or less



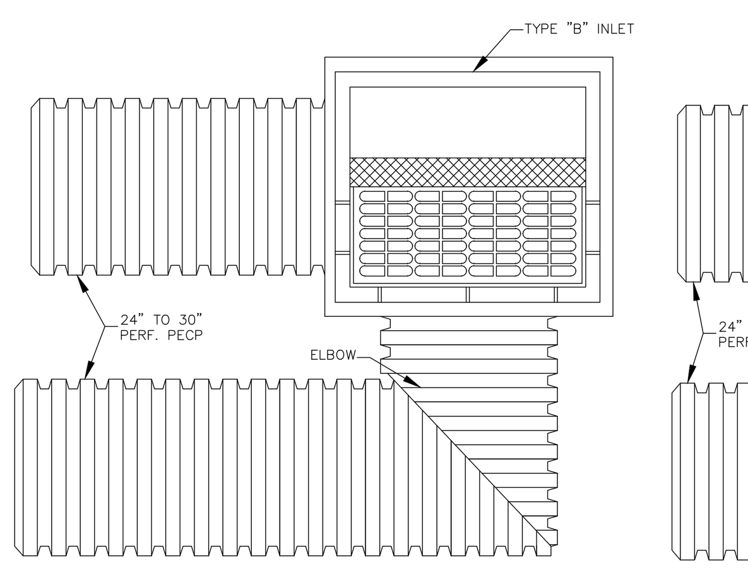
PLAN



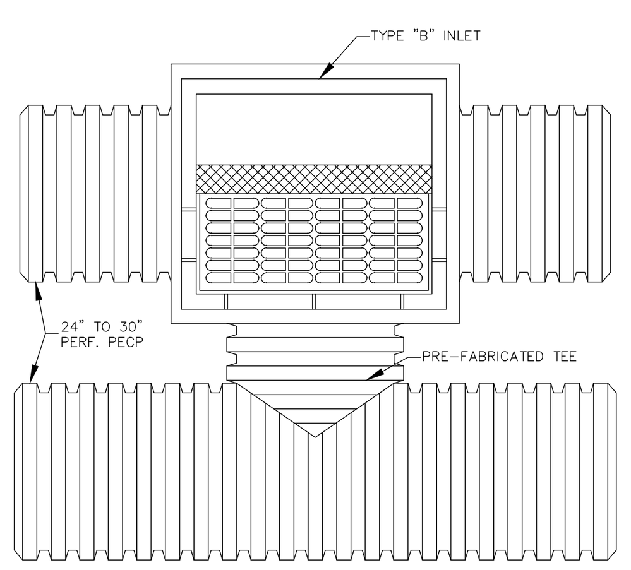
ELEVATION

NOTE :
CONTRACTOR TO EXCAVATE TEST PIT TO DETERMINE DATA REQUIRED FOR FABRICATION PRIOR TO ORDERING FITTINGS (TYPICAL)

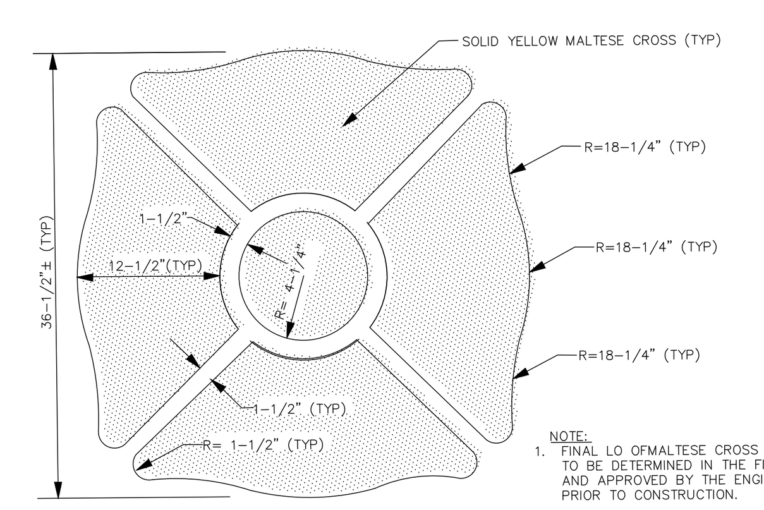
VERTICAL BEND RESTRAINT DETAILS
N.T.S.



TERMINAL INLET CONNECTION
NOT TO SCALE

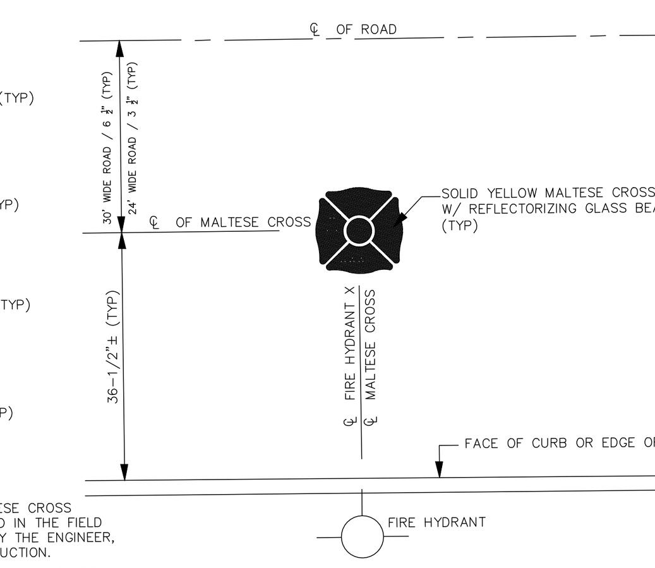


MID-BLOCK INLET CONNECTION
NOT TO SCALE



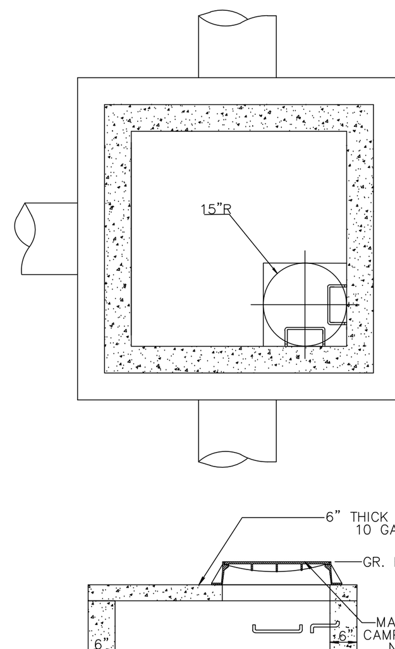
MALTESE CROSS SYMBOL

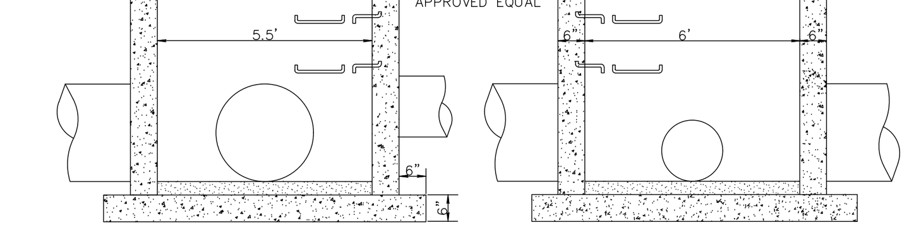
NOTE:
1. FINAL LO OFMALTESE CROSS TO BE DETERMINED IN THE FIELD AND APPROVED BY THE ENGINEER, PRIOR TO CONSTRUCTION.
2. MATLESE CROSS SYMBOL TO BE CONSTRUCTED TO DIMENSIONS PROVIDED, UNLESS OTHERWISE APPROVED BY THE ENGINEER..



MALTESE CROSS LOCATION

FIRE HYDRANT MARKER DETAIL
N.T.S

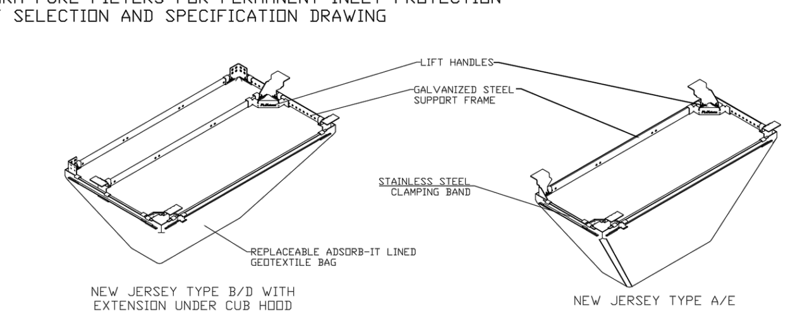




NOTES:
1. CONCRETE SLAB TO BE REINFORCED WITH 10 GA., 6"x6" W.W.M.
2. WALLS TO BE REINFORCED WITH #4, 12 O.C. BOTH WAYS / DWL #4, 12" O.C. AT CENTERLINE OF WALL LOCATIONS.
3. CONCRETE TO BE AIR ENTRAINED 4500 PSI @ 28 DAYS

MODIFIED DRAINAGE MANHOLE
NOT TO SCALE

FLEXSTORM PURE FILTERS FOR PERMANENT INLET PROTECTION
PRODUCT SELECTION AND SPECIFICATION DRAWING



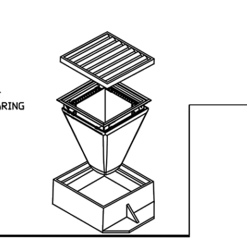
Product selection for FLEXSTORM CATCH-IT Filters (Temporary Inlet Protection)										
NJ Std.	Bridgestate/Campbell Foundry #	General Foundry #	Quirin Foundry	Inlet Type	Grate Size	Opening Size	Bag Cap (ft^3)	Flow Ratings (CFS)	ADS P/N
Type A	3405, 3432	23405	GR 251	Square/Rect (SQ)	47.75 x 21.75	45.5 x 19.5	3.6	5.9	62NJAFX
Type B	2617, 2541	22618	GRH 450 NJ	Curb Box (CB)	47.75 x 21.75	45.5 x 42	3.6	5.9	62NJBFX
Type D	2618, 2548	22694	GRH 450 NJ	Curb Box (CB)	47.75 x 21.75	45.5 x 30	3.6	5.9	62NJBFX
* Type E	3425, 3440	23425	GR 265	Curb Box (CB)	47.75 x 21.75 (2)	45.5 x 19.5 (2)	7.2	11.8	62NJEFX

*NOTE: TYPE E IS TWO SIDE BY SIDE TYPE A FILTERS

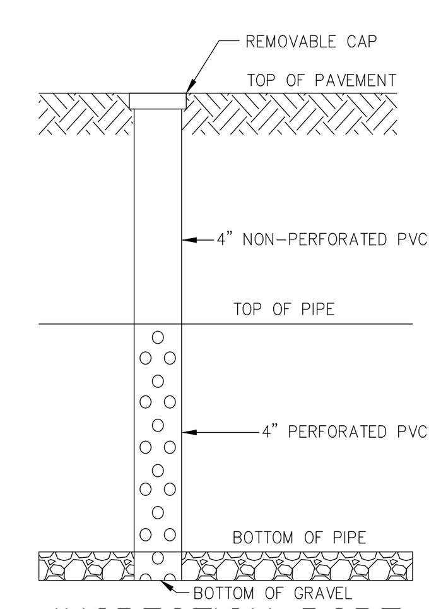
*ITEM CODE MUST BE REFERENCED IN ADDITION TO ADS P/N IF SHOWN
**FLOW RATINGS SHOWN ARE 50% MAXIMUM

NOTES:
1. ALL FRAMING IS CONSTRUCTED OF 304 STAINLESS STEEL FOR 25 YEAR SERVICE LIFE RATING
2. TOTAL BYPASS CAPACITY WILL VARY WITH EACH SIZED DRAINAGE STRUCTURE. FLEXSTORM DESIGNS FRAMING BYPASS TO MEET OR EXCEED THE DESIGN FLOW OF THE PARTICULAR DRAINAGE STRUCTURE.
3. UPON ORDERING ADS P/N CONFIRMATION OF THE DOT CALLOUT, FLEXSTORM ITEM CODE, CASTING MAKE AND MODEL, OR DETAILED DIMENSIONAL FORMS MUST BE PROVIDED.
4. FOR WRITTEN SPECIFICATIONS AND MAINTENANCE GUIDELINES VISIT WWW.INLETFILTERS.COM

INSTALLATION:
1. REMOVE GRATE
2. DROP FLEXSTORM INLET FILTER ONTO LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE
3. REPLACE GRATE



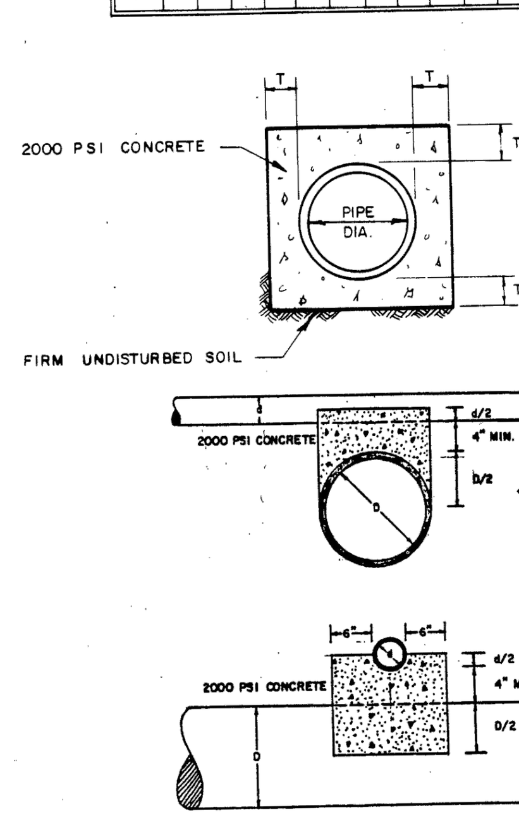
FLEXSTORM PURE



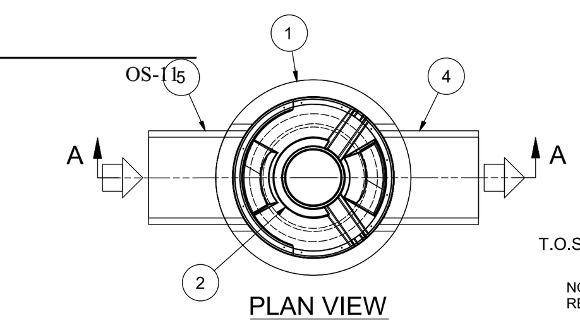
INSPECTION PORT
NOT TO SCALE

November 2015 Urban Drainage and Flood Control District OS-15
Urban Storm Drainage Criteria Manual Volume 3

DIMENSIONS														
DIA.	6"	8"	10"	12"	15"	18"	21"	24"	27"	30"	36"	42"	48"	54"
T	5"	5.5"	5.5"	6"	6"	6"	6"	6"	6"	7"	8"	9"	10"	12"

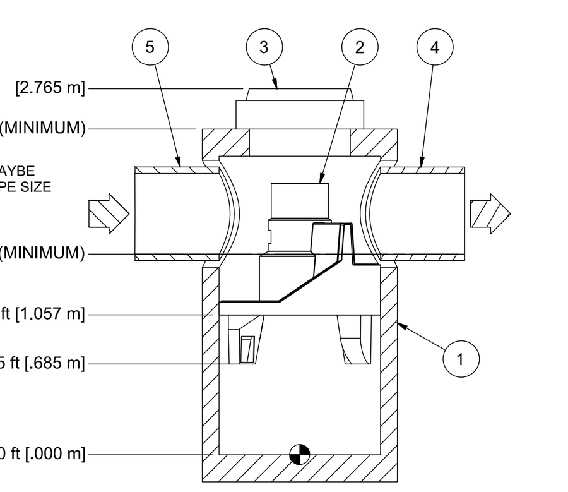


CONCRETE ENCASEMENT & CRADLE DETAIL
N.T.S.



PLAN VIEW

HYDRO FRAME AND COVER (INCLUDED)
GRADE RINGS BY OTHERS AS REQUIRED



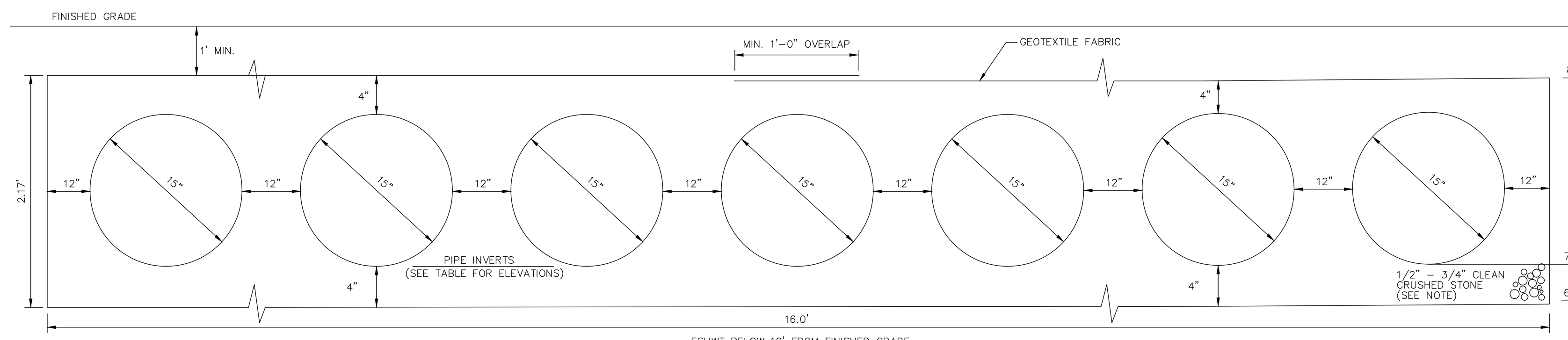
SECTION A-A

PRODUCT SPECIFICATION:

1. PEAK HYDRAULIC FLOW: 18.0 cfs (510 l/s)
2. MIN SEDIMENT STORAGE CAPACITY: 0.7 cu. yd. (0.5 cu. m.)
3. OIL STORAGE CAPACITY: 191 gal. (723 liters)
4. MAXIMUM INLET/OUTLET PIPE DIAMETERS: 24 in. (600 mm)
5. THE TREATMENT SYSTEM SHALL USE AN INDUCED VORTEX TO SEPARATE POLLUTANTS FROM STORMWATER RUNOFF.
6. FOR MORE PRODUCT INFORMATION INCLUDING REGULATORY ACCEPTANCES, PLEASE VISIT https://hydro-int.com/en/products/first-defense

GENERAL NOTES:
1. General Arrangement drawings only. Contact Hydro International for site specific drawings.
2. The diameter of the inlet and outlet pipes may be no more than 24".
3. Multiple inlet pipes possible (refer to project plan).
4. Inlet/outlet pipe angle can vary to align with drainage network (refer to project plan.s)
5. Peak flow rate and minimum height limited by available cover and pipe diameter.
6. Larger sediment storage capacity may be provided with a deeper sump depth.

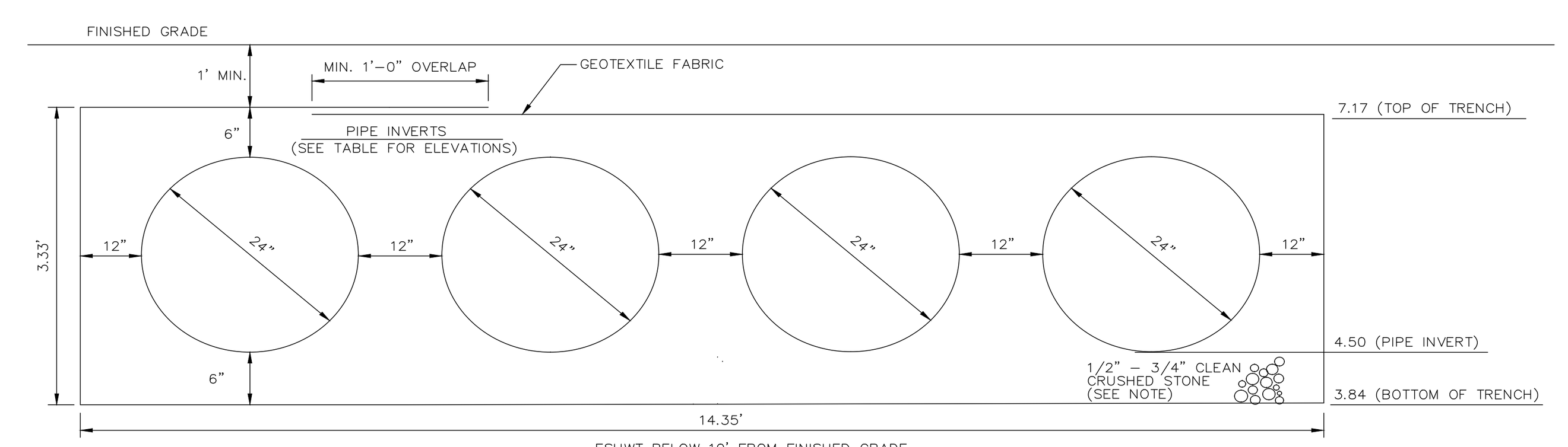
PARTS LIST				
ITEM	QTY	SIZE (in)	SIZE (mm)	DESCRIPTION
1	1	48	1200	I.D. PRECAST MANHOLE
2	1			INTERNAL COMPONENTS (PRE-INSTALLED)
3	1	30	750	FRAME AND COVER (ROUND)
4	1	24 (MAX)	600 (MAX)	OUTLET PIPE (BY OTHERS)
5	1	24 (MAX)	600 (MAX)	INLET PIPE (BY OTHERS)



ESHWT BELOW 10' FROM FINISHED GRADE
(SEE PLANS FOR SOIL BORING LOCATIONS)

NOTES:
1. THE STONE SUPPLIER SHALL CERTIFY MINIMUM VOID RATIO OF STONE TO BE 40% OR MORE
2. FILTER FABRIC TO BE MIRAFI 140N OR APPROVED EQUAL
3. TEST PITS TO BE EXCAVATED TO 5' BELOW BOTTOM OF RECHARGE TRENCH PRIOR TO CONSTRUCTION. IF SEASON HIGH GROUNDWATER IS LESS THAN 2 FEET BELOW BOTTOM OF TRENCH REVISED DESIGN WILL BE REQUIRED. IF SOIL PERMEABILITY IS LESS THAN THE DESIGN RATE, UP TO 5' OF SOIL REPLACEMENT WILL BE REQUIRED.

DA1 RECHARGE TRENCH
NOT TO SCALE



ESHWT BELOW 10' FROM FINISHED GRADE
(SEE PLANS FOR SOIL BORING LOCATIONS)

NOTES:
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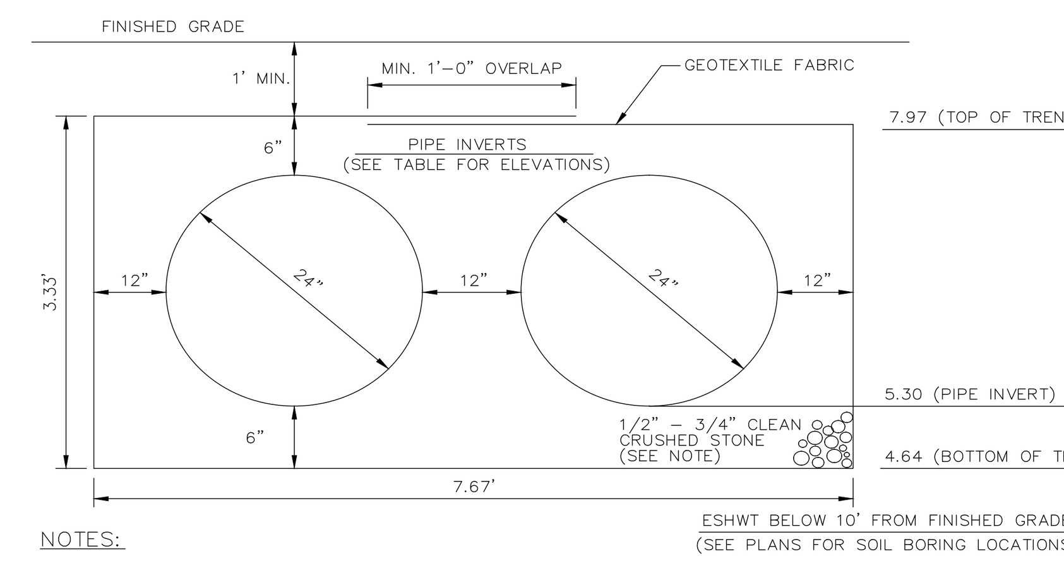
3. TEST PITS TO BE EXCAVATED TO 5' BELOW BOTTOM OF RECHARGE TRENCH PRIOR TO CONSTRUCTION. IF SEASON HIGH GROUNDWATER IS LESS THAN 2 FEET BELOW BOTTOM OF TRENCH REVISED DESIGN WILL BE REQUIRED. IF SOIL PERMEABILITY IS LESS THAN THE DESIGN RATE, UP TO 5' OF SOIL REPLACEMENT WILL BE REQUIRED.

DA5 RECHARGE TRENCH
NOT TO SCALE



ESHWT BELOW 10' FROM FINISHED GRADE
(SEE PLANS FOR SOIL BORING LOCATIONS)

NOTES:
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2. FILTER FABRIC TO BE MIRAFI 140N OR APPROVED EQUAL
3. TEST PITS TO BE EXCAVATED TO 5' BELOW BOTTOM OF RECHARGE TRENCH PRIOR TO CONSTRUCTION. IF SEASON HIGH GROUNDWATER IS LESS THAN 2 FEET BELOW BOTTOM OF TRENCH REVISED DESIGN WILL BE REQUIRED. IF SOIL PERMEABILITY IS LESS THAN THE DESIGN RATE, UP TO 5' OF SOIL REPLACEMENT WILL BE REQUIRED.

DA3 RECHARGE TRENCH
NOT TO SCALE

3/25/2020	REVISIONS PER ENGINEERING TECHNICAL REVIEW COMMENTS	ZEE

SITE PLAN
DETAIL SHEET #2
6001 BORDENTOWN AVENUE
BLOCK 9 LOT 1
BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY

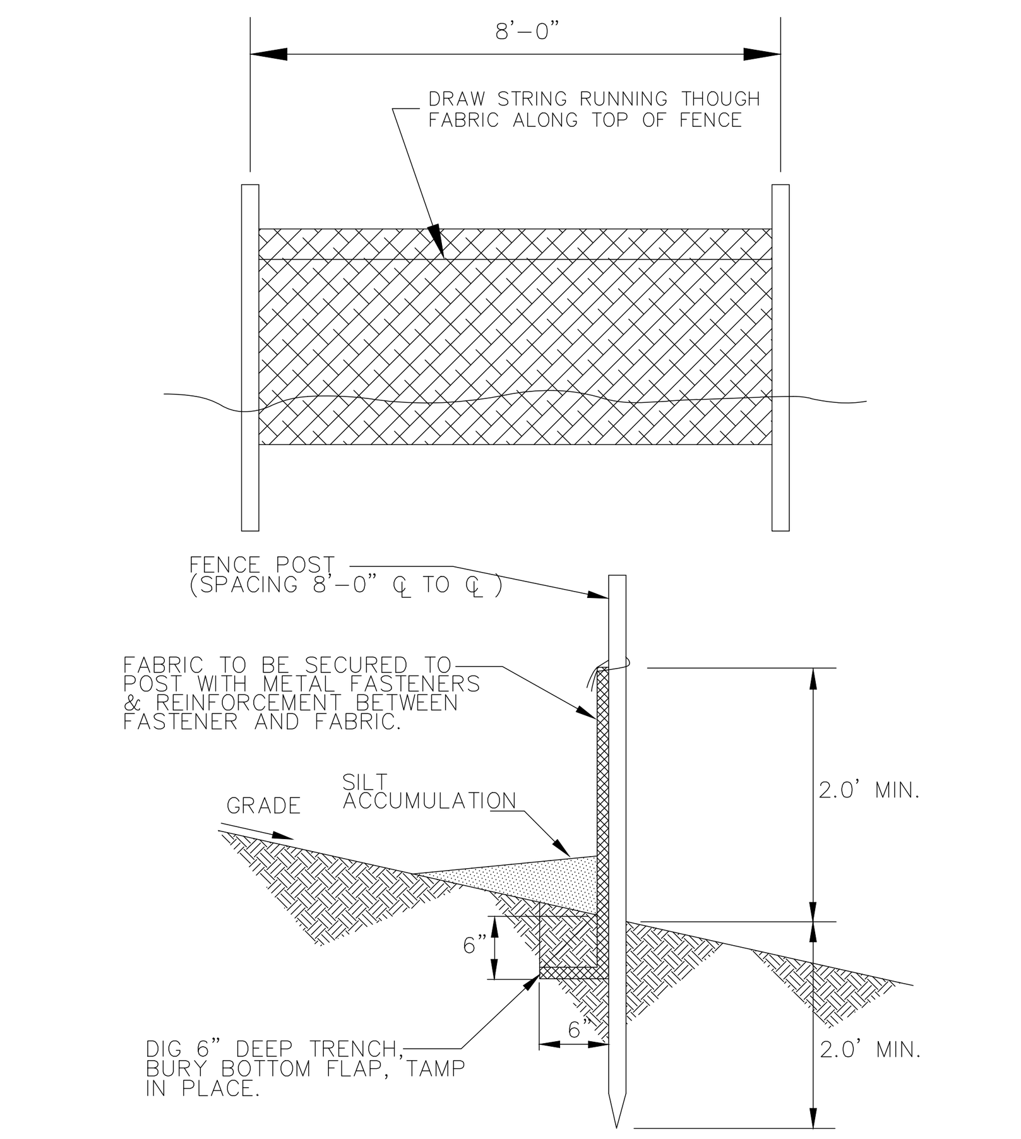
NEWLINES ENGINEERING & SURVEY
CERTIFICATE #24GA28264200
315 Monmouth Avenue
Suite 205
Lakewood, New Jersey 08701
Phone (732) 994-4900
Fax (732) 994-4999

GLENN D. LINES, P.E., P.P.

LICENSED PROFESSIONAL ENGINEER AND PLANNER
STATE OF NEW JERSEY LICENSE NO. 33011 (P.E.) 4066 (P.P.)

DATE

PROJECT NO.	19111
DRAWN BY	ZEE
SCALE	AS SHOWN
DATE	7/10/19
SHEET	9 OF 16

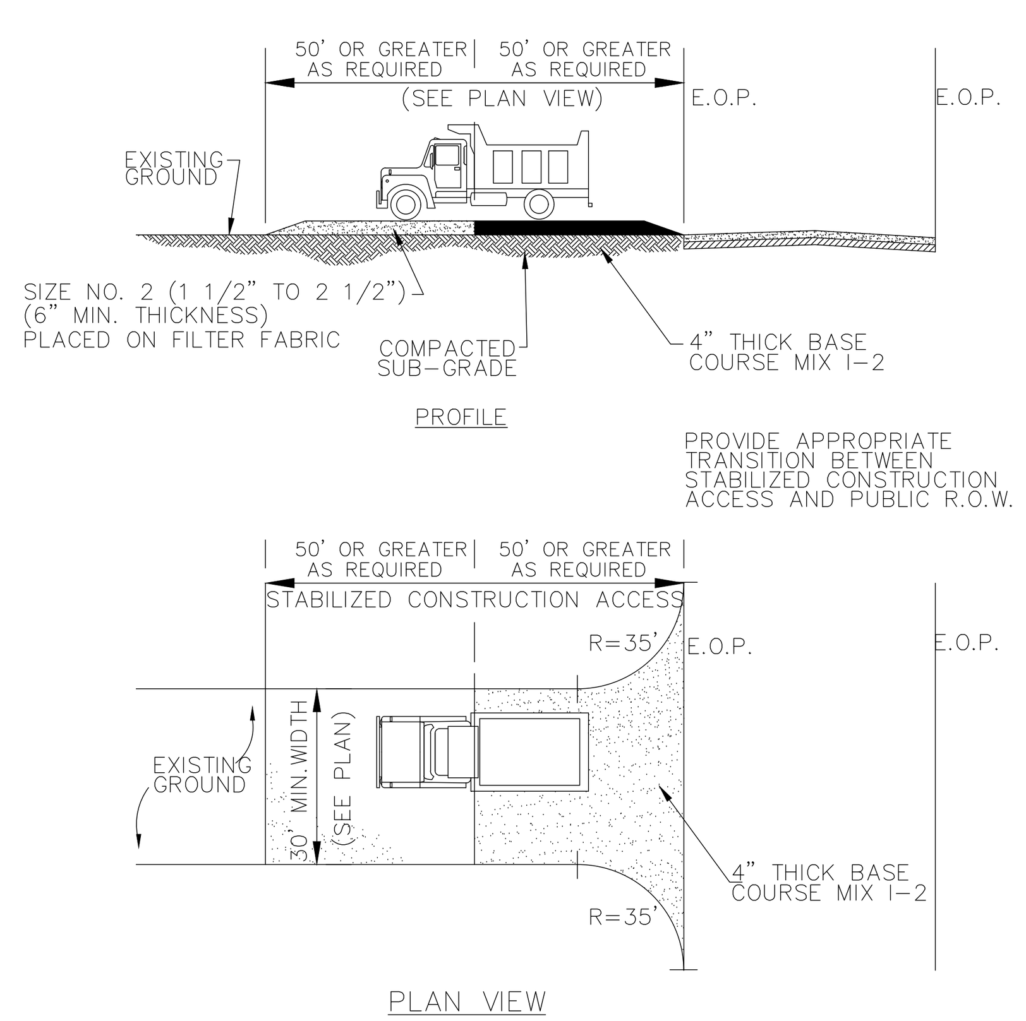


NOTES:

1. FENCE POSTS SHALL BE SPACED 8 FEET CENTER–TO–CENTER OR CLOSER. THEY SHALL EXTEND AT LEAST 2 FEET INTO THE GROUND AND EXTEND AT LEAST 2 FEET ABOVE GROUND (FIG. 23–2). POSTS SHALL BE CONSTRUCTED OF HARDWOOD WITH A MINIMUM DIAMETER THICKNESS OF 1½ INCHES.
2. "SUPER" SILT FENCE–A METAL FENCE WITH 6 INCH OR SMALLER MESH OPENINGS AND AT LEAST 2 FEET HIGH MAY BE UTILIZED, FASTENED TO THE FENCE POSTS, TO PROVIDE REINFORCEMENT AND SUPPORT TO THE GEOTEXTILE FABRIC. POSTS MAY BE SPACED LESS THAN 8 FEET ON CENTER AND MAY BE CONSTRUCTED OF HEAVIER WOOD OR METAL AS NEEDED TO WITHSTAND HEAVIER SEDIMENT LOADING. THIS PRACTICE IS APPROPRIATE WHERE SPACE FOR OTHER PRACTICES IS LIMITED AND HEAVY SEDIMENT LOADING IS EXPECTED, "SUPER" SILT FENCE IS NOT TO BE USED IN PLACE OF PROPERLY DESIGNED DIVERSIONS (PG. 15–1) WHICH MAY BE NEEDED TO CONTROL SURFACE RUNOFF RATES AND VELOCITIES.
3. A GEOTEXTILE FABRIC, RECOMMENDED FOR SUCH USE BY MANUFACTURER, SHALL BE BURIED AT LEAST 6 INCHES DEEP IN THE GROUND. THE FABRIC SHALL EXTEND AT LEAST 2 FEET ABOVE THE GROUND. THE FABRIC MUST BE SECURELY FASTENED TO THE POSTS USING A SYSTEM CONSISTING OF METAL FASTENERS (NAILS OR STAPLES) AND A HIGH STRENGTH REINFORCEMENT MATERIAL (NYLON WEBBING, GROMMETS, WASHERS ETC.) PLACED BETWEEN THE FASTENERS AND THE GEOTEXTILE FABRIC. THE FASTENING SYSTEM SHALL RESIST TEARING AWAY FROM THE POST. THE FABRIC SHALL INCORPORATE A DRAWSTRING IN THE TOP PORTION OF THE FENCE FOR ADDED STRENGTH.

SILT FENCE DETAIL

NOT TO SCALE



NOTES:

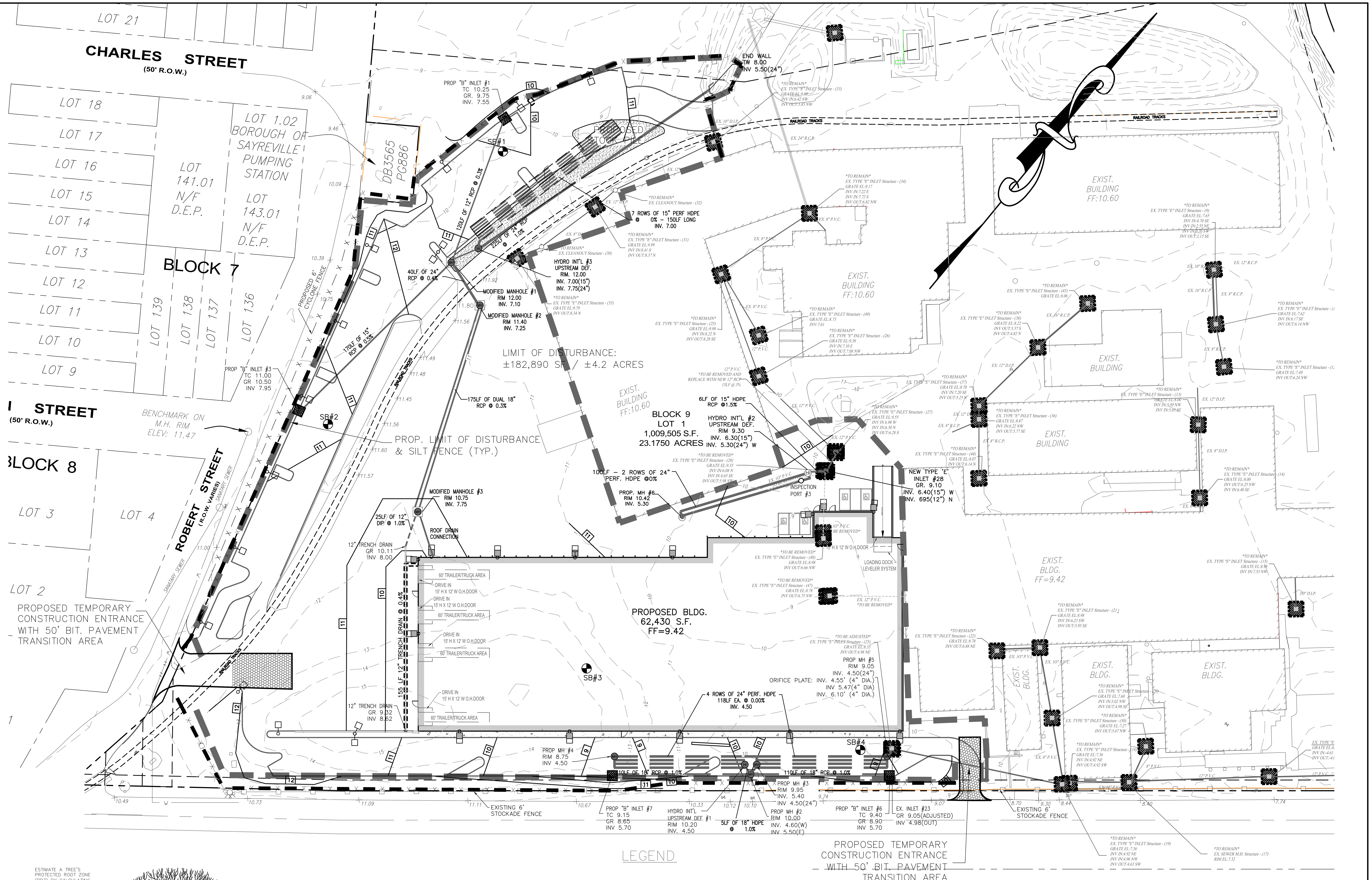
MAINTENANCE:

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO ROADWAYS (PUBLIC OR PRIVATE) OR OTHER IMPERVIOUS SURFACES MUST BE REMOVED IMMEDIATELY.

WHERE ACCUMULATION OF DUST/SEDIMENT IS INADEQUATELY CLEANED OR REMOVED BY CONVENTIONAL METHODS, A POWER BROOM OR STREET SWEEPER WILL BE REQUIRED TO CLEAN PAVED OR IMPERVIOUS SURFACES. ALL OTHER ACCESS POINTS WHICH ARE NOT STABILIZED SHALL BE BLOCKED OFF.

STABILIZED CONSTRUCTION ACCESS

NOT TO SCALE



LEGEND

SILT FENCE

LIMIT OF DISTURBANCE

STABILIZED CONSTRUCTION ENTRANCE

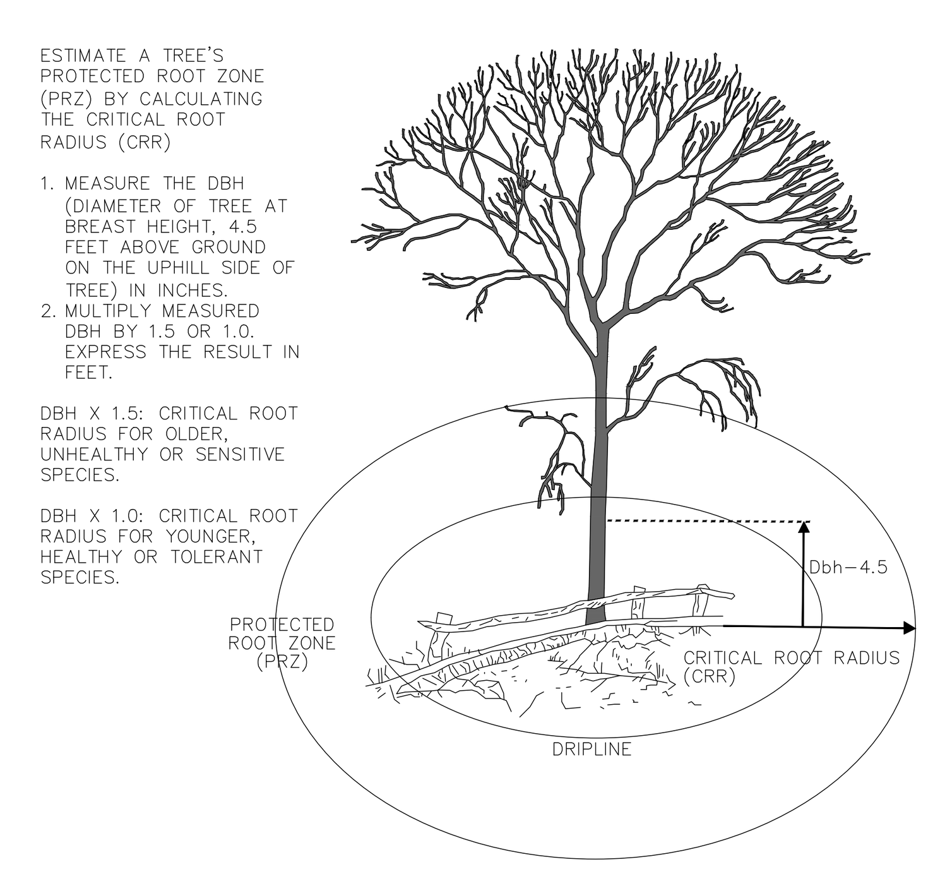
INLET PROTECTION

ESTIMATE A TREE'S PROTECTED ROOT ZONE (PRZ) BY CALCULATING THE CRITICAL ROOT RADIUS (CRR)

1. MEASURE THE DBH (DIAMETER OF TREE AT BREAST HEIGHT, 4.5 FEET ABOVE GROUND ON THE UPHILL SIDE OF TREE) IN INCHES.
2. MULTIPLY MEASURED DBH BY 1.5 OR 1.0. EXPRESS THE RESULT IN FEET.

DBH X 1.5: CRITICAL ROOT RADIUS FOR OLDER, UNHEALTHY OR SENSITIVE SPECIES.

DBH X 1.0: CRITICAL ROOT RADIUS FOR YOUNGER, HEALTHY OR TOLERANT SPECIES.



ROOT PROTECTION DURING CONSTRUCTION DETAIL

NOT TO SCALE

CALL BEFORE YOU DIG
1-800-272-1000
It's THE LAW
NEW JERSEY ONE CALL Dig Safely.

CONTRACTOR TO CALL AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF EXCAVATION WORK.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

3/25/2020	REVISIONS PER ENGINEERING TECHNICAL REVIEW COMMENTS	ZEE

SITE PLAN
SOIL EROSION & SEDIMENT CONTROL PLAN #1
6001 BORDENTOWN AVENUE
BLOCK 9 LOT 1
BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY

NEWLINES ENGINEERING & SURVEY
CERTIFICATE #24GA28264200
315 Monmouth Avenue
Suite 205
Lakewood, New Jersey 08701
Phone (732) 994-4900
Fax (732) 994-4999

GLENN D. LINES, P.E., P.P.

LICENSED PROFESSIONAL ENGINEER AND PLANNER
STATE OF NEW JERSEY LICENSE NO. 33011 (P.E.) 4066 (P.P.)

DATE

PROJECT NO.	19111
DRAWN BY	ZEE
SCALE	1" = 40'
DATE	7/10/19
SHEET	10 OF 16

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. THE BOROUGH OF SAYREVILLE SHALL BE NOTIFIED FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY SOIL DISTURBING ACTIVITY.

2. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES ARE TO BE INSTALLED PRIOR TO SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.

3. ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLANS WILL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE BOROUGH FOR RE-CERTIFICATION. THE REVISED PLANS MUST MEET ALL CURRENT STATE SOIL EROSION AND SEDIMENT CONTROL STANDARDS.

4. N.J.S.A 4:24-39 ET. SEQ. REQUIRES THAT NO CERTIFICATES OF OCCUPANCY BE ISSUED BEFORE THE BOROUGH DETERMINES THAT A PROJECT OR PORTION THEREOF IS IN FULL COMPLIANCE WITH THE CERTIFIED PLAN AND STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY AND A REPORT OF COMPLIANCE HAS BEEN ISSUED. UPON WRITTEN REQUEST FROM THE APPLICANT, THE BOROUGH MAY ISSUE A REPORT OF COMPLIANCE WITH CONDITIONS ON A LOT-BY-LOT OR SECTION-BY-SECTION BASIS, PROVIDED THAT THE PROJECT OR PORTION THEREOF IS IN SATISFACTORY COMPLIANCE WITH THE SEQUENCE OF DEVELOPMENT AND TEMPORARY MEASURES FOR SOIL EROSION AND SEDIMENT CONTROL HAVE BEEN IMPLEMENTED, INCLUDING PROVISIONS FOR STABILIZATION AND SITE WORK.

5. ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN SIXTY (60) DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF 2 TO 2 ½ TONS PER ACRE, ACCORDING TO THE STANDARD FOR STABILIZATION WITH MULCH ONLY.

6. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (I.E. SOIL STOCKPILES, STEEP SLOPES AND ROADWAY EMBANKMENTS) WILL RECEIVE TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AND A MULCH ANCHOR, IN ACCORDANCE WITH STATE STANDARDS.

7. A SUB-BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS TO STABILIZE STREETS, ROADS, DRIVEWAYS, AND PARKING AREAS. IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUB-BASE SHALL BE INSTALLED WITHIN FIFTEEN (15) DAYS OF THE PRELIMINARY GRADING.

8. THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS REQUIRES THE INSTALLATION OF A PAD OF CLEAN CRUSHED STONE AT POINTS WHERE TRAFFIC WILL BE ACCESSING THE CONSTRUCTION SITE. AFTER INTERIOR ROADWAYS ARE PAVED, INDIVIDUAL LOTS REQUIRE A STABILIZED CONSTRUCTION ACCESS CONSISTING OF ONE INCH TO TWO INCH (1" - 2") STONE FOR A MINIMUM LENGTH OF TEN FEET (10') EQUAL TO THE LOT ENTRANCE WIDTH. ALL OTHER ACCESS POINTS SHALL BE BLOCKED OFF.

9. ALL SOIL WASHED, DROPPED, SPILLED, OR TRACKED OUTSIDE THE LIMIT OF DISTURBANCE OR ONTO PUBLIC RIGHT-OF-WAYS WILL BE REMOVED IMMEDIATELY.

10. PERMANENT VEGETATION IS TO BE SEEDED OR SODDED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING.

11. AT THE TIME THAT 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 IT 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.

12. IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, ANY SOIL HAVING A PH OF 4 OR LESS OR CONTAINING IRON SULFIDES SHALL BE ULTIMATELY PLACED OR BURIED WITH LIMESTONE APPLIED AT THE RATE OF 10 TONS/ACRE, (OR 450 LBS/1,000 SQ FT OF SURFACE AREA) AND COVERED WITH A MINIMUM OF 12" OF SETTLED SOIL WITH A PH OF 5 OR MORE, OR 24" WHERE TREES OR SHRUBS ARE TO BE PLANTED.

13. CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.

14. UNFILTERED DEWATERING IS NOT PERMITTED. NECESSARY PRECAUTIONS MUST BE TAKEN DURING ALL DEWATERING OPERATIONS TO MINIMIZE SEDIMENT TRANSFER. ANY DEWATERING METHODS USED MUST BE IN ACCORDANCE WITH THE STANDARD FOR DEWATERING.

15. SHOULD THE CONTROL OF DUST AT THE SITE BE NECESSARY, THE SITE WILL BE SPRINKLED UNTIL THE SURFACE IS WET, TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED OR MULCH SHALL BE APPLIED AS REQUIRED BY THE STANDARD FOR DUST CONTROL.

16. STOCKPILE AND STAGING LOCATIONS ESTABLISHED IN THE FIELD SHALL BE PLACED WITHIN THE LIMIT OF DISTURBANCE ACCORDING TO THE CERTIFIED PLAN. STAGING AND STOCKPILES NOT LOCATED WITHIN THE LIMIT OF DISTURBANCE WILL REQUIRE CERTIFICATION OF A REVISED SOIL EROSION AND SEDIMENT CONTROL PLAN. CERTIFICATION OF A NEW SOIL EROSION AND SEDIMENT CONTROL PLAN MAY BE REQUIRED FOR THESE ACTIVITIES IF AN AREA GREATER THAN 5,000 SQUARE FEET IS DISTURBED.

17. ALL SOIL STOCKPILES ARE TO BE TEMPORARILY STABILIZED IN ACCORDANCE WITH SOIL EROSION AND SEDIMENT CONTROL NOTE #6.

18. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR BELOW STORMWATER OUTFALLS OR OFFSITE AS A RESULT OF CONSTRUCTION OF THE PROJECT.

STANDARD FOR STABILIZATION WITH MULCH ONLY

THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO EROSION, WHERE THE SEASON AND OTHER CONDITIONS MAY NOT BE SUITABLE FOR GROWING AN EROSION-RESISTANT COVER OR WHERE STABILIZATION IS NEEDED FOR A SHORT PERIOD UNTIL MORE SUITABLE PROTECTION CAN BE APPLIED. REFER TO SESC NOTE #6.

METHODS AND MATERIALS

1. SITE PREPARATION

A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARDS FOR LAND GRADING.
B. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.

2. PROTECTIVE MATERIALS

A. UNROTTED SMALL-GRAIN STRAW, AT 2.0 TO 2.5 TONS PER ACRE, IS SPREAD UNIFORMLY AT 90 TO 115 POUNDS PER 1,000 SQUARE FEET AND ANCHORED WITH A MULCH ANCHORING TOOL, LIQUID MULCH BINDERS, OR NETTING TIE DOWN. OTHER SUITABLE MATERIALS MAY BE USED IF APPROVED BY THE SOIL CONSERVATION DISTRICT. THE APPROVED RATES ABOVE HAVE BEEN MET WHEN THE MULCH COVERS THE GROUND COMPLETELY UPON VISUAL INSPECTION, I.E. THE SOIL CANNOT BE SEEN BELOW THE MULCH.
B. SYNTHETIC OR ORGANIC SOIL STABILIZERS MAY BE USED UNDER SUITABLE CONDITIONS AND IN QUANTITIES AS RECOMMENDED BY THE MANUFACTURER.
C. WOOD-FIBER OR PAPER-FIBER MULCH AT THE RATE OF 1,500 POUNDS PER ACRE (OR ACCORDING TO THE MANUFACTURER'S REQUIREMENTS) MAY BE APPLIED BY A HYDROSEEDER.
D. MULCH NETTING, SUCH AS PAPER JUTE, EXCELSIOR, COTTON, OR PLASTIC, MAY BE USED.
E. WOODCHIPS APPLIED UNIFORMLY TO A MINIMUM DEPTH OF2 INCHES MAY BE USED. WOODCHIPS WILL NOT BE USED ON AREAS WHERE FLOWING WATER COULD WASH THEM INTO AN INLET AND PLUG IT.
F. GRAVEL, CRUSHED STONE, OR SLAG AT THE RATE OF 9 CUBIC YARDS PER 1,000 SQ. FT. APPLIED UNIFORMLY TO A MINIMUM DEPTH OF 3 INCHES MAY BE USED. SIZE 2 OR 3 (ASTM C-33) IS RECOMMENDED.

3. MULCH ANCHORING - SHOULD BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT OF HAY OR STRAW MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA AND STEEPNESS OF SLOPES.

A. PEG AND TWINE- DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISS-CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
B. MULCH NETTINGS- STAPLE PAPER, COTTON, OR PLASTIC NETTINGS OVER MULCH. USE DEGRADABLE NETTING IN AREAS TO BE MOWED. NETTING IS USUALLY AVAILABLE IN ROLLS 4 FEET WIDE AND UP TO 300 FEET LONG.
C. CRIMPER MULCH ANCHORING COULTER TOOL - A TRACTOR-DRAWN IMPLEMENT ESPECIALLY DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE. THIS PRACTICE AFFORDS MAXIMUM EROSION CONTROL, BUT ITS USE IS LIMITED TO THOSE SLOPES UPON WHICH THE TRACTOR CAN OPERATE SAFELY. SOIL PENETRATION SHOULD BE ABOUT 3 TO 4 INCHES. ON SLOPING LAND, THE OPERATION SHOULD BE ON THE CONTOUR.
D. LIQUID MULCH-BINDERS
1. APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND CATCHES THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. REMAINDER OF AREA SHOULD BE UNIFORM IN APPEARANCE.
2. USE ONE OF THE FOLLOWING:
A. ORGANIC AND VEGETABLE BASED BINDERS - NATURALLY OCCURRING, POWDER BASED, HYDROPHILIC MATERIALS THAT MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANE NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTO-TOXIC EFFECT OR IMPEDE GROWTH OF TURFGRASS. VEGETABLE BASED GELS SHALL BE APPLIED AT RATES AND WEATHER CONDITIONS RECOMMENDED BY THE MANUFACTURER.
B. SYNTHETIC BINDERS - HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND FOLLOWING APPLICATION TO MULCH, DRYING AND CURING SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER IT SHALL BE APPLIED AT RATES AND WEATHER CONDITIONS RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.

ADDITIONAL SOIL EROSION AND SEDIMENT CONTROL NOTES FOR PROJECTS WITH BASINS

1. BASIN MUST BE PROPERLY CONSTRUCTED AND PERMANENTLY STABILIZED, AND CONDUIT OUTLET PROTECTION INSTALLED, PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.

2. THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL HAVE SPECIFIC REQUIREMENTS FOR TOPSOILING, THE INSTALLATION OF SOD, TEMPORARY AND/OR PERMANENT VEGETATIVE COVER AND LAND GRADING. THE TEXT FOUND ON PAGES 4-1 (SEC. 1B), 6-2 (SEC. 2B), 7-1 (SEC. 1C), 8-2 (SEC. 3D) AND 19-4 (LAST PARAGRAPH) SERVE TO HELP MINIMIZE SOIL COMPACTION AND REDUCE MAINTENANCE.

3. OWNERSHIP AND RESPONSIBILITY FOR THE OPERATION AND MAINTENANCE OF THE DETENTION STRUCTURE MUST BE DETERMINED DURING DESIGN AND SHOWN ON THE PLANS AND ON THE COMPLETED "HYDRAULIC AND HYDROLOGIC DATA BASE SUMMARY FROM." TO BE EFFECTIVE OVER A LONG PERIOD OF TIME, THE STRUCTURE MUST BE PROPERLY MAINTAINED.

STANDARD FOR TOPSOILING

MATERIALS:

1. TOPSOIL SHOULD BE FRIABLE, LOAMY, FREE OF DEBRIS, OBJECTIONABLE WEEDS AND STONES, AND CONTAIN NO TOXIC SUBSTANCE OR ADVERSE CHEMICAL OR PHYSICAL CONDITION THAT MAY BE HARMFUL TO PLANT GROWTH. SOLUBLE SALTS SHOULD NOT BE EXCESSIVE (CONDUCTIVITY LESS 0.5 MILLIMHOS PER CENTIMETER. MORE THAN 0.5 MILLIMHOS MAY DESICCATE SEEDLINGS AND ADVERSELY IMPACT GROWTH). IMPORTED TOPSOIL SHALL HAVE A MINIMUM ORGANIC MATTER CONTENT OF 2.75 PERCENT. ORGANIC MATTER CONTENT MAY BE RAISED BY ADDITIVES.

2. TOPSOIL SUBSTITUTE IS A SOIL MATERIAL WHICH MAY HAVE BEEN AMENDED WITH SAND, SILT, CLAY ORGANIC MATTER, FERTILIZER OR LIME AND HAS THE APPEARANCE OF TOPSOIL. TOPSOIL SUBSTITUTES MAY BE UTILIZED ON SITES WITH INSUFFICIENT TOPSOIL FOR ESTABLISHING PERMANENT VEGETATION. ALL TOPSOIL SUBSTITUTE MATERIALS SHALL MEET THE REQUIREMENTS OF TOPSOIL NOTED ABOVE. SOIL TESTS SHALL BE PERFORMED TO DETERMINE THE COMPONENTS OF SAND, SILT, CLAY, ORGANIC MATTER, SOLUBLE SALTS AND PH LEVEL.

STRIPPING AND STOCKPILING

1. FIELD EXPLORATION SHOULD BE MADE TO DETERMINE WHETHER QUANTITY AND OR QUALITY OF SURFACE SOIL JUSTIFIES STRIPPING.

2. STRIPPING SHALL BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA.

3. WHERE FEASIBLE, LIME MAY APPLIED BEFORE STRIPPING AT A RATE DETERMINED BY SOIL TESTS TO BRING SOIL PH TO APPROXIMATELY 6.5.

4. A 4-6 INCH STRIPPING DEPTH IS COMMON, BUT MAY VARY DEPENDING ON THE PARTICULAR SOIL.

5. STOCKPILES OF TOPSOIL SHOULD BE SITUATED SO AS NOT TO OBSTRUCT NATURAL DRAINAGE OR CAUSE OFF-SITE ENVIRONMENTAL DAMAGE.

6. STOCKPILES SHOULD BE VEGETATED IN ACCORDANCE WITH STANDARDS PREVIOUSLY DESCRIBED HEREIN; SEE STANDARDS FOR PERMANENT (PG.4-1) OR TEMPORARY (PG.7-1) VEGETATIVE COVER FOR SOIL STABILIZATION. WEEDS SHOULD NOT BE ALLOWED TO GROW ON STOCKPILES.

SITE PREPARATION

1. GRADE AT THE ONSET OF THE OPTIMAL SEEDING PERIOD SO AS TO MINIMIZE THE DURATION AND AREA OF EXPOSURE OF DISTURBED SOIL TO EROSION. IMMEDIATELY PROCEED TO ESTABLISH VEGETATIVE COVER IN ACCORDANCE WITH THE SPECIFIED SEED MIXTURE. TIME IS OF THE ESSENCE.

2. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND ANCHORING, AND MAINTENANCE.

3. AS GUIDANCE FOR IDEAL CONDITIONS, SUBSOIL SHOULD BE TESTED FOR LIME REQUIREMENT. LIMESTONE, IF NEEDED, SHOULD BE APPLIED TO BRING SOIL TO A PH OF APPROXIMATELY 6.5 AND INCORPORATED INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES.

4. PRIOR TO TOPSOILING, THE SUBSOIL SHALL BE IN COMPLIANCE WITH THE STANDARD FOR LAND GRADING.

5. EMPLOY NEEDED EROSION CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEAUSERES, SEDIMENTATION BASINS, AND WATERWAYS.

APPLYING TOPSOIL

1. TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING SOIL STRUCTURE; I.E., LESS THAN FIELD CAPACITY (SEE GLOSSARY).

2. A UNIFORM APPLICATION TO AN AVERAGE DEPTH OF 5.0 INCHES, MINIMUM OF 4 INCHES, FIRMED IN PLACE IS REQUIRED. ALTERNATIVE DEPTH MAY BE CONSIDERED WHERE SPECIAL REGULATORY AND/OR INDUSTRY DESIGN STANDARDS ARE APPROPRIATE SUCH AS ON GOLF COURSES, SPORTS FIELDS, LANDFILL CAPPING, ETC.. SOILS WITH A PH OF 4.0 OR LESS OR CONTAINING IRON SULFIDE SHALL BE COVERED WITH A MINIMUM DEPTH OF 12 INCHES OF SOIL HAVING A H OF 5.0 OR MORE, IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOIL.

3. PURSUANT TO THE REQUIREMENTS IN SECTION 7 OF THE STANDARD FOR PERMANENT VEGETATIVE STABILIZATION, THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT PERMANENT VEGETATIVE COVER BECOMES ESTABLISHED ON AT LEAST 80 % OF THE SOILS TO BE STABILIZED WITH VEGETATION. FAILURE TO ACHIEVE THE MINIMUM COVERAGE MAY REQUIRE ADDITIONAL WORK TO BE PERFORMED BY THE CONTRACTOR TO INCLUDE SOME OR ALL OF THE FOLLOWING: SUPPLEMENTAL SEEDING, RE-APPLICATION OF LIME AND FERTILIZERS, AND/OR THE ADDITION OF ORGANIC MATTER (I.E. COMPOST) AS A TOP DRESSING. SUCH ADDITIONAL MEASURES SHALL BE BASED ON SOIL TESTS SUCH AS THOSE OFFERED BY RUTGERS COOPEATIVE EXTENSION SERVICE OR OTHER APPROVED LABORATORY FACILITIES QUALIFIED TO TEST SOIL SAMPLES FOR AGRONOMIC PROPERTIES.

STANDARD FOR MAINTAINING VEGETATION

A PREVENTIVE MAINTENANCE PROGRAM ANTICIPATES REQUIREMENTS AND ACCOMPLISHES WORK WHEN IT CAN BE DONE WITH LEAST EFFORT AND EXPENSE TO INSURE ADEQUATE VEGETATIVE COVER. MAINTENANCE SHOULD OCCUR ON A REGULAR BASIS, CONSISTENT WITH FAVORABLE PLANT GROWTH, SOIL, AND CLIMATIC CONDITIONS. THIS INVOLVES REGULAR SEASONAL WORK FOR MOWING, FERTILIZING, LIMING, WATERING, PRUNING, FIRE CONTROL, WEED AND PEST CONTROL, RESEEDING, AND TIMELY REPAIRS. THE DEGREE OF PREVENTIVE MAINTENANCE NEEDED DEPENDS UPON THE TYPE OF VEGETATION AND ITS PROPOSED FUNCTION OR USE.

1. MOWING IS A RECURRING PRACTICE AND ITS INTENSITY DEPENDS UPON THE FUNCTION OF THE GROUND COVER. ON HIGH TO MODERATE (A TO B) MAINTENANCE AREAS, SUCH AS LAWNS, CERTAIN RECREATION FIELDS, AND PICNIC AREAS, MOWING WILL BE FREQUENT (2 TO 7 DAY INTERVALS) AND TYPICALLY AT A HEIGHT OF 2.5 TO 3 INCHES. RETURN CLIPPINGS FROM MOWING (MULCHING MOWER) TO THE TURF TO REDUCE THE AMOUNT OF FERTILIZER NEEDED TO MAINTAIN THE TURF BY AS MUCH AS 50%. SOME TURF MIXTURES CAN BE MANAGED AS NATURALIZED STANDS REQUIRING ONLY ONE (COOL SEASON MIXTURES) OR TWO (WARM SEASON MIXTURES) MOWINGS PER YEAR. MOWING OF NATURALIZED AREAS IS TYPICALLY DONE AT HEIGHTS NO LESS THAN 4 INCHES AND SHOULD NOT BE DONE BETWEEN APRIL 1ST AND JULY 15TH TO AVOID DISTURBING GROUND NESTING BIRDS. THE LARGE AMOUNT OF CLIPPING DEBRIS GENERATED BY MOWING NATURALIZED AREAS WILL NEED TO BE REMOVED AND/OR DISPERSED SO THE VEGETATION IS NOT SMOTHERED. BURNING OF NATURALIZED AREAS IS ANOTHER PROCEDURE USED TO MANAGE NATURALIZED TURFS. LOW MAINTENANCE (D) AREAS MAY BE LEFT UNMOWED TO PERMIT NATURAL SUCCESSION. SEE PG. 4-13 FOOTNOTE #4, MAINTENANCE LEVELS A, B, C AND D IN THE STANDARD FOR PERMANENT VEGETATIVE COVER, TABLE 4-2.

2. INCORPORATION OF ORGANIC MATTER (FOR EXAMPLE, MATURE COMPOST) INTO THE SOIL WILL SUBSTANTIALLY REDUCE THE NEED FOR FERTILIZER AND IRRIGATION INPUTS.

3. FERTILIZER AND LIME SHOULD BE APPLIED AS NEEDED TO MAINTAIN A DENSE STAND OF DESIRABLE SPECIES. FREQUENTLY MOWED AREAS AND THOSE ON SANDY SOILS WILL REQUIRE MORE FREQUENT FERTILIZATION BUT AT LOWER NUTRIENT RATES PER APPLICATION.

4. LIME REQUIREMENT SHOULD BE DETERMINED BY SOIL TESTING EVERY 2 OR 3 YEARS. FERTILIZATION MAY INCREASE THE NEED FOR LIMING. CONTACT THE LOCAL COUNTY EXTENSION OFFICE FOR DETAILS ON SOIL TESTING AND FERTILIZATION AND PEST CONTROL RECOMMENDATIONS ONLINE AT HTTP://NJAES.RUTGERS.EDU/COUNTY/.

5. FERTILIZATION AND ADDITIONS OF OTHER SOIL AMENDMENTS ARE NOT RECOMMENDED FOR MANAGING NATIVE VEGETATION SUCH AS IN THE PINELANDS NATIONAL RESERVE. SEE THE STANDARD FOR PERMANENT VEGETATIVE STABILIZATION FOR SPECIFIC REQUIREMENTS IN THE PNR.

6. WEED INVASION MAY RESULT FROM ABUSIVE MOWING AND FROM INADEQUATE FERTILIZING AND LIMING. MANY NEWLY ESTABLISHED GRASSES WILL NOT SURVIVE IF MOWED AT HEIGHTS BELOW 2.5 INCHES AND AT INTERVALS GREATER THAN 7 DAYS. BRUSH INVASION IS A COMMON CONSEQUENCE OF LACK OF MOWING. THE AMOUNT OF WEEDS OR BRUSH THAT CAN BE TOLERATED IN ANY VEGETATED AREA DEPENDS UPON THE INTENDED USE OF THE LAND. DRAINAGE WAYS ARE SUBJECT TO RAPID INFESTATION BY WEED AND WOODY PLANTS. THESE SHOULD BE CONTROLLED, SINCE THEY OFTEN REDUCE DRAINAGE WAY EFFICIENCY. CONTROL OF WEEDS OR BRUSH IS ACCOMPLISHED BY USING HERBICIDES OR MECHANICAL METHODS.

7. FIRE HAZARD IS GREATER WHERE DRY VEGETATION HAS ACCUMULATED. THE TALLER THE VEGETATION, THE GREATER THE HAZARD.

8. PRUNE TREES AND SHRUBS TO REMOVE DEAD OR DAMAGED BRANCHES. REMOVE UNDESIRABLE OR INVASIVE PLANTS TO MAINTAIN INTEGRITY OF THE LANDSCAPE AND ENHANCE QUALITY OF PERMANENT VEGETATIVE COVER.

SEQUENCE OF CONSTRUCTION

1. INSTALLATION OF TEMPORARY SOIL EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSTALLED AT THE INITIATION OF LAND DISTURBANCE ACTIVITIES. ALL TEMPORARY SOIL EROSION MEASURES MUST INCLUDE SILT FENCE, STAB. CONSTRUCTION ENTRANCE AND INLET PROTECTION.
2. INSTALLATION OF SILT FENCING AND TREE PROTECTION FENCING PRIOR TO ANY LAND DISTURBANCE. (3 DAYS)
3. APPLICATION OF PROPER MEASURES FOR THE CONTROL OF SOIL EROSION AND SEDIMENT CONTROL. (5 DAYS)
4. CONSTRUCT STABILIZED CONSTRUCTION ACCESS WHERE CONSTRUCTION TRAFFIC ENTERS PAVED ROADWAYS. (1 DAY)
5. DEMOLITION, SITE GRADING, CLEARING SITE AS SHOWN ON THE PLANS WITH APPROPRIATE EROSION CONTROL FACILITIES. (3 WEEKS)
6. PROVIDE AND INSTALL TEMPORARY STABILIZATION MEASURES AS REQUIRED. (1 WEEK)
7. ROUGH GRADE AND INSTALL DRAINAGE FACILITIES INCLUDING DA1, DA3 AND DA5 SUBSURFACE STORMWATER SYSTEMS. (4 WEEKS)
8. CONSTRUCT CURBS AND INSTALL UTILITIES. (4 WEEKS)
9. PLACE STONE BASE IN ALL AREAS TO BE PAVED AND INSTALL INLET PROTECTION. (1 WEEK)
10. INSTALL INLET PROTECTION (1 DAY)
11. BEGIN WAREHOUSE BUILDING CONSTRUCTION. (8 MONTHS)
12. MAINTENANCE OF SOIL EROSION AND SEDIMENT CONTROL. (ON-GOING)
11. CONDUCT SOIL COMPACTION TESTS IN LOCATIONS SHOWN ON SOIL MANAGEMENT & PREPARATION PLAN. TESTING MUST BE WITNESSED BY OCSCD INSPECTOR.
12. IF TESTS PASS, SUBMIT TEST RESULTS TO SAYREVILLE SOIL CONSERVATION DISTRICT. TESTING MUST BE WITNESSED BY OCSCD INSPECTOR.
13. IF TESTS FAIL, RESTORATION OF COMPACTED SOILS SHALL BE CONDUCTED THROUGH DEEP SCARIFICATION/TILLAGE (6" MINIMUM DEPTH).
14. APPLY TOPSOIL TO AN AVERAGE DEPTH OF 5" (4" MINIMUM) FIRMED IN PLACE (SEE STANDARD "TOPSOILING" PG. 8-2).
15. REGRADE AND PERMANENTLY STABILIZE THE LAWN AREAS. (AS REQUIRED)
16. FINAL PAVING AND PERMANENT STABILIZATION OF SITE. (2 WEEKS)
17. REMOVAL OF SOIL EROSION, SEDIMENT CONTROL FACILITIES & PROTECTIVE TREE FENCING WHEN PERMANENT EROSION CONTROL MEASURES ARE ACCEPTED BY THE TOWNSHIP ENGINEER. (1 WEEK)
18. RECEIVE CERTIFICATE OF COMPLIANCE FROM OCEAN COUNTY SOIL CONSERVATION DISTRICT.

STANDARD FOR DUST CONTROL

THE FOLLOWING METHODS SHOULD BE CONSIDERED FOR CONTROLLING DUST:

MULCHES - SEE STANDARD OF STABILIZATION WITH MULCHES ONLY, PG. 5-1

VEGETATIVE COVER - SEE STANDARD FOR: TEMPORARY VEGETATIVE COVER, PG. 7-1, PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION PG. 4-1 AND PERMANENT STABILIZATION WITH SOD, PG. 6-1

SPRAY-ON ADHESIVES - ON MINERAL SOILS (NOT EFFECTIVE ON MUCK SOILS). KEEP TRAFFIC OFF THESE AREAS.

TABLE 16-1 DUST CONTROL MATERIALS

MATERIAL	WATER DILUTION	TYPE OF NOZZLE	APPLY GALLONS/ACR
ANIONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1200
LATEX EMULSION	12.5:1	FINE SPRAY	235
RESIN IN WATER	4:1	FINE SPRAY	300
POLYACRYLAMIDE (PAM) - SPRAY ON POLYACRYLAMIDE (PAM) - DRY SPREAD	APPLY ACCORDING TO MANUFACTURERS INSTRUCTIONS. MAY ALSO BE USED AS AN ADDITIVE TO SEDIMENT BASINS TO FLOCCULATE AND PRECIPITATE SUSPENDED COLLOIDS. SEE SEDIMENT BASIN STANDARD, P. 26-1		
ACIDULATED SOY BEAN SOAP STICK	NONE	COARSE SPRAY	1200

TILLAGE - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS A TEMPORARY EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART AND SPRING-TOOTHED HARROWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.

SPRINKLING - SITE IS SPRINKLED UNTIL THE SURFACE IS WET.

BARRIERS - SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.

CALCIUM CHLORIDE - SHALL BE IN THE FORM OF LOOSE, DRY GRANULES OR FLAKES FINE ENOUGH TO FEED THROUGH COMMONLY USED SPREADERS AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE. IF USED ON STEEPER SLOPES, THEN USE OTHER PRACTICES TO PREVENT WASHING INTO STREAMS OR ACCUMULATION AROUND PLANTS.

STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

STANDARD FOR DEWATERING

CONDITIONS WHERE PRACTICE APPLIES:

DURING CONSTRUCTION EXCAVATED FACILITIES MAY NEED TO BE DEWATERED TO FACILITATE OR COMPLETE THE CONSTRUCTION PROCESS. THE WATER PUMPED OUT OF THE EXCAVATED AREAS CONTAIN SEDIMENTS THAT MUST BE REMOVED PRIOR TO DISCHARGING TO RECEIVING BODIES OF WATER. THIS STANDARD DOES NOT ADDRESS THE REMOVAL OF GROUND WATER THROUGH WELL POINTS ETC. THIS STANDARD DESCRIBES THE FOLLOWING PRACTICE FOR THE REMOVAL OF SEDIMENT LADEN WATERS FROM EXCAVATION AREA:
SILT CONTROL BAGS.

SEDIMENT TANK / SILT CONTROL BAGS ARE CONTAINERS THROUGH WHICH SEDIMENT LADEN WATER IS PUMPED TO TRAP AND RETAIN THE SEDIMENT. A SEDIMENT TANK OR A SILT CONTROL BAG IS TO BE USED ON SITES WERE EXCAVATIONS ARE DEEP, AND SPACE IS LIMITED AND WHERE DIRECT DISCHARGE OF SEDIMENT LADEN WATER TO STREAM AND STORM DRAINAGE SYSTEMS IS TO BE AVOIDED.

CONSTRUCTION SPECIFICATIONS:

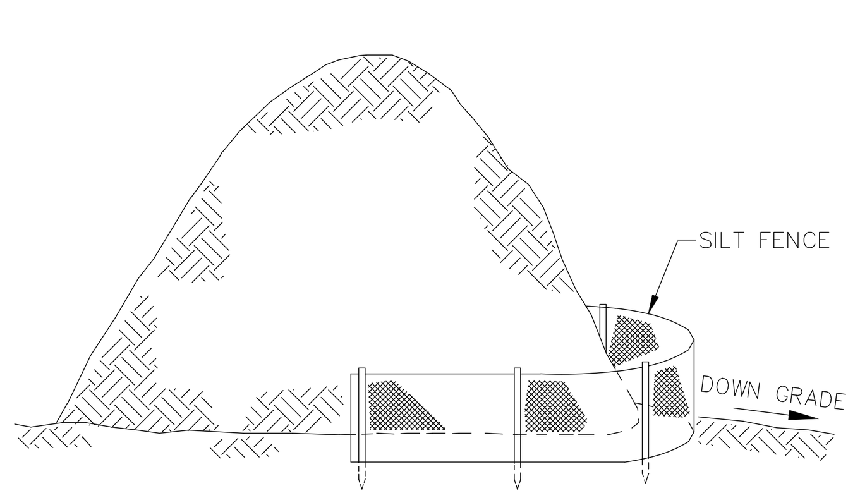
A. LOCATION. CONTAINERS (TANKS OR BAGS) SHALL BE LOCATED FOR EASE OF CLEAN-OUT AND DISPOSAL OF THE TRAPPED SEDIMENT AND TO MINIMIZE INTERFERENCE WITH CONSTRUCTION ACTIVITIES AND PEDESTRIAN TRAFFIC. BAGS SHALL NOT BE PLACE DIRECTLY INTO RECEIVING WATERS.

B. TANK SIZE. THE FOLLOWING FORMULA SHOULD BE USED IN DETERMINING THE STORAGE VOLUME OF THE TANK: 1 CUBIC FOOT OF STORAGE FOR EACH GALLON PER MINUTE OF PUMP DISCHARGE CAPACITY. TYPICAL TANK CONFIGURATION IS SHOWN ON DETAIL 14-3. TANKS MAY BE CONNECTED IN SERIES TO INCREASE EFFECTIVENESS.

C. TANKS CONSIST OF TWO CONCENTRIC CIRCULAR PIPES (CMP), ATTACHED TO A WATERTIGHT BASEPLATE. THE INNER CMP IS PERFORATED WITH 1" HOLES ON 6" CENTERS AND IS WRAPPED WITH GEOTEXTILE AND HARDWARE CLOTH. PUMPED WATER IS DISCHARGED INTO THE INNER CMP WHERE IT FLOWS THROUGH THE GEOTEXTILE INTO THE SPACE BETWEEN THE TWO CMP=S. A DISCHARGE LINE IS ATTACHED TO THE OUTER CMP AND DRAWS FILTERED WATER FROM THE ANNULUS BETWEEN THE TWO CONCENTRIC CMP=S. THE DISCHARGE LINE MAY BE CONNECTED TO ANOTHER TANK WHERE IT DRAINS TO THE INNER CMP OF THE SECOND TANK. THIS SERIES CONNECTION MAY BE CONTINUED INDEFINITELY.

D. SEDIMENT CONTROL BAGS MUST BE LOCATED AWAY FROM RECEIVING WATERS AND DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS. SEE DETAIL 14-4. BAGS MAY BE COMBINED WITH TEMPORARY FILTERS (ITEM 4, FOLLOWING) FOR ENHANCED FILTRATION.

TEMPORARY FILTERS FOR SMALL IMPOUNDMENTS FOR SMALL QUANTITIES OF PONDED WATER SUCH AS MAY BE FOUND IN SHALLOW EXCAVATIONS (SMALL TRENCHES, MANHOLE INSTALLATIONS ETC.) A SEDIMENT FILTER MAY BE CONSTRUCTED USING COMBINATIONS OF HAY BALES, SMALL CLEAN STONE AND FILTER FABRIC. THIS METHOD IS LIMITED TO SMALL QUANTITIES OF TRAPPED SURFACE WATER (PUMPING OF WELL POINTS IS EXCLUDED FROM THIS STANDARD) AND WHERE SEDIMENTS ARE NOT HIGHLY COLLOIDAL IN NATURE.



NOTES:
1. 4"-6" STRIPPING DEPTH IS COMMON (BUT MAY VARY). STOCKPILES SHOULD BE SITUATED SO AS NOT TO OBSTRUCT NATURAL DRAINAGE OR CAUSE OFFSITE ENVIRONMENTAL DAMAGE. STOCKPILES SHOULD BE VEGETATED IN ACCORDANCE WITH STANDARDS DESCRIBED HEREON. REFER TO TEMPORARY OR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION.

2. STOCKPILES NOT TO BE PLACED IN AREA WITH CONCENTRATED FLOW, WETLANDS, EXTREME SLOPE OR WITHIN 100 FEET OF A NATURAL STREAM.

TOPSOIL STOCKPILE DETAIL
NOT TO SCALE

TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

FOR ESTABLISHMENT OF TEMPORARY VEGETATIVE COVER ON SOILS EXPOSED FOR PERIODS OF TWO TO SIX MONTHS WHICH ARE NOT UNDER ACTIVE CONSTRUCTION OR NOT SCHEDULED FOR PERMANENT SEEDING WITHIN 60 DAYS.

1. SITE PREPARATION- GRADE AS NEEDED AND IN ACCORDANCE WITH "STANDARDS FOR LAND FOUND ON PAGE 19-1. INSTALL TEMPORARY EROSION CONTROL PRACTICES OF FACILITIES AS SHOWN. IMMEDIATELY PRIOR TO SEEDING THE SURFACE SHOULD BE SCARIFIED 6-12" WHERE THERE HAS BEEN SOIL COMPACTION AND NO DANGER TO UNDERGROUND UTILITIES.
2. SEEDED PREPARATION- APPLY GROUND LIMESTONE AND FERTILIZER ACCORDING TO SOIL TESTS RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10-20-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE. CALCIUM CARBONATE IS THE EQUIVALENT AND STANDARD FOR MEASURING THE ABILITY OF LIMING MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM AND MAGNESIUM TO GRASSES AND LEGUMES. WORK LIME AND FERTILIZER INTO SOIL TO A DEPTH OF 4" WITH A DISC, OR OTHER SUITABLE EQUIPMENT. FINAL DISKING OPERATION SHOULD BE ON THE GENERAL CONTOUR AND CONTINUE UNTIL A UNIFORM SEEDBED IS PREPAIRED, INSPECT SEEDBED BEFORE SEEDING. THE AREA MUST BE RE-TILLED IF SOIL IS COMPACTED. SOILS HIGH IN SULFIDES (PH OF 4 OR LESS) REFER TO STANDARDS PAGE 1-1 REGARDING HIGH ACID PRODUCING SOILS.
3. SEEDING- SEED CAN BE SELECTED FROM STANDARDS TABLE 7-2 TEMPORARY SEEDING SHALL CONSIST OF EITHER:

COOL SEASON GRASSES	RATES	SEEDING DATES
PERENIAL RYEGRASS	1.0 LB./S.F.	3/1-5/15 OR 8/15-10/1
SPRING OATS	2.0 LB./S.F.	3/1-5/15 OR 8/15-10/1
WINTER BARLEY	2.2 LB./S.F.	8/15-10/1
WINTER CEREAL RYE	2.8 LB/S.F.	8/1-11/15
WARM SEASON GRASSES		
PEARL MILLET	0.5 LB./S.F.	5/15-8/15
MILLET (GERMAN OR HUNGARIAN)	0.7 LB./S.F.	5/15-8/15

4. FOR CONVENTIAL SEEDING, APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER OR DROP SEEDER. SEED SHALL BE INCORPORATED INTO SOIL,TO A DEPTH OF $\frac{1}{4}$ TO $\frac{1}{2}$ INCH. BY RAKING OR DRAGGING. DEPTH OF SEED MAY BE $\frac{1}{4}$" DEEPER ON COARSE TEXTURED SOIL. AFTER SEEDING, FIRMING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED TO SOIL CONTACT.
5. MULCHING- MULCHING IS ON ALL SEEDING. UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, APPLIED AT A RATE OF $1\frac{1}{2}$ TO 2 TONS PER ACRE, SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 95% OF SOIL SURFACE WILL BE COVERED, (APPROX. 90LB PER 1000SF). ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY FOLLOWING PLACEMENT TO MINIMIZE LOSS. THIS MAY BE DONE WITH A MULCH NETTING, STAPLE PAPER, JUTE, COTTON OR PLASTIC NETTING TO HE SURFACE, USING A DEGRADABLE NETTING IN AREAS TO BE MOWED. A WOOD-FIBER OR PAPER-FIBER MULCH CAN ALSO BE USED AT A RATE OF 1500 POUNDS PER ACRE AND APPLIED BY A HYDROSEEDER. MULCH CANNOT BE MIXED IN A TANK WITH SEED.

PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION

FOR ESTABLISHMENT OF PERMANENT VEGETATIVE COVER ON EXPOSED SOILS WHERE PERENNIAL VEGETATION IS NEEDED FOR LONG-TERM PROTECTION.

1. SITE PREPARATION- GRADE AS NEEDED, IN ACCORDANCE WITH THE STANDARDS FOR TOPSOILING, AND FEASIBLE TO PERMIT THE USE OF CONVENTIAL EQUIPMENT FOR SEEDED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING IN ACCORDANCE WITH STANDARD FOR LAND GRADING. IMMEDIATELY PRIOR TO SEEDING AND TOPSOIL APPLICATION, THE SUBSOIL SHALL BE EVALUATED FOR COMPACTION. TOPSOIL SHOULD BE HANDLED ONLY WITH DRY AND APPLIED UNIFORMLY TO A DEPTH OF 5 INCHES IS REQUIRED. TOPSOIL SHALL BE AMENDED WITH ORGANIC MATTER AS NEEDED. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES.
2. SEEDED PREPARATION- UNIFORMLY APPLY GROUND LIMESTONE AND FERTILIZER TO TOPSOIL WHICH HAS BEEN SPREAD AND FIRMED, ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES (HTTP://NJAES.RUTGERS.EDU/COUNTY/). FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE AND INCORPORATED INTO THE SURFACE 4 INCHES. IF FERTILIZER IS NOT INCORPORATED, APPLY ONE-HALF THE RATE DESCRIBED ABOVE DURING SEEDBED PREPARATION AND REPEAT ANOTHER ONE-HALF RATE APPLICATION OF THE SAME FERTILIZER WITHIN 3 TO 5 WEEKS AFTER SEEDING. WORK LIME AND FERTILIZER INTO THE TOPSOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING-TOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.
3. SEEDING- PERMANENT SEED MIXTURE SHALL BE:

SEED	RATES
TALL FESCUE	6LBS/1000SF
KENTUCKY BLUEGRASS (BLEND)	0.5LBS/1000SF
PERENNIAL RYEGRASS (BLEND)	0.5LBS/1000SF
OPTIMAL SEEDING DATES:	8/15 -10/15
ACCEPTABLE SEEDING DATES:	3/1 - 4/30 5/1 - 8/14*

*SUMMER SEEDINGS SHOULD ONLY BE CONDUCTED WHEN THE SITE IS IRRIGATED. MIXES INCLUDING WHITE CLOVER REQUIRE AT LEAST 6 WEEKS OF GROWING SEASON REMAIN AFTER SEEDING TO ENSURE ESTABLISHMENT BEFORE FREEZING

SEEDING TO BE PREFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLONE SEEDER OR DROP SEEDER. SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDBED PREPARATION BY RAKING OR DRAGGING, AFTER SEEDING, FIRM THE SOIL WITH A CORRUGATED ROLLER TO ASSURE GOOD SEED-TO-SOIL CONTACT

4. MULCHING- MULCHING IS REQUIRED ON ALL SEEDING, USE UNROTTED STRAW OR HAY FREE OF SEEDS, APPLIED AT A RATE OF $1\frac{1}{2}$ TO 2 TONS PER ACRE, HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING TURF OR LAWN. SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THAT 85% OF SOIL SURFACE IS COVERED. ANCHOR IMMEDIATELY AFTER PLACEMENT WITH MULCH NETTING, STAPLE PAPER, JUTE, COTTON OR PLASTIC NETTING TO SOIL SURFACE. USE A DEGRADABLE NETTING IN ACRES TO BE MOWED.
5. IRRIGATION- IF SOIL MOISTURE IS DEFICIENT SUPPLY NEW SEEDING WITH ADEQUATE WATER (MIN. 1/4 IN. APPLIED TWICE A DAY UNTIL VEGETATION IS ESTABLISHED). THIS IS ESPECIALLY TRUE WHEN SEEDLINGS ARE MADE IN ABNORMALLY DRY OR HOT WEATHER OR ON DROUGHTY SITES.
6. TOPDRESSING- IF THERE IS A GROSS NITROGEN DEFICIENCY IN THE EXISTING SOIL, TOPDRESS WITH 10-10-10 OR EQUIVALENT AT 300LBS PER ACRE EVERY 3 TO 5 WEEKS UNTIL DEFICIENCY IN TURF IS AMELIORATED.
7. ESTABLISHING PERMANENT VEGETATIVE STABILIZATION- THE QUALITY OF PERMANENT VEGETATION RESTS WITH THE CONTRACTOR. THE TIMING OF SEEDING, PREPARING THE SEEDBED, APPLYING NUTRIENTS, MULCH AND OTHER MANAGEMENT ARE ESSENTIAL. THE SEED APPLICATION RATES IN TABLE 4-3 ARE REQUIRED WHEN A REPORT OR COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. UP TO 50% REDUCTION IN APPLICATION RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO REQUESTING A REPORT OF COMPLIANCE FROM THE DISTRICT. THESE RATES APPLY TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVER (OF THE SEEDED SPECIES) AND MOWED ONCE. NOTE THIS DESIGNATION OF MOWED ONCE DOES NOT GUARANTEE THE PERMANENCY OF THE TURF SHOULD OTHER MAINTENANCE FACTORS BE NEGLECTED OR OTHERWISE MISMANAGED.

HIGH ACID SOIL NOTES

STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY JANUARY 2014
PRODUCING SOILS ARE COMMONLY BLACK, DARK BROWN, GRAY OR GREENISH WITH SILVERY PYRITE OR MARCASITE NUGGETS OR FLAKES.
ALTERNATIVELY, SANDY SOILS OR REDDISH, YELLOWISH OR LIGHT TO MEDIUM BROWN SOIL MATERIALS ARE USUALLY FREE OF HIGH ACIDPRODUCING DEPOSITS.

STANDARDS FOR HIGH ACID-PRODUCING SOILS

1. LIMIT THE EXCAVATION AREA AND EXPOSURE TIME WHEN HIGH ACID-PRODUCING SOILS ARE ENCOUNTERED.

2. TOPSOIL STRIPPED FROM THE SITE SHALL BE STORED SEPARATELY FROM TEMPORARILY STOCKPILED HIGH ACID-PRODUCING SOILS.

3. STOCKPILES OF HIGH ACID-PRODUCING SOIL SHOULD BE LOCATED ON LEVEL LAND TO MINIMIZE ITS MOVEMENT, ESPECIALLY WHEN THIS MATERIAL HAS A HIGH CLAY CONTENT.

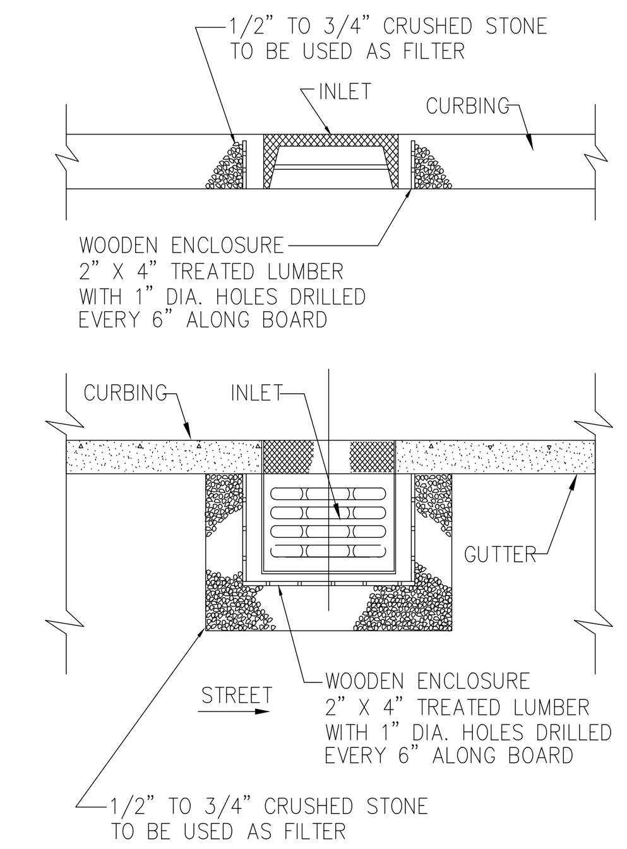
4. TEMPORARILY STOCKPILED HIGH ACID-PRODUCING SOIL MATERIAL TO BE STORED MORE THAN 48 HOURS SHOULD BE COVERED WITH PROPERLY ANCHORED, HEAVY GRADE SHEETS OF POLYETHYLENE WHERE POSSIBLE. IF NOT POSSIBLE, STOCKPILES SHALL BE COVERED WITH A MINIMUM OF 3 TO 6 INCHES OF WOOD CHIPS TO MINIMIZE EROSION OF THE STOCKPILE. SILT FENCE SHALL BE INSTALLED AT THE TOE OF THE SLOPE TO CONTAIN MOVEMENT OF THE STOCKPILED MATERIAL. TOPSOIL SHALL NOT BE APPLIED TO THE STOCKPILES TO PREVENT TOPSOIL CONTAMINATION WITH HIGH ACID-PRODUCING SOIL.

5. HIGH ACID-PRODUCING SOILS WITH A PH OF 4.0 OR LESS OR CONTAINING IRON SULFIDE (INCLUDING BORROW FROM CUTS OR DREDGED SEDIMENT) SHALL BE ULTIMATELY PLACED OR BURIED WITH LIMESTONE APPLIED AT THE RATE OF 10 TONS PER ACRE (OR 450 POUNDS PER 1,000 SQUARE FEET OF SURFACE AREA) AND COVERED WITH A MINIMUM OF 12 INCHES OF SETTLED SOIL WITH A PH OF 5.0 OR MORE EXCEPT AS FOLLOWS:
A. AREAS WHERE TREES OR SHRUBS ARE TO BE PLANTED SHALL BE COVERED WITH A MINIMUM OF 24 INCHES OF SOIL WITH A PH OR 5 OR MORE.
B. DISPOSAL AREAS SHALL NOT BE LOCATED WITHIN 24 INCHES OF ANY SURFACE OF A SLOPE OR BANK, SUCH AS BERMS, STREAM BANKS, DITCHES, AND OTHERS, TO PREVENT POTENTIAL LATERAL LEACHING DAMAGES.

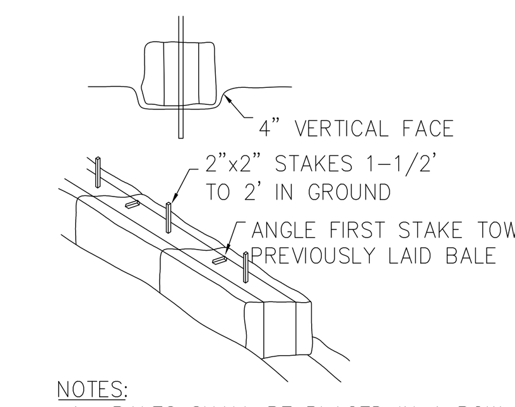
6. EQUIPMENT USED FOR MOVEMENT OF HIGH ACID-PRODUCING SOILS SHOULD BE CLEANED AT THE END OF EACH DAY TO PREVENT SPREADING OF HIGH ACID-PRODUCING SOIL MATERIALS TO OTHER PARTS OF THE SITE, INTO STREAMS OR STORMWATER CONVEYANCES, AND TO PROTECT MACHINERY FROM ACCELERATED RUSTING.

7. NON-VEGETATIVE EROSION CONTROL PRACTICES (STONE TRACKING PADS, STRATEGICALLY PLACED LIMESTONE CHECK DAM, SEDIMENT BARRIER, WOOD CHIPS) SHOULD BE INSTALLED TO LIMIT THE MOVEMENT OF HIGH ACID-PRODUCING SOILS FROM, AROUND, OR OFF THE SITE.

8. FOLLOWING BURIAL OR REMOVAL OF HIGH ACID-PRODUCING SOIL, TOPSOILING AND SEEDING OF THE SITE (SEE TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION, PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION, AND TOPSOILING), MONITORING MUST CONTINUE FOR A MINIMUM OF 6 MONTHS TO ENSURE THERE IS ADEQUATE STABILIZATION AND THAT NO HIGH ACID-PRODUCING SOIL PROBLEMS EMERGE. IF PROBLEMS STILL EXIST, THE AFFECTED AREA MUST BE TREATED AS INDICATED ABOVE TO CORRECT THE PROBLEM.

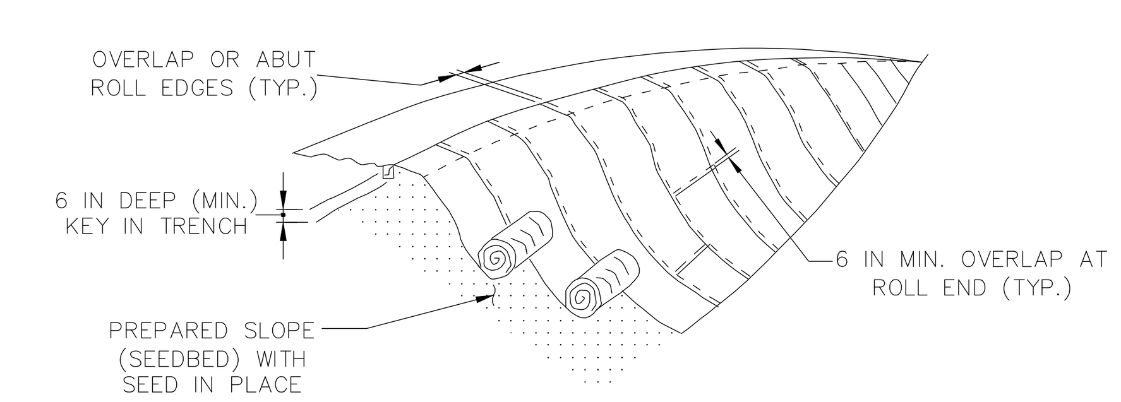


INLET PROTECTION DETAIL
NOT TO SCALE



NOTES:
1. BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE SECURELY ANCHORED IN PLACE BY STAKES, WITH THE FIRST STAKE ANGLED TOWARDS PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
3. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4".
4. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS, BUT NOT UNTIL ALL THE PAVEMENT IS IN PLACE.
6. CONTRACTOR TO HAVE A SUPPLY OF HAYBALES ONSITE DURING CONSTRUCTION FOR USE IN CASE OF EROSION ISSUES.

HAY BALE DETAIL
NOT TO SCALE



ISOMETRIC VIEW

CONSTRUCTION SPECIFICATIONS:
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS SIX MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MATT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAD MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2 X 2" AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO 11 AND NO 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1.5 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LAG, AND MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM OF 4 INCH HEAD. WOOD STAKES MUST BE ROUGH SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1X3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH THE SESC PLAN OR "THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY, JANUARY 2014 7TH EDITION, REVISED FEBRUARY 2017." PLEASE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT A ROLL EDGES FOR MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
7. KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE / STAKE MAT IN A STAGGERED PATTERN ON 4 FOOD (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION 4-4 VEGETATIVE STABILIZATION.
10. MANUFACTURER'S INSTRUCTIONS MUST BE FOLLOWED WHEN SPECIAL MATERIALS OR TECHNIQUES ARE REQUIRED.
11. TEMPORARY SOIL STABILIZATION MATTING MUST FOLLOW GUIDELINES AS OF THE STANDARDS.

TEMPORARY SOIL STABILIZATION MATTING SLOPE DETAIL
NOT TO SCALE

AREA OF DISTURBANCE
± 182,890 S.F. / ± 4.2 ACRES

3/25/2020	REVISIONS PER ENGINEERING TECHNICAL REVIEW COMMENTS	ZEE

SITE PLAN
SOIL EROSION & SEDIMENT CONTROL PLAN #1
6001 BORDENTOWN AVENUE
BLOCK 9 LOT 1
BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY

NEWLINES ENGINEERING & SURVEY
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GLENN D. LINES, P.E., P.P.
LICENSED PROFESSIONAL ENGINEER AND PLANNER
STATE OF NEW JERSEY LICENSE NO. 33011 (P.E.) 4066 (P.P.)
DATE

PROJECT NO.	19111
DRAWN BY	ZEE
SCALE	AS SHOWN
DATE	7/10/19
SHEET	11 OF 16

SOIL DE-COMPACTION AND TESTING REQUIREMENTS

A. SOIL COMPACTION TESTING REQUIREMENTS

1. SUBGRADE SOILS PRIOR TO THE APPLICATION OF TOPSOIL (SEE PERMANENT SEEDING AND STABILIZATION NOTES FOR TOPSOIL REQUIREMENTS) SHALL BE FREE OF EXCESSIVE COMPACTION TO A DEPTH OF 6.0 INCHES TO ENHANCE THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.
2. AREAS OF THE SITE WHICH ARE SUBJECT TO COMPACTION TESTING AND/OR MITIGATION ARE GRAPHICALLY DENOTED ON THE CERTIFIED SOIL EROSION CONTROL PLAN.
3. COMPACTION TESTING LOCATIONS ARE DENOTED ON THE PLAN. LOCATION ID'S SHALL BE USED TO COMPLETE THE COMPACTION REMEDIATION FORM, AVAILABLE FROM THE LOCAL SOIL CONSERVATION DISTRICT. THIS FORM MUST BE FILLED OUT AND SUBMITTED PRIOR TO RECEIVING A CERTIFICATE OF COMPLIANCE FROM THE DISTRICT.
4. IN THE EVENT THAT TESTING INDICATES COMPACTION IN EXCESS OF THE MAXIMUM THRESHOLDS INDICATED FOR THE SIMPLIFIED TESTING METHODS (SEE DETAILS BELOW), THE CONTRACTOR/OWNER SHALL HAVE THE OPTION TO PERFORM EITHER (1) COMPACTION MITIGATION OVER THE ENTIRE MITIGATION AREA DENOTED ON THE PLAN (EXCLUDING EXEMPT AREAS), OR (2) PERFORM ADDITIONAL, MORE DETAILED TESTING TO ESTABLISH THE LIMITS OF EXCESSIVE COMPACTION WHEREUPON ONLY THE EXCESSIVELY COMPACTED AREAS WOULD REQUIRE COMPACTION MITIGATION. ADDITIONAL DETAILED TESTING SHALL BE PERFORMED BY A TRAINED, LICENSED PROFESSIONAL.

B. COMPACTION TESTING METHODS

1. PROBING WIRE TEST (SEE DETAIL)
2. HAND-HELD PENETROMETER TEST (SEE DETAIL)
3. TUBE BULK DENSITY TEST (LICENSED PROFESSIONAL REQUIRED)
4. NUCLEAR DENSITY TEST (LICENSED PROFESSIONAL REQUIRED)
5. NOTE: ADDITIONAL TESTING METHODS WHICH CONFORM TO ASTM STANDARDS AND SPECIFICATIONS, AND WHICH PRODUCE A DRY WEIGHT, SOIL BULK DENSITY MEASUREMENT MAY BE ALLOWED SUBJECT TO DISTRICT APPROVAL.
6. DETAILED REQUIREMENTS FOR EACH COMPACTION TESTING METHOD CAN BE FOUND IN SECTION 19 "STANDARD FOR LAND GRADING" OF THE NJ STANDARD FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION.
7. SOIL COMPACTION TESTING IN NOT REQUIRED IF/WHEN SUBSOIL COMPACTION REMEDIATION (SCARIFICATION/TILLAGE(6" MINIMUM DEPTH) OR SIMILAR) IS PROPOSED AS PART OF THE SEQUENCE OF CONSTRUCTION.

C. PROCEDURES FOR SOIL COMPACTION MITIGATION

1. PROCEDURES SHALL BE USED TO MITIGATE EXCESSIVE SOIL COMPACTION PRIOR TO PLACEMENT OF TOPSOIL AND ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.
2. RESTORATION OF COMPACTED SOILS SHALL BE THROUGH DEEP SCARIFICATION/TILLAGE (6" MINIMUM DEPTH) WHERE THERE IN NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.). IN THE ALTERNATIVE, ANOTHER METHOD AS SPECIFIED BY A NEW JERSEY LICENSED PROFESSIONAL ENGINEER MAYBE SUBSTITUTED SUBJECT TO DISTRICT APPROVAL.

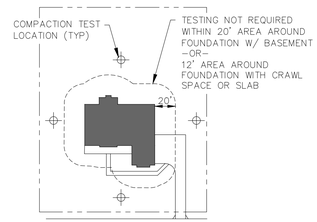
SEQUENCE OF CONSTRUCTION

AFTER ROUGH GRADING SITE TO 4" BELOW PROPOSED GRADES.

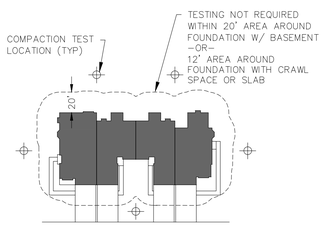
1. CONDUCT SOIL COMPACTION TESTS IN LOCATIONS SHOWN ON PLAN.
2. IF TESTS PASS, SUBMIT TEST RESULTS TO OCEAN COUNTY SOIL CONSERVATION DISTRICT.
3. IF TESTS FAIL, RESTORATION OF COMPACTED SOILS SHALL BE CONDUCTED THROUGH DEEP SCARIFICATION/TILLAGE (6" MINIMUM DEPTH).
4. APPLY TOPSOIL TO AN AVERAGE DEPTH OF 5 INCHES (4 INCHES MINIMUM) FIRMED IN PLACE (SEE STANDARD "TOPSOILING" PG. 8-2).THEN REGRADE AND STABILIZE LAWN AREAS. (AS REQUIRED)
5. RECEIVE CERTIFICATE OF COMPLIANCE FROM FREEHOLD SOIL CONSERVATION DISTRICT.

TOTAL SOIL COMPACTION AREA

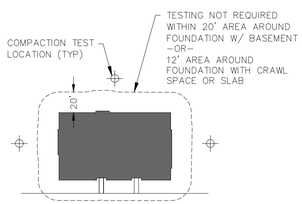
± 7664.09 AC.



A. SINGLE FAMILY UNIT



B. TOWNHOUSE BUILDING

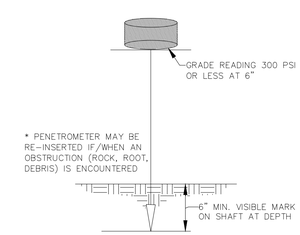


C. MULTIFAMILY HOUSING OR OTHER NON-RESIDENTIAL BUILDING/STRUCTURE

NOTE: SOIL COMPACTION TEST LOCATIONS IDENTIFIED ARE RECOMMENDED LOCATIONS FOR GRADED/DISTURBED AREAS WITHIN THE VICINITY OF BUILDINGS AND STRUCTURES OR ON INDIVIDUAL LOTS. FOR GRADED/DISTURBED AREAS WITHIN OPEN OR COMMON SPACES, SOIL COMPACTION TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE FREQUENCY LISTED IN THE LEGEND (THIS SHEET)

TYPICAL SOIL COMPACTION TESTING LOCATIONS

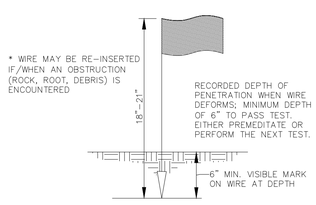
NOT TO SCALE



NOTE: SOIL SHOULD BE MOIST BUT NOT SATURATED. DO NOT TEST WHEN SOIL IS EXCESSIVELY DRY OR SUBJECT TO FREEZING TEMPERATURES. SLOW, STEADY DOWNGRADE PRESSURE USED TO ADVANCE THE WIRE.

HANDHELD SOIL PENETROMETER TEST

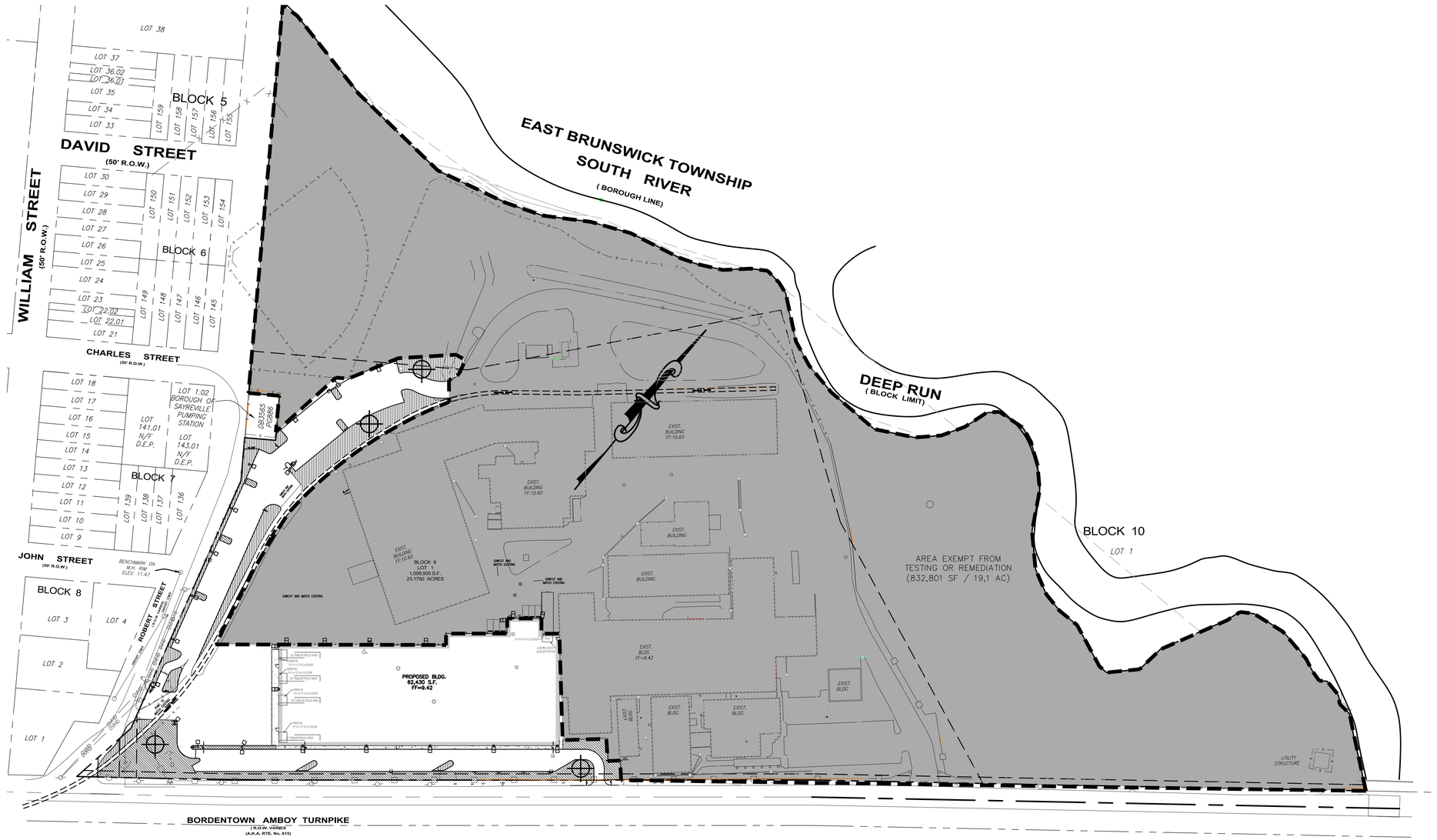
NOT TO SCALE



NOTE: SOIL SHOULD BE MOIST BUT NOT SATURATED. DO NOT TEST WHEN SOIL IS EXCESSIVELY DRY OR SUBJECT TO FREEZING TEMPERATURES. SLOW, STEADY DOWNGRADE PRESSURE USED TO ADVANCE THE WIRE.

PROBING WIRE TEST
15.5 GA. STEEL WIRE (SURVEY FLAG)

NOT TO SCALE



TOWNSHIP OF OLD BRIDGE

LEGEND

- AREA EXEMPT FROM TESTING OR REMEDIATION
- SOIL COMPACTION TESTING AREAS
- RECOMMENDED SOIL COMPACTION TEST LOCATION (APPROX. 1 PER/.5 ACRE)

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

3/25/2020	REVISIONS PER ENGINEERING TECHNICAL REVIEW COMMENTS — ZEE

SITE PLAN

SOIL MANAGEMENT & PREPARATION PLAN

6001 BORDENTOWN AVENUE
BLOCK 9 LOT 1
BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY

NEWLINES ENGINEERING & SURVEY
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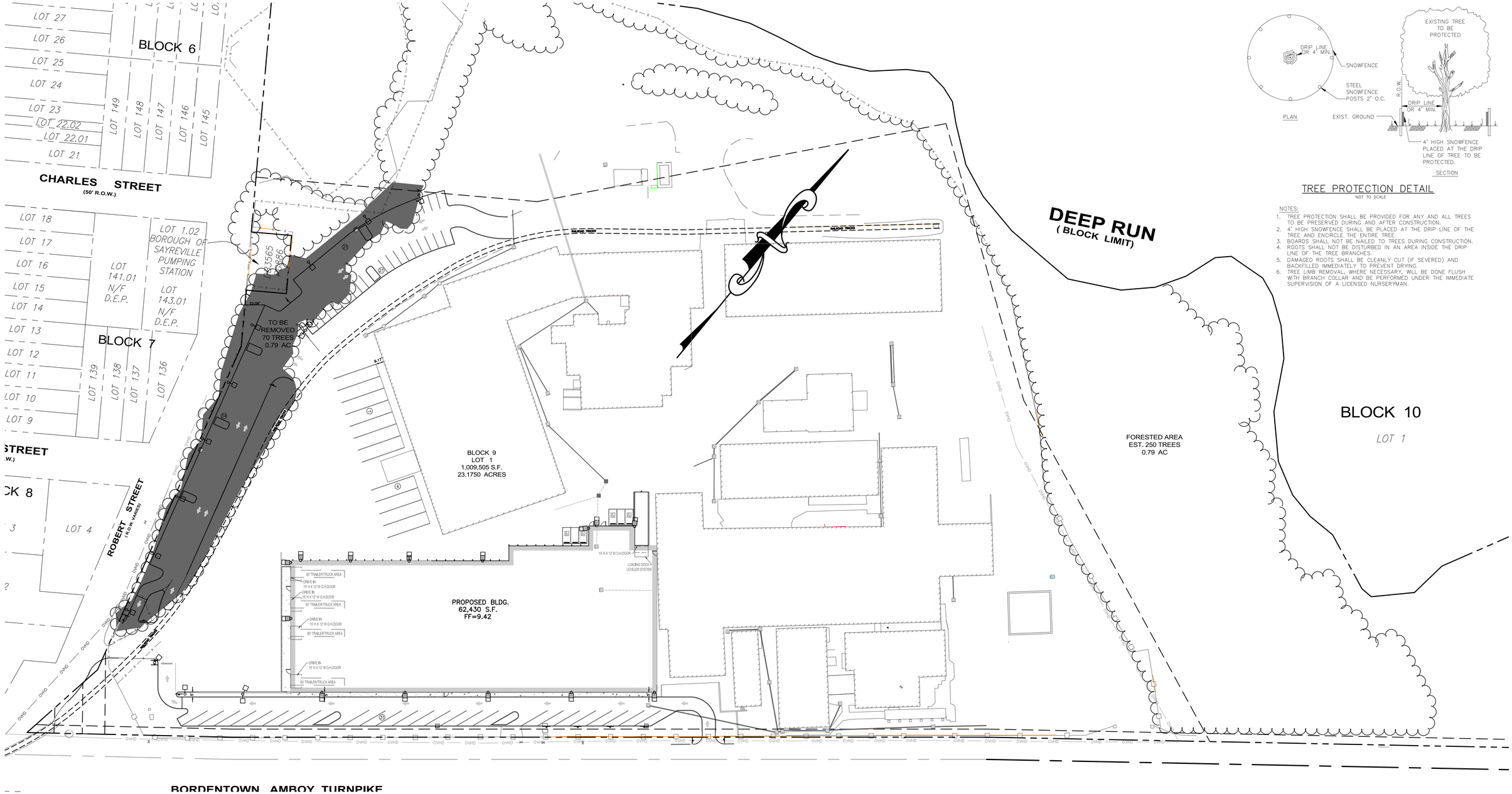
GLENN D. LINES, P.E., P.P.
LICENSED PROFESSIONAL ENGINEER AND PLANNER
STATE OF NEW JERSEY LICENSE NO. 33011 (P.E.) 4066 (P.P.)

PROJECT NO.	19111
DRAWN BY	ZEE
SCALE	1" = 80'
DATE	7/10/19
SHEET	12 OF 16



TREE PROTECTION DETAIL

NOT TO SCALE

NOTES:

1. TREE PROTECTION SHALL BE PROVIDED FOR ANY AND ALL TREES TO BE PRESERVED DURING AND AFTER CONSTRUCTION.
2. 4' HIGH SNOWFENCE SHALL BE PLACED AT THE DRIP LINE OF THE TREE AND ENCIRCLE THE ENTIRE TREE.
3. BOARDS SHALL NOT BE NAILED TO TREES DURING CONSTRUCTION.
4. ROOTS SHALL NOT BE DISTURBED IN AN AREA INSIDE THE DRIP LINE OF THE TREE BRANCHES.
5. DAMAGED ROOTS SHALL BE CLEANLY CUT (IF SEVERED) AND BACKFILLED IMMEDIATELY TO PREVENT DRYING.
6. TREE LIMB REMOVAL, WHERE NECESSARY, WILL BE DONE FLUSH WITH BRANCH COLLAR AND BE PERFORMED UNDER THE IMMEDIATE SUPERVISION OF A LICENSED NURSERYMAN.

TREE PRESERVATION MANAGEMENT PLAN NOTES:

1. ENGINEER ESTIMATED 50 TREES DEFINED IN CHAPTER 30 SECTION 30-3, UNDER BOROUGH STANDARDS OF THE SAYREVILLE BOROUGH CODE BOOK.
2. ENGINEER ESTIMATED 250 TREES DEFINED IN SAYREVILLE BOROUGH ORDINANCE 30-3 ON-SITE
3. TREES SHALL BE REMOVED BY COMPETENT PROFESSIONAL IN ACCORDANCE WITH INDUSTRY STANDARDS.
4. TREES TO BE PROTECTED SHALL BE PROTECTED IN ACCORDANCE WITH THE DETAIL ON THIS SHEET.
5. ALL TREES OUTSIDE THE DISTURBANCE ZONE SHALL BE PRESERVED.
6. BOROUGH REQUIRES 1 TREE FOR EVERY 2 PARKING SPACES PROPOSED.
7. TOTAL TREES REQUIRED = 57+20 =77 TREES
9. TOTAL TREES PROVIDED = 78 TREES

CALL BEFORE YOU DIG
1-800-272-1000
It's THE LAW
NEW JERSEY ONE CALL Dig Safely.

CONTRACTOR TO CALL AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF EXCAVATION WORK.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

3/25/2020	REVISIONS PER ENGINEERING TECHNICAL REVIEW COMMENTS	ZEE

SITE PLAN
TREE PRESERVATION PLAN
6001 BORDENTOWN AVENUE
BLOCK 9 LOT 1
BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY

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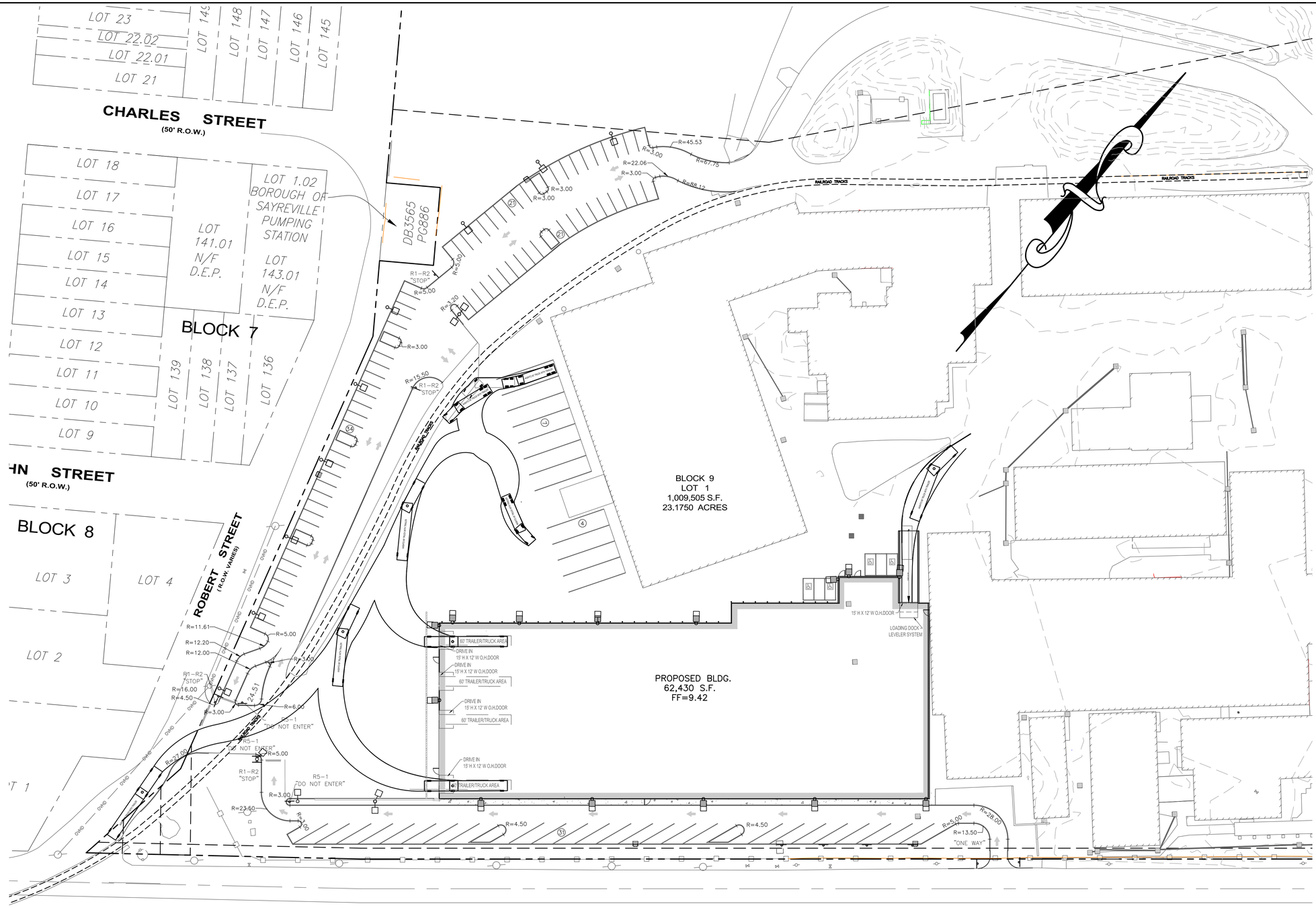
STATE OF NEW JERSEY LICENSE NO. 33011 (P.E.) 4066 (P.P.)

DATE

PROJECT NO.	19111
DRAWN BY	ZEE
SCALE	1" = 50'
DATE	7/10/19
SHEET	13 OF 16



BREAKDOWN OF EXISTING USE

Building	SF	Use
14	2,100	Cafeteria
8	4,000	Maintenance
1	11,100	Manufacturing
4	6,900	Manufacturing
5	17,900	Manufacturing
9	9,400	Manufacturing
10	20,000	Manufacturing
11	4,300	Manufacturing
12	14,500	Manufacturing
16	7,200	Office
19	4,400	Office
2	10,400	Storage
3	19,300	Storage
6	3,900	Storage
7	4,000	Storage
13	2,900	Storage
15	5,100	Storage
17	2,300	Storage

PARKING CALCULATIONS

PRE-EXISTING	65
REMOVED	28
REQUIRED:	
WAREHOUSE: 1 SPACE / 5,000 S.F.	23
CAFETERIA 1 SPACE / 3 SEATS	12
MANUFACTURING 1 SPACE / 1,000 S.F.	66
OFFICE 4 SPACE / 1,000 S.F.	46
TOTAL REQUIRED:	146
TOTAL PROPOSED:	113
TOTAL PARKING SPOTS:	150

NOTES:

1. ALL EXISTING SIGNAGE TO REMAIN, AND NO NEW SIGNAGE PROPOSED UNLESS SPECIFIED ON THIS PLAN.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

3/25/2020	REVISIONS PER ENGINEERING TECHNICAL REVIEW COMMENTS	ZEE

SITE PLAN
TRAFFIC CIRCULATION PLAN
6001 BORDENTOWN AVENUE
BLOCK 9 LOT 1
BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY

NEWLINES ENGINEERING & SURVEY
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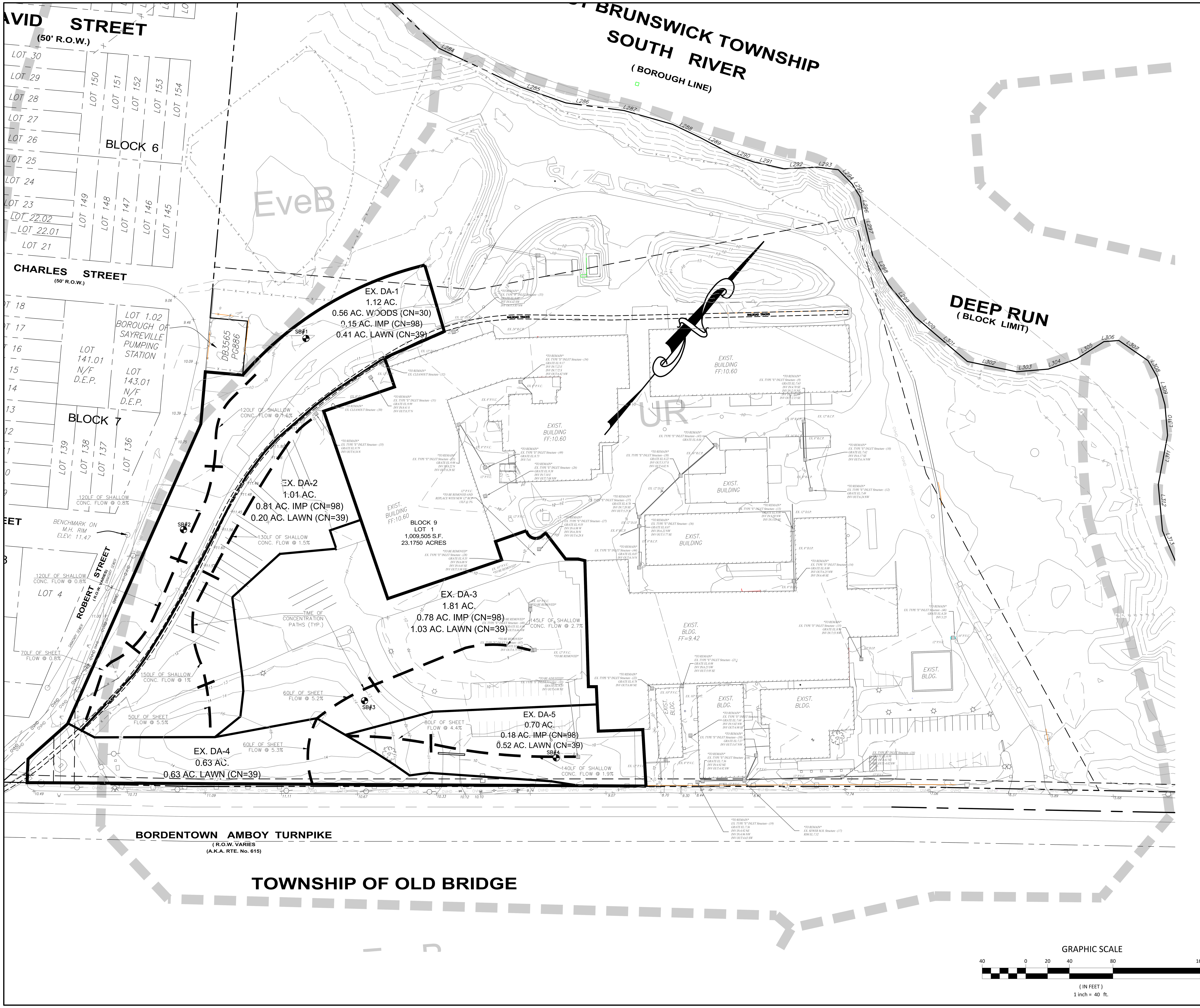
PROJECT NO.	19111
DRAWN BY	ZEE
SCALE	1" = 40'
DATE	7/10/19
SHEET	14 OF 16



3/25/2020	REVISIONS PER ENGINEERING TECHNICAL REVIEW COMMENTS	ZEE

SITE PLAN

EXISTING DRAINAGE AREA PLAN
6001 BORDENTOWN AVENUE
BLOCK 9 LOT 1
BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY

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DRAWN BY	ZEE
SCALE	1" = 40'
DATE	7/10/19
SHEET	15 OF 16

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

3/25/2020	REVISIONS PER ENGINEERING TECHNICAL REVIEW COMMENTS	ZEE

SITE PLAN
PROPOSED DRAINAGE AREA PLAN
6001 BORDENTOWN AVENUE
BLOCK 9 LOT 1
BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY

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SHEET	16 OF 16