

CERTIFIED LISTS OF PROPERTY OWNERS WITHIN 200 FEET OF LOT 6.02 BLOCK 10411 TOWNSHIP OF LONG HILL

LOT BLOCK PROPERTY LOCATION OWNERS NAME & ADDRESS

LONG HILL TOWNSHIP

19	10402	ARATA STREET	PSE&G/SERVICE CORP 80 PARK PLAZA T6B 6TH FLR NEWARK, NJ 07102-4194
31	10402	ELIZABETH STREET	TRANSCO/ATT: AD VALOREM TAX MD 46-4 P.O. BOX 2400 TULSA, OK 74102
8	10402	VALLEY ROAD	TOWNSHIP OF LONG HILL 915 VALLEY ROAD GILETTE, NJ 07933
2	10403	JANE STREET	TRANSCO/ATT: AD VALOREM TAX MD 46-4 P.O. BOX 2400 TULSA, OK 74102
21	10403	ELIZABETH STREET	TOWNSHIP OF LONG HILL 915 VALLEY ROAD GILETTE, NJ 07933
42	10403	JANE STREET	SHEFLO, COL ROSE FR22065 13906 CABANO NO CORPUS CHRISTIE, TEXAS 78418
1	10404	JANE STREET	TOWNSHIP OF LONG HILL 915 VALLEY ROAD GILETTE, NJ 07933
3	10405	LESTER STREET	TOWNSHIP OF LONG HILL 915 VALLEY ROAD GILETTE, NJ 07933
1	10406	S MAIN AVENUE	TOWNSHIP OF LONG HILL 915 VALLEY ROAD GILETTE, NJ 07933
1	10407	RAYMOND STREET	TOWNSHIP OF LONG HILL 915 VALLEY ROAD GILETTE, NJ 07933
1	10408	S MAIN STREET	TOWNSHIP OF LONG HILL 915 VALLEY ROAD GILETTE, NJ 07933
1	10411	1221 VALLEY ROAD	1221 VALLEY ROAD, LLC 271 HILLTOP ROAD MENDHAM, NJ 07945
2	10411	VALLEY ROAD	TRANSCO/ATT: AD VALOREM TAX MD 46-4 P.O. BOX 2400 TULSA, OK 74102
5	10411	1229 VALLEY ROAD	LONG HILL COMMUNITY CENTER, INC. PO BOX 162 STIRLING, NJ 07980
6	10411	1223 VALLEY ROAD	TOWNSHIP OF LONG HILL 915 VALLEY ROAD GILETTE, NJ 07933
1	10501	1153 VALLEY ROAD	STIRLING CENTER ASSOC., FIDELITY 841 SHUNPIKE ROAD CHATHAM, NJ 07928
7	10502	WALNUT AVENUE	BRIER, ANNA B MRS ANNE GALPERT 53 PAUL STREET NEWTON CENTRE, MASS 02459
9	10502	MAGNOLIA AVENUE	TOWNSHIP OF LONG HILL 915 VALLEY ROAD GILETTE, NJ 07933
5	10503	MAGNOLIA AVENUE	TOWNSHIP OF LONG HILL 915 VALLEY ROAD GILETTE, NJ 07933
8	10503	126 LAUREL AVENUE	TOWNSHIP OF LONG HILL 915 VALLEY ROAD GILETTE, NJ 07933
6	10504	111 LAUREL AVENUE	MAMMONE, LARRY/ROBIN 111 LAUREL AVENUE STIRLING, NJ 07980
8	10504	134 CEDAR AVENUE	TOWNSHIP OF LONG HILL 915 VALLEY ROAD GILETTE, NJ 07933
3	10505	125 CEDAR AVENUE	FERRUSO, KEVIN D/LISA E 125 CEDAR AVENUE STIRLING, NJ 07980
4	10505	MORRIS PLACE	PASSAIC RIVER COALITION 330 SPEEDWELL AVENUE MORRISTOWN, NJ 07960

WARREN TOWNSHIP, SOMERSET, CO.

1	160	RIVERSIDE AVENUE	TOWNSHIP OF WARREN 46 MOUNTAIN BOULEVARD WARREN, NJ 07059
1	157	RIVERSIDE--JERSEY	TOWNSHIP OF WARREN 46 MOUNTAIN BOULEVARD WARREN, NJ 07059
2	155	RIVERSIDE AVENUE	TOWNSHIP OF WARREN 46 MOUNTAIN BOULEVARD WARREN, NJ 07059
1	158	NEWARK--JERSEY	TOWNSHIP OF WARREN 46 MOUNTAIN BOULEVARD WARREN, NJ 07059
1	156	RAHWAY AVENUE	TOWNSHIP OF WARREN 46 MOUNTAIN BOULEVARD WARREN, NJ 07059

CERTIFIED LIST OF UTILITY CONTACTS

LONG HILL TOWNSHIP

JCP&L
300 Madison Avenue
PO Box 1911
Morristown, NJ 07960

N.J. American Water Co.,
No. Div. (NJAWC)
1025 Laurel Oak Rd
Voorhees, NJ 08043

PSE&G
Corporate Properties Manager
80 Park Plaza, T6B
Newark, NJ 07102

Comcast Cable Communications
100 Randolph Road
Somerset, NJ 08873

Morris County Planning Board
Courthouse CN 900
Morristown, NJ 07960-900

WARREN TOWNSHIP, SOMERSET, CO.

Morton A. Plawner, General Manager
Property & Risk Management
Public Service Gas & Electric, T24A
Newark, NJ 07102

Kenneth G. Ward, Secretary
Elizabethtown Gas Company
Elizabethtown Plaza
Union, NJ 07083

Somerset County Planning Board
P.O. Box 3000
Somerville, NJ 08876-1262

Richard S. Cohen, Secretary
Jersey Central Power & Light
300 Madison Avenue
Morristown, NJ 07962

Paul Kostyz
Cablevision
40 Pine Street
Tinton Falls, NJ 07753

Edward J. Roan, Special Projects Mgr.
Somerset Raritan Sewerage Authority
P.O. Box 6400
Bridgewater, NJ 08807

Donna Short
GIS Supervisor
New Jersey American Water
1025 Laurel Oak Road
Voorhees, NJ 08043

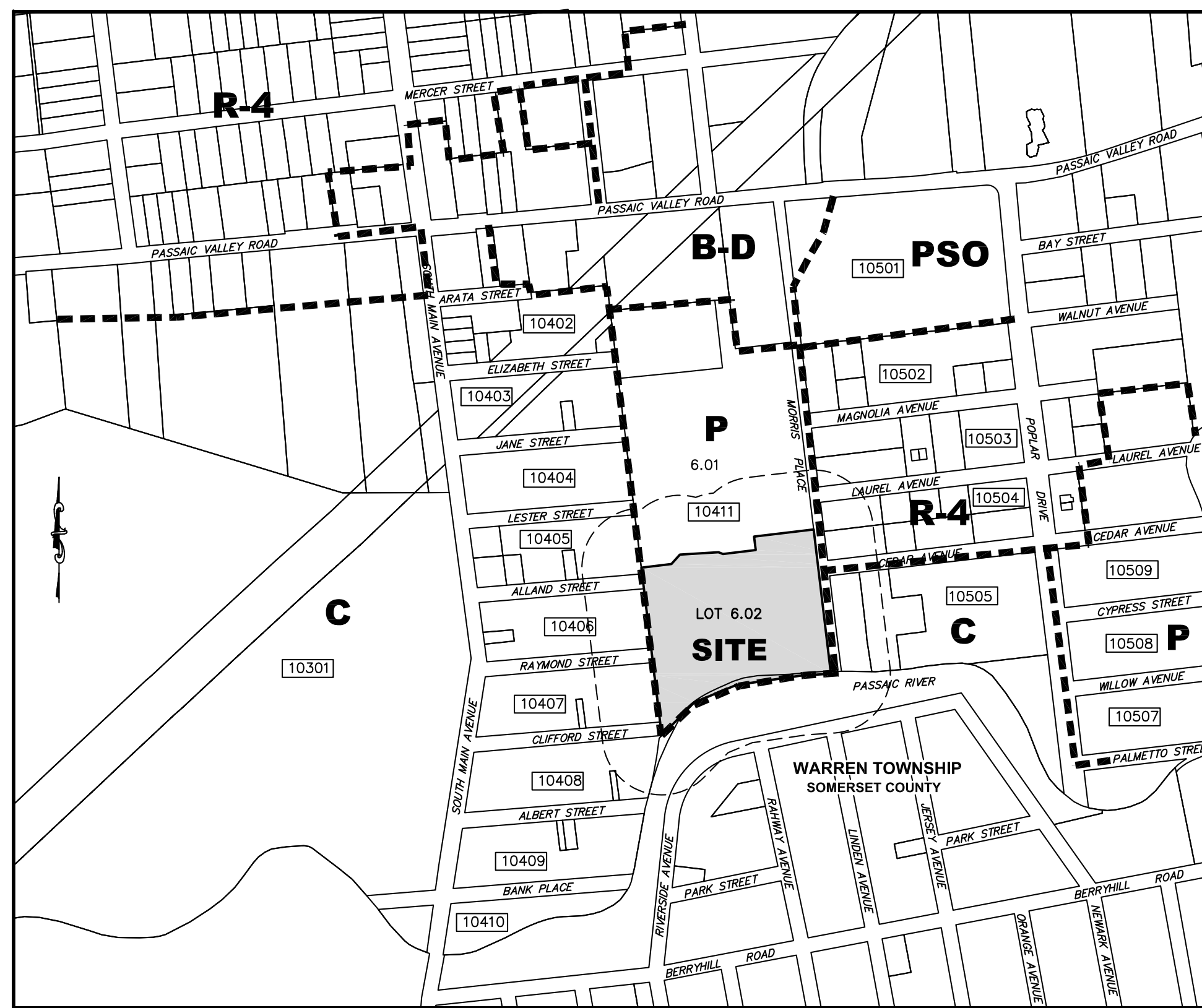
Lee Ann Molineaux
Verizon
1717 Arch Street
Philadelphia, PA 19103

LONG HILL TWP. SEWER TREATMENT PLANT UPGRADES

MINOR SITE PLAN

LOT 6.02 BLOCK 10411

LONG HILL TOWNSHIP MORRIS COUNTY NEW JERSEY



PROJECT SITE

SCALE 1" = 400'

SUBJECT PREMISES AS SHOWN ON TOWNSHIP OF LONG HILL TAX MAP SHEET #4

APPROVED BY LONG HILL TOWNSHIP

PLANNING BOARD

BOARD CHAIRMAN DATE

BOARD SECRETARY DATE

TOWNSHIP ENGINEER DATE

LIST OF DRAWINGS

SHEET NO. TITLE

1. COVER SHEET
2. BOUNDARY & TOPOGRAPHIC SURVEY
3. SITE PLAN
4. CONSTRUCTION DETAILS

ZONE DATA

P: PUBLIC USE ZONE
EXISTING USE: SEWER TREATMENT PLANT
PROPOSED USE: SEWER TREATMENT PLANT
TRACT AREA = 284,504 S.F. OR 6.531 ACRES

DESCRIPTION	REQUIRED/PROVIDED	EXISTING	PROPOSED
MIN. LOT AREA	15,000 SQ. FEET	284,504 SQ. FEET	284,504 SQ. FEET
MIN. LOT WIDTH	100 FEET		
MIN. FLOOR AREA (SQUARE FEET)	1000 SQ. FEET	8,483 SQ. FEET	10,311 SQ. FEET
MAX. BUILDING HEIGHT	2-1/2 STORIES/35 FEET	1 STORY	2 STORY
MIN. FRONT YARD	25 FEET	235.40 FEET	235.40 FEET
MIN. SIDE YARD	10 FEET	4.48 FEET**	4.48 FEET**
MIN. REAR YARD	25 FEET	136.18 FEET	136.18 FEET
LOT COVERAGE (IMPERVIOUS)	60%	25.9%	27.6%
FLOOR AREA RATIO (FAR)	0.40	0.03	0.04

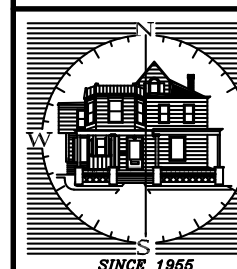
- * EXISTING NON-CONFORMING, NO IMPROVED ROAD FRONTAGE--VARIANCE GRANTED 8/18/20
- ** VARIANCE REQUIRED, EXISTING CONDITION--4.5' VARIANCE GRANTED 8/18/20
- *** VARIANCE REQUIRED (PROPOSED VACTOR TRUCK BUILDING)

OWNER/APPLICANT

NEW JERSEY AMERICAN WATER COMPANY, INC.
ONE WATER STREET
CAMDEN, NJ 08102

COVERSHEET

LONG HILL TWP. SEWER TREATMENT PLANT UPGRADES
LOT 6.02 BLOCK 10411
TOWNSHIP OF LONG HILL MORRIS COUNTY NEW JERSEY

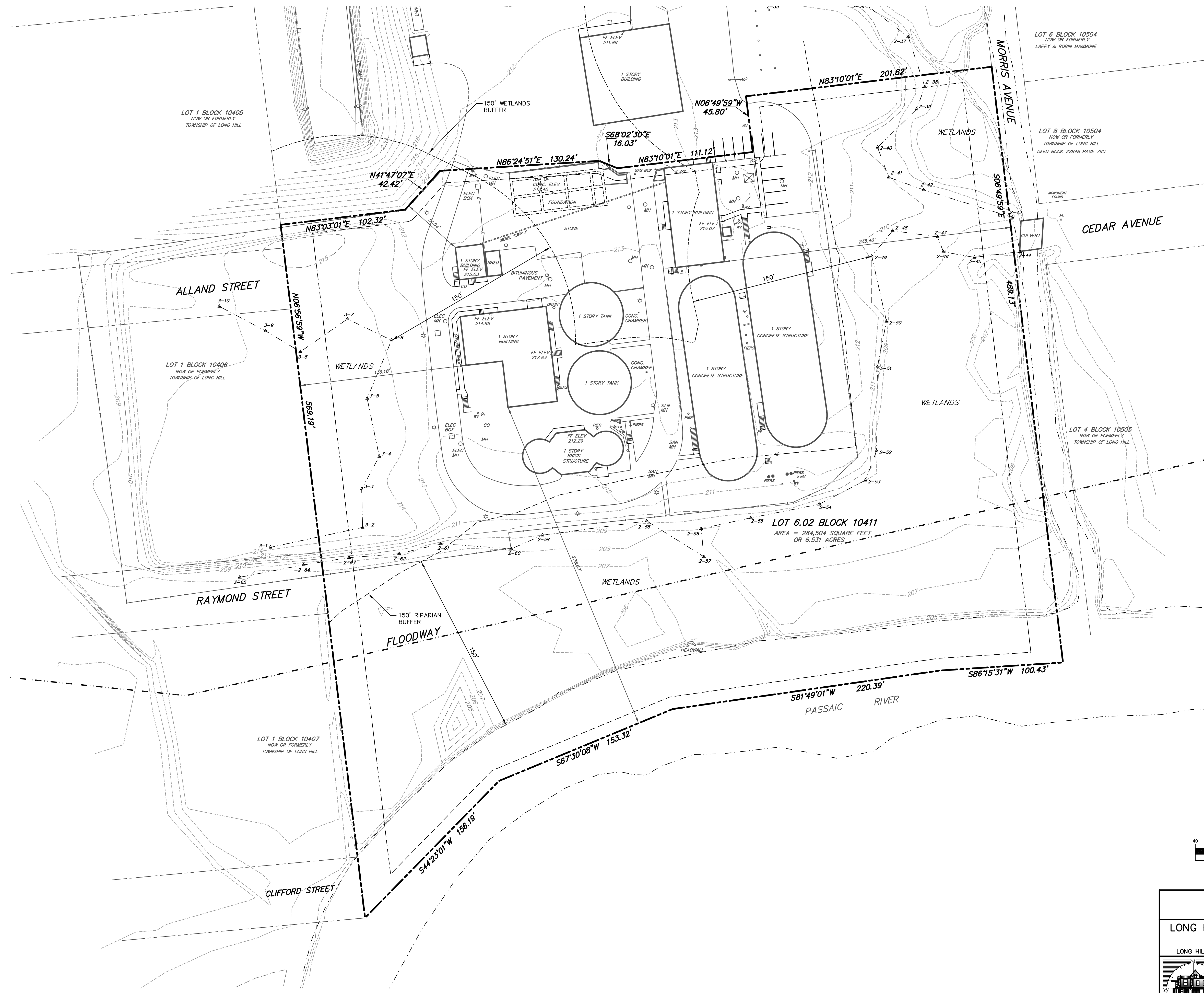


STIRES ASSOCIATES, P.A.
ENGINEERS, SURVEYORS & ENVIRONMENTAL CONSULTANTS

43 West High Street, Somerville, New Jersey 08876
Phone (908) 725-0230 Fax (908) 707-0831

CRAIG W. STIRES PROFESSIONAL ENGINEER	N.J. LICENSE No. 39078	DESIGNED BY:	EG
<i>Craig W. Stires</i>	DATE 10/29/20	CHECKED BY:	CWS
SCALE: AS SHOWN	SHEET NUMBER	1 OF 4	
PROJECT No. 20222	DATE REVISION BY		

CAUTION: If this document does not contain the raised registration seal of the professional, it is not an authentic original document and may have been altered.



FLOOD HAZARD NOTES

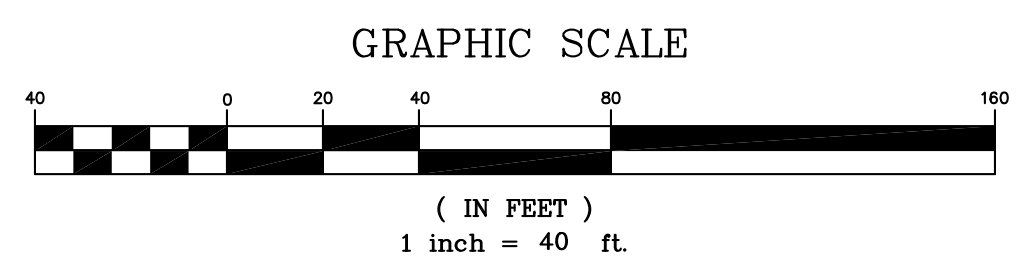
1. ALL OR A PORTION OF THIS SITE LIES IN A FLOOD HAZARD AREA. CERTAIN ACTIVITIES IN FLOOD HAZARD AREAS ARE REGULATED BY THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND SOME ACTIVITIES MAY BE PROHIBITED ON THIS SITE OR MAY FIRST REQUIRE A PERMIT. CONTACT THE DIVISION OF LAND USE REGULATION AT (609) 292-0060 FOR MORE INFORMATION PRIOR TO ANY CONSTRUCTION ON SITE.
2. IN ACCORDANCE WITH N.J.A.C. 7:13-3, METHOD 5 (N.J.A.C. 7:13-3.5) DEPARTMENT DELINEATION WAS USED TO DETERMINE THE LIMIT OF THE FLOOD HAZARD AREA AND/OR FLOODWAY.
3. THE TOPOGRAPHIC SURVEY HAS A VERTICAL DATUM OF NAVD 1988. ADD 1.0 FT TO CONVERT THE VERTICAL ELEVATION FROM NAVD 1988 TO NGVD 1929.

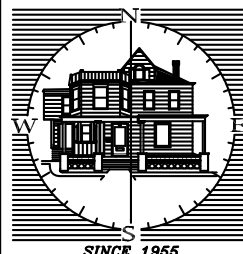

NOTES

VERTICAL SURVEY DATUM ESTABLISHED FROM NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 1988).
 REFERENCE MAP ENTITLED "PRELIMINARY MINOR SUBDIVISION PLAT 1223 PASSAIC VALLEY ROAD, BLOCK 10411 LOT 6, TOWNSHIP OF LONG HILL, MORRIS COUNTY NEW JERSEY" PREPARED BY FERRIERO ENGINEERING, INC. DATED 7/17/2020.

SYMBOL LEGEND

- MONITORING WELL
- ⊕ GUARD POST
- ⊕ GAS VALVE
- ⊕ WATER VALVE
- ⊕ SANITARY SEWER CLEANOUT
- ⊕ UTILITY MANHOLE
- ⊕ LIGHT POLE
- ♿ HANDICAP SPACE
- ⊕ HYDRANT
- ⊕ SIGN (ROAD)
- ⊕ SIGN (PRIVATE)
- ⊕ UTILITY POLE
- ⊕ GUY ANCHOR
- ⊕ INLET
- ⊕ ELECTRIC JUNCTION BOX
- FENCE
- ELECTRIC/TELEPHONE CABLES
- GAS MAIN
- WATER MAIN
- STORM SEWER PIPE
- SANITARY SEWER PIPE

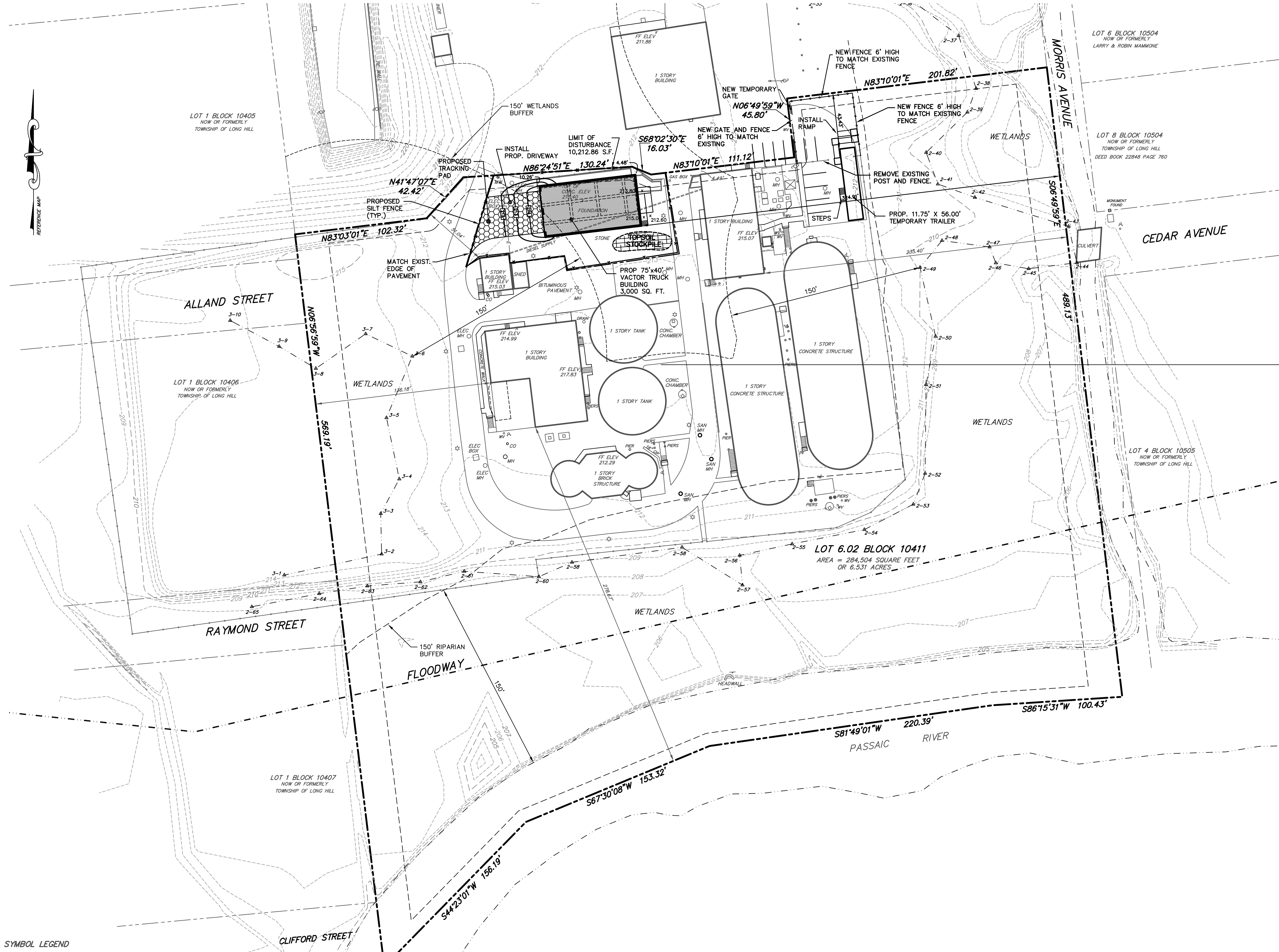


TOPOGRAPHIC SURVEY	
LONG HILL TWP. SEWER TREATMENT PLANT UPGRADES LOT 6.02 BLOCK 10411	
LONG HILL TOWNSHIP	MORRIS COUNTY NEW JERSEY
 STIRES ASSOCIATES, P.A. ENGINEERS, SURVEYORS & ENVIRONMENTAL CONSULTANTS 43 West High Street, Somerville, New Jersey 08876 Phone (908) 725-0230 Fax (908) 707-0831	
RICHARD C. MATHEWS PROFESSIONAL LAND SURVEYOR 	N.J. LICENSE No. 29353 DATE 08/31/20 SCALE: 1" = 40' PROJECT No. 20222
DESIGNED BY:	DRAWN BY: RCM/EG
CHECKED BY: RCM	SHEET NUMBER
	2 OF 4

DATE	REVISION	BY

GENERAL NOTES

- TOPOGRAPHIC INFORMATION SHOWN HAS BEEN PREPARED FROM ACTUAL FIELD SURVEYS COMPLETED BY STIRES ASSOCIATES, P.A. PERSONNEL.
- PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION, SIZE AND DIMENSION OF ALL UNDERGROUND UTILITIES. STIRES ASSOCIATES, P.A. ASSUMES NO RESPONSIBILITY FOR THE LOCATION OF BURIED UTILITIES SHOWN NOR LACK THEREOF. THE CONTRACTOR SHALL CONTACT THE UTILITY MARK OUT SERVICE BY CALLING 1-800-272-1000 PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY OF ANY DISCREPANCIES IN THE PLANS, REVISIONS AS MAY BE REQUIRED BY DESIGN DEVELOPMENT, OR FIELD REVISIONS THERETO. FIELD CHANGES MUST BE APPROVED BY THE DESIGN ENGINEER IN WRITING PRIOR TO SUBMITTAL TO THE TOWNSHIP ENGINEER, OR HIS DESIGNATED REPRESENTATIVE, FOR APPROVAL.
- ALL DEBRIS, CONCRETE CHUNKS, TREE STUMPS AND OTHER UNSUITABLE MATERIAL RESULTING FROM THE SITE GRADING AND EXISTING STRUCTURAL DEMOLITION SHALL BE DISPOSED OF AT AN APPROVED DISPOSAL LOCATION. NO UNSUITABLE MATERIALS SHALL BE PERMITTED TO BE BURIED ON SITE.
- IN INSTANCES WHERE THE TOWNSHIP SPECIFICATIONS PROVIDE NO DETAILED SPECIFICATION, THE MATERIALS AND METHODS OF CONSTRUCTION SHALL MEET AND CONFORM TO THE REQUIREMENTS OF "THE STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION" FOR THE NEW JERSEY DEPARTMENT OF TRANSPORTATION.
- ANY EXCESS FILL OR ANY OTHER MATERIAL IS TO BE REMOVED FROM THE SITE. THE PROJECT OWNER/APPLICANT SHALL BE RESPONSIBLE FOR ITS PROPER DISPOSAL AND WILL NOTIFY THE SOMERSET-UNION SOIL CONSERVATION DISTRICT AS TO THE PLANNED DISPOSAL SITE LOCATION. IF APPLICABLE, A SOIL EROSION AND SEDIMENT CONTROL PLAN MUST BE SUBMITTED TO, REVIEWED AND CERTIFIED BY THE MORRIS COUNTY SOIL CONSERVATION DISTRICT PRIOR TO ANY MATERIAL REMOVAL FROM THE PROJECT SITE.
- MAXIMUM ALLOWABLE VEGETATED SLOPES SHALL BE 2:1. ANY SLOPES IN EXCESS OF 3:1 SHALL BE COVERED BY TEMPORARY EROSION CONTROL MATTING.
- ADDITIONAL SOIL EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED BY THE SOIL CONSERVATION DISTRICT OR TOWNSHIP ENGINEER IF FIELD CONDITIONS WARRANT THEM.
- ANY EXISTING WELLS, SEPTIC SYSTEMS AND OIL TANKS MUST BE REMOVED OR ABANDONED IN ACCORDANCE WITH APPLICABLE LOCAL AND STATE CODES.
- PLOT PLANS SHALL BE PREPARED FOR EACH NEW DWELLING UNIT AND SHALL MEET ALL ZONING REQUIREMENTS AND THE GRADING SHALL MEET THE INTENT OF THIS GRADING PLAN.
- TOWNSHIP ENGINEER AND SEWERAGE AUTHORITY SHALL BE NOTIFIED A MINIMUM OF 48 HOURS IN ADVANCE OF ANY SITE WORK.
- CONNECTIONS TO EXISTING MANHOLES SHALL BE CORE DRILLED AND A WATER TIGHT GASKET ("BOOT") WITH STAINLESS STEEL BANDS SHALL BE INSTALLED.
- CLEANOUTS SHALL BE INSTALLED IN ACCORDANCE WITH THE AUTHORITY STANDARD DETAILS.
- EXISTING SEWER LATERALS THAT ARE RETAINED MUST PASS A LEAKAGE TEST IN ACCORDANCE WITH CODE ENFORCEMENT DEPARTMENT REQUIREMENTS FOLLOWING THE COMPLETION OF ALL SITE GRADING.
- ALL EXISTING STRUCTURES AND UTILITIES ARE TO BE REMOVED UNLESS OTHERWISE INDICATED.
- ANY NEW DWELLINGS SHALL COMPLY WITH ALL YARD SETBACKS AT THE TIME.



LOT 6.02 BLOCK 10411
AREA = 284,504 SQUARE FEET
OR 6.531 ACRES

- SYMBOL LEGEND**
- MONITORING WELL
 - GUARD POST
 - GAS VALVE
 - WATER VALVE
 - SANITARY SEWER CLEANOUT
 - UTILITY MANHOLE
 - LIGHT POLE
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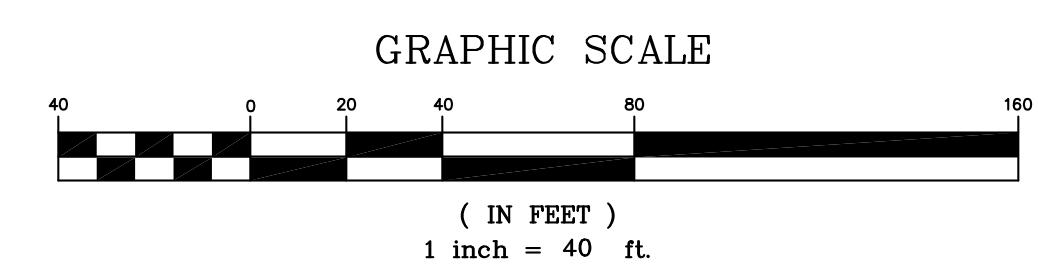
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SITE PLAN

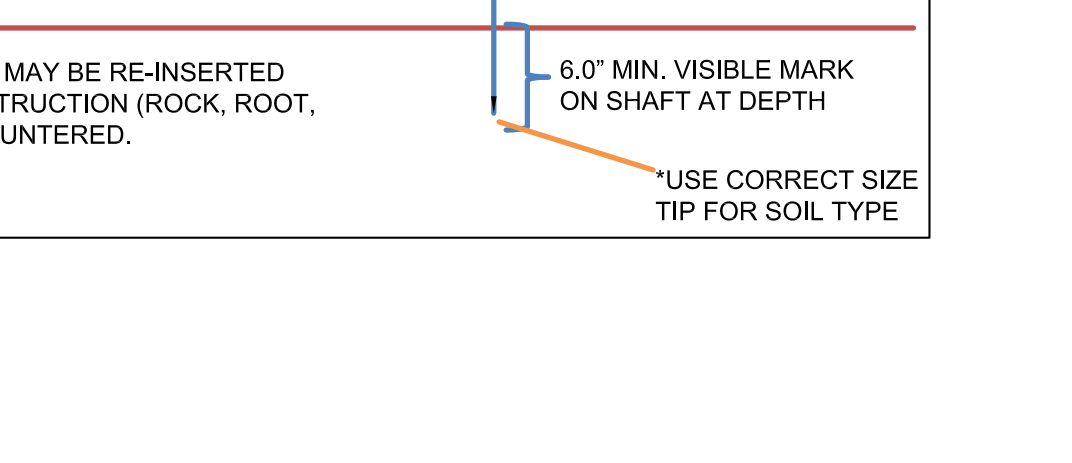
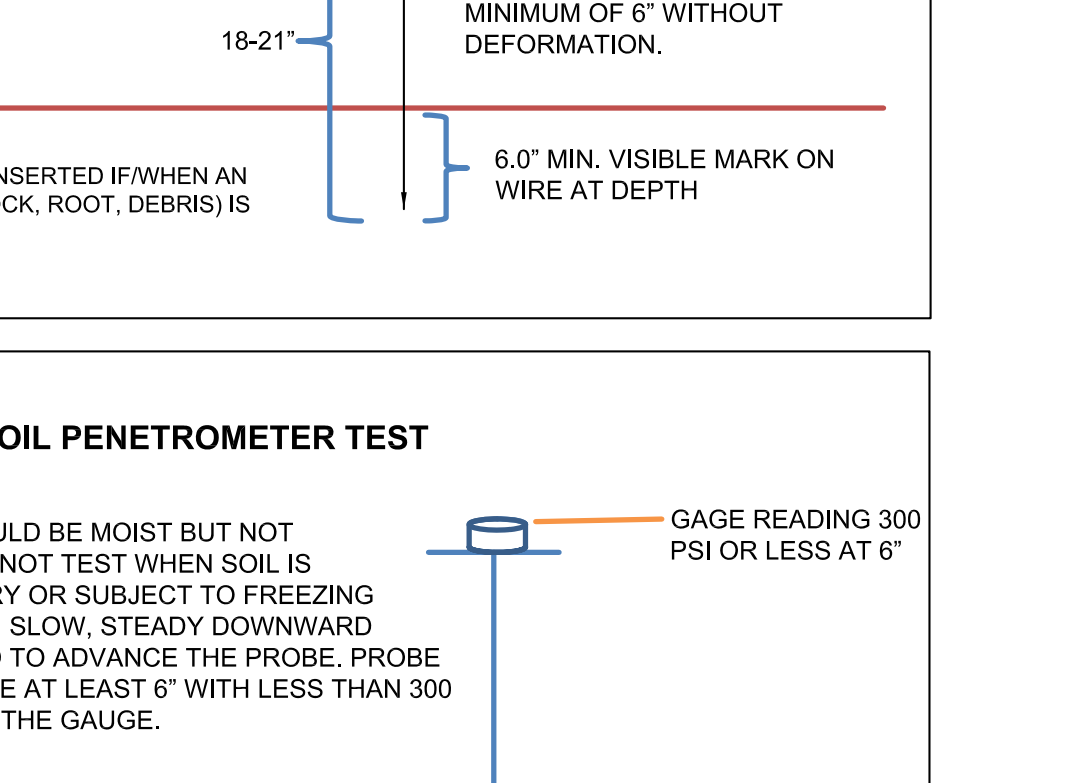
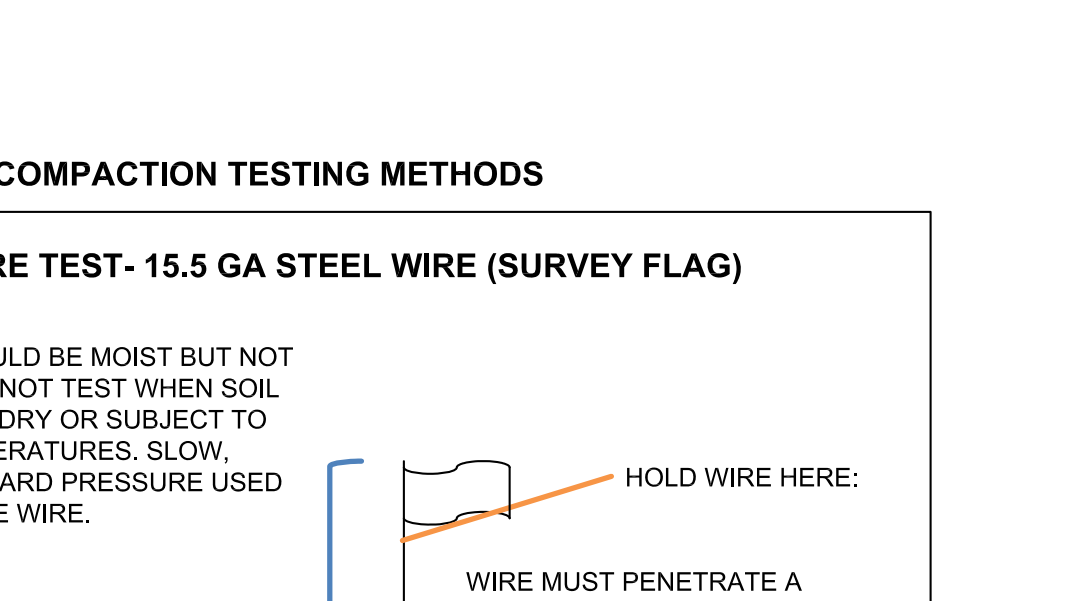
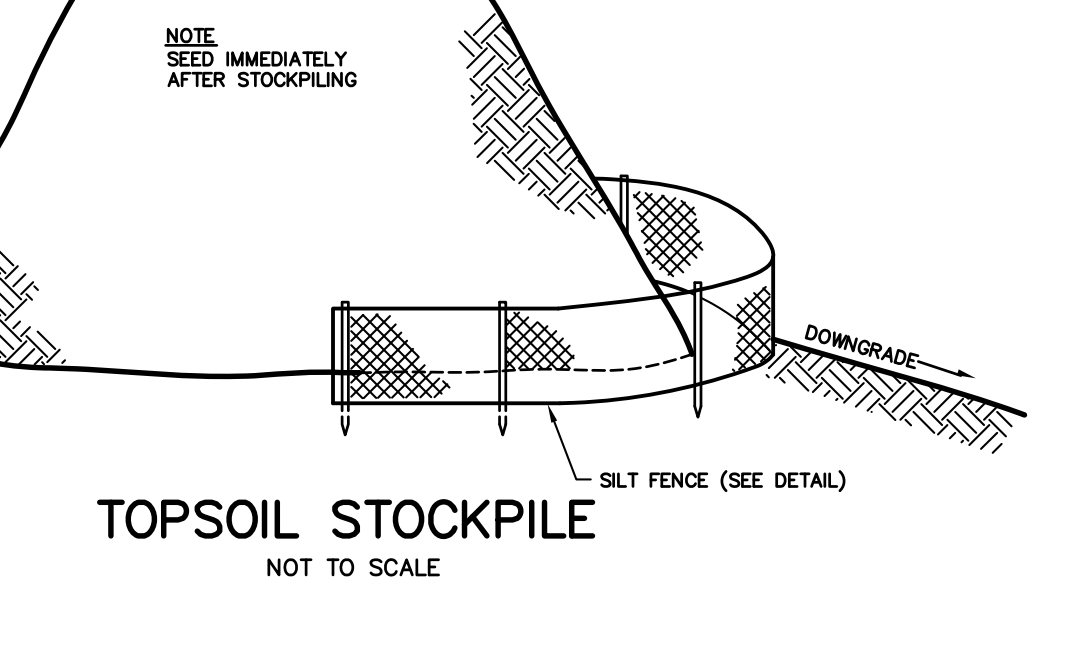
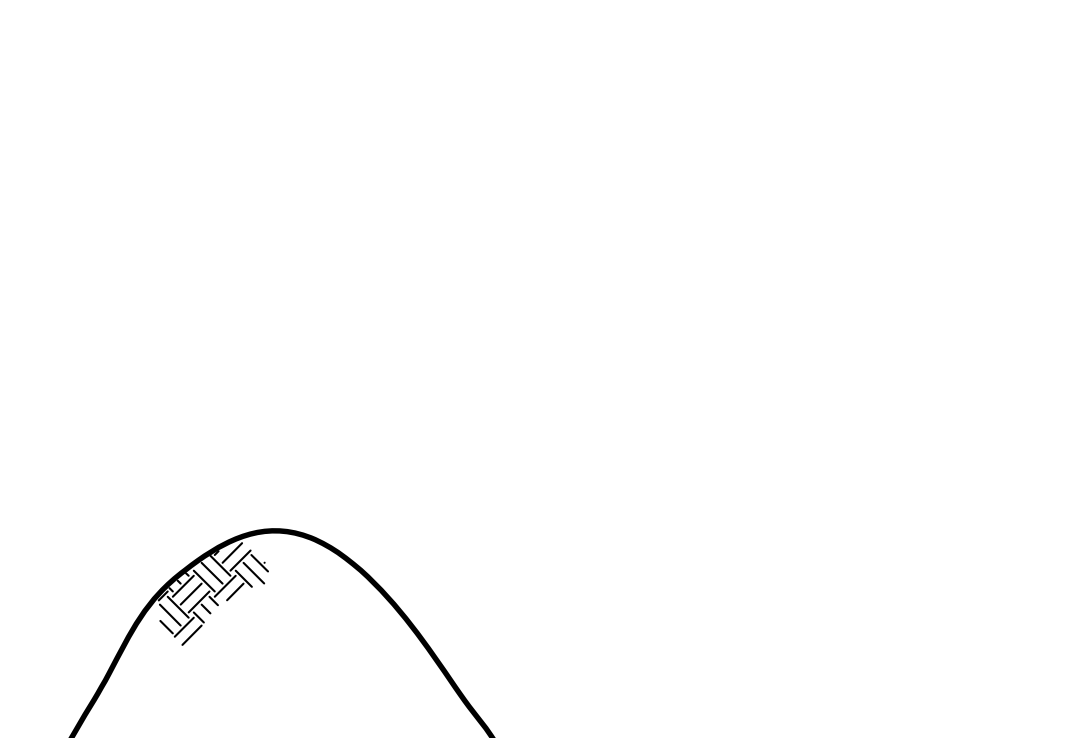
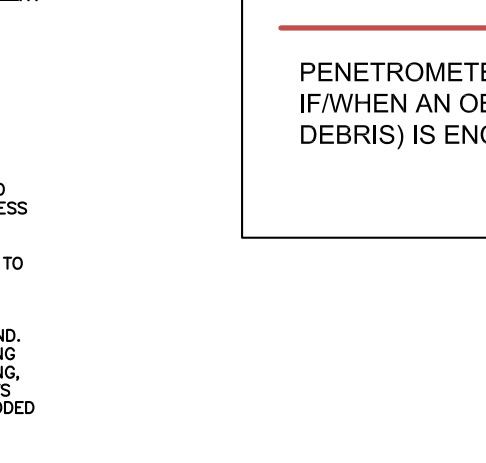
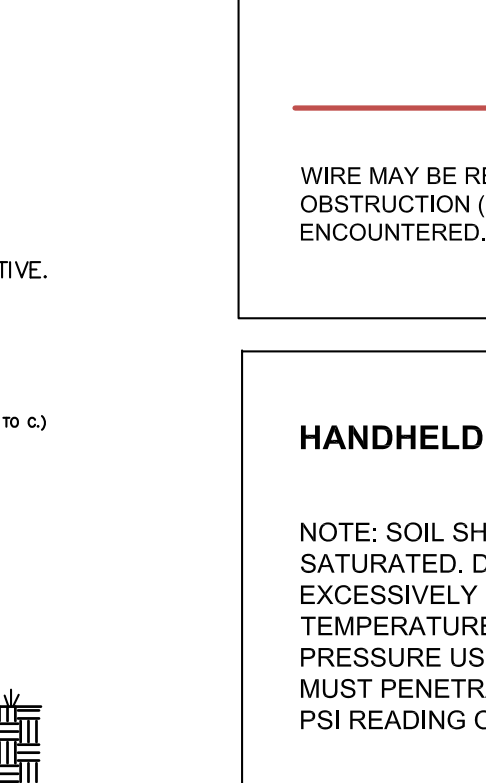
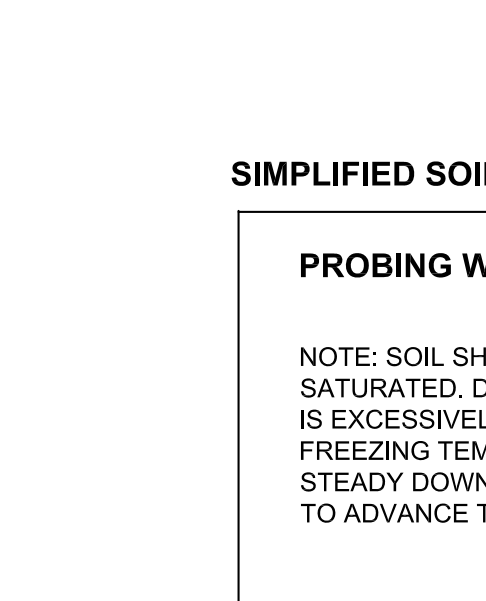
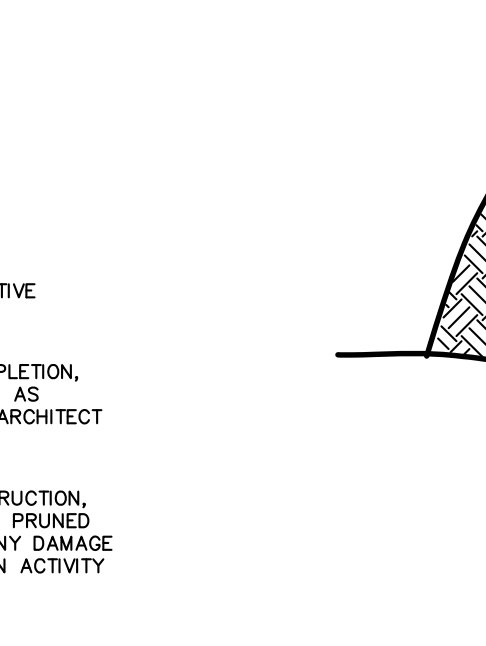
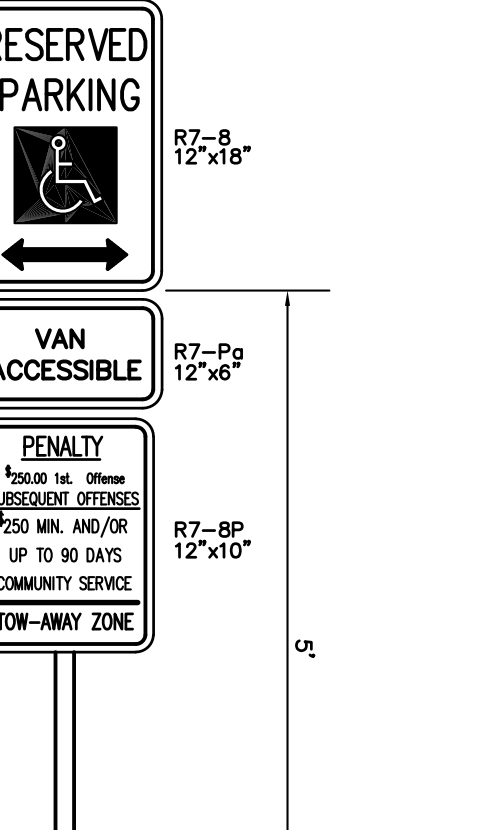
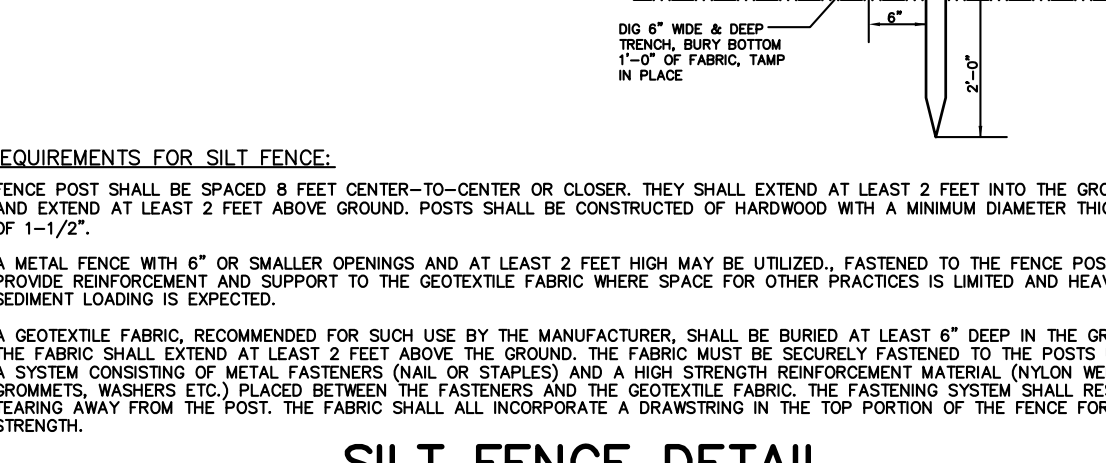
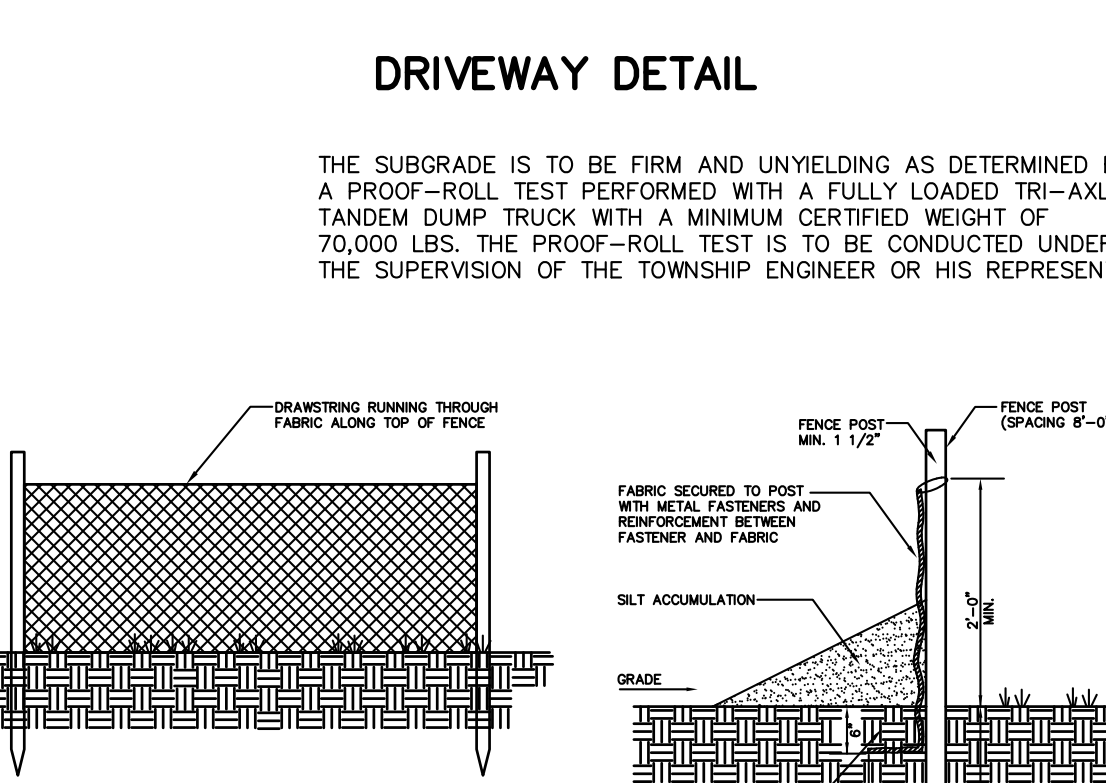
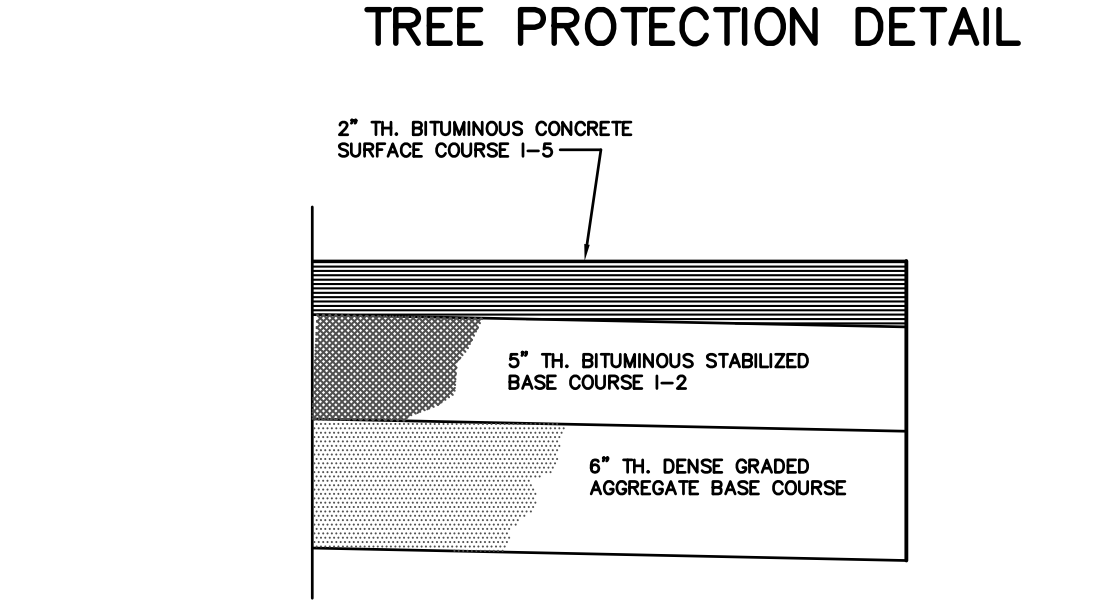
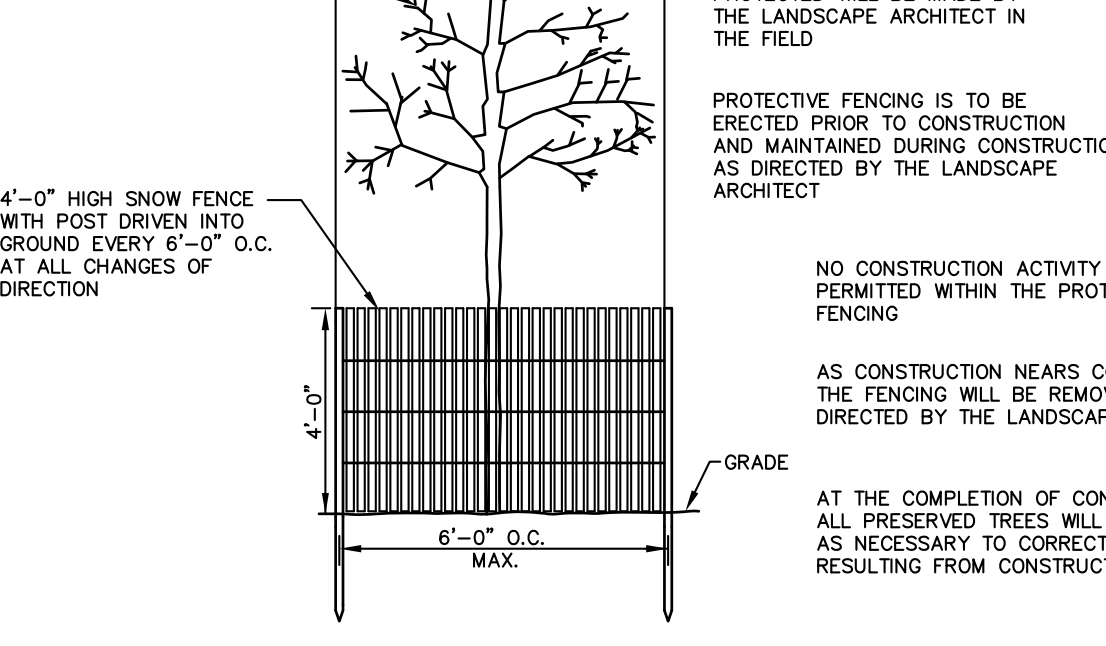
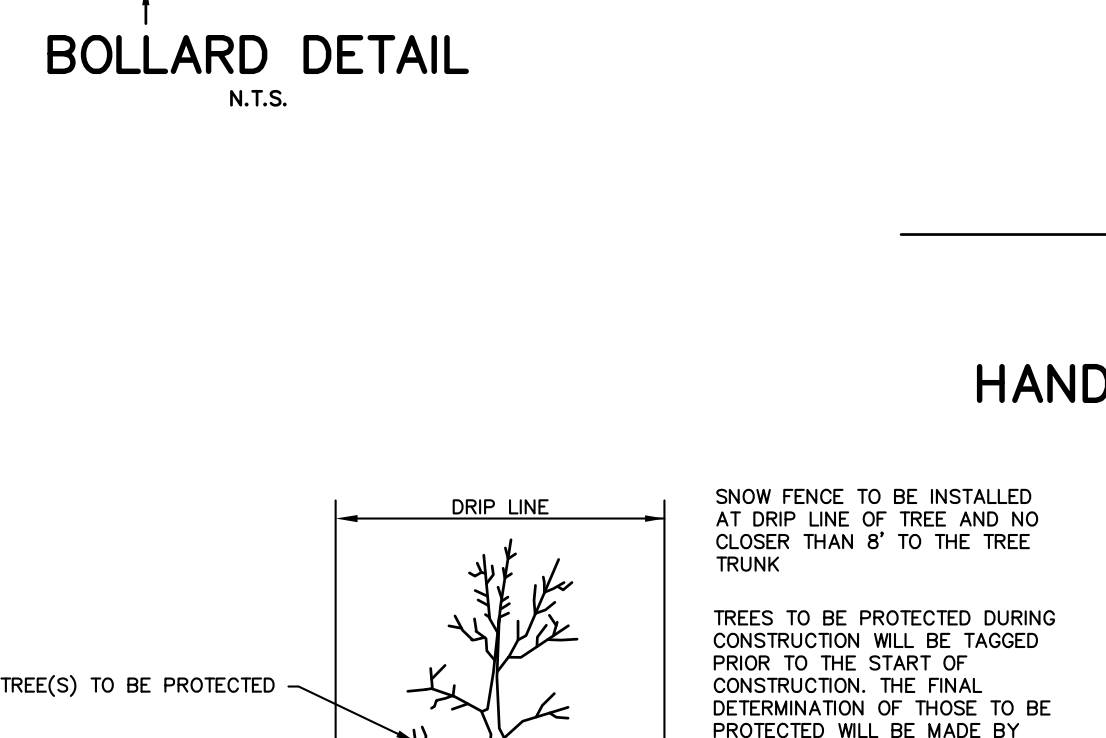
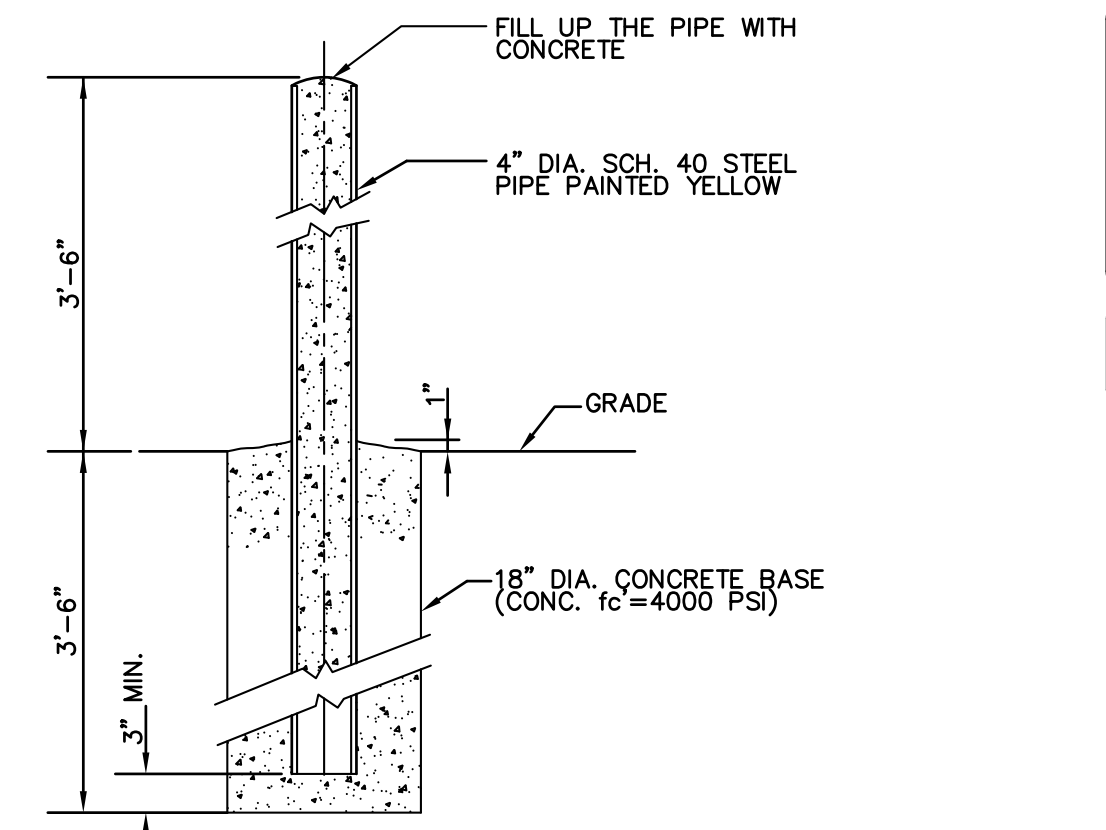
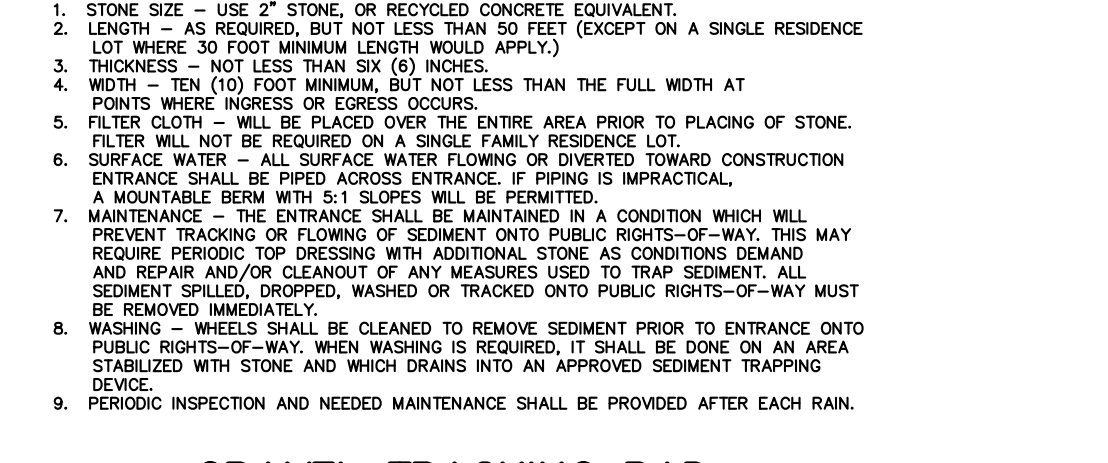
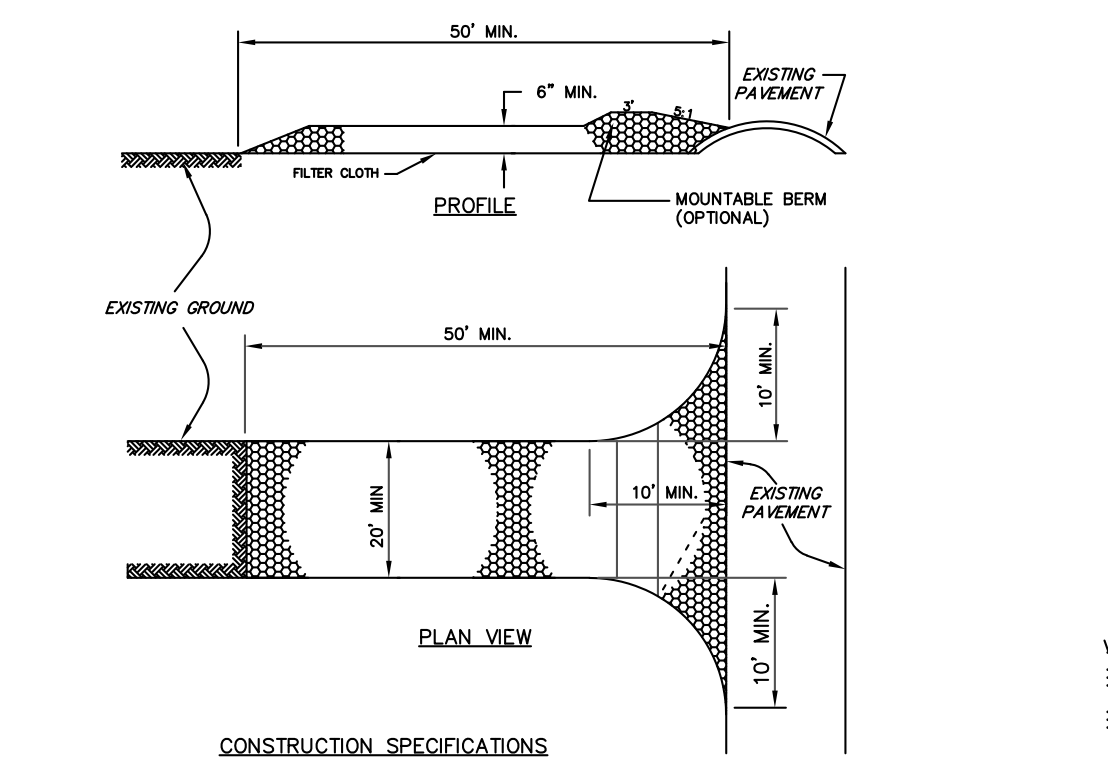
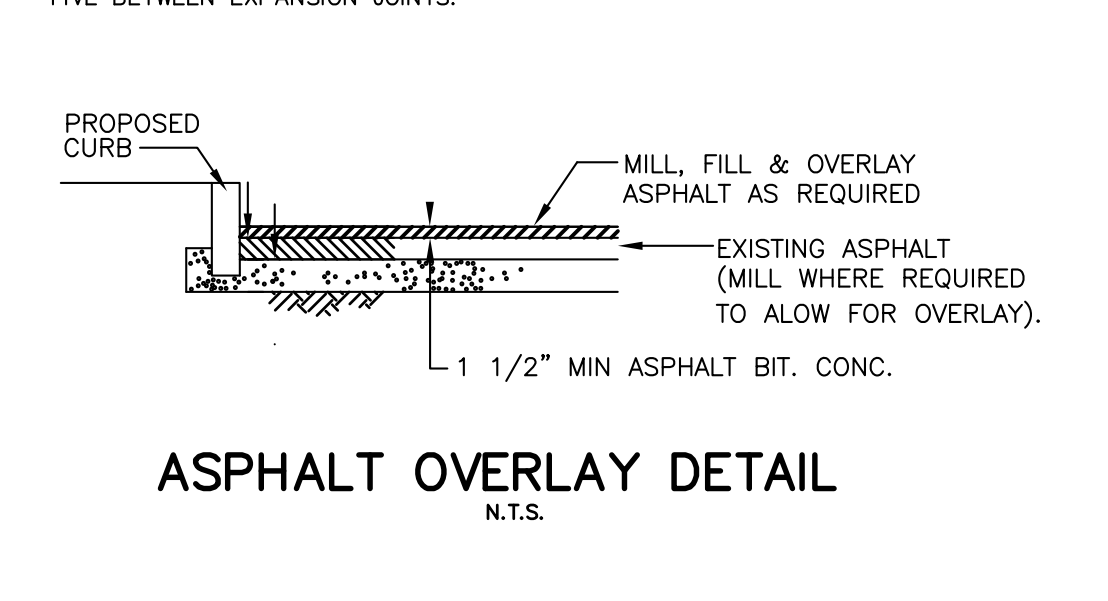
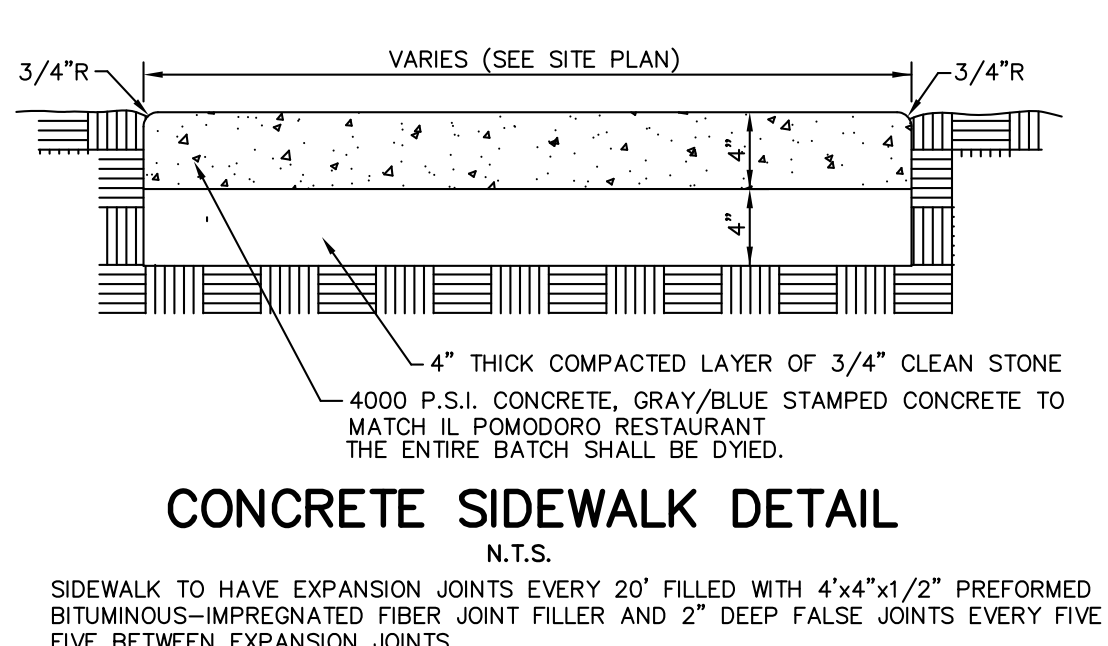
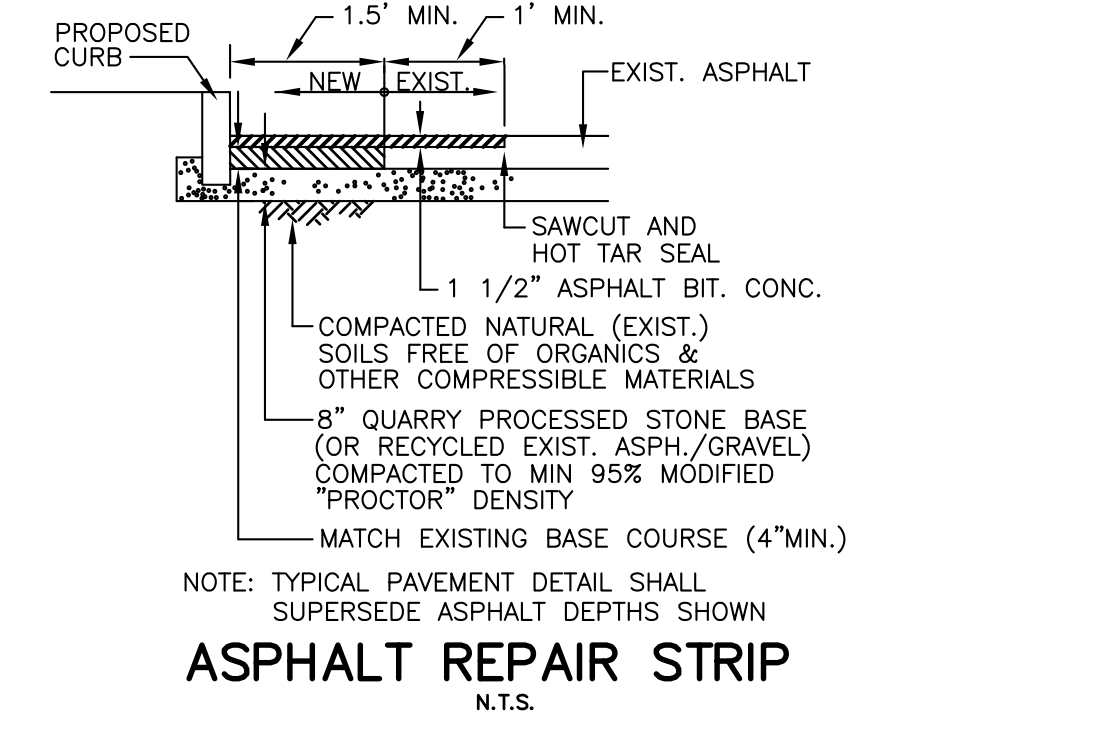
LONG HILL TWP. SEWER TREATMENT PLANT UPGRADES
LOT 6.02 BLOCK 10411
LONG HILL TOWNSHIP MORRIS COUNTY NEW JERSEY

STIRES ASSOCIATES, P.A.
ENGINEERS, SURVEYORS & ENVIRONMENTAL CONSULTANTS
43 West High Street, Somerville, New Jersey 08876
Phone (908) 725-0230 Fax (908) 707-0831

DESIGNED BY: CWS
DRAWN BY: RCM/EGJ
CHECKED BY: CWS
SHEET NUMBER
3 OF **4**

CRAIG W. STIRES
PROFESSIONAL ENGINEER
N.J. LICENSE No. 39078
DATE **10/29/20**
SCALE: 1" = 40'
PROJECT No. 20222

DATE	REVISION	BY



SOIL COMPACTION TESTING REQUIREMENTS

- Soil Management and Preparation**
- Subgrade soils prior to the application of topsoil shall be free of excessive compaction to a depth of 6.0 inches to enhance the establishment of permanent vegetative cover.
 - These notes address the potential for excessive soil compaction in light of the intended land use, testing for excessive soil compaction where permanent vegetation is to be established and mitigation of excessive soil compaction when appropriate.
 - Due to use or setting, certain disturbed areas will not require compaction remediation including, but not limited to the following:
 - Within 20 feet of building foundations with basements, 12 feet from slab or crawl space construction.
 - Where soils or gravel surfaces will be required to support post-construction vehicular traffic loads such as roads, parking lots and driveways (including gravel surfaces), bicycle paths or pedestrian walkways (sidewalks etc)
 - Airports, railways or other transportation facilities
 - Areas requiring industry or government specified soil designs, including golf courses, landfills wetland restoration, septic disposal fields, wetland ponds, etc.
 - Areas governed or regulated by other local, state or federal regulations which dictate soil conditions
 - Brownfields (capped uses), urban redevelopment areas, in-fill areas, recycling yards, junk yards, and quarries
 - Slopes determined to be inappropriate for safe operation of equipment
 - Portions of a site where no heavy equipment travel or other disturbance has taken place
 - Areas receiving temporary vegetative stabilization in accordance with the Standard.
 - Where the area available for remediation practices is 500 square feet or less in size.
 - Locations containing shallow (close to the surface) bedrock conditions.

- Areas of the site which are subject to compaction testing and/or mitigation are graphically denoted on the certified soil erosion control plan.
- Soil compaction remediation or testing to prove remediation is not necessary will be required in areas where permanent vegetation is to be established that are not otherwise exempted above. Testing method shall be selected, and soil compaction testing shall be performed by the contractor or other project owner's representative (e.g. engineer). A minimum of two (2) tests shall be performed for projects with an overall limit of disturbance of up to one (1) acre and at a rate of two (2) tests per acre of the overall limit of disturbance for larger areas which shall be evenly distributed over the area of disturbance subject to testing. Tests shall be performed in areas representative of the construction activity prevailing in the area. In the event this testing indicates compaction in excess of the maximum thresholds indicated for the testing method, the contractor/owner shall have the option to perform compaction mitigation over the entire disturbed area (excluding exempt areas) or to perform additional testing to establish the limits of excessive compaction whereupon only the excessively compacted areas would require compaction mitigation.

- Soil Test Method Options**
 - Probing Wire Test Method**
This test shall be conducted with a firm wire (15-1/2 gauge steel wire - e.g. survey marker flag, straight wire stock, etc.) 18 to 21 inches in length, with 6 inches from one end visibly marked on the wire. Conduct wire flag test by holding the wire flag near the flag end and push it vertically into the soil at several different locations in the field to the lesser of a 6 inch depth or the depth at which it bends due to resistance in the soil. Record the depth at which it bends due to resistance in the soil. The wire should penetrate without bending or deforming at least 6" into the ground by hand, without the use of tools. If penetration fails and an obstruction is suspected (rocks, root, debris, etc.) the test can be repeated in the same general area. If the test is successful the soil is not excessively compacted. If the wire is difficult to insert (wire bends or deforms prior to reaching 6 inches in depth) the soil may be excessively compacted and compaction mitigation or further testing via method 3 or 4 below is required, the choice of which is at the contractor/owner's discretion.
 - Handheld Soil Penetrometer Test Method**
This test shall be conducted based on the Standard Operation Procedure (SOP) #RCE2010-001, prepared by the Rutgers Cooperative Extension, Implemented June 1, 2010, last revised February 28, 2011. A result of less than or equal to 300 psi shall be considered passing. If the result is greater than 300 psi the soil may be excessively compacted and compaction mitigation or further testing via method 3 or 4 below is required, the choice of which is at the contractor/owner's discretion.
 - Tube Bulk Density Test Method**
This test shall be certified by a New Jersey Licensed Professional Engineer utilizing only undisturbed samples (reconstitution of the sample not permitted) collected utilizing the procedure for Soil Bulk Density Tests as described in the USDA NRCS Soil Quality Test Kit Guide, Section 1-4, July 2001. When the texture of the soil to be tested is a sand or loamy sand and lacks of soil cohesion or the presence of large amounts of coarse fragments, roots or worm channels prevent the taking of undisturbed samples, this test shall not be used. Where the results of replicate tests differ by more than ten percent (10%), the samples shall be examined for the following defects:
 - Cracks, worm channels, large root channels or poor soil tube contact within the samples;
 - Large pieces of gravel, roots or other foreign objects
 Snagging or compaction of the upper or lower surface of the samples
 If any of the defects described in 3 (a)-(iv) above are found, the defective core(s) shall be discarded and the test repeated using a new replicate sample for each defective replicate sample. The bulk density (defined as the weight of dry soil per volume) results shall be compared with the Maximum Dry Bulk Densities in Table 19-1. A result of less than or equal to the applicable maximum bulk density shall be considered passing. If the result is greater than the maximum bulk density the soil shall be considered excessively compacted and compaction mitigation is required.
 - Nuclear Density Test Method**
This test shall be certified by a New Jersey Licensed Professional Engineer and conducted by a nuclear gauge certified inspector pursuant to ASTM D6938. The bulk density measurement results shall be compared with the Maximum Dry Bulk Densities in Table 19-1. A result of less than or equal to the applicable maximum bulk density shall be considered passing. If the result is greater than the maximum bulk density the soil shall be considered excessively compacted and compaction mitigation is required.

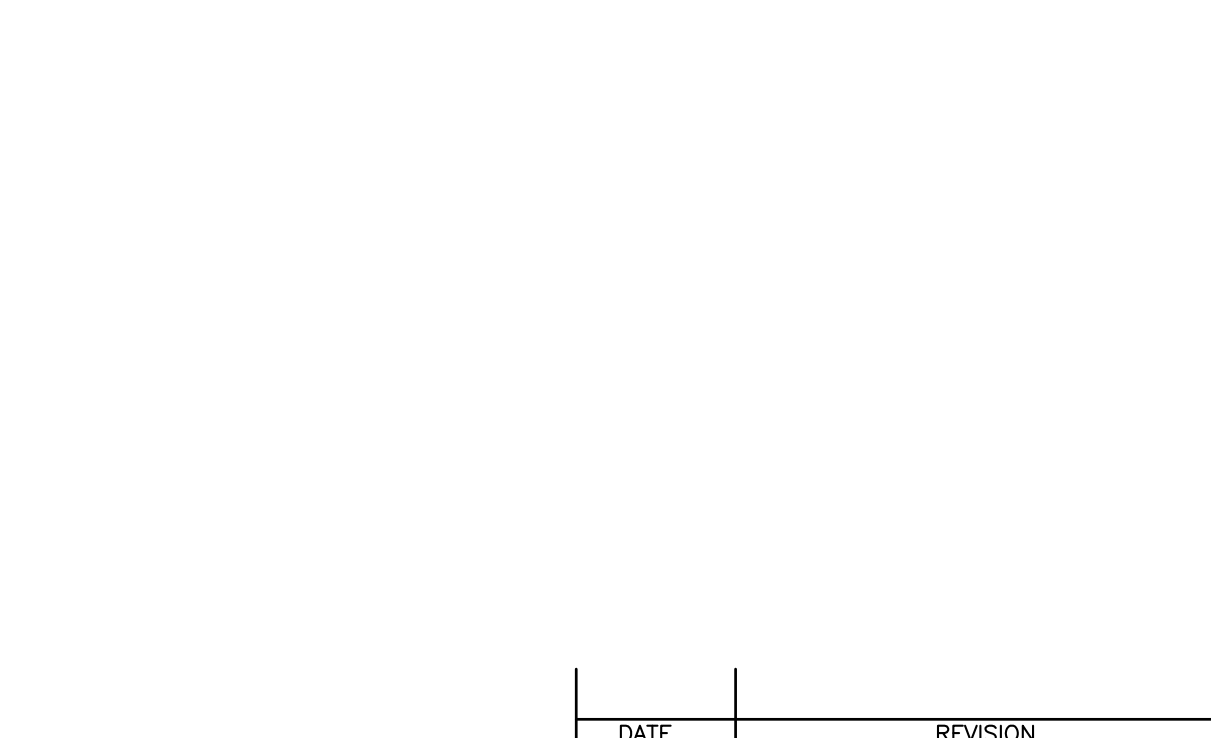
Table 19-1 - Maximum Dry Bulk Densities (grams/cubic centimeter) by soil type

Soil Type/Texture	Bulk Density (g/cc)
Coarse, Medium and Fine Sands and Loamy Sands	1.80
Very Fine Sand and Loamy Very Fine Sand	1.77
Sandy Loam	1.75
Loam, Sandy Clay Loam	1.70
Clay Loam	1.65
Sandy Clay	1.60
Silt, Silt Loam	1.55
Silty Clay Loam	1.50
Silty Clay	1.45
Clay	1.40

Source: USDA Natural Resource Conservation Service, Soil Quality Information Sheet, Soil Quality Resource Concerns: Compaction, April 1996

- Additional testing methods which conform to ASTM standards and specifications, and which produce a dry weight, soil bulk density measurement may be allowed to District approval.
- Procedures for Soil Compaction Mitigation**
If subgrade soils are determined to be excessively compacted by testing, as identified above, procedures shall be used to mitigate excessive soil compaction prior to placement of topsoil and establishment of permanent vegetative cover. Restoration of compacted soils shall be through deep scarification/village (6" minimum depth) where there is no danger to underground utilities (cables, irrigation systems, etc.) or in the alternative, another method as specified by a New Jersey Licensed Professional Engineer.

- Installation Requirements**
- Timber, logs, brush, rubbish, rocks, stumps and vegetative matter which will interfere with the grading operation or affect the planned stability of fill areas shall be removed and disposed of according to the plan.
 - Topsoil is to be stripped and stockpiled in amounts necessary to complete finish grading of all exposed areas requiring topsoil.
 - Fill material is to be free of brush, rubbish, timber, logs, vegetative matter and stumps in amounts that will be detrimental to constructing stable fills.
 - All structural fills shall be compacted as determined by structural engineering requirements for their intended purpose and as required to reduce slipping, erosion or excessive saturation.
 - All disturbed areas shall be left with a neat and finished appearance and shall be protected from erosion.
 - Trees to be retained shall be protected if necessary in accordance with the Standard for Tree Protection During Construction.



SOIL EROSION AND SEDIMENT CONTROL NOTES

- ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL AND WILL BE IN PLACE PRIOR TO ANY MAJOR SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
- ANY DISTURBED AREA THAT WILL BE LEFT EXPOSED FOR MORE THAN FOURTEEN (14) DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PROHIBITS TEMPORARY SEEDING, DISTURBED AREAS SHALL BE MULCHED WITH STRAW OR HAY AND TACKED IN ACCORDANCE WITH THE NEW JERSEY STANDARDS. SEE NOTE 22 BELOW.
- PERMANENT VEGETATION IS TO BE ESTABLISHED ON EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING. MULCH IS TO BE USED FOR PROTECTION UNTIL VEGETATION IS ESTABLISHED. SEE NOTE 23 BELOW.
- IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS (STEEP SLOPES, SANDY SOILS, WET CONDITIONS) SUBJECT TO EROSION WILL RECEIVE A TEMPORARY SEEDING IN ACCORDANCE WITH NOTE 22 BELOW.
- TEMPORARY DIVERSION BARRIERS ARE TO BE INSTALLED ON ALL CLEARED ROADWAYS AND EXISTING AREAS. SEE THE DIVERSION DETAIL.
- PERMANENT SEEDING AND STABILIZATION IS TO BE IN ACCORDANCE WITH THE STANDARDS FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION COVER. SPECIFIED RATES AND LOCATIONS SHALL BE ON THE APPROVED SOIL EROSION AND SEDIMENT CONTROL PLAN.
- THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SO THAT ALL STORMWATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
- ALL SEDIMENTATION STRUCTURES (SILT FENCE, INLET FILTERS, AND SEDIMENT BASINS) WILL BE INSPECTED AND MAINTAINED DAILY.
- STOCKPILES SHALL NOT BE LOCATED WITHIN 50' OF A FLOODPLAIN, SLOPE, DRAINAGE FACILITY, OR ROADWAY. ALL STOCKPILE BASES SHALL HAVE A SILT FENCE PROPERLY EXTENDED AT THE TOE OF SLOPE.
- A STABILIZED CONSTRUCTION ACCESS WILL BE INSTALLED, WHENEVER AN EARTHEN ROAD INTERSECTS WITH A PAVED ROAD. SEE THE STABILIZED CONSTRUCTION ACCESS DETAIL AND CHART FOR DIMENSIONS.
- NEW ROADWAYS WILL BE TREATED WITH SUITABLE SUBBASE UPON ESTABLISHMENT OF FINAL GRADE ELEVATIONS.
- PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.
- BEFORE DISCHARGE POINTS BECOME OPERATIONAL, ALL STORM DRAINAGE OUTLETS WILL BE STABILIZED AS REQUIRED.
- ALL DEWATERING OPERATIONS MUST BE DISCHARGED DIRECTLY INTO A SEDIMENT FILTER AREA. THE FILTER SHOULD BE COMPOSED OF A FABRIC OR A MARKER INSTALLED ON THE DEWATERING DETAIL.
- ALL SEDIMENT BASINS WILL BE CLEANED WHEN THE CAPACITY HAS BEEN REDUCED BY 50% A CLEAN OUT PROGRAM SHALL BE INSTALLED AND MAINTAINED DAILY.
- DURING AND AFTER CONSTRUCTION, THE APPLICANT WILL BE RESPONSIBLE FOR THE MAINTENANCE AND UPGRADE OF THE DRAINAGE STRUCTURES, VEGETATION COVER, AND ANY OTHER MEASURES DEEMED APPROPRIATE BY THE DISTRICT. SAID RESPONSIBILITY WILL END WHEN COMPLETED WORK IS APPROVED BY THE MORRIS COUNTY SOIL CONSERVATION DISTRICT.
- ALL TREES OUTSIDE THE DISTURBANCE LIMIT INDICATED ON THE SUBJECT PLAN OR THOSE TREES WITHIN THE DISTURBANCE AREA WHICH ARE DESIGNATED TO REMAIN AFTER CONSTRUCTION ARE TO BE PROTECTED WITH TREE PROTECTION DEVICES. SEE THE TREE PROTECTION DETAIL.
- THE MORRIS COUNTY SOIL CONSERVATION DISTRICT MAY REQUEST ADDITIONAL MEASURES TO MINIMIZE ON SITE OR OFF SITE EROSION PROBLEMS DURING CONSTRUCTION.
- THE MORRIS COUNTY SOIL CONSERVATION DISTRICT MUST BE NOTIFIED, IN WRITING, AT LEAST 48 HOURS PRIOR TO ANY LAND DISTURBANCE, AND A PRE-CONSTRUCTION MEETING HELD.
- CONTRACTOR TO SET UP A MEETING WITH THE INSPECTOR FOR PERIODIC INSPECTIONS OF THE TEMPORARY SEDIMENT BASIN PRIOR TO AND DURING ITS CONSTRUCTION.
- TOPSOIL STOCKPILE PROTECTION
 - APPLY GROUND LIMESTONE AT A RATE OF 90 LBS PER 1000 SQ. FT.
 - APPLY FERTILIZER (10-20-10) AT A RATE OF 11 LBS. PER 1000 SQ. FT.
 - APPLY PERENNIAL RYEGRASS SEED AT 1 LB. PER 1000 SQ. FT. AND ANNUAL RYEGRASS AT 1 LB. PER 1000 SQ. FT.
 - MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1000 SQ. FT.
 - APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.
 - PROPERTY ENTRANCE A SILT FENCE AT THE BOTTOM OF THE STOCKPILE.
- TEMPORARY STABILIZATION SPECIFICATIONS
 - APPLY GROUND LIMESTONE AT A RATE OF 90 LBS PER 1000 SQ. FT.
 - APPLY FERTILIZER (10-20-10) AT A RATE OF 11 LBS. PER 1000 SQ. FT.
 - APPLY PERENNIAL RYEGRASS SEED AT 1 LB. PER 1000 SQ. FT. AND ANNUAL RYEGRASS AT 1 LB. PER 1000 SQ. FT.
 - MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1000 SQ. FT.
 - APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.
- PERMANENT STABILIZATION SPECIFICATIONS
 - APPLY TOPSOIL TO A DEPTH OF 5 INCHES (UNSETTLED).
 - APPLY GROUND LIMESTONE AT A RATE OF 90 LBS PER 1000 SQ. FT. AND WORK FOUR INCHES INTO SOIL.
 - APPLY FERTILIZER (10-20-10) AT A RATE OF 11 LBS. PER 1000 SQ. FT.
 - APPLY HARD FESCUE SEED AT 2.7 LBS. PER 1000 SQ. FT. AND CREEPING RED FESCUE SEED AT 0.7 LBS PER 1000 SQ. FT. AND PERENNIAL RYEGRASS SEED AT 0.25 LBS PER 1000 SQ. FT.
 - MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1000 SQ. FT.
 - APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.
- SOIL TYPE-USPENS (URBAN LAND-PENN COMPLEX, 0 to 8 PERCENT SLOPES)

SEQUENCE OF CONSTRUCTION

1.	INSTALL SILT FENCE AROUND PERIMETER OF PROJECT	5 DAYS
2.	INSTALL TRACKING PAD	1 DAY
3.	REMOVE EXISTING STRUCTURES	20 DAYS
4.	STRIP TOPSOIL AND STOCKPILE AREAS	3 DAYS
5.	ROUGH GRADE SITE	14 DAYS
6.	INSTALL STORM SEWER AND SANITARY SEWER SYSTEMS	4 DAYS
7.	BUILDING CONSTRUCTION	6 MONTHS
8.	INSTALL GAS, ELECTRIC	14 DAYS
9.	INSTALL STONE AND BASE COURSE	5 DAYS
10.	ALL DISTURBED NON-PAVED AREAS ARE TO BE SCARIFIED/TILLED TO A DEPTH OF 6"	5 DAYS
12.	INSTALL LANDSCAPING	14 DAYS
13.	TILL ALL LANDSCAPE AREAS TO A DEPTH OF 6"	5 DAYS
14.	TOPSOIL FINE GRADE AND SEED ALL AREAS	5 DAYS
15.	PLACE FINAL PAVEMENT	5 DAYS
16.	REMOVE ALL SEDIMENT CONTROL BARRIERS AFTER STABILIZATION	1 DAY

PRIOR TO LAND DISTURBANCE, ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL AND WILL BE IN PLACE PRIOR TO ANY MAJOR SOIL DISTURBANCE OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.

CONSTRUCTION DETAILS

LONG HILL TWP. SEWER TREATMENT PLANT UPGRADES
LOT 6.02 BLOCK 10411

TOWNSHIP OF LONG HILL MORRIS COUNTY NEW JERSEY

STIRES ASSOCIATES, P.A.
ENGINEERS, SURVYORS & ENVIRONMENTAL CONSULTANTS

43 West High Street, Somerville, New Jersey 08876
Phone (908) 725-0230 Fax (908) 707-0831

DESIGNED BY: _____

DRAWN BY: EG

CHECKED BY: CWS

SHEET NUMBER
4 OF **4**

CRAIG W. STIRES
PROFESSIONAL ENGINEER

N.J. LICENSE No. 39078

DATE 10/29/20

SCALE: AS SHOWN

PROJECT No. 20222

DATE _____ REVISION _____ BY _____

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