SITE DATA:

OWNER / DEVELOPER:	593 NORTH STATE RD. LLC.
PROJECT LOCATION:	593 NORTH STATE RD. OSSINING, NY, 10510
EXISTING TOWN ZONING:	GB, GENERAL BUSINESS
PROPOSED USE:	GB, GENERAL BUSINESS
TOWN TAX MAP DATA:	SECTION 90.11, BLOCK 1, LOT 36
SITE AREA :	0.697 ACRES (30,368 SF)
SEWAGE FACILITIES:	PUBLIC SEWERS
WATER FACILITIES:	PUBLIC WATER FACILITIES

ZONING SCHEDULE:

ZONING DISTRICT:	GB, GENERAL BUSINESS		
DIMENSIONAL REGULATIONS:	REQUIRED	PROVIDED	VARIANCE REQUIRED
MINIMUM SIZE OF LOT:			
MINIMUM LOT AREA:	20,000 SF.	30,368 SF.	NONE
MINIMUM LOT WIDTH:	100 FT.	201 FT.	NONE
MINIMUM LOT DEPTH:	130 FT.	132 FT.	NONE
MINIMUM YARD DIMENSIONS:			
PRINCIPAL BUILDING:			
FRONT YARD SETBACK:	30 FT.	55.2 FT.	NONE
REAR YARD SETBACK:	0, 30 FT. (1)	67.8 FT.	NONE
ONE SIDE YARD SETBACK:	0, 30 FT. (1)	22.6 FT.	NONE
COMBINED SIDE YARD SETBACK:	---	---	NONE
ACCESSORY BUILDINGS:			
FRONT YARD SETBACK:	30 FT.	---	NONE
REAR YARD SETBACK:	30 FT. (1)	---	NONE
ONE SIDE YARD SETBACK:	30 FT. (1)	---	NONE
COMBINED SIDE YARD SETBACK:	---	---	NONE
MAXIMUM % OF LOT TO BE OCCUPIED:			
TOTAL BUILDING COVERAGE:	30% OF LOT AREA	5.6 % OF LOT AREA	NONE
MAXIMUM HEIGHT:			
PRINCIPAL BUILDING - FEET:	35 FT.	35 FT. MAX	NONE
PRINCIPAL BUILDING - STORIES:	2	2	NONE
ACCESSORY BUILDING - FEET:	35 FT.	---	NONE
ACCESSORY BUILDING - STORIES:	2	---	NONE

ZONING REGULATION NOTES:
1. SETBACK SHALL BE 30 FT. ALONG ANY RESIDENCE DISTRICT BOUNDARY, 0 FT. OTHERWISE.

PARKING SCHEDULE

REQUIRED PARKING:	1 SPACE PER 200 SF RETAIL FLOOR AREA 1 SPACE PER 300 SF OFFICE FLOOR AREA
RETAIL SPACE: OFFICE SPACE:	1691 S.F. @ 1 SPACES/200 S.F. = 9 SPACES 1691 S.F. @ 1 SPACES/300 S.F. = 6 SPACES TOTAL = 15 SPACES
PROVIDED PARKING:	2 GARAGE 14 STANDARD 1 HANDICAP
TOTAL PROVIDED PARKING:	15 SPACES
PARKING VARIANCE REQUIRED:	0 SPACES

NOTES:
1. THE EXISTING TWO STORY BUILDING SHALL BE USED AS A COMBINATION OFFICE AND SHOW ROOM FOR THE PROPOSED PLUMBING BUSINESS. THE FIRST/BOTTOM FLOOR SHALL BE USED FOR THE SHOW ROOM AND STORAGE SPACE, AND THE SECOND FLOOR SHALL BE USED AS OFFICE SPACE.
2. SITE IS TRIBUTARY TO POCANTICO RIVER
3. THERE SHALL BE NO OUTDOOR STORAGE OF ANY MATERIALS ON THE LOT.
4. THERE SHALL BE NO OUTDOOR PARKING OF ANY CONSTRUCTION EQUIPMENT ON THE LOT
5. ALL LIGHTING SHOWN ON THIS PLAN SHALL BE DIRECTED AND/OR SHIELDED SO AS TO PRECLUDE OBJECTIONABLE GLARE FROM BEING OBSERVABLE FROM ADJOINING STREETS AND PROPERTIES.
6. ALL VEGETATION SHOWN ON THIS PLAN SHALL BE MAINTAINED IN A HEALTHY AND VIGOROUS GROWING CONDITION THROUGHOUT THE DURATION OF THE PROPOSED USE OF THE SITE. ALL VEGETATION NOT SO MAINTAINED SHALL BE REPLACED WITH NEW COMPARABLE VEGETATION AT THE BEGINNING OF THE NEXT GROWING SEASON.

LEGEND

- 222 — EXISTING GRADING
- × 222.8 — EXISTING SPOT GRADE
- 200 — PROPOSED GRADING
- PROPERTY LINE / RIGHT OF WAY
- PROPOSED CURB
- 100' WETLAND BUFFER
- W — EXISTING WATER LINE
- EXISTING FIRE HYDRANT
- PROPOSED DRAINAGE LINE
- PROPOSED CATCH BASIN
- Ⓓ — PROPOSED DRAINAGE MANHOLE
- PROPOSED LIMIT OF DISTURBANCE

0 5 10 20
SCALE: 1"=10'-0"

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F:\2018\18-13 ARMSTRONG PLUMBING NORTH STATE RD\ENGINEERING\CAD\C3D-18-13 ARMSTRONG PLUMBING NORTH STATE RD\18-13 SITE PLAN 6-7-18.DWG 1/16/2017 3:19:52 PM

PROJECT # 18-13

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Civil Engineers • Land Planners
251-F Underhill Avenue, Yorktown Heights, NY 10598
(914) 962-4488 - Fax: (914) 962-7386
www.sitedesignconsultants.com

Engineer:
Joseph C. Riina, P.E.
NYS Lic. No. 64431
STATE OF NEW YORK · JOSEPH CARLO RIINA · NO. 64431 · LICENSED PROFESSIONAL ENGINEER

Revisions:

No.	Date	Comments:
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2	5/25/18	Town Comments
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DRAWN BY: TK
DATE: 3/21/18

SITE PARKING PLAN

SITE PLAN
PREPARED FOR
ARMSTRONG PLUMBING LLC
593 NORTH STATE ROAD
Town of Ossining, Westchester County, NY

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PHOTO 1

PHOTO 2

PHOTO 3

PHOTO 4

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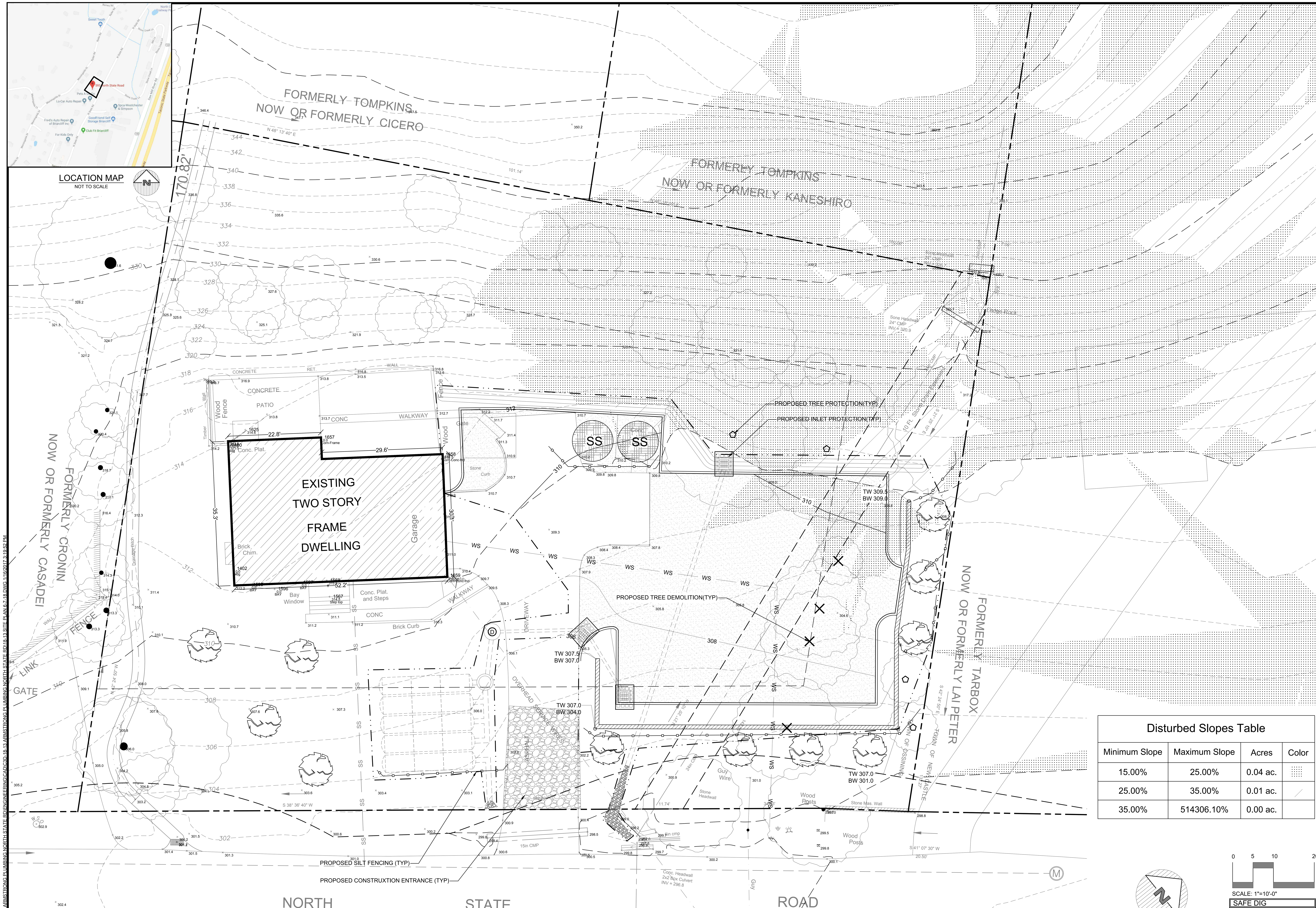
EXISTING CONDITIONS

SITE PLAN
PREPARED FOR
ARMSTRONG PLUMBING LLC
593 NORTH STATE ROAD
Town of Ossining Westchester County, NY

Sheet 2 of 11



Disturbed Slopes Table

Minimum Slope	Maximum Slope	Acres	Color
15.00%	25.00%	0.04 ac.	
25.00%	35.00%	0.01 ac.	
35.00%	514306.10%	0.00 ac.	

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E&SC PLAN

SITE PLAN
PREPARED FOR
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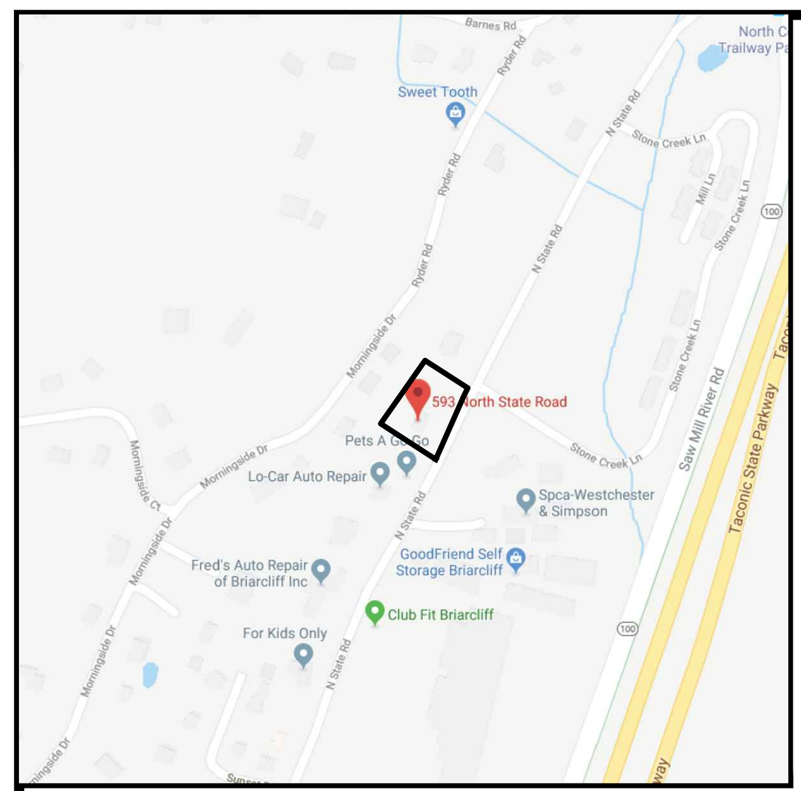
593 NORTH STATE ROAD
Town of Ossining Westchester County, NY



LOCATION MAP
NOT TO SCALE

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STATE OF NEW YORK
JOSEPH CARLO RIINA
LICENSED PROFESSIONAL ENGINEER
Joseph C. Riina, P.E.
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AREA MAP

SITE PLAN
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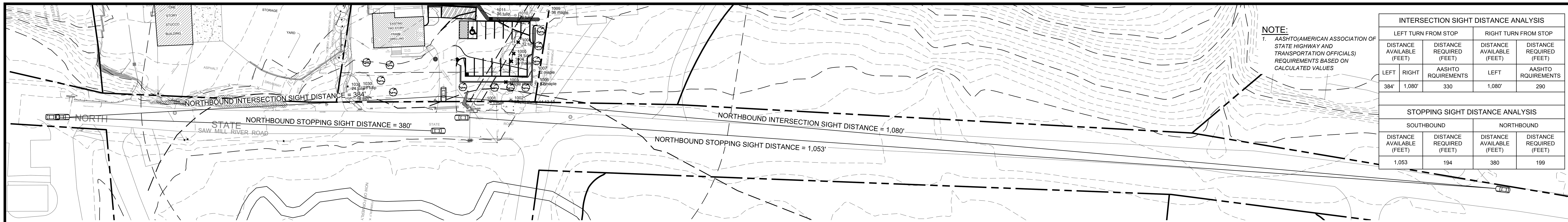
593 NORTH STATE ROAD
Town of Ossining Westchester County, NY



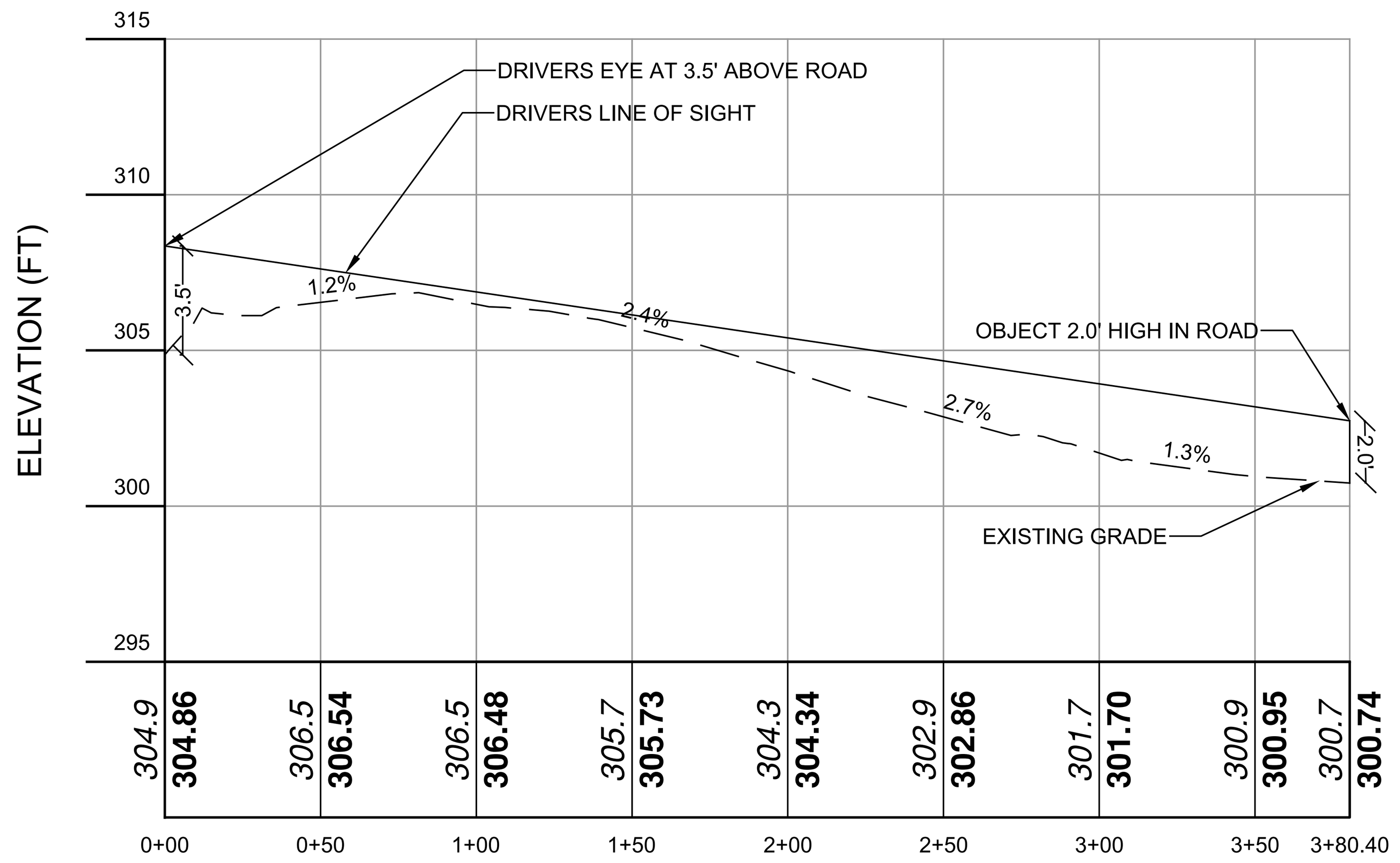
NOTE:
1. *AASHTO(AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS) REQUIREMENTS BASED ON CALCULATED VALUES*

INTERSECTION SIGHT DISTANCE ANALYSIS

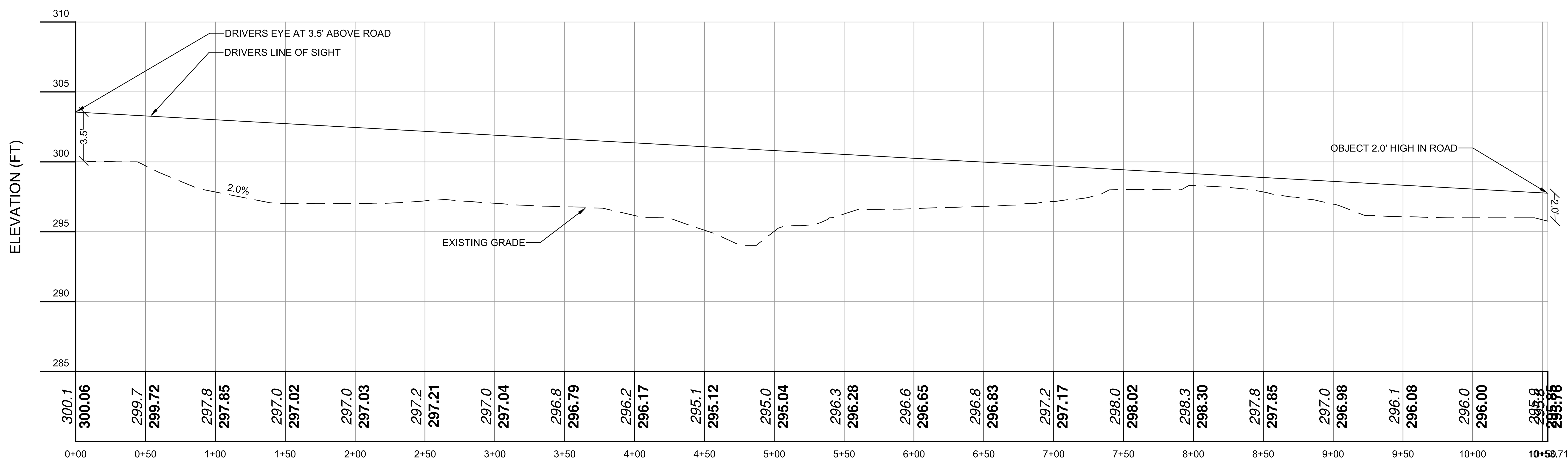
LEFT TURN FROM STOP			RIGHT TURN FROM STOP	
DISTANCE AVAILABLE (FEET)		DISTANCE REQUIRED (FEET)	DISTANCE AVAILABLE (FEET)	DISTANCE REQUIRED (FEET)
LEFT	RIGHT	AASHTO RQUIREMENTS	LEFT	AASHTO RQUIREMENTS
384'	1,080'	330	1,080'	290

STOPPING SIGHT DISTANCE ANALYSIS

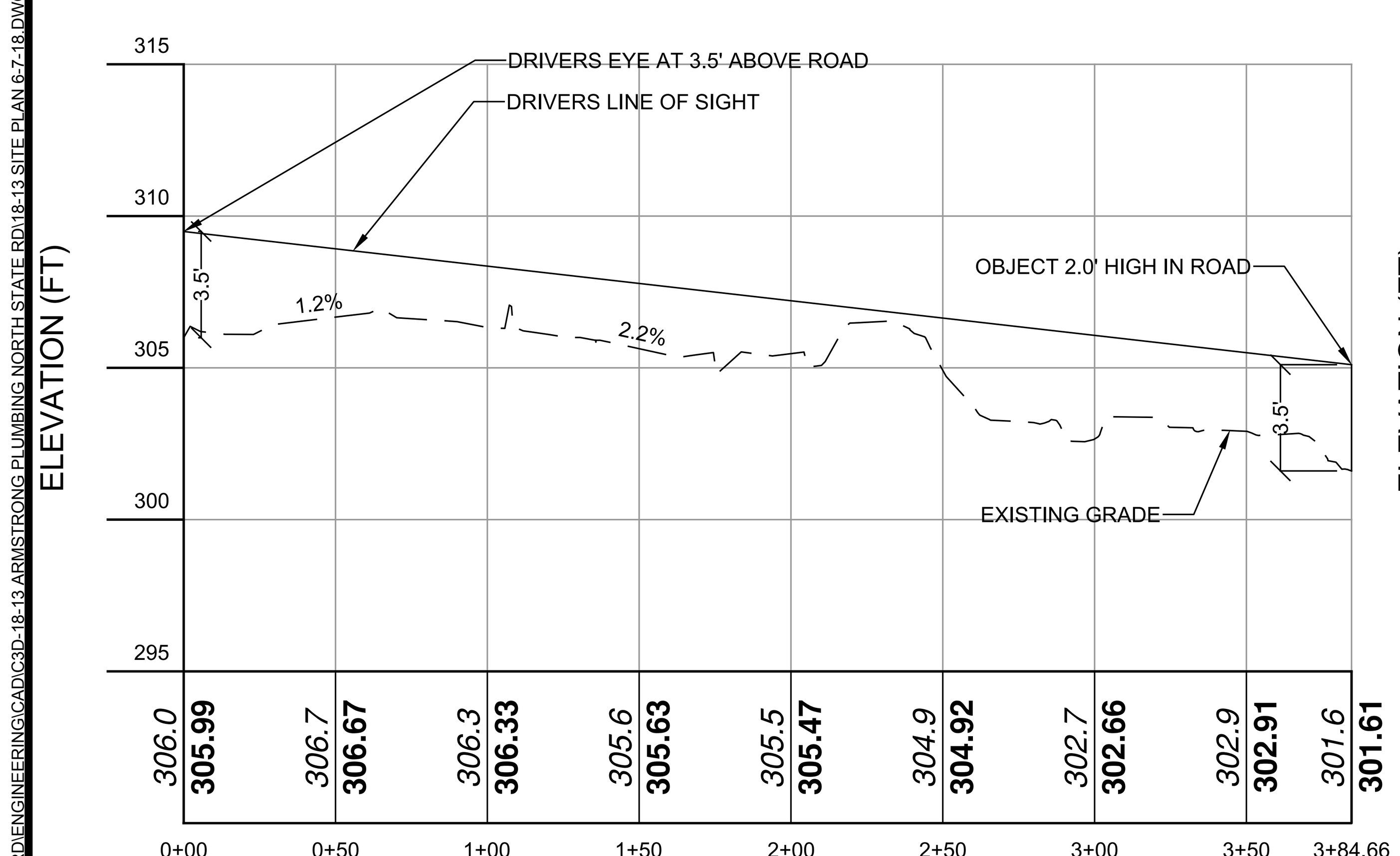
SOUTHBOUND		NORTHBOUND	
DISTANCE AVAILABLE (FEET)	DISTANCE REQUIRED (FEET)	DISTANCE AVAILABLE (FEET)	DISTANCE REQUIRED (FEET)
1,053	194	380	199



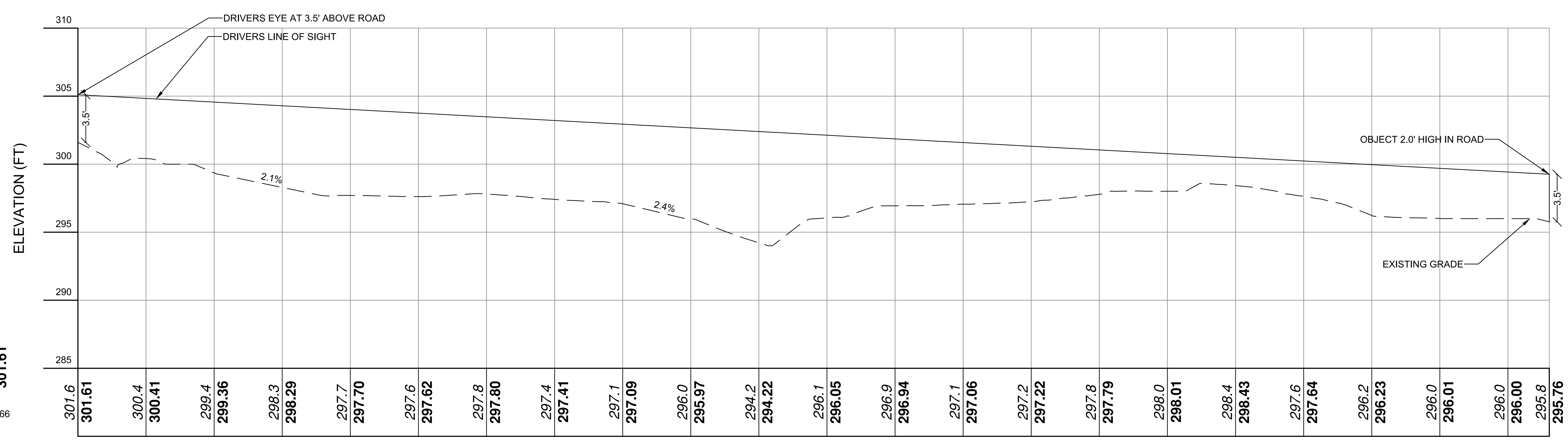
NORTHBOUND STOPPING SIGHT DISTANCE
VERT. SCALE: 1" = 5
HORIZ. SCALE: 1" = 50



SOUTHBOUND STOPPING SIGHT DISTANCE
VERT. SCALE: 1" = 5
HORIZ. SCALE: 1" = 50



NORTHBOUND INTERSECTION SIGHT DISTANCE
VERT. SCALE: 1" = 5
HORIZ. SCALE: 1" = 50



SOUTHBOUND INTERSECTION SIGHT DISTANCE
VERT. SCALE: 1" = 5
HORIZ. SCALE: 1" = 50

SCALE: 1"=50'-0"

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SIGHT DISTANCE PLAN

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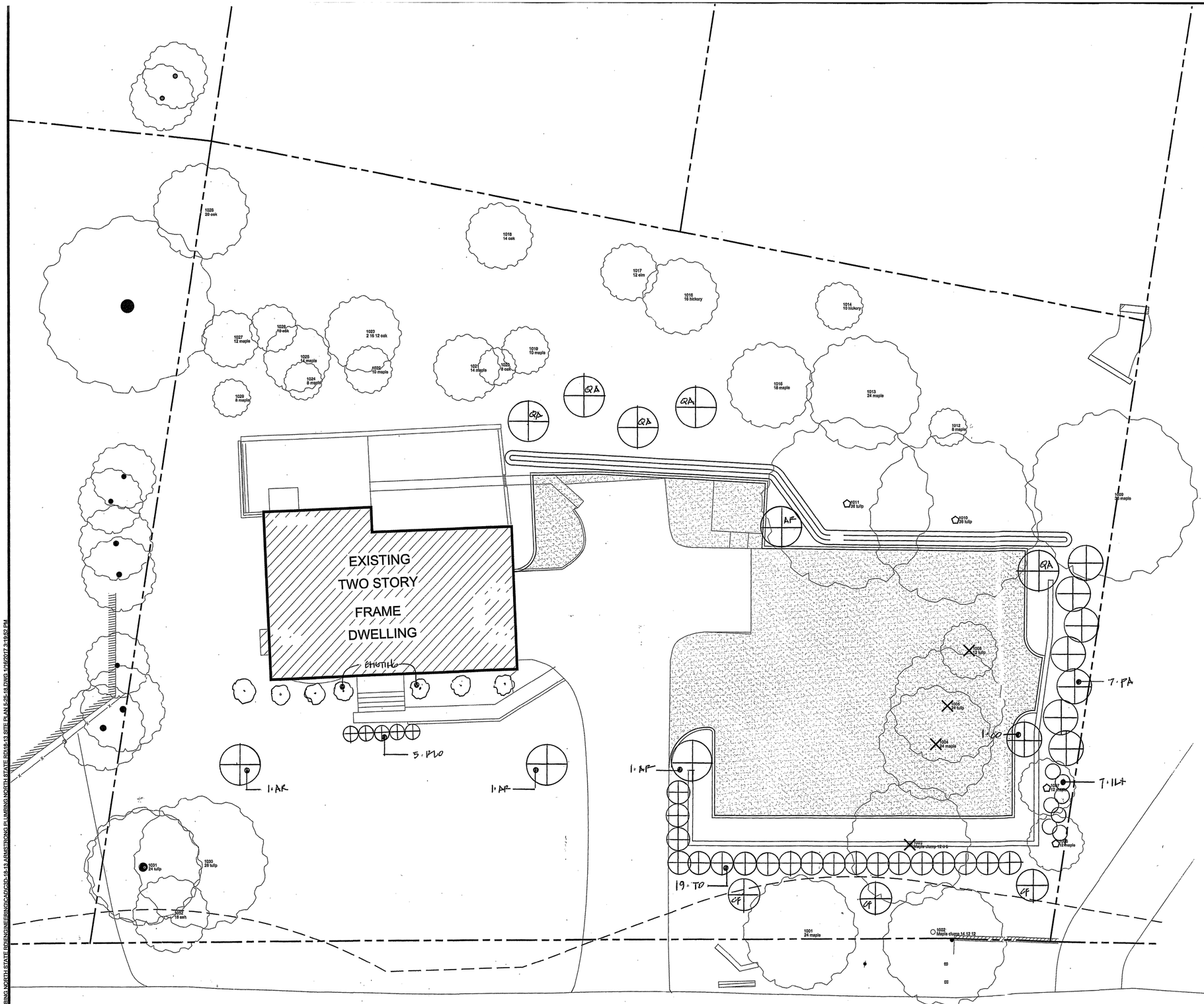
593 NORTH STATE ROAD
Town of Ossining Westchester County, NY



PLANT SCHEDULE

KEY	QUAN.	BOTANICAL / COMMON NAME	SIZE
NATIVE TREES			
AR	4	Acer rubrum "October Glory"	4"-41/2" Cal
CO	1	Celtis occidentalis – Northern Hackberry	3"-31/2" Cal.
CF	3	Cornus fl."Rutgers" - White Am. Dogwood	3"-31/2" Cal.
PA	7	Picea glauca - White Spruce	8'-9' HT.
QA	5	Quercus alba - White Oak	4"-41/2" Cal.
TO	19	Thuja occidentalis – Northern White Cedar	6'-7' HT.
NATIVE SHRUBS:			
ILX	7	Ilex glabra - Inkberry	30"-36" HT.
RLO	5	Rhus c. "Gro-Low" – Gro -Low Sumac	3 Gal.

PLANTING SPECIFICATIONS:

GENERAL: All plants, trees and shrubs, shall meet the specifications for "plant material" as per the American Horticultural Society. All plants shall be guaranteed for one full year from the time the landscaping is formally accepted by the owner.

PLANTING: All plants shall be planted in planting pits two times the diameter of the plant ball or container, and 12" deeper than the plant ball or container. The plants shall be planted at the same grade as they were in the container or nursery. Backfill for all planting pits shall be as follows: Two parts native soil, one part screened topsoil and one part peat moss or humus. "Roots Plus" shall be added to all backfill, as per label directions.

MULCHING: All planting beds shall be mulched with three (3) inches of shredded bark. All trees shall be mulched with three (3) inches of shredded bark in a four (4) foot diameter circle around each existing tree.

WATERING: The contractor shall water all planted material, until formal acceptance of the landscaping from the owner.

SEEDED LAWN AREAS: All disturbed areas shall be seeded. Seeded areas shall have a minimum of four (4) inches of topsoil as a base. Seed bed shall be fine graded, with all stones and debris over 1" in diameter removed. Seed shall be spread at the rate of 10 pounds per 1000 square feet. Entire area shall be covered with "Penn-Mulch", at the rate of one bag per 700 S.F., and installed as per manufacturers specifications. An organic starter fertilizer shall be spread prior to installation of Penn Mulch, as per label directions. Seed mix shall be "Northeast" mix by Pennington Seed Company.

NOTES:

1. ALL VEGETATION SHOWN ON THIS PLAN SHALL BE MAINTAINED IN A HEALTHY AND VIGOROUS GROWING CONDITION THROUGHOUT THE DURATION OF THE PROPOSED USE OF THE SITE. ALL VEGETATION NOT SO MAINTAINED SHALL BE REPLACED WITH NEW COMPARABLE VEGETATION AT THE BEGINNING OF THE NEXT GROWING SEASON.

TREE REPLACEMENT NOTE:

There will be 88 caliper inches of trees removed. As per Town code 50% caliper inch shall be replaced, hence; 44 caliper inches of trees are required to be replaced.

As per the PLANT SCHEDULE there will be 48 Caliper inches of trees replaced, using the minimum caliper for each tree.

SEASONAL MAINTENANCE SCHEDULE:

SPRING: All Ilex glabra and Rhus "Gro-Low", shall be cut to 18" from the ground each late winter, or any time before March 1.

Spring clean- up shall begin as soon as ground is no longer frozen. An application of an organic fertilizer, (NO PHOSPHORUS) (15-0-10) shall be applied to all plantings and lawn area as per label directions and all organic cedar mulch shall be replenished to a 3" depth in all planting beds in April.

Lawn mowing shall start as soon as grass reaches a height of 3" and continued to be mowed and maintained at a height of 21/2" until frost.

SUMMER: Lawn mowing shall continue as noted above. A second application of an Organic fertilizer, no phosphorus, (15-0-10) shall be applied as per label directions in July to all Lawn areas.

FALL: Lawn mowing shall continue as noted above. A third application of a phosphorus free, organic fertilizer (15-0-10) shall be applied as per label directions in November.

Leaves shall be removed from all planting beds before Dec.1. Leaves shall be removed weekly from all lawn areas from the start of leaf fall until Dec.1.

WINTER: Due to the "Low Maintenance" design of this plan. No winter maintenance is required.

0 5 10 20

SCALE: 1"=10'-0"

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FRANK GIULIANO - LANDSCAPE ARCHITECTS
8 PINE TREE DRIVE, KATONAH, NY 10536
PH.914.962.3690 FG1ARCH@AOL.COM

Landscape Architect:
Frank Giuliano
NYS Lic. No. 000809-1

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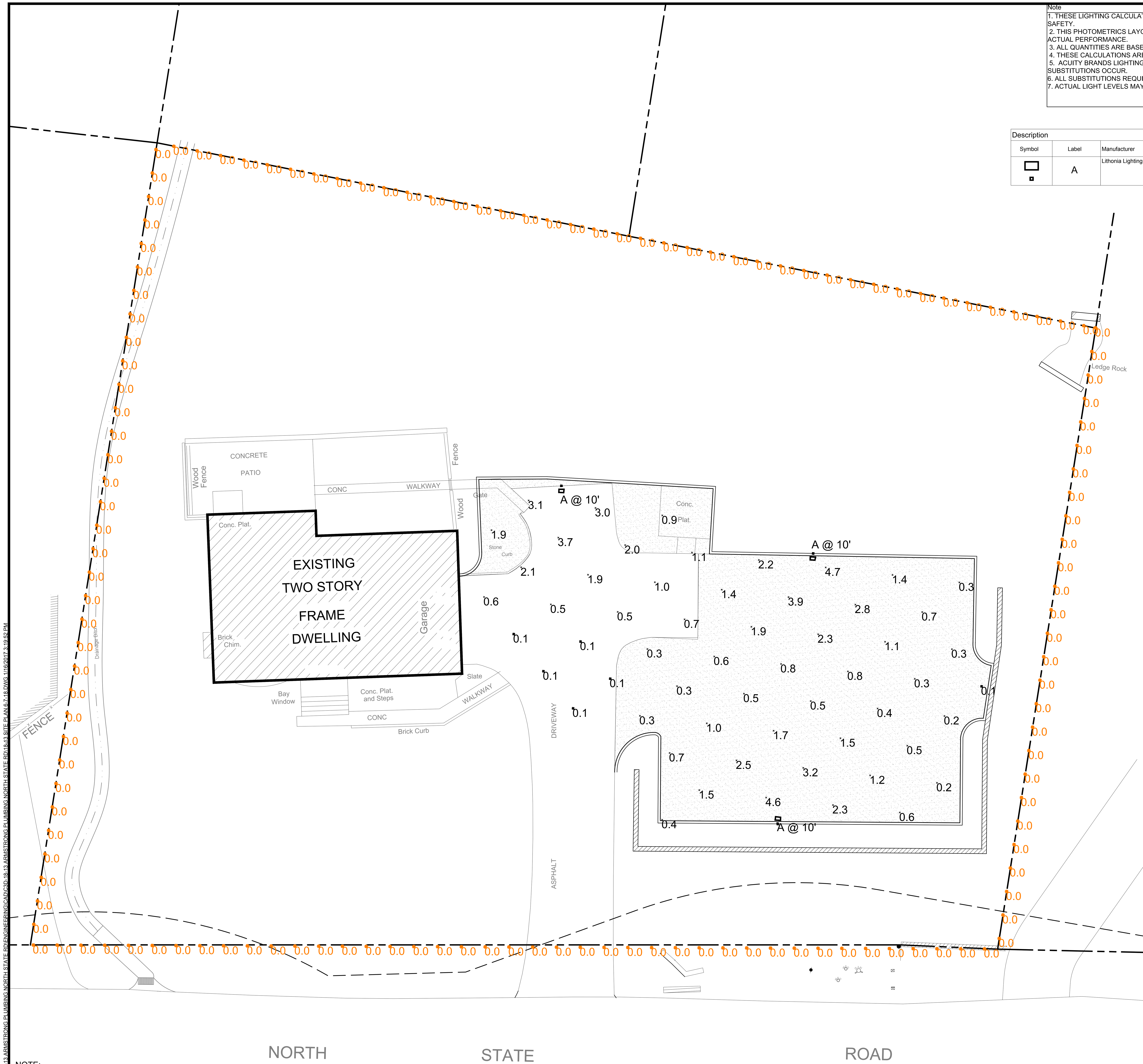
DRAWN BY: FG

DATE: 3/21/18

LANDSCAPE PLAN

SITE PLAN
PREPARED FOR:
ARMSTRONG PLUMBING LLC
593 NORTH STATE ROAD
Town of Ossining Westchester County, NY

Sheet 6 of 11



Note

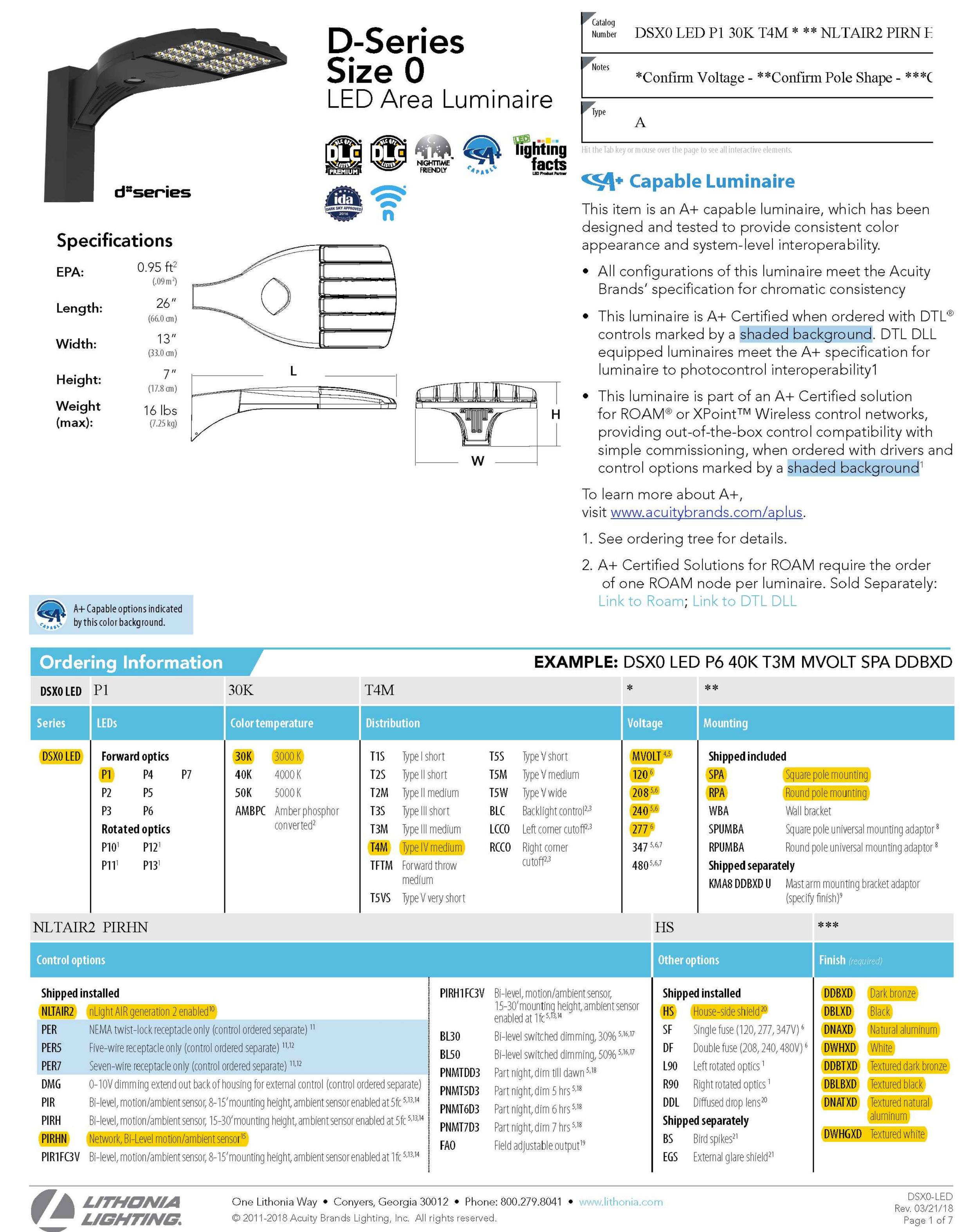
1. THESE LIGHTING CALCULATIONS ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SUITABILITY AND SAFETY.
2. THIS PHOTOMETRICS LAYOUT WAS CALCULATED USING SPECIFIC CRITERIA, ANY DEVIATION FROM STATED PARAMETERS WILL AFFECT ACTUAL PERFORMANCE.
3. ALL QUANTITIES ARE BASED ON FIXTURES SHOWN IN THE LIGHTING CALCULATIONS ONLY.
4. THESE CALCULATIONS ARE BASED ON LISTED FIXTURES ONLY. SUBSTITUTION OF THESE FIXTURES VOIDS ALL CALCULATIONS.
5. ACUITY BRANDS LIGHTING RESERVES THE RIGHT TO WITHDRAW THESE COPYRIGHTED LIGHTING PLANS FROM PUBLIC RECORD IF SUBSTITUTIONS OCCUR.
6. ALL SUBSTITUTIONS REQUIRE NEW CALCULATIONS BASED ON THE FIXTURES SUPPLIED.
7. ACTUAL LIGHT LEVELS MAY VARY DUE TO ACTUAL FIXTURE LOCATIONS AND FIELD CONDITIONS.

Description

Symbol	Label	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	A	Lithonia Lighting	DSX0 LED P1 30K T4M MVOLT HS	DSX0 LED P1 30K T4M MVOLT with houseside shield	LED	1	DSX0_LED_P1_30K_T4M_MVOLT_HS.ies	3322	0.9	38

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Property Line	+	0.0 fc	0.0 fc	0.0 fc	N/A	N/A
Proposed Parking	+	1.3 fc	4.7 fc	0.1 fc	47.0:1	13.0:1



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2. THE OUTDOOR LGIHTS SHALL BE LED AND SHALL NOT BE INCANDESCENT OR HALOGEN
3. THE OUTDOOR LIGHTS SHALL BE ON MOTION SENSORS FROM DUSK UNTIL DAWN AND SHALL NOT BE ON UNLESS MOTION ACTIVATED.
4. THE COLOR TEMPERATURE OF THE OUTDOOR LIGHTING SHALL BE LESS THAN OR EQUAL TO 3,000 DEGREES KELVIN.

SCALE: 1"=10'-0"

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LIGHTING PLAN

SITE PLAN
PREPARED FOR
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593 NORTH STATE ROAD
Town of Ossining Westchester County, NY

CONSTRUCTION SEQUENCE

Recommended Sequence of Construction

Use of erosion and sediment control structures and practices are important for maintaining site stability under runoff and during daily construction activities. The Construction Sequence should be staged with erosion and sediment controls, as follows, with all controls in place and implemented prior to respective infrastructure construction. As construction proceeds, the controls should be monitored, maintained and replaced as needed. Additional controls may be required as needed to address unforeseen situations.

Refer to The Construction Drawings for all plans and details which relate to the Construction Sequence. This Sequence should be followed in conjunction with all Plans, Notes, and the Stormwater Pollution Prevention Plan. Prior to the commencement of work, the Owner and General Contractor shall read and understand the Sequence for Construction. The Sequence shall be discussed at the time of the Pre-construction Meeting.

During construction of the project, the Contractor is responsible to coordinate all required inspections with various agencies and the Project Engineer.

Construction Sequence

General Sequence: The general sequence applies to the start of all Phases of the project. The requirements in such shall be applied as appropriate in that phase and shall be assumed in place prior to the start of the work outlined in the sequence for each Phase.

1. Prior to the beginning of any site work the major features of the construction must be field staked by a licensed surveyor. These include the building, limits of disturbance, utility lines, and Stormwater practices.
2. Prior to the start of the project, an on-site pre-construction meeting will be held. This will be attended by the Project Owner, the Operator responsible for complying with the approved construction drawings including the Erosion and Sediment Control (E&SC) Plan and Details, the Design Engineer, the Engineer responsible for E&SC monitoring during construction, Town representatives from the Engineering Department and Code Enforcement.
3. Cut and clear trees within the phase limits as necessary for the areas to be disturbed. Install tree protective measure at marked locations on E&SC Plan.
4. Install all temporary erosion control measures as shown on the Erosion and Sediment Control Plan for the project's immediate disturbance areas. This shall include, but not limited to silt fence, stabilized construction entrances, diversion swales, sediment traps, construction fence, etc. This sequence must be followed to insure proper implementation of the Erosion and Sediment Control Plan (E&SC) and Stormwater Pollution Prevention Plan (SWPPP).
5. Timbered trees and woodchips shall be temporarily stored in the stockpile and/or staging area if necessary before being removed off-site. Woodchips may be used for mulch to stabilize disturbed areas. Woodchip mulch shall be applied at a minimum rate of 500 lbs. per 1000 SF (2" thick minimum).
6. Remove existing vegetative cover, cut and clear trees, grub, remove stumps and other surface features in the limit of construction only. Any disturbance that results from tree clearing and grubbing shall be immediately stabilized with woodchips mulch, hydro-mulch, or straw and seed. Timbered trees, wood chips, and stumps shall be removed off-site unless otherwise directed. As stated woodchips may be stockpiled for use as stabilizing ground cover. Demolish and/or remove existing features, i.e.: fence, concrete slab, asphalt etc., and dispose of or stockpile as required by the Owner. All construction debris shall be properly disposed of in accordance with all Federal, State, and Local requirements.
7. Once the tree removal operation is complete strip the topsoil within the limits of disturbance and place excavated topsoil within the identified stockpile locations. Any soils so deemed by the Design or Monitoring Engineer shall be stockpiled for future use as landscaped area topsoil. Contractor shall take every precaution feasible to reduce the amount of disturbed/exposed soils during construction.
8. Begin rough grading of driveways and adjacent areas. Slops in excess of 3H:1V shall not be left exposed and must be stabilized.
9. Cut material shall first be moved to the fill locations required to complete the access drive and parking and bring the area up to final grades. Excess material to be used toward infilling in Phase II shall be stockpiled. Blasted rock that is not suitable to remain on site shall be hauled away and properly disposed of.
10. Begin installation of subsurface detention chambers within limits of disturbance.
11. When the subsurface units are installed, the upstream drainage structure shall be blocked so as to not allow sediment laden water from reaching the subsurface chambers.
12. Backfill as installation is complete and stabilize the area. If trenches are to be left open, place excavated material on the up-slope sides of the trench and protect and stabilize if it is to remain open for an extended period of seven (7) days or more.
13. Upon completion of the subsurface chambers, begin installation of proposed Downstream Defender unit. Install storm sewer piping, catch basins and manholes, working downstream to upstream. During the installation of catch basins, install inlet protection as per E&SC Plan to assure that sediment laden water will not enter the storm system. Once the final grade above the system is achieved, put into place the final topsoil cover, seed mix, and erosion control blanket, or hydro-mulch.
14. Once the infiltrator system has been installed, grade and install the base course for the driveways and parking areas.

Final Site Stabilization and Completion of New Construction:

15. Upon completion of all Phases, the site shall be inspected by the Supervising Engineer and Town Inspector to determine completion of all work and permanent stabilization of the site.
16. Any areas deemed incomplete or not properly stabilized shall be done so to the satisfaction to the Supervising Engineer and Town Inspector.
17. Once the site is deemed adequately stable the temporary erosion and sediment control measures can be removed including the sediment traps. The area where the sediment trap was located shall be filled, top soiled, seeded and mulched in accordance with the specifications within this plan. At that time if deemed appropriate drainage structures upstream from the subsurface stormwater management systems shall be cleaned of sediment and debris. They can then be unblocked to allow for flow of collected surface runoff.

Contact information during and after construction:

593 North State Road LLC.
593 North State Road
Ossining, NY 10510

GENERAL EROSION CONTROL NOTES:

1. Contractor shall be responsible for compliance with all sediment and erosion control practices. The sediment and erosion control practices are to be installed prior to any major soil disturbances and maintained until permanent protection is established. Road surface flows from the site should be dissipated with tracking pad or appropriate measures during adjacent road shoulder regrading. The contractor is responsible for the installation and maintenance of all soil erosion and sedimentation control devices throughout the course of construction.
2. Catch basin inlet protection must be installed and operating at all times until tributary areas have been stabilized. When possible, flows should be stabilized before reaching inlet protection structure. Timely maintenance of sediment control structures is the responsibility of the contractor.
3. All structures shall be maintained in good working order at all times. The sediment level in all sediment traps shall be closely monitored and sediment removed promptly when maximum levels are reached or as ordered by the engineer. All sediment control structures shall be inspected on a regular basis, and after each heavy rain to insure proper operation as designed. An inspection schedule shall be set forth prior to the start of construction.
4. The locations and the installation times of the sediment capturing standards shall be as specified in these plans, as ordered by the engineer, and in accordance with the latest edition of the "New York standards and specifications for erosion and sediment control" (NYSSESC).
5. All topsoil shall be placed in a stabilized stockpile for reuse on the site. All stockpile material required for final grading and stored on site shall be temporarily seeded and mulched within 7 days. Refer to soil stockpile details.
6. Any disturbed areas that will be left exposed more than 7 days and not subject to construction traffic, shall immediately receive temporary seeding. Mulch shall be used if the season prevents the establishment of a temporary cover. Disturbed areas shall not be limed and fertilized prior to temporary seeding.
7. All disturbed areas within 500 feet of an inhabited dwelling shall be wetted as necessary to provide dust control.
8. The contractor shall keep the roadways within the project clear of soil and debris and is responsible for any street cleaning necessary during the course of the project.
9. Sediment and erosion control structures shall be removed, and the area stabilized when the drainage area has been properly stabilized by permanent measures.
10. All sediment and erosion control measures shall be installed in accordance with current edition of nyssesc.
11. All regraded areas must be stabilized appropriately prior to any rock blasting, cutting, and/or filling of soils. Special care should be taken during construction to insure stability during maintenance and integrity of control structures.
12. Any slopes graded at 3:1 or greater shall be stabilized with erosion blankets to be staked into place in accordance with the manufactures requirements. Erosion blankets may also be required at the discretion of town officials or project engineer. When stabilized blanket is utilized for channel stabilization, place all of the volume of seed mix prior to laying net, or as recommended by the manufacturer.
13. To prevent heavy construction equipment and trucks from tracking soil off-site, construct a pervious crushed stone pad. Locate and construct pads as detailed in these plans.
14. Contractor is responsible for controlling dust by sprinkling exposed soil areas periodically with water as required. Contractor to supply all equipment and water.
15. Contractor shall be responsible for construction inspections as per NYSDEC GP-0-15-002 and Town of Ossining code.

OWNER / OPERATOR CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. Further, I hereby certify that the SWPPP meets all Federal, State, and local erosion and sediment control requirements. I am aware that false statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law."

Name (please print): _____

Title: _____

Date: _____

Address: _____

Phone: _____

E-mail: _____

Signature: _____

MAINTENANCE OF TEMPORARY EROSION AND SEDIMENT CONTROL STRUCTURES:

NYS DEC GP-0-15-002 exposure restrictions - states that any exposed earthwork shall be stabilized in accordance with the guidelines of this plan.

1. Trees and vegetation shall be protected at all times as shown on the detail drawing and as directed by the engineer.
2. Care should be taken so as not to channel concentrated runoff through the areas of construction activity on the site.
3. Fill and site disturbances should not be created which causes water to pond off site or on adjacent properties.
4. Runoff from land disturbances shall not be discharged or have the potential to discharge off site without first being intercepted by a control structure, such as a sediment trap or silt fence. Sediment shall be removed before exceeding 50% of the retention structure's capacity.
5. For finished grading, adequate grade shall be provided so that water will not pond on lawns for more than 24 hours after rainfall, except in swale flow areas which may drain for as long as 48 hours after rainfall.
6. All swales and other areas of concentrated flow shall be properly stabilized with temporary control measures to prevent erosion and sediment travel. Surface flows over cut and fill areas shall be stabilized at all times.
7. All sites shall be stabilized with erosion control materials within 7 days of final grading.
8. Temporary sediment trapping devices shall be removed from the site within 30 days of final stabilization.

MAINTENANCE SCHEDULE:

	DAILY	WEEKLY	MONTHLY	AFTER RAINFALL	NECESSARY TO MAINTAIN FUNCTION	AFTER APPROVAL OF INSPECTOR
SILT FENCE	– – –	– – – –	INSP.	INSP.	CLEAN/ REPLACE	REMOVE
WHEEL CLEANER	CLEAN	– – – –	– – – –	– – – –	REPLACE	REMOVE
INLET PROTECTION	– – –	INSP.	INSP.	CLEAN	REPLACE	REMOVE

MAINTENANCE OF PERMANENT CONTROL STRUCTURES DURING CONSTRUCTION:

The stormwater management system and outlet structure shall be inspected on a regular basis and after every rainfall event. Sediment build up shall be removed from the inlet protection regularly to insure detention capacity and proper drainage. Outlet structure shall be free of obstructions. All piping and drain inlets shall be free of obstruction. Any sediment build up shall be removed.

MAINTENANCE OF CONTROLS AFTER CONSTRUCTION:

Controls (including respective outlet structures) should be inspected periodically for the first few months after construction and on an annual basis thereafter. They should also be inspected after major storm events.

DEBRIS AND LITTER REMOVAL:

Twice a year, inspect outlet structure and drain inlets for accumulated debris. Also, remove any accumulations during each mowing operation.

STRUCTURAL REPAIR/REPLACEMENT:

Outlet structure must be inspected twice a year for evidence of structural damage and repaired immediately.

EROSION CONTROL:

Unstable areas tributary to the basin shall immediately be stabilized with vegetation or other appropriate erosion control measures.

SEDIMENT REMOVAL:

Sediment should be removed after it has reached a maximum depth of five inches above the stormwater management system floor.

TOPSOIL:

Existing topsoil will be removed and stored in piles sufficiently as to avoid mixing with other excavation. Stockpiles shall be surrounded by erosion control as outlined on these plans. The furnishing of new topsoil shall be of a better or equal to the following criteria (SS713.01 NYSDOT):

1. The pH of the material shall be 5.5 to 7.6.
2. The organic content shall not be less than 2% or more than 70%.
3. Gradation:

SIEVE SIZE	% PASSING BY WGT.
2 INCH	100
1 INCH	85 TO 100
1/4 INCH	65 TO 100
NO. 200 MESH	20 TO 80

PERMANENT VEGETATIVE COVER:

1. Site preparation:
   - 1.1. Install erosion control measures.
   - 1.2. Scarify compacted soil areas.
   - 1.3. Lime as required to ph 6.5.
   - 1.4. Fertilize with 10-6-4 4 lbs/1,000 S.F.
   - 1.5. Incorporate amendments into soil with disc harrow.
2. Seed mixtures for use on swales and cut and fill areas.

MIXTURE		LBS./ACRE
ALT. A	KENTUCKY BLUE GRASS	20
	CREEPING RED FESCUE	28
	RYE GRASS OR REDTOP	5
ALT. B	CREEPING RED FESCUE	20
	REDTOP	2
	TALL FESCUE/SMOOTH BLOOMGRASS	20

3. SEEDING
   - 3.1. Prepare seed bed by raking to remove stones, twigs, roots and other foreign material.
   - 3.2. Apply soil amendments and integrate into soil.
   - 3.3. Apply seed uniformly by cyclone seeder culti-packer or hydro-seeder at rate indicated.
   - 3.4. Stabilize seeded areas in drainage swales.
   - 3.5. Irrigate to fully saturate soil layer, but not to dislodge planting soil.
   - 3.6. Seed between April 1st and May 15th or August 15th and October 15th.
   - 3.7. Seeding may occur May 15th and August 15th if adequate irrigation is provided.

TEMPORARY VEGETATIVE COVER:

SITE PREPARATION:

1. Install erosion control measures.
2. Scarify areas of compacted soil.
3. Fertilize with 10-10-10 at 400/acre.
4. Lime as required to ph 6.5.

SEED SPECIES:

MIXTURE	LBS./ACRE
Rapidly germinating annual ryegrass (or approved equal)	20
Perennial ryegrass	20
Cereal oats	36

SEEDING:
Same as permanent vegetative cover

CONTRACTOR CERTIFICATION STATEMENT

Certification Statement - All contractors and subcontractors as identified in a SWPPP, by the Owner or Operator, in accordance with Part III.A.5 of the SPDES General Permit for Stormwater Runoff from Construction Activity, GP-0-15-002, dated January 12, 2015, Page 10 of 40, shall sign a copy of the following Certification Statement before undertaking any construction activity at the Site identified in the SWPPP:

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the Qualified Inspector during a site inspection. I also understand that the Owner or Operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System ("SPDES") General Permit for Stormwater Discharge from Construction Activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings."

Individual Contractor: _____

Name and Title (please print): _____

Signature of Contractor: _____

Company / Contracting Firm: _____

Name of Company: _____

Address of Company: _____

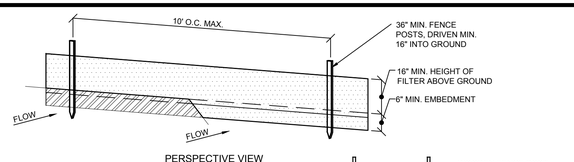
Telephone Number / Cell Number: _____

Site Information: _____

Address of Site: _____

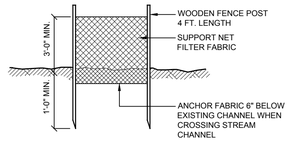
_____

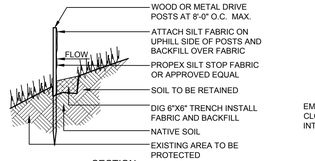
Today's Date: _____



PERSPECTIVE VIEW

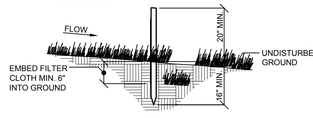
PLAN VIEW: JOINING SECTIONS





SECTION

ELEVATION



SECTION

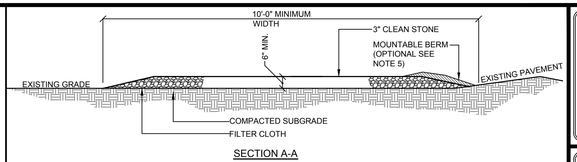
SYMBOL

NOTES:

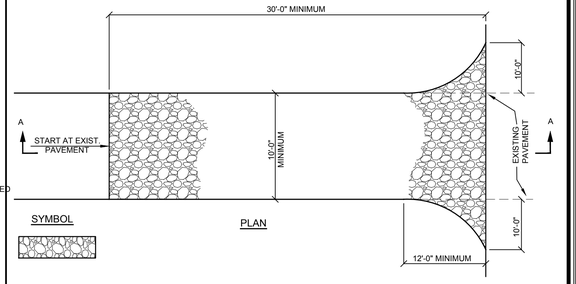
1. Filter cloth to be fastened securely to post: steel either t or u type or 2" hardwood posts at top and mid section.
2. When two sections of filter cloth adjoin each other they shall be overlapped by 6 inches and folded. Filter cloth shall be mirafi 100x, stabilinka t140n or approved equal
3. Maintenance shall be performed as needed and material removed when "bulges" develop in the silt fence.
4. Excavate 4 inch trench along the lower perimeter of the site.
5. Unroll a section at a time and position the post against the back (downstream) wall of the trench (net side away from direction of flow).
6. Drive the post into the ground until the netting is approximately 2 inches from the trench bottom.
7. Lay the toe-in flap of fabric onto the undisturbed bottom of the trench, backfill the trench and tamp the soil. Steeper slopes require an intercept trench.
8. Join sections as shown above.

E-1 SILT FENCE DETAIL

NOT TO SCALE



SECTION A-A



SYMBOL

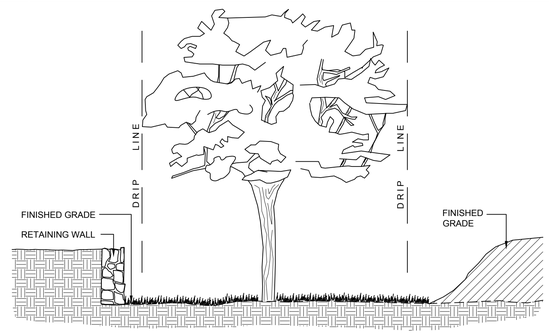
PLAN

INSTALLATION NOTES:

1. Stone size - use 3" min. Stone, or reclaimed or recycled concrete equivalent.
2. Length - as required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply.
3. Thickness - not less than six (6) inches.
4. Width - 10 foot minimum, but not less than the full width at points where ingress or egress occur. 24 ft if single entrance to site.
5. Surface water - all surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
6. Maintenance - the entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public right of way this may require periodic top dressing with additional stone as conditions demand and repair and/or cleanouts of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public right of way must be removed immediately.
7. Washing - wheels shall be cleaned to remove sediment prior to entrance onto public right of way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
8. Periodic inspection and needed maintenance shall be provided after each rain

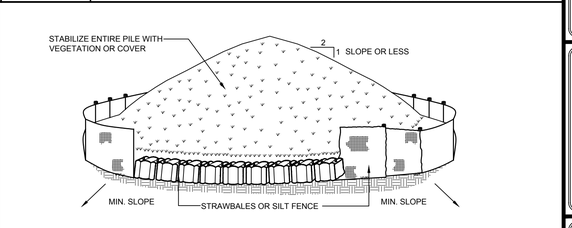
E-2 STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE



E-3 TREE PROTECTION PLAN FOR GRADE CHANGE DETAIL

NOT TO SCALE



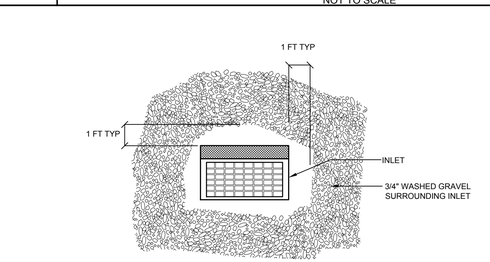
SYMBOL

NOTES:

1. Area chosen for stockpiling operations shall be dry and stable.
2. Maximum slope of stockpile shall be 1:2.
3. Upon completion of soil stockpiling, each pile shall be surrounded with either silt fencing or strawbales, then stabilized with vegetation or covered.
4. See detail for installation of silt fence.

E-4 SOIL STOCKPILE DETAIL

NOT TO SCALE

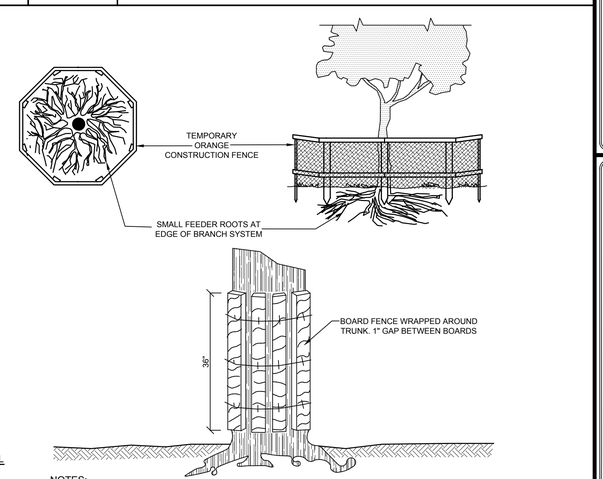


SYMBOL

SECTION

E-5 INLET PROTECTION DETAIL

NOT TO SCALE



SYMBOL

NOTES:

1. Contractor shall use the tree trunk armor detail for isolated trees that require protection.
2. As an alternate, the contractor may protect trees in the vicinity of regular heavy traffic / construction areas or clusters of trees to be protected as per the construction fence detail.

E-6 TREE TRUNK ARMOR / TREE PROTECTION DETAIL

NOT TO SCALE

Site Design Consultants
Civil Engineers • Land Planners
251-F Underhill Avenue, Yorktown Heights, NY 10598
(914) 962-4488 - Fax: (914) 962-7386
www.sitedesignconsultants.com

PROJECT # 18-13

Engineer:
Joseph C. Riina, P.E.
NYS Lic. No 64431

Revisions:

No.	Date	Comments:
1	5/25/18	Town Comments
2	5/25/18	Town Comments
3	6/11/18	Town Comments
4	7/6/18	Town Comments

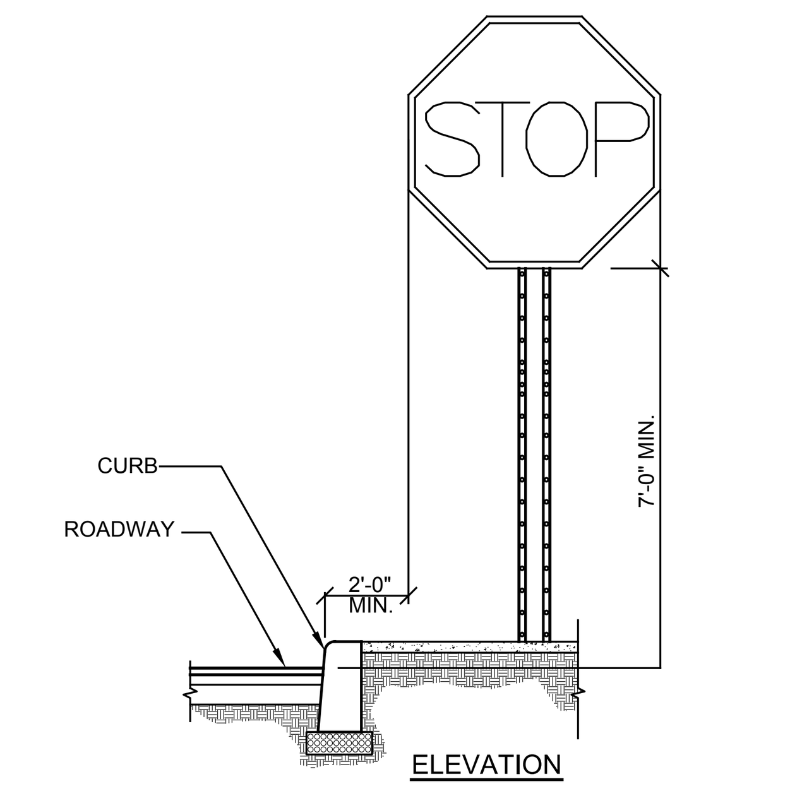
SCALE: NTS
DRAWN BY: TK
DATE: 3/21/18

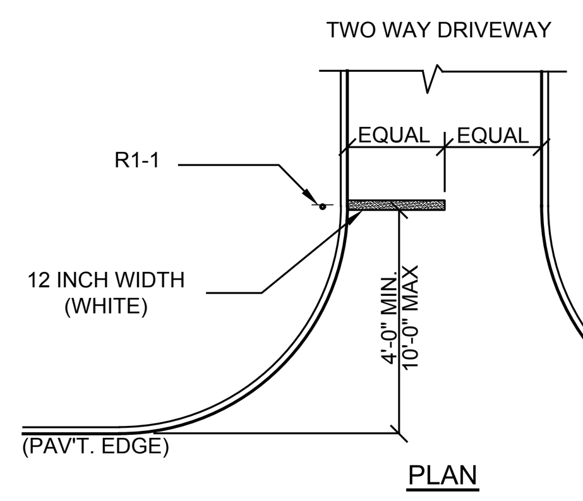
E&SC DETAILS

SITE PLAN PREPARED FOR
ARMSTRONG PLUMBING LLC
593 NORTH STATE ROAD
Town of Ossining Westchester County, NY

Sheet 8 of 11

F:\2018\18-13 ARMSTRONG PLUMBING NORTH STATE RD\ENGINEERING\CAD\C3D-18-13 ARMSTRONG PLUMBING NORTH STATE RD\18-13 SITE PLAN 6-7-18.DWG





SYMBOL	DESCRIPTION
GR. MT. OH MT. BR MT. B/B	GROUND MOUNTED OVERHEAD MOUNTED BRIDGE MOUNTED BACK TO BACK
┼ OR ◦	APPROXIMATE LOCATION OF SIGN

TYPICAL INSTALLATION GUIDELINES

SIGN	M.U.T.C.D. NUMBER	SIZE OF SIGN	TYPE OF MOUNT
STOP	R1-1	18" X 18"	GR. MT.
RESERVED PARKING	R7-8	12" X 18"	GR. MT.

SIGN	M.U.T.C.D. NUMBER	SIZE OF SIGN	TYPE OF MOUNT
NO PARKING ANY TIME	P1-2 (SEE NOTE 4)	12" X 18"	GR. MT.
NO PARKING LOADING ZONE	R7-6 (SEE NOTE 4)	12" X 18"	GR. MT.

GENERAL NOTES:

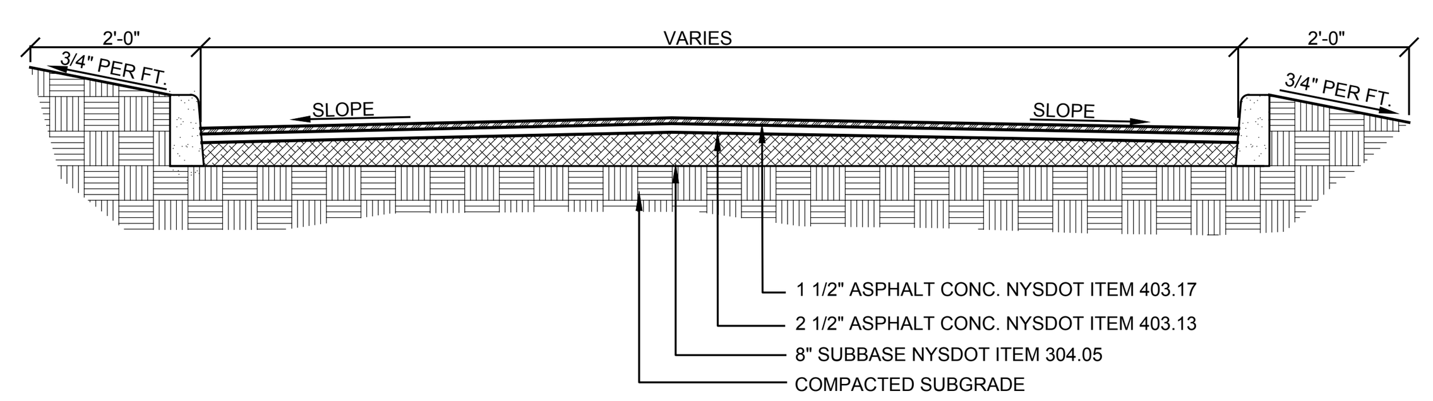
1. All signage shall be in accordance with the latest edition of the national MUTCD and the N.Y.S Supplement (MUTCD), September 2007, including the following:
   A. Letter size and series
   B. Legend and background color
   C. Reflectivity
   D. Size of sign
2. The type of characters as specified in the standard specifications shall be as follows:

MUTCD CODE LETTER	TYPE OF CHARACTER
G.I.	TYPE IV
R.P.W.M.	TYPE IV OR V.

3. Sign locations as shown on plans are approximate. The Contractor shall relocate existing signs and install new signs in accordance with the MUTCD, latest edition. The Contractor shall contact the Town Engineer to discuss/resolve problem areas.
4. Except where otherwise specified, parking signs shall be placed facing approaching traffic at an angle of between 30 and 45 degrees with the line of traffic flow. Parking signs shall be placed at each end of a regulation (single-headed arrows) and, within the regulation (double-headed arrows), at intervals not to exceed 200 ft
5. Where new signs are installed the Contractor shall affix a label to the back of the sign panel. This label will show the date of installation and identification numbers.
6. Placement of W3-17 sign is prescribed in the General Municipal Law.

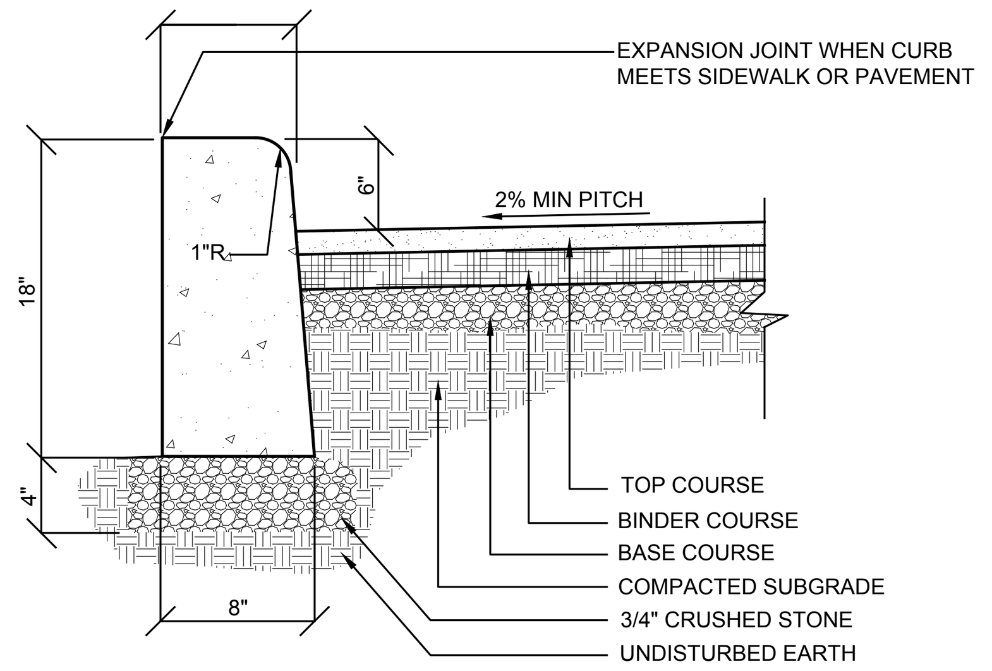
R-1 TRAFFIC SIGN DETAIL

NOT TO SCALE



R-2 TYPICAL DRIVEWAY AND PARKING LOT SECTION

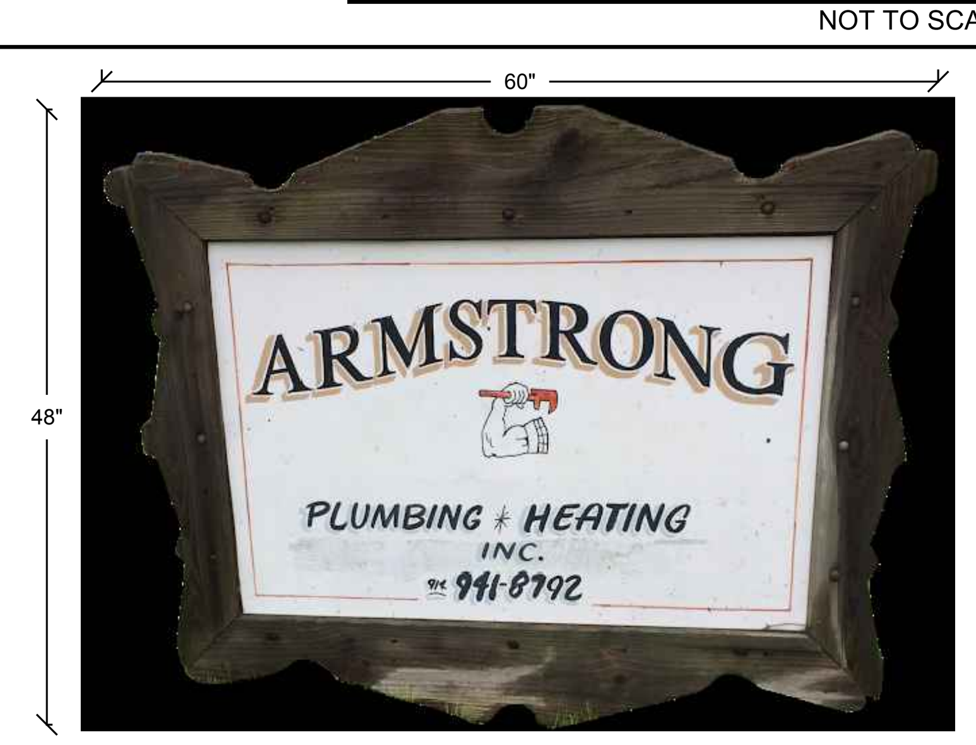
NOT TO SCALE



NOTE:
1. Provide 1/2" expansion joint in concrete curb every ten feet.
2. Construct curb with class A concrete (3000 psi).
3. For use within the site.

R-3 CONCRETE CURB DETAIL

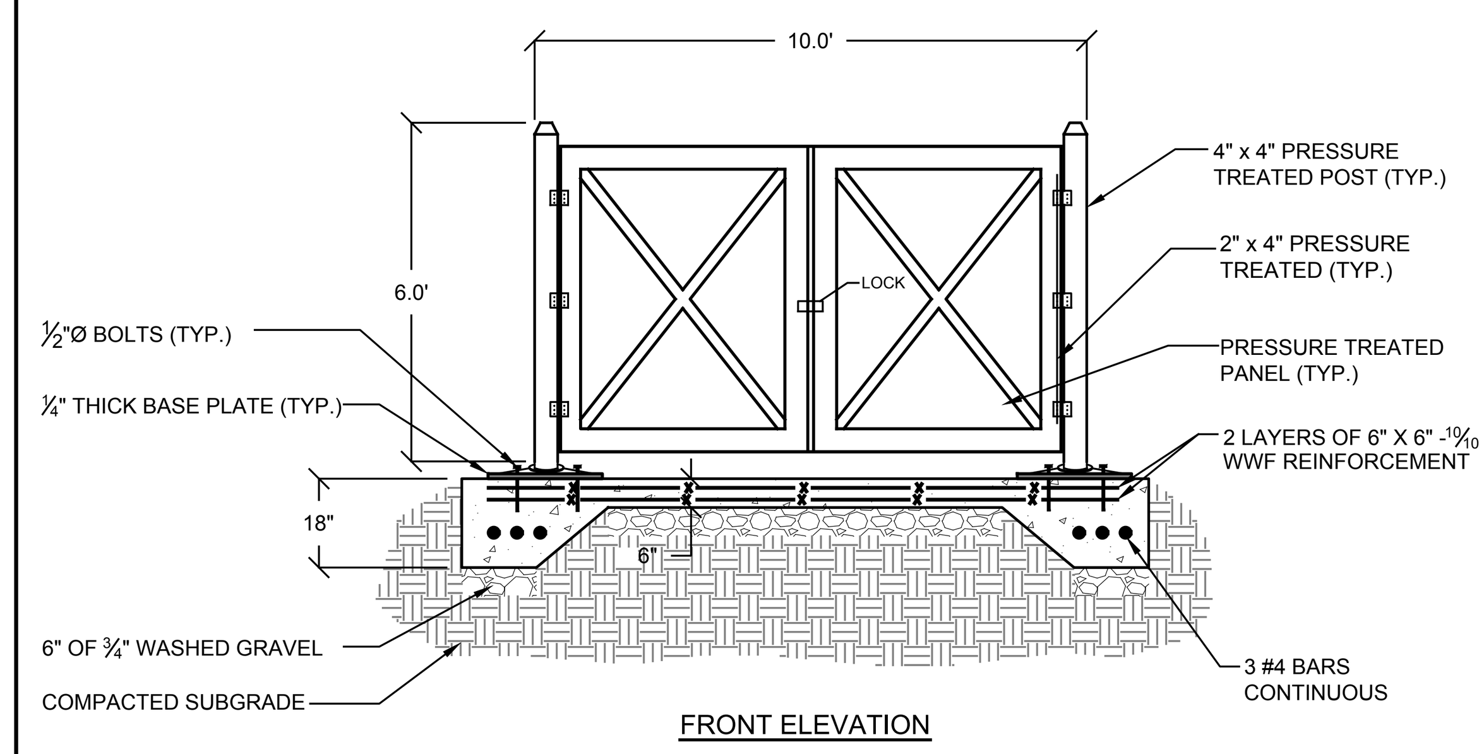
NOT TO SCALE

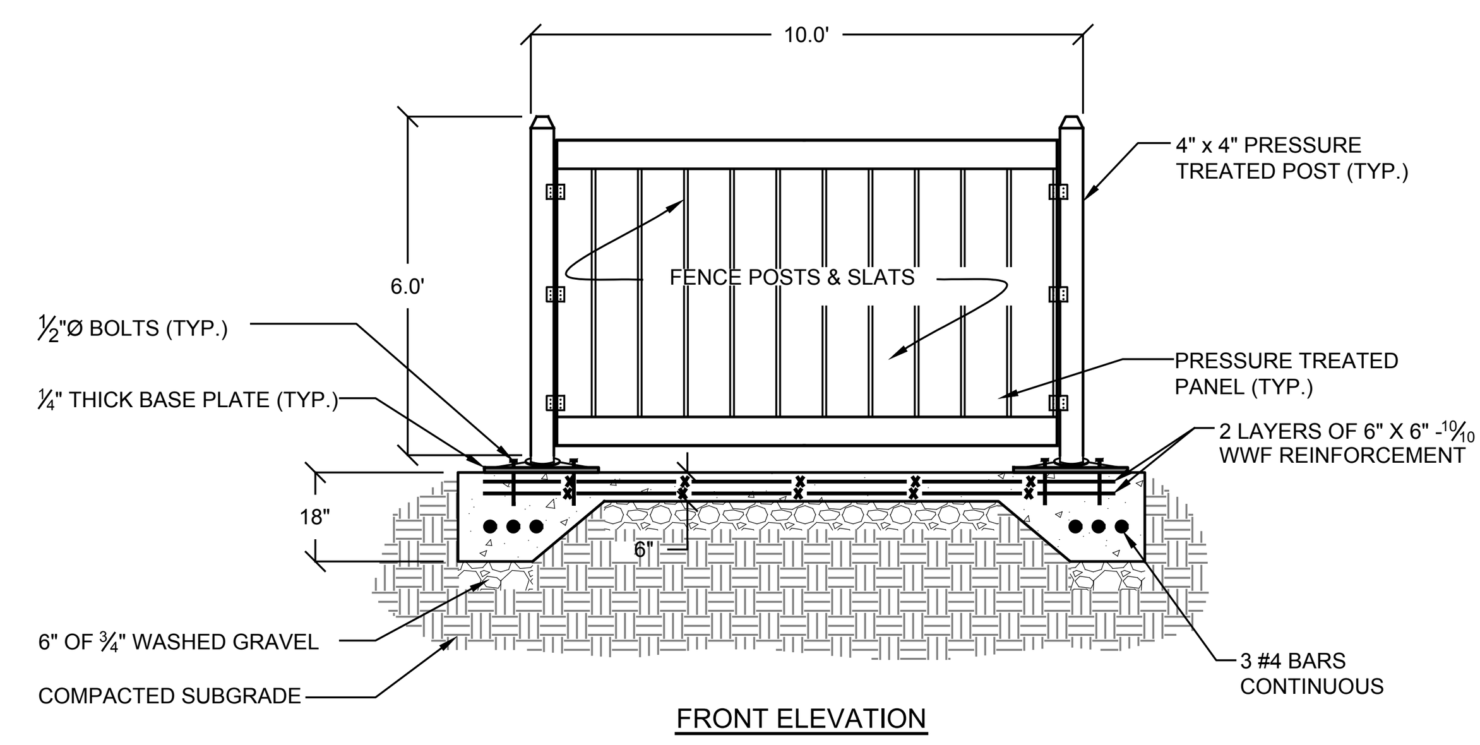


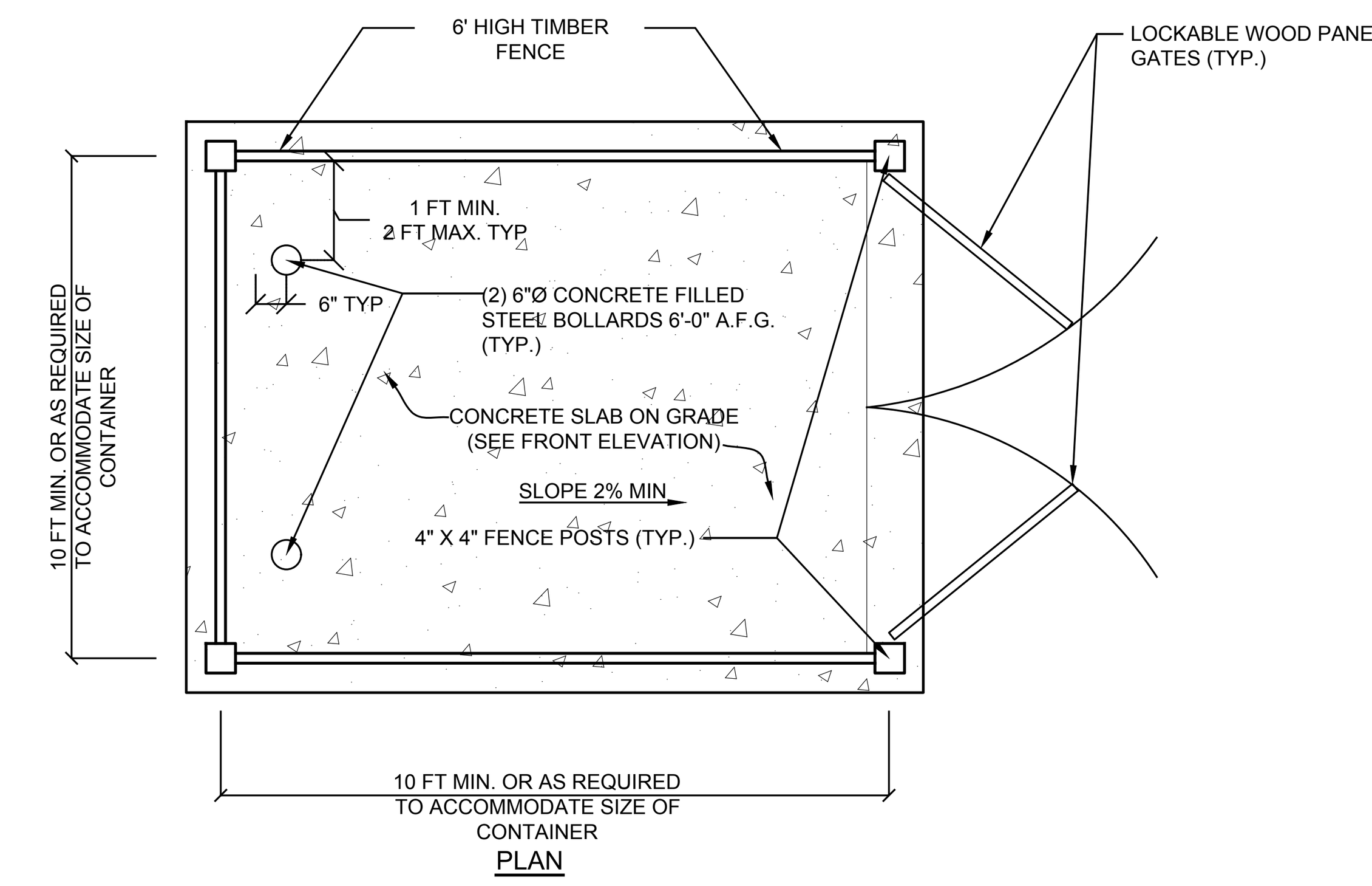
NOTE:
1. NO ILLUMINATION SHALL BE PROVIDED FOR THE SIGN.
2. THE EXISTING SIGN SHALL BE REDUCED FROM 49 ½" X 61 ½" TO THE DIMENSIONS SHOWN ABOVE

R-4 PROPOSED SIGN DETAIL

NOT TO SCALE

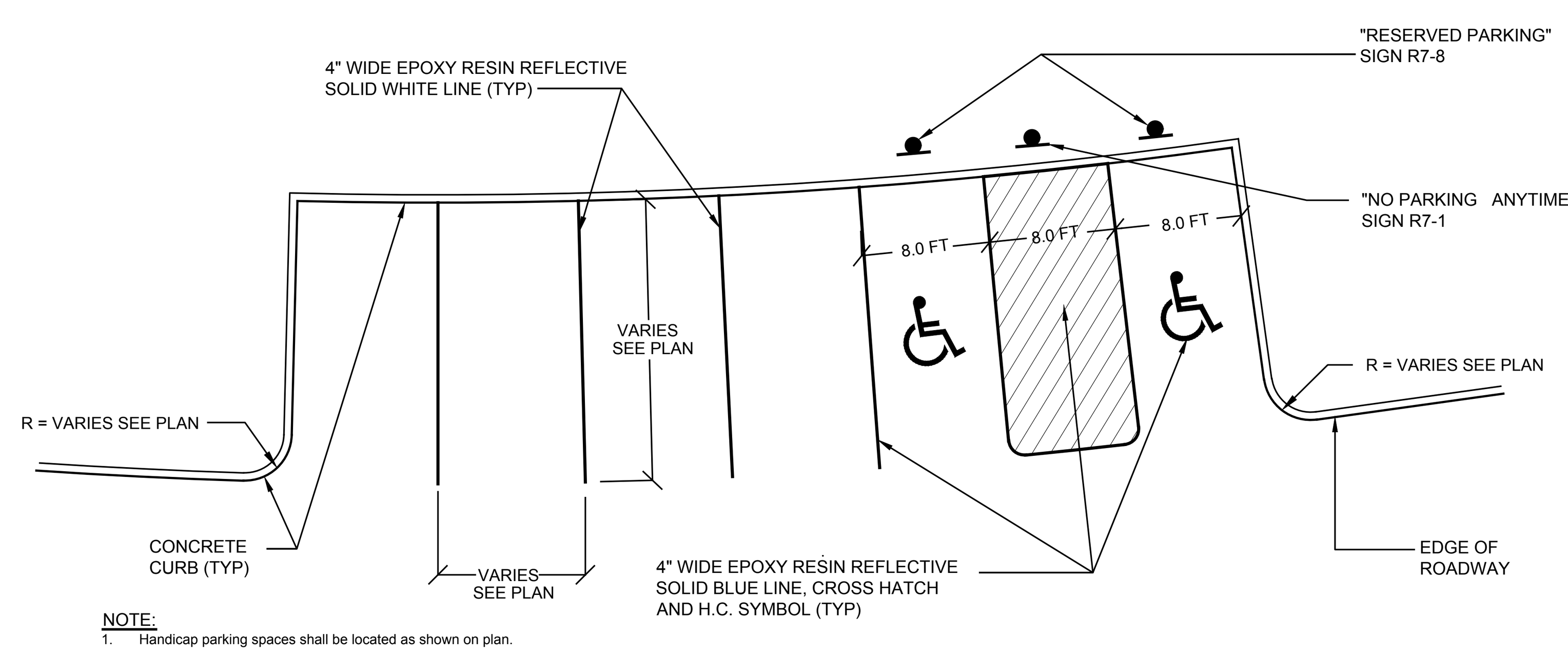






S-1 TRASH ENCLOSURE DETAIL

NOT TO SCALE



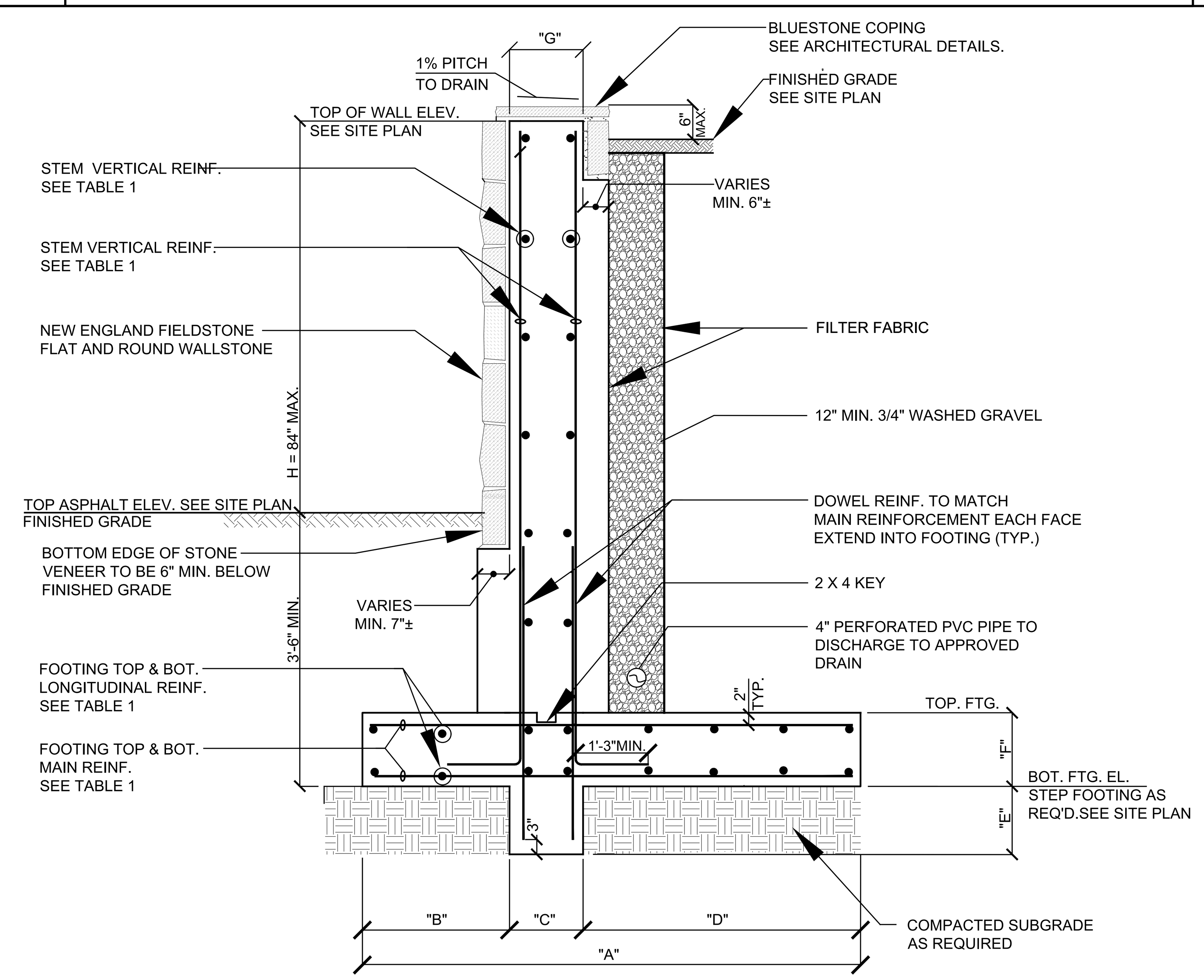
NOTE:
1. Handicap parking spaces shall be located as shown on plan.

R-5 TYPICAL PARKING STALL LAYOUT

NOT TO SCALE

TABLE I

WALL HEIGHT "H"	WALL DIMENSIONS									REINFORCING			
										STEM		FOOTING	
	A	B	C	D	E	F	G	I	J	VERTICAL EACH FACE	HORIZONTAL EACH FACE	MAIN TOP & BOTTOM	LONGITUDINAL TOP & BOTTOM
1'-0"	3'-6"	1'-3"	0"	0"	2'-3"	0"	1'-0"	1'-0"	1'-0"	#6 @ 16" O.C.	#5 @ 18" O.C.	#6 @ 18" O.C.	4 - #5
2'-0"	3'-6"	1'-3"	0"	0"	2'-3"	0"	1'-0"	1'-0"	1'-0"	#6 @ 16" O.C.	#5 @ 18" O.C.	#6 @ 18" O.C.	4 - #5
3'-0"	4'-0"	1'-6"	0"	0"	2'-6"	0"	1'-0"	1'-0"	1'-0"	#6 @ 16" O.C.	#5 @ 18" O.C.	#6 @ 16" O.C.	4 - #5
4'-0"	4'-6"	1'-9"	0"	1'-0"	1'-9"	6"	1'-3"	1'-0"	1'-0"	#6 @ 16" O.C.	#5 @ 18" O.C.	#6 @ 16" O.C.	5 - #5
5'-0"	5'-0"	1'-6"	10"	1'-0"	1'-8"	6"	1'-3"	1'-0"	1'-3"	#6 @ 15" O.C.	#5 @15" O.C.	#6 @ 16" O.C.	6 - #5
6'-0"	6'-0"	2'-0"	8"	1'-4"	2'-0"	8"	1'-3"	1'-0"	1'-4"	#6 @ 15" O.C.	#5 @ 15" O.C.	#6 @ 16" O.C.	7 - #5



GENERAL NOTES:

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN CODE OF PRACTICE AND THE NEW YORK STATE BUILDING CONSTRUCTION CODE.
2. ALL CHANGES MADE TO THESE PLANS SHALL BE APPROVED BY THE ENGINEER AND ANY SUCH CHANGES SHALL BE FILED AS AMENDMENTS TO THE ORIGINAL BUILDING PERMIT.
3. ALL WRITEN DIMENSIONS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER ANY SCALED DIMENSIONS.
4. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING HIS BEST SKILL AND ATTENTION. HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES.
5. THE CONTRACTOR SHALL BE RESPONSIBLE TO THE OWNER FOR THE ACTS AND OMISSIONS OF HIS EMPLOYEES, SUBCONTRACTORS, AND THEIR AGENTS AND EMPLOYEES, AND ANY OTHER PERSONS PERFORMING ANY WORK.
6. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT HIS WORK AND WILL BE HELD RESPONSIBLE FOR CONSEQUENTIAL DAMAGE DUE TO HIS ACTIVITIES. THE OWNER AND THE ENGINEER SHALL BE HELD HARMLESS.
7. THE CONTRACTOR SHALL SECURE & PAY FOR A BUILDERS RISK POLICY TO COVER THE PERIOD OF CONSTRUCTION. THE ENGINEER & OWNER SHALL BE NAMED AS ADDITIONAL INSURED. ALL CONTRACTORS EMPLOYED AT THE SITE SHALL BE COVERED BY WORKMAN'S COMPENSATION.
8. ENGINEER'S WHOSE SEAL APPEARS HEREON HAS NOT BEEN RETAINED FOR SUPERVISION OF CONSTRUCTION, SUBSEQUENTLY, HE HIS NOT RESPONSIBLE FOR CONSTRUCTION AND THEREFORE ASSUMES NO RESPONSIBILITY FOR CONSTRUCTION PRACTICES, PROCEDURES, AND RESULTS THEREFROM.

CONSTRUCTION NOTES:

1. ALL CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE, ACI 318, LATEST EDITION
2. EXCAVATION IN GENERAL SHALL CONFORM TO THE LINES AND GRADES SHOWN ON THE CONTRACT DRAWINGS
3. FILL MATERIAL SHALL BE PLACED IN LOOSE 8 INCH LIFTS. PRIOR TO COMPACTION, EACH LIFT SHALL BE MOISTENED OR AERATED AS NECESSARY TO PROVIDE OPTIMUM MOISTURE CONTENT. EACH LIFT SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY A,S.T.M. D1557 METHOD C. THE CONTRACTOR WILL BE REQUIRED TO HIRE AN INDEPENDENT CERTIFIED TESTING LAB TO PERFORM FIELD DENSITY TESTS. FIELD TESTING SHALL BE PERFORMED IN ACCORDANCE WITH A.S.T.M. D1556 OR D2922. A MINIMUM OF 6 IN-PLACE FIELD DENSITY TESTS SHALL BE PERFORMED ON ALTERNATE LIFTS. FILLING OPERATIONS MAY NOT PROCEED UNTIL iN-PLACE DENSITY TESTS HAVE BEEN PERFORMED AND THE FILL PROPERLY COMPACTED.
4. FILL SHALL CONSIST OF SOUND DURABLE PARTICLES TO THE GRADATION SHOWN IN THE TABLE BELOW. THE MATERIAL SHALL BE GRANULAR AND FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL. IN GENERAL THE SOIL SHALL BE NON-PLASTIC WITH A PLASTICITY INDEX LESS THAN 5 AND SHALL CONFORM TO THE UNIFIED SOIL CLASSIFICATION SYSTEM FOR AN "SW" SOIL OR THE REQUIREMENTS OF THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION SECTION 203-2 ITEM NO. 203.07 SELECT GRANULAR FILL, HOWEVER THE MAXIMUM SIZE SHALL BE 3 INCHES.

SIEVE SIZE	PERCENT PASSING BY WEIGHT
3 "	100
No. 40	0 - 70
No. 200	0 - 15

IF ON-SITE EXCAVATED MATERIAL IS USED IT MUST CONFORM TO THE SAME MINIMUM REQUIREMENTS SPECIFIED. IN ALL INSTANCES, THE THE CONTRACTOR MUST SUBMIT CERTIFIED LABORATORY TEST REPORTS ON ALL MATERIALS USED FOR BACKFILL. THE FOLLOWING REPORTS SHALL BE PROVIDED AND BE IN ACCORDANCE WITH THE FOLLOWING ASTM SPECIFICATIONS:

- PARTICLE SIZE ANALYSIS - A.S.T.M. D422
- SOIL CLASSIFICATION - A.S.T.M. D2487
- LIQUID & PLASTIC LIMITS - A.S.T.M. D424
- MODIFIED PROCTOR MAXIMUM DENSITY - A.S.T.M. D1557 METHOD C

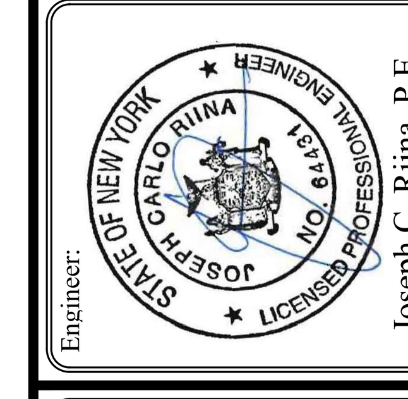
5. EXCAVATION SHALL BE PERFORMED IN ACCORDANCE WITH THE "CONSTRUCTION SAFETY & HEALTH ACT O.S.H.A. PART 192
6. GEOTEXTILE FABRIC SHALL BE TREVIRA SPUNBOUND NON-WOVEN #1125 OR APPROVED EQUAL. THE GEOTEXTILE SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS AND GUIDELINES.
7. THE CONTRACTOR SHALL NOT USE LARGE OR HEAVY CONSTRUCTION EQUIPMENT WITHIN 5 FEET OF THE RETAINING WALL. SUITABLE HAND/SMALL COMPACTION EQUIPMENT SHALL BE USED WITHIN 5 FEET OF THE WALL.
8. FOOTINGS CONSTRUCTED ON VIRGIN IN-SITU SOIL SHALL HAVE A MINIMUM ALLOWABLE BEARING CAPACITY OF 3000 PSF.
9. TO INSURE A PROPER BEARING SURFACE FOR THE FOOTINGS CONSTRUCTED ON NATURAL IN-SITU SOIL, THE CONTRACTOR SHALL STRIP ALL TOP SOIL. PRIOR TO CONSTRUCTION OF THE FOOTINGS, THE AREA SHALL BE COMPACTED USING SUITABLE COMPACTION EQUIPMENT. A MINIMUM A 3 PASSES SHALL BE MADE.
10. DURING BACKFILL OPERATIONS, THE CONTRACTOR SHALL BE CAREFUL NOT TO CREATE UNBALANCED LOADING CONDITIONS ON THE WALL. BACKFILL SHOULD BE PLACED AND COMPACTED ON BOTH SIDES OF THE WALL SIMULTANEOUSLY.
11. ALL FOOTINGS SHALL BE LOCATED A MINIMUM OF 3'-6" BELOW ANY ADJACENT FINISHED GRADE.
12. ALL CONCRETE SUPPLIED TO THE PROJECT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH "f'c = 4000 PSI" AND SHALL CONTAIN A MINIMUM 5% AIR ENTRAINING ADMIXTURE IN ACCORDANCE WITH A.S.T.M. C 260.
13. STEEL REINFORCEMENT SHALL BE OF THE SIZES SPECIFIED AND SHALL HAVE A MIN. YIELD STRENGTH fy = 60, OOO PSI
14. THE CONTRACTOR SHALL PROVIDE EXPANSION JOINTS @ 90'-0" O.C. (MAX.) IN THE WALL.
15. FOOTINGS SHALL NOT BE CONSTRUCTED ON WET OR FROZEN GROUND. UNSUITABLE MATERIAL SHALL BE EXCAVATED AND REPLACED WITH COMPACTED GRANULAR FILL OR 3/4" CRUSHED STONE.

ST-1 RETAINING WALL DETAIL

NOT TO SCALE

Site Design Consultants
Civil Engineers • Land Planners
251-F Underhill Avenue, Yorktown Heights, NY 10598
(914) 962-4488 - Fax: (914) 962-7386
www.sitedesignconsultants.com

Engineer:



Joseph C. Riina, P.E.
NYS Lic. No. 64431

Revisions:

No.	Date	Comments:
1	5/2/18	Plan Revisions
2	5/25/18	Town Comments
3	6/11/18	Town Comments
4	7/6/18	Town Comments

SCALE: N.T.S

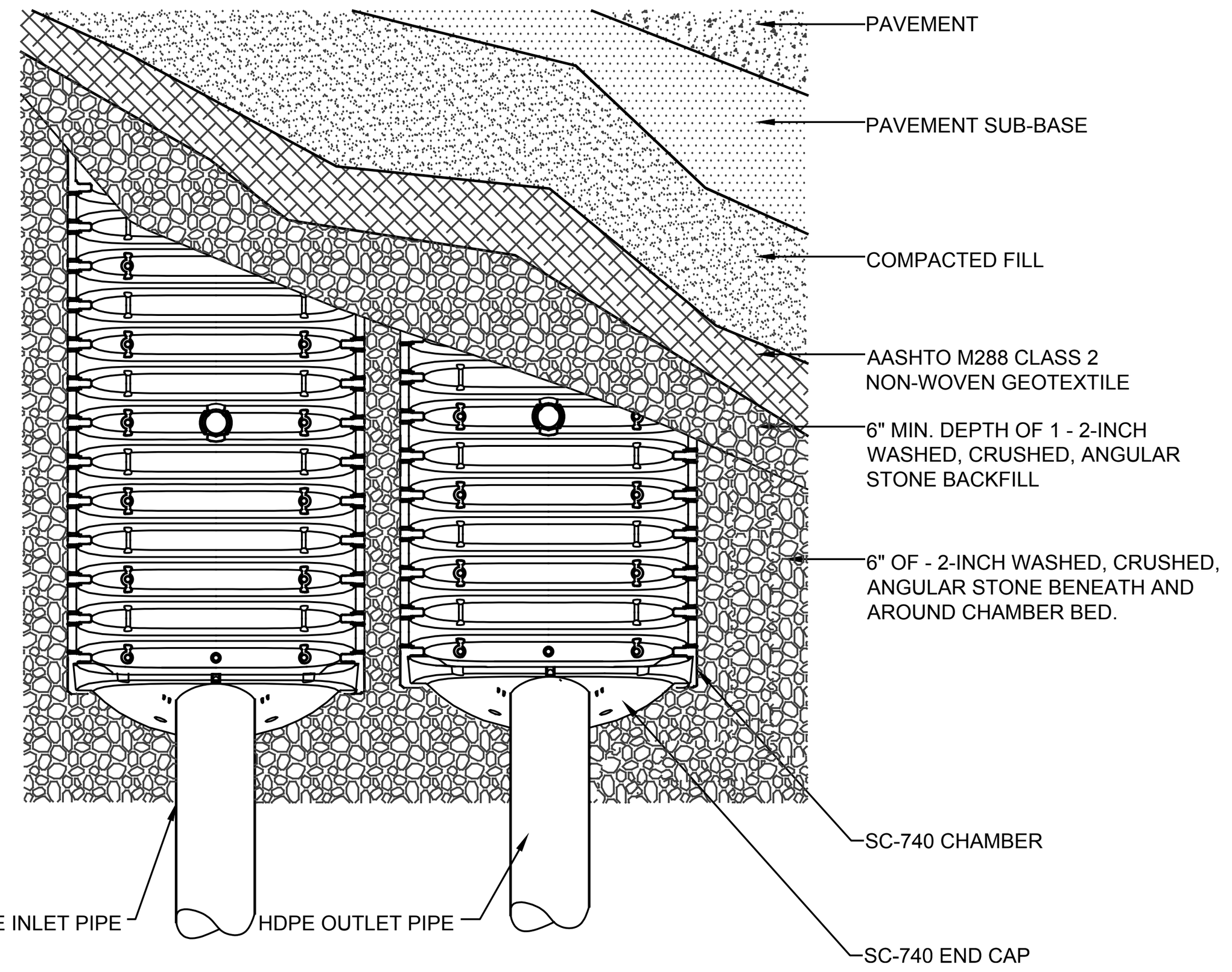
DRAWN BY: TK

DATE: 3/21/18

SITE DETAILS

SITE PLAN
PREPARED FOR
ARMSTRONG PLUMBING LLC
593 NORTH STATE ROAD
Town of Ossining Westchester County, NY

Sheet 9 of 11



NOTES:

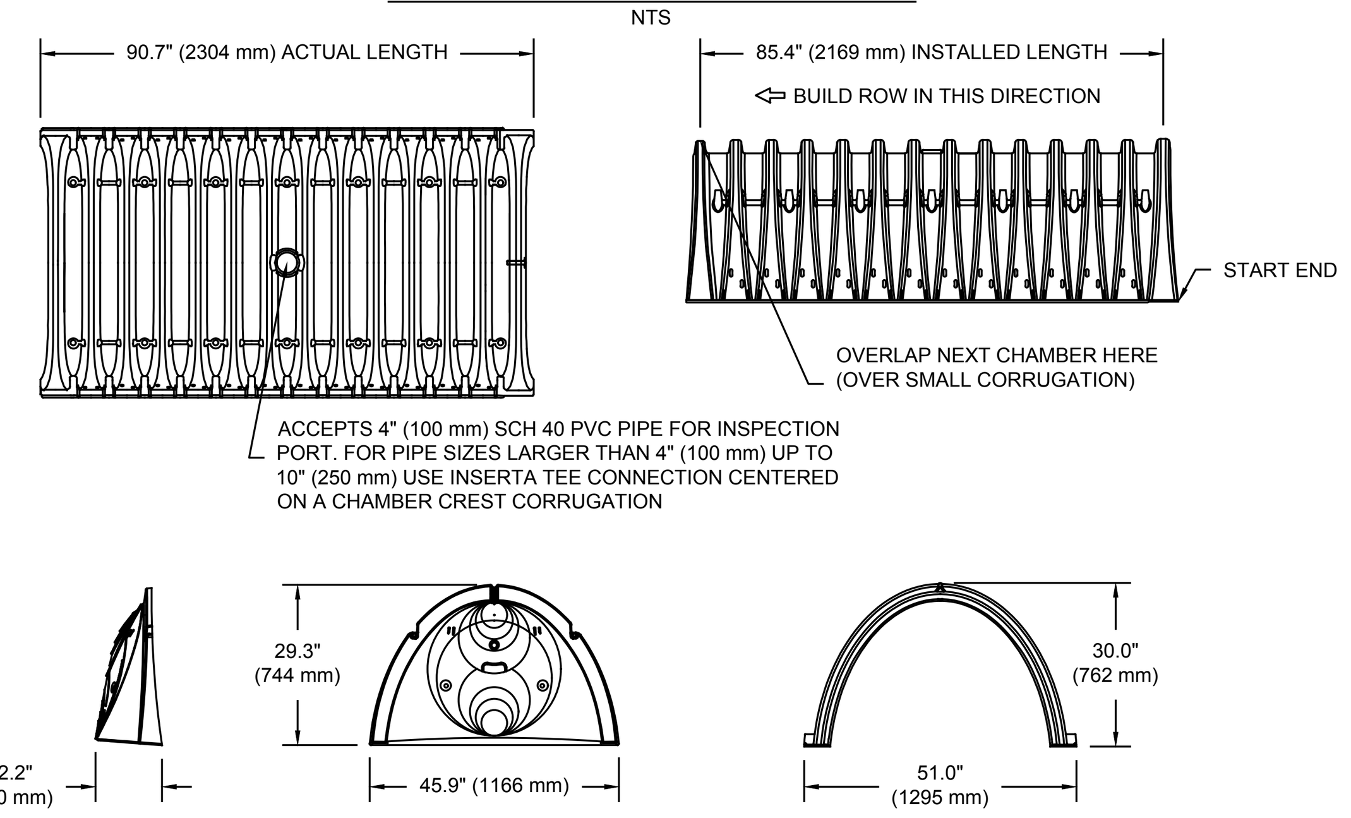
1. All design specifications for Stormtech SC-740 chambers shall be in accordance with the Stormtech design manual.
2. The installation of Stormtech SC-740 chambers shall be in accordance with the latest Stormtech installation instructions.
3. The contractor is advised to review and understand the installation instructions prior to beginning system installation. Call 1-888-892-2694 or visit www.stormtech.com to receive a copy of the latest Stormtech installation instructions.
4. Chambers shall meet the design requirements and load factors specified in Section 12.12 of the latest edition of the AASHTO LRFD bridge design specifications

SWM-1 STORMTECH SC-740 CHAMBER SYSTEM PLAN VIEW DETAIL

NOT TO SCALE

SC-740 TECHNICAL SPECIFICATION

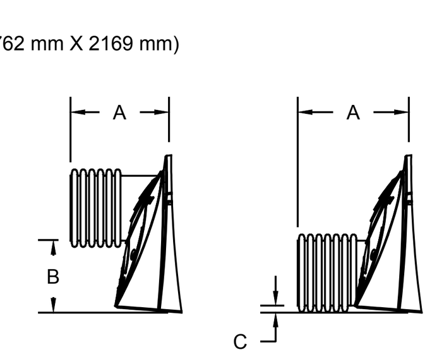
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET	(1.30 m³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET	(2.12 m³)
WEIGHT	75.0 lbs.	(33.6 kg)

*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS



STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EPE06B / SC740EPE06BPC			---	0.5" (13 mm)
SC740EPE08T /SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	---
SC740EPE08B / SC740EPE08BPC			---	0.6" (15 mm)

ALL STUBS, EXCEPT FOR THE SC740EPE24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC740EPE24B THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

SWM-2 STORMTECH SC-740 CHAMBER DETAIL

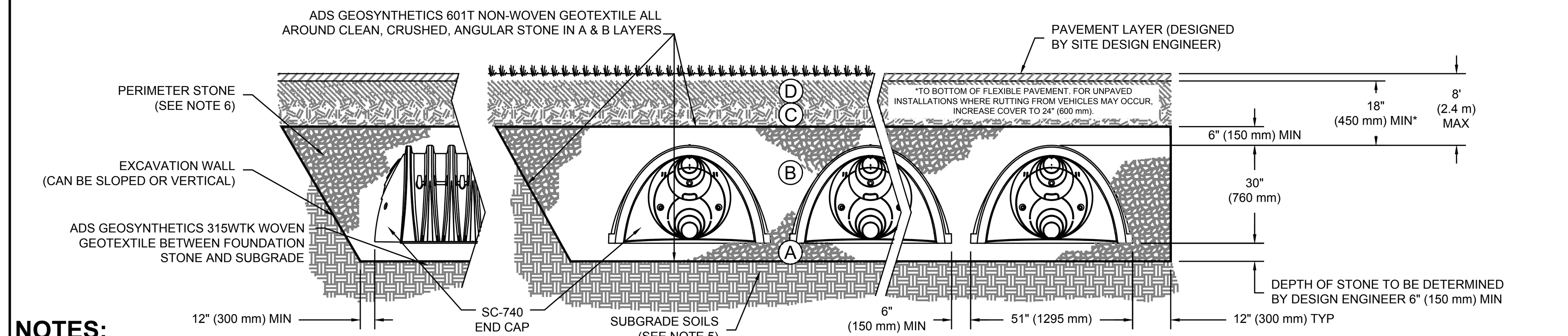
NOT TO SCALE

ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4-2 INCH (20-50 mm)	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4-2 INCH (20-50 mm)	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. [2,3]

PLEASE NOTE:

1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.

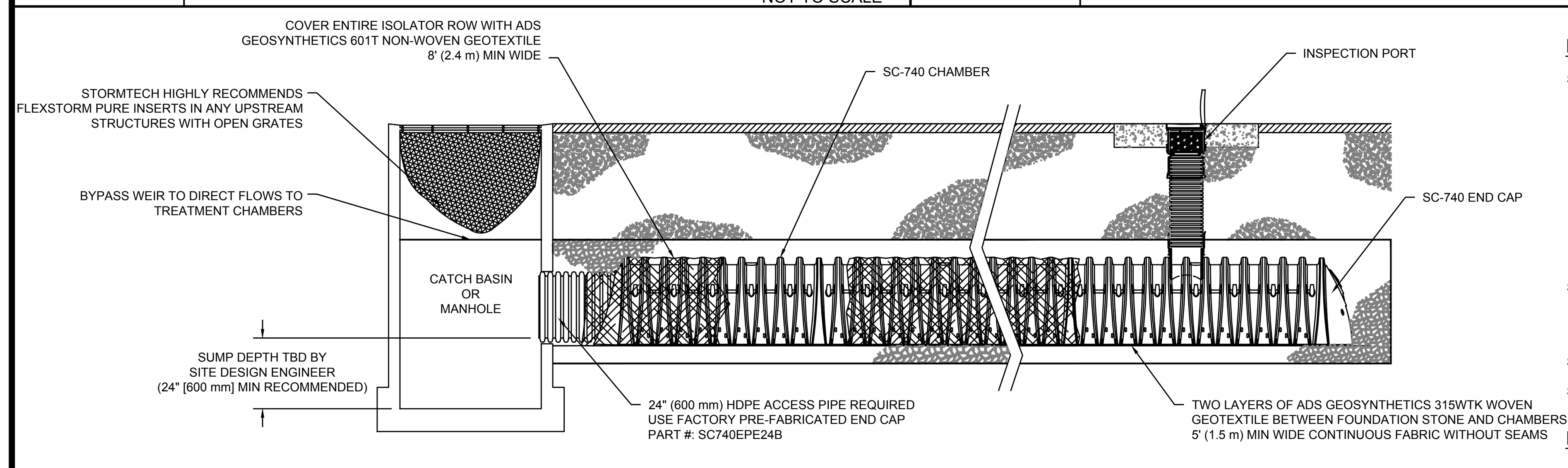


NOTES:

1. SC-310 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE "SITE DESIGN ENGINEER" REFERS TO THE ENGINEER RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE STORMTECH CHAMBERS FOR THIS PROJECT.
5. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
6. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
7. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

SWM-3 STORMTECH SC-740 CROSS SECTION DETAIL

NOT TO SCALE



SC-740 ISOLATOR ROW DETAIL

NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE^Ji) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY^Jii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

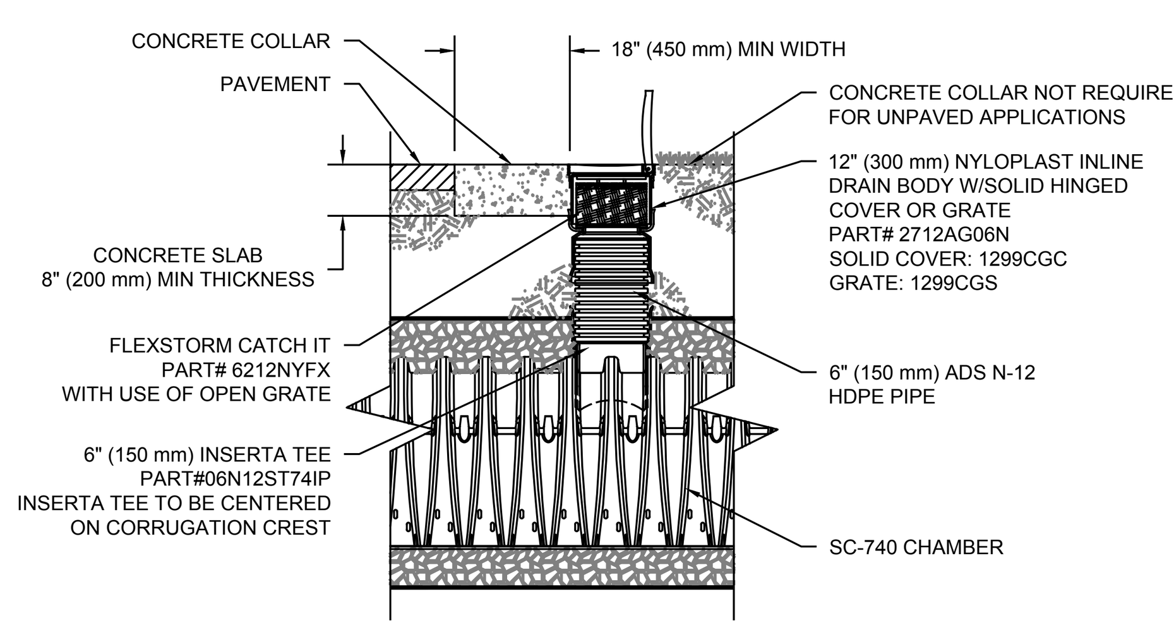
STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.^J
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

SWM-4 STORMTECH SC-740 CHAMBER DETENTION ISOLATOR ROW DETAIL

NOT TO SCALE

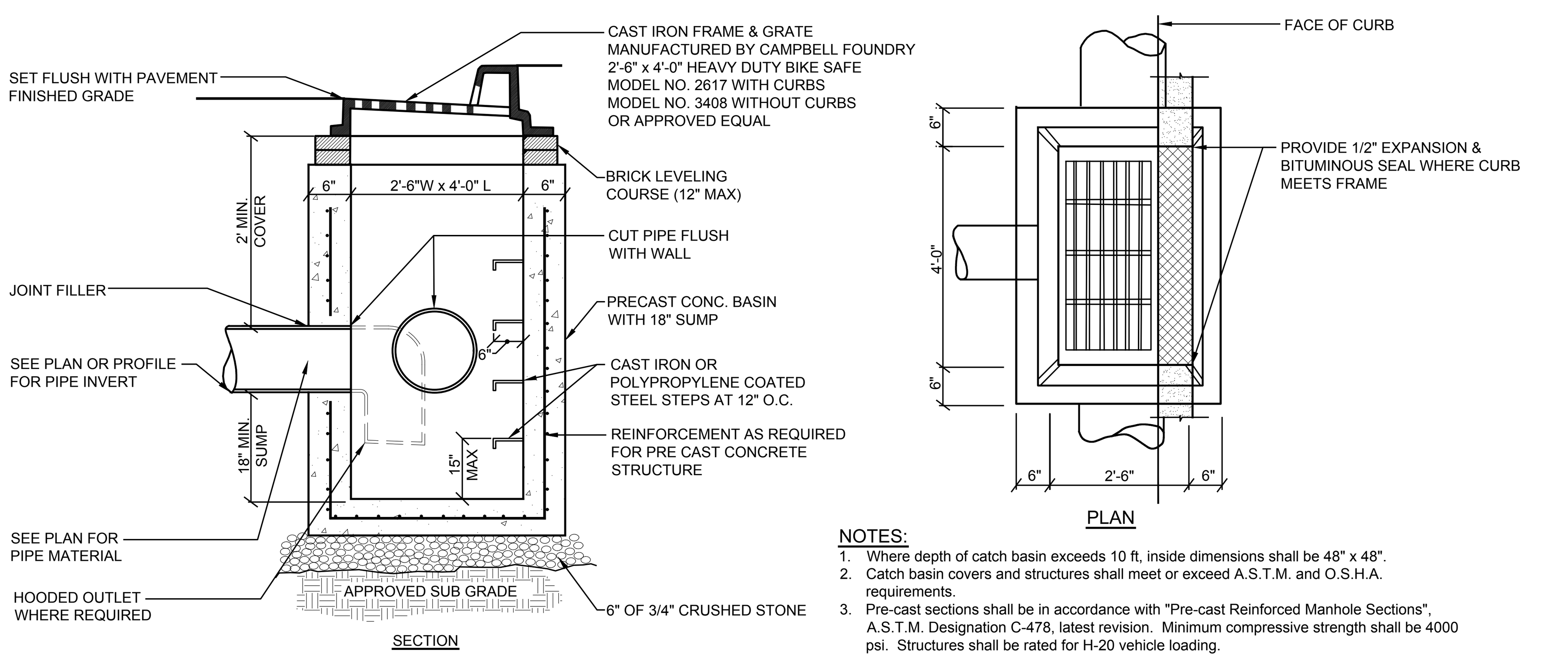


SC-740 6" INSPECTION PORT DETAIL

NTS

SWM-5 STORMTECH FLUSING/INSPECTION PORT DETAIL

NOT TO SCALE

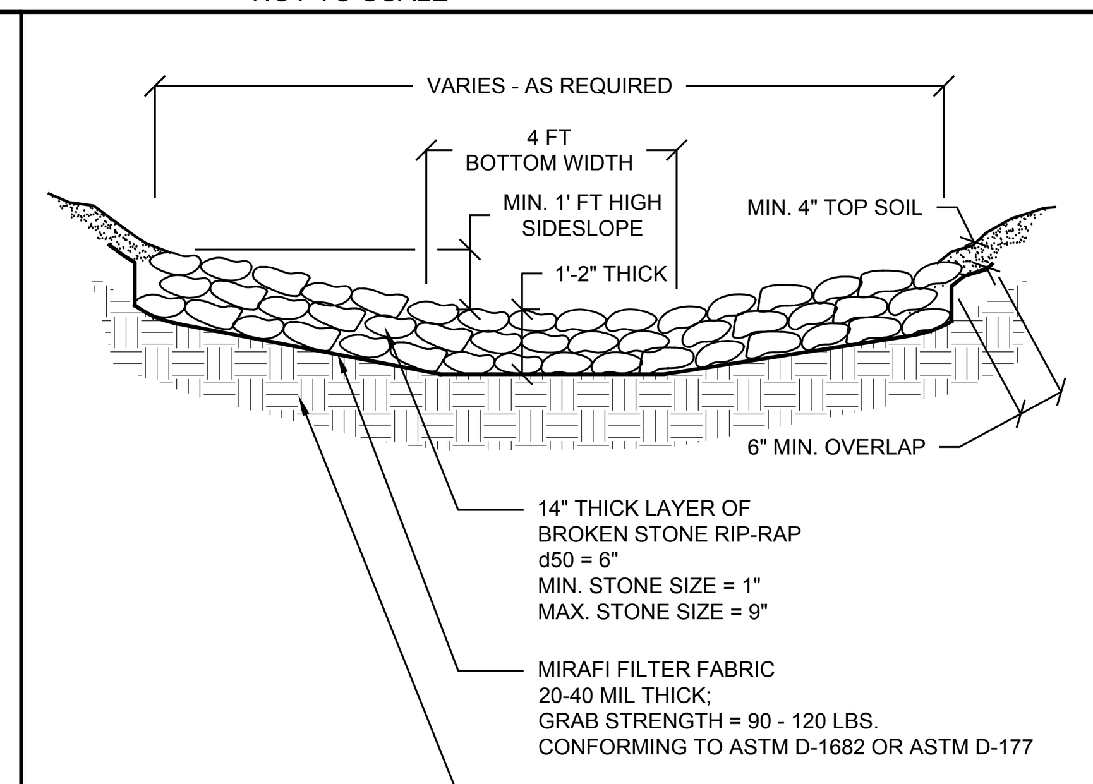


NOTES:

1. Where depth of catch basin exceeds 10 ft, inside dimensions shall be 48" x 48".
2. Catch basin covers and structures shall meet or exceed A.S.T.M. and O.S.H.A. requirements.
3. Pre-cast sections shall be in accordance with "Pre-cast Reinforced Manhole Sections", A.S.T.M. Designation C-478, latest revision. Minimum compressive strength shall be 4000 psi. Structures shall be rated for H-20 vehicle loading.

D-1 TYPICAL CATCH BASIN DETAIL

NOT TO SCALE

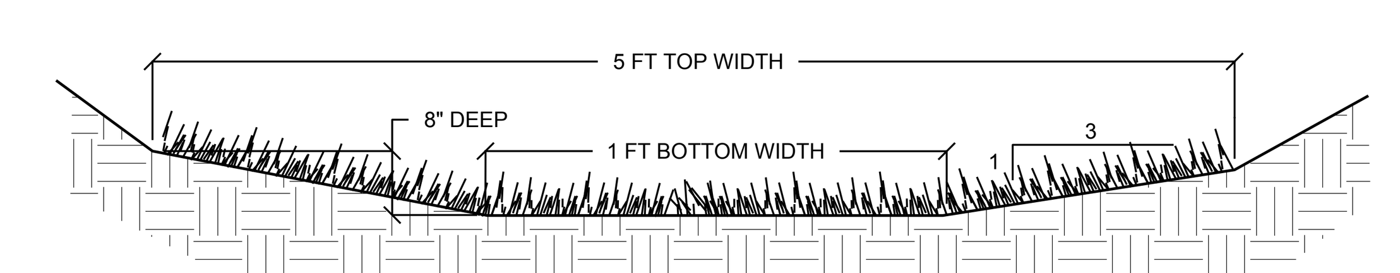


NOTES:

1. The foundation area shall be cleared of trees, stumps,sod, loose rock, or other objectionable materials.
2. The cross section shall be excavated to the neat lines and grades shown on the plans. Over excavated areas shall be backfilled with moist soil compacted to the density of the surrounding material.
3. Filter, bedding, and rock riprap shall be placed to line and grade in the manner specified.
4. No abrupt deviations from design grade or horizontal alignment shall be permitted.
5. Construction operations shall be done in such a manner that erosion, air and water pollution will be minimized and held within legal limits. All disturbed areas shall be vegetated or otherwise protected against soil erosion.

D-2 RIP-RAP OVERFLOW CHANNEL DETAIL

NOT TO SCALE



SYMBOL

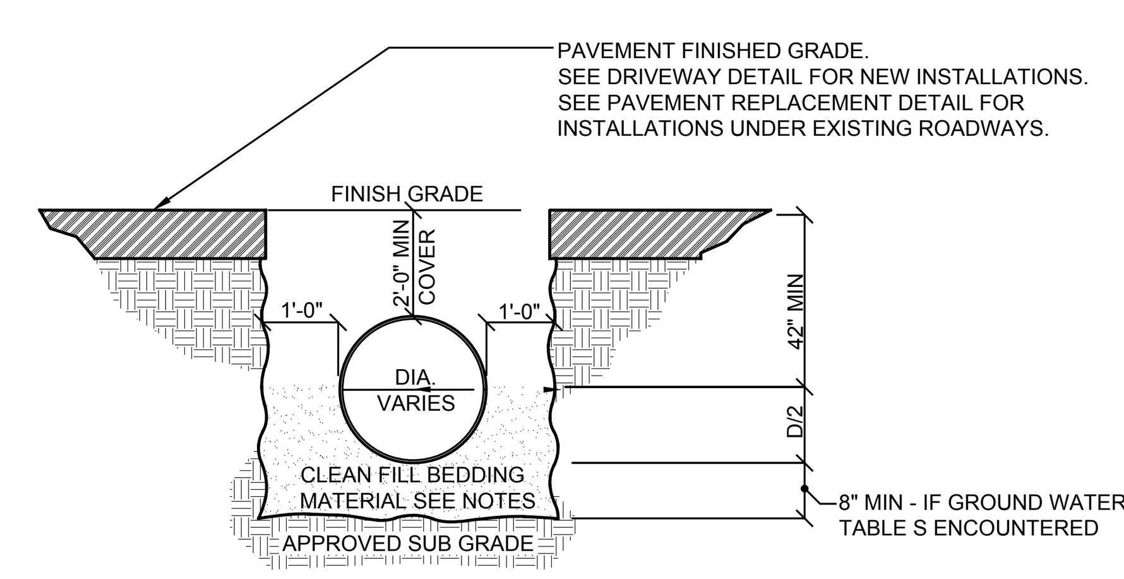
GL

NOTE:

1. Grass swale to be seeded with grass mixture per 1000 s.F as follows:
   Kentucky Bluegrass: .60lbs
   Creeping Red Fescue: .50 lbs
   Perennial Ryegrass: .20lbs
2. The foundation area shall be cleared of trees, stumps,sod, loose rock, or other objectionable materials.
3. The cross section shall be excavated to the neat lines and grades shown on the plans. Over excavated areas shall be backfilled with moist soil compacted to the density of the surrounding material.
4. No abrupt deviations from design grade or horizontal alignment shall be permitted.
5. Construction operations shall be done in such a manner that erosion, air and water pollution will be minimized and held within legal limits. All disturbed areas shall be vegetated or otherwise protected against soil erosion.

D-3 GRASS SWALE DETAIL

NOT TO SCALE



NOTES:

1. Pipe shall be laid and connected in the bedding which shall consist of:
   A. Compacted existing subsoil when laid above ground water or;
   B. 3/4" crushed stone when laid below ground water.
2. If subsoil is determined to be unsuitable by the Engineer, all unsuitable material shall be removed for at least 2'-6" below the pipe invert or twice the pipe diameter, whichever is greater, and replaced with compacted bedding material.

D-4 STORM PIPE BEDDING DETAIL

NOT TO SCALE

PROJECT # 18-13

Site Design Consultants
Civil Engineers • Land Planners
251-F Underhill Avenue, Yorktown Heights, NY 10598
(914) 962-4488 - Fax: (914) 962-7386
www.sitedesignconsultants.com

Engineer:
STATE OF NEW YORK ★ JOSEPH CARLO RIINA ★ LICENSED PROFESSIONAL ENGINEER NO. 64431
Joseph C. Riina, P.E.
NYS Lic. No. 64431

Revisions:

No.	Date	Comments:
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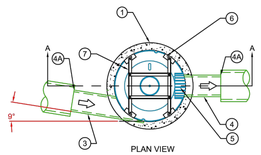
4	7/6/18	Town Comments

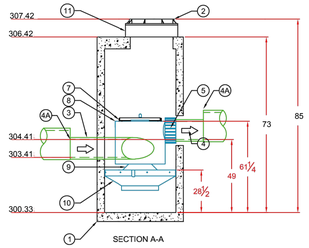
SCALE: NTS
DRAWN BY: TK
DATE: 3/21/18

STORMWATER MANAGMENT DETAILS

SITE PLAN
PREPARED FOR
ARMSTRONG PLUMBING LLC
593 NORTH STATE ROAD
Town of Ossining   Westchester County, NY

Sheet 10 of 11





PARTS LIST		
ITEM	DESCRIPTION	SIZE
1	PRECAST MANHOLE (BY HYDRO)	48"
2	MANHOLE LID, FRAME AND COVER	30"
3	INLET PIPE (BY ADS/OTHERS)	12"
4	OUTLET PIPE (BY ADS/OTHERS)	12"
4A	REDUCER/ EXPANDER (NOT SHOWN FOR DETAIL)	18"X12"
5	PIPE COUPLING (BY ADS/OTHERS)	
6	LEDGER ANGLE	
7	SUPPORT FRAME	
8	DIP PLATE	
9	CENTER SHAFT & CONE	
10	BENCHING SKIRT	
11	MATERIALS & LABOR TO ACHIEVE FINAL GRADE (BY OTHERS)	

CAPACITIES
1. PEAK TREATMENT FLOW: 3.0 CFS (85 L/S)
2. SEDIMENT STORAGE CAPACITY: 0.70 YD³ (0.54 m³)
3. OIL STORAGE CAPACITY: 70 GALLONS (265 LITERS)

ADDITIONAL DESIGN INFORMATION
1. THE OUTLET PIPE STUB IS A ROTO-MOLDED PRODUCT WITH AN I.D. OF 12" THAT CANNOT BE MODIFIED. TO AVOID THE USE OF A REDUCER OR EXPANDER ON THE OUTLET A 12" OUTLET PIPE SHOULD BE USED IF POSSIBLE.
2. ONLY SMALLER INLET PIPES MAY BE USED. THE INLET PIPE INVERT SHOULD BE PLACED ONE INLET PIPE DIAMETER BELOW THE OUTLET PIPE INVERT. THE I.D. OF THE INLET PIPE SHOULD BE PLACED TANGENT TO THE I.D. OF THE MANHOLE. HEADLOSS AT 3.0 CFS WITH A 12" INLET: 8" (203 mm). HEADLOSS WILL INCREASE WITH SMALLER INLET PIPES.
3. SEDIMENT SHALL BE STORED IN A ZONE THAT IS ISOLATED FROM THE MAIN FLOW PATH AND PROTECTED FROM RE-ENTRAINMENT BY THE BENCHING SKIRT.

Hydro International stormwater

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ARMSTRONG PLUMBING - NY
4' ONLINE DD - DETAILS

DATE:	05/25/2018	PROJECT:	91772
DRAWN:	DWC	SCALE:	1/4" = 1'
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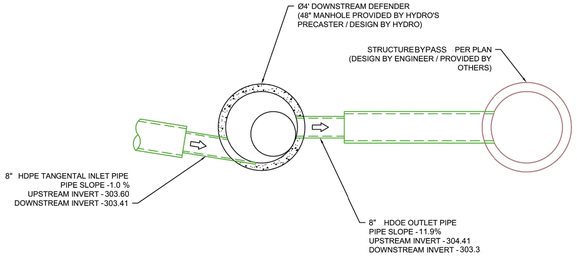

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ARMSTRONG PLUMBING - NY
4' ONLINE DD - PLAN VIEW

DATE:	05-27-2015	PROJECT:	91772
DRAWN:	DWC	SCALE:	1/4" = 1'
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F:\2018\18-13 ARMSTRONG PLUMBING NORTH STATE ROAD\ENGINEERING\CAD\C3D\18-13 ARMSTRONG PLUMBING NORTH STATE RD\18-13 SITE PLAN 6-7-18.DWG

Operation

Introduction

The Downstream Defender® operates on simple fluid hydraulics. It is self-activating, has no moving parts, no external power requirement and is manufactured from durable non-corrosive components. No manual procedures are required to operate the unit and maintenance is limited to monitoring accumulations of stored pollutants and periodic clean-outs. The Downstream Defender® has been designed to allow for easy and safe access for inspection/monitoring and clean-out procedures. Entry into the unit or removal of the internal components is not necessary for maintenance, thus safety concerns related to confined-space-entry are avoided.

Pollutant Capture and Retention

The internal components of the Downstream Defender® have been designed to protect the oil/floatables and sediment storage volumes so that separator performance is not reduced as pollutants accumulate between clean-outs (Fig.2). The Downstream Defender® vessel remains wet between storm events. Oil and floatables are stored on the water surface in the outer annulus separate from the sediment storage volume in the sump of the unit providing the option for separate oil disposal, and accessories such as adsorbant pads. Since the oil/floatables and sediment storage volumes are isolated from the active separation region, the potential for re-suspension and washout of stored pollutants between clean-outs is minimized.

Wet Sump

The sump of the Downstream Defender® retains a standing water level between storm events. The water in the sump prevents stored sediment from solidifying in the base of the unit. (The clean-out procedure becomes more difficult and labor intensive if the system allows fine sediment to dry-out and consolidate. Dried sediment must be manually removed by maintenance crews. This is a labor intensive operation in a hazardous environment.)

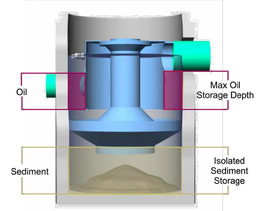

Fig.2 Pollutant storage volumes of the Downstream Defender®.

Blockage Protection

The Downstream Defender® has large clear openings and no internal restrictions or weirs, minimizing the risk of blockage and hydraulic losses. In addition to increasing the system headloss, orifices and internal weirs can increase the risk of blockage within the unit.

Maintenance

Overview

The Downstream Defender® protects the environment by removing a wide range of pollutants from stormwater runoff. Periodic removal of these captured pollutants is essential to the continuous, long-term functioning of the Downstream Defender®. The Downstream Defender® will capture and retain sediment and oil until the sediment and oil storage volumes are full to capacity. When sediment and oil storage capacities are reached, the Downstream Defender® will no longer be able to store removed sediment and oil. Maximum pollutant storage capacities are provided in Table 1.

Hydro International recommends that maintenance crews watch the Downstream Defender® maintenance training video at **www.hydro-int.com/us/products/downstream-defender**. Maintenance providers are also encouraged to participate in Hydro International's Maintenance Contractor Certification Program (see page 12).

Fig.3 Watch the Downstream Defender® instructional maintenance video at **www.hydro-int.com/us/products/downstream-defender**.

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The Downstream Defender® allows for easy and safe inspection, monitoring and clean-out procedures. A commercially or municipally owned sump-vac is used to remove captured sediment and floatables. Access ports are located in the top of the manhole. On the 6-ft (1.8m), 8-ft (2.4m), 10-ft (3.0m) and 12-ft (3.7m) units, the floatables access port is above the outlet pipe between the concrete manhole wall and the dip plate. The sediment removal access ports for all Downstream Defender® models are located directly over the hollow center shaft.

Maintenance events may include Inspection, Oil & Floatables Removal, and Sediment Removal. Maintenance events do not require entry into the Downstream Defender®, nor do they require the internal components of the Downstream Defender® to be removed. In the case of inspection and floatables removal, a vactor truck is not required. However, a vactor truck is required if the maintenance event is to include oil removal and/or sediment removal.

Determining Your Maintenance Schedule

The frequency of cleanout is determined in the field after installation. During the first year of operation, the unit should be inspected every six months to determine the rate of sediment and floatables accumulation. A simple probe such as a Sludge Judge® can be used to determine the level of accumulated solids stored in the sump. This information can be recorded in the maintenance log (see page 9) to establish a routine maintenance schedule.

The vactor procedure, including both sediment and oil/floatables removal, for a 6-ft (1.8m) Downstream Defender® typically takes less than 30 minutes and removes a combined water/oil volume of about 500 gallons (1900 liters).

Inspection Procedures

Inspection is a simple process that does not involve entry into the Downstream Defender®. Maintenance crews should be familiar with the Downstream Defender® and its components prior to inspection.

Scheduling

- It is important to inspect your Downstream Defender® every six months during the first year of operation to determine your site-specific rate of pollutant accumulation
- Typically, inspection may be conducted during any season of the year
- Sediment removal is not required unless sediment depths exceed 75% of maximum clean-out depths stated in Table 1

Recommended Equipment

- Safety Equipment and Personal Protective Equipment (traffic cones, work gloves, etc.)
- Crow bar or other tool to remove grate or lid
- Pole with skimmer or net
- Sediment probe (such as a Sludge Judge®)
- Trash bag for removed floatables
- Downstream Defender® Maintenance Log

Table 1. Downstream Defender® Pollutant Storage Capacities and Max. Cleanout Depths.

Unit Diameter		Total Oil Storage		Oil Clean-out Depth		Total Sediment Storage		Sediment Clean-out Depth		Max. Liquid Volume Removed	
(ft)	(m)	(gal)	(L)	(in)	(cm)	(yd^3)	(m^3)	(in)	(cm)	(gal)	(L)
4	1.2	70	265	<16	<41	0.70	0.53	<18	<45	384	1,454
6	1.8	216	818	<23	<58	2.10	1.61	<24	<61	1,239	4,690
8	2.4	540	2,044	<33	<84	4.65	3.56	<30	<76	2,884	10,917
10	3.0	1,050	3,975	<42	<107	8.70	6.65	<36	<91	5,546	20,994
12	3.7	1,770	6,700	<49	<125	14.70	11.24	<42	<107	9,460	35,810

NOTES
1. Refer to Downstream Defender® Clean-out Detail (Fig.2) for measurement of depths.
2. Oil accumulation is typically less than sediment, however, removal of oil and sediment during the same service is recommended.
3. Remove floatables first, then remove sediment storage volume.
4. Sediment removal is not required unless sediment depths exceed 75% of maximum clean-out depths stated in Table 1.


Fig.4


Fig.5


Fig.6

Inspection Procedures

1. Set up any necessary safety equipment around the accass port or grate of the Downstream Defender® as stipulated by local ordinances. Safety equipment should notify passing pedestrian and road traffic that work is being done.
2. Remove the lids to the manhole (Fig. 4). NOTE: The 4-ft (1.2m) Downstream Defender® will only have one lid.
3. Without entering the vessel, look down into the chamber to inspect the inside. Make note of any irregularities. See Fig.7 and 8 for typical inspection views.
4. Without entering the vessel, use the pole with the skimmer net to remove floatables and loose debris from the outer annulus of the chamber.
5. Using a sediment probe such as a Sludge Judge®, measure the depth of sediment that has collected in the sump of the vessel (Fig.5).
6. On the Maintenance Log (see page 9), record the date, unit location, estimated volume of floatables and gross debris removed, and the depth of sediment measured. Also note any apparent irregularities such as damaged components or blockages.
7. Securely replace the grate or lid.
8. Take down safety equipment.
9. Notify Hydro International of any irregularities noted during inspection.

Floatables and Sediment Cleanout

Floatables cleanout is typically done in conjunction with sediment removal. A commercially or municipally owned sump-vac is used to remove captured sediment and floatables (Fig.6).

Floatables and loose debris can also be netted with a skimmer and pole. The access port located at the top of the manhole provides unobstructed access for a vactor hose and skimmer pole to be lowered to the base of the sump.

Scheduling

- Floatables and sump cleanout are typically conducted once a year during any season.
- If sediment depths are greater than 75% of maximum clean-out depths stated in Table 1, sediment removal is required.
- Floatables and sump cleanout should occur as soon as possible following a spill in the contributing drainage area.


Fig.7 View over center shaft into sediment storage zone.


Fig.8 View of outer annulus of floatables and oil collection zone.

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Recommended Equipment

- Safety Equipment (traffic cones, etc)
- Crow bar or other tool to remove grate or lid
- Pole with skimmer or net (if only floatables are being removed)
- Sediment probe (such as a Sludge Judge®)
- Vactor truck (6-inch/150mm diameter flexible hose recommended)
- Downstream Defender® Maintenance Log

Floatables and Sediment Clean Out Procedures

1. Set up any necessary safety equipment around the access port or grate of the Downstream Defender® as stipulated by local ordinances. Safety equipment should notify passing pedestrian and road traffic that work is being done.
2. Remove the lids to the manhole NOTE: The 4-ft (1.2m) Downstream Defender® will only have one lid.
3. Without entering the vessel, look down into the chamber to inspect the inside. Make note of any irregularities.
4. Using the Floatables Port for access, remove oil and floatables stored on the surface of the water with the vactor hose or the skimmer net (Fig.9, top).
5. Using a sediment probe such as a Sludge Judge®, measure the depth of sediment that has collected in the sump of the vessel and record it in the Maintenance Log (Pg.9).
6. Once all floatables have been removed, drop the vactor hose to the base of the sump via the Central Access Port. Vactor out the sediment and gross debris off the sump floor (Fig.6 and 9).
7. Retract the vactor hose from the vessel.
8. On the Maintenance Log provided by Hydro International, record the date, unit location, estimated volume of floatables and gross debris removed, and the depth of sediment measured. Also note any apparent irregularities such as damaged components or blockages.
9. Securely replace the grate or lid.

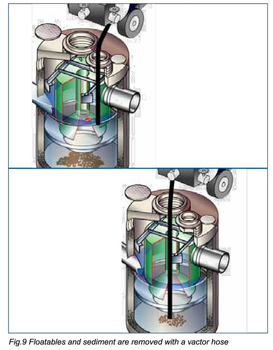
Fig.9 Floatables and sediment are removed with a vactor hose

Maintenance at a Glance

Activity	Frequency
Inspection	- Regularly during first year of installation - Every 6 months after the first year of installation
Oil and Floatables Removal	- Once per year, with sediment removal - Following a spill in the drainage area
Sediment Removal	- Once per year or as needed - Following a spill in the drainage area
NOTE: For most cleanouts it is not necessary to remove the entire volume of liquid in the vessel. Only removing the first few inches of oils/floatables and the sediment storage volume is required.	

NOTE: THESE PAGES HAVE BEEN TAKE FROM THE DOWNSTREAM DEFENDER MAINTENANCE AND OPERATIONS MANUAL. THEY ILLUSTRATE THE INPSECTION AND MAINTENANCE PROCEDURE FOR THE SYSTEM

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PROJECT # 18-13

Engineer: Joseph C. Rima, P.E. NYS Lic. No 64431

Revisions:

No.	Date	Comments
1	4/2/18	Planning Board
2	5/25/18	Town Comments
3	6/11/18	Town Comments

SCALE: NTS
DRAWN BY: TK
DATE: 3/21/18

DOWNSTREAM DEFENDER DETAILS

SITE PLAN
PREPARED FOR
ARMSTRONG PLUMBING LLC
593 NORTH STATE ROAD
Town of Ossining Westchester County, NY

Sheet 11 of 11