



7 May 2024

Ms. Maura Weissleder, Deputy Town Clerk
Town of Yorktown, Town Board
363 Underhill Ave.
Yorktown Heights, NY 10598

Re: Town of Yorktown Tree Committee
Comments New York City Dept. Environmental Protection
DEP Log #: 2020-CNC-0078-SQ.2

Dear Ms. Weissleder and the Honorable Members of the Town Board:

Teatown Lake Reservation is committed to protecting the environment as it's core mission and on behalf of my client I am pleased to be able to answer the questions and request for additional information as found in the comments in Ms. Cynthia Garcia's letter of November 14th, 2023 regarding the application to dredge portions of Teatown Lake.

1. SWPPP details are contained on the revised drawing sets from WSP labeled Permit Submission April 2024.
2. The Geotubes used for dewatering the solids will simply return the decanted water back to Teatown Lake. This is accomplished by allowing the water to collect and travel back to Teatown Lake through the temporary return flow pipe. There will not be an impact on the principal aquifer.
3. Ms. Mariyam Zacharia was contacted regarding a site visit. Because the culvert is dry and does not involve any watercourses, it was determined by Ms. Zacharia that a site visit was not required at this time.
4. To avoid any potential compaction or impact to the force main that crosses under the dewatering site 1, steel plates will be placed above the piping to prevent flexing of the pipe. Areas within the Blinn Rd. parking lot not occupied by the geotubes will be utilized for staging equipment and piping.

Environmental Permitting and Ecological Assessment

EcoAssessment, LLC
436 Benedict Ave., Tarrytown, NY 10591
845-222-6135 judget@alum.rpi.edu

5. The reclamation of the Hidden Valley North Field meadow will use the dewatered solids on site, mixed with the soil cut from the preparation of the dewatering terraced pads. Each pad will be cut into the hillside with a slight angle into the hillside. These terraces are lined with a plastic underlay that collects the water from the geosynthetic dewatering bags, and that water will be returned to Teatown Lake via a return flow pipe. At the conclusion of the dredging process, the geotubes will be allowed to dry for at least 3 months before the retained solids are removed and mixed with the soils cut during the preparation of the terraced pads. The stockpiled soils will be covered (tarp) and silt fencing will be installed a minimum of 10 feet from the bottom of the pile. Please see the attached planting schedule for the restoration of the meadow area. The solids in the Blinn Rd parking lot (Dewatering Site 1) will be kept in the geotubes for a period of 6 to 9 months to ensure maximum solids percentage prior to using the solids on site for trail maintenance and other compatible uses as per the determination of the NYSDEC R3 office of Materials Management. Appropriate institutional controls such as chain link and silt fencing will be maintained until all solids have been removed from the site.
6. The turbidity curtains will be deployed from the shoreline of the Wildflower Island to the lake shore to isolate the area being dredged. In the area dredged near the board walk, the turbidity curtain will be deployed in the immediate area being dredged.
7. Because of the volumes of sediments to be removed and the physical constraints of dewatering locations, it was determined that hydraulic dredging would be the most efficient when used in conjunction with geotubes. As Teatown's core mission is to protect the environment through preservation, stewardship and education, other possible means of dredging were not considered viable alternatives.
 - a. At the start of each dredging session, the operator starts the cutting heads at half speed for 30 seconds, followed by one minute at zero rpms. This sequence will be repeated two times and at the end of the third one minute zero rpm period, full operation of the cutting head may begin. This sequence will be repeated if dredging operations paused for more than 60 minutes. This protocol is based on the soft start concept used for pile driving in marine environments required by the United States Army Corps of Engineers. Please see the following literature:
 - b. **USACE** (1978) *Effects of Dredging and disposal on aquatic organisms*. TR-DS-78-5
 - c. **Reine K** (2014) *Characterization of underwater sounds produced by hydraulic and mechanical dredging operations*. J Acoustical Soc America V136
 - d. **CEDA** (2011) Central Dredging Association *Underwater Sound in Relation to Dredging*. Position Paper No. 7.
8. Please see the attached detailed construction sequence. Please note that silt fencing will be employed for all areas of dewatering, and that the solids retained in the Geotubes are

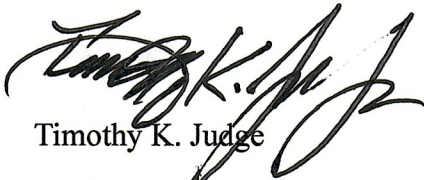
not exposed to rain events. The engineered geosynthetic fabric used in the construction of the Geotubes has a direction flow for water. Water only flows out of the Geotube.

9. The area around Wildflower Island does not have a high velocity flow, and because of the engineering of the Geotube fabric, water can not flow into the tube. The presence of water on the outside surface of the Geotubes enhances the removal of water from inside the tube by lower the surface tension.
10. The United States Army Corps of Engineers communicated that a permit from the USACE is not required for this project as no sediment is returning to Teatown Lake and no alteration of any wetlands or adding any height to the bottom of the lake will occur. Please see the email correspondence attached.

At the request of the Tree Commission Advisory Committee, I have also included a site plan for the Hidden Valley dewatering location that includes a table of the species and diameter breast height of the trees to be removed.

Please feel free to contact me if you have any questions or concerns.

Sincerely Yours,



Timothy K. Judge

President, EcoAssessment



7 May 2024

Ms. Tracey O'Malley
Deputy Regional Permit Administrator
Division of Environmental Permits
New York State Department of Environmental Conservation
15 S. Putt Corners Rd.
New Paltz, New York 12561

Re: Teatown Lake Reservation Dredge Project
3-5554-00145/00011,12 (EF, FW, WQC) NOIA dated 12/21/2023

Dear Ms. O'Malley:

Teatown Lake Reservation is committed to protecting the environment as it's core mission and on behalf of my client I am pleased to be able to answer the questions and request for additional information in the Notice of Incomplete Application (NOIA) for the Joint Application that was submitted on 12 September 2023.

Item 1 of the NOIA. The dredge spoils have been classified as General Fill by the NYSDEC Region 3 Division of Materials Management. The dredge spoils will be dewatered using Geotubes at two locations as shown on the plan drawings on sheet 3. Dewatering site 1, the Blinn Rd. parking lot, the solids will be used on the Teatown property for trail maintenance and as part of a future construction project. The material will also be available as clean fill for local projects. The dredge solids at dewatering location 2 will be used in a meadow restoration project to remove invasive species and restore the native plant community.

Item 2 of the NOIA. Attached is a revised drawing set that includes the requested additional information.

- a) Please see profile and cross section sheet 4 of 9 of the revised plan set.
- b) Please see the attached bathymetric survey of Teatown Lake.
- c) Shorelines to remain as is, extent of channel will be 12 feet from existing shoreline.

Environmental Permitting and Ecological Assessment

EcoAssessment, LLC
436 Benedict Ave., Tarrytown, NY 10591
845-222-6135 judget@alum.rpi.edu

- d) PrDredge material to be used at Geotube location #2 as part of Hidden Valley Meadow restoration. Please see sheets 3 and 6 of 9 of the revised plan set.
- e) The dredge unit will be lowered by crane into Teatown Lake from Spring Valley Rd., approximately 400 feet east of the junction of Teatown Lake Rd. and Spring Valley Rd.. Access to geotube location #1, Blinn Rd. parking lot, will be accessed from Blinn Rd. Access to the geotube location #2 will be from an existing access road. The entrance is approximately 200 feet east of the junction of Blinn Rd. and Spring Valley Rd.
- f) Please see the attached spec sheet for the hydro-dredge unit, Mudcat SP-915.

Item 3 of the NOIA requested documentation about compliance with the Community Risk and Resiliency Act (CRRA). The two areas where the dredged material will be dewatered are not within a flood zone as per FEMA FIRM (Map 36119C0129F) and no permanent structures are being built or installed. There is no risk of flooding of the two Geotube dewatering locations or the need for compliance with the CRRA as both locations are more than two feet above the Base Flood Elevation (BFE). Copies of FIRM 36119C0129F and a detail showing the Geotube dewatering locations is attached.

Item 4 of the NOIA. Please excuse the oversight of not including the letter of 10 June 2022 from Lee Reiff, Region 3 Division of Material Management. Based on the results of the analysis performed by Phoenix Environmental Laboratories, Inc. (NYSDOH Lab Reg. #11301) the material is characterized as General Fill and did not require a specific Beneficial Use Determination. The letter from Mr. Reiff is attached.

Item 5 of the NOIA. The Town of Yorktown is assuming Lead Agency Status for the purpose of SEQRA and will coordinate the review under SEQRA.

Item 6 of the NOIA. The Joint Application was submitted to the United States Army Corps of Engineers (USACE) 21 September 2023. A review by Brian Orzel, Senior Regulatory Project

Manager, New York District determined that no permit was required. A copy of email correspondence with Mr. Orzel that no the permit is needed is attached.

Please let me know if you have any questions regarding the attached information.

Sincerely Yours,

A handwritten signature in black ink, appearing to read "Timothy K. Judge". The signature is stylized and cursive, with the first name "Timothy" and last name "Judge" being the most legible parts.

Timothy K. Judge

President, EcoAssessment



TRANSMITAL

Document	No. Pages
Letter to Town of Yorktown	3
Letter to NYSDEC	3
Plan Set	9
Mud Cat Hydro-Dredge Unit Specification	2
Restoration Plan for Hidden Valley Meadow, Dewatering Location #2	6
Work Narrative and Sequence of Operations	4
Detail FEMA FIRM 36119C0129F	1
Letter from NYSDEC R3 Materials Management	1
Email from Brian Orzel, USACE regarding No Permit Required	1
Hidden Valley dewatering site with table of species and DBH to be removed	

TEATOWN LAKE DREDGING

PREPARED FOR THE TEATOWN LAKE RESERVATION

TOWN OF OSSINING, WESTCHESTER COUNTY, NEW YORK

TEATOWN LAKE
RESERVATION NATURE PRESERVE



WSP USA INC.
500 Summit Lake Drive, Suite 450
Valhalla, NY 10595
(914) 747-1120

ENGINEER OF RECORD:

NEW YORK STATE LICENSED
PROFESSIONAL ENGINEER

UNAUTHORIZED ALTERATIONS AND ADDITIONS TO THIS
DRAWING IS A VIOLATION OF SECTION 7209 (2)
OF THE NEW YORK STATE EDUCATION LAW

KEY PLAN:

REVISIONS:

PROJECT NAME:

**TEATOWN LAKE DREDGING
PROJECT**

WESTCHESTER COUNTY, NEW YORK

ISSUE DATE:

JUNE 2023

PROJECT NUMBER:

SCALE:

X

NONE

DRAWING NAME:

COVER SHEET

DRAWING NUMBER:

CS101

SHEET NUMBER:

1 OF 9



LOCATION MAP

N.T.S.

THE LATEST REVISIONS OF THE NYSDOT STANDARD SHEETS, WHICH ARE CURRENT ON THE DATE OF ADVERTISEMENT FOR BIDS, SHALL BE CONSIDERED TO BE IN EFFECT. ALL PAY ITEMS AND WORK CONTAINED IN THE CONTRACT AND ANY ADDITIONAL PAY ITEMS AND WORK ENCOUNTERED DURING THE COURSE OF THE CONTRACT SHALL BE SUBJECT TO THE APPLICABLE STANDARD SHEET(S) UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.

ALL WORK CONTEMPLATED UNDER THIS CONTRACT IS TO BE COVERED BY AND IN CONFORMITY WITH THE NYSDOT STANDARD SPECIFICATIONS (US CUSTOMARY UNITS) OF MAY 1, 2018, EXCEPT AS MODIFIED ON THESE PLANS AND IN THE ITEMIZED PROPOSAL.

CONTRACT PLANS HAVE BEEN DESIGNED IN ACCORDANCE WITH NYSDOT POLICIES AND GUIDELINES.

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

INDEX OF DRAWINGS		
SHEET NO.	TITLE	DRAWING
1	COVER SHEET	CS101
2	GENERAL NOTES	GEN101
3	OVERALL PLAN	GEN102
4	LAKE DREDGING PLAN	GEN103
5	GEOTUBE STOCKPILE SITE NO. 1 PLAN	SP101
6	GEOTUBE STOCKPILE SITE NO. 2 PLAN	SP102
7	SITE NO. 1 & 2 SECTIONS (SHEET 1 OF 2)	GR101
8	SITE NO. 1 & 2 SECTIONS (SHEET 2 OF 2)	GR102
9	EROSION & SEDIMENT CONTROL DETAILS	DET101
10		

PERMIT SUBMISSION - APRIL 2024

GENERAL NOTES:

- UNLESS NOTED OTHERWISE, ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH NEW YORK STATE DEPARTMENT OF TRANSPORTATION, OFFICE OF ENGINEERING STANDARD SPECIFICATIONS - CONSTRUCTION AND MATERIALS DATED SEPTEMBER 1, 2022 AS AMENDED BY CURRENT ADDITIONS AND MODIFICATIONS THERETO, THE 2015 INTERNATIONAL CODES, 2017 UNIFORM CODE SUPPLEMENT, WESTCHESTER COUNTY DEPARTMENT OF HEALTH REGULATIONS AND LOCAL CODES HAVING JURISDICTION OVER THE WORK.
- WHEN PROPOSED WORK SHOWN IN THE PLANS AND SPECIFICATIONS IS IN CONFLICT, THE INFORMATION IN THE SPECIFICATIONS SHALL GOVERN.
- THE CONTRACTOR SHALL EXAMINE AND VERIFY IN THE FIELD ALL EXISTING AND GIVEN CONDITIONS AND DIMENSIONS WITH THOSE SHOWN ON THE CONTRACT DOCUMENTS. IF THE FIELD CONDITIONS AND DIMENSIONS DIFFER FROM THOSE SHOWN ON THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER, ALL FIELD CONDITIONS AND DIMENSIONS SHALL BE SO NOTED ON THE DRAWINGS AND SUBMITTED FOR APPROVAL.
- THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT, DUE TO THE NATURE OF THIS PROJECT, THE EXACT EXTENT OF WORK CAN NOT ALWAYS BE ACCURATELY DETERMINED PRIOR TO THE COMMENCEMENT OF WORK. THE CONTRACT DOCUMENTS HAVE BEEN PREPARED BASED ON FIELD INSPECTION AND OTHER INFORMATION AVAILABLE AT THE TIME. ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATIONS TO CONSTRUCTION DETAILS AND WORK QUANTITIES. THE CONTRACTOR SHALL PERFORM THE WORK IN ACCORDANCE WITH THE FIELD CONDITIONS AND A.O.B.E.. ALL FIELD CONDITIONS AND DIMENSIONS DIFFERENT FROM THE DRAWINGS SHALL BE NOTED & SUBMITTED TO THE ENGINEER FOR APPROVAL.
- ALL BIDDERS SHOULD INSPECT THE PROJECT SITE PRIOR TO SUBMITTING BIDS TO VERIFY THE FIELD CONDITIONS WHICH MAY BE ENCOUNTERED AND THE NATURE OF THE WORK TO BE DONE UNDER THIS CONTRACT. NO COMPENSATION WILL BE ALLOWED TO THE BIDDER FOR FAILURE TO INCLUDE ALL LABOR, MATERIALS AND EQUIPMENT COSTS NECESSARY TO COMPLETE THE WORK.
- CONCURRENT WITH CONSTRUCTION WORK OF THIS CONTRACT, OTHER PROJECTS ON THIS SITE AND ADJACENT AREAS MAY BE UNDER CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE HIS/HER WORK THROUGH THE ENGINEER ON ALL ONGOING CONSTRUCTION PROJECTS.
- THE CONTRACTOR SHALL PERFORM ALL WORK WITH CARE SO THAT ANY MATERIALS WHICH ARE TO REMAIN IN-PLACE OR WHICH ARE TO REMAIN IN THE PROPERTY OF THE OWNER WILL NOT BE DAMAGED. IF THE CONTRACTOR DAMAGES ANY MATERIALS WHICH ARE TO REMAIN THE PROPERTY OF THE OWNER, THE DAMAGED MATERIALS SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE ENGINEER AT THE EXPENSE OF THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING EXISTING GRADES, ROADWAYS AND UTILITIES WHICH MAY AFFECT THE WORK.
- THE CONTRACTOR SHALL ESTABLISH OR VERIFY DIMENSIONS OF EXISTING STRUCTURES, EQUIPMENT AND THEIR LOCATIONS WITH THE REQUIRED ACCURACY WHERE NEEDED.
- THE CONTRACTOR SHALL FOLLOW OSHA SAFETY AND HEALTH STANDARDS (29 CFR 1925/1910, LATEST REVISION) AS WELL AS ALL STATE AND LOCAL REQUIREMENTS.
- UTILITIES SHALL BE PROTECTED AND MAINTAINED AT ALL TIMES. CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND SHALL "MARK OUT" EACH UTILITY PRIOR TO PROCEEDING WITH ANY EXCAVATION OR SITE WORK. CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION TO ALL UTILITIES BY MEANS OF CODE 753. CERTAIN UTILITIES SUCH AS TRAFFIC LOOP DETECTORS ARE NOT COVERED UNDER THE CODE 753 CALL OUT. CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH UTILITY OWNERS FOR THEIR MARK OUT AND TO MAKE ARRANGEMENTS PRIOR TO THE START OF WORK. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR RESTORATION AND REPAIR OF ANY DAMAGE AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF HIS WORK AND NEWLY INSTALLED OR EXISTING WORK, INCLUDING PROTECTION OF PARK OCCUPANTS, PUBLIC AND PERSONNEL. CONTRACTOR SHALL PROVIDE APPROPRIATE BARRIERS AND SAFETY MEASURES AS REQUIRED.
- SUBMISSION OF CONTRACTOR'S BID IMPLIES THAT HE HAS EXAMINED THE EXISTING FACILITIES BY MEANS OF SITE INSPECTION AND OTHER MEANS, AND IS FAMILIAR WITH ALL THE REQUIREMENTS OF THE WORK. ADDITIONAL COMPENSATION REQUESTS WILL NOT BE CONSIDERED DUE TO THE CONTRACTORS FAILURE TO INFORM HIMSELF OF THE SITE CONDITIONS AND CONTRACT REQUIREMENTS.
- THE CONTRACTOR SHALL PROVIDE ALL CUTTING AND PATCHING AS REQUIRED FOR THE INSTALLATION OF HIS WORK, COST INCLUDED UNDER THE APPROPRIATE PAY ITEM.
- ALL CONSTRUCTION WORK SHALL BE CONFINED TO THE AREA INDICATED ON THE PLANS AND SHALL NOT BLOCK MEANS OF EGRESS.
- ANY IMPORTED TOPSOIL SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS FOR QUALITY AND USE.

ACCESS NOTES:

- CONTRACTOR SHALL MAINTAIN ACCESS ALONG BLINN ROAD AT ALL TIMES BY WAY OF ROADWAY PLATING OR OTHER METHOD APPROVED BY ENGINEER.

UTILITY NOTES:

- THE CONTRACTOR IS ALERTED TO THE RULES AND REGULATIONS OF GENERAL BUSINESS LAW ARTICLE 36 AND PUBLIC SERVICE LAW 119-b (NEW YORK STATE INDUSTRIAL CODE 53 OF TITLE 16, (16 NYCRR PART 753) AND IS DIRECTED TO COMPLY. AT LEAST 2 DAYS BUT NOT MORE THAN 10 WORKING DAYS BEFORE THE COMMENCEMENT DATE OF THE EXCAVATION OR DEMOLITION THE CONTRACTOR SHALL NOTIFY THE NEW YORK CITY ONE-CALL CENTER AT 1-800-272-4480 AND PROVIDE THE LOCATION AND DATE OF THE PROPOSED EXCAVATION OR DEMOLITION.
- LOCATIONS OF EXISTING UTILITIES SHOWN ON THE PLANS HAVE BEEN TAKEN FROM RECORD DRAWINGS AND ARE BASED UPON THE BEST AVAILABLE INFORMATION. ACTUAL FIELD CONDITIONS MAY VARY FROM THE CONDITIONS SHOWN ON THE PLANS AND OTHER INFRASTRUCTURE NOT SHOWN MAY EXIST NEAR OR WITHIN THE AREA OF WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATIONS OF ALL UTILITIES PRIOR TO WORKING IN THE AREA AND TO AVOID INTERFERENCE.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY INFRASTRUCTURE IS EXPOSED AND/OR UNDERMINED DURING THE COURSE OF CONSTRUCTION. IN THE EVENT THE CONTRACTOR DAMAGES AN EXISTING UTILITY SERVICE CAUSING AN INTERRUPTION IN SERVICE, THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE ENGINEER, AND THE UTILITY COMPANY. THE CONTRACTOR SHALL COMMENCE WORK TO RESTORE SERVICE AND MAY NOT CEASE HIS WORK OPERATION UNTIL SERVICE IS RESTORED AT NO ADDITIONAL COST TO THE OWNER.

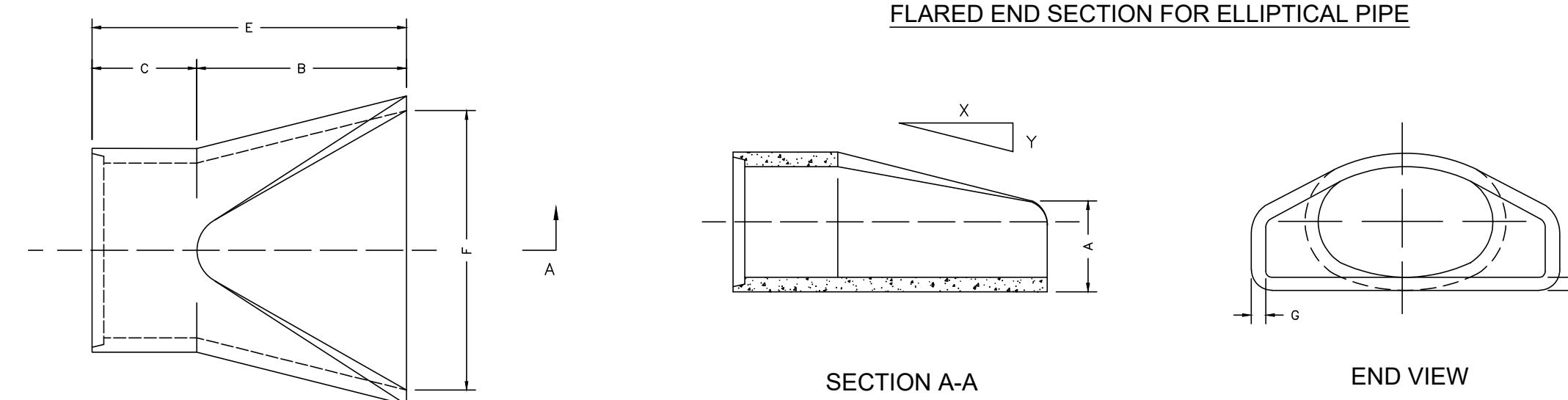
CULVERT INSTALLATION NOTES

- HDPE CULVERT TO BE LEFT IN PLACE AT THE COMPLETION OF THE PROJECT FOR USE AS A WILDLIFE CROSSING.
- PROPER BEDDING AND BACKFILL TO BE PLACED IN CONFORMANCE WITH PIPE MANUFACTURER REQUIREMENTS
- EXISTING PAVEMENT TO BE SAWCUT (MINIMUM TRENCH WIDTH = 48"), REMOVED AND DISPOSED OF.
- NEW PAVEMENT SECTION TO BE PLACED BACK SHALL MATCH EXISTING TYPE AND THICKNESS OF PAVEMENT LAYERS.
- CULVERT WORK TO BE STAGED SO AS NOT TO IMPEDE THE FLOW OF TRAFFIC. PROPER PERMITS ARE REQUIRED PRIOR TO WORK IN THE ROADWAY.

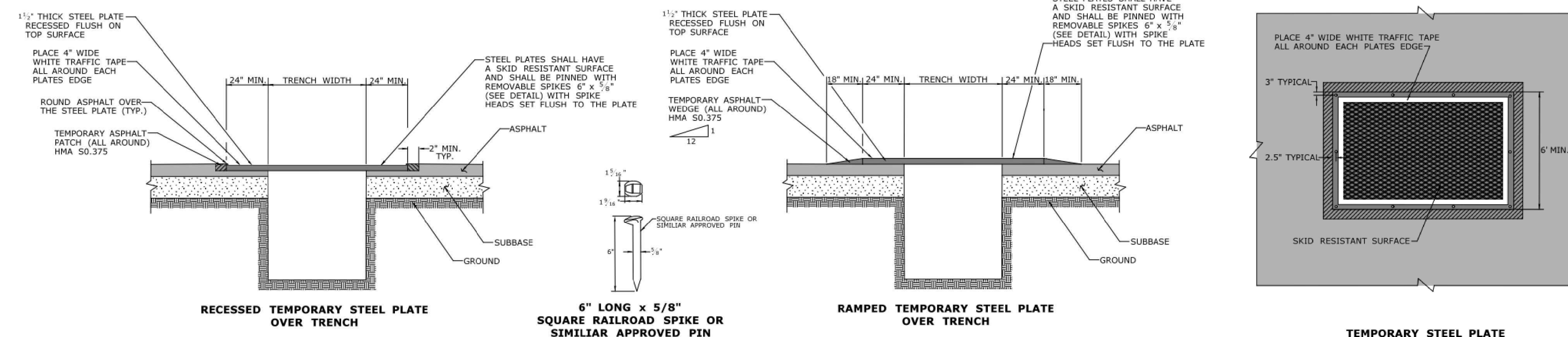
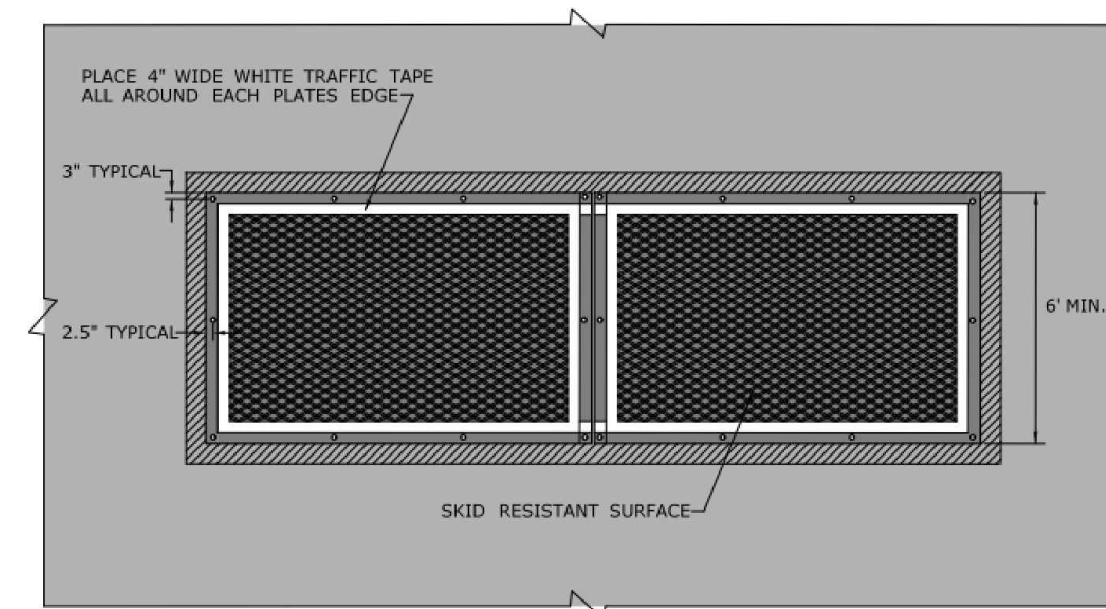
SOIL EROSION AND SEDIMENT CONTROL NOTES

- ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE INSTALLED IN ACCORDANCE WITH NEW YORK STANDARDS & SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL (NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC), NOVEMBER 2016), OR MOST CURRENT EDITION.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL COMPLETION OF CONSTRUCTION AND SHALL BE IN ACCORDANCE WITH NYSDEC REQUIREMENTS.
- THE LOCAL MUNICIPALITY, NYSDEC OR THE ENGINEER MAY REQUEST ADDITIONAL MEASURES TO MINIMIZE THE POTENTIAL FOR ONSITE OR OFFSITE EROSION PROBLEMS THAT MAY OCCUR DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH THESE MEASURES.
- NO DISTURBED AREA SHALL BE LEFT EXPOSED FOR MORE THAN 14 DAYS AFTER WORK STOPPAGE. THESE AREAS MUST IMMEDIATELY RECEIVE TEMPORARY SEED AND MULCH. IF THE SEASON PREVENTS THE ESTABLISHMENT OF A TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL. THE SEEDING WILL BE DONE IN ACCORDANCE WITH NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL.
- ANY GRADED AREAS NOT SUBJECT TO FURTHER DISTURBANCE OR CONSTRUCTION TRAFFIC SHALL, WITHIN 10 DAYS OF FINAL GRADING, RECEIVE PERMANENT VEGETATIVE COVER (SEED MIX) IN COMBINATION WITH SUITABLE MULCH AS PER THE NYSDEC, AUGUST 2005 OR LATEST EDITION.
- PAVED AREAS SHALL BE KEPT CLEAN AT ALL TIMES.
- IF FOR ANY REASON THE CONSTRUCTION IS HALTED FOR EXTENDED PERIODS, THE CONTRACTOR SHALL STABILIZE THE SELECT MATERIAL BY HYDRO-SEED OR OTHER MEANS, TO THE SATISFACTION OF THE ENGINEER FOR ALL AREAS DEVOID OF VEGETATION.
- DUST CONTROL - WATER SHALL BE APPLIED BY SPRINKLER OR WATER TRUCK DURING CONSTRUCTION ACTIVITIES TO MINIMIZE SEDIMENT TRANSPORT AND MAINTAIN ACCEPTABLE AIR QUALITY CONDITIONS. REPETITIVE TREATMENTS SHALL BE DONE AS NEEDED TO THE SATISFACTION OF THE ENGINEER.
- THE TIMELY MAINTENANCE OF SEDIMENT CONTROL STRUCTURES IS THE RESPONSIBILITY OF THE CONTRACTOR. 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 WEEKLY, AND AFTER EACH RAINFALL IN EXCESS OF 1/2 INCH TO INSURE PROPER OPERATION AS DESIGNED.

- THE CONTRACTOR SHALL REPAIR OR REPLACE DAMAGED EROSION CONTROL DEVICES IMMEDIATELY, AND IN NO CASE, MORE THAN TWENTY FOUR (24) HOURS AFTER OBSERVING OR BEING INFORMED ABOUT SUCH DEFICIENCIES.
- THE CONTRACTOR SHALL BE PREPARED TO IMPLEMENT INTERIM DRAINAGE CONTROLS AND EROSION CONTROL MEASURES AS THE NEED ARISES DURING THE COURSE OF CONSTRUCTION.
- THE CONTRACTOR SHALL MAKE AVAILABLE ONSITE ALL EQUIPMENT, MATERIALS AND LABOR NECESSARY TO PERFORM EMERGENCY EROSION CONTROL AND DRAINAGE IMPROVEMENTS WITHIN FOUR (4) HOURS OF ANY IMPENDING EMERGENCY SITUATION.
- ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL FINAL ACCEPTANCE OF THE SITE WORK BY THE OWNER. UPON CERTIFICATION OF FINAL ACCEPTANCE, THE OWNER WILL ASSUME RESPONSIBILITY FOR THE CONTINUED MAINTENANCE OF PERMANENT SOIL EROSION AND SEDIMENT CONTROL MEASURES.
- NO CONSTRUCTION ACTIVITIES OF ANY KIND SHOULD OCCUR WITHIN THE LIMITS OF ANY PROTECTED AREAS INCLUDING, BUT NOT LIMITED TO GRADING, EXCAVATION, STOCKPILING OF MATERIALS, STORAGE OF CONSTRUCTION EQUIPMENT, VEHICLE PARKING, MOVEMENT OF WORKERS OR MACHINERY, OR DUMPING OF CONSTRUCTION DEBRIS.
- ANY IMPORTED TOPSOIL SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS FOR QUALITY AND USE.
- ALL SOIL RESTORATION PROCEDURES SHALL BE CONSISTENT WITH CHAPTER 5 OF THE NYSDEC STORMWATER MANAGEMENT DESIGN MANUAL (JANUARY 2015).
- TEMPORARY SOIL EROSION AND SEDIMENT CONTROLS ARE NOT TO BE REMOVED UNTIL PERMANENT STABILIZATION (80% UNIFORM DENSITY OF PERMANENT VEGETATION OR PERMANENT MULCH/STONE) IS ESTABLISHED IN ALL CONTRIBUTORY DRAINAGE AREAS PER THE NOVEMBER 2016 NYS STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL.
- TEMPORARY SEED SHALL BE PLACED IN ALL DISTURBED AREAS THAT WILL BE LEFT EXPOSED FOR MORE THAN 21 DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC. DISTURBED AREAS SHALL BE LIMITED AND BE COVERED WITH A LAYER OF TOPSOIL PRIOR TO SEEDING. SEEDING SHALL BE INSPECTED FOR BARE SPOTS, WASH OUTS, AND HEALTHY GROWTH. IF REQUIRED, ADDITIONAL SEEDING SHALL BE PERFORMED. THE SEED MIX SHALL BE AN ANNUAL RYEGRASS (LOLIUM PERENNE SSP. MULTIFLORUM) AT A RATE OF 30 LBS/ACRE. SEE NYS DOT STANDARD SPECIFICATIONS FOR ADDITIONAL INFORMATION. CONTRACTOR SHALL SUBMIT SEED MIX TO ENGINEER FOR APPROVAL, PRIOR TO USE.
- PERMANENT SEED SHALL BE PLACED IN ALL DISTURBED AREAS AT THE COMPLETION OF THE DISTURBANCE ACTIVITIES AND IN ACCORDANCE WITH NYS DOT STANDARD SPECIFICATIONS. THE PERMANENT SEED MIX SHALL BE A COMBINATION OF 30% ANNUAL RYEGRASS (LOLIUM PERENNE SSP. MULTIFLORUM) AND 70% NATIVE GRASSES. NATIVE GRASSES SHALL BE TWO OR MORE OF THE FOLLOWING (BIG BLUESTEM (ANDROPOGON GERARDII), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPULORUM), SWITCHGRASS (PANICUM VIRGATUM), INDIAN GRASS (SORGHASTRUM NUTANS), TUFTED HAIRGRASS (DESCHAMPSIA CESPITOSA), DEERTONGUE (DICHANTHELIUM CLANDESTINUM), CANADA WILD RYE (ELYMUS CANADENSIS), VIRGINIA WILD RYE (ELYMUS VIRGINICUS), AND/OR SIDEOATS GRAMA (BOULETELOUA CURTIPENDULA). CONTRACTOR SHALL SUBMIT SEED MIX TO ENGINEER FOR APPROVAL, PRIOR TO USE.



Diam.	Slope X : Y	SECTION A-A						
		A	B	C	E	F	G	
24"	3 : 1	9"	3'-3"	2'-9"	6'-0"	4'-0"	3 1/4"	
30"	3 : 1	11"	4'-6"	1'-6"	6'-0"	5'-0"	3 3/4"	
36"	3 : 1	12"	5'-0"	3'-0"	8'-0"	6'-0"	4 1/2"	
42"	3 : 1	16"	5'-0"	3'-0"	8'-0"	6'-6"	5"	
48"	3 : 1	21"	5'-0"	3'-0"	8'-0"	7'-0"	5 1/2"	
54"	2.4 : 1	26"	5'-0"	3'-0"	8'-0"	7'-6"	6"	
60"	2 : 1	31"	5'-0"	3'-0"	8'-0"	8'-0"	6 1/2"	



WSP USA INC.
500 Summit Lake Drive, Suite 450
Valhalla, NY 10595
(914) 747-1120

ENGINEER OF RECORD:

NEW YORK STATE LICENSED PROFESSIONAL ENGINEER

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KEY PLAN:

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PROJECT NAME:

TEATOWN LAKE DREDGING PROJECT

WESTCHESTER COUNTY, NEW YORK

ISSUE DATE:

JUNE 2023

PROJECT NUMBER:

X

SCALE:

NONE

DRAWING NAME:

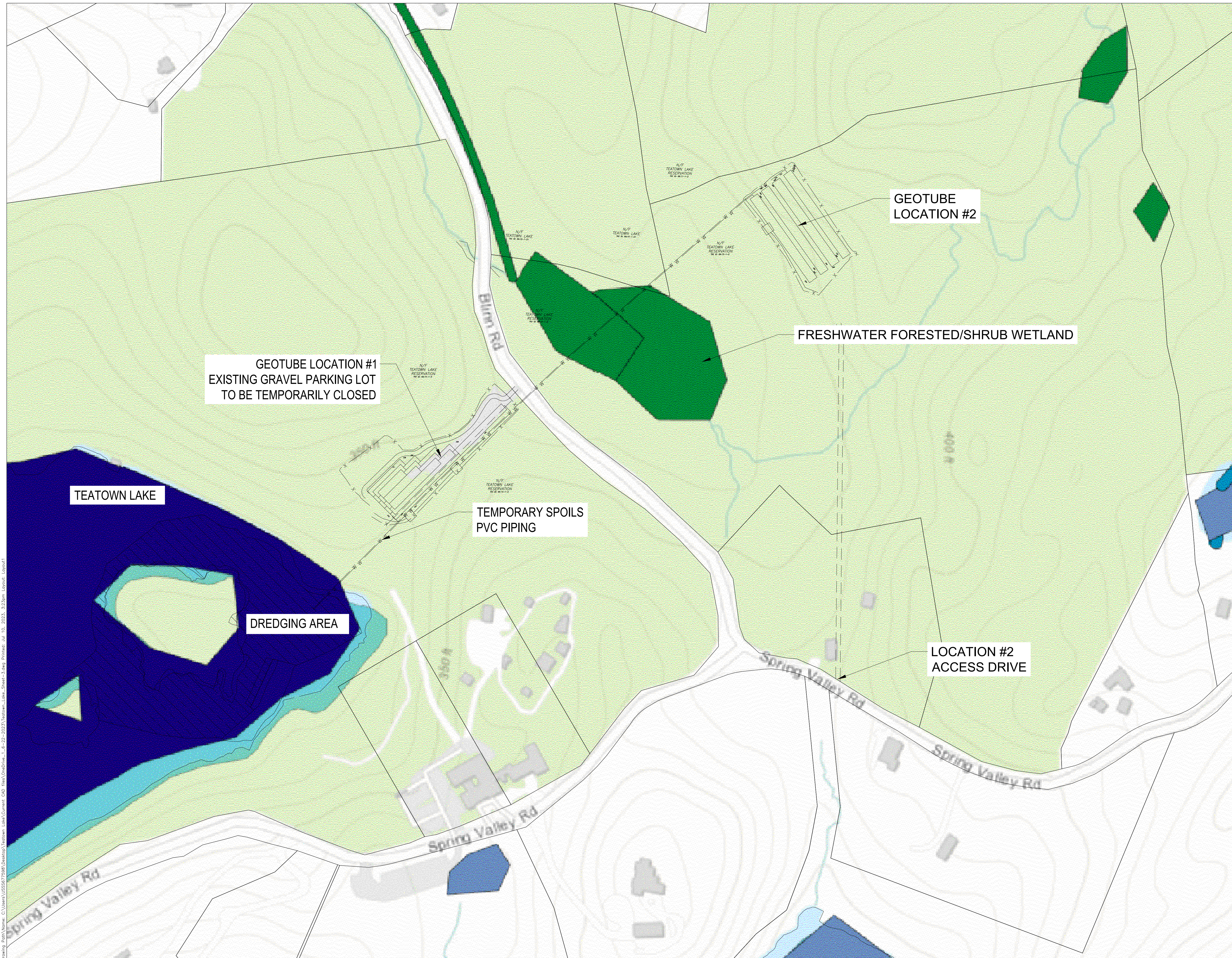
GENERAL NOTES

DRAWING NUMBER:

GEN101

SHEET NUMBER:

2 OF 9



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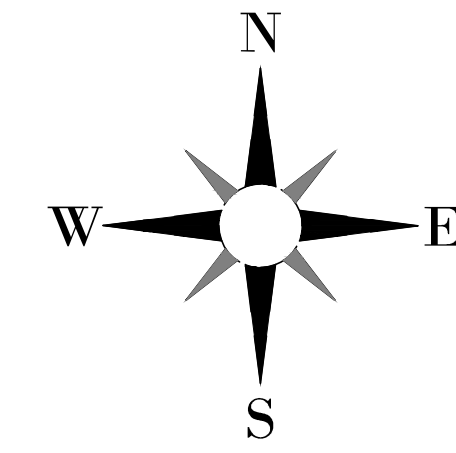
OVERALL PLAN

DRAWING NUMBER:

GEN102

SHEET NUMBER:

3 OF 9



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**LAKE DREDGING
PLAN**

DRAWING NUMBER:

GEN103

SHEET NUMBER:

4 OF 9



NOTES:

1. CONTRACTOR TO COORDINATE THE TEMPORARY REMOVAL OF FLOATING DOCK/ WALKING PATH TO ACCESS DREDGING LOCATION FROM LAUNCH AREA.
2. CONTRACTOR TO PROVIDE ANY NECESSARY TEMPORARY TRAFFIC CONTROL WITHIN SPRING VALLEY ROAD FOR DREDGE LAUNCH.

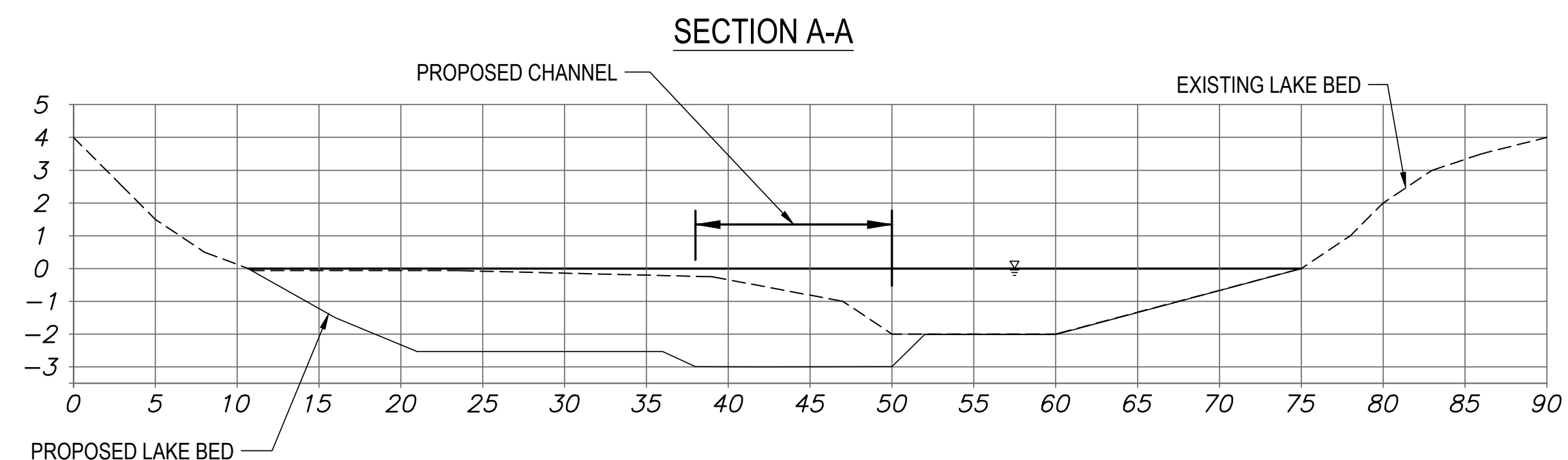
SUGGESTED SEQUENCE OF CONSTRUCTION

PRE-DREDGE DEWATERING SITE 2

1. SITE PREPARATION OF HIDDEN VALLEY MEADOW (DEWATERING SITE 2):
 - a) INSTALL EROSION AND SEDIMENT CONTROL FENCING.
 - b) TREE REMOVAL AT DEWATERING SITE 2.
 - c) CUT ACCESS ROAD TO DEWATERING SITE 2.
 - d) CUT TERRACES AT DEWATERING SITE 2.
 - e) INSTALL TEMPORARY CYCLONE FENCING.
 - f) SOLARIZE EXPOSED SOIL IN TERRACES.
 - g) INSTALL EROSION AND SEDIMENT CONTROL FENCING FOR BLINN RD. DRY CULVERT INSTALLATION.
 - h) INSTALL DRY CULVERT AS TEMPORARY PIPE PASSAGE UNDER BLINN RD.; CULVERT TO REMAIN IN PLACE AS WILDLIFE CROSSING.

PRE-DREDGE DEWATERING SITE 1:

2. SITE PREPARATION OF BLINN RD. PARKING LOT (DEWATERING SITE 1):
 - a) INSTALL ELECTRICAL PANEL FOR TEMPORARY POWER SUPPLY.
 - b) INSTALL EROSION AND SEDIMENT CONTROL FENCING BLINN RD. SITE.
 - c) INSTALL TEMPORARY CYCLONE FENCING AROUND DEWATERING AREA.
 - d) CUT AND FILL GRADE BLINN RD. PARKING LOT TO LEVEL.
 - e) PREPARE TEMPORARY EMERGENCY ACCESS ROAD TO LAKE TRAIL.
 - f) PLACE STEEL PLATES TO PROTECT SEPTIC FORCE MAIN UNDER PARKING LOT.
3. HYDRO-DREDGE UNIT WILL BE LAUNCHED INTO AND RETRIEVED FROM TEATOWN LAKE BY CRANE FROM SPRING VALLEY RD. JUST EAST OF INTERSECTION OF TEATOWN RD AND SPRING VALLEY RD.
4. INSTALL TEMPORARY PIPING (6" CONTINUOUS WELD PVC) FROM HYDRO-DREDGE TO DEWATERING SITES. ALL PIPING WILL BE ABOVE GRADE AND SUPPORTED ON THE GROUND.
5. INSTALL TURBIDITY CURTAIN AS SHOWN ON THE PLANS PRIOR TO DREDGE ACTIVITY.
6. COMMENCE DREDGING OPERATIONS. TEMPORARY PIPE AND EROSION/SEDIMENT CONTROLS TO BE MOVED AND ADJUSTED AS NECESSARY.
7. AFTER COMPLETION OF DREDGING ACTIVITIES, THE HYDRO-DREDGE UNIT CAN BE REMOVED FROM TEATOWN LAKE. ALL TEMPORARY PIPING SHALL BE REMOVED. TURBIDITY CURTAIN SHALL BE REMOVED.
8. AFTER DEWATERING OF GEOTUBES, AND AT THE DIRECTION OF THE ENGINEER, THE DEWATERED DREDGED MATERIAL ON SITE 2 (HIDDEN VALLEY MEADOW) SHALL BE SPREAD AS SHOWN ON CONSTRUCTION PLANS.
9. PERMANENT SEEDING AND LANDSCAPING SHALL BE PLACED.
10. AFTER REMOVAL OF DEWATERED DREDGED MATERIAL AT SITE 1 (BLINN ROAD PARKING LOT), THE IMPORTED FILL SHALL BE REMOVED, THE PARKING LOT REGRADED AND STONE AGGREGATE PLACED IN ORDER TO RESTORE THE LOT TO ITS EXISTING CONDITION.
11. REMOVE E&S CONTROLS AND CONSTRUCTION FENCING AFTER FINAL SITE STABILIZATION.



NOTES:

- 1) TEMPORARY POWER TO BE PROVIDED (BY OTHERS)
- 2) AFTER GEOTUBE DE-WATERING IS COMPLETE, OWNER TO COORDINATE REMOVAL OF DREDGED MATERIAL BY OTHERS. CONTRACTOR TO RESTORE PARKING LOT AND ADJACENT AREA TO EXISTING CONDITIONS. AFTER REMOVAL OF DREDGED MATERIAL. CONTRACTOR TO PROVIDE MINIMUM OF 4" DEPTH OF NEW 3/8" CRUSHED STONE IN PARKING LOT.
- 3) SEE GEN101 UTILITY NOTE 4 FOR ADDITIONAL CULVERT INFORMATION

PROPOSED PRECAST CONCRETE
END SECTION (INV. 333.88)
SEE DETAIL ON GEN101



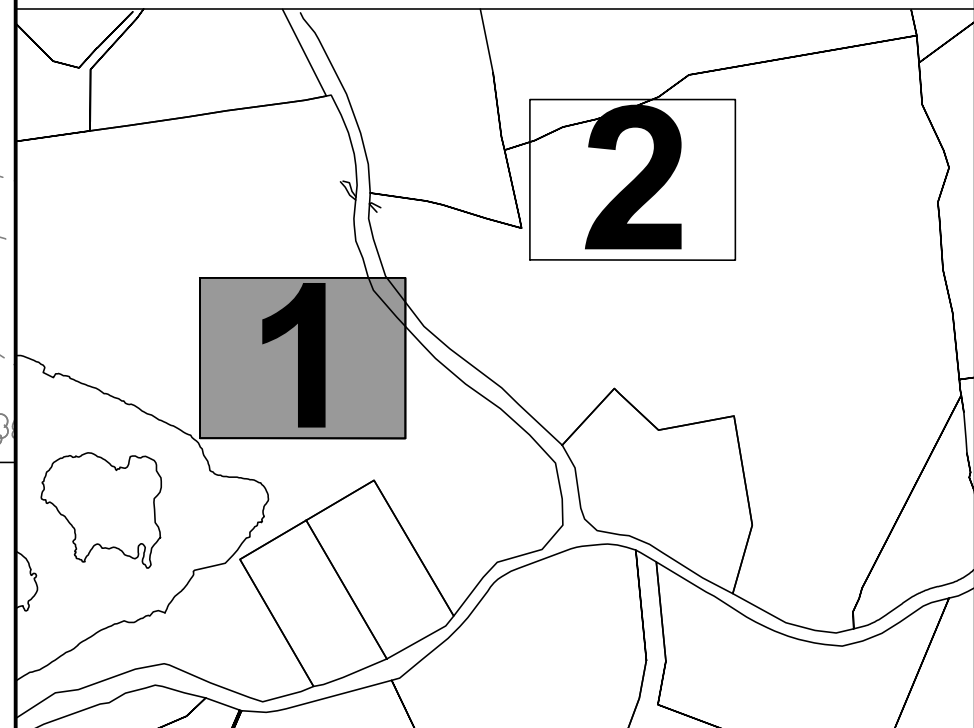
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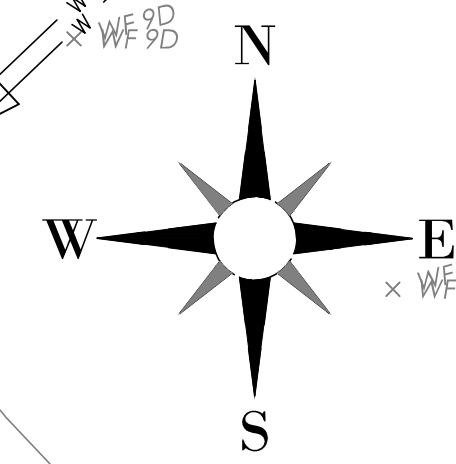
**GEOTUBE STOCKPILE
SITE NO. 1 PLAN**

DRAWING NUMBER:

SHEET NUMBER:

SP101

5 OF 9



PROPOSED GEOTUBE STACKING AREA
LOCATION 1 - PARKING LOT
1802.7 LF OF GEOTUBES

EXISTING SEPTIC FIELD - NO
CONTRACTOR ACCESS.
NO CONSTRUCTION VEHICLES,
STORAGE OR FILL MATERIAL

DUMPSTER AND ENCLOSURE TO BE
REMOVED AND STORED; TO BE
REINSTALLED AT COMPLETION OF PROJECT

PARKING METER AND SIGNS
TO BE REMOVED AND STORED; TO BE
REINSTALLED AT COMPLETION OF PROJECT

10' WIDE EMERGENCY ACCESS ROAD
MUST REMAIN CLEAR AT ALL TIMES

TEMPORARY 6' CHAIN LINK CONSTRUCTION FENCE WITH GATE

PROPOSED 19" X 30" ELLIPTICAL
HDPE 62' DRY CULVERT FOR
TEMPORARY PVC PIPING; TO
REMAIN AT COMPLETION OF
PROJECT. SEE NOTE 3

PROPOSED PRECAST CONCRETE
END SECTION (INV. 334.5)
SEE DETAIL ON GEN101.

SECTION A-A

SECTION B-B

SILT FENCE (TYP.)

TEMPORARY CONSTRUCTION FENCING
(MIN. HEIGHT 6')

TEMPORARY SPOILS
PVC PIPING (INFLOW)

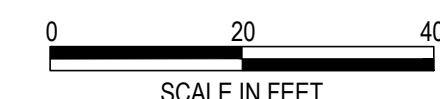
TEMPORARY PVC PIPING (OUTFLOW)

TOTAL LF:
CONTAINED DREDGED VOLUME:

LAYER 1	LAYER 2	LAYER 3
944.7 LF	543.4 LF	314.6 LF
2730.2 CY	1570.4 CY	909.2 CY

STACKED GEOTUBE SCHEMATIC LAYOUT

NOT TO SCALE



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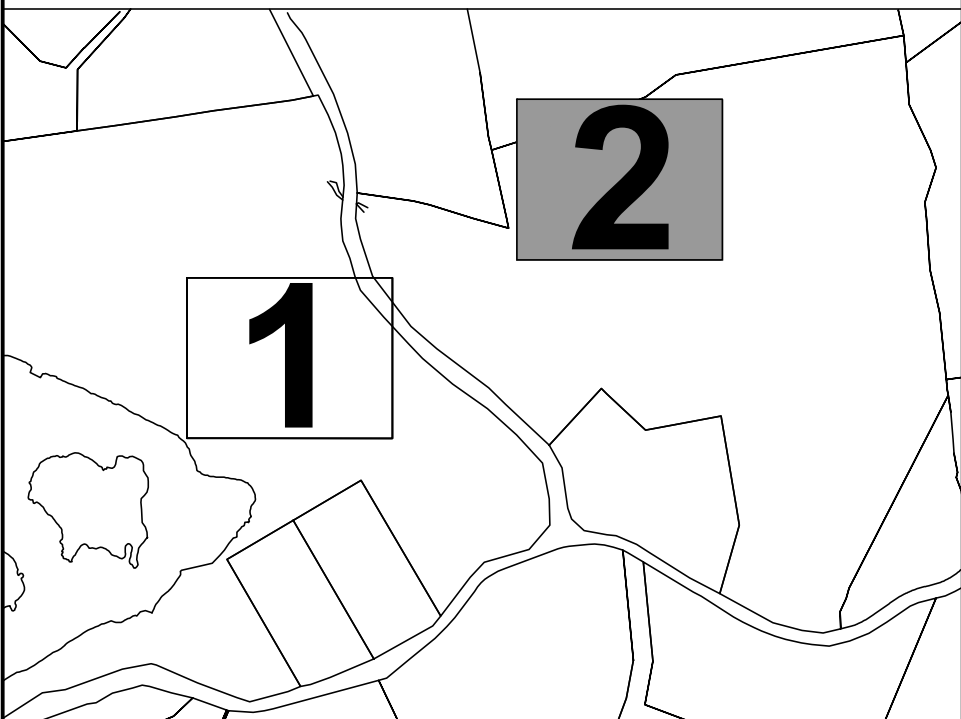
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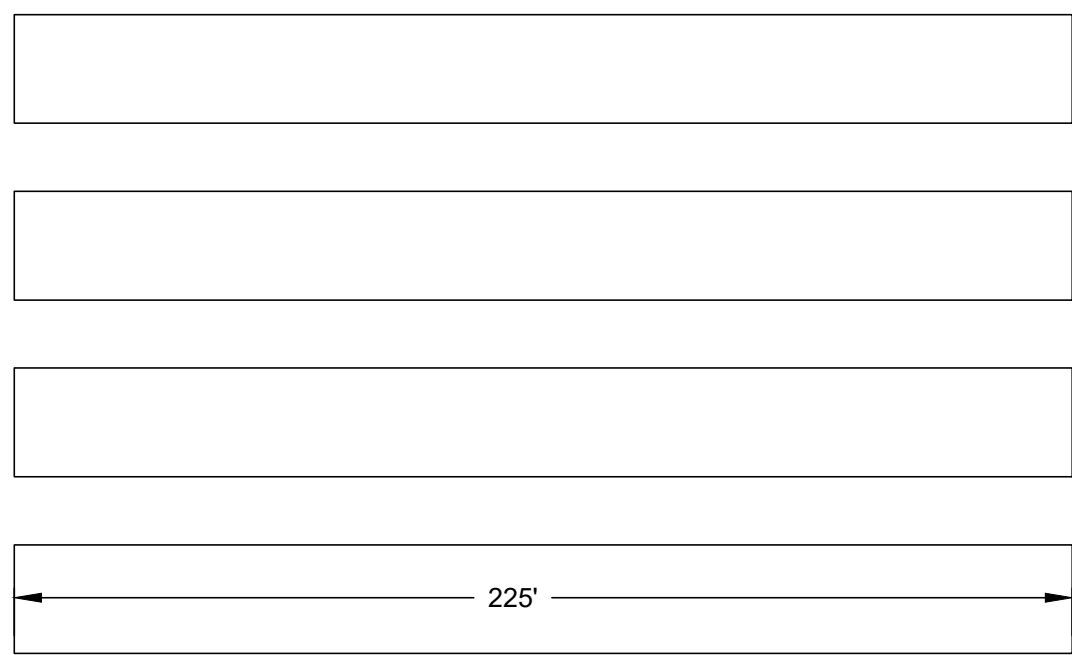
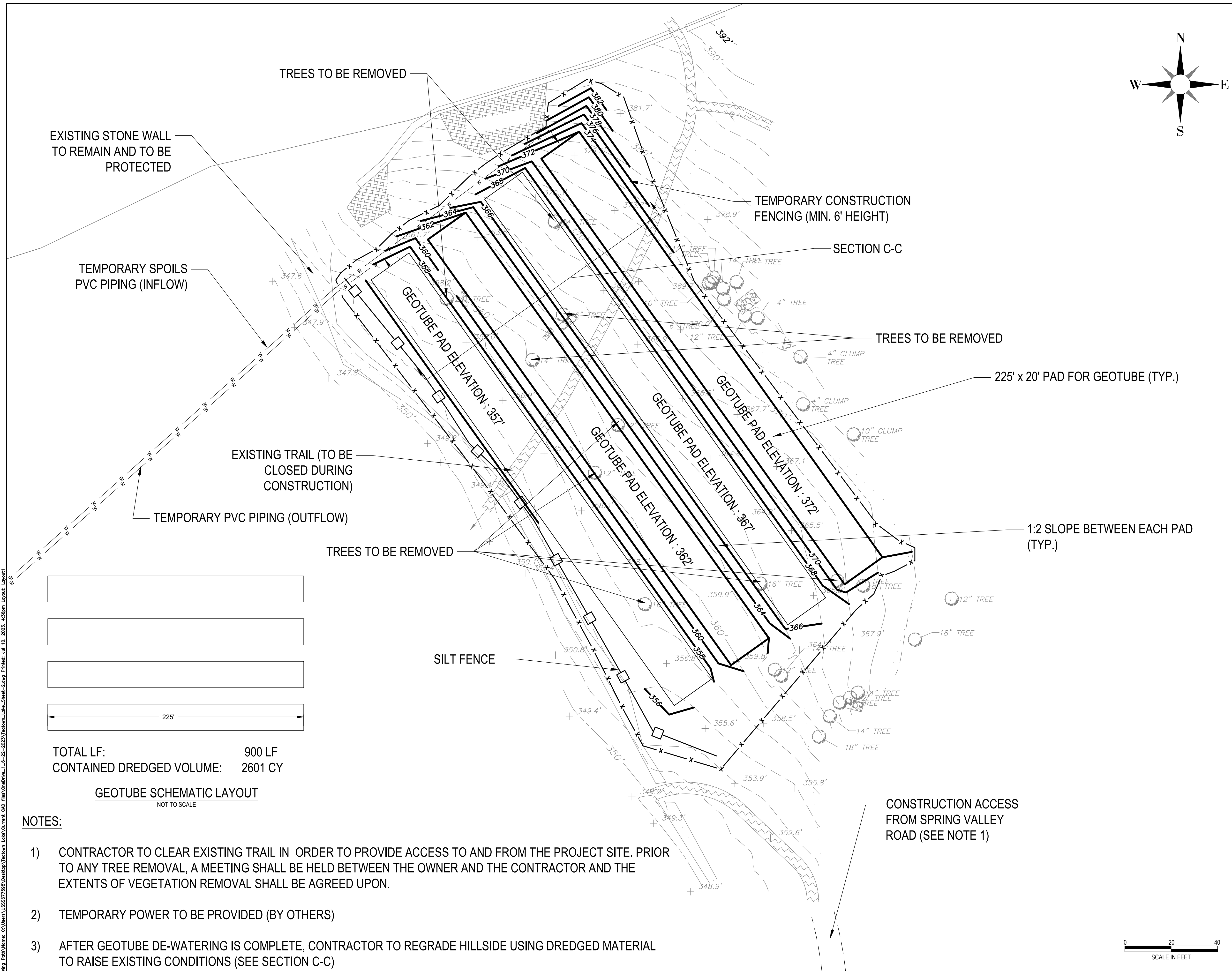
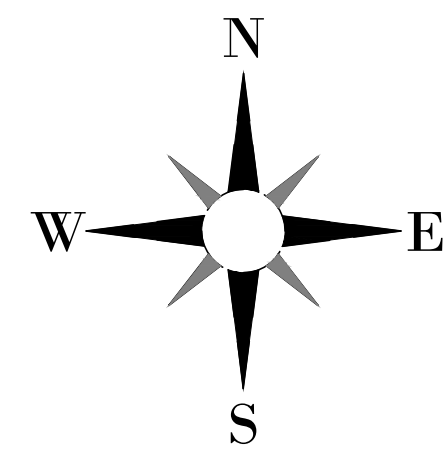
**GEOTUBE STOCKPILE
SITE NO. 2 PLAN**

DRAWING NUMBER:

SHEET NUMBER:

SP102

6 OF 9



TOTAL LF: 900 LF
CONTAINED DREDGED VOLUME: 2601 CY

GEOTUBE SCHEMATIC LAYOUT
NOT TO SCALE

NOTES:

- 1) CONTRACTOR TO CLEAR EXISTING TRAIL IN ORDER TO PROVIDE ACCESS TO AND FROM THE PROJECT SITE. PRIOR TO ANY TREE REMOVAL, A MEETING SHALL BE HELD BETWEEN THE OWNER AND THE CONTRACTOR AND THE EXTENTS OF VEGETATION REMOVAL SHALL BE AGREED UPON.
- 2) TEMPORARY POWER TO BE PROVIDED (BY OTHERS)
- 3) AFTER GEOTUBE DE-WATERING IS COMPLETE, CONTRACTOR TO REGRADE HILLSIDE USING DREDGED MATERIAL TO RAISE EXISTING CONDITIONS (SEE SECTION C-C)



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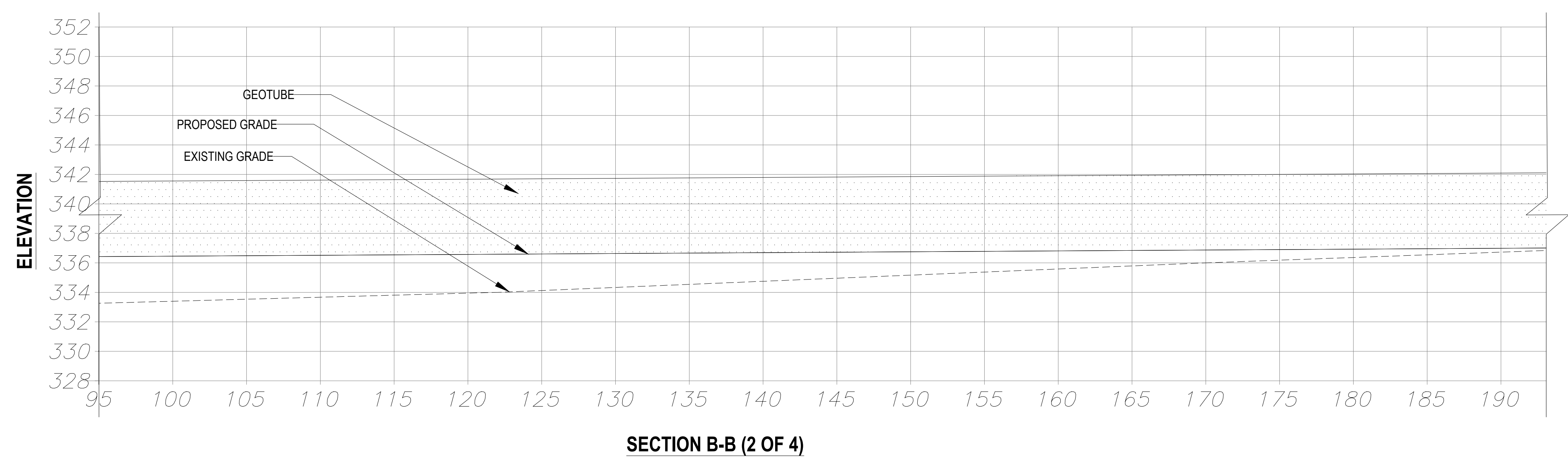
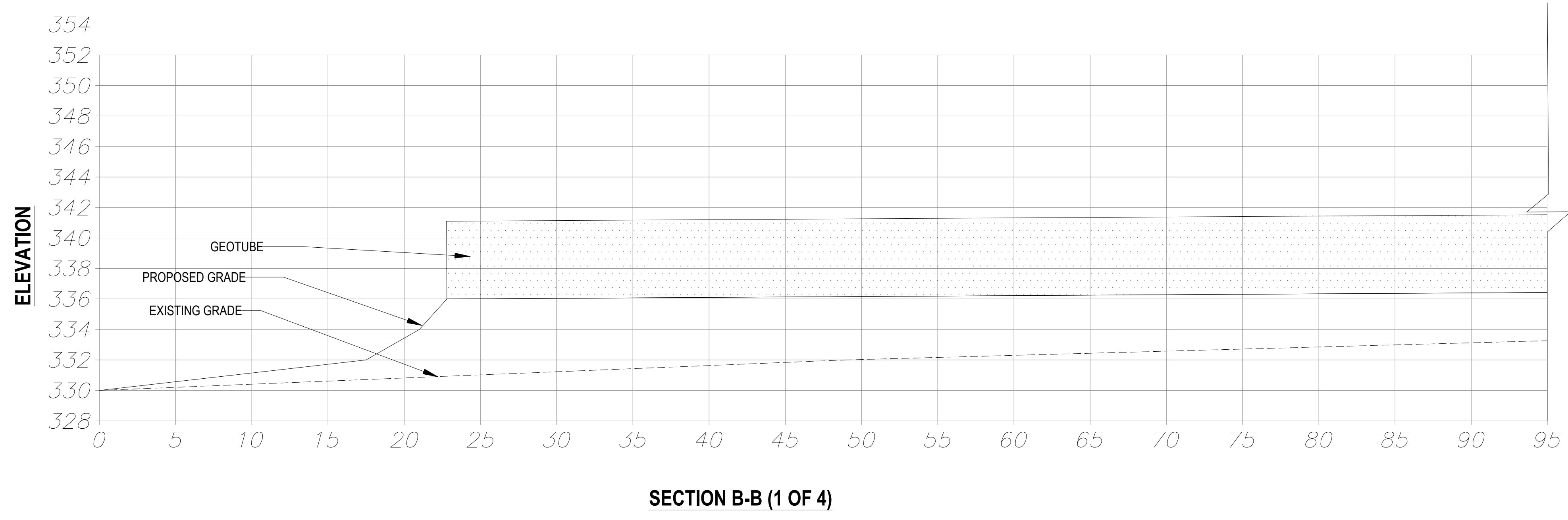
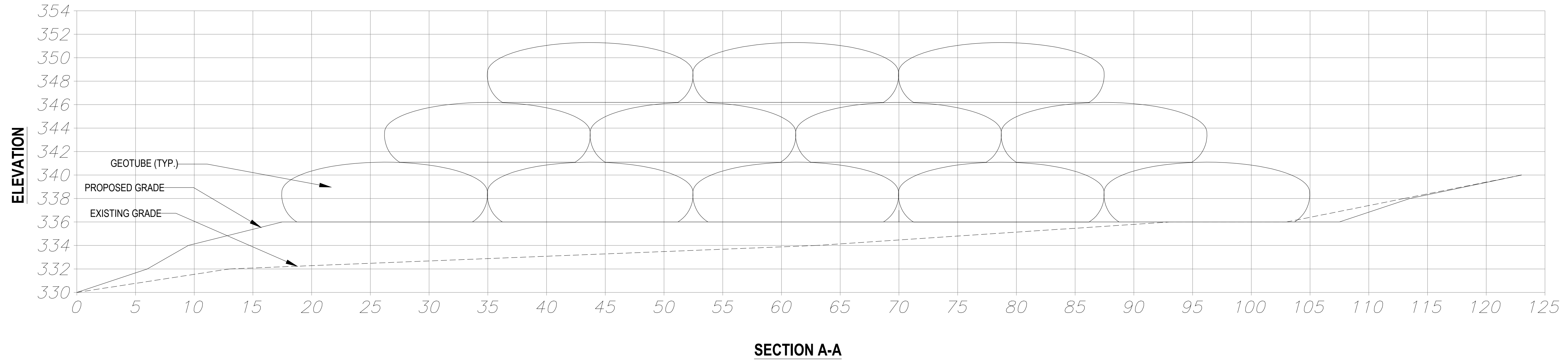
PROJECT NAME:
**TEATOWN LAKE DREDGING
PROJECT**
WESTCHESTER COUNTY, NEW YORK

ISSUE DATE:
JUNE 2023

PROJECT NUMBER: X SCALE:

DRAWING NAME:
**SITE NO. 1 & 2 SECTIONS
(SHEET 1 OF 2)**

DRAWING NUMBER: GR101 SHEET NUMBER:
7 OF 9



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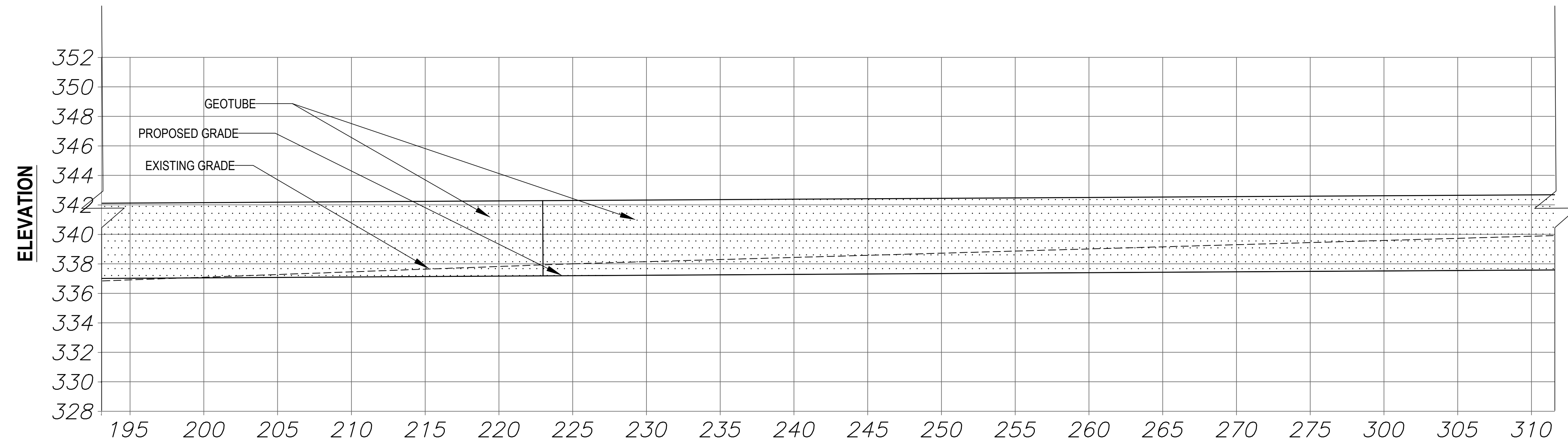
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(SHEET 2 OF 2)**

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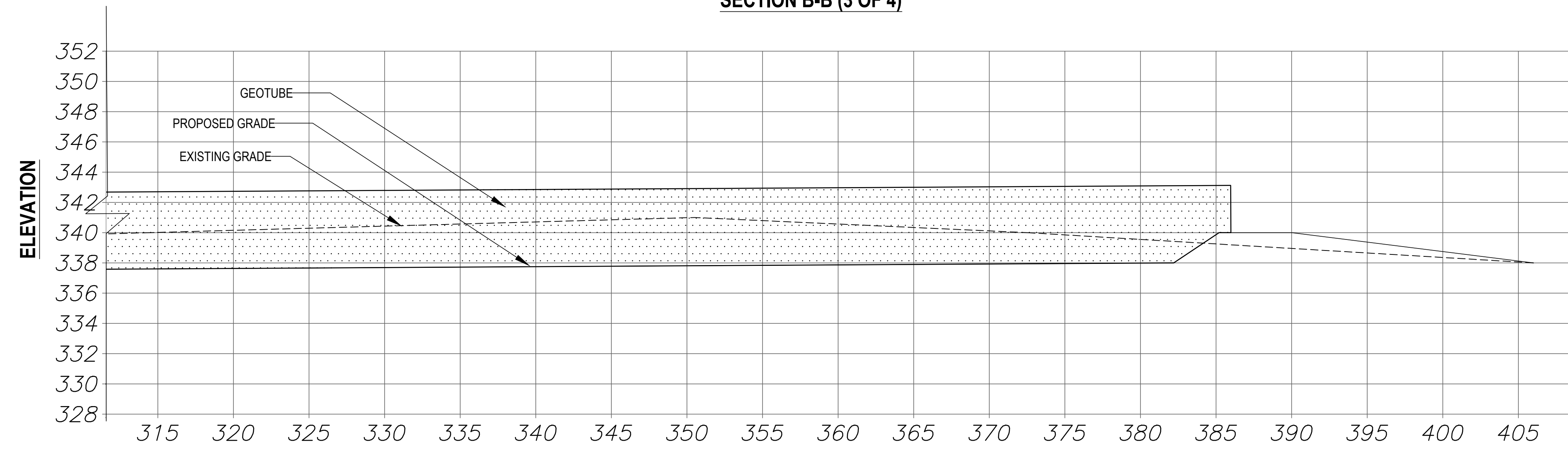
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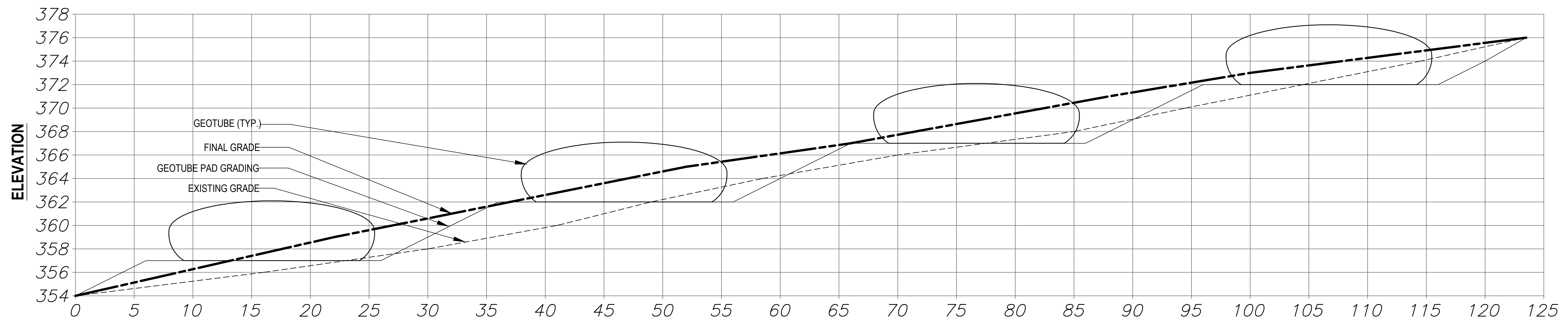
8 OF 9



SECTION B-B (3 OF 4)



SECTION B-B (3 OF 4)



SECTION C-C

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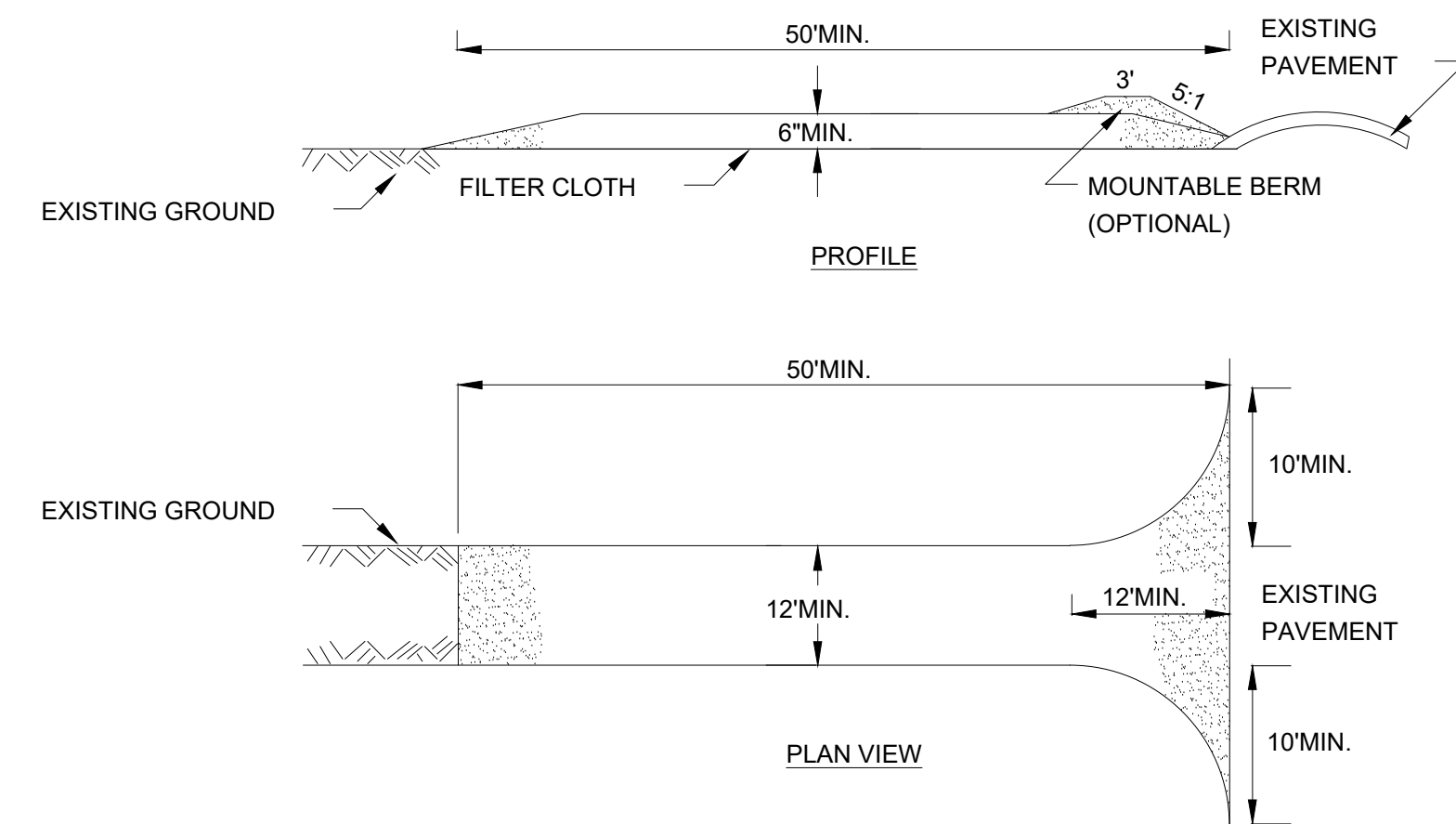
**EROSION & SEDIMENT
CONTROL DETAILS - 1**

DRAWING NUMBER:

DET101

SHEET NUMBER:

9 OF 9

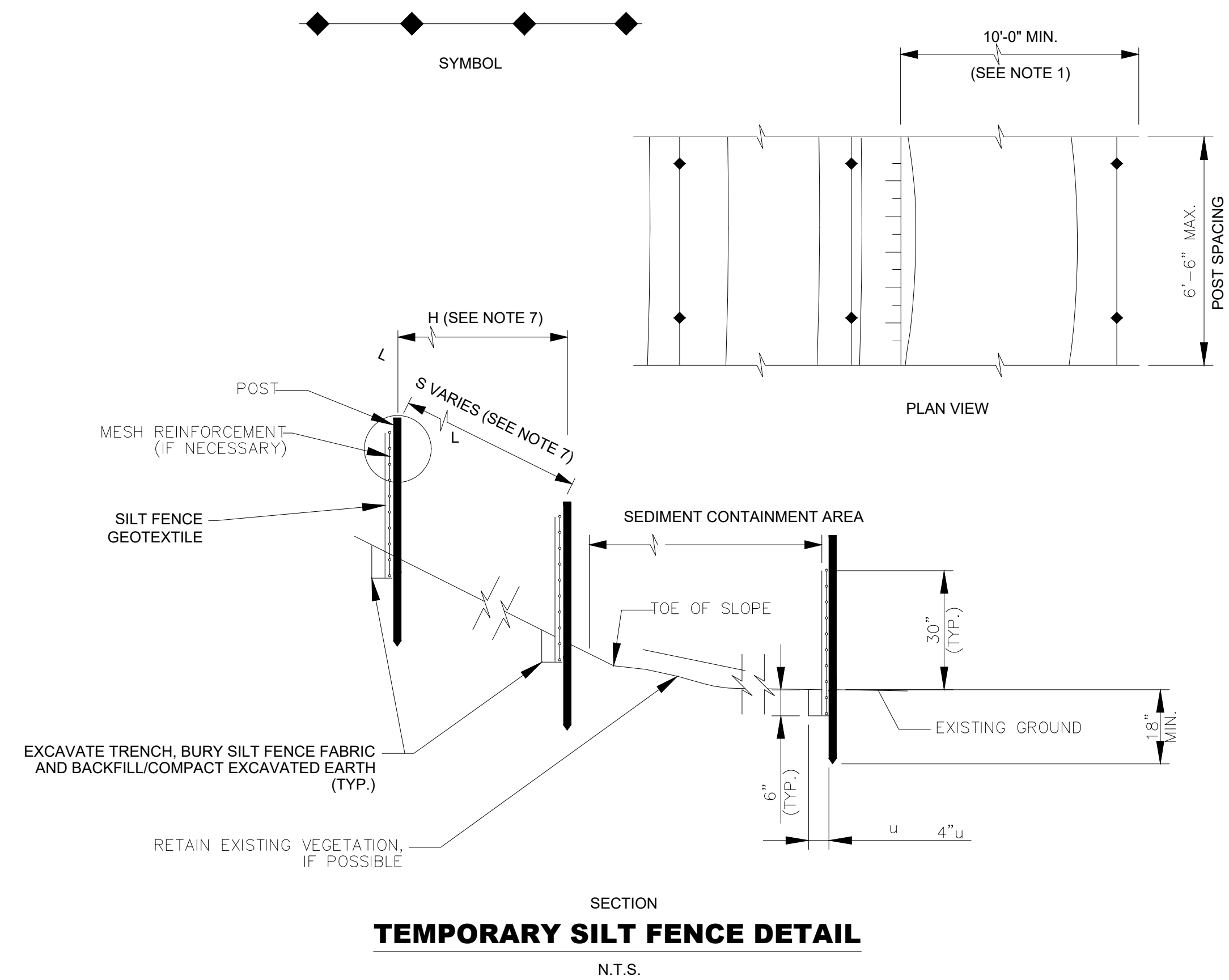


CONSTRUCTION ENTRANCE DETAIL

N.T.S.

CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. 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.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

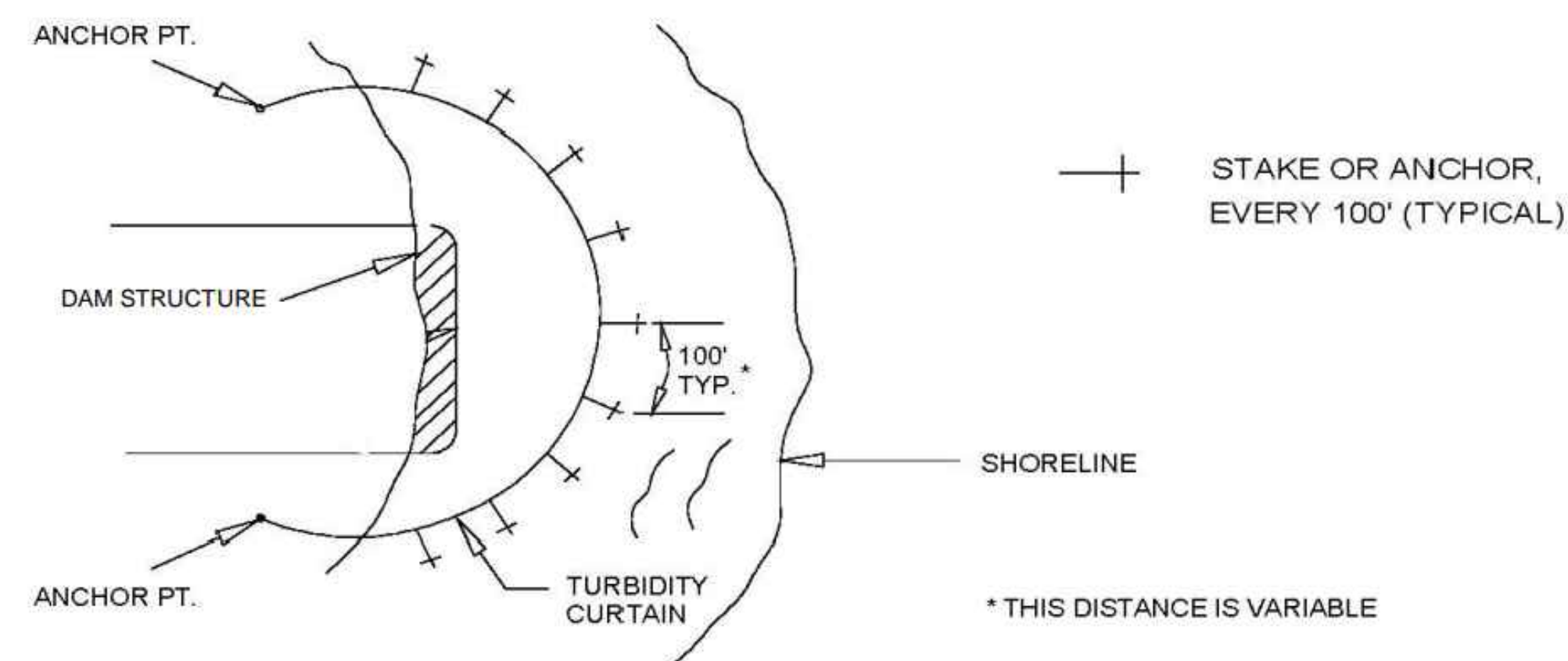


TEMPORARY SILT FENCE DETAIL

N.T.S.

GENERAL NOTES (SILT FENCE):

1. PLACEMENT OF SILT FENCE SHALL PROVIDE ADEQUATE AREA FOR SEDIMENT STORAGE AND FACILITATE MAINTENANCE OF SEDIMENT CONTAINMENT AREA.
2. POSTS MAY BE 1" X 1" (MIN.) HARDWOOD, 1" X 3" (MIN.) SOFTWOOD, OR 1.3 LB/FT (MIN.) STEEL. SPACING FOR THE PROVIDED SILT FENCE SHALL BE AS DESIGNATED ON THE DEPARTMENT APPROVED LIST FOR SILT FENCE.
3. THE BOTTOM EDGE OF SILT FENCE SHALL BE BURIED A MINIMUM OF 6" BELOW GROUND. THE FENCE SHALL BE INSTALLED WITH THE POSTS ON THE DOWNSTREAM SIDE OF THE FABRIC.
4. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS OR AFTER EACH RAINFALL OF " OR MORE WITHIN A 24 HOUR PERIOD. MEASURES SHALL BE CLEANED AND REPAIRED AS REQUIRED.
5. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
6. DRAINAGE AREAS:
MAXIMUM DRAINAGE AREA TRIBUTARY TO 100'-0" OF SILT FENCE SHALL BE . ACRE.
THE FOLLOWING ARE MAXIMUM SLOPE LENGTHS TO THESE MEASURES:
SLOPE (L)SLOPE LENGTH (FT) (H)HORIZ LENGTH(FT)
2:1 25 22
3:1 50 47
4:1 75 73
5:1 100 98
7. SILT FENCE INSTALLATION, INCLUDING EXCAVATION, BACKFILL, COMPACTION, MAINTENANCE & REMOVAL OF SILT FENCE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 209.13.



TURBIDITY CURTAIN DETAIL

N.T.S.

TURBIDITY CURTAIN NOTES:

1. A TURBIDITY CURTAIN OR SILT CURTAIN OF GEOTEXTILE FABRIC OR HEAVY PLASTIC SHALL BE INSTALLED IN THE WATER AROUND THE WORK AREA TO PREVENT SEDIMENT OR SEDIMENT-LADEN WATER FROM LEAVING THE IMMEDIATE WORK AREA.
2. TURBIDITY CURTAINS SHALL NOT BE INSTALLED ACROSS FLOWING WATER. THEY ARE INTENDED TO BE PLACED PARALLEL TO THE SHORELINE.
3. PRIOR TO A STORM EVENT OR ANTICIPATED HIGH WATER FLOWS, THE WORK AREA SHALL BE TEMPORARILY STABILIZED AND THE CURTAIN SHALL BE REMOVED TO PREVENT DAMAGE TO THE CURTAIN OR DOWNSTREAM AREAS.
4. CURTAINS SHALL BE MARKED WITH BRIGHT COLORS AND LIGHTS IF PLACED IN NAVIGABLE WATERS.
5. CURTAINS SHALL BE PROPERLY ANCHORED TO SHORE BY A FLOATATION LINE.
6. SEAMS SHALL BE SEALED AND INSPECTED REGULARLY FOR GAPS OR OPENINGS AND IF FOUND, REPAIRED IMMEDIATELY.
7. IF SEDIMENT OR SEDIMENT-LADEN WATERS ARE OBSERVED LEAVING THE IMMEDIATE WORK AREA, OPERATIONS SHALL CEASE AND THE TURBIDITY CURTAIN SHALL BE INSPECTED. IF THE CURTAIN IS FOUND TO NOT BE PROPERLY ANCHORED OR IS DAMAGED, REPAIRS/MODIFICATIONS SHALL BE MADE TO ENSURE IT IS FUNCTIONING PROPERLY BEFORE RESTARTING OPERATIONS. IF THE CURTAIN IS FOUND TO BE PROPERLY INSTALLED AND NO OTHER DAMAGE IS APPARENT, ADDITIONAL MEASURES SHALL BE PUT IN PLACE TO CONTAIN SEDIMENT OR SEDIMENT-LADEN WATERS WITHIN THE WORK AREA.
8. THE TURBIDITY CURTAIN SHALL REMAIN IN PLACE FOR AT LEAST 12 HOURS FOLLOWING COMPLETION OF WORK ACTIVITIES. THE TURBIDITY CURTAIN SHALL BE CAREFULLY REMOVED BY PULLING IT TOWARD THE SHORELINE TO MINIMIZE THE RELEASE OF ATTACHED SEDIMENT BACK INTO THE REGULATED WATER. SEDIMENTS SHALL BE PROPERLY DISPOSED OF IN AN UPLAND AREA.

MACHINE SPECIFICATIONS

Model SP-915



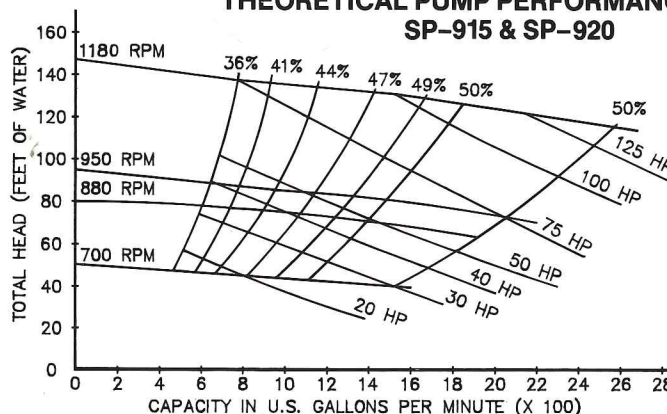
1611 Bush Street
Baltimore, Maryland
21230 U.S.A.

General:	Length (O.A.)	39'5½"
	Width (O.A.)	9'0"
	Height (O.A.)	8'8"
	Weight	23,000 lbs. dry
	Draft	21"
	Fuel Capacity	360 gallons
Flotation:	Pontoons—Two 36" x 32" x 33'0" 10 Gauge Steel with Internal Bulkheads and Stiffeners; formed for rigidity; polyurethane foam filled.	
Cutter Assembly:	Auger:	
	Diameter	13½"
	Pitch	11"
	Flighting	¾"
	Speed	Variable to 92.5 RPM
	Cutter Knives	Detachable Heat-Treated Blades
	Auger Torque	16,660 in. lbs.
Mud Shield:	19"x9' Hydraulically Adjustable	
Working Capacity:	Cut 9' wide x 18" maximum depth	
	Operating Depth	15' maximum
Engine:	Detroit Diesel 6-71 N; 175 Continuous BHP @ 1800 RPM	
Drive:	Engine	
		Direct Hydraulic Dual Pump Drive
Pump:	Centrifugal Recessed Impeller	
	Impeller Diameter	18"
	Suction Diameter	8" (10" available as option)*
	Discharge Diameter	6"
	Nominal Pump Performance	2000 GPM @ 1180 RPM against 124' Head (water)
	Lead in screw (option)*	
Hydraulic System:	Auger and Accessory Drive—Dual Pumps	
	Capacity Total	26.1 GPM @ 1800 RPM (Engine Speed)
	Reservoir	47 Gallons at full mark
	Circuit One	Auger Drive
	Circuit Two	Boom, Mud Shield and Winch
	Relief Valve Setting:	
	Auger	3000 PSI
	Others	1800 PSI
	Main Pump Drive—Single Pump	
	Variable Displacement Hydraulic Pump	
	Fixed Displacement Hydraulic Motor	
	Capacity	76 GPM @ 1800 RPM (Engine Speed)
	Reservoir	30 Gallons at full mark
	Relief Valve Setting	3750 PSI
Propulsion:	Double Wrap Sheave Hydraulic Winch	
	Traverse Speed	31 FPM Maximum Forward & Reverse
	Average Cutting Speed	8 to 12 FPM
Electrical System:	Voltage	
		12V
	Alternator Output	65 Ampere
	Batteries	(2) 12V, 205 Ampere Hour, Parallel Wired
	Circuits	2 Wire System Full Ground
Finish:	Polyurethane finish coat on corrosion inhibitive epoxy primer.	
Colors:	Standard Colors	
		Red, White and Blue.
NOTE:	Specifications Subject To Change Without Notice. Optional configurations quoted upon request. *These options are recommended for applications involving thick viscous sludges.	

MUD CAT machines are operating in a growing list of countries throughout the world. To obtain complete information, call the MUD CAT DIVISION of ELLCOTT MACHINE CORPORATION
Phone: 301/837-7900,
FAX: 301/752-3294
Telex: 87621.

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ELLCOTT MACHINE CORPORATION

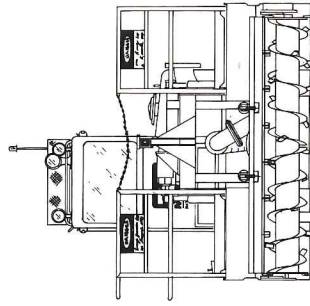
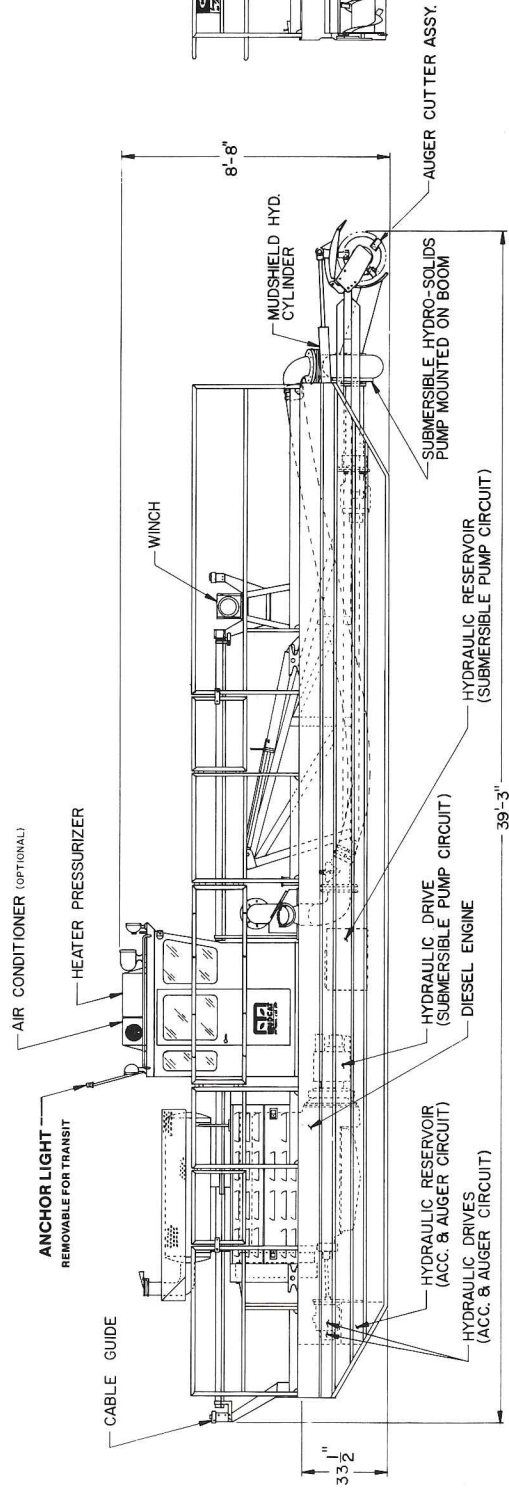
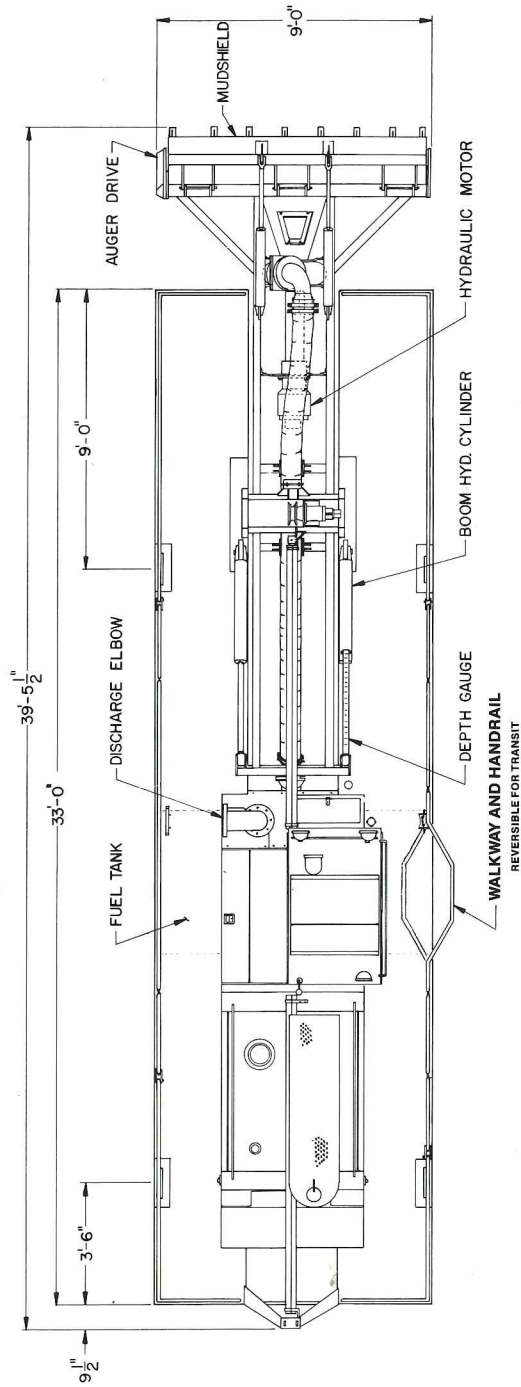
THEORETICAL PUMP PERFORMANCE CURVE SP-915 & SP-920



Impeller Dia — 18 Inch
No. of Vanes — 8
Type of Vanes — Recessed
S.G. of Liquid — 1.0

NOTE:
The theoretical performance curve indicates capacity for pumping water only. Contact MUD CAT DIV. ELLCOTT for information regarding capacities for pumping material.

Fig. 2a



MUD CAT DIVISION ELLCOTT MACHINE CORP.	BALTIMORE MARYLAND
MUD CAT MODEL SP 915	DWG NO. D9185
DATE 8/8/88	

Teatown Lake Reservation Hidden Valley North Field Meadow Reclamation Plan - DRAFT March 04, 2024

Caroline H. Saxton
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Bedford Hills, NY 10507
Email: saxtonchp@gmail.com
Mobile: 914 536-3879

In response to the NYC DEP letter dated November 14, 2023, regarding the Teatown Lake Dredging project, below are some key considerations and recommendations for developing a reclamation plan for the Hidden Valley North Field Meadow site as outlined in items 5 and 13 in the above-mentioned document.

Current Site Observations (Hidden Valley North Field Meadow)

1. Site conditions

Area approx. 330 feet x 180 feet = 60,000 ft² (less than 1.5 acres). Light: Full sun: Soil: because of its location upland from the wetland area, the existing soil in the reclamation site is dry and well drained; additionally, per conversations with Tim Judge of EcoAssessment LLC, preliminary data suggests that dredged dewatered sediment from the lake will likely be sandy and low in Organic Matter (OM). Topography: the elevation of the site ranges from 357 feet to 372 feet over a span of 180 feet (< 5% slope) (refer to Teatown Lake Reservation Dredge Project, Application submitted on September 12, 2023, Section D, Narrative and Work Plan, Figure 2). Thus, overall site conditions for the reclaimed North Field Meadow are expected to be full sun, well drained sandy soils with low OM (Xeric-Mesic conditions) and a relatively flat topography.

2. Dominant and/or indicative plant species currently present

Trees: Walnut (*Juglans nigra*), Flowering dogwood (*Cornus florida*), and Sassafras (*Sassafras albidum*)

Shrubs & Woody Vines: Gray Dogwood (*Cornus racemosa*), Virginia creeper (*Parthenocissus quinquefolia*), plus invasive species such as Multiflora rose (*Rosa multiflora*), Wineberry (*Rubus phoenicolasius*), Oriental bittersweet (*Celastrus orbiculatus*), and Japanese honeysuckle (*Lonicera japonica*).

Forbs & Herbaceous Vines: Native plant species in moderate to high abundance include Yarrow (*Achillea millefolium*), Hog peanut (*Amphicarpaea bracteata*), Wild basil (*Clinopodium vulgare*), Pilewort (*Erechtites hieracifolius*), Virginia stickweed (*Hackelia virginiana*), Wild bergamot (*Monarda fistulosa*), Common blue violet (*Viola sororia*). Highly desirable native plant species in lower abundance include Field thistle (*Cirsium discolor*), Wild tobacco (*Lobelia inflata*), Jumpseed (*Persicaria virginiana*), and Rabbit tobacco (*Pseudognaphalium obtusifolium*). Non-

native species in high abundance include Field garlic (*Allium vineale*) plus the invasive Garlic mustard (*Allaria petiolata*).

Graminoids: Deertongue (*Dicanthelium clandestinum*), Purpletop (*Tridens flavus*) and various sedges (*Carex sp.*) are dominant native grasses in the area. Nonnative invasive species include Orchardgrass (*Dactylis glomerata*), Couchgrass or Quackgrass (*Elymus repens*), Japanese stiltgrass (*Microstegium vimineum*), Timothy grass (*Phleum pratense*), and yellow foxtail (*Setaria pumila*). Additionally, Kentucky bluegrass (*Poa pratensis*), a non-native widely used turf grass was found to be present in the area.

Observed plant lists were compiled from two sources: Larry Weaner Landscape Associates (LWLA) site inventory memo dated October 29, 2020 (copy of report provided by Dr. Danielle Begley-Miller, prior Director of Science and Stewardship in Teatown Lake Reservation), and direct observations by Caroline Saxton from site surveys conducted from October 2023 through present. Observations were consistent across both surveys.

Prior to Project initiation

3. Protecting existing clusters of native beneficial meadow plants and shrubs

There are a few clusters of beneficial native plants including Beebalm (*Monarda fistulosa*), and native grasses such as Deertongue (*Dichanthelium clandestinum*), Little Bluestem (*Schizachyrum scoparium*), and Purpletop (*Tridens flavus*) in the area surrounding the reclamation site. There are also large strands of young Sassafras (*Sassafras albidum*) trees and Gray Dogwood (*Cornus racemosa*) outside the North corner of the area near the walking path. Where feasible and logistically possible to do so, especially those outside the reclamation site, these clusters should be identified and marked in order protect them from accidental disturbance and/or destruction during the dredging project.

During dredging project

4. Solarizing soil displaced from terracing process

The work plan calls for cutting for “terraces” to hold the Geotubes in place. This will likely create a soil disturbance resulting in exposing the dormant weed seed bank. If the plan is to return the displaced soil from the terracing back to the site upon completion of the dewatering process, and if practical to do so, solarizing the soil prior to returning it to the site will help mitigate emergent weeds in the newly seeded reclamation area. This can be accomplished by layering sheets of **clear plastic** over the soil for a period which traps heat and kills the dormant weed seed bank below (black plastic is less effective because it absorbs and deflects part of the heat) (Ref: U. California Ag. & Nat Resources [Soil solarization](#)).

5. Stabilization and erosion control

DEP recommended annual ryegrass (*Lolium perenne ssp. multiflorum*) for temporary stabilization / erosion control. Another suitable cover crop is Winter Wheat (*Triticum aestivum*). Here is a fact sheet from Cornell U. Ext with more information on *T. aestivum* and its benefits / uses ([Cover Crop Fact Sheet](#)).

Reclamation considerations and recommendations

6. Soil test prior to seeding

Too much organic matter (OM) in the soil benefits fertilizer-dependent cool season (non-native) grasses and many invasive plants and weeds. Most, native meadow plants, on the other hand, prefer poor soil that is low in nutrients.

Once the dredging process is complete and the site is re-graded and ready for seeding, a soil test would help to determine the available nutrient content, pH, and percent OM in the soil. If needed, applying sulfur to lower the pH of the soil reduces the availability of nutrients thereby benefiting the growth of native meadow plants over non-native species (Ref: Weaner, L and Cotton, 2024).

7. Create a Native Grass buffer zone

Seeding a wide area (~ 12 to 15 feet wide) of native grasses around the perimeter between the reclaimed site and adjacent areas creates a physical barrier to prevent undesirable plants, native or non-native / invasive, from re-establishing into the newly seeded area. Additionally, including mowed and un-mowed area will visually define the boundaries between existing and new areas for easier maintenance.

Many invasive broad leaved plant species were observed during the survey including Multiflora rose (*Rosa multiflora*), Oriental bittersweet (*Celastrus orbiculatus*), Honeysuckle vines and shrub (*Lonicera sp.*) and Wineberry (*Rubus phoenicolasius*), among others. An effective strategy to control re-infestation of these plants is to exploit the difference between the plants to preserve, in this case native grasses (graminoids), and the ones to eliminate, in this case broad-leaved invasive shrubs. Effective mechanical and chemical methods exist that target broad leaved plants while not harming grasses (and vice versa).

Unfortunately, in the case Japanese stilt grass (*Microstegium vimenium*) re-establishes itself within the grass buffer zone the “exploiting the differences” approach will not work, and a different control strategy will have to be employed.

The native grasses, as recommended by the DEP, are all excellent choices for the reclamation site which includes Big bluestem (*Andropogon gerardii*), Sideoats grama (*Bouteloua curtipendula*), Tufted hairgrass (*Deschampsia cespitosa*), Deertongue (*Dichanthelium clandestinum*), Canada wild rye (*Elymus canadensis*), Virginia wild rye (*Elymus virginicus*), Switchgrass (*Panicum virgatum*), Little bluestem (*Schizachyrium scoparium*), and Indiangrass (*Sorghastrum nutans*). Lovegrass (*Eragrostis spectabilis*) would also be a good candidate to add to this list.

A cover crop such as annual ryegrass (*Lolium perenne ssp. multiflorum*) is recommended to stabilize the seeded area while the native grasses are establishing.

8. Create a separate native herbaceous (forb) meadow

Seeding herbaceous plants should be done in conjunction with a suitable cover crop such as annual ryegrass (*Lolium perenne ssp. multiflorum*) or Winter wheat (*Triticum aestivum*) as mentioned previously. Do not recommend including native grasses with the herbaceous meadow seed mix at the onset. This allows herbaceous plants to emerge without being overshadowed by grasses that typically grow faster. Grasses can be added by seed into the meadow after the forbs have had a chance to establish (after 1 or 2 years).

Native herbaceous plant selection considerations:

In meadows, only the most well adapted plants survive. The plant selection needs to fill multiple niches: layers (creeping understory, mid-layer and canopy); seasonal life cycle (warm vs cool season); successional lifetime (early successional, mid and long-term successional); plant competitiveness level; bloom time (providing year-round habitat and food); height (tall and small plants in separate areas), and others.

Early successional plants emerge and establish in year 1 and 2 to fill the available spaces quickly. Taking a longer time to establish, moderate colonizers followed by competitive long-term successional plants eventually dominate the meadow. This allows for a dense successional “living mulch” which effectively excludes other plants (weeds and invasive plants) from germinating and establishing.

Suggested herbaceous plants / forbs include:

Early successional forbs: Pearly everlasting (*Anaphalis margaritacea*), Partridge pea (*Chamaecrista fasciculata*), Lanceleaf coreopsis (*Coreopsis lanceolata*), Spotted bee balm (*Monarda punctata*), Black Eyed Susan (*Rudbeckia hirta*).

Moderate Colonizers: Whorled milkweed (*Asclepias verticillata*), Rattlesnake Master (*Eryngium yuccifolium*), Beardtongue (*Penstemon digitalis*), Phlox (*Phlox subulata*), Brown-Eyed Susan (*Rudbeckia fulgida*), Goldenrods (*Solidago rugosa*, *S. speciosa*), Culver’s Root (*Veronicastrum virginicum*).

Long Term, Competitive forbs: Dolls eyes and Black Cohosh (*Actaea pachypoda*, *A. racemosa*), Spikenard (*Aralia racemosa*), Common Milkweed and Butterflyweed (*Asclepias syriaca*, *A. tuberosa*), Blue False Indigo (*Baptisia australis*), False aster (*Boltonia asteroides*), Coreopsis (*Coreopsis verticillata*), Boneset (*Eupatorium hyssopifolium*), Wild Strawberry (*Fragaria virginica*), Sneezeweed (*Helenium autumnale*), Narrow-leaf sunflower (*Helianthus angustifolius*), Bergamot (*Monarda fistulosa*), Mountain mint (*Pycnanthemum muticum*), Asters (*Symphotrichum leave*, *S. lanceolatum*, *S. lateriflorum*, *S. puniceus*), Upland Ironweed (*Veronia glauca*)

9. Shrub-zone

If desired and/or practical, native shrub species can be added to the area in defined clusters to increase habitat biodiversity in the reclaimed area. Sowing shrubs from seed can be impractical and take a long time. Consider transplanting shrubs from existing colonies in adjacent areas.

Management plan

10. First year:

Grass buffer zone: if seeding is done in the Fall, mow the area the following year from May through end of June and then stop. This allows native warm season grasses to establish while suppressing the growth of cool season grasses and for example. If seeding is done in the Spring, skip mowing in year 1, then follow the mowing regimen outlined below for year 2 and beyond.

Herbaceous meadow reclamation area: while the cover crop of annual rye or winter wheat will help depress weed seeds from germinating, this fast-growing grass can also deprive native forb seedlings from the sunlight they need to grow. Mowing every 6 weeks during the first year (from June to October) to no less than 6" high ensures that the rye cover crop grass is kept low while allowing the seedlings to emerge. If the seedling height exceeds 6", the mowing height can be increased accordingly (cut grasses, as monocots can regenerate during the growing season, not so with herbaceous forbs which are dicots).

Monitor and control for weeds and invasive plants.

11. Year 2 and beyond

Mowing the grass buffer zone and the meadow is necessary to stop the natural successional development from annual to biennial to perennial meadow to shrub land to forest.

Grass buffer zone: to favor warm season grass growth (native grasses) over cool season grasses (turf grasses and most grass-like weeds etc.), mowing should be done from Spring until end of June. This will allow the warm season grasses to grow in the warm season when it is too hot for the cool season grasses to grow. Recommend that half of the grass buffer on the perimeter is maintained as a continuously mowed path to prevent any plants from invading from surrounding areas. This also delineates the area to be maintained and monitored.

Reclaimed meadow area: Mow entire area (excluding shrub zone if present) one a year in late Winter.

12. Monitor and control of invasive species

To ensure the area isn't re-infested with existing invasive plants nearby and the residual dormant weed seed bank in the soil, monitoring and controlling the recurrence of undesirable plant species is crucial, especially in the first few years while the new native plants are still getting established.

Additional considerations

13. Protecting native nesting habitats

Mowing the meadow area in the late winter before ground nesting birds have established nests will ensure nests and fledglings are not harmed in the process. However, mowing the entire area will also prevent these birds from using the area for habitat. One option is to separate the area into sub areas and mow them in late winter on a rotating basis each year. This allows for some areas to be available habitat for ground nesting birds and stem nesting beneficial insects while others are mowed to maintain the meadow habitat.

14. Deer management

Deer browsing can be detrimental to the establishment of a meadow, especially since they prefer native plants vs. invasive ones. If possible, extend the temporary fencing until the meadow is established. (1 – 2 years).

15. Introducing native grasses into the meadow area

After 2 years or so, once the herbaceous plants are established in the meadow area, seeds of native grasses can be introduced if desired in drifts or defined clusters. Seeding area may need to be lightly thatched to ensure contact of the seeds with soil.

References

Cornell U. Cooperative Ext., Wheat and Spelt, Triticale (Cover Crop Fact Sheet),
<https://www.hort.cornell.edu/bjorkman/lab/covercrops/pdf/wheat.pdf> (Accessed 3/1/2024)

U. California Ag. & Nat Resources; Soil Solarization for Gardens and Landscapes,
<https://ipm.ucanr.edu/PMG/PESTNOTES/pn74145.html#:~:text=In%20general%2C%20transparent%20or%20clear,trapping%20as%20clear%20plastic%20does.> (Accessed 3/1/2024)

Weaner, Larry, and Ian Caton; *Ecology-Based Landscape Practices* (2024), Course manual for 7-part course (Feb through April 2024)

Narrative and Work Plan

Teatown Lake Reservation (TLR) is a 901-acre nature preserve in the Towns of Yorktown, Cortlandt, and New Castle in Westchester County, New York. Teatown Lake also provides educational opportunities to learn about nature for all ages, including children in its annual summer camp to graduate students conducting their research.

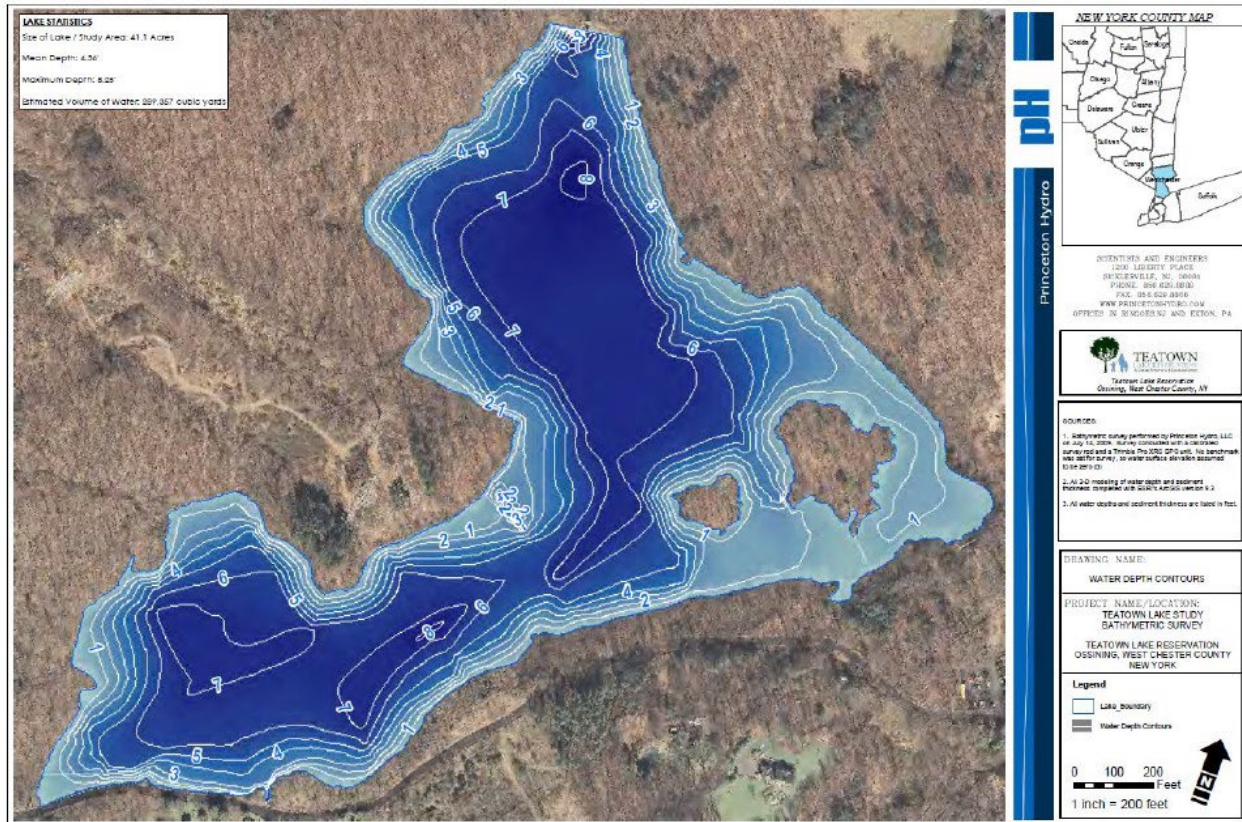
One of greatest assets that TLR has is its namesake lake and Wildflower Island. Wildflower Island is a two-acre island that contains over 240 species of plants. The New York State Department of Environmental Conservation (NYSDEC) and the New York Natural Heritage Program consider thirty-seven of these as Exploitably Vulnerable, two as Rare, three as Threatened and five as Endangered pending further confirmation in the field (McDowell 2019, please see Appendix A).

The Need to Dredge

Teatown Lake is a human-made lake formed by the damming of Bailey Brook. The dam is located on the northern most point of the lake. Wildflower Island is 325 meters Southeast of the dam and is connected to the lake shore by a gated bridge to keep white-tailed deer (*Odocoileus virginianus*) from getting on the island. Additionally, the island perimeter has been fenced to protect from beaver activity.

The south and eastern sides of the island were once separated from the lake shore by a free-flowing channel of water, that has since filled in with sediments. Should this sedimentation continue, the protective effects of separation of the island from the mainland will cease. Lake fill-in will allow non-native species of plants to colonize the island and out compete the many native plants including those that are vulnerable, rare, threatened, and endangered. The sedimentation may also provide a route for deer to access the island, and further pressure the existence of the biologically diverse flora of Wildflower Island. The bathymetric survey conducted by Princeton Hydro in July 2009 is shown in Figure 1.

Figure 1. Bathymetric Survey July 2009



TLR undertook a wetland restoration project to address further sedimentation caused by runoff from Spring Valley Road and the lands above the southeastern corner of the lake. The restoration of the wetland included the removal of invasive, non-native species of plants, the installation of new catch basins and improvements to the existing storm water management system. This investment addressed the primary causes of sedimentation of the area around the island, but did not address the already accumulated sediments in the basin around the island.

EcoAssessment submitted, on behalf of TLR, a Sediment Sampling and Analysis Plan with the NYSDEC and the plan was approved on 2 November 2021. Teatown hired a contractor,

Soiltesting Inc., of Oxford, CT to take the core samples and that were analyzed by a New York State Department of Health certified laboratory, Phoenix Environmental Laboratories, Inc., of Manchester CT. The samples were taken 10 May 2022. The NYSDEC R3 Materials Management office determined that the sediments are characterized as General Fill. (See Section E)

The Dredge

TLR is proposing to remove approximately 7,800 cubic yards of sediment to restore the free flow of water around Wildflower Island. This will be done by removing approximately 12 linear feet on the island side of the channel to a depth of 3 feet. Other areas around the island will be dredged to a depth of 3 feet to help restore the hydrology of the lake. Additionally, the area under the boardwalk along the south-western portion of the lake will be dredged to keep the boardwalk floating as it frequently rests on the lake bottom. Details of the areas to be dredged are on sheets 3 and 4 of the drawings/plan set, submitted as part of this application. (See Section C)

Dredge Method

The dredge will be done using a Mudcat SP-19 (please see attached specifications). The hydraulic dredge is 40 feet in length and 9 feet wide. The cutting head is composed of two augers and a pump that will be used to deliver the removed sediments to Geotubes through continuous welded PVC pipes. The pipe is heat welded in the field, as it is deployed and terminates at a manifold that allows for even distribution of the sediments into the Geotubes.

The dredge unit will be put into Teatown Lake using a crane to lift it off a trailer in the south-western end of the lake, near the floating boardwalk.

The removal of sediments impacts submerged aquatic vegetation growing on or in the removed sediments. The report by SOLitude Lake Management, *2019 Submersed Aquatic Macrophyte Survey* conducted for TLR showed a diverse aquatic plant community. One species, Spiny Hornwort (*Ceratophyllum echinatum*) was shown to be present around Wildflower Island and within the proposed dredge area (See Appendix B). While the removal of any plant designated

as S4 by the New York Natural Heritage Program as a rare aquatic plant is to be avoided, the balance of protecting the 37 vulnerable and 10 Rare, Threatened and Endangered species found on Wildflower Island outweighs the potential impact on a species not currently present. A recent survey (31 July 2023) conducted by TLR staff did not show any Spiny Hornwort in the same locations, the report by Danielle Begley-Miller, Ph.D., Director of Science and Stewardship (See Appendix C).

Dewatering:

The possible sites to dewater the solids on the TLR site are limited by the very wooded nature of the property and the mission of TLR. Two locations were chosen to avoid significant land clearing and the management and eventual end use of the dewatered solids.

The dredged sediments will be pumped to two areas located on the lands owned by Teatown Lake Reservation. Dewatering will be accomplished using geosynthetic fabric bags that retain solids and allow water to only flow out of the bag. The construction of the geosynthetic fabric's one way water flow results in efficient solids retention and consolidation while allowing for a low total suspended solids return flow and discharge to the lake. Both locations will have the appropriate institutional controls to keep the public away from the two dewatering locations and the Geotubes.

Site 1: Blinn Road Parking Lot

The parking lot on Blinn Rd. will be prepared and graded to accept three levels of stacked Geotubes. This will provide a total of 1,803 linear feet of Geotubes. The dimensions of the tubes and the stacking pattern is detailed on sheet 3 of the plan set (See Section C).

Site 2: Hidden Valley North Field Meadow

The Hidden Valley North Field Meadow is located across Blinn Rd. from the parking lot and is above a wet area wetland. This area has several invasive plant species present and needs to be restored as a native meadow. The installation of inflow and return flow pipes will cross Blinn Rd. in a trench covered with steel plates and will cross the forested and shrub wetland at grade and will be temporary. Typically, these trenches are also temporary. TLR is exploring ways to

make this a permanent trench, pending approval of the Town of Yorktown, that will serve as a tunnel under the road to allow herpetofauna and small mammals to cross under Blinn Road and reduce mortality for those organisms traveling between the Teatown Lake and the wetland area. The design will follow the recommendations of Jackson and Tynning (1989), Woltz et.al (2008) and Aresco (2005). The TLR team has had conversations with individuals in academia and government who have significant experience with these types of tunnels and are reviewing literature and plans that have proven successful (Johnson G., Ross, A., pers. comm.)

The hill side will need to be prepared by cutting for “terraces” that will hold the Geotubes. Access for construction equipment will be from Spring Vally Rd, on property owned by TLR. Sheet 4 of the plan set has site preparation details. Nine trees will be removed from the hillside as part of the site preparation. One of these trees is a double stemmed flowering dogwood with one trunk. It was measured twice (“trees” 9 and 10). The full inventory of trees to be removed are shown and listed below.

Figure 2. Trees to be removed Hidden Valley North Field Meadow

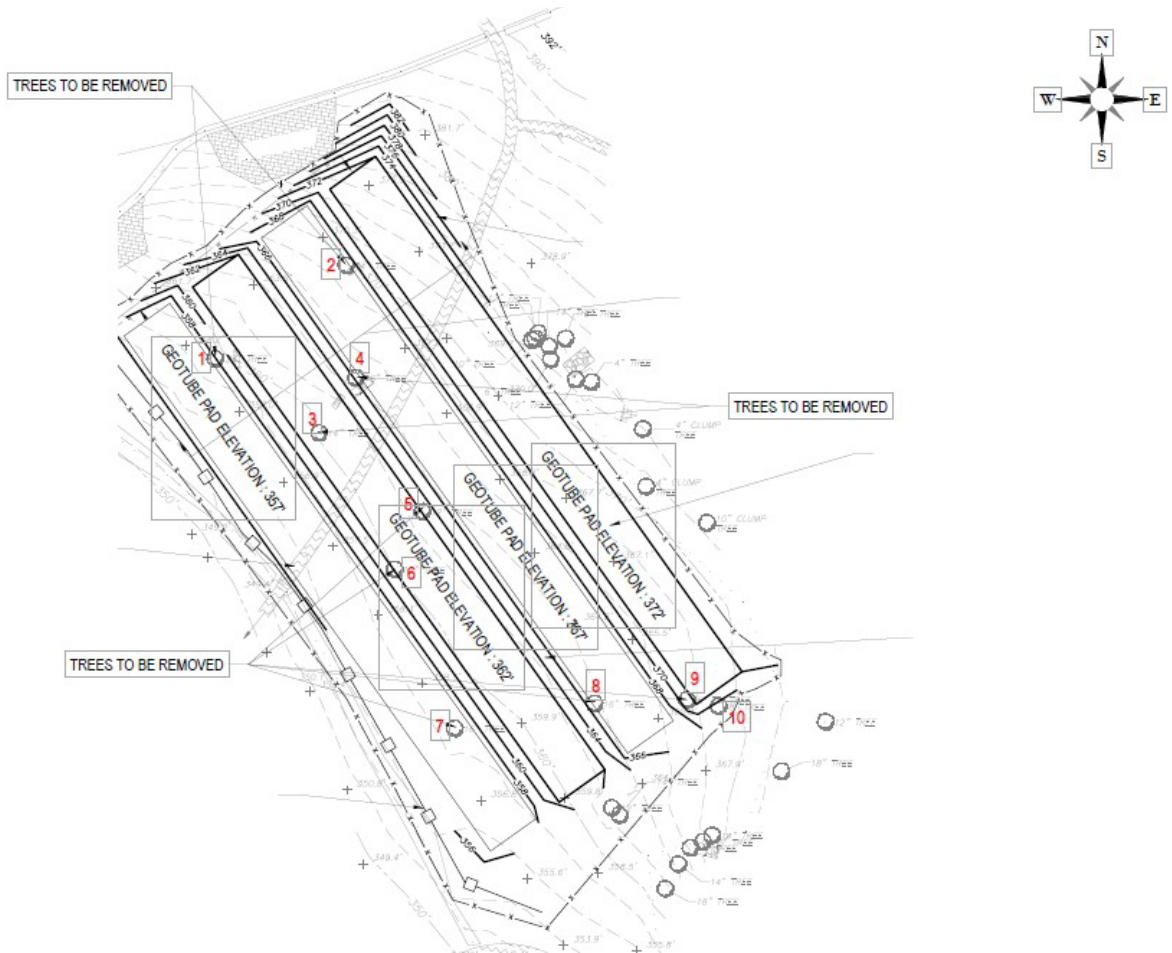


Table 1 Trees to be removed Hidden Valley North Meadow.

Tree #	Species	DBH	% Dieback
1	Tulip (<i>Liriodendron tulipifera</i>)	62.1	5-15%
2	Eastern Black Walnut (<i>Juglans nigra</i>)	44	50-75%
3	Eastern Black Walnut (<i>Juglans nigra</i>)	42.5	25-50%
4	Eastern Black Walnut (<i>Juglans nigra</i>)	47.2	25-50%
5	Eastern Black Walnut (<i>Juglans nigra</i>)	41.5	25-50%
6	Eastern Black Walnut (<i>Juglans nigra</i>)	42.5	25-50%
7	Eastern Black Walnut (<i>Juglans nigra</i>)	45.5	5-15%
8 *	Sugar Maple (<i>Acer saccharum</i>)	43.5	50-75%
9 **	Flowering Dogwood (<i>Cornus florida</i>)	13.5	50-75%
10 **	Flowering Dogwood (<i>Cornus florida</i>)	15	50-75%

* Large hole in trunk with epicormic sprouting, significantly stressed.

** 9 & 10 are a Single Trunk, Double Stemmed

Once the sediments have dewatered and consolidated, the solids will be removed from the Geotubes and used to regrade the hillside and prepare it for replanting of native meadow plants.

Potential Noise Impacts

The potential noise impact of the dredge was evaluated by EcoAssessment, LLC as part of the planning and assessment for the project. Based on ambient noise levels at specific locations around the areas to be dredged and the known decibel levels of the Detroit Diesel 6-71N engine on the Mudcat Dredge SP-915, the dredge operation will not raise ambient noise levels. While the engine of the dredge unit will produce noise when running, the level at locations surveyed for ambient noise are far enough away as to be at the level of background or ambient noise.

The ambient or background noise was measured as a base line to determine the potential impacts of the dredging project at Teatown Lake Reservation. The sampling protocol was modified from those described in the *Guidelines for Environmental Noise Measurement and Assessment* (2005 update) Nova Scotia Department of the Environment, Province of Nova Scotia, Canada. All measurements were made using a Tadeto TE 017 Digital Decibel Meter with a measurement range of 30 to 130 dBA ± 1.5 dB. The response frequency is from 31.5 Hz to 8.0kHz. Please note that the dBA scale most closely models how the human ear receives sound.

Figure 3. Ambient Sound Levels at dredge locations.



Table 2 Ambient Sound Levels

Dredge Engine Detroit Diesel N 6-71	Sound Level dB
50 Feet away, inner red circle	78 dB
100 Feet away, middle yellow circle	72 dB
200 Feet away, outer red circle	66 dB
Ambient Sounds at TLR	
Passing Car on Blinn Road	64 dB
Private Jet at 5,000 feet ASL	52 dB
Spring Peepers at lake side	58 dB

Additionally, the hours of operation will only be during the day between the hours of 8:00 AM and 4:00 PM Monday through Saturday. All noise impacts will only be for the length of the dredge operation and the eventual removal of the dewatered solids.

Public/Stakeholder Outreach

TLR held a Zoom session on Saturday, August 26, 2023 to describe the project to the residents immediately adjacent to Teatown Lake and the areas where the dewatering will be done. TLR has addressed comments from the stakeholders attending the meeting and welcomed their input to this project to meet the core mission of TLR and to be good stewards of this unique area. This initial public presentation is available on TLR website (<https://www.teatown.org/dredge>).

Literature Cited

Aresco M (2005) *Mitigation Measures Reduce Herpetofauna in Florida*. J Wildlife Management V69N2 pp 549-560

Nova Scotia Environment and Labour (2005) *Guidelines for Environmental Noise Measurement and Assessment*. Provincial Government of Nova Scotia

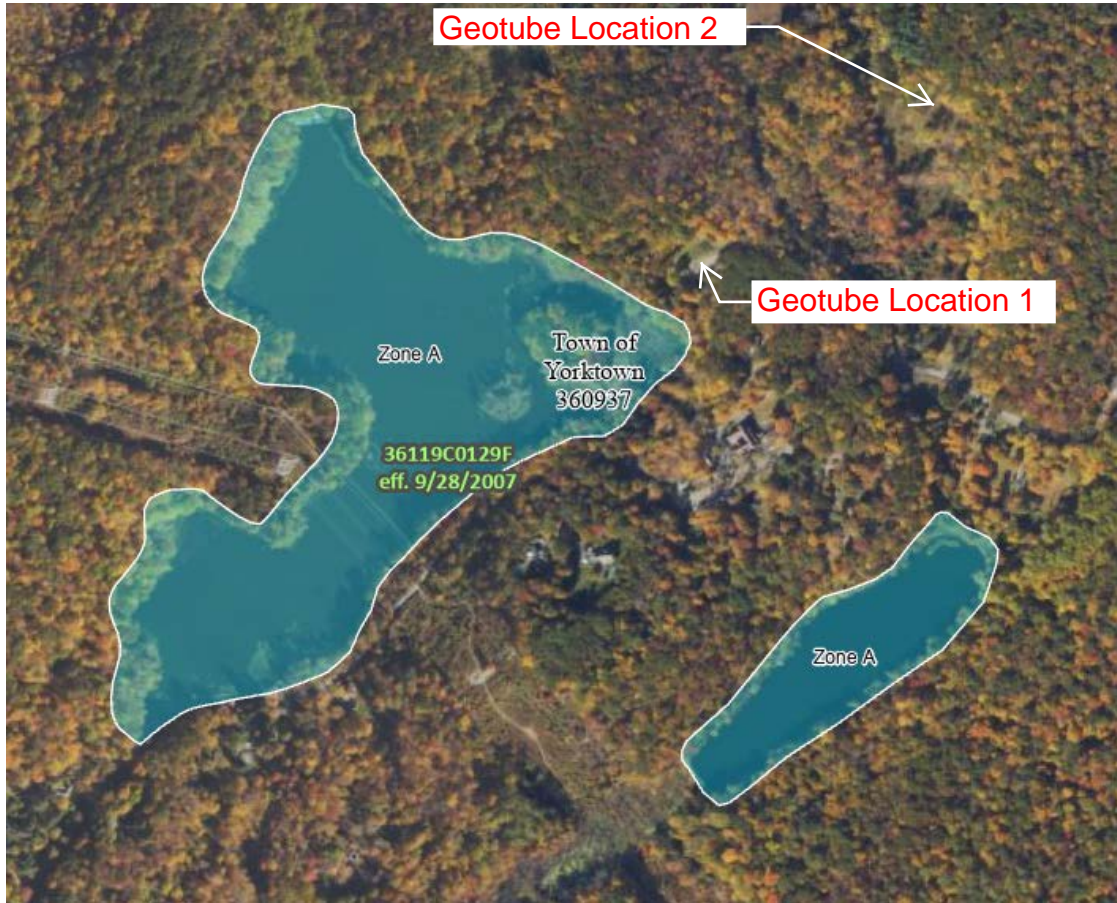
Jackson SD and T Tynning (1989) *Effectiveness of drift fences and tunnels for moving spotted salamanders *Ambystoma maculatum* under roads*. In Langston TES Ed. Toad Tunnel Conference Proceedings, Rendsburg, UK 1989

Johnson, Glenn, Ph.D. State University of New York Pottsdam. Personal communication regarding tunnels and Blanding's turtles (*Emydoidea blandingii*) and tunnels. 7 August 2023

McDowell, M (2019) *Plants of Wildflower Island and Native and Legal Status*. Teatown Lakes Reservation.

Ross, Angelena, New York State Department of Environmental Conservation. Personal communication regarding wildlife tunnels/culverts and designs. 25 August 2023

Woltz HW et al (2008) *Road crossing structure for amphibians and reptiles Informed design through behavioral analysis*. Biological Conservation V141 p2745-50



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Materials Management, Region 3
21 South Putt Corners Road, New Paltz, NY 12561-1620
P: (845) 256-3000 | F: (845) 255-3414
www.dec.ny.gov

June 10, 2022

Timothy Judge
EcoAssesment LLC
250 Highland Avenue
Sleepy Hollow NY 10591

RE: Teatown Lake Reservation, Ossining, Westchester County

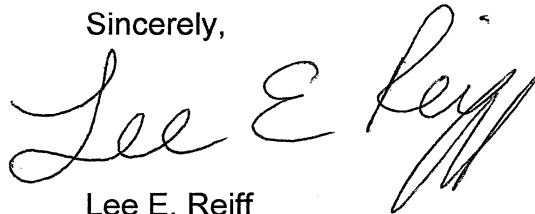
Dear Timothy Judge,

Solid Waste staff has finished its review of the analytical results for samples in support of the removal of a total of approximately 20,000 cubic yards of sediment from the Teatown Lake Reservation, Ossining, Westchester County.

The Division of Materials Management has determined that the sampling results fall below the maximum concentration levels identified in Part 360.13(f) Table 2 for the per-determined beneficial use for "General Fill". Therefore, the sediments removed from the lake once properly de-watered can be used in accordance with Table 2 as "General Fill" which states: *"Any setting where the fill material meets the engineering criteria, for, use, except on undeveloped land and agricultural crop land"*.

You are reminded that all applicable local, state and federal permits must be in place before dredging occurs. If you have any questions regarding this matter, please do not hesitate to call me at (845) 256-3134.

Sincerely,



Lee E. Reiff
Region 3, Division of Materials Management

Ecc
D. Pollock, DMM Region 3

Subject: RE: [Non-DoD Source] Regarding the Teatown Dredge Application
From: "Orzel, Brian A CIV USARMY CENAN (USA)" <Brian.A.Orzel@usace.army.mil>
Date: 12/18/2023, 9:14 AM
To: Tim Judge <judgetk@bestweb.net>
CC: Danielle Begley-Miller <dbegley-miller@teatown.org>

Tim,

If the return water indeed does not include suspended solids, then there would be no discharge of fill material and would not require a permit.

If you are content to use this email to proceed with your project, I'm ok with that.

In fact, I'm so inundated with work right now, if you want formal authorization, it might take a while.

Brian

Brian A. Orzel
Senior Regulatory Project Manager, Civil Engineer
NY District US Army Corps of Engineers
Regulatory Branch
26 Federal Plaza, Room 16-406
New York, New York 10278-0090

Please note in order to ensure our continuity of operations and improve the timeliness of permit application reviews, the New York District, U.S. Army Corps of Engineers is requiring that all new permit applications be submitted to the New York District electronically at CENAN-R-Permit-App@usace.army.mil. Until further notice, the New York District will no longer process any paper permit applications.

From: Tim Judge <judgetk@bestweb.net>
Sent: Thursday, December 7, 2023 12:08 PM
To: Orzel, Brian A CIV USARMY CENAN (USA) <Brian.A.Orzel@usace.army.mil>
Cc: Danielle Begley-Miller <dbegley-miller@teatown.org>
Subject: Re: [Non-DoD Source] Regarding the Teatown Dredge Application

Hi Brian:

Teatown would be happy to avoid having a permit, however, as we understand it, the sediment free water from the Geotubes has to go back to the lake.

All of the sediments are retained within the Geotube and the water decants from the surface of the bag. The decanted water falls to a temporary collection sheet on the ground. This water runs on the sheet and is pitched to a temporary pipe that conveys the water to the lake. When this method was

used to dredge the Philipse Manor Beach Club Marina (NAN-2016-01481-WCA) it was noted during a visit by a NYSDEC biologist that the water returning to the Pocantico River was clearer than the river itself. The water will have less suspended solids than the water in the lake and is not changing the height of the bottom as described in the document (Part 323) you provided.

Could this water be considered to be the equivalent as the incidental return of water when using a clam shell to mechanically dredge?

None of the dredged solids are going back into the lake, and this is least impactful on the environment and the ecology.

If this work does require a permit I will get you a cross section drawing of the area to be dredged around Wild Flower Island and the area under the floating boardwalk.

Are there additional documents you will require for the review? My goal is to assist you in having a transparent and timely review of the application so that Teatown can get to work dredging the area around Wild Flower Island.

Thanks,

Tim

On 12/5/2023 10:27 AM, Orzel, Brian A CIV USARMY CENAN (USA) wrote:

Tim,

1. Return flow of water to the lake is considered to be a discharge of fill material under Section 404 of the CWA. Judging from the distance that you showed them from the lake, I thought that the return flow of water to the lake seemed unlikely.
2. If someone doesn't need a permit from this office, they don't need a letter stating so.

Given my current workload, if someone insists on asking for a letter that states that we have no jurisdiction, it could take months.

Brian

Brian A. Orzel
Senior Regulatory Project Manager, Civil Engineer
NY District US Army Corps of Engineers
Regulatory Branch
26 Federal Plaza, Room 16-406
New York, New York 10278-0090

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From: Tim Judge <judgetk@bestweb.net>
Sent: Tuesday, December 5, 2023 9:16 AM
To: Orzel, Brian A CIV USARMY CENAN (USA) <Brian.A.Orzel@usace.army.mil>
Cc: Danielle Begley-Miller <dbegley-miller@teatown.org>
Subject: Re: [Non-DoD Source] Regarding the Teatown Dredge Application

Hi Brian:

Thanks for getting back to me. Rosie had forwarded your email.

I read over the materials you sent, and have a couple of questions.

- 1) Using Geotubes to retain the sediments does have a return flow of water to the lake. Is my understanding that the return flow is not considered a discharge of fill into the Waters of the United States correct?
- 2) Is a letter stating that no permit is required provided to the applicant and to involved agencies such as NYSDEC R3 and Town of Yorktown?

While a cross section of the proposed dredge area was not included, a bathymetric survey is included in the Joint Application, Section D, page 2 of 10 as Figure 1. Should you require the cross section we can provide one.

Much appreciate your assistance.

Tim

On 12/4/2023 6:00 PM, Orzel, Brian A CIV USARMY CENAN (USA) wrote:

Tim,

Did you get the attached email?

It includes guidance as to what constitutes a discharge of fill material into waters of the United States. If there would be a discharge of fill material into waters, you would need some sort of permit under Section 404 of the CWA. If you can avoid a discharge of fill material into waters, there would be no permit required.

Brian

Brian A. Orzel
Senior Regulatory Project Manager, Civil Engineer
NY District US Army Corps of Engineers
Regulatory Branch
26 Federal Plaza, Room 16-406
New York, New York 10278-0090

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CENAN-R-Permit-App@usace.army.mil. Until further notice, the New York District will no longer process any paper permit applications.

From: Tim Judge <judgetk@bestweb.net>
Sent: Friday, December 1, 2023 10:14 AM
To: Orzel, Brian A CIV USARMY CENAN (USA) <Brian.A.Orzel@usace.army.mil>
Cc: Danielle Begley-Miller <dbegley-miller@teatown.org>
Subject: [Non-DoD Source] Regarding the Teatown Dredge Application

Hi Brian:

I see that there is a glitch with communications. My email address was incorrect in the email you sent to me on 11/24, it was missing one letter (t). Rosie forwarded the email to me.

My correct email is:

judget@alum.rpi.edu

Please let me know that you received this and if we could set a time to speak.

Many thanks,

Tim

--

Timothy K Judge



EcoAssessment, LLC
436 Benedict Ave.
Tarrytown, NY 10591
845-222-6135
judget@alum.rpi.edu

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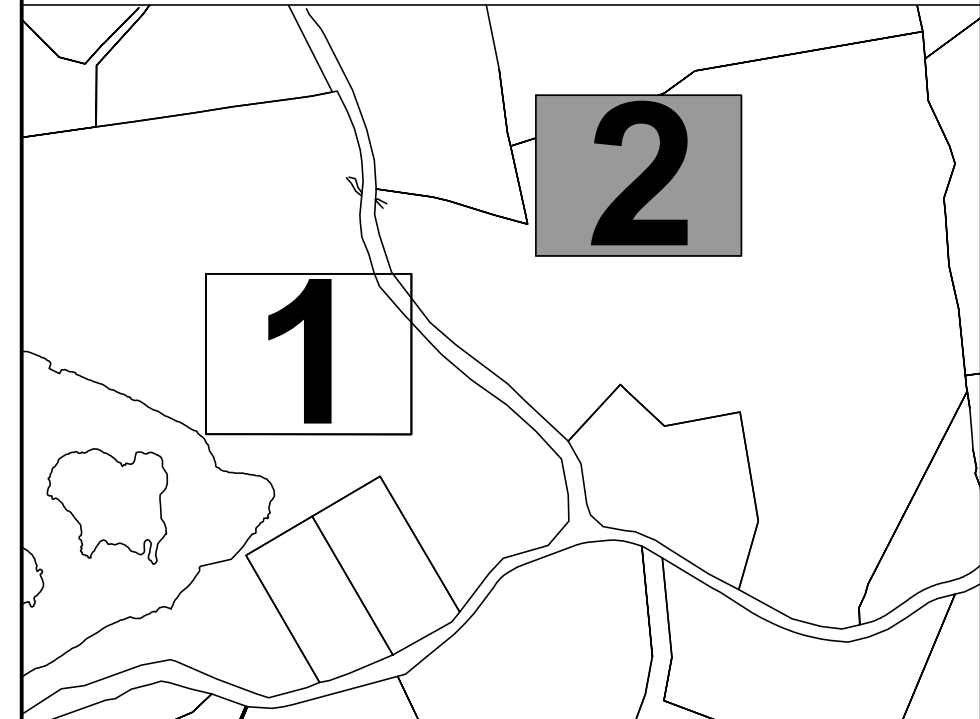
WSP USA INC.
500 Summit Lake Drive, Suite 450
Valhalla, NY 10595
(914) 747-1120

ENGINEER OF RECORD:

NEW YORK STATE LICENSED
PROFESSIONAL ENGINEER

UNAUTHORIZED ALTERATIONS AND ADDITIONS TO THIS
DRAWING IS A VIOLATION OF SECTION 7209 (2)
OF THE NEW YORK STATE EDUCATION LAW

KEY PLAN:



REVISIONS:

PROJECT NAME:

**TEATOWN LAKE DREDGING
PROJECT**

WESTCHESTER COUNTY, NEW YORK

ISSUE DATE:

JUNE 2023

PROJECT NUMBER:

SCALE:

X

DRAWING NAME:

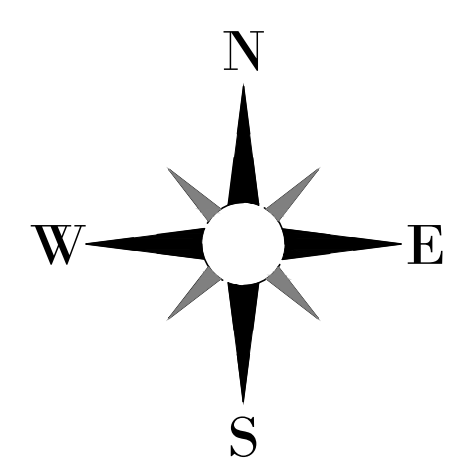
**GEOTUBE STOCKPILE
SITE NO. 2 PLAN**

DRAWING NUMBER:

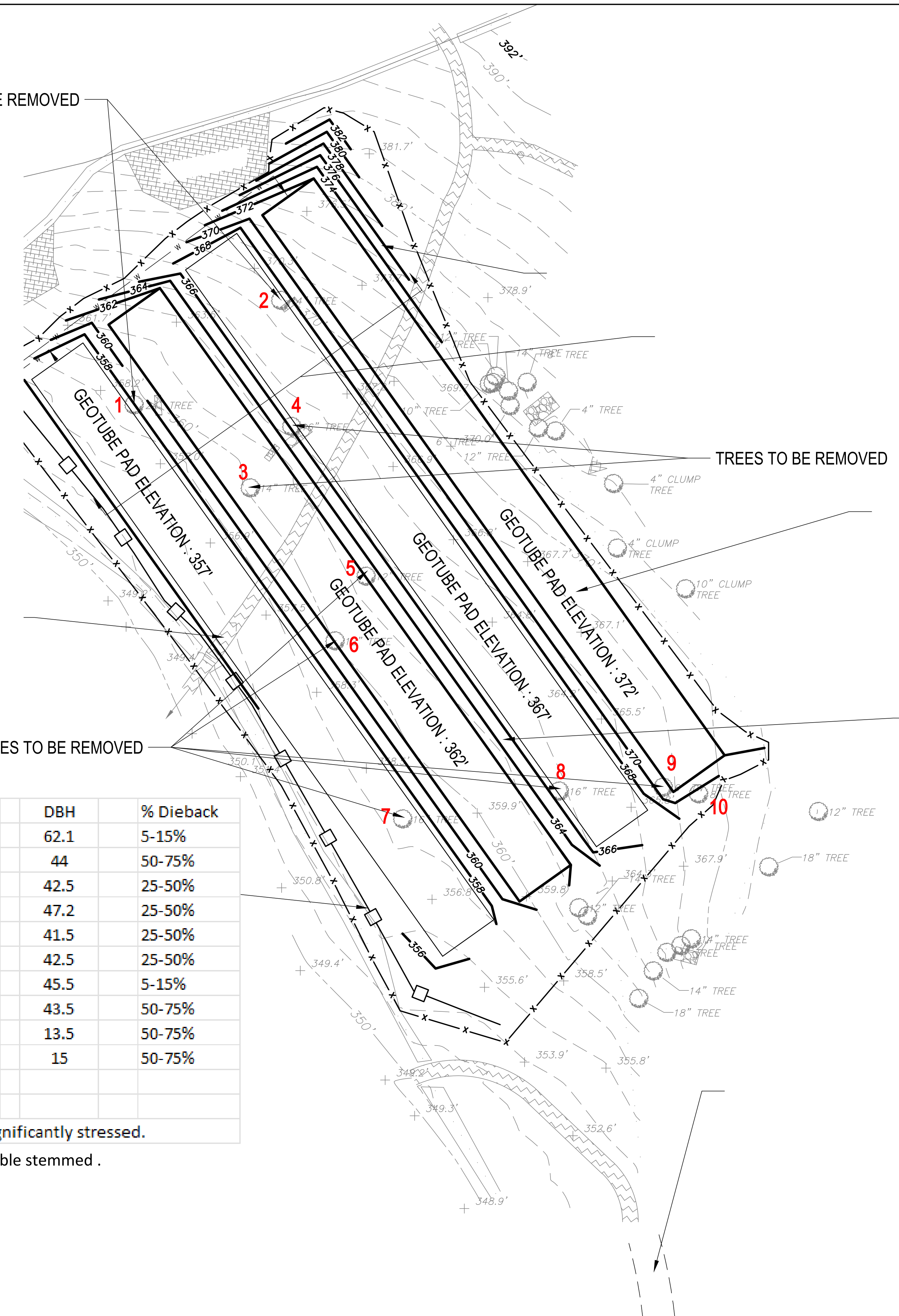
SP102

SHEET NUMBER:

6 OF 9



TREES TO BE REMOVED



TREES TO BE REMOVED

TREES TO BE REMOVED

Tree #	Species	DBH	% Dieback
1	Tulip (<i>Liriodendron tulipifera</i>)	62.1	5-15%
2	Eastern Black Walnut (<i>Juglans nigra</i>)	44	50-75%
3	Eastern Black Walnut (<i>Juglans nigra</i>)	42.5	25-50%
4	Eastern Black Walnut (<i>Juglans nigra</i>)	47.2	25-50%
5	Eastern Black Walnut (<i>Juglans nigra</i>)	41.5	25-50%
6	Eastern Black Walnut (<i>Juglans nigra</i>)	42.5	25-50%
7	Eastern Black Walnut (<i>Juglans nigra</i>)	45.5	5-15%
8	Sugar Maple (<i>Acer saccharum</i>) *	43.5	50-75%
9	Flowering Dogwood (<i>Cornus florida</i>)	13.5	50-75%
10	Flowering Dogwood (<i>Cornus florida</i>)	15	50-75%

* Large hole in trunk with epicormic sprouting, significantly stressed.

Please note trees 9 and 10 are a single trunk, double stemmed.



Drawing Path Name: C:\Users\US8587798\OneDrive\Teatown\Stock\Current_CAD\Task\Onsite\1_6-22-2023\Teatown_Lake_Shoreline_Survey\2.dwg Printed: Jul 10, 2023, 4:38pm Layout: Layout1