



dean pushlar ASLA, PLA
licensed landscape architect

Transmittal

Date: January 6, 2023

To: Town of North Castle Planning Board
17 Bedford Road, Armonk, NY

Re: Petrenko – 33 Woodland Road, Bedford, NY

QUANT	DWG. NO.	DATE	DESCRIPTION
1		10-04-22	Wetland Functional Analysis (Jaehnic)
1		11-01-22	Pool Assessment relative to wetland impact
1			NDS Channel Drain flow capacities table
1	L-1.0	10-31-22	Overall Site Plan
1	L-2.0	10-31-22	Layout Grading Plan
1	L-3.0	10-31-22	Site Details and Sections
1	L-4.0	10-31-22	Planting Plan
1	1 of 3	9-13-22	Existing Conditions – Holt Engineering
1	2 of 3	9-13-22	Overall Site Plan –Holt Engineering
1	3 of 3	9-13-22	Site Details.

Notes:

Please find the attached updated drawing as approved by the town Conservation Board. The Board has granted unanimous approval and recommendation to the planning board.

Below please find the following responses from the Staff report dated August 8, 2022 and the Town Engineer Consultant memo dated September 9, 2022.

Staff Report responses – Item #3 under general comments. A boulder demarcation feature has been added to the plans to separate the lawn areas with the proposed wetland mitigation areas and will provide a long term physical feature to prevent encroachment.

A Wetland Functional analysis has been prepared by Mary Jaehnic soils scientist and is attached.

Town Engineer Memo responses



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Item #3 – The mitigation plan has been modified with additional planting along the pond edge that removes portion of existing lawn and provides an additional filtration of silt, and unwanted chemicals such as nitrates and phosphorus. The red maple tree adjacent to the pond has burls along the trunk that may reduce the health of the tree slightly but are otherwise not harmful to neighboring trees or vegetation. The owner is fond of the fall color and would like to keep that tree.

Item #4 – The fence detail can be found on sheet L-3.0 (detail 5) along with specification of self-closing hinge and latch devices.

Item #5 – We have reviewed the plans to coordinate between the landscape architectural plans and engineering plans. The disturbance limit lines are matching and the siltation fence only show on engineering plans.

Item #6 – The stormwater engineering plans have been revised to include the pool area in the calculations to be directed into the infiltration units

Item #7 – The Pool area and patio areas have been sized to handle the 25 year storm event required for the design storm. As an added benefit the pool cover pump would not typically be used during a storm so the infiltrators would have time to percolate and provide additional storage from what is designed. A 3" NDS mini Channel drain is proposed to catch and divert the stormwater to the infiltration units. This is a common drain used often as it has a high volume flow rate. At a sensible slope of .25% it can handle 31.4 gallons per minute per foot. 527 gallons (70 cu. Ft.) for a 17 l.f. drain. That equals 1.5" of rain per minute over the largest patio area of 536 s.f. Well beyond what is required.

Item #8 – The Construction compliance inspections note will be added to the plans upon review with structural engineer and building department.

Item #9 – The proposed infiltrators are over 50' from the existing and reserve septic fields as noted on the engineering plan sheet 2 of 3. The well is 155' from the proposed infiltration units.

Please let me know if you need any additional information.

Best Regards,

Dean Pushlar, ASLA, PLA

October 4, 2022

Wetland Functional Analysis

Petrenko Residence

33 Woodland Road

Town of North Castle, New York

Setting:

The property is located along the eastern shore of a man made lake and at the base of a wooded hillside that ascends to the east. The site is approximately 300 feet upstream from state wetland K-33 and 1000 feet upstream, and the headwater to, a tributary to the Mianus River.

The wetland on site consists of two classes according to 'A Rapid Procedure for Assessing Wetland Functional Capacity' by Dennis W. Magee and Garrett G. Hollands', 1998, based upon Hydrogeomorphic (HGM) classification.

Wetland Descriptions:

The class for the hillside scrub/shrub wetland north of the grassed lawn is 'slope'. There is a mix of wetland and upland vegetation due to microtopographic highs within the wetland. The sparse canopy includes dying ash trees, birch spp., red maple and white oak with yellow poplar and sugar maples in the upland pockets. Ill defined rills support spicebush, winterberry, summersweet, skunk cabbage and sensitive fern. Invasive species throughout include multiflora rose, Japanese barberry, cat briar, brambles and stilt grass. Soils are poorly drained fine sandy loams over glacial till.

The wetland along the edge of the lake is classed as 'lacustrine fringe'. The lake was created by both damming the outflow and partial excavation. Excavated material was smoothed over the lake edge and the lacustrine fringe is narrow due to rise in lake level with damming. The edge supports arrow arum, bulrush and soft rush with a maintained grass lawn almost to the water line.

Wetland Buffer Description:

The buffer is mostly grassed lawn. There is a narrow area of upland shrubs between the hillside wetland and the grassed lawn.

Wetland Functions and Values:

Slope Wetland:

1)Modification of Groundwater Discharge:

High value, intersection of water table and topography.

2)Modification of Groundwater Recharge:

Low to no value, lack of underlying surficial deposits, fast transit time.

3)Storm and Flood Storage:

Low, vegetation provides roughness to slow down water but fast transit time due to slopes.

4)Modification of Streamflow:

Moderate, the wetland discharges water to provide some amount of base line flow to pond.

5)Modification of Water Quality:

Low, residence time and long term storage is low.

6)Export of Detritus,

Moderate, the wetland flushes detritus due to short residence time, the value is lowered due to small size.

7)Contribution to Abundance and Diversity of Wetland Vegetation,

Low due to small size of wetland and amount of invasive species.

8)Contribution to Abundance and Diversity of Wetland Fauna,

Low, disturbed buffer, mostly lawn on southern side, modified upward due to connection to open water.

Lacustrine Fringe Wetland:

All of the functions are low for the fringe wetland. The man made nature of the lake causes different water levels and a narrow edge of hydric soil and emergent vegetation. The grassed lawn extends almost to the water line on upland soil.

Conclusions:

The highest values of the slope wetland are those of groundwater discharge; modification of streamflow by providing some base flow to the pond; and export of detritus by flushing detritus to the lake for use in the benthic environment. Both the contribution to abundance and diversity of wetland

PFIZER – JÄHNIG
ENVIRONMENTAL CONSULTING

vegetation and fauna are low due to the invasive species and grassed lawn south of the wetland.

All of the values for the lacustrine fringe wetland are low due to the grassed lawn extending almost to the water line and the narrow edge of hydric soil.

A planting plan between the proposed pool and hillside wetland combined with a plan to remove invasive species would enhance the values for the abundance and diversity of wetland vegetation and fauna and would not undermine the already high values.

An extensive planting plan along the edge of the lake would improve the values for all the functions of the lacustrine fringe.

Sincerely,



Mary Jaehnig
soil scientist

Pfizer Jaehnig Soils
17 Fairview Avenue



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Pool Assessment relative to Wetland Impact

1. Removal of invasive species within buffer and upland area. Invasive species outcompete native vegetation thus reducing biodiversity and animal habitat. The long term maintenance of invasive removal will allow the natives to return along with the introduction of a native seed mix. (New England Conservation and Wildlife mix.) An area of 15,750 s.f. of invasives removed.
2. 2:1 disturbed area to mitigation provided. Over 3200 s.f. of lawn removed and planted. An additional 1820 s.f. of buffer area has been enhanced with native plantings.
3. Removal of lawn areas and installation of native vegetation. The native vegetation increases water quality over lawn areas, reduces erosion with deep roots and slows runoff.
4. Native vegetation increases wildlife habitat and food for nesting birds and other animals and provide a protected pathway for wildlife.
5. Native planting including wetland obligate species at pond edge take up heavy metals and other pollutants (cattail) and uptake of dissolved phosphorus (pickerelweed)
6. With the use of sediment and erosion control measures such as anti-tracking paving, siltation fencing and careful work practices, land disturbance will be minimized and the potential for sediment runoff alleviated.
7. The increase in impervious area has been offset with the proposed installation of an infiltration system to handle not only the impervious area, but the pool drawdown for winterizing. A vegetated filter is provided along the pond edge of the pool to slow runoff increase groundwater discharge.
8. The pool location and proposed retaining walls have been pushed back from the pond and wetlands to the extent possible and provide a larger buffer area from original concept. The raised elevation of the pool will provide an improved transition from the house to the pool area.

MINI CHANNEL™ DRAIN

Part #: 500

CHANNEL FLOW CAPACITIES

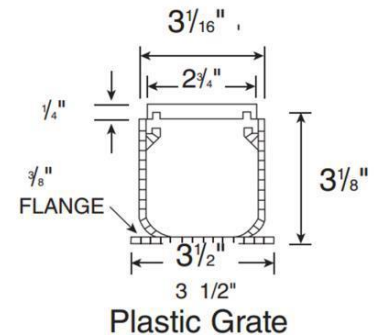
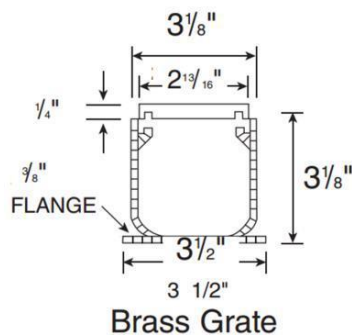
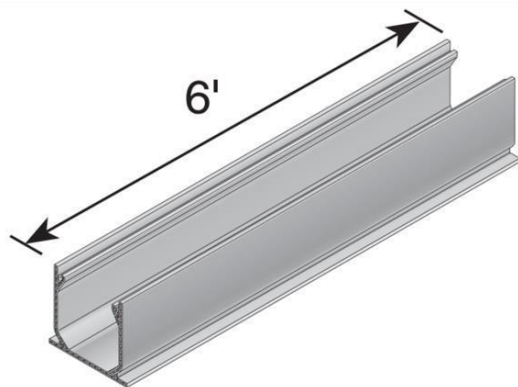
Slope (%)	Flow Velocity (ft/sec)	Flow Discharge (ft ³ /sec)	Flow Discharge (GPM)
0.1	0.29	0.01	4.5
0.25	1.44	0.07	31.4
0.5	2.04	0.10	44.9
0.75	5.50	0.12	53.9
1	2.88	0.14	62.8
2	4.08	0.19	85.3
3	4.99	0.24	107.7

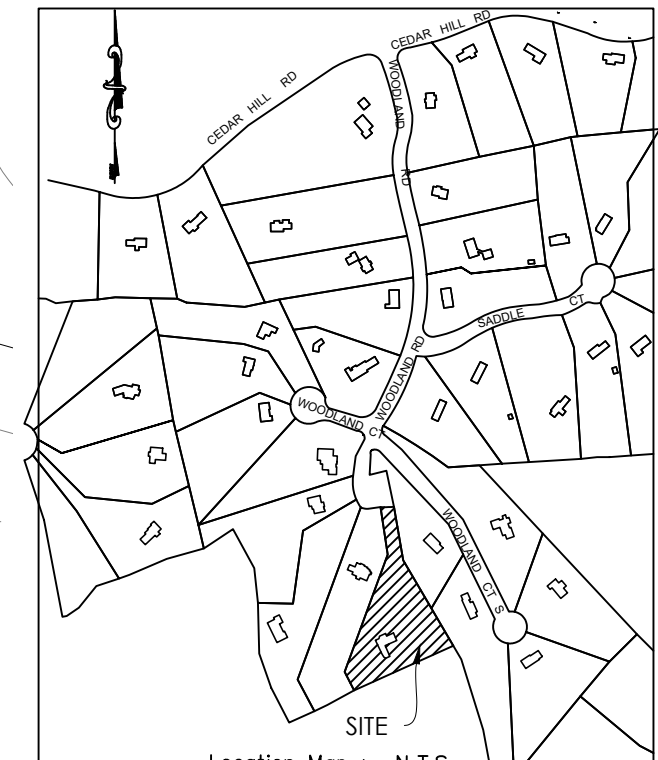
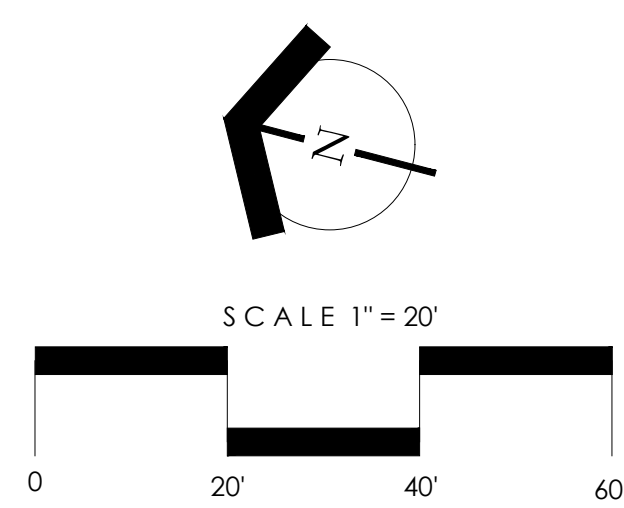
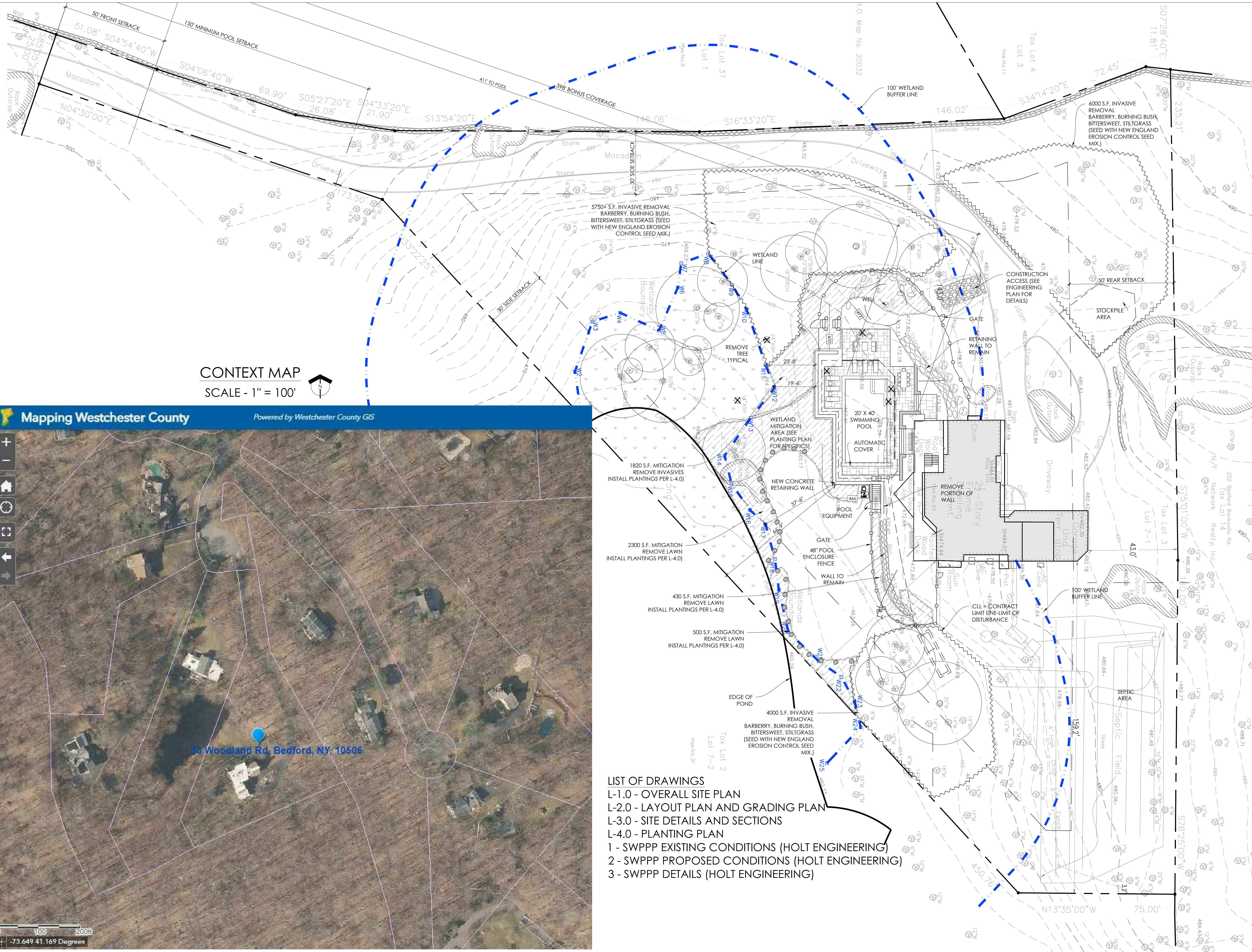
FLOW RATES THROUGH THE GRATE WITH ½" HEAD PRESSURE

Part #	Load Capacity	Flow Rate (GPM per linear foot)
540, 541, 542, 543, 544, 551	Class B	30.29
552B, 552PB	Class A	28.14
554, 554GY, 554GR, 554S	Class B	16.43
554CI	Class B	15.08
555, 555GY, 555GR, 555S	Class B	17.54
555CI	Class B	12.56

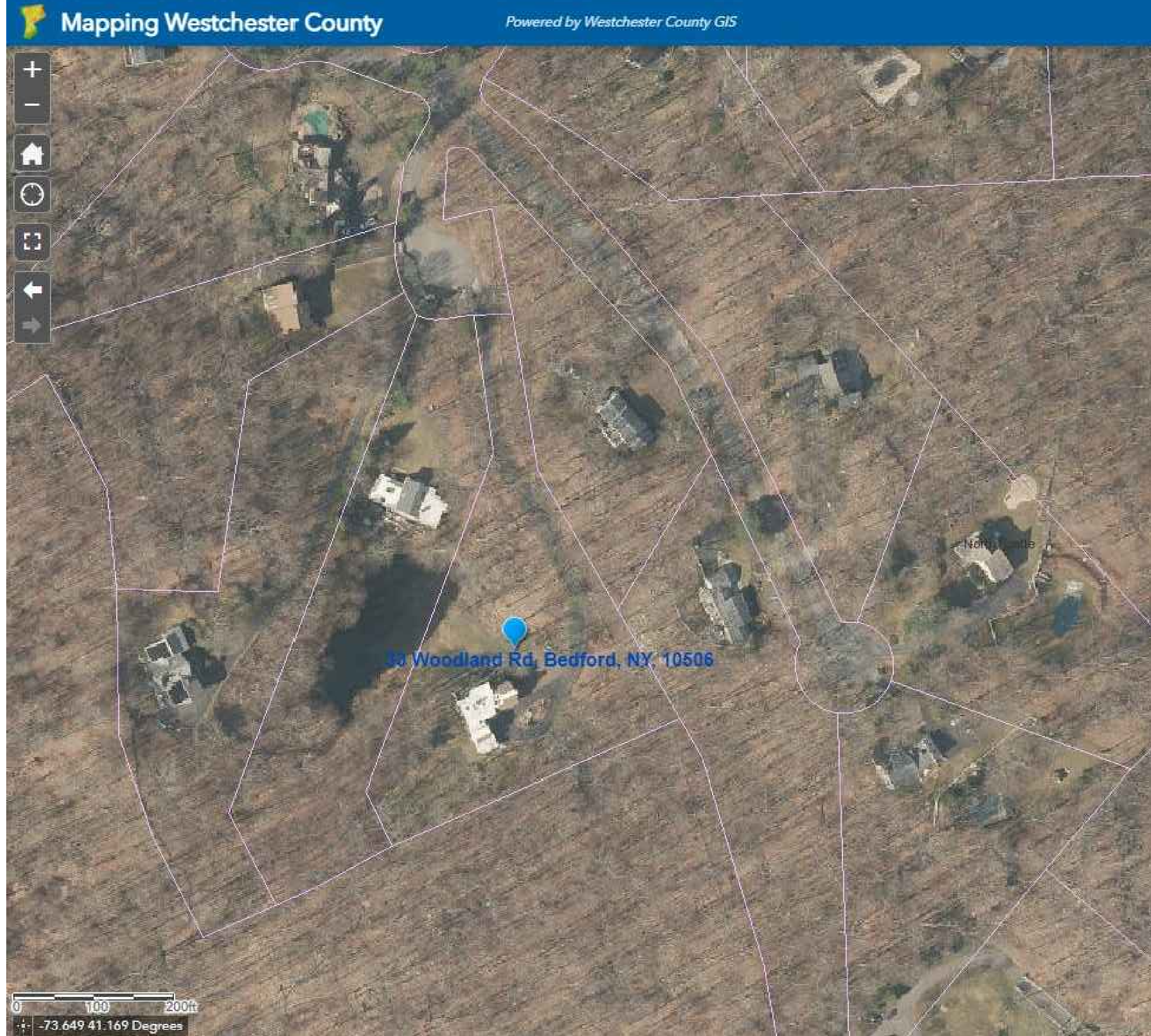
OUTLET FLOW CAPACITY

Part #	Flow Rate (GPM)	Pipe Connection
546	17.35	2" Sch. 40 Fittings
550	31.79	





CONTEXT MAP
SCALE - 1" = 100'



GENERAL NOTES

BASE INFORMATION ENTITLED "PROPERTY AND TOPOGRAPHIC SURVEY DEPICTING 33 WOODLAND ROAD, BEDFORD, NY" HAS BEEN PROVIDED IN DIGITAL FORMAT BY RONALD PERSAUD, LAND SURVEYOR OF 15 SOUTH TENTH AVE, MOUNT VERNON, NY DATED MARCH 31, 2021

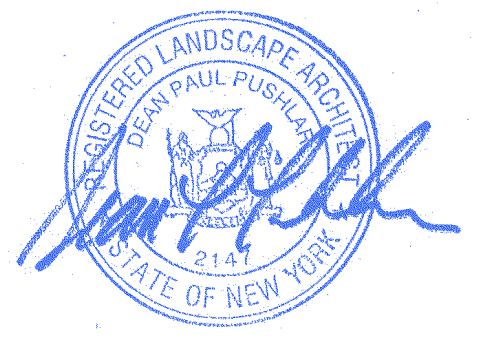
WETLAND HAVE BEEN FLAGGED BY MARY JAEHNIG SOIL SCIENTIST.

ZONING DATA

ZONE - R-2A ZONE RESIDENTIAL
LOT AREA - 2.169 ACRES (94,473 S.F.)
MAX BUILDING COVERAGE - 8%
FRONT YARD - 50' (PROPOSED 411' TO POOL)
SIDE YARD - 30' (PROPOSED 66.75')
REAR YARD - 50'
POOL FRONT - 150' (355-15(C))
MAX ACCESSORY - 800 S.F. (MAX 25% HOUSE)
MAX HT. ACCESSORY - 1 STORY (15')
AREA OF WETLANDS - 8925 S.F.
AREA OF SLOPES - 13,912 S.F.

2:1 MITIGATION CALCULATIONS

WETLAND BUFFER DISTURBED AREA - 10,255 S.F.
PROPOSED PLANTING AREAS - 5050 S.F. ±
INVASIVE REMOVAL AREAS - 15,750 S.F. ±
TOTAL MITIGATION - 20,800 S.F. ±



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revision: REV #1 OCTOBER 31, 2022
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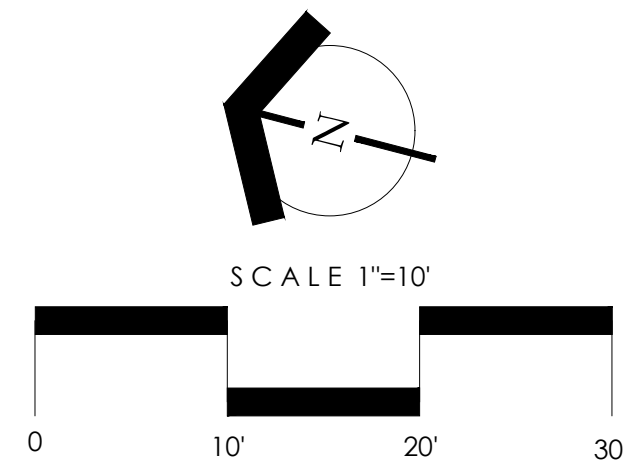
PETRENKO RESIDENCE
33 WOODLAND ROAD
BEDFORD, NY
TOWN OF NORTH CASLLE

OVERALL SITE PLAN

job number: xxx
scale: as shown
drawn by: dpp

drawing number: **L-1.0**

- LIST OF DRAWINGS**
L-1.0 - OVERALL SITE PLAN
L-2.0 - LAYOUT PLAN AND GRADING PLAN
L-3.0 - SITE DETAILS AND SECTIONS
L-4.0 - PLANTING PLAN
1 - SWPPP EXISTING CONDITIONS (HOLT ENGINEERING)
2 - SWPPP PROPOSED CONDITIONS (HOLT ENGINEERING)
3 - SWPPP DETAILS (HOLT ENGINEERING)



TREE REMOVALS

#1	24" ASH	(DEAD OR DISEASED)
#2	14" ASH	(DEAD OR DISEASED)
#3	32' TULIP	(WITHIN LIMITS OF WORK)
#4	22' RED MAPLE	(ROTEN TRUNK)
#5	18' RED MAPLE	(WITHIN LIMITS OF WORK)
#6	14" BLACK BIRCH	(WITHIN LIMITS OF WORK)

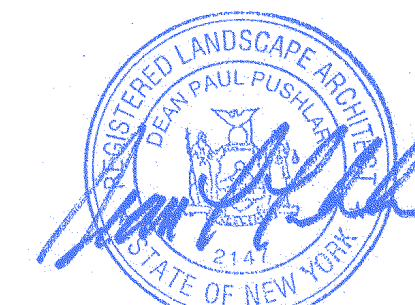
CUT AND FILL CALCULATIONS
 EXCAVATION POOL - 75 CU. YDS.
 EXCAVATION FOR DRYWELLS - 35 CU. YDS.
 EXCAVATION STEPS AND SEATWALL - 30 CU. YDS.
 PROPOSED TOTAL CUT - 140 CU. YDS.
 PROPOSED TOTAL FILL (SOIL) - 120 CU. YDS. (FROM SITE)*

CONCRETE FOR POOL - 30 CU. YDS.
 GRAVEL UNDER POOL - 20 CU. YDS.
 CONCRETE FOR PATIOS - 20 CU. YDS.
 CONCRETE UNDER PATIOS - 25 CU. YDS.
 CONCRETE FOR LOWER WALLS - 45 CU. YDS.
 CONCRETE FOR UPPER WALLS - 6 CU. YDS.
 CONCRETE FOR STEPS - 17 CU. YDS.
 GRAVEL FOR DRYWELLS - 14 CU. YDS.

WORK ITEM LEGEND

KEY # - DESCRIPTION	SYMBOL - #
1. STONE PAVING ON CONCRETE (THERMAL FINISH BLUESTONE OR SIMILAR)	(Symbol 1)
2. 3" MINI CHANNEL DRAIN - NDS OR SIMILAR	(Symbol 2)
3. CONCRETE RETAINING WALL	(Symbol 3)
4. STONE STEPS WITH FIELDSTONE RISERS (BLUESTONE STEPS OR SIMILAR)	(Symbol 4)
5. SPLIT RAIL POOL ENCLOSURE FENCE AND GATES	(Symbol 5)
6. FIELDSTONE SEATWALL WITH STONE CAP	(Symbol 6)

*** SEE L-3.0 FOR INSTALLATION DETAILS



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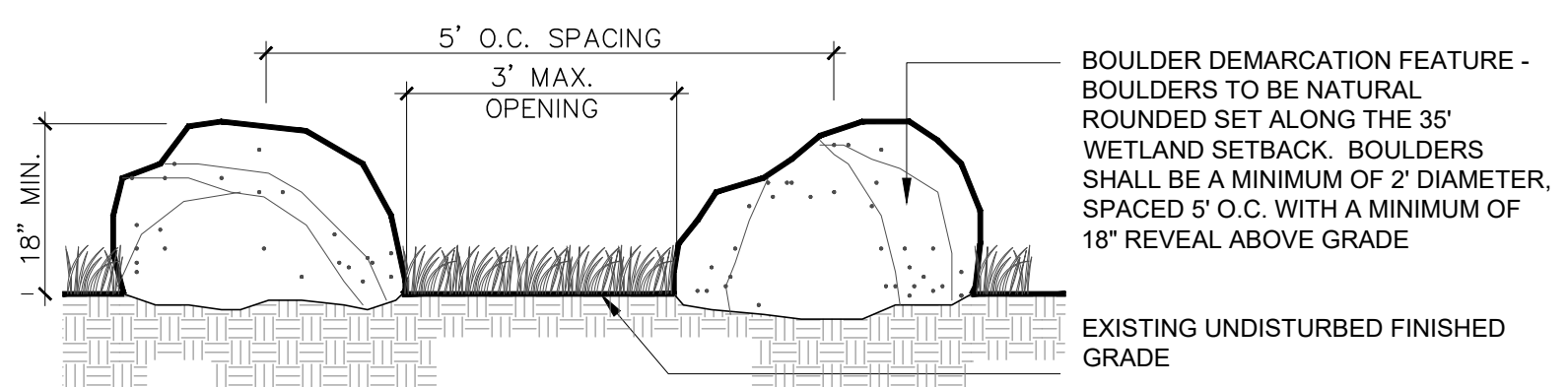
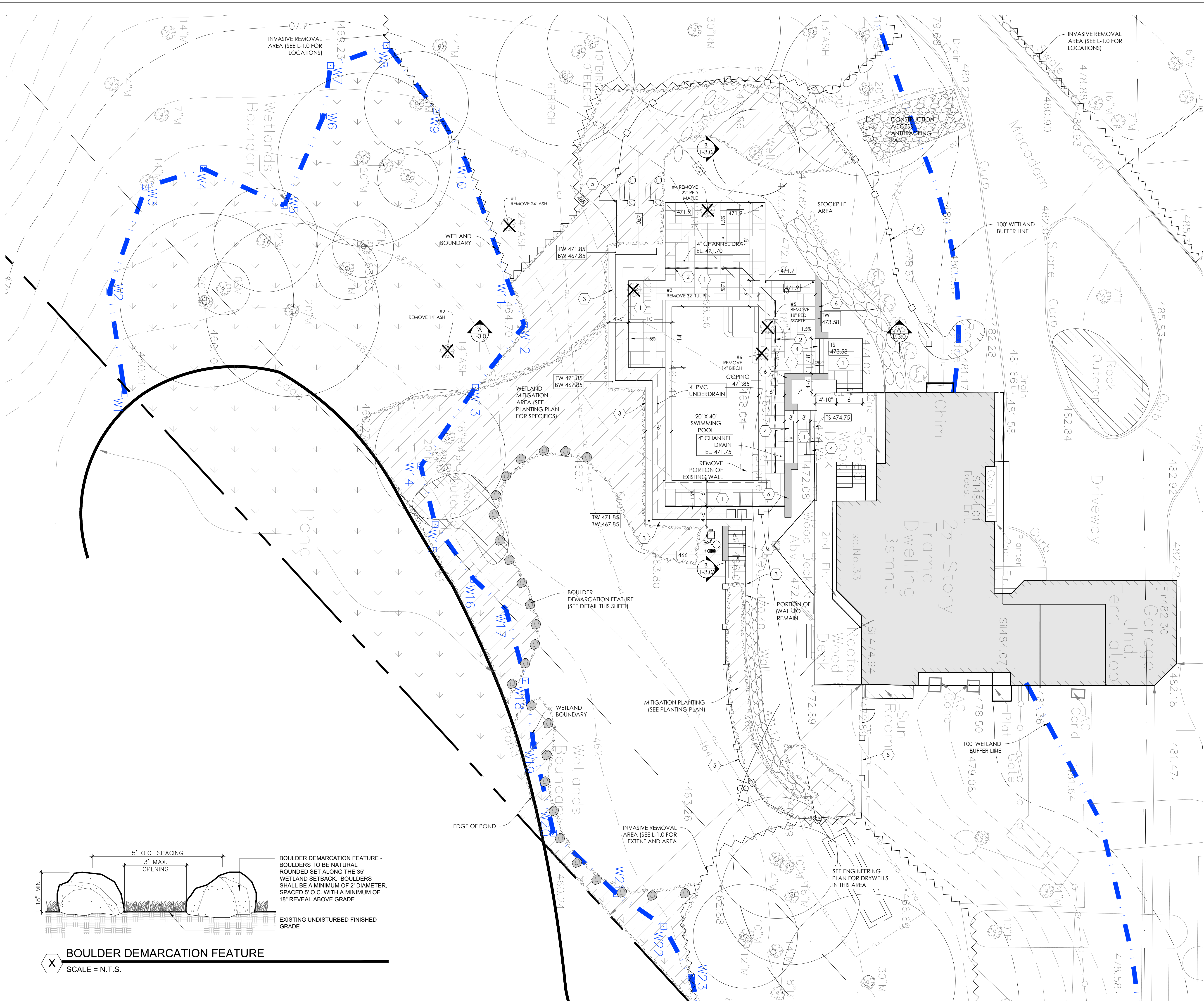
PETRENKO RESIDENCE

33 WOODLAND ROAD
 BEDFORD, NY
 TOWN OF NORTH CASLLE

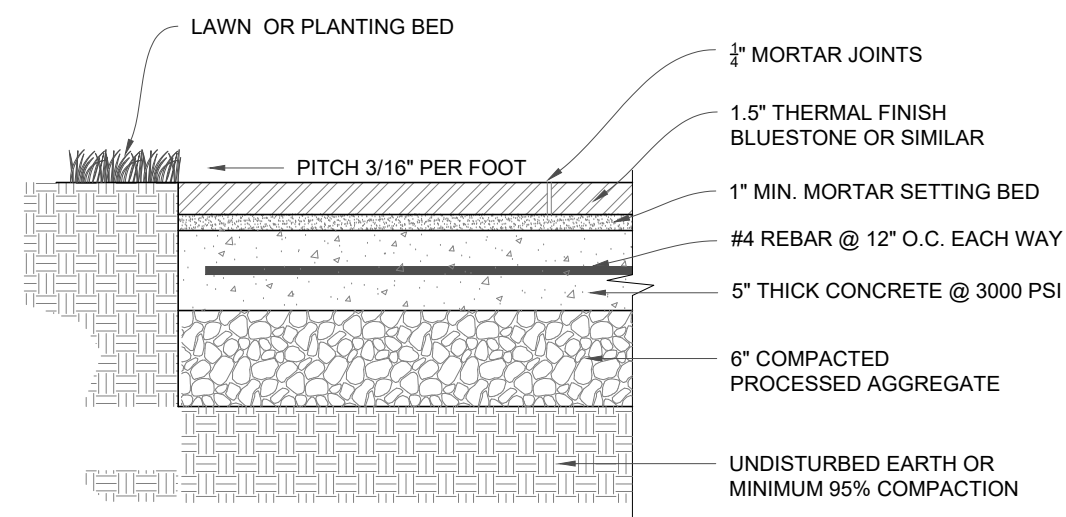
LAYOUT AND GRADING PLAN

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 drawn by: dpp

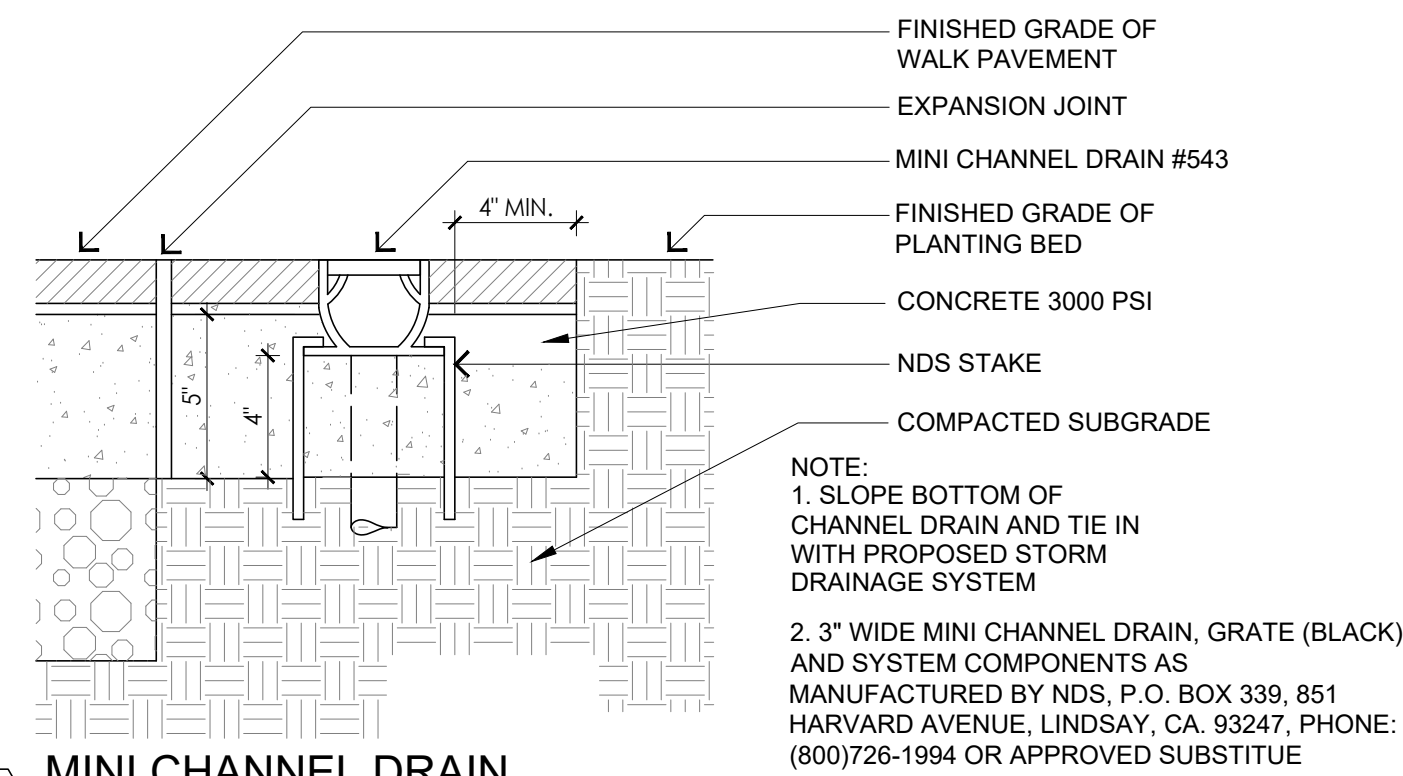
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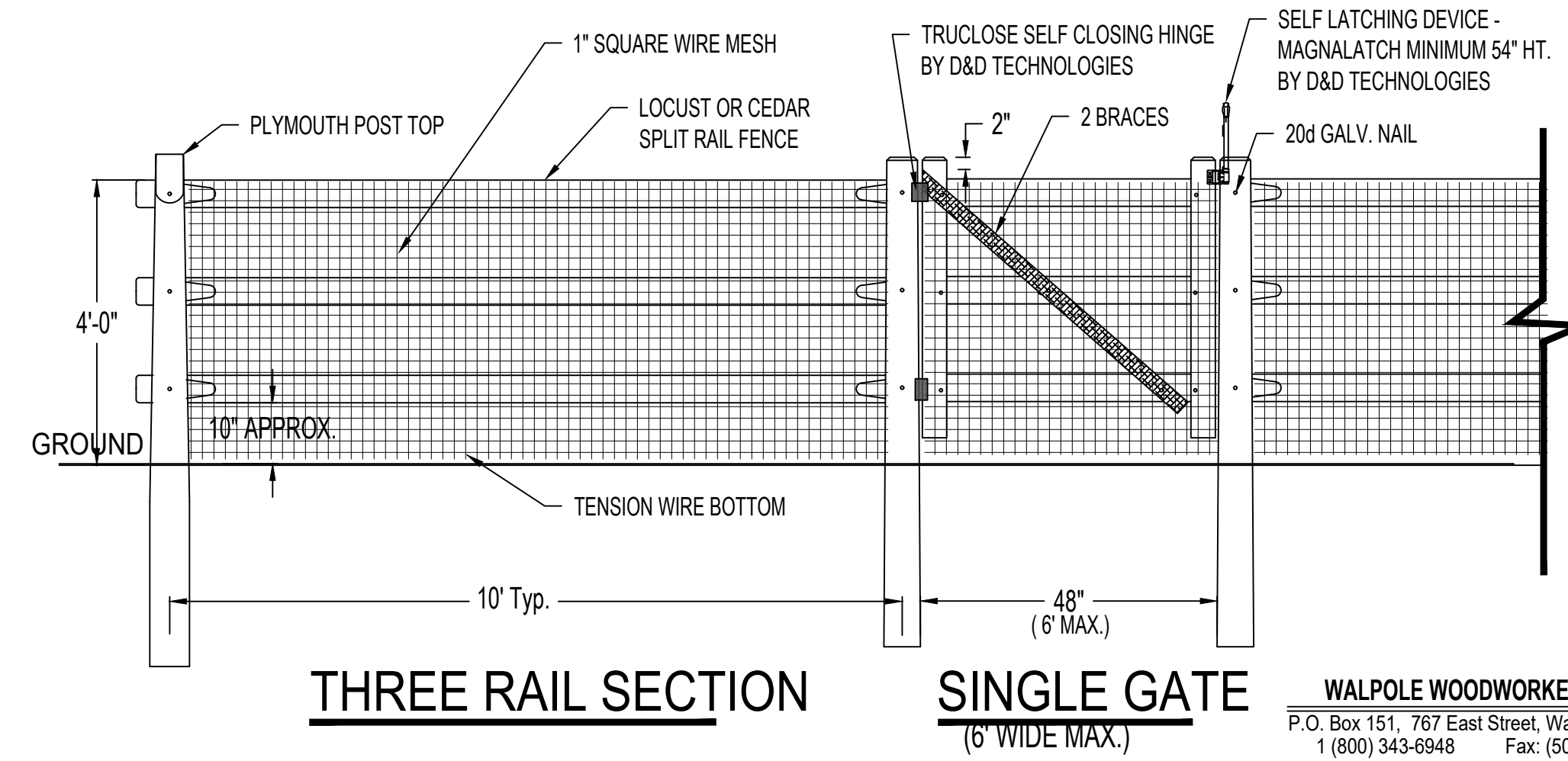
BOULDER DEMARCATION FEATURE
 SCALE = N.T.S.



1 STONE PAVING ON CONCRETE BASE
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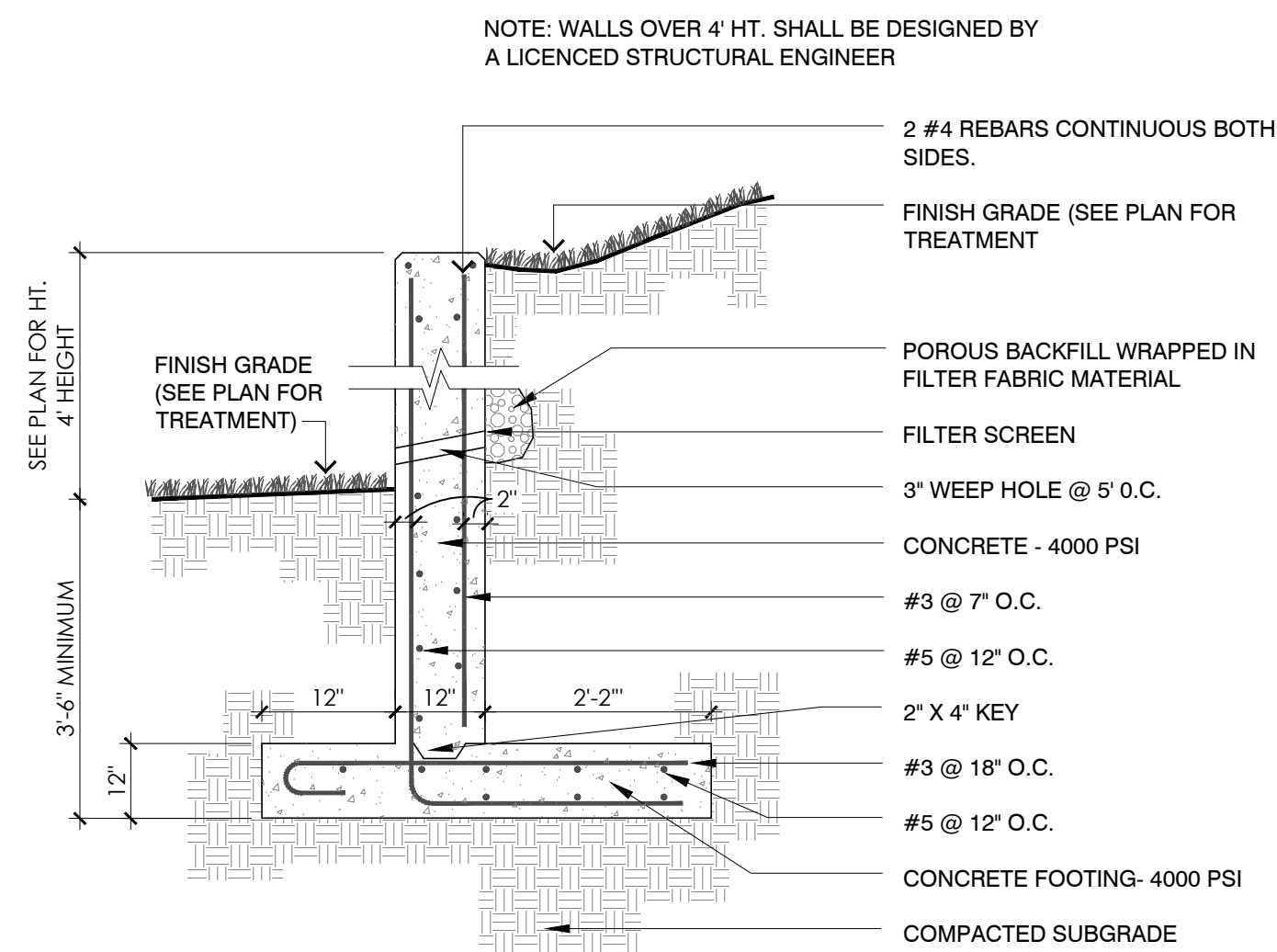


2 MINI CHANNEL DRAIN
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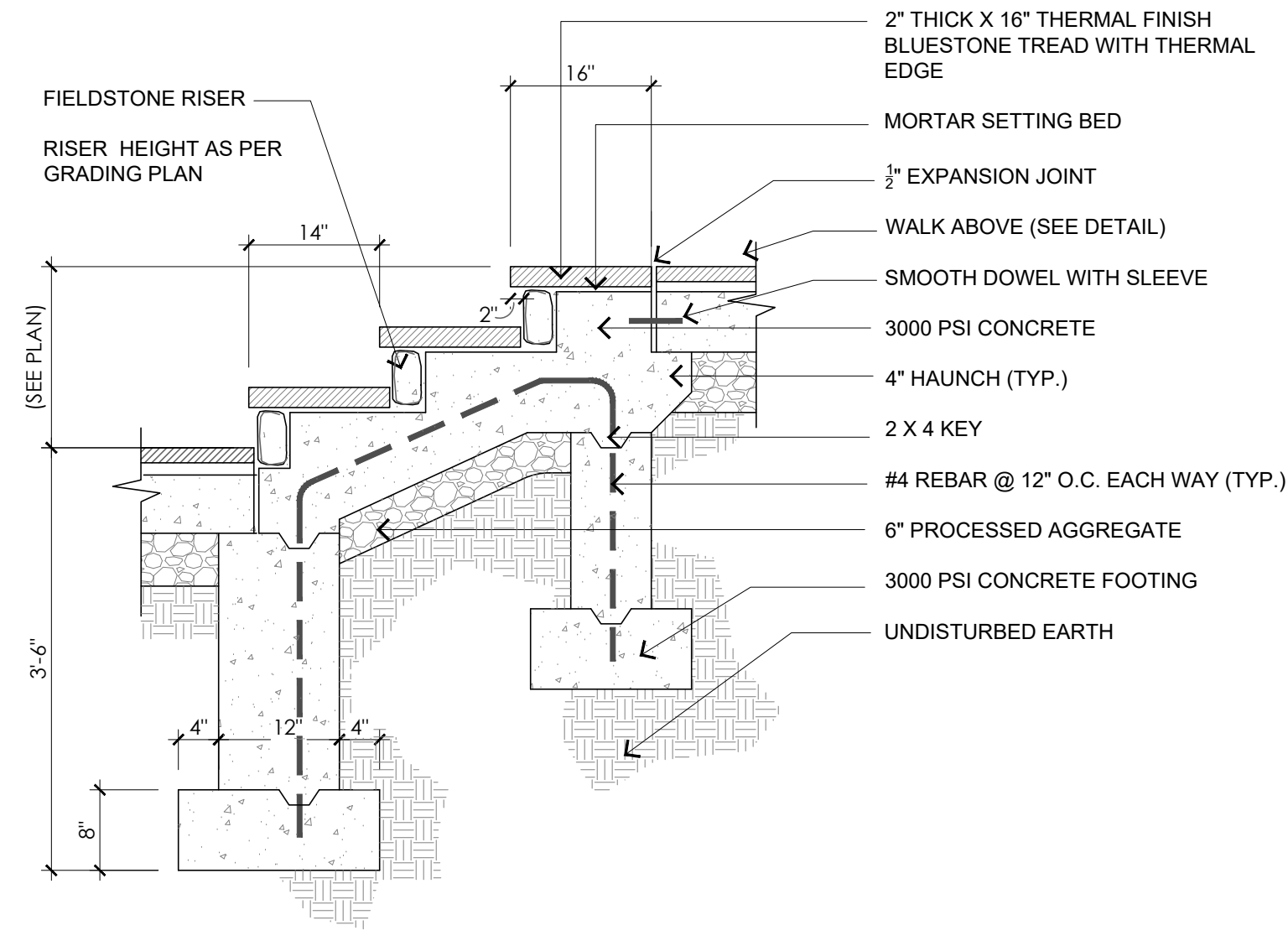


5 SPLIT RAIL FENCE WITH 1" WIRE MESH
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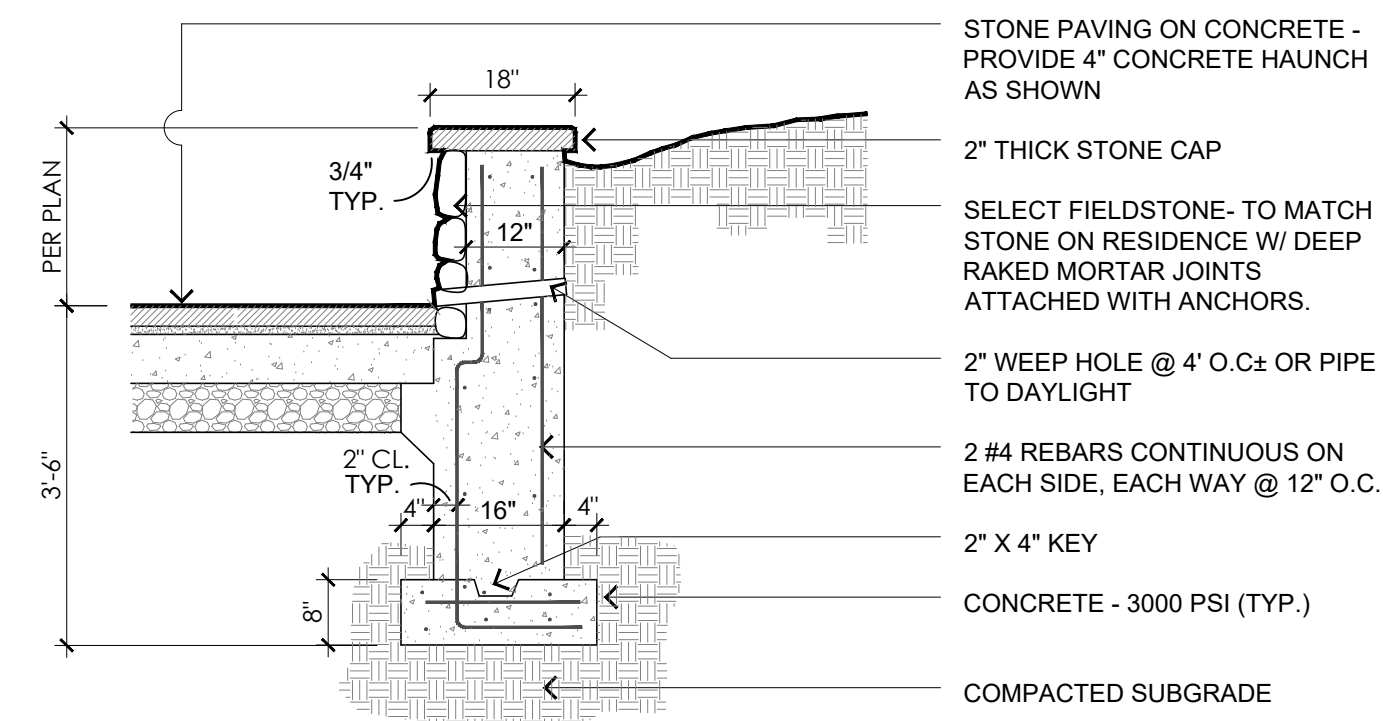
WALPOLE WOODWORKERS
P.O. Box 151, 767 East Street, Walpole, MA 02081
1 (800) 343-6948 Fax: (508) 668-7301



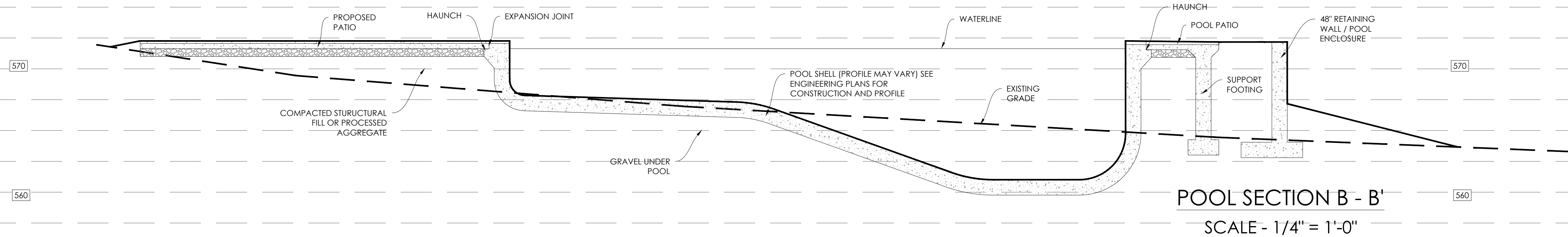
3 CONCRETE RETAINING WALL
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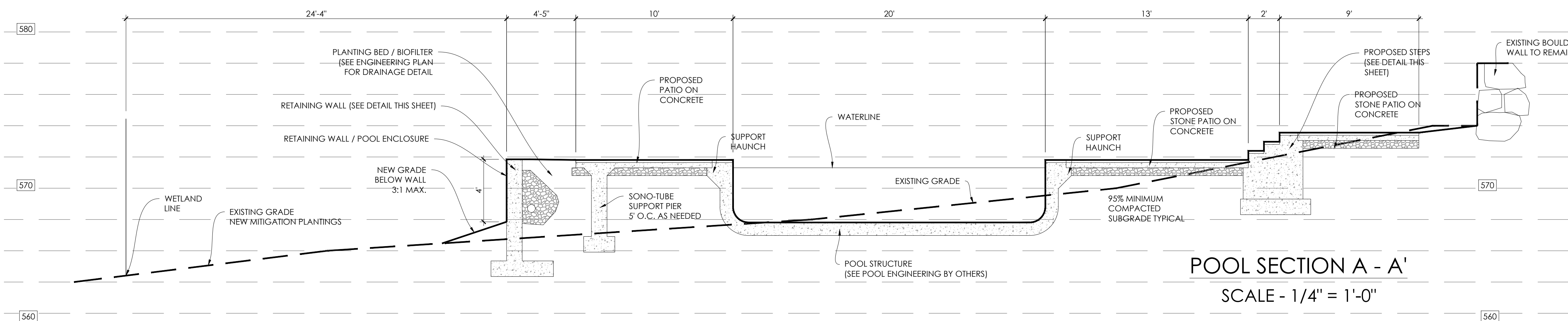
4 BLUESTONE STEPS AND FIELDSTONE RISERS
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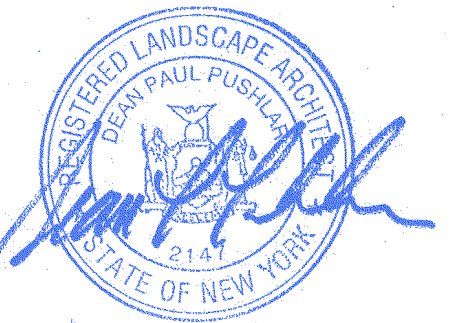
6 FIELDSTONE SEAT WALL WITH STONE CAP
SCALE = N.T.S.



POOL SECTION B - B'
SCALE - 1/4" = 1'-0"



POOL SECTION A - A'
SCALE - 1/4" = 1'-0"



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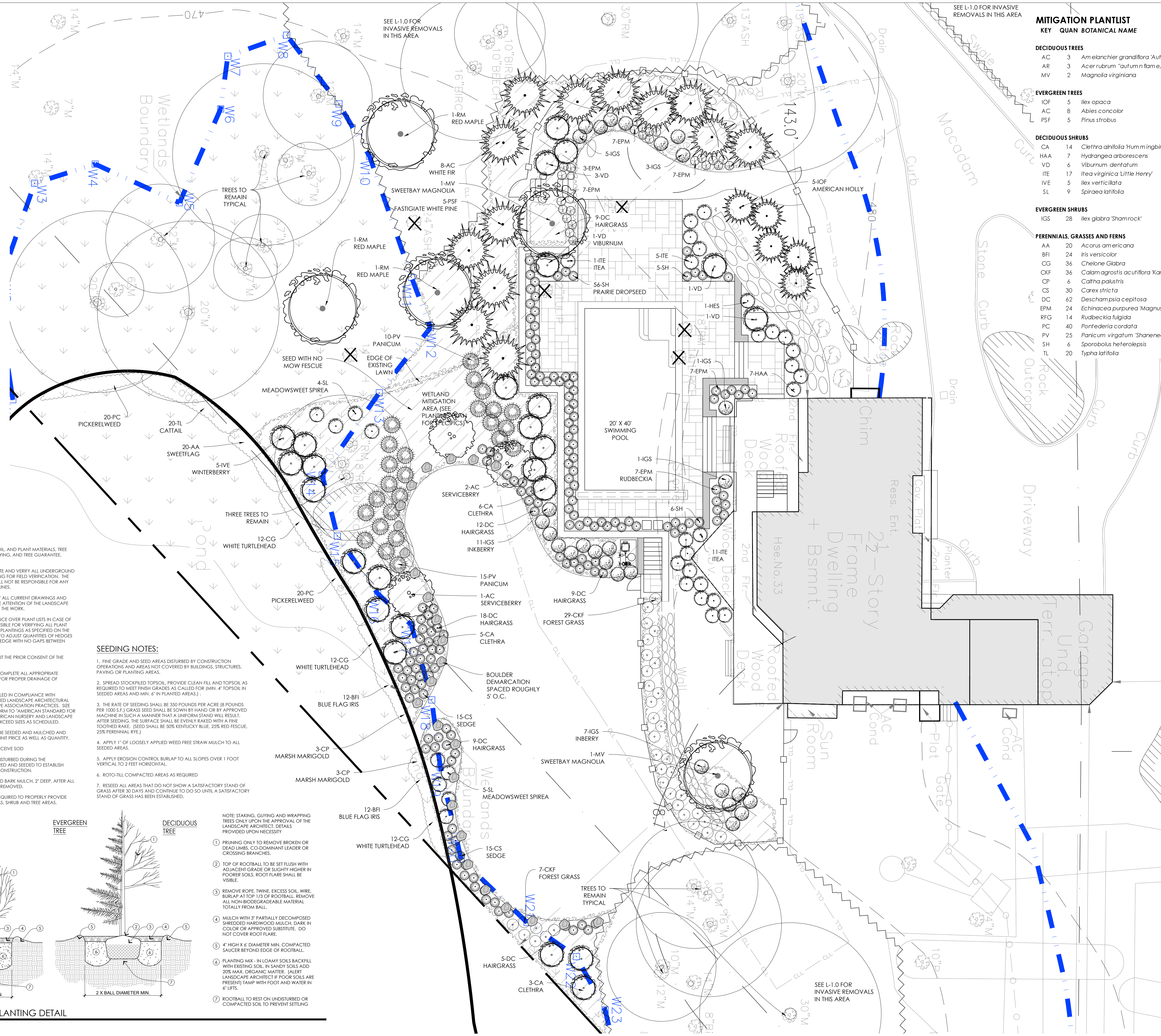
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RESIDENCE
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CONSTRUCTION
DETAILS

job number: xxx
scale: as shown
drawn by: dpp

drawing number:

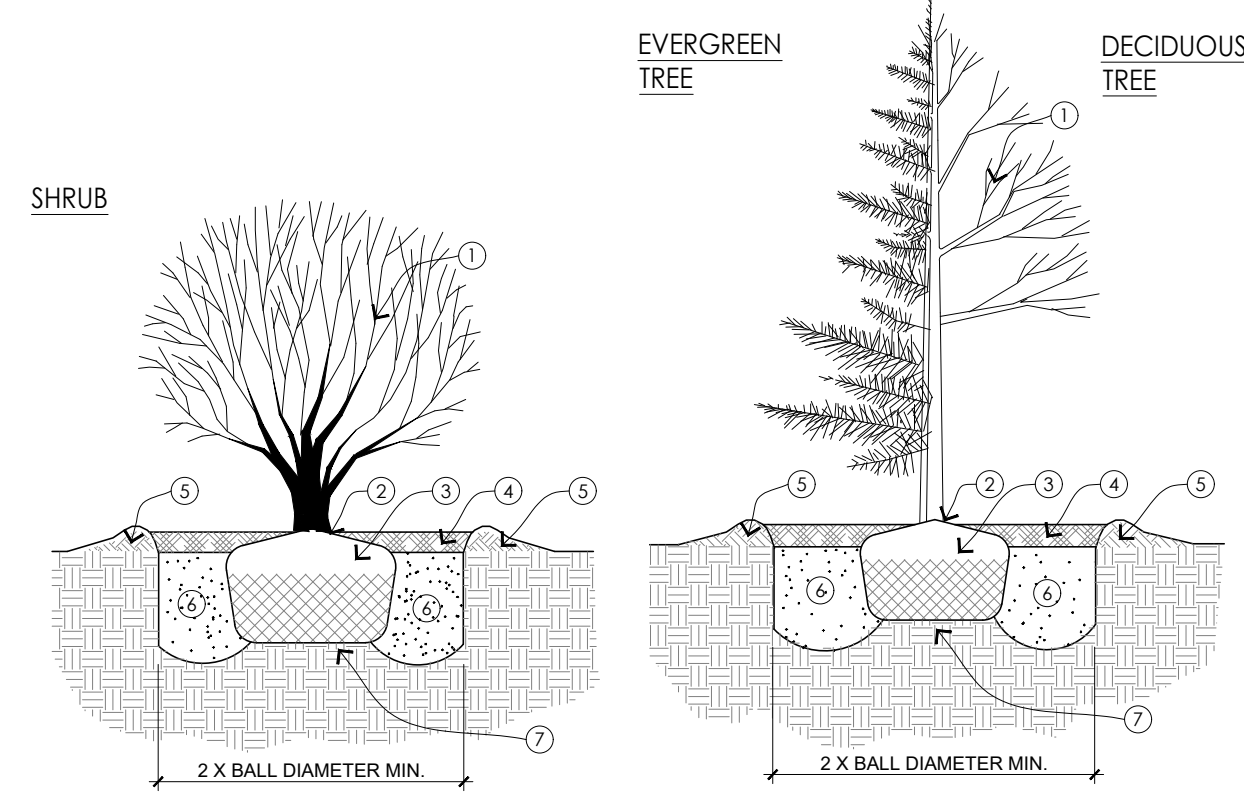
L-3.0



MITIGATION PLANTLIST					
KEY	QUAN	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
DECIDUOUS TREES					
AC	3	<i>Amelanchier grandiflora</i> 'Autumn Brilliance'	Serviceberry	5-6 clump	B&B white april
AR	3	<i>Acer rubrum</i> 'autumn flame, red sunset, oct'	Red Maple	2-2.5' cal.	B&B
MV	2	<i>Magnolia virginiana</i>	Sweetbay	6-8' ht.	B&B white may/june
EVERGREEN TREES					
IOF	5	<i>Ilex opaca</i>	American Holly	5-6' ht.	B&B
AC	8	<i>Abies concolor</i>	White Fir	7-8' ht.	B&B
PSF	5	<i>Pinus strobus</i>	White Pine	7-8' ht.	B&B
DECIDUOUS SHRUBS					
CA	14	<i>Clethra alnifolia</i> 'Hummingbird'	Summersweet	#3 cont.	white jul/aug
HAA	7	<i>Hydrangea arborescens</i>	Smoothleaf Hydrangea	#3 cont.	WHITE july/sept
VD	6	<i>Viburnum dentatum</i>	Arrowwood Viburnum	#3 cont.	5' o.c. green jul/sept
ITE	17	<i>Itea virginica</i> 'Little Henry'	Virginia Sweetspire	#3 cont.	4' o.c. white jun/jul
IVE	5	<i>Ilex verticillata</i>	Winterberry	#3 cont.	5' o.c. green jun/jul
SL	9	<i>Spiraea latifolia</i>	Meadowsweet Spirea	#2 cont.	4' o.c. wh/pink june
EVERGREEN SHRUBS					
IGS	28	<i>Ilex glabra</i> 'Shamrock'	Shamrock Inkberry	#3 cont.	18-21
PERENNIALS, GRASSES AND FERNS					
AA	20	<i>Acorus americana</i>	Sweetflag	2" plug	24" o.c.
BFI	24	<i>Iris versicolor</i>	Blue Flag Iris	2" plug	24" o.c.
CG	36	<i>Chelone Glabra</i>	White Turtlehead	2" plug	18" o.c.
CKF	36	<i>Calamagrostis acutiflora</i> 'Karl Foerster'	Feather Reed Grass	#1 cont.	2' o.c.
CP	6	<i>Caltha palustris</i>	Marsh Marigold	2" plug	18" o.c.
CS	30	<i>Carex stricta</i>	Tussock Sedge	#1 cont.	2' o.c.
DC	62	<i>Deschampsia cespitosa</i>	Tufted Hair Grass	#1 cont.	18" o.c.
EPM	24	<i>Echinacea purpurea</i> 'Magnus'	Purple Coneflower	#1 cont.	18" o.c.
RFG	14	<i>Rudbeckia fulgida</i>	Black-eyed Susan	#1 cont.	24" o.c. yellow
PC	40	<i>Panicum virgatum</i>	Switchgrass	2" plug	18" o.c.
PV	25	<i>Panicum virgatum</i> 'Shanenedoo'	Switchgrass	#3 cont.	4' o.c. fall
SH	6	<i>Sporobolus heterolepis</i>	Prairie Dropseed	#1 cont.	30" o.c. fall
TL	20	<i>Typha latifolia</i>	Common Cattail	2" plug	24" o.c.

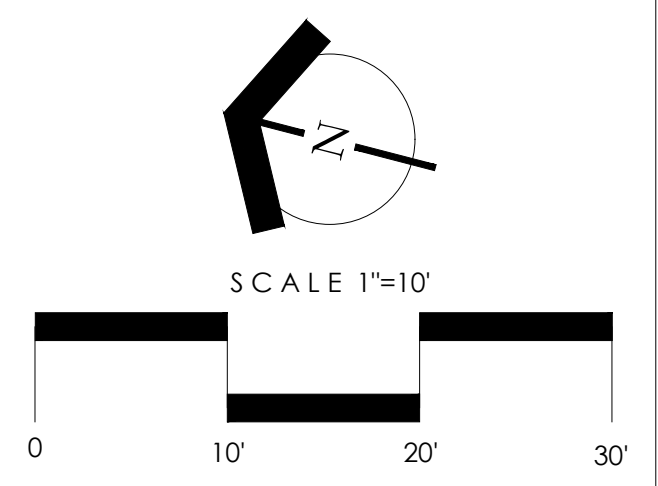
- PLANTING NOTES:**
1. ALL BIDS INCLUDE SITE PREPARATION, SOIL, AND PLANT MATERIALS, TREE PITS, INSTALLATION, FERTILIZER, MULCH, GUYING, AND TREE GUARANTEE, UNLESS OTHERWISE STATED.
 2. LANDSCAPE CONTRACTOR IS TO LOCATE AND VERIFY ALL UNDERGROUND AND OVERHEAD UTILITIES PRIOR TO DIGGING FOR FIELD VERIFICATION. THE OWNER AND LANDSCAPE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ANY DAMAGE TO UTILITY LINES OR IRRIGATION LINES.
 3. LANDSCAPE CONTRACTOR IS TO VERIFY ALL CURRENT DRAWINGS AND CHECK DISCREPANCIES AND BRING TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO COMMENCING WITH THE WORK.
 4. PLANTING PLANS SHALL TAKE PRECEDENCE OVER PLANT LISTS IN CASE OF DISCREPANCIES. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL PLANT QUANTITIES NECESSARY TO COMPLETE THE PLANTINGS AS SPECIFIED ON THE PLANTING PLAN. CONTRACTOR(OWNER) TO ADJUST QUANTITIES OF HEDGES AS NEEDED TO ACHIEVE A CONTINUOUS HEDGE WITH NO GAPS BETWEEN SHRUBS.
 5. NO CHANGES ARE TO BE MADE WITHOUT THE PRIOR CONSENT OF THE LANDSCAPE ARCHITECT AND OWNER.
 6. PROVIDE ALL TOPSOIL NECESSARY TO COMPLETE ALL APPROPRIATE PLANTINGS AND BERMS AND TO PROVIDE FOR PROPER DRAINAGE OF PLANTING AREAS.
 7. ALL PLANT MATERIALS ARE TO BE INSTALLED IN COMPLIANCE WITH STANDARDS AS ESTABLISHED BY RECOGNIZED LANDSCAPE ARCHITECTURAL AND AMERICAN NURSERY AND LANDSCAPE ASSOCIATION PRACTICES. SIZE AND GRADING STANDARDS SHALL CONFORM TO "AMERICAN STANDARD FOR NURSERY STOCK", SPONSORED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION. PLANTS SHALL EQUAL OR EXCEED SIZES AS SCHEDULED.
 8. ALL AREAS INDICATED AS LAWN SHALL BE SEEDED AND MULCHED AND RE-SEEDED TO ESTABLISH LAWN. PROVIDE UNIT PRICE AS WELL AS QUANTITY.
 9. ALL AREAS INDICATED AS SOD SHALL RECEIVE SOD.
 10. ALL EXISTING AREAS AND NEW LAWN DISTURBED DURING THE CONSTRUCTION PROCESS SHALL BE REPAIRED AND SEEDED TO ESTABLISH LAWN FREE OF DEPRESSIONS CAUSED BY CONSTRUCTION.
 11. TOP ALL PLANTING BEDS WITH SHREDDED BARK MULCH, 2" DEEP. AFTER ALL MATERIAL HAS BEEN PLANTED AND WEEDS REMOVED.
 12. INSTALL NEW IRRIGATION SYSTEM AS REQUIRED TO PROPERLY PROVIDE 100% COVERAGE OF ALL NEW LAWN AREAS, SHRUB AND TREE AREAS.

- SEEDING NOTES:**
1. THE GRADE AND SEED AREAS DISTURBED BY CONSTRUCTION OPERATIONS AND AREAS NOT COVERED BY BUILDINGS, STRUCTURES, PAVING OR PLANTING AREAS.
 2. SPREAD STOCKPILED TOPSOIL. PROVIDE CLEAN FILL AND TOPSOIL AS REQUIRED TO MEET FINISH GRADES AS CALLED FOR (MIN. 4" TOPSOIL IN SEEDED AREAS AND MIN. 6" IN PLANTED AREAS).
 3. THE RATE OF SEEDING SHALL BE 350 POUNDS PER ACRE (8 POUNDS PER 1000 S.F.) GRASS SEED SHALL BE SOWN BY HAND OR BY APPROVED MACHINE IN SUCH A MANNER THAT A UNIFORM STAND WILL RESULT. AFTER SEEDING, THE SURFACE SHALL BE EVENLY RAKED WITH A FINE TOOTHED RAKE. (SEED SHALL BE 50% KENTUCKY BLUE, 25% RED FESCUE, 25% PERENNIAL RYE.)
 4. APPLY 1" OF LOOSELY APPLIED WEED FREE STRAW MULCH TO ALL SEEDED AREAS.
 5. APPLY EROSION CONTROL BURLAP TO ALL SLOPES OVER 1 FOOT VERTICAL TO 2 FEET HORIZONTAL.
 6. ROTO-TILL COMPACTED AREAS AS REQUIRED.
 7. RESEED ALL AREAS THAT DO NOT SHOW A SATISFACTORY STAND OF GRASS AFTER 30 DAYS AND CONTINUE TO DO SO UNTIL A SATISFACTORY STAND OF GRASS HAS BEEN ESTABLISHED.



- NOTE: STAKING, GUYING AND WRAPPING TREES ONLY UPON THE APPROVAL OF THE LANDSCAPE ARCHITECT. DETAILS PROVIDED UPON NECESSITY.
1. PRUNING ONLY TO REMOVE BROKEN OR DEAD LIMBS. CO-DOMINANT LEADER OR CROSSING BRANCHES.
 2. TOP OF ROOTBALL TO BE SET FLUSH WITH ADJACENT GRADE OR SLIGHTLY HIGHER IN POORER SOILS. ROOT FLARE SHALL BE VISIBLE.
 3. REMOVE ROPE, TWINE, EXCESS SOIL, WIRE, BURLAP AT TOP 1/3 OF ROOTBALL. REMOVE ALL NON-BIODEGRADABLE MATERIAL TOTALLY FROM BALL.
 4. MULCH WITH 2" PARTIALLY DECOMPOSED SHREDDED HARDWOOD MULCH, DARK IN COLOR OR APPROVED SUBSTITUTE. DO NOT COVER ROOT FLARE.
 5. 4" HIGH X 6" DIAMETER MIN. COMPACTED SAUCER BEYOND EDGE OF ROOTBALL.
 6. PLANTING MIX - IN LOAMY SOILS BACKFILL WITH EXISTING SOIL. IN SANDY SOILS ADD 20% MAX. ORGANIC MATTER. (ALERT LANDSCAPE ARCHITECT IF POOR SOILS ARE PRESENT) TAMP WITH FOOT AND WATER IN 6" LIFTS.
 7. ROOTBALL TO REST ON UNDISTURBED OR COMPACTED SOIL TO PREVENT SETTLING.

SHRUB AND TREE PLANTING DETAIL
SCALE = N.T.S.



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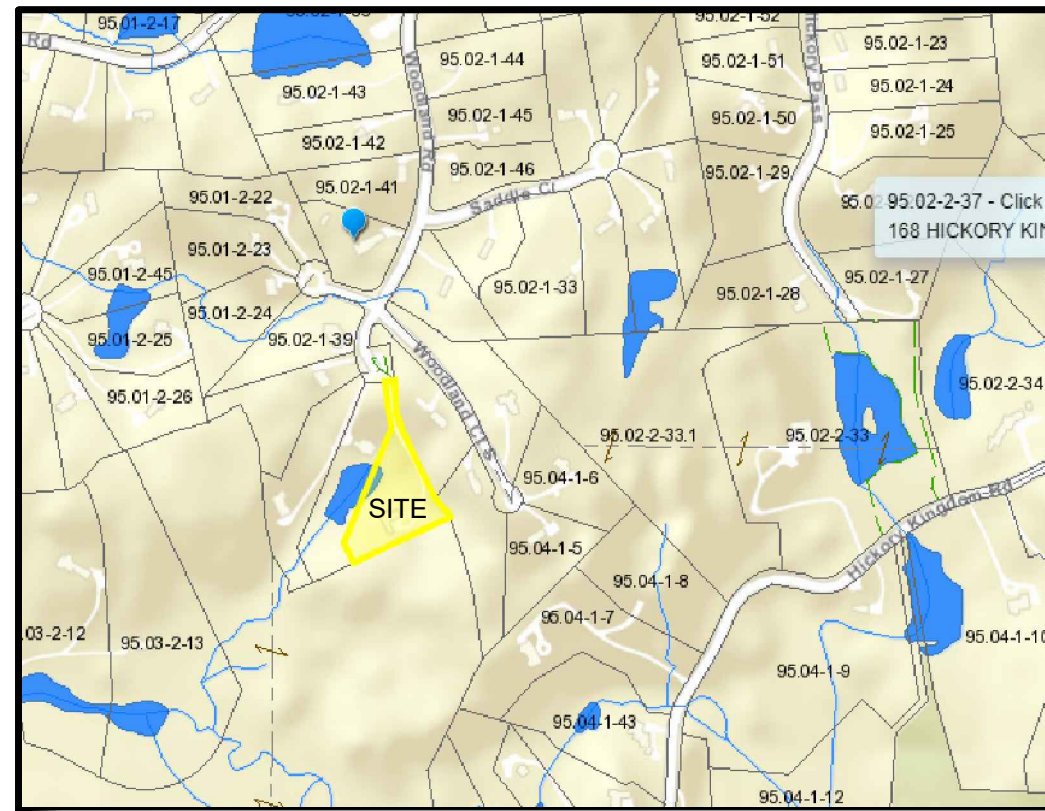
revision: REV #1 OCTOBER 31, 2022
date: SEPTEMBER 19, 2022

PETRENKO RESIDENCE
33 WOODLAND ROAD
BEDFORD, NY
TOWN OF NORTH CASLLE

MITIGATION PLANTING PLAN

job number: xxx
scale: as shown
drawn by: dpp

drawing number: **L-4.0**



VICINITY MAP
SCALE: 1" = 400'

OWNER APPLICANT: IGOR PETRENKO
 ADDRESS: 33 WOODLAND ROAD, BEDFORD (TOWN OF NORTH CASTLE), NY
 PROPERTY ID: 95.04-1-3
 ZONING DISTRICT: R-2A
 FEMA DESIGNATION: ZONE X; 36119C0167F

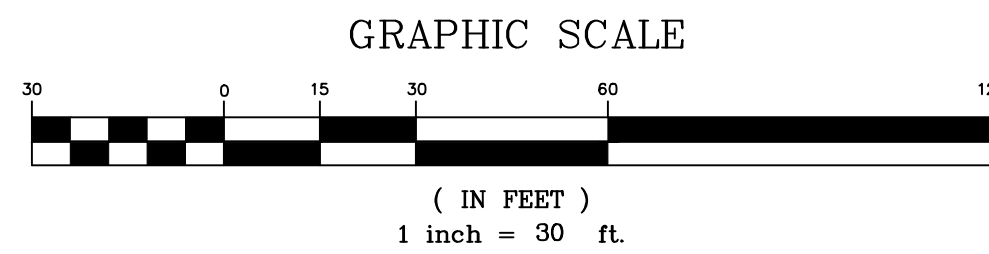
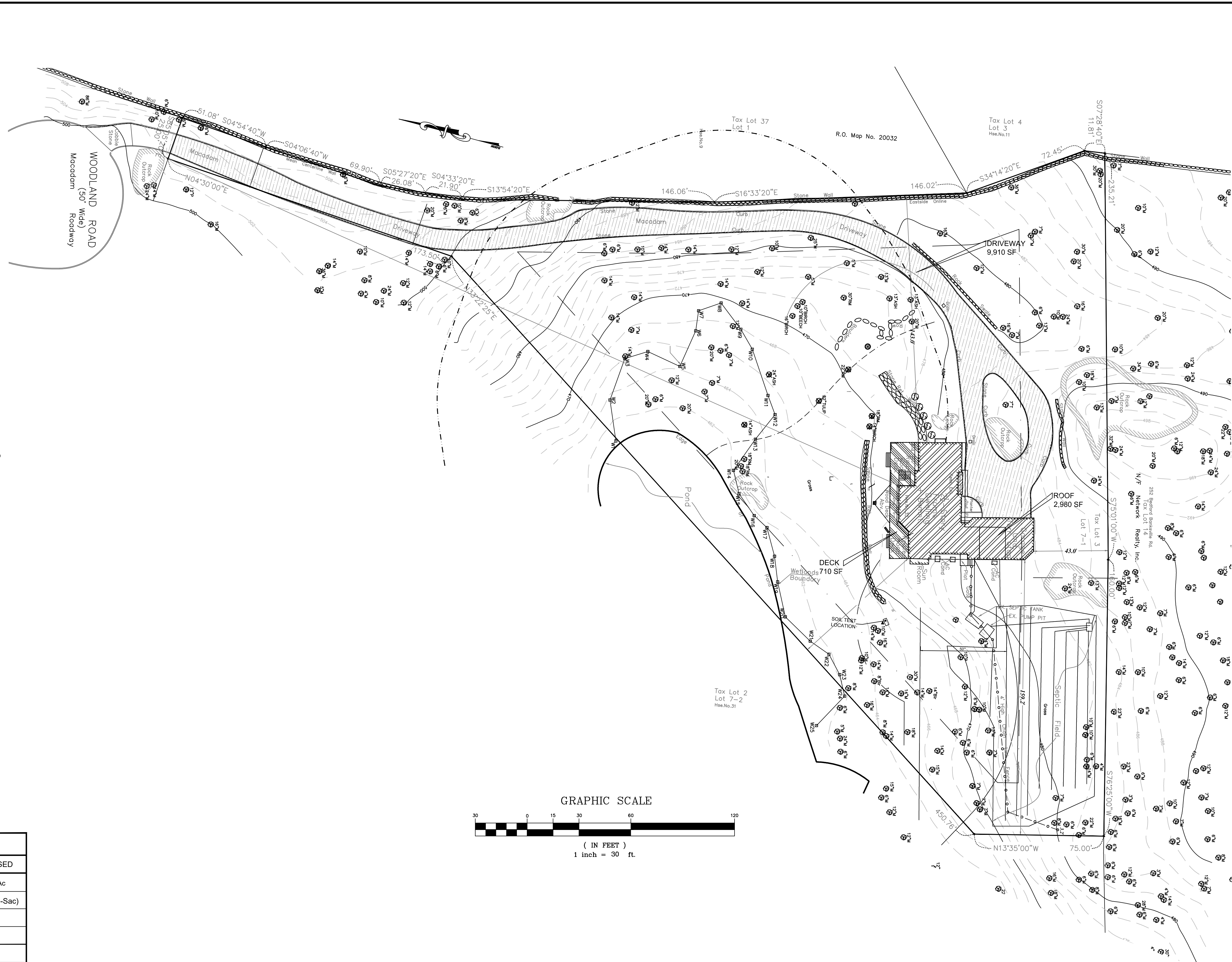
- GENERAL NOTES:
- SURVEY INFORMATION (i.e. EXISTING LOT LINES, TOPOGRAPHY, ETC) FROM SURVEY ENTITLED "PROPERTY AND TOPOGRAPHIC SURVEY DEPICTING 33 WOODLANDS ROAD, BEDFORD, NY, DATED MARCH 31, 2021 AND PREPARED BY RONALD PERSAUD, LS
 - CONTRACTOR SHALL VERIFY THE DEPTH AND LOCATION OF ALL UTILITIES PRIOR TO COMMENCING CONSTRUCTION AND SHALL CONTACT "CALL BEFORE YOU DIG, INC." AT 1-800-962-7962, 2 DAYS BEFORE COMMENCING CONSTRUCTION.
 - ALL CONSTRUCTION SHALL COMPLY WITH APPLICABLE SECTIONS OF THE STATE OF NEW YORK AND TOWN OF NORTH CASTLE CODES AND SHALL TAKE PRECEDENCE OVER THESE PLANS.
 - THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION AND THEREFORE SHOULD BE PRESUMED TO BE APPROXIMATE. CONTRACTOR SHALL VERIFY LOCATIONS WITH TEST PITS PRIOR TO CONSTRUCTION. ANY CONFLICTS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
 - ALL PROPOSED DRAIN PIPING SHALL BE HDPE OF SIZE AS SPECIFIED ON THE DRAWING.
 - LOCATION OF EXISTING SEWER TRENCHES FROM AN AS-BUILT DRAWING OBTAINED FROM WESTCHESTER COUNTY DEPARTMENT OF HEALTH RECORDS
 - SEE LANDSCAPING PLANS BY DEAN PULSHAR, LS FOR DETAILS OF POOL FENCING, GARDEN WALLS, PROPOSED GRADING FOR RESPECTIVE CONSTRUCTION DETAILS.
 - NO CONSTRUCTION ACTIVITIES SHALL OCCUR BEYOND THE "LIMIT OF DISTURBANCE LINES" DEPICTED ON THESE PLANS. SIMILARLY, UNLESS OTHERWISE NOTED, THERE SHALL BE NO REMOVAL OF TOWN REGULATED TREES.
 - PRIOR TO THE START OF ANY WORK THE CONTRACTOR SHALL SURVEY-LOCATE THE LIMITS OF DISTURBANCE SHOWN ON THESE PLANS.

GROSS LAND COVERAGE CALCULATIONS WORKSHEET*

APPLICATION NAME: PETRENKO			
TAX MAP DESIGNATION: 95.04-1-3 ZONING DISTRICT: R-2A			
GROSS LOT COVERAGE	EXISTING	PROPOSED	
1. TOTAL LOT AREA	94,473 sf	94,473 sf	
2. MAXIMUM PERMITTED GROSS LAND COVERAGE	17,088.5 sf	NA	
3. BONUS MAXIMUM GROSS LAND COVER Distance principal home to beyond minimum front yard setback 412.7 ft x 10 = 4,127 sf	4,127 sf	NA	
4. TOTAL MAXIMUM PERMITTED GROSS LAND COVERAGE	21,215.5 sf	NA	
5. AMOUNT OF LOT AREA COVERED BY PRINCIPAL BUILDING	2,980 sf	2,980 sf	
6. AMOUNT OF LOT AREA COVERED BY ACCESSORY BLDGS	0 sf	0 sf	
7. AMOUNT OF LOT AREA COVERED BY DECKS	710 sf	710 sf	
8. AMOUNT OF LOT AREA COVERED BY PORCHES	0 sf	0 sf	
9. AMOUNT OF LOT AREA COVERED BY DRIVEWAY, PARKING AREAS AND WALKWAYS	9,910 sf	9,910 sf	
10. AMOUNT OF LOT AREA COVERED BY TERRACES/PATIOS	0 sf	0 sf	
11. AMOUNT OF LOT AREA COVERED BY TENNIS COURT, POOL & MECHANICAL EQUIP	0 sf	824 sf	
12. AMOUNT OF LOT AREA COVERED BY ALL OTHER STRUC.	0 sf	0 sf	
13. PROPOSED GROSS LAND COVERAGE: Total of Lines 5-12	13,800 sf	15,904 sf	

ZONING CONFORMANCE TABLE - R 2A ZONE

MIN. LOT SIZE	REQUIRED	EXISTING	PROPOSED
MIN. LOT AREA	2 Ac	2.169 Ac	2.169 Ac
MIN. FRONTAGE	150 ft	25 ft (Cul-de-Sac)	25 ft (Cul-de-Sac)
MIN. WIDTH	150 ft	150 ft	150 ft
MIN. DEPTH	150 ft	±300 ft	±300 ft
MIN. PRINCIPAL BUILDING SETBACKS			
FRONT YARD	50 ft	462.7 ft	462.7 ft
SIDE YARD	30 ft	78.7 ft (min)	78.7 ft (min)
REAR YARD	50 ft	43 ft	43 ft
MAX. HEIGHT (PRINCIPAL) (FEET/STORIES)	30 ft/3	<30 ft	<30 ft
MIN. PROPOSED POOL SETBACKS			
FRONT YARD	50 ft	---	411.7 ft
SIDE YARD	30 ft	---	78.2 ft (min)
REAR YARD	50 ft	---	138.6 ft



- LEGEND
- EXISTING "SPOT" GRADE
 - OHW OVERHEAD UTILITY WIRES
 - IB IRON BAR
 - IBC IRON BAR & CAP
 - DUE DRAINAGE & UTILITY EASEMENT
 - (M) EX. MANHOLE
 - (X) EX. CATCH BASIN
 - (SF) SILT FENCE
 - (CF) CONSTRUCTION FENCE
 - (IP) INLET PROTECTION
 - (490) PROP CONTOUR

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SHEET: 1 of 3

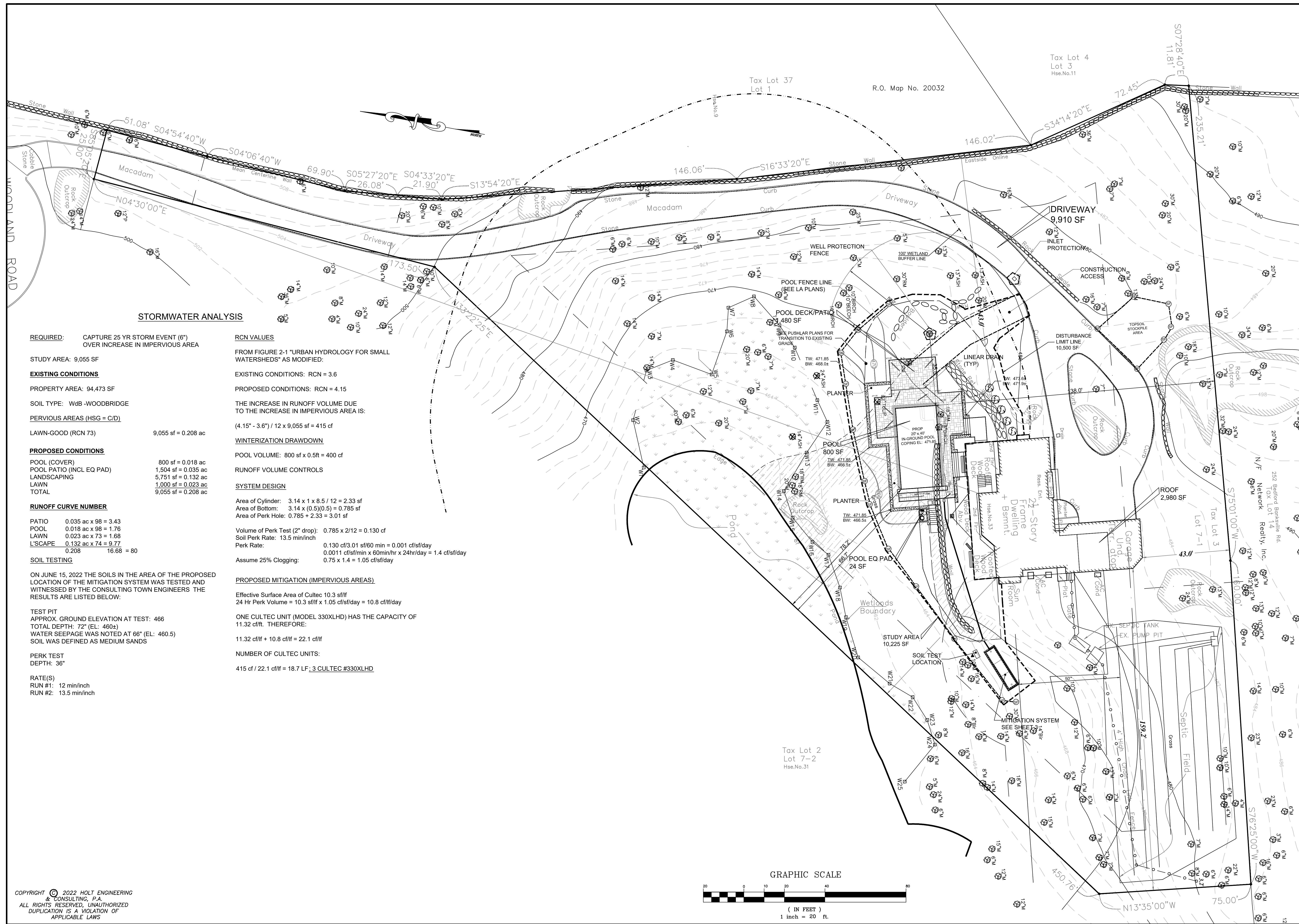
NATHANIEL J. HOLT, PE
 STATE OF NEW YORK
 PROFESSIONAL ENGINEER

DATE

NATHANIEL J. HOLT, PE
 CONSULTING ENGINEERS
 599 ROUTE 22
 PAWLING, NEW YORK 12564
 PHONE: (914) 760-1800 FX: (772) 204-9553

EXISTING CONDITIONS

PROPOSED SWIMMING POOL
 for
 PETRENKO
 33 WOODLAND ROAD, (TNC) BEDFORD, NY



STORMWATER ANALYSIS

REQUIRED: CAPTURE 25 YR STORM EVENT (6") OVER INCREASE IN IMPERVIOUS AREA

STUDY AREA: 9,055 SF

EXISTING CONDITIONS

PROPERTY AREA: 94,473 SF

SOIL TYPE: WdB - WOODBRIDGE

PERVIOUS AREAS (HSG = C/D)

LAWN-GOOD (RCN 73) 9,055 sf = 0.208 ac

PROPOSED CONDITIONS

POOL (COVER) 800 sf = 0.018 ac
 POOL PATIO (INCL EQ PAD) 1,504 sf = 0.035 ac
 LANDSCAPING 5,751 sf = 0.132 ac
 LAWN 1,000 sf = 0.023 ac
 TOTAL 9,055 sf = 0.208 ac

RUNOFF CURVE NUMBER

PATIO 0.035 ac x 98 = 3.43
 POOL 0.018 ac x 98 = 1.76
 LAWN 0.023 ac x 73 = 1.68
 L'SCAPE 0.132 ac x 74 = 9.77
 TOTAL 0.208 16.68 = 80

SOIL TESTING

ON JUNE 15, 2022 THE SOILS IN THE AREA OF THE PROPOSED LOCATION OF THE MITIGATION SYSTEM WAS TESTED AND WITNESSED BY THE CONSULTING TOWN ENGINEERS THE RESULTS ARE LISTED BELOW:

TEST PIT
 APPROX. GROUND ELEVATION AT TEST: 466
 TOTAL DEPTH: 72" (EL: 460±)
 WATER SEEPAGE WAS NOTED AT 66" (EL: 460.5)
 SOIL WAS DEFINED AS MEDIUM SANDS

PERK TEST

DEPTH: 36"
 RATE(S)
 RUN #1: 12 min/inch
 RUN #2: 13.5 min/inch

RCN VALUES

FROM FIGURE 2-1 "URBAN HYDROLOGY FOR SMALL WATERSHEDS" AS MODIFIED:

EXISTING CONDITIONS: RCN = 3.6

PROPOSED CONDITIONS: RCN = 4.15

THE INCREASE IN RUNOFF VOLUME DUE TO THE INCREASE IN IMPERVIOUS AREA IS:

(4.15 - 3.6) / 12 x 9,055 sf = 415 cf

WINTERIZATION DRAWDOWN

POOL VOLUME: 800 sf x 0.5ft = 400 cf

RUNOFF VOLUME CONTROLS

SYSTEM DESIGN

Area of Cylinder: 3.14 x 1 x 8.5 / 12 = 2.33 sf
 Area of Bottom: 3.14 x (0.5)(0.5) = 0.785 sf
 Area of Perk Hole: 0.785 + 2.33 = 3.01 sf

Volume of Perk Test (2" drop): 0.785 x 2/12 = 0.130 cf
 Soil Perk Rate: 13.5 min/inch
 Perk Rate: 0.130 cf/3.01 sf/60 min = 0.001 cf/sf/day
 0.0011 cf/sf/min x 60min/hr x 24hr/day = 1.4 cf/sf/day
 Assume 25% Clogging: 0.75 x 1.4 = 1.05 cf/sf/day

PROPOSED MITIGATION (IMPERVIOUS AREAS)

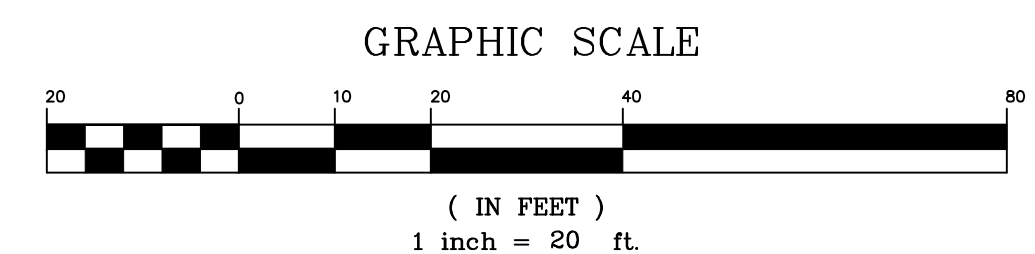
Effective Surface Area of Cultec 10.3 sf/lf
 24 Hr Perk Volume = 10.3 sf/lf x 1.05 cf/sf/day = 10.8 cf/lf/day

ONE CULTEC UNIT (MODEL 330XLHD) HAS THE CAPACITY OF 11.32 cf/lf. THEREFORE:

11.32 cf/lf + 10.8 cf/lf = 22.1 cf/lf

NUMBER OF CULTEC UNITS:

415 cf / 22.1 cf/lf = 18.7 LF; 3 CULTEC #330XLHD



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SHEET: 2 of 3

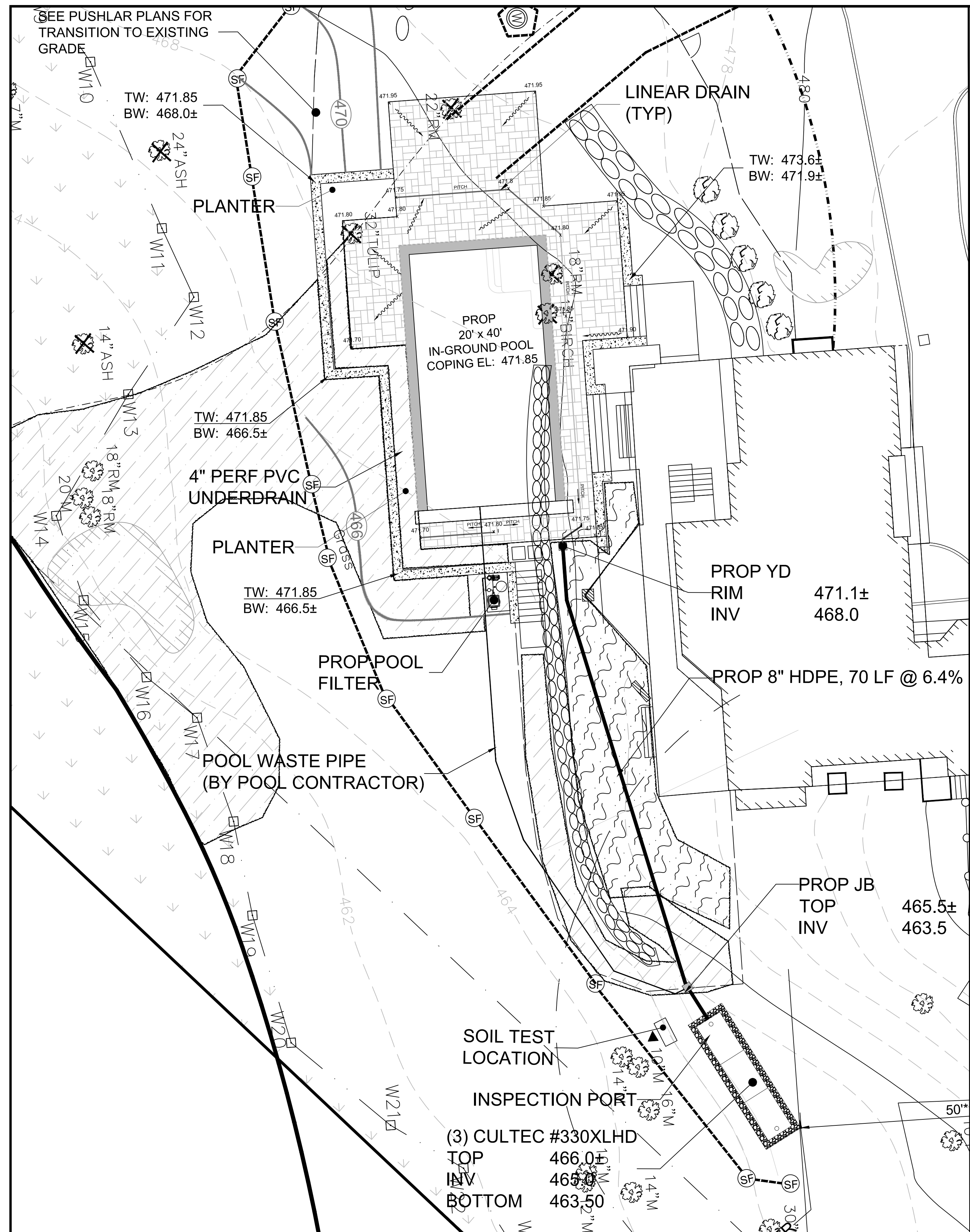
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OVERALL SITE PLAN

PROPOSED SWIMMING POOL
 for
PETRENKO
 33 WOODLAND ROAD, (TNC) BEDFORD, NY

DATE
 PROJECT NUMBER: PET-SWPPP
 ORIGINAL DATE: MARCH 6, 2022
 1 AUGUST 9, 2022
 2 SEPTEMBER 13, 2022
 3 SEPTEMBER 13, 2022
 4

DATE
 PROJECT NUMBER: PET-SWPPP
 ORIGINAL DATE: MARCH 6, 2022
 1 AUGUST 9, 2022
 2 SEPTEMBER 13, 2022
 3 SEPTEMBER 13, 2022
 4



LEGEND

- EXISTING "SPOT" GRADE
- OHW OVERHEAD UTILITY WIRES
- IB IRON BAR
- IBC IRON BAR & CAP
- DUE DRAINAGE & UTILITY EASEMENT
- (MH) EX. MANHOLE
- EX. CATCH BASIN

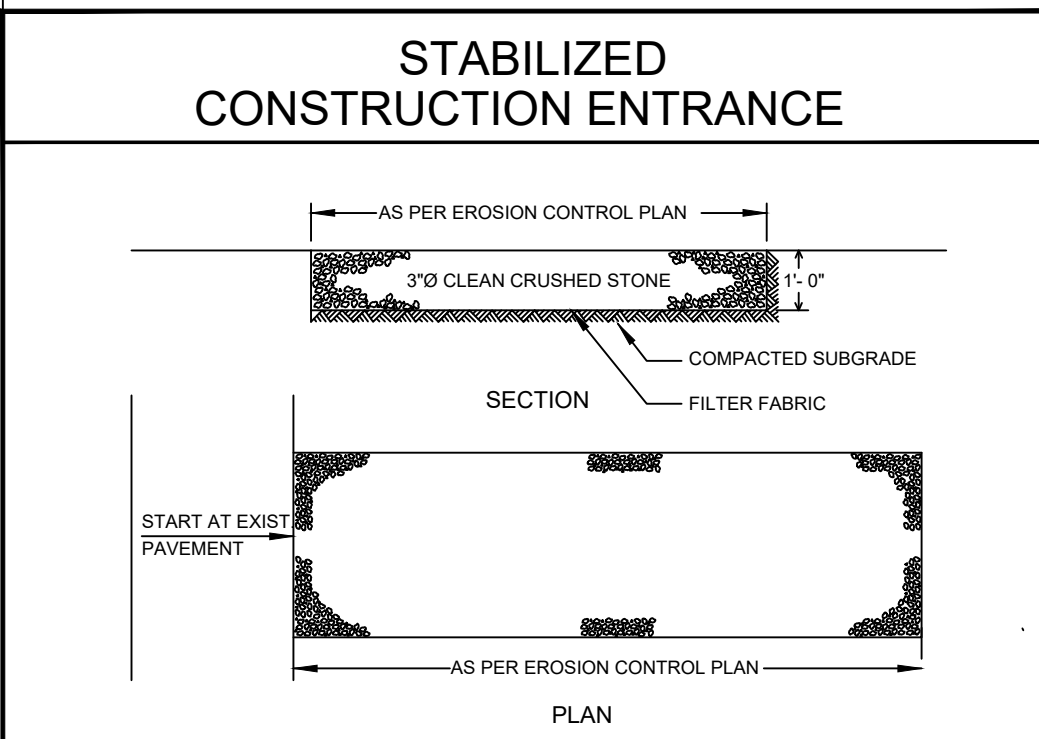
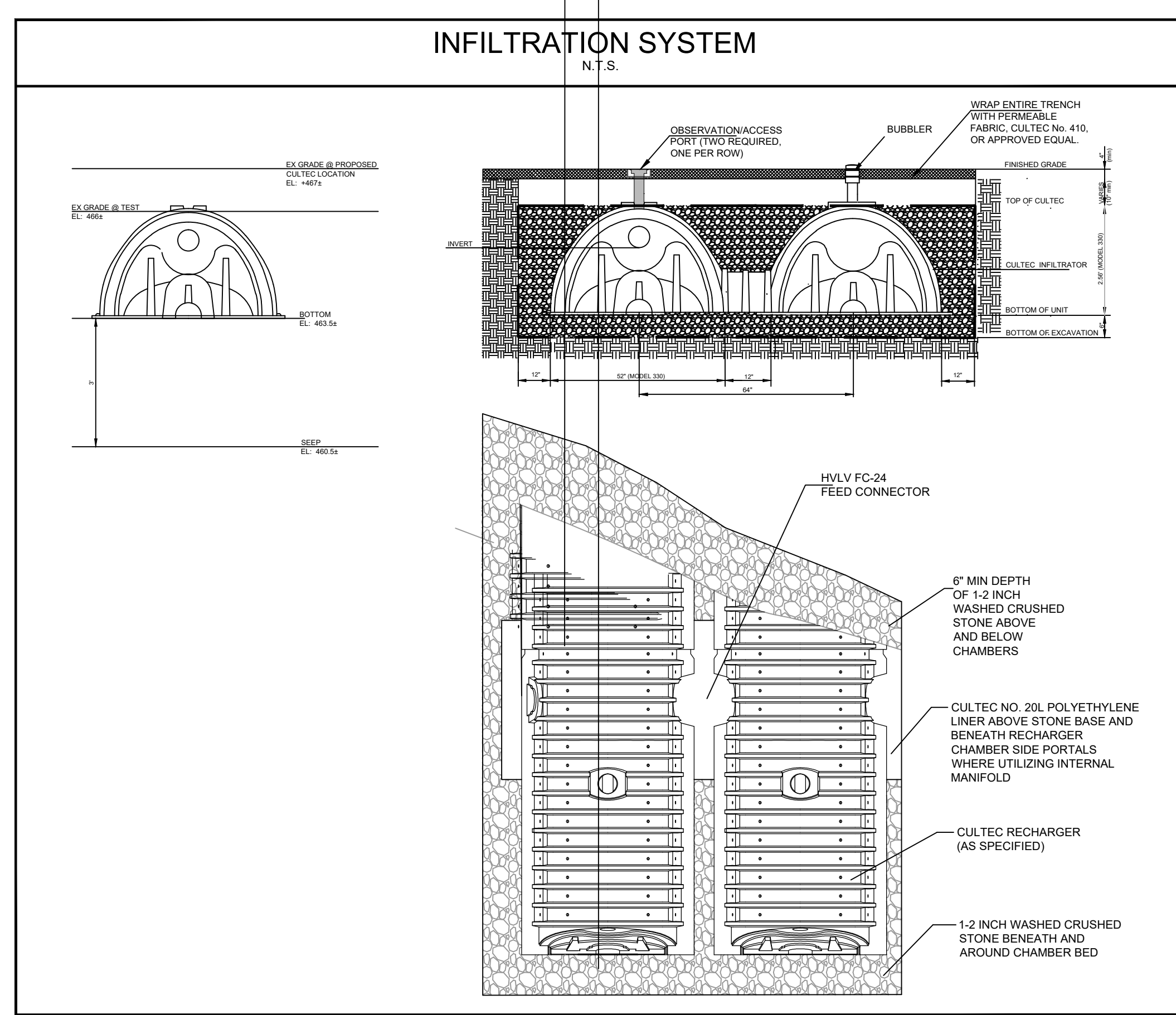
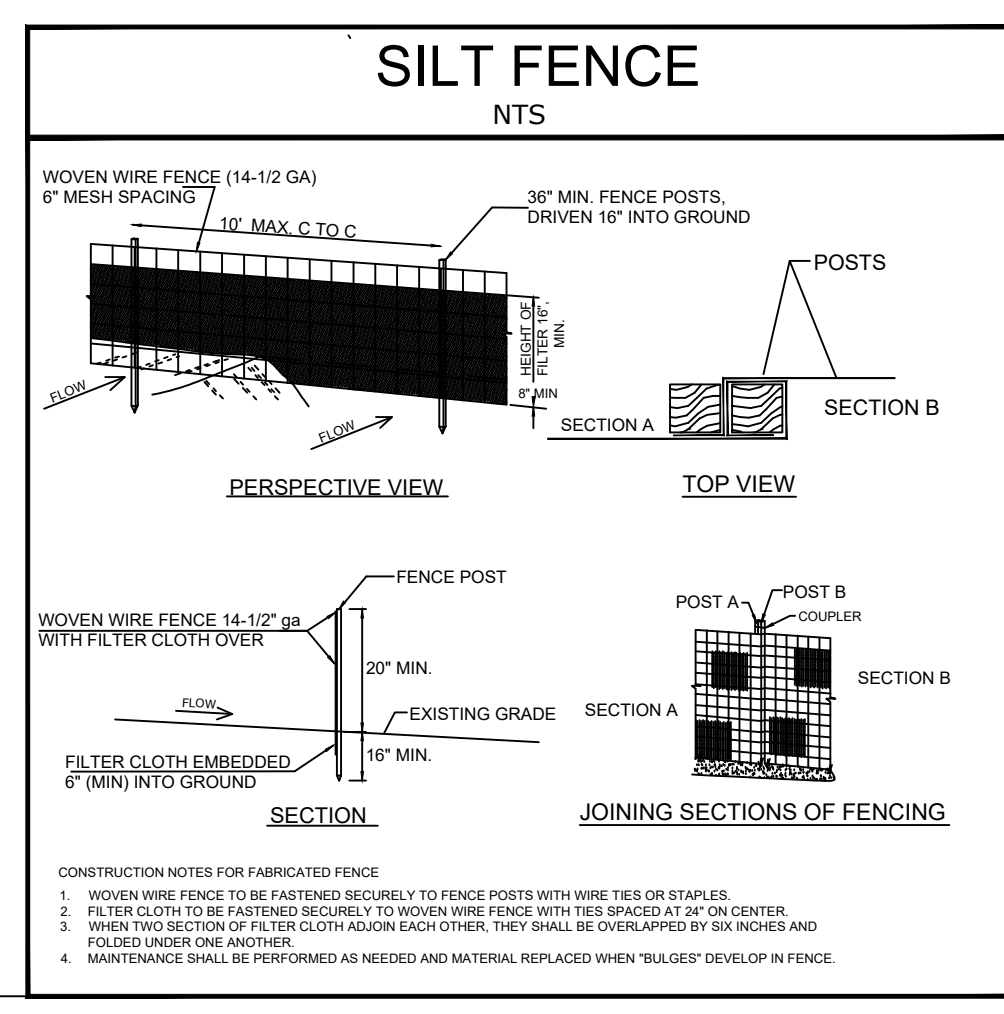
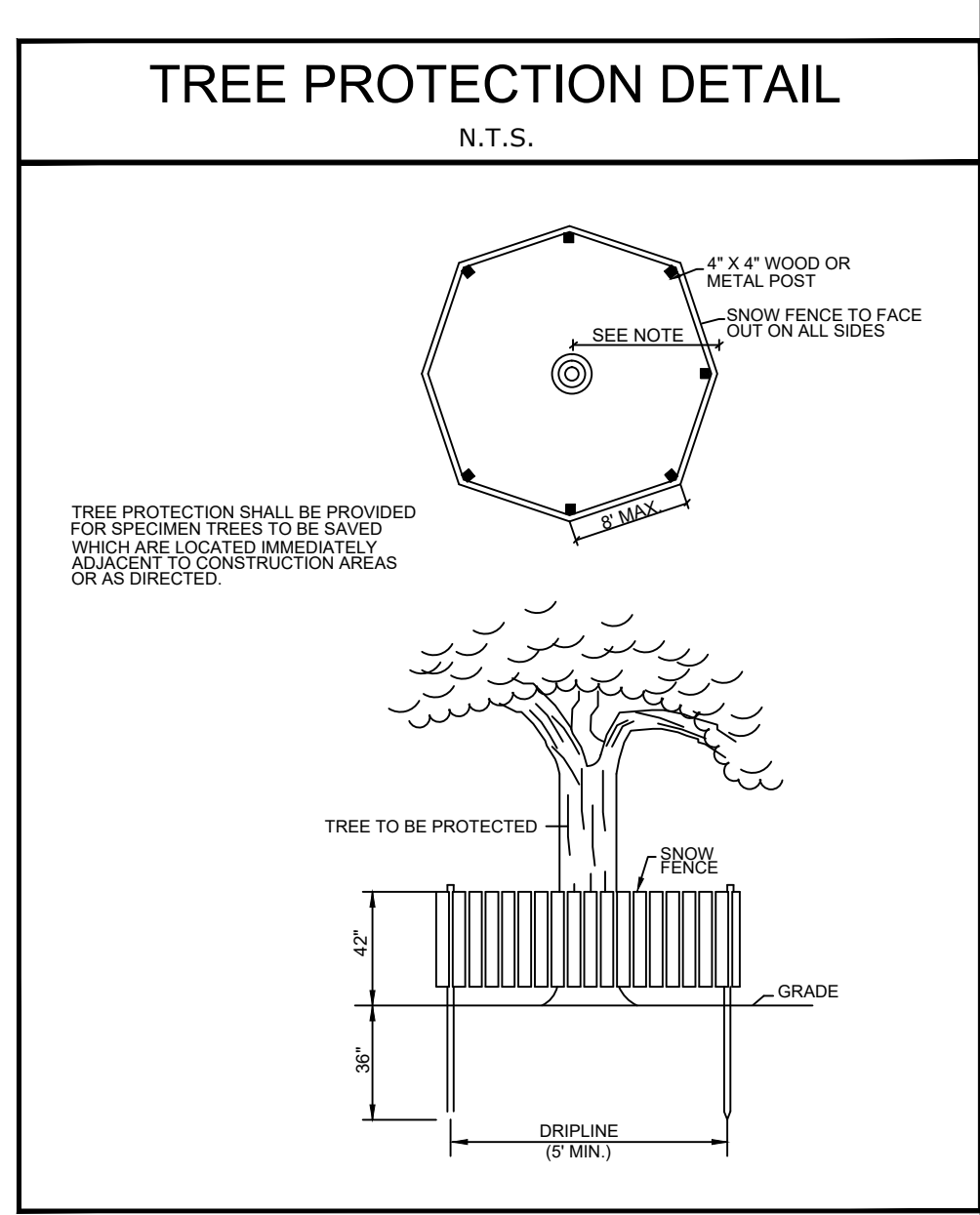
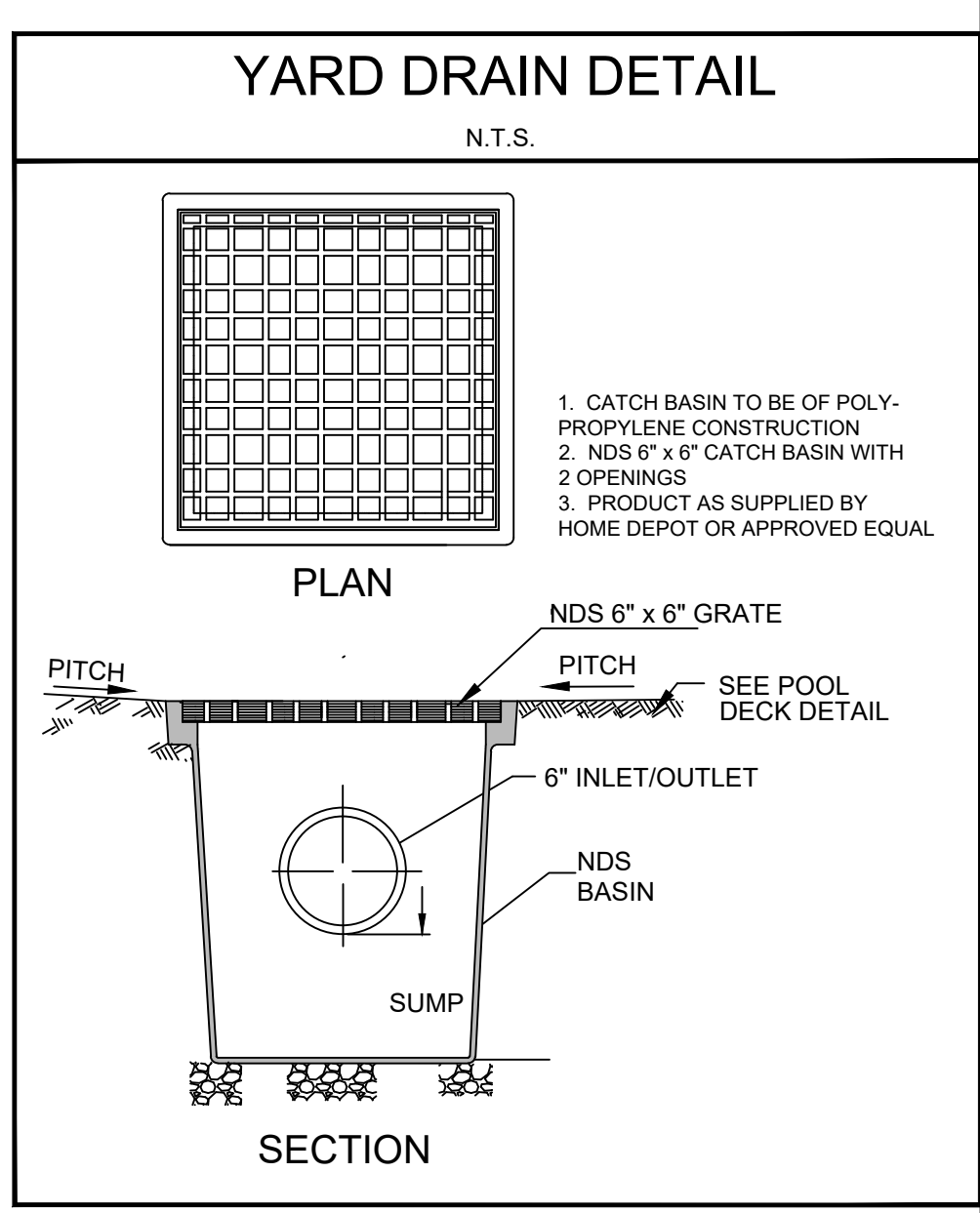
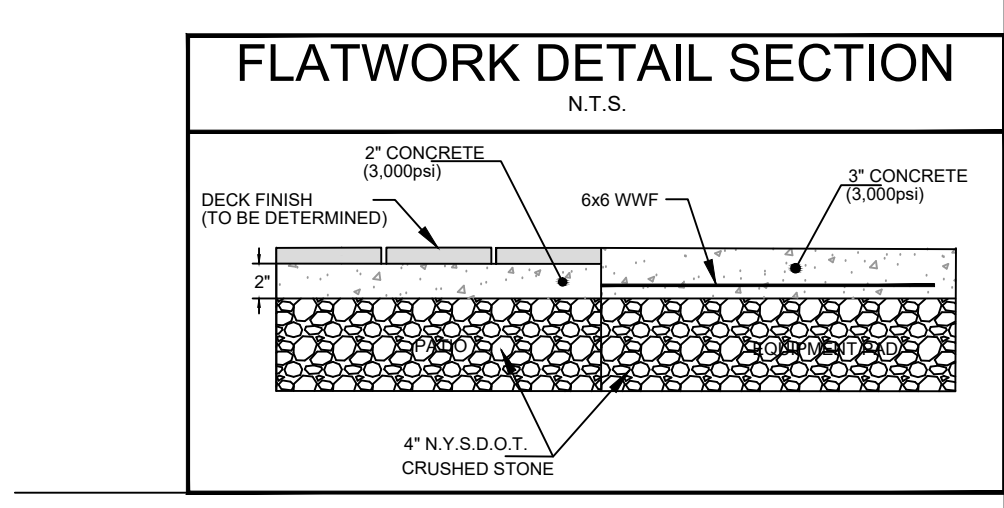
GRAPHIC SCALE

(IN FEET)

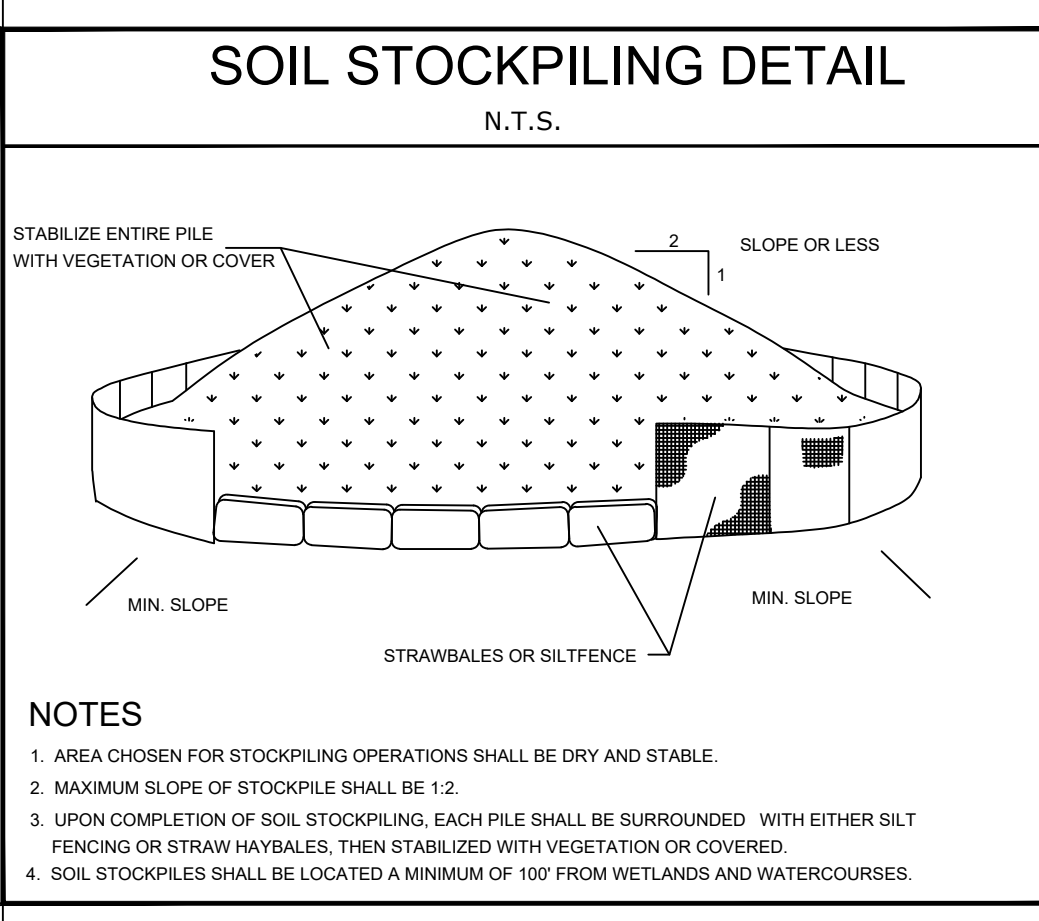
1 inch = 10 ft.

MITIGATION PLAN

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- INSTALLATION NOTES**
- STONE SIZE - USE 3" CRUSHED STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
 - LENGTH - AS PER PLAN.
 - THICKNESS - AS DETAILED.
 - WIDTH - 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH OF DRIVEWAY.
 - FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
 - SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE PILED ACROSS THE ENTRANCE, IF PILING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
 - 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. THE REPAIR AND/OR REMOVAL OF ANY MEASURES USED TO TRAP SEDIMENT, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO THE PUBLIC RIGHT OF WAY MUST BE REMOVED IMMEDIATELY.
 - WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO THE PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE COMPLETED ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
 - PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE COMPLETED AFTER EACH RAIN EVENT.



SHEET: 3 of 3

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DETAILS

PROPOSED SWIMMING POOL
for
PETRENKO

33 WOODLAND ROAD, (TNC) BEDFORD, NY