

LOCATION MAP SCALE 1"=2,000'

LEGEND:

EXISTING	PROPOSED	DESCRIPTION
N/F		NOW OR FORMERLY
RP		RECORD OF PROBATE
SCRD		STRAFFORD COUNTY REGISTRY OF DEEDS
11		MAP 11 / LOT 21
27		RAILROAD SPIKE FOUND/SET
RR SPK FND	RR SPK SET	IRON ROD FOUND/SET
IR FND	IR SET	IRON PIPE FOUND/SET
IP FND	IP SET	DRILL HOLE FOUND/SET
DH FND	DH SET	NHDOT BOUND FOUND
NHHB FND		TOWN BOUND FOUND
TB FND		BOUND w/ DRILL HOLE
BND w/DH	BND w/DH	OVERHEAD ELECTRIC WIRES
100	100	CONTOUR
97x3	98x0	SPOT ELEVATION
		EDGE OF PAVEMENT (EP)
		WOODS / TREE LINE
		UTILITY POLE (w/ GUY)
A-1		EDGE OF WETLAND FLAGGING
		SWAMP / MARSH
EL	EL	ELEVATION
EP	EP	EDGE OF PAVEMENT
F.F.	F.F.	FINISHED FLOOR
INV.	INV.	INVERT
TBM	TBM	TEMPORARY BENCHMARK
TYP.	TYP.	TYPICAL
LSA	LSA	LANDSCAPED AREA

PLAN REFERENCES:

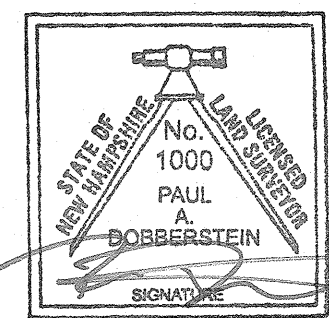
- EXISTING CONDITIONS PLAN PREPARED FOR DAVID GERARD AND MARIA BOWDEN-GERARD TAX MAP 12 LOT 1-9 33 CEDAR POINT ROAD TOWN OF DURHAM COUNTY OF STRAFFORD STATE OF NEW HAMPSHIRE. PREPARED BY MCENEANY SURVEY ASSOCIATES, INC. DATED MARCH 20, 2007. S.C.R.D. PLAN 90-58.
- BOUNDARY LINE AGREEMENT FOR ROEMER/SLY IN DURHAM, NH. PREPARED BY SEACOAST ENGINEERING ASSOCIATES, INC. DATED JANUARY 10, 1989. S.C.R.D. PLAN 32-103.
- PLAN OF LOT JACOB CIBOROWSKI DURHAM NEW HAMPSHIRE. PREPARED BY G.L. DAVIS & ASSOCIATES. DATED OCTOBER 1970. S.C.R.D. POCKET 1 FOLDER 13 PLAN 33.

I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN ACCURACY OF THE CLOSED TRAVERSE THAT EXCEEDS THE PRECISION OF 1:15,000.

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

PAUL A. DOBBERSTEIN, LLS #1000

DATE 1/8/2019



TEST PIT #1, ELEV. 16.8±

Date: 12/6/17  
 Logged by: STEVE RIKER  
 Witnessed by: AUDREY CLINE  
 ESHWT: 14"  
 Observed Water: NONE  
 Restrictive layer: 14"  
 REFUSAL: NONE TO 39"  
 Percolation rate: 6 min./inch  
 Roots: NONE

DEPTH	DESCRIPTION
0" - 6"	2.5Y 4/2 SILTY LOAM
6" - 14"	2.5Y 4/3 SILTY LOAM
14" - 39"	2.5Y 5/2 SILT LOAM, MASSIVE FIRM

TEST PIT #2, ELEV. 17.9±

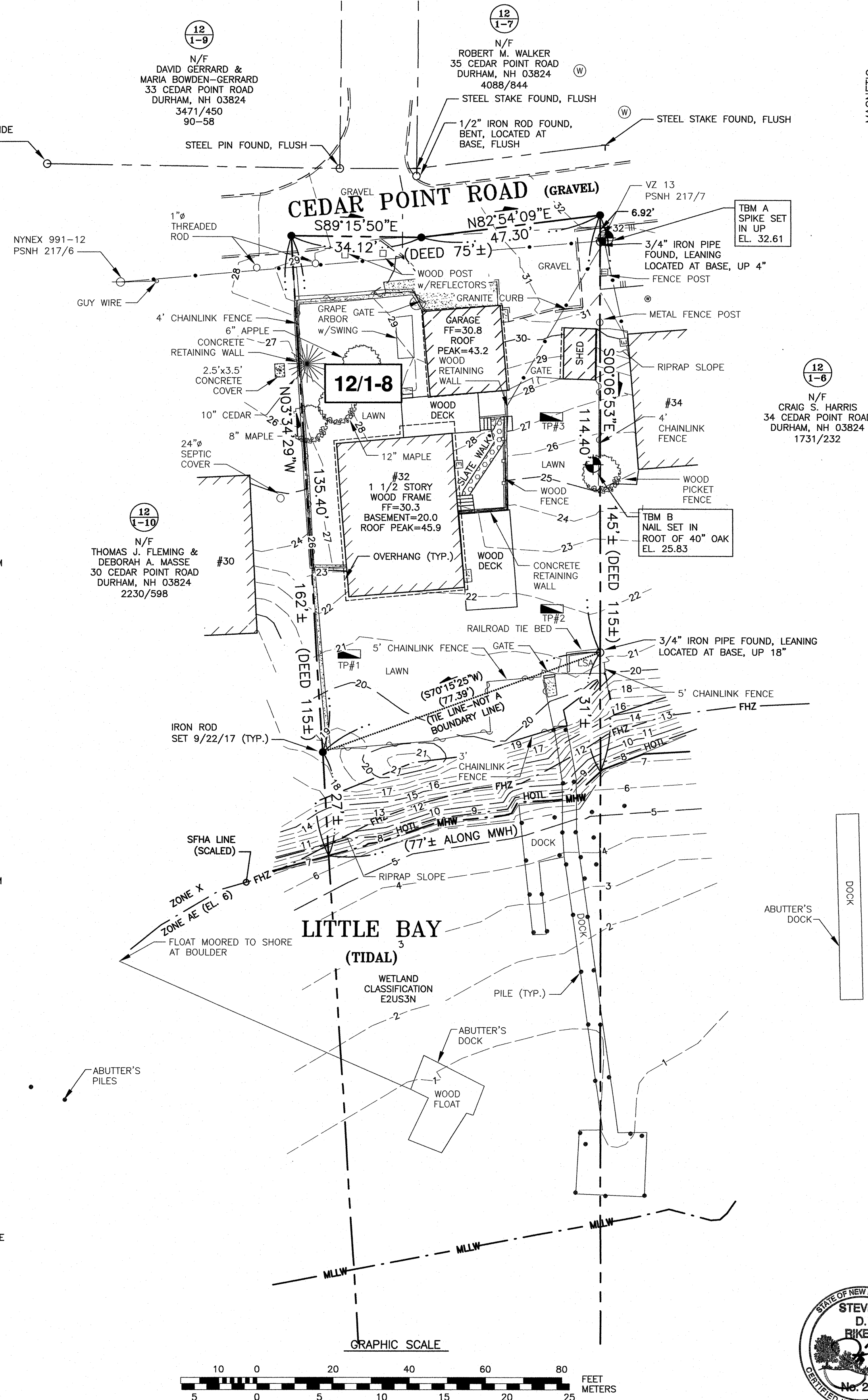
Date: 12/6/17  
 Logged by: STEVE RIKER  
 Witnessed by: AUDREY CLINE  
 ESHWT: 18"  
 Observed Water: NONE  
 Restrictive layer: 18"  
 REFUSAL: NONE TO 47"  
 Percolation rate: 6 min./inch  
 Roots: NONE

DEPTH	DESCRIPTION
0" - 6"	10YR 4/2 FINE SANDY LOAM, GRANULAR, FRIABLE
6" - 18"	2.5Y 4/3 FINE SANDY LOAM, GRANULAR, FRIABLE
18" - 47"	2.5Y 5/2 SILT LOAM, MASSIVE FIRM

TEST PIT #3, ELEV. 23±

Date: 12/6/17  
 Logged by: STEVE RIKER  
 Witnessed by: AUDREY CLINE  
 ESHWT: 34"  
 Observed Water: NONE  
 Restrictive layer: 34"  
 REFUSAL: 60"  
 Percolation rate: 6 min./inch  
 Roots: NONE

DEPTH	DESCRIPTION
0" - 5"	10YR 4/2 FINE SANDY LOAM, GRANULAR, FRIABLE (FILL)
5" - 14"	10YR 4/3 FINE SANDY LOAM, GRANULAR, FRIABLE (FILL)
14" - 34"	2.5Y 4/3 SILT LOAM
34" - 60"	2.5Y 4/2 SILT LOAM, FIRM, MASSIVE



DEMOLITION NOTES

- THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR THE DESIGNER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITIES AND ANTICIPATE CONFLICTS. CONTRACTOR SHALL REPAIR EXISTING UTILITIES DAMAGED BY THEIR WORK AND RELOCATE EXISTING UTILITIES THAT ARE REQUIRED TO BE RELOCATED PRIOR TO COMMENCING ANY WORK IN THE IMPACTED AREA OF THE PROJECT.
- ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTORS UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, ORDINANCES AND CODES. THE CONTRACTOR SHALL COORDINATE REMOVAL, RELOCATION, DISPOSAL, OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.
- ANY EXISTING WORK SCHEDULED TO REMAIN OR ADJACENT PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO THE ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH THE CONDITIONS OF ALL THE PERMIT APPROVALS.
- THE CONTRACTOR SHALL PAY ALL COSTS NECESSARY FOR TEMPORARY PARTITIONING, BARRICADING, FENCING, SECURITY AND SAFETY DEVICES REQUIRED FOR THE MAINTENANCE OF A CLEAN AND SAFE CONSTRUCTION SITE.
- ANY CONTAMINATED MATERIAL REMOVED DURING THE COURSE OF THE WORK WILL REQUIRE HANDLING IN ACCORDANCE WITH NHDES REGULATIONS. CONTRACTOR SHALL HAVE A HEALTH AND SAFETY PLAN IN PLACE, AND COMPLY WITH ALL APPLICABLE PERMITS, APPROVALS, AUTHORIZATIONS, AND REGULATIONS.
- ALL THE EXISTING SITE IMPROVEMENTS ARE TO BE REMOVED.

WETLAND NOTES:

- HIGHEST OBSERVABLE TIDE LINE DELINEATED BY STEVEN D. RIKER, CWS ON 8/10/2017 IN ACCORDANCE WITH THE FOLLOWING STANDARDS:
  - U.S. ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL. TECHNICAL REPORT Y-87-1 (JAN. 1987). AND REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012.
  - FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.1, USDA-NRCS, 2017 AND (FOR DISTURBED SITES) FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4. NEWIPCC WETLANDS WORK GROUP (2017).
  - NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: NORTHEAST (REGION 1). USFWS (MAY 1988).
  - CLASSIFICATION OF WETLANDS AND DEEPWATER HABITATS OF THE UNITED STATES. USFW MANUAL FWS/OBS-79/31 (1997).
  - "IDENTIFICATION AND DOCUMENTATION OF VERNAL POOLS IN NEW HAMPSHIRE" (1997). NEW HAMPSHIRE FISH AND GAME DEPARTMENT.
- WETLAND FLAGS WERE FIELD LOCATED BY AMBIT ENGINEERING, INC.

**AMBIT ENGINEERING, INC.**  
 Civil Engineers & Land Surveyors  
 200 Griffin Road - Unit 3  
 Portsmouth, N.H. 03801-7114  
 Tel (603) 430-9282  
 Fax (603) 436-2315

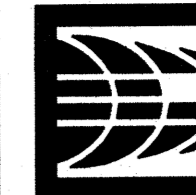
NOTES:

- PARCEL IS SHOWN ON THE TOWN OF DURHAM ASSESSOR'S MAP 12 AS LOT 1-8.
- OWNERS OF RECORD:  
 MANISHA P. HEIDERSCHIEDT  
 2010 REVOCABLE TRUST  
 MANISHA P. HEIDERSCHIEDT &  
 BENEDICT G. HEIDERSCHIEDT, TRUSTEES  
 21 CAVERNO DRIVE  
 LEE, NH 03861  
 4495/149
- A PORTION OF THE PARCEL IS IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33017C0340E. EFFECTIVE DATE SEPTEMBER 30, 2015.
- EXISTING LOT AREA:  
 11,794± SF  
 0.2708± ACRES
- PARCEL IS LOCATED IN RESIDENCE COASTAL (RC) ZONING DISTRICT AND IS SUBJECT TO THE SHORELAND PROTECTION OVERLAY DISTRICT.
- DIMENSIONAL REQUIREMENTS:  

MIN. LOT AREA:	150,000 SF
FRONTAGE:	ROAD 300 FEET SHORELAND 200 FEET
SETBACKS:	FRONT 30 FEET SIDE 50 FEET REAR 50 FEET
MAXIMUM BUILDING HEIGHT:	30 FEET (35' WITH CONDITIONAL USE)
MAXIMUM IMPERVIOUS SURFACE RATIO:	20%
- THE PURPOSE OF THIS PLAN IS TO SHOW THE RESULT OF A STANDARD BOUNDARY AND TOPOGRAPHIC SURVEY OF TAX MAP 12 LOT 1-8 IN THE TOWN OF DURHAM.
- VERTICAL DATUM IS MEAN LOWER LOW WATER PER NOAA STATION 0420411 - DOVER, COCHEO RIVER, 0 MLLW BEING 3.93' LOWER THAN 0 NAVD88. BASIS OF VERTICAL DATUM IS NH DOT BENCHMARK 133-0410.
- CEDAR POINT ROAD IS REFERRED IN THE SUBJECT PARCEL, AS WELL AS ABUTTING DEEDS AS AN EIGHTEEN FOOT RIGHT OF WAY. FOR THE PURPOSE OF ESTABLISHING THE BOUNDARIES OF THE PARCEL, THIS WIDTH WAS HELD. RIGHTS OF THE PUBLIC MAY EXIST OVER THE TRAVELED PORTION OF CEDAR POINT ROAD WITHIN THE BOUNDARIES OF THE SUBJECT PARCEL.

NO.	DESCRIPTION	DATE
3	CHANGE VERTICAL DATUM TO MLLW	1/8/19
2	ISSUED FOR APPROVAL	1/5/18
1	ADD MONUMENTS AS SET	10/16/17
0	ISSUED FOR COMMENT	9/5/17

STANDARD BOUNDARY AND TOPOGRAPHIC SURVEY  
 TAX MAP 12 - LOT 1-8  
 OWNER  
**MANISHA P. HEIDERSCHIEDT**  
 2010 REVOCABLE TRUST  
 32 CEDAR POINT ROAD  
 TOWN OF DURHAM  
 COUNTY OF STRAFFORD  
 STATE OF NEW HAMPSHIRE



**AMBIT ENGINEERING, INC.**  
Civil Engineers & Land Surveyors

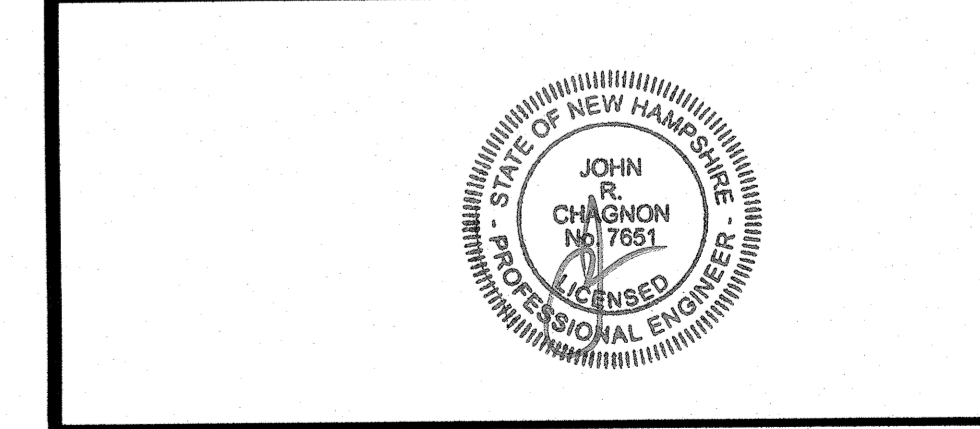
200 Griffin Road - Unit 3  
Portsmouth, N.H. 03801-7114  
Tel (603) 430-9282  
Fax (603) 436-2316

**NOTES:**

- 1) PARCEL IS SHOWN ON THE TOWN OF DURHAM ASSESSOR'S MAP 12 AS LOT 1-8.
- 2) OWNERS OF RECORD:  
MANISHA P. HEIDERSCHIEDT  
2010 REVOCABLE TRUST  
MANISHA P. HEIDERSCHIEDT &  
BENEDICT G. HEIDERSCHIEDT, TRUSTEES  
21 CAVERNO DRIVE  
LEE, NH 03861  
4495/149
- 3) A PORTION OF THE PARCEL IS IN A SPECIAL FLOOD HAZARD AREA AS SHOWN ON FIRM PANEL 33017C0340E. EFFECTIVE DATE SEPTEMBER 30, 2015.
- 4) EXISTING LOT AREA:  
11,794± SF  
0.2708± ACRES
- 5) PARCEL IS LOCATED IN RESIDENCE COASTAL (RC) ZONING DISTRICT AND IS SUBJECT TO THE SHORELAND PROTECTION OVERLAY DISTRICT.
- 6) THE PURPOSE OF THIS PLAN IS TO SHOW THE LOCATION OF PROPOSED WALK AND PATIO AS WELL AS REPAIR TO AN EXISTING RETEVMENT ON TAX MAP 12 LOT 1-8.
- 7) VERTICAL DATUM IS MEAN LOW LOW WATER LEVEL NAVD88. BASIS OF VERTICAL DATUM IS NH DOT BENCHMARK 133-0410.
- 8) PROPERTY HAS 77' OF SHORE FRONTAGE.

**HEIDERSCHIEDT  
RESIDENCE  
32 CEDAR POINT ROAD  
DURHAM, N.H.**

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	1/8/19



SCALE 1"=5' JANUARY 2019

**RETEVMENT  
PERMIT PLAN**

**C2**

**WETLAND IMPACT AREAS  
(IN SQ. FT)**

	PROPOSED IMPACT	IMPACT AREAS
TIDAL WATERS WETLAND (E2US3N)	281	
TIDAL BUFFER ZONE	1,705	
TOTAL	1,986	S.F.

**WETLAND NOTES:**

- 1) HIGHEST OBSERVABLE TIDE LINE DELINEATED BY STEVEN D. RIKER, CWS ON 8/10/2017 IN ACCORDANCE WITH THE FOLLOWING STANDARDS:
  - A) U.S. ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y-87-1 (JAN. 1987), AND REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012.
  - B) FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.1, USDA-NRCS, 2017 AND (FOR DISTURBED SITES) FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4. NEIWPCC WETLANDS WORK GROUP (2017).
  - C) NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: NORTHEAST (REGION 1), USFWS (MAY 1988).
  - D) CLASSIFICATION OF WETLANDS AND DEEPWATER HABITATS OF THE UNITED STATES. USFW MANUAL FWS/OBS-79/31 (1997).
  - E) "IDENTIFICATION AND DOCUMENTATION OF VERNAL POOLS IN NEW HAMPSHIRE" (1997). NEW HAMPSHIRE FISH AND GAME DEPARTMENT.
- 2) WETLAND FLAGS WERE FIELD LOCATED BY AMBIT ENGINEERING, INC.

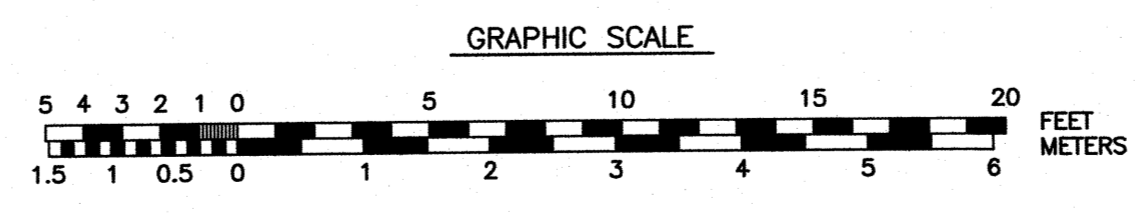
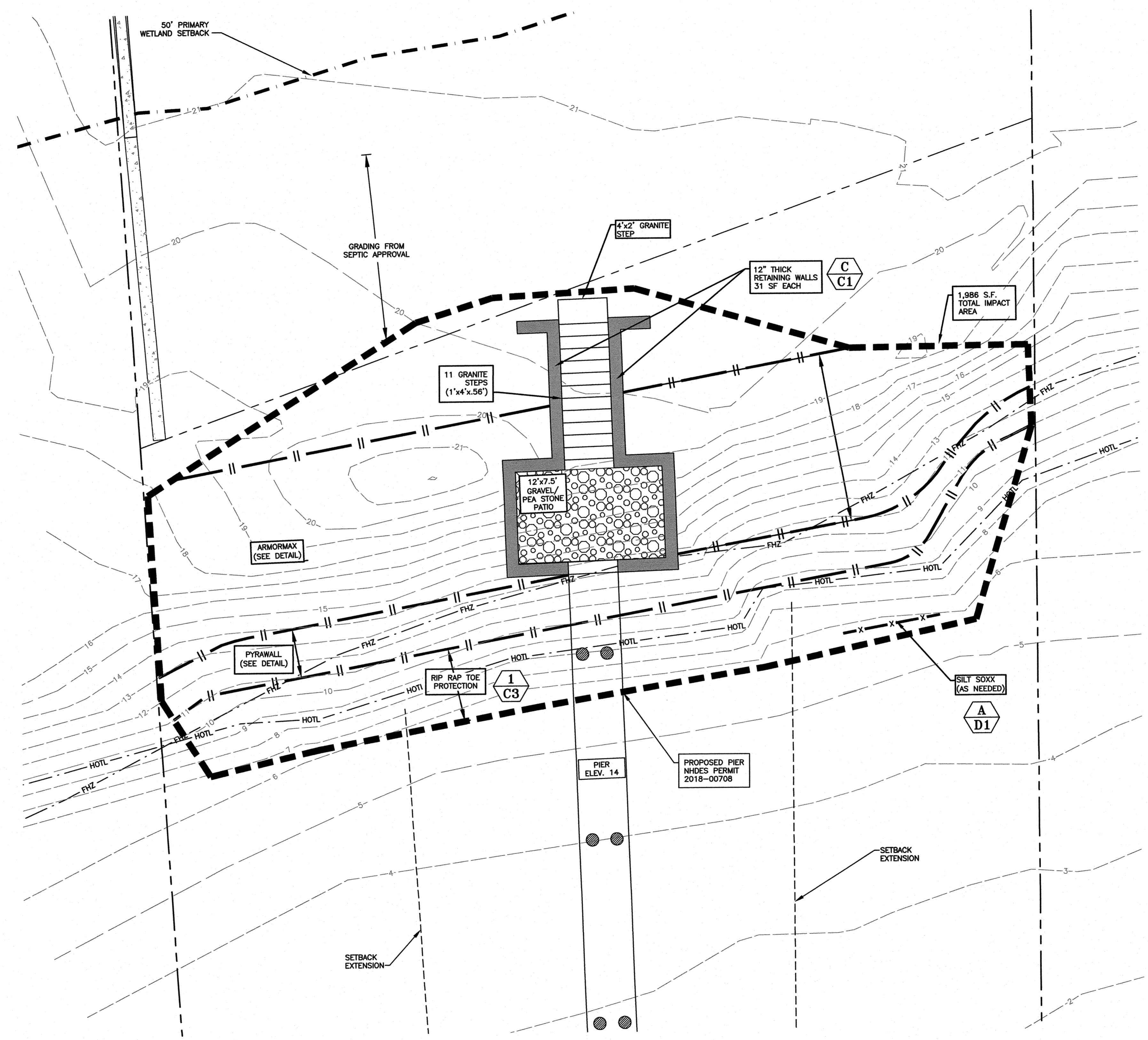
**PLANTING NOTES:**

**SEED MIX:**  
BUFFER PLANTING AREA TO BE SEEDED WITH TICKLESEED/ROUGH BENTGRASS (AGROSTIS SCABRA), VIRGINIA WILD RYE (ELYMUS VIRGINIUS) AND LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM) SPREAD THROUGHOUT. SEE PYRAWALL AND ARMORMAX PLANTING SPECIFICATIONS.

SEED CAN BE OBTAINED FROM PIERSON NURSERIES INC (24 BUZZELL ROAD, BIDDEFORD, MAINE 04005: PHONE 207-499-2934)

**LIVE STAKES:**  
NORTHERN ARROWWOOD (VIBURNUM RECOGNITUM)  
SILKY DOGWOOD (CORNUS AMOMUM)  
WILD RAISIN (VIBURNUM CASSINOIDES)  
SPECKLED ALDER (ALNUS RUGOSA)

PLANT EVERY 4 FT ON CENTER IN THE PYRAWALL. OFFSETS BETWEEN LIFTS.



FEBRUARY 2007  
 PLAN 90-58  
 MAGNETIC  
 PER SCRD

J:\OBS2\W2500s\N\_2552\2552.16 Revetment\Plans & Specs\Site\2552.16 Revetment 2018.dwg, c2 PERMIT  
 J:\OBS2\W2500s\N\_2552\2552.16 Heiderscheidt 32 Cedar Point Road, Durham, NH\2017 Permitting\Plans & Specs\Site\2552.16 Revetment 2018.dwg, c2 PERMIT



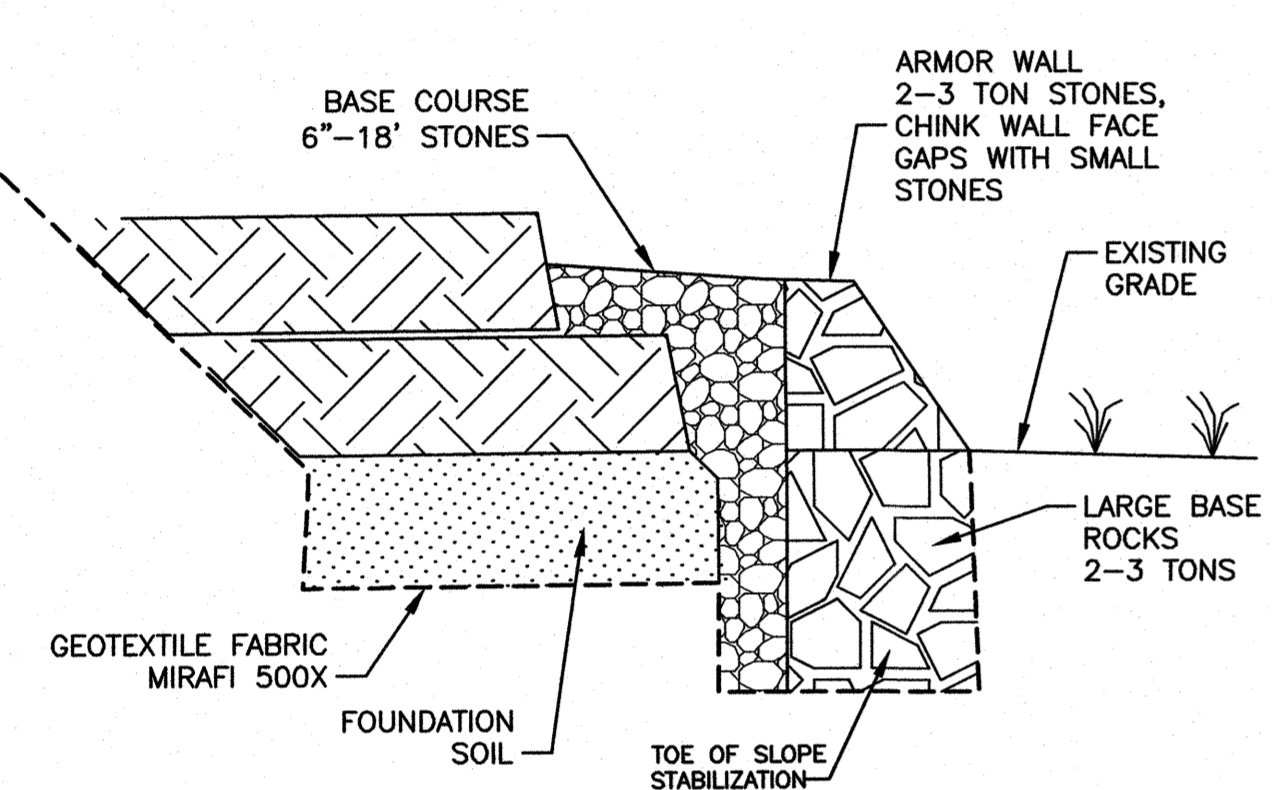
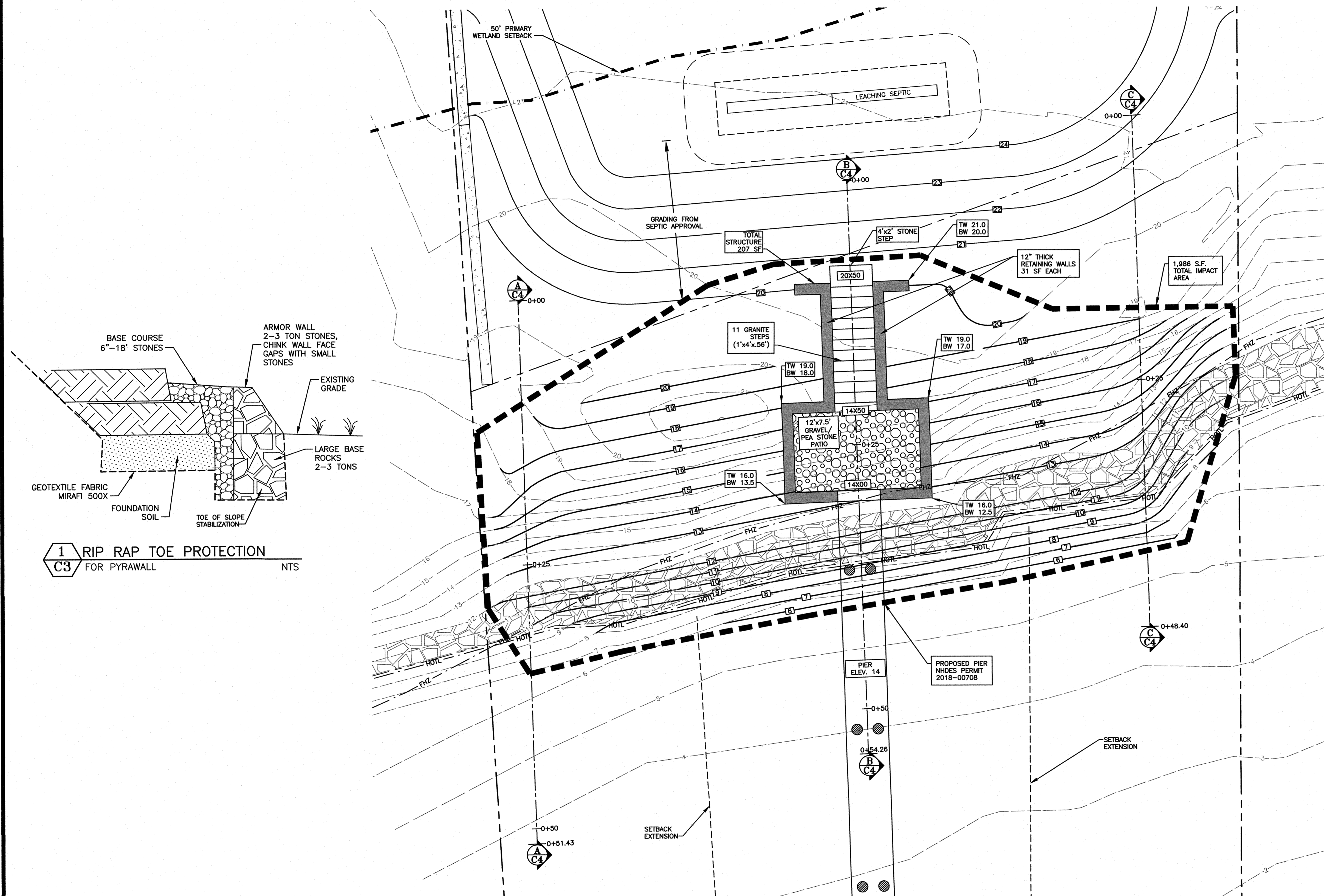
**AMBIT ENGINEERING, INC.**  
Civil Engineers & Land Surveyors

200 Griffin Road - Unit 3  
Portsmouth, N.H. 03801-7114  
Tel (603) 430-9282  
Fax (603) 436-2315

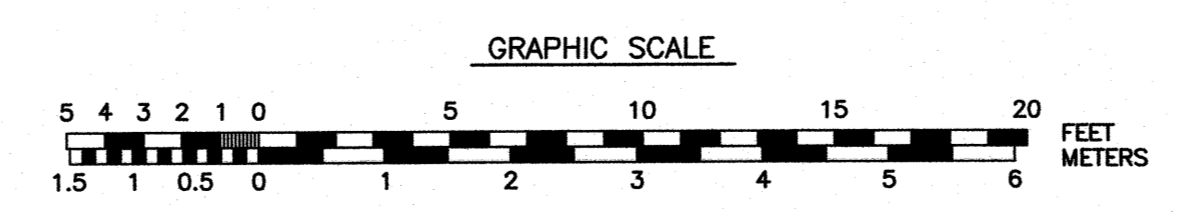
**NOTES:**

- 1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.
- 2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.
- 3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).
- 4) VERTICAL DATUM IS MEAN LOW LOW WATER LEVEL NAVD88 (MLLW). BASIS OF VERTICAL DATUM IS NH DOT BENCHMARK 133-0410.

FEBRUARY 2007  
PLAN 90-58  
MAGNETIC  
PER SCRD

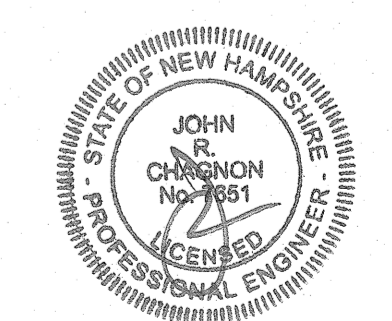


**1** RIP RAP TOE PROTECTION  
**C3** FOR PYRAWALL NTS



**HEIDERSCHIEDT  
RESIDENCE  
32 CEDAR POINT ROAD  
DURHAM, N.H.**

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	1/4/19



SCALE 1"=5' JANUARY 2019

**REVIEMENT  
DESIGN PLAN** **C3**

J:\\_DBSZ\_JN2500s\JN\_2550's\JN\_2552\2552.16 Heiderscheidt 32 Cedar Point Road, Durham, NH\2017 Permitting\Plans & Specs\Site\2552.16 Rev16.dwg, C3 REV16

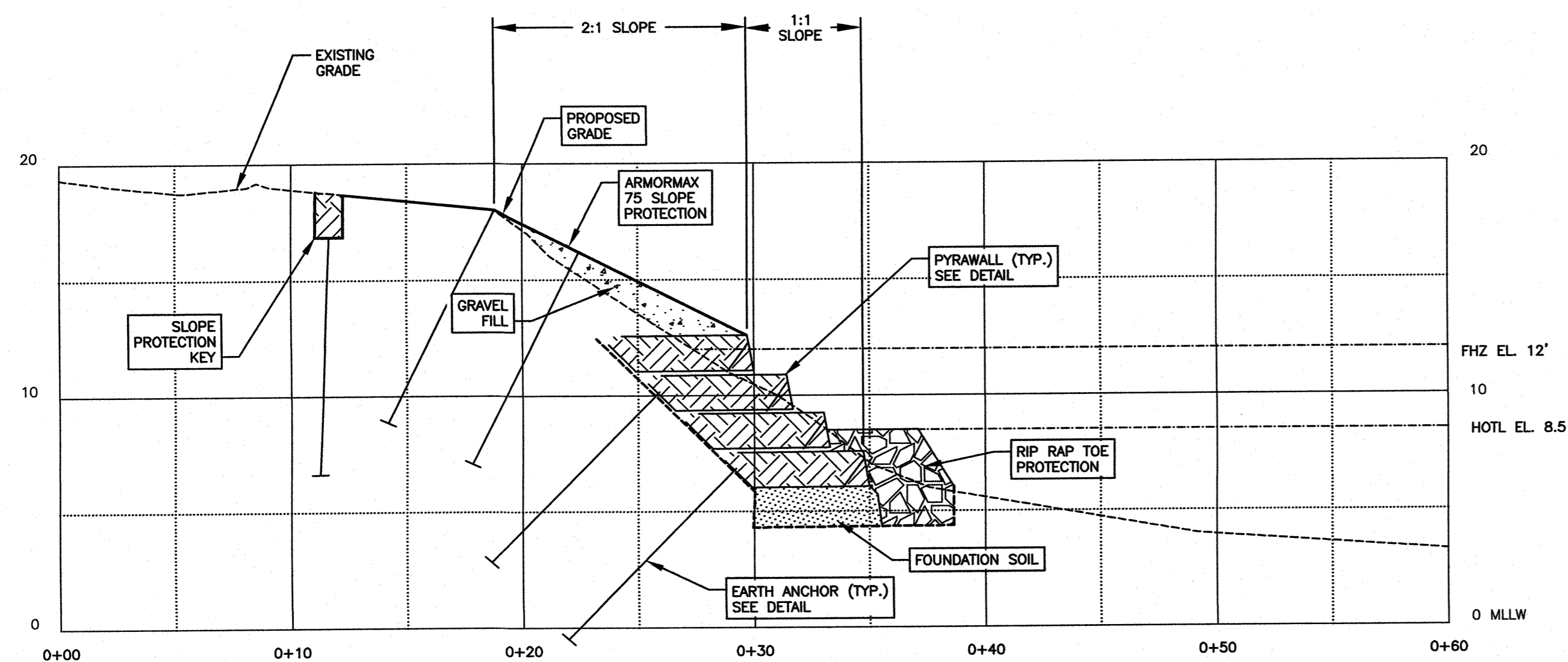


**AMBIT ENGINEERING, INC.**  
Civil Engineers & Land Surveyors

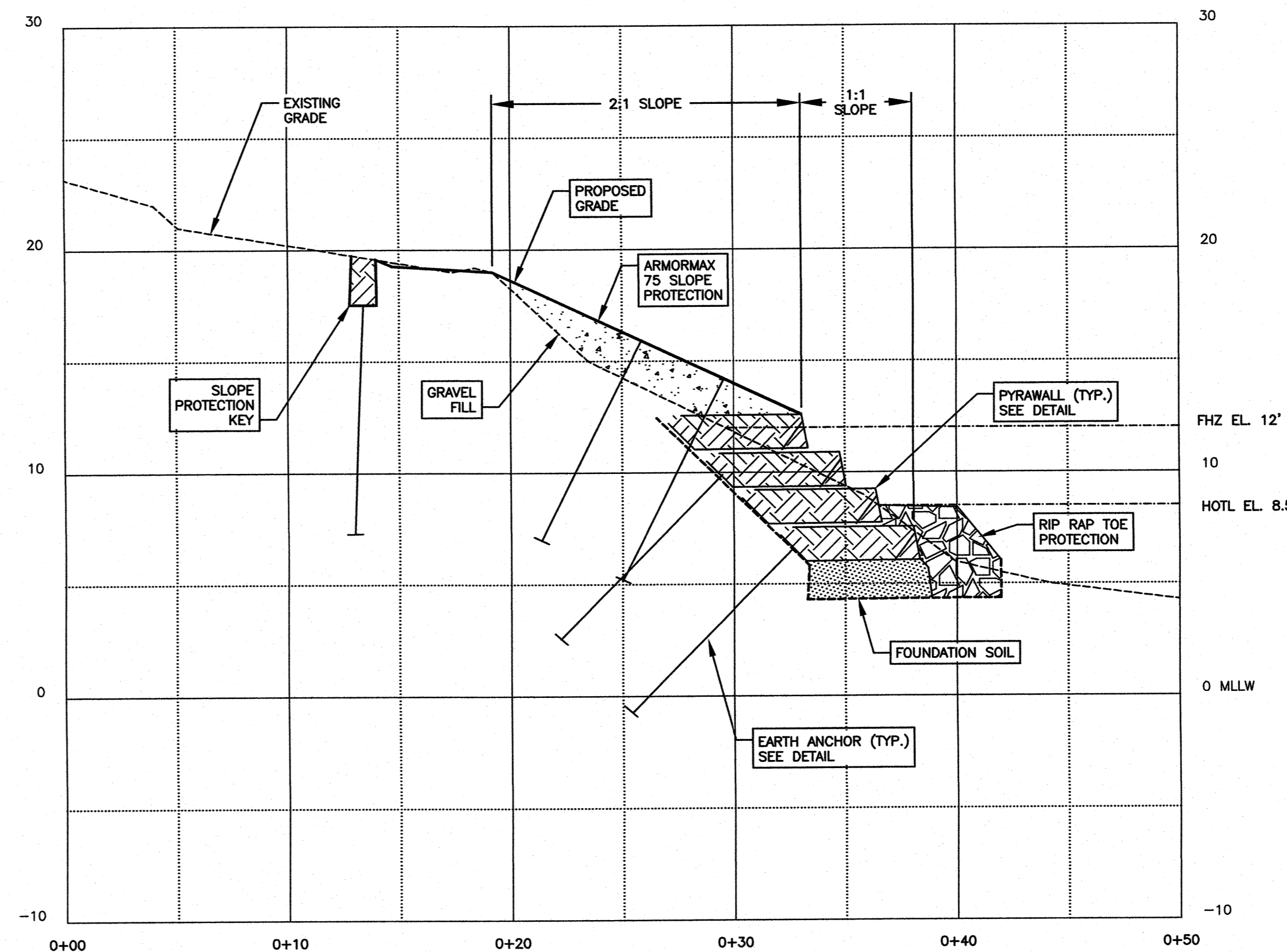
200 Griffin Road - Unit 3  
Portsmouth, N.H. 03801-7114  
Tel (603) 430-9282  
Fax (603) 436-2315

**NOTES:**

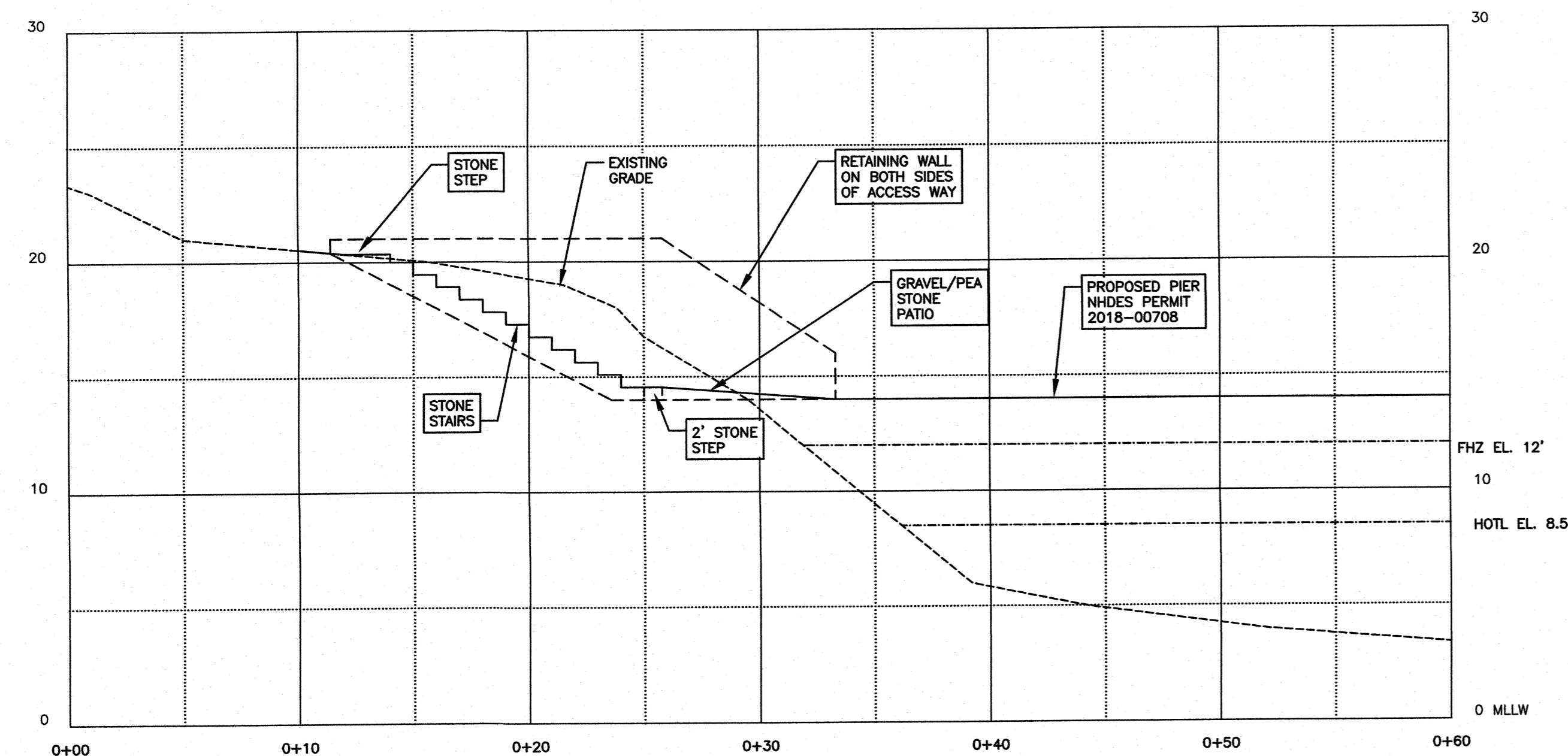
- 1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.
- 2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.
- 3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).
- 4) VERTICAL DATUM IS MEAN LOW WATER LEVEL NAVD88 (MLLW). BASIS OF VERTICAL DATUM IS NH DOT BENCHMARK 133-0410.



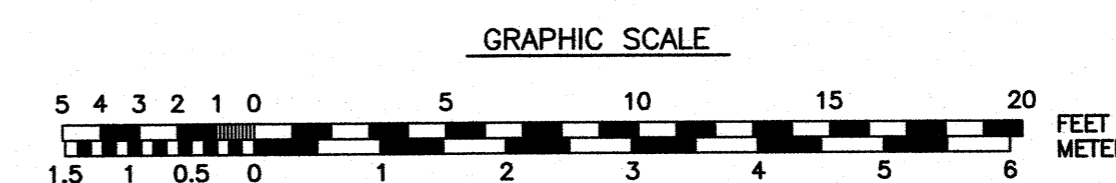
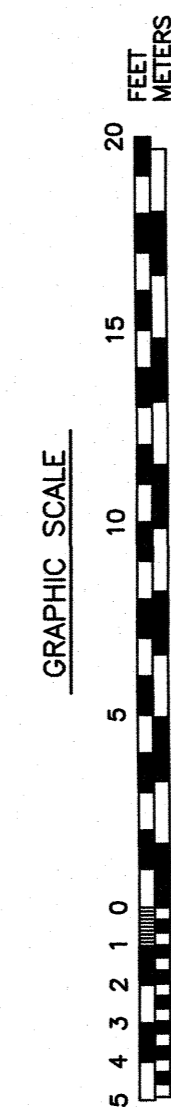
SECTION A-A  
SCALE: 1"=5'



SECTION C-C  
SCALE: 1"=5'



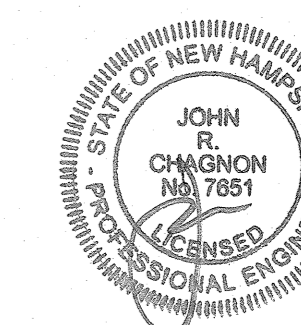
SECTION B-B  
SCALE: 1"=5'



**HEIDERSCHIEDT  
RESIDENCE  
32 CEDAR POINT ROAD  
DURHAM, N.H.**

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	1/4/19

REVISIONS



SCALE 1"=5' JANUARY 2019

**REVETMENT  
SECTIONS**

**C4**

**SEQUENCE OF CONSTRUCTION**

- 1) MOBILIZATION OF EXCAVATOR, BOBCAT, AND MATERIALS TO THE SITE VIA APPROVED ACCESS AND LAYDOWN AREAS.
- 2) MOBILIZATION OF EQUIPMENT TRUCKS TO THE SITE.
- 3) LAYOUT OF WORK AREA EXTENTS TO BE COMPLETED PRIOR TO START OF WORK.
- 4) EROSION CONTROL FENCING TO BE INSTALLED IN AREAS WHERE FEASIBLE.
- 5) ALL WORK WILL BE PERFORMED AT LOW TIDE TO MINIMIZE SEDIMENTATION.
- 6) MOST WORK TO BE COMPLETED FROM THE TOP OF THE EMBANKMENT BY EXCAVATOR. ONE SECTION AT THE NORTHERN END OF THE AREA OF WORK WILL REQUIRE ACCESS TO THE TOE OF THE EMBANKMENT WITH THE EXCAVATOR BELOW THE HOTL. CRANE MATS WILL BE USED UNDER THE EXCAVATOR TO TRAVERSE AND WORK IN THE INTERTIDAL AREA. THE AREA OF TEMPORARY IMPACT FROM ACCESS BY THE EXCAVATOR IS ENTIRELY OVER AN AREA OF SHALE/LEDGE SO THERE WILL BE MINIMAL IMPACT.
- 7) IN AREAS WHERE STABILIZATION WILL OCCUR, THE EMBANKMENT WILL BE RESHAPED WHERE POSSIBLE, A TOE DUG IN AND A NON WOVEN GEOTEXTILE FILTER FABRIC INSTALLED. WORK ON THE SLOPE WILL BE LIMITED TO THE MAXIMUM AREA THAT CAN BE RESHAPED AND STABILIZED IN A WORKDAY THUS MINIMIZING EROSION FROM OPEN SOIL.
- 8) AFTER INSTALLATION OF THE FILTER FABRIC AND THE LAYER OF CRUSHED GRAVEL WILL BE BROUGHT IN AND LAID ON TOP. FINALLY ARMOUR STONE WILL BE SET ON TOP OF THE CRUSHED GRAVEL AND THEN CHINKED, STARTING WITH THE INSTALLATION OF THE TOE.
- 9) ONCE THE RIPRAP HAS BEEN INSTALLED THE REMAINING PORTION OF THE SLOPE WILL BE STABILIZED USING THE PROPOSED VEGETATIVE STABILIZATION PLAN.
- 10) ALL TEMPORARY AREAS OF IMPACT FROM ACCESS AND LAYDOWN WILL BE RESTORED AFTER COMPLETION OF THE PROPOSED STABILIZATION WORK. ONCE ALL AREAS HAVE BEEN STABILIZED THEN EROSION CONTROL SYSTEMS WILL BE REMOVED.

**DISCHARGES, AVOIDANCE, MINIMIZATION AND MITIGATION**

DISCHARGES OF DREDGED OR FILL MATERIAL INTO WATERS OF THE U.S. AND ANY SECONDARY IMPACTS SHALL BE AVOIDED AND MINIMIZED TO THE MAXIMUM EXTENT PRACTICABLE. PERMITTEES MAY ONLY FILL THOSE JURISDICTIONAL WETLANDS AND WATERWAYS THAT THE CORP AND NHDES AUTHORIZES TO BE FILLED AND IMPACT THOSE AREAS THAT THE CORPS AND NHDES AUTHORIZES AS SECONDARY IMPACTS. IF NOT SPECIFICALLY AUTHORIZED BY USACE AND NHDES, ANY UNAUTHORIZED FILL OR SECONDARY IMPACT TO WETLANDS MAY BE CONSIDERED AS A VIOLATION OF THE CWA.

UNLESS SPECIFICALLY AUTHORIZED USACE AND NHDES, NO WORK SHALL DRAIN A WATER OF THE U.S. BY PROVIDING A CONDUIT FOR WATER ON OR BELOW THE SURFACE.

**HEAVY EQUIPMENT IN WETLANDS**

HEAVY EQUIPMENT OTHER THAN FIXED EQUIPMENT (DRILL RIGS, FIXED CRANES, ETC.) WORKING IN WETLANDS SHALL NOT BE STORED, MAINTAINED OR REPAIRED IN WETLANDS, UNLESS IT IS LESS ENVIRONMENTALLY DAMAGING OTHERWISE, AND AS MUCH AS POSSIBLE SHALL NOT BE OPERATED WITHIN THE INTERTIDAL ZONE. WHERE CONSTRUCTION REQUIRES HEAVY EQUIPMENT OPERATION IN WETLANDS, THE EQUIPMENT SHALL EITHER HAVE LOW GROUND PRESSURE (<3 PSI), OR SHALL NOT BE LOCATED DIRECTLY ON WETLAND SOILS AND VEGETATION; IT SHALL BE PLACED ON SWAMP MATS THAT ARE ADEQUATE TO SUPPORT THE EQUIPMENT IN SUCH A WAY AS TO MINIMIZE DISTURBANCE OF WETLAND SOIL AND VEGETATION. SWAMP MATS ARE TO BE PLACED IN THE WETLAND FROM THE UPLAND OR FROM EQUIPMENT POSITIONED ON SWAMP MATS IF WORKING WITHIN A WETLAND. DRAGGING SWAMP MATS INTO POSITION IS PROHIBITED. OTHER SUPPORT STRUCTURES THAT ARE LESS IMPACTING AND ARE CAPABLE OF SAFELY SUPPORTING EQUIPMENT MAY BE USED WITH WRITTEN CORPS AND NHDES AUTHORIZATION. SIMILARLY, NOT USING MATS DURING FROZEN, DRY OR OTHER CONDITIONS MAY BE ALLOWED WITH WRITTEN CORPS AND NHDES AUTHORIZATION. AN ADEQUATE SUPPLY OF SPILL CONTAINMENT EQUIPMENT SHALL BE MAINTAINED ON SITE. CORDUROY ROADS AND SWAMP/CONSTRUCTION MATS ARE CONSIDERED AS FILL WHETHER THEY'RE INSTALLED TEMPORARILY OR PERMANENTLY.

**TIME OF YEAR WORK WINDOW AND NOISE RESTRICTIONS**

1. WORK ANTICIPATED TO BE COMPLETED DURING THE LATE SUMMER OR EARLY FALL. LBS. AND A WOOD CUSHION IS USED BETWEEN THE HAMMER AND STEEL PILE.

**WORK SITE RESTORATION**

- UPON COMPLETION OF CONSTRUCTION, ALL DISTURBED WETLAND AREAS SHALL BE PROPERLY STABILIZED. ANY SEED MIX SHALL CONTAIN ONLY PLANT SPECIES NATIVE TO NEW ENGLAND.
- THE INTRODUCTION OR SPREAD OF INVASIVE PLANT SPECIES IN DISTURBED AREAS IS PROHIBITED.
- IN AREAS OF AUTHORIZED TEMPORARY DISTURBANCE, IF TREES ARE CUT THEY SHALL BE CUT AT GROUND LEVEL AND NOT UPROOTED IN ORDER TO PREVENT DISRUPTION TO THE WETLAND SOIL STRUCTURE AND TO ALLOW STUMP SPROUTS TO REVEGETATE THE WORK AREA, UNLESS OTHERWISE AUTHORIZED.
- WETLAND AREAS WHERE PERMANENT DISTURBANCE IS NOT AUTHORIZED SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AND ELEVATION, WHICH UNDER NO CIRCUMSTANCES SHALL BE HIGHER THAN THE PRE-CONSTRUCTION ELEVATION. ORIGINAL CONDITION MEANS CAREFUL PROTECTION AND/OR REMOVAL OF EXISTING SOIL AND VEGETATION, AND REPLACEMENT BACK TO THE ORIGINAL LOCATION SUCH THAT THE ORIGINAL SOIL LAYERING AND VEGETATION SCHEMES ARE APPROXIMATELY THE SAME, UNLESS OTHERWISE AUTHORIZED.

**SEDIMENTATION AND EROSION CONTROL**

ADEQUATE SEDIMENTATION AND EROSION CONTROL MANAGEMENT MEASURES, PRACTICES AND DEVICES, SUCH AS PHASED CONSTRUCTION, VEGETATED FILTER STRIPS, GEOTEXTILE SILT FENCES, STORMWATER DETENTION AND INFILTRATION SYSTEMS, SEDIMENT DETENTION BASINS, OR OTHER DEVICES SHALL BE INSTALLED AND PROPERLY MAINTAINED TO REDUCE EROSION AND RETAIN SEDIMENT ON-SITE DURING AND AFTER CONSTRUCTION. THEY SHALL BE CAPABLE OF PREVENTING EROSION, OF COLLECTING SEDIMENT, SUSPENDED AND FLOATING MATERIALS, AND OF FILTERING FINE SEDIMENT. THE DISTURBED AREAS SHALL BE STABILIZED AND THESE DEVICES SHALL BE REMOVED UPON COMPLETION OF WORK. THE SEDIMENT COLLECTED BY THESE DEVICES SHALL BE REMOVED AND PLACED AT AN UPLAND LOCATION, IN A MANNER THAT WILL PREVENT ITS LATER EROSION INTO A WATERWAY OR WETLAND. ALL EXPOSED SOIL AND OTHER FILLS SHALL BE PERMANENTLY STABILIZED AT THE EARLIEST PRACTICABLE DATE.

**SPAWNING AREAS**

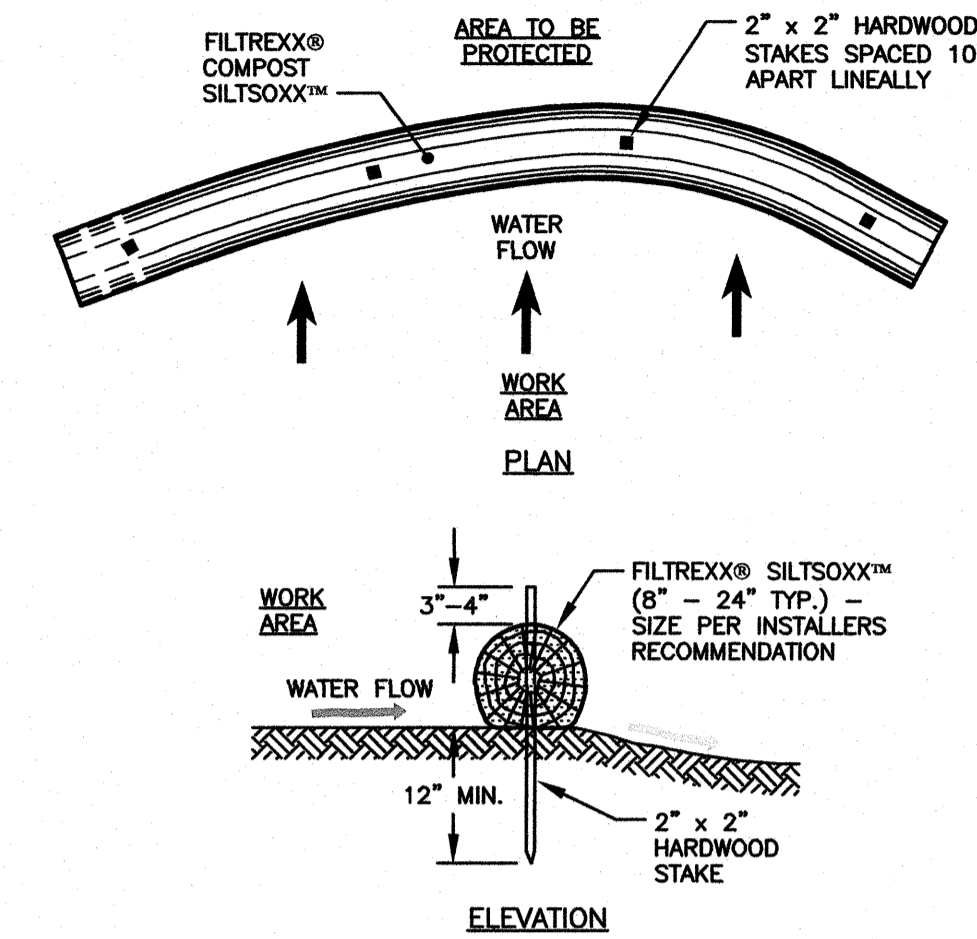
DISCHARGES OF DREDGED OR FILL MATERIAL, AND/OR SUSPENDED SEDIMENT PRODUCING ACTIVITIES IN FISH AND SHELLFISH SPAWNING OR NURSERY AREAS, OR AMPHIBIAN AND MIGRATORY BIRD BREEDING AREAS, DURING SPAWNING OR BREEDING SEASONS SHALL BE AVOIDED. IMPACTS TO THESE AREAS SHALL BE MINIMIZED TO THE MAXIMUM EXTENT PRACTICABLE DURING ALL TIMES OF THE YEAR. INFORMATION ON SPAWNING HABITAT FOR SPECIES MANAGED UNDER THE MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT (I.E., EFH FOR SPAWNING ADULTS) CAN BE OBTAINED FROM THE NMFS WEBSITE AT: WWW.NERO.NOAA.GOV/HCD.

**ENVIRONMENTAL FUNCTIONS AND VALUES**

THE PERMITTEE SHALL MAKE EVERY REASONABLE EFFORT TO 1) CARRY OUT THE CONSTRUCTION OR OPERATION OF THE WORK AUTHORIZED BY USACE AND NHDES HEREIN IN A MANNER THAT MINIMIZES ADVERSE IMPACTS ON FISH, WILDLIFE AND NATURAL ENVIRONMENTAL VALUES, AND 2) PROHIBIT THE ESTABLISHMENT OR SPREAD OF PLANT SPECIES IDENTIFIED AS NON-NATIVE INVASIVE SPECIES BY ANY FEDERAL OR STATE AGENCY. SEE THE SECTION ON INVASIVE SPECIES AT HTTP://WWW.NAE.USACE.ARMY.MIL/REGULATORY/ FOR CONTROL METHODS.

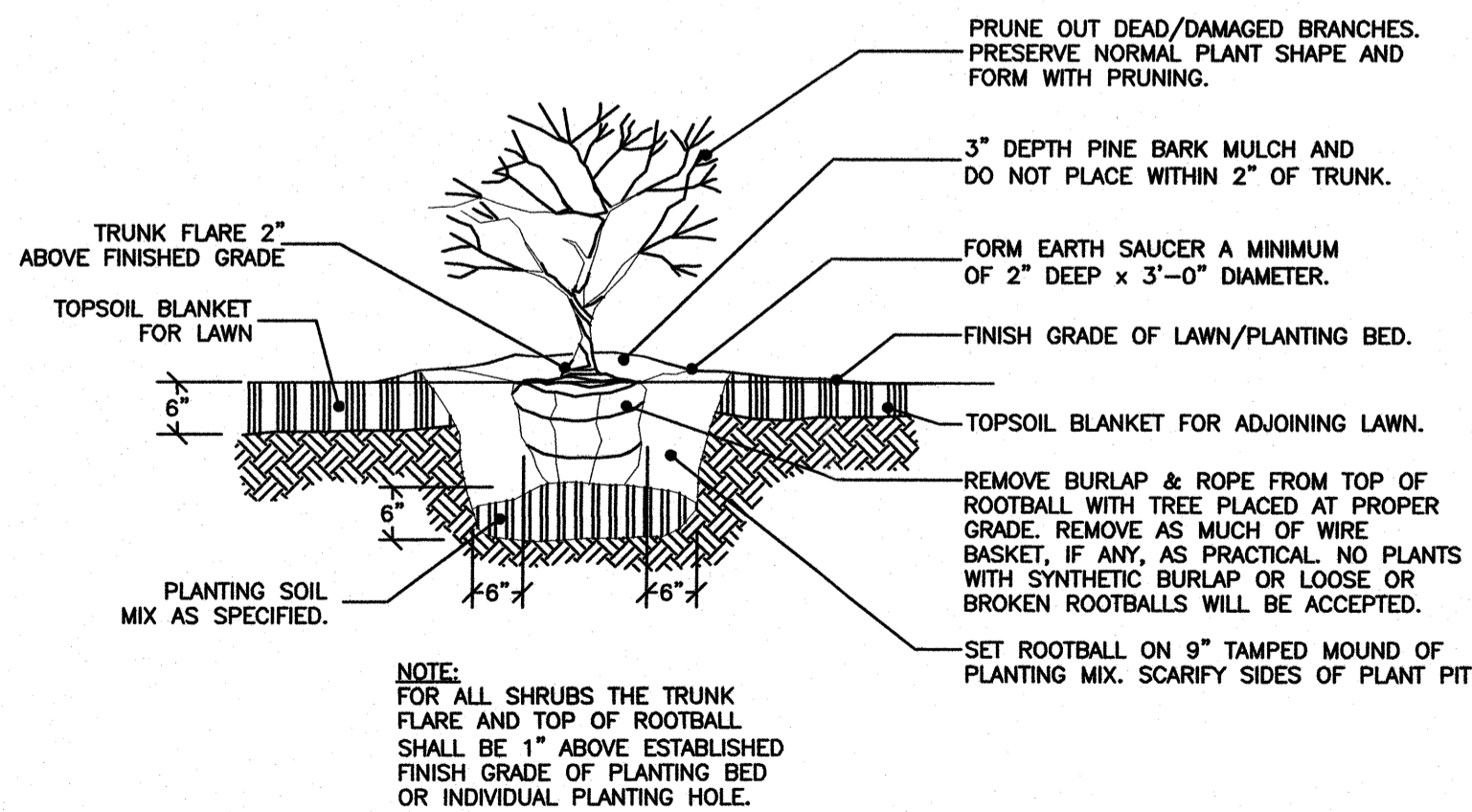
**INSPECTIONS**

THE PERMITTEE SHALL ALLOW THE CORPS AND NHDES TO MAKE PERIODIC INSPECTIONS AT ANY TIME DEEMED NECESSARY IN ORDER TO ENSURE THAT THE WORK IS BEING OR HAS BEEN PERFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THIS PERMIT. THE CORPS AND NHDES MAY ALSO REQUIRE POST-CONSTRUCTION ENGINEERING DRAWINGS FOR COMPLETED WORK.

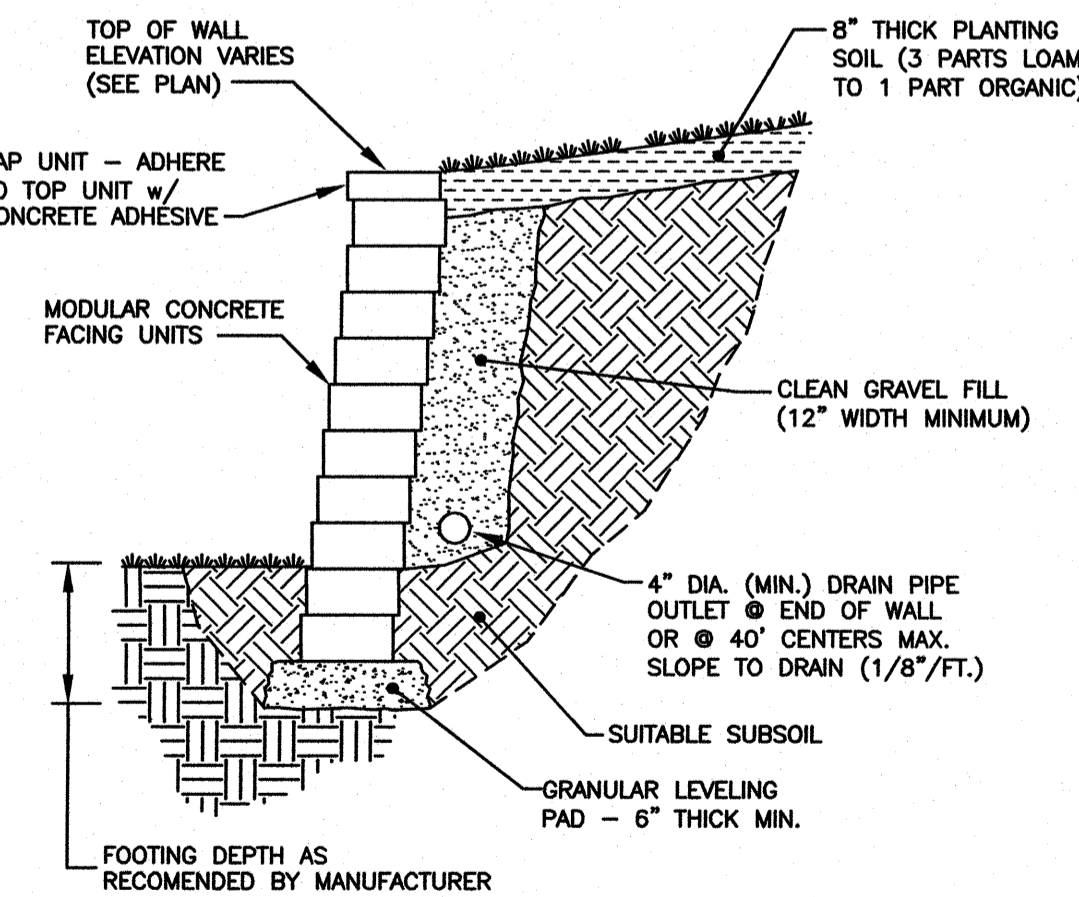


- NOTES:**
1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
  2. FILTREXX SYSTEM SHALL BE INSTALLED BY A CERTIFIED FILTREXX INSTALLER.
  3. THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTRATION SYSTEM IN A FUNCTIONAL CONDITION AT ALL TIMES. IT WILL BE ROUTINELY INSPECTED AND REPAIRED WHEN REQUIRED.
  4. SILTSOXX DEPICTED IS FOR MINIMUM SLOPES, GREATER SLOPES MAY REQUIRE ADDITIONAL PLACEMENTS.
  5. THE COMPOST FILTER MATERIAL WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE ENGINEER.

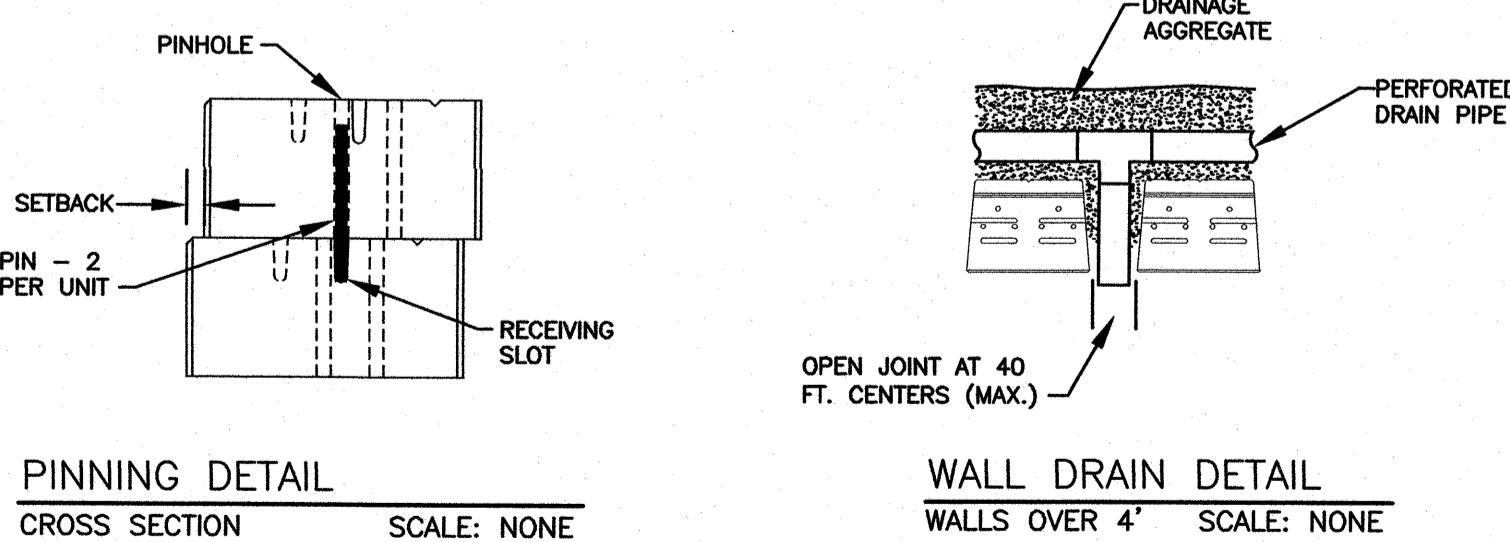
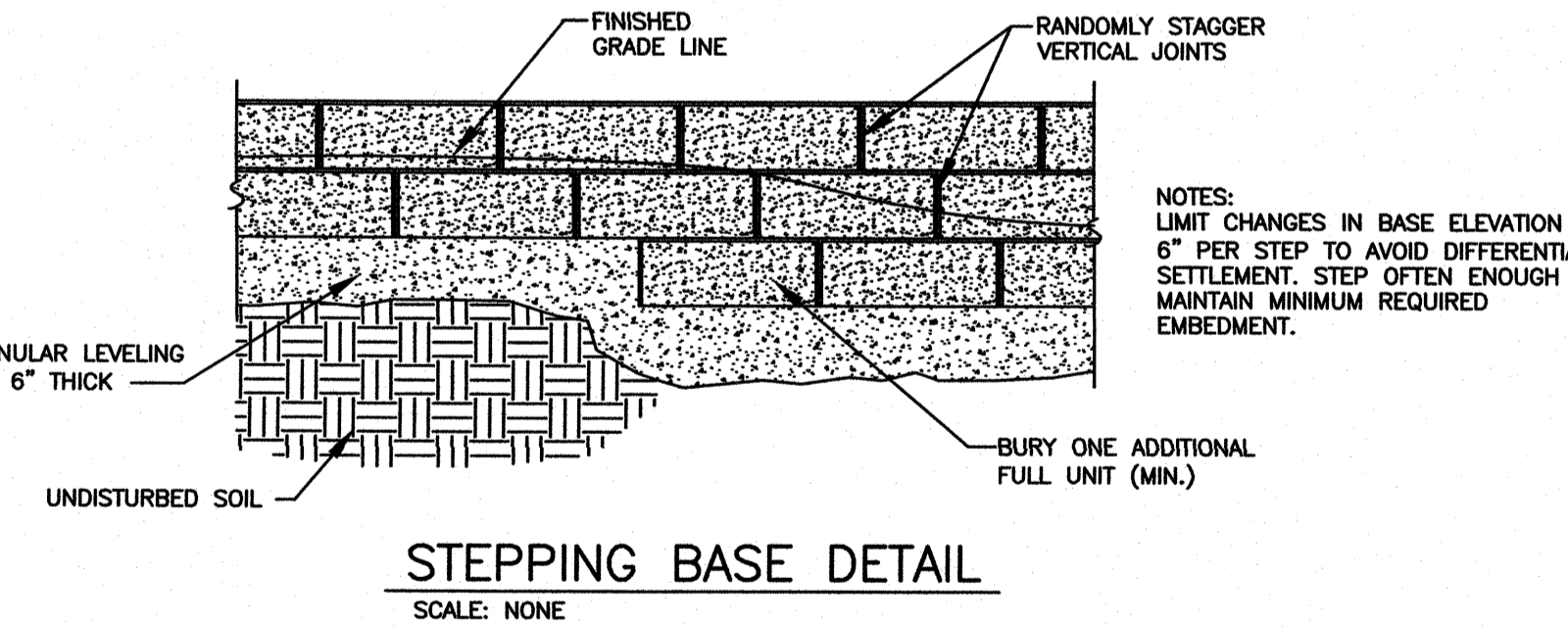
**FILTREXX® SILTSOXX™ FILTRATION SYSTEM**  
(INSTALL IF NEEDED) NTS



**B** SHRUB PLANTING DETAIL  
(SHRUB PLANTING DETAIL APPLIES TO EVERGREEN AND DECIDUOUS SHRUBS) (IF NEEDED) NTS



**C** RETAINING WALL DETAIL MODULAR CONCRETE UNIT NTS

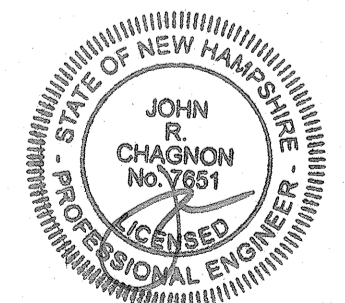


**PINNING DETAIL** CROSS SECTION SCALE: NONE  
**WALL DRAIN DETAIL** WALLS OVER 4' SCALE: NONE

- NOTES:**
- 1) THE CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON PUBLIC OR PRIVATE PROPERTY.
  - 2) UNDERGROUND UTILITY LOCATIONS ARE BASED UPON BEST AVAILABLE EVIDENCE AND ARE NOT FIELD VERIFIED. LOCATING AND PROTECTING ANY ABOVEGROUND OR UNDERGROUND UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR THE OWNER. UTILITY CONFLICTS SHOULD BE REPORTED AT ONCE TO THE DESIGN ENGINEER.
  - 3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).

**HEIDERSCHIEDT RESIDENCE**  
32 CEDAR POINT ROAD  
DURHAM, N.H.

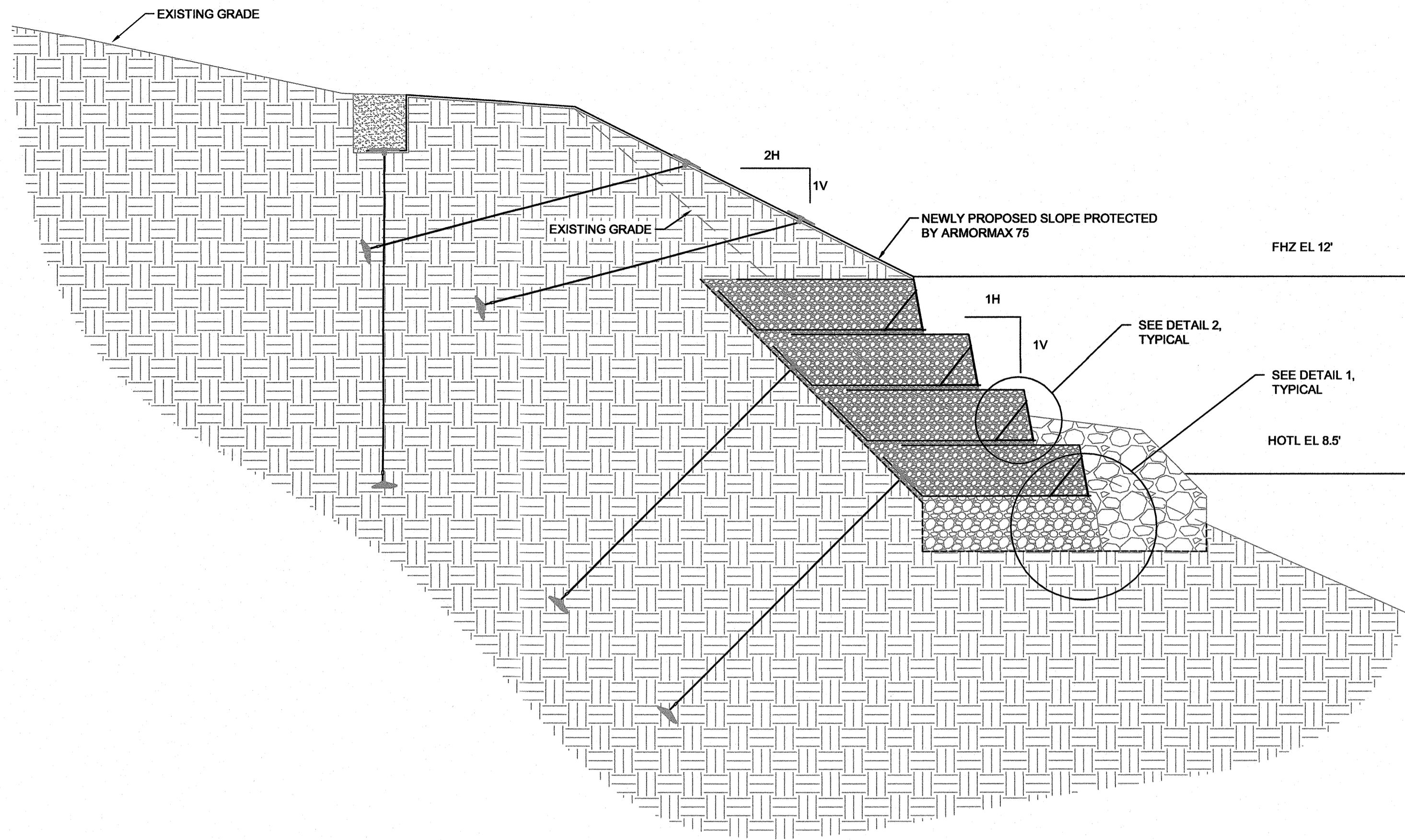
NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	1/4/19
REVISIONS		



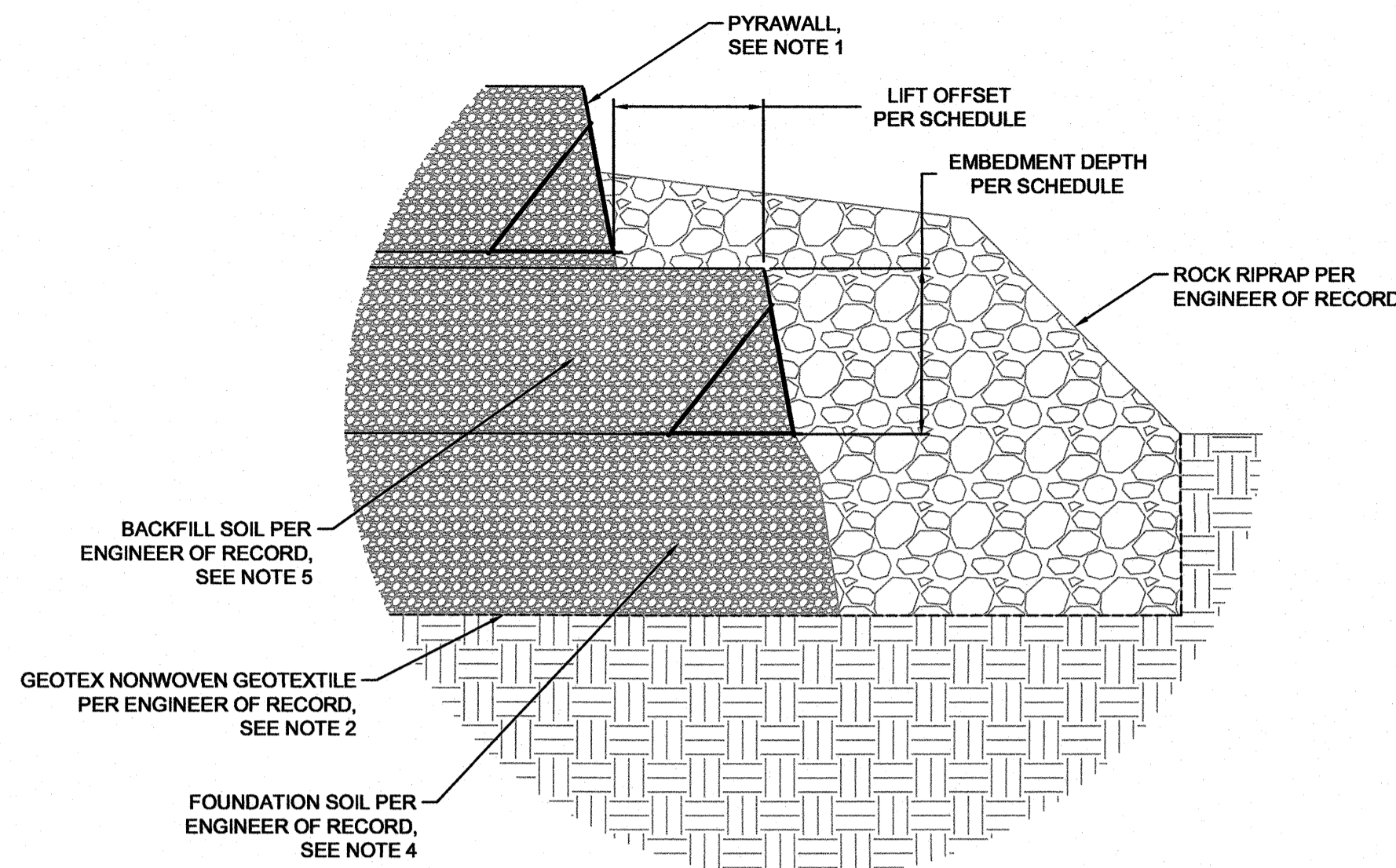
SCALE: AS SHOWN JANUARY 2019

**REVETMENT DETAILS** **D1**

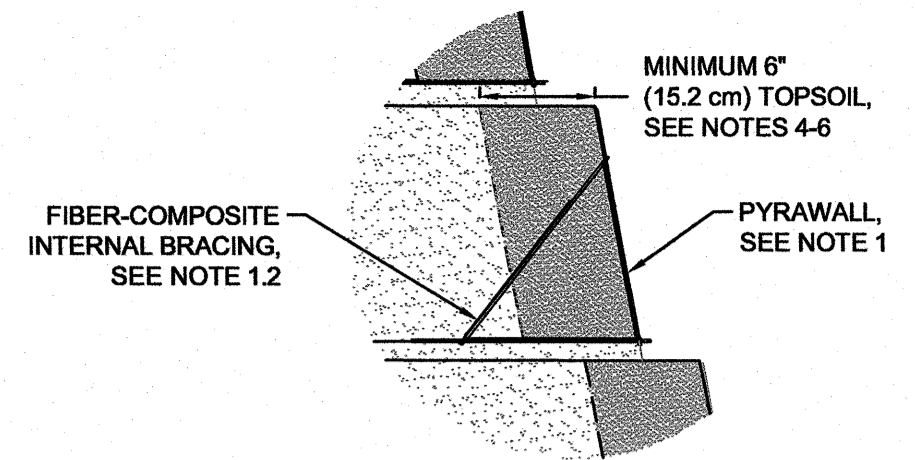




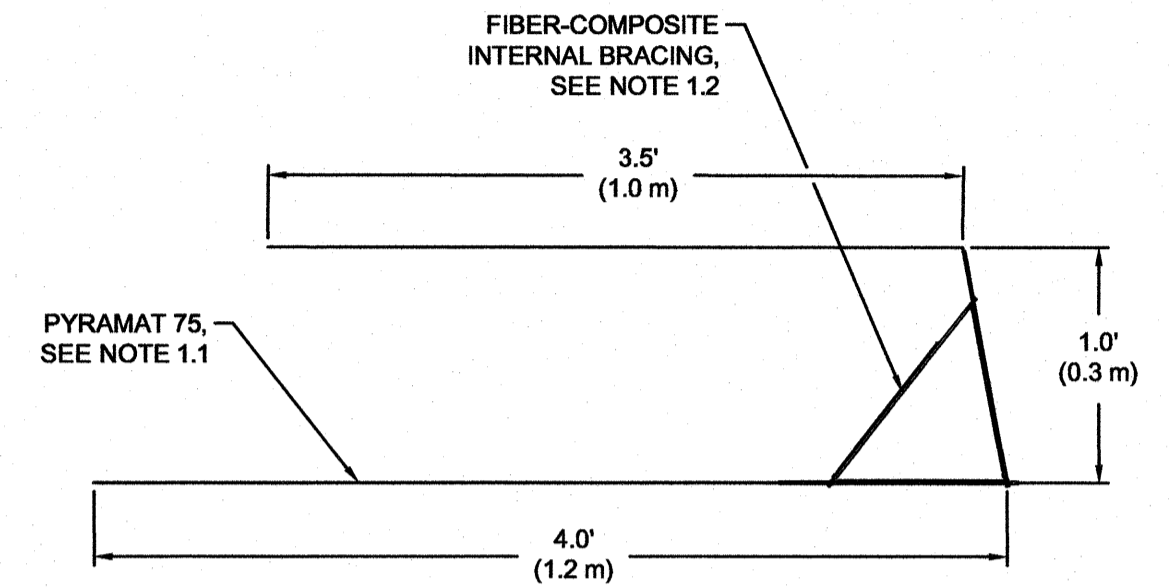
ELEVATION 1: INSTALLATION OF PYRAWALL



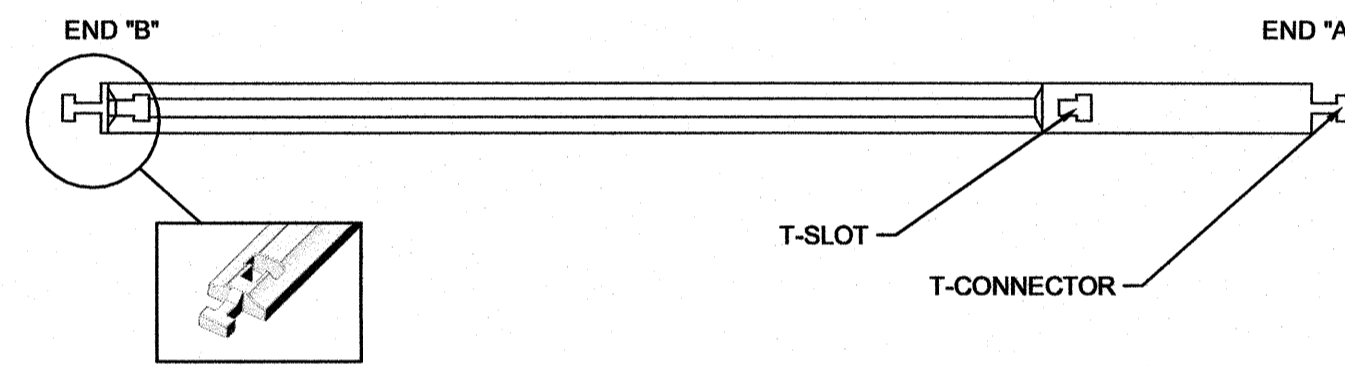
DETAIL 1: PYRAWALL FOUNDATION



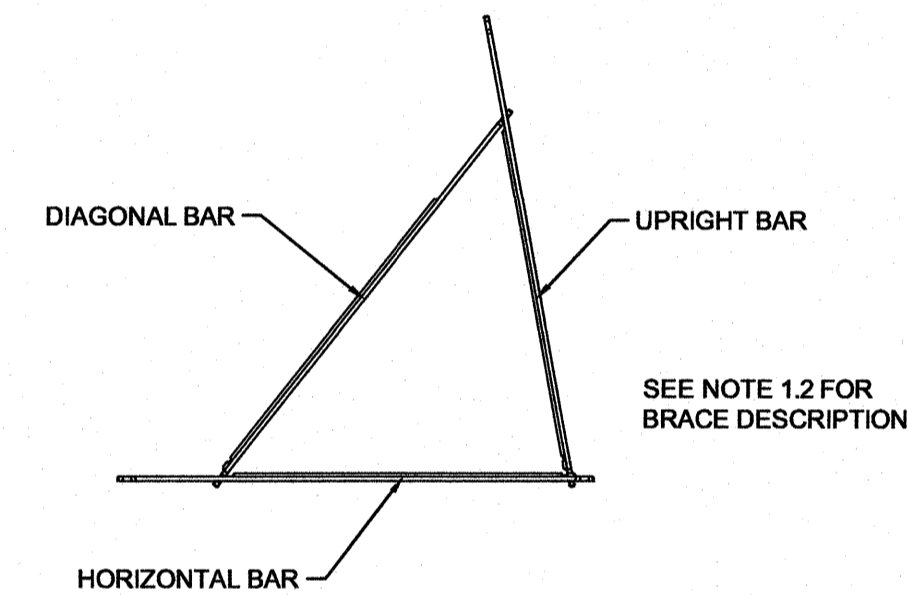
DETAIL 2: PYRAWALL VEGETATION ESTABLISHMENT



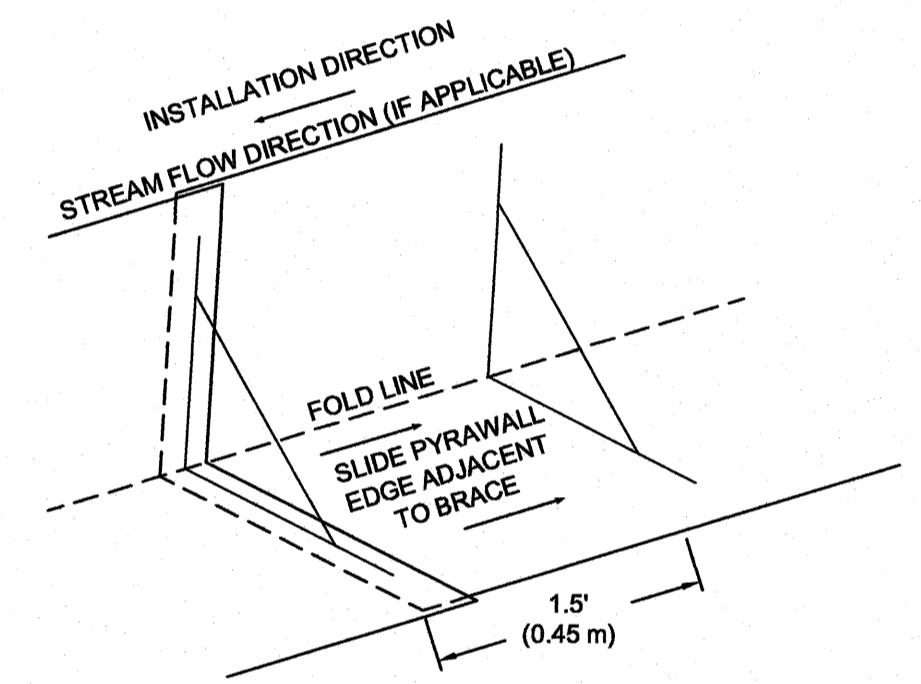
DETAIL 3: TYPICAL LIFT



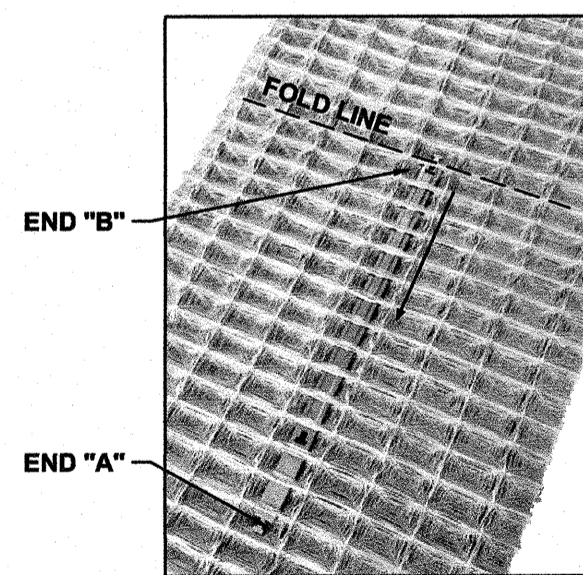
DETAIL 4: INDIVIDUAL FIBER-COMPOSITE BRACING BAR



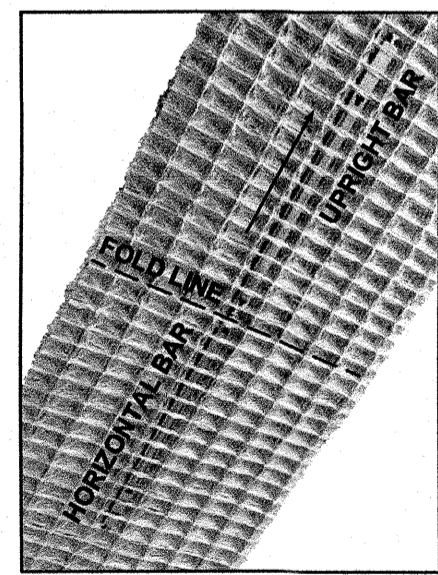
DETAIL 5: INTERNAL BRACE



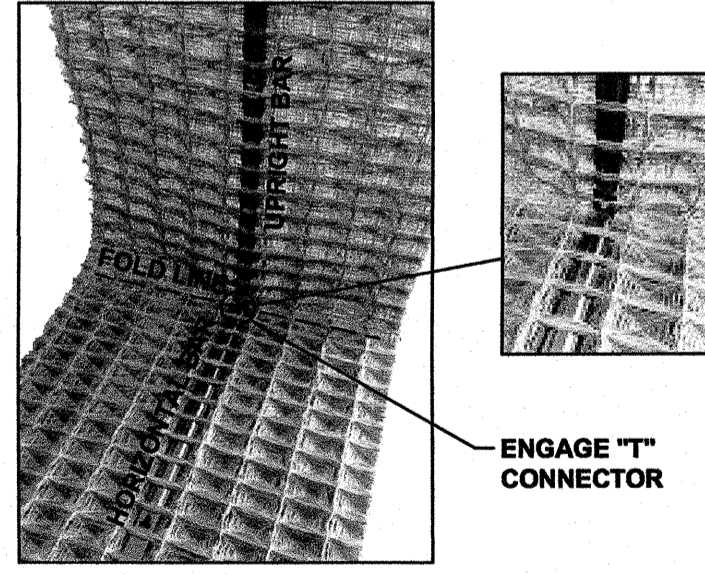
DETAIL 6: PYRAWALL OVERLAP



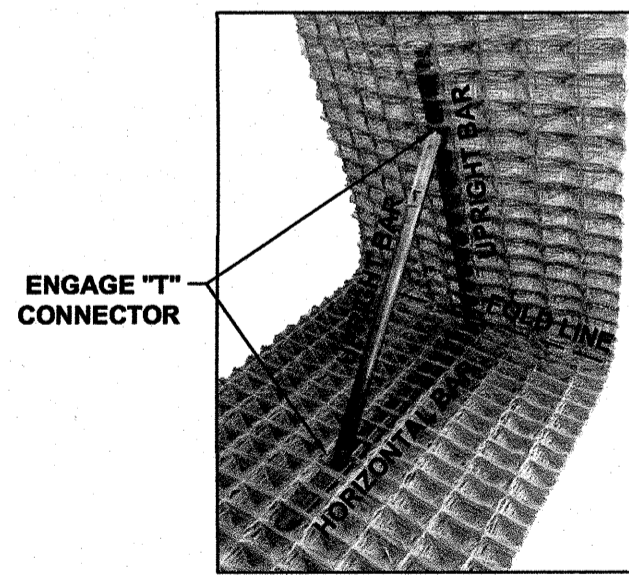
STEP 1: INSERT END "A" OF HORIZONTAL BAR THROUGH PYRAMIDAL THREADS STARTING AT FOLD LINE



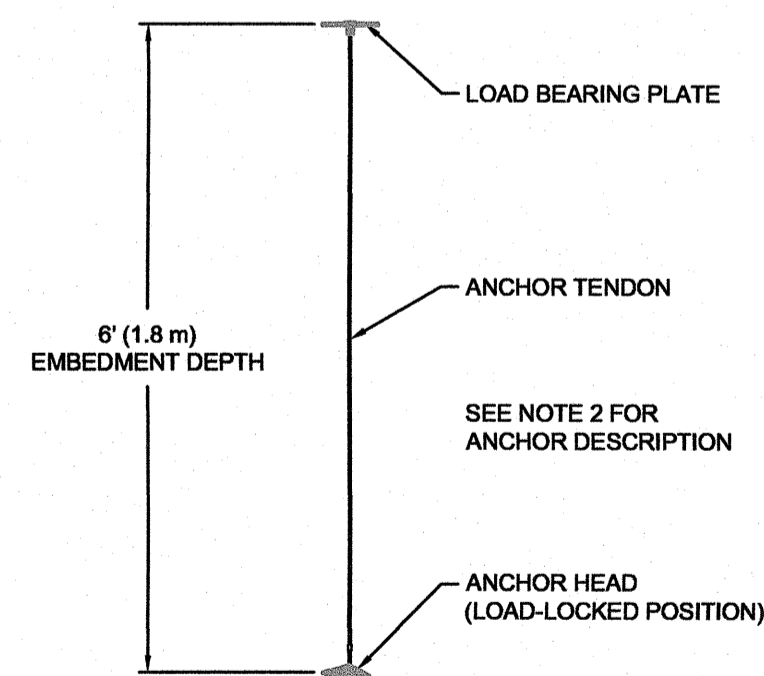
STEP 2: INSERT END "A" OF UPRIGHT BAR THROUGH PYRAMIDAL THREADS STARTING AT FOLD LINE



STEP 3: FOLD PYRAMAT UPRIGHT AND USE "T" CONNECTOR TO ENGAGE END "B" OF UPRIGHT BAR INTO END "B" OF HORIZONTAL BAR



STEP 4: ENGAGE "T" CONNECTOR OF DIAGONAL BAR INTO "T" SLOT



DETAIL 6: ENGINEERED EARTH ANCHOR

**PYRAWALL™ GENERAL INSTALLATION GUIDELINES**

**GENERAL NOTES**

1. PYRAWALL™ is a reinforced-earth wall and/or steepened slope system that provides permanent erosion protection from initial construction. The expected design life of PYRAWALL is up to 75 years because of its superior UV resistance, strength, and durability due to its components which are environmentally inert and do not corrode. PYRAWALL is an Engineered Wrap-Face Vegetated Solution consisting of two components: PYRAMAT® 75 High Performance Turf Reinforcement Mat (HPTRM) and Fiber-composite internal bracing.

- 1.1. PYRAMAT 75 HPTRM is a three-dimensional, lofty, woven polypropylene geotextile that is available in green or tan which is specially designed for erosion control applications on steep slopes and vegetated waterways. The matrix is composed of polypropylene monofilament yarns featuring X3® technology woven into a uniform configuration of resilient pyramid-like projections. The material exhibits very high interlock and reinforcement capacity with both soil and root systems, demonstrates superior UV resistance, and enhances seedling emergence.
- 1.2. The Fiber-composite internal braces are designed to integrate with PYRAMAT 75 HPTRM and provide internal structure during construction to facilitate the layout and backfilling of the lifts.
2. GEOTEX® 801 is a polypropylene, staple fiber, needlepunched nonwoven geotextile manufactured to be resistant to ultraviolet degradation and to biological and chemical environments normally found in soils.
3. The Type B2 anchor model is used for surficial slope stability applications and has a working load of up to 1,500 lbs. The Type B2 anchor consists of a die cast aluminum anchor head, zinc-aluminum coated carbon steel cable, a die cast zinc load-locking mechanism with a ceramic roller, and two aluminum ferrules. The bullet nose design of the anchor head allows the anchor to penetrate HPTRM resulting in minimal installation damage. The Type B2 anchor is also designed with a recessed cavity so the top of the cable can be cut below the surface being protected.

**CONSTRUCTION NOTES**

4. Foundation Soil: Material to be approved by Engineer of Record. Deleterious material (overly wet soil, uncontrolled loose fill, construction debris, organics, etc.) encountered during excavation shall be over-excavated, removed, and replaced with compacted granular fill or approved backfill soil. Compact the subgrade as specified by Engineer of Record.
5. Backfill Soil: Material to be approved by Engineer of Record. Place backfill in 7 to 8 inch (17 to 20 cm) thick loose lifts to at least 95 percent of the specified modified Procter dry density. Place a second lift of backfill soil along the backfill zone and compact it to bring the total height up to 12 inches (30 cm) and even with the top of the internal braces.

**VEGETATION ESTABLISHMENT**

6. Apply topsoil and seed directly behind the PYRAWALL face. Select and apply soil amendments and fertilizer as needed. A site specific soil test should be performed to help determine what soil amendments, such as lime and fertilizer, need to be incorporated into the soil to promote healthy vegetation.
7. If desired, additional seeding can be achieved post-construction by hydroseeding the completed PYRAWALL.
8. Irrigate as necessary to establish and maintain vegetation. Frequent, light irrigation will need to be applied to seeded areas if natural rain events have not occurred within two weeks of seeding.

**BEFORE INSTALLATION BEGINS**

9. Coordinate with a Propex Representative: A pre-construction meeting is suggested with the construction team and a representative from Propex. This meeting should be scheduled by the contractor with at least a two week notice.
10. Gather the Tools Needed: Tools that you will need to install PYRAWALL include a pair of industrial shears to cut PYRAMAT 75, tape measure, equipment for soil compaction, and equipment for vegetation establishment.
11. Determine how to Establish Vegetation: The method of vegetation establishment should be determined prior to the start of installation. Different vegetation establishment methods require different orders of installation. Refer to Vegetation Establishment for further guidance.
12. Please consult the Propex Website for the most up to date installation guidelines.

**HEIDERSCHIEDT RESIDENCE STABILIZATION - CONCEPTUAL**

Please note that the information presented herein is general information only. It is for conceptual use only and not intended to be used for construction. While every effort has been made to ensure its accuracy, this information should not be used for a specific application without independent professional examination and verification of its suitability, applicability, and accuracy. This engineering drawing is protected by the Copyright Act, 17 U.S.C. §101 et seq. and may be used ONLY with the express written permission of Propex in connection with Propex products. Any copying, distributing, and/or creation of a derivative work without permission of Propex is prohibited and is subject of actual damages, statutory damages and attorney's fees under the Copyright Act.

△	1 of 1
△	
△	
Rev	



**PYRAWALL™ INSTALLATION DETAILS**

Date: 01/07/2019 Drawn By: D. LOIZEAUX Scale: NTS

\*ALL DIMENSIONS ARE TO BE VERIFIED BY ENGINEER OF RECORD

**PYRAWALL CONSTRUCTION INFORMATION**

EMBEDMENT DEPTH	6" (15 cm) MIN
LIFT OFFSET	3" (7.5 cm) MIN
PYRAWALL EMBEDMENT LENGTH	4 FT (1.2 m) MIN
INTERNAL BRACING HORIZONTAL SPACING	2 FT (0.6 m) MAX

