

THIS DRAWING SET HAS NOT BEEN
RELEASED FOR CONSTRUCTION

Granite Ridge Estates Cluster Subdivision

15 Hot Hole Pond Road
Concord, New Hampshire

Assessor's Parcel 11Z, Lot 25-1
ISSUED FOR FINAL APPROVAL

APPROVED

UNDER THE PROVISIONS OF R.S.A 674:35 AND 674:36

PLANNING BOARD

CITY OF CONCORD, NEW HAMPSHIRE

IN ACCORDANCE WITH A VOTE OF THE BOARD DATED:

APPROVAL OF THIS PLAT IS LIMITED TO LOTS AS SHOWN

CLERK

CHAIR

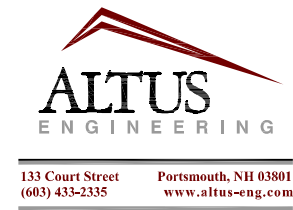
Owner:
EASTERN DEVELOPMENT, LLC

P.O. BOX 2671
CONCORD, NH 03302
(603) 333-0147

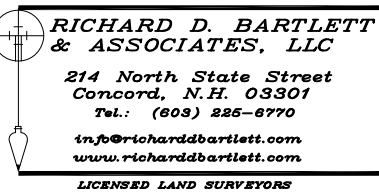
Applicant:
EASTERN DEVELOPMENT, LLC

P.O. BOX 2671
CONCORD, NH 03302
(603) 333-0147

Civil Engineer:



Surveyor:



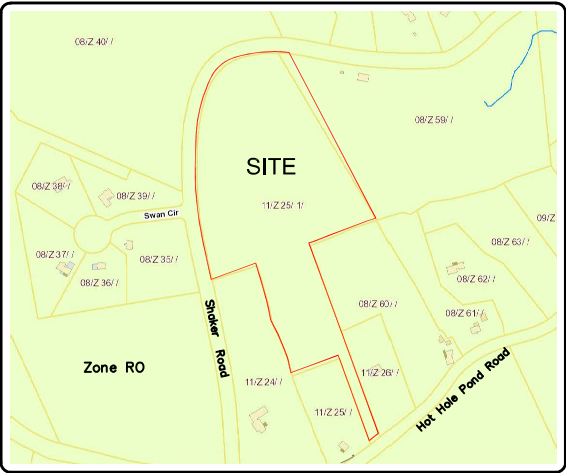
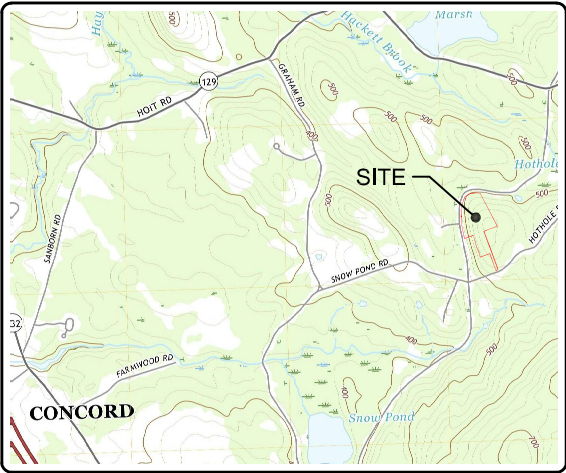
Soil Scientist:

BAG LAND CONSULTANTS
43 ROCKINGHAM STREET
CONCORD, NH 03301
(603) 228-5775

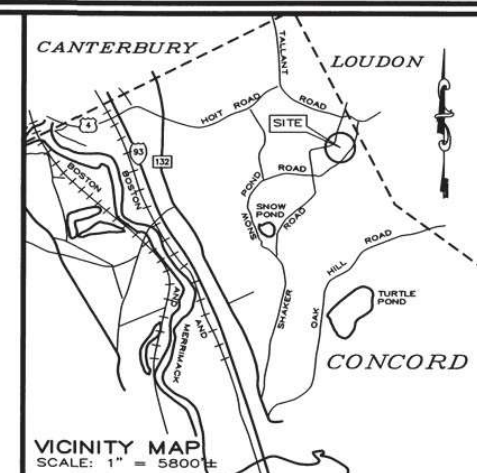
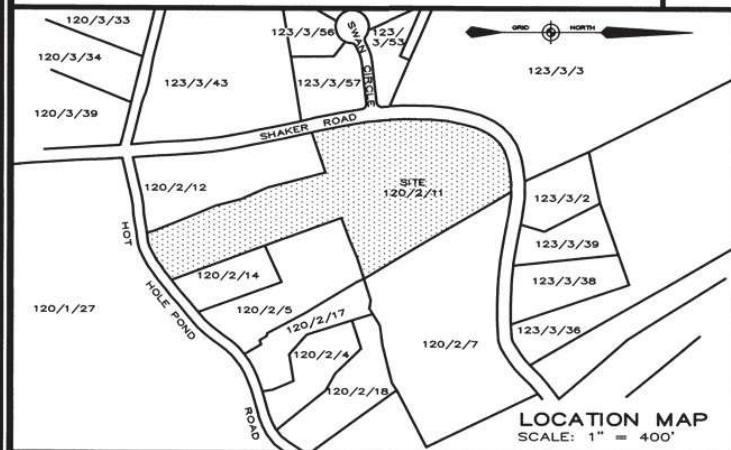
Plan Issue Date:

Original: September 20, 2023
Revised: October 18, 2023
February 23, 2024
June 10, 2024
July 30, 2024
October 21, 2024
December 17, 2024
January 9, 2025
February 19, 2025
Current: March 18, 2025

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Existing Condition Plat	4 of 7	0	03/11/20
Existing Condition Plat	5 of 7	0	03/11/20
Existing Condition Plat	6 of 7	0	03/11/20
Existing Condition Plat	7 of 7	0	03/11/20
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Soils and Topography Plan	C-1.2	5	12/17/24
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Utility Plan	C-7	7	02/19/25
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Detail Sheet	C-12	6	12/17/24
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Landscaping Plan	L1.0	1	02/23/24
Landscape Details	L1.1	1	02/23/24



Permit Summary	Submitted	Received
Concord Subdivision Approval	09/20/23	03/20/24
NHDES Subdivision Approval	04/29/24	01/03/25
NHDES Subsurface Approval	By individual unit owners prior to construction	
EPA Notice of Intent	By Contractor 14 days prior to construction	



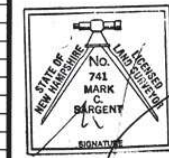
NOTES

- NOTES**
1. Survey by totastation on June 13, 2017, with Control Traverse error of closure of 1:96,489. Additional survey between the dates of January 27 and February 5, 2020 with a control traverse error of closure of 1:20,473.
 2. Horizontal datum is based on New Hampshire State Plane Coordinate System NAD 83.
 3. Vertical datum is based on NAVD 88.
 4. Owner of record: Matthew & Erin Berry 267 Main Street Candia, NH 03034 Vol. 3647, Page 1390, Total Area: 639,794 sq. ft. or 14.69 acres.
 5. Parcel is within the Open Space Residential Zoning District (RO). Minimum lot size = 2 acres, Minimum buildable land = 20,000 sq. ft., Minimum frontage = 200', Building setbacks: front=50'; rear=50'; side=40', Maximum lot coverage = 10%, Minimum useable area = 8,712 sq. ft.
 6. The underground utilities depicted hereon have been located from field survey information and plotted from existing drawings. The surveyor makes no guarantee that the underground utilities depicted comprise all such utilities in the area, either in service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated although they are located as accurately as possible from information available. The surveyor has not physically located the underground portion of the utilities. All contractors should notify, in writing, any utility company and appropriate governmental agencies prior to any excavation work and call DIG-SAFE at 1-888-344-7233.
 7. The subject premises is with Zone X, areas determined to be outside the 0.2% annual chance floodplain, depicted on the Flood Insurance Rate Map, Merrimack County, plan 348 of 705, Map no. 33013C0345E with an effective date of April 19, 2010.
 8. The intent of this plat is to depict the existing conditions of Map 11Z, Lot 25-1
 9. Reference plat entitled "Subdivision of Land Belonging to Marvin H. Caswell, Florence Martin, and Pearl Stortstrom" dated May 22, 1982 by Gilbert C. Castle and recorded at the MCRD as plan no. 7152.

LEGEND

	PROPERTY LINE		STONE WALL
	EDGE OF PAVEMENT		EDGE OF WOODS
	EDGE OF GRAVEL		CONCRETE
	OVERHEAD UTILITY LINES		
	DOUBLE YELLOW LINE		WELL
	SOIL BOUNDARY		IRON PIPE OR REBAR
			GRANITE OR CONCRETE BOUND (GB OR CB)
			UTILITY POLE

NO.	DATE	REVISION
-----	------	----------



FOR: RICHARD D. BARTLET
& ASSOCIATES, LLC



**RICHARD D. BARTLETT
& ASSOCIATES, LLC**

214 North State Street
Concord, N.H. 03301
Tel.: (603) 225-6770

info@richarddbartlett.com
www.richarddbartlett.com

LICENSED LAND SURVEYORS

EXISTING CONDITION PLAT
prepared for:
MATTHEW & ERIN BERRY

PROJECT MAP 11Z, LOT 25-1
LOCATION 15 HOT HOLE POND RD CONCORD, NH

GRAPHIC SCALE	DATE: MARCH 11, 2020
---------------	----------------------



JOB NO.: 1219.213

10'
SCALE: 1" = 30'

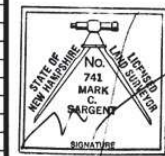
SCALE: 1" = 20' SHEET 1 OF 7

MATCH TO SHEET 3

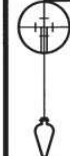
Map 8Z, Lot 60
Jack Rodolico
Christina Oliva
25 Hot Hole Pond Road
Concord, NH 03301
Book 3457, Page 1087



NO.	DATE	REVISION



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EXISTING CONDITION PLAT
prepared for:
MATTHEW & ERIN BERRY

PROJECT: MAP 11Z, LOT 25-1
LOCATION: 15 HOT HOLE POND RD CONCORD, NH

GRAPHIC SCALE
0' 20' 40'
10'
SCALE: 1" = 20'

DATE: MARCH 11, 2020

JOB NO.: 1219.213

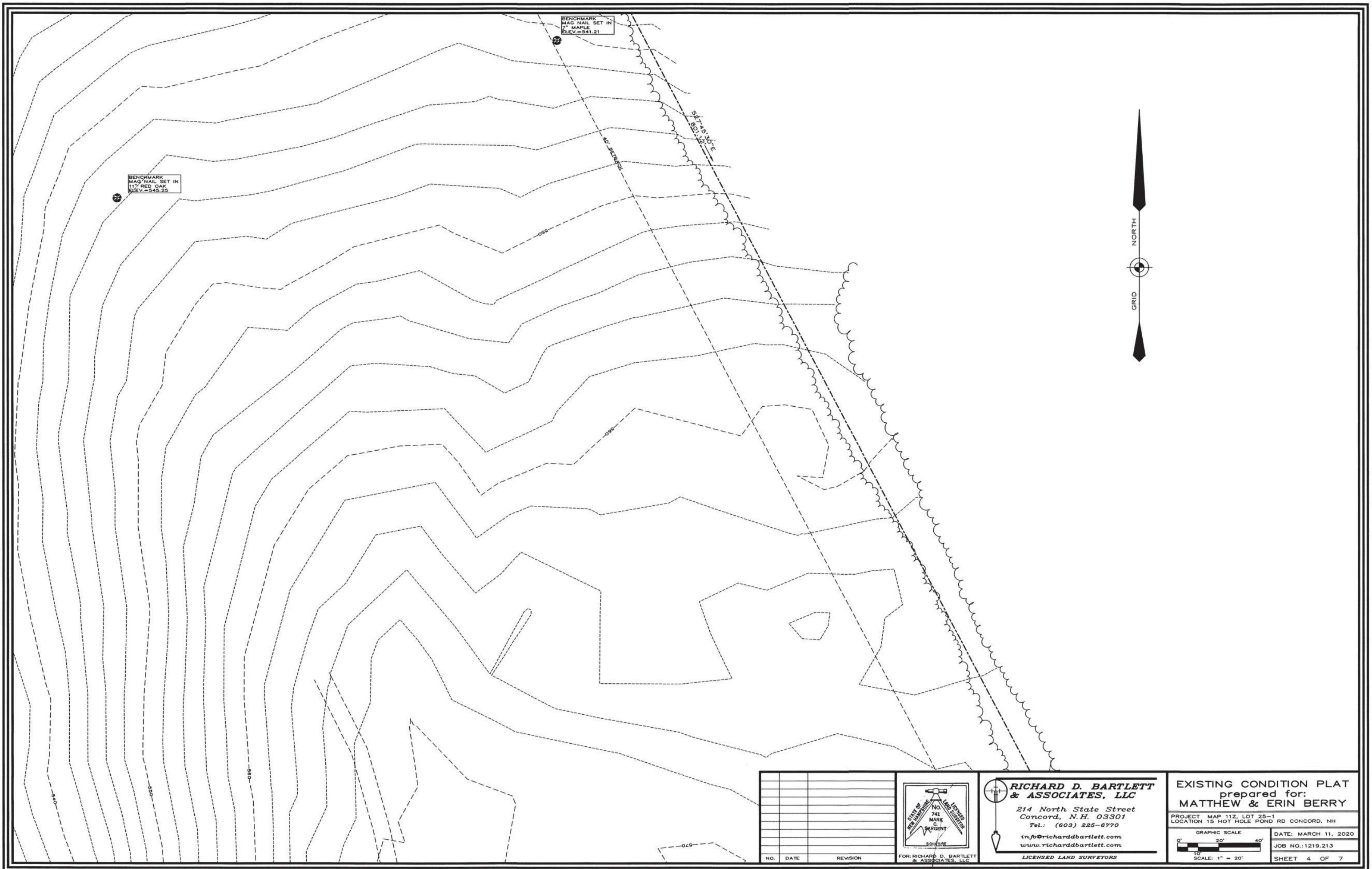
SHEET 2 OF 7

MATCH TO SHEET 1

5/8" S.P.
W/ CAP FND.
5" PROJ.



Map Jac Chr 25 Hot Conco Book 34					 RICHARD D. BARTLETT & ASSOCIATES, LLC 214 North State Street Concord, N.H. 03301 Tel.: (603) 225-6770 info@richarddbartlett.com www.richarddbartlett.com LICENSED LAND SURVEYORS	EXISTING CONDITION PLAT prepared for: MATTHEW & ERIN BERRY <hr/> PROJECT MAP 112, LOT 25-1 LOCATION 15 HOT HOLE POND RD CONCORD, NH	<div style="text-align: center;">GRAPHIC SCALE</div>  0' 20' 40' 10' SCALE: 1" = 20'	DATE: MARCH 11, 2020 JOB NO.: 1219.213 SHEET 3 OF 7
	NO.	DATE	REVISION					



MATCH TO SHEET 6



Map 8Z, Lot 35
Jonathan D. & Jennifer L. Uhouse
13 Swan Circle
Concord, NH 03301
Book 3644, Page 2555

Q.
PSNH 319/26

S.P. W/CAP FND.
5" PROJ.

NYNEX 1322/5
PSNH 1756/2

N 15° 42' 30" W
158.29

40' SETBACK

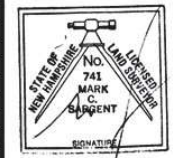
S 69° 49' 58" W
1202.49

TOP OF INSUL 564.6
BOTTOM OF INSUL 563.9
PSNH 319/27

PSNH EASEMENT
VOL. 475, PAGE 138

Map 11Z, Lot 24
Susan E. McLaughlin-Beltz
Pete McGinnis
3 Hot Hole Pond Road
Concord, NH 03301
Book 3577, Page 379

NO.	DATE	REVISION



FOR: RICHARD D. BARTLETT
& ASSOCIATES, LLC

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Concord, N.H. 03301
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www.richarddbartlett.com
LICENSED LAND SURVEYORS

EXISTING CONDITION PLAT
prepared for:
MATTHEW & ERIN BERRY
PROJECT: MAP 11Z, LOT 25-1
LOCATION: 15 HOT HOLE POND RD CONCORD, NH
GRAPHIC SCALE
0' 20' 40'
1" = 20'
DATE: MARCH 11, 2020
JOB NO.: 1219.213
SHEET 5 OF 7

MATCH TO SHEET 2

MATCH TO SHEET 3



Map 8Z, Lot 39
Huthinson Joint Rev. Trust
6 Swan Circle
Concord, NH 03301
Book 3448, Page 2001

SHAKER ROAD

S.P. W/CAP FND.
12" PROJ.

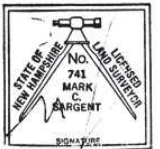
S.P. W/CAP FND.

NYNEX 1322/4-140
PSNH 751/1
W/ DROPS

R=1467.00
L=522.32
Δ=12°35'20"

BENCHMARK
MAG NAIL SET IN
117' RED OAK
ELEV.=545.25

NO.	DATE	REVISION



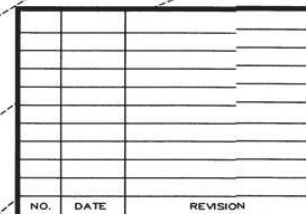
**RICHARD D. BARTLETT
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PROJECT: MAP 11Z, LOT 25-1
LOCATION 15 HOT HOLE POND RD CONCORD, NH

GRAPHIC SCALE
0' 20' 40'
SCALE: 1" = 20'

DATE: MARCH 11, 2020
JOB NO.: 1219.213
SHEET 6 OF 7



LICENSED LAND SURVEYORS

SHEET 7 OF 7

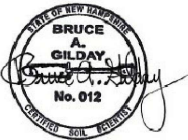
MATCH TO SHEET 4

EXISTING CONDITIONS AND SOILS NOTES

1. THIS PLAN IS INTENDED TO PROVIDE A GENERAL OVERVIEW OF THE SITE'S EXISTING CONDITIONS. SEE EXISTING CONDITIONS PLANS PREPARED BY RICHARD D. BARTLETT AND ASSOCIATES, LLC, DATED MARCH 11, 2020 FOR ADDITIONAL DETAIL. NO SURVEY WAS PERFORMED BY THIS OFFICE.
2. THE PARCEL IS IDENTIFIED AS CONCORD ASSESSOR'S MAP 11Z, LOT 25-1.
3. DEED REFERENCE: MCRD BOOK 3866, PAGE 2039.
4. LOT AREA: 639,794 S.F. (±14.69 AC.)
5. ZONE: RO (OPEN SPACE RESIDENTIAL DISTRICT). THERE ARE NO ZONING DISTRICT BOUNDARIES IN PROXIMITY TO THE SITE.
6. HORIZONTAL DATUM NH STATE PLANE NAD 83, VERTICAL DATUM NAVD 88.
7. PER THOMAS E. SOKOLOSKI, CWS #127 OF TES ENVIRONMENTAL, LLC, NO WETLANDS HAVE BEEN OBSERVED ON THE SUBJECT PARCEL.
8. HIGH INTENSITY SOILS MAPPING WAS PERFORMED BY BRUCE A. GILDAY, CSS OF BAG LAND CONSULTANTS IN AUGUST 2023.
9. PARCEL IS IN ZONE X PER FIRM PANEL 33013C0345E DATED APRIL 19, 2020.

HIGH INTENSITY MAP SYMBOL: 523BH			
DRAINAGE CLASS		IDENTIFIER	
1. EXCESSIVELY DRAINED		H. INDICATES HIGH INTENSITY SOIL MAP	
2. WELL DRAINED		P. INDICATES PRELIMINARY MAP	
3. MODERATELY WELL DRAINED			
4. SOMEWHAT POORLY DRAINED			
5. POORLY DRAINED			
6. VERY POORLY DRAINED			
7. NOT DETERMINABLE			
PARENT MATERIAL		SLOPE CLASS	
1. GLACIOFLUVIAL		B. 0 TO 8%	
2. GLACIAL TILL		C. 8 TO 15%	
3. MARINE OR GLACIOLACUSTRINE VERY FINE SAND AND SILT		D. 15 TO 25%	
4. MARINE OR GLACIOLACUSTRINE LOAMY/SANDY OVER SILT/CLAY		E. 15 TO 25%	
5. MARINE OR GLACIOLACUSTRINE SILT AND CLAY		F. 35%+	
6. EXCAVATED, REGRADED, OR FILLED			
7. ALLUVIAL DEPOSITS			
8. ORGANIC MATERIALS FRESH WATER			
9. ORGANIC MATERIALS TIDAL MARSH			
		RESTRICTIVE FEATURE	
		1. NONE	
		2. BOULDERY, WITH MORE THAN 15% OF SURFACE COVERED	
		3. MINERAL RESTRICTIVE LAYER(S) ARE PRESENT AT LESS THAN 40" DEPTH	
		4. BEDROCK 0" TO 20" DEPTH	
		5. SUBJECT TO FLOODING	
		6. DOES NOT MEET FILL STANDARDS	
		7. BEDROCK 20-40" DEPTH	
		8. DEPTH TO BEDROCK VARIABLE, COMPLEX OF SOIL TYPES	

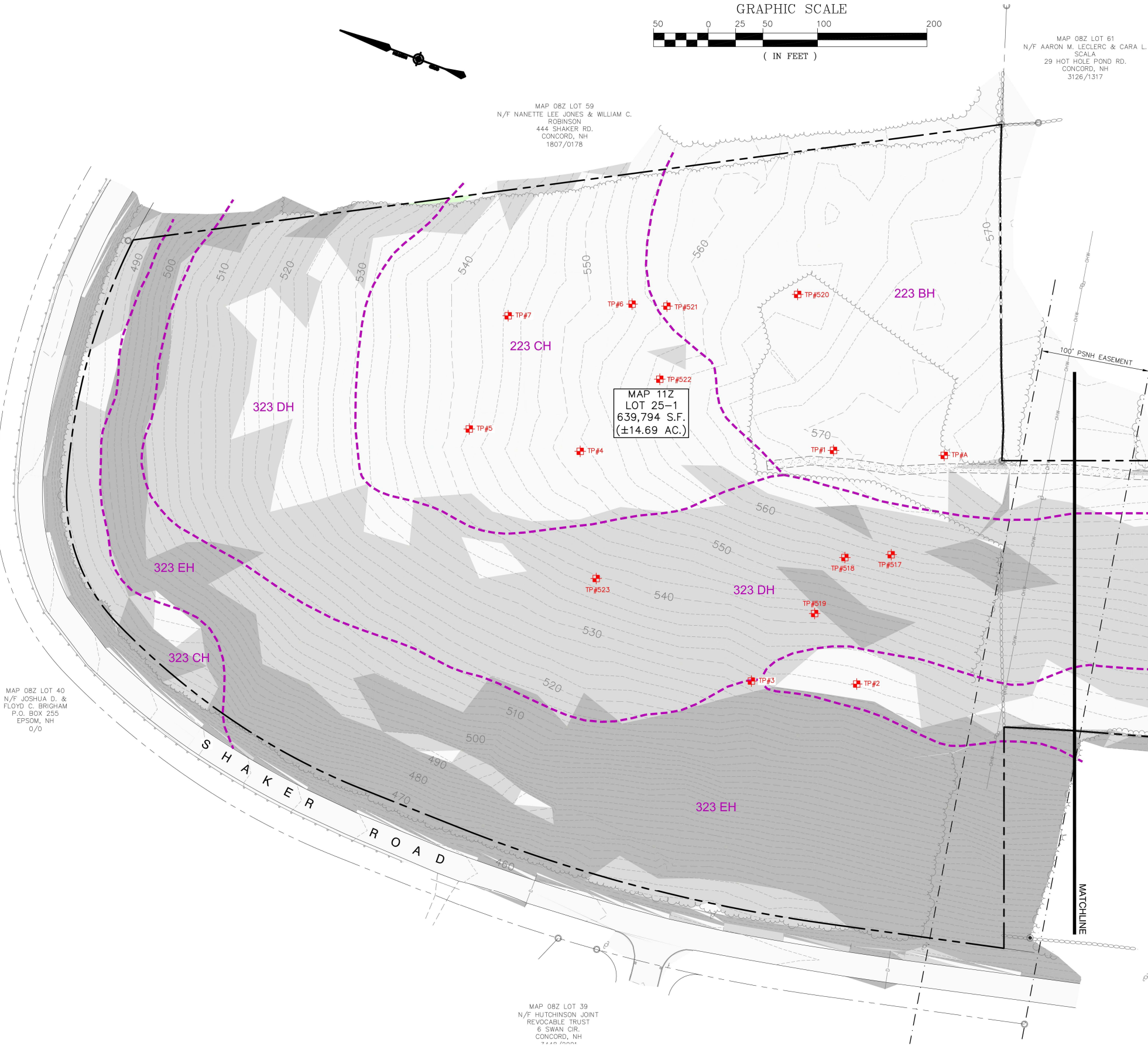
EXAMPLE: HIGH INTENSITY MAP SYMBOL 523BH INDICATES A POORLY DRAINED GLACIAL TILL SOIL WITH A RESTRICTIVE FEATURE, ON A SLOPE OF 0 TO 8%.



MAP 08Z LOT 40
N/F JOSHUA D. &
FLOYD C. BRIGHAM
P.O. BOX 255
EPSOM, NH
07033

MAP 08Z LOT 59
N/F NANETTE LEE JONES & WILLIAM C. ROBINSON
444 SHAKER RD.
CONCORD, NH
03301

MAP 08Z LOT 39
N/F HUTCHINSON JOINT
REVOCABLE TRUST
6 SWAN CIR.
CONCORD, NH
03301



133 Court Street
(603) 433-2335

Portsmouth, NH 03801
www.altus-eng.com

NOT FOR CONSTRUCTION

ISSUED FOR: FINAL APPROVAL

ISSUE DATE: DECEMBER 17, 2024

NO.	DESCRIPTION	BY	DATE
0	SUBMISSION	EBS	09/20/23
1	REV. HISS TABLE	EBS	09/23/23
2	REVISED PER COMMENTS	EBS	02/23/24
3	CONDITIONS OF APPROVAL	EBS	06/10/24
4	REVISED PER COMMENTS	EBS	10/21/24
5	REV. DEED REF.	EBS	12/17/24

DRAWN BY: EBS

APPROVED BY: EBS

DRAWING FILE: 5470-SITE.dwg

SCALE:
22" x 34" - 1" = 50'
11" x 17" - 1" = 100'

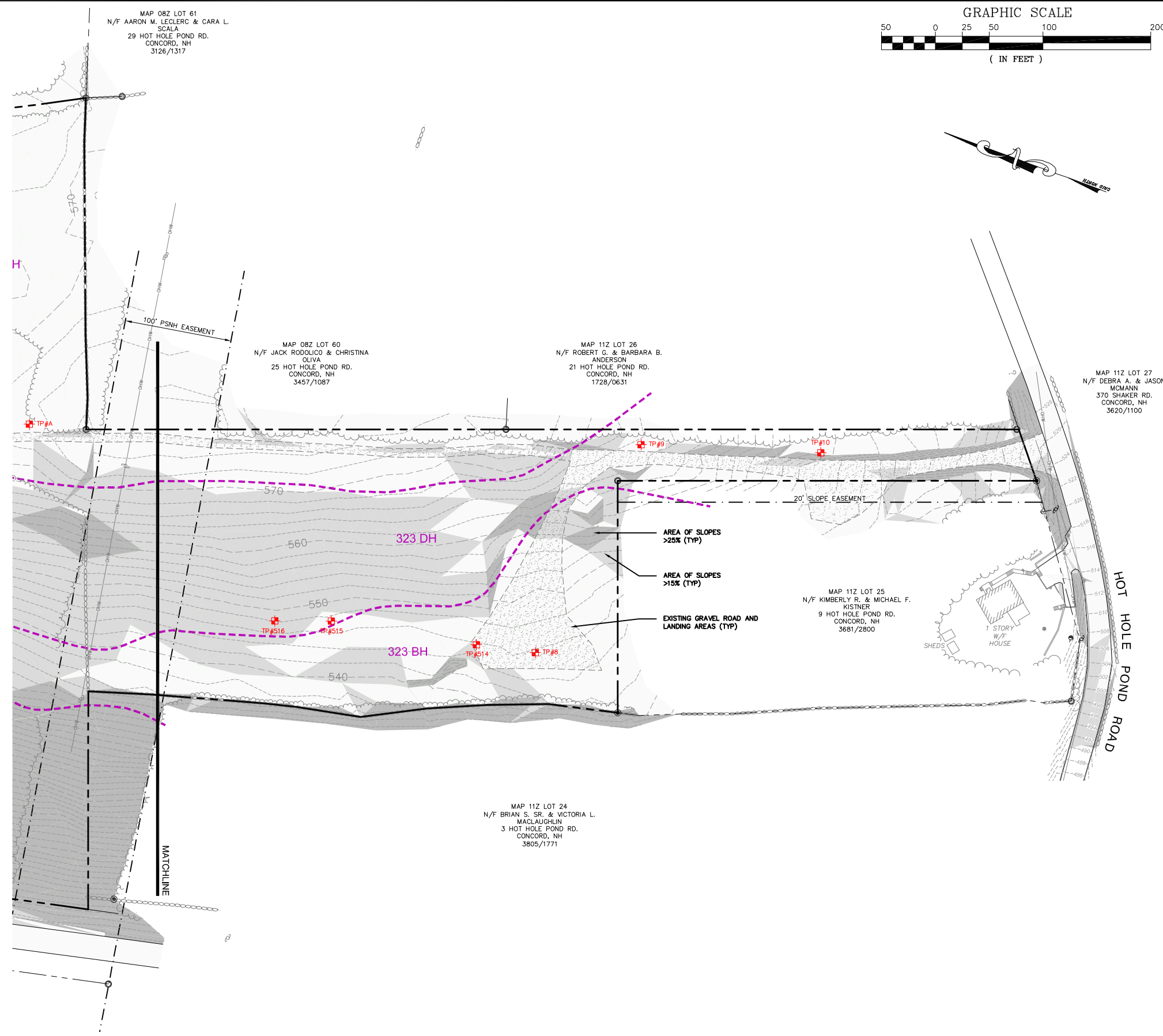
OWNER:
EASTERN DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302

APPLICANT:
EASTERN DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302

PROJECT:
GRANITE RIDGE ESTATES
CLUSTER SUBDIVISION
TAX MAP 11Z
LOT 25-1
15 HOT HOLE POND ROAD
CONCORD, NH

TITLE:
SOILS AND TOPOGRAPHY PLAN

SHEET NUMBER:
C-1.1



ALTUS
ENGINEERING

133 Court Street
(603) 433-2335

Portsmouth, NH 03801
www.altus-eng.com

NOT FOR CONSTRUCTION

ISSUED FOR:
FINAL APPROVAL

ISSUE DATE:
DECEMBER 17, 2024

REVISIONS		
NO.	DESCRIPTION	BY DATE
0	SUBMISSION	EBS 09/20/23
1	REV. HISS TABLE	EBS 09/23/23
2	REVISED PER COMMENTS	EBS 02/23/24
3	CONDITIONS OF APPROVAL	EBS 06/10/24
4	REVISED PER COMMENTS	EBS 10/21/24
5	REV. PROJECT NAME	EBS 12/17/24

DRAWN BY: _____ EBS
APPROVED BY: _____ EBS
DRAWING FILE: 5470-SITE.dwg

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22" x 34" - 1" = 50'
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CONCORD, NH 03302

APPLICANT:
EASTERN DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302

PROJECT:
GRANITE RIDGE ESTATES
CLUSTER SUBDIVISION
TAX MAP 11Z
LOT 25-1
15 HOT HOLE POND ROAD
CONCORD, NH

TITLE:
SOILS AND TOPOGRAPHY PLAN

SHEET NUMBER:
C-1.2

P5470



SITE NOTES

- DESIGN INTENT - THIS PLAN SET IS INTENDED TO DEPICT THE DEVELOPMENT OF THE SITE FOR A SINGLE-FAMILY RESIDENTIAL CONDOMINIUM CLUSTER SUBDIVISION SERVED BY A PRIVATE COMMON DRIVEWAY AND INDIVIDUAL PRIVATE WELLS AND SUBSURFACE SANITARY DISPOSAL SYSTEMS.
- LOT AREA: 639,794 S.F. (±14.69 AC.)
- ZONE: RO (OPEN SPACE RESIDENTIAL DISTRICT)
- DEED REFERENCE: MORD BOOK 3823, PAGE 2084
- DIMENSIONAL REQUIREMENTS (FOR CLUSTER SUBDIVISION w/o LOTS)
 - MIN. LOT AREA/UNIT: 21,780 S.F. "BUILDABLE LAND"
 - MIN. STREET FRONTAGE: 150'
 - SETBACK FROM ROW: 30'
 - BUILDING SEPARATION: 50'
 - PRIVATE YARD: 500 S.F. MIN.
 - MAX. BUILDING HEIGHT: 35'
 - MAX. LOT COVERAGE: 10% (9.8% PROPOSED, 62,690 S.F.)
 - MIN. OPEN SPACE: 60% (40% MUST BE "BUILDABLE LAND")
 - PERIMETER BUFFER: 100'
 - WETLAND BUFFER: 50' (WETLANDS >3,000 S.F.)
- CLUSTER SUBDIVISION DENSITY CALCULATIONS
 - TRACT AREA: 639,794 S.F.
 - "UNBUILDABLE" LAND ON TRACT:
 - FLOODPLAIN/WAY: 0
 - WETLANDS: 0
 - SURFACE WATERS: 223,120 S.F.
 - SLOPES 15-25%: 138,720 S.F.
 - SLOPES >25%: 7,286 S.F. (AREA OUTSIDE SLOPES)
 - EXISTING EASEMENTS: 0
 - SHORELAND BUFFER: 0
 - TOTAL "UNBUILDABLE": 369,126 S.F.
 - TRACT - "UNBUILDABLE" = 270,668 S.F. "BUILDABLE LAND"
 - MAXIMUM PERMITTED DENSITY: 270,668 / 21,780 = 12.43 (12) UNITS MAX. (9 UNITS PROPOSED)
- OPEN SPACE CALCULATIONS
 - 639,794 S.F. TRACT AREA * 0.60 = 383,876 S.F. OPEN SPACE REQUIRED
 - 383,876 * 0.40 = 153,551 S.F. MIN. "BUILDABLE LAND" REQUIRED
 - 437,570 S.F. OPEN SPACE PROVIDED (68.4% OF SITE, 114.1% OF REQUIREMENT)
 - 170,946 S.F. "BUILDABLE" PROVIDED (39.1% OF OPEN SPACE, 111.3% OF REQUIREMENT)

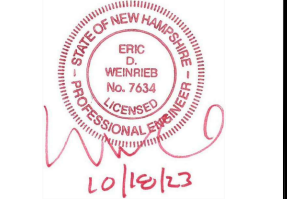
- THE FOLLOWING WAIVERS FROM THE CONCORD SUBDIVISION REGULATIONS ARE REQUIRED FOR THE PLAN AS DEPICTED:
 - TABLE 20-1 TO ALLOW A PRIVATE COMMON DRIVEWAY WIDTH OF 20' WHERE 26' IS REQUIRED.
 - TABLE 20-1 TO ALLOW A PRIVATE COMMON DRIVEWAY SLOPE OF 10% WHERE 8% IS THE MAXIMUM.
 - TABLE 20-1 TO ALLOW THE MAXIMUM GRADE OF 2% TO EXTEND LESS THAN THE REQUIRED MINIMUM OF 60' FROM THE PROPOSED INTERSECTION.
 - SECTION 20.24 AND 21.11 TO ALLOW A PRIVATE COMMON DRIVEWAY LENGTH IN EXCESS OF THE 1,000' MAXIMUM.
 - FIGURE 20-3 TO ALLOW PRIVATE COMMON DRIVEWAY SIDE SLOPES IN EXCESS OF THE 4:1 MAXIMUM.
 - SECTION 28.02(1) TO ALLOW OVERHEAD UTILITIES ON A PORTION OF THE PRIVATE COMMON DRIVEWAY WHERE UNDERGROUND IS REQUIRED.
 - SECTION 28.04(7) TO ALLOW STORMWATER MANAGEMENT FACILITIES WITHIN A CUL-DE-SAC ISLAND WHERE THEY ARE TYPICALLY NOT PERMITTED.
- OVERALL AREA OF DISTURBANCE UNDER 100,000 S.F., NHDES ALTERATION OF TERRAIN PERMIT NOT REQUIRED.
- NHDOT DRIVEWAY PERMIT NOT REQUIRED.
- NHDES SUBDIVISION AND SUBSURFACE APPROVALS REQUIRED.
- AREA OF DISTURBANCE OVER 43,580 SF. COVERAGE UNDER EPA NPDES PHASE II CONSTRUCTION GENERAL PERMIT REQUIRED (NOI TO BE PREPARED AND SUBMITTED BY CONTRACTOR, SWPPP AND INSPECTIONS TO BE PREPARED AND PERFORMED BY CONTRACTOR).
- CONSTRUCTION WILL REQUIRE STREET EXCAVATION AND DRIVEWAY PERMITS FROM THE CITY OF CONCORD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THESE PERMITS PRIOR TO CONSTRUCTION.
- HORIZONTAL DATUM NH STATE PLANE NAD 83, VERTICAL DATUM NAVD 88.
- PARCEL IS IN ZONE X PER FIRM PANEL 3301300345E DATED APRIL 19, 2020.
- TES ENVIRONMENTAL CONSULTANTS EVALUATED THE SITE ON JANUARY 15, 2020 AND FOUND NO WETLANDS.

- PAVEMENT MARKINGS SHALL BE CONSTRUCTED USING WHITE, YELLOW OR BLUE TRAFFIC PAINT (WHERE SPECIFIED) MEETING THE REQUIREMENTS OF AASHTO M248, TYPE F OR EQUAL.
- PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC DEVICES," "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" AND THE AMERICANS WITH DISABILITIES ACT (ADA), LATEST EDITIONS.
- ALL CONSTRUCTION SHALL MEET THE MINIMUM STANDARDS OF THE CITY OF CONCORD & NHDOT'S STANDARD SPECIFICATION FOR ROAD & BRIDGE CONSTRUCTION, LATEST EDITIONS. THE MORE STRINGENT SPECIFICATION SHALL GOVERN.
- ALL BONDS AND FEES SHALL BE PAID/POSTED PRIOR TO INITIATING CONSTRUCTION.
- THE CONTRACTOR SHALL VERIFY ALL BENCHMARKS AND TOPOGRAPHY IN THE FIELD PRIOR TO CONSTRUCTION.
- UNITS AND DRIVEWAYS SHOWN ARE FOR CONCEPTUAL PLANNING PURPOSES ONLY AND WILL BE CONSTRUCTED SEPARATELY FROM THE PRIVATE COMMON DRIVEWAY AND ASSOCIATED UTILITIES SHOWN IN THIS PLAN SET. ACTUAL BUILDING FOOTPRINTS WILL VARY BASED ON THE PREFERENCES OF THE FUTURE HOMEOWNER BUT SHALL NOT EXCEED OR ENROACH OUTSIDE OF THE 2,475 SF AREA SHOWN HEREON. BUILDINGS MAY HAVE GREATER GROSS FLOOR AREAS DUE TO THE PRESENCE OF ADDITIONAL FLOORS. DRIVEWAYS SHALL BE NO WIDER THAN 24' AND SHALL BE LOCATED AS SHOWN SO AS TO ALLOW THE PRIVATE COMMON DRIVEWAY CONTRACTOR TO PROVIDE CURB BREAKS WHERE APPROPRIATE.
- THERE SHALL BE A MINIMUM 50' SEPARATION BETWEEN BUILDINGS AND EACH UNIT SHALL HAVE A DEEDED 500 S.F. PRIVATE YARD AREA.
- LIMITED COMMON AREAS ("LCA") SHOWN HEREON SHALL BE EXCLUSIVE OF BUILDINGS AND ASSOCIATED 500 S.F. PRIVATE YARDS AND SHALL BE MAINTAINED BY THE RESPECTIVE UNIT OWNERS.
- OPEN SPACE SHALL NOT BE FURTHER SUBDIVIDED OR DEVELOPED BEYOND AS DESCRIBED IN THIS PLAN SET.
- THE CONTRACTOR SHALL CONVEY A PRE-CONSTRUCTION MEETING WITH THE CONCORD ENGINEERING SERVICES DIVISION TO DISCUSS CONSTRUCTION REQUIREMENTS, SITE INSPECTIONS, FEES, SCHEDULES, ETC.
- AFTER THE COMPLETION OF CONSTRUCTION, AN AS-BUILT PLAN SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE CONCORD ENGINEERING SERVICES DIVISION.
- A BLACK AND WHITE VERSION OF THIS PLAN SHEET IS INTENDED FOR RECORDING. A COPY OF THE FULL PLAN SET IS ON FILE WITH THE CITY OF CONCORD PLANNING DEPARTMENT.

APPROVED
UNDER THE PROVISIONS OF R.S.A 674:35 AND 674:36
PLANNING BOARD
CITY OF CONCORD, NEW HAMPSHIRE
IN ACCORDANCE WITH A VOTE OF THE BOARD DATED:
APPROVAL OF THIS PLAT IS LIMITED TO LOTS AS SHOWN
CLERK CHAIR



133 Court Street
(603) 433-2335
Portsmouth, NH 03801
www.altus-eng.com



NOT FOR CONSTRUCTION

ISSUED FOR:
DESIGN REVIEW

ISSUE DATE:
OCTOBER 18, 2023

REVISIONS
NO. DESCRIPTION BY DATE
0 SUBMISSION EBS 09/20/23
1 ADDED LCA'S EBS 10/18/23

DRAWN BY: EBS
APPROVED BY: EBS
DRAWING FILE: 5470-SITE.dwg

SCALE:
22" x 34" - 1" = 80'
11" x 17" - 1" = 160'

OWNER:
RYAN TABER
P.O. BOX 2671
CONCORD, NH 03302

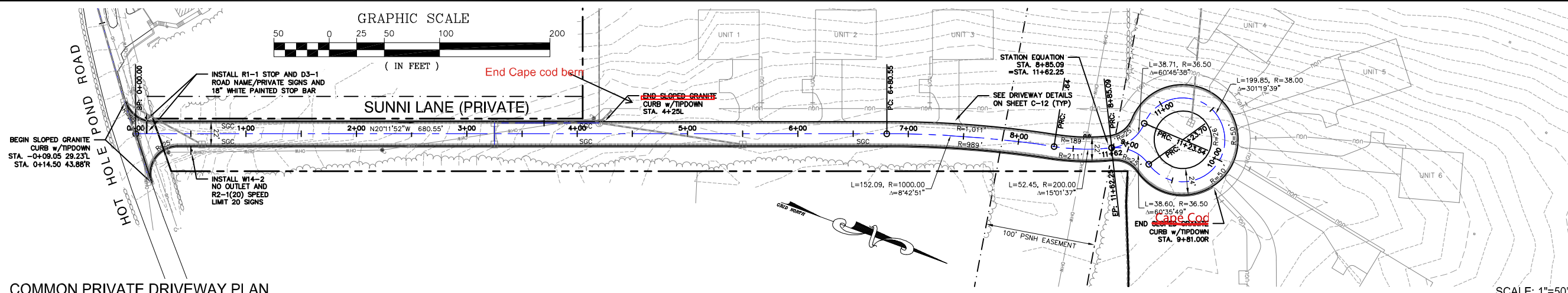
APPLICANT:
HHP DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302

PROJECT:
SHAKER LANDING
CLUSTER SUBDIVISION

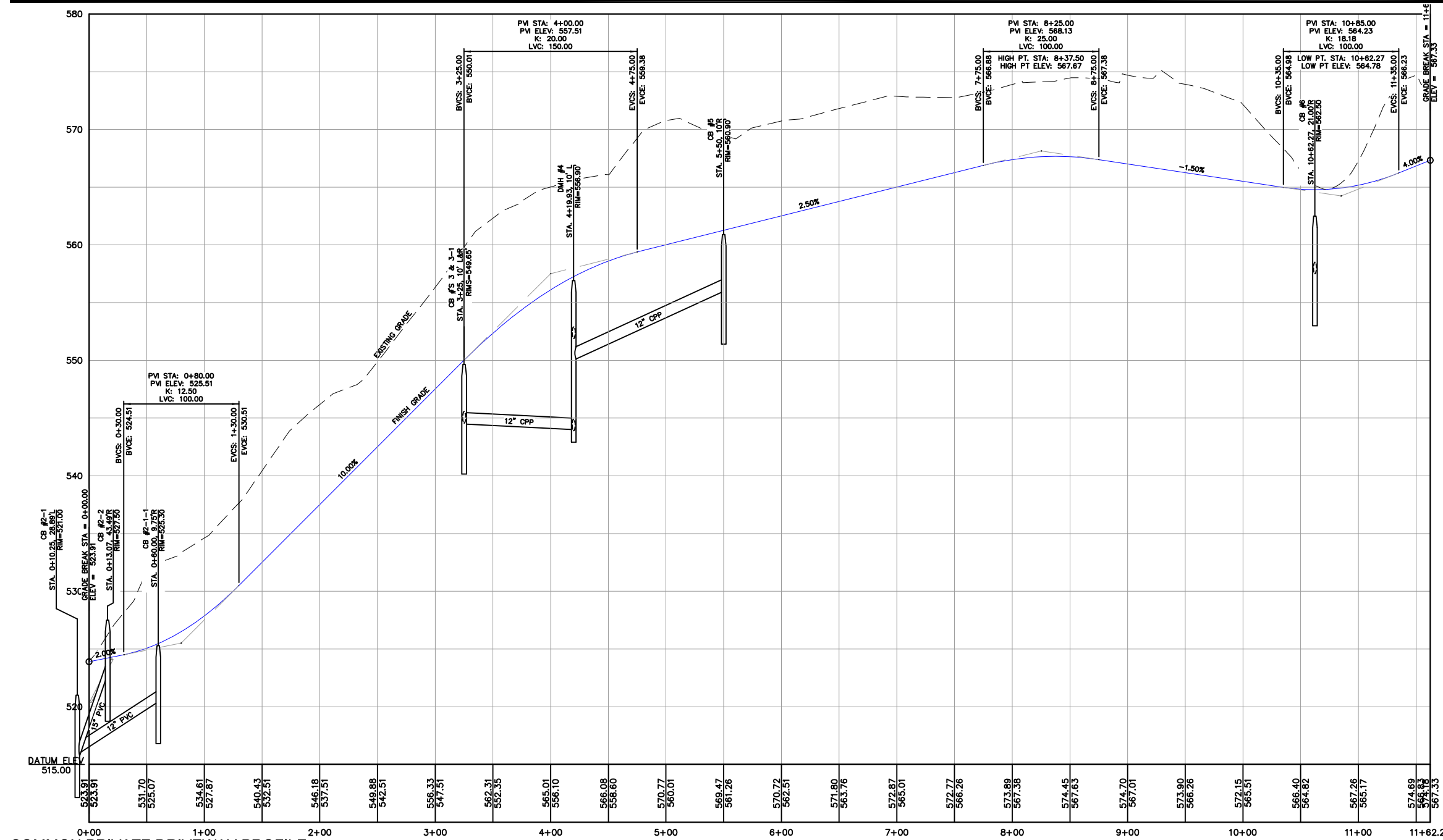
TAX MAP 11Z
LOT 25-1
15 HOT HOLE POND ROAD
CONCORD, NH

TITLE:
CONDOMINIUM
SITE PLAN

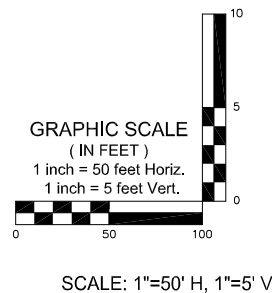
SHEET NUMBER:
C-2




COMMON PRIVATE DRIVEWAY PLAN



COMMON PRIVATE DRIVEWAY PROFILE





133 Court Street
(603) 433-2335

Portsmouth, NH 03801
www.altus-eng.com

NOT FOR CONSTRUCTION

ISSUED FOR: **FINAL APPROVAL**

ISSUE DATE: **FEBRUARY 19, 2025**

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	SUBMISSION	EBS	09/20/23
1	ADJUSTED ALIGNMENT	EBS	10/18/23
2	REVISED PER COMMENTS	EBS	02/23/24
3	CONDITIONS OF APPROVAL	EBS	06/10/24
4	REVISED PER COMMENTS	EBS	10/21/24
5	ADDED OFFSITE	EBS	12/17/24
6	REVISED OFFSITE	EBS	02/19/25

DRAWN BY: EBS

APPROVED BY: EBS

DRAWING FILE: 5470-SITE.dwg

SCALE:
22" x 34" - 1" = 50'
11" x 17" - 1" = 100'

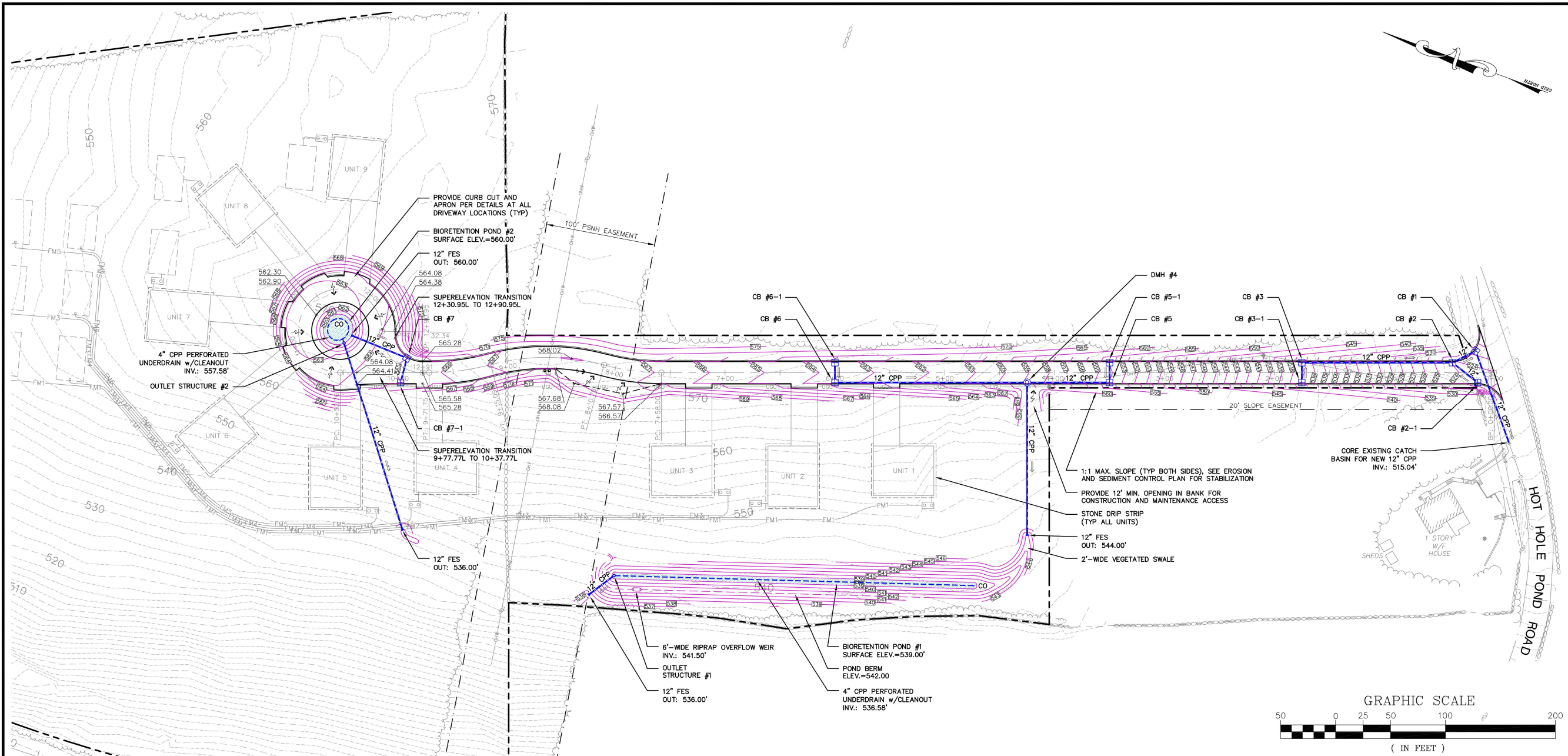
OWNER:
EASTERN DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302

APPLICANT:
EASTERN DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302

PROJECT:
GRANITE RIDGE ESTATES
CLUSTER SUBDIVISION
TAX MAP 11Z
LOT 25-1
15 HOT HOLE POND ROAD
CONCORD, NH

TITLE:
DRIVEWAY PLAN AND PROFILE

SHEET NUMBER:
C-4.1

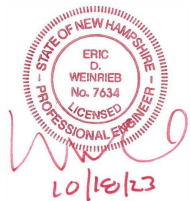
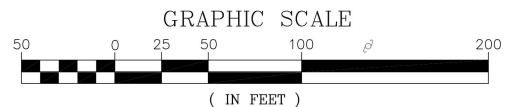


GRADING AND DRAINAGE NOTES

- DO NOT BEGIN CONSTRUCTION UNTIL ALL STATE AND LOCAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.
- PROJECT SUBJECT TO EPA NPDES PHASE II, NOI, SWPPP AND MINIMUM WEEKLY INSPECTIONS REQUIRED. NOI TO BE PREPARED AND SUBMITTED BY CONTRACTOR, SWPPP AND INSPECTIONS TO BE PREPARED AND PERFORMED BY CONTRACTOR. CONTRACTOR SHALL FILE NOI WITH EPA A MINIMUM OF 2 WEEKS PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL READ AND FOLLOW ALL CONDITIONS OF APPROVAL IN THE SITE'S LOCAL, STATE AND FEDERAL PERMITS.
- CONTRACTOR SHALL OBTAIN A "DIGSAFE" NUMBER AT LEAST 72 HOURS PRIOR TO COMMENCING CONSTRUCTION.
- A PRE-CONSTRUCTION CONFERENCE WITH THE DEVELOPER, DESIGN ENGINEER, EARTHWORK CONTRACTOR, DPW AND THE MUNICIPAL ENGINEER SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITY.
- ALL BONDS AND FEES SHALL BE PAID/POSTED PRIOR TO INITIATING CONSTRUCTION.
- ALL BENCHMARKS AND TOPOGRAPHY SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO INITIATING CONSTRUCTION.
- UNLESS OTHERWISE AGREED IN WRITING, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING TEMPORARY BENCHMARKS (TBMS) AND PERFORMING ALL CONSTRUCTION SURVEY LAYOUT.
- PRIOR TO CONSTRUCTION, FIELD VERIFY JUNCTIONS, LOCATIONS AND ELEVATIONS/INVERTS OF ALL EXISTING STORMWATER AND UTILITY LINES. PRESERVE AND PROTECT LINES TO BE RETAINED.
- ALL CONSTRUCTION SHALL MEET THE MINIMUM STANDARDS OF THE LOCAL MUNICIPALITY & NHDOT'S STANDARD SPECIFICATION FOR ROAD & BRIDGE CONSTRUCTION, LATEST EDITIONS. THE MORE STRINGENT SPECIFICATION SHALL GOVERN.
- IN ORDER TO PROVIDE VISUAL CLARITY ON THE PLANS, DRAINAGE AND OTHER UTILITY STRUCTURES MAY NOT BE DRAWN TO SCALE. SYMBOLS MAY NOT BE INDICATIVE OF THE CENTER OF A STRUCTURE, PARTICULARLY WHEN SHOWN ADJACENT TO A CURB LINE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER SIZING AND LOCATION OF ALL STRUCTURES AND IS DIRECTED TO RESOLVE ANY POTENTIAL DISCREPANCY WITH THE ENGINEER PRIOR TO CONSTRUCTION.
- IF SUITABLE, EXCAVATED MATERIALS SHALL BE PLACED AS FILL WITHIN UPLAND AREAS ONLY AND SHALL NOT BE PLACED WITHIN WETLANDS. PLACEMENT OF BORROW MATERIALS SHALL BE IN A MANNER THAT PREVENTS LONG TERM DIFFERENTIAL SETTLEMENT. EXCESSIVELY WET MATERIALS SHALL BE STOCKPILED AND ALLOWED TO DRAIN BEFORE PLACEMENT. FROZEN MATERIAL SHALL NOT BE USED FOR CONSTRUCTION.
- PROTECTION OF SUBGRADE: THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN STABLE, DEWATERED SUBGRADES FOR FOUNDATIONS, PAVEMENT AREAS, UTILITY TRENCHES, AND OTHER AREAS DURING CONSTRUCTION. SUBGRADE DISTURBANCE MAY BE INFLUENCED BY EXCAVATION METHODS, MOISTURE, PRECIPITATION, GROUNDWATER CONTROL, AND CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PREVENT SUBGRADE DISTURBANCE. SUCH PRECAUTIONS MAY INCLUDE DIVERTING STORMWATER RUNOFF AWAY FROM CONSTRUCTION AREAS, REDUCING TRAFFIC IN SENSITIVE AREAS, AND MAINTAINING AN EFFECTIVE DEWATERING PROGRAM. SOILS EXHIBITING HEAVING OR INSTABILITY SHALL BE OVER EXCAVATED TO MORE COMPETENT BEARING SOIL AND REPLACED WITH FREE DRAINING STRUCTURAL FILL. IF THE EARTHWORK IS PERFORMED DURING FREEZING WEATHER, EXPOSED SUBGRADES ARE SUSCEPTIBLE TO FROST. NO FILL OR UTILITIES SHALL BE PLACED ON FROZEN GROUND. THIS WILL LIKELY REQUIRE REMOVAL OF A FROZEN SOIL CRUST AT THE COMMENCEMENT OF EACH DAY'S OPERATIONS. THE FINAL SUBGRADE ELEVATION WOULD ALSO REQUIRE AN APPROPRIATE DEGREE OF INSULATION AGAINST FREEZING.
- ROCK AND LEDGE SHALL BE REMOVED FROM THE ROADWAY TO AT LEAST 2' BELOW FINISH GRADE.
- DRAINAGE PIPE SHALL BE CORRUGATED POLYETHYLENE PIPE ("CPP", TYPE ADS N-12, HANCOR H1-Q OR APPROVED EQUAL).
- ALL FLARED END SECTIONS (FES) SHALL BE METAL OR CONCRETE. HOPE END SECTIONS SHALL NOT BE ACCEPTED.
- ALL PIPES WITH SLOPES OF 9% (0.09'/') OR GREATER SHALL BE INSTALLED WITH ANTI-SEEP COLLARS AT LEAST EVERY 75' ALONG THE PIPE RUN.
- ALL CATCH BASIN, MANHOLE AND OTHER DRAINAGE RIMS SHALL BE SET FLUSH WITH OR NO LESS THAN 0.1' BELOW FINISH GRADE. ANY RIM ABOVE SURROUNDING FINISH GRADE SHALL NOT BE ACCEPTED.
- ALL SPOT GRADES ARE AT FINISH GRADE AND BOTTOM OF CURB WHERE APPLICABLE.
- DRIVEWAY APRONS SHALL BE INSTALLED TO 4' OUTSIDE THE ROADWAY PRIOR TO THE PLACEMENT OF ROADWAY BINDER COURSE PAVING OR CURBING.
- ALL SWALES, STORMWATER PONDS AND THEIR CONTRIBUTING AREAS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- UPON COMPLETION OF CONSTRUCTION, ALL DRAINAGE INFRASTRUCTURE SHALL BE CLEANED OF ALL DEBRIS AND SEDIMENT.
- SEE SHEET C-7 FOR EROSION AND SEDIMENT CONTROL MEASURES.
- SEE SHEET C-12 FOR LEGEND.

DRAINAGE SCHEDULE

OUTLET STRUCTURE #1 30" I.D. CONCRETE BEEHIVE GRATE RIM=541.00' IN: 536.50' (4" UNDERDRAIN) OUT: 536.50' (TO FES) 12" CPP w/FES L=±26' S=0.0179'/'	CB #2-1 4' I.D. CONCRETE w/SUMP TYPE B GRATE RIM=523.40' OUT: 518.40' (TO CB#2) 12" CPP L=±26' S=0.005'/'	CB #5 4' I.D. CONCRETE w/SUMP TYPE F GRATE RIM=553.90' IN: 548.83' (12" FROM CB#5-1) OUT: 548.73' (TO DMH#4) 12" CPP L=±71' S=0.005'/'	CB #7 4' I.D. CONCRETE w/SUMP TYPE B GRATE RIM=564.95' IN: 560.85' (12" FROM CB#7-1) OUT: 560.75' (TO FES) 12" CPP w/FES L=±52' S=0.0144'/'
OUTLET STRUCTURE #2 30" I.D. CONCRETE BEEHIVE GRATE RIM=561.30' IN: 557.50' (4" UNDERDRAIN) OUT: 557.50' (TO FES) 12" CPP L=±178' S=0.1220'/'	CB #3 4' I.D. CONCRETE w/SUMP TYPE F GRATE RIM=536.90' IN: 531.83' (12" FROM CB#3-1) OUT: 531.73' (TO CB#2) 12" CPP L=±134' S=0.1004'/'	CB #5-1 4' I.D. CONCRETE w/SUMP TYPE F GRATE RIM=553.90' OUT: 548.90' (TO CB#5) 12" CPP L=±14' S=0.005'/'	CB #7-1 4' I.D. CONCRETE w/SUMP TYPE B GRATE RIM=564.95' OUT: 560.95' (TO CB#7) 12" CPP L=±20' S=0.005'/'
CB #1 4' I.D. CONCRETE w/SUMP TYPE F GRATE RIM=525.25' IN: 518.07' (12" FROM CB#2) OUT: 517.97' (TO EXISTING CB) 12" CPP L=±87' S=0.0337'/'	CB #3-1 4' I.D. CONCRETE w/SUMP TYPE B GRATE RIM=536.90' IN: 531.90' (TO CB#3) 12" CPP L=±14' S=0.005'/'	DMH #4 4" I.D. RIM=558.75' IN: 549.38' (12" FROM CB#5) IN: 554.75' (12" FROM CB#6) OUT: 548.28' (TO FES) 12" CPP w/FES L=±138' S=0.031'/'	CB #6 4' I.D. CONCRETE w/SUMP TYPE B GRATE RIM=563.35' IN: 558.28' (12" FROM CB#6-1) OUT: 558.18' (TO DMH#4) 12" CPP L=±171' S=0.0201'/'
CB #2 4' I.D. CONCRETE w/SUMP TYPE B GRATE RIM=523.90' IN: 518.27' (12" FROM CB#2-1) IN: 518.27' (12" FROM CB#3) OUT: 518.17' (TO CB#1) 12" CPP L=±20' S=0.005'/'	CB #6-1 4' I.D. CONCRETE w/SUMP TYPE B GRATE RIM=563.35' IN: 558.35' (TO CB#6) 12" CPP L=±14' S=0.005'/'		



NOT FOR CONSTRUCTION

ISSUED FOR:
DESIGN REVIEW

ISSUE DATE:
OCTOBER 18, 2023

REVISIONS	NO.	DESCRIPTION	BY	DATE
	0	SUBMISSION	EBS	09/20/23
	1	ADJUSTED DRIVEWAY	EBS	10/18/23

DRAWN BY: EBS
APPROVED BY: EBS
DRAWING FILE: 5470-SITE.dwg

SCALE:
22" x 34" - 1" = 50'
11" x 17" - 1" = 100'

OWNER:
RYAN TABER
P.O. BOX 2671
CONCORD, NH 03302

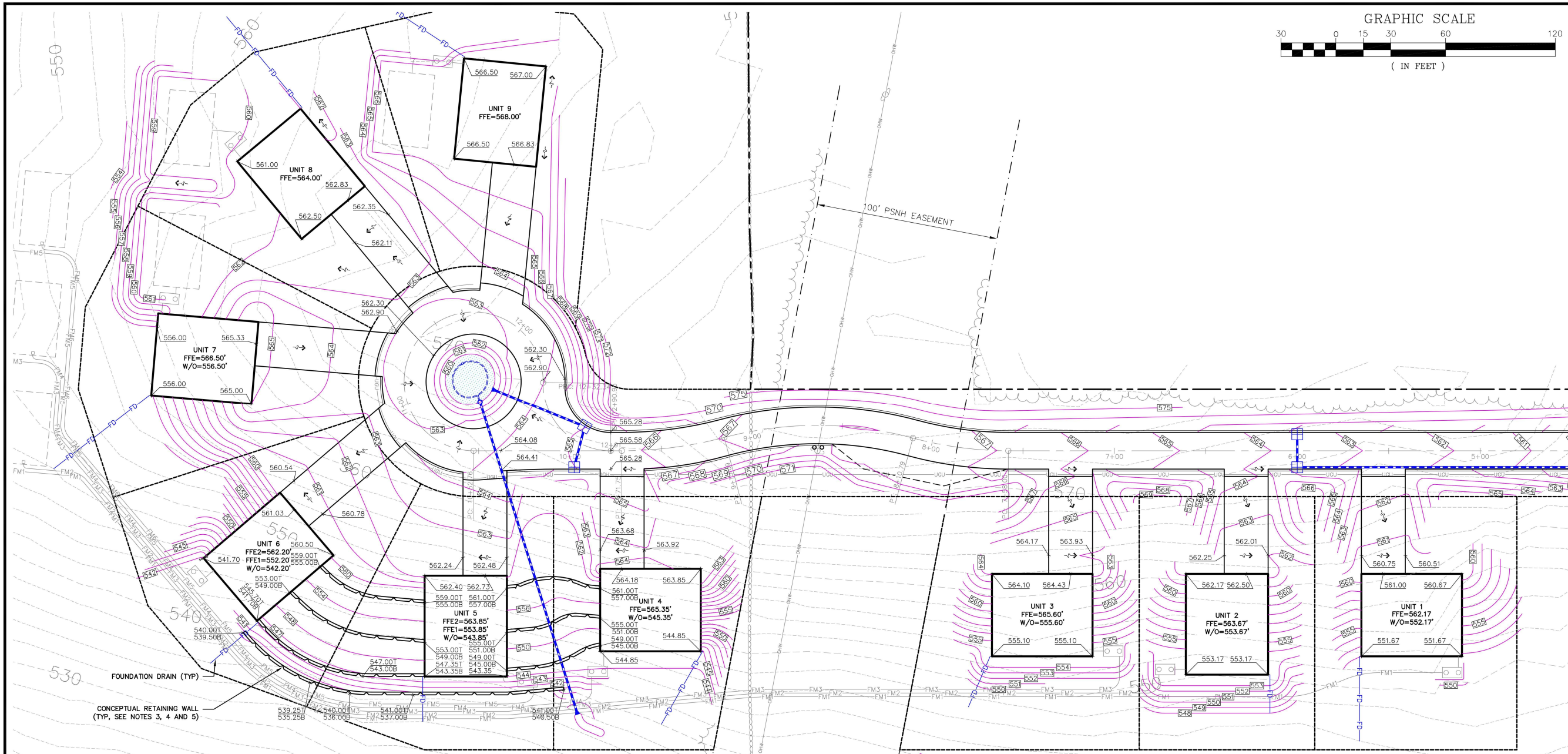
APPLICANT:
HHP DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302

PROJECT:
SHAKER LANDING
CLUSTER SUBDIVISION
TAX MAP 11Z
LOT 25-1
15 HOT HOLE POND ROAD
CONCORD, NH

TITLE:

**GRADING AND
DRAINAGE PLAN**

SHEET NUMBER:
C-4

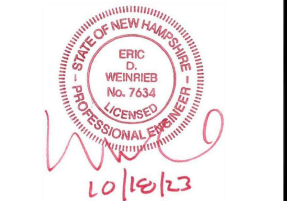


UNIT DEVELOPMENT NOTES

- UNIT GRADING AND ANY RETAINING WALLS SHOWN ARE SCHEMATIC AND INTENDED FOR PLANNING PURPOSES ONLY. ACTUAL GRADING AND RETAINING WALL CONFIGURATIONS AND LOCATIONS MAY VARY DEPENDING ON THE SPECIFIC DESIGNS FOR EACH INDIVIDUAL UNIT AS PREPARED BY OTHERS. IT SHALL BE THE RESPONSIBILITY OF THE INDIVIDUAL UNIT OWNER TO COMPLY WITH ALL APPLICABLE RULES AND REGULATIONS, INCLUDING, BUT NOT LIMITED TO, MUNICIPAL BUILDING SETBACKS AND HOA RULES.
- UNITS TO BE SERVICED BY UNDERGROUND ELECTRIC AND COMMUNICATIONS UTILITIES AND PRIVATE WELLS AND PRIVATE SUBSURFACE SANITARY DISPOSAL SYSTEMS. UNIT OWNERS SHALL BE RESPONSIBLE FOR COORDINATION WITH APPROPRIATE UTILITY COMPANIES AND OBTAINING ALL NECESSARY PERMITS.
- ANY RETAINING WALL IN EXCESS OF FOUR FEET IN HEIGHT SHALL BE BUILT IN ACCORDANCE WITH A DESIGN STAMPED BY A NH LICENSED ENGINEER FAMILIAR WITH WALL DESIGN.
- ALL RETAINING WALLS SHALL BE CONSTRUCTED WITH APPROPRIATE DRAINAGE BEHIND THE WALL IN ORDER TO MINIMIZE THE IMPACT OF GROUNDWATER TO THE WALL AND IT'S FOUNDATION. WALL UNDERDRAINS MAY BE CONNECTED TO BUILDING FOUNDATION DRAINS OR DIRECTED TO OUTFALLS ON STABLE, WELL VEGETATED GROUND.
- RETAINING WALLS AND GRADING THAT EXTEND PAST THE BOUNDARY OF A LIMITED COMMON AREA SHALL REQUIRE APPROVAL FROM THE HOA PRIOR TO CONSTRUCTION.
- ALL HOUSES SHALL BE EQUIPPED WITH STONE DRIP STRIPS WHERE APPROPRIATE TO ENSURE THE INFILTRATION OF ROOF RUNOFF. WHERE GUTTERS ARE REQUIRED AT SELECT LOCATIONS (I.E. OVER DRIVEWAYS, ETC.), DOWNSPOUTS SHALL BE DIRECTED TO THE DRIP STRIPS. GUTTER DOWNSPOUTS DIRECTED TO LAWN, WOODS OR LANDSCAPE AREAS SHALL NOT BE PERMITTED.
- A MINIMUM OF 6" OF SCREENED LOAM AND SEED SHALL BE APPLIED TO ALL AREAS DISTURBED BY CONSTRUCTION THAT ARE OUTSIDE BUILDING, PAVEMENT AND DRIP EDGE LIMITS.
- FOUNDATION DRAIN OUTFALL LOCATIONS ARE CONCEPTUAL. OUTFALLS MAY BE CONSTRUCTED WHERE NECESSARY PROVIDED THEY DISCHARGE TO STABLE, WELL VEGETATED GROUND, DO NOT CONFLICT WITH ANY UTILITIES, AND ARE AT LEAST 5' FROM A SEPTIC TANK OR LEACHFIELD FOR SOLID PIPE OR 25' FOR PERFORATED PIPE OUTFALLS.
- ADDITIONAL DRAINAGE INFRASTRUCTURE MAY BE REQUIRED BASED ON FINAL GRADING AS SPECIFIED BY INDIVIDUAL LOT OWNERS. LOT OWNERS SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND CODE COMPLIANCE OF SAID INFRASTRUCTURE.
- ALL SEDIMENT AND EROSION CONTROL MEASURES SHOWN ARE CONCEPTUAL IN NATURE AND SHOULD BE TAILORED TO THE FINAL HOUSE AND DRIVEWAY DESIGNS SPECIFIED BY THE LOT OWNERS. ALL SEDIMENT AND EROSION CONTROLS SHALL BE INSTALLED IN ACCORDANCE WITH THE NH STORMWATER MANUAL, LATEST EDITION.
- SEE SHEET C-7 FOR EROSION AND SEDIMENT CONTROL MEASURES.
- SEE SHEET C-12 FOR LEGEND.



133 Court Street
(603) 433-2335
Portsmouth, NH 03801
www.altus-eng.com



NOT FOR CONSTRUCTION

ISSUED FOR:
DESIGN REVIEW

ISSUE DATE:
OCTOBER 18, 2023

REVISIONS
NO. DESCRIPTION BY DATE
0 INITIAL SUBMISSION EBS 10/18/23

DRAWN BY: EBS
APPROVED BY: EBS
DRAWING FILE: 5470-SITE.dwg

SCALE:
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11" x 17" - 1" = 60'

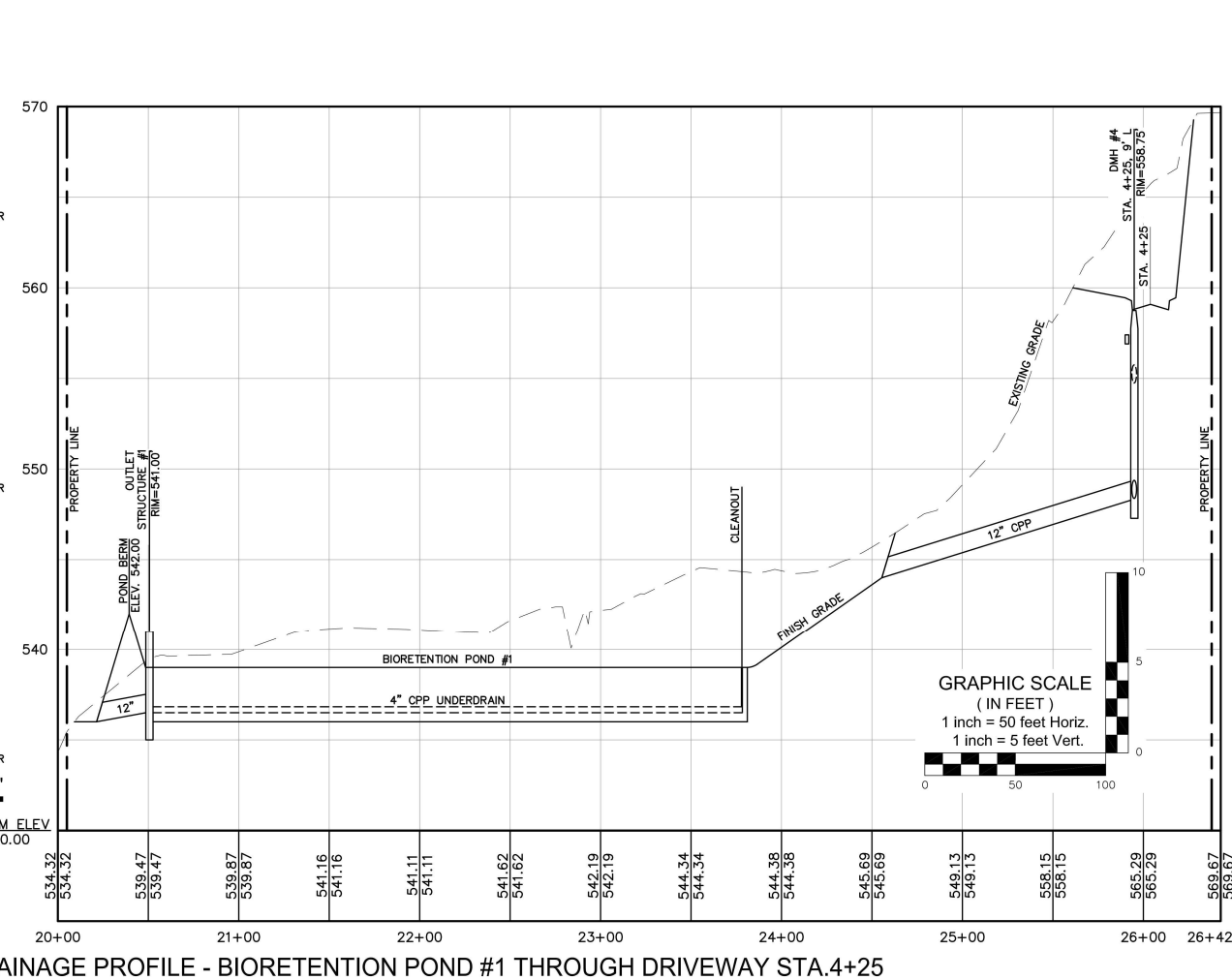
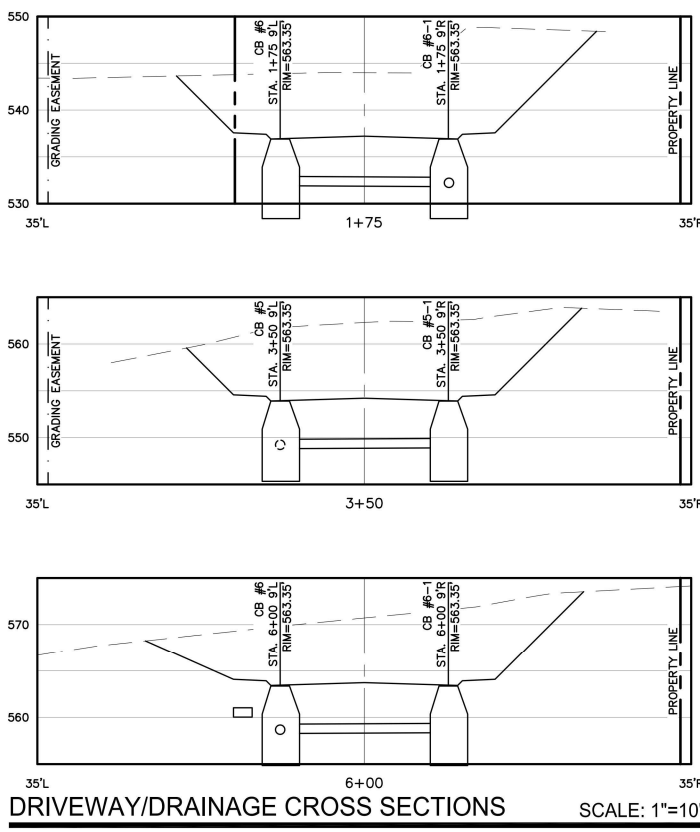
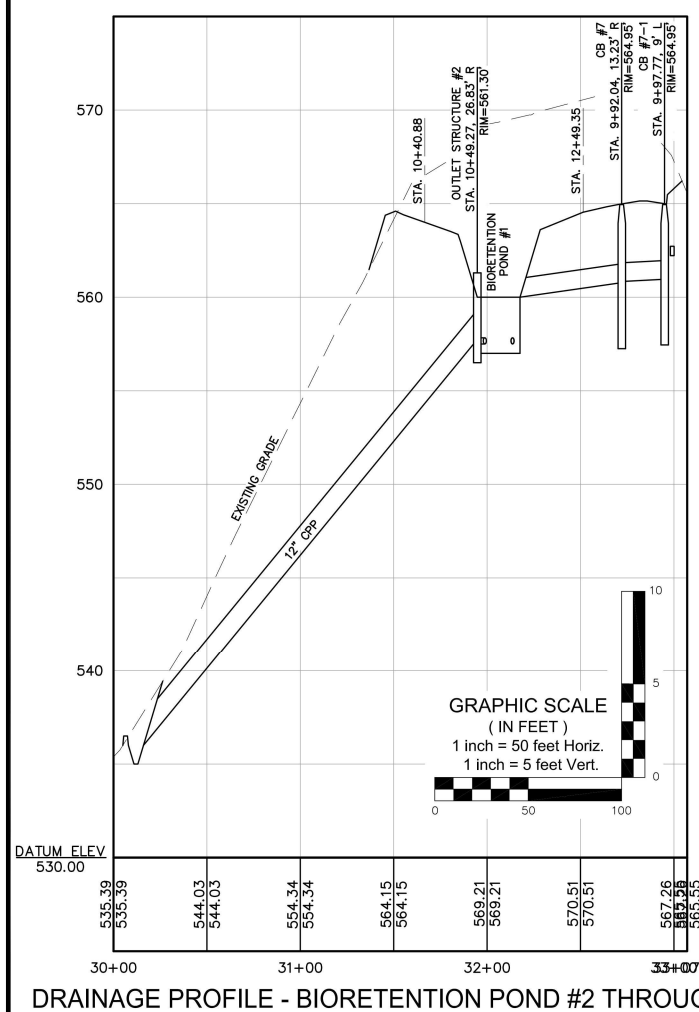
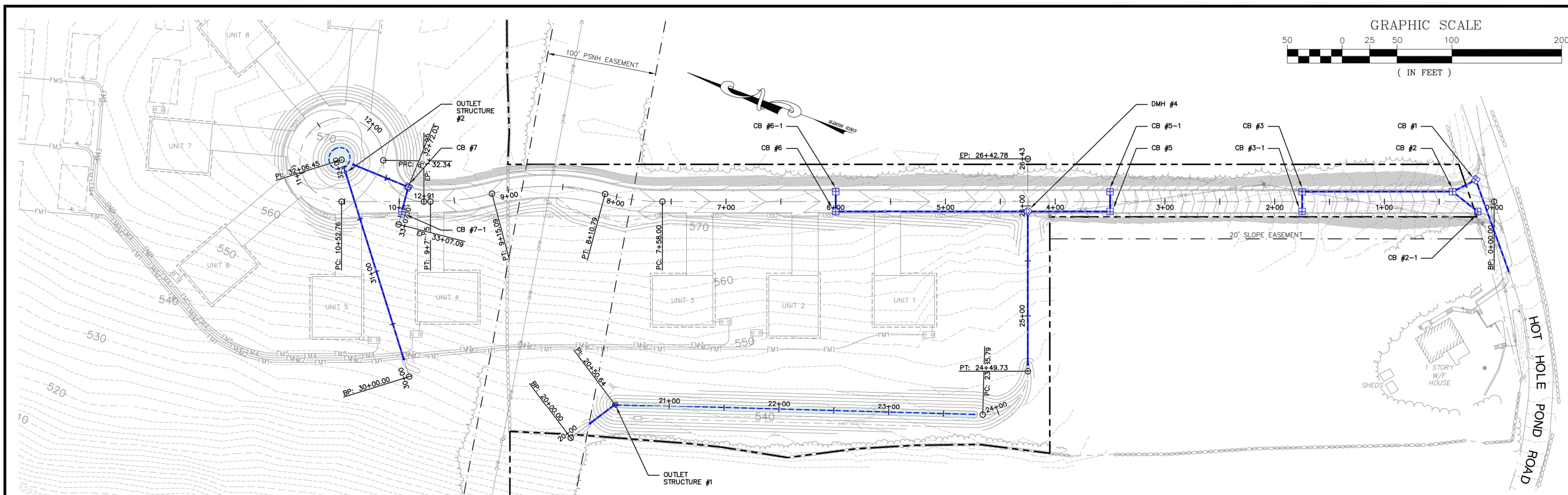
OWNER:
RYAN TABER
P.O. BOX 2671
CONCORD, NH 03302

APPLICANT:
HHP DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302

PROJECT:
SHAKER LANDING
CLUSTER SUBDIVISION
TAX MAP 11Z
LOT 25-1
15 HOT HOLE POND ROAD
CONCORD, NH

TITLE:
CONCEPTUAL UNIT
GRADING PLAN

SHEET NUMBER:
C-5



133 Court Street
(603) 433-2335

Portsmouth, NH 03801
www.altus-eng.com

NOT FOR CONSTRUCTION

ISSUED FOR: **DESIGN REVIEW**

ISSUE DATE: **OCTOBER 18, 2023**

REVISIONS	NO.	DESCRIPTION	BY	DATE
0	INITIAL SUBMISSION	EBS	09/20/23	
1	ADDED LCA'S	EBS	10/18/23	

DRAWN BY: _____ EBS

APPROVED BY: _____ EBS

DRAWING FILE: 5470-SITE.dwg

SCALE:
22" x 34" - 1" = 50'
11" x 17" - 1" = 100'

OWNER:
RYAN TABER
P.O. BOX 2671
CONCORD, NH 03302

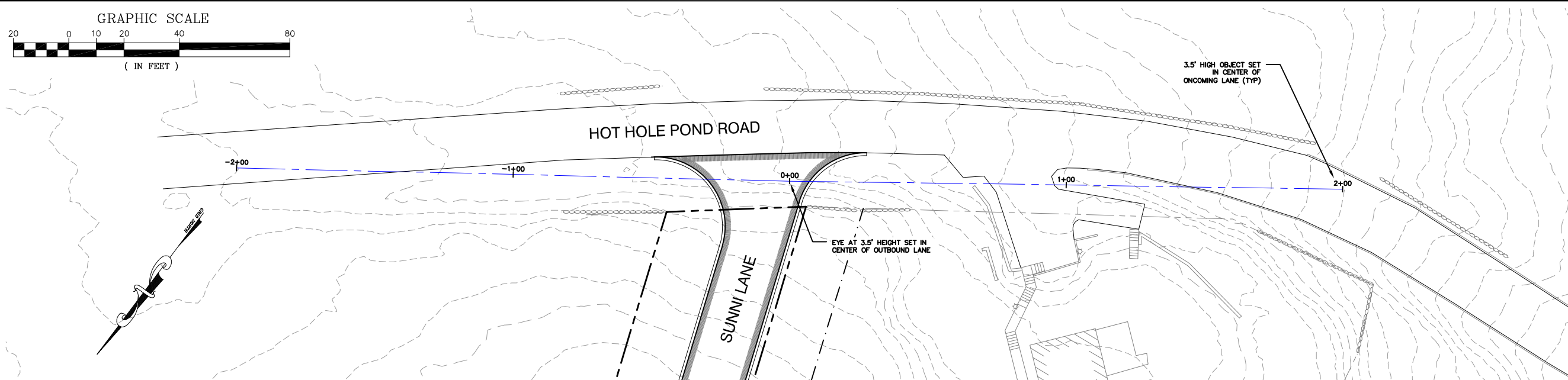
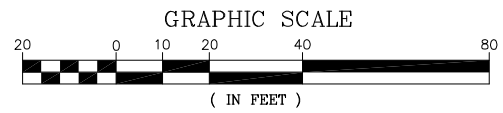
APPLICANT:
HHP DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302

PROJECT:
SHAKER LANDING
CLUSTER SUBDIVISION
TAX MAP 11Z
LOT 25-1
15 HOT HOLE POND ROAD
CONCORD, NH

TITLE:
DRAINAGE
CROSS SECTIONS
AND PROFILES

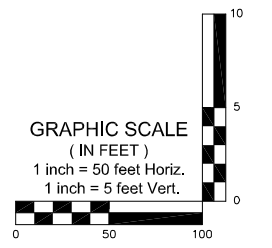
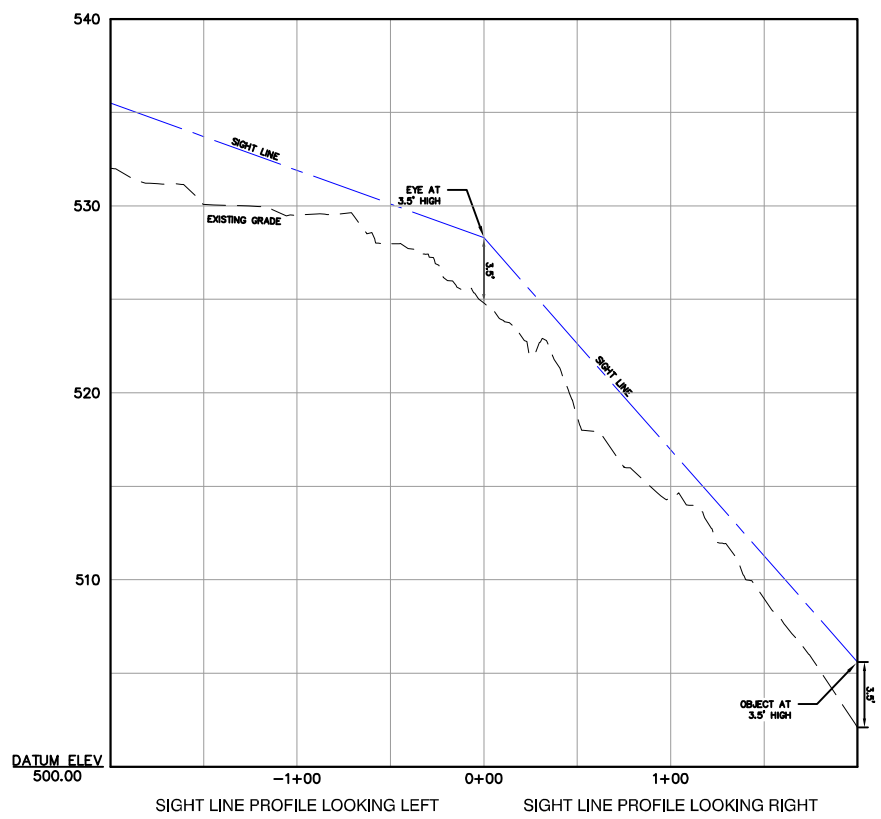
SHEET NUMBER:
C-6

P5470



COMMON PRIVATE DRIVEWAY ACCESS PLAN

SCALE: 1"=20'



SCALE: 1"=50' H, 1"=5' V

SIGHT DISTANCE PROFILE

ALTUS
ENGINEERING

133 Court Street
(603) 433-2335

Portsmouth, NH 03801
www.altus-eng.com

NOT FOR CONSTRUCTION

ISSUED FOR:
FINAL APPROVAL

ISSUE DATE:
DECEMBER 17, 2024

REVISIONS		
NO.	DESCRIPTION	BY DATE
0	CONDITIONS OF APPROVAL	EBS 06/10/24
1	REV. PROJECT NAME	EBS 12/17/24

DRAWN BY: _____ EBS
APPROVED BY: _____ EBS
DRAWING FILE: 5470-SITE.dwg

SCALE:
22" x 34" - 1" = 50'
11" x 17" - 1" = 100'

OWNER:
EASTERN DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302

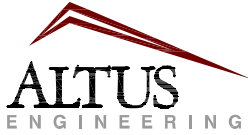
APPLICANT:
EASTERN DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302

PROJECT:
GRANITE RIDGE ESTATES
CLUSTER SUBDIVISION
TAX MAP 11Z
LOT 25-1
15 HOT HOLE POND ROAD
CONCORD, NH

TITLE:
ROADWAY ACCESS PLAN

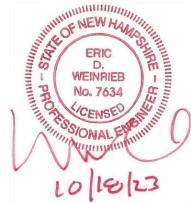
SHEET NUMBER:
C-4.2

P5470



133 Court Street
(603) 433-2335

Portsmouth, NH 03801
www.altus-eng.com



NOT FOR CONSTRUCTION

ISSUED FOR:

DESIGN REVIEW

ISSUE DATE:

OCTOBER 18, 2023

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	SUBMISSION	EBS	09/20/23
1	REMOVE EONE, ADD TREE	EBS	10/18/23

DRAWN BY: EBS

APPROVED BY: EBS

DRAWING FILE: 5470-SITE.dwg

SCALE:

NOT TO SCALE

OWNER:

**RYAN TABER
P.O. BOX 2671
CONCORD, NH 03302**

APPLICANT:

**HHP DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302**

PROJECT:

**SHAKER LANDING
CLUSTER SUBDIVISION**

**TAX MAP 11Z
LOT 25-1**

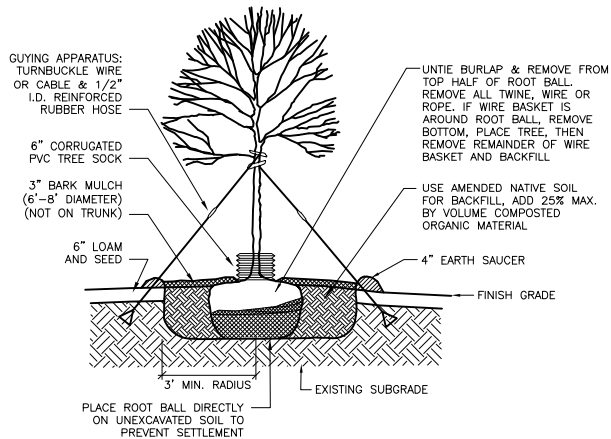
**15 HOT HOLE POND ROAD
CONCORD, NH**

TITLE:

DETAIL SHEET

SHEET NUMBER:

C-13



NOTES:

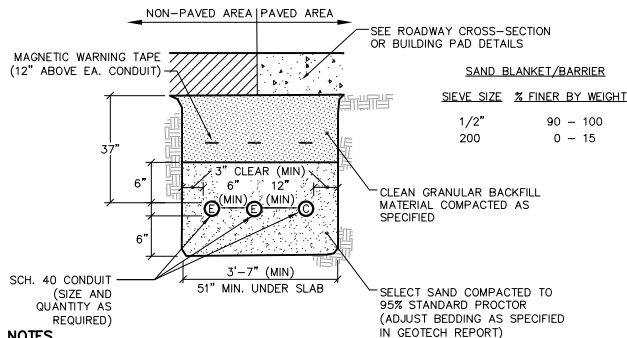
- PLANT TREE SUCH THAT TOP OF ROOT BALL IS FLUSH WITH GRADE (1" - 2" HIGHER IN SLOW DRAINING SOIL). TRUNK FLARE MUST BE VISIBLE AT THE TOP OF THE ROOT BALL.
- TREE SHALL BE SET PLUMB.
- THREE FLAGGED GUY WIRES TO BE EQUALLY SPACED ABOUT TREE. WOODEN STAKES (24" LENGTH) MAY BE SUBSTITUTED FOR METAL ANCHORS. EITHER OPTION SHALL BE DRIVEN OUTSIDE THE ROOT BALL, PREFERABLY IN UNEXCAVATED SOIL AND REMOVED AT THE END OF THE FIRST GROWING SEASON OR WHEN TREE IS STABILIZED.
- COORDINATE PRUNING WITH LANDSCAPE ARCHITECT WHEN POSSIBLE. DO NOT HEAVILY PRUNE THE TREE AT PLANTING. DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN. PRUNING OF DEAD OR BROKEN BRANCHES OR CO-DOMINANT LEADERS IS PERMITTED.
- REMOVE PVC TREE SOCK AND GUYS AFTER ONE GROWING SEASON.

DECIDUOUS TREE PLANTING

NOT TO SCALE

STANDARD TRENCH NOTES

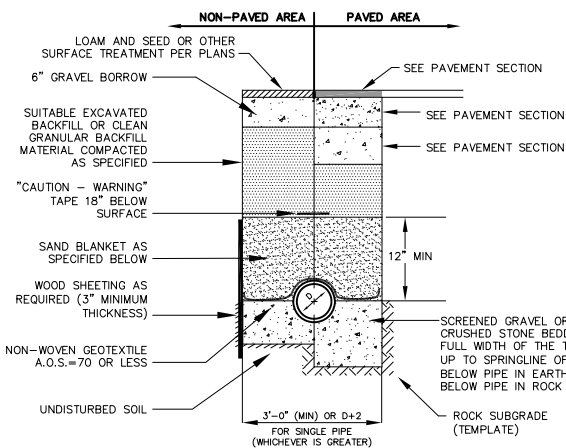
- ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE: BACKFILL AS STATED IN THE TECHNICAL SPECIFICATIONS OR AS SHOWN ON THE DRAWING.
- BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING THE GRADATION SHOWN IN THE TRENCH DETAIL. WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, SCREENED GRAVEL OR CRUSHED STONE 1-1/2 INCH TO 1/2 INCH SHALL BE USED.
- SAND BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER MEETING THE GRADATION SHOWN IN THE TRENCH DETAIL. BLANKET MAY BE REPLACED WITH BEDDING MATERIAL FOR CAST-IRON, DUCTILE IRON, AND REINFORCED CONCRETE PIPE PROVIDED THAT NO STONE LARGER THAN 2" IS IN CONTACT WITH THE PIPE AND THE GEOTEXTILE IS RELOCATED ACCORDINGLY.
- SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT, OR CLAY, ALL EXCAVATED LEDGE MATERIAL, ALL ROCKS OVER 6 INCHES IN LARGEST DIMENSION, AND ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION. IN CROSS COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK, OR PEAT, IF SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE AND POSSIBLE RECONSTRUCTION WILL BE PRESERVED.
- BASE COURSE AND PAVEMENT SHALL MEET THE REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES - DIVISIONS 300 AND 400 RESPECTIVELY.
- SHEETING, IF REQUIRED: WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION 1 FOOT ABOVE THE TOP OF PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAT 1 FOOT ABOVE THE TOP OF THE PIPE.
- W = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES IN NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE OUTSIDE DIAMETER (O.D.) ALSO, W SHALL BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.
- FOR CROSS COUNTRY CONSTRUCTION, BACKFILL, FILL AND/OR LOAM SHALL BE MOUNDED TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- CONCRETE FOR ENCASEMENT SHALL CONFORM TO THE NEW HAMPSHIRE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS STANDARD SPECIFICATION REQUIREMENTS FOR CLASS A (3000#) CONCRETE AS FOLLOWS:
CEMENT: 6.0 BAGS PER CUBIC YARD
WATER: 5.75 GALLONS PER BAG
CEMENT MAXIMUM SIZE OF AGGREGATE: 1 INCH
CONCRETE ENCASEMENT IS NOT ALLOWED FOR PVC PIPE.
- CONCRETE FULL ENCASEMENT: IF FULL ENCASEMENT IS UTILIZED, DEPTH OF CONCRETE BELOW PIPE SHALL BE 1/4 I.D. (4" MINIMUM). BLOCK SUPPORT SHALL BE SOLID CONCRETE BLOCKS.
- NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES DESIGN STANDARDS REQUIRE TEN FEET (10') SEPARATION BETWEEN WATER AND SEWER. REFER TO TOWN'S STANDARD SPECIFICATIONS FOR METHODS OF PROTECTION IN AREAS THAT CANNOT MEET THESE REQUIREMENTS.



NOTES

- ALL CONDUIT IS TO BE SCHEDULE 40 PVC, ELECTRICAL GRADE, GRAY IN COLOR AND INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS. A 10-FOOT HORIZONTAL SECTION OF RIGID GALVANIZED STEEL CONDUIT WILL BE REQUIRED AT EACH SWEEP, UNLESS IN THE OPINION OF THE SERVICE PROVIDER DESIGNER, THE SWEEP-PVC JOINT IS NOT SUBJECT TO FAILURE DURING PULLING OF THE CABLE. ALL JOINTS ARE TO BE WATERTIGHT.
- ALL 90 DEGREE SWEEPS WILL BE MADE WITH RIGID GALVANIZED STEEL WITH A MINIMUM RADIUS OF 36 INCHES FOR PRIMARY CABLES AND 24 INCHES FOR SECONDARY CABLES.
- BACKFILL MAY BE MADE WITH EXCAVATED MATERIAL OR COMPARABLE, UNLESS MATERIAL IS DEEMED UNSUITABLE BY SERVICE PROVIDER. BACKFILL SHALL BE FREE OF FROZEN LUMPS, ROCKS, DEBRIS, AND RUBBISH. ORGANIC MATERIAL SHALL NOT BE USED AS BACKFILL. BACKFILL SHALL BE IN 6-INCH LAYERS AND THOROUGHLY COMPACTED.
- A SUITABLE PULLING STRING, CAPABLE OF 300 POUNDS OF PULL, MUST BE INSTALLED IN THE CONDUIT BEFORE SERVICE PROVIDER IS NOTIFIED TO INSTALL CABLE. THE STRING SHOULD BE BLOWN INTO THE CONDUIT AFTER THE RUN IS ASSEMBLED TO AVOID BONDING THE STRING TO THE CONDUIT. A MINIMUM OF TWENTY-FOUR (24") INCHES OF ROPE SLACK SHALL REMAIN AT THE END OF EACH DUCT. PULL ROPE SHALL BE INSTALLED IN ALL CONDUIT FOR FUTURE PULLS. PULL ROPE SHALL BE NYLON ROPE HAVING A MINIMUM TENSILE STRENGTH OF THREE HUNDRED (300#) LBS.
- SERVICE PROVIDER SHALL BE GIVEN THE OPPORTUNITY TO INSPECT ALL CONDUIT PRIOR TO BACKFILL. THE CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS SHOULD SERVICE PROVIDER BE UNABLE TO INSTALL ITS CABLE IN A SUITABLE MANNER.
- TYPICAL CONDUIT SIZES ARE 3-INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4-INCH FOR THREE PHASE SECONDARY, AND 5-INCH FOR THREE PHASE PRIMARY. HOWEVER, SERVICE PROVIDERS MAY REQUIRE DIFFERENT NUMBERS, TYPES AND SIZES OF CONDUIT THAN THOSE SHOWN HERE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL CONDUIT SIZES, TYPES AND NUMBERS WITH EACH SERVICE PROVIDER PRIOR TO ORDERING THEM.
- ROUTING OF CONDUIT, LOCATION OF MANHOLES, TRANSFORMERS, CABINETS, HANDHOLES, ETC., SHALL BE DETERMINED BY SERVICE PROVIDER DESIGN PERSONNEL. THE CONTRACTOR SHALL COORDINATE WITH ALL SERVICE PROVIDERS PRIOR TO THE INSTALLATION OF ANY CONDUIT.
- ALL CONDUIT INSTALLATIONS MUST CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRIC SAFETY CODE, STATE AND LOCAL CODES AND ORDINANCES, AND WHERE APPLICABLE, THE NATIONAL ELECTRIC CODE. WHERE REQUIRED BY UTILITY PROVIDER, CONDUIT SHALL BE SUPPORTED IN PLACE USING PIPE STANCHIONS PLACED EVERY FIVE (5) FEET ALONG THE CONDUIT RUN.
- UNDER A BUILDING SLAB THE CONDUIT SHALL BE ENCASED IN 8" OF CONCRETE ON ALL SIDES.
- ALL CONDUIT TERMINATIONS SHALL BE CAPPED TO PREVENT DEBRIS FROM ENTERING CONDUIT.

ELECTRIC / COMMUNICATION TRENCH NOT TO SCALE



NOTES

- BACKFILL MATERIAL BELOW PAVED OR CONCRETE AREAS, BEDDING MATERIAL, AND SAND BLANKET SHALL BE COMPACTED TO NOT LESS THAN 95% OF AASHTO T 99, METHOD C. SUITABLE BACKFILL MATERIAL BELOW LOAM AREAS SHALL BE COMPACTED TO NOT LESS THAN 90% OF AASHTO T 99, METHOD C.
- INSULATE GRAVITY SEWER AND FORCEMAINS WHERE THERE IS LESS THAN 5'-0" OF COVER WITH 2" THICK CLOSED CELL RIGID BOARD INSULATION, 18" ON EACH SIDE OF PIPE.
- MAINTAIN 12" MINIMUM HORIZONTAL SEPARATION AND WIDEN TRENCH ACCORDINGLY IF MULTIPLE PIPES ARE IN TRENCH.

SAND BLANKET/BARRIER	
SIEVE SIZE	% FINER BY WEIGHT
1/2"	90 - 100
200	0 - 15

SCREENED GRAVEL OR CRUSHED STONE BEDDING*	
SIEVE SIZE	% PASSING BY WEIGHT
1"	100
3/4"	90 - 100
3/8"	20 - 55
# 4	0 - 10
# 8	0 - 5

* EQUIVALENT TO STANDARD STONE SIZE #67 - SECTION 703 OF NHDOT STANDARD SPECIFICATIONS

DRAINAGE, SEWER & FORCEMAIN TRENCH

NOT TO SCALE

LABEL	QTY	NAME	LATIN	SIZE
A	12	OCTOBER GLORY MAPLE	ACER RUBRUM 'OCTOBER GLORY'	2.5-3" CAL.
B	12	GREEN MOUNTAIN SUGAR MAPLE	ACER SACC. 'GREEN MOUNTAIN'	2.5-3" CAL.
C	11	GREEN ASH	FRAXINUS PENNSYLVANICA	2.5-3" CAL.
D	10	LONDON PLANE TREE	PLATANUS X ACERIFOLIA	2.5-3" CAL.
	150,000	SEED ALL DISTURBED AREAS		(SF)

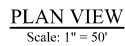
Civil Engineer:
Altus Engineering
133 Court Street
Portsmouth, NH 03801
(603) 433-2335

13 HOL HOLE Pond Road, Concord, New Hampshire

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Job # 187	Dwg. No.
Date: Oct. 17, 2023	L1.0
Scale: As Shown	
Drawn: SS	
Checked: SS	

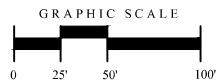
ISSUED FOR PLANING BOARD SUBMISSION 10-17-23



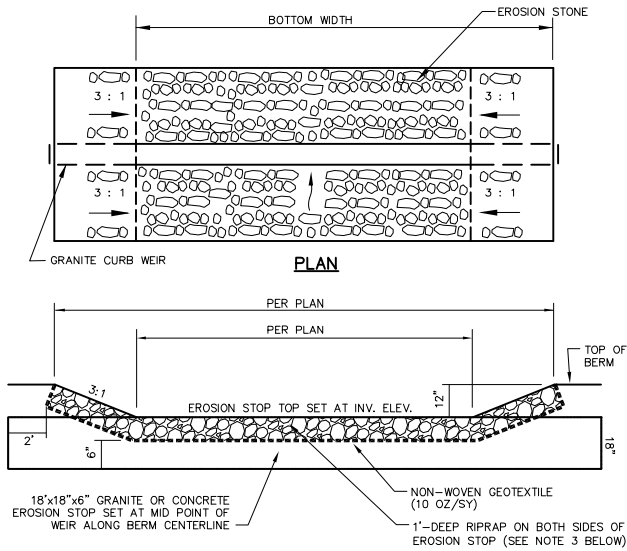
1. THE LANDSCAPE CONTRACTOR SHALL SUPPLY ALL PLANTS IN QUANTITIES SUFFICIENT TO COMPLETE THE WORK SHOWN ON THE PLAN.
2. ANY SUBSTITUTION OF SPECIFIED PLANTS SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT. ONLY NATIVE SPECIES AND/OR VARIETIES WILL BE ACCEPTABLE.
3. ALL TREE, SHRUB, VINE, AND PLANT BED (GROUNDCOVERS, PERENNIALS, BULBS, ETC.) LOCATIONS SHALL BE STAKED OR MARKED BY CONTRACTOR AND THEN APPROVED BY THE LANDSCAPE ARCHITECT IN THE FIELD PRIOR TO PLANTING. CONTRACTOR MUST GIVE A MINIMUM 3 DAY NOTICE BETWEEN STAKING AND PLANTING.
4. CHALK MARK NORTH AT TREE BASE PRIOR TO DIGGING AT NURSERY. REPLANT ON SITE WITH SAME NORTH ORIENTATION FOR ALL TREES.
5. ALL PLANTS INSTALLED SHALL MEET THE SPECIFICATIONS OF THE AMERICAN STANDARD FOR NURSERY STOCK (LATEST ADDITION) AS SET FORTH BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
6. ALL PLANTS SHALL BE DELIVERED TO THE SITE FOR REVIEW BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
7. THE LANDSCAPE CONTRACTOR IS ADVISED OF THE EXISTENCE OF UNDERGROUND UTILITIES. THE LOCATION OF WHICH SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY EXCAVATION OPERATIONS. SHOULD THE LOCATION OF PROPOSED PLANTINGS CONFLICT WITH ANY OF SAID UTILITIES, ADJUST PLANT LOCATIONS ACCORDINGLY AFTER CONSULTATION WITH THE LANDSCAPE ARCHITECT.

9. MULCH PLANTING BEDS AND TREE PITS WITH 3" FINELY SHREDDED AND AGED BARK MULCH OR AS SPECIFIED ON THE PLAN.
10. ALL DISTURBED LAWN AREAS TO BE LOAMED AND SODDED AS NECESSARY AT NO ADDITIONAL COST TO OWNER(S).
11. GRADES SHOWN REPRESENT PROPOSED GRADES PER CONTRACT. CONTRACTOR TO VERIFY GRADES AS NEEDED.
12. PLANT MATERIALS SHALL BE GUARANTEED FOR ONE (1) YEAR AFTER PLANTING. ANY DEAD, UNSIGHTLY, OR UNHEALTHY PLANTS SHALL BE REPLACED IN KIND AT NO COST TO THE OWNER(S).
13. THE CONTRACTOR SHALL REPLACE OR REPAIR TO ORIGINAL CONDITION ANY AND ALL UTILITIES, PAVING, CURBING, ETC., DAMAGED AS A RESULT OF THEIR OPERATIONS AT NO ADDITIONAL COST TO THE OWNER(S).
14. A PRE-CONSTRUCTION MEETING SHALL BE HELD PRIOR TO LANDSCAPE CONTRACTOR BEGINNING CONSTRUCTION OR ORDERING PLANT MATERIALS.
15. PLANTING PLAN IS DIAGRAMMATIC IN NATURE. FINAL PLACEMENT OF PLANTS TO BE APPROVED BY THE LANDSCAPE ARCHITECT IN THE FIELD.

1. THE FOLLOWING GENERAL PRACTICES SHALL BE USED TO ESTABLISH LAWNS. FOR MORE DETAILED SPECIFIC REQUIREMENTS, REFER TO PROJECT MANUAL AND WRITTEN EROSION AND SEDIMENTATION CONTROL PLAN.
2. ALL DISTURBED AREAS ON-SITE NOT COVERED BY BUILDINGS OR PAVED AREAS SHALL RECEIVE A MINIMUM OF 4" OF LOAM AND SEED, UNLESS DETAILED OR SPECIFIED ELSEWHERE.
3. ALL FINAL SEEDING SHALL BE COMPLETED WITHIN SEVEN (7) DAYS FOLLOWING THE FINAL GRADING.
4. FOR LAWN CONSTRUCTION SPECIFICATIONS, SOIL AMENDMENTS, SEED MIX AND APPLICATION RATES, REFER TO THE PROJECT MANUAL AND THE "EROSION AND SEDIMENTATION CONTROL PLAN".
5. ALL AREAS SHALL BE MULCHED IMMEDIATELY AFTER SEEDING. MULCHING SHALL BE MONITORED. IF MULCHING PROVES TO BE INEFFECTIVE, THEN NETTING AND MATTING SHALL BE USED IN ITS PLACE.
6. CONSTRUCTION SHALL BE PLANNED TO ELIMINATE THE NEED FOR SEEDING BETWEEN OCTOBER 1 AND APRIL 15. DORMANT SEEDING SHALL NOT BE USED UNLESS APPROVED BY OWNER'S REPRESENTATIVE.
7. SHOULD DORMANT SEEDING BE NECESSARY, THE SPECIFIED SEED APPLICATION RATE SHALL BE DOUBLED.
8. FOR LATE SEEDING OR DORMANT SEEDING, ALL FERTILIZING, SEEDING, AND MULCHING SHALL BE DONE ON THE SAME DAY IMMEDIATELY AFTER THE LOAM IS SPREAD. FINAL GRADING SHALL BE LIMITED TO AREAS WHICH CAN BE COMPLETED AND SEEDED THE SAME DAY.





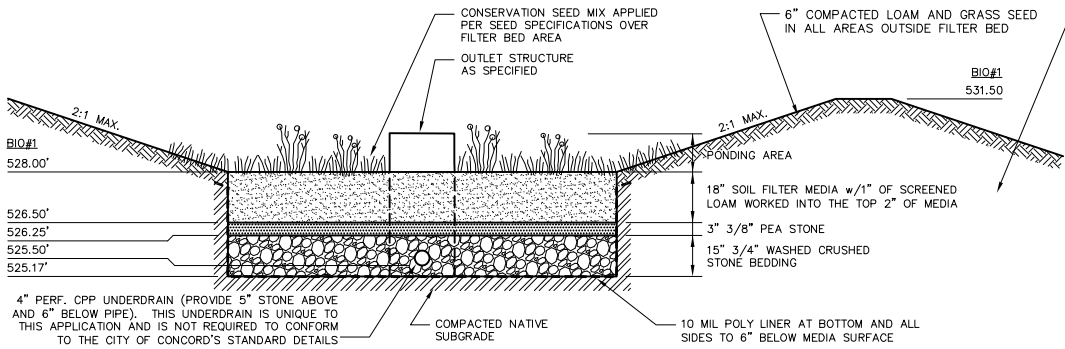


1. CONSTRUCT EMERGENCY OVERFLOW WEIR TO THE WIDTHS AND LENGTHS SHOWN ON THE PLAN.
2. THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIPRAP SHALL BE PREPARED TO LINES AND GRADES SHOWN ON THE PLANS.
3. UNLESS OTHERWISE SPECIFIED OR DIRECTED, RIPRAP USED FOR THE EMERGENCY OVERFLOW WEIR SHALL MEET THE FOLLOWING GRADATION:

SIZE	PERCENT PASSING BY WEIGHT
4"	90-100
2"	0-15

4. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE EROSION STONE. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 18 INCHES.
5. THE EROSION STONE MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.

RIPRAP SPILLWAY / OVERFLOW WEIR NOT TO SCALE



NOTES

1. WHEN CONTRACTOR EXCAVATES BIORETENTION POND AREA TO SUBGRADE, DESIGN ENGINEER SHALL PERFORM SUBSURFACE EVALUATION PRIOR TO THE PLACEMENT OF ANY SELECT MATERIAL OR OTHER BACKFILL.
2. SOIL FILTER MEDIA SHALL EITHER OPTION A OR OPTION B AT CONTRACTOR'S DISCRETION.
3. DO NOT PLACE BIORETENTION POND INTO SERVICE UNTIL ITS SIDE SLOPES AND CONTRIBUTING AREAS HAVE BEEN STABILIZED.
4. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES TO THE BIORETENTION POND DURING ANY STAGE OF CONSTRUCTION.
5. DO NOT TRAFFIC EXPOSED SURFACES OF BIORETENTION POND WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATION ACTIVITIES WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE BASIN.
6. POND BERMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STORMWATER POND BERM DETAIL.

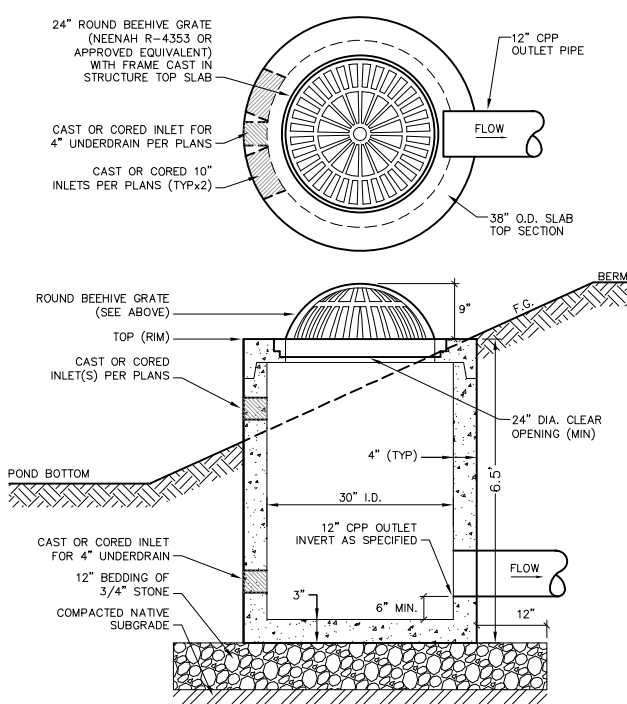
MAINTENANCE REQUIREMENTS

- SYSTEMS SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND FOLLOWING ANY RAINFALL EXCEEDING 2.5 INCHES IN A 24-HOUR PERIOD, WITH MAINTENANCE OR REHABILITATION CONDUCTED AS A WARRANTED BY SUCH INSPECTION.
- PRETREATMENT MEASURES SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND CLEANED OF ACCUMULATED SEDIMENT AS WARRANTED BY INSPECTION, BUT NO LESS THAN ONCE ANNUALLY.
- AT LEAST ONCE ANNUALLY, SYSTEM SHOULD BE INSPECTED FOR DRAWDOWN TIME. IF BIORETENTION SYSTEM DOES NOT DRAIN WITHIN 72-HOURS FOLLOWING A RAINFALL EVENT, THEN A QUALIFIED PROFESSIONAL SHOULD ASSESS THE CONDITION OF THE FACILITY TO DETERMINE MEASURES REQUIRED TO RESTORE FILTRATION FUNCTION OR INFILTRATION FUNCTION (AS APPLICABLE), INCLUDING BUT NOT LIMITED TO REMOVAL OF ACCUMULATED SEDIMENTS OR RECONSTRUCTION OF THE FILTER MEDIA.
- VEGETATION SHOULD BE INSPECTED AT LEAST ANNUALLY, AND MAINTAINED IN HEALTHY CONDITION, INCLUDING, WEED WHACKING, REMOVAL, AND REPLACEMENT OF DEAD OR DISEASED VEGETATION, AND REMOVAL OF INVASIVE SPECIES. BERM AREAS ARE TO BE MOWED TWICE ANNUALLY.

DESIGN REFERENCES

- UNH STORMWATER CENTER
- EPA (1999A)
- NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 2, DECEMBER 2008 AS AMENDED.

BIORETENTION POND

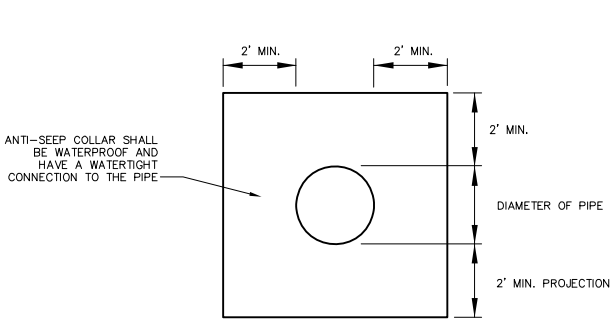


CONSTRUCTION SPECIFICATIONS

1. OUTLET STRUCTURE SHALL BE CONSTRUCTED ONSITE OR PRECAST TO EQUAL DIMENSIONS. A SUITABLE PLASTIC STRUCTURE MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER.
2. ALL JOINTS AND PIPE OPENINGS SHALL BE SEALED WATERTIGHT WITH MORTAR.
3. CONCRETE STRUCTURE IS TO BE BUILT TO WITHSTAND H2O LOADING.
4. NATIVE SOIL UNDERLYING THE STRUCTURE'S GRAVEL BASE PAD AND THE PAD ITSELF ARE TO BE COMPACTED TO 95% MODIFIED PROCTOR.
5. ALL CONCRETE SHALL BE 4,000 PSI MINIMUM.

OUTLET STRUCTURE

NOT TO SCALE

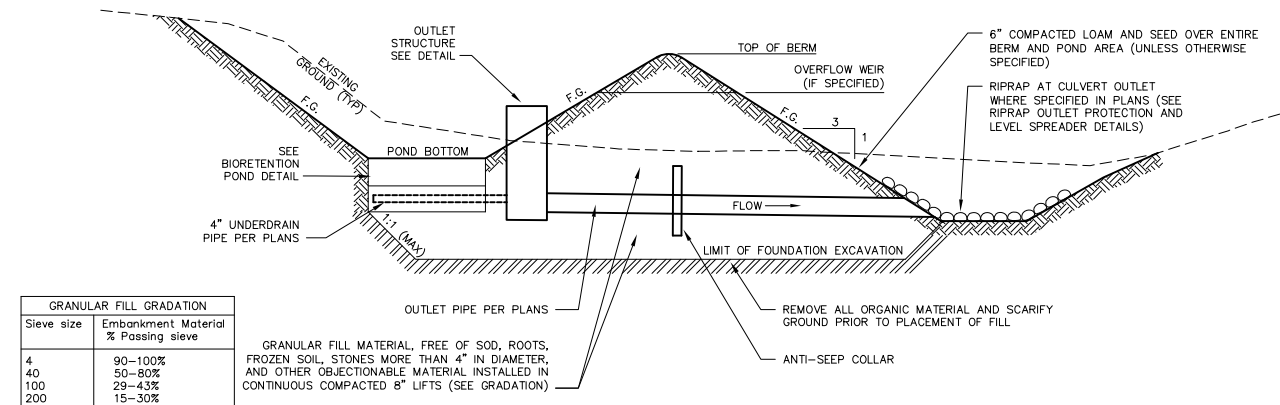


NOTES

ANTI-SEEP COLLARS SHALL BE CLAY, CONCRETE, PLASTIC (AGRI-DRAIN), OR EQUAL APPROVED BY THE ENGINEER.

ANTI-SEEP COLLAR

NOT TO SCALE



Construction Criteria

1. Foundation Preparation -- The foundation shall be cleared of trees, logs, stumps, roots, brush, boulders, sod, and rubbish. If suitable for reuse, the topsoil and sod shall be stockpiled and spread on the completed embankment and spillways. Foundation surfaces shall be sloped no steeper than 1:1. The foundation area shall be thoroughly scarified before placement of fill material. The surface shall have moisture added and/or it shall be compacted if necessary so that the first layer of fill can be bonded to the foundation. The cutoff trench and any other required excavations shall be dug to the lines and grades shown on the plans or as staked in the field. If they are suitable, excavated materials shall be used in the permanent fill. Existing stream channels in the foundation area shall be sloped no steeper than 1:1 and deepened and widened as necessary to remove all stones, gravel, sand, stumps, roots, and other objectionable material and to accommodate compaction equipment. Foundation areas shall be kept free of standing water when fill is being placed on them.
2. Granular Fill Placement -- The material placed in the fill shall be free of sod, roots, frozen soil, stones more than 4 inches in diameter and other objectionable material. Selected backfill material shall be placed around structures, pipe conduits, and drainage diaphragm at about the same rate on all sides to prevent damage from unequal loading. The placing and spreading of fill material shall be started at the lowest point of the foundation and the fill brought up in horizontal layers of such thickness that the required compaction can be obtained. The fill shall be constructed in 8\"/>
3. Moisture Control -- The moisture content of the fill material shall be adequate for obtaining the required compaction. Material that is too wet shall be dried to meet this requirement, and material that is too dry shall have water added and mixed until the requirement is met.
4. Compaction -- Construction equipment shall be operated over the areas of each layer of fill to insure that the required compaction is obtained. Special equipment shall be used if needed to obtain the required compaction. Fill material shall be compacted to not less than 95% of AASHTO T99 Method C compaction method. Fill adjacent to structures, pipe conduits, and drainage diaphragm shall be compacted to a density equivalent to that of the surrounding fill by means of hand tamping or manually directed power tamper or plate vibrators. Fill adjacent to concrete structures shall not be compacted until the concrete is strong enough to support the load.
5. Protection -- A protective cover of vegetation shall be established on all exposed surfaces of the embankment, spillway, and borrow area in accordance with the plans. If soil or climatic conditions preclude the use of vegetation and protection is needed, non-vegetative means, such as mulches or gravel, may be used. In some places, temporary vegetation may be used until conditions permit establishment of permanent vegetation.

Maintenance

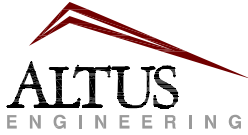
Maintenance is necessary if detention/retention basins are to continue to function as originally designed. A local government, a designated group such as a homeowners' association, or an individual must be assigned responsibility for maintaining the structures and the basin area. A maintenance plan should be developed that outlines the maintenance operations and a schedule for carrying out the procedures.

The following should be considered in formulating a maintenance plan:

1. Embankment -- The embankment should be inspected annually to determine if rodent burrows, wet areas, or erosion of the fill is taking place.
2. Vegetation -- The vegetated areas of the structure should be protected from damage by fire, grazing, traffic, and dense weed growth. Lime and fertilizer should be applied as necessary as determined by soil tests. Trees and shrubs should be kept off the embankment and emergency spillway areas.
3. Inlets -- Pipe inlets and spillway structures should be inspected annually and after every major storm. Accumulated debris and sediment should be removed.
4. Outlets -- Pipe outlets should be inspected annually and after every major storm. The condition of the pipes should be noted and repairs made as necessary. If erosion is taking place, then measures should be taken to stabilize and protect the affected area.
5. Sediment -- Sediment should be continually checked in the basin. When sediment accumulations reach the predetermined design elevation, then the sediment should be removed and properly disposed of.
6. Safety Inspections -- All permanent impoundments should be inspected by a qualified professional engineer on a periodic basis. If there is potential for significant damage or loss of life downstream, then the inspection should be carried out annually.

STORMWATER POND BERM DETAIL

NOT TO SCALE



133 Court Street
(603) 433-2335

Portsmouth, NH 03801
www.altus-eng.com

NOT FOR CONSTRUCTION

ISSUED FOR:

FINAL APPROVAL

ISSUE DATE:

DECEMBER 17, 2024

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	SUBMISSION	EBS	09/20/23
1	RENUMBERED SHEET	EBS	10/18/23
2	REVISED PER COMMENTS	EBS	02/23/24
3	CONDITIONS OF APPROVAL	EBS	06/10/24
4	REVISED PER COMMENTS	EBS	10/21/24
5	REV. PROJECT NAME	EBS	12/17/24

DRAWN BY:

EBS

APPROVED BY:

EBS

DRAWING FILE:

5470-SITE.dwg

SCALE:

NOT TO SCALE

OWNER:

EASTERN DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302

APPLICANT:

EASTERN DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302

PROJECT:

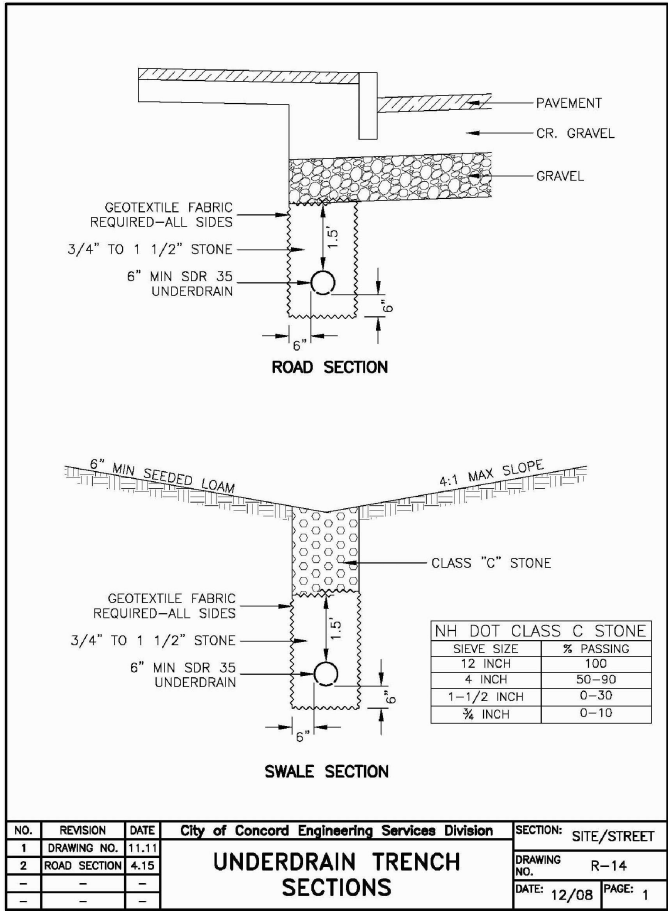
GRANITE RIDGE
ESTATES
CLUSTER SUBDIVISION
TAX MAP 11Z
LOT 25-1
15 HOT HOLE POND ROAD
CONCORD, NH

TITLE:

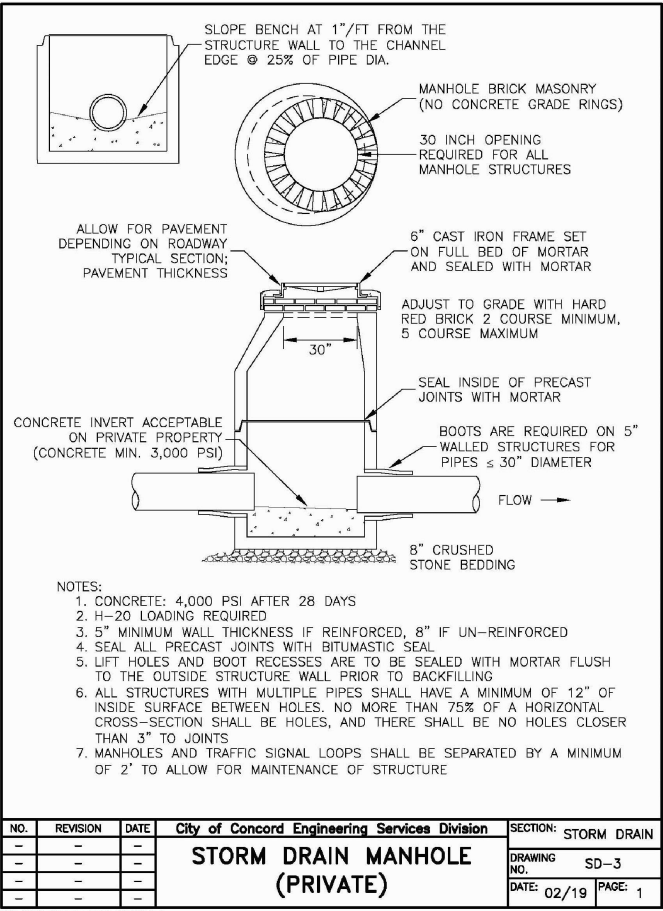
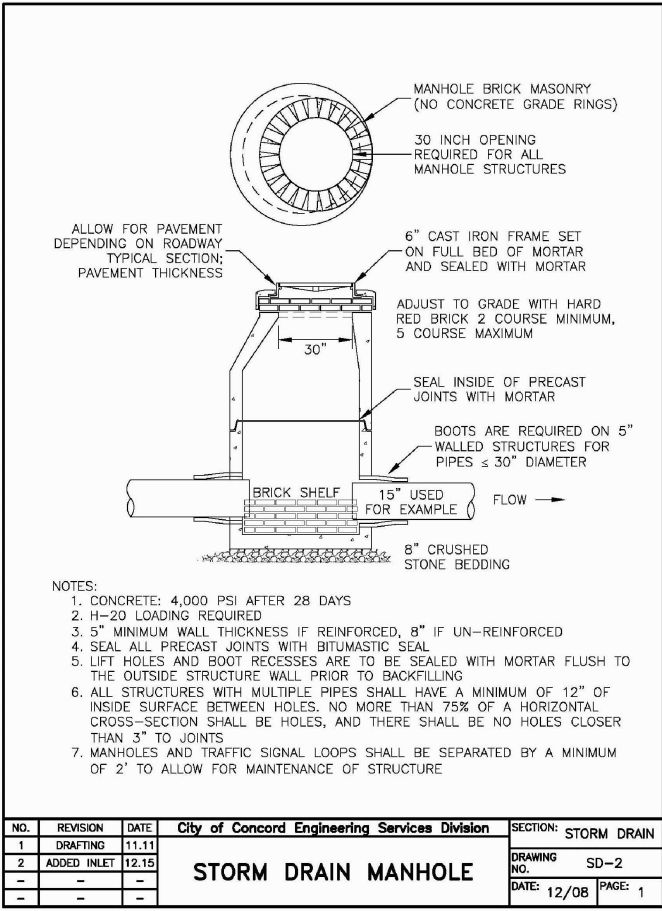
DETAIL SHEET

SHEET NUMBER:

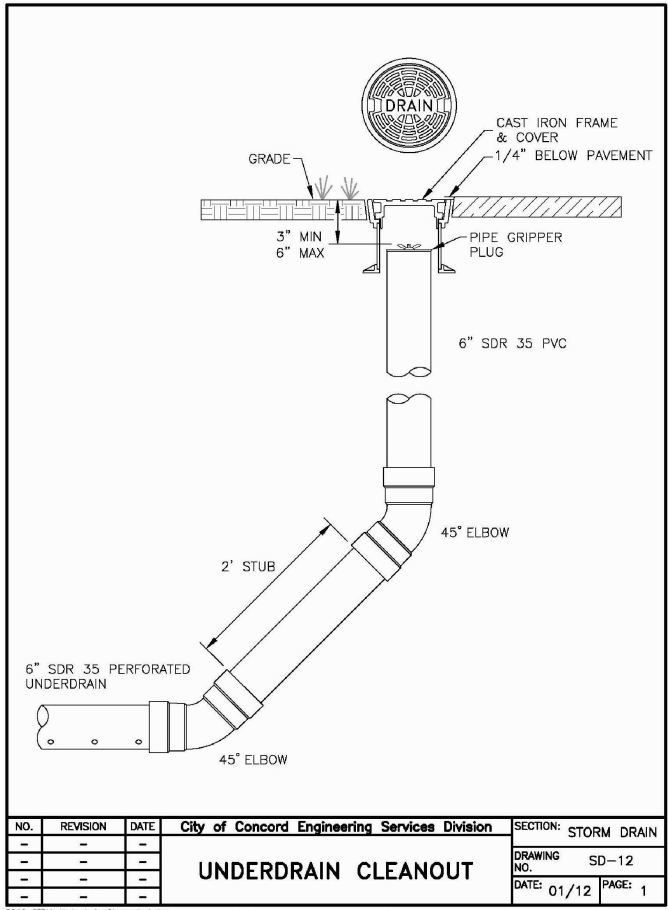
C-10



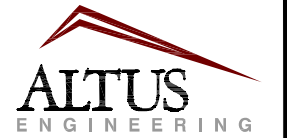
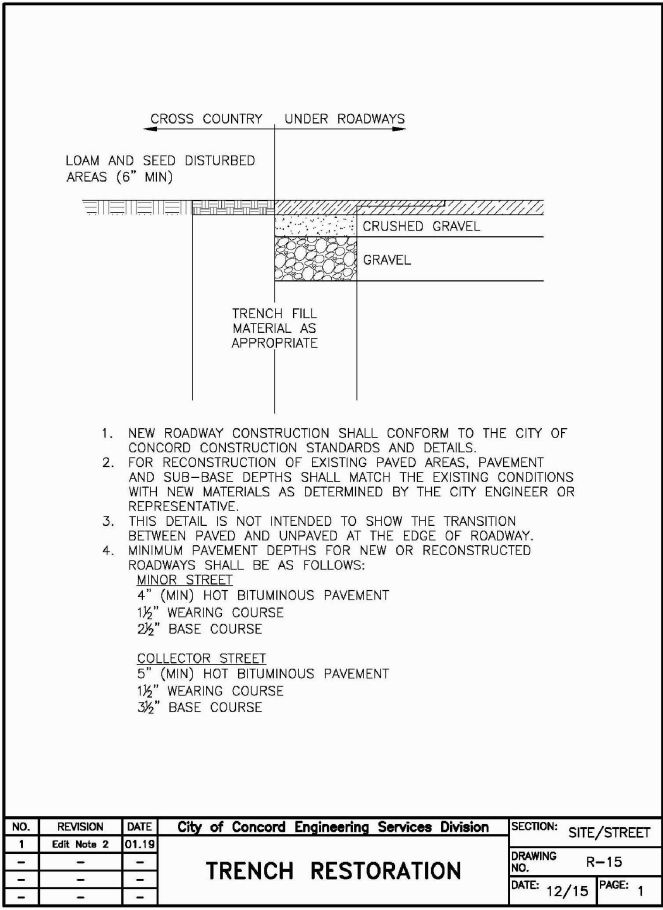
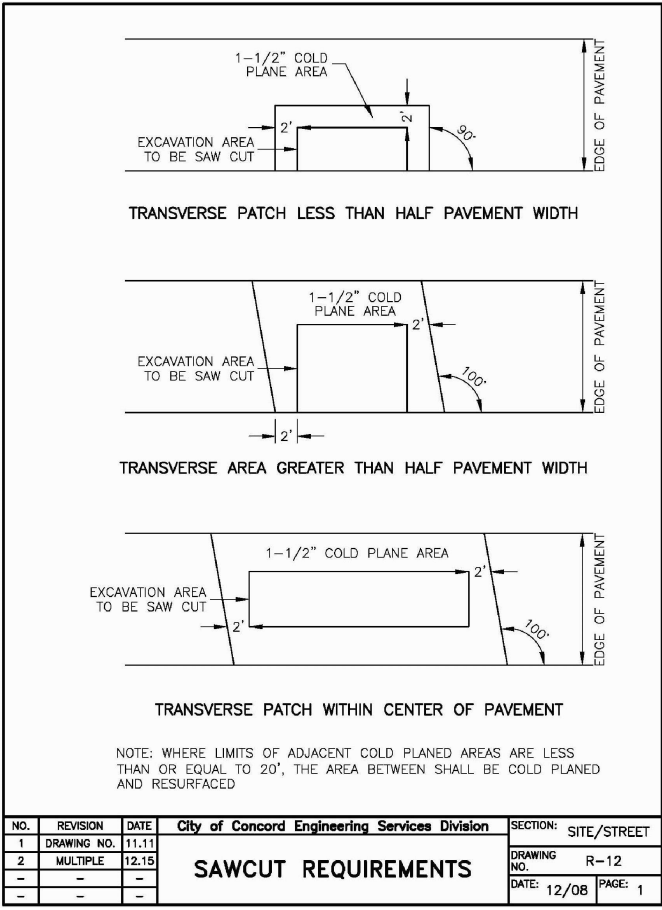
R14_ROW-Underdrain Trench_2.dwg



SD3_STRM-Concrete Invert PRIVATE.dwg



SD12_STRM-Underdrain Cleanout_1.dwg



133 Court Street
(603) 433-2335

Portsmouth, NH 03801
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ISSUED FOR: FINAL APPROVAL

ISSUE DATE: FEBRUARY 19, 2025

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	SUBMISSION	EBS	10/21/24
1	REV. PROJECT NAME	EBS	12/17/24
2	ADD DETAILS	EBS	02/19/25

DRAWN BY: EBS

APPROVED BY: EBS

DRAWING FILE: 5470-SITE.dwg

SCALE: NOT TO SCALE

OWNER: EASTERN DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302

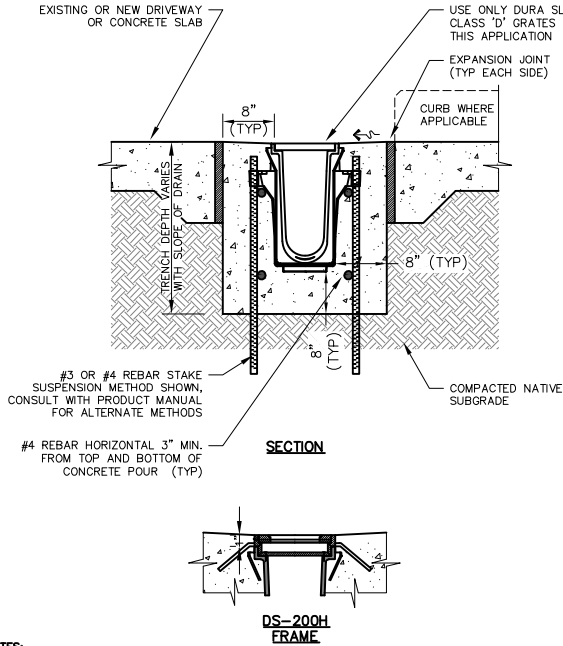
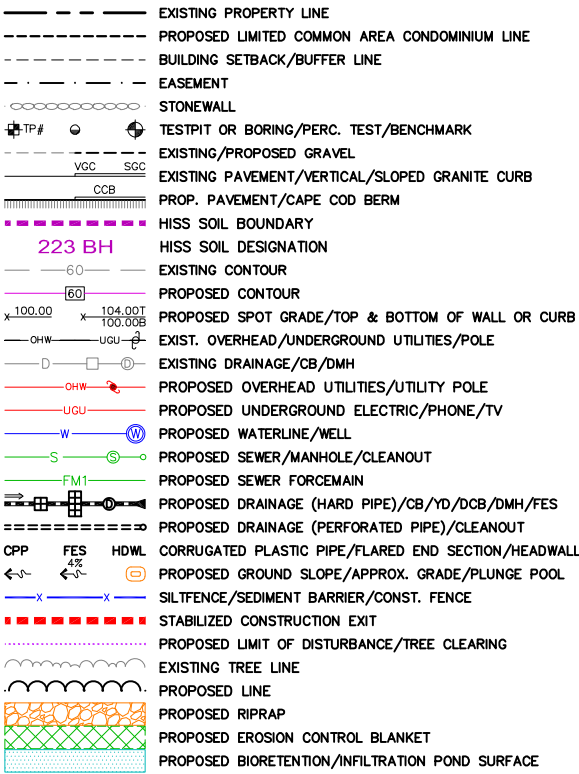
APPLICANT: EASTERN DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302

PROJECT: GRANITE RIDGE ESTATES
CLUSTER SUBDIVISION
TAX MAP 11Z
LOT 25-1
15 HOT HOLE POND ROAD
CONCORD, NH

TITLE: DETAIL SHEET - CITY OF CONCORD STANDARDS

SHEET NUMBER: C-13

LEGEND

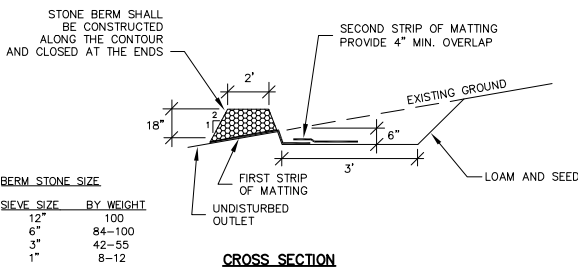
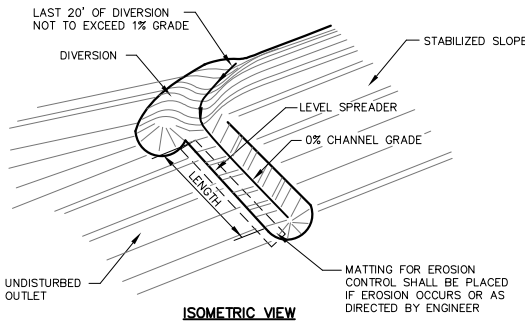


NOTES:

- TRENCH DRAIN SYSTEM SHALL BE NDS DURA SLOPE OR APPROVED EQUAL.
- CHANNELS SHALL HAVE NEUTRAL SLOPE AND BOTTOM OUTLET WITH 8" CONCRETE ENCASEMENT FOR CLASS 'D' LOADING.
- CHANNELS TO BE INSTALLED WITH BLANK GRATE. GRATE TO BE PROTECTED FROM CONCRETE POUR (COVER HOLES WITH TAPE).
- BLANK GRATES TO BE REMOVED AND REPLACED WITH APPLICABLE GRATES AFTER CHANNEL INSTALLATION.
- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.

TRENCH DRAIN (TD)

NOT TO SCALE

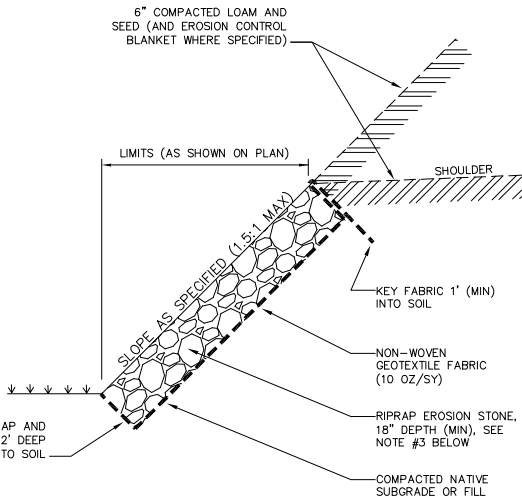


NOTES:

- LEVEL SPREADERS SHALL BE CONSTRUCTED PER STORMWATER MANAGEMENT FOR MAINE, "VOLUME III BMP'S TECHNICAL DESIGN MANUAL, CHAPTER 5.2.2, BUFFER WITH STONE BERMED LEVEL UP SPREADER", JANUARY 2006 SPECIFICATIONS.
- FOR STAPLE REQUIREMENTS SEE MANUFACTURER'S STANDARDS & SPECIFICATIONS FOR PROTECTIVE MATERIALS.
- AREAS BELOW LEVEL SPREADERS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.

LEVEL SPREADER

NOT TO SCALE



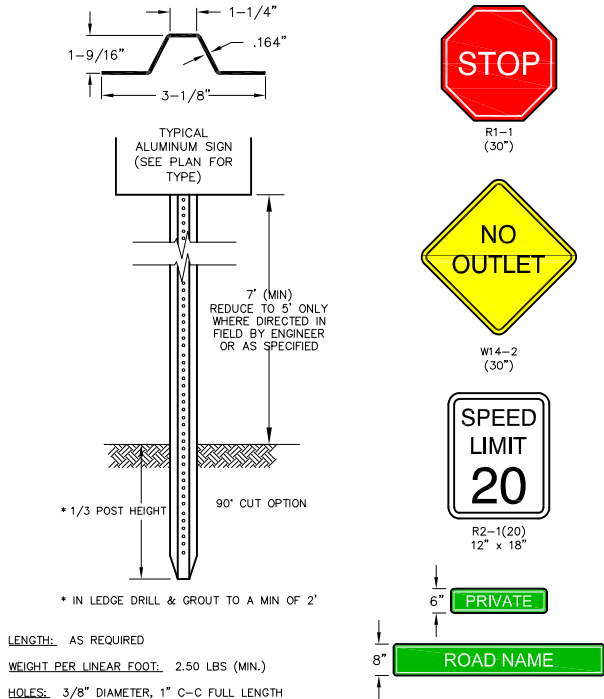
NOTES:

- CONSTRUCT RIP RAP LINED SLOPE TO THE WIDTHS AND LENGTHS SHOWN ON THE PLAN.
- THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIPRAP SHALL BE PREPARED TO LINES AND GRADES SHOWN ON THE PLANS.
- EROSION STONE USED FOR THE RIP RAP LINED SLOPE SHALL MEET THE FOLLOWING GRADATION:

SIZE	PERCENT PASSING BY WEIGHT
12"	100
6"	25-50
- GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE EROSION STONE. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 18 INCHES.
- THE EROSION STONE MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.

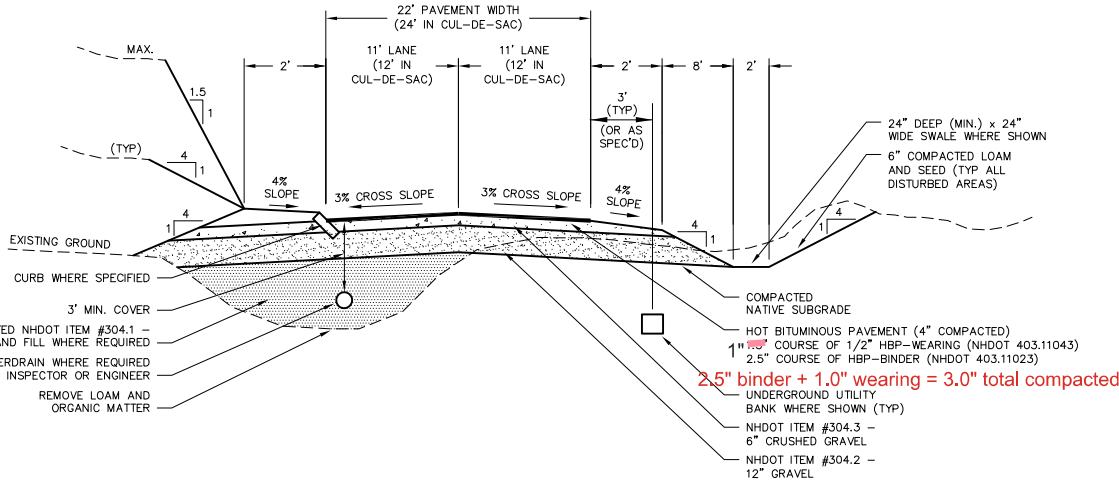
RIPRAP STABILIZED SLOPE

NOT TO SCALE



SIGN DETAILS

NOT TO SCALE

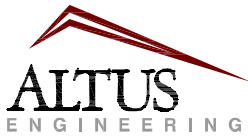


NOTES:

- EACH GRAVEL BASE COURSE TO BE CONSTRUCTED AT THE PAVEMENT CROSS SLOPE.
- REMOVE LEDGE 18" BELOW LOWEST WORK BEING INSTALLED.
- REMOVE ALL LOAM, CLAY, MUCK, ORGANIC, YIELDING OR OTHERWISE UNSTABLE MATERIAL TO A MINIMUM OF 22" BELOW FINISHED GRADE. ADDITIONAL DEPTH MAY BE REQUIRED BY THE GEOTECHNICAL REPORT (IF AVAILABLE) OR THE ENGINEER. SUCH ADDITIONAL REMOVAL SHALL REQUIRE THE PLACEMENT OF COMPACTED SAND OR GRAVEL BORROW APPROVED BY THE ENGINEER TO THE BOTTOM OF SUBGRADE.
- THE OVER-EXCAVATION OF UNSUITABLE MATERIAL BEYOND THAT SPECIFIED ABOVE, THE INSTALLATION OF UNDERDRAINAGE, AND/OR THE INSTALLATION OF GEOTEXTILE FABRIC SHALL BE PROVIDED UPON DETERMINATION OF THE ENGINEER.
- FILL BELOW PAVEMENT SUBGRADE SHALL BE SAND OR GRANULAR COMMON BORROW COMPACTED PER DOT REQUIREMENTS.
- SITWORK CONTRACTOR SHALL COORDINATE GEOTECHNICAL ENGINEERING INSPECTIONS PRIOR TO PLACING GRAVELS.
- SUBGRADE SHALL BE FREE OF VOIDS THAT ALLOW MOVEMENT AND/OR SETTLEMENT OF MATERIALS.
- SUBGRADE SHALL BE ROLLED WITH A MINIMUM OF SIX PASSES OF A 10-TON VIBRATORY COMPACTOR OPERATING AT PEAK RATED FREQUENCY OR BY OTHER MEANS APPROVED BY THE ENGINEER.
- COMPACT ALL MATERIALS TO 95% STANDARD PROCTOR. COMPACTION TESTING SHALL BE PERFORMED BY A GEOTECHNICAL ENGINEER FOR ALL MATERIAL COURSES AND THE RESULTS APPROVED BY THE ENGINEER PRIOR TO PLACING THE SUBSEQUENT COURSE.
- SUBGRADE SHALL BE PROOF-ROLLED WITH A FULLY LOADED DUMP TRUCK PRIOR TO PLACEMENT OF SELECT GRAVELS. PROOF-ROLLING SHALL BE WITNESSED AND APPROVED BY THE ENGINEER.
- BITUMINOUS PAVEMENT SHALL BE COMPACTED TO 90 TO 97 PERCENT OF ITS THEORETICAL MAXIMUM DENSITY AS DETERMINED BY ASTM D-2041.
- TACK COAT SHALL BE APPLIED BETWEEN SUCCESSIVE LIFTS OF ASPHALT PAVEMENT.

TYPICAL ROADWAY CROSS SECTION

NOT TO SCALE



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ISSUED FOR:

FINAL APPROVAL

ISSUE DATE:

DECEMBER 17, 2024

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	SUBMISSION	EBS	09/20/23
1	ADDED DRIVEWAY X-SEC	EBS	10/18/23
2	REVISED PER COMMENTS	EBS	02/23/24
3	CONDITIONS OF APPROVAL	EBS	06/10/24
4	REVISED PER COMMENTS	EBS	07/30/24
5	REVISED PER COMMENTS	EBS	10/21/24
6	REV. PROJECT NAME	EBS	12/17/24

DRAWN BY:

EBS

APPROVED BY:

EBS

DRAWING FILE:

5470-SITE.dwg

SCALE:

NOT TO SCALE

OWNER:

EASTERN DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302

APPLICANT:

EASTERN DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302

PROJECT:

GRANITE RIDGE
ESTATES
CLUSTER SUBDIVISION

TAX MAP 11Z
LOT 25-1
15 HOT HOLE POND ROAD
CONCORD, NH

TITLE:

DETAIL SHEET

SHEET NUMBER:

C-11

SEDIMENT AND EROSION CONTROL NOTES

PROJECT NAME AND LOCATION

GRANITE RIDGE ESTATES
CLUSTER SUBDIVISION
15 HOT HOLE POND ROAD
CONCORD, NEW HAMPSHIRE
TAX MAP 11Z, LOT 25-1

LATITUDE: 43.283° N
LONGITUDE: 71.524° W

OWNER/APPLICANT:
EASTERN DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302

DESCRIPTION

The project consists of a private eight-unit cluster subdivision and cul-de-sac roadway together with associated site improvements.

PROJECT PHASING

The roadway and drainage components of the project will be completed in one phase. Individual lot development will be completed later per the individual lot unit owners.

NAME OF RECEIVING WATER

The site drains to an unnamed wetland complex tributary to Hayward Brook approximately 1.5 miles away.

SEQUENCE OF MAJOR ACTIVITIES

- Cut trees but do not remove stumps.
- Install temporary erosion control measures including perimeter controls, stabilized construction entrance and inlet sediment filters as noted on the plan. All temporary erosion control measures shall be maintained in good working condition for the duration of the project.
- Stump, grub and strip loam in roadway and stormwater construction areas.
- Rough grade site.
- Construct drainage structures and utilities.
- Fine grade site.
- Install pavement subgrade and base course paving.
- Install curbing.
- Install landscaping and loam (6" min) and seed all disturbed areas not paved or otherwise stabilized.
- Allow others to commence building, driveway, septic and unit-related utility construction.
- Install top course paving after the completion of all units and related utilities.
- Install striping and signage.
- When all construction activity is complete and site is stabilized, remove all temporary erosion control measures and any sediment that has been trapped by these devices.

TEMPORARY EROSION & SEDIMENT CONTROL AND STABILIZATION PRACTICES

All work shall be in accordance with state and local permits. Work shall conform to the practices described in the "New Hampshire Stormwater Manual, Volumes 1 - 3", issued December 2008, as amended. As indicated in the sequence of Major Activities, perimeter controls shall be installed prior to commencing any clearing or grading of the site. Structural controls shall be installed concurrently with the applicable activity. Once construction activity ceases permanently in an area and permanent measures are established, perimeter controls shall be removed.

During construction, runoff will be diverted around the site with stabilized channels where possible. Sheet runoff from the site shall be filtered through appropriate perimeter controls. All storm drain inlets shall be provided with inlet protection measures.

Temporary and permanent vegetation and mulching is an integral component of the erosion and sedimentation control plan. All areas shall be inspected and maintained until vegetative cover is established. These control measures are essential to erosion prevention and also reduce costly rework of graded and shaped areas.

Temporary vegetation shall be maintained in these areas until permanent seeding is applied. Additionally, erosion and sediment control measures shall be maintained until permanent vegetation is established.

INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES

A. GENERAL

These are general inspection and maintenance practices that shall be used to implement the plan:

- The smallest practical portion of the site shall be denuded at one time.
- All control measures shall be inspected at least once each week and following any storm event of 0.25 inches or greater.
- All measures shall be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours.
- Built-up sediment shall be removed from perimeter barriers when it has reached one-third the height of the barrier or when "bulges" occur.
- All diversion dikes shall be inspected and any breaches promptly repaired.
- Temporary seeding and planting shall be inspected for bare spots, washouts, and unhealthy growth.
- The owner's authorized engineer shall inspect the site on a periodic basis to review compliance with the Plans.
- An area shall be considered stable if one of the following has occurred:
 - Base coarse gravels have been installed in areas to be paved;
 - A minimum of 85% vegetated growth as been established;
 - A minimum of 3 inches of non-erosive material such as stone of riprap has been installed; - or -
 - Erosion control blankets have been properly installed.
- The length of time of exposure of area disturbed during construction shall not exceed 45 days.

B. MULCHING

Mulch shall be used on highly erodible soils, on critically eroding areas, on areas where conservation of moisture will facilitate plant establishment, and where shown on the plans.

- Timing - In order for mulch to be effective, it must be in place prior to major storm events. There are two (2) types of standards which shall be used to assure this:
 - Apply mulch prior to any storm event. This is applicable when working within 100 feet of wetlands. It will be necessary to closely monitor weather predictions, usually by contacting the National Weather Service in Concord, to have adequate warning of significant storms.
 - Required Mulching within a specified time period. The time period can range from 21 to 28 days of inactivity on a area, the length of time varying with site conditions. Professional judgment shall be used to evaluate the interaction of site conditions (soil erodibility, season of year, extent of disturbance, proximity to sensitive resources, etc.) and the potential impact of erosion on adjacent areas to choose an appropriate time restriction.

2. Guidelines for Winter Mulch Application -

Type	Rate per 1,000 s.f.	Use and Comments
Hay or Straw	70 to 90 lbs.	Must be dry and free from mold. May be used with plantings.
Wood Chips or Bark Mulch	460 to 920 lbs.	Used mostly with trees and shrubs.

INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES (CONTINUED)

Jute and Fibrous Matting (Erosion Blanket)	As per manufacturer Specifications	Used in slope areas, water courses and other Control areas.
Crushed Stone 1/4" to 1-1/2" dia.	Spread more than 1/2" thick	Effective in controlling wind and water erosion.
Erosion Control Mix	2" thick (min)	<ul style="list-style-type: none">* The organic matter content is between 80 and 100%, dry weight basis.* Particle size by weight is 100% passing a 6" screen and a minimum of 70 %, maximum of 85%, passing a 0.75" screen.*The organic portion needs to be fibrous and elongated.*Large portions of silts, clays or fine sands are not acceptable in the mix.* Soluble salts content is less than 4.0 mmhos/cm.*The pH should fall between 5.0 and 8.0.

- Maintenance - All mulches must be inspected periodically, in particular after rainstorms, to check for rill erosion. If less than 90% of the soil surface is covered by mulch, additional mulch shall be immediately applied.

C. PERMANENT SEEDING -

- Bedding - stones larger than 1/2", trash, roots, and other debris that will interfere with seeding and future maintenance of the area should be removed. Where feasible, the soil should be tilled to a depth of 5" to prepare a seedbed and mix fertilizer into the soil.

- Fertilizer - lime and fertilizer should be applied evenly over the area prior to or at the time of seeding and incorporated into the soil. Kinds and amounts of lime and organic fertilizer should be based on an evaluation of soil tests. When a soil test is not available, the following minimum amounts should be applied:

Agricultural Limestone @ 100 lbs. per 1,000 s.f.
10-20-20 organic fertilizer @ 12 lbs. per 1,000 s.f.

3. Seed Mixture:

Grass Seed: Provide fresh, clean, new-crop seed complying with tolerance for purity and germination established by Official Seed Analysts of North America. Provide seed mixture composed of grass species, proportions and minimum percentages of purity, germination, and maximum percentage of weed seed, as specified:

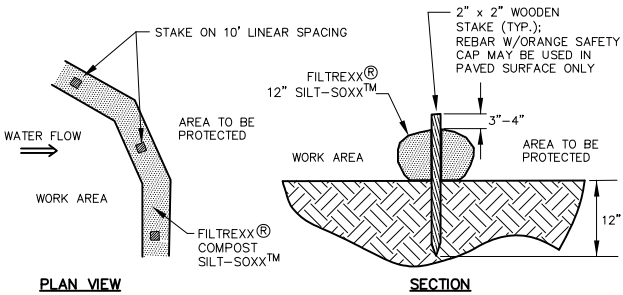
Type	Min. Purity (%)	Min. Germination (%)	Lbs./Acre
Creeping Red Fescue (a)	96	85	40
Perennial Rye Grass (b)	98	90	50
Kentucky Bluegrass	97	85	25
Redtop	95	80	5
			Total 120

Seed mixture shall meet NHDOT 644-1 Park Seed Type 15

- Fescue varieties shall include - Creeping Red and/or Hard Reliant, Scaldis, Koket, or Jamestown.
 - Ryegrass shall be a certified fine-textured variety such as Pennfine, Fiesta, Yorktown, Diplomat, or equal.
- Sodding - sodding is done where it is desirable to rapidly establish cover on a disturbed area. Sodding an area may be substituted for permanent seeding procedures anywhere on site. Bed preparation, fertilizing, and placement of sod shall be performed according to the S.C.S. Handbook. Sodding is recommended for steep sloped areas, areas immediately adjacent to sensitive water courses, easily erodible soils (fine sand/silt), etc.

WINTER CONSTRUCTION NOTES

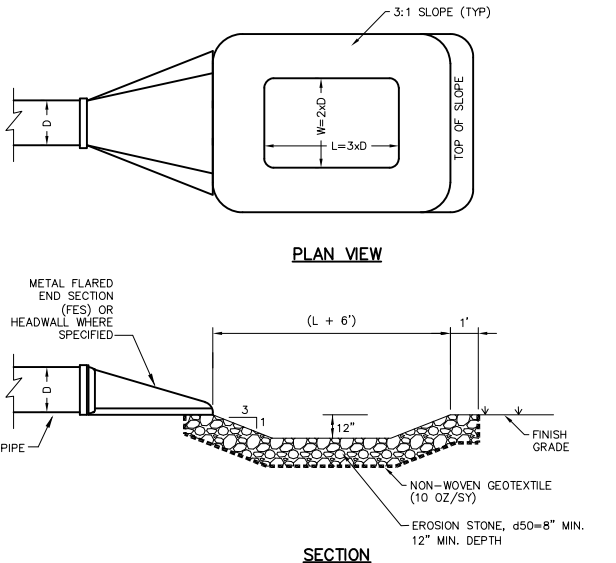
- All proposed vegetated areas which do not exhibit a minimum of 85% vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1, and elsewhere seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting. The installation of erosion control blankets or mulch and netting shall not occur over accumulated snow or on frozen ground and shall be completed in advance of thaw or spring melt events;
- All ditches or swales which do not exhibit a minimum of 85% vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized temporarily with stone or erosion control blankets appropriate for the design flow conditions; and
- After November 15th, incomplete road or parking surfaces where work has stopped for the winter season shall be protected with a minimum of 3 inches of crushed gravel per NHDOT item 304.3.



- NOTES:
- SILT-SOXX or APPROVED EQUAL MAY BE USED IN PLACE OF SILT FENCE OR OTHER SEDIMENT BARRIERS.
 - ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
 - SILT-SOXX COMPOST/SOIL/ROCK/SEED FILL MATERIAL SHALL BE ADJUSTED AS NECESSARY TO MEET THE REQUIREMENTS OF THE SPECIFIC APPLICATION.
 - ALL SEDIMENT TRAPPED BY SILT-SOXX SHALL BE DISPOSED OF PROPERLY.

TUBULAR SEDIMENT BARRIER

NOT TO SCALE



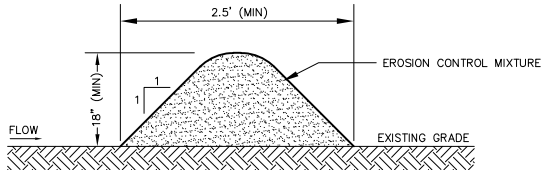
NOTES

- CONSTRUCT PLUNGE POOL TO THE WIDTHS AND LENGTHS SHOWN ON THE PLAN.
- THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIPRAP SHALL BE PREPARED TO ACCOUNT FOR THE DEPTH OF RIPRAP.
- EROSION STONE USED FOR THE PLUNGE POOL SHALL MEET THE FOLLOWING GRADATION:

SIZE	PERCENT PASSING BY WEIGHT
18"	100
12"	90-100
4"	0-15
- GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE EROSION STONE. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 18".
- THE EROSION STONE MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.

PLUNGE POOL

NOT TO SCALE

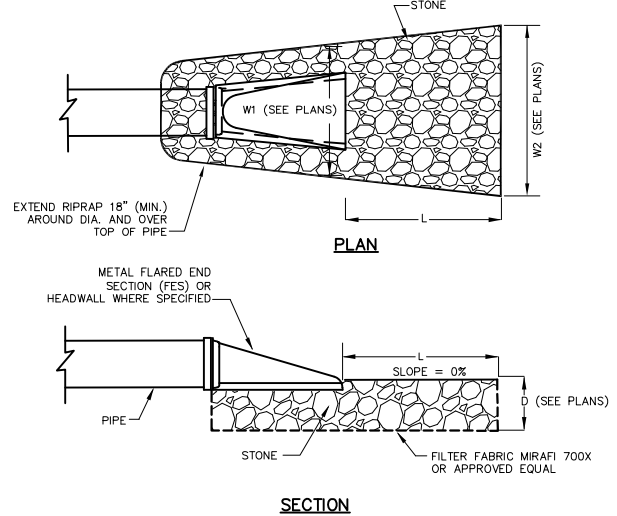


NOTES

- ORGANIC FILTER BERMS MAY BE UTILIZED IN LIEU OF SILT FENCE OR OTHER SEDIMENT BARRIERS.
- THE EROSION CONTROL MIXTURE USED IN FILTER BERMS SHALL BE A WELL-GRADED MIX OF PARTICLE SIZES THAT MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER, STUMP GRINDINGS, SHREDDED OR COMPOSTED BARK, AND/OR ACCEPTABLE MANUFACTURED PRODUCTS AND SHALL BE FREE OF REFUSE, PHYSICAL CONTAMINANTS AND MATERIAL TOXIC TO PLANT GROWTH. EROSION CONTROL MIXTURE SHALL MEET THE FOLLOWING STANDARDS:
 - THE ORGANIC CONTENT SHALL BE 80-100% OF DRY WEIGHT.
 - PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6" SCREEN, AND 70-85% PASSING A 0.75" SCREEN.
 - THE ORGANIC PORTION SHALL BE FIBROUS AND ELONGATED.
 - LARGE PORTIONS OF SILTS, CLAYS, OR FINE SANDS SHALL NOT BE INCLUDED IN THE MIXTURE.
 - SOLUBLE SALTS CONTENT SHALL BE >4.0mmhos/cm.
 - THE pH SHALL BE BETWEEN 5.0 AND 8.0.
- ORGANIC FILTER BERMS SHALL BE INSTALLED ALONG A RELATIVELY LEVEL CONTOUR. IT MAY BE NECESSARY TO CUT TALL GRASSES OR WOODY VEGETATION TO AVOID CREATING VOIDS AND BRIDGES THAT WOULD ENABLE FINES TO WASH UNDER THE BERM.
- ON SLOPES LESS THAN 5%, OR AT THE BOTTOM OF SLOPES NO STEEPER THAN 3:1 AND UP TO 20' LONG, THE BERM SHALL BE A MINIMUM OF 12" HIGH (AS MEASURED ON THE UPHILL SIDE) AND A MINIMUM OF 36" WIDE. ON LONGER AND/OR STEEPER SLOPES, THE BERM SHALL BE TALLER AND WIDER TO ACCOMMODATE THE POTENTIAL FOR ADDITIONAL RUNOFF (MAXIMUM HEIGHT SHALL NOT EXCEED 2').
- FROZEN GROUND, OUTCROPS OF BEDROCK, AND VERY ROOTED FORESTED AREAS PRESENT THE MOST PRACTICAL AND EFFECTIVE LOCATIONS FOR ORGANIC FILTER BERMS. OTHER BMP'S SHOULD BE USED AT LOW PORTS OF CONCENTRATED RUNOFF, BELOW CULVERT OUTLET APRONS, AROUND CATCH BASINS, AND AT THE BOTTOM OF STEEP PERIMETER SLOPES THAT HAVE A LARGE CONTRIBUTING AREA.
- SEDIMENT SHALL BE REMOVED FROM BEHIND THE FILTER BERMS WHEN IT HAS ACCUMULATED TO ONE HALF THE ORIGINAL HEIGHT OF THE BERM.
- ORGANIC FILTER BERMS MAY BE LEFT IN PLACE ONCE THE SITE IS STABILIZED PROVIDED ANY SEDIMENT DEPOSITS TRAPPED BY THEM ARE REMOVED AND DISPOSED OF PROPERLY.
- FILTER BERMS ARE PROHIBITED AT THE BASE OF SLOPES STEEPER THAN 8% OR WHERE THERE IS FLOWING WATER WITHOUT THE SUPPORT OF ADDITIONAL MEASURES SUCH AS SILT FENCE.

ORGANIC FILTER BERM

NOT TO SCALE



MAINTENANCE

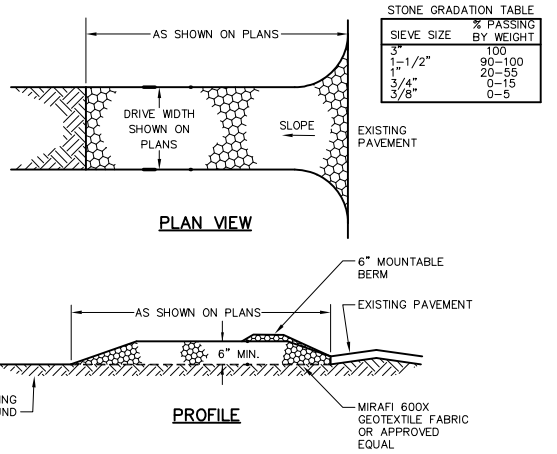
THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIPRAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE CHANNEL IMMEDIATELY BELOW THE OUTLET SHOULD BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO THE OUTLET PROTECTION APRON.

CONSTRUCTION SPECIFICATIONS

- THE SUBGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIPRAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
- THE ROCK OR GRAVEL USED FOR FILTER OR RIPRAP SHALL CONFORM TO THE SPECIFIED GRADATION.
- GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIPRAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
- STONE FOR THE RIP RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.

RIPRAP OUTLET PROTECTION

NOT TO SCALE

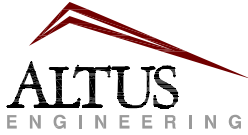


CONSTRUCTION SPECIFICATIONS

- STONE SIZE - NHDOT STANDARD STONE SIZE #4 - SECTION 703 OF NHDOT STANDARD.
- LENGTH - DETAILED ON PLANS (50 FOOT MINIMUM).
- THICKNESS - SIX (6) INCHES (MINIMUM).
- WIDTH - FULL DRIVE WIDTH UNLESS OTHERWISE SPECIFIED.
- FILTER FABRIC - MIRAFI 600X OR EQUAL APPROVED BY ENGINEER.
- SURFACE WATER CONTROL - ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
- MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS WILL REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
- WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- STABILIZED CONSTRUCTION EXITS SHALL BE INSTALLED AT ALL ENTRANCES TO PUBLIC RIGHTS-OF-WAY, AT LOCATIONS SHOWN ON THE PLANS, AND/OR WHERE AS DIRECTED BY THE ENGINEER.

STABILIZED CONSTRUCTION EXIT

NOT TO SCALE



133 Court Street
(603) 433-2335

Portsmouth, NH 03801
www.altus-eng.com

NOT FOR CONSTRUCTION

ISSUED FOR:

FINAL APPROVAL

ISSUE DATE:

MARCH 18, 2025

REVISIONS

NO.	DESCRIPTION	BY	DATE
0	SUBMISSION	EBS	09/20/23
1	RENUMBERED SHEET	EBS	10/18/23
2	REVISED PER COMMENTS	EBS	02/23/24
3	CONDITIONS OF APPROVAL	EBS	06/10/24
4	REVISED PER COMMENTS	EBS	10/21/24
5	REVISED PLUNGE POOL	EBS	03/18/25

DRAWN BY:

EBS

APPROVED BY:

EBS

DRAWING FILE:

5470-SITE.dwg

SCALE:

NOT TO SCALE

OWNER:

EASTERN DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302

APPLICANT:

EASTERN DEVELOPMENT, LLC
P.O. BOX 2671
CONCORD, NH 03302

PROJECT:

GRANITE RIDGE
ESTATES
CLUSTER SUBDIVISION

TAX MAP 11Z
LOT 25-1
15 HOT HOLE POND ROAD
CONCORD, NH

TITLE:

DETAIL SHEET

SHEET NUMBER:

C-8