

Ryan Taber Eastern Development  
P.O. Box 2671  
Concord, NH 03302  
(603) 333-0147  
[ryan@eastern-development.com](mailto:ryan@eastern-development.com)

September 17, 2025

City of Concord  
AnneMarie Skinner  
41 Green Street  
Concord, NH 03301  
**Sent via email**

**Re: Request for Appeal and Agenda Placement, October 15, 2025 Planning Board Meeting**

Dear Ms. Skinner,

Eastern Development, LLC respectfully requests that this appeal be placed on the Planning Board's October 2025 agenda. The appeal seeks modification of conditions imposed on the final approval of the above-referenced project relating to:

1. Curbing
2. Street Trees
3. Roadway Length
4. Pavement Thickness

**Grounds for Appeal**

**1. Curbing**

Concord's Subdivision Regulations 20.13 allow curbing on residential common private drives to be vertical granite, sloped granite, concrete, or asphaltic concrete (Cape Cod berm), constructed per the city's Construction Standards. Vertical granite is required only where a sidewalk is within four feet of the drive, or at public-street intersections (21.07).

The project's common private drive does not contain sidewalks, and all maintenance responsibility rests with the homeowners' association (20.11). Requiring vertical granite throughout exceeds the regulation and imposes unnecessary costs without added safety or drainage benefit.

Cape Cod berm has been authorized and installed by the city in comparable settings, including Palm Street (2025) and Hot Hole Pond Road, confirming its acceptance as a standard curbing treatment.

**Requested Action:** Approve substitution of Cape Cod berm (asphaltic concrete) for vertical granite curb throughout the common private drive.

## 2. Street Trees

Section 28.04(6) requires street trees only “where appropriate” and credits existing non-invasive trees within ten (10) feet of the right-of-way. Placement must also avoid sight-distance hazards and conflicts with overhead or underground utilities (28.04(6)(d)–(e)). Section 28.02 directs the city to preserve existing vegetation, not impose duplicative plantings.

This corridor is heavily wooded, with continuous canopy and existing buffers. Overhead utilities run along the frontage, and driveway aprons require clear sight triangles. Adding new trees along the entire road is redundant, unsafe, and contrary to the preservation mandate.

**Requested Action:** Waive the requirement for street trees along the full length of the road. Limit any new plantings to the cul-de-sac area, with existing trees along the approach credited toward compliance under 28.04(6).

## 3. Roadway Length: Consistency, Proportionality, and Equal Protection

The Planning Board denied relief for a roadway length exceeding 1,000 feet, thereby limiting the subdivision layout. However, in 2023 the city approved the Shelburne Lane subdivision, located in the same zoning district and under nearly identical conditions, with no public water or sewer service and a rural character, with a roadway extending beyond 1,000 feet. In addition, Farmwood Road and Coventry Road both exceed 1,000 feet in length and are likewise not served by public water or sewer.

This disparate treatment constitutes inconsistent application of subdivision standards. Selective enforcement undermines RSA 676:4, I(h) (requiring written findings) and RSA 674:36 (requiring equal application of subdivision regulations).

From a planning perspective, the proposed extension is proportional to the size and design of the parcel, will remain privately maintained, and does not increase municipal burden. The intent of the 1,000-foot limitation, to avoid long public roads that strain city services, is not implicated.

Equal protection principles under Part I, Article 12 of the New Hampshire Constitution reinforce that similarly situated landowners must be treated alike. Allowing roadway length for Shelburne Lane but denying it here violates that standard.

**Requested Action:** Approve the roadway length over 1,000 feet, consistent with prior approvals, ensuring equal and proportional application of Concord’s subdivision regulations.

## 4. Pavement Thickness: Code, Standards, and Engineering Basis

### Code and City Standards:

Concord’s Subdivision Regulations 21.05 state: “*Common private drives shall be surfaced with a minimum of three (3) inches of hot bituminous pavement per State specifications.*” The project

proposes exactly that standard, 1.5" binder and 1.5" wearing course, compacted to 3 inches total, consistent with NHDOT Section 401 Plant-Mixed Pavements, which Concord expressly references. The city's 2020 Construction Standards & Details also specify for driveways a section of 6" crushed gravel plus 3" hot bituminous pavement in two lifts, aligning with 21.05's minimum requirement for common private drives.

#### **Planning Board Record: May 15, 2024:**

At the May 15, 2024, meeting, the city objected to the 3" pavement thickness but did not present factual evidence or engineering data. The minutes reflect:

- An acknowledged inconsistency between the Subdivision Regulations (3") and a Construction Standards detail (4").
- The city Engineer's statement that 3" is the state minimum standard for rural residential roads and sufficient for low-volume facilities.
- Staff noted they intended to "fix" the verbiage to require 4" in the future, but no such amendment had been adopted.
- Several Board members recognized that 3" was acceptable and that any inconsistency would not affect the city, since the roadway is private and HOA-maintained.

This demonstrates the denial was based on policy preference, not on technical findings, contrary to RSA 676:3, I, which requires written findings grounded in fact.

#### **Engineering Consensus:**

The Federal Highway Administration (FHWA) emphasizes that pavement performance depends more on subgrade preparation, base design, and drainage control than on asphalt thickness. The AASHTO flexible pavement design method shows that 3" of HMA over a 12" aggregate base yields a Structural Number of ~3.0, sufficient for low-volume residential traffic. Adding an extra inch of asphalt provides minimal additional capacity compared to strengthening the base.

#### **State Standard and Adoption:**

NHDOT Section 401 establishes 3" compacted HBP as the statewide baseline for flexible pavements. By incorporating Section 401, Concord's 21.05 adopts the same standard. Requiring 4" for a private, HOA-maintained drive is inconsistent with both the city's regulations and state practice.

#### **Jurisdiction and Fairness:**

Common private drives are privately maintained (20.11). The city has no responsibility for future repair or replacement. Requiring public-road standards for private facilities imposes undue costs on homeowners without any municipal benefit.

#### **Lack of Evidence Supporting 4" Compacted Pavement:**

Neither Concord nor NHDOT has produced findings that 4" performs materially better than 3" for private, low-volume roads. Absent unusual conditions (heavy truck use, poor soils, drainage issues), there is no engineering or legal justification for exceeding the codified 3" minimum.

**Requested Action:** Approve the project's 3" compacted HBP pavement section as compliant with:

- Concord Subdivision Regulations 21.05 (minimum 3" requirement),
- NHDOT Section 401 (state standard).

### **Legal Authority**

- Concord Subdivision Regulations: 20.11, 20.13, 21.05, 28.02, 28.04(6).
- Concord Construction Standards & Details (2020).
- RSA 674:36, II(n): Authorizes waivers where strict conformity creates hardship or where conditions show a waiver furthers the regulations' intent.
- RSA 676:3, I: Requires written factual findings to support conditions.
- Case Law: *Tidd v. Alton*, 148 N.H. 424 (2002); *Trustees of Dartmouth College v. Hanover*, 171 N.H. 497 (2018).

### **Proposed Findings**

- **Curbing:** Cape Cod berm is permitted under 20.13 and consistent with city practice.
- **Street Trees:** Limiting plantings to the cul-de-sac complies with 28.02 and 28.04(6) while preserving safety and utilities.
- **Roadway Length:** Approving >1,000' ensures equal treatment with similar subdivisions and avoids unequal enforcement.
- **Pavement Thickness:** A 3" HBP section satisfies 21.05 and state standards, is endorsed by the city Engineer as the minimum state standard and is technically sufficient for private HOA-maintained drives.

Sincerely,

Ryan Taber  
Eastern Development, LLC

## **Granite Ridge Estates: Amendment to Major Subdivision**

15 Hot Hole Pond Road, Concord, NH

**Applicant:** Eastern Development, LLC

**Tax Map Lot:** 11Z 25-1

### **I. PROJECT DESCRIPTION**

The applicant requests an amendment to the approved major subdivision application and recorded subdivision plat to grant certain waivers from the Subdivision Regulations at 15 Hot Hole Pond Road, as outlined below. The proposed development consists of an 8-unit detached single-family residential cluster on a private common drive, served by utilities, drainage, and associated site improvements.

#### **Zoning and Overlay Compliance:**

- Zoning District: Open Space Residential (RO)
- Existing Use: Vacant
- Proposed Use: Single-Family Residential
- Overlay Districts: Flood Hazard (FH), Shoreland Protection (SP), Historic (HI), Penacook Lake Watershed (WS), Aquifer Protection (AP) – **Not applicable.**
- Wetlands / Buffers: **None impacted.**

**Plan Set Reference:** Altus Engineering, 29 sheets, dated September 20, 2023, with revisions through March 18, 2025; plus 4-page waiver request and appeal, Eastern Development, LLC, September 17, 2025.

### **II. PROJECT HISTORY**

- **November 15, 2023:** Planning Board deemed application complete for a 9-unit major subdivision; not a development of regional impact.
- **March 20, 2024:** Conditional major subdivision approval granted for 8-unit cluster condominium, including certain waivers.
- **May 15, 2024:** Planning Board amended conditions, granting certain waivers from the Subdivision Regulations.
- **March 19, 2025:** Two-year extension granted for conditional approvals; expiration set to March 20, 2027.
- **June 2, 2025:** Final approval for 8-unit detached single-family cluster, new common private driveway, and site improvements.

- **June 16, 2025:** Condominium site plan, declaration, and bylaws recorded at Merrimack County Registry of Deeds.

### **III. COMPLIANCE ANALYSIS**

#### **Engineering & Staff Review Summary:**

- Zoning compliance: Open Space Residential (RO), density within permitted limits.
- Site Plan compliance: All prior conditions satisfied; no new site plan required.
- Utilities & Fire Department: Road designed to exceed minimum emergency vehicle width by 50%; cul-de-sac and driveway slopes meet operational safety standards.
- Landscape compliance: Proposed plantings, combined with existing non-invasive trees, satisfy 28.04(6) intent.
- Staff noted prior denial of 3" pavement waiver (Figure 20-2), but this appeal addresses technical justification and statutory authority under RSA 674:36(II)(n) and Section 35.08 of the Subdivision Regulations.

### **IV. LEGAL BASIS FOR WAIVERS**

#### **State Law:**

- **RSA 674:36, II(n):** Planning Board may grant waivers where strict conformity causes unnecessary hardship, provided public safety and intent are maintained.
- **RSA 677:15:** Any person aggrieved by a Planning Board decision may petition the Superior Court within 30 days; the applicant has fully preserved rights.

#### **City Regulations:**

- Concord Subdivision Regulations 19.09, 20.12, 20.13, 28.04(6), Figure 20-2, 35.08, 35.19.
- 19.09 and 35.08 explicitly allow waivers for undue hardship, physical constraints, or where equivalent public benefit is maintained.
- 35.04 Conflict Rule: If multiple standards apply, the most restrictive controls; waiver does not compromise public safety.

#### **V. Precedent:**

While Farmwood Road and Coventry Road were constructed over 25 years ago, they provide a clear and relevant precedent for roads exceeding 1,000 feet in length. Historical data speaks for itself: these extended cul-de-sacs have safely accommodated fire apparatus and emergency

vehicles for more than two decades without incident, demonstrating that road length alone does not compromise public safety when proper design standards are met.

**Additional precedents reinforce this conclusion:**

- Hot Hole Pond Road: This existing private road is narrower and steeper than the proposed roadway, yet it is safely navigable by Fire Department trucks, demonstrating that properly engineered longer roads can be accessed without safety issues.
- Shelburne Lane: Approved through a conditional multi-phase process (2019/2023), this project illustrates the Planning Board's flexibility in approving private roads with non-standard configurations while maintaining emergency access and public safety. While the project is not fully complete and the secondary egress is not yet constructed due to its phased development, homes along the road have already been sold and occupied. Despite the incomplete egress, the Fire Department has had no operational safety concerns, demonstrating that emergency access remains adequate. This supports the conclusion that the safety factor claimed by the FD for extended roads should remain consistent with real-world experience.

**Comparative Safety of Proposed Road:**

The proposed road exceeds the Fire Department minimum width by 50%, features a properly designed cul-de-sac, and maintains moderate slopes. These factors provide enhanced safety margins relative to the older precedents.

**Functional Validation:**

The long-term, incident-free operation of Farmwood Road, Coventry Road, and Hot Hole Pond Road demonstrates that private roads exceeding 1,000 feet can safely serve emergency and residential traffic when engineered according to accepted standards.

**Conclusion:**

Given the historical performance of these roads, there is no reasonable basis for the Fire Department to assert a safety concern regarding the proposed private road. In fact, the proposed design exceeds the safety standards of these established precedents, ensuring reliable emergency access and full compliance with the intent of the regulations.

## **VI. WAIVER REQUESTS**

### **A. Cape Cod Berm in Lieu of Granite Curbing**

**Project Context:**

The proposed roadway is approximately 1,000 linear feet in length, a private, low-volume residential street serving eight single-family homes. It is constructed to full structural standards, ensuring compliance with safety, drainage, and durability requirements. The Cape Cod berm provides a practical, safe, and contextually appropriate edge treatment for the private roadway.

## **Waiver Criteria Analysis:**

- 1. No Detriment to Public Safety, Health, or Welfare**
  - The Cape Cod berm design meets all safety and drainage objectives.
  - It provides continuous pavement protection, directs runoff to drainage swales, and clearly defines the road edge for drivers and emergency responders.
  - The cul-de-sac has been designed to accommodate fire department apparatus, with turning radii verified to meet or exceed NFPA and local standards.
  - The berm's beveled slope reduces potential tire or snowplow damage, enhancing safety.
- 2. Unique Conditions**
  - The road is privately maintained, low-volume, and serves only eight homes.
  - Granite curbing is unnecessary for this context; Cape Cod berm is functionally adequate for drainage and pavement protection.
- 3. Unnecessary Hardship**
  - Granite curbing costs 3-4 times more than Cape Cod berms (\$40,000–\$50,000 additional), with no measurable improvement in safety or durability.
  - For a homeowner-maintained road, this cost constitutes a clear and disproportionate hardship.
  - Granite curbing provides no additional safety, drainage, or structural benefit over Cape Cod berms, so the mandated installation is a hardship without measurable public benefit.
- 4. Consistency with Spirit and Intent of the Regulations**
  - 20.13 aims for safe, drained, structurally stable roads.
  - The proposed berm meets these objectives efficiently and economically, reflecting proportional design standards for private roads.
- 5. No Conflict with Other Provisions**
  - Granting this waiver does not conflict with the Zoning Ordinance, Master Plan, or Official Map.

## **Conclusion:**

The Cape Cod berm fully satisfies all five waiver criteria and maintains the safety, drainage, and functional intent of the Subdivision Regulations. Approval is requested under 19.09 and RSA 674:36(II)(n).

## **B. Street Trees**

### **Project Context:**

Existing non-invasive trees ( $\geq 4"$  diameter within 10 feet of ROW) are proposed to satisfy the street tree requirement. Full planting along the entire driveway is impractical due to steep slopes and the presence of utility lines, which could compromise tree survival and safe utility maintenance.

## **Waiver Criteria Analysis:**

- 1. No Detriment to Public Safety, Health, or Welfare**

- Proposed tree planting within the cul-de-sac, supplemented by existing mature trees, maintains erosion control, aesthetics, and safe emergency access.

2. **Unique Conditions**
  - Steep slopes and utility conflicts are unique to this property and not generally applicable to other properties.
3. **Unnecessary Hardship**
  - Strict compliance would require excessive grading or removal of existing vegetation, creating hardship without significant public benefit.
  - Strict compliance could be environmentally counterproductive.
4. **Consistency with Spirit and Intent of the Regulations**
  - The waiver preserves the intent of 28.04(6) to enhance aesthetics, maintain erosion control, and support neighborhood character.
5. **No Conflict with Other Provisions**
  - The waiver does not conflict with the Zoning Ordinance, Master Plan, or Official Map.

**Conclusion:**

The waiver ensures compliance with the intent of 28.04(6) while addressing practical limitations, balancing safety, aesthetics, and feasibility.

## C. Road Length (>1,000 ft)

**Project Context:**

The proposed private road extends approximately 1,150 feet, exceeding the 1,000-foot limit in 20.12. The road is designed 50% wider than the Fire Department minimum requirements, features a properly designed cul-de-sac, and maintains moderate slopes.

**Waiver Criteria Analysis:**

1. **No Detriment to Public Safety, Health, or Welfare**
  - The road width and cul-de-sac accommodate fire apparatus safely.
  - Hot Hole Pond Road, narrower and steeper, is safely navigable by FD trucks.
  - Farmwood Road and Coventry Road (>1,000 ft) have operated safely for over 25 years, demonstrating long-term public safety.
  - Shelburne Lane (2019/2023, phased project) shows emergency access remains safe even before secondary egress completion, and homes are already occupied.
2. **Unique Conditions**
  - The ~150-foot extension is necessary to accommodate the unique site geometry and lot layout.
  - Other properties in the area do not share this configuration.
3. **Unnecessary Hardship**
  - Limiting the road to 1,000 feet would prevent access to certain portions of the property, effectively rendering parts of the land unusable for homes, driveways, or utilities and preventing the owner from using the land as originally intended.
  - Reduced usable land translates directly to fewer saleable lots and lost revenue, creating a disproportionate financial burden.

**4. Consistency with Spirit and Intent of the Regulations**

- The intent is to ensure safe, properly designed roads with emergency access.
- The proposed road exceeds width and emergency access standards, fully meeting the regulation's purpose.

**5. No Conflict with Other Provisions**

- Development complies with zoning, density, setbacks, and Master Plan goals.

**Conclusion:**

The road length waiver satisfies all five criteria, ensures safety, and supports responsible, well-planned development.

## **D. Pavement Thickness Reduction (Figure 20-2)**

**Project Context:**

A 3-inch compacted HMA pavement section is proposed in lieu of the 4-inch standard for the private road.

**Waiver Criteria Analysis:**

**1. No Detriment to Public Safety, Health, or Welfare**

- Provides full structural support for residential, delivery, and emergency traffic.
- Engineering analysis confirms adequacy; drainage meets city standards; no FD access concerns.

**2. Unique Conditions**

- Small, low volume privately maintained subdivision; HOA ownership; limited traffic.

**3. Unnecessary Hardship**

- Strict adherence to 4-inch standard adds \$12,000–\$15,000 without measurable benefit.
- Larger asphalt volume results in higher embodied carbon and energy consumption during construction, conflicting with sustainable development principles.
- Extra asphalt is effectively unused structural capacity in a low-volume context, representing wasteful resource use.
- Adds maintenance complexity over time (e.g., thermal expansion/contraction differences between pavement layers).

**4. Consistency with Spirit and Intent of the Regulations**

- 21.05 aims for safe, durable, serviceable roads.
- The proposed 3-inch HMA, combined with proper subbase and compaction, meets the intended purpose.

**5. No Conflict with Other Provisions**

- Complies with Master Plan goals, zoning, and city mapping requirements.

**Conclusion:**

The pavement thickness waiver fully satisfies all five criteria, avoids unnecessary hardship, preserves safety, and aligns with the intent of the regulations.

## **VII. CONCLUSION & REQUEST FOR RELIEF**

The applicant respectfully requests that the Planning Board:

- 1. Approve all four requested waivers:**
  - Cape Cod Berm in lieu of granite curbing
  - Street Trees
  - Road Length
  - Pavement Thickness
- 2. Find that each waiver fully satisfies applicable standards**, including 19.09, 35.08, and RSA 674:36(II)(n), and that granting the waivers will not compromise public safety, health, or welfare. Each request has been carefully designed to meet the intent of the regulations while accommodating the unique characteristics of the site.
- 3. Recognize that strict compliance would create unnecessary hardship.** Denial of the waivers would impose significant cost, engineering, and practical burdens on the applicant and future homeowners that are not justified by any measurable public benefit. Similar waivers have been granted historically under comparable circumstances, establishing a clear precedent for flexible application when technical standards and public safety are maintained.
- 4. Confirm that approval aligns with the spirit and intent of the regulations and statutory authority.** The requested waivers reflect best practices in low-volume residential road design, preserve environmental and safety standards, and ensure efficient use of resources consistent with City and State guidelines.

Granting these waivers will uphold the City's regulatory objectives, protect public interests, and allow for a safe, functional, and economically reasonable development.

Sincerely,

Eastern Development

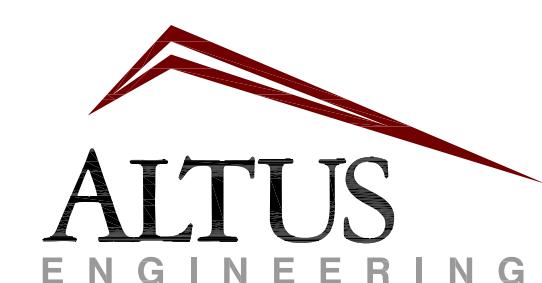
# Granite Ridge Estates Cluster Subdivision

15 Hot Hole Pond Road  
Concord, New Hampshire

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:



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

Surveyor:

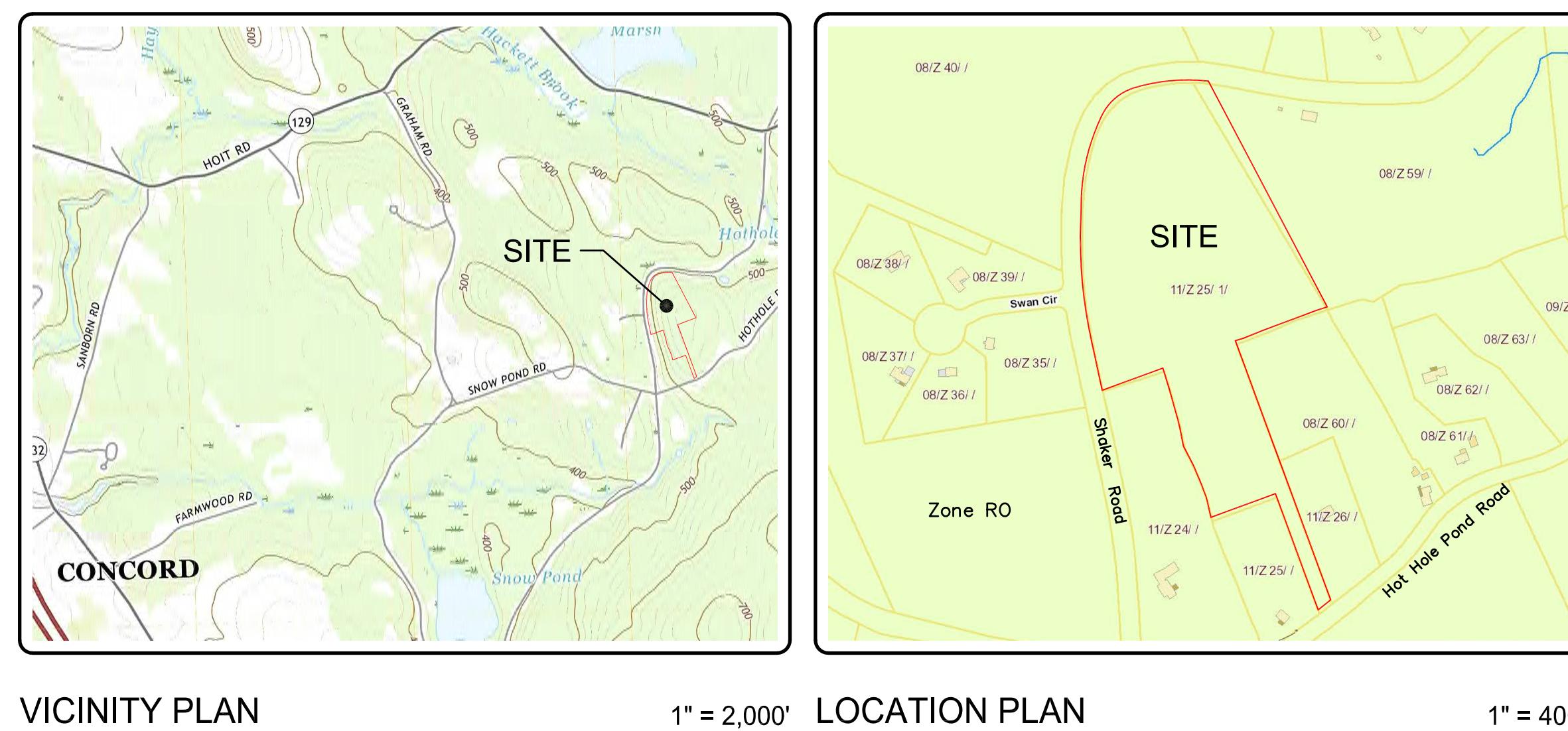
RICHARD D. BARTLETT  
& ASSOCIATES, LLC  
214 North State Street  
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LICENSED LAND SURVEYORS

Soil Scientist:

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

## Plan Issue Date:

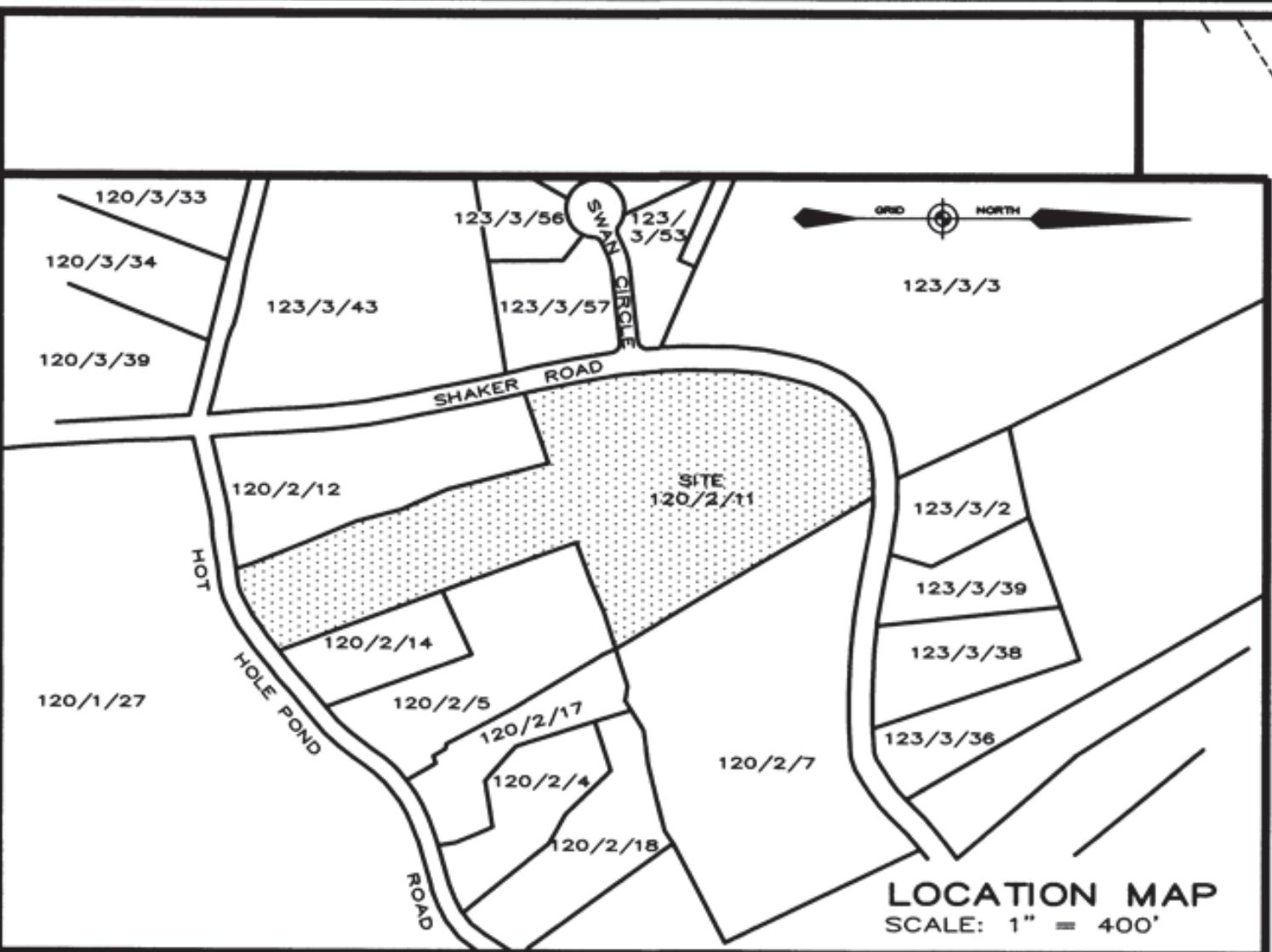
Original: September 20, 2023  
Revised: October 18, 2023  
February 23, 2024  
June 10, 2024  
July 30, 2024  
October 21, 2024  
December 17, 2024  
January 9, 2025  
February 19, 2025  
Current: March 18, 2025



Sheet Index	Sheet No.:	Rev.	Date
Existing Condition Plat	1 of 7	0	03/11/20
Existing Condition Plat	2 of 7	0	03/11/20
Existing Condition Plat	3 of 7	0	03/11/20
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
Soils and Topography Plan	C-1.1	5	12/17/24
Soils and Topography Plan	C-1.2	5	12/17/24
Overall Site Plan	C-2	4	12/17/24
Condominium Site Plan	C-3.1	5	10/21/24
Condominium Site Plan	C-3.2	6	01/09/25
Driveway Plan and Profile	C-4.1	6	02/19/25
Roadway Access Plan	C-4.2	1	12/17/24
Grading and Drainage Plan	C-5.1	8	03/18/25
Drainage Cross Sections and Profiles	C-5.2	4	12/17/24
Drainage Profiles	C-5.3	1	02/19/25
Unit Grading and Drainage Plan	C-5.4	6	02/19/25
Erosion and Sediment Control Plan	C-6	8	03/18/25
Utility Plan	C-7	7	02/19/25
Detail Sheet	C-8	5	03/18/25
Detail Sheet	C-9	6	12/17/24
Detail Sheet	C-10	5	12/17/24
Detail Sheet	C-11	6	12/17/24
Detail Sheet	C-12	6	12/17/24
Detail Sheet	C-13	2	02/19/25
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		
EPA Notice of Intent		

By individual unit owners prior to construction  
By Contractor 14 days prior to construction



NORTH  
GRID

**NOTES**

1. Survey by total station on June 13 & 14, 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'; sides=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 the 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.

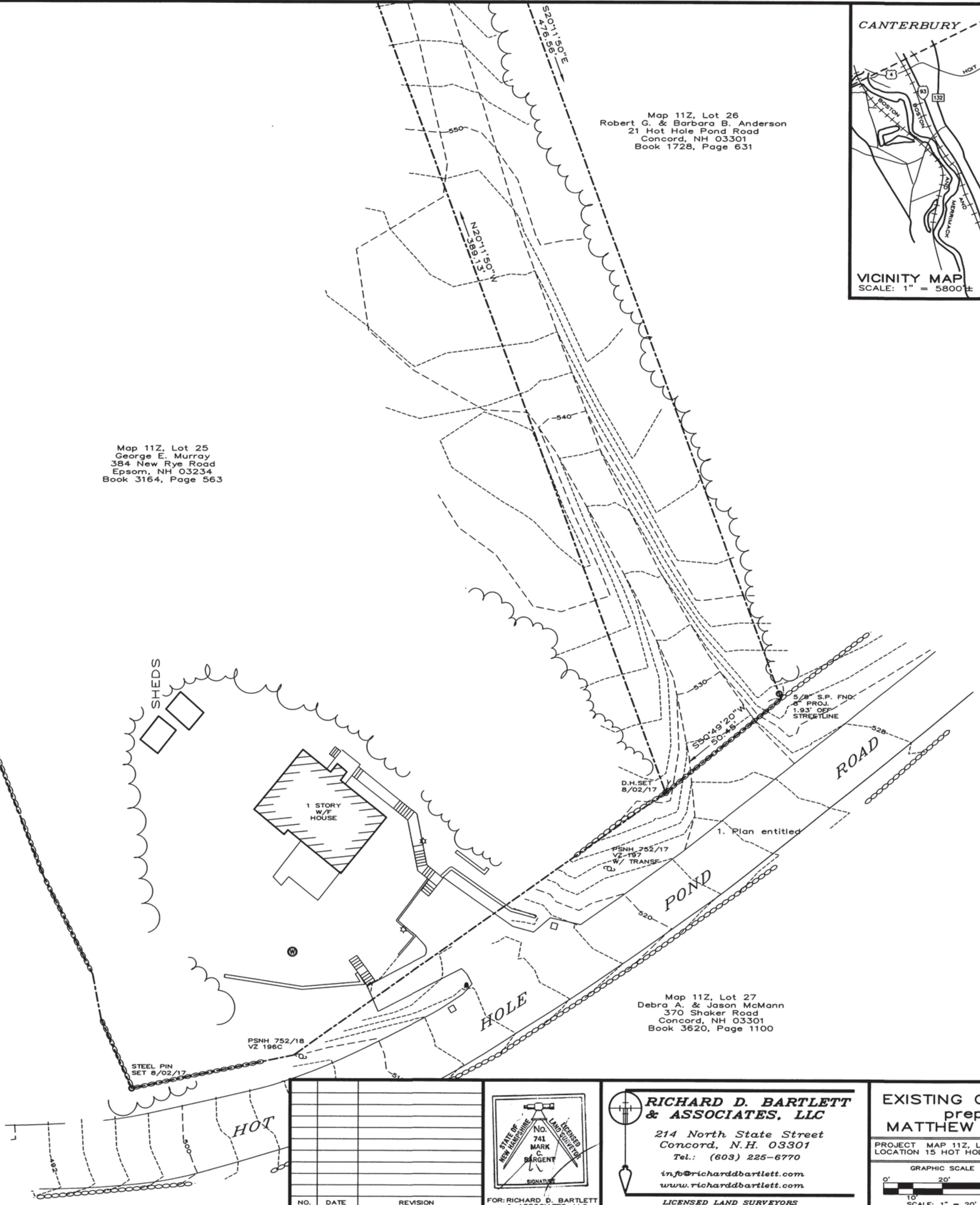
7. The subject premises is with Zone X, areas determined to be outside the 0.2% annual chance floodplain, depicted on the Flood Insurance Rate Map, Merrimack County, panel 348 of 705, Map no. 33013C0345E with an effective date of April 19, 2010.

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.

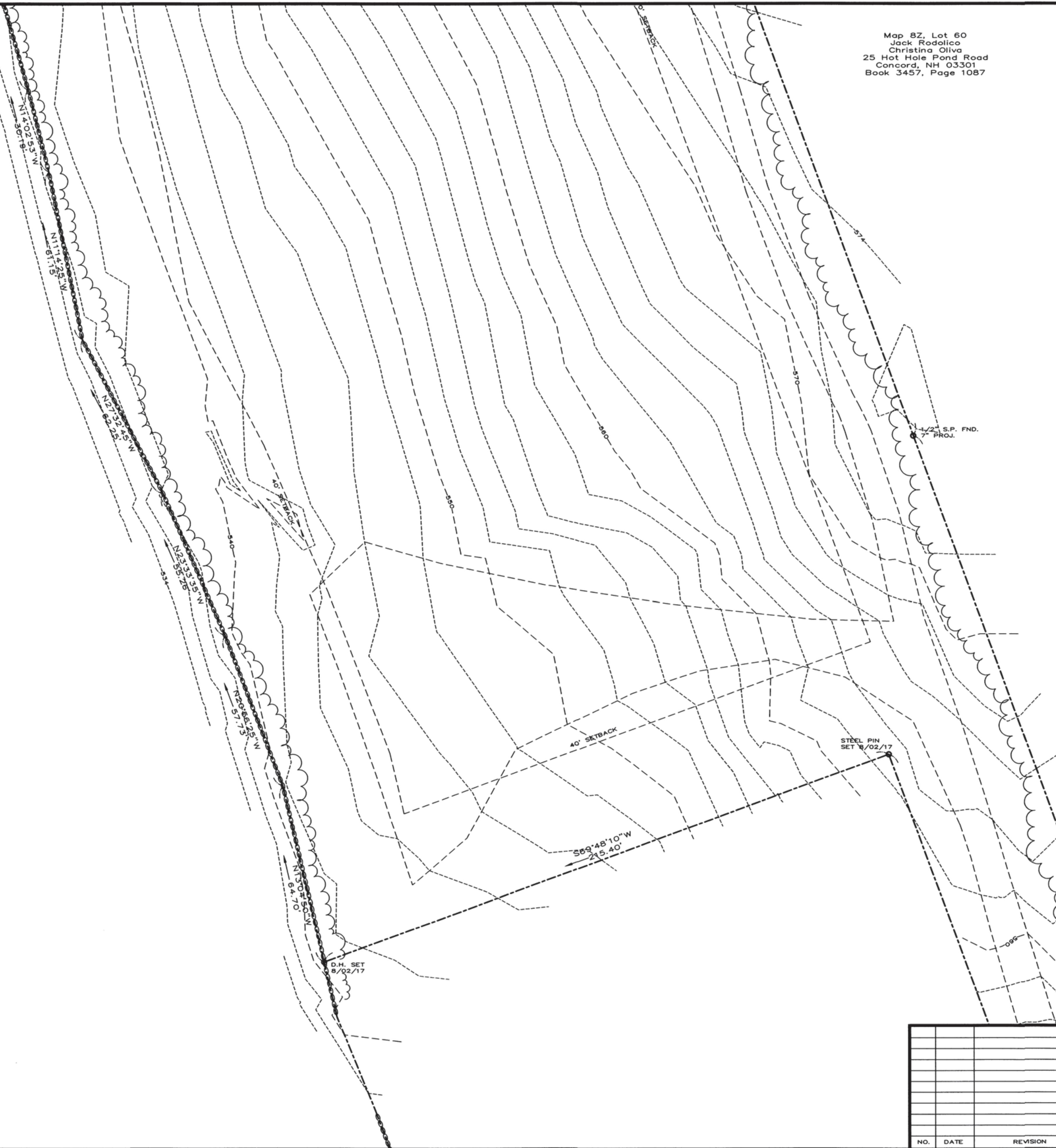
**LEGEND**

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



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

NORTH  
 GRID



Map 82, Aaron M. Cara L., 29 Hot Hole Rd, Concord, NH, Book 3126, P.

PSNH 319/28

PSNH 319/29

1/2" S.P. FND. 91' PROJ.

567-34-28'W 28.92'

567-54-31'W 59.04'

569-26-32'W 177.36'

571-43-44'W 42.21'

1/2" S.P. FND. 8' PROJ.

1/2" S.P. W/ CAP FND. 8' PROJ.

1/2" S.P. W/ CAP FND. 5' PROJ.

PSNH EASEMENT VOL. 475, PAGE 136

1220' STRA. MN 0 DIME: 0.006 FILL: 0.08

520-11-50'E 390-15'

NO. DATE REVISION

Map 82, Aaron M. Cara L., 29 Hot Hole Rd, Concord, NH, Book 3126, P.

RICHARD D. BARTLETT & ASSOCIATES, LLC

214 North State Street Concord, N.H. 03301

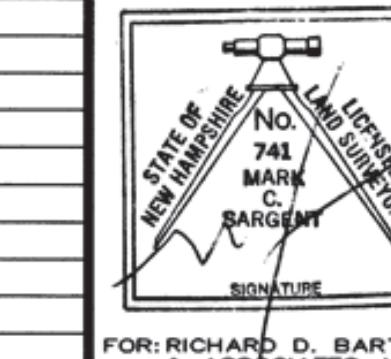
Tel.: (603) 225-6770

info@richarddbartlett.com

www.richarddbartlett.com

LICENSED LAND SURVEYORS

Mc  
J  
C  
25 Ho  
Con  
Book



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

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

[info@richarddbartlett.com](mailto:info@richarddbartlett.com)  
[www.richarddbartlett.com](http://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

DATE: MARCH 11, 2010  
JOB NO.: 1219-213

SCALE: 1" = 20'

111

**MATCH TO SHEET 3**

BENCHMARK  
MAG NAIL SET I  
11" RED OAK  
ELEV. -545.25

BENCHMARK  
MAG NAIL SET IN  
7" MAPLE  
ELEV.=541.21

Fig. 1

100

Fig. 1

1

10 of 10

11

— 1 —



**EXISTING CONDITION PLAT**  
**prepared for:**  
**MATTHEW & ERIN BERRY**

---

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


 NORTH

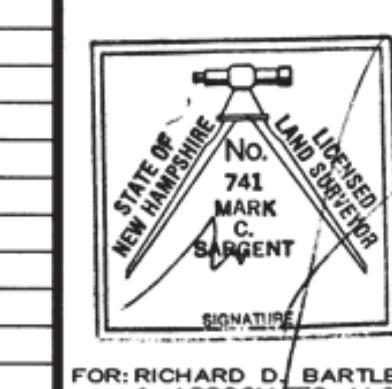

 GRID

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

PSNH 319/26



NO.	DATE	REVISION



**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  
0' 20' 40'  
10' SCALE: 1" = 20'  
DATE: MARCH 11, 2020  
JOB NO.: 1219.213  
SHEET 5 OF 7

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

S.P. 1

S.P.

## SHAKER ROAD

L=135  
Δ=12°  
25.15°E

-1467-

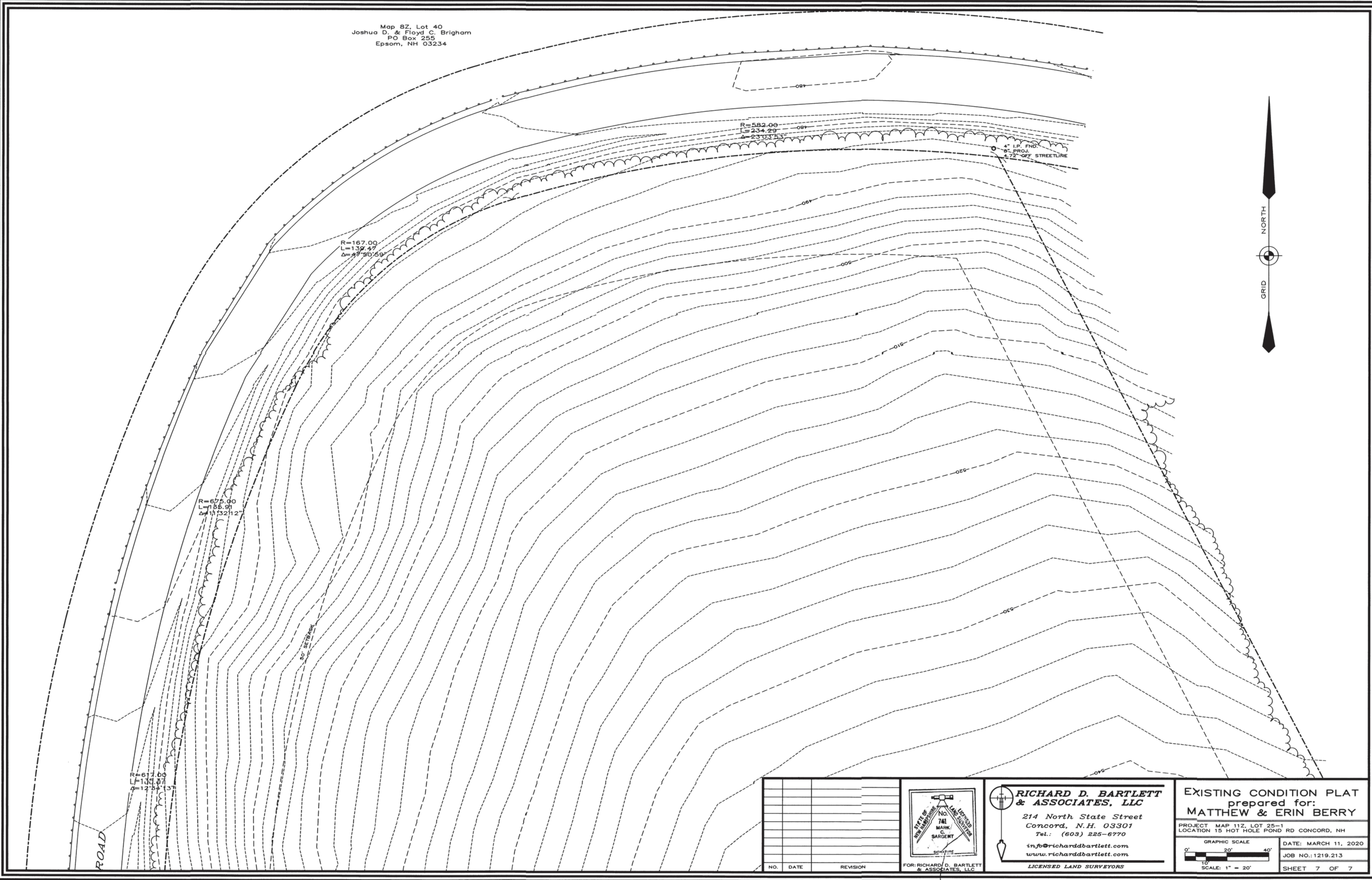
111

11

MATCH TO SHEET 5

**EXISTING CONDITION PLAT**  
**prepared for:**  
**MATTHEW & ERIN BERRY**

Map 8Z, Lot 40  
Joshua D. & Floyd C. Brigham  
PO Box 255  
Epsom, NH 03234



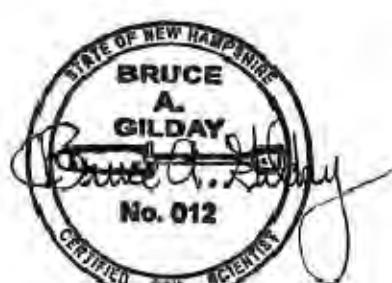
**MATCH TO SHEET 6**

**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. ( $\pm 14.69$  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.

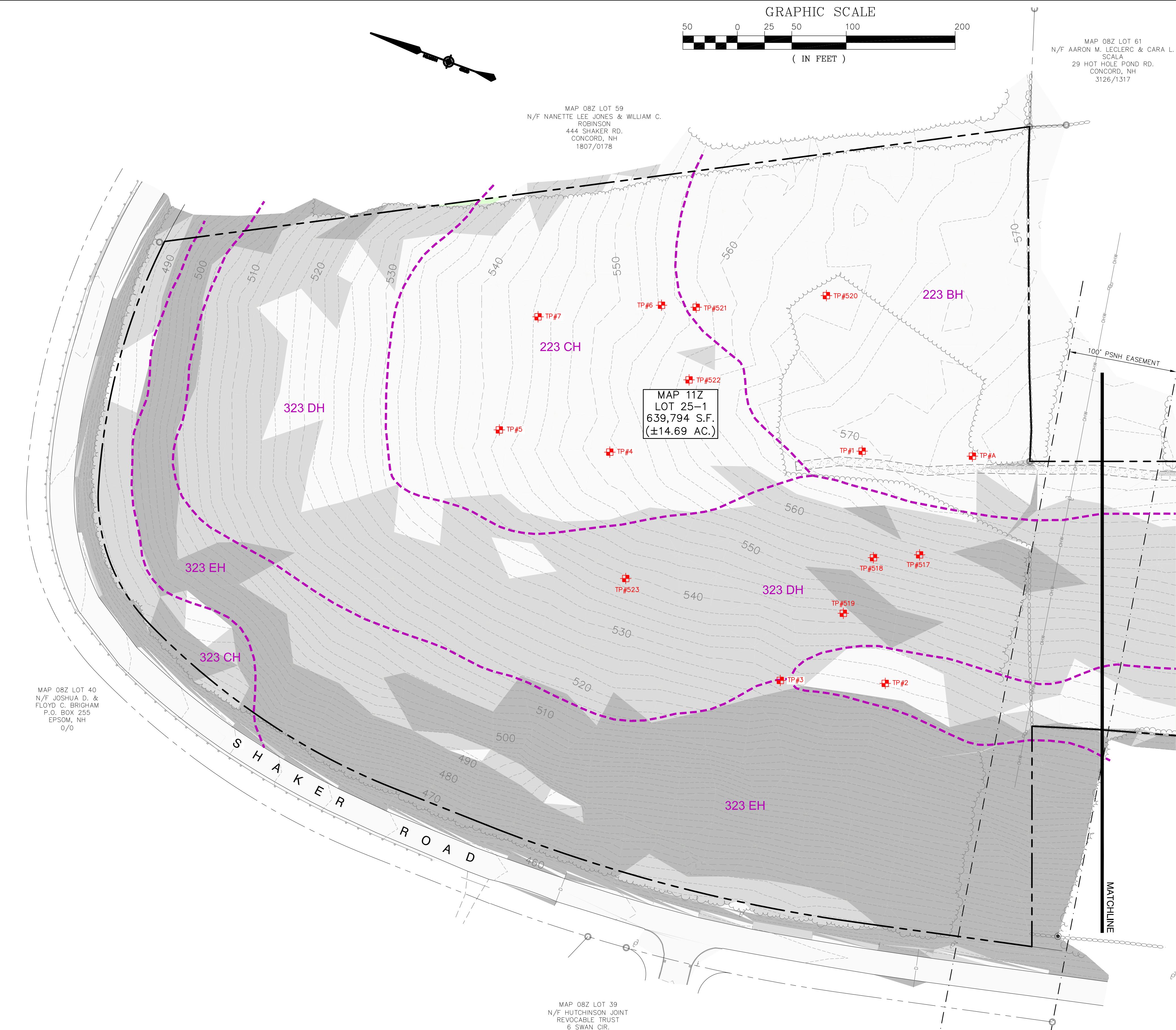
HIGH INTENSITY MAP SYMBOL: 523BH	
DRAINAGE CLASS	IDENTIFIER
1. EXCESSIVELY DRAINED	H. INDICATES HIGH INTENSITY SOIL MAP
2. WELL DRAINED	P. INDICATES PRELIMINARY MAP
3. MODERATELY WELL DRAINED	
4. SOMEWHAT POORLY DRAINED	
5. POORLY DRAINED	
6. VERY POORLY DRAINED	
7. NOT DETERMINABLE	
PARENT MATERIAL	SLOPE CLASS
1. GLACIOFLUVIAL	B. 0 TO 8%
2. GLACIAL TILL	C. 8 TO 15%
3. MARINE OR GLACIOLACUSTRIINE VERY FINE SAND AND SILT	D. 15 TO 25%
4. MARINE OR GLACIOLACUSTRIINE LOAMY/SANDY OVER SILT/CLAY	E. 15 TO 25%
5. MARINE OR GLACIOLACUSTRIINE SILT AND CLAY	F. 35%+
6. EXCAVATED, REGRADED, OR FILLED	
7. ALLUVIAL DEPOSITS	
8. ORGANIC MATERIALS FRESH WATER	
9. ORGANIC MATERIALS TIDAL MARSH	
EXAMPLE: HIGH INTENSITY MAP SYMBOL 523BH INDICATES A POORLY DRAINED GLACIAL TILL SOIL WITH A RESTRICTIVE FEATURE, ON A SLOPE OF 0 TO 8%.	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

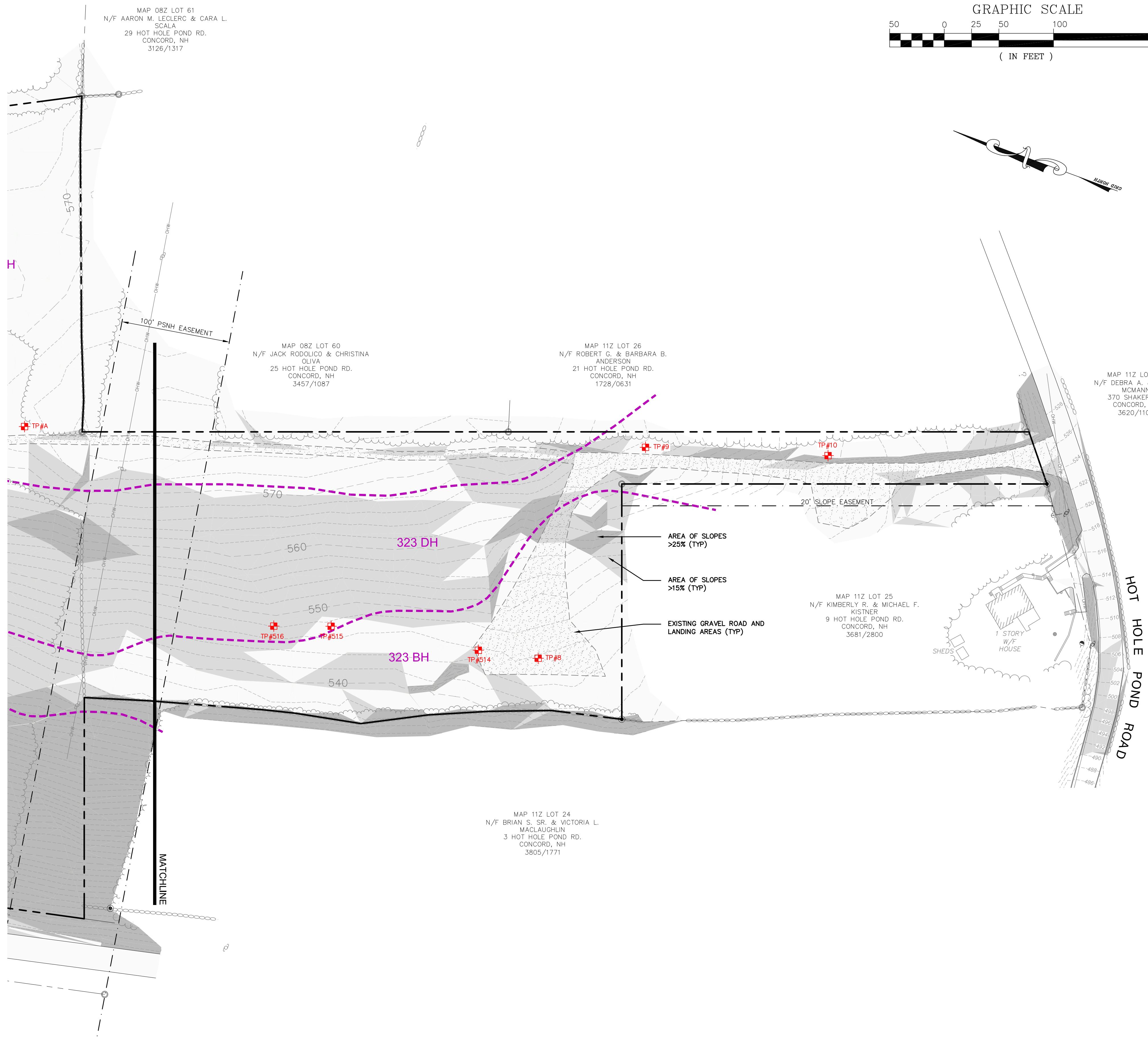


GRAPHIC SCALE  
( IN FEET )

MAP 08Z LOT 61  
N/F AARON M. LECLERC & CARA L.  
SCALA  
29 HOT HOLE POND RD.  
CONCORD, NH  
3126/1317

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





**133 Court Street**      **Portsmouth, NH 03801**  
**(603) 433-2335**      **[www.altus-eng.com](http://www.altus-eng.com)**

NOT FOR CONSTRUCTION  
ISSUED FOR: **FINAL APPROVAL**  
ISSUE DATE: **DECEMBER 17, 2024**

REVISIONS		BY	DATE
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

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

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

APPLICANT:

PROJECT:  
**GRANITE RIDGE  
ESTATES  
CLUSTER SUBDIVISION**

TITLE:

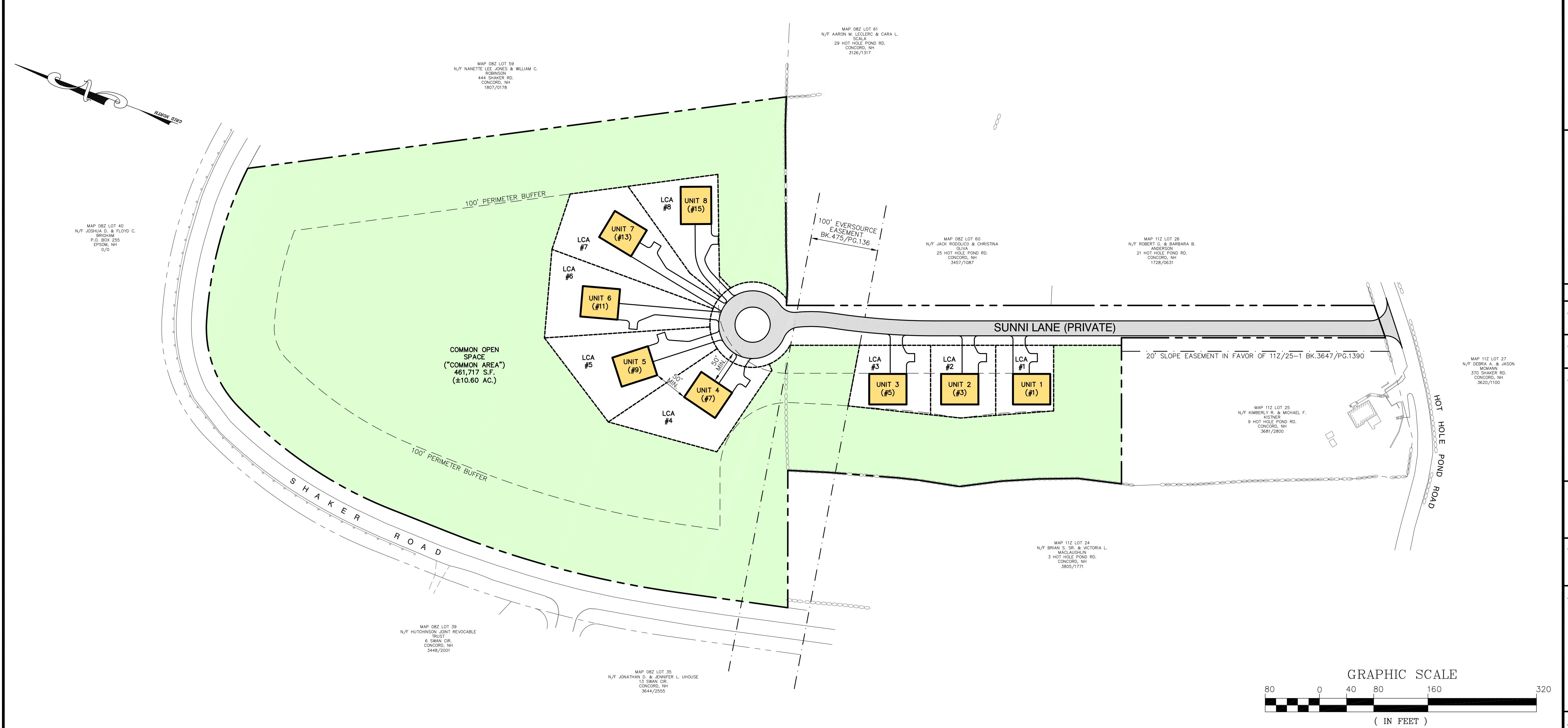
**SOILS AND  
TOPOGRAPHY PLAN**

SHEET NUMBER:

## C-1.2



33 Court Street      Portsmouth, NH 03801  
(603) 433-2335      [www.altus-eng.com](http://www.altus-eng.com)



## NOTES

1. THIS PLAN IS INTENDED TO PROVIDE A GENERAL OVERVIEW OF THE PROJECT AND IS NOT INTENDED FOR RECORDING. SEE SHEETS C-3 AND C-4 FOR RECORDING PLANS.
2. SPECIFICATION REFERENCES THAT MAY BE USED IN THIS PLAN SET:
  - (1) REFERENCE TO CITY STANDARDS SHALL MEAN THE CITY OF CONCORD CONSTRUCTIONS STANDARDS AND DETAILS, AS MOST RECENTLY PUBLISHED.
  - (2) REFERENCE TO STATE SPECIFICATIONS SHALL MEAN STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE NHDOT, AS MOST RECENTLY PROMULGATED.
  - (3) REFERENCE TO MUTCD SHALL MEAN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, AS MOST RECENTLY PUBLISHED.
  - (4) REFERENCE TO THE CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE NHDES SHALL MEAN THE CONSTRUCTION STANDARDS FOR SANITARY SEWER AND WATER SUPPLY SYSTEMS OF THE NHDES, AS MOST RECENTLY ADOPTED.
  - (5) REFERENCE TO THE ARCHITECTURAL BARRIER FREE CODE SHALL MEAN THE ACCESSIBLE AND USEABLE BUILDING AND FACILITIES CODE OF THE INTERNATIONAL CODE COUNCIL, AS MOST RECENTLY ADOPTED BY THE CITY.
  - (6) REFERENCE TO THE ALTERATIONS OF TERRAIN STANDARDS SHALL MEAN THE NHDES ALTERATION OF TERRAIN (AoT) (CHAPTER ENV-WQ 1500).
  - (7) REFERENCE TO STANDARDS FOR SEWER DISCHARGE PERMITS SHALL MEAN THE NHDES STANDARDS OF DESIGN AND CONSTRUCTION FOR SEWERAGE AND WASTEWATER TREATMENT FACILITIES (CHAPTER ENV-WQ 700).
  - (8) REFERENCE TO STANDARDS FOR SEPTIC SYSTEMS SHALL MEAN THE NHDES SUBDIVISION AND INDIVIDUAL SEWAGE DISPOSAL SYSTEM DESIGN RULES (CHAPTER ENV-WQ 1000).
  - (9) REFERENCE TO STANDARDS FOR POTABLE WELLS SHALL MEAN NH WATER WELL BOARD STANDARDS FOR THE CONSTRUCTION, MAINTENANCE AND ABANDONMENT OF WELLS (CHAPTER ENV-WQ 600).

APPLICANT:

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

## TITLE E:

# OVERALL SITE PLAN

**C-2**



RESERVED FOR REGISTRY USE

**SURVEY NOTES**

1. LOT AREA: 639,794 S.F. ( $\pm 14.69$  AC.)
2. ZONE: RO (OPEN SPACE RESIDENTIAL DISTRICT)
3. DEED REFERENCE: MCRD BOOK 3866, PAGE 2039
4. THE PARCEL IS IDENTIFIED AS CONCORD ASSESSOR'S MAP 11Z, LOT 25-1.
5. HORIZONTAL DATUM NH STATE PLANE NAD 83, VERTICAL DATUM NAVD 88.
6. PARCEL IS IN ZONE X PER FIRM PANEL 33013C0345E DATED APRIL 19, 2020.
7. THOMAS E. SOKOLOSKI, CWS #127 OF TES ENVIRONMENTAL CONSULTANTS, LLC EVALUATED THE SITE ON JANUARY 15, 2020 AND FOUND NO WETLANDS.
8. THESE PLANS ARE BASED ON SURVEY PLANS TITLED "EXISTING CONDITIONS PLAT PREPARED FOR MATTHEW & ERIN BERRY" DATED MARCH 11, 2020 PREPARED BY RICHARD D. BARTLETT AND ASSOCIATES, LLC. ALL "FOUND" AND "SET" MONUMENTS WERE DONE SO BY RICHARD D. BARTLETT AND ASSOCIATES, LLC. NO SURVEY WORK OF ANY KIND WAS PERFORMED BY ALTUS ENGINEERING.
9. THE ABOVE REFERENCED SURVEY BY RICHARD D. BARTLETT AND ASSOCIATES, LLC WAS BY TOTAL STATION ON JUNE 13 & 14, 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 TOTAL CONTROL TRAVERSE ERROR OF CLOSURE OF 1:20,473.
10. REFERENCE PLAT ENTITLED "SUBDIVISION OF LAND BELONGING TO MARVIN H. CASWELL, FLORENCE MARTIN, AND PEARL STORTSRUM" DATED MAY 22, 1982 BY GILBERT C. CASTLE AND RECORDED AT MCRD AS PLAN NO. 7152.

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

LEGEND

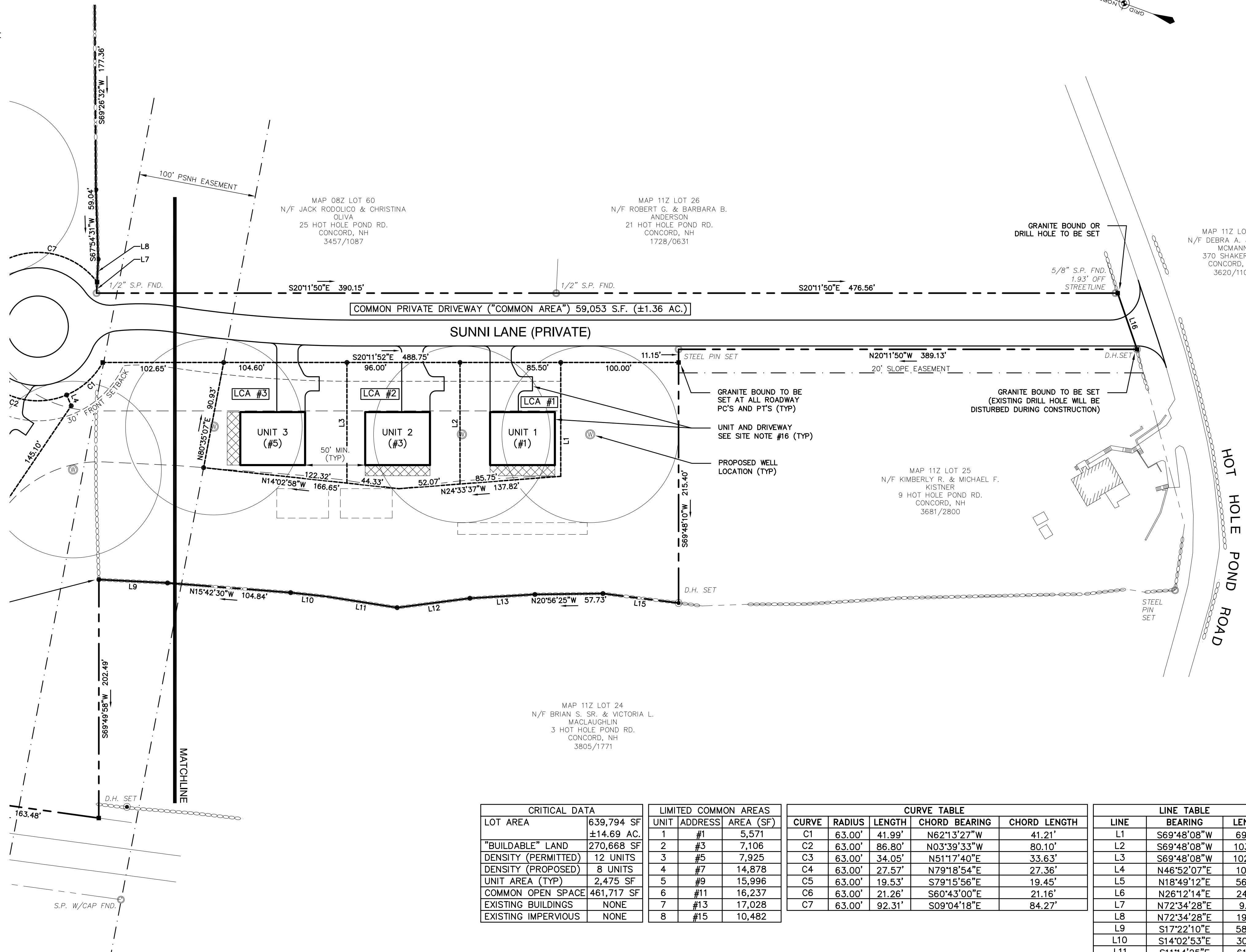
- PROPERTY LINE
- - - BUILDING SETBACK
- - - 100' BUFFER
- - - LIMITED COMMON AREA
- - - EASEMENT
- ○ ● ■ MONUMENT AS DESCRIBED

Surveyor:

**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

GRAPHIC SCALE  
50 0 25 50 100 200  
( IN FEET )



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

P5470

NOT FOR CONSTRUCTION  
ISSUED FOR:  
FINAL APPROVAL  
ISSUE DATE:  
**JANUARY 9, 2025**

REVISIONS  
NO. DESCRIPTION BY DATE  
0 SUBMISSION EBS 09/20/23  
1 ADDED LCA'S 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 REVISED L13 EBS 01/09/25

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

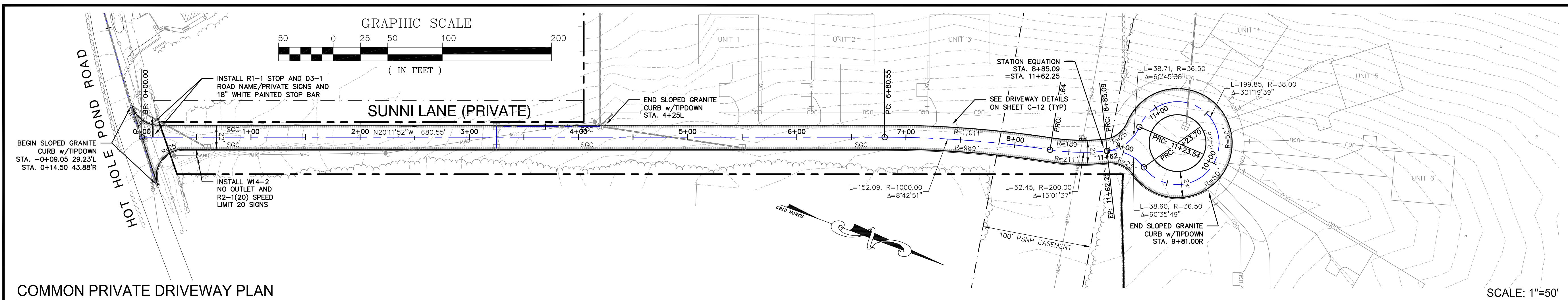
SCALE:  
22" x 34" - 1" = 50'  
11" x 17" - 1" = 100'

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

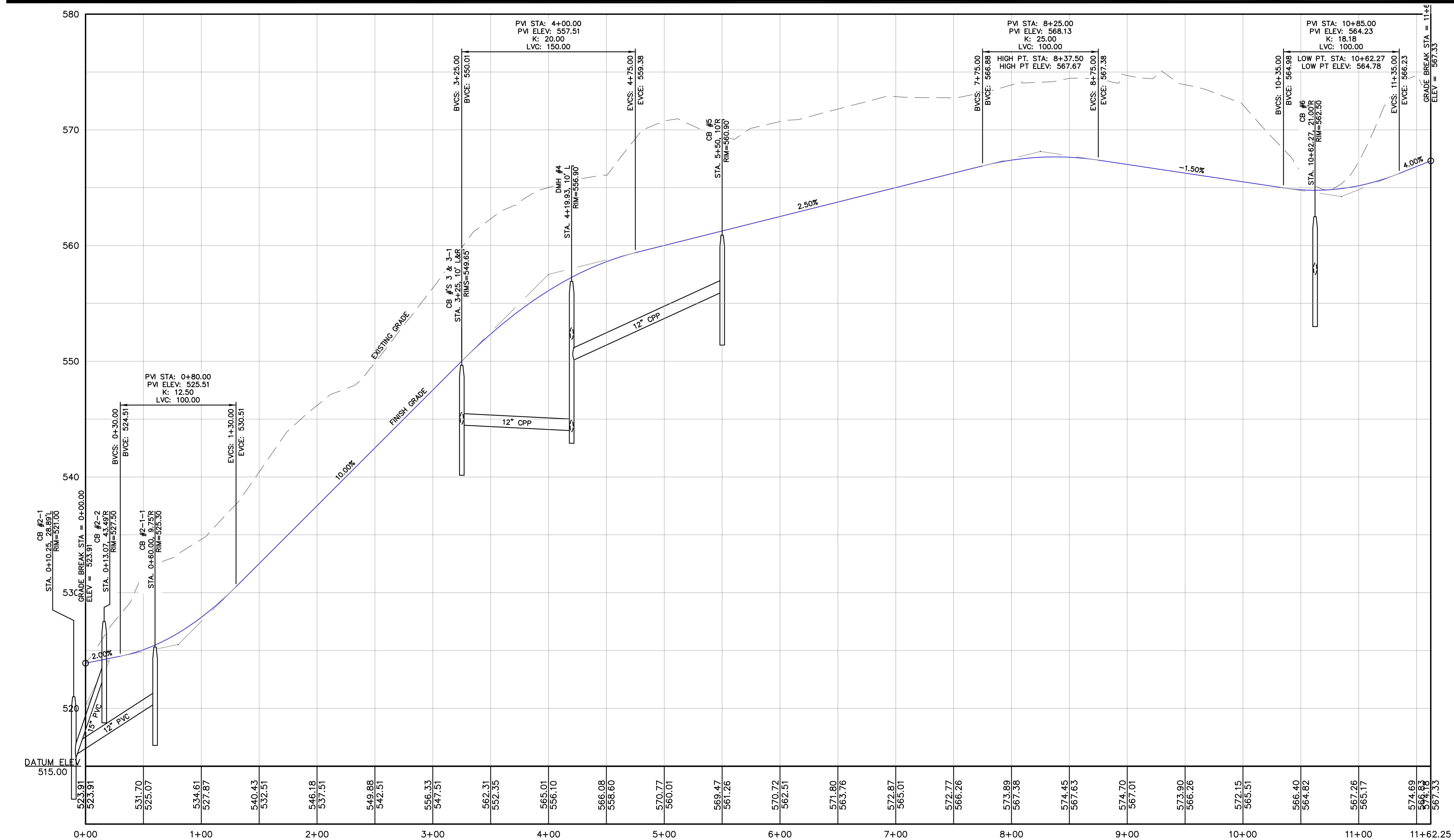
TITLE:  
**CONDOMINIUM  
SITE PLAN**  
SHEET NUMBER:  
C-3.2



# COMMON PRIVATE DRIVEWAY PLAN

SCALE: 1"=50'

**Court Street  
3) 433-2335** **Portsmouth, NH 03801**  
**www.altus-eng.com**



# COMMON PRIVATE DRIVEWAY PROFILE

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

C-4.1

# DRIVEWAY PLAN AND PROFILE

四

PROJECT:

# GRANITE RIDGE ESTATES

## CLUSTER SUBDIVISION

APPLICANT:

OWNER:

<u>REVISIONS</u>		BY	DATE
NO.	DESCRIPTION		
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:

$$\begin{aligned}22'' \times 34'' - 1'' &= 50' \\11'' \times 17'' - 1'' &= 100'\end{aligned}$$

PROJECT:

# GRANITE RIDGE ESTATES

## CLUSTER SUBDIVISION

四

# DRIVEWAY PLAN AND PROFILE

**TITLE:**

PROJECT:

# GRANITE RIDGE ESTATES

## CLUSTER SUBDIVISION

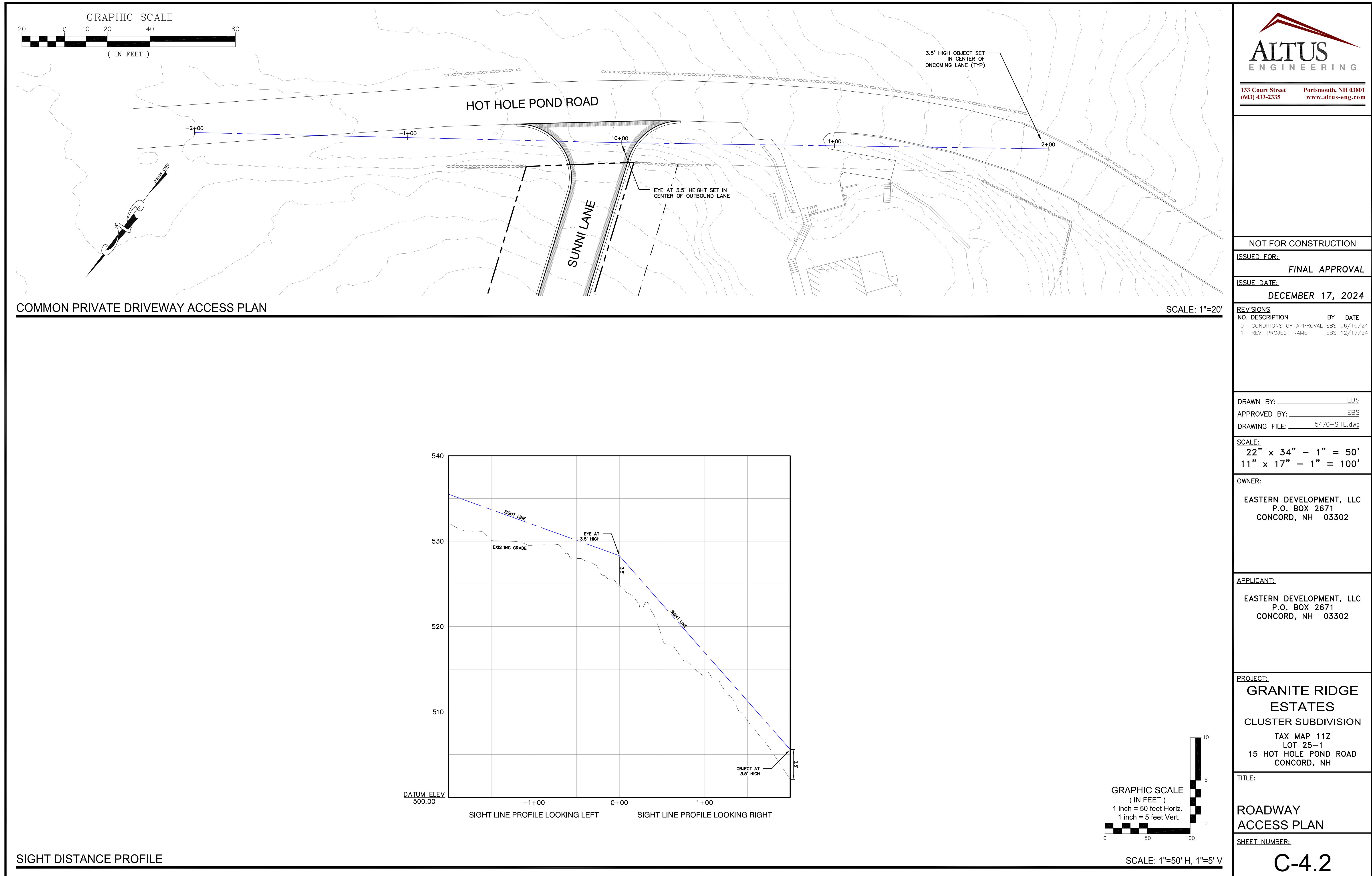
# DRIVEWAY PLAN AND PROFILE

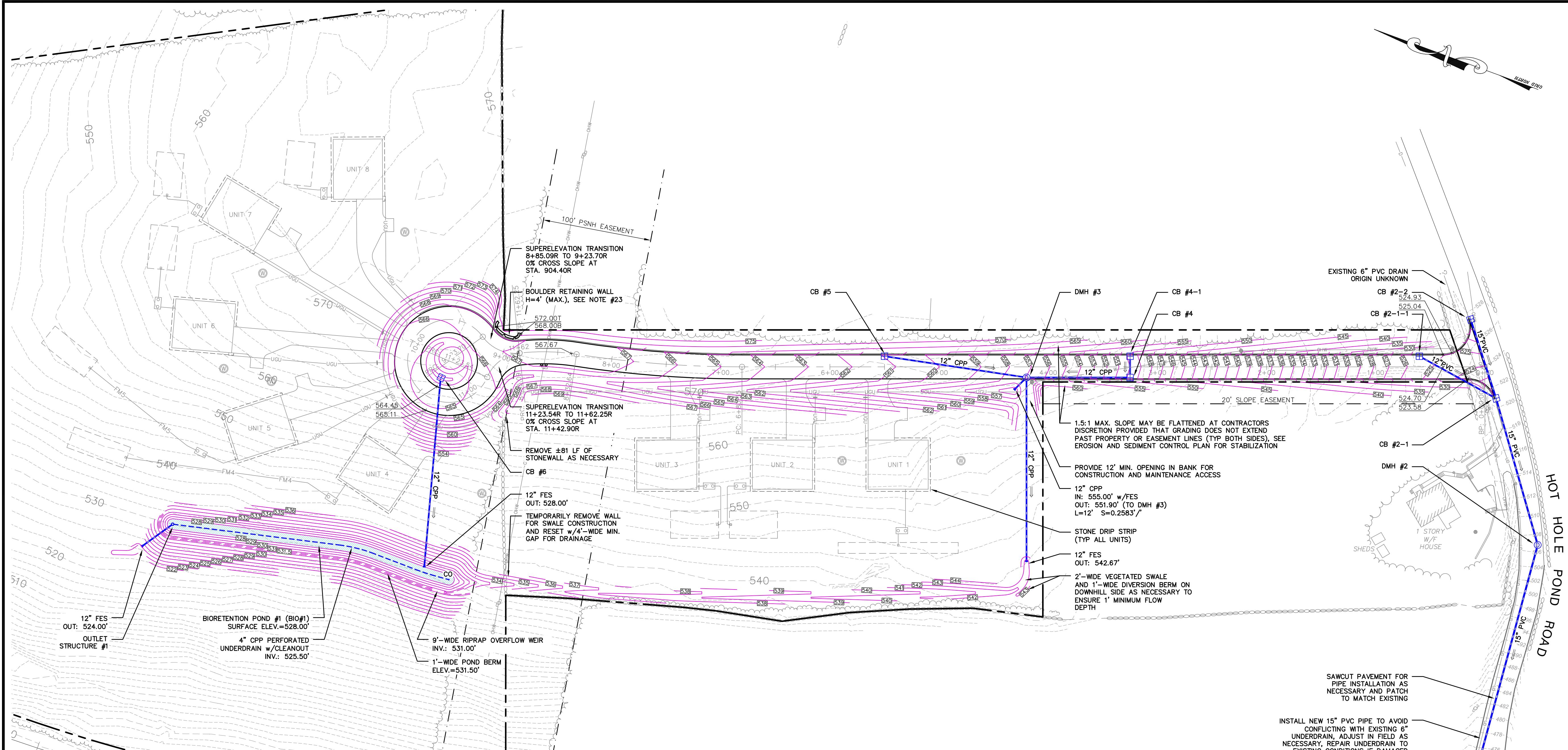
SHEET NUMBER:

DRI

C-4 1

C-4





# GRADING AND DRAINAGE NOTES

1. DO NOT BEGIN CONSTRUCTION UNTIL ALL STATE AND LOCAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.
2. 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.
3. CONTRACTOR SHALL READ AND FOLLOW ALL CONDITIONS OF APPROVAL IN THE SITE'S LOCAL, STATE AND FEDERAL PERMITS.
4. CONTRACTOR SHALL OBTAIN A "DIGSAFE" NUMBER AT LEAST 72 HOURS PRIOR TO COMMENCING CONSTRUCTION.
5. A PRE-CONSTRUCTION CONFERENCE WITH THE DEVELOPER, DESIGN ENGINEER, EARTHWORK CONTRACTOR, CONCORD GENERAL SERVICES DEPARTMENT AND THE CITY ENGINEER SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITY AND NO LESS THAN TWO WEEKS AFTER THE POSTING OF ALL REQUIRED BONDS AND PERFORMANCE SURETYS.
6. ALL BONDS AND FEES SHALL BE PAID/POSTED PRIOR TO INITIATING CONSTRUCTION.
7. ALL BENCHMARKS AND TOPOGRAPHY SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO INITIATING CONSTRUCTION.
8. UNLESS OTHERWISE AGREED IN WRITING, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING TEMPORARY BENCHMARKS (TBMS) AND PERFORMING ALL CONSTRUCTION SURVEY LAYOUT.
9. PRIOR TO CONSTRUCTION, FIELD VERIFY JUNCTIONS, LOCATIONS AND ELEVATIONS/INVERTS OF ALL EXISTING STORMWATER AND UTILITY LINES. PRESERVE AND PROTECT LINES TO BE RETAINED.
10. 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.
11. 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.
12. 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.
13. 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.
14. ROCK AND LEDGE SHALL BE REMOVED FROM THE ROADWAY TO AT LEAST 2' BELOW FINISH GRADE.
15. DRAINAGE PIPE SHALL BE CORRUGATED POLYETHYLENE PIPE ("CPP", TYPE ADS N-12, HANCOR H1-Q OR APPROVED EQUAL) OR SDR 35 PVC ("PVC") AS SPECIFIED.
16. ALL FLARED END SECTIONS (FES) SHALL BE METAL OR CONCRETE. HDPE END SECTIONS SHALL NOT BE ACCEPTED.
17. ALL PIPES WITH SLOPES OF 9% (0.09'/') OR GREATER SHALL BE INSTALLED WITH ANTI-SEEP COLLARS AT REGULAR INTERVALS SPACED NO LESS THAN 75' APART ALONG THE PIPE RUN.
18. 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.
19. ALL SPOT GRADES ARE AT FINISH GRADE AND BOTTOM OF CURB WHERE APPLICABLE.
20. ALL DRAINAGE INFRASTRUCTURE CONSTRUCTED WITHIN THE PROPERTY SHALL BE PRIVATELY OWNED AND MAINTAINED IN PERPETUITY.
21. ALL SWALES, STORMWATER PONDS AND THEIR CONTRIBUTING AREAS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
22. UPON COMPLETION OF CONSTRUCTION, ALL DRAINAGE INFRASTRUCTURE SHALL BE CLEANED OF ALL DEBRIS AND SEDIMENT.
23. ANY RETAINING WALL IN EXCESS OF FOUR FEET IN HEIGHT SHALL REQUIRE A BUILDING PERMIT AND SHALL BE BUILT IN ACCORDANCE WITH A DESIGN STAMPED BY A NH LICENSED ENGINEER FAMILIAR WITH WALL DESIGN.
24. SEE SHEET C-6 FOR EROSION & SEDIMENT CONTROL MEASURES AND SHEET C-11 FOR LEGEND.

# DRAINAGE SCHEDULE

OUTLET STRUCTURE #1 30" I.D. CONCRETE BEEHIVE GRATE RIM= 530.50 IN: 525.50 (4" UNDERDRAIN) IN: 528.90 (10" ORIFICE x2) OUT: 525.00 (TO FES) 12" CPP w/FES L=±32' S=0.0313'/'	CB #2-2 4' I.D. CONCRETE w/3' SUMP TYPE B GRATE RIM= 527.50 OUT: 522.25 (TO CB #2-1) 15" PVC L=73' S=0.0890'/' (SEE NOTE #17)	CB #5 4' I.D. CONCRETE w/3' SUMP TYPE B GRATE RIM= 560.90 OUT: 555.90 (TO DMH#3) 12" CPP L=±128' S=0.045'/'
DMH #2 (PER CITY DETAIL SD-2) RIM= 506.75 IN: 501.50 (15" FROM CB#2-1) OUT: 501.40 (TO FES) 15" PVC w/FES L=±262' S=±0.1370'/' (SEE NOTE #17)	DMH #3 4' I.D. RIM= 556.90' IN: 544.01 (12" FROM CB#4) IN: 550.14 (12" FROM CB#5) IN: 551.90 (12" FROM FES) OUT: 543.91 (TO SWALE) 12" CPP w/FES L=±166' S=0.0075'/'	CB #6 4' I.D. CONCRETE w/3' SUMP TYPE B GRATE RIM= 562.50 OUT: 557.50 (TO FES) 12" CPP w/FES L=±172' S=0.1715'/' (SEE NOTE #17)
CB #2-1 5' I.D. CONCRETE w/3' SUMP TYPE F GRATE RIM= 521.00 IN: 516.00 (12" FR. CB #2-1-1) IN: 515.75 (15" FROM CB #2-2) OUT: 515.65 (TO CB #DMH #2) 15" PVC L=136' S=0.1040'/' (SEE NOTE #17)	CB #4 4' I.D. CONCRETE w/3' SUMP TYPE F GRATE RIM= 549.65 IN: 544.57 (12" FROM CB#4) IN: 544.47 (TO DMH #3) 12" CPP L=±92' S=0.005'/'	CB #4-1 4' I.D. CONCRETE w/3' SUMP TYPE F GRATE RIM= 549.65 OUT: 544.65 (TO CB#4) 12" CPP L=±16' S=0.005'/'
CB #2-1-1 4' I.D. CONCRETE w/3' SUMP TYPE F GRATE RIM= 525.30 OUT: 520.30 (TO CB#2-1) 12" PVC L=±77' S=0.0558'/'		

GRAPHIC SCALE

( IN FEET )

**133 Court Street** **Portsmouth, NH 03801**  
**(603) 433-2335** **[www.altus-eng.com](http://www.altus-eng.com)**

NOT FOR CONSTRUCTION

ISSUED FOR:

FINAL APPROVAL

ISSUE DATE:

MARCH 18, 2025

O. DESCRIPTION		BY	DATE
0	SUBMISSION	EBS	09/20/23
1	ADJUSTED DRIVEWAY	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	ADDED OFFSITE DRAINAGE	EBS	12/17/24
7	REV. OFFSITE DRAINAGE	EBS	02/19/25
8	REV. DMH #3 OUTFALL	EBS	03/18/25

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

SCALE:  
 $22'' \times 34'' - 1'' = 50'$   
 $11'' \times 17'' - 1'' = 100'$

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

APPLICANT:  
**EASTERN DEVELOPMENT, LLC**  
**P.O. BOX 2671**

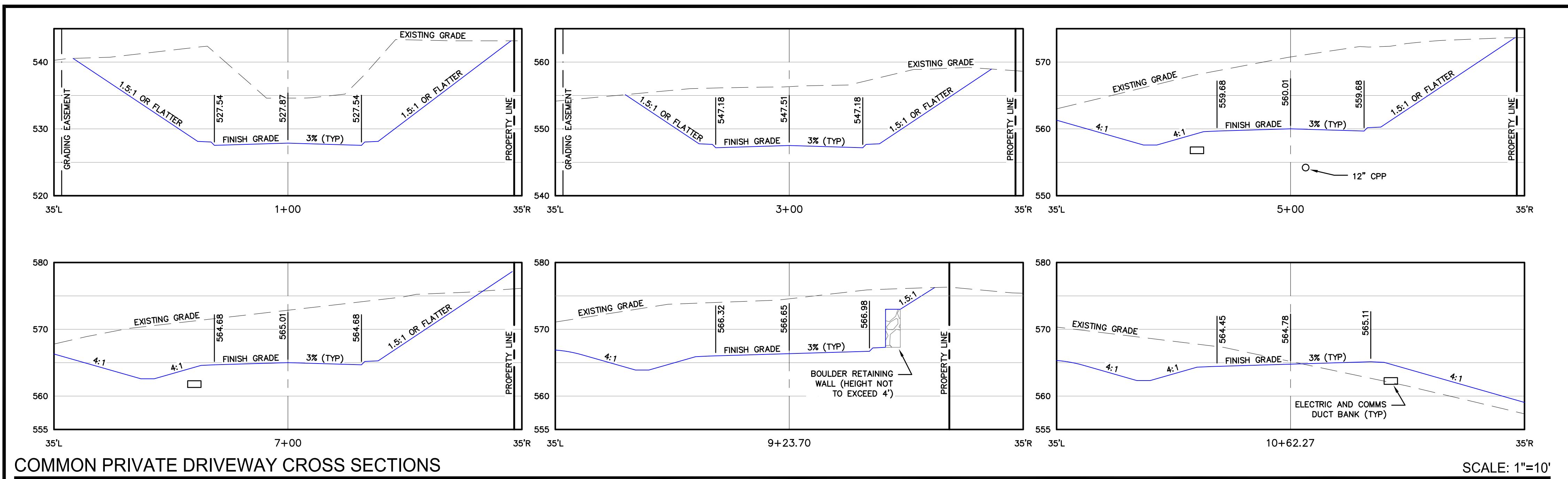
ROJECT:  
**GRANITE RIDGE  
ESTATES  
CLUSTER SUBDIVISION**

TITLE:

# GRADING AND DRAINAGE PLAN

HEET NUMBER:

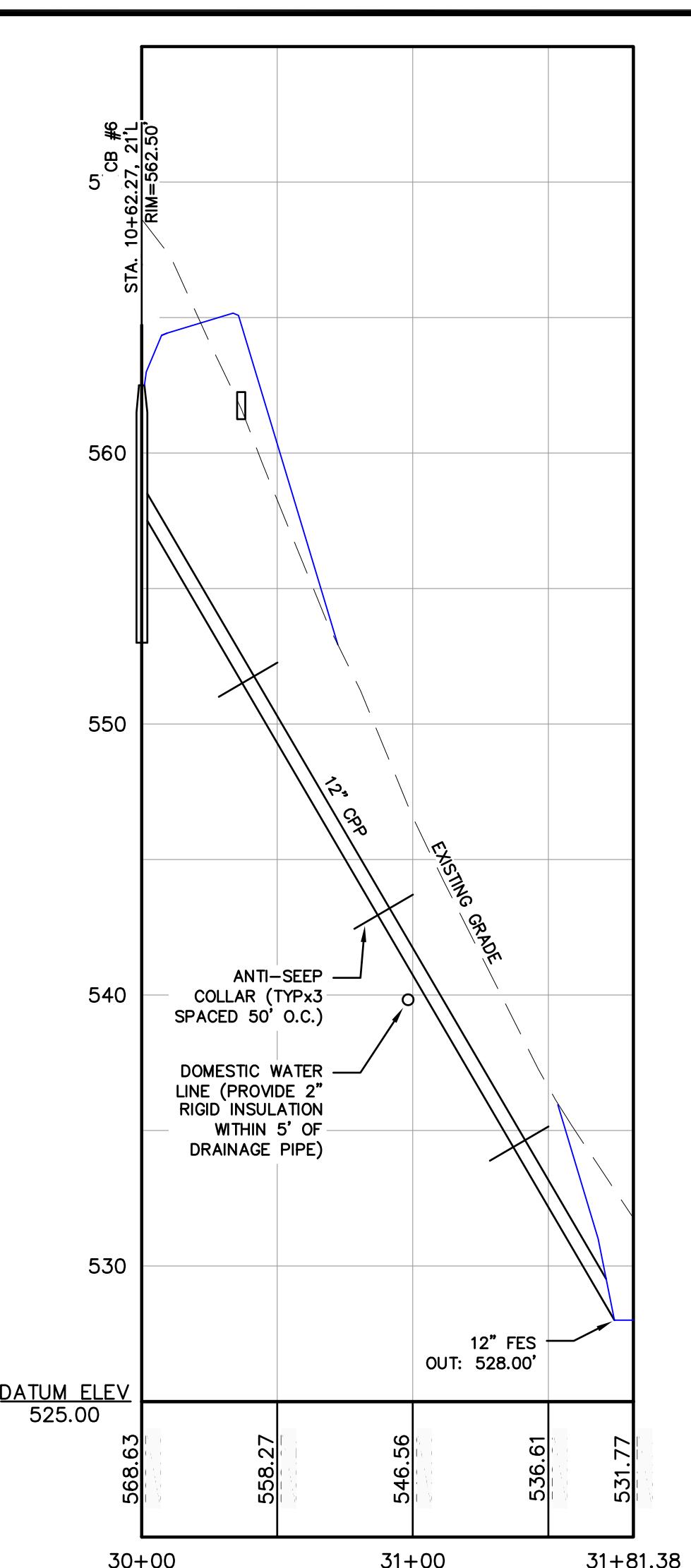
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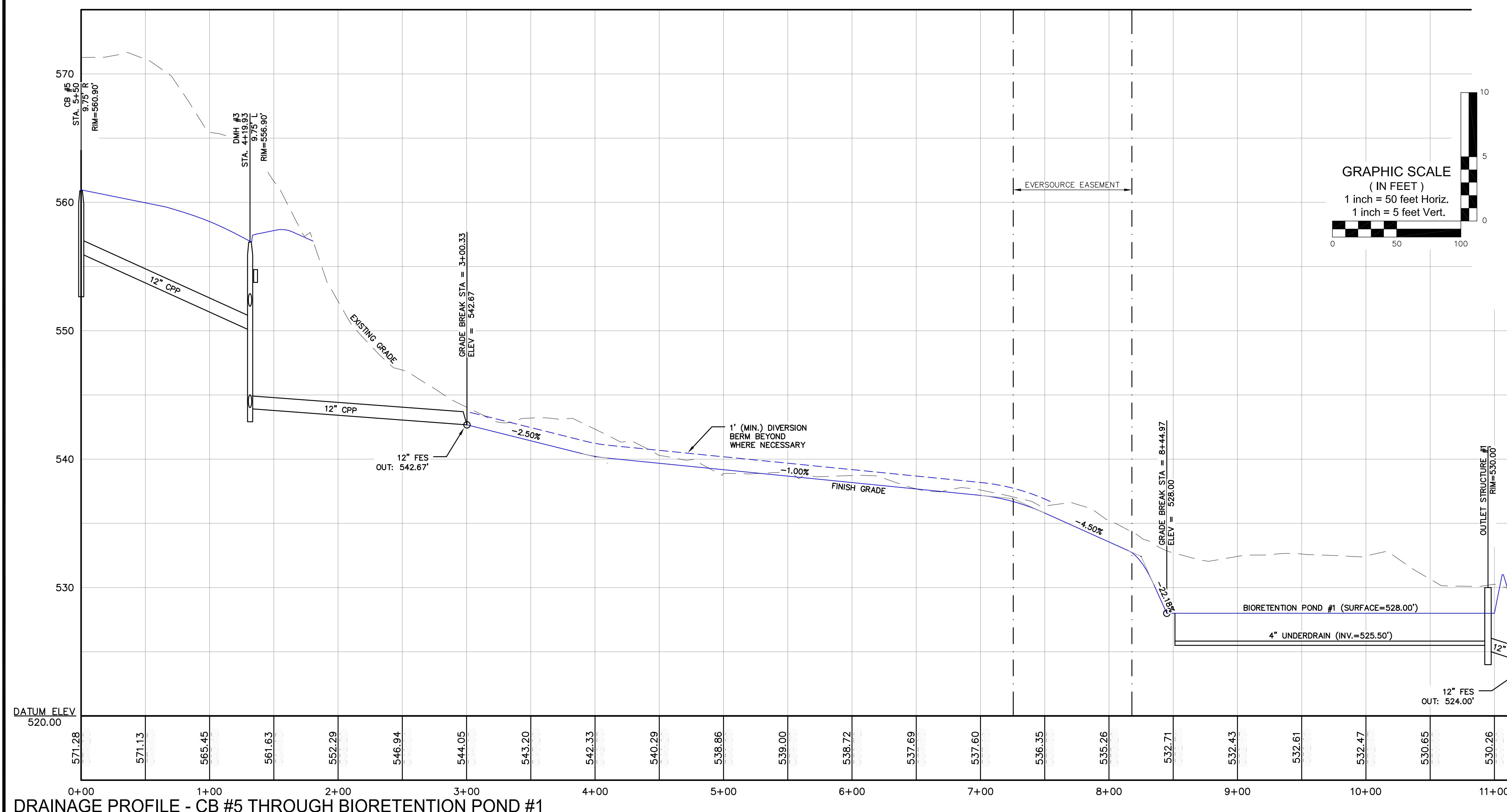
## COMMON PRIVATE DRIVEWAY CROSS SECTIONS

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SCALE: 1"=10'



# DRAINAGE PROFILE - CB #6 TO POND



## DRAINAGE PROFILE - CB #5 THROUGH BIORETENTION POND #1

54. DRAINAGE PROFILE -  
CB #4-1 TO DMH #3

**Court Street  
3) 433-2335** **Portsmouth, NH 03801**  
**www.altus-eng.com**

DATE: DECEMBER 17, 2024

DECEMBER 17, 2024

ONS  
SCRIPTION BY DATE

ENTIAL SUBMISSION EBS 09/20/23  
WISED PER COMMENTS EBS 02/23/24

WISED PER COMMENTS	EBS	02/29/24
NDITIONS OF APPROVAL	EBS	06/10/24
WISED PER COMMENTS	EBS	10/21/24
RRECTED TITLE	EBS	12/17/24

BY: \_\_\_\_\_ EBS  
VED BY: \_\_\_\_\_ EBS  
NG FILE: 5470-SITE.dwg

$$\begin{array}{r} \overline{5} \times 34'' - 1'' = 50' \\ \times 17'' - 1'' = 100' \end{array}$$

TERN DEVELOPMENT, LLC  
P.O. BOX 2671  
CONCORD, NH 03301

RENTANT:  
INTERIOR DEVELOPMENT, LLC  
P.O. BOX 2671  
CONCORD, NH 03301

CT:  
**GRANITE RIDGE  
ESTATES  
CLUSTER SUBDIVISION**

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

# WATER MANAGEMENT PROFILES AND CROSS SECTIONS

NUMBER:

# RAINAGE PROFILES AND CROSS SECTIONS

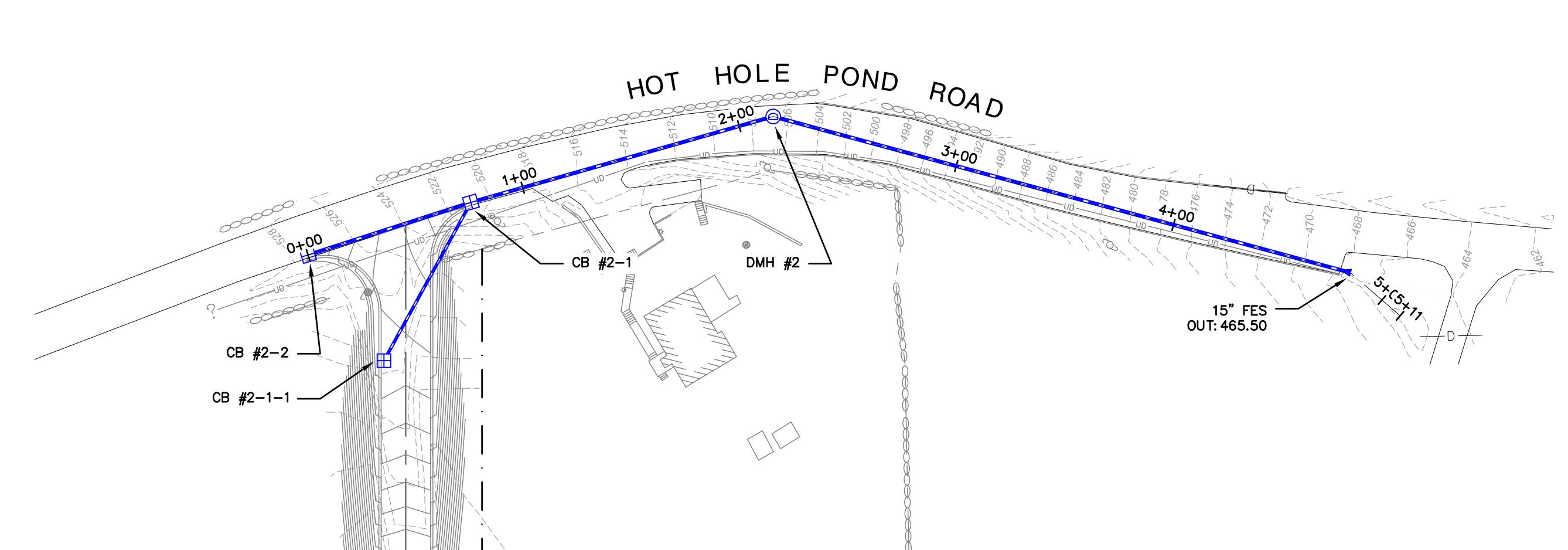
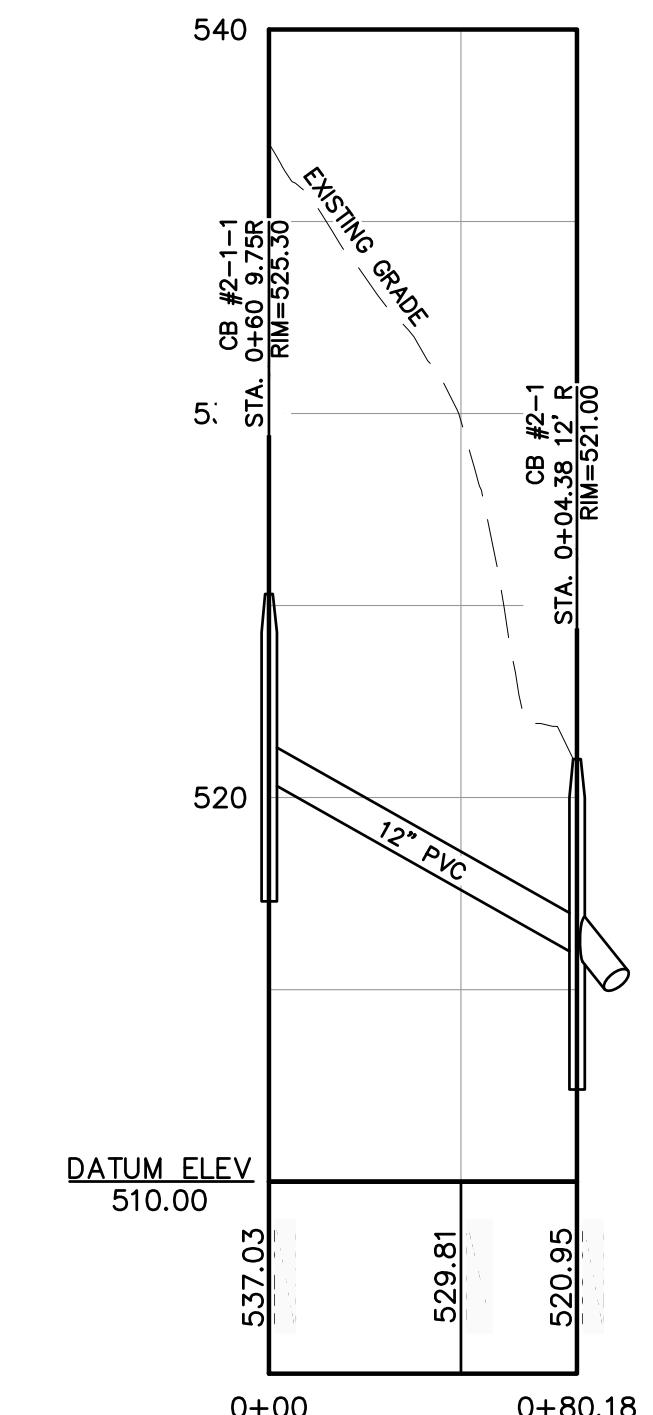
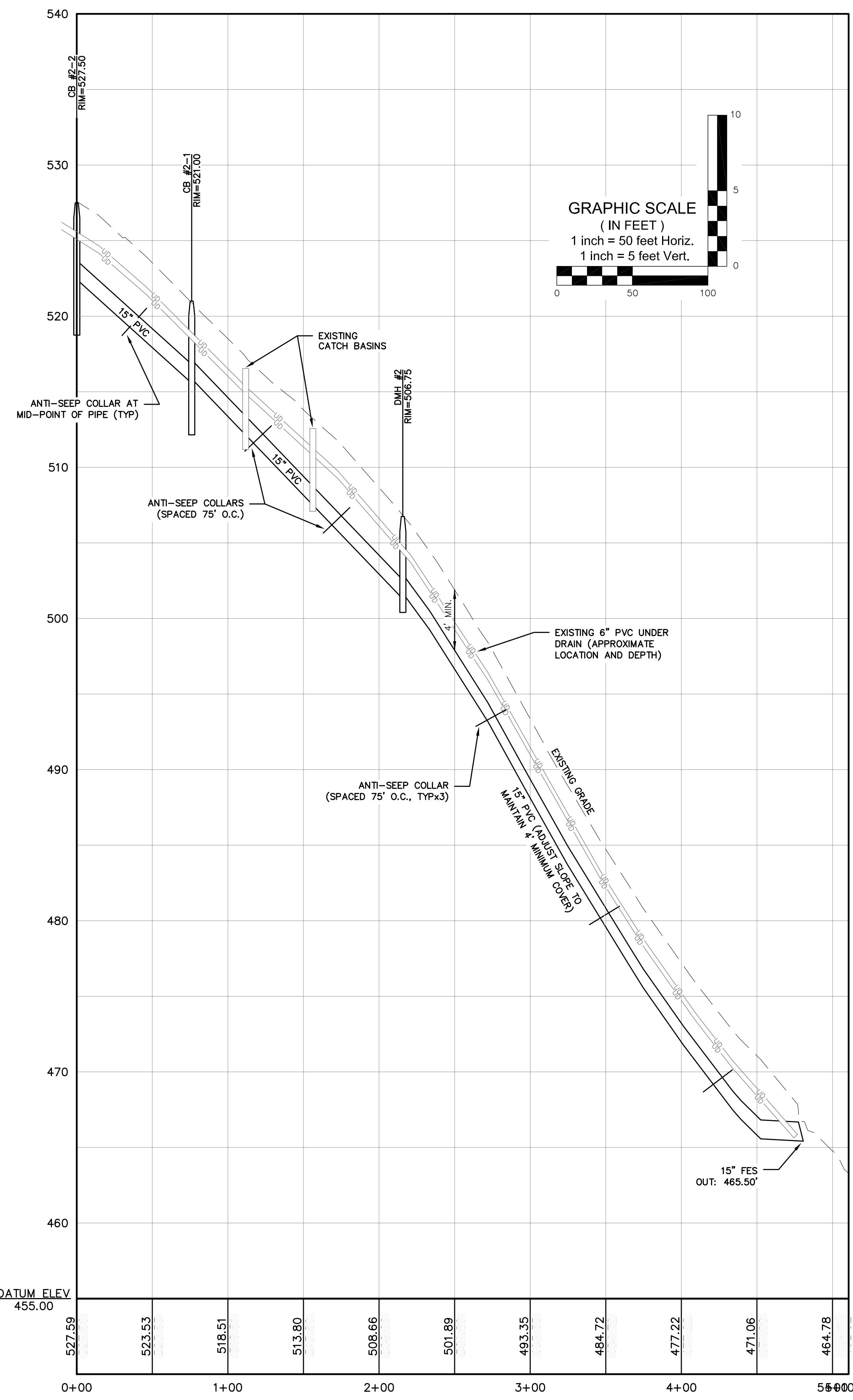
NUMBER:

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258

**C-5.2**

## C-5.2



SCALE: 1"=50'

**C-5.3**

NOT FOR CONSTRUCTION  
ISSUED FOR: FINAL APPROVAL  
ISSUE DATE: FEBRUARY 19, 2025

REVISIONS  
NO. DESCRIPTION BY DATE  
0 SHEET ADDED EBS 12/17/24  
1 REVISED PER COMMENTS EBS 02/19/25

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

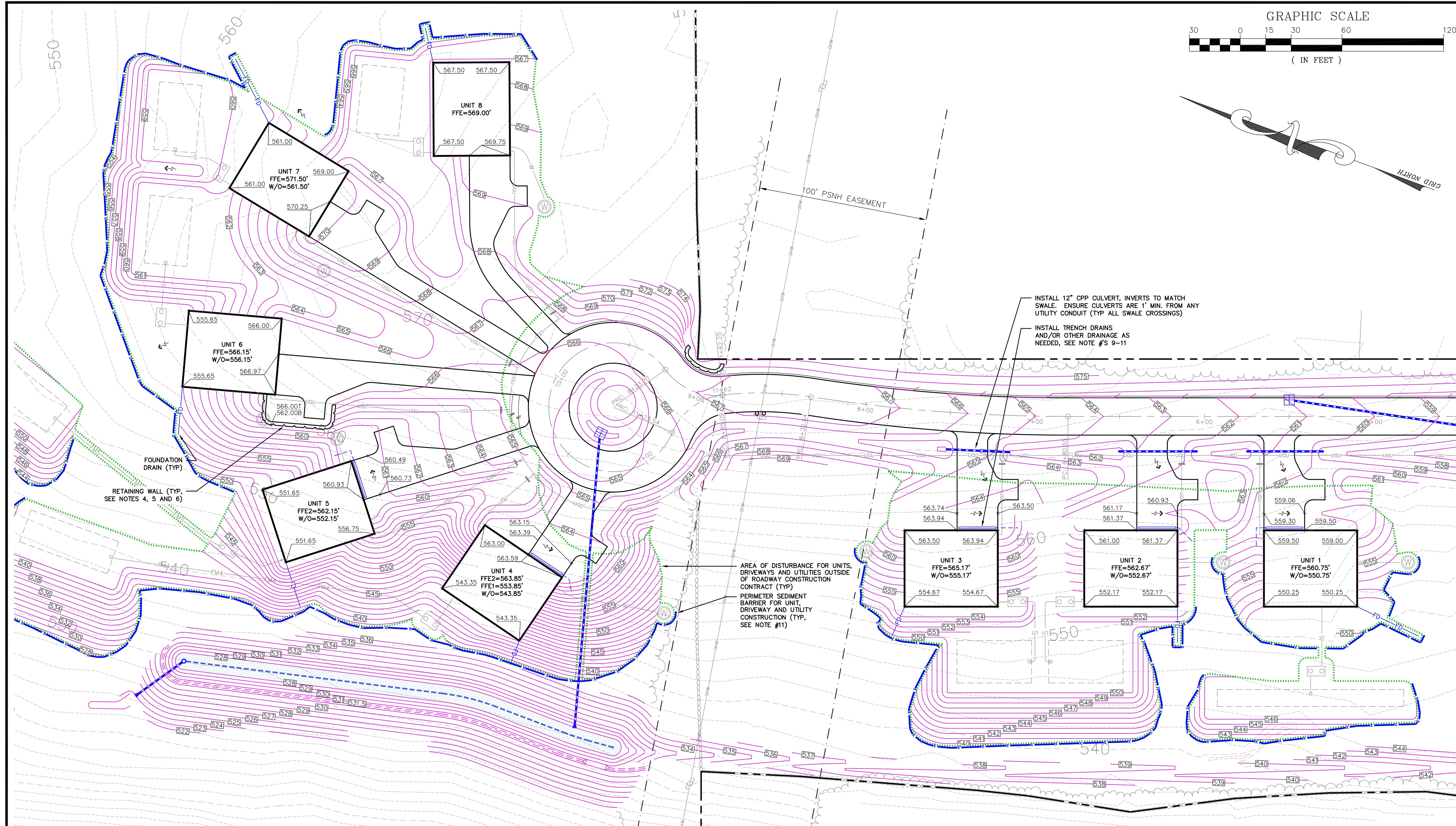
SCALE: 22" x 34" - 1" = 50'  
11" x 17" - 1" = 100'

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: DRAINAGE  
PROFILES  
SHEET NUMBER: \_\_\_\_\_



#### UNIT DEVELOPMENT NOTES

- IT SHALL BE THE RESPONSIBILITY OF THE INDIVIDUAL UNIT OWNERS TO COMPLY WITH ALL APPLICABLE RULES AND REGULATIONS, INCLUDING, BUT NOT LIMITED TO, MUNICIPAL BUILDING CODES, SETBACKS, HOA RULES AND STATE SEPTIC REGULATIONS. DEVIATIONS FROM THIS PLAN WILL REQUIRE APPROVAL FROM THE CONCORD PLANNING BOARD.
- AREA OF NON-CONTIGUOUS EARTH DISTURBANCE FOR THE CONSTRUCTION OF UNITS, DRIVEWAYS, WELLS AND SEPTIC SYSTEMS BEYOND THAT REQUIRED FOR COMMON ROADWAY AND ASSOCIATED DRAINAGE INFRASTRUCTURE (129,510 S.F. UNITS AND ROADWAY INFRASTRUCTURE ARE TO BE CONSTRUCTED SEPARATELY).
- 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. UTILITY CONNECTION POINTS AT BUILDINGS ARE CONCEPTUAL AND MAY BE ADJUSTED IN THE FIELD AS NECESSARY PROVIDED ALL INSTALLATIONS MEET ALL APPLICABLE CODES AND REGULATIONS.
- 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 ITS FOUNDATION. WALL UNDERDRAINS MAY BE CONNECTED TO BUILDING FOUNDATION DRAINS OR DIRECTED TO OUTfalls ON 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.
- RETAINING WALLS AND GRADING THAT EXTEND PAST THE BOUNDARY OF A LIMITED COMMON AREA SHALL REQUIRE APPROVAL FROM THE HOA PRIOR TO CONSTRUCTION. SAID APPROVAL IS NOT GUARANTEED AND INDIVIDUAL UNIT OWNERS AND THEIR CONTRACTORS ARE STRONGLY ENCOURAGED TO CONTAIN ALL GRADING WITHIN THE LIMITS OF THE RELEVANT LIMITED COMMON AREA.
- 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 DOORWAYS, ETC.), DOWNSPOUTS SHALL BE DIRECTED TO THE DRIP STRIPS. GUTTER DOWNSPOUTS DIRECTED TO LAWNS, 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 STRIP LIMITS.

- WHERE REQUIRED, TRENCH DRAINS SHALL BE EQUIPPED WITH A 4" (MIN.) PVC OUTLET PIPE WITH A MINIMUM SLOPE OF 1%.
- FOUNDATION AND TRENCH DRAIN 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 UNIT OWNERS. UNIT OWNERS SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND CODE COMPLIANCE OF SAID INFRASTRUCTURE. ALL DRAINAGE OUTfalls SHALL BE DIRECTED TO STABLE OUTLET LOCATIONS.
- ALL SEDIMENT AND EROSION CONTROL MEASURES SHOWN 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.
- PER THE CITY OF CONCORD, ALL SLOPES IN EXCESS OF 4:1 SHALL BE STABILIZED WITH EROSION CONTROL BLANKET AND ALL SLOPES EXCESS OF 3:1 SHALL BE STABILIZED WITH RIPRAP.
- SEE SHEET C-6 FOR ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES.

15. SEE SHEET C-11 FOR LEGEND.



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

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ISSUED FOR:  
FINAL APPROVAL  
ISSUE DATE:  
FEBRUARY 19, 2025

REVISIONS  
NO. DESCRIPTION BY DATE  
0 INITIAL SUBMISSION EBS 10/18/23  
1 REVISED PER COMMENTS EBS 02/23/24  
2 CONDITIONS OF APPROVAL EBS 06/10/24  
3 REVISED PER COMMENTS EBS 07/30/24  
4 REVISED PER COMMENTS EBS 10/21/24  
5 RENUMBERED SHEET EBS 12/17/24  
6 REVISED UNIT 5 EBS 02/19/25

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

SCALE:  
22" x 34" - 1" = 30'  
11" x 17" - 1" = 60'

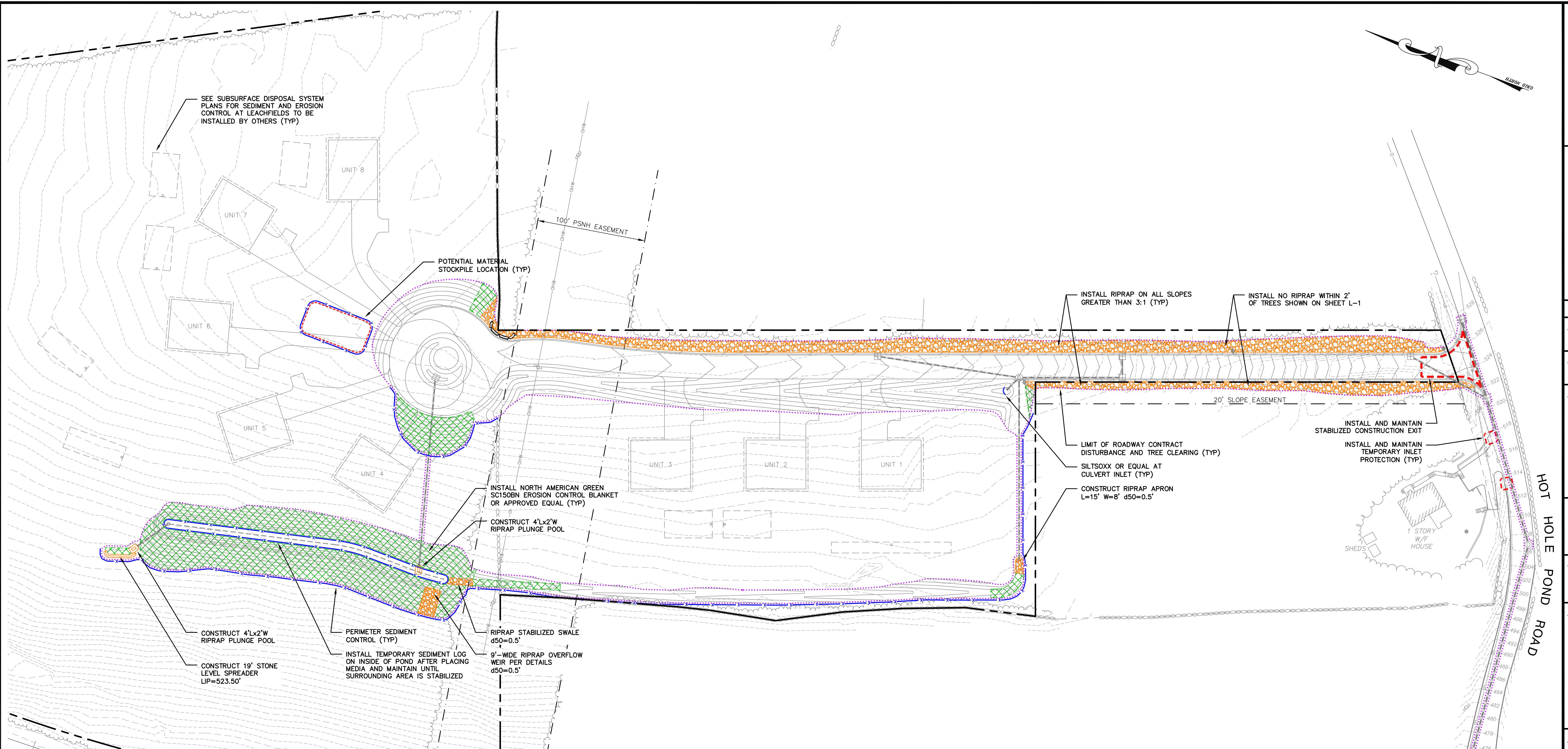
OWNER:  
EASTERN DEVELOPMENT, LLC  
P.O. BOX 2671  
CONCORD, NH 03302

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:  
UNIT GRADING  
AND DRAINAGE PLAN  
SHEET NUMBER:  
C-5.4



# EROSION AND SEDIMENT CONTROL NOTES

1. AREA OF DISTURBANCE =  $\pm 94,095$  S.F. NHDES ALTERATION OF TERRAIN PERMIT NOT REQUIRED.
2. PROPOSED ROADWAY IMPERVIOUS AREA: 25,972 S.F.
3. PERIMETER SEDIMENT CONTROLS AND CULVERT AND CATCH BASIN INLET PROTECTION MEASURES SHALL BE INSTALLED AFTER TREE CLEARING OPERATIONS HAVE CEASED AND BEFORE ANY STUMPING, GRUBBING OR OTHER EARTH DISTURBANCE.
4. GRIND STUMPS AND REUSE GRINDINGS FOR EROSION CONTROL WHERE POSSIBLE OR TRUCK OFFSITE FOR PROPER DISPOSAL IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS. NO STUMPS SHALL BE BURIED ON SITE OR LEFT AT ANY DEPTH BELOW ROADWAY OR PARKING LOT SURFACES.
5. NO EARTHWORK SHALL COMMENCE UNTIL ALL APPROPRIATE SEDIMENT AND EROSION CONTROL MEASURES HAVE BEEN INSTALLED. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE PROPERLY MAINTAINED IN GOOD WORKING ORDER FOR THE DURATION OF CONSTRUCTION AND THE SITE IS STABILIZED.
6. SEE DETAIL SHEETS FOR PERTINENT SEDIMENT AND EROSION CONTROL DETAILS AND ADDITIONAL NOTES.
7. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE DESIGN STANDARDS AND SPECIFICATIONS SET FORTH IN THE NHDES STORMWATER MANUAL.
8. THE CONTRACTOR SHALL TAKE WHATEVER MEANS NECESSARY TO PREVENT EROSION, PREVENT SEDIMENT FROM LEAVING THE SITE AND/OR ENTERING WETLANDS AND ENSURE PERMANENT SOIL STABILIZATION.
9. TEMPORARY INLET PROTECTION MEASURES SHALL BE INSTALLED AT ALL CULVERT ENTRANCES WHEN SITE WORK WITHIN CONTRIBUTING AREAS IS ACTIVE OR SAID AREAS HAVE NOT BEEN STABILIZED.
10. ALL EROSION CONTROL BLANKETS AND FASTENERS SHALL BE BIODEGRADEABLE.
11. ALL EROSION CONTROL BLANKETS SHALL BE BY NORTH AMERICAN GREEN OR EQUAL AS APPROVED IN WRITING BY THE ENGINEER.
12. ALL SWALES, STORMWATER PONDS AND THEIR CONTRIBUTING AREAS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
13. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE SIX (6") INCHES OF LOAM, LIMESTONE, FERTILIZER, SEED, AND HAY MULCH OR EROSION CONTROL BLANKET USING APPROPRIATE SOIL STABILIZATION TECHNIQUES. SEE DETAILS FOR ADDITIONAL INFORMATION.
14. UPON COMPLETION OF CONSTRUCTION, ALL DRAINAGE INFRASTRUCTURE SHALL BE CLEANED OF ALL DEBRIS AND SEDIMENT.
15. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AFTER FINAL SITE STABILIZATION. TRAPPED SEDIMENT AND OTHER DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED WITHIN 30 DAYS.
16. FUGITIVE DUST SHALL BE CONTROLLED DURING CONSTRUCTION IN ACCORDANCE WITH ENV-A 1000. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DUST FROM LEAVING THE SITE. THIS SHALL INCLUDE BUT NOT BE LIMITED TO THE PROACTIVE MANAGEMENT OF STOCKPILES, MATERIALS PROCESSING ACTIVITIES, VEHICULAR TRAFFIC, THE EXCAVATION AND PLACEMENT OF EARTH MATERIALS, SPRAYING WATER, SWEEPING PAVED SURFACES, PROVIDING TEMPORARY VEGETATION, AND/OR MULCHING EXPOSED AREAS AND STOCKPILES.
17. ALL ACTIVITIES SHALL BE MANAGED IN STRICT ACCORDANCE WITH NH RSA 430:53 AND AGR 3800 RELATIVE TO INVASIVE SPECIES. NO INVASIVE SPECIES SHALL BE INSTALLED ON THE PROJECT SITE FOR ANY REASON.
18. TEMPORARY SEDIMENT LOG (SILTSOXX OR EQUAL APPROVED BY THE ENGINEER) SHALL BE INSTALLED AROUND THE INLETS OFF ALL CULVERTS AND THE PERIMETER OF STORMWATER POND BOTTOMS. THESE MEASURES ARE TO REMAIN IN PLACE UNTIL CONTRIBUTING AREAS HAVE BEEN STABILIZED.
19. MATERIAL STOCKPILE LOCATIONS SHOWN ARE CONCEPTUAL. THE CONTRACTOR MAY LOCATE STOCKPILES WHERE NECESSARY PROVIDED THAT TEMPORARY SEDIMENT LOGS OR OTHER ACCEPTABLE PERIMETER SEDIMENT CONTROLS ARE INSTALLED AT THEIR DOWNSLOPE PERIMETERS.
20. NO MATERIAL STOCKPILE SHALL BE LOCATED WITHIN 100' OF THE PROPERTY LINE.
21. ALL HOUSES CONSTRUCTED IN THE DEVELOPMENT SHALL BE EQUIPPED WITH STONE DRIP STRIPS WHERE APPROPRIATE. ALL GUTTER DOWNSPOUTS SHALL BE DIRECTED TO THE NEAREST DRIP STRIP.
22. PER THE CITY OF CONCORD, ALL SLOPES IN EXCESS OF 4:1 SHALL BE STABILIZED WITH EROSION CONTROL BLANKET AND ALL SLOPES EXCESS OF 3:1 SHALL BE STABILIZED WITH RIPRAP.
23. SEE SHEET C-11 FOR LEGEND.

**133 Court Street**      **Portsmouth, NH 03801**  
**(603) 433-2335**      **[www.altus-eng.com](http://www.altus-eng.com)**

NOT FOR CONSTRUCTION

ISSUED FOR:

FINAL APPROVAL

ISSUE DATE:

MARCH 18, 2025

<u>REVISIONS</u>		BY	DATE
NO.	DESCRIPTION	BY	DATE
0	SUBMISSION	EBS	09/20/23
1	ADJUSTED DRIVEWAY	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	ADDED OFFSITE DRAINAGE	EBS	12/17/24
7	REV. OFFSITE DRAINAGE	EBS	02/19/25
8	REV. OFFSITE OUTFALL	EBS	03/18/25

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

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SCALE:

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

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

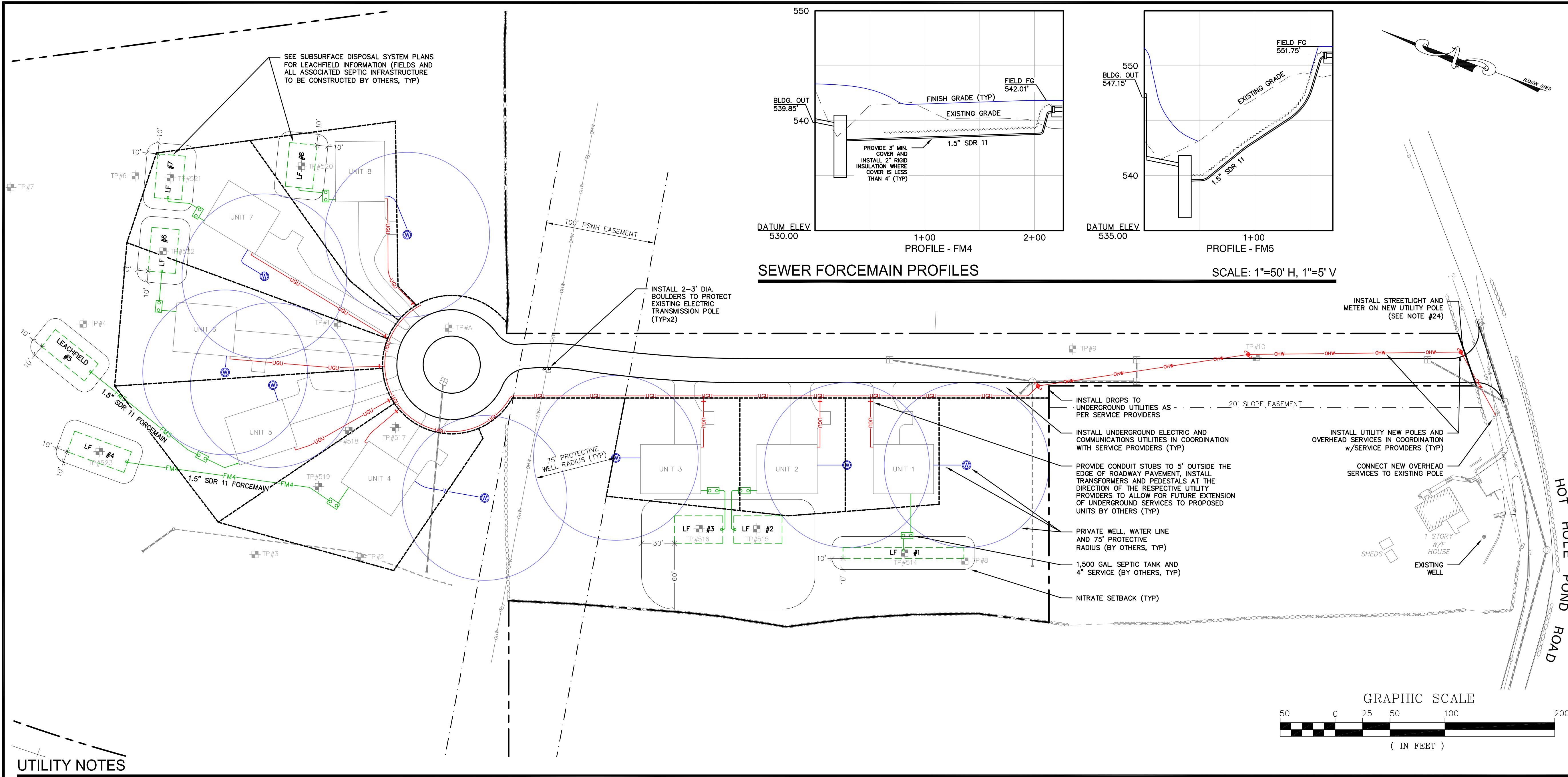
APPLICANT:

PROJECT:  
**GRANITE RIDGE  
ESTATES  
CLUSTER SUBDIVISION**

TITLE:

# EROSION AND SEDIMENT CONTROL PLAN

C-6



## UTILITY NOTES

1. THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASED UPON THE FIELD LOCATION OF ALL VISIBLE STRUCTURES (IE. CATCH BASINS, MANHOLES, WATER GATES, ETC.) AND INFORMATION COMPILED FROM PLANS PROVIDED BY UTILITY PROVIDERS AND GOVERNMENTAL AGENCIES. AS SUCH, THEY ARE NOT INCLUSIVE AS OTHER UTILITIES AND UNDERGROUND STRUCTURES THAT ARE NOT SHOWN ON THE PLANS MAY EXIST. THE ENGINEER, SURVEYOR AND OWNER ACCEPT NO RESPONSIBILITY FOR POTENTIAL INACCURACIES IN THE PLAN AND/OR UNFORESEEN CONDITIONS. THE CONTRACTOR SHALL NOTIFY, IN WRITING, SAID AGENCIES, UTILITY PROVIDERS, THE CONCORD GENERAL SERVICES DEPARTMENT AND OWNER'S AUTHORIZED REPRESENTATIVE AND CALL DIG SAFE AT 1 (800) DIG-SAFE AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO ANY EXCAVATION WORK.
2. PRIOR TO CONSTRUCTION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND FIELD VERIFY JUNCTIONS, LOCATIONS AND ELEVATIONS/INVERTS OF ALL EXISTING AND PROPOSED STORMWATER AND UTILITY LINES. CONFLICTS SHALL BE ANTICIPATED AND ALL EXISTING LINES TO BE RETAINED SHALL BE PROTECTED. ANY DAMAGE DONE TO EXISTING UTILITIES SHALL BE REPAIRED AND, IF NECESSARY, EXISTING UTILITIES SHALL BE RELOCATED AT NO EXTRA COST TO THE OWNER. ALL CONFLICTS SHALL BE RESOLVED WITH THE INVOLVEMENT OF THE ENGINEER, THE CONCORD ENGINEERING DIVISION AND APPROPRIATE UTILITY PROVIDERS.
3. ALL CONSTRUCTION SHALL MEET THE MINIMUM CONSTRUCTION STANDARDS OF THE CITY OF CONCORD AND NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION. THE MORE STRINGENT SPECIFICATION SHALL GOVERN.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE POSTING OF ALL BONDS AND PAYMENT OF ALL TAP, TIE-IN AND CONNECTION FEES.
5. ALL UNITS TO BE SERVED BY INDIVIDUAL PRIVATE WELLS. PERMITTING AND INSTALLATION SHALL BE THE RESPONSIBILITY OF THE INDIVIDUAL UNIT OWNERS. WELL INSTALLATIONS SHALL BE CERTIFIED BY THE DRILLER TO MEET ALL APPLICABLE NHDES CRITERIA. CERTIFICATIONS SHALL BE COPIED TO THE CONCORD ENGINEERING DIVISION.
6. ALL UNITS TO BE SERVED BY INDIVIDUAL PRIVATE SUBSURFACE SANITARY DISPOSAL SYSTEMS. PERMITTING AND INSTALLATION SHALL BE THE RESPONSIBILITY OF THE INDIVIDUAL UNIT OWNERS. FINAL APPROVED SEPTIC PLANS SHALL BE FORWARDED TO THE CONCORD ENGINEERING DIVISION. MAINTENANCE OF SAID SYSTEMS SHALL BE BY THE HOA.
7. ALL SEPTIC AND WELL INSTALLATIONS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE STATE AND LOCAL REGULATIONS INCLUDING, BUT NOT LIMITED TO NHDES SUBDIVISION AND INDIVIDUAL SEWAGE DISPOSAL SYSTEM DESIGN AND THE NH WATER WELL BOARD STANDARDS FOR THE CONSTRUCTION, MAINTENANCE AND ABANDONMENT OF WELLS.
8. TEST PITS WERE EVALUATED BY BRUCE A. GILDAY, NH SOIL SCIENTIST #12, ON AUGUST 23, 2023.
9. IF REQUIRED, ALL ROAD/LANE CLOSURES OR OTHER TRAFFIC INTERRUPTIONS SHALL BE COORDINATED WITH THE LOCAL POLICE DEPARTMENT AND CONCORD GENERAL SERVICES DEPARTMENT AT LEAST ONE WEEK PRIOR TO COMMENCING RELATED CONSTRUCTION.
10. ALL UNITS SHALL BE SERVICED BY UNDERGROUND ELECTRIC AND COMMUNICATIONS SERVICES.
11. ALL TRENCHING, PIPE LAYING AND BACKFILLING SHALL CONFORM TO FEDERAL OSHA AND LOCAL REGULATIONS.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRENCHING, BEDDING, BACKFILL & COMPACTION FOR ALL UTILITY TRENCHING IN ADDITION TO ALL CONDUIT INSTALLATION AND COORDINATION OF ALL REQUIRED INSPECTIONS.
13. UTILITY SERVICES SHALL BE INSTALLED WITH TRANSFORMERS, PADS, PEDESTALS, ETC. IN COORDINATION WITH THE SERVICE PROVIDERS.
14. DETECTABLE WARNING TAPE SHALL BE PLACED OVER THE ENTIRE LENGTH OF ALL BURIED UTILITIES, COLORS PER THE RESPECTIVE UTILITY PROVIDERS.
15. UTILITY PROVIDERS:
  - WATER: PRIVATE WELLS (RESPONSIBILITY OF INDIVIDUAL UNIT OWNERS)
  - SEWER: PRIVATE SEPTIC SYSTEMS (RESPONSIBILITY INDIVIDUAL UNIT OWNERS)
  - CABLE/INTERNET/TELECOMMUNICATIONS: COMCAST
  - ELECTRIC: EVERSOURCE
  - GAS: PRIVATE PROPANE (RESPONSIBILITY OF INDIVIDUAL UNIT OWNERS)
16. UNITS TO BE SERVED BY PRIVATE TRASH/RECYCLING PICKUP COORDINATED BY THE HOA.
17. FINAL UTILITY LOCATIONS TO BE COORDINATED BETWEEN THE CONTRACTOR, APPROPRIATE UTILITY COMPANIES AND THE CONCORD GENERAL SERVICES DEPARTMENT.
18. FINAL UTILITY LAYOUTS PREPARED BY UTILITY PROVIDERS SHALL BE SUBMITTED TO THE CONCORD GENERAL SERVICES DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
19. THE CONTRACTOR SHALL CONFIRM ALL UTILITY LINE AND CONDUIT SIZES WITH SERVICE PROVIDERS PRIOR TO INSTALLATION. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
20. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL REQUIRED MANHOLES, PULL BOXES, PEDESTALS, HANHOLES, TRANSFORMERS, TRANSFORMER PADS, FITTINGS, CONNECTORS, COVER PLATES AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS IN ORDER TO RENDER THE FULL INSTALLATION OF COMPLETE AND OPERATIONAL UTILITY AND DRAINAGE SYSTEMS

21. ALL GRAVITY SEPTIC LINES SHALL BE SDR 26, ALL FORCEMAINS SHALL BE SDR 11.
22. SEE NHDES-APPROVED SEPTIC PLANS FOR ADDITIONAL INFORMATION ON WELLS AND SUBSURFACE DISPOSAL AND SANITARY COLLECTION SYSTEMS. ALL WELL AND SEPTIC INFRASTRUCTURE IS TO BE CONSTRUCTED BY OTHERS AND IS SHOWN HERE FOR PLANNING PURPOSES ONLY.
23. FINAL SEPTIC AND WELL LOCATIONS ARE SUBJECT TO CHANGE BASED ON NHDES APPROVALS.
24. CONTRACTOR SHALL COORDINATE WITH THE CONCORD ENGINEERING DIVISION FOR STREETLIGHT SPECIFICATIONS AND INSTALLATION REQUIREMENTS AND EVERSOURCE FOR METERING REQUIREMENTS. THE HOA SHALL BE RESPONSIBLE FOR THE PAYMENT OF ALL RELATED UTILITY BILLS.
25. WHERE WATER LINES CROSS, RUN ADJACENT TO OR ARE WITHIN 5' OF STORM DRAINAGE PIPES OR STRUCTURES, 2"-THICK CLOSED CELL RIGID BOARD INSULATION SHALL BE INSTALLED FOR FROST PROTECTION.
26. WATER AND SANITARY SEWER LINES SHALL BE LOCATED AT LEAST 10' HORIZONTALLY FROM EACH OTHER. WHERE CROSSING, 18" MINIMUM VERTICAL CLEARANCE SHALL BE PROVIDED WITH WATER INSTALLED OVER SEWER.
27. SEE SHEET C-11 FOR LEGEND.

27. SEE SHEET C-11 FOR LEGEND

APPLICANT:  
EASTERN DEVELOPMENT, LLC  
P.O. BOX 2671

PROJECT: **GRANITE RIDGE  
ESTATES  
CLUSTER SUBDIVISION**

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# UTILITY PLAN

SHEET NUMBER:

## SEDIMENT AND EROSION CONTROL NOTES

### PROJECT NAME AND LOCATION

GRANITE RIDGE ESTATES  
CLUSTER SUBDIVISION  
15 HOT HOLE POND ROAD  
CONCORD, NEW HAMPSHIRE  
TAX MAP 112, LOT 25-1

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.
- Stamp, grub and strip loam in roadway and stormwater construction areas.
- Rough grade site.
- Construct drainage structures and utilities.
- Fine grade site.
- Install curb.
- Install pavement subgrade and base course paving.
- 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.
- Build-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 gravel have been installed in areas to be paved;
  - A minimum of 85% vegetated growth as been established;
  - A minimum of 3 inches of non-erodic material such as stone or riprap has been installed;
  - 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 erodic 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.
  - Reduced 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 erodability, 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.
- 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"> <li>The organic matter content is between 80 and 100% dry weight.</li> <li>Particle weight is 100% passing a 6" screen and a minimum of 70% maximum of 85% passing a 0.75" screen.</li> <li>The organic portion needs to be fibrous and elongated.</li> <li>Large portions of silts, clays or fine sands are not acceptable in the mix.</li> <li>Soluble salts content is less than 4.0 mmhos/cm.</li> <li>The pH should fall between 5.0 and 8.0.</li> </ul>

- 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

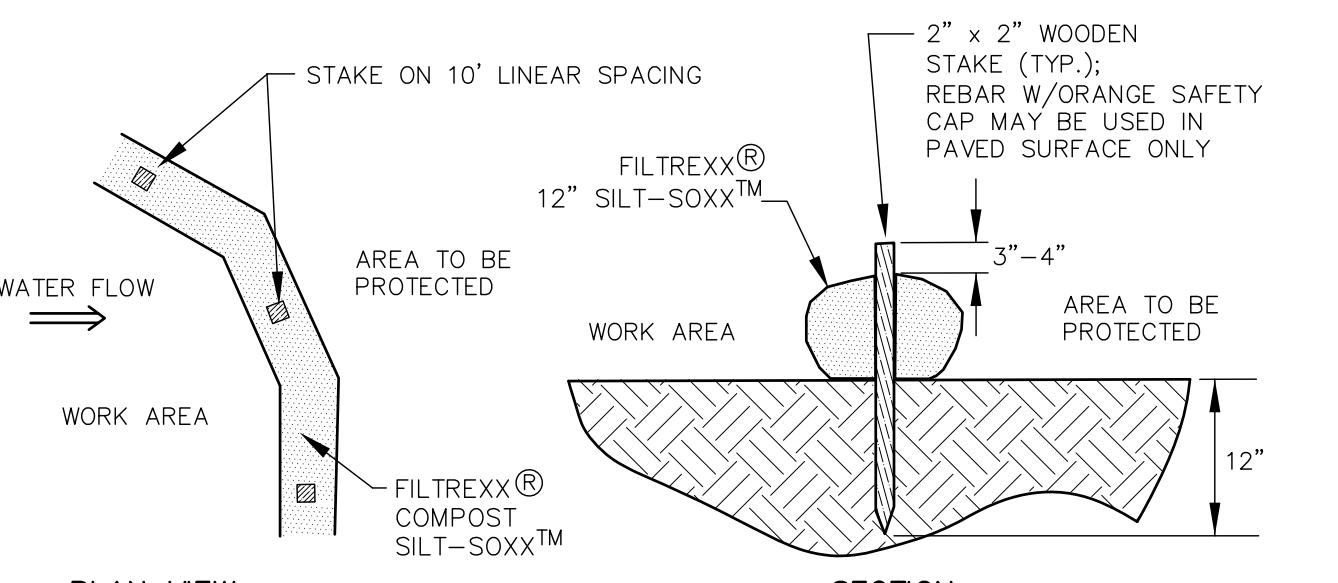
Seed mixture shall meet NHDOT 644-1 Park Seed Type 15

- Fescue varieties shall include - Creeping Red and/or Hard Reliant, Scaldis, Koket, or Jonestown.
- Ryegrass shall be a certified fine-textured variety such as Penfine, 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

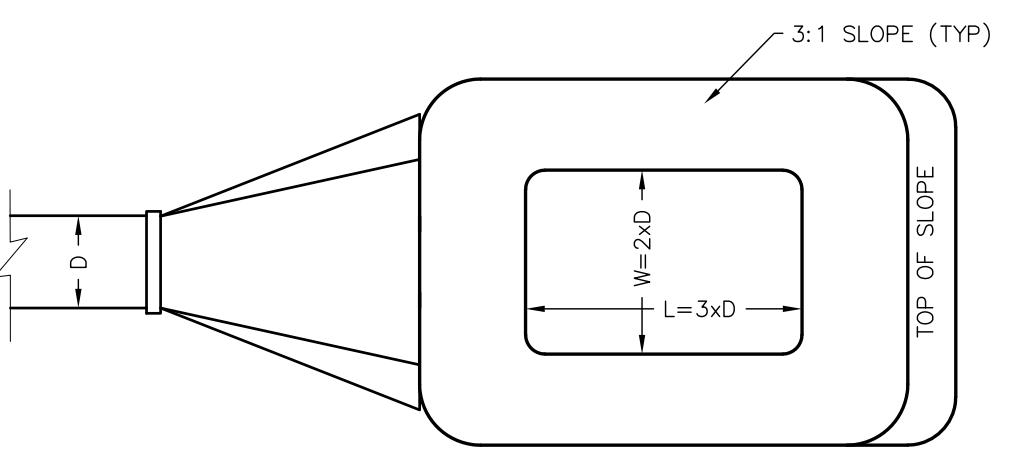
- All proposed vegetated areas which do not exhibit a minimum of 85% vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1, and elsewhere seeding and placing 3 to 4 tons of mulch 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.



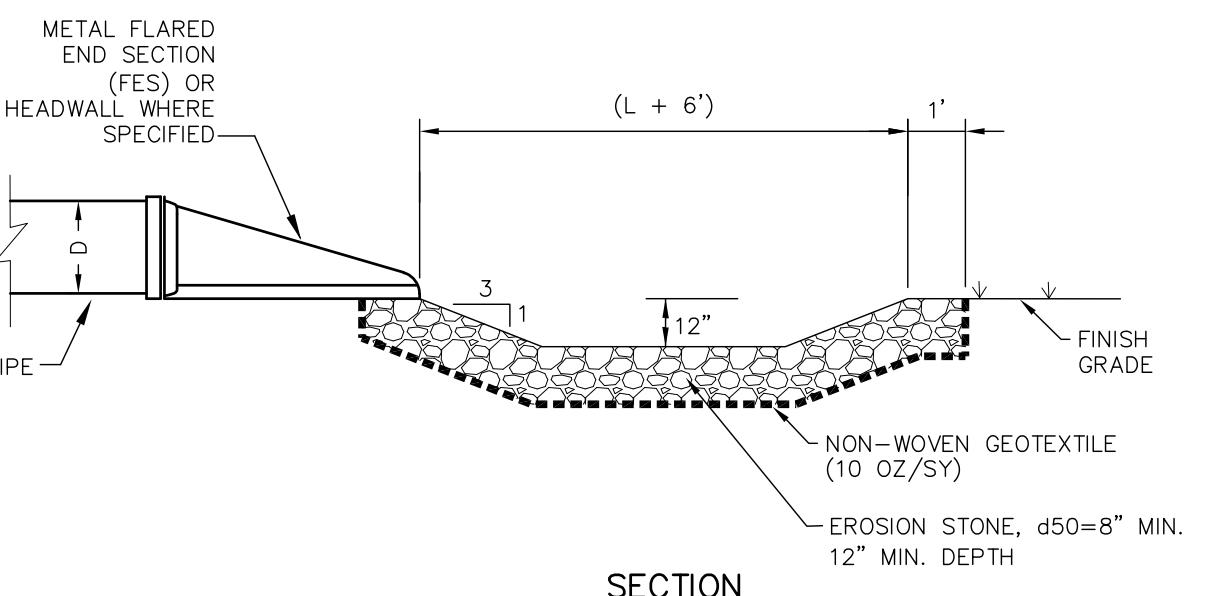
**NOTES:**

- 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



### PLAN VIEW



### SECTION

### 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.

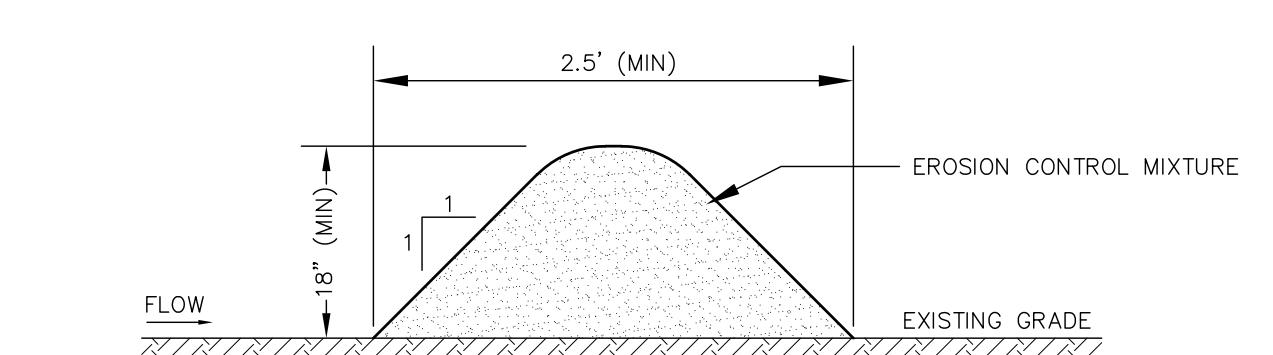
#### 3. EROSION STONE USED FOR THE PLUNGE POOL SHALL MEET THE FOLLOWING GRADATION:

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 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 POINTS 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.

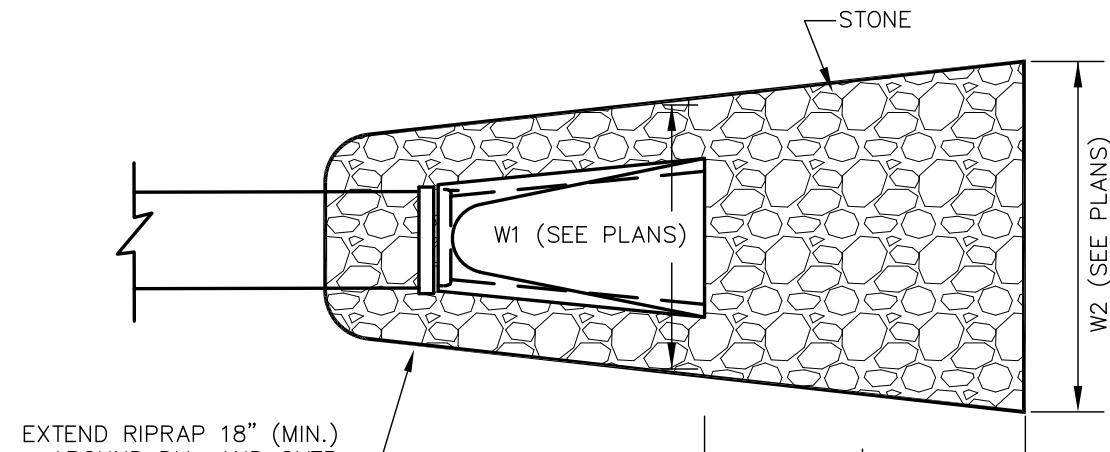
- ORGANIC FILTER BERMS MAY BE LEFT IN PLACE ONCE THE SITE IS STABILIZED PROVIDED ANY SEDIMENT DEPOSITS TRAPPED BY THEM ARE REMOVED AND DISPOSED OF PROPERLY.

- 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.

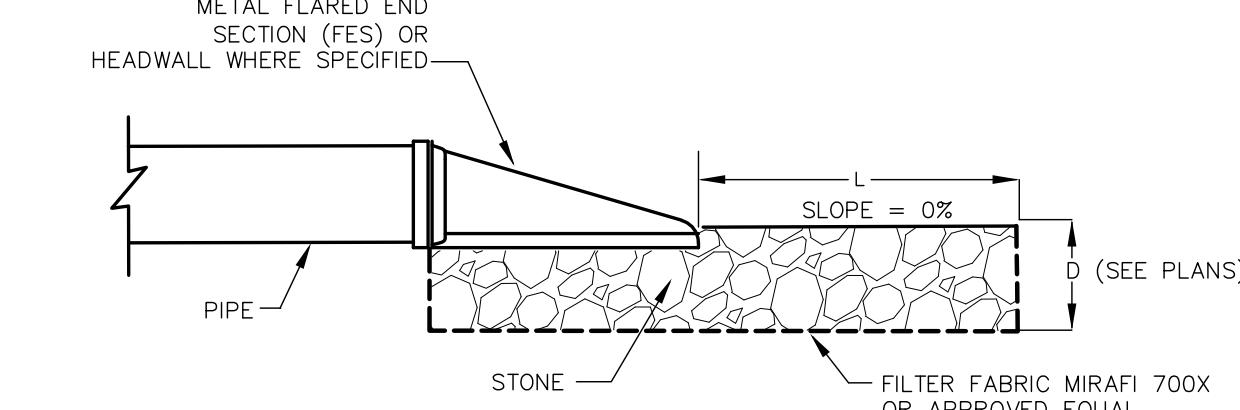
- ALL SEDIMENT TRAPPED BY SILT-SOXX SHALL BE DISPOSED OF PROPERLY.

### ORGANIC FILTER BERM

### NOT TO SCALE

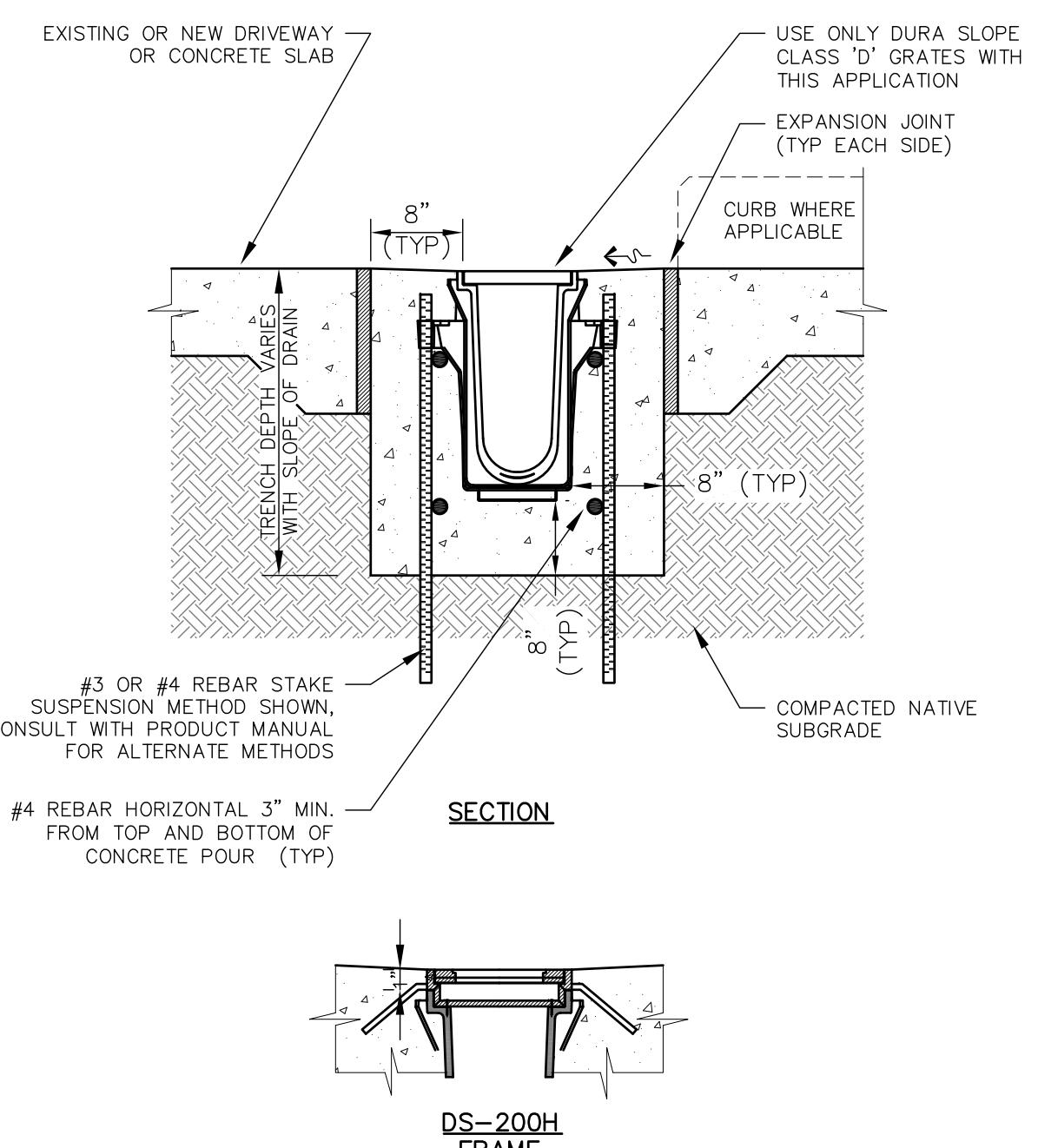
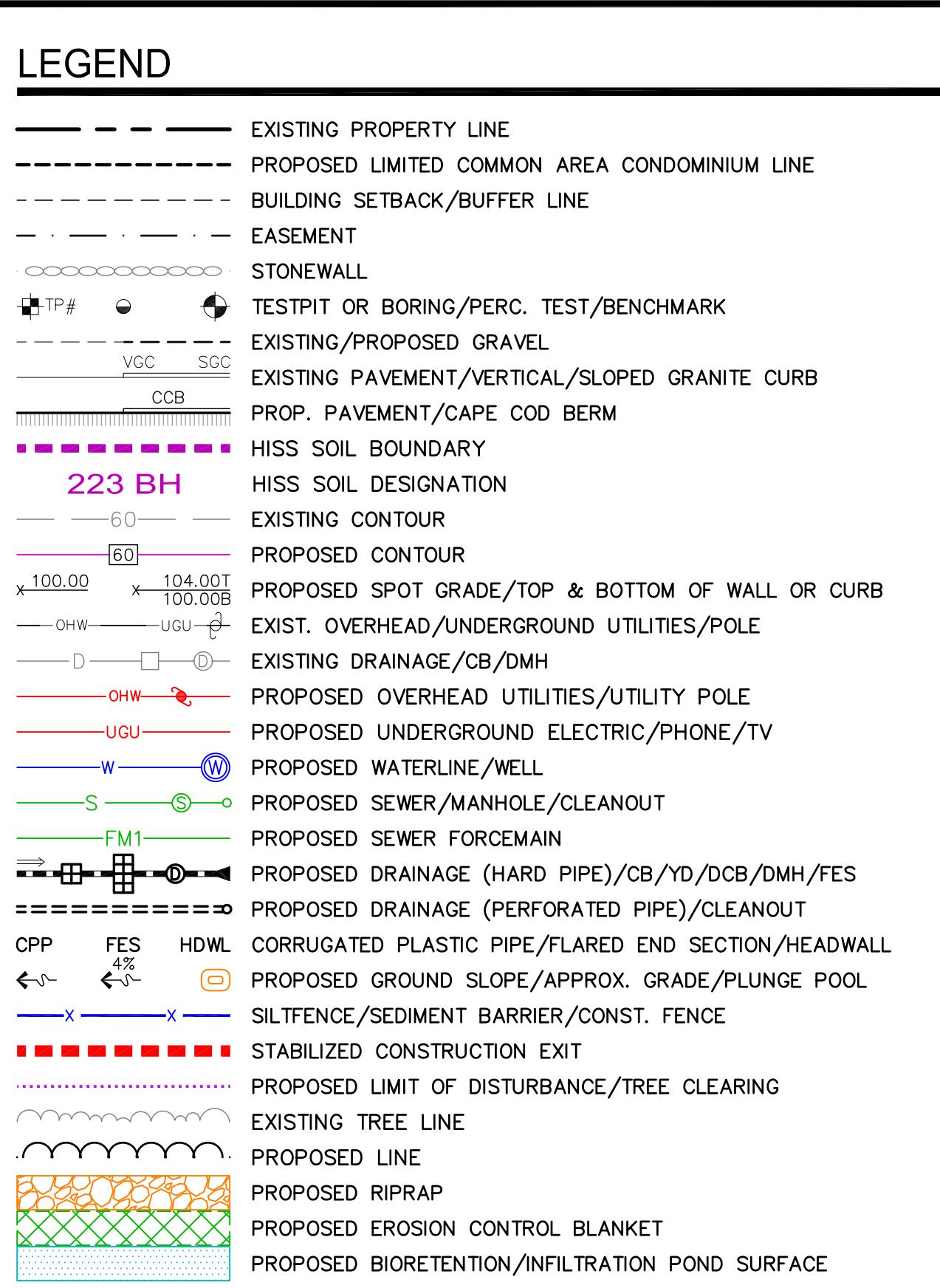


### PLAN



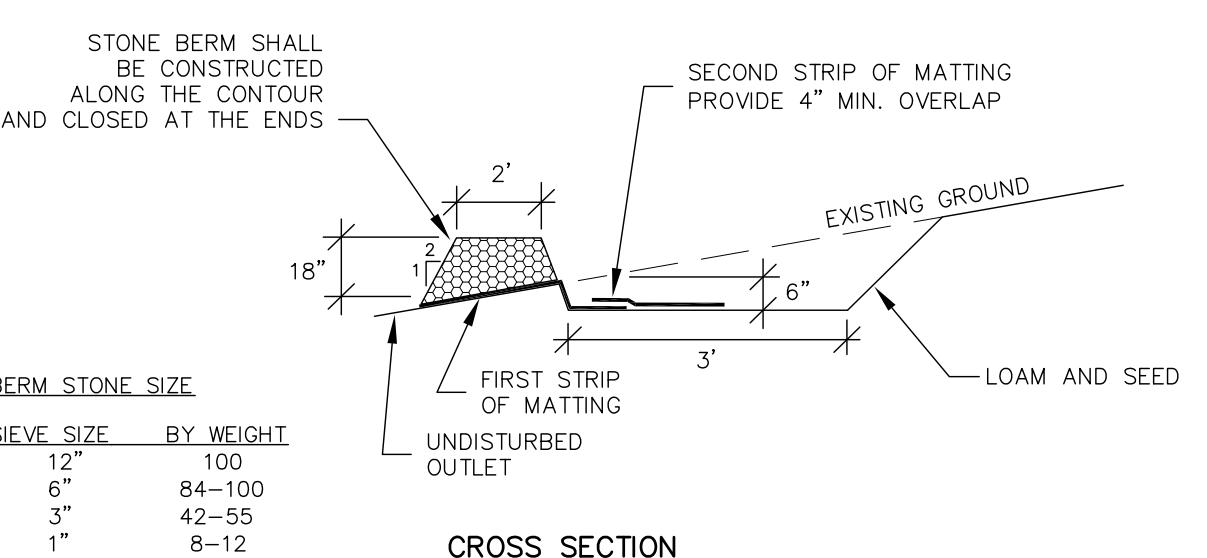
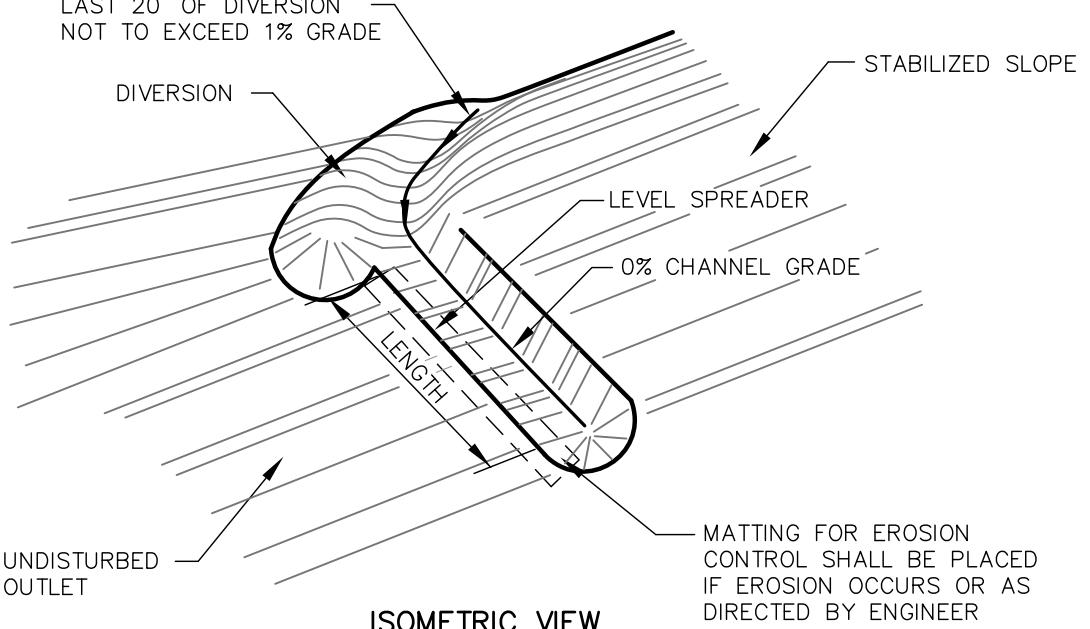






### TRENCH DRAIN (TD)

NOT TO SCALE

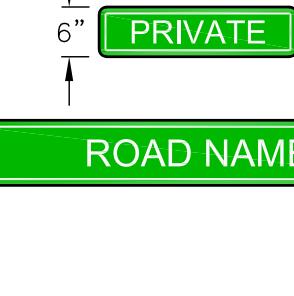
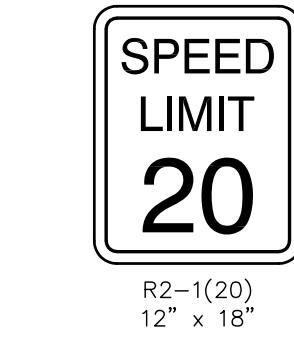
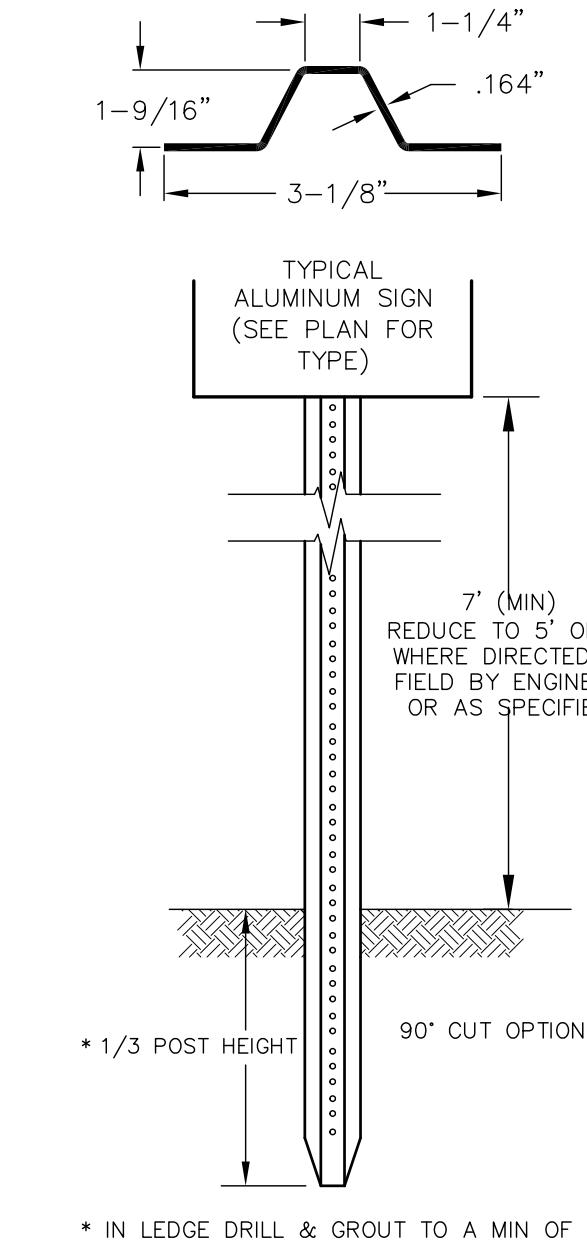


### LEVEL SPREADER

NOT TO SCALE

### RIPRAP STABILIZED SLOPE

NOT TO SCALE



ROAD NAME

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APPROVED BY: \_\_\_\_\_ EBS  
DRAWING FILE: 5470-SITE.dwg

SCALE: \_\_\_\_\_ NOT TO SCALE

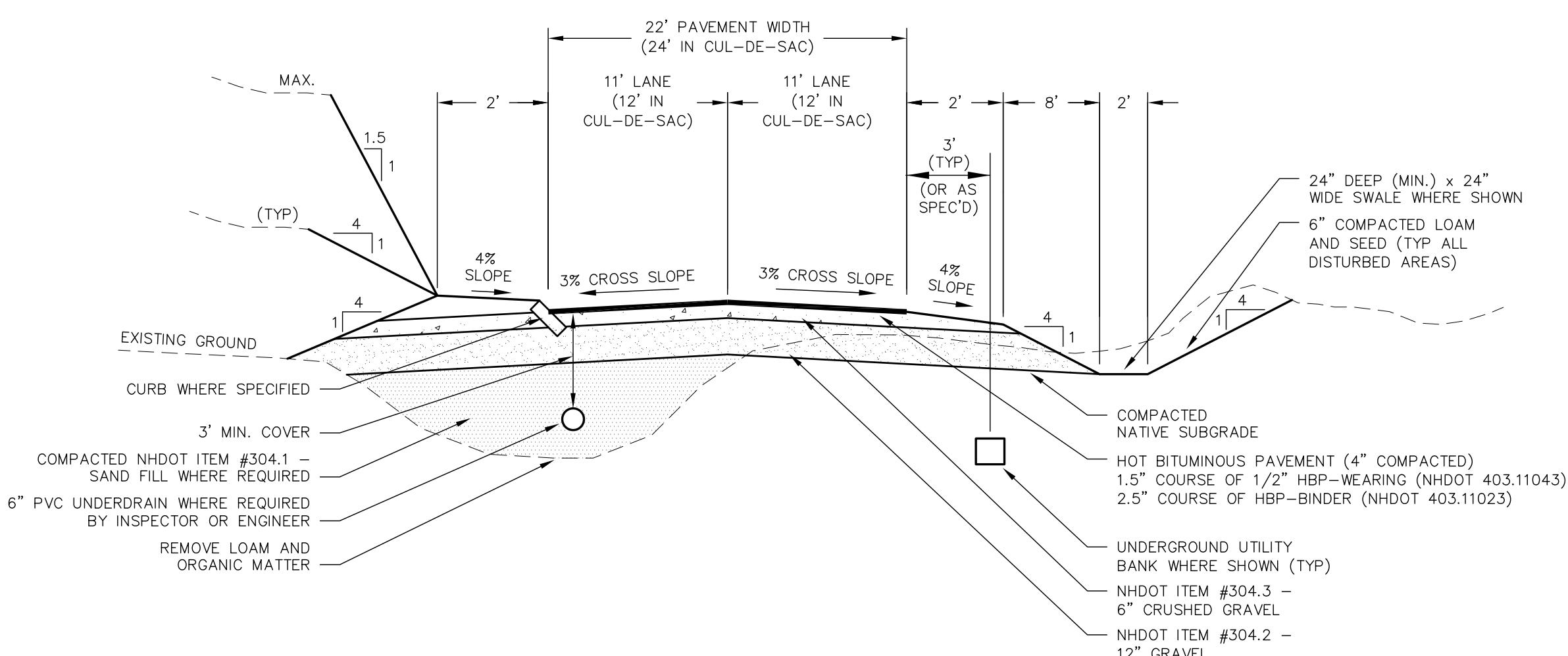
OWNER: EASTERN DEVELOPMENT, LLC  
P.O. BOX 2671  
CONCORD, NH 03302

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



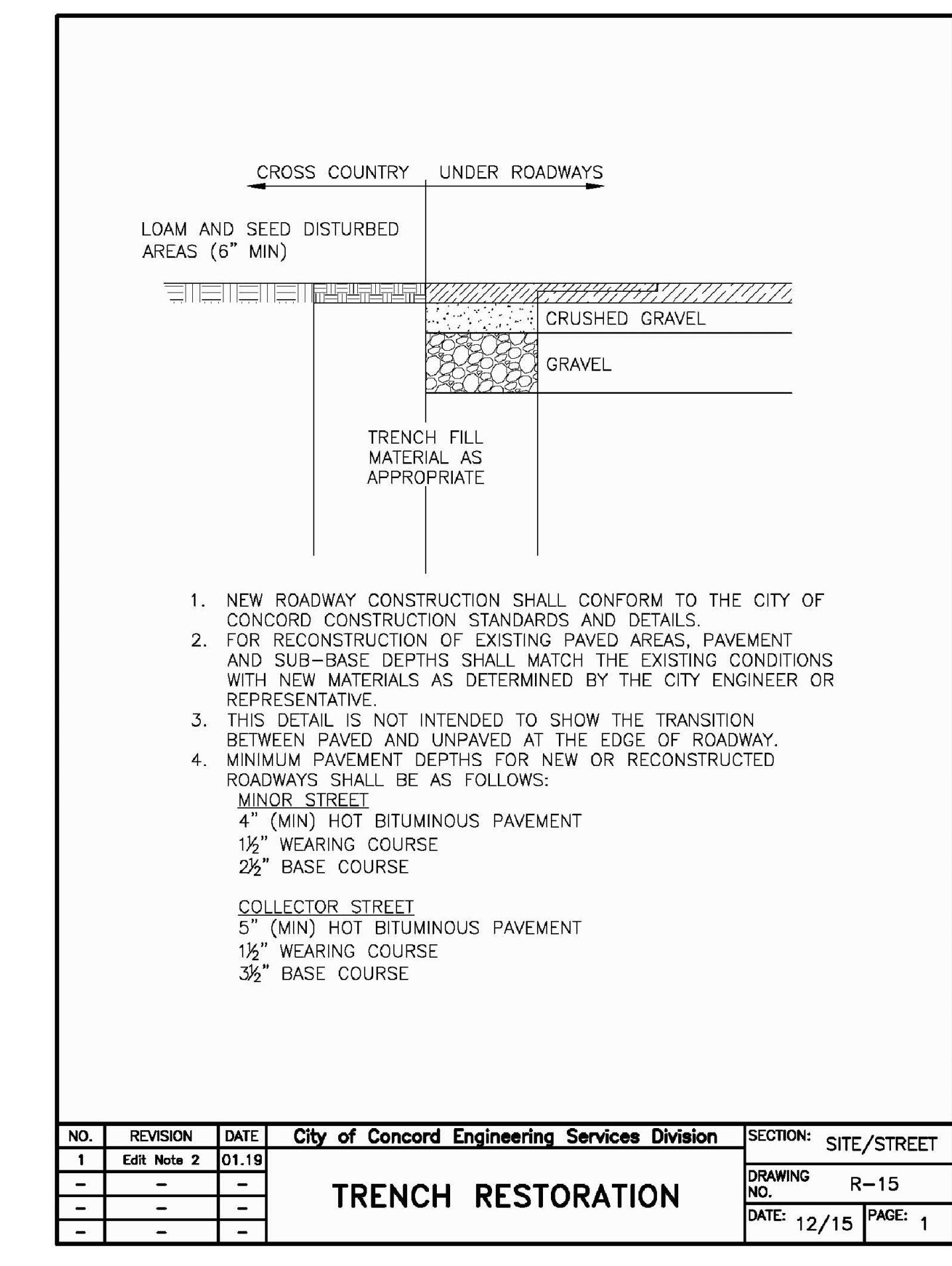
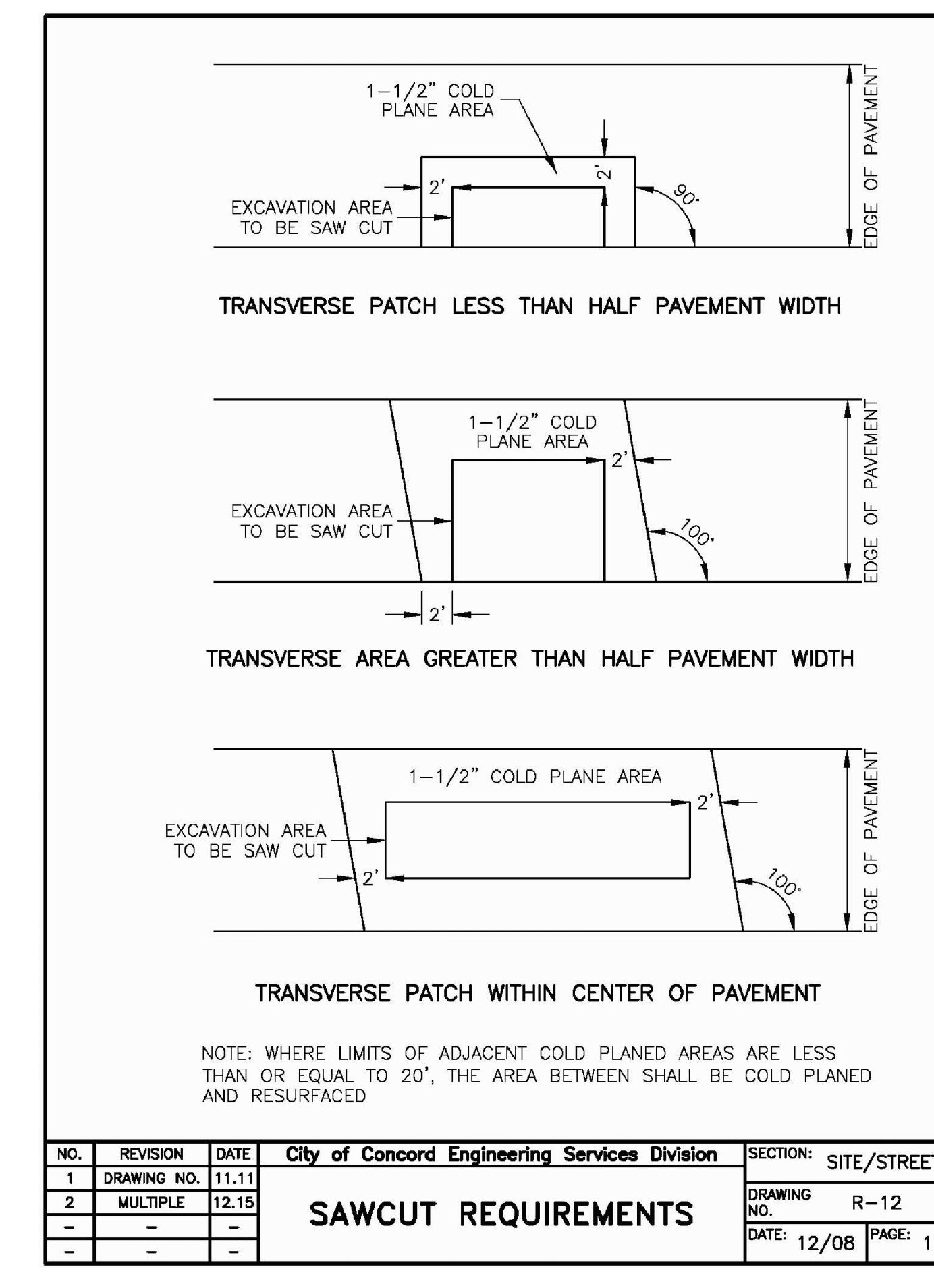
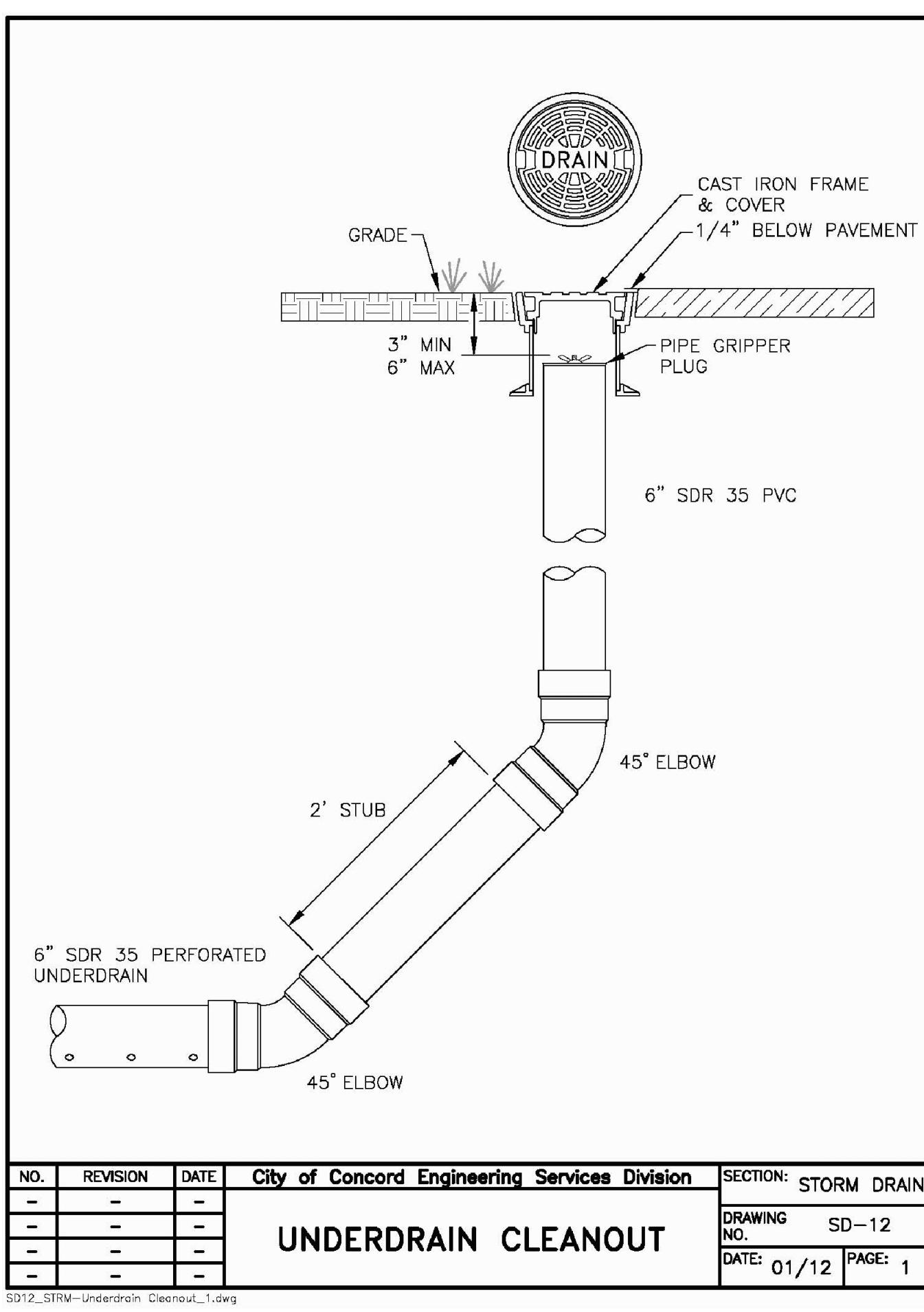
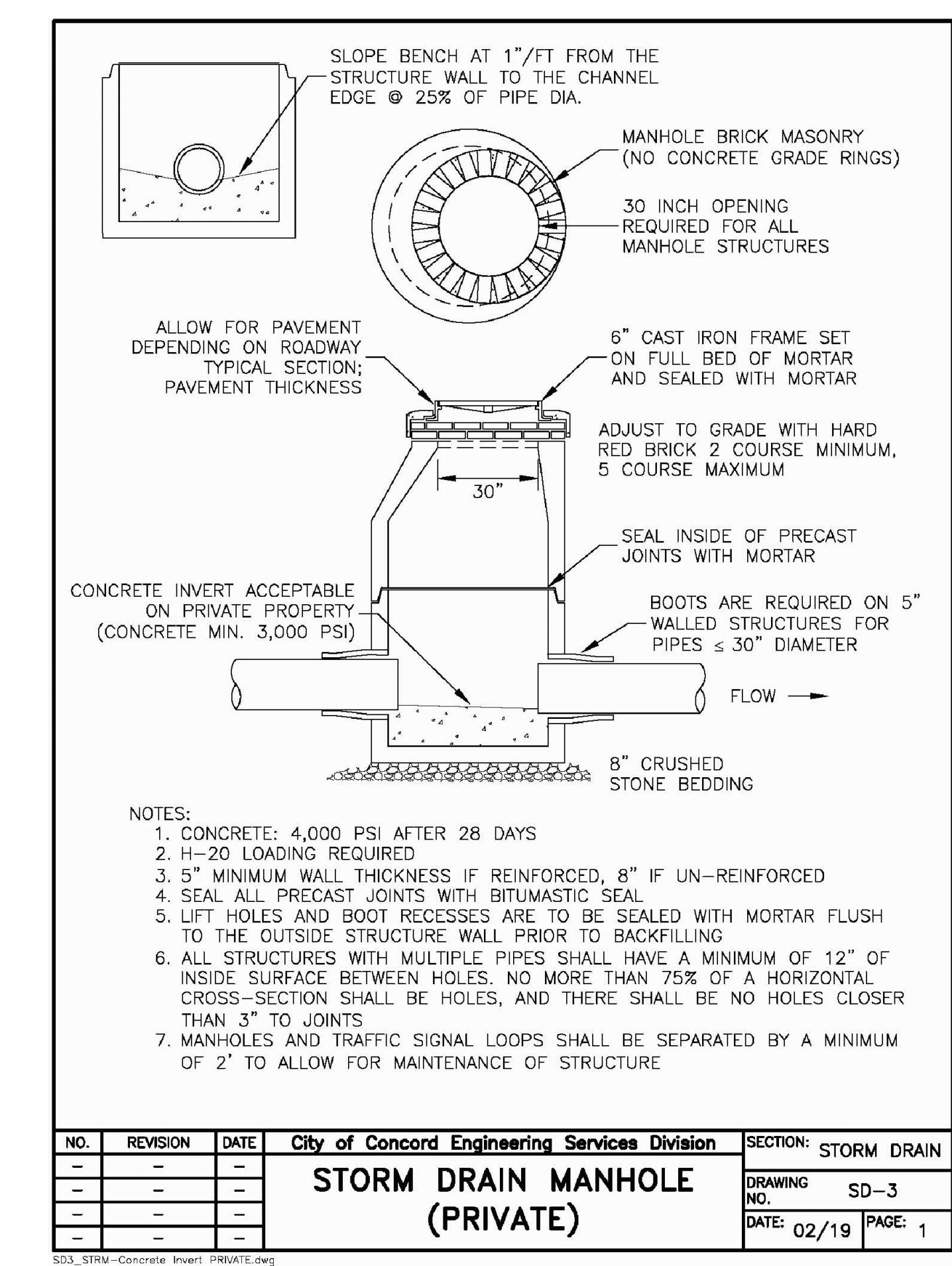
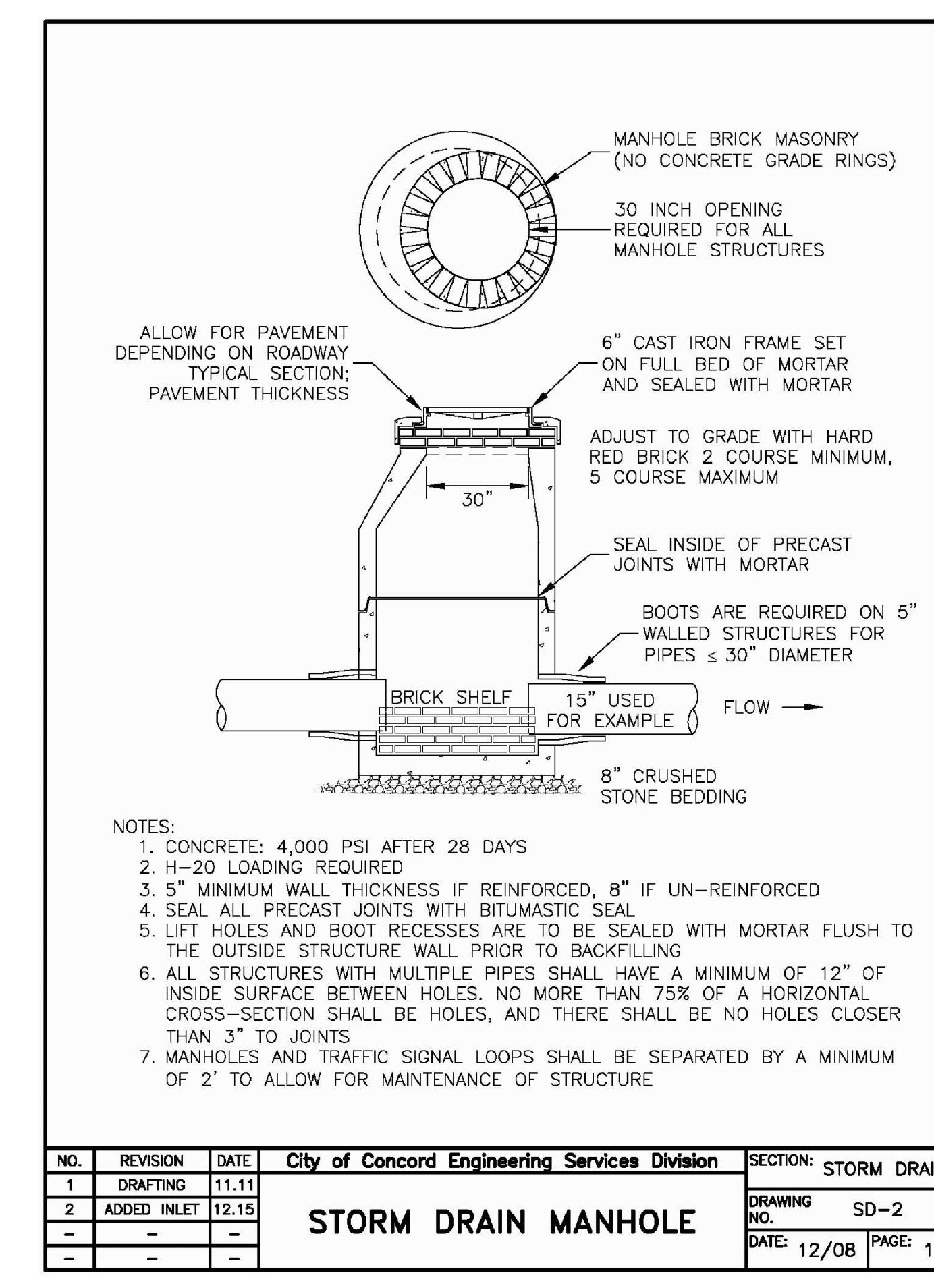
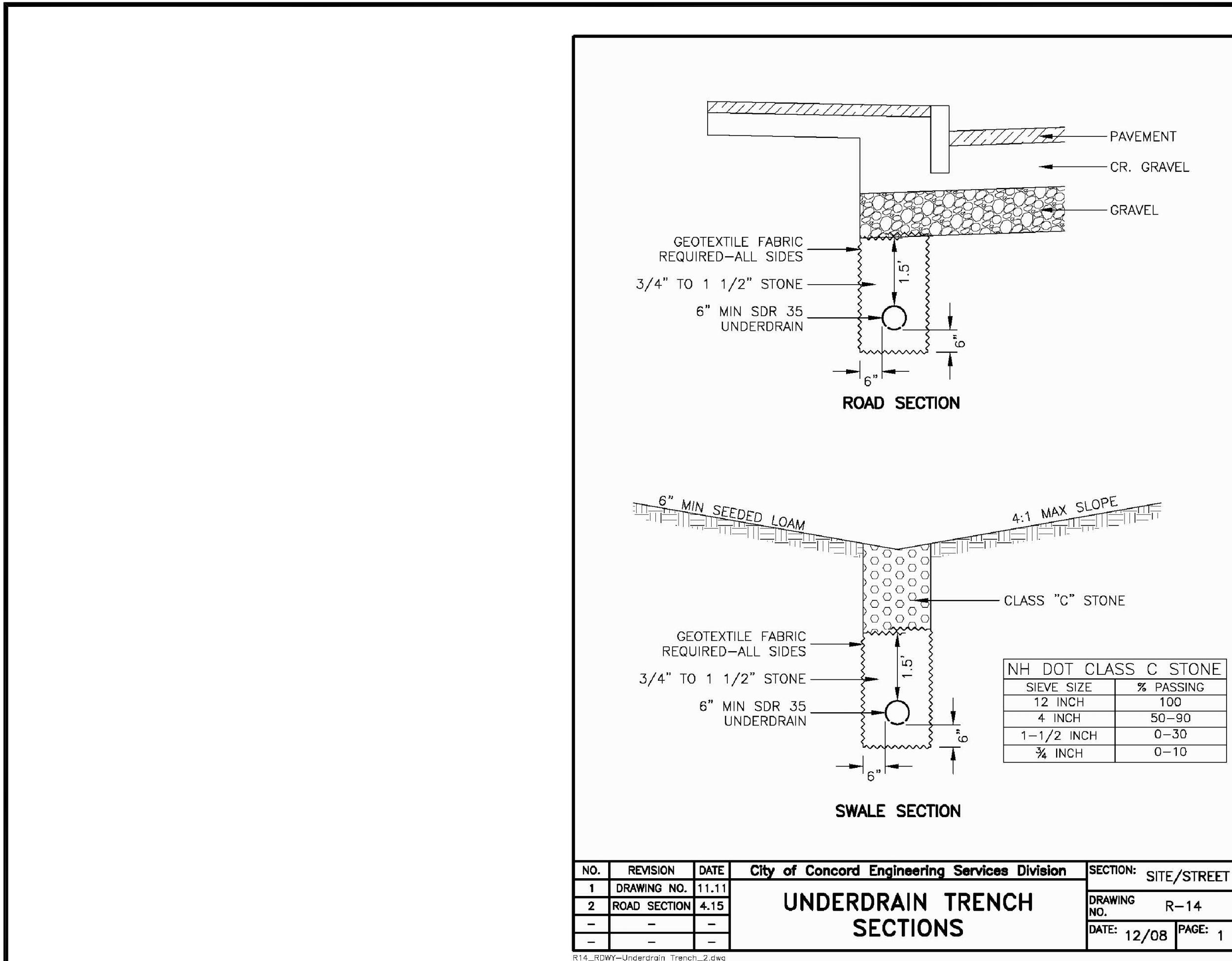
NOTES:

1. EACH GRAVEL BASE COURSE TO BE CONSTRUCTED AT THE PAVEMENT CROSS SLOPE.
2. REMOVE LEDGE 18" BELOW LOWEST WORK BEING INSTALLED.
3. 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.
4. 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.
5. FILL BELOW PAVEMENT SUBGRADE SHALL BE SAND OR GRANULAR COMMON BORROW COMPACTED PER DOT REQUIREMENTS.
6. SITEWORK CONTRACTOR SHALL COORDINATE GEOTECHNICAL ENGINEERING INSPECTIONS PRIOR TO PLACING GRAVELS.
7. SUBGRADE SHALL BE FREE OF VOIDS THAT ALLOW MOVEMENT AND/OR SETTLEMENT OF MATERIALS.
8. 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.
9. 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.
10. 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.
11. BITUMINOUS PAVEMENT SHALL BE COMPACTED TO 90 TO 97 PERCENT OF ITS THEORETICAL MAXIMUM DENSITY AS DETERMINED BY ASTM D-2041.
12. TACK COAT SHALL BE APPLIED BETWEEN SUCCESSIVE LIFTS OF ASPHALT PAVEMENT.

### TYPICAL ROADWAY CROSS SECTION

NOT TO SCALE





NOT FOR CONSTRUCTION  
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

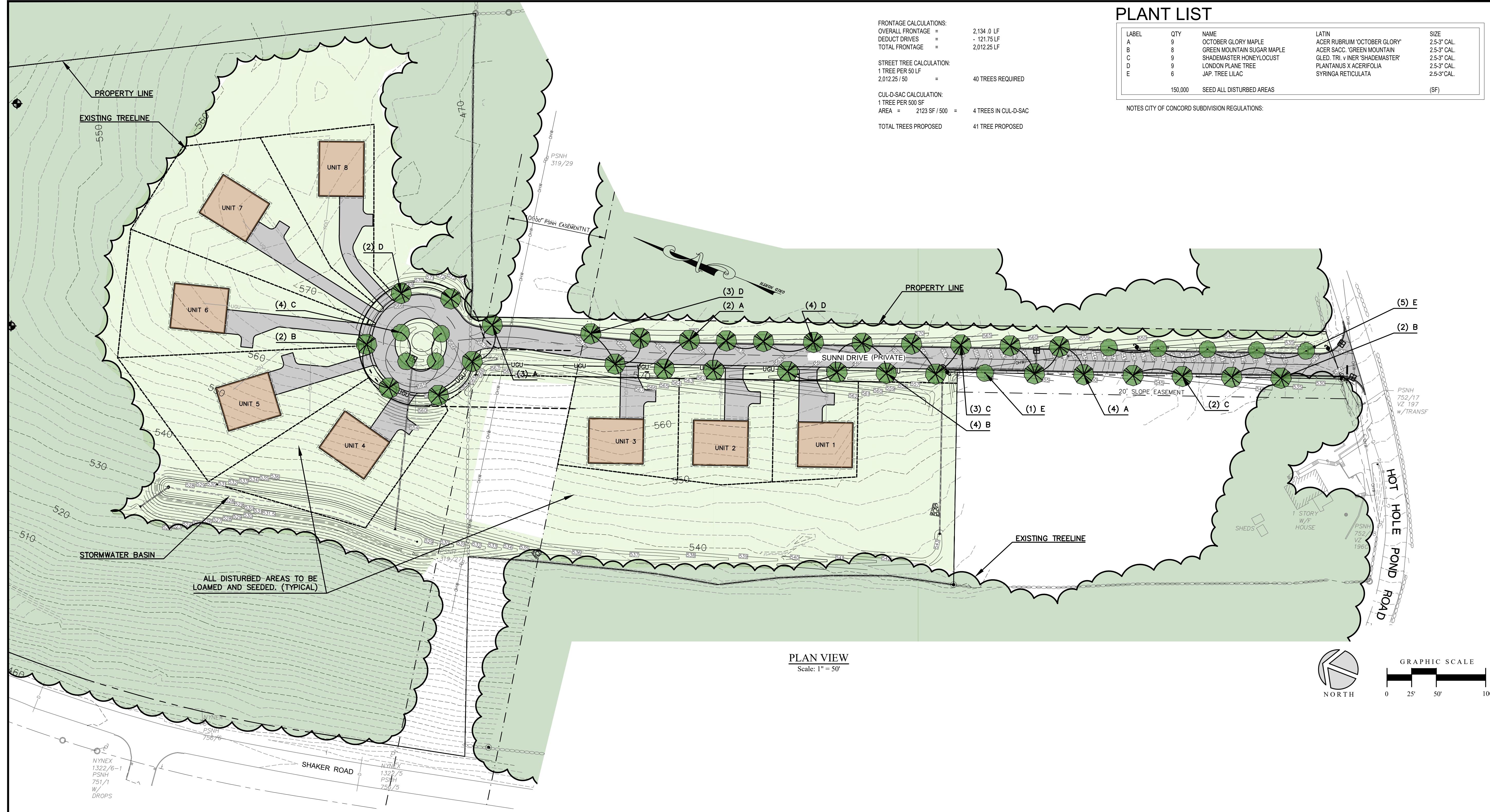
OWNER: EASTERN DEVELOPMENT, LLC P.O. BOX 2671 CONCORD, NH 03302

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



## **PLANT LIST**

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LABEL	QTY	NAME	LATIN	SIZE
A	9	OCTOBER GLORY MAPLE	ACER RUBRUM 'OCTOBER GLORY'	2.5-3" CAL.
B	8	GREEN MOUNTAIN SUGAR MAPLE	ACER SACC. 'GREEN MOUNTAIN'	2.5-3" CAL.
C	9	SHADEMASTER HONEYLOCUST	GED. TRI. v INER 'SHADEMASTER'	2.5-3" CAL.
D	9	LONDON PLANE TREE	PLANTANUS X ACERIFOLIA	2.5-3" CAL.
E	6	JAP. TREE LILAC	SYRINGA RETICULATA	2.5-3" CAL.
150,000		SEED ALL DISTURBED AREAS	(SF)	

## NOTES CITY OF CONCORD SUBDIVISION REGULATIONS:

cott Strynar  
andscape Architect, LLC.  
3 Meehan Lane  
orth Berwick, ME 03906  
207-957-4441  
egistered Landscape Architect  
aine, New Hampshire & Massachusetts  
[www.scottstrynarla.com](http://www.scottstrynarla.com)

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

# GRANITE RIDGE ESTATES Cluster Subdivision

15 Hot Hole Pond Road, Concord, New Hampshire

PLANTING NOTES:

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.

8. MULCH PLANTING BEDS AND TREE PITS WITH 3" FINELY SHREDDED AND AGED BARK MULCH OR AS SPECIFIED ON THE PLAN.
9. ALL DISTURBED LAWN AREAS TO BE LOAMED AND SODDED AS NECESSARY AT NO ADDITIONAL COST TO OWNER(S).
10. GRADES SHOWN REPRESENT PROPOSED GRADES PER CONTRACT. CONTRACTOR TO VERIFY GRADES AS NEEDED.
11. 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).
12. 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).
13. A PRE-CONSTRUCTION MEETING SHALL BE HELD PRIOR TO LANDSCAPE CONTRACTOR BEGINNING CONSTRUCTION OR ORDERING PLANT MATERIALS.
14. PLANTING PLAN IS DIAGRAMMATIC IN NATURE. FINAL PLACEMENT OF PLANTS TO BE APPROVED BY THE LANDSCAPE ARCHITECT IN THE FIELD.

SEEDING NOTES:

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 6" 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.

ISSUED FOR PLANING BOARD SUBMISSION 2-23-24

L1.0

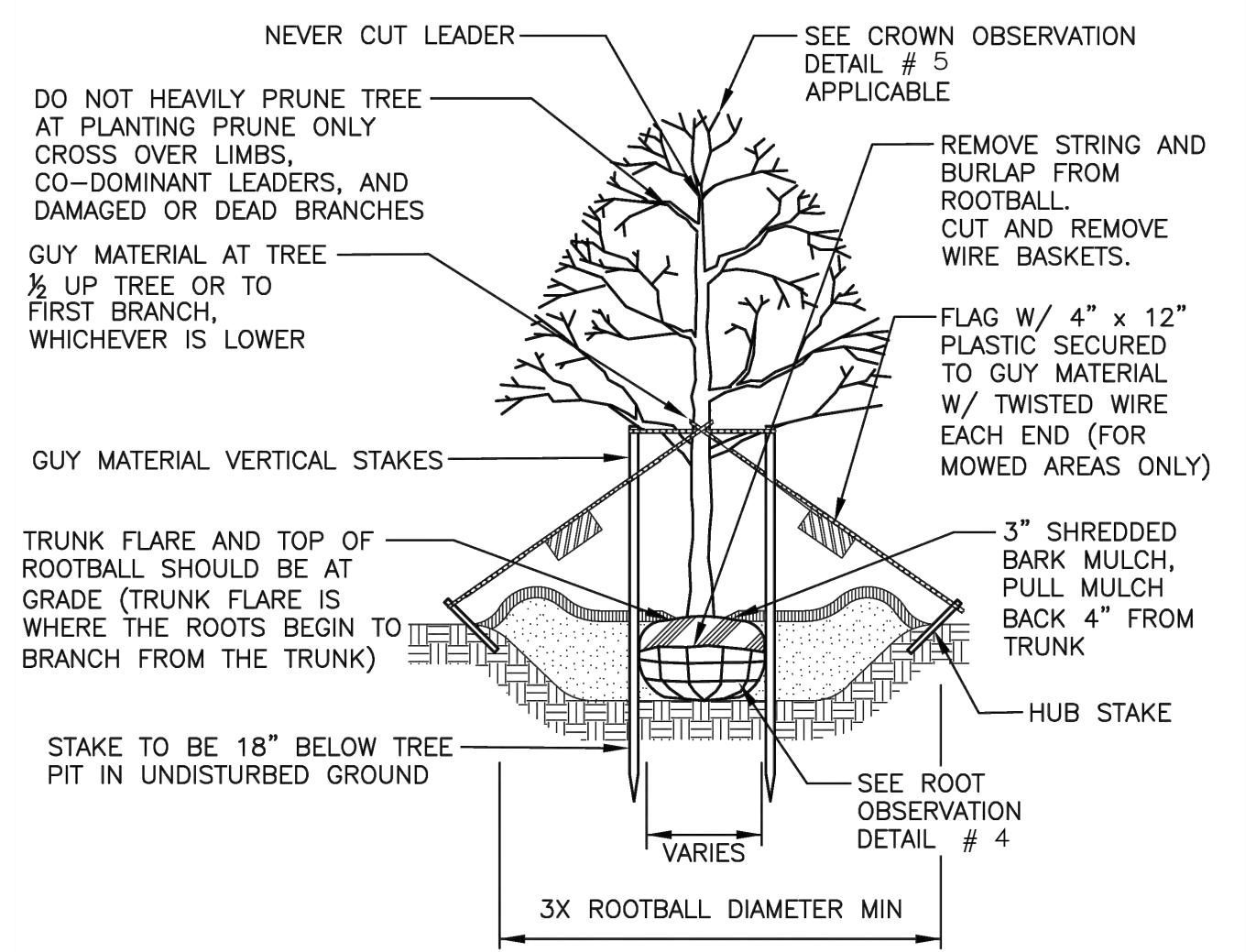
Title: **LANDSCAPE DETAILS**

No.	Date	Revision
1	2-22-24	Revised Site Plan

Job # 187      Dwg. No. **L1.1**

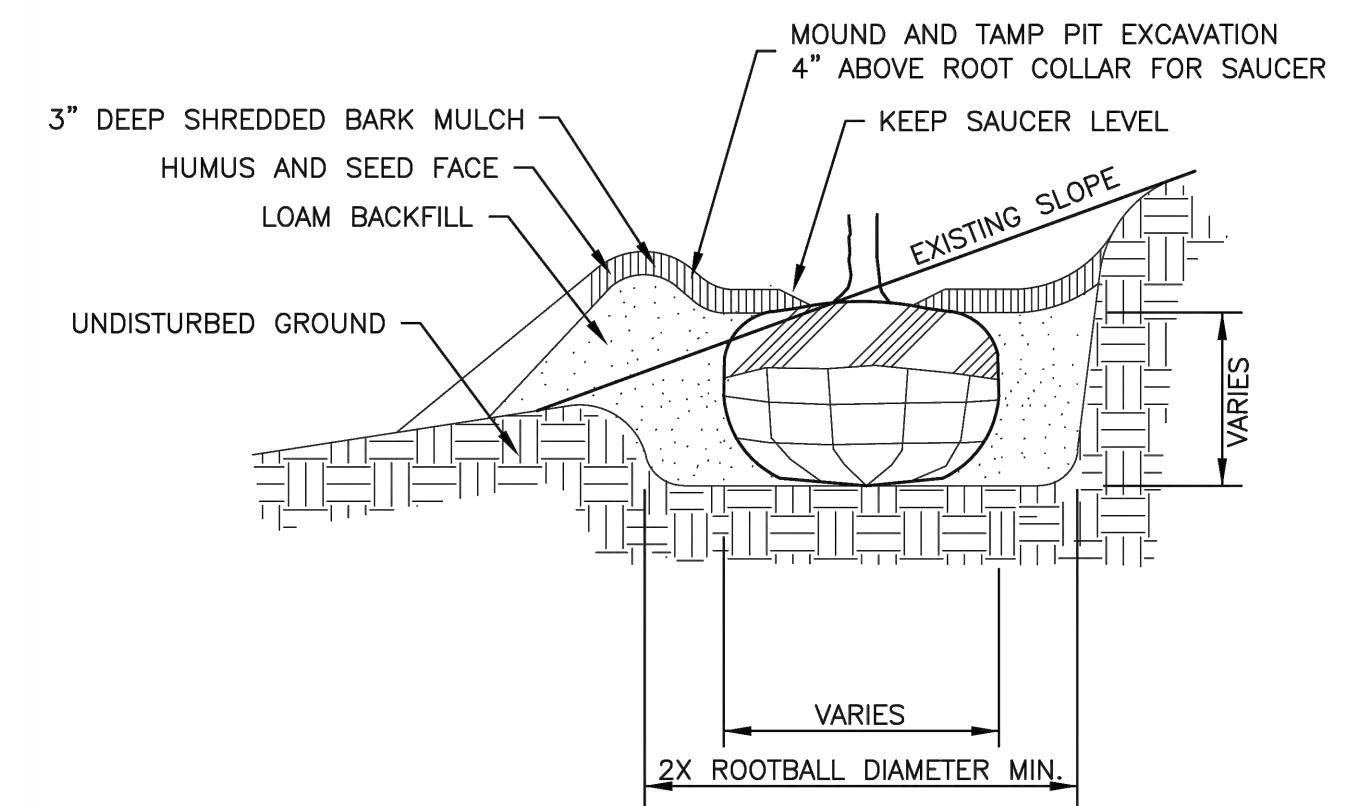
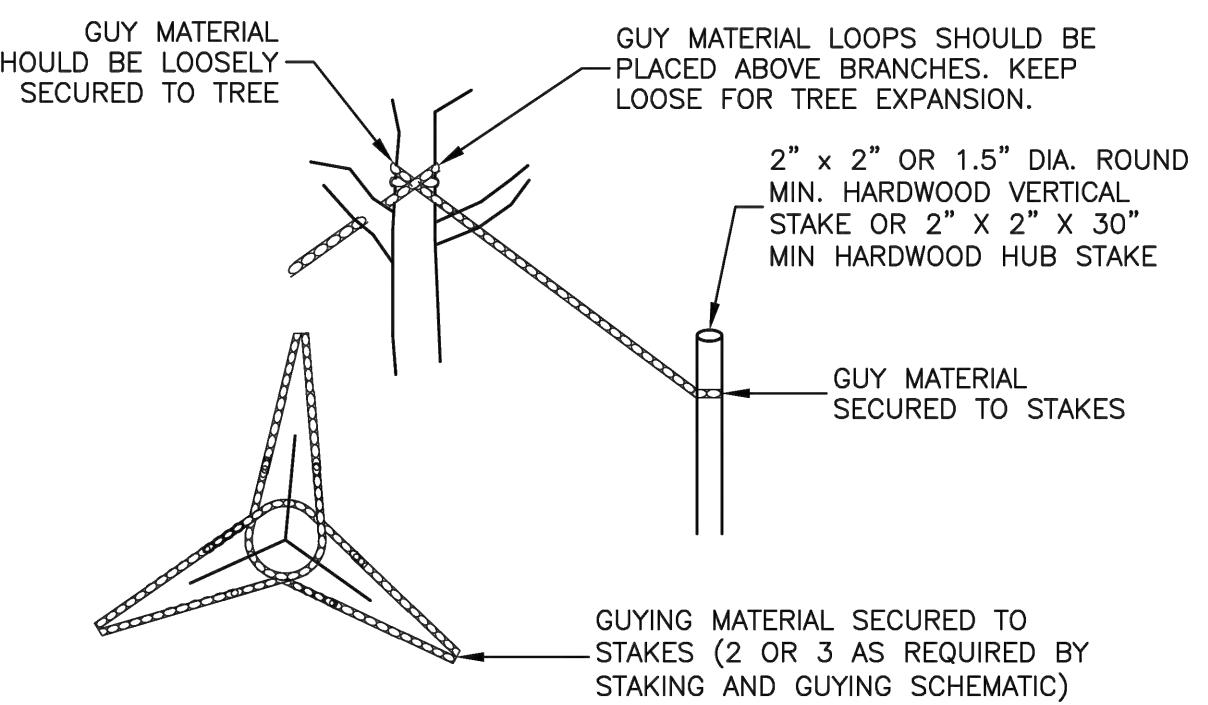
Date: 2/22/24      Scale: As Shown

Drawn: SS      Checked: SS



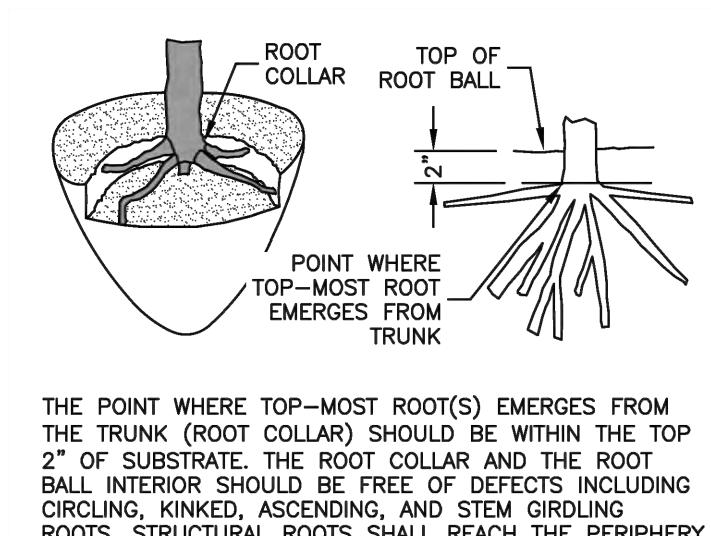
**NOTES:**

1. GUYING AND STAKING TO BE DETERMINED IN THE FIELD BY THE LANDSCAPE ARCHITECT. LOCAL FIELD CONDITIONS AS WELL AS PLANT CHARACTERISTICS WILL DETERMINE THE NECESSITY OF GUYING AND STAKING.
2. TYPICALLY ONLY TREES WITH A 3" OR GREATER CALIPER NEED TO BE STAKED. TREES WITH LESS THAN A 3" CALIPER NEED TO BE STAKED ONLY AS REQUIRED BY LANDSCAPE ARCHITECT.
3. ONLY WRAP TREE TRUNKS AS REQUIRED BY LANDSCAPE ARCHITECT.
4. TREE SHALL BE SET PLUMB, AFTER SETTLEMENT.
5. LOAM FOR BACKFILLING SHALL BE AMENDED AS REQUIRED BY LANDSCAPE ARCHITECT.
6. CITY TREES PLANTED ON PRIVATE PROPERTY, ADJACENT TO A PUBLIC RIGHT-OF-WAY, NEED TO BE PLANTED A MINIMUM OF 10 FEET FROM THE EDGE OF THE CITY SIDEWALK.
7. ALL NURSERY TAGS, TAPE, AND SIMILAR MATERIALS SHALL BE REMOVED.

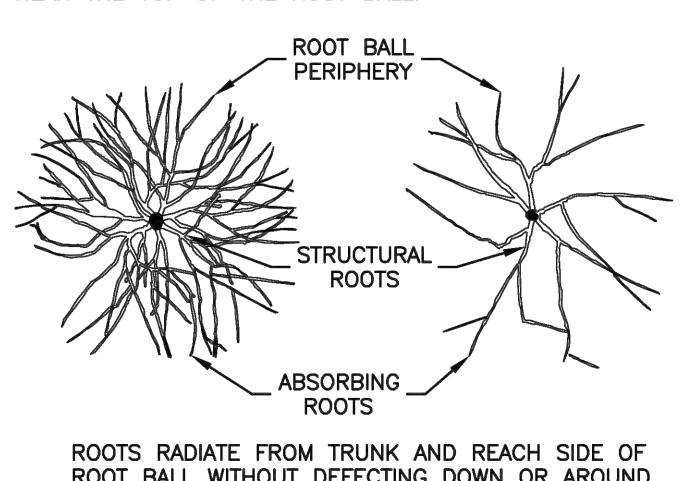


TYPICAL PLANTING PIT ON SLOPE  
4:1 OR GREATER

**1** DECIDUOUS TREE PLANTING INSTALLATION  
NOT TO SCALE



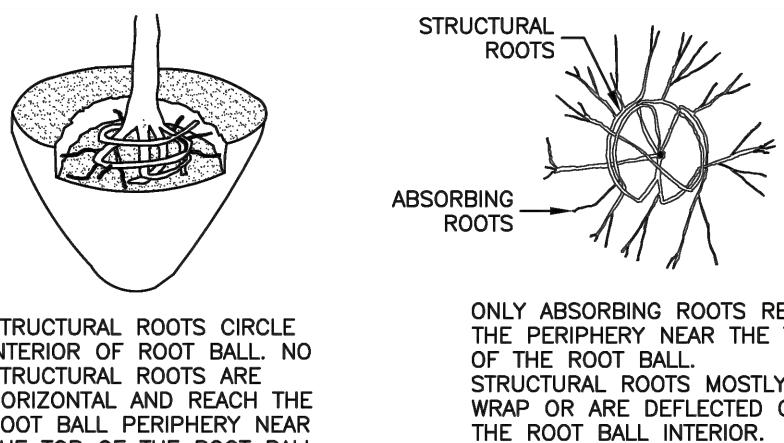
THE POINT WHERE TOP-MOST ROOT(S) EMERGES FROM THE TRUNK (ROOT COLLAR) SHOULD BE WITHIN THE TOP 2" OF SUBSTRATE. THE ROOT COLLAR AND THE ROOT BALL INTERIOR SHOULD BE FREE OF DEFECTS INCLUDING CIRCLING, KINKED, ASCENDING, AND STEM GIRDLING ROOTS. STRUCTURAL ROOTS SHALL REACH THE PERIPHERY NEAR THE TOP OF THE ROOT BALL.



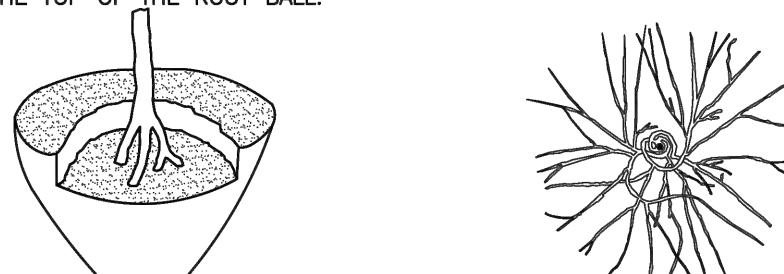
**ACCEPTABLE**

NOTES:

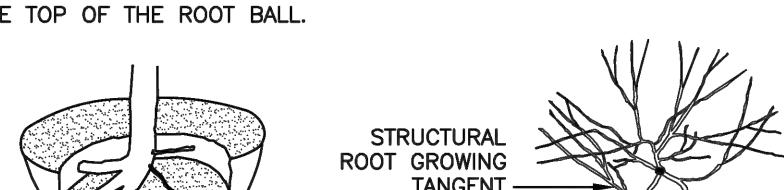
1. OBSERVATIONS OF ROOTS SHALL OCCUR PRIOR TO ACCEPTANCE. ROOTS AND SOIL MAY BE REMOVED DURING THE OBSERVATION PROCESS; SUBSTRATE/SOIL SHALL BE REPLACED AFTER THE OBSERVATIONS HAVE BEEN COMPLETED.
2. SEE SPECIFICATIONS FOR OBSERVATION PROCESS AND REQUIREMENTS.
3. DETAIL DEVELOPED BY THE URBAN TREE FOUNDATION AND IS OPEN SOURCE AND FREE TO USE BY OTHERS.



STRUCTURAL ROOTS CIRCLE INTERIOR OF ROOT BALL. NO STRUCTURAL ROOTS ARE HORIZONTAL AND REACH THE ROOT BALL PERIPHERY NEAR THE TOP OF THE ROOT BALL.



STRUCTURAL ROOTS DESCEND INTO ROOT BALL INTERIOR. NO STRUCTURAL ROOTS ARE HORIZONTAL AND REACH THE ROOT BALL PERIPHERY NEAR THE TOP OF THE ROOT BALL.



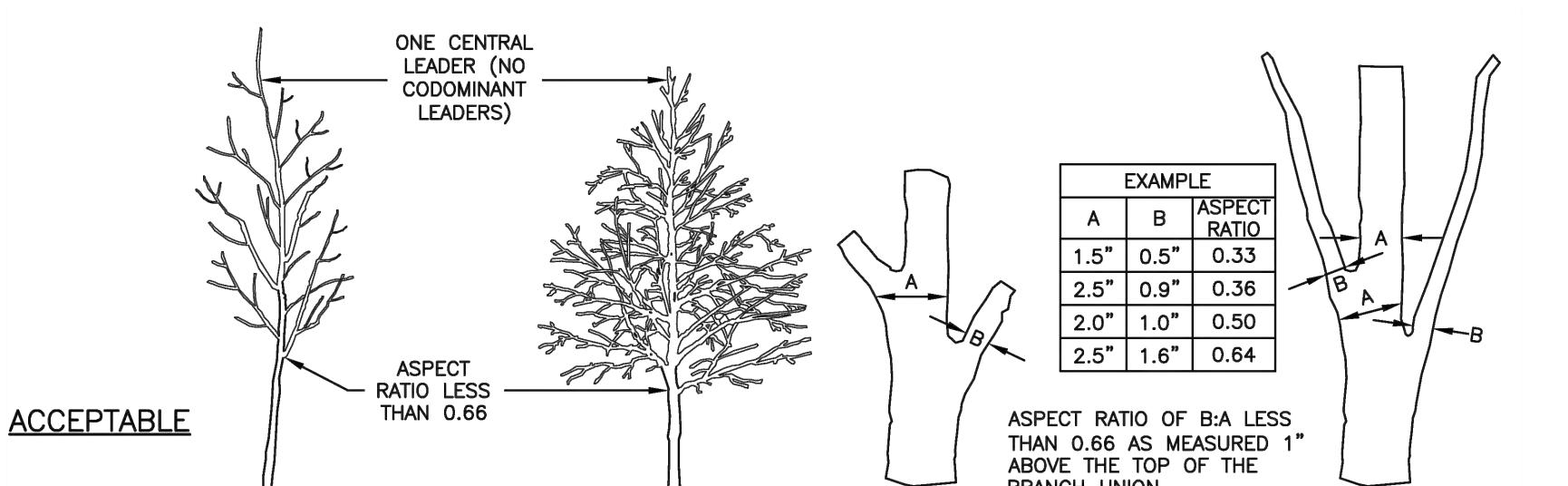
STRUCTURAL ROOTS GROW TANGENT (PARALLEL) TO TRUNK. STRUCTURAL ROOTS MISSING FROM ONE SIDE, AND/OR GROW TANGENT TO TRUNK.



STRUCTURAL ROOTS PRIMARILY GROW TO ONE SIDE.

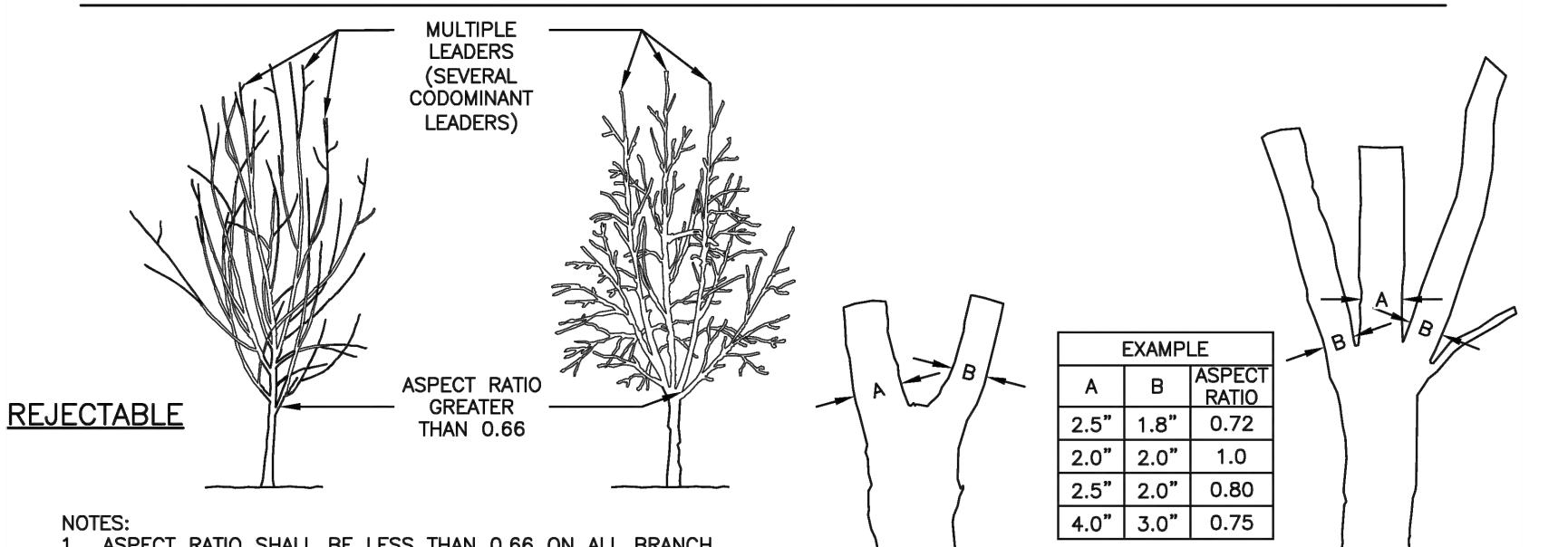
**REJECTABLE**

**2** TREE GUYING DETAIL  
NOT TO SCALE



EXAMPLE		
A	B	ASPECT RATIO
1.5"	0.5"	0.33
2.5"	0.9"	0.36
2.0"	1.0"	0.50
2.5"	1.6"	0.64

ASPECT RATIO OF B/A LESS THAN 0.66 AS MEASURED 1" ABOVE THE TOP OF THE BRANCH UNION.



EXAMPLE		
A	B	ASPECT RATIO
2.5"	1.8"	0.72
2.0"	2.0"	1.0
2.5"	2.0"	0.80
4.0"	3.0"	0.75

ASPECT RATIO OF B/A GREATER THAN OR EQUAL TO 0.66 AS MEASURED 1" ABOVE THE TOP OF THE BRANCH UNION.

**4** ROOT BALL INSPECTIONS  
NOT TO SCALE

**5** CROWN OBSERVATION DETAIL  
NOT TO SCALE

