

 **RiverWoods**  
**Durham**

**PHASE II**  
**Stone Quarry Drive**  
**Durham, New Hampshire**

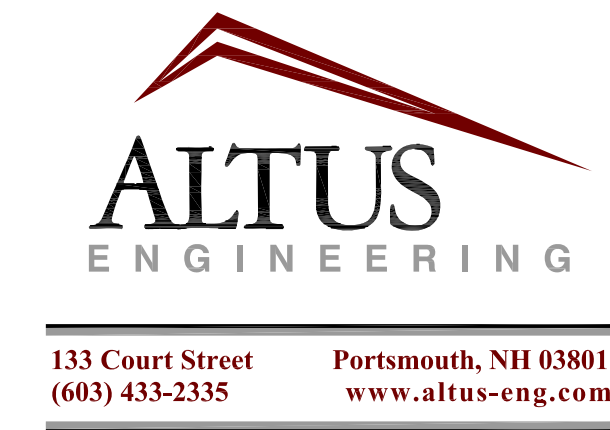
WILDLIFE PROTECTION NOTES

1. SEE NOTES AND WILDLIFE FLYERS ON SHEET C-21.

**Owner/Applicant:**  
**RIVERWOODS DURHAM**  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

**Assessor's Parcel 209, Lot 33**  
**ISSUED FOR REVIEW**

**Civil Engineer:**



**Surveyor:**

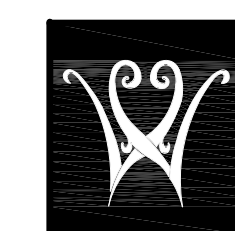


**Wetland Scientist:**  
**MICHAEL CUOMO, CWS**  
6 YORK POND ROAD  
YORK, ME 03909

**Lighting Consultant:**  
 **VISIBLE LIGHT**  
24 STICKNEY TERRACE, SUITE 6  
HAMPTON, NH 03842  
(603) 926-6049

**Architect:**

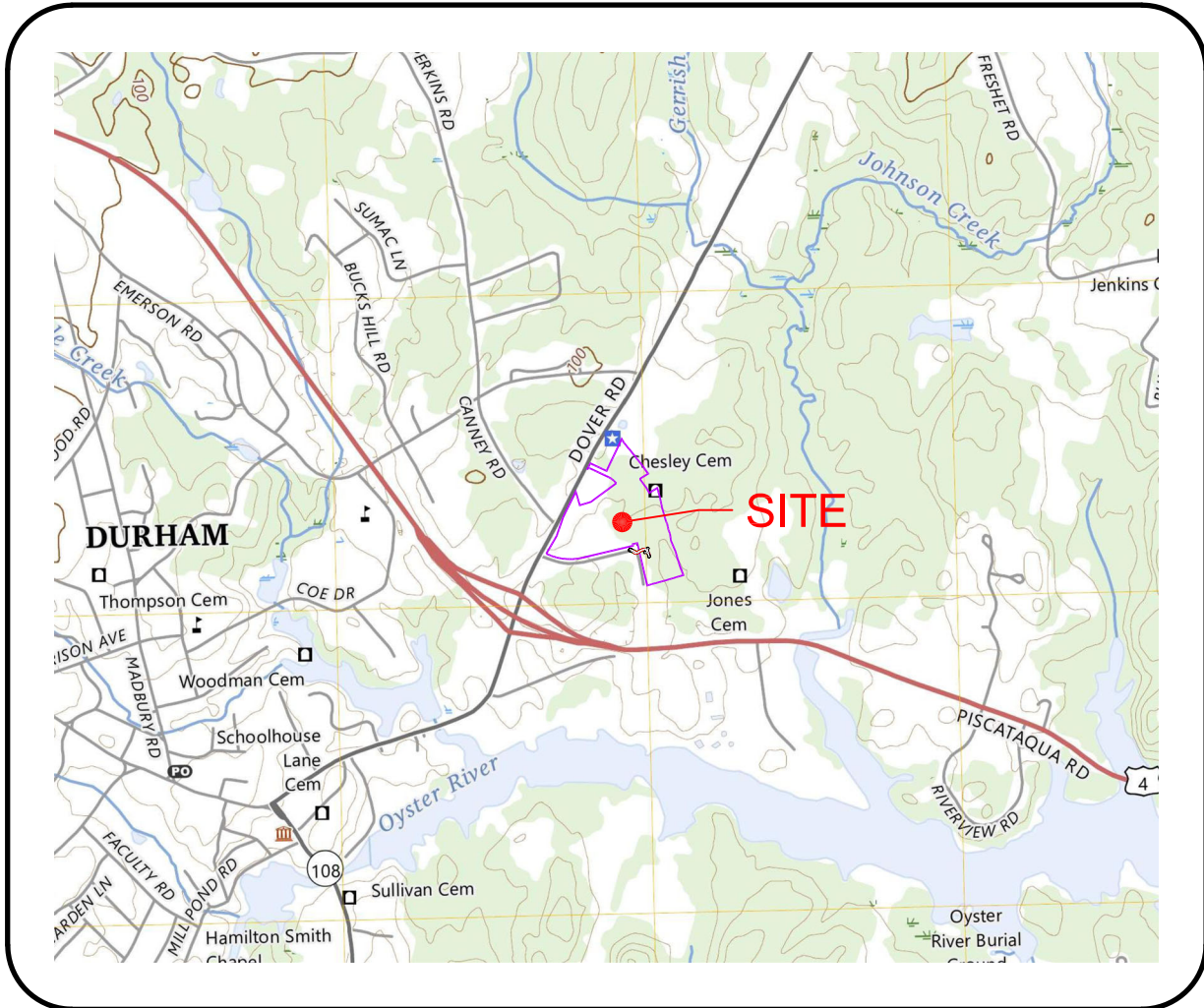


**Landscape Architect:**  
 **woodburn  
& company**  
LANDSCAPE ARCHITECTURE  
103 Kent Place Newmarket, New Hampshire Phone: 603.659.5949

**Traffic Engineer:**  
 **GPI**  
44 Stiles Road  
Salem, NH 03079  
Phone: (603) 893-0720

Plan Issue Date:

October 8, 2025



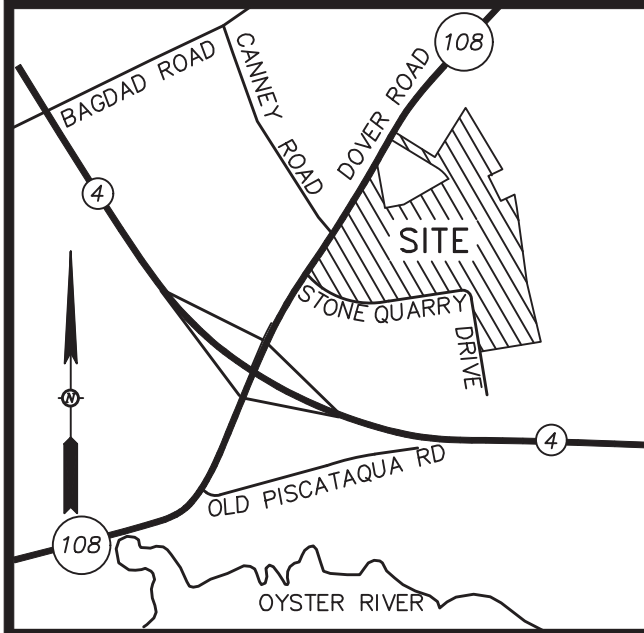
LOCUS

SCALE: 1"=2,000'

| Sheet Index<br>Title                        | Sheet<br>No.: | Rev. | Date     |
|---------------------------------------------|---------------|------|----------|
| Overall Plan                                | S-1           | 1    | 06/03/25 |
| Existing Conditions Plan                    | S-2           | 1    | 06/03/25 |
| Existing Conditions Plan                    | S-3           | 1    | 06/03/25 |
| Existing Conditions Plan                    | S-4           | 1    | 06/03/25 |
| Existing Conditions Plan                    | S-5           | 1    | 06/03/25 |
| Existing Conditions Plan                    | S-6           | 1    | 06/03/25 |
| Existing Conditions Plan                    | S-7           | 1    | 06/03/25 |
| Topography and Soils Plan                   | C-1           | 0    | 07/23/25 |
| Lot Line Adjustment Plan                    | C-2           | 1    | 10/08/25 |
| Overall Site Plan                           | C-3           | 1    | 10/08/25 |
| Site Plan                                   | C-4           | 1    | 10/08/25 |
| Roadway Realignment Plan                    | C-5           | 1    | 10/08/25 |
| Stormwater Management Plan                  | C-6.1         | 1    | 10/08/25 |
| Stormwater Management Plan                  | C-6.2         | 1    | 10/08/25 |
| Erosion and Sediment Control Plan           | C-7.1         | 1    | 10/08/25 |
| Erosion and Sediment Control Plan           | C-7.2         | 1    | 10/08/25 |
| Utility Plan                                | C-8.1         | 1    | 10/08/25 |
| Utility Plan                                | C-8.2         | 1    | 10/08/25 |
| Sewer Plan and Profile                      | C-9.1         | 1    | 10/08/25 |
| Sewer Plan and Profile                      | C-9.2         | 1    | 10/08/25 |
| Lighting Plan                               | C-10.1        | 1    | 10/08/25 |
| Lighting Plan                               | C-10.2        | 1    | 10/08/25 |
| Wetland Buffer Conditional Use Permit Plan  | C-11          | 1    | 10/08/25 |
| Detail Sheet                                | C-12          | 1    | 10/08/25 |
| Detail Sheet                                | C-13          | 1    | 10/08/25 |
| Detail Sheet                                | C-14          | 1    | 10/08/25 |
| Detail Sheet                                | C-15          | 1    | 10/08/25 |
| Detail Sheet                                | C-16          | 1    | 10/08/25 |
| Detail Sheet                                | C-17          | 1    | 10/08/25 |
| Detail Sheet                                | C-18          | 1    | 10/08/25 |
| Detail Sheet                                | C-19          | 1    | 10/08/25 |
| Detail Sheet                                | C-20          | 1    | 10/08/25 |
| Detail Sheet                                | C-21          | 1    | 10/08/25 |
| Detail Sheet                                | C-22          | 0    | 07/23/25 |
| Landscape Plan                              | L-1           | 1    | 10/07/25 |
| Landscape Plan                              | L-2           | 1    | 10/07/25 |
| 1/8" Exterior Elevations - Hybrid Home 'A'  | A500          | 1    | 09/18/25 |
| 1/8" Exterior Elevations - Hybrid Home 'B'  | A501          | 1    | 09/18/25 |
| 1/8" Exterior Elevations - Community Center | A502          | 1    | 09/18/25 |
| Maintenance Garage                          | A503          | 0    | 06/05/25 |

| Permit Summary                | Submitted                                   | Received |
|-------------------------------|---------------------------------------------|----------|
| Durham Zoning Approval        | 06/17/25                                    | 07/08/25 |
| Durham Site Plan Approval     | 07/23/25                                    | —        |
| NHDES Alteration of Terrain   | To be Submitted                             | —        |
| NHDES Sewer Connection Permit | To be Submitted                             | —        |
| NHDOT Driveway Permit         | 06/27/25                                    | —        |
| EPA Notice of Intent          | By Contractor 14 days prior to construction |          |





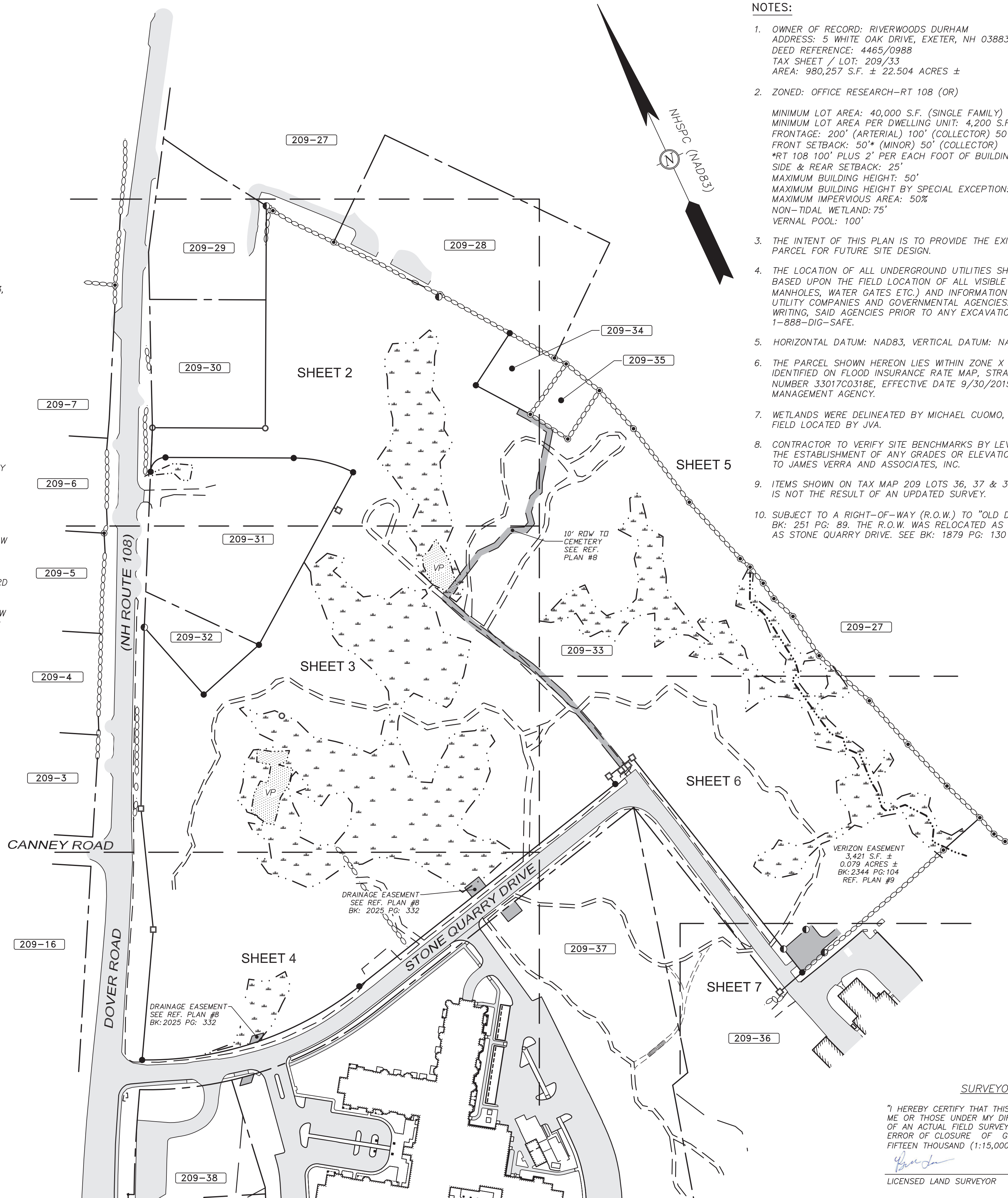
## LOCUS (N.T.S.)

### REFERENCE PLANS:

- "ALTA/NSPS LAND TITLE SURVEY, 14 & 20 STONE QUARRY DRIVE, & US ROUTE 4, DURHAM, NEW HAMPSHIRE, ASSESSOR'S PARCEL 11-8-1 FOR RIVERWOODS DURHAM." DATED OCTOBER 13, 2023. PREPARED BY AND ON FILE WITH THIS OFFICE. NOT RECORDED. JVA JOB #23867.
- "RECORD DRAWING, 14 & 20 STONE QUARRY DRIVE, 56 DOVER ROAD (RT 108) & US ROUTE 4, DURHAM, NEW HAMPSHIRE, ASSESSOR'S PARCELS 11-8-0 & 11-8-1 FOR RIVERWOODS DURHAM." DATED OCTOBER 13, 2020. PREPARED BY AND ON FILE WITH THIS OFFICE. NOT RECORDED. JVA JOB #23867.
- "PROPOSED EASEMENT PLAN PREPARED FOR THE RIVERWOODS GROUP LOCATED AT STONE QUARRY DR & RTE 108 DURHAM, NH." DATED APRIL 9, 2018 AND PREPARED BY ATLANTIC SURVEY COMPANY. SCRD PLAN #115-86.
- "RIGHT-OF-WAY RELOCATION PLAN FOR THE TOWN OF DURHAM N.H. ROUTE 4 DURHAM, NEW HAMPSHIRE." DATED JUNE 22, 1996 AND PREPARED BY DOUCET SURVEY INC., SCRD PLAN #48-43.
- "PLAN OF LAND PREPARED FOR ROCKINGHAM PROPERTIES I LIMITED PARTNERSHIP LOCATED AT ROUTE 108 & STONE QUARRY DRIVE, DURHAM, NH." DATED NOVEMBER 2019 AND PREPARED BY ATLANTIC SURVEY COMPANY. SCRD PLAN #12082 & 12083.
- "LOT LINE ADJUSTMENT PLAN TAX MAP 22 LOT 3-2 & 4-2 DOVER RD, DURHAM, NH." DATED MARCH 2, 2020 AND PREPARED ERIC C. MITCHELL & ASSOCIATES, INC. SCRD PLAN #12261.
- "BOUNDARY LINE ADJUSTMENT ROCKINGHAM PROPERTIES I LIMITED PARTNERSHIP DURHAM, STRAFFORD COUNTY NEW HAMPSHIRE." DATED SEPTEMBER 1995 AND PREPARED BY ORVIS/DREW LLC. SCRD PLAN #48-1 & 48-2.
- "SUBDIVISION PLAN, ROCKINGHAM PROPERTIES I, LIMITED PARTNERSHIP, DURHAM, STRAFFORD COUNTY, NEW HAMPSHIRE." LAST REVISED MAY 1998 AND PREPARED BY ORVIS/DREW LLC. SCRD PLAN #53-49.
- "EASEMENT PLAN OVER LAND OF ROCKINGHAM PROPERTIES STONE QUARRY DRIVE DURHAM, NEW HAMPSHIRE FOR VERIZON NEW ENGLAND, INC." DATED APRIL 20, 2001 AND PREPARED BY THIS OFFICE. SCRD PLAN #52-74.
- "LANDS OF EDWARD C. BATCHELDER AND WILFRED H. BATCHELDER, DURHAM, STRAFFORD COUNTY, NEW HAMPSHIRE." DATED AUGUST 9, 1953 AND PREPARED BY W.E. CLARK, E.C. AND W.H. BATCHELDER AND HAMES A. BRODIE. SCRD POCKET #2, FOLDER #16, PLAN #53.

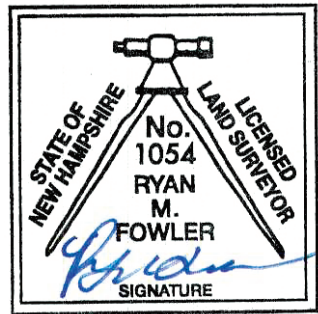
### LEGEND:

- .....BOUND (AS NOTED)
- .....IRON PIPE (AS NOTED)
- .....MONUMENT TO BE SET
- DHF.....DRILL HOLE FOUND
- DHS.....DRILL HOLE SET
- .....IRON ROD FOUND
- ×.....OLD ELECTRIC LIVESTOCK FENCING
- .....CHAINLINK FENCE
- .....STOCKADE FENCE
- .....BRICK
- .....CONCRETE
- .....PATIO
- .....UTILITY POLE
- ×.....UTILITY POLE W/TRANSFORMER
- .....GUY
- .....OVERHEAD WIRES
- .....UTILITY POLE WITH ARM & LIGHT
- SCRD.....STRAFFORD COUNTY REGISTRY OF DEEDS
- 101-03.....TAX SHEET / LOT NO.
- EOP.....EDGE OF PAVEMENT
- .....CATCH BASIN
- .....SEWER MANHOLE
- .....WATER SHUT OFF VALVE
- .....HYDRANT
- .....DECIDUOUS TREE
- .....CONIFEROUS TREE
- .....STONE WALL
- .....TEMPORARY BENCHMARK
- .....STUMP
- .....STRUB
- .....WETLAND HATCH
- VP.....VERNAL POOL
- S.A.C.....SLOPED ASPHALT CURBING



### NOTES:

- OWNER OF RECORD: RIVERWOODS DURHAM  
ADDRESS: 5 WHITE OAK DRIVE, EXETER, NH 03883  
DEED REFERENCE: 4465/0988  
TAX SHEET / LOT: 209/33  
AREA: 980,257 S.F. ± 22.504 ACRES ±
- ZONED: OFFICE RESEARCH-RT 108 (OR)  
  
MINIMUM LOT AREA: 40,000 S.F. (SINGLE FAMILY) 80,000 S.F. (MULTI UNIT, NON RES.)  
MINIMUM LOT AREA PER DWELLING UNIT: 4,200 S.F.  
FRONTAGE: 200' (ARTERIAL) 100' (COLLECTOR) 50' (MINOR)  
FRONT SETBACK: 50' (MINOR) 50' (COLLECTOR) SEE BELOW (ARTERIAL)  
\*RT 108 100' PLUS 2' PER EACH FOOT OF BUILDING HEIGHT IN EXCESS OF 25'  
SIDE & REAR SETBACK: 25'  
MAXIMUM BUILDING HEIGHT: 50'  
MAXIMUM BUILDING HEIGHT BY SPECIAL EXCEPTION: 75'  
MAXIMUM IMPERVIOUS AREA: 50%  
NON-TIDAL WETLAND: 75'  
VERNAL POOL: 100'
- THE INTENT OF THIS PLAN IS TO PROVIDE THE EXISTING CONDITIONS OF THE SUBJECT PARCEL FOR FUTURE SITE DESIGN.
- THE LOCATION OF ALL 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 COMPANIES AND GOVERNMENTAL AGENCIES. ALL CONTRACTORS SHOULD NOTIFY, IN WRITING, SAID AGENCIES PRIOR TO ANY EXCAVATION WORK AND CALL DIG-SAFE @ 1-888-DIG-SAFE.
- HORIZONTAL DATUM: NAD83, VERTICAL DATUM: NAVD88. BASED ON REFERENCE PLAN #1.
- THE PARCEL SHOWN HEREON LIES WITHIN ZONE X (AREA OF MINIMAL FLOOD HAZARD) AS IDENTIFIED ON FLOOD INSURANCE RATE MAP, STRAFFORD COUNTY, NEW HAMPSHIRE, MAP NUMBER 33017C0318E, EFFECTIVE DATE 9/30/2015 BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
- WETLANDS WERE DELINEATED BY MICHAEL CUOMO, CWS #4 ON 05/15/2023 AND WERE FIELD LOCATED BY JVA.
- CONTRACTOR TO VERIFY SITE BENCHMARKS BY LEVELING BETWEEN 2 BENCHMARKS PRIOR TO THE ESTABLISHMENT OF ANY GRADES OR ELEVATIONS. DISCREPANCIES ARE TO BE REPORTED TO JAMES VERRA AND ASSOCIATES, INC.
- ITEMS SHOWN ON TAX MAP 209 LOTS 36, 37 & 38 WERE TAKEN REFERENCE PLAN #1, AND IS NOT THE RESULT OF AN UPDATED SURVEY.
- SUBJECT TO A RIGHT-OF-WAY (R.O.W.) TO "OLD DOVER ROAD" REFERENCED IN SCRD BK: 251 PG: 89. THE R.O.W. WAS RELOCATED AS SHOWN ON REF. PLAN #4 TO BE KNOWN AS STONE QUARRY DRIVE. SEE BK: 1879 PG: 130 & PG: 135.



### SURVEYOR'S CERTIFICATION

"I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS AN ERROR OF CLOSURE OF GREATER ACCURACY THAN ONE PART IN FIFTEEN THOUSAND (1:15,000)."

*Ryan M. Fowler*  
LICENSED LAND SURVEYOR

6/10/25  
DATE

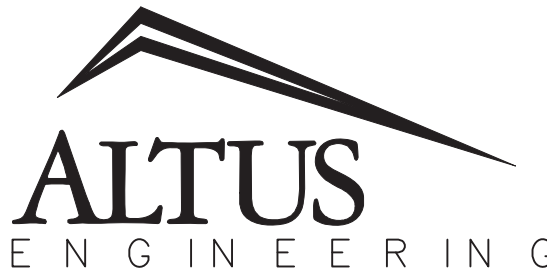
### SURVEYOR:



101 SHATTUCK WAY, SUITE 8,  
NEWINGTON, N.H., 03801-7876  
603-436-3557

JOB NO: 23-2036

### ENGINEER:



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

### ISSUED FOR:

### SUBMISSION

### ISSUE DATE:

1/15/24

### REVISIONS

| NO. | DESCRIPTION                             | BY  | DATE   |
|-----|-----------------------------------------|-----|--------|
| 1   | ADD DETAIL AND TOPO BY THE PUBLIC WORKS | BJM | 6/3/25 |

### DRAWN BY:

RMF

### APPROVED BY:

RMF

### DRAWING FILE:

23-2036\_EXCON

### SCALE:

22" x 34" - 1" = 100'  
11" x 17" - 1" = 200'

### APPLICANT:

RIVERWOODS DURHAM  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

### OWNER:

RIVERWOODS DURHAM  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

### PROJECT:

RIVERWOODS DURHAM  
TAX MAP 209  
LOT 33  
STONE QUARRY  
DRIVE  
& DOVER ROAD  
(NH RT 108)  
DURHAM, NH

### TITLE:

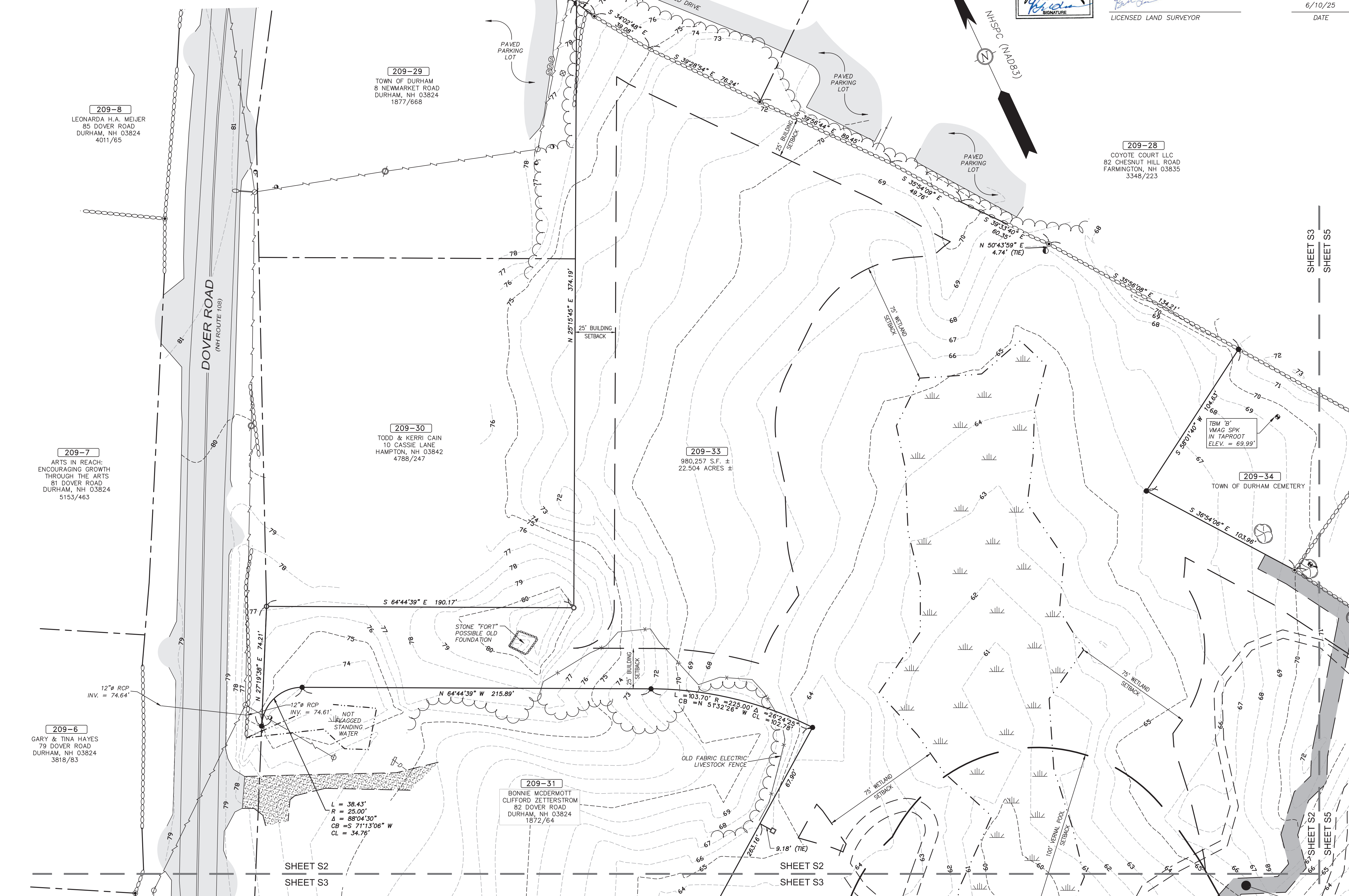
OVERALL PLAN

### SHEET NUMBER:

S-1

ALTUS JOB#5440





**SURVEYOR'S CERTIFICATION**

"I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS AN ERROR OF CLOSURE OF GREATER ACCURACY THAN ONE PART IN FIFTEEN THOUSAND (1:15,000)."



---

LICENSED LAND SURVEYOR

6/10/25

---

DATE

**ENGINEER:**



**ALTUS**  
ENGINEERING

---

133 Court Street  
(603) 433-2335

Portsmouth, NH 03801  
[www.altus-eng.com](http://www.altus-eng.com)

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APPROVED BY: \_\_\_\_\_ RMF  
DRAWING FILE: \_\_\_\_\_ 23-2036\_EXCON

APPLICANT:

RIVERWOODS DURHAM  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

OWNER:

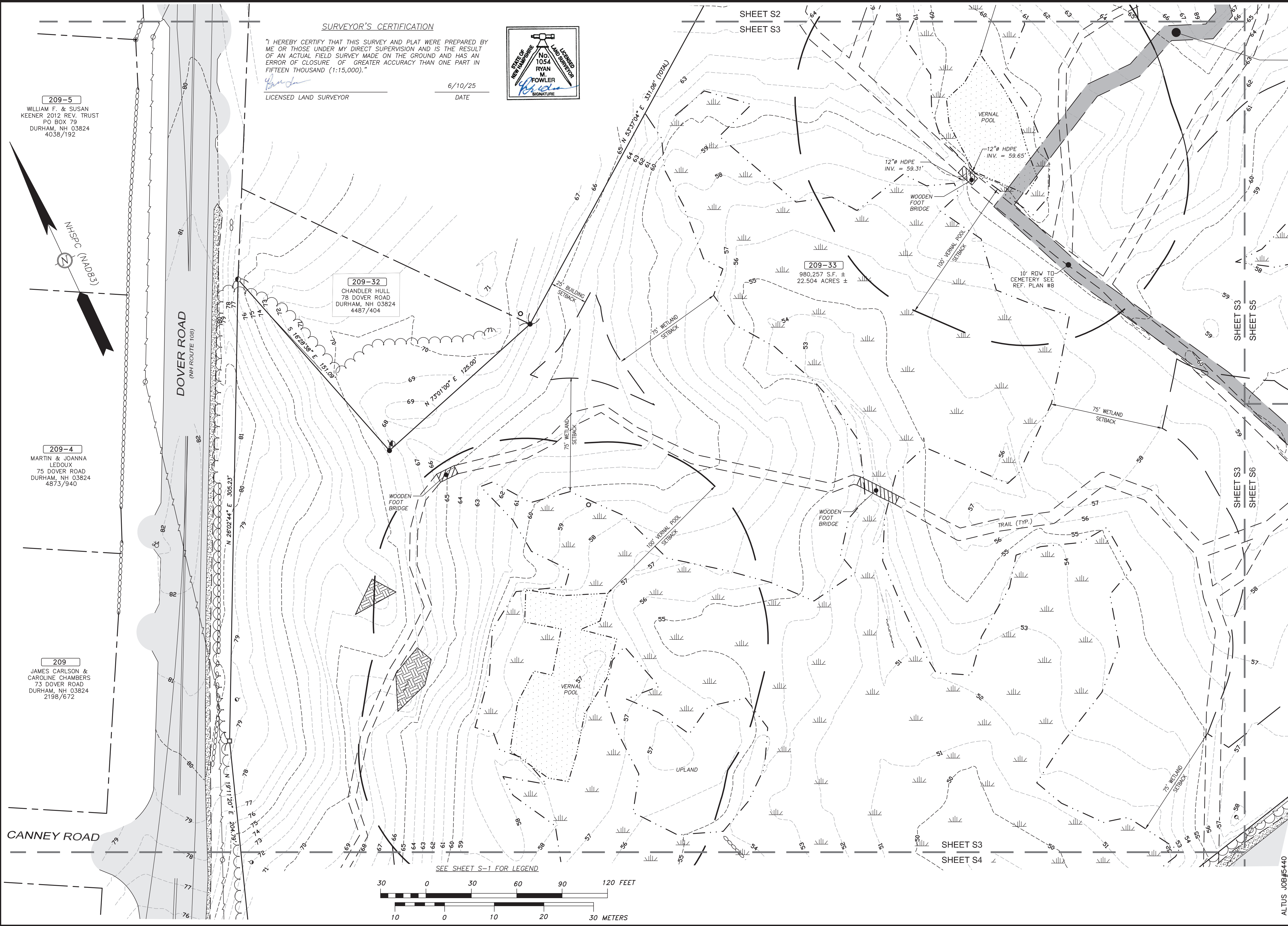
RIVERWOODS DURHAM  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

TITLE:

*EXISTING  
CONDITIONS  
PLAN*

**SHEET NUMBER:**  
**S-2**





SURVEYOR:

**JVA**  
JAMES VERRA & ASSOCIATES, INC.  
101 SHATTUCK WAY, SUITE 8,  
NEWINGTON, N.H., 03801-7876  
603-436-3557  
JOB NO: 23-2036

ENGINEER:

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

ISSUED FOR:

**ENGINEERING REVIEW**

ISSUE DATE:

**1/15/24**

REVISIONS

| NO. | DESCRIPTION                             | BY  | DATE   |
|-----|-----------------------------------------|-----|--------|
| 1   | ADD DETAIL AND TOPO BY THE PUBLIC WORKS | BJM | 6/3/25 |

DRAWN BY: \_\_\_\_\_ RMF

APPROVED BY: \_\_\_\_\_ RMF

DRAWING FILE: \_\_\_\_\_ 23-2036\_EXCON

SCALE:

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

APPLICANT:

**RIVERWOODS DURHAM**  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

OWNER:

**RIVERWOODS DURHAM**  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

PROJECT:

**RIVERWOODS DURHAM**  
**TAX MAP 209**  
**LOT 33**  
**STONE QUARRY**  
**DRIVE**  
**& DOVER ROAD**  
**(NH RT 108)**  
**DURHAM, NH**

TITLE:

**EXISTING**  
**CONDITIONS**  
**PLAN**

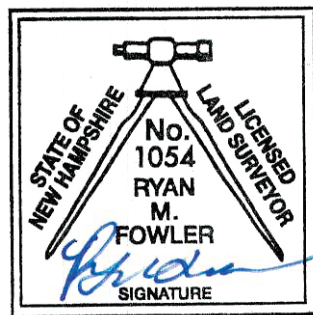
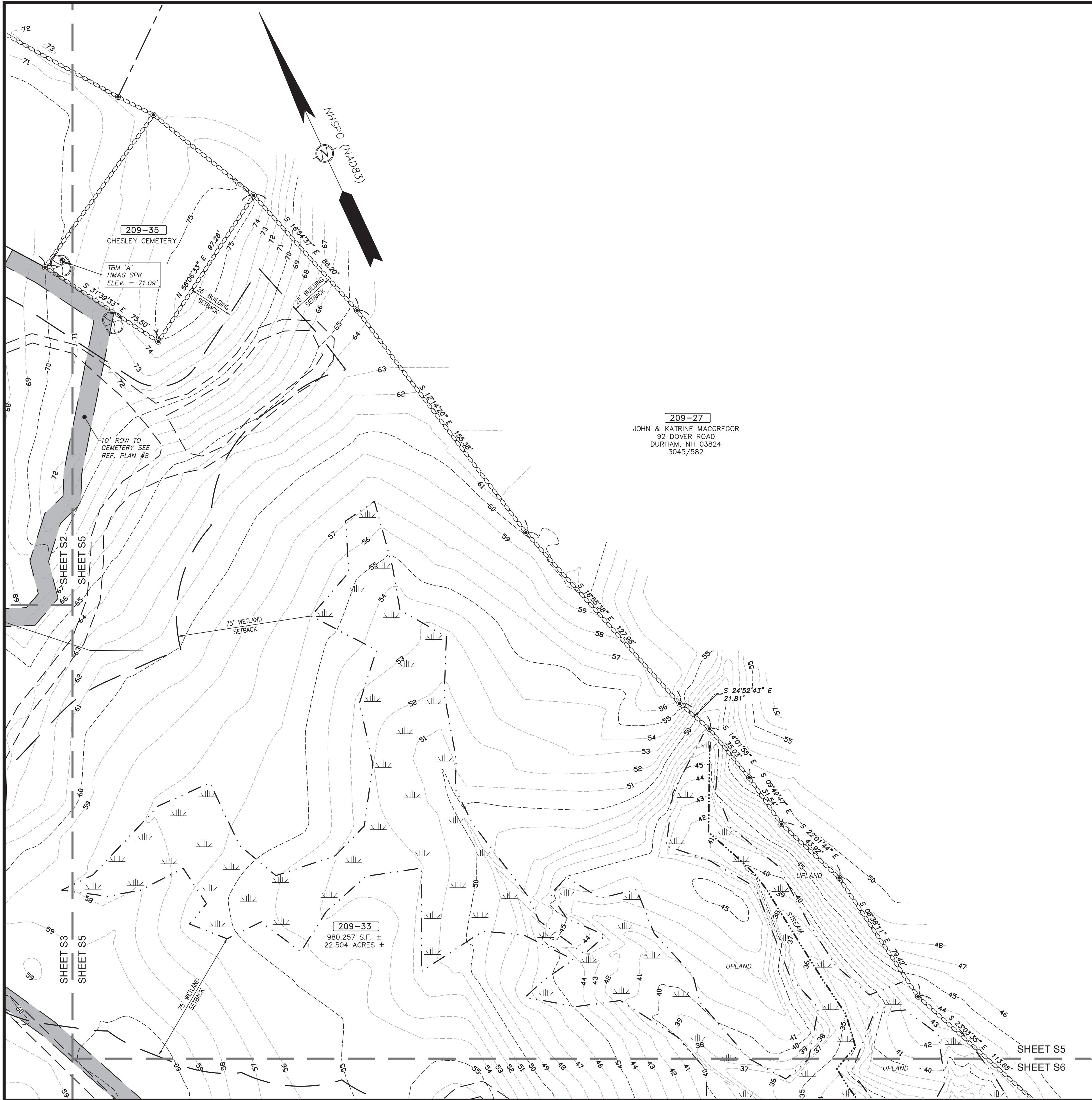
SHEET NUMBER:

**S-3**









SURVEYOR'S CERTIFICATION  
"I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS AN ERROR OF CLOSURE OF GREATER ACCURACY THAN ONE PART IN FIFTEEN THOUSAND (1:15,000)."  
6/10/25  
DATE  
LICENSED LAND SURVEYOR

SURVEYOR:  
**JVA**  
JAMES VERRA & ASSOCIATES, INC.  
101 SHATTUCK WAY, SUITE 8,  
NEWINGTON, N.H., 03801-7876  
603-436-3557  
JOB NO: 23-2036

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

ISSUED FOR:  
**SUBMISSION**

ISSUE DATE:  
**1/15/24**

| <u>REVISIONS</u> |                                               |     |       |
|------------------|-----------------------------------------------|-----|-------|
| NO.              | DESCRIPTION                                   | BY  | DATE  |
| 1                | ADD DETAIL AND<br>TOPO BY THE<br>PUBLIC WORKS | BJM | 6/3/2 |

DRAWN BY: \_\_\_\_\_ RMF  
APPROVED BY: \_\_\_\_\_ RMF  
DRAWING FILE: 23-2036\_EXCON

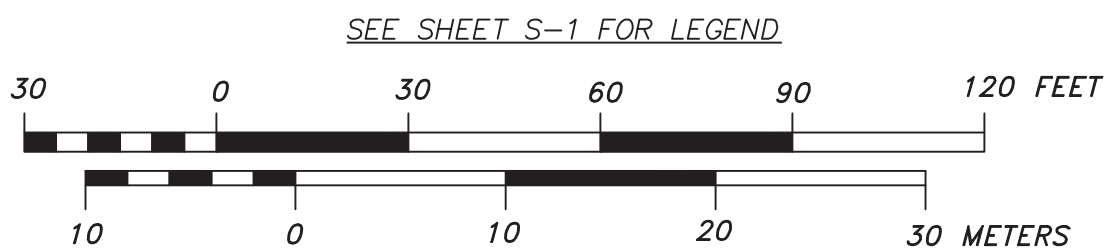
SCALE:  
22" x 34" - 1" = 30'  
11" x 17" - 1" = 60'

APPLICANT:  
**RIVERWOODS DURHAM**  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824  
OWNER:  
**RIVERWOODS DURHAM**  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

PROJECT:  
**RIVERWOODS DURHAM**  
**TAX MAP 209**  
**LOT 33**  
**STONE QUARRY**  
**DRIVE**  
**& DOVER ROAD**  
**(NH RT 108)**  
**DURHAM, NH**

TITLE:  
**EXISTING**  
**CONDITIONS**  
**PLAN**

SHEET NUMBER:  
**S-5**

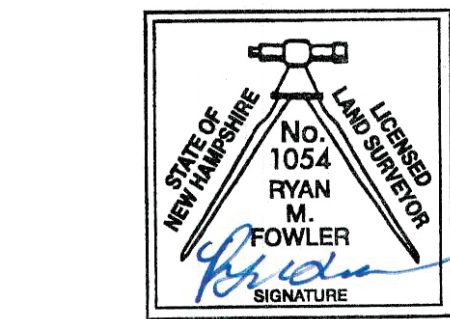


ALTUS JOB#5440









EXISTING  
CONDITIONS  
PLAN

S-7

  
\_\_\_\_\_  
LICENSED LAND SURVEYOR

6/10/25

DATE \_\_\_\_\_



SOIL NOTES

1. ON SITE WETLANDS WERE DELINEATED BY MICHAEL CUOMO, INC. IN MAY, 2023 IN ACCORDANCE WITH THE U.S. ARMY CORPS OF ENGINEERS (ACOE) WETLAND DELINEATION MANUAL (1987) AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL, NORTH-CENTRAL AND NORTHEAST REGION (VERSION 2). HYDRIC SOIL DETERMINATIONS WERE CONDUCTED IN ACCORDANCE WITH THE U.S. DEPT. OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE'S FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES (VERSION 7.0, 2010) ALONG WITH THE MANUAL FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND (VERSION 3, APRIL 2004). PLANT SPECIES INDICATOR STATUS WAS BASED ON THE ACOE'S THE NATIONAL WETLAND PLANT LIST (2013).
2. OFF SITE WETLANDS WERE DELINEATED BY JAMES H. LONG OF GZA GEOENVIRONMENTAL, INC. IN APRIL, 2017 USING THE SAME CRITERIA AS ABOVE. THEY ARE SHOWN HERE FOR REFERENCE ONLY.
3. SEE SOIL REPORT FOR TEST PIT LOGS.

SITE SPECIFIC SOILS MAP LEGEND

| MAP SYMBOL | SOIL NAME   | HYDROLOGIC SOIL GROUP | DRAINAGE CLASS               |
|------------|-------------|-----------------------|------------------------------|
| 29         | WOODBIDGE   | C                     | MODERATELY WELL DRAINED      |
| 32         | BOXFORD     | B                     | MODERATELY WELL DRAINED      |
| 33         | SOITICO     | C                     | POORLY DRAINED               |
| 42         | CANTON      | D                     | WELL DRAINED                 |
| 85         | HOLLIS      | D                     | SOMEWHAT EXCESSIVELY DRAINED |
| 89         | CHATFIELD   | B                     | WELL DRAINED                 |
| 134        | MAYBID      | D                     | VERY POORLY DRAINED          |
| 953        | BOXFORD SPD | C                     | SOMEWHAT POORLY DRAINED      |

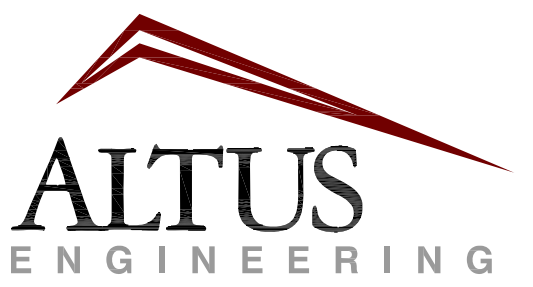
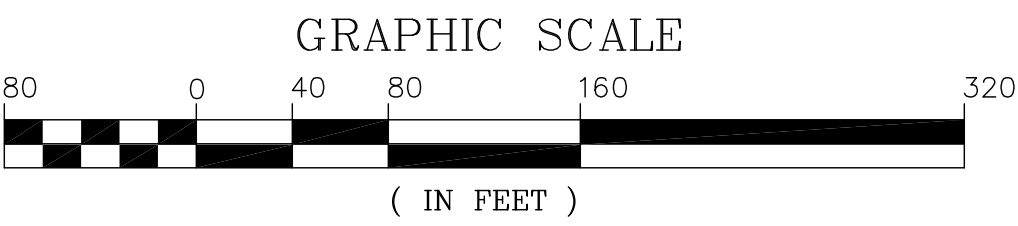
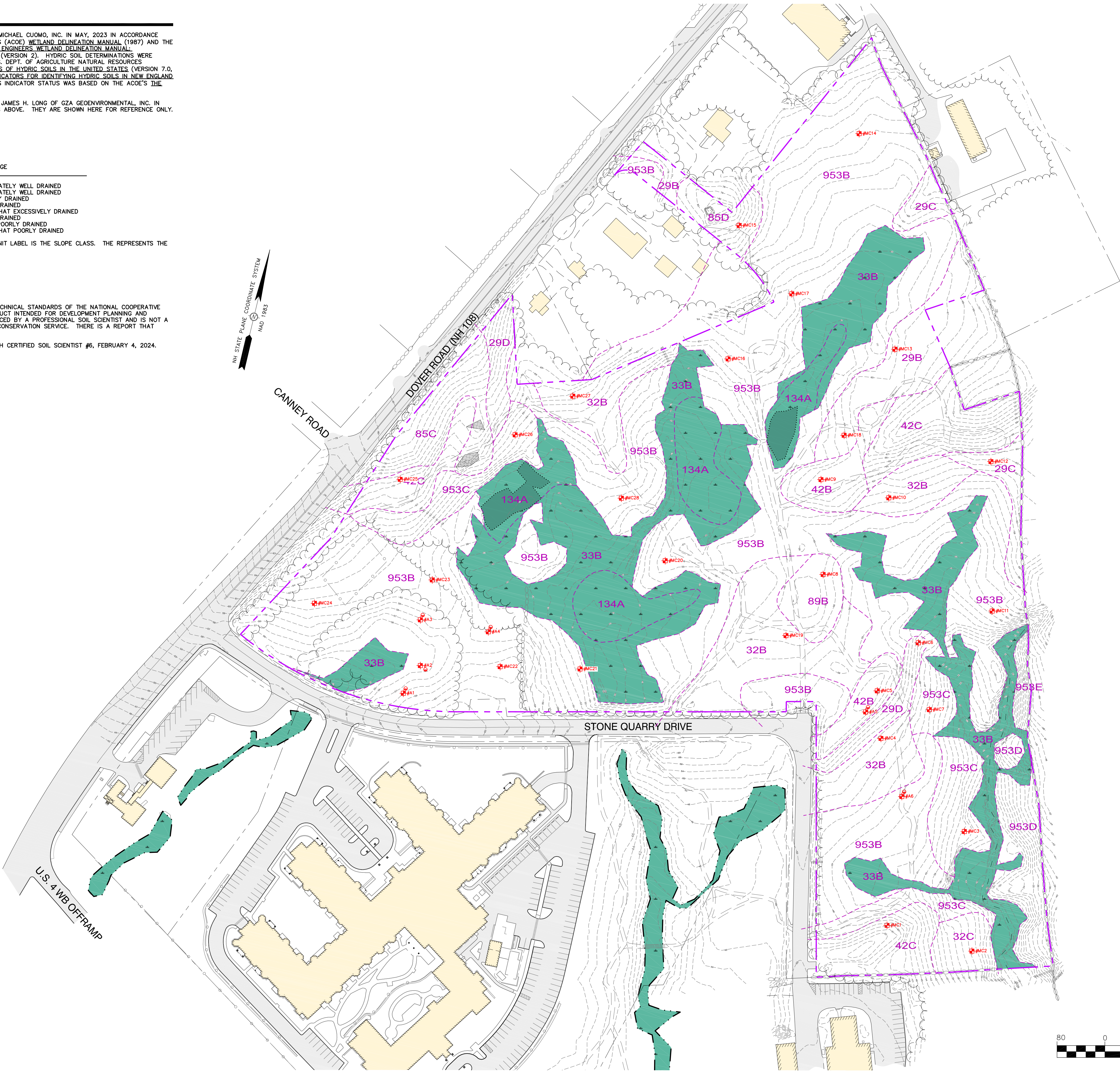
THE LETTER AT THE END OF THE SOILS MAP UNIT LABEL IS THE SLOPE CLASS. THE REPRESENTS THE PREDOMINANT SLOPE OF THE MAP UNIT.

SLOPE CLASS

- A 0-1%
- B 1-5%
- C 6-15%
- D 15-25%
- E >25%

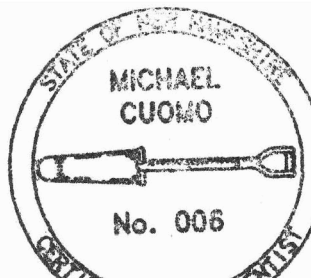
SOILS SHOWN ON THIS MAP ARE WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT INTENDED FOR DEVELOPMENT PLANNING AND ENGINEERING INTERPRETATIONS. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE. THERE IS A REPORT THAT ACCOMPANIES THIS MAP.

SOIL SURVEY PREPARED BY MICHAEL CUOMO, NH CERTIFIED SOIL SCIENTIST #6, FEBRUARY 4, 2024.



133 Court Street  
(603) 433-2335

Portsmouth, NH 03801  
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Michael Cuomo  
22 MAY 2025

NOT FOR CONSTRUCTION

ISSUED FOR: REVIEW

ISSUE DATE: JULY 23, 2025

REVISIONS  
NO. DESCRIPTION BY DATE  
0 REVIEW EBS 06/23/25

DRAWN BY: EBS  
APPROVED BY: EBS  
DRAWING FILE: 5440-SITE.dwg

SCALE:  
24" x 36" - 1" = 80'  
11" x 17" - 1" = NTS

OWNER:  
RIVERWOODS DURHAM  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

APPLICANT:  
RIVERWOODS DURHAM  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

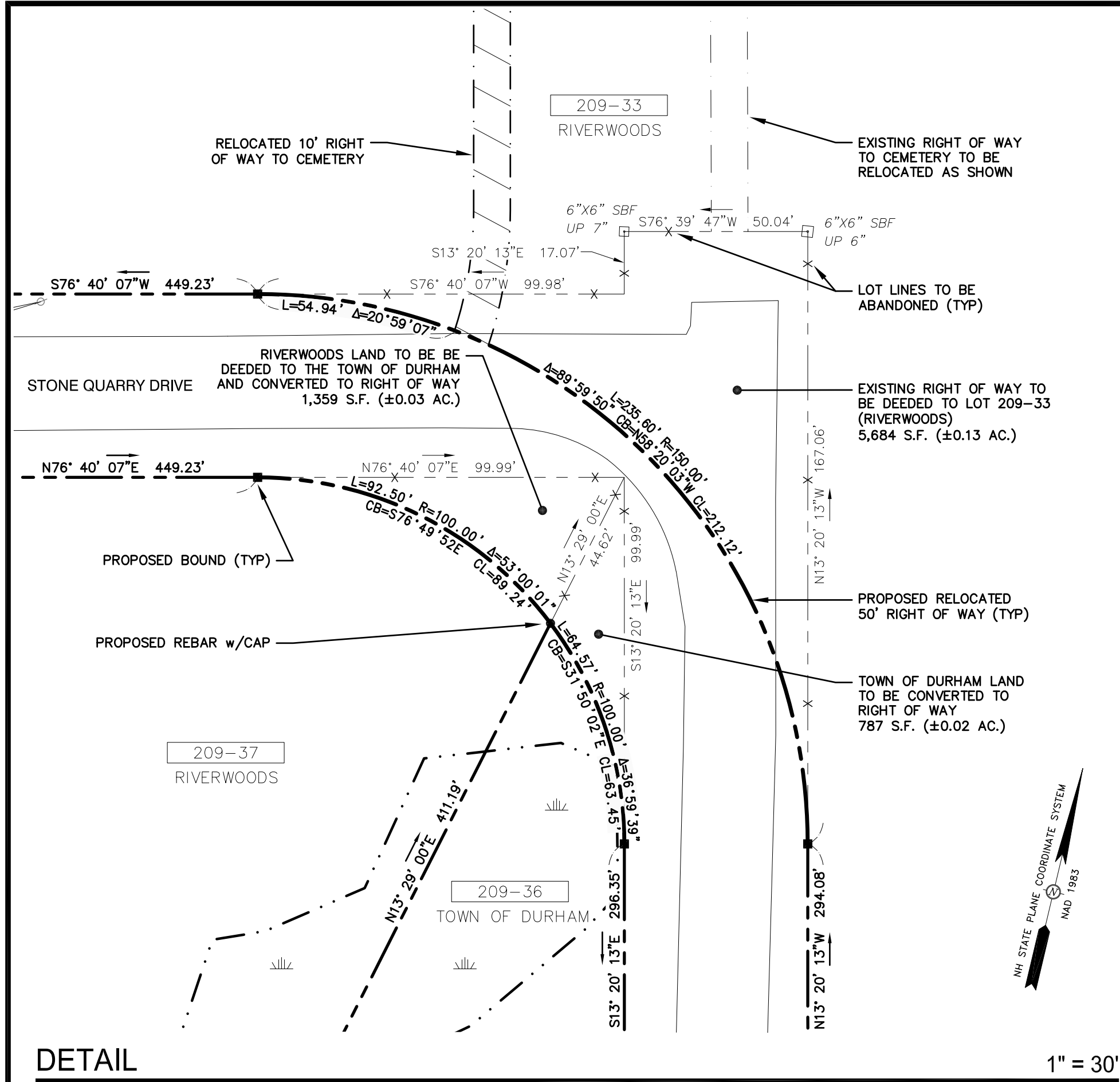
PROJECT:  
RIVERWOODS  
DURHAM PHASE II  
TAX MAP 209 LOT 33  
STONE QUARRY DRIVE  
& DOVER ROAD (NH 108)  
DURHAM, NH

TITLE:

SOILS AND  
TOPOGRAPHY PLAN

SHEET NUMBER:  
C-1





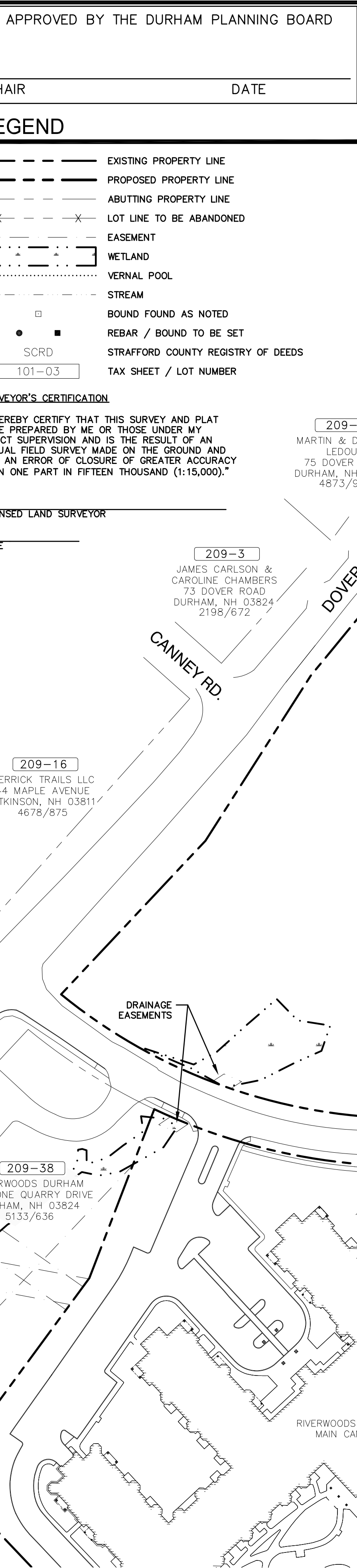
NOTES

- OWNER OF RECORD: RIVERWOODS DURHAM  
ADDRESS: 14 STONE QUARRY DRIVE, DURHAM, NH 03824  
DEED REFERENCE: SCRD 4465/988, 992 & 999  
TAX SHEET / LOT: 209/33  
AREA: ±980,257 S.F. (±22.50 AC.) EXIST. / ±985,941 S.F. (±22.63 AC.) PROP.  
TAX SHEET / LOT: 209/37  
AREA: ±492,308 S.F. (±11.30 ACRES) EXIST. / ±490,949 S.F. (±11.26 ACRES) PROP.  
OWNER OF RECORD: TOWN OF DURHAM  
ADDRESS: 8 NEWMARKET ROAD, DURHAM, NH 03824  
DEED REFERENCE: SCRD 1827/501  
TAX SHEET / LOT: 209/36  
AREA: ±10.10 ACRES EXIST. / ±10.08 ACRES PROP. (PER TAX MAP)
- PLAN INTENT: THIS PLAN IS INTENDED TO DEPICT THE RELOCATION OF THE STONE QUARRY DRIVE RIGHT OF WAY THROUGH THE TRANSFER ±0.13 ACRES FROM THE STONE QUARRY DRIVE RIGHT OF WAY TO LOT 209/33 (RIVERWOODS), THE TRANSFER ±0.03 ACRES FROM LOT 209/37 (RIVERWOODS) TO THE STONE QUARRY DRIVE RIGHT OF WAY, AND THE TRANSFER ±0.02 ACRES FROM LOT 209/36 (TOWN OF DURHAM) TO THE STONE QUARRY RIGHT OF WAY.
- ZONED: OFFICE RESEARCH—RT 108 (OR)  
MINIMUM LOT AREA: 40,000 S.F. (SINGLE FAMILY) 80,000 S.F. (MULTI-UNIT, NON RES.)  
MINIMUM LOT AREA PER DWELLING UNIT: 4,200 S.F.  
FRONTAGE: 200' (ARTERIAL) 100' (COLLECTOR) 50' (MINOR)  
FRONT SETBACK: 50' (MINOR) 50' (COLLECTOR) SEE BELOW\* (ARTERIAL)  
\*RT 108 100' PLUS 2' PER EACH FOOT OF BUILDING HEIGHT IN EXCESS OF 25'  
SIDE & REAR SETBACK: 25'  
MAXIMUM BUILDING HEIGHT: 50' (75' BY SPECIAL EXCEPTION)  
MAXIMUM IMPERVIOUS AREA: 50%  
NON-TIDAL WETLAND: 75'  
VERNAL POOL: 100'
- HORIZONTAL DATUM: NAD83, VERTICAL DATUM: NAVD88. BASED ON REF. PLAN #1.
- THE PARCEL SHOWN HEREON LIES WITHIN ZONE X (AREA OF MINIMAL FLOOD HAZARD) AS IDENTIFIED ON FLOOD INSURANCE RATE MAP, STRAFFORD COUNTY, NEW HAMPSHIRE, MAP NUMBER 33017C0318E, EFFECTIVE DATE 9/30/2015 BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
- WETLANDS WERE DELINEATED BY MICHAEL CUOMO, CWS #4 ON 05/15/2023 AND WERE FIELD LOCATED BY JVA.
- ITEMS SHOWN ON TAX MAP 209 LOTS 36, 37 & 38 WERE TAKEN REFERENCE PLAN #1, AND IS NOT THE RESULT OF AN UPDATED SURVEY.
- SUBJECT TO A RIGHT-OF-WAY (R.O.W.) TO "OLD DOVER ROAD" REFERENCED IN SCRD BK: 251 PG: 89. THE R.O.W. WAS RELOCATED AS SHOWN ON REF. PLAN #4 TO BE KNOWN AS STONE QUARRY DRIVE. SEE BK: 1879 PG: 130 & PG: 135.3.
- SEE RIGHT OF WAY DEED AT SCRD BK: 2367 PG: 310 TO TOWN FROM ROCKINGHAM PROPERTIES LIMITED I PARTNERSHIP.
- NO KNOWN ENCROACHMENTS SHALL RESULT FROM THIS LOT LINE ADJUSTMENT.
- FOR MORE INFORMATION ABOUT THIS LOT LINE ADJUSTMENT CONTACT JAMES VERRA AND ASSOCIATES, INC.

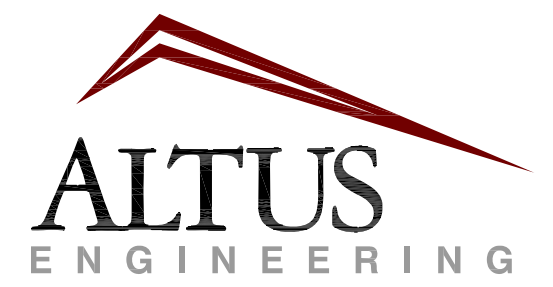
REFERENCE PLANS:

- PLAN SET CONSISTING OF SEVEN SHEETS ENTITLED "OVERALL PLAN" AND "EXISTING CONDITIONS PLAN" "RIVERWOODS DURHAM TAX MAP 209 LOT 22 STONE QUARRY DRIVE & DOVER ROAD (NH RT 108), DURHAM, NH", DATED JUNE 6, 2025, PREPARED BY AND ON FILE WITH JAMES VERRA AND ASSOCIATES, INC. NOT RECORDED. JVA JOB #23-2036.

GRAPHIC SCALE

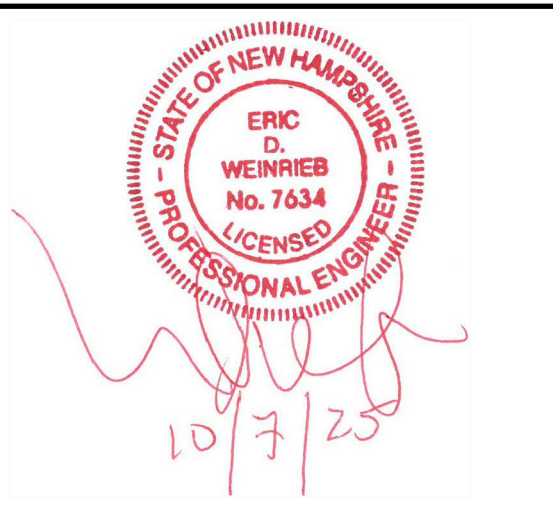






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| 1         | REVISED PER COMMENTS | EBS | 10/08/25    |    |      |

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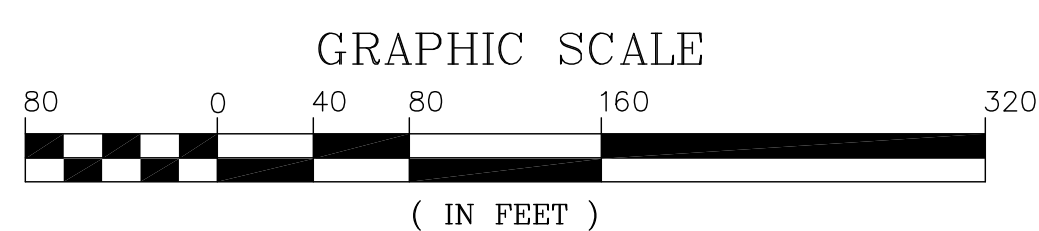
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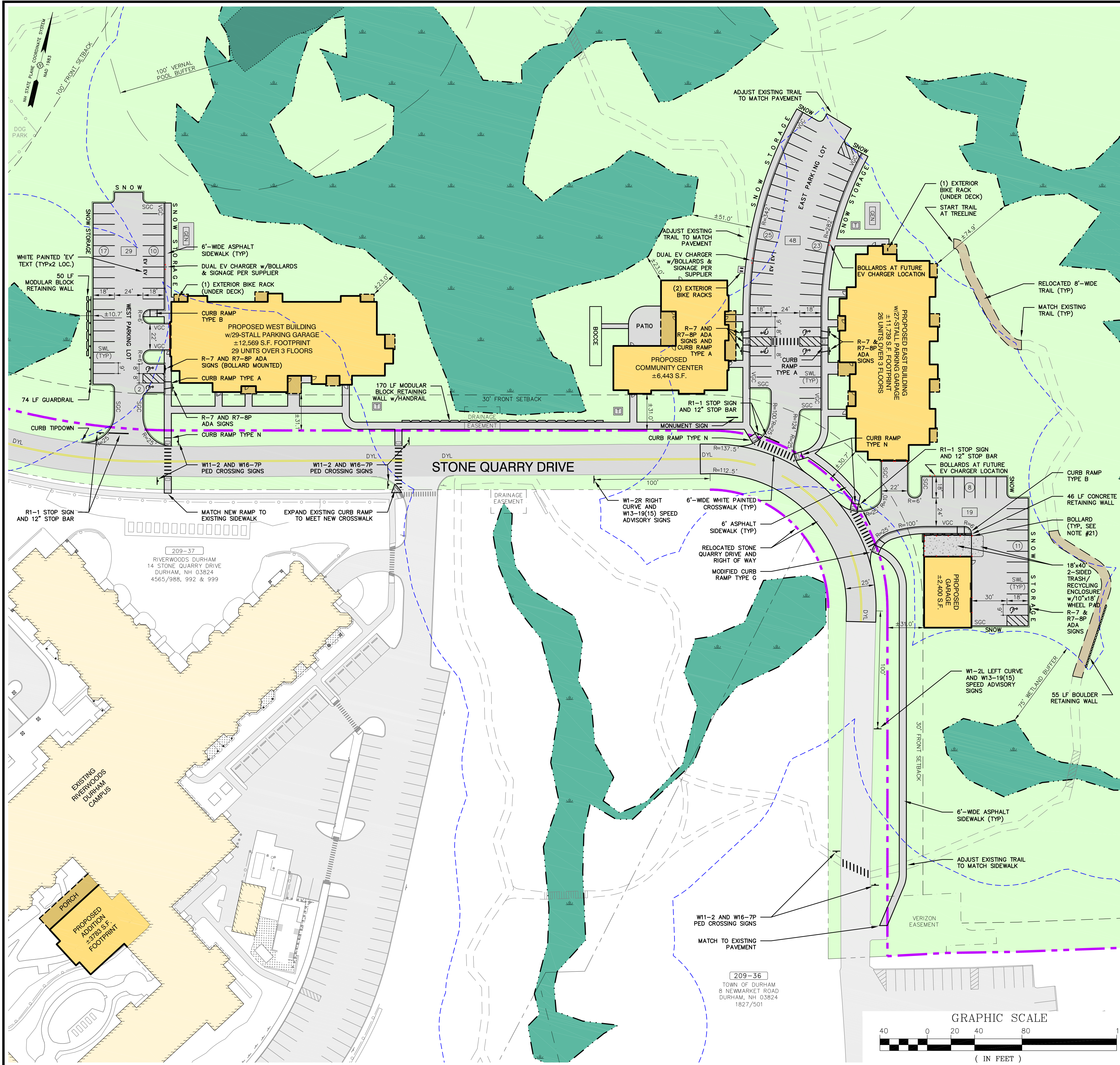
PROJECT:  
**RIVERWOODS  
DURHAM PHASE II**  
TAX MAP 209 LOT 33  
STONE QUARRY DRIVE  
& DOVER ROAD (NH 108)  
DURHAM, NH

TITLE:  
**OVERALL  
SITE PLAN**

SHEET NUMBER:  
**C-3**







## SITE NOTES

- DESIGN INTENT - THIS PLAN SET IS INTENDED TO DEPICT THE DEVELOPMENT OF THE SITE FOR AN EXPANSION OF THE EXISTING RIVERWOODS CONTINUING CARE RETIREMENT COMMUNITY TO INCLUDE NEW INDEPENDENT LIVING UNITS, A COMMUNITY CENTER, A MAINTENANCE GARAGE TOGETHER WITH ASSOCIATED ACCESSWAYS AND PARKING.
- APPROXIMATE LOT AREA (AFTER LOT LINE ADJUSTMENT): 985,948 S.F. (±22.63 AC.)
- REFERENCE DEED: STRAFFORD COUNTY REGISTRY OF DEED BOOK 4465 PAGE 0988
- ZONE: OFFICE RESEARCH-RT 108 (OR)
- DIMENSIONAL REQUIREMENTS:**

|                        |                                                     |
|------------------------|-----------------------------------------------------|
| MIN. LOT AREA:         | 40,000 S.F. (80,000 MULTI-UNIT OR NON-RES.)         |
| DENSITY:               | 1 UNIT/4,200 S.F.                                   |
| MIN. STREET FRONTAGE:  | 200' (ARTERIAL), 100' (COLLECTOR), 50' (MINOR)      |
| FRONT SETBACK:         | 100' +2' PER 1' OF BLDG. HEIGHT OVER 25' (ARTERIAL) |
|                        | 30' (PER PROPOSED ZONING CHANGE)                    |
| SIDE SETBACK:          | 25'                                                 |
| REAR SETBACK:          | 25'                                                 |
| MAX. BUILDING HEIGHT:  | 50' (75' BY SPECIAL EXCEPTION)                      |
| MAX. IMPERVIOUS COVER: | 50%                                                 |
| WETLAND BUFFERS:       | 75' (POORLY DRAINED, NATURAL WETLANDS >3,000 S.F.)  |
|                        | 100' (VERNAL POOL)                                  |
| SIDE PARKING SETBACK:  | 10'                                                 |
| REAR PARKING SETBACK:  | SAME AS REAR BUILDING SETBACK                       |
| FRONT LANDSCAPE STRIP: | 50' (ON ROUTE 108 ONLY)                             |
| DENSITY (RESIDENTIAL): | 4,200 S.F. NON-ISOLATED UPLAND/RESIDENTIAL UNIT     |
| DENSITY (SENIOR RES.): | 1 BEDROOM/STUDIO SENIOR = 0.33 RESIDENTIAL UNITS    |
|                        | 2-3 BEDROOM SENIOR = 0.50 RESIDENTIAL UNITS         |
|                        | 4 BEDROOM SENIOR = 1.00 RESIDENTIAL UNITS           |
- DENSITY CALCULATIONS:**

|                               |                                     |
|-------------------------------|-------------------------------------|
| VPD, PD AND SPD SOILS         | 708,212 S.F.                        |
| FLOODPLAIN AND FLOODWAY       | 0                                   |
| LEDGE 0'-20" (IF SEPTIC)      | 0                                   |
| 50% LEDGE 20'-40" (IF SEPTIC) | 0                                   |
| SLOPES >25%                   | 0                                   |
| 50% SLOPES 15-24%             | 13,013 S.F.                         |
| ROW AND EASEMENTS             | 3,423 S.F.                          |
| STREAMS                       | 0                                   |
| ISOLATED LAND <5,000 S.F.     | 0                                   |
| <b>TOTAL</b>                  | <b>724,648 S.F. UNSUITABLE LAND</b> |

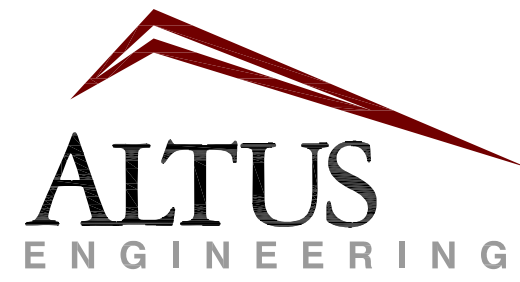
985,948 S.F. LOT AREA - 724,648 S.F. UNSUITABLE LAND = 261,300 S.F. USEABLE LAND  
261,300 S.F. / 4,200 S.F. = 62 RESIDENTIAL (NON-SENIOR) UNITS PERMITTED  
62 RES. UNITS / 0.33 = 187 1 BED/STUDIO SENIOR RES. UNITS PERMITTED  
62 RES. UNITS / 0.50 = 124 2 BED SENIOR RES. UNITS PERMITTED  
62 RES. UNITS / 1.00 = 62 4 BED SENIOR RES. UNITS PERMITTED  
(55 SENIOR UNITS PROPOSED)
- PARKING REQUIREMENTS (PER DURHAM REGULATIONS):**

|                                                                      |                                             |
|----------------------------------------------------------------------|---------------------------------------------|
| SENIOR HOUSING: 1 SPACE/UNIT PLUS 1 SPACE/STAFF*                     |                                             |
| SENIOR HOUSING UNITS: 55 UNITS x 1 = 55 SPACES REQUIRED              |                                             |
| STAFF AT MAX. SHIFT: 1 STAFF x 17 = 17 SPACES REQUIRED (MAINTENANCE) |                                             |
| <b>TOTAL PARKING REQUIRED</b>                                        | <b>= 72 SPACES</b>                          |
| <b>TOTAL PARKING PROVIDED</b>                                        | <b>= 152 SPACES (56 GARAGE, 96 SURFACE)</b> |
| <b>SURPLUS/DEFICIT</b>                                               | <b>= +80 SPACES</b>                         |

\*FOR COMPARISON, DURHAM REGULATIONS REQUIRE 2 SPACES/UNIT FOR MULTI-FAMILY RESIDENTIAL USES

**PARKING DEMAND (PER APPLICANT PROJECTIONS):**

|                                          |                     |
|------------------------------------------|---------------------|
| SENIOR HOUSING: 55 UNITS x 2 SPACES/UNIT | = 110 SPACES        |
| COMMUNITY CENTER: 20 SPACES              | = 20 SPACES         |
| MAINTENANCE GARAGE: 17 SPACES            | = 17 SPACES         |
| <b>TOTAL PARKING DEMAND</b>              | <b>= 147 SPACES</b> |
| <b>TOTAL PARKING PROVIDED</b>            | <b>= 152 SPACES</b> |
| <b>SURPLUS/DEFICIT</b>                   | <b>= +5 SPACES</b>  |
- OVERALL CONTIGUOUS AREA OF DISTURBANCE OVER 100,000 S.F., NHDES ALTERATION OF TERRAIN PERMIT REQUIRED.
- AREA OF DISTURBANCE OVER 43,560 SF, COVERAGE UNDER EPA NPDES PHASE II CONSTRUCTION GENERAL PERMIT REQUIRED (NOI to BE PREPARED AND SUBMITTED BY CONTRACTOR, SWPPP AND INSPECTIONS TO BE PREPARED AND PERFORMED BY CONTRACTOR).
- NHDES SEWER DISCHARGE PERMIT REQUIRED.
- NHDOT DRIVEWAY PERMIT REQUIRED.
- TOWN OF DURHAM SIGN PERMIT REQUIRED FOR ALL BUSINESS SIGNS, IF ANY.
- CONDITIONAL USE PERMIT UNDER ZONING SECTION 175.61 REQUIRED FOR SITE DEVELOPMENT IN THE WETLANDS CONSERVATION OVERLAY DISTRICT.
- SITE IS NOT IN A SPECIAL FLOOD HAZARD ZONE PER FIRM PANEL #33017C0318E PANEL 318 OF 405, SEPTEMBER 30, 2015.
- ALL BONDS AND FEES SHALL BE PAID/POSTED PRIOR TO INITIATING CONSTRUCTION.
- ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND WITH THE REGULATIONS AND STANDARD SPECIFICATIONS OF THE TOWN OF DURHAM, LATEST EDITIONS. THE MORE STRINGENT SPECIFICATION SHALL APPLY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER LOCATION, INSTALLATION AND ORIENTATION OF ALL SIGNS IN ADDITION TO OBTAINING ANY REQUIRED LOCAL SIGN PERMITS.
- THE APPLICANT RESERVES THE RIGHT TO INSTALL ADDITIONAL WAYFINDING SIGNS NOT SHOWN ON THIS PLAN PROVIDED THAT THEY ARE IN COMPLIANCE WITH ALL APPLICABLE LOCAL REGULATIONS.
- PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC DEVICES," "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" AND THE AMERICANS WITH DISABILITIES ACT (ADA), LATEST EDITIONS.
- PAVEMENT MARKINGS SHALL BE CONSTRUCTED USING WHITE, YELLOW OR BLUE TRAFFIC PAINT (WHERE SPECIFIED) MEETING THE REQUIREMENTS OF AASHTO M248, TYPE F OR EQUAL. PAINTED ISLANDS AND LOADING ZONES SHALL BE 4"-WIDE DIAGONAL WHITE LINES 3'-0" O.C. BORDERED BY 4"-WIDE WHITE LINES. PARKING STALLS SHALL BE SEPARATED BY 4"-WIDE WHITE LINES. SEE DETAILS FOR HANDICAP SYMBOLS, SIGNS AND SIGN DETAILS.
- ALL EXISTING STRIPING DISTURBED BY THE WORK SHALL BE REPAINTED PRIOR TO THE CONCLUSION OF THE PROJECT.
- PAVEMENT MARKING ABBREVIATIONS:  
SWL: SINGLE WHITE LINE (4" SOLID LINE)  
DYL: DOUBLE YELLOW LINE (2 x 4" SOLID LINES SEPARATED BY 4")
- BOLLARDS SHALL BE LOCATED AT ALL BUILDING CORNERS IN PAVED AREAS AND AT EACH SIDE OF ALL OVERHEAD GARAGE DOORS. COORDINATE FINAL LOCATIONS WITH ARCHITECTURAL PLANS.
- CLEAN AND COAT VERTICAL FACE OF EXISTING PAVEMENT AT SAWCUT LINES WITH RS-1 IMMEDIATELY PRIOR TO PLACING NEW BITUMINOUS CONCRETE.
- UNLESS OTHERWISE NOTED, ALL NEW CURBING SHALL BE SLOPED GRANITE ("SGC") OR VERTICAL GRANITE ("VGC") WITH A MINIMUM RADIUS OF 4'.
- ALL CURB RAMP AND SIDEWALKS AT CROSSWALKS SHALL BE EQUIPPED WITH ADA-COMPLIANT DETECTABLE WARNING PANELS.
- ALL NEW SIDEWALKS SHOWN IN THIS PLAN SHALL BE MAINTAINED BY THE APPLICANT OR ASSIGNS IN PERPETUITY.
- SNOW SHALL BE STORED AT THE EDGE OF PAVEMENT AND IN AREAS SHOWN HEREON AS APPROPRIATE. NO SNOW SHALL BE STORED DIRECTLY IN ANY STORMWATER POND.
- BUILDING AREA AND DIMENSIONS SHOWN ARE BASED ON MEASUREMENTS TO THE EXTERIOR FACE. ACTUAL DIMENSIONS TO FOUNDATION AND INTERIOR SPACE WILL DIFFER. THE CONTRACTOR SHALL VERIFY ALL BUILDING DIMENSIONS WITH THE ARCHITECTURAL AND STRUCTURAL PLANS PRIOR TO CONSTRUCTION AND SHALL BE RESPONSIBLE FOR ALL NECESSARY COORDINATION BETWEEN CIVIL AND ARCHITECTURAL PLANS TO ENSURE THE DESIGN INTENT IS MET. ALL DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER FOR RESOLUTION.
- THIS SITE PLAN IS DESIGNED IN COMPLIANCE WITH ALL APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED BUILDING IS DESIGNED IN COMPLIANCE WITH ALL APPLICABLE ACCESSIBILITY REGULATIONS INCLUDING NH RSA 155-A:5-6-a88, THE IBC AND ANSI 117.1.
- AT THE CONCLUSION OF THE PROJECT, THE CONTRACTOR SHALL PREPARE AN AS-BUILT SITE AND UTILITY PLAN STAMPED BY A NH LICENSED LAND SURVEYOR (LLS) & PROVIDE DIGITAL COPIES IN PDF AND CAD FORMAT TO THE ENGINEER.
- STREET ADDRESSES SHALL BE ASSIGNED BY THE DURHAM FIRE DEPARTMENT PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY. MAIL SHALL BE TO A CENTRAL MAIL ROOM.
- SEE DETAIL SHEETS FOR LEGEND.



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10/7/25

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DURHAM, NH 03824

**APPLICANT:**

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14 STONE QUARRY DRIVE  
DURHAM, NH 03824

**PROJECT:**

**RIVERWOODS  
DURHAM PHASE II**

TAX MAP 209 LOT 33  
STONE QUARRY DRIVE  
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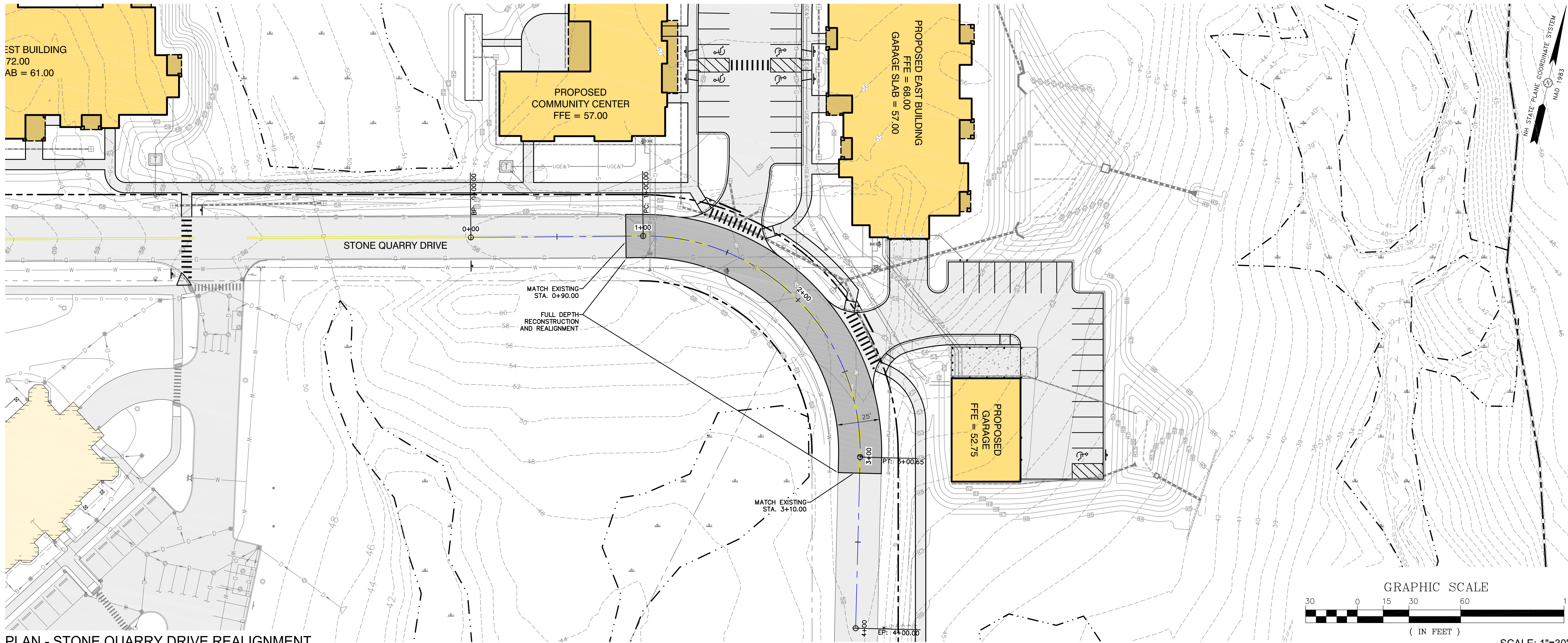
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**SITE PLAN**

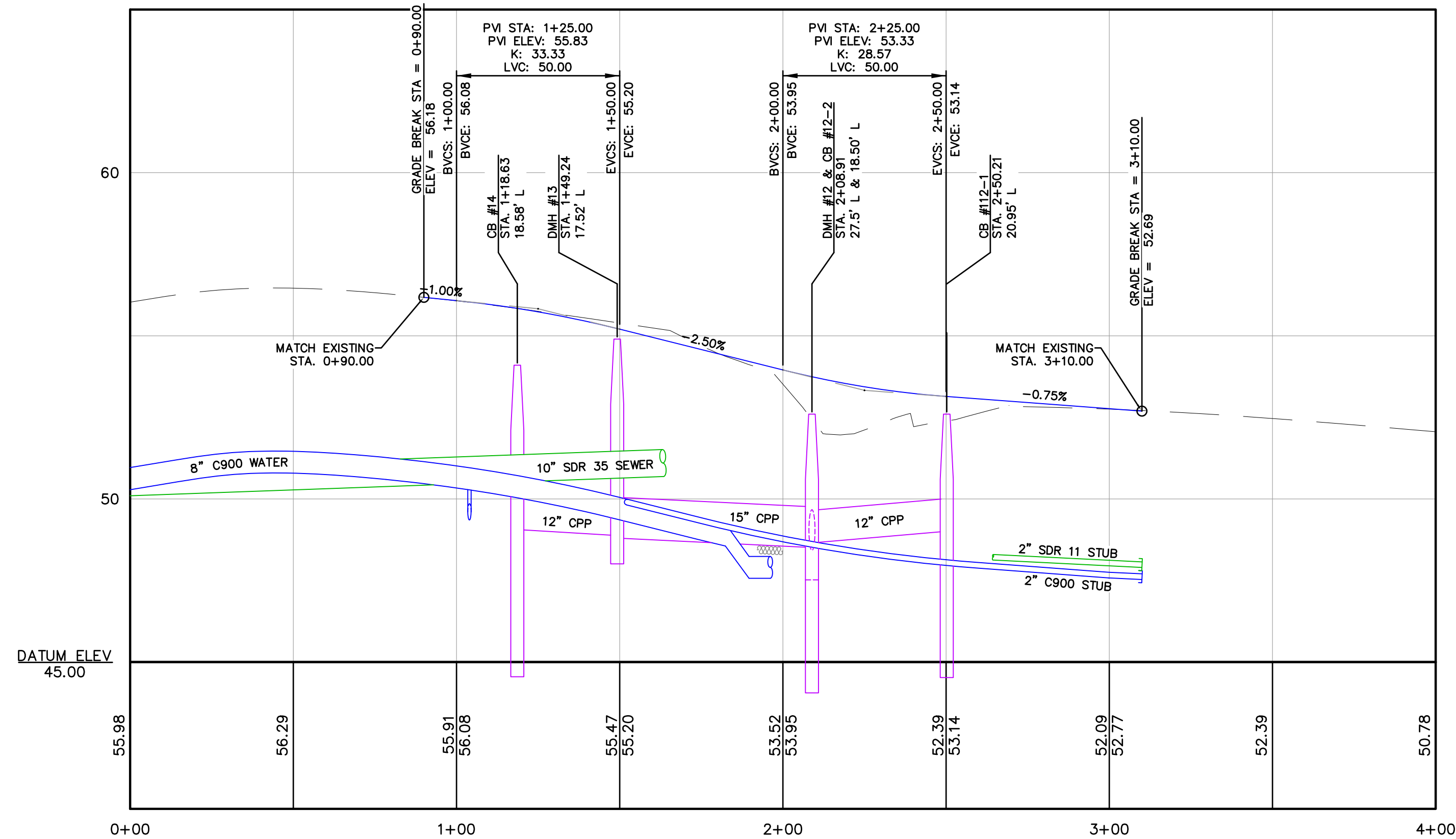
**SHEET NUMBER:**

C-4





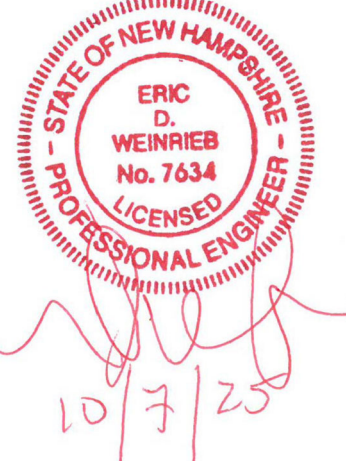
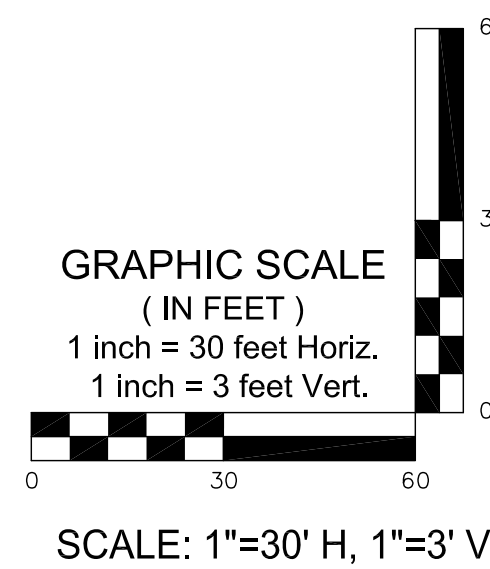
PLAN - STONE QUARRY DRIVE REALIGNMENT



PROFILE - STONE QUARRY DRIVE REALIGNMENT

### REALIGNMENT NOTES

1. THE ROADWAY STATIONING SHOWN HERE RELATES TO THE REALIGNMENT AREA ONLY AND NOT THE ENTIRETY OF STONE QUARRY DRIVE.
2. PAVEMENT WEARING COURSE PLACEMENT SHALL BE COORDINATED WITH THE 1.5" MILL AND OVERLAY OF STONE QUARRY DRIVE TO THE WEST OF THE REALIGNED SECTION AS SHOWN ELSEWHERE IN THIS PLAN SET.
3. SEE "TYPICAL ROADWAY CROSS SECTION - STONE QUARRY DRIVE" ON SHEET C-17.



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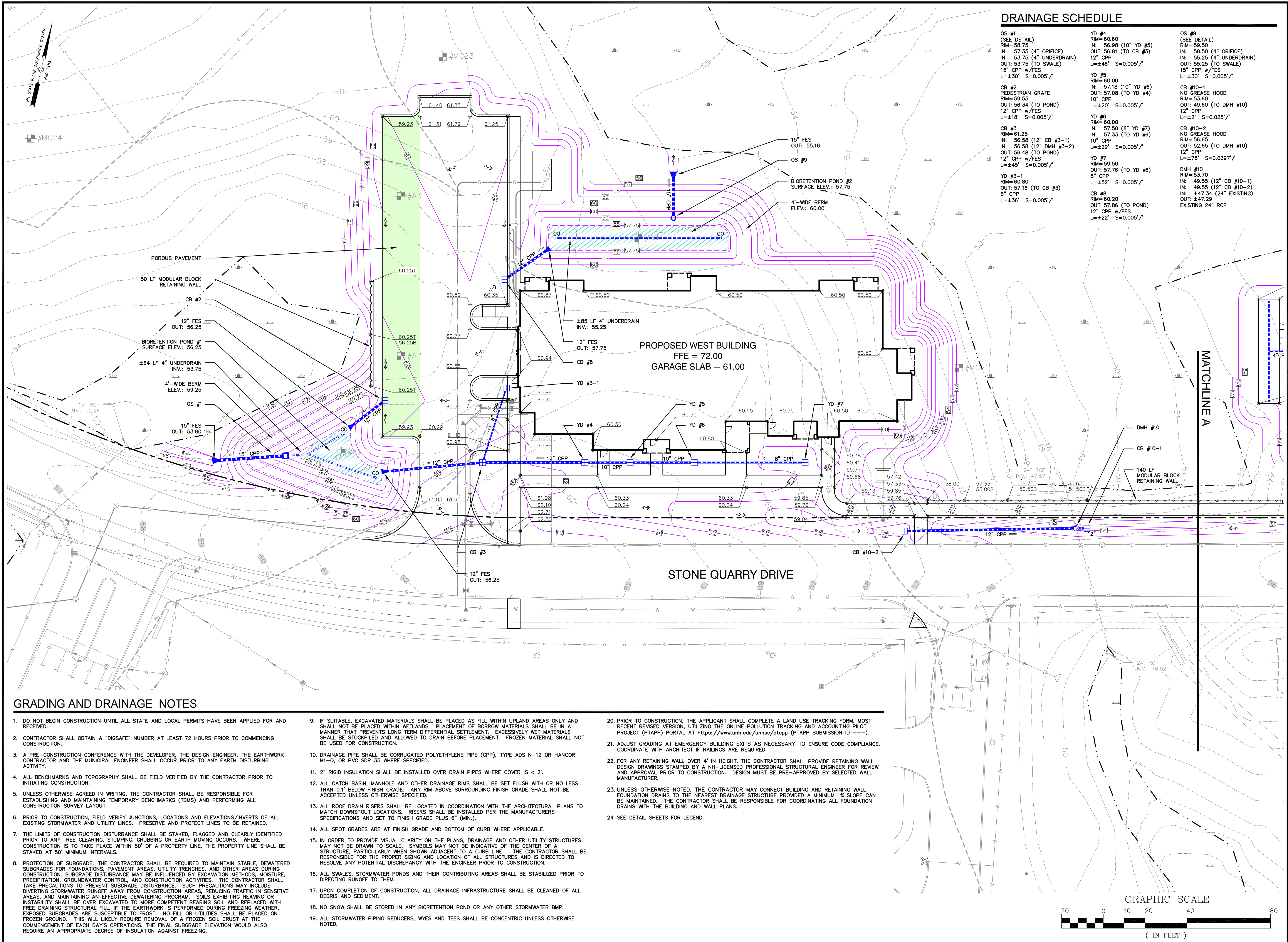
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DURHAM PHASE II  
TAX MAP 209 LOT 33  
STONE QUARRY DRIVE  
& DOVER ROAD (NH 108)  
DURHAM, NH

TITLE: ROADWAY  
REALIGNMENT  
PLAN

SHEET NUMBER: C-5



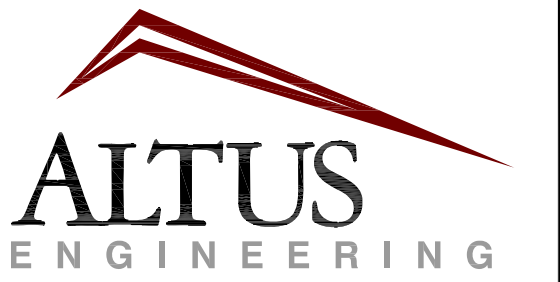
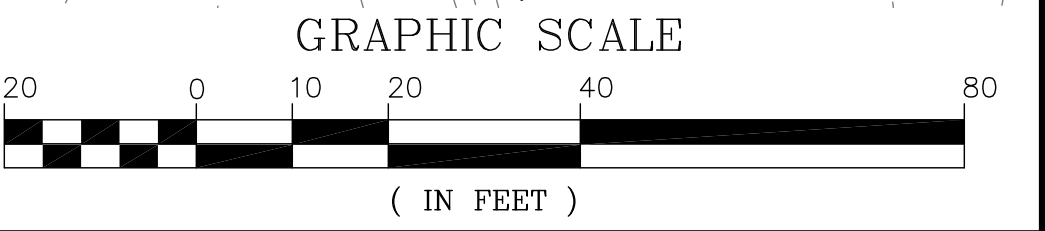


DRAINAGE SCHEDULE

|                                                                                                                                                         |                                                                                                     |                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| OS #1<br>(SEE DETAIL)<br>RIM=58.75<br>IN: 57.35 (4" ORIFICE)<br>IN: 53.75 (4" UNDERDRAIN)<br>OUT: 53.75 (TO SWALE)<br>15" CPP w/FES<br>L=±30' S=0.005'/ | YD #4<br>RIM=60.60<br>IN: 56.98 (10" YD #5)<br>OUT: 56.81 (TO CB #3)<br>12" CPP<br>L=±46' S=0.005'/ | OS #9<br>(SEE DETAIL)<br>RIM=59.50<br>IN: 58.50 (4" ORIFICE)<br>IN: 55.25 (4" UNDERDRAIN)<br>OUT: 55.25 (TO SWALE)<br>15" CPP w/FES<br>L=±30' S=0.005'/ |
| CB #2<br>PEDESTRIAN GRATE<br>RIM=59.55<br>OUT: 56.34 (TO POND)<br>12" CPP w/FES<br>L=±18' S=0.005'/                                                     | YD #5<br>RIM=60.00<br>IN: 57.18 (10" YD #6)<br>OUT: 57.08 (TO YD #4)<br>10" CPP<br>L=±20' S=0.005'/ | CB #10-1<br>NO GREASE HOOD<br>RIM=53.60<br>OUT: 49.60 (TO DMH #10)<br>12" CPP<br>L=±2' S=0.025'/                                                        |
| YD #3-1<br>RIM=60.80<br>OUT: 57.16 (TO CB #3)<br>6" CPP<br>L=±36' S=0.005'/                                                                             | YD #6<br>RIM=60.00<br>IN: 57.50 (8" YD #7)<br>IN: 57.33 (TO YD #6)<br>10" CPP<br>L=±29' S=0.005'/   | CB #10-2<br>NO GREASE HOOD<br>RIM=56.65<br>OUT: 52.65 (TO DMH #10)<br>12" CPP<br>L=±78' S=0.0397'/                                                      |
| YD #3-1<br>RIM=60.80<br>OUT: 57.16 (TO CB #3)<br>6" CPP<br>L=±36' S=0.005'/                                                                             | YD #7<br>RIM=59.50<br>OUT: 57.76 (TO YD #6)<br>8" CPP<br>L=±52' S=0.005'/                           | DMH #10<br>RIM=53.70<br>IN: 49.55 (12" CB #10-1)<br>IN: 49.55 (12" CB #10-2)<br>IN: ±47.34 (24" EXISTING)<br>OUT: ±47.29<br>EXISTING 24" RCP            |
|                                                                                                                                                         | CB #8<br>RIM=60.20<br>OUT: 57.86 (TO POND)<br>12" CPP w/FES<br>L=±22' S=0.005'/                     |                                                                                                                                                         |

GRADING AND DRAINAGE NOTES

- DO NOT BEGIN CONSTRUCTION UNTIL ALL STATE AND LOCAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.
- CONTRACTOR SHALL OBTAIN A "DIGSAFE" NUMBER AT LEAST 72 HOURS PRIOR TO COMMENCING CONSTRUCTION.
- A PRE-CONSTRUCTION CONFERENCE WITH THE DEVELOPER, THE DESIGN ENGINEER, THE EARTHWORK CONTRACTOR AND THE MUNICIPAL ENGINEER SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITY.
- ALL BENCHMARKS AND TOPOGRAPHY SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO INITIATING CONSTRUCTION.
- UNLESS OTHERWISE AGREED IN WRITING, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING TEMPORARY BENCHMARKS (TBMS) AND PERFORMING ALL CONSTRUCTION SURVEY LAYOUT.
- PRIOR TO CONSTRUCTION, FIELD VERIFY JUNCTIONS, LOCATIONS AND ELEVATIONS/INVERTS OF ALL EXISTING STORMWATER AND UTILITY LINES. PRESERVE AND PROTECT LINES TO BE RETAINED.
- THE LIMITS OF CONSTRUCTION DISTURBANCE SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR TO ANY TREE CLEARING, STUMPING, GRUBBING OR EARTH MOVING OCCURS. WHERE CONSTRUCTION IS TO TAKE PLACE WITHIN 50' OF A PROPERTY LINE, THE PROPERTY LINE SHALL BE STAKED AT 50' MINIMUM INTERVALS.
- 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.
- 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.
- DRAINAGE PIPE SHALL BE CORRUGATED POLYETHYLENE PIPE (CPP), TYPE ADS N-12 OR HANCOR H1-Q, OR PVC SDR 35 WHERE SPECIFIED.
- 2" RIGID INSULATION SHALL BE INSTALLED OVER DRAIN PIPES WHERE COVER IS < 2'.
- 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 UNLESS OTHERWISE SPECIFIED.
- ALL ROOF DRAIN RISERS SHALL BE LOCATED IN COORDINATION WITH THE ARCHITECTURAL PLANS TO MATCH DOWNSPOUT LOCATIONS. RISERS SHALL BE INSTALLED PER THE MANUFACTURERS SPECIFICATIONS AND SET TO FINISH GRADE PLUS 6" (MIN.).
- ALL SPOT GRADES ARE AT FINISH GRADE AND BOTTOM OF CURB WHERE APPLICABLE.
- 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.
- UPON COMPLETION OF CONSTRUCTION, ALL DRAINAGE INFRASTRUCTURE SHALL BE CLEANED OF ALL DEBRIS AND SEDIMENT.
- NO SNOW SHALL BE STORED IN ANY BIORETENTION POND OR ANY OTHER STORMWATER BMP.
- ALL STORMWATER PIPING REDUCERS, WYES AND TEES SHALL BE CONCENTRIC UNLESS OTHERWISE NOTED.
- PRIOR TO CONSTRUCTION, THE APPLICANT SHALL COMPLETE A LAND USE TRACKING FORM, MOST RECENT REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PILOT PROJECT (PTAPP) PORTAL AT <https://www.unh.edu/unhsc/ptapp> (PTAPP SUBMISSION ID ---).
- ADJUST GRADING AT EMERGENCY BUILDING EXITS AS NECESSARY TO ENSURE CODE COMPLIANCE. COORDINATE WITH ARCHITECT IF RAILINGS ARE REQUIRED.
- FOR ANY RETAINING WALL OVER 4' IN HEIGHT, THE CONTRACTOR SHALL PROVIDE RETAINING WALL DESIGN DRAWINGS STAMPED BY A NH-LICENSED PROFESSIONAL STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. DESIGN MUST BE PRE-APPROVED BY SELECTED WALL MANUFACTURER.
- UNLESS OTHERWISE NOTED, THE CONTRACTOR MAY CONNECT BUILDING AND RETAINING WALL FOUNDATION DRAINS TO THE NEAREST DRAINAGE STRUCTURE PROVIDED A MINIMUM 1% SLOPE CAN BE MAINTAINED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL FOUNDATION DRAINS WITH THE BUILDING AND WALL PLANS.
- SEE DETAIL SHEETS FOR LEGEND.



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DRAWN BY: EBS

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DRAWING FILE: 5440-SITE.dwg

SCALE: 24" x 36" - 1" = 20'  
11" x 17" - 1" = NTS

OWNER: RIVERWOODS DURHAM  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

APPLICANT: RIVERWOODS DURHAM  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

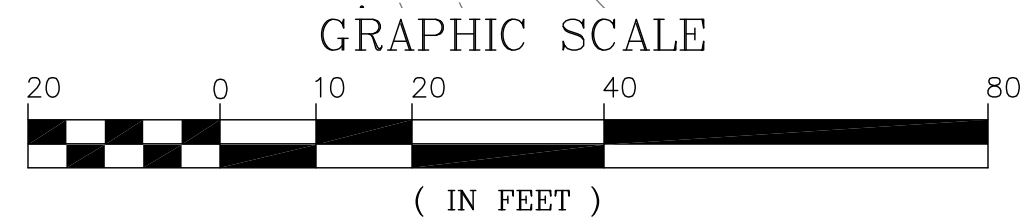
PROJECT: RIVERWOODS  
DURHAM PHASE II

TAX MAP 209 LOT 33  
STONE QUARRY DRIVE  
& DOVER ROAD (NH 108)  
DURHAM, NH

TITLE: STORMWATER  
MANAGEMENT PLAN

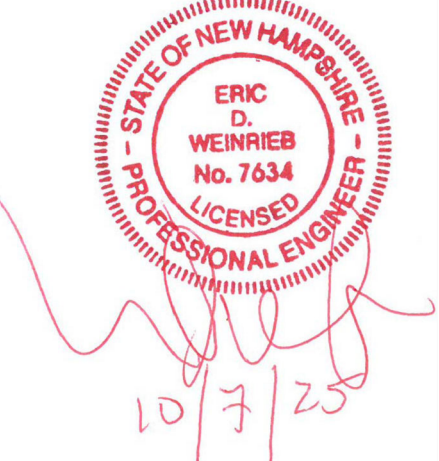
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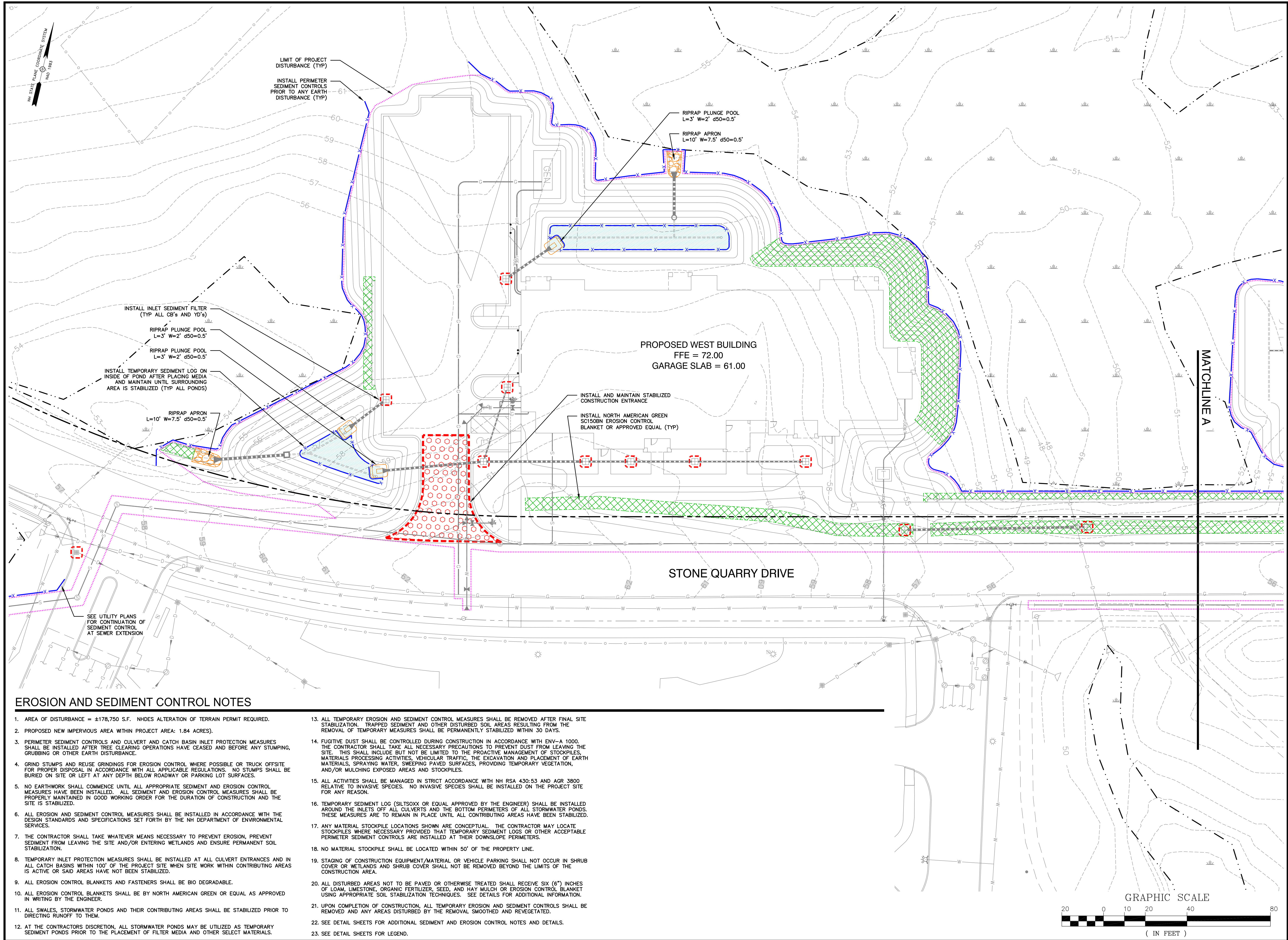
OS #11  
 (SEE DETAIL)  
 RIM=52.50  
 IN: 50.00 (4"x30" h. ORIFICE)  
 IN: 45.50 (4" UNDERDRAIN)  
 OUT: 45.50 (TO SWALE)  
 18" CPP w/FES  
 L=±50' S=0.005' /  
 DMH #12  
 RIM=54.00  
 IN: 48.67 (12" CB #12-1)  
 IN: 48.67 (12" CB #12-2)  
 IN: 48.52 (15" CPP #13)  
 OUT: 48.42 (TO POND)  
 15" CPP w/FES  
 L=±103' S=0.004' /  
 CB #12-1  
 RIM=52.60  
 OUT: 48.90 (TO DMH #12)  
 12" CPP  
 L=±46' S=0.005' /  
 CB #13-2  
 RIM=52.60  
 OUT: 48.70 (TO DMH #12)  
 12" CPP  
 L=±6' S=0.005' /  
 DMH #13  
 RIM=54.90  
 IN: 48.89 (12" CB #13-1)  
 IN: 48.89 (12" CB #13-2)  
 IN: 48.89 (12" CB #14)  
 OUT: 48.79 (TO DMH #12)  
 15" CPP  
 L=±87' S=0.004' /  
 CB #13-1  
 RIM=54.50  
 OUT: 48.95 (TO DMH #13)  
 12" CPP  
 L=±12 S=0.005' /  
 CB #13-2  
 RIM=54.65  
 OUT: 49.25 (TO DMH #13)  
 12" CPP  
 L=±22' S=0.0164' /  
 CB #14  
 RIM=54.10  
 IN: 49.60 (8" YD #15)  
 OUT: 49.05 (TO DMH #13)  
 12" CPP  
 L=±31' S=0.005' /  
 DMH #16  
 CUSTOM HEADWALL/  
 RETAINING WALL  
 12" OUT: 48.50  
 YD #15-1  
 RIM=54.80  
 IN: 54.12 (4" FROM BOCCO)  
 OUT: 53.95 (TO WYE)  
 6" CPP  
 L=158' S=0.0175' /  
 YD #15  
 RIM=55.75  
 IN: 50.99 (6" ROOF)  
 OUT: 50.80 (TO CB #14)  
 8" CPP  
 L=±80' S=0.015' /  
 DMH #16  
 RIM=56.10  
 IN: 50.09 (12" CB #17)  
 OUT: 49.49 (TO POND)  
 10" CPP  
 15" CPP w/FES  
 L=±90' S=0.011' /  
 CB #17  
 PEDESTRIAN GRATE  
 RIM=55.50  
 IN: 50.06 (12" DMH #17-1)  
 IN: 50.06 (12" YD #18)  
 OUT: 49.96 (TO DMH #16)  
 12" CPP  
 L=±74' S=0.005' /  
 DMH #17-1  
 RIM=54.95  
 IN: 50.29 (12" CB #17-1-1)  
 IN: 50.29 (12" CB #17-1-2)  
 OUT: 50.19 (TO DMH #16)  
 12" CPP  
 L=±25' S=0.005' /  
 CB #17-1-1  
 RIM=54.90  
 OUT: 50.40 (TO DMH #17-1)  
 12" CPP  
 L=±3' S=0.0367' /  
 CB #17-1-2  
 RIM=54.40  
 OUT: 50.90 (TO DMH #17-1)  
 12" CPP  
 L=±21' S=0.005' /  
 YD #18  
 RIM=55.50  
 IN: 50.79 (10" YD #19)  
 OUT: 50.62 (TO CB #17)  
 12" CPP  
 L=±11' S=0.0509' /  
 YD #19  
 RIM=56.00  
 IN: 51.10 (10" YD #20)  
 OUT: 51.00 (TO YD #18)  
 10" CPP  
 L=±42' S=0.005' /  
 YD #20  
 RIM=55.75  
 IN: 51.45 (8" YD #21)  
 OUT: 51.28 (TO YD #20)  
 10" CPP  
 L=±35' S=0.005' /  
 YD #21  
 RIM=55.50  
 OUT: 51.70 (TO YD #20)  
 8" CPP  
 L=±49' S=0.005' /  
 OS #22  
 RIM=48.50  
 (SEE DETAIL)  
 IN: 47.05 (4" ORIFICE)  
 IN: 43.00 (4" UNDERDRAIN)  
 OUT: 43.00 (TO SWALE)  
 15" CPP w/FES  
 L=±26' S=0.0058' /  
 CB #23  
 PEDESTRIAN GRATE  
 RIM=49.85  
 IN: 46.35 (6" ROOF)  
 OUT: 45.85 (TO POND)  
 12" CPP w/FES  
 L=±18' S=0.0194' /

STONE QUARRY DRIVE



## C-6.2





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APPLICANT: RIVERWOODS DURHAM  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

PROJECT: RIVERWOODS DURHAM PHASE II  
TAX MAP 209 LOT 33  
STONE QUARRY DRIVE  
& DOVER ROAD (NH 108)  
DURHAM, NH

TITLE: EROSION AND SEDIMENT CONTROL PLAN

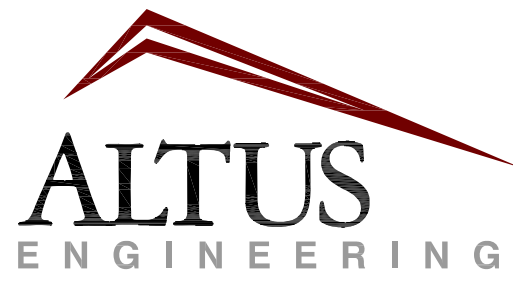
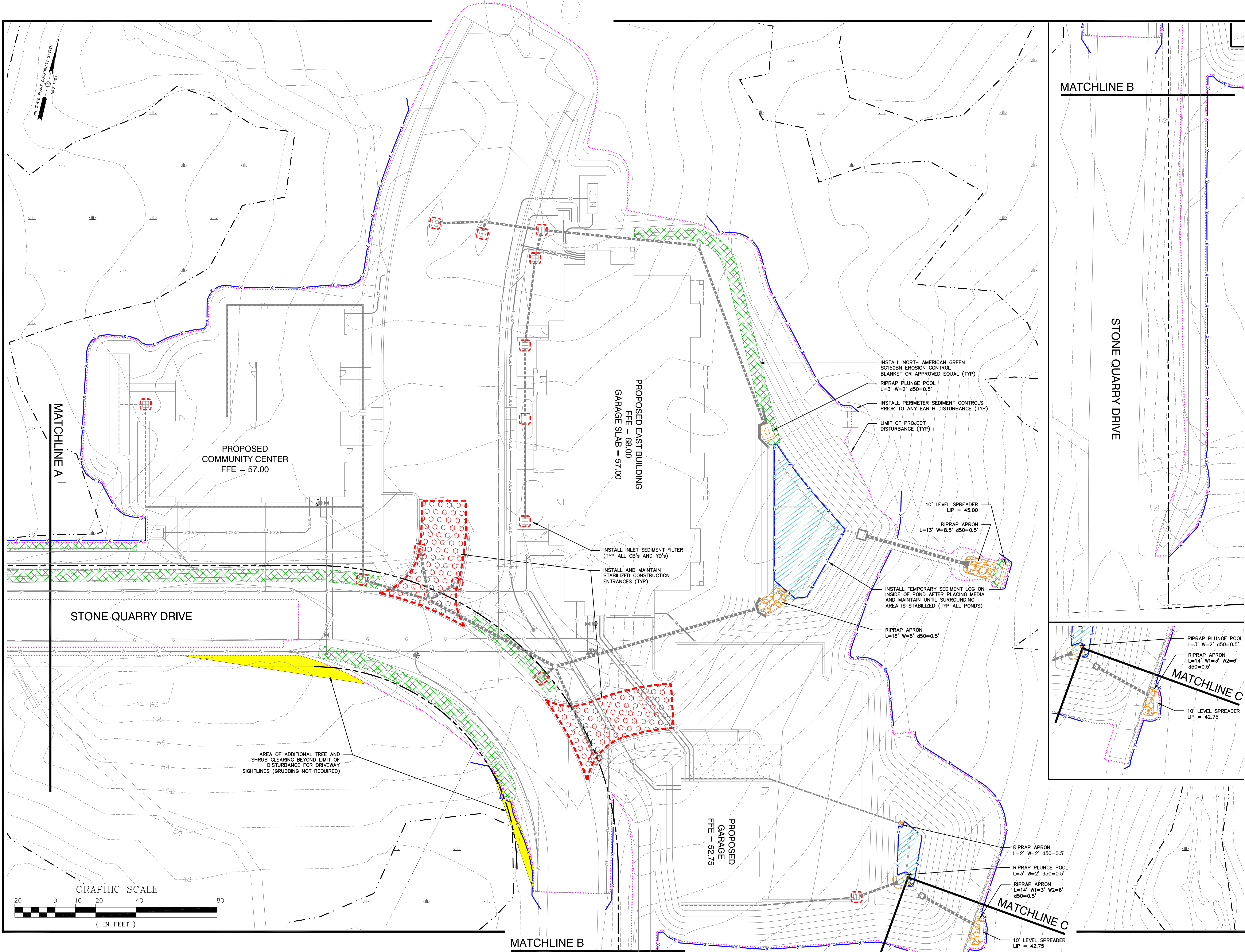
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P5440

### EROSION AND SEDIMENT CONTROL NOTES

- AREA OF DISTURBANCE = ±178,750 S.F. NHDES ALTERATION OF TERRAIN PERMIT REQUIRED.
- PROPOSED NEW IMPERVIOUS AREA WITHIN PROJECT AREA: 1.84 ACRES).
- 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.
- 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.
- 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.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE DESIGN STANDARDS AND SPECIFICATIONS SET FORTH BY THE NH DEPARTMENT OF ENVIRONMENTAL SERVICES.
- 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.
- TEMPORARY INLET PROTECTION MEASURES SHALL BE INSTALLED AT ALL CULVERT ENTRANCES AND IN ALL CATCH BASINS WITHIN 100' OF THE PROJECT SITE WHEN SITE WORK WITHIN CONTRIBUTING AREAS IS ACTIVE OR SAID AREAS HAVE NOT BEEN STABILIZED.
- ALL EROSION CONTROL BLANKETS AND FASTENERS SHALL BE BIO DEGRADABLE.
- ALL EROSION CONTROL BLANKETS SHALL BE BY NORTH AMERICAN GREEN OR EQUAL AS APPROVED IN WRITING BY THE ENGINEER.
- ALL SWALES, STORMWATER PONDS AND THEIR CONTRIBUTING AREAS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- AT THE CONTRACTORS DISCRETION, ALL STORMWATER PONDS MAY BE UTILIZED AS TEMPORARY SEDIMENT PONDS PRIOR TO THE PLACEMENT OF FILTER MEDIA AND OTHER SELECT MATERIALS.
- 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.
- 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.
- 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.
- TEMPORARY SEDIMENT LOG (SILT/SOXX OR EQUAL APPROVED BY THE ENGINEER) SHALL BE INSTALLED AROUND THE INLETS OFF ALL CULVERTS AND THE BOTTOM PERIMETERS OF ALL STORMWATER PONDS. THESE MEASURES ARE TO REMAIN IN PLACE UNTIL ALL CONTRIBUTING AREAS HAVE BEEN STABILIZED.
- ANY 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.
- NO MATERIAL STOCKPILE SHALL BE LOCATED WITHIN 50' OF THE PROPERTY LINE.
- STAGING OF CONSTRUCTION EQUIPMENT/MATERIAL OR VEHICLE PARKING SHALL NOT OCCUR IN SHRUB COVER OR WETLANDS AND SHRUB COVER SHALL NOT BE REMOVED BEYOND THE LIMITS OF THE CONSTRUCTION AREA.
- ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE SIX (6") INCHES OF LOAM, LIMESTONE, ORGANIC FERTILIZER, SEED, AND HAY MULCH OR EROSION CONTROL BLANKET USING APPROPRIATE SOIL STABILIZATION TECHNIQUES. SEE DETAILS FOR ADDITIONAL INFORMATION.
- UPON COMPLETION OF CONSTRUCTION, ALL TEMPORARY EROSION AND SEDIMENT CONTROLS SHALL BE REMOVED AND ANY AREAS DISTURBED BY THE REMOVAL SMOOTHED AND REVEGETATED.
- SEE DETAIL SHEETS FOR ADDITIONAL SEDIMENT AND EROSION CONTROL NOTES AND DETAILS.
- SEE DETAIL SHEETS FOR LEGEND.





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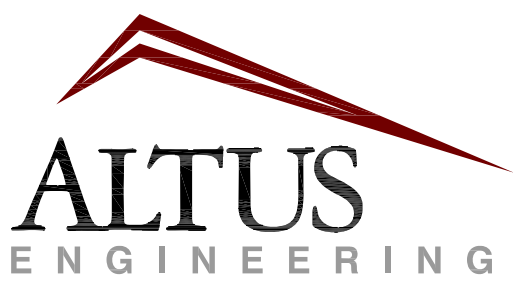
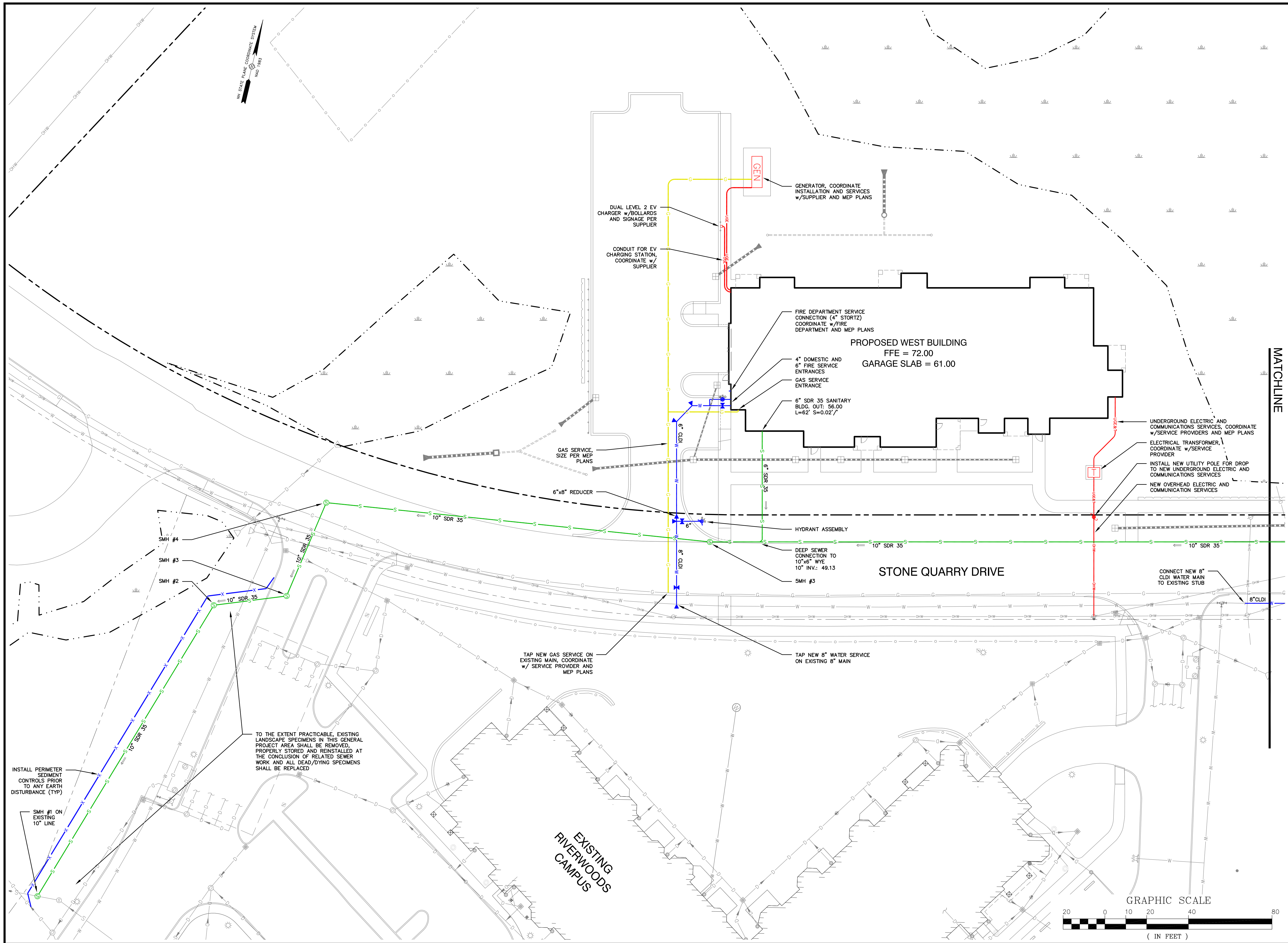
APPLICANT: RIVERWOODS DURHAM  
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PROJECT: RIVERWOODS  
DURHAM PHASE II  
TAX MAP 209 LOT 33  
STONE QUARRY DRIVE  
& DOVER ROAD (NH 108)  
DURHAM, NH

TITLE: EROSION AND  
SEDIMENT  
COMNTROL PLAN

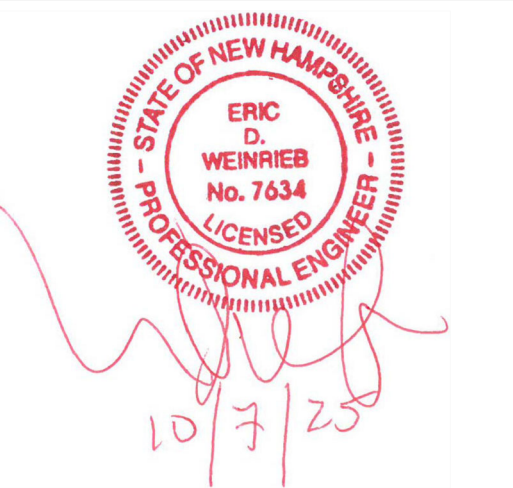
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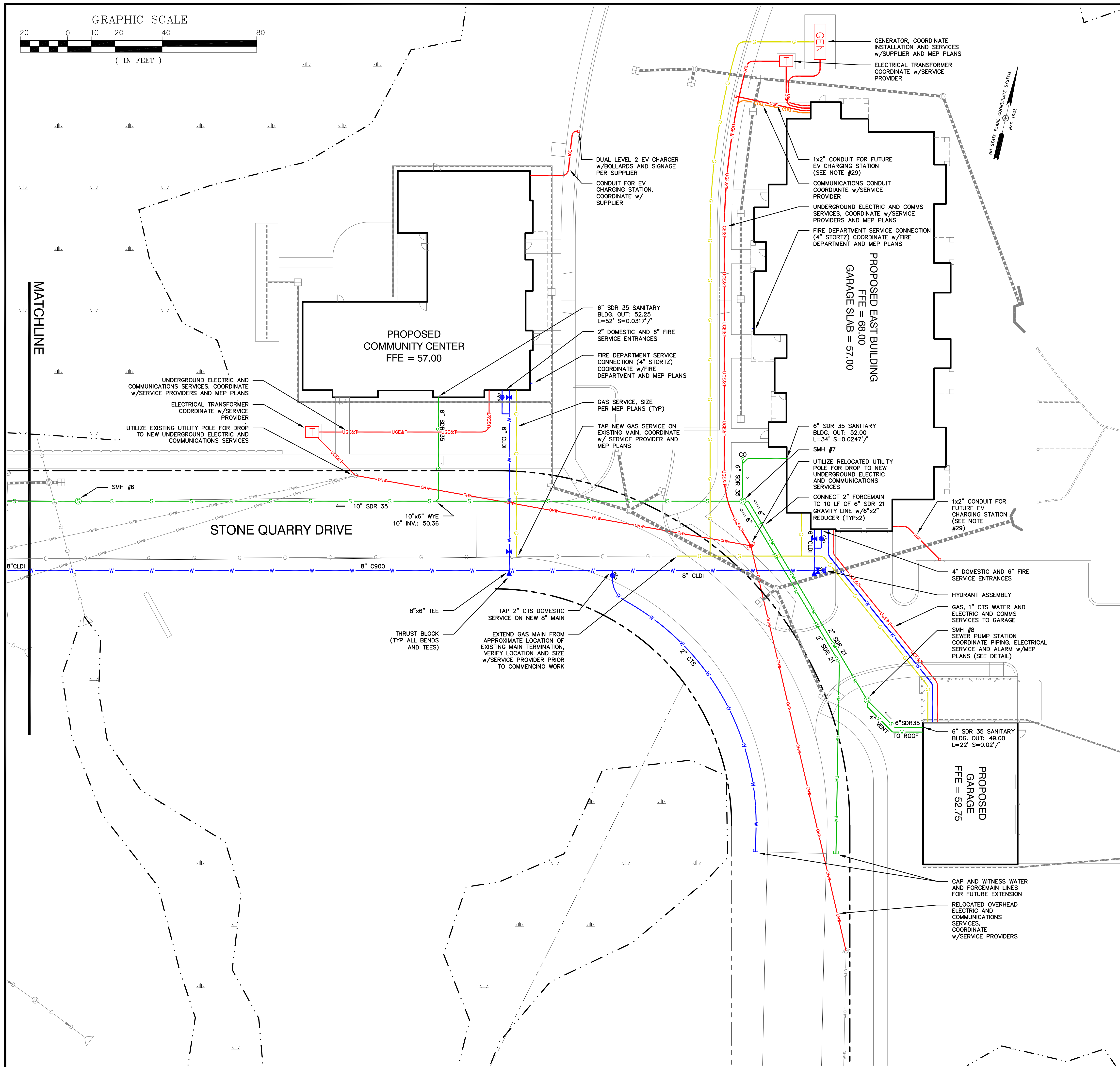
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DURHAM, NH

TITLE:

UTILITY PLAN

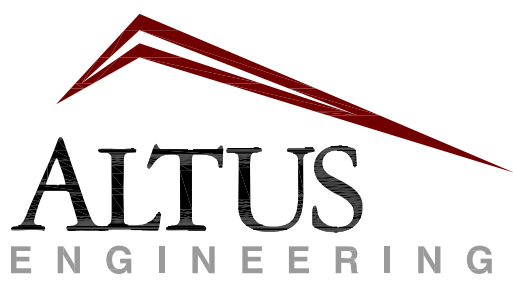
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**C-8.1**





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, LOCAL DPW 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, LOCAL DPW AND APPROPRIATE UTILITIES.
3. THE SITE IS SERVED BY MUNICIPAL WATER AND SEWER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE POSTING OF ALL BONDS AND PAYMENT OF ALL TAP, TIE-IN AND CONNECTION FEES.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY LOCAL UTILITY CONNECTION/DISCONNECTION AND TRENCHING PERMITS.
6. ALL UTILITY RELOCATIONS SHALL BE DONE IN A MANNER SO AS TO MINIMIZE DISRUPTION OF SERVICE. ALL INTERRUPTIONS SHALL BE COORDINATED WITH THE SERVICE PROVIDERS AND OWNER AT LEAST 72 HOURS PRIOR TO PERFORMING THE WORK.
7. 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.
8. ALL TRENCHING, PIPE LAYING AND BACKFILLING SHALL CONFORM TO FEDERAL OSHA AND LOCAL REGULATIONS.
9. SEE ARCHITECTURAL/MECHANICAL DRAWINGS FOR EXACT LOCATIONS & ELEVATIONS OF UTILITY CONNECTIONS AT BUILDING. COORDINATE ALL WORK WITHIN FIVE (5) FEET OF BUILDINGS WITH BUILDING CONTRACTOR AND ARCHITECTURAL/MECHANICAL DRAWINGS. ALL CONFLICTS AND DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY AND PRIOR TO COMMENCING RELATED WORK.
10. WITH THE EXCEPTION OF THE NEW OVERHEAD SERVICE SHOWN, THE INSTALLATION OF ELECTRIC POWER AND COMMUNICATIONS LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE.
11. THE CONTRACTOR SHALL INSTALL APPROVED BACKFLOW PREVENTORS FOR BOTH FIRE AND DOMESTIC WATER LINES.
12. UNLESS OTHERWISE DETERMINED BY THE UTILITY PROVIDER, ALL ELECTRICAL TRANSFORMERS AND SWITCHES SHALL REMAIN THE PROPERTY OF THE UTILITY.
13. FINAL UTILITY LOCATIONS TO BE COORDINATED BETWEEN THE ARCHITECT, CONTRACTOR, APPROPRIATE UTILITY COMPANIES AND THE LOCAL DPW.
14. DETECTABLE WARNING TAPE SHALL BE PLACED OVER THE ENTIRE LENGTH OF ALL BURIED UTILITIES, COLORS PER THE RESPECTIVE UTILITY PROVIDERS.
15. CONTRACTOR TO PROVIDE BOLLARDS OR OTHER PROTECTIVE MEASURES AT UTILITY SERVICE ENTRANCES PER THE SPECIFICATIONS OF THE RESPECTIVE UTILITY PROVIDERS.
16. UTILITY PROVIDERS AND CONTACTS:
  - WATER & SEWER: DURHAM PUBLIC WORKS, APRIL TALON, TOWN ENGINEER, (603) 773-6157.
  - GAS: UNILIT, DAVID MACLEAN, (603) 294-5144.
  - TELECOMMUNICATIONS: CONSOLIDATED, JOE CONSIDINE, (603) 427-5525.
  - CABLE: COMCAST, MIKE COLLINS, (603) 679-5695, EXT. 1037.
  - ELECTRICAL: EVERSOURCE, MARK BOUCHER, (603) 634-3029. ALL ELECTRIC CONDUIT INSTALLATION SHALL BE INSPECTED BY EVERSOURCE PRIOR TO BACKFILL, 48-HOUR MINIMUM NOTICE REQUIRED.
15. ALL WATER MAIN AND SERVICE INSTALLATIONS SHALL BE CONSTRUCTED AND TESTED PER DURHAM DPW STANDARDS AND SPECIFICATIONS. ALL OTHER UTILITIES SHALL BE TO THE STANDARDS AND SPECIFICATIONS OF THE RESPECTIVE UTILITY PROVIDERS.
16. 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.
17. 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.
18. THE CONTRACTOR SHALL CONFIRM ALL UTILITY LINE AND CONDUIT SIZES WITH THE MEP PLANS AND SERVICE PROVIDERS PRIOR TO INSTALLATION. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
19. FIRE ALARM PANELS SHALL BE MONITORED THROUGH A THIRD-PARTY SECURITY COMPANY. CONTRACTOR SHALL COORDINATE PANEL LOCATIONS AND INTERCONNECTIONS WITH LOCAL FIRE DEPARTMENT AND ARCHITECT.
20. FIRE DEPARTMENT CONNECTIONS SHALL BE LOCATED ON THE BUILDINGS AS SHOWN. COORDINATE WITH MEP PLANS AND THE LOCAL FIRE DEPARTMENT. ACCESS TO THE FDC'S SHALL BE MAINTAINED AS A CLEAR AND UNOBSTRUCTED PATH AT ALL TIMES.
21. THE PROPOSED STRUCTURE SHALL BE SERVED BY A SPRINKLER SYSTEM AS REQUIRED UNDER LOCAL AND STATE BUILDING CODES.
22. SPRINKLER CONNECTIONS MUST BE FLUSHED IN ACCORDANCE WITH NFPA 24 AND A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM MUST BE COMPLETED.
23. EXTERIOR SPRINKLER FLUSHING DRAIN PORTS SHALL BE EQUIPPED WITH A 2'x2' CONCRETE SPLASH PAD INSTALLED AT GROUND LEVEL SO AS TO MINIMIZE EROSION.
24. THE TOWN OF DURHAM SHALL HAVE A BLANKET EASEMENT TO ACCESS ALL EXTERIOR VALVES AND SHUTOFFS CONNECTED TO THE MUNICIPAL WATER SYSTEM.
25. ALL WATER VALVES AND HYDRANTS SHALL BE OPEN LEFT.
26. ALL UTILITY FOUNDATION PENETRATIONS SHALL BE SLEEVED. COORDINATE w/MEP AND ARCHITECTURAL PLANS.
27. IRRIGATION SYSTEM TO BE DESIGN-BUILD BY CONTRACTOR. INSTALL PIPE SLEEVES UNDER ROADWAYS AND SIDEWALKS AS REQUIRED FOR IRRIGATION PIPE AND CONTROL WIRING.
28. COORDINATE WITH MEP PLANS FOR SITE IRRIGATION CONNECTION(S) AT BUILDING.
29. UNLESS OTHERWISE SPECIFIED BY THE SUPPLIER, CONDUIT FOR FUTURE EV CHARGING STATIONS SHALL BE 2" SCH 40 ROUTED FROM THE BUILDINGS AS SHOWN AND TERMINATED IN A HANDHOLE ADJUSTED TO FINISH GRADE.
30. THE TOWN OF DURHAM SHALL HAVE AN EASEMENT OVER ALL PORTIONS OF THE SEWER MAIN AND THE FORCEMAIN STUB SERVING THE DURHAM DPW FACILITY THAT ARE LOCATED ON THE PROJECT SITE AND THE ADJACENT RIVERWOODS PROPERTY AT MAP 209 LOT 37.
31. EVERSOURCE SHALL HAVE AN EASEMENT OVER ALL PORTIONS OF OVERHEAD WIRES, UTILITY POLES AND ASSOCIATED GUY WIRES AND ANCHORS LOCATED ON THE PROJECT SITE.
32. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL HANDHOLES, 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.
33. SEE DETAIL SHEETS FOR LEGEND.



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SCALE: 24" x 36" - 1" = 20'  
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OWNER: RIVERWOODS DURHAM  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

APPLICANT: RIVERWOODS DURHAM  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

PROJECT: RIVERWOODS  
DURHAM PHASE II

TAX MAP 209 LOT 33  
STONE QUARRY DRIVE  
& DOVER ROAD (NH 108)  
DURHAM, NH

TITLE:

UTILITY PLAN

SHEET NUMBER: C-8.2

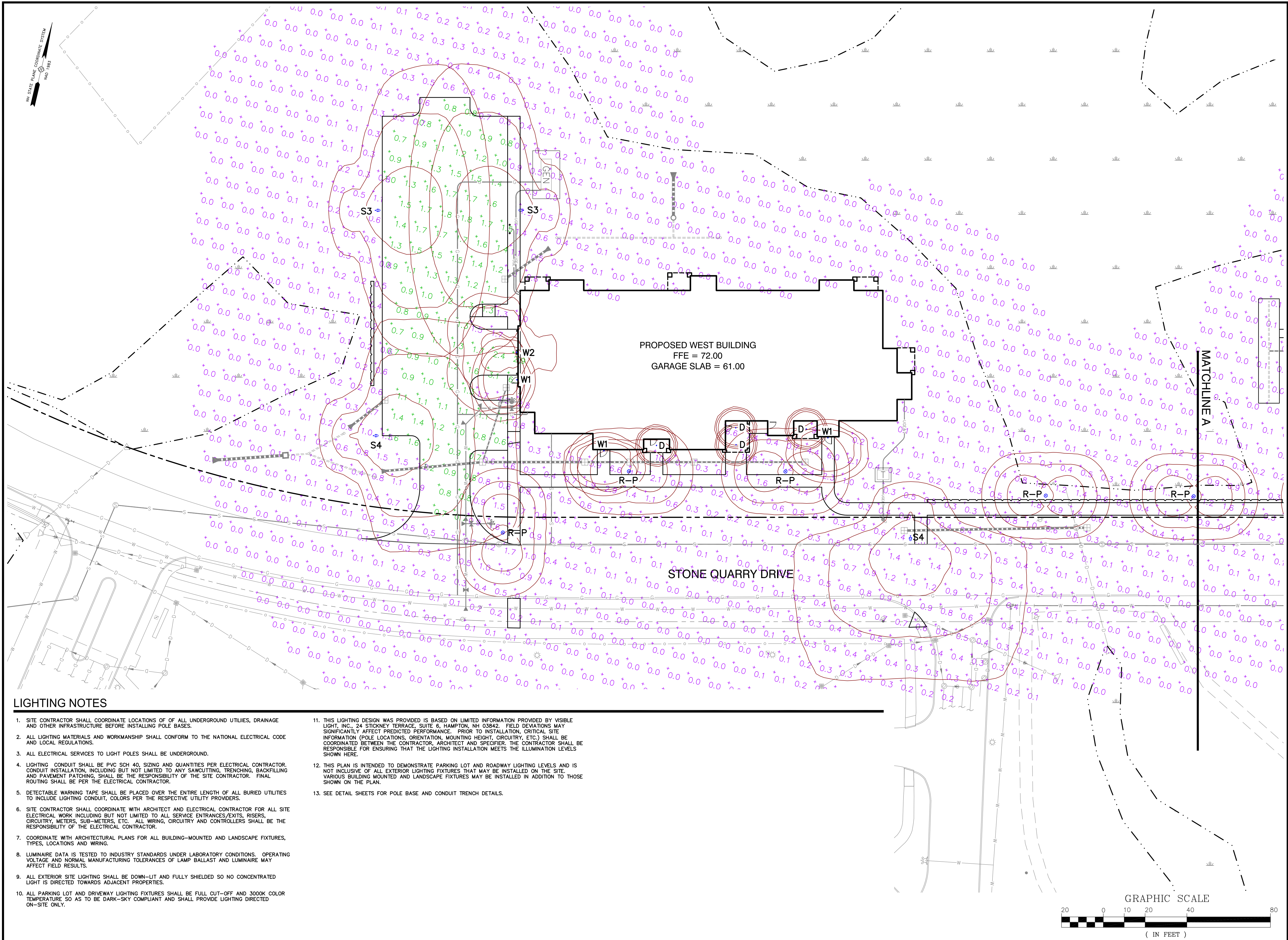






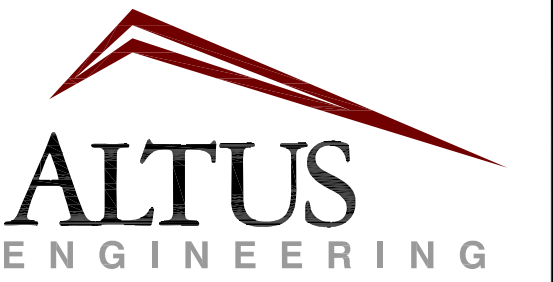






### LIGHTING NOTES

1. SITE CONTRACTOR SHALL COORDINATE LOCATIONS OF ALL UNDERGROUND UTILITIES, DRAINAGE AND OTHER INFRASTRUCTURE BEFORE INSTALLING POLE BASES.
2. ALL LIGHTING MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE AND LOCAL REGULATIONS.
3. ALL ELECTRICAL SERVICES TO LIGHT POLES SHALL BE UNDERGROUND.
4. LIGHTING CONDUIT SHALL BE PVC SCH 40, SIZING AND QUANTITIES PER ELECTRICAL CONTRACTOR. CONDUIT INSTALLATION, INCLUDING BUT NOT LIMITED TO ANY SAWCUTTING, TRENCHING, BACKFILLING AND PAVEMENT PATCHING, SHALL BE THE RESPONSIBILITY OF THE SITE CONTRACTOR. FINAL ROUTING SHALL BE PER THE ELECTRICAL CONTRACTOR.
5. DETECTABLE WARNING TAPE SHALL BE PLACED OVER THE ENTIRE LENGTH OF ALL BURIED UTILITIES TO INCLUDE LIGHTING CONDUIT, COLORS PER THE RESPECTIVE UTILITY PROVIDERS.
6. SITE CONTRACTOR SHALL COORDINATE WITH ARCHITECT AND ELECTRICAL CONTRACTOR FOR ALL SITE ELECTRICAL WORK INCLUDING BUT NOT LIMITED TO ALL SERVICE ENTRANCES/EXITS, RISERS, CIRCUITRY, METERS, SUB-METERS, ETC. ALL WIRING, CIRCUITRY AND CONTROLLERS SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
7. COORDINATE WITH ARCHITECTURAL PLANS FOR ALL BUILDING-MOUNTED AND LANDSCAPE FIXTURES, TYPES, LOCATIONS AND WIRING.
8. LUMINAIRE DATA IS TESTED TO INDUSTRY STANDARDS UNDER LABORATORY CONDITIONS. OPERATING VOLTAGE AND NORMAL MANUFACTURING TOLERANCES OF LAMP BALLAST AND LUMINAIRE MAY AFFECT FIELD RESULTS.
9. ALL EXTERIOR SITE LIGHTING SHALL BE DOWN-LIT AND FULLY SHIELDED SO NO CONCENTRATED LIGHT IS DIRECTED TOWARDS ADJACENT PROPERTIES.
10. ALL PARKING LOT AND DRIVEWAY LIGHTING FIXTURES SHALL BE FULL CUT-OFF AND 3000K COLOR TEMPERATURE SO AS TO BE DARK-SKY COMPLIANT AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.
11. THIS LIGHTING DESIGN WAS PROVIDED IS BASED ON LIMITED INFORMATION PROVIDED BY VISIBLE LIGHT, INC., 24 STICKNEY TERRACE, SUITE 6, HAMPTON, NH 03842. FIELD DEVIATIONS MAY SIGNIFICANTLY AFFECT PREDICTED PERFORMANCE. PRIOR TO INSTALLATION, CRITICAL SITE INFORMATION (POLE LOCATIONS, ORIENTATION, MOUNTING HEIGHT, CIRCUITRY, ETC.) SHALL BE COORDINATED BETWEEN THE CONTRACTOR, ARCHITECT AND SPECIFIER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE LIGHTING INSTALLATION MEETS THE ILLUMINATION LEVELS SHOWN HERE.
12. THIS PLAN IS INTENDED TO DEMONSTRATE PARKING LOT AND ROADWAY LIGHTING LEVELS AND IS NOT INCLUSIVE OF ALL EXTERIOR LIGHTING FIXTURES THAT MAY BE INSTALLED ON THE SITE. VARIOUS BUILDING MOUNTED AND LANDSCAPE FIXTURES MAY BE INSTALLED IN ADDITION TO THOSE SHOWN ON THE PLAN.
13. SEE DETAIL SHEETS FOR POLE BASE AND CONDUIT TRENCH DETAILS.



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PROJECT:  
RIVERWOODS  
DURHAM PHASE II  
TAX MAP 209 LOT 33  
STONE QUARRY DRIVE  
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DURHAM, NH

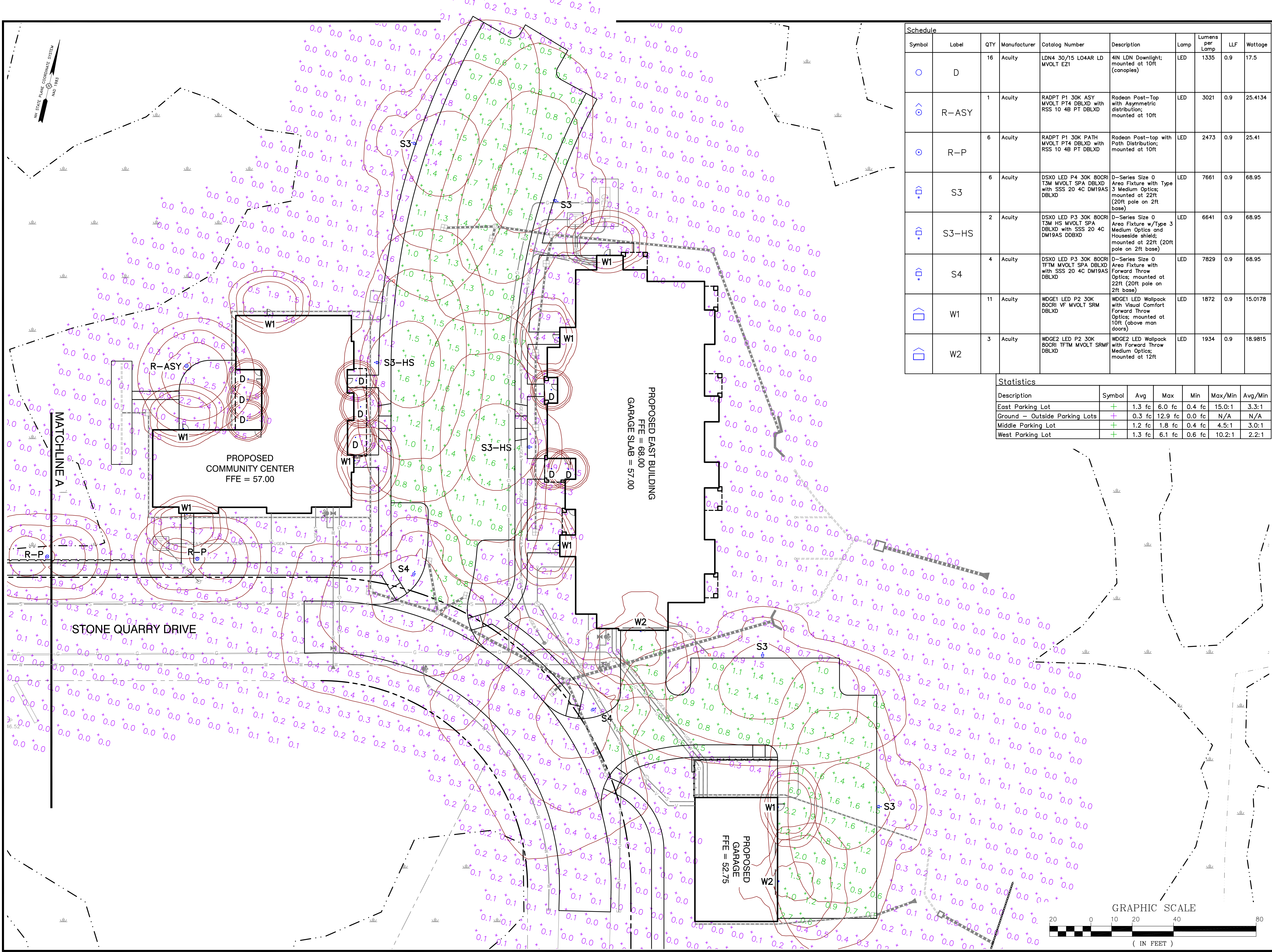
TITLE:

LIGHTING PLAN

SHEET NUMBER:

C-10.1





| Schedule                                                                            |       |     |              |                                                                          |                                                                                                                   |      |                 |     |         |
|-------------------------------------------------------------------------------------|-------|-----|--------------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------|-----------------|-----|---------|
| Symbol                                                                              | Label | QTY | Manufacturer | Catalog Number                                                           | Description                                                                                                       | Lamp | Lumens per Lamp | LLF | Wattage |
|  | D     | 16  | Acuity       | LDN4-30/15 L04AR LD MVOLT E21                                            | 4IN LDN Downlight; mounted at 10ft (canopies)                                                                     | LED  | 1335            | 0.9 | 17.5    |
|  | R-ASY | 1   | Acuity       | RADPT P1 30K ASY MVOLT P14 DBLXD with RSS 10 4B PT DBLXD                 | Rodean Post-Top with Asymmetric distribution; mounted at 10ft                                                     | LED  | 3021            | 0.9 | 25.4134 |
|  | R-P   | 6   | Acuity       | RADPT P1 30K PATH MVOLT P14 DBLXD with RSS 10 4B PT DBLXD                | Rodean Post-top with Path Distribution; mounted at 10ft                                                           | LED  | 2473            | 0.9 | 25.41   |
|  | S3    | 6   | Acuity       | DSX0 LED P4 30K 80CRI T3M MVOLT SPA DBLXD with SSS 20 4C DM19AS DBLXD    | D-Series Size 0 Area Fixture with Type 3 Medium Optics; mounted at 22ft (20ft pole on 2ft base)                   | LED  | 7661            | 0.9 | 68.95   |
|  | S3-HS | 2   | Acuity       | DSX0 LED P3 30K 80CRI T3M HS MVOLT SPA DBLXD with SSS 20 4C DM19AS DBBXD | D-Series Size 0 Area Fixture w/Type 3 Medium Optics and Houseside shield; mounted at 22ft (20ft pole on 2ft base) | LED  | 6641            | 0.9 | 68.95   |
|  | S4    | 4   | Acuity       | DSX0 LED P3 30K 80CRI TFTM MVOLT SPA DBLXD with SSS 20 4C DM19AS DBLXD   | D-Series Size 0 Area Fixture with Forward Throw Optics; mounted at 22ft (20ft pole on 2ft base)                   | LED  | 7829            | 0.9 | 68.95   |
|  | W1    | 11  | Acuity       | WDGE1 LED P2 30K 80CRI VF MVOLT SRM DBLXD                                | WDGE1 LED Wallpack with Visual Comfort Forward Throw Optics; mounted at 10ft (above man doors)                    | LED  | 1872            | 0.9 | 15.0178 |
|  | W2    | 3   | Acuity       | WDGE2 LED P2 30K 80CRI TFTM MVOLT SRMF DBLXD                             | WDGE2 LED Wallpack with Forward Throw Medium Optics; mounted at 12ft                                              | LED  | 1934            | 0.9 | 18.9815 |

| Statistics                    |        |        |         |        |         |         |
|-------------------------------|--------|--------|---------|--------|---------|---------|
| Description                   | Symbol | Avg    | Max     | Min    | Max/Min | Avg/Min |
| East Parking Lot              | +      | 1.3 fc | 6.0 fc  | 0.4 fc | 15.0:1  | 3.3:1   |
| Ground - Outside Parking Lots | +      | 0.3 fc | 12.9 fc | 0.0 fc | N/A     | N/A     |
| Middle Parking Lot            | +      | 1.2 fc | 1.8 fc  | 0.4 fc | 4.5:1   | 3.0:1   |
| West Parking Lot              | +      | 1.3 fc | 6.1 fc  | 0.6 fc | 10.2:1  | 2.2:1   |

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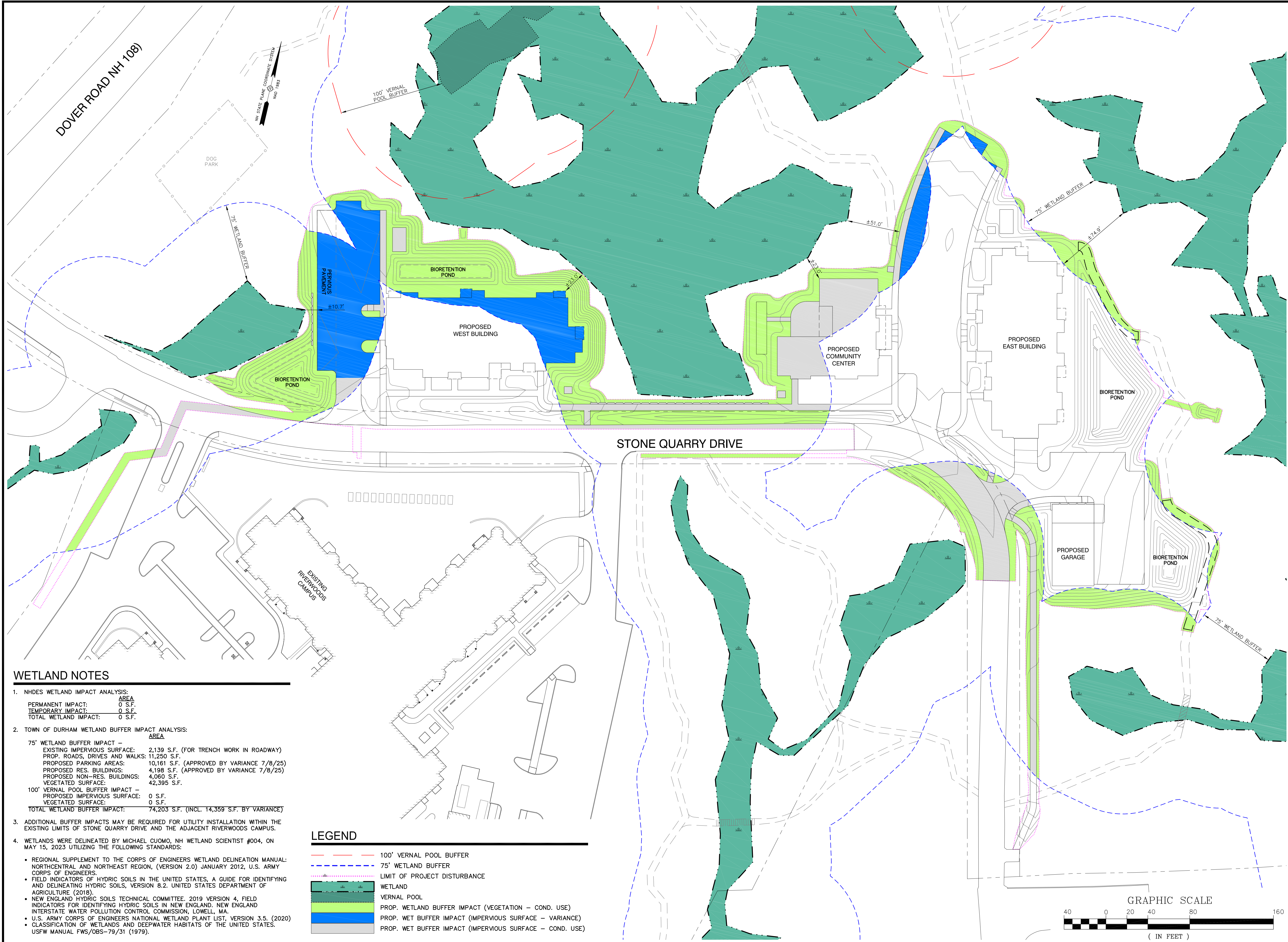
TITLE:

LIGHTING PLAN

SHEET NUMBER:

C-10.2





**WETLAND NOTES**

1. NHDES WETLAND IMPACT ANALYSIS:

|                       |        |
|-----------------------|--------|
| PERMANENT IMPACT:     | AREA   |
| TEMPORARY IMPACT:     | 0 S.F. |
| TOTAL WETLAND IMPACT: | 0 S.F. |

2. TOWN OF DURHAM WETLAND BUFFER IMPACT ANALYSIS:

|                                  |                                             |
|----------------------------------|---------------------------------------------|
| 75' WETLAND BUFFER IMPACT –      | AREA                                        |
| EXISTING IMPERVIOUS SURFACE:     | 2,139 S.F. (FOR TRENCH WORK IN ROADWAY)     |
| PROP. ROADS, DRIVES AND WALKS:   | 11,250 S.F.                                 |
| PROPOSED PARKING AREAS:          | 10,161 S.F. (APPROVED BY VARIANCE 7/8/25)   |
| PROPOSED RES. BUILDINGS:         | 4,198 S.F. (APPROVED BY VARIANCE 7/8/25)    |
| PROPOSED NON-RES. BUILDINGS:     | 4,060 S.F.                                  |
| VEGETATED SURFACE:               | 42,395 S.F.                                 |
| 100' VERNAL POOL BUFFER IMPACT – |                                             |
| PROPOSED IMPERVIOUS SURFACE:     | 0 S.F.                                      |
| VEGETATED SURFACE:               | 0 S.F.                                      |
| TOTAL WETLAND BUFFER IMPACT:     | 74,203 S.F. (INCL. 14,359 S.F. BY VARIANCE) |

3. ADDITIONAL BUFFER IMPACTS MAY BE REQUIRED FOR UTILITY INSTALLATION WITHIN THE EXISTING LIMITS OF STONE QUARRY DRIVE AND THE ADJACENT RIVERWOODS CAMPUS.

4. WETLANDS WERE DELINEATED BY MICHAEL CUOMO, NH WETLAND SCIENTIST #004, ON MAY 15, 2023 UTILIZING THE FOLLOWING STANDARDS:

**LEGEND**

- 100' VERNAL POOL BUFFER
- 75' WETLAND BUFFER
- LIMIT OF PROJECT DISTURBANCE
- WETLAND
- VERNAL POOL
- PROP. WETLAND BUFFER IMPACT (VEGETATION – COND. USE)
- PROP. WET BUFFER IMPACT (IMPERVIOUS SURFACE – VARIANCE)
- PROP. WET BUFFER IMPACT (IMPERVIOUS SURFACE – COND. USE)

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DURHAM, NH 03824

PROJECT: RIVERWOODS DURHAM PHASE II  
TAX MAP 209 LOT 33  
STONE QUARRY DRIVE  
& DOVER ROAD (NH 108)  
DURHAM, NH

TITLE: WETLAND BUFFER CONDITIONAL USE PERMIT PLAN

SHEET NUMBER: C-11



SEDIMENT AND EROSION CONTROL NOTES

PROJECT NAME AND LOCATION

RIVERWOODS DURHAM PHASE II  
14 STONE QUARRY DRIVE  
DURHAM, NEW HAMPSHIRE  
TAX MAP 209, LOT 33

LATITUDE: 43°08'25" N  
LONGITUDE: 70°54'22" W

OWNER/APPLICANT  
RIVERWOODS DURHAM  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

DESCRIPTION

The project consists of a new senior independent living housing development, a community center, maintenance garage and the relocation of an existing road together with associated site improvements.

PROJECT PHASING

The project will be completed in one phase.

NAME OF RECEIVING WATER

The site drains to an unnamed wetland complex tributary to the Oyster River.

SEQUENCE OF MAJOR ACTIVITIES

1. Prepare SWPPP and file NOI at least two weeks prior to initiating earthwork.
2. Attend pre-construction meeting with Town and relevant stakeholders.
3. Cut trees but do not remove stumps.
4. 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.
5. Stump, grub and strip and stockpile loam.
6. Relocate utilities and roadway.
7. Shape and stabilize primary stormwater ponds and swales. At the contractors discretion, stormwater ponds may be utilized as temporary sediment ponds prior to the placement of fill media and select materials.
8. Construct building foundation.
9. Rough grade site.
10. Construct drainage structures and utilities.
11. Fine grade site.
12. Install pavement subgrade.
13. Install base course paving.
14. Install curbing.
15. Install landscaping.
16. Loam (6" min) and seed all disturbed areas not paved or otherwise stabilized.
17. Install top course paving.
18. Install striping and signage.
19. 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:

1. The smallest practical portion of the site shall be denuded at one time but in no case shall exceed 5 acres at any one time before disturbed areas are stabilized.
2. All control measures shall be inspected at least once each week and following any storm event of 0.25 inches or greater.
3. All measures shall be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours.
4. Built-up sediment shall be removed from perimeter barriers when it has reached one-third the height of the barrier or when "bulges" occur.
5. All diversion dikes shall be inspected and any breaches promptly repaired.
6. Temporary seeding and planting shall be inspected for bare spots, washouts, and unhealthy growth.
7. The owner's authorized engineer shall inspect the site on a periodic basis to review compliance with the Plans.
8. All roadways and parking lots shall be stabilized within 72 hours of achieving final grade.
9. All cut and fill slopes shall be loamed and seeded within 72 hours of achieving final grade.
10. An area shall be considered stable if one of the following has occurred:
  - a. Base coarse gravel has been installed in areas to be paved;
  - b. A minimum of 85% vegetated growth as been established;
  - c. A minimum of 3 inches of non-erosive material such as stone of riprap has been installed; or
  - d. Erosion control blankets have been properly installed.
11. The length of time of exposure of area disturbed during construction shall not exceed 45 days.

B. MULCHING

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

1. 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:
  - a. 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.
  - b. Required Mulching within a specified time period. The time period can range from 21 to 28 days of inactivity on a area, the length of time varying with site conditions. Professional judgment shall be used to evaluate the interaction of site conditions (soil erodibility, season of year, extent of disturbance, proximity to sensitive resources, etc.) and the potential impact of erosion on adjacent areas to choose an appropriate time restriction.
2. Guidelines for Winter Mulch Application –

| Type         | Rate per 1,000 s.f. | Use and Comments                                            |
|--------------|---------------------|-------------------------------------------------------------|
| Hay or Straw | 70 to 90 lbs.       | Must be dry and free from mold. May be used with plantings. |

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

|                                            |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Wood Chips or Bark Mulch                   | 460 to 920 lbs.                    | Used mostly with trees and shrubs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 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 basis.</li><li>* Particle size by 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> |

3. 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 –

1. 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.
2. Fertilizer – lime and organic 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. 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:

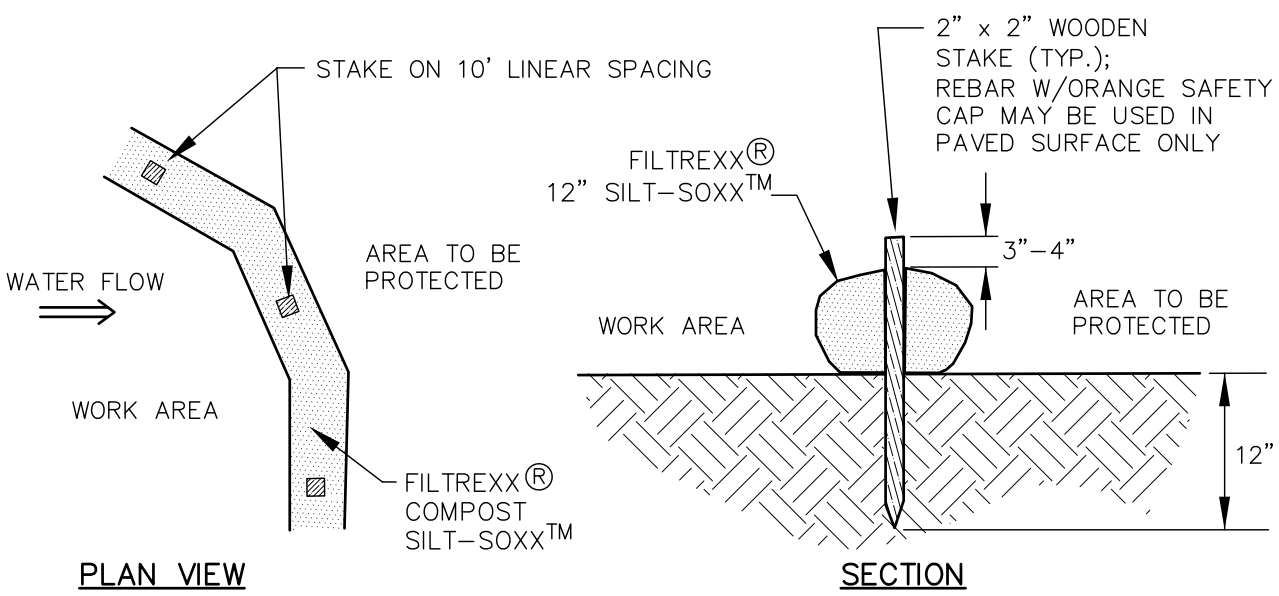
| Seed Mixture (for lawns**): |                    |                         |           |
|-----------------------------|--------------------|-------------------------|-----------|
| Type                        | Min.<br>Purity (%) | Min.<br>Germination (%) | Lbs./Acre |
| Tall Fescue                 | 96                 | 85                      | 25        |
| Creeping Red Fescue         | 96                 | 85                      | 25        |
|                             |                    |                         | Total 50  |

| Seed Mixture (For slope embankments**): |                    |                         |           |
|-----------------------------------------|--------------------|-------------------------|-----------|
| Type                                    | Min.<br>Purity (%) | Min.<br>Germination (%) | Lbs./Acre |
| Creeping Red Fescue (c)                 | 96                 | 85                      | 40        |
| Perennial Rye Grass (a)                 | 98                 | 90                      | 35        |
| Redtop                                  | 95                 | 80                      | 5         |
|                                         |                    |                         | Total 80  |

- a. Ryegrass shall be a certified fine-textured variety such as Pennfine, Fiesta, Yorktown, Diplomat, or equal.
  - b. Fescue varieties shall include – Creeping Red and/or Hard Reliant, Scaldis, Koket, or Jamestown.
  - c. Alternate seed mixtures may be used with the approval of the engineer and landscape architect.
  - d. Hydroseed mixtures shall not contain microplastics. Dyes shall be water-soluble and eco-friendly. Hydroseeding shall not occur within 75' of a wetland.
  - \*\* In the event that the seed mixes shown here conflict with the project landscape plans, the landscape plans shall govern.
4. 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

1. 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;
2. 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
3. After October 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.

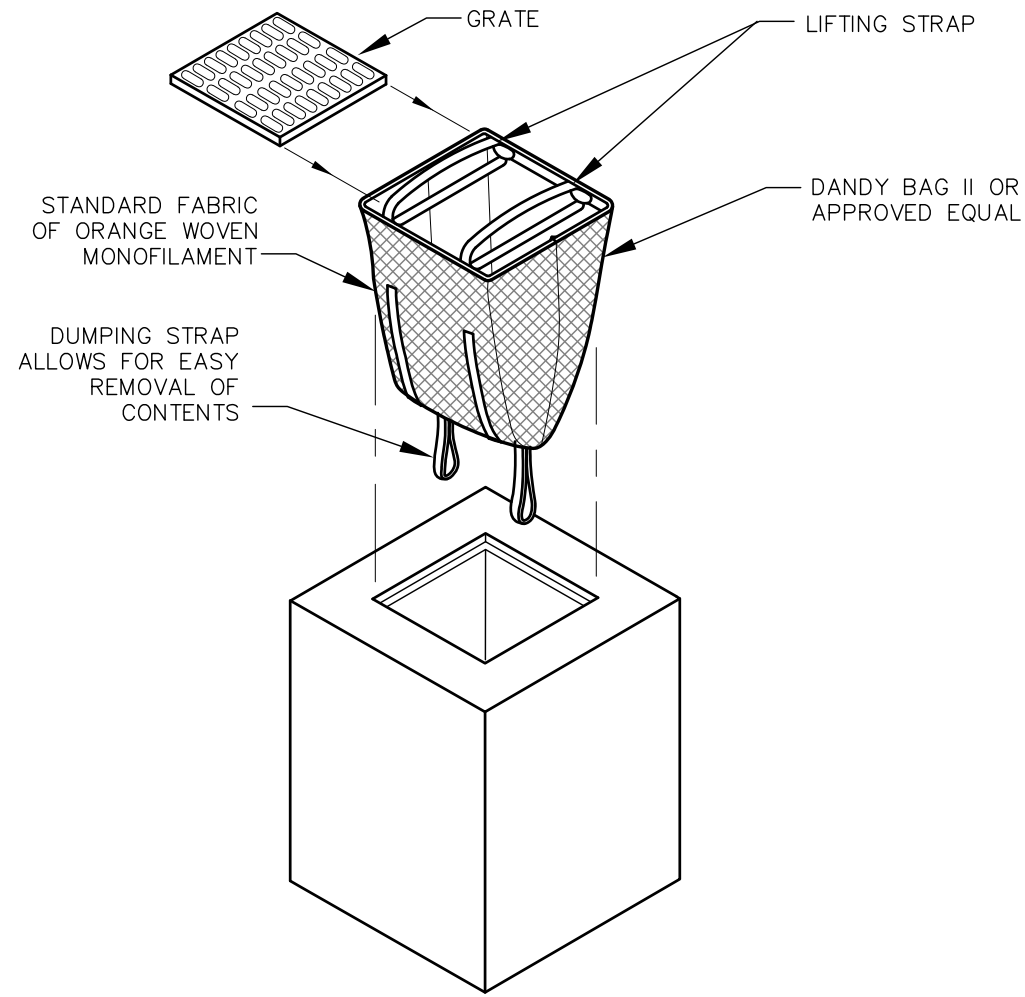


NOTES:

1. SILTBOX OR APPROVED EQUAL MAY BE USED IN PLACE OF SILT FENCE OR OTHER SEDIMENT BARRIERS.
2. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
3. SILTBOX COMPOST/SOIL/ROCK/SEED FILL MATERIAL SHALL BE ADJUSTED AS NECESSARY TO MEET THE REQUIREMENTS OF THE SPECIFIC APPLICATION.
4. ALL SEDIMENT TRAPPED BY SILTBOX SHALL BE DISPOSED OF PROPERLY.
5. SOXX SHALL NOT CONTAIN PLASTIC OR MULTIFILAMENT OR MONO FILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE GREATER THAN 1/8".

TUBULAR SEDIMENT BARRIER

NOT TO SCALE



INSTALLATION AND MAINTENANCE:

INSTALLATION: REMOVE THE GRATE FROM CATCH BASIN. IF USING OPTIONAL OIL ABSORBENTS, PLACE ABSORBENT PILLOW IN UNIT. STAND GRATE ON END. MOVE THE TOP LIFTING STRAPS OUT OF THE WAY AND PLACE THE GRATE INTO CATCH BASIN INSERT SO THE GRATE IS BELOW THE TOP STRAPS AND ABOVE THE LOWER STRAPS. HOLDING THE LIFTING DEVICES, INSERT THE GRATE INTO THE INLET.

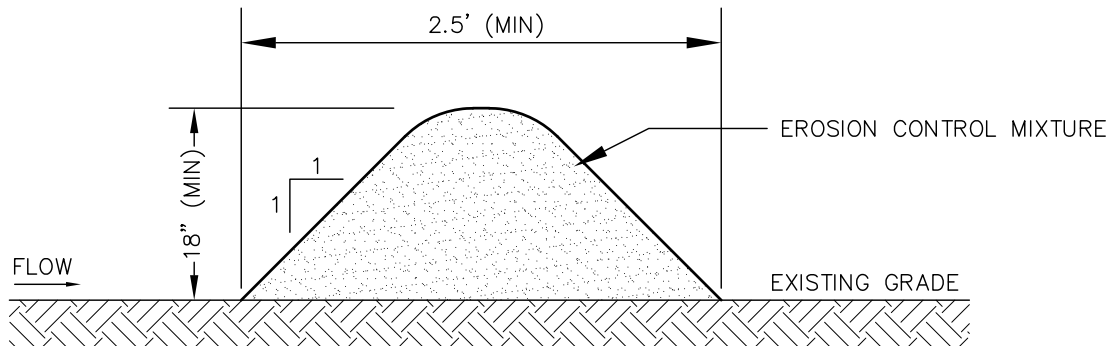
MAINTENANCE: REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM VICINITY OF THE UNIT AFTER EACH STORM EVENT. AFTER EACH STORM EVENT AND AT REGULAR INTERVALS, LOOK INTO THE CATCH BASIN INSERT. IF THE CONTAINMENT AREA IS MORE THAN 1/3 FULL OF SEDIMENT, THE UNIT MUST BE EMPTIED. TO EMPTY THE UNIT, LIFT THE UNIT OUT OF THE INLET USING THE LIFTING STRAPS AND REMOVE THE GRATE. IF USING OPTIONAL ABSORBENTS, REPLACE ABSORBENT WHEN NEAR SATURATION.

UNACCEPTABLE INLET PROTECTION METHOD:

A SIMPLE SHEET OF GEOTEXTILE UNDER THE GRATE IS NOT ACCEPTABLE.

STORM DRAIN INLET PROTECTION

NOT TO SCALE

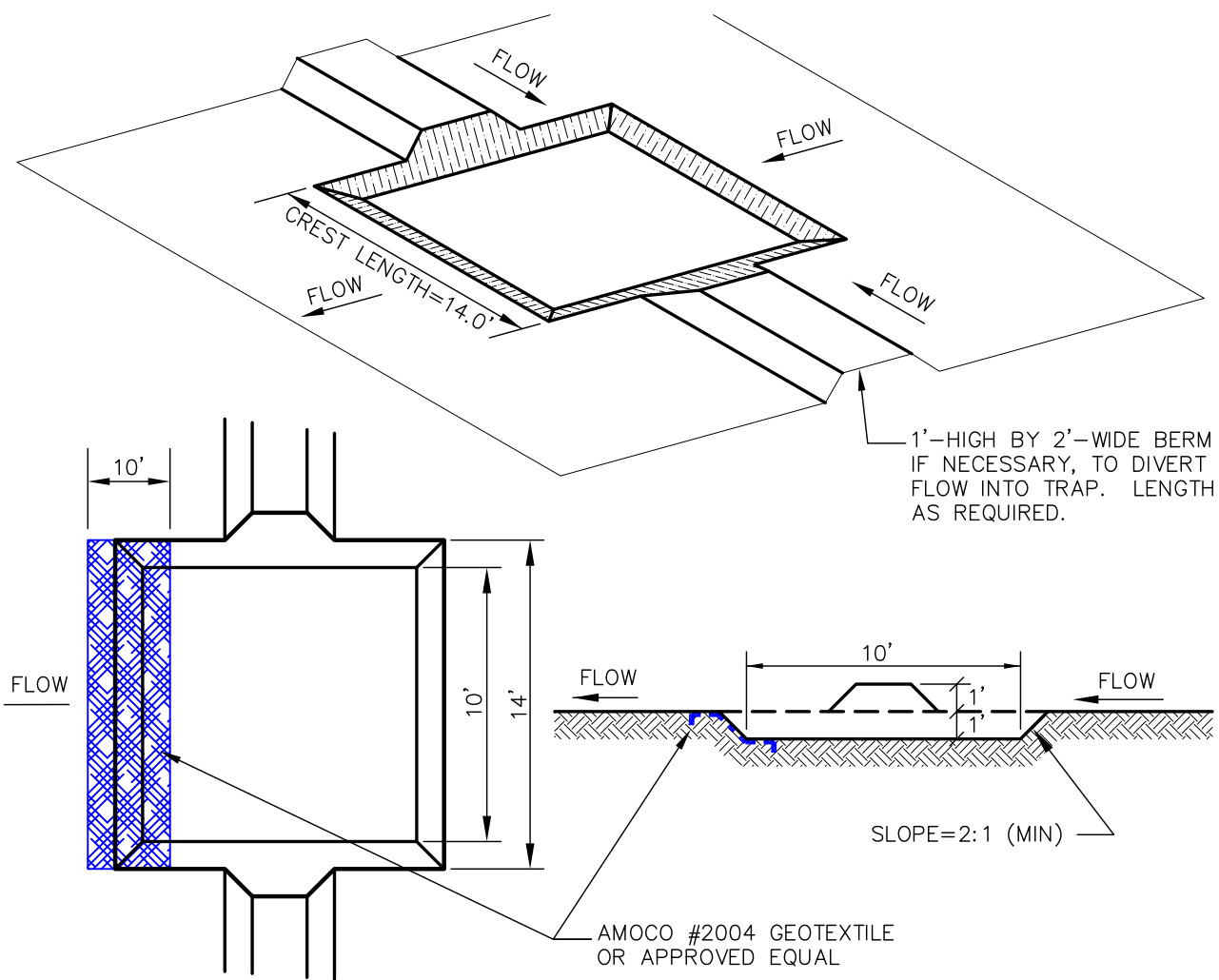


NOTES

1. ORGANIC FILTER BERMS MAY BE UTILIZED IN LIEU OF SILT FENCE OR OTHER SEDIMENT BARRIERS.
2. 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:
  - a) THE ORGANIC CONTENT SHALL BE 80-100% OF DRY WEIGHT.
  - b) PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6" SCREEN, AND 70-85% PASSING A 0.75" SCREEN.
  - c) THE ORGANIC PORTION SHALL BE FIBROUS AND ELONGATED.
  - d) LARGE PORTIONS OF SILTS, CLAYS, OR FINE SANDS SHALL NOT BE INCLUDED IN THE MIXTURE.
  - e) SOLUBLE SALTS CONTENT SHALL BE >4.0mmhos/cm.
  - f) THE pH SHALL BE BETWEEN 5.0 AND 8.0.
3. 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.
4. ON SLOPES LESS THAN 5%, OR AT THE BOTTOM OF SLOPES NO STEEPER THAN 3:1 AND UP TO 20' LONG, THE BERM SHALL BE A MINIMUM OF 12" HIGH (AS MEASURED ON THE UPHILL SIDE) AND A MINIMUM OF 36" WIDE. ON LONGER AND/OR STEEPER SLOPES, THE BERM SHALL BE TALLER AND WIDER TO ACCOMMODATE THE POTENTIAL FOR ADDITIONAL RUNOFF (MAXIMUM HEIGHT SHALL NOT EXCEED 2').
5. 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.
6. SEDIMENT SHALL BE REMOVED FROM BEHIND THE FILTER BERMS WHEN IT HAS ACCUMULATED TO ONE HALF THE ORIGINAL HEIGHT OF THE BERM.
7. 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.
8. FILTER BERMS ARE PROHIBITED AT THE BASE OF SLOPES STEEPER THAN 8% OR WHERE THERE IS FLOWING WATER WITHOUT THE SUPPORT OF ADDITIONAL MEASURES SUCH AS SILT FENCE.

ORGANIC FILTER BERM

NOT TO SCALE

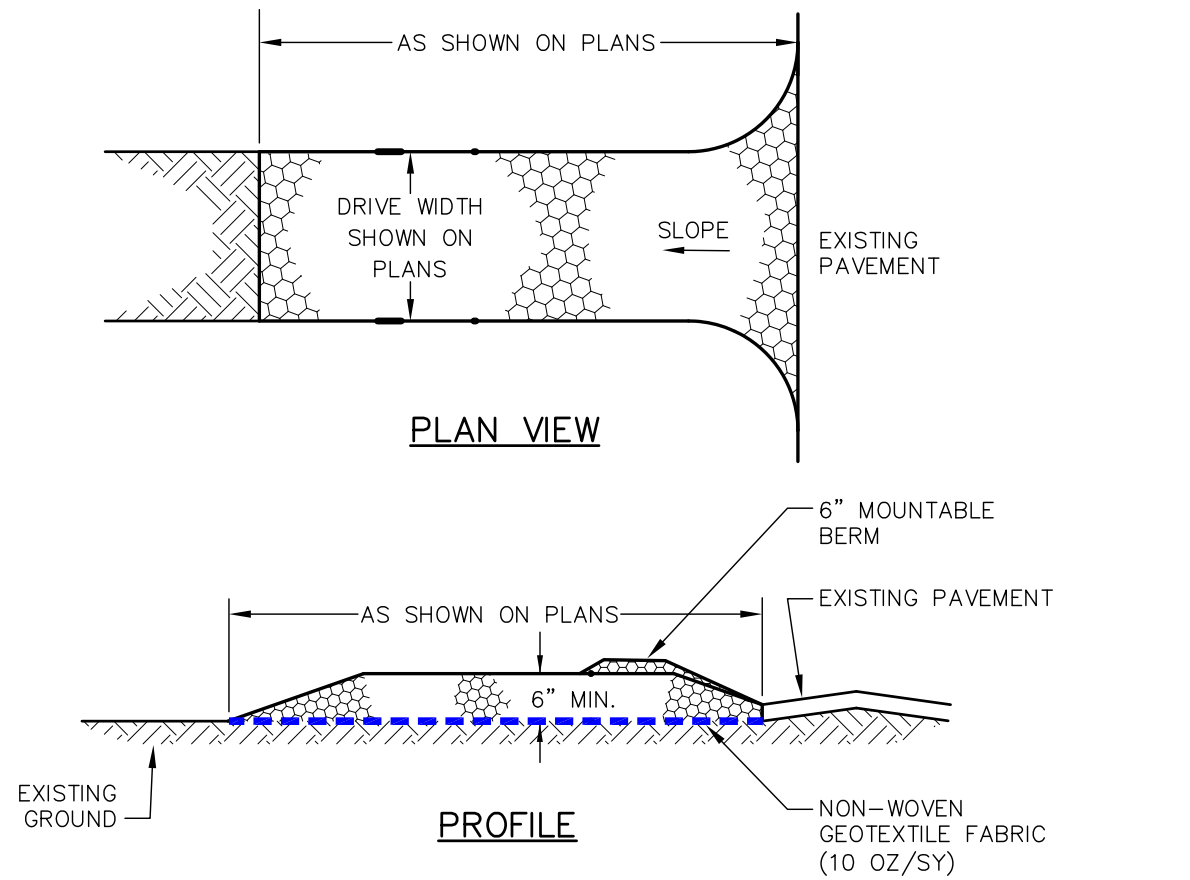


NOTES:

1. THE AREA UNDER THE EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ALL VEGETATION, ROOTS, AND DEBRIS.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS, WOODY VEGETATION, STONES OVER 6" SIZE, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIALS. THE FILL SHALL BE COMPACTED BY ROUTING CONSTRUCTION EQUIPMENT OVER IT SO THAT THE ENTIRE AREA OF THE FILL IS TRAVERSED BY AT LEAST ONE WHEEL OR TREAD TRACK OF THE EQUIPMENT.
3. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE MINIMIZED.
4. ALL CUT AND FILL SLOPES SHALL BE 2:1 (H:V) OR FLATTER.
5. OUTLET CREST ELEVATIONS SHALL BE AT LEAST ONE FOOT BELOW THE TOP OF THE EMBANKMENT.
6. OUTLET CREST IS TO BE STABILIZED WITH AMOCO #2004 GEOTEXTILE (OR APPROVED EQUAL), WHICH IS TO BE TIED INTO THE GROUND AT ITS ENDS AT LEAST SIX INCHES AND IS TO EXTEND AT LEAST ONE FOOT INTO THE TRAP AND ONE FOOT DOWNSTREAM FROM THE OUTLET EDGE FOR THE ENTIRE LENGTH OF THE CREST.
7. ALL DISTURBED AREAS SHALL BE VEGETATED USING THE APPROPRIATE VEGETATIVE BEST MANAGEMENT PRACTICE.
8. ALL TRAPS ARE TO HAVE SEDIMENT DEPOSITS REMOVED AND DISPOSED PROPERLY ONCE THEY REACH HALF THE CAPACITY OF THE TRAP.

TEMPORARY SEDIMENT TRAP

NOT TO SCALE

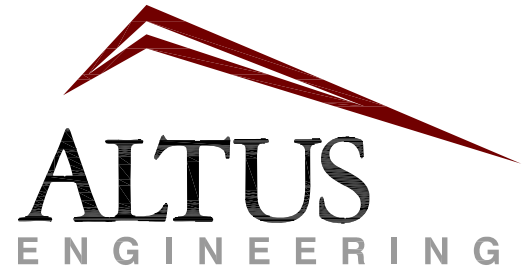


CONSTRUCTION SPECIFICATIONS

1. STONE SIZE – 3" MINIMUM.
2. LENGTH – DETAILED ON PLANS (50 FOOT MINIMUM).
3. THICKNESS – SIX (6) INCHES (MINIMUM).
4. WIDTH – FULL DRIVE WIDTH UNLESS OTHERWISE SPECIFIED.
5. FILTER FABRIC – MIRAFI 600X OR EQUAL APPROVED BY ENGINEER.
6. SURFACE WATER CONTROL – ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE GROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS WILL REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. STABILIZED CONSTRUCTION EXITS SHALL BE INSTALLED AT ALL ENTRANCES TO PUBLIC RIGHTS-OF-WAY, AT LOCATIONS SHOWN ON THE PLANS, AND/OR WHERE AS DIRECTED BY THE ENGINEER.

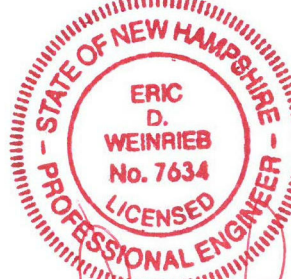
STABILIZED CONSTRUCTION EXIT

NOT TO SCALE



133 Court Street  
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Portsmouth, NH 03801  
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10/7/25

NOT FOR CONSTRUCTION

ISSUED FOR: REVIEW

ISSUE DATE: OCTOBER 8, 2025

| REVISIONS | NO.     | DESCRIPTION  | BY  | DATE     |
|-----------|---------|--------------|-----|----------|
| 0         | REVIEW  |              | EBS | 06/23/25 |
| 1         | REVISED | PER COMMENTS | EBS | 10/08/25 |

DRAWN BY: EBS

APPROVED BY: EBS

DRAWING FILE: 5440-SITE.dwg

SCALE: 24" x 36" - 1" = NTS  
11" x 17" - 1" = NTS

OWNER: RIVERWOODS DURHAM  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

APPLICANT: RIVERWOODS DURHAM  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

PROJECT: RIVERWOODS  
DURHAM PHASE II  
TAX MAP 209 LOT 33  
STONE QUARRY DRIVE  
& DOVER ROAD (NH 108)  
DURHAM, NH

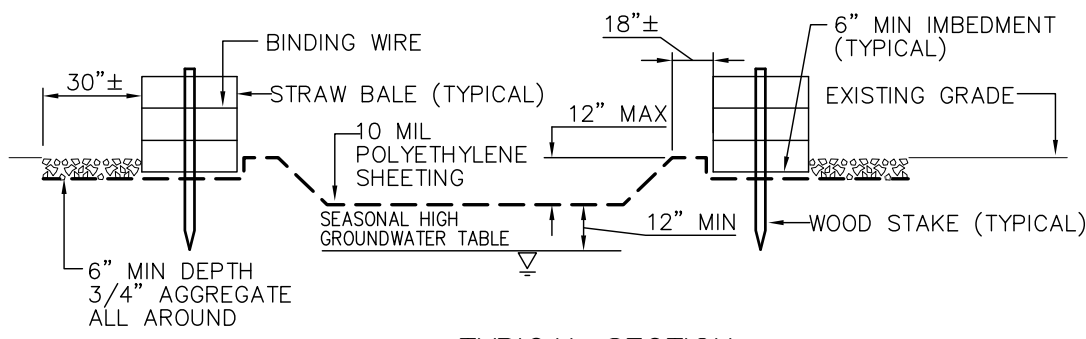
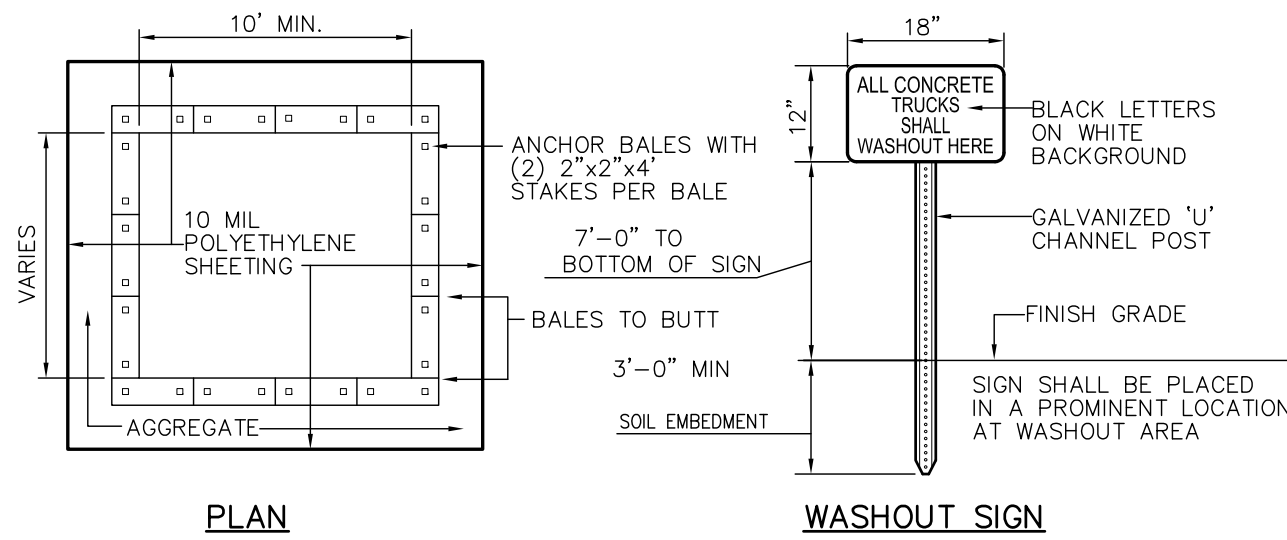
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SHEET NUMBER:

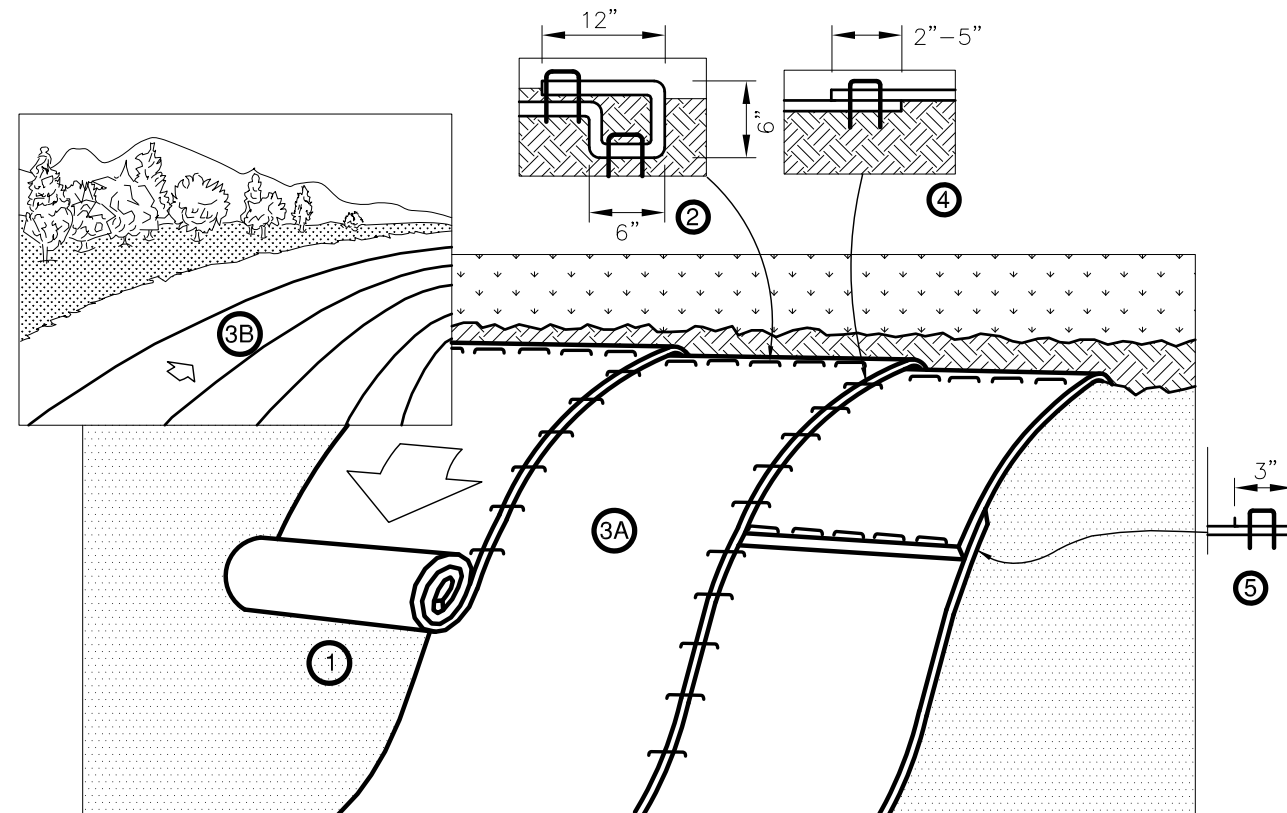
C-12





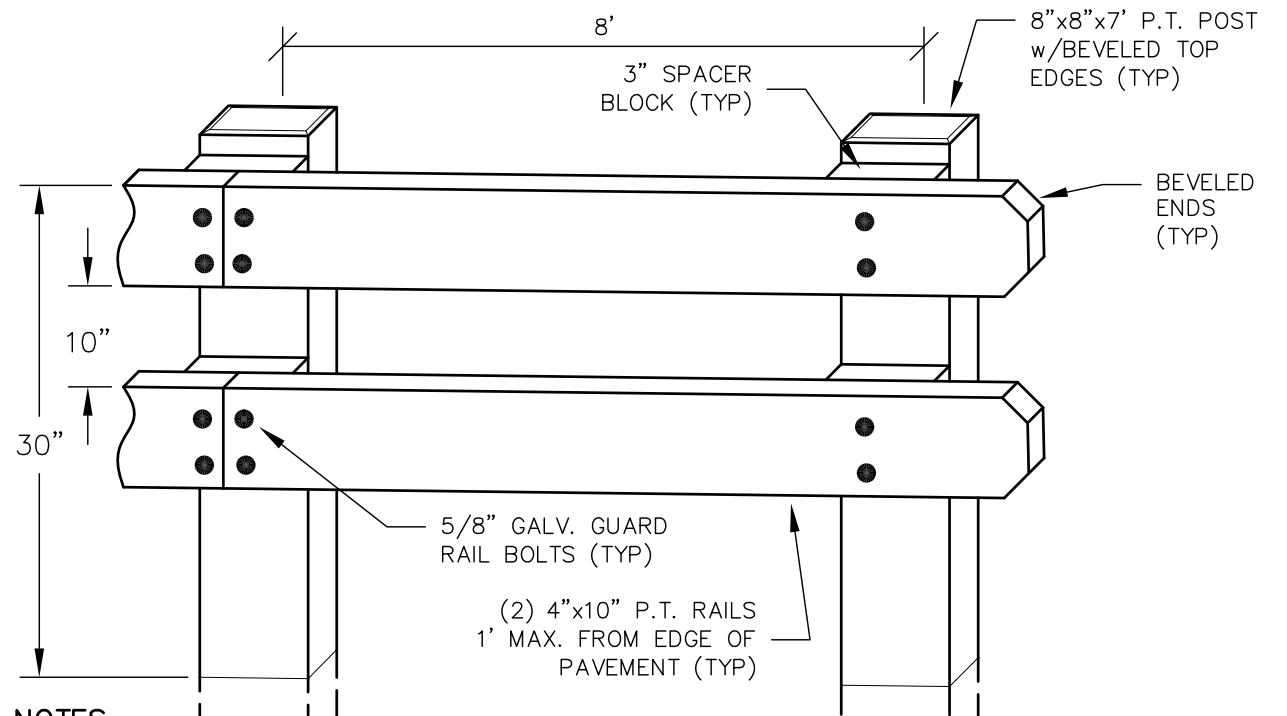
- NOTES**
1. CONTAINMENT MUST BE STRUCTURALLY SOUND AND LEAK FREE AND CONTAIN ALL LIQUID WASTES.
  2. CONTAINMENT DEVICES MUST BE OF SUFFICIENT QUANTITY OR VOLUME TO COMPLETELY CONTAIN THE LIQUID WASTES GENERATED.
  3. WASHOUT MUST BE CLEANED OR NEW FACILITIES CONSTRUCTED AND READY TO USE ONCE WASHOUT IS 75% FULL.
  4. WASHOUT AREA(S) SHALL BE INSTALLED IN A LOCATION EASILY ACCESSIBLE BY CONCRETE TRUCKS.
  5. ONE OR MORE AREAS MAY BE INSTALLED ON THE CONSTRUCTION SITE AND MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
  6. AT LEAST WEEKLY REMOVE ACCUMULATION OF SAND AND AGGREGATE AND DISPOSE OF PROPERLY.

## CONCRETE WASHOUT NOT TO SCALE

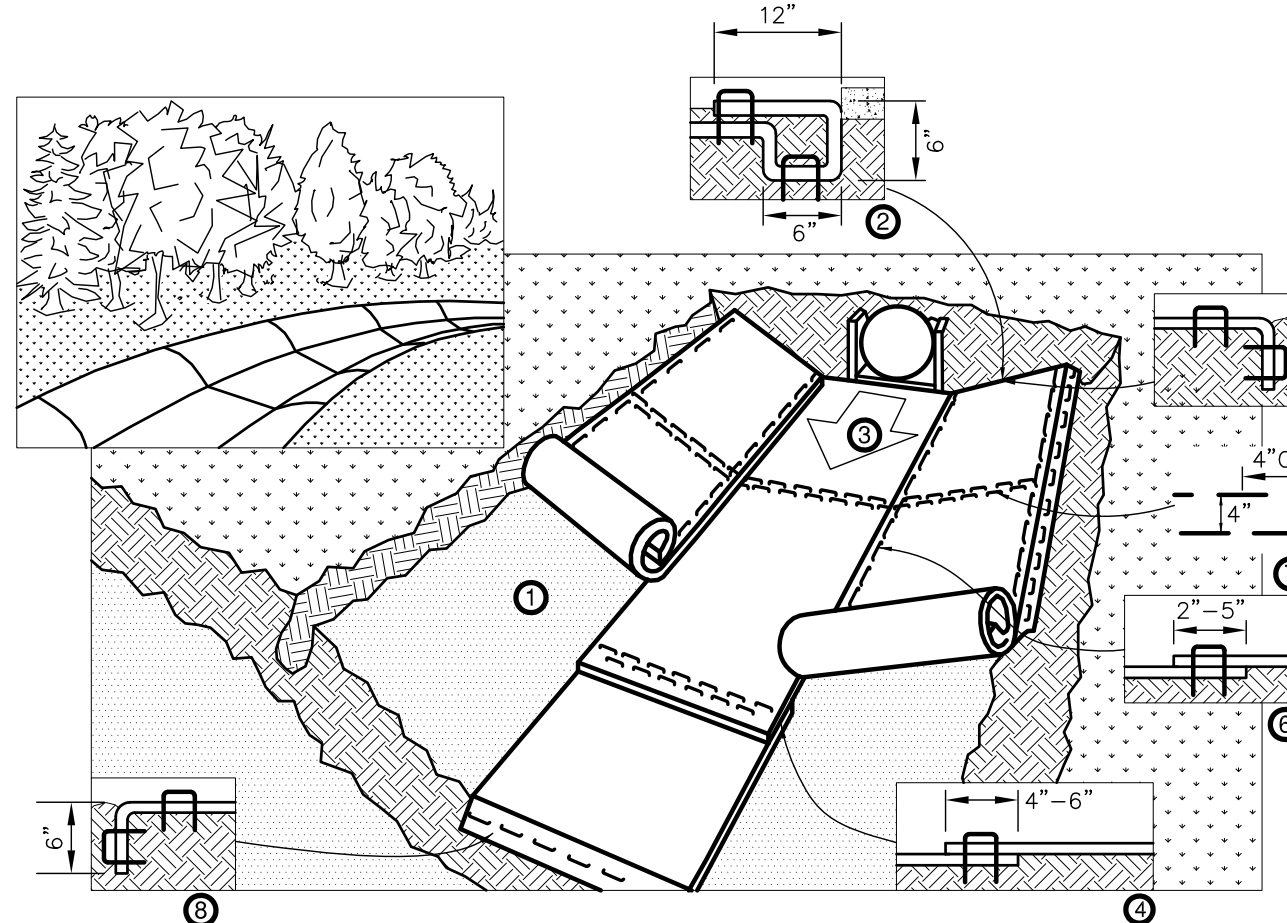


- NOTES**
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
  2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6\"/>
  3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
  4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2\"/>
  5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3\"/>

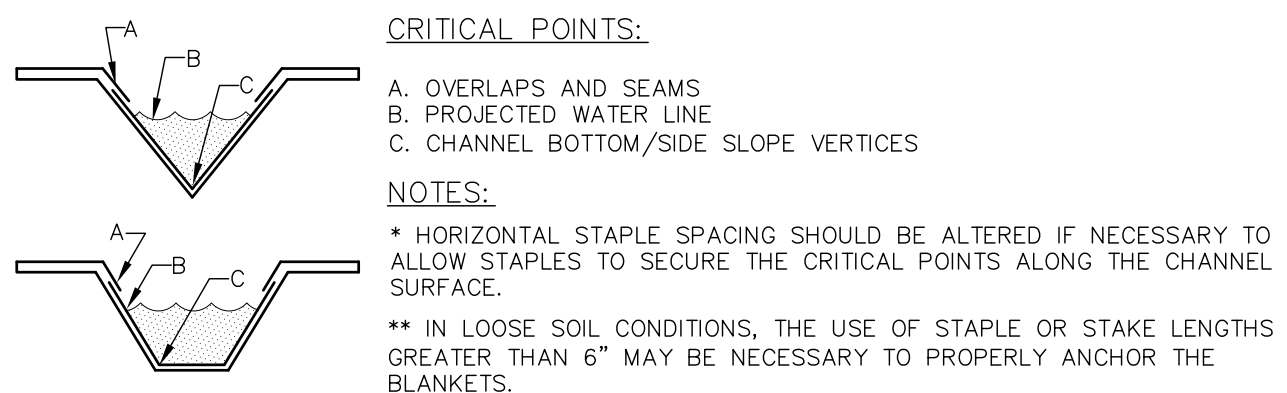
## EROSION CONTROL BLANKET - SLOPE NOT TO SCALE



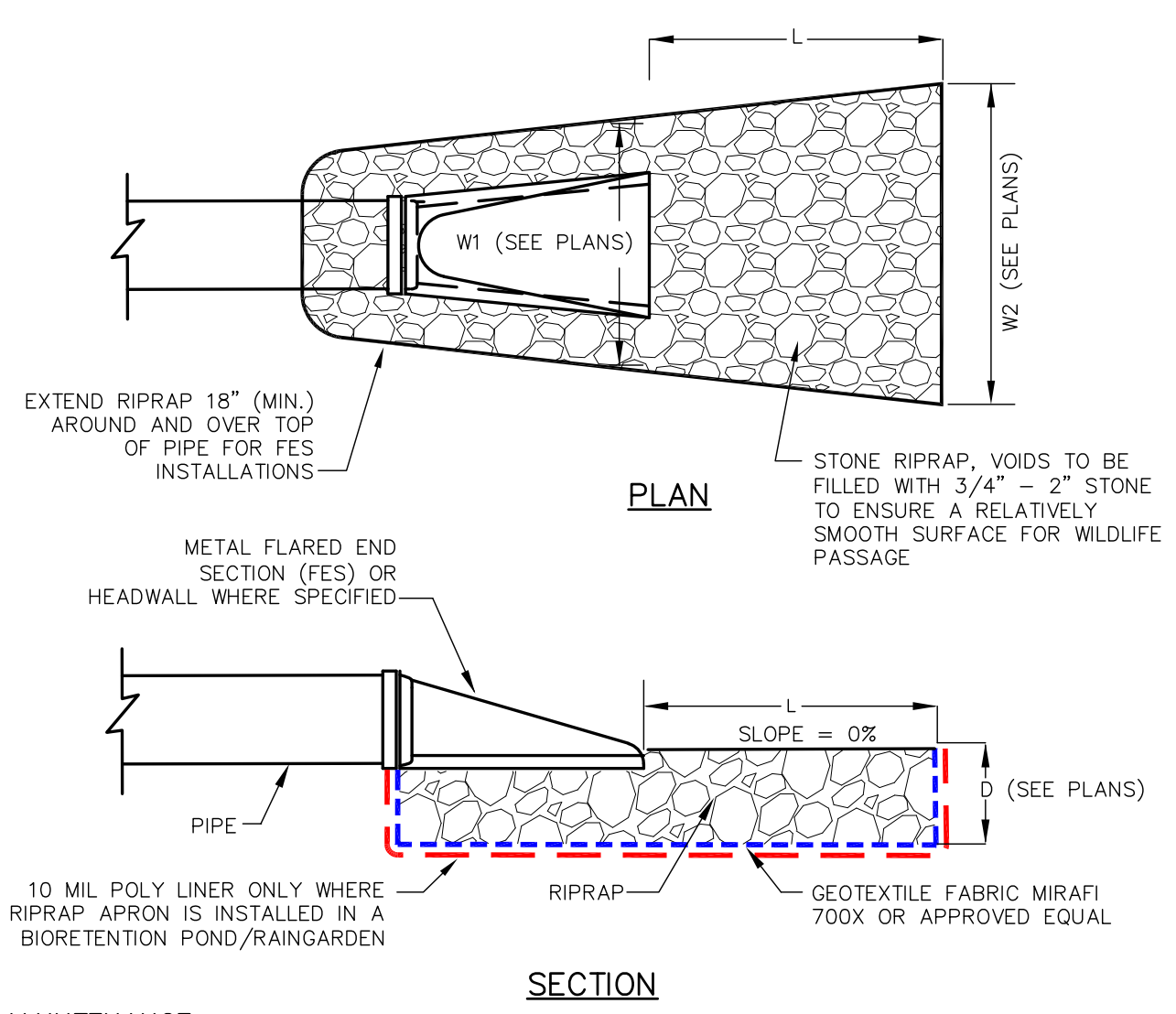
- NOTES**
1. ALL POST AND RAIL MATERIAL SHALL BE PRESSURE TREATED (PT). PT POSTS SHALL BE 7\"/>
- WOOD BEAM GUARDRAIL NOT TO SCALE**



- NOTES**
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
  2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6\"/>
  3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
  4. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4\"/>
  5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12\"/>
  6. ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 2\"/>
  7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4\"/>
  8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12\"/>



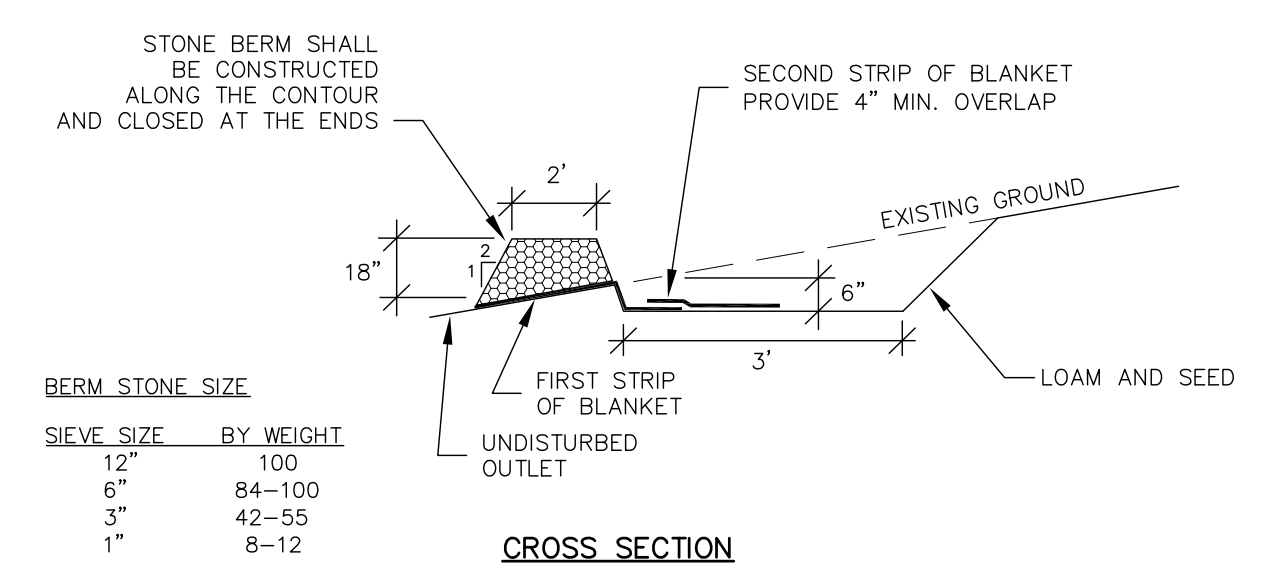
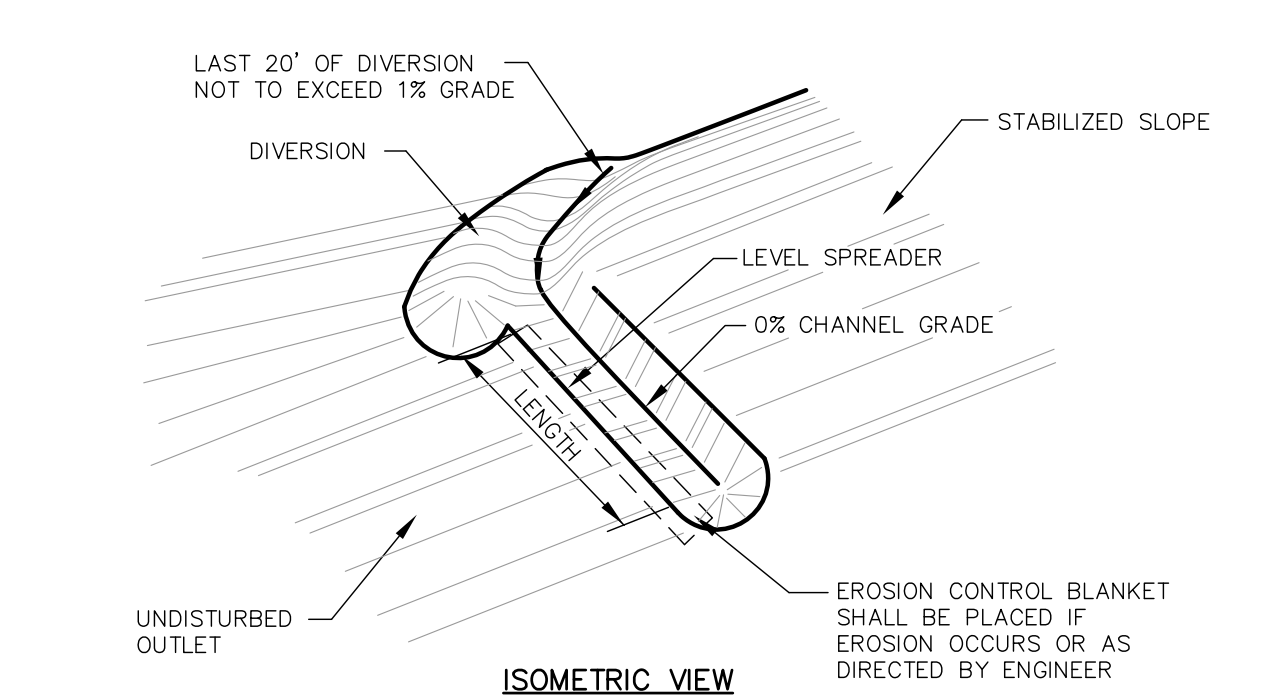
## EROSION CONTROL BLANKET - SWALE NOT TO SCALE



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

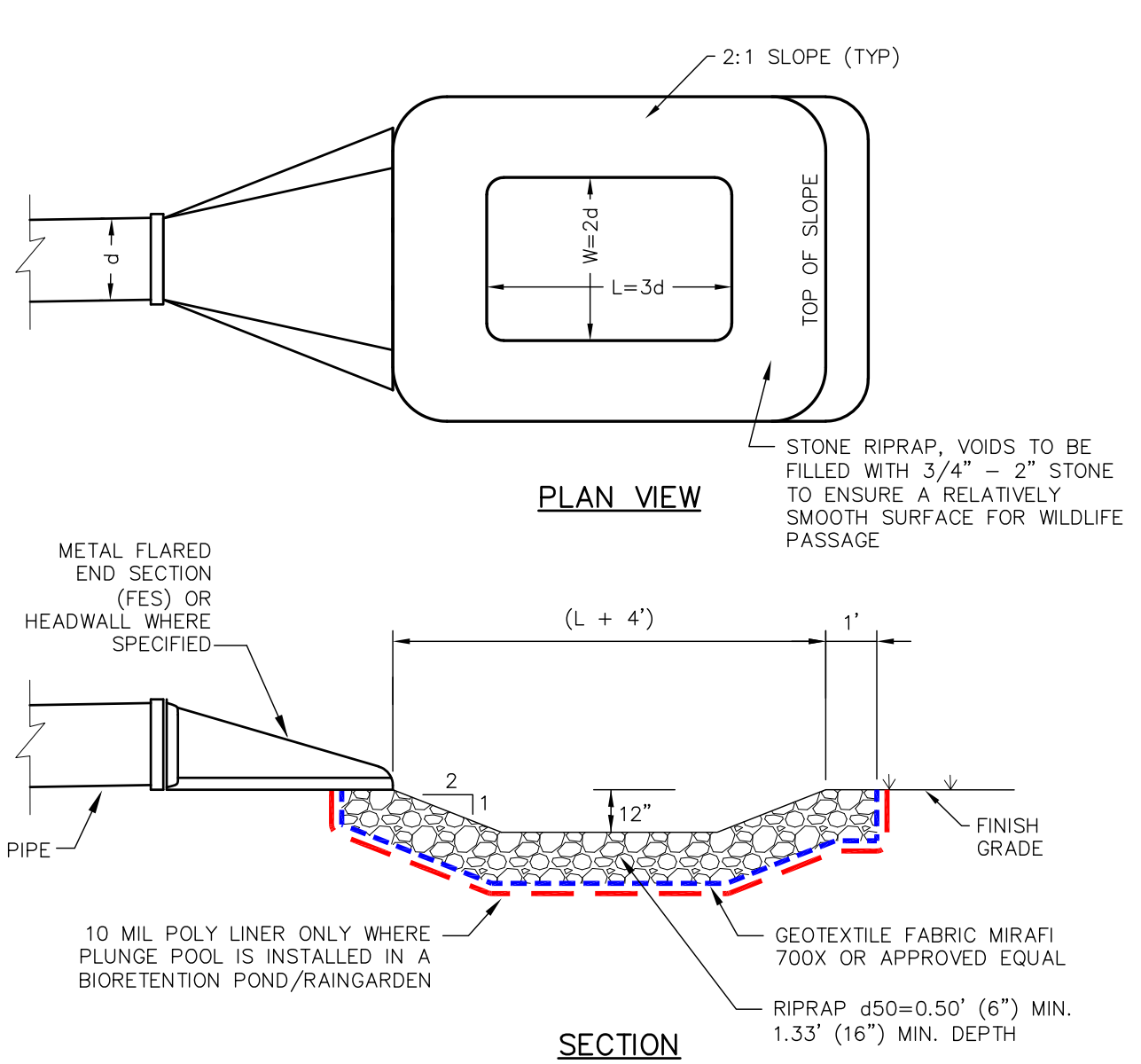
- CONSTRUCTION SPECIFICATIONS**
1. THE SUBGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIPRAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
  2. THE ROCK OR GRAVEL USED FOR FILTER OR RIPRAP SHALL CONFORM TO THE SPECIFIED GRADATION.
  3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM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

## RIPRAP OUTLET PROTECTION NOT TO SCALE



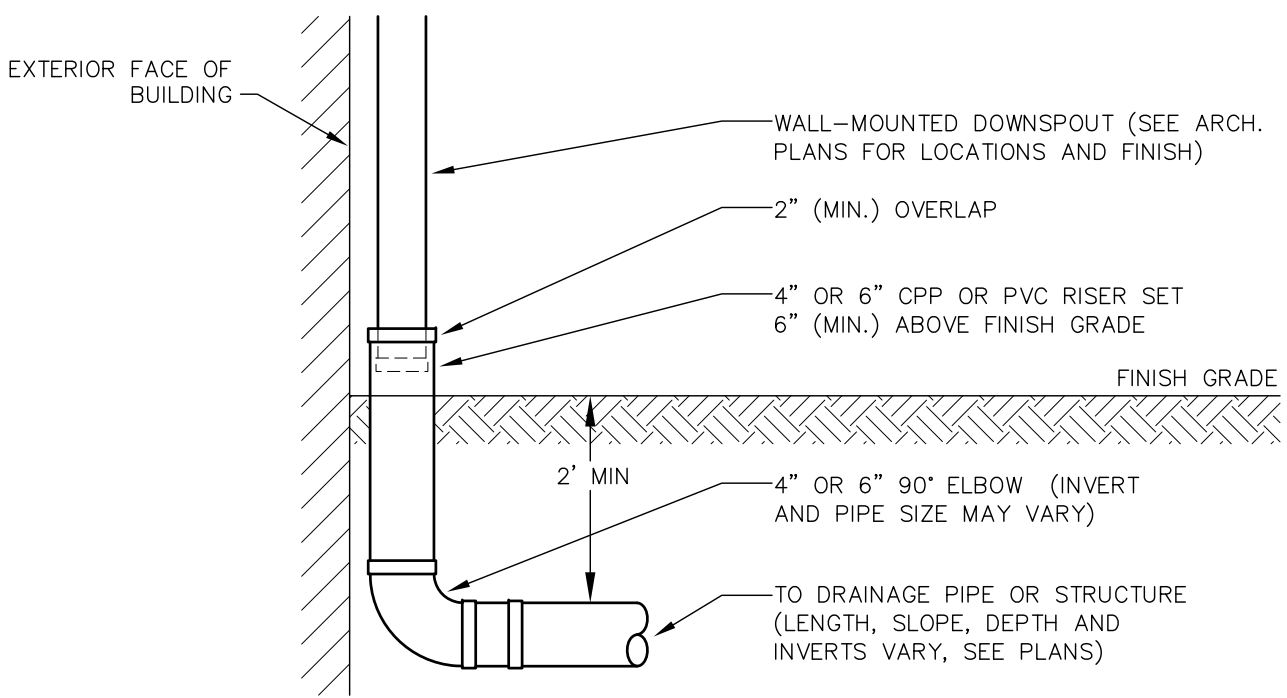
- NOTES**
1. LEVEL SPREADERS SHALL BE CONSTRUCTED PER STORMWATER MANAGEMENT FOR MAINE, "VOLUME III BMP'S TECHNICAL DESIGN MANUAL, CHAPTER 5.2.2, BUFFER WITH STONE BERMED LEVEL LIP SPREADER", LATEST EDITION.
  2. FOR EROSION CONTROL BLANKET STAPLE REQUIREMENTS SEE MANUFACTURER'S STANDARDS & SPECIFICATIONS FOR PROTECTIVE MATERIALS.
  3. AREAS BELOW LEVEL SPREADERS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.

## LEVEL SPREADER NOT TO SCALE

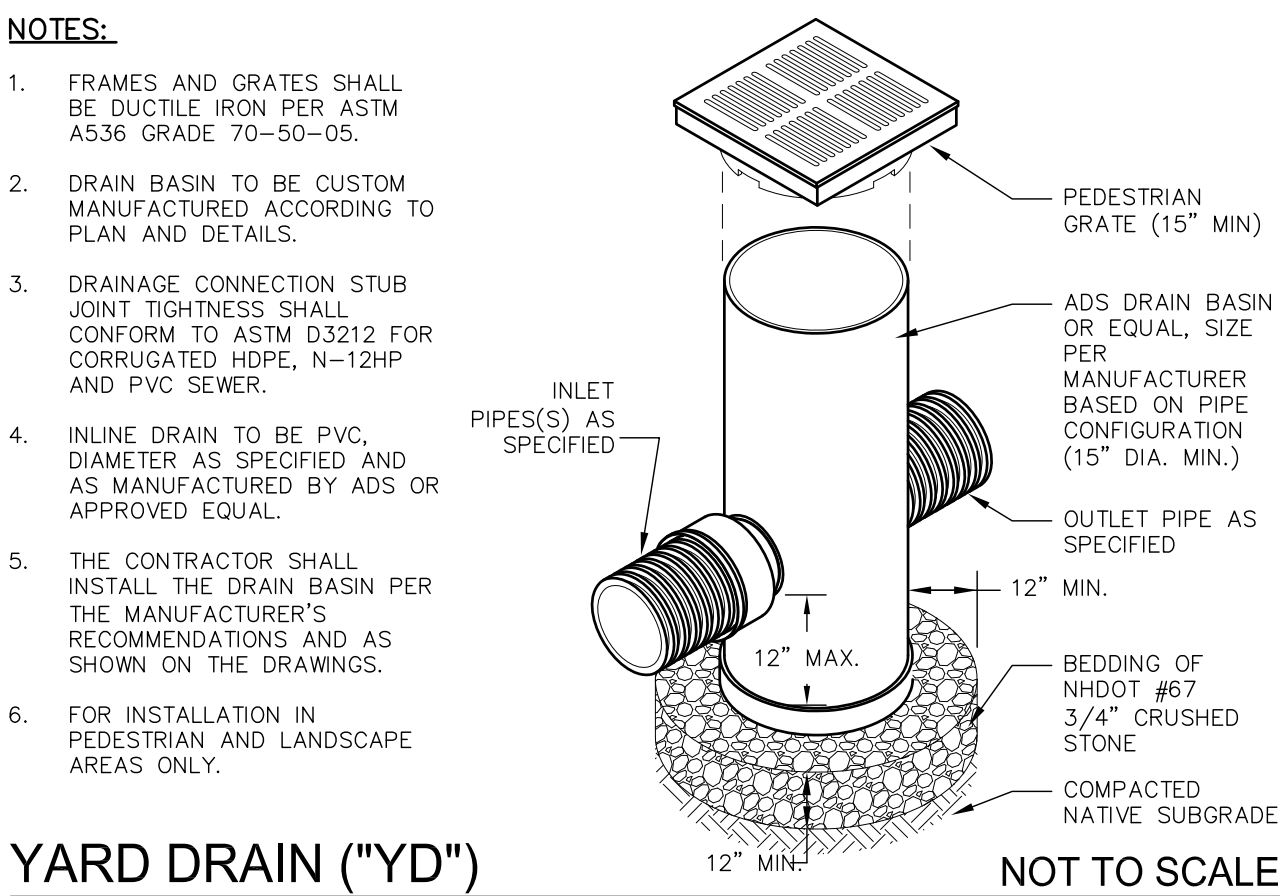


- NOTES**
1. CONSTRUCT PLUNGE POOL TO THE WIDTHS AND LENGTHS SHOWN ON THE PLAN.
  2. THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIPRAP SHALL BE PREPARED TO ACCOUNT FOR THE DEPTH OF RIPRAP.
  3. EROSION STONE USED FOR THE PLUNGE POOL SHALL MEET THE FOLLOWING GRADATION:
- | SIZE | PERCENT PASSING BY WEIGHT |
|------|---------------------------|
| 18"  | 100                       |
| 12"  | 90-100                    |
| 4"   | 0-15                      |
4. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE EROSION STONE. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 18".
  5. THE EROSION STONE MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.

## PLUNGE POOL NOT TO SCALE



## EXTERIOR ROOF DRAIN CONNECTION NOT TO SCALE



- NOTES:**
1. FRAMES AND GRATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
  2. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN AND DETAILS.
  3. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE, N-12HP AND PVC SEWER.
  4. INLINE DRAIN TO BE PVC, DIAMETER AS SPECIFIED AND AS MANUFACTURED BY ADS OR APPROVED EQUAL.
  5. THE CONTRACTOR SHALL INSTALL THE DRAIN BASIN PER THE MANUFACTURER'S RECOMMENDATIONS AND AS SHOWN ON THE DRAWINGS.
  6. FOR INSTALLATION IN PEDESTRIAN AND LANDSCAPE AREAS ONLY.

## YARD DRAIN ("YD") NOT TO SCALE

## NOT FOR CONSTRUCTION

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ISSUE DATE: JULY 23, 2025

REVISIONS  
NO. DESCRIPTION BY DATE  
0 REVIEW EBS 06/23/25

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APPROVED BY: EBS  
DRAWING FILE: 5440-SITE.dwg

SCALE: 24" x 36" - 1" = NTS  
11" x 17" - 1" = NTS

OWNER: RIVERWOODS DURHAM  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

APPLICANT: RIVERWOODS DURHAM  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

PROJECT: RIVERWOODS  
DURHAM PHASE II  
TAX MAP 209 LOT 33  
STONE QUARRY DRIVE  
& DOVER ROAD (NH 108)  
DURHAM, NH

TITLE:

## DETAIL SHEET

SHEET NUMBER:

C-13



**NOT FOR CONSTRUCTION**

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APPROVED BY: EBS  
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TAX MAP 209 LOT 33  
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DURHAM, NH

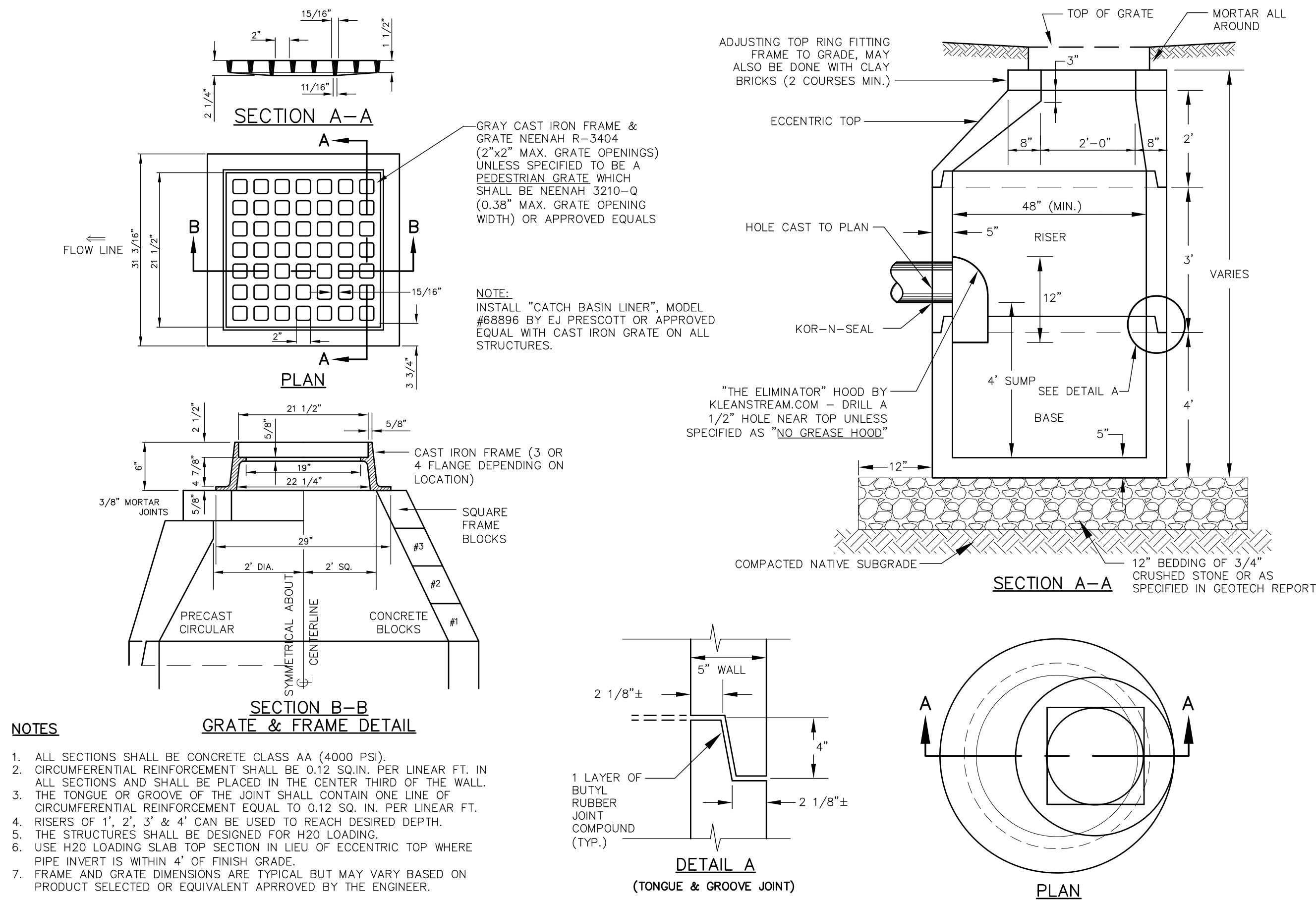
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DETAIL SHEET

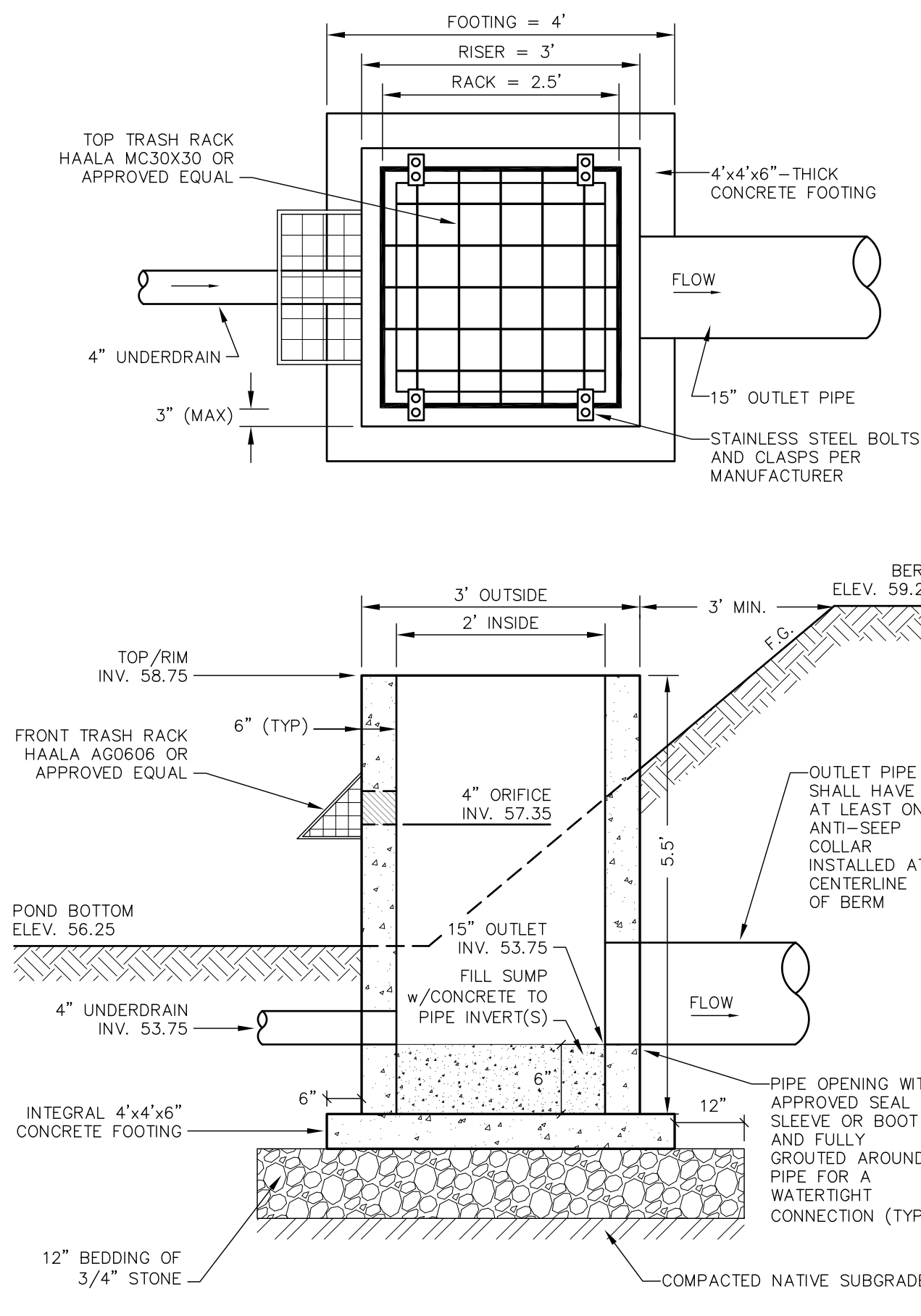
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C-14

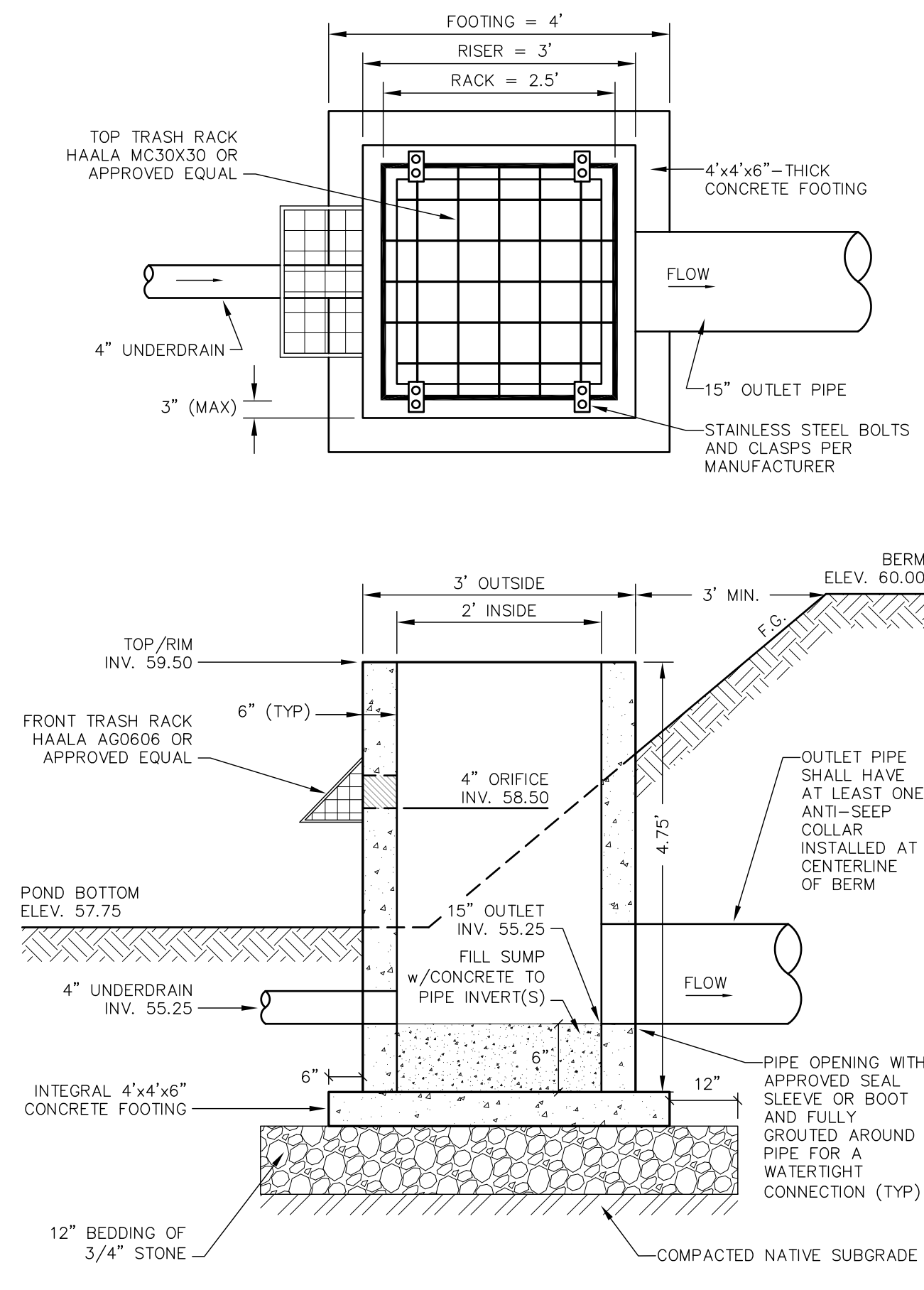
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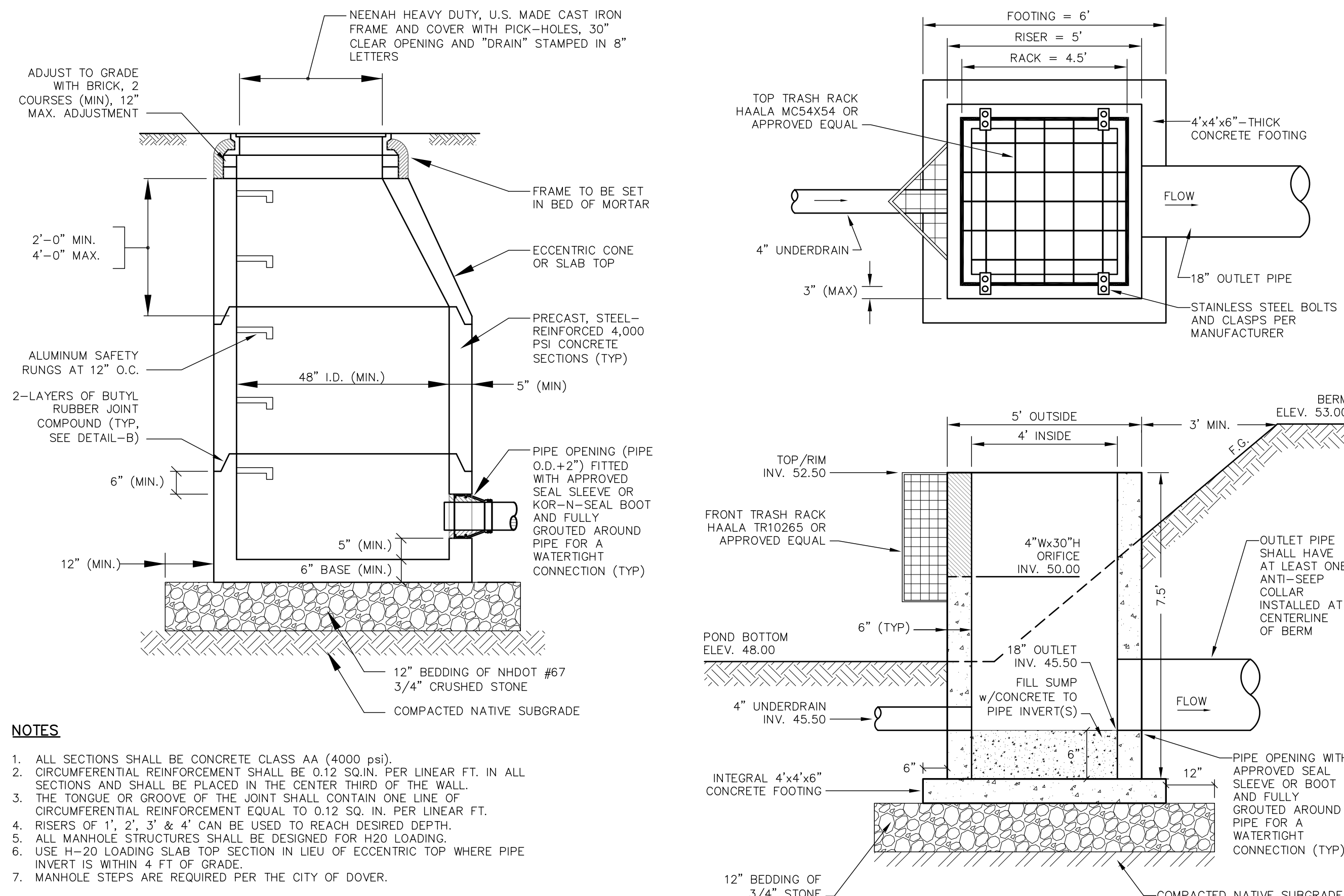
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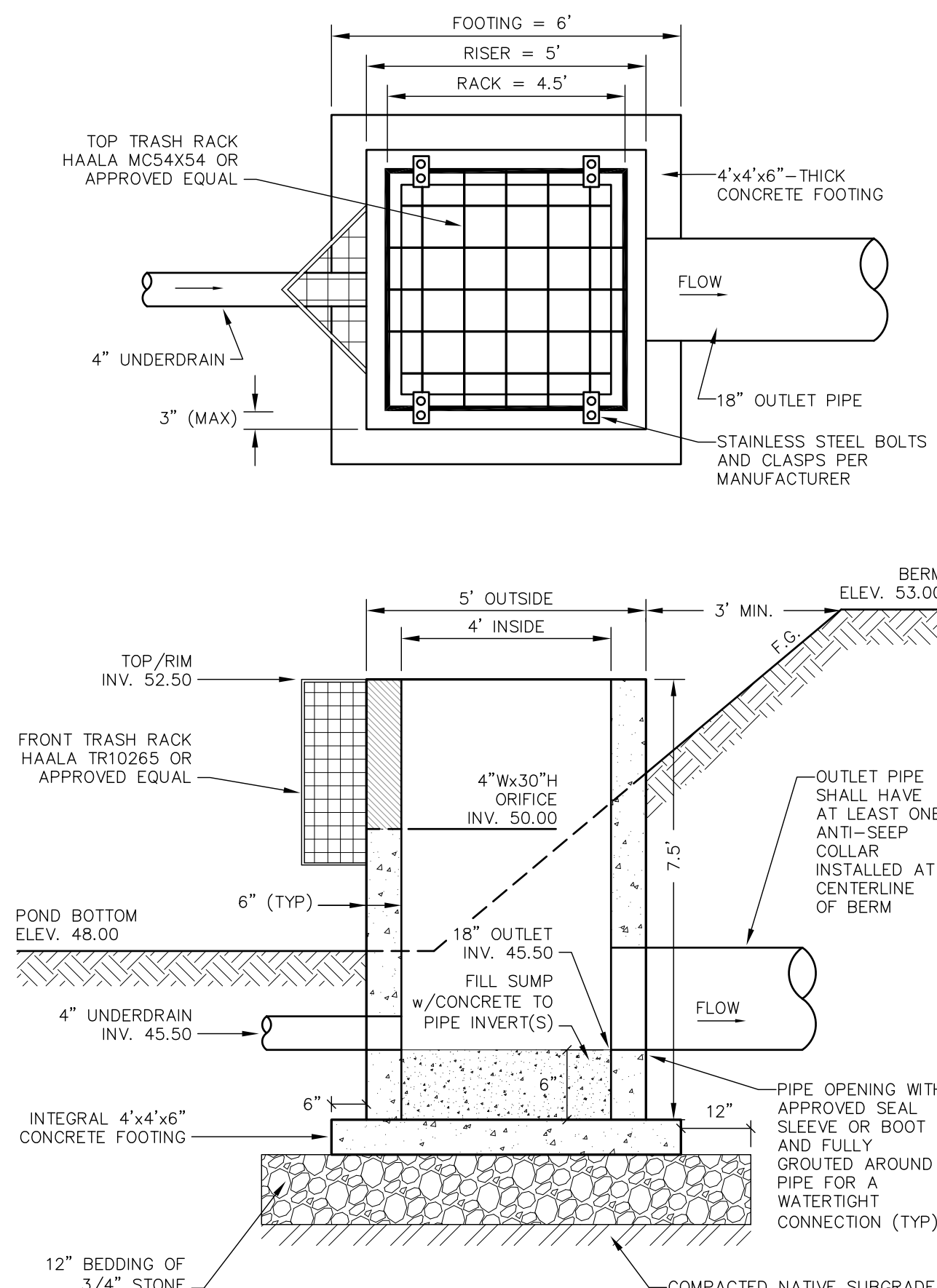
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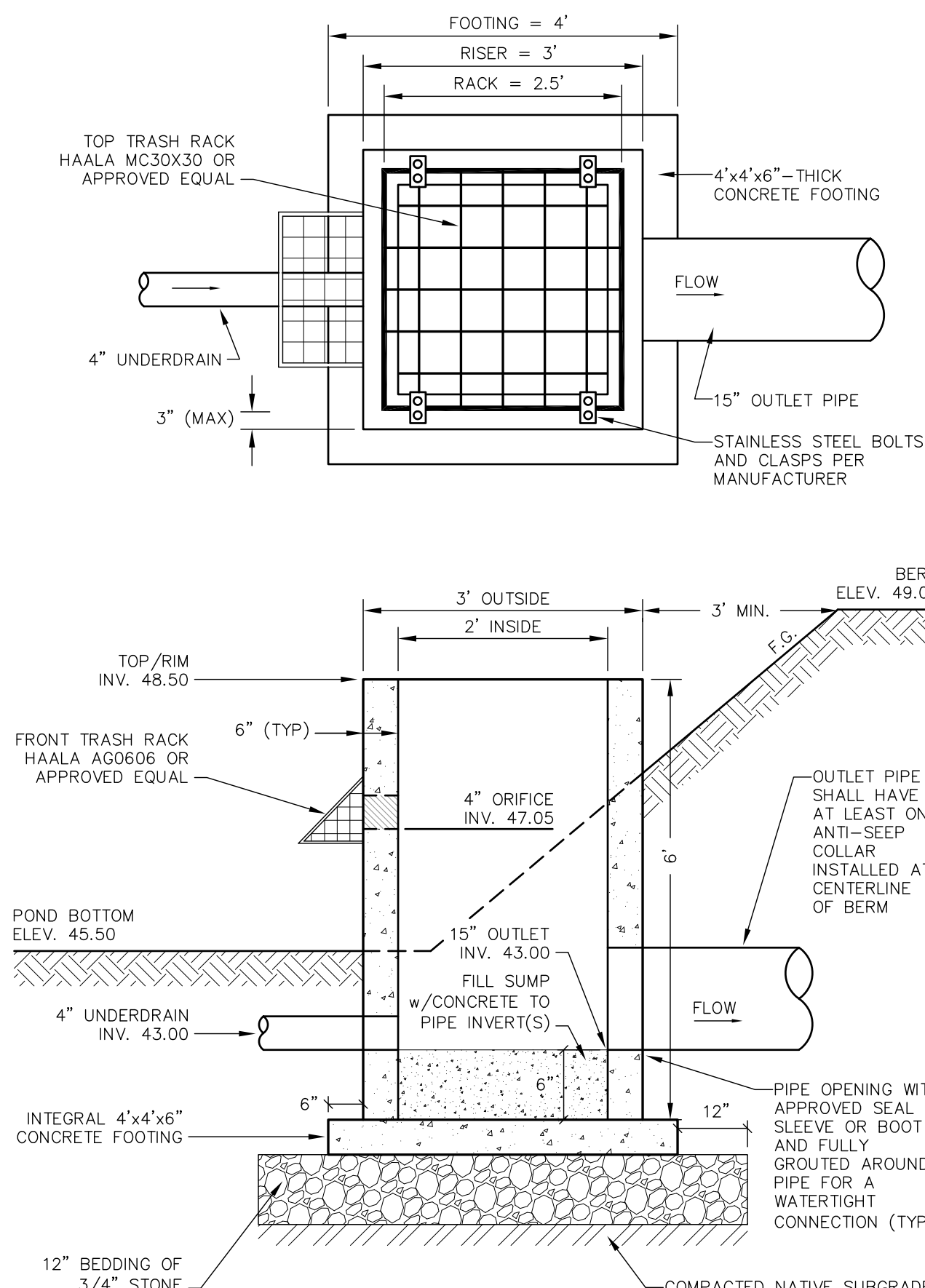
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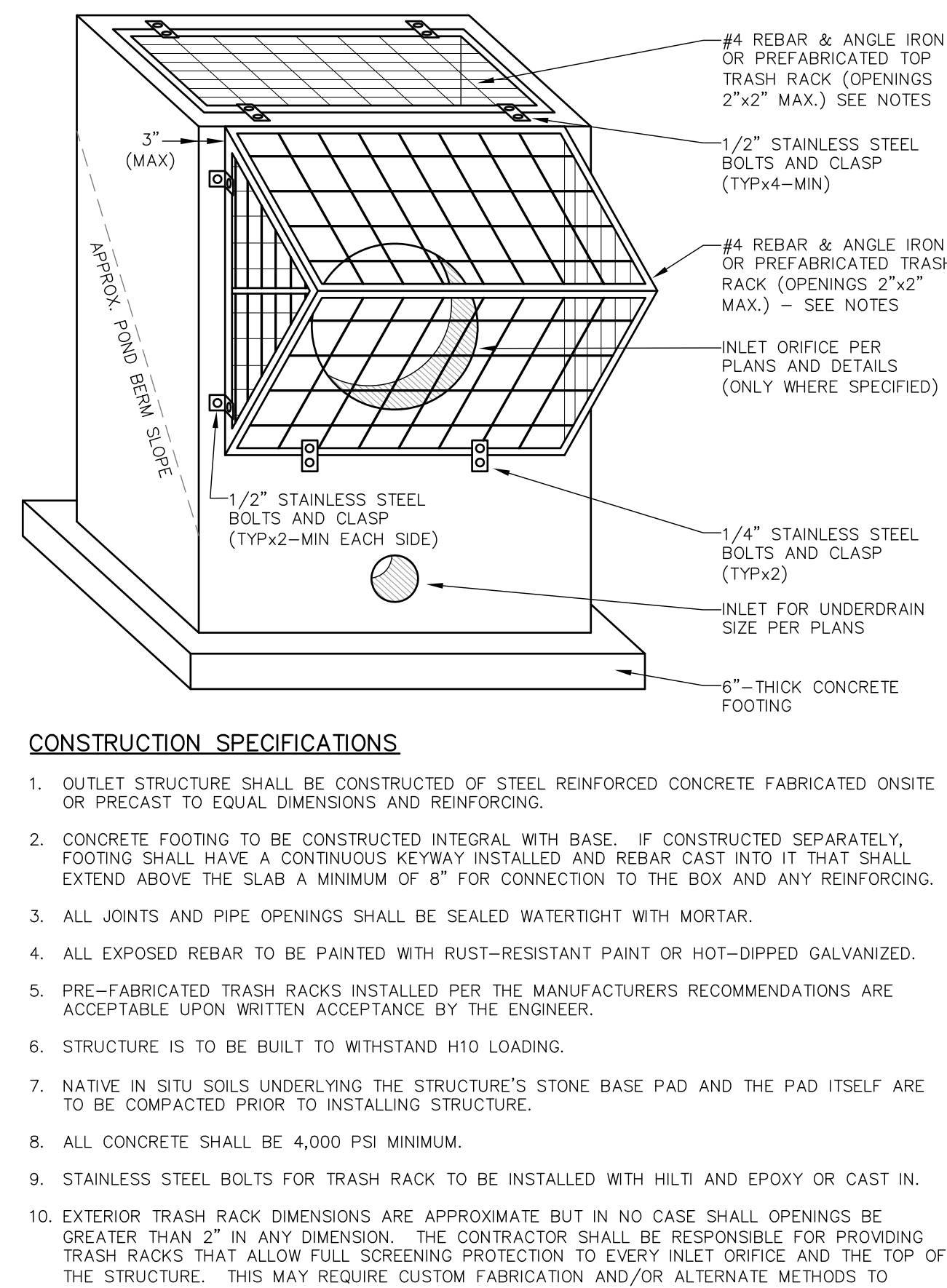
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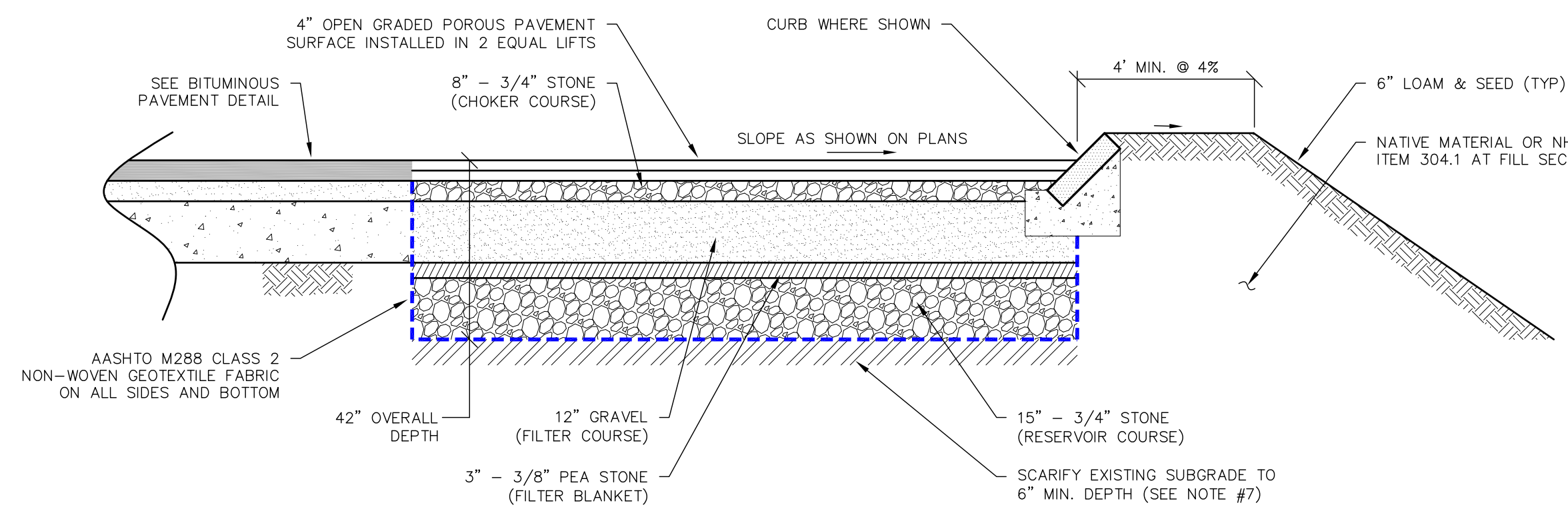
NOT TO SCALE



NOT TO SCALE

- CONSTRUCTION SPECIFICATIONS**
- OUTLET STRUCTURE SHALL BE CONSTRUCTED OF STEEL REINFORCED CONCRETE FABRICATED ONSITE OR PRECAST TO EQUAL DIMENSIONS AND REINFORCING.
  - CONCRETE FOOTING TO BE CONSTRUCTED INTEGRAL WITH BASE. IF CONSTRUCTED SEPARATELY, FOOTING SHALL HAVE A CONTINUOUS KEYWAY INSTALLED AND REBAR CAST INTO IT THAT SHALL EXTEND ABOVE THE SLAB A MINIMUM OF 8" FOR CONNECTION TO THE BOX AND ANY REINFORCING.
  - ALL JOINTS AND PIPE OPENINGS SHALL BE SEALED WATERTIGHT WITH MORTAR.
  - ALL EXPOSED REBAR TO BE PAINTED WITH RUST-RESISTANT PAINT OR HOT-DIPPED GALVANIZED.
  - PRE-FABRICATED TRASH RACKS INSTALLED PER THE MANUFACTURERS RECOMMENDATIONS ARE ACCEPTABLE UPON WRITTEN ACCEPTANCE BY THE ENGINEER.
  - STRUCTURE IS TO BE BUILT TO WITHSTAND H10 LOADING.
  - NATIVE IN SITU SOILS UNDERLYING THE STRUCTURE'S STONE BASE PAD AND THE PAD ITSELF ARE TO BE COMPACTED PRIOR TO INSTALLING STRUCTURE.
  - ALL CONCRETE SHALL BE 4,000 PSI MINIMUM.
  - STAINLESS STEEL BOLTS FOR TRASH RACK TO BE INSTALLED WITH HILTI AND EPOXY OR CAST IN.
  - EXTERIOR TRASH RACK DIMENSIONS ARE APPROXIMATE BUT IN NO CASE SHALL OPENINGS BE GREATER THAN 2" IN ANY DIMENSION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TRASH RACKS THAT ALLOW FULL SCREENING PROTECTION TO EVERY INLET ORIFICE AND THE TOP OF THE STRUCTURE. THIS MAY REQUIRE CUSTOM FABRICATION AND/OR ALTERNATE METHODS TO CONNECT THE RACKS TO THE OUTLET STRUCTURE.





| MATERIAL GRADATIONS        |                     |                         |                     |                               |                     |                                 |                     |
|----------------------------|---------------------|-------------------------|---------------------|-------------------------------|---------------------|---------------------------------|---------------------|
| 3/4" STONE CHOKER COURSE * |                     | GRAVEL FILTER COURSE ** |                     | 3/8" PEA STONE FILTER BLANKET |                     | 3/4" STONE RESERVOIR COURSE *** |                     |
| Sieve size                 | % Passing by weight | Sieve size              | % Passing by weight | Sieve size                    | % Passing by weight | Sieve size                      | % Passing by weight |
| 1"                         | 100%                | 3/8"                    | 100%                | 1/2"                          | 100%                | 1"                              | 100%                |
| 3/4"                       | 90 - 100%           | #4                      | 70 - 85%            | 3/8"                          | 85 - 100%           | 3/4"                            | 90 - 100%           |
| 3/8"                       | 20 - 55%            | #8                      | 0 - 6%              | #4                            | 10 - 30%            | #8                              | 20 - 55%            |
| #4                         | 0 - 10%             |                         |                     | #8                            | 0 - 10%             | #4                              | 0 - 10%             |
| #8                         | 0 - 5%              |                         |                     | #16                           | 0 - 5%              | #8                              | 0 - 5%              |

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

\*\* NHDOT ITEM 304.1 SAND MAY BE SUBSTITUTED UPON WRITTEN APPROVAL OF THE ENGINEER

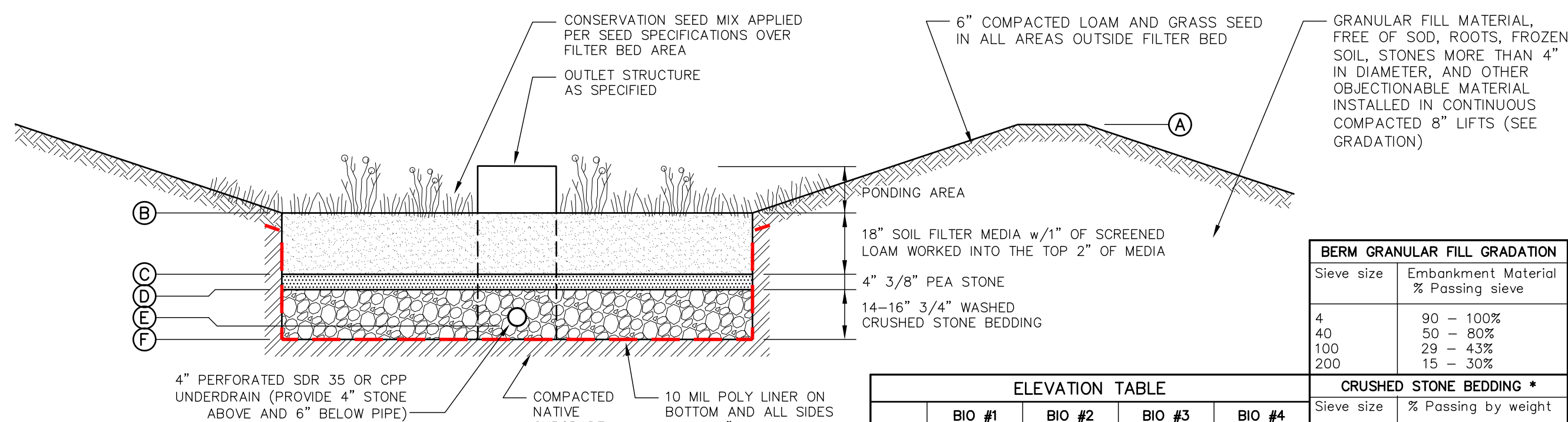
\*\*\* EQUIVALENT TO STANDARD STONE SIZE #67 - SECTION 703 NHDOT STANDARD SPECIFICATIONS

NOTES:

- DESIGN OF POROUS PAVEMENT SHALL BE IN ACCORDANCE WITH UNHSC DESIGN SPECIFICATIONS FOR POROUS ASPHALT PAVEMENT AND INFILTRATION BEDS.
- THE CONSTRUCTION OF THE POROUS PAVEMENT SHALL BE IN ACCORDANCE WITH THE UNHSC DESIGN SPECIFICATIONS FOR POROUS ASPHALT PAVEMENT AND INFILTRATION BEDS.
- CONTRACTOR SHALL PROVIDE SUBMITTALS FOR POROUS PAVEMENT AS NOTED IN THE SPECIFICATIONS A MINIMUM OF 14-DAYS PRIOR TO COMMENCING CONSTRUCTION.
- THE ENGINEER SHALL INSPECT SITE PREPARATION AND INSTALLATION OF POROUS PAVEMENT.
- CONTRACTOR SHALL NOTIFY ENGINEER A MINIMUM OF 7 DAYS IN ADVANCE OF WORK SO THAT THE ENGINEER CAN OBSERVE INSTALLATION OF POROUS PAVEMENT CROSS SECTION.
- CONTRACTOR TO REMOVE ANY EXISTING BURIED LAYERS OF LOAM OR UNSUITABLE MATERIAL ENCOUNTERED DURING THE EXCAVATION OF THE POROUS PAVEMENT AREA TO AT LEAST 18" BELOW THE BOTTOM OF THE POROUS PAVEMENT CROSS SECTION.
- PROOF ROLL THE EXISTING SUBGRADE PRIOR TO SCARIFYING ONLY AT AREAS REQUESTED BY THE ENGINEER. SAND FILL SHALL BE ADDED IN ALL LOCATIONS WHERE THE BOTTOM OF THE RESERVOIR COURSE IS ABOVE THE EXISTING SUBGRADE.
- POROUS PAVEMENT BASE MATERIAL AND ASPHALT SHALL NOT BE INSTALLED UNTIL ALL OTHER SITE WORK AND BUILDING CONSTRUCTION IS SUBSTANTIALLY COMPLETE AND THE SURROUNDING AREA HAS BEEN STABILIZED. THIS SHALL INCLUDE THE INSTALLATION OF LANDSCAPING.
- THE TOP LAYER (WEARING COURSE) SHALL BE PRE-BLENDED PG 76-28 MODIFIED WITH SBS. THE BASE COURSE SHOULD BE, AT A MINIMUM, PG 64-28 WITH 5 POUNDS OF FIBER PER TON ASPHALT MIX. IF SUFFICIENT STAGING OR USE OF THE BASE COURSE SECTION WILL BE REQUIRED PRIOR TO THE APPLICATION OF THE WEARING COURSE, THE USE OF PRE-BLENDED PG 64V-28 MODIFIED WITH SBS ON BOTH COURSES MAY PERMITTED AT THE DISCRETION OF THE ENGINEER.
- AFTER INSTALLATION, THE MIXING OR RINSING OF CONCRETE, GYPSUM, PAINT OR ANY OTHER SIMILAR ACTIVITY SHALL BE STRICTLY PROHIBITED ON ANY SECTION OF POROUS PAVEMENT OR IN ANY UPHILL CONTRIBUTING AREA.

POROUS PAVEMENT CROSS SECTION

NOT TO SCALE



NOTES:

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

MAINTENANCE REQUIREMENTS

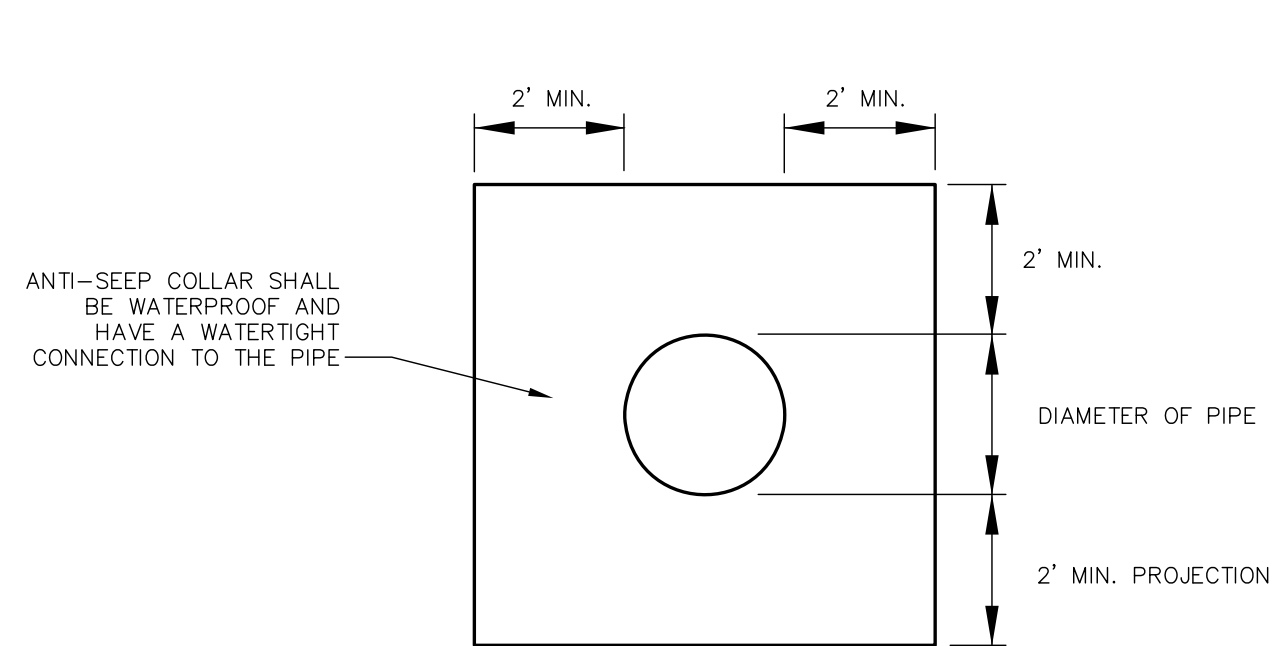
- SYSTEMS SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND FOLLOWING ANY RAINFALL EXCEEDING 2.5 INCHES IN A 24-HOUR PERIOD, WITH MAINTENANCE OR REHABILITATION CONDUCTED AS A WARRANTED BY SUCH INSPECTION.
- PRETREATMENT MEASURES SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND CLEANED OF ACCUMULATED SEDIMENT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

DESIGN REFERENCES

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

BIORETENTION POND (BIO #S 1, 2, 3 AND 4)

NOT TO SCALE

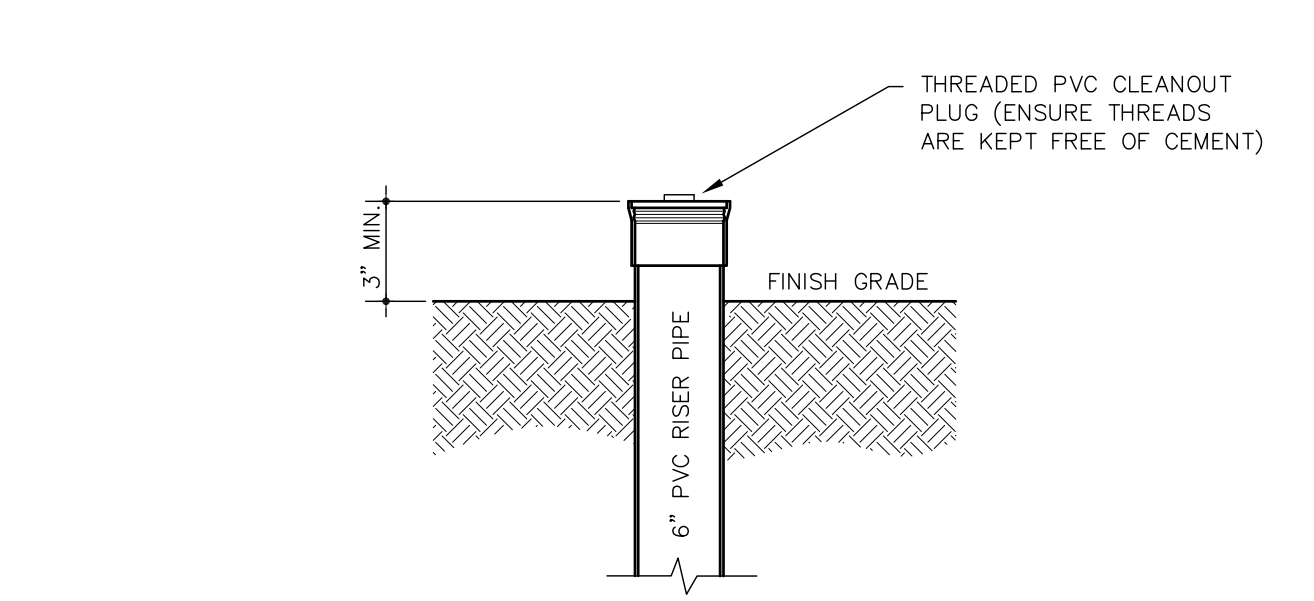


NOTES:

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

ANTI-SEEP COLLAR

NOT TO SCALE

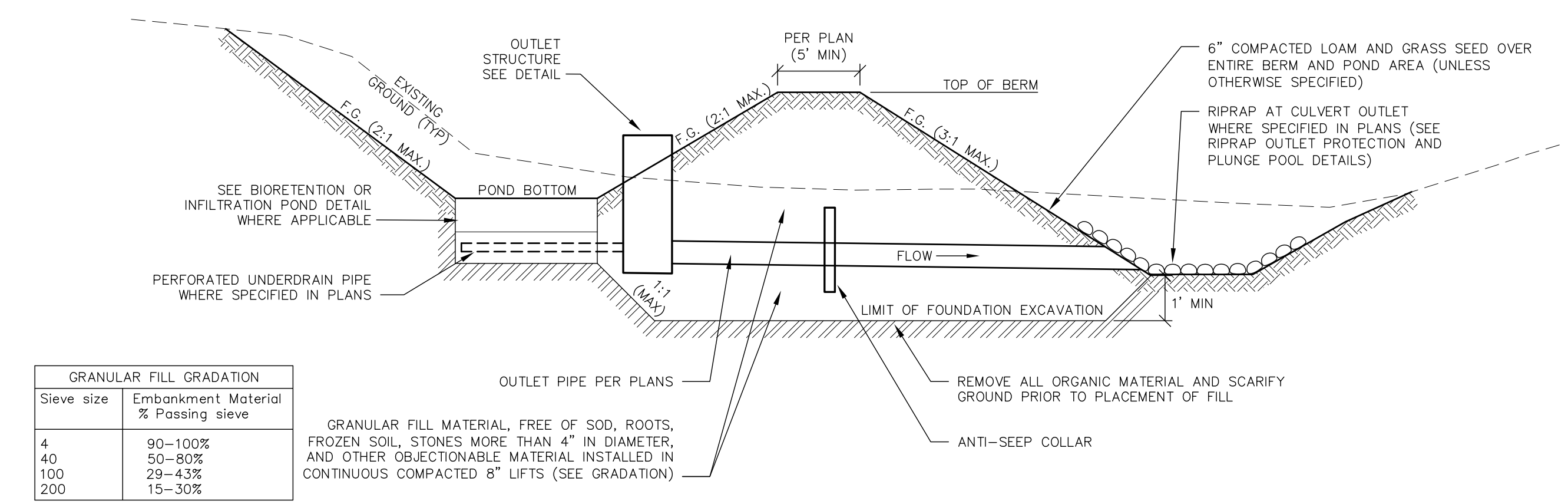


NOTES:

- THIS DETAIL IS INTENDED FOR USE WITH BIORETENTION POND UNDERDRAINS ONLY. SEE OTHER DETAILS FOR CLEANOUTS IN OTHER AREAS.
- CLEANOUT LOCATIONS ARE MARKED "CO" ON STORMWATER MANAGEMENT PLANS.
- CLEANOUTS MAY NOT BE SET TO FINISH GRADE WITHOUT APPROVAL FROM THE ENGINEER.

BIORETENTION U.D. CLEANOUT ("CO")

NOT TO SCALE



Construction Criteria

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

Maintenance

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

The following should be considered in formulating a maintenance plan:

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

STORMWATER POND BERM DETAIL

NOT TO SCALE

| ELEVATION TABLE |        |        |        |        |
|-----------------|--------|--------|--------|--------|
|                 | BIO #1 | BIO #2 | BIO #3 | BIO #4 |
| (A)             | 59.25  | 60.00  | 53.00  | 49.00  |
| (B)             | 56.25  | 57.75  | 48.00  | 45.50  |
| (C)             | 54.75  | 56.25  | 46.50  | 44.00  |
| (D)             | 54.42  | 55.92  | 46.17  | 43.67  |
| (E)             | 53.75  | 55.25  | 45.50  | 43.00  |
| (F)             | 53.25  | 54.75  | 45.00  | 42.50  |

| CRUSHED STONE BEDDING * |                     |
|-------------------------|---------------------|
| Sieve size              | % Passing by weight |
| 1"                      | 100%                |
| 3/4"                    | 90 - 100%           |
| 3/8"                    | 20 - 55%            |
| #4                      | 0 - 10%             |
| #8                      | 0 - 5%              |

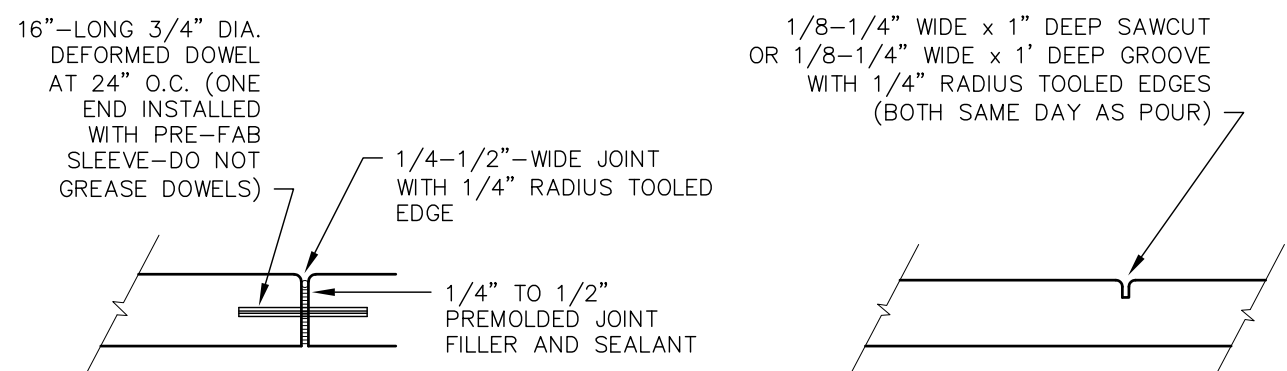
\* EQUIVALENT TO STANDARD STONE SIZE #67 - SECTION 703 NHDOT STANDARD SPECIFICATIONS

| FILTER MEDIA MIXTURES                                                      |                              |                       |                                          |
|----------------------------------------------------------------------------|------------------------------|-----------------------|------------------------------------------|
| Component Material                                                         | Percent of Mixture by Volume | Gradation of material |                                          |
|                                                                            |                              | Sieve No.             | Percent by Weight Passing Standard Sieve |
| Filter Media Option A                                                      |                              |                       |                                          |
| ASTM C-33 concrete sand                                                    | 50 - 55%                     |                       |                                          |
| Loamy sand topsoil, with fines as indicated                                | 20 - 30%                     | 200                   | 15 to 25%                                |
| Moderately fine shredded bark or wood fiber mulch, with fines as indicated | 20 - 30%                     | 200                   | < 5%                                     |
| Filter Media Option B                                                      |                              |                       |                                          |
| Moderately fine shredded bark or wood fiber mulch, with fines as indicated | 20 - 30%                     | 200                   | < 5%                                     |
| Loamy coarse sand                                                          | 70 - 80%                     | 10                    | 85 - 100%                                |
|                                                                            |                              | 20                    | 70 - 100%                                |
|                                                                            |                              | 60                    | 15 - 40%                                 |
|                                                                            |                              | 200                   | 8 - 15%                                  |

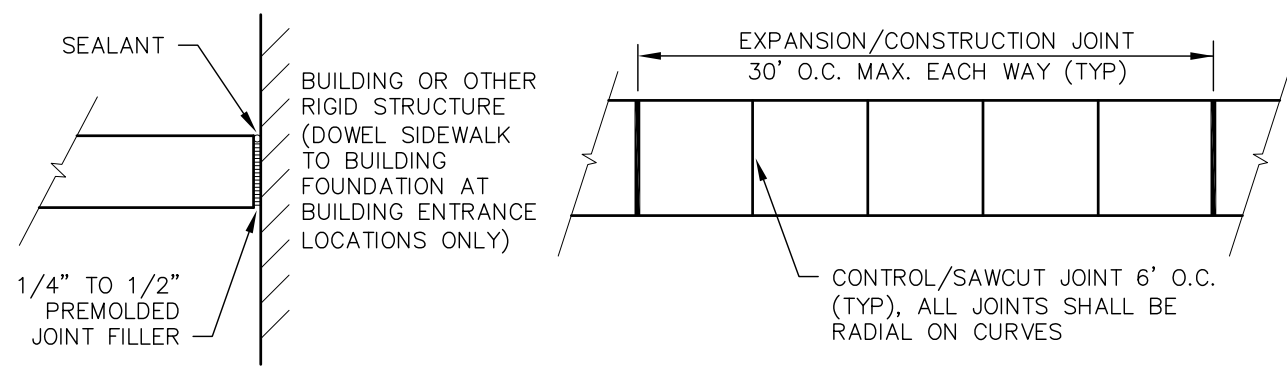




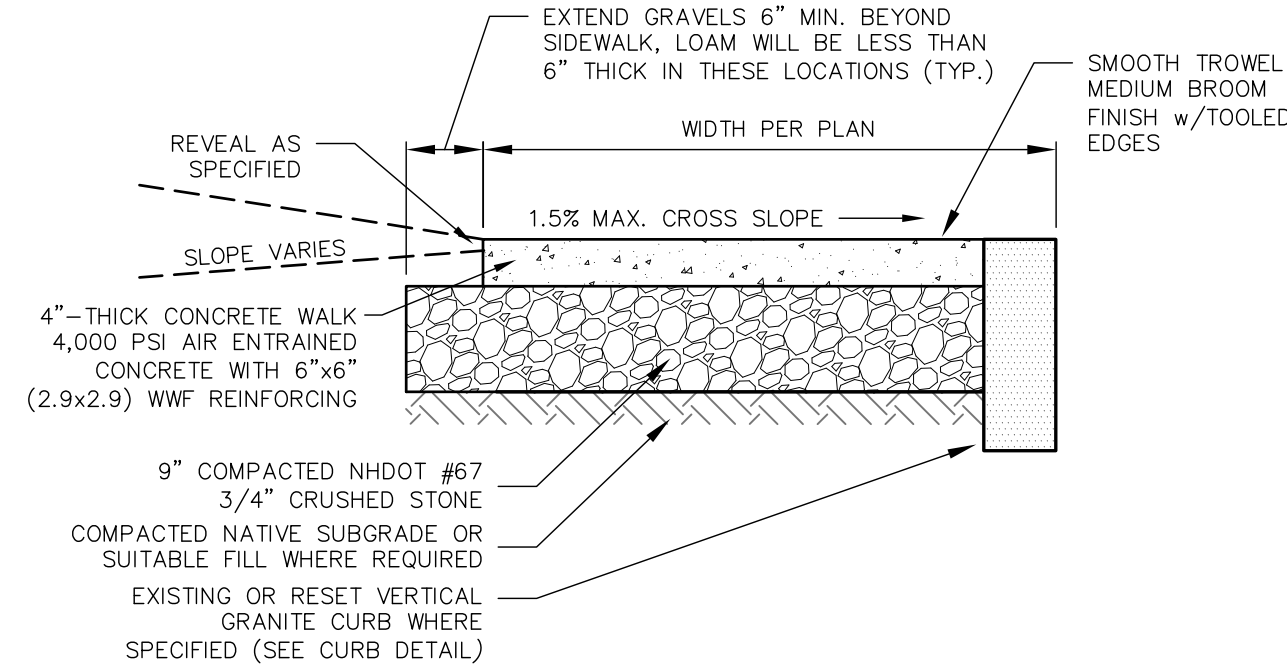




EXPANSION/CONSTRUCTION JOINT CONTROL/SAWCUT JOINT

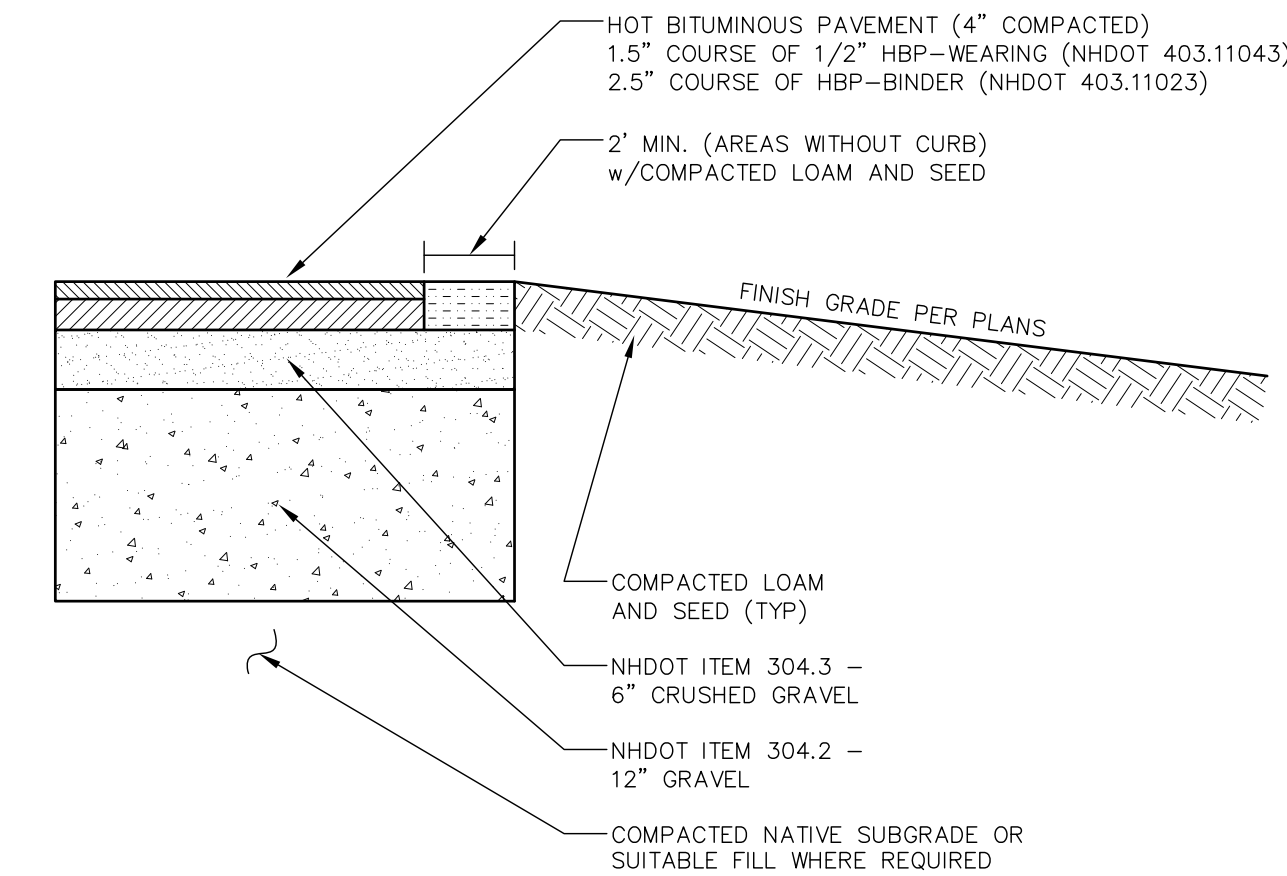


ISOLATION JOINT PLAN



**NOTE**  
1. JOINTS IN CONCRETE SIDEWALKS SHALL CONFORM TO THE TYPES AND LOCATIONS SHOWN IN THE HEAVY-DUTY CONCRETE PAVEMENT DETAIL

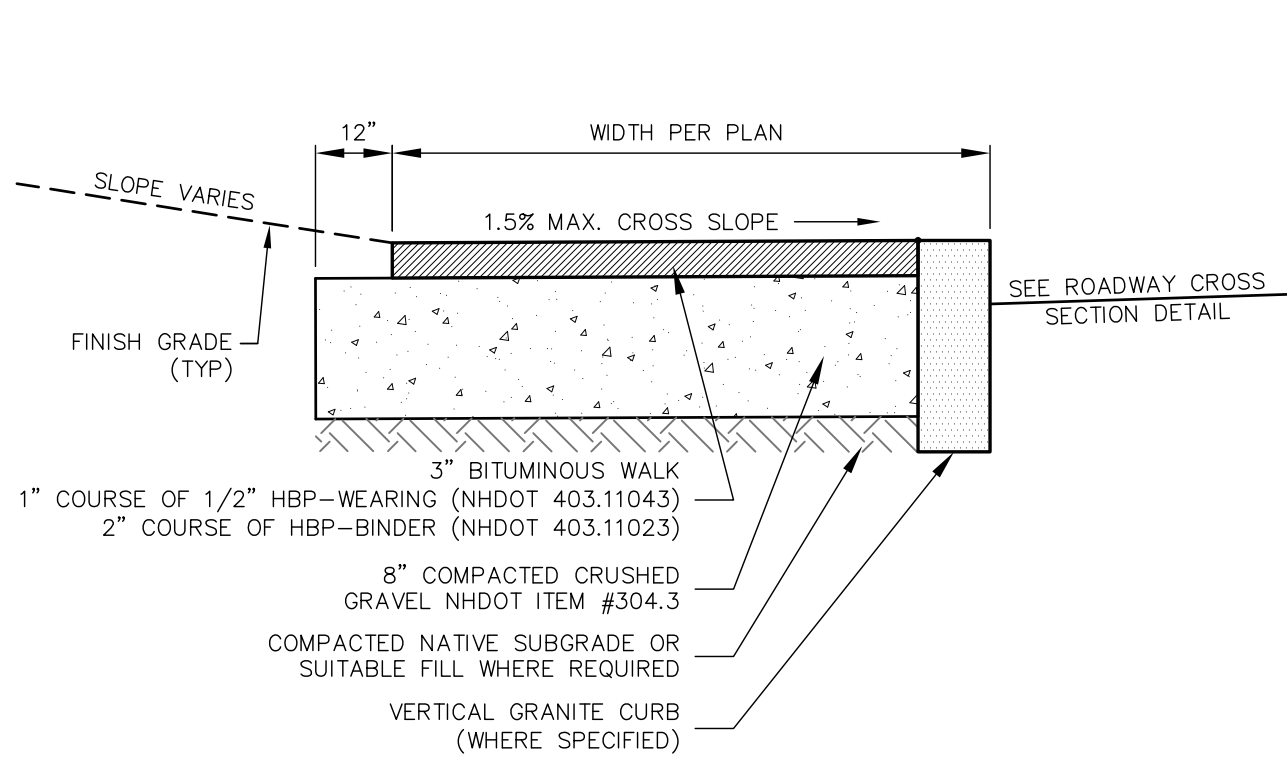
CONCRETE SIDEWALK NOT TO SCALE



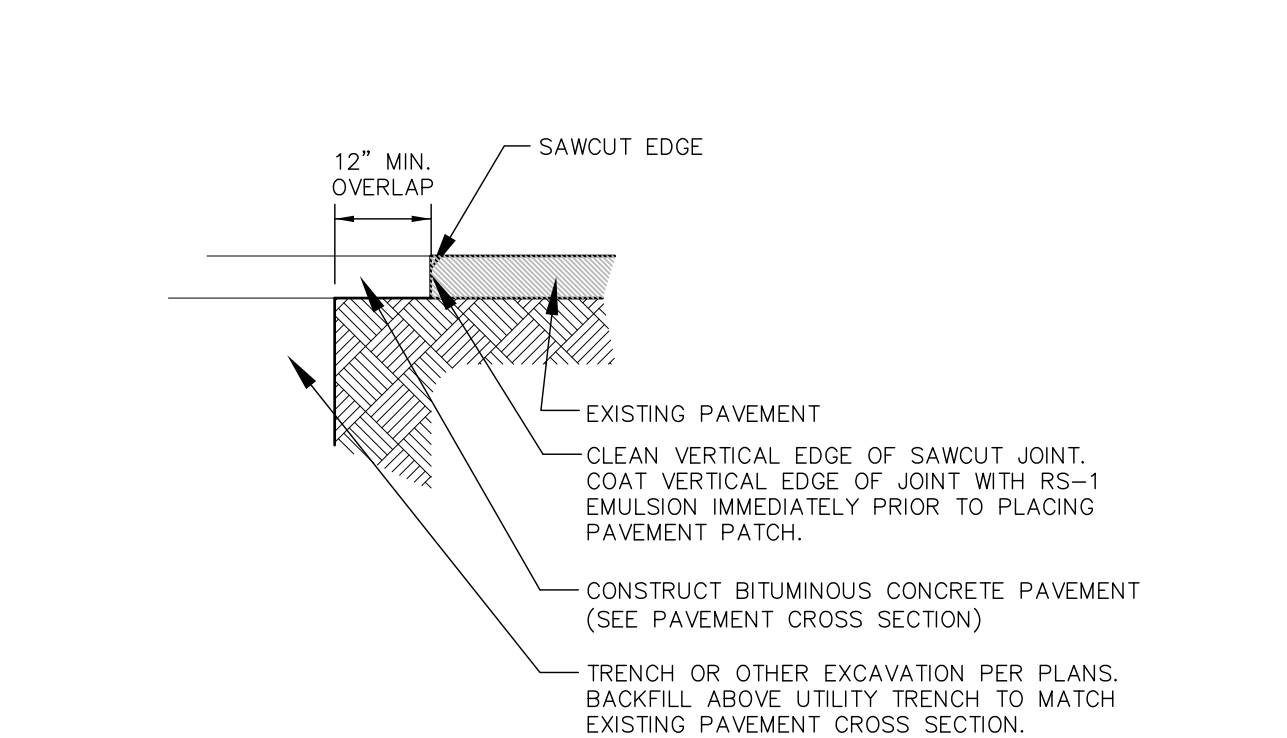
**NOTES FOR STANDARD AND HEAVY DUTY ASPHALT PAVEMENT**

1. PROJECT GEOTECHNICAL REPORT MAY REQUIRE A DIFFERENT PAVEMENT CROSS SECTION(S). THE CONTRACTOR SHALL BE RESPONSIBLE FOR READING AND FOLLOWING ALL RECOMMENDATIONS IN THE GEOTECHNICAL REPORT. IN THE EVENT THAT THE REPORT AND CIVIL PLANS DIFFER, THE MORE STRINGENT SPECIFICATION SHALL APPLY.
2. REMOVE ALL LOAM, CLAY, MUCK, ORGANIC, YIELDING OR OTHERWISE UNSTABLE MATERIAL TO A MINIMUM OF 24" BELOW FINISH 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.
3. SUBGRADE SHALL BE PROOFROLLED A MINIMUM OF 6 PASSES WITH A 10-TON VIBRATORY COMPACTOR OPERATING AT PEAK RATED FREQUENCY OR BY MEANS APPROVED BY THE ENGINEER.
4. FILL BELOW PAVEMENT SUBGRADE SHALL BE SAND OR GRANULAR BORROW COMPACTED PER DOT REQUIREMENTS.
5. SITEWORK CONTRACTOR SHALL COORDINATE GEOTECHNICAL ENGINEERING INSPECTIONS WITH THE CONSTRUCTION MANAGER PRIOR TO PLACING GRAVELS.
6. BITUMINOUS PAVEMENT SHALL BE COMPACTED TO 90 TO 97 PERCENT OF ITS THEORETICAL MAXIMUM DENSITY AS DETERMINED BY ASTM D-2041. THE BASE AND SUBBASE MATERIALS SHOULD BE COMPACTED TO AT LEAST 95 PERCENT OF THEIR MAXIMUM DRY DENSITIES AS DETERMINED BY ASTM D-1557. 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.
7. TACK COAT SHALL BE APPLIED BETWEEN SUCCESSIVE LIFTS OF ASPHALT.

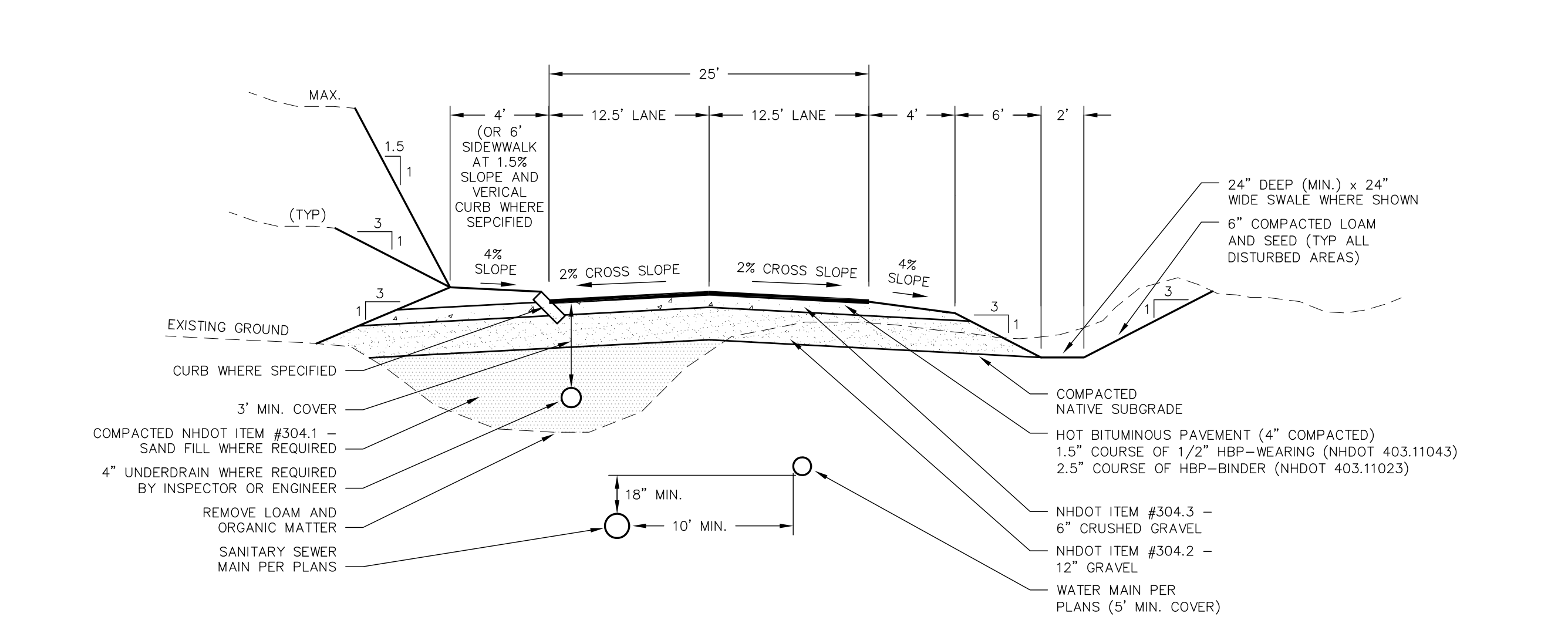
STANDARD DUTY ASPHALT PAVEMENT NOT TO SCALE



BITUMINOUS SIDEWALK NOT TO SCALE

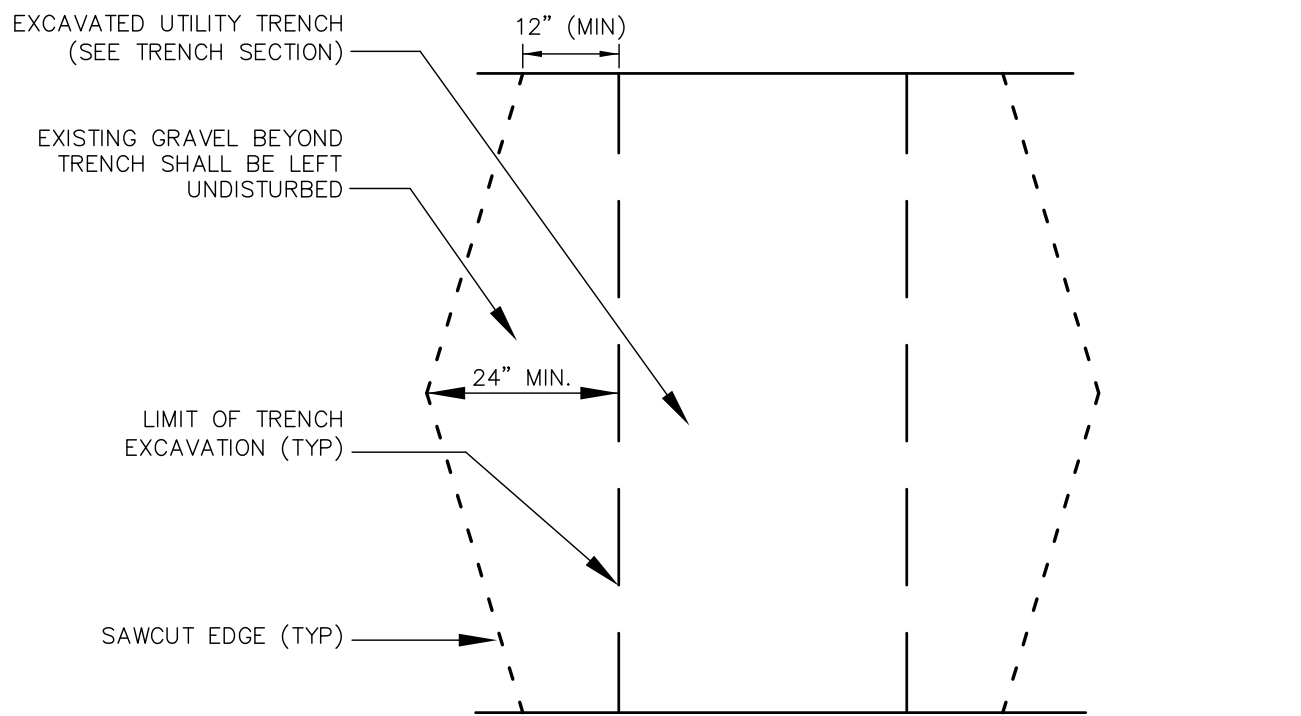


TYPICAL PAVEMENT SAWCUT NOT TO SCALE

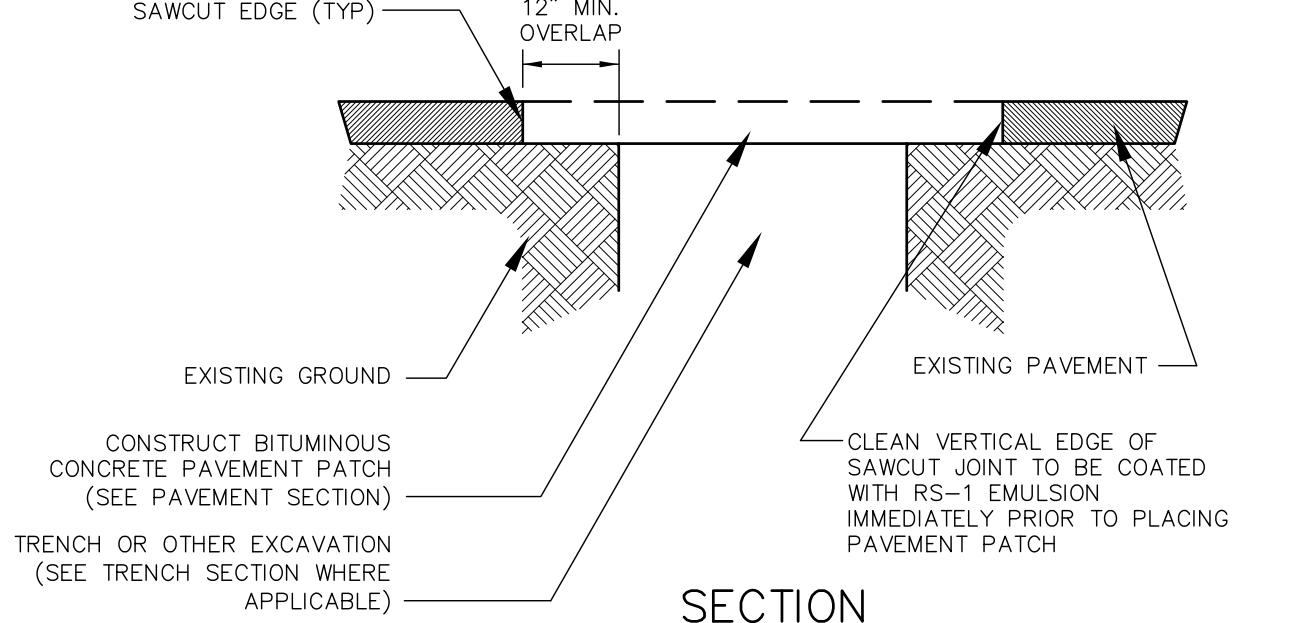


- NOTES**
1. EACH GRAVEL BASE COURSE TO BE CONSTRUCTED AT THE PAVEMENT CROSS SLOPE.
  2. REMOVE LEDGE 18" BELOW LOWEST WORK BEING INSTALLED.
  3. REMOVE ALL LOAM, CLAY, MUCK, ORGANIC, YIELDING OR OTHERWISE UNSTABLE MATERIAL TO A MINIMUM OF 24" BELOW FINISH GRADE. ADDITIONAL DEPTH MAY BE REQUIRED BY THE 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 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. 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.
  10. BITUMINOUS PAVEMENT SHALL BE COMPACTED TO 90 TO 97 PERCENT OF ITS THEORETICAL MAXIMUM DENSITY AS DETERMINED BY ASTM D-2041. THE BASE AND SUBBASE MATERIALS SHOULD BE COMPACTED TO AT LEAST 95 PERCENT OF THEIR MAXIMUM DRY DENSITIES AS DETERMINED BY ASTM D-1557. 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.
  11. TACK COAT SHALL BE APPLIED BETWEEN SUCCESSIVE LIFTS OF ASPHALT PAVEMENT.

TYPICAL ROADWAY CROSS SECTION - STONE QUARRY DRIVE NOT TO SCALE



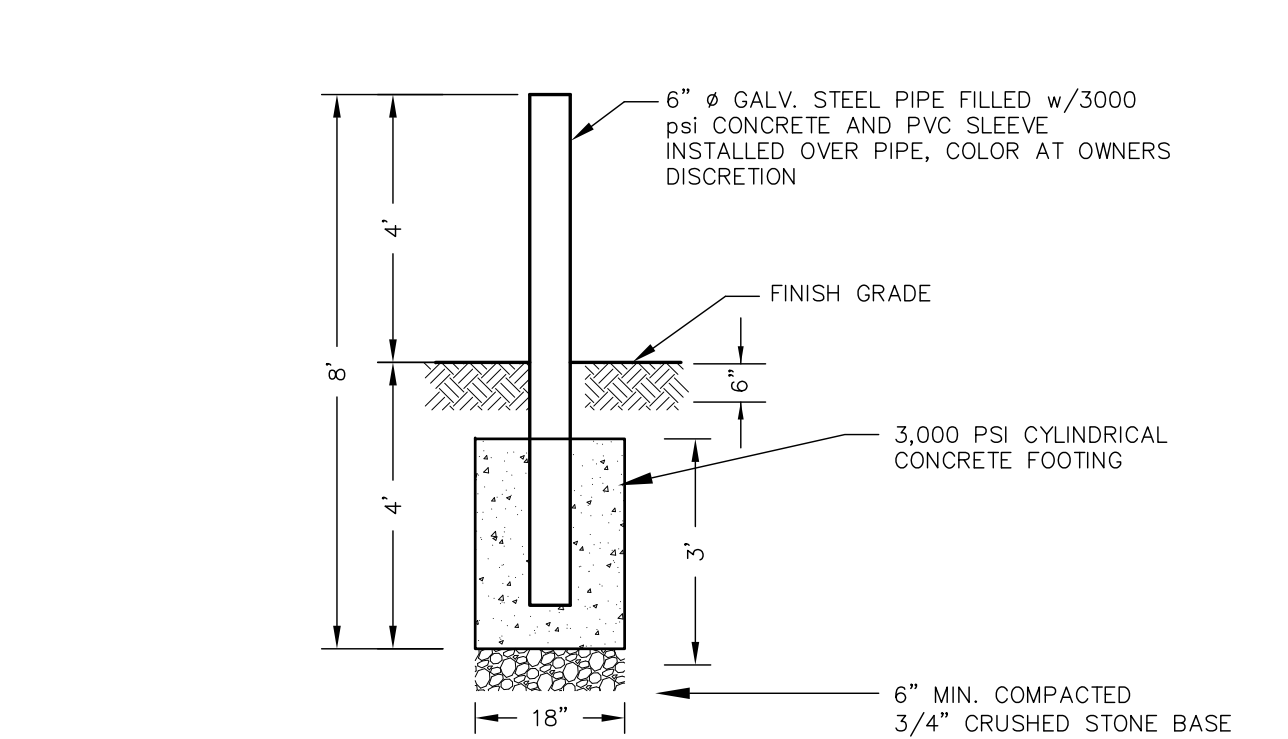
PLAN



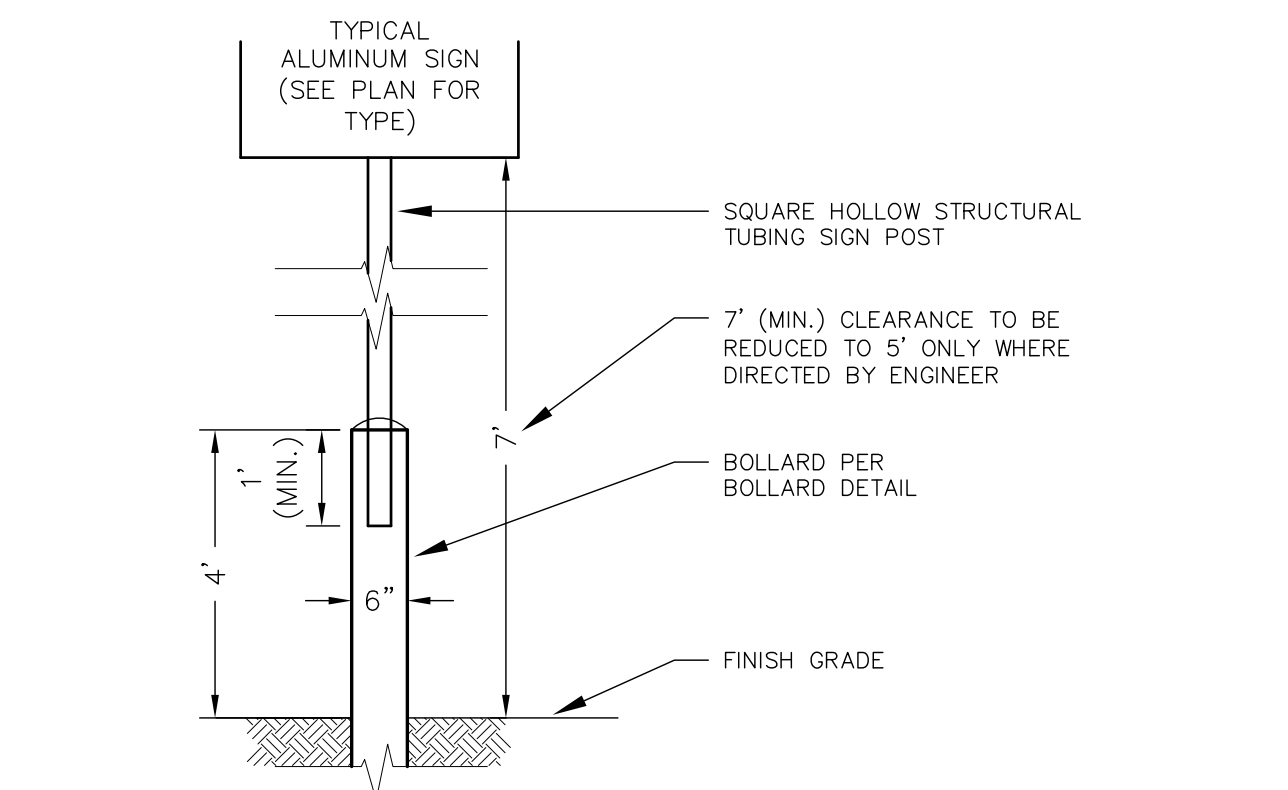
SECTION

- NOTES**
1. MACHINE CUT EXISTING PAVEMENT.
  2. ALL TEMPORARY, DAMAGED OR DEFECTIVE PAVEMENT SHALL BE REMOVED PRIOR TO PLACEMENT OF PERMANENT TRENCH REPAIRS.
  3. DIAMOND PATCH SHALL BE REQUIRED FOR ALL TRENCHES CROSSING ROADWAYS AND SHALL MEET NHDOT REQUIREMENTS UNLESS OTHERWISE SPECIFIED BY ENGINEER.

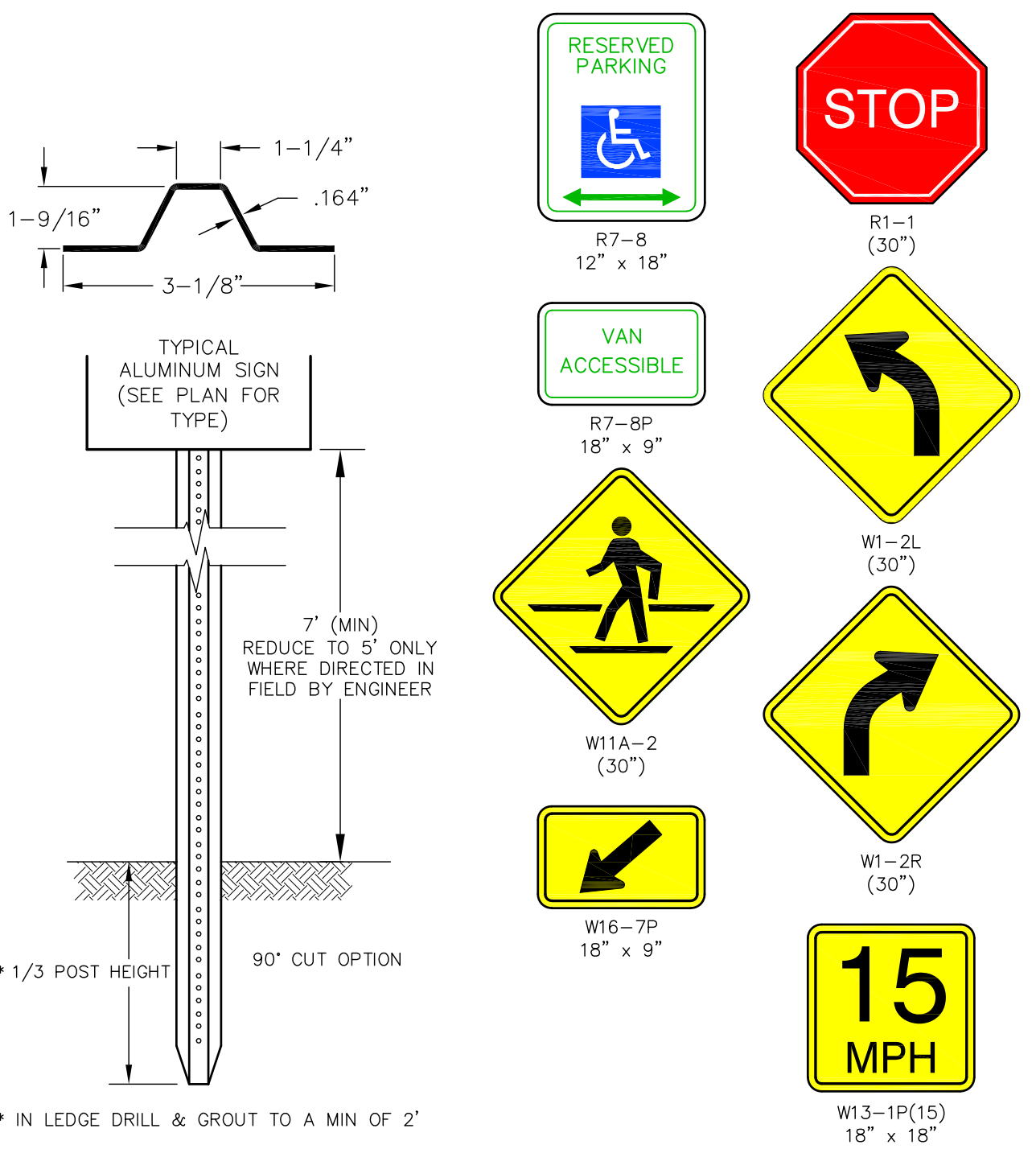
TYPICAL TRENCH PATCH NOT TO SCALE



BOLLARD NOT TO SCALE

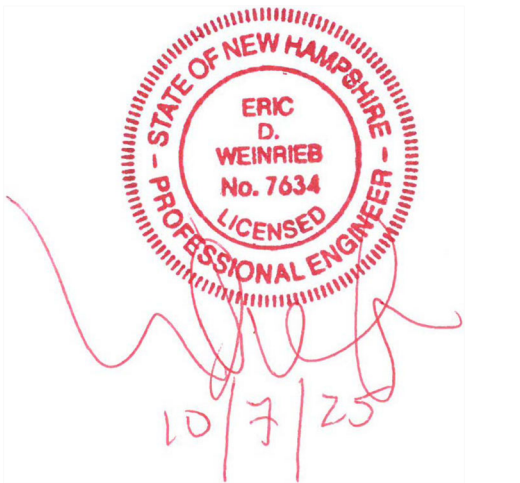


SIGN BOLLARD DETAIL NOT TO SCALE



- NOTES**
1. ALL SIGNS SHALL MEET THE REQUIREMENTS OF AND BE INSTALLED AS INDICATED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
  2. WHEN PLACED PERPENDICULAR TO A TRAVELLED WAY OR SIDEWALK, SIGN EDGE SHALL BE NO CLOSER THAN 2' TO THE EDGE OF PAVEMENT. GREATER MINIMUM DISTANCE MAY BE REQUIRED IN CERTAIN LOCATIONS.
- LENGTH:** AS REQUIRED  
**WEIGHT PER LINEAR FOOT:** 2.50 LBS (MIN.)  
**HOLES:** 3/8" DIAMETER, 1" C-C FULL LENGTH  
**STEEL:** SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASTM A-576 (GRADE 1070 - 1080)

SIGN DETAILS NOT TO SCALE



**NOT FOR CONSTRUCTION**

ISSUED FOR: REVIEW

ISSUE DATE: OCTOBER 8, 2025

| NO. | DESCRIPTION          | BY  | DATE     |
|-----|----------------------|-----|----------|
| 0   | REVIEW               | EBS | 06/23/25 |
| 1   | REVISED PER COMMENTS | EBS | 10/08/25 |

DRAWN BY: EBS  
APPROVED BY: EBS  
DRAWING FILE: 5440-SITE.dwg

SCALE: 24" x 36" - 1" = NTS  
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OWNER: RIVERWOODS DURHAM  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

APPLICANT: RIVERWOODS DURHAM  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

PROJECT: RIVERWOODS  
DURHAM PHASE II  
TAX MAP 209 LOT 33  
STONE QUARRY DRIVE  
& DOVER ROAD (NH 108)  
DURHAM, NH

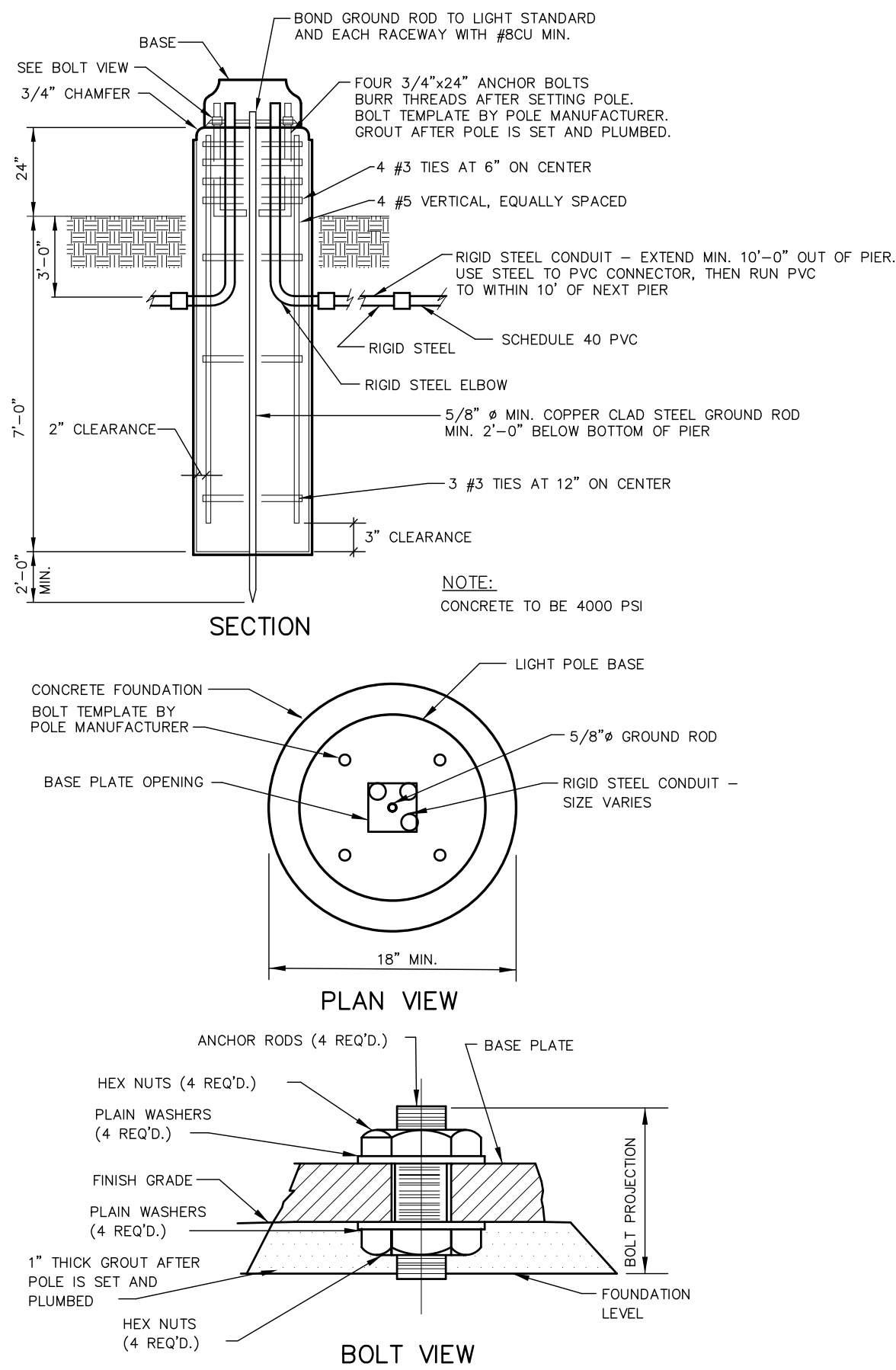
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**DETAIL SHEET**

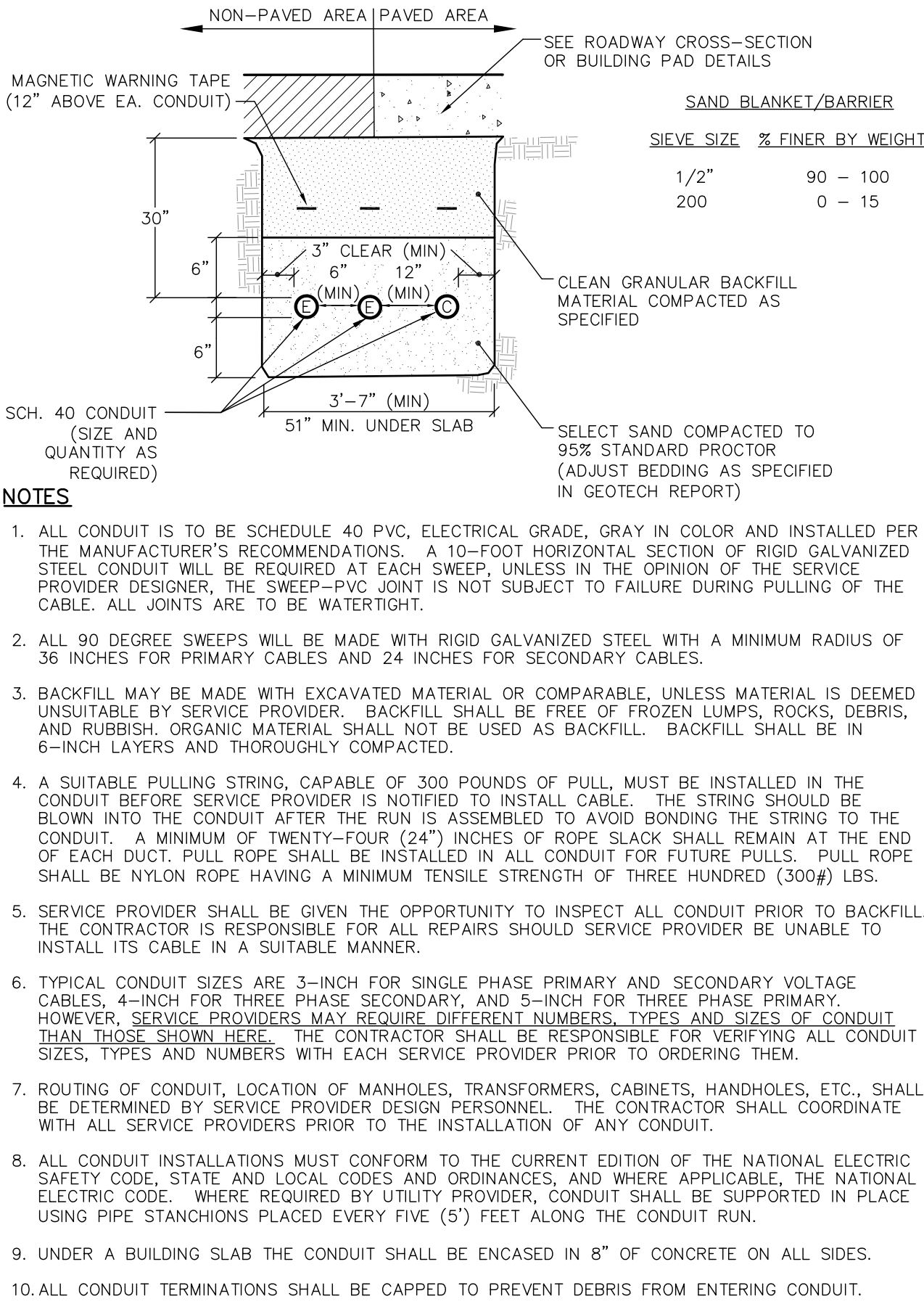
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C-17

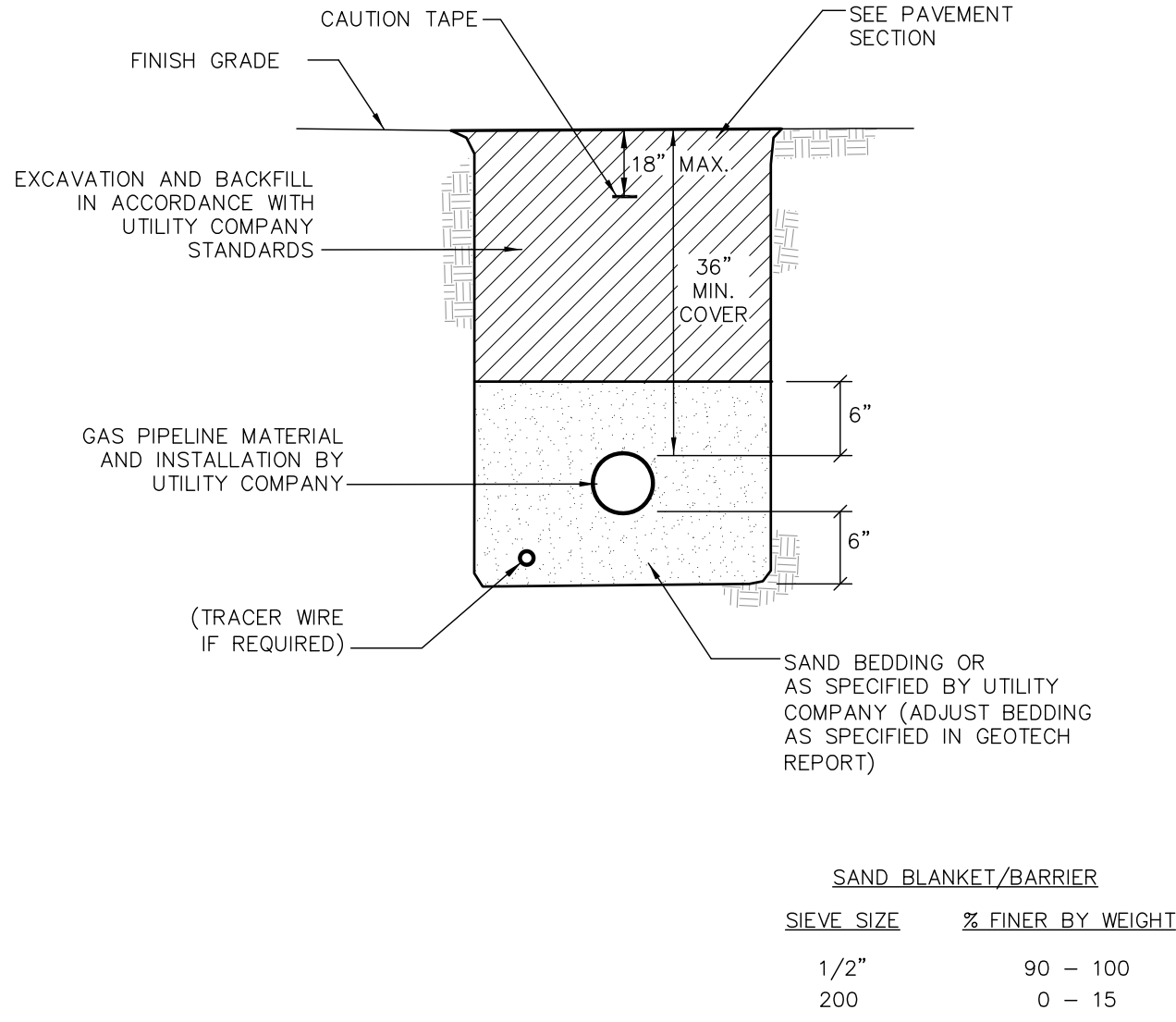




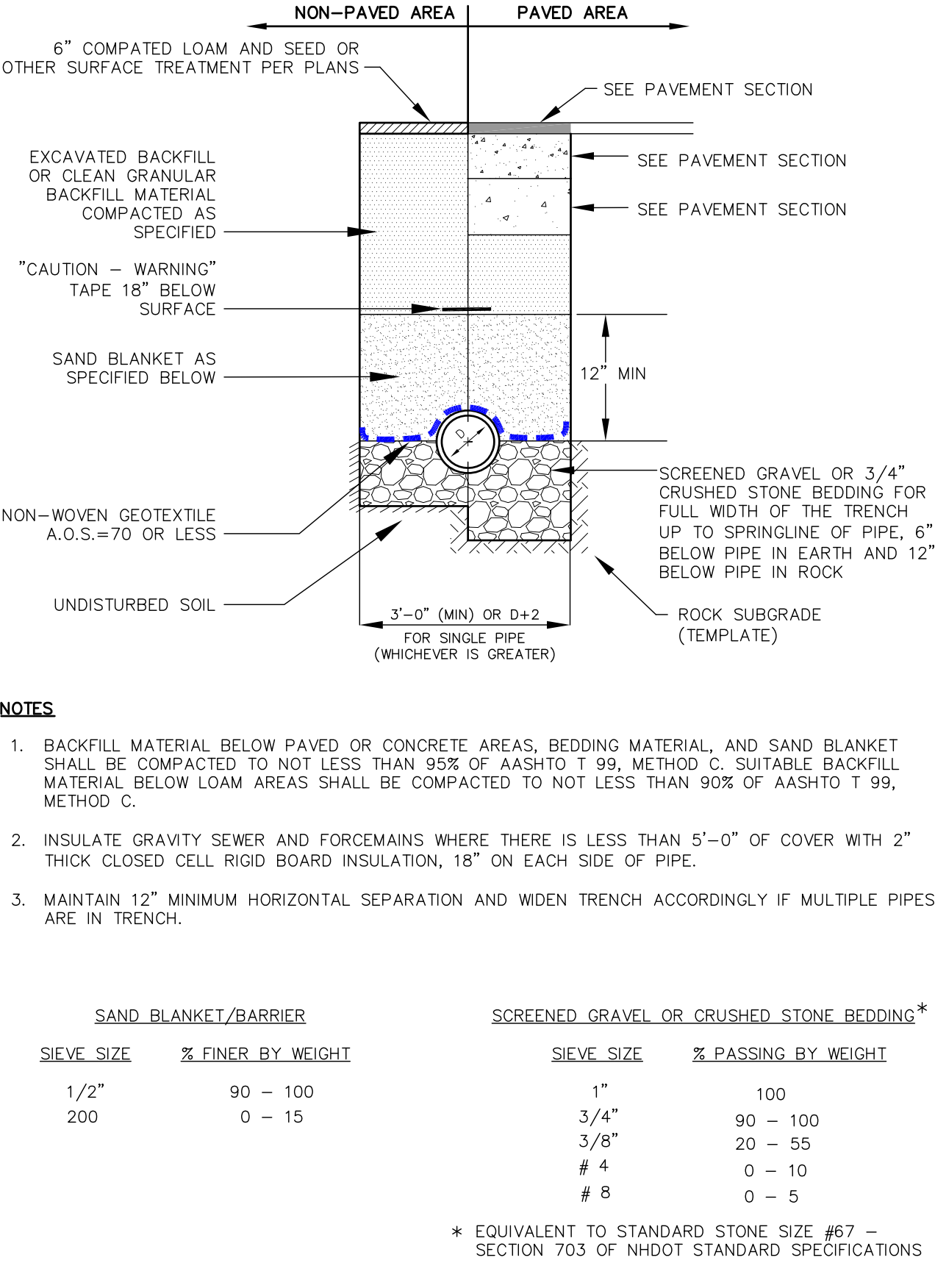
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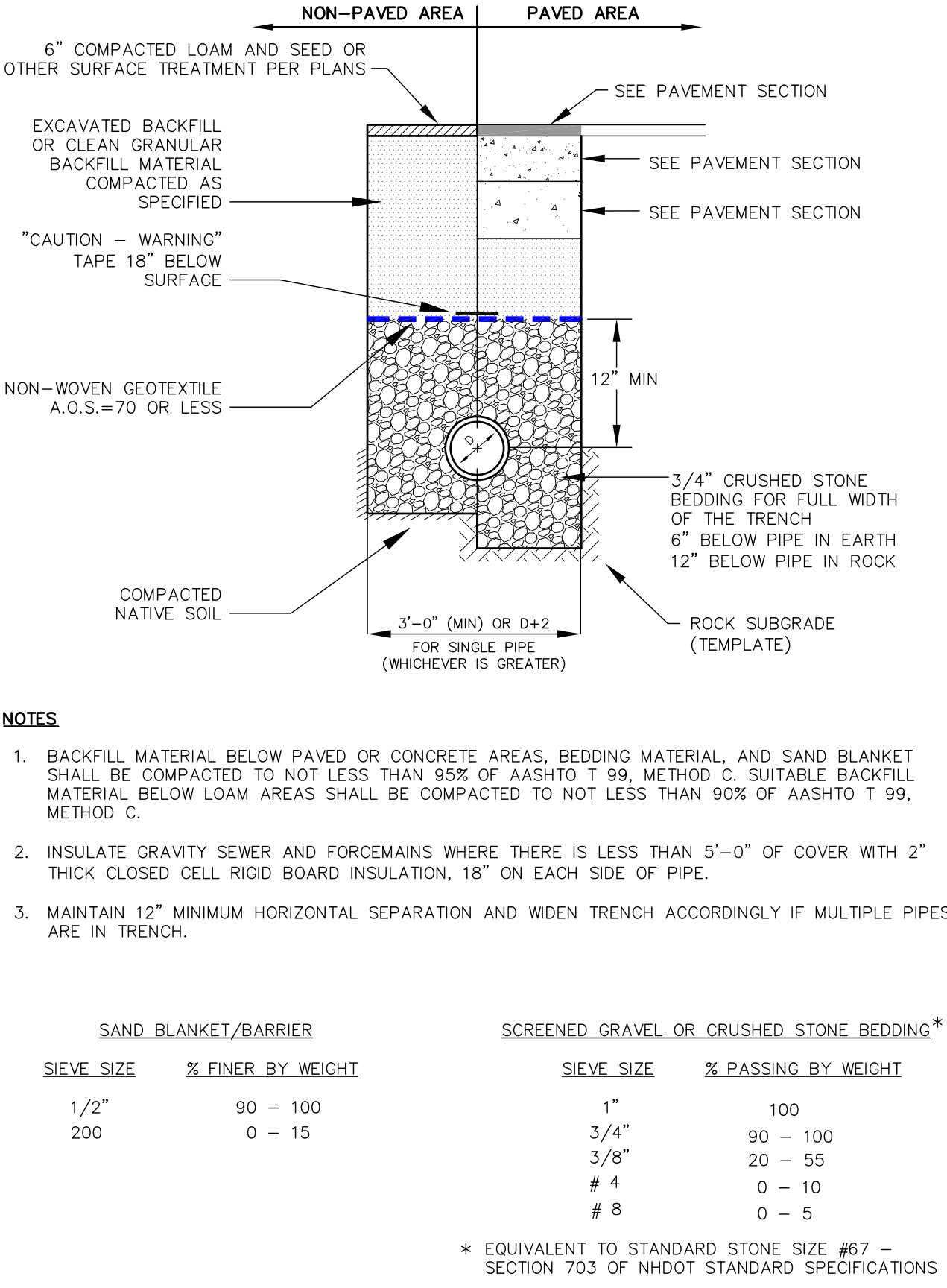
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**GAS TRENCH** NOT TO SCALE



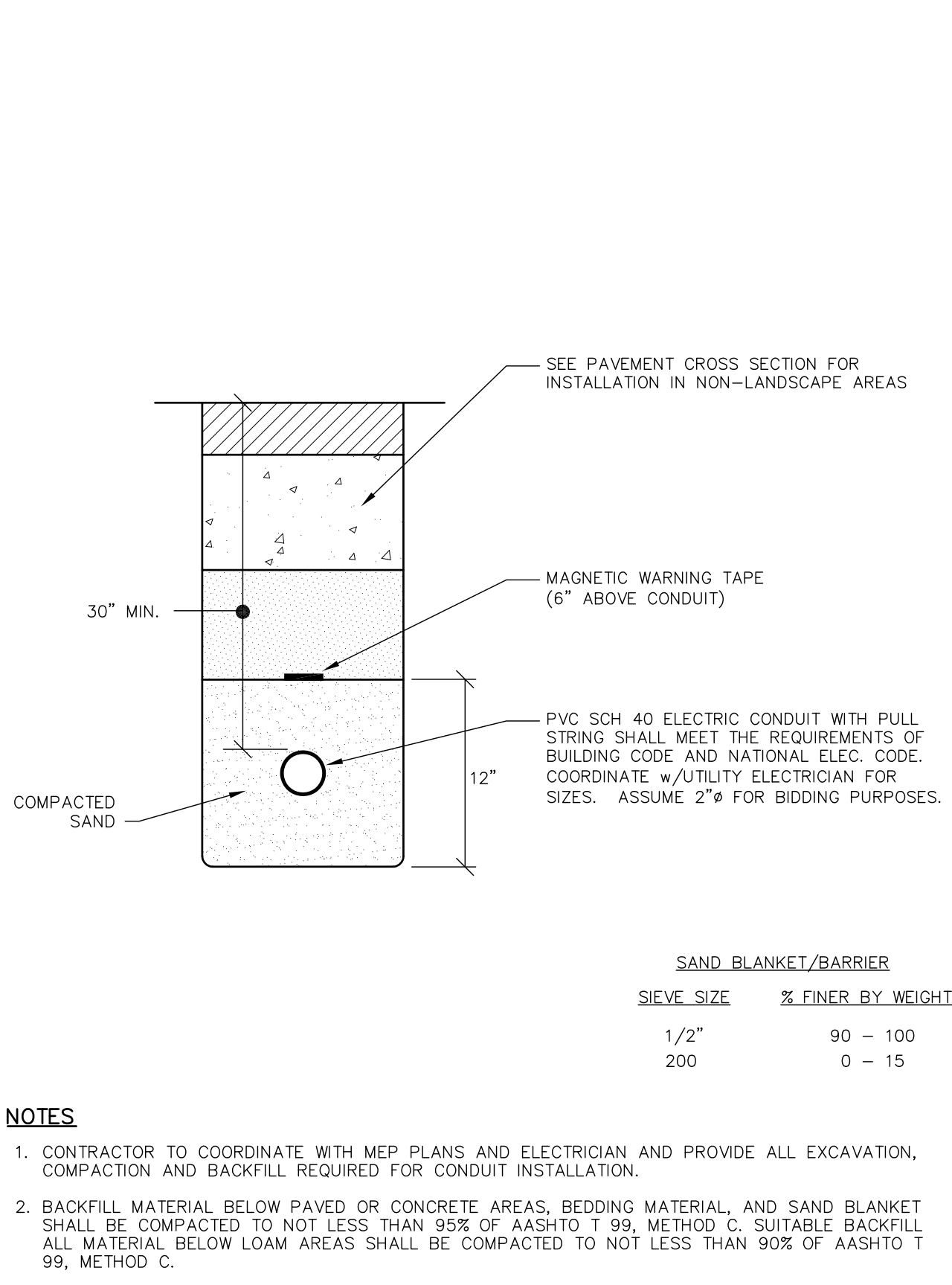
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**SEWER TRENCH** NOT TO SCALE

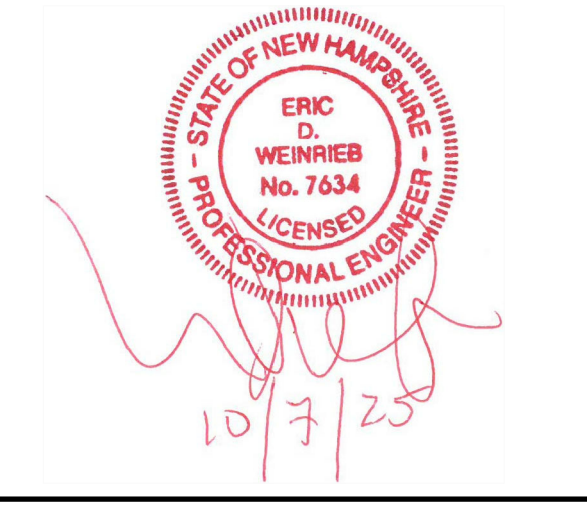
- STANDARD TRENCH NOTES**
- ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE: BACKFILL AS STATED IN THE TECHNICAL SPECIFICATIONS OR AS SHOWN ON THE DRAWING.
  - BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING THE GRADATION SHOWN IN THE TRENCH DETAIL. WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, SCREENED GRAVEL OR CRUSHED STONE 1-1/2 INCH TO 1/2 INCH SHALL BE USED.
  - SAND BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER MEETING THE GRADATION SHOWN IN THE TRENCH DETAIL. BLANKET MAY BE REPLACED WITH BEDDING MATERIAL FOR CAST-IRON, DUCTILE IRON, AND REINFORCED CONCRETE PIPE PROVIDED THAT NO STONE LARGER THAN 2" IS IN CONTACT WITH THE PIPE AND THE GEOTEXTILE IS RELOCATED ACCORDINGLY.
  - SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT, OR CLAY, ALL EXCAVATED LEDGE MATERIAL, ALL ROCKS OVER 6 INCHES IN LARGEST DIMENSION, AND ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION. IN CROSS COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK, OR PEAT ONLY IF SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE AND POSSIBLE RECONSTRUCTION WILL BE PRESERVED.
  - BASE COURSE AND PAVEMENT SHALL MEET THE REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES - DIVISIONS 300 AND 400 RESPECTIVELY.
  - W = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES IN NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE OUTSIDE DIAMETER (O.D.) ALSO, W SHALL BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.
  - FOR CROSS COUNTRY CONSTRUCTION, BACKFILL, FILL AND/OR LOAM SHALL BE MOUNDED TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
  - CONCRETE FOR ENCASEMENT SHALL CONFORM TO THE NEW HAMPSHIRE DOT STANDARD SPECIFICATION REQUIREMENTS FOR CLASS A (3000#) CONCRETE AS FOLLOWS:  
CEMENT: 6.0 BAGS PER CUBIC YARD  
WATER: 5.75 GALLONS PER BAG  
CEMENT MAXIMUM SIZE OF AGGREGATE: 1 INCH  
CONCRETE ENCASEMENT IS NOT ALLOWED FOR PVC PIPE.
  - CONCRETE FULL ENCASEMENT: IF FULL ENCASEMENT IS UTILIZED, DEPTH OF CONCRETE BELOW PIPE SHALL BE 1/4 I.D. (4" MINIMUM). BLOCK SUPPORT SHALL BE SOLID CONCRETE BLOCKS.
  - NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES DESIGN STANDARDS REQUIRE TEN FEET (10') SEPARATION BETWEEN WATER AND SEWER. REFER TO CITY STANDARD SPECIFICATIONS FOR METHODS OF PROTECTION IN AREAS THAT CANNOT MEET THESE REQUIREMENTS.
  - THE CONTRACTOR SHALL INSTALL TRENCH DAMS IN ACCORDANCE WITH NHDES REGULATIONS.
  - SEWER TRENCHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH NHDES STANDARDS OF DESIGN AND CONSTRUCTION FOR SEWAGE AND WASTEWATER FACILITIES, LATEST EDITION.
  - ALL GRAVITY SEWER INSTALLATIONS SHALL BE TESTED IN ACCORDANCE WITH NHDES ENV-WO 704.06.

**NOT TO SCALE**



**WATER MAIN TRENCH** NOT TO SCALE

**LIGHTING TRENCH SECTION** NOT TO SCALE



| NOT FOR CONSTRUCTION |                      |                 |
|----------------------|----------------------|-----------------|
| ISSUED FOR:          |                      | REVIEW          |
| ISSUE DATE:          |                      | OCTOBER 8, 2025 |
| REVISIONS            | NO. DESCRIPTION      | BY DATE         |
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DURHAM, NH

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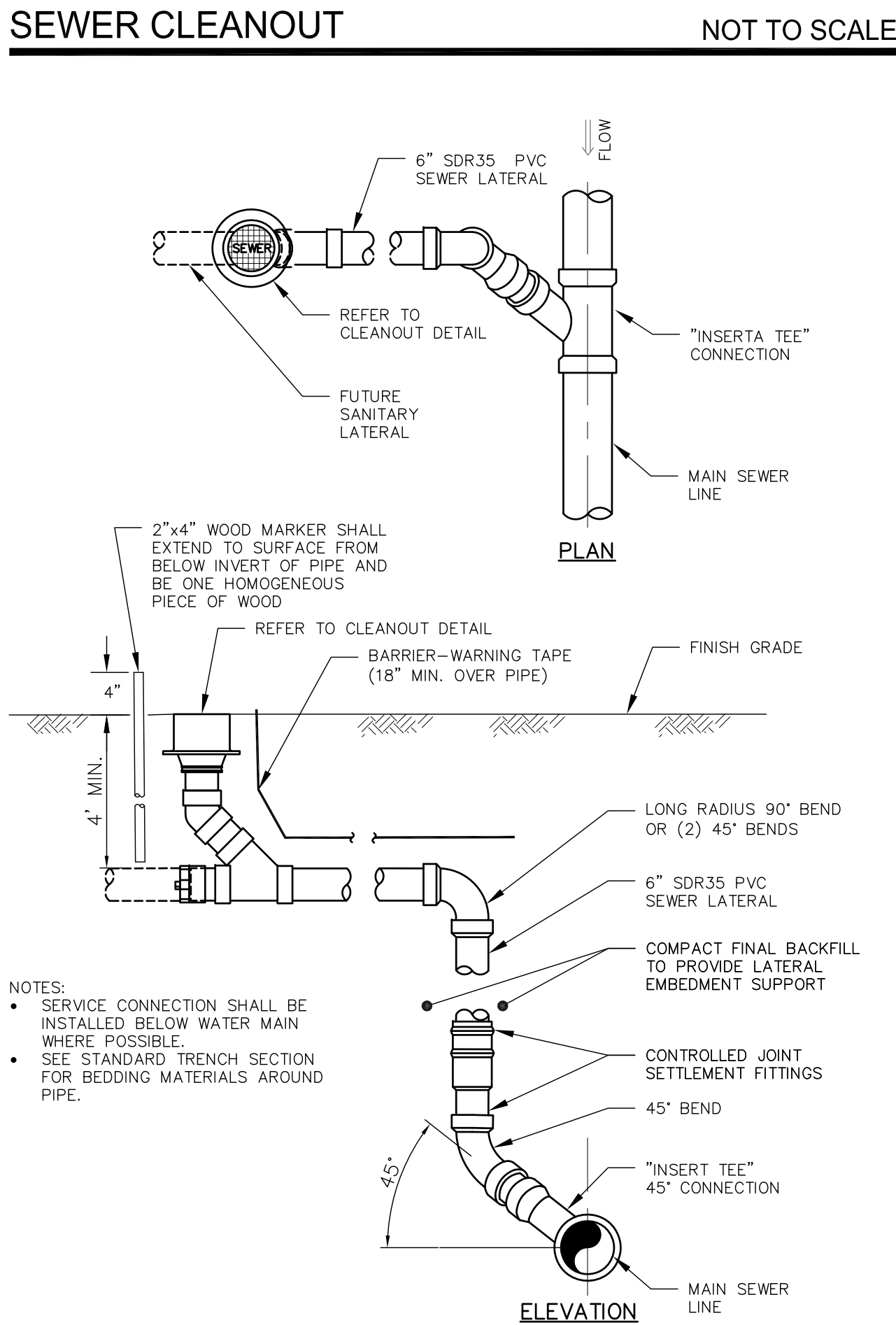
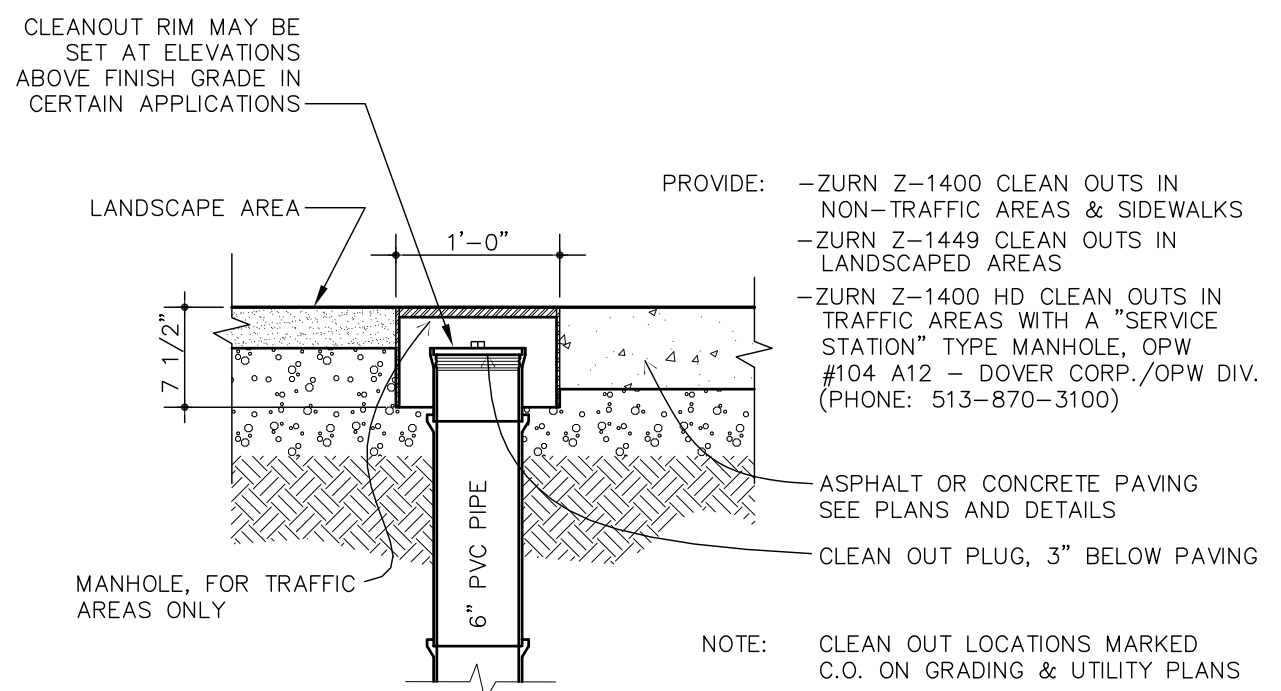
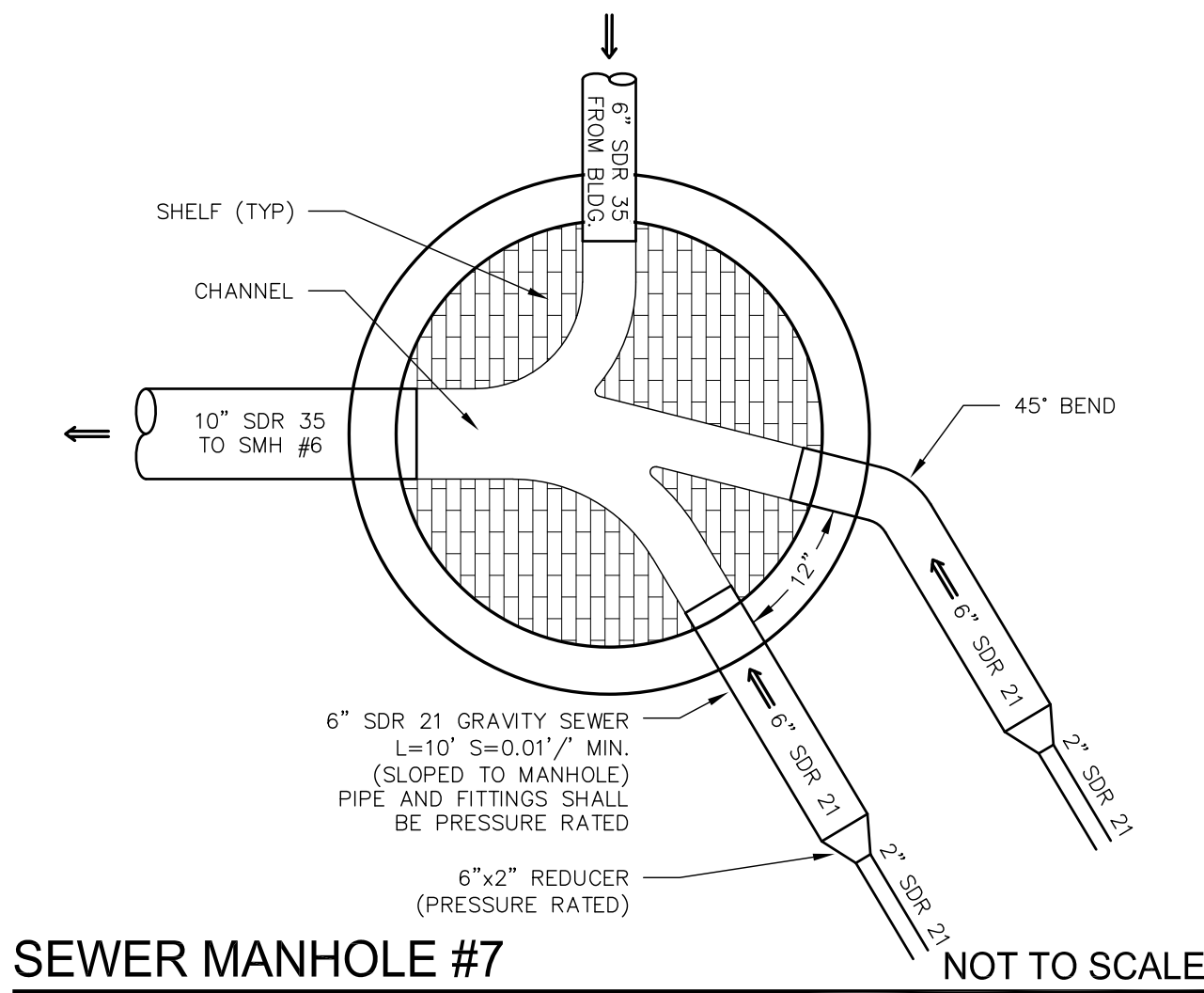
DETAIL SHEET

SHEET NUMBER:  
**C-18**







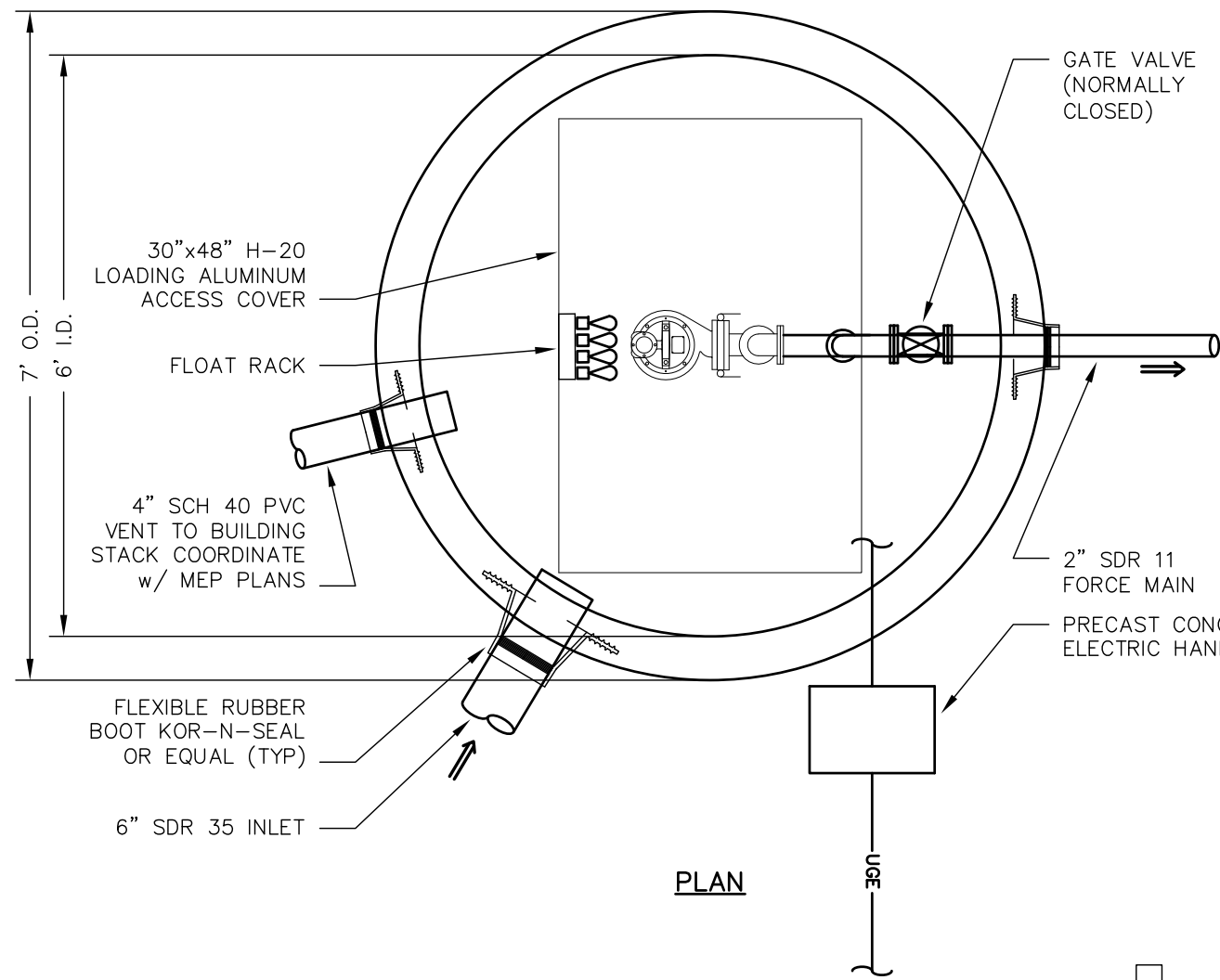


### PUMP STATION SPECIFICATIONS

**PUMP STATION:**  
Furnish and install pump station as shown on the plans. Station shall include, but not be limited to, a concrete pump chamber, pump, slide rail assemblies, duplex controller, access covers discharge piping, fittings, valves, junction box, level sensors, alarms, electric service, level controls, etc. All wiring shall be in compliance with Town of Durham codes.

**PUMP CHAMBER:**  
Pump chamber shall be an 5-foot inside diameter precast concrete pump chamber to the depth shown on the Drawings. Chamber shall be rated for H-20 loading.

**ACCESS COVER:**  
The access covers shall be rigidly constructed to provide an H-20 rating with a 2'-6" X 4'-0" clear opening, manufactured by Syracuse Castings or approved equal. Cover shall be sealed with neoprene seal of openings and have hinges constructed of 316 stainless steel.



**PUMP:**  
Pump shall be supplied to operate at the following range of flow vs. TDH: Flow of 170 gpm with a total dynamic head of 9.0'. Provide pump motor with adequate horsepower to deliver flows at the TDH required to reach the receiving point, taking into account the manufacturer's rated efficiency. Motor shall be 1-phase, 60 Cycle 1,750 rpm. Pump shall be submersible non-clog solids-handling sewage pump with 2" discharge as specified by the manufacturer and approved by the Engineer. Impeller shall have a diameter of 4.75" (121mm). Pump shall be Barnes SE-411 (0.4 hp) or approved equal. Provide discharge piping assembly for installation and removal of pump without entering wetwell with stainless steel lift-out rail system.

**CONTROLLER:**  
Duplex control to perform equal alternation of both pumps. Control to consist of two circuit breakers with through-door operating handle, two magnetic starters with ambient compensated quick-trip overloads in each line, discharge piping by manufacturer, duplex unit, running lights, lightening arrestor, door-mounted resets, hour meters, and door-mounted hand-off-automatic selector switches for each pump. Enclosure to include continuous hinge, neoprene gasket in cover and continuous seam weld. Controller shall be Barnes Single Phase Duplex Alternating Control Panel 106484 or approved equal. The controls shall be NEMA 4x weatherlight construction and mounted on a pedestal adjacent to Pump chamber, on a building, or on nearby utility pole. All conduit and wiring between the station junction boxes and control panel shall be included.

**SLIDE RAIL ASSEMBLY:**  
The slide rail assembly, mounting hardware, and lifting chain shall be AISI Type 316 stainless steel. Slide rails to be provided with AISI Type 316 stainless guide supports. Discharge coupling to be machined cast iron and support the pump four (4) inches above the floor.

**PIPING:**  
The discharge pipe shall be two (2") inch diameter SDR 11 PVC pipe. All fittings shall be cemented or threaded. PVC Ball check valves shall be provided with teflon seats. The working pressure of the check valves shall be 150 psi.

**LEVEL CONTROL:**  
Four (4) liquid level control sensors shall be provided to control operation of the pumps and provide a high water alarm. The level control sensors shall be mounted on a PVC pipe. The controls shall be set at elevations shown on the plans and for a dosage rate of 105.75 gallons.

**ALARM:**  
Alarm shall be exterior mounted audio and visual in a location as determined by the Owner. Contractor shall provide a sign for identification.

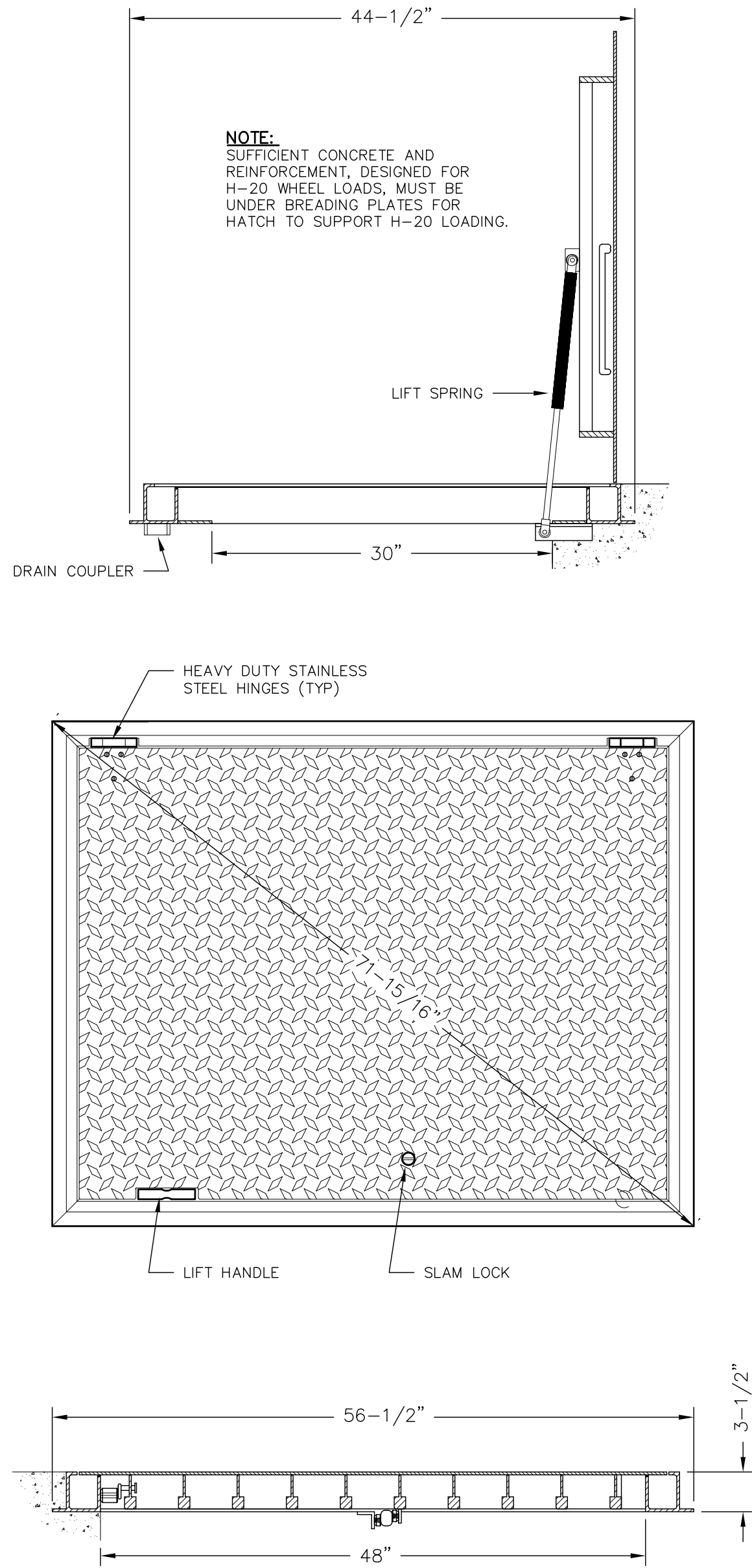
**DOSAGE:**  
105.75 gallons per dose  
Design flow 170 GPD / 105.75 = ±1.6 doses per day

### OWNER'S MAINTENANCE NOTES

1. PUMP CHAMBER TO BE PUMPED ANNUALLY BY A LICENSED SANITARY DISPOSAL CONTRACTOR.

### NOTES

1. STYLE "DT-HD" ACCESS HATCH, AS MANUFACTURED BY SYRACUSE CASTINGS, CICERO, NEW YORK (315-699-2601) OR APPROVED EQUAL.
2. MATERIAL SHALL BE 6061-T6 ALUMINUM FOR BARS, ANGLES, AND EXTRUSIONS. 1/4" DIAMOND PLATE SHALL BE 5086 ALUMINUM.
3. UNIT DESIGNED HEAVY DUTY, FOR H-20 WHEEL LOADS, WHERE NOT SUBJECT TO HIGH DENSITY TRAFFIC. FRAME AND BEARING PLATE MUST BE CAST INTO AND SUPPORTED BY CONCRETE DESIGNED FOR H-20 WHEEL LOADS.
4. UNIT SUPPLIED WITH A HEAVY DUTY PNEU-SPRING, FOR EASE OF OPERATION WHEN OPENING COVER. COVER SHALL BE COUNTERBALANCED, SO ONE PERSON CAN EASILY OPEN THE HATCH DOOR.
5. FRAME SHALL BE OF EXTRUDED ALUMINUM WITH A CONTINUOUS 1-1/4" ANCHOR FLANGE. A DOVETAIL GROOVE SHALL BE EXTRUDED INTO THE SEAT OF THE FRAME FOR A 1/8" SILICONE GASKET.
6. EACH HATCH SHALL BE EQUIPPED WITH A STAINLESS STEEL HOLD OPEN ARM. DOOR SHALL LOCK OPEN IN THE 90 DEGREE POSITION. HOLD OPEN ARM SHALL BE FASTENED TO THE FRAME WITH A 1/2" GRADE 316 STAINLESS STEEL BOLT.
7. HINGES SHALL BE OF HEAVY DUTY DESIGN. MATERIAL SHALL BE GRADE 316 STAINLESS STEEL. EACH HINGE SHALL HAVE A GRADE 316 STAINLESS STEEL, 3/8" DIAMETER HINGE PIN. HINGE SHALL BE FASTENED TO THE CHANNEL FRAME AND DIAMOND PLATE WITH GRADE 316 STAINLESS STEEL BOLTS AND NY-LOCK NUTS.
8. ALUMINUM SHALL BE SUPPLIED WITH MILL FINISH. EXTERIOR OF FRAME WHICH COMES IN CONTACT WITH CONCRETE SHALL HAVE ONE COAT BLACK PRIMER.
9. EACH HATCH SHALL BE SUPPLIED WITH A STAINLESS STEEL SLAM LOCK, WITH THE KEY WAY PROTECTED BY A THREADED ALUMINUM PLUG. THE PLUG SHALL BE FLUSH WITH THE TOP OF THE 1/4" DIAMOND PLATE. THE SLAM LOCK SHALL BE FASTENED WITH GRADE 316 STAINLESS STEEL BOLTS AND WASHERS.
10. EACH HATCH SHALL BE EQUIPPED WITH A STAINLESS STEEL LIFT HANDLE. LIFT HANDLE SHALL BE FLUSH WITH TOP OF 1/4" DIAMOND PLATE.
11. EACH "DT-HD" STYLE HATCH IS SUPPLIED WITH A 1-1/2" THREADED DRAIN COUPLER ON THE UNDERSIDE OF CHANNEL FRAME, FOR PIPE CONNECTION.



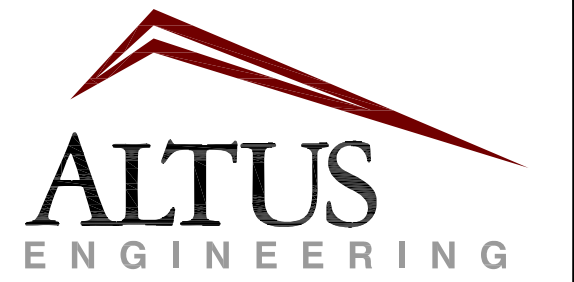
### SIMLEX PUMP STATION

TYPICAL SECTION

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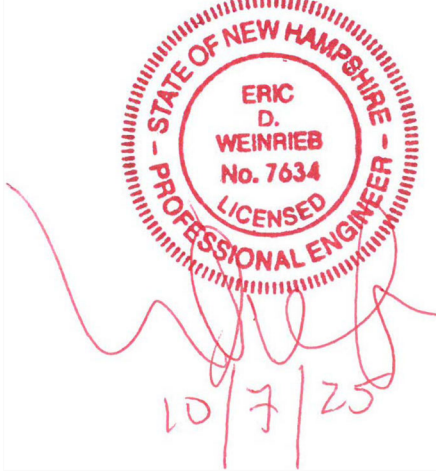
### SINGLE LEAF H-20 ALUMINUM HATCH

NOT TO SCALE



133 Court Street  
(603) 433-2335

Portsmouth, NH 03801  
www.altus-eng.com



### NOT FOR CONSTRUCTION

ISSUED FOR: REVIEW

ISSUE DATE: OCTOBER 8, 2025

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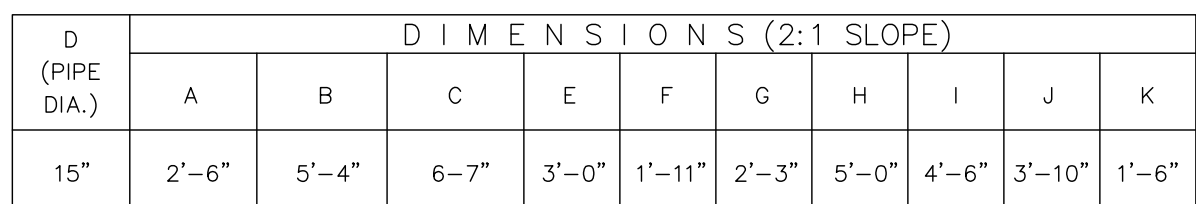
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DURHAM, NH

TITLE:

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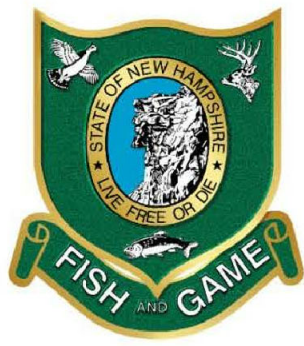






NH FISH AND GAME CONSERVATION MEASURES APPLICABLE TO THIS PROJECT

- BLANDING'S TURTLE (STATE ENDANGERED) AND NEW ENGLAND COTTONTAIL (STATE ENDANGERED) OCCUR WITHIN THE VICINITY OF THE PROJECT AREA. SPOTTED TURTLE (STATE THREATENED) ALSO VERY LIKELY OCCUR IN THE VICINITY DUE TO OVERLAPPING HABITAT USE AND DISTRIBUTION. ALL OPERATORS AND PERSONNEL WORKING ON OR ENTERING THE SITE SHALL BE MADE AWARE OF THE POTENTIAL PRESENCE OF THESE SPECIES AND SHALL BE PROVIDED NHFG CONTACT INFORMATION. SEE SPECIES FLYERS THIS SHEET.
- SEE THIS SHEET FOR RARE SPECIES INFORMATION (E.G. IDENTIFICATION, OBSERVATION AND REPORTING OF OBSERVATIONS, WHEN TO CONTACT NHFG IMMEDIATELY AND NHFG CONTACT INFORMATION) SHALL BE COMMUNICATED DURING MORNING TAILGATE MEETINGS PRIOR TO WORK COMMENCEMENT DURING THE CONSTRUCTION PHASE OF THE PROJECT.
- TURTLES MAY BE ATTRACTED TO DISTURBED GROUND DURING THE NESTING SEASON (MAY 15TH – JULY 15TH). TURTLE NESTS ARE PROTECTED BY NH LAWS. IF A NEST IS OBSERVED OR SUSPECTED, OPERATORS SHALL CONTACT JOSH MEGYESY AT NHFG IMMEDIATELY FOR FURTHER CONSULTATION. SEE SPECIES FLYERS THIS SHEET FOR NHFG CONTACT INFORMATION.
  - TO MINIMIZE THE POTENTIAL FOR NESTING TO OCCUR WITHIN THE PROJECT SITE:
    - MINIMIZE GROUND DISTURBANCE ACTIVITIES DURING THE ACTIVE NESTING SEASON. LIMIT CLEARING AREAS AND DISTURBING GROUND UNTIL READY TO START ACTIVE CONSTRUCTION FOR A PROJECT COMPONENT.
    - MINIMIZE ACCESS OR MAKE AREAS LESS ATTRACTIVE TO WILDLIFE FOR NESTING FOR DISTURBED GROUND AREAS DURING ACTIVE NESTING SEASON. SOIL/SANDY MOUNDS OR OPEN SANDY/GRAVELLY AREAS WITHIN THE ACTIVE PROJECT SITE SHALL BE COVERED WITH TARPS OR OTHER CONSTRUCTION MATERIALS AT THE END OF THE WORK DAY (NOTE TURTLES CAN MOVE INTO A SITE OVERNIGHT TO NEST – BE OBSERVANT FOR OF TRACKS AND NESTING SIGNS).
  - THE NEST OR SUSPECTED NEST SHALL BE MARKED (SURROUNDING ROPED OFF OR CONE BUFFER DEPLOYED) AND AVOIDED; THIS SHALL BE COMMUNICATED TO ALL PERSONNEL ONSITE.
  - SITE ACTIVITIES SHALL NOT OCCUR IN THE AREA SURROUNDING THE NEST OR SUSPECTED NEST UNTIL FURTHER GUIDANCE IS PROVIDED BY NHFG.
- CATCH BASINS CB #2, CB #17 AND CB #23 SHALL HAVE GRATE OPENINGS NO LARGER THAN 5"x3/8". OUTLET CONTROL STRUCTURES SHALL NOT CONTAIN PUMPS AND SHALL HAVE GRATE OPENINGS NO LARGER THAN 2"x2". SEE PLAN SHEETS C-6.1, C-6.2 AND C-14.
- YARD DRAINS SHALL HAVE HAVE GRATE OPENINGS NO LARGER THAN 6.5"x3/8" AND SHALL NOT CONTAIN GREASE HOODS. SEE PLAN SHEET C-12.
- CATCH BASINS CB #10-1 AND CB #10-2 SHALL NOT CONTAIN GREASE HOODS. SEE PLAN SHEET C-6.1.
- OUTLET CONTROL STRUCTURES SHALL NOT BE PLACED ADJACENT TO THE SIDE SLOPES BUT RATHER AS FAR AWAY AS POSSIBLE TO DETER WILDLIFE FROM CRAWLING ONTO THEM AND FALLING THROUGH THE GRATE OPENINGS. THESE STRUCTURES SHALL BE A MINIMUM OF 12"-18" ABOVE GRADE AND BE SET BACK AT LEAST 3' FROM ADJACENT SLOPES. SEE PLAN SHEET C-14.
- IF HYDROSEEDING IS DEEMED NECESSARY, THE MIX SHALL NOT CONTAIN MICROPLASTICS AND DYES SHALL BE WATER-SOLUBLE AND ECO-FRIENDLY. HYDROSEEDING SHALL NOT OCCUR WITHIN 75 FEET OF WETLANDS. SEE PLAN SHEET C-12.
- AVOID OR MINIMIZE THE USE OF FERTILIZERS IN UPLAND AREAS OR TRANSITION ZONES. IF FERTILIZERS ARE NECESSARY, USE ORGANIC VERSUS SYNTHETIC FERTILIZER OPTIONS. SYNTHETIC OPTIONS SHOULD BE AVOIDED; HOWEVER, IF CHOSEN, THEY SHALL BE CONTROLLED-RELEASED/SLOW-RELEASED AND AT LOW STRENGTHS. SEE PLAN SHEET C-12.
- RIP-RAP SHALL BE FILLED WITH FINER MATERIAL (I.E., NATIVE WETLAND MATERIAL, NATIVE WETLAND SEED MIX, OR GRAVEL IN BETWEEN RIP-RAP) TO CREATE A RELATIVELY SMOOTH SURFACE FOR WILDLIFE TO TRAVERSE. SEE PLAN SHEET C-13.
- STAGING OF CONSTRUCTION EQUIPMENT/MATERIAL AND VEHICLE PARKING SHALL NOT OCCUR IN SHRUB COVER OR WETLANDS AND SHRUB COVER SHALL NOT BE REMOVED BEYOND THE LIMITS OF THE CONSTRUCTION AREA. SEE PLAN SHEET C-7.1.
- A NATIVE SEED MIXTURE SHALL BE APPLIED TO ALL AREAS AFFECTED BY CONSTRUCTION. THE SEED MIXTURE SHALL NOT CONTAIN INVASIVE SPECIES SUCH AS CROWN VETCH, BIRD'S-FOOT TREFOIL, ALSIKE CLOVER, OR FLAT PEA. SEE PLAN SHEET C-12.
- ALL MANUFACTURED OR DERIVED PRODUCTS, WITH THE EXCEPTION OF TURF REINFORCEMENT MATS, UTILIZED FOR, BUT NOT LIMITED TO, SLOPE PROTECTION, SLOPE DIVERSION, SLOPE INTERRUPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHALL NOT CONTAIN PLASTIC, OR MULTIFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8" INCHES. SEE PLAN SHEET C-12.
- ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES ON THE PROJECT SITE SHALL BE REPORTED IMMEDIATELY TO THE NHFG NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT [NHGREVIEW@WILDLIFE.NH.GOV](mailto:NHGREVIEW@WILDLIFE.NH.GOV), WITH THE EMAIL SUBJECT LINE CONTAINING THE NHB DATACHECK TOOL RESULTS LETTER ASSIGNED NUMBER, THE PROJECT NAME, AND THE TERM WILDLIFE SPECIES OBSERVATION.
  - PHOTOGRAPHS OF THE OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHALL BE PROVIDED TO NHFG IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION, AS FEASIBLE.
- IN THE EVENT A THREATENED OR ENDANGERED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF THE PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO CONSULTATION WITH NHFG AND IMPLEMENTATION OF CORRECTIVE ACTIONS RECOMMENDED BY NHFG.
  - SITE OPERATORS SHALL BE ALLOWED TO RELOCATE WILDLIFE ENCOUNTERED IF DISCOVERED WITHIN THE ACTIVE WORK ZONE IF IN DIRECT HARM FROM PROJECT ACTIVITIES.
  - WILDLIFE SHALL BE RELOCATED IN CLOSE PROXIMITY TO THE CAPTURE LOCATION BUT OUTSIDE OF THE WORK ZONE AND IN THE DIRECTION THE INDIVIDUAL WAS HEADING.
  - NHFG SHALL BE CONTACTED IMMEDIATELY IF THIS ACTION OCCURS.
- NHFG, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT.



NEW HAMPSHIRE  
STATE ENDANGERED

BLANDING'S TURTLE

**Report Sightings:** Contact Wildlife Biologist Josh Megyesy at (603) 271 – 1125 or the Wildlife Division at (603) 271 – 2461. Observation reports can be sent to [RAARP@wildlife.nh.gov](mailto:RAARP@wildlife.nh.gov). Photographs and exact locations are strongly encouraged.

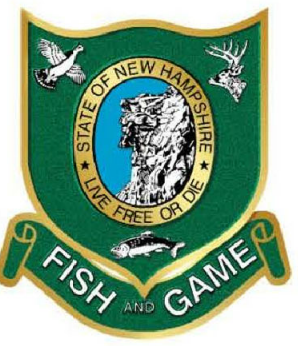
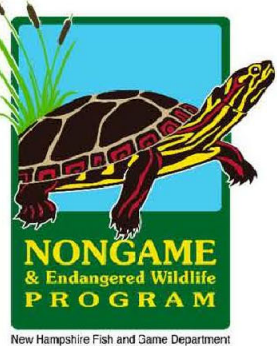


- Specific Information:**
- Adults are 7 – 9 inches long.
  - Shell is highly domed with light speckles.
  - Distinct yellow throat and chin.
  - Uses variety of wetlands and moves extensively over land.
  - Turtles are frequently concealed by leaves and undergrowth and may not be easily visible.
  - Turtles are most active from April 15 – October 15.
  - During nesting season (May 15 – July 15) turtles are attracted to disturbed ground.



This species is protected under RSA 212-A and Fis 1000. Thank you for reporting any observations.

PLEASE DO NOT DISTURB OR HANDLE WILDLIFE



NEW HAMPSHIRE  
STATE THREATENED

SPOTTED TURTLE

**Report Sightings:** Contact Wildlife Biologist Josh Megyesy at (603) 271 – 1125 or the Wildlife Division at (603) 271 – 2461. Observation reports can be sent to [RAARP@wildlife.nh.gov](mailto:RAARP@wildlife.nh.gov). Photographs and exact locations are strongly encouraged.

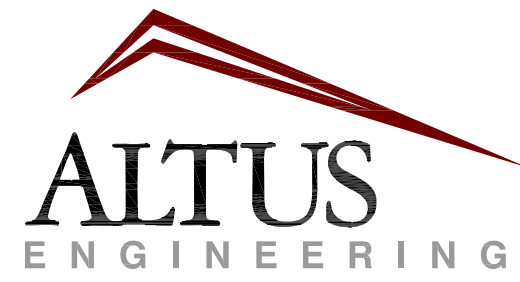


- Specific Information:**
- Adults are 3 – 5 inches long
  - Shell is black or brown, fairly flat, and with yellow spots.
  - Uses variety of wetlands and moves extensively over land.
  - Turtles are frequently concealed by leaves and undergrowth and may not be easily visible.
  - Turtles are most active from April 15 – October 15.
  - During nesting season (May 15 – July 15) turtles are attracted to disturbed ground.



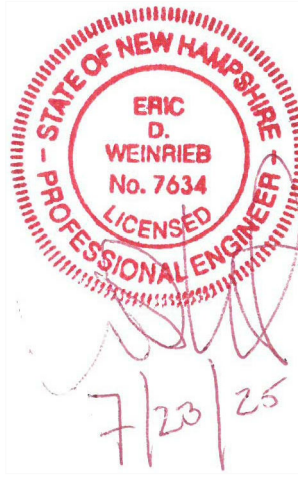
This species is protected under RSA 212-A and Fis 1000. Thank you for reporting any observations.

PLEASE DO NOT DISTURB OR HANDLE WILDLIFE



133 Court Street  
(603) 433-2335

Portsmouth, NH 03801  
[www.altus-eng.com](http://www.altus-eng.com)



NOT FOR CONSTRUCTION

ISSUED FOR: REVIEW

ISSUE DATE: JULY 23, 2025

REVISIONS  
NO. DESCRIPTION BY DATE  
0 REVIEW EBS 06/23/25

DRAWN BY: EBS  
APPROVED BY: EBS  
DRAWING FILE: 5440-SITE.dwg

SCALE: 24" x 36" - 1" = NTS  
11" x 17" - 1" = NTS

OWNER: RIVERWOODS DURHAM  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

APPLICANT: RIVERWOODS DURHAM  
14 STONE QUARRY DRIVE  
DURHAM, NH 03824

PROJECT: RIVERWOODS  
DURHAM PHASE II  
STAGE 209 LOT 33  
STONE QUARRY DRIVE  
& DOVER ROAD (NH 108)  
DURHAM, NH

TITLE:

DETAIL SHEET

SHEET NUMBER:

C-22



**D-Series Size 0  
LED Area Luminaire**

**Specifications**

EPA: 0.44 ft<sup>2</sup> (0.04m<sup>2</sup>)

Length: 26.19" (665.30mm)

Width: 14.09" (357.91mm)

Height H1: 2.26" (57.91mm)

Height H2: 7.48" (190.00mm)

Weight: 23 lbs (10.4kg)

**Introduction**

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications, with typical energy savings of 70% and expected service life of over 100,000 hours.

**design select**

Items marked by a **design select** qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit [www.altuslighting.com/designselect](http://www.altuslighting.com/designselect).

\*See ordering tree for details.

| Ordering Information |                |                   |                       | EXAMPLE: DSX0 LED P6 40K Z0CR T3M MVOLT SPA NLTAR2 PIRNH DDBX0 |                   |                  |  |
|----------------------|----------------|-------------------|-----------------------|----------------------------------------------------------------|-------------------|------------------|--|
| Series               | LEDs           | Color temperature | Color Rendering Index | Distribution                                                   | Mounting          | Shipped included |  |
| DSX0 LED             | Forward optics | 30K 3000K         | 70CRI                 | AFR Asymmetric foot                                            | TMV Type 1 medium | MDVOLT 120V-277V |  |
|                      | P1 P6          | 40K 4000K         | 70CRI                 | TSR Type 1 foot                                                | TSR Type 1 wide   | MDVOLT 120V-277V |  |
|                      | P2 P7          | 50K 5000K         | 70CRI                 | TSR Type 1 foot                                                | TSR Type 1 wide   | MDVOLT 120V-277V |  |
|                      | P4             | 27K 2700K         | 70CRI                 | TSR Type 1 foot                                                | TSR Type 1 wide   | MDVOLT 120V-277V |  |
| Rotated optics       | P10 P12 P13    | 30K 3000K         | 70CRI                 | TSR Type 1 foot                                                | TSR Type 1 wide   | MDVOLT 120V-277V |  |
|                      |                | 40K 4000K         | 70CRI                 | TSR Type 1 foot                                                | TSR Type 1 wide   | MDVOLT 120V-277V |  |
|                      |                | 50K 5000K         | 70CRI                 | TSR Type 1 foot                                                | TSR Type 1 wide   | MDVOLT 120V-277V |  |

**Control options**

**Shipped installed**

**Other options**

**Shipped separately**



**FEATURES & SPECIFICATIONS**

**INTENDED USE** — Typical applications include corridors, hallways, conference rooms and private offices.

**CONSTRUCTION** — Galvanized steel mounting bracket frame, galvanized steel junction box with ballast-hinged access covers and spring latches. Reflectors are retained by tension springs.

Vertically adjustable mounting brackets with commercial hangars provide 3/8" total adjustment.

Two construction 1/2" x 3/8" and 1/2" x 1/2" knockouts for straight-through conduit run. Capacity 1/4 inch, No. 12 AWG conductors, conductor 90°C.

Accessories: 1/2" x 3/8" post spacing.

Passive cooling thermal management for 35°C standard, high ambient 40°C option available. Light engine and others are accessible from above or below ceiling.

Max cable thickness 1.5/8"

**OPTICS** — LED is luminaire 3-step black/white/gray 80 CRI minimum. 94 CRI optional.

LED light source concealed with diffusing optics lens.

General illumination lighting with 1.5/8" and 1/2" optical source and source image.

Self-Ranged and/or reflectors in specular, semi-specular, or matte diffuse finishes. Also available in white and black powder-coated.

**AS CAPABLE LUMINAIRE** — This down is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and uniformity of the beam and uniformity with other luminaires in the same system.

Acrylic Brands controls products. All configurations of this luminaire are calibrated and tested to meet the Acrylic Brands' specifications for domestic consistency — including color rendering, color fidelity and color temperature tolerances around standard CIE chromaticity coordinates. It is known about A+ standards, specifications, and testing methods.

**UGR** — UGR is used for luminaire aimed at task with a cut-off equal to or less than 10° per CEI 107-1996. Discomfort glare is inherent lighting (UGR 19.0).

**ELECTRICAL** — Built-in with 120V-277V, 50/60Hz, 0-10V dimming. Dimmer connected to junction box, 90% or 95% minimum dimming level available.

0-10V dimming luminaire requires 0-10V additional line voltage wires to be pulled.

**LUMEN MAINTENANCE** — 70% lumen maintenance at 60,000 hours.

**LISTINGS** — Certified UL listed Canadian safety standards. Wet location standard (covered ceiling), IP54 rated. Others are UL listed.

**GOVERNMENT PROCUREMENT** — BAA — Product with the BAA option qualifies as a domestic end product under the Buy America Act as implemented in the FAR and DFARS. Product with the BAA option also qualifies as manufactured in the United States under 301 Buy America regulations.

BABA — Built in America Buy America. Product with the BAA option also qualifies as produced in the United States under the definition of the Buy America Act.

Please refer to [www.altuslighting.com](http://www.altuslighting.com) for additional information.

**WARRANTY** — 5-year limited warranty. This is the only warranty provided and no other statements in this specification shall create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at [www.altuslighting.com/warranty](http://www.altuslighting.com/warranty) and [www.altuslighting.com/warranty](http://www.altuslighting.com/warranty).

Note: Actual performance may differ as a result of end-use environment and application.

All values are design or typical values, measured under laboratory conditions at 25 °C.

Specific values subject to change without notice.

**PERFORMANCE DATA**

| Luminaire | Lumens | Wattage | lm/W |
|-----------|--------|---------|------|
| 540       | 3224   | 5.74    | 91.2 |
| 750       | 7511   | 8.6     | 87.3 |
| 1000      | 1045   | 10.38   | 98.8 |
| 1200      | 1312   | 11.5    | 88.4 |
| 2000      | 2004   | 22.4    | 92.7 |
| 2500      | 2551   | 26.1    | 97.7 |
| 3000      | 3003   | 32.1    | 97.7 |
| 4000      | 4170   | 43      | 98.0 |

**NOTES**

Tested in accordance with IESNA LM-79-08

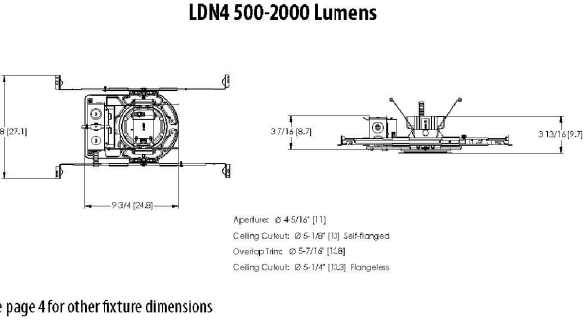
Tested to current ENEC EN1891 standards under stabilized laboratory conditions.

Based on LEDA 40 L55 35K 80CRI

**See page 4 for other fixture dimensions**

**DIMENSIONS**

LDN4 500-2000 Lumens



See page 4 for other fixture dimensions



**Radean Post Top  
LED Area Luminaire**

**Specifications**

EPA: 1.02 ft<sup>2</sup> (0.105 m<sup>2</sup>)

Length: 24" (61cm)

Width: 24" (61cm)

Height: 4" (101.6mm)

1/2" Luminaire Height: 20" (508mm)

1/2" Luminaire Height: 66.04cm

Weight: 38lbs (17.24kg)

**Introduction**

The architecturally-inspired shape of the RADEAN™ post top area luminaire embodies the grace and strength of the RADEAN family. The twin copper-core cast aluminum arms support the slender superstructure, creating a beautiful sculpture by day transforming into a beacon of comfort by night. Triangular arms redirect reflection maintaining its visually quiet appearance. With sleek lines and simple silhouettes, these LED luminaires use specialized lighting and visual comfort to transform common areas like courtyards, outdoor retail locations, universities and corporate campuses into pedestrian-friendly nighttime environments.

| Ordering Information |                     |                   |                          | EXAMPLE: RADPT LED P3 30K SYM MVOLT PT4 PE DNAXD |          |                                          |  |
|----------------------|---------------------|-------------------|--------------------------|--------------------------------------------------|----------|------------------------------------------|--|
| Series               | Performance package | Color temperature | Distribution             | Voltage                                          | Mounting | Shipped included                         |  |
| RADPT LED            | P1 3000 Lumens      | 27K 2700K         | SYM Symmetrical type IV  | MDVOLT 120V-277V                                 | PT4      | Ships with a 1/2" DNAXD mounting bracket |  |
|                      | P2 5000 Lumens      | 30K 3000K         | ASY Asymmetrical type IV | MDVOLT 120V-277V                                 | PT4      | Ships with a 1/2" DNAXD mounting bracket |  |
|                      | P3 10000 Lumens     | 35K 3500K         | PATH Pathway type IV     | MDVOLT 120V-277V                                 | PT4      | Ships with a 1/2" DNAXD mounting bracket |  |
|                      | P4 15000 Lumens     | 50K 5000K         | PATH Pathway type IV     | MDVOLT 120V-277V                                 | PT4      | Ships with a 1/2" DNAXD mounting bracket |  |

**Control options**

**Other options**

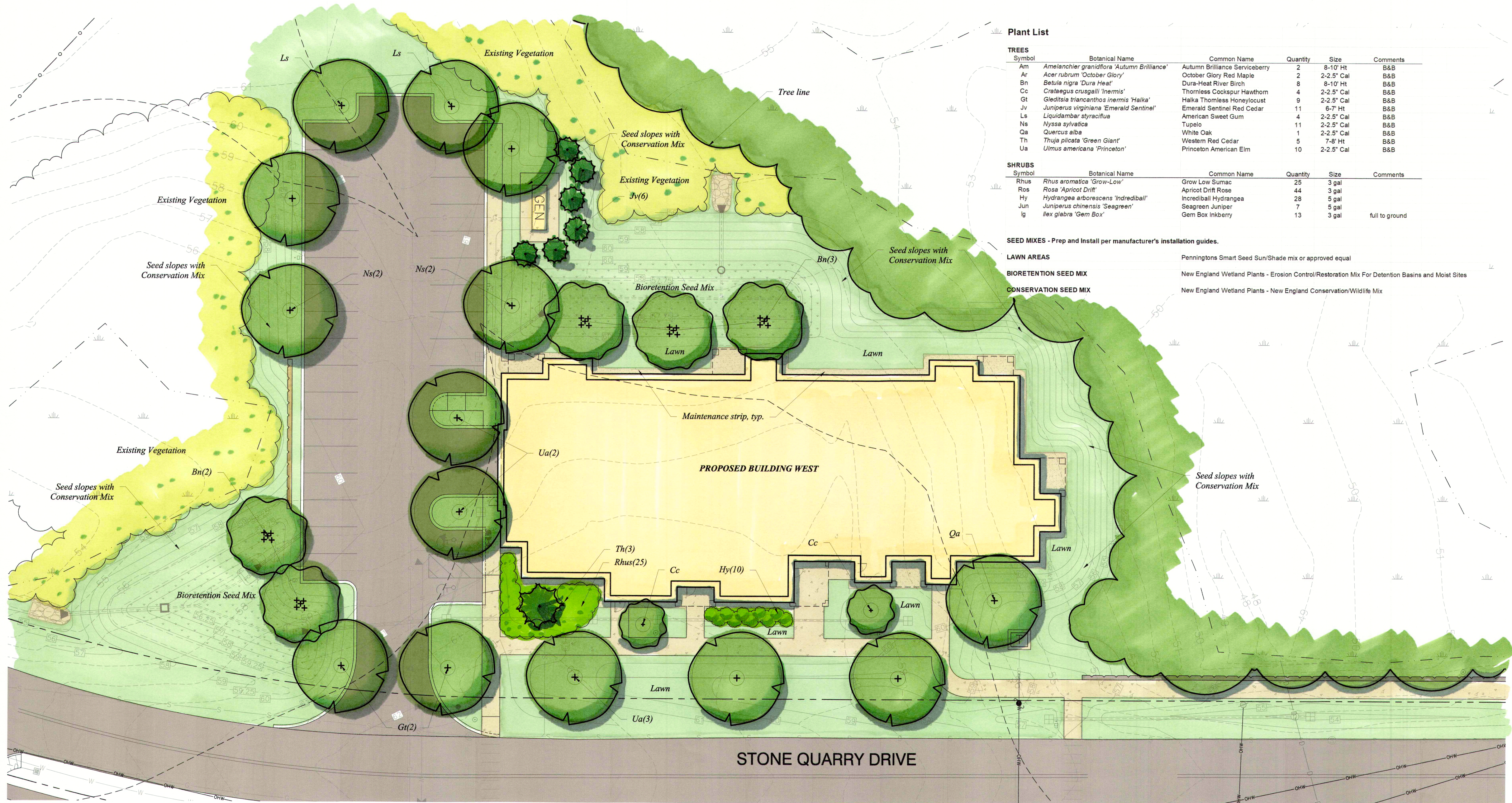
**Shipped installed**

**Field installed**

LIGHT FIXTURE CUT SHEETS

NOT TO SCALE





| TREES  |                                                    |                                |          |            |          |
|--------|----------------------------------------------------|--------------------------------|----------|------------|----------|
| Symbol | Botanical Name                                     | Common Name                    | Quantity | Size       | Comments |
| Am     | <i>Amelanchier grandiflora</i> 'Autumn Brilliance' | Autumn Brilliance Serviceberry | 2        | 8-10' Ht   | B&B      |
| Ar     | <i>Acer rubrum</i> 'October Glory'                 | October Glory Red Maple        | 2        | 2-2.5' Cal | B&B      |
| Bn     | <i>Betula nigra</i> 'Dura Heat'                    | Dura-Heat River Birch          | 8        | 8-10' Ht   | B&B      |
| Cc     | <i>Crataegus crusgalli</i> 'Inermis'               | Thornless Cockspur Hawthorn    | 4        | 2-2.5' Cal | B&B      |
| Gl     | <i>Gleditsia triacanthos</i> 'Inermis 'Italia'     | Halia Thornless Honeylocust    | 9        | 2-2.5' Cal | B&B      |
| Jv     | <i>Juniperus virginiana</i> 'Emerald Sentinel'     | Emerald Sentinel Red Cedar     | 11       | 6-7' Ht    | B&B      |
| Ls     | <i>Liquidambar styraciflua</i>                     | American Sweet Gum             | 4        | 2-2.5' Cal | B&B      |
| Na     | <i>Nyssa sylvatica</i>                             | Tupelo                         | 11       | 2-2.5' Cal | B&B      |
| Qa     | <i>Quercus alba</i>                                | White Oak                      | 1        | 2-2.5' Cal | B&B      |
| Th     | <i>Thuja plicata</i> 'Green Giant'                 | Western Red Cedar              | 5        | 7-8' Ht    | B&B      |
| Ua     | <i>Ulmus americana</i> 'Princeton'                 | Princeton American Elm         | 10       | 2-2.5' Cal | B&B      |

| SHRUBS |                                            |                       |          |       |                |
|--------|--------------------------------------------|-----------------------|----------|-------|----------------|
| Symbol | Botanical Name                             | Common Name           | Quantity | Size  | Comments       |
| Rhus   | <i>Rhus aromatica</i> 'Grow-Low'           | Grow Low Sumac        | 25       | 3 gal |                |
| Ros    | <i>Rosa</i> 'Apricot Drift'                | Apricot Drift Rose    | 44       | 3 gal |                |
| Hy     | <i>Hydrangea arborescens</i> 'Incrediball' | Incrediball Hydrangea | 28       | 5 gal |                |
| Jun    | <i>Juniperus chinensis</i> 'Seagreen'      | Seagreen Juniper      | 7        | 5 gal |                |
| Ig     | <i>Ilex glabra</i> 'Gem Box'               | Gem Box Inkberry      | 13       | 3 gal | full to ground |

SEED MIXES - Prep and install per manufacturer's installation guides.

LAWN AREAS  
Penningtons Smart Seed Sun/Shade mix or approved equal

BIORETENTION SEED MIX  
New England Wetland Plants - Erosion Control/Restoration Mix For Detention Basins and Moist Sites

CONSERVATION SEED MIX  
New England Wetland Plants - New England Conservation/Wildlife Mix

## Landscape Notes

- Design is based on drawings by Altus Engineering dated October 2025 and may require adjustment due to actual field conditions.
- The contractor shall follow best management practices during construction and shall take all means necessary to stabilize and protect the site from erosion.
- Erosion Control shall be in place prior to construction.
- The Contractor shall verify layout and grades and inform the Landscape Architect or Client's Representative of any discrepancies or changes in layout and/or grade relationships prior to construction.
- It is the contractor's responsibility to verify drawings provided are to the correct scale prior to any bid, estimate or installation. A graphic scale bar has been provided on each sheet for this purpose. If it is determined that the scale of the drawing is incorrect, the landscape architect will provide a set of drawings at the correct scale, at the request of the contractor.
- Trees to remain within the construction zone shall be protected from damage for the duration of the project by snow fence or other suitable means of protection to be approved by Landscape Architect or Client's Representative. Snow fence shall be located at the drip line at a minimum and shall include any and all surface roots. Do not fill or mulch on the trunk flare. Do not disturb roots. In order to protect the integrity of the roots, branches, trunk and bark of the tree(s) no vehicles or construction equipment shall drive or park in or on the area within the drip line(s) of the tree(s). Do not store any refuse or construction materials or portables within the tree protection area.
- This plan is for review purposes only. NOT for Construction. Construction Documents will be provided upon request.
- Location, support, protection, and restoration of all existing utilities and appurtenances shall be the responsibility of the Contractor.
- The Contractor shall verify exact location and elevation of all utilities with the respective utility owners prior to construction. Call 811 or 1-888-344-7233.
- The Contractor shall procure any required permits prior to construction.
- Prior to any landscape construction activities Contractor shall test all existing loam and loam from off-site intended to be used for lawns and plant beds using a thorough sampling throughout the supply. Soil testing shall indicate levels of pH, nitrates, macro and micro nutrients, texture, soluble salts, and organic matter. Contractor shall provide Landscape Architect with test results and recommendations from the testing facility along with soil amendment plans as necessary for the proposed plantings to thrive. All loam to be used on site shall be amended as approved by the Landscape Architect prior to placement.
- Contractor shall notify landscape architect or owner's representative immediately if at any point during demolition or construction a site condition is discovered which may negatively impact the completed project. This includes, but is not limited to, unforeseen drainage problems, unknown subsurface conditions, and discrepancies between the plan and the site. If a contractor is aware of a potential issue, and does not bring it to the attention of the landscape architect or owner's representative immediately, they may be responsible for the labor and materials associated with correcting the problem.
- The Contractor shall furnish and plant all plants shown on the drawings and listed thereon. All plants shall be nursery-grown under climatic conditions similar to those in the locality of the project. Plants shall conform to the botanical names and standards of size, culture, and quality for the highest grades and standards as adopted by the American Association of Nurserymen, Inc. in the *American Standard of Nursery Stock*. American Standards Institute, Inc. 230 Southern Building, Washington, D.C. 20005.
- A complete list of plants, including a schedule of sizes, quantities, and other requirements is shown on the drawings. In the event that quantity discrepancies or material omissions occur in the plant materials list, the planting plans shall govern.
- All plants shall be legibly tagged with proper botanical names.
- The Contractor shall guarantee all plants for 2 years from time of acceptance.
- Owner or Owner's Representative will inspect plants upon delivery for conformity to Specification requirements. Such approval shall not affect the right of inspection and rejection during or after the progress of the work. The Owner reserves the right to inspect and/or select all trees at the place of growth and reserves the right to approve a representative sample of each type of shrub, herbaceous perennial, annual, and ground cover at the place of growth. Such sample will serve as a minimum standard for all plants of the same species used in this work.
- No substitutions of plants may be made without prior approval of the Owner or the Owner's Representative for any reason.
- All landscaping shall be provided with the following:
  - Outside hose attachments spaced a maximum of 150 feet apart, and
  - An underground automatic irrigation system utilizing the latest technology in water conservation
- If an automatic irrigation system is installed, all irrigation valve boxes shall be located within planting bed areas.
- The contractor is responsible for all plant material from the time their work commences until final acceptance. This includes but is not limited to maintaining all plants in good condition, the security of the plant material once delivered to the site, and watering of plants. Plants shall be appropriately watered prior to, during and after planting. It is the contractor's responsibility to provide clean water suitable for plant health from off site, should it not be available on site.
- All disturbed areas will be dressed with 6" of topsoil and planted as noted on the plans or seeded except plant beds. Plant beds shall be prepared to a depth of 12" with 75% loam and 25% compost.
- Trees, ground cover, and shrub beds shall be mulched to a depth of 2" with one-year-old, well-composted, shredded native bark not longer than 4" in length and 1/2" in width, free of woodchips and sawdust. Mulch for ferns and herbaceous perennials shall be no longer than 1" in length. Trees in lawn areas shall be mulched in a 5' diameter min. saucer. Color of mulch shall be black.
- Drip strip shall extend to 6" beyond roof overhang and shall be edged with 3/16" thick metal edger.
- In no case shall mulch touch the stem of a plant nor shall mulch ever be more than 3" thick total (including previously applied mulch) over the root ball of any plant.
- Secondary lateral branches of deciduous trees overhanging vehicular and pedestrian travel ways shall be pruned up to a height of 6' to allow clear and safe passage of vehicles and pedestrians under tree canopy. Within the sight distance triangles at vehicle intersections the canopies shall be raised to 8' min.
- Snow shall be stored a minimum of 5' from shrubs and trunks of trees.
- Landscape Architect is not responsible for the means and methods of the contractor.

Do not heavily prune the tree at planting. Prune only cross-over limbs, co-dominant leaders, and broken or dead branches. Some interior twigs and lateral branches may be pruned; however, DO NOT remove the terminal buds of branches that extend to the edge of the crown.

Trees less than 3" in caliper shall be staked with three stakes per tree, spaced evenly around the trunk with 12 gauge wire. Plastic hose sections shall be used at attachment to trees. Each wire shall be flagged with a visual marker. 5' long min. wooden stakes shall be used to anchor the wires. Stakes shall be driven at least 12" outside the edge of the planting pit into stable soil. Remove all staking NO LATER than the end of the first growing season after planting.

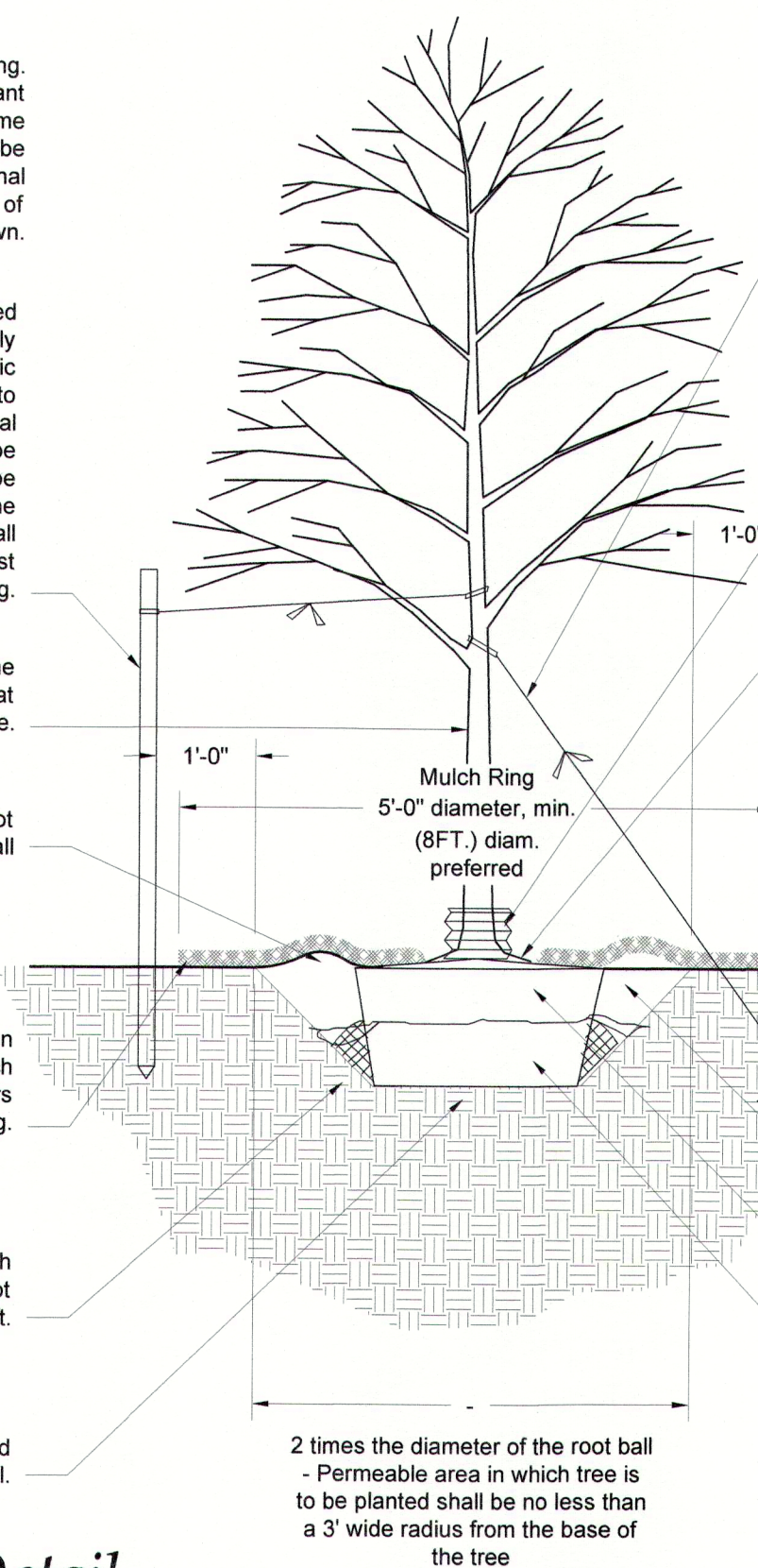
Mark the north side of the tree in the nursery. Rotate the tree to face north at the site whenever possible.

4 in. high earth saucer beyond edge of root ball

2 in. max. Mulch. Do NOT place mulch in contact with tree trunk. Maintain the mulch weed-free for a minimum of three years after planting.

Tamp soil around root ball base firmly with foot pressure so that root ball does not shift.

Place root ball on unexcavated or tamped soil.



Trees greater than 3" in caliper shall be guyed with three guys per tree, spaced evenly around the trunk with 12 gauge wire. Plastic hose sections shall be used at attachment to trees. Each guy wire shall be flagged with a visual marker. 24" stakes or metal drive anchors shall be used to anchor the guy wires. Stakes/Anchors shall be driven 12" min. outside the edge of the planting pit into stable soil. Remove all guying NO LATER than the end of the first growing season after planting.

6" Corrugated PVC tree sock

Each tree must be planted such that the original trunk flare is visible at the top of the root ball. Trees where the original trunk flare is not visible may be rejected. Do NOT cover the top of the root ball with soil. Before planting Contractor shall inspect the rootball for the location of the original root flare. If the original root flare is not visible at the top of the root ball then the Contractor shall then gently remove from the top of the root ball any excess soil from nursery operations that may be covering the original root flare. All secondary and girdling roots shall be removed prior to planting. Trees with 4" or more of extraneous soil and/or adventitious roots greater than 1/8" shall be rejected. The tree shall be planted with the original root flare at or slightly (2-3") above surrounding finished grade.

Backfill with existing soil, in sandy and heavy clay soils add 20% max. by volume composted organic material to the existing soil.

Remove all twine, rope, wire, and burlap

If plant is shipped with a wire basket around the root ball, prior to planting, the contractor shall cut away the bottom of the wire basket, leaving the sides in place. Once the tree is placed and faced, the contractor shall remove the remainder of the wire basket and backfill the planting pit as noted above.

## Tree Planting Detail

woodburn  
& company  
LANDSCAPE ARCHITECTURE

103 Kent Place  
Neumark, New Hampshire  
Phone: 603.659.5949

# RiverWoods Durham Phase II

## LANDSCAPE PLAN

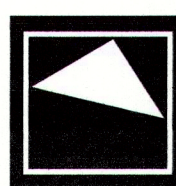
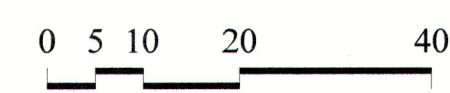
14 Stone Quarry Drive Durham, New Hampshire

Drawn By: VM  
Checked By: RW  
Scale: 1" = 20' - 0"  
Date: October 7, 2025  
Revisions:

L-1

Sheet 1 of 2





Plant List

| TREES  |                                             |                                |          |            |                |
|--------|---------------------------------------------|--------------------------------|----------|------------|----------------|
| Symbol | Botanical Name                              | Common Name                    | Quantity | Size       | Comments       |
| Am     | Amelanchier grandiflora 'Autumn Brilliance' | Autumn Brilliance Serviceberry | 2        | 8-10' Ht   | B&B            |
| Ar     | Acer rubrum 'October Glory'                 | October Glory Red Maple        | 2        | 2-2.5' Cal | B&B            |
| Bn     | Betula nigra 'Dura Heat'                    | Dura-Heat River Birch          | 8        | 8-10' Ht   | B&B            |
| Cc     | Crataegus crusgalli 'Inermis'               | Thornless Cockspur Hawthorn    | 4        | 2-2.5' Cal | B&B            |
| Gt     | Gleditsia triacanthos inermis 'Halka'       | Halka Thornless Honeylocust    | 9        | 2-2.5' Cal | B&B            |
| Jv     | Juniperus virginiana 'Emerald Sentinel'     | Emerald Sentinel Red Cedar     | 11       | 6-7' Ht    | B&B            |
| Ls     | Liquidambar styraciflua                     | American Sweet Gum             | 4        | 2-2.5' Cal | B&B            |
| Ns     | Nyssa sylvatica                             | Tupelo                         | 11       | 2-2.5' Cal | B&B            |
| Qa     | Quercus alba                                | White Oak                      | 1        | 2-2.5' Cal | B&B            |
| Th     | Thuja plicata 'Green Giant'                 | Western Red Cedar              | 5        | 7-8' Ht    | B&B            |
| Ua     | Ulmus americana 'Princeton'                 | Princeton American Elm         | 10       | 2-2.5' Cal | B&B            |
| SHRUBS |                                             |                                |          |            |                |
| Symbol | Botanical Name                              | Common Name                    | Quantity | Size       | Comments       |
| Rhus   | Rhus aromatica 'Grow-Low'                   | Grow Low Sumac                 | 25       | 3 gal      |                |
| Ros    | Rosa 'Apricot Drift'                        | Apricot Drift Rose             | 44       | 3 gal      |                |
| Hy     | Hydrangea arborescens 'Incrediball'         | Incrediball Hydrangea          | 28       | 5 gal      |                |
| Jun    | Juniperus chinensis 'Seagreen'              | Seagreen Juniper               | 7        | 5 gal      |                |
| Ig     | Ilex glabra 'Gem Box'                       | Gem Box Inkberry               | 13       | 3 gal      | full to ground |

- SEED MIXES** - Prep and Install per manufacturer's installation guides.
- LAWN AREAS** Penningtons Smart Seed Sun/Shade mix or approved equal
- BIORETENTION SEED MIX** New England Wetland Plants - Erosion Control/Restoration Mix For Detention Basins and Moist Sites
- CONSERVATION SEED MIX** New England Wetland Plants - New England Conservation/Wildlife Mix







LEFT

4  
A500



BACK

3  
A500

- ROOF MIDPOINT  
149'-3 3/8"
- TRUSS BEARING  
142'-4 7/8"
- FOURTH FLOOR  
133'-3 3/4"
- THIRD FLOOR  
122'-1 7/8"
- SECOND FLOOR  
111'-0"
- FIRST FLOOR  
100'-0"



RIGHT

2  
A500



FRONT

1  
A500

- ROOF MIDPOINT  
149'-3 3/8"
- TRUSS BEARING  
142'-4 7/8"
- FOURTH FLOOR  
133'-3 3/4"
- THIRD FLOOR  
122'-1 7/8"
- SECOND FLOOR  
111'-0"
- FIRST FLOOR  
100'-0"



EXTERIOR ELEVATION KEY NOTES:

|     |                                                                                        |
|-----|----------------------------------------------------------------------------------------|
| MR  | STANDING SEAM GALVALUME METAL ROOF                                                     |
| A   | THREE DIMENSIONAL ASPHALT SHINGLES                                                     |
| S   | STONE VENEER                                                                           |
| MS  | MANUFACTURED STONE                                                                     |
| F5  | FIBER CEMENT SIDING WITH 5" LAP - COLOR B                                              |
| F52 | FIBER CEMENT SIDING WITH 5" LAP - COLOR C                                              |
| FP  | FIBER CEMENT PANEL - COLOR A                                                           |
| FP2 | FIBER CEMENT PANEL - COLOR B                                                           |
| FV  | FIBER CEMENT VERTICAL BATTEN SIDING - COLOR A<br>(1X3 FIBER CEMENT BATTENS @ 16" O.C.) |
| FV2 | FIBER CEMENT VERTICAL BATTEN SIDING - COLOR A<br>(1X3 FIBER CEMENT BATTENS @ 8" O.C.)  |
| FV3 | FIBER CEMENT VERTICAL BATTEN SIDING - COLOR D<br>(1X3 FIBER CEMENT BATTENS @ 16" O.C.) |



LEFT

4  
A501

BACK

3  
A501



RIGHT

2  
A501

FRONT

1  
A501



EXTERIOR ELEVATION KEY NOTES:

|     |                                                                                        |
|-----|----------------------------------------------------------------------------------------|
| MR  | STANDING SEAM GALVALUME METAL ROOF                                                     |
| A   | THREE DIMENSIONAL ASPHALT SHINGLES                                                     |
| S   | STONE VENEER                                                                           |
| MS  | MANUFACTURED STONE                                                                     |
| F5  | FIBER CEMENT SIDING WITH 5" LAP - COLOR B                                              |
| F52 | FIBER CEMENT SIDING WITH 5" LAP - COLOR C                                              |
| FP  | FIBER CEMENT PANEL - COLOR A                                                           |
| FP2 | FIBER CEMENT PANEL - COLOR B                                                           |
| FV  | FIBER CEMENT VERTICAL BATTEN SIDING - COLOR A<br>(1X3 FIBER CEMENT BATTENS @ 16" O.C.) |
| FV2 | FIBER CEMENT VERTICAL BATTEN SIDING - COLOR A<br>(1X3 FIBER CEMENT BATTENS @ 8" O.C.)  |
| FV3 | FIBER CEMENT VERTICAL BATTEN SIDING - COLOR D<br>(1X3 FIBER CEMENT BATTENS @ 16" O.C.) |





