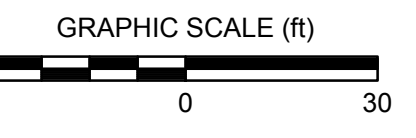


**Site Plan**

SCALE: 1 in. = 30 ft.



WATER RESOURCE PROTECTION OVERLAY DISTRICT (WPROD): The following activities shall not be allowed on the property.

- Existing or protected uses, excluding the use of pesticides, herbicides and other chemicals except lawn fertilizers applied either at a rate not to exceed 16 pounds of nitrates per 40,000 square feet per year or in accordance with a schedule developed by the Department of Food and Agriculture of the United States Department of Agriculture.
- Any activity that will generate, treat, store and dispose of, and the transportation of, hazardous waste or materials as defined under c. 21C and 310 CMR 30.000, except very small quantity generators, household hazardous waste events, waste oil retention facilities required by G. L. c. 21, s.52A and water remediation treatment works approved by DEP for the treatment of contaminated ground or surface waters.
- Sale or storage of liquid petroleum products, except storage for normal household use, outdoor maintenance, heating of a structure, waste oil retention facilities or emergency generators required by statute or regulation, approved treatment works for ground or surface waters, provided that such storage is in freestanding containers within buildings or aboveground with secondary containment adequate to contain a spill the size of the container's total storage capacity.
- Use of septic tank cleaners, which contain toxic chemicals as defined by the Commonwealth of Massachusetts DEP Regulations 310 CMR 30.00.
- Solid waste disposal sites, including junk and salvage yards or sanitary landfills.
- Motor vehicle repair facilities, body shops and gasoline service stations.
- Trucking or bus terminals.
- Car and truck washing facilities not connected to the municipal sewer system.
- Storage of hazardous materials, including but not limited to chemicals, fertilizers, pesticides, herbicides, manure or deicing compounds, unless in a freestanding container within a building or above ground with secondary containment adequate to contain a spill the size of the container's total storage capacity or within a structure designed to prevent the escape of contaminated runoff or leachate.
- Dumping of snow brought in from outside the WRPOD.
- Use of deicing compounds on roads, driveways and parking lots.
- Diversion of storm water runoff from the WRPOD.

UTILITIES: The location of all existing subsurface sewage disposal systems and other utilities shown are approximate and must be confirmed by the respective utility authorities prior to any construction. The utility authorities shall also be consulted for their respective specifications prior to installation of all proposed utilities shown. All existing utilities to the existing dwelling to be demolished and cut and capped as required.

At a minimum, the builder shall utilize the following minimum utility sizing for each unit:  
 A. Water Service Main Line -> 2" Class 52 Ductile Iron w/Tyton Joint piping w/Brass Curb Stop and 5/8" Meter  
 B. Gas Connection -> 1" MDPE Gas Pipe  
 C. Electric Connection -> 400 Amp Service within structure

DATE	REVISION	BY	DESIGN BY
08/20/24	REVIS PER PLANNING DEPT REVIEW COMMENTS REQUIRING RELOCATION OF ENTRANCE DRIVE	KML	KML
10/15/24	REVIS PER PLANNING DEPT REVIEW COMMENTS REQUIRING RELOCATION OF ENTRANCE DRIVE	KML	KML/TAJ
12/06/24	REVIS PER PLANNING DEPT REVIEW COMMENTS FOR PHASING PLAN AND BATHROOM REQUIREMENTS	KML	KML
			Check by JAV/TAJ

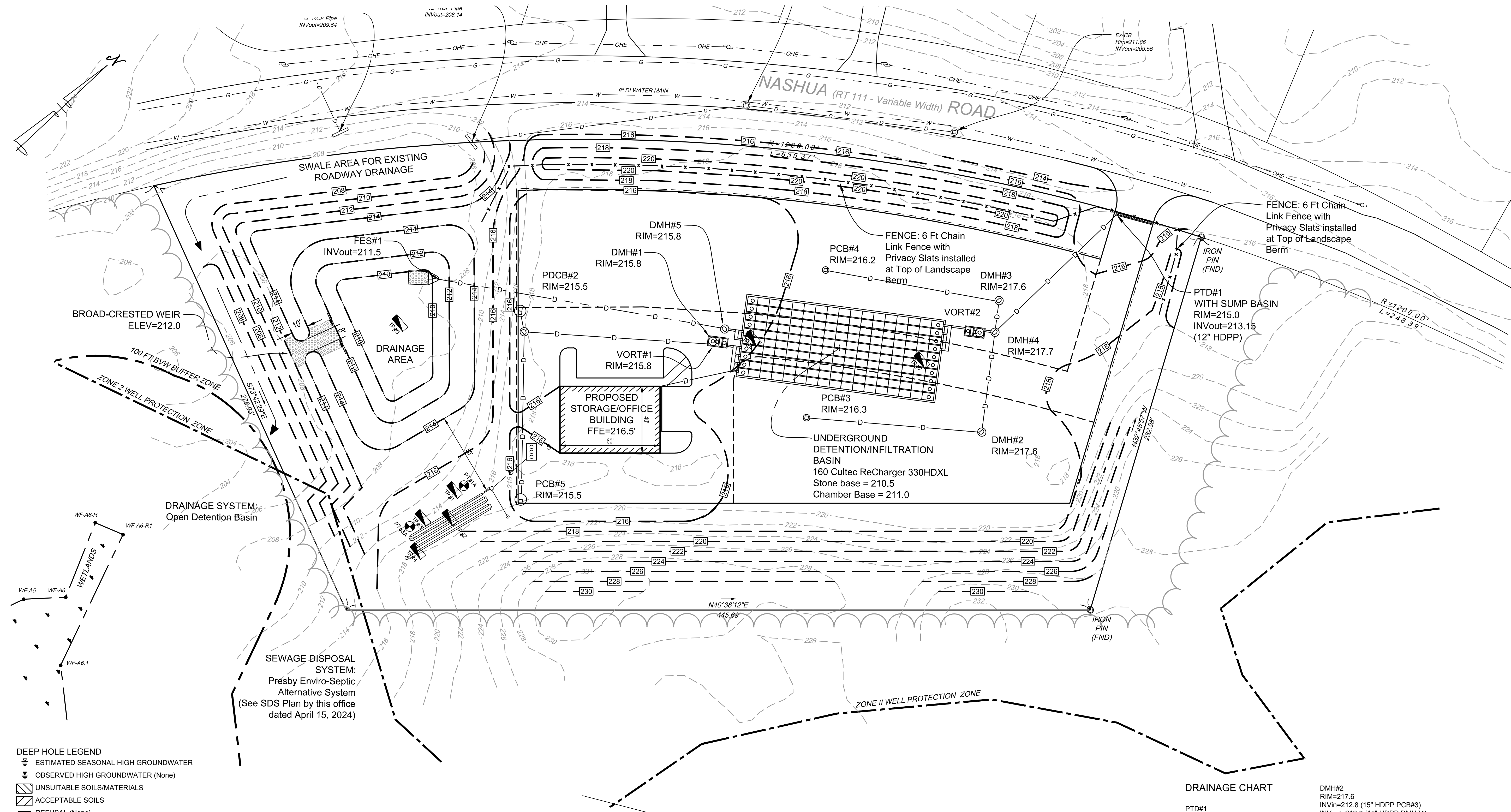
**Comerstone Land Associates, LLC**  
 Civil & Structural Engineering  
 Land Surveying - Land Development  
 25 Dean Ave  
 Tyngsboro, MA 01879  
 (978) 835-0102  
 www.comerstone.com

SCALE: As Shown  
 DATE: March 22, 2024  
 PREPARED FOR:  
 Fabio Lacerda  
 12 Constance Drive  
 Tyngsboro, MA 01879

**LAYOUT & UTILITIES PLAN**  
 Commercial Development  
 147 NASHUA ROAD  
 PEPPERELL, MASSACHUSETTS

JOB NO.: 2023-333  
 SHEET: 2 of 10

DRAWING NO.  
**C-102**



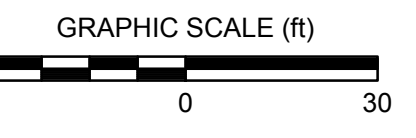
- DEEP HOLE LEGEND**
- ESTIMATED SEASONAL HIGH GROUNDWATER
  - OBSERVED HIGH GROUNDWATER (None)
  - UNSUITABLE SOILS/MATERIALS
  - ACCEPTABLE SOILS
  - REFUSAL (None)

**SUBSURFACE TESTING**  
DEEP OBSERVATION HOLE LOGS

HOLE NO.	TP-1	TP-2	TP-3	TP-4	TP-5	TP-6	TP-7
	HORIZON TEXTURE COLOR	HORIZON TEXTURE COLOR	HORIZON TEXTURE COLOR	HORIZON TEXTURE COLOR	HORIZON TEXTURE COLOR	HORIZON TEXTURE COLOR	HORIZON TEXTURE COLOR
	ELEV. (ft.) MOTTLING MISC. DESC.	ELEV. (ft.) MOTTLING MISC. DESC.	ELEV. (ft.) MOTTLING MISC. DESC.	ELEV. (ft.) MOTTLING MISC. DESC.	ELEV. (ft.) MOTTLING MISC. DESC.	ELEV. (ft.) MOTTLING MISC. DESC.	ELEV. (ft.) MOTTLING MISC. DESC.
DATE:	12/06/23	12/06/23	12/06/23	12/06/23	11/02/23	11/02/23	11/02/23
S.E.:	K. Lania/U. Visniewski - CLA	K. Lania/U. Visniewski - CLA	K. Lania/U. Visniewski - CLA	K. Lania/U. Visniewski - CLA	K. Lania/U. Visniewski - CLA	K. Lania/U. Visniewski - CLA	K. Lania/U. Visniewski - CLA
INSP:	K. Gendron - NABOH	K. Gendron - NABOH	K. Gendron - NABOH	K. Gendron - NABOH	K. Gendron - NABOH	K. Gendron - NABOH	K. Gendron - NABOH

**Site Plan**

SCALE: 1 in. = 30 ft.



**DRAINAGE CHART**

PTD#1 RIM=215.0 INVout=213.5 (12" HDPP DMH#4)	DMH#2 RIM=217.6 INVin=212.8 (15" HDPP PCB#3) INVout=212.7 (15" HDPP DMH#4)
PDCB#2 RIM=215.5 INVout=211.9 (15" HDPP DMH#1)	DMH#3 RIM=217.6 INVin=212.7 (15" HDPP PCB#4) INVout=212.6 (15" HDPP DMH#4)
DMH#1 RIM=215.6 INVin=211.85 (15" HDPP PDCB#2) INVin=212.0 (15" HDPP PCB#5) INVout=211.75 (15" HDPP VORT#1)	DMH#4 RIM=217.7 INVin=212.6 (12" HDPP PTD#1) INVin=212.4 (15" HDPP DMH#2) INVin=212.5 (15" HDPP DMH#3) INVout=212.3 (18" HDPP VORT#2)
VORT#1 VORTECHNICS MODEL 4000 INVin=211.2 (18" HDPP DMH#1) INVout=211.1 (18" HDPP UD/IB)	VORT#2 VORTECHNICS MODEL 4000 RIM=217.4 INVin=212.0 (18" HDPP DMH#4) INVout=211.9 (18" HDPP UD/IB)
PCB#3 RIM=216.3 INVout=213.3 (15" HDPP DMH#2)	UNDERGROUND DETENTION/INFILTRATION BASIN (UD/IB) INVin=211.0 (18" HDPP VORT#1-4 PIPE HEADER) INVin=211.5 (18" HDPP VORT#2-4 PIPE HEADER) INVout=213.0 (6" HDPP OCS#1-2 PIPE HEADER)
PCB#4 RIM=216.2 INVout=213.2 (15" HDPP DMH#3)	DMH#5 RIM=215.8 INVin=212.5 (6" HDPP UD/IB) INVout=212.4 (12" FES#1)
PCB#5 RIM=215.5 INVout=212.5 (15" HDPP PDCB#2)	FES#1 INVout=211.5 (12" PDMH#5)

DATE	REVISION	BY	DESIGN BY
08/20/24	REVIS PER PLANNING DEPT REVIEW COMMENTS REQUIRING RELOCATION OF ENTRANCE DRIVE	KML	KML
10/15/24	REVIS PER PLANNING DEPT REVIEW COMMENTS REQUIRING RELOCATION OF ENTRANCE DRIVE	KML	KML
12/06/24	REVIS PER PLANNING DEPT REVIEW COMMENTS REQUIRING RELOCATION OF ENTRANCE DRIVE	KML	KML

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12/06/24	REVIS PER PLANNING DEPT REVIEW COMMENTS REQUIRING RELOCATION OF ENTRANCE DRIVE	KML	KML

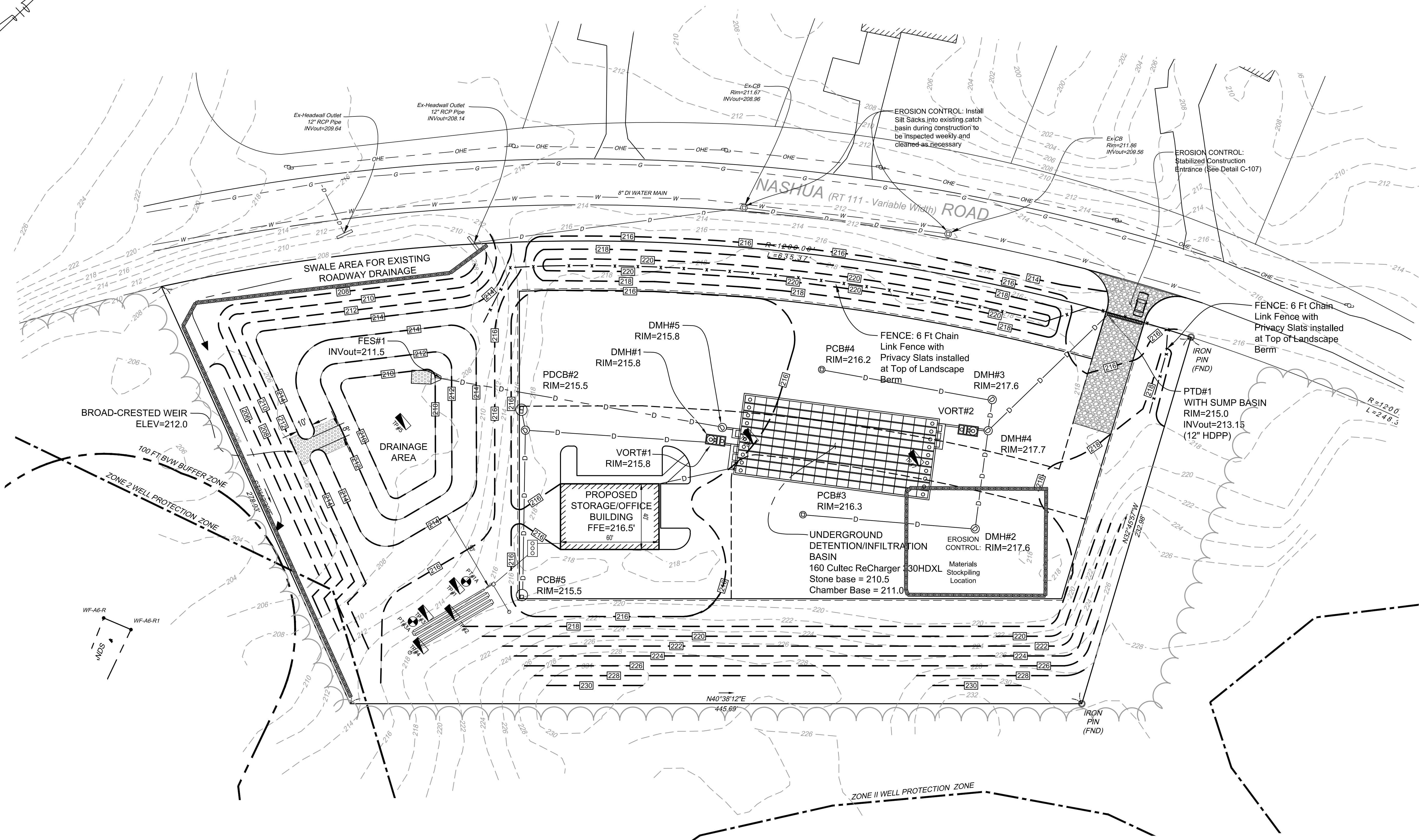
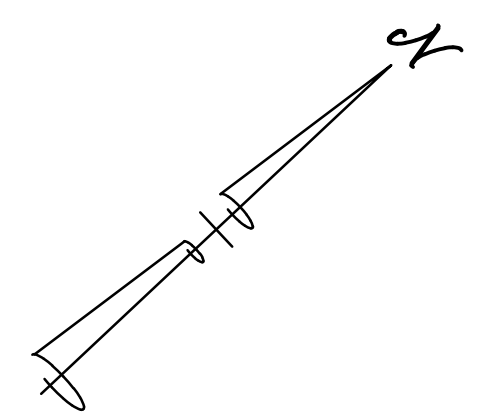
**Comerstone Land Associates, LLC**  
Civil & Structural Engineering  
Land Surveying - Land Development  
25 Dean Avenue, Suite 102  
Worcester, MA 01602  
www.comerstone.com

SCALE: As Shown  
DATE: March 22, 2024  
PREPARED FOR:  
Fabio Lacerda  
12 Constatine Drive  
Tyngsboro, MA 01879

**GRADING & DRAINAGE PLAN**  
Commercial Development  
147 NASHUA ROAD  
PEPPERELL, MASSACHUSETTS

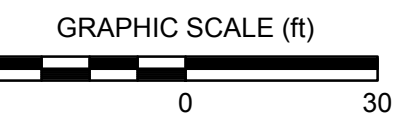
JOB NO.: 2023-333  
SHEET: 3 of 10  
DRAWING NO.  
**C-103**

Certification not valid without ORIGINAL stamp and/or signature



**Site Plan**

SCALE: 1 in. = 30 ft.



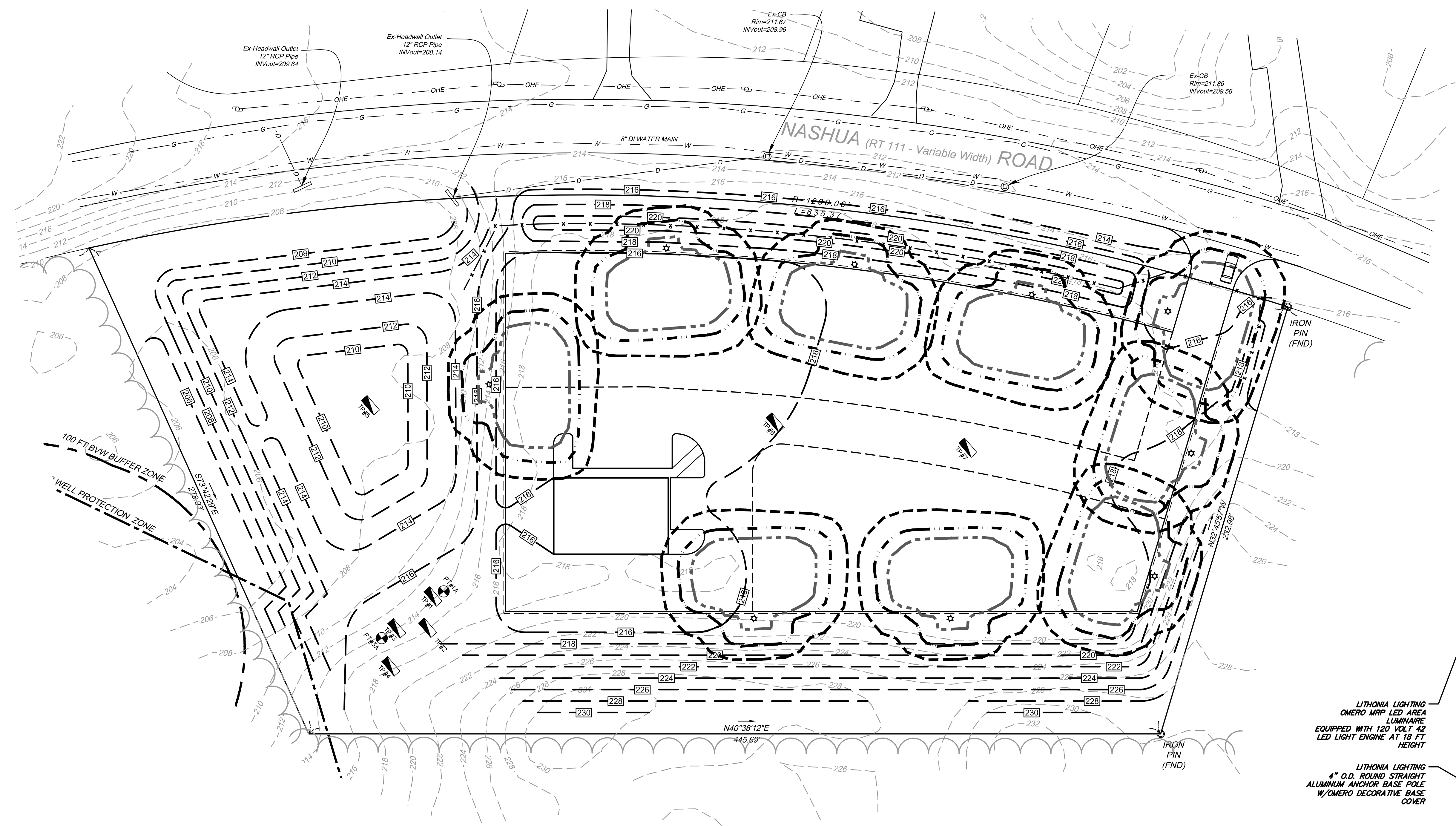
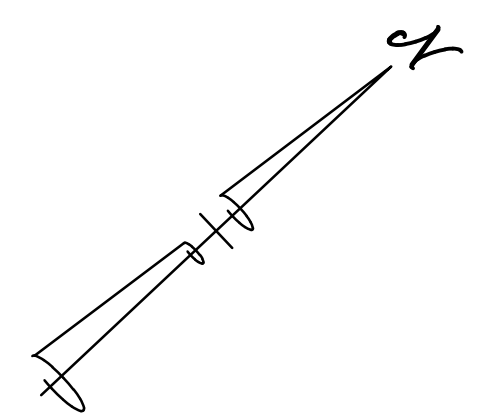
DATE	REVISION	BY	DESIGN BY
08/20/24	REVIS PER PLANNING DEPT REVIEW COMMENTS REQUIRING RELOCATION OF ENTRANCE DRIVE	KML	KML
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**Comerstone Land Associates, LLC**  
 Civil & Structural Engineering  
 Land Surveying - Land Development  
 25 Dean Avenue  
 Tyngsboro, MA 01879  
 (978) 835-0102

SCALE: As Shown  
 DATE: March 22, 2024  
 PREPARED FOR:  
 Fabio Lacerda  
 12 Constantine Drive  
 Tyngsboro, MA 01879

**EROSION CONTROL PLAN**  
 Commercial Development  
 147 NASHUA ROAD  
 PEPPERELL, MASSACHUSETTS

JOB NO.: 2023-333  
 SHEET: 4 of 10  
 DRAWING NO.  
**C-104**

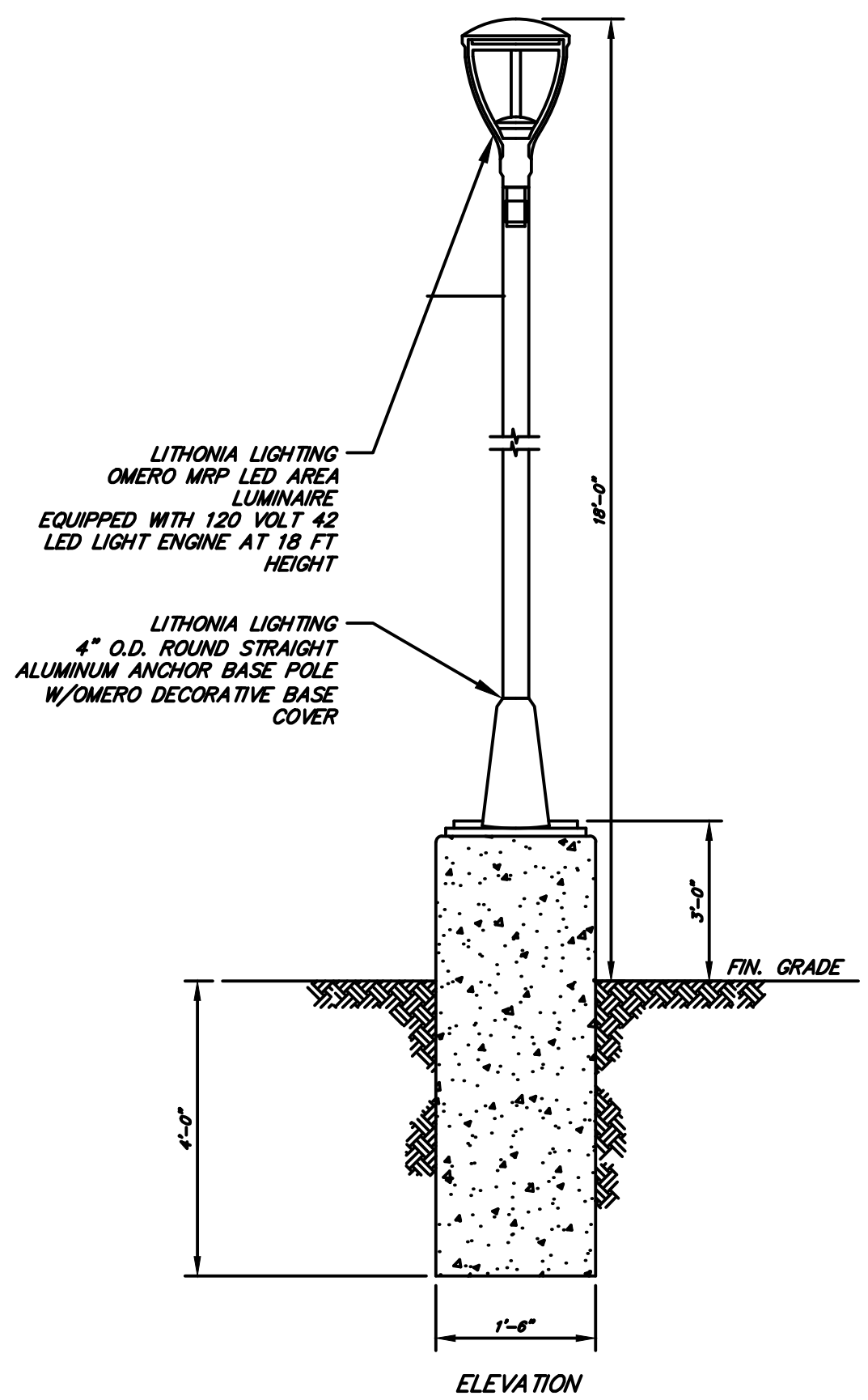


**Site Plan**

SCALE: 1 in. = 30 ft.  
 GRAPHIC SCALE (ft)  
 0 30

**LEGEND**

- 0.5 FT CANDLE WATT CONTOUR
- - - 1.0 FT CANDLE WATT CONTOUR
- 2.0 FT CANDLE WATT CONTOUR



**SITE LIGHTING FIXTURE**  
 NOT TO SCALE

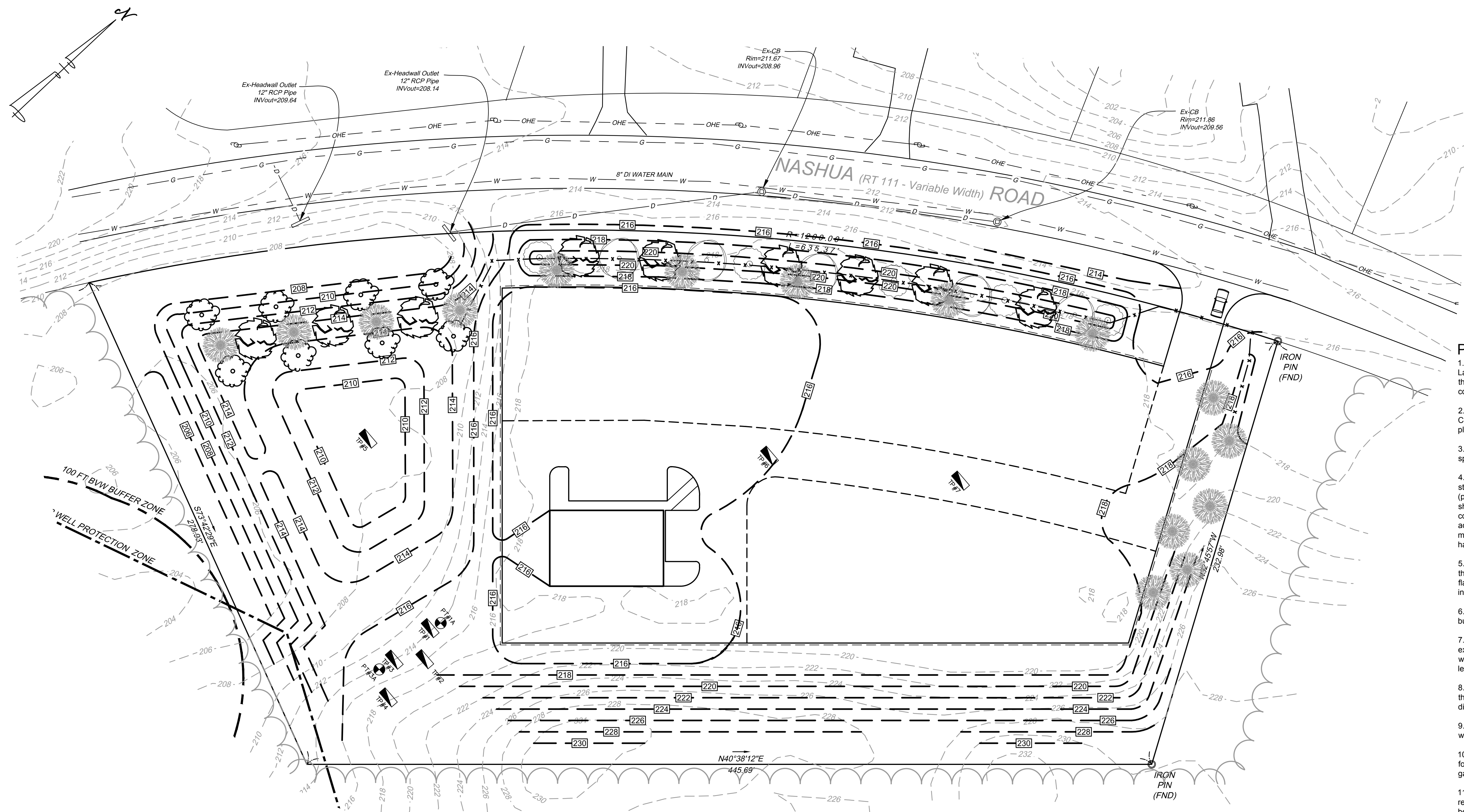
DATE	REVISION	BY	DESIGN BY
08/20/24	REVIS PER PLANNING DEPT REVIEW COMMENTS REQUIRING RELOCATION OF ENTRANCE DRIVE	KML	KML
10/15/24	REVIS PER PLANNING DEPT REVIEW COMMENTS REQUIRING RELOCATION OF ENTRANCE DRIVE	KML	KML/TAJ
12/06/24	REVIS PER PLANNING DEPT REVIEW COMMENTS FOR PHASING PLAN AND BATHROOM REQUIREMENTS	KML	KML
			Check by JAV/TAJ

**Cornerstone Land Associates, LLC**  
 Civil & Structural Engineering  
 Land Surveying - Land Development  
 25 Dean Avenue  
 Tyngsboro, MA 01879  
 (978) 935-0102  
 www.cornerstoneland.com

SCALE: As Shown  
 DATE: March 22, 2024  
 PREPARED FOR:  
 Fabio Lacerda  
 12 Constantine Drive  
 Tyngsboro, MA 01879

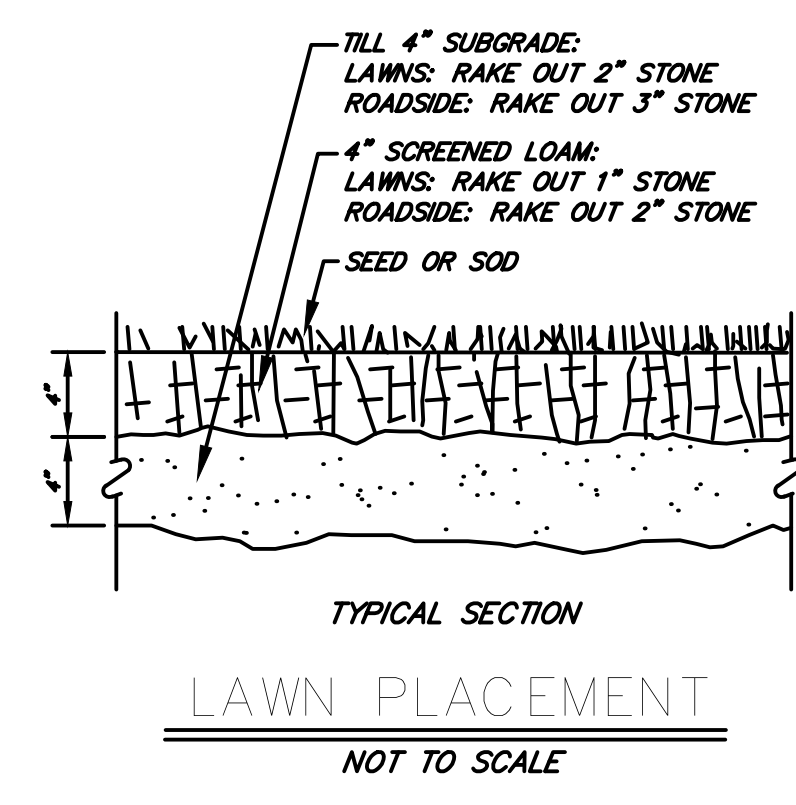
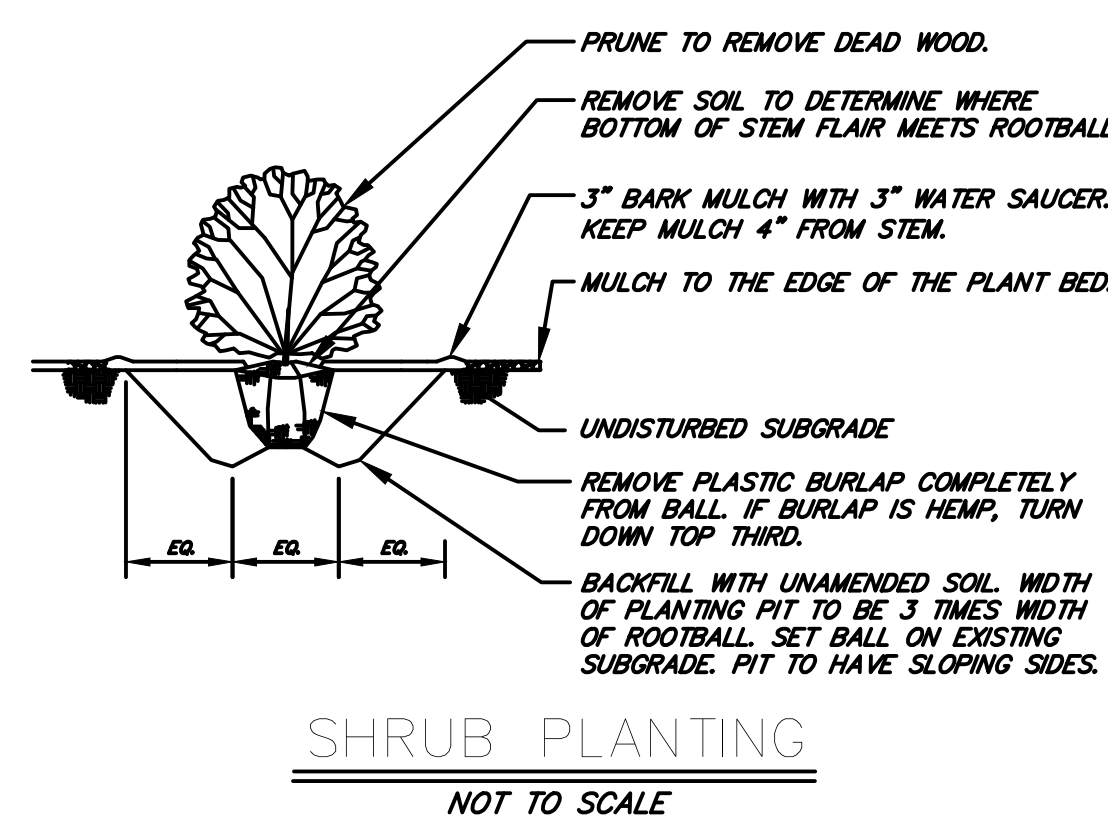
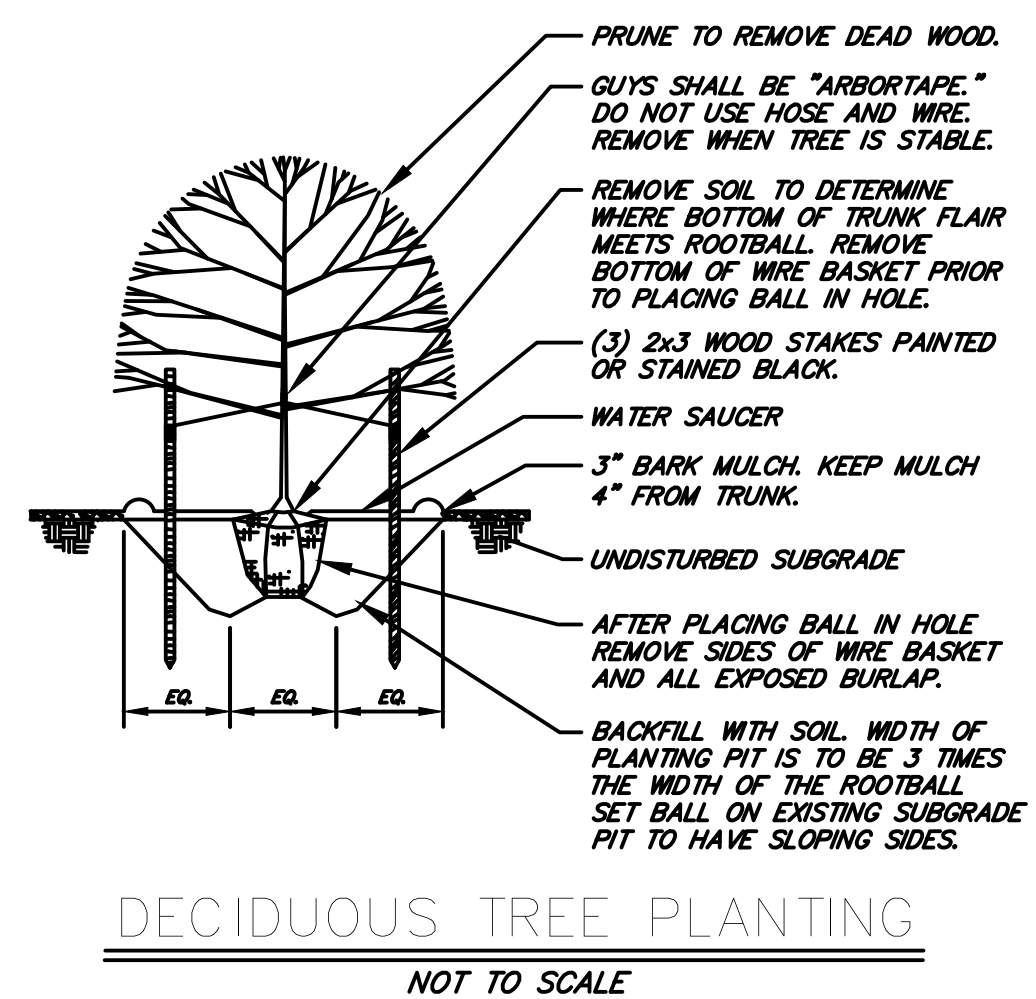
**LIGHTING PLAN**  
 Commercial Development  
 147 NASHUA ROAD  
 PEPPERELL, MASSACHUSETTS

JOB NO.: 2023-333  
 SHEET: 5 of 10  
 DRAWING NO.  
**C-105**



**Site Plan**

SCALE: 1 in. = 30 ft.



**LEGEND**

- Gray Birch (5)
- Oak (2)
- Silver Maple (12)
- Spruce (5)
- Austrian Pine (16)

**PLANTING NOTES**

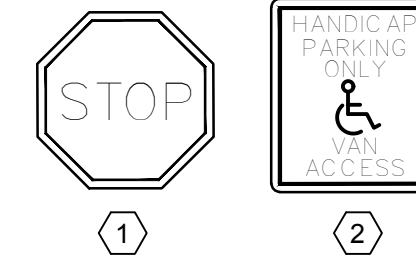
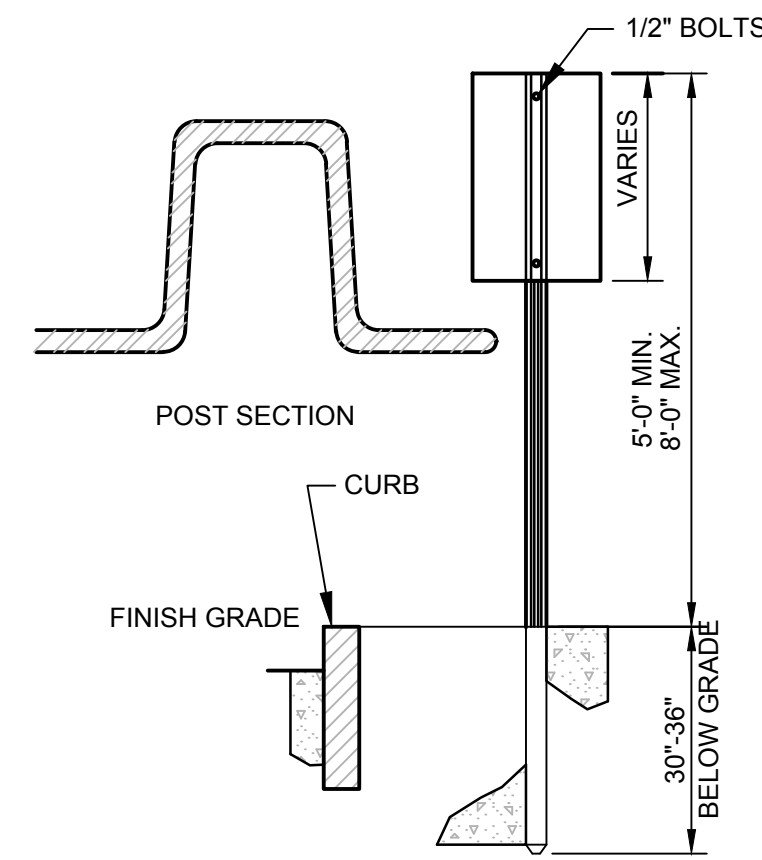
- UTILITIES:** Call Dig Safe prior to any digging or grading at the site. Landscape contractor shall review architectural/engineering plans to become thoroughly familiar with surface and subsurface utilities. Landscape contractor is to coordinate his work with the irrigation and lighting contractors.
- COMPACTED SUBGRADE:** Shall be tilled prior to the spreading of loam. Compacted loam shall be tilled prior to the spreading of seed, laying of sod, or planting of trees and shrubs. Compacted grass areas shall be aerated.
- DRAINAGE:** The landscape contractor shall insure before and after the spreading of loam that all areas will drain.
- LOAM:** Shall be clean, well drained topsoil, thoroughly raked to remove stones and debris greater than 1". Loam shall be tested for planting suitability (ph, organic matter, fertility, percolation, toxicity, etc.). At least three tests shall be taken per stockpile for consistency. If soil is found to be deficient, contractor shall provide a program of corrective actions. Compost shall be added and tilled into the soil as necessary to bring the organic content to 10% min. All plant beds shall have a minimum of 12" of loam. All lawn areas shall have a minimum of 6" of loam.
- PLANT PITS:** Shall be three root ball diameters in width, and no deeper than the plant ball. Remove soil from the top of the root ball down to the trunk flare by loosening the burlap and dig plant pit such that root flare is 1 to 2 inches above finished grade.
- PLANT SETTING:** Set plant in the hole. Cut away all visible rope and burlap. Cut away top 12" of wire baskets.
- BACKFILL:** Fill hole with existing soil. Amend with loam or organic matter if excessively sandy or of poor quality. When backfilling is half complete, fill pit with water and allow to drain to remove air pockets. Complete backfilling leaving the root flare exposed.
- MYCOR:** Mix mycor tree saver into top 8" of soil adjacent to the root ball at the rate of 1 packet per caliper inch of trunk or 1 packet per foot of root ball diameter.
- WATER-HOLDING SAUCER:** Shall be built up around the plant pit. Flood with water for 5 minutes immediately after planting.
- WATERING:** Water plants once a day for the first week and once a week for the first planting season. Water at the rate of five gallons per shrub and 10 gallons per tree.
- STAKES AND TREE WRAP:** The landscape contractor shall be wholly responsible for stability and plumb condition of all trees and shrubs and shall be responsible for any damage caused by instability of any plant materials. Stakes and tree wrap shall be removed in the spring prior to final acceptance and release of the guarantee.
- MULCH:** Mulch areas around proposed trees and shrubs and all plant beds with 3" shredded bark mulch. Do not mulch against trunks and stems.
- PRUNING:** Remove all dead, broken and damaged branches.
- GUARANTEE:** All plants shall be guaranteed for one full year from date of acceptance.

REVISION	DATE	BY	DESIGN BY
REVIS PER PLANNING DEPT REVIEW COMMENTS	08/20/24	KML	KML
REQUIRING RELOCATION OF ENTRANCE DRIVE	10/15/24	KML	KML/TAJ
REQUIRING RELOCATION OF ENTRANCE DRIVE	12/06/24	KML	KML
REVIS PER PLANNING DEPT REVIEW COMMENTS			
FOR PHASING PLAN AND BATHROOM REQUIREMENTS			

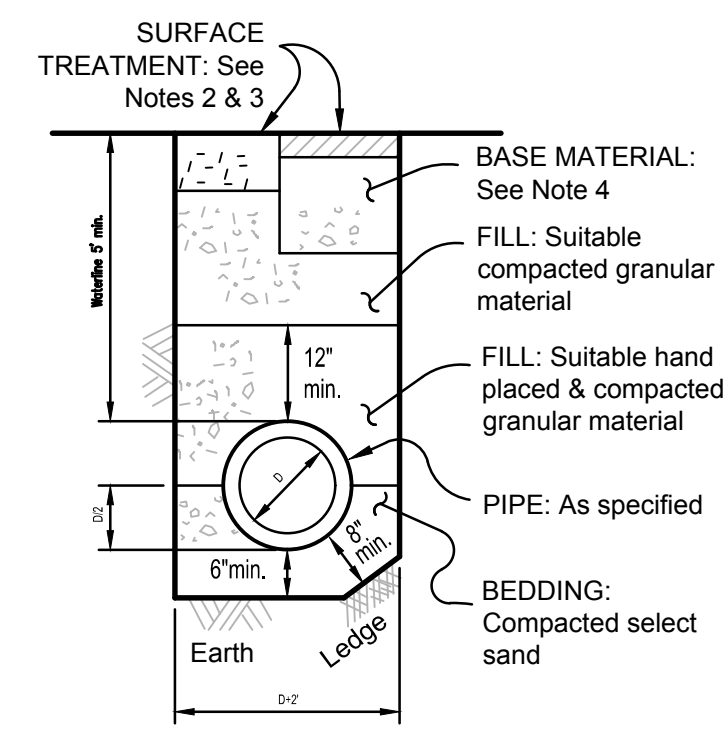
**Comerstone Land Associates, LLC**  
Civil & Structural Engineering  
Land Surveying - Land Development  
25 Dear Avenue  
Worcester, MA 01478  
937-835-0102

SCALE: As Shown  
DATE: March 22, 2024  
PREPARED FOR:  
Fabio Lacerda  
12 Constantine Drive  
Tyngsboro, MA 01879

**LANDSCAPE PLAN**  
Commercial Development  
147 NASHUA ROAD  
PEPPERELL, MASSACHUSETTS

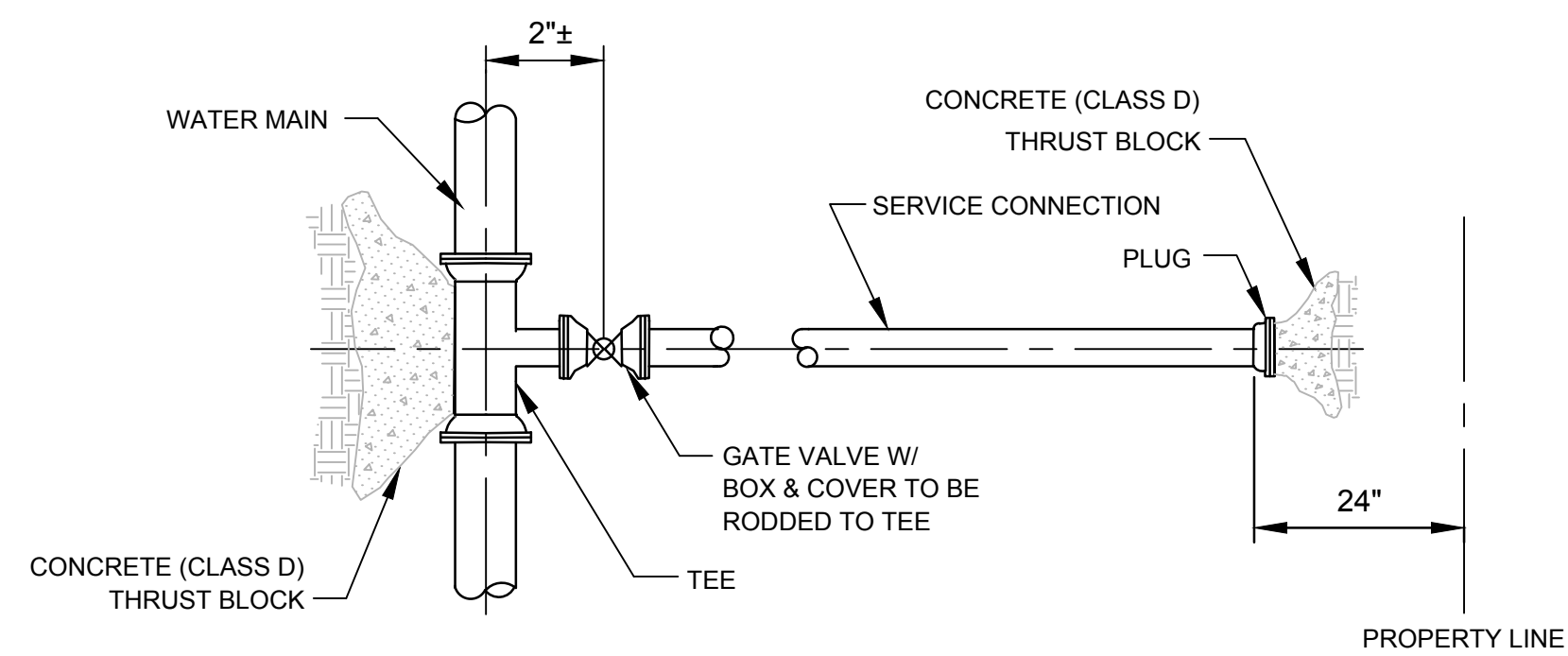


SEE SITE PLAN FOR LOCATION OF THESE SIGNS.

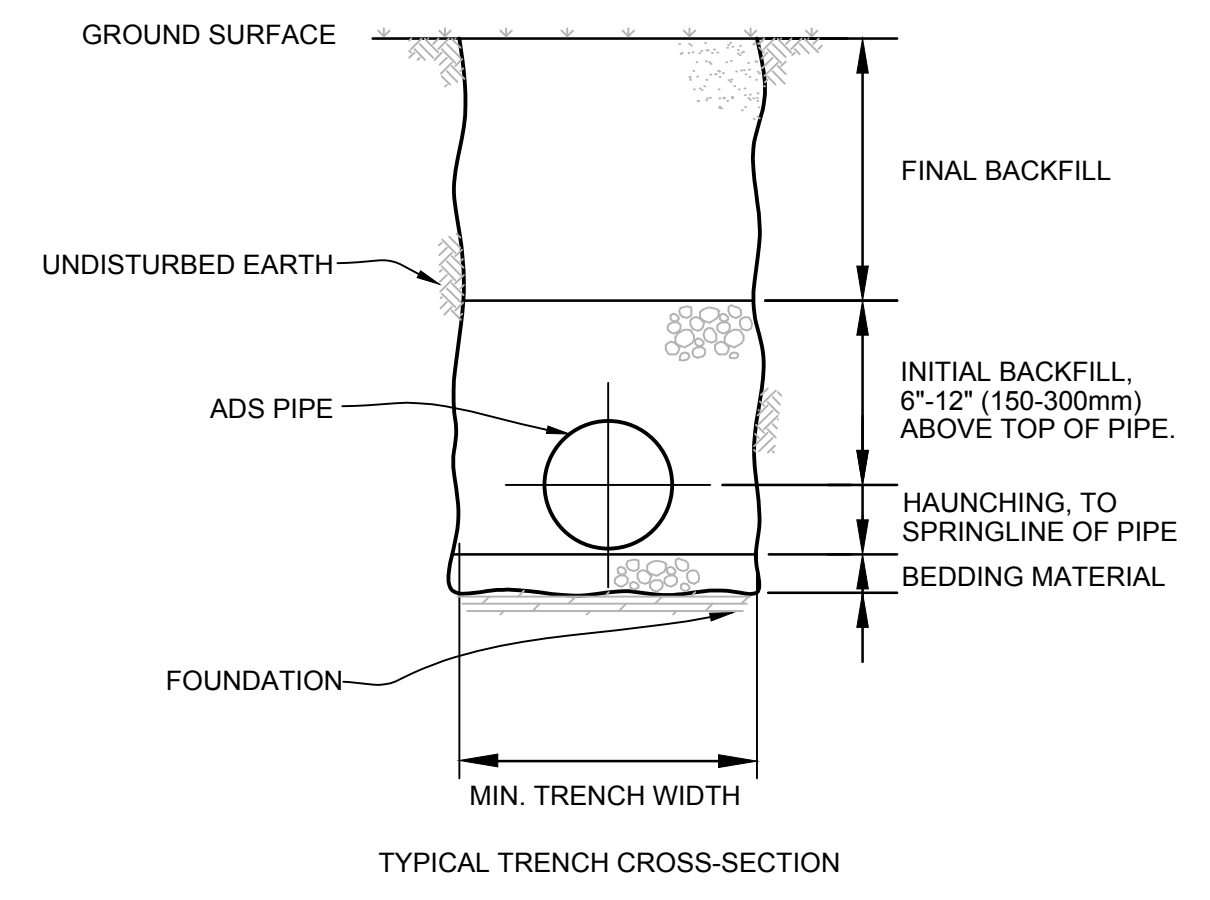


WATER PIPE TRENCH

**WATER PIPE TRENCH NOTES:**  
 1. Materials and construction shall comply with the Department of Public Works specifications.  
 2. Surface and bedding shall be 4" min. & 8" max.  
 3. Surface pavement shall be 1-1/2" bituminous concrete finish course over 1-1/2" bituminous concrete binder course.  
 4. Conveyance liner material shall be clean compacted gravel with no aggregate size over 2".



SERVICE CONNECTION 4" AND OVER



TYPICAL TRENCH CROSS-SECTION

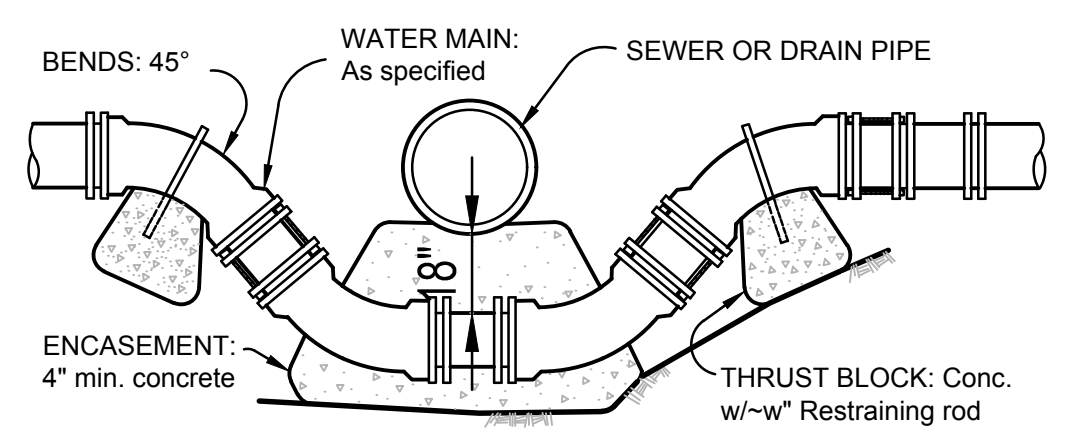
- NOTES:**
- FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH A FOUNDATION OF CLASS I OR II MATERIAL AS DEFINED IN ASTM D2321, "STANDARD PRACTICE FOR INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS," LATEST EDITION, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A WOVEN GEOTEXTILE FABRIC.
  - BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.  
 UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100-600mm) AND 42"-48" (1050-1200mm) CORRUGATED POLYETHYLENE PIPE (CPEP); 6" (150mm) FOR 30"-36" (750-900mm) CPEP.
  - HAUNCHING AND INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
  - UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MINIMUM TRENCH WIDTHS SHALL BE AS FOLLOWS:

NOMINAL Ø in (mm)	MIN. RECOMMENDED TRENCH WIDTH, in (mm)
4 (100)	21 (530)
6 (150)	23 (580)
8 (200)	25 (630)
10 (250)	28 (710)
12 (300)	31 (790)
15 (375)	34 (860)
18 (450)	39 (990)
24 (600)	48 (1220)
30 (750)	66 (1680)
36 (900)	78 (1980)
42 (1050)	83 (2110)
48 (1200)	89 (2260)
60 (1500)	102 (2590)

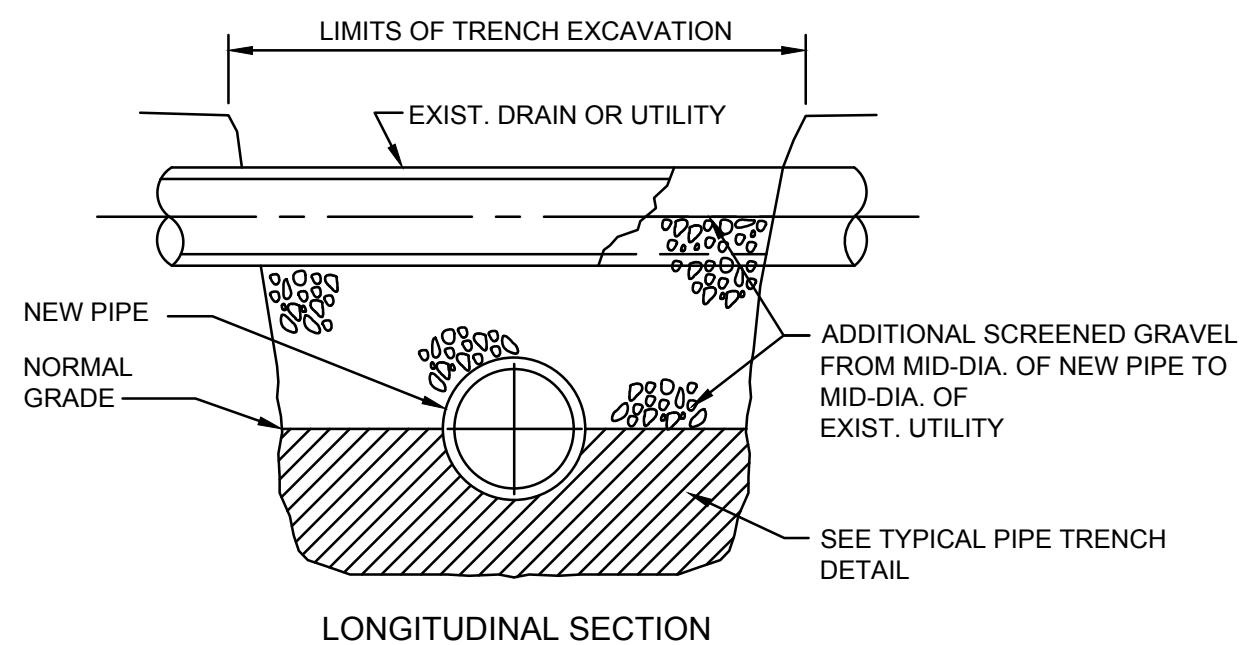
- MINIMUM COVER: MINIMUM RECOMMENDED DEPTHS OF COVER FOR VARIOUS LIVE LOADING CONDITIONS ARE SUMMARIZED IN THE FOLLOWING TABLE. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE TAKEN FROM THE TOP OF PIPE TO THE GROUND SURFACE.

SURFACE LIVE LOADING CONDITION	MINIMUM RECOMMENDED COVER, in (mm)
H25 (FLEXIBLE PAVEMENT)	12 (300)
H25 (RIGID PAVEMENT)	12 (300)
E80 RAILWAY	24 (610)
HEAVY CONSTRUCTION	48 (1220)

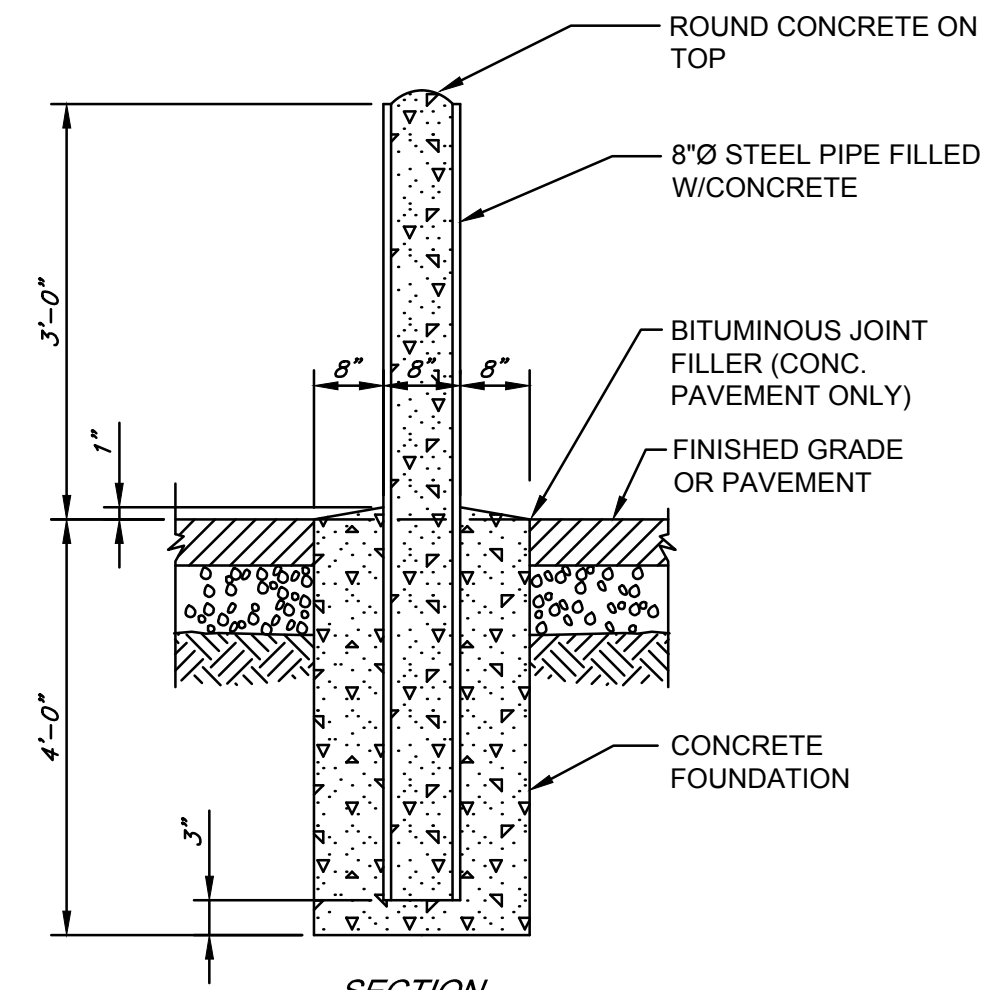
\* TOP OF PIPE TO BOTTOM OF BITUMINOUS PAVEMENT SECTION



WATERMAIN LOWERING



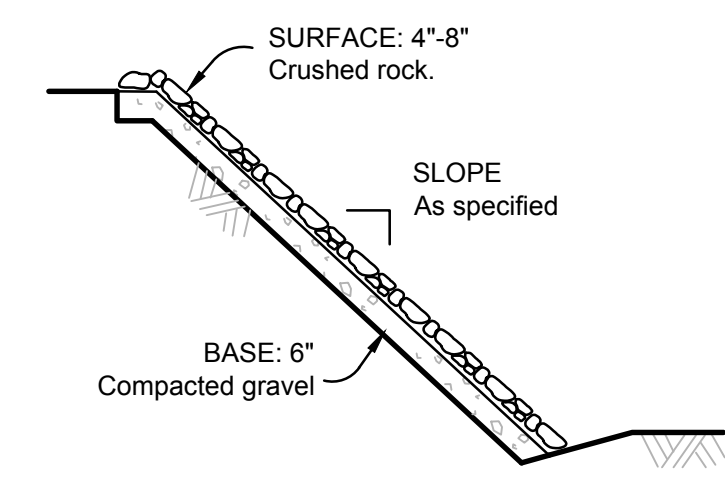
LONGITUDINAL SECTION



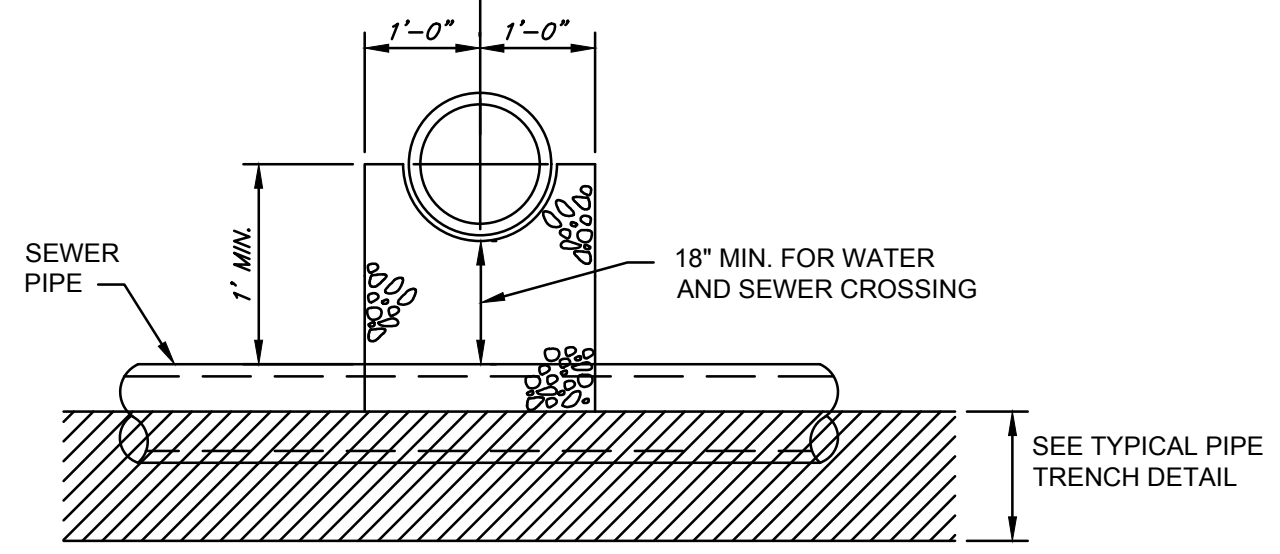
SECTION

STEEL PIPE SHALL BE GALVANIZED (2.0 OZ. ZINC/SQ. FT.) & HAVE A MINIMUM WALL THICKNESS OF 0.322 INCHES.

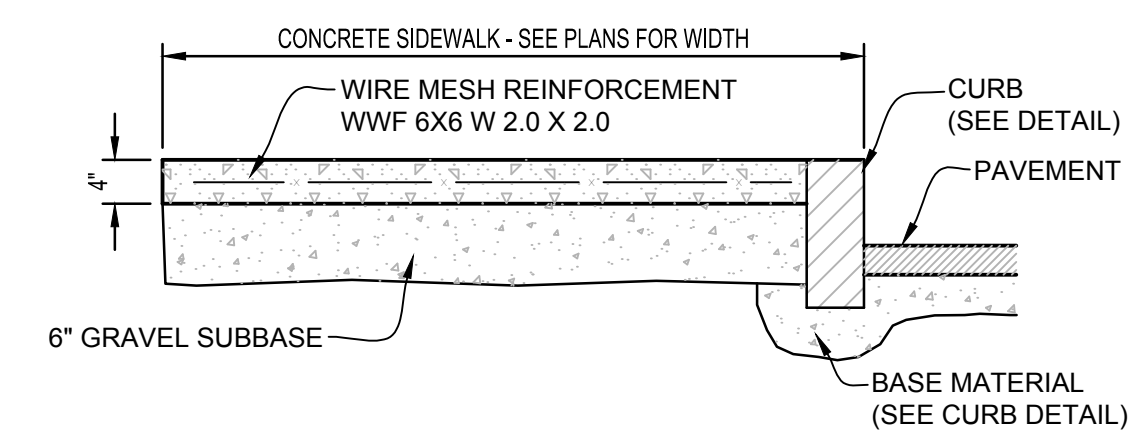
BUILDING BOLLARD



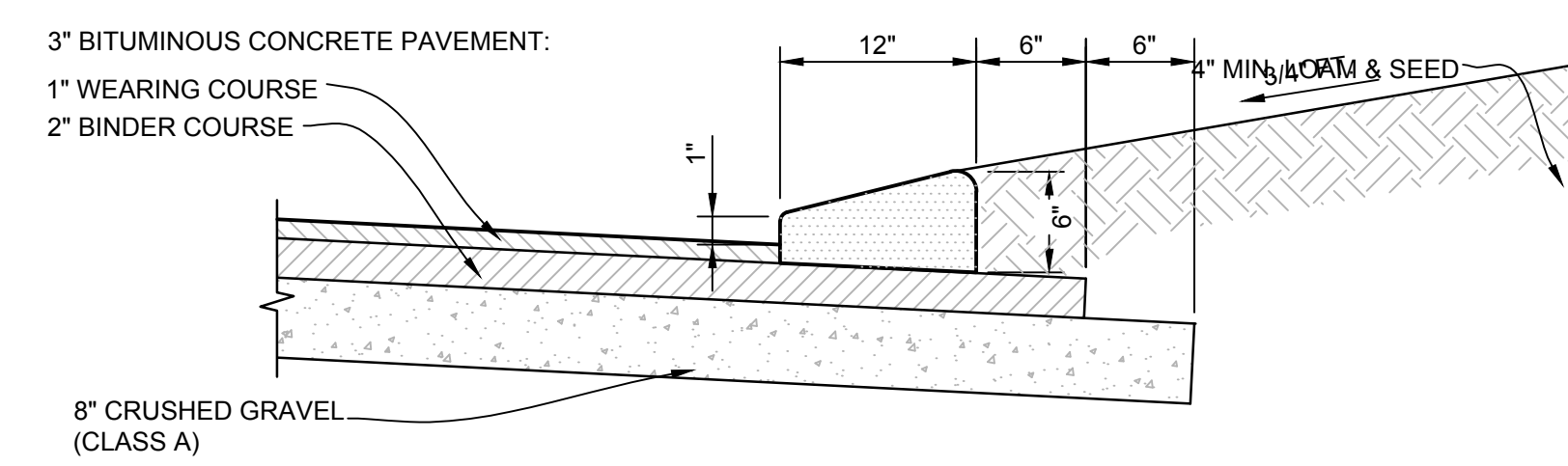
SLOPE PROTECTION



TYPICAL PIPE CROSSING



CONCRETE SIDEWALK

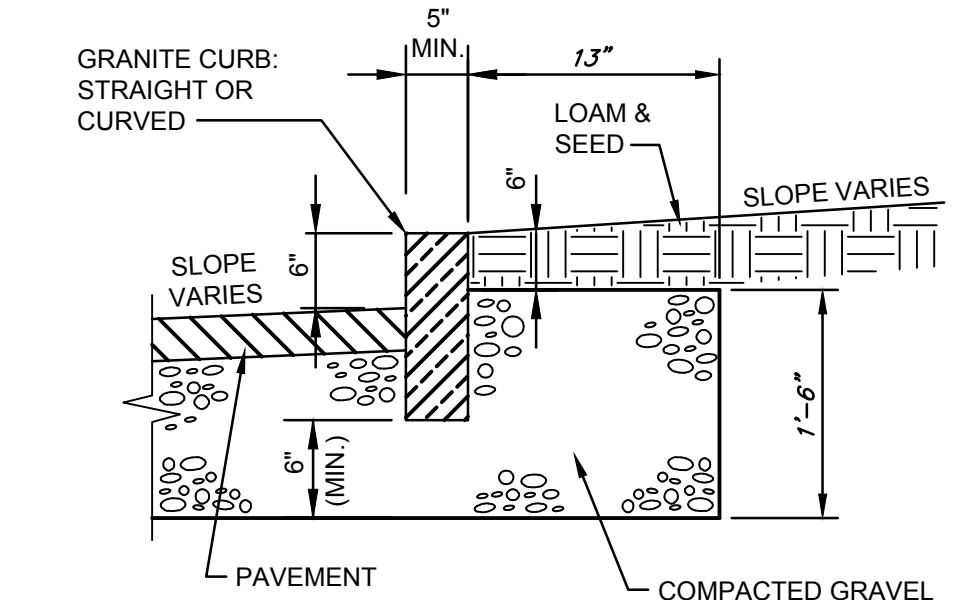


BITUMINOUS CAPE COD BERM

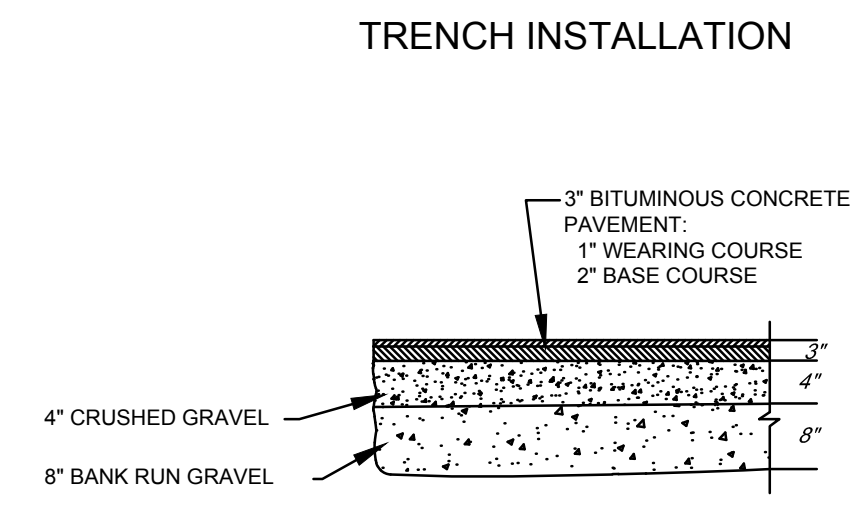
RADIUS	MAX. LENGTH
2'-1"	3'
2'-2"	4'
2'-3"	5'
2'-4"	6'
2'-5"	7'
2'-6"	8'
2'-7"	9'
2'-8"	10'

MINIMUM LENGTH OF CURB STONES - 3'  
 MAXIMUM LENGTH OF CURB STONES - 10'  
 MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES - SEE CHART.

ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.



VERTICAL GRANITE CURBING



DRIVEWAY PAVEMENT

THE LOCATIONS OF UNDERGROUND UTILITIES AS SHOWN HEREON ARE BASED ON ABOVE-GROUND STRUCTURES AND RECORD DRAWINGS PROVIDED THE SURVEYOR. LOCATIONS OF UNDERGROUND UTILITIES/STRUCTURES MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED. NO EXCAVATIONS WERE MADE DURING THE PROGRESS OF THIS SURVEY TO LOCATE BURIED UTILITIES/STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, SIZE, AND ELEVATIONS OF ALL EXISTING UTILITIES SHOWN OR NOT SHOWN ON THESE PLANS PRIOR TO AND/OR DURING CONSTRUCTION. AT LEAST 72 HOURS PRIOR TO EXCAVATING, MASSACHUSETTS DIG-SAFE SHOULD BE CONTACTED AT 1-800-322-4844.

Details

Not To Scale

DESIGN BY KML	REVISION BY KML	DATE 08/29/24	REVISION DATE 10/15/24	REVISION DATE 12/06/24	REVISION DATE
SURVEY BY KML/TAJ	REVISION BY KML	DATE 10/15/24	REVISION DATE 12/06/24	REVISION DATE	REVISION DATE
DRAWN BY KML	REVISION BY KML	DATE 10/15/24	REVISION DATE 12/06/24	REVISION DATE	REVISION DATE
CHECKED BY JAV/TAJ	REVISION BY KML	DATE 10/15/24	REVISION DATE 12/06/24	REVISION DATE	REVISION DATE

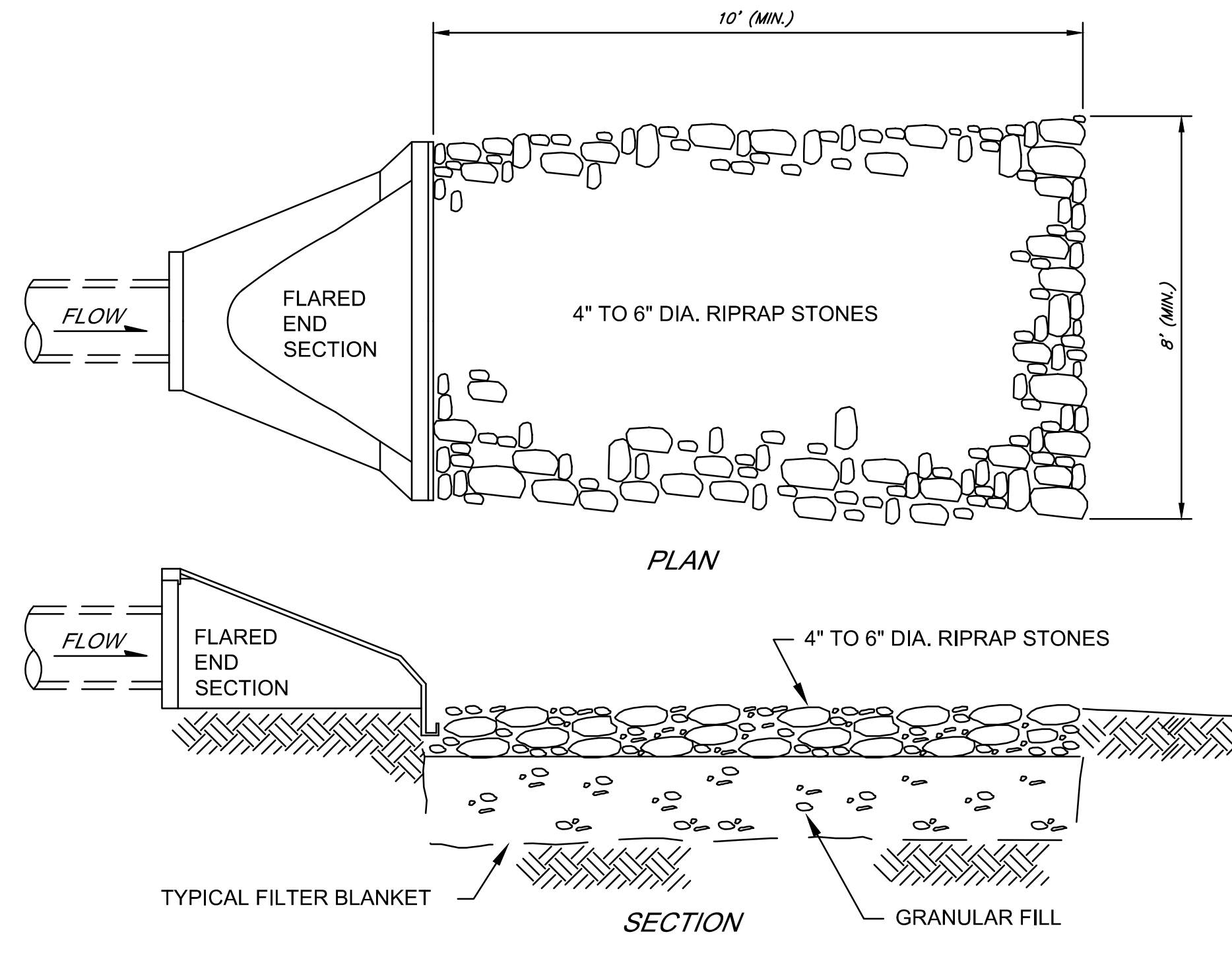
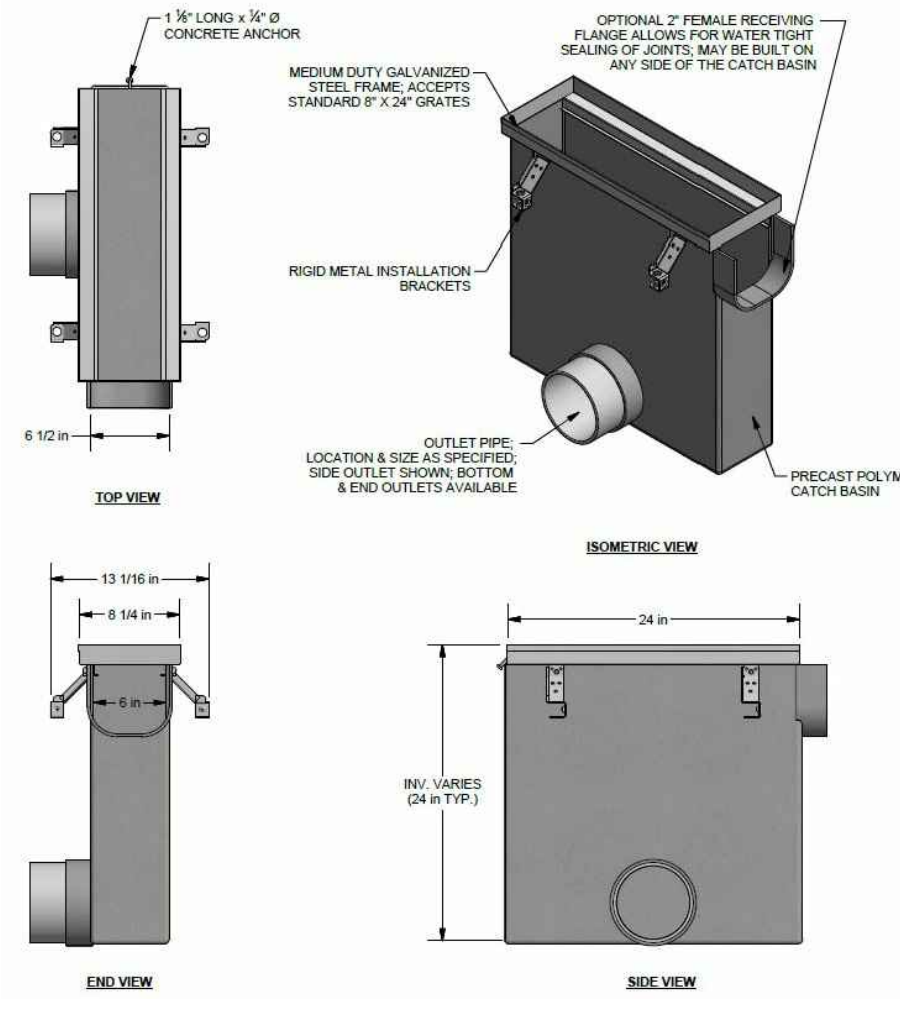
Comerstone Land Associates, LLC  
 Civil & Structural Engineering  
 Land Surveying, Land Development  
 25 Dean Avenue, Tyngsboro, MA 01879  
 (978) 435-5102  
 info@comerstoneland.com

SCALE: As Shown  
 DATE: May 22, 2024  
 PREPARED FOR:  
 Fabio Lacerda  
 12 Constanline Drive  
 Tyngsboro, MA 01879

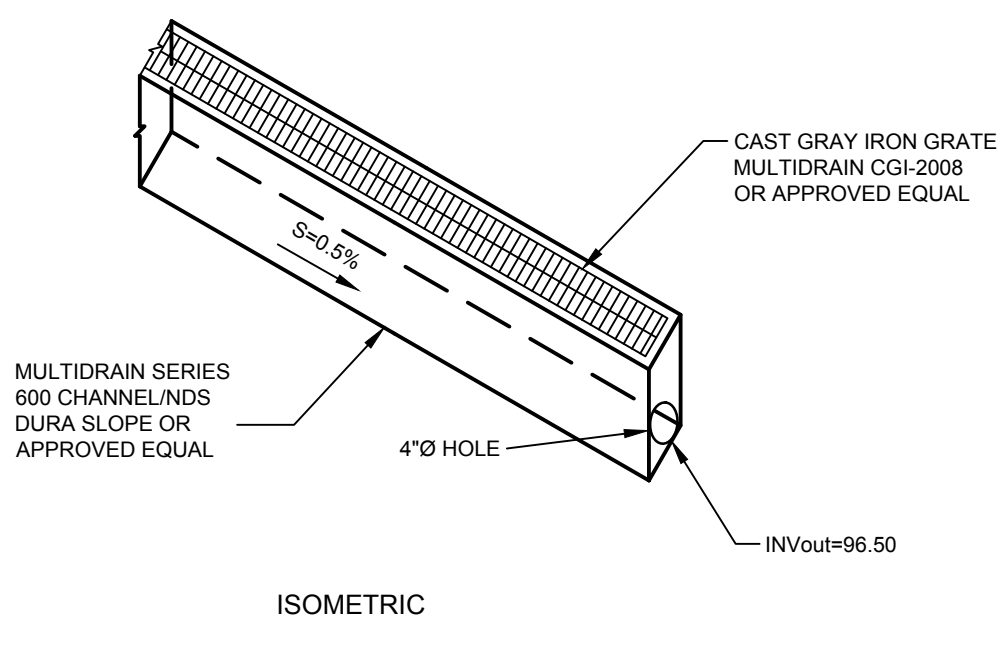
DETAILS PLAN  
 Commercial Development  
 147 NASHUA ROAD  
 PEPPERELL, MASSACHUSETTS

JOB NO.: 2023-333  
 SHEET: 7 of 10  
 DRAWING NO.  
 C-107

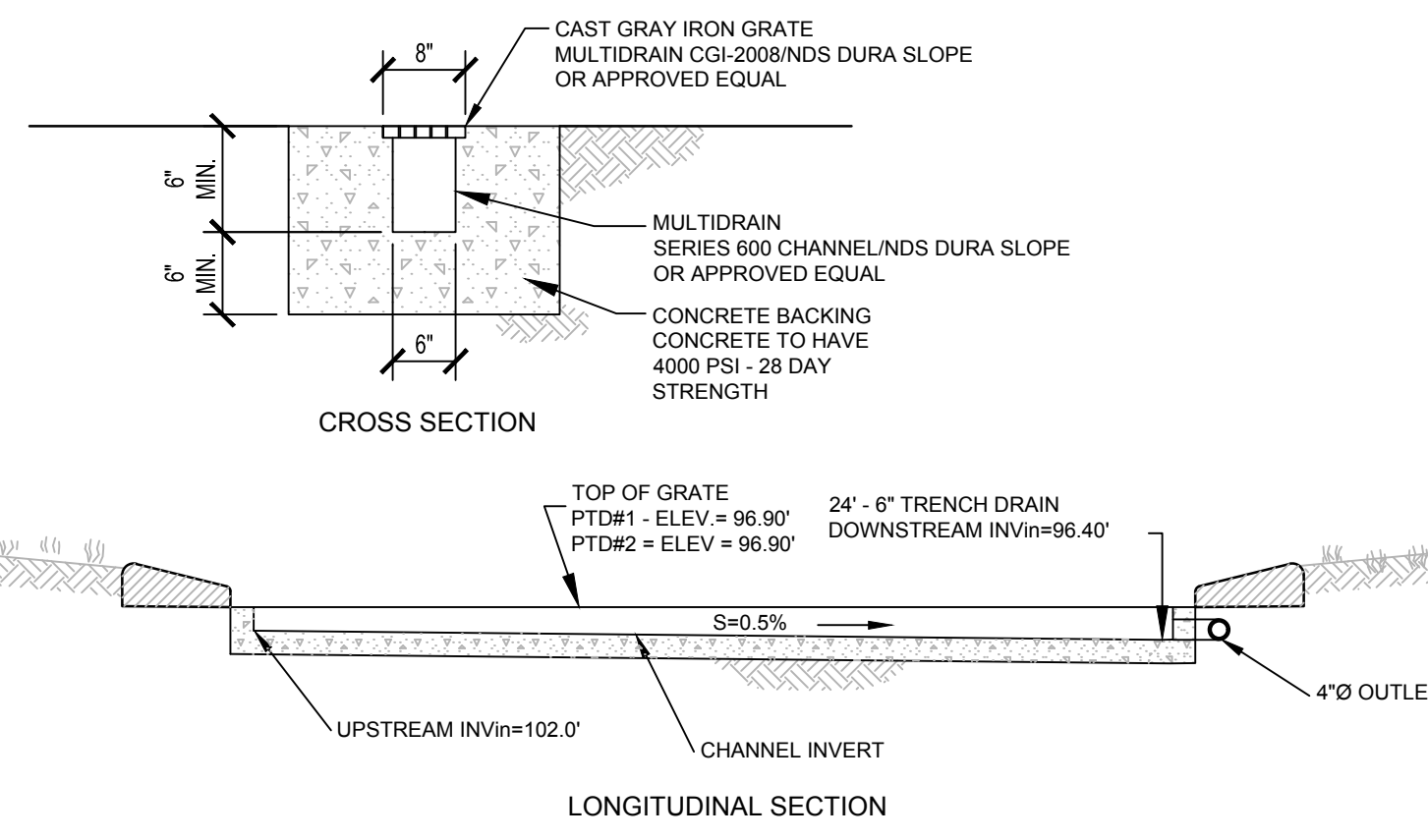
Certification not valid without ORIGINAL stamp and/or signature



RIP RAP AT FES

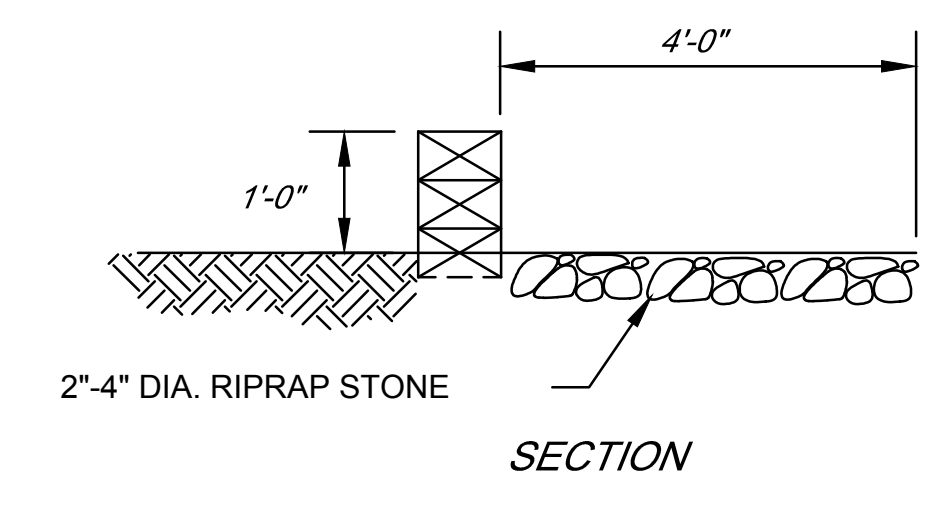


ISOMETRIC

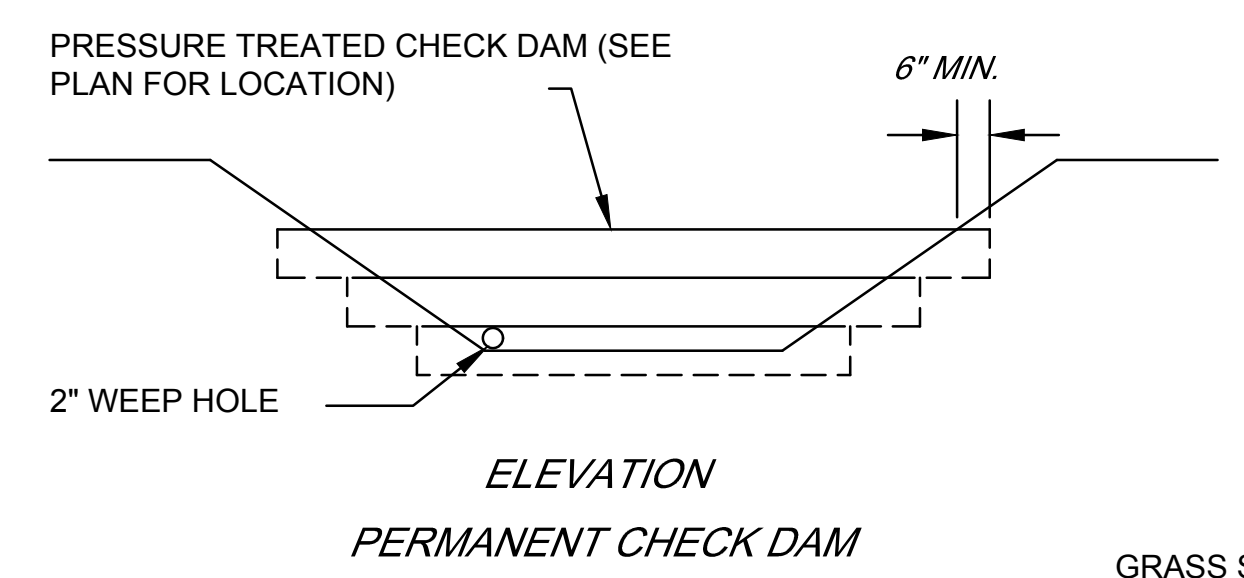


TRENCH DRAIN

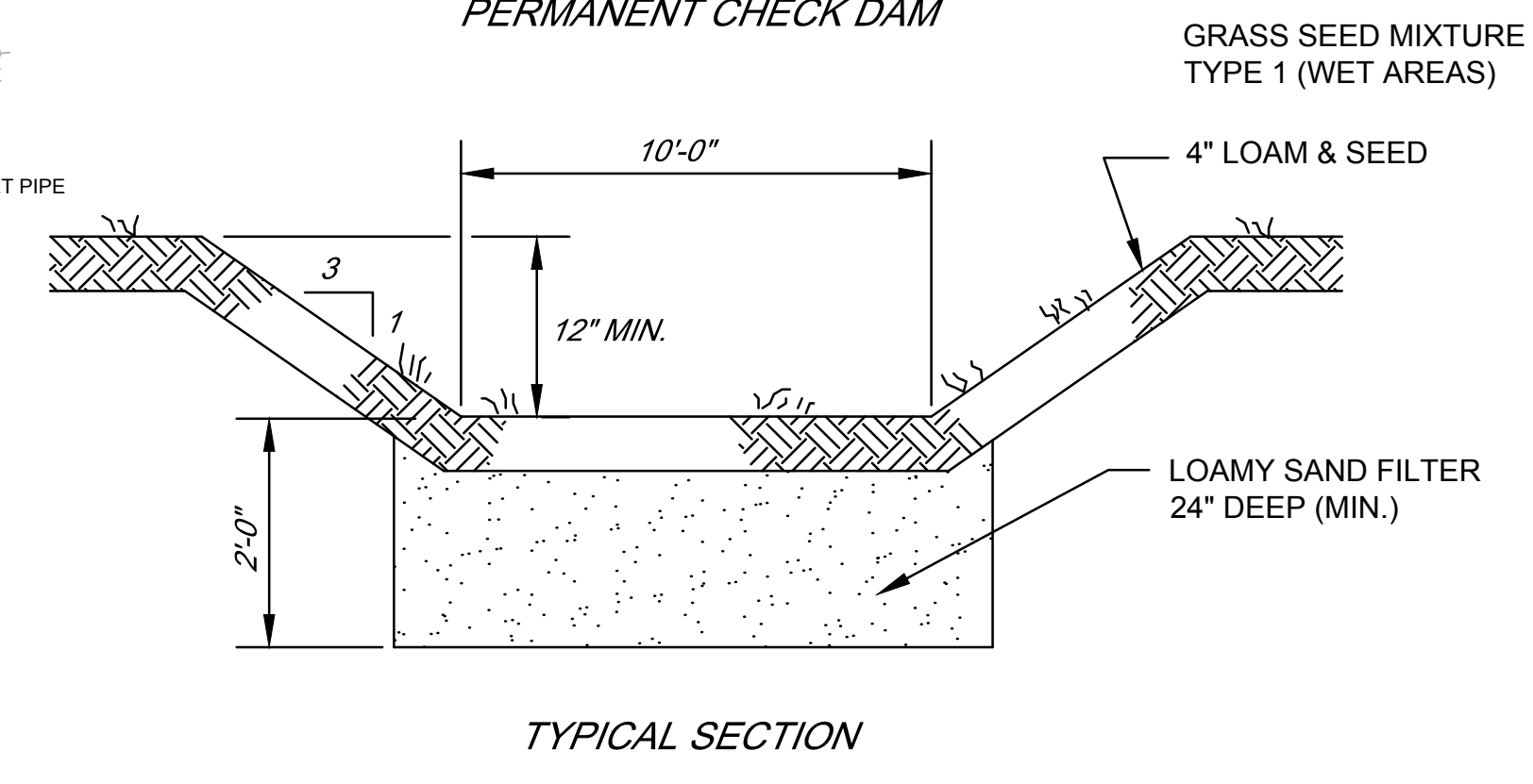
NOTE: All components and construction shall be in accordance with the specifications provided by MultiDrain/nds Dura Slope.



SECTION

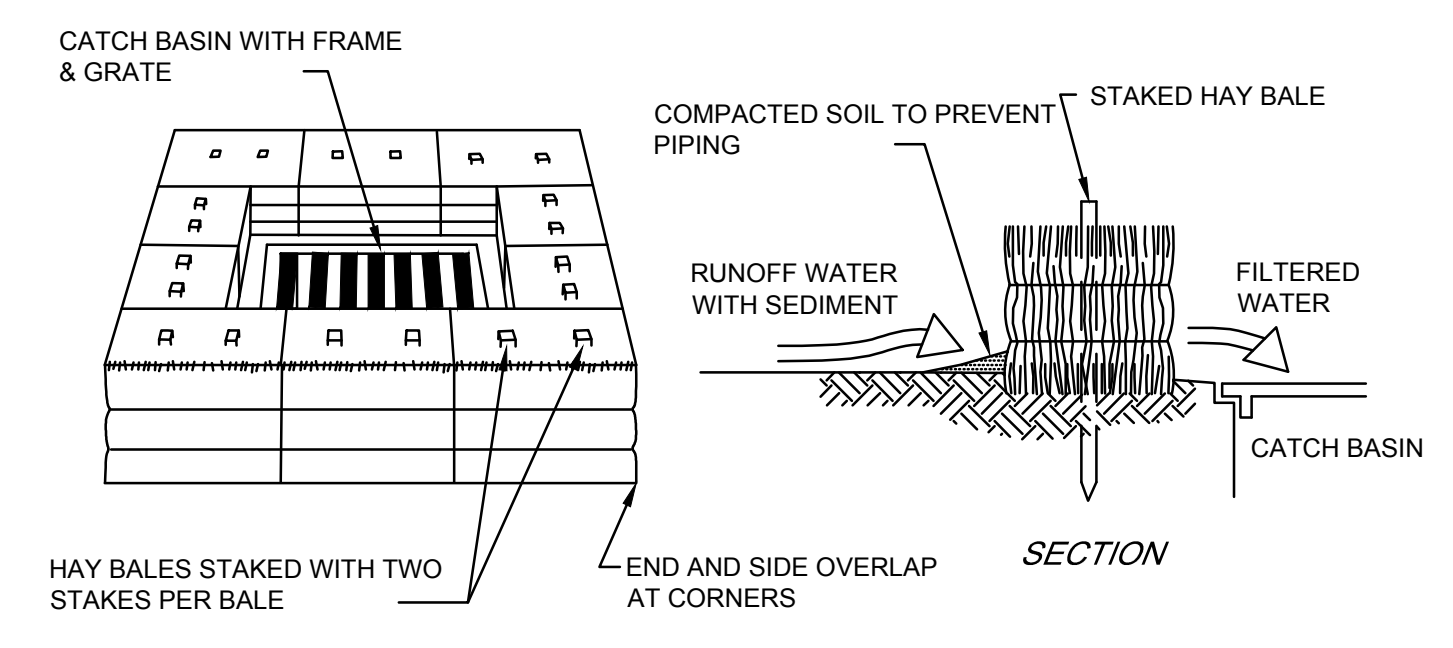


ELEVATION  
PERMANENT CHECK DAM



TYPICAL SECTION

ROADWAY DRAINAGE WATER QUALITY SWALE

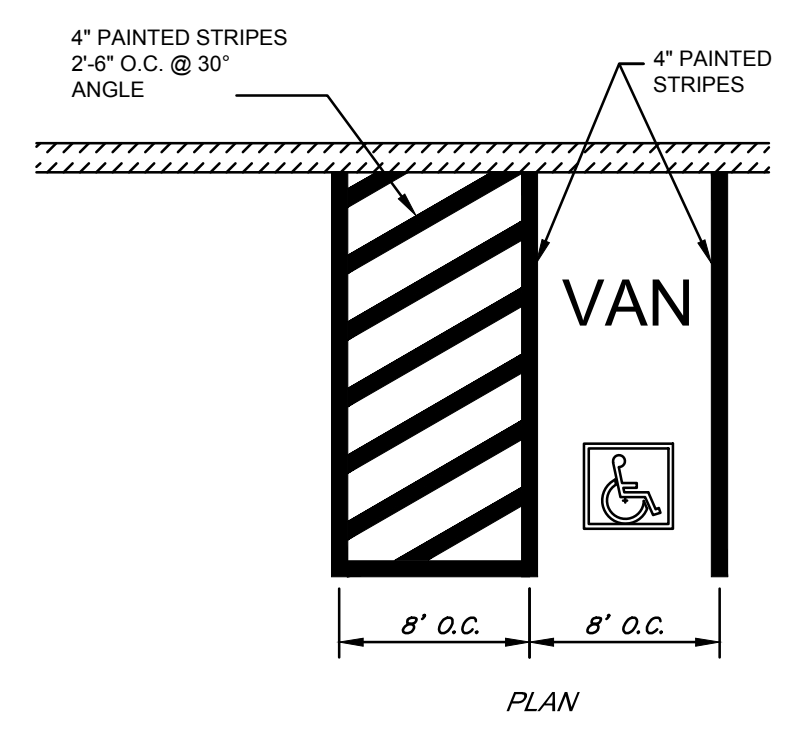


SECTION

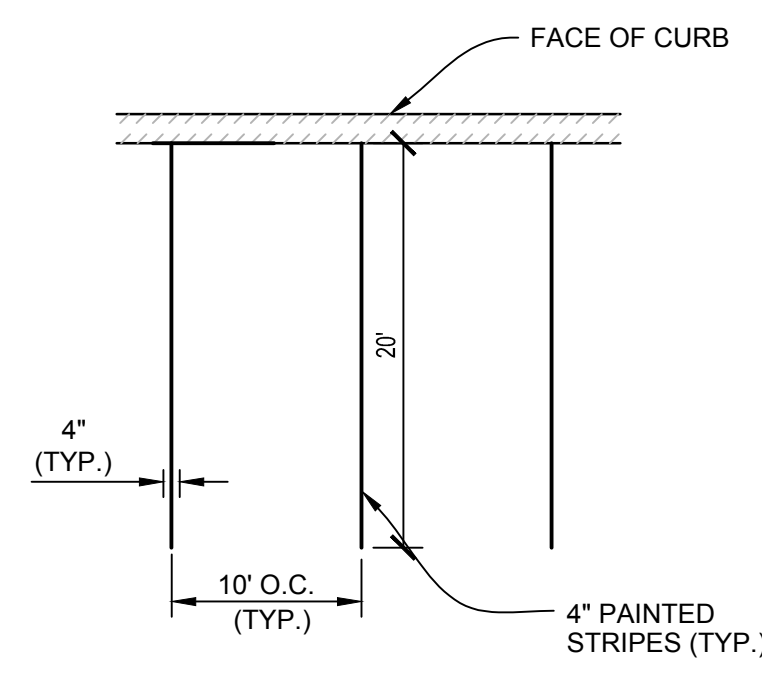
INSTALLATION PROCEDURE:

1. EXCAVATE A 4 IN. (10 CM) DEEP TRENCH AROUND THE INLET. MAKE THE TRENCH AS WIDE AS A HAY BALE.
2. ORIENT HAY BALES WITH THE BINDINGS AROUND THE SIDES OF THE BALES RATHER THAN OVER AND UNDER THE BALES.
3. PLACE BALES LENGTHWISE AROUND THE INLET AND PRESS THE ENDS OF ADJACENT BALES TOGETHER.
4. DRIVE TWO 2"x2" (5 CM X 5 CM) STAKES THROUGH EACH BALE TO ANCHOR THE BALE SECURELY IN PLACE.
5. BACKFILL THE EXCAVATED SOIL AND COMPACT IT AGAINST THE BALES.
6. WEDGE LOOSE HAY BETWEEN BALES TO PREVENT WATER FROM FLOWING BETWEEN BALES.

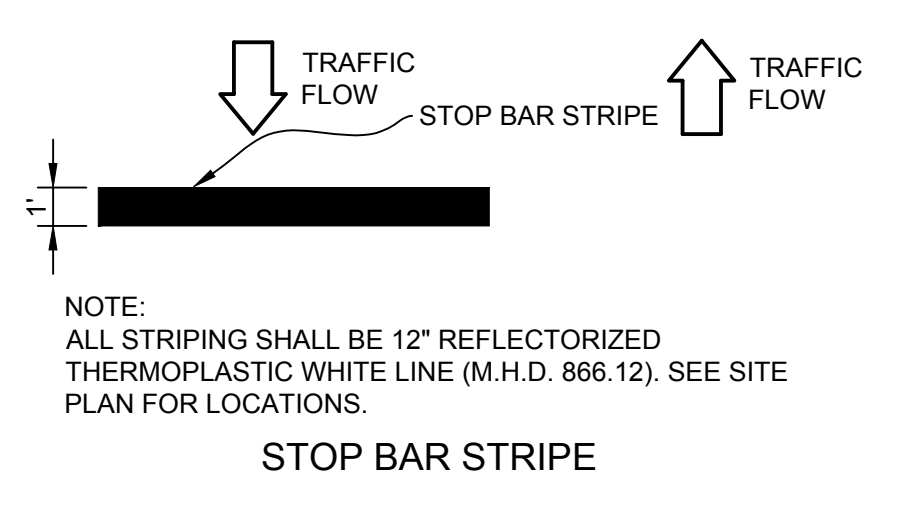
HAYBALES AT CATCH BASIN



PLAN

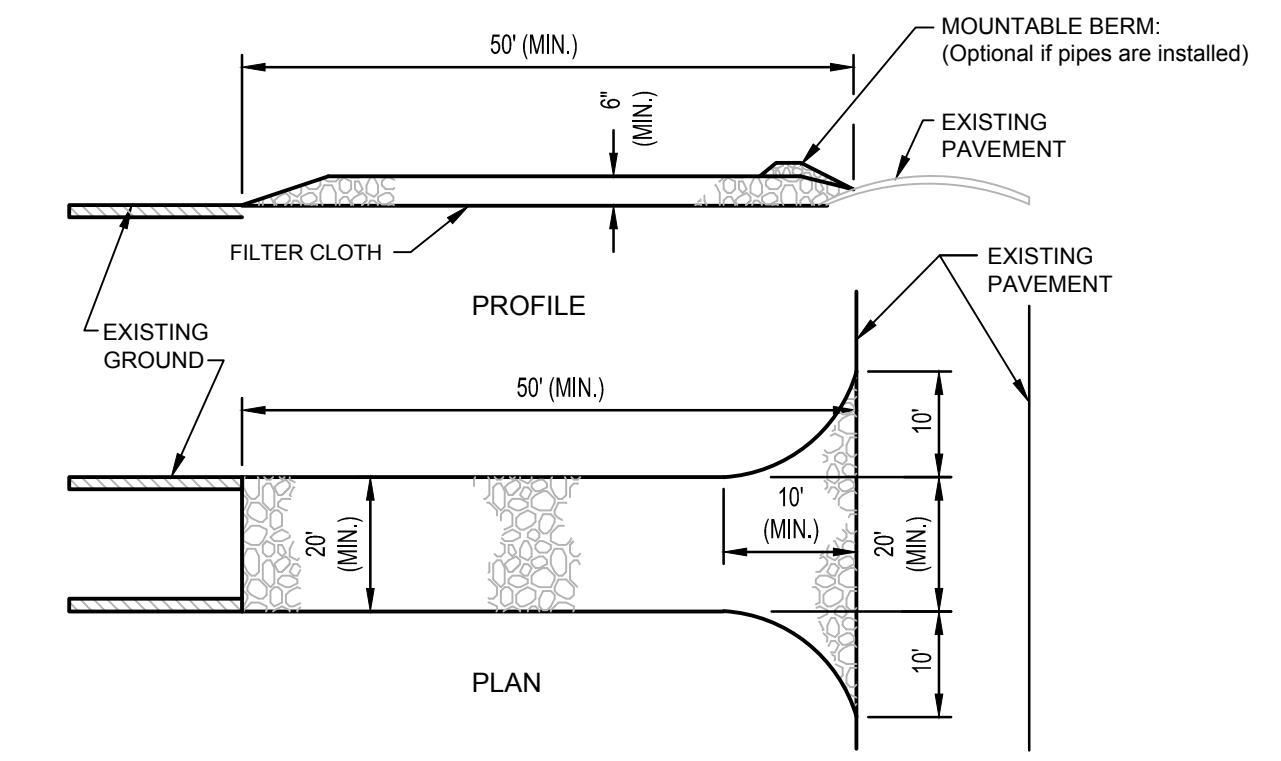


PARKING STALL STRIPING



STOP BAR STRIPE

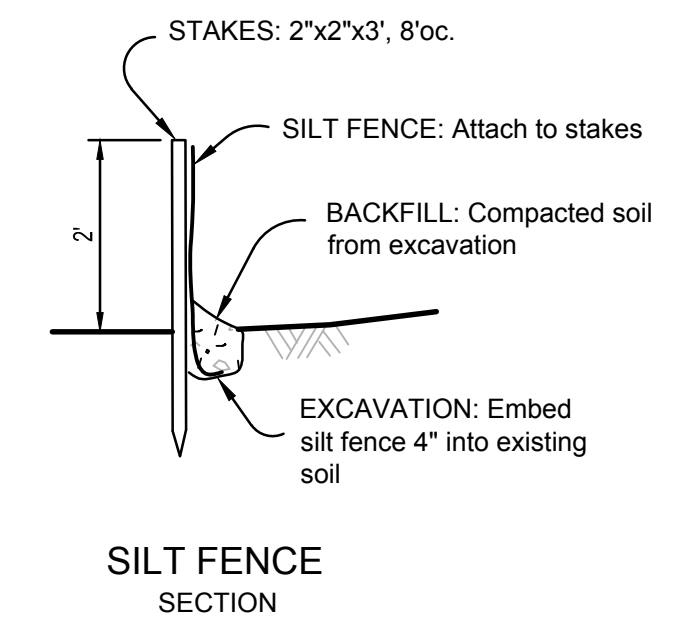
NOTE: ALL STRIPING SHALL BE 12\"/>



PROFILE

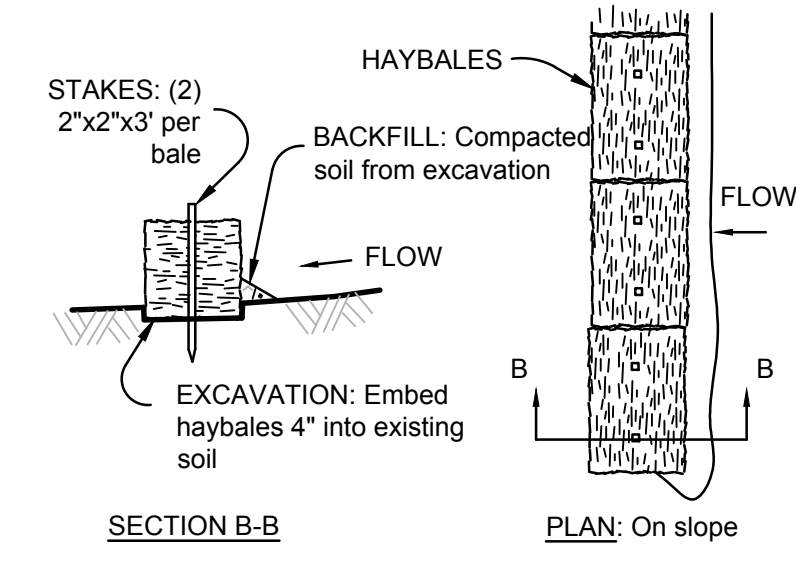
1. STONE SIZE - Use 2\"/>
2. LENGTH - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
3. THICKNESS - Not less than six (6) inches.
4. WIDTH - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
5. FILTER CLOTH: Will be placed over the entire area prior to placing of stone. Filter cloth will not be required on a single family residence lot.
6. SURFACE WATER: All surface water flowing or diverted toward construction entrance shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
7. MAINTENANCE: The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone 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. WASHING: Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
9. INSPECTION: Periodic inspection and needed maintenance shall be provided after each rain.

STABILIZED CONSTRUCTION ENTRANCE



SILT FENCE  
SECTION

NOTE: Silts fence may be used alone or as a backing for staked haybales as specified by the Conservation Commission



STAKED HAYBALES

Design by	KML
Survey by	KML/TAJ
Draft by	KML
Check by	JAV/TAJ

REVISION	DATE	BY	REASON
1	08/29/24	KML	REVS PER PLANNING DEPT REVIEW COMMENTS REQUIRING RELOCATION OF ENTRANCE DRIVE
2	10/15/24	KML	REVISIONS PER PLANNING DEPT REVIEW COMMENTS REQUIRING RELOCATION OF ENTRANCE DRIVE
3	12/06/24	KML	REVS PER PLANNING DEPT REVIEW COMMENTS FOR PHASING PLAN AND BATHROOM REQUIREMENTS

**Comerstone Land Associates, LLC**  
 Civil & Structural Engineering  
 Land Surveying - Land Development  
 25 Glen Avenue, Dept. MA 01824 - (978) 435-1102  
 info@comerstone.com

SCALE: As Shown  
 DATE: May 22, 2024  
 PREPARED FOR:  
 Fabio Lacerda  
 12 Constanline Drive  
 Tyngsboro, MA 01879

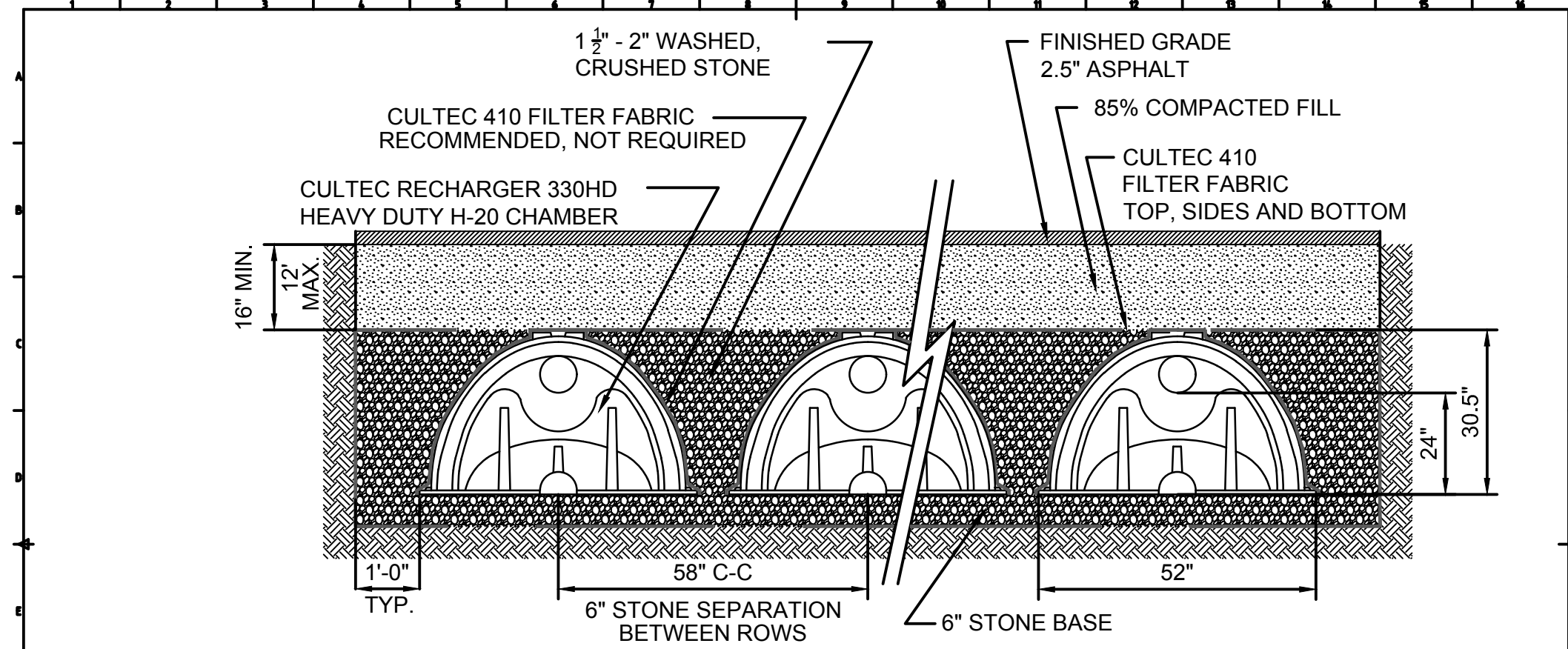
**DETAILS PLAN**  
 Commercial Development  
 147 NASHUA ROAD  
 PEPPERELL, MASSACHUSETTS

JOB NO.: 2023-333  
 SHEET: 8 of 10

DRAWING NO.  
**C-108**

**Details**  
 Not To Scale

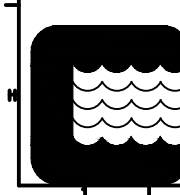
For Registry Use Only



**TYPICAL CROSS SECTION RECHARGER 330HD  
PAVED H-20 CULTEC CHAMBER SYSTEM**  
(10.35 CF./LF.)  
N.T.S.

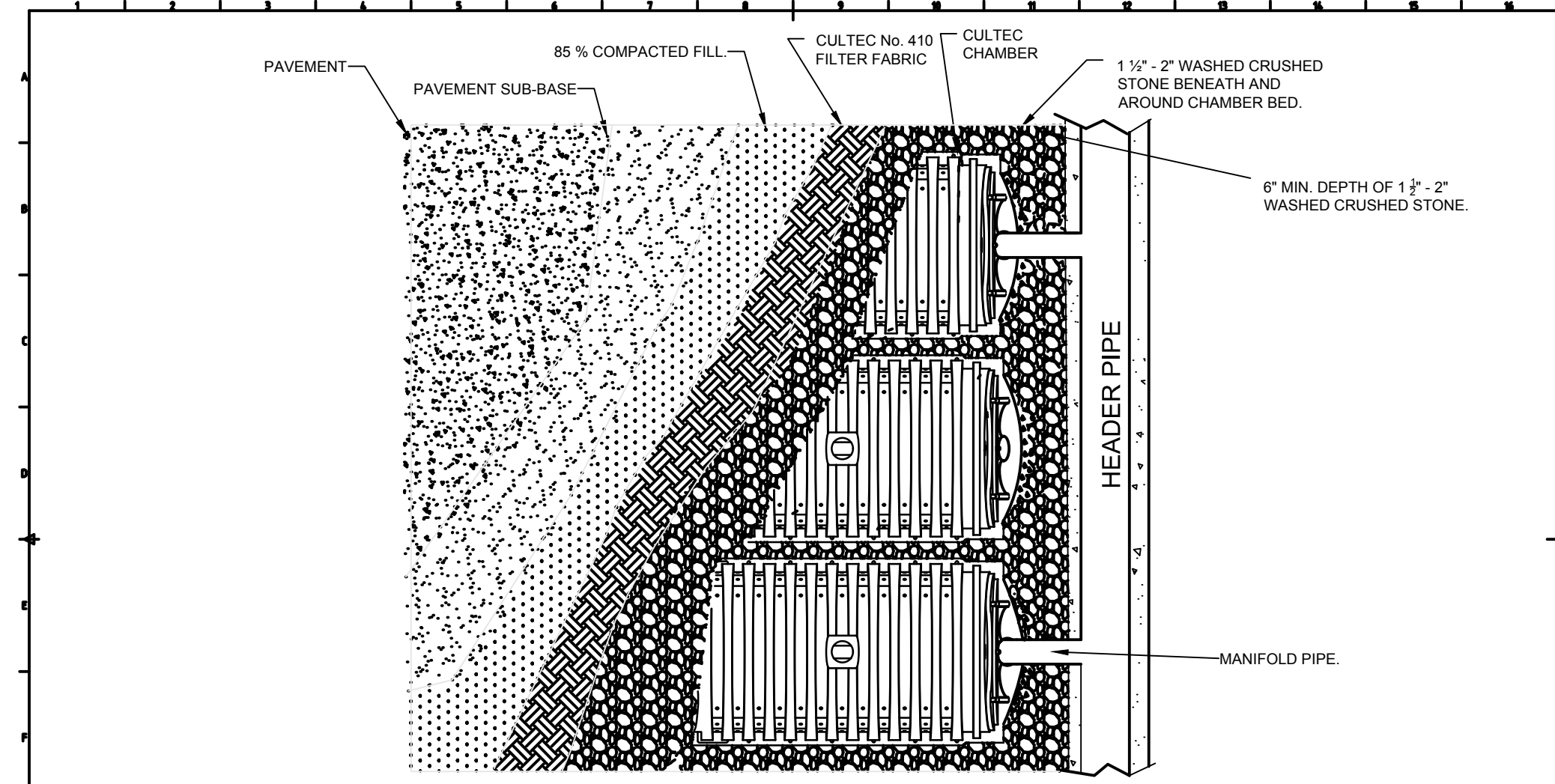
**GENERAL NOTES**

Recharger 330 by CULTEC, INC. of Brookfield, CT. All Recharger 330 Chambers must be installed in accordance with all applicable local, state and federal regulations. Refer to manufacturer, CULTEC, INC.'s recommended installation guidelines. All Recharger 330HD H2O Heavy Duty units are marked with a 4" stripe along the length of the chamber. CALCULATIONS BASED ON 40% STONE VOID



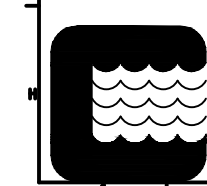
**CULTEC Contactor® & Recharger™**  
Plastic Septic & Stormwater Chambers

Designed by R.H.	Checked by LUIS TAPIA	Approved by - date G.C. 6/7/02	Filename CAD FILE	Date 6/7/02	Scale N/S
CULTEC, INC.			330 CROSS SECTION		
878 FEDERAL RD. BROOKFIELD CT 06804		FX: (203) 775-1462 PH: (800) 4-CULTEC PH: (203) 775-4416		330HD PVD H2O	
WWW.CULTEC.COM		Edition A		Sheet 1/2	



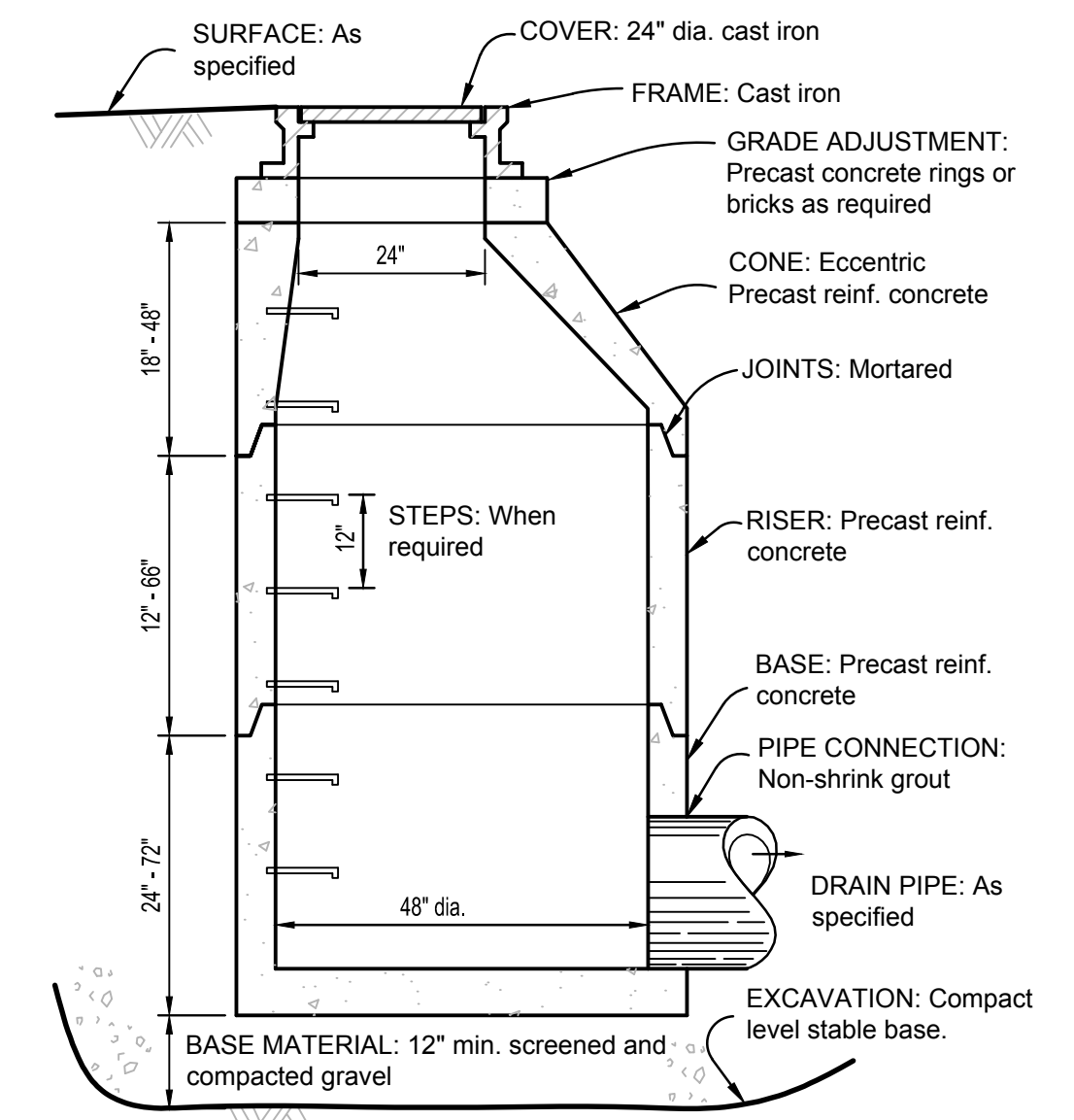
**CULTEC CHAMBER SYSTEM  
PLAN VIEW DETAIL**  
N.T.S.

\*REFER TO CULTEC TECHNICAL MANUAL IN STORMWATER SECTION.



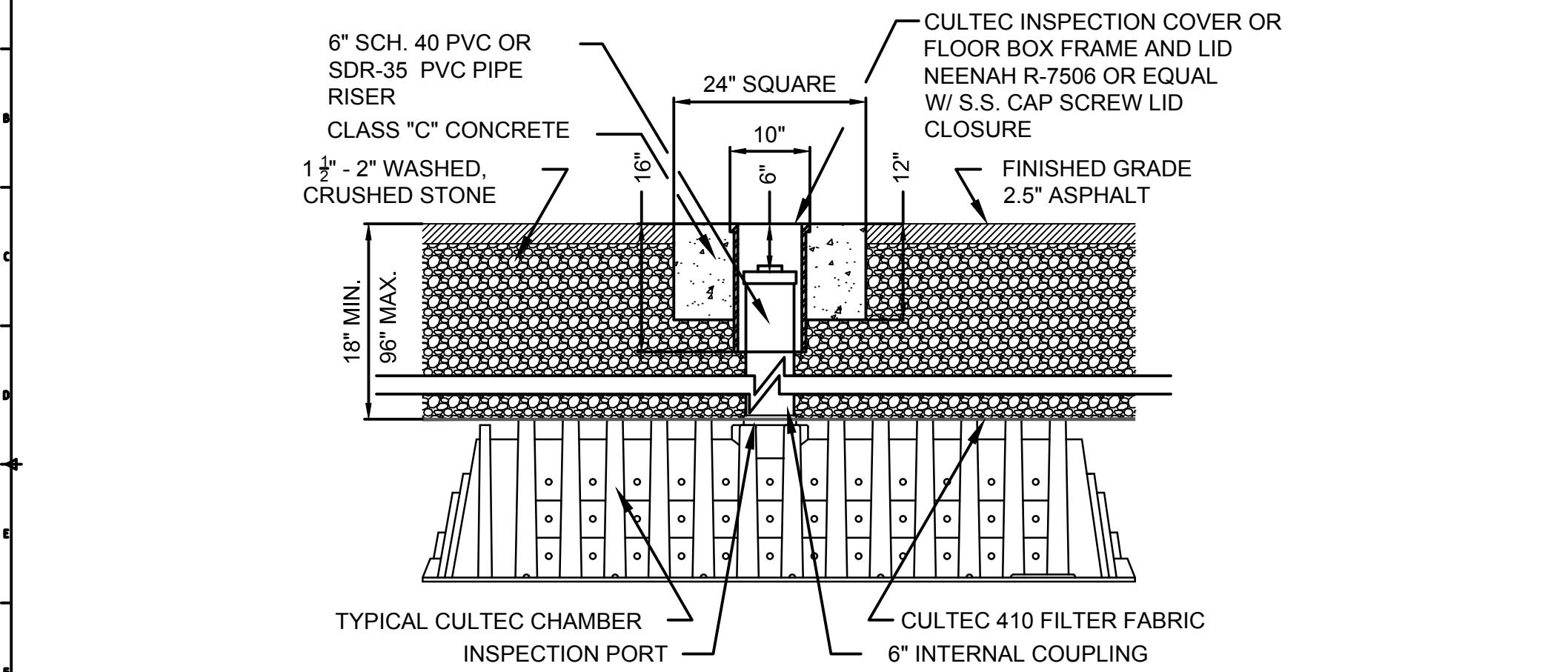
**CULTEC Contactor® & Recharger™**  
Plastic Septic & Stormwater Chambers

Designed by L.T.	Checked by LUIS TAPIA	Approved by - date G.C. 6/16/02	Filename CULTEC FILES (MISC.)	Date 6/16/02	Scale N/S
CULTEC, INC.			CULTEC SWM SYSTEM		
878 FEDERAL RD. BROOKFIELD CT 06804		FX: (203) 775-1462 PH: (800) 4-CULTEC PH: (203) 775-4416		PLAN VIEW DETAIL	
WWW.CULTEC.COM		Edition A		Sheet 1/1	

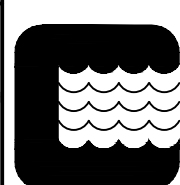


**DRAINAGE MANHOLE**

NOTES  
1. All components and construction shall provide H-20 design loading per AASHTO HS-20-44 & ASTM C478.

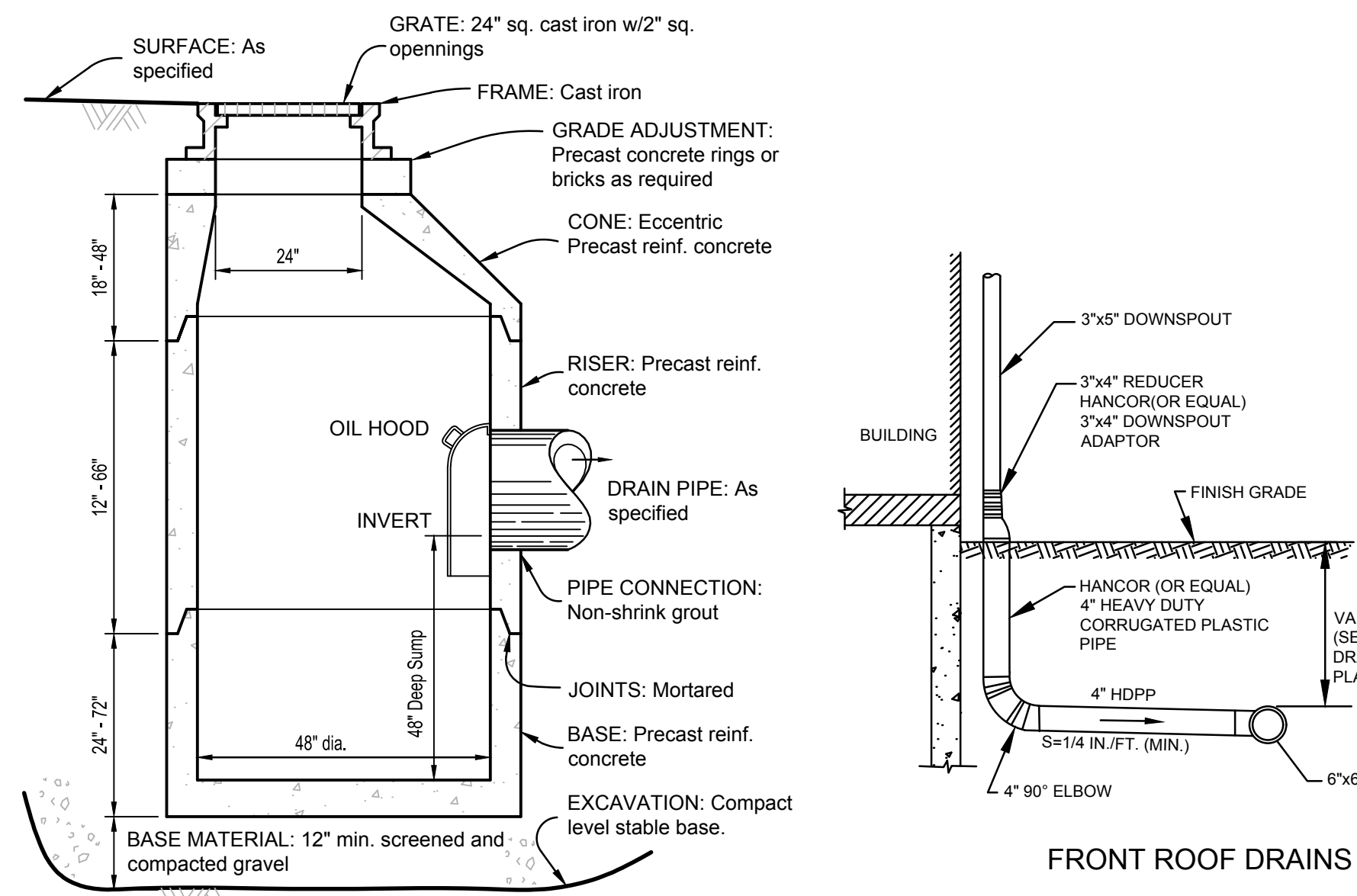


**TYPICAL INSPECTION PORT DETAIL**  
N.T.S.



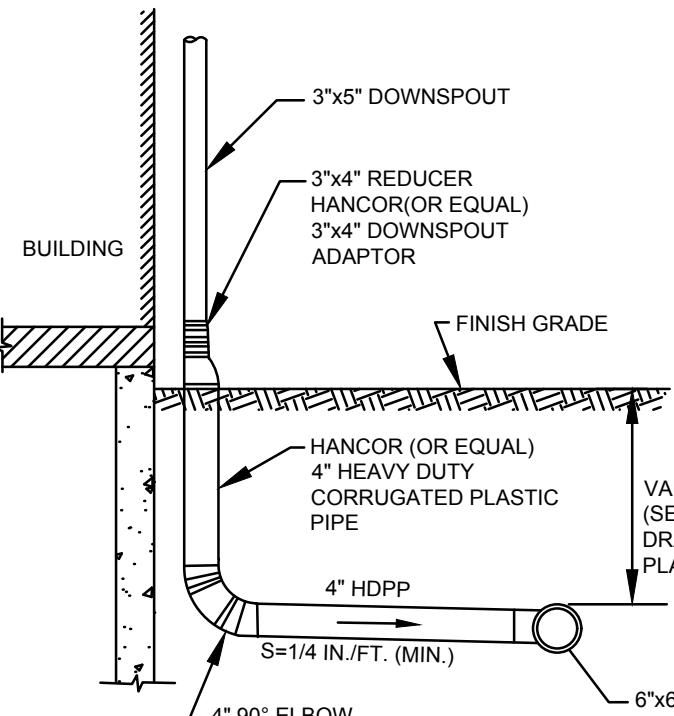
**CULTEC Contactor® & Recharger™**  
Plastic Septic & Stormwater Chambers

Designed by R.H.	Checked by LUIS TAPIA	Approved by - date G.C. 6/12/02	Filename CAD FILES (MISC.)	Date 6/12/02	Scale N/S
CULTEC, INC.			INSPECTION PORT		
878 FEDERAL RD. BROOKFIELD CT 06804		FX: (203) 775-1462 PH: (800) 4-CULTEC PH: (203) 775-4416		0001	
WWW.CULTEC.COM		Edition A		Sheet 1/1	

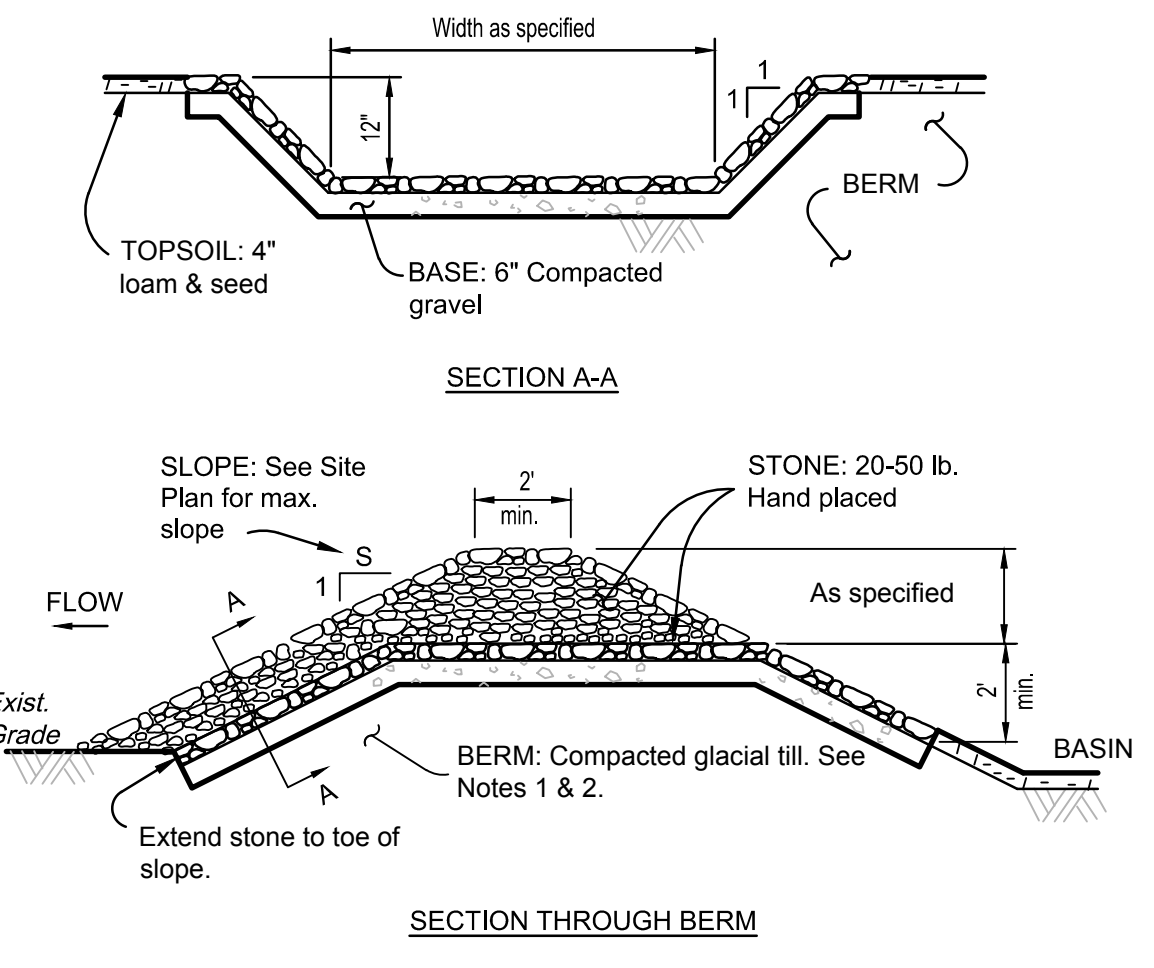


**CATCH BASIN**

NOTES  
1. All components and construction shall provide H-20 design loading per AASHTO HS-20-44 & ASTM C478.



**FRONT ROOF DRAINS**



**EMERGENCY OVERFLOW SPILLWAY**

NOTES  
1. Remove topsoil from beneath berm prior to construction.  
2. Berm shall be compacted to 95% optimum density (Proctor).

For Registry Use Only

**Details**

Not To Scale

Confirmation not valid without ORIGINAL stamp and/or signature

DATE	REVISION	BY	DESIGN BY	CHECK BY
08/29/24	REVS PER PLANNING DEPT REVIEW COMMENTS REQUIRING RELOCATION OF ENTRANCE DRIVE	KHL	KHL	KHL
10/15/24	REVISIONS REQUIRING RELOCATION OF ENTRANCE DRIVE	KHL	KHL	KHL
12/06/24	REVISIONS REQUIRING RELOCATION OF ENTRANCE DRIVE FOR PHASING PLAN AND BATHROOM REQUIREMENTS	KHL	KHL	KHL
			Design by KHL	Check by JAV/TAJ
			Survey by KHL/TAJ	
			Draft by KHL	

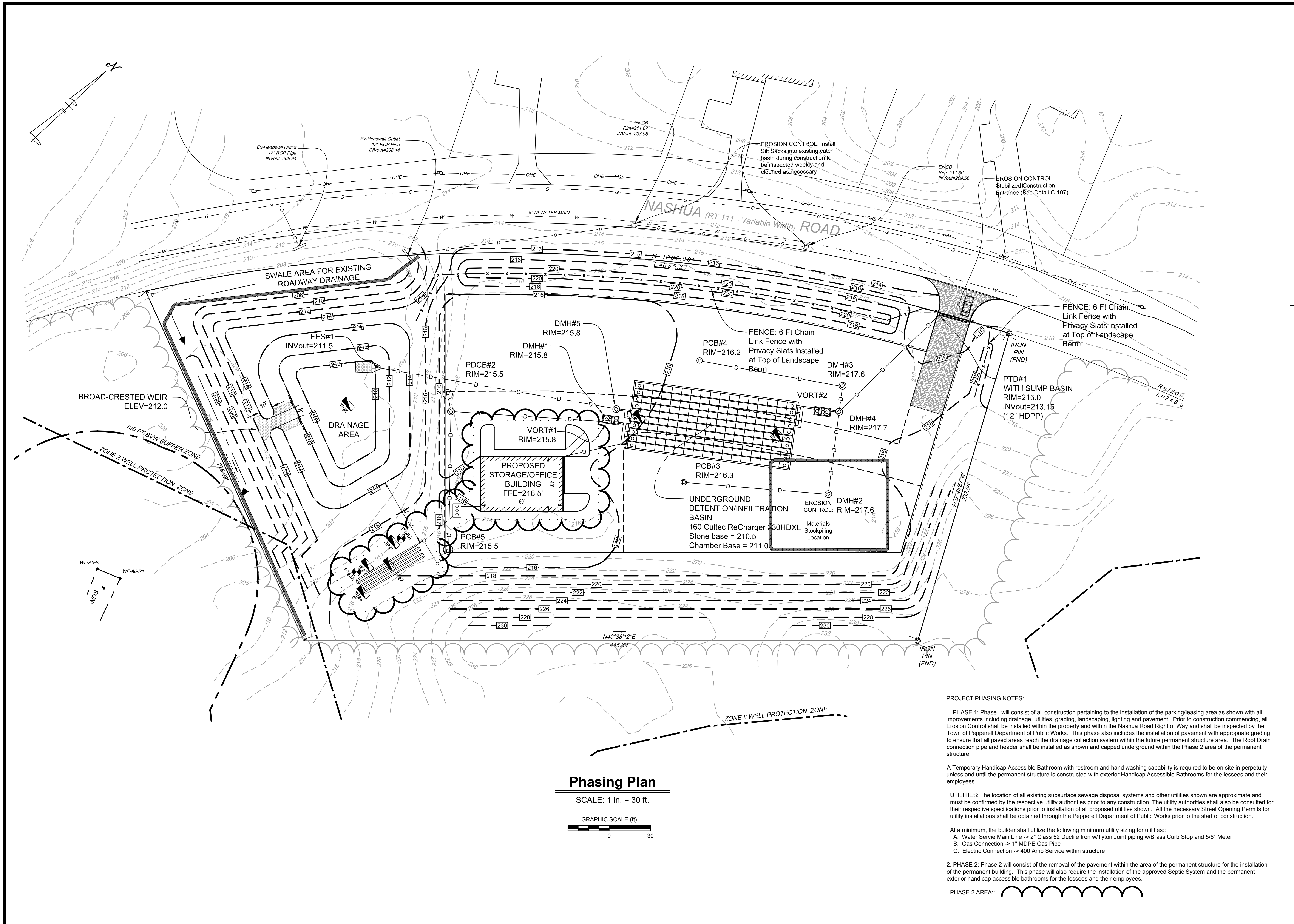
**Comerstone Land Associates, LLC**  
Civil & Structural Engineering  
Land Surveying - Land Development  
35 Main Avenue, Dept. A, MA 01826 • (978) 835-0102  
info@comerstone.com

SCALE: As Shown  
DATE: May 22, 2024  
PREPARED FOR:  
Fabio Lacerda  
12 Constanline Drive  
Tyngsboro, MA 01879

**DETAILS PLAN**  
Commercial Development  
147 NASHUA ROAD  
PEPPERELL, MASSACHUSETTS

JOB NO.: 2023-333  
SHEET: 9 of 10

DRAWING NO.  
**C-109**



DATE	REVISION	BY	DESIGN BY
08/20/24	REVIS PER PLANNING DEPT REVIEW COMMENTS REQUIRING RELOCATION OF ENTRANCE DRIVE	KML	KML
10/15/24	REVIS PER PLANNING DEPT REVIEW COMMENTS REQUIRING RELOCATION OF ENTRANCE DRIVE	KML	KML
12/06/24	REVIS PER PLANNING DEPT REVIEW COMMENTS FOR PHASING PLAN AND BATHROOM REQUIREMENTS	KML	KML

**Comerstone Land Associates, LLC**  
Civil & Structural Engineering  
Land Surveying - Land Development  
25 Dean Avenue, Suite 101  
Pepperell, MA 01879  
www.comerstone.com

SCALE: As Shown  
DATE: March 22, 2024  
PREPARED FOR:  
Fabio Lacerda  
12 Constatine Drive  
Tyngsboro, MA 01879

**PHASING PLAN**  
Commercial Development  
147 NASHUA ROAD  
PEPPERELL, MASSACHUSETTS

JOB NO.: 2023-333  
SHEET: 10 of 10  
DRAWING NO.  
C-110