

**TOWN OF HARVARD
ZONING BOARD OF APPEALS AGENDA
WEDNESDAY, DECEMBER 6, 2023 @ 7:00pm via ZOOM**

Pursuant to Chapter 2 of the Acts of 2023, An Act Making Appropriations for the Fiscal Year 2023 to Provide for Supplementing Certain Existing Appropriations and for Certain Other Activities and Projects, and signed into law on March 29, 2023, this meeting will be conducted via remote participation. Interested individuals may attend at Town Hall or listen in and participate by phone and/or online by following the link and phone number below.

UpperTH ProWebinar is inviting you to a scheduled Zoom meeting.

Topic: Zoning Board of Appeals
Time: Dec 6, 2023 07:00 PM Eastern Time (US and Canada)

Join Zoom Meeting

<https://us02web.zoom.us/j/86972225138?pwd=UmVzT0JzTGQwMUNiWkQyKzV6d3VOQT09>

Meeting ID: 869 7222 5138

Passcode: 433263

One tap mobile

+16469313860,,86972225138# US

+19294362866,,86972225138# US (New York)

Dial by your location

- +1 646 931 3860 US
- +1 929 436 2866 US (New York)
- +1 301 715 8592 US (Washington DC)
- +1 305 224 1968 US
- +1 309 205 3325 US

Meeting ID: 869 7222 5138

Find your local number: <https://us02web.zoom.us/j/86972225138?pwd=UmVzT0JzTGQwMUNiWkQyKzV6d3VOQT09>

Public Participation

7:00pm Continuation of Public Hearing of Special Permit Hearing – Latham at 200 Still River Road,
§125-3B Non-conforming one- and two-family dwellings, and §135-25 Special rule applicable to
one- and two-family dwellings.

7:15pm Continuation of Special Permit Hearing – William Ference at 247 Littleton County Road, §125-
3C Non-conforming structures other than one – and two-family
dwellings and §125-3D Non-conforming uses, request for Modification of
a Special Permit.

**7:20pm Continuation of Public Hearing of COMPREHENSIVE Permit Hearing – JUNO Construction LLC at
Old Mill Road,** for a proposed 40-B development

8:00pm Public Hearing requesting a Special Permit for Paul Cavicchio at 39 Turner Lane for an addition
to a pre-existing, non-conforming structure as prescribed in §125-3 of
the Town of Harvard Bylaw.

The listing of matters are those reasonably anticipated by the chair which may be discussed at the meeting. Not all items listed may in fact be discussed and other items not listed may be brought up for discussion to the extent permitted by law, also.

8:15pm Public Hearing requesting the Change in Use at 184 Ayer Road by SC Bailey Landscape Inc. as prescribed in 125-3(A) and 125-3D(2)(b) due to the use being changed to a different use, the new use is permitted, subject to the use being in the same or less intense use category.

- New Business:**
- a) Approve Minutes
 - b) Approve Invoice (none this month)
 - c) Craftsman Village
 - d) Confirm ZBA meeting night starting in January 2024 (not 2nd Wednesday of the month)
 - e) Discuss future ZBA meeting date conflicts in Feb. 2024 & July 2024

**NEXT SCHEDULED MEETING:
WEDNESDAY, JANUARY 3, 2024**

RMM

The listing of matters are those reasonably anticipated by the chair which may be discussed at the meeting. Not all items listed may in fact be discussed and other items not listed may be brought up for discussion to the extent permitted by law, also.



October 30, 2023

Town of Harvard Conservation Commission
c/o Liz Allard, Conservation Agent
13 Ayer Road
Harvard, Massachusetts 01451

Via: Email to lallard@harvard-ma.gov

Reference: Peer Review - Notice of Intent (NOI)
MassDEP File No. 177-0733
The Village at Robin Lane
Old Mill Road at Ayer Road
Harvard, Massachusetts
B+T Project No. 3241.04

Dear Commissioners:

Beals and Thomas, Inc. (B+T) is pleased to assist the Town of Harvard Conservation Commission (the Commission) with its review of a Notice of Intent (NOI) for the proposed Village at Robin Lane (the Project) located at Old Mill Road at Ayer Road (the Property). We understand that Juno Construction, LLC (the Applicant) proposes to develop a 40B housing project consisting of 12 two-story duplex style buildings for a total of 24 units, with associated site improvements.

We have reviewed the documentation submitted by the Applicant with respect to the requirements of the Massachusetts Wetlands Protection Act and implementing Regulations; the Massachusetts Department of Environmental Protection (MassDEP) Stormwater Regulations and Handbook (the Handbook); and, generally accepted engineering practice.

B+T has completed a separate review of the Comprehensive Permit Application for the Project on behalf of the Harvard Zoning Board of Appeals (ZBA). That review considered the Harvard Wetlands Protection Bylaw and requested waivers therefrom. Therefore, this review is limited to the state law and regulations. This review is undertaken so as not to be duplicative with our review during the ZBA process, and reflects Project information provided by the Applicant during that process to the extent relevant.

B+T received the following documentation which served as the basis for our review:

- *Notice of Intent for The Village at Robin Lane, Old Mill Road and Ayer Road*, dated August 2023. Prepared by Norse Environmental Services, Inc. (38 pages)
- *Site Plans - Chapter 40B Residential Development, The Village at Robin Lane, Harvard, MA*, dated June 2023, revised through September 20, 2023, prepared by GPR, Inc. (8 sheets)

Corporate Office

144 Turnpike Road
Southborough, MA 01772

bealsandthomas.com T 508.366.0560 F 508.366.4391

Regional Office

32 Court Street
Plymouth, MA 02360

- *Stormwater Management Report, The Village at Robin Lane At Old Mill & Ayer Road, Harvard, MA, dated June 2023, revised through September 18, 2023, prepared by GPR, Inc. (174 pages)*
- *Long Term Pollution Prevention & Stormwater System Operation and Maintenance Plan, The Village at Robin Lane At Old Mill & Ayer Road, Harvard, MA, dated June 2023, prepared by GPR, Inc. (15 pages)*
- *Form 11 - Soil Evaluator Forms, dated September 25, 2023, prepared by GPR, Inc. (5 pages)*
- *Soil Evaluation Logs, dated September 2023, prepared by GPR, Inc. (1 sheet)*

MassDEP Technical Review Comments

MassDEP's Environmental Analysts provided the following technical comments relating to the Project. To the extent we have additional input/requests, we have indicated so below the comment.

1. *While surface basins and mitigation may be deducted from Riverfront Area impact calculations towards the 10% provided there is not a practical alternative, they should still be quantified for review. Please provide the quantified area of alteration to RFA.*
2. *The Applicant should explore and provide information on practical alternatives like subsurface options beneath paved areas to reduce impact to RFA as well as including LID methods. The Commission may want to consider the impact to mature trees when considering the proposed stormwater BMPs.*
3. *Were there any LID or alternative BMPs considered or proposed that would reduce the footprint and minimize clearing for the BMPs. "The alternatives analysis may reduce the scale of the activity or the number of lots available for development..." Please use the alternatives analysis to review all reasonable layouts and explain why those configurations were not selected through the perspective of avoid, minimize, and mitigate. Please see 310 CMR 10.58(4)(c). No build does not explore practical alternatives. All proposed alternatives must also meet performance standards. Soil test pits are required at the location of any infiltration BMP to verify seasonal high groundwater and soil type. While there is a single test pit in the proposed infiltration basin, it is not situated near the bottom elevation and it appears to be from 1999. The Commission may wish to request updated data that is closer to the bottom elevation of where the basin is situated that confirms the depth is at least 2 ft to seasonal high groundwater and/or bedrock. Please provide soil test pit data as well as updated site plans with labeled test pits at the location of the proposed infiltration basin.*

The Applicant provided additional soil evaluation data as part of the Comprehensive Permit review process with the ZBA. In our opinion, that portion of the above comment has been addressed.

- 4. Pretreatment is required for an infiltration basin to achieve 80% TSS removal, see V2, Ch 2, p86. Please revise TSS worksheet as credit appears to have been taken for the pretreatment itself in addition to 80% for infiltration BMPs that can only be credited with pretreatment, see V1, Ch1, p11. Each treatment train requires its own worksheet.*

NOI Review Comments

5. The narrative addressing the Riverfront Area (RFA) performance standards in 310 CMR 10.58(4)(1)b notes that work within the inner 100-foot RFA is temporary for the installation of the drinking water supply wells. However, an access road is shown as a permanent post-project condition (100-foot RFA not shown), and we presume that the vegetation surrounding the wells will need to remain cleared. We request that the Applicant provide an updated performance standard evaluation that considers this permanent RFA impact.
6. In the RFA Alternatives Analysis, the Applicant maintains that the installation of the three wells within the RFA may be considered an exempt activity. However, we note that 310 CMR 10.02(b)2.i only exempts utility work within a paved roadway or driveway, and not within an existing forested RFA. Therefore, this exemption does not appear to be applicable. We request that the Applicant provide additional information documenting the exemption, or otherwise address the apparent discrepancy.
7. We request that the Applicant expand the Alternatives Analysis to fully address the requirements of 310 CMR 10.58(4)(c).
8. There is a channelized flow path that crosses the southerly portion of the Property and discharges water directly into a finger of the Bordering Vegetated Wetland (BVW) in the vicinity of WF-40B through WF-44B. This flow will be piped around the proposed development and discharge south of the existing channel. Although topography is such that the flow will reach the overall wetland system, we request that the Applicant evaluate if the hydrology of this BVW finger will be impacted and whether the pipe should be extended to the existing topographic swale.
9. There appears to be a minor discrepancy in the depiction of the FEMA Zone AE elevation on the plan and how it is depicted in the Flood Insurance Rate Maps (FIRMs).

The site plans depict this Zone AE as Elevation 235.5 throughout the Property, but there is an on-site transect on the FEMA panel down to 235.4 (Panel No. 25027C0312E). While this is a minor discrepancy, we note it for the administrative record as the elevation depicts the boundary of Bordering Land Subject to Flooding (BLSF) and request that it be evaluated and corrected.

10. The site plans refer to the use of hay bale BMPs for erosion and sediment control. We request that the Applicant consider the use of straw bales rather than hay given the propensity of the latter to contain seed mass of invasive species.
11. The proposed dewatering detail (Sheet C6.1) contains the use of flocculant crystals on the bed of hay bales. We request that the Applicant consider avoiding the use of flocculants, especially given the proposal to install three drinking water supply wells in the down-gradient area. Further, additional monitoring requirements may apply to the project with the use of flocculants under the 2022 Construction General Permit (CGP).

B+T is available to attend the public hearing, upon request, to present the results of our review and be available for discussion regarding the comments listed herein.

We thank you for the opportunity to assist the Town of Harvard with the review of this NOI. Should you have any questions, please do not hesitate to contact our office.

Sincerely,

BEALS AND THOMAS, INC.



Matthew Cote PE, SITES AP, ENV SP
Senior Civil Engineer

A handwritten signature in blue ink that reads "Andrew Gorman".

Andrew Gorman, CESSWI
Senior Environmental Planning Specialist

CHAPTER 40B RESIDENTIAL DEVELOPMENT

THE VILLAGE AT ROBIN LANE

HARVARD, MA

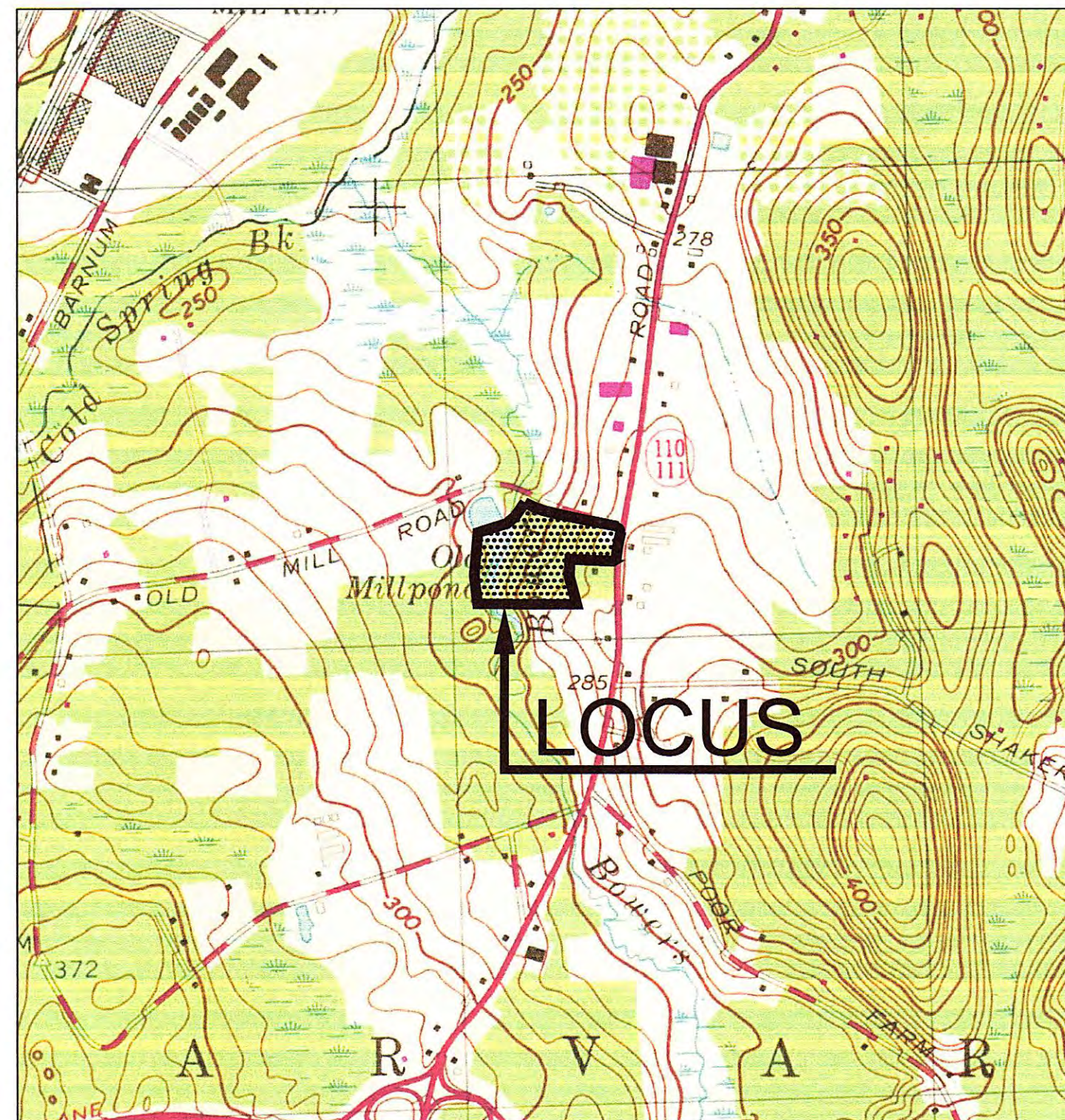
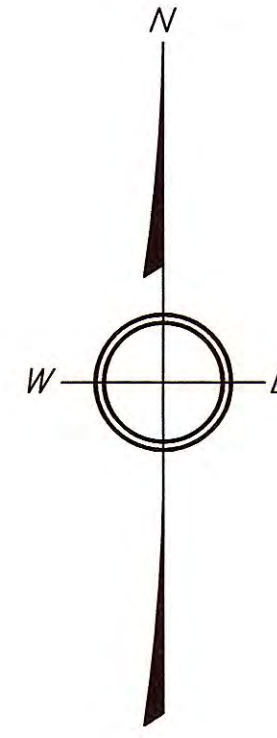
SITE DATA

LOT AREA: 11.47± AC. (499,853 SF)
 DWELLING UNIT: RESIDENTIAL DUPLEX (3-BEDROOM & 2-BEDROOM UNITS)
 BEDROOM COUNT: 60 BEDROOMS (12 RESIDENTIAL DUPLEX)
 WATER SUPPLY [1]: ON-SITE WELLS (6,820 GPD)
 SEWAGE DISPOSAL [1]: ON-SITE SEWAGE DISPOSAL SYSTEM (6,820 GPD)

[1] ON-SITE WELLS AND SEWAGE DISPOSAL SYSTEM HAVE BEEN DESIGNED TO HANDLE (62) BEDROOMS, ACCOMMODATING THE (60) BEDROOMS ASSOCIATED WITH THE PROPOSED 12 RESIDENTIAL DUPLEXES, AS WELL AS ADDITIONAL (2) BEDROOMS AS BONUS.

GENERAL NOTES

- LOCATIONS OF EXISTING UNDERGROUND UTILITIES/OBSTRUCTIONS/SYSTEMS SHOWN HEREON ARE APPROXIMATE ONLY. ALL UTILITIES/OBSTRUCTIONS/SYSTEMS MAY NOT BE SHOWN. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL UNDERGROUND UTILITIES/OBSTRUCTIONS/SYSTEMS, WHETHER OR NOT SHOWN HEREON.
- UNLESS OTHERWISE SHOWN, ALL NEW UTILITIES SHALL BE UNDERGROUND.
- BURIED UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THEIR RESPECTIVE COMPANY SPECIFICATIONS.
- CONSTRUCTION LAYOUT OF BUILDING AND SITE IMPROVEMENTS SHALL BE PERFORMED BY A LICENSED PROFESSIONAL LAND SURVEYOR. LOCATIONS OF EXISTING FEATURES OR PROPOSED IMPROVEMENTS DERIVED BY SCALING DRAWINGS MAY NOT BE ACCURATE. PROPERTY LINES SHOWN HEREON ARE APPROXIMATE. SEE PLAN REFERENCE HEREON.
- SAFETY MEASURES, CONSTRUCTION METHODS, AND CONTROL OF WORK SHALL BE RESPONSIBILITY OF CONTRACTOR.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ANY EXISTING UTILITY OR STRUCTURE DAMAGED DURING CONSTRUCTION THAT ARE NOT DESIGNATED FOR DEMOLITION AND/OR REMOVAL HEREON. DAMAGED UTILITY OR STRUCTURE SHALL BE REPAIRED TO THE SATISFACTION OF THEIR RESPECTIVE OWNERS.
- ANY INTENDED REVISION OF THE HORIZONTAL AND/OR VERTICAL LOCATION OF IMPROVEMENTS TO BE CONSTRUCTED AS SHOWN HEREON SHALL BE REVIEWED AND APPROVED BY ENGINEER PRIOR TO IMPLEMENTATION.
- CONTRACTOR SHALL NOTIFY ENGINEER UPON COMMENCEMENT OF CONSTRUCTION IN ORDER TO ENSURE THAT REQUIRED INSPECTIONS ARE PERFORMED IN A TIMELY AND EFFICIENT MANNER.
- CONTRACTOR SHALL PROMPTLY NOTIFY ENGINEER UPON DISCOVERY OF ANY UNFORESEEN SURFACE OR SUBSURFACE CONDITIONS THAT MAY IMPACT SITE CONSTRUCTION.
- FINISH RIM ELEVATIONS SHOULD MATCH PAVEMENT, GRADING OR LANDSCAPING, UNLESS SPECIFICALLY INDICATED OTHERWISE.
- WHERE EXISTING UTILITY LINES/STRUCTURES ARE TO BE CUT/BROKEN DOWN/ABANDONED, LINES/STRUCTURES SHALL BE PLUGGED/CAPPED/FILLED IN ACCORDANCE WITH UTILITY OWNER REQUIREMENTS.
- EROSION CONTROL MEASURES, SUCH AS SILT FENCE OR STRAW WATTLES AS MAY BE SHOWN HEREON, SHALL BE INSTALLED BEFORE EARTH DISTURBANCE OCCURS WITHIN BUFFER ZONE, AND SHALL SERVE AS THE LIMIT OF WORK.
- WHERE THE WORD "INSTALL" IS USED HEREIN, IT IS INTENDED TO DIRECT CONTRACTOR TO "FURNISH, INSTALL, AND PLACE IN OPERATION" THE COMPONENT REFERRED TO.
- LIMITS OF WORK SHALL BE STAKED IN THE FIELD PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- ALL STORM DRAIN PIPE TO BE SMOOTH INTERIOR HDP PIPE, 2.0 PSI GASKETED JOINT, UNLESS OTHERWISE NOTED.
- WHERE SHOWN, CONSTRUCTION NOTES ARE INTENDED TO SUMMARIZE AND CLARIFY MAJOR ITEMS OF WORK. THESE NOTES SHOULD NOT BE CONSTRUED AS AN EXHAUSTIVE LISTING OF ALL WORK REQUIRED. CONTRACTOR SHOULD CONTACT ENGINEER WHEN FURTHER CLARIFICATION OF DEPICTED WORK IS DESIRED.
- CONSTRUCTION OF FIRE AND DOMESTIC WATER SUPPLY IMPROVEMENTS SHALL CONFORM TO TOWN OF HARVARD REQUIREMENTS.
- WHERE DIMENSIONS INVOLVE CURB, DIMENSIONS ARE TO FACE OF CURB. WHERE SLOPED GRANITE CURB OR CAPE COD BERM SPECIFIED, FACE OF CURB IS EDGE OF FINISH PAVEMENT AT TOE OF CURB.
- NO DEBRIS, JUNK, RUBBISH OR OTHER NON-BIODEGRADABLE MATERIALS, FILL CONTAINING HAZARDOUS MATERIALS OR WASTES, OR STUMPS SHALL BE BURIED ON ANY LAND ON THIS SITE, OR LEFT ON ANY LOT OR ON THE STREET RIGHT OF WAY.



VICINITY MAP
SCALE: 1" = 1000'

REGULATORY NOTES

- CONTRACTOR SHALL CONTACT DIG-SAFE FOR UNDERGROUND UTILITY MARKING AT 888.344.7233 AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF ANY WORK. CONTRACTOR SHALL GIVE TWENTY-FOUR (24)-HOUR NOTICE TO PERTINENT TOWN DEPARTMENTS BEFORE COMMENCING ANY WORK IN THE FIELD.
- CONTRACTOR SHALL COORDINATE AND OBTAIN ALL CONSTRUCTION PERMITS REQUIRED BY REGULATORY AUTHORITIES.
- CONTRACTOR SHALL BE AWARE OF ALL CONSTRUCTION REQUIREMENTS, CONDITIONS, AND LIMITATIONS IMPOSED BY PERMITS AND APPROVALS ISSUED BY REGULATORY AUTHORITIES PRIOR TO COMMENCEMENT OF ANY WORK.
- ALL WORK OUTSIDE OF BUILDING THAT IS LESS THAN 10 FEET FROM THE INSIDE FACE OF BUILDING FOUNDATION SHALL CONFORM WITH THE UNIFORM STATE PLUMBING CODE OF MASSACHUSETTS, 248 CMR 2.00.
- GENERAL COMPLIANCE WITH 28 CFR PART 36 - 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN AND 521 CMR PART C, EXTERIOR OF THE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD REGULATIONS IS INTENDED. CONTRACTOR SHALL VERIFY COMPLIANCE DURING CONSTRUCTION AND SHALL NOTIFY THE OWNER OF ANY NON-COMPLIANCE ISSUES AS SOON AS DISCOVERED.

COVERAGE COMPUTATIONS

PARAMETER	AREA (ACRES)	AREA (SQARE FEET)	FRACTION OF TOTAL LOT AREA (%)
EXISTING CONDITION			
Lot Area	11.47	499,853	100%
Total Impervious Coverage	0.00	0	0%
DEVELOPED CONDITION			
Lot Area	11.47	499,853	100%
Building Footprint	0.68	29,808	6%
Other Impervious Area	0.80	34,808	7%
Total Impervious Coverage	1.48	64,616	13%
Open Space Area	9.99	435,237	87%
Common Open Space	7.47±	325,400±	65%

ZONING SUMMARY

Juno Construction, LLC Map: 4
 92 Middlesex Road, Unit 3 Parcel: 52, 52.1, 52.2, 53
 Tyngsborough, MA 01879

Parameter	Section [1]	Requirement	Remarks
Zoning District	125-23	C	Commercial District
Proposed Use	125-23	Prohibited	Residential Duplex
Lot Area	125-29.B(1)	1.50 acres	11.47± acres
Frontage	125-29.B(2)	180 FT	
Lot Width	125-29.B(2)	200 FT	
Yard [2]			
	Front	20 FT	
	Side	20 FT	
	Rear	20 FT	
Buffer strip	125-39.C(1)	20 FT	10% of standard lot width
Open Area	125-39.C(2)	Not required	87% (435,237± SF)
Floor Area Ratio	125-30.B	10% of land area of lot	15.8% of land area of lot (49,985± SF max. allowable)
Building Height	125-30.C	<35 FT; <3 stories	above average grade, excepting unoccupied projections
Parking	125-39.A(1)	quantity not regulated	(2) parking spaces per dwelling units, (12) guest parking spaces
Wetlands Setback		50-FT no disturb buffer	75-FT no structure buffer
Zone 1 Protective Radius			On-site public water supplies

NOTES:
 [1] Reference to section of The Protective Bylaw, where applicable.
 [2] Building setback from property line shall be at least 60 feet from abutting property in an AR or MR District.

ABBREVIATIONS:
 SF=Square feet; CF=Cubic feet; FT=feet; GFA=gross floor area; AC=acres; WFH=Watershed Protection and Flood Hazard; IPOD=Interim Planning Overlay District; WCTOD=Wireless Communications Tower Overlay District; ZBA=Zoning Board of Appeals.

PARKING SUMMARY

Number of Dwelling Units	No. of Parking Spaces per Unit	Guest Parking Spaces	Total No. of Parking Spaces
24	2	12	60

LOCAL BYLAW EXEMPTIONS

Section	Requirement	Request
PROTECTIVE ZONING BYLAW (CHAPTER 125)		
Section 125-23	Uses permitted in the Commercial District.	Allow residential use in the Commercial District.
Section 125-30.A	Every structure must be able to provide its own lot conforming to the bylaw.	Allow multiple structure on a single lot.
Section 125-30.B	Total building floor area (all levels, all buildings) shall not exceed 10% (49,985± SF) of the land area of the lot.	Allow over 10% of land area (Proposed 15.8%) of the lot as total building floor area for all the residential dwelling units (78,960± SF total floor area).
Section 125-30.E(2)	Structures other than fences shall be set back from lot boundaries by at least the height of the structure.	Allow proposed gazebo to be located within the structure set back line and the dwellings to be pursuant to Section 125-30.E(3) & (4).
Section 125-30.E(4)	In the Commercial District such structures shall be set back from the front lot line a minimum of 20 feet.	Allow proposed gazebo to be located within 20 feet of the property line.
Section 125-31	Limits number of structures on a lot.	Allow a private way to service 24 units (12 structures) Village at Robin Lane.
Section 125-32.D	Communal disposal by a non-municipal entity.	Allow the use of a communal subsurface sewage disposal system in accordance with Title 5 of the State Environmental Code.
Section 125-38.F	Design review submission.	No design review board process.
Section 125-38.G	Prepare a landscape plan at the same scale as the site plan.	Provide typical structure planting layout, street trees and cut-de-sac plantings.
Section 125-39.A(3)(a)(1)	Parking stalls at least nine by 19 feet.	Allow guest parking stall dimension to be nine by 18 feet.
Section 125-39.G(1)	Provide 6-ft wide cement concrete sidewalks along all sides of the lot which abuts a public street unless an alternative surface is allowed by the Planning Board.	Allow 6-ft wide bituminous concrete sidewalk to be constructed along the section of Old Mill Road up to Ayer Road only and allow an alternative surface approval by the Zoning Board of Appeals. Proposed sidewalk will end at approximately the location of 1
Section 125-39.G(2)	Internal pedestrian walkways to be 6-ft wide and car stops to be provided at parking spaces.	To allow 4-ft wide bituminous concrete sidewalk along one side of the street and no car stops required.
Section 125-58.E	Project subject to Planning Board review as part of the Planning Board process.	Allow review by the Zoning Board of Appeals as part of the Zoning Board of Appeals process.
ZONING BOARD OF APPEALS (CHAPTER 136)		
Section 136-3.A(1)(a)(1)(b)(x)	Filing procedure to include proposed lighting and photometric analysis within site development plans.	Waive the requirement for lighting and photometric analysis as there is no proposed street lights or driveway lights. Development is designed in accordance with "dark sky" guidelines.
WETLAND PROTECTION BYLAW (CHAPTER 119)		
Section 119-4E	At time of application the applicant shall pay the local filing fee(s).	At time of application the applicant will pay the State mandated fees (only).
WETLAND PROTECTION BYLAW REGULATIONS (CHAPTER 147)		
Section 147-6C	Filing procedure to include additional Harvard filing fees (Form F)...	At time of application the applicant will pay the State mandated fees (only).
Section 147-12	Harvard wetland setbacks of no disturbance within fifty feet (50') and no driveways, roads, structures within seventy-five feet (75').	Use the Wetland Protection Act standards.
Section 147-14C	Enhanced Stormwater management standards.	Allow the project to provide best management practices pursuant only to Massachusetts Stormwater Handbook standards.
Board of Health Article I Sanitation (Chapter 145)		
Section 145-3J	There must be a minimum offset distance of ten feet (10') between the primary and the reserve area.	Standards of Title 5 to be followed.
Section 145-6B	Additional deep observation hole testing will be required at one test hole per additional 2,000 gallons per day capacity or fraction thereof.	Standards of Title 5 to be followed.

SHEET INDEX

- C1.1 TITLE SHEET
- C2.1 EXISTING CONDITIONS PLAN
- C3.1 SITE LAYOUT AND UTILITIES PLAN
- C4.1 GRADING, DRAINAGE AND PAVING PLAN
- C5.1 DRIVEWAY PROFILE & EMERGENCY VEHICLE TURNING MOVEMENT
- C6.1 EROSION AND SEDIMENT CONTROL PLAN
- C7.1 CONSTRUCTION DETAILS
- C7.2 CONSTRUCTION DETAILS

EXISTING CONDITION NOTES:

- THE EXISTING CONDITION INFORMATION SHOWN IS BASED ON AN INSTRUMENT SURVEY PERFORMED BY THIS OFFICE IN PREPARATION OF THIS DRAWING.
- THE WETLAND DELINEATION SHOWN HAS BEEN PERFORMED BY NORSE ENVIRONMENTAL DURING OCTOBER 2021. SEE PLAN REFERENCE NO. 2.
- APPROXIMATE LIMIT OF THE 100-YR FLOODPLAIN AND ZONE AE SHOWN IS BASED ON FEMA FLOOD INSURANCE STUDY ELEVATION. DATED JULY 4, 2011. PANEL NO. 25027C0312F.

PLAN REFERENCES:

- "PLAN OF LAND IN HARVARD, MASS." AS PREPARED BY GOLDSMITH, PREST & RINGWALL, INC. DATED NOVEMBER 28, 2000. JOB NO. 99213. FILED AS PLAN BOOK 763, PLAN 22.
- "ABBREVIATED NOTICE OF RESOURCE AREA DELINEATION - OLD MILL ROAD, HARVARD, MA" AS PREPARED BY GOLDSMITH, PREST & RINGWALL, INC. REVISED NOVEMBER 25, 2023.
- "NEW DUPLEX, HARVARD, MASSACHUSETTS" AS PREPARED BY JOZKOS ARCHITECTURE INC. DATED OCTOBER 7, 2021. PROJECT NO. 21052.
- "CHAPTER 40B RESIDENTIAL DEVELOPMENT - SUBSURFACE SEWAGE DISPOSAL SYSTEM - THE VILLAGE AT ROBIN LANE" AS PREPARED BY GOLDSMITH, PREST & RINGWALL, INC. DATED TBD.

APPROVED BY THE HARVARD ZONING BOARD OF APPEALS

CHAIR

APPLICATION FILED

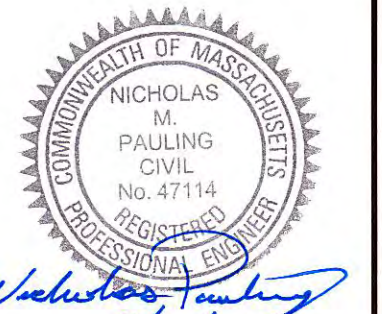
HEARING DATE

PLAN APPROVED

DRAWING ISSUED FOR:

- CONCEPT CONSTRUCTION
- PERMIT CONSTRUCTION RECORD

THIS DRAWING MAY NOT SHOW CONSTRUCTION DETAILS AND SPECIFICATIONS FOR ALL PROPOSED IMPROVEMENTS, AND MAY NOT IDENTIFY ALL CONSTRUCTION WORK ITEMS/AREAS OF CONTRACTOR JURISDICTION.



PER 250 CMR 5.03(13), THE FOLLOWING ARE EXCLUDED FROM THE PROFESSIONAL ENGINEER'S RESPONSIBILITY: ALL BOUNDARY INFORMATION; LOCATION OF EXISTING STRUCTURES, TREES, UTILITIES, TOPOGRAPHY OR SIMILAR FEATURES; DESIGN OF RETAINING WALLS, PROPRIETARY EQUIPMENT. SEE EXISTING CONDITION NOTES.

NO.	DATE	BY	APP.	REVISION DESCRIPTION
2	11/16/23	LT	NMP	PEER REVIEW COMMENTS
1	9/20/23	LT	NMP	PEER REVIEW COMMENTS

GPR Engineering Solutions for Land & Structures

GOLDSMITH, PREST & RINGWALL, INC.
 39 MAIN STREET, SUITE 301, AYER, MA 01432
 CIVIL ENGINEERING • LAND SURVEYING • LAND PLANNING
 VOICE: 978.772.1590 FAX: 978.772.1591
 www.gpr-inc.com

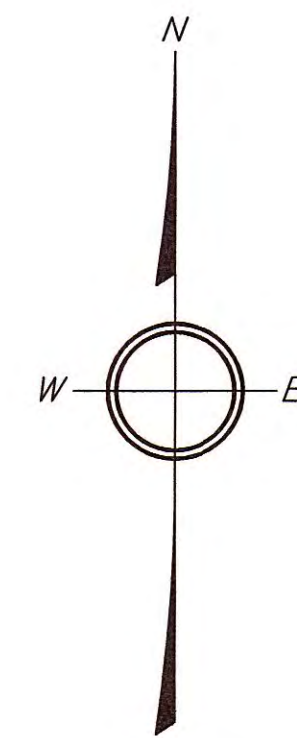
40B RESIDENTIAL DEVELOPMENT

TITLE SHEET

THE VILLAGE AT ROBIN LANE
 AT OLD MILL & AYER ROADS
 HARVARD, MA

PREPARED FOR:
 JUNO CONSTRUCTION, LLC
 92 MIDDLESEX ROAD, UNIT 3
 TYNGSBOROUGH, MA 01879

DES. BY: LT DATE: JUNE 2023 JOB: 211140 C1.1
 CHK. BY: NMP



N/F
MNC & DAG
UNRECD REV. TR.
4.3130/396

N/F
TOWN OF
HARVARD
CONSERVATION
28153/214

OLD MILL
POND

LOT 1-3
11.47± ACRES

N/F
WELCH COMMERCIAL
ENTERPRISES INC.
50547/7

N/F
TOWN OF HARVARD
CONSERVATION-MAXANT
11358/46776

N/F
FOXGLOVE
HOUSING ASSOC.
14348/25

- LEGEND**
- EXISTING
- ELEVATION CONTOUR
 - SPOT GRADE
 - PROPERTY LINE
 - WETLAND DELINEATION
 - WETLAND BUFFER ZONE
 - SHORELINE
 - 100-YEAR FLOODPLAIN LIMIT
 - TREE LINE / EDGE OF VEGETATION
 - EDGE OF PAVEMENT
 - CAPE COD BERM CURBING
 - GRANITE CURBING
 - GRAVEL/DIRT ROAD
 - STOCKADE FENCE
 - STONE WALL
 - WATER MAIN
 - WATER SERVICE
 - FIRE SERVICE
 - WATER VALVE
 - FIRE HYDRANT
 - FORCE MAIN
 - GRAVITY SEWER LINE
 - SEWER MANHOLE
 - GAS LINE
 - GAS SERVICE
 - GAS VALVE
 - BURIED POWER LINE
 - OVERHEAD POWER LINE
 - UTILITY POLE
 - GUY WIRE
 - ELECTRIC BOX
 - STORM DRAIN
 - UNDERDRAIN
 - ROOF DRAIN
 - FOUNDATION DRAIN
 - CATCH BASIN
 - DRAIN MANHOLE
 - DEEP SOIL OBSERVATION HOLE
 - SITE LUMINAIRE
 - SIGN

- ABBREVIATIONS**
- EL ELEVATION
 - INV INVERT
 - SF SQUARE FEET
 - AC ACRES
 - FT FEET
 - R RADIUS
 - DIA DIAMETER
 - BIT BITUMINOUS
 - CONC CONCRETE
 - L LENGTH
 - S SLOPE
 - HDPE HIGH DENSITY POLYETHYLENE
 - PVC POLYVINYL CHLORIDE
 - RCC REINFORCED CONCRETE PIPE
 - N/F NOW OR FORMERLY
 - VP VERNAL POOL
 - WF WETLAND FLAG
 - TW TOP OF WALL
 - BW BOTTOM OF WALL
 - FG FINISH GRADE
 - BSMT BASEMENT
 - FF FINISH FLOOR

NOTE:
1. SEE TITLE SHEET C1.1 FOR EXISTING CONDITIONS NOTES AND PLAN REFERENCES.

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 PERMIT CONSTRUCTION RECORD

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NO.	DATE	BY	APP.	REVISION DESCRIPTION
2	11/16/23	LT	NMP	FEMA ZONE AE UPDATE
1	9/20/23	LT	NMP	PEER REVIEW COMMENTS

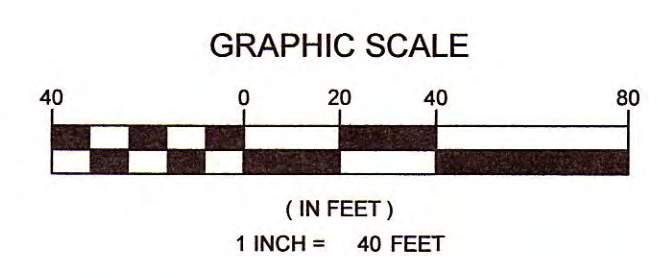
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40B RESIDENTIAL DEVELOPMENT
 EXISTING CONDCTIONS PLAN

THE VILLAGE AT ROBIN LANE
 AT OLD MILL & AYER ROADS
 HARVARD, MA

PREPARED FOR:
 JUNO CONSTRUCTION, LLC
 92 MIDDLESEX ROAD, UNIT 3
 TYNGSBOROUGH, MA 01879



FIELD BY: AMB	DATE: JUNE 2023	JOB 211140	C2.1
CALC. BY: DSB			

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The Village at Robin Lane - Sewer Rim & Invert Schedule

Building Unit [1]	FROM		TO		Pipe Size (in)	Pipe Type	Length (ft)	Slope (ft/ft)	From		TO		Pipe Size (in)	Pipe Type	Length (ft)	Slope (ft/ft)	Drop Wye Invert	
	TOP / Rim Elev.	Invert	Structure Invert	Min. Tank Invert					Structure Invert	Invert	Structure Invert	Invert						
1A & 1B	278.50	274.75	Tank in	274.51	276.76	4	PVC	12.0	0.020	Tank out	274.26	SMH-1	273.50	4	PVC	22.0	0.035	271.90
2A & 2B	279.50	275.75	Tank in	275.51	277.76	4	PVC	12.0	0.020	Tank out	275.26	SMH-1	273.50	4	PVC	43.0	0.041	271.90
3A & 3B	273.50	269.75	Tank in	269.51	271.76	4	PVC	12.0	0.020	Tank out	269.26	SMH-1 - SMH-3	268.50	4	PVC	24.5	0.031	266.71
4A & 4B	278.00	274.25	Tank in	274.01	276.26	4	PVC	12.0	0.020	Tank out	273.76	SMH-1 - SMH-3	270.92	4	PVC	52.5	0.054	-
5A & 5B	270.50	266.75	Tank in	266.51	268.76	4	PVC	12.0	0.020	Tank out	266.26	SMH-2 - SMH-3	265.50	4	PVC	24.5	0.031	262.27
6A & 6B	274.50	270.75	Tank in	270.51	272.76	4	PVC	12.0	0.020	Tank out	270.26	SMH-2 - SMH-3	269.50	4	PVC	28.0	0.027	267.32
7A & 7B	266.50	262.75	Tank in	262.51	264.76	4	PVC	12.0	0.020	Tank out	262.26	SMH-2 - SMH-3	261.47	4	PVC	39.3	0.020	-
8A & 8B	268.75	264.50	Tank in	264.26	266.51	4	PVC	12.0	0.020	Tank out	264.01	SMH-2 - SMH-3	263.50	4	PVC	22.0	0.023	261.59
9A & 9B	267.50	264.50	Tank in	264.26	266.51	4	PVC	12.0	0.020	Tank out	264.01	SMH-2 - SMH-3	263.08	4	PVC	54.6	0.017	-
10A & 10B	269.00	265.00	Tank in	264.76	267.01	4	PVC	12.0	0.020	Tank out	264.51	SMH-2 - SMH-3	263.27	4	PVC	63.4	0.027	-
11A & 11B	269.00	265.00	Tank in	264.76	267.01	4	PVC	12.0	0.020	Tank out	264.51	SMH-2	263.70	4	PVC	31.5	0.026	-
12A & 12B	270.00	266.00	Tank in	265.76	268.01	4	PVC	12.0	0.020	Tank out	265.51	SMH-2	263.70	4	PVC	54.8	0.033	-
SMH-1	275.90	271.80	SMH-3	269.12	-	6	PVC	271.3	0.043	-	-	-	-	-	-	-	-	
SMH-2	267.10	263.60	SMH-3	269.12	-	6	PVC	211.3	0.016	-	-	-	-	-	-	-	-	
SMH-3	266.00	260.02	Manhole Tank	259.42	-	6	PVC	42.3	0.014	-	-	-	-	-	-	-	-	

[1] Each dwelling unit shall have their own building sewer connection going into the septic tank for each residential duplex.
 [2] Septic tanks shall be 1,500-Gal tank rated for H-20 loading unless stated otherwise.

Abbreviations:
 SMH - Sewer Manhole; TOF - Top of Foundation;

PROPOSED PRIVATE COMMON DRIVEWAY SIGN
 ACCESSIBLE CURB RAMP
 STOP SIGN
 PROPOSED GAZEBO
 EXISTING UTILITY POLE TO BE RELOCATED PER UTILITY'S OWNER REQUIREMENTS

PROPOSED 6'-FT BITUMINOUS CONCRETE WALKWAY
 PROPOSED 4'-FT BITUMINOUS CONCRETE WALKWAY
 PROPOSED BITUMINOUS CONCRETE DRIVEWAY
 PROPOSED CAPE COD BERM (TYP.)

PROPOSED LIMIT OF CLEARING (TYP.)
 BUILDING SETBACK (TYP.)
 PROPOSED WATER MAIN CONNECTION (TYP. OF 24)

PROPOSED WATER SERVICE CONNECTION (TYP. OF 24)
 PROPOSED COMMUNAL MAIL KIOSK

PROPOSED WALKING TRAIL SHALL MATCH EXISTING TRAIL ON SITE
 PROPOSED BENCHES (BY OTHERS)
 PROPOSED FORCE MAIN

SEDIMENT FOREBAY (FB)
 APPROXIMATE LOCATION OF SEPTIC TANK & NITROGEN LOADING REDUCTION SYSTEM [SEE PLAN REF. NO. 4]

INFLTRATION CHAMBER (IC)
 PROPOSED SEWER MANHOLE (TYP. OF 3)

VENT & FILL PIPE
 PROPOSED STREET TREE [SEE SHEET C5.1]

PROPOSED DRY HYDRANT OVER 30,000-GAL UNDERGROUND CISTERN AND TWO BOLLARDS
 PROPOSED STONE PAVERS AREA AND BENCHES (BY OTHERS)

PROPOSED 8'-FT WIDE MAINTENANCE ACCESS DRIVE
 PROPOSED WELL (TYP. OF 3)

PROPOSED WATERLINE CONNECTION TO MAINTENANCE SHED (TYP. OF 3)
 PROPOSED FENCE POSTS AND GATE

PROPOSED ZONE 1 RADIUS = 153.50' 2,273 GPD (TYP. OF 3)
 PROPOSED WPA RADIUS = 450.52' 2,273 GPD (TYP. OF 3)

PROPOSED WALKING TRAIL SHALL MATCH EXISTING TRAIL ON SITE
 PROPOSED BENCHES (BY OTHERS)
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INFLTRATION CHAMBER (IC)
 PROPOSED SEWER MANHOLE (TYP. OF 3)

VENT & FILL PIPE
 PROPOSED STREET TREE [SEE SHEET C5.1]

SITE PLAN NOTE:
 1. PIPE ENCASMENT SHALL BE REQUIRED FOR WATER AND SEWER UTILITY CROSSINGS EXCEPT FOR WHERE WATER LINE CAN BE INSTALLED AT LEAST 18 INCHES OVER SEWER LINE. SEE PIPE ENCASMENT DETAIL ON SHEET C7.1.

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2	11/16/23	LT	NMP	PEER REVIEW COMMENTS
1	9/20/23	LT	NMP	PEER REVIEW COMMENTS

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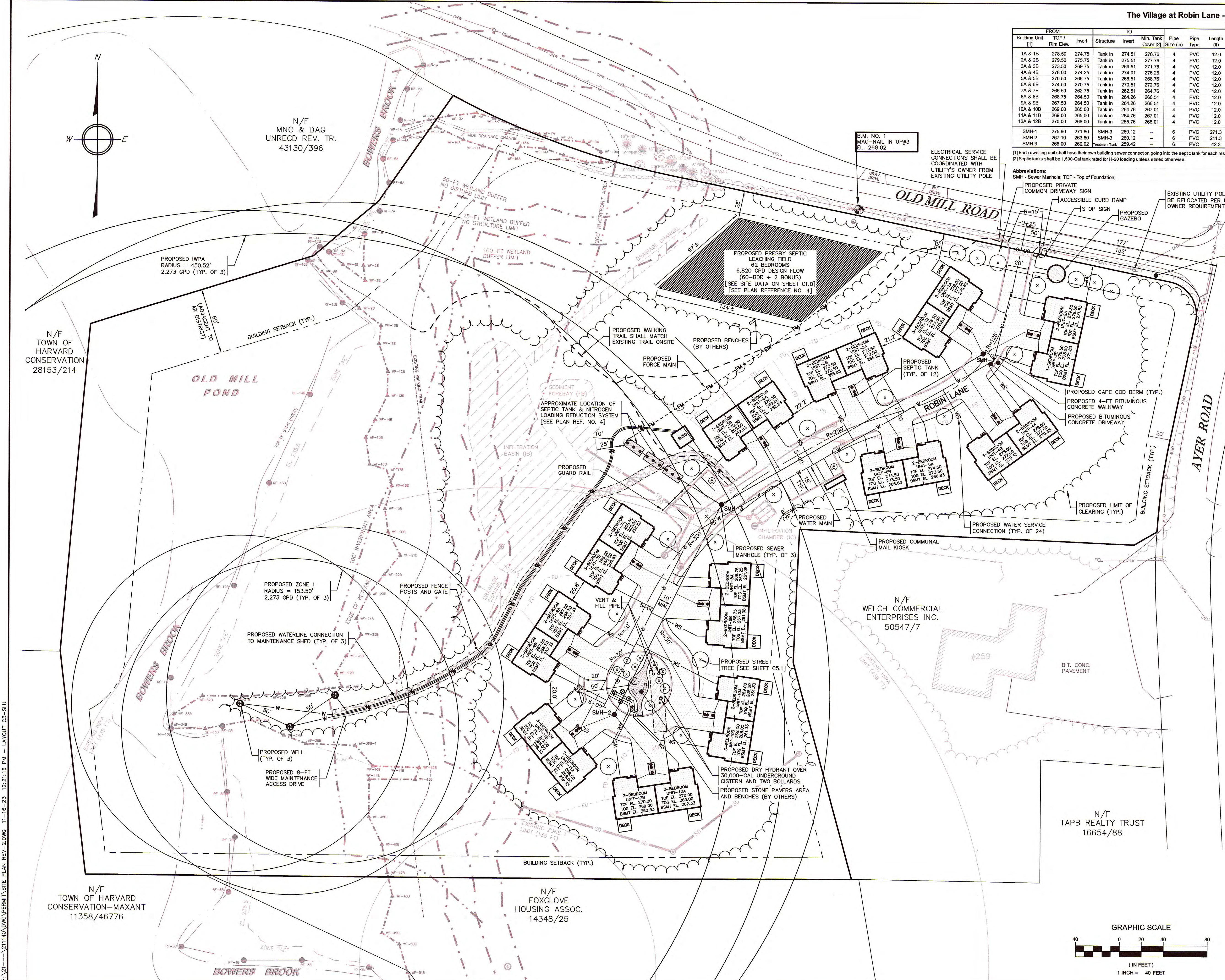
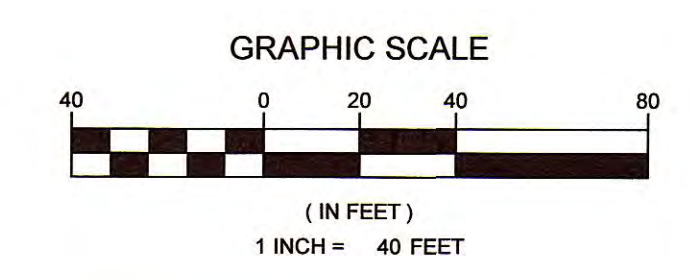
40B RESIDENTIAL DEVELOPMENT

SITE LAYOUT AND UTILITIES PLAN

THE VILLAGE AT ROBIN LANE AT OLD MILL & AYER ROADS HARVARD, MA

PREPARED FOR:
 JUNO CONSTRUCTION, LLC
 92 MIDDLESEX ROAD, UNIT 3
 TYNGSBOROUGH, MA 01879

DES. BY: LT	DATE: JUNE 2023	JOB 211140	C3.1
CHK. BY: NMP			



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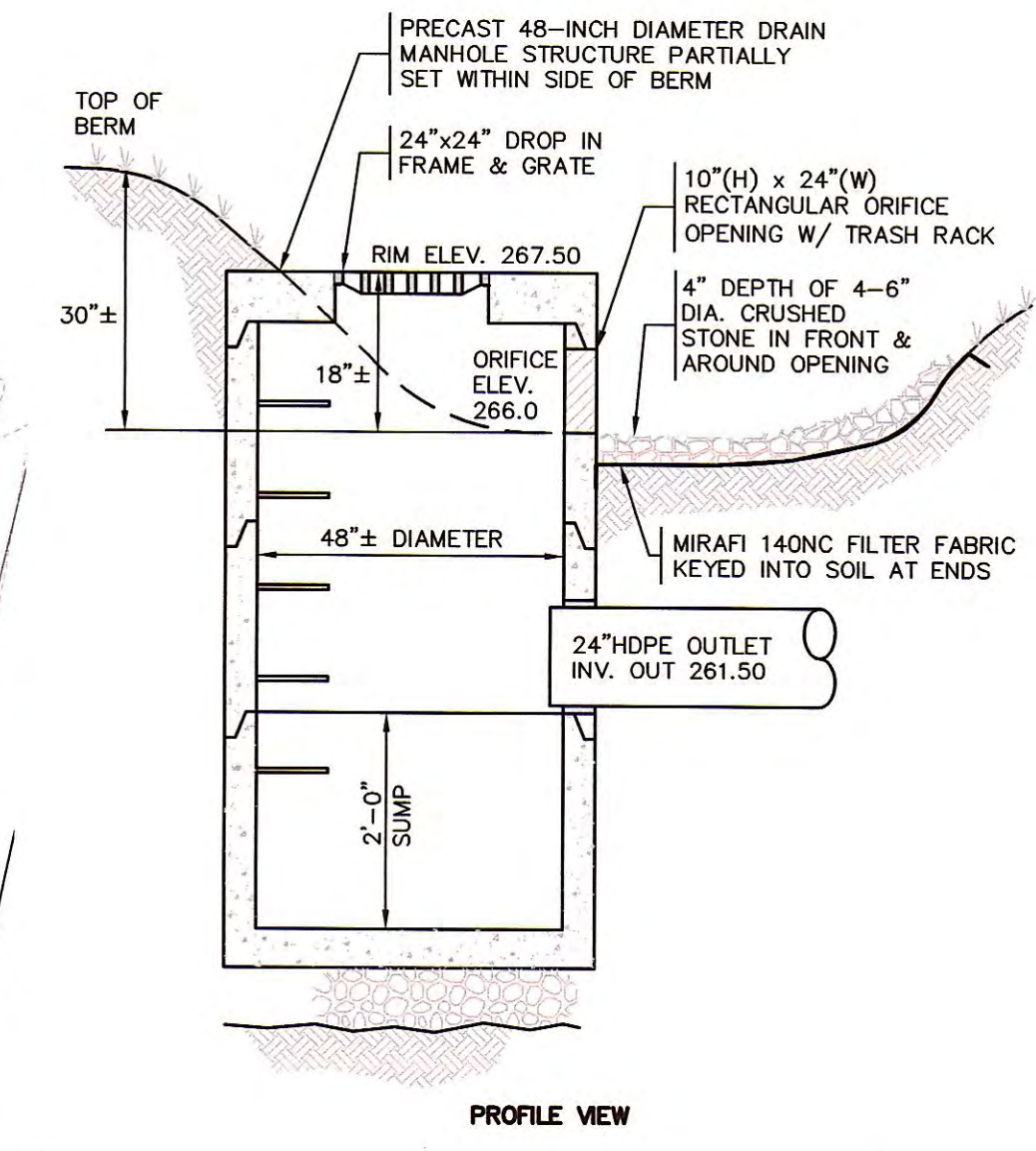
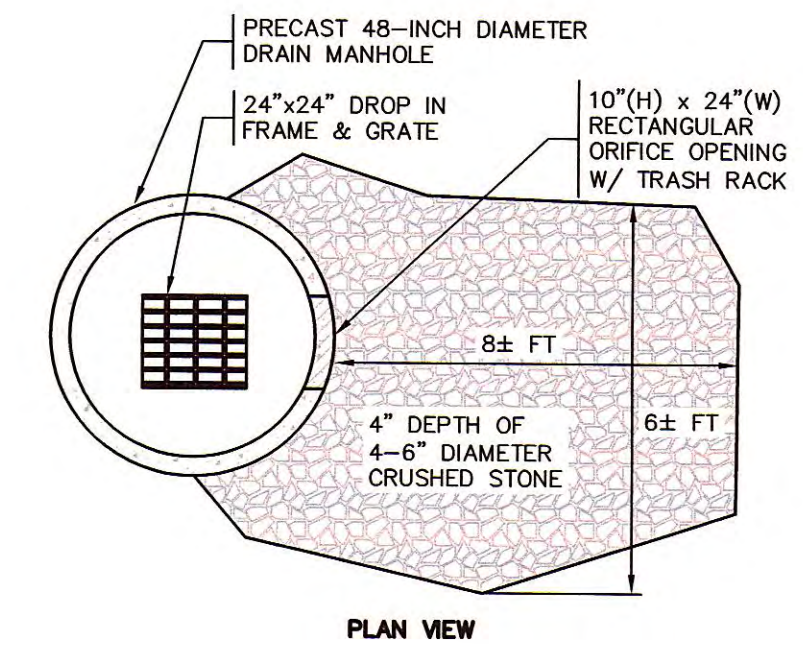
The Village at Robin Lane - Drainage Rim & Invert Schedule

Structure	FROM		TO		Pipe Size (in)	Pipe Type	Length (ft)	Slope (ft/ft)	Comments
	Rim	Invert	Structure	Invert					
CB-1 [1]	270.20	266.20	DMH-1	265.60	12	HDPE	18.0	0.033	Discharges into Infiltration Chambers (IC)
CB-2 [1]	270.20	266.20	DMH-1	265.60	12	HDPE	22.0	0.027	
DMH-1	269.50	265.50	DMH-4	260.40	12	HDPE	128.0	0.040	
DCB-3	266.70	262.30	IC	262.25	24	HDPE	4.0	0.013	Discharges into Infiltration Basin (IB)
IC	-	263.20	DMH-2	263.10	12	HDPE	4.0	0.025	
DMH-2	266.90	258.50	FES-1	255.50	12	HDPE	161.0	0.019	
DCB-4 [1]	264.40	260.40	DMH-3	260.20	15	HDPE	10.0	0.020	Discharges into Sediment Forebay
DCB-5 [1]	264.40	260.40	DMH-3	260.20	15	HDPE	16.0	0.012	
DMH-3	264.80	259.95	DMH-4	259.70	18	HDPE	24.0	0.010	
DMH-4	265.00	259.20	FES-2	258.10	24	HDPE	108.0	0.010	Drainage Diverter Structure
OCS-1	264.60	252.00	FES-3	250.00	12	HDPE	38.0	0.053	
DMH-5	267.50	261.50	DMH-6	258.60	24	HDPE	142.0	0.020	
DMH-6	268.50	258.50	FES-4	255.00	24	HDPE	139.0	0.025	

[1] Catch Basin shall be installed with Silt Prison Insert

Abbreviations:

CB - Catch Basin; DCB - Double Grate Catch Basin; DMH - Drain Manhole; FES - Flared End Section; OCS - Outlet Control Structure

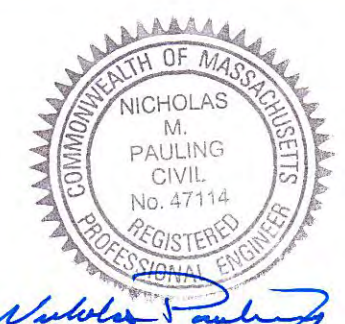


PROFILE VIEW
DRAINAGE DIVERTER STRUCTURE (DMH-5)
TYPICAL CROSS SECTION
NOT TO SCALE

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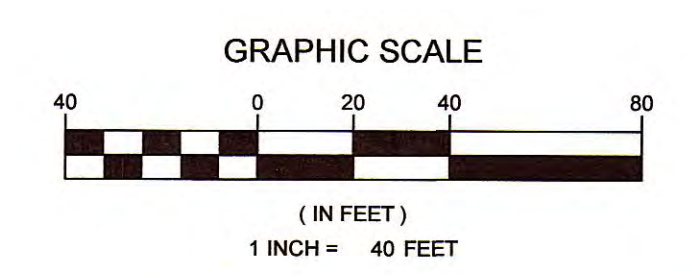
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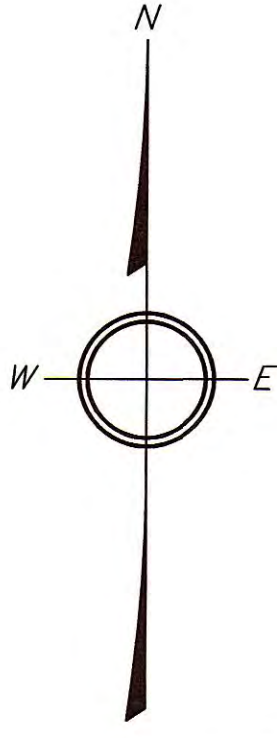
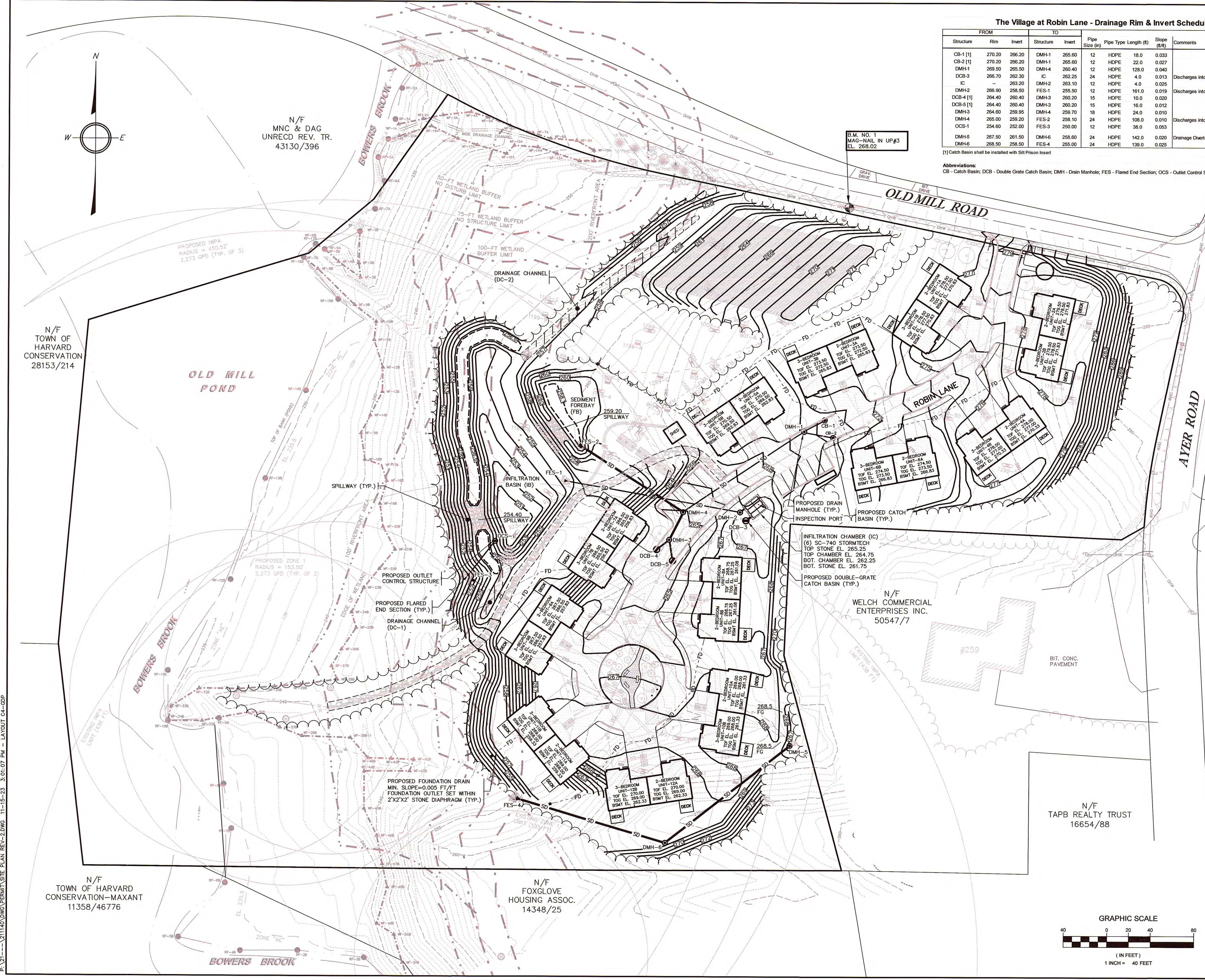
GRADING, DRAINAGE AND PAVING PLAN

THE VILLAGE AT ROBIN LANE AT OLD MILL & AYER ROADS HARVARD, MA

PREPARED FOR:
JUNO CONSTRUCTION, LLC
92 MIDDLESEX ROAD, UNIT 3
TYNGSBOROUGH, MA 01879



DES. BY: LT	DATE: JUNE 2023	JOB 211140	C4.1
CHK. BY: NMP			



N/F MNC & DAG UNRECD REV. TR. 43130/396

N/F TOWN OF HARVARD CONSERVATION 28153/214

OLD MILL POND

OLD MILL ROAD

ROBIN LANE

AYER ROAD

N/F WELCH COMMERCIAL ENTERPRISES INC. 50547/7

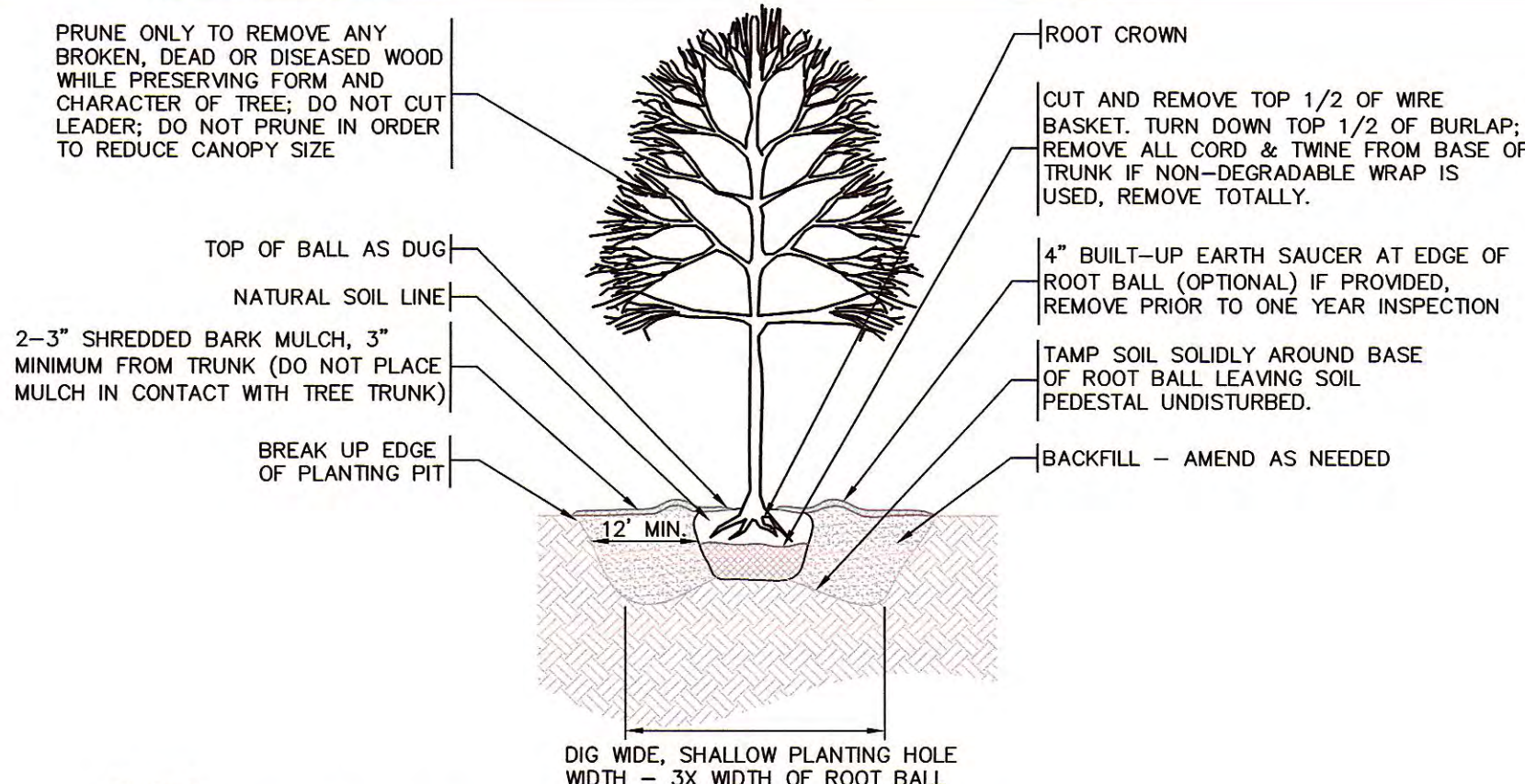
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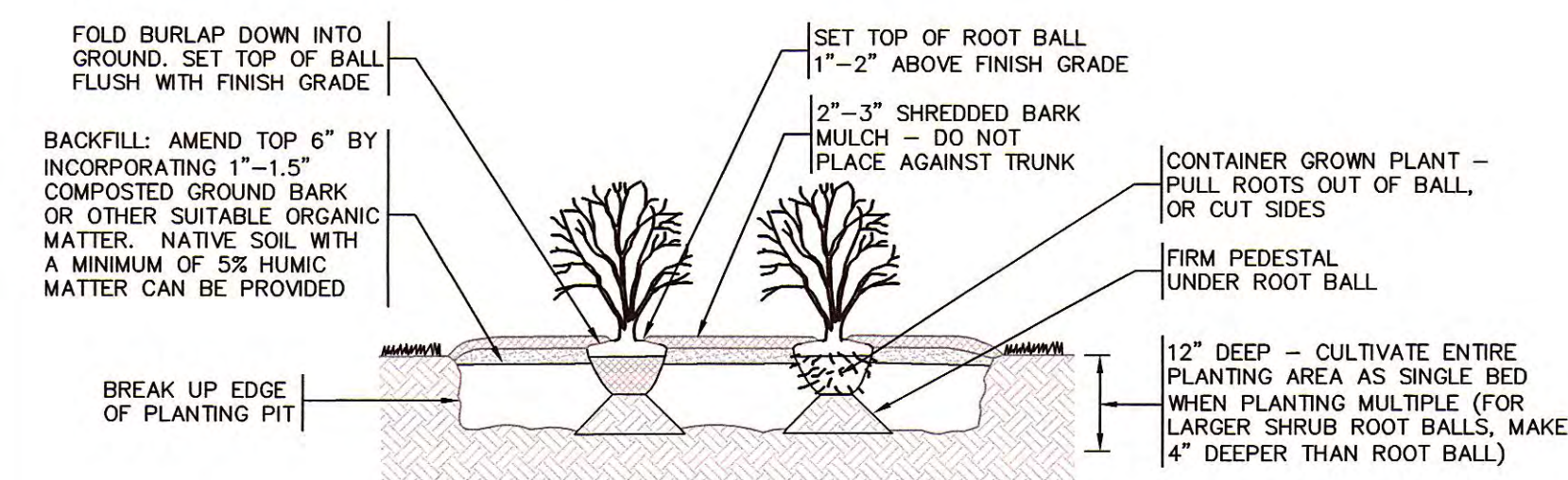
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- NOTES:**
1. CONTRACTOR TO VERIFY THAT ADEQUATE DRAINAGE EXISTS PRIOR TO PLANTING.
 2. DO NOT WRAP TRUNK OF TREE.
 3. STAKING OF TREES IS NOT RECOMMENDED, EXCEPT ON WINDY SITES OR FOR LARGE EVERGREEN TREES. IF STAKING IS DONE, FLEXIBLE STRAPS - NOT HOSE AND WIRE - SHOULD BE USED AND MUST BE REMOVED AT APPROPRIATE TIME.
 4. ALL TREES SHALL CONFORM TO THE STANDARDS SET FORTH IN THE MOST RECENT AMERICAN STANDARDS FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN (A.A.N.).
 5. TREES WITH ROOT FLARE COVERED BY MORE THAN 1.5\"/>

TREE PLANTING
TYPICAL CROSS SECTION
NOT TO SCALE



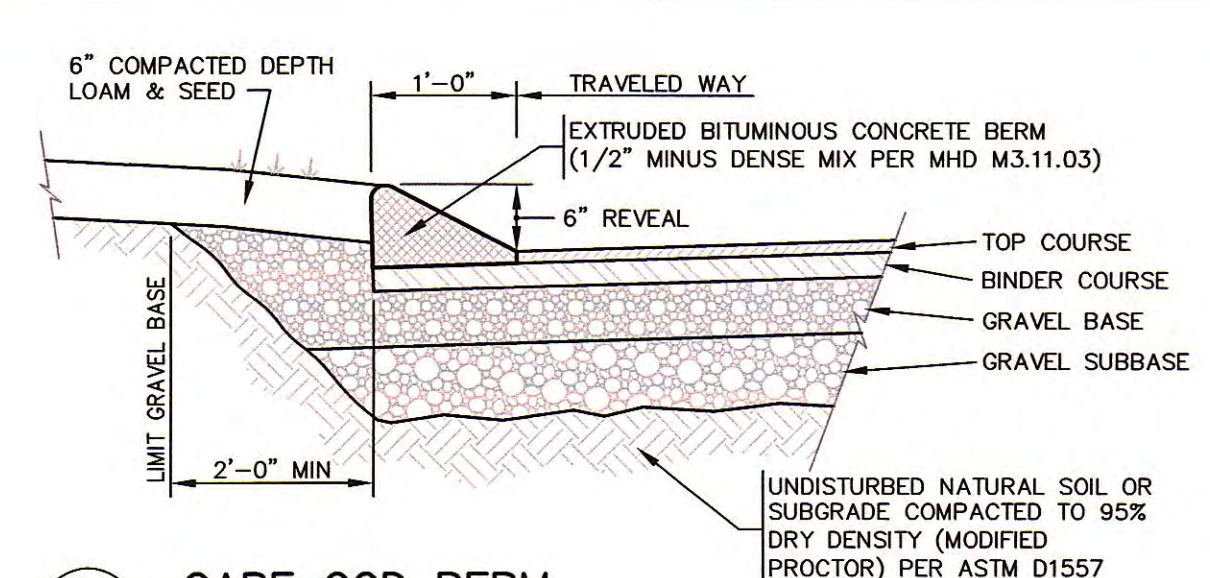
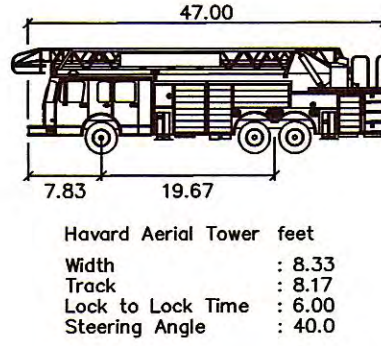
- NOTES:**
1. ALL SHRUBS MUST CONFORM TO THE STANDARDS SET FORTH IN THE MOST RECENT AMERICAN STANDARDS FOR NURSERY STOCK, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN (A.A.N.).
 2. SOIL ANALYSIS SHALL BE OBTAINED PRIOR TO PLANTING. SOIL SHALL BE AMENDED AS RECOMMENDED.
 3. SHEET PREPARATION OF BEDS IS HIGHLY PREFERRED TO INDIVIDUALLY DUG HOLES.

SHRUB PLANTING
TYPICAL CROSS SECTION
NOT TO SCALE

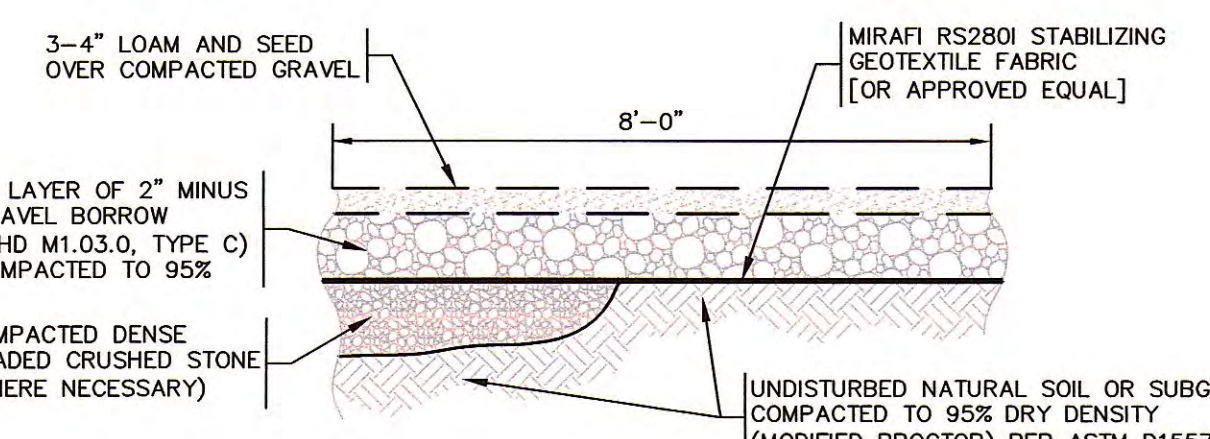
Plant List

Symbol	No.	Botanical Name	Common Name	Size
Ar	4	Acer rubrum 'October Glory'	October Glory Red Maple	1 1/2\"/>
Tp	7	Liriodendron tulipifera	Tulip Tree	1 1/2\"/>
Ft	6	Abies Fraseri	Fraser Fir	6\"/>
Ua	4	Ulmus Americana	American Elm	1 1/2\"/>

No.	Botanical Name	Common Name	Size
Vd	2	Viburnum dentatum Autumn Jazz	Arrowwood Viburnum Autumn Jazz
Rs	6	Rosa Scarlet Meidiland 'Meikrola'	Scarlet Meidiland
Md	4	Miscanthus sinensis 'Andanti'	Andanti Maiden Grass
Mc	4	Miscanthus sinensis 'Zebrainus'	Zebrainus Grass

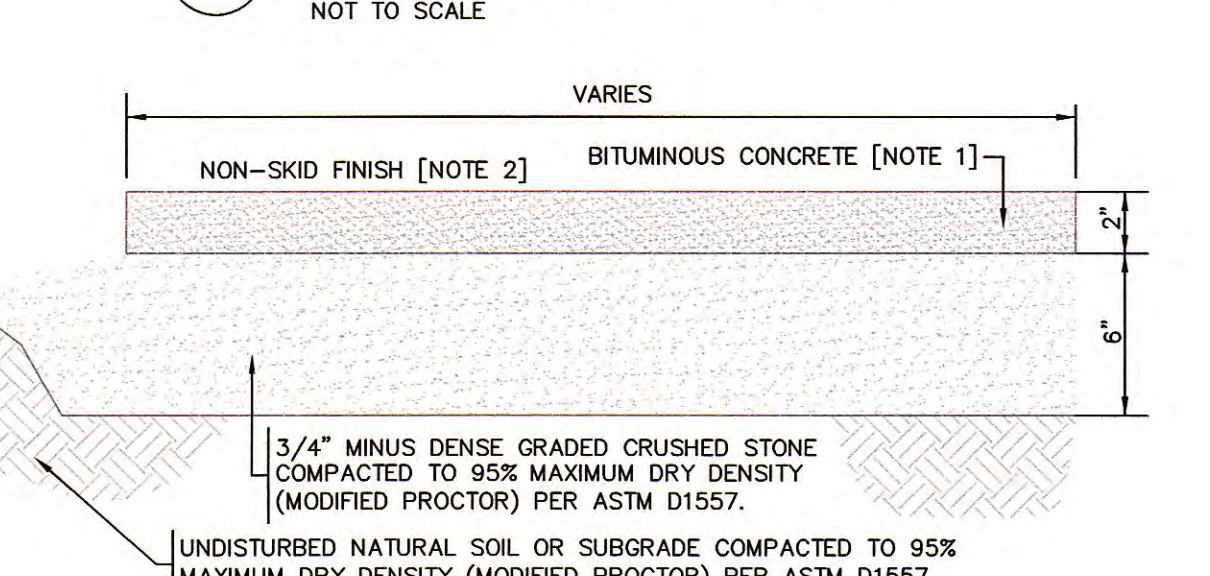


CAPE COD BERM
TYPICAL CROSS SECTION
NOT TO SCALE



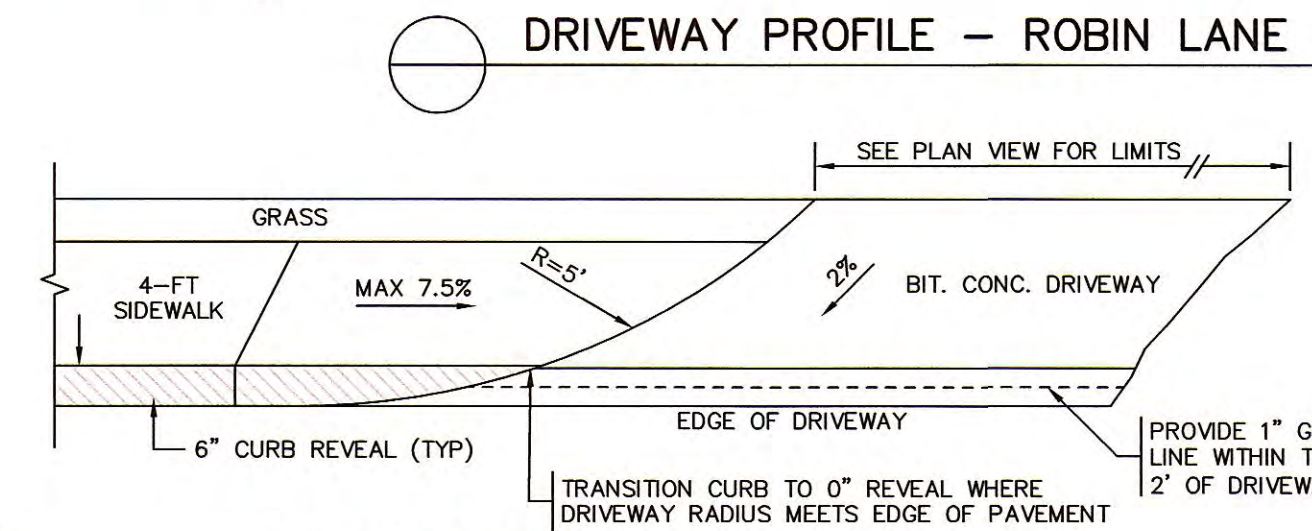
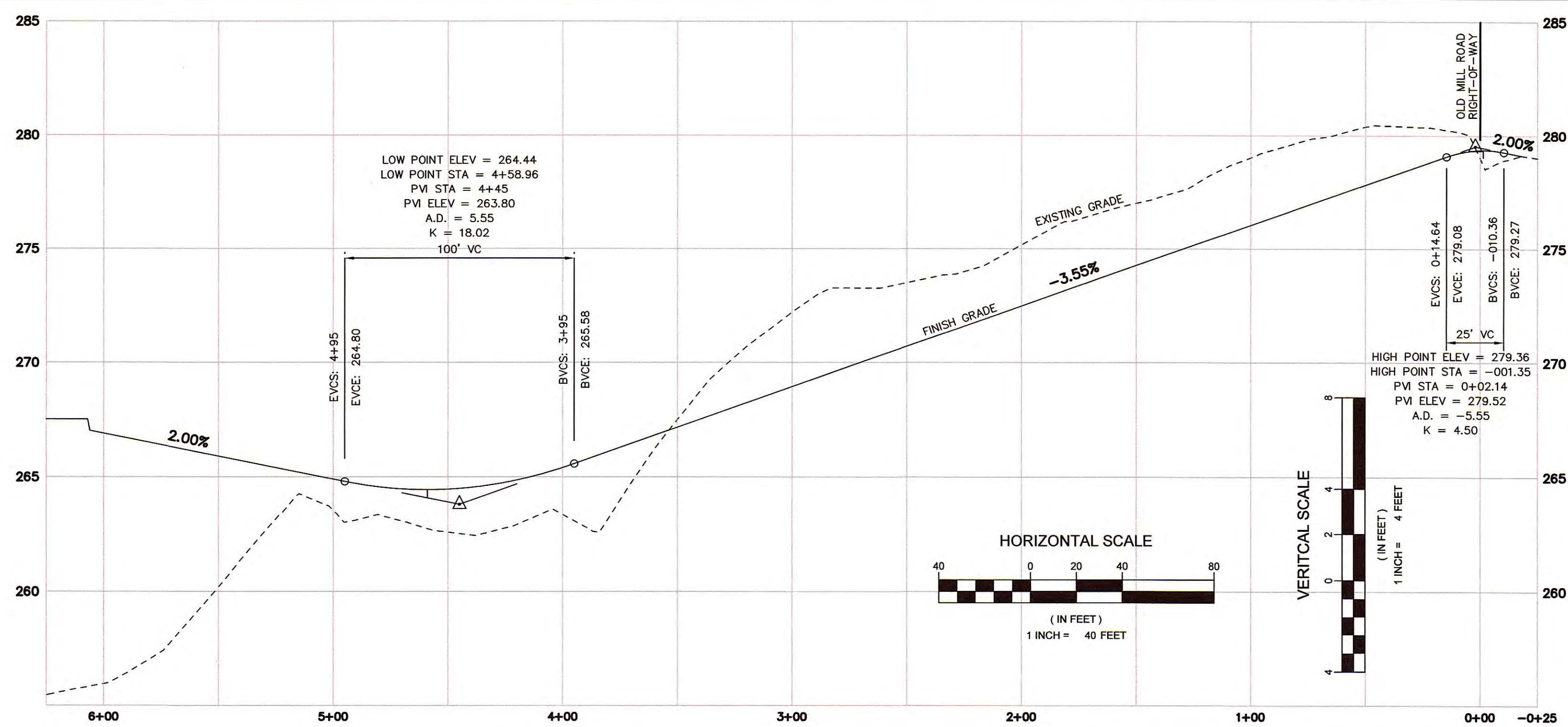
- NOTES:**
- [1] UNSUITABLE MATERIAL IN THE SUBGRADE SHALL BE REMOVED AND REPLACED WITH AN ACCEPTABLE SUBSTITUTE MATERIAL: 3/4\"/>
 - [2] FINAL GRAVEL DRIVEWAY STABILIZATION DESIGN TO BE CONFIRMED BY THE GEOTECHNICAL ENGINEER.

MAINTENANCE ACCESS WAY
TYPICAL CROSS SECTION
NOT TO SCALE

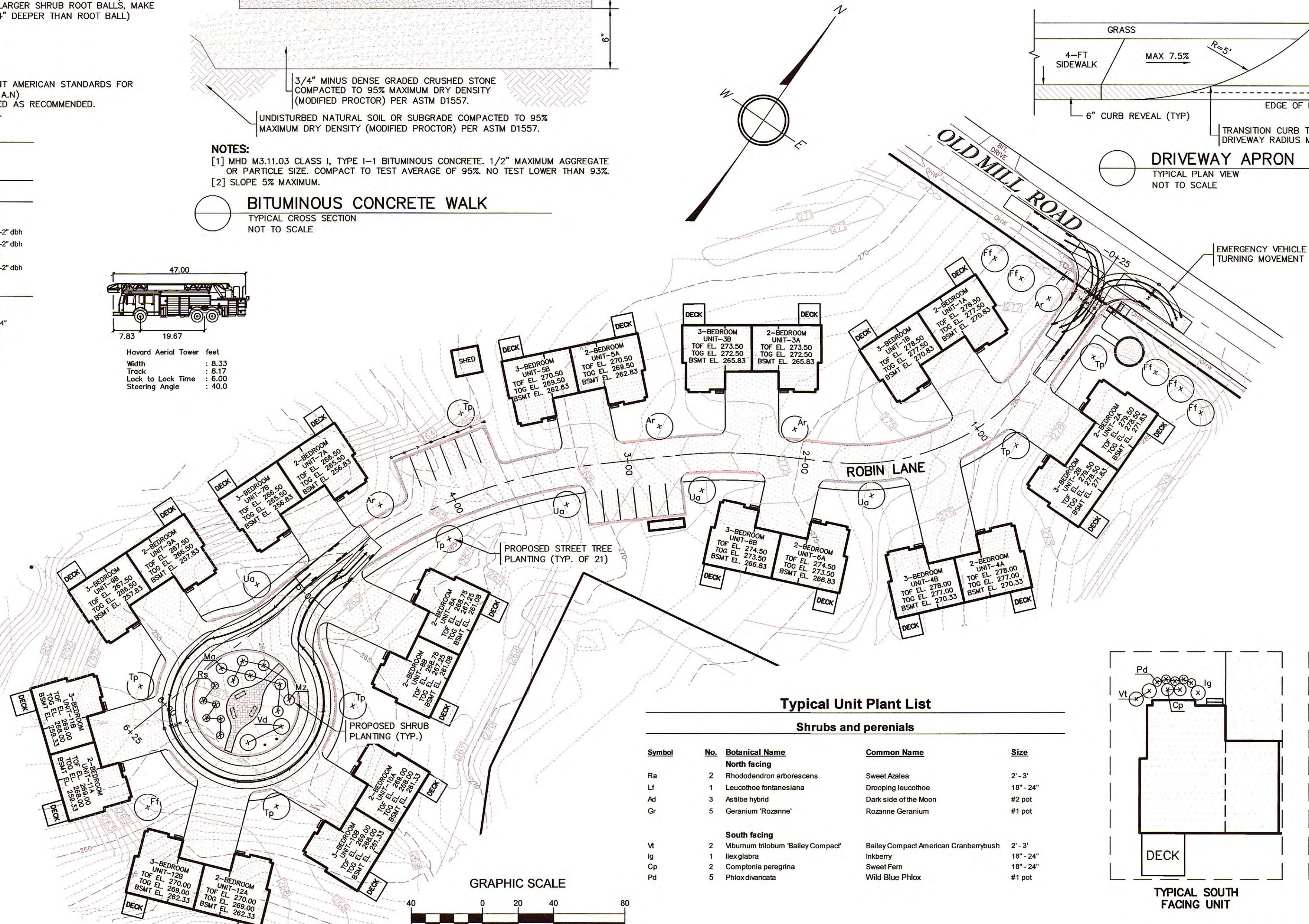


- NOTES:**
- [1] MHD M3.11.03 CLASS 1, TYPE I-1 BITUMINOUS CONCRETE, 1/2\"/>
 - [2] SLOPE 5% MAXIMUM.

BITUMINOUS CONCRETE WALK
TYPICAL CROSS SECTION
NOT TO SCALE

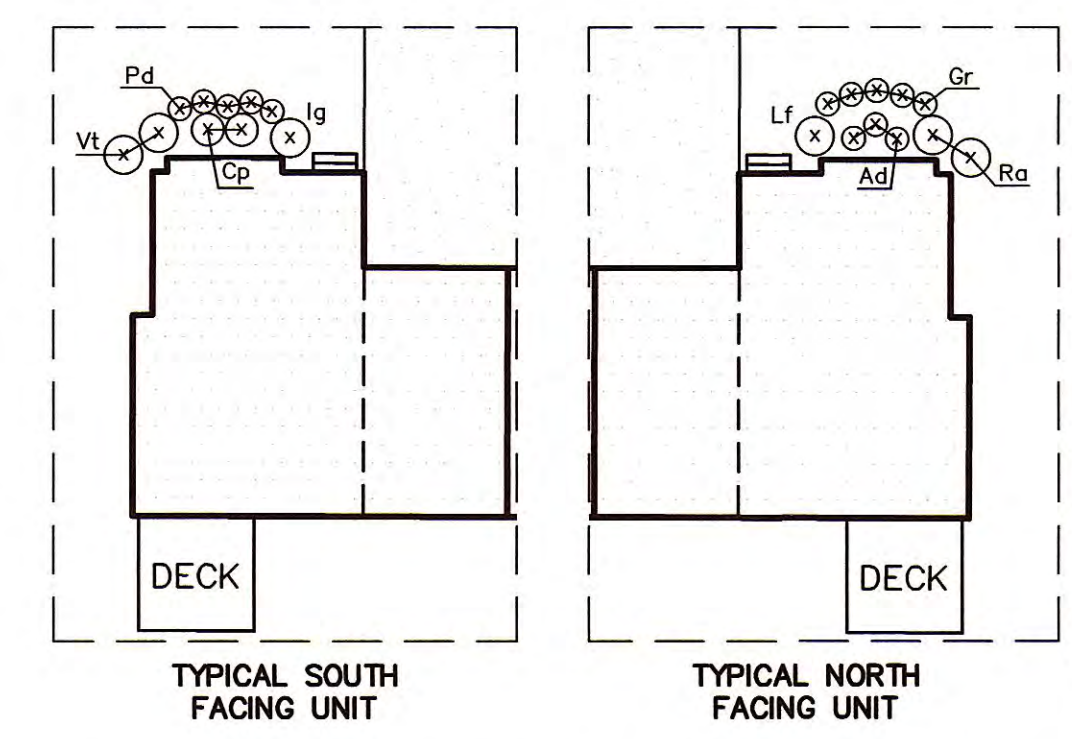


DRIVEWAY APRON
TYPICAL PLAN VIEW
NOT TO SCALE

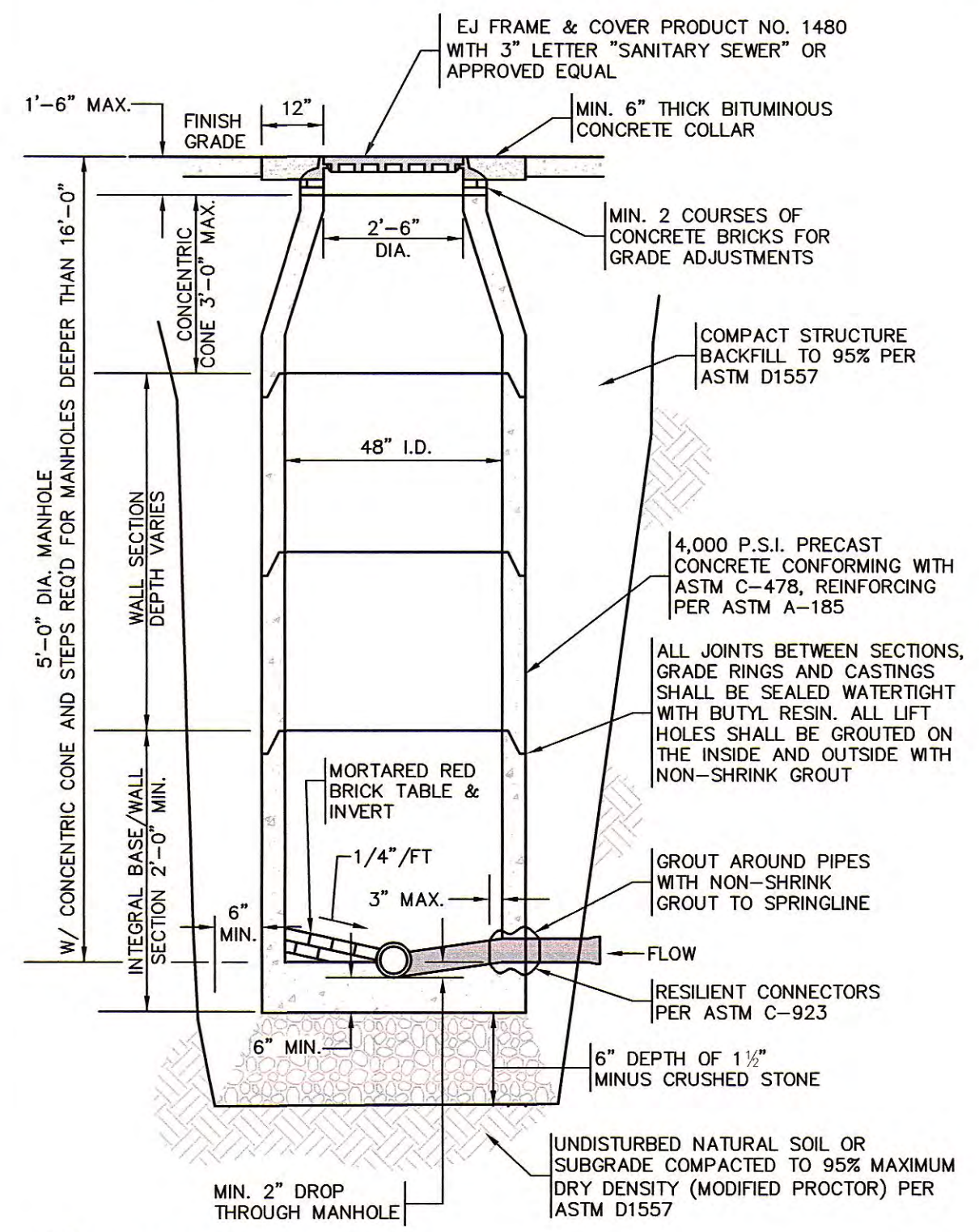


Typical Unit Plant List

Symbol	No.	Botanical Name	Common Name	Size
North facing				
Ra	2	Rhododendron arborescens	Sweet Azalea	2\"/>
Lf	1	Leucophaea fontanesiana	Drooping Heuchothoe	18\"/>
Ad	3	Asilaba hybrid	Dark side of the Moon	#2 pot
Gr	5	Geranium 'Rozanne'	Rozanne Geranium	#1 pot
South facing				
Vt	2	Viburnum silibum 'Bailey Compact'	Bailey Compact American Cranberrybush	2\"/>
Ig	1	Ilex glabra	Inkberry	18\"/>
Cp	2	Complanata pennsylvanica	Sweet Fern	18\"/>
Pd	5	Phlox divaricata	Wild Blue Phlox	#1 pot



TYPICAL PLANTING FOR DWELLING UNIT
NOT TO SCALE



SEWER MANHOLE
TYPICAL CROSS SECTION
NOT TO SCALE

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CONCEPT CONSTRUCTION
 PERMIT CONSTRUCTION RECORD

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NO.	DATE	BY	APP.	REVISION DESCRIPTION
2	11/16/23	LT	NMP	PEER REVIEW COMMENTS
1	9/20/23	LT	NMP	PEER REVIEW COMMENTS

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40B RESIDENTIAL DEVELOPMENT

DRIVEWAY PROFILE & EMERGENCY VEHICLE TURNING MOVEMENT

THE VILLAGE AT ROBIN LANE AT OLD MILL & AYER ROADS HARVARD, MA

PREPARED FOR:
JUNO CONSTRUCTION, LLC
92 MIDDLESEX ROAD, UNIT 3
TYNGBOROUGH, MA 01879

DES. BY: LT	DATE: JUNE 2023	JOB 211140	C5.1
CHK. BY: NMP			

EROSION AND SEDIMENT CONTROL REQUIREMENTS

PART 1 - GENERAL

- 1.01 SUMMARY
 A. FURNISH, INSTALL, AND MAINTAIN TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL MEASURES, SUCH AS, BUT NOT NECESSARILY LIMITED TO, STRAW WATTLES AND SILT FENCE BARRIERS, RIPRAP, DIVERSION CHANNELS AND BERMS, CHECK DAMS, STRATEGICALLY LOCATED STOCKPILES, SEDIMENT BASINS, MULCH, AND SEED MIX (HEREINAFTER "CONTROL MEASURES") ADEQUATE TO PREVENT THE CONVEYANCE OF EROSION PRODUCTS (E.G. SOIL, MULCH, SOD) OFF SITE, OR INTO ENVIRONMENTALLY SENSITIVE AREAS, OR INTO AREAS WHERE WORK WILL BE ADVERSELY IMPACTED. ENVIRONMENTALLY SENSITIVE AREAS INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, WETLANDS, TRIBUTARIES TO WETLANDS, WETLAND BUFFER ZONES, INTERMITTENT AND PERENNIAL STREAMS / RIVERS, AND THEIR ATTENDANT BUFFER ZONES.
 1. REFER TO DRAWINGS FOR LOCATION AND DETAILS OF CONTROL MEASURES REQUIRED TO COMMENCE WORK. THESE CONTROL MEASURES WILL BE ADEQUATE ONLY FOR VEGETATION CLEARING. THE DRAWINGS ARE NOT INTENDED TO GRAPHICALLY DEPICT ALL CONTROL MEASURES THAT WILL BE REQUIRED TO MEET THE REQUIREMENTS DESCRIBED IN 1.01.A.
 2. DEVEISE AND EMPLOY CONTROL MEASURES THROUGHOUT THE DURATION OF PROJECT, OVER ALL AREAS DISTURBED OR UNDISTURBED BY CONSTRUCTION, AS NECESSARY TO MEET THE REQUIREMENTS DESCRIBED IN 1.01.A.
 3. DEVEISE AND EMPLOY TEMPORARY CONTROL MEASURES AS NECESSARY TO MEET THE REQUIREMENTS DESCRIBED IN 1.01.A, WHILE ALLOWING WORK TO PROCEED IN AN EFFICIENT, COST EFFECTIVE MANNER.
 4. DEVEISE, EMPLOY AND MAINTAIN CONTROL MEASURES UNTIL SUCH TIME AS THE ENTIRE SITE IS PERMANENTLY STABILIZED BY ESTABLISHED VEGETATION, FINISH LANDSCAPE MATERIALS, PAVED SURFACES, AND/OR ROOF AREA.
 5. ONCE THE SITE IS PERMANENTLY STABILIZED AND CERTIFIED AS SUCH BY ENGINEER, REMOVE TEMPORARY CONTROL MEASURES WHILE PROTECTING STABILIZED SURFACES.

- 1.02 SUBMITTALS
 A. SUBMIT PRODUCT DATA, WARRANTY, AND TEST REPORTS AS INDICATED ON THE DRAWINGS.
 1.03 QUALITY ASSURANCE
 A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS FROM ACCEPTABLE MANUFACTURERS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 B. CONFORM TO CONDITIONS OF APPROVAL ISSUED BY REGULATORY AGENCIES INCLUDING, BUT NOT NECESSARILY LIMITED TO, LOCAL PLANNING BOARD, CONSERVATION COMMISSION, BOARD OF SELECTMEN, BOARD OF HEALTH, PUBLIC WORKS / HIGHWAY DEPARTMENT, STATE ENVIRONMENTAL PROTECTION DEPARTMENT, AND U.S. GOVERNMENT ENVIRONMENTAL PROTECTION AGENCY. WHERE CONDITIONS OF REGULATORY APPROVAL DIFFER FROM REQUIREMENTS CONTAINED HEREIN OR ON THE DRAWINGS, COMPLY WITH THE MORE STRINGENT REQUIREMENT.

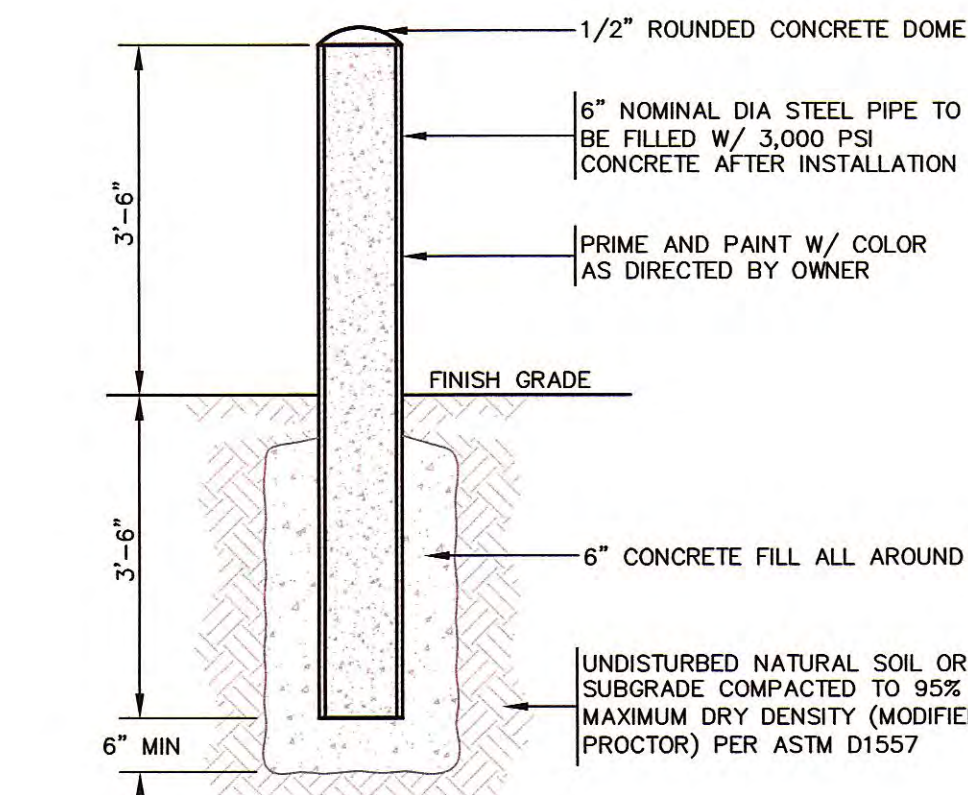
PART 2 - PRODUCTS

- 2.01 MATERIALS
 A. STRAW WATTLES: 100% WHEAT STRAW WITH NATURAL BIO-DEGRADABLE JUTE NETTING. MINIMUM 9-INCH DIAMETER AND 10 FEET LONG. USE 12-INCH OR 20-INCH DIAMETER WATTLES TO PROTECT LARGER UNSTABLE AREAS.
 B. SILT FENCE: NON-WOVEN, UV-RESISTANT, POLYPROPYLENE FABRIC, FLOW RATED AT 10 GPM/SF MINIMUM, GRAB TENSILE RATED AT 124 POUNDS MINIMUM, WITH INTEGRAL STAKE LOOPS, AND HARDWOOD STAKES. USE NO. 2130 BY AMOCO FABRICS & FIBERS, OR APPROVED EQUAL.
 C. MULCH: ORGANICS INCLUDING STRAW, PROCESSED PINE / HEMLOCK TWIGS AND NEEDLES.
 D. SEED MIXES: PERENNIAL RYEGRASS, KENTUCKY BLUEGRASS, AND / OR FINE FESCUE, DISEASE RESISTANT. NON-MAINTAINED AREA OPTION - ANNUAL RYEGRASS COMBINED WITH MEDIUM RED CLOVER.
 E. EXCELOR BLANKET: CURLED WOOD FIBER ON PHOTODEGRADABLE EXTRUDED PLASTIC MATRIX, 80% OF FIBERS 6-INCHES LONG OR LONGER, WEIGHT 0.975 POUNDS / SY, CONTAINING NO CHEMICAL ADDITIVES. USE CURLEX I BLANKET BY AMERICAN EXCELOR COMPANY, OR APPROVED EQUAL.
 F. ROCK RIPRAP: SOUND, ANGULAR, 6-INCH MINUS PROCESSED ROCK, BLAST ROCK, OR TAILINGS.
 G. CRUSHED STONE: SOUND, ANGULAR, 2-INCH MINUS PROCESSED CRUSHED STONE

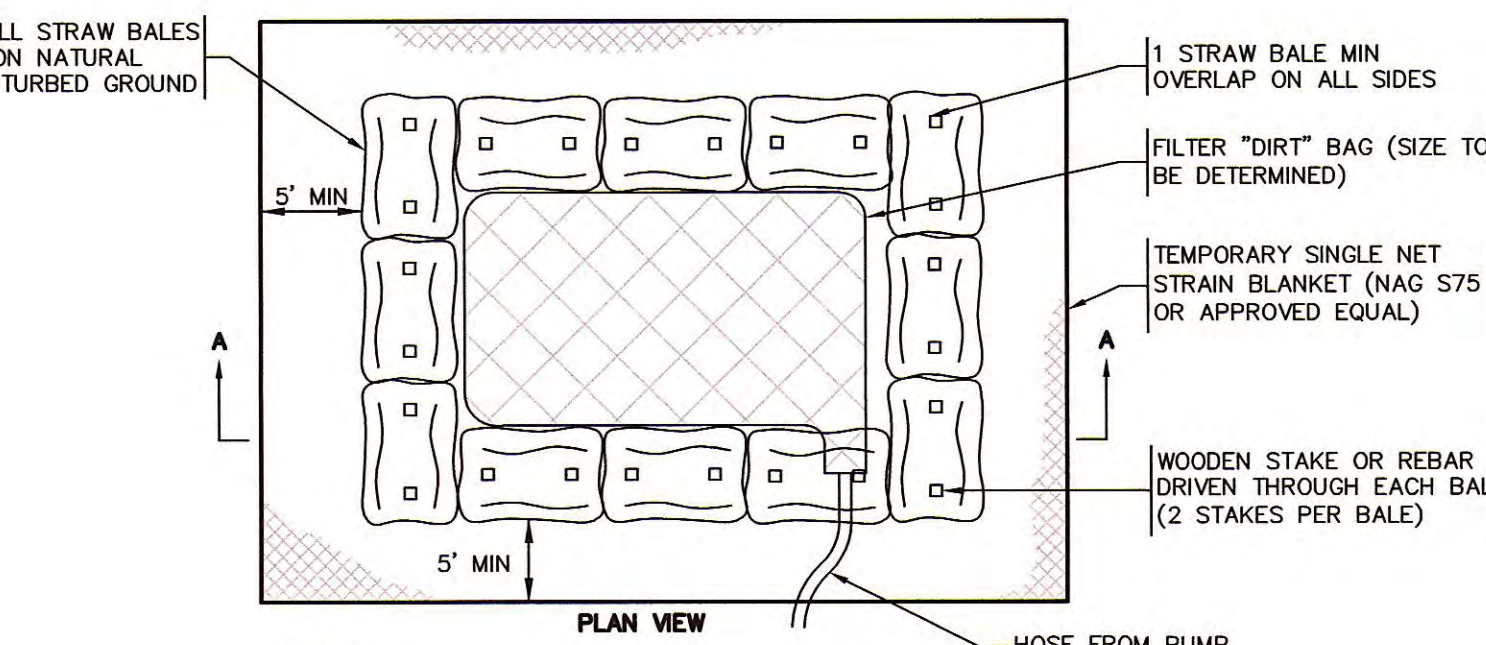
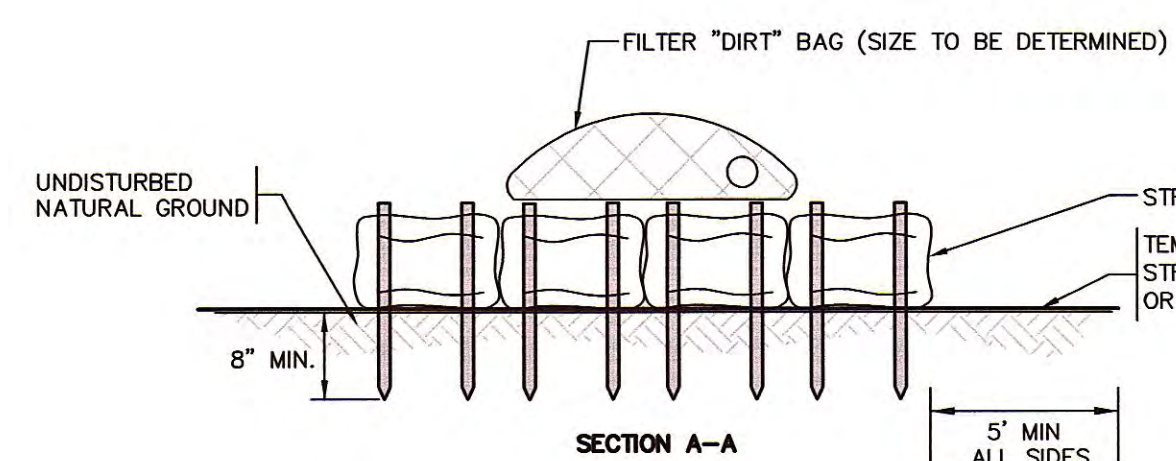
PART 3 - EXECUTION

- 3.01 THROUGHOUT CONSTRUCTION
 A. DEVEISE WORK SEQUENCE SO AS TO LIMIT DRAINAGE AREA THAT IS TRIBUTARY TO DISTURBED AREAS. DEVEISE, EMPLOY, AND MAINTAIN CONTROL MEASURES SUCH AS DIVERSION CHANNELS AND BERMS, STRATEGICALLY LOCATED STOCKPILES, AND SEDIMENT BASINS TO SUBDIVIDE DRAINAGE AREAS INTO SMALL MANAGEABLE SUBAREAS, THEREBY MINIMIZING RUNOFF AND THE POTENTIAL FOR EROSION.
 B. MAINTAIN BARRIER AT LIMIT OF WORK AND PROTECT EXISTING VEGETATION / FACILITIES OUTSIDE OF LIMIT OF WORK.
 C. MAINTAIN SPARE MATERIAL STOCKPILES FOR IMMEDIATE EMPLOYMENT / REPAIR / EXPANSION OF CONTROL MEASURES. AT A MINIMUM, SUCH MATERIALS SHALL INCLUDE STRAW WATTLES, SILT FENCE AND STAKES, AND CRUSHED STONE.
 D. INSPECT AND MAINTAIN EFFECTIVENESS OF CONTROL MEASURES BY REPAIRING AS NECESSARY TO ENSURE INTENDED FUNCTION; BY SUPPLEMENTING AS NECESSARY FOR ADEQUATE EXTENT; BY REMOVING TRAPPED PRODUCTS OF EROSION AS NECESSARY TO MAINTAIN EFFECTIVE TRAP VOLUME.
 E. LIMIT EXTENT OF WORK AREA SO THAT ALL DISTURBED AREAS CAN BE STABILIZED WITH CONTROL MEASURES WITHIN A 24-HOUR PERIOD.
 F. INSTALL CONTROL MEASURES AS SOON AS PRACTICABLE AFTER EACH MANAGEABLE PORTION OF EARTHWORK IS COMPLETE. EMPLOY TEMPORARY MEASURES AS NECESSARY TO STABILIZE DISTURBED AREAS, EVEN WHERE SUBSEQUENT CONSTRUCTION OPERATIONS MAY REQUIRE RE-DISTURBANCE.
 G. WHEN INTENSE RAINFALL IS EXPECTED, CONSIDER, DEVEISE, AND EMPLOY REINFORCING CONTROL MEASURES PRIOR TO THE RAINFALL EVENT TO MEET THE REQUIREMENTS DESCRIBED IN 1.01.A. IF NECESSARY, EMPLOY TEMPORARY CONTROL MEASURES ON MATERIAL STOCKPILES TO COUNTERACT POTENTIAL SEDIMENT TRANSPORT DURING INTENSE RAINFALL.
 H. WHEN VEHICLE REFUELING IS REQUIRED ON SITE, CONDUCT REFUELING OPERATIONS OUTSIDE OF ENVIRONMENTALLY SENSITIVE AREAS.
 I. PROPERLY DISPOSE OF DEBRIS, SOLID WASTE, TRASH, AND CONSTRUCTION WASTE / BYPRODUCTS OFF SITE.
 J. SWEEP ON-SITE PAVED AREAS AND OFF-SITE STREETS AS NECESSARY TO PREVENT SILT AND DEBRIS ORIGINATING ON SITE FROM ENTERING CLOSED DRAINAGE SYSTEMS AND / OR ENVIRONMENTALLY SENSITIVE AREAS.

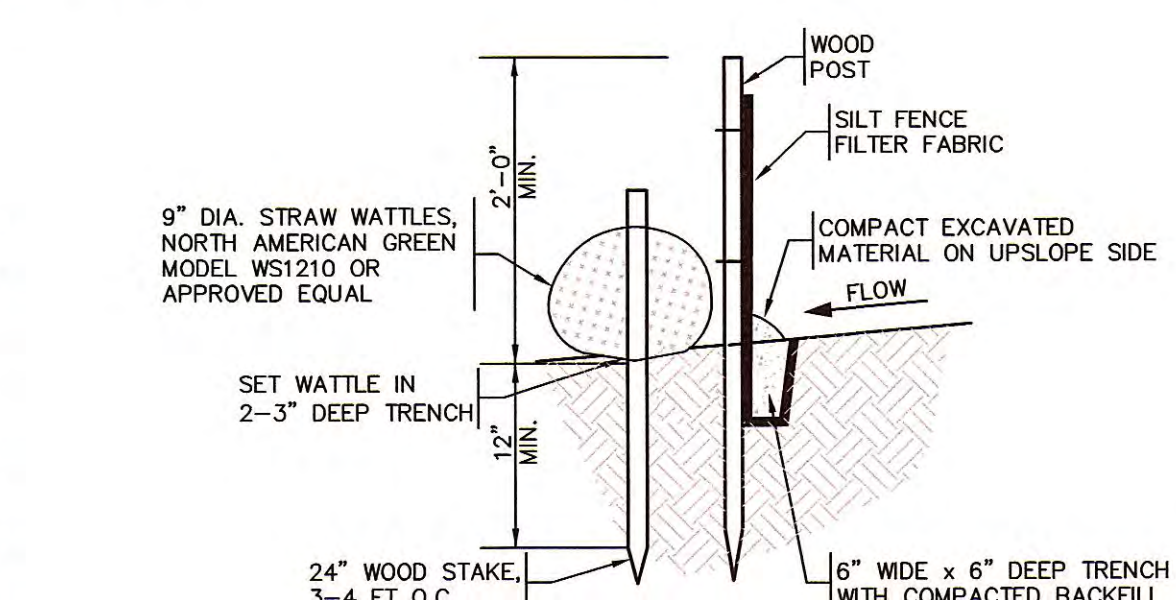
- 3.02 SITE PREPARATION AND ACCESS
 A. WALK SITE AND IDENTIFY LOCATIONS OF LIMIT OF WORK AND ENVIRONMENTALLY SENSITIVE AREAS. ESTABLISH CONSTRUCTION STAGING AREA, LOCATED BEYOND ENVIRONMENTALLY SENSITIVE AREAS.
 B. INSTALL CONTROL MEASURES AS SHOWN ON THE DRAWINGS, INCLUDING THOSE DEFINING THE LIMIT OF WORK.
 C. LIMIT VEHICULAR TRAFFIC TO AND FROM SITE TO MINIMIZE TRANSPORT OF SEDIMENT.
 3.03 CLEARING, GRUBBING, AND STRIPPING
 A. SCHEDULE GRUBBING AND STRIPPING TO OCCUR IMMEDIATELY PRIOR TO EARTH DISTURBANCE. DEPENDING ON SITE AREA, CONSIDER MULTIPLE GRUBBING PHASES, SEQUENCED TO TAKE ADVANTAGE OF THE EROSION PREVENTION POTENTIAL OF EXISTING VEGETATIVE COVER.
 B. MINIMIZE THE AREA OF EXISTING VEGETATION REMOVED WHEREVER POSSIBLE.
 C. LOCATE AND SIZE STOCKPILES TO MINIMIZE EROSION POTENTIAL, TAKING ADVANTAGE OF TERRAIN SLOPE AND ASPECT WHERE APPROPRIATE.
 D. PROTECT VEGETATION, INCLUDING ROOT SYSTEMS, BEYOND LIMIT OF CLEARING.
 E. PROCESS TIMBER, STUMPS, SLASH, AND BRUSH SO AS TO PROTECT ENVIRONMENTALLY SENSITIVE AREAS AND INSTALLED CONTROL MEASURES. PROPERLY DISPOSE OF EXCESS BUFF SITE. BURIAL OF STUMPS ON SITE IS PROHIBITED.
 3.04 EXCAVATION FOR BUILDING FOUNDATIONS AND UTILITIES
 A. DEVEISE AND INSTALL CONTROL MEASURES ADEQUATE TO HANDLE DISCHARGES AND TRAP SEDIMENT FROM FOOTING SUMP AND WELL POINT PUMPS PRIOR TO EXCAVATION.
 B. ARMOR SUMP PUMP DISCHARGE LOCATIONS TO PREVENT EROSION AT POINT OF DISCHARGE AND AREAS DOWNSTREAM.
 C. IF FOUNDATION EXCAVATIONS GRADE TO DAYLIGHT ON THE LOW SIDE, DEVEISE AND INSTALL CONTROL MEASURES TO HANDLE SURFACE AND GROUNDWATER FLOW FROM EXCAVATION LOW POINT.
 D. STOCKPILE EXCAVATED MATERIALS TO BAFFLE OVERLAND RUNOFF, AVOIDING THE CREATION OF LENGTHY PATHS OF CONCENTRATED RUNOFF.
 E. BACKFILL UTILITY TRENCHES AS SOON AS PRACTICABLE TO PREVENT FLOODING, SLOUGHING, POTENTIAL OVERFLOW, AND REPETITIVE EARTH DISTURBANCE.
 3.05 SITE GRADING
 A. WHERE APPLICABLE, FOLLOW EXCAVATION AND FILL PRACTICES SHOWN ON DRAWINGS TO LOCALIZE AND MINIMIZE EROSION.
 B. MONITOR SEDIMENT VOLUME IN TEMPORARY SEDIMENT BASINS AND AT DIVERSION BERMS AND CHECK DAMS. IN ALL AREAS EXCEPT THOSE THAT DO NOT PRESENT POTENTIAL PROBLEMS WITH REGARD TO FUTURE SOIL STABILITY DRAINAGE, OR BEARING CAPACITY, REMOVE AND PROPERLY DISPOSE OF TRAPPED SEDIMENT BEFORE BRINGING SITE TO FINAL SUBGRADE.
 3.06 STORMWATER MANAGEMENT SYSTEM
 A. THE STORMWATER MANAGEMENT SYSTEM INCLUDES, BUT IS NOT NECESSARILY LIMITED TO, ALL PERMANENT DETENTION / RETENTION BASINS, DISCHARGE STRUCTURES / WEIRS, CULVERTS, OPEN CHANNELS, CURBS, GUTTERS, PAVED SWALES, CATCH BASINS, DRAIN MANHOLES, DRAINAGE PIPES, ROOF DRAIN MANIFOLDS, WATER QUALITY SWALES, SEPARATORS, AND SIMILAR STORMWATER RUNOFF CONVEYANCE, TREATMENT, AND STORAGE FACILITIES.
 B. INSTALL STORMWATER MANAGEMENT SYSTEM COMPONENTS STARTING AT THE DOWNSTREAM END AND PROCEED UPSTREAM. WHERE POSSIBLE, COMPLETE INSTALLATION OF PERMANENT DETENTION / RETENTION BASIN PRIOR TO BEGINNING WORK ON UPSTREAM SYSTEM COMPONENTS.
 C. INSTALL CONTROL MEASURES AT FINISHED UPSTREAM AND DOWNSTREAM PIPE ENDS AS SOON AS POSSIBLE AFTER COMPLETION OF PIPE RUN. SUCH MEASURES INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, RIPRAP, CHECK DAMS, STRAW WATTLES / SILT FENCE BARRIERS, AND VELOCITY DISSIPATORS.
 D. AT THE END OF EACH DAY OR WHEN RAINFALL IS EXPECTED, PLUG UPSTREAM END OF PIPES / DAM OPEN CHANNELS OR OTHERWISE REDIRECT POTENTIAL RUNOFF AND PREVENT FLOW FROM ENTERING PARTIALLY COMPLETED SYSTEM / SYSTEM COMPONENTS.
 E. WHERE PORTIONS OF A NEW SYSTEM ARE TO BE ACTIVATED PRIOR TO COMPLETION OF THE ENTIRE SYSTEM, EMPLOY CONTROL MEASURES TO PREVENT SILT AND DEBRIS FROM ENTERING THE SYSTEM. EMPLOY SILT SACKS OR FABRIC ON CATCH BASIN INLETS, AND PIPE AND CULVERT OPENINGS. EMPLOY CHECK DAMS AND TEMPORARY SEDIMENT BASINS UPSTREAM OF AND ALONG OPEN CHANNELS, SWALES, AND DITCHES TO TRAP SEDIMENT UPGRADIENT OF ENVIRONMENTALLY SENSITIVE AREAS.
 F. REMOVE TRAPPED SEDIMENT AND DEBRIS FROM ALL SYSTEM COMPONENTS AFTER COMPLETION OF INSTALLATION, AND AGAIN AFTER THE ENTIRE SITE IS PERMANENTLY STABILIZED BY ESTABLISHED VEGETATION, FINISH LANDSCAPE MATERIALS, PAVED SURFACES, AND/OR ROOF AREA. REMOVE TRAPPED SEDIMENT AND DEBRIS FROM DETENTION / RETENTION BASIN BOTTOMS SO THAT FINISH BOTTOM MATERIALS / INFILTRATION FUNCTION CONFORM TO DESIGN.
 3.07 LANDSCAPING
 A. COMPLETE LANDSCAPING AS SOON AS POSSIBLE AFTER COMPLETION OF FINAL SUBGRADE.
 B. IMMEDIATELY AFTER PLACEMENT OF TOPSOIL, STABILIZE WITH CONTROL MEASURES INCLUDING, BUT NOT NECESSARILY LIMITED TO, SEED MIX, MULCH, AND / OR BLANKET.



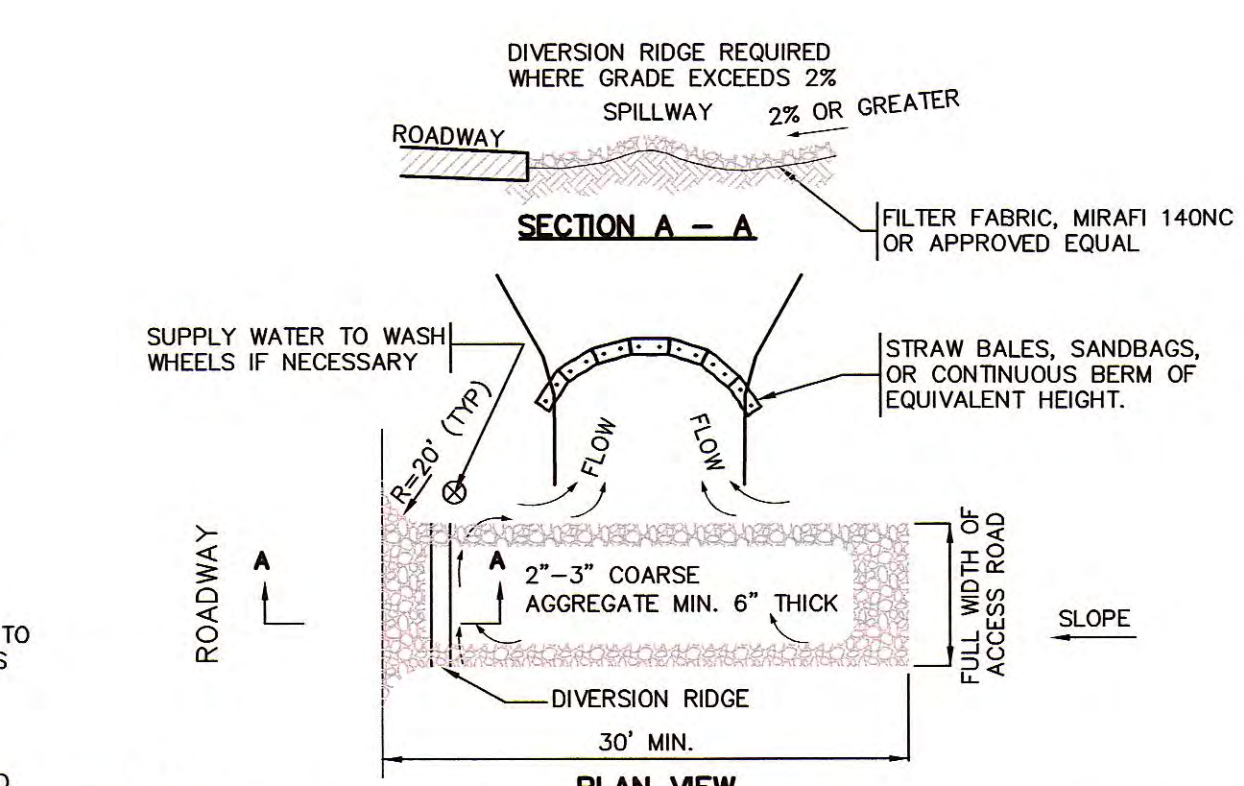
BOLLARD
 TYPICAL CROSS SECTION
 NOT TO SCALE



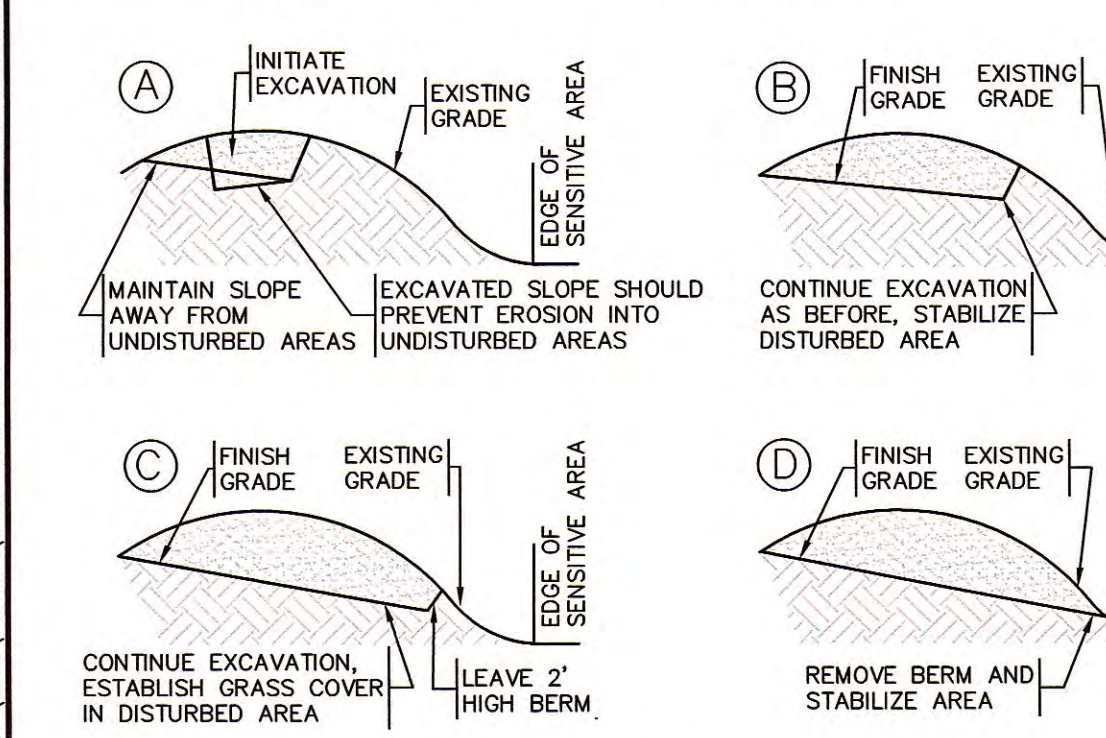
TEMPORARY DEWATERING STRUCTURE
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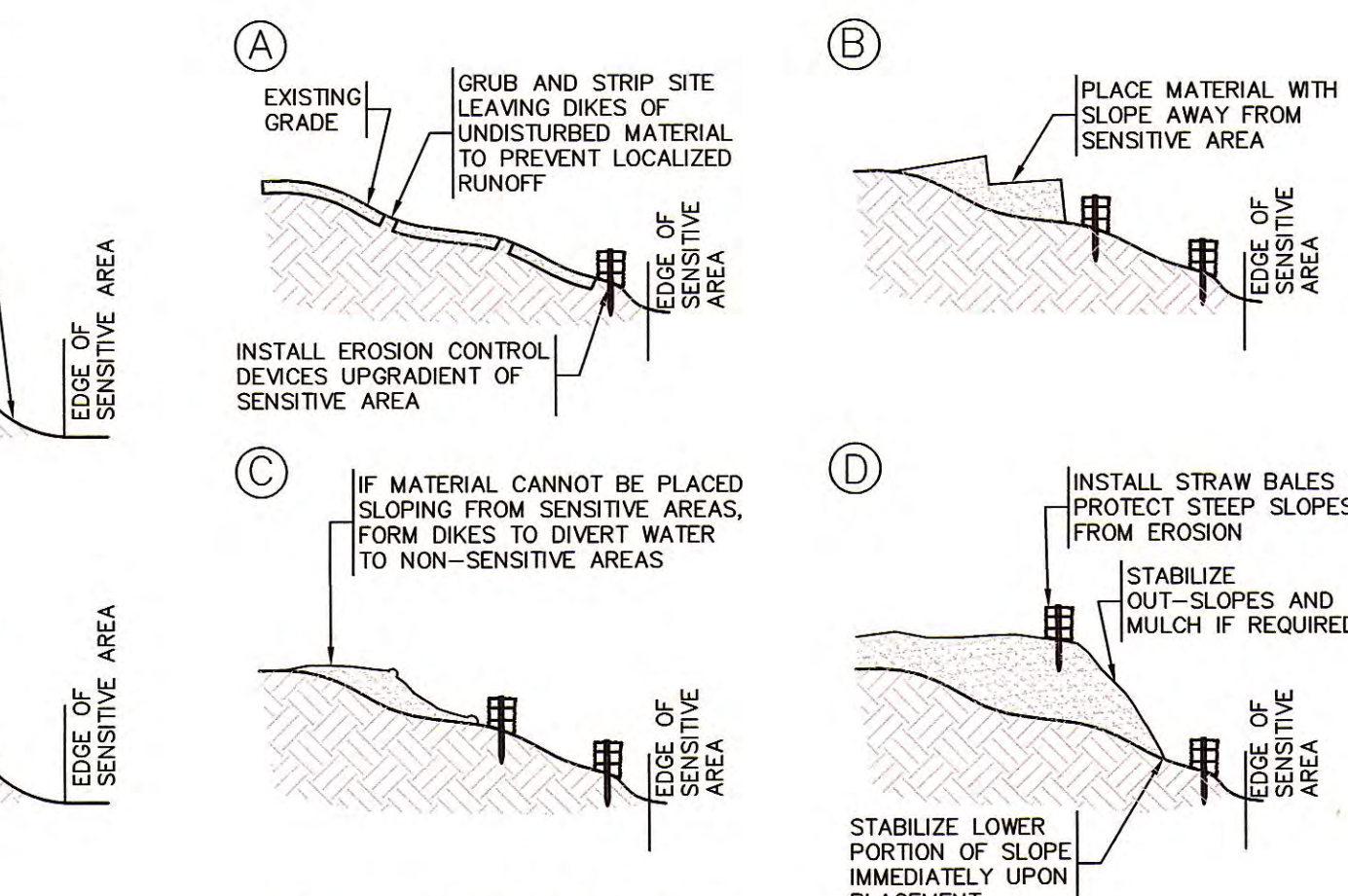
SILT FENCE / STRAW WATTLE BARRIER
 TYPICAL CROSS SECTION
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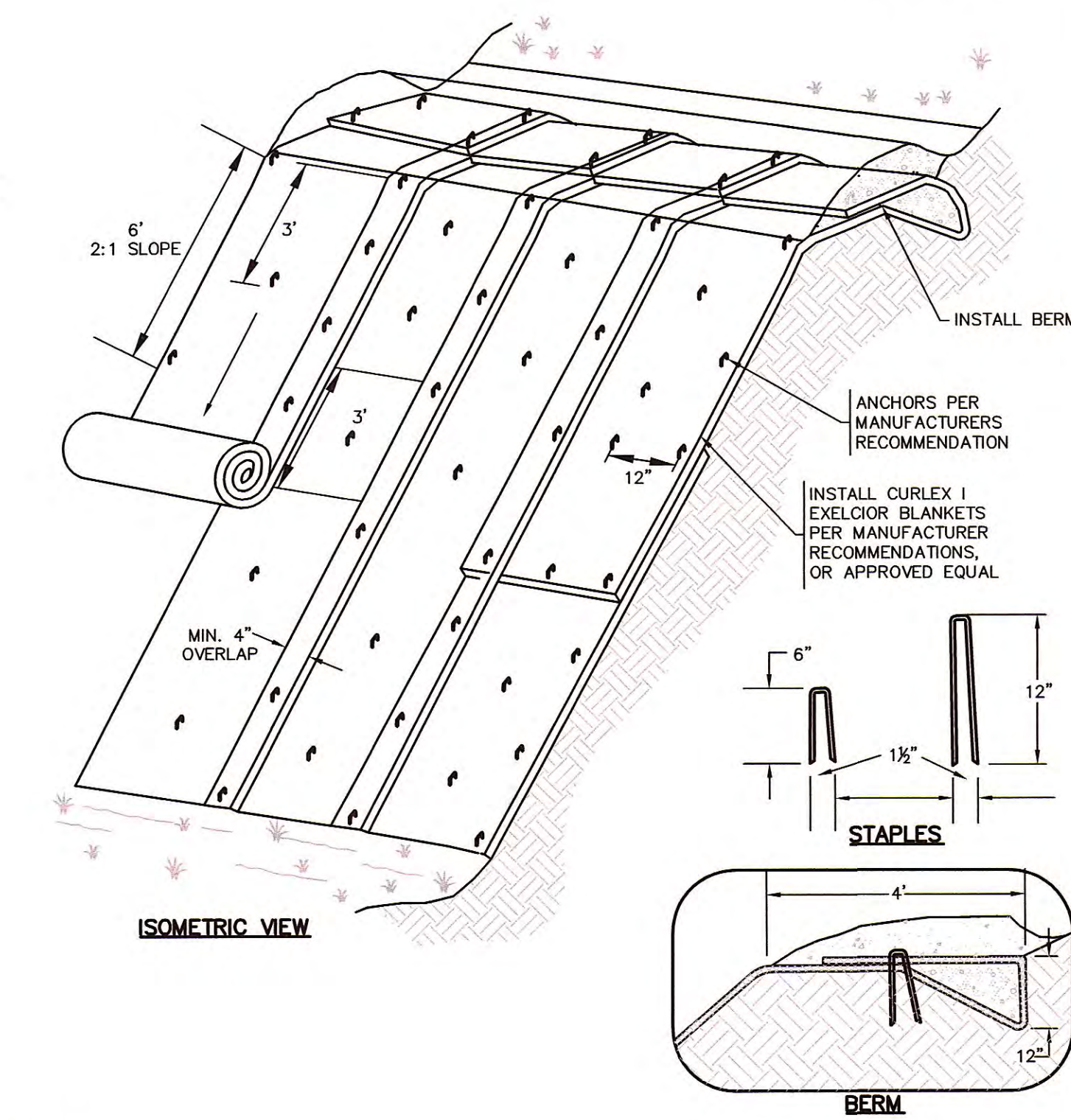
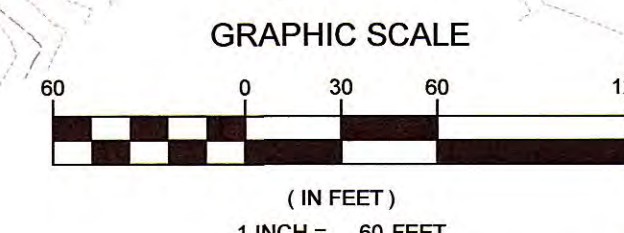
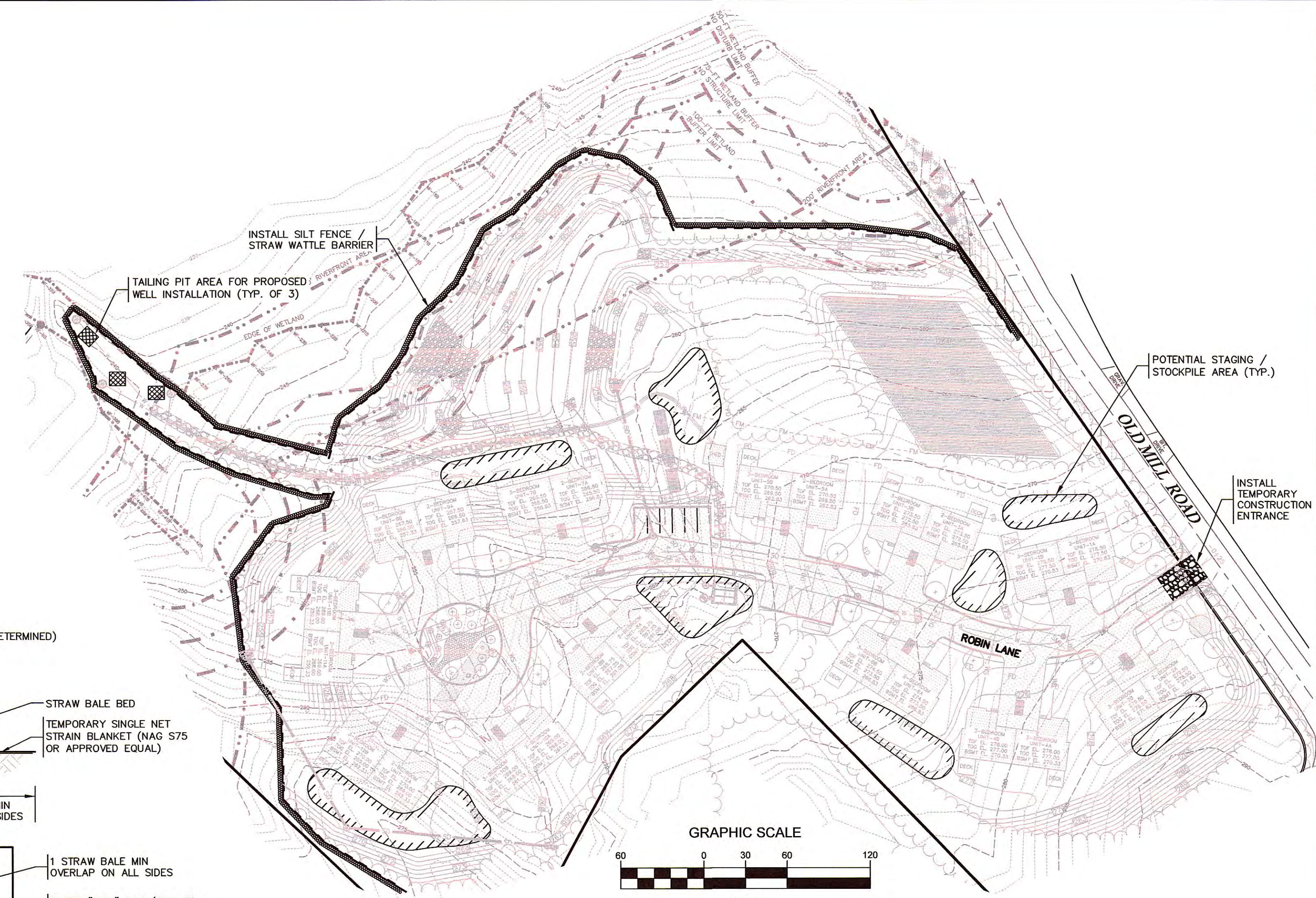
CONSTRUCTION ENTRANCE
 NOT TO SCALE



EXCAVATION PROCEDURE
 TYPICAL CROSS SECTION
 NOT TO SCALE



FILL PROCEDURE
 SLOPE PROFILES
 NOT TO SCALE



EROSION BLANKET
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40B RESIDENTIAL DEVELOPMENT
EROSION AND SEDIMENT CONTROL PLAN

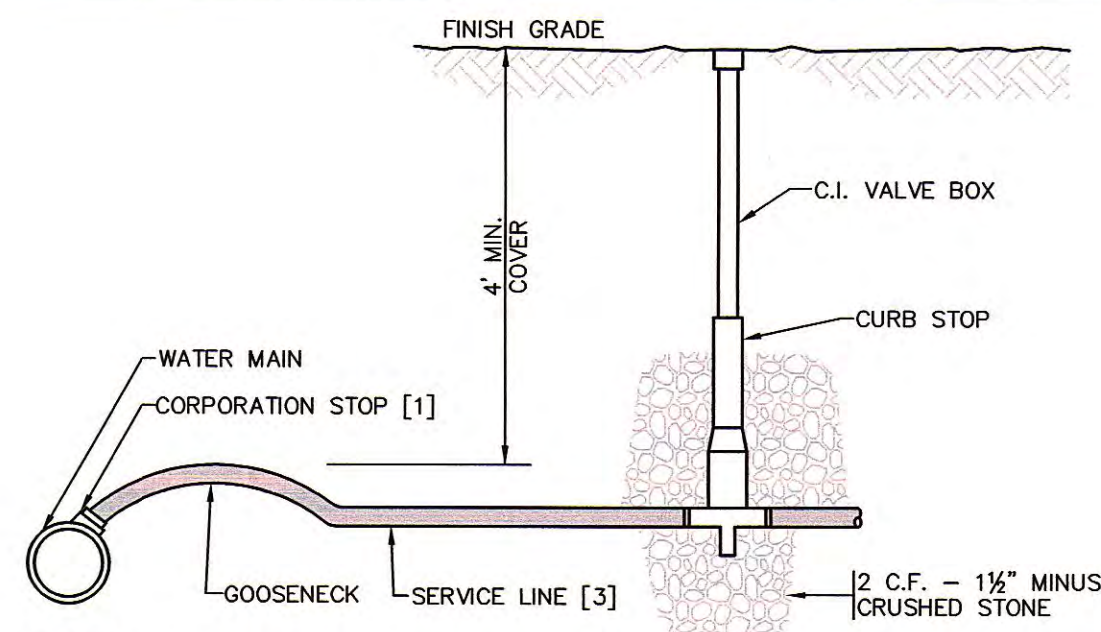
THE VILLAGE AT ROBIN LANE AT OLD MILL & AYER ROADS HARVARD, MA

PREPARED FOR:
 JUNO CONSTRUCTION, LLC
 92 MIDDLESEX ROAD, UNIT 3
 TYNGSBOROUGH, MA 01879

DES. BY: LT	DATE: JUNE 2023	JOB 211140	C6.1
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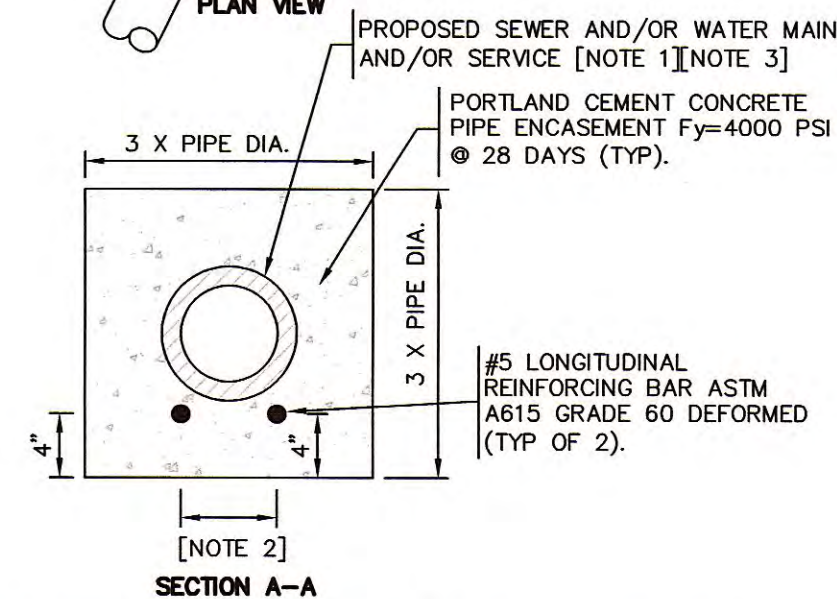
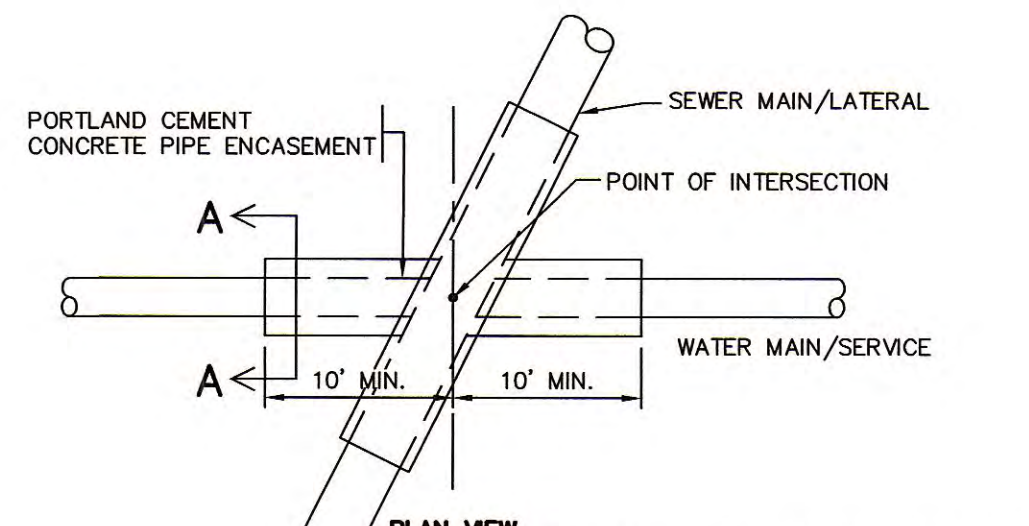
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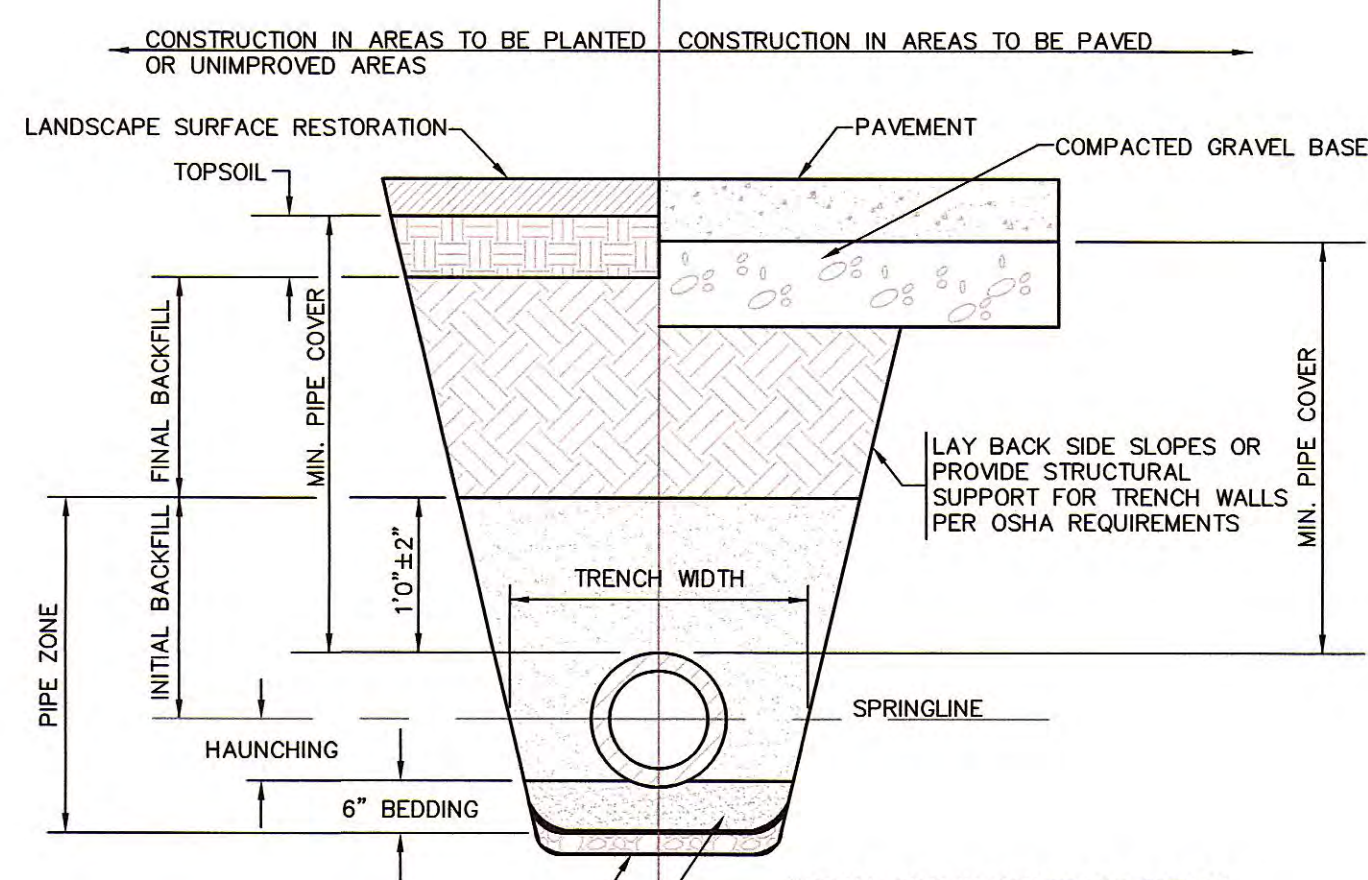
NOTES:
 [1] WATER SERVICES LARGER THAN 1" ARE TO BE RESTRAINED TO MAIN WITH APPROVED SADDLE.
 [2] COORDINATE BUILDING CONNECTION WITH PLUMBING DRAWINGS.
 [3] ALL MATERIALS PER MUNICIPAL STANDARDS.

WATER SERVICE
 TYPICAL CROSS SECTION
 NOT TO SCALE



NOTES:
 [1] CONCRETE PIPE ENCASEMENT TO EXTEND 10 FT ALONG SEWER LINE AND WATER LINE FROM POINT OF INTERSECTION.
 [2] DISTANCE EQUAL TO PIPE DIAMETER.
 [3] CONCRETE PIPE ENCASEMENT REQUIRED WHENEVER PROPOSED SEWER MAIN/LATERAL IS WITHIN 10' OF PROPOSED WATER MAIN/SERVICE.

PIPE ENCASEMENT
 NOT TO SCALE



TRENCH WIDTH:
 [1] MINIMUM WIDTH OF TRENCH MEASURED AT SPRINGLINE OF PIPE, INCLUDING ANY NECESSARY SHEATHING:

PIPE I.D.	WIDTH
LESS THAN 21"	O.D. + 12"
21" TO 42"	O.D. + 24"
GREATER THAN 42"	O.D. + 30"

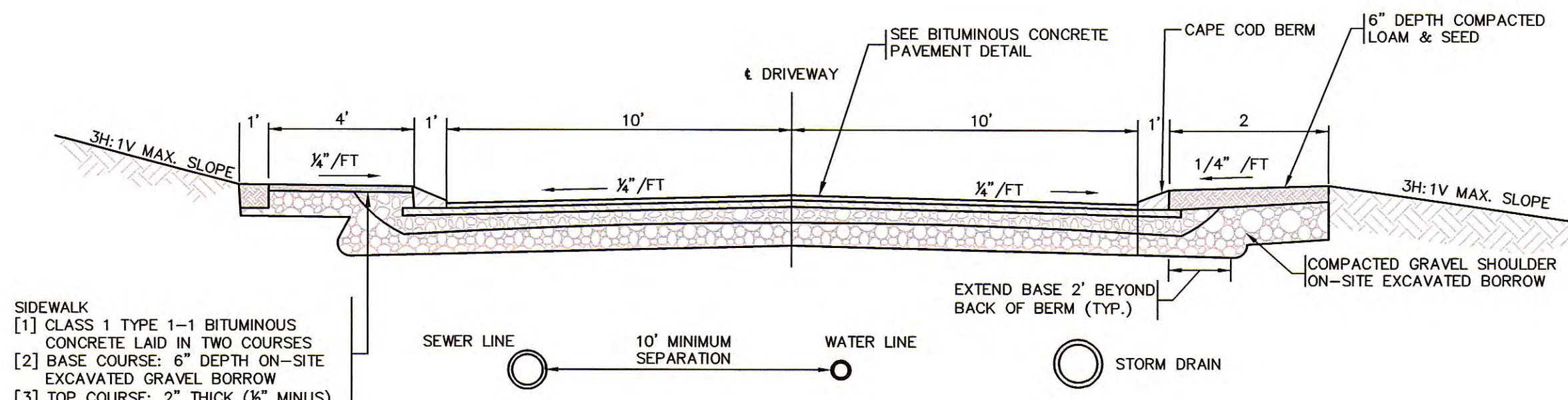
MINIMUM PIPE COVER:
 [1] MINIMUM SOIL COVER OVER TOP OF PIPE.

PIPE MATERIAL	HDP, PVC	RC, DI
WATER	5' - 0"	5' - 0"
SEWER	4' - 0"	4' - 0"
DRAIN	2' - 0"	1' - 0"

MATERIAL KEY NOTES (SEE TABLE BELOW):
 [1] PLACE 2" MINUS CRUSHED STONE.
 [2] PLACE 1/2" MINUS SAND BORROW (MHD M1.04.1), AT OPTIMUM MOISTURE IN HORIZONTAL 8" DEEP LAYERS, COMPACT TO 95% PER ASTM D-1557 MODIFIED PROCTOR METHOD.
 [3] IN PLANTED OR UNIMPROVED AREAS, USE 2-INCH MINUS ON-SITE EXCAVATED MATERIAL, COMPACT TO 80% PER ASTM D-1557, IN PAVED AREAS, OBTAIN ENGINEER'S APPROVAL OF 2-INCH MINUS ON-SITE EXCAVATED MATERIALS.

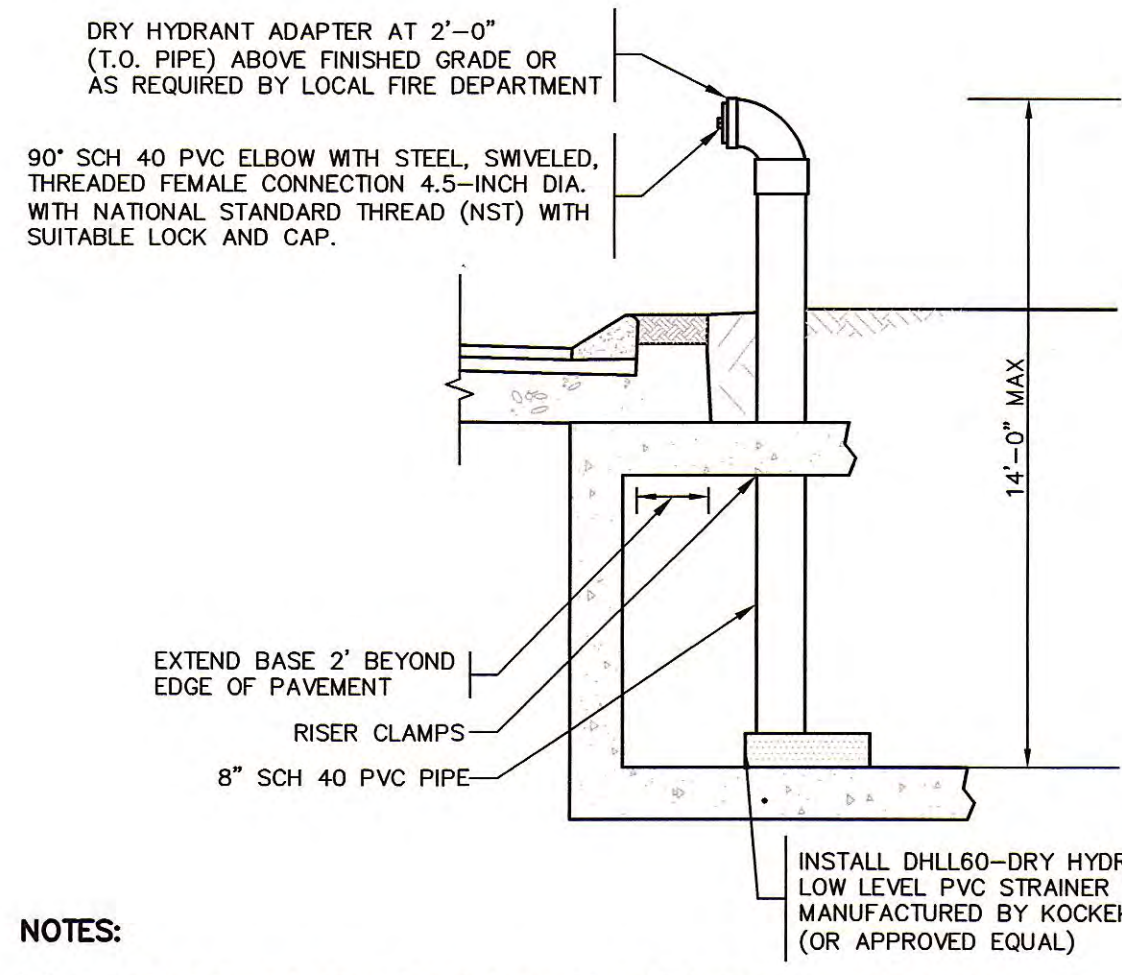
FOUNDATION, BEDDING AND BACKFILL MATERIALS	RC, DI
PIPE MATERIAL	HDP, PVC
FOUNDATION STABILIZATION	[NOTE 1] [NOTE 1]
BEDDING	[NOTE 2] [NOTE 2]
HAUNCHING	[NOTE 2] [NOTE 2]
INITIAL BACKFILL	[NOTE 2] [NOTE 2]
FINAL BACKFILL	[NOTE 3] [NOTE 3]

PIPE TRENCH
 TYPICAL CROSS SECTION
 NOT TO SCALE



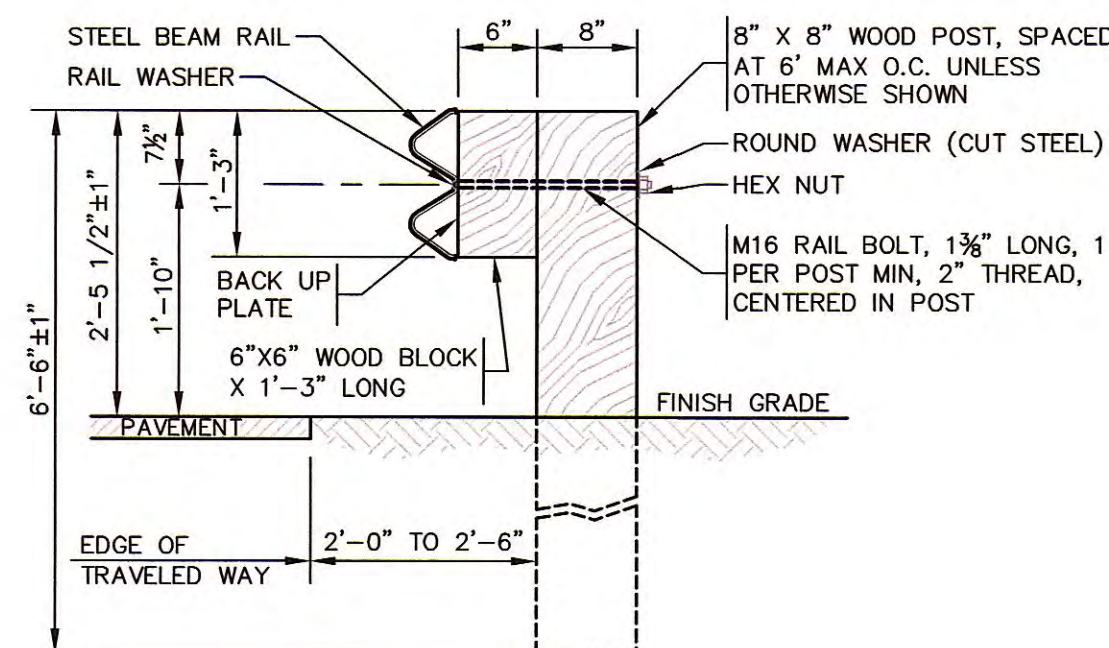
SIDEWALK
 [1] CLASS 1 TYPE 1-1 BITUMINOUS CONCRETE LAID IN TWO COURSES
 [2] BASE COURSE: 6" DEPTH ON-SITE EXCAVATED GRAVEL BORROW
 [3] TOP COURSE: 2" THICK (1/2" MINUS)

DRIVEWAY - ROBIN LANE
 TYPICAL CROSS SECTION
 NOT TO SCALE



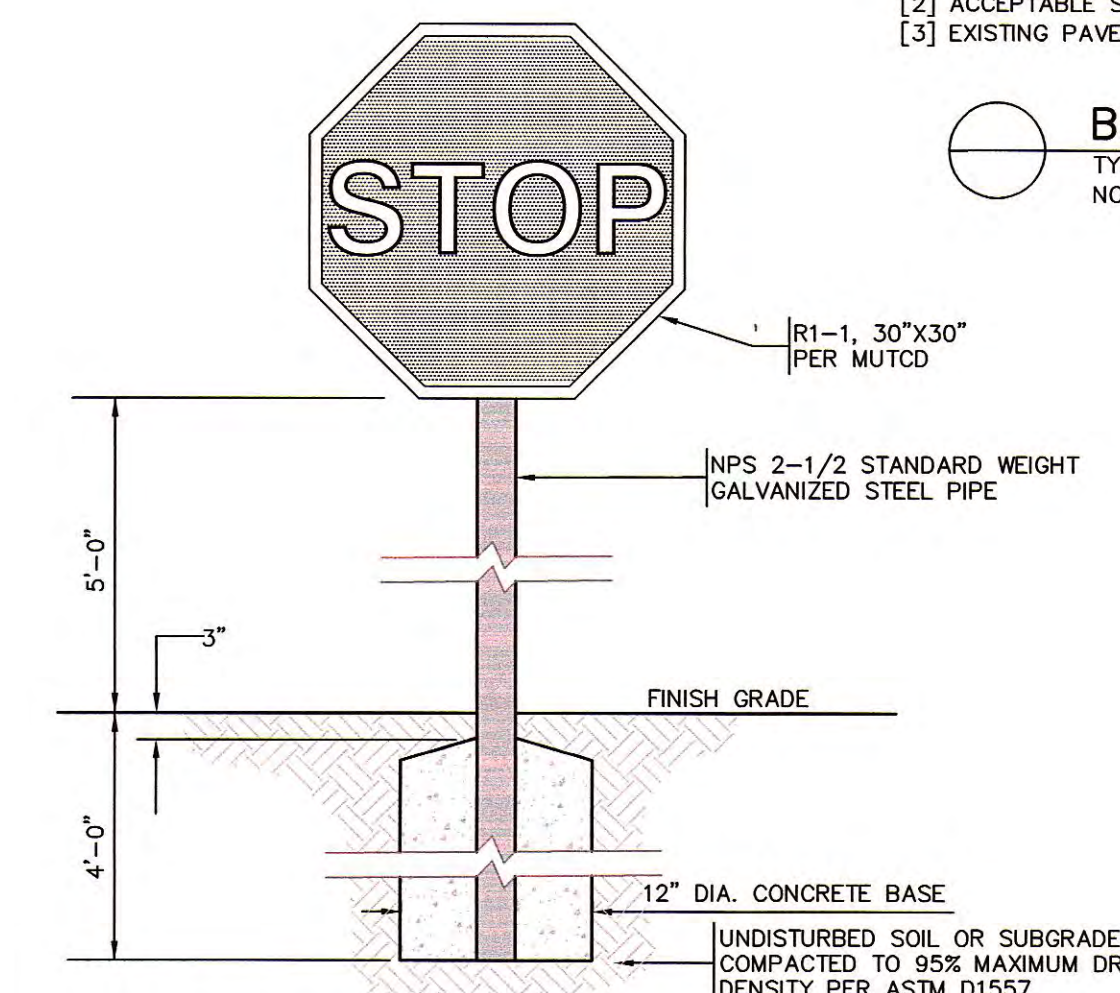
NOTES:
 [1] ALL ABOVE TANK SUCTION PIPING SHALL BE SLOPED 0.5% TOWARDS THE TANK

DRY HYDRANT
 TYPICAL CROSS SECTION
 NOT TO SCALE

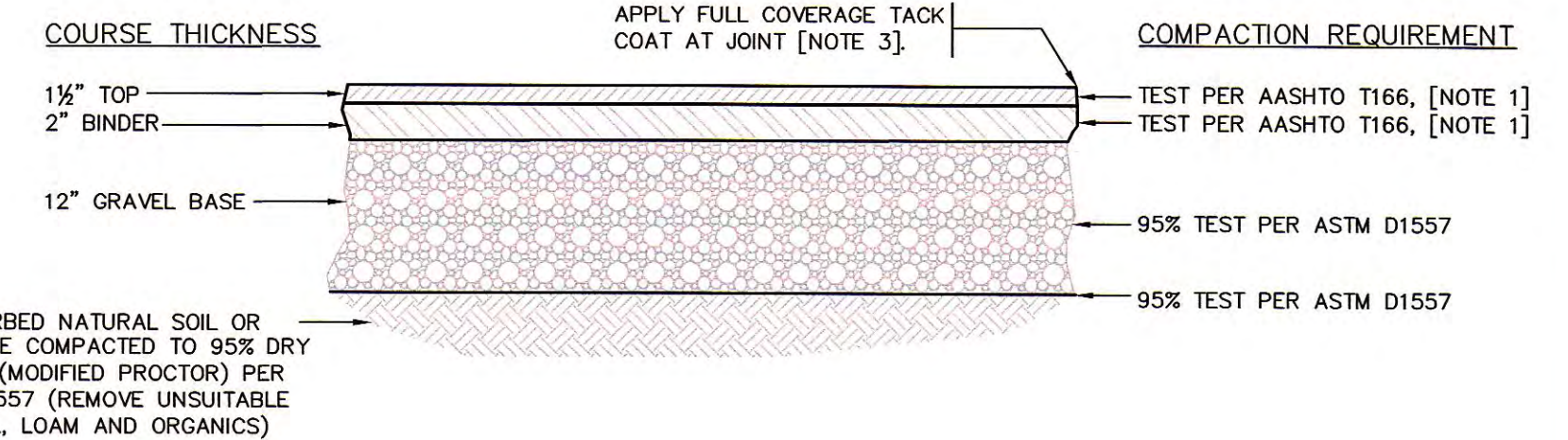


NOTES:
 [1] ALL NUTS, BOLTS & WASHERS ARE TO BE HIGH STRENGTH GALVANIZED STEEL.
 [2] ALL SPLICES ARE TO BE MADE AT POST.
 [3] BACK-UP PLATE IS TO BE PLACED BEHIND RAIL ELEMENTS AT NON SPLICE LOCATIONS (INTERMEDIATE POSTS).
 [4] WOOD AND WOOD TREATMENT SHALL COMPLY WITH MASSACHUSETTS HIGHWAY DEPARTMENT SPECIFICATIONS AND STANDARDS.
 [5] TERMINAL SECTIONS SHALL BE IN ACCORDANCE WITH MASSACHUSETTS HIGHWAY DEPARTMENT SPECIFICATIONS AND STANDARDS.

STEEL RAIL GUARDRAIL
 TYPICAL CROSS SECTION
 NOT TO SCALE



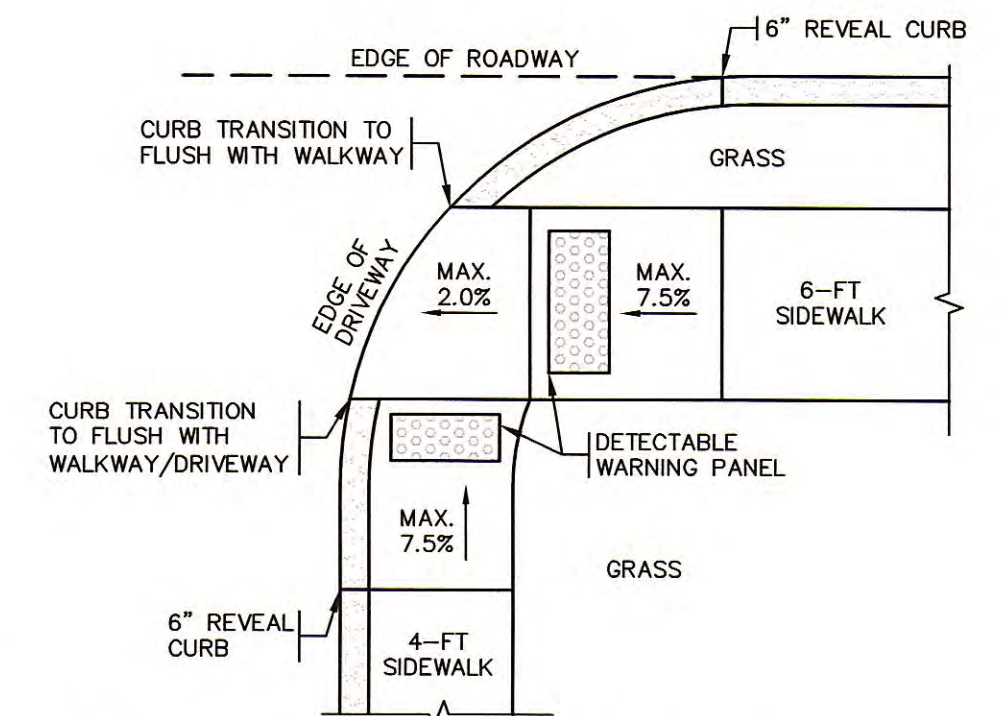
STOP SIGN
 NOT TO SCALE



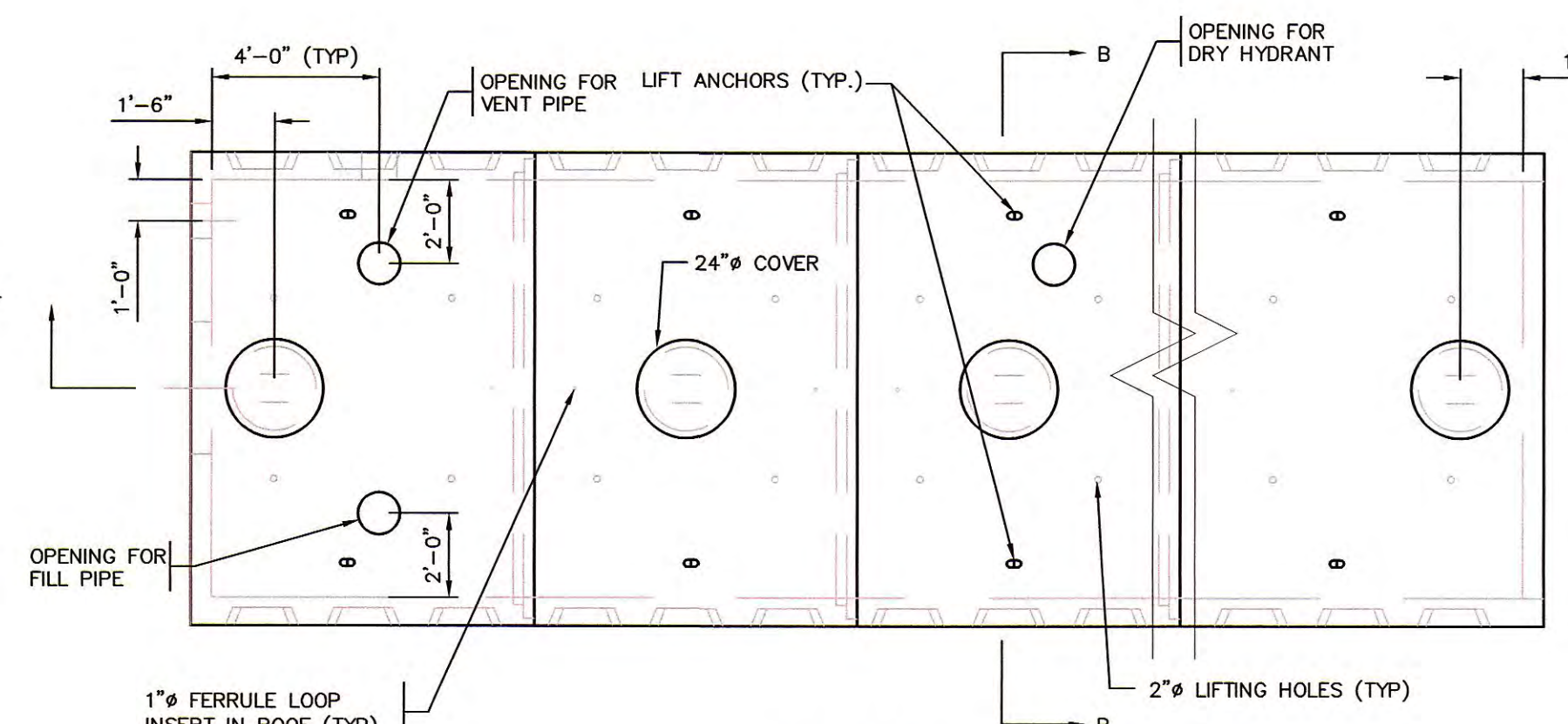
COURSE	MATERIAL	SPECIFICATION PER MASS HIGHWAY DEPARTMENT (MHD)	MAX AGG. SIZE (INCH)
TOP	BITUMINOUS CONCRETE	M3.11.03 CLASS 1, TYPE I-1	1/2
BINDER	BITUMINOUS CONCRETE	M3.11.03 CLASS 1, TYPE I-1	3/4
BASE	GRAVEL BORROW [2]	M1.03.0 TYPE B	3
UNSUITABLE SUBGRADE	ORDINARY BORROW	ON-SITE EXCAVATED MATERIAL	12

NOTES:
 [1] COMPACT TO TEST AVERAGE OF 95% NO TEST LOWER THAN 93%.
 [2] ACCEPTABLE SUBSTITUTE MATERIAL: 3/4" MINUS DENSE GRADED CRUSHED STONE.
 [3] EXISTING PAVEMENT SHALL BE SAW CUT VERTICALLY AT FINAL JOINT LOCATIONS.

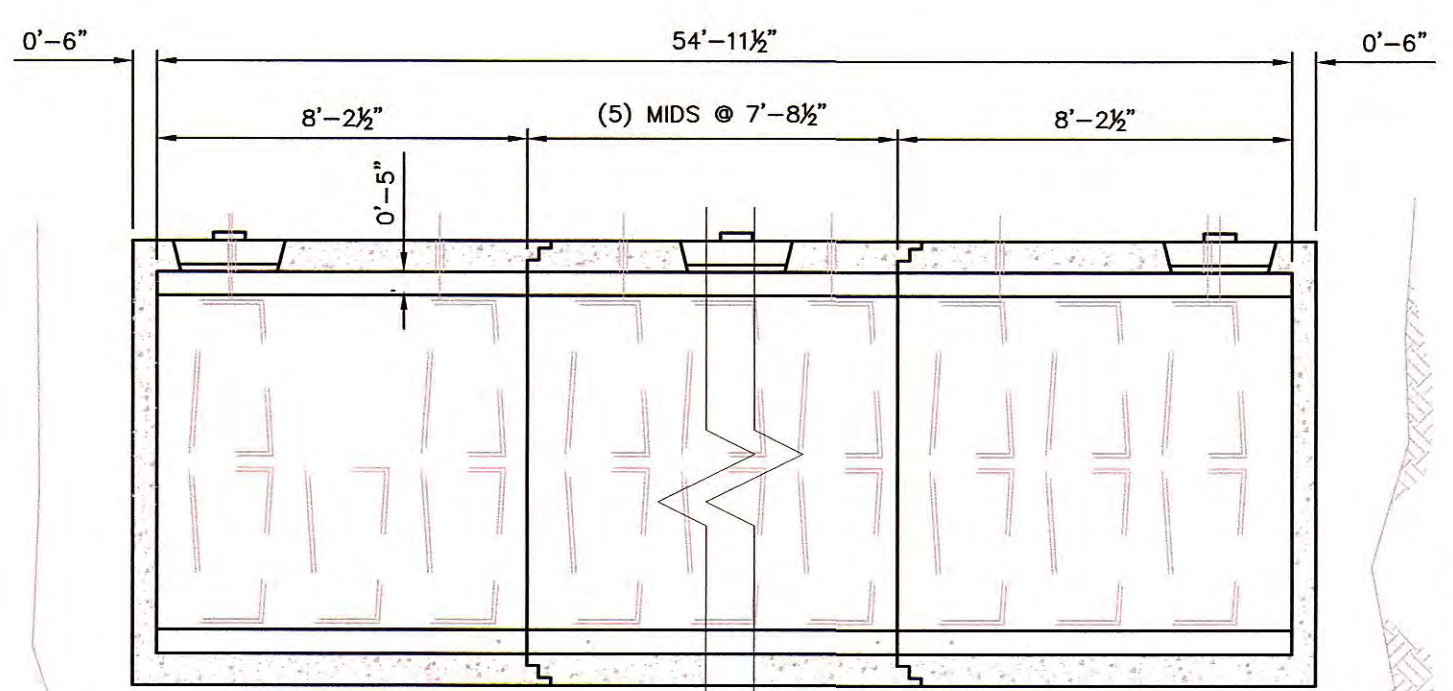
BITUMINOUS CONCRETE PAVEMENT
 TYPICAL CROSS SECTION
 NOT TO SCALE



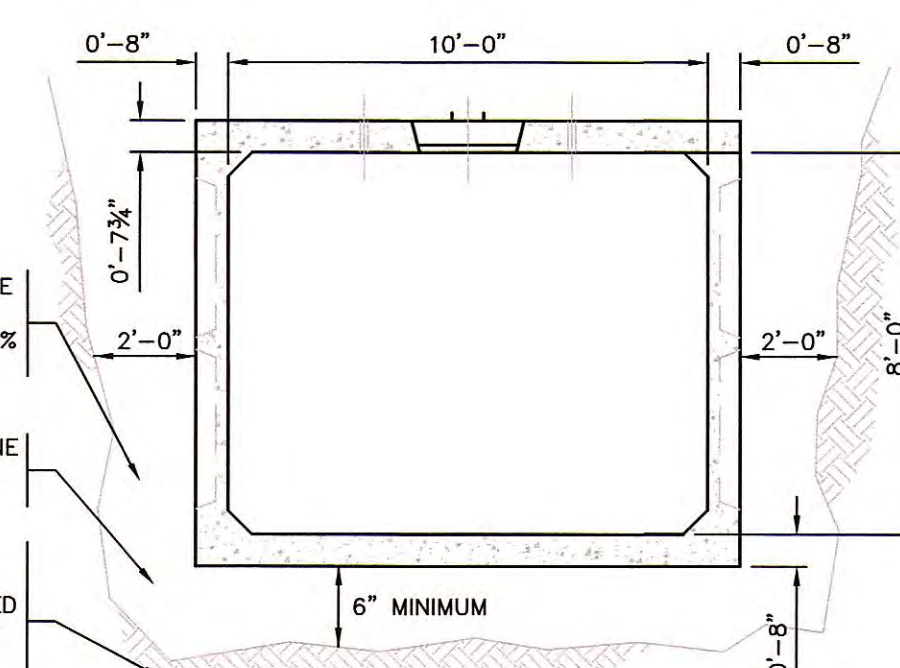
ACCESSIBLE CURB RAMP
 TYPICAL PLAN VIEW
 NOT TO SCALE



PLAN VIEW
 NOTE: THIS TANK IS NOT FOR USE IN A POTABLE WATER SYSTEM.



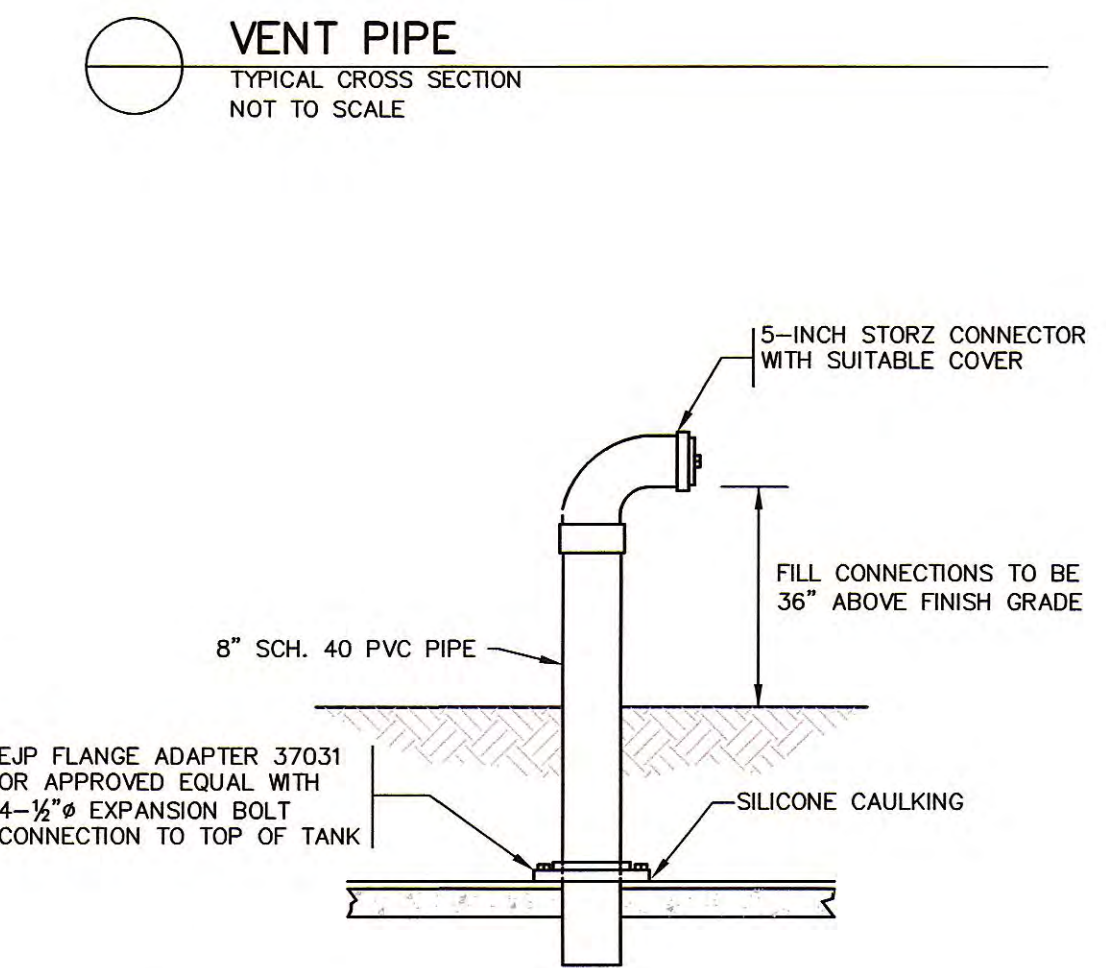
SECTION A-A



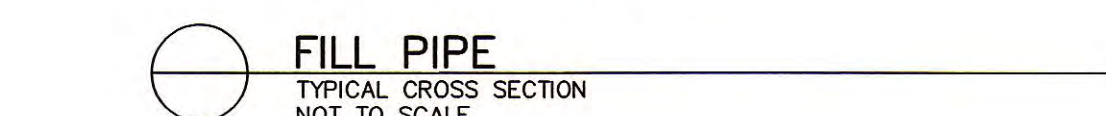
SECTION B-B

INSTALLATION NOTES:
 1. A MANUFACTURER'S REPRESENTATIVE SHALL INSPECT THE BASE PAD PRIOR TO INSTALLATION AND SHALL INSPECT BACKFILL MATERIALS AND APPROVE PROCEDURES.
 2. SUITABLE ON-SITE MATERIAL FOR BACKFILL SHALL CONSIST OF A MINERAL MATERIAL FREE FROM CINDERS, ASHES, ORGANIC MATERIAL, LOAM, WOOD, TRASH, AND OTHER OBJECTIONABLE MATERIALS. IT SHALL HAVE NO STONE LARGER THAN 6" IN ITS GREATEST DIMENSION.
 3. LEAKAGE TESTING SHALL BE IN ACCORDANCE WITH NFPA22 CHAPTER 18.
 4. FIRE CISTERN SHALL BE RATED FOR H-20 LOADING.

FIRE CISTERN
 NOT TO SCALE



VENT PIPE
 TYPICAL CROSS SECTION
 NOT TO SCALE



FILL PIPE
 TYPICAL CROSS SECTION
 NOT TO SCALE

DRAWING ISSUED FOR:
 CONCEPT CONSTRUCTION
 PERMIT CONSTRUCTION RECORD

THIS DRAWING MAY NOT SHOW CONSTRUCTION DETAILS AND SPECIFICATIONS FOR ALL PROPOSED IMPROVEMENTS, AND MAY NOT IDENTIFY ALL CONSTRUCTION WORK ITEMS/AREAS OF CONTRACTOR JURISDICTION.

PER 250 CMR 5.03(13), THE FOLLOWING ARE EXCLUDED FROM THE PROFESSIONAL ENGINEER'S RESPONSIBILITY: ALL BOUNDARY INFORMATION; LOCATION OF EXISTING STRUCTURES, TREES, UTILITIES, TOPOGRAPHY OR SIMILAR FEATURES; DESIGN OF RETAINING WALLS, PROPRIETARY EQUIPMENT. SEE EXISTING CONDITION NOTES.

NICHOLAS M. PAULING
 CIVIL ENGINEER
 No. 47514
 REGISTERED

NO.	DATE	BY	APP.	REVISION DESCRIPTION
2	11/16/23	LT	NMP	PEER REVIEW COMMENTS
1	9/20/23	LT	NMP	PEER REVIEW COMMENTS

GPR Engineering Solutions for Land & Structures

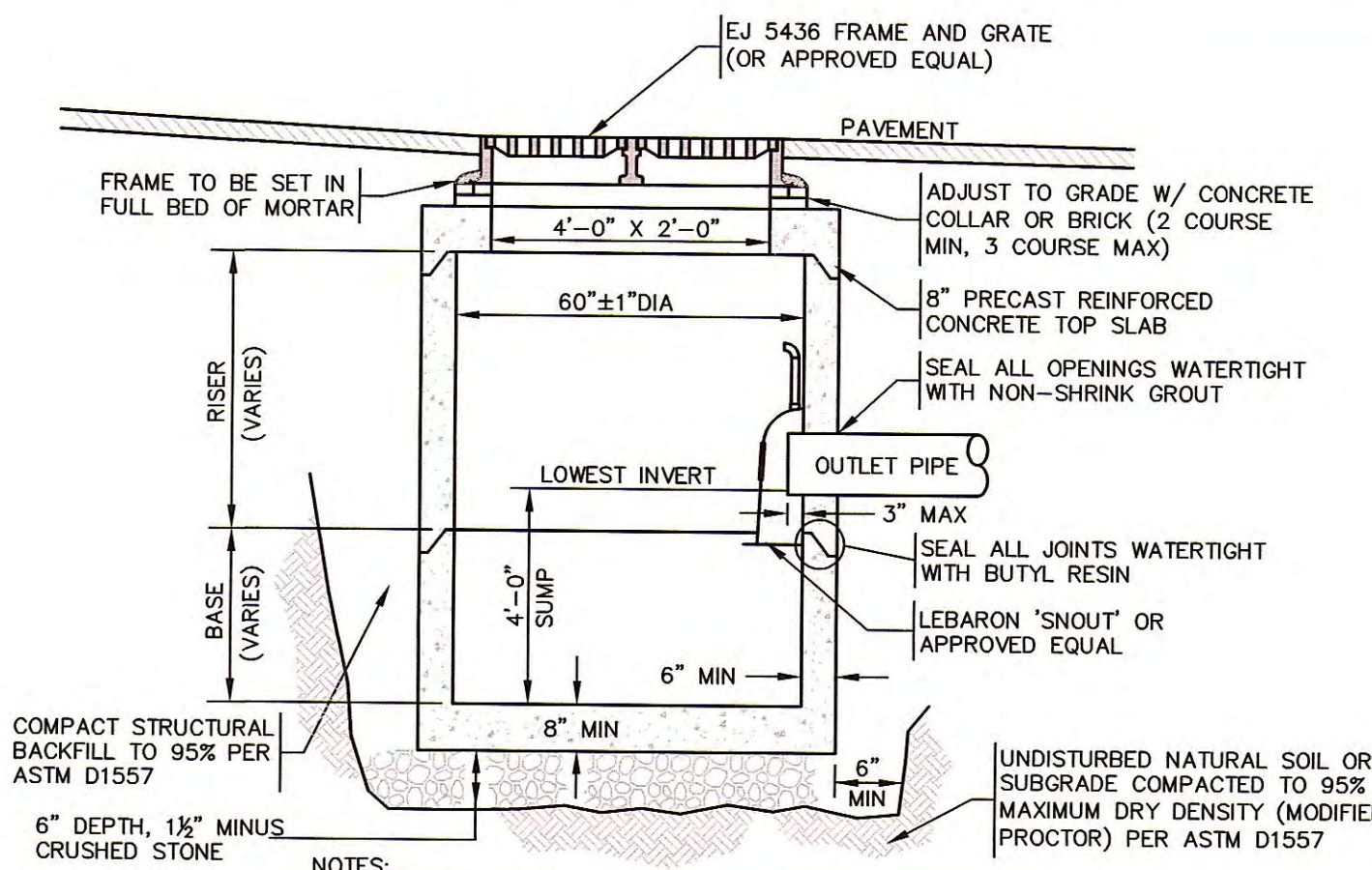
GOLDSMITH, PREST & RINGWALL, INC.
 39 MAIN STREET, SUITE 301, AYER, MA 01432
 CIVIL ENGINEERING • LAND SURVEYING • LAND PLANNING
 VOICE: 978.772.1590 FAX: 978.772.1591
 www.gpr-inc.com

40B RESIDENTIAL DEVELOPMENT
 CONSTRUCTION DETAILS

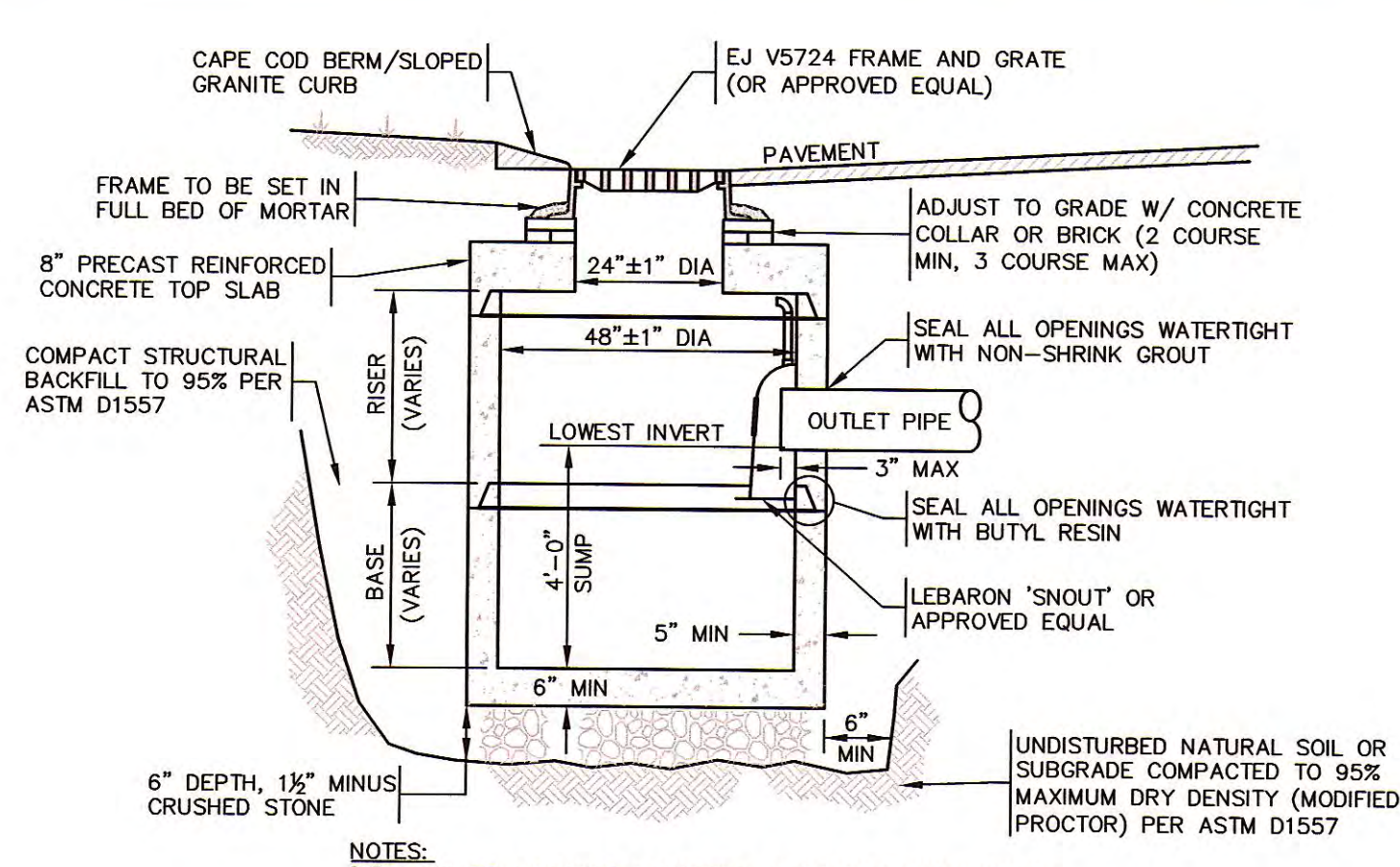
THE VILLAGE AT ROBIN LANE
 AT OLD MILL & AYER ROADS
 HARVARD, MA

PREPARED FOR:
 JUNO CONSTRUCTION, LLC
 92 MIDDLESEX ROAD, UNIT 3
 TYNGSBOROUGH, MA 01879

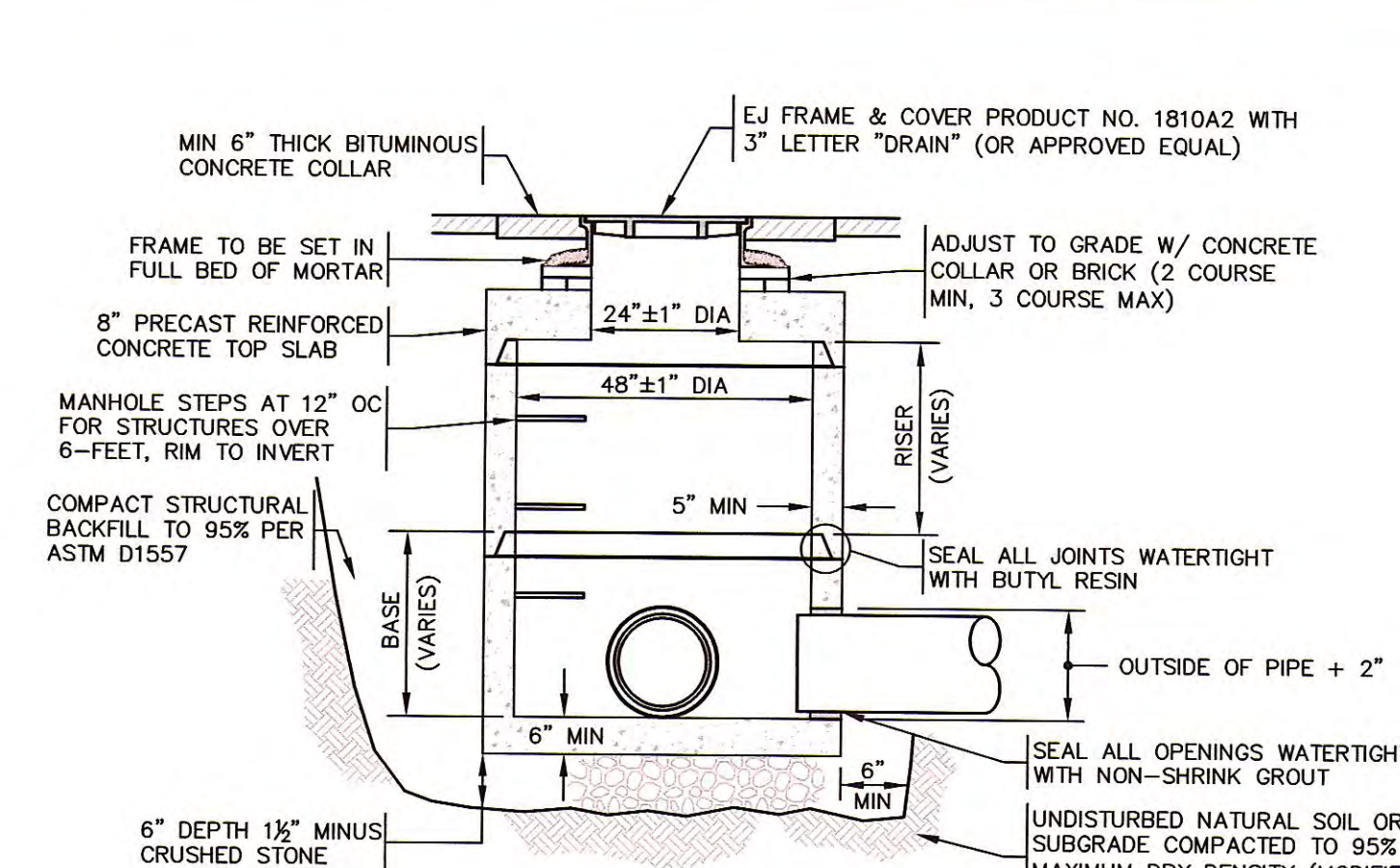
DES. BY: LT	DATE: JUNE 2023	JOB 211140	C7.1
CHK. BY: NMP			



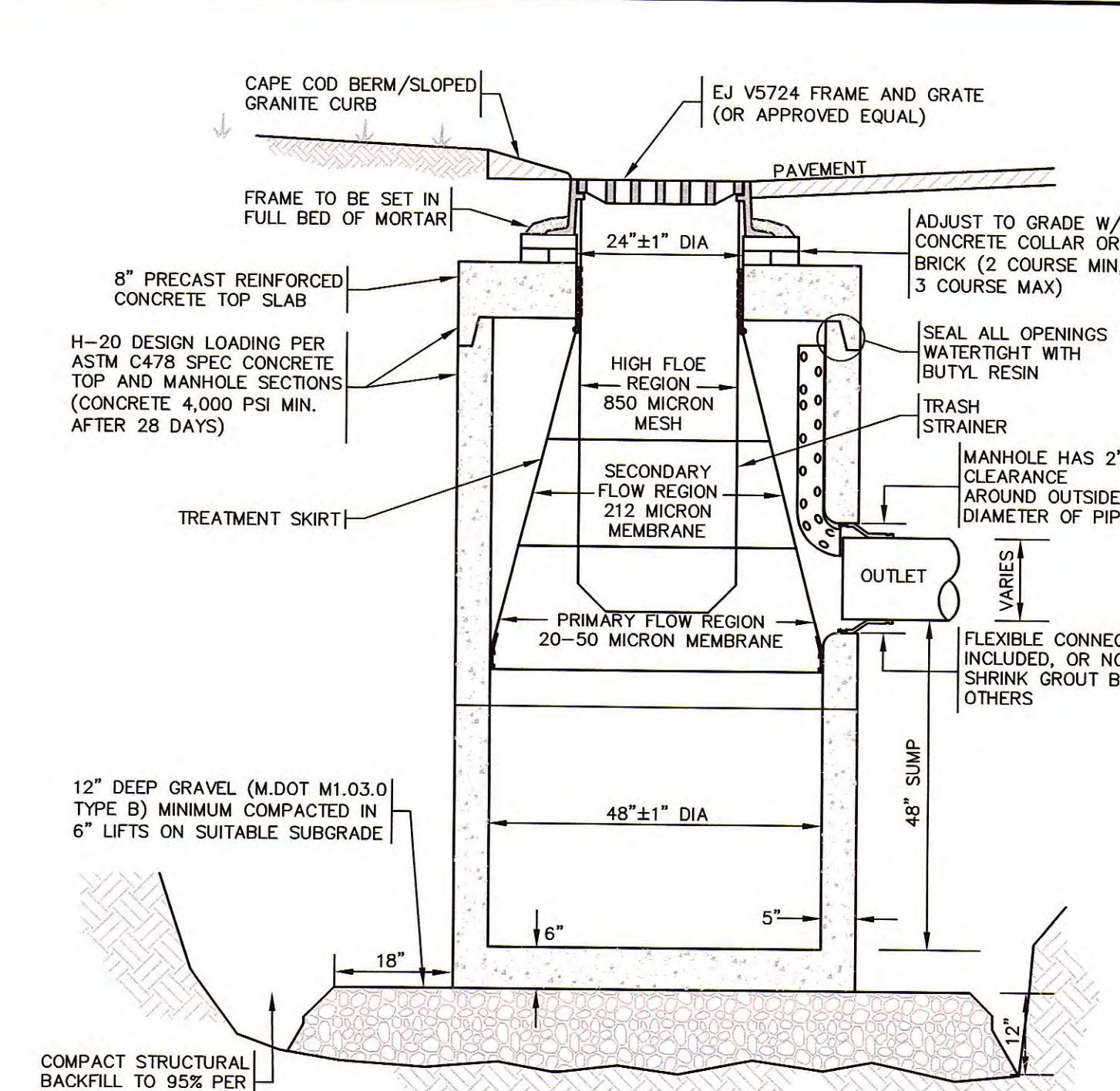
DOUBLE GRATE CATCH BASIN
TYPICAL CROSS SECTION
NOT TO SCALE



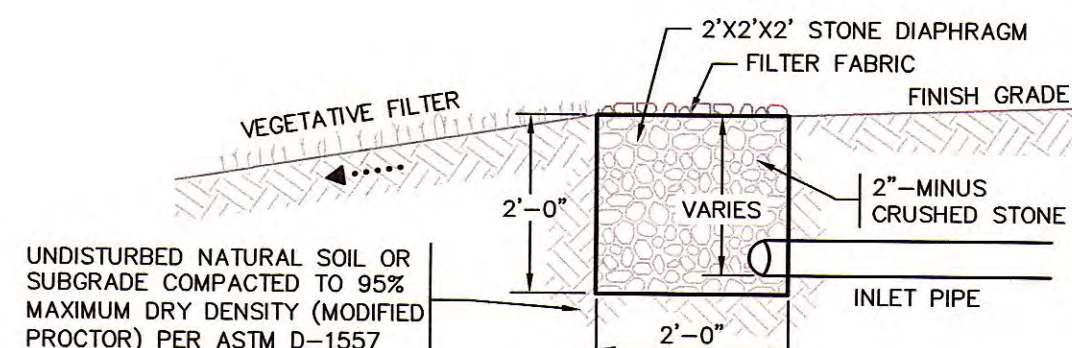
CATCH BASIN
TYPICAL CROSS SECTION
NOT TO SCALE



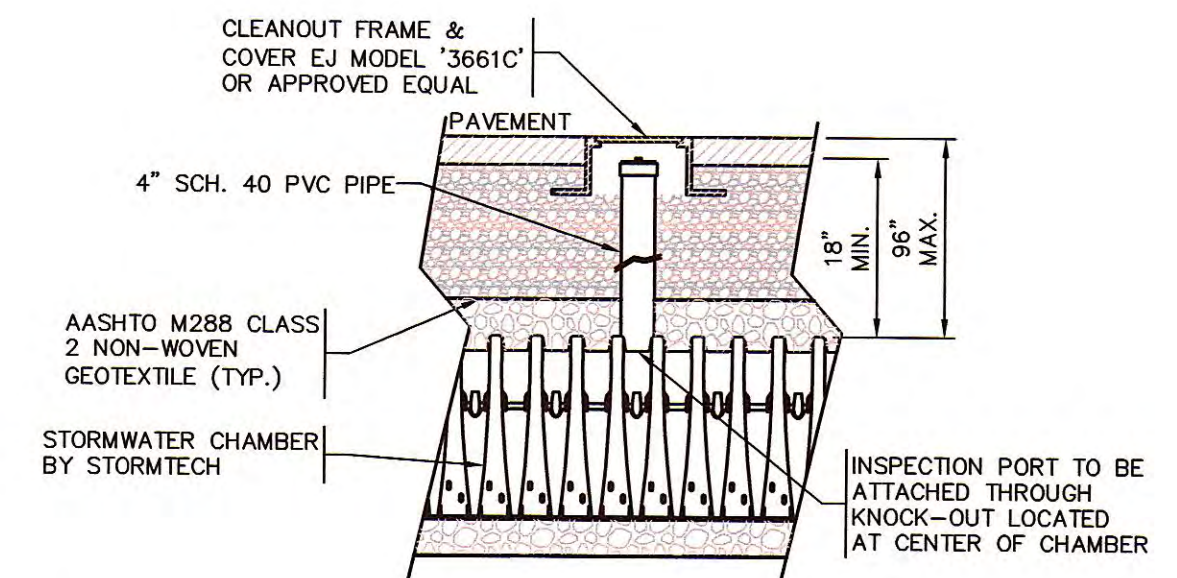
DRAIN MANHOLE
TYPICAL CROSS SECTION
NOT TO SCALE



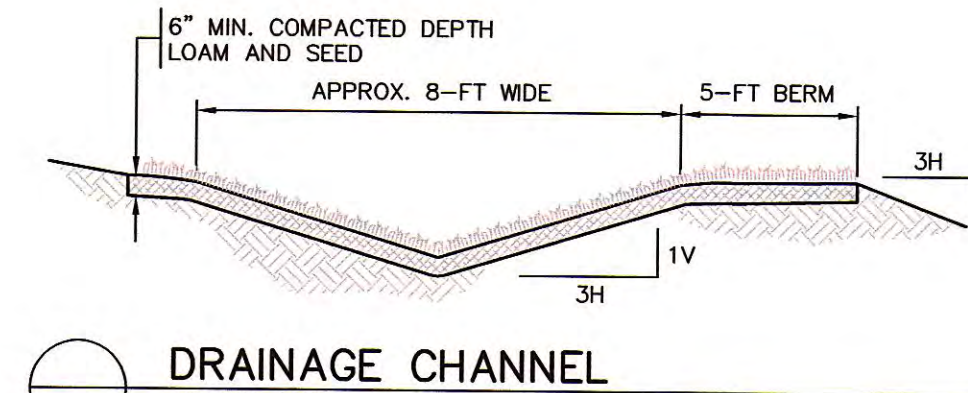
SILT PRISON CATCH BASIN
TYPICAL CROSS SECTION
NOT TO SCALE



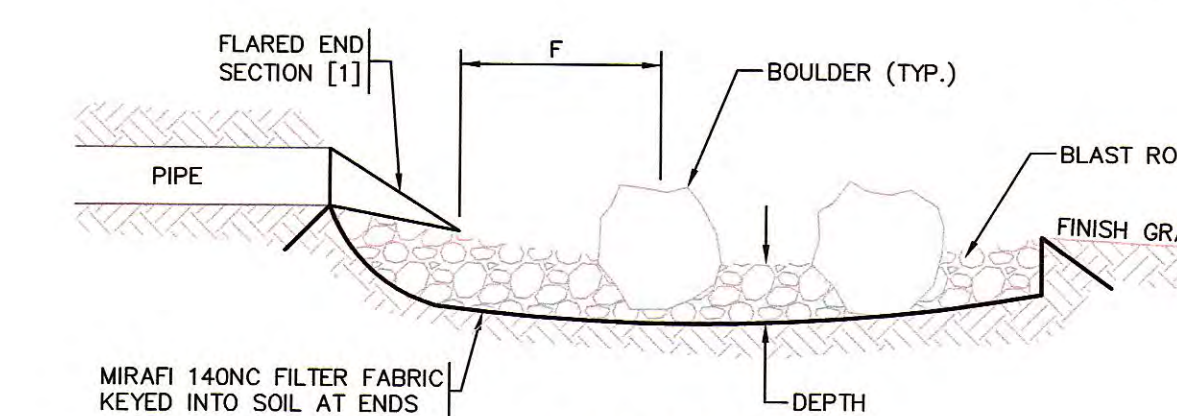
2'X2'X2' STONE DIAPHRAGM
TYPICAL CROSS SECTION
NOT TO SCALE



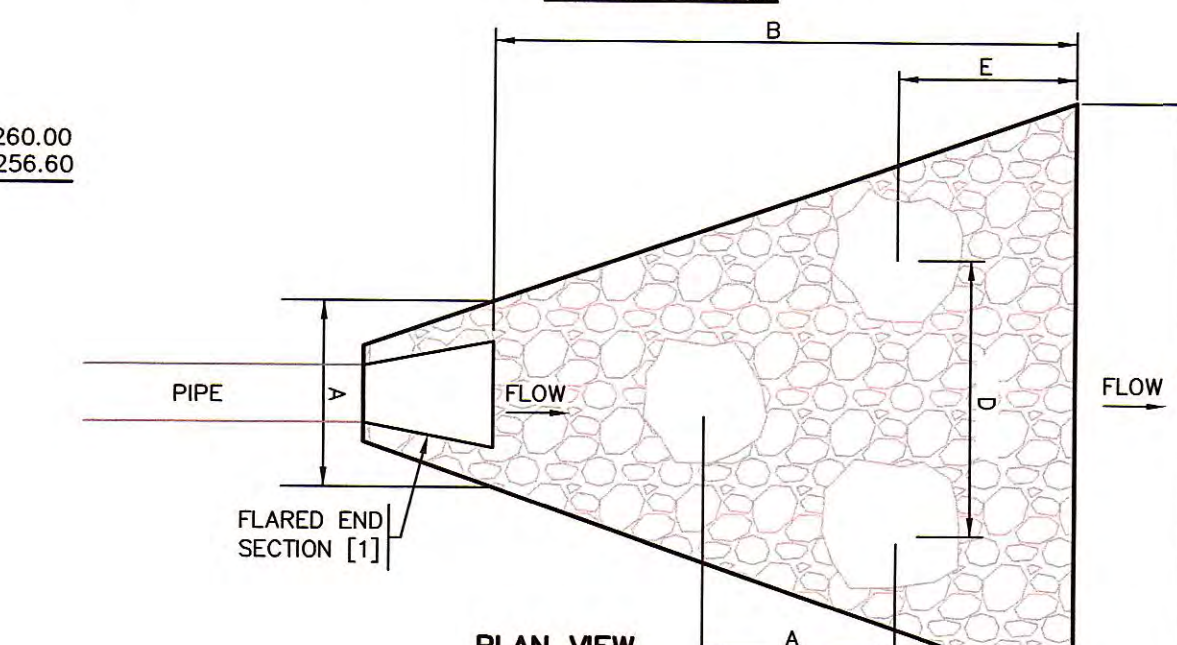
INSPECTION PORT
TYPICAL CROSS SECTION
NOT TO SCALE



DRAINAGE CHANNEL
TYPICAL CROSS SECTION
NOT TO SCALE



CROSS SECTION

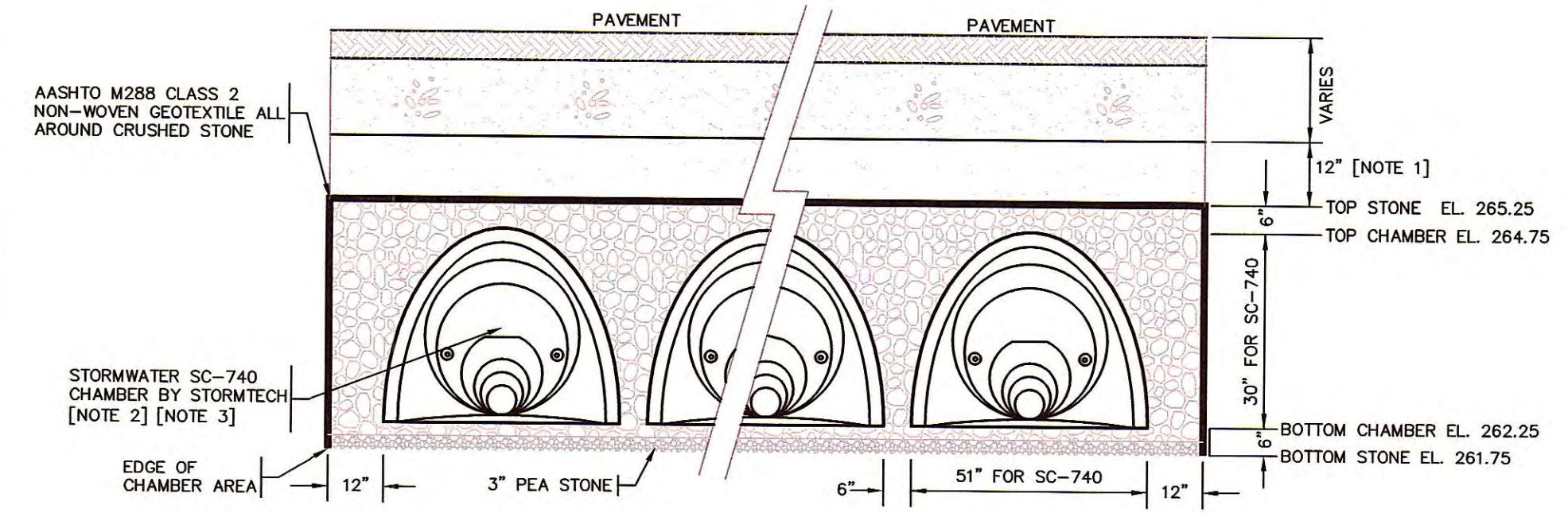


PLAN VIEW

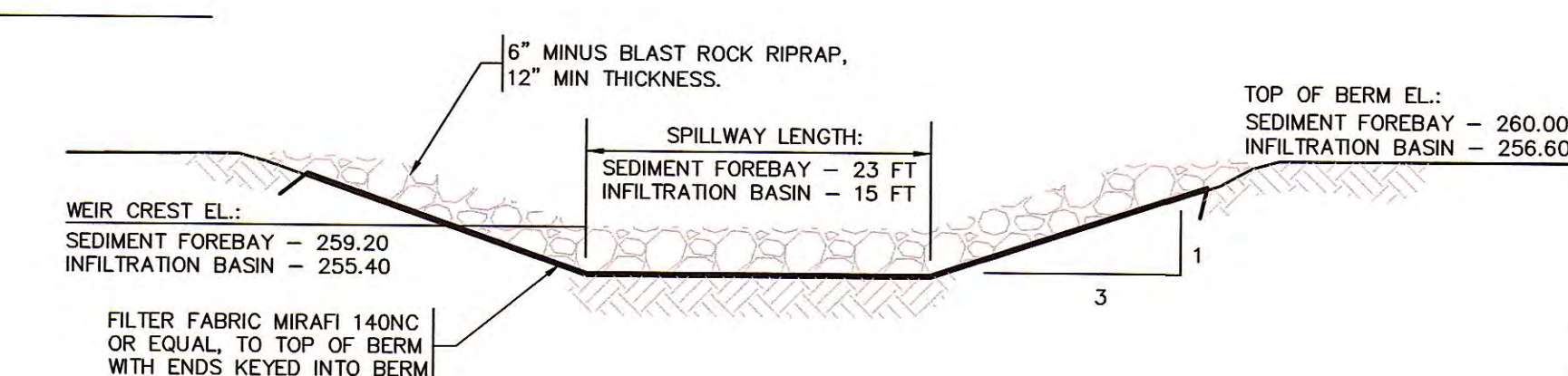
PIPE DIA. (IN.)	A (FT)	B (FT)	C (FT)	D (FT)	E (FT)	F (FT)	DEPTH (FT)	BLAST ROCK	BOULDER
12 IN.	3	8	9	4	2	1.5	0.5	6" MINUS	18" - 24"
15 IN.	4	10	11.5	5	2.5	2	0.62	6" MINUS	21" - 30"
18 IN.	4.5	12	13.5	6	3	2.25	0.75	9" MINUS	27" - 36"
24 IN.	5	14	14	7	4	2.5	0.75	9" MINUS	32" - 40"

NOTES:

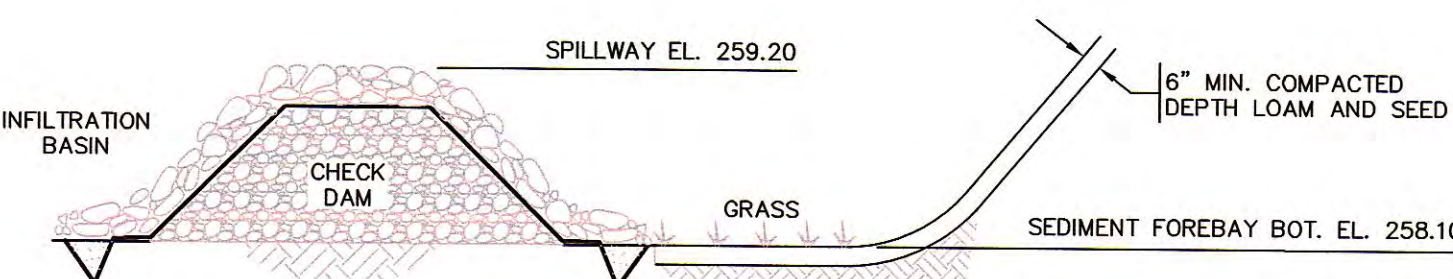
- [1] INSTALL TRASH RACK OR OTHER MEANS OF PREVENTION ON PIPE OUTLET TO PREVENT UNWANTED ITEMS FROM ENTERING CULVERT.
- [2] DO NOT PLACE BOULDERS WITHIN LEVEL SPREADER FOR INLET PIPE DIAMETERS LESS THAN 12".



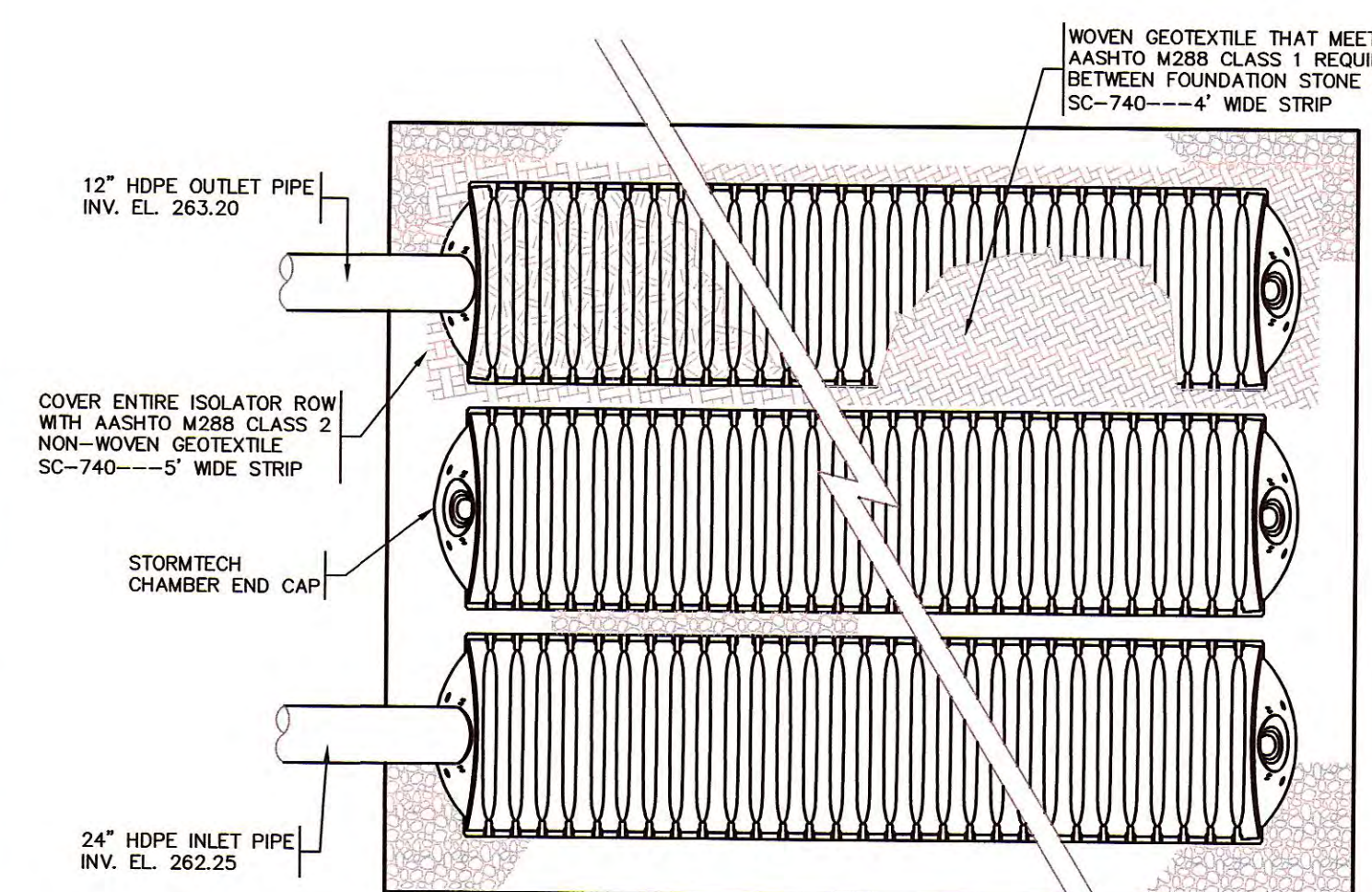
INFILTRATION CHAMBER (IC)
TYPICAL PLAN VIEW
NOT TO SCALE



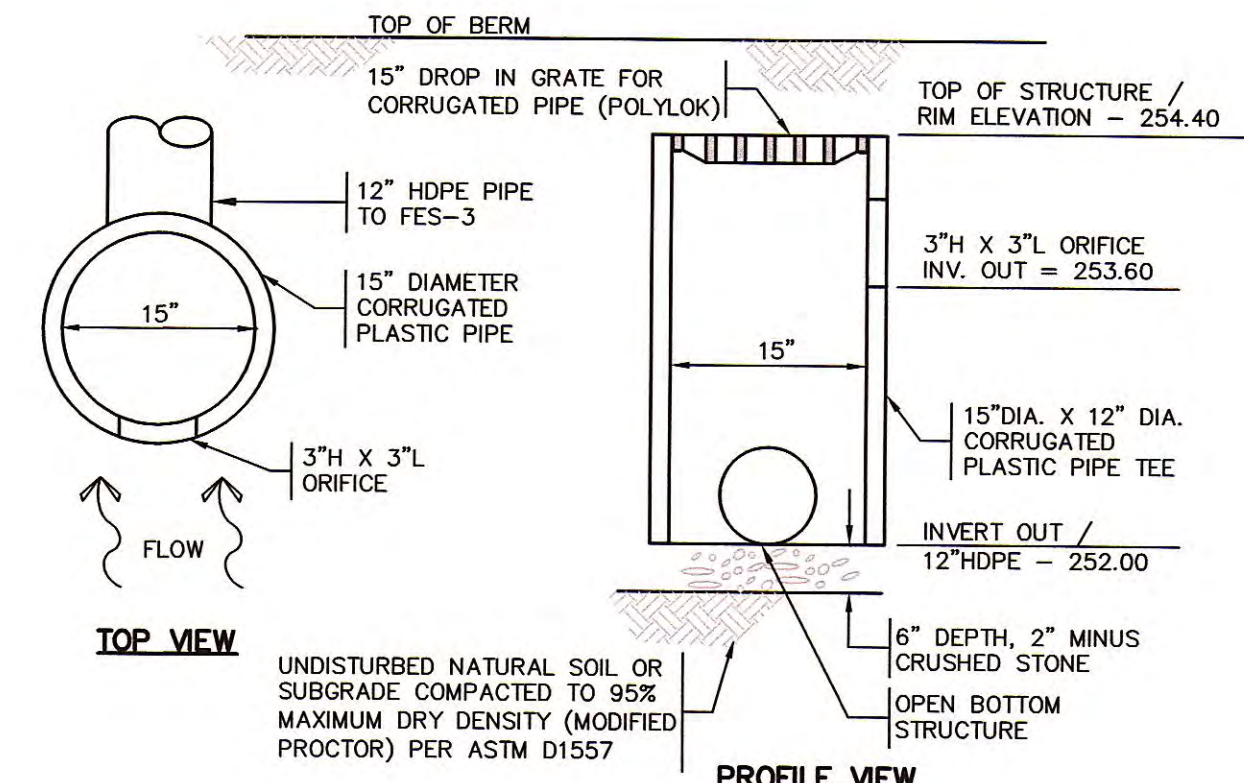
SPILLWAY
TYPICAL CROSS SECTION
NOT TO SCALE



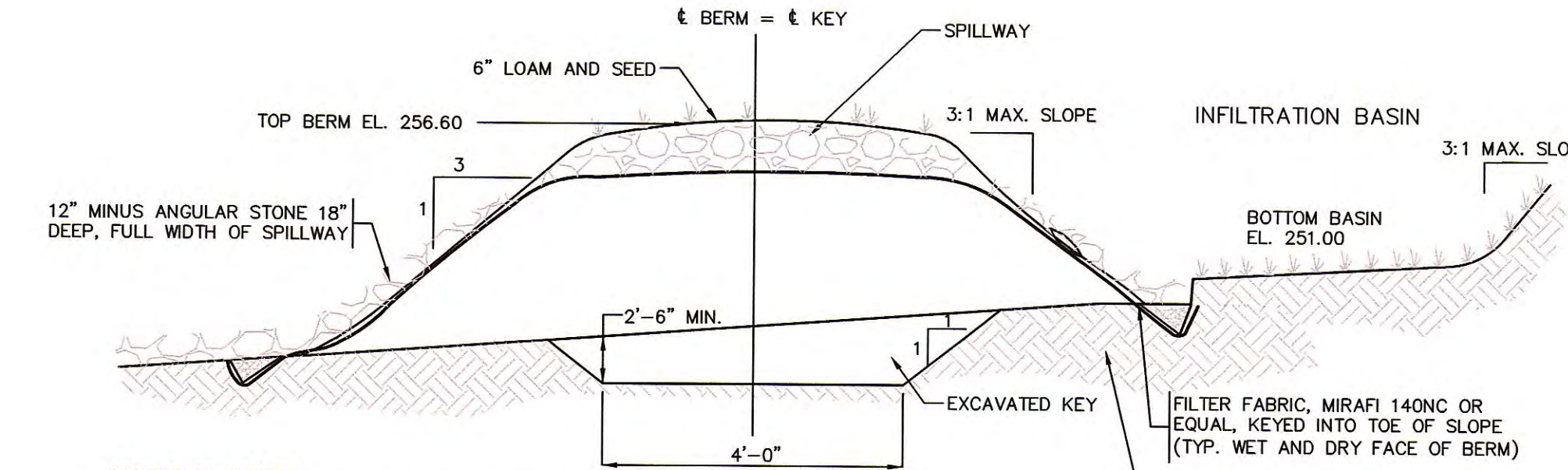
SEDIMENT FOREBAY
TYPICAL CROSS SECTION
NOT TO SCALE



INFILTRATION BASIN (IB)
TYPICAL CROSS SECTION
NOT TO SCALE



OUTLET CONTROL STRUCTURE
NOT TO SCALE



INFILTRATION BASIN (IB)
TYPICAL CROSS SECTION
NOT TO SCALE

DRAWING ISSUED FOR:

- CONCEPT
- CONSTRUCTION
- PERMIT
- CONSTRUCTION RECORD

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Nicholas M. Pailing
11/16/2023

NO.	DATE	BY	APP.	REVISION DESCRIPTION
2	11/16/23	LT	NMP	PEER REVIEW COMMENTS
1	9/20/23	LT	NMP	PEER REVIEW COMMENTS

GPR Engineering Solutions
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CIVIL ENGINEERING • LAND SURVEYING • LAND PLANNING
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40B RESIDENTIAL DEVELOPMENT
CONSTRUCTION DETAILS

THE VILLAGE AT ROBIN LANE
AT OLD MILL & AYER ROADS
HARVARD, MA

PREPARED FOR:
JUNO CONSTRUCTION, LLC
92 MIDDLESEX ROAD, UNIT 3
TYNGSBOROUGH, MA 01879

DES. BY: LT	DATE: JUNE 2023	JOB 211140	C7.2
CHK. BY: NMP			

P:\211140\DWG\PERMIT\SITE PLAN REV-2.DWG 11-16-23 12:26:40 PM - LAYOUT C7.2-C0

2023 © COPYRIGHT GOLDSMITH, PREST & RINGWALL, INC.

FORM A
NOTICE OF FILING

DATE: 8/31/2023 RE: Property located at Old Mill Rd & Ayer Rd

FROM: Juno Construction LLC
(applicant)

Address 6 Courthouse Lane, Unit 3, Chelmsford, MA

Telephone 508-509-5220

A. Pursuant to the requirements of M.G.L. Chapter 131 §. 40 and /or the Harvard Wetlands Bylaw I am submitting herewith a complete copy of a Request for Determination of Applicability or an Application for a Harvard Wetland Permit. Copies of this complete application have been submitted as required under subsection 147-14 Notice to Town Boards by certified mail or hand delivery as follows:

	Date of Submittal
Conservation Commission (10 copies)	<u>8/31/2023</u>
Department of Environmental Protection (2 copies)	<u>8/31/2023</u>
_____	_____
_____	_____
_____	_____

(add boards as specified at time of filing)

B. Have the abutters to the property on which the work is proposed, been notified about the filing of this application, on Form B? YES (attach a certified list of abutters).

C. If the owner of the land is other than the Applicant, the owner must either sign this application in the space provided or provide written authorization for the Applicant to apply.

Owner's Signature *Limkuot Tiv* Date: 8/31/2023
As Agent of Owner/Applicant

D. Please check the appropriate box(s):

- Request for Determination of Applicability
- Notice of Intent
- Abbreviated Notice of Intent
- Abbreviated Notice of Resource Area Delineation
- Amendment of the Order of Conditions

E. Have the appropriate Town filing fees been included? See Form F

FORM B
NOTIFICATION TO ABUTTERS
MASSACHUSETTS WETLAND PROTECTION ACT
AND HARVARD WETLANDS PROTECTION BYLAW

DATE: 8/31/2023

Certified Mail # _____
or Date of Hand Delivery _____

TO: _____
(abutter) (address)

FROM: Juno Construction LLC 6 Courthouse Lane, Unit 3, Chelmsford, MA 508-509-5220
(applicant) (address) (Telephone No.)

RE: Property identified on Harvard Assessors Map # 4 Parcel 52 & 53
The address of the lot where the activity is proposed is:
at Old Mill Road & Ayer Road

Pursuant to the requirements of the Harvard Wetlands Protection Bylaw and the second paragraph of Massachusetts General Laws Chapter 131 §40, you are hereby notified that the following forms have been filed with the Harvard Conservation Commission:

A Notice of Intent or Abbreviated Notice of Intent seeking permission to conduct one or more of the following, remove, fill, dredge, or alter an Area Subject to Protection Under the Wetlands Protection Act (General Laws Chapter 131, §40) and the Harvard Wetlands Protection Bylaw (Chapter 119 of the Code of the Town of Harvard).

An Abbreviated Notice of Resource Area Delineation for confirmation of the delineation of a Bordering Vegetated Wetland (BVW) for projects in the buffer zone under the Wetlands Protection Act (General Law Chapter 131, § 40) and the Harvard Wetlands Protection Bylaw (Chapter 119 of the Code of the Town of Harvard).

A Request for Determination of Applicability of the Harvard Wetlands Protection Bylaw (Chapter 119 of the Code of the Town of Harvard) and the State Wetlands Protection Act (General Laws Chapter 131, §40)

Amendment to the Order of Conditions under the Harvard Wetland Bylaw (Chapter 119 of the Code of the Town of Harvard)

The Harvard Wetlands Protection Bylaw defines abutters as those persons whose property is within 300 feet of the boundary of the property or whose property lies across a traveled way or railroad bed from the property identified above. Notices shall be sent to the most recent owner of the property according to the most recent Assessors record. The list of abutters shall be certified by the Board of Assessors.

The Harvard Conservation Commission will hold a public hearing on the filing within twenty-one (21) days upon receipt of the complete application. Notice of this public hearing will be given at least five (5) days prior to the hearing, in a local newspaper, as well as appear on the Town of Harvard website at www.harvard.ma.us.

Plans for this project and a copy of the application are on file with the Land Use Board Office. Copies may be obtained from the Applicant's Representative by calling the following telephone number 978 - 772 - 1590 between the hours of 8:00AM and 5:00PM on the following days of the week Monday thru Friday.

The hearing can be subsequently continued to a later date by the Commission with the agreement of the Applicant.

To contact the Central Region DEP office call 508-792-7650

FORM C

REQUEST FOR WAIVER

HARVARD WETLANDS PROTECTION BYLAW

Date:

To: Harvard Conservation Commission

From: Juno Construction LLC
(name of petitioner)

6 Courthouse Lane, Unit 3, Chelmsford, MA
(address of petitioner)

RE: Harvard Wetlands Rules and Regulations

Request for Waiver

Pursuant to the provisions of §147-3 of the Regulations for the administration of The Harvard Wetlands Protection Bylaw, I hereby request a waiver from the Commission for compliance with the following section of the regulations:

To allow work within the 50-FT No Disturb buffer limit

To Waive the Harvard NOI filing fee

The waiver is requested for the following reason(s):

To allow for the installation of the public water supply wells

Signature of petitioner Limkuot Tu Telephone # 978-772-1590

As agent for Owner/Applicant

FORM D
PERMISSION FOR ACCESS

TO: Harvard Conservation Commission
13 Ayer Road
Harvard, MA 01451

From: Juno Construction LLC
6 Courthouse Lane, Unit 3
Chelmsford, MA

Pursuant to §147-6.D. or §147-11.D. of the Wetlands Protection Bylaw Rules I do hereby grant the Harvard Conservation Commission and/or its consultants access to the project site under consideration for a Determination of Applicability, Notice of Intent, Abbreviated Notice of Intent, Abbreviated Notice of a Resource Area Delineation or an Amendment to the Order of Conditions any time from the receipt of such notice through the issuance of a Certificate of Compliance, Negative Determination, expiration of a Positive Determination and/or an Order of Resource Area Delineation.

Signed: Limhuot Tiv Date 8/31/2023
Owner or Authorized Applicant from Form A part C
As Agent of Owner/Applicant

FORM E

PERMISSION TO BILL APPLICANT DIRECTLY FOR LEGAL NOTICE

TO: Harvard Conservation Commission
13 Ayer Road
Harvard, MA 01451

FROM: Juno Construction LLC
6 Courthouse Lane, Unit 3
Chelmsford, MA

I hereby authorize Harvard Press to bill me directly for the legal notice published for a public hearing with the Harvard Conservation Commission.

Signed: *Limkuot Tw* As Agent of Owner/Applicant
Owner or Authorized Applicant from Form A part C

FORM F

Wetland filing fees calculation worksheet for work in resource areas

	Fee	Total
<u>Notice of Intent Fees</u>		
1) <i>Single family</i>		
Septic Repair or Upgrade (Enter Fee & Skip to Total Fee)	\$200.00	_____
New Construction or alteration involving 500sf or less of total construction	\$300.00	_____
New Construction or alteration involving 501sf to 1499sf of total construction	\$600.00	_____
New Construction or alteration involving 1500 sf or more of total construction	\$900.00	_____
2) <i>Subdivision/mini Subdivision</i>		
Roads and Utilities only	\$1,500.00	<u>\$1,500.00</u>
Multifamily/Condominium Structures construction	\$1,500.00	<u>\$1,500.00</u>
3) <i>Commercial or Industrial Projects</i>	\$1,500.00	_____
<u>Additional charges under a Notice of Intent for disturbance within the buffer zone</u>		
1) Disturbance within the buffer zone	33,078 sf	x 0.25 = <u>\$8,269.50</u>
2) Confirmation delineated wetland line	_____ linear ft	x 0.50 = _____
3) Alteration or replication of wetlands	_____ sf	x 1.00 = _____
TOTAL FILING FEE		_____
Fee doubled if Notice of Intent is filed after work began or an Enforcement Order was issued		_____
<u>Other fees</u>		
Request for an amendment to an Order of Conditions	\$200.00	_____
Request for an extension to an Order of Conditions	\$125.00	_____
Request for a reissued Certificate of Compliance	\$100.00	_____
Request for an Emergency Certificate of Compliance	\$200.00	_____
Request for an Emergency Certification Form	\$200.00	_____
Request for Certificate of Compliance with Expired OOC or Partial Certificate of Compliance	\$125.00	_____
Request for Determination of Applicability (RDA)	\$100.00	_____
Abbreviated Notice of Resource Area Delineation (ANRAD) (Minimum \$100.00, Maximum \$1,500.00)	_____ linear ft	x \$1.50= _____

Note: These fees are in addition to recording and advertising fees, and to the State Wetlands Program Fees charged under MGL. Ch. 131 Sec.40 and 310 CMR 4.10(8)(n).

TOTAL FEE PAYABLE TO THE TOWN OF HARVARD

\$11,269.50

See Waiver Request Form C



November 2, 2023

Town of Harvard
Conservation Commission
13 Ayer Road
Harvard, MA 01451

**Subject: Peer Review Comments Response
Notice of Intent – MassDEP File No. 177-0733
The Village at Robin Lane
At Old Mill & Ayer Road
Harvard, MA**

Dear Commission Members:

On behalf of the proponent, Juno Construction, LLC, GPR submits the following responses to the comments from the following review comments document:

- **“Peer Review – Notice of Intent (NOI) MassDEP File No. 177-0733” as prepared by Beals and Thomas. Dated September 5, 2023. Project No. 3241.04.**

The responses below are intended to address these comments, while summarizing revisions made to address them. Responses from GPR are shown below in **green**.

MassDEP Technical Review Comments:

1. While surface basins and mitigation may be deducted from Riverfront Area impact calculations towards the 10% provided there is not a practical alternative, they should still be quantified for review. Please provide the quantified area of alteration to RFA.
The area of temporary impact within the Riverfront Area as required for the installation of the surface infiltration basin is approximately 15,300± SF, which is approximately 8.1% of the total onsite Riverfront Area of 188,480± SF. The area for said temporary impact is exclusively within the 100-ft to 200-ft Riverfront Area limit.
2. The Applicant should explore and provide information on practical alternatives like subsurface options beneath paved areas to reduce impact to RFA as well as including LID methods. The Commission may want to consider the impact to mature trees when considering the proposed stormwater BMPs.

Goldsmith, Prest & Ringwall, Inc.

The proposed infiltration basin has been located at an area outside of other onsite constraints such as the onsite public water supply wells and their associated Zone 1 Radius, onsite communal subsurface sewage disposal system with sufficient offset requirements per Title V, and outside of the Town of Harvard's 50-ft Wetland No Disturb Buffer Limit. The proposed drainage system also must be located vertically lower than the rest of the development in order to capture and treat stormwater runoff as required per the Massachusetts Stormwater Management Standards. Subsurface options beneath paved areas are not possible due to the proposed utilities.

3. *Were there any LID or alternative BMPs considered or proposed that would reduce the footprint and minimize clearing for the BMPs. "The alternatives analysis may reduce the scale of the activity or the number of lots available for development..." Please use the alternatives analysis to review all reasonable layouts and explain why those configurations were not selected through the perspective of avoid, minimize, and mitigate. Please see 310 CMR 10.58(4)(c). No build does not explore practical alternatives. All proposed alternatives must also meet performance standards. Soil test pits are required at the location of any infiltration BMP to verify seasonal high groundwater and soil type. While there is a single test pit in the proposed infiltration basin, it is not situated near the bottom elevation and it appears to be from 1999. The Commission may wish to request updated data that is closer to the bottom elevation of where the basin is situated that confirms the depth is at least 2 ft to seasonal high groundwater and/or bedrock. Please provide soil test pit data as well as updated site plans with labeled test pits at the location of the proposed infiltration basin.*

The Applicant provided additional soil evaluation data as part of the Comprehensive Permit review process with the ZBA. In our opinion, that portion of the above comment has been addressed.

Although it would be entirely possible to reduce the number of dwelling units to allow for no impact within the 200-ft Riverfront Area, various town officials of the Town of Harvard had requested for more dwelling units than what's currently being proposed (12 Residential Duplexes) under this Chapter 40B filing. Given the aforementioned site constraints and the design requirements to meet the Massachusetts Stormwater Management Standards, we feel reducing the number of proposed dwelling units to eliminate the limited Riverfront Area alternation (2,986± SF, 1.58% of total onsite Riverfront Area) is neither practical nor beneficial to the Applicant, the Town of Harvard, or the Commonwealth of Mass.

A reduction in the number of dwellings would allow the public water supply (PWS) wells to shift further away from the wetlands and Riverfront Area, but doing so shifts the Zone 1 radii of the PWS wells, causing further dwelling reduction to the point the project become uneconomically feasible.

Additionally, if the PWS wells were proposed at near the intersection of Ayer Road and Old Mill Road, the minimum associated Zone 1 area would be entirely out of the resource areas, however, the access and much of the development would be located much closer and into the wetland buffer and Riverfront Area.

4. Pretreatment is required for an infiltration basin to achieve 80% TSS removal, see V2, Ch 2, p86. Please revise TSS worksheet as credit appears to have been taken for the pretreatment itself in addition to 80% for infiltration BMPs that can only be credited with pretreatment, see V1, Ch1, p11. Each treatment train requires its own worksheet. Pretreatment shown as "SP" is limited to the treatment provided by the Silt Prison Insert within the catch basins, to meet the minimum required 44% TSS removal rate as required to discharge near or to a critical area. The treatment credit shown as "FB / INF" accounts

for both the sediment forebay and infiltration basin, making up the 80% TSS removal rate as shown, with FB being a sediment forebay.

NOI Review Comments:

5. The narrative addressing the Riverfront Area (RFA) performance standards in 310 CMR 10.58(4)(1)b notes that work within the inner 100-foot RFA is temporary for the installation of the drinking water supply wells. However, an access road is shown as a permanent post-project condition (100-foot RFA not shown), and we presume that the vegetation surrounding the wells will need to remain cleared. We request that the Applicant provide an updated performance standard evaluation that considers this permanent RFA impact.

As an access path is required for the maintenance of the proposed public water supply wells, stormwater management system, and communal septic system, the gravel access road is intended to be a permanent project feature, but only to serve as a base for maintenance vehicle access while allowing vegetation to regrow. Vegetation leading down the access road and surrounding the public supply wells will need to be cleared during the initial installation but will be loamed and seeded in the post-project condition.

The area surrounding the wells and leading up to the limit of tree clearing will be allowed to be naturalized as access to the area is limited to the maintenance of the wells as needed. Additionally, the site plan shall be revised to show gate and fence at the limit of tree clearing to prevent unauthorized vehicles from using this access. Gravel access way detail shall also be revised to provide loam and seed over the gravel base.

6. In the RFA Alternatives Analysis, the Applicant maintains that the installation of the three wells within the RFA may be considered an exempt activity. However, we note that 310 CMR 10.02(b)2.i only exempts utility work within a paved roadway or driveway, and not within an existing forested RFA. Therefore, this exemption does not appear to be applicable. We request that the Applicant provide additional information documenting the exemption, or otherwise address the apparent discrepancy.

Yes, we agree that the installation of the three wells is not an exempt activity. The installation of the PWS wells and gravel access way have been accounted for within the Riverfront Area disturbance. Furthermore, A waiver request from the Harvard Wetland Bylaw has been provided to address proposed work as described.

7. We request that the Applicant expand the Alternatives Analysis to fully address the requirements of 310 CMR 10.58(4)(c).

See response comment No. 3.

8. There is a channelized flow path that crosses the southerly portion of the Property and discharges water directly into a finger of the Bordering Vegetated Wetland (BVW) in the vicinity of WF-40B through WF-44B. This flow will be piped around the proposed development and discharge south of the existing channel. Although topography is such that the flow will reach the overall wetland system, we request that the Applicant evaluate if the hydrology of this BVW finger will be impacted and whether the pipe should be extended to the existing topographic swale.

The proposed pipe was located outside of the wetland buffer and Riverfront Area to minimize further disturbance and tree clearing. Furthermore, the proposed grading directly downgradient of said pipe will create a path to allow flow to continue further down into the natural channel and into the BVW fingerlike projection.

9. There appears to be a minor discrepancy in the depiction of the FEMA Zone AE elevation on the plan and how it is depicted in the Flood Insurance Rate Maps (FIRMs). The site plans depict this Zone AE as Elevation 235.5 throughout the Property, but there is an on-site transect on the FEMA panel down to 235.4 (Panel No. 25027C0312E). While this is a minor discrepancy, we note it for the administrative record as the elevation depicts the boundary of Bordering Land Subject to Flooding (BLSF) and request that it be evaluated and corrected.

Acknowledged. Although the proposed development does not encroach upon the FEMA Zone AE, the site plan shall be revised to provide notation for the section of the FEMA Zone AE Elevation 235.5 and Zone AE Elevation 235.4.

10. The site plans refer to the use of hay bale BMPs for erosion and sediment control. We request that the Applicant consider the use of straw bales rather than hay given the propensity of the latter to contain seed mass of invasive species.

Agreed. The site plan shall be revised to replace hay bales with straw as recommended.

11. The proposed dewatering detail (Sheet C6.1) contains the use of flocculant crystals on the bed of hay bales. We request that the Applicant consider avoiding the use of flocculants, especially given the proposal to install three drinking water supply wells in the down-gradient area. Further, additional monitoring requirements may apply to the project with the use of flocculants under the 2022 Construction General Permit (CGP).

Agreed. The site plan shall be revised to remove the use of flocculant crystals and hay shall be replaced with straw as recommended.

Sincerely,
Goldsmith, Prest & Ringwall, Inc.



Limhuot Tiv, PE

Copy to: 211140
Walter Erikson

Attachments:

Town of Harvard Notice of Intent Application Filing

- Form A – Notice of Filing
- Form B – Notification to Abutters
- Form C – Request for Waiver
- Form D – Permission for Access
- Form E – Permission to Bill Applicant for Legal Notice
- Form F – Wetland Filing Fees Calculation

OFFICE OF THE
CONSERVATION COMMISSION

13 AYER ROAD HARVARD, MA 01451

978-456-4100 EXT.421


www.harvard-ma.gov



MEMORANDUM

DATE: December 4, 2023

TO: Harvard Zoning Board of Appeals

FROM: Harvard Conservation Commission 

RE: Requested Exemptions – The Village at Robin Lane

The Harvard Conservation Commission has reviewed the requested exemptions to the Code of the Town of Harvard Chapters 119 Wetland Protection Bylaw and 147 Wetland Protection Bylaw Regulations submitted on behalf of Juno Construction LLC for the above-mentioned development and have the following recommendations:

Wetland Protection Bylaw Section 119-4E: At the time of an application, the applicant shall pay a filing fee specified in regulations of the Commission. The fee is in addition to that required by the Wetlands Protection Act and the regulations promulgated thereunder.

The Commission recommends the fee collected under the Wetland Protection Bylaw be reduced from \$11,269.50 to \$8000.00 to provide for the cost associated with the administering and monitoring the project by the Conservation Agent.

Wetland Protection Bylaw Regulations, Chapter 147

Section 147-6C Filling Fees – See comment above

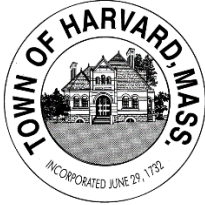
Section 147-12 Setbacks: No disturb zone in which there shall be undisturbed natural vegetation, 50-foot setback

With no other alternatives to locate the Public Water Supply (PWS) wells on the site, other than those that would make the project uneconomical, the Commission recommends the issuance of this waiver to allow for the proposed PWS wells and an associated gravel access road within the 50-foot “No disturb zone”.

Section 147-14C Stormwater Management

For the applicant to comply with the Commission’s Stormwater Management regulations two additional drainage basins would be required, which would result in additional clearing of the site resulting in potential adverse impacts to the wetland resource areas, therefore the Commission recommends the issuance of this waiver.

Please note these waivers are being recommended based on the Applicant’s willingness to work with the Commission on additional measures outside of the Commission’s jurisdiction of the wetland resource areas and the associated buffer zones to best protect those resources, such as the addition rain gardens in areas that have been proposed as lawn areas.



HARVARD DESIGN REVIEW BOARD

Memo

Date: 26 OCTOBER 2023
To: Richard Cabelus, Chair of Planning Board
Cc: Members of the Planning Board
From: Frank O'Connor, Jr., Dir. of Planning
RE: Design Review Board comment on proposed 40-B at Old Mill & Ayer roads

The Design Review Board members had a virtual meeting regarding the proposed 40-B to build twenty-four units of housing in twelve duplex residential buildings at Old Mill and Ayer Roads. The applicant, Mr. Walter Eriksen, requested to speak to the Design Review Board even though the proposal was not a commercial development.

Mr. Bruce Ringwall presented for the applicant and began by sharing a site plan which delineated wetlands setbacks and elevations and the layout of the proposal. He spoke about the 11.5 acre site with 3.5 acres for development with a septic system, leaching field and drainage. He highlighted where the water supply is to be located and emphasized that the proposal meets the newer Cornell stormwater guidelines and a cistern and dry hydrant located as specified by the Harvard Fire Department. The applicant's team showed how terracing and tree vegetation will help conceal the development from Ayer Road and that all units will have basements. The trail across the property will remain, with additional trails and a pocket park on the site.

The architectural floor plans show each unit is a mirror image of the other unit sharing the duplex. There was a discussion about the layout of each floor plan and that there are some units with a home office. A member of the DRB expressed concern how this might be utilized as a bedroom. Ringwall showed renderings from the front and of each duplex, highlighting decks or patios of the back of each unit. There was discussion about the façade, windows for each unit, as well as materials. One question was about the screening from the Ayer Road side of the proposed development. It was explained that the design utilizes the slope of the site as a buffer along Ayer Road and how the plantings would help conceal the buildings.

The Harvard Climate Initiative Committee had expressed its pleasure with the way the project proposed to use energy efficient insulation and utilities and that there would be some changes to plantings based on the recommendations of the HCIC. There was a detailed explanation of what would be planted throughout the site.

The DRB inquired about landscape maintenance and responsibility for service contracts with wells, septic system, plowing roads and mowing lawns. The developer said he thought there might be space for a community garden area. Ringwall added that the reasonable yard area for each unit was about 25 to thirty feet behind each unit and half the distance between each unit, which vary between buildings.

The DRB asked about the appearance and the materials of the siding and the garage doors and window types. The developer told the DRB that it would be vinyl siding with PVC or composite trim. He said they could be using a six over six, very energy efficient window and that the garage door would be insulated. These features helped to obtain a HERS rating of a ten, making the units energy efficient and that the units would be all electric utilities. The DRB asked if the first pair of units were able to have a small bump out add character to the rear of the buildings. The developer thought it might be possible.

The DRB expressed concern about the original layout for Craftsman Village and how it changed at construction. The developer's team said the issues at Craftsman Village would not happen at this proposed development because those issues had all been addressed upfront. The topic of parking at the site was raised. While each unit will have two parking spots and that there would be twelve guest spaces, the DRB expressed concern this would not be sufficient if someone were having a party.

The attorney for the developer discussed how the condo association would bring in a management service company would be utilized to negotiate contracts for services. Exterior lighting was discussed and the developer said there would be no street lights in the development. He felt the exterior lighting on the buildings would provide sufficient safety lighting throughout the development and that there might be lighting in the gazebo / bus stop.

The developer said he expects to break ground in Spring 2024 and complete the project within two years. This project will add six more units for the affordable inventory. A Notice of Intent has been submitted to the Conservation Commission. The wells still need to be permitted by Massachusetts Department of Environmental Protection. The developer said that road system would go in first and then a few units as models, and after that it would be market driven with construction in the front of the development closest to Old Mill Rd.

Town of Harvard
13 Ayer Road
Harvard, MA 01451Invoice number 3241.04-1
Date 10/31/2023Project **3241.04**
The Village at Robin Lane
Old Mill Road at Ayer Road
Harvard, MA

FOR PROFESSIONAL SERVICES RENDERED: this period through October 31, 2023

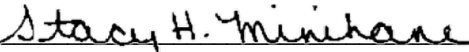
Services to undertake a peer review of The village at Robin lane (Old Mill Road at Ayer Road) Notice of Intent application. Specifically, during this period we coordinated with the Town staff regarding our review services; and, we issued our initial review comments in a letter to the Conservation Commission dated October 30, 2023.

NOI Review

	Hours	Amount
Senior Professional Staff III	1.50	307.50
Senior Professional Staff V	4.25	743.75
Senior Professional Staff VI	12.25	1,960.00
NOI Review subtotal		3,011.25

Supplemental Review Allowance

	Hours	Amount
Administrative Staff I	0.50	40.00

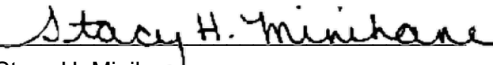
Invoice total **3,051.25**By: 
Stacy H. Minihane
Principal

Town of Harvard
Zoning Board of Appeals
13 Ayer Road
Harvard, MA 01451
Frank O'Connor, Jr.Invoice number 3241.03-3
Date 10/31/2023Project **3241.03**
The Village at Robin Lane
Old Mill Road at Ayer Road
Harvard, MA

FOR PROFESSIONAL SERVICES RENDERED: this period through October 31, 2023

Services to undertake a peer review of The village at Robin lane (Old Mill Road at Ayer Road) Comprehensive Permit application. During this period, we participated in virtual working session with the Town Planner and representatives of the Applicant on October 3, 2023 to review outstanding items relative to our initial review comments; we issued our supplemental review comments in a letter to the Zoning Board of Appeals dated October 3, 2023; and, we attended the virtual public hearing for the project on October 10, 2023.

Hearing	Hours	Amount
Senior Professional Staff V	2.25	393.75
Supplemental Review Allowance	Hours	Amount
Senior Professional Staff III	0.75	153.75
Senior Professional Staff V	0.75	131.25
Senior Professional Staff VI	0.25	40.00
Supplemental Review Allowance subtotal		325.00
Coordination	Hours	Amount
Senior Professional Staff V	1.25	218.75
Invoice total		937.50

By: 
Stacy H. Minihane
Principal