

SITE DATA

LOT AREA:	11.03± AC. (480,379± SF)
WATER SUPPLY:	PUBLIC WATER SUPPLY
APPROXIMATE WATER USE:	1,622 GPD FOR BLDG A, 930 GPD FOR BLDG B, 600 GPD FOR BLDG C
SEWAGE DISPOSAL:	ONSITE SEWAGE DISPOSAL SYSTEM
APPROXIMATE SEWAGE FLOW:	1,622 GPD FOR BLDG A, 930 GPD FOR BLDG B, 600 GPD FOR BLDG C
ZONING DISTRICT:	COMMERCIAL - C
OVERLAY DISTRICT:	WIRELESS COMMUNICATION
PROPOSED GFA:	
BUILDING A	29,998 SF
BUILDING B	11,400 SF
BUILDING C	8,000 SF
TOTAL	49,398 SF (10.28% OF 480,379 SF)

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 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 CONSIDERED AS AN EXHAUSTIVE LISTING OF ALL WORK REQUIRED. CONTRACTOR SHOULD CONTACT ENGINEER WHEN FURTHER CLARIFICATION OF DEPICTED WORK IS DESIRED.
- CONSTRUCTION OF FIRE WATER SUPPLY IMPROVEMENTS SHALL CONFORM TO TOWN OF HARVARD REQUIREMENTS.
- CONSTRUCTION OF DOMESTIC WATER SUPPLY IMPROVEMENTS SHALL CONFORM TO UTILITY OWNER 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.

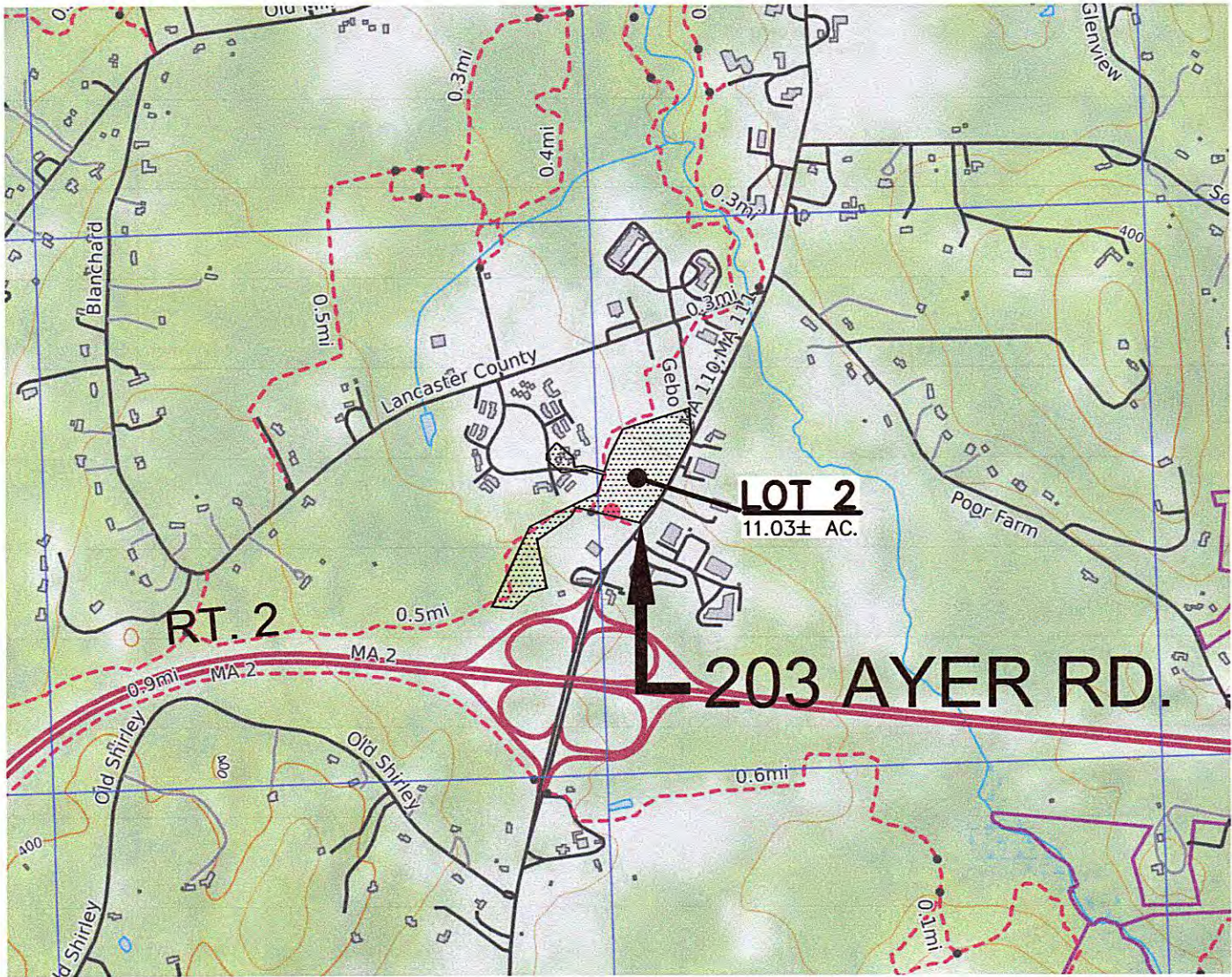
REGULATORY NOTES

- 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.

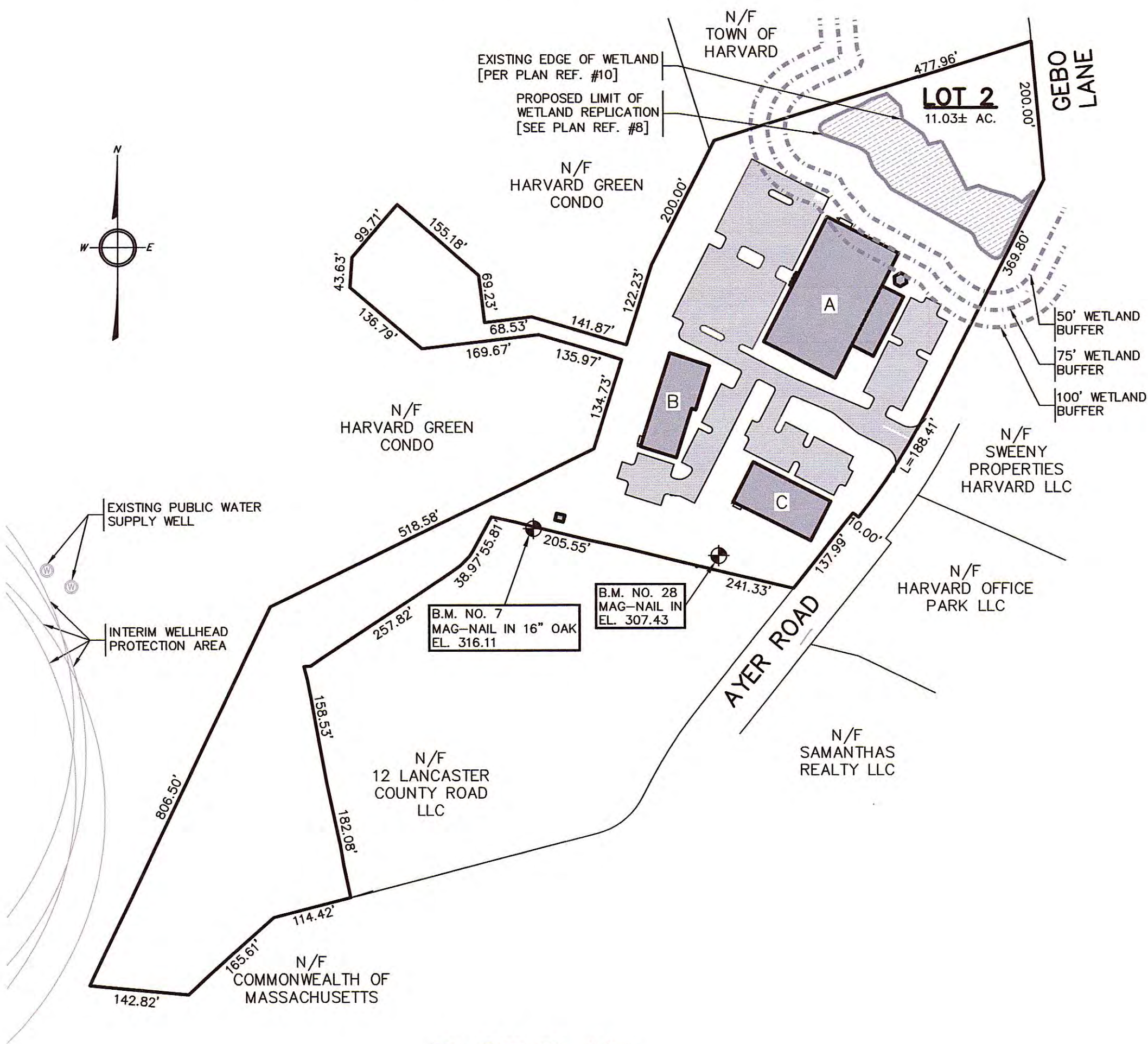
PLAN REFERENCES

- "SUBSURFACE SEWAGE DISPOSAL SYSTEM-UPGRADE-203 AYER ROAD, HARVARD, MA" PREPARED FOR WHEELER REALTY TRUST BY GOLDSMITH, PREST & RINGWALL, INC. DATED FEBRUARY 2022, REVISED THROUGH 7/25/22 . GPR JOB #201009A.
- "SUBSURFACE SEWAGE DISPOSAL SYSTEM FOR: LOT 2 AYER ROAD, HARVARD MA" DESIGNED FOR GEBO LANE REALTY TRUST & BERNICE TAVERAS. BY GOLDSMITH, PREST & RINGWALL, INC. DATED MARCH 1998. GPR JOB #97-264.
- "LOT 2, AYER ROAD, SEWAGE DISPOSAL WORKS CONSTRUCTION PERMIT" ISSUED BY THE HARVARD BOARD OF HEALTH. OWNED BY BERNICE TAVERAS & GEBO LANE REALTY TRUST. DATED JULY 10, 1998.
- "PARTIAL CONSTRUCTION RECORD PLAN-SUBSURFACE SEWAGE DISPOSAL SYSTEM-LOT 2 AYER ROAD, HARVARD, MA" PREPARED FOR GEBO LANE REALTY TRUST & BERNICE TAVERAS BY GOLDSMITH, PREST & RINGWALL, INC. DATED NOVEMBER 1998. GPR JOB #97-264.
- "SUBSURFACE SEWAGE DISPOSAL SYSTEM-CONSTRUCTION RECORD PLAN" PREPARED FOR HARVARD GREEN DEVELOPMENT CORP. BY GOLDSMITH, PREST & RINGWALL, INC. DATED MARCH 18, 1997. REVISED THROUGH 7/2/98.
- "PLAN OF LAND, HARVARD, MASSACHUSETTS" PREPARED FOR HARVARD GREEN DEVELOPMENT CORP. BY DILLIS & MISCHKE, INC., SCALE 1" = 80'. DATED SEPTEMBER 1997. APPROVED ON 9/22/97.
- "SUBSURFACE SEWAGE DISPOSAL SYSTEM" PREPARED FOR HARVARD GREEN DEVELOPMENT CORP. BY GOLDSMITH, PREST & RINGWALL, INC., PLAN NO. 96-507:SDS01, DATED MARCH 1997, REVISED JUNE 23, 1997.
- COMMERCIAL DEVELOPMENT - NOTICE OF INTENT - 203 AYER ROAD, HARVARD, MA" PREPARED FOR YVONNE CHERN AND WHEELER REALTY TRUST BY GOLDSMITH, PREST & RINGWALL, INC. DATED MARCH 2022. GPR JOB #211009.
- "COMMERCIAL DEVELOPMENT-203 AYER ROAD, HARVARD, MA" PREPARED FOR WHEELER REALTY TRUST BY GOLDSMITH, PREST & RINGWALL, INC. DATED JULY 2021. REVISED THROUGH 09/09/21. GPR JOB #211009A.
- "WPA FROM 5--ORDER OF CONDITIONS-203 AYER ROAD, HARVARD MA" PREPARED FOR WHEELER TRUST BY THE HARVARD CONSERVATION COMMISSION. DATED 09/30/21. MASS DEP FILE #177-0707.
- "BACKWASH DISPOSAL SITE PLAN - 196 AYER ROAD HARVARD, MA 01451" PREPARED FOR AYER ROAD PROPERTIES, LLC, BOWERS BROOK, LLC AND WHEELER REALTY TRUST BY PROVENCHER ENGINEERING, LLC. DATED AUGUST 19, 2013. REVISED 08/19/13.
- "BRP WP70 ALTERNATIVE DESIGN FLOW FOR TITLE 5 SYSTEM - HARVARD BADMINTON CENTER, 203 AYER ROAD, HARVARD, MA 01451" AS ISSUED BY MASSEDP. DATED JULY 5, 2022. TRANSMITTAL NUMBER 22-WP70/70A-002-APP.
- "203 AYER RD" PHOTOMETRIC LIGHTING PLAN - BUILDING A, PREPARED FOR GOLDSMITH, PREST & RINGWALL, INC. BY MAXLITE, DATED SEPTEMBER 9, 2022.
- "203 AYER RD BUILDINGS B -C" PHOTOMETRIC LIGHTING PLAN, PREPARED FOR GOLDSMITH, PREST & RINGWALL, INC. BY MAXLITE, DATED DECEMBER 6, 2022.

Ayer Road Village Special Permit  
& Mixed Use Village Development  
203 AYER ROAD  
HARVARD, MA



VICINITY MAP  
SCALE: 1" = 1,000'



PLOT PLAN  
SCALE: 1" = 150'

ZONING

Parameter	Underlying District		Ayer Road Village Special Permit		Remarks
	Zoning Section	Requirement	Zoning Section	Requirement	
Zoning District	125-23	Commercial - C	125-23	Commercial - C	
Overlay District	125-42		125-42		Wireless Communication Overlay District
Proposed Use	125-14.D	Large-scale Commercial Use	125-14.D	Large-scale Commercial Use	Planning Board Special Permit Required for use
	125-12	Small-scale Commercial Use	125-12	Small-scale Commercial Use	Allowed
	125-13	Medium-scale Commercial Use	125-13	Medium-scale Commercial Use	Allowed
Lot Area	125-13.Z	Medium-scale Commercial Use	125-13.Z	Multi-Family	Allowed
	125-29.B.(1)	1.5 AC	125-52.B	300 FT	11.03 AC (480,379 sf)
Frontage	125-29.B.(2)	180 FT	125-52.B	300 FT	904 FT of frontage provided
Lot Width	125-29.B.(2)	200 FT at 120 FT from roadway center line	125-52.G.1(a)	permit alt. bldg. siting without regard to lot width circle	200 ft lot width provided
Lot Shape	125-29.I	30 max build factor			8.88 build factor
Yard	Front	125-30.E.(4)	20 FT, 60 ft abutting AR district		Underlying District setbacks met
	Side & Rear	125-30.E.(3)	20 FT, 60 ft abutting AR district		Underlying District setbacks met
Total Floor Area	125-30.B	10% of land area	125-52.G.2	20% of land area	
Building Height	125-30.C	35 FT, 3 stories Max.			< 35 ft provided
Parking	125-39.A.(3)	20-ft wide green area every 160 ft			Alternatively, 10-ft wide green area every 80 ft of length
	125-39.A.(3).(a)	9x19' stall with 24' aisle			
Open Area	Buffer Strip	125-39.C.(1)	20-ft buffer strip around perimeter		
	Total Green Area	125-39.C.(2)	50% of lot area		74.7% Green Area Provided
Wetlands Bylaw	local bylaw	No Structure within 75 ft. No disturbance within 50 ft. within 200 ft of riverbank			from edge of wetlands and water bodies
MDEP Riverfront Area					none on site
FEMA Floodplain					none on site
WVPA					none on site
NOTES:					
[1] Reference to section of The Protective Bylaw, where applicable					
ABBREVIATIONS:					
SF=square feet; FT=feet; AC=acres; PB=Planning Board; ZBA=Zoning Board of Appeals; WVPA=interim wellhead protection area; OSPD=Open Space Preservation Development					

PARKING COMPUTATIONS

USE	REQUIRED SPACES	PROPOSED SPACES (# OF HANDICAP SPACES)
Building A	N/A	120 (5)
Building B	N/A	24 (1)
Building C	N/A	25 (1)

COVERAGE COMPUTATIONS

PARAMETER	AREA (ACRES)	AREA (SQUARE FEET)	FRACTION OF TOTAL LOT AREA (%)
EXISTING CONDITION			
Lot Area	11.03±	480,379±	100%
Building Footprint	0	0	0%
Other Impervious Area	0	0	0%
Total Impervious Coverage	0	0	0%
DEVELOPED CONDITION			
Lot Area	11.03±	480,379±	100%
Building Footprint	0.98±	42,613±	8.9%
Other Impervious Area	1.81±	78,757±	16.4%
Total Impervious Coverage	2.79±	121,370±	25.3%

SHEET INDEX

- C1.1 TITLE SHEET
- C2.1 EXISTING CONDITIONS PLAN
- C3.1 SITE UTILITIES PLAN
- C3.2 SITE LAYOUT PLAN
- C4.1 GRADING AND PAVING PLAN
- C4.2 DRAINAGE PLAN
- C5.1 EROSION AND SEDIMENT CONTROL PLAN
- C6.1 CONSTRUCTION DETAILS
- C6.2 CONSTRUCTION DETAILS
- C6.3 CONSTRUCTION DETAILS
- L-1.01 PLANTING PLAN (BY FISHER DESIGN GROUP)

ASSESSORS REFERENCE

ASSESSORS PARCEL # 008-062-002  
OWNER PER ASSESSOR RECORD:  
WHEELER REALTY TRUST  
200 AYER ROAD  
HARVARD, MA 01451

APPROVED BY THE  
HARVARD PLANNING BOARD

\_\_\_\_\_  
CHAIR

\_\_\_\_\_  
APPLICATION FILED \_\_\_\_\_

\_\_\_\_\_  
HEARING DATE \_\_\_\_\_

\_\_\_\_\_  
PLAN APPROVED \_\_\_\_\_

DRAWING ISSUED FOR:

- ☐ CONCEPT
- ☐ CONSTRUCTION
- ☒ PERMIT
- ☐ CONSTRUCTION RECORD

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2	3/2/23	JFB	NMP	MUVD & PEER REVIEW COMMENTS
1	7/25/22	LT	NMP	PEER REVIEW COMMENTS
NO.	DATE	BY	APP.	REVISION DESCRIPTION

**GPR** Engineering Solutions for Land & Structures

**GOLDSMITH, PREST & RINGWALL, INC.**  
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www.gpr-inc.com

COMMERCIAL DEVELOPMENT  
SPECIAL PERMIT

TITLE SHEET

203 AYER ROAD  
HARVARD, MA

PREPARED FOR:  
YVONNE CHERN  
7 GREEN WAY  
WAYLAND, MA 01778

WHEELER REALTY TRUST  
198 AYER ROAD  
HARVARD, MA 01451

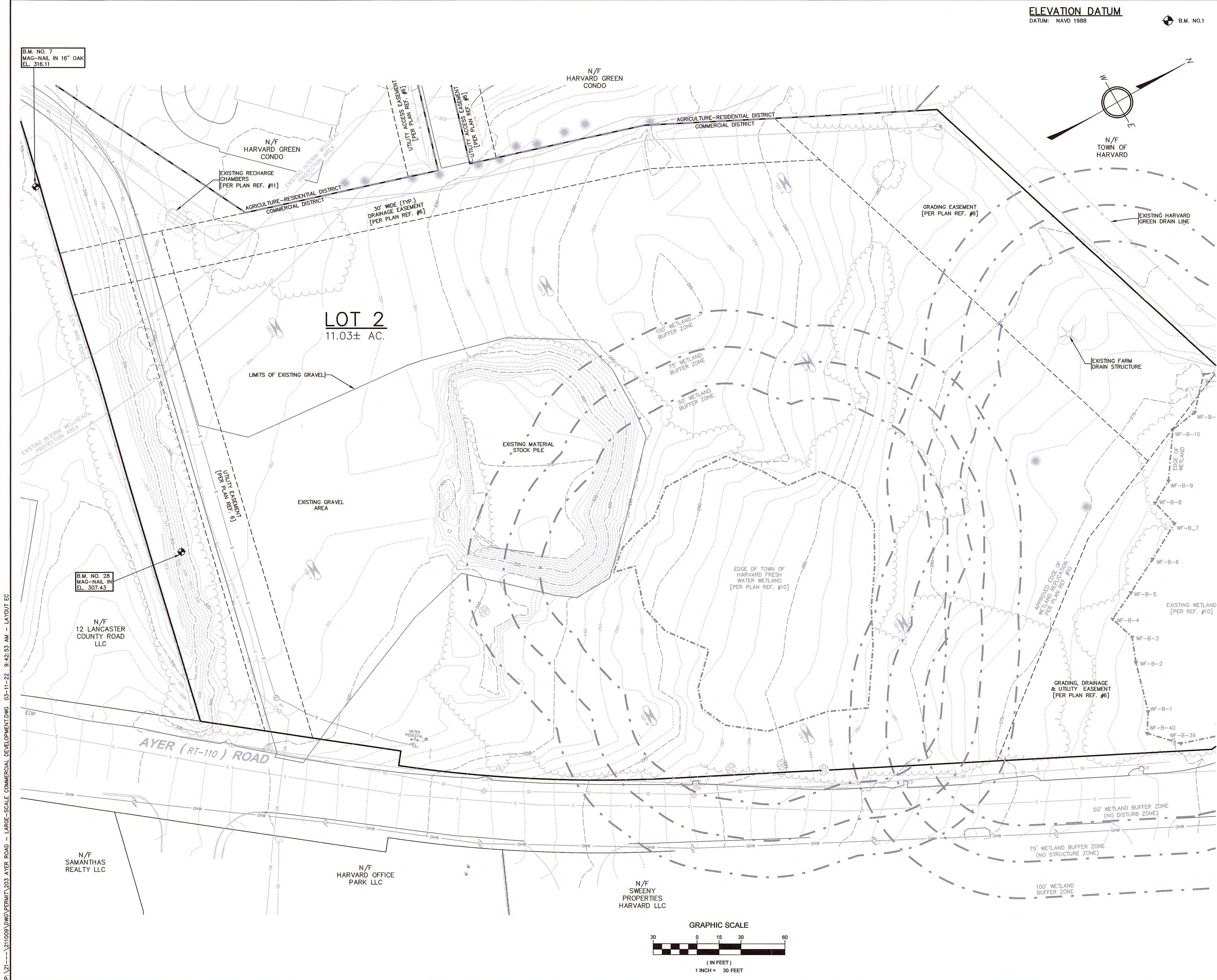
DES. BY: MCL  
CHK. BY: NMP

DATE: MARCH 2022

JOB 211009

C1.1





ELEVATION DATUM  
DATUM: NAVD 1988

B.M. NO.1

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
  - DRAIN
  - FOUNDATION DRAIN
  - CATCH BASIN
  - DRAIN MANHOLE
  - DEEP SOIL OBSERVATION HOLE
  - SITE LUMINAIRE
  - SIGN
  - STONE BOUND
  - DRILL HOLE
  - IRON ROD

ABBREVIATIONS

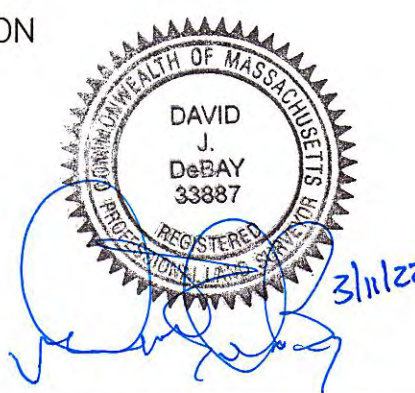
- |      |             |      |                           |
|------|-------------|------|---------------------------|
| EL   | ELEVATION   | HDPE | HIGH DENSITY POLYETHYLENE |
| INV  | INVERT      | PVC  | POLYVINYL CHLORIDE        |
| SF   | SQUARE FEET | RCP  | REINFORCED CONCRETE PIPE  |
| AC   |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

EXISTING CONDITIONS NOTES:

- EXISTING CONDITION INFORMATION BASED ON AN ON-THE-GROUND TOPOGRAPHIC SURVEY PERFORMED BY GOLDSMITH, PREST & RINGWALL, INC. DURING JUNE 2021 & SUPPLEMENTED WITH CONSTRUCTION RECORD INFORMATION SHOWN ON PLAN REF. #4 & #5.
- THE EDGE OF WETLAND DELINEATED BY MATTHEW S. MARRO ENVIRONMENTAL CONSULTING, INC. DATED JUNE 2021. PER ORDER OF CONDITIONS DEP FILE #177-0707 (PLAN REF. #10).
- SUBSURFACE UTILITIES SHOWN HEREON ARE BASED ON PLAN REF. #11.
- SEE COVER SHEET FOR PLAN REFERENCES.

DRAWING ISSUED FOR:

- |  |  |
|--|--|
| <input type="checkbox"/> CONCEPT           | <input type="checkbox"/> CONSTRUCTION        |
| <input checked="" type="checkbox"/> PERMIT | <input type="checkbox"/> CONSTRUCTION RECORD |



2	3/2/23	--	--	MUVD & PEER REVIEW COMMENTS
1	7/25/22	--	--	NO CHANGES ON THIS SHEET
NO.	DATE	BY	APP.	REVISION DESCRIPTION

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EXISTING CONDITIONS PLAN

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PREPARED FOR:  
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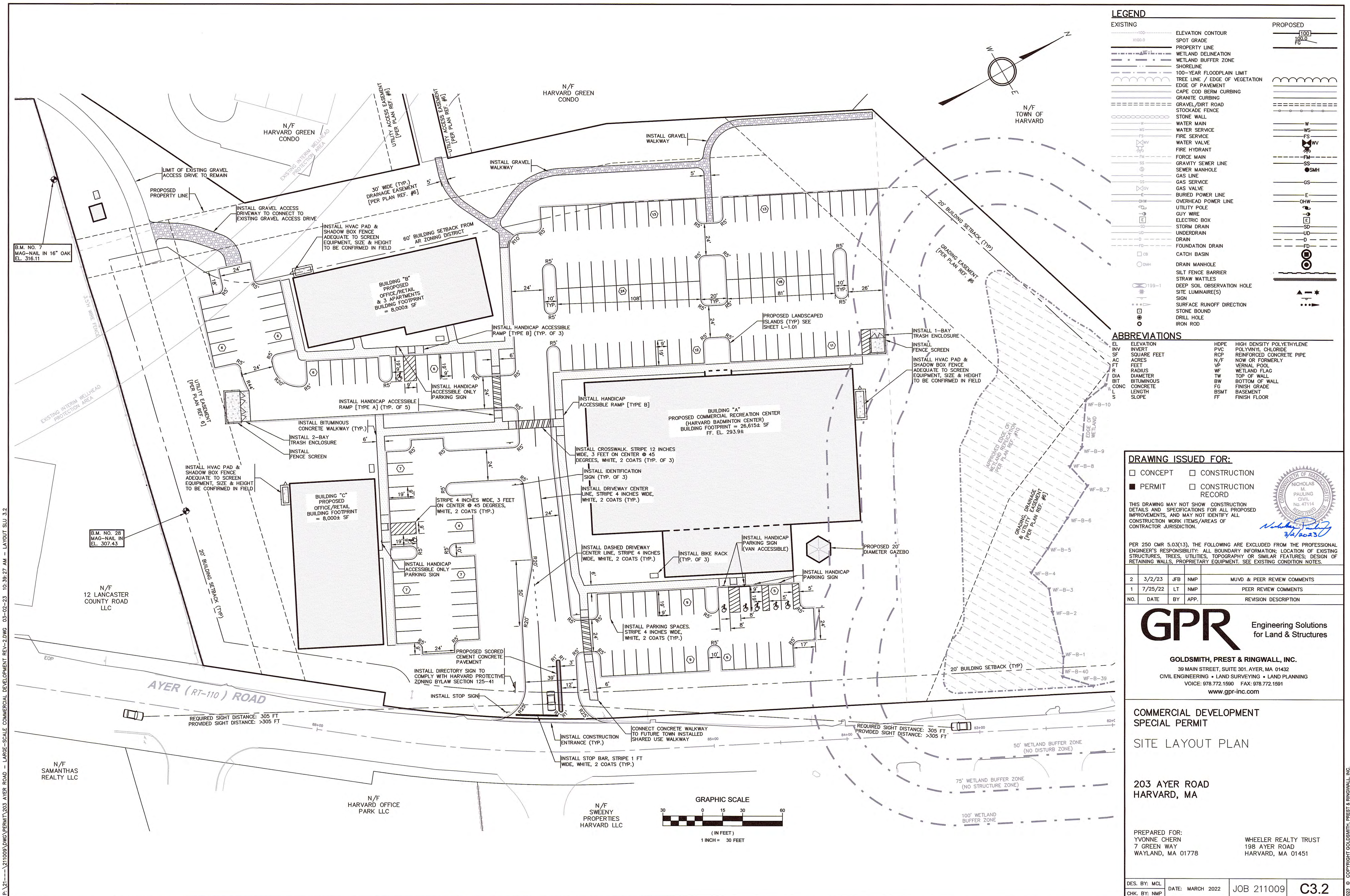
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DES. BY: MCL	DATE: MARCH 2022	JOB 211009	C2.1
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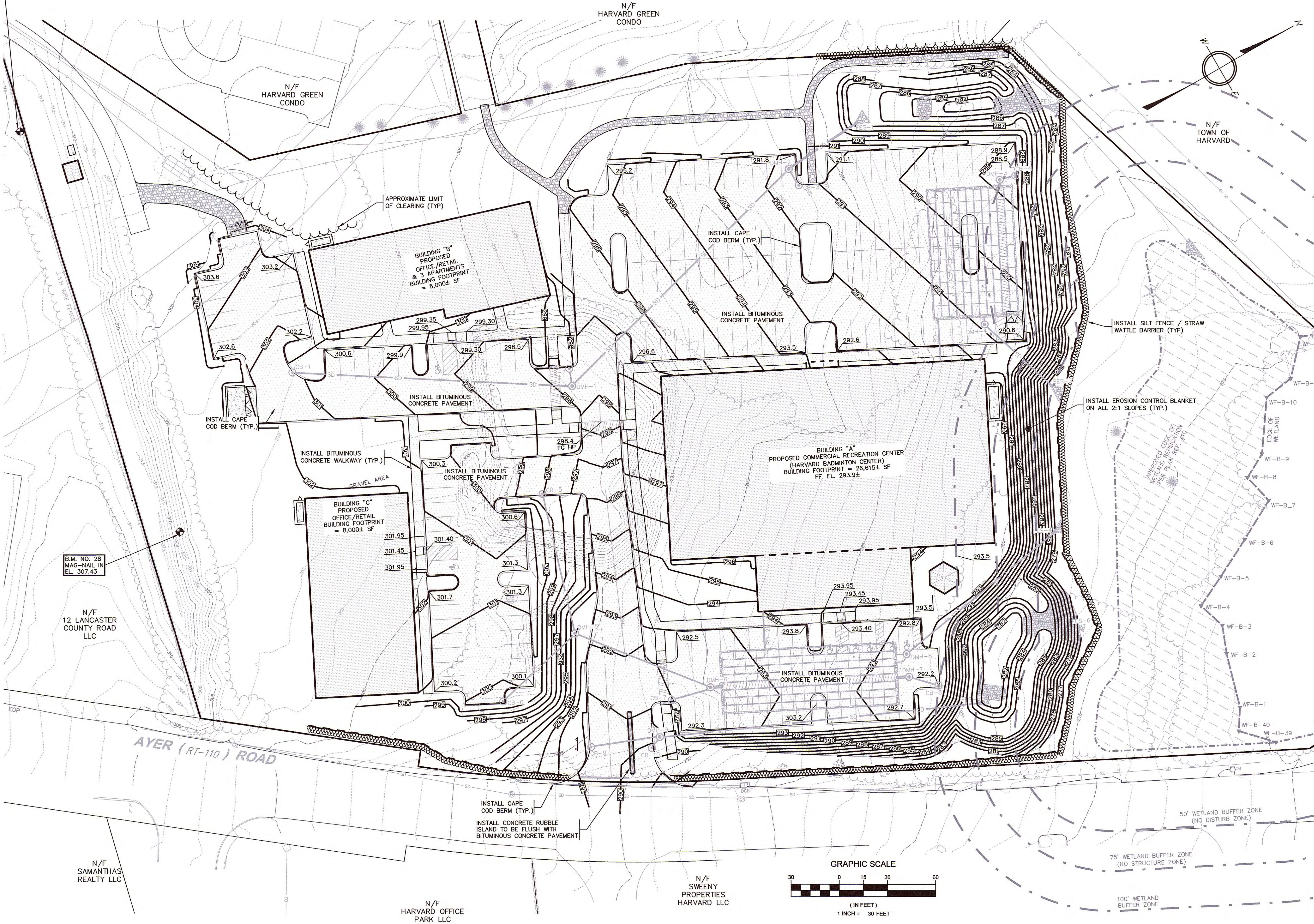






P:\21009\DWG\PERMIT\203 AYER ROAD - LARGE-SCALE COMMERCIAL DEVELOPMENT REV-2.DWG 03-02-23 10:26:36 AM - LAYOUT GSP 4:1

B.M. NO. 7  
MAG-NAIL IN 16" OAK  
EL. 316.11



#### LEGEND

EXISTING		PROPOSED
100	ELEVATION CONTOUR	100
X100.0	SPOT GRADE	100.0
---	PROPERTY LINE	FG
---	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	
W	WATER MAIN	W
WS	WATER SERVICE	WS
FS	FIRE SERVICE	FS
WV	WATER VALVE	WV
FM	FIRE HYDRANT	FM
FM	FORCE MAIN	FM
GS	GRAVITY SEWER LINE	GS
SMH	SEWER MANHOLE	SMH
GS	GAS LINE	GS
GS	GAS SERVICE	GS
GS	GAS VALVE	GS
E	BURIED POWER LINE	E
OHW	OVERHEAD POWER LINE	OHW
UT	UTILITY POLE	UT
GW	GUY WIRE	GW
EB	ELECTRIC BOX	EB
SD	STORM DRAIN	SD
UD	UNDERDRAIN	UD
D	DRAIN	D
FD	FOUNDATION DRAIN	FD
CB	CATCH BASIN	CB
DMH	DRAIN MANHOLE	DMH
SFB	SILT FENCE BARRIER	SFB
SW	STRAW WATTLES	SW
DSOH	DEEP SOIL OBSERVATION HOLE	DSOH
SL	SITE LUMINAIRE(S)	SL
SDIR	SURFACE RUNOFF DIRECTION	SDIR
SB	STONE BOUND	SB
DH	DRILL HOLE	DH
IR	IRON ROD	IR

#### ABBREVIATIONS

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

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- |  |  |
|--|--|
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#### GRADING AND PAVING PLAN

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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 BALE 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. DEVISE 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. DEVISE 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. DEVISE, 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: DRY GRASS OR STRAW, MACHINE BOUND WITH JUTE OR WIRE, APPROXIMATE SIZE EACH BALE 9" DIAMETER.
- 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. EXCELSIOR 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 EXCELSIOR 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

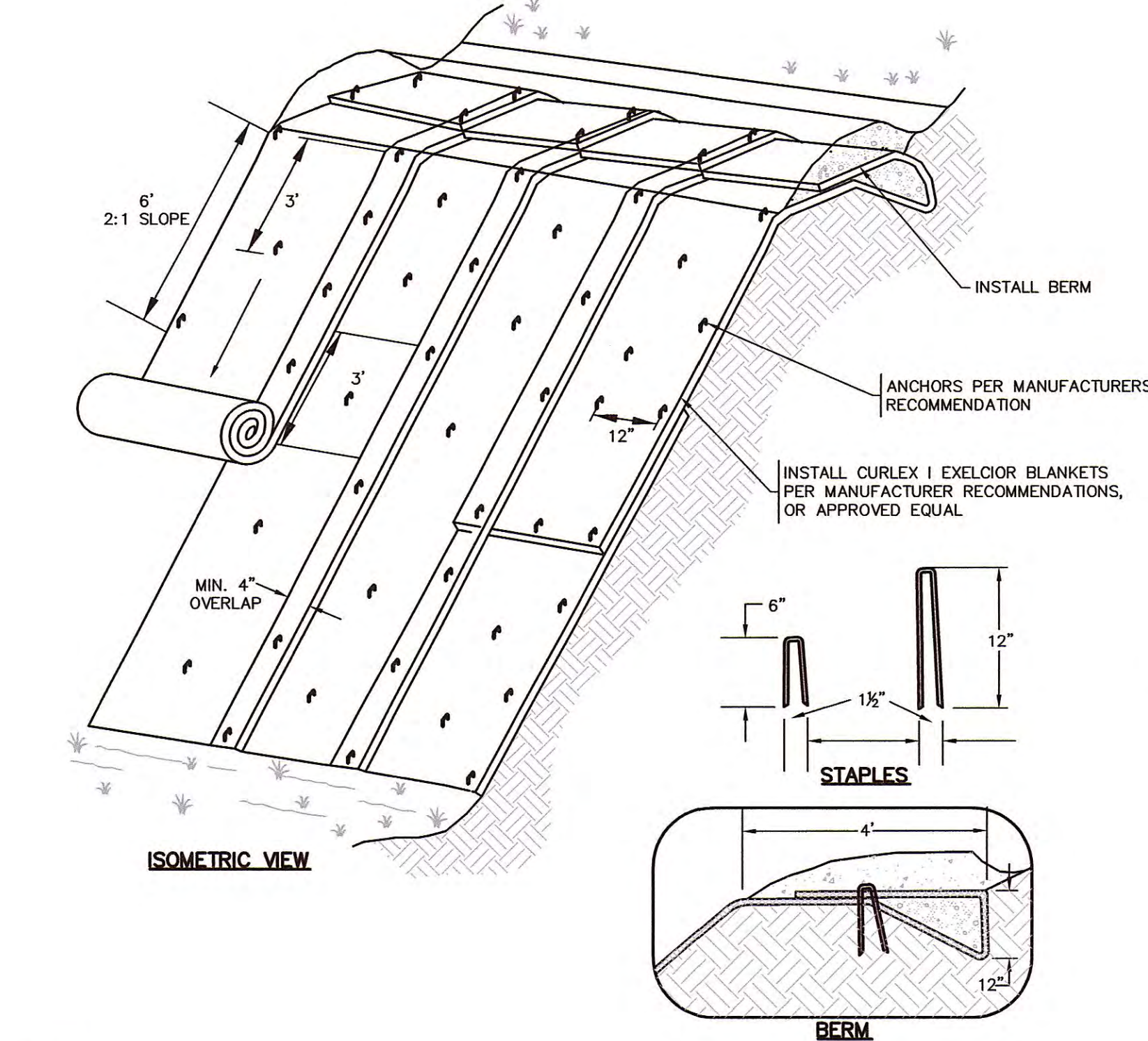
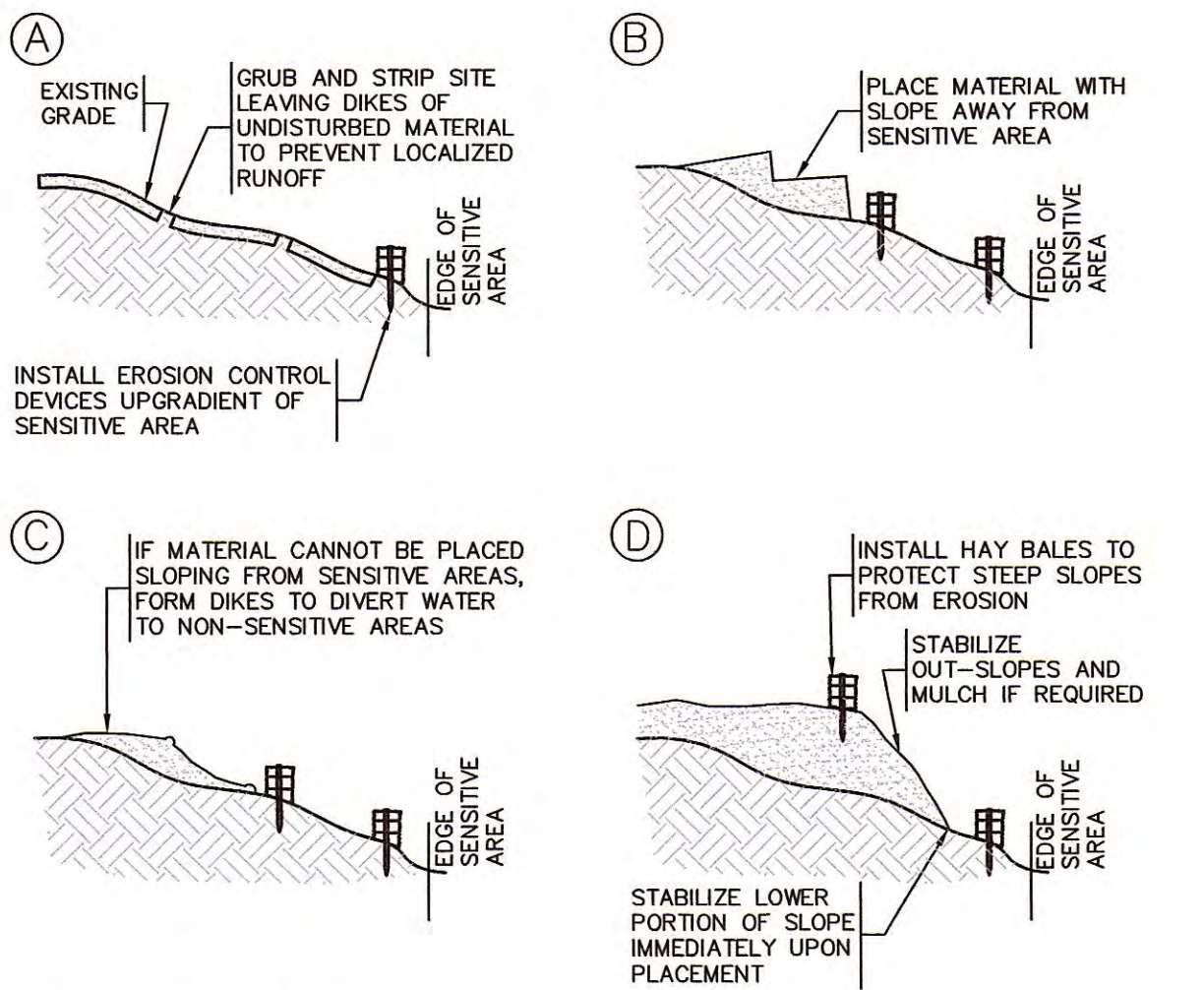
PART 3 – EXECUTION

- 3.01 THROUGHOUT CONSTRUCTION
- A. DEVISE WORK SEQUENCE SO AS TO LIMIT DRAINAGE AREA THAT IS TRIBUTARY TO DISTURBED AREAS, DEVISE, 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 BALES, 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, DEVISE, 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.

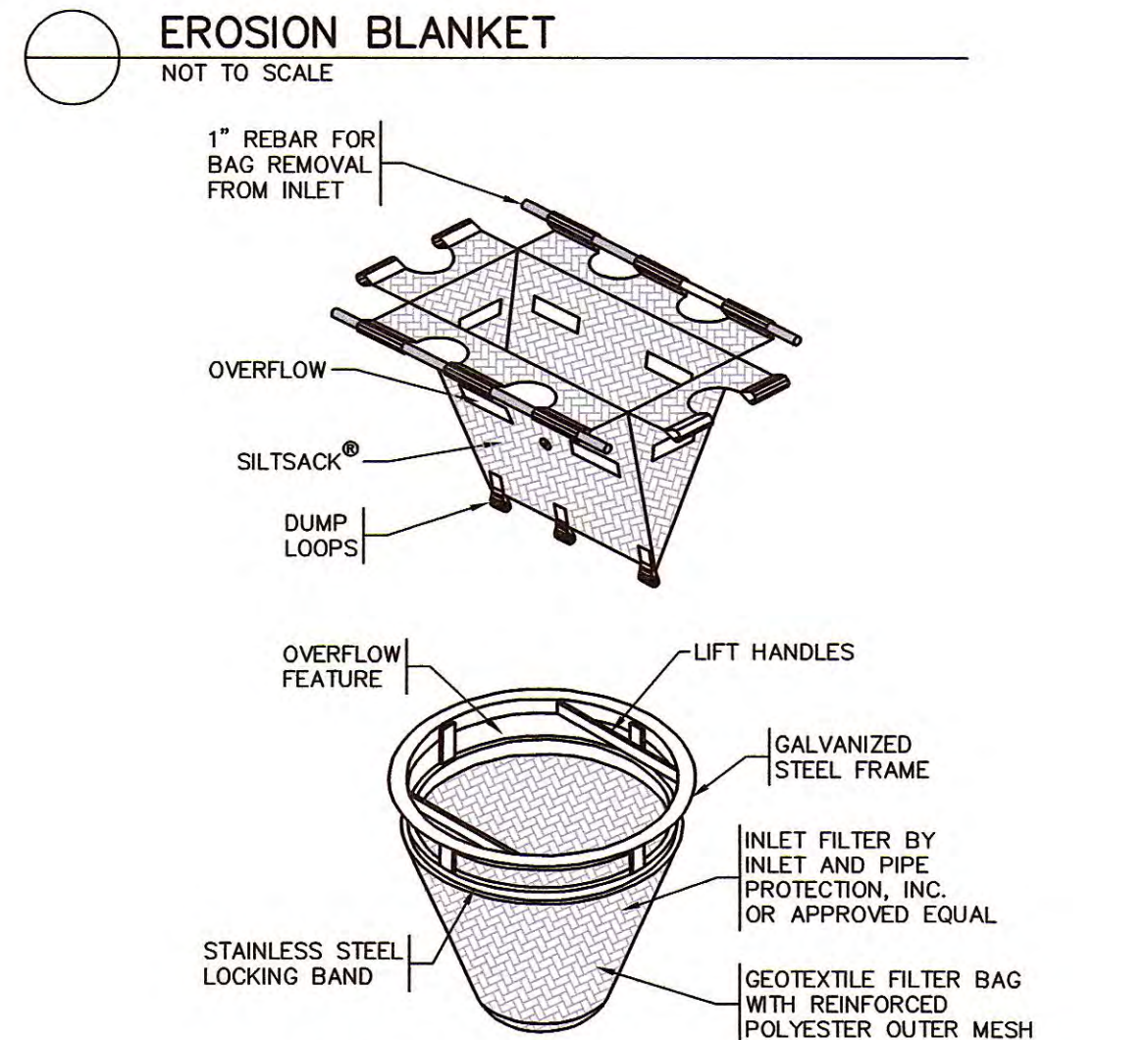
- 3.02 SITE PREPARATION AND ACCESS
- A. WALK SITE AND IDENTIFY LOCATIONS OF LIMIT OF WORK AND ENVIRONMENTALLY SENSITIVE AREAS. ESTABLISH CONSTRUCTION STAGING AREA, LOCATED BEYOND ENVIRONMENTALLY SENSITIVE AREAS.
- B. INSTALL CONTROL MEASURES AS SHOWN ON THE DRAWINGS, INCLUDING THOSE DEFINING THE LIMIT 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 OFF SITE. BURIAL OF STUMPS ON SITE IS PROHIBITED.
- 3.04 EXCAVATION FOR BUILDING FOUNDATIONS AND UTILITIES
- A. DEVISE 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, DEVISE 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 BASINS 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, HAY BALE / 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.

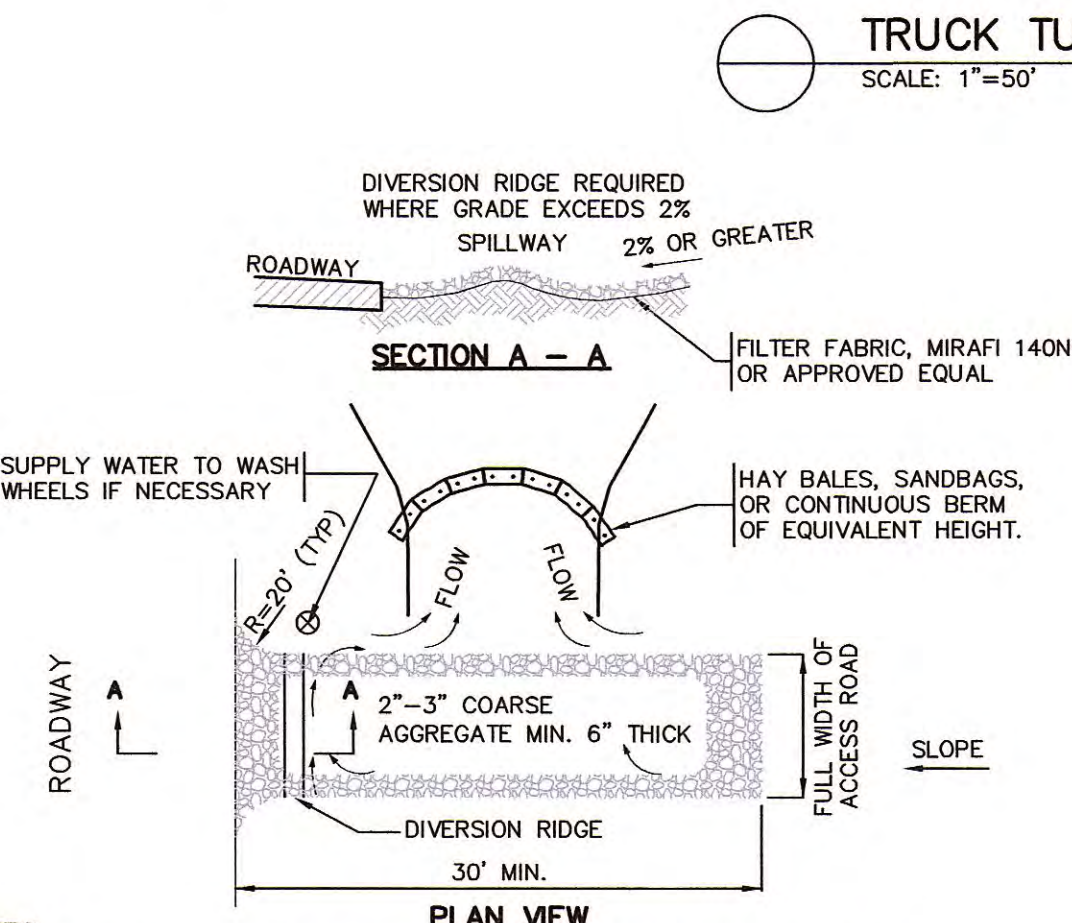
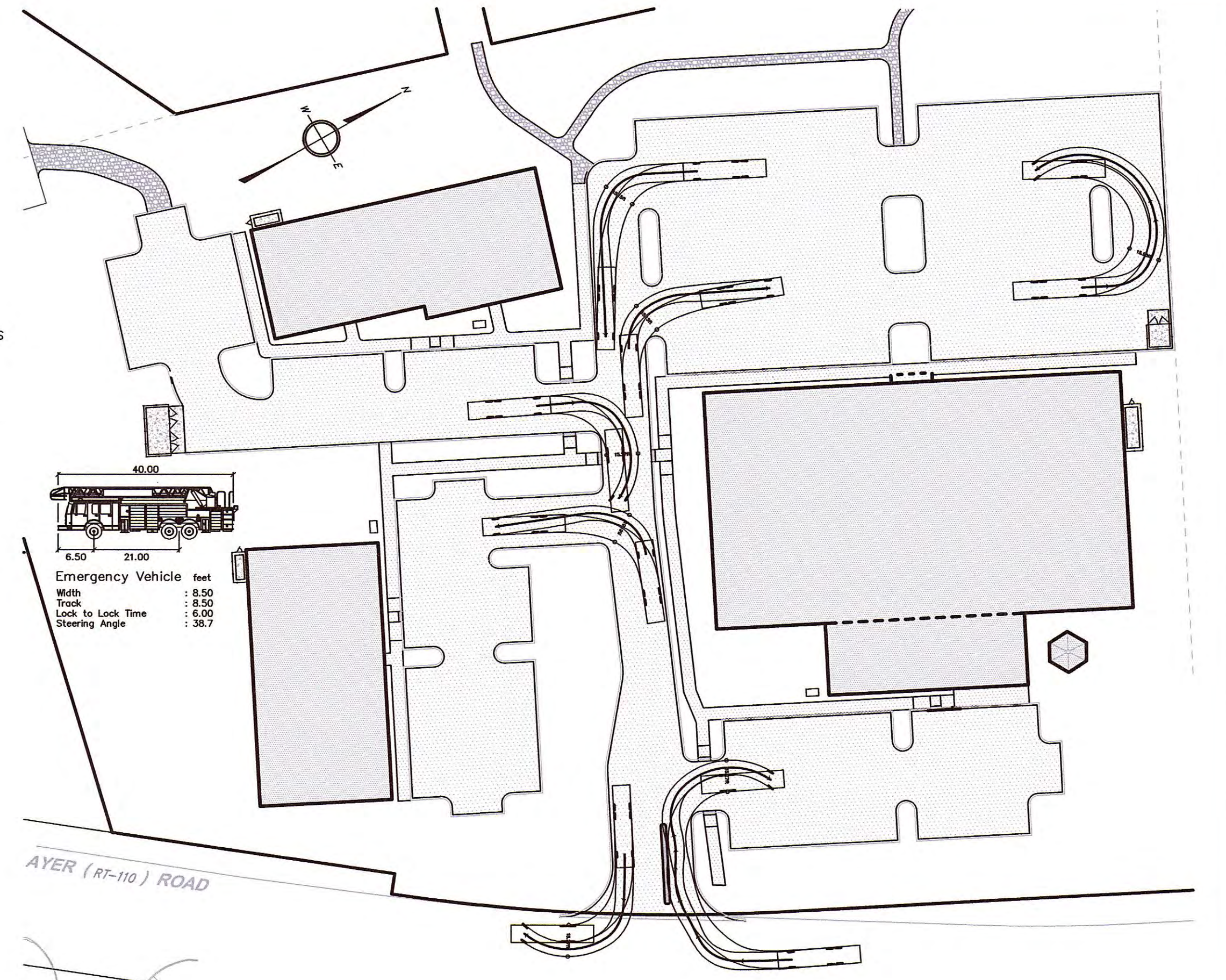
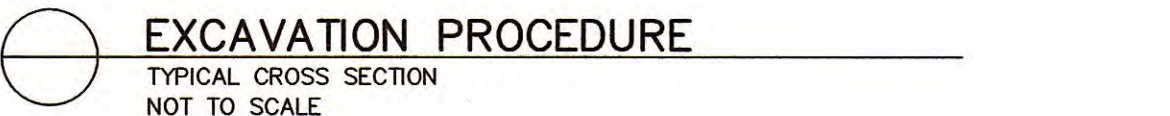
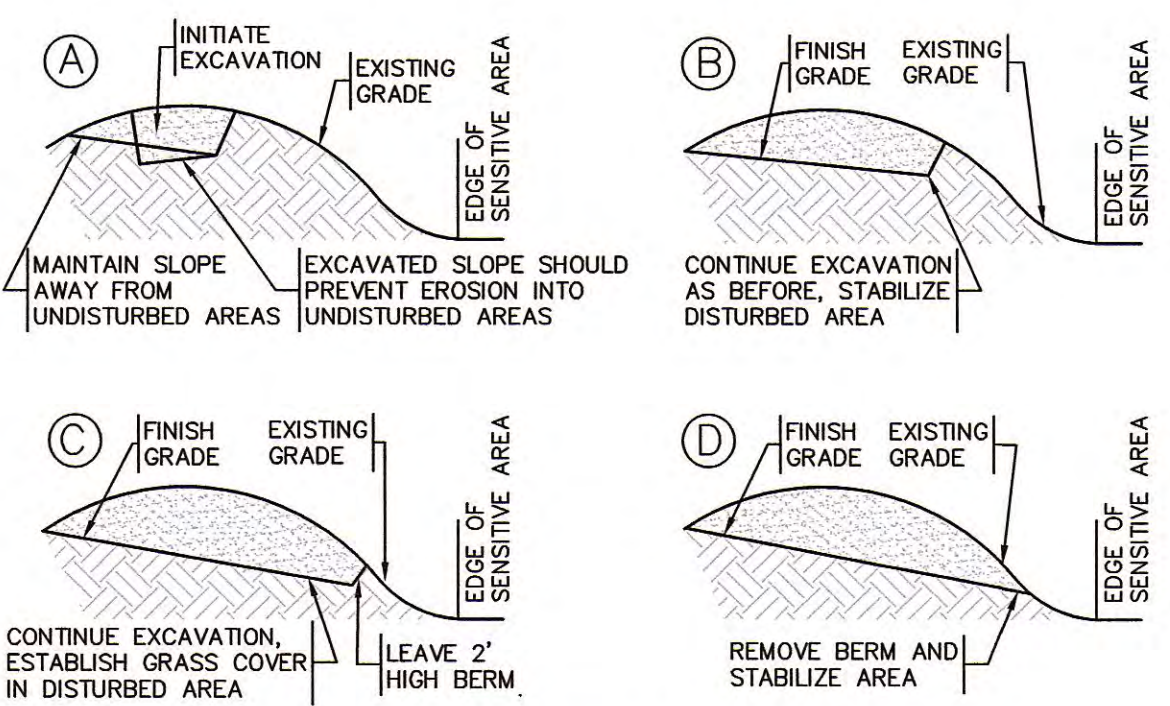
- 3.07 LANDSCAPING
- A. COMPLETE LANDSCAPING AS SOON AS POSSIBLE AFTER COMPLETION OF FINAL SUBGRADE.
- B. IMMEDIATELY AFTER PLACEMENT OF TOPSOIL, STABILIZE WITH CONTROL MEASURES INCLUDING, BUT NOT NECESSARILY LIMITED TO, SEED MIX, MULCH, AND / OR BLANKET.



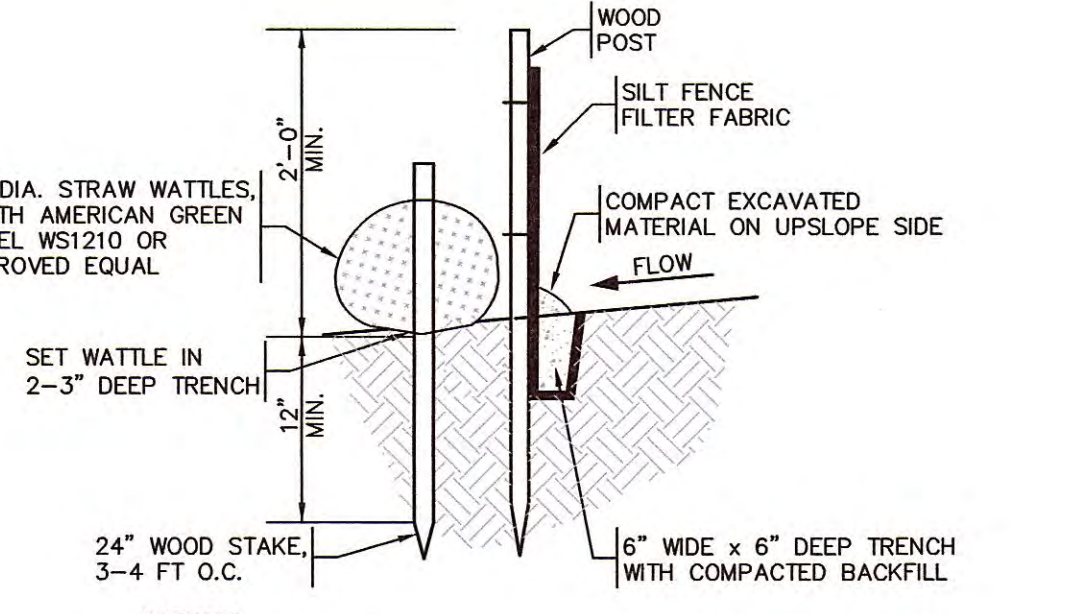
- NOTES:
- [1] SLOPE SURFACE SHALL BE FREE OF ROCK, CLODS, STICKS AND GRASS, MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT
- [2] APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS
- [3] LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH
- [4] MATS/BLANKETS SHOULD BE INSTALLED VERTICALLY DOWNSLOPE
- [5] TAMP SOIL OVER MAT/BLANKET



- NOTES:
- [1] CLEAN INLET PROTECTION WHEN 30% FULL
- [2] BURLAP IS NOT AN ACCEPTABLE GEOTEXTILE



- NOTES:
- [1] THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT
- [2] WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
- [3] WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
- [4] USE SANDBAGS, HAY BALES OR OTHER APPROVED METHODS TO CHANNELIZE RUNOFF TO BASIN AS REQUIRED.



- NOTES:
- [1] INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
- [2] TRAPPED SEDIMENT SHALL BE REMOVED TO A NON-SENSITIVE UPLAND AREA.



DRAWING ISSUED FOR:

- ☐ CONCEPT ☐ CONSTRUCTION
- ☒ PERMIT ☐ CONSTRUCTION RECORD

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2	3/2/23	JFB	NMP	MUVD & PEER REVIEW COMMENTS
1	7/25/22	LT	NMP	PEER REVIEW COMMENTS

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EROSION & SEDIMENT CONTROL PLAN

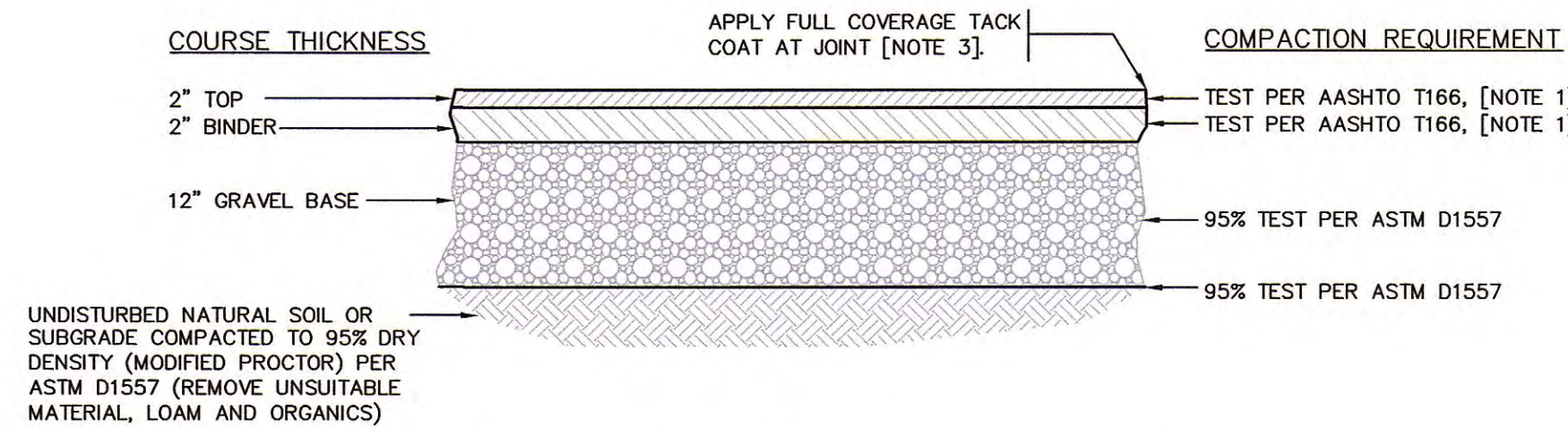
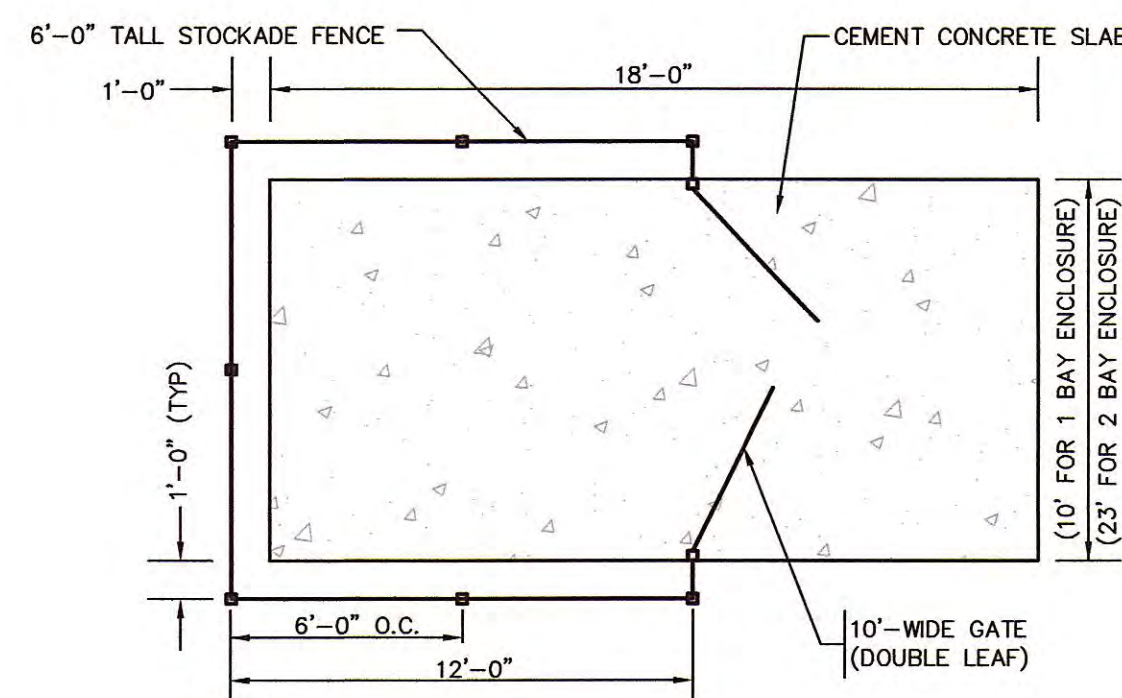
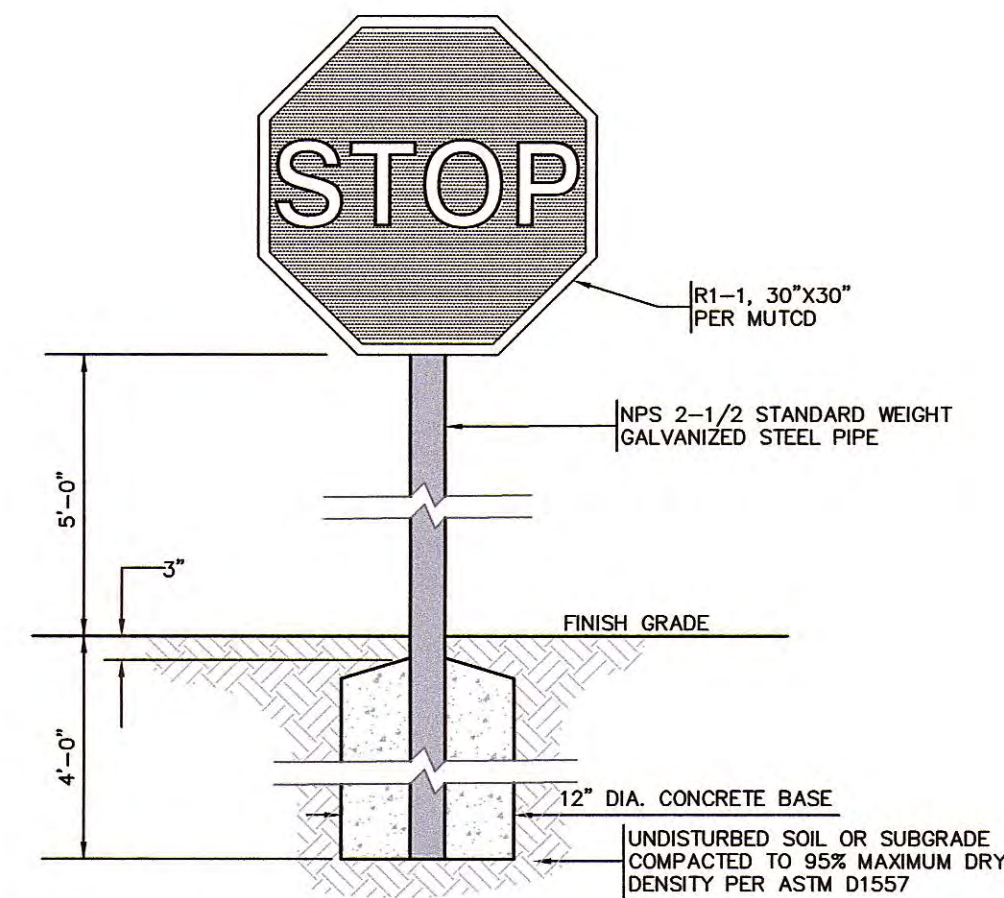
203 AYER ROAD HARVARD, MA

PREPARED FOR:  
YVONNE CHERN  
7 GREEN WAY  
WAYLAND, MA 01778

WHEELER REALTY TRUST  
198 AYER ROAD  
HARVARD, MA 01451

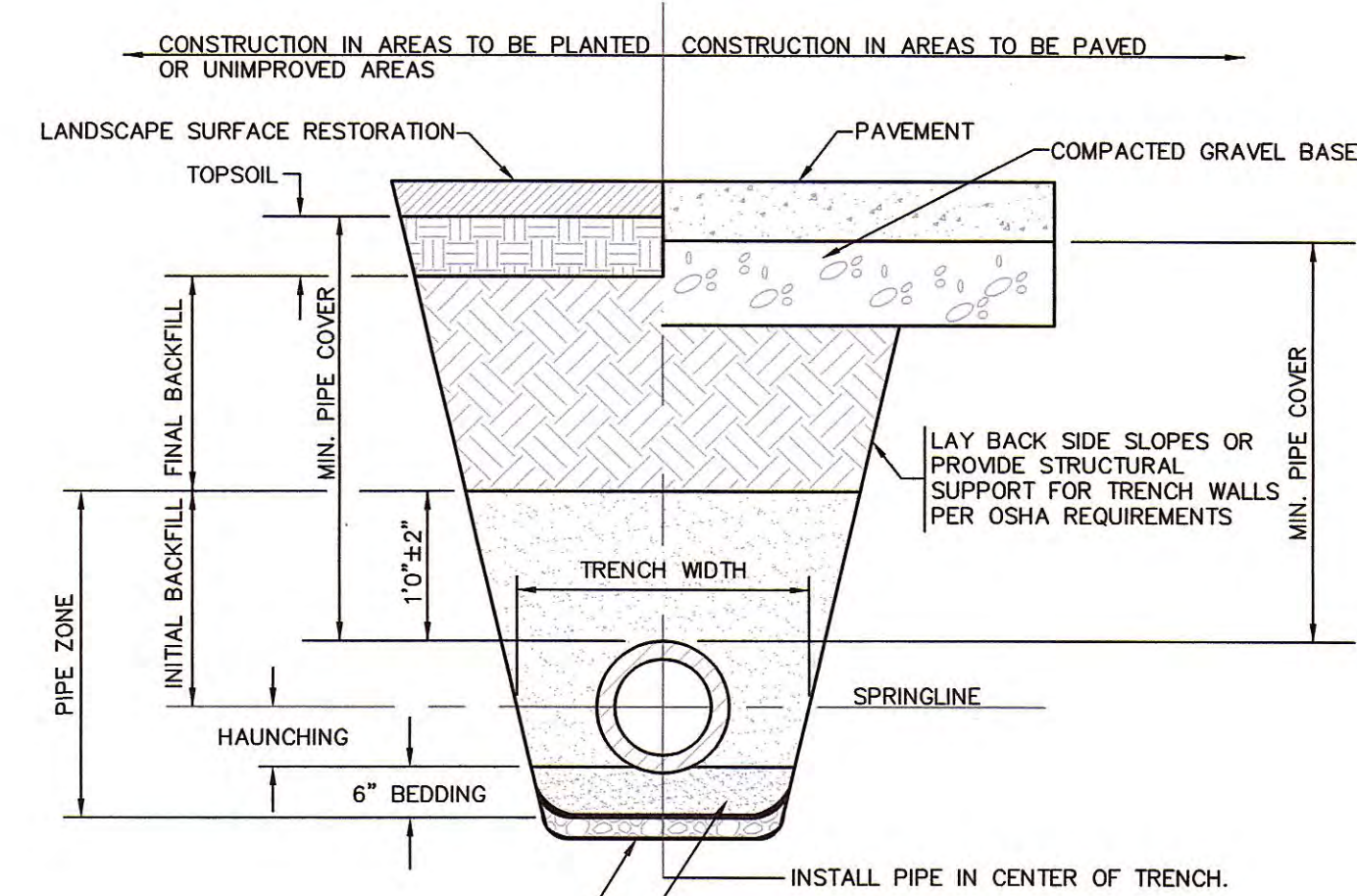
DES. BY: MCL	DATE: MARCH 2022	JOB 211009	C5.1
CHK. BY: NMP			





COURSE	MATERIAL	SPECIFICATION PER MASS HIGHWAY DEPARTMENT (MHD)	MAX AGG. SIZE (INCH)
TOP	BITUMINOUS CONCRETE	M3.11.03 CLASS I, TYPE I-1	1/2
BINDER	BITUMINOUS CONCRETE	M3.11.03 CLASS I, 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.



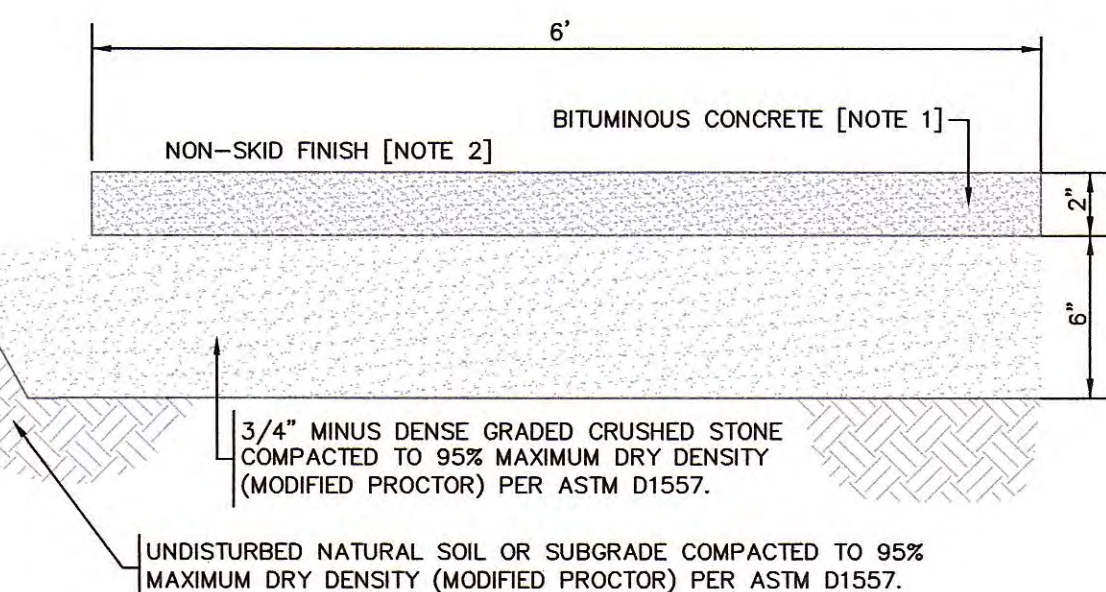
MATERIAL KEY NOTES (SEE TABLE BELOW):  
[1] PLACE 2" MINUS CRUSHED STONE.  
[2] PLACE 1/2" MINUS SAND BORROW (MHD M1.04.1), AT OPTIMUM MOISTURE IN HORIZONTAL 8" DEEP LOOSE LAYERS, COMPACT TO 95% PER ASTM D-1557 MODIFIED PROCTOR METHOD.  
[3] IN PLANTED OR UNIMPROVED AREAS, USE 3-INCH MINUS ON-SITE EXCAVATED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

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

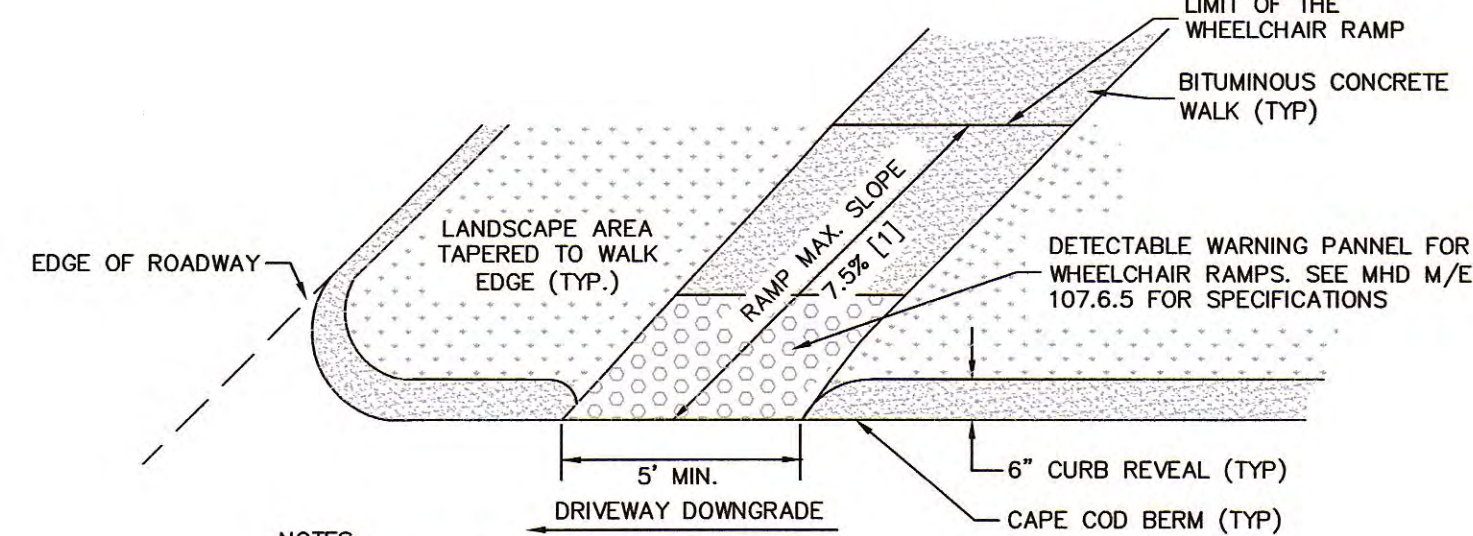
TRENCH WIDTH:  
[1] MINIMUM WIDTH OF TRENCH MEASURED AT SPRINGLINE OF PIPE, INCLUDING ANY NECESSARY SHEARING:

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

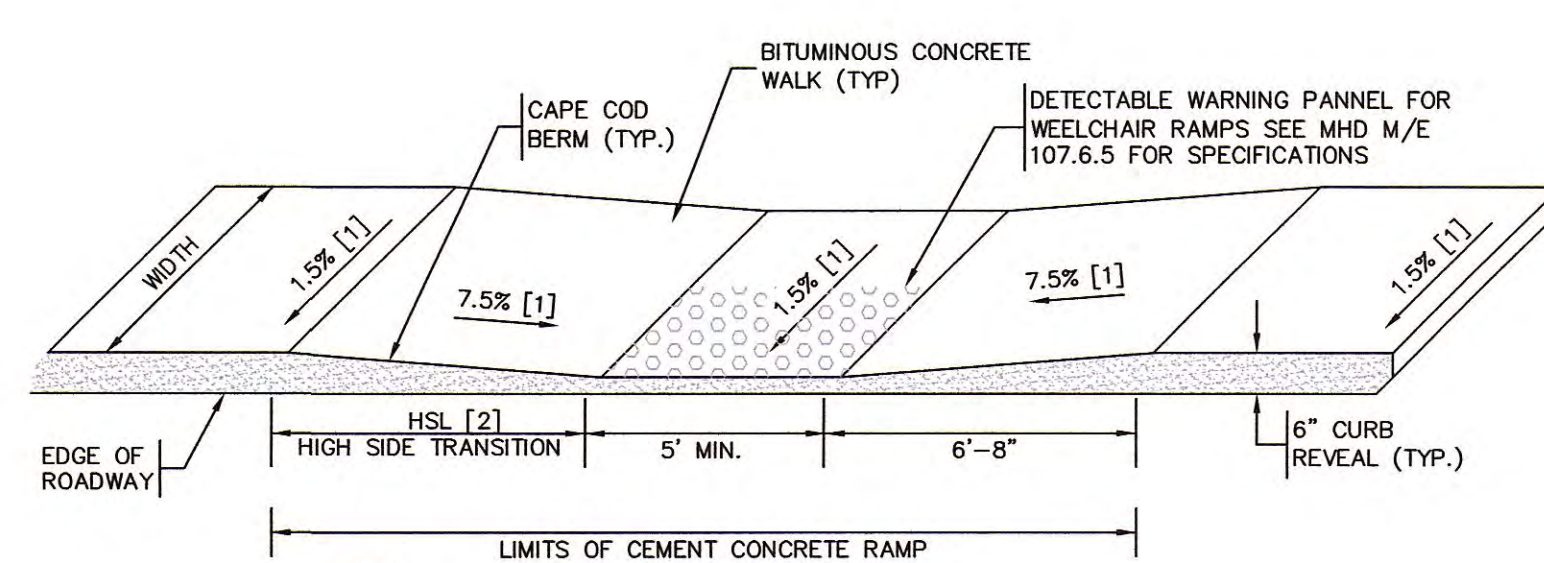
MINIMUM PIPE COVER	PIPE MATERIAL	HDP, PVC	RC, DI
WATER	5' - 0"	5' - 0"	5' - 0"
SEWER	4' - 0"	4' - 0"	4' - 0"
DRAIN	2' - 0"	1' - 0"	1' - 0"



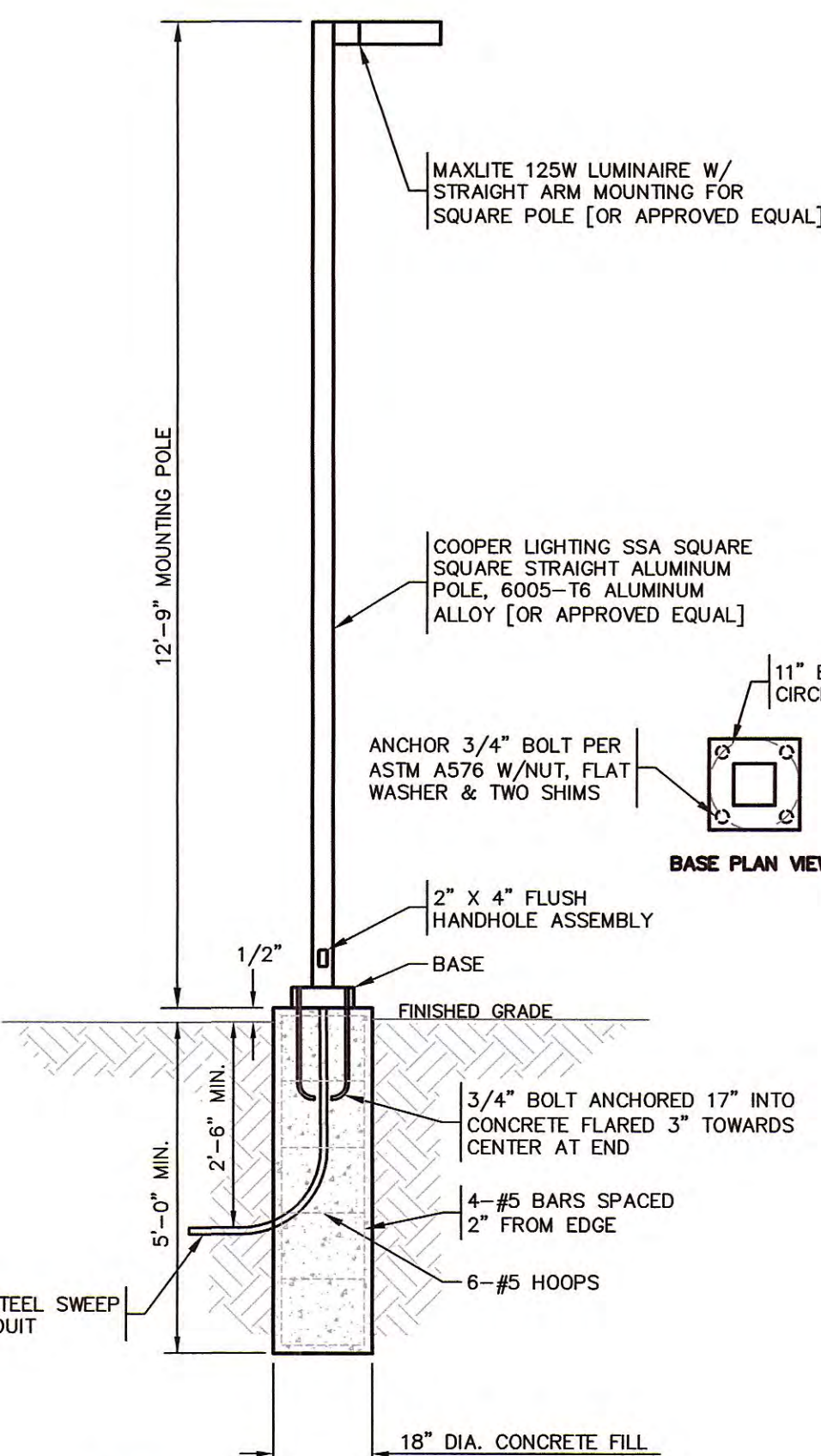
NOTES:  
[1] MHD M3.11.03 CLASS I, TYPE I-1 BITUMINOUS CONCRETE. 1/2" MAXIMUM AGGREGATE OR PARTICLE SIZE. COMPACT TO TEST AVERAGE OF 95% NO TEST LOWER THAN 93%.  
[2] SLOPE 5% MAXIMUM.



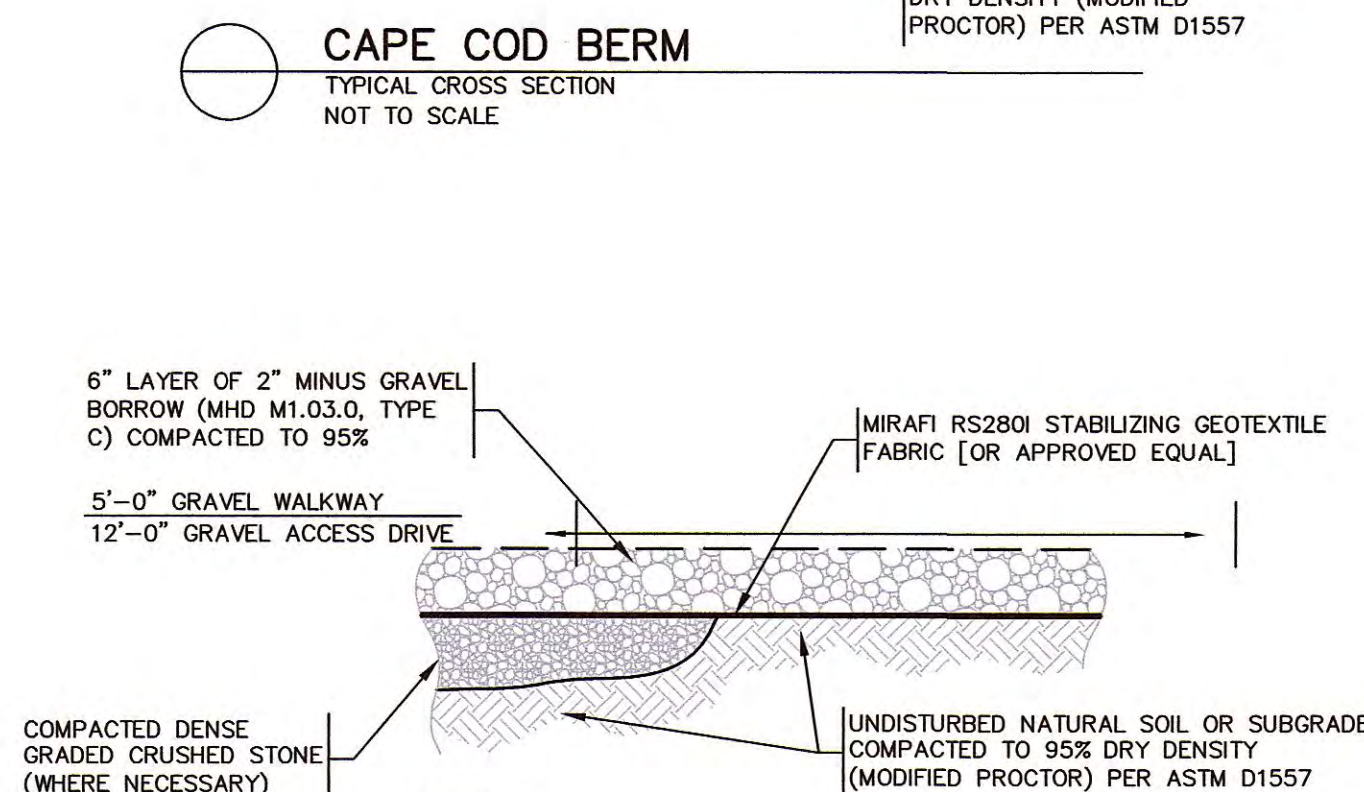
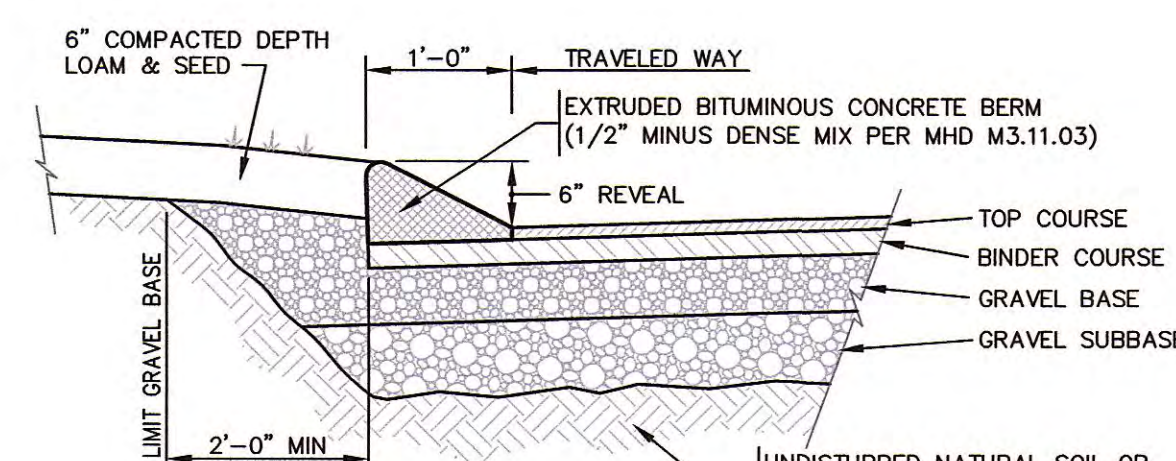
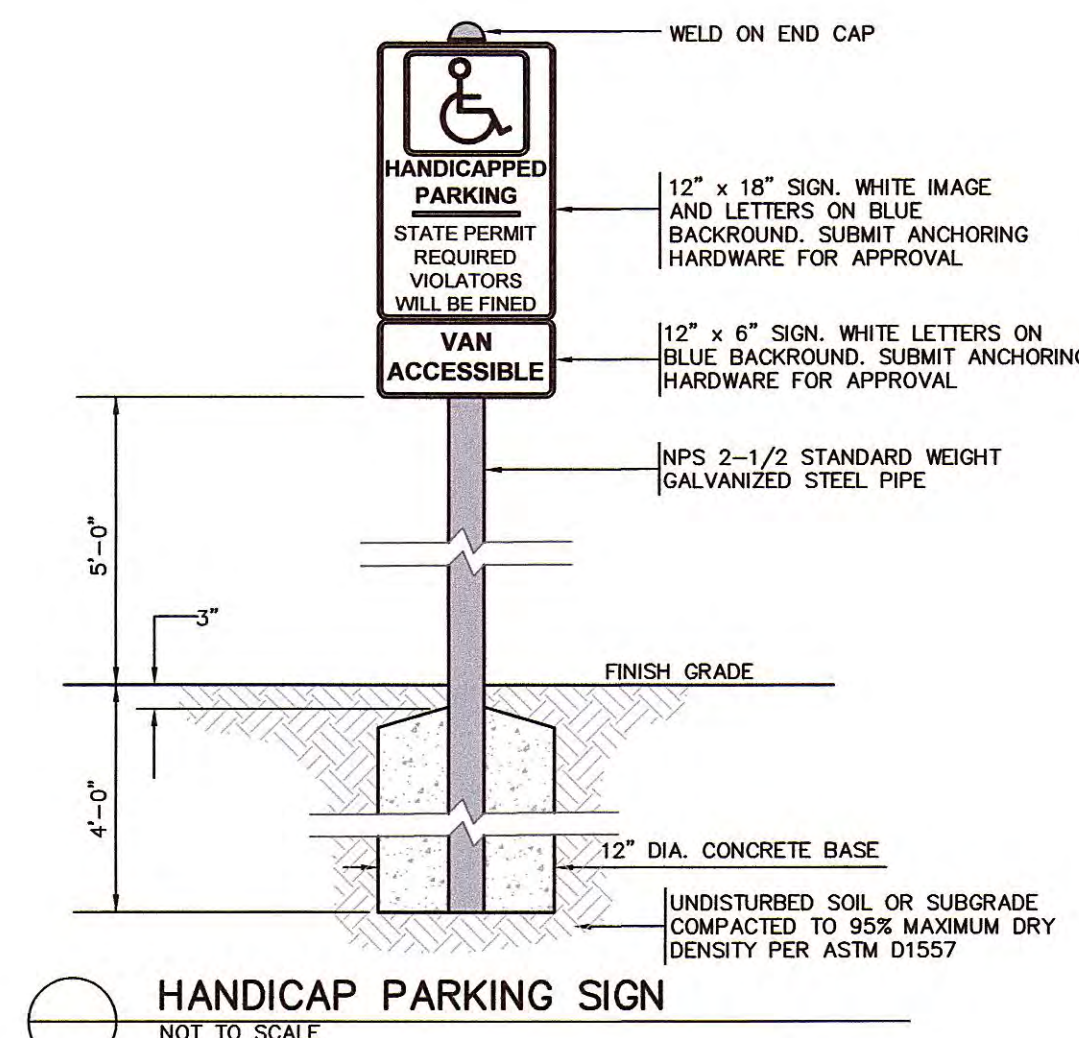
NOTES:  
[1] TOLERANCE FOR CONSTRUCTION 0.5%  
[2] DETECTABLE WARNING PANEL LOCATED NOT LESS THAN 6" OR MORE THAN 24" FROM ROADWAY EDGE (GUTTER LINE). TRUNCATED DOMES TO BE ALIGNED WITH DIRECTION OF TRAVEL.  
[3] ROADWAY, GUTTER, AND FIRST 6" OF SIDEWALK TO BE ADJUSTED FOR FIELD CONDITIONS.



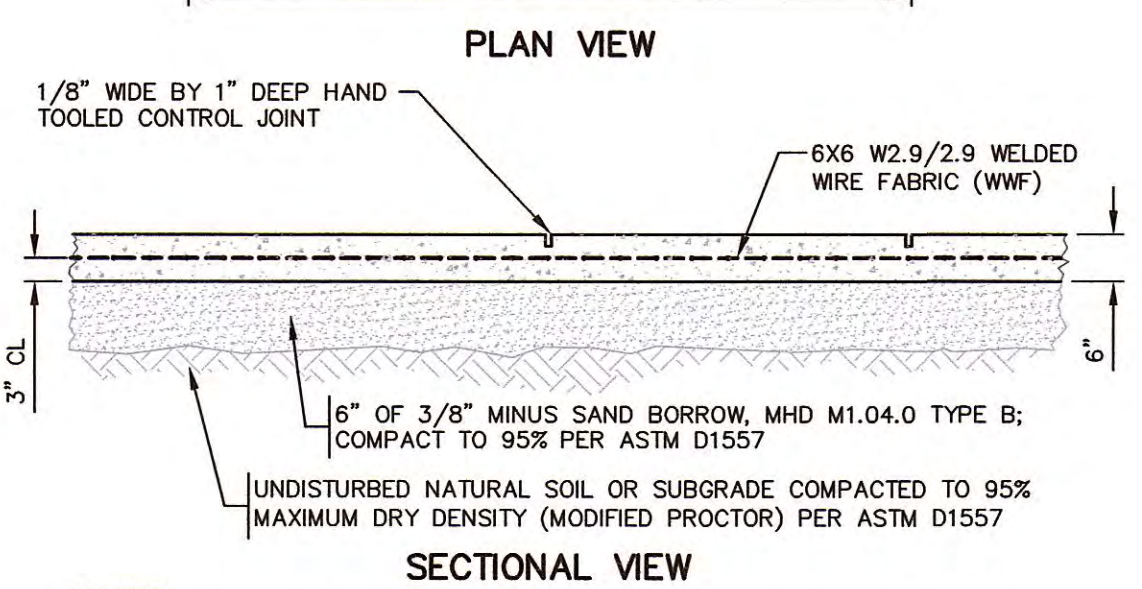
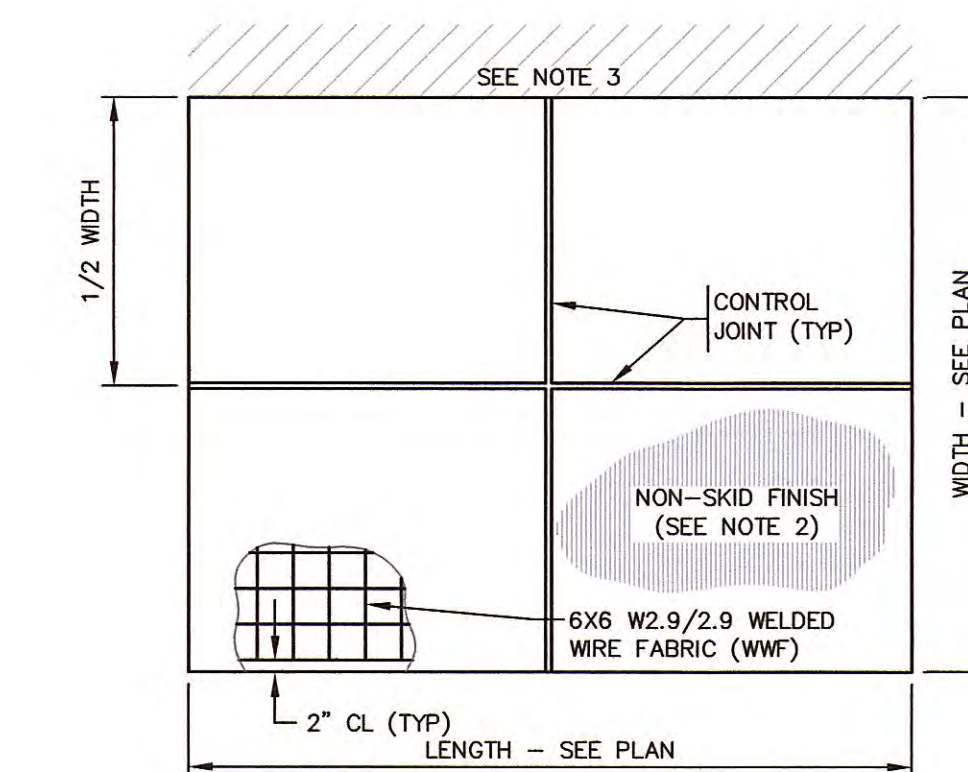
NOTES:  
[1] TOLERANCE FOR CONSTRUCTION 0.5%  
[2] HSL - HIGH SIDE TRANSITION LENGTH (SEE M/E 107.9.0)  
[3] USABLE SIDEWALK WIDTH PER AAB = WIDTH - CURB WIDTH



NOTES:  
[1] CONTRACTOR TO CONFIRM WITH MANUFACTURER ON PROPER INSTALLATION OF BALLAST, BALLAST MOUNTING, LIGHT POLE, BASE PLATE & ANCHORING.  
[2] APPROVED EQUALS MAY BE USED IN LUMINAIRE ASSEMBLY PROVIDED IT MEETS MANUFACTURER'S SPECIFICATIONS.



NOTES:  
[1] UNSUITABLE MATERIAL IN THE SUBGRADE SHALL BE REMOVED AND REPLACED WITH AN ACCEPTABLE SUBSTITUTE MATERIAL: 3/4" MINUS DENSE GRADED CRUSHED STONE.  
[2] FINAL GRAVEL DRIVEWAY STABILIZATION DESIGN TO BE CONFIRMED BY THE GEOTECHNICAL ENGINEER.



NOTES:  
[1] CEMENT CONCRETE: 4000 PSI AT 28 DAYS W/ 3/8" MINUS MAXIMUM PARTICLE SIZE (MHD M4.02.00).  
[2] PROVIDE MEDIUM HAIR BROOM FINISH TO ALL EXPOSED SURFACES. USE ROUGH HAIR BROOM ON GRADES OVER 6%.  
[3] WHERE SLAB ABUTS FACE OF BUILDING, AN ISOLATION JOINT SHALL BE USED BETWEEN SLAB AND BUILDING.

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1	7/25/22	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

COMMERCIAL DEVELOPMENT  
SPECIAL PERMIT

CONSTRUCTION DETAILS

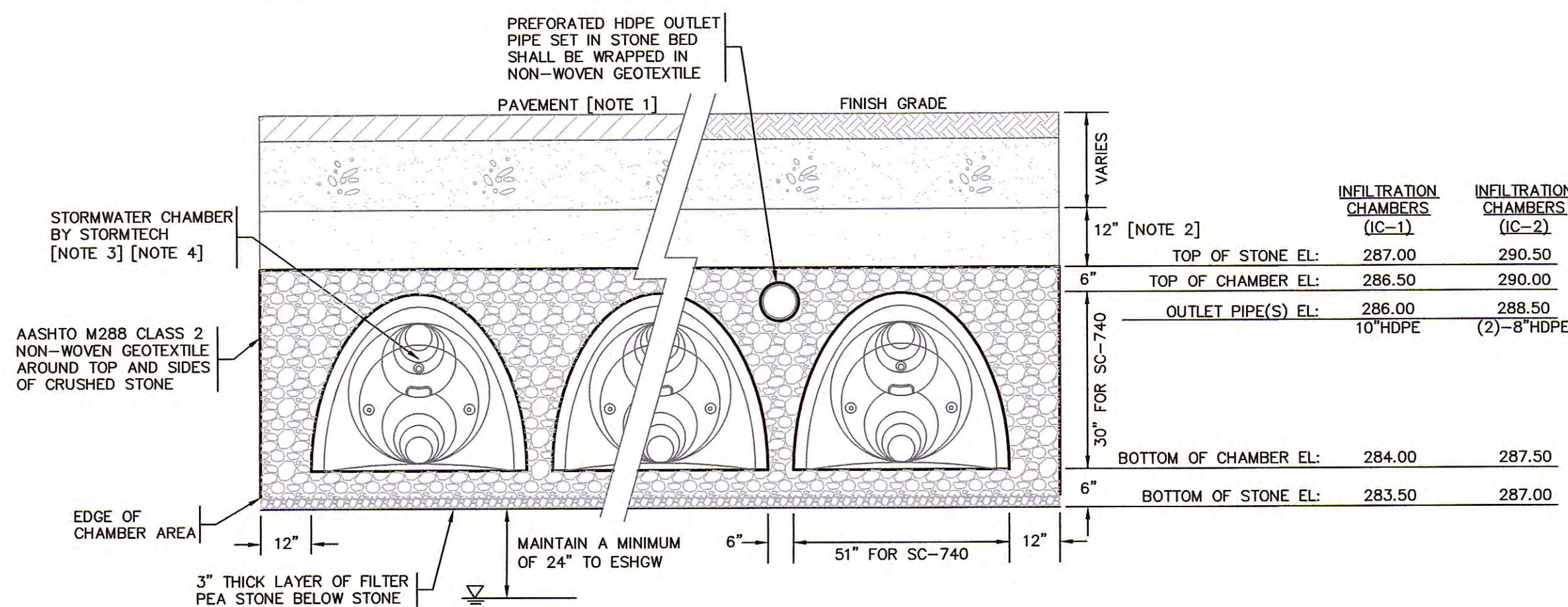
203 AYER ROAD  
HARVARD, MA

PREPARED FOR:  
YVONNE CHERN  
7 GREEN WAY  
WAYLAND, MA 01778

WHEELER REALTY TRUST  
198 AYER ROAD  
HARVARD, MA 01451

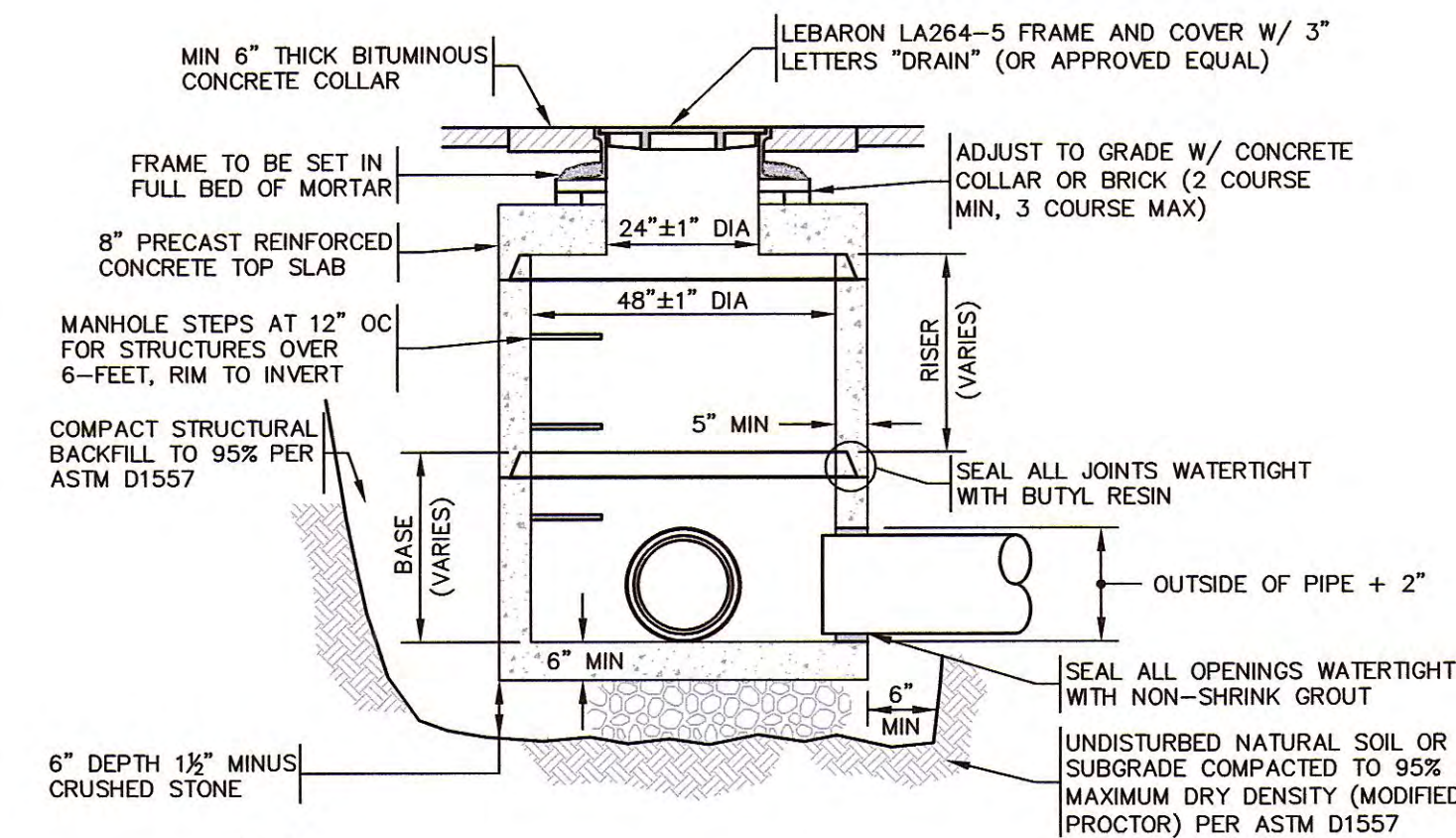
DES. BY: MCL  
CHK. BY: NMP  
DATE: MARCH 2022  
JOB 211009  
C6.1





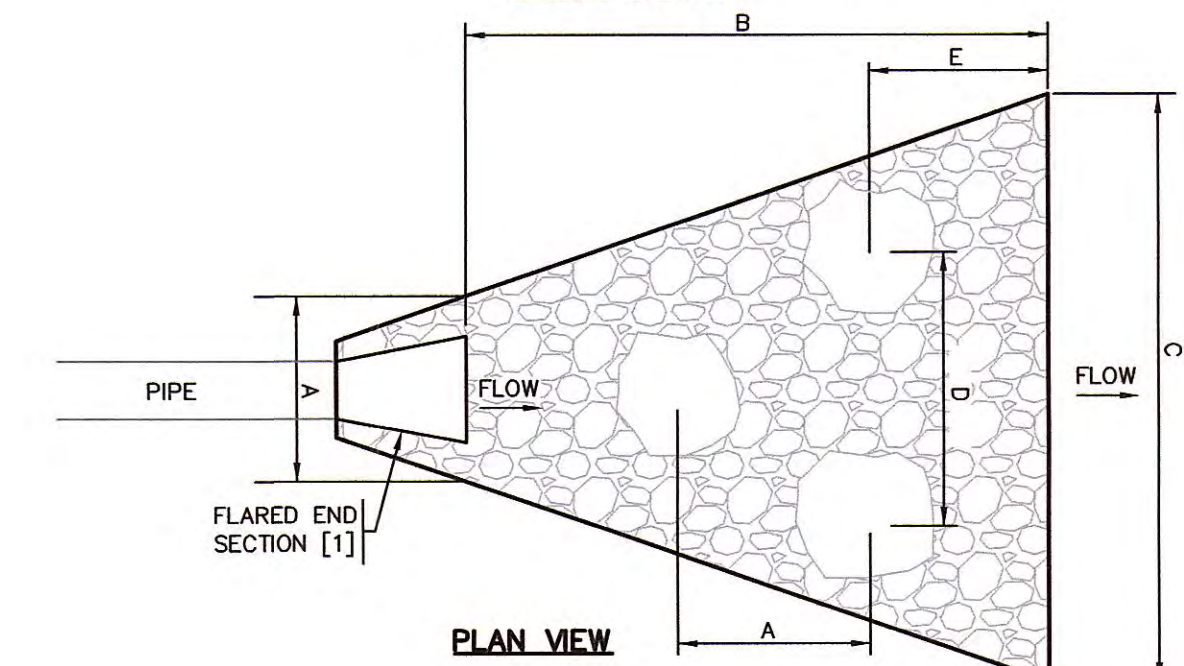
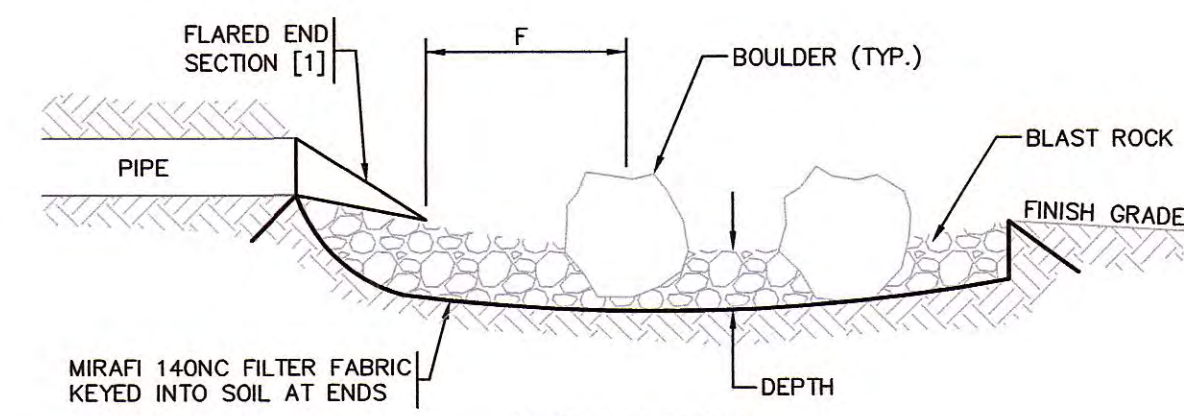
- NOTES:
- [1] SEE BITUMINOUS CONCRETE PAVEMENT DETAIL FOR MATERIALS AND SPECIFICATIONS
  - [2] GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES. COMPACT IN 6" LIFTS TO MINIMUM 95% STANDARD PROCTOR DENSITY.
  - [3] SEE STORMTECH CHAMBER SYSTEMS DESIGN MANUAL FOR MANUFACTURERS SPECIFICATIONS AND MATERIAL SPECIFICATIONS.
  - [4] ALL CHAMBERS MAY NOT BE SHOWN, SEE SITE PLAN FOR NUMBER AND CONFIGURATION.

STORMWATER CHAMBER SYSTEM  
TYPICAL CROSS SECTION  
NOT TO SCALE



- NOTES:
- [1] 4,000 PSI PRECAST CONCRETE AT 28 DAYS CONFORMING WITH LATEST ASTM C478.
  - [2] REINFORCING PER LATEST ASTM A185.
  - [3] STRUCTURE SHALL BE RATED FOR H-20 LOADING UNLESS SPECIFIED OTHERWISE.

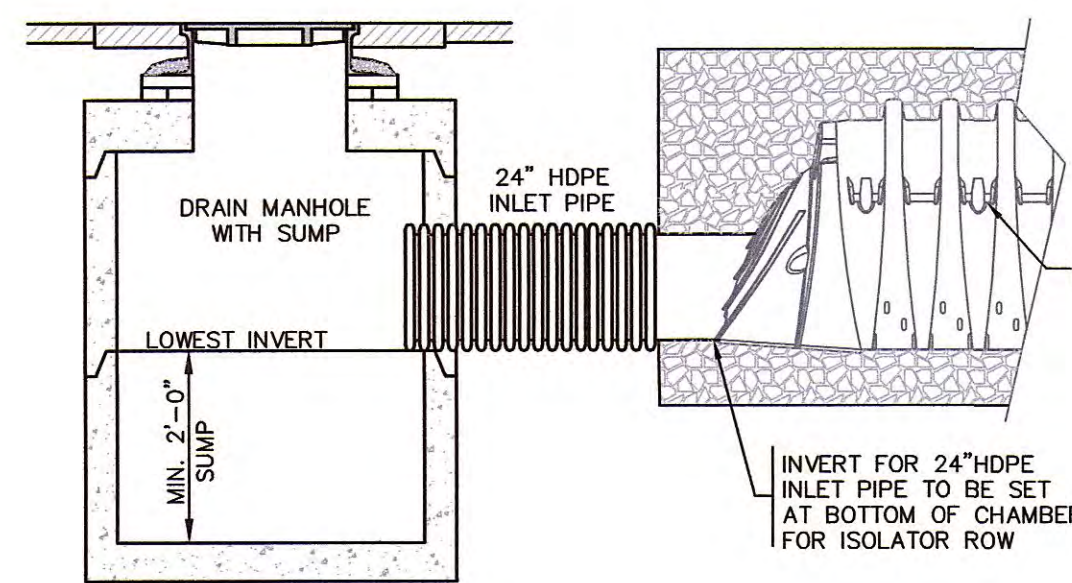
DRAIN MANHOLE  
TYPICAL CROSS SECTION  
NOT TO SCALE



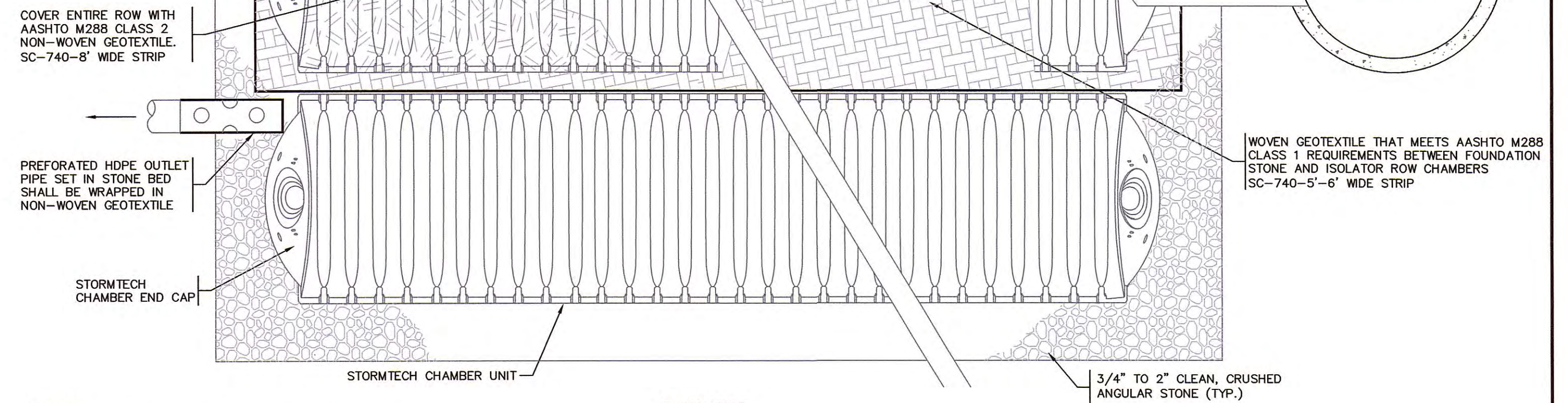
PIPE DIA.	A (FT)	B (FT)	C (FT)	D (FT)	E (FT)	F (FT)	DEPTH (FT)	BLAST ROCK	BOULDER
8 IN.	1.5	4	4.5	[2]	-	0.5	6" MINUS	18" - 24"	-
12 IN.	3	8	9	4	2	1.5	0.5	6" MINUS	21" - 30"
15 IN.	4	10	11.5	5	2.5	2	0.62	6" MINUS	27" - 36"
18 IN.	4.5	12	13.5	6	3	2.25	0.75	9" MINUS	-

- 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".

FLARED END SECTION  
NOT TO SCALE

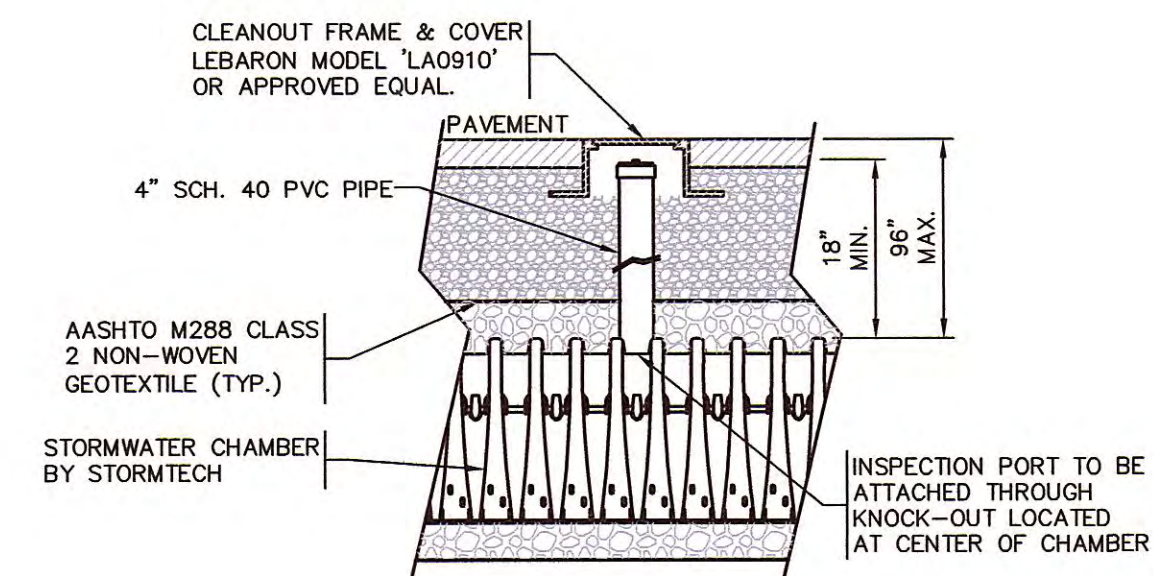


CROSS SECTION VIEW

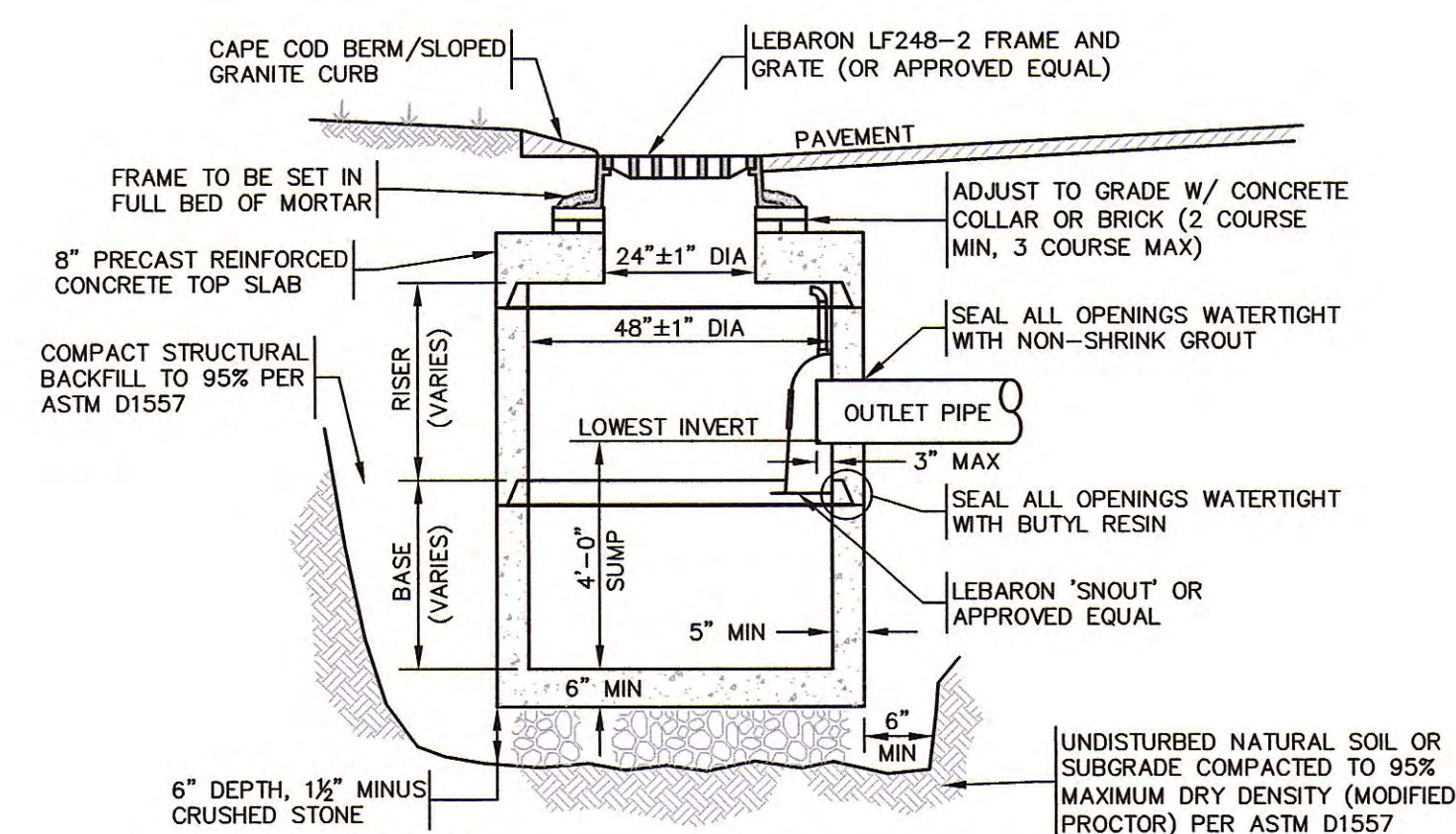


- NOTES:
1. SEE SITE PLAN FOR INLET AND OUTLET INVERT ELEVATIONS.
  2. ALL CHAMBERS MAY NOT BE SHOWN, SEE SITE PLAN.
  3. CONFIGURATION SHOWN MAY NOT BE ACCURATE, SEE SITE PLAN.

STORMTECH ISOLATOR ROW  
TYPICAL PLAN VIEW  
NOT TO SCALE

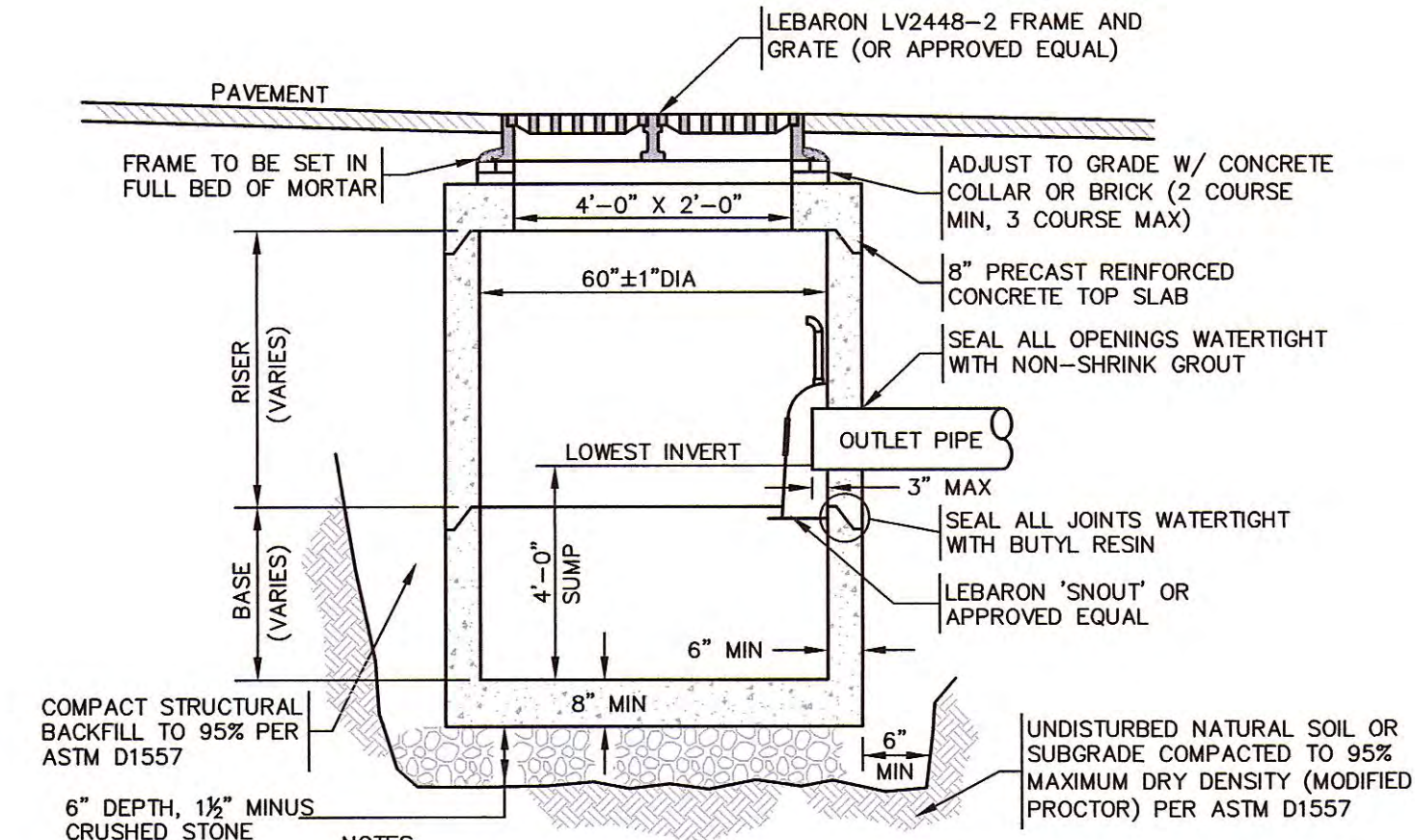


INSPECTION PORT  
TYPICAL CROSS SECTION  
NOT TO SCALE



- NOTES:
- [1] 4,000 PSI PRECAST CONCRETE AT 28 DAYS CONFORMING WITH LATEST ASTM C478
  - [2] REINFORCING PER LATEST ASTM A185.
  - [3] STRUCTURE SHALL BE RATED FOR H-20 LOADING UNLESS SPECIFIED OTHERWISE.

CATCH BASIN  
TYPICAL CROSS SECTION  
NOT TO SCALE



- NOTES:
- [1] 4,000 PSI PRECAST CONCRETE AT 28 DAYS CONFORMING WITH LATEST ASTM C478
  - [2] REINFORCING PER LATEST ASTM A185.
  - [3] STRUCTURE SHALL BE RATED FOR H-20 LOADING UNLESS SPECIFIED OTHERWISE.

DOUBLE GRATE CATCH BASIN (DCB-4)  
TYPICAL CROSS SECTION  
NOT TO SCALE

DRAWING ISSUED FOR:

- ☐ CONCEPT ☐ CONSTRUCTION  
☒ PERMIT ☐ CONSTRUCTION RECORD

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1	7/25/22	LT	NMP	PEER REVIEW COMMENTS

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198 AYER ROAD  
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DES. BY: MCL  
CHK. BY: NMP  
DATE: MARCH 2022  
JOB 211009  
C6.2



SOIL EVALUATION SUMMARY

SOIL EVALUATOR: LMHJOT TIV, GPR, INC.  
SOIL EVALUATOR APPROVED ON: NOVEMBER 02, 2021  
WITNESSED BY: UNWITNESSED  
EVALUATION PERFORMED: 01/13/2022

Deep Observation Hole Log					
Hole # 122-1	NB	14/E-31	Surface EL. 301.9		
Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (MUNSELL)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-12	A	FSL	10YR 3/3		
12-42	C1	S	10YR 5/4		
42-85	C2	SL	2.5Y 5/3	@42" 10YR 6/4 2.5Y 6/2	

Parent Material (geologic) Glacial Till Depth to Bedrock: 85"  
Depth to Groundwater: Standing Water in the Hole None Weeping from Pit Face: None  
Estimated Seasonal High Groundwater in the Hole 42"

Deep Observation Hole Log					
Hole # 122-2	NB	14/E-31	Surface EL. 304.0		
Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (MUNSELL)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-12	A	FSL	10YR 3/3		
12-50	C1	S	10YR 5/4		
50-91	C2	SL	2.5Y 5/4	@50" 10YR 6/4 2.5Y 6/2	

Parent Material (geologic) Glacial Till Depth to Bedrock: >91"  
Depth to Groundwater: Standing Water in the Hole 88" Weeping from Pit Face: 78"  
Estimated Seasonal High Groundwater in the Hole 50"

Deep Observation Hole Log					
Hole # 122-3	NB	14/E-31	Surface EL. 295.4		
Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (MUNSELL)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-12	A	FSL	10YR 3/3		
12-27	C1	S	10YR 6/4	@24"	
27-102	C2	FSL	2.5Y 5/4	7.5YR 5/6 2.5Y 6/2	

Parent Material (geologic) Glacial Till Depth to Bedrock: >102"  
Depth to Groundwater: Standing Water in the Hole 60" Weeping from Pit Face: 30"  
Estimated Seasonal High Groundwater in the Hole 24"

Deep Observation Hole Log					
Hole # 122-4	NB	14/E-31	Surface EL. 289.4		
Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (MUNSELL)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-12	A	FSL	10YR 3/3		
12-26	Fill	LS	10YR 6/4		
26-40	Ab	FSL	10YR 4/3		
40-50	C1	FS	2.5Y 6/1	@45"	
50-102	C2	FSL	2.5Y 5/4	7.5YR 5/6 2.5Y 6/2	

Parent Material (geologic) Glacial Till Depth to Bedrock: >102"  
Depth to Groundwater: Standing Water in the Hole 90" Weeping from Pit Face: 48"  
Estimated Seasonal High Groundwater in the Hole 45"

Deep Observation Hole Log					
Hole # 122-5	NB	14/E-31	Surface EL. 288.3		
Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (MUNSELL)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-40	Fill	FSL	10YR 3/3		
40-48	C1	S	10YR 5/4		
48-108	C2	FSL	2.5Y 5/4	@50" 7.5YR 5/6 2.5Y 6/2	

Parent Material (geologic) Glacial Till Depth to Bedrock: >108"  
Depth to Groundwater: Standing Water in the Hole 101" Weeping from Pit Face: 52"  
Estimated Seasonal High Groundwater in the Hole 50"

Deep Observation Hole Log					
Hole # 122-6	NB	14/E-31	Surface EL. 281.2		
Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (MUNSELL)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-15	A	FSL	10YR 3/3	@15"	
15-80	C1	FSL	GLE Y 3/N	7.5YR 5/8	
80-108	C2	FLS	2.5Y 4/3		

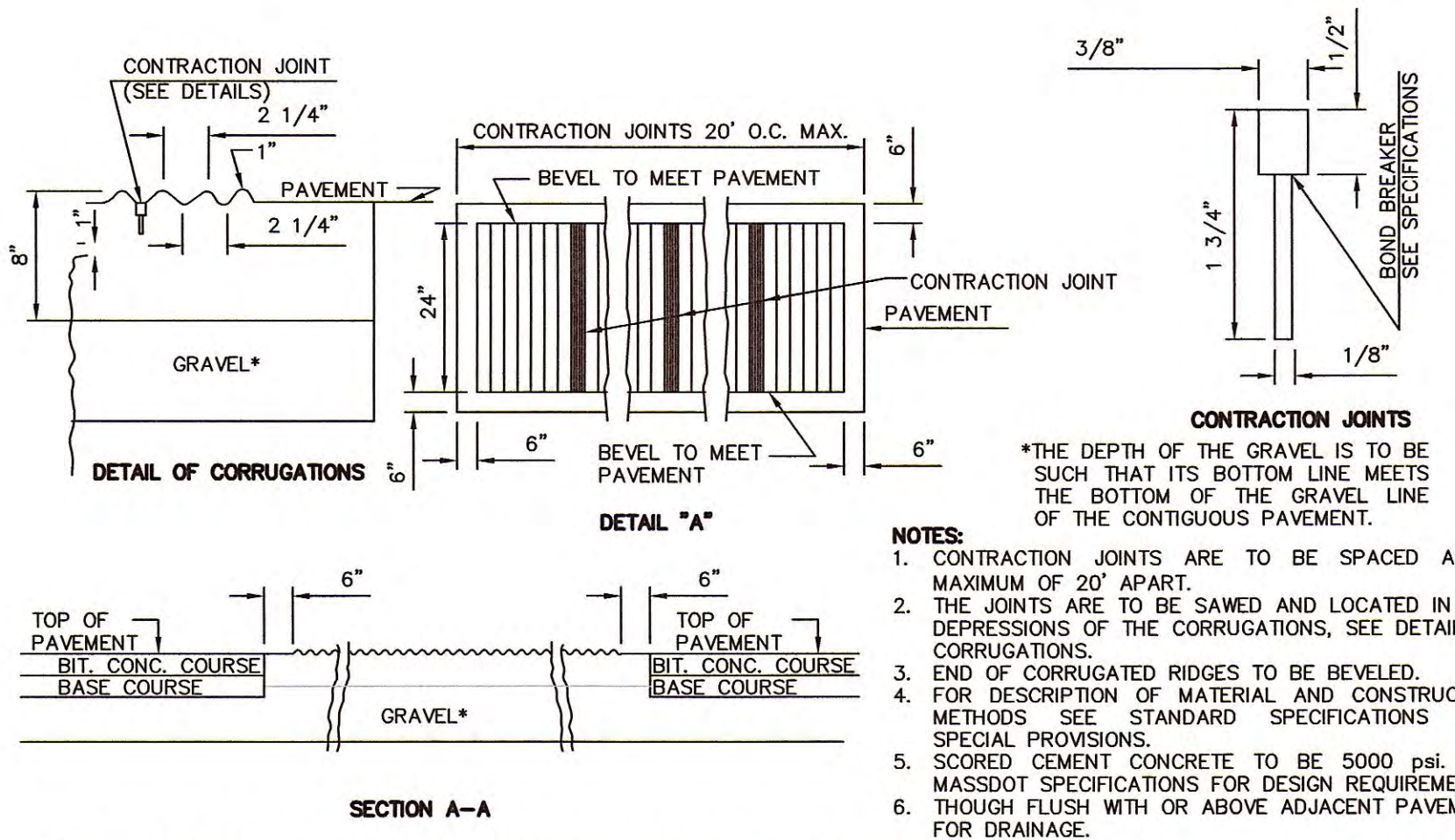
Parent Material (geologic) Glacial Till Depth to Bedrock: >108"  
Depth to Groundwater: Standing Water in the Hole 100" Weeping from Pit Face: 35"  
Estimated Seasonal High Groundwater in the Hole 15"

Deep Observation Hole Log					
Hole # 122-7	NB	14/E-31	Surface EL. 283.8		
Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (MUNSELL)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-15	A	FSL	7.5YR 2.5/2	@15"	
15-28	C1	S	10YR 4/2	10YR 5/6	
28-99	C2	FSL	GLE Y 3/N		

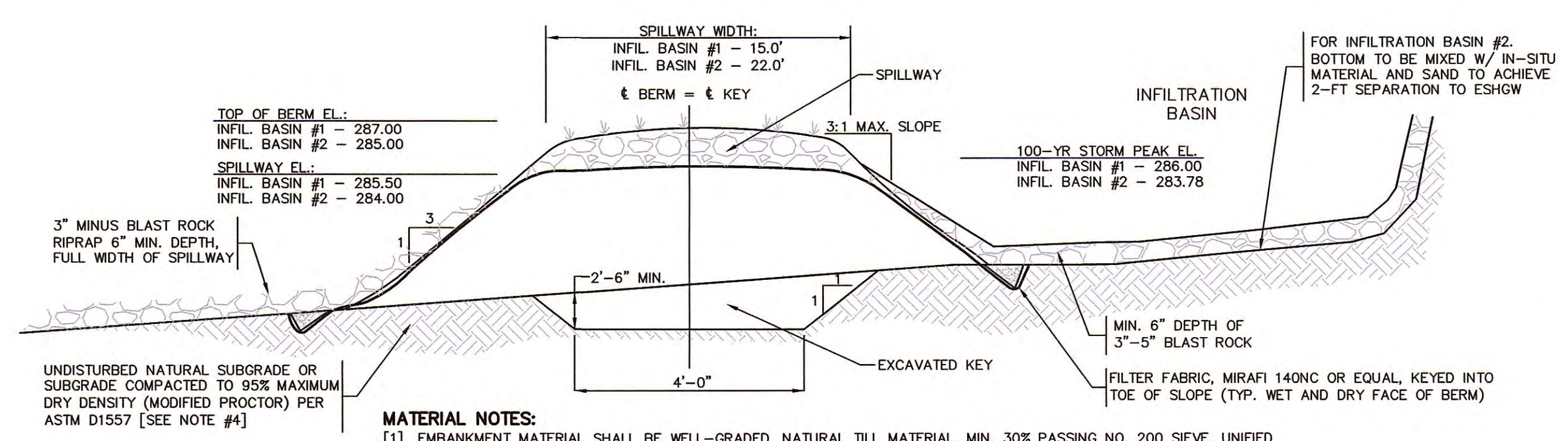
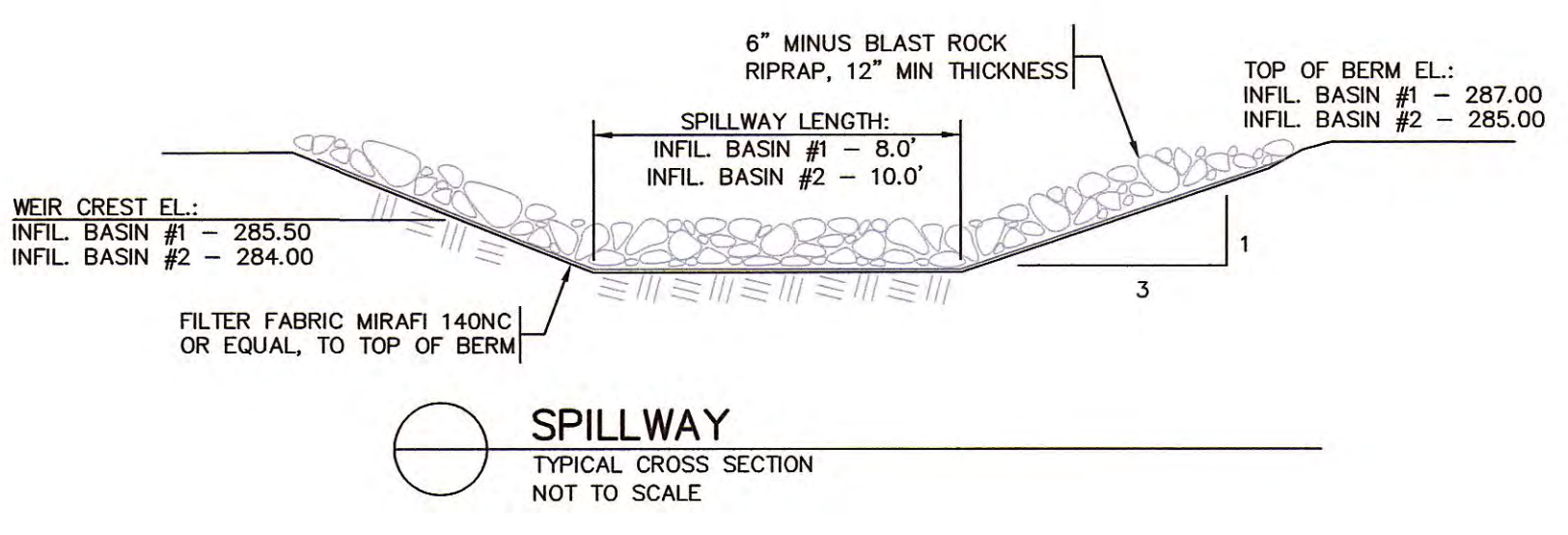
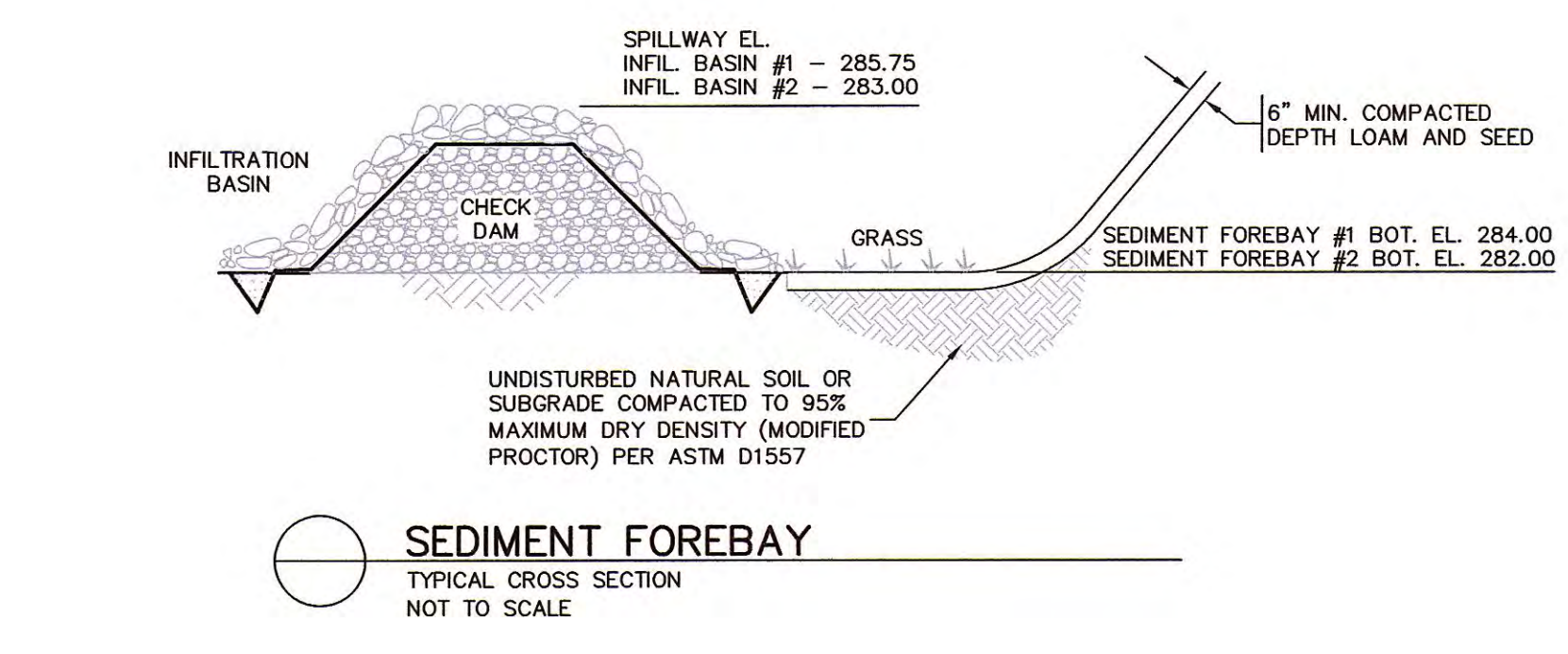
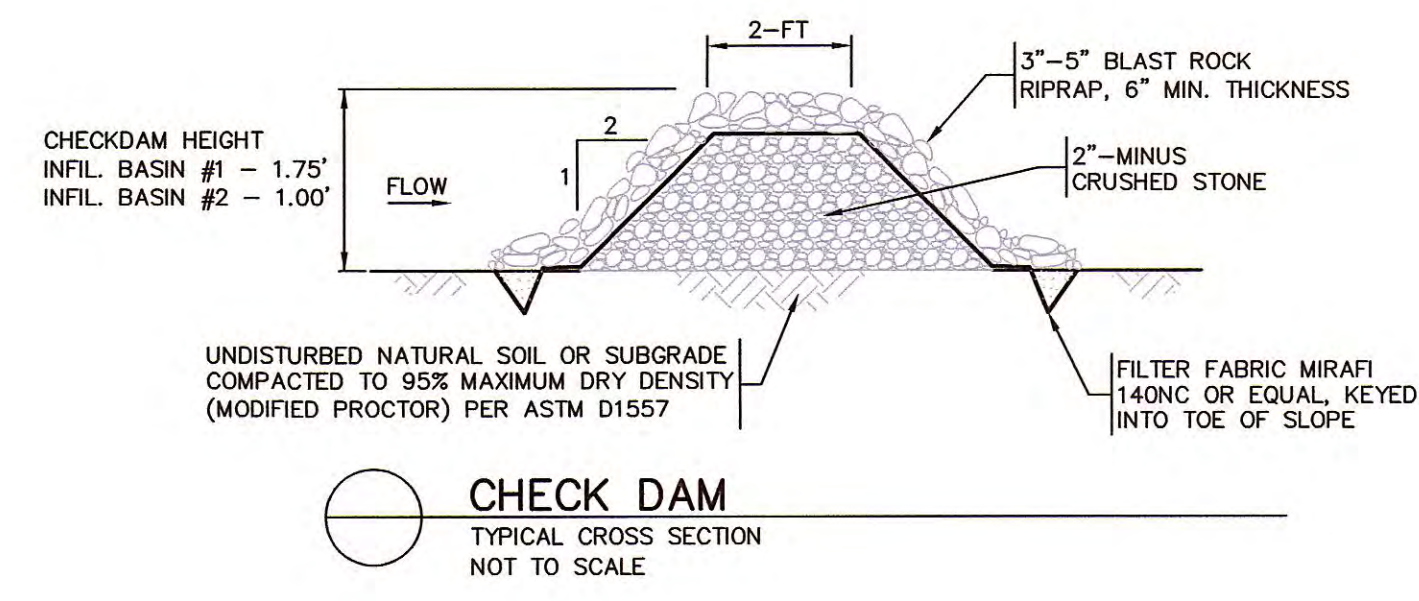
Parent Material (geologic) Glacial Till Depth to Bedrock: >99"  
Depth to Groundwater: Standing Water in the Hole 80" Weeping from Pit Face: 20"  
Estimated Seasonal High Groundwater in the Hole 15"

Deep Observation Hole Log					
Hole # 122-8	NB	14/E-31	Surface EL. 292.5		
Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (MUNSELL)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-12	A	FSL	10YR 3/3		
12-28	C1	LS	10YR 5/4		
28-76	C2	SL	2.5Y 5/3	@60" 10YR 6/4 2.5Y 6/2	

Parent Material (geologic) Glacial Till Depth to Bedrock: >76"  
Depth to Groundwater: Standing Water in the Hole 72" Weeping from Pit Face: 70"  
Estimated Seasonal High Groundwater in the Hole 60"



SECTION A-A  
SCORED CEMENT CONCRETE PAVEMENT  
NOT TO SCALE



INFILTRATION BASIN BERM  
TYPICAL CROSS SECTION  
NOT TO SCALE

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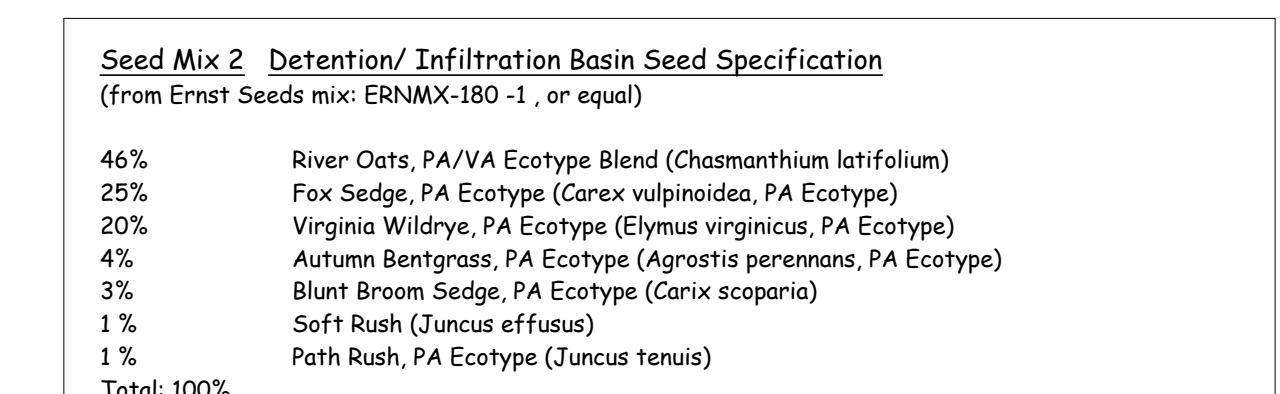
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DES. BY: MCL	DATE: MARCH 2022	JOB 211009	C6.3
CHK. BY: NMP			



MASSACHUSETTS  
DAVID E. POWER  
REGISTERED LANDSCAPE ARCHITECT  
NO. 677



PLANT LIST					
QTY	SYM.	SCIENTIFIC NAME	COMMON NAME	SIZE	COMMENTS
Deciduous Trees					
10	AR	<i>Acer rubrum</i> 'October Glory'	October Glory Red Maple	4"-5" cal.	NE Native
13	AS	<i>Acer saccharum</i> 'Green Mountain'	Green Mountain Sugar Maple	4"-5" cal.	NE Native
3	CK	<i>Cornus x Stellar</i> Pink	Stellar Pink Dogwood	2.5"-3" cal.	
7	CF	<i>Cornus x Ruth</i> Ellen	Ruth Ellen Dogwood	2.5"-3" cal.	
9	MF	<i>Malus floribunda</i>	Japanese Flowering Crab	2"-2.5" cal.	
9	QR	<i>Quercus rubra</i>	Red Oak	4"-5" cal.	NE Native
19	PY	<i>Prunus x yedoensis</i>	Yoshino Cherry	2"-2.5" cal.	
Evergreen Trees					
6	AF	<i>Abies fraserii</i>	Fraser Fir	8'-10" Tall	Native
4	PN	<i>Pinus nigra</i>	Austrian Pine	8'-10" Tall	
3	TC	<i>Tsuga canadensis</i>	Canadian Hemlock	8'-10" Tall	Native
Shrubs					
6	CB	<i>Cornus baileyi</i>	Bailey Red Twig Dogwood	3'-3.5" Tall	Native
5	DP	<i>Deutzia gracilis</i>	Common Deutzia	2"-2.5" Tall	
6	MG	<i>Myrica pensylvanica</i>	Bayberry	3'-3.5" Tall	Native
3	PO	<i>Physocarpus opulifolius</i>	Common Ninebark	4.5'-5" Tall	Native
12	RC	<i>Rhododendron catawbiense</i>	Catawba Rhododendron	4.5'-5" Tall	Native
23	SP	<i>Syringa meyeri</i> "Palibin"	Dwarf Korean Lilac		
10	VC	<i>Vaccinium corymbosum</i>	High Bush Blueberry	4.5'-5" Tall	Native