

RECORD OWNER:
 ASSESSORS MAP 60 LOT 103
 56 B STREET

RECORD OWNER:
 ASSESSORS MAP 60 LOT 105
 50 B STREET

ASSESSORS MAP 60 LOT 113
 KING STREET OFF

ASSESSORS MAP 60 LOT 139
 64 B STREET

FOX ISLAND, LLC
 80 WASHINGTON STREET, SUITE 45
 NORWELL, MA 02061
 DEED BOOK 55324 PAGE 197
 PLAN BOOK 8 PAGE 532
 PLAN #212 OF 1966
 PLAN #565 OF 2005

- NOTES:**
- TOPOGRAPHIC AND DETAIL INFORMATION SHOWN HEREON IS BASED UPON AN ON THE GROUND SURVEY PERFORMED BY MERRILL ENGINEERS AND LAND SURVEYORS DURING MAY OF 2021.
 - ALL ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.
 - WETLAND RESOURCE AREAS SHOWN ON THIS PLAN WERE DELINEATED BY ENVIRONMENTAL CONSULTING AND RESTORATION, LLC DURING MAY OF 2021 AND FIELD LOCATED BY MERRILL ENGINEERS AND LAND SURVEYORS.
 - SUBJECT SITE IS IN THE "FIREWORKS" DISTRICT AND THE "WIRELESS TELECOMMUNICATIONS" OVERLAY DISTRICT AS DEPICTED ON THE TOWN OF HANOVER ZONING MAP.
 - EXISTING UTILITIES, WHERE SHOWN, HAVE BEEN COMPILED BASED ON GROUND EVIDENCE AND AVAILABLE RECORD PLANS AND ARE TO BE CONSIDERED APPROXIMATE. MERRILL ENGINEERS AND LAND SURVEYORS DOES NOT GUARANTEE THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN OR THAT ALL EXISTING UTILITIES AND/OR SUBSURFACE STRUCTURES ARE SHOWN.
 - LOCATION OF EXISTING SEPTIC SYSTEM TAKEN FROM RECORD AS-BUILT PLAN ON FILE WITH THE HANOVER BOARD OF HEALTH AND IS CONSIDERED APPROXIMATE ONLY.
 - THERE ARE NO KNOWN WELLS WITHIN 200' OF THE PROPOSED SOIL ABSORPTION SYSTEM.
 - THERE ARE NO KNOWN EXISTING FOUNDATIONS WITHIN 25' OF THE PROPOSED SOIL ABSORPTION SYSTEM.
 - THERE ARE NO KNOWN PERENNIAL STREAMS WITHIN 200' OF THE PROPOSED SOIL ABSORPTION SYSTEM.
 - THERE ARE NO KNOWN WETLANDS WITHIN 100' OF THE PROPOSED SOIL ABSORPTION SYSTEM.
 - CATCH BASINS AND DRAINS WITHIN 100' OF THE PROPOSED SOIL ABSORPTION SYSTEM ARE SHOWN ON THE PLAN.
 - THE SITE DOES NOT FALL WITHIN AN APPROVED ZONE II ACCORDING TO MASS GIS.

FLOOD NOTE:
 BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS LOCATED IN ZONE X AND AE (EL.55±) OF THE FLOOD INSURANCE RATE MAP, AS SHOWN ON COMMUNITY MAP No. 2502300201K, WHICH BEARS AN EFFECTIVE DATE OF JULY 6, 2021, AND IS IN A SPECIAL FLOOD HAZARD AREA.

SEPTIC SYSTEM INSPECTIONS

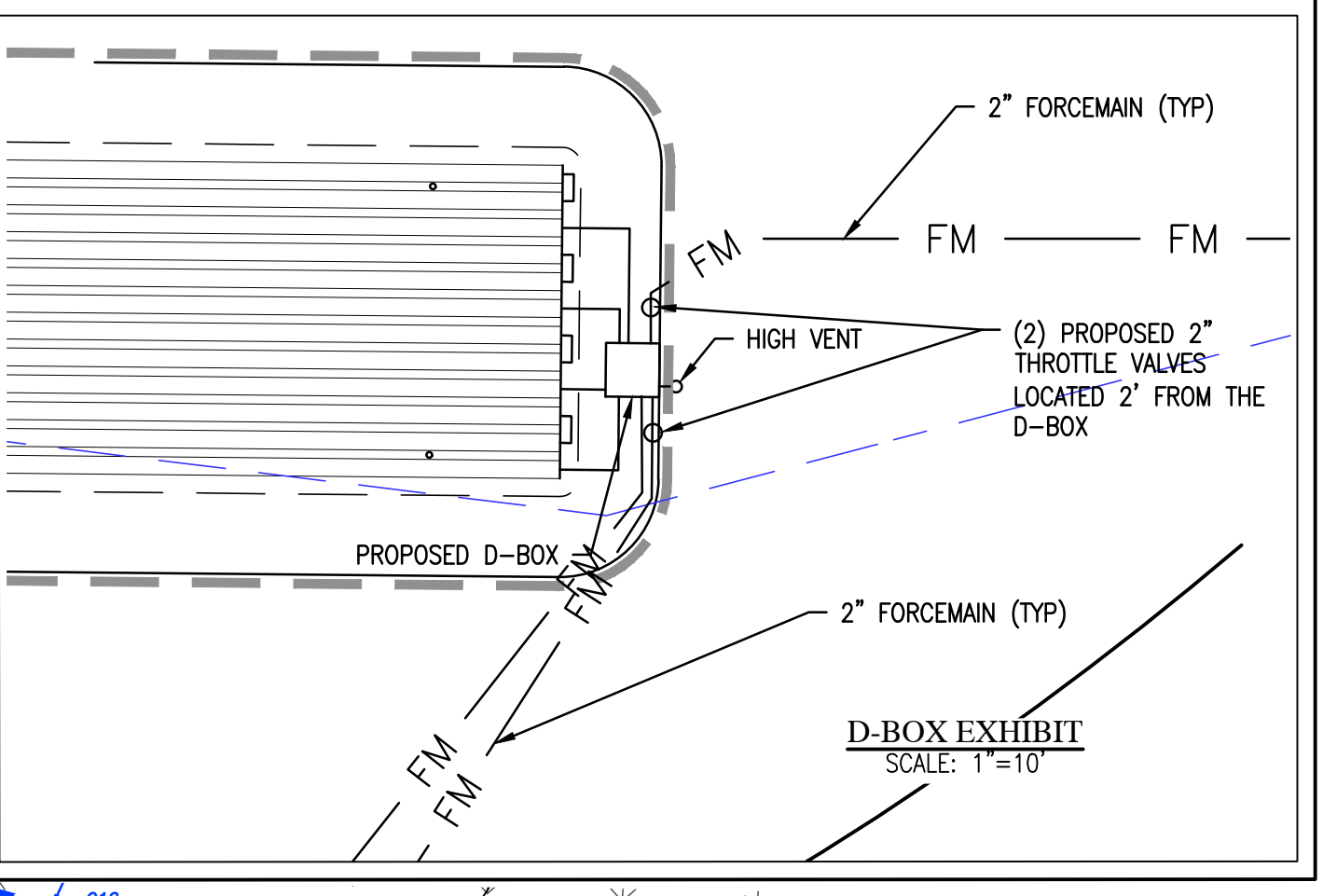
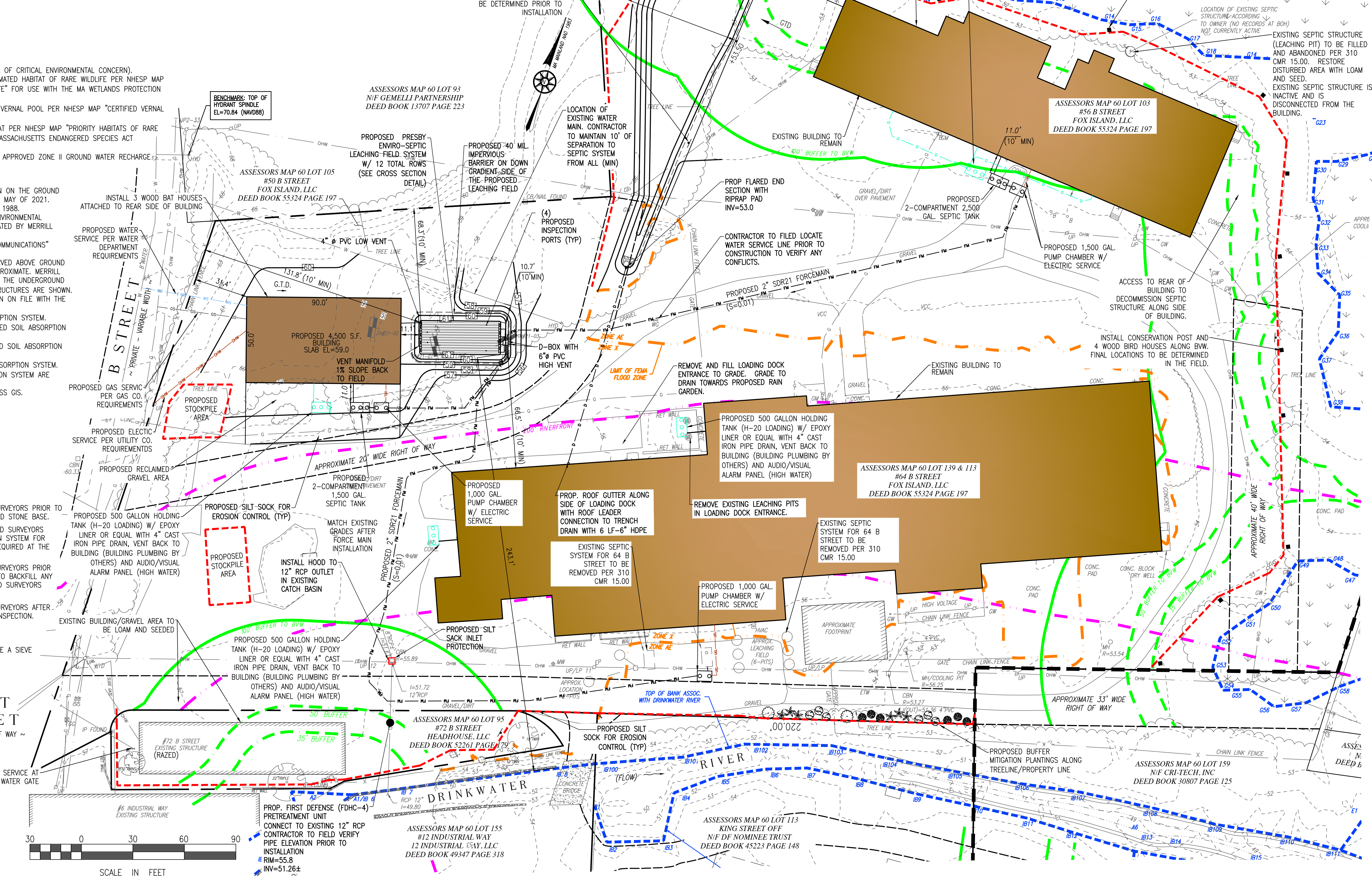
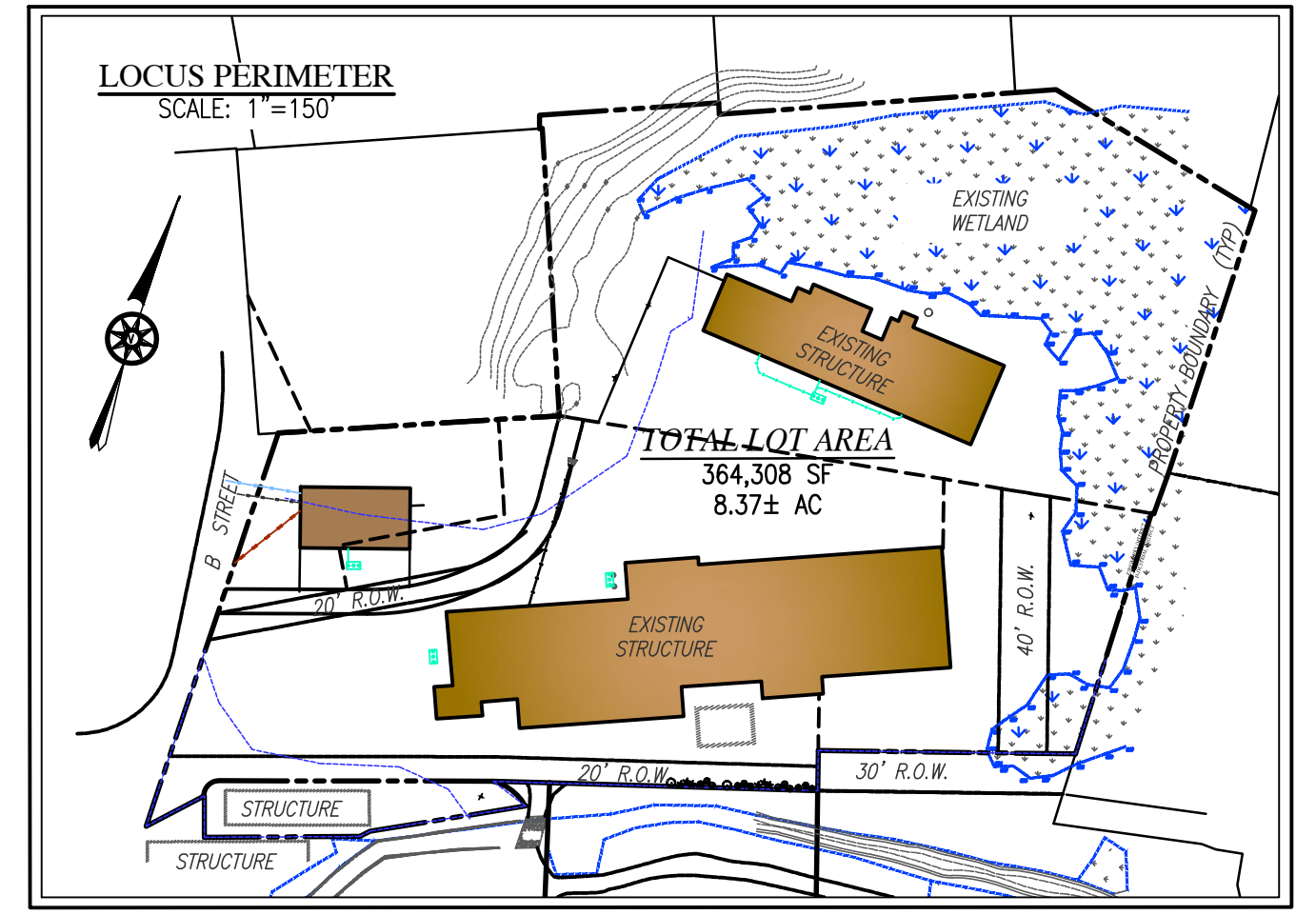
- NOTIFY BOARD OF HEALTH AND MERRILL ENGINEERS AND LAND SURVEYORS PRIOR TO BACKFILLING OF SEPTIC STRUCTURES FOR INSPECTION OF CRUSHED STONE BASE.
- NOTIFY THE BOARD OF HEALTH AND MERRILL ENGINEERS AND LAND SURVEYORS AFTER EXCAVATING THE SOIL FROM AROUND THE SOIL ABSORPTION SYSTEM FOR BOTTOM OF HOLE INSPECTION, ADDITIONAL EXCAVATION MAY BE REQUIRED AT THE TIME OF INSPECTION.
- NOTIFY BOARD OF HEALTH AND MERRILL ENGINEERS AND LAND SURVEYORS PRIOR TO BACKFILLING OF SYSTEM. THE CONTRACTOR IS NOT ALLOWED TO BACKFILL ANY COMPONENT OF THE SYSTEM UNTIL MERRILL ENGINEERS AND LAND SURVEYORS HAS VERIFIED THE SYSTEM LOCATION AND ELEVATION.
- NOTIFY BOARD OF HEALTH AND MERRILL ENGINEERS AND LAND SURVEYORS AFTER THE SEPTIC SYSTEM HAS BEEN BACKFILLED FOR FINAL GRADING INSPECTION. ADDITIONAL GRADING AND FILL MAY BE REQUIRED AT THE TIME.

VARIANCE REQUEST:
 THE APPLICANT REQUESTS A LOCAL UPGRADE APPROVAL TO UTILIZE A SIEVE ANALYSIS IN LIEU OF THE A PERCOLATION TEST.

ZONING REQUIREMENTS
 FIREWORKS DISTRICT

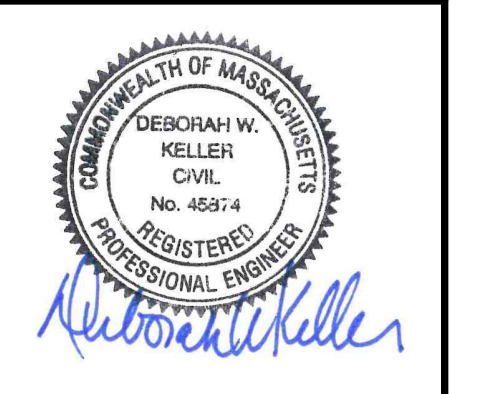
AREA	44,000 SF
FRONTAGE	200 FEET
BUILDING COVERAGE	17.5%
LOT COVERAGE	60%
MINIMUM YARDS:	
FRONT	50 FEET*
SIDE	25 FEET
REAR	40 FEET

* DIMENSIONAL REGULATIONS IN THE FIREWORKS DISTRICT MAY BE RELAXED UPON THE GRANT OF A SPECIAL PERMIT BY THE PLANNING BOARD.



REVISIONS

4. 5/18/22	RELOCATE BLDG
3. 3/11/22	CON COM REVISIONS
2. 2/17/22	CON COM FILING
1. 1/25/22	BOH COMMENTS

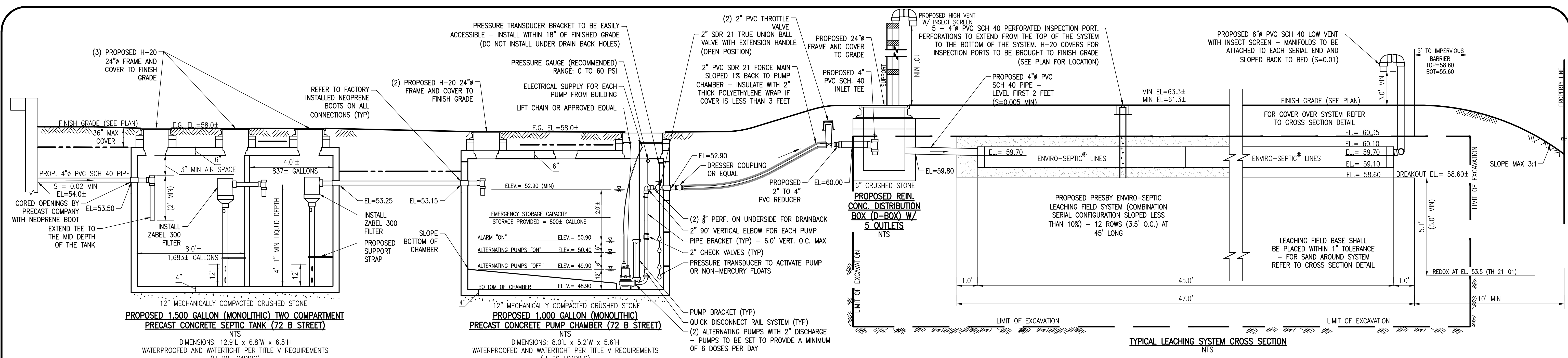


DRAWN BY: JG
DESIGNED BY: JG
CHECKED BY: DA

Merrill
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 427 COLUMBIA ROAD, HANOVER, MA 02339 / T: (781) 826-9200
 26 UNION STREET, PLYMOUTH MA 02360 / T: (508) 746-6060
 WWW.MERRILLINC.COM

SEPTIC DESIGN PLAN
 50, 56, 64 & 72 B STREET
 ASSESSORS MAP 60 LOTS 105, 103, 95, 139 & 113
 HANOVER, MASSACHUSETTS 02339

NOVEMBER 29, 2021
 SCALE: 1" = 30'
 JOB NO. 21-194
 LATEST REVISION:
 MAY 18, 2022



TYPICAL LEACHING SYSTEM CROSS SECTION
NTS

SEPTIC DESIGN (NOT DESIGNED FOR GARBAGE GRINDER)

1. DESIGN DAILY FLOW: 310 CMR 15.203 (1): SYSTEM SEWAGE FLOW DESIGN CRITERIA

COLLECTION SYSTEM #1:	56 B STREET	72 B STREET	TOTAL DAILY FLOW
WAREHOUSE/DRY STORAGE SPACE			
@ 15 G.P.D. PER EMPLOYEE	35 EMPLOYEES (525 G.P.D.)	10 EMPLOYEES (150 G.P.D.)	675 G.P.D.
OFFICE SPACE			
@ 75 G.P.D. PER 1,000 S.F.	3,500 S.F. (263 G.P.D.)	500 S.F. (38 G.P.D.)	300 G.P.D.
	TOTAL: 788 G.P.D.	TOTAL: 188 G.P.D.	TOTAL DESIGN DAILY FLOW FOR SITE: 976 G.P.D.

2. DESIGN SEPTIC TANK (310 CMR 15.223 TO 15.228)

	MINIMUM REQUIRED	PROPOSED:
56 B STREET SEPTIC TANK (1st COMPARTMENT): 48 HRS	788 GPD x 200% = 1,576 GALLONS	1,683± GALLONS
SEPTIC TANK (2nd COMPARTMENT): 24 HRS	788 GPD x 100% = 788 GALLONS	837± GALLONS
72 B STREET SEPTIC TANK (1st COMPARTMENT): 48 HRS	188 GPD x 200% = 376 GALLONS	980± GALLONS
SEPTIC TANK (2nd COMPARTMENT): 24 HRS	188 GPD x 100% = 188 GALLONS	508± GALLONS

3. DESIGN SOIL ABSORPTION SYSTEM
310 CMR 15.242(b): LTAR - EFFLUENT LOADING RATE:

FOR DESIGN USE:
SIEVE >85% SAND, ELR = 0.74 GPD/SF

FOR DESIGN USE:
PRESBY ENVIRO - SEPTIC® PER DEP APPROVAL FOR GENERAL USE

PROPOSED SYSTEM CONFIGURATION:
LEACHING FIELD SYSTEM
COMBINATION SERIAL CONFIGURATION: SLOPED LESS THAN 10% (PROPOSED LEVEL)

4. EXCAVATION:

- EXCAVATE ALL HUMUS & SUBSOIL MATERIAL 5 FT AROUND S.A.S. TO C1/C2 LAYER (SEE SOIL LOGS).
- REPLACE WITH CLEAN COARSE MATERIAL IN ACCORDANCE WITH 310 CMR 15.255 TO THE TOP OF THE S.A.S. EXCAVATION MUST BE INSPECTED BY THE TOWN & MERRILL PRIOR TO SOIL REPLACEMENT ADDITIONAL EXCAVATION MAY BE REQUIRED AT THE TIME OF INSPECTION.

PROPOSED SAND BED AREA SIZE - 47.0' WIDE x 19.5' LONG = 916 S.F. (USE FOR DESIGN)

4. EXCAVATION: (continued)

REPLACE WITH CLEAN COARSE MATERIAL IN ACCORDANCE WITH 310 CMR 15.255 TO THE TOP OF THE S.A.S. EXCAVATION MUST BE INSPECTED BY THE TOWN & MERRILL PRIOR TO SOIL REPLACEMENT ADDITIONAL EXCAVATION MAY BE REQUIRED AT THE TIME OF INSPECTION.

CONTROL PANEL SHALL HAVE THE FOLLOWING: HAND/OFF/AUTOMATIC SELECTOR SWITCH, PUMP RUN LIGHT, PUMP RUNNING TIME HOUR METERS FOR EACH PUMP.

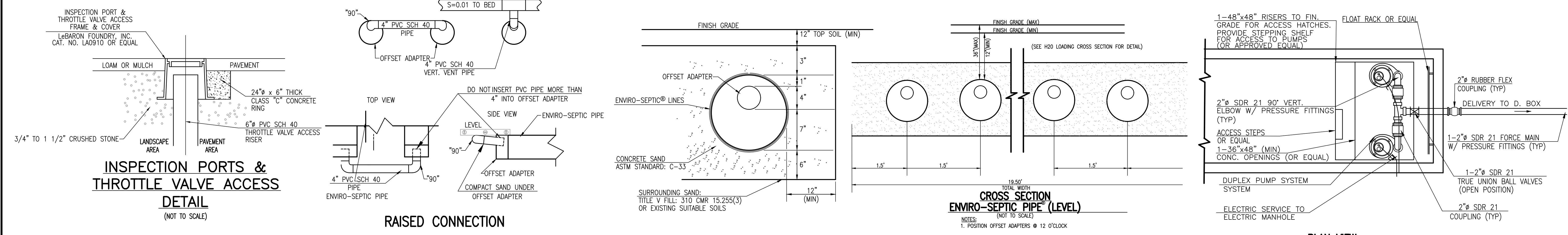
PANEL MOUNTED LIGHTS FOR INDICATION OF EACH OF THE FOLLOWING: LOW WATER LEVEL, HIGH WATER LEVEL. ALARMS TO BE ON SEPARATE CIRCUIT FROM PUMPS AND HAVE BACKUP POWER. TO HAVE VISUAL AND AUDIO ALARM, PLACED IN A COMMON AREA INDICATE WHICH PUMP CAUSED THE ALARM.

THE CONTROL PANEL SHALL BE OF "NEMA" 4 STAINLESS STEEL DESIGNED FOR OUTDOOR MOUNTING OR APPROVED EQUAL.

PUMPS MUST BE INSTALLED BY A LICENSED ELECTRICAL CONTRACTOR.

CONTRACTOR TO VERIFY JUNCTION BOX LOCATION WITH ELECTRICAL INSPECTOR AND BOARD OF HEALTH. ALL ELECTRICAL CONNECTIONS SHALL BE OUTSIDE THE TANK.

CONTRACTOR MUST CHECK PUMPS STARTING & RUNNING AMPS VS. PUMP SPECIFICATIONS.



PLAN VIEW PROPOSED PUMP CHAMBER
NTS

REVISIONS

4. 5/18/22	RELOCATE BLDG
3. 3/11/22	CON COM REVISIONS
2. 2/17/22	CON COM FILING
1. 1/25/22	BOH COMMENTS

DEBORAH W. KELLER
CIVIL
No. 45974
REGISTERED PROFESSIONAL ENGINEER

Drawn By: JG
Designed By: JG
Checked By: DA

Merrill
Engineers and Land Surveyors

427 COLUMBIA ROAD, HANOVER, MA 02339 / T: (781) 826-9200
26 UNION STREET, PLYMOUTH MA 02360 / T: (508) 746-6060
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SEPTIC DESIGN PLAN

50, 56, 64 & 72 B STREET
ASSESSORS MAP 60 LOT 105, 103, 139 & 95
HANOVER, MASSACHUSETTS 02339

OWNER/APPLICANT: FOX ISLAND, LLC
80 WASHINGTON STREET, SUITE 45
NORWELL, MA 02061

HEADHOUSE, LLC
256 MARGINAL STREET
EAST BOSTON, MA 02128

NOVEMBER 29, 2021

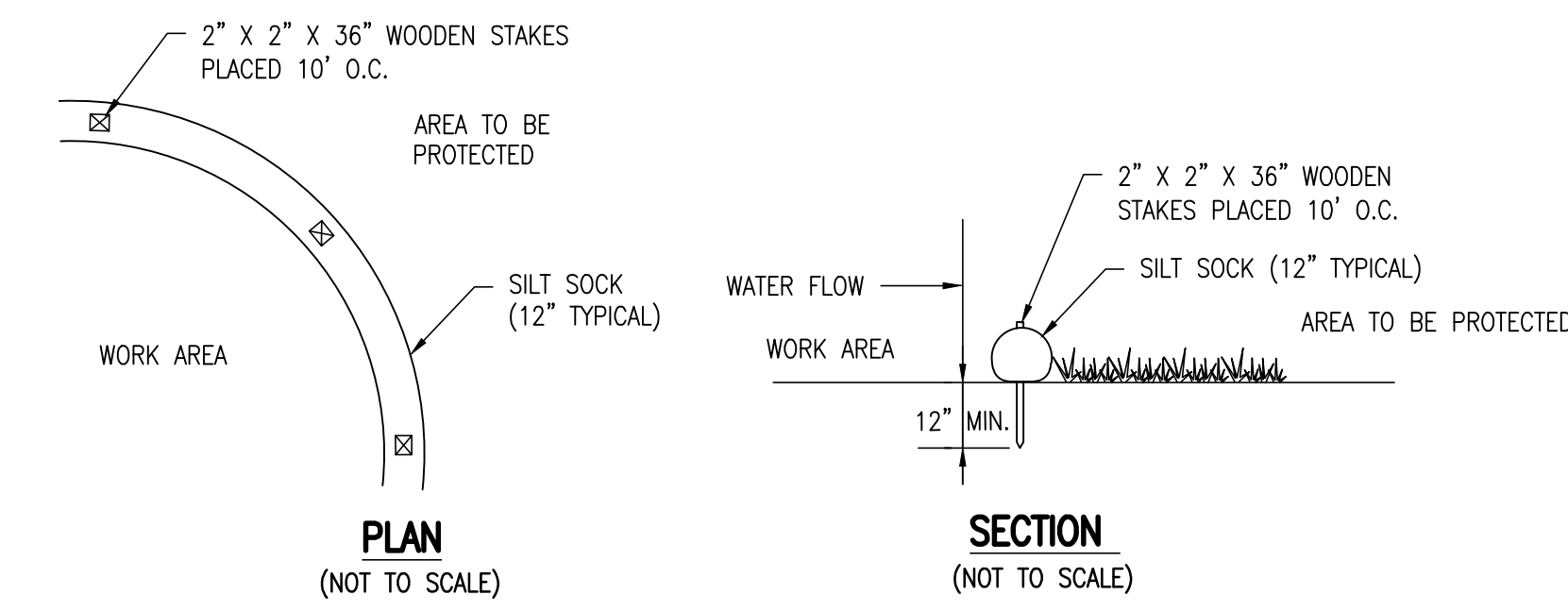
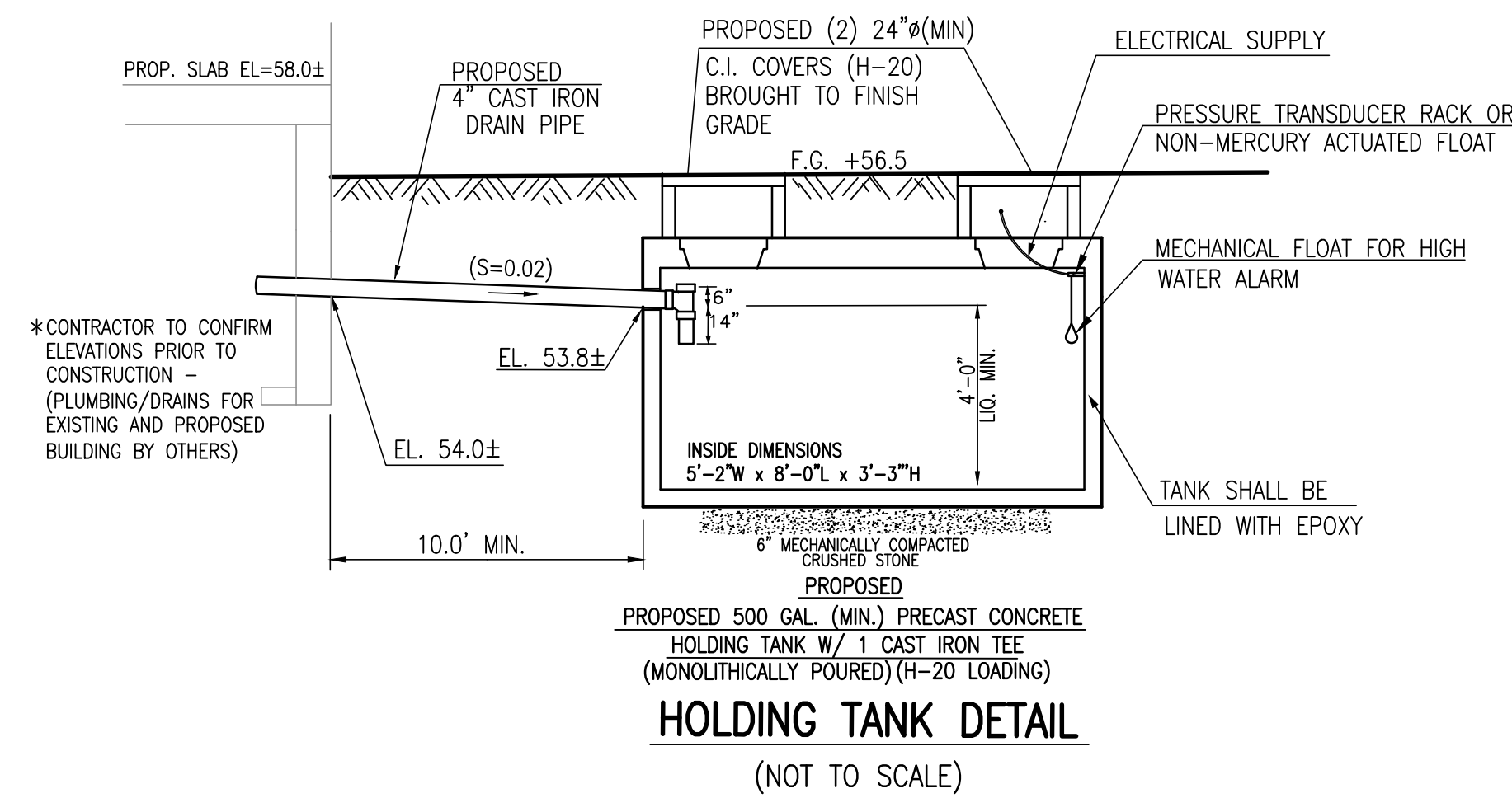
SCALE: AS NOTED

JOB NO. 21-194

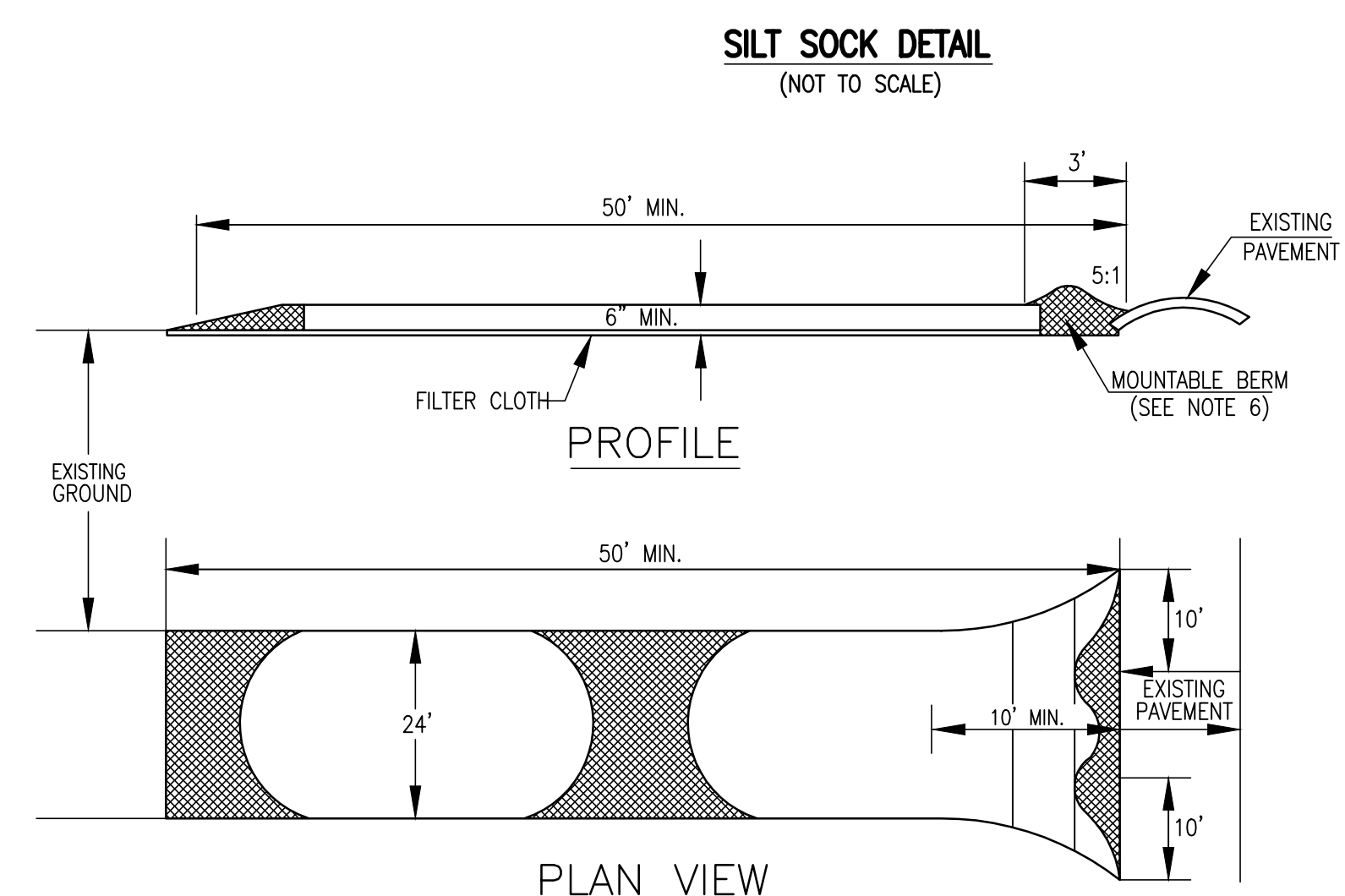
LATEST REVISION:
MAY 18, 2022

SHEET 2 OF 3

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NOTE: REFER TO THE PLAN FOR PROPOSED LOCATION.



STABILIZED CONSTRUCTION ENTRANCE
(NOT TO SCALE)

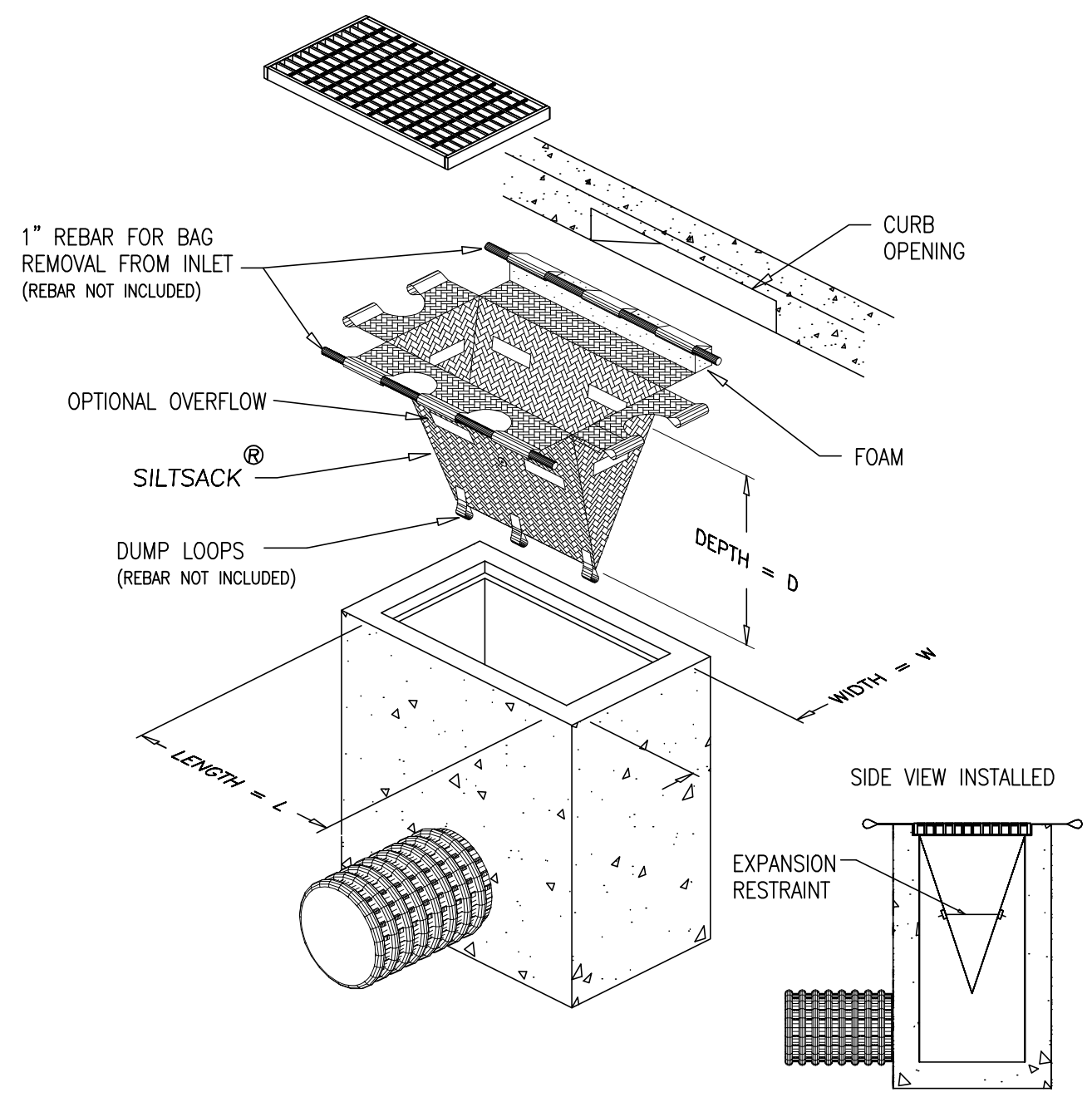
SPECIFICATIONS

- STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FT.
- THICKNESS - NOT LESS THAN SIX (6) INCHES.
- WIDTH - TEN (10) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
- FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. FILTER WILL NOT BE REQUIRED ON A SINGLE FAMILY RESIDENCE LOT.
- SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
- MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAYS MUST BE REMOVED IMMEDIATELY.
- WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

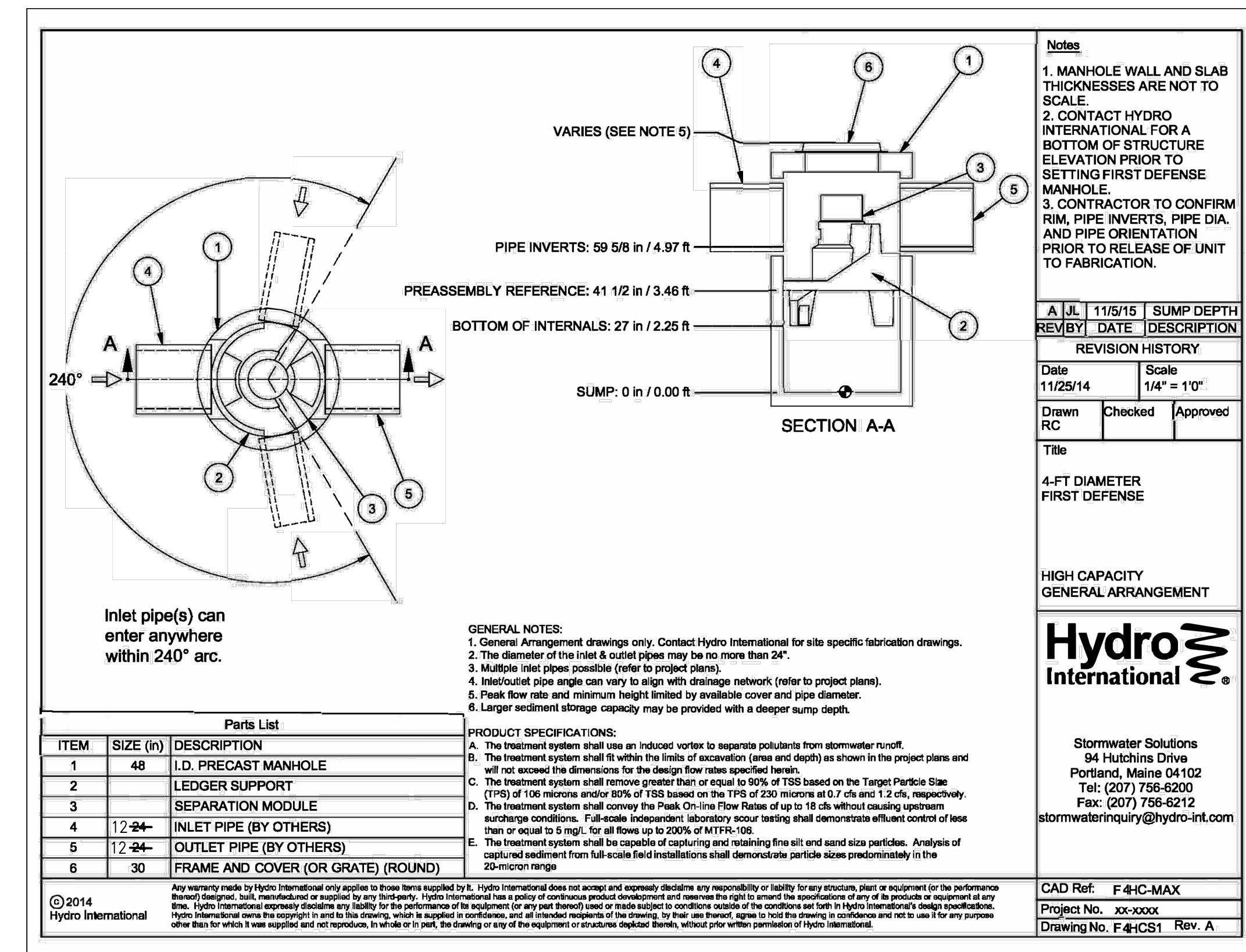
SOIL LOGS

PERFORMED BY: JOSHUA GREEN, E.I.T.
WITNESSED BY: WILL BARRETT, HANOVER BOARD OF HEALTH
DATE: AUGUST 26, 2021

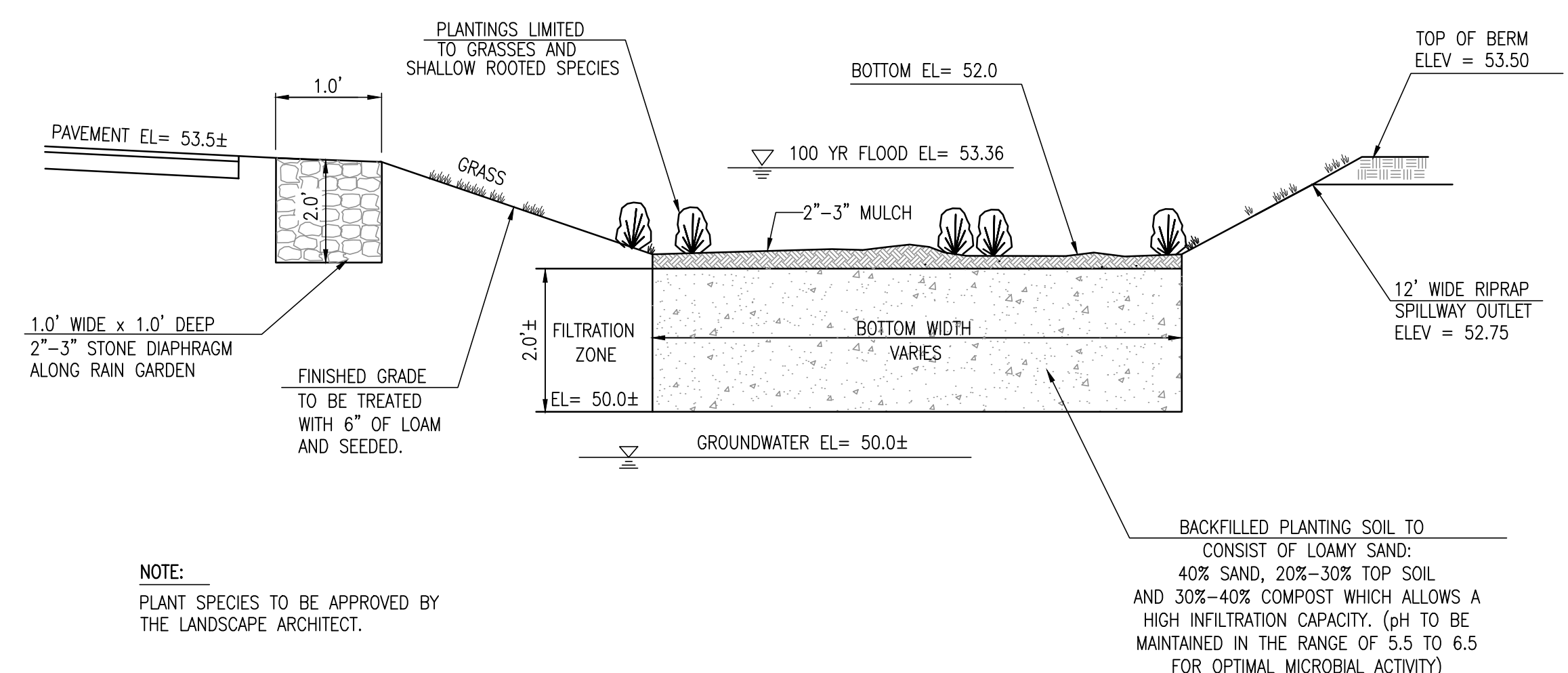
TH21-01 EL. 57.0	TH21-02 EL. 58.2	TH21-03 EL. 56.1
0" TO 28" FILL 54.7	0" TO 30" FILL 55.7	0" TO 48" FILL 52.1
28" TO 30" A/L LAYER SANDY LOAM 10YR 2/2 54.5	30" TO 32" A/L LAYER SANDY LOAM 10YR 2/2 55.5	48" TO 50" A/L LAYER SANDY LOAM 10YR 2/2 51.9
30" TO 42" B/L LAYER SANDY LOAM 10YR 5/6 53.5	32" TO 45" B/L LAYER SANDY LOAM 10YR 5/6 54.5	50" TO 72" B/C LAYER SANDY LOAM 2.5Y 6/2 50.1
42" TO 74" C1 LAYER SILT LOAM 2.5Y 6/1 50.8	45" TO 70" C LAYER SANDY LOAM 2.5Y 6/2 52.4	72" TO 130" C LAYER V.F. SAND 2.5Y 6/2 45.3
74" TO 120" C2 LAYER LOAMY SAND 2.5Y 6/2 47.0		
D=120" REDOX @ 42" EL=53.5±	D=70" REDOX @ 62" EL=53.0±	D=130" REDOX @ 50" EL=51.9±



SILT SACK DETAIL
(NOT TO SCALE)



FIRST DEFENSE PRETREATMENT UNIT (FDHC4)
(NOT TO SCALE)

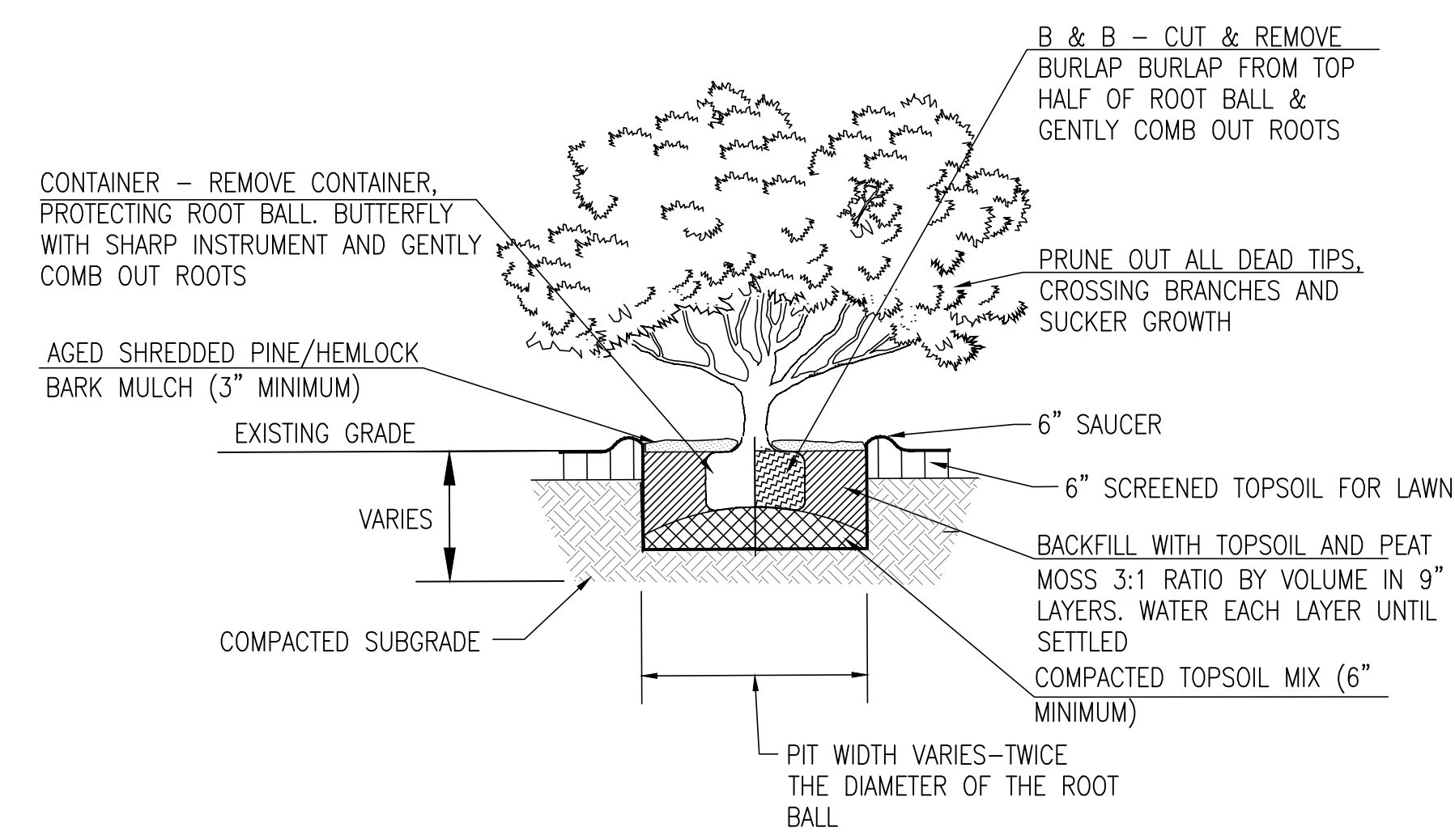


RAIN GARDEN DETAIL
(NOT TO SCALE)

SUGGESTED BUFFER PLANTING SCHEDULE

BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE	COMMENTS
ACER RUBRUM	RED SWAMP MAPLE	2	2.5" CAL.	DECIDUOUS
VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	6	2-3 FT	SHRUB
ARONIA MELANOCARPA	BLACK CHOKEBERRY	6	2-3 FT	SHRUB
AMELANCHIER CANADENSIS	SHADBUSH	6	2-3 FT	SHRUB

NOTE: TYPE AND QUANTITY OF PLANTINGS TO BE DETERMINED AT THE TIME OF PLANTING



SHRUB PLANTING DETAIL
(NOT TO SCALE)

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1.	1/25/22	BOH COMMENTS

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Fax: (207) 756-6212
stormwaterinquiry@hydro-int.com

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SHEET 3 OF 3