

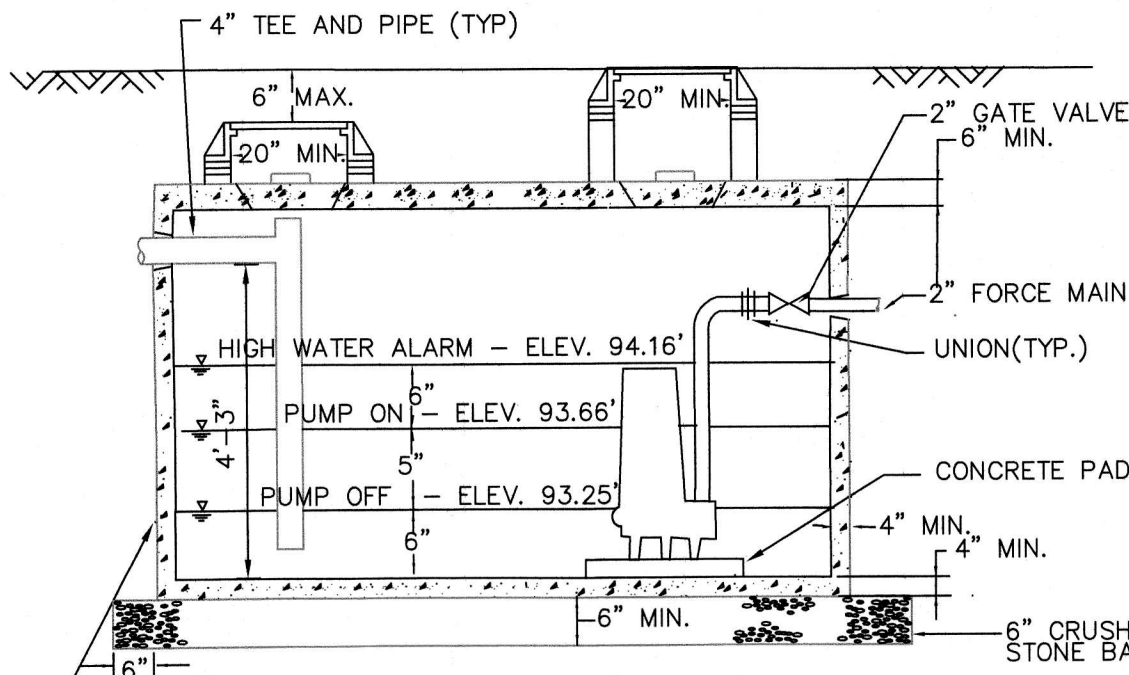
PUMP SPECIFICATIONS

Liberty Pump Model LE51

- .50 H.P., 115V, Single Phase
- 2" Solids Handling
- Mechanical Float Switches
- Install high water alarm inside dwelling on separate circuit other than pump, include red light, buzzer and merc. float switch

PUMP DESIGN

Dosing Frequency : 4 Doses Per Day
Dose : 110 gal. + 8 gal. flowback = 118 gal.
Pump Chamber Capacity : (1000 Gal.)
Chamber Capacity : 8'-10"x4'-2"x1"x7.48 gal./cu.ft.
= 22.87g/inch depth(Approx.)
Pump Controls :
Pump On/Off : 118 gal./22.87 gal./inch. = 5"
Emergency Storage Requirements:
440 gal./22.87 gal./in. = 19.0 in. req.
Avail Storage = 4'-3"(tank) - 11.0"(working level)
= 40.0" > 19.0" req. ok



1000 Gal. Pump Chamber Design

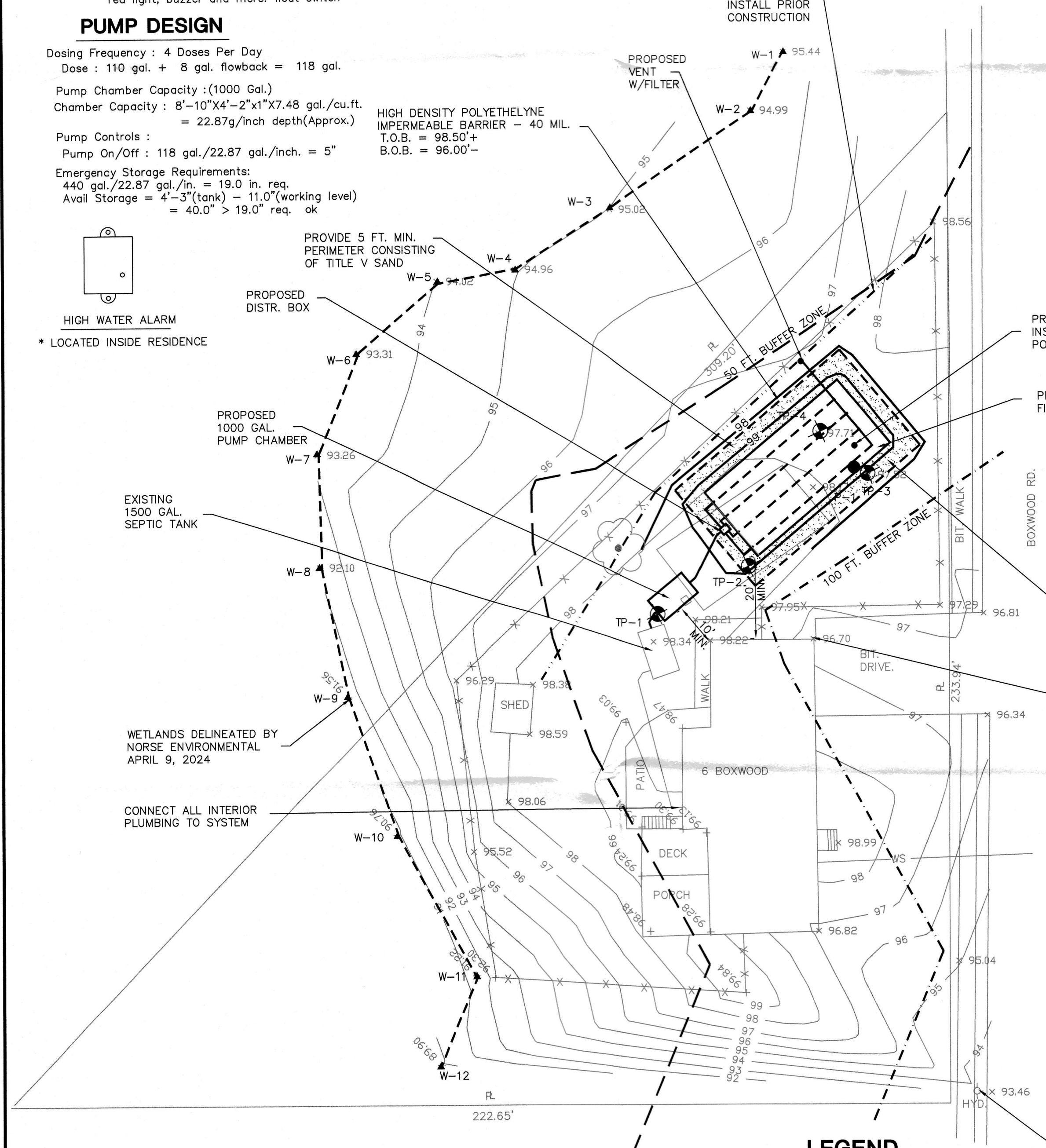
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PROPOSED HAY WATTLE INSTALL PRIOR CONSTRUCTION

HIGH DENSITY POLYETHYLENE IMPERMEABLE BARRIER - 40 MIL.
T.O.B. = 98.50'+
B.O.B. = 98.00'+

PROVIDE 5 FT. MIN. PERIMETER CONSISTING OF TITLE V SAND

HIGH WATER ALARM
* LOCATED INSIDE RESIDENCE

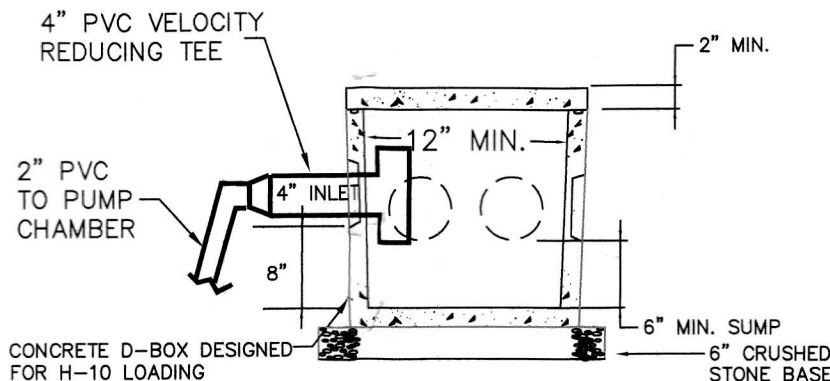


LEGEND

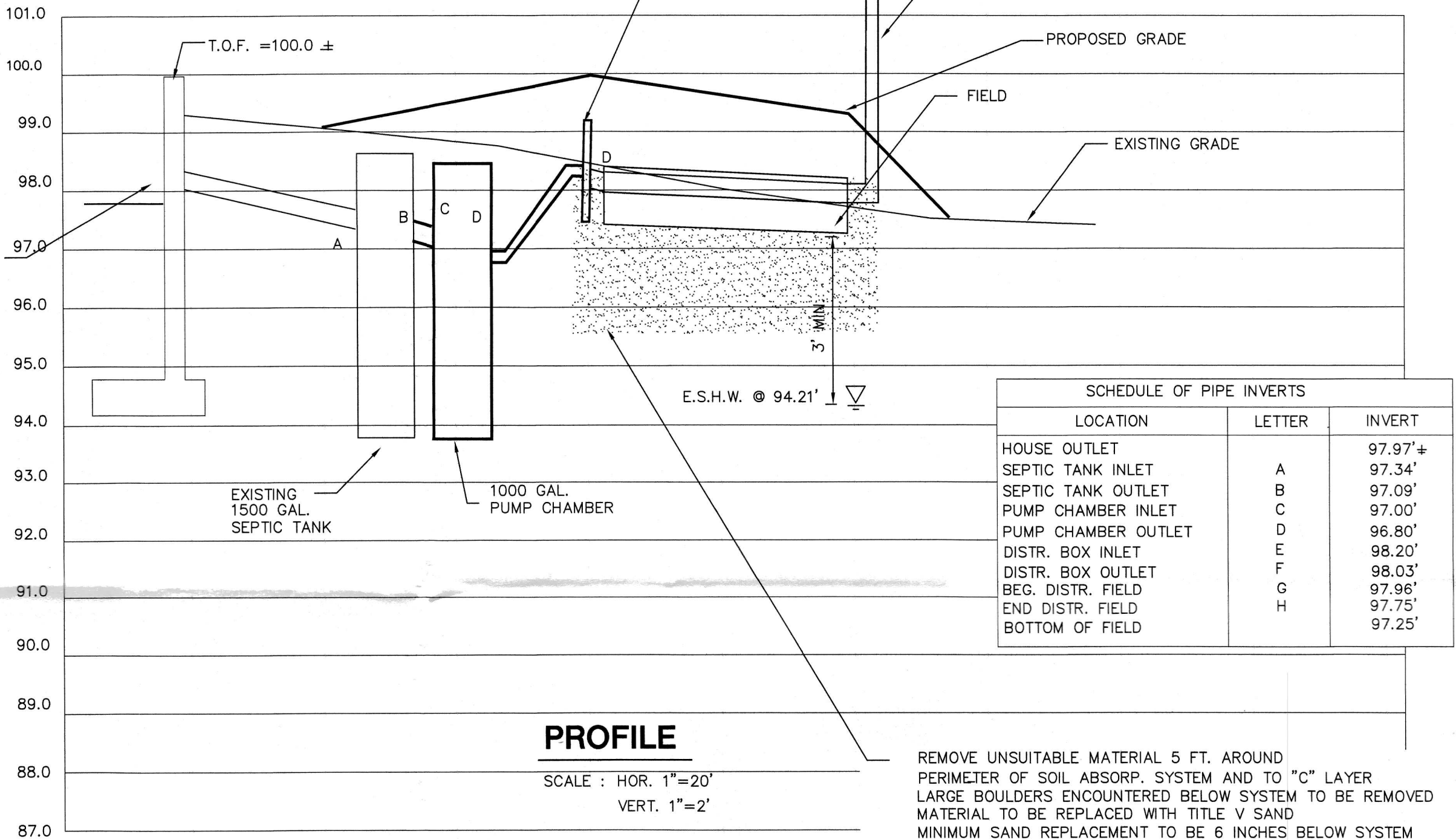
PLAN VIEW

SCALE : 1"=20'

BENCHMARK TOP OF HYDRANT SPINDLE ELEV. 96.43'



Distribution Box(6-Hole)



SCHEDULE OF PIPE INVERTS		
LOCATION	LETTER	INVERT
HOUSE OUTLET		97.97'±
SEPTIC TANK INLET	A	97.34'
SEPTIC TANK OUTLET	B	97.09'
PUMP CHAMBER INLET	C	97.00'
PUMP CHAMBER OUTLET	D	96.80'
DISTR. BOX INLET	E	98.20'
DISTR. BOX OUTLET	F	98.03'
BEG. DISTR. FIELD	G	97.96'
END DISTR. FIELD	H	97.75'
BOTTOM OF FIELD		97.25'

REMOVE UNSUITABLE MATERIAL 5 FT. AROUND PERIMETER OF SOIL ABSORP. SYSTEM AND TO "C" LAYER LARGE BOULDERS ENCOUNTERED BELOW SYSTEM TO BE REMOVED MATERIAL TO BE REPLACED WITH TITLE V SAND MINIMUM SAND REPLACEMENT TO BE 6 INCHES BELOW SYSTEM

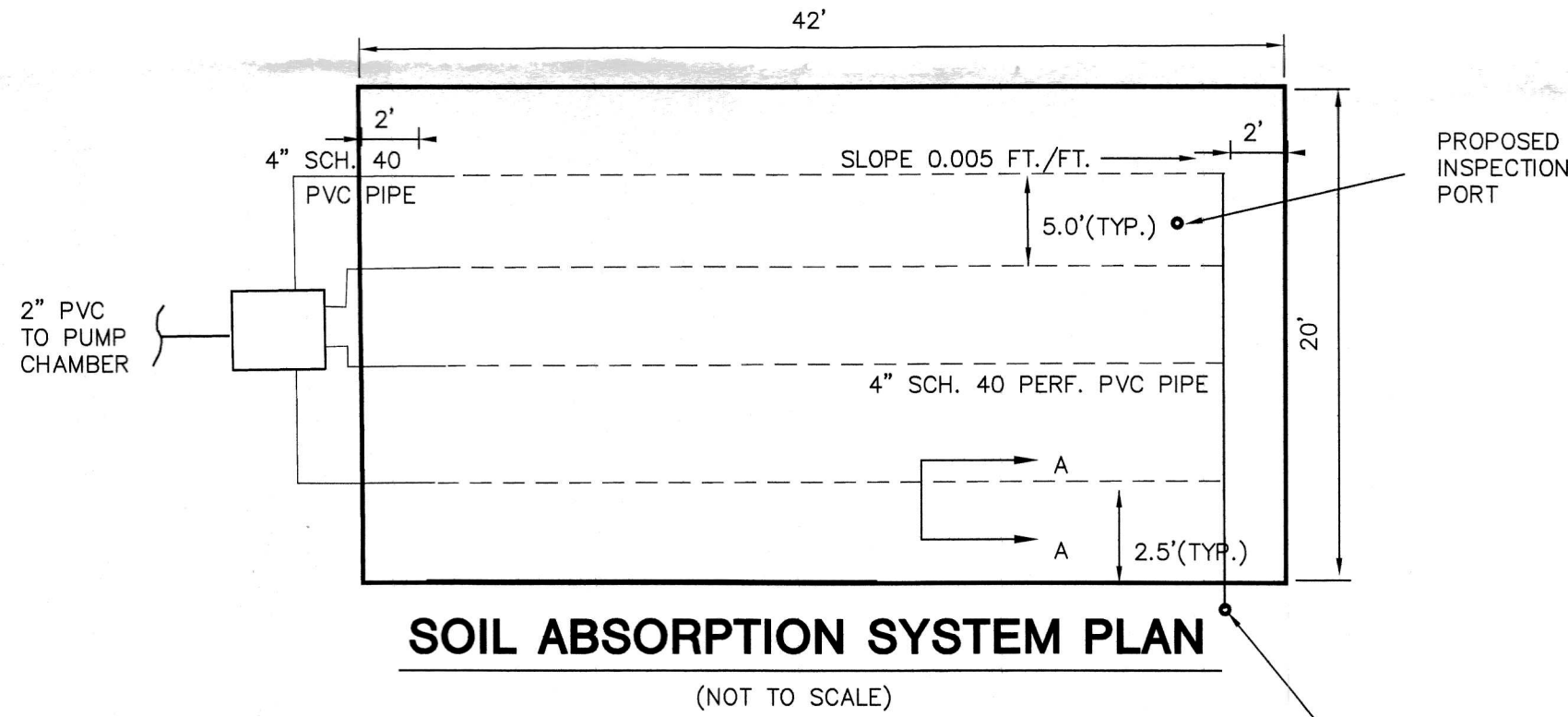
FROM SURF.	SOIL TYPE	GRND. ELEV.	FROM SURF.	SOIL TYPE	GRND. ELEV.	FROM SURF.	SOIL TYPE	GRND. ELEV.	FROM SURF.	SOIL TYPE	GRND. ELEV.	FROM SURF.	SOIL TYPE	GRND. ELEV.
0'-10"	Ap-LFS 10YR3/2	97.03'	0'-12"	Ap-LFS 10YR3/2	97.15'	0'-10"	Ap-FSL 10YR3/2	97.52'	0'-12"	Ap-LFS 10YR3/2	97.71'	54"	18 MIN./IN.	93.02'
10"-30"	Bw-LFS 10YR6/8	94.53'	12"-24"	Bw-LFS 10YR6/8	95.15'	10"-24"	FSL 10YR6/8	95.52'	12"-26"	Bw-LFS 10YR6/8	95.54'			
30"-108"	C1-GLS 2.5y7/4	88.03'	24"-84"	C1-GLS 2.5y7/4	90.15'	24"-90"	C1-SL 2.5y7/4	90.02'	26"-100"	C1-GLS 2.5y7/4	89.38'			
GROUNDWATER OBSERVED @ 8"(89.03') EST. SEAS. HIGH GRNDWTR @ 42"(93.53') EST. SEAS. HIGH GRNDWTR @ 42"(93.65') EST. SEAS. HIGH GRNDWTR @ 78"(91.02') EST. SEAS. HIGH GRNDWTR @ 42"(94.02') EST. SEAS. HIGH GRNDWTR @ 80"(91.04') EST. SEAS. HIGH GRNDWTR @ 42"(94.21')														

SOIL ANALYSIS

WITNESSED BY: MARTIN FAIR
BOARD OF HEALTH
TOWN OF N. READING
JULY 14, 2003

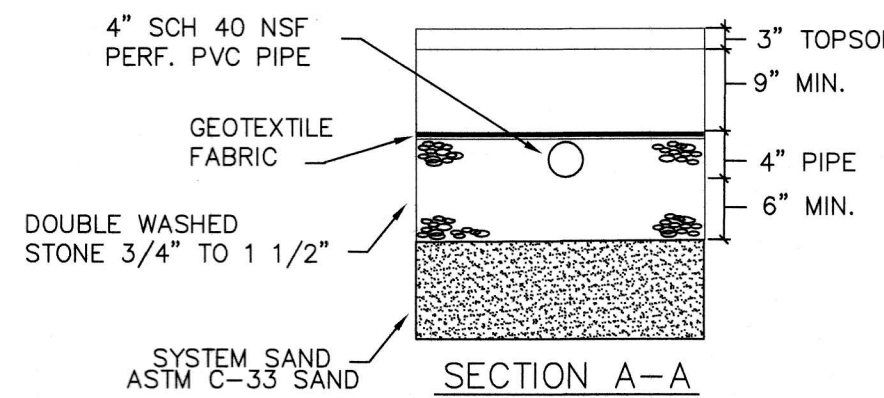
SOIL ANALYSIS

WITNESSED BY: ALEX PARKER
BOARD OF HEALTH
TOWN OF N. READING
APRIL 18, 2024



SOIL ABSORPTION SYSTEM PLAN

(NOT TO SCALE)



Notes

- ALL UNSUITABLE MATERIAL MUST BE REMOVED FROM THE PROPOSED CONSTRUCTION AREA BELOW THE SOIL ABSORPTION SYSTEM AND A MINIMUM OF FIVE FEET LATERALLY IN ALL DIRECTIONS BEYOND THE OUTER PERIMETER OF THE SYSTEM. BACKFILL MATERIAL SHALL CONSIST OF CLEAN SAND OR GRAVEL FREE OF FINES AND HAVING A PERCOLATION RATE OF 2 MIN. PER INCH OR LESS AFTER BEING PLACED AND COMPACTED.
- ALL STONE MUST BE DOUBLE WASHED AND FREE FROM FINES AND MUST HAVE LESS THAN 0.5% FINER MATERIAL PASSING THE NO. 200 SIEVE.
- HEAVY MACHINERY SHALL NOT BE PERMITTED TO PASS OVER ANY PART OF THE PROPOSED SUBSURFACE DISPOSAL SYSTEM.
- SYSTEM PIPING SHALL CONSIST OF POLYVINYL CHLORIDE PIPE(PVC) SCHEDULE 40 NSF, UNLESS OTHERWISE NOTED.
- GARBAGE GRINDER/DISPOSAL SYSTEM IS NOT TO BE CONNECTED TO THE SUBSURFACE DISPOSAL SYSTEM.
- SITE SURVEY WAS SOLELY PERFORMED TO OBTAIN SITE TOPOGRAPHY FOR THE INSTALLATION OF A SUBSURFACE DISPOSAL SYSTEM. THE DESIGNER IS NOT RESPONSIBLE FOR THE ACCURACY OF THE REPRESENTATION OF ANY PROPERTY LINES OR BUILDING LOCATIONS SHOWN. THE CONTRACTOR IS RESPONSIBLE FOR ALL HORIZONTAL AND VERTICAL CONTROLS.
- ALL DISTURBED AREAS SHALL BE LOAMED, SEEDED AND MAINTAINED TO PREVENT EROSION. ANY DISTURBED PAVING MUST BE REPLACED IN-KIND.
- THE DESIGNER HAS NOT BEEN RETAINED BY THE CLIENT TO CONSTRUCT OR SUPERVISE THE CONSTRUCTION OF THE SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR MAKING ARRANGEMENTS FOR INSPECTION OF THE INSTALLATION OF THE SYSTEM WITH THE LOCAL BOARD OF HEALTH.
- ALL SURFACE AND SUBSURFACE DRAINAGE SHALL BE DIRECTED AWAY FROM THE SUBSURFACE DISPOSAL SYSTEM.
- ALL SYSTEM TANKS AND PIPING CONNECTIONS SHALL BE MADE WATERTIGHT THROUGHOUT SPECIFICATIONS AND WARRANTY.
- PROPER MAINTENANCE AND PERFORMANCE OF THE SUBSURFACE DISPOSAL SYSTEM SHOULD CONSIST OF INSPECTING THE SEPTIC TANK AT LEAST ONCE A YEAR AND WHEN THE TOTAL DEPTH OF SCUM AND SOLIDS EXCEEDS 1/3 THE LIQUID DEPTH OF THE TANK, THE TANK SHOULD BE PUMPED.
- SEPTIC TANK MANUFACTURER TO SUPPLY BOUANCY VERIFICATION AND/OR BOUANCY PAD FOR PROPOSED CHAMBERS.
- SEWER LINES WHICH HAVE LESS THAN 1/4 BENDS INSTALLED SHALL ALSO HAVE CLEANOUTS INSTALLED IN AN ACCESSIBLE LOCATION.
- THIS PROJECT IS GOVERNED BY AN ORDER OF CONDITIONS ISSUED BY THE LOCAL CONSERVATION COMMISSION. THE CONTRACTOR SHALL OBTAIN ALL PROJECT RELATED DOCUMENTATION REGARDING ADDITIONAL REQUIREMENTS PRIOR TO CONSTRUCTION.
ORDER OF CONDITIONS - DEP FILE NO. _____

LOCAL UPGRADE REQUEST:

UNDER SECTION 15.405(1) OF MDEP REGULATION 310 CMR 15.00
- A REQUEST IS ASKED FOR A VARIANCE FOR A REDUCTION OF THE SAS FROM THE E.S.H.W FROM 4 FT. TO 3 FT.

Design

Design Flow : 4 Bedrooms @ 440 gpd = 440 gpd
Percolation Rate = 18 min./in.
LTAR = 0.53 gpd/sq.ft.
Design of Soil Absorption System : Field
Effective Width = 20 Feet
Effective Depth = 6 inches
Bottom Capacity = 20 sq.ft./ft. x 0.53 gpd/sq.ft. = 10.6 gpd/ft.
Overall Capacity = 10.6 gpd/ft.
440 gpd / 10.6 gpd/ft. = 41.5 ft. of Field Needed
USE FIELD SIZE 20 FT. X 42 FT. = 840 S.F.

Septic Tank Design

200% for Design factor : 2 X440 gpd = 880 gpd
Use (Min. Req'd.) 1500 Gal. Septic Tank

SOIL EVALUATOR STATEMENT :

(JAMES M. KAVANAUGH) CERTIFY THAT ON JULY 26,1995 I HAVE PASSED THE EXAMINATION APPROVED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THAT THE ABOVE ANALYSIS HAS BEEN PERFORMED BY ME CONSISTENT WITH THE REQUIRED TRAINING, EXPERTISE AND EXPERIENCE DESCRIBED IN 310 CMR 15.018(2).

James M. Kavanaugh, P.E.
Environmental Consultant

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N. Reading Mass. 01864

Tel.(978)664-2925

DESIGN OF SUBSURFACE DISPOSAL SYSTEM

PREPARED FOR

Tracy DeGregorio
6 Boxwood Rd.
North Reading Ma. 01864

Map No. 57
Parcel No. 26

Proj. No. 24012

Desn. By: JMK

Date : April 20, 2024

Drn. By: DMC

Scale : As Noted

Sheet 1 of 1