

OLMSTEAD CONSULTING
P.O. BOX 151
GLENFIELD, NY 13343
PHONE: 315-558-1314
email: solmste@twcnny.rr.com

September 27, 2023

Mr. Claude Curley, P.E.
NYSDOH
Watertown District Office
317 Washington Street
Watertown, NY 13601

Re: Proposed Singing Waters Campground
Town of Greig
Lewis County, NY

Dear Mr. Curley,

Attached please find three copies of a revised/final submission for the above referenced facility.

Materials provided within this submission include (with associated page numbers):

-) Engineering Report (1-5);
-) Water Treatment Schematic Drawing (6);
-) NYSDEC Water Well Completion Report (7);
-) Pump Test Results (8);
-) Analytical Results (including MPA) (9-29);
-) Equipment Specifications (30-49);
-) Septic system design plans (by others) (50-87);
-) Pavilion drawings (reduced size, for information only) (88-90);
-) Full size drawings including site plan, water distribution system details, and bath house details.

If you have any questions or require any additional information, please feel free to contact me.

Sincerely,

Steven J. Olmstead, P.E.

Attachments

**SINGING WATERS CAMPGROUND
FISH CREEK ROAD
TOWN OF GREIG
LEWIS COUNTY, NY
ENGINEERING REPORT
07/26/2023
REVISED 08/18/23
REVISED 09/01/23
REVISED 09/27/23**

Proposed Project:

Lewis County is planning to upgrade the facilities at the existing Singing Waters property. The proposed work includes:

-) Construction of a new bath house (completed 2022);
-) Construction of a new pavilion (proposed for 2023);
-) Installation of:
 - o A new septic system (completed 2022);
 - o A new drilled well after initial well failed to produce enough water (completed 2023);
 - o Buried water piping to serve the bath house and yard hydrants within the facility (completed 2022 to failed well, additional proposed in 2023 to connect new well);
 - o Buried electrical wiring to serve the bath house and well (completed but not connected 2022, additional proposed in 2023 to connect new well and pavilion).

The proposed uses of the facility include:

-) 10 campsites
-) Day use for hiking and picnics.

Referencing the septic system design (included, by Terry Thisse P.E.) the total capacity of the facility is proposed to be those using the campsites, plus up to 30 people per day for hiking/picnics. It is assumed that use of the pavilion will be only for those camping, hiking and having picnics. The pavilion is not proposed to be used for events outside of those activities.

Note that the septic system design included up to 19 campsites, but the County has since determined to do no more than the 10 shown on the site plan.

Proposed Septic System and Current Status:

As noted above, please reference the design by Terry Thisse, P.E. that is included with this report. The septic system was installed in 2022, and Steven Olmstead, P.E. inspected the installation prior to it being covered. At the request of the County (and as provided by the County) a 5,000 gallon septic tank was installed. The locations of the new septic system components are shown on the site plan (included). Steven Olmstead, P.E. will

provide a certification that the septic system installation was done in accordance with the design.

Proposed Water System and Current Status:

In 2021 a well was drilled on the property. At that time a four hour pump test was not performed. A four hour pump test was attempted in 2022, and fracking of that well was also attempted, but it was determined that the well would produce less than 1 gpm.

In 2023 a new well was installed (see well log and site plan). A four hour pump test was done (included) and indicated that the well can sustain a flow of 7 gpm.

Water quality testing was done (results included), with iron at 1.15 mg/L being the only elevated result. The water was retested (08/09/23) after running the well for an extended period of time, and that result was 0.08 mg/L; therefore, no treatment for iron is proposed.

Based on the proximity of the well to Fish Creek (approximately 75'), it was determined that MPA testing would also be done. Those results indicated that treatment for surface water influence is not necessary.

Proposed Water System Design:

System to consist of:

-) Pumping via submersible pump to building plumbing and distribution system;
-) Pressure tanks;
-) Chlorination and retention for contact time.

Water Demands:

-) Although the septic system design was based upon an average daily flow of 1,200 gpd, that assumed 19 campsites. Since the County proposes no more than 10 campsites, that number can be reduced by 495 gpd (9 sites X 55 gpd). Thus the average daily water usage is estimated at $1,200 - 495 = 705$ gpd.
-) Average daily flow = 705 gpd.
-) The peak/instantaneous flow, based on the anticipated use of the fixtures within the bath house and the yard hydrants, is proposed as follows:

<u>fixture</u>	<u>number</u>	<u>gpm</u>	<u>assumed in use</u>	<u>total gpm</u>
shower	3	2.5	2	5
toilet	4	2	1	2
urinal	1	1	0	0
sink	4	2	1	2
utility sink	2	2	1	2
yard hydrant	4	5	1	<u>5</u>
total:				16 gpm

A peak/instantaneous flow of 16 gpm is proposed.

Well Data:

-) New drilled well 340' deep.
-) 4 hour pump test performed by well driller resulted in stabilized yield of 7 gpm.
-) Yield test results and Water Well Completion Report attached.

GWUDI Evaluation:

From the Water Well Completion Report:

-) Total well depth 340'
-) Casing depth 40'
-) Bedrock depth 30'
-) Sand/till depth 0 – 30'
-) Grouted depth 40'
-) Static water level from pump test, approximately 0.5 gpm overflow

Due to the proximity of this well to Fish Creek (approximately 75'), it was agreed that Microscopic Particulate Analysis (MPA) testing would be done. Satisfactory results are attached.

Pumping from Well:

-) Based on the characteristics of the well, a submersible pump will be installed at approximately 300' deep.
-) Distance to bath house utility room say 400'.
-) Bath house to distribution system (looped), use 400'.
-) Assume 50' losses for fittings.
-) Total length assume $300 + 400 + 400 + 50 = 1150'$. At 16 gpm with 1.5" diameter piping friction head = 35'.
-) Elevation difference is approximately 320' from pump to utility room. Distribution system is all downhill from bath house.
-) Add 20 psi residual at yard hydrants (or $20 \times 2.3 = 46'$ of head) plus elevation head of 320' for total: $35' + 320' + 46' = 401'$ of head.
-) To pump from well at 16 gpm with 400' of head, use proposed Goulds 13GS30 submersible pump (or approved equal).
-) Flow to be restricted to 16 gpm with Dole valve, PRV to be installed to regulate pressure (at no more than 75 psi, which is the maximum for the retention tanks). (Note that 16 gpm flow control valve not available, will install 15 gpm valve rather than 20 gpm option. All calculations will assume 16 gpm.).
-) Proposed pressure tank to be ten times peak flow (16 gpm), or 160 gallons.
-) Use two Amtrol WX-255 tank (81 gallon volume each), or approved equal.

Water Demands and Well Level Control:

-) Since the well yield test resulted in a stabilized rate of 7 gpm and a pump flow rate of 16 gpm is proposed, a water level transducer will be installed in the well. The pump controls will be connected to the transducer to avoid over pumping the well. Proposed equipment specifications are attached, including the transmitter

and controls. Programming will shut pump off at low level preset and pump back on at a higher level preset, while also allowing pump to operate under normal conditions via pressure switch. Designer will coordinate set up of system with contractor.

-) While a peak flow of 16 gpm is proposed, that flow is anticipated only for a short duration. Over a one hour period the demand would be $60 \times 16 = 960$ gallons. Over that one hour period the well (based on the yield test) would produce $60 \times 7 = 420$ gallons, for a deficit of 540 gallons. If the well pump is at 300' of depth, there will be approximately 440 gallons in the well casing (300×1.47 gallons/foot). In addition, there will be storage in the contact tanks and pressure tanks. The pump test also indicates a relatively fast recovery time; therefore, it is felt that the pumping scheme proposed is suitable.

Contact Time and Storage:

-) To get 4 log removal need CT of 8.0 at 5 degrees Celsius.
-) Formula: $(\text{Peak Flow} \times \text{CT}) / (\text{Concentration} \times \text{Baffle Factor})$
-) Use peak flow of 16 gpm, CT of 8.0, concentration of 0.5, baffle factor of 1.0 (for three tanks in series each with baffle diffuser installed).
-) $(16 \times 8.0) / (0.5 \times 1.0) = 256$ gallons
-) Use three 120 gallon Clack RT120 retention tanks, or approved equal, for total volume of 360 gallons.
-) Chlorination:
 - o Use small (5 gpd) hypochlorite metering pump (Stenner, or approved equal)
 - o Use 15 gallon solution tank
 - o Dilute 5.25% hypochlorite approximately 1 part to 20 parts water.
 - o Metering pump to be wired such that it is on when the booster pump is on.

Miscellaneous Notes:

-) All flow to be metered via water meter to be installed where water line enters building.
-) All piping to be pressure tested per AWWA requirements.
-) All components to be disinfected per AWWA requirements prior to placing into service.

PRODUCT LITERATURE AND SPECIFICATIONS

Submersible Well Pump

Water Pipe

Flow Control Valve

Pressure Reducing Valve

Meter

Water Level Transmitter

Pump Controller

Pressure Tanks

Hypo Pump

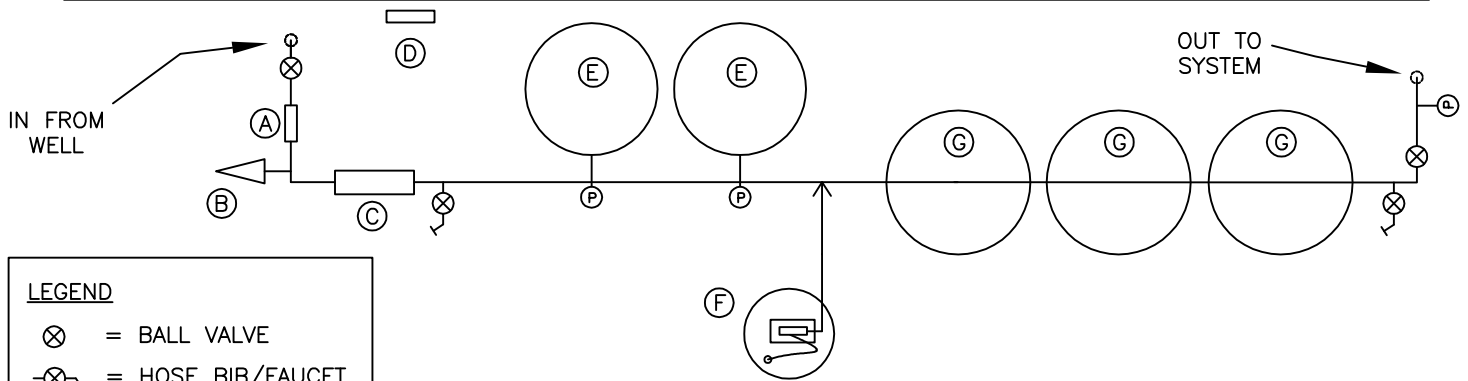
Hypo Controller

Hypo Tank

Retention Tanks

Yard Hydrant

EXTERIOR WALL OF BUILDING (UTILITY ROOM OF NEW BATH HOUSE)



LEGEND

- ⊗ = BALL VALVE
- ⊗- = HOSE BIB/FAUCET
- Ⓟ = PRESS. GAUGE

EQUIPMENT SPECIFICATIONS
(ALSO PROVIDED SEPARATELY):

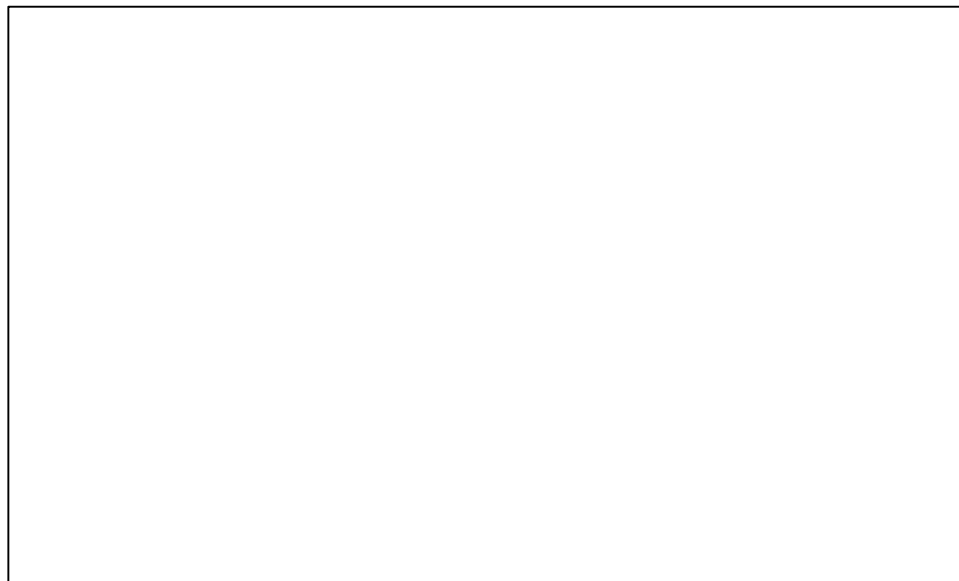
WATER EQUIPMENT SCHEMATIC

SCALE: 3/8" = 1'

ITEM	DESCRIPTION	MAKE/MODEL
A	FLOW CONTROL VALVE	DOLE GX15, 15 GPM
B	PRESSURE REDUCING VALVE	WATTS, 1"
C	METER	CLACK V3040-15, 1.5"
D	PUMP/LEVEL CONTROLS	AMETEK MODEL 575 TRANSMITTER (INSTALLED IN WELL) AMETEK MODEL DDMC METER/CONTROLLER
E	PRESSURE TANKS (2)	AMTROL WX-255
F	HYPO FEED PUMP/ SOLN. TANK	STENNER 45 MP2/ STENNER STS15GC, 15 GAL.
G	RETENTION TANK (3)	CLACK RT120, 120 GAL.

ALL EQUIPMENT/PIPING TO
BE 1" PVC OR PEX,
PRESSURE TESTED AND
DISINFECTED PRIOR TO USE.

ANY ALTERNATE PRODUCTS
MUST BE APPROVED BY
THE DESIGNER PRIOR TO
PURCHASE AND
INSTALLATION.



NYSDOH APPROVAL

SHEET 1 OF 1 DATE: 09/27/23

**PROPOSED WATER SYSTEM
SINGING WATERS
TOWN OF GREIG, NY**

**OLMSTEAD CONSULTING
P.O. BOX 151
GLENFIELD, NY 13343
PHONE: (315) 558-1314**

(1) COUNTY LEWIS

(2) TOWN Greig



Department of
Environmental
Conservation

(3) DEC Well Number
L001476

WATER WELL COMPLETION REPORT

(4) OWNER NAME The County of Lewis			
(5) OWNER ADDRESS 7600 N. State St., Lowville, NY 13367			
(6) WELL ADDRESS (Also provide sketch or map, see instructions on reverse) ☐ Same as owner address Singing Waters Park 7273 Fish Creek Road, Greig, NY			
(7) LATITUDE/LONGITUDE AND METHOD USED ☒ GPS ☐ Map 433948.81N - 751918.02W		(8) TAX MAP NO.	
(9) DEPTH OF WELL (Feet) 340	(10) DEPTH TO GROUNDWATER (Feet) 26	(11) DATE MEASURED 5/23/20	(12) FLOWING? ☐ Yes ☒ No
CASINGS			
(13) DIAMETER 6 in.			
(14) LENGTH 40 ft.			
(15) GROUT TYPE / SEALING Bentonite		(16) GROUT / SEALING INTERVAL (Feet) From 0 To 40	
SCREENS			
(17A) MAKE N/A	(17B) MATERIAL	(18) SLOT SIZE	
(19) DIAMETER in.			
(20) LENGTH ft.			
(21) DEPTH TO TOP OF SCREEN, FROM TOP OF CASING (Feet)			
YIELD TEST			
(22) DATE 5/23/20		(23) DURATION OF TEST (Hours:Minutes) 04:00	
(24) LIFT METHOD ☒ Pump ☐ Air Lift ☐ Bailer		(25) STABILIZED DISCHARGE (GPM) 7	
(26) STATIC LEVEL PRIOR TO TEST (Feet below top of casing) 2'		(27) MAXIMUM DRAWDOWN (Stabilized) (Feet below top of casing) 155	
(28) RECOVERY TIME (Hours:Minutes) 01:00		(29) Was the water produced during the test discharged away from immediate area? ☒ Yes ☐ No	
DRILLER INFORMATION			
(30) METHOD OF DRILLING ☒ Rotary ☐ Cable Tool ☐ Other		(31) USE OF WATER PUBLIC WATER SUPPLY	
(32) DATE DRILLING WORK STARTED 5/15/20		(33) DATE DRILLING WORK COMPLETED 5/17/20	
(34) DATE REPORT COMPLETED 5/31/20	(35) REGISTERED COMPANY NAME O'Rourke Groundwater Developing, LLC		(36) DEC REGISTRATION NO. NYRD 10219
(37) REGISTERED COMPANY ADDRESS 12132 County Route 77, Adams, NY 13605			
(38) CERTIFIED DRILLER (Print name) Kevin O'Rourke		(39) CERTIFIED DRILLER INITIALS (ELECTRONIC SIGNATURE) * KO	
PUMP INSTALLATION			
(40) PUMP INSTALLED? ☐ Yes ☒ No		(41) DATE	
(42) TYPE	(43) MAKE	(44) MODEL	
(45) MAXIMUM CAPACITY (GPM)		(46) PUMP INSTALLATION LEVEL (Feet below top of casing)	
(47) DATE REPORT COMPLETED	(48) REGISTERED COMPANY NAME		(49) DEC REGISTRATION NO. NYRD
(50) REGISTERED COMPANY ADDRESS			
(51) CERTIFIED PUMP INSTALLER (Print Name)		(52) CERTIFIED PUMP INSTALLER INITIALS (ELECTRONIC SIGNATURE)*	

WELL LOG

DEPTH TO BEDROCK 30
(Feet below land surface)

GROUND ELEVATION 1083
(Feet above sea level)

TOP OF CASING 2'
(Feet above (+) or below (-) land surface)

TOP OF WELL

DEPTH (Feet)	DESCRIPTION
10'	Sand
30' Sandy & Till	
Gt granite Bedrock	
340 Total Depth	

BOTTOM OF HOLE

Provide a copy of this report to DEC and the well owner.

* I agree, and it is my intent, to electronically sign this Water Well Completion Report (WWCR) by typing my initials in this signature box and electronically submitting it to the New York State Department of Environmental Conservation. I understand that my electronic signature is the legal equivalent of having placed my handwritten signature on a WWCR. I understand and agree that by electronically signing this WWCR, I hereby affirm that: (1) I am certified to supervise water well drilling activities as defined by Environmental Conservation Law 15-1502; (2) this water well was constructed in accordance with water well standards promulgated by the New York State Department of Health; and (3) under the penalty of perjury the information provided in this WWCR is true, accurate and complete, and I understand that any false statement made herein is punishable as a Class A Misdemeanor under Penal Law §210.45. 02/2020

LOCATION SKETCH - Indicate north. Insert here or attach to this file.

4-hour Pump Test

TIME (MIN)	LEVEL (FT)
8:30:00 AM	1.00
8:31:00 AM	2.00
8:32:00 AM	4.00
8:33:00 AM	8.00
8:34:00 AM	
8:35:00 AM	
8:36:00 AM	21.00
8:37:00 AM	
8:38:00 AM	
8:39:00 AM	35.00
8:40:00 AM	
8:42:00 AM	
8:44:00 AM	55.00
8:46:00 AM	
8:48:00 AM	67.00
8:50:00 AM	
8:55:00 AM	73.50
9:00:00 AM	82.50
9:05:00 AM	
9:10:00 AM	104.00
9:15:00 AM	114.20
9:20:00 AM	119.00
9:25:00 AM	126.00
9:30:00 AM	129.00
9:35:00 AM	135.00
9:40:00 AM	142.00
9:45:00 AM	146.00
9:50:00 AM	147.00
9:55:00 AM	
10:00:00 AM	148.00
10:15:00 AM	
10:30:00 AM	149.00
10:45:00 AM	151.00
11:00:00 AM	153.00
11:15:00 AM	152.00
11:30:00 AM	152.00
11:45:00 AM	153.00
12:00:00 PM	153.00

TIME (MIN)	LEVEL (FT)
12:30:00 PM	155.00
12:45:00 PM	155.00
1:00:00 PM	156.00
1:15:00 PM	157.00
1:30:00 PM	156.00
1:45:00 PM	157.00
2:00:00 PM	157.00
2:15:00 PM	157.00
2:30:00 PM	157.00
2:45:00 PM	157.00
3:00:00 PM	157.00
3:15:00 PM	
3:30:00 PM	157.00
Recovery Test	
3:31:00 PM	154.00
3:32:00 PM	150.00
3:33:00 PM	145.00
3:34:00 PM	140.00
3:35:00 PM	135.00
3:36:00 PM	
3:37:00 PM	126.00
3:38:00 PM	122.00
3:39:00 PM	116.00
3:40:00 PM	113.00
3:42:00 PM	103.00
3:44:00 PM	
3:46:00 PM	89.00
3:48:00 PM	82.00
3:50:00 PM	74.00
3:55:00 PM	62.00
4:00:00 PM	51.00
4:05:00 PM	40.00
4:10:00 PM	32.00
4:15:00 PM	26.00
4:20:00 PM	21.00
4:25:00 PM	
4:30:00 PM	

Project: Singing Waters Campground

Date: 05/23/23

Pump Start Time: 8:30 AM

End Test Time: 4:45 pm

Static Water Level: overflow .5 gpm

Flow Rate: 7 GPM

Converse Laboratories Inc.

800 Starbuck Ave. Suite B101
Watertown, NY 13601

NYS Approved ELAP
ID# 10708

USPH Certified
ID# 36144

Client: Lewis County Recreation, Forestry & Parks
7660 North State Street
Lowville, NY 13367

Report Date:
5/25/2023

Laboratory Report

Sample ID: 2304630
Sample Date: 5/23/2023 1130
Date Received: 5/23/2023 1344

Sample Type: Drilled Well
Sample Site: Singing Waters
Sampler: RB

Analysis	Result	Units	Method Code	Lab ID	Date/Time/Tech Tested
Coliform, Total	NEG	100ml	SM 21-9223B	10708	5/23/2023 1325 ML
Hydrogen Ion (pH)	6.65	**	SM 21-4500-H+B	10708	5/23/2023 1310 TLE
Turbidity	7.6	ntu	EPA 180.1	10708	5/23/2023 1322 TLE

Key: mg/l - Milligrams per Liter

100ml - Amount of water tested

ntu - Nephelometric Turbidity unit

The information in this report is accurate to the best of our knowledge and capability. In no event shall our liability exceed the cost of these services. I certify that these results confirm to NYS Department of Health Standard and requirements (10 NYDDR Subpart 55-2). Sample results are based on samples as they are received, unless sampled by CLI. This report shall not be reproduced, except in full, without written approval from CLI.

Report Comment: pH is not included in NYS DOH ELAP certification program.

Ran out of hold time, per client request.

Authorized Review by/Supervisor : Kathleen M. Bonney

Project Name: LEWIS COUNTY

Lab Number: L2328750

Project Number: AL23-0500

Report Date: 05/30/23

SAMPLE RESULTS

Lab ID: L2328750-01

Date Collected: 05/23/23 11:30

Client ID: SINGING WATERS

Date Received: 05/23/23

Sample Location: Not Specified

Field Prep: Not Specified

Sample Depth:

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	1.15		mg/l	0.0500	--	1	05/26/23 08:42	05/28/23 18:04	EPA 3005A	19,200.7	AMW
Lead, Total	ND		mg/l	0.0010	--	1	05/26/23 08:42	05/30/23 10:54	EPA 3005A	3,200.8	EGW
Manganese, Total	0.0261		mg/l	0.0010	--	1	05/26/23 08:42	05/30/23 10:54	EPA 3005A	3,200.8	EGW
Sodium, Total	19.8		mg/l	2.00	--	1	05/26/23 08:42	05/28/23 18:04	EPA 3005A	19,200.7	AMW
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	50.4		mg/l	0.660	NA	1	05/26/23 08:42	05/28/23 18:04	EPA 3005A	19,200.7	AMW



Project Name: LEWIS COUNTY

Lab Number: L2328750

Project Number: AL23-0500

Report Date: 05/30/23

SAMPLE RESULTS

Lab ID: L2328750-01
 Client ID: SINGING WATERS
 Sample Location: Not Specified

Date Collected: 05/23/23 11:30
 Date Received: 05/23/23
 Field Prep: Not Specified

Sample Depth:
 Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	63.1		mg CaCO ₃ /L	2.00	NA	1	-	05/26/23 14:05	121,2320B	MKT
Nitrogen, Nitrite	ND		mg/l	0.050	--	1	-	05/24/23 05:23	44,353.2	KAF
Nitrogen, Nitrate	ND		mg/l	0.100	--	1	-	05/24/23 05:23	121,4500NO3-F	KAF
Anions by Ion Chromatography - Westborough Lab										
Chloride	7.34		mg/l	0.500	--	1	-	05/25/23 01:08	44,300.0	AVT





Doc. # 357
7/10/2018
Rev. # 117
Page 1 of 1

Check#



ANALYTICAL REPORT

Lab Number:	L2328750
Client:	Converse Laboratories, Inc. 800 Starbuck Ave Suite B101 Watertown, NY 13601
ATTN:	Dave Converse
Phone:	(315) 788-8388
Project Name:	LEWIS COUNTY
Project Number:	AL23-0500
Report Date:	05/30/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Project Name: LEWIS CO REC, FORESTRY & PARKS

Lab Number: L2345858

Project Number: AL23-0847

Report Date: 08/15/23

SAMPLE RESULTS

Lab ID: L2345858-01

Date Collected: 08/08/23 13:30

Client ID: SINGING WATER CG

Date Received: 08/09/23

Sample Location: Not Specified

Field Prep: Not Specified

Sample Depth:

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.0783		mg/l	0.0500	--	1	08/10/23 06:40	08/15/23 07:31	EPA 3005A	19,200.7	JMF





ANALYTICAL REPORT

Lab Number:	L2345858
Client:	Converse Laboratories, Inc. 800 Starbuck Ave Suite B101 Watertown, NY 13601
ATTN:	Dave Converse
Phone:	(315) 788-8388
Project Name:	LEWIS CO REC, FORESTRY & PARKS
Project Number:	AL23-0847
Report Date:	08/15/23

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Chain of Custody

Client Name: Law's County Protection, Forestry, Parks		Client Project ID / PO# :		Matrix Codes DW= Drinking Water GW=Ground Water WW=Wastewater SL=Sludge SW=Surface Water SO=Soil		Sample Information: ☐ Finished ☐ Raw ☐ Chlorinated ☐ UV ☐ OTHER: _____	
Client Address: 660 North State Street Lowville NY 13367		Phone #: 315-376-5972 Cell #: 315-955-3118		Preservative Codes 1= Na ₂ S ₂ O ₃ 2= HCl 3= H ₂ SO ₄ 4= HNO ₃ 5= NaOH 6= Ascorbic Acid 7= NH ₄ CL 8= Unpres. 9= _____		PLEASE NOTE: Reports will be forwarded to your DOH.	
E-Mail address: Jackie.mahoney@kwicounty.ny.gov		Chlorine Residual		List Preservative Code Below 1 2 3 4 5 6 7 8		NOTES TO LABORATORY Normal TAT ☒ Rush TAT ☒ RUSHI Date Needed: _____ a.m. / p.m.	
Contact/Report to: Jackie Mahoney		Matrix - see codes above		G = Grab C = Composite		ANALYSIS / TEST REQUESTED	
Sampler: Ryan Battles		Sample Identification Slating Waters Compound		SAMPLE ID # (lab use only)		8009	
Date Collected	Time Collected	Date		Time		ICED?	
8/8	1:30	8/8		1497		Yes/No	
Relinquished by:		Received by:		Rec'd Temp°		AUTHORIZED RECIPIENTS & CONTACT INFO.	
[Signature]		[Signature]		11.2		SAMPLE(S) AS RECEIVED CONFORM TO NELAC STANDARDS *If no, see attached sheet	
						YES/NO	

Doc. # 357

7/10/2018

Rev. # 117

Amt. Due:

Amt. Paid:

Initial Review: LDS-8/8/23

Transcriptural Rev:

Final Review:

Cash	Check#
1000	1000
2000	2000
3000	3000
4000	4000
5000	5000
6000	6000
7000	7000
8000	8000
9000	9000
10000	10000
11000	11000
12000	12000
13000	13000
14000	14000
15000	15000
16000	16000
17000	17000
18000	18000
19000	19000
20000	20000
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22000	22000
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82000	82000
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87000	87000
88000	88000
89000	89000
90000	90000
91000	91000
92000	92000
93000	93000
94000	94000
95000	95000
96000	96000
97000	97000
98000	98000
99000	99000
100000	100000

88

Final Review:



August 30, 2023

NON-ROUTINE CLIENT
Refer to Chain of Custody
2829 Reach Rd
Williamsport, PA 17701

RE: Project: Lewis County, NY
Pace Project No.: 30611787

Dear NON-ROUTINE CLIENT:

Enclosed are the analytical results for sample(s) received by the laboratory on August 09, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rebecca Fink

Rebecca Albert
rebecca.albert@pacelabs.com
(570)326-4001
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



SAMPLE SUMMARY

Project: Lewis County, NY

Pace Project No.: 30611787

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30611787001	MPA	Drinking Water	08/08/23 13:20	08/09/23 11:25

REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.

30611787

Page 3 of 13

Client Name: Lewis County

PM: REA

Due Date: 09/21/23

CLIENT: WP-HOMEOWNER

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: _____

Label _____

LIMS Login _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☒ noThermometer Used 8 Type of Ice: Wet ☒ Blue ☐ NoneCooler Temperature Observed Temp 16.0 °C Correction Factor: _____ °C Final Temp: 16.0 °C

Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot# <u>NA</u>	Date and Initials of person examining contents: <u>REA 6-9-23</u>
Chain of Custody Present:	☒	☒	☐	1.	<u>grab comp pres type not on Cds</u>
Chain of Custody Filled Out:	☒	☒	☐	2.	
Chain of Custody Relinquished:	☐	☒	☐	3.	
Sampler Name & Signature on COC:	☒	☐	☐	4.	
Sample Labels match COC:	☒	☐	☐	5.	
-Includes date/time/ID Matrix: <u>OT</u>	☐	☐	☐		
Samples Arrived within Hold Time:	☒	☐	☐	6.	
Short Hold Time Analysis (<72hr remaining):	☒	☐	☐	7.	
Rush Turn Around Time Requested:	☐	☒	☐	8.	
Sufficient Volume:	☒	☐	☐	9.	
Correct Containers Used:	☒	☐	☐	10.	
-Pace Containers Used:	☒	☐	☐		
Containers Intact:	☒	☐	☐	11.	
Orthophosphate field filtered	☐	☐	☒	12.	
Hex Cr Aqueous sample field filtered	☐	☐	☒	13.	
Organic Samples checked for dechlorination:	☐	☐	☒	14.	
Filtered volume received for Dissolved tests	☐	☐	☒	15.	
All containers have been checked for preservation.	☐	☐	☒	16.	
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix					
All containers meet method preservation requirements.	☐	☐	☒	Initial when completed	Date/time of preservation
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):	☐	☐	☒	17.	
Trip Blank Present:	☐	☐	☒	18.	
Trip Blank Custody Seals Present	☐	☐	☒		
Rad Samples Screened < 0.5 mrem/hr	☐	☐	☒	Initial when completed:	Date:

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

☐ A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

**Delivering Science Better**2829 Reach Road, Williamsport, PA 17701 • Phone: (570) 326-4001 • Fax: (570) 326-0399 • www.pacelabs.com

Certificate of Analysis

August 30, 2023

Samantha Merrill

Work Order: 2304199

PAS, LLC - Williamsport, PA

Project: MPA

2829 Reach Road

Williamsport, PA 17701

Dear Samantha Merrill,

Enclosed is your Microscopic Particulate Analysis (MPA) report of analysis that contains the result(s) of the sample(s) received on 8/9/2023. Please direct any questions or comments regarding the content of this report to your Project Manager.

Sample(s) that were collected by Pace Analytical Services, LLC. personnel are done in accordance with the latest revision of the laboratory's Field Sampling and Field Analysis Standard Operating Procedures. The result(s) contained within this report are representative of the sample(s) as received. Any abnormalities in how the sample(s) were received are noted in the documentation contained herein.

All information contained within this report is the property of Pace Analytical Services, LLC. and that of the client. This report may not be reproduced in any form without prior consent from either an authorized representative of Pace Analytical Services, LLC. or the client for which this report was intended. If required, this report must be reproduced in its entirety. Pace Analytical Services, LLC. is not responsible for the use or interpretation of the data included herein.

Please visit www.pacelabs.com for various topics of interest.

Regards,

Pace Analytical Services, LLC.

Approved by: _____

A handwritten signature in blue ink, appearing to read "S. Merrill", written over a horizontal line.

Samantha Merrill, Quality Manager

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Notes and Definitions	6
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PAS, LLC - Williamsport, PA

Project: MPA

2829 Reach Road

Project Number: 30611787

Williamsport, PA 17701

Reported: 08/30/2023 09:03

Sample Summary

Lab ID	Sample	Matrix	Sampled	Received
2304199-01	MPA	Filter	08/08/2023 13:20	08/09/2023 11:25



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2829 Reach Road, Williamsport, PA 17701 • Phone: (570) 326-4001 • Fax: (570) 326-0399 • www.pacelabs.com

PAS, LLC - Williamsport, PA

Project: MPA

2829 Reach Road

Project Number: 30611787

Williamsport, PA 17701

Reported: 08/30/2023 09:03

Analytical Results

Sample ID: MPA

Sampled: 08/08/2023 13:20

Lab ID: 2304199-01

Received: 08/09/2023 11:25

Matrix: Filter

	Result	Qualifier	Prepared	Analyzed	Method	Analyst
--	--------	-----------	----------	----------	--------	---------

Microscopic Particulate Analysis (MPA) - Results Based on 100 Gallons

Cellular Plant Debris - Particles Observed	0		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Cellular Plant Debris - Rating	Not Significant		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Cellular Plant Debris - Relative Risk Factor	Low		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Diatoms (living) - Particles Observed	0		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Diatoms (living) - Rating	Not Significant		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Diatoms (living) - Relative Risk Factor	Low		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Diatoms (non-living) - Particles Observed	0		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Diatoms (non-living) - Rating	Not Significant		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Diatoms (non-living) - Relative Risk Factor	Low		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Giardia - Particles Observed	0		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Giardia - Rating	Not Significant		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Giardia - Relative Risk Factor	Low		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Insect/Crustacea - Particles Observed	0		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Insect/Crustacea - Rating	Not Significant		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Insect/Crustacea - Relative Risk Factor	Low		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Non-Diatomaceous Algae - Particles Observed	0		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Non-Diatomaceous Algae - Rating	Not Significant		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Non-Diatomaceous Algae - Relative Risk Factor	Low		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Rotifers - Particles Observed	0		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Rotifers - Rating	Not Significant		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Rotifers - Relative Risk Factor	Low		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB



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PAS, LLC - Williamsport, PA

Project: MPA

2829 Reach Road

Project Number: 30611787

Williamsport, PA 17701

Reported: 08/30/2023 09:03

Analytical Results

Sample ID: MPA (Continued)

Sampled: 08/08/2023 13:20

Lab ID: 2304199-01

Received: 08/09/2023 11:25

Matrix: Filter

	Result	Qualifier	Prepared	Analyzed	Method	Analyst
--	--------	-----------	----------	----------	--------	---------

Microscopic Particulate Analysis (MPA) - Results Based on 100 Gallons (Continued)

Total Particles Observed	0		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Total Risk Factor	Not Significant		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Risk of Surface Water Contamination	Low		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB

Microscopic Particulate Analysis (MPA) - Observations on Total Sample

Total Gallons Filtered	305		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Total Sediment (mL/Total Gallons filtered)	4		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Color & Appearance of filter	Dark Brown		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB
Post flocculation	No		8/14/23 10:05	8/15/23 10:43	MPA-In House	TB



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PAS, LLC - Williamsport, PA

Project: MPA

2829 Reach Road

Project Number: 30611787

Williamsport, PA 17701

Reported: 08/30/2023 09:03

Notes and Definitions

Item	Definition
TNTC	Too Numerous To Count
MPA	Microscopic Particulate Analysis
Floc	Post Flocculation observed and interfered with the MPA analysis
Counting method =	Natural unit
1 gallon =	3.78541 Litres

MPA Evaluation Tables

Table 1 - numerical range of each bio-indicator based on numbers per 100 gallons filtered water. **Note:** the total sample is analyzed and the results are standardized to 100 gallons for evaluation purposes.

Indicator	Extremely Heavy	Heavy	Moderate	Rare	Not significant
Giardia	>30	16-30	6-16	1-5	0
Diatoms	>150	41-149	11-40	6-10	0-5
Other Algae	>300	96-299	21-95	6-20	0-5
Insect/Crustacea	>100	31-99	16-30	1-15	0
Rotifers	>150	61-149	21-60	1-25	0
Plant Debris	>200	71-200	26-70	1-25	0

Note: if Giardia cysts are found in any sample, irrespective of volume, then it is scored as above.

Table 2 - Values associated with scoring of bio-indicators present during MPA of subsurface water sources (Relative Risk Factors). The values from **Table 1** above are used in **Table 2** below.

Indicator	Extremely Heavy	Heavy	Moderate	Rare	Not significant
Giardia	40	30	25	20	0
Diatoms	16	13	11	6	0
Other Algae	14	12	9	4	0
Insect/Crustacea	9	7	5	3	0
Rotifers	4	3	2	1	0
Plant Debris	3	2	1	0	0

Risk factors from Table 2 above are added and the total value is used for the Risk of Surface Water Contamination as follows:

1. ≥ 20 = high risk
2. 10-19 = moderate risk
3. < 9 = low risk

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers)
PM Review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS--The review is in the Status section of the Workorder Edit Screen.

A check in this box indicates that additional information has been stored in ereports.

Client Notification/ Resolution: _____
Person Contacted: _____ Date/Time: _____
Comments/ Resolution: _____
Contacted By: _____

Chain of Custody Present:	☒	Yes	No	N/A	
Chain of Custody Filled Out:	☒				
Chain of Custody Relinquished:	☒				
Sampler Name & Signature on COC:	☒				
Sample Labels match COC:	☒				
-Includes date/time/ID Matrix:	☒				
Samples Arrived within Hold Time:	☒				
Short Hold Time Analysis (<72hr remaining):	☒				
Rush Turn Around Time Requested:	☒				
Sufficient Volume:	☒				
Correct Containers Used:	☒				
-Pace Containers Used:	☒				
Containers Intact:	☒				
Orthophosphate field filtered	☒				
Hex Cr Aqueous sample field filtered	☒				
Organic Samples checked for dechlorination:	☒				
Filled volume received for Dissolved tests	☒				
All containers have been checked for preservation.	☒				
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	☒				
All containers meet method preservation requirements.	☒				
Lot # of added preservative					
Initial when completed					
Date/time of preservation					
Initial when completed					
Date					
Rad Samples Screened < 0.5 mre/m/hr	☒				
Trip Blank Custody Seals Present	☒				
Trip Blank Present:	☒				
Headspace in VOA Vials (>6mm):	☒				
17.	☒				
18.	☒				
Initial when completed					
Date					

Comments: _____
Temp should be above freezing to 6°C
Cooler Temperature Observed Temp 16.0 °C Correction Factor: _____ Final Temp: 16.0 °C
Thermometer Used 8
Type of Ice: Wet ☒ Blue ☒ None
Custody Seal on Cooler/Box Present: ☒ yes ☒ no
Seals Intact: ☒ yes ☒ no
Tracking #: _____
Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other
Label _____ LIMS Login _____
Client Name: Lewis County Project # 2304194
Williamsport Lab Sample Condition Upon Receipt

30611787 001 - Micro Particulate Analysis total gallons filtered was 305. The color was dark brown, no living or non-living debris was found on the filter. The analyst started out with 4mLs of sample and resuspended in 10mLs, followed by 1mL of sample being analyzed on 10 slides. Results were multiplied by 10.

Figure 1: Filter upon receipt

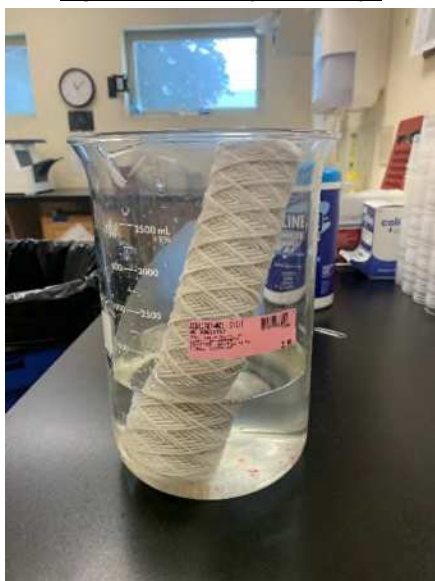


Figure 2: Filter after shredding/rinsing



Figure 3: After centrifugation





TECHNICAL BROCHURE

B5-25GS R9

FEATURES

Powered for Continuous Operation: All ratings are within the working limits of the motor as recommended by the motor manufacturer. Pump can be operated continuously without damage to the motor.

Field Serviceable: Units have left hand threads and are field serviceable with common tools and readily available repair parts.

Sand Handling Design: Our face clearance, floating impeller stack has proven itself for over 50 years as a superior sand handling, durable pump design.

FDA Compliant Non-Metallic Parts: Impellers, diffusers and bearing spiders are constructed of glass filled engineered composites. They are corrosion resistant and non-toxic.

Discharge Head/Check Valve: Cast 303 stainless steel for strength and durability. Two cast-in safety line loops for installer convenience. The built-in check valve is constructed of stainless steel and FDA compliant BUNA rubber for abrasion resistance and quiet operation.

Motor Adapter: Cast 303 stainless steel for rigid, accurate alignment of pump and motor. Easy access to motor mounting nuts using standard open end wrench.

Stainless Steel Casing: Polished stainless steel is strong and corrosion resistant.

Hex Shaft Design: Six sided shafts for positive impeller drive.

Engineered Polymer Bearings: The proprietary, engineered polymer bearing material is strong and resistant to abrasion and wear. The enclosed upper bearing is mounted in a durable Noryl® bearing spider for excellent abrasion resistance.

5GS, 7GS, 10GS, 13GS, 18GS & 25GS

5-25 GPM, ½ - 5 HP, 60 HZ, SUBMERSIBLE PUMPS



WATER END DATA

Series	Model	Required HP	Stages	Length (in)	Weight (lbs)
5GS	5GS05R	.5	9	12.9	8
	5GS05	.5	12	15.0	9
	5GS07	.75	15	17.0	11
	5GS10	1	20	21.7	13
	5GS15	1.5	26	25.8	15
	5GS20	2	33	31.6	19
7GS	7GS05R	.5	7	11.7	6
	7GS05	.5	10	13.8	7
	7GS07	.75	13	16.0	8
	7GS10	1	17	18.8	9
	7GS15	1.5	22	23.6	12
	7GS20	2	27	27.2	13
10GS	10GS05R*	0.5	8	12.2	7
	10GS05*	0.5	10	13.6	8
	10GS07*	0.75	14	16.4	9
	10GS10*	1	16	17.7	11
	10GS15	1.5	17	18.4	12
	10GS20	2	20	21.7	13
	10GS30	3	27	27.5	18
	10GS50R	5	35	33	21
	10GS50	5	42	40.2	24
13GS	13GS05	.5	5	10.1	6
	13GS07	.75	7	11.5	7
	13GS10	1	10	13.6	8
	13GS15	1.5	12	15.0	9
	13GS20	2	17	18.4	12
	13GS30	3	21	22.3	15
18GS	18GS07	.75	6	11.8	7
	18GS10	1	8	13.5	8
	18GS15	1.5	11	16.1	10
	18GS20	2	14	18.6	11
	18GS30	3	19	24.1	15
	18GS50R	5	24	28.3	17
	18GS50	5	30	34.4	21
25GS	25GS10	1	7	13.4	8
	25GS15	1.5	9	15.3	9
	25GS20	2	11	17.2	10
	25GS30	3	15	20.9	14
	25GS50R	5	22	28.7	17
	25GS50	5	26	33.4	21

*New High Head Hydraulic Design for models manufactured starting 8/2017

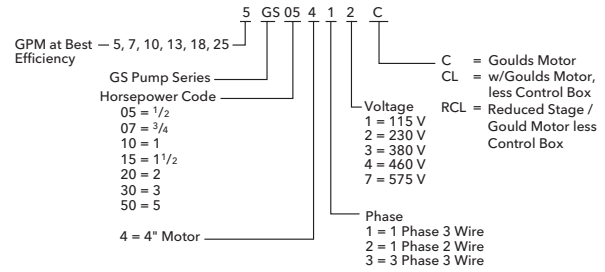
SPECIFICATIONS

Model	Flow Range GPM	Horsepower Range	Best Efficiency GPM	Discharge Connection	Minimum Well Size	Rotation ^①
5GS	1.2 - 7.5	½ - 2	5	1¼"	4"	CCW
7GS	1.5 - 10	½ - 3	7	1¼"	4"	CCW
10GS	3 - 16	½ - 5	10	1¼"	4"	CCW
13GS	4 - 20	½ - 3	13	1¼"	4"	CCW
18GS	6 - 28	¾ - 5	18	1¼"	4"	CCW
25GS	8 - 33	1 - 5	25	1¼"	4"	CCW

① Rotation is counterclockwise when observed from pump discharge end.

NOMENCLATURE See price book for complete order numbers.

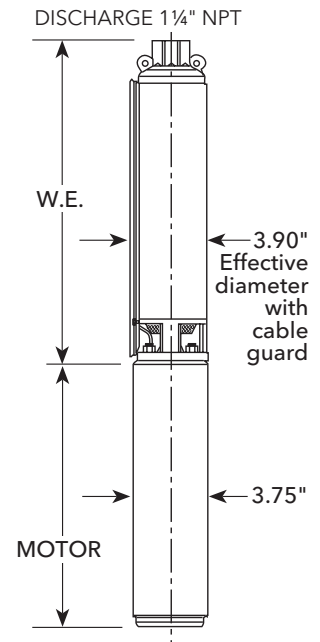
NOMENCLATURE See price book for complete order numbers.



"GS" SERIES MATERIALS OF CONSTRUCTION

Part Name	Material
Discharge Head	AISI 303 SS
Check Valve Poppet	AISI 304 SS
Check Valve Seal	BUNA, FDA compliant
Check Valve Seat	AISI 304 SS
Check Valve Retaining Ring	AISI 302 SS
Bearing Spider - Upper	Noryl® GFN2
Bearing	Proprietary Engineered Polymer
Klipring	AISI 301 SS
Diffuser	Lexan®
Impeller	Noryl®
Bowl	AISI 304 SS
Intermediate Sleeve *	AISI 304 SS, Powder Metal
Intermediate Shaft Coupling *	AISI 304 SS, Powder Metal
Intermediate Bearing Spider *	Glass Filled Engineered Composite
Intermediate Bearing Spider *	AISI 303 SS
Shim	AISI 304 SS
Screws - Cable Guard	AISI 304 SS
Motor Adapter	AISI 303 SS
Casing	AISI 304 SS
Shaft	AISI 304 SS
Coupling	AISI 304 SS, Powder Metal
Cable Guard	AISI 304 SS
Suction Screen	AISI 304 SS

*See repair parts for where used.



GOULDS WATER TECHNOLOGY 4" SINGLE-PHASE MOTORS

Order No.	Type	HP	Volts	Length in. (mm)	Weight lb. (kg.)
M05421	2-wire PSC	½	115	10.5 (267)	18 (8.2)
M05422		½	230	10.5 (267)	18 (8.2)
M07422		¾		11.9 (302)	22 (9.7)
M10422		1		12.5 (318)	24 (10.5)
M15422		1.5		14.2 (361)	28 (12.4)
M05411	3-wire	½	115	9.6 (244)	17.9 (8.1)
M05412		½	230	9.2 (234)	16.7 (7.6)
M07412		¾		10.3 (262)	19.8 (9.0)
M10412		1		11.2 (284)	22.0 (10.0)
M15412		1.5		12.8 (325)	26.0 (11.8)
M20412		2		15.1 (383)	31 (14.1)
M30412		3		18.3 (466)	40 (18.1)
M50412		5		27.7 (703)	70 (31.8)

NEMA MOTOR

- Corrosion resistant stainless steel construction.
- Built-in surge arrester is provided on single phase motors through 5 HP.
- Stainless steel splined shaft.
- Hermetically sealed windings.
- Replaceable motor lead assembly.
- NEMA mounting dimensions.
- Control box is required with 3 wire single phase units.
- Three phase units require a magnetic starter with three leg Class 10 overload protection.

GOULDS WATER TECHNOLOGY 4" THREE-PHASE MOTORS

Order No. by Voltage			HP	Length in. (mm)	Weight lb. (kg.)
200V	230V	460V			
M05430	M05432	M05434	½	10.0 (254)	19 (8.7)
M07430	M07432	M07434	¾	10.8 (275)	22 (9.7)
M10430	M10432	M10434	1	11.7 (297)	23 (10.4)
M15430	M15432	M15434	1.5	11.7 (297)	23 (10.4)
M20430	M20432	M20434	2	13.8 (351)	28 (12.7)
M30430	M30432	M30434	3	15.3 (389)	32 (14.5)
M50430	M50432	M50434	5	21.7 (550)	55 (24.9)
M75430	M75432	M75434	7.5	27.7 (703)	70 (1.8)

Order No.	HP	Volts	Length in. (mm)	Weight lb. (kg.)
M15437	1.5	575	11.7 (297)	23 (10.4)
M20437	2		15.3 (389)	32 (14.5)
M30437	3		15.3 (389)	32 (14.5)
M50437	5		27.7 (703)	70 (31.8)
M75437	7.5		27.7 (703)	70 (31.8)

AGENCY LISTINGS



Pump/Water End and Goulds water technology Motor - tested to UL778 and CAN 22.2 by CSA International (Canadian Standards Association)



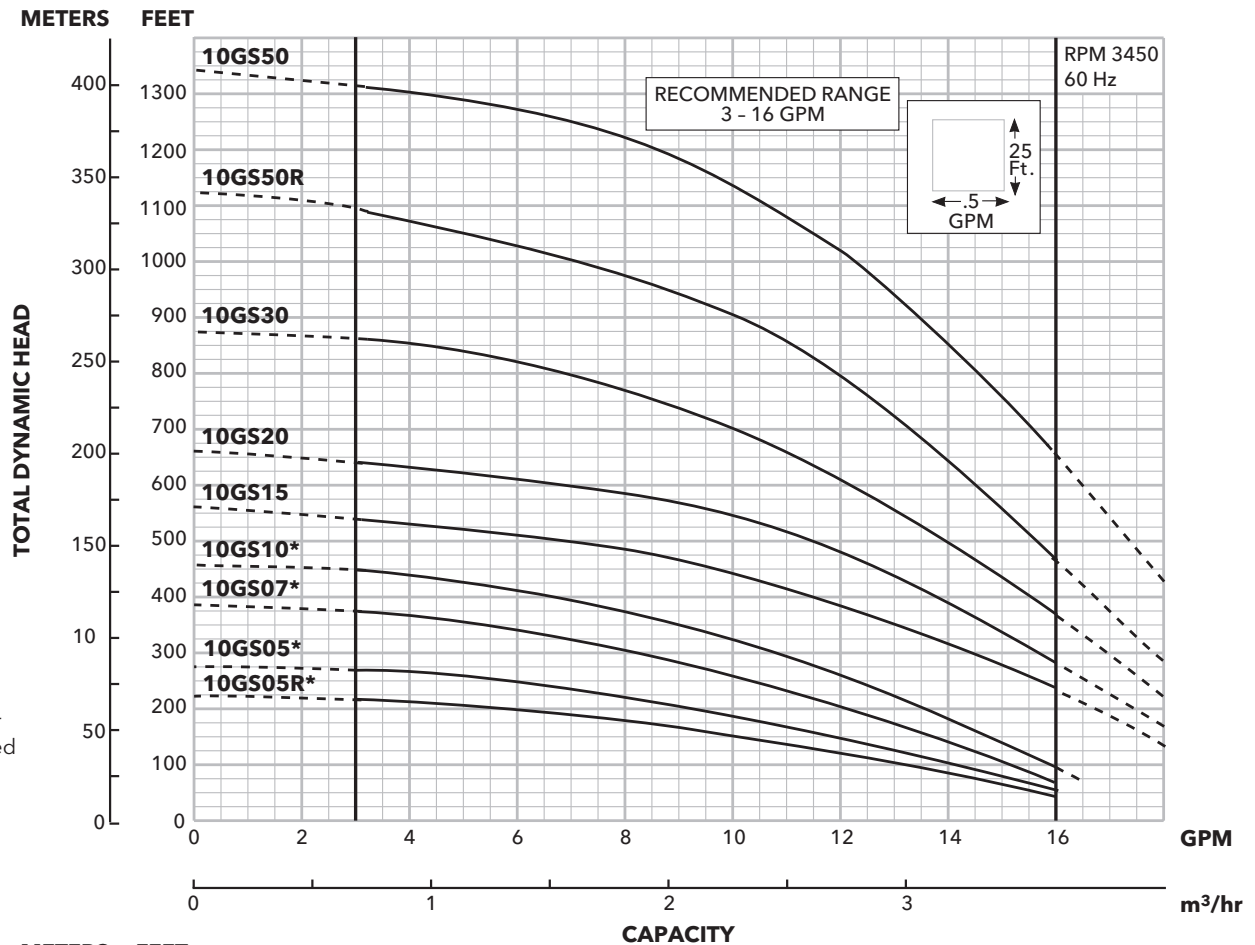
Goulds water technology Motor - Certified to NSF/ANSI 61, Annex G, Drinking Water System Components 4P49



NSF/ANSI 372 - Drinking Water System Components - Lead Content

CLASS 6853 01 - Low Lead Content Certification Program - Plumbing Products

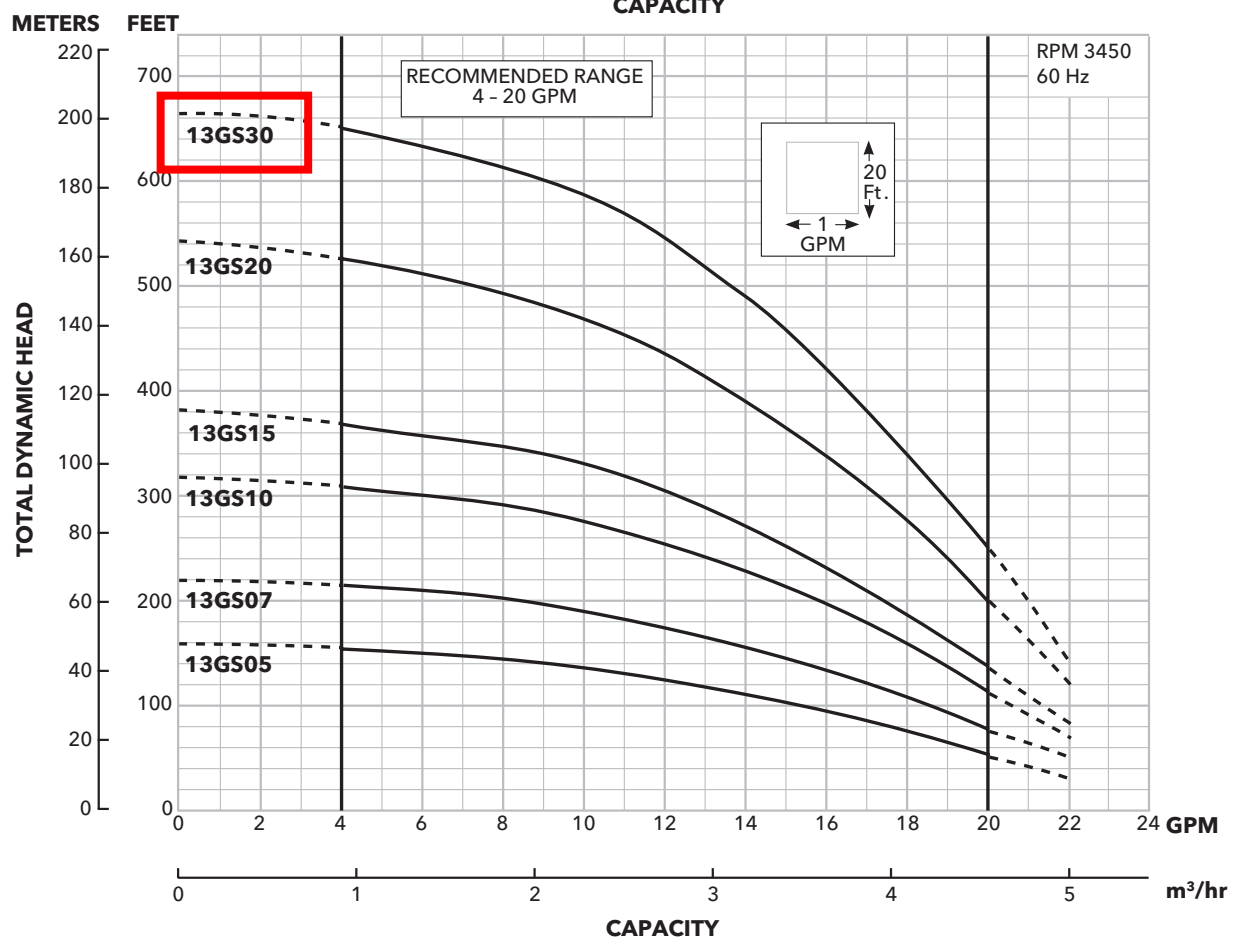
Model 10GS



New High Head Hydraulic Design for models manufactured starting 8/2017

* HH Versions

Model 13GS



► **PE 3408/3608 CTS – POTABLE WATER TUBING**
Copper Tube Size HDPE
Black

12/06

Designed for pressure applications
Water Service

ASTM D 2737

Pressure Class	SIZE	O.D.	Minimum Wall	Weight Per 100'
PC 200 DR 9	¾"	.875	.097	10.26
	1"	1.125	.125	16.94
	1-1/4"	1.375	.153	25.35
	1-1/2"	1.625	.181	35.46
	2"	2.125	.236	60.54

Weight Calculations are based on PPI TR7
 Available in straight lengths, coils or mileage reels



DOLE GX15 1" 15.0 GPM FLOW RATE

Features & Benefits

[Product Specifications](#)

[Submittal Data](#)

[Repair Parts](#)

- Prevents over-pumping of low yield wells
- Installs in the discharge line between check valve and pressure tank
- Do not use to suspend pipe
- Self-cleaning, designed to deliver constant volume of water over wide pressure drop range
- Flow rated maintained within +/- 15% up to a pressure drop of 125 psi
- Maximum system pressure 200 psi
- Lead free

Price:	Manufacturer:	Weight:	SKU:
\$68.89	DOLE FLOW CONTROL	0.833	2802GX15



Watts LF25AUB Brass Pressure Reducing Valve, 1 inch x 1 inch, FNPT Union x FNPT



Watts Water Technologies LF25AUBH

Mfg.Part # : LF25AUBH | Mfg.Name : Watts Water Technologies | Part # : WLF25AUBH |
Min Order Qty : 1 | Qty Interval : 1

Price:\$240.21 | Availability: In Stock

Each

Note: Branch Customer? Please login to your account to see local branch availability

California residents see Prop 65 WARNING

Quantity:

1

Add To Cart

Add to My Lists

Add Customer Part #

Features

Description

Specifications

Documents

Watts Series LF25AUB Lead Free Water Pressure Reducing Valves are used in commercial and residential applications to reduce incoming water pressure for protection of plumbing system components and to reduce water consumption. It consists of a Lead Free copper silicon alloy body construction, union inlet connection, integral stainless steel strainer and high temperature resistant reinforced diaphragm for hot water

- Union inlet connection
- Serviceable in line
- Replaceable seat module
- Integral stainless steel strainer
- High temperature resistant reinforced diaphragm for hot water
- Bypass feature controls thermal expansion pressure



Stainless Steel Inline Flow Meters

1.5" Meter V3040-15 or V3040BSPT-15	2" Meter V3094-15 or V3094BSPT-15	3" Meter V3095-15 or V3095BSPT-15
• 1.5" Inline meter suited for commercial/industrial applications • 316 stainless steel material • Electro polished for improving corrosion resistance, leaving a lasting bright finish • Service flow range 0.5 to 75 gpm (2-284 lpm) • Meter accuracy $\pm 5\%$ • Reliable and proven turbine design • 15-foot cable included • 1.5" Male x Female NPT or BSPT connections	• 2" Inline meter suited for commercial/industrial applications • 316 stainless steel material • Electro polished for improving corrosion resistance, leaving a lasting bright finish • Service flow range 1.5 to 150 gpm (5.7-568 lpm) • Meter accuracy $\pm 5\%$ • Reliable and proven turbine design • 15-foot cable included • 2" Male x Female NPT or BSPT connection	• 3" Inline meter suited for commercial/industrial applications • 316 stainless steel material • Electro polished for improving corrosion resistance, leaving a lasting bright finish • Service flow range 3.5 to 350 gpm (13-1,325 lpm) • Meter accuracy $\pm 5\%$ • Reliable and proven turbine design • 15-foot cable included • 3" Male x Female NPT or BSPT connection



Certified to NSF/ANSI/CAN 61 and NSF/ANSI 372.

ELECTRONIC PRESSURE MEASUREMENT PRODUCTS

Model 575 Series Submersible Level Transmitters with NSF Approval



Certified to
NSF/ANSI/CAN 61
& NSF/ANSI 372

DESCRIPTION

The Model 575 with NSF Approval is used for clean water applications including potable water storage, livestock tanks and municipal water treatment. The sensor is designed to provide the convenience of direct submergence in many types of liquids for quick, accurate and reliable measurement. With stainless steel isolation diaphragm (standard) and all 316 stainless steel housing, these solid state instruments provide long lasting service with virtually no maintenance.

The transmitter is offered in a non-clogging snub nose end. The 575 series is CSA approved for intrinsically safe operation when used with an approved safety barrier.

The 575 Series transmitters indicate the level of liquid by continuously measuring hydrostatic pressure via its sensing element, an ion implanted silicon semiconductor chip with integral Wheatstone bridge circuit. The pressure measurement is transmitted by a 4-20 mA output signal. This design, with isolation diaphragm for media compatibility, provides for excellent linearity and repeatability, low hysteresis and long term stability with a precision accuracy at $\pm 0.25\%$ FS (BFSL) typical.

The transmitter is easy to install. Simply lower the unit into a tank, pond or vessel. All electronics are mounted in the submersible 316 stainless steel housing. A special cable support bracket is also available to provide extra stability when used with longer cable lengths or when used in an agitated liquid. Optional steel support cable is also available for use with the support bracket.

The transmitters are available calibrated for any span needed from 0-6 psi (0-13.8 ft of water, 0-.4 bar, 0-4.2 meters of water) to 300 psi (0-692 ft of water, 0-20 bar, 0-211 meters of water). The transducer is offered as a standard 2 wire, 4-20 mA device.

To complete your liquid measurement and control system, consider the Model DDMC meter/controller or the complete Levelmate III system.

The 575 transducer is manufactured in the United States under ISO 9001.

FEATURES

- NSF approved
- Low cost measurement solution, easy installation and precision accuracy
- Rugged 316 stainless steel construction and wetted materials resists the corrosive effects of caustic medias with excellent environmental protection, designed for continuous submersion
- 2 wire, 4 to 20 mA output
- Reverse polarity and surge protected with additional lightning and surge protectors
- CSA approved for intrinsically safe operation in hazardous areas in Canada and U.S.
- Desiccant available to minimize moisture effects
- Designed for continuous submersion
- Made in USA



APPLICATIONS

- Inventory tank measurement
- Livestock tanks
- Ponds, rivers and lakes
- Municipal water treatment
- Water wells
- Pump control



Model 575M
standard 1/2 NPT

ELECTRONIC PRESSURE MEASUREMENT PRODUCTS

Model 575 Series Submersible Level Transmitters with NSF Approval

SPECIFICATIONS

Feet of Water: 0/14, 0/35, 0/69, 0/138, 0/230, 0/345, 0/460, 0/690

Meters of Water: 0/4, 0/10, 0/21, 0/42, 0/70, 0/105, 0/140, 0/210

Bar: 0/0.4, 0/1, 0/2, 0/4, 0/7, 0/10, 0/14, 0/20

PSI: 0/6, 0/15, 0/30, 0/60, 0/100, 0/150, 0/200, 0/300

Output: 4 to 20 mA, 2 wire, current limited to 30 mA DC

Power Supply: 12 to 40 VDC with reverse polarity surge protection; limited to 28 VDC for CSA I.S.

Loop Resistance: 1400 ohms maximum at 40 volts

Temperature Range:

General Ambient Operating: -25 to 180°F (-32 to 82°C)**

** CSA intrinsically safe when connected per AMETEK drawing BK750535. Temperature code T3C ambient high temperature limit (Tamb) = 104°F (40°C) max.

If submerged in a liquid that has frozen, damage will result

Storage: -40° to 180°F (-40°C to 82°C)

Overrange Effect: ±0.15% full scale at 200% of maximum range

Overrange Limit: 200% of maximum range

Accuracy: ±0.25% full scale, BFSL (including linearity, hysteresis and repeatability); ±0.50% full scale (6 psi range only)

Zero Offset: ±0.50% full scale set at 77°F (25°C)

Span: ±0.50% full scale set at 77°F (25°C)

Temperature Effects: (15 psi and above)

Compensated: 23° to 130°F (-5°C to 55°C); maximum ±1% URL output change for ±25°C temperature change within compensated range when calibrated at 25°C

Consult factory for lower or alternate pressure ranges.

Power Supply Effect: ±0.005% full scale per volt

Construction:

Diaphragm: 316 stainless steel

Housing Type: 316 stainless steel

Nut/Washer Type: 316 stainless steel

Cable Grommet: Viton standard

Housing O Ring: Viton standard

Cable Jacket: Polyurethane (standard)

Media Compatibility: Reference materials of construction

Electrical Connection: Attached 20 gauge polyurethane shielded cable (standard); unsplined lengths available up to 700 feet / 213 meters

Consult control drawing or contact the factory for cable length limits for Intrinsically Safe (I.S.) use.

Weight: 1 lb. (454 g) model 575S

Approvals: Meets NSF/ANSI/CAN 61 and NSF/ANSI 372. Meets CSA requirements for intrinsically safe operation in hazardous locations as designated by Class I, Div 1, Groups A, B, C & D and Class II, Groups E, F & G. Temperature Code T3C (when used with approved barrier) All NSF approved units will have X459 at the end of the sensor part number.

Snub Nose: 316 stainless steel; removable to a 1/2" female NPT process connection

Calibration:

NOTE: Units are calibrated 4-20 mA over standard full scale range unless otherwise specified

Examples:

Model 575SB0015NLSX459 will be calibrated as 4 mA = 0 psi, 20 mA = 15 psi or 4-20 mA over 0-34.6 ft. of water

For a special calibration select the appropriate standard pressure range and indicate the special calibration as follows:

Model 575SB0015NLSX459 Calibrate 0-10 psi or calibrate 0-23 ft. of water



Close up of Model 575 NSF
with 316L SST snub nose

ELECTRONIC PRESSURE MEASUREMENT PRODUCTS

Model DDMC Digital Meter/Controller

DESCRIPTION

The AMETEK Model DDMC Digital Meter/Controller powered by 85 to 265 VAC will display data from transmitters, transducers, scales, and other process instruments. It provides 24 volt excitation, alarm relays, and optional analog output for process control functions.

FEATURES

- 0-20 mA, 4-20 mA, 0-5 V, 1-5 V, and ± 10 V inputs
- NEMA 4X, IP65 front
- Universal 85-265 VAC or 12/24 VDC input power
- Large dual-line 6-digit display, 0.60" and 0.46"
- Dual-scale for level applications – single input
- Isolated 24 VDC @ 200 mA transmitter power supply
- Math functions for flow and round horizontal tanks
- Programmable displays and function keys
- 32-point, square root, or exponential linearization
- Multi-pump alternation control
- 2 or 4 relays and isolated 4-20 mA output options
- External 4-relay expansion module option allows for up to 8 relays maximum
- USB serial communication option
- MODBUS® RTU communication protocol standard (requires serial communication adapter)
- Configure, monitor and datalog from a PC with free DDMC Meter View software
- Onboard digital input

SPECIFICATIONS

Display:

Main display: 0.60" (15 mm) high, red LEDs

Second display: 0.46" (12 mm) high, red LEDs

6 digits each (-99999 to 999999), with lead zero blanking

Display Intensity: Eight user selectable intensity levels

Display Update Rate: 5/second (200 ms)

Overrange: Display flashes 999999

Underrange: Display flashes -999999

Programming Methods: Four front panel buttons, digital inputs, PC and multi-point linearization utility, or cloning using Copy function.

Noise Filter: Programmable from 2 to 199 (0 will disable filter)

Filter Bypass: Programmable from 0.1 to 99.9% of calibrated span

Recalibration: All ranges are calibrated at the factory. Recalibration is recommended at least every 12 months.

Max/Min Display: Max/Min readings reached by the process are stored until reset by the user or until power to the meter is turned off.

(specifications continued on next page)



**Model DDMC Digital Meter/Controller
in NEMA 4 Enclosure**

with readout close-up above

ELECTRONIC PRESSURE MEASUREMENT PRODUCTS

Model DDMC Digital Meter/Controller

SPECIFICATIONS (continued)

Password: Three programmable passwords restrict modification of programmed settings.

Pass 1: Allows use of the F1–F3 function keys

Pass 2: Allows use of the F1–F3 function keys and changing the set/reset points

Pass 3: Restricts all programming and F1–F3 keys

Note: Digital inputs are not password protected, except programming functions.

Non-Volatile Memory: All programmed settings are stored in non-volatile memory for a minimum of ten years if power is lost

Power Options: Standard universal 85-265 VAC 50/60 Hz, 90-265 VDC, 20 W max or jumper selectable 12/24 VDC $\pm$ 10%, 15 W max

Optional 12/24 VDC input power model

Fuse: Required external fuse: UL Recognized, 5 A max, slow blow; up to 6 meters may share one 5 A fuse

Isolated Transmitter Power Supply: Terminals P+ & P-: 24 VDC $\pm$ 5% @ 200 mA max (standard), (12/24 VDC powered models rated @ 100 mA max). 5 or 10 VDC @ 50 mA max, selectable with internal jumper J4.

Normal Mode Rejection: Greater than 60 dB at 50/60 Hz

Isolation: 4kV input / output-to-power line 500 V input to output or output-to-P+ supply

Overvoltage Category:

Installation Overvoltage Category II: Local level with smaller transient overvoltages than Installation Overvoltage Category III.

Environmental:

Operating temperature range: -40 to 65°C

Storage temperature range: -40 to 85°C

Relative humidity: 0 to 90% non-condensing

Connections: Removable screw terminal blocks accept 12 to 22 AWG wire, RJ45 for external relays and serial communication adapters.

Enclosure: 1/8 DIN, high impact plastic, UL 94V-0, color: black

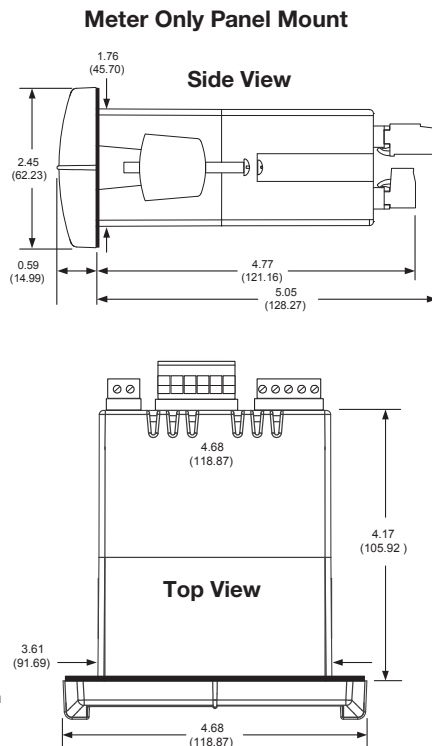
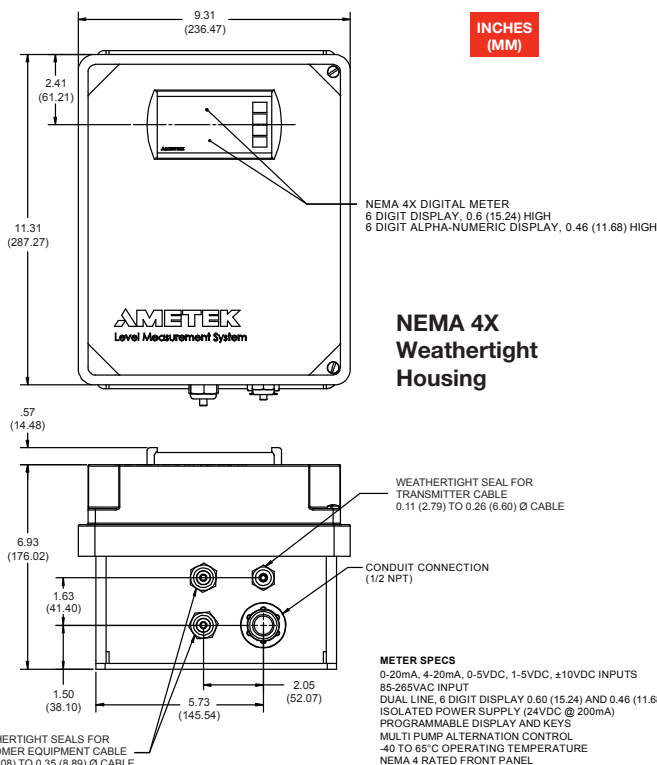
Mounting: 1/8 DIN panel cutout required: 3.622" x 1.772" (92 mm x 45 mm). Two panel mounting bracket assemblies are provided.

Tightening Torque: Screw terminal connectors: 5 lb-in (0.56 Nm)

Overall Dimensions: 4.68" x 2.45" x 5.64" (119 mm x 62 mm x 143 mm) (W x H x D)

Weight: 9.5 oz (269 g)

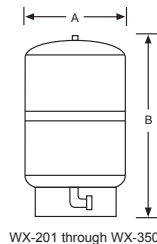
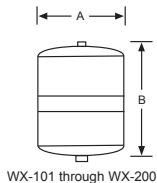
Warranty: 2 years parts and labor





WELLXTROL®

Next Generation Well Tanks Featuring Antimicrobial Protection



Specifications

Model Number	Tank Volume (Gallons)	Max. Acceptance Factor	Dimensions		System Conn. (Inches)	Drawdown (Gallons)			Shipping Weight (lbs.)
			A Diameter (Inches)	B Height (Inches)		30/50 (psig)	40/60 (psig)	50/70 (psig)	
WX-101	2.0	0.45	8	13	¾ NPTM	0.6	0.6	0.5	5
WX-102	4.4	0.55	11	15	¾ NPTM	1.4	1.2	1.0	9
WX-103	6.7	0.40	11	20	¾ NPTM	2.1	1.8	1.6	15
WX-104	10.3	1.00	15	18	1 NPTM	3.2	2.8	2.4	20
WX-200	14.0	0.81	15	22	1 NPTM	4.3	3.8	3.3	22
WX-201	14.0	0.81	15	25	1 NPTF	4.3	3.8	3.3	25
WX-202	20.0	0.57	15	32	1 NPTF	6.2	5.4	4.7	32
WX-202XL	26.0	0.44	15	39	1 NPTF	8.0	7.0	6.1	39
WX-203	32.0	0.35	15	47	1 NPTF	9.9	8.6	7.6	47
WX-205	34.0	1.00	22	30	1 ¼ NPTF	10.5	9.1	8.0	57
WX-250	44.0	0.77	22	36	1 ¼ NPTF	13.6	11.8	10.4	65
WX-251	62.0	0.55	22	47	1 ¼ NPTF	19.2	16.6	14.6	87
WX-255	81.0	0.41	22	57	1 ¼ NPTF	25.0	21.7	19.1	109
WX-302	86.0	0.54	26	47	1 ¼ NPTF	26.6	23.0	20.3	106
WX-350	119.0	0.39	26	62	1 ¼ NPTF	36.8	31.9	28.1	146

Stainless Steel System Connection.

Maximum Working Pressure: All models: 150 psig. Factory Precharge: 38 psig.

Drawdown can be affected by various ambient and system conditions, including temperature and pressure.

Well-X-Trol® ESP Quick Sizing Table

Pump Discharge Rate (Approx. GPM)	Pumps Up To 3/4 hp & 1 Minute Run Time			Pumps Over 3/4 hp & 2 Minute Run Time		
	30/50 psig	40/60 psig	50/70 psig	30/50 psig	40/60 psig	50/70 psig
5	WX-202	WX-202	WX-202XL	WX-205	WX-250	WX-250
7	WX-202XL	WX-203	WX-203	WX-251	WX-251	WX-251
10	WX-203	WX-250	WX-250	WX-255	WX-255	WX-302
12	WX-250	WX-251	WX-251	WX-255	WX-350	WX-350
15	WX-251	WX-251	WX-255	WX-350	WX-350	WX-255 (2)
20	WX-255	WX-255	WX-302	WX-255 (2)	WX-255 (2)	WX-302 (2)
25	WX-255	WX-350	WX-350	WX-255 (2)	WX-350 (2)	WX-350 (2)
30	WX-350	WX-350	WX-255 (2)	WX-350	WX-350 (2)	WX-302 (3)
35	WX-350	WX-255 (2)	WX-255 (2)	WX-350 (2)	WX-350 (3)	WX-350 (3)
40	WX-255 (2)	WX-255 (2)	WX-302 (2)	WX-350 (3)	WX-350 (3)	WX-350 (3)

The Effective System Protection (ESP) reduces system wear and energy consumption by keeping pump starts to a minimum.

Larger Tank = Fewer Cycles = Longer Tank and Pump Life.



1400 Division Road, West Warwick, RI 02893 USA T: 800.426.8765 www.amtrol.com

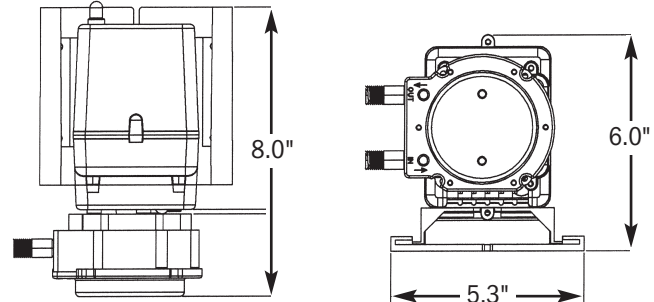
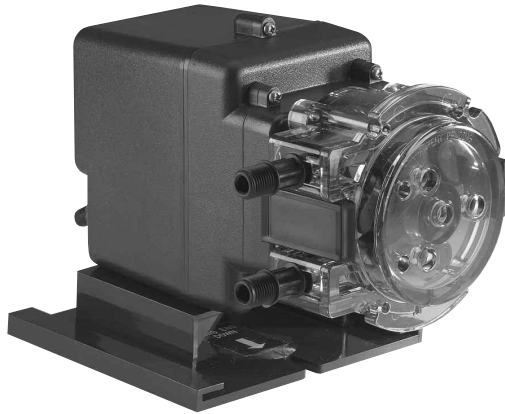
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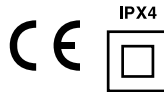
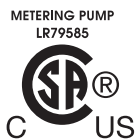
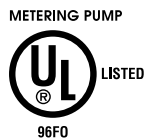
MC7025 (01/23)

CLASSIC SERIES SINGLE HEAD FIXED SPECIFICATIONS

STENNER PUMPS®



Shipping Weight 8 lbs (3.4 kg)



THIS PUMP IS TESTED AND
CERTIFIED BY WQA ACCORDING TO
NSF/ANSI 61 FOR CONTACT WITH
SODIUM HYPOCHLORITE AND
WATER ONLY AND NSF/ANSI 372.



Intertek
94247

**CONFORMS TO
ANSI/NSF STD. 50**

Equipment for swimming pools,
spas, hot tubs and other
recreational water facilities.

USE ONLY WITH ANSI/NSF 50
LISTED CONTROLLERS

Listings vary by model

FEATURES

- Fixed flow rate output
- Self-priming, does not lose prime or vapor lock
- Pumps off-gassing solutions and can run dry
- 3-point roller design assists with anti-siphon
- Tube replacement without tools
- Output reproducibility
- Tube lubrication not required
- Foot valve not required to prime
- Output volume not affected by back pressure
- Tubes and pump heads interchangeable between models
- Installation accessories included

CLASSIC SERIES SINGLE HEAD FIXED SPECIFICATIONS

STENNER PUMPS®

SPECIFICATIONS

Flow Rate Output Control Fixed output

Maximum Working Pressure
25 psi (1.7 bar), 100 psi (6.9 bar)

Maximum Operating Temperature
125°F (52°C)

Maximum Suction Lift
25 ft (7.6 m) vertical lift, based on water

Motor Type 1/30 HP, shaded pole, class B

Shaft RPM (average maximum) 26 or 44

Duty Cycle Continuous

Motor Voltage (Amp Draw)
120V 60Hz 1PH (1.7)
220V 60Hz 1PH (0.9)
230V 50Hz 1PH (0.9)
250V 50Hz 1PH (0.9)

Power Cord Type
120V 60Hz, 220V 60Hz: SJTOW
230V 50Hz, 250V 50Hz: H05VV-F

Power Cord Plug End
120V 60Hz NEMA 5-15P
220V 60Hz NEMA 6-15P
230V 50Hz CEE CEE7/7
250V 50Hz CEE CEE7/7

MATERIALS OF CONSTRUCTION

All Housings Polycarbonate

Pump Tube
Santoprene** (FDA approved) or Versilon***

Check Valve Duckbill
Santoprene** (FDA approved) or Pellethane*†

Pump Head Rollers Polyethylene

Roller Bushings Oil impregnated bronze

Suction/Discharge Tubing, Ferrules
Polyethylene (FDA approved)

Tube and Injection Fittings
PVC or Polypropylene (both NSF listed)

Connecting Nuts
PVC or Polypropylene (both NSF listed)

3/8" Adapter
PVC or Polypropylene (both NSF listed)

Suction Line Strainer and Cap
PVC or Polypropylene (both NSF listed); ceramic weight

All Fasteners Stainless steel

Pump Head Latches Polypropylene

ACCESSORIES

3 Connecting nuts 1/4" or 3/8"

3 Ferrules 1/4" or 6 mm *Europe*

1 Injection check valve 100 psi (6.9 bar) max.
OR **1** Injection fitting 25 psi (1.7 bar) max.

1 Weighted suction line strainer
1/4", 3/8" or 6 mm *Europe*

1 20' Roll suction/discharge tubing
1/4" or 3/8", white or UV black
OR 6 mm White *Europe*

1 Additional pump tube

2 Additional latches

1 Mounting bracket

1 Manual

* Santoprene® is a registered trademark of Exxon Mobil Corporation.

** Versilon® is a registered trademark of Saint-Gobain Performance Plastics.

† Pellethane® is a registered trademark of Lubrizol Advanced Materials, Inc.

FLOW RATE OUTPUT CHART

Single Head Fixed - Flow Rate Output Chart 25 psi (1.7 bar) maximum

	Model	Item Number Prefix	Pump Tube	Gallons per Day	Gallons per Hour	Ounces per Minute	Liters per Day	Liters per Hour	Milliliters per Minute	Liters per Day	Liters per Hour	Milliliters per Minute
45 SERIES	45MP1	45MFL1	1	3.0	0.13	0.27	11.4	0.48	7.92	9.1	0.38	6.32
	45MP2	45MFL2	2	10.0	0.42	0.89	37.9	1.58	26.32	30.3	1.26	21.04
	45MP3	45MFL3	3	22.0	0.92	1.96	83.3	3.47	57.85	66.6	2.78	46.25
	45MP4	45MFL4	4	35.0	1.46	3.11	132.5	5.52	92.01	106.0	4.42	73.61
	45MP5	45MFL5	5	50.0	2.08	4.44	189.3	7.89	131.43	151.4	6.31	105.14
85 SERIES	85MP1	85MFL1	1	5.0	0.21	0.44	18.9	0.79	13.13	15.1	0.63	10.49
	85MP2	85MFL2	2	17.0	0.71	1.51	64.4	2.68	44.65	51.5	2.15	35.76
	85MP3	85MFL3	3	40.0	1.67	3.55	151.4	6.31	105.14	121.1	5.05	84.10
	85MP4	85MFL4	4	60.0	2.50	5.33	227.1	9.46	157.71	181.7	7.57	126.18
	85MP5	85MFL5	5	85.0	3.54	7.55	321.8	13.40	223.40	257.4	10.73	178.75
Approximate Output @ 60Hz										Approximate Output @ 50Hz		

Single Head Fixed - Flow Rate Output Chart 100 psi (6.9 bar) maximum

	Model	Item Number Prefix	Pump Tube	Gallons per Day	Gallons per Hour	Ounces per Minute	Liters per Day	Liters per Hour	Milliliters per Minute	Liters per Day	Liters per Hour	Milliliters per Minute
45 SERIES	45MPHP2	45MFH1	1	3.0	0.13	0.27	11.4	0.48	7.92	9.1	0.38	6.32
	45MPHP10	45MFH2	2	10.0	0.42	0.89	37.9	1.58	26.32	30.3	1.26	21.04
	45MPHP22	45MFH7	7	22.0	0.92	1.96	83.3	3.47	57.85	66.6	2.78	46.25
85 SERIES	85MPHP5	85MFH1	1	5.0	0.21	0.44	18.9	0.79	13.13	15.1	0.63	10.49
	85MPHP17	85MFH2	2	17.0	0.71	1.51	64.4	2.68	44.65	51.5	2.15	35.76
	85MPHP40	85MFH7	7	40.0	1.67	3.55	151.4	6.31	105.14	121.1	5.05	84.10
Approximate Output @ 60Hz										Approximate Output @ 50Hz		

* Injection check valve included with pumps rated 100 psi (6.9 bar) maximum.

NOTICE: The information within this chart is solely intended for use as a guide. The output data is an approximation based on pumping water under a controlled testing environment. Many variables can affect the output of the pump. Stenner Pump Company recommends that all metering pumps undergo field calibration by means of analytical testing to confirm their outputs. The information contained in this flyer is not intended for specific application purposes. Stenner Pump Company reserves the right to make changes to prices, products, and specifications at any time without prior notice.

PCM - SPECIFICATIONS

STENNER PUMPS®



The Pump Control Module (PCM) is a time adjusted controller that powers the pump. A pulsing flow meter sends a signal to the PCM which actuates the pump to deliver the desired dose based upon water volume. The PCM has a locking feature on the adjustment knob.

TIME RANGE IN SECONDS

PCM1: 0.1-1.0

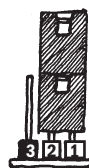
PCM5: 0.5-5.0

PCM10: 1.0-10.0

PCM20: 2.0-20.0

NOTE: The time range can be changed by adjusting the internal jumper setting as indicated above.

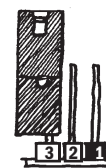
INTERCHANGEABLE TIME RANGE SETTINGS



0.1-1 second
(Jumper 2 & 1)



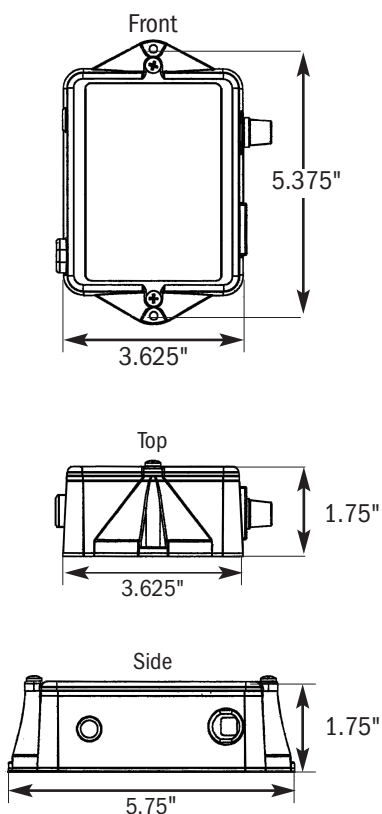
0.5-5 seconds
(Jumper 3 & 2)



1-10 seconds
(Jumper 3)



2-20 seconds
(Jumper 3 & 2, 2 & 1)



SHIPPING WEIGHT 2 lbs (0.9 kg)

Timer Microcontroller with triac output

Turndown Ratio 10:1

Input Signal Non-voltage dry contact, water meter

Reset Time Immediate

Minimum Signal Durations 10 milliseconds

Input Electrical 120V 60Hz

No Load Current 0.45mA AC maximum

Output Electrical Maximum device load, 1.8 amp at 120V

Housing Material Polycarbonate plastic

BOX Dimensions L x W x H 8 x 8 x 6 in. (20.3 x 20.3 x 15.2 cm)

TANK SYSTEM SPECIFICATIONS

STENNER PUMPS®

TANK SYSTEM



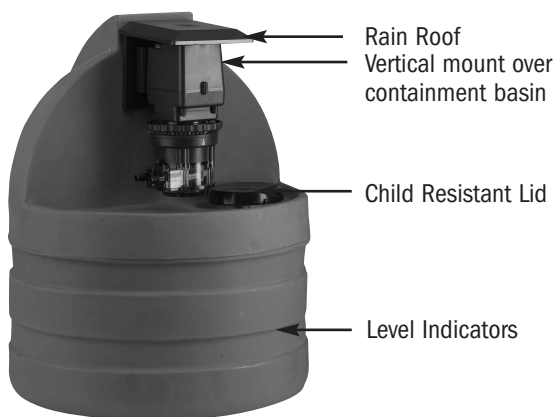
7.5-Gallon (28.4 Liters)



15-Gallon (56.8 Liters)



30-Gallon (113.6 Liters)



Tank System consists of the tank and pump and is built with Classic single head adjustable or fixed, M128 or Econ series.

FEATURES

- Shipped pre-assembled for easy installation and convenience
- Includes rain roof to help protect motor (Classic series only)
- Vertically mounted for solution containment
- Child resistant lid
- Polyethylene construction is lightweight and rugged
- UV resistant gray or translucent white

MATERIALS OF CONSTRUCTION

Tank Polyethylene, approved to NSF/ANSI 61

Lid with child resistant lock Polypropylene

Grommets Viton

Screws Stainless steel

SHIPPING WEIGHT AND BOX DIMENSIONS

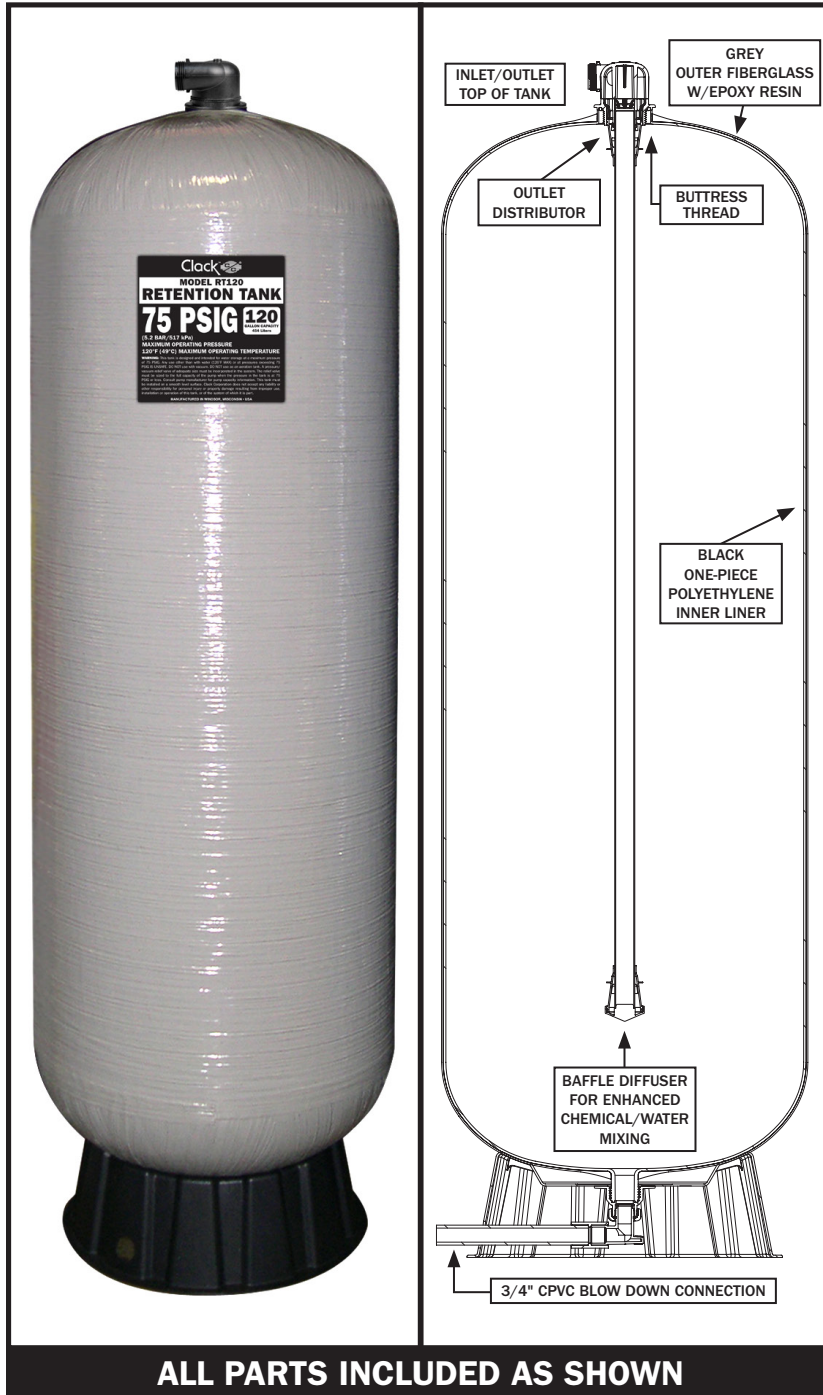
Tank Size	Shipping Weight			Box Dimensions
	Classic Adjustable or M128	Classic Fixed	Econ	
7.5-Gallon	18 lbs (8.1 kg)	15 lbs (6.8 kg)	14 lbs (6.4 kg)	23 x 23 x 21 in. (58.4 x 58.4 x 53.3 cm)
15-Gallon	27 lbs (12.3 kg)	25 lbs (11.3 kg)	23 lbs (10.4 kg)	23 x 23 x 27 in. (58.4 x 58.4 x 68.6 cm)
30-Gallon	35 lbs (15.9 kg)	32 lbs (14.5 kg)	31 lbs (14 kg)	23 x 23 x 38 in. (58.4 x 58.4 x 96.5 cm)

PRODUCT DIMENSIONS

- 7.5-Gallon: 20.5 OD x 19.6 in. (52.1 OD x 49.8 cm)
- 15-Gallon: 20.5 OD x 25.3 in. (52.1 OD x 64.1 cm)
- 30-Gallon: 20.5 OD x 37.5 in. (52.1 OD x 95.3 cm)



Retention Tanks



FEATURES:

- Convenient Inlet/Outlet piping connection at the top of the tank
- Inlet/Outlet Adapter easily accommodates the use of a vacuum breaker
- Inlet/Outlet Buttress thread for strength
- Bypass valve option available
- Full 3/4" blow down drain at lowest point of tank
- 360° degree drain orientation
- Black one piece polyethylene liner for impact and corrosion resistance
- 5 year limited warranty

SPECIFICATIONS:

- Maximum Operating Pressure 75 psi/517 kPa
- Maximum Operating Temperature 120°F 49°C
- Maximum Allowable Operating Vacuum 0
- A Vacuum/Pressure Relief Valve of adequate size must be incorporated in the plumbing

FITTINGS INCLUDED:

1 1/4" x 1 1/2" PVC Straight Solvent Fitting Kit and
1 1/4" Plastic Straight Male NPT Fittings

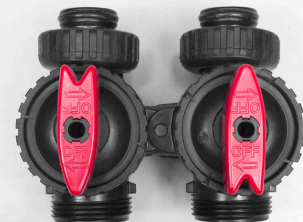


V3007-07

V3317

OPTIONAL:

Bypass



V3006

ORDER NO.	DESCRIPTION	TANK ASSEMBLY DIAMETER INCHES/MM	TANK ASSEMBLY HEIGHT INCHES/MM	CAPACITY GALLONS/LITERS	QTY/ CARTON	SHIPPING WEIGHT LBS/KG
C2250	RT40 Retention Tank	21/533	40.5/1,029	40/151	1	37/17
C2251	RT80 Retention Tank	21/533	67.5/1,715	80/303	1	66/30
C2252	RT120 Retention Tank	24/607	78.5/1,994	120/454	1	80/36

ORDER NO.	DESCRIPTION	QTY/CARTON	SHIPPING WEIGHT LBS/KG
V3006	Bypass	24	26/12

CERTIFIED LEAD FREE - MODELS 800LF - 818LF

800LF Series Deluxe Frost-Proof Yard Hydrant



- 3/4" or 1" NPT Female Inlet
- 3/4" Male Hose Thread Outlet
- Cast Iron Head and Handle with Blue Polyester Powder Coated Finish.
- Max. Pressure 120 PSI
- Many Parts and Accessories are common for all Models.
- Yard hydrant accessories...See page 27.



NSF/ANSI 372

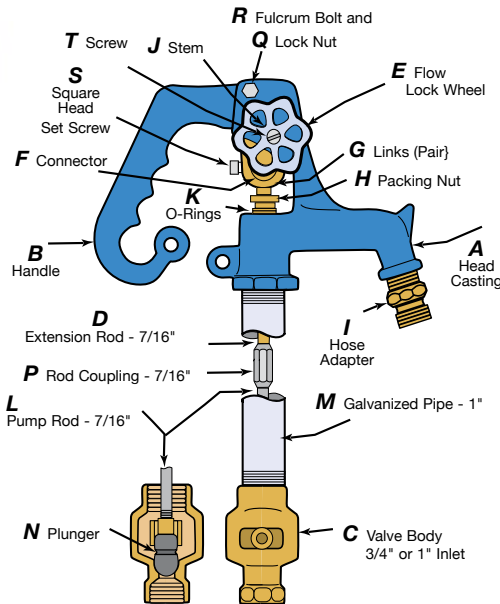
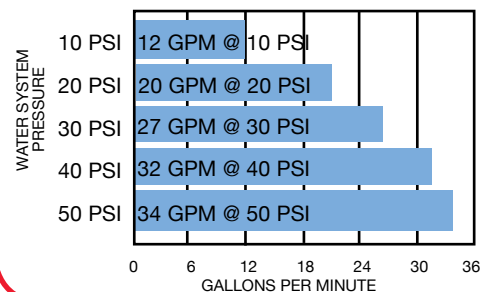
Certified by Truesdale Laboratories. Meets all Federal and state Safe Drinking Water Acts and requirements. **Does not meet California Prop. 65 (Environmental Law)**

3/4" Inlet Part No.	1" Inlet Part No.	Bury Depth	Weight Each lbs.
800LF	810LF	1	11.9
801LF	811LF	1 1/2	13.5
802LF	812LF	2	14.5
803LF	813LF	3	16.8
804LF	814LF	4	18.9
805LF	815LF	5	21.2
806LF	816LF	6	23.4
807LF	817LF	7	25.7
808LF	818LF	8	28.2

All Simmons Yard Hydrants are Individually Boxed.

Flow Rates:

(For All Simmons Yard Hydrant Models except 6800 Series)



Parts Kit



CERTIFIED LEAD FREE

800LF Series Yard Hydrant Parts

Ref. No.	Name of Part
850SB	Parts Kit
840	Head Complete
A	8820 Head
B	8821 Handle
C	8822SB Valve Body (3/4")
	8832A Valve Body (1")
D	8845 Extension Rod, 7/16"
E	8824* Flow Lock Wheel
F	8825• Brass Connector
G	8826• Brass Links (Price per Pair)
H	8847• Brass Packing Nut
I	8844 Hose Adapter
J	8829* Brass Stem, Square Head
K	8839• Buna-N "O" Rings (Price per Pair)
L	8814 Pump Rod, 7/16"
M	8815 Galvanized Pipe Casing, 1"
N	8842• Plunger (One Piece)
P	8834 Rod Coupling, 7/16"
Q	8301• Stainless Steel Lock Nut
R	8836• Fulcrum Bolt Stainless Steel
S	8837• Square Head Set Screw Stainless
T	8610* Screw for Flow Lock Wheel

*Included in Parts Kit. Refer to Parts Kit photo at left.
*These parts make up the flow lock wheel assembly.

MADE IN U.S.A.

SEPTIC SYSTEM DESIGN

SINGING WATERS PARK
FISH CREEK ROAD
TOWN OF GREIG

OWNER/OPERATOR: COUNTY OF LEWIS
7660 NORTH STATE STREET
LOWVILLE, NY 13367

CONTACT: JACKIE MAHONEY,
DIRECTOR OF RECREATION, FORESTRY & PARKS
315-376-5422
315-489-0240



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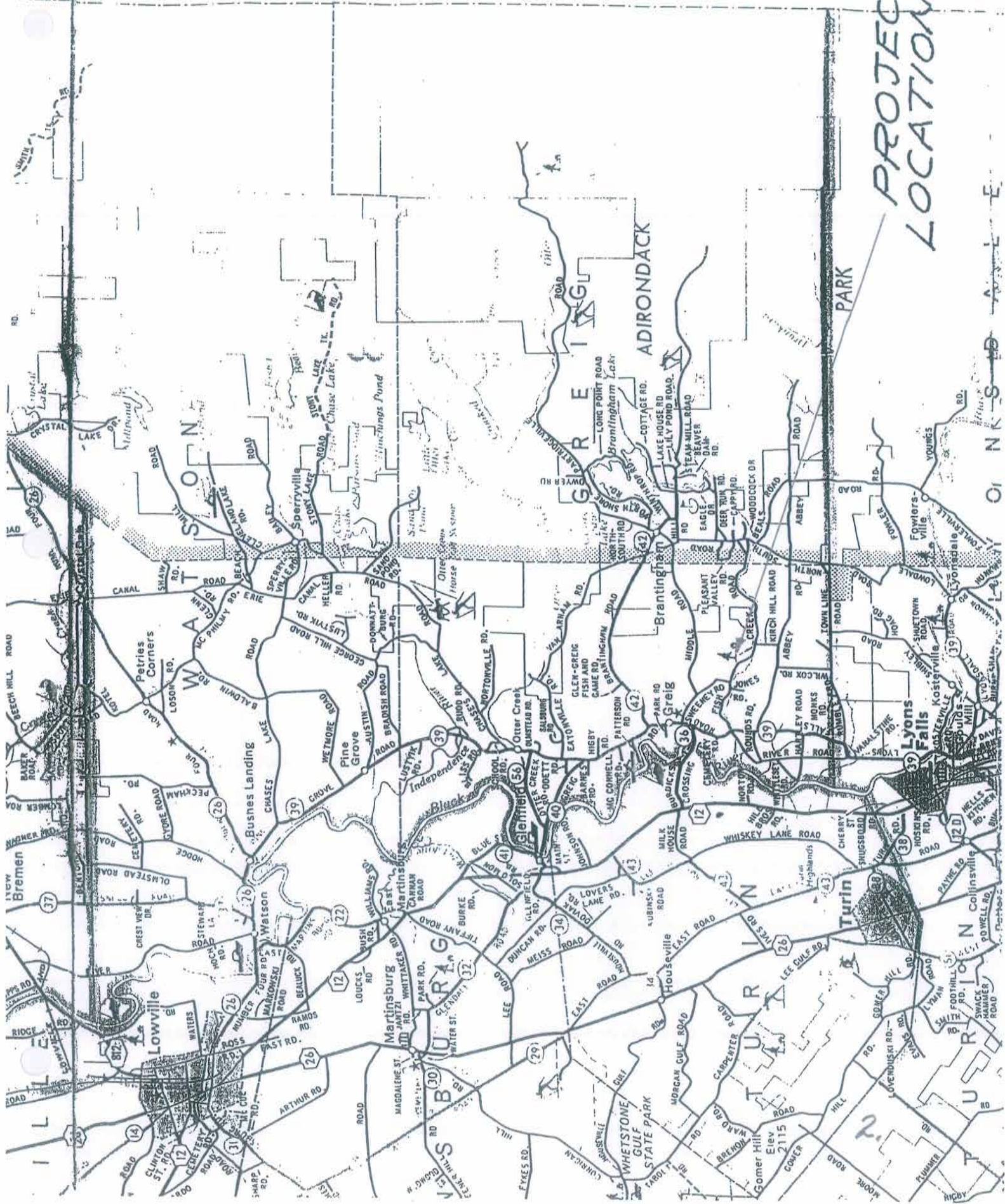
SANITARY EQUIPMENT & CONSTRUCTION DETAILS

CONSTRUCTION NOTES

h

PROJECT
LOCATION

0 1 2 3 4 5 6 7 8 9 10
M I L E S



PROJECT DESCRIPTION

This project consists of the design for a septic system for "Singing Waters" picnic grounds located on the Fish Creek Road in the Town of Greig, Lewis County, NY. The grounds are operated by Lewis County. Some of the picnic sites are to be converted to overnight campsites as well as additional campsites being developed, bringing the total number of campsites to 19. There is an existing bathhouse that will be replaced in the future. The septic system design is intended to service the new bathhouse and renovated picnic and camp sites.

The campground will be designed according to the New York State Department of Health's publication, "Subpart 7-3, Campgrounds". The sanitary facilities and water supply will also meet the requirements of Subpart 7-3. "Gravelless leaching chambers" are specified for this absorption field.

Due to access restrictions, RV's will not be allowed at this time.

NOTE:

This campground addition to the existing picnic area, owned and operated by Lewis County, is to be constructed in stages as funds become available.

Stage 1 – Drill a well (Completed).

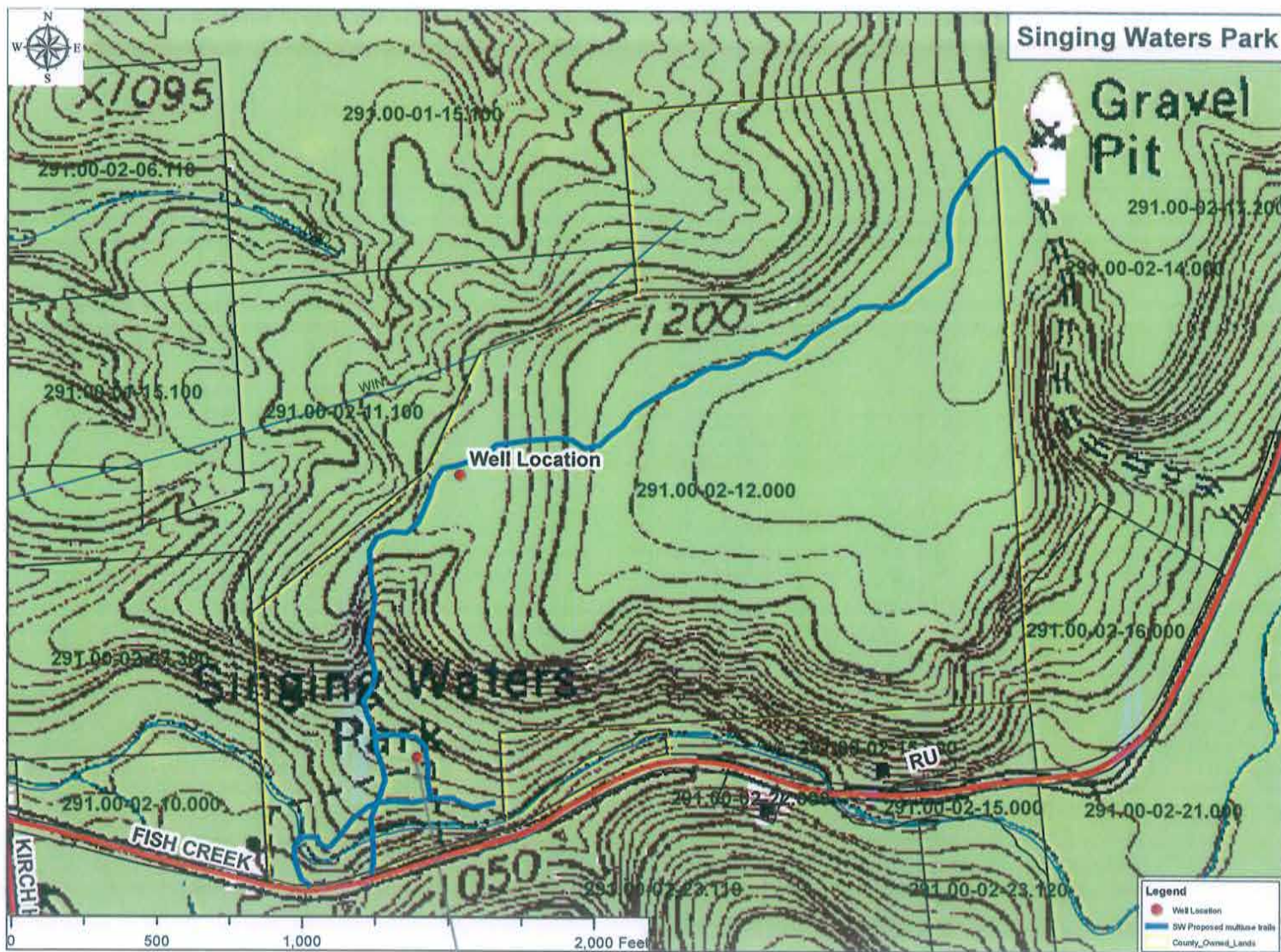
Stage 2 – Install the septic system for the planned campground.

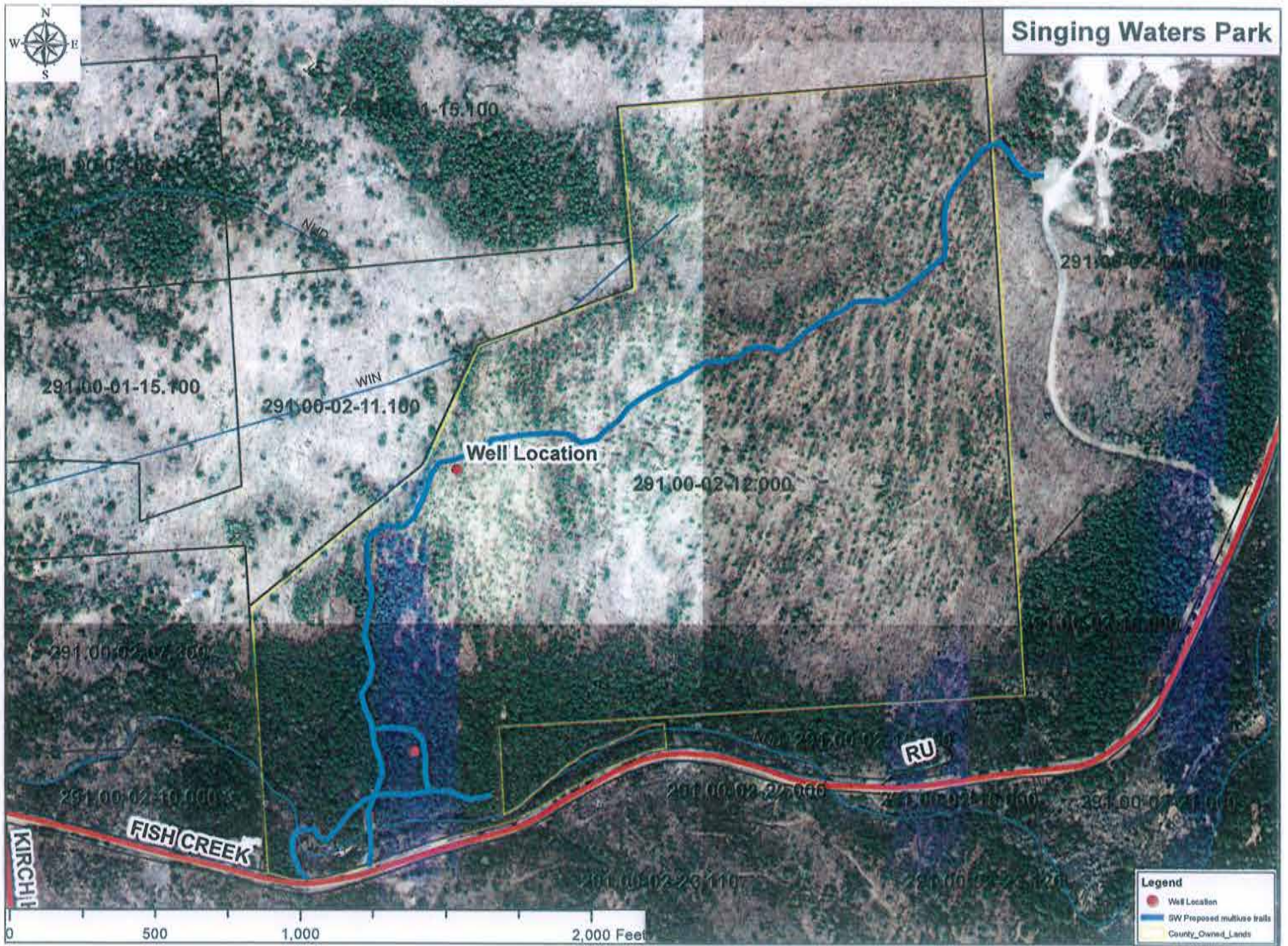
Stage 3 – Clear and make ready the campsites.

Stage 4 – Build a new bathhouse.

Singing Waters Part



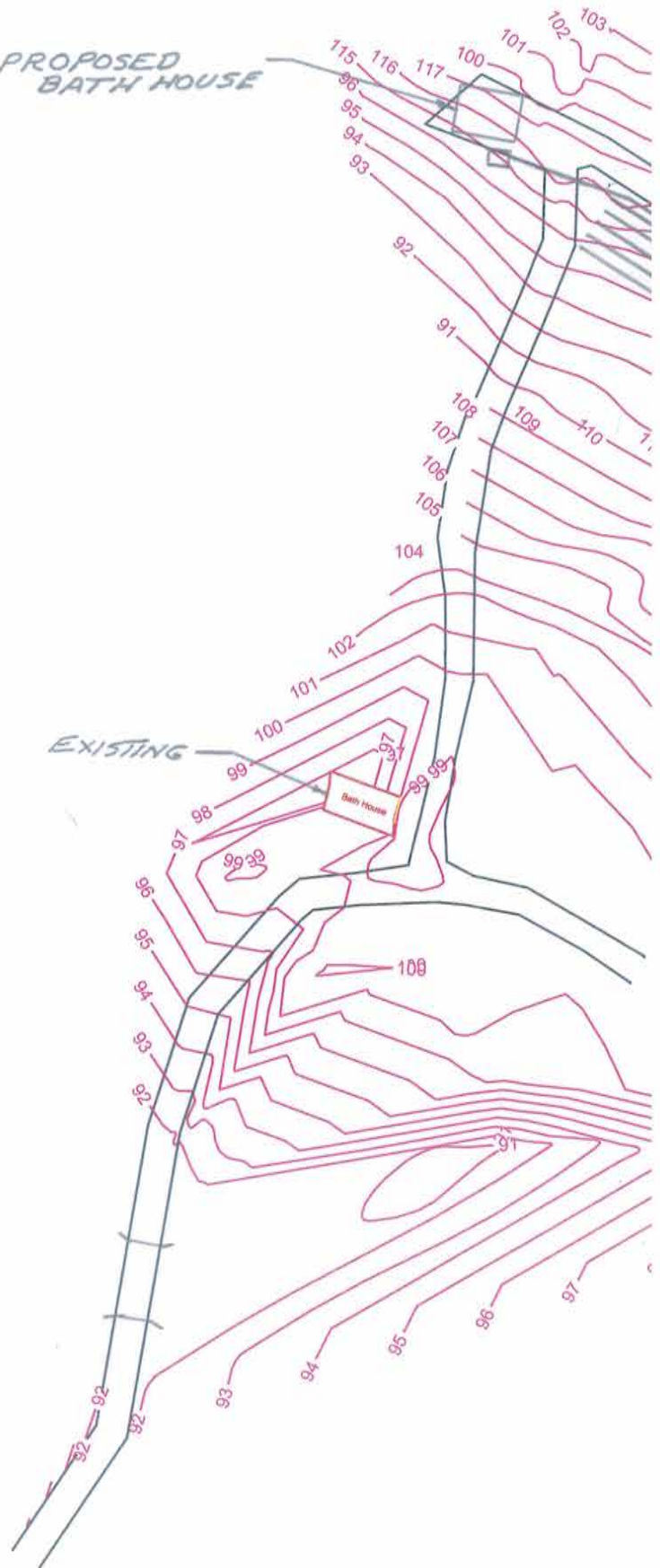




PROPOSED
BATH HOUSE

EXISTING

Bath house



SANITARY FACILITIES REQUIREMENTS

TOILET FACILITIES

Number of campsites = 19

Required number of toilets = (4) for the first 25 campsites (2 for each sex),
then (1) for each sex for each additional 25
campsites.

With 19 campsites, the requirement is a minimum of 4 toilet facilities.
There may be an additional 10 picnic table sites. This will require an additional
toilet for each sex, bringing the total to 6 toilet facilities

HAND WASH FACILITIES

Required number of hand wash facilities = (1) for every two toilets.

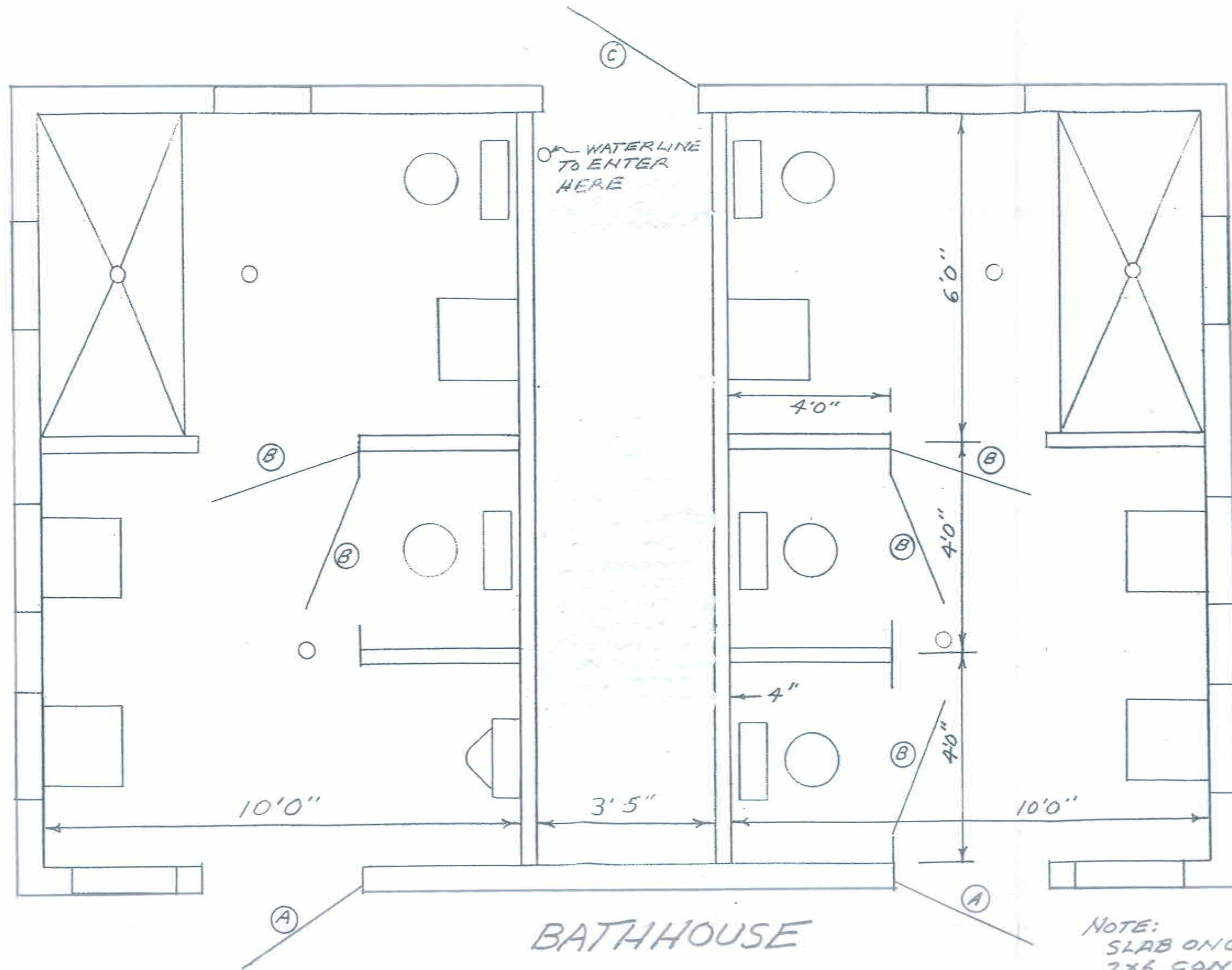
Total number of hand wash facilities required is 3.

UTILITY SINKS

Utility sinks will be provided at central locations.

BATH HOUSE

The proposed bath house will be designed with future growth anticipated. The
proposed campsites are located within 500 feet of the bath house facility. This is
a New York State Department of Health requirement. This facility will be
handicapped accessible.



BATHHOUSE
PLAN VIEW

NOTE:
SLAB ON GRADE FOUNDATION
2x6 CONSTRUCTION
1/2" PLYWOOD SHEATHING
INSIDE & OUT
INTERIOR FINISH TO BE
WASHABLE

NOTE:

The proposed campground is not accessible by RVs. A dump station will not be part of the design.

SEPTIC SYSTEM DESIGN

SEPTIC TANK DESIGN

$$Q_1 = 19 \text{ campsites @ } 55 \text{ gal./day} = 1045 \text{ gal./day}$$

$$Q_2 = 10 \text{ picnic tables w/3 persons per table} = 30 \text{ persons @ } 5 \text{ gal./day/person} \\ = 150 \text{ gal./day}$$

$$Q = 1045 \text{ gal./day} + 150 \text{ gal./day} = 1195 \text{ gal./day}$$

$$\text{Septic tank size} = 1.5 \times Q$$

$$= 1.5 \times 1195 \text{ gal./day}$$

$$= 1793 \text{ gal./day}$$

A 2000-gallon septic tank is necessary.

ABSORPTION TRENCH SYSTEM DESIGN

$$Q = 1195 \text{ gal.}$$

$$\text{Perk rate} = 1 - 5 \text{ minutes}$$

$$\text{Application rate} = 1.2 \text{ gal./sq.ft./day}$$

$$\text{Area of trenches} = \frac{1195 \text{ gal./day}}{1.2 \text{ gal./sq.ft./day}}$$

$$= 996 \text{ sq.ft.}$$

$$\text{Total length of trenches} = \frac{996 \text{ sq. ft}}{2 \text{ sq.ft./ft.}}$$

$$= 498 \text{ ft.}$$

Using a length of 50 ft. per trench, 10 absorption trenches will be used.

Total trench length will be 500 ft.

"Infiltrator" Quik 4 equalizer 24 HD gravelless leaching chambers specified.

The enclosed sketch shows the proposed location of the septic system. Field conditions may slightly alter the exact location.

The absorption trench system is not to be driven over.

Type of Use	Unit	Gallons per Day
Apartment	Per Bedroom	110/130/150 ¹⁶
Mobile Home Park	"Single-Wide" Home	220
	"Double-Wide" Home	330
Single Family Residence	Per Bedroom	110 / 130/ 150 ¹⁷

Campgrounds

Type of Use	Unit	Gallons per Day
Day Camp	Per Person	15
	Add for Shower	5
	Add for Lunch	5
Campground	Per Unsewered Site ¹⁸	55(includes showers)
	Per Sewered Site – with water hookups	100
	Per Sewered Site – without water hookups	55
Campground Day Use	Per Person	5
Dumping Station ¹⁹	Per Unsewered Site	10
	Per Sewered Site	5

Type of Use	Unit	Gallons per Day
Assisted Living Facility/Complex	Per Bed ^{20,21} – add 10 gpd for in room kitchen	110/130/150 50
Group Home (residential-style building)	Per Bed ²⁰ – add 150 gpd per house for garbage grinder	110/130/150
Nursing Home (hospital care)	Per Bed ^{20,21}	175

¹⁷ For individual household systems under 1,000 gpd, use design flows in the NYSDOH's *Wastewater Treatment Standards Residential Onsite Systems - Appendix 75- A*.

¹⁸ Additional wastewater flow due to food service or laundry shall be accounted for. Structures available for overnight occupancy other than those meeting the definition of a camping unit shall be based on 150 gpd / unit for design flow purposes, pursuant to NYSDOH – *Chapter 1 State Sanitary Code Subpart 7-3 Campgrounds*.

¹⁹ The addition of flow for dump station sewage may be prorated by using an estimated percentage of sites suited for RV use based on historical data. No reduction for low flow fixture usage should be applied here.

²⁰ Add 15 gpd per employee

²¹ Add for Food Service (e.g. 24-hour restaurant; refer to Food Service Operations Table)

Table E-1 Recommended Sewage Application Rates

Percolation Rate (mpi)	Typical Soil Type	Application Rate (gal /day/sq. ft.)
< 1	Gravel, Coarse Sand	Not suitable ⁴²
1-5 ✓	Coarse Medium Sand	1.20 ✓
6-7	Fine Sand, Loamy Sand	1.00
8-10	Fine Sand, Loamy Sand	0.90
11-15	Fine Sand, Loamy Sand	0.80
16-20	Sandy Loam, Loam	0.70
21-30	Sandy Loam, Loam	0.60
31-45	Loam, Porous Silt Loam	0.50
46-60	Loam, Porous Silt Loam	0.45
61-120	Silty Clay Loam, Clay Loam	0.20 ^{43,44}
> 120	Clay	Not Suitable

PERK TEST

SIXING CORRESP

DATE 10/14/19
 TIME 2:30
 WEATHER CLEAR

SOILS

0-10"
 ORGANIC
 TOP SOIL
 10"-36"
 SILTY
 SAND
 36"-50"
 COARSE
 SILTY
 SAND

TEST #	BEG. TIME	END TIME	RATE
HOLE #1	2:56:05	2:57:30	1:25
	2:58:40	3:01:00	2:20
	3:02:10	3:04:20	2:10
HOLE #2	3:07:20	3:08:40	1:20
	3:10:30	3:13:20	3:10
	3:14:50	3:17:50	3:00
HOLE #3			



0° 42'

DEP. 26.50
 WELL
 LOCATION

Percolation Test Data
(see instructions on reverse side)

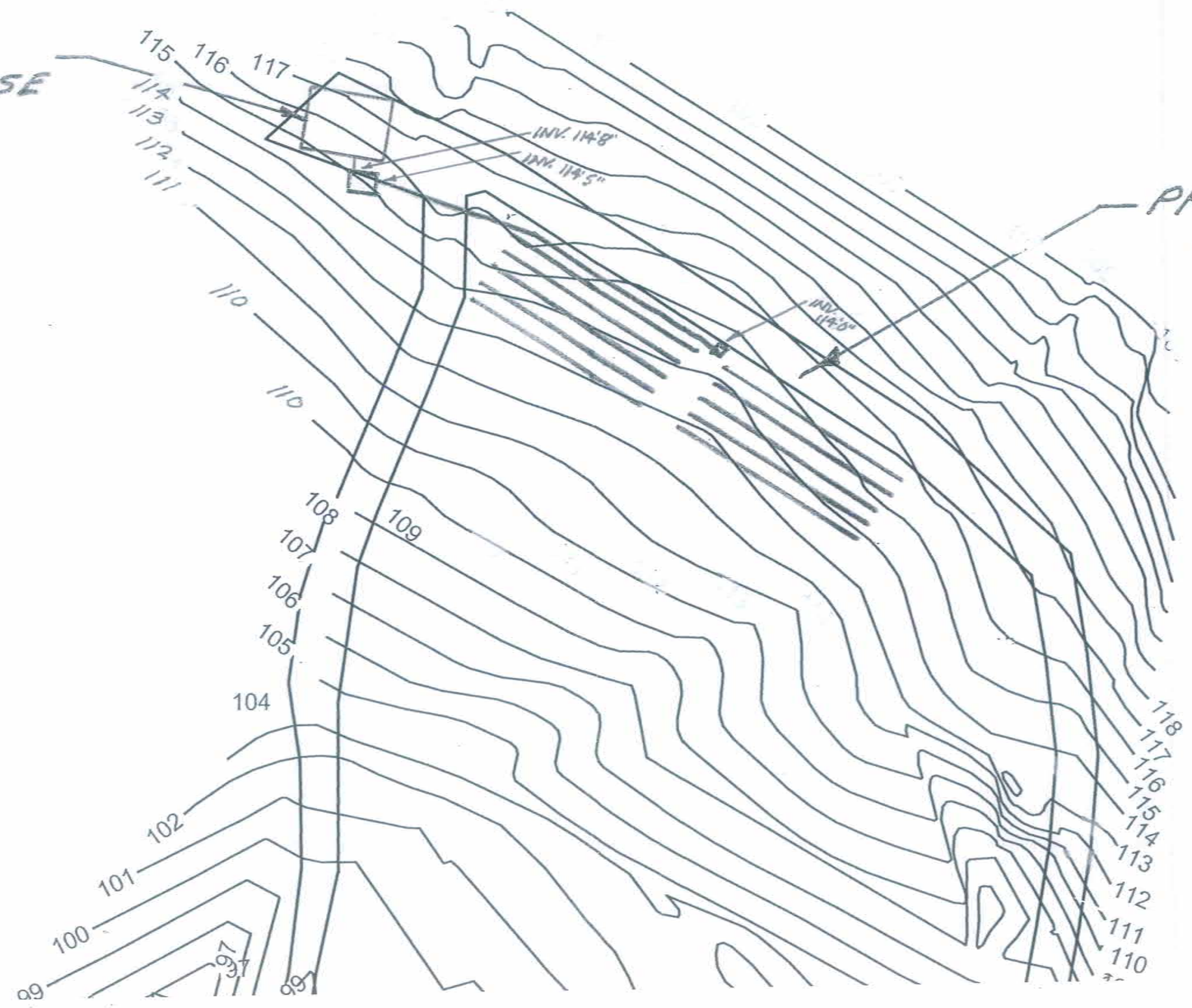
Development Site: SINGING ROCK (T/V/C): _____ County: LEWIS
Date: 10/25/19 Tests Conducted By: T. THAYER
Weather Conditions: C. CUPLEY

Test Hole No.	Test Hole Depth (inches)	Lot No.	Soil Profile Description and Groundwater Depth (if identified)	Presoaking Date & Time	Time	Percolation Test					
						1	2	3	4	5	6
			<u>STOP WATER</u>		End						
					Begin						
			<u>HOLE #1</u>		Result	<u>2:20</u>	<u>2:20</u>				
					End						
					Begin						
			<u>HOLE #2</u>		Result	<u>3:26</u>	<u>4:52</u>	<u>5:57</u>			
					End						
					Begin						
					Result						
					End						
					Begin						
					Result						
					End						
					Begin						
					Result						
					End						
					Begin						
					Result						

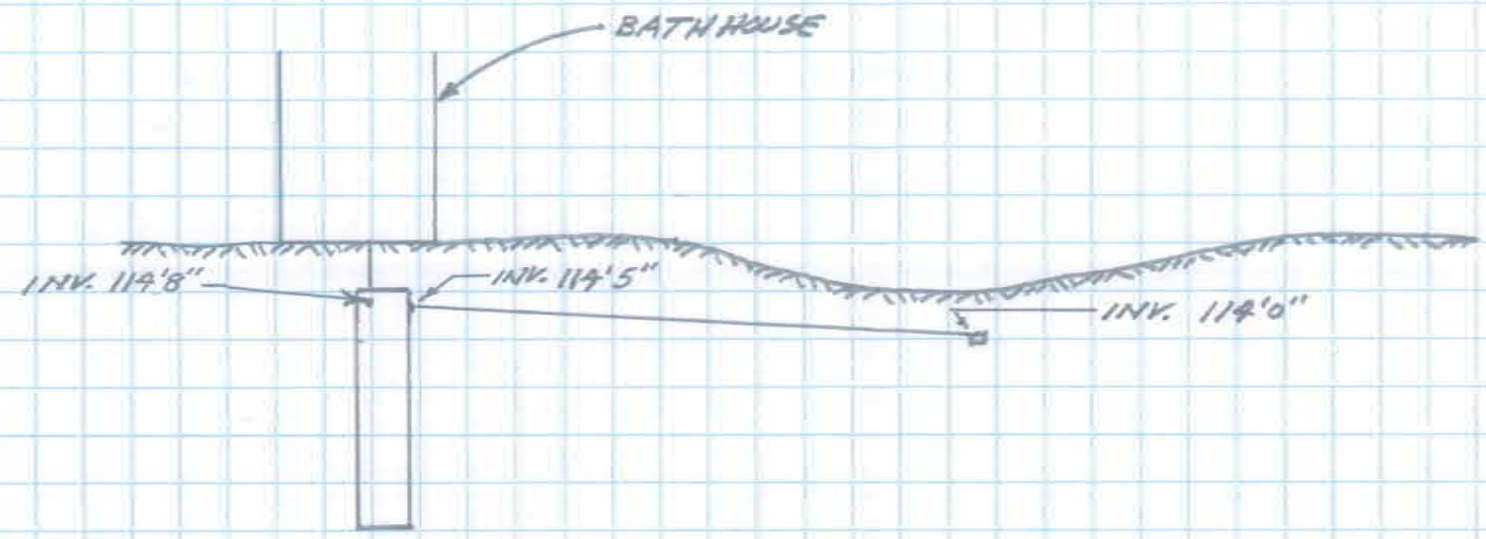
Begin time, end time, and result in minutes for a water elevation change from 6" to 5" above the bottom of the test hole.

PROPOSED
BATH HOUSE

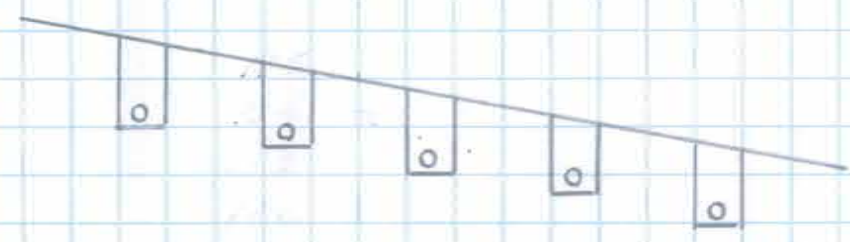
PROPOSED
ABSORPTION
FIELD



116
115
114
113
112
111
110



NOTE:
ABSORPTION FIELD SITE WILL BE GRADED
TO AN EVEN SLOPE



SCALE:
VERT- 1" = 5'
HORIZ- 1" = 30'

SANITARY EQUIPMENT & CONSTRUCTION DETAILS

NOTE: Equipment manufacturers shown are for reference only.
Other manufacturers are acceptable.

(888) 686-8265

LOWEST PRICES

BEST SHIPPING RATES

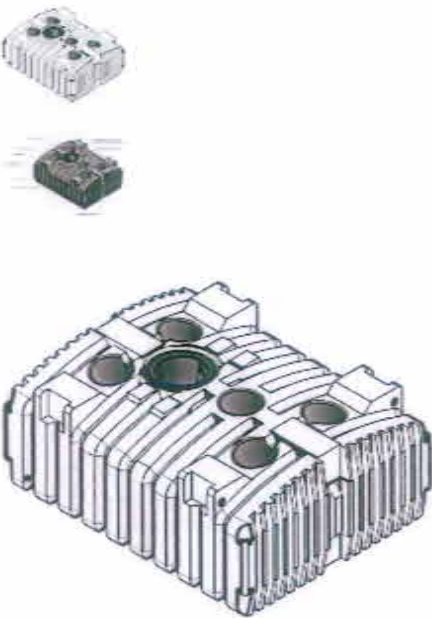


Products

HOME / PLASTIC SEPTIC TANKS / UNDERGROUND PLASTIC SEPTIC TANKS / 2000 GALLON SEPTIC TANK

2000 GALLON NORWESCO SEPTIC TANK

underground septic tank, waste tank, sewage tank



Hover to zoom

Images may be inaccurate. See specs table below to ensure accuracy.

Quick Summary	
PART#	MPN: 44593 / Store ID: X9803535
DIMENSIONS	126" Length x 98" Width x 51" Height
LIQUID ACCESS	1 Manway / Lid
WEIGHT / SHIP CLASS	704 lbs. / Ship Class 300
SHIPS FROM	MN, OH, OK
DRAWING	Norwesco 44593 Drawing

Description

Tank does not come with plumbing installed.

- Features 20" manhole for ease of access
- Complies with FDA standards 21 CFR 177.1520 (1) 3.1 and 3.2
- Integral columns provide excellent structural strength
- Designed to accept up to 4" plumbing connections
- Multi-use option for potable, non-potable, & septic applications

Tank does not come with plumbing installed.

~~\$3,599.99~~ **\$2,455.99**

32% Off MSRP Guaranteed for 3 days only

Qty: 1

ADD TO CART

GET A QUOTE

ADD-ONS

Check items to add to the cart or select all

- ☐ 6" Norwesco Underground Tank Manhole Extension
- ☐ 15" Norwesco Underground Tank Manhole Extension
- Show More

10/16/20192000 Gallon Septic Tank |Norwesco 44593

Norwesco 2,000 Gallon Septic Tank, part# 44593 is a 1 compartment septic tank. It's can be used for the storage of potable water & wastewater. This plastic septic tank offers a lightweight low cost alternative to old-fashioned concrete septic tanks.

This 2,000 gallon septic tank is constructed with rotationally molded polyethylene resin. It's seamless construction makes it durable and resistant to cracks, chips, and ruptures. The poly tank was made with FDA approved resin that complies with FDA standards 21 CFR 177.1520 (1) 3.1 and 3.2 for waste water storage.

The 2,000 gallon septic tank Installation requires a 25% internal backfill to equalize the pressure between the outside and the inside of the tank.

Norwesco backs their septic tanks with a 3 year manufacturer warranty. Additional riser options are available. These plastic septic tanks are available in sizes ranging from 200 to 2,000 gallons.

The National Tank Outlet is ready to help fulfill your liquid transportation needs. Contact our septic tank experts with your questions or customization requirements.

FIND THIS SEPTIC TANK IN

Underground Plastic Septic Tanks

Plastic Tank Manufacturers

Norwesco Tanks

Norwesco Legacy Septic Tanks

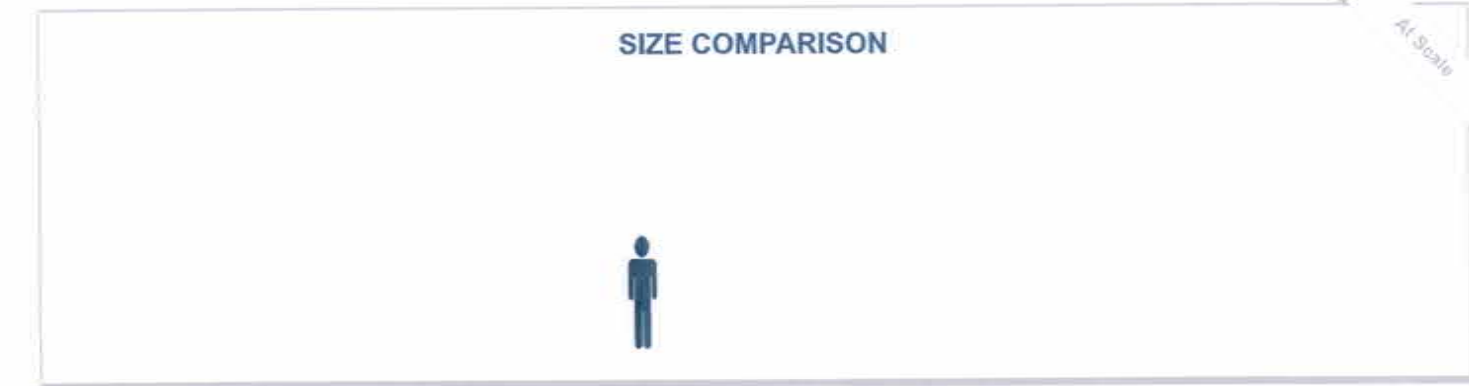
Plastic Septic Tanks

Norwesco Septic Tanks

2000 Gallon Septic Tanks

Arkansas Septic Tanks

▼ Show More ▼



Specifications

ADDITIONAL INFORMATION

STORE ID	X9803535
Manufacturer Info	
PRODUCT PART #	44593
MANUFACTURER	Norwesco
MANUFACTURER WARRANTY	3 Year Warranty
TECHNICAL DRAWING	Norwesco 44593 Drawing
DOCUMENTS	Norwesco Septic FAQ
INSTALLATION INSTRUCTIONS	Norwesco Septic Installation Instructions

Size Info	
CAPACITY (GALLONS)	2000
DIMENSIONS	126" Length x 98" Width x 51" Height
WEIGHT (LBS)	704
Liquid Accessibility	
LIQUID ACCESS	1 Manway / Lid
Resin Features	
COLOR	Natural White
MATERIAL	Polyethylene
MAX TEMP ALLOWED	130° F / 54° C
Physical Features	
PRODUCT TYPE	Septic Tank
ENVIRONMENT	Underground
PREPLUMBED	No
IAPMO	No
COMPARTMENTS	1
ANSI / NSF 61 APPROVED RESIN	Yes
Shipping Info	
SHIPPING LOCATIONS	Minnesota, Ohio, Oklahoma
SHIPPING ZIP CODES	43130, 55375, 74801
SHIP FREIGHT CLASS	300

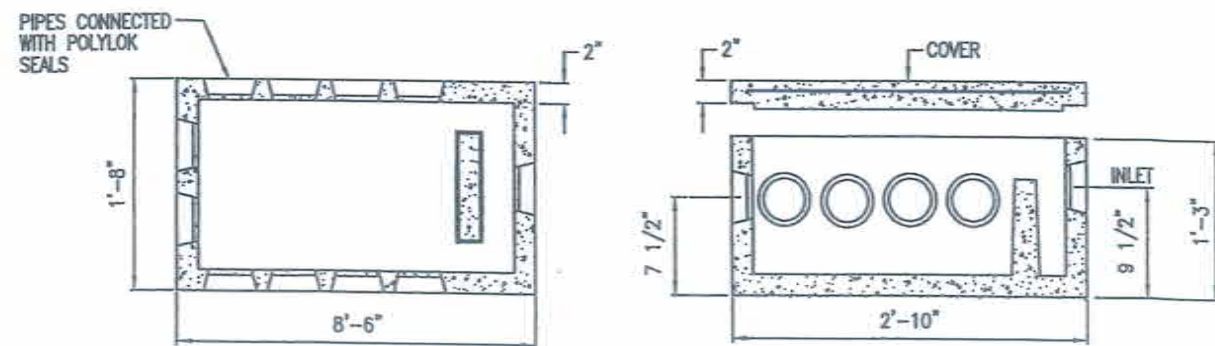
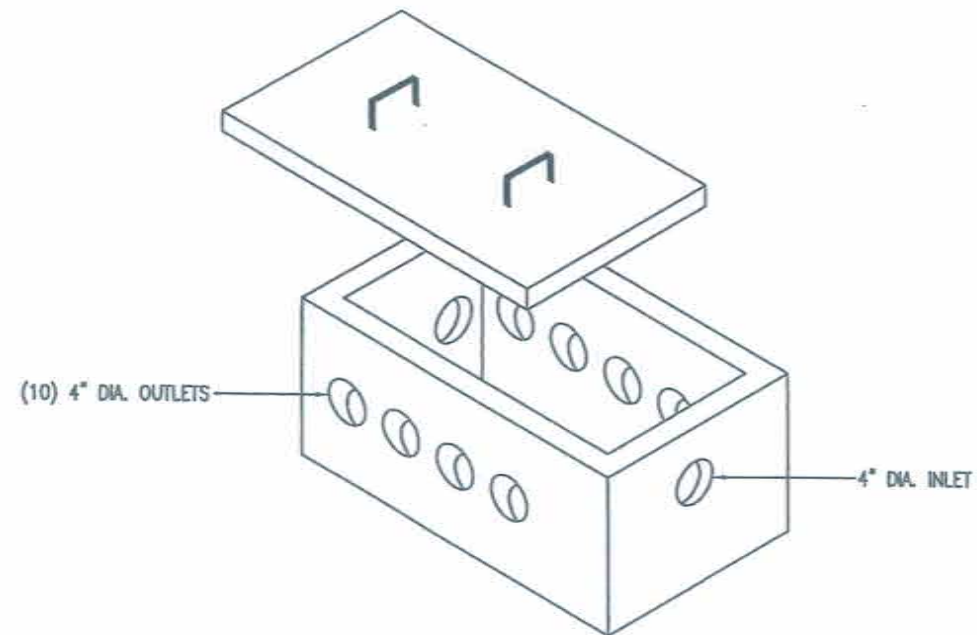


22,

JEFFERSON CONCRETE CORP.

22850 MURROCK CIRCLE
WATERTOWN, NY 13601
TEL (315)788-4171 FAX (315)788-7958
www.jeffersonconcrete.com

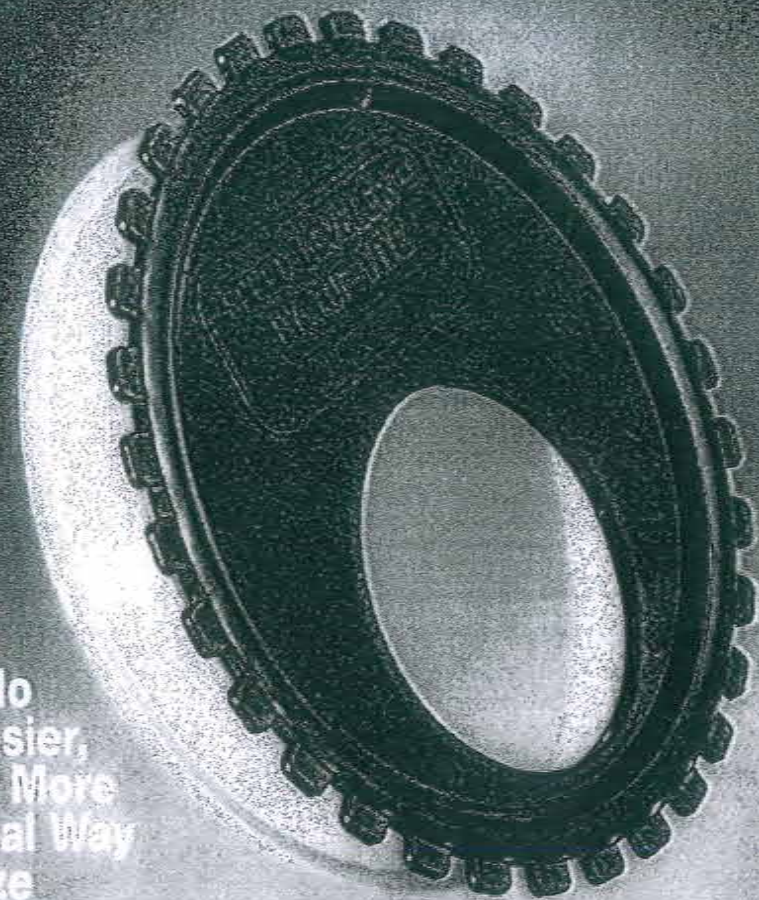
10 OUTLET
DISTRIBUTION BOX



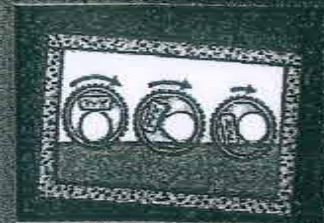
GENERAL NOTES:

CONCRETE TO BE MIN. 5000 PSI @ 28 DAYS
ENTRAINED AIR 5%-8%
STEEL REINFORCEMENT - ASTM A 615 GRADE 60
BUILT IN ACCORDANCE TO ASTM C-1227/C913 (300 PSF)

UPDATED 03/28/10



Tough Problem
The distribution box is tilted. Effluent does not flow equally into the outlet pipes.



TUF-TITE Solution
Insert Tuf-Tite Speed Levelers into the outlet pipes. Simply adjust each Leveler so the flow is equally distributed.

There Is No Faster, Easier, Better, Or More Economical Way To Equalize Distribution Box Flow

There's no need to dig up and re-level tilted distributions boxes. Or to struggle with makeshift pipe dams. Now, with Tuf-Tite Speed Levelers, you can do the job in a fraction of the time, for a fraction of the cost.



For all size and shape concrete distributions boxes, as well as polyethylene boxes from Tuf-Tite.



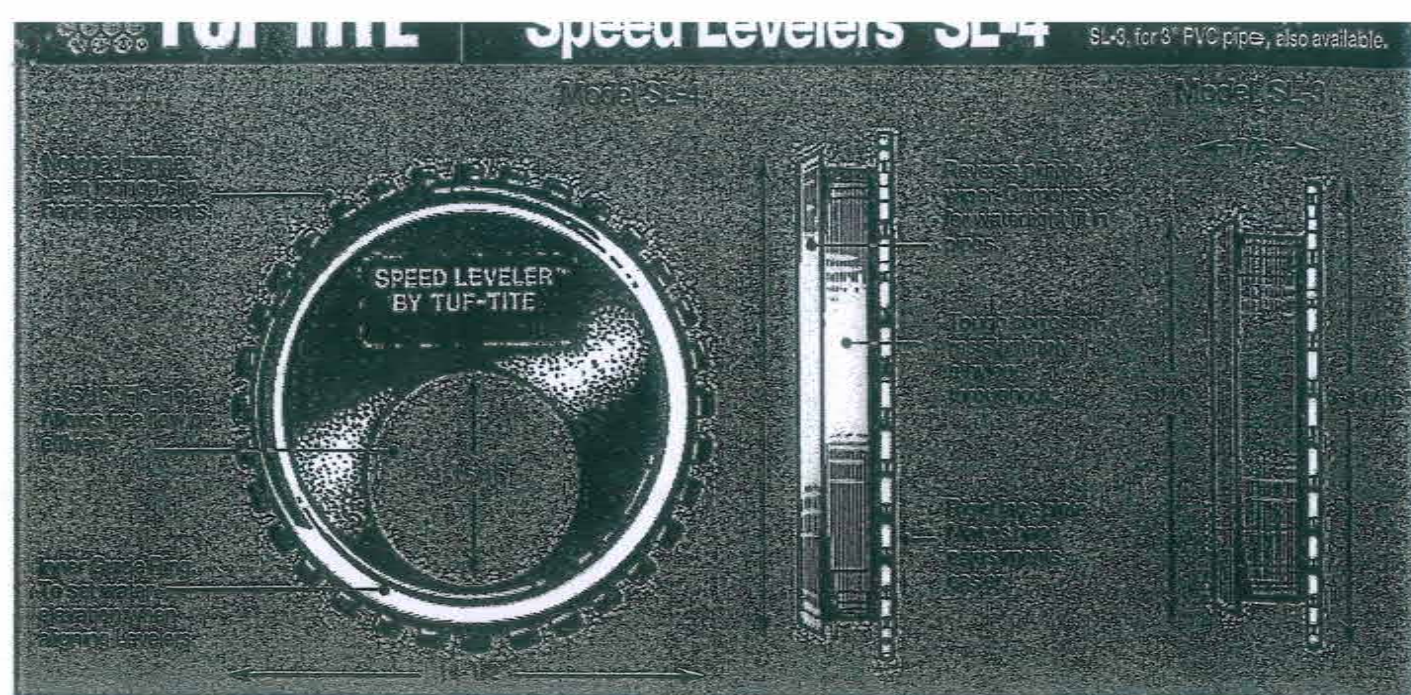
For 3" or 4" PVC pipes
Speed Levelers are precision engineered to fit commonly used Schedule 40 Thick-Wall, SDR 35 (3034), and 2729 Thin-Wall PVC pipes. Simply press the Levelers into the pipe ends. They fit water-tight. No tools are necessary.

Non-corrosive Polyethylene
Tuf-Tite Speed Levelers are molded of specially formulated polyethylene that is highly chemical resistant. They are actually more corrosion resistant than the PVC pipe in which they're used.



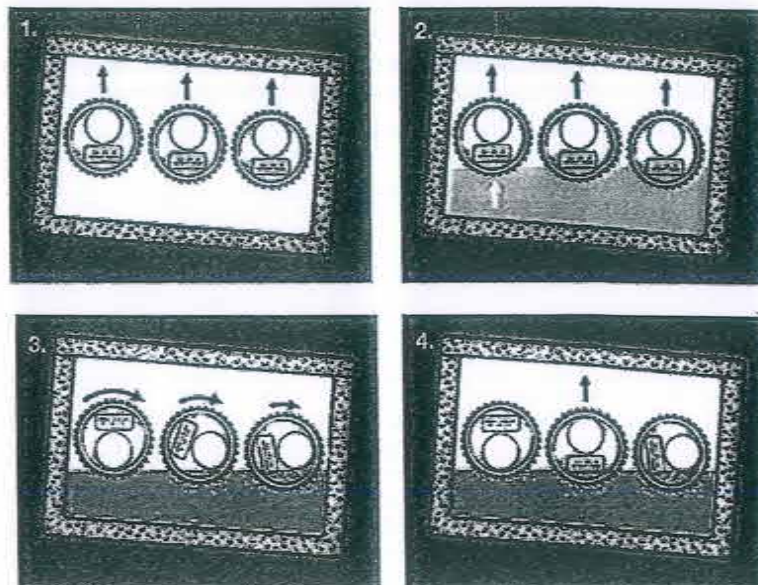
They're hand-adjustable
Easily rotate Speed Levelers by hand. The Flo-Hole can be positioned to admit effluent at the precise level you desire. The range of settings is infinitely variable. And Levelers can be reset easily, anytime.

Tested. Proved. Preferred
Test after test show that Tuf-Tite Speed Levelers significantly improve distribution in gravity-flow septic systems. There simply is no other way this can be accomplished as effectively, quickly, easily, or economically.



HOW TO SET SPEED LEVELERS

1. Insert a Speed Leveler into each outlet pipe inside the Distribution Box. Rotate each Leveler until the Flo-Hole is at the 12 o'clock position.
2. Start filling the Distribution Box with water. Stop when the water level touches the "Inner Guide Ring" of the highest Speed Leveler.
3. Rotate all the Speed Levelers until each of the Flo-Holes is aligned just above the water level. Slowly add more water to see if it enters all the Flo-Holes simultaneously. Make fine-tune adjustments if necessary.
4. You can alternate fields, or rest failed lines anytime. Simply rotate the Leveler on the appropriate pipe until the Flo-Hole is at the 12 o'clock position to stop the flow.



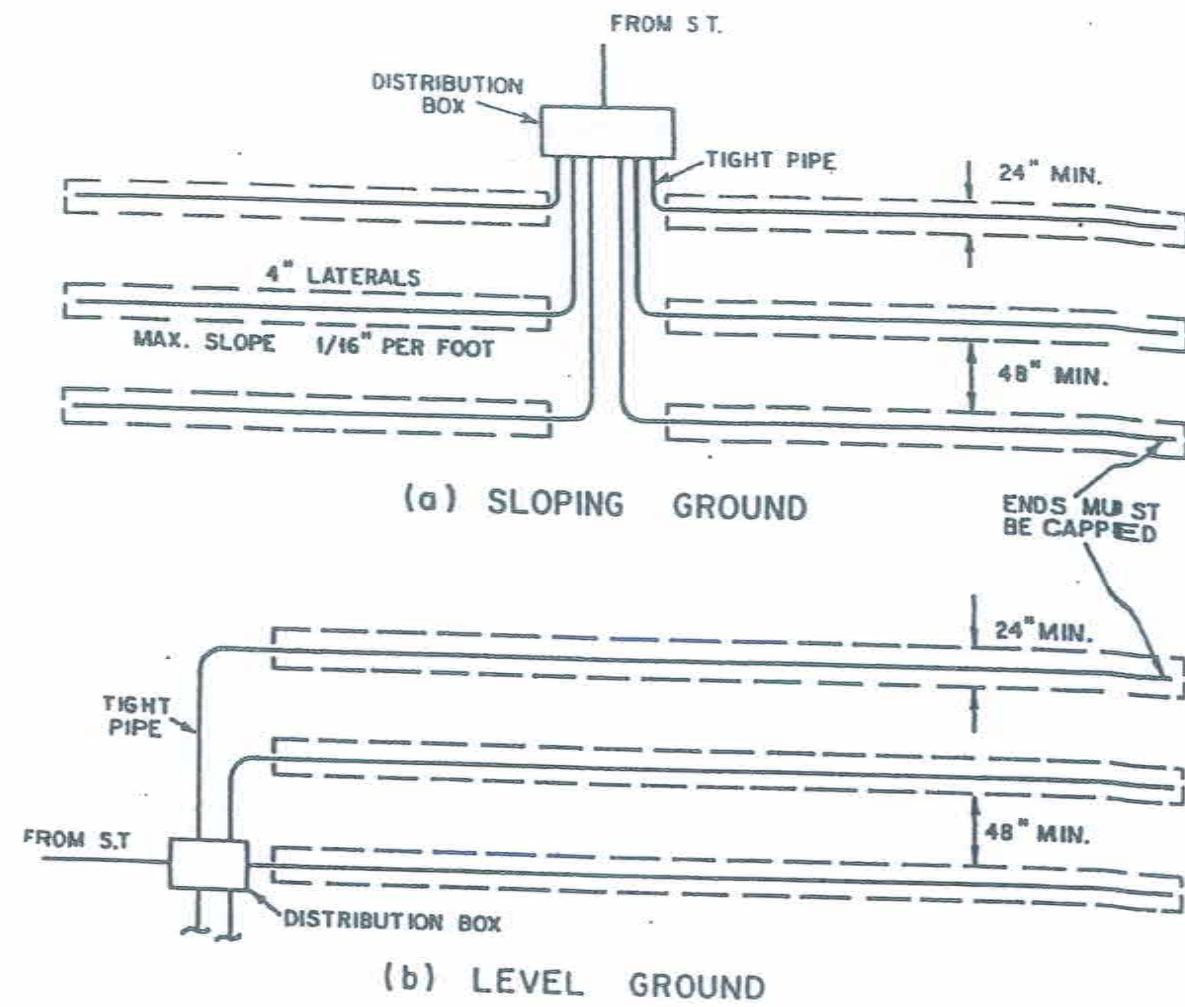
Drainage and Septic Products

Tuf-Tite® Corporation
500 Capital Drive
Lake Zurich, Illinois 60047



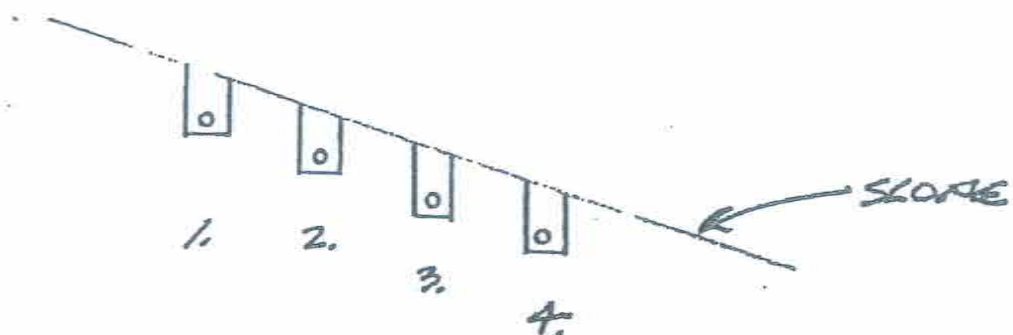
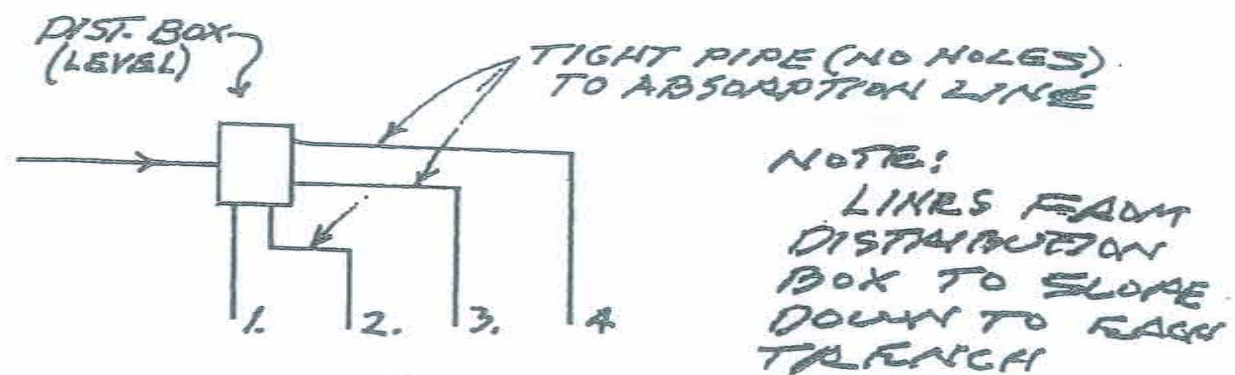
NOTE:

The trench details in this report are to be strictly followed. The Engineer and Building Inspector will reject the installation if the trenches are too deep. Any variances must be approved by the engineer.



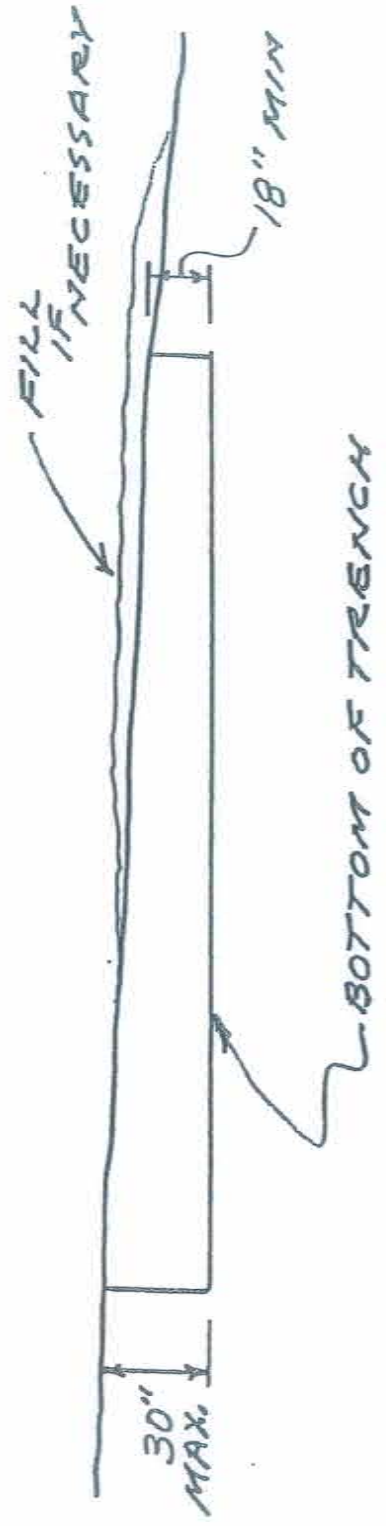


SLOPED ABSORPTION FIELD

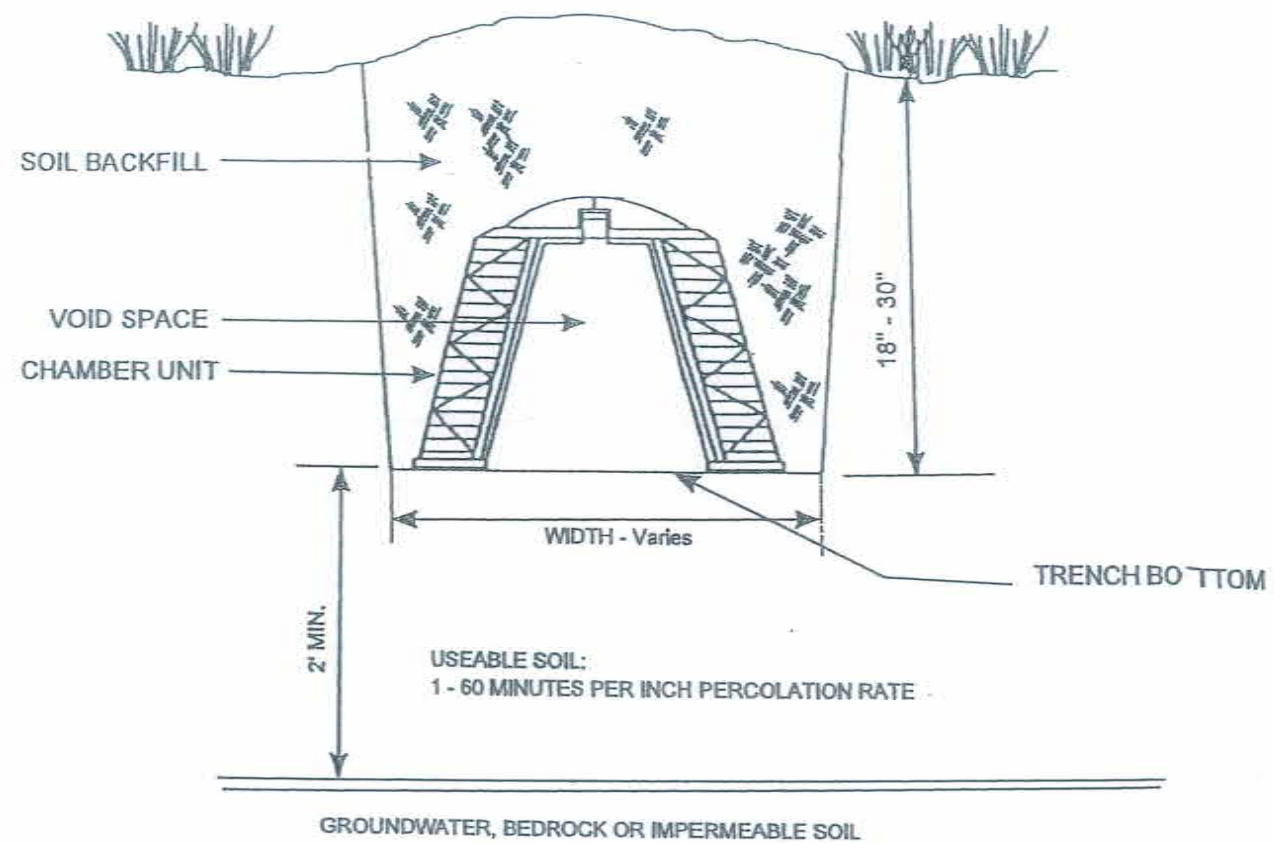


NOTE:
EACH LINE
TO BE LEVEL

TRENCHES RUNNING
ACROSS THE SLOPE



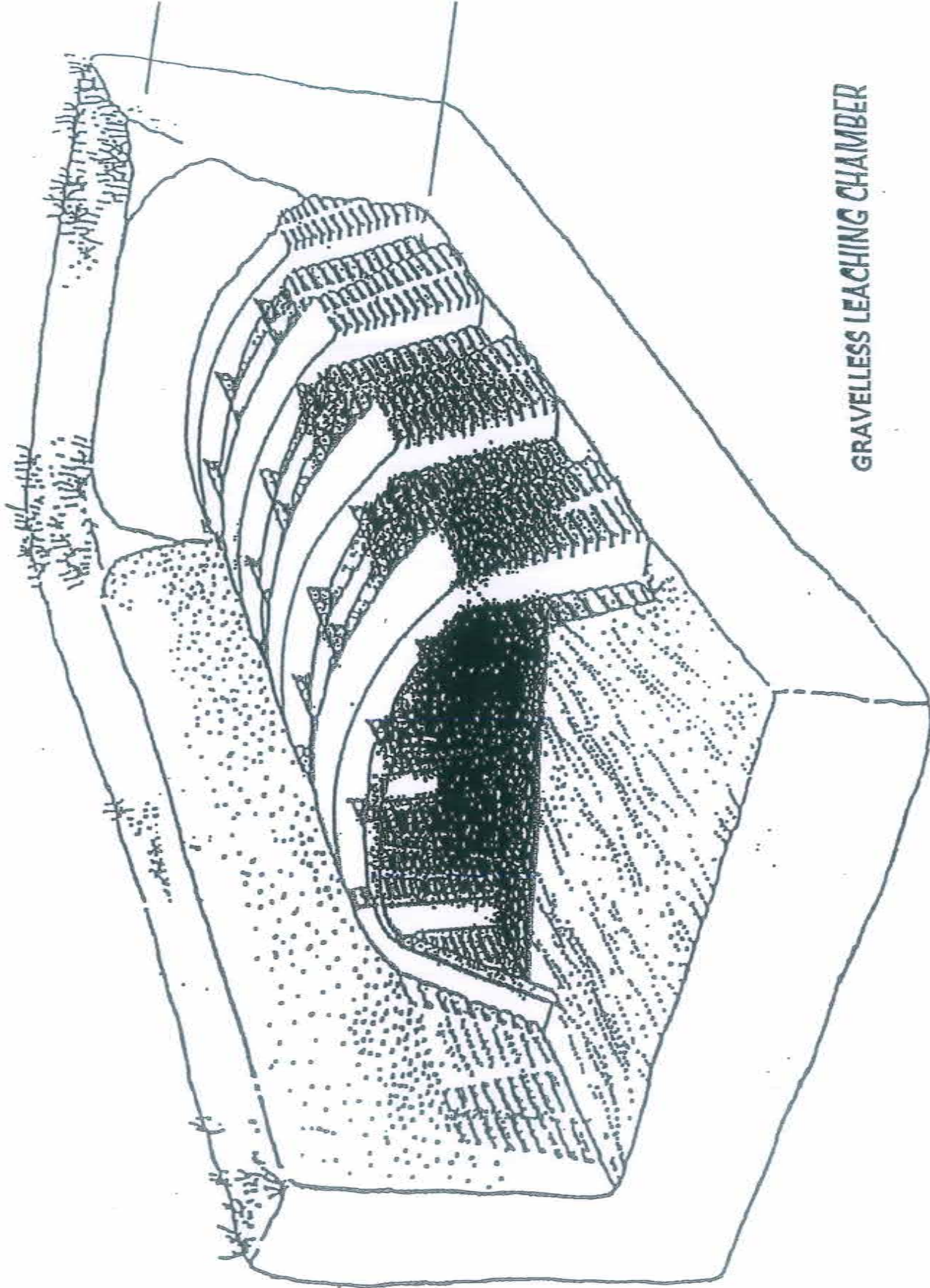
TRENCHES RUNNING
WITH THE SLOPE



NOTES:

1. Gravelless absorption system products shall be installed in conformance with manufacturer's instructions
2. The gravelless trench sidewalls shall be separated by a minimum of 4 feet.
3. All gravelless trenches shall be of equal length.

FIGURE 20: EXAMPLE OPEN - BOTTOM GRAVELLESS CHAMBER



GRAVELLESS LEACHING CHAMBER

GRAVELLESS and ALTERNATE AGGREGATE PRODUCTS

January 2017

The NYS Department of Health has determined that the following products comply with 10 NYCRR Appendix 75-A.
This Department does not approve proprietary products, but will review products as a courtesy.

Manufacturer	Product	Trench Length Design (75-A: Tables 4A or 4B) ^{1,2}
Cultec http://www.cultec.com	Contractor EZ-24 Chamber Contractor 100 Chamber Contractor 125 Chamber	1:1 25% 25%
Cur-Tech Systems http://www.cur-tech.com/	CTL 12 CTL 12 geo- sand filter system CTL 18 CTL 18 geo- sand filter system	25% 6.0ft ² /ft rating 25% 6.0ft ² /ft rating
Eljen Corporation www.eljen.com	Geotextile Sand Filter (Type B) Geotextile Sand Filter (Model A425)	6.0 ft ² /ft rating 6.0 ft ² /ft rating
Infiltrator Systems http://www.infiltratorsystems.com	ATL System ATL Geotextile Sand Filter System Equalizer 24 Quick 4 Equalizer 24 Quick4 Equalizer 24 HD Quick4 Equalizer 24 LP Quick 4 Equalizer 36 Quick4 Plus Equalizer 36 LP Quick4 Standard Quick4 Plus Standard Quick4 Plus Standard LP High Capacity H-20 EZ Flow 1202H EZ Flow 1203T EZ Flow 1003T BioDiffuser 15" Narrow (Bio 2) BioDiffuser 22" Narrow (Bio 3) ARC 18 Chamber* ARC 24 Chamber* ARC 36 Chamber* ARC 36 HC Chamber* ARC 36 HC H-20 Chamber* BioDiffuser 11" Standard (34" wide) BioDiffuser 16" High Capacity H-20 Flowtech by Infiltrator: FTS 122H-1 Flowtech by Infiltrator: FTS 123T-1 Flowtech by Infiltrator: FTS 103T-1 Septic Stack 9 Septic Stack 13	25% 6.0 ft ² /ft rating 1:1 1:1 1:1 1:1 25% 1:1 25% 25% 25% 25% 25% 1:1 25% 25% 1:1 25% 25% 25% 25% 25% 25% 25% 25% 25% 25% 25% 25% 25% 25%
Advanced Drainage Systems http://www.ads-pipe.com/en/ *ARC Chambers may be marketed as Advanced Drainage Systems (ADS) products; ADS is owned by Infiltrator.		
Geomatrix LLC http://www.geomatrixsystems.com	GST Leaching System Geomat 3900	1:1 6.0ft ² /ft rating
Presby Environmental http://www.presbyeeco.com	Enviro-Septic System AES geotextile sand filter system	25% 6.0 ft ² /ft rating
Modern Landfill http://www.moderncorporation.com	Tire Derived Aggregate (TDA) ³	1:1

Casing, Inc. http://casingsinc.com	Fire Derived Aggregate (FDA) ²	1:1
1	Reductions in total linear feet based on criteria in Appendix 75-A, subsection 75-A.8(c)	
2	The trench length reductions are not applicable at properties located within the NYC Watershed	
3	The TDA product meets criteria established in Section 75-A.8(b)(3)(v)	
<i>Note: The above list is not an endorsement of any of the products by the NYS Department of Health, nor is it intended to represent a comprehensive list of all products that comply with 10 NYCRR Appendix 75-A. This list will be occasionally updated as new product specifications are reviewed. The use of these products may be subject to approvals by local government agencies, including local health departments, watersheds or other local agencies.</i>		

CONSTRUCTION NOTES

- 1) All work is to be done in strict accordance with these plans and/or the engineer's instructions.
- 2) All work is to conform to New York State Code.
- 3) Changes in either materials or the installation of the system are not to be made without prior approval in writing of the engineer.
- 4) The plans and specifications contained in this report are for the location indicated on the title page and are subject to all other notes as listed.
- 5) Precast structures shown are suggested. Substitutions are allowed upon approval of the engineer.
- 6) Care is to be observed during construction in order that the finished bed is not compacted.
- 7) All pressurized sewage lines are to be sch. #40 PVC.
- 8) Water conserving fixtures are to be in use.
- 9) The design does not allow for garbage disposals or hot tubs.
- 10) End caps are to be installed on all distribution lines.

SEPARATION DISTANCES FROM WASTEWATER SYSTEM COMPONENTS

System Components	Well or Suction Line	To Stream, Lake, watercourse (b), or Wetland	Dwelling	Property Line
House sewer (watertight joints)	25' if cast iron pipe, 50' otherwise	25'	3'	10'
Septic tank	50'	50'	10'	10'
Effluent line to distribution box	50'	50'	10'	10'
Distribution box	100'	100'	20'	10'
Absorption field	100' (a)	100'	20'	10'
Seepage pit	150' (a)	100'	20'	10'
Dry well (roof and footing)	50'	25'	20'	10'
Raised or Mound system (c)	100' (a)	100'	20'	10'
Evapotranspiration- absorption system (c)	100' (a)	50'	20'	10'
Composter	50'	50'	20'	10'

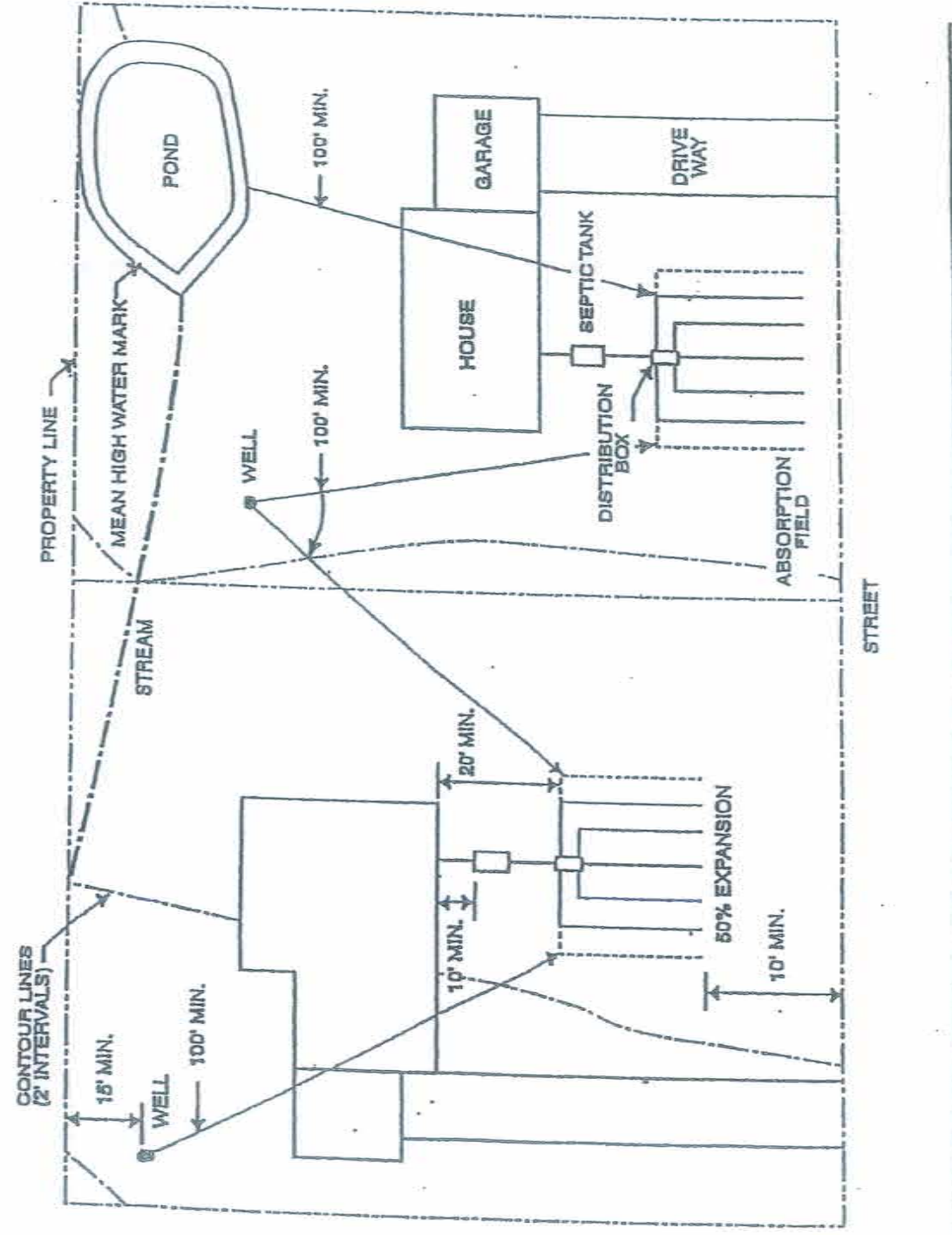


Figure 1
Absorption Field Separation Requirements

Division of Environmental Health Protection

Plan Review Fee

For Office Use Only

ID Number: _____

Public Water Supply ID: _____

Instructions to operator for completion of this form: To determine if and what fee applies to your operation;

B. All others

1. Is this facility operated by a religious, educational or philanthropic organization? ☒ Yes ☐ No

2. Is this facility operated by a municipality (city, town, village)? ☒ Yes ☐ No
3. If the answer to questions 1 or 2 is "yes", you may request exemption from payment of the annual registration fee. Please indicate documentation that will be made available upon inspection request.
- ☐ Incorporation Papers ☒ Other (specify) FACILITY OWNED + OPERATED BY

B. Locate category type of your establishment on the list below (e.g., food service, temporary residence).

2. Enter the amount indicated under "Fee Calculation" on the right side of the form.
3. Enter total at bottom of form.
4. Sign and date the fee determination schedule.
5. Submit this completed form with fee in the amount indicated under "Total Fee" to the appropriate NYS Department of Health Regional/District Office.

Type of Establishment	Fee	State Sanitary Code	Fee Calculation
Food service establishments, taverns, bars, caterers, commissaries, etc.	\$ 75	Subpart 14-1 Food Service Establishments	
Hotels, motels, bungalow colonies, cottage colonies, cabins Number of stories or structures: 1 or 2 3 or more	\$ 50 \$200	Subpart 7-1 Temporary Residences	
Campgrounds and travel trailer parks	\$100	Subpart 7-3 Campgrounds	
Mobile home parks	\$100	Part 17 Mobile Home Parks	
Migrant labor camps	\$ 50	Part 15 Migrant Farmworker Housing	
Swimming pools and bathing beaches: 100-5000 sq. ft. 5001 sq. ft. or more wavepools, slides, spa pools	\$100 \$150 \$150	Subpart 6-1 Swimming Pools Subpart 6-2 Bathing Beaches	
Realty subdivision (per lot)	\$25 x number of lots	Sec. 1119, PHL (amended, 1989)	
Community and non-community water supplies: Cost of project: Less than \$10,000 \$10,000 - \$100,000 More than \$100,000	\$ 50 \$100 \$200	Subpart 5-1 Public Water Systems	
Individual sewage system (alternative design)	\$ 50	Part 75 Individual Residential Wastewater Treatment Systems	
TOTAL			

Certification Statement: I hereby certify that the statements made above are accurate to the best of my knowledge.

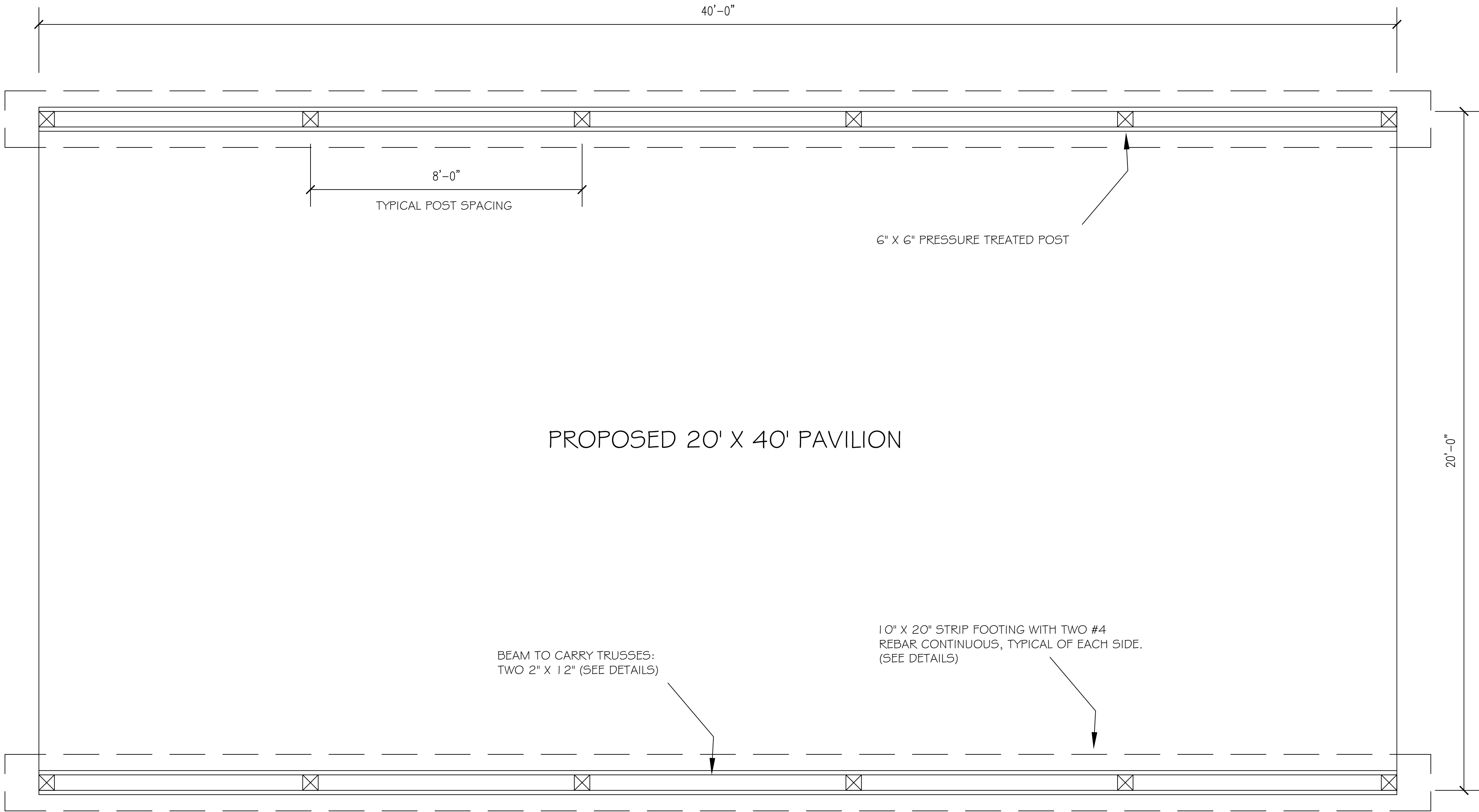
Title

Date _____

Note: False statements on this form are punishable as crimes under Article 170 of the Penal Law.
Make checks payable to: New York State Department of Health.

DOH-2249 (12/04) NOV 19 2019





PROVIDE ONE EXTERIOR OUTLET, COORDINATE LOCATION WITH OWNERS.

PROVIDE MOTION LIGHTS, COORDINATE LOCATIONS WITH OWNERS. MATCH LIGHTS ON EXISTING BATHHOUSE.

INSTALL NEW 4/0-4/0-2/0 #4 ALUMINUM CABLE IN 4" SCHEDULE 40 PVC CONDUIT, FROM EXISTING POLE. PROVIDE BREAKERS AS NEEDED IN ACCORDANCE WITH APPLICABLE CODES.

PLAN

SCALE 1/2" = 1'-0"

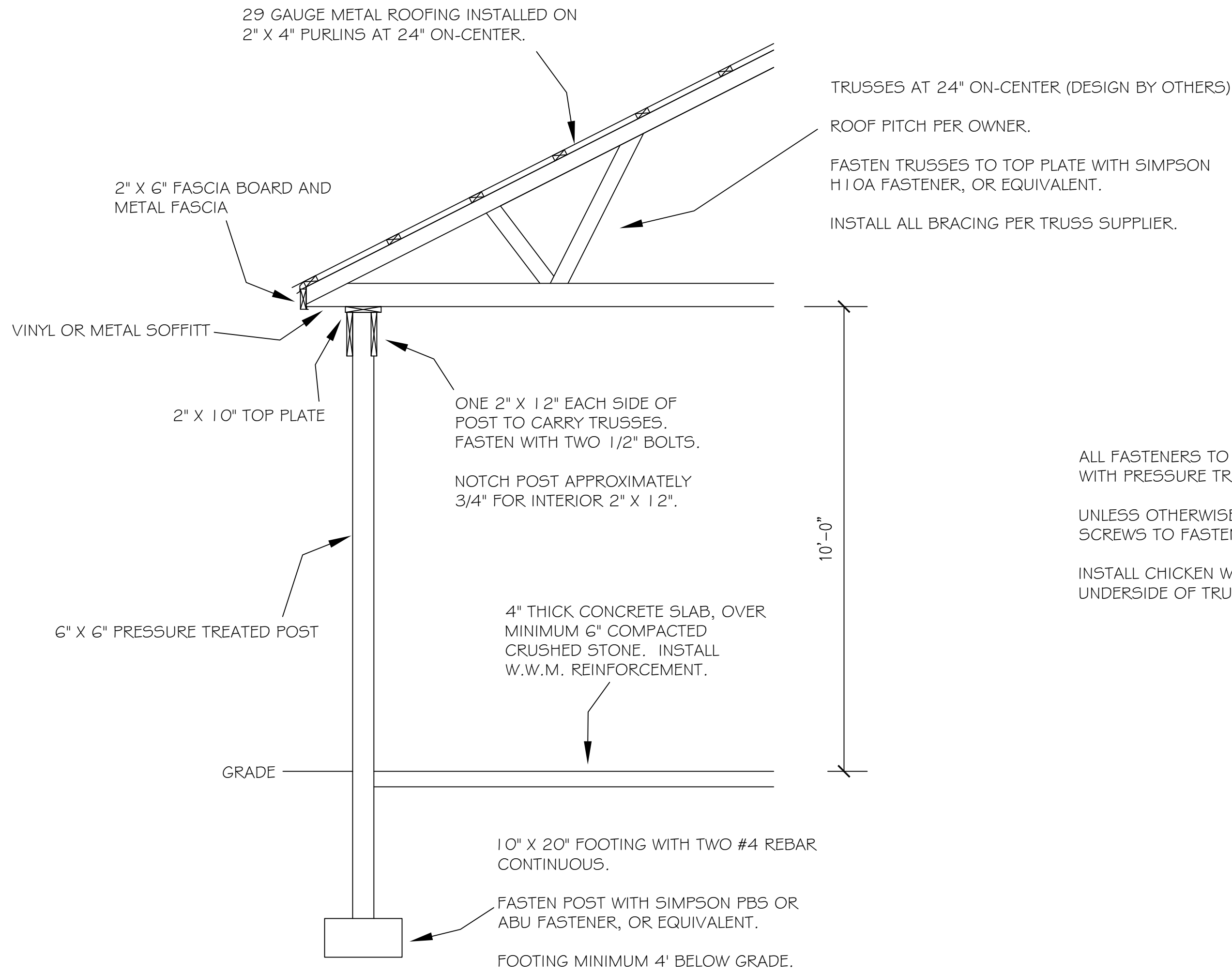


OLMSTEAD CONSULTING
P.O. BOX 151
GLENFIELD, NY 13343
PHONE: (315) 558-1314

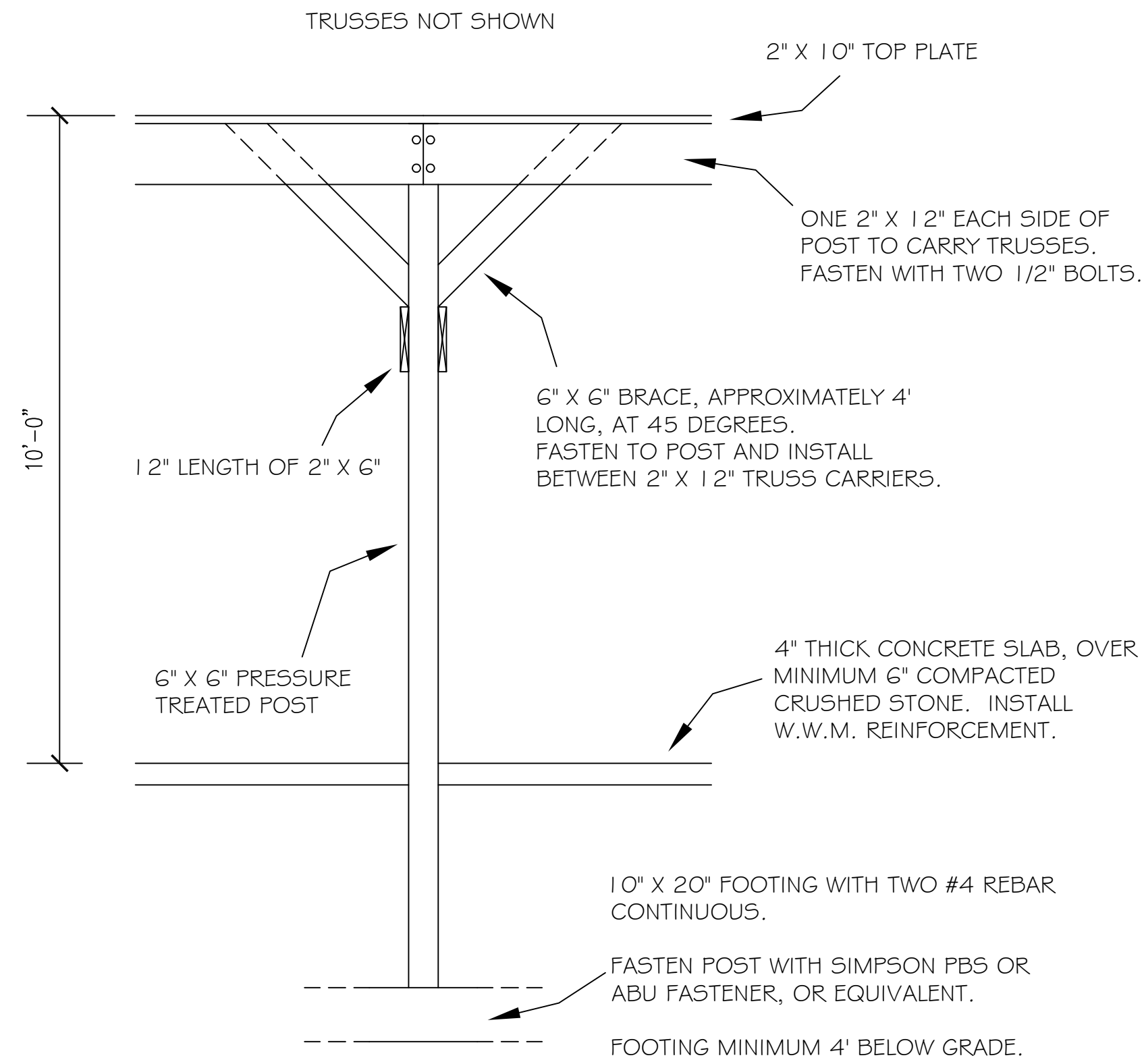
**NEW PAVILION
FOR
SINGING WATERS
FISH CREEK ROAD
LEWIS COUNTY, NY**

REVISIONS		
DATE	DESCRIPTION	BY
06/14/23	ADD ELEC. NOTES	SJO
06/28/23	REV. ELEC. NOTES DELETE CLEAR PANELS	SJO
DATE	06/07/23	
DRAWN	S.J.O.	
CHECKED	S.J.O.	
SCALE	AS SHOWN	
DRAWING NO.		

A1
PLAN



SECTION 1
SCALE 1/2" = 1'-0"



SECTION 2
SCALE 1/2" = 1'-0"

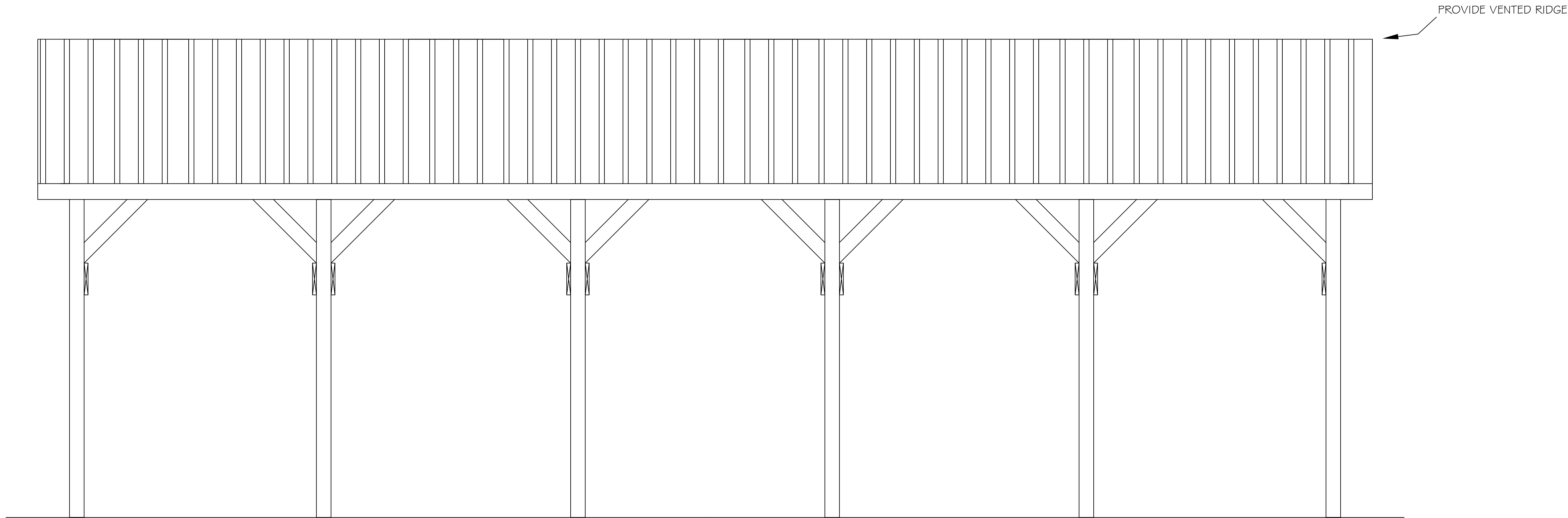


OLMSTEAD CONSULTING
P.O. BOX 151
GLENFIELD, NY 13343
PHONE: (315) 558-1314

**NEW PAVILION
FOR
SINGING WATERS
FISH CREEK ROAD
LEWIS COUNTY, NY**

REVISIONS		
DATE	DESCRIPTION	BY
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06/28/23	REV. ELEC. NOTES DELETE CLEAR PANELS	SJO

A2
SECTIONS

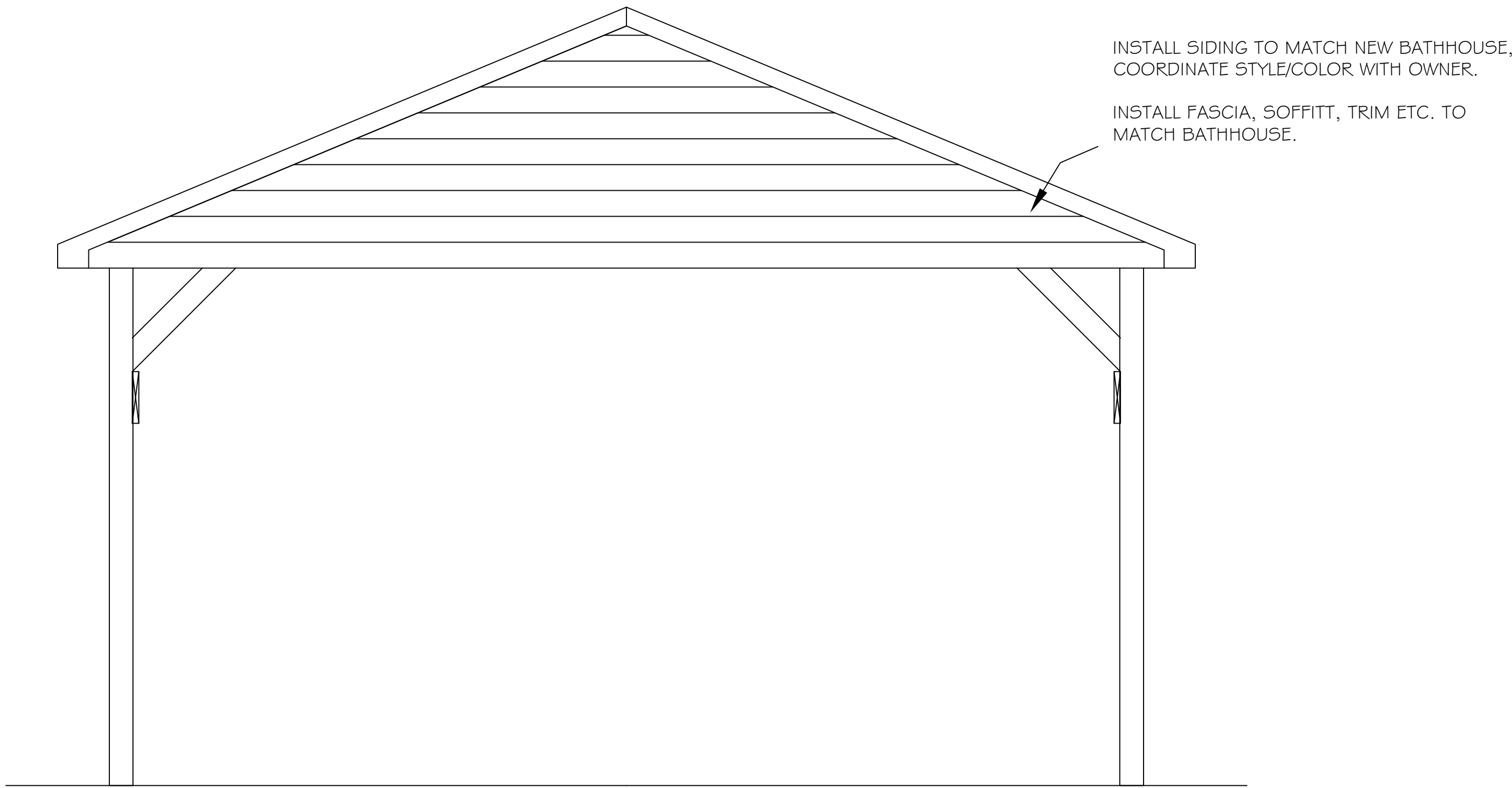


SIDE
SCALE 1/2" =1'-0"

PROVIDE ONE EXTERIOR OUTLET, COORDINATE LOCATION WITH OWNERS.

PROVIDE MOTION LIGHTS, COORDINATE LOCATIONS WITH OWNERS. MATCH LIGHTS ON EXISTING BATHHOUSE.

INSTALL NEW 4/0-4/0-2/0 #4 ALUMINUM CABLE IN 4" SCHEDULE 40 PVC CONDUIT, FROM EXISTING POLE. PROVIDE BREAKERS AS NEEDED IN ACCORDANCE WITH APPLICABLE CODES.



END
SCALE 1/2" =1'-0"



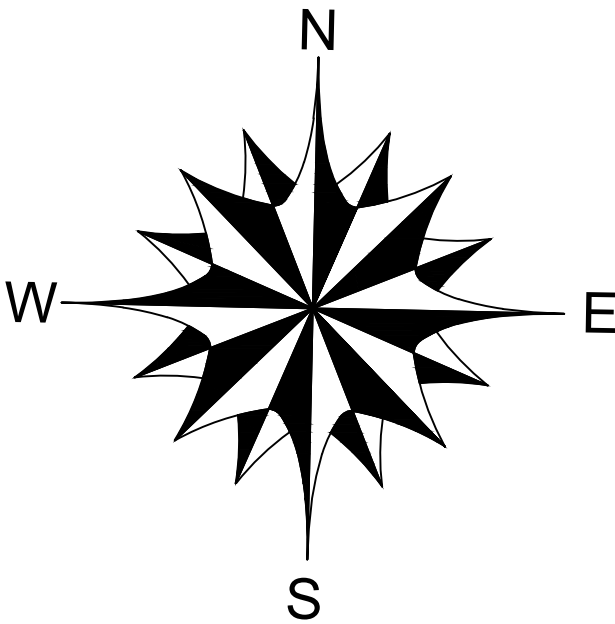
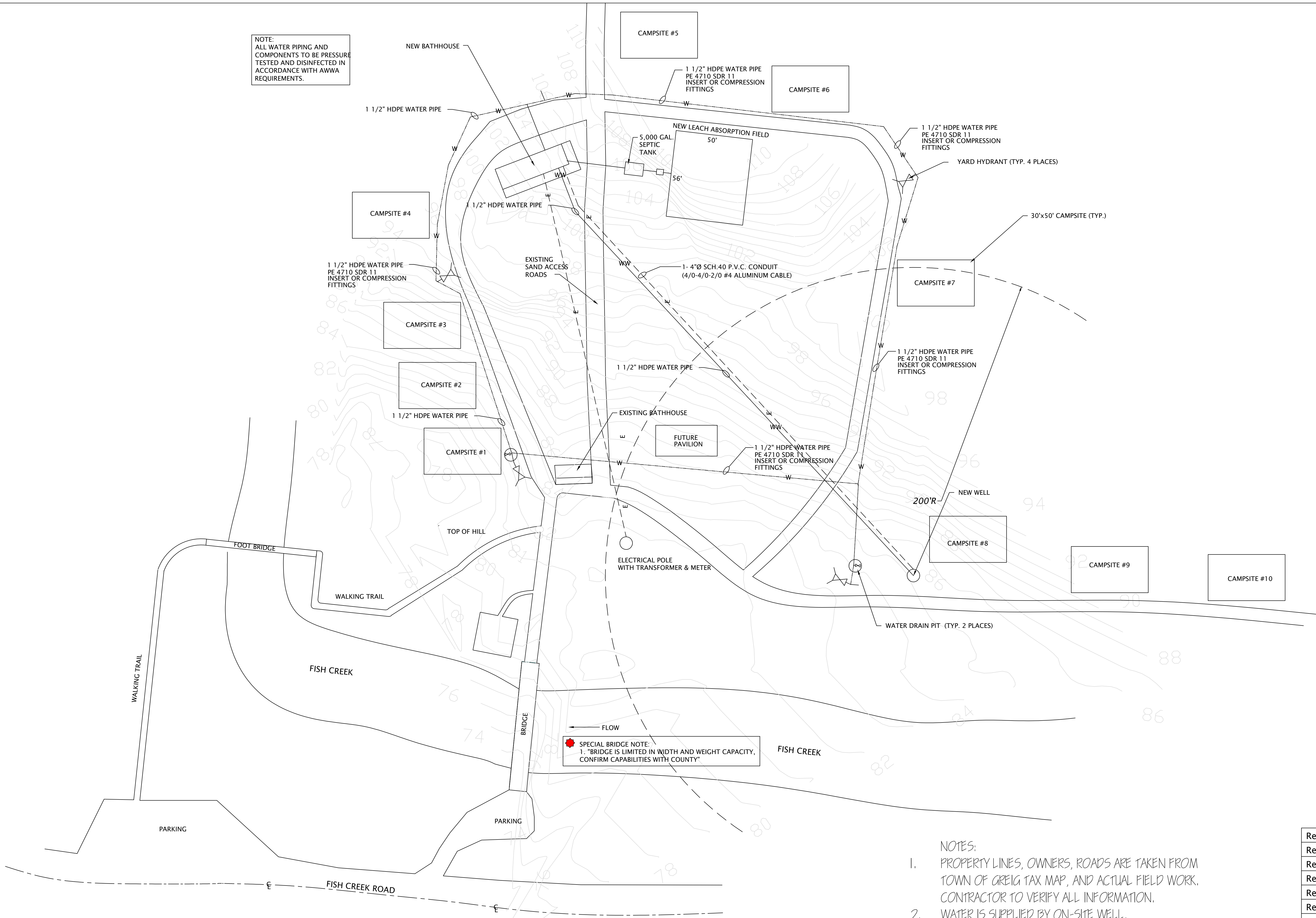
OLMSTEAD CONSULTING
P.O. BOX 151
GLENFIELD, NY 13343
PHONE: (315) 558-1314

**NEW PAVILION
FOR
SINGING WATERS
FISH CREEK ROAD
LEWIS COUNTY, NY**

DATE	06/07/23
DRAWN	S.J.O.
CHECKED	S.J.O.
SCALE	AS SHOWN

DRAWING NO.

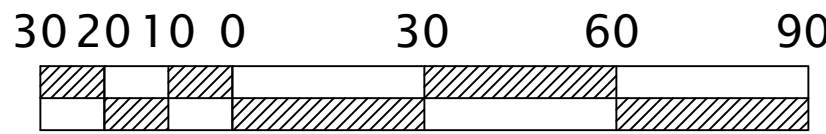
A3
ELEVATIONS



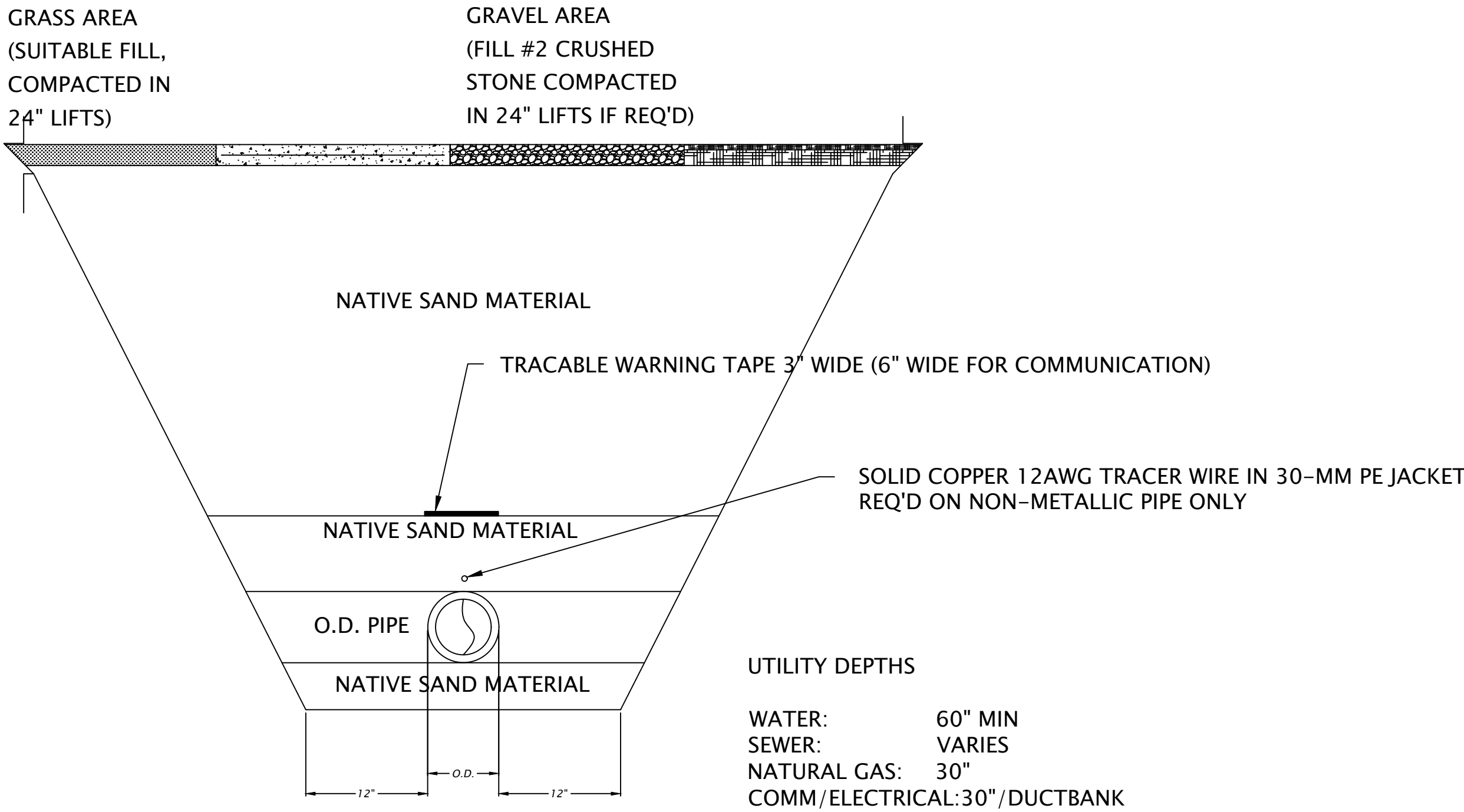
- NOTES:
1. PROPERTY LINES, OWNERS, ROADS ARE TAKEN FROM TOWN OF GREIG TAX MAP, AND ACTUAL FIELD WORK. CONTRACTOR TO VERIFY ALL INFORMATION.
 2. WATER IS SUPPLIED BY ON-SITE WELL.
 3. DRAWING SHOULD NOT BE CONSIDERED A SURVEY MAP. DIMENSIONS ARE TAKEN FROM TAX MAP.

SITE PLAN

SCALE: 1"=30'-0"

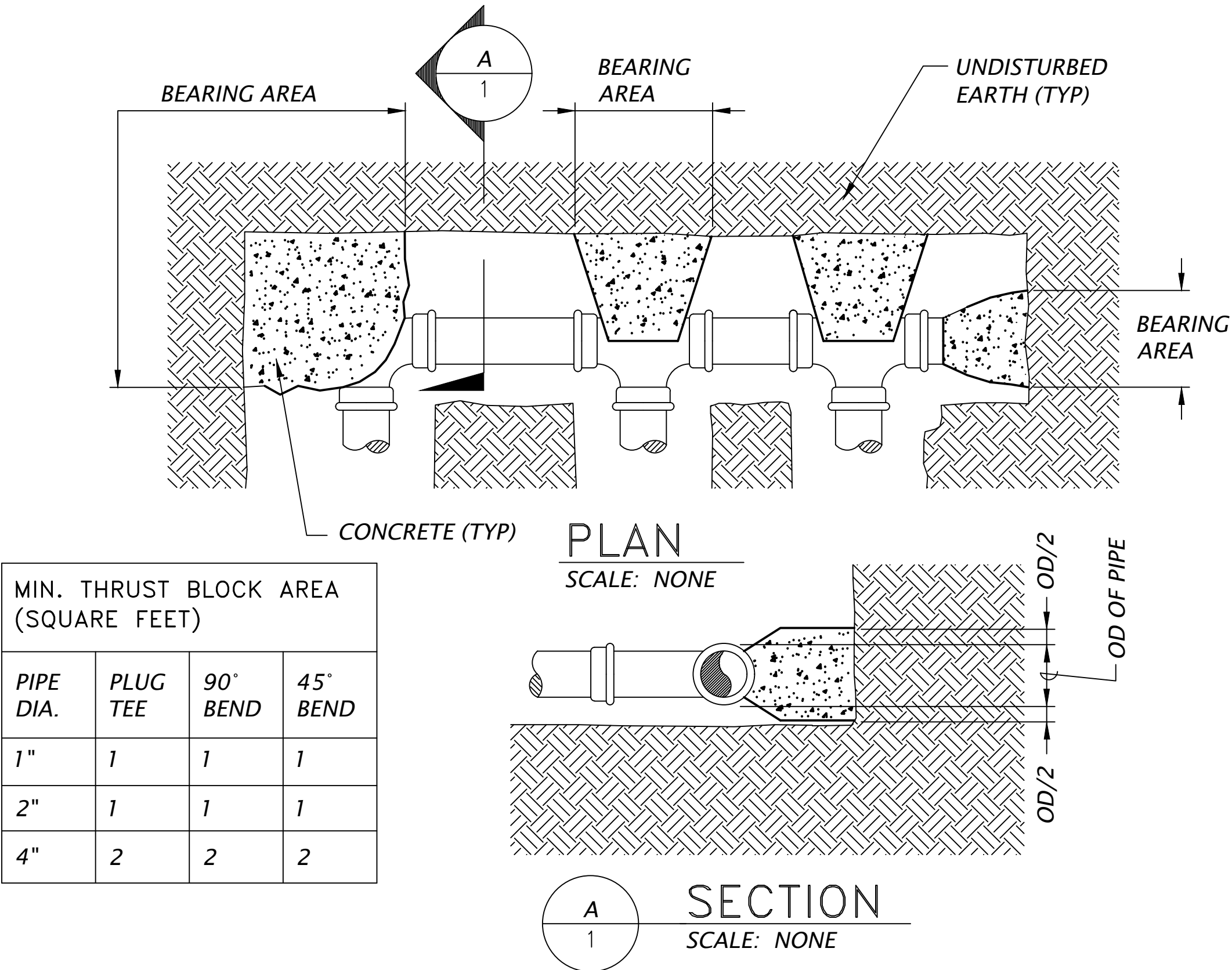


Rev.No. 7	Date:07/25/2022
Rev.No. 6	Date:07/24/2022
Rev.No. 5	Date:01/05/2022
Rev.No. 4	Date:12/30/2021
Rev.No. 3	Date:12/28/2021
Rev.No. 2	Date:12/15/2021
Rev.No. 1	Date:11/24/2021
Date:08/19/2021	Drw'n By:SRW
315-558-1314	Olmstead Consulting P.O. Box 151 Glenfield, NY 13343
Sheet No. C-100	Singing Waters Park Site Plan Fish Creek Road, Town of Greig

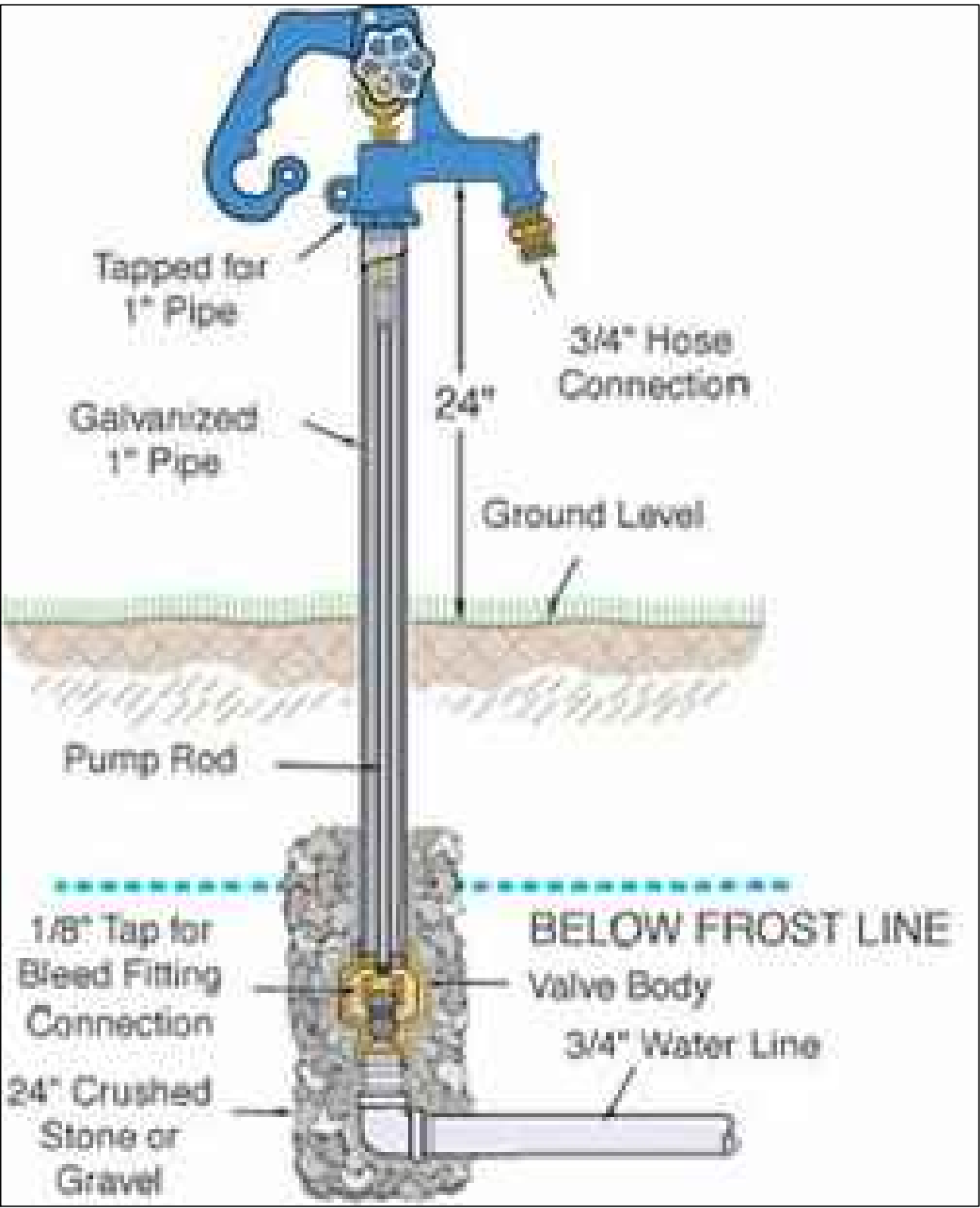


Typical Trench Section

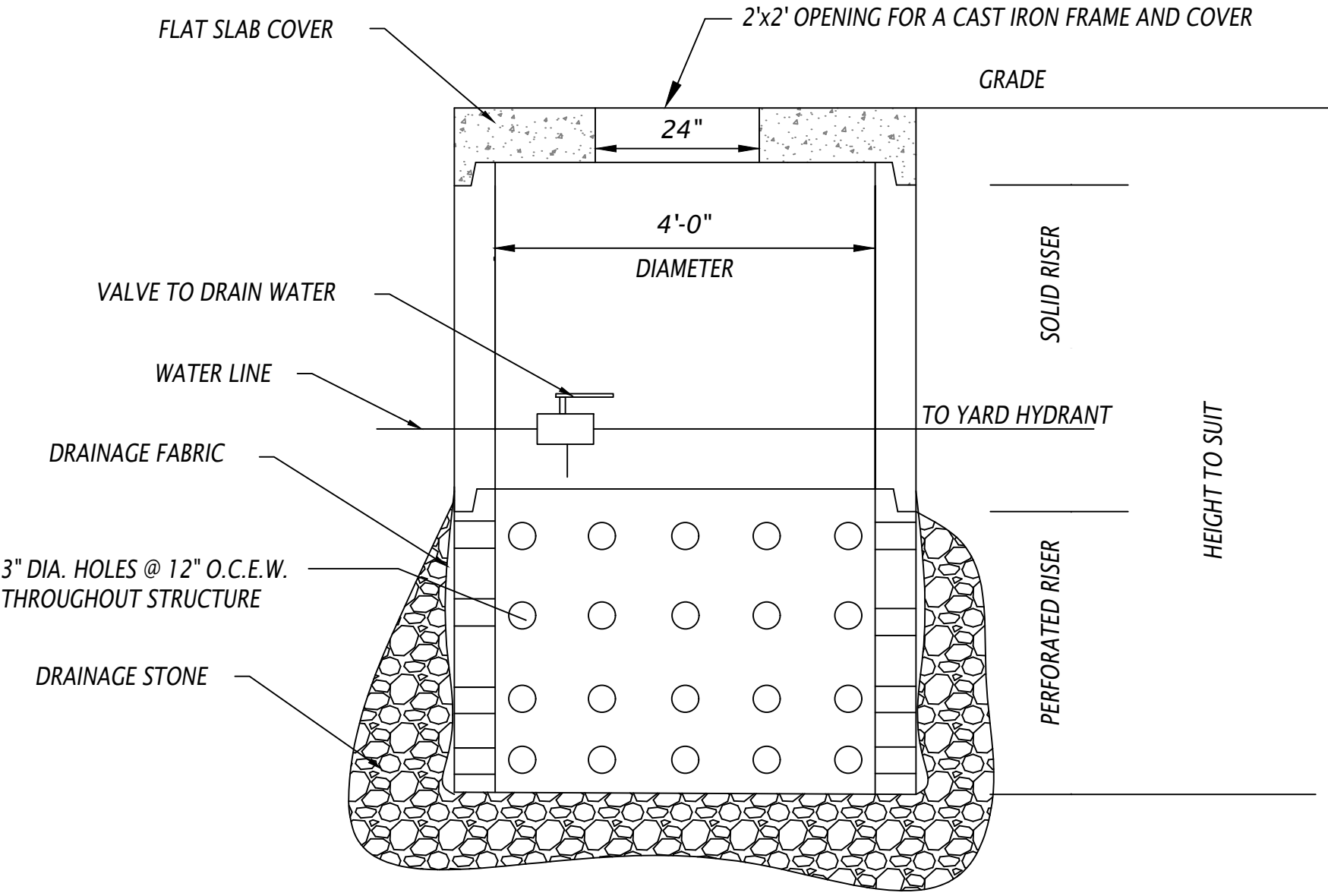
- NOTES:
1. TRENCH WIDTH AND DEPTH TO COMPLY WITH ALL O.S.H.A. REGULATIONS AND ALL OTHER APPLICABLE CODES/REGULATIONS.
 2. APPROVED O.S.H.A SHEETING OR TRENCH BOX MAY BE USED IN CONJUNCTION WITH SLOPED TRENCH WALLS.



THRUST BLOCK DETAIL FOR DOMESTIC WATER LINE



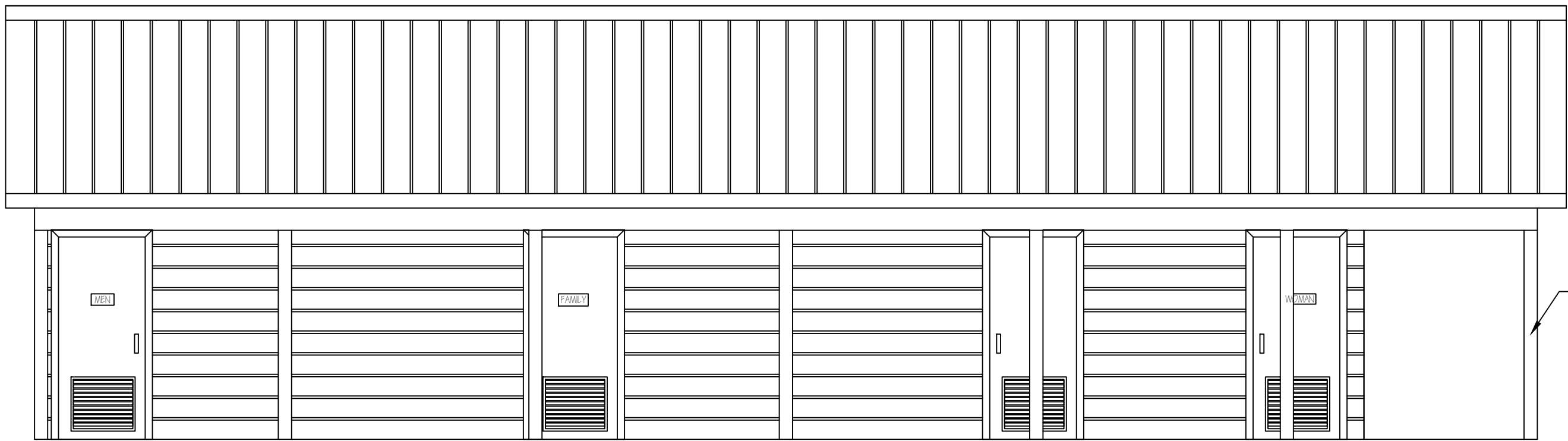
Typical Yard Hydrant Section



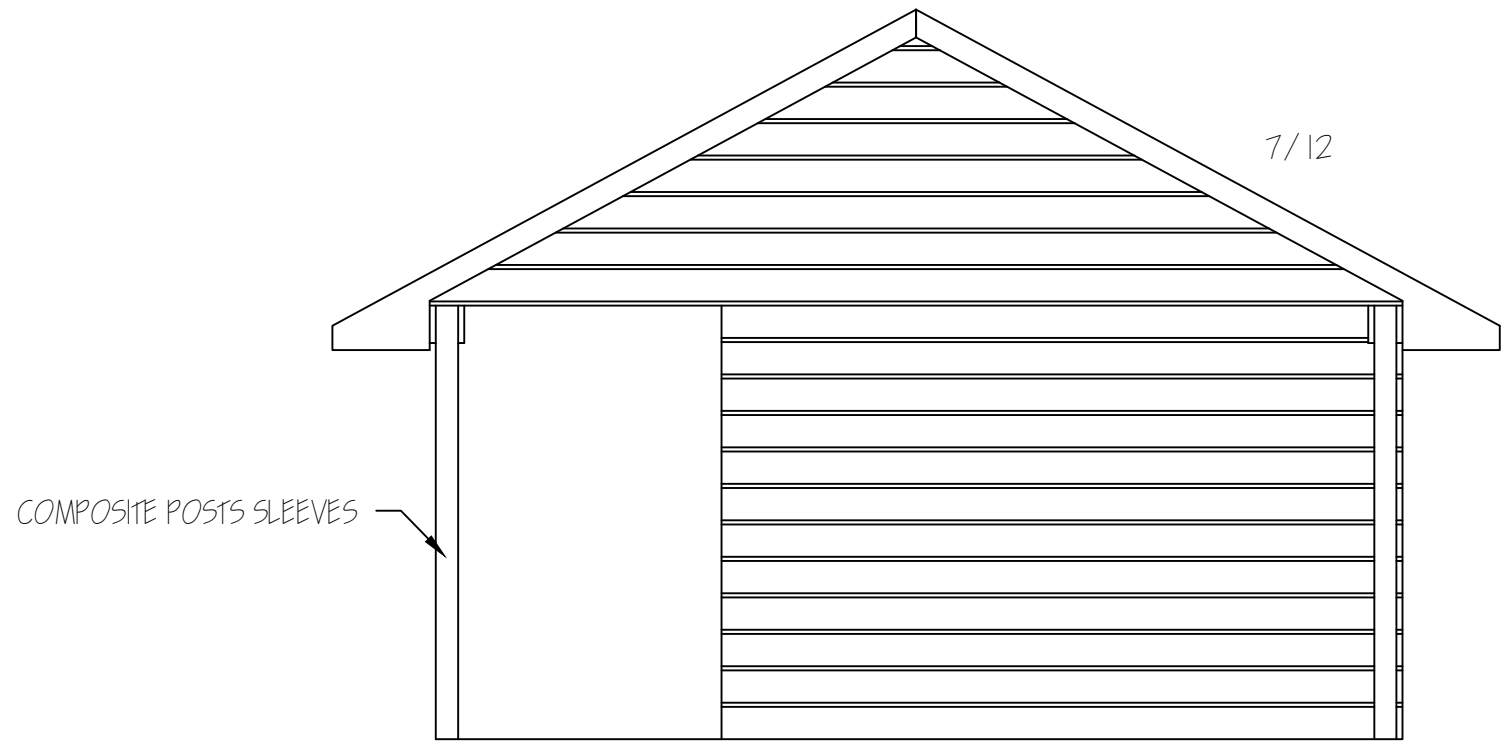
Water Drain Pit Section

Rev.No. 2	Date:
Rev.No. 1	Date:12/15/2021
Date:11/23/21	Drw'n By:SRW
315-558-1314 Olmstead Consulting P.O. Box 151 Glenfield, NY 13343	
Singing Waters Park Site Details Fish Creek Road, Town of Greig	

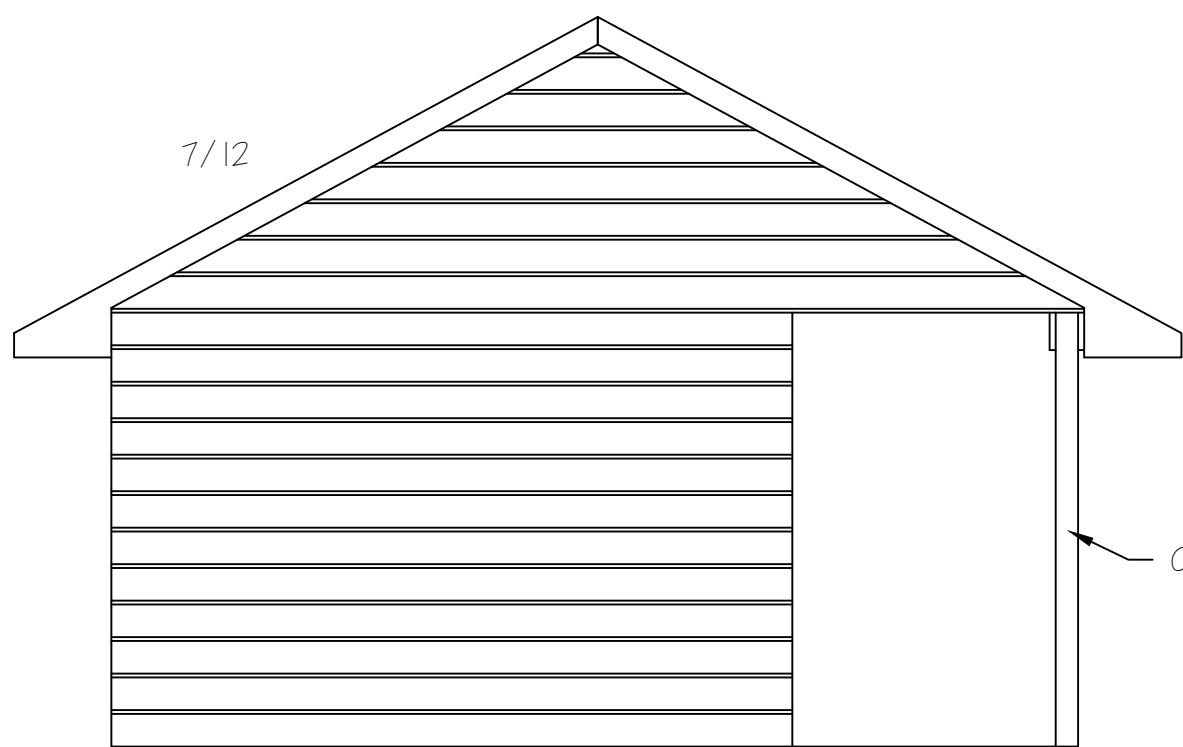
Sheet No.
D-100



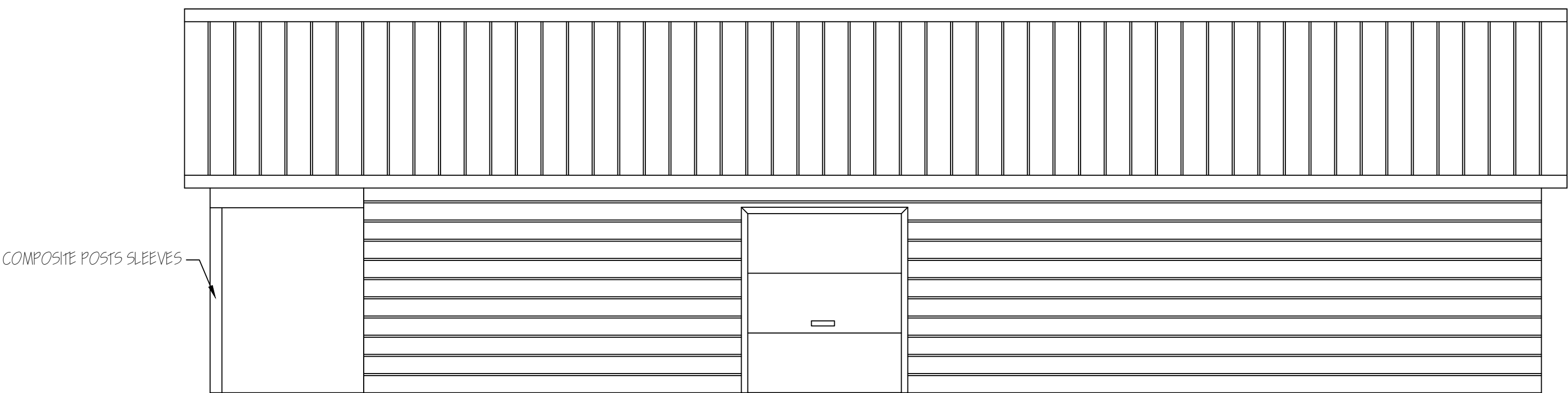
Front Elevation
Scale: 1/4" = 1'-0"



Right Elevation
Scale: 1/4" = 1'-0"

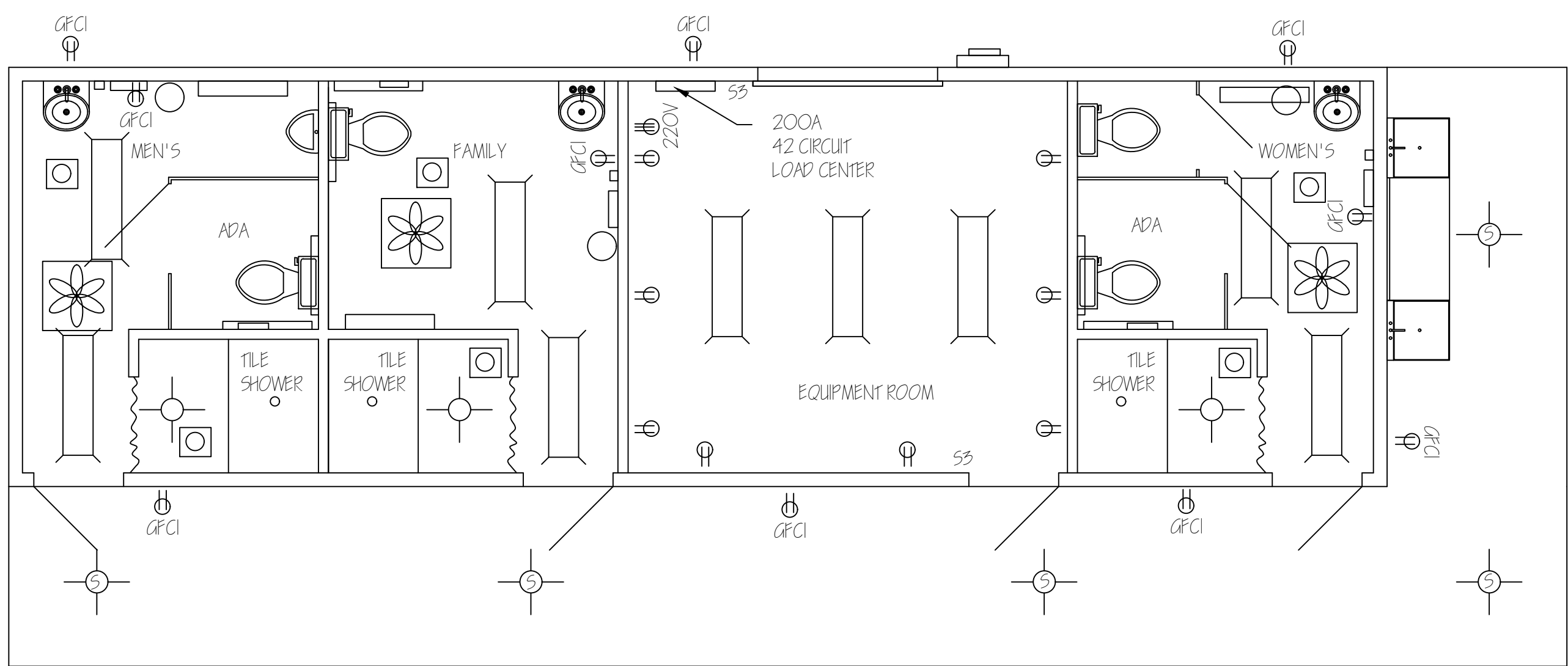


Left Elevation
Scale: 1/4" = 1'-0"



Rear Elevation
Scale: 1/4" = 1'-0"

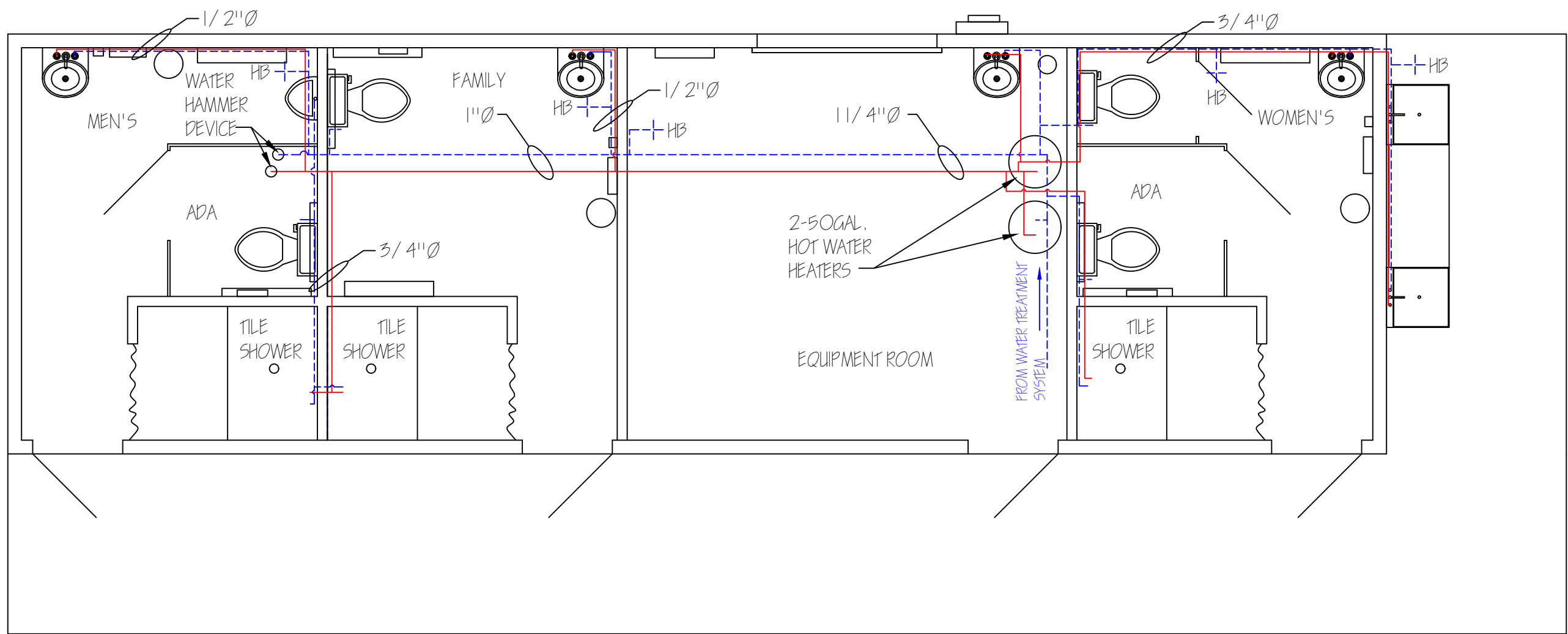
Rev.No. 3	Date:12/ 28/ 2021
Rev.No. 2	Date:05/ 26/ 2021
Rev.No. 1	Date:05/ 25/ 2021
Date:05/ 18/ 2021	Drw'n By:SRW
315-558-1314	Olmstead Consulting P.O. Box 151 Glenfield, NY 13543 solmste@twcnyrr.com
Sheet No. A-000	Singing Waters Park Bathhouse Elevations & Floor Plan Fish Creek Road, Town of Greig



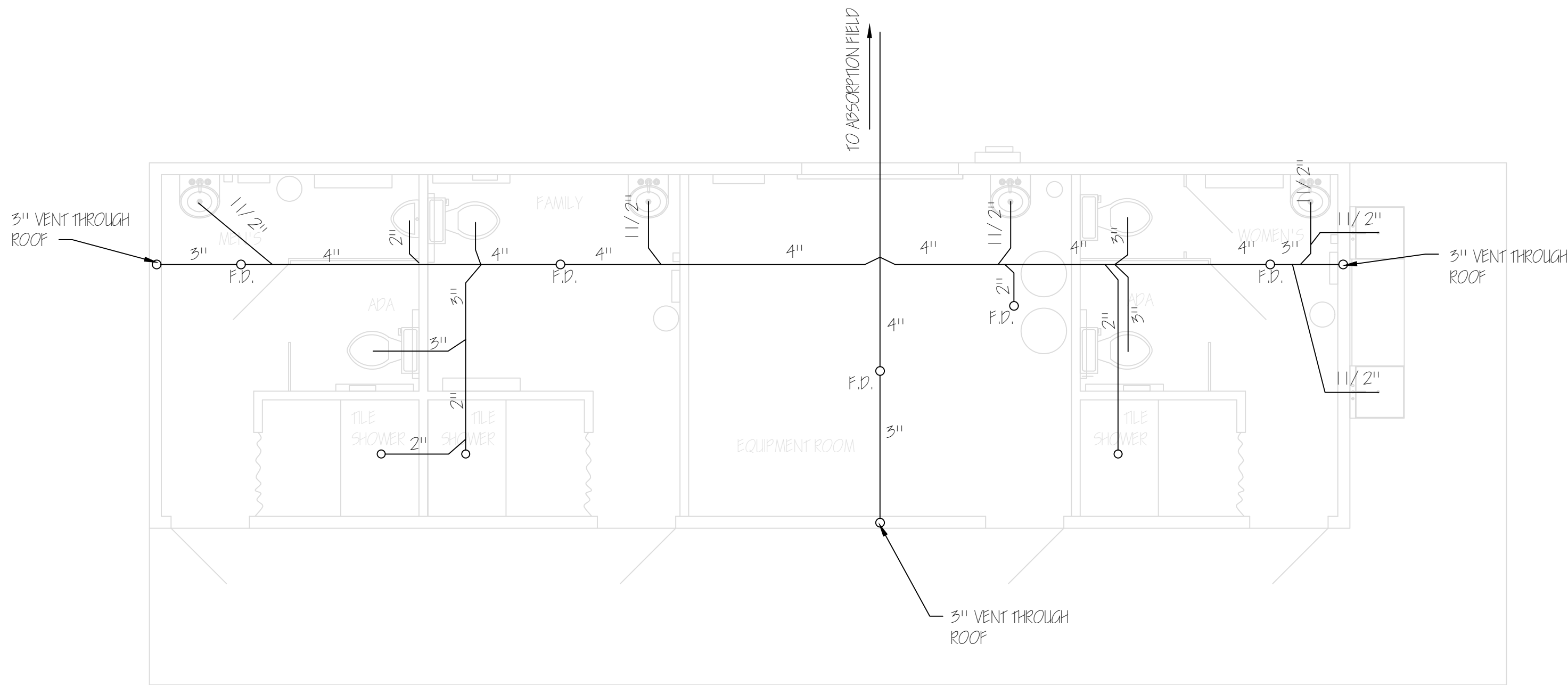
Basic Electrical Plan
Scale: 1/4" = 1'-0"

ELECTRICAL LEGEND

- GFCI
- GROUND FAULT 120V RECEPTACLE
- 120V RECEPTACLE
- 220V
- 220V RECEPTACLE
- LED SURFACE MOUNT SEALED LIGHT
- LED SURFACE MOUNT SEALED LIGHT CONTROLLED BY DUSK/DAWN SENSOR
- LED SURFACE MOUNT SEALED STRIP LIGHT
- SURFACE CEILING MOUNT MOTION SENSOR
- SS
- THREE WAY LIGHT SWITCH
- LED NIGHT SKY COMPLIANT WALL PACK LIGHT WITH DUSK/DAWN SENSOR
- 300 CFM EXHAUST FAN (PIPING TO BE INSTALLED TO EXTERIOR) CONTROLLED BY OCCUPANCY SENSOR

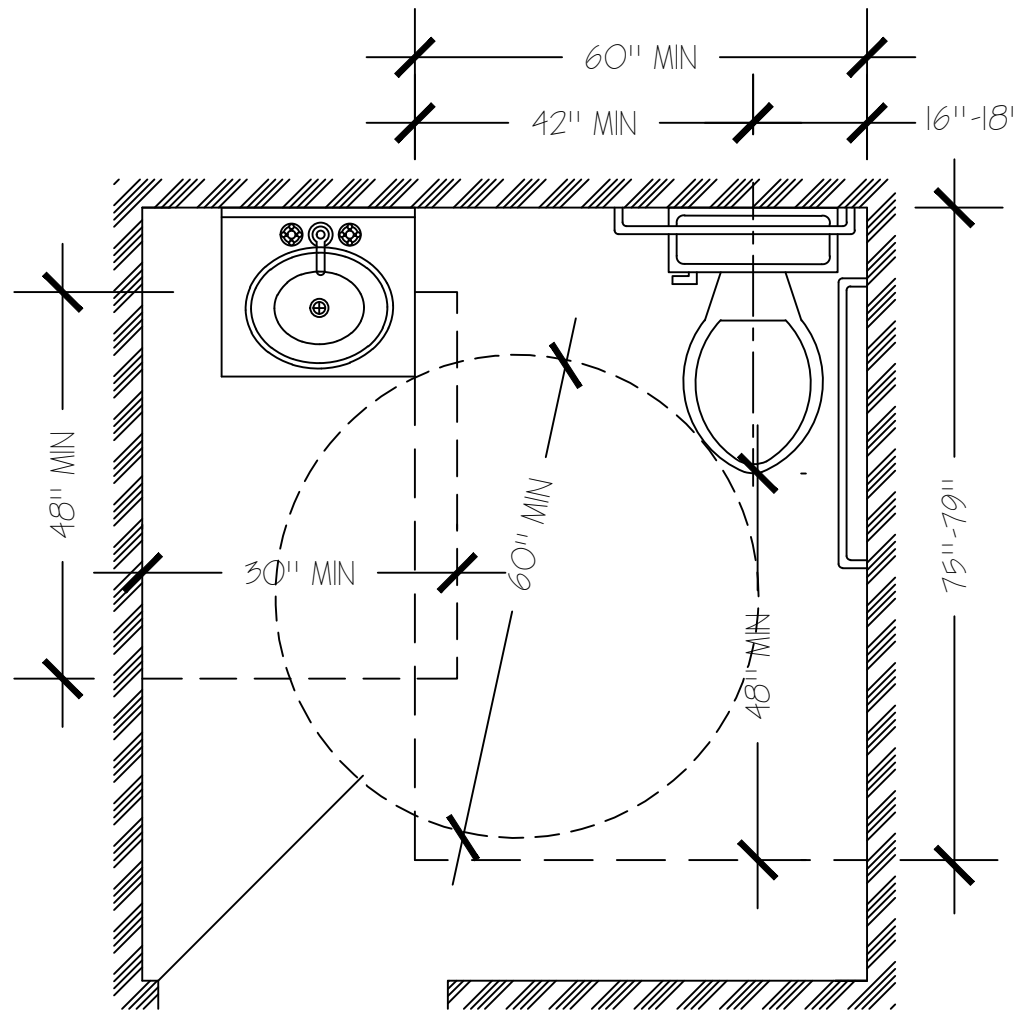


Basic Domestic Water Plan
Scale: 1/4" = 1'-0"

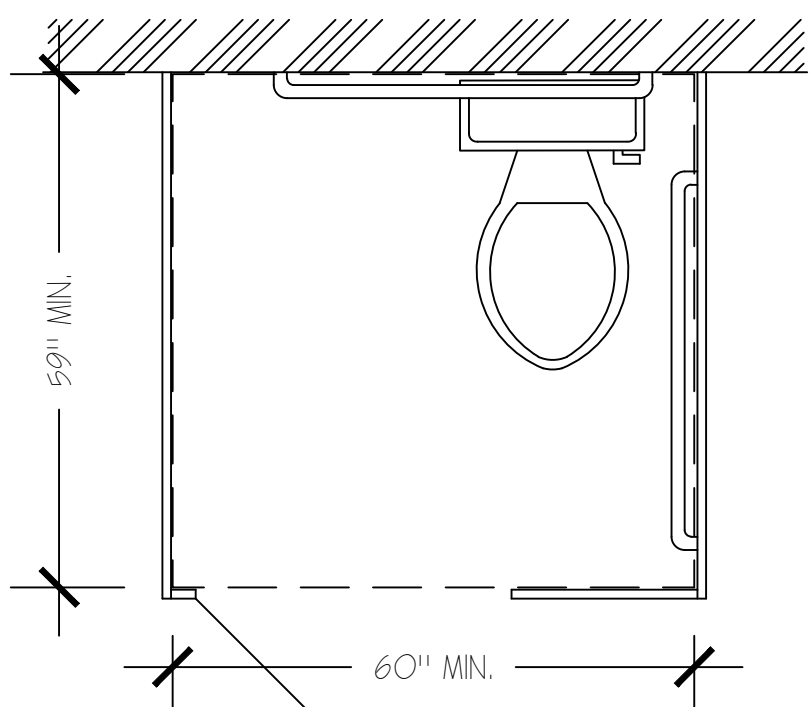


Basic Sanitary Drainage Plan
Scale: 1/4" = 1'-0"

Rev.No. 2	Date:01/05/2022
Rev.No. 1	Date:12/28/2021
Date:06/21/2021	Drw'n By:SRW
315-558-1314	Olmstead Consulting P.O. Box 151 Glenfield, NY 13343
Sheet No. A-200	Singing Waters Park Basic Electrical, Basic Domestic Water, Basic Sanitary Drainage Fish Creek Road, Town of Greig



Typical ADA Restroom Layout
Scale: None



Typical ADA Restroom Stall Layout
Scale: None

Notes & Specifications

- 1.) It is being proposed to construct a new bathhouse.
- 2.) Design Loads
 - a. Roof - 90 P.S.F. Ground Snow Load
 - b. Wind - 15 P.S.F. (Ultimate design wind speed = 115 MPH)
 - c. Weathering for concrete = Severe
 - d. Floor – (Concrete) 50 P.S.F. + 10 P.S.F. DEAD = 60 P.S.F. (Wood) 50 P.S.F. + 10 P.S.F. DEAD = 60 P.S.F.
 - e. Seismic Design Category = B
- 3.) Foundation – See Foundation Drawings A-100 and A-101 for options. Frost depth = 48”
- 4.) All concrete to have an ultimate 28 compressive strength of 3,500 P.S.I. Materials to be in accordance with the latest ASTM specifications and placed in accordance with the ACI code. All Reinforcing will be grade 60 for rebar. Rebar to be deformed.
- 5.) Wall system 8” CMU Exterior, 4” CMU Interior. See Drawings.
- 6.) Floor System See drawing A-100.
- 7.) Roof system pre-engineered wood truss, 24” O.C. Final design and layout by truss manufacturer. See drawing for layout and truss style.
- 8.) Headers (Concrete Option) doors to have 2-4”x4”x1/2” angles back-to-back, O.H. 2-4”x4”x1/2” angles back-to-back.
- 9.) All Stairs shall be verified with field conditions and meet ALL NYS Code Requirements with tread width, tread height, and railings.
- 10.) Contractor shall follow all safety regulations as set forth by OSHA 29 CFR 1926 for Construction Industry. Contractor shall install pre-manufactured roof trusses, floor trusses, I.v.l.’s and all other products in strict accordance with manufacturers installation guidelines.
- 11.) All joints and penetrations to be sealed to minimize air infiltration.
- 12.) Structure to meet all New York State Building Codes and New York State Energy Codes and all plumbing codes and earthquake requirements.
- 13.) Structure to meet the latest N.E.C. regulations.
- 14.) Drawings are not to be scaled.

Equipment and Accessory List:

Bathroom sink	Kohler	K-2005	*
Bathroom faucet	Chicago	3300-ABCP-METERING	*
Under sink pipe covers	TrueBro	Pipe Covers	*
Mirror	Bobrick B-294		*
Toilet Paper Dispenser	Bobrick B-3588		
Urinal	Kohler	K-5452-ET	*
Toilets	Kohler	K-3493	*
Changing Table	Koala Care	KB200	
Composite Plastic Doors	Bobrick SierraSeries	(Solid Color Reinforced Composite) 82” high	
Grab Bar	Bobrick B-5806		*
Paper Towel Dispenser	Bobrick B-72974		
Soap Dispenser	Bobrick B-26627		
Utility Sink	Mustee	27F	
Utility Sink Faucet	Chicago	3500-4E2805ABCP-METERING	*
Outdoor Countertop	Solid Surface w/metal	support brackets	
Shower Curtain Rod	Bobrick B-6107		
Shower Curtain	Bobrick B-204-2		
Shower Faucet	Chicago	770-665PSHCP-METERING	*
Shower Seat	Bobrick B-5193		*
Hot Water Heater	A.O. Smith	Dura-Power	
Overhead Door	Clopay	Steel, non-insulated (with hardware)	
Exterior Doors	Edgewater	FRP with louver 2’x2’ and hardware	*

Notes:

- 1. Items marked with * must be ADA compliant.
- 2. For each item, an equivalent item may be used as approved by owner/designer.
- 3. Coordinate colors, styles, etc. with owner/designer.
- 4. All products to be installed per manufacturer’s instructions.

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Rev.No. 4	Date:12/ 30/ 2021
Rev.No. 3	Date:12/ 28/ 2021
Rev.No. 2	Date:12/ 15/ 2021
Rev.No. 1	Date:11/ 24/ 2021
Date:06/ 24/ 2021	Drw'n By:SKW
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Sheet No. A-300	Singing Waters Park Details and Notes Fish Creek Road, Town of Greig