

Pump Selection for a Non-Pressurized System - Single Family Residence Project
Crimson Ridge / Harbor View Estates - Effluent Sewer Section



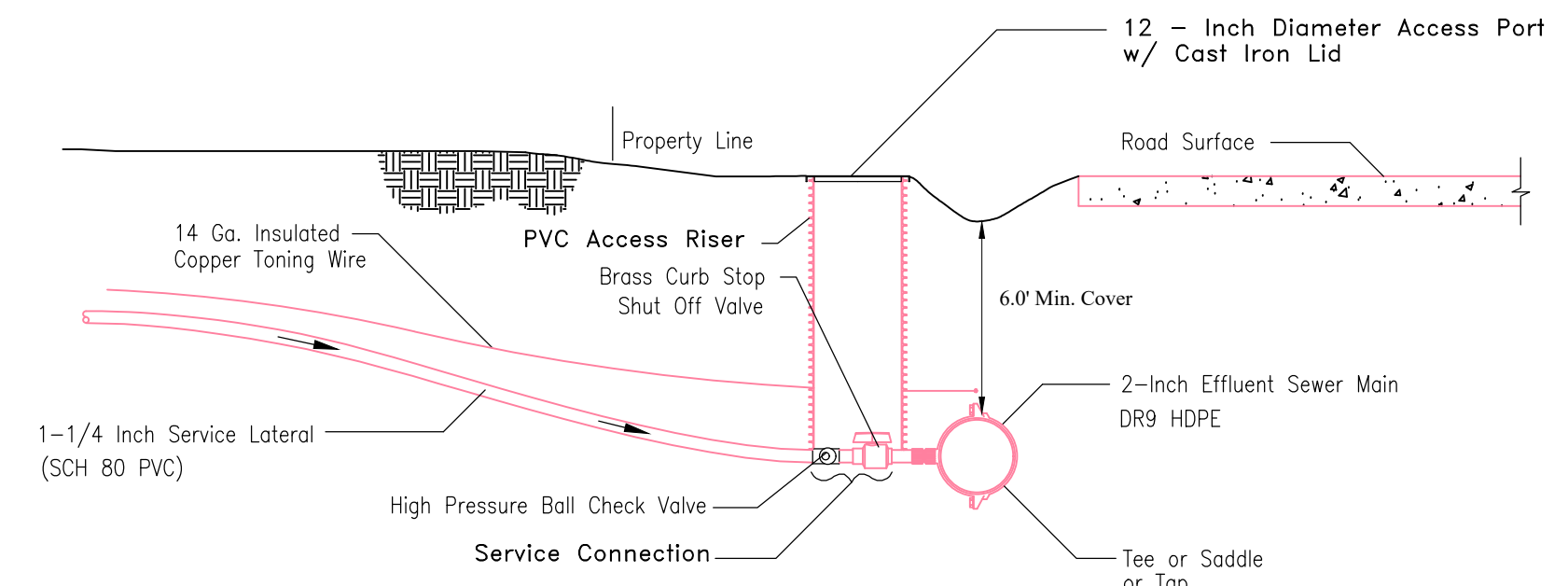
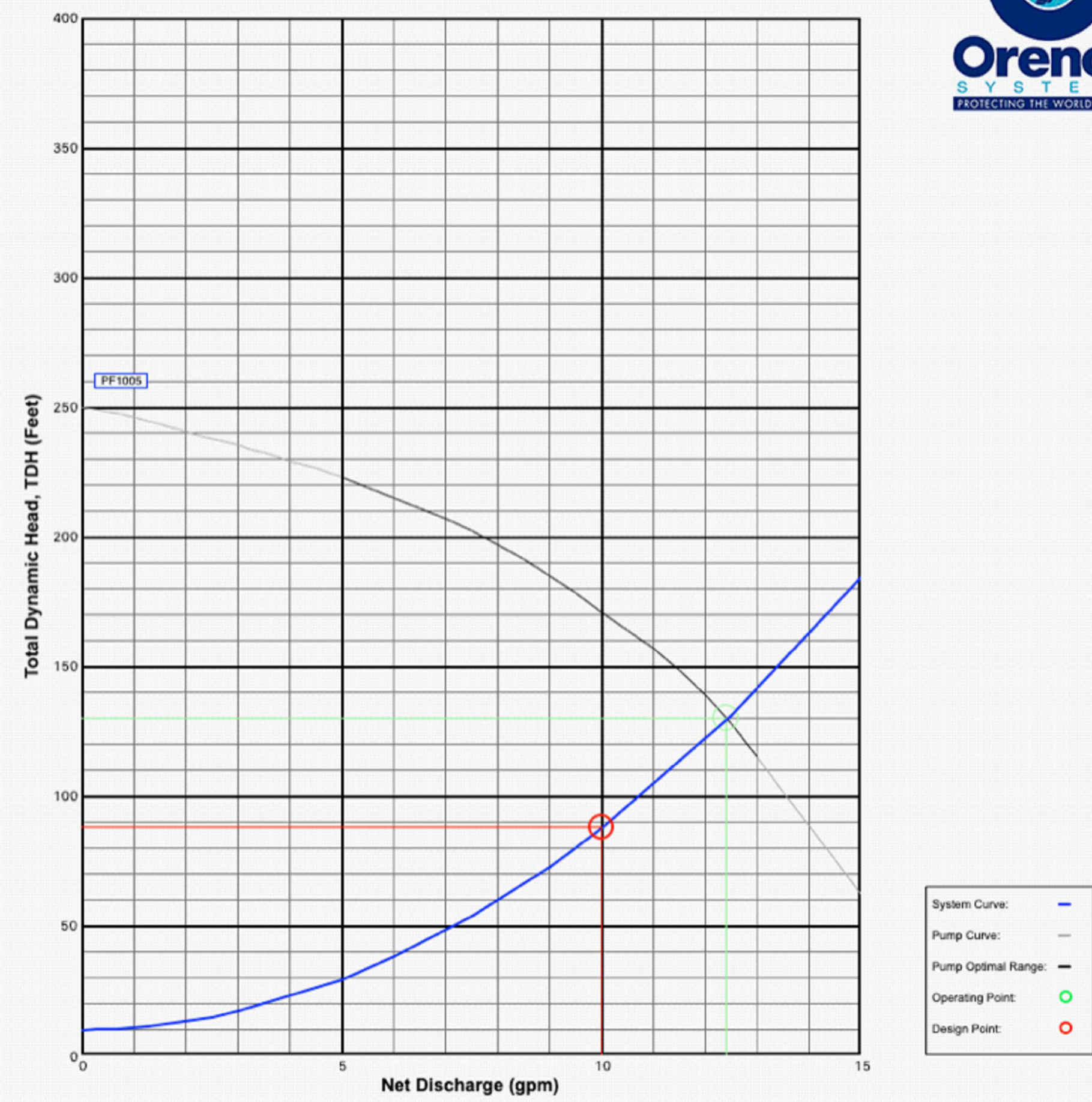
| Parameters | |
|--------------------------|-------------|
| Discharge Assembly Size | 1.25 inches |
| Transport Length | 70 feet |
| Transport Pipe Class | 40 |
| Transport Line Size | 1.25 inches |
| Distributing Valve Model | None |
| Max Elevation Lift | 10 feet |
| Design Flow Rate | 10 gpm |
| Flow Meter | None |
| 'Add-on' Friction Losses | 76 feet |

| Calculations | |
|--------------------|---------|
| Transport Velocity | 2.2 fps |

| Frictional Head Losses | |
|--------------------------|-----------|
| Loss through Discharge | 0.7 feet |
| Loss in Transport | 1.0 feet |
| Loss through Valve | 0.0 feet |
| Loss through Flowmeter | 0.0 feet |
| 'Add-on' Friction Losses | 76.0 feet |

| Pipe Volumes | |
|-----------------------|----------|
| Vol of Transport Line | 5.4 gals |

| Minimum Pump Requirements | |
|---------------------------|-----------|
| Design Flow Rate | 10.0 gpm |
| Total Dynamic Head | 87.7 feet |



All service line connections shall be solvent welded. The only acceptable solvents and cements are those that are recommended by the pipe manufacturer. All service laterals from the effluent sewer main to the property line shall be pressure tested prior to any backfilling.

1 EFFLUENT PRESSURE SEWER TYPICAL SERVICE CONNECTION
Scale: (NOT TO SCALE)

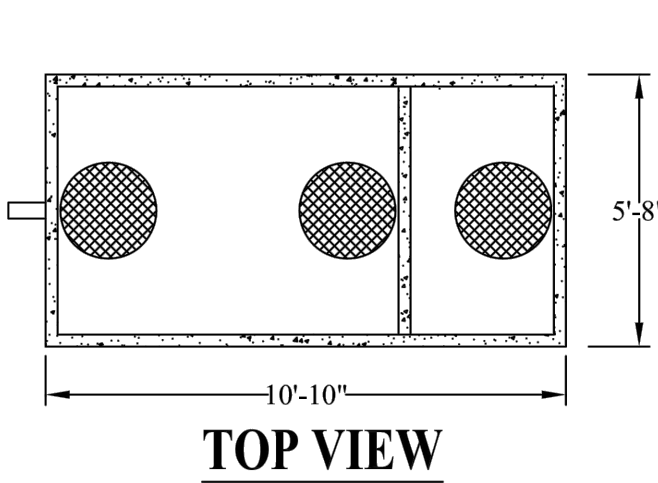
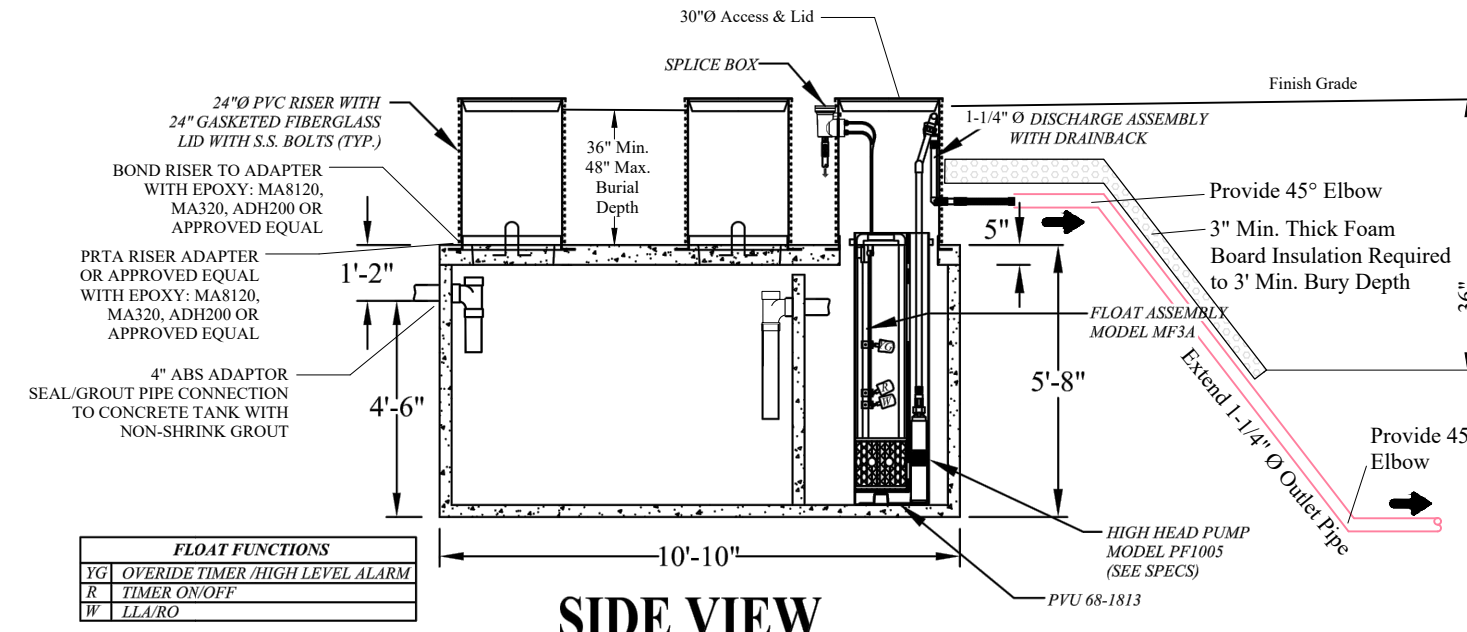
1500 GALLON SEPTIC TANK DETAIL

NOTES:
WEIGHT: 10,800 LBS
EXCAVATION DIMS: 8' X 13'
SEALED WITH BUTYL ROPE
4" SANITARY TEE
4500 PSI CONCRETE

REINFORCING:
TANK - 6X6-6X6 WELDED WIRE FABRIC CAGE
#4 BAR OVERLAP 2" O.C.
LID - #4 BAR 8" O.C.E.W.

SPECS ON THICKNESS
WALLS-3"
FLOOR-3"
LID-5"

NOTE: WATERTIGHT TANK TEST TO EXTEND A MINIMUM OF 3" ABOVE HIGHEST JOINT IN ACCESS RISER

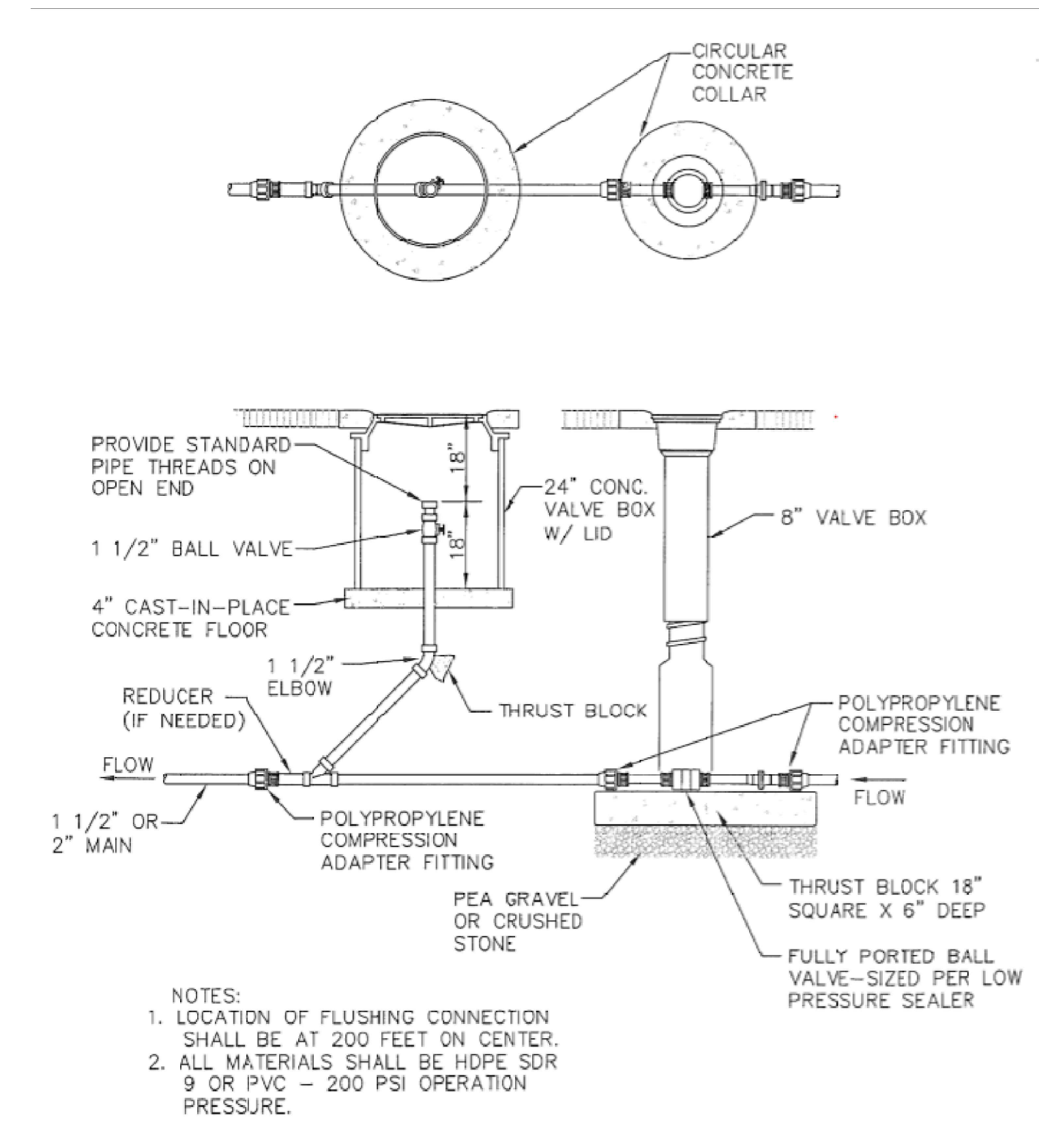


SEPTIC TANK NOTE:
CONTACT ALTERNATIVEONSITE BEN WITH 801-380-0103 FOR CONCRETE TANK (COMPLETE) TO BE INSTALLED AND MAINTAINED BY FUTURE HOME OWNER. AT LEAST TWO INDEPENDENT POWER SOURCES WITH APPROVED WIRING SHALL BE INSTALLED FOR SEWER PUMP.

FOR ORENCO PUMPS CONTACT AUTHORIZED DEALER JEX ENVIRONMENTAL SOLUTIONS PO BOX 3603 LOGAN, UT 84323 1-435-753-2051



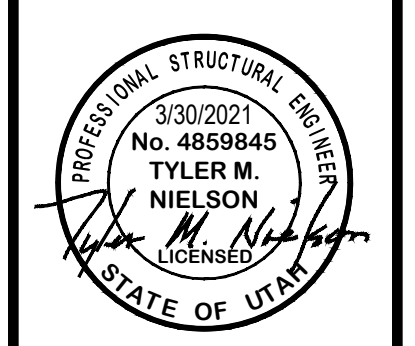
2 1,500 GALLON TANK W/ PUMP (HARBOR VIEW ESTATES ONLY)
(4 BEDROOMS OR LESS)
Scale: (NOT TO SCALE)



NOTES:
1. LOCATION OF FLUSHING CONNECTION SHALL BE AT 200 FEET ON CENTER.
2. ALL MATERIALS SHALL BE HDPE SDR 9 OR PVC - 200 PSI OPERATION PRESSURE.

3 EFFLUENT PRESSURE SEWER TYPICAL FLUSHING CONNECTION ON MAIN LINE
Scale: (NOT TO SCALE)

| REVISIONS | DESCRIPTION |
|-----------|-------------|
| DATE | |



SEWER DETAILS - HARBOR VIEW ESTATES SUBDIVISION
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH



Pump Selection for a Non-Pressurized System - Single Family Residence Project
Crimson Ridge / Harbor View Estates - Effluent Sewer Section



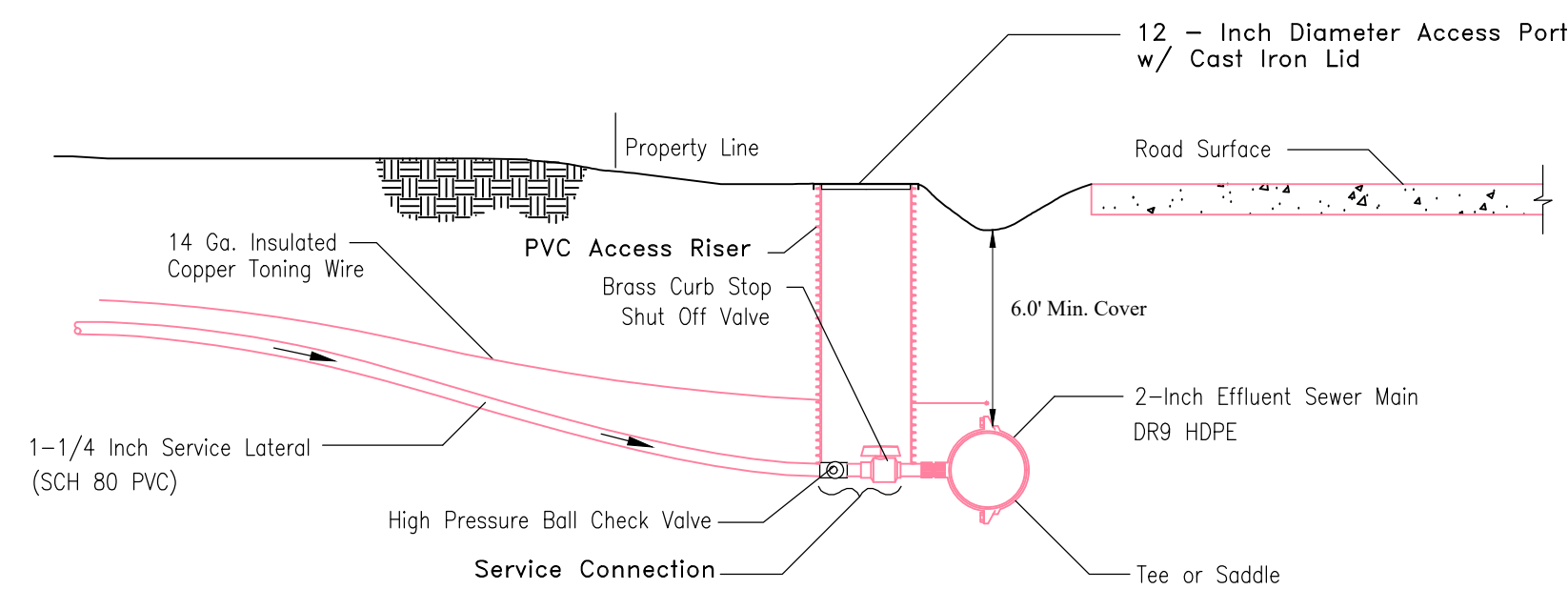
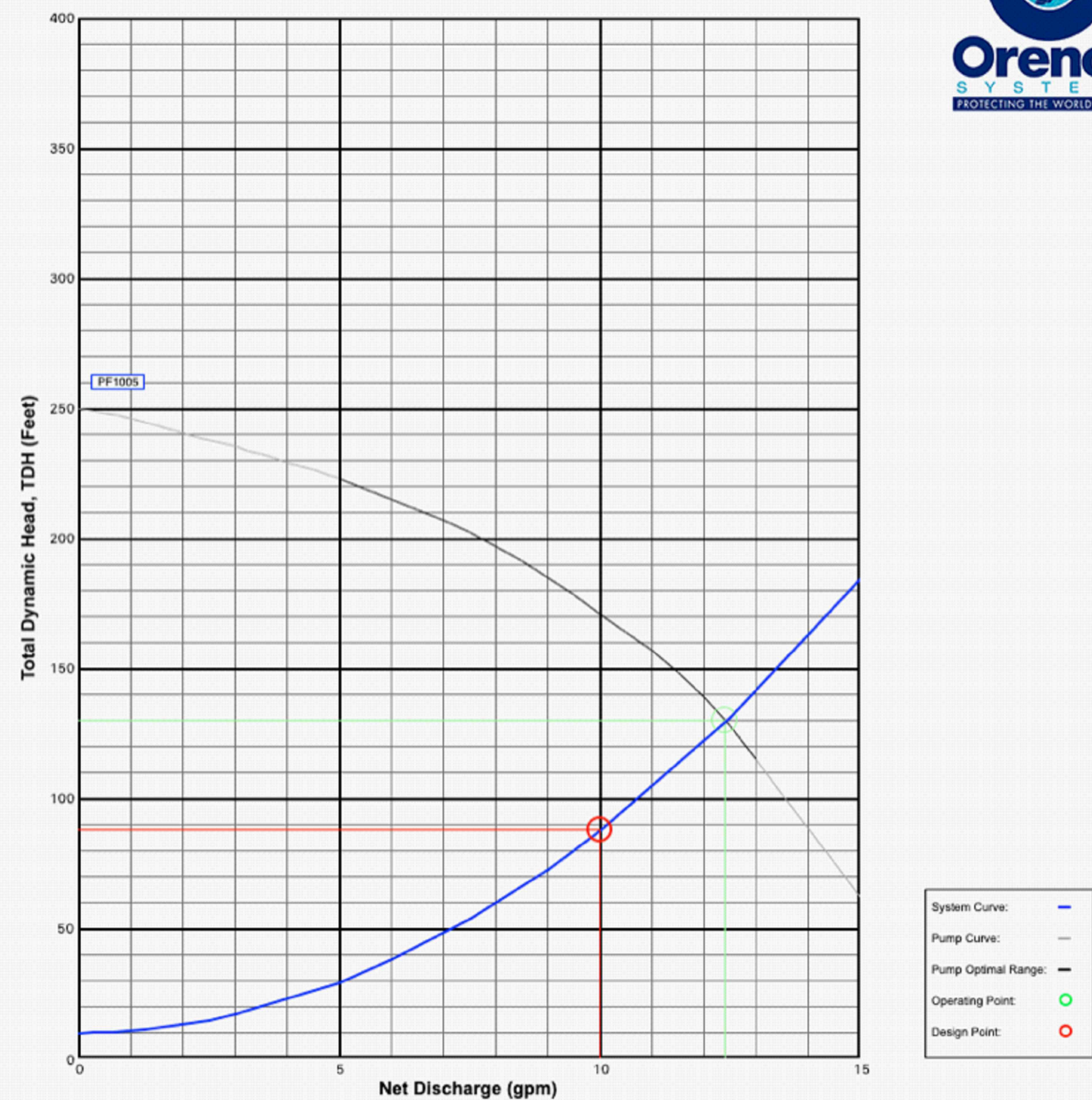
| Parameters | |
|--------------------------|-------------|
| Discharge Assembly Size | 1.25 inches |
| Transport Length | 70 feet |
| Transport Pipe Class | 40 |
| Transport Line Size | 1.25 inches |
| Distributing Valve Model | None |
| Max Elevation Lift | 10 feet |
| Design Flow Rate | 10 gpm |
| Flow Meter | None |
| 'Add-on' Friction Losses | 76 feet |

| Calculations | |
|--------------------|---------|
| Transport Velocity | 2.2 fps |

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|--------------------------|-----------|
| Loss through Discharge | 0.7 feet |
| Loss in Transport | 1.0 feet |
| Loss through Valve | 0.0 feet |
| Loss through Flowmeter | 0.0 feet |
| 'Add-on' Friction Losses | 76.0 feet |

| Pipe Volumes | |
|-----------------------|----------|
| Vol of Transport Line | 5.4 gals |

| Minimum Pump Requirements | |
|---------------------------|-----------|
| Design Flow Rate | 10.0 gpm |
| Total Dynamic Head | 87.7 feet |

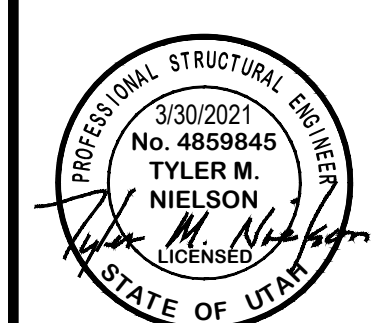


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1 EFFLUENT PRESSURE SEWER TYPICAL SERVICE CONNECTION
Scale: (NOT TO SCALE)

| | |
|---------|-----------|
| SCALE | NTS |
| DATE | 3/30/2021 |
| DESIGN | BBO/MS |
| DRAWN | BBO/MS |
| CHECKED | TJM |

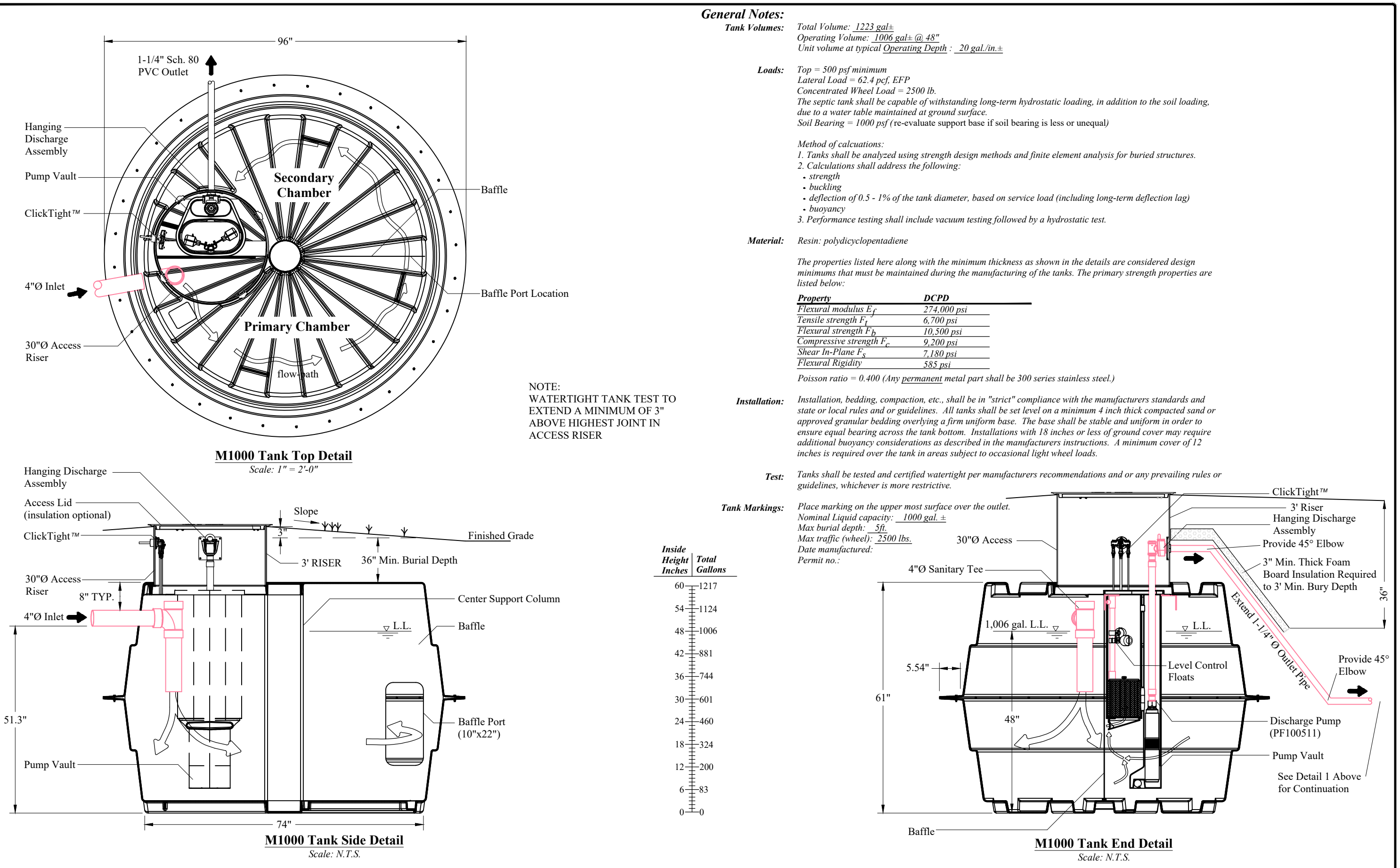
| REVISIONS | DESCRIPTION |
|-----------|-------------|
| DATE | |



ORENGO ALT DETAILS - HARBOR VIEW ESTATES SUBDIVISION
 THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
 1250 NORTH 5200 EAST
 EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
 CIVIL-LAND PLANNING
 MUNICIPAL-LAND SURVEYING
 5150 SOUTH 375 EAST OGDEN, UT
 OFFICE: 801-476-0202 FAX: 801-476-0066

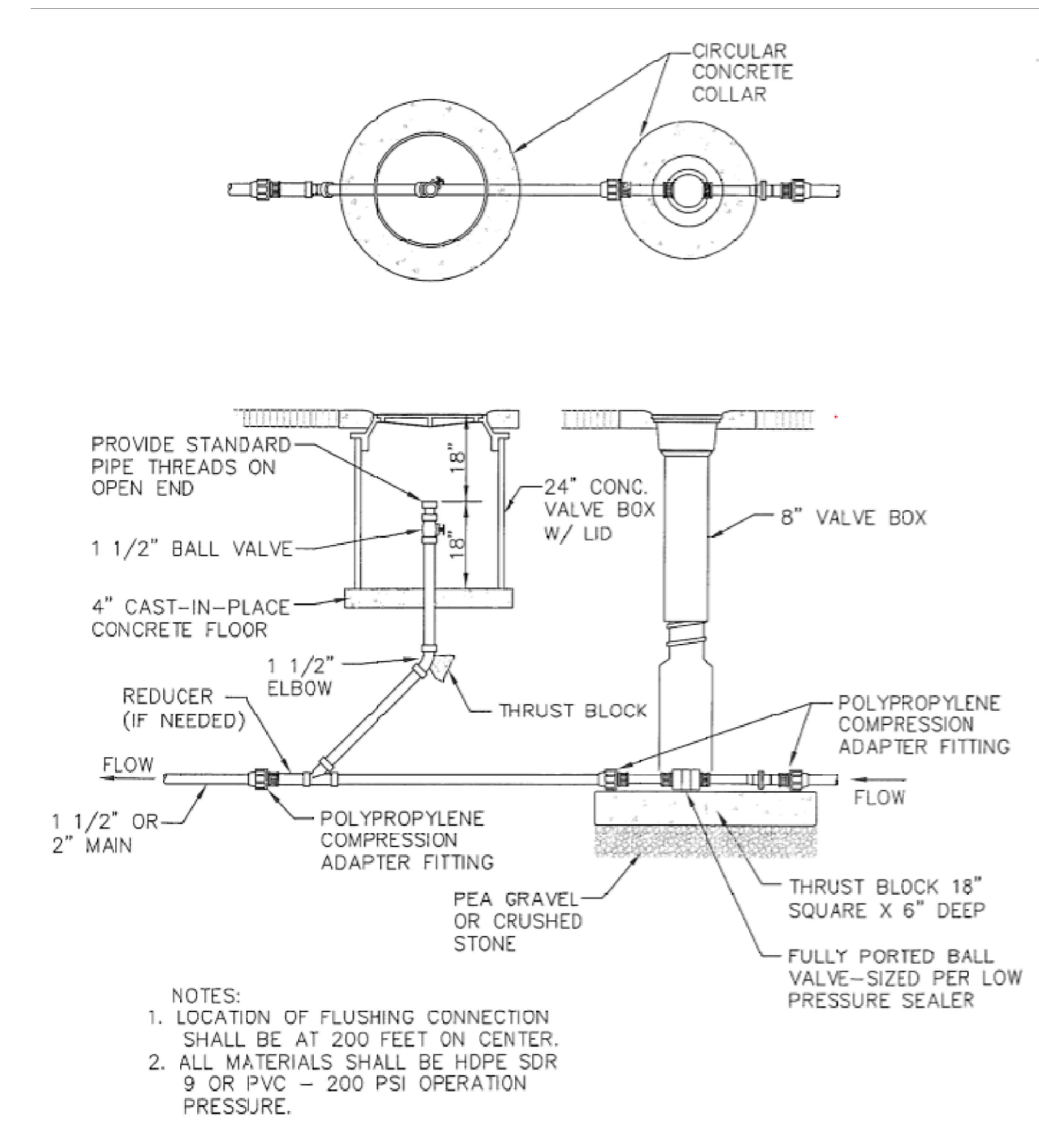
DIALT



General Notes:
Tank Volume: Total Volume: 1223 gal.; Operating Volume: 1006 gal. @ 48" Line Volume at typical Operating Depth: 20 gal./in.
Loads: Top - 500 psf minimum; Lateral Load - 62.4 pcf, EFP; Concentrated Wheel Load - 2500 lb. The septic tank shall be capable of withstanding long-term hydrostatic loading, in addition to the soil loading, due to a water table maintained at ground surface. Soil Bearing - 1000 psf (re-evaluate support base if soil bearing is less or unequal).
Method of calculations:
 1. Tanks shall be analyzed using strength design methods and finite element analysis for buried structures.
 2. Calculations shall address the following:
 - buckling
 - deflection of 0.5 - 1% of the tank diameter, based on service load (including long-term deflection lag)
 - buoyancy
 3. Performance testing shall include vacuum testing followed by a hydrostatic test.
Material: Resin: polydicyclopentadiene
 The properties listed here along with the minimum thickness as shown in the details are considered design minimums that must be maintained during the manufacturing of the tanks. The primary strength properties are listed below:
Property DCPD
 Flexural modulus E_f 274,000 psi
 Tensile strength F_t 6,700 psi
 Flexural strength F_b 10,500 psi
 Compressive strength F_c 9,200 psi
 Shear by Pulling F_v 7,100 psi
 Flexural Rigidity 585 psi
 Poisson ratio = 0.400 (Any permanent metal part shall be 300 series stainless steel).
Installation: Installation, bedding, compaction, etc., shall be in "strict" compliance with the manufacturers standards and state or local rules and/or guidelines. All tanks shall be set level on a minimum 4 inch thick compacted sand or approved granular bedding covering a firm uniform base. The base shall be stable and uniform in order to ensure equal bearing across the tank bottom. Installations with 18 inches or less of ground cover may require additional buoyancy considerations as described in the manufacturers instructions. A minimum cover of 12 inches is required over the tank in areas subject to occasional light wheel loads.
Test: Tanks shall be tested and certified watertight per manufacturers recommendations and or any prevailing rules or guidelines, whichever is more restrictive.
Tank Markings: Place marking on the upper most surface over the outlet.
 Nominal Liquid Capacity: 1000 gal. ±
 Max burial depth: 5ft
 Max traffic (wheels): 2200 lbs.
 Date manufactured:
 Permit no.:

ORENGO AUTHORIZED DEALER
 JEX ENVIRONMENTAL SOLUTIONS
 PO BOX 3603
 LOGAN, UT 84323
 1-435-753-2051

PRELOS 1000 GALLON PROCESSOR WITH PUMP
 NOTES:
 THIS UNIT (COMPLETE) TO BE INSTALLED AND MAINTAINED BY FUTURE HOME OWNER. AT LEAST TWO INDEPENDENT POWER SOURCES WITH APPROVED WIRING SHALL BE INSTALLED.



NOTES:
 1. LOCATION OF FLUSHING CONNECTION SHALL BE AT 200 FEET ON CENTER.
 2. ALL MATERIALS SHALL BE HDPE SDR 9 OR PVC - 200 PSI OPERATION PRESSURE.

3 EFFLUENT PRESSURE SEWER TYPICAL FLUSHING CONNECTION ON MAIN LINE
Scale: (NOT TO SCALE)



© Orengo Systems, Inc. Portions or all of this Proposed System Configuration Drawing, as appropriate, may be reproduced and integrated into the site-specific layout and configuration of a system by its designer.

Disclaimer: This Proposed System Configuration Drawing is provided solely as a design aid and illustrates one possible configuration of a system that would comply with Orengo's design criteria for the requirements and/or specifications that have been communicated to Orengo (based on third-party standards listing protocols and performance records, as applicable). Design decisions, including the actual layout and configuration of the system and its viability for the project, are at the sole discretion of the system's designer.

| | | |
|---|-------------------------------|-------------------------|
| Prelos 1000 Processor with Pump Discharge | Drawn By: CSJ | Scale: N.T.S. |
| DESIGN AID | Reviewed By: TB | Sheet: 1 OF 1 |
| | File Name: NDR-TP-LOS-100-DWG | Rev: 1.0 Date: 11/24/20 |

2 ORENGO 1,000 GALLON PROCESSOR WITH PUMP DISCHARGE
Scale: (NOT TO SCALE)

DURA-CRETE INC.
1475 W. 3500 S.
WVC, UTAH 84119
801-972-8686
SALES@DURACRETE.COM

MFG. TANK MARKINGS
INLET & OUTLET
TANK GAL. SIZE
MFG. NAME ON OUTLET SIDE

ENGINEERED FOR 48" EARTH COVERAGE

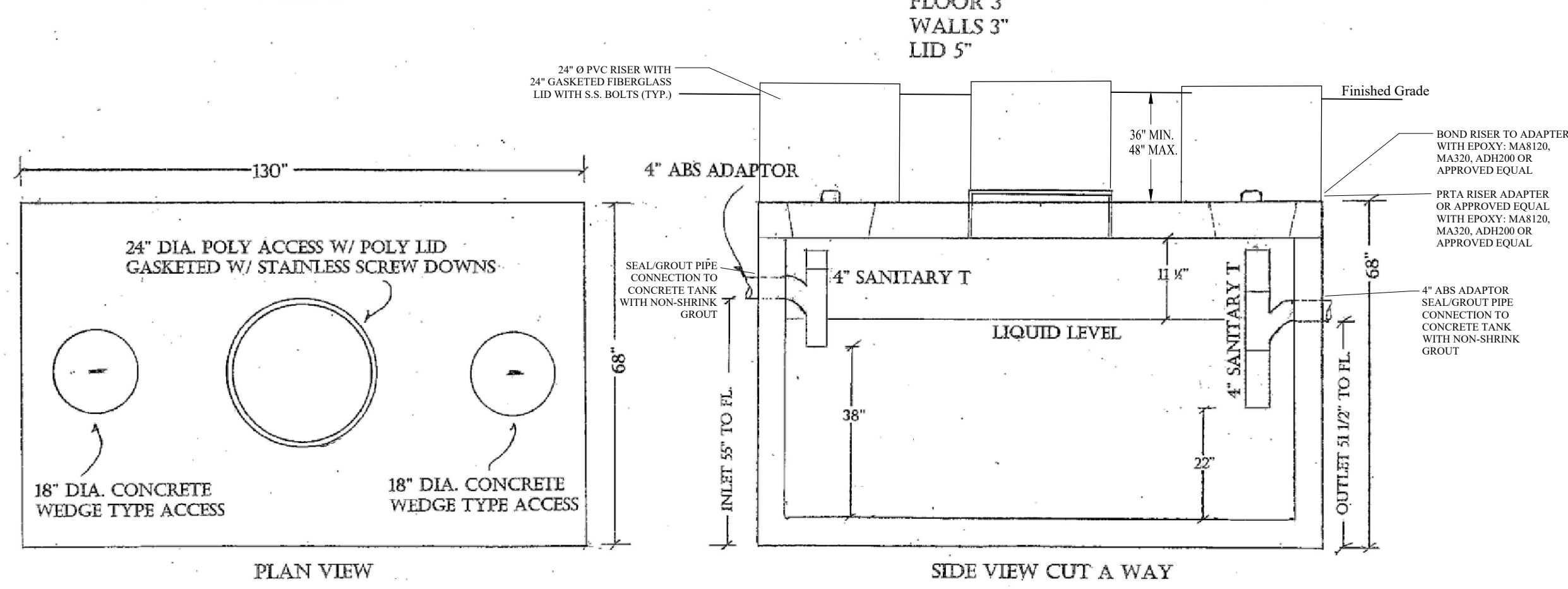
1500 GALLON SEPTIC TANK

DURA-CRETE INC.

EXCAVATION HOLE SIZE
8'X 13'

WEIGHT 12,400 LBS

CONCRETE THICKNESS
FLOOR 3"
WALLS 3"
LID 5"



1 1,500 GALLON CONCRETE SEPTIC TANK (GRAVITY EFFLUENT)
(4 BEDROOMS OR LESS) Scale: (NOT TO SCALE)

SEPTIC TANK NOTE:
CONTACT ALTERNATIVEONSITE
BEN WITT 801-380-0103
FOR CONCRETE TANK (COMPLETE).
TO BE INSTALLED AND MAINTAINED
BY FUTURE HOME OWNER.

NOTE:
WATERTIGHT TANK TEST TO
EXTEND A MINIMUM OF 3"
ABOVE HIGHEST JOINT IN
ACCESS RISER

DURA-CRETE INC.
1475 W. 3500 S.
WVC, UTAH 84119
801-972-8686
SALES@DURACRETE.COM

MFG. TANK MARKINGS
INLET & OUTLET
TANK GAL. SIZE
MFG. NAME ON OUTLET SIDE

ENGINEERED FOR 48" EARTH COVERAGE

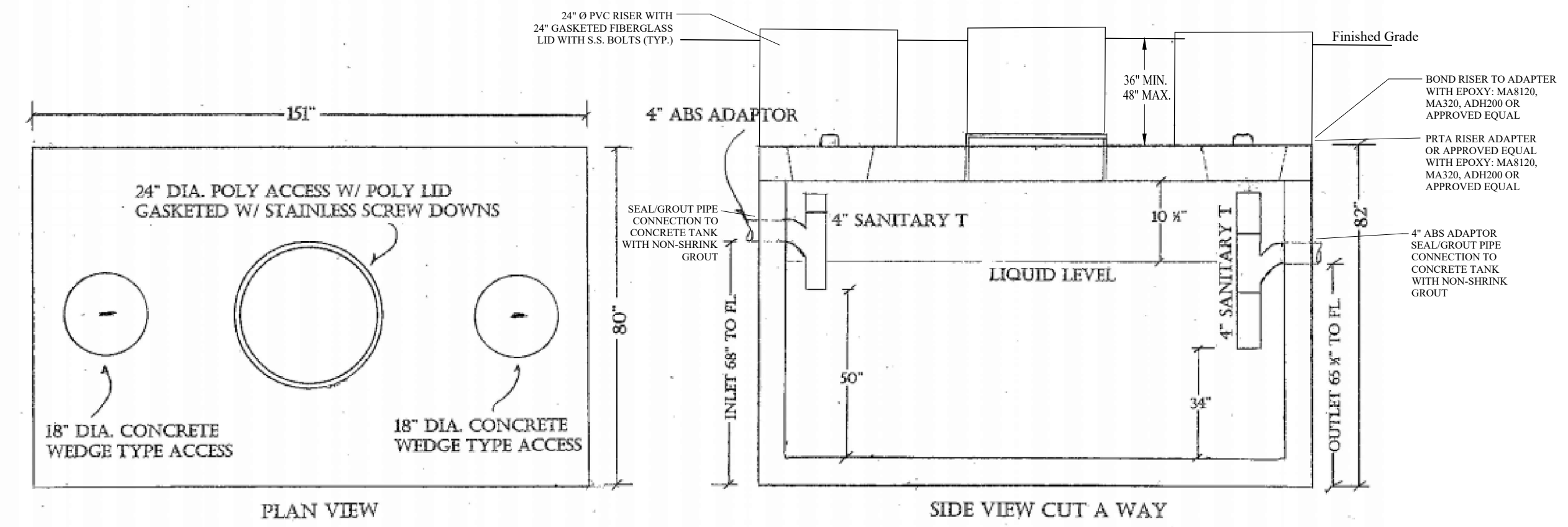
2500 GALLON SEPTIC TANK

DURA-CRETE INC.

EXCAVATION HOLE SIZE
9'X 15'

WEIGHT 16,000 LBS

CONCRETE THICKNESS
FLOOR 5"
WALLS 4"
LID 5"

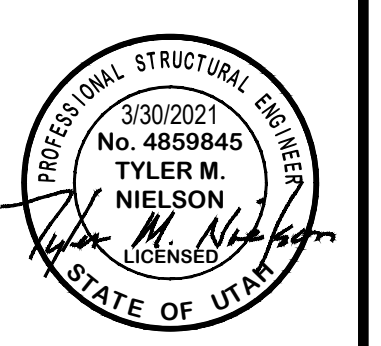


2 2,500 GALLON CONCRETE SEPTIC TANK (GRAVITY EFFLUENT)
(5 BEDROOMS OR MORE) Scale: (NOT TO SCALE)

SEPTIC TANK NOTE:
CONTACT ALTERNATIVEONSITE
BEN WITT 801-380-0103
FOR CONCRETE TANK (COMPLETE).
TO BE INSTALLED AND MAINTAINED
BY FUTURE HOME OWNER.

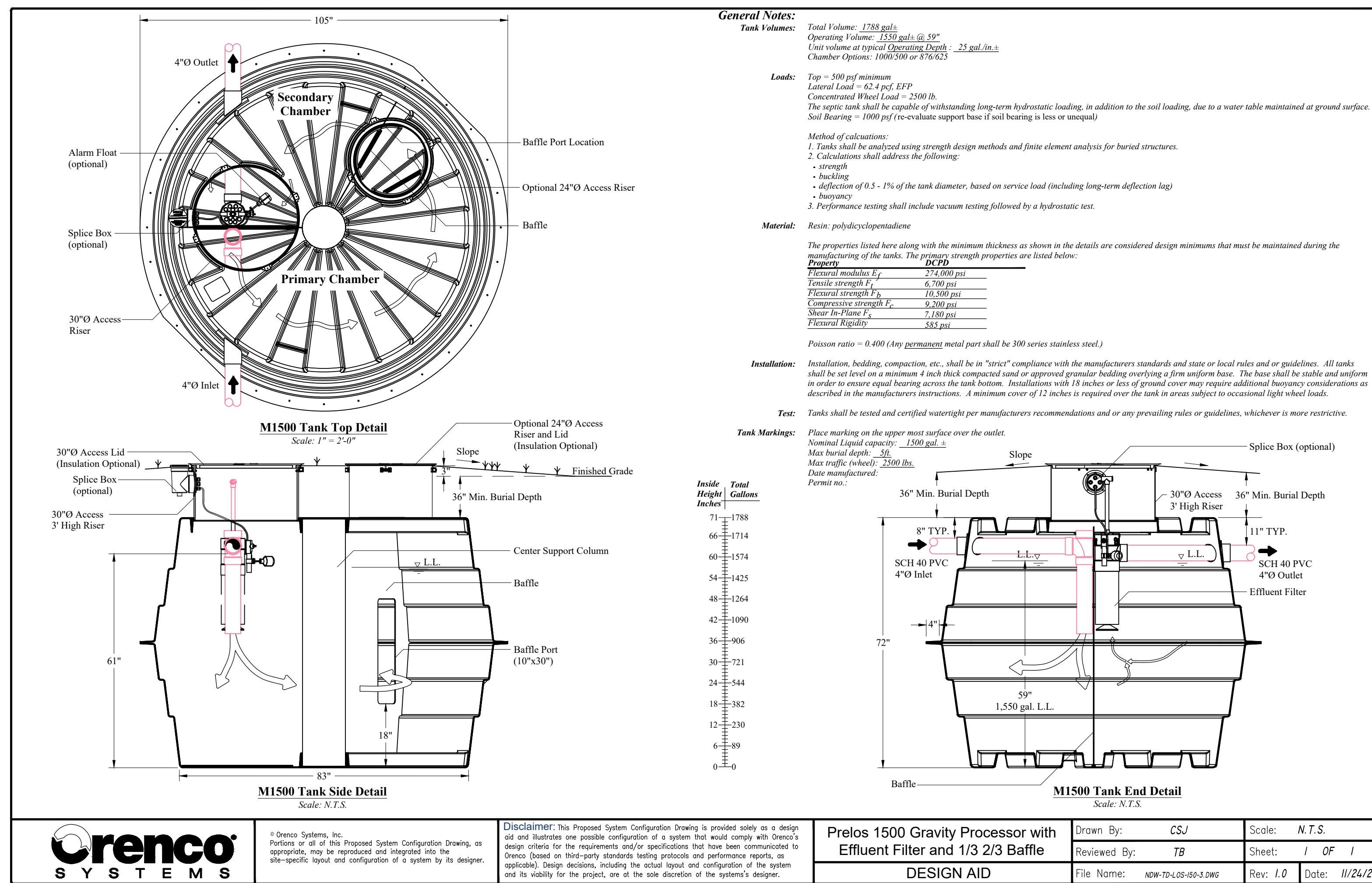
NOTE:
WATERTIGHT TANK TEST TO
EXTEND A MINIMUM OF 3"
ABOVE HIGHEST JOINT IN
ACCESS RISER

| REVISIONS | DATE | DESCRIPTION |
|-----------|------|-------------|
| | | |
| | | |
| | | |

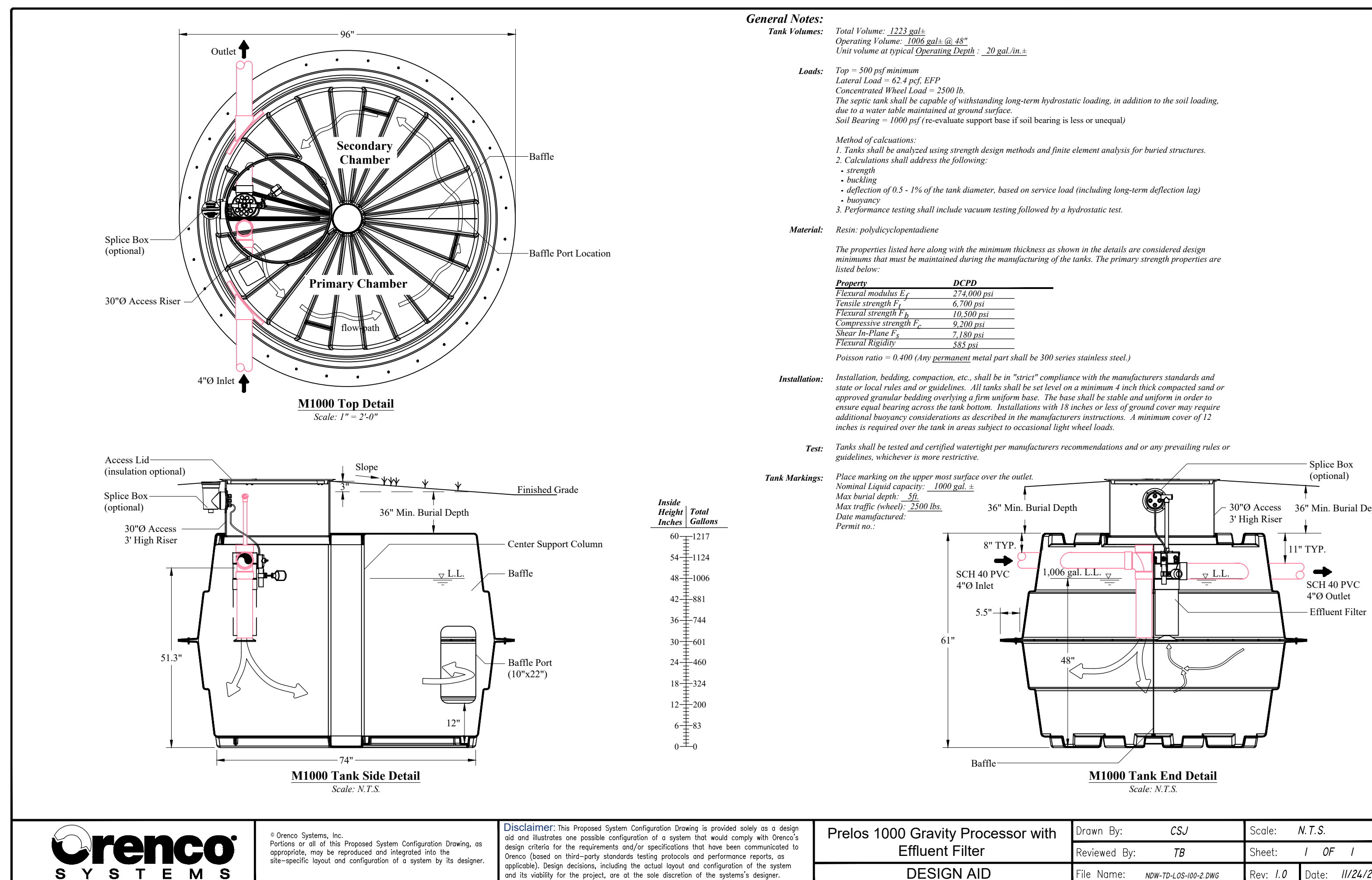


SEPTIC TANK DETAILS PHASE 2A, 2B, + 2C
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL-LAND PLANNING
MUNICIPAL-LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066



2 ORENCO 1,500 GALLON GRAVITY PROCESSOR DISCHARGE
 (5 BEDROOMS OR LARGER) Scale: (NOT TO SCALE)



3 ORENCO 1,000 GALLON GRAVITY PROCESSOR DISCHARGE
 (4 BEDROOMS OR LESS) Scale: (NOT TO SCALE)

SCALE: N.T.S.
 DATE: 3/30/2021
 DESIGN: BBO/MUS
 DRAWN: BBO/MUS
 CHECKED: TMN
 DWG: EN2008 - BBA INVESTMENT/CRIMSON RIDGE DESIGN/DWG/CRIMSON RIDGE - COS.DWG

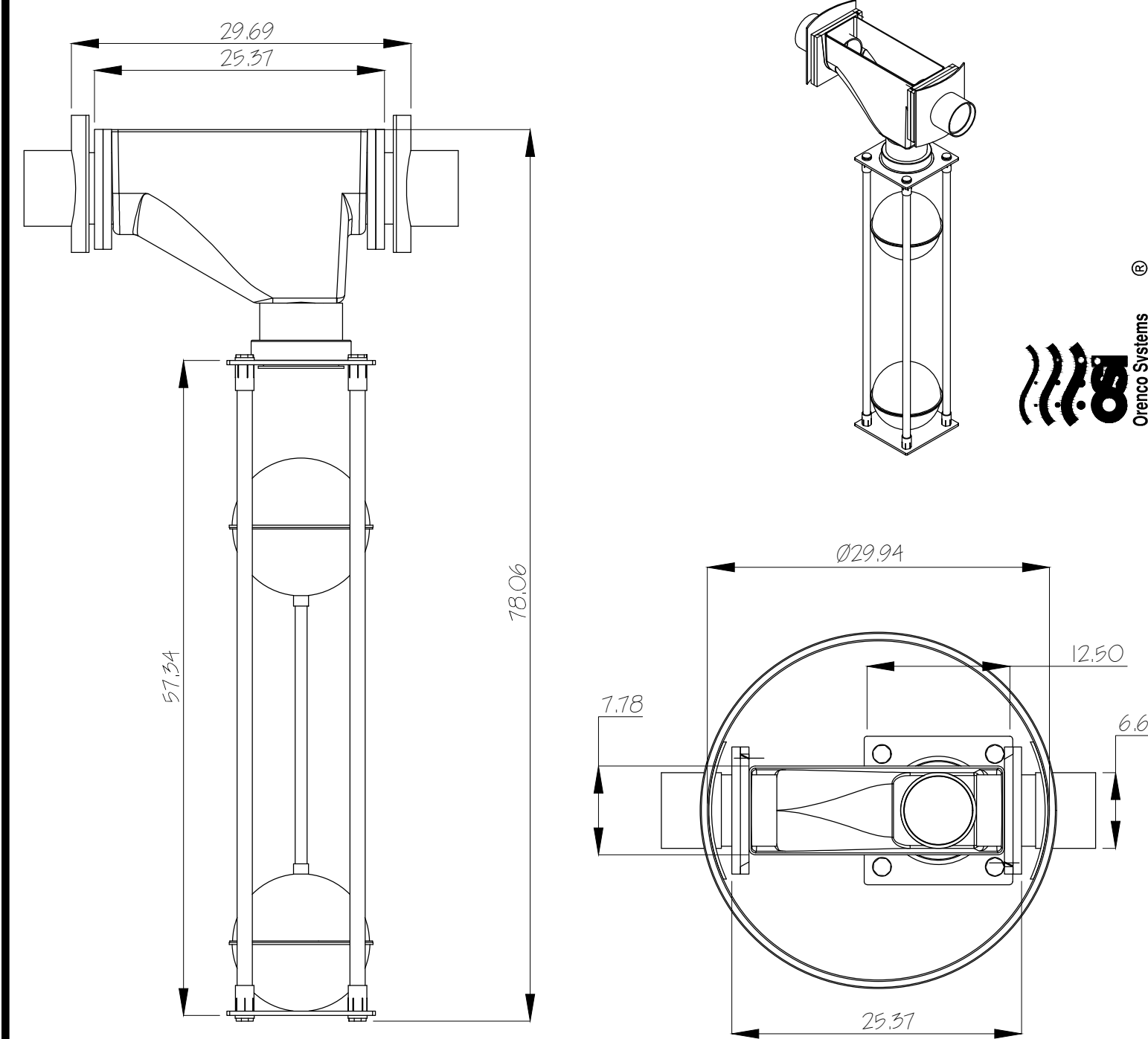
REVISIONS
 DATE DESCRIPTION

PROFESSIONAL STRUCTURAL ENGINEER
 3/30/2021
 No. 4859845
 TYLER M. NIELSON
 LICENSED
 STATE OF UTAH

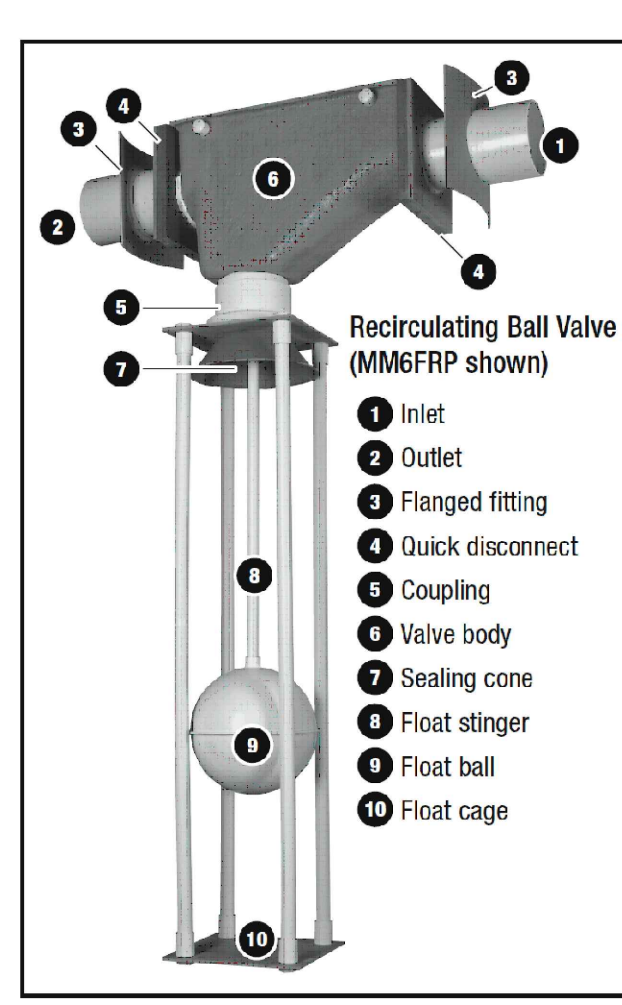
ORENCO ALT SEPTIC TANK DETAILS PHASE 2A. 2B. + 2C
 THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
 1250 NORTH 5200 EAST
 EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
 CIVIL-LAND PLANNING
 MUNICIPAL-LAND SURVEYING
 5150 SOUTH 375 EAST OGDEN, UT
 OFFICE: 801-476-0202 FAX: 801-476-0066

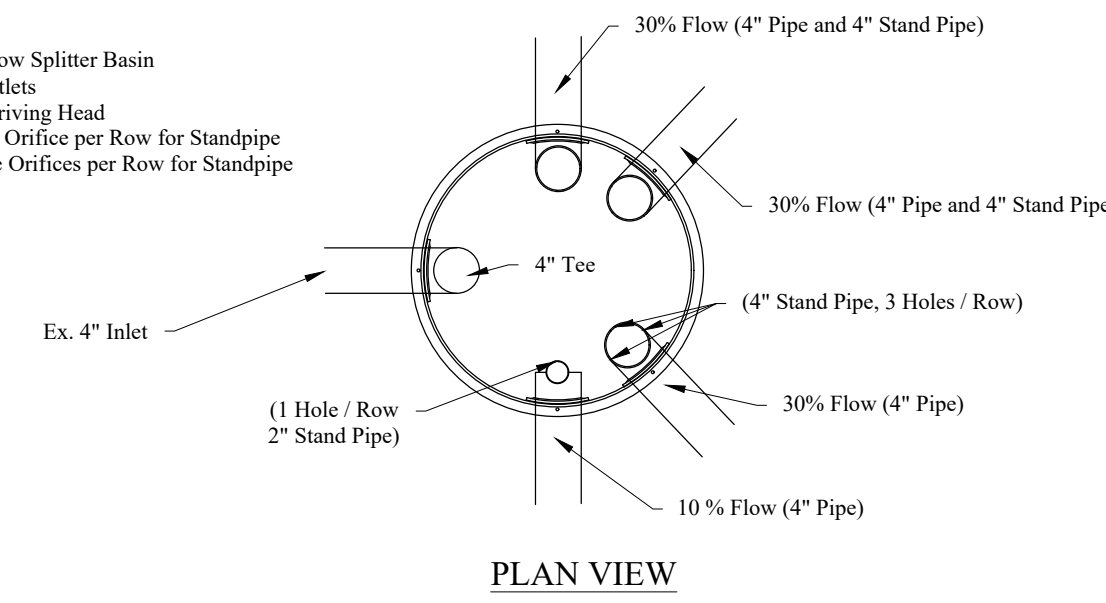
D2ALT



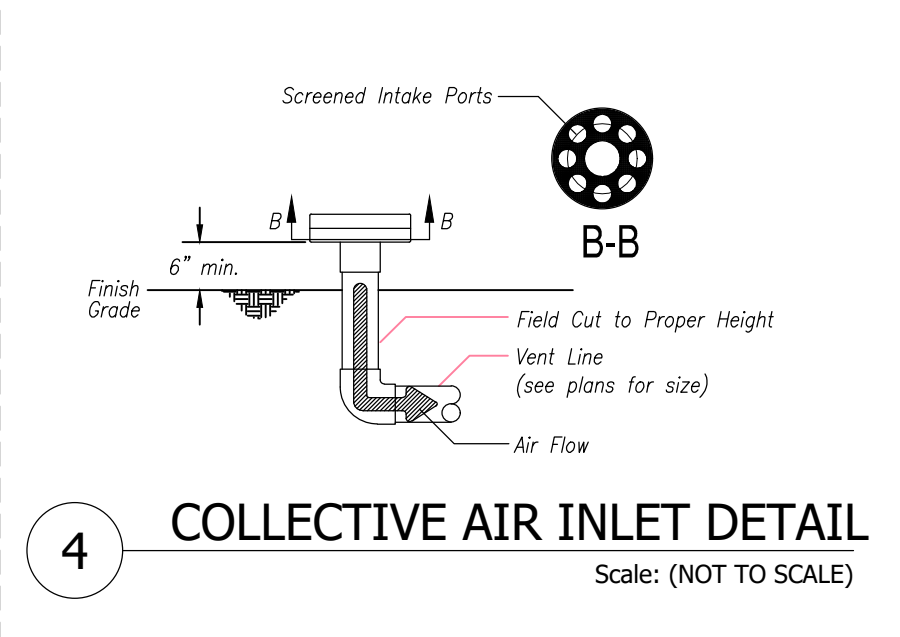
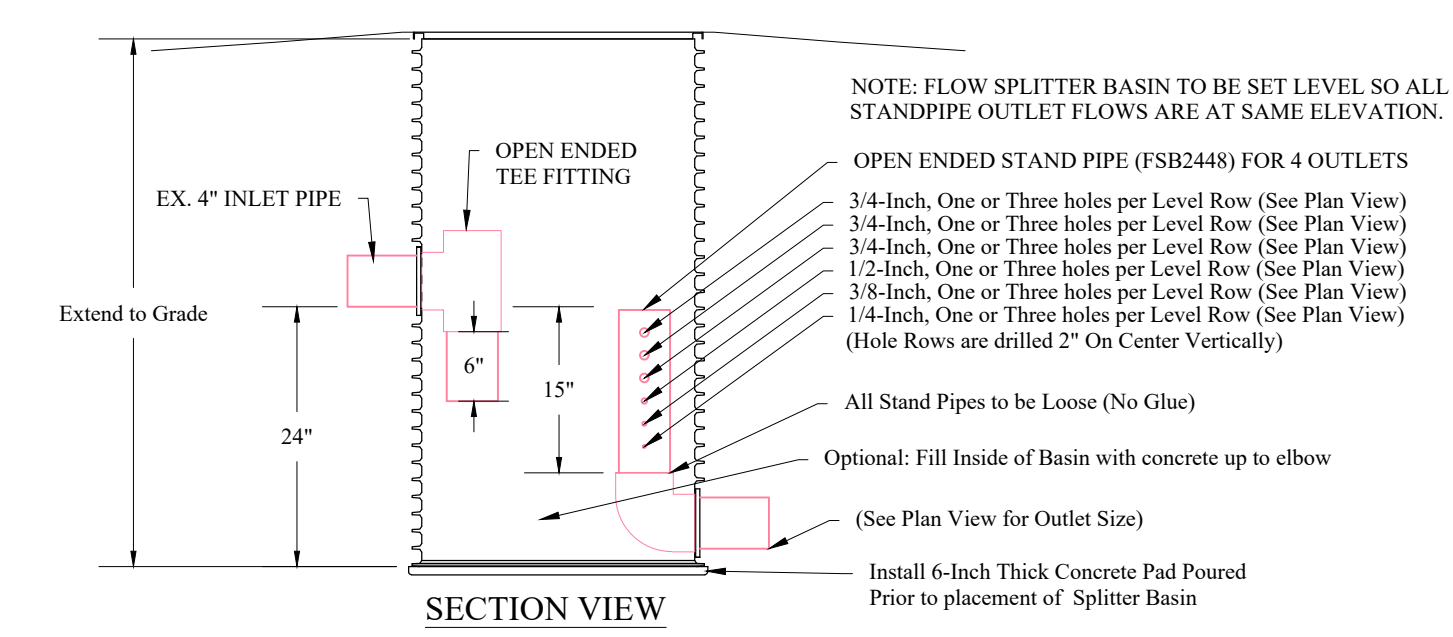
1 RECIRCULATING SPLITTER VALVE DETAIL (MM6-FRP)
Scale: (NOT TO SCALE)



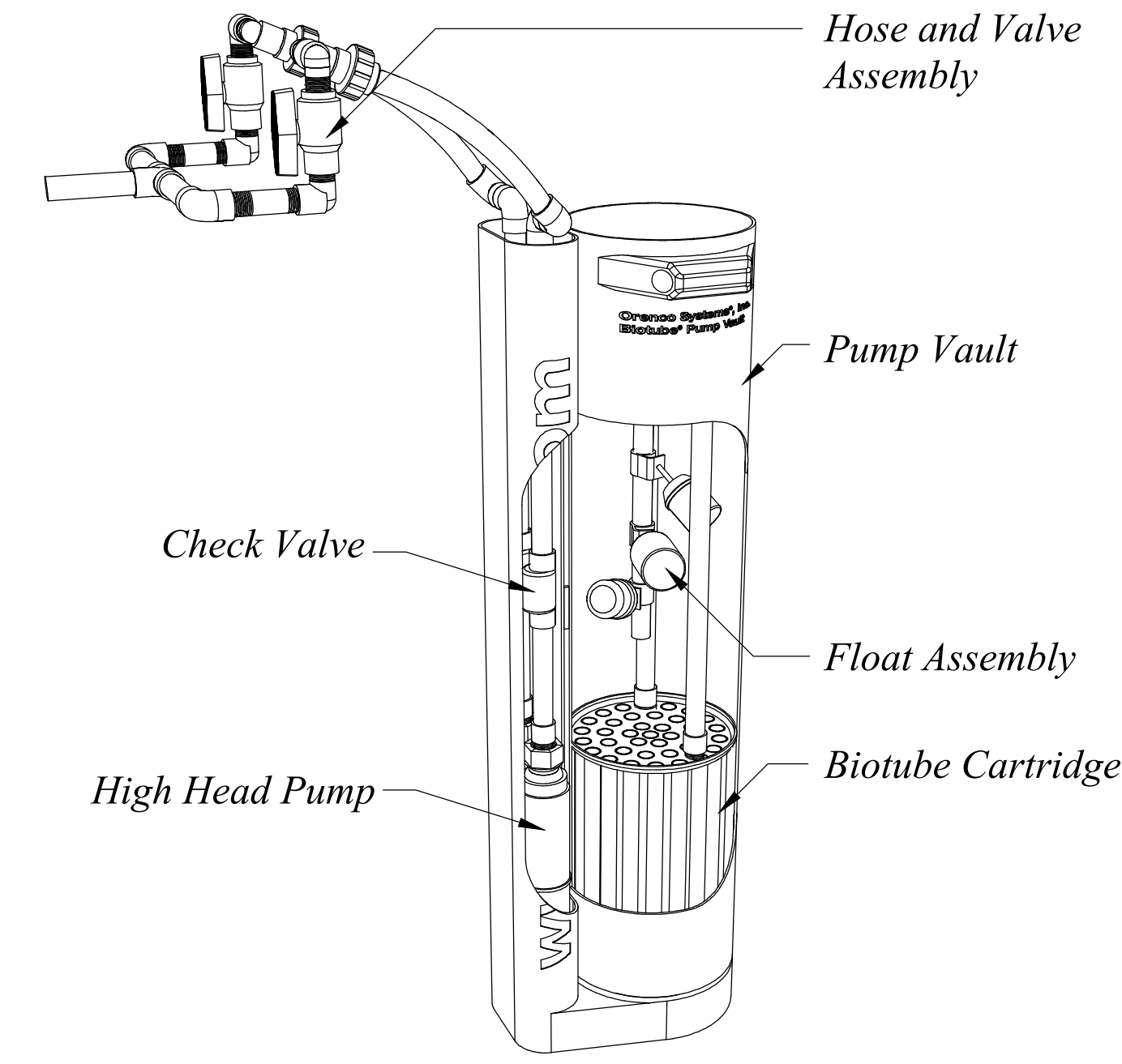
Orenco Multi-Outlet Flow Splitter Basin
FSB2448 (4) Outlets
- Minimum 15" Driving Head
- (1) Outlet Single Orifice per Row for Standpipe
- (3) Outlets Three Orifices per Row for Standpipe



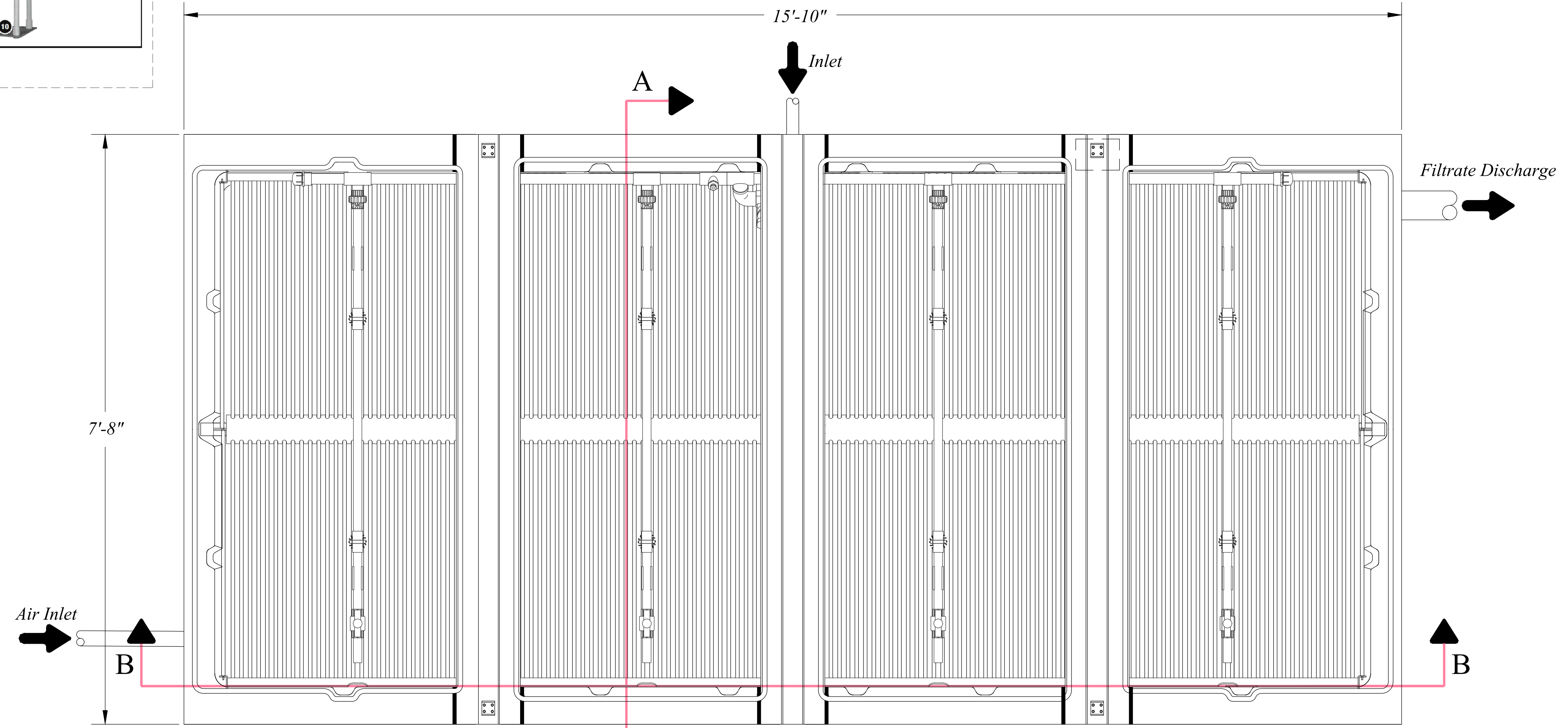
2 MULTI-OUTLET FLOW SPLITTER BASIN DETAIL
Scale: (NOT TO SCALE)



4 COLLECTIVE AIR INLET DETAIL
Scale: (NOT TO SCALE)

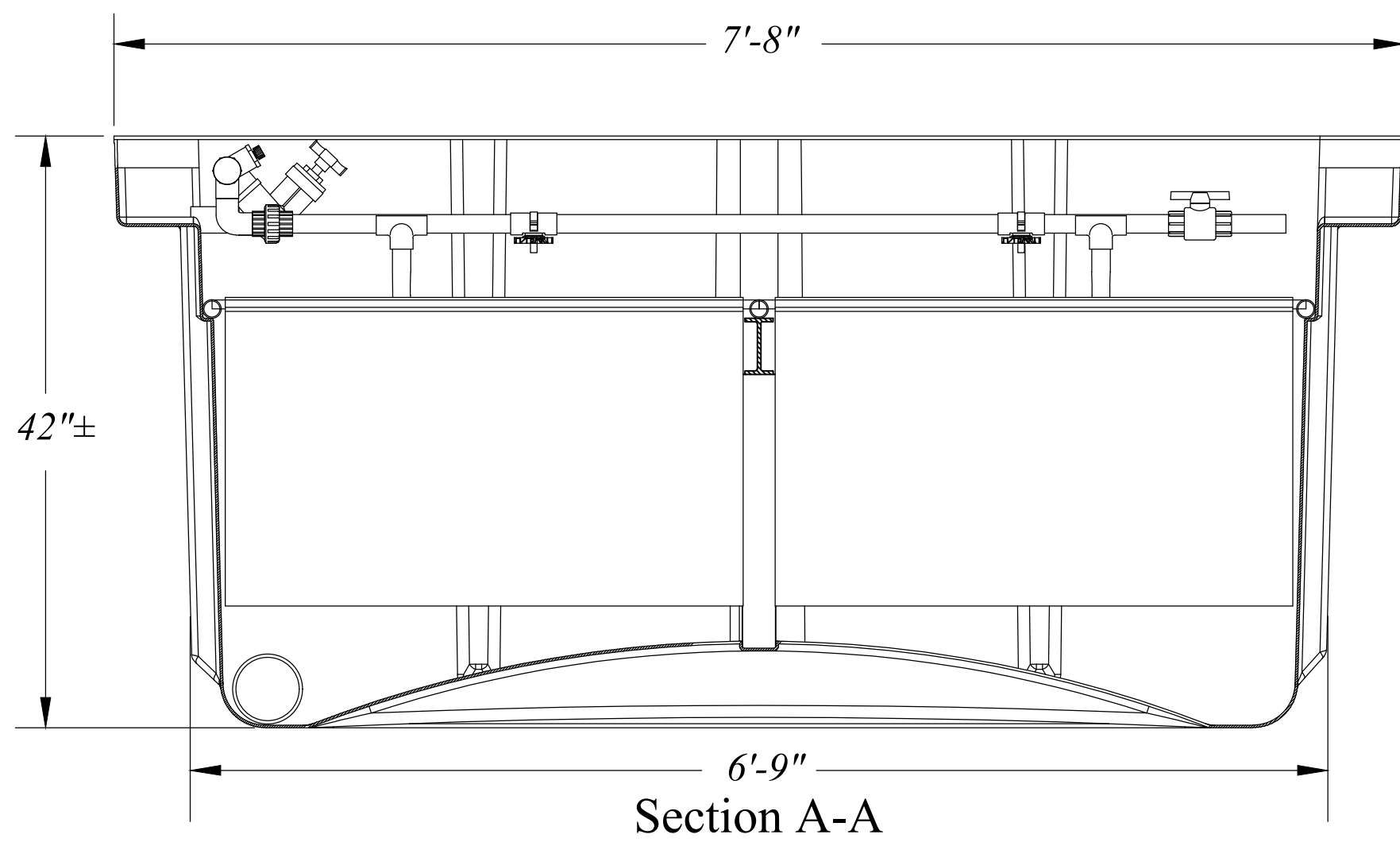


3 DUPLEX PUMP VAULT DETAIL
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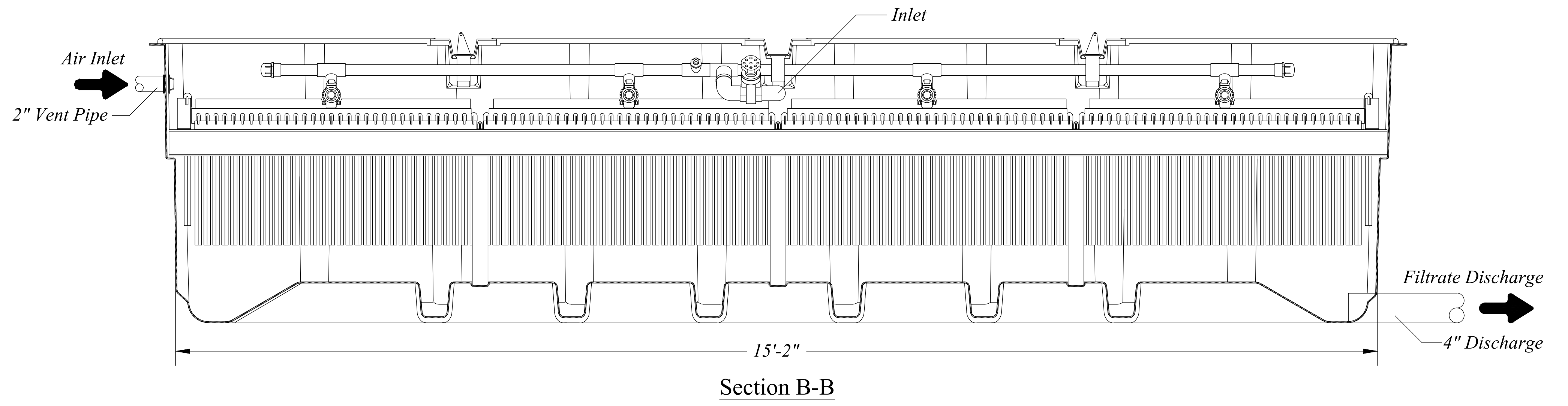


5 ORENCO FILTER POD ADVANTEX AX 100 DETAIL
Scale: (NOT TO SCALE)

ORENCO AUTHORIZED DEALER
JEX ENVIRONMENTAL SOLUTIONS
PO BOX 3603
LOGAN, UT 84323
1-435-753-2051

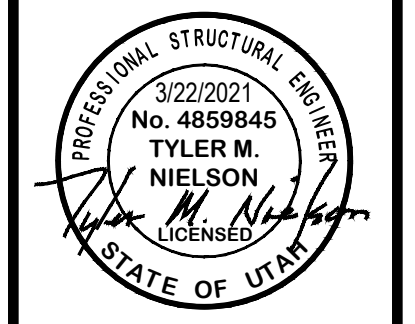


Section A-A



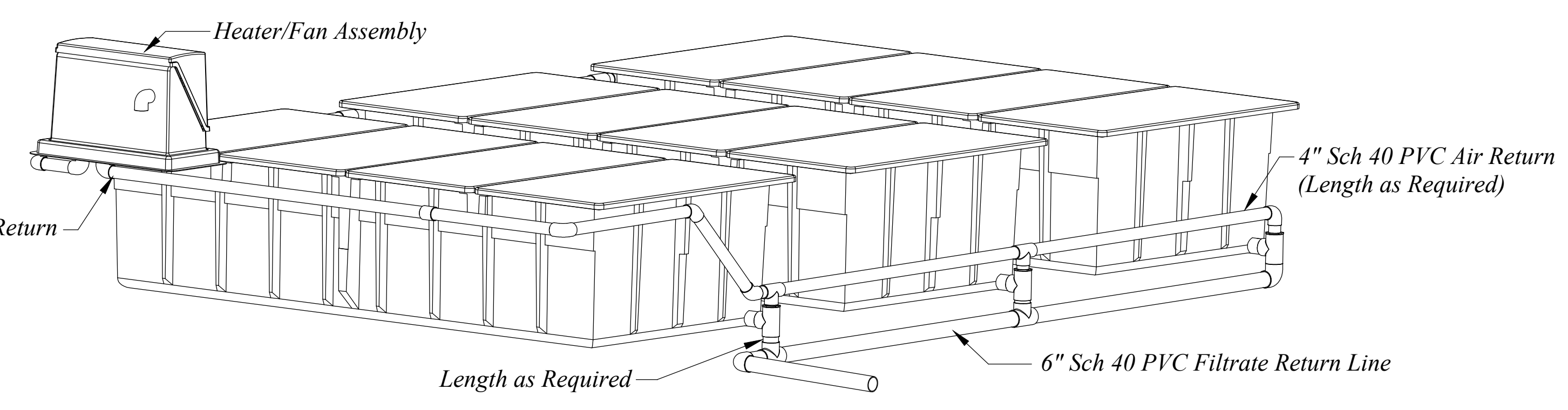
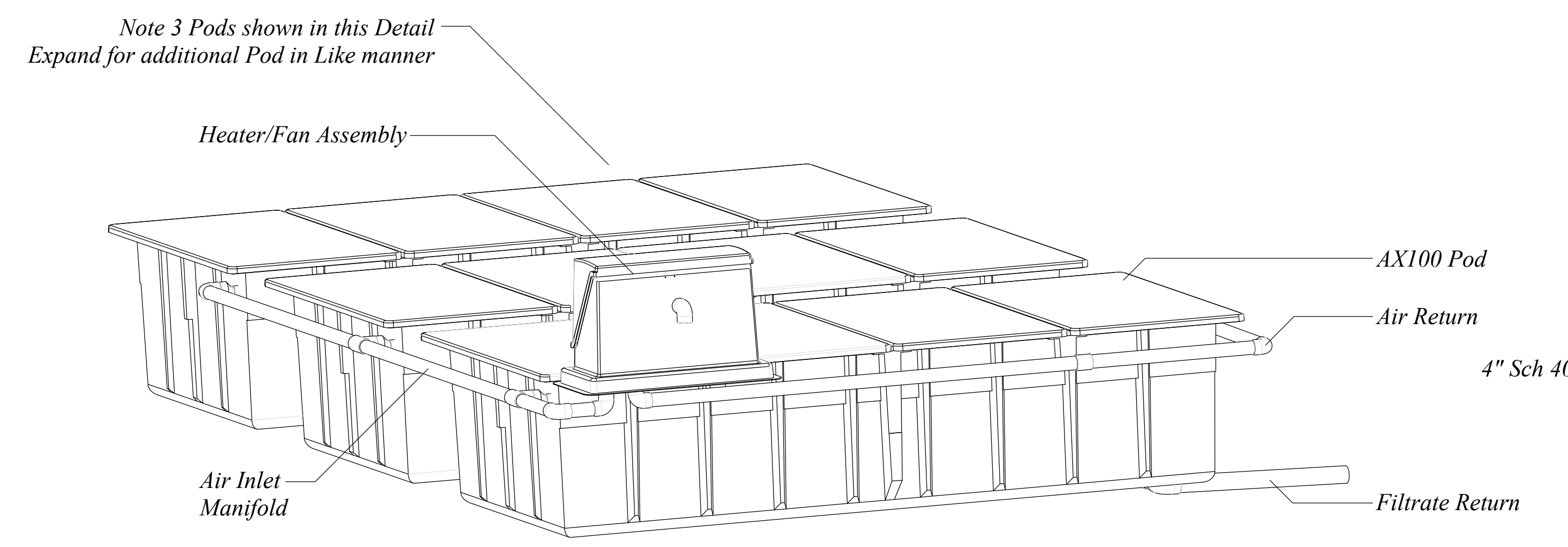
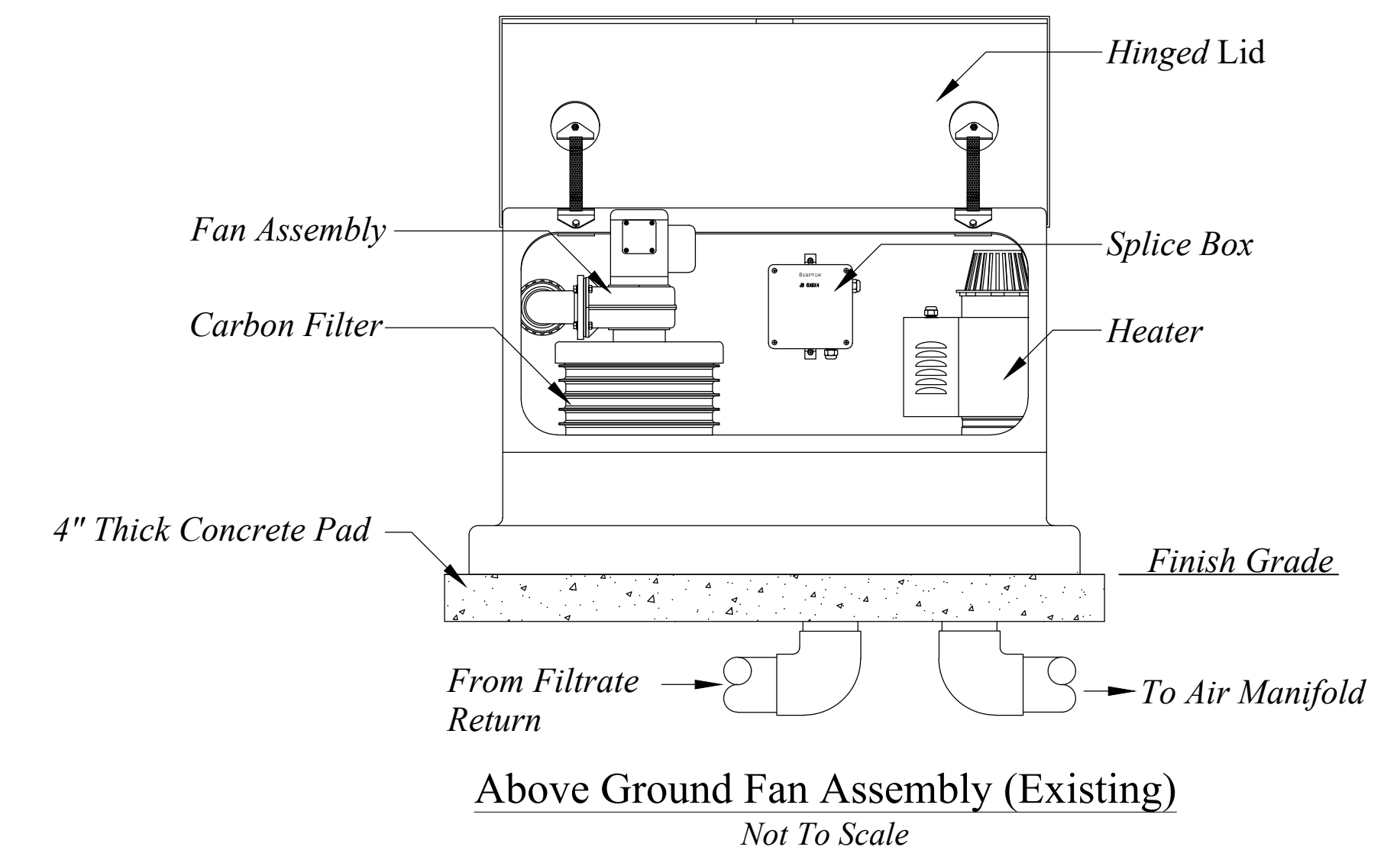
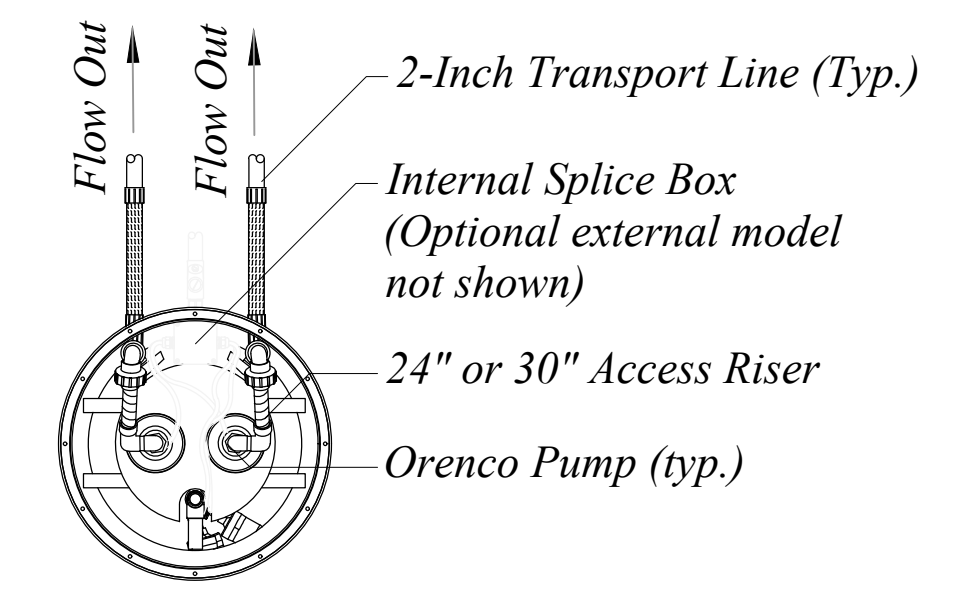
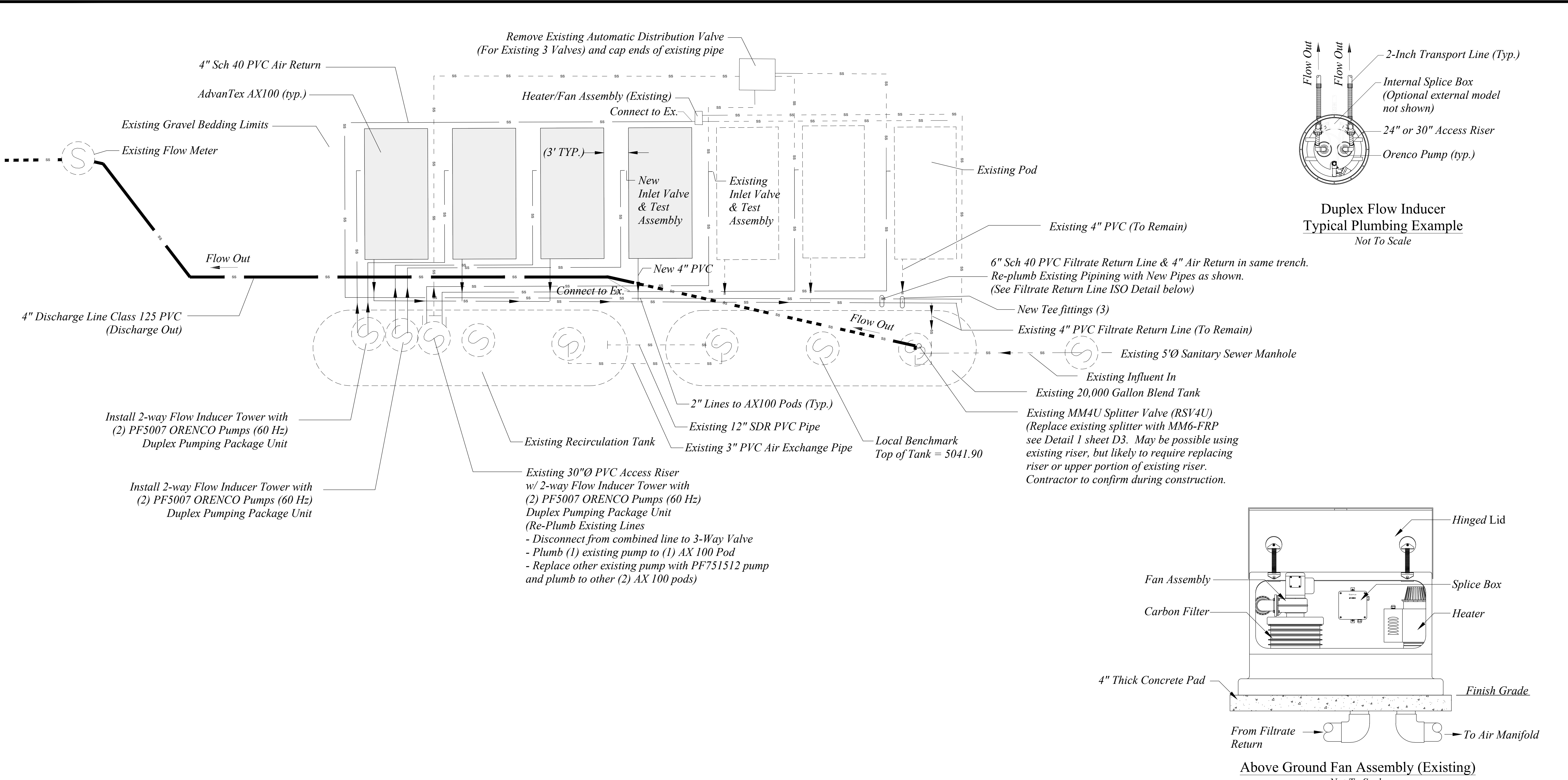
Section B-B

| | | | | |
|------------|-----------------|----------------|---------------|--------------|
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| REVISIONS | DESCRIPTION | DATE | | |
| | | | | |



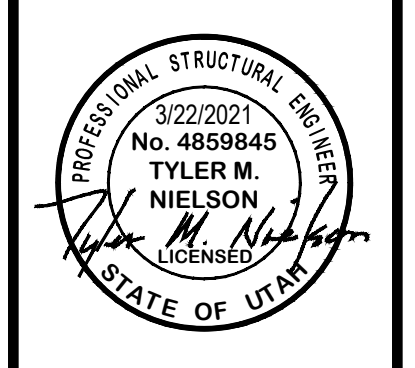
EFFLUENT TREATMENT FACILITY DETAILS
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH





**AdvanTex AX100 System
Cold Weather Venting (Example)**

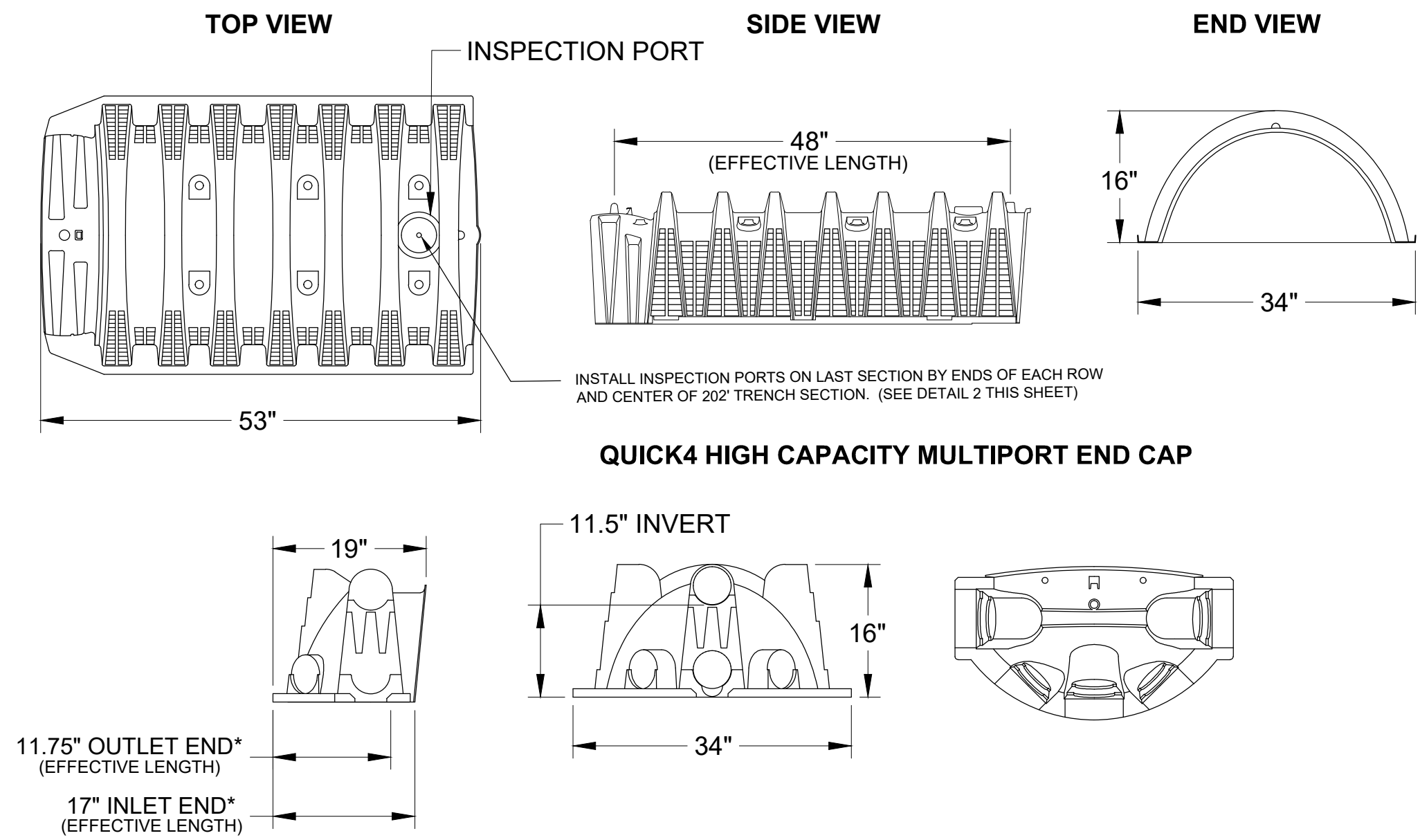
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|---------|--|
| SCALE | NTS |
| DATE | 3/22/2021 |
| DESIGN | BSD/MS |
| DRAWN | BSD/MS |
| CHECKED | TJM |
| DWG. | RY2024 - BAA INVESTMENT, CRIMSON RIDGE DESIGN, CRIMSON RIDGE - COS.DWG |



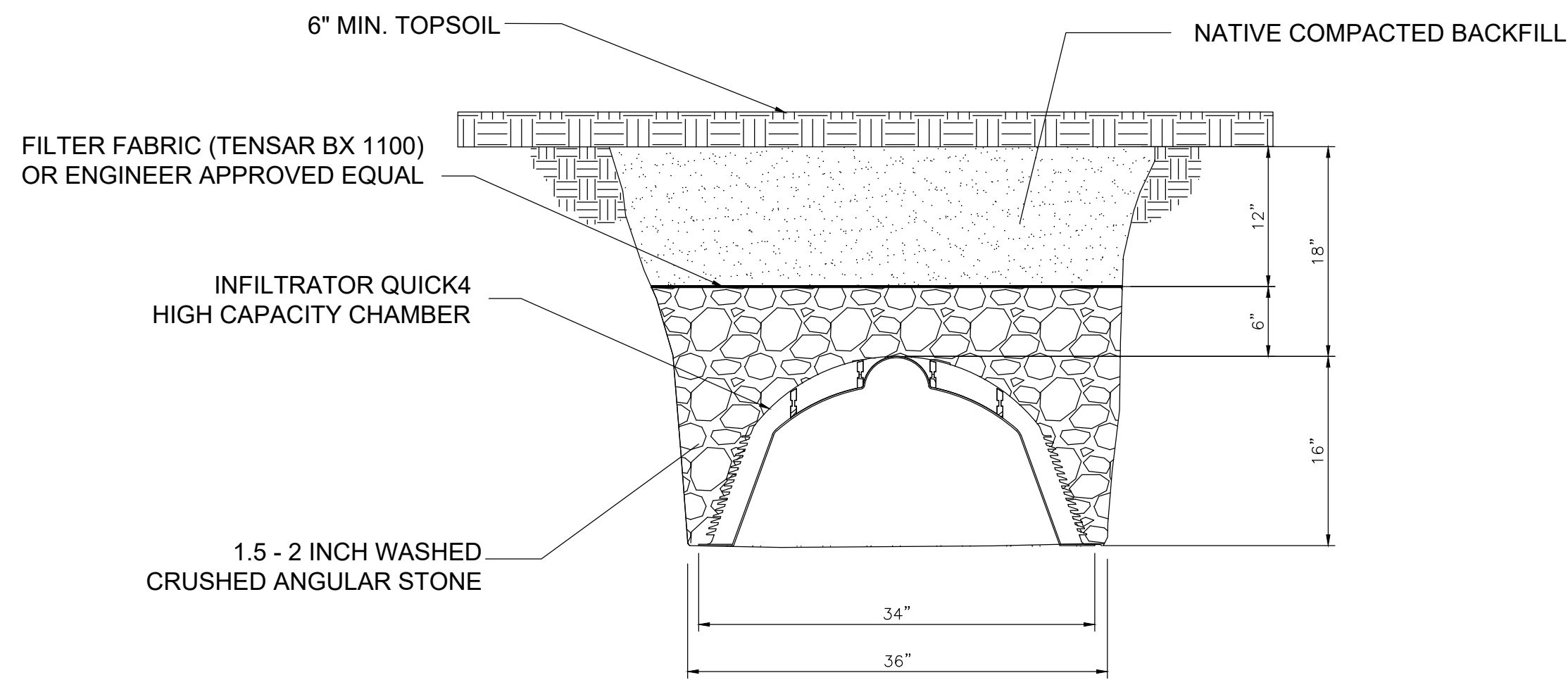
EFFLUENT + AIR POD DETAILS
 THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
 1250 NORTH 5200 EAST
 EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
 CIVIL - LAND PLANNING
 MUNICIPAL - LAND SURVEYING
 5150 SOUTH 375 EAST OGDEN, UT
 OFFICE: 801.476.0202 FAX: 801.476.0066

**INFILTRATOR WATER TECHNOLOGIES
QUICK4 HIGH CAPACITY CHAMBER
PRODUCT SPECIFICATIONS
(NOT TO SCALE)**

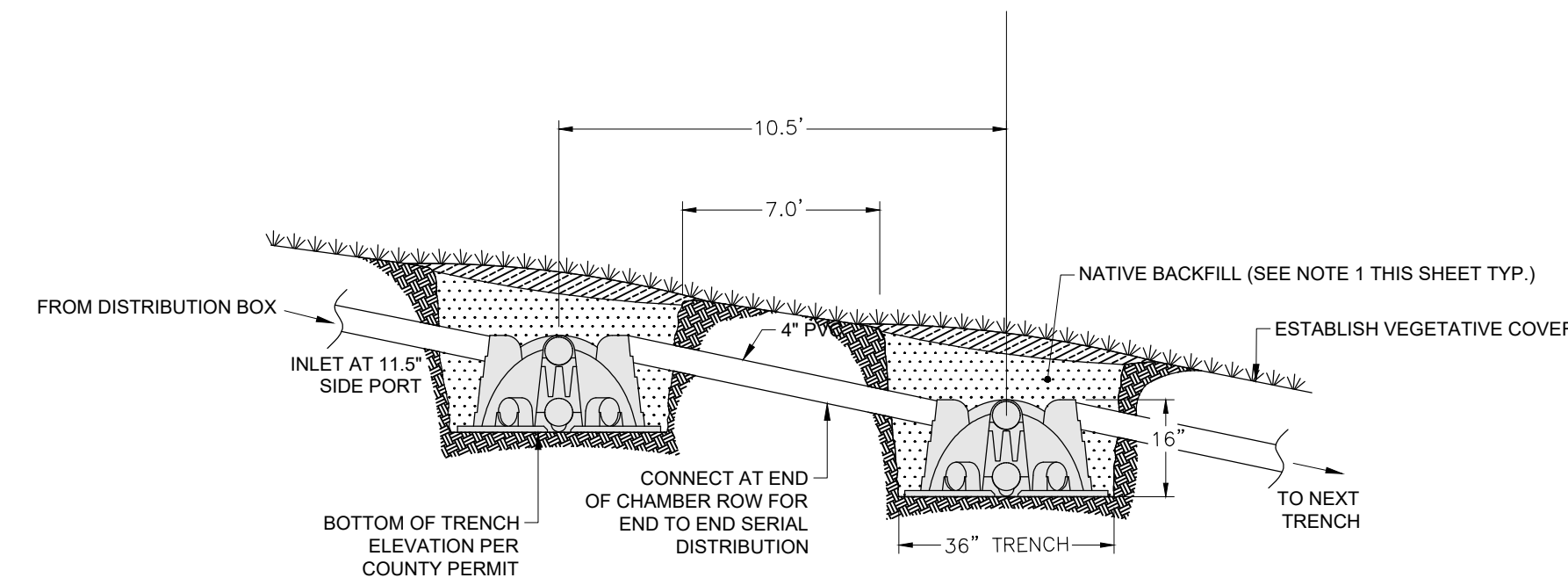


*ALL VIEWS = INSTALLED LENGTHS.



**CHAMBER SYSTEM
TRENCH DETAIL
(NOT TO SCALE)**

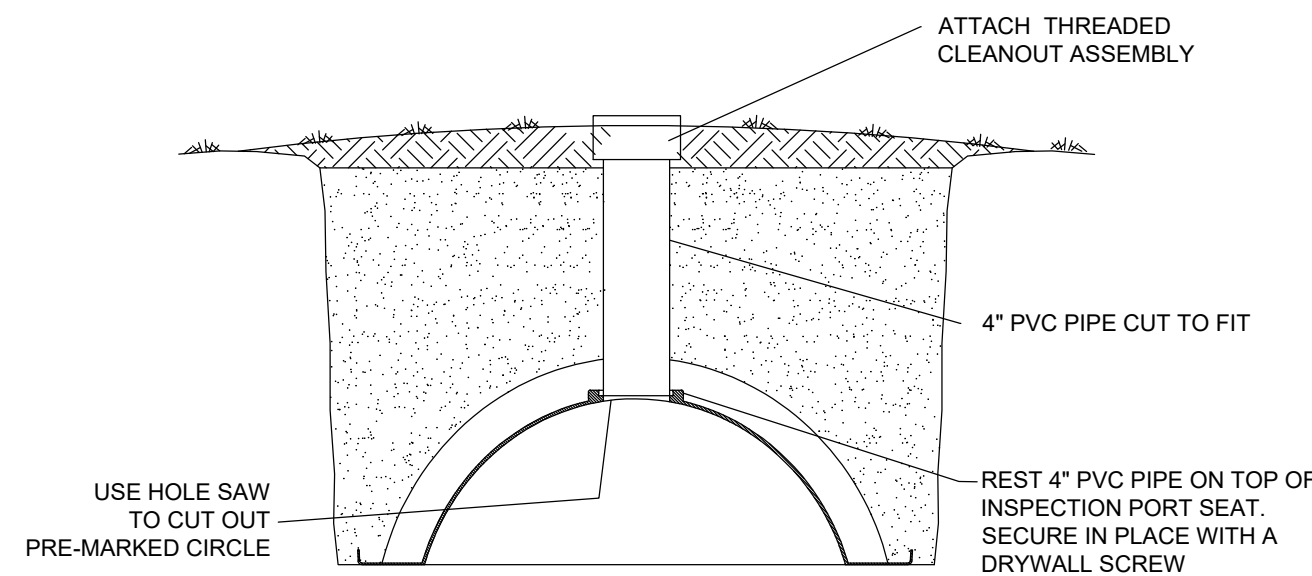
1 INFILTRATION TRENCH DETAIL
Scale: (NOT TO SCALE)



SEE SHEET C7 FOR PLAN VIEW LENGTHS.
CENTER TO CENTER SPACING PER STATE CODE.

NOTES:
1. MAX SIZE ROCK: 3-4". BACKFILL CAREFULLY PLACED (LADLED IN, OR PUSHED IN LIGHTLY FROM THE SIDES). NO DUMPING - IMPACT LOADING.

**INFILTRATOR WATER
TECHNOLOGIES
QUICK4 HIGH CAPACITY
CHAMBER
SERIAL DISTRIBUTION TYPICAL
SECTION VIEW
(NOT TO SCALE)**



**QUICK4 CHAMBERS
INSPECTION PORT
TYPICAL INSTALLATION DETAIL
(Not to Scale)**

2 CHAMBER CLEANOUT DETAIL
Scale: (NOT TO SCALE)

THIS PLAN SET IS BASED UPON THE EXPECTED FLOWS AND WASTE STRENGTHS FOR THE PURPOSE OF SERVING THE RESERVE AT CRIMSON RIDGE SUBDIVISION.

EXPECTED INFLUENT CHARACTERISTICS:

| TYPE | AVERAGE mg/L | WEEKLY PEAK mg/L | RARELY EXCEEDS mg/L |
|------|--------------|------------------|---------------------|
| BOD | 150 | 250 | 500 |
| TSS | 40 | 75 | 150 |
| TKN | 65 | 75 | 150 |
| FOG | 20 | 25 | 30 |

ONCE THE EXPANDED FACILITY IS OPERATIONAL, THE WASTE STRENGTHS AND FLOWS TO THE FACILITY SHOULD BE MONITORED. IF ANY OF THE INFLUENT WASTE STRENGTHS OR FLOW EXCEED THOSE LISTED IN THE DESIGN ABOVE, MEASURES SHOULD BE TAKEN TO REDUCE THESE PARAMETERS TO THOSE LISTED ON THIS PLAN SET. OTHERWISE ADDITIONAL TREATMENT CAPACITY AND PLANT EXPANSION WILL BE NECESSARY.

DO NOT DISPOSE OF TOXINS OR CHEMICALS INTO SYSTEM. EXAMPLES: WAX STRIPPER FOR LINOLEUM, CARPET SHAMPOO, RESTAURANT DEGREASERS AND CLEANSERS, AND OTHER WASTE PRODUCTS OR OTHER TOXINS.

BASED ON PERC RATE 53 MIN/IN
APPLICATION RATE 0.4 GAL/SF PER TABLE 1 PAGE 8 GEOFLOW WASTE WATER DESIGN, INSTALLATION & MAINTENANCE GUIDELINES.

ABSORPTION APPLICATION RATES
Q = 5.0 MIN/IN / (53 MIN/IN * 0.5) = 0.68 GAL/SF

EXISTING TRENCH FIELD - PHASE 1
7,177 LF

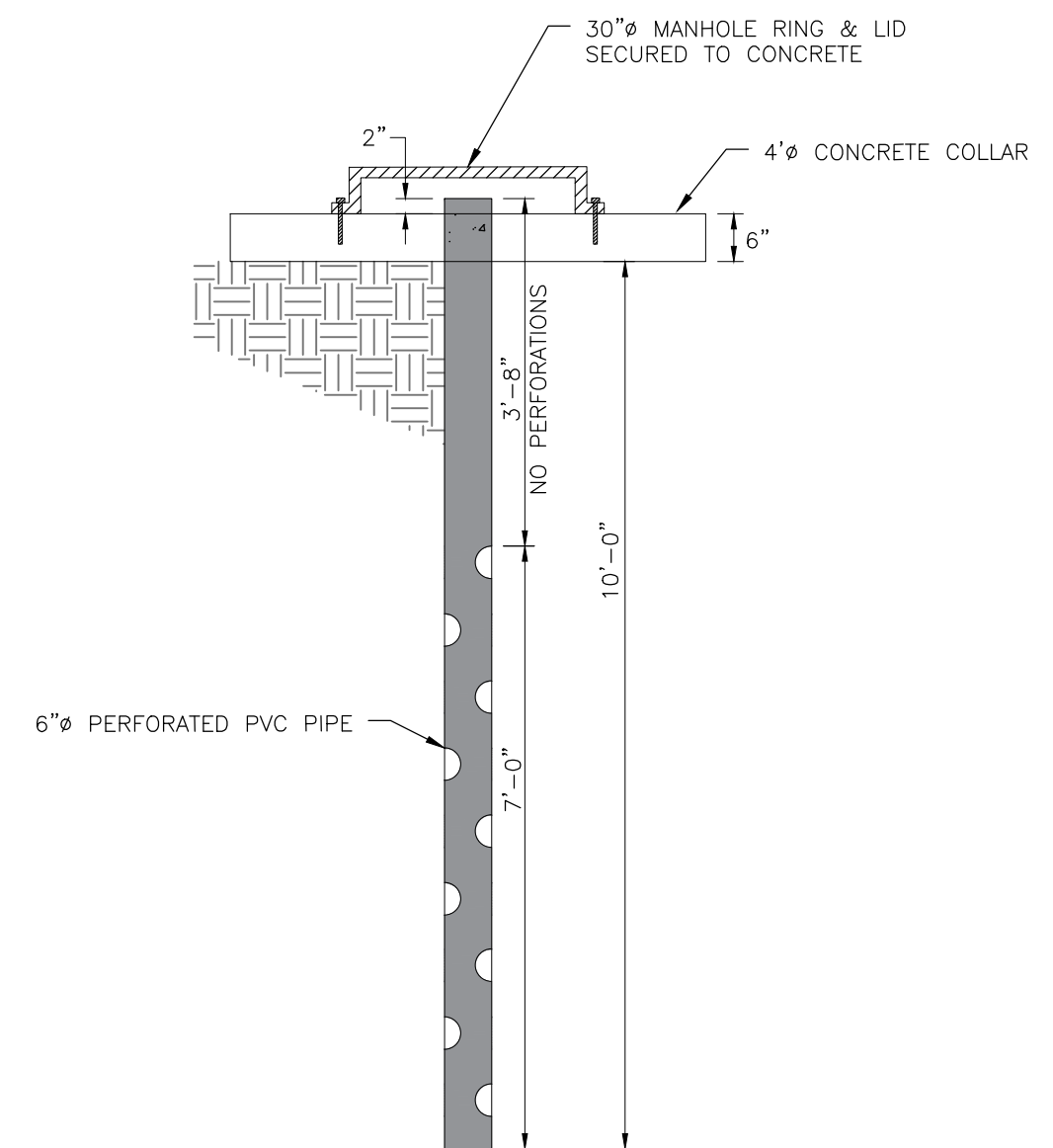
ABSORPTION FIELD TOTAL BUILD OUT (INCLUDES EX. PHASE 1, PHASE 2 & HARBOR VIEW ESTATES SUBDIVISION)
76 LOTS (TOTAL BUILD OUT)
76 LOTS @ 400 GAL/LOT/DAY = 30,400 GAL/DAY

APPROXIMATE APPLICATION RATES ABSORPTION FIELD
Q = 5.0 MIN/IN / (53 MIN/IN * 0.5) = 0.68 GAL/SF
(BASED ON ORIGINAL PHASE 1 DESIGN REQUIREMENTS)

REQUIRED ABSORPTION FIELD AREA TRENCH
30,400 GAL/DAY / 0.68 GAL/SF = 44,706 SF

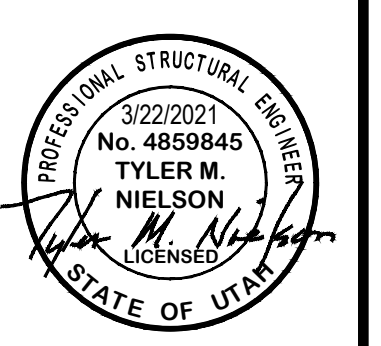
REQUIRED ABSORPTION TRENCH LENGTH
44,706 SF / 3' = 14,901 LF OF TRENCH REQUIRED

14,933 LF OF TRENCH PROVIDED



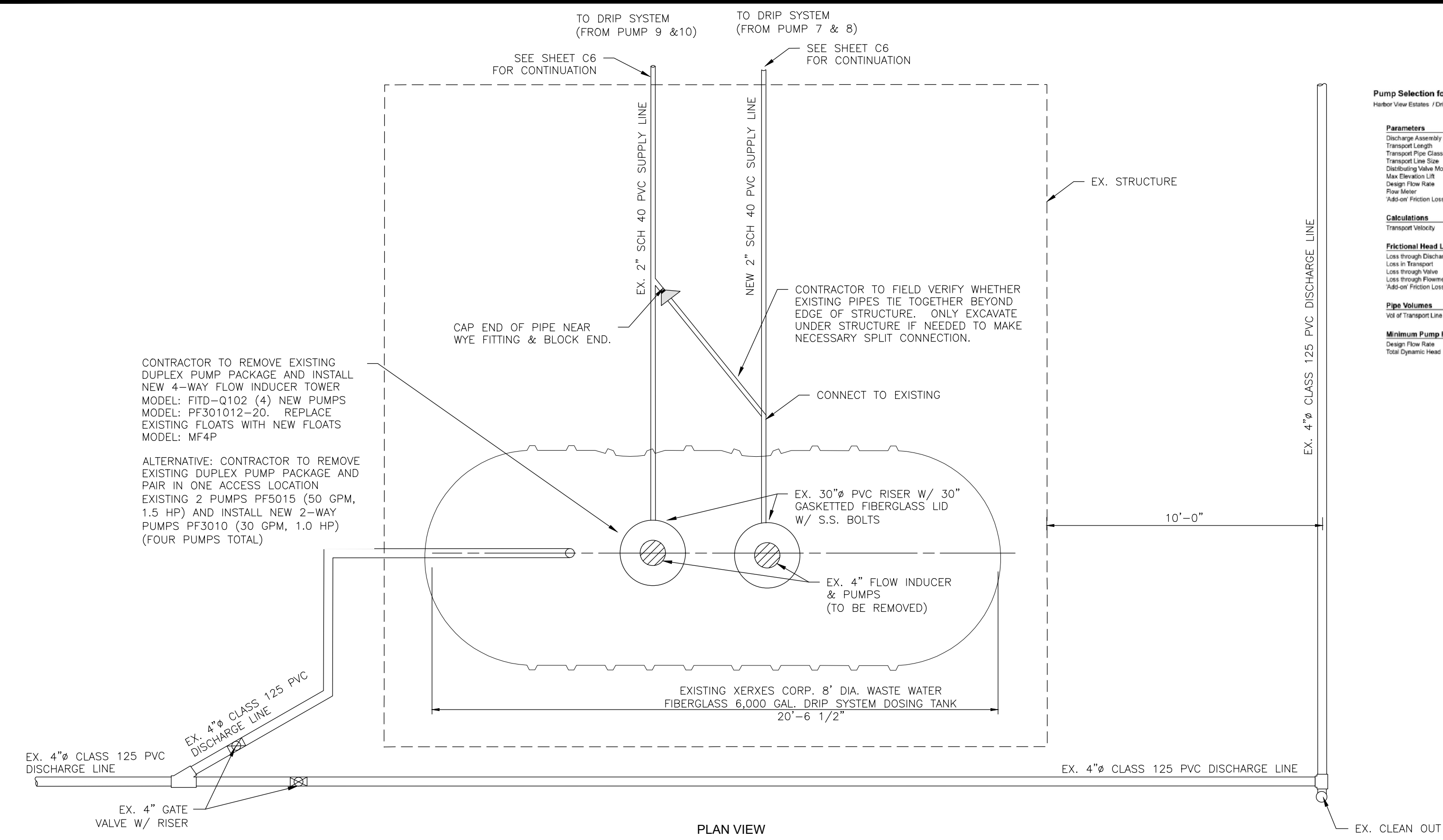
3 MONITORING / SAMPLING WELL
Scale: (NOT TO SCALE)

| REVISIONS | DATE | DESCRIPTION |
|-----------|------|-------------|
| | | |
| | | |
| | | |



EFFLUENT TREATMENT - ABSORPTION BED DETAILS
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL - LAND PLANNING
MUNICIPAL - LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801.476.0202 FAX: 801.476.0066



Pump Selection for a Non-Pressurized System - Commercial Project
Harbor View Estates / Drip Field Calculations

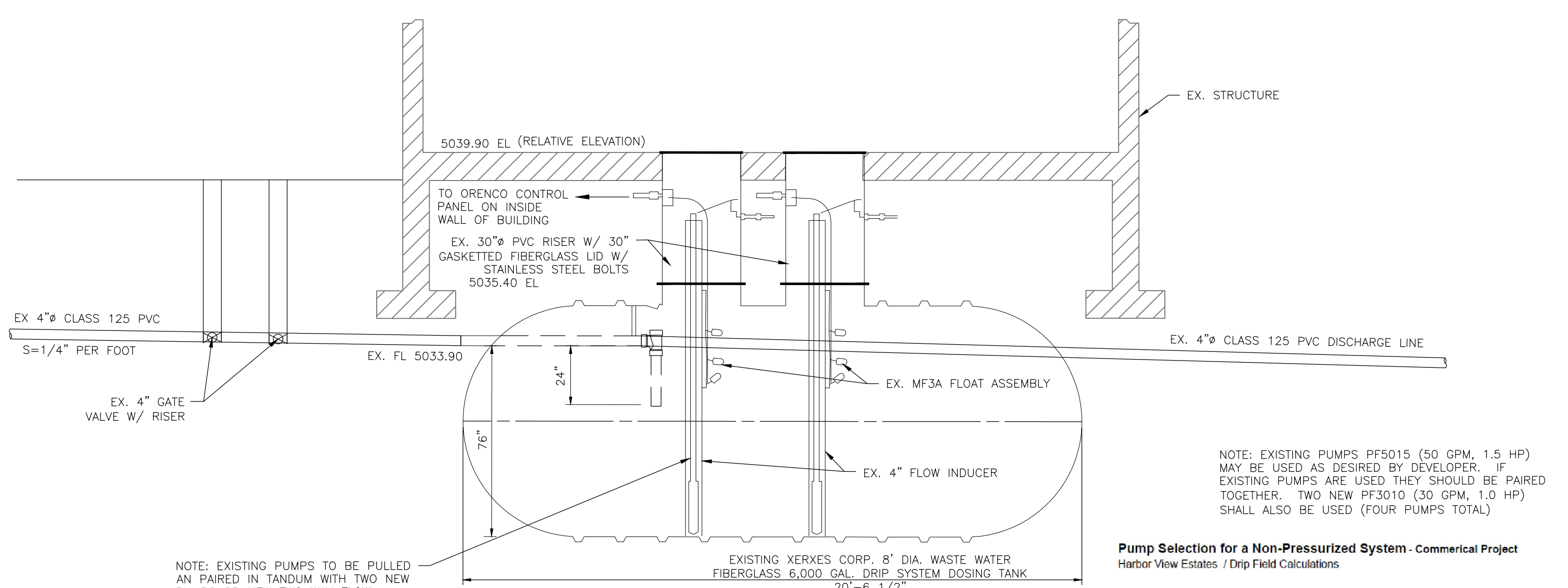
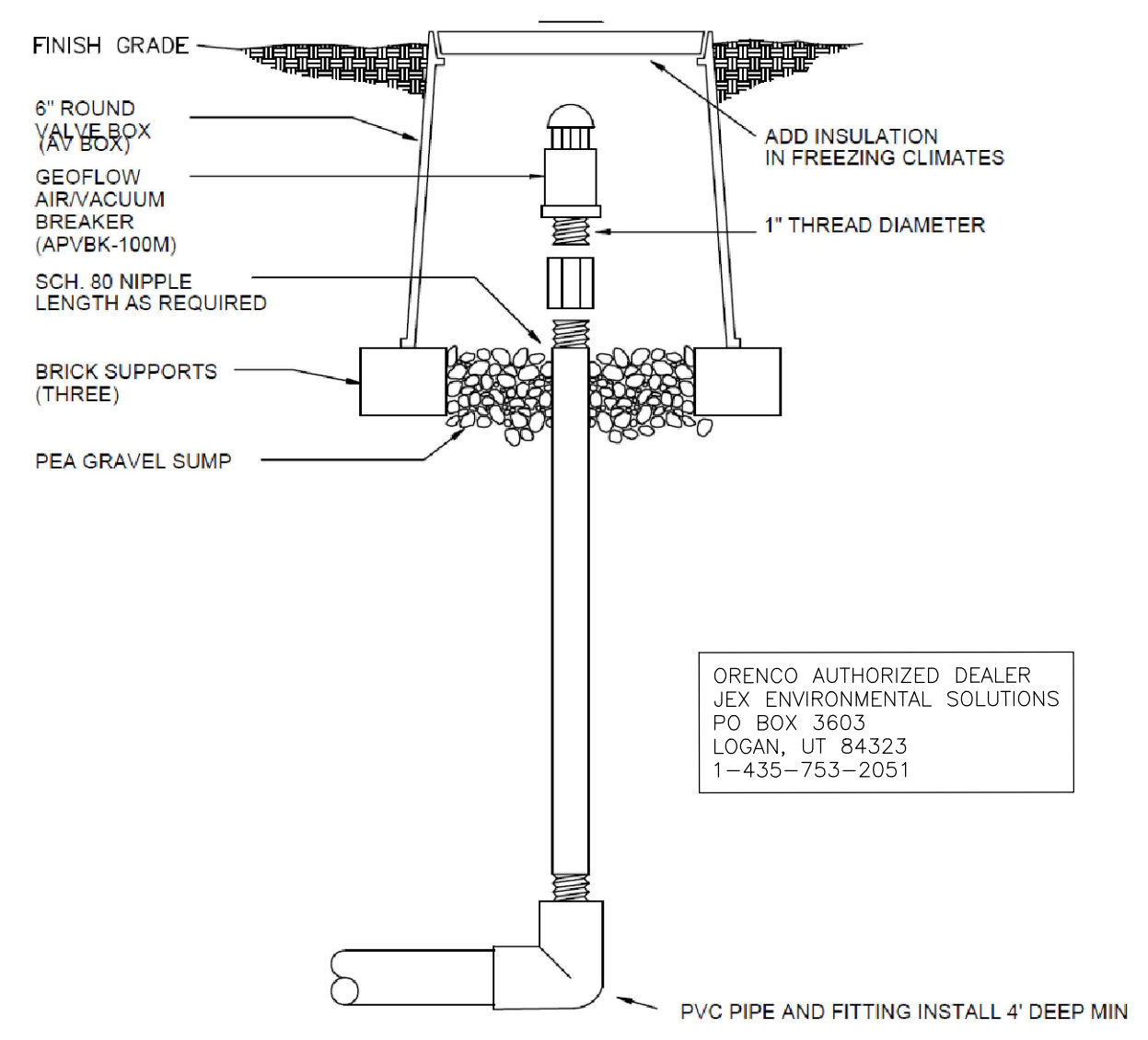
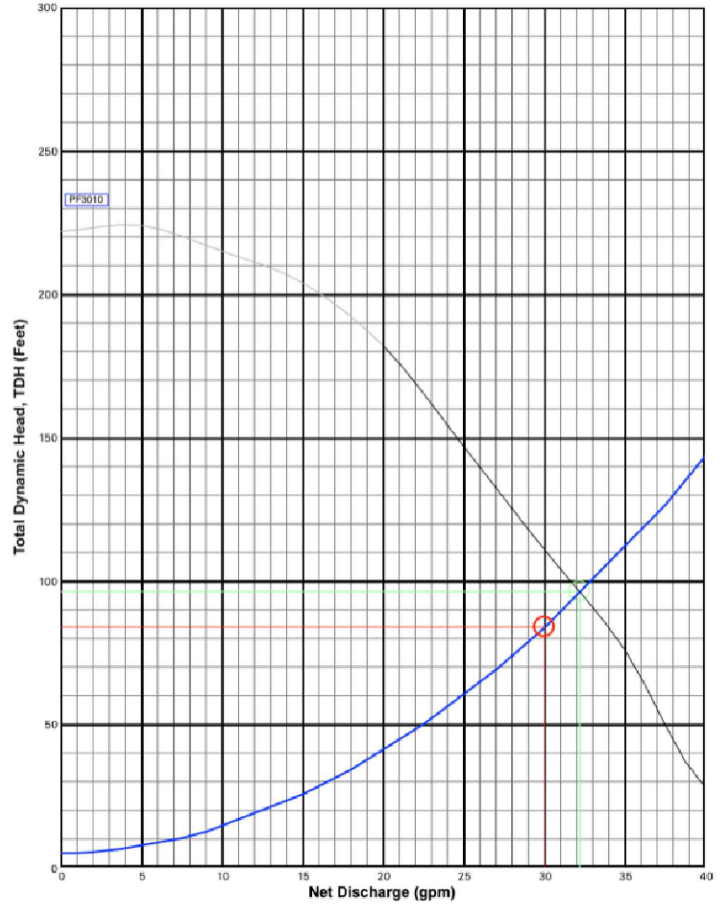
| Parameters | |
|--------------------------|-------------|
| Discharge Assembly Size | 2.00 inches |
| Transport Length | 2000 feet |
| Transport Pipe Class | 40 |
| Transport Line Size | 2.00 inches |
| Distributing Valve Model | None |
| Min. Elevation Lift | 5 feet |
| Design Flow Rate | 30 gpm |
| Flow Meter | None |
| Absorpt. Friction Losses | 48 feet |

| Calculations | |
|--------------------|---------|
| Transport Velocity | 2.9 fps |

| Frictional Head Losses | |
|--------------------------|-----------|
| Loss through Discharge | 1.8 feet |
| Loss in Transport | 31.1 feet |
| Loss through Valve | 0.0 feet |
| Loss through Flowmeter | 0.0 feet |
| Absorpt. Friction Losses | 48.0 feet |

| Pipe Volumes | |
|-----------------------|------------|
| Vol of Transport Line | 348.6 gals |

| Minimum Pump Requirements | |
|---------------------------|-----------|
| Design Flow Rate | 30.0 gpm |
| Total Dynamic Head | 83.9 feet |



Pump Selection for a Non-Pressurized System - Commercial Project
Harbor View Estates / Drip Field Calculations

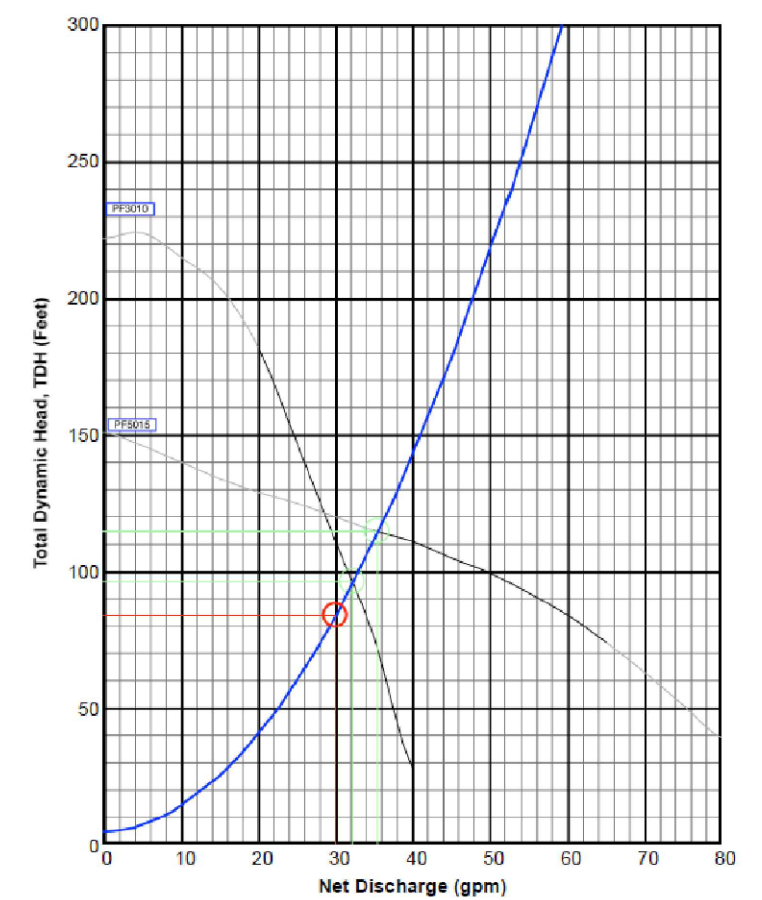
| Parameters | |
|--------------------------|-------------|
| Discharge Assembly Size | 2.00 inches |
| Transport Length | 2000 feet |
| Transport Pipe Class | 40 |
| Transport Line Size | 2.00 inches |
| Distributing Valve Model | None |
| Min. Elevation Lift | 5 feet |
| Design Flow Rate | 30 gpm |
| Flow Meter | None |
| Absorpt. Friction Losses | 48 feet |

| Calculations | |
|--------------------|---------|
| Transport Velocity | 2.9 fps |

| Frictional Head Losses | |
|--------------------------|-----------|
| Loss through Discharge | 1.8 feet |
| Loss in Transport | 31.1 feet |
| Loss through Valve | 0.0 feet |
| Loss through Flowmeter | 0.0 feet |
| Absorpt. Friction Losses | 48.0 feet |

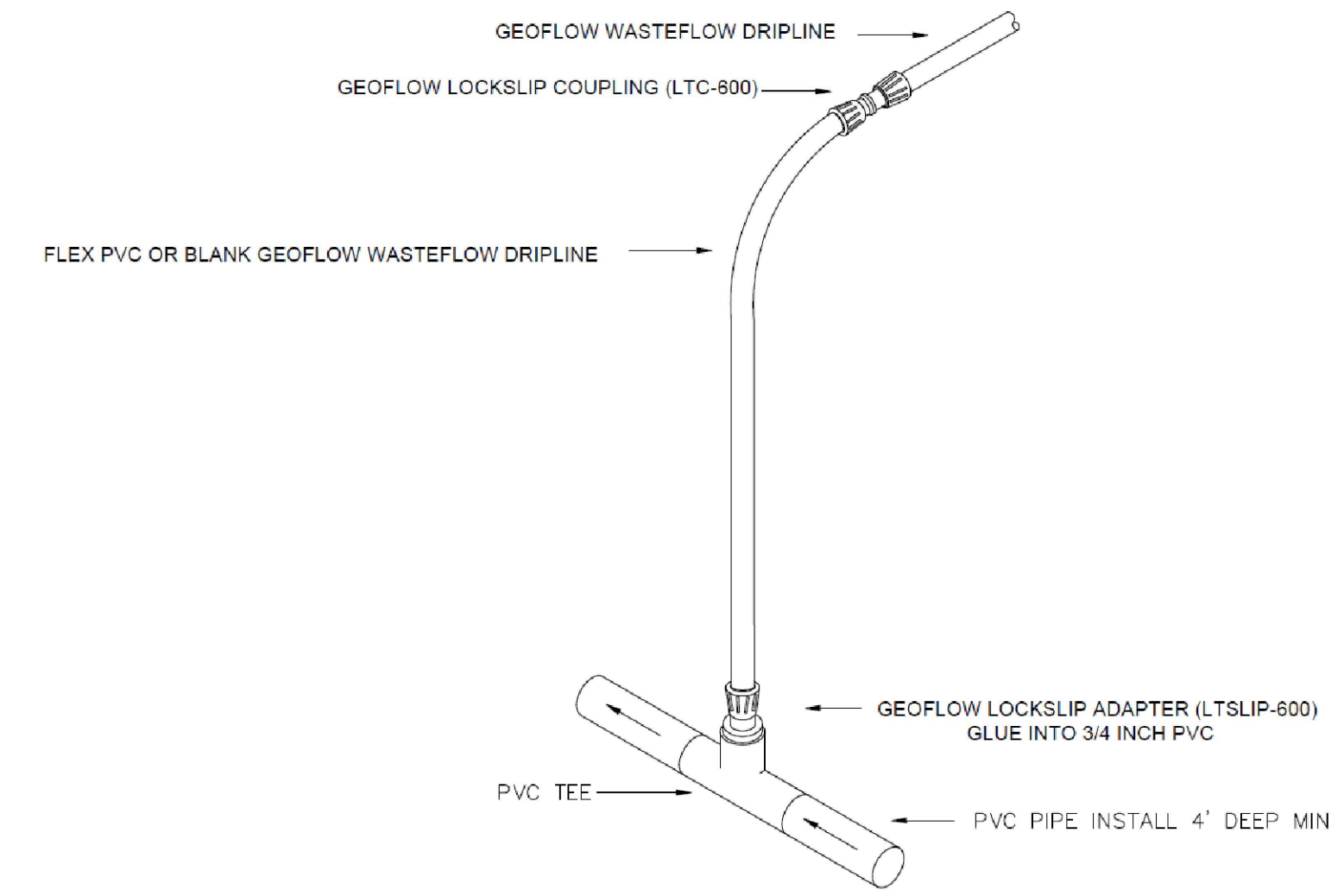
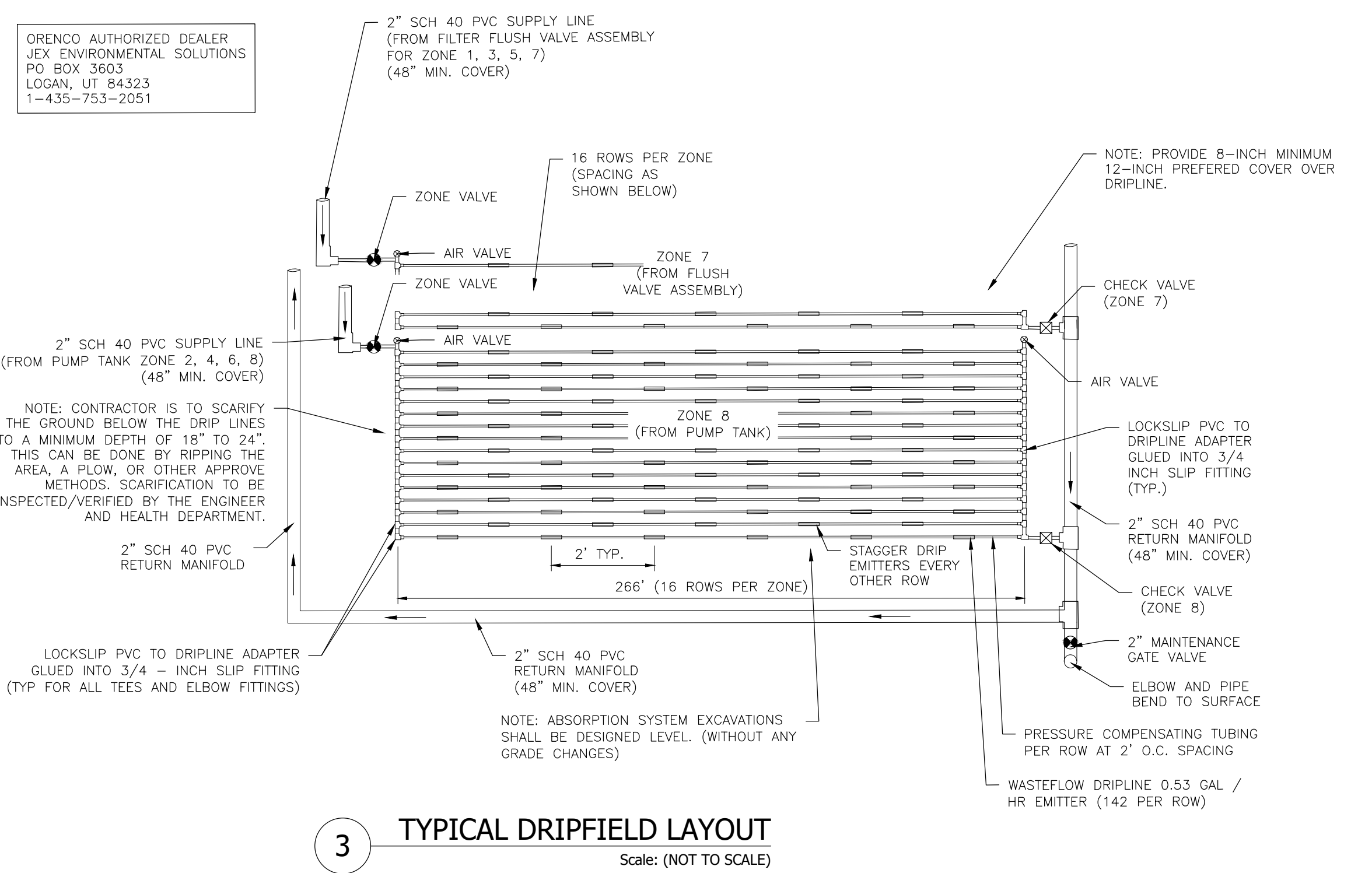
| Pipe Volumes | |
|-----------------------|------------|
| Vol of Transport Line | 348.6 gals |

| Minimum Pump Requirements | |
|---------------------------|-----------|
| Design Flow Rate | 30.0 gpm |
| Total Dynamic Head | 83.9 feet |

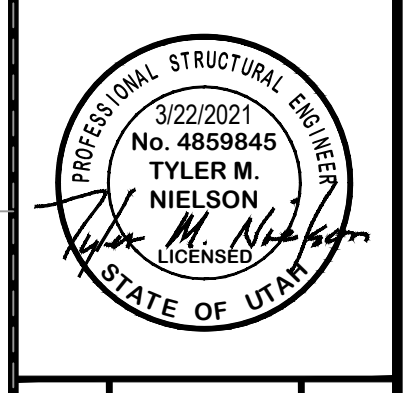


PumpData

| | |
|---|--------------------|
| PF3010 High Head Effluent Pump 30 GPM, 1.0HP 230V 1Ø 60HZ, 200/460V 3Ø 60HZ | System Curve |
| PF5015 High Head Effluent Pump 50 GPM, 1.5HP 230V 1Ø 60HZ, 200V 3Ø 60HZ | Pump Curve |
| | Pump Optimal Range |
| | Operating Point |
| | Design Point |



| SCALE | NTS |
|---------|-----------|
| DATE | 3/22/2021 |
| DESIGN | BSO/MS |
| DRAWN | BSO/MS |
| CHECKED | TJM |



EFFLUENT TREATMENT FACILITY DRIP SYSTEM DETAILS

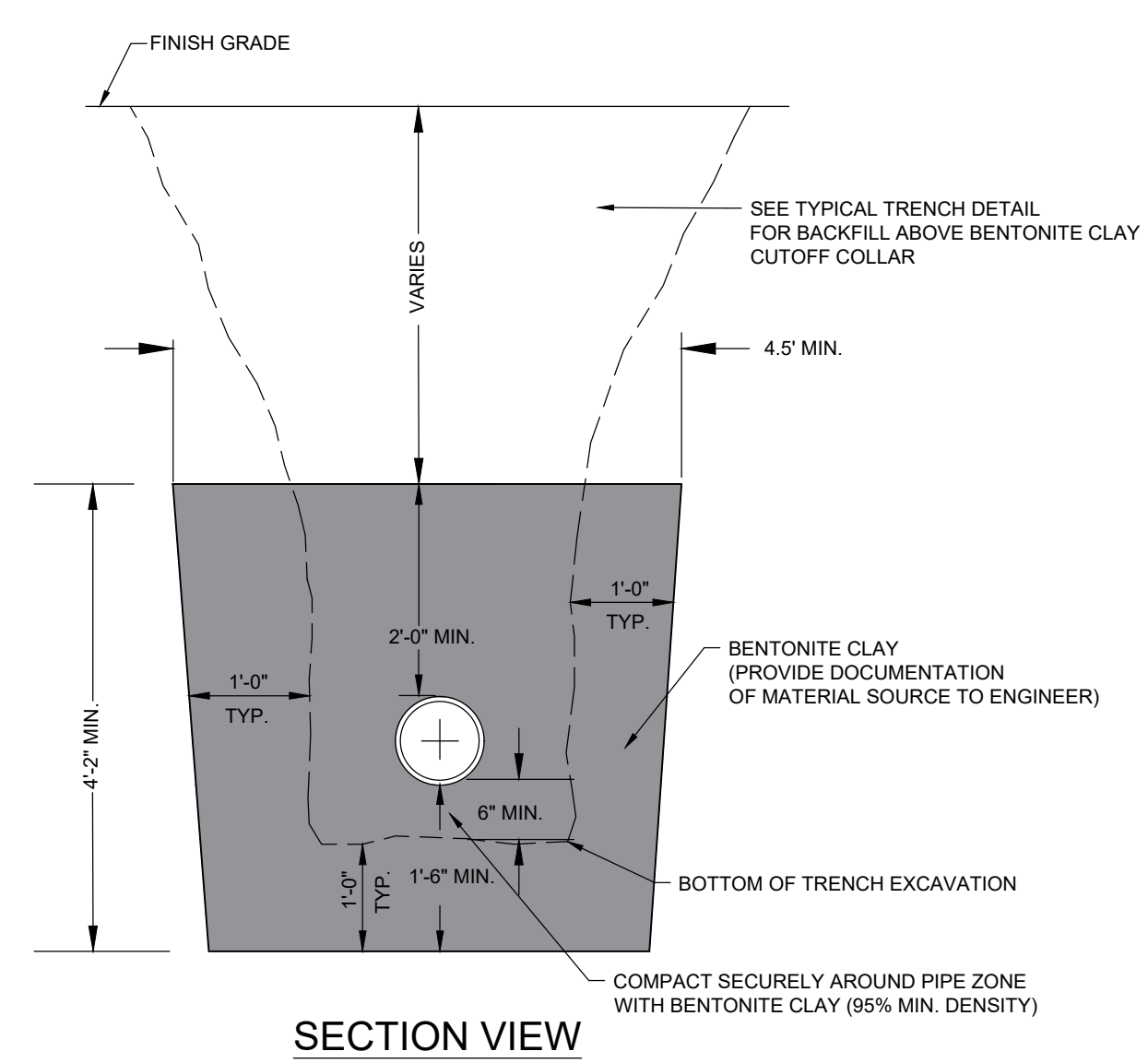
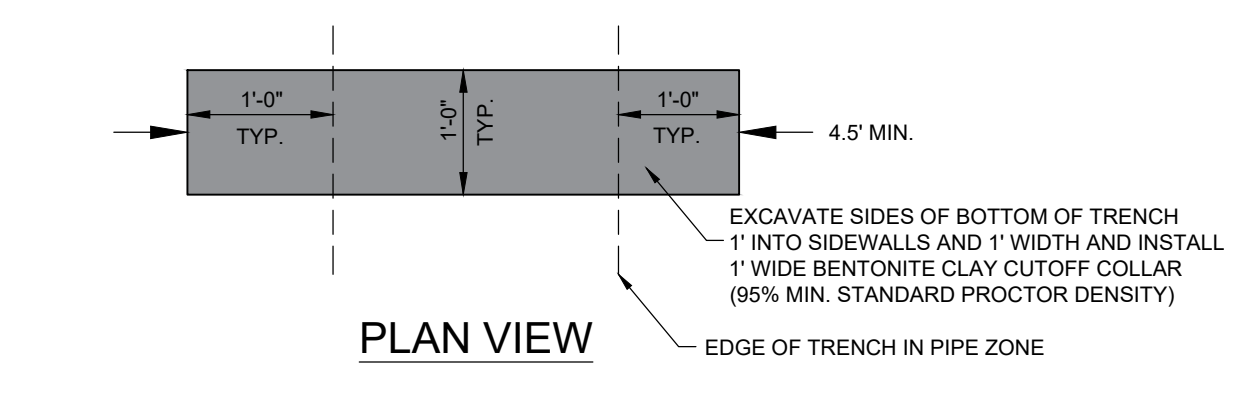
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2

1250 NORTH 5200 EAST

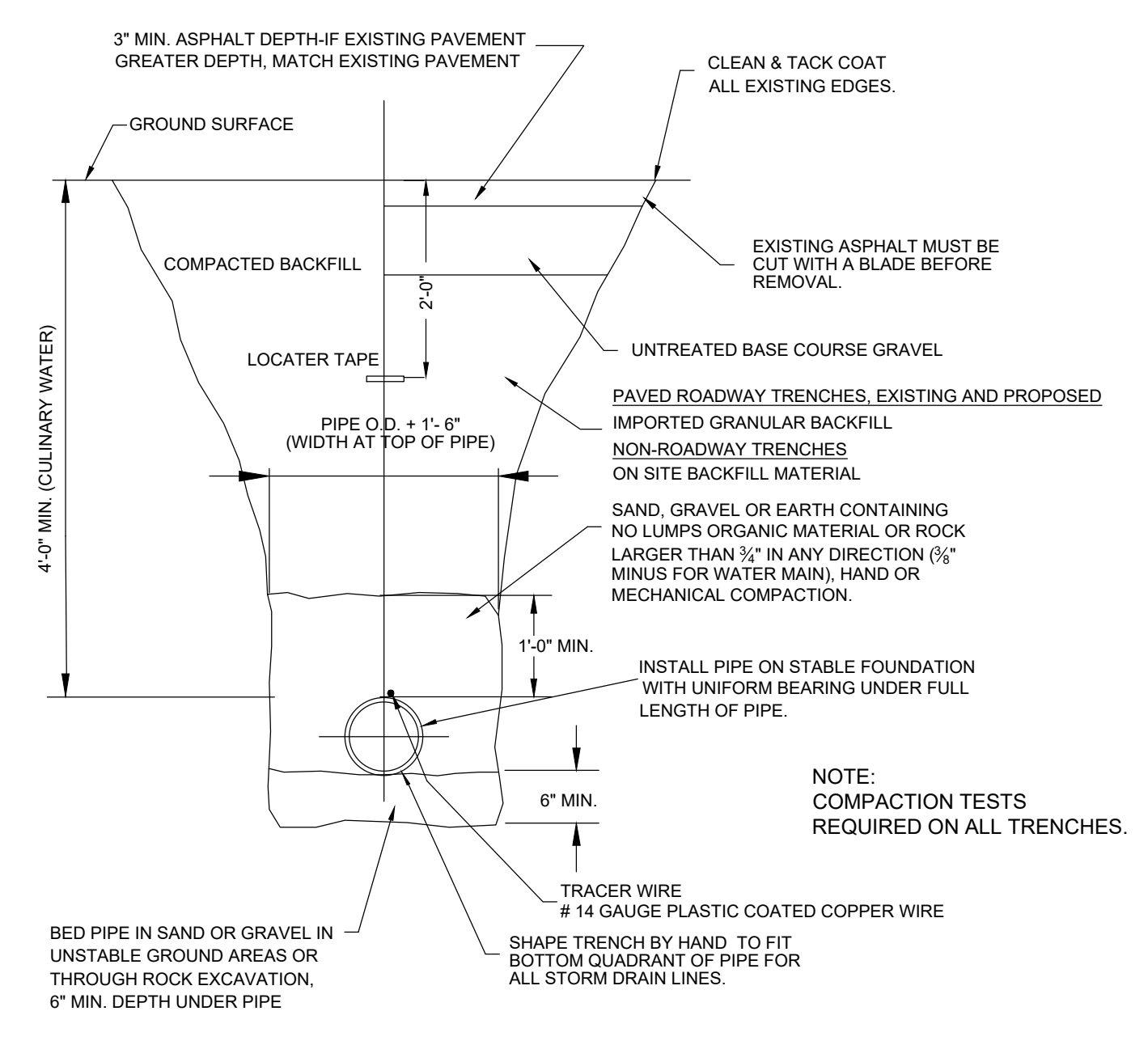
EDEN, WEBER COUNTY, UTAH



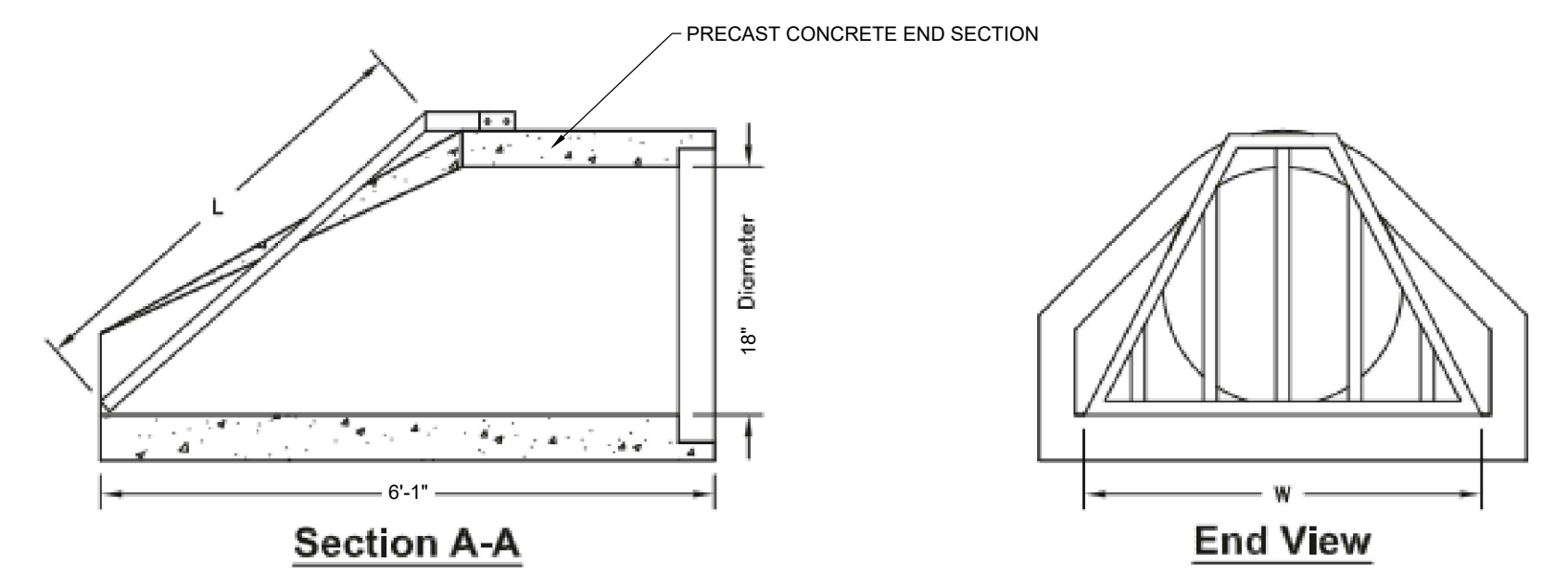
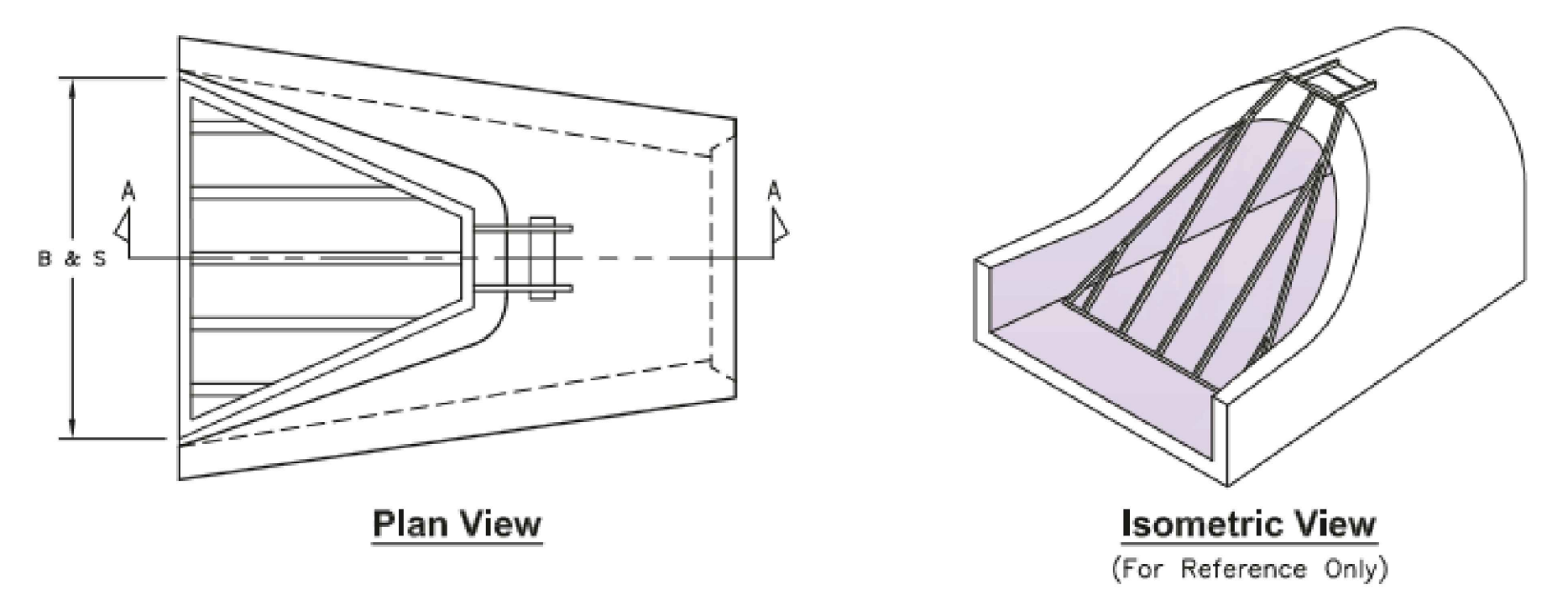
D6



1 CUTOFF TRENCH DETAIL
Scale: (NOT TO SCALE)

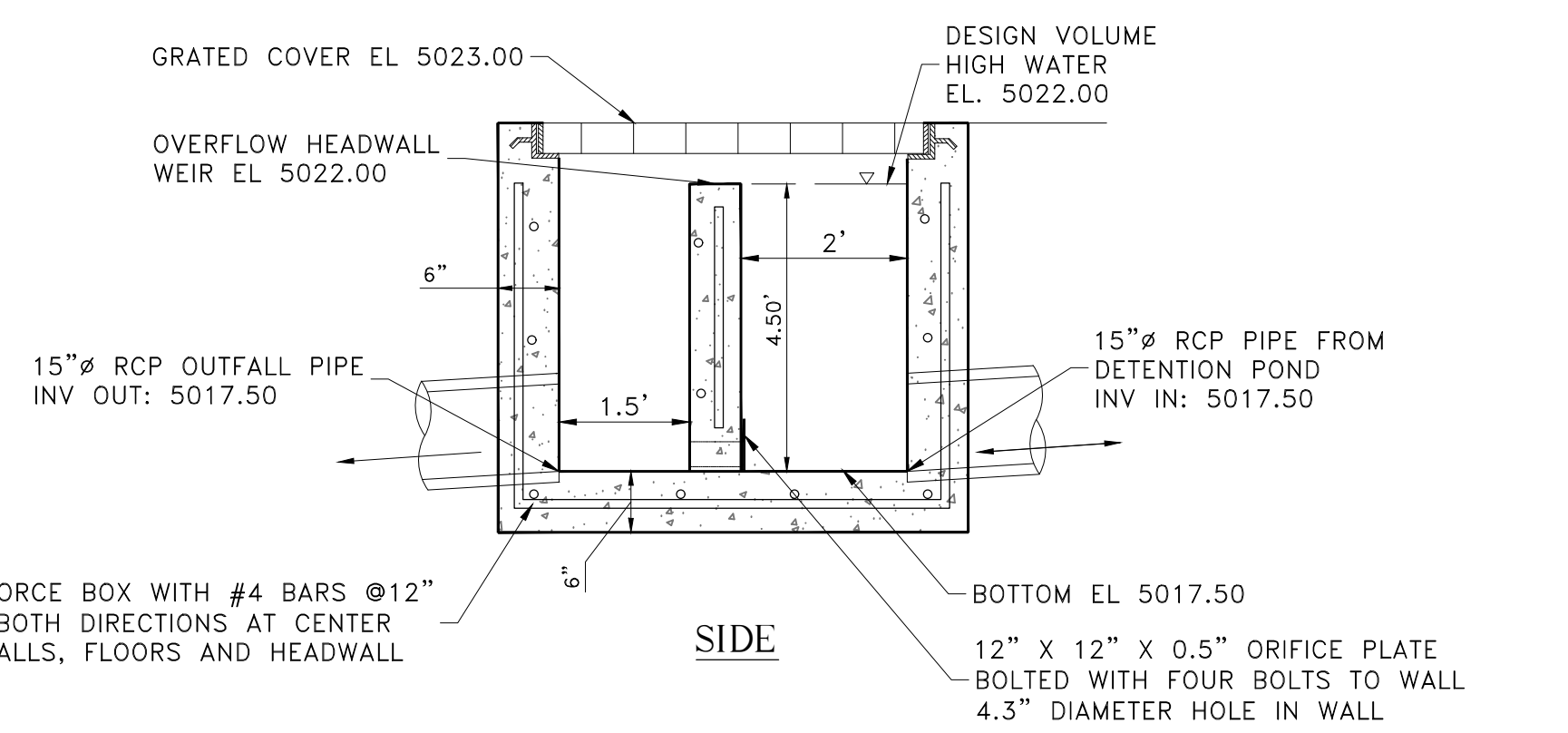
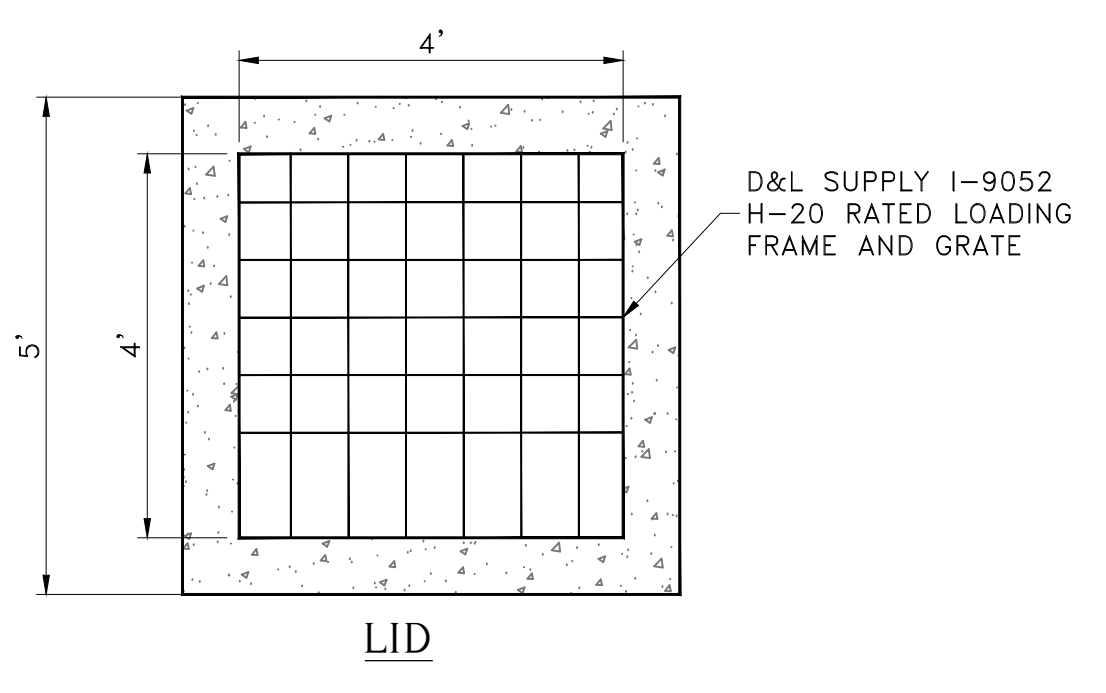
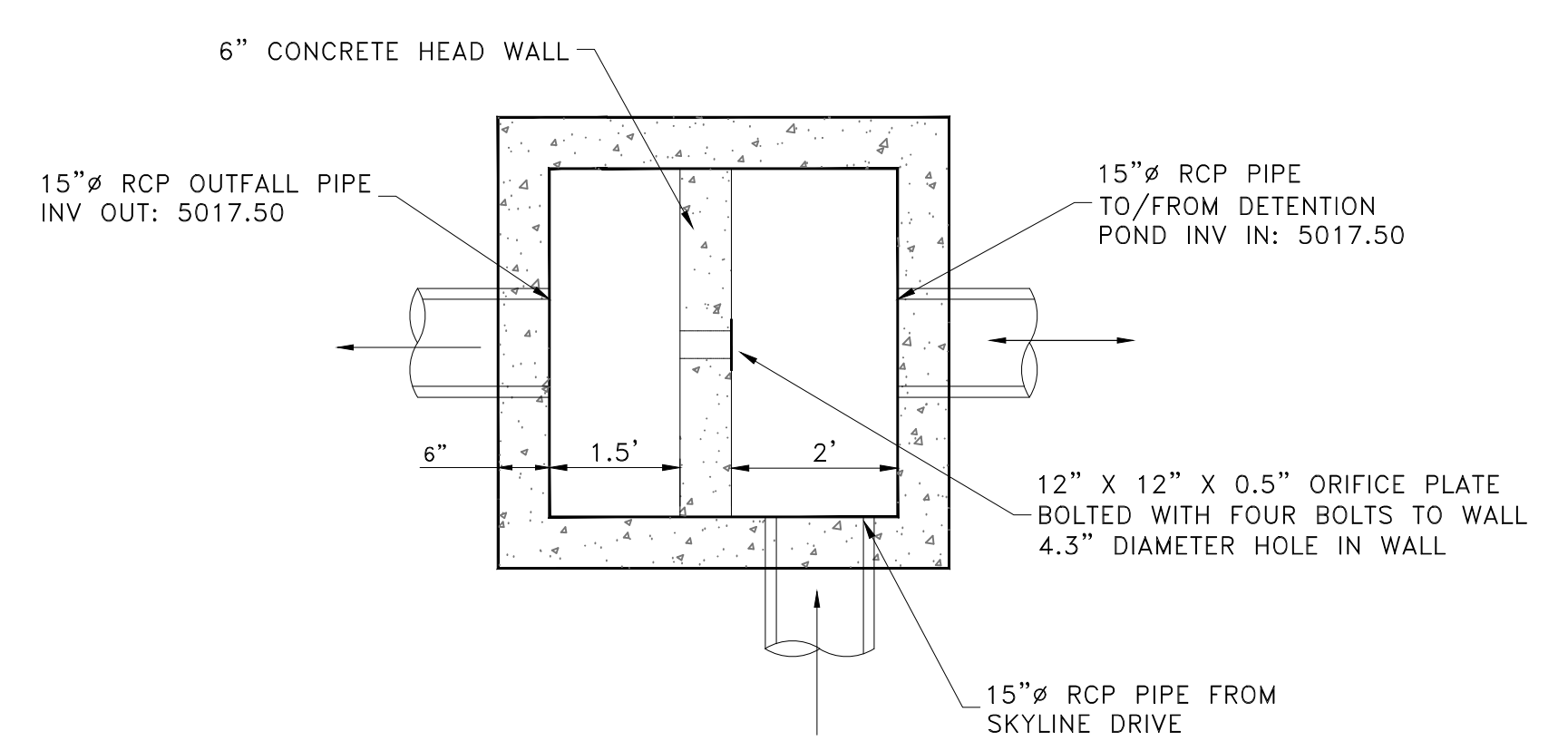


TYPICAL TRENCH DETAIL
Scale: (NOT TO SCALE)

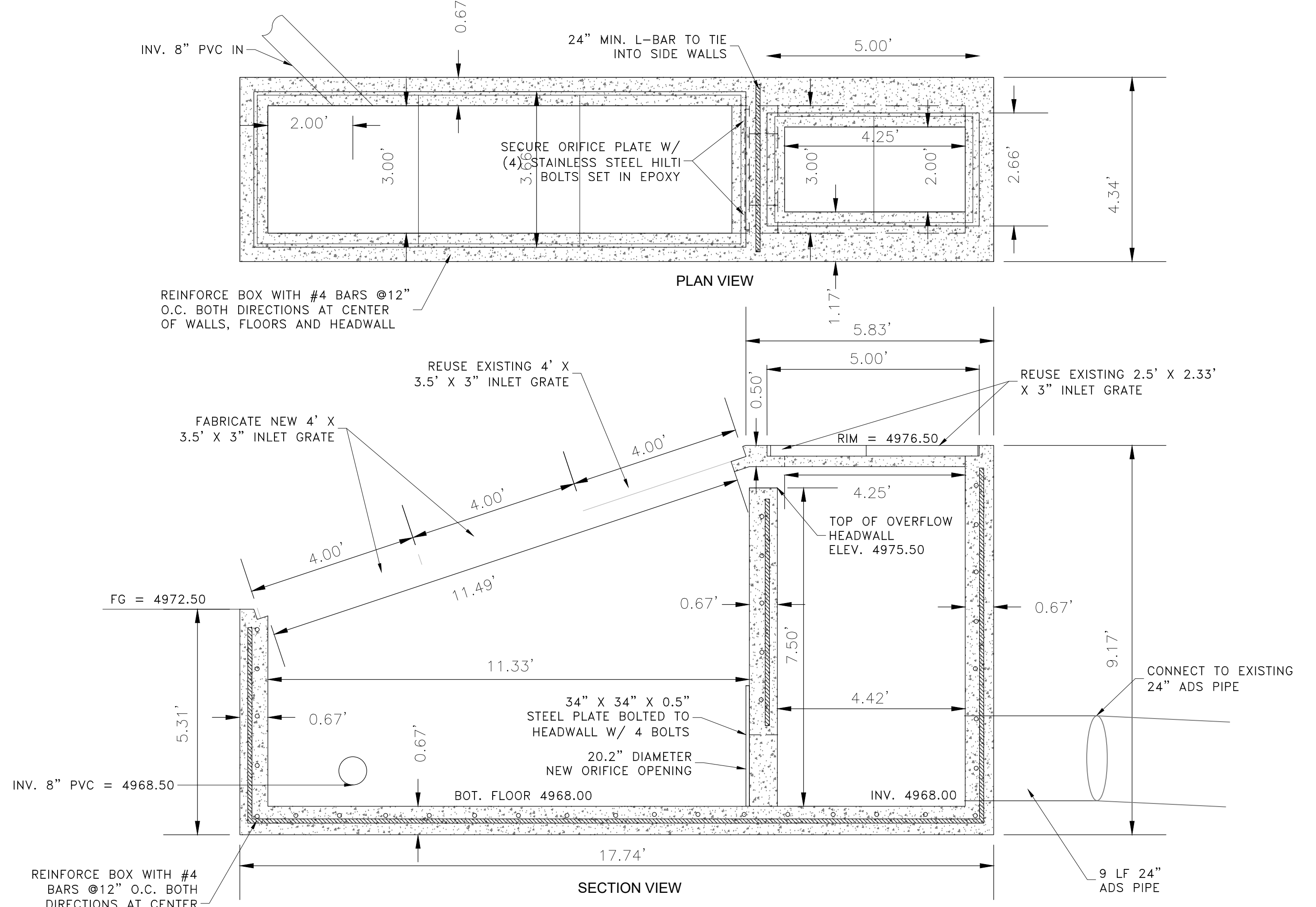


| Pipe Diameter | Trash Rack Width W (in.) | Trash Rack Length L (in.) | Total # of Bars B | Bar Spacing S (in.) |
|---------------|--------------------------|---------------------------|-------------------|---------------------|
| 12" | 21.00" | 30.00" | 3 | 6.0" |
| 15" | 28.00" | 32.00" | 3 | 6.5" |
| 18" | 33.00" | 34.00" | 3 | 8.0" |

2 FLARED END SECTION
OR ENGINEER APPROVED EQUAL Scale: (NTS)



3 4' x 4' STORM DRAIN OUTLET CONTROL BOX (UPPER DETENTION POND)
Scale: (NOT TO SCALE)



4 OUTLET CONTROL BOX (LOWER DETENTION POND)
Scale: (NOT TO SCALE)

MISC. DETAILS

THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
EDEN, WEBER COUNTY, UTAH

GARDNER ENGINEERING
CIVIL-LAND PLANNING
MUNICIPAL-LAND SURVEYING

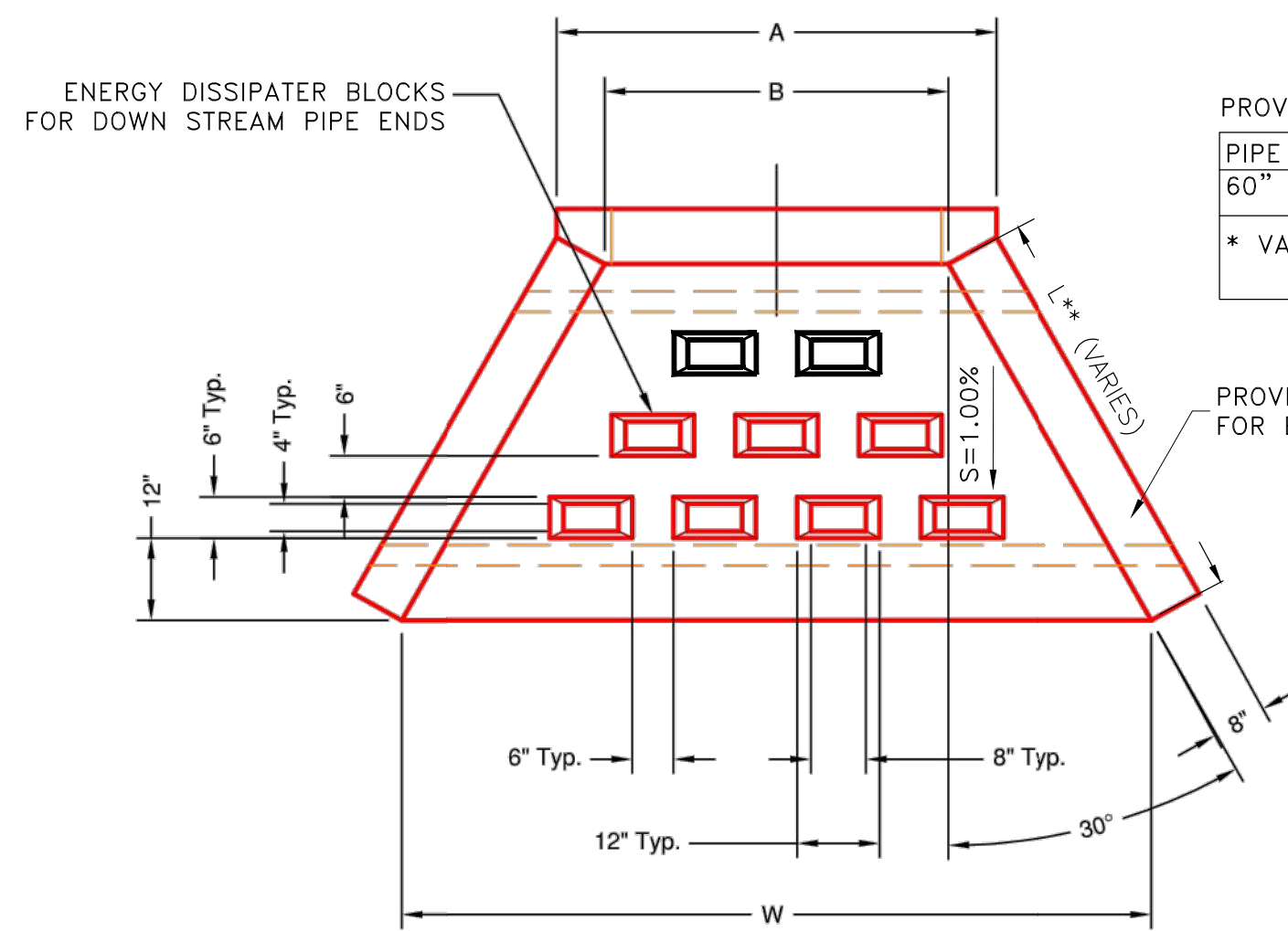
5150 SOUTH 375 EAST OGDEN, UT
OFFICE: 801-476-0202 FAX: 801-476-0066

SCALE: NTS
DATE: 3/22/2021
DESIGN: BBD/MS
DRAWN: BBD/MS
CHECKED: TMM
DWG: 815208 - 884 INVESTMENT CRIMSON RIDGE DESIGN (PWS) CRIMSON RIDGE - COS.DWG

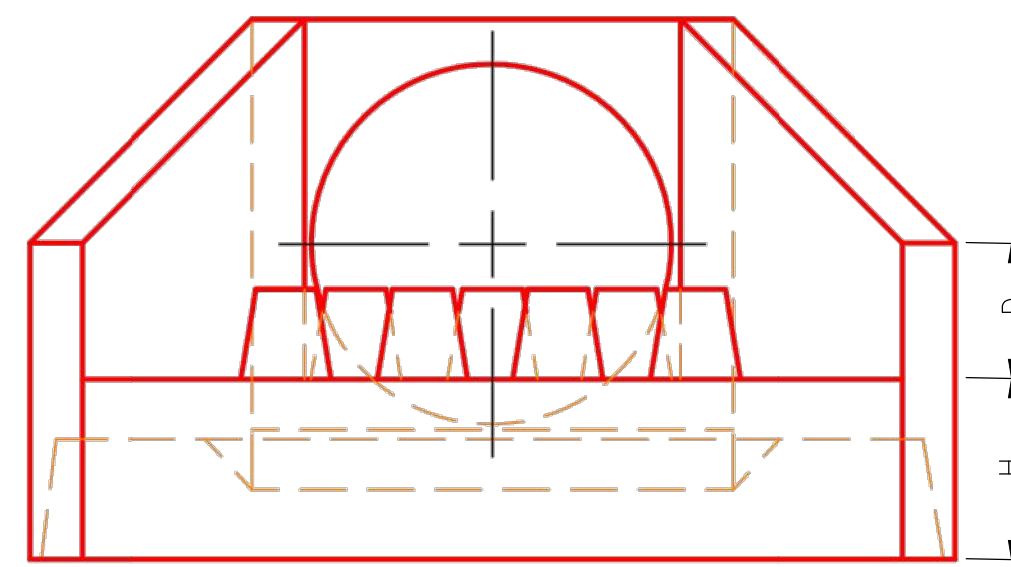
REVISIONS
DATE DESCRIPTION

PROFESSIONAL STRUCTURAL ENGINEER
3/22/2021 No. 4859845
TYLER M. NIELSON
LICENSED
STATE OF UTAH

D7



PLAN VIEW



FRONT VIEW

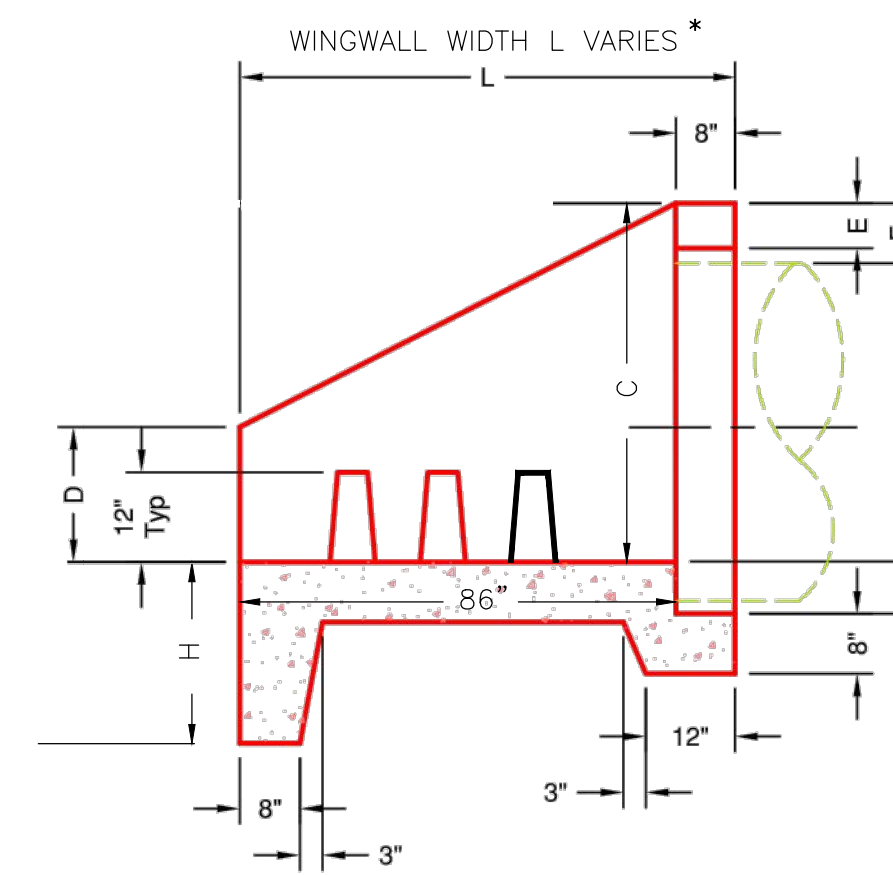
PROVIDE OLDCASTLE PRECAST (OR CAST IN PLACE)

| PIPE SIZE | HOLE SIZE | W | L | H | A | B | C | D | E | F | G | H |
|-----------|-----------|------|---|-----|------|-----|-----|-----|-----|-----|----|-----|
| 60" RCP | 76" | 205" | * | 24" | 105" | 96" | 86" | 33" | 20" | 26" | 8" | 24" |

* VARIES SEE PROFILE SHEET FOR DIMENSIONS

PROVIDE 2 ROWS 12-INCH O.C. EACH WAY NO. 5 BAR FOR EACH FACE 2.5-INCH MIN. CLEAR FROM OUTER EDGE

NOTE: HEADWALLS AND RELATED PIPES FOR EPHEMERAL STREAM TO BE INSTALLED DURING DRY PERIODS AND WHEN NO WATER IS IN THE STREAM BED.

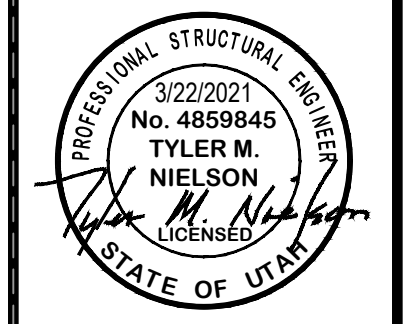


SECTION A-A

1 60-INCH PIPE HEADWALL DETAIL
Scale: (NOT TO SCALE)

| REVISIONS | DATE | DESCRIPTION |
|-----------|------|-------------|
| | | |

| | |
|-----------------|--|
| SCALE: NTS | DATE: 3/22/2021 |
| DESIGN: BSO/MJS | DRAWN: BSO/MJS |
| CHECKED: TMN | DWG: R:\2020 - 884 INVESTMENT\CRIMSON RIDGE\DESIGN\DWG\CRIMSON RIDGE - CDS.DWG |



MISC. DETAILS
THE RESERVE AT CRIMSON RIDGE CLUSTER SUBD. PHASE 2
1250 NORTH 5200 EAST
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5150 SOUTH 375 EAST OGDEN, UT
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