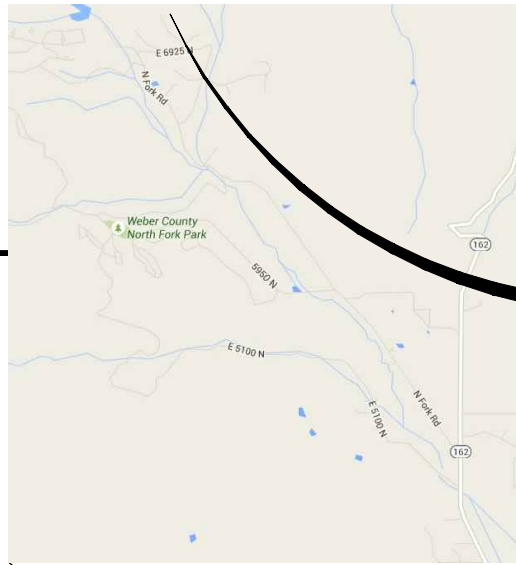
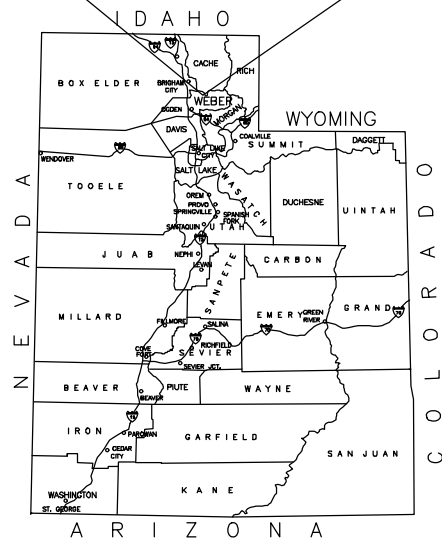


# UPPER SYSTEM TANK LIBERTY PIPELINE COMPANY

2016  
CONSTRUCTION DOCUMENTS  
LIBERTY, WEBER, UTAH



PROJECT  
LOCATION



**PRESIDENT**  
LIBERTY PIPELINE COMPANY  
MIKE RHODES  
3707 N 3500 N  
LIBERTY, UT 84310

**PROJECT ENGINEER**  
DAN WHITE, P.E.  
GARDNER ENGINEERING  
5150 S 375 E  
OGDEN, UT. 84405  
(801) 476-0202  
DAN@GECIVIL.COM

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## GENERAL NOTES

- ALL MATERIALS, WORKMANSHIP AND CONSTRUCTION OF SITE IMPROVEMENTS SHALL MEET OR EXCEED THE STANDARDS AND SPECIFICATIONS SET FORTH BY THE ENGINEER, PLANNING, CODES AND SPECIFICATIONS AND APPLICABLE COUNTY, STATE AND FEDERAL REGULATIONS. WHERE THERE IS CONFLICT BETWEEN THESE PLANS AND SPECIFICATIONS, OR ANY APPLICABLE STANDARDS, THE HIGHER QUALITY STANDARD SHALL APPLY.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND OR ELEVATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS, ESPECIALLY AT THE CONNECTION POINTS AND AT POTENTIAL UTILITY CONFLICTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM ALL APPLICABLE AGENCIES. THE CONTRACTOR SHALL NOTIFY THE DESIGNATED PUBLIC WORKS INSPECTOR AT LEAST 48 HOURS PRIOR TO THE START OF ANY EARTH DISTURBING ACTIVITY, OR CONSTRUCTION ON ANY AND ALL PUBLIC IMPROVEMENTS.
- THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH THE CITY AND ALL UTILITY COMPANIES INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION AND TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE.
- THE CONTRACTOR SHALL HAVE ONE (1) COPY OF APPROVED PLANS, AND ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB, ON SITE AT ALL TIMES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING BUT NOT LIMITED TO, EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY.
- IF DURING THE CONSTRUCTION PROCESS CONDITIONS ARE ENCOUNTERED BY THE CONTRACTOR, HIS SUBCONTRACTORS, OR OTHER AFFECTED PARTIES, WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR THE COMPLETION OF THE INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED TO BE PROVIDED, INSTALLED, CONSTRUCTED, REMOVED AND RELOCATED UNLESS SPECIFICALLY NOTED OTHERWISE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADWAYS FREE AND CLEAR OF ALL CONSTRUCTION DEBRIS AND DIRT TRACKED FROM THE SITE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING AS-BUILT DRAWINGS ON A SET OF RECORD DRAWINGS KEPT AT THE CONSTRUCTION SITE, AND AVAILABLE TO THE CITY INSPECTOR AT ALL TIMES.
- THE CONTRACTOR SHALL SEQUENCE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO MINIMIZE POTENTIAL UTILITY CONFLICTS. IN GENERAL, STORM SEWER AND SANITARY SEWER SHOULD BE CONSTRUCTED PRIOR TO INSTALLATION OF WATER LINES AND DRY UTILITIES.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL UTILITY RELOCATIONS CONSISTENT WITH THE CONTRACTORS SCHEDULE FOR THIS PROJECT, WHETHER SHOWN OR NOT SHOWN AS IT RELATES TO THE CONSTRUCTION ACTIVITIES CONTEMPLATED IN THESE PLANS.

## TRAFFIC CONTROL & SAFETY NOTES

- BARRICADING AND DETOURING SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS OF THE CURRENT STATE OF UTAH DEPARTMENT OF TRANSPORTATION MANUAL OF TRAFFIC CONTROLS FOR CONSTRUCTION AND MAINTENANCE WORK ZONES, AND THE CURRENT CITY STANDARD DRAWING, AND SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO ANY WORK.
- NO STREET SHALL BE CLOSED TO TRAFFIC WITHOUT WRITTEN PERMISSION FROM THE CITY TRAFFIC ENGINEER, EXCEPT WHEN DIRECTED BY LAW ENFORCEMENT OR FIRE OFFICIALS.
- THE CONTRACTOR SHALL MAKE EVERY EFFORT TO PROVIDE FOR SMOOTH TRAFFIC FLOW AND SAFETY. ACCESS SHALL BE MAINTAINED FOR ALL PROPERTIES ADJACENT TO THE WORK.
- DETOURING OPERATIONS FOR A PERIOD OF SIX CONSECUTIVE CALENDAR DAYS, OR MORE, REQUIRE THE INSTALLATION OF TEMPORARY STREET STRIPING AND REMOVAL OF INTERFERING STRIPING BY SANDBLASTING. THE DETOURING STRIPING PLAN OR CONSTRUCTION TRAFFIC CONTROL PLAN MUST BE SUBMITTED TO THE CITY TRAFFIC ENGINEER FOR REVIEW AND APPROVAL.
- ALL TRAFFIC CONTROL DEVICES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE END OF THE WORK TO THE SATISFACTION OF THE CITY TRAFFIC ENGINEER.
- TRAFFIC CONTROL DEVICES (TCDs) SHALL REMAIN VISIBLE AND OPERATIONAL AT ALL TIMES.

## UTILITY DISCLAIMER

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT EXISTING UNDERGROUND UTILITIES AND IMPROVEMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATIONS BASED UPON RECORD INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF PLANS. LOCATIONS MAY NOT HAVE BEEN VERIFIED IN THE FIELD AND NO GUARANTEE IS MADE AS TO ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. IT SHALL BE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXISTENCE AND LOCATION OF THOSE UTILITIES SHOWN ON THESE PLANS OR INDICATED IN THE FIELD BY LOCATING SERVICES. ANY ADDITIONAL COSTS INCURRED AS A RESULT OF CONTRACTOR'S FAILURE TO VERIFY LOCATIONS OF EXISTING UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION IN THEIR VICINITY SHALL BE BORNE BY THE CONTRACTOR AND ASSUMED INCLUDED IN THE CONTRACT.

## NOTICE TO CONTRACTOR

ALL CONTRACTORS AND SUBCONTRACTORS PERFORMING WORK SHOWN ON OR RELATED TO THESE PLANS SHALL CONDUCT THEIR OPERATIONS SO THAT ALL EMPLOYEES ARE PROVIDED A SAFE PLACE TO WORK AND THE PUBLIC IS PROTECTED. ALL CONTRACTORS AND SUBCONTRACTORS SHALL COMPLY WITH THE "OCCUPATIONAL SAFETY AND HEALTH REGULATIONS" OF THE U.S. DEPARTMENT OF LABOR AND THE STATE OF UTAH DEPARTMENT OF INDUSTRIAL RELATIONS CONSTRUCTION SAFETY ORDERS". THE CIVIL ENGINEER SHALL NOT BE RESPONSIBLE IN ANY WAY FOR CONTRACTORS AND SUBCONTRACTORS COMPLIANCE WITH SAID REGULATIONS AND ORDERS.

CONTRACTOR FURTHER AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB-SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE CIVIL ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.



## GENERAL GRADING NOTES

- ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST APWA STANDARDS AND SPECIFICATION FOR PUBLIC WORKS AND THE COMPANY STANDARDS. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AWAY FROM BUILDING FOUNDATIONS AND ENTRIES. FINISHED GRADE AT FOUNDATION FOR WOOD FRAMED STRUCTURES SHALL BE 8 INCHES BELOW TOP OF FOUNDATION AND DRAINAGE SHALL BE A MINIMUM OF 5% WITHIN 10 FEET FROM THE BUILDING.
- MAXIMUM SLOPES SHALL BE 3:1 FOR CUT AND FILL UNLESS OTHERWISE NOTED.
- COMPACTION REQUIREMENTS AND TESTING SHALL BE PERFORMED TO MEET THE COUNTY STANDARDS.
- NO FILL SHALL BE PLACED UNTIL VEGETATION HAS BEEN REMOVED AND SUB-GRADE PREPARED PER THE SOILS REPORT.
- DUST SHALL BE CONTROLLED BY WATERING OR OTHER APPROVED METHODS.
- CONTRACTOR SHALL COMPLY WITH STORM WATER POLLUTION PREVENTION PLAN BY INSTALLING BMP'S PRIOR TO COMMENCEMENT OF EXCAVATION ACTIVITIES. CONTACT THE COUNTY INSPECTOR FOR INSPECTION.
- ALL RECOMMENDATIONS OF THE GEOTECHNICAL REPORT AND ALL SUBSEQUENT REPORTS, ADDENDUM ETC. SHALL BE CONSIDERED A PART OF THE GRADING PLAN CONTAINED HEREIN AND SHALL BE COMPLIED WITH.
- THE CONTRACTOR SHALL CONTACT BLUE STAKES FOR LOCATION MARKING PRIOR TO COMMENCING EXCAVATION ACTIVITIES.
- COUNTY MAY REQUIRE A PRE-CONSTRUCTION MEETING BEFORE A PERMIT IS ISSUED.
- STREETS ADJACENT TO THE PROJECT SHALL BE CLEAN AT ALL TIMES.
- CONTRACTOR IS RESPONSIBLE FOR ARRANGING FOR ALL REQUIRED INSPECTIONS.
- PRIOR TO TAKING WATER FROM A FIRE HYDRANT, THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE WATER UTILITY TO OBTAIN A WATER METER.

## CULINARY WATER GENERAL NOTES

- ALL INSTALLATION AND MATERIALS SHALL CONFORM TO LIBERTY PIPELINE COMPANY STANDARDS, SPECIFICATIONS AND PLANS.
- THRUST BLOCKING AND MECHANICAL RESTRAINTS ARE REQUIRED AT ALL BENDS AND FITTINGS.
- ALL WATERLINES AT SEWER CROSSINGS SHALL BE LOCATED ABOVE AND HAVE AN 18-INCH VERTICAL SEPARATION FROM THE SEWER PIPE. IF THIS IS NOT PROVIDED, CARE SHALL BE TAKEN TO ENSURE, THERE ARE NO JOINTS IN EITHER PIPE WITHIN 20' OF THE POINT AT WHICH THE PIPES CROSS EACH OTHER, EITHER THROUGH INSTALLING THE PIPES IN CASINGS OR BY PLACEMENT OF JOINTS.
- DISINFECTION TESTS SHALL BE PERFORMED BY THE WATER UTILITY WITH COOPERATION FROM THE CONTRACTOR IN PERFORMING ANY NECESSARY EXCAVATION AND SUBSEQUENT BACKFILLING AT NO COST TO THE COUNTY.
- CHLORINATION OF COMPLETED WATER LINE. THE NEW WATER LINES SHALL BE DISINFECTED BY CHLORINATION IN ACCORDANCE WITH AWWA STANDARD C551-14. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL RELATED COSTS AND FEES RELATED TO THE CHLORINATION OF THE COMPLETED WATER LINE. THIS TEST SHALL BE PERFORMED PRIOR TO CONNECTION OF THE NEW WATER LINES TO THE EXISTING WATER SYSTEM. THE CONTRACTOR SHALL NOTIFY THE WATER UTILITY AT LEAST 24 HOURS BEFORE THE CHLORINATION IS DESIRED.
- A MINIMUM HORIZONTAL CLEARANCE OF 10 FEET SHALL BE MAINTAINED FROM SANITARY SEWER MAINS.
- UNLESS OTHERWISE SPECIFIED, ALL WATERLINES SHALL BE AWWA C900 PVC DR-18.
- CONTRACTOR SHALL LOCATE VALVES PRIOR TO CONNECTION WITH EXISTING SYSTEM, BUT SHALL NOT OPERATE ANY VALVE WITHOUT PERMISSION FROM THE WATER UTILITY.
- ALL WATER MAINS, VALVES, FIRE HYDRANTS, SERVICES AND APPURTENANCES SHALL BE INSTALLED, TESTED, AND APPROVED PRIOR TO PAVING.
- THE WATER UTILITY REQUIRES THE USE OF CORROSION RESISTANT MATERIALS FOR ALL CULINARY WATER IMPROVEMENTS. SPECIFICALLY, TRIPAC BLUE BOLTS OR STAINLESS STEEL BOLTS MUST BE USED ON ALL FITTINGS. FURTHER, ALL METAL FITTINGS SHALL BE POLY WRAPPED.

## SWPPP GENERAL NOTES

- CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AS REQUIRED BY THE COUNTY AND STATE.
- ALL STRUCTURAL EROSION MEASURES SHALL BE INSTALLED AS SHOWN ON THE SWPPP PLAN, PRIOR TO ANY OTHER GROUND-DISTURBING ACTIVITY. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED IN GOOD REPAIR BY THE CONTRACTOR, UNTIL SUCH TIME AS THE ENTIRE DISTURBED AREAS ARE STABILIZED WITH HARD SURFACE OR LANDSCAPING.

## STORM SEWER GENERAL NOTES

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING:
  - A) OBTAIN ALL REQUIRED PERMITS FROM THE CITY OR REGULATORY AGENCIES, INCLUDING PERMITS TO WORK IN THE RIGHT-OF-WAY.
  - B) RESTORATION OF EXISTING IMPROVEMENTS INCLUDING BUT NOT LIMITED TO FENCES, SOD, LANDSCAPING, PAVEMENT, SPRINKLER SYSTEM.
  - C) VERIFICATION AND PROTECTION OF ALL EXISTING IMPROVEMENTS WITHIN THE LIMITS OF CONSTRUCTION.
  - D) PROVIDING AS-BUILT DRAWINGS TO THE CITY AND THE ENGINEER.
  - E) ALL PERMITTING, DEVELOPMENT, LOCATION, CONNECTION AND INSPECTION AND SCHEDULING FOR SUCH.
- ALL STORM SEWER CONNECTIONS SHALL BE IN CONFORMANCE WITH COUNTY STANDARDS AND SPECIFICATIONS.
- RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATION. PIPELINE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT, AND STEEL SHIMS TO ADJUST THE MANHOLE FRAME TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH CITY STANDARDS AND SPECIFICATIONS AND PLANS. ALL FRAMES SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO PLACEMENT OF ASPHALT PAVING.
- COMPACTION OF ALL TRENCHES WITHIN THE PROJECT SITE MUST BE ATTAINED AND COMPACTION RESULTS SUBMITTED TO THE ENGINEER AND THE CITY PRIOR TO FINAL ACCEPTANCE.
- ALL STORM DRAIN PIPES IN THE CITY RIGHT-OF-WAY SHALL BE RCP CL III.
- ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH THE PAVEMENT AND SHALL HAVE TRAFFIC BEARING LIDS. ALL STORM SEWER LIDS SHALL BE LABELED "STORM DRAIN".
- WHERE CONNECTION TO EXISTING UTILITY IS PROPOSED, CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION AND NOTIFY OWNER/ENGINEER IF LOCATION AND ELEVATION OF EXISTING UTILITY VARIES FROM THE DESIGN.

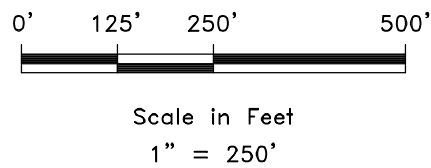
UPPER SYSTEM TANK  
CONSTRUCTION DOCUMENTS



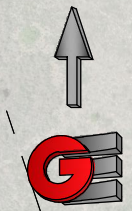
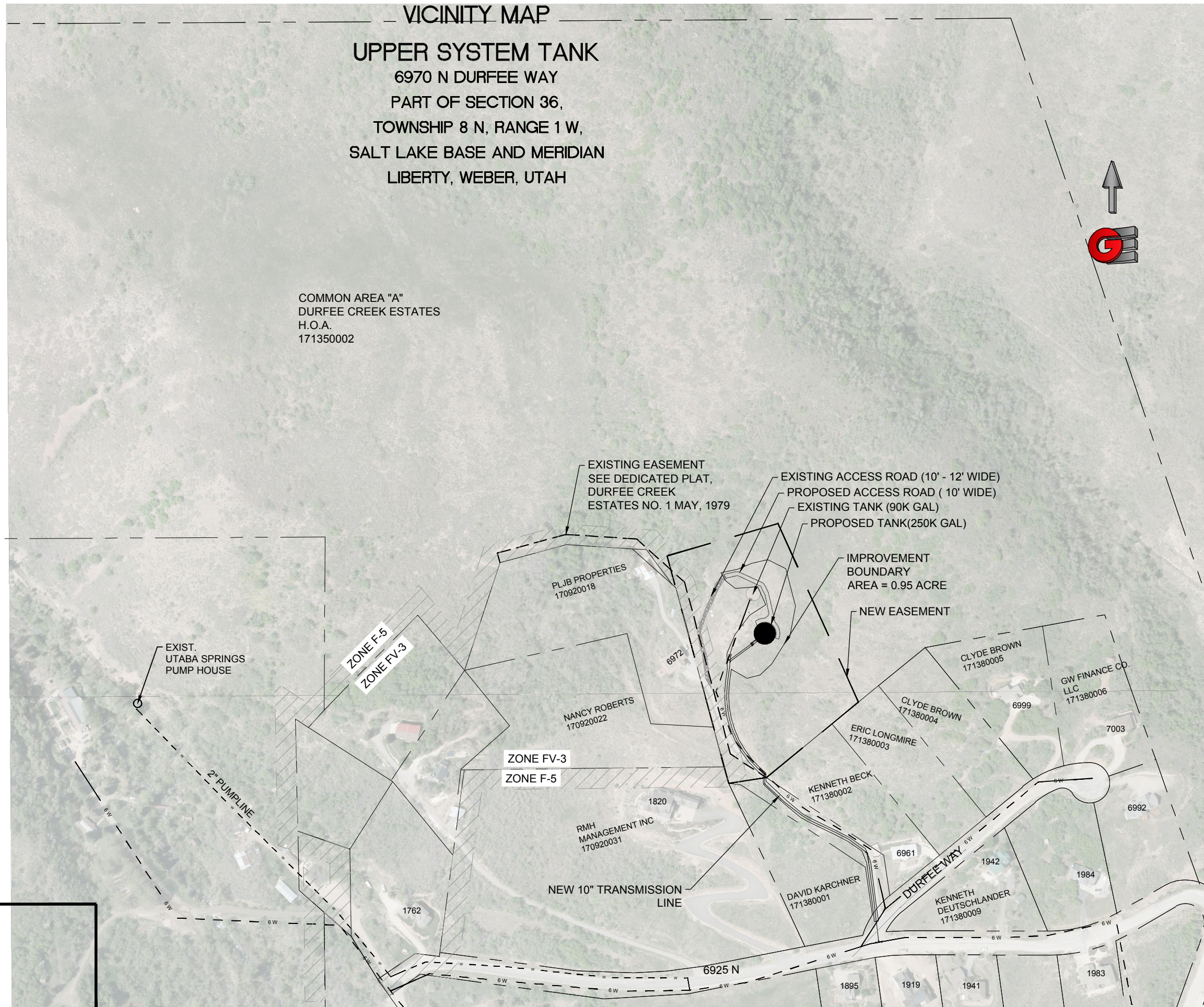
VICINITY MAP  
**UPPER SYSTEM TANK**  
 6970 N DURFEE WAY  
 PART OF SECTION 36,  
 TOWNSHIP 8 N, RANGE 1 W,  
 SALT LAKE BASE AND MERIDIAN  
 LIBERTY, WEBER, UTAH

COMMON AREA "A"  
 DURFEE CREEK ESTATES  
 H.O.A.  
 171350002

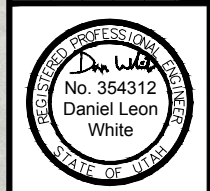
CURRENTLY ZONED F-5  
 PROPERTY 55.23 ACRES  
 AFFECTED AREA = 0.95  
 ACRES



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Revisions	Date	Description



TANK + WATER LINE VICINITY MAP CUP  
 UPPER SYSTEM TANK  
 LIBERTY PIPELINE COMPANY  
 LIBERTY, WEBER, UTAH

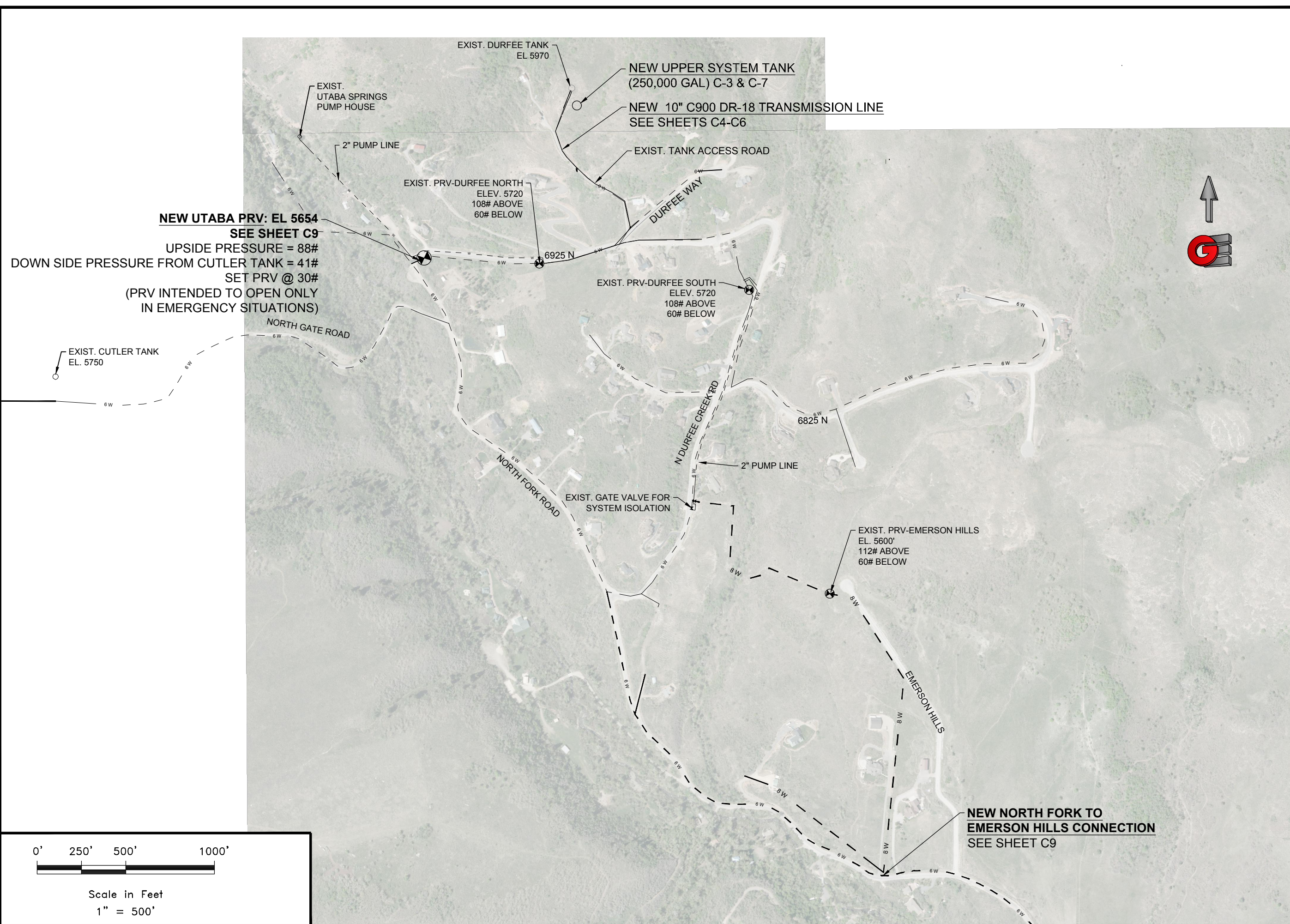
**GARDNER ENGINEERING**  
 CIVIL - LAND PLANNING  
 MUNICIPAL - LAND SURVEYING  
 5150 SOUTH 375 EAST OGDEN, UT  
 OFFICE: 801.476.0202 FAX: 801.476.0066

C1  
 23

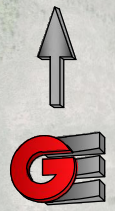
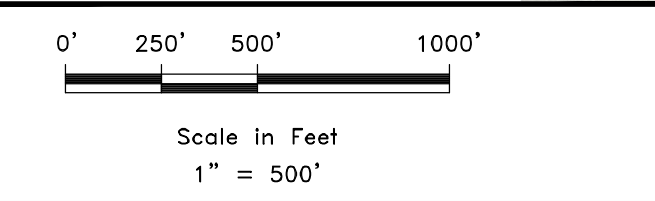
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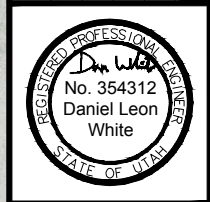
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**NEW UTABA PRV: EL 5654**  
**SEE SHEET C9**  
 UPSIDE PRESSURE = 88#  
 DOWN SIDE PRESSURE FROM CUTLER TANK = 41#  
 SET PRV @ 30#  
 (PRV INTENDED TO OPEN ONLY  
 IN EMERGENCY SITUATIONS)



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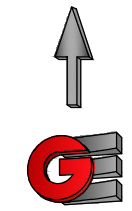
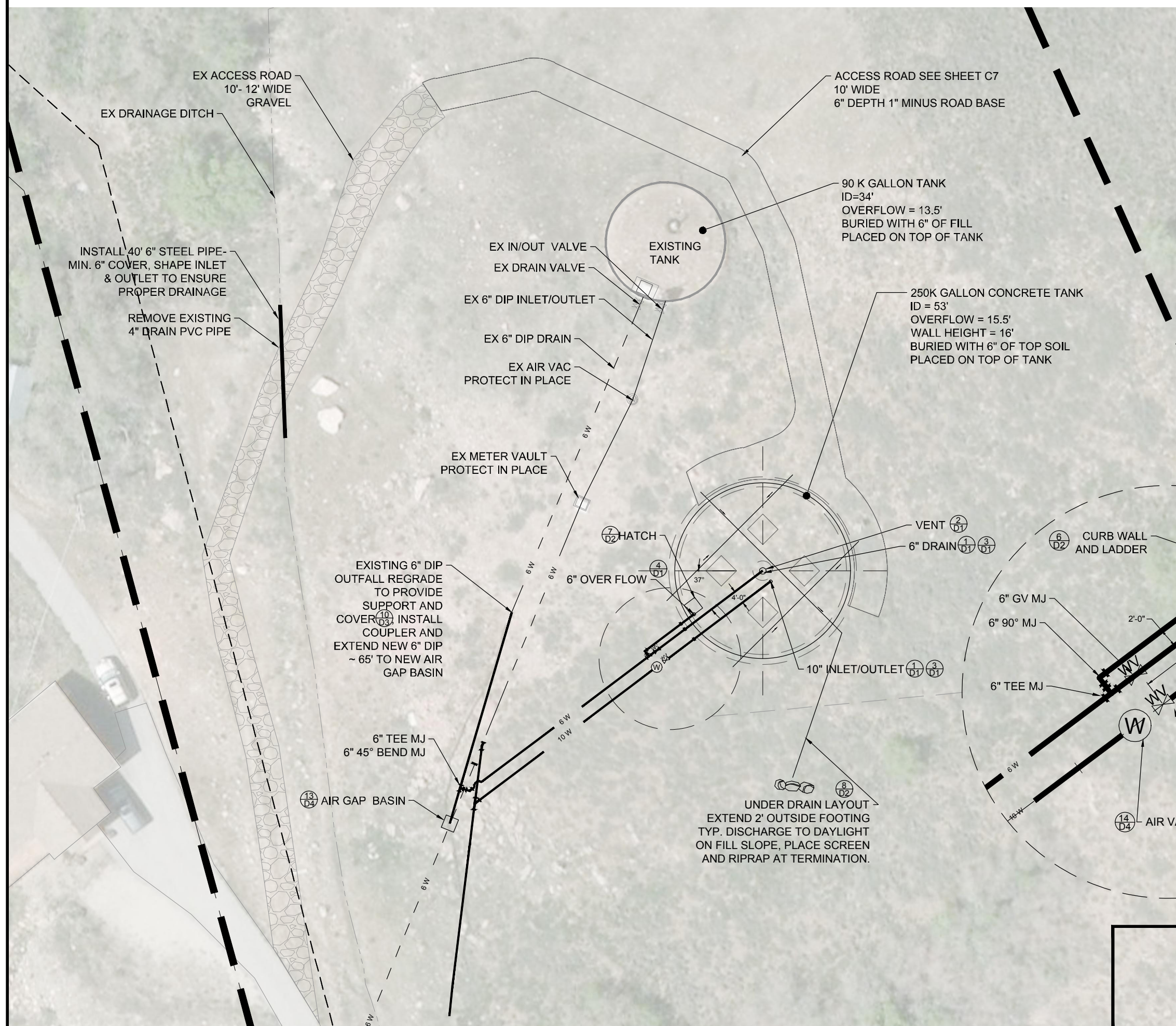
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 UPPER SYSTEM TANK  
 LIBERTY PIPELINE COMPANY  
 LIBERTY, WEBER, UTAH

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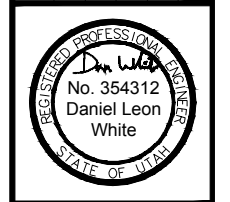
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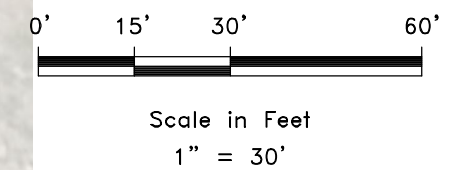


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**SITE PLAN**  
**UPPER SYSTEM TANK**  
**LIBERTY PIPELINE COMPANY**  
**LIBERTY, WEBER, UTAH**

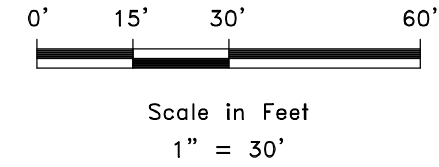
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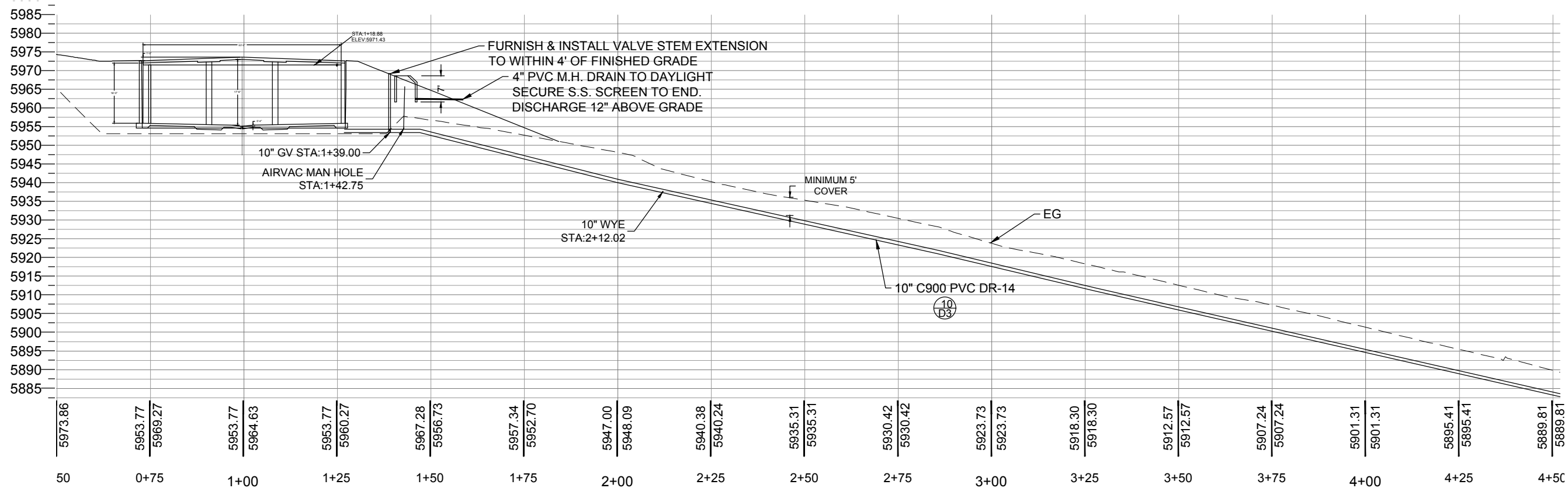
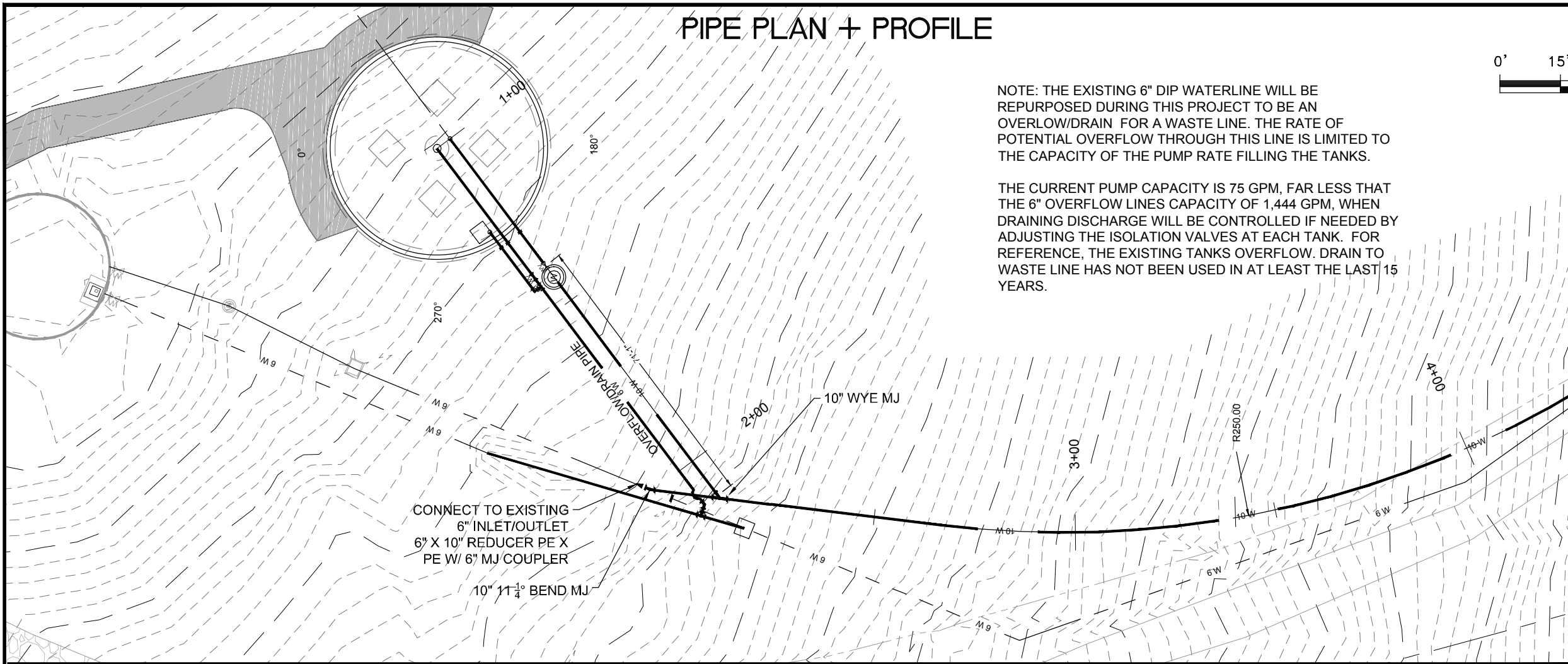


# PIPE PLAN + PROFILE



NOTE: THE EXISTING 6" DIP WATERLINE WILL BE REPURPOSED DURING THIS PROJECT TO BE AN OVERFLOW/DRAIN FOR A WASTE LINE. THE RATE OF POTENTIAL OVERFLOW THROUGH THIS LINE IS LIMITED TO THE CAPACITY OF THE PUMP RATE FILLING THE TANKS.

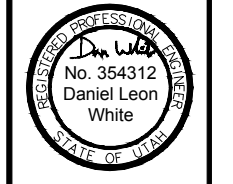
THE CURRENT PUMP CAPACITY IS 75 GPM, FAR LESS THAT THE 6" OVERFLOW LINES CAPACITY OF 1,444 GPM, WHEN DRAINING DISCHARGE WILL BE CONTROLLED IF NEEDED BY ADJUSTING THE ISOLATION VALVES AT EACH TANK. FOR REFERENCE, THE EXISTING TANKS OVERFLOW. DRAIN TO WASTE LINE HAS NOT BEEN USED IN AT LEAST THE LAST 15 YEARS.



PIPE PLAN + PROFILE  
 UPPER SYSTEM TANK  
 LIBERTY PIPELINE COMPANY  
 LIBERTY, WEBER, UTAH

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C4  
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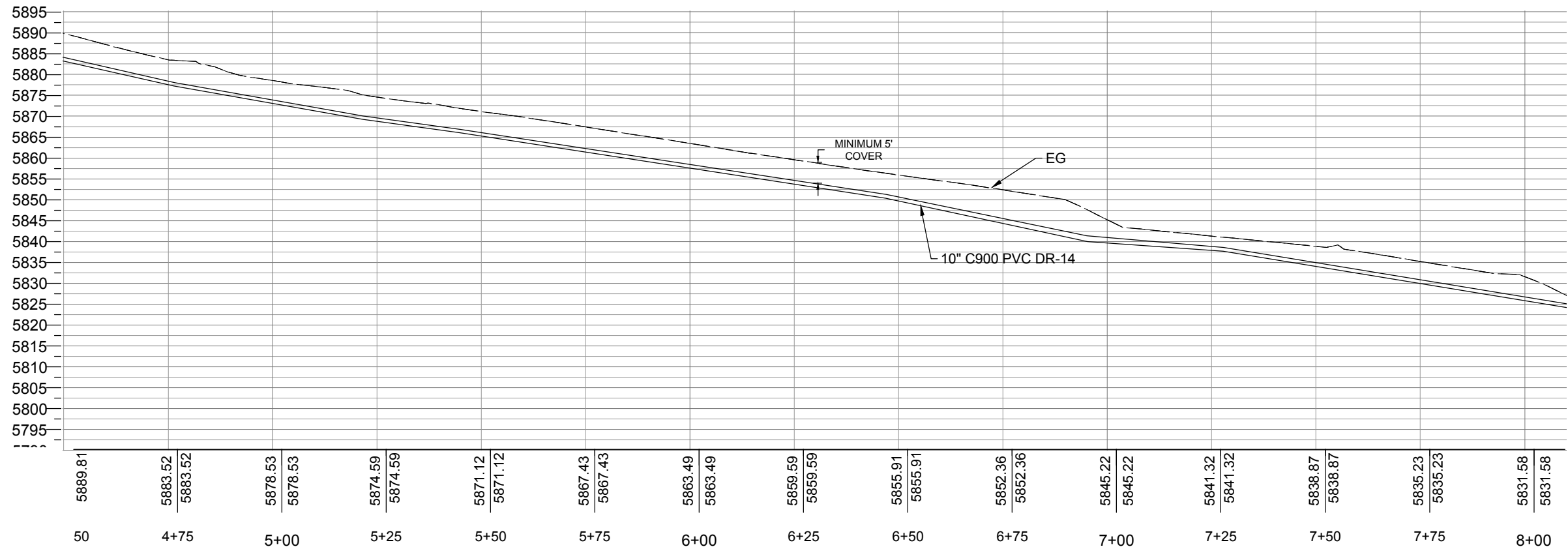
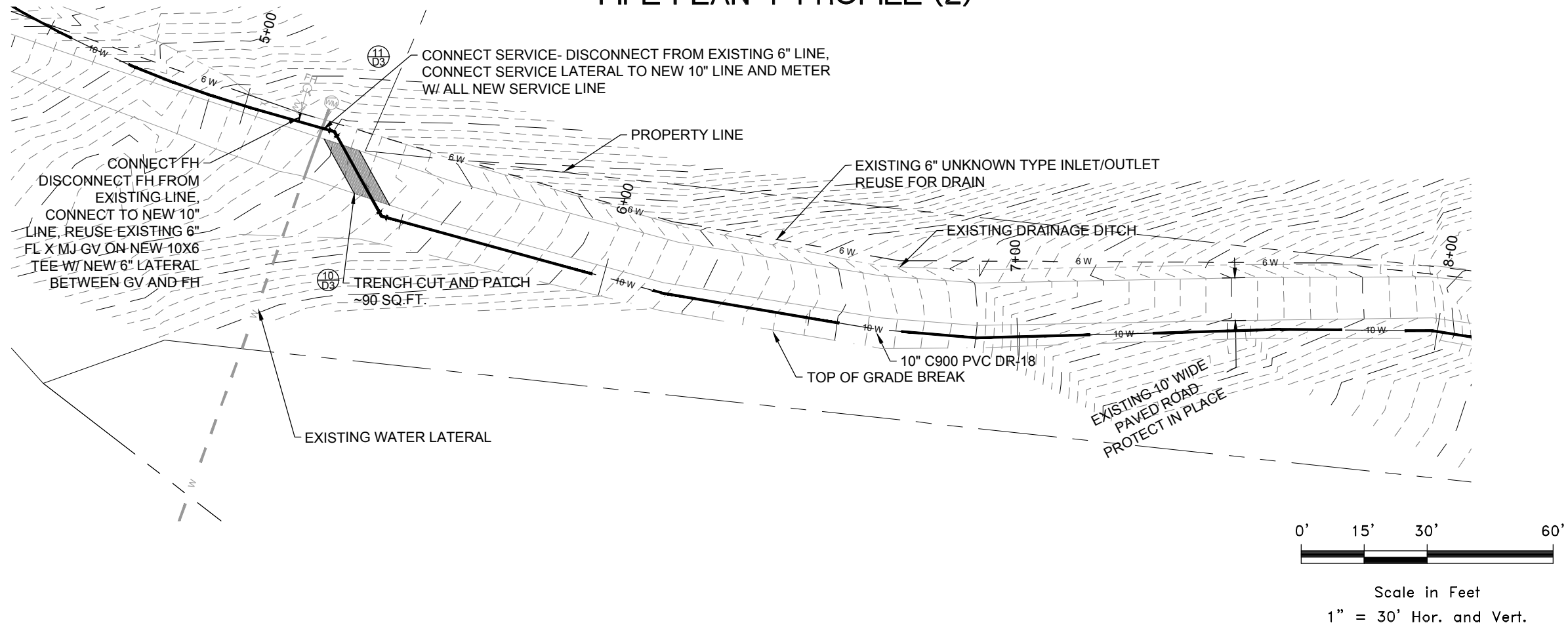


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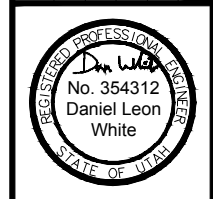
Revisions	Date	Description



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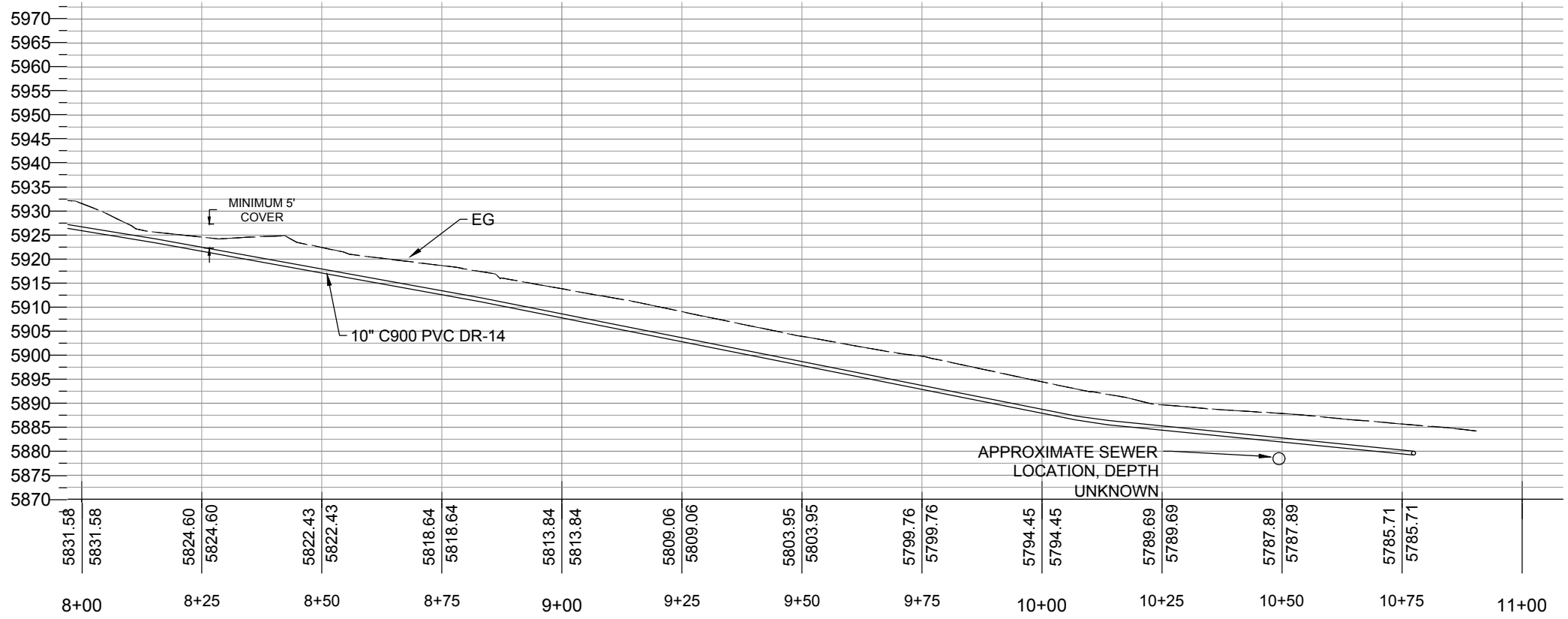
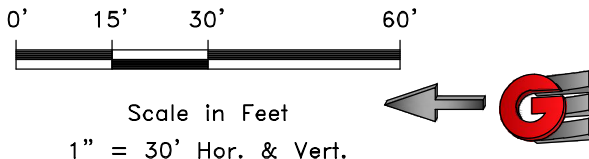
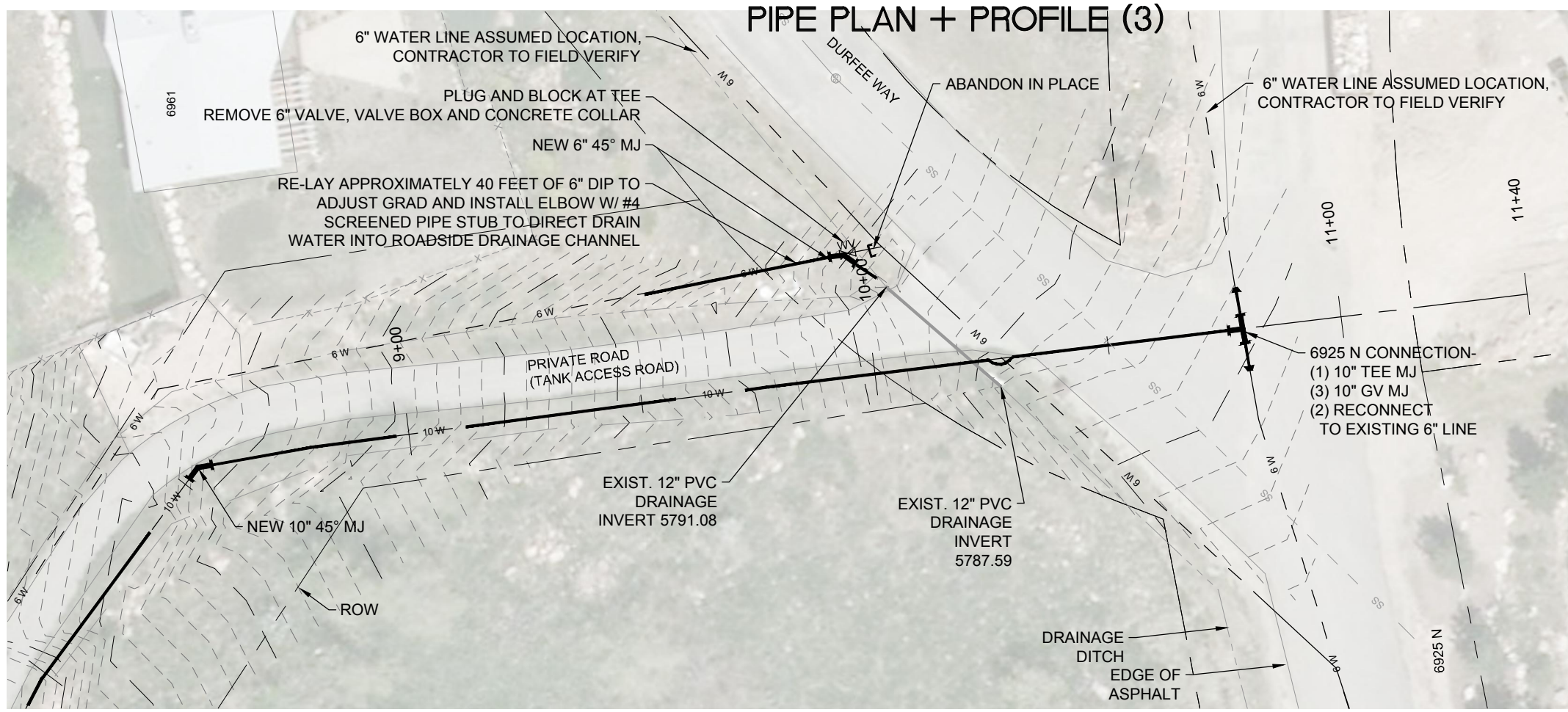


PIPE PLAN + PROFILE (2)  
UPPER SYSTEM TANK  
LIBERTY PIPELINE COMPANY  
LIBERTY, WEBER, UTAH

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**PIPE PLAN + PROFILE (3)**  
**UPPER SYSTEM TANK**  
**LIBERTY PIPELINE COMPANY**  
**LIBERTY, WEBER, UTAH**

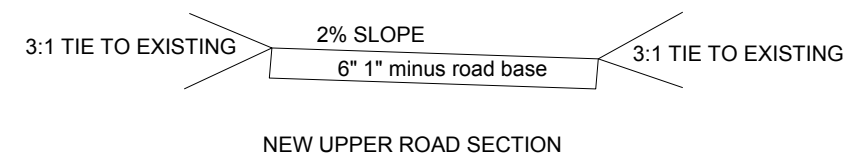
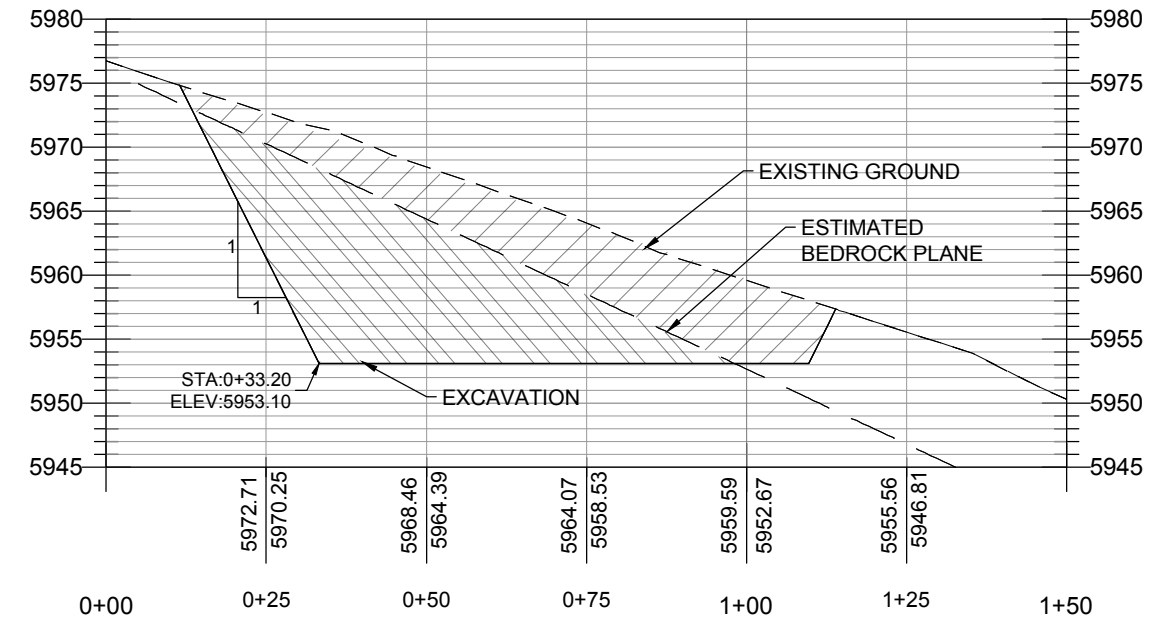
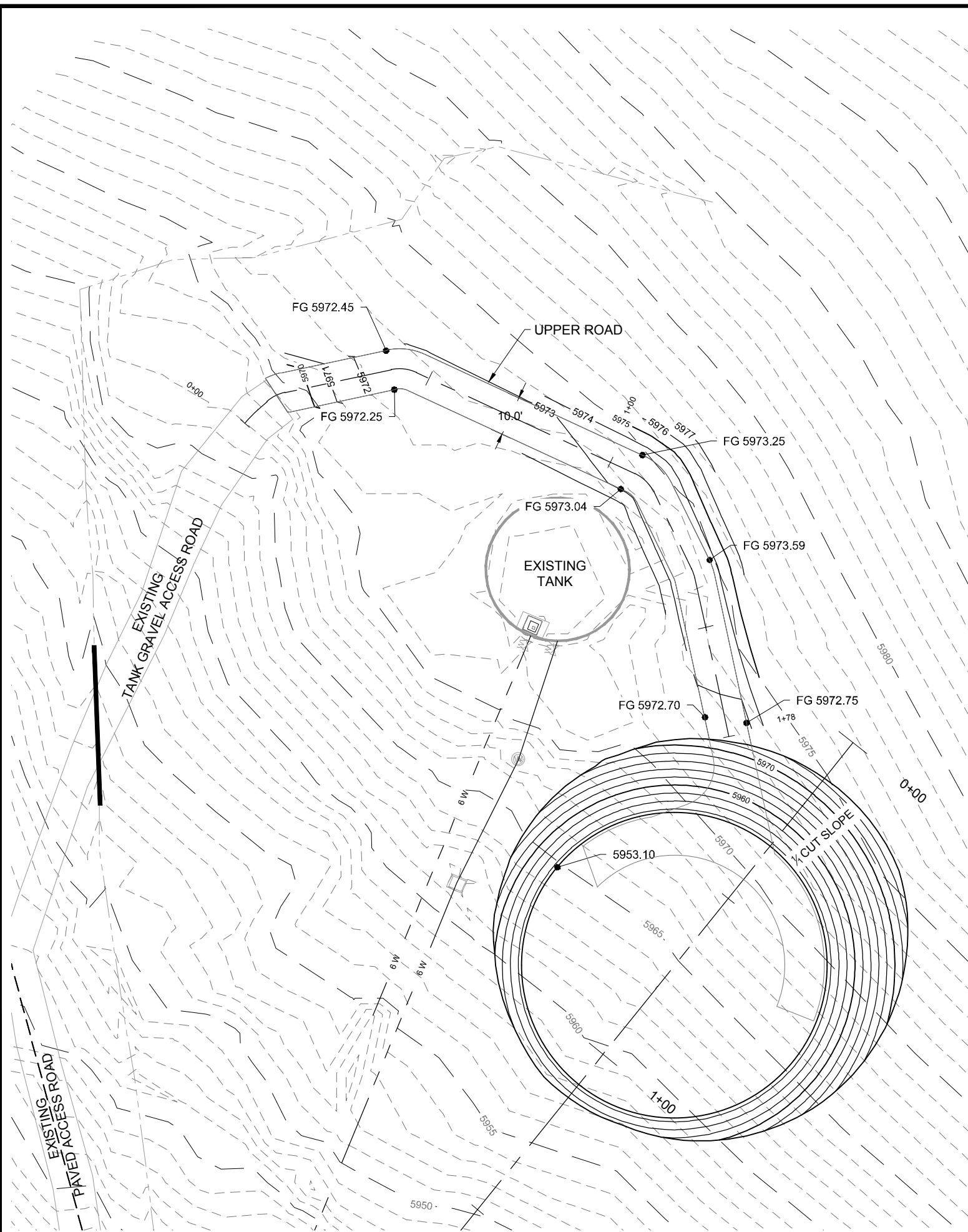
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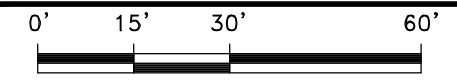


R:\LIBERTY PIPELINE\1602 - UPPER SYSTEM TANK\DESIGN\DWG\1602-UPPER II-5-IMP.DWG, 1/17/2016 3:25:56 PM, HNE



- VOLUME OF ANTICIPATED BEDROCK REMOVAL : 1700 CU YD
- VOLUME OF ANTICIPATED SOIL/ROCK REMOVAL: 1400 CU YD
- VOLUME OF ANTICIPATED SOIL/ROCK REMOVAL FOR UPPER ROAD : 50 CU YD

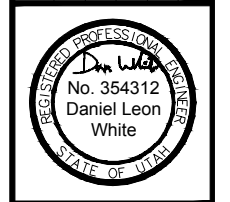
AVERAGE EXISTING SLOPE= 18% IN IMPROVEMENT BOUNDARY



Scale in Feet  
1" = 30'  
PROFILE SCALE 1 HOR. = 2 VERT.

Date:	11/4/2016
Scale:	1" = 30'
Designed:	DLW
Drafted:	MDD
Checked:	DLW

Revisions	Date	Description



**EXCAVATION PLAN**  
**UPPER SYSTEM TANK**  
**LIBERTY PIPELINE COMPANY**  
**LIBERTY, WEBER, UTAH**

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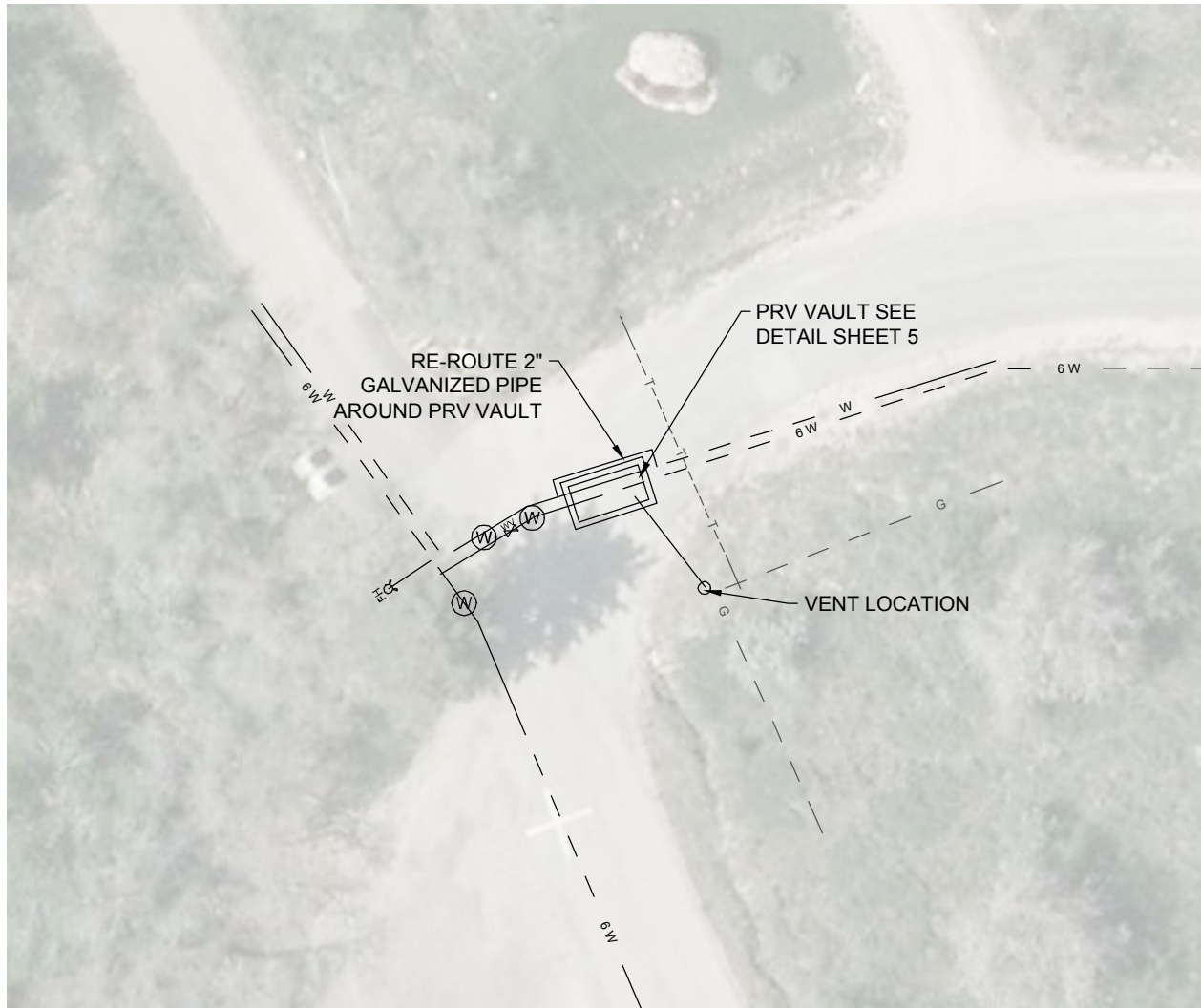
C7  
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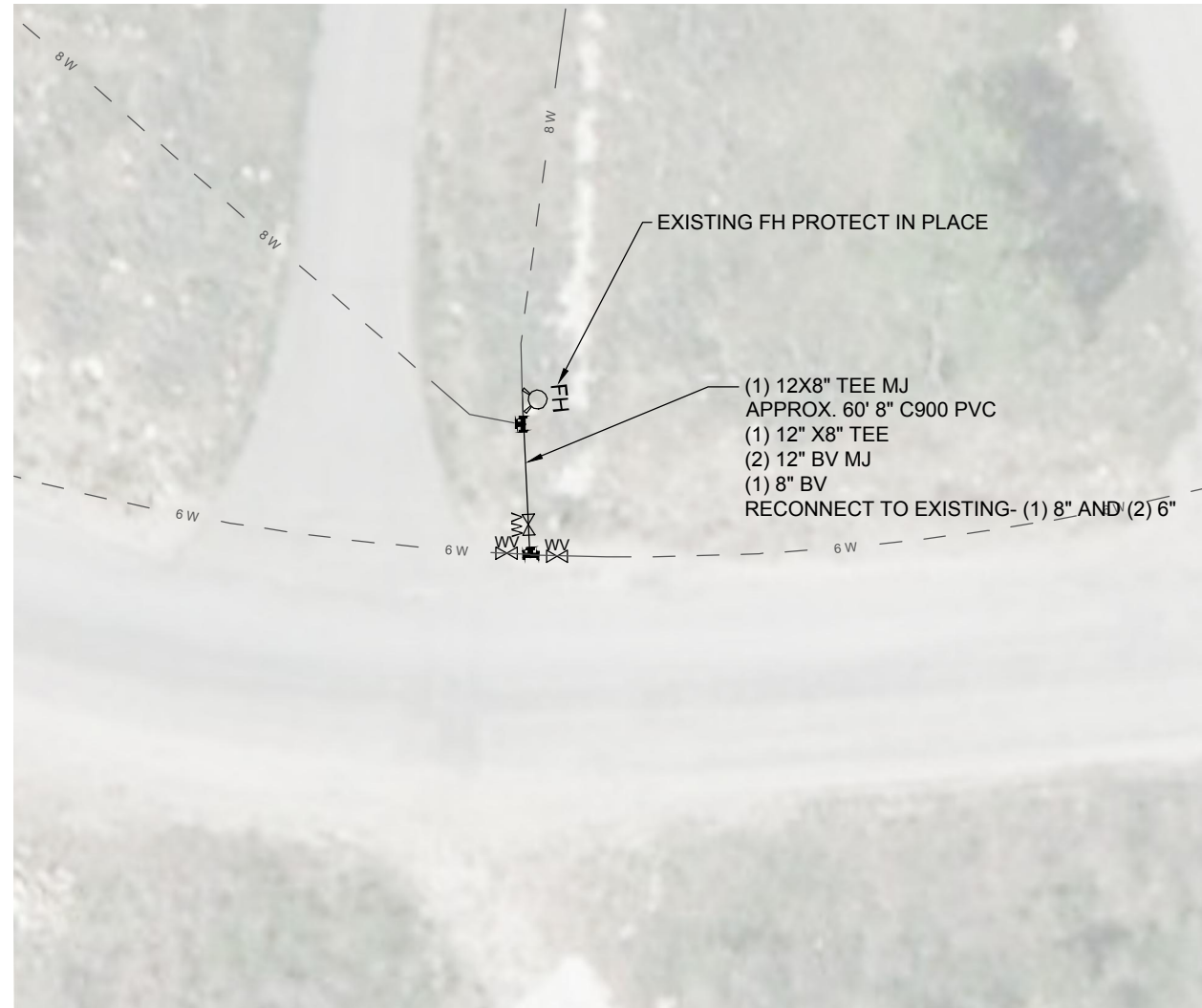




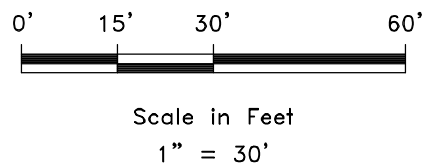
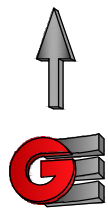
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UTABA PRV VAULT



EMERSON HILLS CONNECTION



Revisions	Date	Description

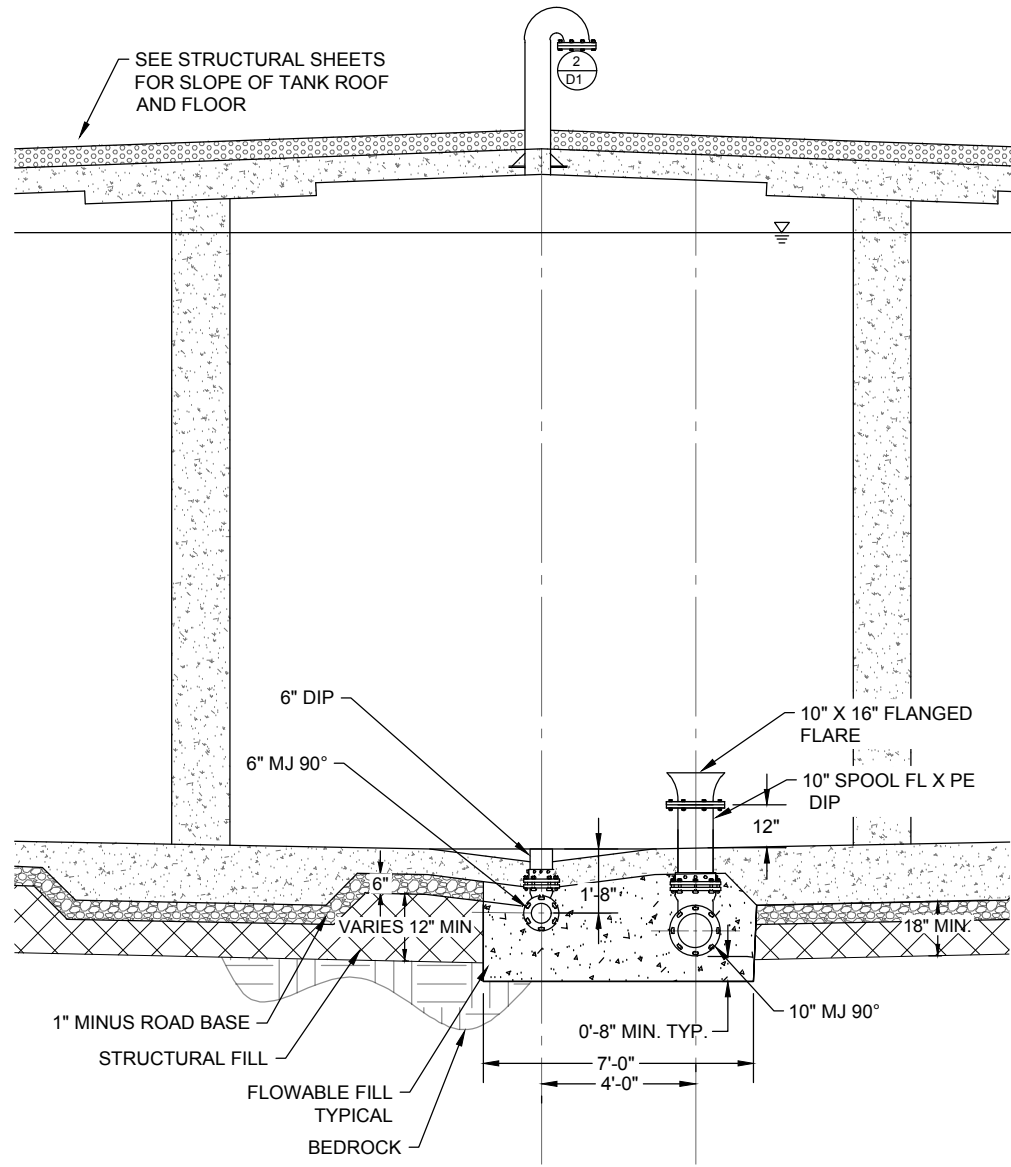
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Drafted:	MDD
Checked:	DLW



UTABA PRV + EMERSON CONN.  
 UPPER SYSTEM TANK  
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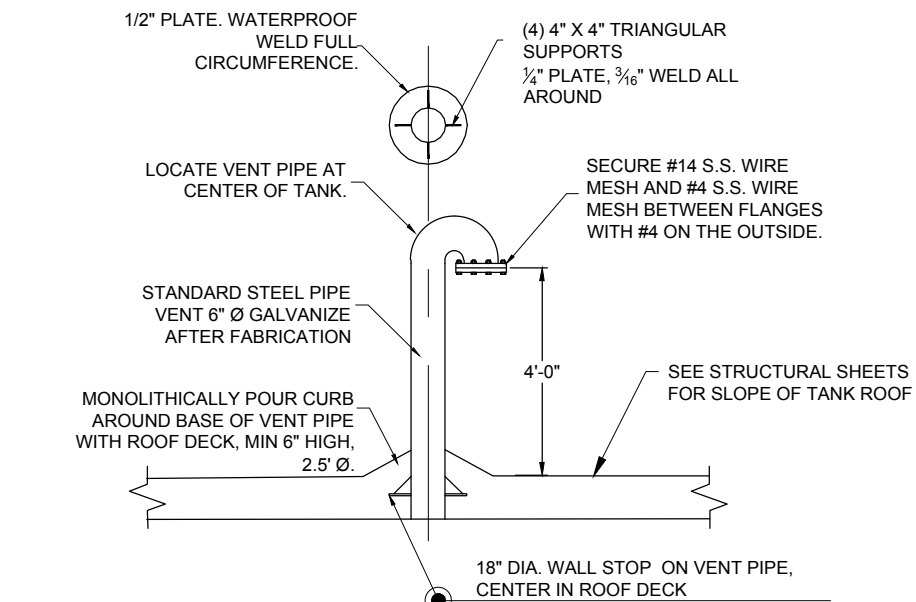
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**INLET/ OUTLET & DRAIN LINE SECTION VIEW**  
NOT TO SCALE

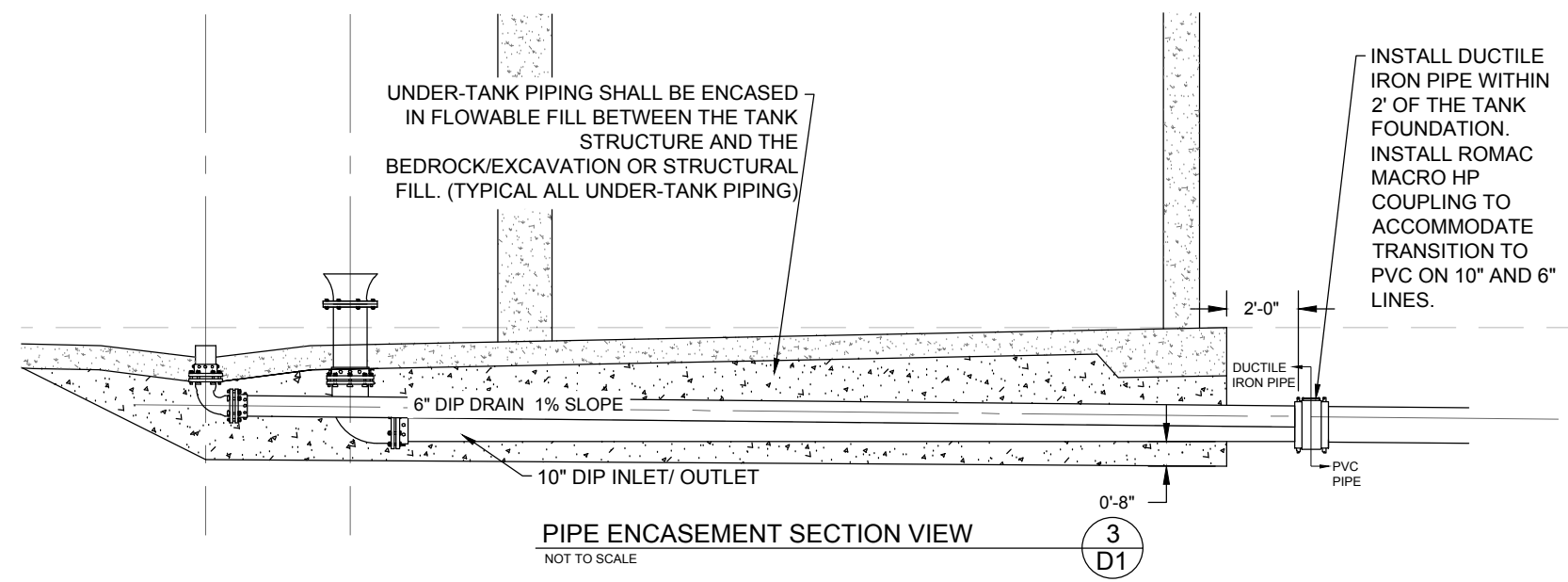
1  
D1



**TANK VENT**  
NOT TO SCALE

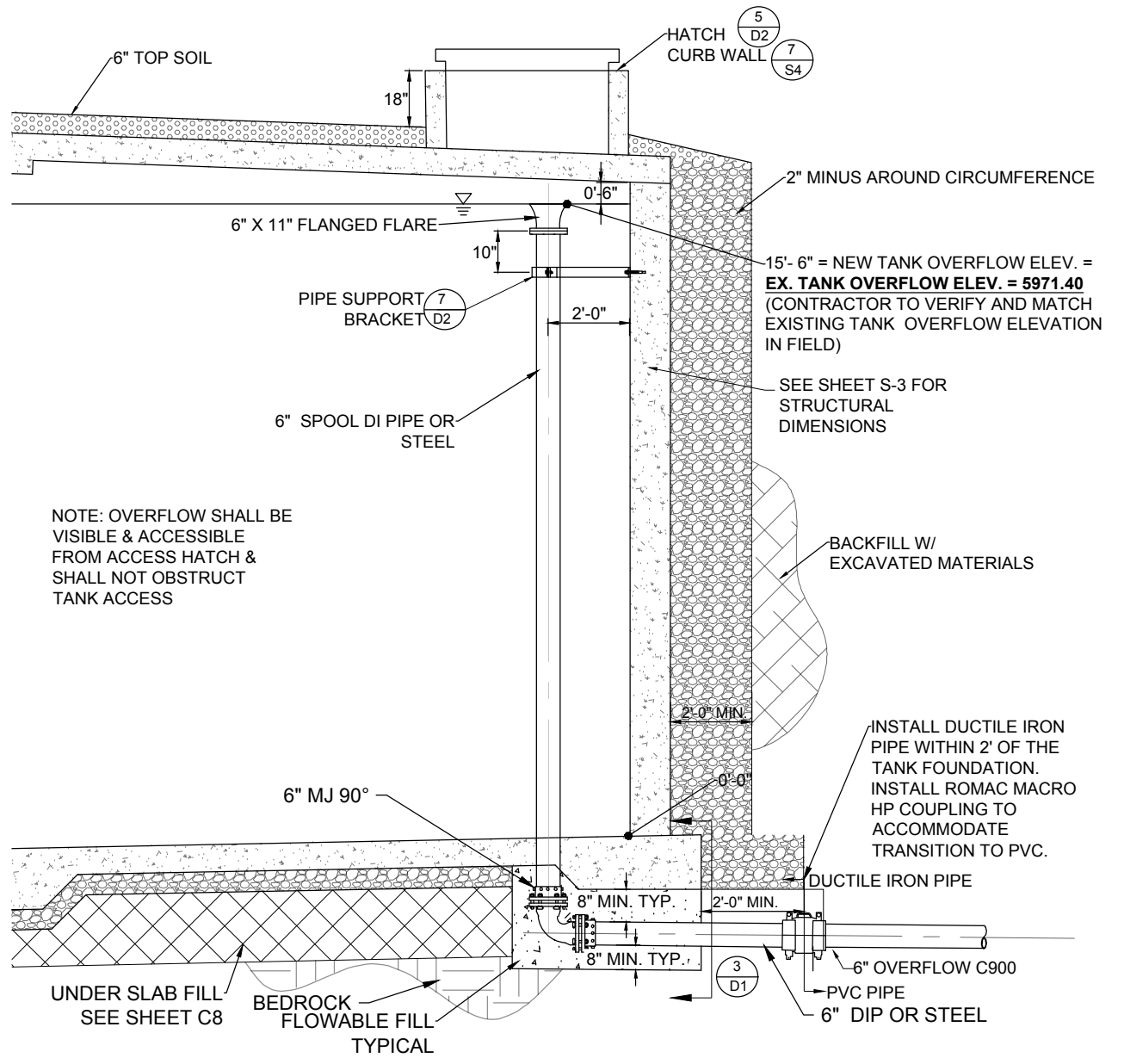
2  
D1

NOTE: ALL PIPING SHALL BE DUCTILE IRON OR STEEL WITHIN 2' OF TANK. ALL PIPING AND FITTINGS IN CONTACT WITH CONCRETE SHALL HAVE PROTECTIVE COATING OR POLY WRAP.



**PIPE ENCASEMENT SECTION VIEW**  
NOT TO SCALE

3  
D1



**OVER FLOW PROFILE VIEW**  
NOT TO SCALE

4  
D1

Date:	11/4/2016
Scale:	
Designed:	DLW
Drafted:	MDD
Checked:	DLW



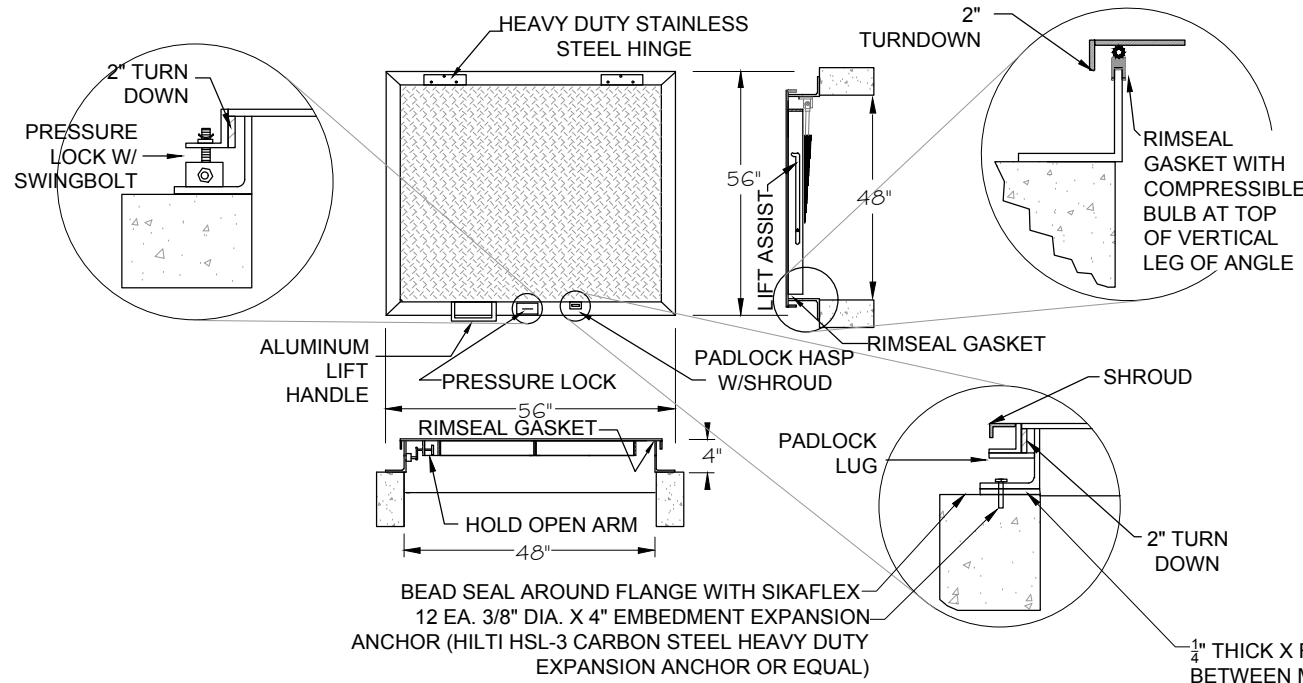
**TANK DETAILS**  
**UPPER SYSTEM TANK**  
**LIBERTY PIPELINE COMPANY**  
**LIBERTY, WEBER, UTAH**

**GARDNER ENGINEERING**  
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D1  
23

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**WATER TANK HATCH**

NOT TO SCALE

5  
D2

1.) MODEL "H48484701" AS MANUFACTURED BY EJ OR APPROVED EQUAL. WESTERN REGIONAL OFFICE IN TOOELE, UT. TEL: 801-544-5728. FAX: 801-544-9571.

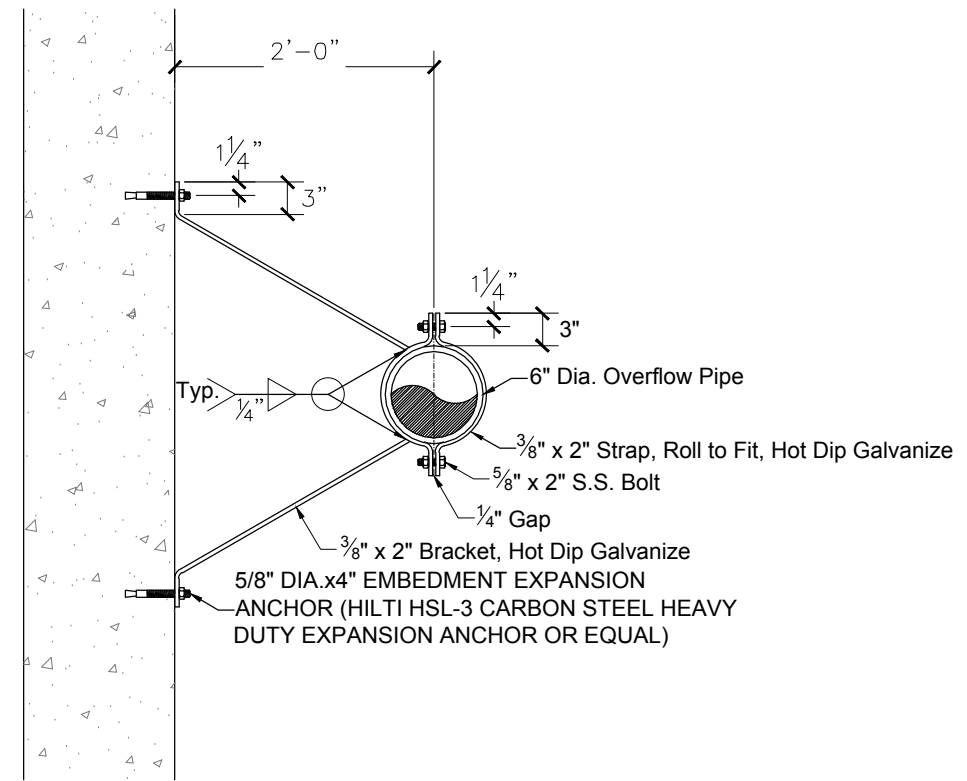
2.) UNIT DESIGNED FLOODTIGHT RATED FOR (150 PSF).

3.) COVER SHALL BE EQUIPPED WITH A HOLD OPEN ARM. DOOR SHALL LOCK OPEN IN THE 90 DEGREE POSITION.

4.) EXTERIOR OF FRAME WHICH COMES IN CONTACT WITH CONCRETE SHALL HAVE ONE COAT BLACK BITUMINOUS PAINT.

5.) COVER SHALL BE SUPPLIED WITH SHROUDED PADLOCK LUG AND PRESSURE LOCKS.

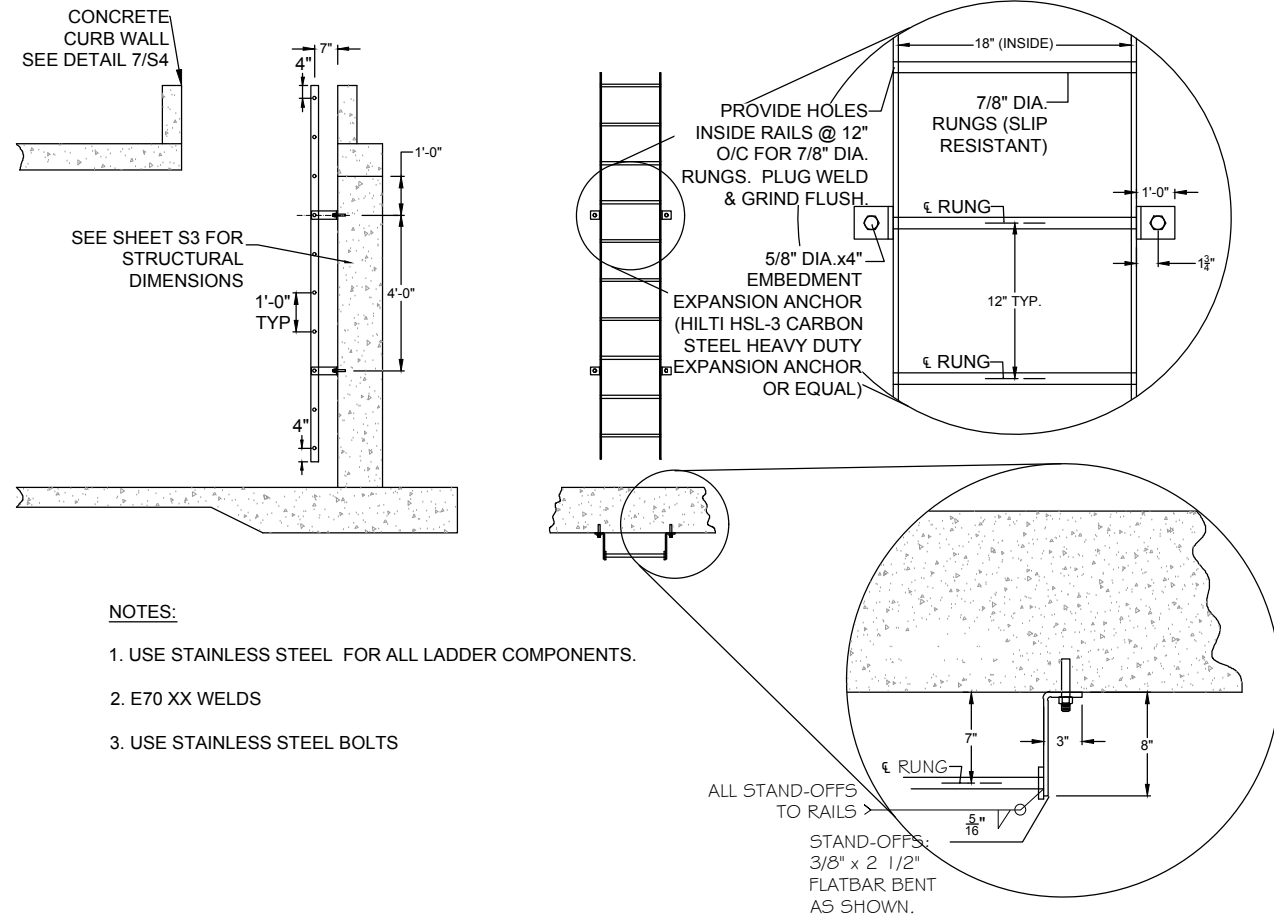
6.) UNIT SUPPLIED WITH A RIMSEAL GASKET ON INSIDE VERTICAL LEG OF ANGLE.



**PIPE SUPPORT BRACKET DETAIL**

NOT TO SCALE

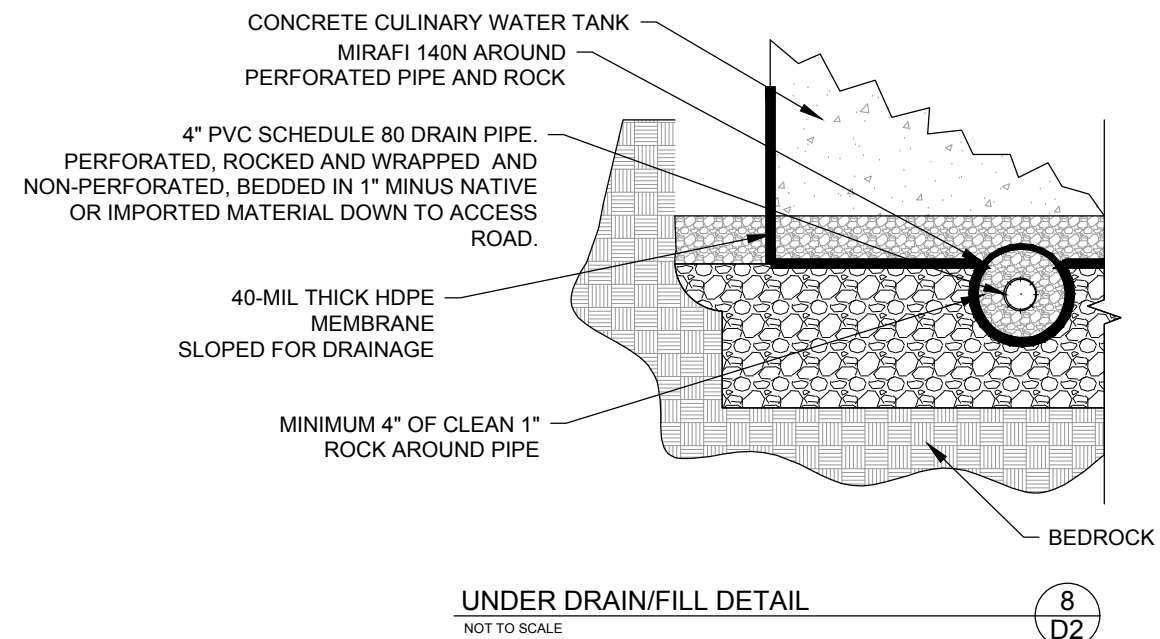
7  
D2



**LADDER DETAIL**

NOT TO SCALE

6  
D2



**UNDER DRAIN/FILL DETAIL**

NOT TO SCALE

8  
D2

NOTE: OVERLAP GEOTEXTILE A MINIMUM OF 24 INCHES AT ALL SEAMS EXTEND DRAIN PIPE 2' OUTSIDE OF FOOTING

Date:	11/4/2016
Scale:	
Designed:	DLW
Drafted:	MDD
Checked:	DLW

Revisions	Date	Description



TANK DETAILS 2

UPPER SYSTEM TANK

LIBERTY PIPELINE COMPANY  
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D2



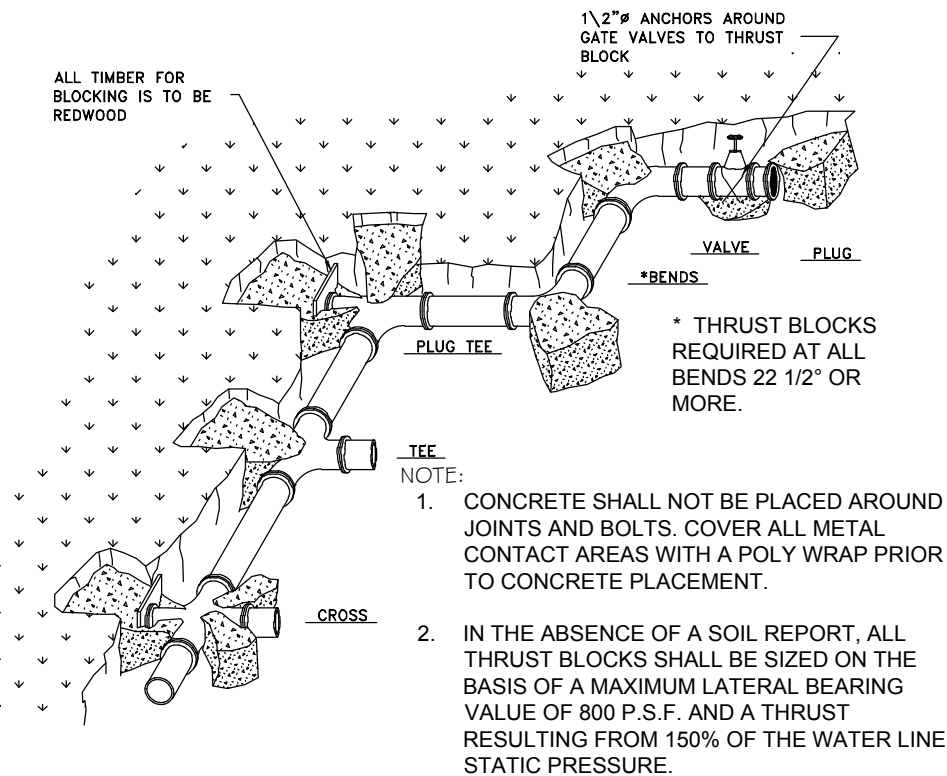


TABLE OF BEARING AREAS IN SQ. FT FOR CONCRETE THRUST BLOCKING

SIZE	BENDS				TEES*	GATE VALVES	DEAD ENDS	CROSSW/1BRANCH PLUGGED	CROSSW/2 BRAN. PLUGGED
	90°	45°	22 1/2°	11 1/4°					
3	1.0	0.0	0.3	0	0.7	0.5	0.7	0.7	0.7
4	1.8	1.0	0.5	0	1.3	0.5	1.3	1.3	1.3
6	4.0	2.2	1.1	0	2.8	0.7	2.8	2.8	2.8
8	7.1	3.8	2.0	1.0	5.0	2.4	5.0	5.0	5.0
10	11.1	6.0	3.0	1.5	7.8	4.5	7.8	7.8	7.8
12	16.0	8.6	4.4	2.2	11.3	7.3	11.3	11.3	11.3
14	21.7	11.8	6.0	3.0	15.4	11.0	15.4	15.4	15.4
15	25.0	13.5	7.0	3.5	17.6		17.6	17.6	17.6
16	28.4	15.3	8.0	4.0	20.0		20.0	20.0	20.0
18	36.0	19.4	10.0	5.0	25.4		25.4	25.4	25.4
20	44.2	24.0	12.2	6.1	31.4		31.4	31.4	31.4
21	49.0	26.5	13.5	6.8	34.6		34.6	34.6	34.6
22	54.0	29.0	14.8	7.4	38.0		38.0	38.0	38.0
24	64.0	34.5	17.7	8.8	45.0		45.0	45.0	45.0
30	100.0	54.0	27.6	13.8	71.0		71.0	71.0	71.0
36	144.0	78.0	40.0	20.0	102.0		102.0	102.0	102.0

\*SIZE IS BRANCH SIZE.

FOR 100 P.S.I. INTERNAL STATIC PRESSURE AND 1000 LBS.PER SQ. FT. SOIL BEARING CAPACITY.

ALL VALVES, TEES, CROSSES AND BENDS SHALL ALSO BE FITTED WITH MECHANICAL RESTRAINTS, SUCH AS MEGA LUGS OR APPROVED EQUAL.

AREAS GIVEN IN TABLE ARE BASED UPON AN INTERNAL STATIC PRESSURE OF 100 P.S.I AND A SOIL BEARING CAPACITY OF 1000 LBS PER SQ. FT. BEARING AREAS FOR ANY PRESSURE AND SOIL BEARING CAPACITY MAY BE OBTAINED BY MULTIPLYING THE TABULATED VALUES BY A CORRECTION FACTOR "F".

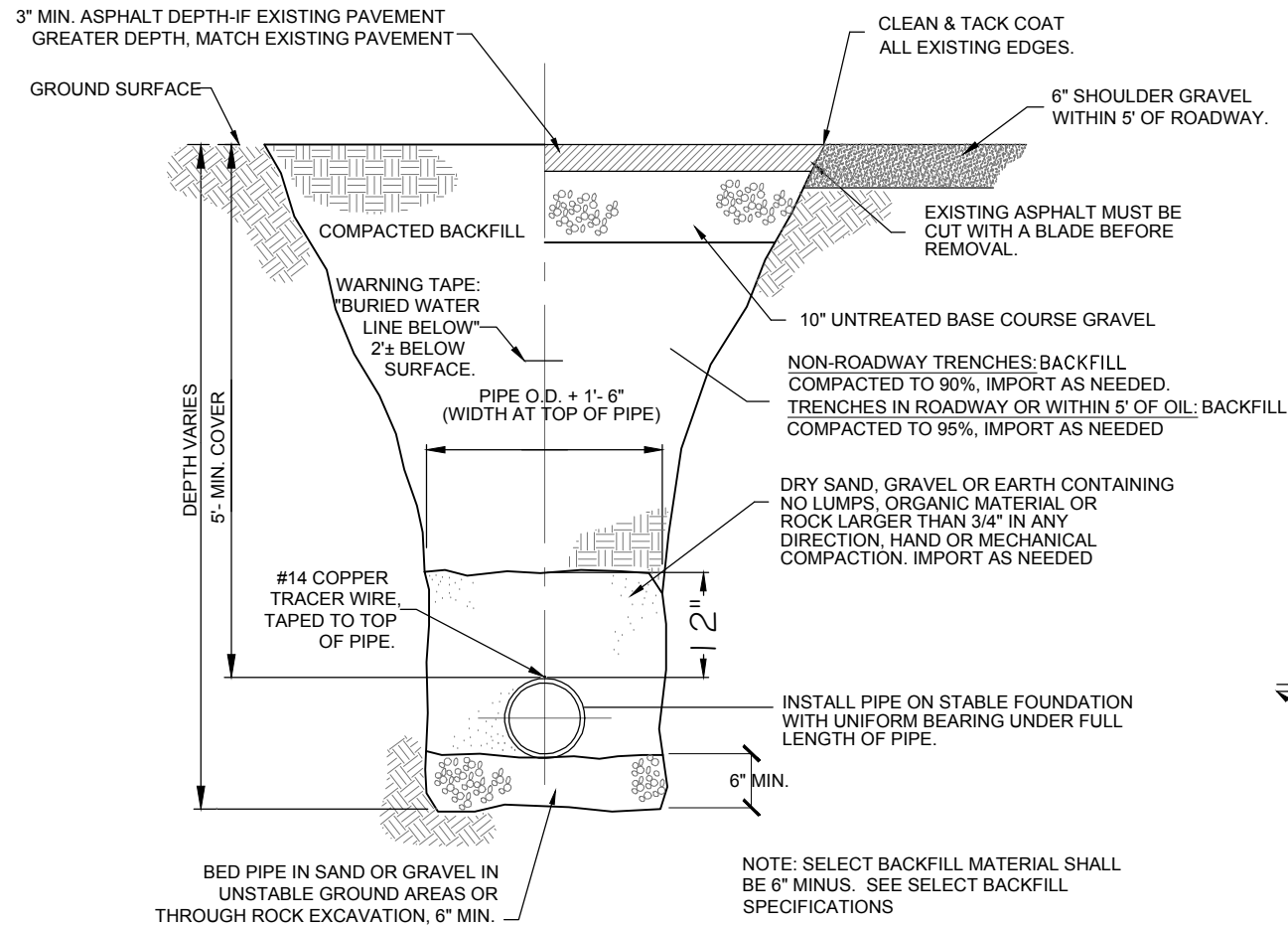
$$F = \frac{\text{ACTUAL SPECIFIED TEST PRESSURE IN HUNDREDS OF LBS/SQ. IN.}}{\text{ACTUAL SOIL BEARING CAPACITY IN THOUSANDS OF LBS.}}$$

EXAMPLE: TO FIND BEARING AREA FOR 8"-90° BEND WITH A STATIC INTERNAL PRESSURE OF 1500 P.S.I AND WITH A SOIL BEARING CAPACITY OF 3000 LBS. PER SQ. FT.  $F = 1.5 / 3 = 0.5$  TABULATED VALUE = 7.1 SQ. FT.  $0.5 \times 7.1 = 3.56 \sim 4$  SQ. FT. (~OR 2FT. LONG BY 2FT. HIGH.)

THRUST BLOCKING DETAIL

NOT TO SCALE

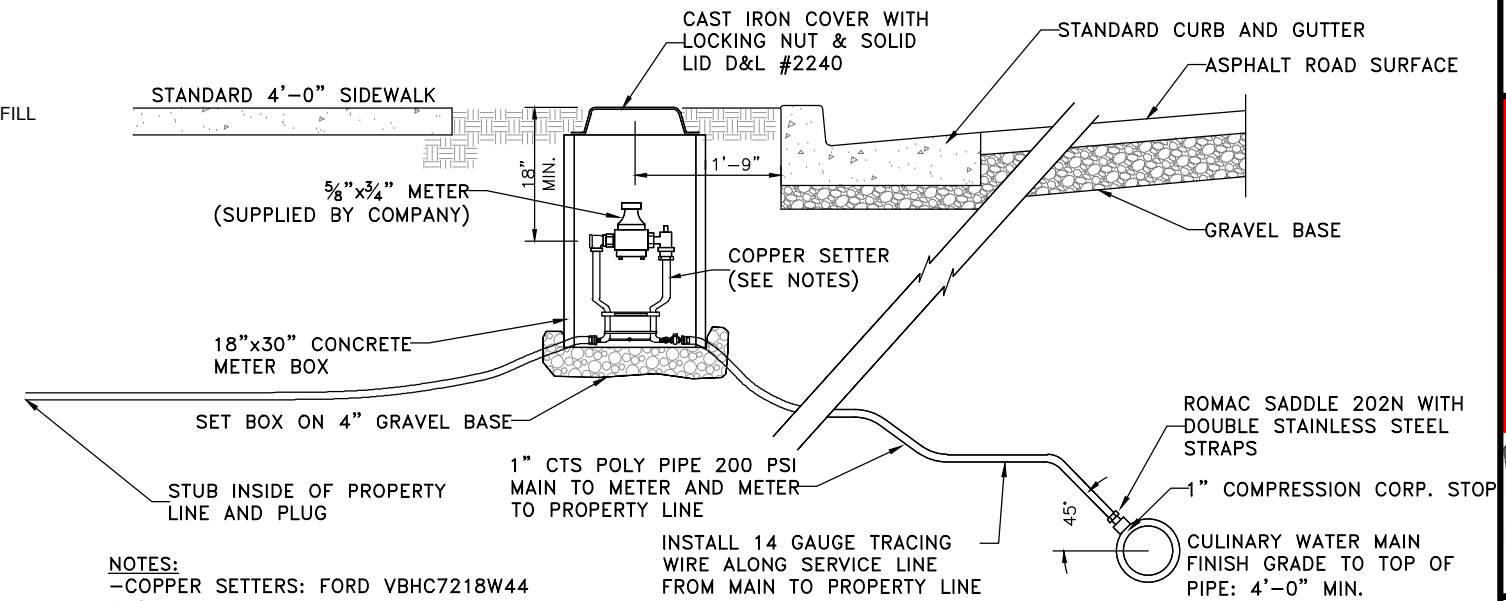
9  
D3



TYPICAL TRENCH DETAIL

NOT TO SCALE

10  
D3



TYPICAL SERVICE CONNECTION

NOT TO SCALE

11  
D3

Date: 11/4/2016  
Scale:  
Designed: DLW  
Drafted: MDD  
Checked: DLW

Revisions	Description
Date	

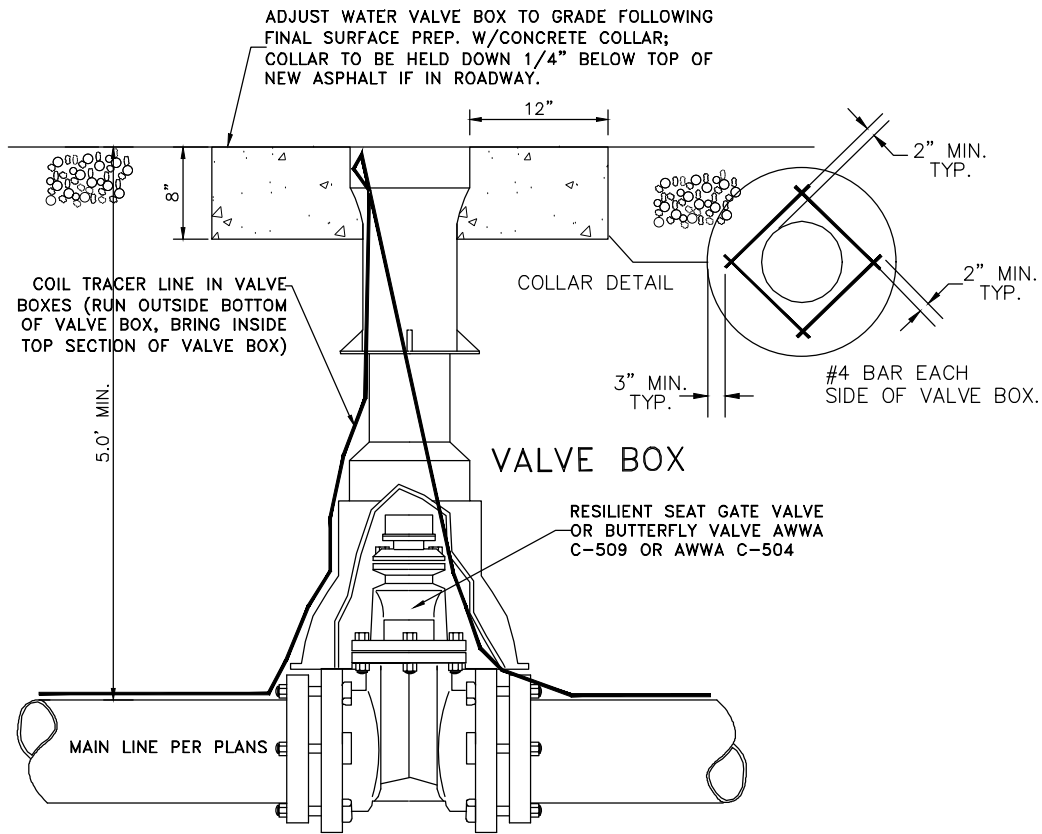


DETAILS 3  
UPPER SYSTEM TANK  
LIBERTY PIPELINE COMPANY  
LIBERTY, WEBER, UTAH



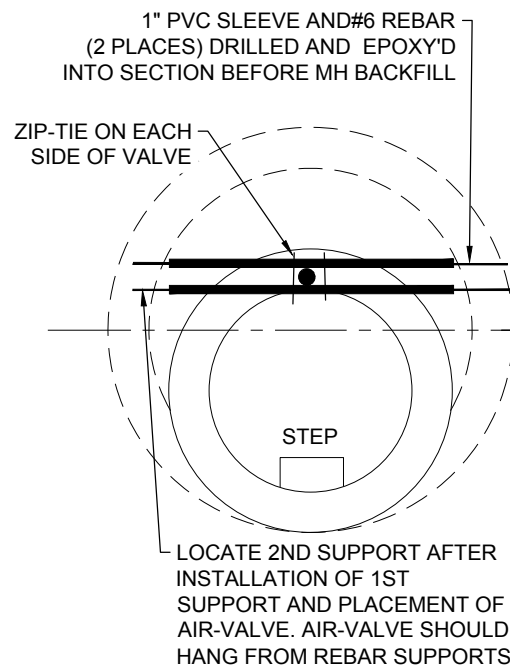
D3  
23





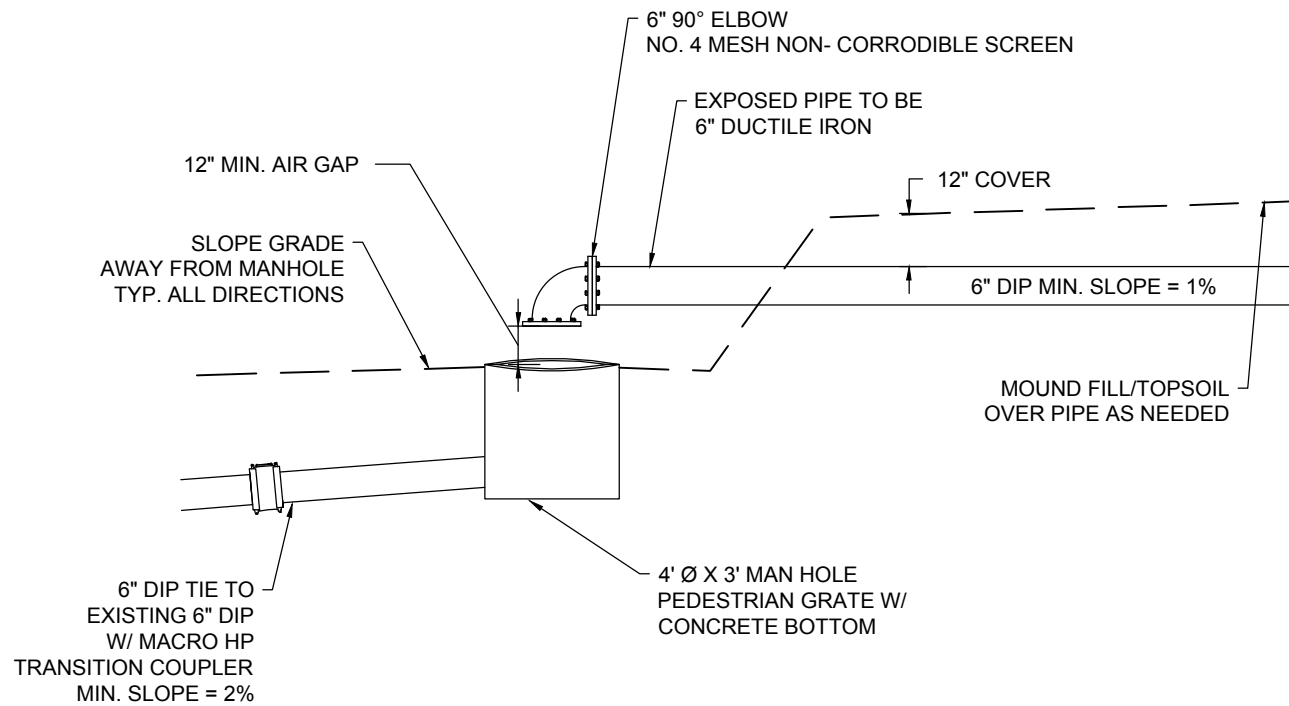
**TYPICAL VALVE DETAIL**  
NOT TO SCALE

12  
D4



**AIR VACUUM RELEASE VALVE DETAIL**  
NOT TO SCALE

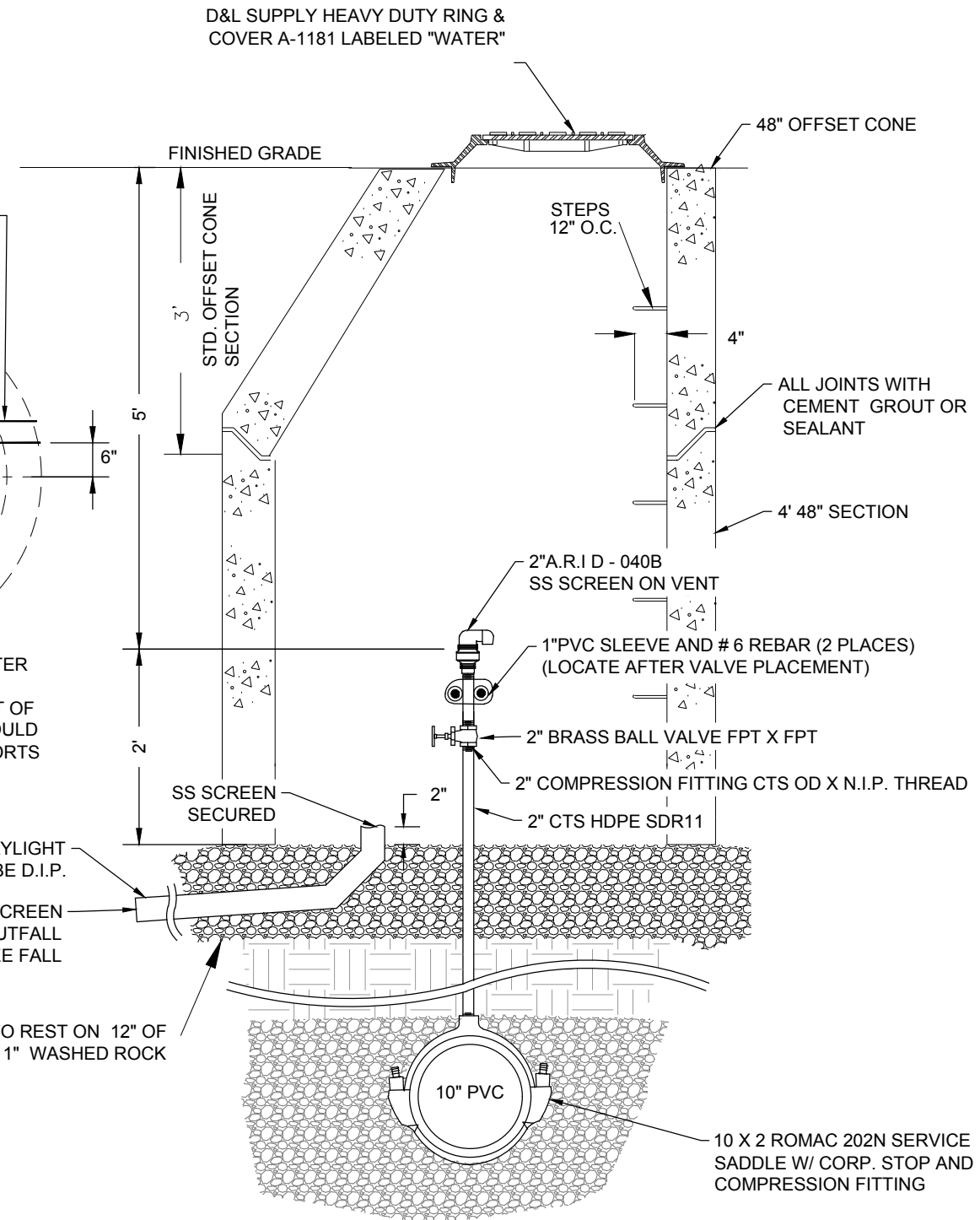
14  
D4



**AIR GAP BASIN**

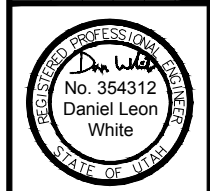
NOT TO SCALE

13  
D4



Date:	11/4/2016
Scale:	
Designed:	DLW
Drafted:	MDD
Checked:	DLW

Revisions	Date	Description



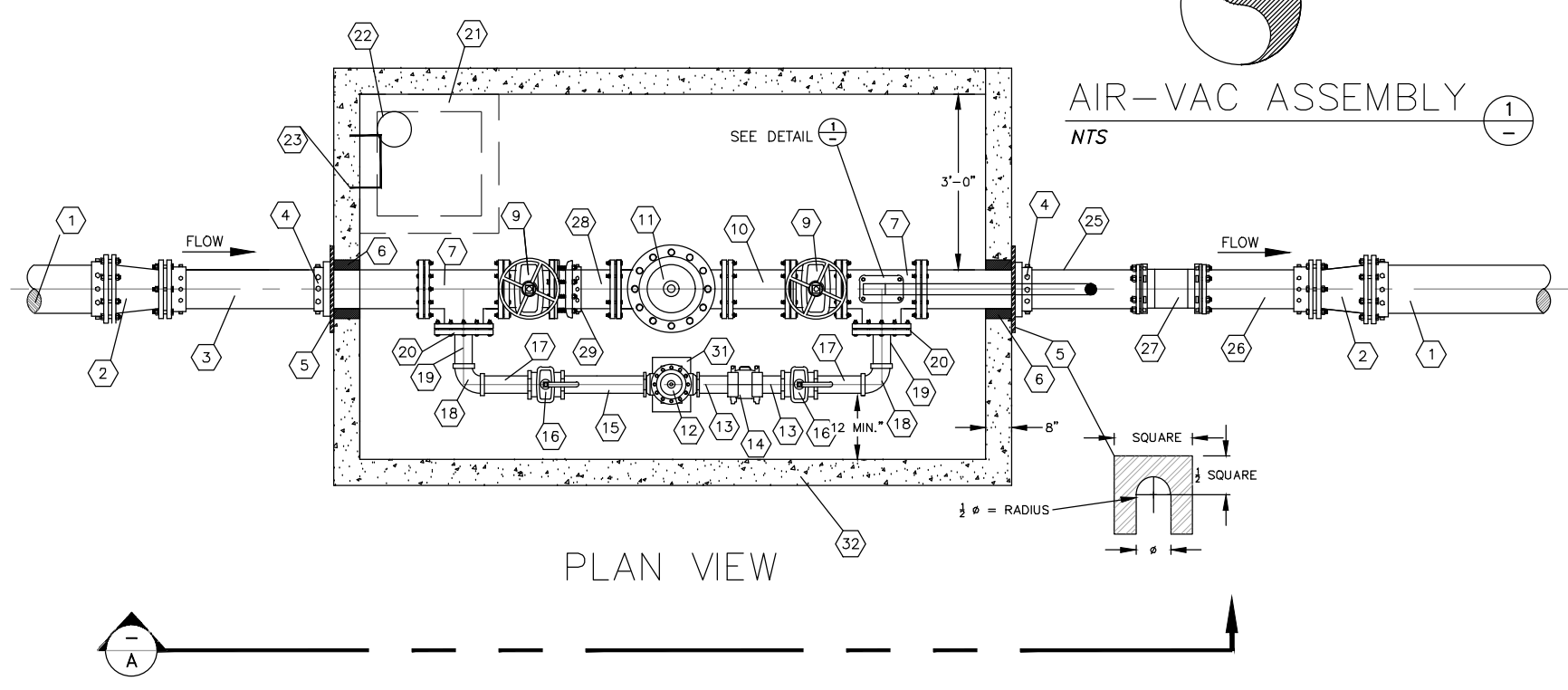
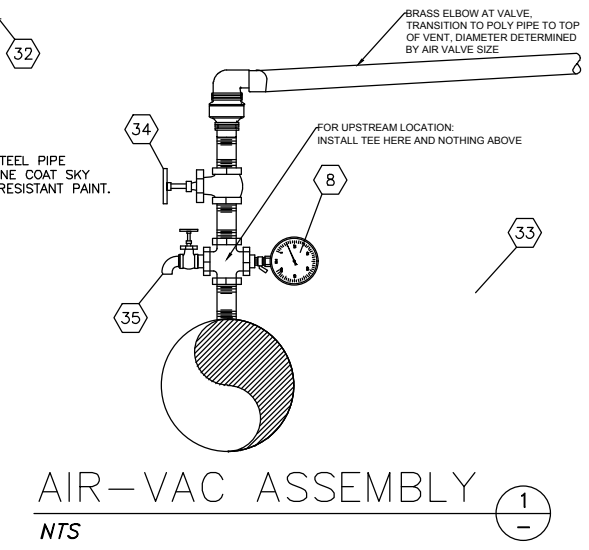
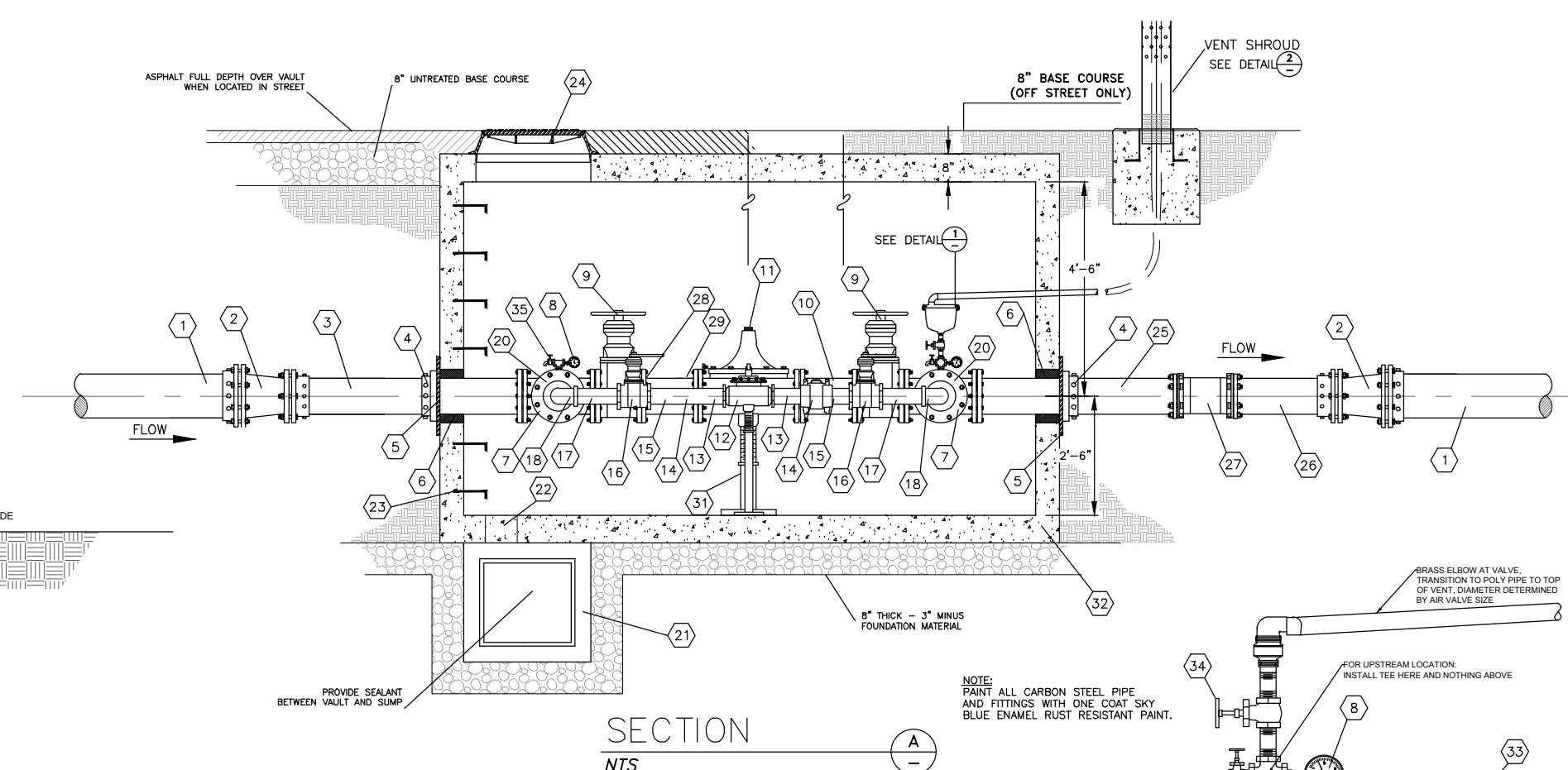
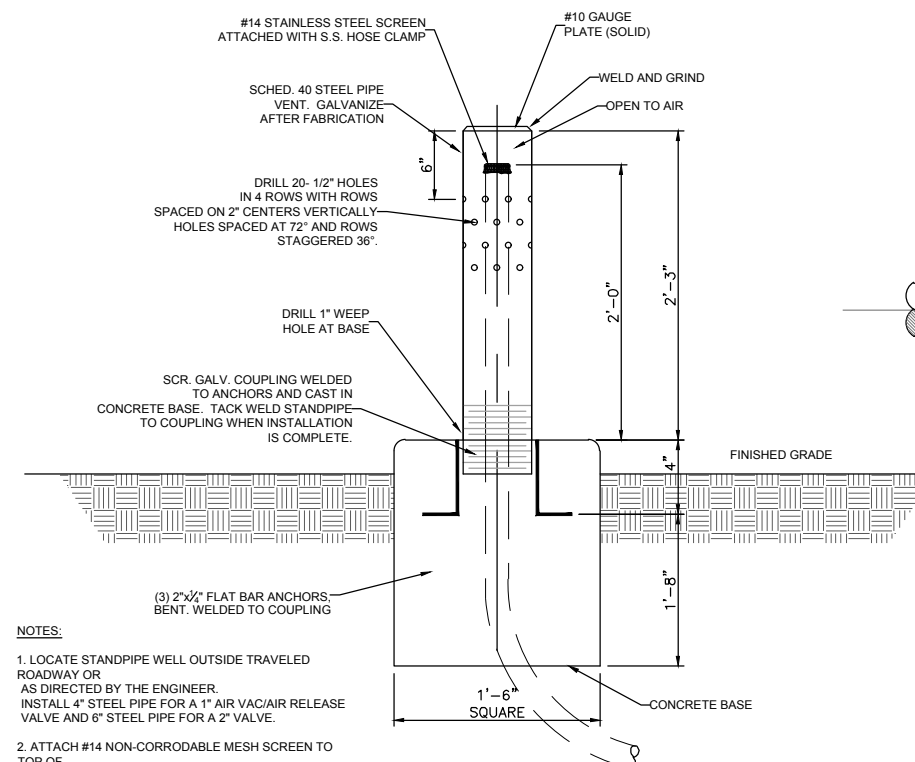
**DETAILS 4**  
**UPPER SYSTEM TANK**  
**LIBERTY PIPELINE COMPANY**  
**LIBERTY, WEBER, UTAH**

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D4  
23

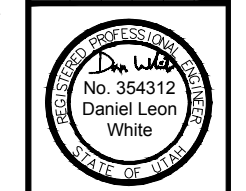
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BILL OF MATERIALS				
NO.	QTY	DESCRIPTION	6" LINE	NOTES
1	2	DIP OR PVC MxPE	6"	
2	2	REDUCER MxMJ	6"x4"	USE JOINT RETAINER GLANDS
3	1	DIP SPOOL 5'-0" LENGTH FLGXPE	4"	
4	2	FIELD FLANGE FOR DIP	4"	
5	2	1/4" THICK STEEL THRUST PLATE	10"x10" 5"	SQ. W/ Ø CUT OUT
6	2	PRE-CORED HOLES	10" Ø	SEAL WITH NON-SHRINK GROUT
7	2	TEE FLGXFLG	4"x4"x4"	
8	2	1/4" (1-200) PSI LIQUID FILLED PRESSURE GAUGE		SUPPLY WITH BRASS STOP COCK
9	2	RESILIENT SEAT GATE VALVE FLGXFLG	4"	
10	1	DIA. X 1'-0" 1/4" DIP FLGXFLG	6"	
11	1	PRESSURE REDUCING VALVE FLGXFLG	4"	CLA-VAL MODEL 90-01 KC
12	1	PRESSURE REDUCING VALVE THDXTHD	2"	CLA-VAL MODEL 90-01 KC
13	2	DIA. X LENGTH GALV. PIPE THDXVIC.	2" Ø	FIELD ADJUST LENGTH
14	2	COUPLING	2"	ROMAC MACRO HP
15	1	DIA. X LENGTH GALV. PIPE THDXVIC.	2" Ø	FIELD ADJUST LENGTH
16	2	BALL VALVE THDXTHD	2"	
17	2	DIA. X LENGTH GALV. PIPE THDXTHD	2" Ø	FIELD ADJUST LENGTH
18	2	90° GALV. BEND THDXTHD	2"	
19	2	DIA. X 8" GALV. PIPE THDXTHD	2" Ø	
20	2	BLIND FLANGE W/ THREAD TAP	4" 2"	
21	1	2' X 2' CONCRETE CATCH BASIN		SUMP FOR SUBSURFACE WATER
22	1	8" PRE-CORED HOLE		SUMP HOLE TO DEWATER VAULT
23	6	STEPS		"WATER"
24	1	A-1181 D&L MANHOLE RING AND COVER		
25	1	DIA. X LENGTH DIP FLGXPE	4", 6'-0"	
26	1	DIA. X 2'-0" SPOOL PEXPE	4"	
27	1	DIP SLEEVE MxMJ	4"	
28	1	DIA. X 1'-0" DIP FLGXPE	4"	
29	1	RESTRAINED FLANGED COUPLING ADAPTER	4"	
31	2	PIPE STAND		
32	1	6' X 12' X 7' HIGH PRECAST CONCRETE VAULT		H2O LOADING
33	1	COMBINATION AIR RELEASE VALVE W/ AIR VENT	1"	A.R.I. D-040B W/ FITTINGS
34	1	SCREWED GATE VALVE	1"	W/ FITTINGS
35	1	1/2" SMOOTH NOSE TAP		W/ FITTINGS

Date:	11/4/2016
Scale:	DLW
Designed:	DLW
Drafted:	MDD
Checked:	DLW



**DETAILS 5 PRV**  
**UPPER SYSTEM TANK**  
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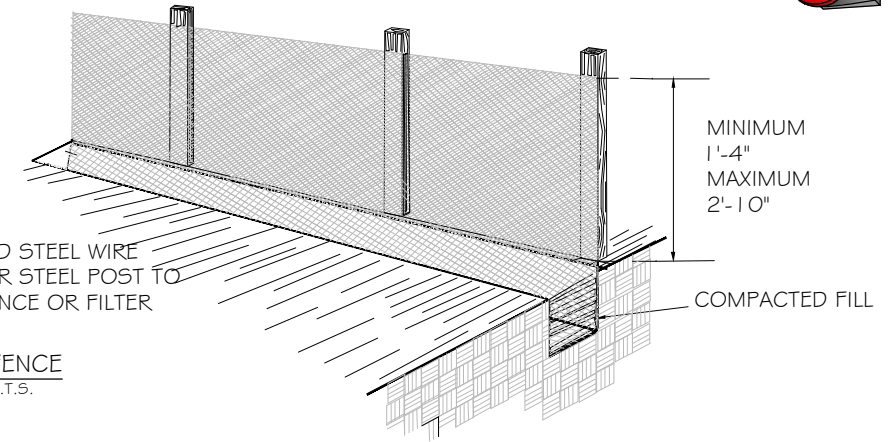
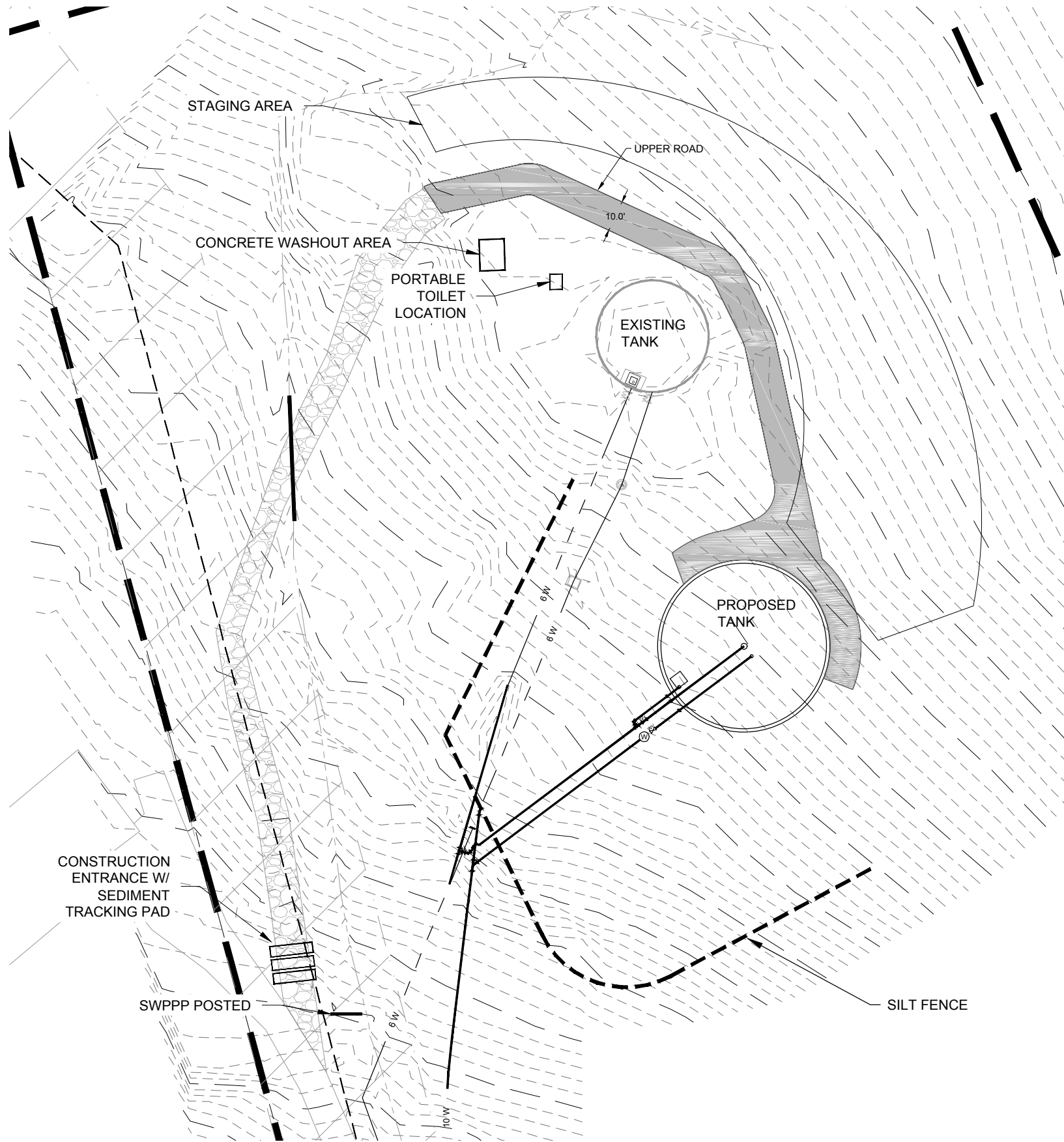
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**D5**  
**23**

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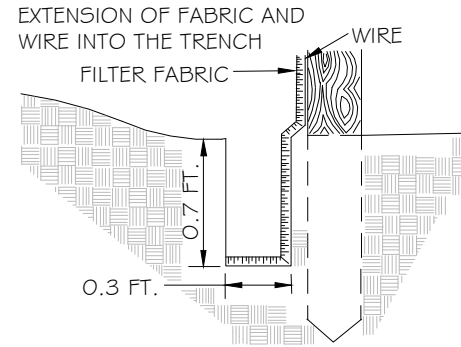


# SWPPP UPPER SYSTEM TANK



INSTALL GALVANIZED STEEL WIRE MESH ON WOOD OR STEEL POST TO SUPPORT A SILT FENCE OR FILTER BARRIER.

SILT FENCE  
SCALE: N.T.S.



- 1-FILTER FABRIC - 3'-3" MINIMUM WIDTH
- 2-FENCE FUNCTIONS BEST IN SHEET FLOW CONDITIONS
- 3-REMOVE AND DISPOSE OF SEDIMENT WHEN ACCUMULATION REACH 50% FABRIC HEIGHT.
- 4-BACKFILL MIN 0.7 FT. THICK LAYER OF FREE DRAINING GRANULAR BACKFILL MATERIAL.

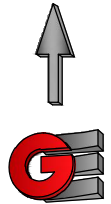
NOTE: ALL CONSTRUCTION TO CONFORM TO WEBER COUNTY STANDARDS AND SPECIFICATIONS.

### LEGEND

--- SILT FENCE



Scale in Feet  
0.30000000 = 1'-0"



Date:	11/4/2016
Scale:	0.30000000 = 1'-0"
Designed:	DLW
Drafted:	MDD
Checked:	DLW

Revisions	Date	Description



SWPPP  
UPPER SYSTEM TANK  
LIBERTY PIPELINE COMPANY  
LIBERTY, WEBER, UTAH

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SW1  
23



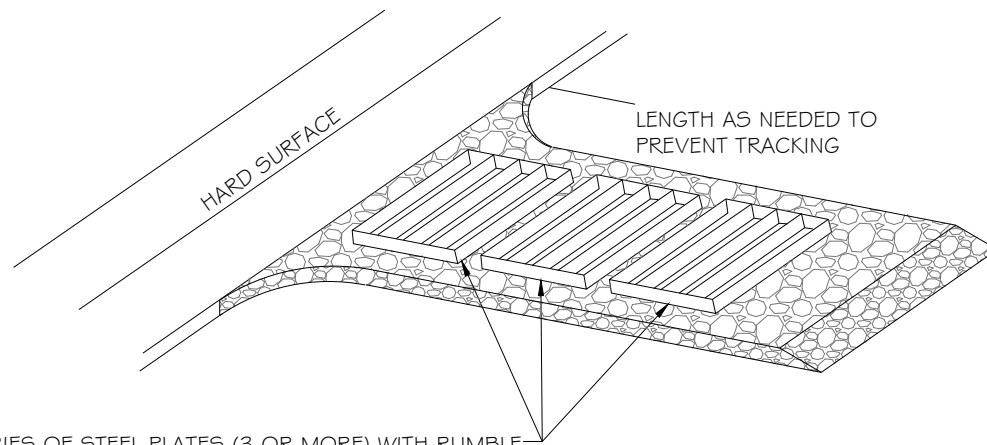
# SWPPP DETAILS UPPER SYSTEM TANK

### STREET MAINTENANCE NOTES:

1. REMOVE ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS IMMEDIATELY.
2. SWEEP PAVED AREAS THAT RECEIVE CONSTRUCTION TRAFFIC WHENEVER SEDIMENT BECOMES VISIBLE.
3. PAVEMENT WASHING WITH WATER IS PROHIBITED IF IT RESULTS IN A DISCHARGE TO THE STORM DRAIN SYSTEM OR NATURAL WATERWAY.

### EROSION CONTROL NOTES:

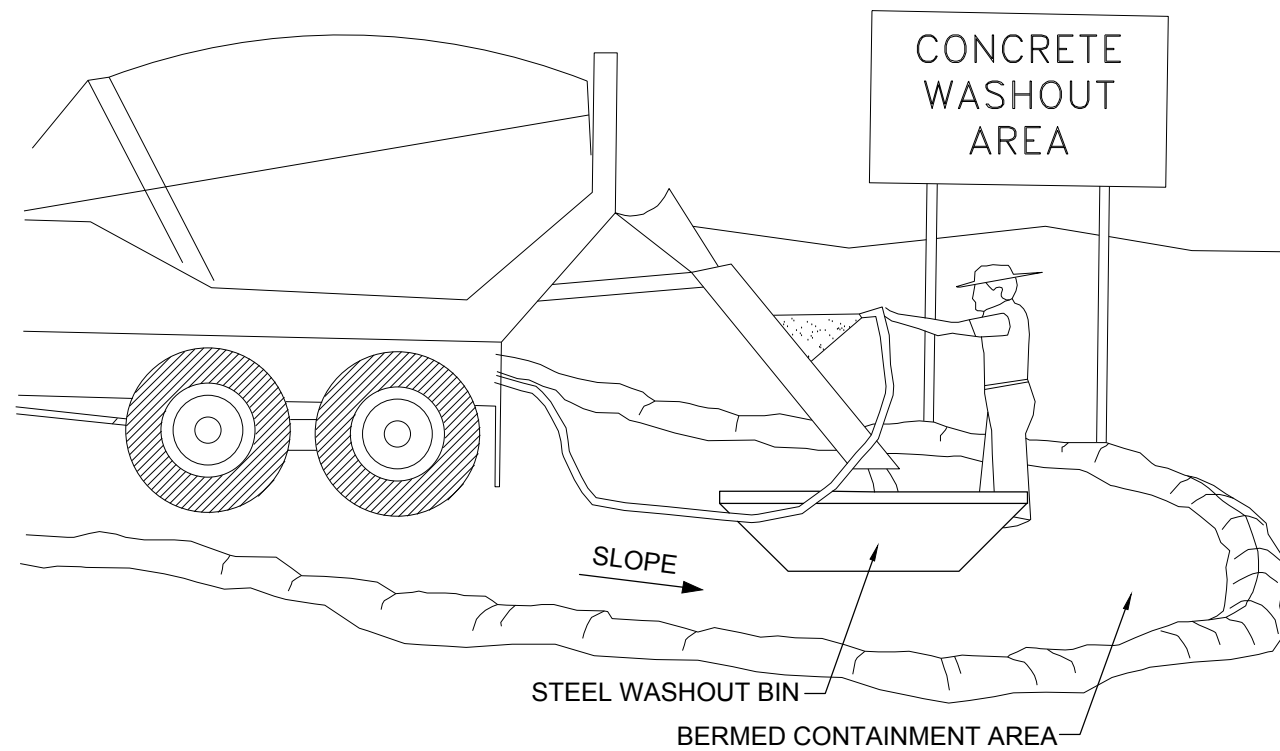
1. INSTALL SILT FENCE PRIOR TO COMMENCING ANY CONSTRUCTION



A SERIES OF STEEL PLATES (3 OR MORE) WITH RUMBLE STRIPS OR MIN. 3" COARSE AGGREGATE.

### ENTRANCE STABILIZATION NOTES:

1. SEDIMENTS AND OTHER MATERIALS SHALL NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS SHALL BE STABILIZED SO AS TO PREVENT SEDIMENTS FROM BEING DEPOSITED INTO THE STORM DRAIN SYSTEMS. DEPOSITIONS MUST BE SWEEPED UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS INTO THE STORM DRAIN SYSTEM.
2. STABILIZED CONSTRUCTION ENTRANCE SHALL BE:
  - a. LOCATED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE TO OR FROM A HARD DRIVING SURFACE.
  - b. A SERIES OF STEEL PLATES WITH "RUMBLE STRIPS", AND/OR MIN. 3" COARSE AGGREGATE WITH LENGTH, WIDTH AND THICKNESS AS NEEDED TO ADEQUATELY PREVENT ANY TRACKING ONTO PAVED SURFACES.
3. ADDING A WASH RACK WITH A SEDIMENT TRAP LARGE ENOUGH TO COLLECT ALL WASH WATER CAN GREATLY IMPROVE EFFICIENCY.
4. ALL VEHICLES ACCESSING THE CONSTRUCTION SITE SHALL UTILIZE THE STABILIZED CONSTRUCTION ENTRANCE SITES.



### CONCRETE WASTE MANAGEMENT NOTES:

1. EXCESS AND WASTE CONCRETE SHALL BE DISPOSED OF OFF SITE OR AT DESIGNATED AREAS ONLY.
2. EXCESS AND WASTE CONCRETE SHALL NOT BE WASHED INTO THE STREET OR INTO A DRAINAGE SYSTEM.
3. FOR WASHOUT OF CONCRETE AND MORTAR PRODUCTS ONSITE, A DESIGNATED CONTAINMENT FACILITY OF SUFFICIENT CAPACITY TO RETAIN LIQUID AND SOLID WASTE SHALL BE PROVIDED.
4. ONSITE CONCRETE WASHOUT CONTAINMENT FACILITY SHALL BE A STEEL BIN OR APPROVED ALTERNATE.
5. SLURRY FROM CONCRETE AND ASPHALT SAW CUTTING SHALL BE VACUUMED OR CONTAINED, DRIED, PICKED UP AND DISPOSED OF PROPERLY.

NOTE: ALL CONSTRUCTION TO CONFORM TO WEBER COUNTY STANDARDS AND SPECIFICATIONS.

Date:	11/4/2016
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Designed:	DLW
Drafted:	MDD
Checked:	DLW
Revisions	
Date	Description



SWPPP DETAILS  
UPPER SYSTEM TANK  
LIBERTY PIPELINE COMPANY  
LIBERTY, WEBER, UTAH

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GARDNER  
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OFFICE: 801.476.0202 FAX: 801.476.0066

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# SWPPP NOTES

## UPPER SYSTEM TANK

### DEFINITIONS

1. "BEST MANAGEMENT PRACTICES" ("BMP'S") MEANS SCHEDULES OF ACTIVITIES, PROHIBITIONS OF PRACTICES, MAINTENANCE PROCEDURES, AND OTHER MANAGEMENT PRACTICES TO PREVENT OR REDUCE THE POLLUTION OF WATERS OF THE UNITED STATES. BMP'S ALSO INCLUDE TREATMENT REQUIREMENTS, OPERATING PROCEDURES, AND PRACTICES TO CONTROL SITE RUNOFF, SPILLAGE OR LEAKS, WASTE DISPOSAL, OR DRAINAGE FROM RAW MATERIAL STORAGE.
2. "CLEAN WATER ACT" ("CWA") MEANS THE FEDERAL WATER POLLUTION CONTROL ACT ENACTED BY PUBLIC LAW 92-500 AS AMENDED BY PUBLIC LAWS 95-217, 95-576, 96-483, AND 97-111; 33 USC 1251 ET SEQ.
3. "CONSTRUCTION SITE" IS THE LOCATION OF THE CONSTRUCTION ACTIVITY.
4. "NON-STORM WATER DISCHARGE" MEANS ANY DISCHARGE TO STORM DRAIN SYSTEMS THAT IS NOT COMPOSED ENTIRELY OF STORM WATER EXCEPT DISCHARGE PURSUANT TO AN NPDES PERMIT AND DISCHARGES RESULTING FROM FIRE FIGHTING ACTIVITIES.
5. "SIGNIFICANT MATERIAL" INCLUDES, BUT IS NOT LIMITED TO RAW MATERIALS; FUELS; MATERIALS SUCH AS SOLVENTS, DETERGENTS, AND PLASTIC PELLETS; FINISHED MATERIALS SUCH AS METALLIC PRODUCTS; RAW MATERIALS USED IN FOOD PROCESSING OR PRODUCTION HAZARDOUS SUBSTANCES DESIGNATED UNDER SECTION 101 (14) OF THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT ( CERLCA ) ; ANY CHEMICAL THE FACILITY IS REQUIRED TO REPORT PURSUANT TO SECTION 313 OF TITLE III OF SUPER FUND AMENDMENTS AND REAUTHORIZATION ACT ( SARA ) ; FERTILIZERS; PESTICIDES; AND WASTE PRODUCTS SUCH AS ASHES, SLAG, AND SLUDGE THAT HAVE THE POTENTIAL TO BE RELEASED WITH STORM WATER DISCHARGES.
6. "SIGNIFICANT QUANTITIES" IS THE VOLUME, CONCENTRATIONS, OR MASS OF A POLLUTANT IN STORM WATER DISCHARGE THAT CAN CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR NUISANCE; ADVERSELY IMPACT HUMAN HEALTH OR THE ENVIRONMENT; AND CAUSE OR CONTRIBUTE TO A VIOLATION OF ANY APPLICABLE WATER QUALITY STANDARDS FOR THE RECEIVING WATER.
7. "STORM WATER" MEANS STORM WATER RUNOFF, SNOW MELT RUNOFF, SURFACE RUNOFF AND DRAINAGE. IT EXCLUDES INFILTRATION AND RUNOFF FROM AGRICULTURAL LAND.
8. "POLLUTION" MEANS THE "MAN-MADE OR MAN-INDUCED ALTERATION OF THE CHEMICAL, PHYSICAL, BIOLOGICAL, AND RADIOLOGICAL INTEGRITY OF WATER" [CLEAN WATER ACT SECTION 502 (19) ]. POLLUTION ALSO MEANS "AN ALTERATION OF THE QUALITY OF THE WATERS OF THE STATE BY WASTE TO A DEGREE WHICH UNREASONABLY AFFECTS EITHER : THE WATERS FOR BENEFICIAL USES : OR FACILITIES WHICH SERVE THESE BENEFICIAL USES." [CALIFORNIA WATER CODE SECTION 13050 (1) ].
9. "CONTAMINATION" MEANS "AN IMPAIRMENT OF THE QUALITY OF THE WATERS OF THE STATE BY WASTE TO A DEGREE WHICH CREATES A HAZARD TO THE PUBLIC HEALTH THROUGH POISONING OR THROUGH THE SPREAD OF DISEASE ;INCLUDING ANY EQUIVALENT EFFECT RESULTING FROM THE DISPOSAL OF WASTE, WHETHER OR NOT WATERS OF THE STATE ARE AFFECTED."
10. "NUISANCE" MEANS "ANYTHING WHICH MEETS ALL OF THE FOLLOWING REQUIREMENTS: (1) IS INJURIOUS TO HEALTH, OR IS INDECENT OR OFFENSIVE TO THE SENSES, OR AN OBSTRUCTION TO THE FREE USE OF PROPERTY, SO AS TO INTERFERE WITH THE COMFORTABLE ENJOYMENT OF LIFE AND PROPERTY; (2) AFFECTS AT THE SAME TIME AN ENTIRE COMMUNITY OR NEIGHBORHOOD, OR ANY CONSIDERABLE NUMBER OF PERSONS, ALTHOUGH THE EXTENT OF THE ANNOYANCE OR DAMAGE INFLICTED UPON INDIVIDUALS MAY BE UNEQUAL; (3) OCCURS DURING OR AS A RESULT OF THE TREATMENT OR DISPOSAL OF WASTES."
11. "LOCAL AGENCY" MEANS ANY AGENCY THAT IS INVOLVED WITH REVIEW, APPROVAL, OR OVERSIGHT OF THE CONSTRUCTION SITES' (a) CONSTRUCTION ACTIVITY, (b) EROSION AND SEDIMENT CONTROLS, (c) STORM WATER DISCHARGE.

### STORM WATER POLLUTION PREVENTION PLAN SPECIFIC NOTES

1. THIS STORM WATER POLLUTION PREVENTION PLAN ( SWPPP ) WAS DEVELOPED AT THE REQUEST OF THE OWNER, LIBERTY PIPELINE COMPANY, FOR THE CONSTRUCTION OF THE UPPER SYSTEM TANK, LOCATED IN THE COUNTY OF WEBER, STATE OF UTAH.  
  
THIS PLAN IDENTIFIES POTENTIAL SOURCES OF POLLUTANTS OF STORM WATER, PRESENTS POLLUTION CONTROL MEASURES, AND ASSISTS IN INSURING IMPLEMENTATION AND MAINTENANCE OF THE BEST MANAGEMENT PRACTICES (BMP'S) INDICATED HEREIN.
2. A NOTICE OF INTENT HAS BEEN FILED WITH THE STATE OF UTAH WATER RESOURCES CONTROL BOARD BY THE OWNER SO THAT THIS CONSTRUCTION PROJECT MAY BE COVERED UNDER THE STATE GENERAL PERMIT. THE PERMIT IS NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT (NO. UTR 620000) FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY.
3. IN THE EVENT OF A CHANGE OF OWNERSHIP, A NEW NOTICE OF INTENT SHALL BE FILED WITH THE STATE WATER RESOURCES CONTROL BOARD.
4. IN THE EVENT OF A RELEASE OF A REPORTABLE QUANTITY OF A POLLUTANT, THE CONTRACTOR SHALL ADVISE THE OWNER TO NOTIFY THE NATIONAL RESPONSE CENTER, MORGAN COUNTY AND GARDNER ENGINEERING. IF NECESSARY, THIS POLLUTION PREVENTION PLAN SHOULD BE REVISED TO REFLECT THE CHANGE IN CONDITIONS OF THE CONSTRUCTION ACTIVITY. A REPORTABLE QUANTITY IS ESTABLISHED BY 40 CODE OF FEDERAL REGULATIONS (CFR) 117.3 OR 40 CFR 302.4.
5. ALL CONTRACTORS AND THEIR PERSONNEL WHOSE WORK CAN CONTRIBUTE TO OR CAUSE POLLUTION OF STORM WATER SHOULD BE MADE FAMILIAR WITH THIS POLLUTION PREVENTION PLAN. ADEQUATE TRAINING FOR IMPLEMENTATION OF THE MEASURES PRESENTED HEREIN SHALL BE PROVIDED TO THE CONTRACTORS AND THEIR PERSONNEL.
6. CHANGES ON CONSTRUCTION OR IN CONDITIONS WHICH ARE NOT COVERED BY THIS PLAN SHOULD BE BROUGHT TO THE ATTENTION OF THE OWNER AND GARDNER ENGINEERING. IF NECESSARY, THIS POLLUTION PREVENTION PLAN WILL BE REVISED TO REFLECT THE CHANGE IN CONSTRUCTION OR IN CONDITIONS.
7. ALL PREVENTION AND CLEAN UP MEASURES SHOULD BE CONDUCTED IN ACCORDANCE WITH MORGAN COUNTY ORDINANCES, AS WELL AS STATE AND FEDERAL REGULATIONS. WASTE MATERIALS SHOULD BE DISPOSED OF IN A LEGAL MANNER.  
  
ALL DISCHARGERS OF STORM WATER MUST COMPLY WITH THE LAWFUL REQUIREMENTS OF MORGAN COUNTY AND OTHER LOCAL AGENCIES REGARDING THE DISCHARGES OF STORM WATER TO STORM DRAINS.

8. THIS PLAN DOES NOT COVER THE REMOVAL OF HAZARDOUS OR TOXIC WASTE. IN THE EVENT OF A DISCHARGE OR RELEASE OF A REPORTABLE QUANTITY OF TOXIC WASTE, WORK SHOULD BE STOPPED UNTIL THE SPILL CAN BE ASSESSED AND A MITIGATION REPORT PREPARED BY A QUALIFIED ENVIRONMENTAL CONSULTANT, AND IF NECESSARY, REVIEWED BY MORGAN COUNTY AND ANY OTHER AGENCY HAVING JURISDICTION.

9. THIS SWPPP SHALL BE MADE AVAILABLE TO THE PUBLIC UNDER SECTION 308 (B) OF THE CLEAN WATER ACT. UPON REQUEST BY MEMBERS OF THE PUBLIC, THE DISCHARGER SHALL MAKE AVAILABLE FOR REVIEW A COPY OF THIS SWPPP EITHER TO THE REGIONAL WATER BOARD OR DIRECTLY TO THE REQUESTER.

THIS SWPPP MUST BE KEPT ON SITE DURING CONSTRUCTION ACTIVITY AND MADE AVAILABLE UPON REQUEST OF A REPRESENTATIVE OF THE REGIONAL WATER BOARD AND/OR THE LOCAL AGENCY.

#### 10. CONTACTS

GARDNER ENGINEERING  
5150 E 375 S (801) 476-0202  
SUITE 200  
OGDEN, UTAH 84405

STATE OF UTAH  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF WATER QUALITY ENVIRONMENTAL ENGINEER  
299 NORTH 1460 WEST (801) 538-6146  
P.O. BOX 144870  
SALT LAKE CITY, UTAH 84114

U.S. EPA  
ENVIRONMENTAL PROTECTION AGENCY  
DENVER, COLORADO REGION VIII  
800-759-4372

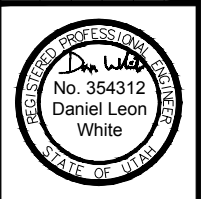
ENVIRONMENTAL PROTECTION AGENCY 202-475-9518  
WASHINGTON, D.C. 20460

#### 11. REFERENCES

- A. UTILITY & STREET IMPROVEMENT PLANS PER GARDNER ENGINEERING DATED JUNE 2016.
- B. STORM WATER POLLUTION PREVENTION PLAN PREPARED BY GARDNER ENGINEERING DATED JUNE 2016.

12. THE PROPOSED CONSTRUCTION ACTIVITY IS THE UPPER SYSTEM TANK.
13. LOCATION OF THE SITE: WEBER COUNTY, UTAH
14. SITE SPECIFIC NOTES -

Date:	11/4/2016
Scale:	#####
Designed:	DLW
Drafted:	MDD
Checked:	DLW



SWPPP NOTES  
UPPER SYSTEM TANK  
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# SWPPP NOTES 2

## UPPER SYSTEM TANK

### STORM WATER POLLUTION PREVENTION PLAN GENERAL NOTES

**A. PROHIBITION ON MOST NON-STORM WATER DISCHARGES**

ONLY STORM WATER FROM THE PROJECT SITE SHALL BE ALLOWED TO FLOW INTO THE ON-SITE STORM DRAIN SYSTEM. CLEAN, NON-CHLORINATED WATER FROM THE FLUSHING OF FIRE HYDRANTS, WATER MAINS, AND STORM DRAINS MAY BE DISCHARGED TO THE STORM DRAIN IF IT IS NOT ALLOWED TO COLLECT DIRT, DEBRIS, AND TRASH WHILE FLOWING TO A STORM DRAIN INLET.

**B. SOURCES OF STORM WATER POLLUTANTS**

STORM WATER POLLUTANTS INCLUDE SOIL SEDIMENT AND NUTRIENTS, OIL, GREASE, TOXIC POLLUTANTS, AND HEAVY METALS. SOURCES OF STORM WATER POLLUTANTS INCLUDE BUT ARE NOT LIMITED TO SOIL EROSION BY WATER AND/OR WIND; CLEARING OF VEGETATION; GRADING; VEHICLE AND EQUIPMENT REFUELING AND MAINTENANCE; WASHING OF CONCRETE TRUCKS, MIXERS AND HANDLING EQUIPMENT; PAINTS, SOLVENTS AND ADHESIVES; AND LANDSCAPING WORK.

**C. EROSION AND SEDIMENT CONTROLS**

**1- COVER EXPOSED STOCKPILES OF SOILS, CONSTRUCTION AND LANDSCAPING MATERIAL WITH HEAVY PLASTIC SHEETING.**

**2- IN LANDSCAPING AREAS WHERE THE VEGETATION HAS NOT ESTABLISHED GROWTH AND TAKEN HOLD, CONSTRUCT SANDBAG OR DIRT BERMS AROUND THEIR PERIMETER TO INSURE THAT WATER WILL BE CONTAINED INSIDE THE LANDSCAPING AREA AND THAT IT WILL NOT BE CONVEYED TO A STORM DRAIN INLET.**

**3- RE-VEGETATE AREAS WHERE LANDSCAPING HAS DIED OR NOT TAKEN HOLD.**

**4- DIVERT STORM WATER RUNOFF AROUND DISTURBED SOILS WITH BERMS OR DIRT SWALES.**

**D. OTHER CONTROLS**

**1- WASTE DISPOSAL**

- A. KEEP WASTE DISPOSAL CONTAINERS COVERED.**
- B. PROVIDE FOR THE WEEKLY (OR MORE FREQUENT, IF NECESSARY) DISPOSAL OF WASTE CONTAINERS.**
- C. PROVIDE CONTAINERS AT CONVENIENT LOCATIONS AROUND THE SITE.**

**2- SWEEPING OF SITE**

**A. PROVIDE WEEKLY SWEEPING BY HAND OR MECHANICAL MEANS TO KEEP THE PAVED AREAS OF THE SITE FREE OF DUST, DIRT, AND DEBRIS.**

**B. DISPOSE OF ACCUMULATED DIRT IN WASTE CONTAINERS, OR HAUL IT OFF THE SITE TO A LANDFILL.**

**3- SANITARY/SEPTIC DISPOSAL**

PORTABLE TOILETS AND OTHER SANITARY FACILITIES SHALL BE SERVICED WEEKLY AND PUMPED CLEAN BY A WASTE DISPOSAL COMPANY. NO TOXIC OR HAZARDOUS WASTE SHALL BE DISPOSED IN A PORTABLE TOILET OR IN THE ON-SITE SANITARY SEWER.

**4- SPILLS**

**A. STORE ADEQUATE ABSORBENT MATERIALS, RAGS, BROOMS, SHOVELS, AND WASTE CONTAINERS ON THE SITE TO CLEAN-UP SPILLS OF MATERIALS SUCH AS FUEL, PAINT, SOLVENTS, OR CLEANERS. CLEAN UP MINOR SPILLS IMMEDIATELY.**

**B. FOR REPORTABLE QUANTITY OF HAZARDOUS OR TOXIC SUBSTANCE, SECURE THE SERVICES OF QUALIFIED PERSONNEL FOR CLEAN-UP AND DISPOSAL.**

**5- CONTROL OF ALLOWABLE NON-STORM WATER DISCHARGES**

LANDSCAPING IRRIGATION, EROSION CONTROL MEASURES, PIPE FLUSHING AND TESTING, AND PAVEMENT WASHING ARE ALLOWED IF THEY CANNOT FEASIBLY BE ELIMINATED, COMPLY WITH THIS PLAN, DO NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF WATER QUALITY STANDARDS, AND ARE NOT REQUIRED TO BE PERMITTED BY THE LOCAL REGIONAL WATER QUALITY CONTROL BOARD.

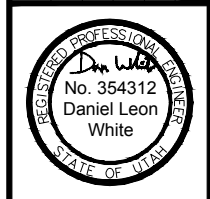
**6- VEHICLES AND EQUIPMENT**

**A. FIX LEAKS OF FUEL, OIL AND OTHER SUBSTANCES IMMEDIATELY.**

**B. PERFORM REFUELING AND SERVICE OF VEHICLES OR EQUIPMENT OFF-SITE WHEN POSSIBLE. IF REFUELING OR SERVICE OF EQUIPMENT IS PERFORMED ON-SITE, THEN PROVIDE AN IMPERVIOUS, CONTAINED AREA WHERE ANY SPILLS CAN BE CONTAINED WITHOUT FLOWING TO A STORM WATER INLET OR INTO THE GROUND.**

**C. USE DRIP PANS TO CATCH LEAKS AND SMALL SPILLS.**

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SWPPP NOTES 2  
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STRUCTURAL NOTES

A. GENERAL

- THE STRUCTURAL NOTES ARE INTENDED TO COMPLEMENT THE PROJECT SPECIFICATIONS WHICH ARE PART OF THE CONSTRUCTION DOCUMENTS. SPECIFIC NOTES AND DETAILS ON THE DRAWINGS SHALL GOVERN OVER THE STRUCTURAL NOTES AND TYPICAL DETAILS.
- THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE SITE. IF ACTUAL CONDITIONS DIFFER FROM THOSE SHOWN ON CONTRACT DOCUMENTS, CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO FABRICATION OR CONSTRUCTION OF ANY AFFECTED ELEMENTS.
- ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH ANY WORK INVOLVED. IN CASE OF CONFLICT, FOLLOW THE MOST STRINGENT REQUIREMENT AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
- OBSERVATION VISITS TO THE SITE BY ARW ENGINEERS FIELD REPRESENTATIVES SHALL NEITHER BE CONSTRUED AS INSPECTION NOR APPROVAL OF CONSTRUCTION.
- SEE SPECIFICATIONS FOR REQUIRED SUBMITTALS. SUBMITTALS SHALL BE MADE IN A TIMELY MANNER AS INDICATED IN SPECIFICATIONS. REVIEW OF SUBMITTALS BY ARW ENGINEERS IS FOR GENERAL COMPLIANCE ONLY AND IS NOT INTENDED AS APPROVAL. SUBMITTALS WHICH ARE UNCLEAR OR DIFFICULT TO READ SHALL BE REJECTED.
- DURING AND AFTER CONSTRUCTION, BUILDER AND/OR OWNER SHALL KEEP LOADS ON STRUCTURE WITHIN THE LIMITS OF DESIGN LOADS.
- TYPICAL DETAILS AND SECTIONS SHALL APPLY WHERE SPECIFIC DETAILS ARE NOT SHOWN.
- THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST TO THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH ANY CHANGES, MODIFICATIONS OR SUBSTITUTIONS.
- THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY SHORING AND BRACING FOR ALL STRUCTURAL ELEMENTS UNTIL THE ENTIRE STRUCTURAL SYSTEM IS COMPLETED. CONTRACTOR IS RESPONSIBLE FOR DESIGN OF ALL SHORING.
- THE CONTRACTOR SHALL COORDINATE AND VERIFY ALL LOCATIONS AND SIZES OF MECHANICAL EQUIPMENT OR OTHER EQUIPMENT BEFORE FABRICATING AND ERECTING STRUCTURAL ELEMENTS.

B. SPECIAL INSPECTION

- SPECIAL INSPECTION OF ALL CONCRETE SHALL BE PROVIDED BY AN INDEPENDENT AGENCY EMPLOYED AS OUTLINED IN THE SPECIFICATIONS. CONTRACTOR SHALL COORDINATE AND COOPERATE WITH REQUIRED INSPECTIONS.

C. BASIS OF DESIGN

- GOVERNING CODE : ACI 318 / ACI 350R
- SNOW LOAD = 100 PSF
- MAXIMUM SOIL COVER = 6" SOIL

D. FOUNDATION

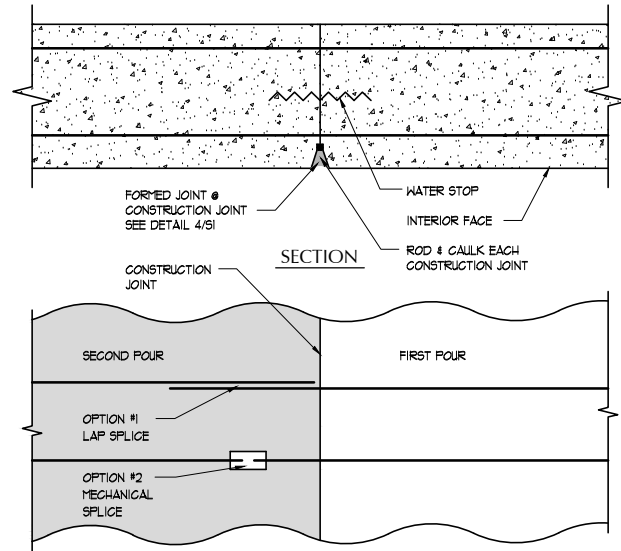
- DESIGN SOIL PRESSURE : 4000 PSF
- SOILS REPORT BY : GEOSTRATA REPORT # : 146-010, DATED : JUNE 21, 2016
- SOIL PREPARATION UNDER FOOTINGS AND SLABS-ON-GRADE SHALL BE IN ACCORDANCE WITH THE SOILS REPORT.
- UNLESS NOTED OTHERWISE, ALL FOOTINGS AT COLUMNS TO BE CENTERED BELOW COLUMNS.

E. CONCRETE

- ALL CONCRETE SHALL HAVE A DESIGN 28-DAY COMPRESSIVE STRENGTH AS FOLLOWS : FOOTINGS, SLAB ON GRADE, COLUMNS, WALLS, AND ROOF SLAB : 4500psi  
ALL CONCRETE SHALL HAVE AN AIR CONTENT OF 5% AND MAXIMUM WATER / CEMENT RATIO OF 0.40
- NO PIPES, DUCTS, SLEEVES, ETC. SHALL BE PLACED IN STRUCTURAL CONCRETE UNLESS SPECIFICALLY DETAILED OR APPROVED BY STRUCTURAL ENGINEER. NO ALUMINUM PRODUCTS SHALL BE EMBEDDED IN CONCRETE. PENETRATIONS THRU WALLS WHEN APPROVED SHALL BE BUILT INTO THE WALL PRIOR TO PLACEMENT OF CONCRETE. REFER TO OTHER (CIVIL, ETC.) DRAWINGS FOR EXTENT AND LOCATION OF DEPRESSIONS, CURBS, RAMPS, ETC.
- AROUND OPENINGS IN SUSPENDED CONCRETE SLABS, ADD REINFORCING BARS EQUIVALENT TO BARS CUT BY OPENING WITH HALF ON EACH SIDE OF OPENING. BARS SHALL RUN FULL LENGTH OF SPAN. SEE DETAIL 3/51.
- CONSTRUCTION JOINTS NOT SHOWN ON THE PLANS SHALL BE MADE AND LOCATED SO AS TO NOT IMPAIR THE STRENGTH OF THE STRUCTURE AND AS APPROVED BY THE STRUCTURAL ENGINEER. PROVIDE WATERSTOP IN ALL VERTICAL AND HORIZONTAL JOINTS. ALL STEEL REINFORCING SHALL BE CONTINUOUS THROUGH COLD JOINTS, WITH LAP SPLICES AS INDICATED, UNLESS NOTED OTHERWISE.

F. REINFORCING STEEL

- ALL REINFORCING BARS SHALL CONFORM TO ASTM STANDARD A-615 GRADE 60 ADEQUATELY TIE AND SUPPORT ALL REINFORCING STEEL AS SPECIFIED BY ACI 318, TO MAINTAIN EXACT REQUIRED POSITION. ALL FIELD BENT DOWNELS SHALL BE GRADE 40 WITH SPACINGS INDICATED REDUCED BY 1/3.
- REINFORCEMENT SHALL HAVE THE FOLLOWING CONCRETE COVERAGE:
  - CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH : ..... 3"
  - EXPOSED TO EARTH, WATER OR WEATHER:
    - #6 & LARGER : ..... 2"
    - #5 & SMALLER : ..... 2" (1 3/4" FOR #3 COLUMN TIES)
- SLAB ON GRADE
  - PLACE REINFORCING AT CENTER OF SLAB UNLESS INDICATED OTHERWISE.
- EXCEPT WHERE NOTED, CONTINUOUS REINFORCEMENT SHALL BE SPLICED WITH LAP SPLICES AT POINTS OF MINIMUM STRESS AS FOLLOWS:
  - IN RESERVOIR WALLS, SEE DETAILS 1/51, 2/51 AND 1/54.
  - IN COLUMNS, USE 35 INCH LAP.
  - IN SUSPENDED SLAB, USE 48 BAR DIAMETER LAP AND STAGGER ADJACENT BAR SPLICES 24" MIN.
  - IN SLAB-ON-GRADE, USE 30 BAR DIAMETER LAP.
- ALL VERTICAL REINFORCING SHALL BE DOWELED TO FOOTINGS OR STRUCTURE BELOW WITH DOWELS TO MATCH. SPLICE LENGTHS SHALL COMPLY WITH NOTE F.3. DOWELS INTO FOOTINGS SHALL TERMINATE WITH A STANDARD HOOK, AND SHALL EXTEND TO WITHIN 4" OF THE BOTTOM OF THE FOOTING, BUT NOT MORE THAN 14" INTO FOOTING. SEE DETAILS FOR REQD. EMBEDMENT OR DOWELS.
- DO NOT WELD REINFORCING.

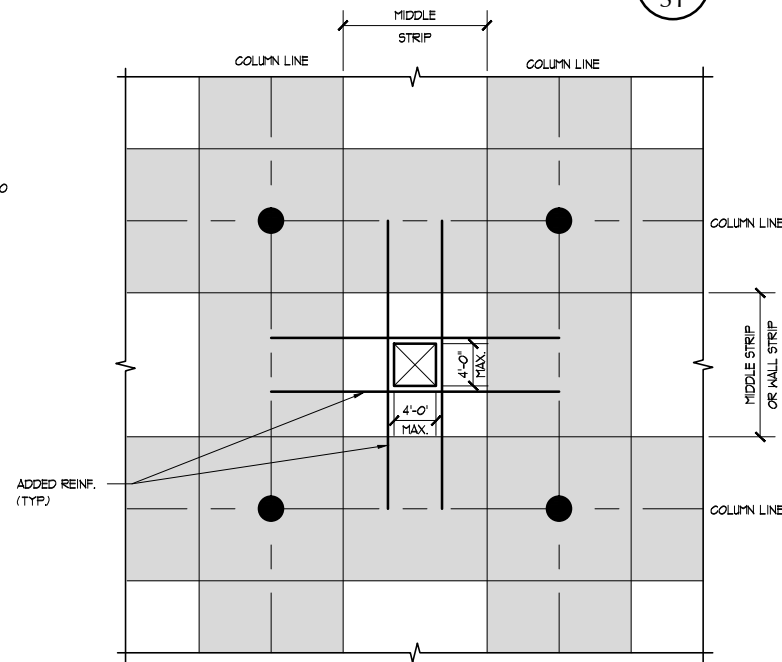


NOTES:  
 1-FOR OPTION #1, SPLICE LENGTHS ARE  
 #5 BARS - 39"  
 #6 BARS - 46"  
 2-FOR OPTION #2, USE MECHANICAL CONNECTORS WHICH ACHIEVE 125% OF THE STRENGTH OF THE BARS BEING SPLICED. SUBMIT A CURRENT ICC RESEARCH REPORT FOR APPROVAL PRIOR TO CONSTRUCTION.

TYP. CONST. JOINT IN WALL DETAIL

SCALE : NONE

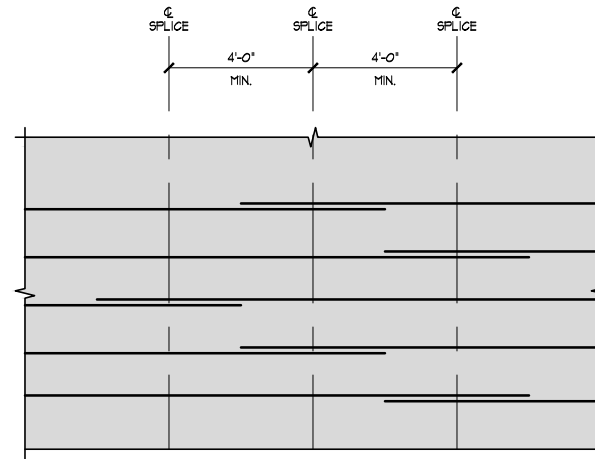
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TYPICAL ROOF OPENING DETAIL

SCALE : NONE

3  
S1



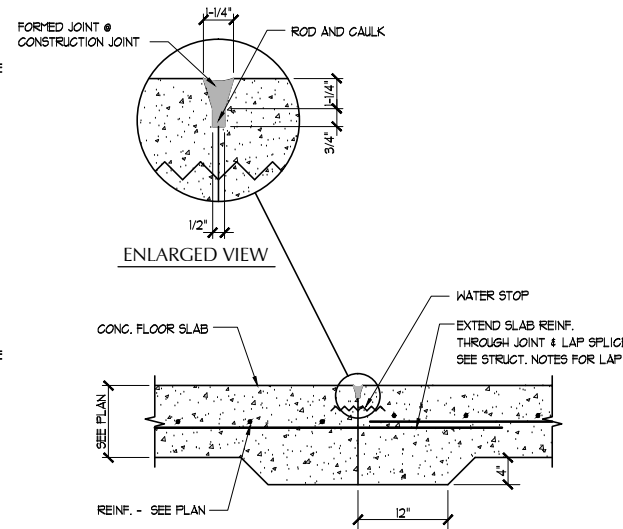
NOTE:  
 SPLICES MAY NOT COINCIDE VERTICALLY MORE FREQUENTLY THAN EVERY THIRD BAR.

SPLICE LENGTHS  
 #5 BAR - 39"  
 #6 BAR - 46"

TYP. REINF. BAR SPLICE DETAIL

SCALE : NONE

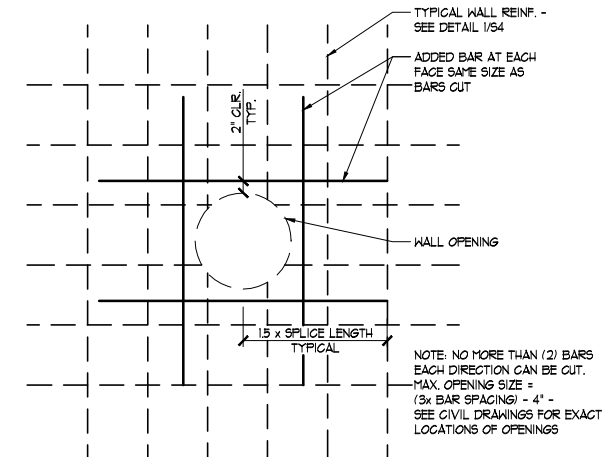
2  
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TYP. CONST. JOINT IN FLOOR SLAB DETAIL

SCALE : NONE

4  
S1



TYPICAL WALL OPENING DETAIL

SCALE : NONE

5  
S1

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Scale	AS NOTED
Designed	WVY
Drafted	BLP
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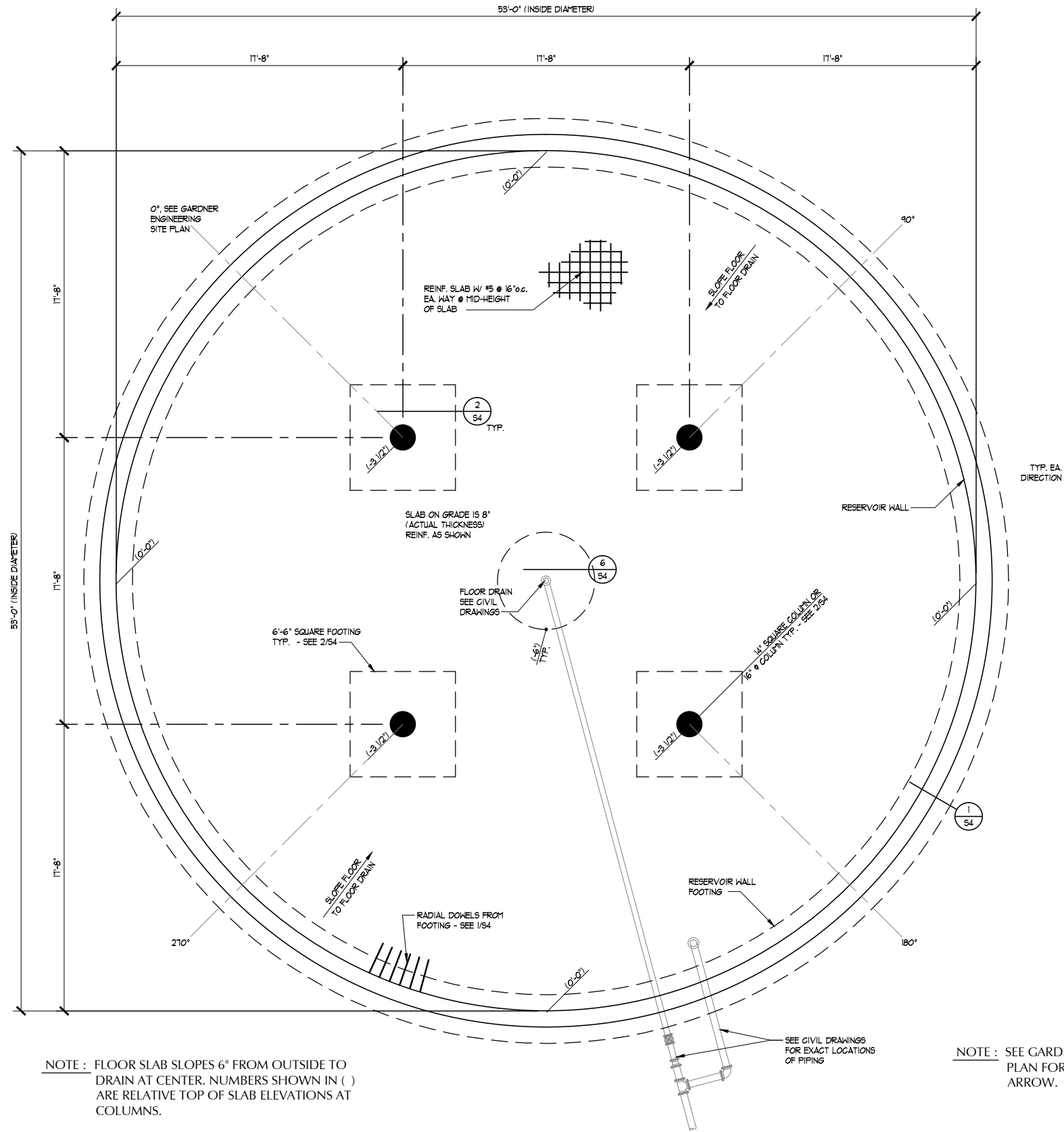


STRUCT. NOTES + SCHEDULES  
 UPPER SYSTEM TANK  
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 1554 W. Park Cir. Ogden, Utah 84404  
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NOTE : FLOOR SLAB SLOPES 6° FROM OUTSIDE TO DRAIN AT CENTER. NUMBERS SHOWN IN ( ) ARE RELATIVE TOP OF SLAB ELEVATIONS AT COLUMNS.

NOTE : SEE GARDNER ENGINEERING SITE PLAN FOR ORIENTATION & NORTH ARROW.

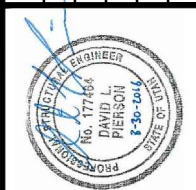
FOOTING AND FOUNDATION PLAN

SCALE : 1/4" = 1'-0"

A  
S2

Date	08-30-2016
Scale	AS NOTED
Designed	WY
Drafted	BLP
Checked	DLP

Revisions	Description
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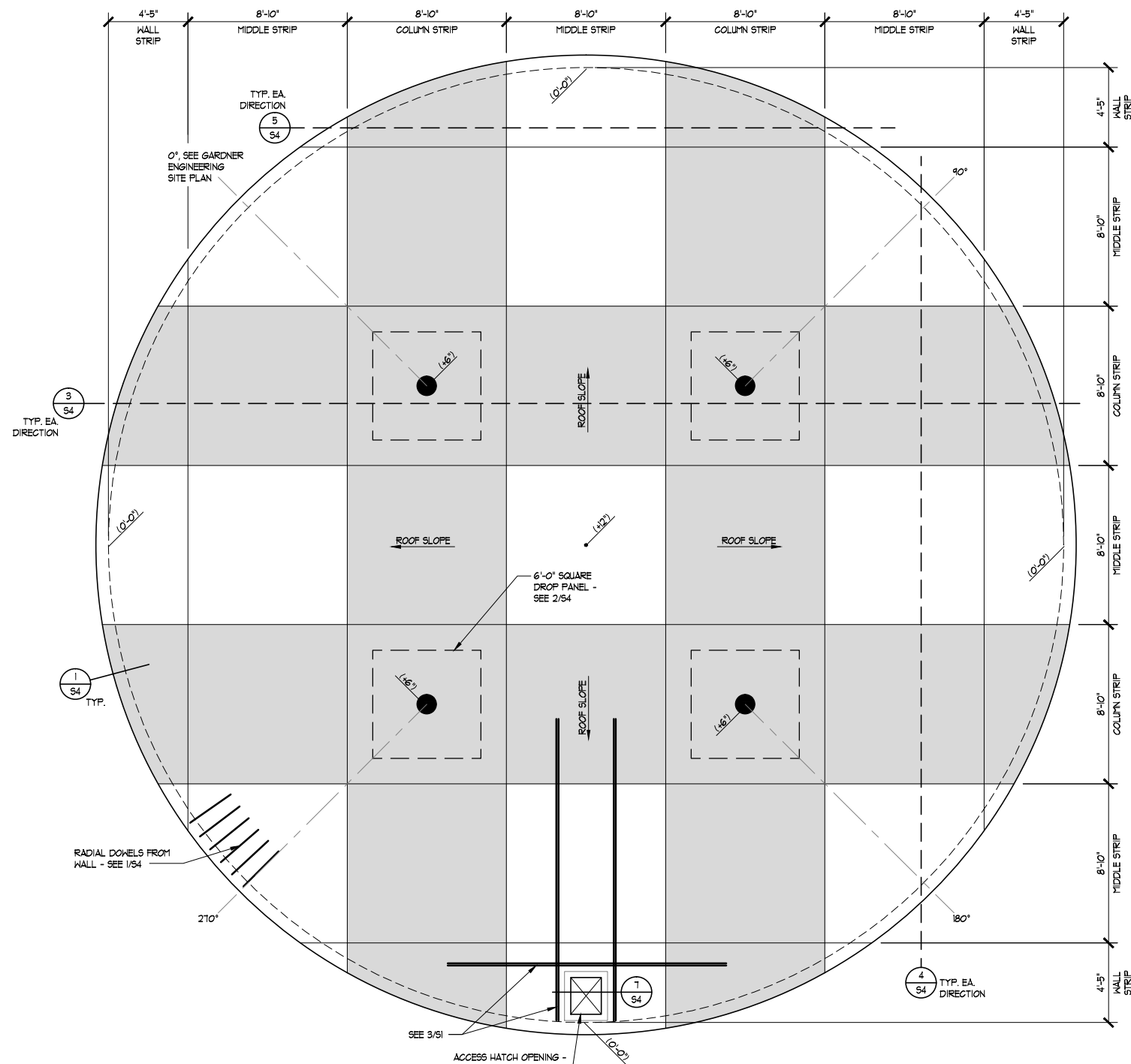


**PLAN**  
**UPPER SYSTEM TANK**  
**LIBERTY PIPELINE COMPANY**  
**LIBERTY, WEBER, UTAH**

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**S2**

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NOTE: SEE GARDNER ENGINEERING SITE PLAN FOR ORIENTATION & NORTH ARROW.

ACCESS HATCH OPENING - SEE CIVIL DRAWINGS FOR EXACT LOCATION AND DETAILS

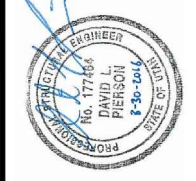
NOTE: ROOF SLOPES 12" FROM CENTER TO EDGE. NUMBERS SHOWN IN ( ) ARE RELATIVE TOP OF SLAB ELEVATIONS AT COLUMNS.

ROOF SLAB PLAN  
SCALE: 1/4" = 1'-0"

A  
S3

Date	08-30-2016
Scale	AS NOTED
Designed	WVY
Drafted	BLP
Checked	DLP

Revisions	Description
Date	

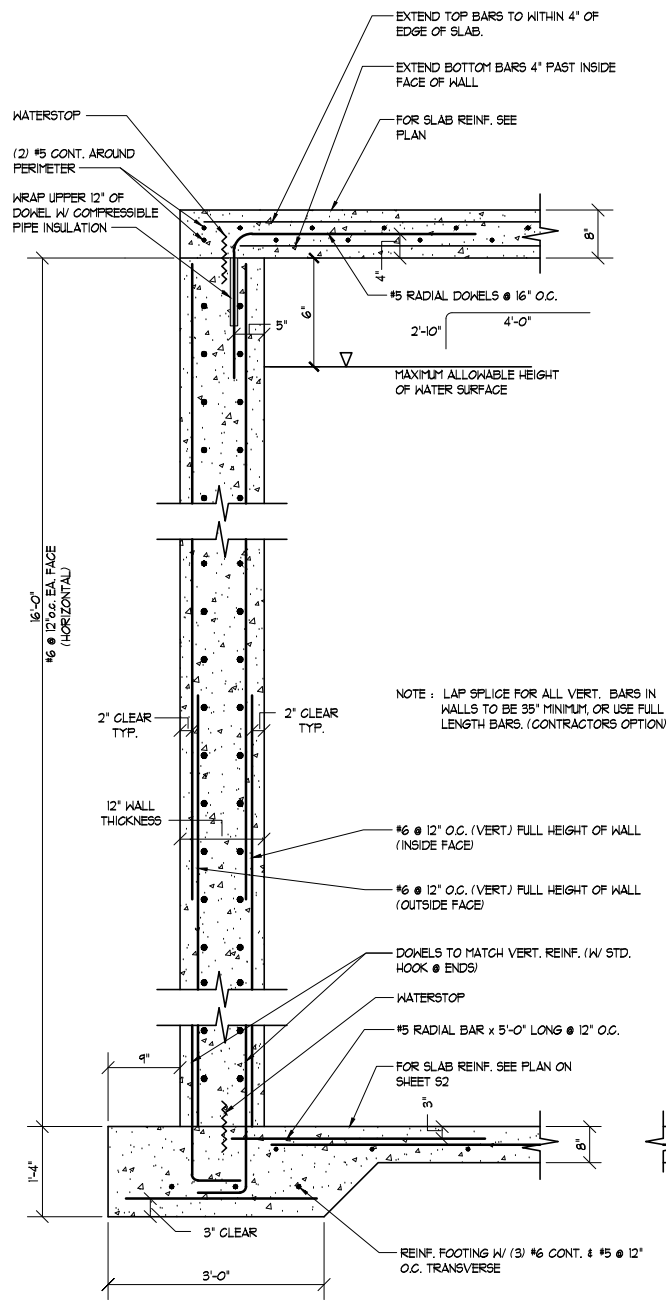


PLAN  
UPPER SYSTEM TANK  
LIBERTY PIPELINE COMPANY  
LIBERTY, WEBER, UTAH

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

S3

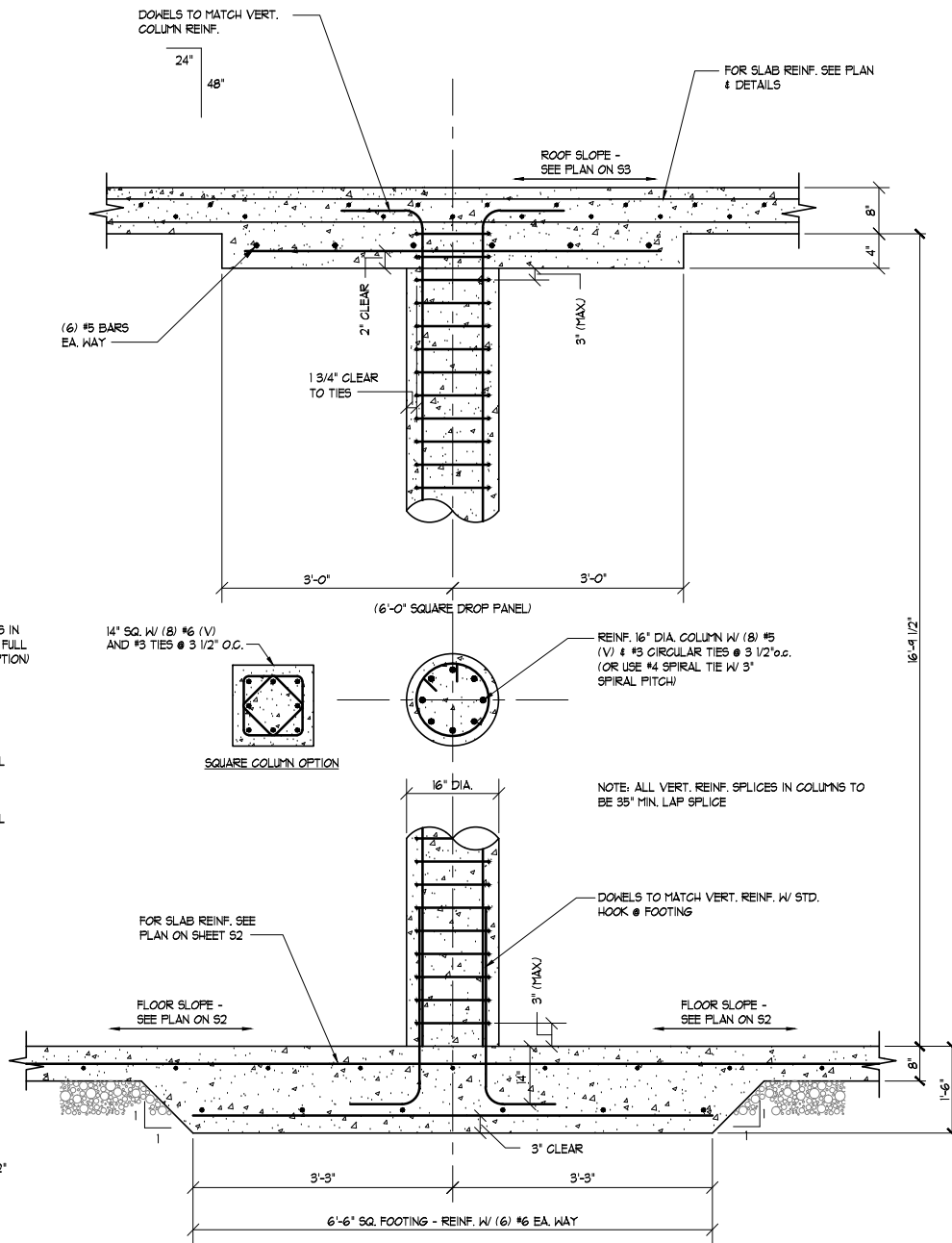




TYPICAL RESERVOIR WALL SECTION

SCALE: NONE

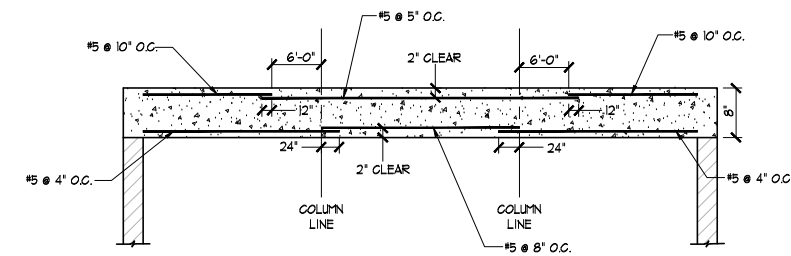
1  
S4



TYPICAL INTERIOR COLUMN

SCALE: NONE

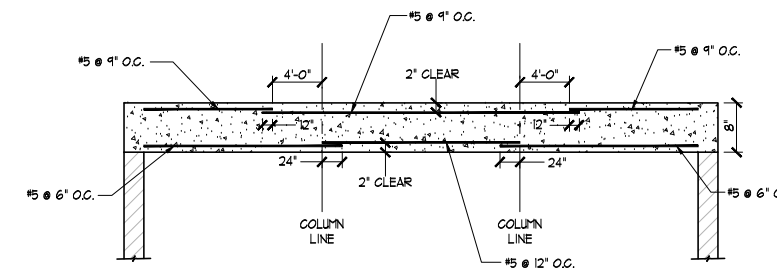
2  
S4



COLUMN STRIP (EACH DIRECTION)

SCALE: NONE

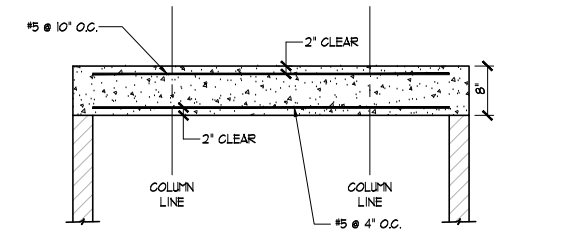
3  
S4



MIDDLE STRIP (EACH DIRECTION)

SCALE: NONE

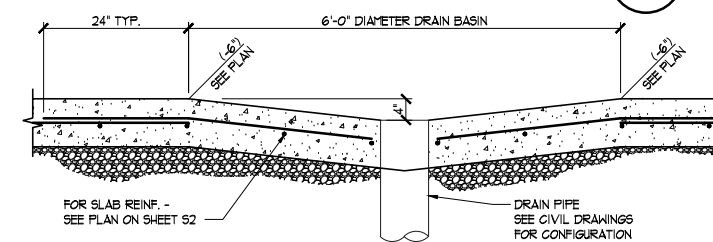
4  
S4



WALL STRIP (EACH DIRECTION)

SCALE: NONE

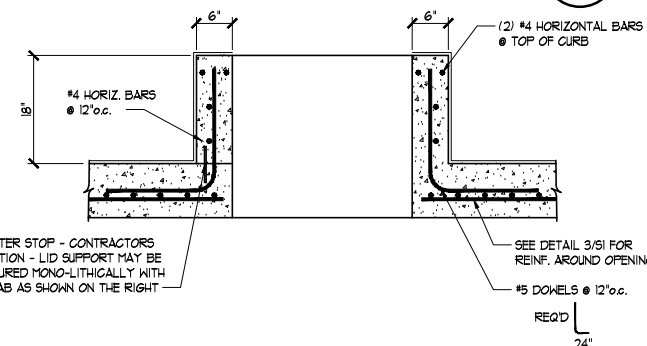
5  
S4



DRAIN BASIN

SCALE: NONE

6  
S4



CURB WALL SECTION

SCALE: NONE

7  
S4

Date	09-30-2016
Scale	AS NOTED
Designed	WVY
Drafted	BLP
Checked	DLP

Revisions	Description
Date	



**DETAILS**  
**UPPER SYSTEM TANK**  
**LIBERTY PIPELINE COMPANY**  
**LIBERTY, WEBER, UTAH**

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