



# Staff Report to the Ogden Valley Planning Commission

Weber County Planning Division

## Synopsis

### Application Information

<b>Application Request:</b>	Consideration and action on a conditional use permit application for a public utility substation (water storage tank) for Wolf Creek Water and Sewer Improvement District.
<b>Type of Decision:</b>	Administrative
<b>Agenda Date:</b>	Tuesday, February 28, 2017
<b>Applicant:</b>	Wolf Creek Water and Sewer Improvement District
<b>Authorized Agent:</b>	Mike Durtschi, project engineer (Gardner Engineering)
<b>File Number:</b>	CUP# 2017-01

### Property Information

<b>Approximate Address:</b>	Intersection of Retreat Dr and Mountain Ridge Dr, Eden, UT
<b>Project Area:</b>	42,870 Sq. Ft.
<b>Zoning:</b>	Open Space Zone (O-1)
<b>Existing Land Use:</b>	Water Storage Tank
<b>Proposed Land Use:</b>	Water Storage Tank
<b>Parcel ID:</b>	22-016-0096
<b>Township, Range, Section:</b>	Township 7 North, Range 1 East, Section 22

### Adjacent Land Use

<b>North:</b>	Forest	<b>South:</b>	Residential
<b>East:</b>	Forest	<b>West:</b>	Residential

### Staff Information

<b>Report Presenter:</b>	<b>Steve Burton</b> sburton@co.weber.ut.us 801-399-8766
<b>Report Reviewer:</b>	RK

## Applicable Ordinances

- Title 101, Chapter 1 General Provisions, Section 7, Definitions
- Title 104, Chapter 26 Open Space Zone (O-1)
- Title 104, Chapter 28 Ogden Valley Sensitive Lands Overlay Districts
- Title 108, Chapter 1 Design Review
- Title 108, Chapter 4 Conditional Uses
- Title 108, Chapter 10 Public Buildings and Public Utility Substations and Structures

## Summary and Background

Wolf Creek Water and Sewer Improvement District is requesting approval of a conditional use permit to construct a 500,000 gallon water storage tank located at approximately 3955 N Retreat Dr, Eden. These improvements will provide the storage capacity needed to meet the added demands of proposed development within the water system boundaries.

The proposed tank will be located approximately 40 feet from an existing tank. The application states that the property boundary of the existing tank will be adjusted to include the new tank upon approval of the Conditional Use Permit. The applicant has also provided a copy of a quit claim deed, adjusting the boundary of the existing tank to include the proposed tank.

The proposed tank's diameter is 75 feet and the tank depth is 16 feet. The tank will be buried with 6 inches of top soil. The property lies in the Open Space Zone (O-1) which allows "Public utility substations" only when authorized by a conditional use permit.

Conditional use permits should be approved as long as any harmful impact is mitigated. The Uniform Land Use Code of Weber County, Utah (LUC) already specifies certain standards necessary for mitigation of harmful impact to which the

proposal must adhere. The proposed application appears to meet these standards. The following is staff's evaluation of the request.

## Analysis

**General Plan:** The Ogden Valley General Plan identifies the need for additional culinary water and new water infrastructure based on projected growth (see the 2016 Ogden Valley General Plan Chapter 7: Utilities and Public Services). The proposed use conforms to the Ogden Valley General Plan by providing additional water sources to meet the demands of the Valley's existing water systems throughout developing areas.

**Zoning:** The subject property is located within the O-1 Zone. The purpose and intent of the Open Space Zone can be further described per LUC §104-26-1 as follows:

*The open space zone is specifically intended to encourage the preservation of a natural environment in an otherwise urban setting; to hold for future generations open space in which plants and animals can be protected and studied; to inhibit erection of unnecessary buildings on a floodplain, on areas of severe slope, areas of fault line and rock slides; to provide suitable areas for recreation and relaxation, and to alleviate stream pollution.*

The O-1 Zone has specific standards identified in the LUC §104-26-4 that shall be met as part of the development process. The applicable standards are as follows:

- Minimum yard setbacks:
  - Front: 30'
  - Side: 20'
  - Rear: 30'
- Minimum lot area: 5 acres
- Minimum lot width: 300'
- Main Building height:
  - Maximum: 35'

The proposed use is conditionally allowed in the O-1 zone and has been reviewed as a "Public utility substation". The location and arrangement of public utility substations and structures must be in accordance with construction plans submitted to and approved by the planning commission. The minimum lot area for all public utility substations per LUC §108-10-2 is waived.

**Conditional Use Review:** A review process has been outlined in LUC §108-4-3 to ensure compliance with the applicable ordinances and to mitigate anticipated detrimental effects.

A site plan showing the Ogden Valley sensitive lands stream corridors identified in LUC §104-28-2 has been submitted as part of the application. The site plan shows that the tank will be located outside of the intermittent stream corridor located on site. The Engineering Division must verify by site visit, that the proposed tank will be located outside of the intermittent stream corridor.

Prior to commencing work, Wolf Creek Water and Sewer Improvement District will need to receive approval from the applicable agencies for the new tank. A condition has been made part of the Planning Division's recommendation to ensure that these standards are met.

**Design Review:** The proposed conditional use mandates a design review as outlined in LUC §108-1 to ensure that the general design, layout and appearance of the building remains orderly and harmonious with the surrounding neighborhood. Certain areas of the design review are only applicable due to the nature of the request. As part of this review, the Planning Commission shall consider the applicable matters based on the proposed conditional use and impose conditions to mitigate deficiencies where the plan is found deficient. The matters for consideration are as follows:

- *Considerations relating to traffic safety and traffic congestion.* As part of this consideration, the applicant has provided a detailed site plan (see Exhibit B). Considerable traffic congestion or delay is not anticipated with this proposal. Per the County Engineering Division, the contractor will be responsible to guarantee site materials are not tracked onto the County roadways. A condition of approval has been added to the Planning Division's recommendation to ensure the contractor cleans all equipment prior to exiting the site and sweeps the County roadway as needed, removing any material tracked from the site onto the asphalt, in order to provide safe vehicular traffic along County roads.

- *Considerations relating to landscaping.* The applicant has outlined the following considerations to landscaping in the project specifications submitted with the application: 5.2.3.7 *Planted Areas: Prior to placing topsoil and/or sod, examine and repair the subgrade as necessary to assure a smooth and even surface which will match grade and contours of surrounding undisturbed ground. Finish grade construction areas to match grade prior to construction activities.*
- *Considerations relating to buildings and site layout.* The proposed water tank will not require a new pump house or other new buildings. The buried water tank has a diameter of 75 feet and a depth of 16 feet.
- *Considerations relating to utility easements, drainage, and other engineering questions.* The applicant will need to adhere to all conditions of the Engineering Division including but not limited to storm water and surface water drainage, retention facilities, and site clean-up of the property. A condition has been made part of the Planning Division’s recommendations to ensure that this standard is met.
- *Considerations relating to prior development concept plan approval associated with any rezoning agreement, planned commercial or manufacturing rezoning, or planned residential unit development approval.* The proposed site does not have any type of development agreement associated with the property; therefore considerations pertaining to this portion of the code are not applicable at this time.

Review Agencies: Prior to the commencement of work, the applicant will need to receive the approval from all applicable agencies for the proposed water system improvements. A condition has been made part of the Planning Division’s recommendations to ensure that all conditions of the review agencies will be met.

## Summary of Planning Commission Considerations

In order for a conditional use to be approved it must meet the requirements of applicable ordinances listed in this staff report, which include the requirements listed in LUC §108-4-4, under “Decision requirements”, which states:

*a) A conditional use shall be approved if reasonable conditions are proposed, or can be imposed, to substantially mitigate the reasonably anticipated detrimental effects of the proposed use in accordance with the standards of this chapter, or relevant standards or requirements of any other chapter of this Land Use Code. When considering any of the standards, the land use authority shall consider the reasonably anticipated detrimental effects of the proposed use in the context of current conditions and, to the extent supported by law, the policy recommendations of the applicable general plan.*

*b) If the reasonably anticipated detrimental effects of a proposed conditional use cannot be substantially mitigated by the proposal or the imposition of reasonable conditions to achieve compliance with applicable standards, the conditional use may be denied.*

The Planning Commission will need to determine if the request for a water storage tank has met the requirements of the applicable Uniform Land Use Code of Weber County. The Planning Commission may impose additional conditions in order to ensure full compliance with the required standards. In making a decision, the Planning Commission should consider the following questions:

- Standards relating to safety for persons and property.
- Standards relating to infrastructure, amenities, and services.
- Standards relating to the environment.
- Standards relating to the current qualities and characteristics of the surrounding area and compliance with the intent of the general plan.
- Standards relating to performance.
- Standards generally.
- If the applicable standards are not met, then what conditions could be added in order to comply?
- Have the "Decision Requirements" and other applicable ordinances been met?

## Staff Recommendation

The Planning Division recommends approval of file# CUP 2017-01, a conditional use permit for Wolf Creek Water and Sewer Improvement District's water storage tank to be located at approximately 3955 N Retreat Dr, Eden. This recommendation for approval is subject to all review agency requirements and with the following conditions:

1. Prior to the issuance of the conditional use permit, the Engineering Division must verify by site visit, that the proposed tank will be located outside of the intermittent stream corridor.
2. All equipment leaving the site will be cleaned prior to entering the County right-of-way and the contractor will be responsible for sweeping the County roadway, as needed, removing any material tracked from the site onto the asphalt, in order to provide safe vehicular traffic along the County right-of-way.

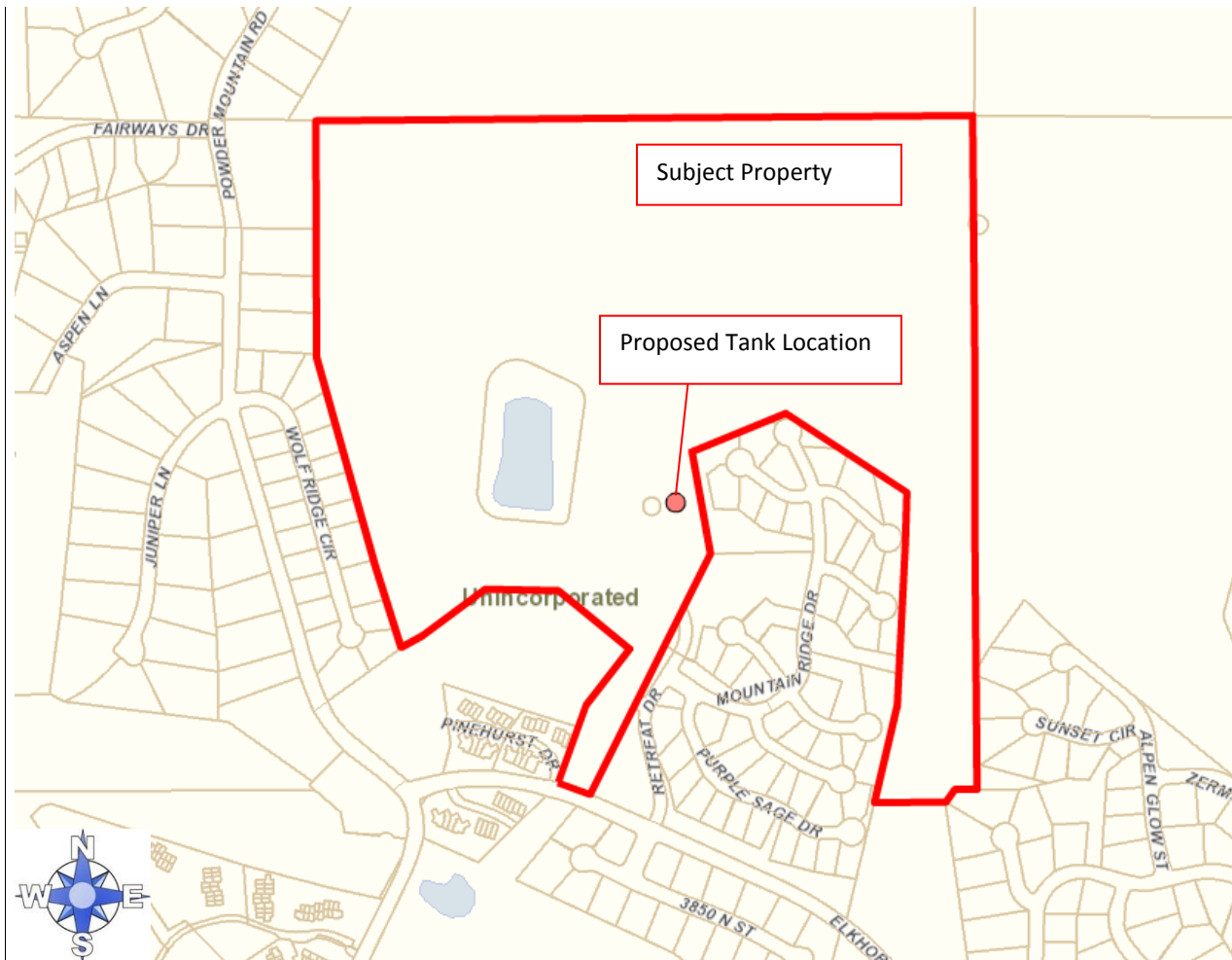
This recommendation is based on the following findings:

1. The proposed use conforms to the Ogden Valley General Plan.
2. The proposed use will provide the needed water sources to meet the demands the Ogden Valley.
3. The proposed use, if conditions are imposed, will not be detrimental to public health, safety, or welfare.
4. The proposed use, if conditions are imposed, will comply with applicable County ordinances.
5. The proposed use will not deteriorate the environment of the general area so as to negatively impact surrounding properties and uses.

## Exhibits

- A. Application
- B. Site and Building Plan

## Map 1



Map 2



# Weber County Conditional Use Permit Application

**Application submittals will be accepted by appointment only. (801) 399-8791. 2380 Washington Blvd. Suite 240, Ogden, UT 84401**

Date Submitted / Completed	Fees (Office Use)	Receipt Number (Office Use)	File Number (Office Use)
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## Property Owner Contact Information

Name of Property Owner(s) WOLF CREEK WATER AND SEWER IMPROVEMENT DISTRICT		Mailing Address of Property Owner(s) WOLF CREEK WATER AND SEWER I.D. 3632 NORTH WOLF CREEK DRIVE EDEN, UT 84310	
Phone 801-721-4171	Fax		
Email Address rthomas@wcvwsid.com		Preferred Method of Written Correspondence <input checked="" type="checkbox"/> Email <input type="checkbox"/> Fax <input type="checkbox"/> Mail	

## Authorized Representative Contact Information

Name of Person Authorized to Represent the Property Owner(s) Gardner Engineering (Mike Durtschi)		Mailing Address of Authorized Person 5150 S 375 E Ogden, UT 84405	
Phone 8014760202	Fax 8014760066		
Email Address miked@gecivil.com		Preferred Method of Written Correspondence <input checked="" type="checkbox"/> Email <input type="checkbox"/> Fax <input type="checkbox"/> Mail	

## Property Information

Project Name 500,000 Gallon Tank	Total Acreage 92.1	Current Zoning O-1
Approximate Address Site Access at Intersection of Retreat Dr and Mountain Ridge Dr Eden, UT	Land Serial Number(s) existing parcel 22-016-0096 Upon approval of CUP is intended that the boundary of parcel 22-016-0070 be adjusted to include the new tank	

Proposed Use Utility Building - Culinary Water Tank
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<p><b>Project Narrative</b></p> <p>Wolf Creek Water and Sewer Improvement District in need of more storage capacity to meet the added demands from proposed development in the northern part of the system, is proposing to build a 500,000 gallon water tank near the existing 250,000 gallon tank. The parcel 22-016-0070 will have a boundary adjustment done to include the new tank.</p> <p>Submitted with this application are the Construction Plans, and construction documents, including a Geotechnical and Geological Hazard Investigation Report for the proposed project.</p> <p>SWPPP Permit will be provided by contractor before construction begins.</p>
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**Basis for Issuance of Conditional Use Permit**

That the proposed use of the particular location is necessary or desirable to provide a service or facility which will contribute to the general well being of the community:

The proposed location is near existing facilities and will provide needed storage capacity to the system at an appropriate elevation to supply water at the needed pressure.

That such use will not, under the circumstances of the particular case and the conditions imposed, be detrimental to the health, safety and general welfare of persons nor injurious to property or improvements in the community, but will be compatible with and complimentary to the existing surrounding uses, buildings and structures when considering traffic generation, parking, building design and location, landscaping and signs:

Construction of the project will follow county guidelines mitigating any harm to the community. Use of the facility will only generate infrequent and minimal maintenance traffic. As such no appreciable safety issues are foreseen.

That the proposed use will comply with the regulations and conditions specified in this Ordinance for such use:

Land Use Ordinance Sec.104-9-3(14) Water pumping plants and reservoirs.

That the proposed use conforms to the goals, policies and governing principles and land use of the General Plan for Weber County:

The project conforms to the goals, policies and governing principles and land use of the General Plan for Weber County.



That the proposed use will not lead to the deterioration of the environment or ecology of the general area, nor will produce conditions or emit pollutants of such a type or of such a quantity so as to detrimentally effect, to any appreciable degree, public and private properties including the operation of existing uses thereon, in the immediate vicinity of the community or area as a whole:

SWPPP and BMP's will be implemented on site during construction. It is anticipated that no appreciable environmental impact will be experienced during construction of the project. It is anticipated that no appreciable environmental impact will result from the completed and operational project.

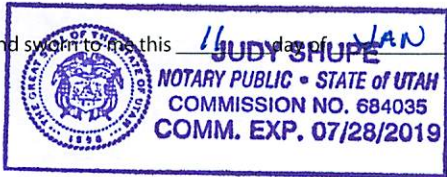
**Property Owner Affidavit**

I (We), Wolf Creek Water and Sewer I.D. (Rob Thomas), depose and say that I (we) am (are) the owner(s) of the property identified in this application and that the statements herein contained, the information provided in the attached plans and other exhibits are in all respects true and correct to the best of my (our) knowledge.

*[Handwritten Signature]*  
(Property Owner)

\_\_\_\_\_  
(Property Owner)

Subscribed and sworn to me this 16 day of JAN, 20 17



*[Handwritten Signature]*

(Notary)

**Authorized Representative Affidavit**

I (We), Wolf Creek Water and Sewer I.D. (Rob Thomas), the owner(s) of the real property described in the attached application, do authorized as my (our) representative(s), Gardner Engineering (Mike Durtschi), to represent me (us) regarding the attached application and to appear on my (our) behalf before any administrative or legislative body in the County considering this application and to act in all respects as our agent in matters pertaining to the attached application.

*[Handwritten Signature]*  
(Property Owner)

\_\_\_\_\_  
(Property Owner)

Dated this 11 day of JAN, 20 17, personally appeared before me Robert Thomas the signer(s) of the Representative Authorization Affidavit who duly acknowledged to me that they executed the same.



Robert Thomas  
*[Handwritten Signature]*

(Notary)

**Wolf Creek Water and Sewer Improvement District**

**500,000 Gallon Tank**

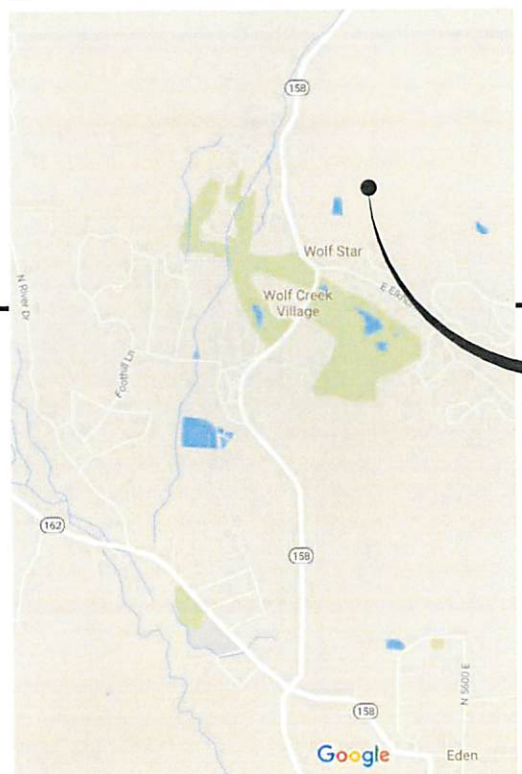
WEBER COUNTY CONDITIONAL USE PERMIT

Prepared By



JANUARY 2017

**500,000 GALLON TANK  
WOLF CREEK WATER + SEWER I. D.  
PART OF SECTION 22,  
TOWNSHIP 7N, RANGE 1E,  
SALT LAKE BASE AND MERIDIAN  
EDEN, WEBER, UTAH**



PROJECT LOCATION

**GENERAL NOTES**

1. 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.
2. 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.
3. 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.
4. 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.
5. 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.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING BUT NOT LIMITED TO, EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY.
7. 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.
8. 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.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADWAYS FREE AND CLEAR OF ALL CONSTRUCTION DEBRIS AND DIRT TRACKED FROM THE SITE.
10. 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 COUNTY INSPECTOR AT ALL TIMES.
11. 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.
12. 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.

**GENERAL GRADING NOTES**

1. 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.
2. MAXIMUM SLOPES SHALL BE 3:1 FOR CUT AND FILL UNLESS OTHERWISE NOTED.
3. COMPACTION REQUIREMENTS AND TESTING SHALL BE PERFORMED TO MEET THE MANUAL OF STD. SPECIFICATIONS (ORANGE BOOK, LATEST EDITION).
4. NO FILL SHALL BE PLACED UNTIL VEGETATION HAS BEEN REMOVED AND SUB-GRADE PREPARED PER THE SOILS REPORT.
5. DUST SHALL BE CONTROLLED BY WATERING OR OTHER APPROVED METHODS.
6. 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.
7. 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.
8. THE CONTRACTOR SHALL CONTACT BLUE STAKES FOR LOCATION MARKING PRIOR TO COMMENCING EXCAVATION ACTIVITIES.
9. COUNTY MAY REQUIRE A PRE-CONSTRUCTION MEETING BEFORE A PERMIT IS ISSUED.
10. STREETS ADJACENT TO THE PROJECT SHALL BE CLEAN AT ALL TIMES.
11. CONTRACTOR IS RESPONSIBLE FOR ARRANGING FOR ALL REQUIRED INSPECTIONS.
12. 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**

1. ALL INSTALLATION AND MATERIALS INSTALLED SHALL BE NEW AND CONFORM TO WOLF CREEK WATER AND SEWER I. D. STANDARDS, SPECIFICATIONS AND PLANS.
2. ALL INTERIOR SURFACES AND COATINGS SHALL COMPLY WITH ANSIS/NSF STANDARD 61 OR OTHER STANDARDS APPROVED BY THE DIRECTOR. THIS REQUIREMENT APPLIES TO ANY PIPES AND FITTINGS, PROTECTIVE MATERIALS (E.G. PAINTS, COATINGS, CONCRETE ADMIXTURES, CONCRETE RELEASE AGENTS, OR CONCRETE SEALERS), JOINING AND SEALING MATERIALS (E.G. ADHESIVES, CALKES, GASKETS, PRIMERS AND SEALANTS) AND MECHANICAL DEVICES (E.G. ELECTRICAL WIRE, SWITCHES, SENSORS, VALVES, OR SUBMERSIBLE PUMPS) THAT MAY COME INTO CONTACT WITH THE DRINKING WATER.
3. THE CURRENT REQUIREMENTS OF THE UTAH DIVISION OF DRINKING WATER, GOVERNING THE MATERIALS AND INSTALLATION USED IN THE PROJECT SHALL BE MET.
4. THRUST BLOCKING AND MECHANICAL RESTRAINTS ARE REQUIRED AT ALL BENDS AND FITTINGS.
5. 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.
6. 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.
7. CHLORINATION OF COMPLETED WATER LINE. THE NEW WATER LINES SHALL BE DISINFECTED BY CHLORINATION IN ACCORDANCE WITH AWWA STANDARD C651-14. 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.
8. A MINIMUM HORIZONTAL CLEARANCE OF 10 FEET SHALL BE MAINTAINED FROM SANITARY SEWER MAINS.
9. UNLESS OTHERWISE SPECIFIED, ALL WATERLINES SHALL BE AWWA DUCTILE IRON CLASS 51, MIN. WORKING PRESSURE 200 PSI AND SHALL BE PRESSURE TESTED AT 200 PSI FOR AT LEAST 2 HOUR.
10. CONTRACTOR SHALL LOCATE VALVES PRIOR TO CONNECTION WITH EXISTING SYSTEM, BUT SHALL NOT OPERATE ANY VALVE WITHOUT PERMISSION FROM THE WATER UTILITY.
11. ALL WATER MAINS, VALVES, FIRE HYDRANTS, SERVICES AND APPURTENANCES SHALL BE INSTALLED, TESTED, AND APPROVED PRIOR TO COMMISSIONING TANK.
12. 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.

**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.



**SHEET INDEX**

SHEET C0	COVER
SHEET V1	VICINITY MAP
SHEET C1	SITE PLAN
SHEET C2	EXCAVATION PLAN
SHEET C3	GRADING PLAN
SHEETS D1-D3	DETAILS
SHEETS SW1-SW2	SWPPP
SHEETS S1-S4	STRUCTURAL DRAWINGS

**PROJECT ENGINEER**

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



**SYSTEM OPERATOR**

WOLF CREEK WATER AND SEWER I.D.  
ROB THOMAS  
3632 N. WOLF CREEK DR.  
EDEN, UT 84310  
801-781-4171

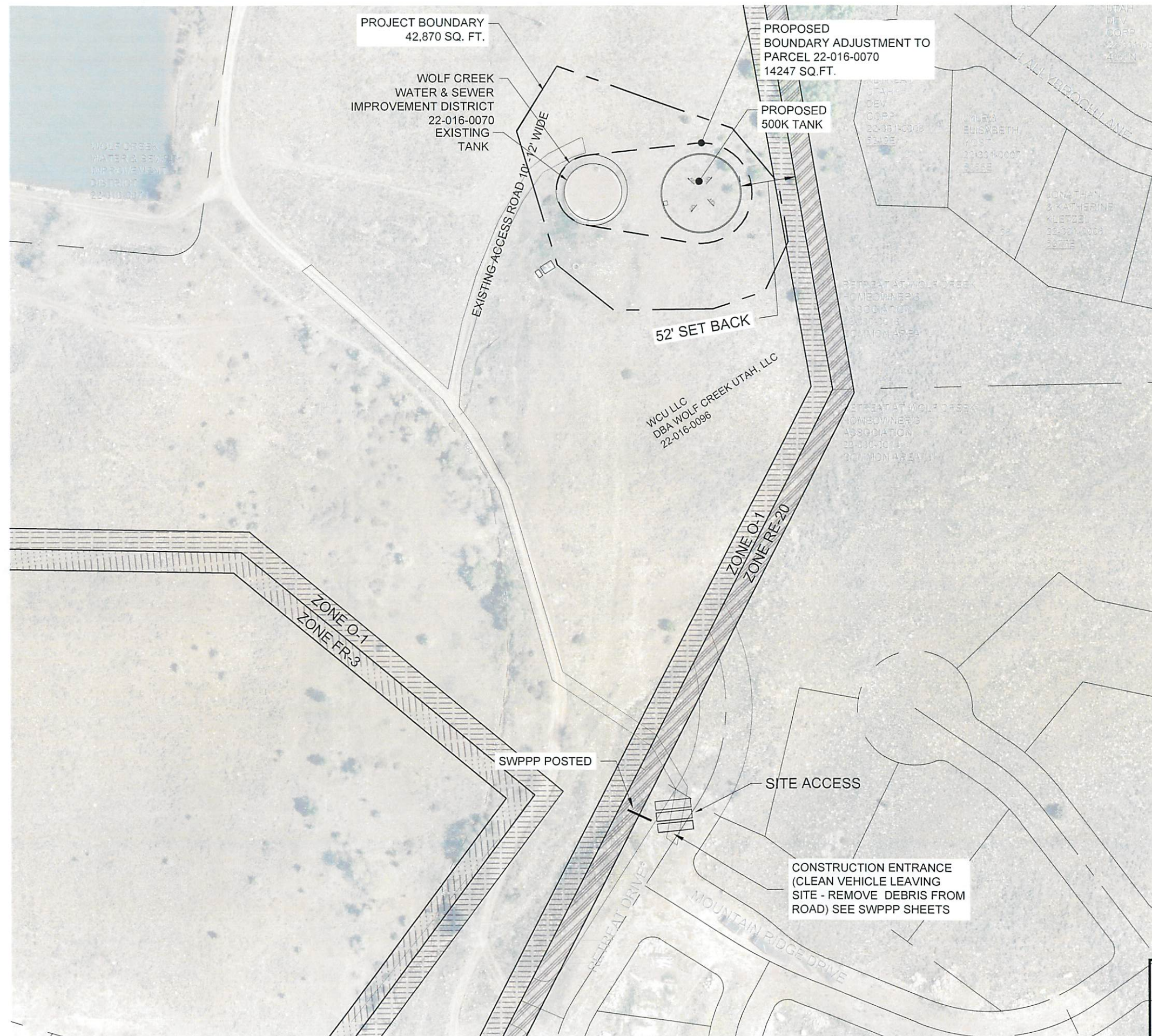


**SWPPP GENERAL NOTES**

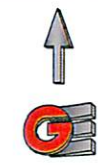
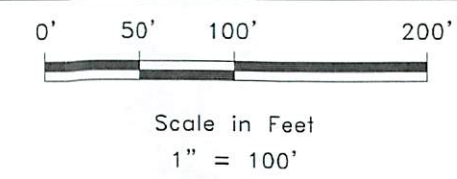
1. CONTRACTOR SHALL OBTAIN ALL NECESSARY UPDES PERMITS AS REQUIRED BY THE COUNTY ENGINEERING DEPARTMENT AND UTAH STATE DEPT. OF ENV. QUALITY.
2. ALL STRUCTURAL EROSION MEASURES SHALL BE INSTALLED AS SHOWN ON THE SWPP PLAN, PRIOR TO ANY OTHER GROUND-DISTURBING ACTIVITY. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED IN GOOD REPAIR BY THE CONTRACTOR, UNTIL SUCH TIME AS THE ENTIRE DISTURBED AREAS ARE STABILIZED WITH HARD SURFACE OR LANDSCAPING.
3. INSPECTION TO BE PERFORMED WEEKLY BY A RSI OR OTHER CERTIFIED INSPECTOR.

WOLF CREEK WATER + SEWER I. D.  
500,000 GALLON TANK  
2017 CONSTRUCTION DOCUMENTS

R:\2319 - WOLF CREEK WATER AND SEWER\500K TANK AND HP WATER\LANDSCAPE\500K TANK 1-11-2017.DWG, 1/11/2017 2:22:06 PM, NHE



CURRENTLY ZONED O-1  
PROPERTY 92.1 ACRES  
AFFECTED AREA = 0.98 ACRES



Date:	1/11/2017
Scale:	1" = 100'
Designed:	MDD
Drafted:	MDD
Checked:	DLW

Revisions	Description
Date	



VICINITY MAP  
500,000 GALLON TANK  
WOLF CREEK WATER + SEWER I. D.  
EDEN, WEBER, UTAH

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

V1  
10



Date: 1/11/2017  
 Scale: 1" = 30'  
 Designed: MDD  
 Drafted: MDD  
 Checked: DLW

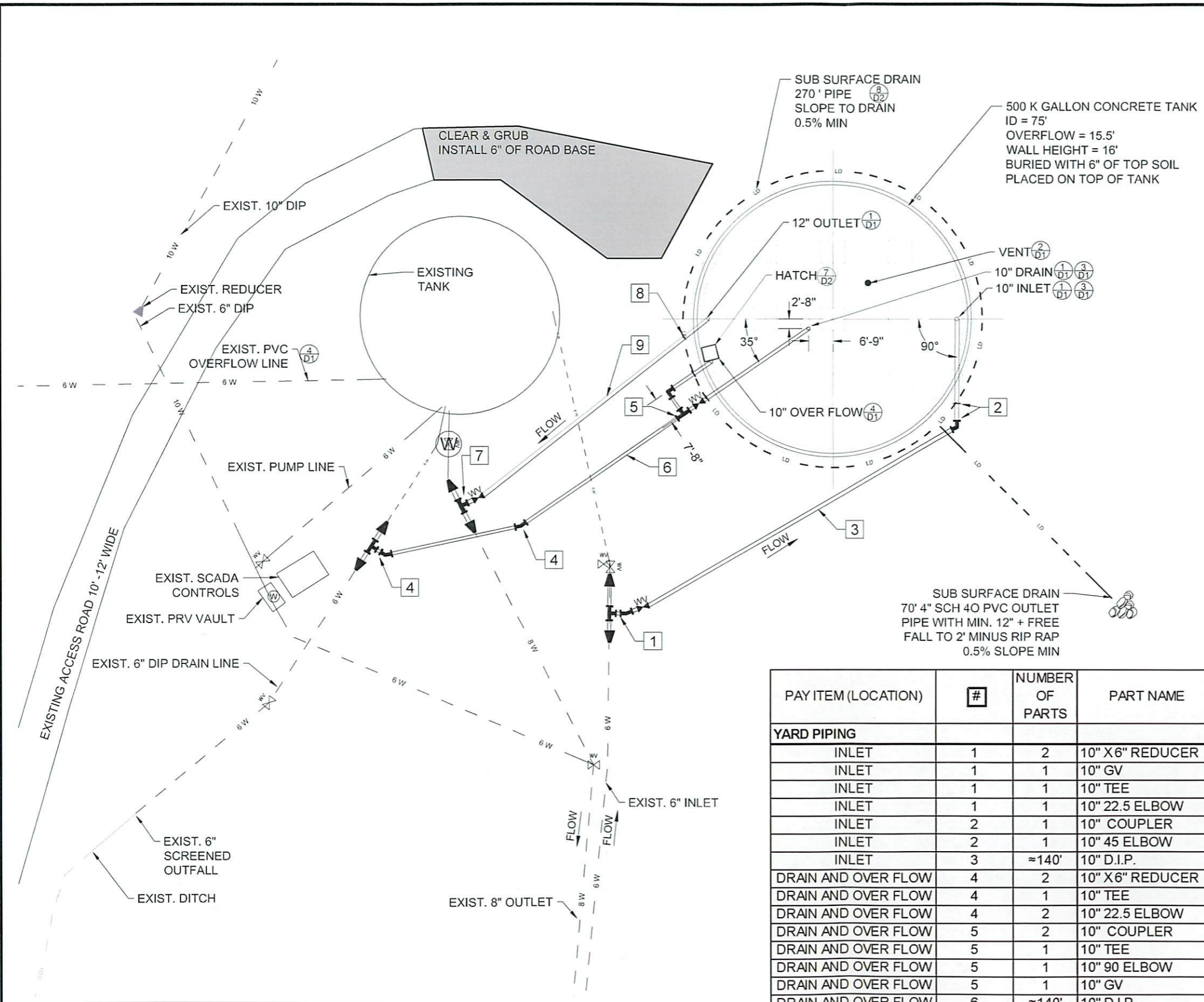
Revisions	Description
Date	



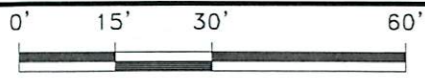
TANK SITE PLAN  
 500,000 GALLON TANK  
 WOLF CREEK WATER + SEWER I. D.  
 EDEN, WEBER, UTAH



C1  
 10



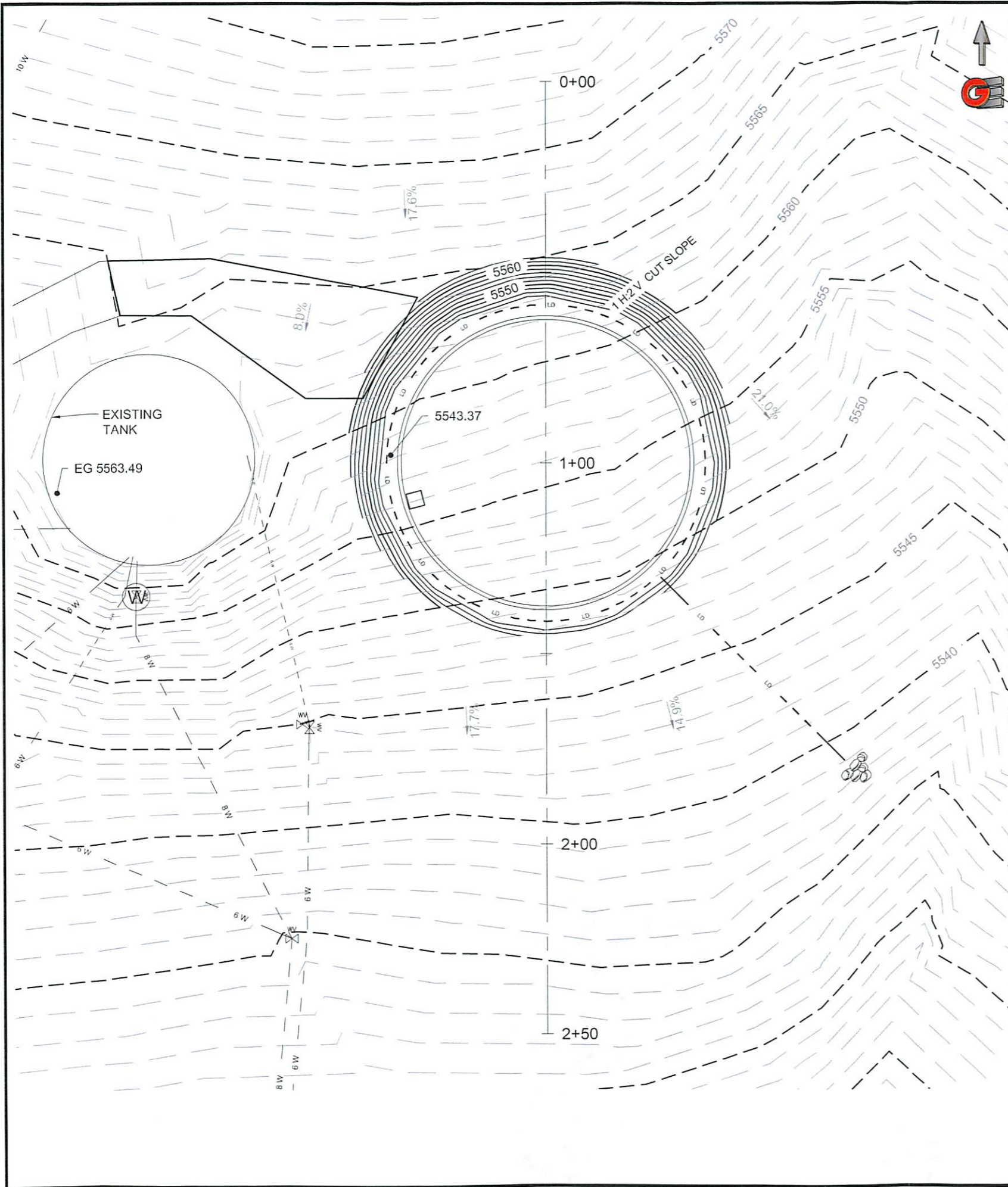
PAY ITEM (LOCATION)	#	NUMBER OF PARTS	PART NAME	CONNECTION TYPE	NOTES
<b>YARD PIPING</b>					
INLET	1	2	10" X 6" REDUCER	MJ X MJ	TIE TO EXISTING 6" CAST IRON
INLET	1	1	10" GV	MJ X MJ	
INLET	1	1	10" TEE	MJ X MJ	
INLET	1	1	10" 22.5 ELBOW	MJ X MJ	
INLET	2	1	10" COUPLER		ROMAC MACRO HP OR APPROVED
INLET	2	1	10" 45 ELBOW	MJ X MJ	
INLET	3	≈140'	10" D.I.P.		≈ LENGTH FROM COUPLER TO TIE IN
DRAIN AND OVER FLOW	4	2	10" X 6" REDUCER	MJ X MJ	TIE TO EXISTING 6" CAST IRON
DRAIN AND OVER FLOW	4	1	10" TEE	MJ X MJ	
DRAIN AND OVER FLOW	4	2	10" 22.5 ELBOW	MJ X MJ	
DRAIN AND OVER FLOW	5	2	10" COUPLER		ROMAC MACRO HP OR APPROVED
DRAIN AND OVER FLOW	5	1	10" TEE	MJ X MJ	
DRAIN AND OVER FLOW	5	1	10" 90 ELBOW	MJ X MJ	
DRAIN AND OVER FLOW	5	1	10" GV	MJ X MJ	RESILIENT
DRAIN AND OVER FLOW	6	≈140'	10" D.I.P.		≈ LENGTH FROM COUPLER TO TIE IN
OUTLET	7	2	12" X 8" REDUCER	MJ X MJ	TIE TO EXISTING 8" CAST IRON
OUTLET	7	1	12" TEE	MJ X MJ	TIE TO EXISTING 8" CAST IRON
OUTLET	7	1	12" BV	MJ X MJ	
OUTLET	8	1	12" COUPLER		ROMAC MACRO HP OR APPROVED
OUTLET	9	≈100'	12" D.I.P.		≈ LENGTH FROM COUPLER TO TIE IN



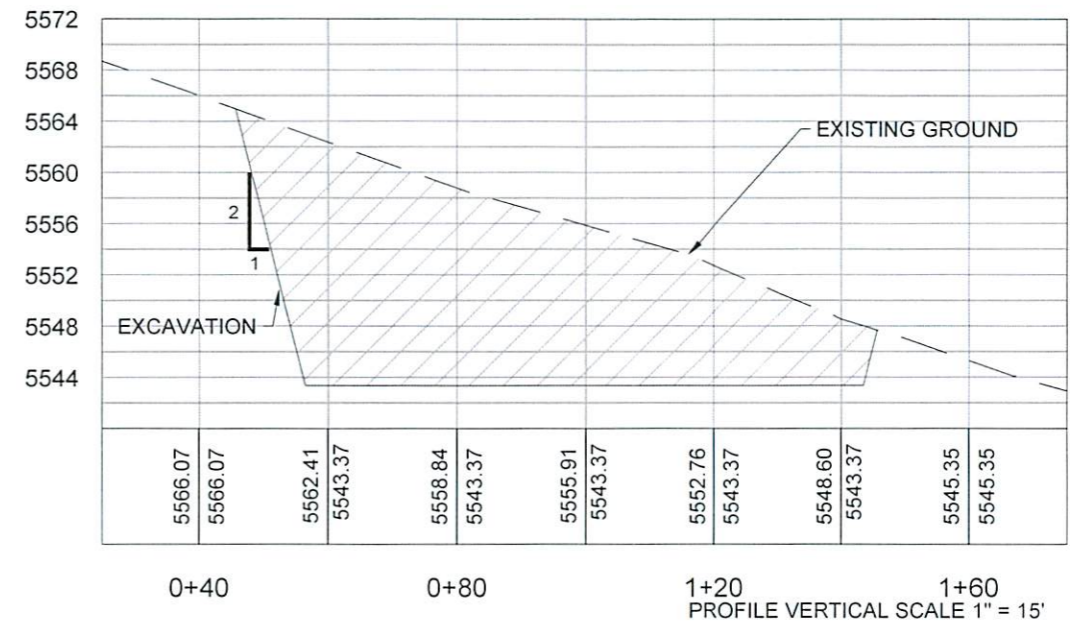
Scale in Feet  
 1" = 30'

R:\219 - WOLF CREEK WATER AND SEWER\02-500k TAN AND HF WATERLINE\DESIGN\0500k TAN I.D. 2017.DWG. 01/11/2017 2:22:05 PM, MDE

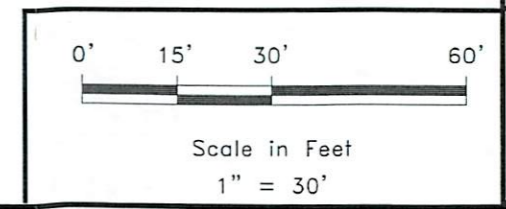
R:\219 - WOLF CREEK WATER AND SEWER\62-500K TANK AND HP WATER\62-500K TANK - 11-2017 DWG - 11/11/2017 2:22:11 PM.rvt



### EXCAVATION PROFILE



ANTICIPATED VOLUME OF SOIL/ROCK REMOVAL: 3330 CU YD



Revisions	Date	Description

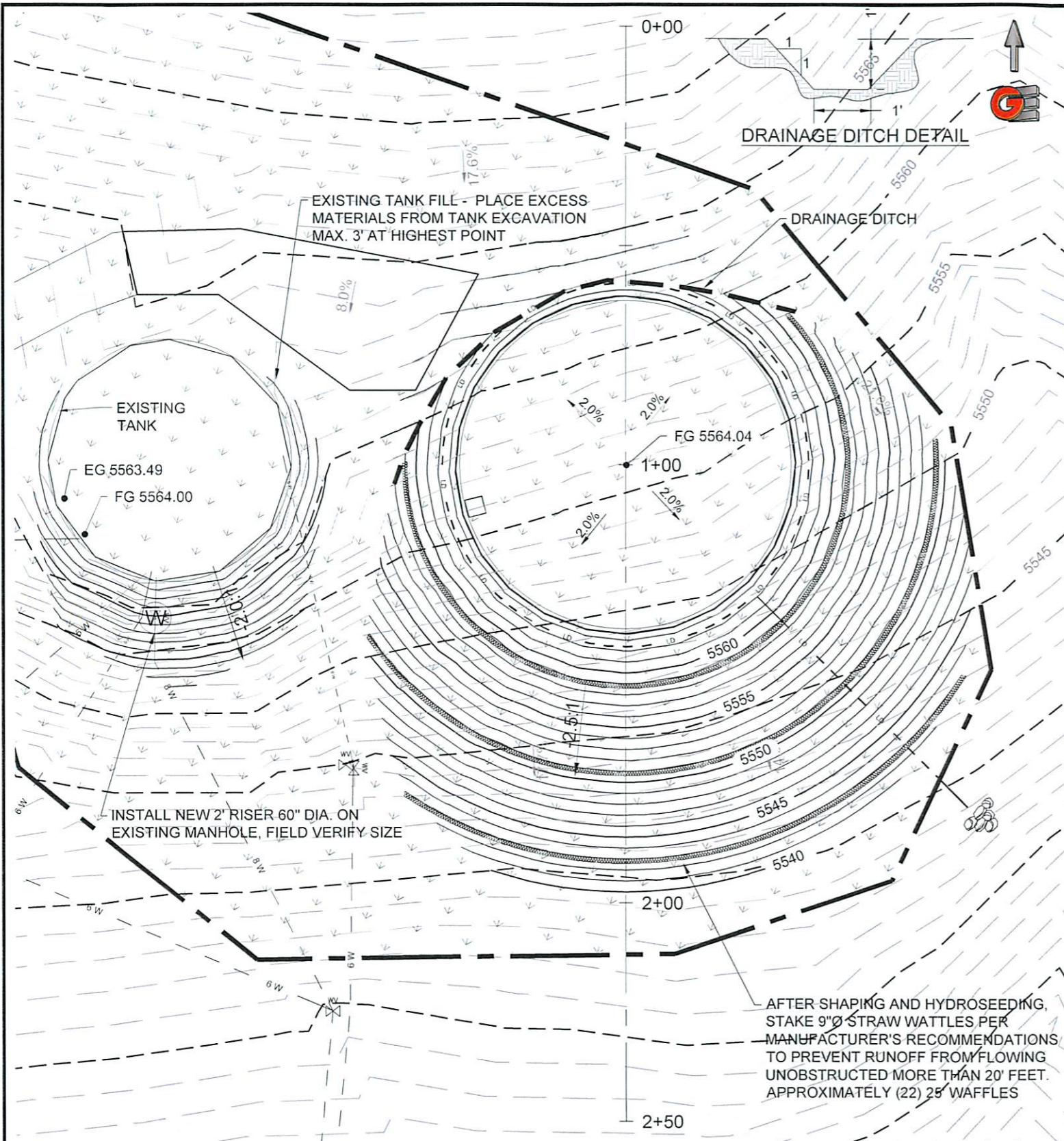


**TANK EXCAVATION**  
 500,000 GALLON TANK  
 WOLF CREEK WATER + SEWER I. D.  
 EDEN, WEBER, UTAH

**GARDNER ENGINEERING**  
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10

Date: 1/11/2017  
 Scale: 1" = 30'  
 Designed: MDD  
 Drafted: MDD  
 Checked: DLW



DRAINAGE DITCH DETAIL

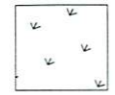
EXISTING TANK FILL - PLACE EXCESS MATERIALS FROM TANK EXCAVATION MAX. 3' AT HIGHEST POINT

INSTALL NEW 2" RISER 60" DIA. ON EXISTING MANHOLE, FIELD VERIFY SIZE

AFTER SHAPING AND HYDROSEEDING, STAKE 9"Ø STRAW WATTLES PER MANUFACTURER'S RECOMMENDATIONS TO PREVENT RUNOFF FROM FLOWING UNOBSTRUCTED MORE THAN 20' FEET. APPROXIMATELY (22) 25' WATTLES

DRYLAND SEED MIX ANTICIPATED AREA = 0.95 ACRES

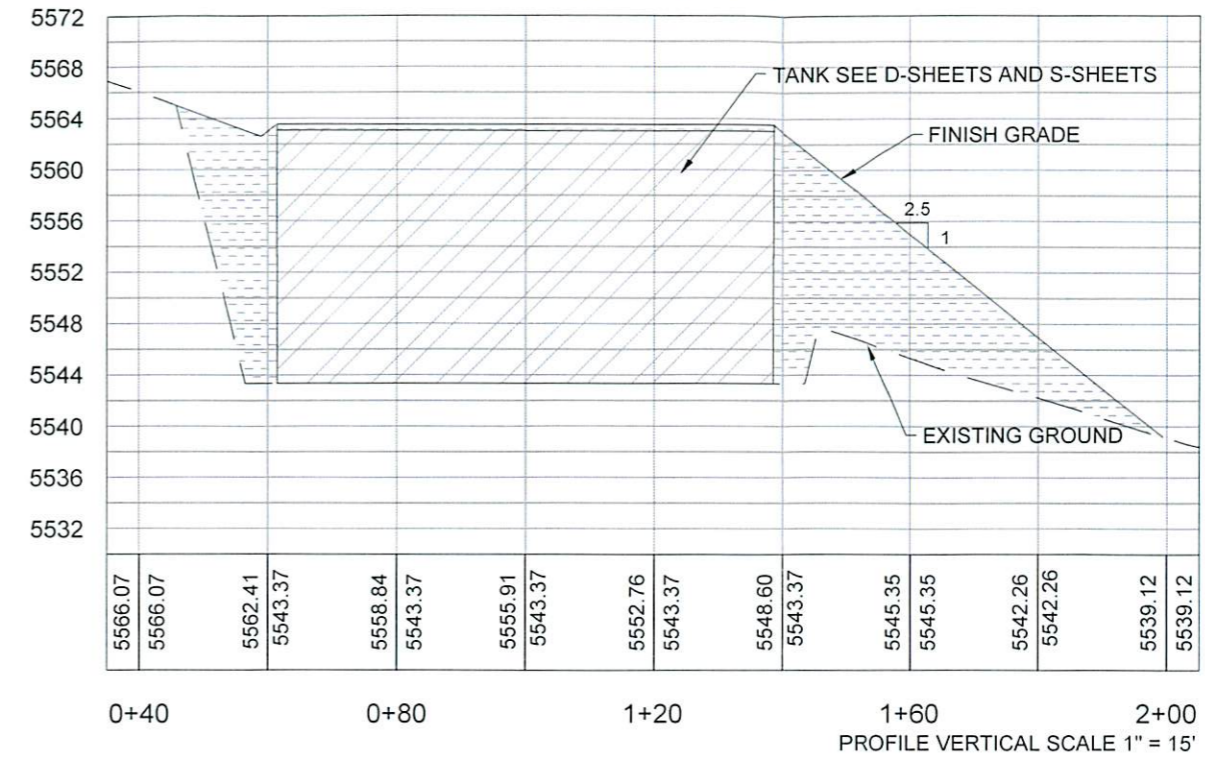
Species	PLS Pounds per Acre
Streambank wheatgrass ( <i>Elymus lanceolatus</i> ssp. <i>psammophilus</i> )	10
Mountain brome ( <i>Bromus marginatus</i> )	20
Western wheatgrass ( <i>Pascopyrum smithii</i> )	10
Sheep fescue ( <i>Festuca ovina</i> )	2.5
Lewis blue flax ( <i>Linum lewisii</i> )	2.5
<b>Total</b>	<b>45</b>



IMPORT 3" OF TOP SOIL, HYDROSEED WITH 2000#/AC WOOD MULCH, 100#/AC MBINDER TACKIFIER, HYDRO SEEDING TO TAKE PLACE BETWEEN OCTOBER 1 AND NOVEMBER 15 - APPROXIMATELY 42,000 SQ.FT.

BREAK UP COMPACTED SURFACES USED FOR STAGING OR OTHER AREAS DISTURBED DURING CONSTRUCTION AND HYDROSEED

GRADING FILL PROFILE



CONCRETE MUST CURE AT LEAST 7 DAYS AND THE 7-DAY BREAKS OF SAMPLED CONCRETE MUST BE ON TRAJECTORY TO REACH FULL DESIGN STRENGTH AND PASS LEAK TEST BEFORE BACKFILLING NEXT TO TANK BEGINS.  
PROVIDE ADEQUATE DUST CONTROL THROUGHOUT CONSTRUCTION

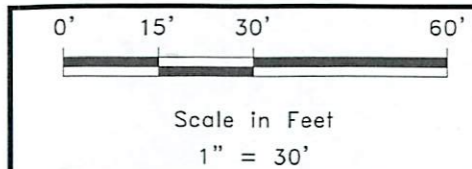
SEE EXCAVATION PLAN FOR ANTICIPATED EXCAVATION VOLUMES  
ANTICIPATED FILL VOLUMES, SEE DETAIL 8/D2:

UNDER SLAB STRUCTURAL FILL (REFER TO GEOTECH REPORT) -12" MIN: 360 TONS  
UNDER SLAB FILL GRAVEL - 3/4" OR 1" WASHED, DEPTH VARIES 6" - 12" : 230 TONS  
WITHIN 2' OF TANK WALLS - 2" MINUS IMPORT OR SCREENED NATIVE: 550 TONS  
REPLACEMENT OF EXCAVATED MATERIALS AT PROPOSED TANK AND EXISTING TANK - PER PLANS AND TYPICAL SECTION ON THIS SHEET: 3200 CUBIC YARDS

ANTICIPATED EXCESS MATERIALS WILL BE USED TO BUILD DRIVING SURFACE

NOTE: SITE RESTORATION BID ITEM:  
CUT AND FILL SLOPES: TOP DRESS WITH 3" OF SANDY LOAM TOP SOIL ON 4" OF 2" MINUS WELL GRADED MATERIAL.

THE COURSE OF 2" MINUS MATERIAL IS INTENDED TO FILL VOIDS AND PREVENT THE TOPSOIL LAYER FROM FILTERING INTO THE LARGER VOIDS BELOW. THE CONTRACTOR SHALL SCREEN AND STOCKPILE OR IMPORT MATERIALS AS NEEDED OR OTHER PROCEDURES AND METHODS AT NO ADDITIONAL COST TO THE OWNER, TO ENSURE THAT THE TOPSOIL IS AVAILABLE ON THE SURFACE OF THE FILL TO ACT AS A SEEDBED FOR THE HYDRO SEED.



Date:	1/11/2017
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Revisions	Date	Description



TANK GRADING  
500,000 GALLON TANK  
WOLF CREEK WATER + SEWER I.D.  
EDEN, WEBER, UTAH

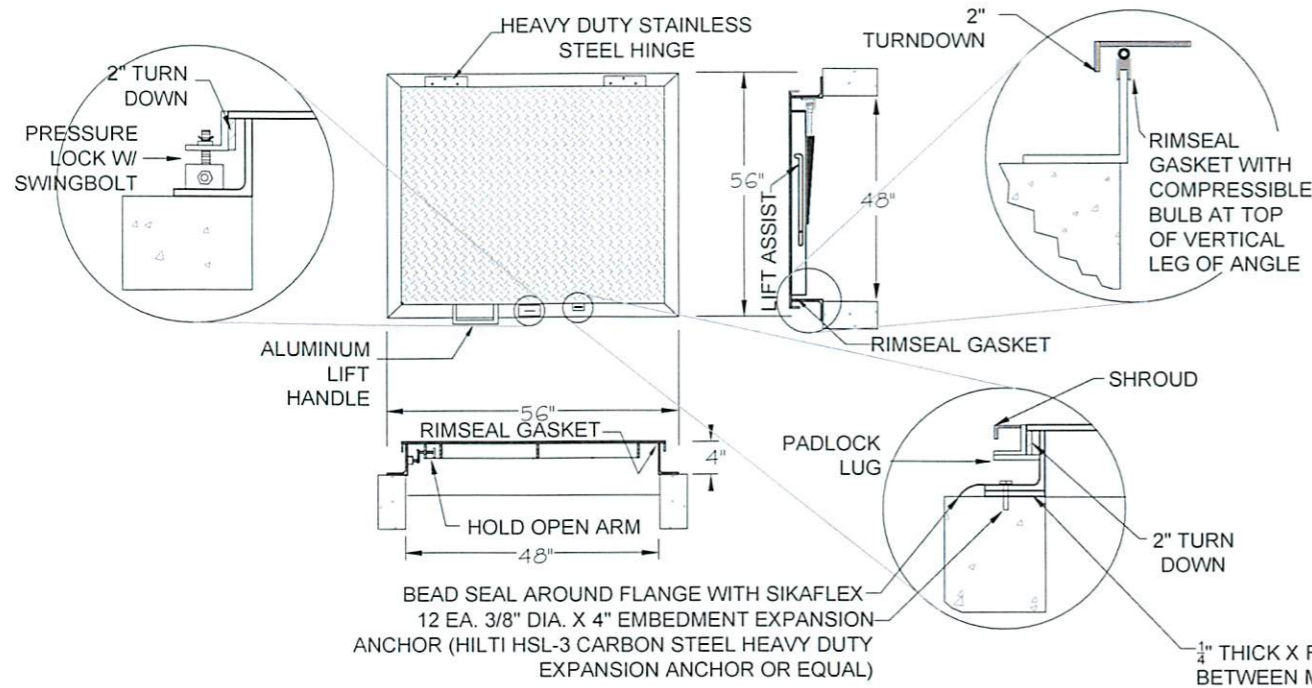


C3  
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R:\2319 - WOLF CREEK WATER AND SEWER\2319-0300\_TANK AND IP WATER\REVISED\DESIGN\3000\_TANK (1) 2017.DWG: UNIVERZ 2 22:15 PM, 1/11/17



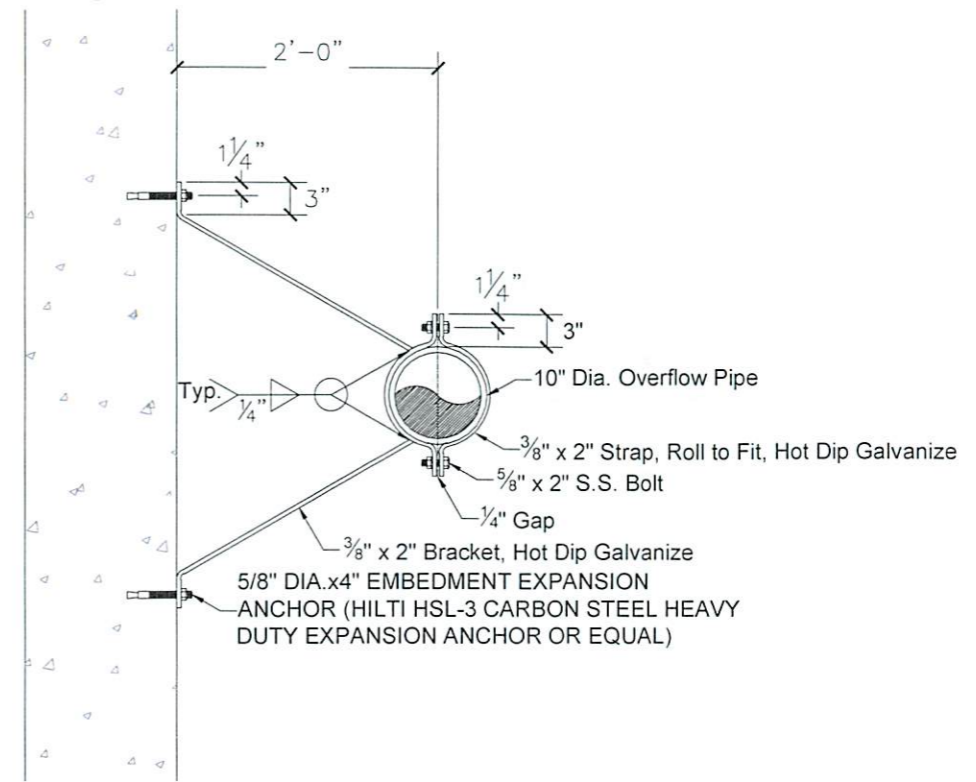




WATER TANK HATCH  
NOT TO SCALE

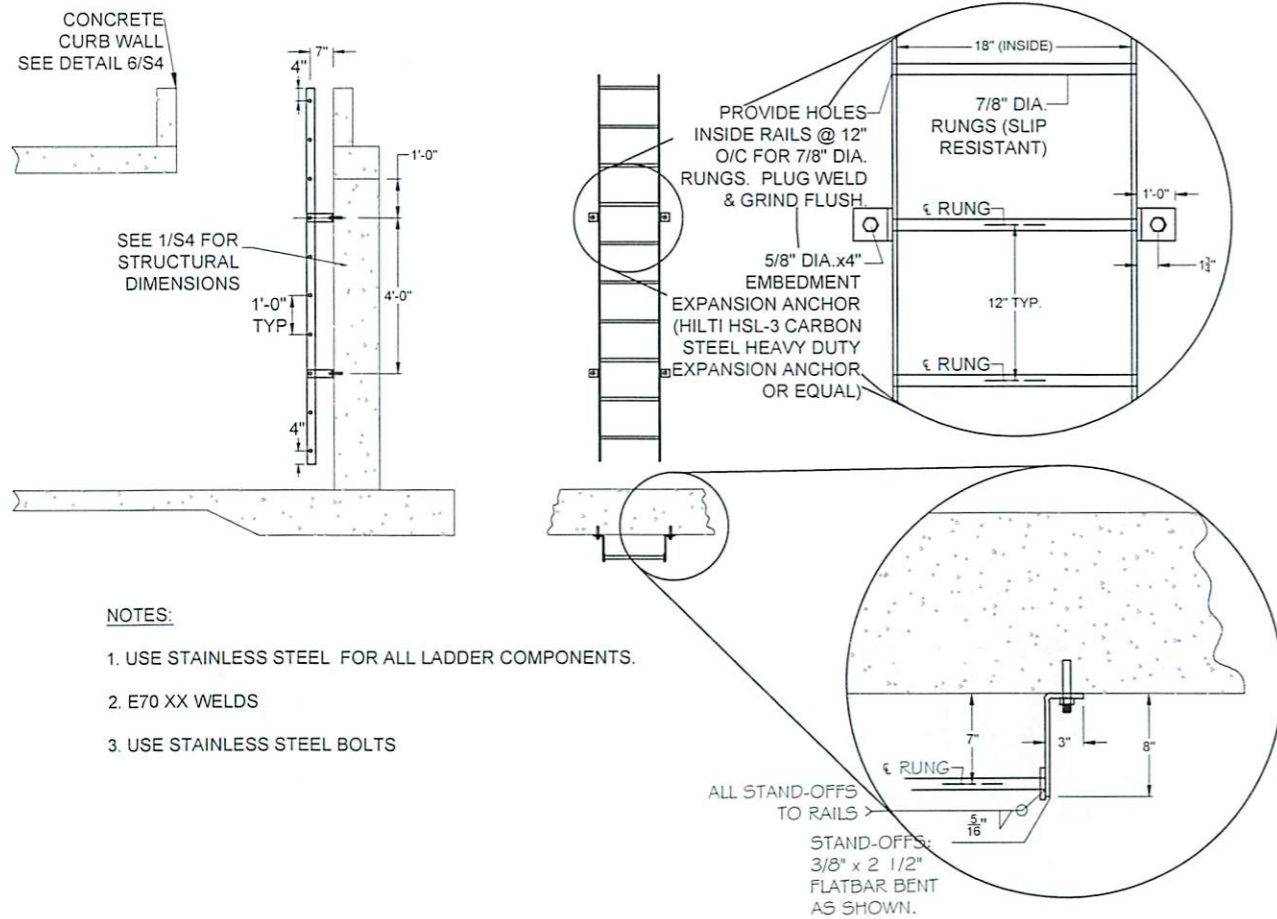
5  
D2

- 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

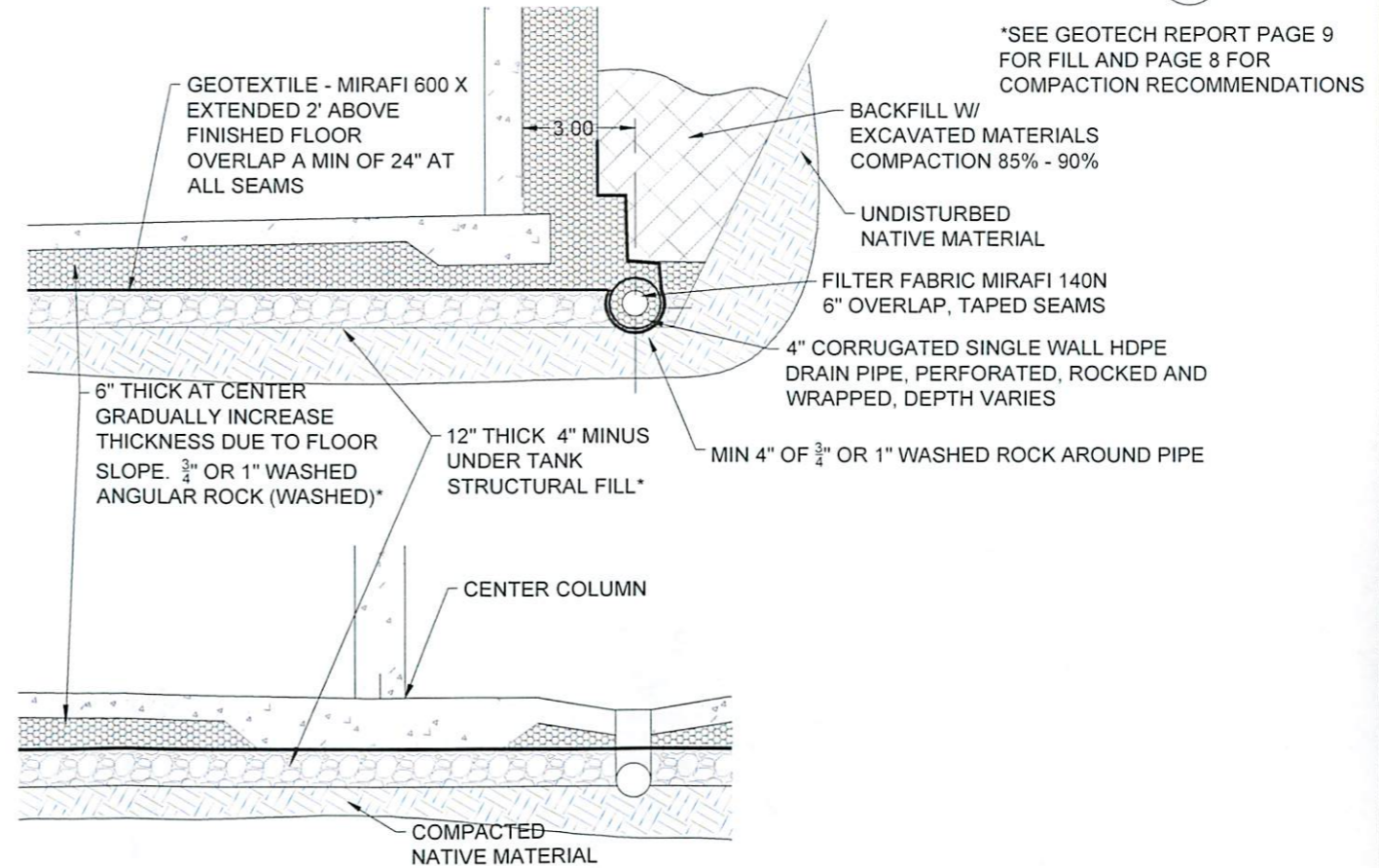
7  
D2



LADDER DETAIL  
NOT TO SCALE

6  
D2

- NOTES:
1. USE STAINLESS STEEL FOR ALL LADDER COMPONENTS.
  2. E70 XX WELDS
  3. USE STAINLESS STEEL BOLTS



UNDER DRAIN/FILL DETAIL  
NOT TO SCALE

8  
D2

\*SEE GEOTECH REPORT PAGE 9 FOR FILL AND PAGE 8 FOR COMPACTION RECOMMENDATIONS

Date: 1/11/2017  
Scale: #####  
Designed: MDD  
Drafted: MDD  
Checked: DLW

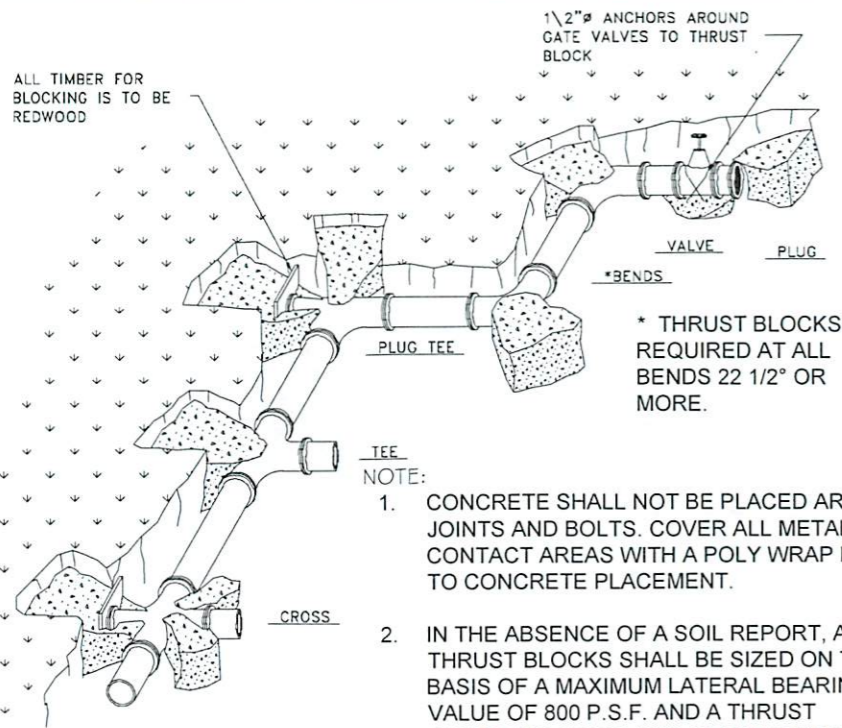
Revisions	Description	Date



TANK DETAILS 2  
500,000 GALLON TANK  
WOLF CREEK WATER + SEWER I.D.  
EDEN, WEBER, UTAH



D2  
10



1. CONCRETE SHALL NOT BE PLACED AROUND JOINTS AND BOLTS. COVER ALL METAL CONTACT AREAS WITH A POLY WRAP PRIOR TO CONCRETE PLACEMENT.
2. IN THE ABSENCE OF A SOIL REPORT, ALL THRUST BLOCKS SHALL BE SIZED ON THE BASIS OF A MAXIMUM LATERAL BEARING VALUE OF 800 P.S.F. AND A THRUST RESULTING FROM 150% OF THE WATER LINE STATIC PRESSURE.

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

SIZE	BENDS				TEES*	GATE VALVES	DEAD ENDS	CROSS/1 BRANCH PLUGGED	CROSS/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".

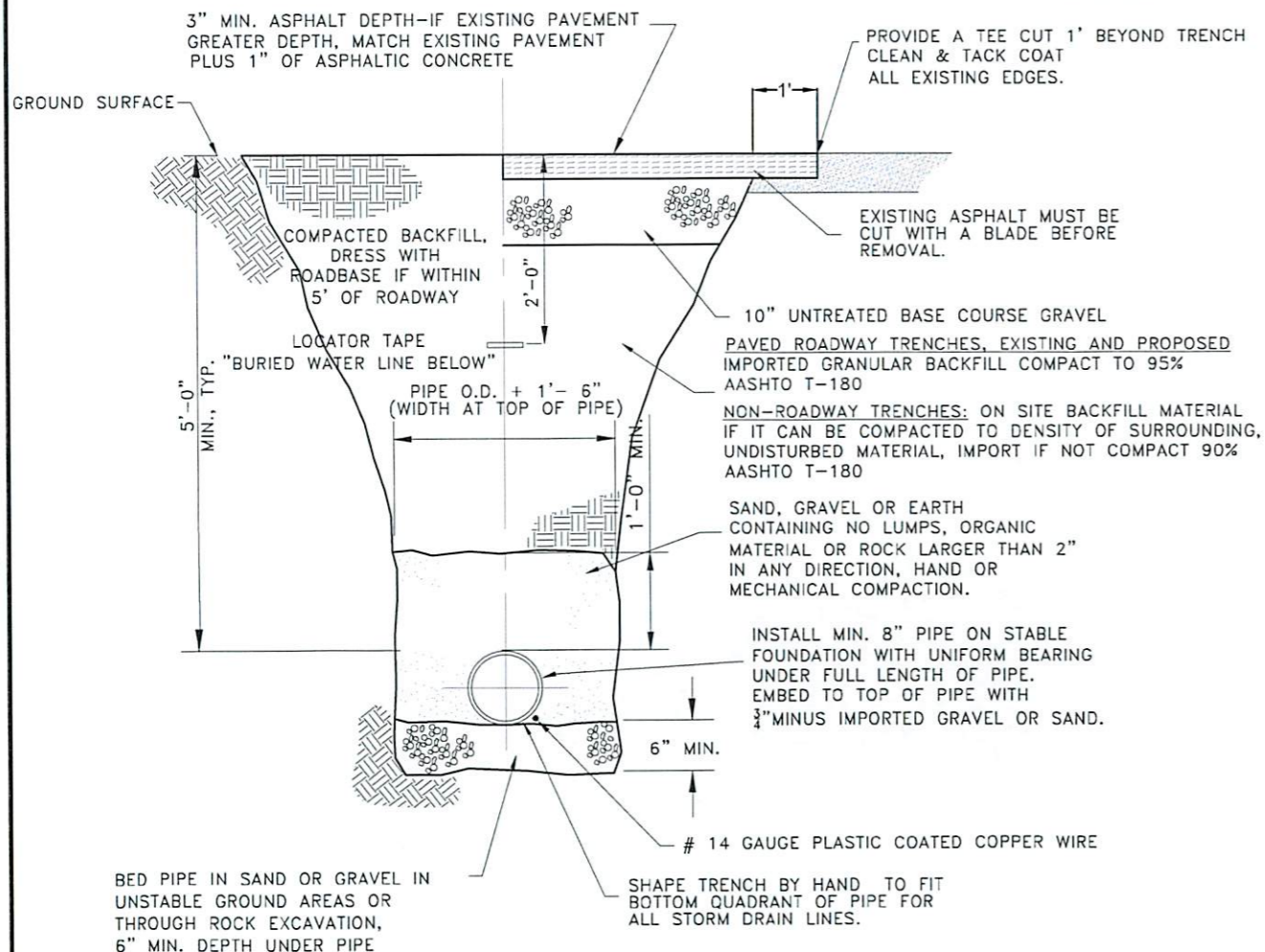
$$F = \frac{\text{ACTUAL SPECIFIED TEST PRESSURE IN HUNDREDS OF LBS/SQ. IN.}}{\text{ACTUAL SOIL BEARING CAPACITY IN THOUSANDS OF LBS.}}$$

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

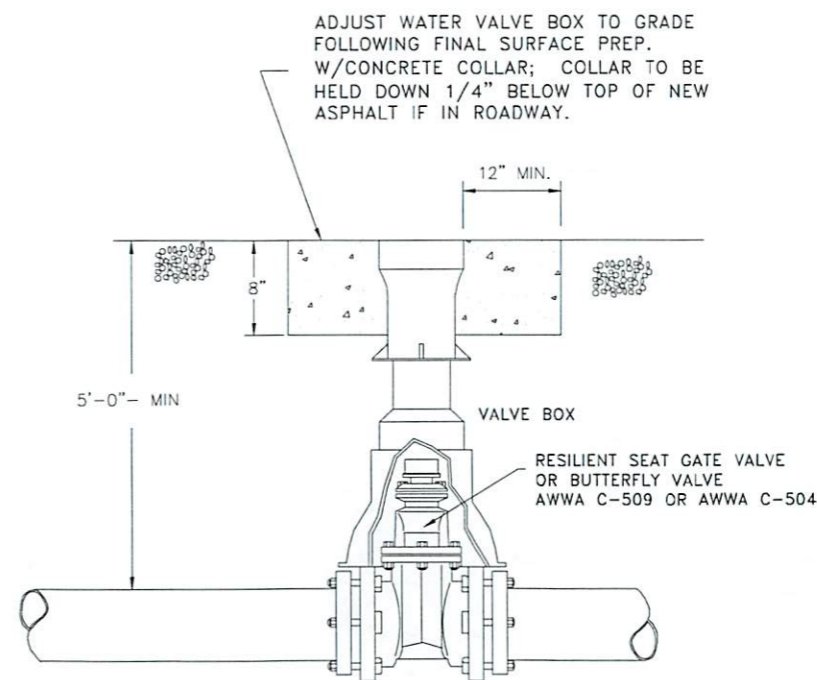
9  
D3



TYPICAL TRENCH DETAIL

NOT TO SCALE

10  
D3



TYPICAL VALVE

12  
D4

DETAILS 3

500,000 GALLON TANK

WOLF CREEK WATER + SEWER I. D.

EDEN, WEBER, UTAH

**GARDNER ENGINEERING**

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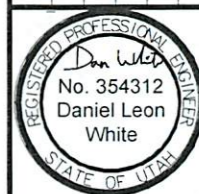
5150 SOUTH 375 EAST OGDEN, UT  
OFFICE: 801.476.0202 FAX: 801.476.0066

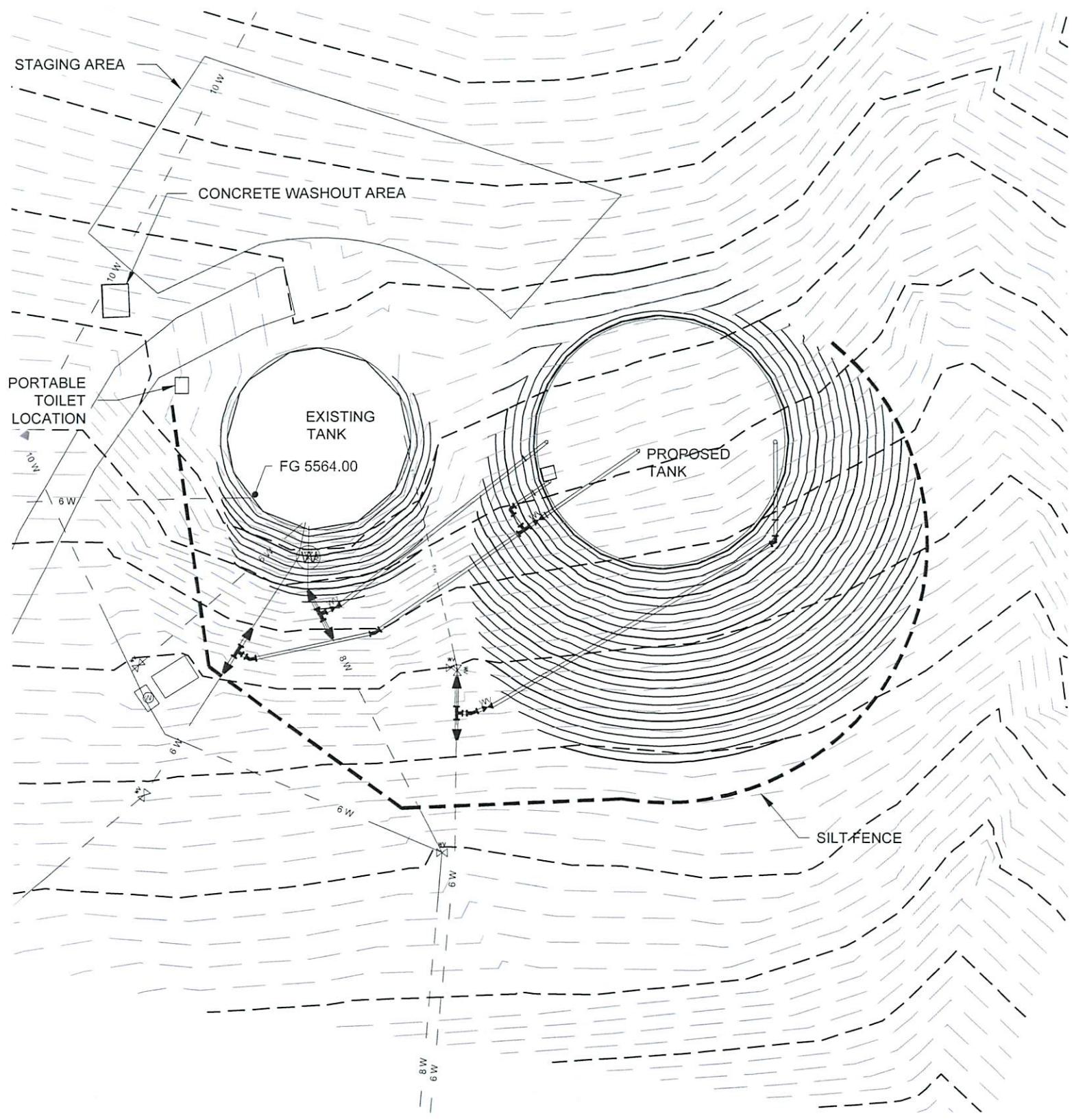
D3

10

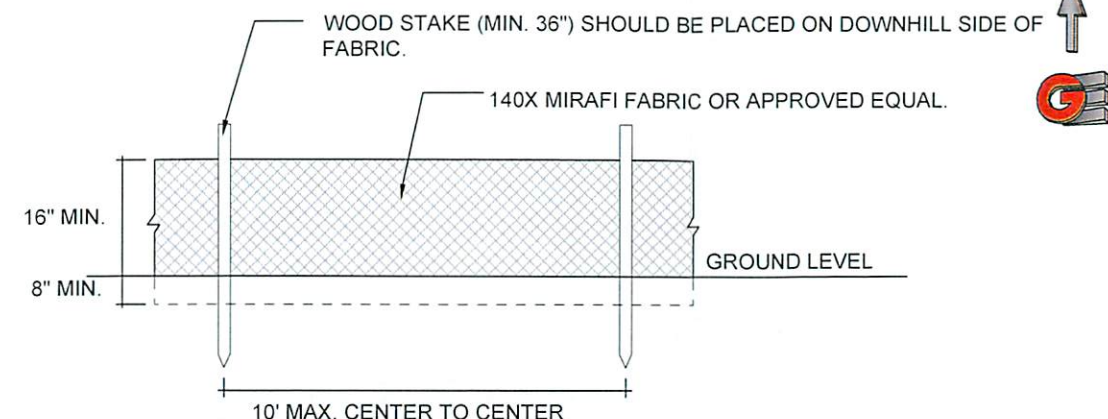
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Scale: #####  
Designed: MDD  
Drafted: MDD  
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Revisions	Description
Date	

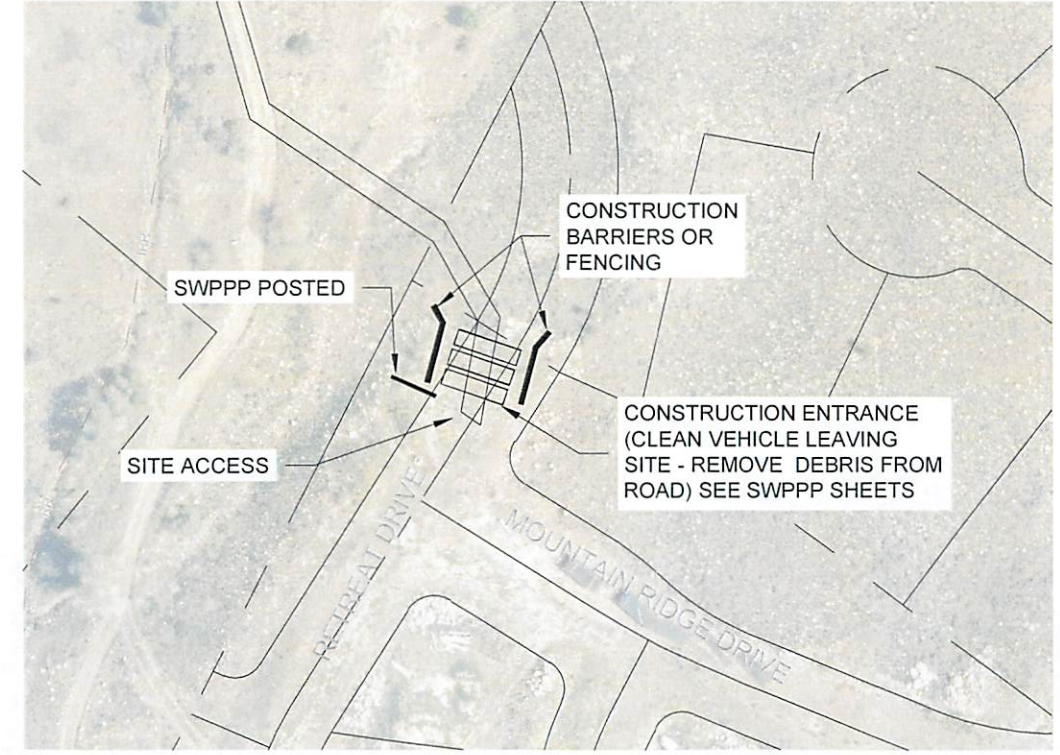
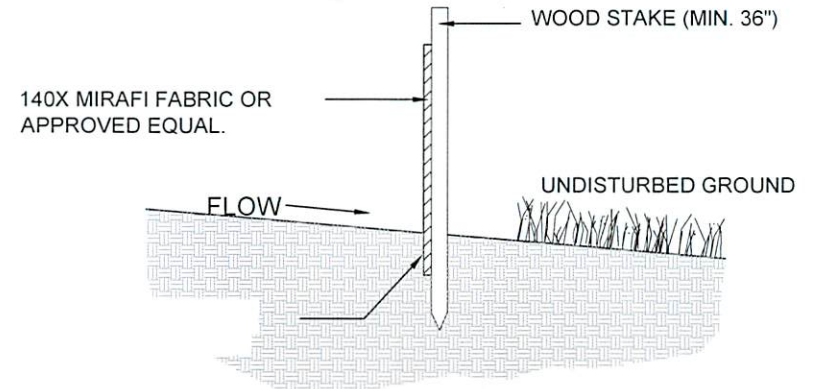




NOTE: ALL CONSTRUCTION TO CONFORM TO WEBER COUNTY STANDARDS AND SPECIFICATIONS.



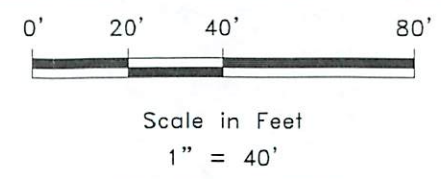
FRONT VIEW



LEGEND

--- SILT FENCE

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



Date:	1/11/2017
Scale:	1" = 40'
Designed:	MDD
Drafted:	MDD
Checked:	DLW

Revisions	Description
Date	



SWMP PLAN  
500,000 GALLON TANK  
WOLF CREEK WATER + SEWER I.D.  
EDEN, WEBER, UTAH

**GARDNER ENGINEERING**  
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5150 SOUTH 575 EAST OGDEN, UT  
OFFICE: 801.476.0202 FAX: 801.476.0066

SW1  
10

R:\2319 - WOLF CREEK WATER AND SEWER\02-500k TANK AND SWPPP\WATERLINE\DESIGN\DWG\500k TANK 1-11-2017.DWG, 1/11/2017 2:22:31 PM, HNE

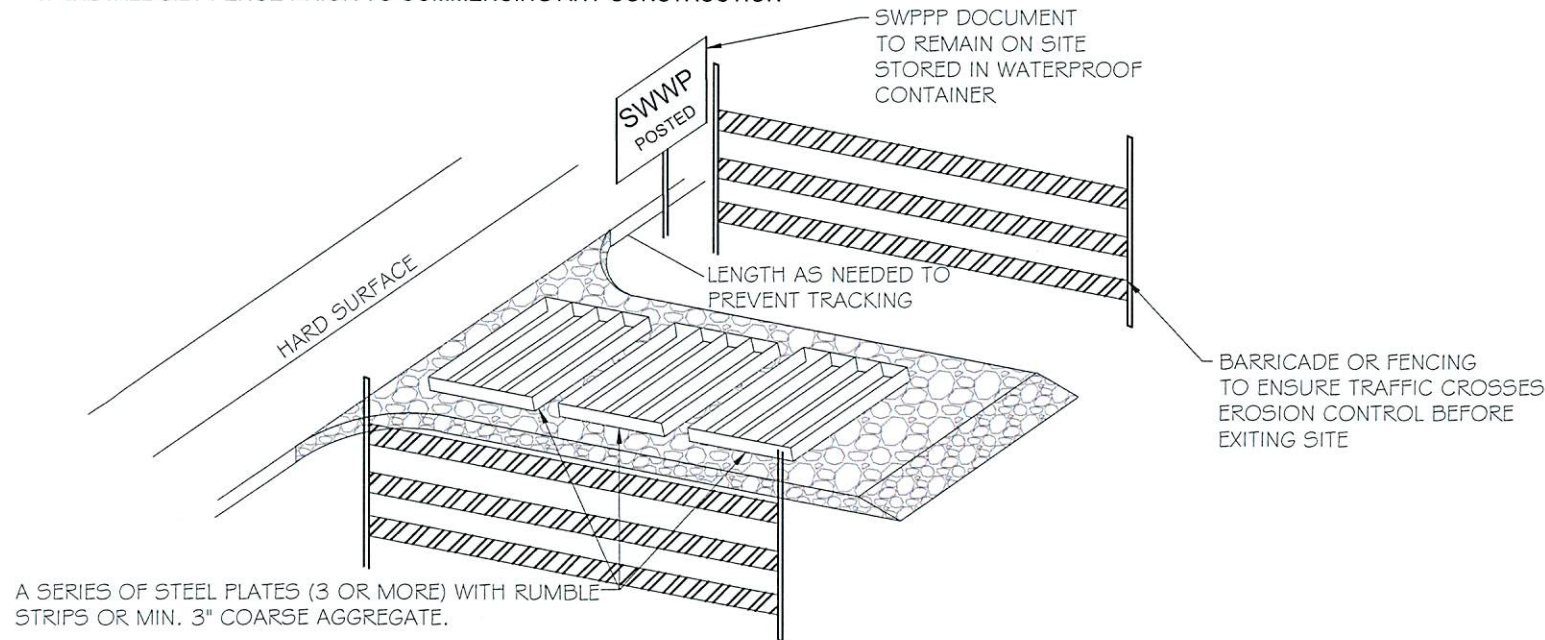
NOTE: ALL CONSTRUCTION TO CONFORM TO WEBER COUNTY STANDARDS AND SPECIFICATIONS.  
INSPECTION TO BE PREFORMED WEEKLY BY A RSI OR OTHER CERTIFIED INSPECTOR.

**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.

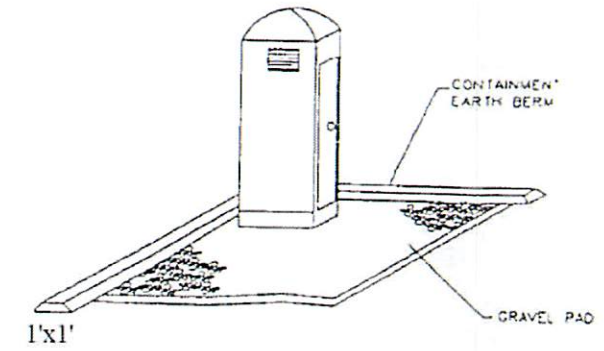
**EROSION CONTROL NOTES:**

1. INSTALL SILT FENCE PRIOR TO COMMENCING ANY CONSTRUCTION



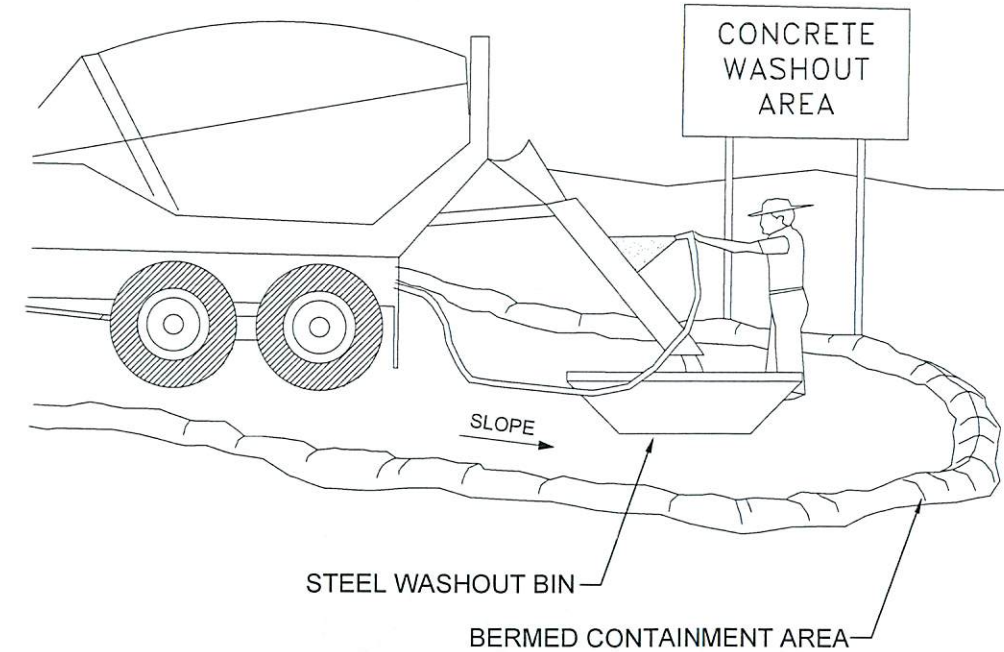
**ENTRANCE STABILIZATION NOTES:**

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.



**TEMPORARY ON-SITE FACILITIES (PORTA-POTTY) NOTES:**

1. PREPARE LEVEL, GRAVEL SURFACE AND PROVIDE CLEAR ACCESS TO THE TOILETS FOR SERVICING AND FOR ON-SITE PERSONNEL.
2. CONSTRUCT EARTH BERM PERIMETER, CONTROL FOR SPILL/PROTECTION LEAK.
3. STAKE PORTA-POTTY TO GROUND TO PREVENT TIP OVER.



**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.
6. CONCRETE WASH OUT TO BE EMPTIED WHEN IT REACHES 1/2 CAPACITY.

Date: 1/11/2017  
Scale: #####  
Designed: MDD  
Drafted: MDD  
Checked: DLW

Revisions	Description
Date	



SWWP DETAILS  
500,000 GALLON TANK  
WOLF CREEK WATER + SEWER I. D.  
EDEN, WEBER, UTAH

**GARDNER ENGINEERING**  
CIVIL • LAND PLANNING  
MUNICIPAL • LAND SURVEYING  
5150 SOUTH 375 EAST OGDEN, UT  
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SW2  
10

R:\2017 - Wolf Creek Water and Sewer\02-500k Tank and HP Waterline\DESIGN\DWG\TANK (11-2017).DWG, 1/11/2017 2:22:33 PM, MDD

**STRUCTURAL NOTES:**

**A. GENERAL**

1. 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.
2. 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.
3. 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.
4. OBSERVATION VISITS TO THE SITE BY ARW ENGINEERS FIELD REPRESENTATIVES SHALL NEITHER BE CONSTRUED AS INSPECTION NOR APPROVAL OF CONSTRUCTION.
5. 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.
6. DURING AND AFTER CONSTRUCTION, BUILDER AND/OR OWNER SHALL KEEP LOADS ON STRUCTURE WITHIN THE LIMITS OF DESIGN LOADS.
7. TYPICAL DETAILS AND SECTIONS SHALL APPLY WHERE SPECIFIC DETAILS ARE NOT SHOWN.
8. THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST TO THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH ANY CHANGES, MODIFICATIONS OR SUBSTITUTIONS.
9. THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY SHORING AND BRACING FOR ALL STRUCTURAL ELEMENTS UNTIL THE FINAL STRUCTURAL SYSTEM IS COMPLETED. CONTRACTOR IS RESPONSIBLE FOR DESIGN OF ALL SHORING.
10. THE CONTRACTOR SHALL COORDINATE AND VERIFY ALL LOCATIONS AND SIZES OF MECHANICAL EQUIPMENT OR OTHER EQUIPMENT BEFORE FABRICATING AND ERECTING STRUCTURAL ELEMENTS.

**B. SPECIAL INSPECTIONS**

1. 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**

1. GOVERNING BUILDING CODE : ACI 318 / ACI 350 / ACI 350.3
  - a. SNOW LOAD = 82 PSF
  - b. MAXIMUM SOIL OVER COVER = 6" SOIL

**D. FOUNDATION**

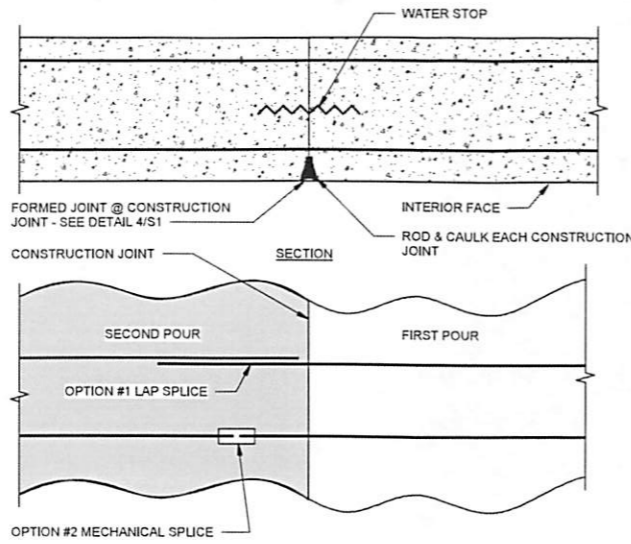
1. DESIGN SOIL PRESSURE : 3,500 PSF
2. SOILS REPORT BY : AGECE  
REPORT # : 1160909  
DATED : NOVEMBER 22, 2016
3. SOIL PREPARATION UNDER FOOTINGS AND SLABS-ON-GRADE SHALL BE IN ACCORDANCE WITH THE SOILS REPORT.
4. UNLESS NOTED OTHERWISE, ALL FOOTINGS AT COLUMNS TO BE CENTERED BELOW COLUMNS

**E. CONCRETE**

1. ALL CONCRETE SHALL HAVE A DESIGN 28-DAY COMPRESSIVE STRENGTH AS FOLLOWS :
  - a. FOOTINGS, SLAB ON GRADE, COLUMNS, WALLS, AND ROOF SLAB : 4500psi
  - b. ALL CONCRETE SHALL HAVE AN AIR CONTENT OF 5% AND MAXIMUM WATER / CEMENT RATIO OF 0.40
2. 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.
3. REFER TO OTHER (CIVIL, ETC.) DRAWINGS FOR EXTENT AND LOCATION OF DEPRESSIONS, CURBS, RAMPS, ETC.
4. 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/S1.
5. 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.
6. SEE PROJECT SPECIFICATION FOR WATERPROOFING ADMIXTURE.

**F. REINFORCING STEEL**

1. ALL REINFORCING BARS SHALL CONFORM TO ASTM STANDARD A-615 GRADE 60 ADEQUATELY TIE AND SUPPORT ALL REINFORCING STEEL AS SPECIFIED BY ACI 315, TO MAINTAIN EXACT REQUIRED POSITION. ALL FIELD BENT DOWELS SHALL BE GRADE 40 WITH SPACINGS INDICATED REDUCED BY 1/3.
2. REINFORCEMENT SHALL HAVE THE FOLLOWING CONCRETE COVERAGE:
  - a. CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ..... 3"
  - b. EXPOSED TO EARTH, WATER OR WEATHER:
    1. #6 & LARGER ..... 2"
    2. #5 & SMALLER ..... 2" (1 3/4" FOR #3 COLUMN TIES)
  - c. SLAB ON GRADE
    1. PLACE REINFORCING AT CENTER OF SLAB UNLESS INDICATED OTHERWISE.
3. EXCEPT WHERE NOTED, CONTINUOUS REINFORCEMENT SHALL BE SPLICED WITH LAP SPLICES AT POINTS OF MINIMUM STRESS AS FOLLOWS:
  - a. IN RESERVOIR WALLS, SEE DETAILS 1/S1, 2/S1 AND 1/S4.
  - b. IN COLUMNS, USE 35 INCH LAP
  - c. IN SUSPENDED SLAB, USE 48 BAR DIAMETER LAP AND STAGGER ADJACENT BAR SPLICES 24" MIN.
  - d. IN SLAB-ON-GRADE, USE 30 BAR DIAMETER LAP.
4. 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 REQ'D. EMBEDMENT OR DOWELS.
5. DO NOT WELD REINFORCING.

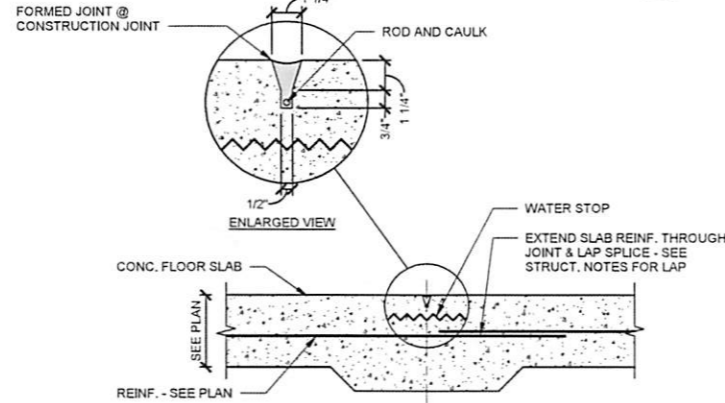


- NOTES:**
1. FOR OPTION #1 - SPLICE LENGTHS ARE
    - a. #5 BARS - 39"
    - b. #6 BARS - 48"
  2. FOR OPTION #2 - USE MECHANICAL CONNECTORS WHICH ACHIEVE 125% OF THE STRENGTH OF THE BARS BEING SPLICED. SUBMIT A CURRENT ICC RESEARCH REPORT FOR APPROVAL PRIOR TO CONSTRUCTION.

**TYPICAL CONST. JOINT IN WALL DETAIL**

SCALE : NONE

1  
S1

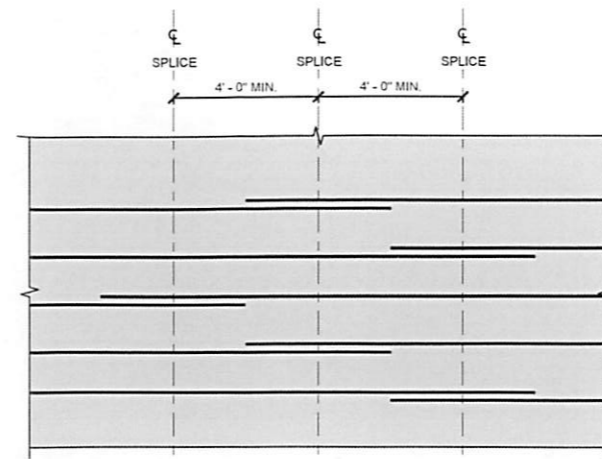


- NOTE:**  
IT IS NOT ANTICIPATED THAT THIS DETAIL WILL BE REQ'D. IT IS ONLY PROVIDED TO GIVE THE CONTRACTOR THE OPTION OF POURING THE FLOOR WITH MULTIPLE POURS

**TYP. CONST. JOINT IN FLOOR SLAB DETAIL**

SCALE : NONE

4  
S1



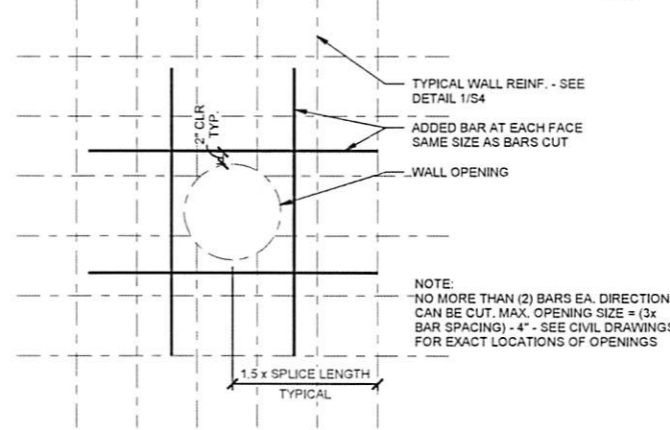
- NOTES:**  
SPLICES MAY NOT COINCIDE VERTICALLY MORE FREQUENTLY THAN EVERY THIRD BAR.

- SPLICE LENGTHS**
- a. #5 BARS - 39"
  - b. #6 BARS - 48"

**TYPICAL REINF. BAR SPLICE DETAIL**

SCALE : NONE

2  
S1

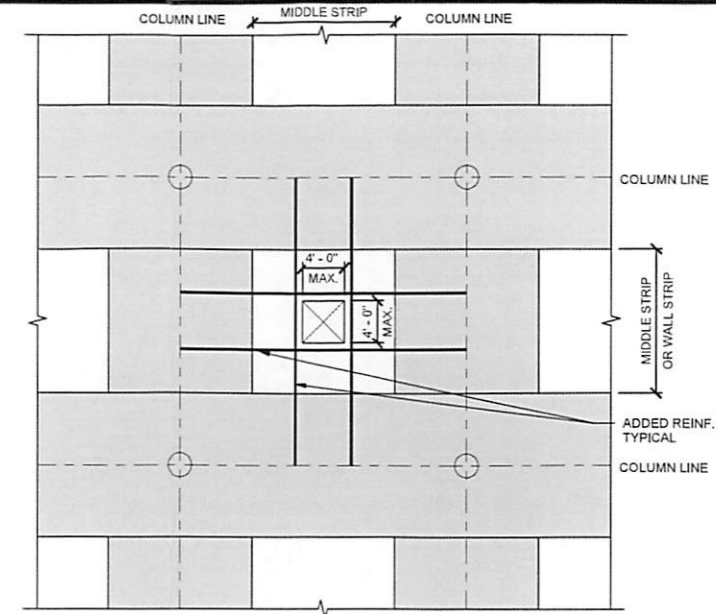


- NOTE:**  
NO MORE THAN (2) BARS EA. DIRECTION CAN BE CUT. MAX. OPENING SIZE = (D x BAR SPACING) - 4" - SEE CIVIL DRAWINGS FOR EXACT LOCATIONS OF OPENINGS

**TYPICAL WALL OPENING DETAIL**

SCALE : NONE

5  
S1



- NOTES:**
1. ADD REINFORCING ON ALL SIDES OF OPENING EQUAL TO 1/2 THE AMOUNT CUT IN THAT DIRECTION. ADDED BARS TO EXTEND TO COLUMN LINES AS SHOWN.
  2. OPENINGS MAY ONLY OCCUR @ INTERSECTIONS OF MIDDLE STRIPS (OR INTERSECTION OF MIDDLE STRIP WITH WALL STRIP) AS SHOWN.

**TYPICAL ROOF OPENING DETAIL**

SCALE : NONE

3  
S1

Structural Sheet Index	
SHEET NUMBER	SHEET NAME
S1	STRUCTURAL NOTES
S2	FOOTING & FOUNDATION PLAN
S3	ROOF FRAMING PLAN
S4	DETAILS

Date	2016.11.28
Engineer	Z. Hansen
Drawn By	D. Barnhill
Checked By	Z. Hansen
ARW Project No.	16492

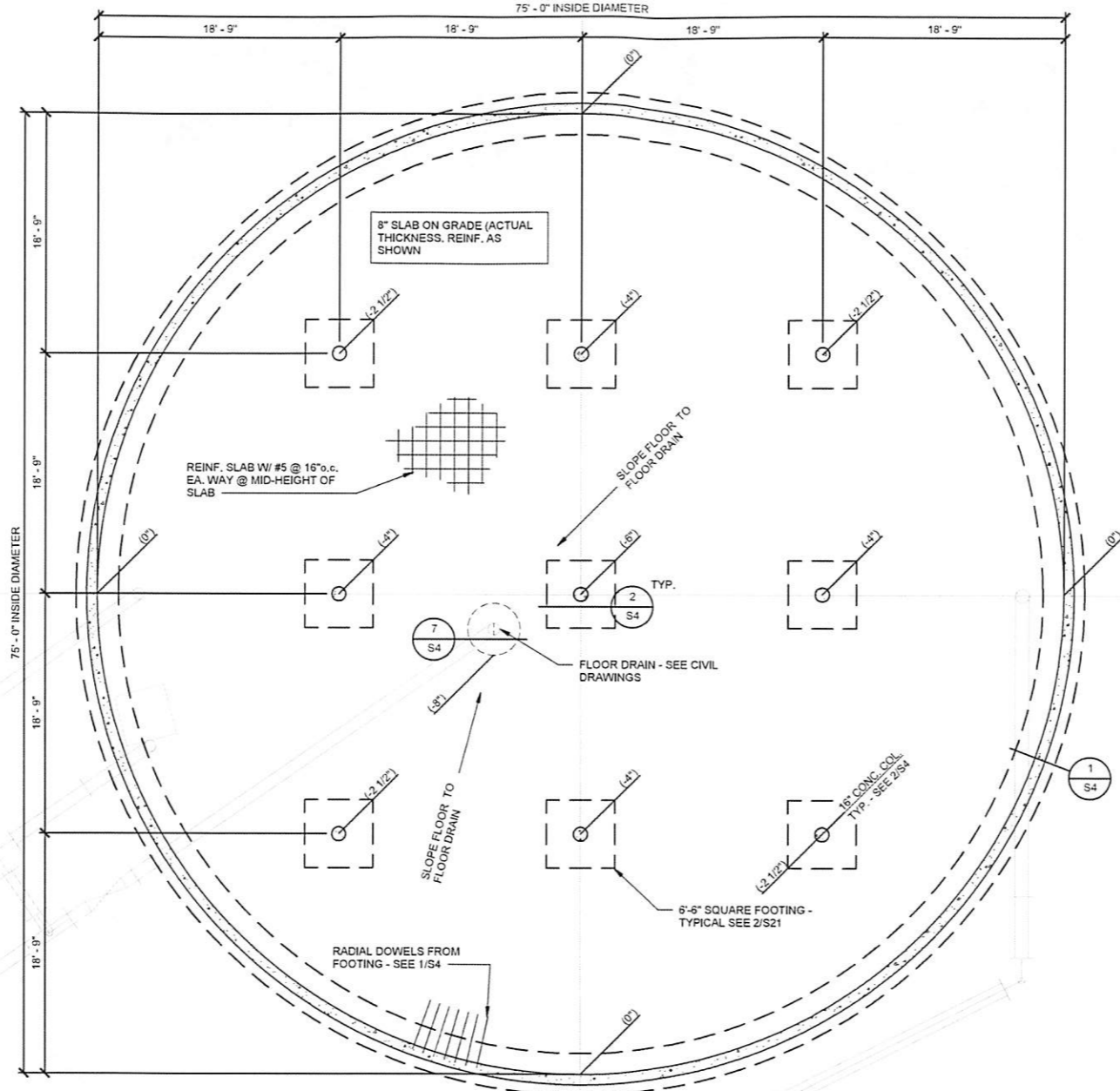
REVISION	DESCRIPTION
DATE	



**STRUCTURAL NOTES**  
500,000 GALLON TANK  
**WOLF CREEK WATER + SEWER I.D.**  
EDEN, WEBER, UTAH



**S1**



NOTE:  
 1. FLOOR SLOPES 3° FROM OUTSIDE TO DRAIN AT CENTER. NUMBERS SHOWN IN ( ) ARE RELATIVE TOP OF SLAB ELEVATIONS AT COLUMNS

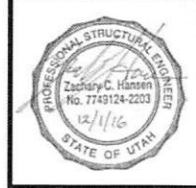
NOTE:  
 SEE GARDNER ENGINEERING SITE PLAN FOR ORIENTATION & NORTH ARROW.

**FOOTING & FOUNDATION PLAN**  
 SCALE: 1/8" = 1'-0"

A  
S2

Date: 2016.11.28  
 Engineer: Z. Hansen  
 Drawn By: D. Bergelson  
 Checked By: Z. Hansen  
 ARW Project No.: 19492

REVISION	DESCRIPTION
DATE	



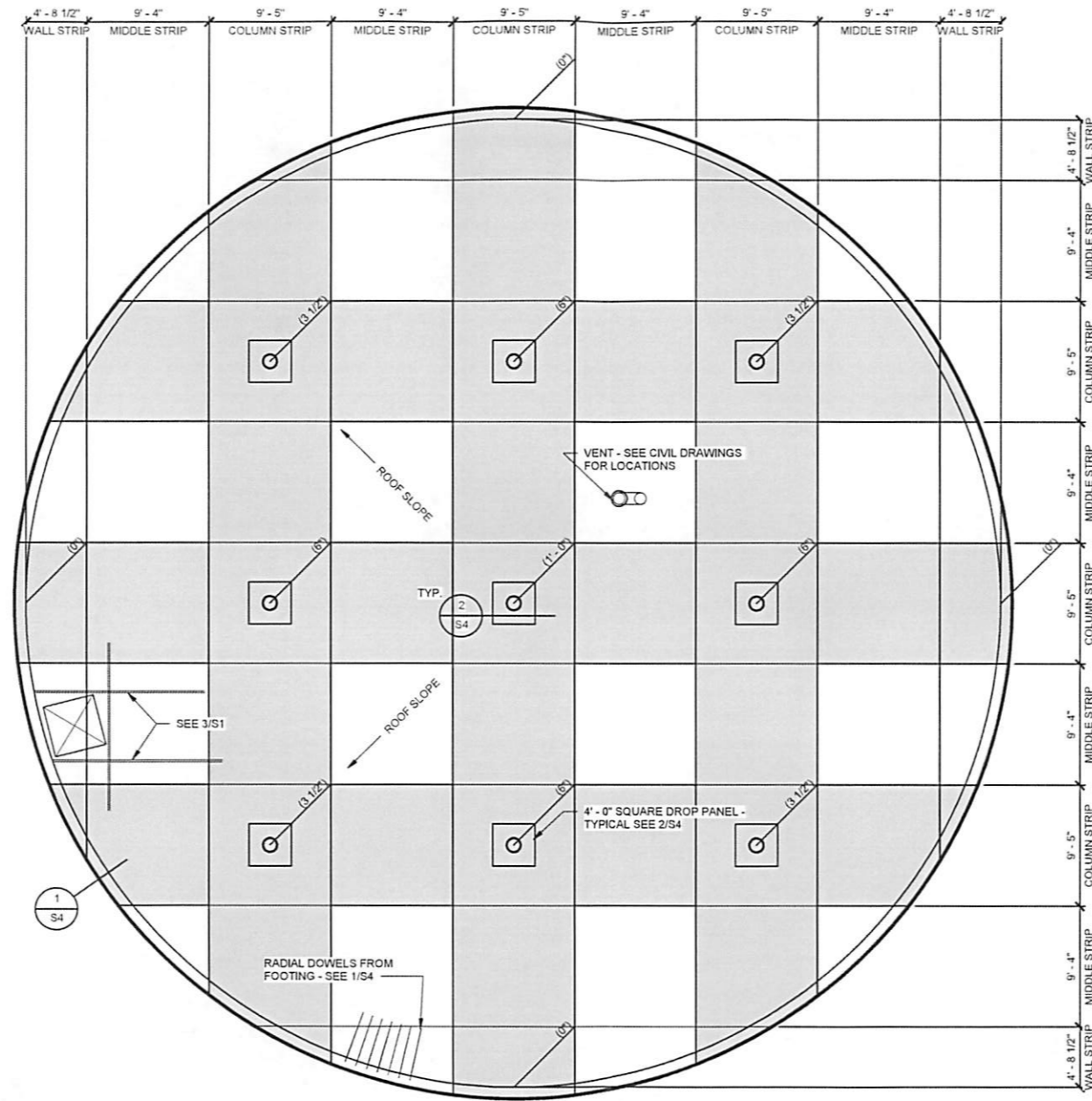
**FOOTING & FOUNDATION PLAN**  
 500,000 GALLON TANK  
**WOLF CREEK WATER + SEWER I.D.**  
 EDEN, WEBER, UTAH

**GARDNER ENGINEERING**  
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**ENGINEERS**  
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 1084 W. Park Dr., Ogden, Utah 84403  
 PH: 435.232.4244 FAX: 435.232.4245

S2

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

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

**ROOF SLAB PLAN**  
 SCALE: 1/8" = 1'-0"

A  
S3

Date	2016.11.28
Engineer	Z. Hansen
Drawn By	D. Byrneson
Checked By	Z. Hansen
ARW Project No.	16-02

REVISION	DESCRIPTION
DATE	



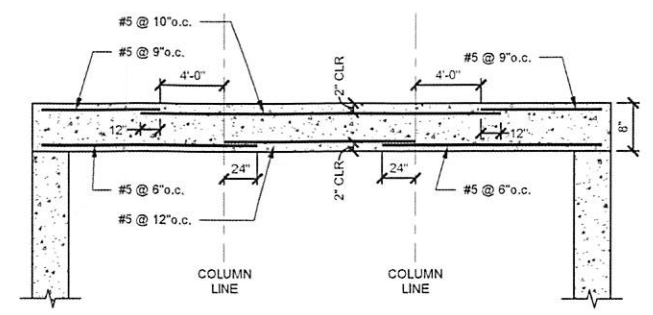
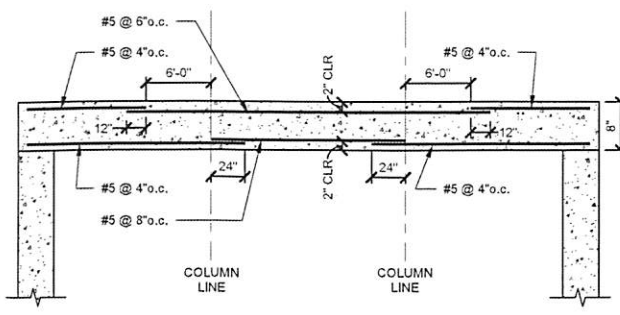
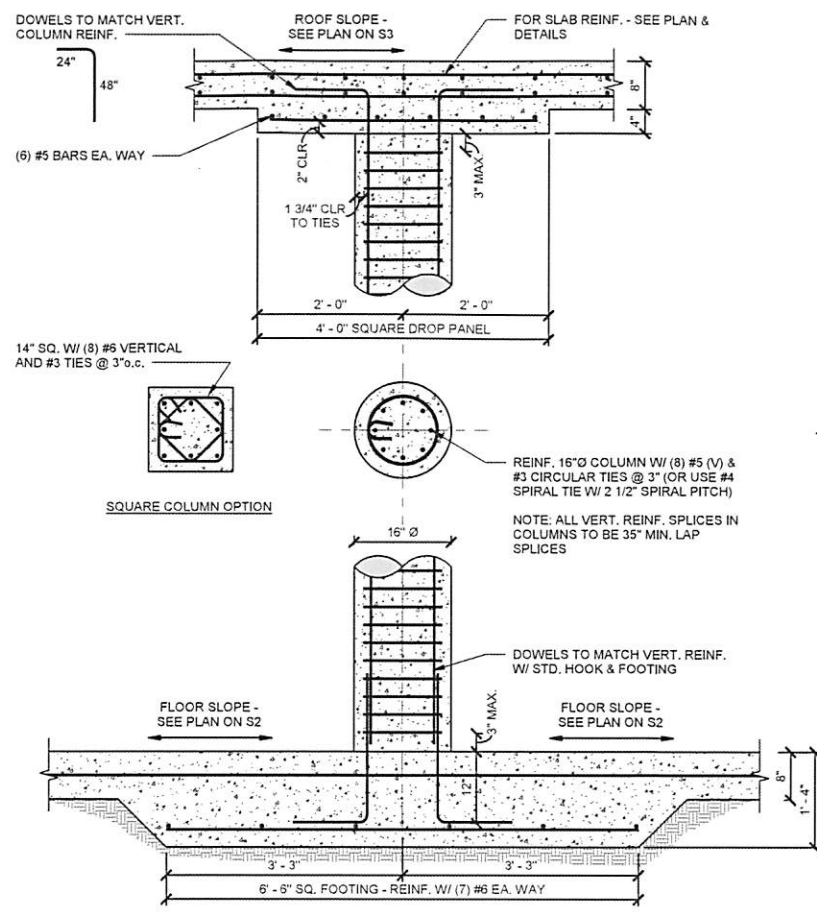
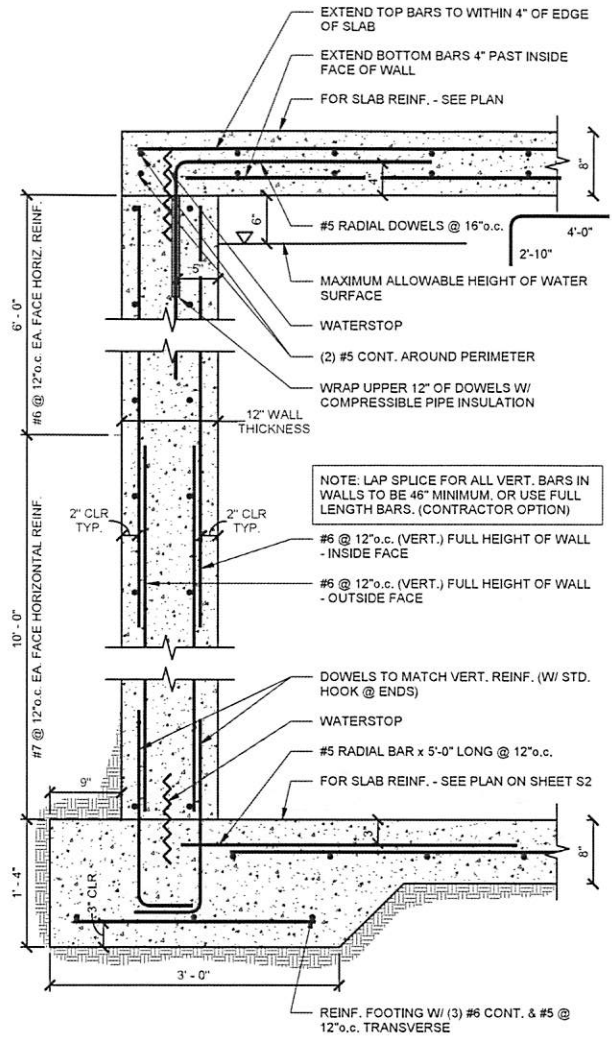
**ROOF FRAMING PLAN**  
 500,000 GALLON TANK  
**WOLF CREEK WATER + SEWER I.D.**  
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S3

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COLUMN STRIP (EACH DIRECTION) 3  
S4  
SCALE: NONE

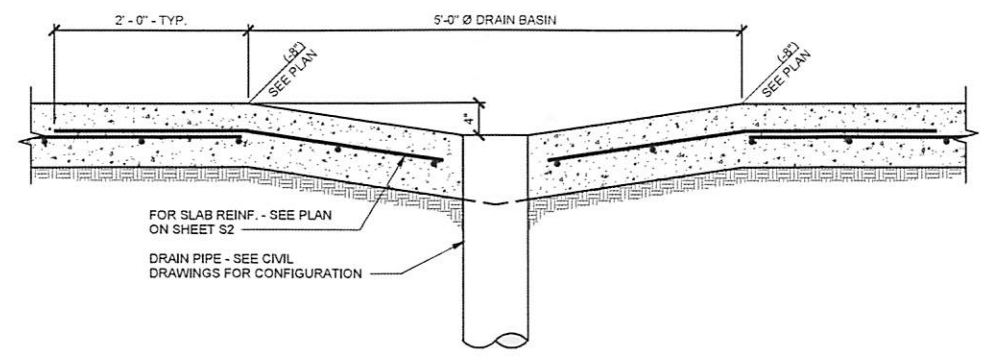
MIDDLE STRIP (EACH DIRECTION) 4  
S4  
SCALE: NONE

TYPICAL RESERVOIR WALL SECTION 1  
S4  
SCALE: NONE

TYPICAL INTERIOR COLUMN 2  
S4  
SCALE: NONE

WALL STRIP (EACH DIRECTION) 5  
S4  
SCALE: NONE

CURB WALL SECTION 6  
S4  
SCALE: NONE



DRAIN BASIN 7  
S4  
SCALE: NONE

Date: 2016.11.28  
 Engineer: Z. Hansen  
 Drawn By: D. Bertelson  
 Checked By: Z. Hansen  
 ARW Project No.: 16402  
 DWG.:

REVISION	DESCRIPTION	DATE



DETAILS  
 500,000 GALLON TANK  
**WOLF CREEK WATER + SEWER I.D.**  
 EDEN, WEBER, UTAH

**GARDNER ENGINEERING**  
 CIVIL & LAND PLANNING  
 MUNICIPAL & LAND SURVEYING

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 435.763.1234

S4

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