



Staff Report to the Ogden Valley Planning Commission

Weber County Planning Division

Synopsis

Application Information

Application Request:	Consideration and action on a conditional use permit application for a water pumping plant for Liberty Pipeline Company.
Type of Decision:	Administrative
Agenda Date:	Tuesday, April 25, 2017
Applicant:	Liberty Pipeline Company c/o Pen Hollist, Director
Authorized Agent:	Mike Durtschi, Project Engineer (Gardner Engineering)
File Number:	CUP# 2017-03

Property Information

Approximate Address:	6701 N. Durfee Creek Way, Liberty, UT
Project Area:	1.04 acres
Zoning:	Forest Zone (F-5)
Existing Land Use:	Unused well
Proposed Land Use:	Water pumping plant and filtration facility
Parcel ID:	17-139-0003
Township, Range, Section:	Township 8 North, Range 1 West, Section 36

Adjacent Land Use

North:	Residential	South:	Residential
East:	Forest	West:	Residential

Staff Information

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

Applicable Ordinances

- Title 101, Chapter 1, General Provisions, Section 7, Definitions
- Title 104, Chapter 9 Forest Zones (F-5)
- 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

Liberty Pipeline Company is requesting approval of a conditional use permit to construct a filtration and pumping facility to treat an unused well in order to increase the water source capacity in the area. The project area is all of Common Area C of Durfee Creek Estates No. 1, and is owned by the Durfee Creek Estates Home Owners Association. The applicant, Pen Hollist, is a member of the Durfee Creek Estates Home Owners Association and has signed the application as the Director of Liberty Pipeline Company.

The submitted site plan includes an existing pump control building, an existing well, and a proposed pump control/filter building, all located within the project area. The property lies in the Forest 5 Zone (F-5) which allows "Water pumping plants and reservoirs" as well as "Public utility substations and transmission lines" 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 F-5 Zone which is categorized as a "Forest Zone". The intent of the forest zones can be further described per LUC §104-9-1 as follows:

a. The intent of the forest zones is to protect and preserve the natural environment of those areas of the county that are characterized by mountainous, forest or naturalistic land, and to permit development compatible to the preservation of these areas.

b. The objectives in establishing the forest zones are:

- 1. To promote the use of the land for forest, fish and wildlife and to facilitate the conservation of the natural resources, vegetation and attractions;*
- 2. To reduce the hazards of flood and fire;*
- 3. To prevent sanitation and pollution problems and protect the watershed;*
- 4. To provide areas for private and public recreation and recreation resorts; and*
- 5. To provide areas for homes, summer homes, and summer camp sites.*

The F-5 Zone has specific standards identified in the LUC §104-9-4 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'
 - Accessory building height:
 - Maximum: 25', unless meeting requirements of LUC §108-7-16, Large accessory buildings

The proposed use is conditionally allowed in the F-5 zone and has been reviewed as a "Water pumping plant and reservoir" as well 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 and the rear yard requirements may be reduced in the Forest Zones to 20' per LUC §108-10-3.

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. Prior to commencing work, Liberty Pipeline Company will need to receive approval from the applicable agencies for the proposal. A condition has been made part of the Planning Division's recommendations to ensure that this standard is met.

Design Review: The forest zone and the proposed conditional use mandate 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 detailed a site plan (see Exhibit B). The proposal is not considered large scale construction; therefore considerable traffic congestion or delay is not anticipated. 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 considerations to landscaping in the SWPPP submitted with the construction plans. The landscaping plan involves importing 3" of topsoil to the project

area. As part of the landscaping plan, the applicant has provided an irrigation plan that includes watering the seeded area for 1 year, up to twice a week in summer months. The irrigation source will be from a spigot inside the building including a hose and sprinkler.

- *Considerations relating to buildings and site layout.* The existing pump control building will be demolished and a new building will be built approximately 22 feet to the south west. The new building will be 24' X 13' 4", approximately 320 square feet. The exterior of the new building will be earthen tan split faced concrete masonry units. The roll up door, metal roof, and steel door will be brown (Exhibit C). The proposed building meets the Ogden Valley Architectural Design Standards as outlined in LUC§ 108-2-5.
- *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 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 pumping plant 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:

- Does the submittal meet the Uniform Land Use Code of Weber County? If no, 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 2017-03, a conditional use permit for a water pumping plant for Liberty Pipeline Company, located at approximately 6701 N. Durfee Creek Way, Liberty, UT. This recommendation for approval is subject to all review agency requirements and with the following conditions:

1. Prior to commencing work, Liberty Pipeline Company will need to receive the approval from the applicable agencies for the water pumping plant, including all permits outlined in the Engineering Division's review.

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.
3. All State, Federal and County standards will be met prior to commencement of construction including receiving any applicable permits from the State for the modifications to the proposed pump control/filter building.

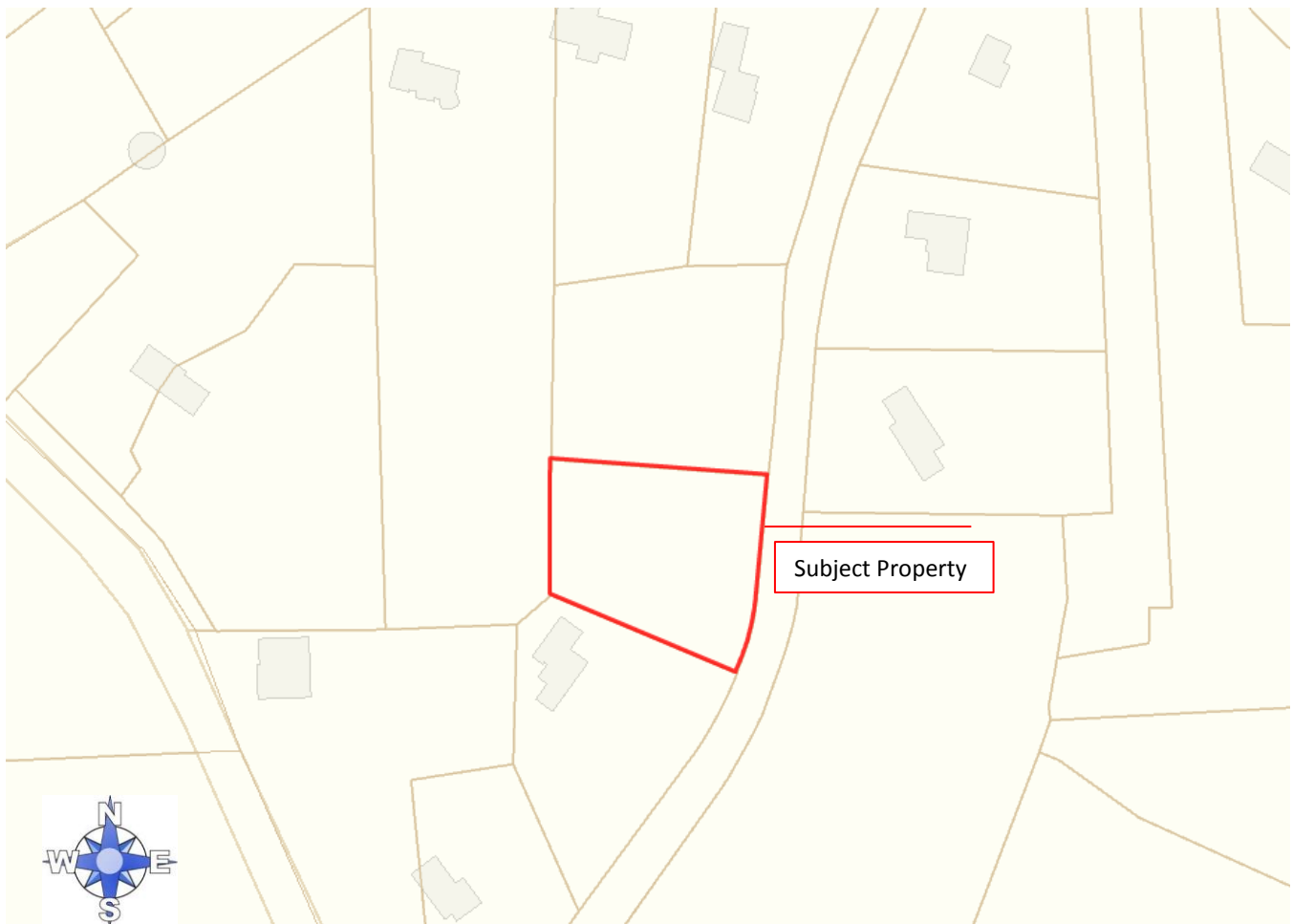
This recommendation is based on the following findings:

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
- C. Building Design and Elevations

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) Liberty Pipeline Company		Mailing Address of Property Owner(s) Liberty, Utah 84310	
Phone	Fax		
Email Address penhollist@gmail.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 3707 N 3500 E Liberty, Utah 84310	
Phone 8014760202	Fax		
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 Durfee Well Rehabilitation	Total Acreage 0.95	Current Zoning F-5
Approximate Address 6701 N. Durfee CREEK WAY Liberty, Utah	Land Serial Number(s) 171390003	

Proposed Use
WATER TREATMENT

Project Narrative

Liberty Pipeline Company (LPC) in agreement with the owner of property, is proposing to construct a filtration and pumping facility to treat an unused well. These improvements will increase LPC upper area source capacity.

Submitted with this application are the Plans for the proposed project.

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 project will provide treated water to the community. Also increasing the companies water source.

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:

SWPP Plan 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), Pen Hollist, LPC Director, 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.

Pen Hollist
(Property Owner)

(Property Owner)

Subscribed and sworn to me this 7 day of Nov, 2016.



Judy Shupe
(Notary)

Authorized Representative Affidavit

I (We), Pen Hollist, LPC Director, the owner(s) of the real property described in the attached application, do authorized as my (our) representative(s), Mike Durtschi, Gardner Engineering, 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.

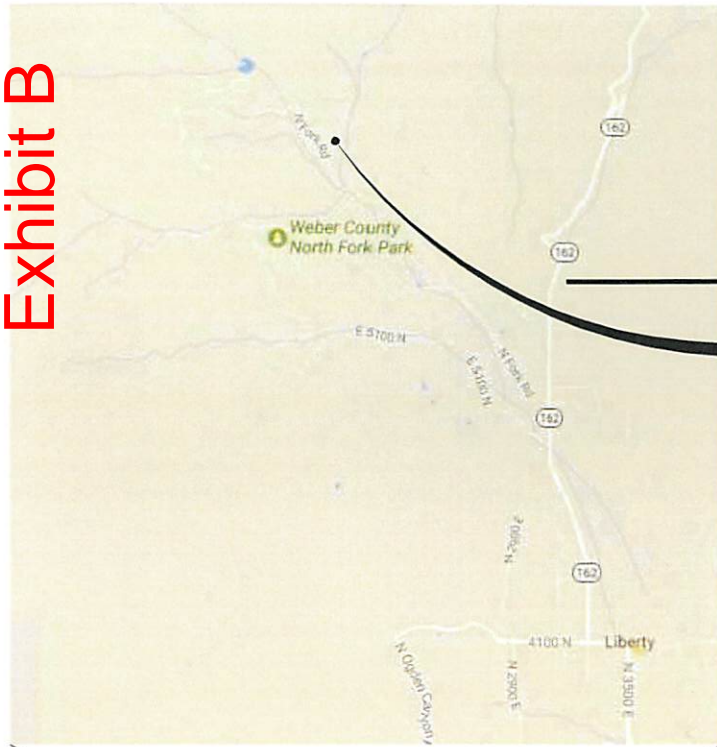
Pen Hollist
(Property Owner)

(Property Owner)

Dated this 7 day of Nov, 2016, personally appeared before me _____, the signer(s) of the Representative Authorization Affidavit who duly acknowledged to me that they executed the same.



Judy Shupe
(Notary)



PROJECT LOCATION



DURFEE WELL REHAB

LIBERTY PIPELINE COMPANY

PART OF SECTION 36, TOWNSHIP 8 N, RANGE 1 W, SALT LAKE BASE AND MERIDIAN

LIBERTY, WEBER, UTAH

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.

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

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 LIBERTY PIPELINE COMPANY STANDARDS, SPECIFICATIONS AND PLANS.
2. ALL INTERIOR SURFACES AND COATINGS SHALL COMPLY WITH ANSISNF 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, CAULKS, 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 C851-14. 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 PVC C900 DR 18, 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.

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 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.
3. INSPECTION TO BE PERFORMED WEEKLY BY A RSI OR OTHER CERTIFIED INSPECTOR.

SHEET INDEX

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SHEET V1	VICINITY MAP
SHEET C1	SITE PLAN
SHEET C2	PLAN
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SHEET C3	PROFILE B
SHEET C4	PART LIST
SHEET C5	GRADING PLAN
SHEET D1-D2	DETAILS
SHEETS SW1-SW2	SWPPP AND LANDSCAPING

PROJECT ENGINEER

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

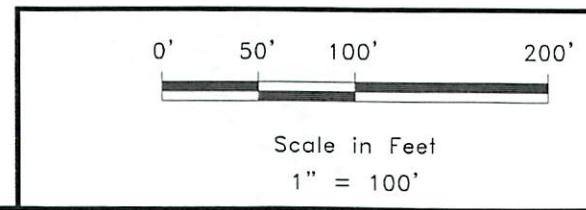
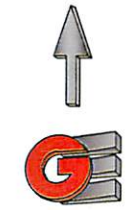
SYSTEM VICE PRESIDENT

LIBERTY PIPELINE COMPANY
PEN HOLLIST
3707 N 3500 E
LIBERTY, UT 84310
801-781-4171





F-5 ZONE
 PROJECT BOUNDARY
 APPROX. 6000 SQ FT
 PROPERTY ACREAGE 1.04 AC



	VICINITY MAP	Date: 3/6/2017
	DURFEE WELL REHAB	Scale: 1" = 100'
LIBERTY PIPELINE COMPANY	Description	Designed: MDD
LIBERTY, WEBER, UTAH	Date	Drafted: MDD
	Revisions	Checked: DLW

GARDNER
ENGINEERING

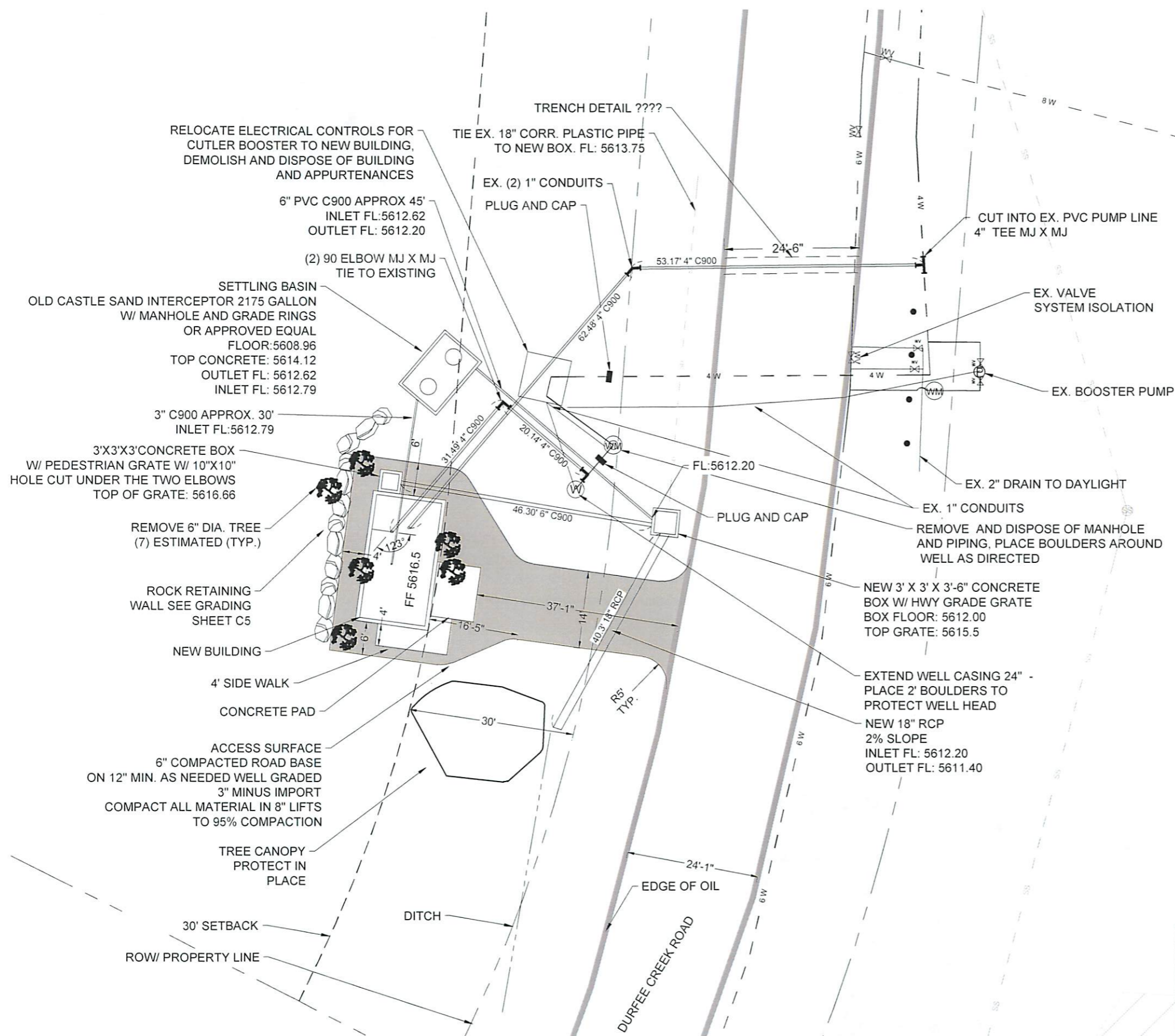
CIVIL • LAND PLANNING
MUNICIPAL • LAND SURVEYING

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

V1

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R: LIBERTY PIPELINE 1603 - DURFEE FILTRATION DESIGN WORKING 3-17.DWG, 2/17/2017, 2:35:14 PM, P&E



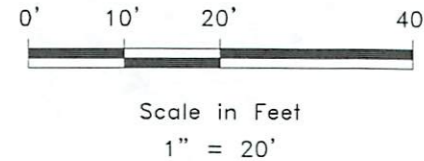
Date: 3/6/2017
 Scale: 1" = 20'
 Designed: MDD
 Drafted: MDD
 Checked: DLW

Revisions	Date	Description

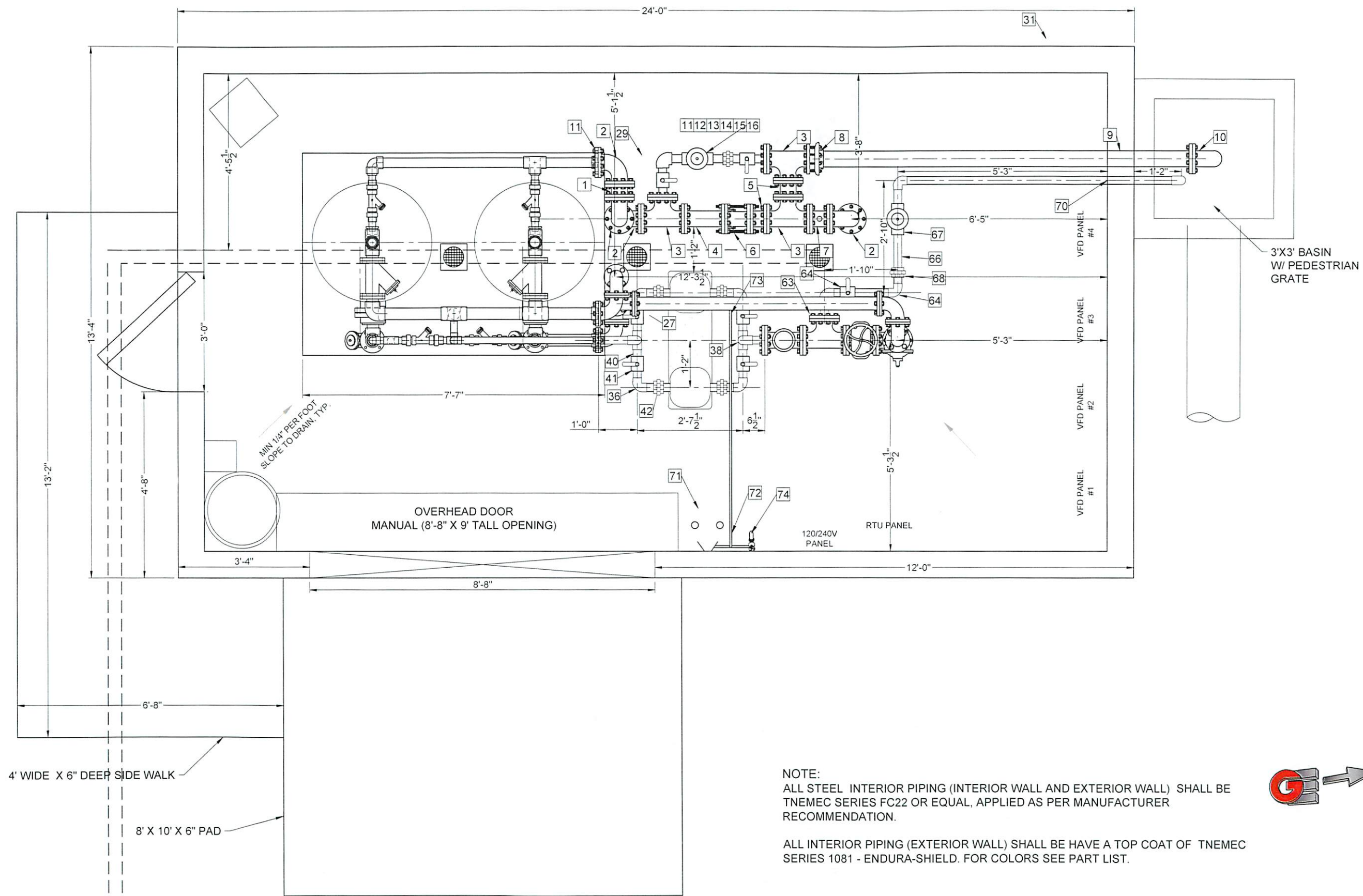
SITE PLAN
 DURFEE WELL REHAB
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 LIBERTY, WEBER, UTAH

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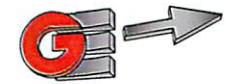
KEEP CONSTRUCTION FOOTPRINT TO A MINIMUM. COORDINATE WITH ENGINEER PRIOR TO REMOVAL OF ANY VEGETATION AND TREES.



C1
 1



NOTE:
 ALL STEEL INTERIOR PIPING (INTERIOR WALL AND EXTERIOR WALL) SHALL BE TNE MEC SERIES FC22 OR EQUAL, APPLIED AS PER MANUFACTURER RECOMMENDATION.
 ALL INTERIOR PIPING (EXTERIOR WALL) SHALL BE HAVE A TOP COAT OF TNE MEC SERIES 1081 - ENDURA-SHIELD. FOR COLORS SEE PART LIST.



Revisions		Date	Description

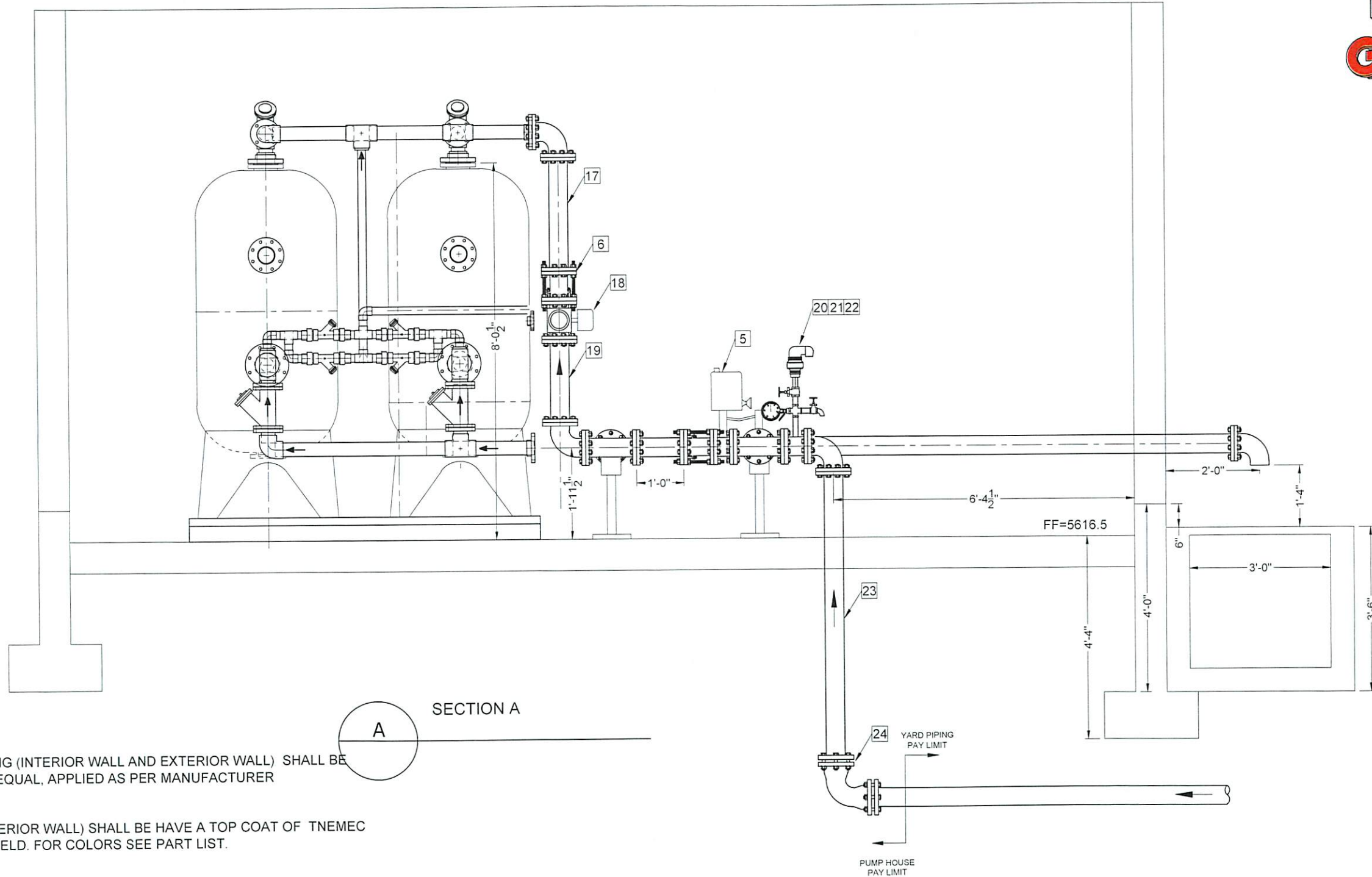
Date: 3/6/2017
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PLAN VIEW
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C2
 1

R:\LIBERTY PIPELINE\003 - DURFEE FIRE ALARM DESIGN\DWG\03R103 - 3/17/2017 3:52:20 PM.rvt



NOTE:
 ALL STEEL INTERIOR PIPING (INTERIOR WALL AND EXTERIOR WALL) SHALL BE TNE MEC SERIES FC22 OR EQUAL, APPLIED AS PER MANUFACTURER RECOMMENDATION.

ALL INTERIOR PIPING (EXTERIOR WALL) SHALL BE HAVE A TOP COAT OF TNE MEC SERIES 1081 - ENDURA-SHIELD. FOR COLORS SEE PART LIST.



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Revisions	Date	Description

PROFILE A

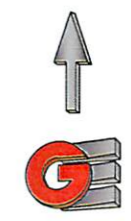
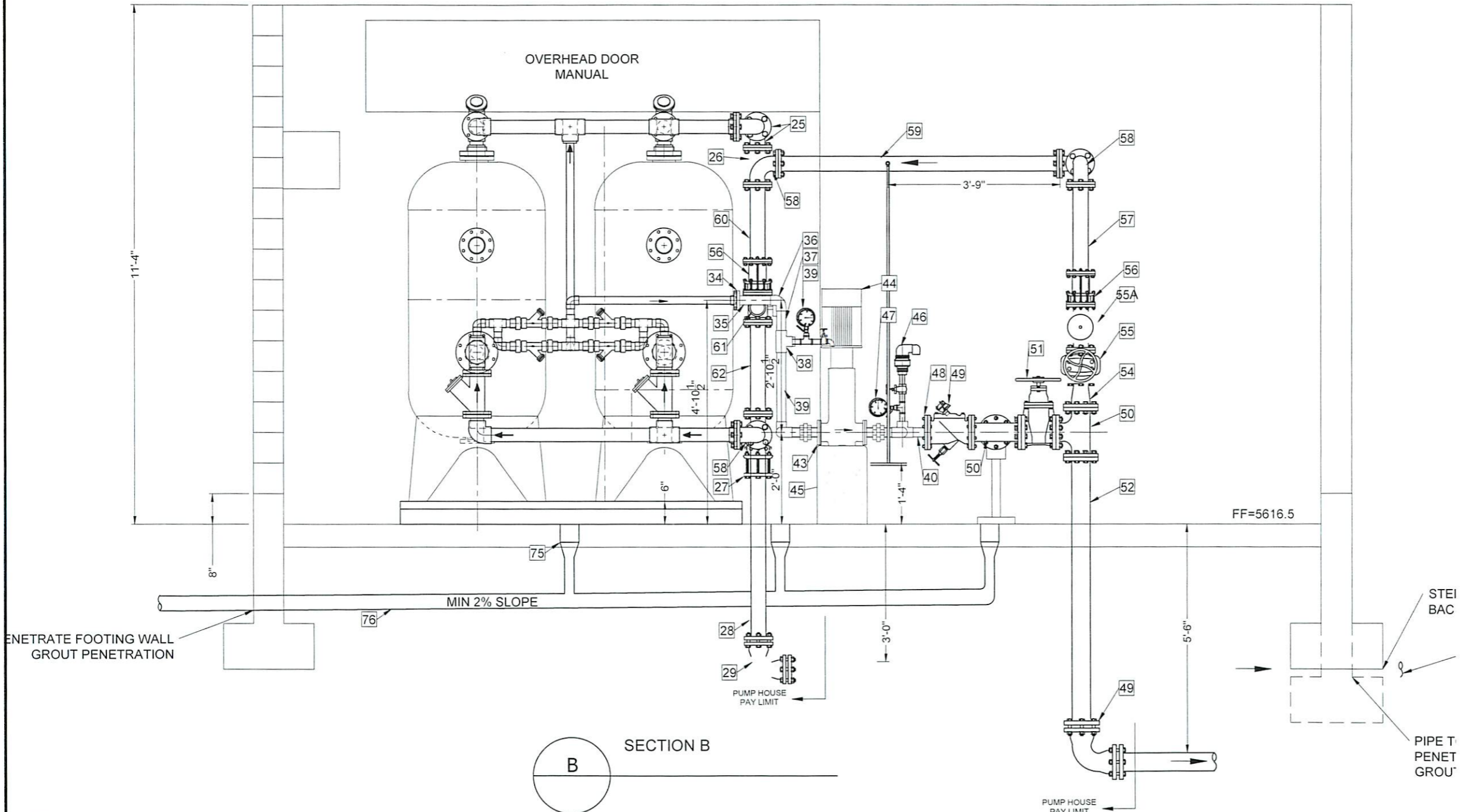
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3
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R:\LIBERTY PIPELINE\603 - DURFEE FILTRATION\DESIGN\WORKING 3-17.dwg, 3/17/2017 1:35:24 PM, HPE



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Revisions	Date	Description

PROFILE B
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C4

NOTE:
 ALL STEEL INTERIOR PIPING (INTERIOR WALL AND EXTERIOR WALL) SHALL BE TNE MEC SERIES FC22 OR EQUAL, APPLIED AS PER MANUFACTURER RECOMMENDATION.
 ALL INTERIOR PIPING (EXTERIOR WALL) SHALL BE HAVE A TOP COAT OF TNE MEC SERIES 1081 - ENDURA-SHIELD. FOR COLORS SEE PART LIST.

ITEM	SHEET	QTY	DESCRIPTION	SIZE	CONNECTION	COLOR	NOTES
INLET FROM WELL TO FILTER							
1	PLAN	1	DI SPOOL FL TO FL LENGTH 5"	4"	FL	AQUAMARINE	
2	PLAN	4	90 ELBOW	4"	FL	AQUAMARINE	
3	PLAN	3	TEE DI	4"	FL	AQUAMARINE	
4	PLAN	4	DI SPOOL FL TO FL LENGTH 12"	4"	FL	AQUAMARINE	
5	PLAN	1	THE VAL-MATIC 2004SV BUTTERFLY VALVE WITH 3-WAY LINKAGE ASSEMBLY AND ROTORK ACTUATOR 019	4"	FL	FACTORY	SUPPLY HOUSE TO BUILD ASSEMBLY
6	PLAN	2	DISMANTLING JOINT	4"	FL	AQUAMARINE	DJ400 OR APPROVED EQUIVALENT
7	PLAN	1	DI SPOOL FL TO FL LENGTH 6"	4"	FL	AQUAMARINE	1" TAP
8	PLAN	1	RFCA	4"	FL X MJ	FACTORY	ROMAC OR APPROVED EQUIVALENT
9	PLAN	1	DI SPOOL 7'-0" LONG FIELD FIT	4"	FL X PE	AQUAMARINE	CORE HOLE W/ 4" LINKSEAL W/ EPDM SEAL ELEMENTS
10	PLAN	1	90 ELBOW	4"	FL X PE	AQUAMARINE	PLACE #4 S.S. SCREENING BETWEEN FLANGES
11	PLAN	3	BLIND FLANGE	4"	-	AQUAMARINE	(2) 2" TAP NPT, (1) 2 1/2" TAP NPT
12	PLAN	2	BALL VALVE	2"	NPT	AQUAMARINE	
13	PLAN	1	90 ELBOW	2"	NPT	AQUAMARINE	
14	PLAN	5	NIPPLES FIELD FIT	2"	NPT	AQUAMARINE	
15	PLAN	1	RELIEF VALVE	2"	NPT	FACTORY	SINGER 106 RPS OR EQUIVALENT SET AT 65 PSI
16	PLAN	1	COUPLER/UNION	2"	NPT	FACTORY	
17	PROFILE A	1	DI SPOOL FL TO PE LENGTH 24"	4"	FL	FACTORY	5 ELEMENT KOFLO HYBRID STATIC MIXER FOR DI LINES, W/ 1" INJECTION PORT
18	PROFILE A	1	FLOW METER	4"	FL X FL	FACTORY	KROHNE WATERFLUX 3070 OR APPROVED EQUIVALENT
19	PROFILE A	1	DI SPOOL FL TO FL LENGTH 21"	4"	FL X FL	AQUAMARINE	
20	PROFILE A	1	COMBINATION AIR VALVE	1"	NPT	FACTORY	A.R.I. D-040 - PLASTIC WITH 1" BRASS BALL VALVE
21	PROFILE A	1	PRESSURE GAUGE	1/4"	NPT		100 # LIQUID-FILLED, 1/4" THD W/ BALL VALVE
22	PROFILE A	1	SMOOTH NOSE SAMPLING TAP	1"	NPT		EPOXY ALL PIPING IN AIR VALVE ASSEMBLY
23	PROFILE A	1	DI SPOOL LENGTH 6'-0" FIELD FIT	4"	FL X PE	AQUAMARINE	EPOXY EXPOSED PIPING
24	PROFILE A	1	90 ELBOW	4"	MJ X MJ	FACTORY	MEGA LUG + BLUE BOLT PACK
BACKWASH OUTLET TO WASTE							
25	PROFILE B	2	90 ELBOW	3"	FL	LIGHT BROWN	
26	PROFILE B	1	DI SPOOL FL TO FL LENGTH 7'-1" FIELD FIT	3"	FL X PE	LIGHT BROWN	
27	PROFILE B	1	RFCA	3"	FL	FACTORY	ROMAC OR APPROVED EQUIVALENT
28	PROFILE B	1	DI SPOOL FL TO FL LENGTH 5'-4" FIELD FIT	3"	FL X PE	FACTORY	ROMAC OR APPROVED EQUIVALENT
29	PROFILE B	1	90 ELBOW	3"	MJ X MJ	LIGHT BROWN	MEGA LUG + BLUE BOLT PACK
30			BLANK				
31			BLANK				
32			BLANK				
33			BLANK				
FILTERED WATER TO SYSTEM							
34	PROFILE B	1	BLIND FLANGE	2"	NPT	DARK BLUE	
35	PROFILE B	1	NIPPLE STEEL FL TO 90 LENGTH 8 3/4"	2"	NPT	DARK BLUE	
36	PROFILE B	6	90 ELBOW	2"	NPT	DARK BLUE	
37	PROFILE B	1	NIPPLE STEEL 90 TO TEE LENGTH 5"	2"	NPT		
38	PROFILE B	3	TEE	2"	NPT		
39	PROFILE B	1	PRESSURE GAUGE W/ MILLI AMP WIRE & SAMPLING TAP ASSEMBLY	2" X 1/2"	NPT	DARK BLUE	100 # LIQUID-FILLED, 1/4" THD W/ BALL VALVE & 1/2" SMOOTH NOSE SAMPLING TAP SHOWN OUT OF PLANE, ORIENT TO SOUTH * PRESSURE GAUGE TO RELAY PRESSURE TO WELL PUMP CONTROL
40	PLAN	17	NIPPLE STEEL	2"	NPT	DARK BLUE	
41	PLAN	4	BALL VALVE	2"	NPT	FACTORY	
42	PLAN	4	COUPLER/UNION	2"	NPT	FACTORY	
43	PROFILE B	4	BLIND FLANGE	2"	-	DARK BLUE	
44	PROFILE B	2	VERTICAL MULTISTAGE CENTRIFUGAL PUMP	2"	FL	FACTORY	GRUNDFOS CR10-10 7.5 HP OR APPROVED EQUAL CHAMFERED EDGES, REINFORCED TO FLOOR, MEASURED HEIGHT FROM FLOOR ELEVATION NEAR WALL WITH NO SLOPED FLOOR ACCOUNTED FOR.
45	PROFILE B	1	PUMP PEDESTAL 13" X 42" X 20 1/2" TALL				
46	PROFILE B	1	COMBINATION AIR VALVE	1"	NPT	FACTORY	A.R.I. D-040 - PLASTIC WITH 1" BRASS BALL VALVE
47	PROFILE B	1	PRESSURE GAUGE W/ MILLI AMP WIRE		NPT		100 # LIQUID-FILLED, 1/4" THD W/ BALL VALVE
48	PROFILE B	1	BLIND FLANGE	4"	-	DARK BLUE	2" TAP
49	PROFILE B	1	SWING FLEX CHECK VALVE	4"	FL	FACTORY	VAL-MATIC W/MECHANICAL DISC POSITION INDICATOR AND BACKFLOW ACTUATOR
50	PROFILE B	2	DI TEE	4"	FL	DARK BLUE	
51	PROFILE B	1	GATE VALVE	4"	FL	DARK BLUE	
52	PROFILE B	1	DI SPOOL LENGTH 6'-0" FIELD FIT	4"	FL X PE	DARK BLUE	EPOXY PAINT ABOVE GRADE
53	PROFILE B	1	90 ELBOW	4"	MJ X MJ	FACTORY	

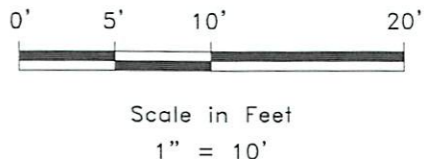
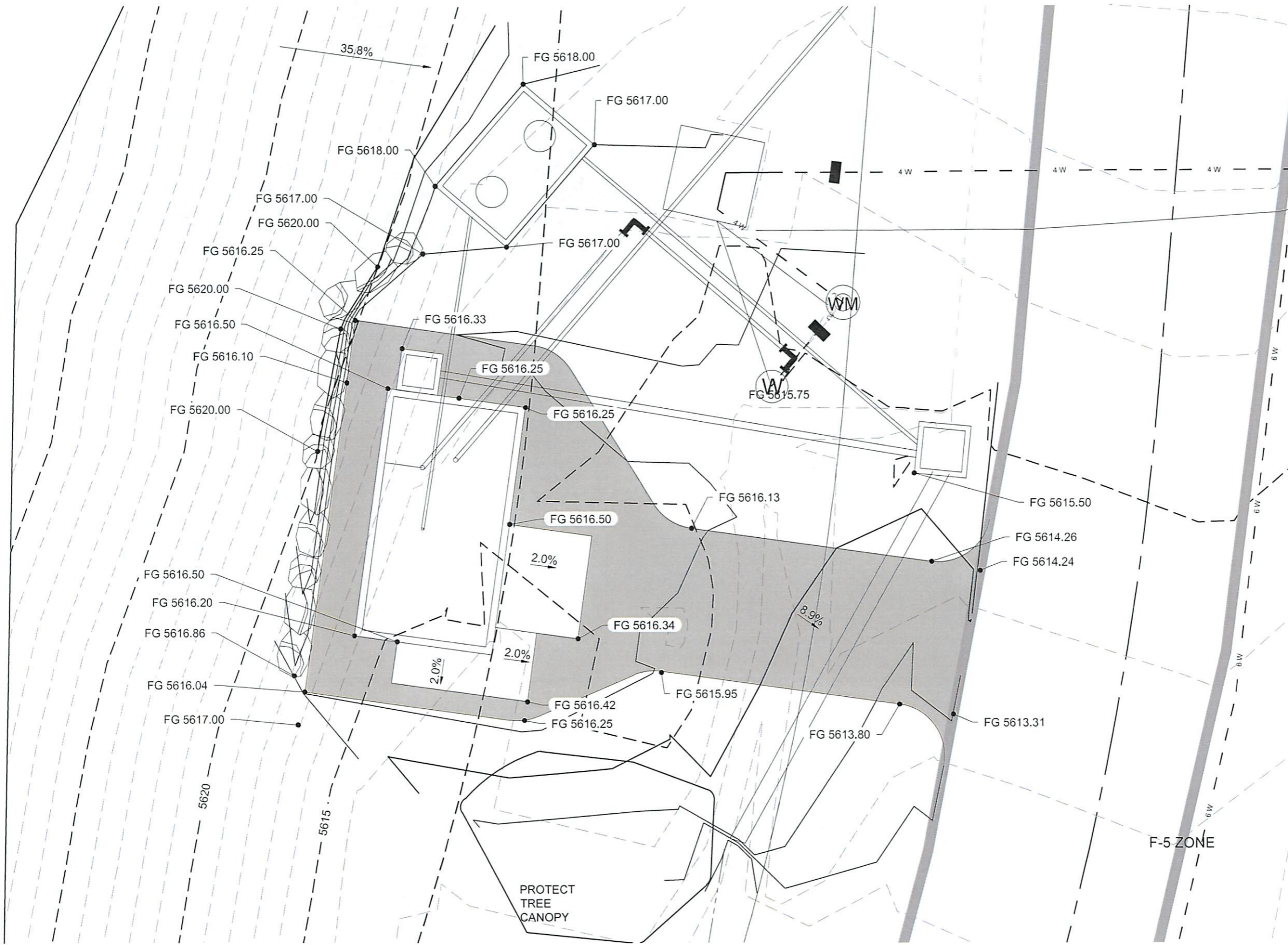
BACKWASH INLET							
54	PROFILE B	1	DI REDUCER	3" X 4"	FL	DARK BLUE	
55	PROFILE B	1	GATE VALVE	3"	FL	FACTORY	
55A	PROFILE B	1	PRESSURE REDUCING VALVE	3"	FL	FACTORY	VERTICAL INSTALLATION (COORDINATE WITH MANUFACTURER) DOWN STREAM PRESSURE AT 60 PSI. SINGER 106 OR APPROVED EQUAL
56	PROFILE B	2	DISMANTLING JOINT	3"	FL	DARK BLUE	DJ400 OR APPROVED EQUIVALENT
57	PROFILE B	1	DI SPOOL FL TO FL LENGTH 2'-0"	3"	FL	DARK BLUE	
58	PROFILE B	5	90 ELBOW	3"	FL	DARK BLUE	
59	PROFILE B	1	DI SPOOL FL TO FL 6' - 1 1/2"	3"	FL	DARK BLUE	
60	PROFILE B	1	DI SPOOL FL TO FL 1' - 8"	3"	FL	DARK BLUE	
61	PROFILE B	1	FLOW METER	3"	FL	FACTORY	KROHN WATER FLUX 3070 CONNECTED TO PLC
62	PROFILE B	1	DI SPOOL FL TO FL 2' - 0"	3"	FL	DARK BLUE	
OUTLET RELIEF LINE							
63	PLAN	1	BLIND FLANGE	4"	-	DARK BLUE	2" TAP NPT
64	PLAN	1	BALL VALVE	2"	NPT	DARK BLUE	
65	PLAN	3	90 ELBOW	2"	NPT	DARK BLUE	
66	PLAN	7	NIPPLES FIELD FIT	2"	NPT	DARK BLUE	
67	PLAN	1	RELIEF VALVE	2"	NPT	FACTORY	SINGER 106 RPS OR EQUIVALENT SET AT 165 PSI
68	PLAN	1	COUPLER/UNION	2"	NPT	FACTORY	
69	PLAN	1	90 ELBOW	2"	NPT	DARK BLUE	W/ #4 S.S. SCREENING BETWEEN PIPE AND 90
70	PLAN	1	LINKSEAL	2"	-		CORE WALL, LINKSEAL W/ EPDM SEAL ELEMENTS
EYEWASH ASSEMBLY							
71	PLAN	1	EYE WASH STATION			FACTORY	GUARDIAN EYEWASH STATION G1814- OR APPROVED EQUAL FASTENED TO WALL AT A HEIGHT 4', W/ 1/2" FLOTECT MINI-SIZE FLOW SWITCH - BRASS
72	PLAN		1/2" STEEL PIPING W/ FITTINGS	1/2"	NPT	DARK BLUE	INCLUDING MANIFOLD TO SPICKET AND EYEWASH - SECURE PIPING AND MANIFOLD TO WALL
73	PLAN	1	1/2" TAP	1/2"	NPT	DARK BLUE	
74	PLAN	1	3/4" HOSE SPICKET WITH VALVE	1/2" X 3/4"			
FLOOR DRAIN TO DAYLIGHT							
75	PROFILE B	3	FLOOR DRAIN W/ STRAINER	5"			NICKEL BRONZE, TOP OF DRAIN TO SIT 1/4" BELOW CONCRETE DRAIN TO DAYLIGHT SHOWN ON SITE PLAN, 4" S.S. SCREEN ON DISCHARGE, DISCHARGE ABOVE HIGH WATER MARK
76	PROFILE B		PVC DWV PIPING W/ FITTINGS	4"			

Date: 3/6/2017
 Scale: N.T.S.
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 Checked: DLW

Revisions	Description
Date	

PART LIST
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 LIBERTY PIPELINE COMPANY
 LIBERTY, WEBER, UTAH

C5



Revisions	
Date	Description

Date: 3/6/2017
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C6
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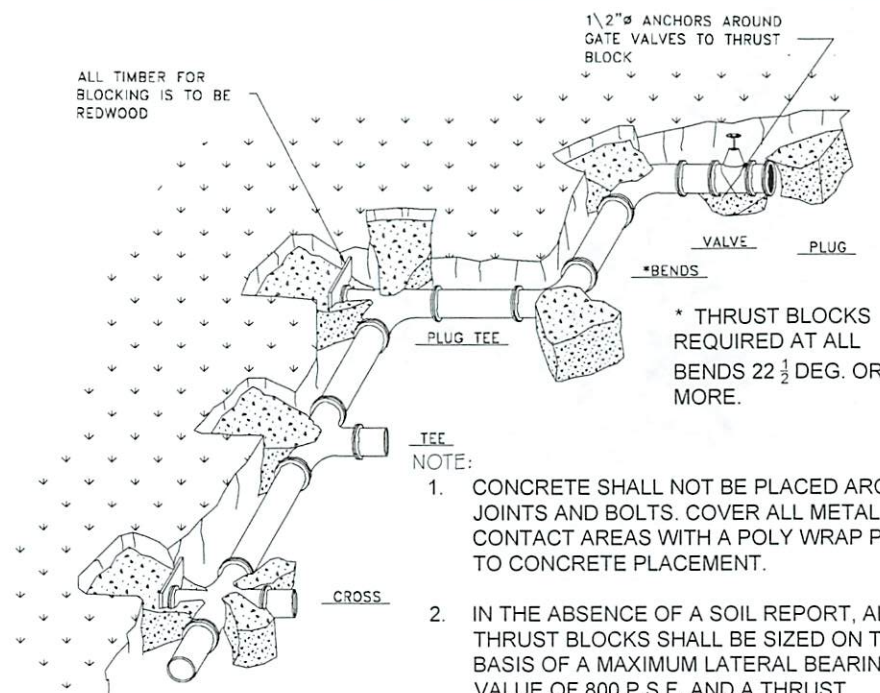


TABLE OF BEARING AREAS IN SQ. FT FOR CONCRETE THRUST BLOCKING

SIZE	BENDS				TEES*	GATE VALVES	DEAD ENDS	CROSSW/1 BRANCH PLUGGED	CROSSW/2 BRANCH 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	27.5	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".

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

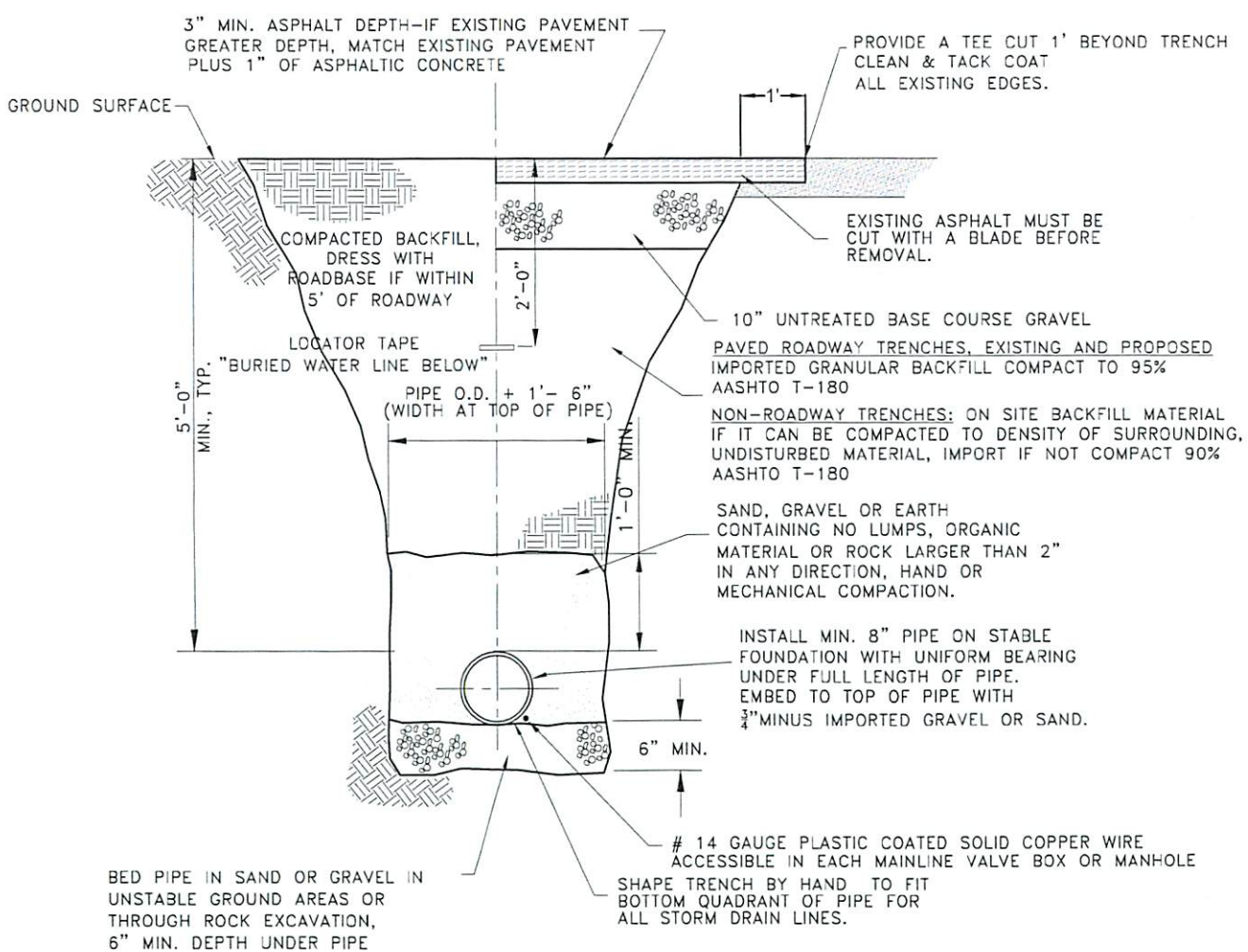
EXAMPLE: TO FIND BEARING AREA FOR 8"-90° BEND WITH A STATIC INTERNAL PRESSURE OF 1500 P.S.I AND WITH A SOIL BEARING CAPACITY OF 3000 LBS. PER SQ. FT.
 $F = 1.5 / 3 = 0.5$ TABULATED VALUE = 7.1 SQ. FT.
 $0.5 \times 7.1 = 3.56 \sim 4$ SQ. FT. (~OR 2FT. LONG BY 2FT. HIGH.)

- NOTE:
- CONCRETE SHALL NOT BE PLACED AROUND JOINTS AND BOLTS. COVER ALL METAL CONTACT AREAS WITH A POLY WRAP PRIOR TO CONCRETE PLACEMENT.
 - 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.

THRUST BLOCKING DETAIL

NOT TO SCALE

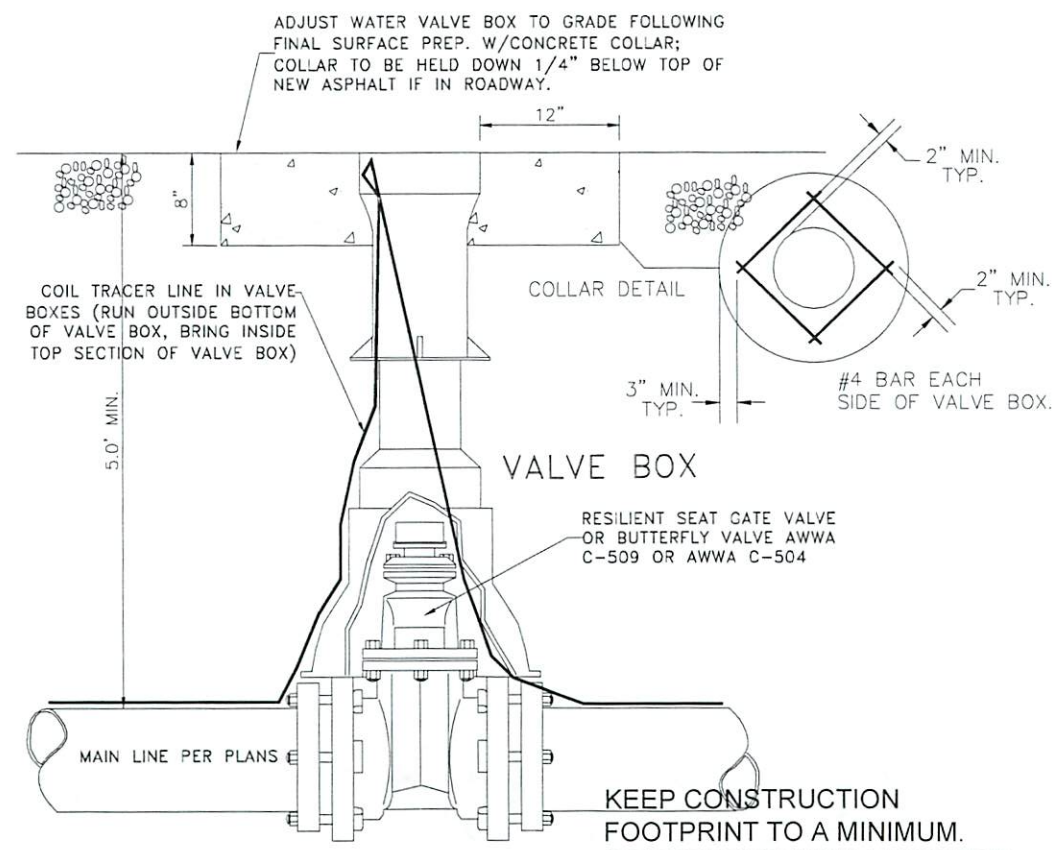
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D1



TYPICAL TRENCH DETAIL

NOT TO SCALE

2
D1



TYPICAL VALVE DETAIL

NOT TO SCALE

3
D1

KEEP CONSTRUCTION FOOTPRINT TO A MINIMUM. COORDINATE WITH ENGINEER PRIOR TO REMOVAL OF ANY VEGETATION AND TREES.

Date: 3/6/2017
Scale: #####
Designed: MDD
Drafted: MDD
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Revisions	Description
Date	

DETAILS
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LIBERTY, WEBER, UTAH

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D1

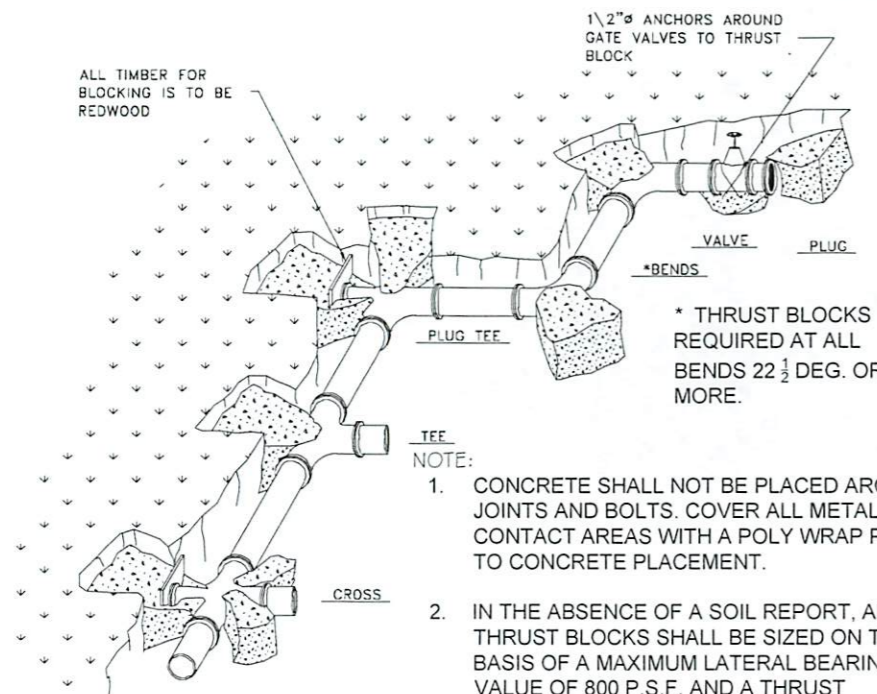


TABLE OF BEARING AREAS IN SQ. FT FOR CONCRETE THRUST BLOCKING

SIZE	BENDS				TEES*	GATE VALVES	DEAD ENDS	CROSSW/1 BRANCH PLUGGED	CROSSW/2 BRANCH 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".

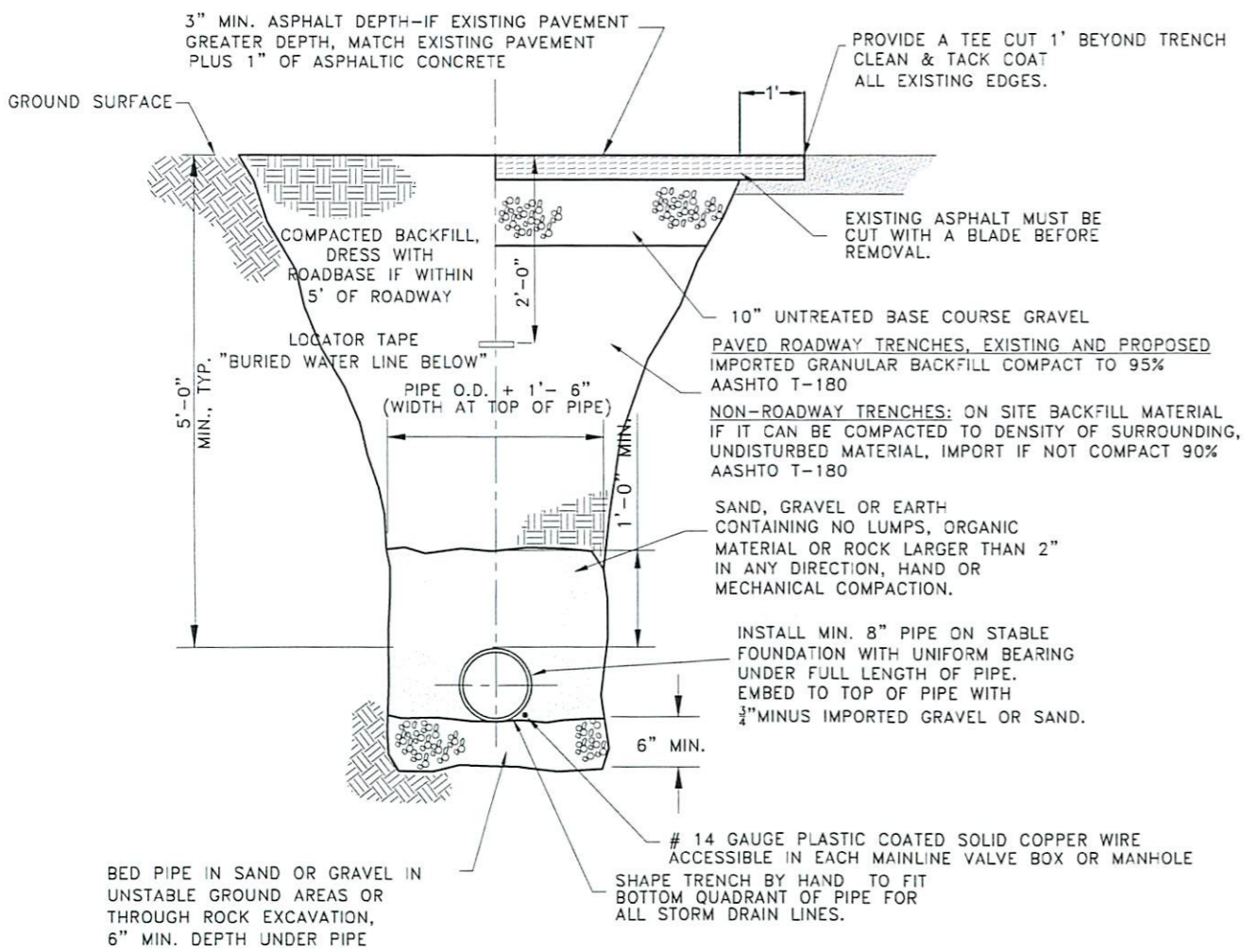
$$F = \frac{\text{ACTUAL SPECIFIED TEST PRESSURE IN HUNDREDS OF LBS./SQ. IN.}}{\text{ACTUAL SOIL BEARING CAPACITY IN THOUSANDS OF LBS.}}$$

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.)

- NOTE:
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.

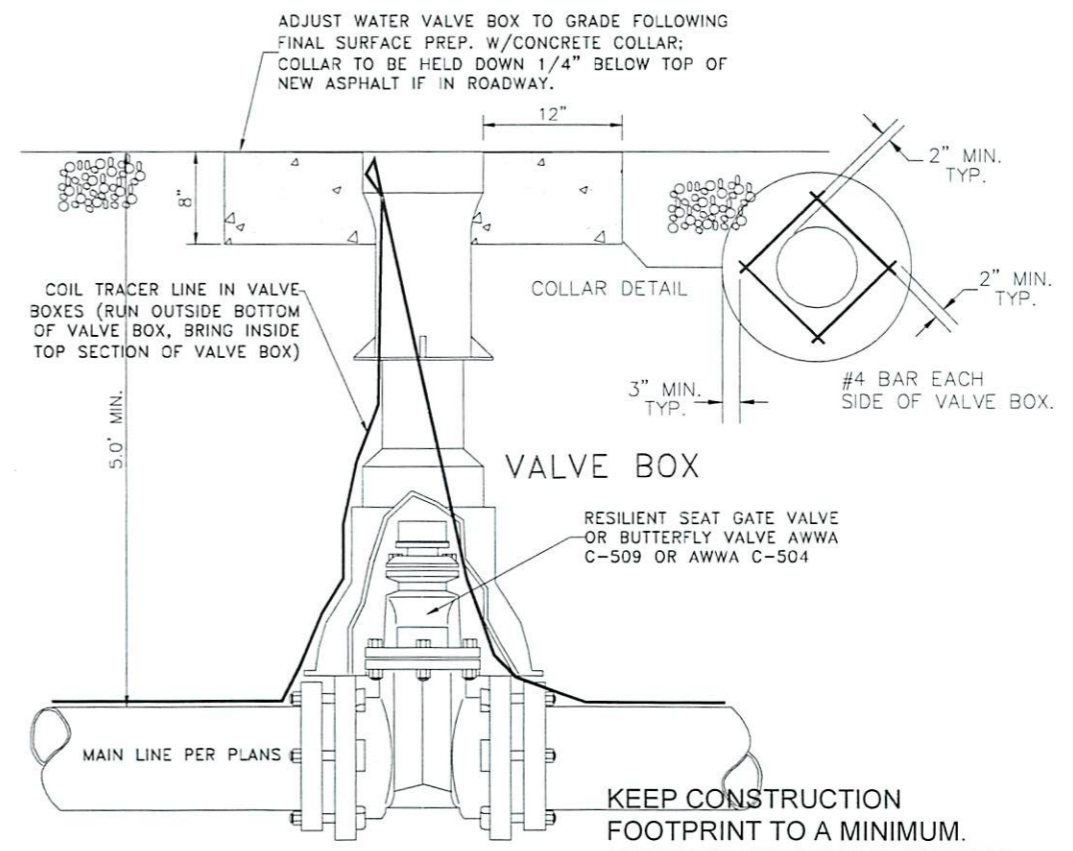
THRUST BLOCKING DETAIL
NOT TO SCALE

1
D1



TYPICAL TRENCH DETAIL
NOT TO SCALE

2
D1



TYPICAL VALVE DETAIL
NOT TO SCALE

3
D1

KEEP CONSTRUCTION FOOTPRINT TO A MINIMUM. COORDINATE WITH ENGINEER PRIOR TO REMOVAL OF ANY VEGETATION AND TREES.

DETAILS (2)

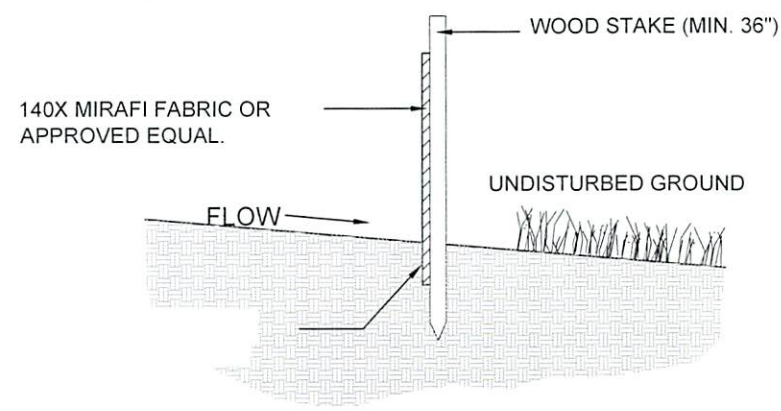
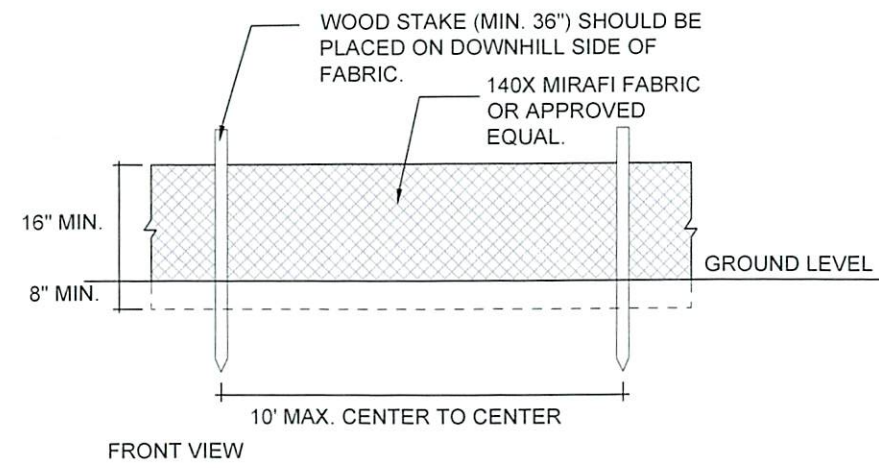
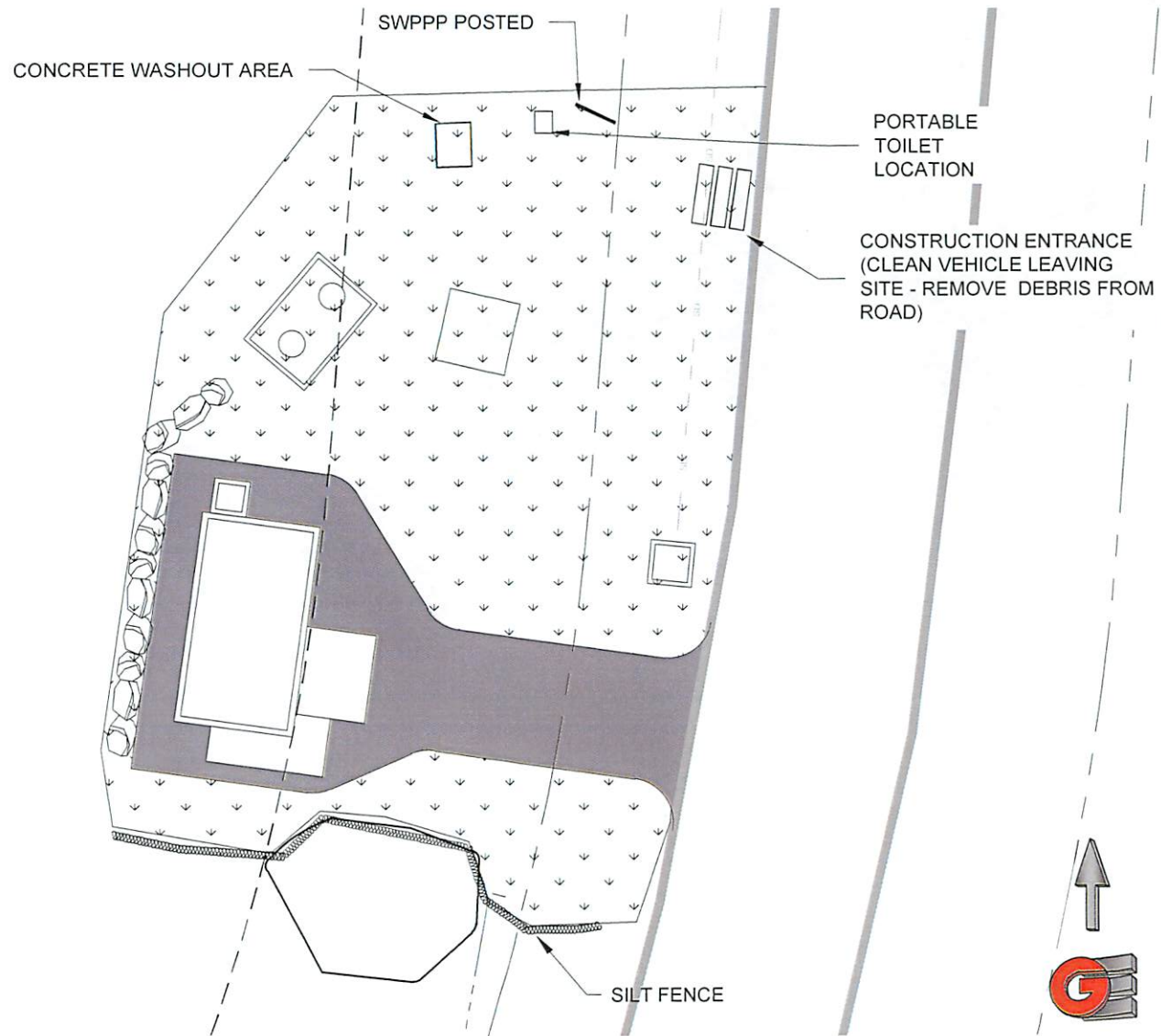
DURFEE WELL REHAB
LIBERTY PIPELINE COMPANY
LIBERTY, WEBER, UTAH

GARDNER ENGINEERING
CIVIL-LAND PLANNING
MUNICIPAL-LAND SURVEYING
5150 SOUTH 375 EAST OGDEN, UT
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D1

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Designed:	MDD
Drafted:	MDD
Checked:	DLW

Revisions	Description
Date	



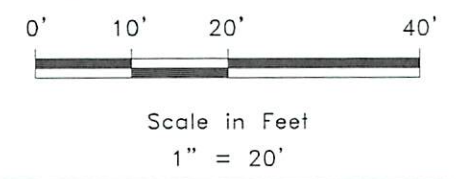
DRYLAND SEED MIX ANTICIPATED AREA = 4200 SQ FT

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
Total	45



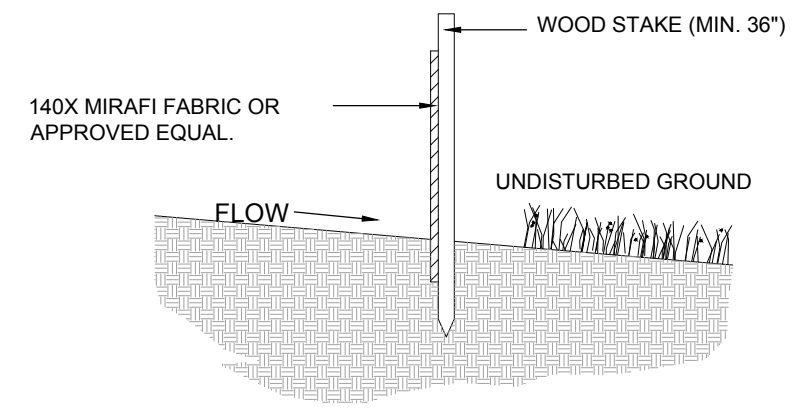
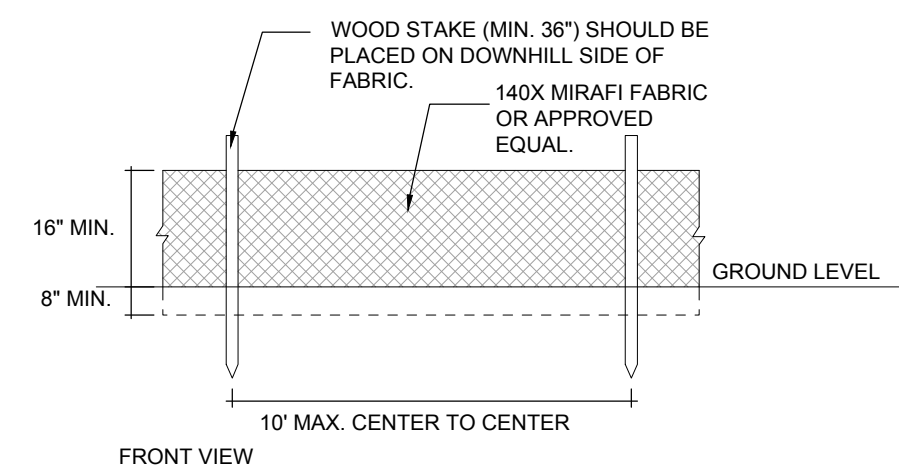
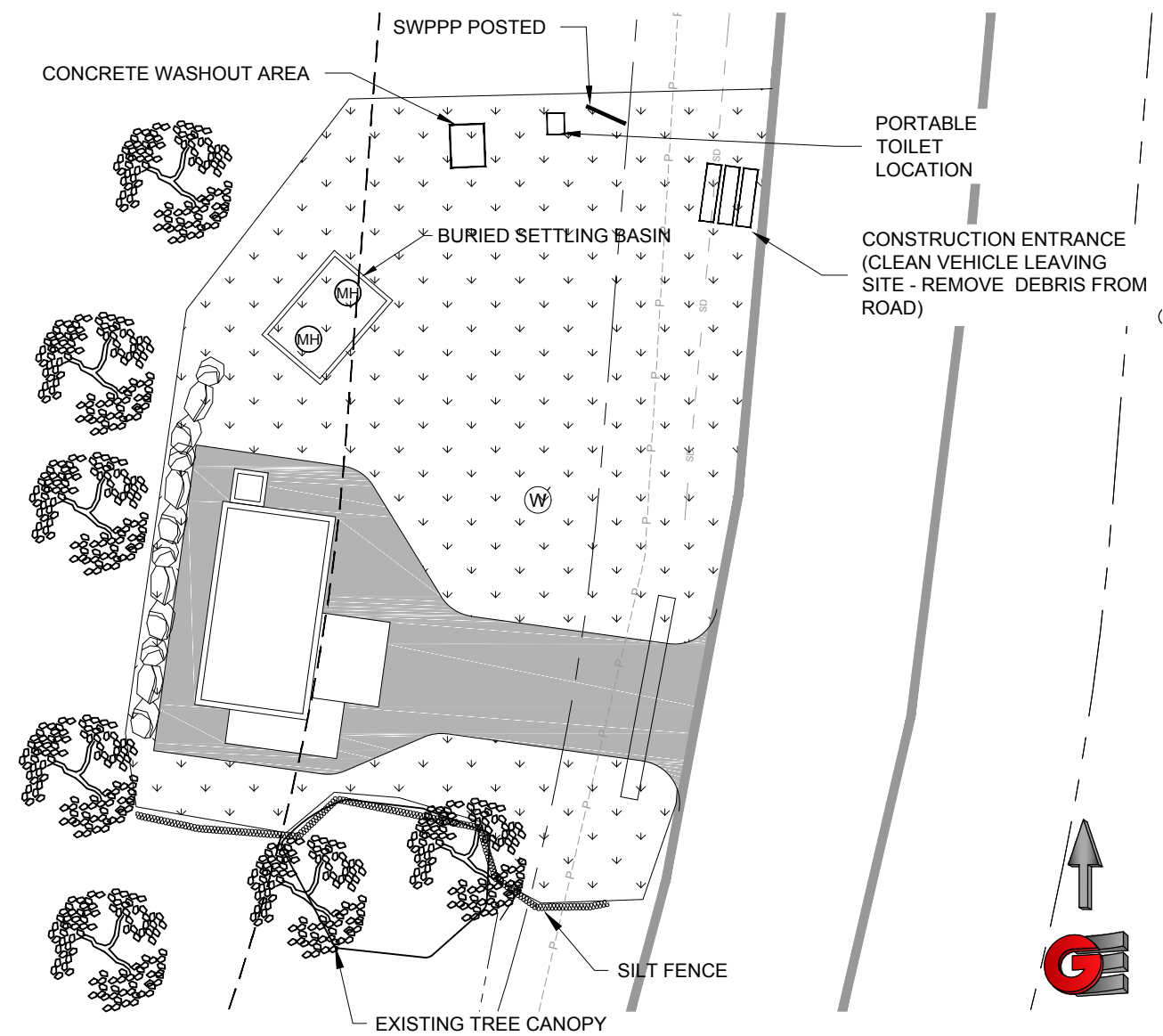
4200 SQ FT.
 IMPORT 3" OF TOP SOIL, HYDROSEED WITH 2000#/AC WOOD MULCH, 100#/AC MBINDER TACKIFIER, HYDRO SEEDING TO TAKE PLACE BETWEEN OCTOBER 1 AND NOVEMBER 15 - APPROXIMATELY 42,000 SQ.FT.

NOTE: PROTECT DITCH FROM FALLING DEBRIS AND MATERIALS. ALL CONSTRUCTION TO CONFORM TO WEBER COUNTY STANDARDS AND SPECIFICATIONS.



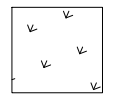
	Date: 3/6/2017	Scale: 1" = 20'	Designed: MDD	Drafted: MDD	Checked: DLW
Revisions	Date	Description			
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<p>GARDNER ENGINEERING <small>CIVIL-LAND PLANNING MUNICIPAL-LAND SURVEYING</small></p>					
<p>5150 SOUTH 375 EAST OGDEN, UT OFFICE: 801.476.0202 FAX: 801.476.0066</p>					
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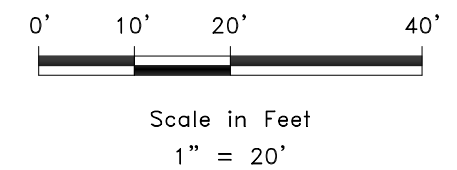
DRYLAND SEED MIX ANTICIPATED AREA = 4200 SQ FT

Species	PLS Pounds per Acre
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Total	45



4100 SQ FT.
 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.
IRRIGATION PLAN - OWNER TO WATER THE AREA PLANTED WITH SEED FOR 1 YEAR AFTER SEED IS PLANTED - WATERING WILL OCCUR AS NEEDED AND UP TO TWICE A WEEK IN SUMMER MONTHS. SOURCE WILL BE FROM SPIGOT INSIDE BUILDING, HOSE AND SPRINKLER.

NOTE: PROTECT DITCH FROM FALLING DEBRIS AND MATERIALS. ALL CONSTRUCTION TO CONFORM TO WEBER COUNTY STANDARDS AND SPECIFICATIONS.



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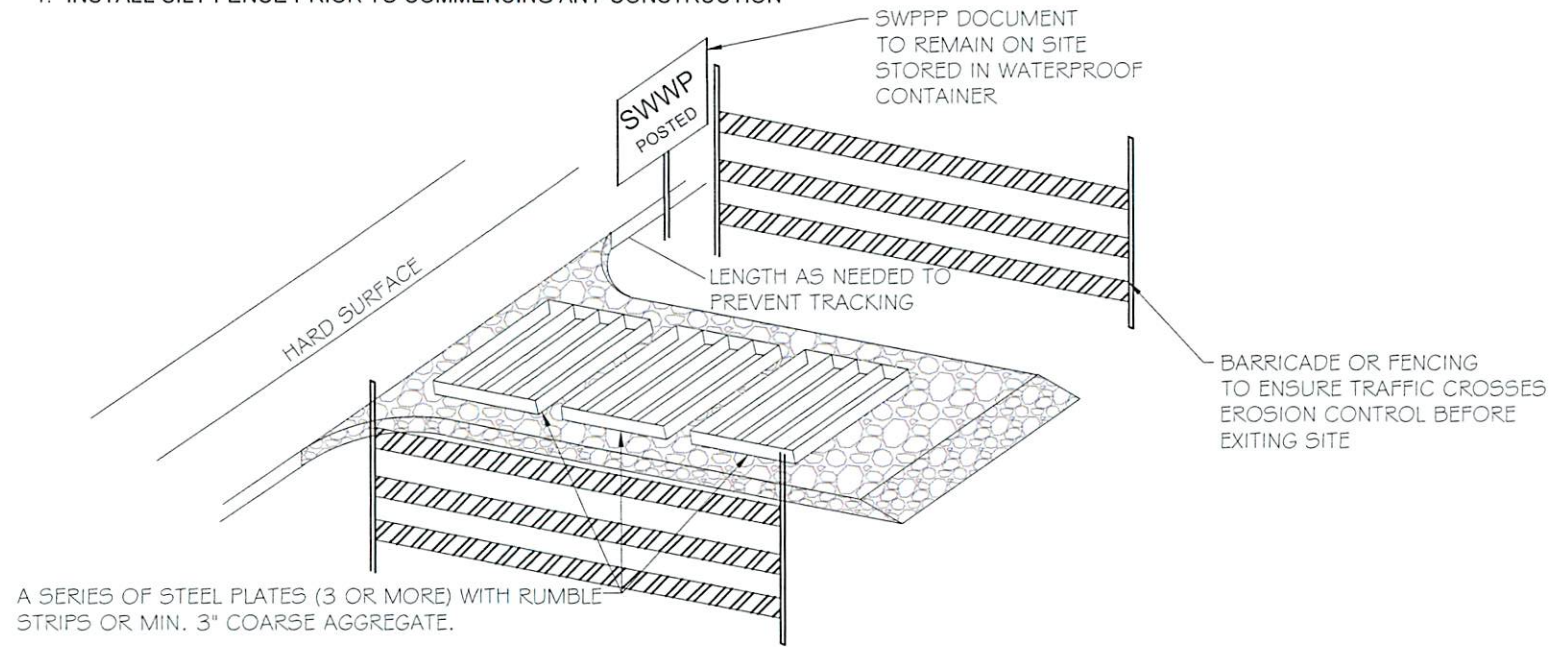
NOTE: ALL CONSTRUCTION TO CONFORM TO WEBER COUNTY STANDARDS AND SPECIFICATIONS.
INSPECTION TO BE PERFORMED WEEKLY BY A RSI OR OTHER CERTIFIED INSPECTOR.

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.

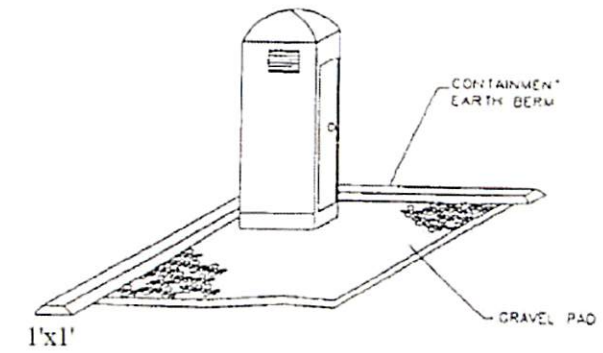
EROSION CONTROL NOTES:

1. INSTALL SILT FENCE PRIOR TO COMMENCING ANY CONSTRUCTION



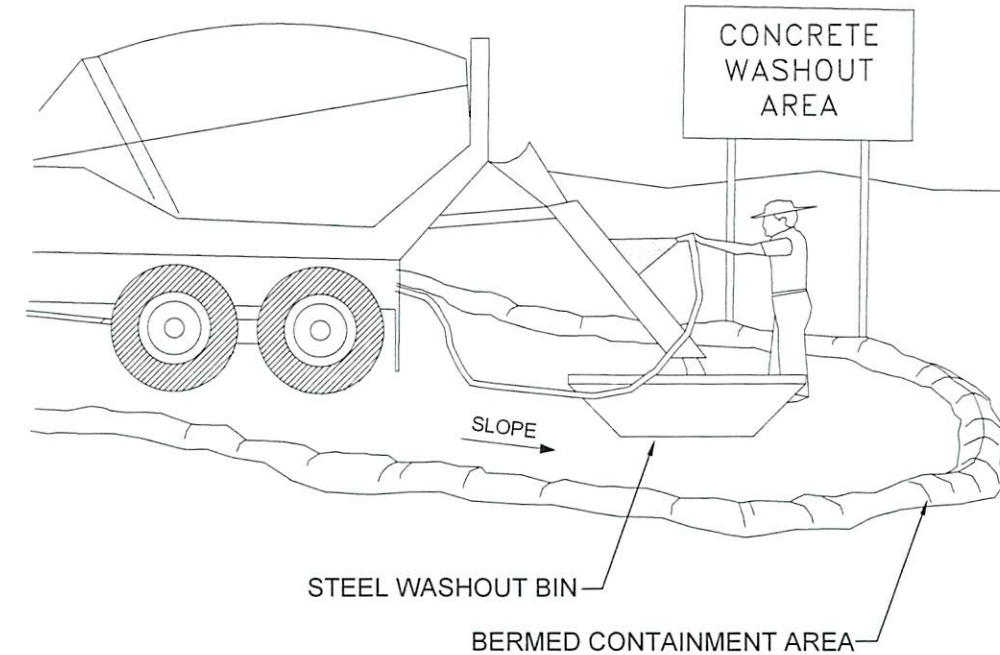
ENTRANCE STABILIZATION NOTES:

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: 3/6/2017
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Checked: DLW

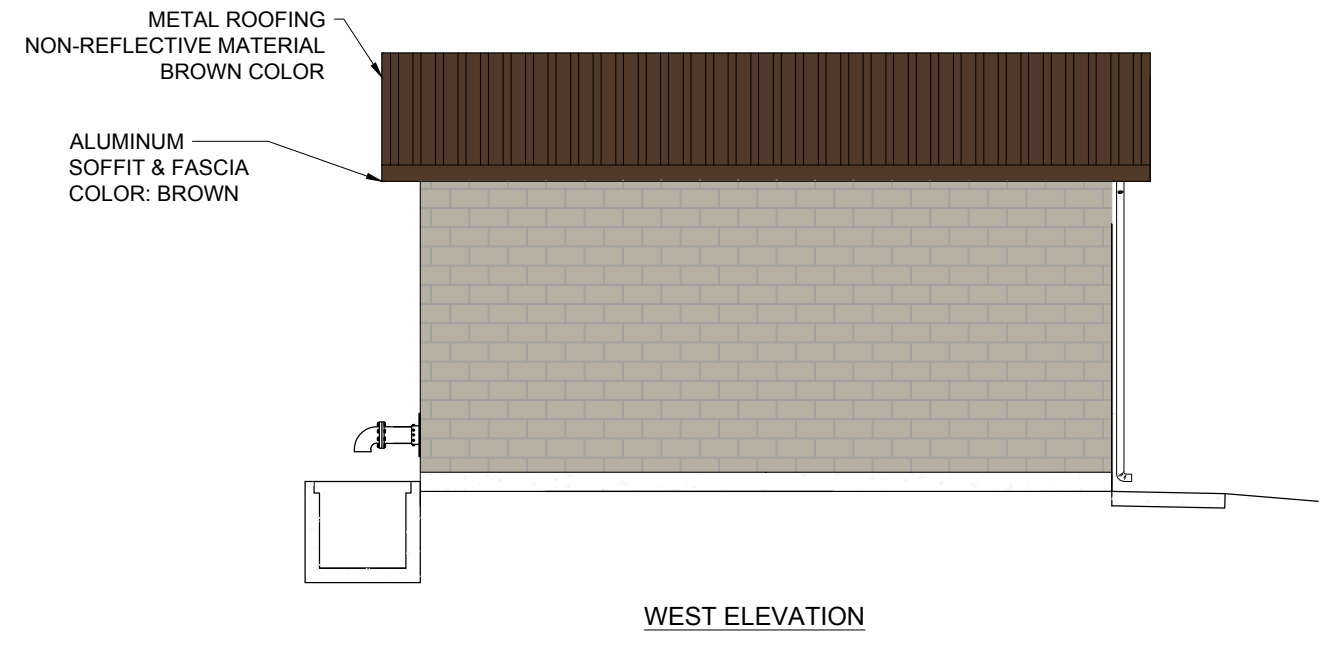
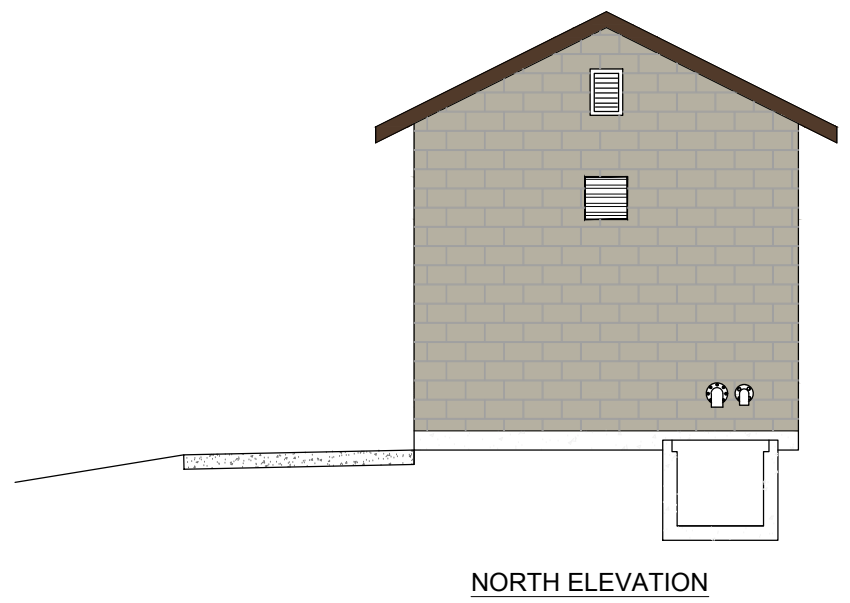
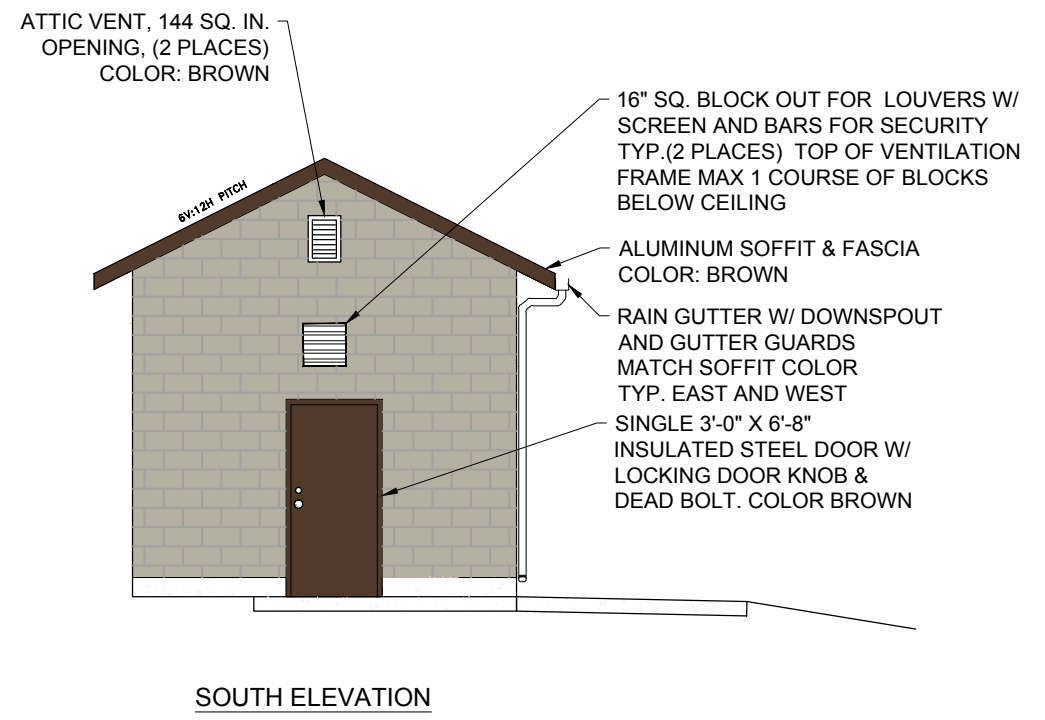
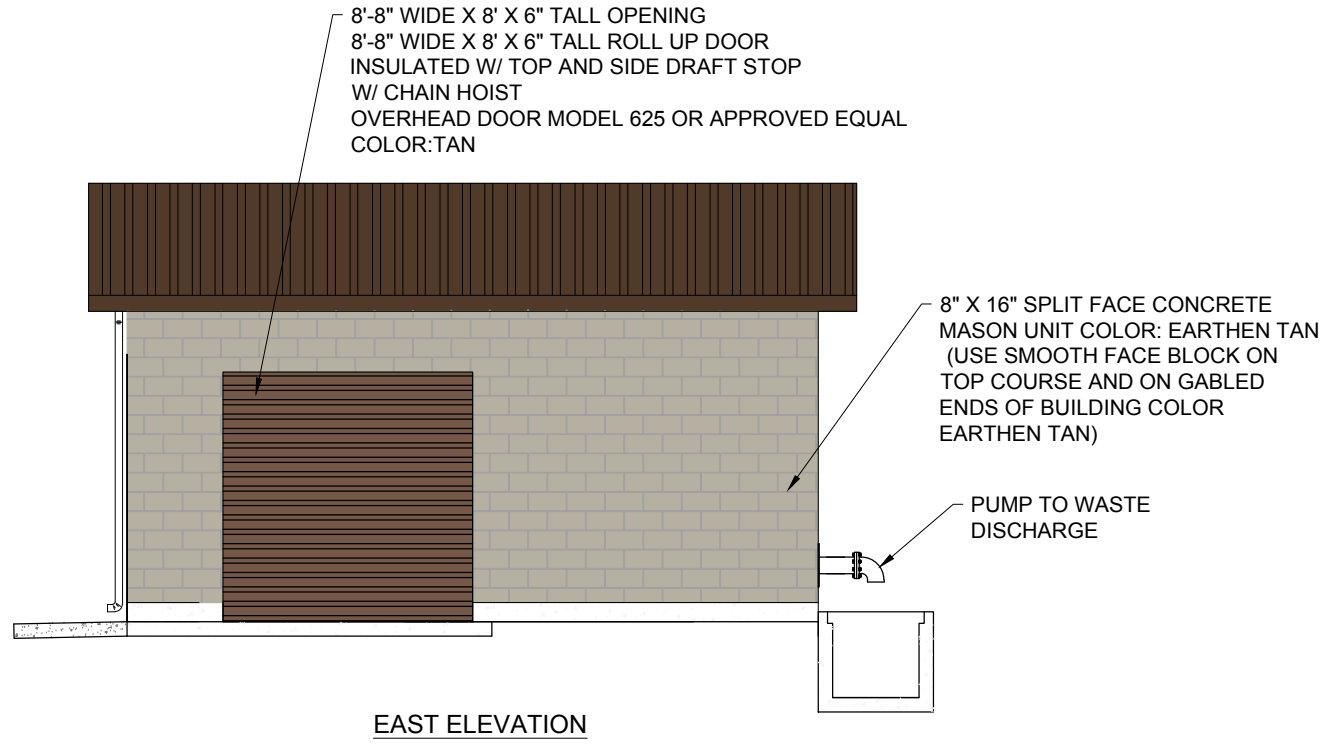
Revisions	Date	Description

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S2

Exhibit C



Revisions	Date	Description

Date:	3/6/2017
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Designed:	MDD
Drafted:	MDD
Checked:	DLW

ELEVATIONS
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