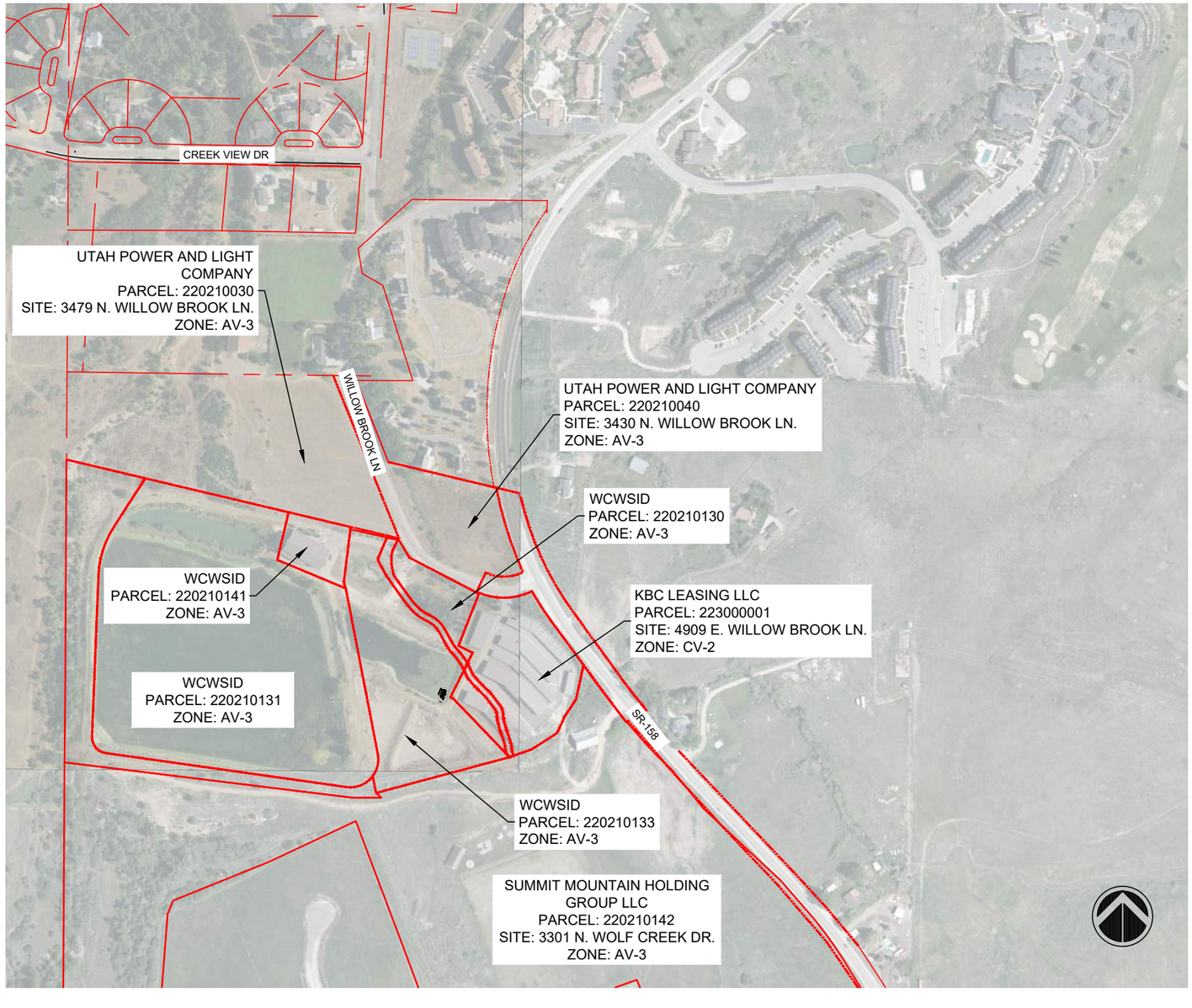
REUSE PROJECT

SCHEDULE A - LOWER PUMP STATION
VICINITY MAP

WOLF CREEK WATER AND SEWER IMPROVEMENT DISTRICT - WEBER, UTAH

DECEMBER 2023

LOCATION MAP



SHEET INDEX:

ENGINEER:
GARDNER ENGINEERING
DAN WHITE
1580 S 2100 W
WEST HAVEN, UTAH 84401
801-476-0202

PREPARED FOR:

WOLF CREEK WATER AND SEWER IMPROVEMENT DISTRICT

REUSE PROJECT
LOWER PUMP STATION

LPS1

REVIEW SET – NOT FOR CONSTRUCTION

R:\2319 – WOLF CREEK WATER AND SEWER\2302 – REUSE PIPELINE\DESIGN\DWG\LPS – REUSE PLAN SET 2023_11_27.DWG

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 NOTES

1. ALL MATERIALS, WORKMANSHIP AND CONSTRUCTION OF SITE IMPROVEMENTS SHALL MEET OR EXCEED THE STANDARDS AND SPECIFICATIONS SET FORTH BY WCWSID, PLANNING, CODES AND SPECIFICATIONS AND APPLICABLE 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 WCWSID 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 DISTRICT 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.

EXISTING IMPROVEMENT LAYERS

E-CABLE	E-CABLE	(CABLE LINE)
E-FENCE	E-FENCE	(FENCE LINES)
E-FIBER OPTIC	FO	(FIBER OPTIC LINE)
E-GAS	G	(ALL GAS REALTED FACILITIES)
E-OVERHEAD LINES	OH	(ELEC, TELE, CABLE OVERHEAD LINES)
E-POWER	E-POWER	(POWER)
E-PRESSURE SEWER	PS	(PRESSURE SEWER)
E-SANITARY SEWER	SS	(SANITARY SEWER PIPES AND STRUCTURES)
E-SECONDARY WATER	SW	(SECONDARY WATER LINES AND STRUCTURES)
E-STORM	SD	(STORM DRAIN PIPES AND STRUCTURES)
E-WATER	W	(WATER LINES AND STRUCTURES)

PROPOSED IMPROVEMENT LAYERS

P-ASPHALT		(EDGE OF PAVEMENT)
P-BUILDING		(EDGE OF PAVEMENT)
P-CONCRETE		(CONCRETE, SIDEWALKS & CURB LINES)
P-ELECTRIC		(ELECTRICAL UTILITIES)
P-IRRIGATION	IRR	(IRRIGATION LINE AND SIZE)
P-PRESSURE SEWER	PS	(PRESSURE SEWER)
P-SANITARY SEWER	SS	(SANITARY SEWER PIPES AND STRUCTURES)
P-SECONDARY WATER	SW	(SECONDARY WATER LINES AND STRUCTURES)
P-SIDEWALK		(SIDEWALK)
P-STORM	SD	(STORM DRAIN PIPES AND STRUCTURES)
P-WATER	W	(WATER LINES AND STRUCTURES)

ABBREVIATIONS

FF	FINISHED FLOOR ELEVATION
FG	FINISH GROUND ELEVATION
F.L.	FIELD LOCATE
FL	FLOW LINE
LPS	LOWER PUMP STATION
R.I.B.	RAPID INFILTRATION BASIN
TA	TOP OF ASPHALT ELEVATION
TC	TOP OF CONCRETE ELEVATION
UPS	UPPER PUMP STATION

REVIEW SET - NOT FOR CONSTRUCTION

R:\2319 - WOLF CREEK WATER AND SEWER\2302 - REUSE PIPELINE\DESIGN\DWG\LPS - REUSE PLAN SET 2023_11_27.DWG

Date 12-11-23
Scale:
Designed DW
Drafted PCA
Checked DW

Revisions

Date	Description

WOLF CREEK WATER AND SEWER I.D.,
REUSE PROJECT
LOWER PUMP STATION
NOTES AND LEGEND

GARDNER ENGINEERING
CIVIL ■ LAND PLANNING
MUNICIPAL ■ LAND SURVEYING
1560 W 2100S., WEST HAVEN, UT 84401
P 801.476.0202 F 801.476.0066

LPS2

UTAH POWER AND LIGHT COMPANY
PARCEL: 220210030
ZONE: AV-3
MAIL: 825 NE MULTNOMAH ST STE 1900
PORTLAND OR 972322151

WILLOW BROOK LN

UTAH POWER AND LIGHT COMPANY
PARCEL: 220210040
ZONE: AV-3
MAIL: 825 NE MULTNOMAH ST STE 1900
PORTLAND OR 972322151

WOLF CREEK WATER & SEWER
IMPROVEMENT DISTRICT
PARCEL: 220210141
ZONE: AV-3

WOLF CREEK WATER & SEWER
IMPROVEMENT DISTRICT
PARCEL: 220210130
ZONE: AV-3

WOLF CREEK WATER & SEWER
IMPROVEMENT DISTRICT
PARCEL: 220210131
ZONE: AV-3

MASS GRADING
BORROW AREA

PROPOSED 10'
WIDE PAVED
ACCESS ROAD

SEE LPG1 FOR
GRADING PLAN

EXISTING PRESSURE
SEWER MAINS

PROPOSED ELECTRICAL
SERVICE SEE
ELECTRICAL SHEETS

PROPOSED REUSE
WATER LINES

WOLF CREEK DR. (5100 E)

KBC LEASING LLC
PARCEL: 223000001
ZONE: CV-2
MAIL: 5393 E 3850 N
EDEN UT 843109648

18.78'

WOLF CREEK WATER & SEWER
IMPROVEMENT DISTRICT
PARCEL: 220210133
ZONE: AV-3

EX FENCE

PROPOSED
LOWER PUMP
STATION

SUMMIT MOUNTAIN HOLDING
GROUP LLC
PARCEL: 220210142
MAIL: PO BOX 750
EDEN, UT 84319-0750
ZONE: AV-3

EFFECTED PARCELS:

220210131	14.81 Acres
220210130	0.89 Acres
220210133	4.78 Acres
220210141	0.77 Acres
TOTAL	21.25 Acres

PROPOSED PAVED ACCESS ROAD

BOUNDARY LINE

APPLICANT:
WOLF CREEK WATER & SEWER
IMPROVEMENT DISTRICT
PO BOX 568
EDEN UT 84310-0568

NARRATIVE:

APPLICANT SEEKS APPROVAL TO CONSTRUCT THE LOWER PUMP STATION AS A PERMITTED ACCESSORY BUILDING TO A CONDITIONAL USE (THE WCWSID TREATMENT PLANT AND SSOCIATED PONDS).

0' 75' 150' 300'

Scale in Feet
1" = 150'

REVIEW SET - NOT FOR CONSTRUCTION

R:\2319 - WOLF CREEK WATER AND SEWER\2302 - REUSE PIPELINE\DESIGN\DWG\LPS - REUSE PLAN SET 2023_11_27.DWG

Revisions		Date	12-11-23
Date	Description	Scale	1" = 150'
		Designed	DW
		Drafted	PCA
		Checked	DW

WOLF CREEK WATER AND SEWER I.D.
REUSE PROJECT
LOWER PUMP STATION
OVERVIEW

GARDNER ENGINEERING
CIVIL ■ LAND PLANNING
MUNICIPAL ■ LAND SURVEYING
1580 W 2100S, WEST HAVEN, UT 84401
P 801.476.0202 F 801.476.0066

LPS3

REVIEW SET - NOT FOR CONSTRUCTION

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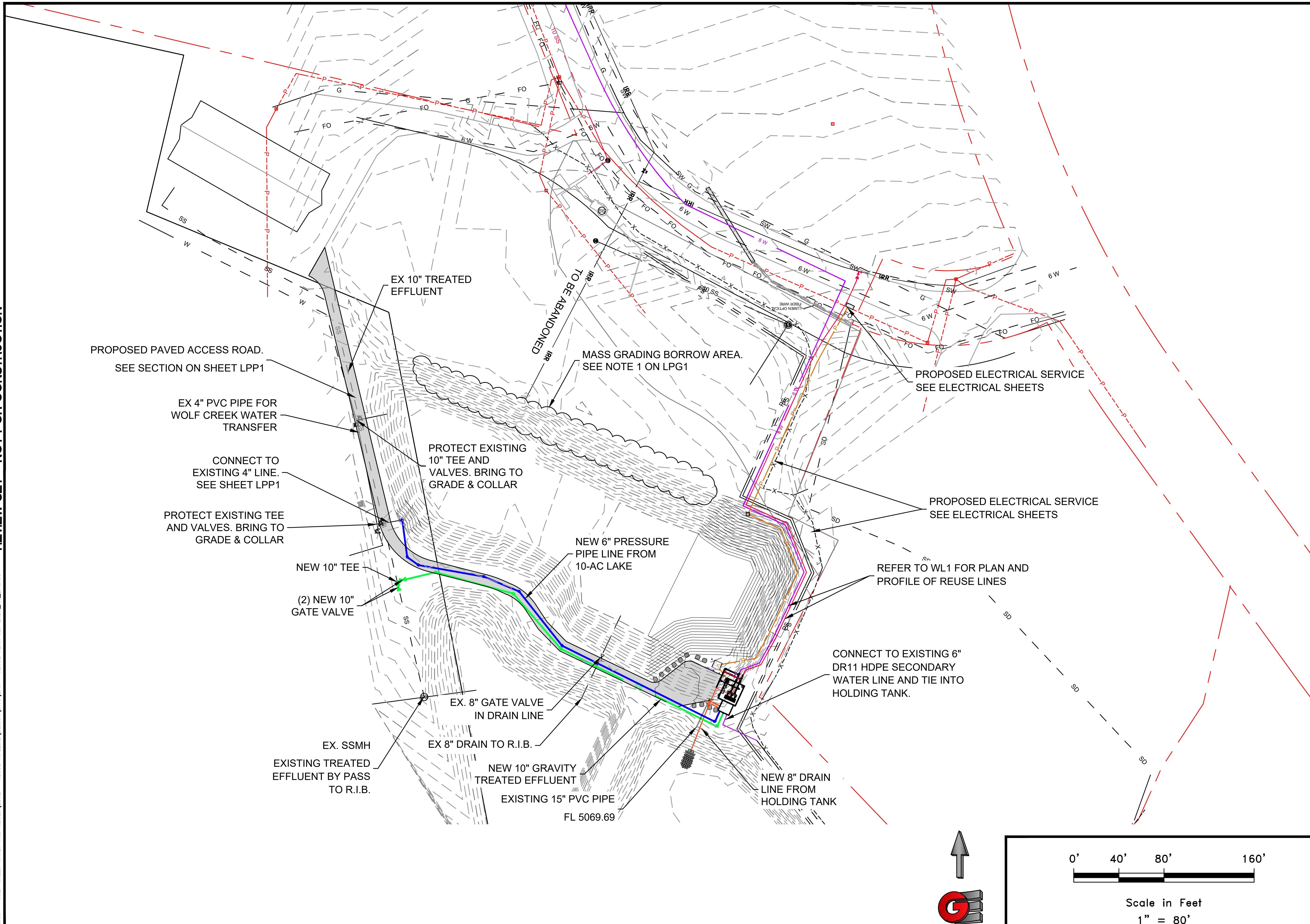

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Scale:	1" = 80'
Designed:	DW
Drafted:	PCA
Checked:	DW

Revisions

Date	Description

WOLF CREEK WATER AND SEWER I.D, REUSE PROJECT

LOWER PUMP STATION

SITE PLAN OVERVIEW

GARDNER ENGINEERING

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LPS4

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8" BYPASS LINES, FITTINGS, AND VALVES TO ALLOW DRAINAGE TO RIB

BARRIER POSTS PER RMP STANDARD (CONCRETE FILLED)

2-3 FOOT BOULDER (TYP) 7' O.C. TO INHIBIT ACCIDENTAL DRIVE-OFF

29.5'

10.00'

GATE VALVE IN 3" PRESSURE RELIEF LINE

REMOVE EXISTING 15" PVC PIPE NORTH OF NEW BOX

48.00'

NEW 6" PRESSURE PIPE LINE FROM 10-AC LAKE

NEW 10" GRAVITY TREATED EFFLUENT

PLACE ADD'L BOULDER(S) TO INHIBIT DRIVING OVER SHALLOW OVERFLOW PIPES

INSTALL NEW 3X3 SD BOX IN EXISTING PIPE MATCH FLOW LINE OF EXISTING PIPE

EXISTING 15" PVC PIPE FL 5069.69

OUTFALL OF NEW 8" DRAIN LINE FL 5061.00 SCREEN WITH #4 S.S. FLANGE OR CAP

90.00° ELBOW

INSTALL NEW 10" PVC PIPE

LAST STICK OF PIPE SHALL BE DUCTILE IRON

SEE GRADING PLAN ON SHEET LPG1

EXISTING SEWER FORCE MAINS

SEE ELECTRICAL PLANS

EXISTING FENCE

EASTERLY LINE LEAVES BUILDING AT 3' COVER TO ACCOMMODATE BYPASS INSTALLATION ABOVE WESTERLY LINE

19.59'

CONNECT TO EXISTING 6" DR11 HDPE SECONDARY WATER LINE AND TIE INTO HOLDING TANK.

PARCEL BOUNDARY LINE

PROPOSED ASPHALT

0' 10' 20' 40'

Scale in Feet
1" = 20'

Revisions	
Date	Description

Date: 12-11-23
Scale: 1" = 20'
Designed: DW
Drafted: PCA
Checked: DW

WOLF CREEK WATER AND SEWER I.D.
REUSE PROJECT
LOWER PUMP STATION
PLAN SHEET

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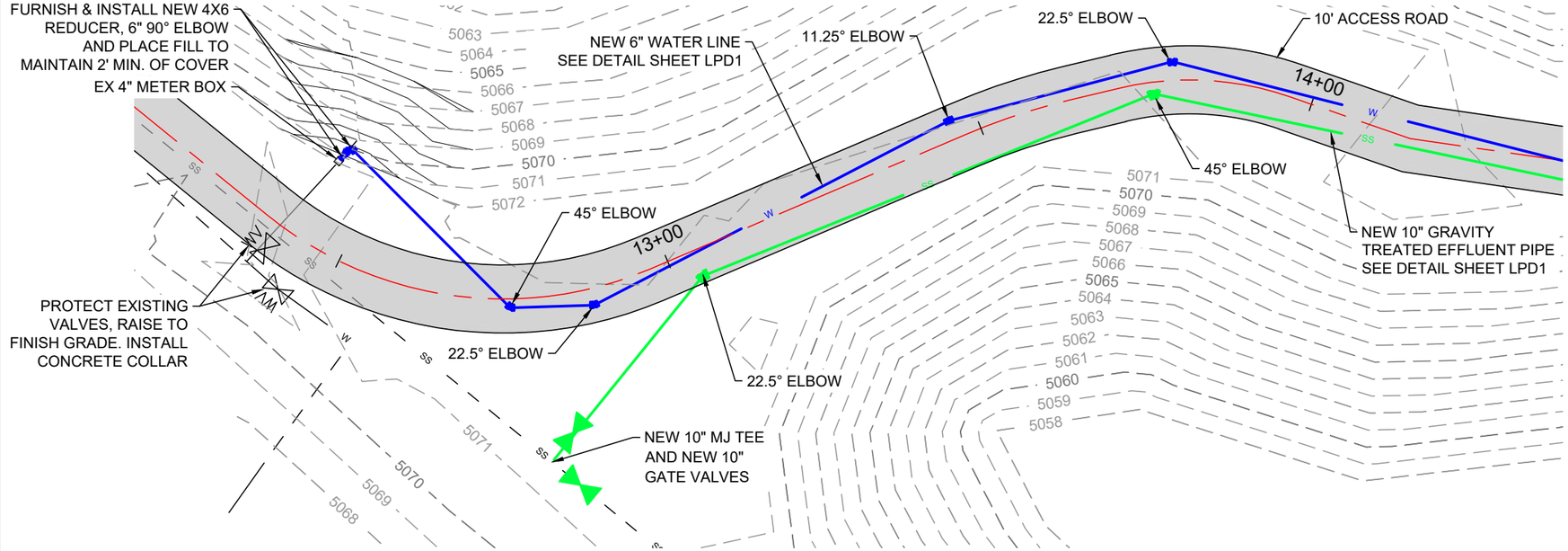
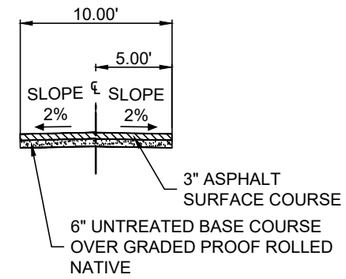
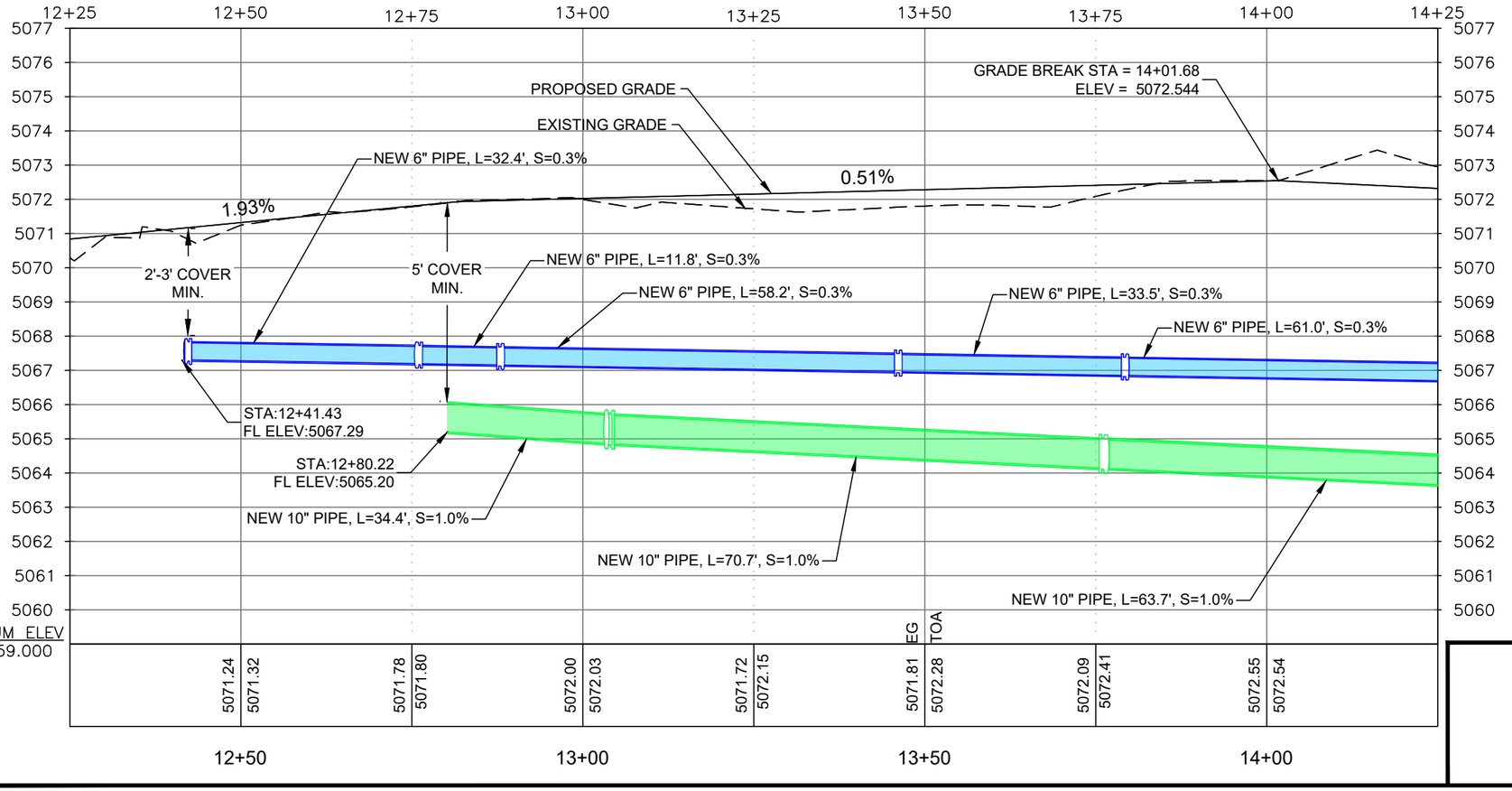
MUNICIPAL ■ LANDSURVEYING
1580 W 2160S, WEST HAVEN, UT 84401
P 801.476.0202 F 801.476.0066

LPS5





10' ACCESS ROAD SECTION



NOTES: NEW PIPES
6"=C-900 DR 18
10"=C-900 DR 25

PROPOSED ASPHALT

Scale in Feet
1" = 20'

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WOLF CREEK WATER AND SEWER I.D.
REUSE PROJECT
LOWER PUMP STATION
PLAN AND PROFILE

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LPP1

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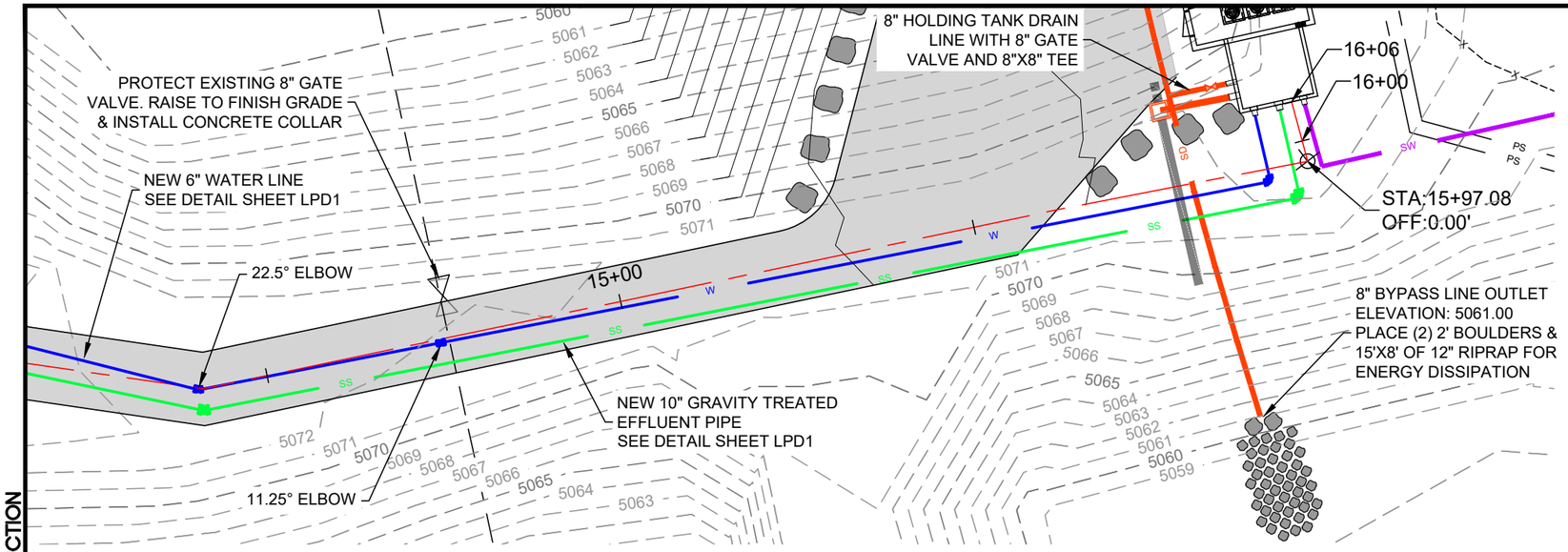
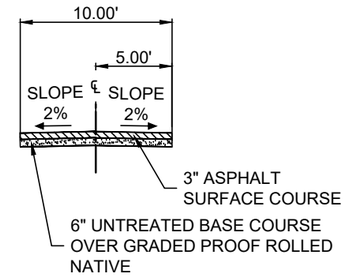
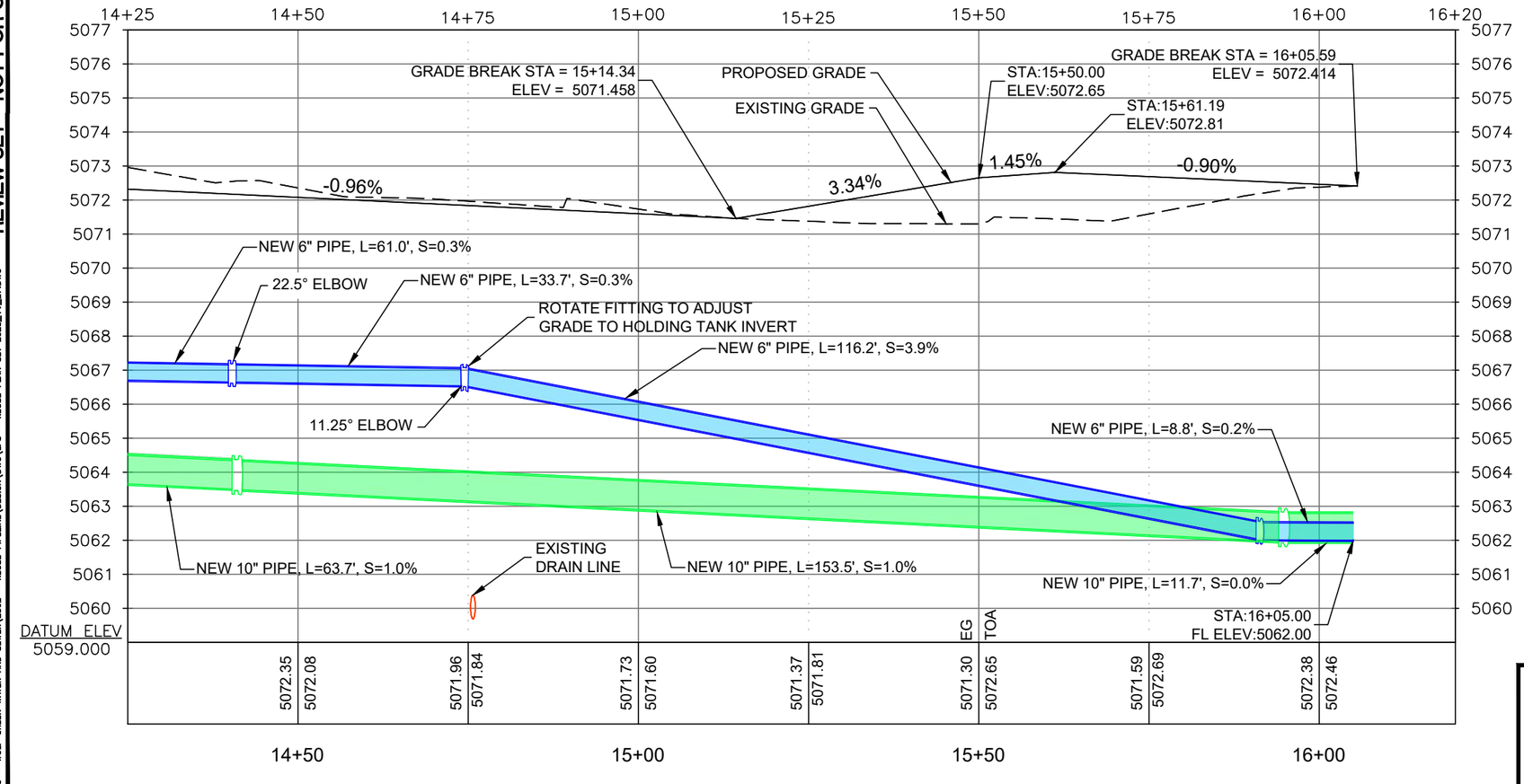




10' ACCESS ROAD SECTION



NOTES: NEW PIPES
6"=C-900 DR 18
10"=C-900 DR 25

PROPOSED ASPHALT

0' 10' 20' 40'

Scale in Feet
1" = 20'

Revisions		
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WOLF CREEK WATER AND SEWER I.D.
REUSE PROJECT
LOWER PUMP STATION
PLAN AND PROFILE

GARDNER ENGINEERING
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LPP2

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TA 5071.67
EG 5071.18
TA 5071.65
EG 5071.59
TA 5072.09
EG 5069.91
FG 5066.47
EG 5059.89
TA 5072.66
EG 5071.31
TA 5072.90
EG 5062.94
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EG 5074.09
EG 5078.00
FG 5074.94
EG 5073.09
FG 5074.89
EG 5074.30
FG 5076.54
EG 5076.54
FG 5074.12
EG 5074.12

10' BUFFER AROUND BUILDING:
FABRIC + 6" OF 1-1/2" CLEAN
SEWER ROCK

NEW REUSE LINES
SEE SHEETS WL1 THROUGH WL17

SEE SHEET LPG2 FOR PROFILE

PARCEL BOUNDARY LINE

EXISTING PRESSURE
SEWER LINES

PROPOSED ASPHALT

NOTE: SEE SHEET LPSP FOR STORMWATER POLLUTION PREVENTION PLAN

NOTES:

1. GRANULAR BORROW MATERIAL FOR MASS GRADING MAY COME FROM ON-SITE AS DIRECTED BY OWNER. SEE OUTLINE OF BORROW AREA ON SHEET LPS4.
2. PLACEMENT OF FILL MATERIAL SHALL BE COMPLETED PER THE GEOTECHNICAL REPORT.

APPROX QUANTITIES:

FILL SHOWN ON THIS SHEET: 2,570 CY.

BORROW AVAILABLE (SEE LPS4): 2,230 CY., MINIMUM
PLUS PIPE SPOILS FROM BOTH SCHEDULES:
ADEQUATE ON-SITE BORROW QUANTITY.

0' 10' 20' 40'
Scale in Feet
1" = 20'

Revisions

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Drafted: PCA
Checked: DW

WOLF CREEK WATER AND SEWER I.D.

REUSE PROJECT

LOWER PUMP STATION

GRADING PLAN

GARDNER ENGINEERING
CIVIL ■ LAND PLANNING
MUNICIPAL ■ LAND SURVEYING
1598 W 2100S, WEST HAVEN, UT 84401
P 801.476.0202 F 801.476.0066

LPG1

REVIEW SET - NOT FOR CONSTRUCTION

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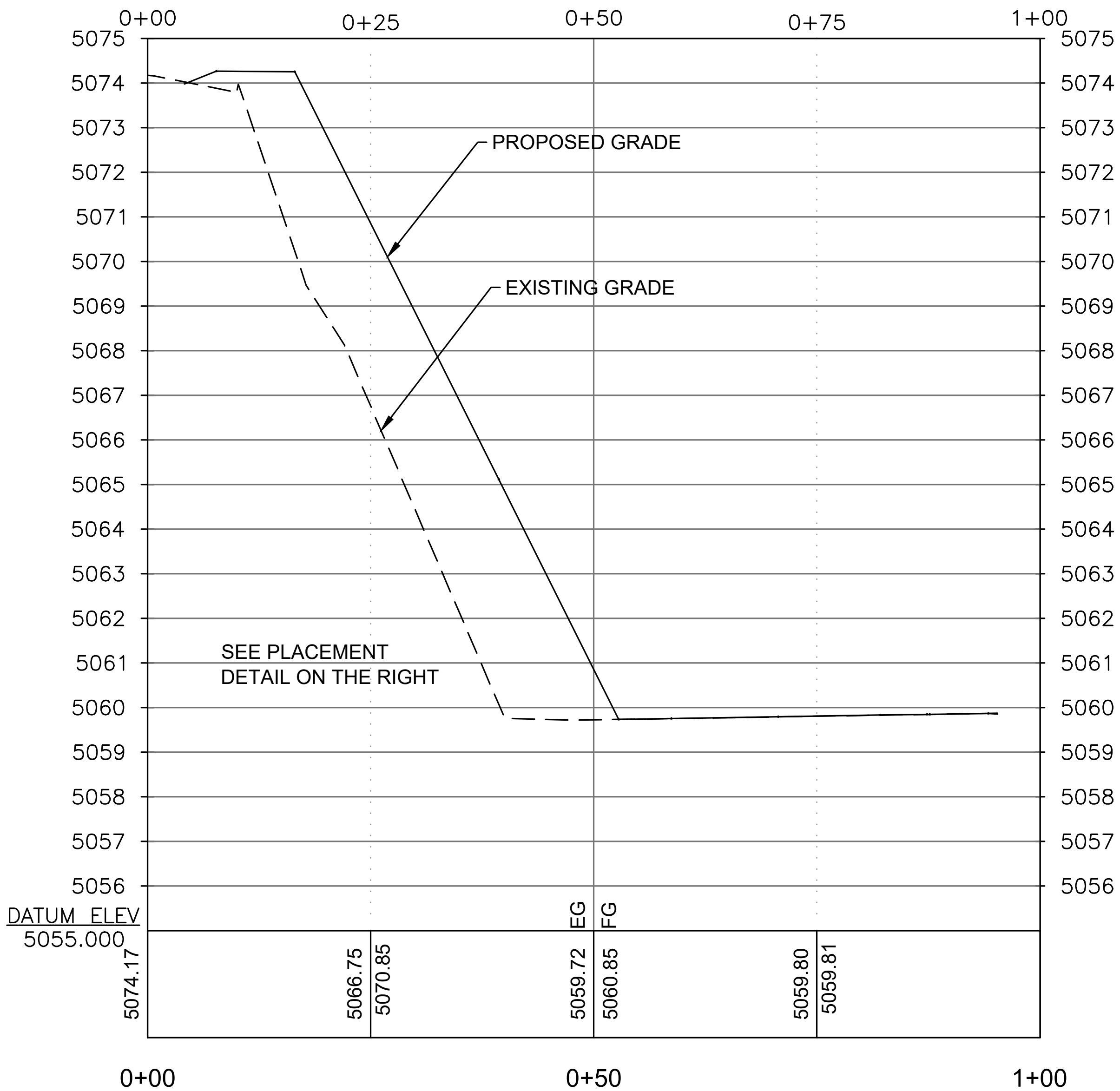
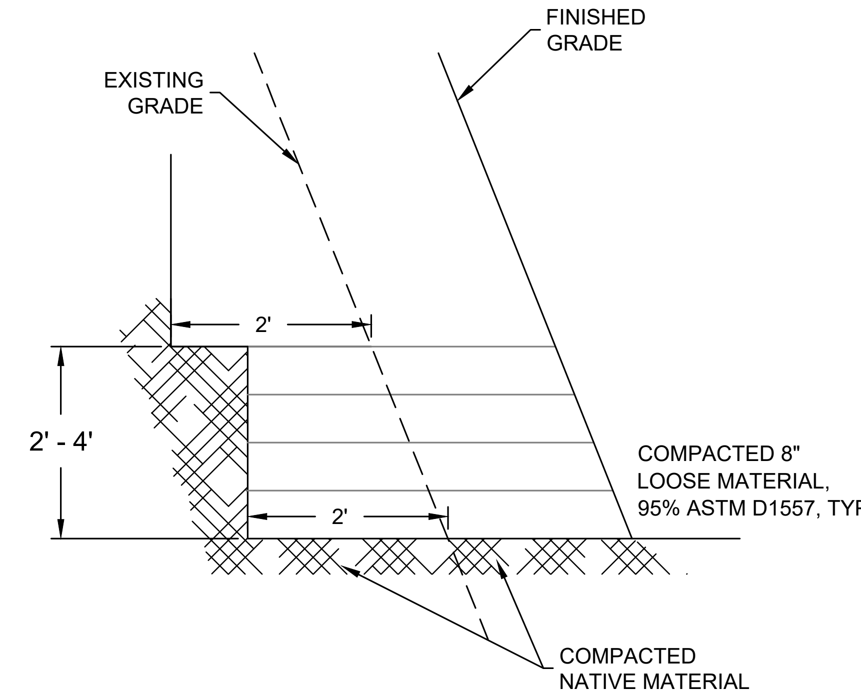


POND GRADING PROFILE
SECTION A-A

NOTES:

1. EXCAVATE BACK INTO EXISTING SLOPE AS NEEDED SO THAT EACH 8" LOOSE LIFT OF FILL MATERIAL BEARS ON AT LEAST 2' OF COMPACTED NATIVE OR FILL MATERIAL. ON-SITE MATERIALS (LOCATION IDENTIFIED ON SHEET LPS4) MAY BE USED FOR FILL IF IT MEETS THE REQUIREMENTS OF SECTION 8.1.2.1 OF THE GEOTECH REPORT.



PLACEMENT DETAIL

0' 10' 20' 40'
Scale in Feet
1" = 20

Date	Description
Revisions	

Date: 12-11-23
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WOLF CREEK WATER AND SEWER I.D,
REUSE PROJECT
LOWER PUMP STATION
GRADING PROFILE

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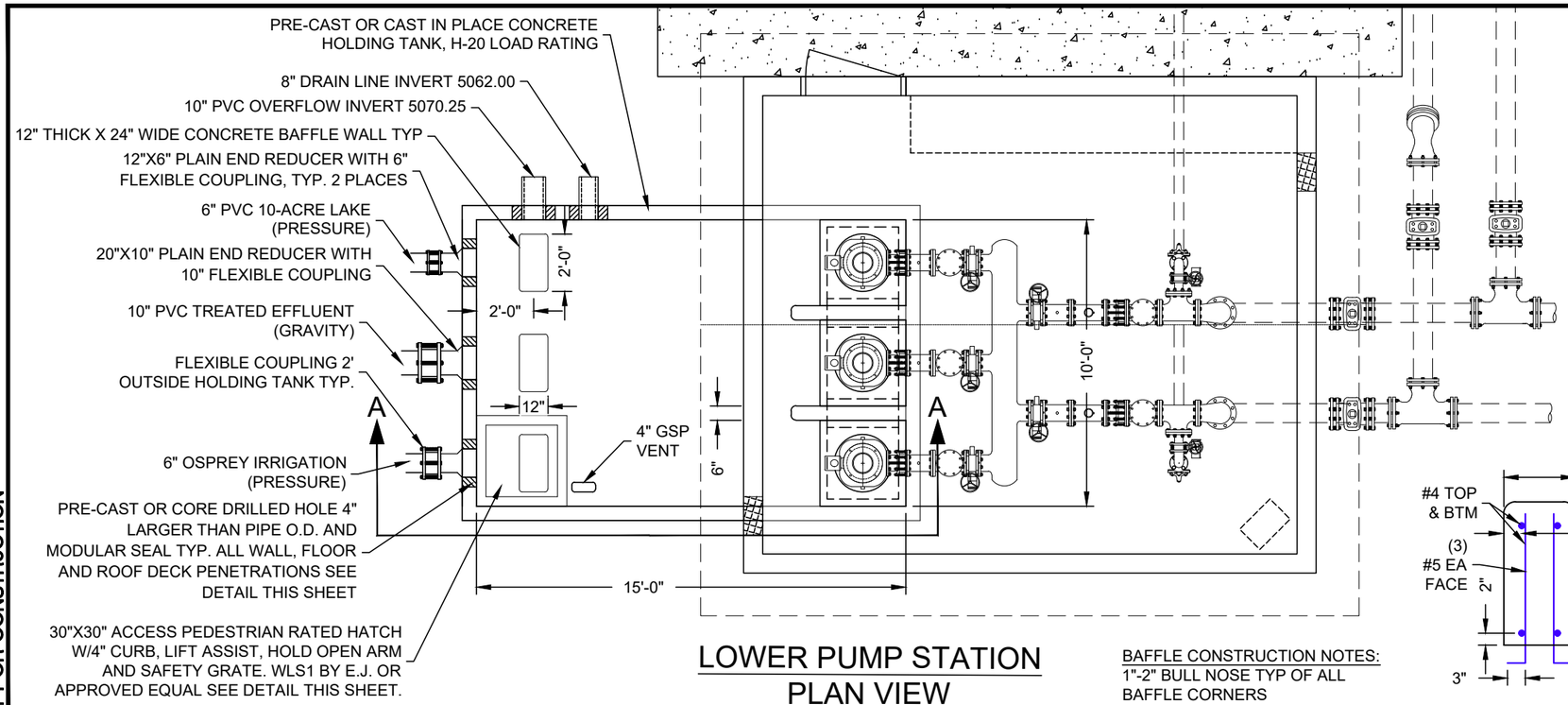
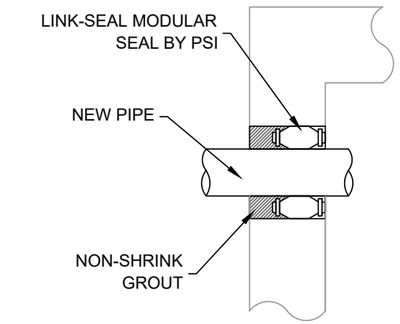
LPG2

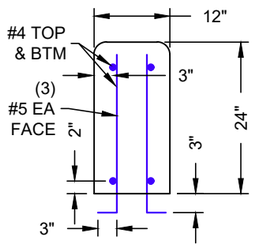


LOWER PUMP STATION PLAN VIEW

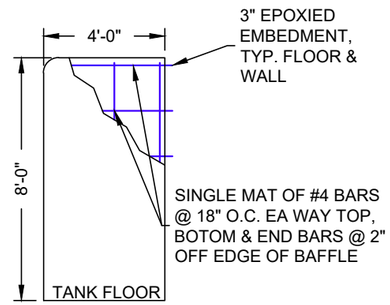
BAFFLE CONSTRUCTION NOTES:
1"-2" BULL NOSE TYP OF ALL BAFFLE CORNERS



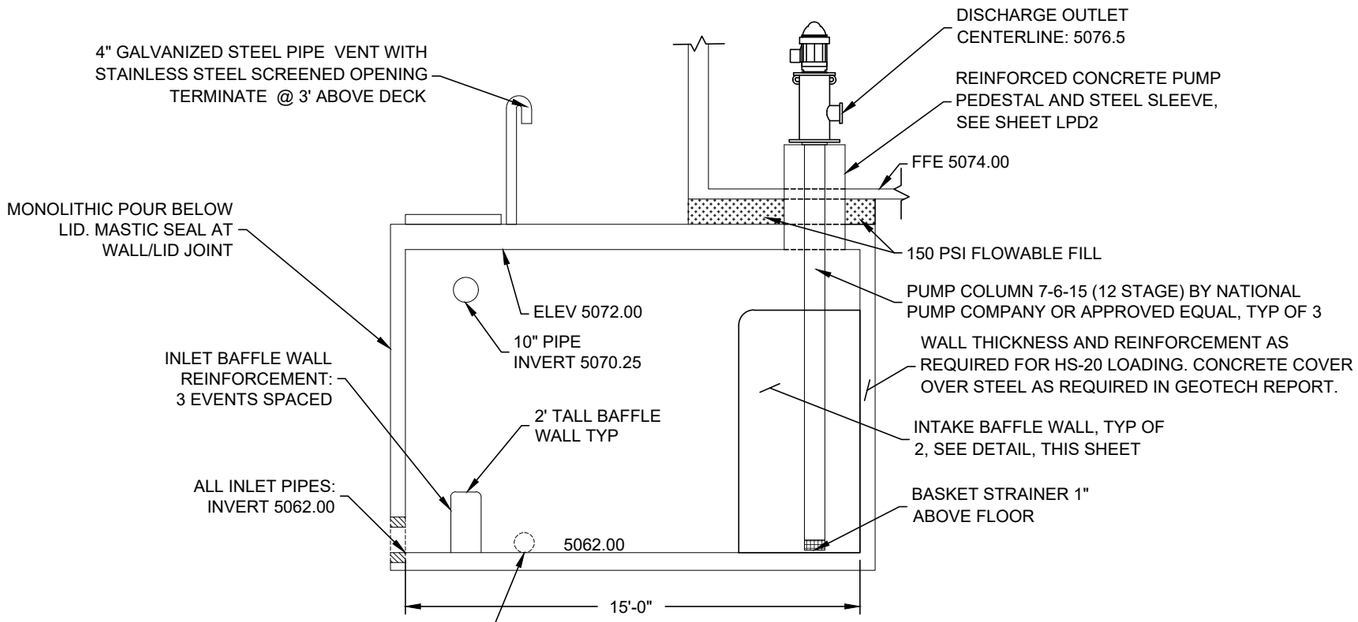
TANK CONNECTION DETAIL



INLET BAFFLE REINFORCEMENT

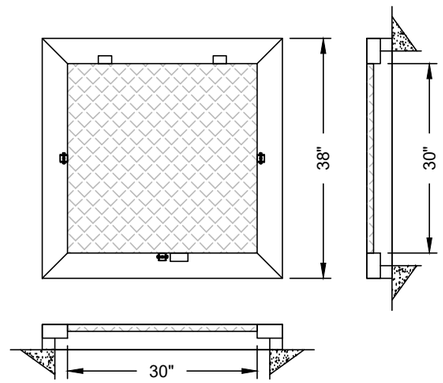


PUMP BAY BAFFLE REINFORCEMENT



LOWER PUMP STATION SECTION A-A'

PEDESTRIAN RATED ALUMINUM HATCH
WLS1 BY EJ OR APPROVED EQUAL



30"X30" ACCESS HATCH

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Revisions		Date: 12-12-23
Date	Description	Scale:
		Designed: DW
		Drafted: PCA
		Checked: DW

WOLF CREEK WATER AND SEWER I.D.,
REUSE PROJECT
LOWER PUMP STATION
LOWER PUMP DETAIL

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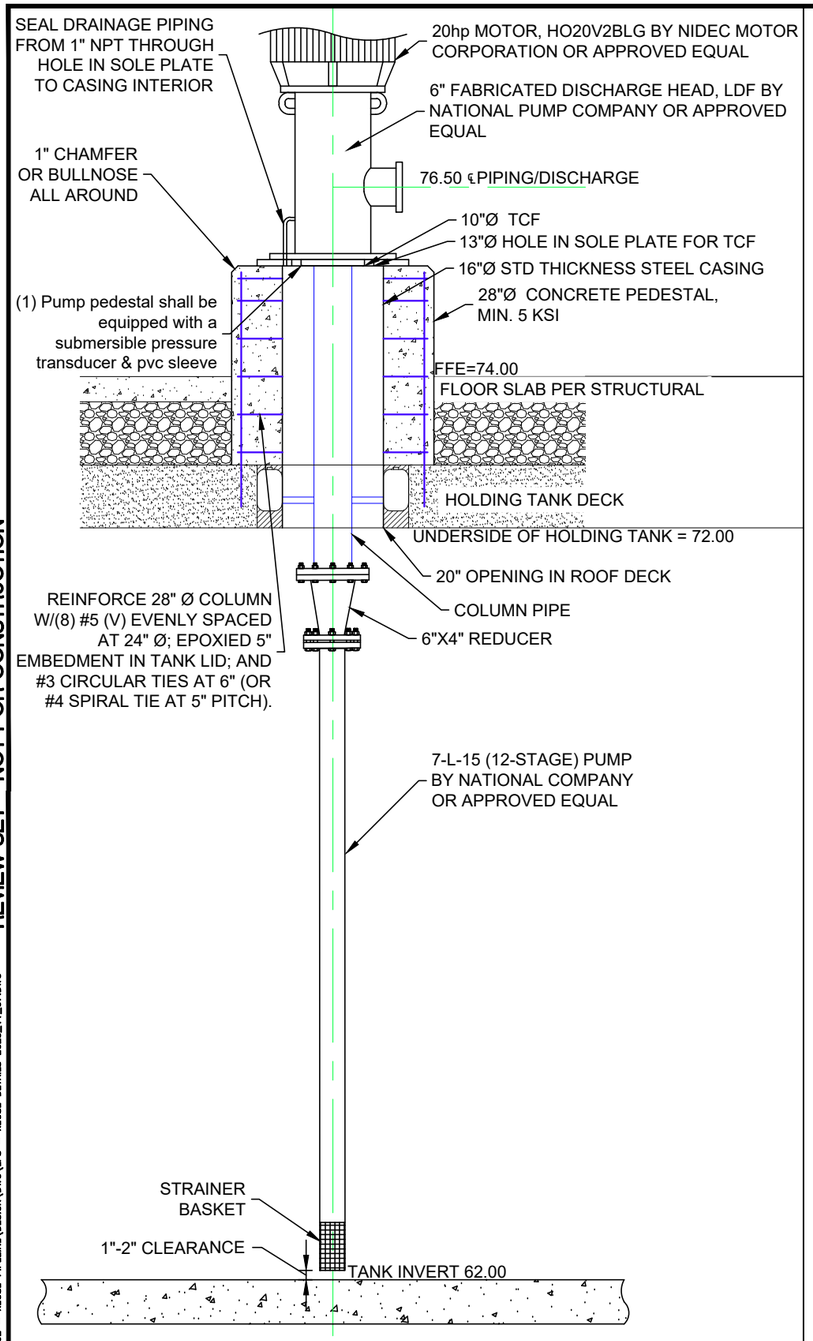
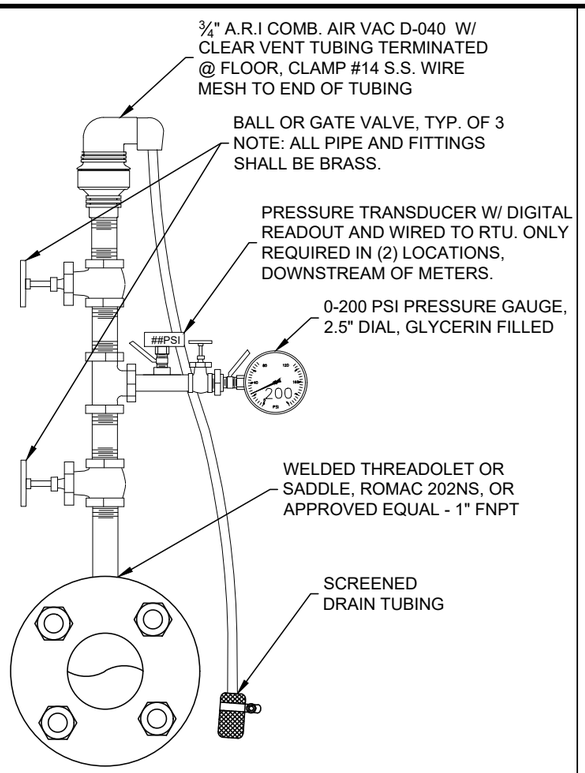
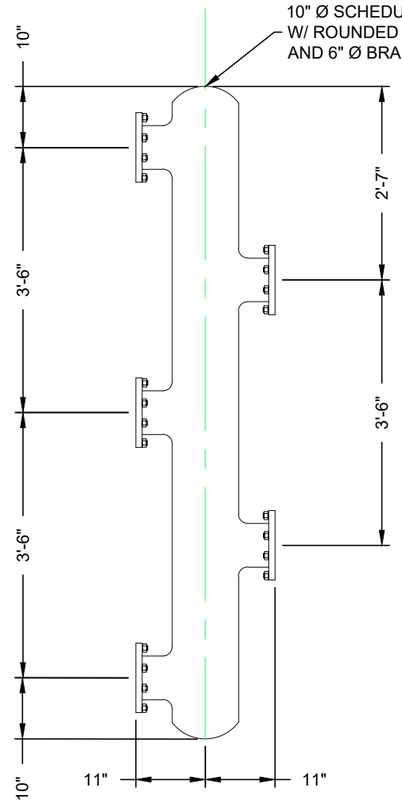
LPD1



PUMP ASSEMBLY DETAIL



AIR VAC DETAIL



NOTE:

COAT AND LINE W/ 2-PART EPOXY.
SEE SPECIFICATIONS

FABRICATED DISCHARGE HEADER
1" = 2'-0"

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WOLF CREEK WATER AND SEWER I.D.,
REUSE PROJECT
LOWER PUMP STATION
PEDESTAL STEEL SLEEVE

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LPD2

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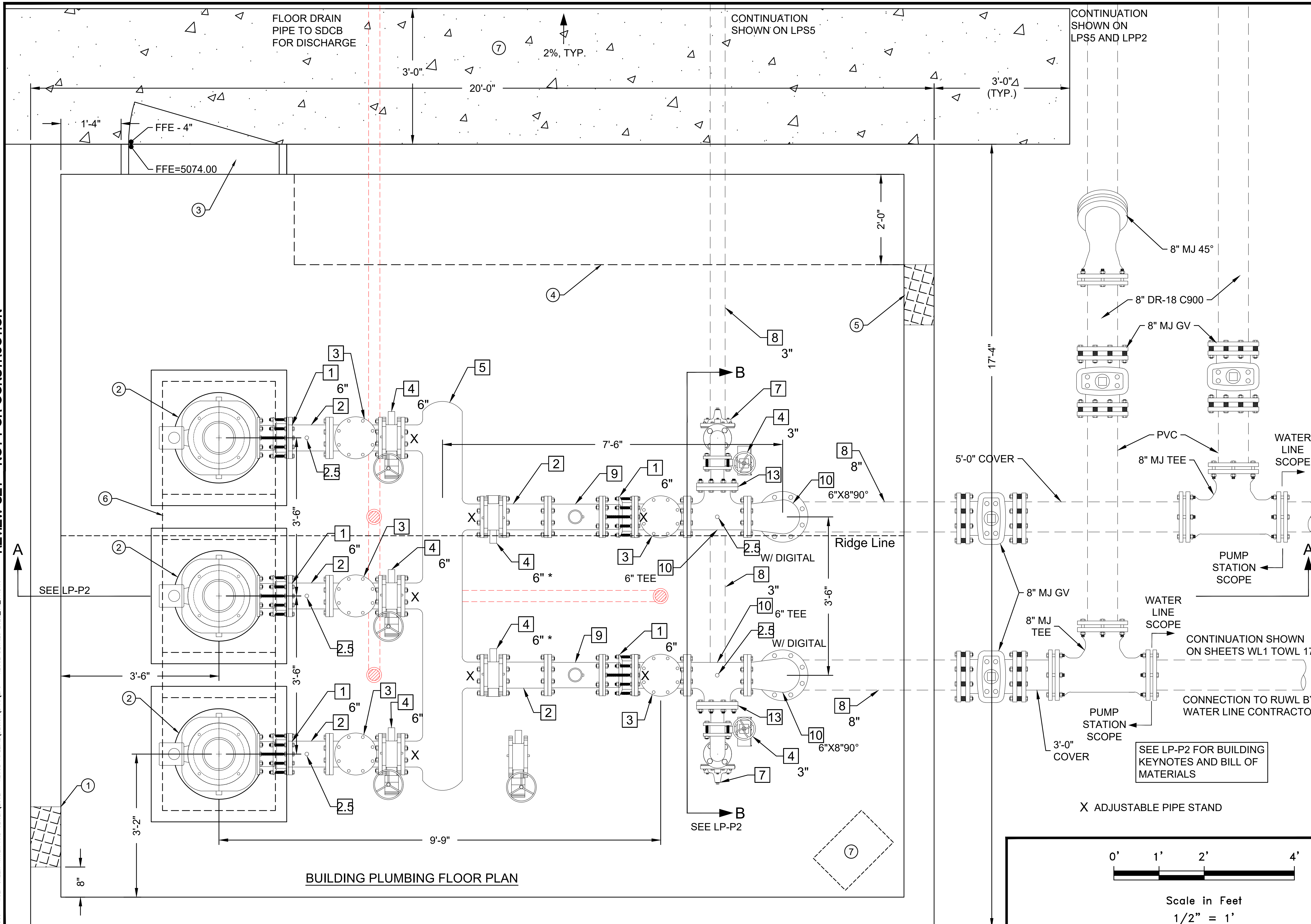

FLOOR DRAIN PIPE TO SDCB FOR DISCHARGE
CONTINUATION SHOWN ON LPS5
CONTINUATION SHOWN ON LPS5 AND LPP2
2%, TYP.
3'-0"
20'-0"
3'-0" (TYP.)
1'-4"
FFE - 4"
FFE=5074.00
2'-0"
17'-4"
7'-6"
3'-6"
3'-2"
9'-9"
8"
6"
3"
8"
6" *
6" TEE
6"X8"90°
W/ DIGITAL
Ridge Line
SEE LP-P2
B
SEE LP-P2
A
8" MJ 45°
8" DR-18 C900
8" MJ GV
PVC
8" MJ TEE
WATER LINE SCOPE
5'-0" COVER
PUMP STATION SCOPE
8" MJ GV
8" MJ TEE
CONTINUATION SHOWN ON SHEETS WL1 TOWL 17
CONNECTION TO RUWL BY WATER LINE CONTRACTOR
3'-0" COVER
SEE LP-P2 FOR BUILDING KEYNOTES AND BILL OF MATERIALS
X ADJUSTABLE PIPE STAND
BUILDING PLUMBING FLOOR PLAN
0' 1' 2' 4'
Scale in Feet
1/2" = 1'

Date: 12-12-23
Scale: 1/2" = 1'
Designed: DW
Drafted: PCA
Checked: DW

Revisions	
Date	Description

WOLF CREEK WATER AND SEWER I.D., REUSE PROJECT

LOWER PUMP STATION

PUMP BUILDING PLAN VIEW

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LP-P1

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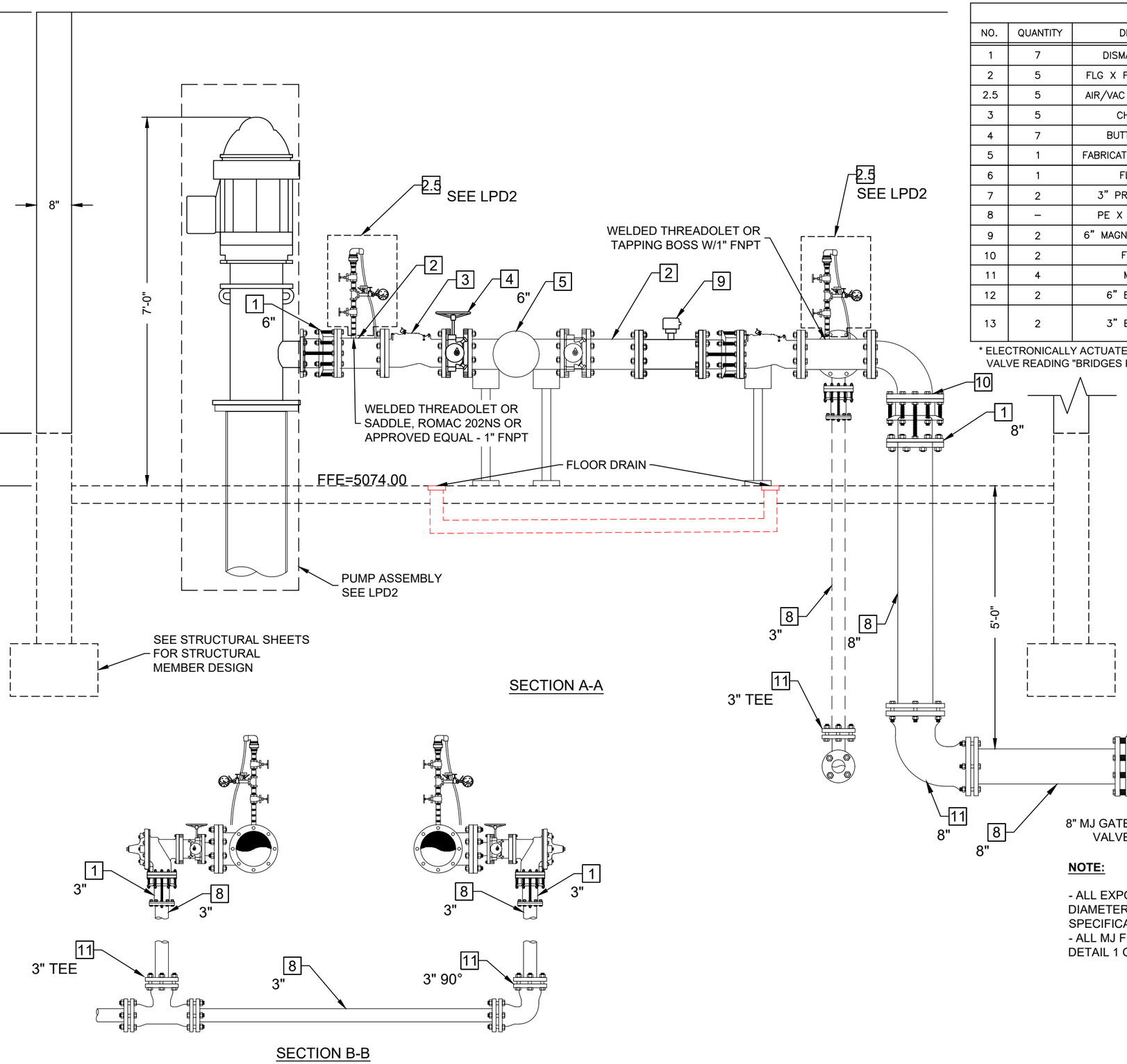

SECTION A-A

SECTION B-B

BILL OF MATERIALS

NO.	QUANTITY	DESCRIPTION	NOTES
1	7	DISMANTLING JOINT	SIZE DENOTED ON PLANS
2	5	FLG X FLG SPOOL X12"L	6"ø
2.5	5	AIR/VAC VALVE ASSEMBLY	
3	5	CHECK VALVE	VAL-MATIC SWINGFLEX O.A.E.
4	7	BUTTERFLY VALVE	WAFER STYLE, HANDWHEEL, SIZE ON PLANS
5	1	FABRICATED STEEL HEADER	SEE DETAIL ON LPD2
6	1	FLANGED 90	3"ø
7	2	3" PRESSURE RELIEF	CLA-VAL, 52-01, WITH CHECK FEATURES
8	–	PE X PE DIP SPOOL	SIZE ON PLANS LENGTH AS NEEDED
9	2	6" MAGNETIC FLOW METER	MOUNT READOUT METER SCADA PANEL
10	2	FLG FITTING	SIZE ON PLANS
11	4	MJ FITTING	SIZE ON PLANS
12	2	6" BLIND FLANGE	W/3" THREADED TAP
13	2	3" BLIND FLANGE	W/ PIPE & FITTINGS NEEDED FOR RESTRAINED CONNECTIONS

* ELECTRONICALLY ACTUATED & TIED TO SCADA. HANG STAINLESS STEEL TAG ON WESTERLY VALVE READING "BRIDGES POND" AND ON EASTERLY VALVE READING "9TH POND"

BUILDING KEYNOTES:

1. 16" SQ. VENTILATION OPENING
TOP OF OPENING = 1 BLOCK BELOW TOP OF WALL
2. PUMP ASSEMBLY
SEE SHEET LPD2
3. ACCESS DOOR OPENING
4. 2" X 2'W X 12' LONG HOUSE KEEPING
PAD RESERVED FOR ELECTRICAL
5. 16" SQ. VENTILATION OPENING
BOTTOM OF OPENING = TOP OF
FOUNDATION WALL
6. OPENING IN ROOF JOISTS TO
ACCOMMODATE (3) 30x30 ACCESS
HATCHES (CONTRACTOR SHALL
COORDINATE ROOFING PLAN WITH
ACCESS HATCH CONFIGURATION
AND CENTER EACH HATCH OVER A
PUMP)
6. 3" THICK CONCRETE APRON, 26'X3'
7. UNIT HEATER, UH1. REFER TO ELECTRICAL SHEETS

NOTE:

- ALL EXPOSED PIPE & FITTINGS 3" OR LARGER DIAMETER SHALL BE COATED AND LINED PER SPECIFICATIONS.
- ALL MJ FITTINGS SHALL BE RESTRAINED PER DETAIL 1 ON SHEET D1 OF RUWL SHEETS.

0' 1' 2' 4'

Scale in Feet
1/2" = 1'

Revisions

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WOLF CREEK WATER AND SEWER I.D.,

REUSE PROJECT

LOWER PUMP STATION

PUMP SECTION VIEW

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LP-P2

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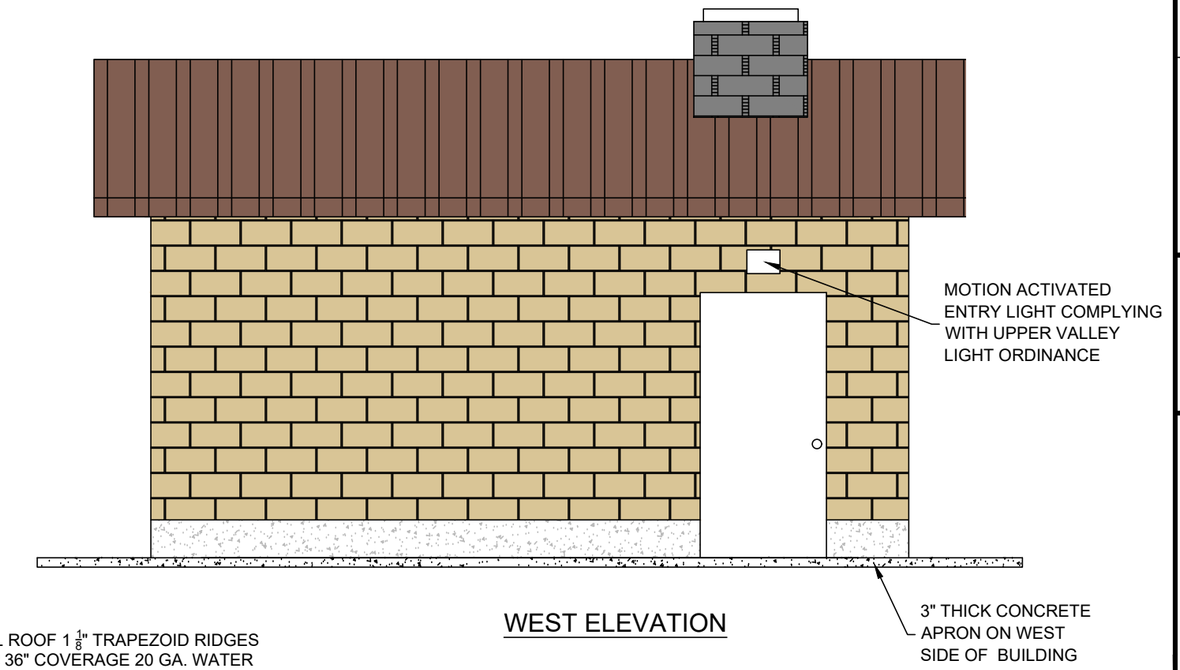
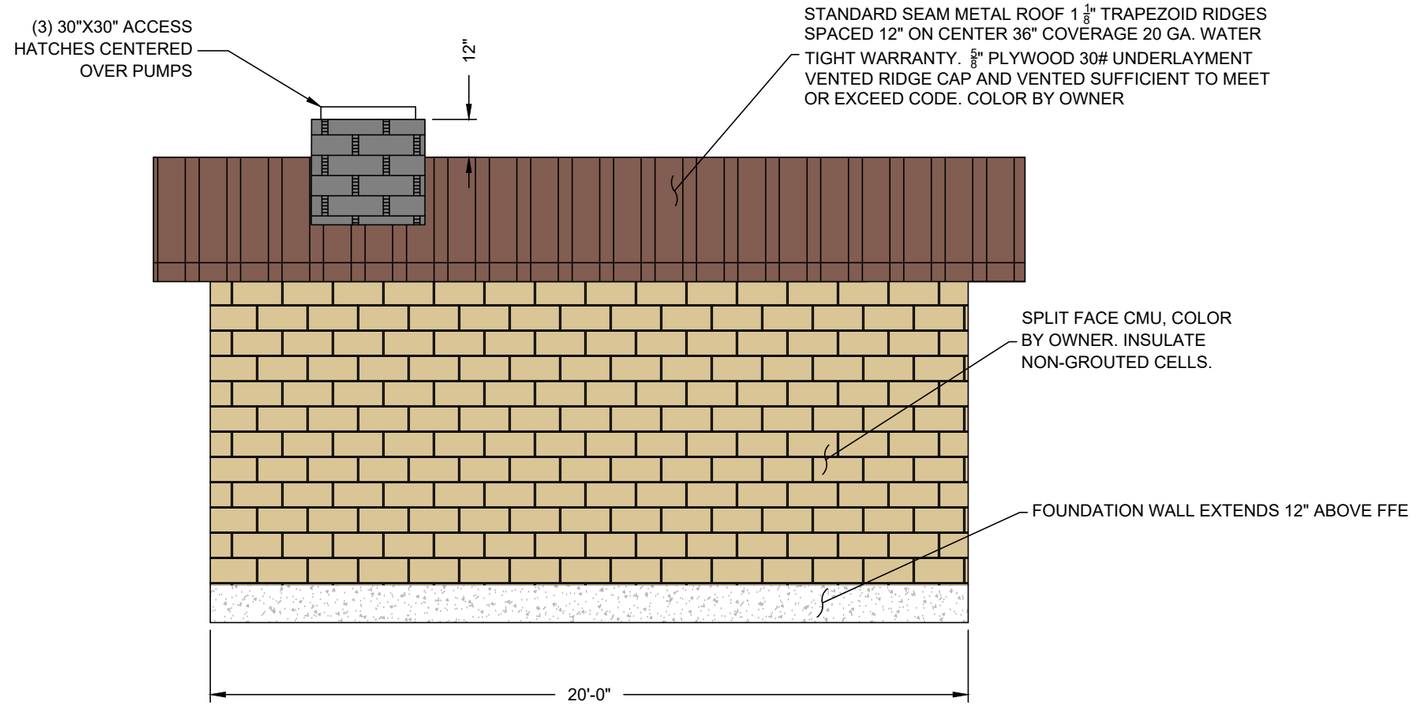


WEST ELEVATION



EAST ELEVATION

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Revisions	
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WOLF CREEK WATER AND SEWER I.D.,
REUSE PROJECT
LOWER PUMP STATION
ELEVATIONS EAST-WEST

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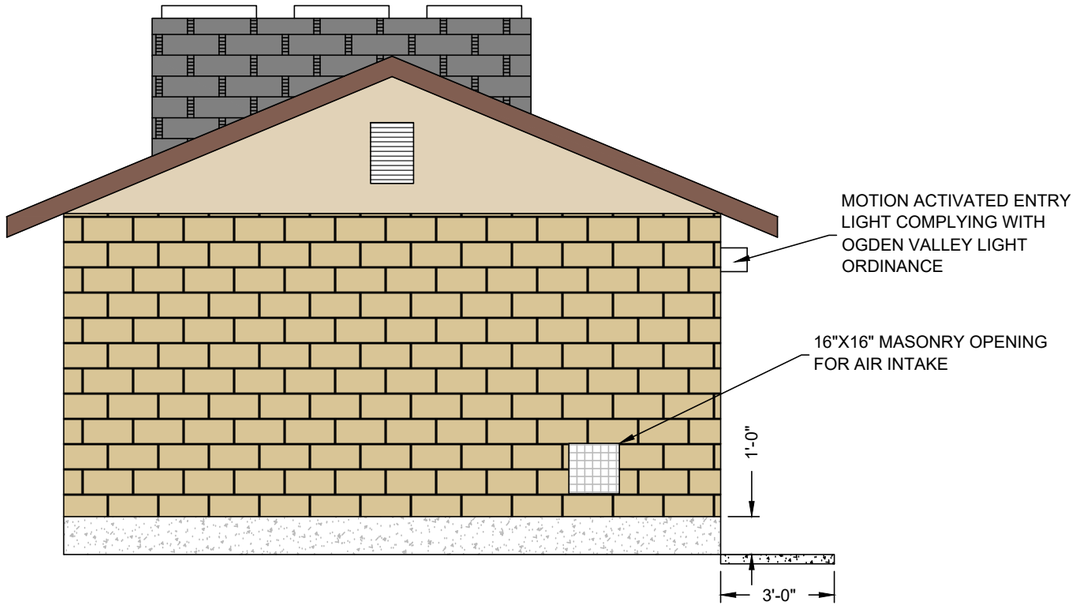
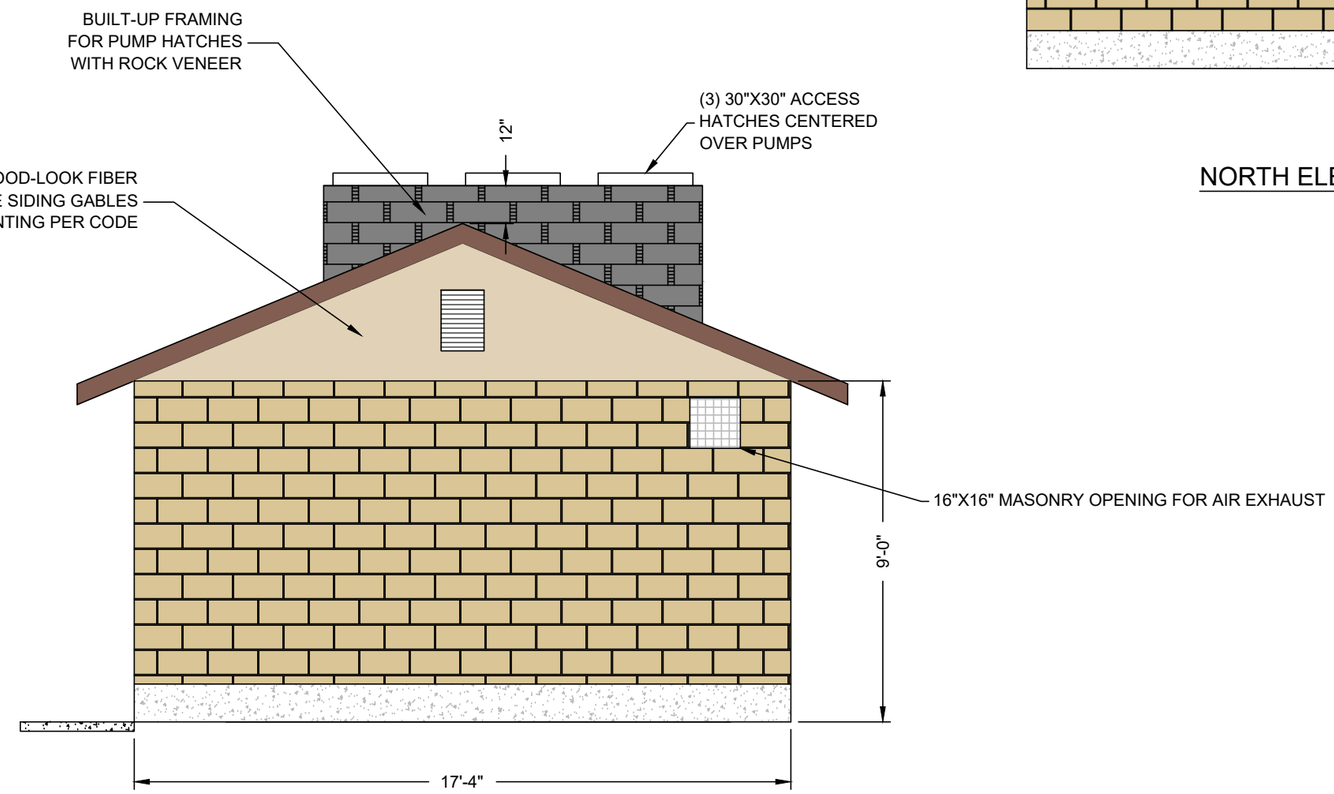
LP-P3



NORTH ELEVATION



SOUTH ELEVATION

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WOLF CREEK WATER AND SEWER I.D.,
REUSE PROJECT
LOWER PUMP STATION
ELEVATIONS NORTH-SOUTH

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LP-P4

DESIGN CRITERIA

1. BUILDING CODE: UTAH CODE, TITLE 15A
    1.1 MODEL BUILDING CODE: 2021 IBC
    1.2 USE AND OCCUPANCY CLASSIFICATION: U
    1.3 RISK CATEGORY: II
2. DEAD LOADS
    2.1 ROOF = 15 PSF (10 PSF TOP CHORD, 5 PSF BOTTOM CHORD)
    2.2 FLOOR = 10 PSF
    2.3 WALLS = 10 PSF (INTERIOR WALLS), 20 PSF (EXTERIOR WALLS)
3. LIVE LOADS
    3.1 ROOF = 20 PSF (OR 300 LB POINT LOAD)
    3.1 FLOOR = 40 PSF (LIVING SPACE), 60 PSF (EXT. DECK)
4. SNOW LOAD
    4.1 ROOF SNOW LOAD = 30 PSF
    4.2 EXPOSURE FACTOR, CE = 1
    4.3 THERMAL FACTOR, CT = 1
    4.4 SNOW IMPORTANCE FACTOR, IS = 1
5. SEISMIC DESIGN PARAMETERS (ASCE 7-16 12.8)
    S_s: 0.907 Sds: 0.725
    S_1: 0.32 S_{d1}: 0.376
    5.1 SEISMIC DESIGN CATEGORY: D
    5.2 SITE CLASS: D
    5.3 RISK CATEGORY: II
    5.4 IMPORTANCE FACTOR, LC: 1.00
    5.5 BASIC SIESMIC-FORCE-RESISTING SYSTEM:
        SPECIAL REINFORCED MASONRY SHEAR WALLS
        5.5.1 RESPONSE MODIFICATION FACTOR: R = 5
        5.5.2 SYSTEM OVERSTRENGTH FACTOR: OMEGA = 2.5
        5.5.3 DEFLECTION AMPLIFICATION FACTOR: CD = 3.5
    5.6 EQUIVALENT LATERAL FORCE PROCEDURE
        5.6.1 SEISMIC RESPONSE COEFFICIENT, Cs: 0.132
        5.6.2 DESIGN BASED SHEAR, V: CsW
6. WIND DESIGN PARAMETERS (ASCE 7-16 6.4)
    6.1 EXPOSURE CATEGORY: 'C'
    6.2 ULTIMATE WIND SPEED: 115 MPH
    6.3 RISK CATEGORY: II
    6.4 COMPONENTS AND CLADDING DESIGN WIND LOADS TO BE PER ASCE 7-16

LICENSED PROFESSIONAL ENGINEER
10/23/23
No. 7877622
DUSTIN JAMES BARNES
STATE OF UTAH

GENERAL NOTES

1. THE STRUCTURAL NOTES AND TYPICAL DETAILS ARE INTENDED TO COMPLIMENT THE PROJECT SPECIFICATIONS AND APPLY WHERE SPECIFIC NOTES AND DETAILS ARE NOT AVAILABLE. TYPICAL OR SIMILAR DETAILS REFER TO THE CONDITIONS ADDRESSED AND ARE NOT NECESSARILY DETAILS LABELED "TYPICAL" OR "SIMILAR" IN THE PLANS AND DOCUMENTS. SPECIFIC NOTES AND DETAILS ON THE DRAWINGS SHALL GOVERN OVER THE STRUCTURAL NOTES AND TYPICAL DETAILS. STRUCTURAL REQUIREMENTS SHOWN ON THE FRAMING PLANS AND STRUCTURAL DETAILS SHALL TAKE PRECEDENCE OVER STRUCTURAL NOTES INDICATED IN ARCHITECTURAL SECTIONS.
2. THESE DRAWINGS (AND, WHERE APPLICABLE, ACCOMPANYING WRITTEN SPECIFICATIONS) ARE THE ONLY CONTRACT DOCUMENTS PROVIDED BY IRONSIDE ENGINEERING FOR THE PROJECT REPRESENTED HEREIN. NOTHING IN ANY DIGITAL MODEL OR DIGITAL FILE RELATED TO THIS PROJECT SHALL BE TAKEN TO SUPERSEDE ANY INFORMATION SHOWN IN THESE DRAWINGS (INCLUDING, BUT NOT LIMITED TO, DIMENSIONS, SIZES, ETC).
3. THE ARCHITECTURAL DRAWINGS ARE THE PRIME CONTRACT DRAWINGS. THE STRUCTURAL DRAWINGS ARE SUPPLEMENTARY TO AND MUST BE USED IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS AND OTHER CONSULTANTS DRAWINGS. ALL OMISSIONS OR CONFLICTS BETWEEN VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT AND STRUCTURAL ENGINEER BEFORE PROCEEDING WITH ANY WORK INVOLVED. IN CASE OF CONFLICT, FOLLOW THE MOST STRINGENT REQUIREMENT AS DIRECTED BY THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER BEFORE PROCEEDING WITH ANY WORK INVOLVED.
4. SEE SPECIFICATIONS FOR REQUIRED SUBMITTALS. SUBMITTALS SHALL BE MADE IN A TIMELY MANNER AS INDICATED IN SPECIFICATIONS. REVIEW OF SUBMITTALS BY IRONSIDE ENGINEERING IS FOR GENERAL COMPLIANCE ONLY AND IS NOT INTENED AS APPROVAL. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL SIZES, DIMENSIONS, AND ELEVATIONS ON SUBMITTALS AS RELATED TO DESIGN DOCUMENTS. PREPARATION OF SHOP DRAWINGS FOR STRUCTURAL ELEMENTS WILL REQUIRE INFORMATION (I.E. DIMENSIONS, ETC.) FOUND IN THE ARCHITECTURAL, STRUCTURAL, AND OTHER CONSULTANTS DRAWINGS.
5. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS, DIMENSIONS, SPANS, ELEVATIONS, COORDINATE ALL MECHANICAL AND/OR OTHER EQUIPMENT, ETC. IF ACTUAL CONDITIONS DIFFER FROM THOSE SHOWN ON CONTRACT DOCUMENTS, CONTRACTOR IS TO IMMEDIATELY NOTIFY ARCHITECT PRIOR TO FABRICATION OR CONSTRUCTION OF ANY AFFECTED ELEMENTS. CONTRACTOR IS TO BECOME FAMILIAR WITH ALL PORTIONS OF THE CONSTRUCTION DOCUMENTS AND SHALL ENSURE THAT ALL SUBCONTRACTORS ARE FAMILIAR WITH THOSE PORTIONS PERTAINING TO THEIR AREA OF WORK INCLUDING THE COORDINATION OF ALL LOCATIONS AND SIZES OF MECHANICAL EQUIPMENT AND OTHER EQUIPMENT.
6. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE TEMPORARY SHORING AND BRACING TO THE STRUCTURE DURING THE SEQUENCE OF CONSTRUCTION. PROVIDING ADEQUATE VERTICAL AND LATERAL SUPPORT FOR ALL STRUCTURAL ELEMENTS UNTIL THE ENTIRE STRUCTURAL SYSTEM IS COMPLETED. DESIGN OF ALL SHORING AND BRACING IS BY OTHERS AT NO ADDITIONAL COST TO THE OWNER.
7. THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST TO THE ARCHITECT FOR ARCHITECT AND/OR ENGINEER APPROVAL BEFORE PROCEEDING WITH ANY CHANGES, MODIFICATIONS, OR SUBSTITUTIONS.
8. DURING AND AFTER CONSTRUCTION, BUILDER AND/OR OWNER SHALL KEEP LOADS ON STRUCTURE WITHIN THE LIMITS OF DESIGN LOADS AS NOTED IN THESE DOCUMENTS.
9. DRAWINGS AND DETAILS HAVE BEEN PREPARED WITH THE INTENT TO VISUALLY REPRESENT INFORMATION PROVIDED IN SCALED FORM; HOWEVER, CONTRACTOR/SUPPLIERS SHOULD NOT SCALE PLANS OR DETAILS FOR DIMENSIONAL INFORMATION.
10. ENGINEER SHALL NOT BE RESPONSIBLE FOR ACTIVITIES UNDER THE CONTROL OF THE CONTRACTOR INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION SITE SAFETY , MEANS, METHODS AND SEQUENCING OF CONSTRUCTION, ETC. ENGINEER SHALL NOT BE RESPONSIBLE FOR FABRICATION, ERECTION AND CONSTRUCTION REQUIREMENTS AS PRESCRIBED BY OSHA OR OTHER REGULATORY AGENCIES REGARDLESS OF INDICATIONS IN THESE DOCUMENTS.
11. NOTICE OF COPYRIGHT: THESE STRUCTURAL DRAWINGS ARE HEREBY COPYRIGHTED BY IRONSIDE ENGINEERING, ALL RIGHTS RESERVED. THESE DOCUMENTS DEFINE A STRUCTURE AND ARE INSTRUMENTS OF SERVICE, FOR ONE USE ONLY. REPRODUCTION AND DISTRIBUTION OF THESE DRAWINGS IS ONLY ALLOWED AS REQUIRED FOR REGULATORY AGENCIES AND FOR CONVEYANCE OF INFORMATION TO PARTIES INVOLVED IN THE CONSTRUCTION OF THIS PROJECT. THESE DOCUMENTS SHALL NOT BE REPRODUCED OR COPIED, IN PART OR WHOLE BY ANY PARTY FOR USE IN PREPARATION OF SHOP DRAWING OF OTHER SUBMITTALS

MASONRY (CMU)

1. ALL MASONRY AND VENEER MATERIALS, CONSTRUCTION AND QUALITY SHALL OBSERVE THE REQUIREMENTS FOUND IN (IBC 2021 2103-2105)
2. HOLLOW CLAY BRICK UNITS (ATLAS BRICK) SHALL BE GRADE 1 BRICK UNITS CONFORMING TO ASTM DESIGNATIONS C652 AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 8250 PSI ON THE NET SECTION (DESIGN STRENGTH, f'm = 3000 PSI).
3. CONCRETE MASONRY UNITS (CMU) ARE TO BE LIGHTWEIGHT, GRADE N UNITS CONFORMING TO ASTM DESIGNATION C90 AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI ON THE NET SECTION (DESIGN STRENGTH, f'm = 1500 PSI).
4. TYPE "S" JOINT MORTAR SHALL CONFORM TO ASTM C270 (SECTION 2103.2 OF THE INTERNATIONAL BUILDING CODE). USE PORTLAND CEMENT, TYPE I OR II.
5. ALL MASONRY SHALL BE REINFORCED WITH HORIZONTAL AND VERTICAL REINFORCEMENT. ALL GROUTED CELLS OR CAVITIES SPECIFIED TO HAVE REINFORCEMENT SHALL BE FULLY GROUTED WITH 2500 PSI GROUT. GROUT SHALL CONFORM TO THE REQUIREMENTS OF ASTM C476. CELLS SHALL BE ALIGNED TO PRESERVE UNOBSTRUCTED VERTICAL CAVITIES OF 2"x3" MINIMUM. WALLS ARE NOT TO BE SOLID GROUTED UNLESS SPECIFICALLY NOTED/REQUIRED ON THE PLANS.
6. GROUT SHALL HAVE 3/8" MAXIMUM SIZE COURSE AGGREGATE. SLUMP FOR GROUT IS TO BE BETWEEN 8 AND 11 INCHES TO PROVIDE THE NEEDED FLOW INTO THE BLOCK CELLS WITHOUT LEAVING VOIDS.
7. MASONRY REINFORCEMENT: UNLESS NOTED OTHERWISE ON THE DRAWINGS, THE MINIMUM REINFORCEMENT IN GROUTED CELLS FOR ALL MASONRY WALLS SHALL BE AS FOLLOWS:
    12" WALLS: #6 @ 32" OC VERTICAL AND
    (2) #4 @ 48" OC HORIZONTAL
    10" WALLS: #5 @ 32" OC VERTICAL AND
    (2) #4 @ 48" OC HORIZONTAL
    8" WALLS: #5 @ 32" OC VERTICAL AND
    (2) #4 @ 48" OC HORIZONTAL

8. ALL HORIZONTAL REINFORCING AT ENDS OF WALLS SHALL TERMINATE WITH A HOOK AROUND VERTICAL REINFORCING.
9. REINFORCEMENT PROTECTION (COVER):
    A. JOINT REINFORCEMENT SHALL HAVE NOT LESS THAN 5/8" MORTAR COVERAGE FROM THE EXPOSED FACE.
    B. OTHER REINFORCEMENT SHALL HAVE A MINIMUM COVERAGE OF ONE BAR DIAMETER OVER ALL THE BARS, BUT NOT LESS THAN 3/4" WHEN MASONRY IS EXPOSED TO WEATHER OR SOIL. MINIMUM COVERAGE SHALL BE 2".
8. CONTINUE VERTICAL REINFORCING BARS IN MASONRY COLUMNS THROUGH FOUNDATION WALL INTO FOOTINGS WITH MATCHING BARS AND DOWELS. ENCLOSE THESE BARS WITH SAME SIZE TIES AT SAME SPACING AS IN MASONRY COLUMN. PROVIDE MATCHING DOWELS FOR VERTICAL BARS IN MASONRY WALLS TO STRUCTURE BELOW.
9. CONTINUE HORIZONTAL REINFORCEMENT IN WALLS THROUGH MASONRY COLUMNS AND PILASTERS. THIS REINFORCEMENT SHALL HAVE MATCHING DOWELS, CORNER BARS, AT CORNERS AND AT INTERSECTIONS OF THE WALLS WITH REQUIRED LAP LENGTHS.
10. UNLESS NOTED OTHERWISE, HOLLOW CELLS AT ALL FOUR (4) SIDES OF OPENINGS IN WALLS SHALL BE GROUTED AND REINFORCED WITH (2) #5, MINIMUM, WITH 2'-8" PROJECTION BEYOND EDGES OF OPENINGS AT EACH END.
11. HORIZONTAL BARS SHALL BE PLACED IN BOND BEAMS FILLED WITH GROUT AT THE TOP OF ALL WALLS AND AT 48" OC MAXIMUM BETWEEN TOP OF WALL AND FOUNDATION. BOND BEAM UNITS AND REINFORCING SHALL CONTINUE UNINTERRUPTED AROUND ALL CORNERS AND WALL INTERSECTIONS. WHERE STRUCTURAL STEEL COLUMNS OR BEAMS INTERRUPT THE CONTINUITY OF A BOND BEAM, DOWELS MATCHING BOND BEAM REINFORCEMENT SHALL BE WELDED TO THE STRUCTURAL STEEL TO PROVIDE CONTINUITY.
12. IN ADDITION LADDER-TYPE REINFORCING CONSISTING OF #9 WIRE FOR EACH FACE SHELL OF EACH WYTHE SHALL BE USED AT 16" OC HORIZONTALLY IN ALL MASONRY WALLS. REINFORCEMENT SHALL BE FOR TOTAL WIDTH OF CAVITY WALLS.
13. ALL VERTICAL REINFORCING BARS SHALL BE DOWELED TO STRUCTURE BELOW WITH BARS OF SAME SIZE AND SPACING. LAP ALL SPLICES IN MASONRY 48 BAR DIAMETERS. PLACE ALL BARS SECURELY PRIOR TO GROUTING.
14. STOP GROUT POURS 1/2" BELOW TOP OF BLOCK UNITS BETWEEN GROUT LIFTS.
15. ALL ANCHOR BOLTS MUST BE PLACED IN GROUTED CELLS.
16. WHERE BEAMS BEAR ON CONCRETE BLOCK WALLS, BLOCK CELLS SHALL BE FILLED WITH GROUT 1'-4" WIDE TO FOUNDATION AND REINFORCE WITH A #5 EACH CELL, UNLESS OTHERWISE SHOWN.
17. AN ADDITIONAL VERTICAL BAR (MATCHING WALL REINFORCEMENT) SHALL BE PLACED AT EACH CORNER, END OF WALL, AND JAMB OF ALL OPENINGS.
18. ALL STEEL JOIST, JOIST GIRDER, AND STEEL BEAM POCKETS IN MASONRY SHALL BE GROUTED SOLID UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
19. NO MASONRY SHALL BE LAID WHEN THE TEMPERATURE OF THE OUTSIDE AIR IS BELOW 40 DEGREES FARENHEIT, UNLESS APPROVED METHODS ARE USED DURING CONSTRUCTION TO PREVENT DAMAGE TO THE MASONRY. SUCH METHODS SHALL INCLUDE PROTECTION OF THE MASONRY FOR A PERIOD OF AT LEAST 48 HOURS.
20. ALL REINFORCING SHALL BE IN PLACE PRIOR TO GROUTING. VERTICAL REINFORCING BARS SHALL BE HELD IN POSITION AT THE TOP, BOTTOM AND AT INTERVALS NOT FARTHER APART THAN 200 BAR DIAMETERS. PROVIDE WIRE TIES AT ALL LAP SPLICES.
21. ALL MASONRY WALLS SHALL HAVE VERTICAL CONTROL JOINTS AT: MAJOR CHANGES IN WALL HEIGHT, AT CHANGES IN WALL THICKNESS, AT BUILDING CONSTRUCTION JOINTS, AND NOT FARTHER APART THAN 40 FEET ELSEWHERE. PROVIDE MATCHING CONTROL JOINTS FOR BRICK VENEER. CONSULT ARCHITECTURAL DRAWINGS FOR LOCATIONS. VERTICAL CELLS EACH SIDE OF CONTROL JOINTS SHALL BE GROUTED AND REINFORCED WITH REBARS TO MATCH VERTICAL REINFORCEMENT USED THROUGHOUT THAT WALL. ONLY HORIZONTAL REBARS IN BOND BEAMS AT FLOORS AND AT ROOF LEVEL SHALL CONTINUE THROUGH CONTROL JOINTS. PROVIDE FULL HEIGHT HARD RUBBER KEY AT JOINT. WHERE JOINT LOCATIONS ARE NOT SHOWN ON THE DRAWINGS THE CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS TO ARCHITECT/ENGINEER FOR REVIEW.

WOOD

1. ALL WOOD MATERIALS, QUALITY AND CONSTRUCTION SHALL OBSERVE THE REQUIREMENTS FOUND IN IBC 2021 CHAPTER 23.
2. ALL DIMENSIONAL LUMBER SHALL BE DF-L#2 GRADE OR BETTER. SAWN LUMBER SHALL BE IDENTIFIED BY THE GRADE MARK OF A LUMBER GRADING OR INSPECTION AGENCY THAT HAS BEEN APPROVED BY AN ACCREDITATION BODY THAT COMPLIES WITH DOC PS 20 OR EQUIVALENT. (IBC 2021 2303.1.1) ALL LUMBER, TIMBER, AND PLYWOOD REQUIRED TO BE PRESERVATIVE TREATED SHALL BEAR THE QUALITY MARK OF AN INSPECTION AGENCY THAT MAINTAINS CONTINUING SUPERVISION, TESTING AND INSPECTION OVER THE QUALITY OF PRESERVATIVE-TREATED WOOD. (IBC 2021 2303.1.9.1) LUMBER GRADES TO BE AS FOLLOWS:

JOISTS:	DOUG FIR #2 OR BETTER
PARALLAMS:	PER MANUFACTURER SPECIFICATIONS
BEAMS/HEADERS:	DOUG FIR #2 OR BETTER
BEARING WALL STUDS:	DOUG FIR #2 OR BETTER
SILL PLATES:	P.T. OR RED WOOD
POSTS:	DOUG FIR #1 OR BETTER
EXTERIOR DECK JOISTS AND BEAMS:	P.T. DOUG FIR OR BETTER
PRE-FAB TRUSSES/JOISTS	PER MANUFACTURER SPECIFICATIONS

3. ALL SHEATHING TO BE APA RATED SHEATHING EXPOSURE 1 AND SHALL CONFORM TO THE REQUIREMENTS FOR THEIR TYPE IN DOC PS 1 OR DOC PS 2. ALL EXTERIOR WALLS ARE REQUIRED TO BE SHEATHED. ALL SHEATHING SHALL HAVE THE FOLLOWING SPAN RATINGS ACCORDING TO (IBC 2021 2304.6-8)

A. FLOOR W/ 12" JOIST/TRUSS SPACING:	24/12
B. FLOOR W/ 16" JOIST/TRUSS SPACING:	32/16
C. FLOOR W/ 24" JOIST/TRUSS SPACING:	48/24
D. ROOF W/ 12" JOIST/TRUSS SPACING:	12/0
E. ROOF W/ 24" JOIST/TRUSS SPACING:	24/0
F. ROOF W/ 48" JOIST/TRUSS SPACING:	48/24
G. WALL W/ 12" STUD SPACING:	16/0
H. WALL W/ 16" STUD SPACING:	24/0

4. LOCATIONS REQUIRING TREATED LUMBER OR REDWOOD: (IBC 2021 2304.12.1)
    4.1 ALL WALL SILL PLATES ON A CONCRETE SLAB THAT ARE IN DIRECT CONTACT WITH EARTH
    4.2 WOOD FRAMING MEMBERS THAT REST ON EXTERIOR FOUNDATION WALLS AND ARE LESS THAN 8" FROM EXPOSED EARTH.
    4.3 WOOD FRAMING MEMBERS AND FURRING STRIPS ATTACHED DIRECTLY TO THE INTERIOR OF EXTERIOR MASONRY OR CONCRETE WALLS BELOW GRADE.
    4.4 WOOD JOISTS THAT ARE CLOSER THAN 18" OR WOOD GIRDERS THAT ARE CLOSER THAN 12" TO THE EXPOSED GROUND IN CRAWL SPACES OR UNEXCAVATED AREAS LOCATED WITHIN THE PERIMETER OF THE BUILDING FOUNDATION.
5. PROVIDE (1) TRIMMER ON EACH SIDE OF ALL OPENINGS LESS THAN 4'-0" WIDE. PROVIDE (2) TRIMMERS MIN. ON EACH SIDE OF ALL OPENINGS 4'-0" WIDE AND GREATER. A MINIMUM OF (2) STUDS SHALL BE PROVIDED AT ALL VERTICAL EDGES OF SHEAR WALLS, GIRDER TRUSSES, AND BEAMS UNLESS OTHERWISE NOTED ON STRUCTURAL PLANS. FOR HEADERS 5'-0" AND LONGER INSTALL (2) ACE STRAPS @ EACH END OR 12" CS16 STRAP. TWO TRIMMERS REQUIRED.
6. OPENINGS SHALL BE FRAMED WITH THE FOLLOWING KING STUDS UNLESS OTHERWISE NOTED ON STRUCTURAL PLANS.
    6.1 OPENINGS UP TO 2'-0" (1) 2X4 OR (1) 2X6 KING STUD AT EACH SIDE OF OPENING
    6.2 OPENINGS UP TO 4'-0" (2) 2X4 OR (1) 2X6 KING STUD AT EACH SIDE OF OPENING
    6.3 OPENINGS UP TO 6'-0" (3) 2X4 OR (2) 2X6 KING STUD AT EACH SIDE OF OPENING
    6.4 OPENINGS UP TO 10'-0" (4) 2X4 OR (2) 2X6 KING STUD AT EACH SIDE OF OPENING

7.NAILS (IBC 2021 2303.6 TABLE 2304.10.1)

PENNYWEIGHT	COMMON	BOX	SINKER
7.1 8d =	0.131" X 2.5"	0.131" X 2.5"	.113" X 2.375"
7.2 10d =	.148" X 3.0"	.0128" X 3.0"	.120" X 2.875"
7.3 12d =	.148" X 3.25"	.128" X 3.25"	.135" X 3.125"
7.4 16d =	.162" X 3.5"	.135" X 3.5"	.148" X 3.25"
7.5 20d =	.192" X 4"	.148" X 4"	.177" X 3.75"
7.6 30d =	.207" X 4.5"	.148" X 4.5"	.192" X 4.25"

8. STAPLES
    8.1. 16 GAGE = 7/16" CROWN X 1 3/4" LONG (IBC 2021 TABLE 2306.3(2))
9. FASTENERS, INCLUDING NUTS AND WASHERS, IN CONTACT WITH PRESERVATIVE-TREATED WOOD SHALL BE OF HOT-DIPPED ZINC-COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE OR COPPER. STAPLES SHALL BE OF STAINLESS STEEL. (IBC 2021 2304.10.5)
10. SHEATHING NAILS OR OTHER APPROVED SHEATHING CONNECTORS SHALL BE DRIVEN SO THAT THEIR HEAD OR CROWN IS FLUSH WITH THE SURFACE OF THE SHEATHING. (IBC 2021 2304.10.2)
11. SILL PLATES OF EXTERIOR WALLS ARE TO BE ANCHORED TO FOUNDATION WITH A MINIMUM OF 1/2" X 10" ANCHOR BOLTS @ 32" O.C. INTERIOR SHEAR WALLS ARE TO BE ANCHORED TO FOUNDATION WITH A MINIMUM OF 5/8" X 12" ANCHOR BOLTS @ 24" O.C. ALL ANCHOR BOLTS SHALL BE EMBEDDED IN AT LEAST 7" OF CONCRETE AND PLACED WITHIN 12" OF SILL PLATE END. IF MULTIPLE PLATES ARE USED, THE ANCHOR BOLTS SHALL EXTEND THROUGH ALL PLATES. THERE SHALL BE A MINIMUM OF 2 ANCHOR BOLTS PER WALL SECTION. 3"X3"X.229" SQUARE WASHERS SHALL BE USED BETWEEN ANCHOR BOLT NUT AND SILL PLATE. (SEE DETAIL PAGES FOR SPACING) (IBC 2021 2308.3.1)
12. ALL BOLT HOLES ARE TO BE DRILLED WITH A BIT NO MORE THAN +1/16" THE SIZE OF THE NOMINAL BOLT DIAMETER.
13. ALL EXTERIOR WALLS AND INTERIOR BEARING WALLS SHALL HAVE FULL BEARING ON A PLATE OR SILL. PLATES OR SILLS SHALL NOT BE LESS THAN 2 INCHES IN THICKNESS AND HAVE A WIDTH NOT LESS THAN THE WIDTH OF THE WALL STUDS. ALL EXTERIOR AND INTERIOR BEARING WALLS SHALL BE CAPPED WITH 2X DOUBLE TOP PLATES INSTALLED TO PROVIDE OVERLAPPING AT CORNERS AND INTERSECTIONS WITH OTHER PARTITIONS. (IBC 2021 2308.5.3) ALL NONBEARING WALLS ARE TO BE CAPPED WITH NO LESS THAN A SINGLE TOP PLATE. ALL DOUBLE TOP PLATES SHALL BE NAILED WITH 16d NAILS @ 16" O.C. (A MINIMUM OF 8-16d NAILS SHALL BE PLACED ON EACH SIDE OF JOINT UNLESS OTHERWISE NOTED).
14. IN EXTERIOR WALL AND BEARING PARTITIONS, WOOD STUDS ARE PERMITTED TO BE CUT OR NOTCHED TO A DEPTH NOT EXCEEDING 25 PERCENT OF THE WIDTH OF THE STUD. IN NONBEARING PARTITIONS, THE CUTTING AND NOTCHING OF STUDS TO A DEPTH NOT GREATER THAN 40 PERCENT OF THE WIDTH OF THE STUD IS ACCEPTABLE. (IBC 2021 2308.5.9)
15. BORED HOLES NOT GREATER THAN 40 PERCENT OF THE STUD WIDTH ARE PERMITTED TO BE BORED IN ANY WOOD STUD. THE EDGE OF A BORED HOLE SHALL NOT BE NEARER THAN 5/8" TO THE EDGE OF THE STUD. BORED HOLES SHALL NOT BE LOCATED AT THE SAME SECTION OF STUD AS A CUT OR NOTCH. (IBC 2021 2308.5.10)
16. ALL GLUED-LAMINATED TIMBERS SHALL BE MANUFACTURED AND IDENTIFIED IN ACCORDANCE WITH ANSI/APA PRG 320. (IBC 2021 2303.1.3)
17. ALL PREFABRICATED I-JOISTS SHALL OBSERVE THE STRUCTURAL CAPACITIES AND DESIGN PROVISIONS IN ACCORDANCE WITH ASTM D5055. (IBC 2021 2303.1.2)
18. BLOCKING BETWEEN ENGINEERED TRUSSES AND JOISTS IS TO BE INSTALLED AS DESIGNED BY THE MANUFACTURER.
19. THE ENDS OF EACH JOIST SHALL HAVE NOT LESS THAN 1.5" OF BEARING ON WOOD OR METAL, OR NOT LESS THAN 3" ON MASONRY. (IBC 2021 2308.4.2.2)
20. WOOD COLUMNS AND POSTS SHALL BE FRAMED TO PROVIDE FULL END BEARING. COLUMNS AND POSTS SHALL BE AS WIDE AS THE MEMBERS THEY SUPPORT AND PROVIDE CONTINUOUS OR SUPERIMPOSED BEARING THROUGHOUT ALL STORIES TO THE FOUNDATION. COLUMNS AND POSTS ARE TO BE FASTENED AT EACH LEVER TO RESIST LATERAL AND NET INDUCED UPLIFT FORCES. (IBC 2021 2304.10.7)

SOIL AND FOUNDATIONS

1. DESIGN VALUES BASED ON ASSUMED VALUES
    A) ALLOWABLE SOIL BEARING PRESSURE - 1500 PSF
    B) COEFFICIENT OF FRICTION - .25
    C) PASSIVE EARTH PRESSURE - 150 PSF/FT OF DEPTH
    D) FROST DEPTH TO BE 30" FOR EXTERIOR FOOTINGS, OR LOCAL FROST DEPTH AND GROUND LEVEL FOR INTERIOR FOOTINGS
2. THE BUILDING PAD AREA SHALL BE STRIPPED OF ALL FROZEN SOILS, DEBRIS, VEGETATION AND TOPSOIL. ALL FILL SOILS AND ANY REMAINING LOOSE NATURAL SOILS SHALL BE EXCAVATED TO EXPOSE SUITABLE NATURAL SOILS.
3. PROOF ROLL THE ENTIRE BUILDING PAD AREA TO LOCATE AND REMOVE ALL SOFT SPOTS, REPLACE WITH COMPACTED STRUCTURAL FILL.
4. PLACE ALL FOOTINGS AND FOUNDATIONS ON UNDISTURBED NATURAL SOIL, COMPACTED FILL MATERIAL OF CLSM. COMPACTED FILL MATERIAL AND CLSM SHALL BE PLACED IN ACCORDANCE WITH IBC 2021 1804.5 AND IBC 2021 1804.6, RESPECTIVELY. (IBC 2021 1807.2)
5. THE TOP SURFACE OF FOOTINGS SHALL BE LEVEL. THE BOTTOM SURFACE OF FOOTINGS SHALL BE PERMITTED TO HAVE A SLOPE OF MAXIMUM 10-PERCENT. FOOTINGS SHALL BE STEPPED WHERE IT IS NECESSARY TO CHANGE THE ELEVATION OF THE TOP SURFACE OF THE FOOTING OR WHERE THE SURFACE OF THE GROUND HAS A SLOPE OF MORE THAN 10-PERCENT. (IBC 2021 1809.3)
6. ALL WALLS (EXCEPT CANTILEVERED RETAINING WALLS) SHALL BE ADEQUATELY BRACED AGAINST LATERAL MOVEMENT (INSTALLATION AND ANCHORAGE OF FLOOR SYSTEM TO FOUNDATION) PRIOR TO BACKFILLING. DESIGN AND ERECTION OF BRACING/SHORING IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. BRACING SHALL REMAIN IN PLACE UNTIL SUPPORTING STRUCTURAL ELEMENTS ARE IN PLACE AND HAVE ATTAINED FULL STRENGTH.
7. UNLESS NOTED OTHERWISE, ALL FOOTINGS AT COLUMNS ARE TO BE CENTERED BELOW COLUMNS.
8. UNLESS NOTED OTHERWISE, ALL FOOTINGS SHALL HAVE VERTICAL FACES FORMED WITH STANDARD FORMING MATERIALS (WOOD, METAL, ETC.). WITH PRIOR APPROVAL OF ARCHITECT AND ENGINEER, CONCRETE FOR FOOTINGS CAN BE PLACED IN EXCAVATED "SOIL" FORMS PROVIDED THAT THE DIMENSIONS ARE INCREASED 3" ON EACH SIDE.
9. FLOORS OF BASEMENTS SHALL BE PLACED OVER A FLOOR BASE COURSE NOT LESS THAN 4 INCHES IN THICKNESS THAT CONSISTS OF GRAVEL OR CRUSHED STONE CONTAINING NOT MORE THAN 10 PERCENT OF MATERIAL THAT PASSES THROUGH A NO. 4 SIEVE. (4.75 mm) (IBC 2021 1805.4.1)

STRUCTURAL STEEL

1. THE DESIGN, FABRICATION , AND ERECTION OF ALL STRUCTURAL STEEL ELEMENTS SHALL COMPLY TO (IBC 2021 2205).
2. STRUCTURAL SHAPES

2.1:	W:	fy = 50 KSI (ASTM A992)
2.2:	HSS SQUARE/RECT.	fy = 46 KSI (ASTM A500 Gr. B)
2.3:	HSS ROUND	fy = 42 KSI (ASTM A500 Gr. B)
2.4:	PIPE	fy = 35 KSI (ASTM A53 Gr. B)
2.5:	M,S,C,MC, L	fy = 36 KSI (ASTM A36)
3.	PLATES AND BARS	fy = 36 KSI (ASTM A36)
4.	METAL DECKING	fy = 36 KSI (ASTM A611)

    4.1 ALL DECK SHALL BE CONTINUOUS OVER 3 SPANS, WHERE NOT POSSIBLE, THE DECK SUPPLIER/ CONTRACTOR SHALL PROVIDE HEAVIER GAUGE DECK AS NEEDED TO PROVIDE THE EQUIVALENT PERFORMANCE OF THE SPECIFIED DECK WIT 3 SPAN CONTINUITY.
    4.2 SEE TYPICAL DETAILS FOR SUPPORT OF DECK AT OPENINGS
    4.3 UNLESS NOTED OTHERWISE, METAL ROOF DECK SHALL BE GALVANIZED/PAINTED STEEL DECK. PAINTED STEEL DECK SHALL CONFORM TO ASTM A1008 AND GALVANIZED STEEL DECK SHALL CONFORM TO A653 GRADE G60.
5. STRUCTURAL FASTENERS
    5.1 HIGH-STRENGTH BOLTS: fu = 105-150 KSI (ASTM A325, A490)
    5.2 COMMON BOLTS: fu = 60 KSI (ASTM A3007 Gr. A)
        5.2.1 UNLESS NOTED OTHERWISE, ALL BOLTING IS CLASSIFIED AS NON-SLIP CRITICAL BEARING TYPE CONNECTIONS WITH THREADS INCLUDED IN SHEAR PLANE. TIGHTEN BOLTS TO A SNUG TIGHT CONDITION, WITH ALL PLIES OF THE JOINT IN FIRM CONTACT.
        5.2.2 AT OVERSIZED AND SLOTTED HOLES, WASHERS SHALL CONFORM TO ASTM F436 AND COMPLETELY COVER HOLE.
    5.3 THREADED RODS: fy = 36 KSI (ASTM A36)
    5.4 ANCHOR RODS: fy = 36 KSI (ASTM F1554 Gr. 36)
6. WELDING
    6.1 ALL WELDING AND CUTTING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS IN ACCORDANCE WITH ANSI/AWS D1.1.
    6.2 E-60XX ELECTRODES MAY BE USED FOR WELDING STEEL DECKS.
    6.3 ALL INTERSECTING STEEL SHAPES WHICH ARE NOT CONNECTED WITH BOLTS SHALL BE WELDED TOGETHER WITH A FILLET WELD ALL AROUND UNLESS NOTED OTHERWISE. WHERE WELD SIZES ARE NOT SHOWN USE THE FOLLOWING:
        6.3.1 WHERE ALL CONNECTED PARTS ARE THICKER THAN 1/4", WELD IS 1/16" LESS THAN THE THICKNESS OF THE THINNEST PART.
        6.3.2 WHERE ANY OF THE CONNECTED PARTS ARE LESS THAN 1/4" THICK, WELD IS SAME AS THICKNESS OF THE THINNEST PART.

OPEN WEB JOISTS AND PREFABRICATED METAL PLATE WOOD TRUSSES

1. ALL WOOD TRUSS SHALL BE DESIGNED IN ACCORDANCE WITH IBC 2021 2303.4.
    1.1 ALL JOISTS AND TRUSSES SHALL COMPLY TO THE STRUCTURAL SPECIFICATIONS AND DESIGN PROVIDED BY ENGINEER OF RECORD.
2. THE TRUSS DESIGNER SHALL SUBMIT A TRUSS PACKAGE, TO THE ENGINEER OF RECORD, THAT INCLUDES THE FOLLOWING:
    2.1 A TRUSS PLACEMENT DIAGRAM IDENTIFYING PROPOSED LOCATION OF EACH TRUSS
    2.2 INDIVIDUAL TRUSS DESIGN DRAWINGS
    2.3 INDIVIDUAL TRUSS MEMBER RESTRAINT/BRACING METHOD
3. TRUSS PACKAGE PROVIDED BY TRUSS DESIGNER IS TO BE APPROVED BY ENGINEER OF RECORD.
4. TRUSS MEMBERS AND COMPONENTS SHALL NOT BE CUT, NOTCHED, DRILL, SPLICED OR OTHERWISE ALTERED IN ANY WAY WITHOUT WRITTEN CONCURRENCE AND APPROVAL OF A REGISTERED DESIGN PROFESSIONAL. ALTERATIONS RESULTING IN THE ADDITION OF LOADS TO ANY MEMBER (FOR EXAMPLE, HVAC EQUIPMENT, PIPING, ADDITION ROOFING OR INSULATION) SHALL NOT BE PERMITTED WITHOUT VERIFICATION THAT THE TRUSS IS CAPABLE OF SUPPORTING SUCH ADDITION LOADING. (IBC 2021 2303.4.5)

SPECIAL INSPECTION

1. THE FOLLOWING SPECIAL INSPECTIONS ARE REQUIRED BY THE CURRENT EDITION OF THE IBC:
    EXPANSION, ADHESIVE, AND POST INSTALLED ANCHORS
    SOILS (IBC 1704.7 AND TABLE 1704.7)
        SITE PREPARATION - PERIODIC
        SOIL COMPACTION - CONTINUOUS
        STRUCTURAL FILL SUITABILITY AND PLACEMENT - PERIODIC DURING PLACEMENT
        OBSERVATION OF SUB GRADES - PERIODIC
        ADDITIONAL REQUIREMENTS IN GEOTECHNICAL REPORT
    STRUCTURAL WOOD
        PERIODIC SPECIAL INSPECTION: REQUIRED FOR ALL NAILING, BOLTING, ANCHORING, AND OTHER FASTENING OF SHEAR WALLS, DIAPHRAGMS, DRAG STRUTS, AND HOLD DOWNS WHERE FASTENER SPACING IS 4" O.C. OR CLOSER.

Date: 10/20/2023
Scale: 1/8" = 1'-0"
Designed: JDL
Drafted: JDL
Checked: JDL

Revisions

Date	Description

WOLF CREEK WATER AND SEWER ID.
REUSE PROJECT
LOWER PUMP STATION
GENERAL STRUCTURAL NOTES

IRONSIDE ENGINEERING
787 N 1200 W
OGDEN, UT 84404
(801) 923-3780

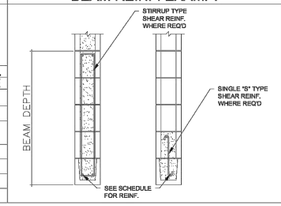
DESIGNED IN CONJUNCTION WITH GARDNER ENGINEERING
1580 W 2100S, WEST HAVEN, UT 84401
P 801.476.0202 F 801.476.0066

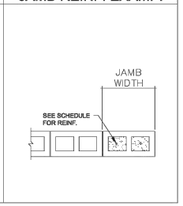
LPSN

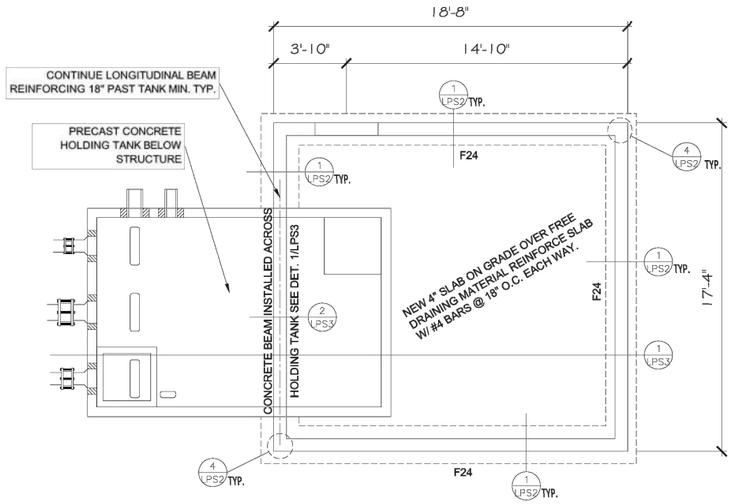
FOOTING SCHEDULE				
MARK	WIDTH	LENGTH	THICKNESS	REINFORCEMENT
F24	24"	CONT	10"	(3) #4 BARS CONT
F30	30"	CONT	12"	(3) #4 BARS CONT
F36	36"	CONT	12"	(4) #4 BARS CONT
S24	24"	24"	10"	(2) #4 BARS BOTH DIRECTIONS
S30	30"	30"	10"	(3) #4 BARS BOTH DIRECTIONS
S36	36"	36"	12"	(4) #4 BARS BOTH DIRECTIONS
S42	42"	42"	12"	(5) #4 BARS BOTH DIRECTIONS
S48	48"	48"	12"	(6) #4 BARS BOTH DIRECTIONS
S60	60"	60"	12"	(7) #4 BARS BOTH DIRECTIONS

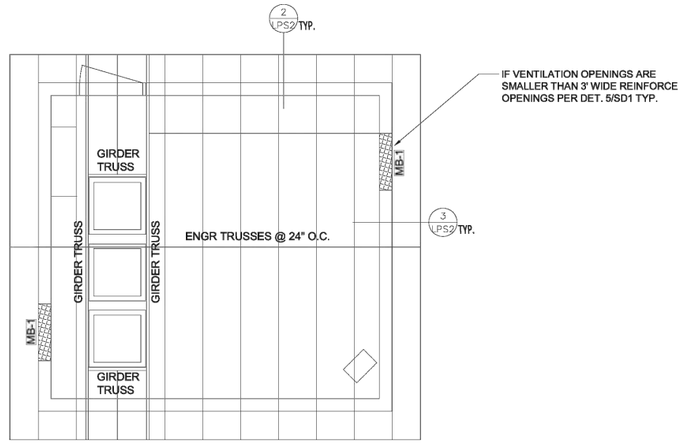
MASONRY BEAM/JAMB SCHEDULE												BEAM REINF. EXAMP.	JAMB REINF. EXAMP.
BEAM CALLOUT	LINTEL DEPTH	WALL WIDTH	REINF AT BOT.		REINF AT TOP.		VERTICAL SHEAR REINF.			JAMB REINF. (SEE EXAMPLE)			
			#	SIZE	#	SIZE	TYPE	SIZE	SPACING	WIDTH.	REINF./CELL QTY	REINF./CELL SIZE	
MB-1	16"	8"	(2)	#4	NA	NA	NA	NA	NA	8	1	#5	

NOTES:
1. BOTTOM REBAR TO BE PLACED 3" FROM BOTTOM FACE OF BEAM. WHEN PRESENT TOP REINFORCING IS TO ALLOW ENOUGH ROOM FOR SHEAR REINFORCING TO RUN OVER TOP AND HAVE AT LEAST 1" OF COVER
2. BOTTOM REINFORCING TO RUN PAST JAMB A MIN. OF 24" FOR #4 BARS AND 36" FOR #5 BARS
3. BEAM TO BE SOLID GROUTED THROUGH THE FULL DEPTH AND LENGTH
4. THIS TABLE ASSUMES F'M OF 1500 PSI
5. JAMBS AT EITHER SIDE TO BE REINFORCED PER SCHEDULE AND SOLID GROUTED









FOOTING AND FOUNDATION

FOUNDATION SCHEDULE															
MAXIMUM WALL HEIGHT FROM T.O. FOOTING	TOP EDGE SUPPORT	MIN. WALL WIDTH	VERTICAL WALL REINF.		HORIZONTAL WALL REINF.		ADDITIONAL REINF. FOR OPENINGS						MAX LINTEL LENGTH	MIN. LINTEL DEPTH	ADDITIONAL FTG. SIZE AND REINF.		FOUNDATION BOLTS(MIN. 7" EMBEDMENT)
							ABOVE		SIDES		BELOW						
			SIZE	SPACING	SIZE	SPACING	QTY	SIZE	QTY	SIZE	QTY	SIZE			WIDTH	LENGTH	
2'-0" TO 5'-0"	NONE	8"	#4	16" O.C.	#4	18" O.C.	2	#4	1	#4	1	#4	2'	6"	SEE FTG. SCHED.		$\frac{5}{8}$" X 10" @ 32" O.C.

NOTES:
1. REBAR TO BE PLACED IN THE CENTER OF THE WALL AND EXTEND FROM THE FOOTING TO WITHIN 3" OF THE TOP OF THE WALL
2. #4 FOOTING DOWELS SHALL EXTEND MINIMUM OF 24" INTO FOUNDATION WALL AND MATCH FOUNDATION WALL VERTICAL STEEL SPACING
3. LOCATE (1) HORIZONTAL REBAR IN THE TOP 3" AND (1) HORIZONTAL REBAR IN THE BOTTOM 3". REMAINING HORIZONTAL REBAR TO BE SPACED EQUALLY
4. REBAR SHALL BE PLACED WITHIN 2" OF THE OPENINGS AND EXTEND 24" BEYOND EDGE OF OPENING.
5. ALL FOUNDATION STEPS TO BE MINIMUM 24"
6. USE 3x3x.229 WASHERS. ADD CUT WASHER IF SLOTTED 3x3 WASHER USED
7. FOUNDATION BOLTS MAY BE REPLACED WITH #4 BARS @ 12" O.C. EXTENDING 24" OUT OF FOUNDATION WALL AND CAST INTO SUSPENDED SLAB/PORCH CAP
8. LARGER FOOTINGS SPECIFIED ON 5'-1" TO 7'-0" WALL MAY BE REDUCED TO SIZE SPECIFIED ON FOOTING SCHEDULE, AND VERTICAL REBAR SPACING OF 24" O.C. FOR FOUNDATION WALLS MAY BE USED PROVIDED THAT THE FOLLOWING CONDITIONS ARE MET:
   a. 5'-1" TO 7'-0" DOES NOT EXCEED 10'-0" LONG
   b. UNBALANCED BACKFILL DOES NOT EXCEED 48"
9. F'c -3000 PSI PER IRC 402.2 AND 60,000 PSI REINFORCING STEEL
10. THIS TABLE ASSUMES 1500 PSF BEARING CAPACITY. 38 PSF EQUIVALENT FLUID PRESSURE AND A GLOBALLY STABLE SITE.

ROOF FRAMING

TRUSS NOTES

1. ROOF TRUSSES SHALL BE DESIGNED TO MEET THE LOADS SPECIFIED IN THE DESIGN CRITERIA. ALL TRIBUTARY, DRIFT, UNBALANCED SNOW, MECHANICAL, ETC., LOADS SHALL BE CONSIDERED IN THE DESIGN PER IRC REQUIREMENTS.
2. THE CONTRACTOR SHALL BLOCK BETWEEN TRUSSES AND CONNECT EACH TRUSS TO WALL TOP PLATE WITH SIMPSON H1 OR H2.5 CONNECTORS.
3. ANY CHANGES TO THE TRUSS CONFIGURATION SHOWN ON THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION.
4. ALL ENGINEERING TRUSS SUBMITTALS SHALL BE STAMPED BY AN ENGINEER LICENSED IN THE STATE OF UTAH.

ROOF SHEATHING NOTES

1. SHEATHING SHALL BE 7/16", 24/16, APA RATED SHEATHING. NAIL WITH 8D'S @6" O.C. 3/8" FROM EDGE OF PANEL AT ALL PANEL ENDS, SUPPORTED EDGES, SHEAR WALL TOPS, AND ALL BLOCKING. NAIL @ 12" O.C. ALONG INTERMEDIATE FRAMING MEMBERS.
2. LAY SHEATHING WITH FACE GRAIN AT RIGHT ANGLES TO FRAMING WITH STAGGERED END JOINTS.
3. FOR ROOF SNOW LOADS OVER 40 PSF USE 5/8" SHEATHING WITH 10D NAILS @ 6" O.C.

STRUCTURAL PLAN SHEET

SCALE - $\frac{1}{8}$" =1'-0"

Revisions

Date	Description

Date: 10/20/2023
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Designed: JDL
Drafted: JDL
Checked: JDL

WOLF CREEK WATER AND SEWER ID.

REUSE PROJECT

LOWER PUMP STATION

STRUCTURAL PLAN SHEET

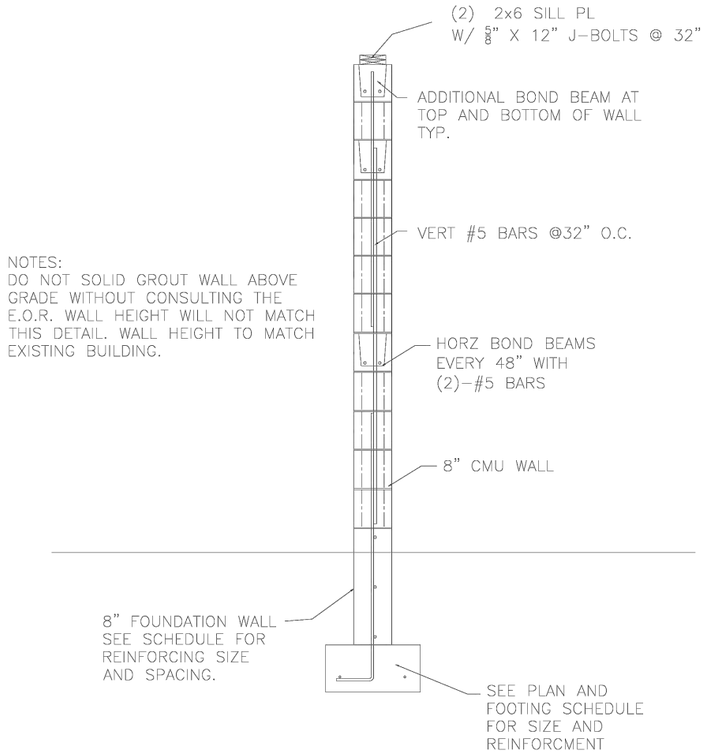
787 N 1200 W
OGDEN, UT 84404
(801) 923-3780

IRONSIDE ENGINEERING

DESIGNED IN CONJUNCTION WITH GARDNER ENGINEERING

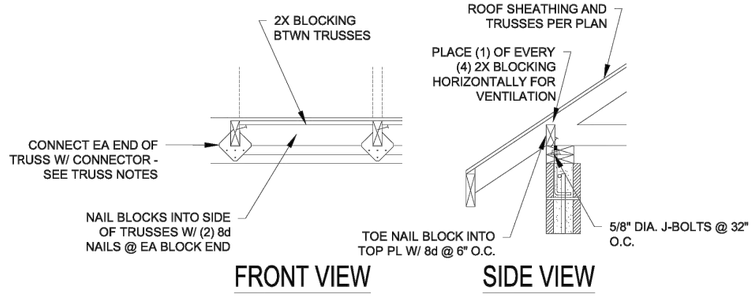
1580 W 2100S, WEST HAVEN, UT 84401
P 801.476.0202 F 801.476.0066

LPS1



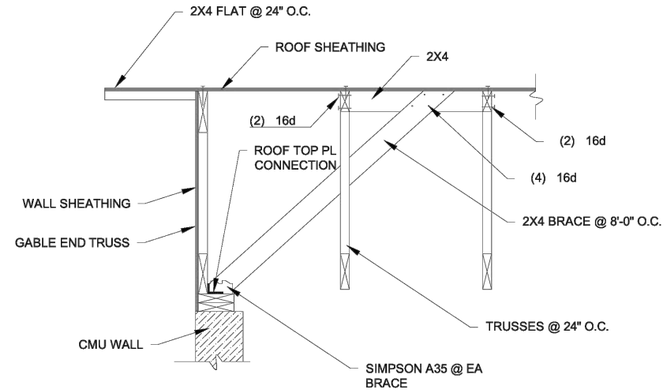
1 CMU WALL DETAIL: TYPICAL CROSS SECTION

N.T.S. TYPICAL DETAIL - USE WHEN APPLIES



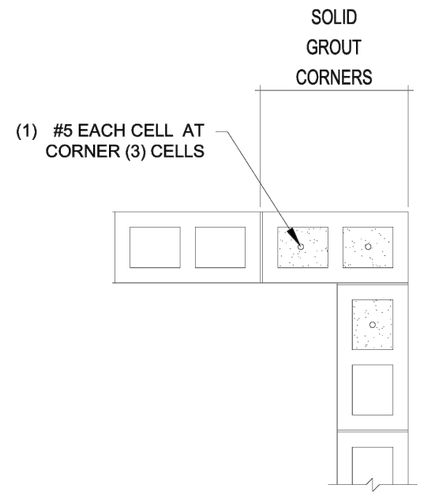
2 TRUSS BLOCKING

N.T.S. TYPICAL DETAIL - USE WHEN APPLIES



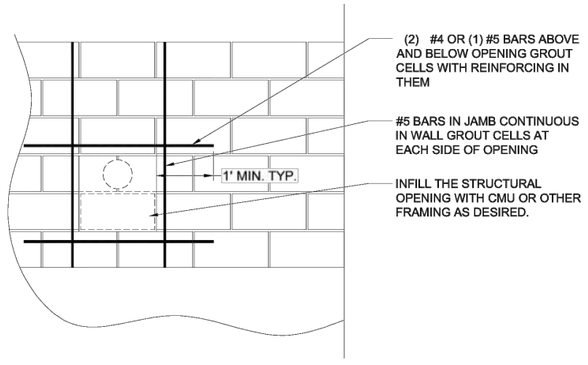
3 GABLE END BRACING

N.T.S. TYPICAL DETAIL - USE WHEN APPLIES



4 MASONRY CORNER REINFORCING

N.T.S. USE WHEN NOTED



5 MECHANICAL OPENING REINFORCING

N.T.S. USE WHEN NOTED

LICENSED PROFESSIONAL ENGINEER
10/23/23
No. 7877622
DUSTIN JAMES BARNES
STATE OF UTAH

STRUCTURAL DETAILS

SCALE - 1/8" =1'-0"

Revisions

Date	Description

Date: 10/20/2023
Scale: 1/8" = 1'-0"
Designed: JDL
Drafted: JDL
Checked: JDL

WOLF CREEK WATER AND SEWER ID.

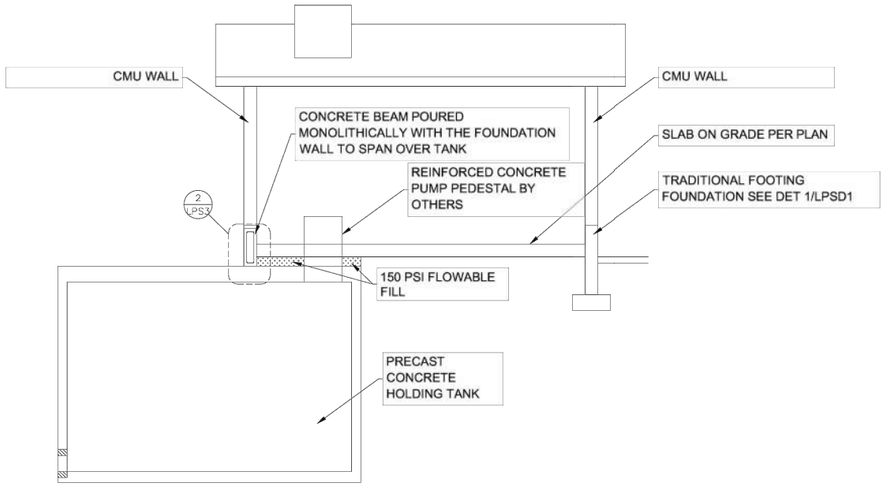
REUSE PROJECT

LOWER PUMP STATION

STRUCTURAL DETAIL SHEET

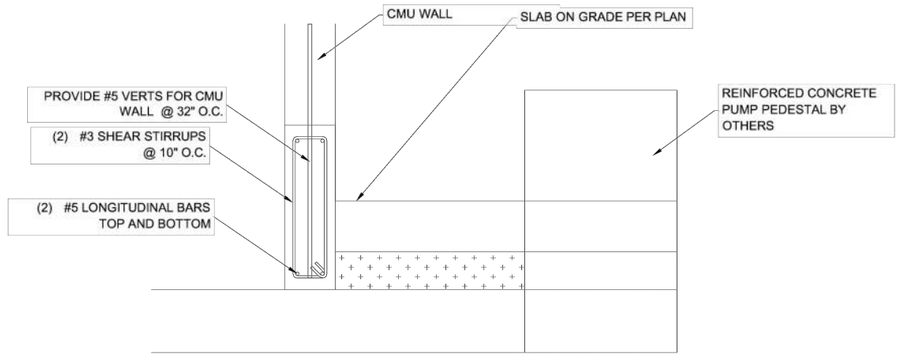
IRONSIDE ENGINEERING
787 N 1200 W
OGDEN, UT 84404
(801) 923-3780
1580 W 2100S, WEST HAVEN UT 84401
P 801.476.0202 F 801.476.0066
DESIGNED IN CONJUNCTION WITH GARDNER ENGINEERING

LPS2



1 PUMP HOUSE & HOLDING TANK CROSS SECTION

N.T.S.



2 CONCRETE BEAM DETAIL AT HOLDING TANK

N.T.S.

STRUCTURAL DETAILS

SCALE - $\frac{1}{8}$" =1'-0"

LICENSED PROFESSIONAL ENGINEER
10/23/23
No. 7877622
DUSTIN JAMES BARNES
STATE OF UTAH

Revisions

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WOLF CREEK WATER AND SEWER ID.
REUSE PROJECT
LOWER PUMP STATION
STRUCTURAL DETAIL SHEET

IRONSIDE ENGINEERING
787 N 1200 W
OGDEN, UT 84404
(801) 923-3780
1580 W 2100S, WEST HAVEN, UT 84401
P 801.476.0202 F 801.476.0066
DESIGNED IN CONJUNCTION WITH GARDNER ENGINEERING

LPS3

UTILITY NOTES:

1. WHERE NOTED, POWER COMPANY IS ROCKY MOUNTAIN POWER - WORK ORDER #7070234, JUAN GOMEZ, 385-466-1374 JUAN.GOMEZ@PACIFICORP.COM

2. WHERE NOTED COMMUNICATIONS UTILITIES INCLUDE:
LUMEN/CENTURYLINK, 385-479-7357, LARRY.BUHLER@LUMEN.COM
UTAH BROADBAND, 385-497-2070, BLUESTAKES@UTAHBROADBAND.COM

ELECTRICAL SYMBOLS

SYMBOL	EXPLANATION
———	BRANCH CIRCUIT CONCEALED IN CEILING OR WALL
– — — –	BRANCH CIRCUIT CONCEALED IN GROUND OR FLOOR
A-1,3	BRANCH CIRCUIT HOMERUNS TO PANEL
CH 1	MECHANICAL EQUIPMENT SYMBOL
1	KEYED NOTE REFERENCE
42X	FEEDER TAG (SEE FEEDER SCHEDULE)
30	ROCKY MOUNTAIN POWER EXHIBIT LOCATION (SEE PACOFICORP WORK ORDER EXHIBITS)
	LIGHTING AND POWER PANELBOARD
NON-FUSED / FUSED	DISCONNECT SWITCH
NON-FUSED / FUSED	DISCONNECT SWITCH WITH MOTOR STARTER
VFD	VARIABLE FREQUENCY DRIVE
©	CONDUIT STUB
Ⓙ	JUNCTION BOX
	DUPLEX RECEPTACLE OUTLET WP — MODIFIER A-3 — PANEL SPACE ASSIGNMENT REF — EQUIPMENT DESIGNATION
WP	WEATHERPROOF COVER & LISTED WEATHER RESISTANT DEVICE
GFCI	PROTECTED BY FAULT CIRCUIT INTERRUPTER
CR	CORROSION RESISTANT
DW	DISHWASHER
Ⓣ	THERMOSTAT OUTLET
$	SWITCH (SUBSCRIPT AS INDICATED BELOW)
2	TWO POLE SWITCH
M	MANUAL STARTER WITH THERMAL OVERLOAD
OC	OCCUPANCY SENSOR SWITCH
F1	FIXTURE TYPE SYMBOL
	LINEAR FIXTURE (TYPICAL)
	WALL PACK
	STRIP LIGHT
▽	COMPUTER DATA OUTLET

NOTE: ALL SYMBOLS MAY NOT BE USED.

GENERAL NOTES:

1. REVIEW AND COORDINATE WITH ARCHITECTURAL, CIVIL, STRUCTURAL, MECHANICAL, PLUMBING, AND OTHER DRAWINGS PRIOR TO BID.

2. NOTIFY AND COOPERATE WITH THE MECHANICAL CONTRACTOR SUCH THAT NO DUCTS, PIPING, OR EQUIPMENT FOREIGN TO THE OPERATION OF THE ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED IN, ENTER, OR PASS THROUGH ELECTRICAL ROOMS OR SPACES, OR ABOVE OR BELOW ELECTRICAL EQUIPMENT IN OTHER AREAS.

3. VERIFY EXACT LOCATION(S) OF ALL EQUIPMENT TO BE FURNISHED BY OTHERS PRIOR TO ROUGH-IN.

4. PERFORM ALL WORK IN A WORKMANLIKE MANNER, PER INDUSTRY STANDARD, AND TO THE SATISFACTION OF THE ARCHITECT AND ENGINEER.

5. WORK, MATERIALS, AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL, STATE AND NATIONAL CODES, STANDARDS AND ORDINANCES.

6. VISIT THE PROJECT SITE DURING THE BIDDING PROCESS TO DETERMINE THE TOTAL SCOPE OF THE PROJECT.

7. DO NOT PENETRATE STRUCTURAL ELEMENTS OF FLOORS, WALLS, CEILINGS, ROOF, ETC.

8. FINAL CONNECTIONS TO EQUIPMENT SHALL BE MADE AS PER MANUFACTURERS WRITTEN INSTRUCTIONS AND APPROVED WIRING DIAGRAMS AND DETAILS. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROVIDE ALL MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED. THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENTS, ETC,) OF EQUIPMENT FURNISHED UNDER OTHER DIVISIONS WITH APPROVED SHOP DRAWINGS PRIOR TO BEGINNING ROUGH-IN.

11. USE EPOXY ANCHORS TO SUPPORT THE ELECTRICAL EQUIPMENT. EXPANSION ANCHOR BOLTS ARE NOT ACCEPTED.

12. PROVIDE BLANK COVER PLATES TO MATCH THE OTHER COVER PLATES FOR ALL JUNCTION BOXES WHERE DEVICES HAVE NOT BEEN INSTALLED AT THE COMPLETION OF WORK.

13. ALL MATERIALS USED IN THIS INSTALLATION SHALL BE U.L. APPROVED AND NEW.

14. TERMINATE THE ELECTRICAL CONNECTIONS TO ALL THE EQUIPMENT BY PROVIDING THE NECESSARY MALE/FEMALE CONNECTOR, RECEPTACLE, PLUG, ETC.

Sheet List Table

ABBREVIATIONS INDEX	
1Ø / 3Ø	SINGLE PHASE / THREE-PHASE
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMP INTERRUPTING CURRENT (SYMMETRICAL)
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER
C	CONDUIT
CO	CONVENIENCE OUTLET
CT	CURRENT TRANSFORMER
CU	COPPER
EM	EMERGENCY
FLA	FULL LOAD AMPS
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HP	HORSE POWER
KVA	KILOVOLT AMPERES
KW	KILOWATT
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL MANUFACTURING ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NTS	NOT TO SCALE
PVC	POLYVINYL CHLORIDE
SPD	SURGE PROTECTION DEVICE
TYP	TYPICAL
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLT (KV-KILOVOLT)
W	WATTS
W/	WITH
WP	WEATHER PROOF
XFMR	TRANSFORMER

BREINHOLT
POWER ENGINEERING, PLLC
805 SOUTH 1430 WEST, LEHI UT 84043
(801) 367-5180 PROJECT: BPE2152

Revisions	Description	Date

PRELIMINARY NOT FOR CONSTRUCTION

WOLF CREEK WATER AND SEWER ID.
REUSE PROJECT
LOWER PUMP STATION
ELECTRICAL COVER SHEET

GARDNER ENGINEERING
CIVIL ▪ LAND PLANNING
MUNICIPAL ▪ LAND SURVEYING
1380 W 2100S, WEST HAVEN, UT 84401
P 801.476.0202 F 801.476.0066

LP-E01

K:_+PROJECTS\2023\WOLF CREEK BPE2326\E01 ELECTRICAL COVER SHEET.DWG

ELECTRICAL SPECIFICATIONS

GENERAL PROVISION

A. REFERENCE
   1. THE GENERAL CONDITIONS AND OTHER CONTRACT DRAWINGS AS SET FORTH IN THE FOREGOING PAGES ARE HEREBY INCORPORATED INTO AND BECOME A PART OF THE SPECIFICATIONS FOR WORK UNDER THIS TITLE, INSOFAR AS THEY APPLY HERETO.
   2. ALL SPECIFICATIONS UNDER THIS DIVISION TITLE ARE DIRECTED TO AND ARE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR, UNLESS OTHER TRADES OR PERSONS ARE SPECIFICALLY MENTIONED, "ELECTRICAL CONTRACTOR" IS INFERRED AND INTENDED.

B. CONTRACT DRAWINGS
   1. THE DRAWINGS ACCOMPANYING THESE SPECIFICATIONS ARE COMPLEMENTARY EACH TO THE OTHER AND WHAT IS CALLED FOR BY ONE SHALL BE AS IF CALLED FOR BY BOTH.
   2. CONSULT ALL CONTRACT DRAWINGS WHICH MAY AFFECT THE LOCATION OF EQUIPMENT, CONDUIT AND WIRING AND MAKE MINOR ADJUSTMENTS IN LOCATION TO SECURE COORDINATION.
   3. WIRING LAYOUT IS SCHEMATIC AND EXACT LOCATIONS SHALL BE DETERMINED BY FIELD CONDITIONS.
   4. OTHER THAN MINOR ADJUSTMENTS SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR APPROVAL BEFORE PROCEEDING WITH THE WORK.

C. JOB-SITE COPY OF DOCUMENTS
   1. MAINTAIN AT THE SITE, ONE COPY OF ALL DRAWINGS, SPECIFICATIONS, ADDENDA APPROVED SHOP DRAWINGS, CHANGE ORDERS AND OTHER MODIFICATIONS, IN GOOD ORDER AND MARKED TO RECORD ALL CHANGES MADE DURING CONSTRUCTION. THESE SHALL BE AVAILABLE TO THE OWNER'S REPRESENTATIVE. THE DRAWINGS MARKED TO RECORD ALL CHANGES MADE DURING CONSTRUCTION SHALL BE DELIVERED TO THE OWNER'S REPRESENTATIVE FOR THE OWNER UPON COMPLETION OF THE WORK. AN ADDITIONAL SET OF DRAWINGS WILL BE FURNISHED BY THE OWNER'S REPRESENTATIVE FOR THIS PURPOSE UPON REQUEST.

D. MANUFACTURER'S DRAWINGS
   1. THE CONTRACTOR SHALL SUBMIT TO THE ARCHITECT FOR REVIEW. (6) COPIES OF MANUFACTURER'S DRAWINGS AND WIRING DIAGRAMS. THE ENGINEER WILL REVIEW CONTRACTOR'S SHOP DRAWINGS AND RELATED SUBMITTALS (AS INDICATED BELOW) WITH RESPECT TO THE ABILITY OF THE DETAILED WORK, WHEN COMPLETE, TO BE A PROPERLY FUNCTIONING INTEGRAL ELEMENT OF THE OVERALL SYSTEM DESIGNED BY THE ENGINEER. BEFORE SUBMITTING A SHOP DRAWING OR ANY RELATED MATERIAL TO THE ENGINEER, CONTRACTOR SHALL: REVIEW EACH SUCH SUBMISSION FOR CONFORMANCE WITH THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND OPERATIONS OF CONSTRUCTION, AND SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO, ALL OF WHICH ARE THE SOLE RESPONSIBILITY OF CONTRACTOR: APPROVE EACH SUCH SUBMISSION BEFORE SUBMITTING IT; AND SO STAMP EACH SUCH SUBMISSION BEFORE SUBMITTING IT. THE ENGINEER SHALL ASSUME THAT NO SHOP DRAWING OR RELATED SUBMITTAL COMPRISES A VARIATION UNLESS CONTRACTOR ADVISES ENGINEER OTHERWISE VIA A WRITTEN INSTRUMENT WHICH IS ACKNOWLEDGED BY ENGINEER IN WRITING. THE ITEMS, TYPES OF SUBMITTALS AND RELATED MATERIAL (IF ANY) CALLED FOR ARE INDICATED BELOW:

ITEMS	TYPE SUBMITTALS REQUESTED
LIGHTING AND POWER PANELS	SHOP DRAWINGS
LIGHTING FIXTURES	CATALOG CUTS
CONTROL PANEL	SHOP DRAWINGS
GENERATOR	SHOP DRAWINGS

E. GUARANTEES
   1. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEFECTS, REPAIRS AND REPLACEMENTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR AFTER DATE OF SUBSTANTIAL COMPLETION AS DETERMINED BY THE OWNER'S REPRESENTATIVE. PRODUCT GUARANTEES GREATER THAN ONE (1) YEAR SHALL BE PASSED ALONG TO THE OWNER FOR FULL BENEFIT OF THE MANUFACTURER'S WARRANTY.

WORK INCLUDED

A. INSTALLATION, MATERIALS, AND WORKMANSHIP
   1. FURNISH AND INSTALL ALL NECESSARY ANCHORS, SUPPORTS, STRAPS, BOXES, FITTINGS AND OTHER SIMILAR APPURTENANCES NOT INDICATED ON THE DRAWINGS BUT WHICH ARE REQUIRED FOR A COMPLETE AND PROPERLY INSTALLED SYSTEM CONSISTENT WITH THE ARCHITECTURAL TREATMENT OF THE BUILDING.
   2. THE ELECTRICAL CONTRACTOR, INSOFAR AS THE WORK IS CONCERNED, SHALL AT ALL TIMES KEEP THE PREMISES IN A NEAT AND ORDERLY CONDITION. AND AT THE COMPLETION OF THE WORK, SHALL PROPERLY CLEAN UP AND CART AWAY DEBRIS AND EXCESS MATERIALS. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF DUMPSTER & REFUSED DISPOSAL AS REQUIRED FOR ELECTRICAL WORK.
   3. ALL MATERIALS SHALL BE NEW AND UNDETERIORATED AND OF A QUALITY NOT LESS THAN THE MINIMUM SPECIFIED.

B. COORDINATION OF PLANS AND SPECIFICATIONS
   1. CONTACT THE OWNER'S REPRESENTATIVE IMMEDIATELY IF THERE IS ANY QUESTIONS REGARDING THE MEANING OR INTENT OF EITHER PLANS OR SPECIFICATIONS, OR UPON NOTICING ANY DISCREPANCIES OR OMISSIONS IN EITHER PLANS OR SPECIFICATIONS.

C. CUTTING AND PATCHING
   1. ALL ELECTRICAL EQUIPMENT SHALL BE KEPT DRY AND CLEAN DURING THE CONSTRUCTION PERIOD. INTERIOR OF ALL ENCLOSURES SHALL BE CLEANED OF DIRT AND DEBRIS BEFORE INSTALLING TRIM OR COVERS.
   2. ALL FINISHED SURFACES OF EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL BE THOROUGHLY CLEANED OF DIRT AND ALL SCRATCHED OR DAMAGED SURFACES SHALL BE TOUCHED UP WITH MATCHING MATERIALS BEFORE FINAL ACCEPTANCE OF THE WORK.
   3. WHEN ALL WORK IS COMPLETED AND ALL WORK HAS BEEN SATISFACTORILY TESTED AND ACCEPTED BY THE OWNER'S REPRESENTATIVE, ALL CONDUIT AND OTHER EXPOSED SURFACES SHALL BE THOROUGHLY CLEANED.

CODES AND FEES

A. CODES:
   1. ALL WORK PERFORMED UNDER THIS SPECIFICATION SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AS PREPARED AND PUBLISHED BY THE NATIONAL FIRE PROTECTION ASSOCIATION AND ANY APPLICABLE STATE OR LOCAL CODES.

B. FEES:
   1. OBTAIN AND PAY FOR ANY AND ALL PERMITS REQUIRED BY ALL LAWS AND REGULATIONS AND PUBLIC AUTHORITY HAVING SUCH JURISDICTION.

TESTS AND INSPECTIONS

A. OBTAIN ALL INSPECTIONS REQUIRED BY ALL LAWS, ORDINANCES, RULES, REGULATIONS OR PUBLIC AUTHORITY HAVING JURISDICTION AND OBTAIN CERTIFICATES OF SUCH INSPECTIONS AND SUBMIT SAME TO THE OWNER'S REPRESENTATIVE. PAY ALL FEES, CHARGES AND OTHER EXPENSES IN CONNECTION THEREIN. OBTAIN OCCUPANCY PERMIT AS REQUIRED BY OWNER. FINAL PAYMENT SHALL NOT BE MADE UNTIL OCCUPANCY PERMIT IS OBTAINED.
B. WORK SHALL BE UNACCEPTABLE WHEN FOUND TO BE DEFECTIVE OR CONTRARY TO THE PLANS SPECIFICATIONS, CODES SPECIFIED OR ACCEPTED STANDARDS OF GOOD WORKMANSHIP.
C. THE CONTRACTOR SHALL PROMPTLY CORRECT ALL WORK FOUND UNACCEPTABLE BY THE OWNER'S REPRESENTATIVE WHETHER OBSERVED BEFORE OR AFTER SUBSTANTIAL COMPLETION AND WHETHER OR NOT FABRICATED, INSTALLED OR COMPLETED. THE CONTRACTOR SHALL BEAR ALL COSTS OF CORRECTING SUCH UNACCEPTABLE WORK, INCLUDING COMPENSATION FOR THE OWNERS REPRESENTATIVE ADDITIONAL SERVICES MADE NECESSARY THEREBY.

CONDUIT

A. FURNISH AND INSTALL ALL CONDUITS, BOXES, FITTINGS, ETC., FOR A COMPLETE RACEWAY SYSTEM.
B. ALL WIRING SHALL BE RUN IN EMT CONDUIT OR MC CABLE WITH GROUND CONDUCTOR UNLESS OTHERWISE NOTED.
C. ALL CONDUIT SIZES STATED HEREIN OR MARKED ON THE DRAWINGS ARE MINIMUM SIZE AND SHALL BE NO LESS THAN ½" UNLESS OTHERWISE NOTED.
D. ALL CONDUIT SHALL BE SUBSTANTIALLY SUPPORTED BY PIPE STRAPS OR SUITABLE CLAMPS OR HANGERS ATTACHED TO THE ELEMENTS OF THE BUILDING STRUCTURE TO PROVIDE RIGID INSTALLATION; IN NO CASE SHALL CONDUIT BE ATTACHED OR SUPPORTED FROM ADJOINING PIPE OR INSTALLED IN SUCH A MANNER AS TO PREVENT THE READY REMOVAL OF OTHER PIPE FOR REPAIRS.

WIRE AND CABLE

A. ALL CONDUCTORS SHALL BE COPPER AND OF THE AWG SIZE AND TYPE SHOWN ON THE DRAWINGS. WHERE NO SIZE OR TYPE IS SHOWN. CONDUCTORS SHALL NOT BE LESS THAN #12 TYPE XHHW, THHN, OR THWN. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED COPPER AND HAVE 600 VOLT INSULATION; BE UL LABELED AND OF AMERICAN MANUFACTURER.
B. ALL CONNECTIONS ARE TO BE MADE USING PRESSURE TYPE TERMINALS.
C. THE FOLLOWING COLOR CODE SHALL BE USED:

	120/240 VOLT	120/208 VOLT	277/480 VOLT
PHASE A	BLACK	BLACK	BROWN
PHASE B	RED	RED	ORANGE
PHASE C		BLUE	YELLOW
NEUTRAL	WHITE	WHITE	WHITE
GROUND	GREEN	GREEN	GREEN

D. CONDUCTORS NO. 10 AWG OR SMALLER SHALL HAVE INSULATION COLORED AS NOTED ABOVE.
E. CONDUCTORS NO. 8 AWG OR LARGER SHALL HAVE INSULATION COLORED AS NOTED ABOVE OR COLORED TAPE, MINIMUM SIZE ½", WRAPPED TWICE AROUND AT THE FOLLOWING POINTS:
   1. AT EACH TERMINAL
   2. AT EACH CONDUIT ENTRANCE
   3. AT INTERVALS NOT MORE THAN 12 INCHES APART IN ALL BOXES, PANEL TUBS, SWITCHBOARDS, ETC
G. ALL BRANCH CIRCUITS SHALL BE MARKED IN THE PANEL BOARD GUTTERS. MARKERS SHALL INDICATE CORRESPONDING BRANCH--CIRCUIT NUMBERS.
H. EACH BRANCH CIRCUIT REQUIRING A NEUTRAL SHALL BE FURNISHED WITH A SEPARATE INDIVIDUAL NEUTRAL CONDUCTOR.

BOXES AND PLATES

A. FURNISH AND INSTALL ALL OUTLET, JUNCTION, AND PULL BOXES AS INDICATED ON THE DRAWINGS AND AS NECESSARY TO INSTALL THE REQUIRED CONDUIT AND WIRING IN A NEAT AND WORKMANLIKE MANNER.
B. PULL BOXES AND JUNCTION BOXES SHALL BE GALVANIZED AND OF THE CORRECT SIZE AND GAUGE, SIZED IN ACCORDANCE WITH CODE REQUIREMENTS AND SHALL BE U.L. LABELED.
C. BOXES AT EXTERIOR AREAS TO BE WATERTIGHT AND DUST-TIGHT WITH GASKETED COVERS.
D. ALL BOXES FOR EXPOSED WORK IN FINISHED SPACES SHALL BE "FS" TYPE WITH THREADED HUBS WITH RIGID CONDUIT RISER (DEEP WIRE MOLD BOXES)
E. ALL BOXES SHALL BE RIGIDLY SUPPORTED INDEPENDENT OF THE CONDUIT SYSTEM. BOXES CAST INTO MASONRY OR CONCRETE ARE CONSIDERED TO BE RIGIDLY SUPPORTED.
F. UNDERGROUND BOXES/ENCLOSURES:
   1. DESCRIPTION: IN-GROUND, OPEN BOTTOM BOXES FURNISHED WITH FLUSH, NON-SKID COVERS WITH LEGEND INDICATING TYPE OF SERVICE AND STAINLESS STEEL TAMPER RESISTANT COVER BOLTS.
   2. SIZE: AS INDICATED ON DRAWINGS.
   3. DEPTH: AS REQUIRED TO EXTEND BELOW FROST LINE TO PREVENT FROST UPHEAVAL, BUT NOT LESS THAN 12 INCHES.
   4. APPLICATIONS:
      a. SIDEWALKS AND LANDSCAPED AREAS SUBJECT ONLY TO OCCASIONAL NONDELIBERATE VEHICULAR TRAFFIC: USE POLYMER CONCRETE OR COMPOSITE ENCLOSURE WITH MINIMUM SCTE 77, TIER 8 LOAD RATING.
      b. PARKING LOTS, IN AREAS SUBJECT ONLY TO OCCASIONAL NONDELIBERATE VEHICULAR TRAFFIC: USE POLYMER CONCRETE OR COMPOSITE ENCLOSURE WITH MINIMUM SCTE 77, TIER 15 LOAD RATING.
      c. DO NOT USE POLYMER CONCRETE ENCLOSURES IN AREAS SUBJECT TO DELIBERATE VEHICULAR TRAFFIC.
H. COMPOSITE UNDERGROUND BOXES/CONCLOSURES: COMPLY WITH SCTE 77.

WIRING DEVICES

A. WIRING DEVICES SHALL BE SIMILAR TO THOSE LISTED BELOW AND OF SPECIFIED AMPERAGE. OTHER SPECIAL PURPOSE DEVICES SHALL BE AS SPECIFIED ON THE DRAWINGS.
B. DUPLEX GROUNDING TYPE RECEPTACLE--20 AMP, 125 VOLT--
   1. HUBBELL--5352
   2. ARROW HART--5352
C. SINGLE POLE SWITCHES - 20 AMP, 120 VOLT
D. WEATHERPROOF RECEPTACLES - 20 AMP, 125 VOLT--NEMA 5--20R
   1. HUBBELL--5352 WITH 5205 COVER INTERMATIC GUARDIAN
   2. I SERIES, NEMA 3R COVER
   3. ARROW HART--5352 WITH 4500 COVER
E. G.F.C.I. RECEPTACLE- 20 AMP, 125 VOLT--NEMA 5-20 R
   1. HUBBELL- GF 5262 WITH MATCHING NYLON COVER PLATE OR WO-26 W.P. COVER
F. GROUND ALL RECEPTACLES IN ACCORDANCE WITH ARTICLE 250-146 OF NEC AND AS INDICATED IN THE GROUNDING SECTION OF THIS SPECIFICATION.
G. PROVIDE TAMPER RESISTANT RECEPTACLES PER NEC 406.12.

IDENTIFICATION

A. EACH PIECE OF SERVICE EQUIPMENT AND INDIVIDUAL SWITCHES, ALL DISCONNECTS, STARTERS, ALL EXHAUST FAN MANUAL STARTING SWITCHES.
B. IDENTIFICATION SHALL BE IN THE FORM OF LAMINATED PLASTIC NAMEPLATES, BLACK RACE, WITH THE LETTERS ENGRAVED INTO THE WHITE BACKGROUND, MINIMUM ¼" HIGH. PLATES SHALL BE DRILLED ON EACH END FOR SHEET METAL SCREW ATTACHMENT. NO "DYMO" OR SIMILAR TYPE LABELS WILL BE ALLOWED.
C. PANEL BOARD DIRECTORY: A TYPED CIRCUIT DIRECTORY SHALL BE PROVIDED INDICATING LOCAL AREA SERVED AND LOCATION FOR EACH BRANCH CIRCUIT.

GROUNDING

A. ALL FEEDERS AND BRANCH CIRCUITS OVER 100 VOLTS SHALL INCLUDE A GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH NEC TABLE 250-122, EXCEPT NOT BE SMALLER THAN #12 FOR POWER AND LIGHTING CIRCUITS AND #14 FOR CONTROL CIRCUITS. ALL GROUND CONDUCTORS SHALL BE GREEN, OR AS SPECIFIED UNDER "WIRE AND CABLE".
B. ALL GROUND CLAMPS SHALL BE PENN-UNION "GPL" TYPE OR SIMILAR BY O.Z. OR BURNDY.
C. CONDUIT FOR SOLITARY GROUND CONDUCTORS SHALL BE RIGID SCHEDULE 40 PVC NON- METALLIC ELECTRICAL CONDUIT WITH U.L. LABEL SOLITARY GROUND CONDUCTORS SHALL NOT BE PLACED THROUGH METALLIC SLEEVES OR CONDUITS AND SHALL NOT BE COMPLETELY ENCIRCLED BY METALLIC HANGERS OR SUPPORTS.
D. THE GROUND CONDUCTOR SHALL BE CONNECTED TO THE NEUTRAL IN ONLY TWO LOCATIONS -ON THE SUPPLY SIDE OF THE SERVICE DISCONNECT MEANS PER NEC--250--24 AND ON SEPARATELY DERIVED SYSTEMS PER NEC 250-30.
E. AT EACH RECEPTACLE BOX, THE GROUND CONDUCTOR SHALL ENTER AND CONNECT, WITH NORMAL WIRING CONNECTOR, TO: 1) THE GROUND PIGTAIL TO RECEPTACLE: 2) THE GROUND PIGTAIL TO THE BOX GROUND SCREW; AND 3) THE OUTGOING GROUND CONDUCTOR TO NEXT DEVICE, IF NOT AT END OF RUN. METAL TO METAL CONTACT BETWEEN THE DEVICE YOKE AND THE OUTLET BOX IS NOT ACCEPTABLE AS A BOND FOR EITHER SURFACE. MOUNTED BOXES OR FLUSH TYPE BOXES.
F. CONDUIT SYSTEM SHALL BE ELECTRICALLY CONTINUOUS. ALL LOCK NUTS SHALL CUT THROUGH ENAMELED OR PAINTED SURFACES ON ENCLOSURES. WHERE ENCLOSURES AND NON-CURRENT CARRYING METALS ARE ISOLATED FROM THE CONDUIT SYSTEM, USE BONDING JUMPERS WITH APPROVED CLAMPS. WHERE REDUCING WASHERS ARE USED AND WHERE CONCENTRIC OR ECCENTRIC KNOCKOUTS ARE NOT COMPLETELY REMOVED BONDING BUSHINGS SHALL BE REQUIRED.

POWER AND LIGHTING PANELS

A. FURNISH AND INSTALL, AS SCHEDULED AND SHOWN ON THE DRAWINGS, POWER PANELS FOR OPERATION ON VOLTAGES INDICATED.
B. ALL TERMINATIONS SHALL BE MARKED "75°C ONLY", "60/75° C" OR LISTED FOR USE OF 75° C INSULATED CONDUCTORS AT FULL 75° C AMPACITY.
C. ALL BUS BARS SHALL BE SILVER OR TIN PLATED COPPER.
D. CABINETS SHALL BE OF COMMERCIAL GALVANIZED SHEET STEEL, CODE GAUGE AND SIZE, SURFACE OR RECESSED MOUNTED AS CALLED FOR IN THE DRAWINGS.
E. NEUTRAL ASSEMBLY SHALL HAVE INDIVIDUAL ANTI-TURN SOLDERLESS TERMINALS, SIMILAR TO SQUARE D TYPE PK, FOR CONNECTION OF ULTIMATE NUMBER OF NEUTRAL WIRES. SHEET METAL TERMINAL STRIPS AND CONNECTIONS WILL BE REJECTED.
F. PANEL SHALL HAVE A COPPER GROUND BAR SIMILAR TO NEUTRAL BAR IN NUMBER, SIZE, AND TYPE OF ANTI-TURN SOLDERLESS LUGS. THIS GROUND BAR SHALL BE FACTORY BONDED TO THE PANEL TUB IN THE GUTTER SPACE OPPOSITE THE MAINS AND THE NEUTRAL ASSEMBLY AND SHALL HAVE THE SCREWDRIVER SLOTS FACING THE FRONT OF THE PANEL.
G. QUALITY STANDARD: SQUARE D TYPE NF AND NQOD

BREINHOLT
POWER ENGINEERING, PLLC
805 SOUTH 1430 WEST, LEHI UT 84043
(801) 367-5180 PROJECT: BPE2152

Revisions	Date	Description

PRELIMINARY
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CONSTRUCTION

WOLF CREEK WATER AND SEWER ID.
REUSE PROJECT
LOWER PUMP STATION
ELECTRICAL SPECIFICATIONS

GARDNER ENGINEERING
CIVIL ▪ LAND PLANNING
MUNICIPAL ▪ LAND SURVEYING
1580 W 2100S, WEST HAVEN, UT 84401
P 801.476.0202 F 801.476.0066

LP-E02

LIGHTING FIXTURES

A. CONTRACTOR SHALL FURNISH AND INSTALL LIGHTING FIXTURES AND LAMPS AS INDICATED IN FIXTURE SCHEDULE SHOWN ON DRAWINGS, AND SPECIFIED HEREIN.
B. NEUTRAL ASSEMBLY SHALL HAVE INDIVIDUAL ANTI-TURN SOLDERLESS TERMINALS, SIMILAR TO SQUARE D TYPE PK, FOR CONNECTION OF ULTIMATE NUMBER OF NEUTRAL WIRES. SHEET METAL TERMINAL STRIPS AND CONNECTIONS WILL BE REJECTED.
C. ALL LAMP HOLDERS INSTALLED BY THE ELECTRICAL CONTRACTOR SHALL BE FURNISHED COMPLETE WITH NEW LAMPS OF THE SIZE INDICATING ON THE FIXTURE SCHEDULE.
D. ANY FIXTURES SCRATCHED, BENT, CRACKED OR IN ANY WAY DAMAGED BEFORE ACCEPTANCE BY OWNER SHALL BE REPLACED AT THIS CONTRACTOR'S EXPENSE.
E. ALL LIGHTING FIXTURES ARE TO BE GROUNDED ON THE INTERIOR OF THE FIXTURE HOUSING, ON CLEAN BARE METAL (FREE OF PAINT). BY USE OF PIGTAIL AND FASTENED BY A SCREW USED FOR NO OTHER PURPOSE.
F. COMMISSIONING
   1. C408.3 LIGHTING SYSTEM FUNCTIONAL TESTING. CONTROLS FOR AUTOMATIC LIGHTING SYSTEMS SHALL COMPLY WITH SECTION C408.3.
   2. C408.3.1 FUNCTIONAL TESTING. TESTING SHALL ENSURE THAT CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED, ADJUSTED, PROGRAMMED AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURER'S INSTALLATION INSTRUCTIONS. THE CONTRACTOR SHALL CONDUCT THE REQUIRED FUNCTIONAL TESTING. WHERE REQUIRED BY THE CODE OFFICIAL, AN APPROVED PARTY INDEPENDENT FROM THE DESIGN OR CONSTRUCTION OF THE PROJECT SHALL BE RESPONSIBLE FOR THE FUNCTIONAL TESTING AND SHALL PROVIDE DOCUMENTATION TO THE CODE OFFICIAL CERTIFYING THAT THE INSTALLED LIGHTING CONTROLS MEET THE PROVISIONS OF SECTION C405. WHERE OCCUPANT SENSORS, TIME SWITCHES, PROGRAMMABLE SCHEDULE CONTROLS, PHOTOSENSORS OR DAYLIGHTING CONTROLS ARE INSTALLED, THE FOLLOWING PROCEDURES SHALL BE PERFORMED:
      a. CONFIRM THAT THE PLACEMENT, SENSITIVITY AND TIME-OUT ADJUSTMENTS FOR OCCUPANT SENSORS YIELD ACCEPTABLE PERFORMANCE.
      b. CONFIRM THAT THE TIME SWITCHES AND PROGRAMMABLE SCHEDULE CONTROLS ARE PROGRAMMED TO TURN THE LIGHTS OFF.
      c. CONFIRM THAT THE PLACEMENT AND SENSITIVITY ADJUSTMENTS FOR PHOTOSENSOR CONTROLS REDUCE ELECTRIC LIGHT BASED ON THE AMOUNT OF USABLE DAYLIGHT IN THE SPACE AS SPECIFIED.

LOW-VOLTAGE TRANSFORMERS

A. PRODUCTS
   1. TRANSFORMERS - GENERAL REQUIREMENTS
      a. DESCRIPTION: FACTORY-ASSEMBLED, DRY TYPE TRANSFORMERS FOR 60 HZ OPERATION DESIGNED AND MANUFACTURED IN ACCORDANCE WITH NEMA ST 20 AND LISTED, CLASSIFIED, AND LABELED AS SUITABLE FOR THE PURPOSE INTENDED.
      b. UNLESS NOTED OTHERWISE, TRANSFORMER RATINGS INDICATED ARE FOR CONTINUOUS LOADING ACCORDING TO IEEE C57.96 UNDER THE FOLLOWING SERVICE CONDITIONS:
         1) ALTITUDE: LESS THAN 3,300 FEET (1,000 M).
         2) AMBIENT TEMPERATURE:
            a) GREATER THAN 10 KVA: NOT EXCEEDING 104 DEGREES F (40 DEGREES C).
            b) 10 KVA OR LESS: NOT EXCEEDING 77 DEGREES F (25 DEGREES C).
      c. CORE: HIGH GRADE, NON-AGING SILICON STEEL WITH HIGH MAGNETIC PERMEABILITY AND LOW HYSTERESIS AND EDDY CURRENT LOSSES. KEEP MAGNETIC FLUX DENSITIES SUBSTANTIALLY BELOW SATURATION POINT, EVEN AT 10 PERCENT PRIMARY OVERVOLTAGE. TIGHTLY CLAMP CORE LAMINATIONS TO PREVENT PLATE MOVEMENT AND MAINTAIN CONSISTENT PRESSURE THROUGHOUT CORE LENGTH.
      d. IMPREGNATE CORE AND COIL ASSEMBLY WITH NON-HYDROSCOPIC THERMO-SETTING VARNISH TO EFFECTIVELY SEAL OUT MOISTURE AND OTHER CONTAMINANTS.
      e. BASIC IMPULSE LEVEL: 10 KV.
      f. GROUND CORE AND COIL ASSEMBLY TO ENCLOSURE BY MEANS OF A VISIBLE FLEXIBLE COPPER GROUNDING STRAP.
      g. ISOLATE CORE AND COIL FROM ENCLOSURE USING VIBRATION-ABSORBING MOUNTS.
      h. NAMEPLATE: INCLUDE TRANSFORMER CONNECTION DATA, RATINGS, WIRING DIAGRAMS, AND OVERLOAD CAPACITY BASED ON RATED WINDING TEMPERATURE RISE.
   2. GENERAL PURPOSE TRANSFORMERS
      a. DESCRIPTION: SELF-COOLED, TWO WINDING TRANSFORMERS LISTED AND LABELED AS COMPLYING WITH UL 506 OR UL 1561; RATINGS AS INDICATED ON THE DRAWINGS.
      b. INSULATION SYSTEM AND ALLOWABLE AVERAGE WINDING TEMPERATURE RISE:
         1) LESS THAN 15 KVA: CLASS 180 DEGREES C INSULATION SYSTEM WITH 115 DEGREES C AVERAGE WINDING TEMPERATURE RISE.
         2) 15 KVA AND LARGER: CLASS 220 DEGREES C INSULATION SYSTEM WITH 150 DEGREES C AVERAGE WINDING TEMPERATURE RISE.
      c. COIL CONDUCTORS: CONTINUOUS ALUMINUM WINDINGS WITH TERMINATIONS BRAZED OR WELDED.
      d. WINDING TAPS:
         1) LESS THAN 3 KVA: NONE.
         2) 3 KVA THROUGH 15 KVA: TWO 5 PERCENT FULL CAPACITY PRIMARY TAPS BELOW RATED VOLTAGE.
         3) 15 KVA THROUGH 300 KVA: TWO 2.5 PERCENT FULL CAPACITY PRIMARY TAPS ABOVE AND FOUR 2.5 PERCENT FULL CAPACITY PRIMARY TAPS BELOW RATED VOLTAGE.
         4) 500 KVA AND LARGER: TWO 2.5 PERCENT FULL CAPACITY PRIMARY TAPS ABOVE AND TWO 2.5 PERCENT FULL CAPACITY PRIMARY TAPS BELOW RATED VOLTAGE.
      e. ENERGY EFFICIENCY: COMPLY WITH 10 CFR 431, SUBPART K.
      f. SOUND LEVELS: STANDARD SOUND LEVELS COMPLYING WITH NEMA ST 20.
      g. MOUNTING PROVISIONS:
         1) LESS THAN 15 KVA: SUITABLE FOR WALL MOUNTING.
         2) 15 KVA THROUGH 75 KVA: SUITABLE FOR WALL, FLOOR, OR TRAPEZE MOUNTING.
      h. TRANSFORMER ENCLOSURE: COMPLY WITH NEMA ST 20.
         1) ENVIRONMENT TYPE PER NEMA 250: UNLESS OTHERWISE INDICATED, AS SPECIFIED FOR THE FOLLOWING INSTALLATION LOCATIONS:
         2) CONSTRUCTION: STEEL.
            a) LESS THAN 15 KVA: TOTALLY ENCLOSED, NON-VENTILATED.
            b) 15 KVA AND LARGER: VENTILATED.
         3) FINISH: MANUFACTURER'S STANDARD GREY, SUITABLE FOR OUTDOOR INSTALLATIONS.
         4) PROVIDE LIFTING EYES OR BRACKETS.
      i. ACCESSORIES:
         1) MOUNTING BRACKETS: PROVIDE MANUFACTURER'S STANDARD BRACKETS.
         2) WEATHERSHIELD KITS: PROVIDE FOR VENTILATED TRANSFORMERS INSTALLED OUTDOORS TO PROVIDE A LISTED NEMA 250, TYPE 3R ASSEMBLY.
         3) LUG KITS: SIZED AS REQUIRED FOR TERMINATION OF CONDUCTORS AS INDICATED ON THE DRAWINGS.
C. EXECUTION
   1. INSTALLATION
      a. PERFORM WORK IN A NEAT AND WORKMANLIKE MANNER IN ACCORDANCE WITH NECA 1.
      b. INSTALL TRANSFORMERS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
      c. INSTALL TRANSFORMERS IN ACCORDANCE WITH NECA 409 AND IEEE C57.94.
      d. USE FLEXIBLE CONDUIT, UNDER THE PROVISIONS OF SECTION 26 0534, 2 FEET (600 MM) MINIMUM LENGTH, FOR CONNECTIONS TO TRANSFORMER CASE. MAKE CONDUIT CONNECTIONS TO SIDE PANEL OF ENCLOSURE.
      e. ARRANGE EQUIPMENT TO PROVIDE MINIMUM CLEARANCES AS SPECIFIED ON TRANSFORMER NAMEPLATE AND IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND NFPA 70.
      f. MOUNT WALL-MOUNTED TRANSFORMERS USING INTEGRAL FLANGES OR ACCESSORY BRACKETS FURNISHED BY THE MANUFACTURER.
      g. MOUNT FLOOR-MOUNTED TRANSFORMERS ON PROPERLY SIZED 3 INCH (80 MM) HIGH CONCRETE PAD.
      h. MOUNT FLOOR-MOUNTED, TRAPEZE-MOUNTED, WALL-MOUNTED, AND CEILING-MOUNTED TRANSFORMERS USING VIBRATION ISOLATORS SUITABLE FOR ISOLATING THE TRANSFORMER NOISE FROM THE BUILDING STRUCTURE.
      i. MOUNT TRAPEZE-MOUNTED TRANSFORMERS AS INDICATED.
      j. PROVIDE SEISMIC RESTRAINTS.
      k. PROVIDE GROUNDING AND BONDING IN ACCORDANCE WITH SECTION 26 0526.
      l. REMOVE SHIPPING BRACES AND ADJUST BOLTS THAT ATTACH THE CORE AND COIL MOUNTING BRACKET TO THE ENCLOSURE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS IN ORDER TO REDUCE AUDIBLE NOISE TRANSMISSION.
      m. WHERE NOT FACTORY-INSTALLED, INSTALL LUGS SIZED AS REQUIRED FOR TERMINATION OF CONDUCTORS AS SHOWN ON THE DRAWINGS.
      n. WHERE FURNISHED AS A SEPARATE ACCESSORY, INSTALL TRANSFORMER WEATHERSHIELD PER MANUFACTURER'S INSTRUCTIONS.
   2. ADJUSTING
      a. MEASURE PRIMARY AND SECONDARY VOLTAGES AND MAKE APPROPRIATE TAP ADJUSTMENTS.
      b. ADJUST TIGHTNESS OF MECHANICAL AND ELECTRICAL CONNECTIONS TO MANUFACTURER'S RECOMMENDED TORQUE SETTINGS.
   3. CLEANING
      a. CLEAN DIRT AND DEBRIS FROM TRANSFORMER COMPONENTS ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
      b. REPAIR SCRATCHED OR MARRED EXTERIOR SURFACES TO MATCH ORIGINAL FACTORY FINISH.

BREINHOLT
POWER ENGINEERING, PLLC
805 SOUTH 1430 WEST, LEHI UT 84043
(801) 367-5180 PROJECT: BPE2152

Revisions	
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WOLF CREEK WATER AND SEWER ID.
REUSE PROJECT
LOWER PUMP STATION
ELECTRICAL SPECIFICATIONS

GARDNER ENGINEERING
CIVIL ▪ LAND PLANNING
MUNICIPAL ▪ LAND SURVEYING
1150 W 2100S, WEST HAVEN, UT 84401
P 801.476.0202 F 801.476.0066

LP-E03

PRIMARY POWER SECTIONALIZING CABINET (PAD MOUNTED)

10

PRIMARY POWER GROUND SLEEVE (PAD MOUNTED)

20

PRIMARY POWER CONDUIT

PRIMARY POWER PULL BOX

30

PRIMARY POWER CONDUIT

40

UTILITY TRANSFORMER

METER/MAIN

MANUAL TRANSFER SWITCH

PANELS H & L

SECONDARY POWER CONDUIT

1 SITE ELECTRICAL PLAN
SCALE: 1" = 40'-0"

0 20' 40' 80'

N

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WOLF CREEK WATER AND SEWER ID.

REUSE PROJECT

LOWER PUMP STATION

SITE ELECTRICAL PLAN

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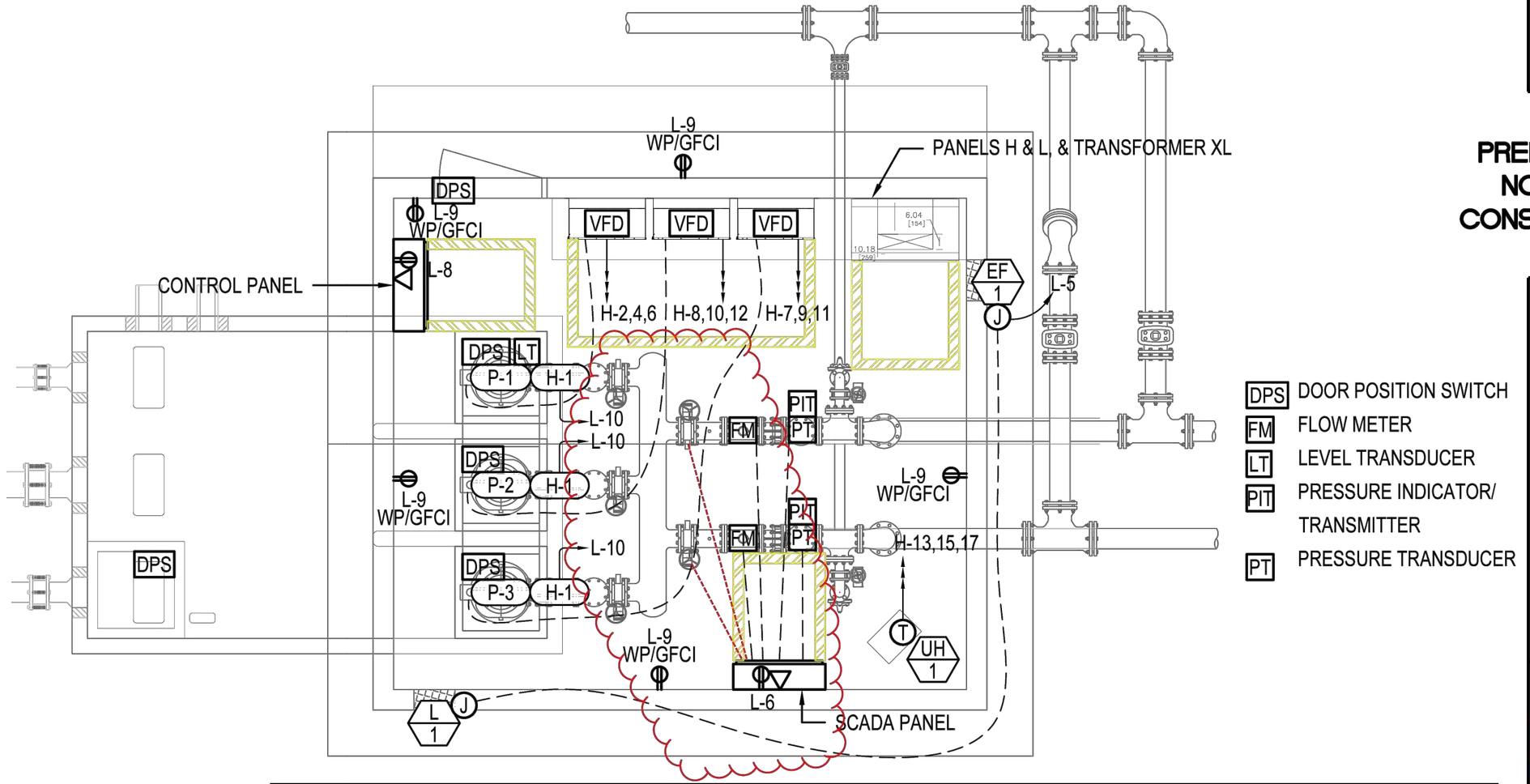
LP-E10

K:_+PROJECTS\2023\WOLF CREEK BPE2326\E10 SITE ELECTRICAL PLAN.DWG



DPS DOOR POSITION SWITCH
FM FLOW METER
LT LEVEL TRANSDUCER
PIT PRESSURE INDICATOR/ TRANSMITTER
PT PRESSURE TRANSDUCER

NOTES:

1. SCADA CONTROL I/O: PUMP RUN STATUS, FLOW METER VALUE - FLOW AND TOTALIZER, INTRUSION STATUS/ALARM, ROOM TEMP, PUMP AMP DRAW, REMOTE HOA FOR PUMPS, TWO PRESSURES IN DISCHARGE LINES, HOLDING TANK LEVEL, LEVEL SETPOINTS - MONITOR AND MODIFY; HOLDING TANK LEVELS WILL INDICATE WHETHER PUMPING IS ALLOWED WHEN THE CALL FOR WATER COMES FROM THE POND, VFDS WILL VARY TO MATCH THE INFLOW TO THE VAULT AND TRY TO KEEP THE WATER LEVEL IN THE HOLDING TANK BETWEEN THE SETPOINTS.
2. FIELD COORDINATE THE LOCATION OF CONTROL PANEL, SCADA PANEL, VFDS, AND POWER DISTRIBUTION EQUIPMENT TO BE LOCATED NEAR THE DOOR IF POSSIBLE. SCADA PANEL & CONTROL PANEL MAY FIT ABOVE/BELOW EACHOTHER AS DETERMINED BY CONTROL/SCADA PANEL SUBMITTALS.

1 POWER PLAN
SCALE: 1/4" = 1'-0"
0 2' 4' 8'

N

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POWER ENGINEERING, PLLC
805 SOUTH 1430 WEST, LEHI UT 84043
(801) 367-8180 PROJECT: BPE2152

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WOLF CREEK WATER AND SEWER ID.
REUSE PROJECT
LOWER PUMP STATION
POWER PLAN

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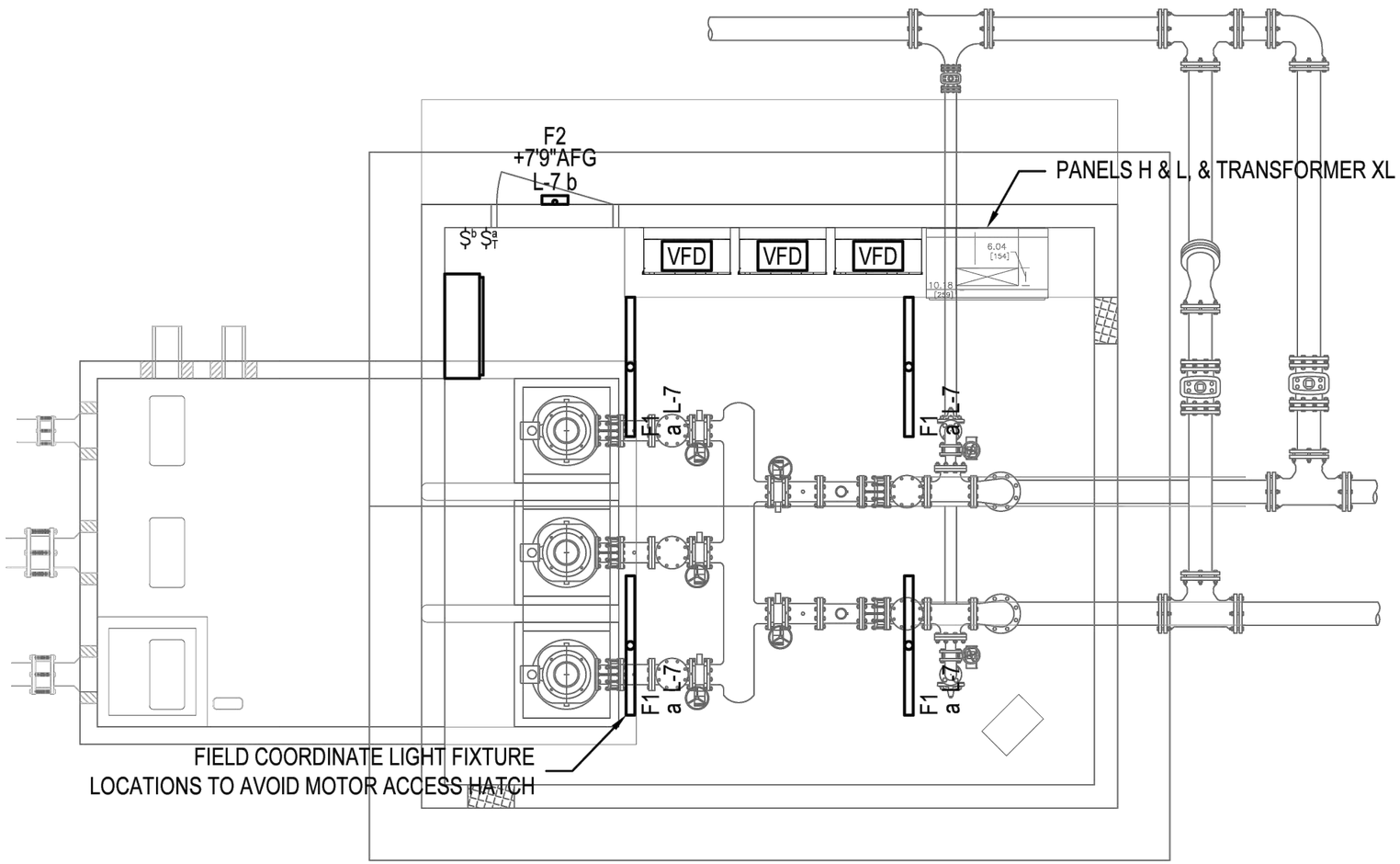
1380 W 2100S, WEST HAVEN, UT 84401
P 801.476.0202 F 801.476.0066

LP-E11

SEQUENCE OF OPERATION

AREA TYPE & DESIGNATION	MANUAL OVERRIDE			OCCUPANCY SENSOR			TIME SWITCH			NOTES
	ON/OFF	SCENE SELECTOR	ON/OFF/RAISE/LOWER	AUTO ON (% OF NORMAL FC)	MANUAL ON (% OF NORMAL FC)	VACANCY TIME OUT REDUCED OUTPUT OR OFF	BEGIN NORMAL OPERATION HOURS (PROGRAMMABLE TIME SWITCH TURN ON)	END NORMAL OPERATING HOURS (PROGRAMMABLE TIME SWITCH TURN OFF)	DURATION (COUNT-DOWN) TIMER 0-20 MINUTES	
INTERIOR, 'a'	X								X	NOTE 1.
EXTERIOR, 'b'	X			100%		20 MIN. OFF				

NOTES:
1. PROVIDE 0-20 MIN. COUNT-DOWN TIMER WITH HOLD-ON (OPERATE LIGHTS INDEFINATELY) TO COMPLY WITH NEC 110.26(D).



1 POWER PLAN
SCALE: 1/4" = 1'-0"
0 2' 4' 8'
N

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POWER ENGINEERING, PLLC
905 SOUTH 1430 WEST, LEHI UT 84043
(801) 367-5180 PROJECT: BPE2152

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WOLF CREEK WATER AND SEWER ID.
REUSE PROJECT
LOWER PUMP STATION
LIGHTING PLAN + SEQUENCE OF OPERATION

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CIVIL ▪ LAND PLANNING
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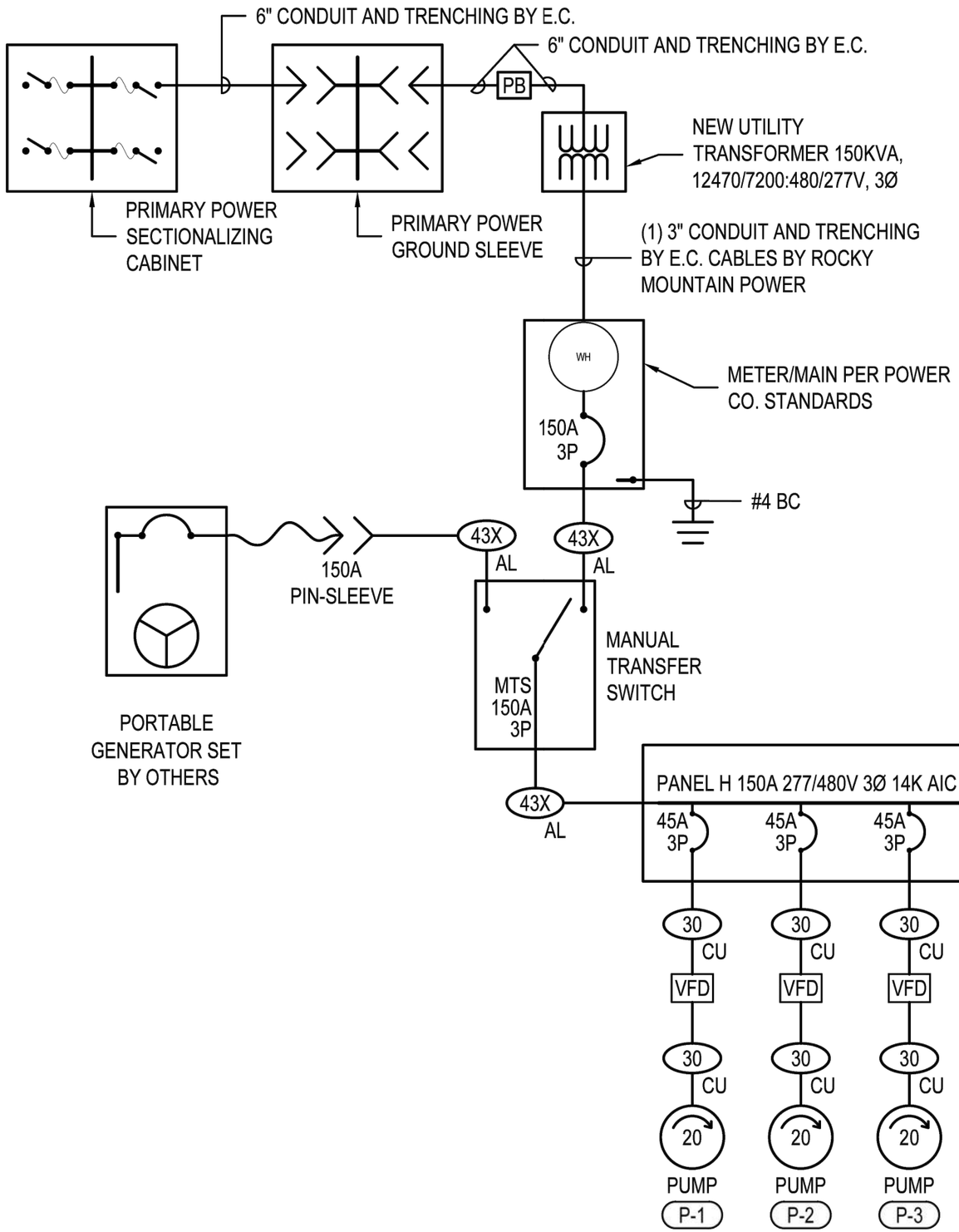
P 801.476.0202 F 801.476.0066

LP-E12



NOTE:

1. SEE EQUIPMENT GROUND CONDUCTOR SCHEDULES OR SERVICE GROUNDING DETAIL FOR GROUND CONDUCTORS RATING.
2. ALL INSULATION SHALL BE THHN (ABOVE GRADE) OR THWN (BELOW GRADE) UNLESS NOTED OTHERWISE.
3. PVC CONDUIT SIZE IS BASED ON SCHEDULE 40 PVC. PVC & THWN ARE APPROVED FOR UNDERGROUND FEEDERS ONLY.

TYPE	CONDUIT SIZE		CONDUCTORS		75°C AMP RATING
	PVC	EMT	QUAN.	SIZE	
312	3/4"	3/4"	3	#12 CU	25
20	3/4"	3/4"	2	#10 CU	35
30	3/4"	3/4"	3	#10 CU	35
38	3/4"	3/4"	3	#8 CU	50
48	3/4"	3/4"	4	#8 CU	50
36	1"	1"	3	#6 CU	65
43	1-1/4"	1-1/4"	4	#3 CU	100
43X	2"	2"	4	3/0 AL	155
CO	1"	1"	NONE	-	CONDUIT ONLY

EQUIPMENT GROUNDING CONDUCTORS SCHEDULE	
OVERCURRENT DEVICE	COPPER
15	14
20	12
30	10
40	10
60	10
100	8
200	6
300	4
400	3
500	2

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POWER ENGINEERING, PLLC
905 SOUTH 1430 WEST, LEHI UT 84043
(801) 367-5180 PROJECT: BPE2152

Revisions

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WOLF CREEK WATER AND SEWER ID.
REUSE PROJECT
LOWER PUMP STATION
ELECTRICAL DIAGRAMS

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CIVIL ▪ LAND PLANNING
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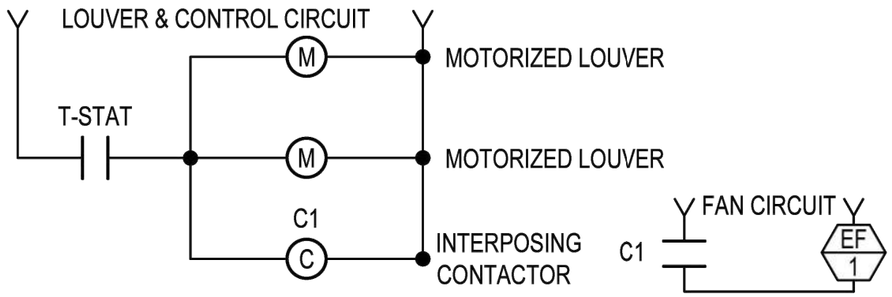
1580 W 2100S, WEST HAVEN, UT 84401
P 801.476.0202 F 801.476.0066

LP-E51

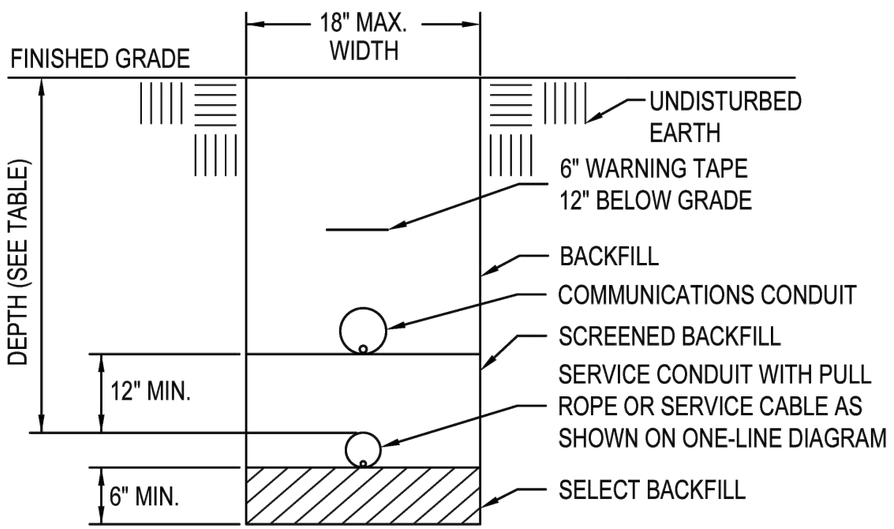
① POWER ONE-LINE DIAGRAM



② EX FAN INTERLOCK DIAGRAM

LOCATION DESCRIPTION	MIN. DEPTH
BELOW CONCRETE SLAB (NOT TRAFFIC)	18 INCHES
BELOW TRAFFIC SURFACES	24 INCHES
PARKING LOT (PAVED OR NON-PAVED)	24 INCHES
OTHER LOCATIONS	24 INCHES
UTILITY SECONDARY	24 INCHES*
UTILITY PRIMARY	48 INCHES*

(SEE NEC TABLE 300.5)
* VERIFY ALL DIMENSIONS WITH LOCAL POWER COMPANY STANDARDS AND SPECIFICATIONS.

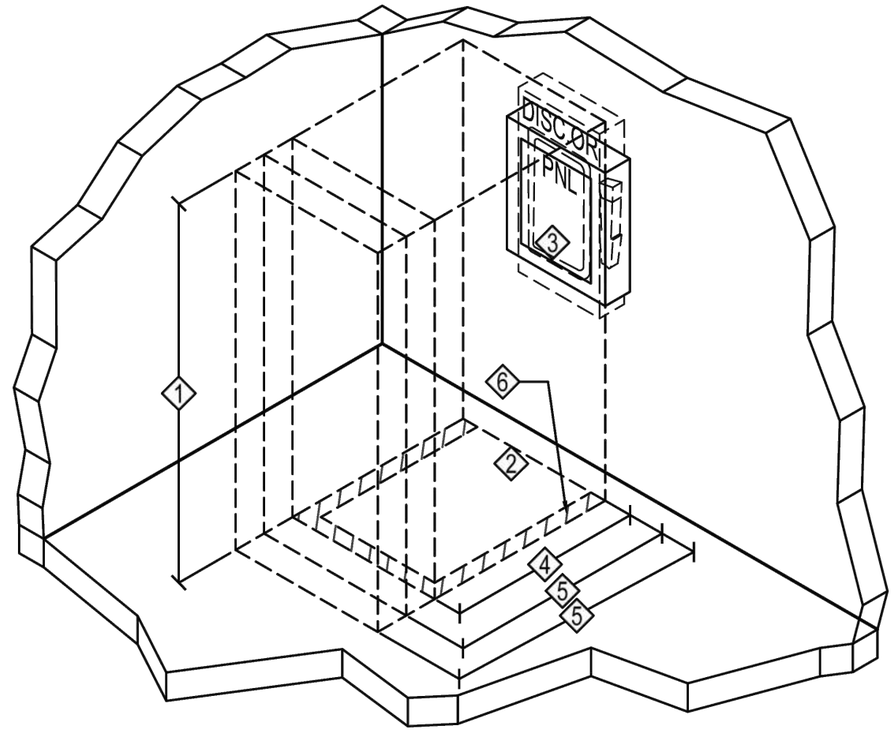


③ TRENCHING DETAIL

SCALE: NTS

NOTES:

1. THE MINIMUM HEADROOM OF WORKING SPACE SHALL BE 6½ FT.
2. THE WIDTH OF THE WORKING SPACE SHALL BE THE WIDTH OF THE EQUIPMENT OR 30 IN., WHICHEVER IS GREATER. THE PANEL DOOR SHALL OPEN AT LEAST 90 DEGREES.
3. ALL CIRCUIT BREAKERS OR DISCONNECT HANDLES SHALL BE NOT MORE THAN 6 FT 7 IN. ABOVE THE FLOOR WHEN IN THEIR HIGHEST POSITION.
4. 3 FT CLEARANCE IF 0-150V TO GROUND.
5. 3.5FT CLEARANCE IF 151-600V TO GROUND. 4FT IF EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORKING SPACE.
6. IN AREAS WHERE STORAGE IS LIKELY TO ENCROACH ON WORK SPACE CLEARANCE PROVIDE FLOOR MARKING TAPE, ON FINISHED FLOOR, FOR ELECTRICAL EQUIPMENT WORKING CLEARANCE IDENTIFICATION. FLOOR MARKING TAPE SHALL BE SELF-ADHESIVE VINYL OR POLYESTER TAPE WITH OVERLAMINATE, 3 INCHES (76MM) WIDE, WITH ALTERNATING BLACK AND WHITE STRIPES.
7. ALL WORKING SPACE CLEARANCE MEASURED FROM FACE OF PANEL FOR DEPTH, LEFT OR RIGHT EDGE FOR WIDTH, AND STANDING SURFACE FOR HEADROOM.
8. SEE NEC 110.26 FOR WORKSPACE CLEARANCES.



① ELECTRICAL EQUIPMENT WORK SPACE CLEARANCES

BRENHOLT
POWER ENGINEERING, PLLC
905 SOUTH 1430 WEST, LEHI UT 84043
(801) 367-5180 PROJECT: BPE2152

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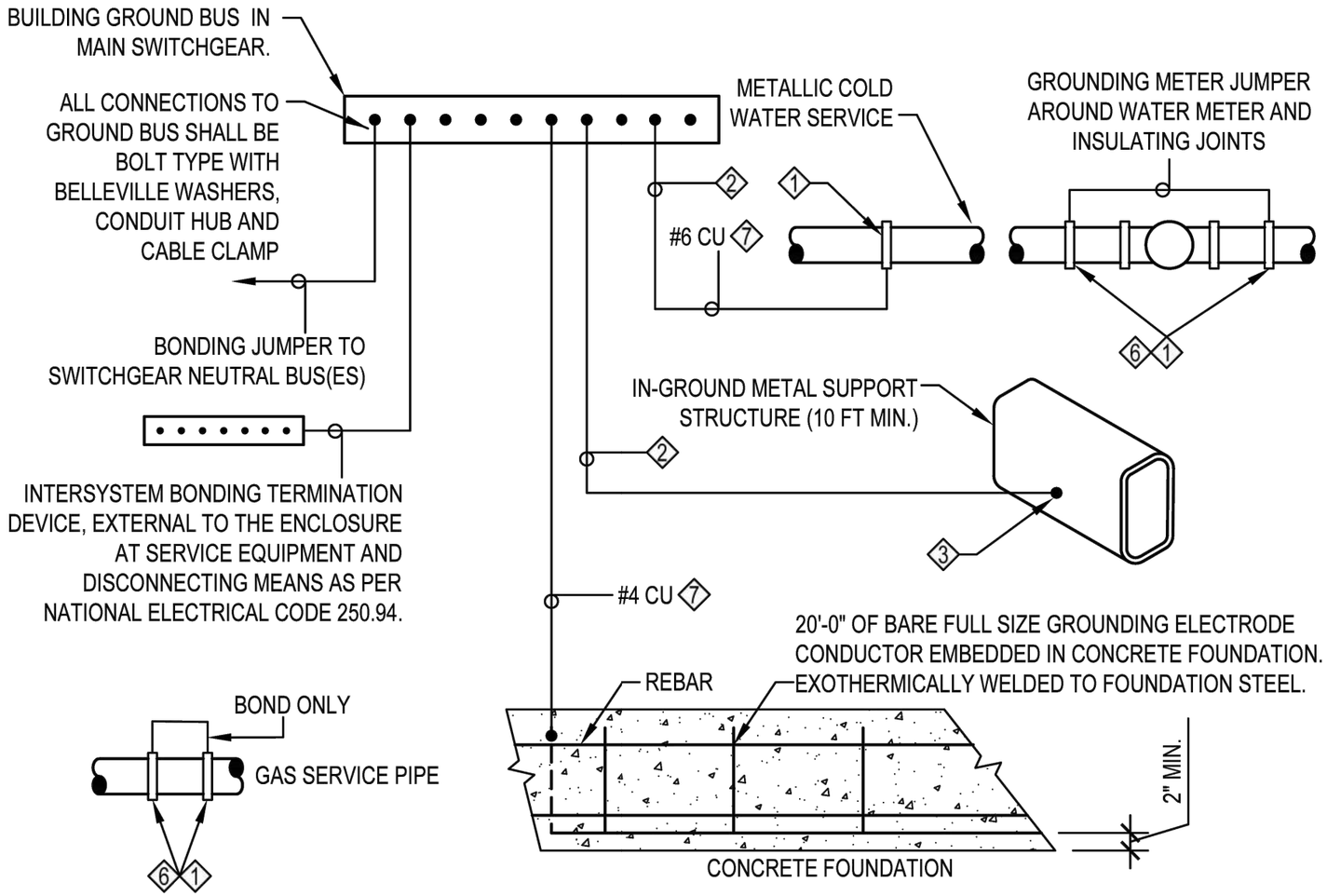
WOLF CREEK WATER AND SEWER ID.
REUSE PROJECT
LOWER PUMP STATION
INSTALLATION DETAILS

GARDNER ENGINEERING
CIVIL ▪ LAND PLANNING
MUNICIPAL ▪ LAND SURVEYING
1580 W 2100S, WEST HAVEN, UT 84401
P 801.476.0202 F 801.476.0066

LP-E52



GROUNDING ELECTRODE CONDUCTOR ◇5

UNGROUNDED PHASE CONDUCTOR (COPPER)	UNGROUNDED PHASE CONDUCTOR (ALUMINUM)	GRND WIRE SIZE (CU)
#2 OR SMALLER	1/0 OR SMALLER	#8
1 OR 1/0	2/0 OR 3/0	#6
2/0 OR 3/0	4/0 OR 250	#4
>3/0 THRU 350 KCMIL	>250 KCMIL THRU 500 KCMIL	#2
>350 KCMIL THRU 600 KCMIL	>500 KCMIL THRU 900 KCMIL	1/0
>600 KCMIL THRU 1100 KCMIL	>900 KCMIL THRU 1750 KCMIL	2/0
>1100 KCMIL	>1750 KCMIL	3/0

NOTES:

◇1 T&B 3900 BU GROUND CLAMP WITH 3/4" CONDUIT HUB AND CABLE CLAMP.

◇2 FULL SIZE GROUNDING ELECTRODE CONDUCTOR IN PVC.

◇3 EXOTHERMICALLY WELDED (TYPICAL).

◇4 NOT USED.

◇5 TABLE TAKEN FROM NEC 250.66. UNGROUNDED PHASE CONDUCTOR REFERS TO THE SIZE OF THE LARGEST UNGROUNDED SERVICE-ENTRANCE CONDUCTOR OR EQUIVALENT AREA FOR PARALLEL CONDUCTORS. SEE NEC 250.66.

◇6 BOND METAL PIPING PER NEC 250.104.

◇7 REDUCED SIZE GROUNDING ELECTRODE CONDUCTOR OR BONDING JUMPER PER NEC 250.66 (A) THROUGH (C). PROVIDE FULL SIZE CONDUCTOR IF CONDITIONS OF NEC 250.66 (A) THROUGH (C) ARE NOT MET.

8. WHEN PRESENT CONTRACTOR SHALL PROVIDE ALL GROUNDING MEANS INDICATED. CONTRACTOR SHALL REFER TO ELECTRICAL ONE-LINE DIAGRAM AND GROUNDING ELECTRODE CONDUCTOR SCHEDULE (THIS DETAIL) FOR GROUNDING ELECTRODE CONDUCTOR SIZE. CONTRACTOR SHALL REFER TO ELECTRICAL SPECIFICATIONS FOR SPECIFICS OF GROUNDING SYSTEM INSTALLATION AND MATERIALS.
9. ONLY BOND GAS PIPE TO GROUND BUS WHEN REQUIRED BY NFPA 780 FOR LIGHTNING PROTECTION OR WHEN LIKELY TO BECOME ENERGIZED PER SEE NEC 250.104 (B).
10. IT IS THE INTENT THAT THE CONTRACTOR MAINTAIN ALL EXISTING GROUNDING AND ADD ALL ADDITIONAL GROUNDING ELECTRODES IDENTIFIED IN THIS DETAIL WHICH ARE ADDED OR MADE ACCESSIBLE DURING RENOVATION.

① SERVICE GROUNDING DETAIL

SCALE: NTS

BREINHOLT
POWER ENGINEERING, PLLC
905 SOUTH 1430 WEST, LEHI UT 84043
(801) 367-5180 PROJECT: BPE2152

Revisions	
Date	Description

PRELIMINARY NOT FOR CONSTRUCTION

WOLF CREEK WATER AND SEWER ID.
REUSE PROJECT
LOWER PUMP STATION
GROUNDING DETAIL

GARDNER ENGINEERING
CIVIL ▪ LAND PLANNING
MUNICIPAL ▪ LAND SURVEYING
1380 W 2100S, WEST HAVEN, UT 84401
P 801.476.0202 F 801.476.0066

LP-E53

EQUIPMENT SCHEDULE

SYMBOL	DESCRIPTION	SERVICE		DISCONNECT		STARTER	LOAD			REMARKS
		VOLTS	PHASE	SIZE	FUSE		HP/TON	VA	AMPS	
AC 1a	SPLIT SYSTEM OUTDOOR UNIT	208 V	1Ø	30A NEMA 3R	-	INTEGRAL	3 TON	5,200	25.0 A	FUTURE BY OTHERS. TRANE #TRUZA0421KA70NA
AC 1b	SPLIT SYSTEM INDOOR UNIT	208 V	1Ø	2 POLE SWITCH	-	INTEGRAL	⅛ HP	416	2.0 A	FUTURE BY OTHERS. TRANE #TPCA0A0421KA70A
EF 1	EXHAUST FAN	120 V	1Ø	INTEGRAL PLUG	-	-	¾ HP	1,656	13.8 A	INTERLOCK VENTILATION FAN AND LOUVERS WITH PUMP RUN OR ACCESS DOOR IS OPEN. 30 MINUTE MIN. RUN TIME. #TCF102AE
L 1	MOTORIZED LOUVER	120 V	1Ø	NOTE E.	-	-	-	50	0.4 A	INTERLOCK TO OPEN LOUVER WHEN EXHAUST FAN IS OPERATING.
UH 1	UNIT HEATER	480 V	3Ø	MANUAL STARTER	-	-	-	7,500	9.0 A	QMARK #MUH-10-4
P-1	PUMP	480 V	3Ø	NOTE D.	45	VFD	20 HP	19,704	23.7 A	PROVIDE INTERLOCK FOR FACTORY INSTALLED MOTOR THERMOSTAT.
P-2	PUMP	480 V	3Ø	NOTE D.	45	VFD	20 HP	19,704	23.7 A	PROVIDE INTERLOCK FOR FACTORY INSTALLED MOTOR THERMOSTAT.
P-3	PUMP	480 V	3Ø	NOTE D.	45	VFD	20 HP	19,704	23.7 A	PROVIDE INTERLOCK FOR FACTORY INSTALLED MOTOR THERMOSTAT.
H-1	PUMP ANTI-CONDENSATION HEATER	120 V	1Ø	PLUG/ CORD	-	-	-	48	0.4 A	FACTORY INSTALLED HEATER. ENERGIZE WHEN MOTOR IS NOT OPERATING.

NOTES:

A. VERIFY ALL EQUIPMENT LOCATIONS AND CONNECTION REQUIREMENTS (i.e. VOLTAGE, PHASE, FLA, ETC.) WITH MECHANICAL DRAWINGS/SUBMITTALS BEFORE FOR ACTUAL EQUIPMENT INSTALLED.
B. ALL FUSES SHALL BE DUAL ELEMENT TIME DELAY. FINAL BREAKER/FUSE & DISCONNECT SIZE SHALL BE DETERMINED BY MANUFACTURER'S RECOMMENDATION FOR ACTUAL EQUIPMENT INSTALLED.
C. MAXIMUM VALUES INDICATED.
D. DISCONNECTING MEANS NOT REQUIRED FOR EQUIPMENT WITHIN SIGHT (AS DEFINED IN NEC) OF BRANCH PANEL SERVING EQUIPMENT. SEE NEC 422.31 (B).
E. DISCONNECTING MEANS NOT REQUIRED FOR APPLIANCES NOT OVER 300 VA. SEE NEC 422.31 (A).

LIGHT FIXTURE SCHEDULE

FIXTURE NUMBER	FIXTURE MANUFACTURER	FIXTURE CATALOG #	LAMPS	FIXTURE			DESCRIPTION	REMARKS
			TYPE	VOLTS	WATTS	MOUNTING		
F1	BEGHELLI LSI FAIL-SAFE DAYBRITE	BS100LED-4HT-MO-WT50 EG3-4-LED-6L-DA-S-UNV-DIM-50-80 4VRVT3-LD5-8-W-UNV-L850-CD1-WL-U VT2-CHAIN/SET-U V3W470L850-UNV-DIM	LED 5000K CCT 7,000 LM 80 CRI	120	69	SURFACE/CHAIN	VAPOR TIGHT STRIP LIGHT	
F2	VISIONAIRE HUBBELL RAYON	VSC-II-T3-16LC-5-3K-UNV-WM-CBA-PCR-120-WSC-8-BAWP LNC4-36L3K-035-3-1-CBA-SCP-8F T228LED-DL-20-UNV-30-T3-CBA-PC-LPL	LED 3000K CCT 2100 LM 80 CRI TYPE III B1-U0-G1	120	30	SURFACE WALL	FULL CUT-OFF LED WALL PACK WITH PHOTO CELL AND MOTION SENSOR CONTROL.	COLOR TO BE SELECTED BY ARCHITECT

verify Dark Sky compliance

BREINHOLT
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Revisions

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PRELIMINARY
NOT FOR
CONSTRUCTION

WOLF CREEK WATER AND SEWER ID.
REUSE PROJECT
LOWER PUMP STATION
EQUIPMENT SCHEDULES

GARDNER ENGINEERING
CIVIL ▪ LAND PLANNING
MUNICIPAL ▪ LAND SURVEYING
1580 W 2100S, WEST HAVEN, UT 84401
P 801.476.0202 F 801.476.0066

LP-E61

PANEL SCHEDULE "L"

VOLTAGE: 208 Y/ 120 VOLTS
MOUNTING: SURFACE
ENCLOSURE: NEMA 1
PHASE: 3
WIRE: 4
BUS RATING (AMPS): 100
MAIN CIRCUIT BREAKER: 50
MINIMUM EQUIPMENT RATING: 10,000 AMPS (RMS-SYM) AFC 1,330
REMARKS: PROVIDE SQUARE D INTEGRATED EQUIPMENT IPC 480V, TRANSFORMER, 208V PANEL COMBO.

CIRCUIT BREAKER					FEEDER			CKT. LOAD		LOAD/PHASE (VA)			CKT. LOAD		FEEDER				CIRCUIT BREAKER			
No.	AMPS	POLE	MOD.	CIRCUIT NAME	C	WIRE	GRD	DEMAND FACTOR	WATTS	ØA	ØB	ØC	WATTS	DEMAND FACTOR	GRD	WIRE	C	CIRCUIT NAME	MOD.	POLE	AMPS	No.
1	40	2	-	FUTURE AC-1a	¾"	#8	#10	1.00	2,600	2,808			208	1.00	#12	#12	¾"	FUTURE AC-1b	-	2	20	2
3	-	-	-	-	-	#8	-	1.00	2,600		2,808		208	1.00	-	#12	-	-	-	-	-	4
5	25	1	-	EF-1 & L-1	¾"	#12	#12	1.00	1,706			2,706	1,000	1.00	#12	#12	¾"	SCADA PANEL	-	1	20	6
7	20	1	-	LIGHT	¾"	#12	#12	1.25	306	1,306			1,000	1.00	#12	#12	¾"	CONTROL PANEL/CONTROL PWR	-	1	20	8
9	20	1	-	CO	¾"	#12	#12	1.00	900		1,044		144	1.00	#12	#12	¾"	(3) H-1	-	1	20	10
11			-	SPACE				1.00				0		1.00				SPACE	-			12
13			-	SPACE				1.00		0				1.00				SPACE	-			14
15			-	SPACE				1.00			0			1.00				SPACE	-			16
17			-	SPACE				1.00				0		1.00				SPACE	-			18

NOTES :

A. ALL INSULATION ON CONDUCTORS TO BE THHN UNLESS NOTED OTHERWISE. INSULATION ON ALL UNDERGROUND EXTERIOR CONDUCTORS SHALL BE THHW.
B. LOAD DEMANDS CALCULATED AS PER SECTIONS 210 & 220 OF THE NATIONAL ELECTRICAL CODE.
C. PANEL COVER SHALL BE FIELD MARKED FOR FLASH PROTECTION WITH A PERMANENT LABEL AS REQUIRED BY THE NATIONAL ELECTRICAL CODE SECTION 110. LABEL SHALL READ: "DANGER: POTENTIAL ARC FLASH HAZARD"
D. ABBREVIATIONS: CO-CONVENIENCE OUTLET, RR-RESTROOM, (N)ORTH, (S)OUTH, (E)AST, (W)EST.

ØA	ØB	ØC	TOTALS	
4,114	3,852	2,706	10,672	CONNECTED LOAD (VA)
			30	CONNECTED LOAD (A)
77	0	0	77	DEMAND FACTOR ADJUSTMENTS (VA)
4,191	3,852	2,706	10,749	TOTAL LOAD (VA)
35	32	23		TOTAL LOAD (A)
			35	MAXIMUM LOAD (A)
39%	36%	25%		PHASE BALANCE

FAULT CURRENT CALCULATION TABLE

MAIN UTILITY COMPANY TRANSFORMER (ROCKY MOUNTAIN POWER)	TRANSFORMER KVA	AFC AT UTILITY	%Z
3Ø 277/480V -150A PAD MOUNTED	150	5,820 A	3.10%

CONFIGURATION						FEEDER			SYSTEM								
FROM		TO		LENGTH	SOURCE FAULT CURRENT	FEEDER SIZE	FEEDERS PER PHASE	WIRE CONSTANT	LINE TO LINE VOLTS	XFMR SECONDARY VOLTS	PHASE	KVA	%Z	MOTOR LOAD	FAULT CURRENT AT EQUIPMENT	FULL OR SERIES RATED	MINIMUM SYMMETRICAL EQUIPMENT AIC RATING
TRANSFORMER	UTILITY	SWITCHBOARD	SES	20'-0"	5,820 AIC	4/0 AL	1	11,174	480 V		3Ø		-		5,609 AIC	FULL	14,000 AIC
PANELBOARD	SES	PANELBOARD	H	5'-0"	5,609 AIC	2/0 CU	1	11,423	480 V		3Ø		-		5,560 AIC	FULL	14,000 AIC
SWITCHBOARD	H	TRANSFORMER	XL	5'-0"	5,560 AIC	12 CU	1	617	208 V		3Ø		-		4,043 AIC	FULL	10,000 AIC
TRANSFORMER	XL	TRANS. SECONDARY			4,043 AIC				208 V	208 V	3Ø	15	2.0%		1,379 AIC	FULL	10,000 AIC
PANELBOARD	XL	PANELBOARD	L	5'-0"	1,379 AIC	8 CU	1	1,558	208 V		3Ø		-		1,330 AIC	FULL	10,000 AIC

NOTES:
1. DISTANCES INDICATED ARE FOR FAULT-CURRENT ANALYSIS ONLY. CONTRACTOR SHALL USE FIELD MEASUREMENTS ESTABLISH CONDUCTOR LENGTHS FOR ORDERING PURPOSES.
2. PER NEC110.24 PROVIDE FIELD MARKING ON SERVICE EQUIPMENT STATING MAXIMUM AVAILABLE FAULT CURRENT AND DATE OF FAULT CURRENT CALCULATION.

BREINHOLT
POWER ENGINEERING, PLLC
805 SOUTH 1430 WEST, LEHI UT 84043
(801) 367-5180 PROJECT: BPE2152

Revisions

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WOLF CREEK WATER AND SEWER ID.
REUSE PROJECT
LOWER PUMP STATION
PANEL SCHEDULE L + FAULT CALC.

GARDNER ENGINEERING
CIVIL ▪ LAND PLANNING
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1580 W 2100S, WEST HAVEN, UT 84401
P 801.476.0202 F 801.476.0066

LP-E62

PANEL SCHEDULE "H"

VOLTAGE: 480 Y/ 277 VOLTS | **BUS RATING (AMPS):** 125 | **REMARKS:** PROVIDE SQUARE D INTEGRATED EQUIPMENT IPC 480V, TRANSFORMER, 208V PANEL COMBO.

MOUNTING: SURFACE | **PHASE:** 3 | **MAIN LUGS ONLY**

ENCLOSURE: NEMA 1 | **WIRE:** 4 | **MINIMUM EQUIPMENT RATING:** 14,000 AMPS (RMS-SYM) AFC 5,560

CIRCUIT BREAKER				CIRCUIT NAME	FEEDER			CKT. LOAD		LOAD/PHASE (VA)			CKT. LOAD		FEEDER			CIRCUIT NAME	CIRCUIT BREAKER			
No.	AMPS	POLE	MOD.		C	WIRE	GRD	DEMAND FACTOR	WATTS	ØA	ØB	ØC	WATTS	DEMAND FACTOR	GRD	WIRE	C		MOD.	POLE	AMPS	No.
1	25	3	-	TRANSORMER XL	¾"	#12	#12	1.00	4,191	10,758			6,568	1.00	#10	#8	¾"	P-1 PUMP	-	3	45	2
3	-	-	-	-	-	#12	-	1.00	3,852		10,420		6,568	1.00	-	#8	-	-	-	-	-	4
5	-	-	-	-	-	#12	-	1.00	2,706			9,274	6,568	1.00	-	#8	-	-	-	-	-	6
7	45	3	-	P-3 PUMP	¾"	#8	#10	1.00	6,568	13,136			6,568	1.00	#10	#8	¾"	P-2 PUMP	-	3	45	8
9	-	-	-	-	-	#8	-	1.00	6,568		13,136		6,568	1.00	-	#8	-	-	-	-	-	10
11	-	-	-	-	-	#8	-	1.00	6,568			13,136	6,568	1.00	-	#8	-	-	-	-	-	12
13	20	3	-	UH-1 UNIT HEATER	¾"	#12	#12	1.00	2,500	2,500				1.00				SPACE	-			14
15	-	-	-	-	-	#12	-	1.00	2,500		2,500			1.00				SPACE	-			16
17	-	-	-	-	-	#12	-	1.00	2,500			2,500		1.00				SPACE	-			18
19			-	SPACE				1.00		0				1.00				SPACE	-			20
21			-	SPACE				1.00			0			1.00				SPACE	-			22
23			-	SPACE				1.00				0		1.00				SPACE	-			24
25			-	SPACE				1.00		0				1.00				SPACE	-			26
27			-	SPACE				1.00			0			1.00				SPACE	-			28
29			-	SPACE				1.00				0		1.00				SPACE	-			30

NOTES :

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D. ABBREVIATIONS: CO-CONVENIENCE OUTLET, RR-RESTROOM, (N)ORTH, (S)OUTH, (E)AST, (W)EST.

ØA	ØB	ØC	TOTALS	
26,394	26,056	24,910	77,360	CONNECTED LOAD (VA)
			93	CONNECTED LOAD (A)
0	0	0	0	DEMAND FACTOR ADJUSTMENTS (VA)
26,394	26,056	24,910	77,360	TOTAL LOAD (VA)
95	94	90		TOTAL LOAD (A)
			95	MAXIMUM LOAD (A)
34%	34%	32%		PHASE BALANCE

BREINHOLT
POWER ENGINEERING, PLLC
805 SOUTH 1430 WEST, LEHI UT 84043
(801) 367-5180 PROJECT: BPE2152

Revisions	Description					
	Date					

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WOLF CREEK WATER AND SEWER ID.
REUSE PROJECT
LOWER PUMP STATION
PANEL SCHEDULE H

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CIVIL • LAND PLANNING
MUNICIPAL • LAND SURVEYING
1580 W 2100S., WEST HAVEN, UT 84401
P 801.476.0202 F 801.476.0066

LP-E63