



HIGHLAND CITY

HIGHLAND CITY COUNCIL AGENDA

Tuesday, December 1, 2020

Amended November 30, 2020

Highland City Council Chambers, 5400 West Civic Center Drive, Highland Utah 84003

VIRTUAL PARTICIPATION

 YouTube Live: <http://bit.ly/HC-youtube>
 Zoom: Call 1-346-248-7799 Meeting ID: 825 4804 2834
 Email comments prior to meeting: council@highlandcity.org

7:00 PM REGULAR SESSION

Call to Order – Mayor Rod Mann

Invocation – Council Member Kurt Ostler

Pledge of Allegiance – Council Member Brittney P. Bills

1. UNSCHEDULED PUBLIC APPEARANCES

Please limit comments to three minutes per person. Please state your name.

2. PRESENTATIONS

a. **Highland City Youth Council** – *Youth Council Representative*

3. CONSENT ITEMS (5 minutes)

Items on the consent agenda are of a routine nature or have been previously studied by the City Council. They are intended to be acted upon in one motion. Council members may pull items from consent if they would like them considered separately.

a. **Purchase Contract for a Front End Loader** *Administrative*

The City Council will consider a purchase contract to replace the front end loader in our streets department and authorize the Mayor or City Administrator and City Recorder to execute the necessary contracts for the purchase. The Council will take appropriate action.

4. **CONDITIONAL USE PERMIT AND SITE PLAN APPROVAL: AUTOMOTIVE LUBE FACILITY (SP-20-03 AND CU-20-02)** *Administrative*

The City Council will hold a public meeting to consider a request by Burt Brothers for approval of a Site Plan and Conditional Use Permit for a Lube Center located approximately at 10908 North Town Center Blvd. The City Council will take appropriate action.

5. ORDINANCE 2020-33: AMENDING CHAPTER 12.02 FREE EXPRESSION REGULATION AND RESOLUTION 2020-33: DESIGNATION OF AREAS FOR LIMITED USE OF EXPRESSIVE ACTIVITIES *Legislative*

The City Council will consider a request by City Staff to amend Title 12, Chapter 02 of the City's Municipal Code related to the regulation of free expression, and to adopt a resolution designating certain areas within Highland City for limited use for expressive activities. The Council will take appropriate action.

6. ORDINANCE 2020-34: MUNICIPAL CODE AMENDMENT PROHIBITING TARGETED RESIDENTIAL PICKETING *Legislative*

The City Council will consider a request by City Staff to adopt Title 9, Chapter 06 of the City's Municipal Code to prevent and impose a criminal punishment for targeted residential picketing. The Council will take appropriate action.

7. ORDINANCE 2020-35: AMENDING CHAPTER 2.36 COMMUNITY TREES *Legislative*

The City Council will consider a request by City Staff to amend Title 2, Chapter 36 of the City's Municipal Code related to the management of trees within Highland City. The Council will take appropriate action.

8. CONSTRUCTION CONTRACT: RECONSTRUCTION OF CULINARY WELL HOUSE #3 *Administrative*

The City Council will consider a request to approve a bid with VanCon Inc. for the reconstruction of Culinary Well House #3, and authorize the Mayor or City Administrator and City Recorder to execute the necessary contract documents. The Council will take appropriate action.

9. PROPOSAL APPROVAL: 2021 UTILITY RATE STUDY UPDATE *Administrative*

The City Council will consider a request to approve the proposal from Lewis, Young, Robertson, and Burningham, Inc. (LYRB) for the preparation of the 2021 Utility Rate Study Update for the for the amount of \$17,150 and authorize the Mayor or City Administrator and City Clerk to execute the necessary contract documents for the project. The Council will take appropriate action.

10. MAYOR/COUNCIL AND STAFF COMMUNICATION ITEMS

a. Park Maintenance Building

b. 2021 January-April Workload

c. Future Meetings

- December 8, Planning Commission Meeting, 7:00 pm, City Hall
- January 5, City Council Meeting, 7:00 pm, City Hall
- January 19, City Council Meeting, 7:00 pm, City Hall
- January 26, Planning Commission Meeting, 7:00 pm, City Hall

11. CLOSED SESSION

The Highland City Council may temporarily recess the City Council meeting to convene in a closed session to discuss pending or reasonably imminent litigation and the character, professional competence, or physical or mental health of an individual, as provided by Utah Code Annotated §52-4-205.

ADJOURNMENT

In accordance with Americans with Disabilities Act, Highland City will make reasonable accommodations to participate in the meeting. Requests for assistance can be made by contacting the City Recorder at (801) 772-4505 at least three days in advance of the meeting.

ELECTRONIC PARTICIPATION

Members of the City Council may participate electronically via telephone, Skype, or other electronic means during this meeting.

CERTIFICATE OF POSTING

I, Stephannie Cottle, the duly appointed City Recorder, certify that the foregoing agenda was posted at the principal office of the public body, at the Lone Peak Fire Station and Lone Peak Police Station, on the Utah State website (<http://pmn.utah.gov>), and on Highland City's website (www.highlandcity.org).

Please note the order of agenda items are subject to change in order to accommodate the needs of the City Council, staff and the public.

Posted and dated this amended agenda 30th day of November, 2020

Stephannie Cottle, City Recorder

THE PUBLIC IS INVITED TO PARTICIPATE IN ALL CITY COUNCIL MEETINGS.



CITY COUNCIL AGENDA REPORT

ITEM #3a

DATE: December 1, 2020
TO: Honorable Mayor and Members of the City Council
FROM: Todd Trane, PE
City Engineer
SUBJECT: Purchase Contract for a Front End Loader *Administrative*

PURPOSE:

The City Council will consider a purchase contract to replace the front end loader in our streets department and authorize the Mayor or City Administrator and City Recorder to execute the necessary contracts for the purchase. The Council will take appropriate action.

BACKGROUND:

We currently use the front end loader for several jobs within the city. Most of the use is completed within our streets department, but all other departments use the loader with needs arise. The front end loader is used daily during the winter months to load the snow plows with salt. This is the only piece of equipment big enough to do the job.

Our current front end loader is in disrepair. It broke down recently during the first storm of the season. We had to spend \$8542.38 to get it fixed in an emergency. Wheeler Machinery was good to lend us a loader until ours was fixed. We as staff don't feel that the loader is reliable enough to make it through another winter. This is a piece of equipment that we need to rely on when the storms come.



Current Street Department Front End Loader
Trade-in Value - \$29,000
2003 CAT with 2,900 hours of operation

We ended up getting quotes from two separate equipment suppliers. Wheeler Machinery

provided a quote for a new Caterpillar Model 926M Loader at \$149,750.00. They also gave us the option of a trade allowance of \$29,000 for our existing loader.

The other quote that we received was from Century Equipment Company. The quote was for a Case 721GXR Loader for \$206,926.00 with the option of a trade allowance of \$40,000 for our existing loader. They also gave us the option to lease this loader for \$22,000 per year.



Caterpillar Model 926M
Price - \$149,750.00
Trade-in Value - \$29,000.00
Final Price = \$120,750.00



Case 721GXR
Price - \$206,926.00
Trade-in Value - \$40,000.00
Final Price = \$166,926.00

We as staff feel that the Caterpillar from Wheeler is the best option for the money and will meet the needs of Highland for many years to come.

FISCAL IMPACT:

This action will commit \$120,750.00 of Highland City funds to replace the front end loader. This expenditure is not in the current budget and will need to be pulled from reserves.

RECOMMENDATION:

Staff recommends that the City Council **APPROVE** and **AUTHORIZE** the City Administrator to execute the necessary purchase contract.

PROPOSED MOTION:

I move that the City Council **APPROVE** and **AUTHORIZE** the City Administrator to purchase a CAT loader to replace and trade-in the current loader for a difference of \$120,750.00.

ALTERNATIVE MOTION:

I move that the City Council **REJECT** the proposal to purchase the CAT Loader. (The Council should draft appropriate findings).

ATTACHMENTS:

1. Wheeler Quote
2. Century Equipment Quote



133017-01

October 15, 2020

HIGHLAND CITY

5400 W CIVIC CENTER DR 1
HIGHLAND, UT84003

Attention: Roy Bond

Roy Bond,

Thank you for this opportunity to quote Caterpillar products for your business needs. We are pleased to quote the following for your purchase consideration.

One (1) New Caterpillar Model: 926M Wheel Loaders with all standard equipment in addition to the additional specifications listed below:

STOCK NUMBER:	SERIAL NUMBER:	YEAR:	SMU:
---------------	----------------	-------	------

Thank you for your interest in Wheeler Machinery and Caterpillar products for your business needs. This quotation is valid for 30 days, after which time we reserve the right to re-quote. If there are any questions, please do not hesitate to contact me.

Sincerely,

Trevor Shuman
Machine Sales Representative
tshuman@wheelercat.com
801-209-1882

If the rental equipment described herein is purchased, notice is hereby given that Wheeler Machinery Co. has assigned its rights, but not its obligations, in the sale to CATD Exchange Services, LLC, as part of a like-kind Exchange.

One (1) New Caterpillar Model: 926M Wheel Loaders with all standard equipment in addition to the additional specifications listed below:

MACHINE SPECIFICATIONS

926M SWL DCA3B	593-8973	563-5967 SEAT, DELUXE	563-5967
LANE 1 - AVAILABLE FROM CLAYTON PDC		372-1868 RADIO, BLUETOOTH, AUX, MIC	372-1868
LANE 2 - AVAILABLE FROM CLAYTON FACTORY		366-8148 FENDERS, STANDARD	366-8148
LANE 3 - AVAILABLE FROM CLAYTON FACTORY		348-2579 COUNTERWEIGHT, STANDARD	348-2579
USE FBC OR CHECK LA TOOL FOR AVAILABILITY		430-2859 RIDE CONTROL	430-2859
		536-5313 QUICK COUPLER, FUSION	536-5313
INCLUDES:		559-0841 LIGHTS, AUX HALOGEN	559-0841
541-2670 926M WHEEL LOADER	541-2670	541-3066 LIGHTS, ROADING, HALOGEN, RH	541-3066
430-2945 PREP PACK, NORTH AMERICA		519-8081 TOOLBOX AUX, NONE	519-8081
541-3083 HYDRAULICS, 3V, CPLR READY, HL	541-3083		
527-8860 LINES, AUX 3RD, HIGH LIFT	527-8860	NOTE: Please refer to the Lane 1 section to complete your order.	
536-5282 HYDRAULICS, STANDARD, HL	536-5282	ENGINE	527-0422
536-5339 JUMPER LINES, NONE	536-5339	PRODUCT LINK, CELLULAR PL641	565-0908
430-2996 STEERING, STANDARD	430-2996	TIRES, 20.5R25 MX XTLA * L2	366-6896
333-6527 DIFFERENTIAL,LIMITED SLIP REAR	333-6527	INSTRUCTIONS, ANSI, US	430-2963
536-5350 ENVIRONMENT, HIGH DEBRIS	536-5350	SHIPPING/STORAGE PROTECTION	0P-2266
525-5964 WEATHER, COLD START 120V	525-5964	BUCKET-GP, 2.7 YD3, FUS, BOCE	360-3321
549-0451 CAB, DELUXE	549-0451		

State Contract **MA3383**

SELL PRICE	\$149,750.00
LESS GROSS TRADE ALLOWANCE	(\$29,000.00)
NET BALANCE DUE	\$120,750.00

TRADE-INS

Model	Make	Serial Number	Year	Trade Allowance
928G	CATERPILLAR (AA)	DJD00644	2003	\$29,000.00

WARRANTY & COVERAGE

Standard Warranty: 12 Months / Unlimited Hours

F.O.B/TERMS:

Highland city

LEASE AGREEMENT

CUSTOMER (LESSEE)

Highland City

ADDRESS

4066 W. 11000 N.

CITY

Highland City

STATE ZIP CODE

UT 84003

CONTACT

Roy Bond

PHONE NO.

801-709-9683

SOCIAL SEC NO. OR FED TAX NO.

COUNTY

ADDRESS OF EQUIPMENT IF DIFFERENT THAN ABOVE

LESSOR

CENTURY EQUIPMENT COMPANY, INC**4343 CENTURY DRIVE****SALT LAKE CITY, UT****(801) 262-5761**

	MAKE	MODEL	DESCRIPTION	SERIAL NO.
	CASE	721GXR	Wheel Loader	TBD

LEASE PAYMENTS:

Term of Lease	1 year
Yr. Lease Pmt	\$22,000.00
Lease Start Date	TBD
Lease End Date	TBD
Max. Hr. limit/Yr.	300
Rate per Hour over	\$35.00
Hour meter reading	TBD

MAINTENANCE OPTIONS:

- ☐ I accept the maintenance package at a rate of 10% of the lease rate. This package includes reasonable rental return clean-up costs, and routine maintenance. Century Equipment will provide all fluids, filters and labor to service equipment per manufacturers recommendations. Lessee is responsible for daily maintenance including grease and all fluid levels. Lessee is responsible for all damages and/or excessive wear.
- ☐ I decline the maintenance package. Lessee is fully responsible to provide all routine maintenance per manufacturers recommendations. Equipment is to be returned clean, with all required maintenance performed. Any necessary clean-up costs and maintenance will be charged accordingly. Lessee is responsible for all damages and/or excessive wear.

If the Equipment is operated for more than (see above) hours in any one month or (see above) hours during the term of this Lease Agreement, then Lessee agrees to pay additional lease rate at the rate of (see above) per hour for each excess hour, due and payable with the next lease payment or, if all such payments have been made, at Lessors demand.

If Lessee fails to make payment within 10 days after the due date, Lessee agrees to pay Lessor a late charge at the highest rate permitted by law or such lower amount assessed by Lessor.

Lease payments shall be made payable to Lessor and mailed to the address shown above.

OPTION TO PURCHASE:

Lessee shall have the option to purchase the Equipment at the expiration of the term of this Lease Agreement, if the Lessee is not in default of this Lease Agreement for a purchase price of **\$ 206,926.00** 100% of all leases paid to Lessor will apply to the agreed purchase price less 1% of agreed purchase price per month as interest.

PHYSICAL DAMAGE INSURANCE/LIABILITY INSURANCE:

Lessee must provide written proof of physical damage insurance coverage for not less than the fair market value of the Equipment. The insurance policy shall name Lessor or its assignee as an additional insured.

Lessee at its own expense, must carry general liability insurance with minimum liability limits in the amount of \$1 million per person, \$1 million per occurrence for bodily injury, including death, and \$500,000 per occurrence for property damage. The insurance policy shall name Lessor as additional insured.

Each policy of insurance maintained by Lessee as required by this Lease Agreement, shall provide that the insurer shall give Lessor not less than 30 days written notice before such policy or the coverage afforded thereby shall be altered, terminated or cancelled, and provided that Lessor's interest under such policy shall not be adversely affected by any act or omission (whether or not negligent, willful, contrary to the terms of such policy or applicable law or otherwise) of Lessee or anyone acting or purporting to act on its behalf, and that Lessor may but shall not be obligated to pay any premium or other sum payable in respect thereof.

NOTICE TO THE LESSEE: (1) DO NOT SIGN THIS BEFORE YOU READ THE WRITING ON THE REVERSE SIDE, EVEN IF OTHERWISE ADVISED. IT IS IMPORTANT THAT YOU THOROUGHLY READ THIS AGREEMENT BEFORE SIGNING IT. (2) DO NOT SIGN THIS IF IT CONTAINS ANY BLANK SPACES. (3) YOU ARE ENTITLED TO HAVE AN EXACT COPY OF ANY AGREEMENT YOU SIGN.

LESSEE (CUSTOMER)**LESSOR (DEALER)**

SIGNATURE

DATE

SIGNATURE

DATE

PRINT NAME



CITY COUNCIL AGENDA REPORT ITEM #4

DATE: December 1, 2020
TO: Honorable May and City Council Members
FROM: Kellie Bronson
Planner & GIS Analyst
SUBJECT: Conditional Use Permit and Site Plan Approval: Automotive Lube Facility
(SP-20-03 and CU-20-02) *Administrative*

PURPOSE:

The City Council will hold a public meeting to consider a request by Burt Brothers for approval of a Site Plan and Conditional Use Permit for an Automotive Lube Facility located approximately at 10908 North Town Center Blvd. The City Council will take appropriate action.

BACKGROUND:

In 2018, Burt Brothers acquired the structure previously known as Timpanogos Tire Service Center on Lot 5 in the Highland Town Center commercial subdivision. In 2018, they also bought Lot 6, adjacent to Lot 5, to expand their business by building a lube center. The proposed Lube Center is located approximately at 10908 North Town Center Blvd.

The subject property is 0.997 acres in the Town Center Flex Use zone. Automobile services and repairs are permitted in the Town Center Flex Use zone subject to approval of a conditional use permit.

Conditional Uses:

Conditional Uses are uses that are meant to give limited flexibility in the review of an application. If a use is allowed as a conditional use it is assumed that the use is desirable but that it may require an extra level of review. Denial must be based on some factor unique to the proposed location that renders the potential negative effects of the proposed use beyond mitigation. Mitigation means to temper or reduce the negative aspects, not eliminate them.

A conditional use is regulated by the following standards:

Utah State Code 10-9a-507. Conditional Uses.

(1) A land use ordinance may include conditional uses and provisions for conditional uses

that require compliance with standards set forth in an applicable ordinance.

(2) (a) A conditional use shall be approved if reasonable conditions are proposed, or can be imposed, to mitigate the reasonably anticipated detrimental effects of the proposed use in accordance with applicable standards.

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

The action taken in response to an application must be supported by substantial evidence in the record. Substantial evidence is evidence that is relevant and credible. To be relevant, it must relate to the standards in the ordinance. To be credible it must be objective and independent.

A site plan and conditional use permit are both an *administrative* process.

SUMMARY OF THE REQUEST:

1. The applicant is requesting Site Plan and Conditional Use Permit approval for a 4,856 square foot Lube Center. The property is located approximately at 10908 North Town Center Blvd.
2. Automobile services and repairs are permitted in the Town Center Flex Use zone subject to a Conditional Use Permit.
3. Access to the site will be from the Macey's service drive on the south side of Macey's.
4. Business hours are Monday through Friday 7:00 am to 6:00 pm and from 7:00 am to 5:00 pm on Saturday. It will be closed on Sunday.
5. Plans currently reflect 25 on-site parking stalls on the project.

CITIZEN PARTICIPATION:

The meeting notification sign was posted on the property October 26, 2020 and letters were sent to affected neighbors. The neighborhood meeting was held on November 5, 2020. One resident attended the meeting. A summary of the meeting is attached.

Notice of the November 17, 2020 Planning Commission meeting was published in the Daily Herald on November 2, 2020 and posted on the state and city websites October 29, 2020. Notification letters for the public hearing associated with this meeting were mailed to all property owners within 500 feet of the proposed site on November 3, 2020. No written correspondence was received.

Formal notification of the City Council meeting is not required.

REQUIRED FINDINGS:

The Planning Commission must determine that the proposed use meets three findings prior to granting a Conditional Use Permit. The burden of proof rests with the applicant. Each finding is presented below along with staff's analysis.

- 1. The use will not be detrimental to the health, safety, or general welfare of persons residing or working in the vicinity or injurious to property or improvements in the vicinity.**

The subject property is designated as Flex Use in the Town Center District. The Town Center was planned to have a mix of residential and nonresidential uses in close proximity to each other.

The properties to the south and east sides of the Lube Center are multi-family residential developments and part of the Highland Vista Town Homes subdivision. Multi-family residential is another conditional use in the Town Center Flex Use zone. According to the Flex Use definition in Section 3-4702 in the Development Code, the proposed use is compatible with the surrounding land uses.

There is an existing six-foot concrete wall between this site and Highland Vista. A ten-foot landscape buffer with trees planted every 43-52 feet on center will be included on the lube center site. Staff is suggesting a stipulation to require additional trees for screening equal to one for every 20 feet to mitigate the impacts of the lube center on the townhomes.

The lighting plan demonstrates 8 exterior wall light fixtures facing downward. They are limiting excessive lighting as mentioned on page 21 in the Town Center Commercial Design Standards.

The proposed Lube Center will not substantially change the look or character of the surrounding area or be detrimental to the health, safety, or general welfare of persons residing or working in the vicinity.

- 2. The use complies with all applicable regulations in the Development Code.**

The site plan provides one existing access from Macey's Service Drive. Staff is suggesting a stipulation to provide a drive aisle between the existing the site and the lube center. This will allow vehicles to travel between sites without having to use the Macey's service drive. Staff is also recommending that a cross access agreement be recorded between the two lots. A stipulation has been included to address these issues.

The plan shows 25 parking stalls, which is more than is required in Section 3-4726 of the Development Code.

A landscape plan has been submitted showing a minimum of 15% landscaping. This is compatible with Section 3-4729 of the Development Code.

The building meets the required setbacks specified in Section 3-4713 of the Development Code.

The building height is a maximum of 26 feet 8 inches. The is compatible with Section 3-4713 of the Development Code.

The building elevations need to be revised to meet the design standards of the Development Code and Town Center Commercial Design Standards. A stipulation has been included to address this issue.

3. Conditions are imposed to mitigate any detrimental effects.

Seven stipulations have been included to ensure compliance with the Development Code.

CONCLUSION:

With the proposed stipulations, the proposed conditional use appears to meet the required findings for approval

PLANNING COMMISSION ACTION:

The Planning Commission held a public hearing on November 17, 2020. Citizen concerns were related to lighting, landscaping, and noise. After discussion, the citizen noted that most concerns were addressed, but there was still a concern about the sound and how early they would be operating.

According to the Municipal Code Section 8.16.100, it is unlawful for any person or group as designated in this chapter to create or permit any noise (regardless of its origin or definition) that is so loud as to be objectionable and bothersome between the hours of ten p.m. and seven a.m. Burt Brothers hours of operation are compliant with this noise ordinance.

Staff did more research on the matter. Section 3-4735 in the Development Code states:
2. Noise Attenuation. All commercial areas within Highland City shall be subject to the following noise limitations measured at the source:

- a. Noise from external sources may not exceed 65 d.b.a. during daylight operations.

- b. Noise from external sources may not exceed 45 d.b.a. during nighttime operations.

The existing tire center was approved on May 1, 2001 by the City Council based on a

sound study performed by Spectrum Acoustical Engineers. They approved it with a stipulation that the air wrenches “emit no more than 85dB of noise at the source” (Attachment 7 and 8). The Applicant has stated that they will comply with this same requirement for the new Automotive Lube Facility.

The Commission voted 5-0 to recommend approval of the Site Plan and Conditional Use Permit subject to the following six stipulations:

1. Development of the site shall comply with the site, elevations, and landscape plan date stamped November 2, 2020 except as modified by these stipulations.
2. All signage shall require a separate permit and comply with the Development Code requirements.
3. ~~The landscape plan shall be revised to include trees placed 20 feet on center in the landscape buffer adjacent to Highland Vistas.~~
4. The site plan shall be modified to show a drive aisle between lot five and six. Further, a cross access agreement shall be recorded between lots five and six prior to the issuance of a certificate of occupancy.
5. Final civil engineering plans shall be reviewed and approved by the City Engineer. The site shall meet all requirements of the City Engineer.
6. In accordance with Section 4-109, the Conditional Use Permit will expire if a building permit is not issued within one year of approval by City Council.
7. ~~The building elevations shall be revised to meet the requirements of Section 3-4713 and the Town Center Commercial Design Standards prior to the site plan and conditional use permit being on a City Council agenda.~~

The applicant has revised the landscape plan as mentioned in stipulation three and has revised the elevations as required; therefore, stipulations three and seven are no longer needed. Staff has added a stipulation related to the noise issue.

RECOMMENDATION:

Staff recommends that the City Council **APPROVE** the Site Plan and Conditional Use Permit subject to the five stipulations recommended by the Planning Commission with an additional stipulation from Staff:

1. Development of the site shall comply with the site, elevations, and landscape plan date stamped November 2, 2020 except as modified by these stipulations.
2. All signage shall require a separate permit and comply with the Development Code requirements.
3. The site plan shall be modified to show a drive aisle between lot five and six. Further, a cross access agreement shall be recorded between lots five and six prior to the issuance of a certificate of occupancy.
4. Final civil engineering plans shall be reviewed and approved by the City Engineer. The site shall meet all requirements of the City Engineer.

5. In accordance with Section 4-109, the Conditional Use Permit will expire if a building permit is not issued within one year of approval by City Council.
6. Noise standards shall meet the same standards as the existing tire center.

PROPOSED MOTION:

I move that the City Council accept the findings and **APPROVE** cases CU-20-02 and SP-20-02 a request for site plan and conditional use permit approval for an automotive lube facility subject to six stipulations.

ALTERNATIVE MOTION:

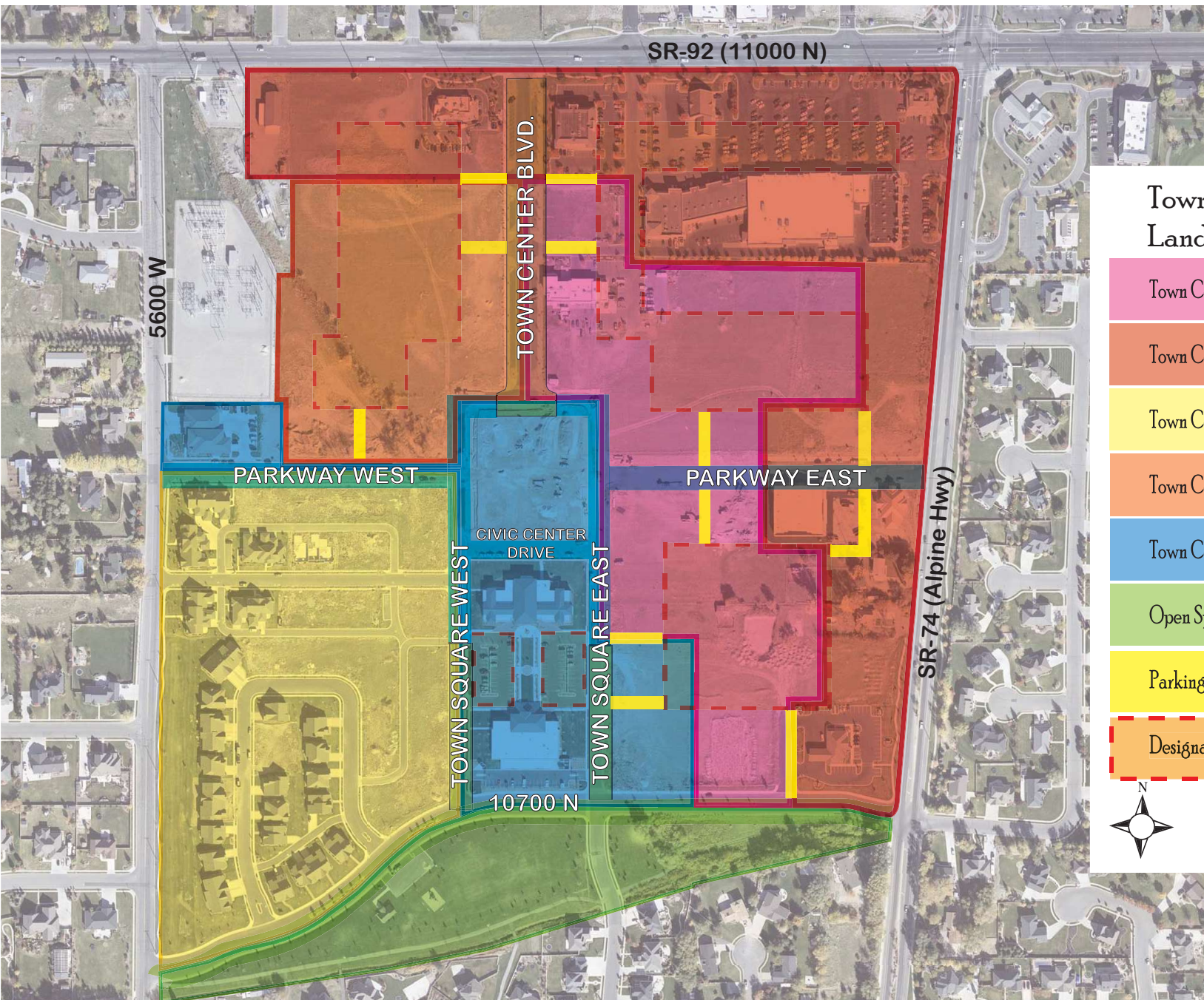
I move that the City Council **DENY** cases CU-20-02 and SP-20-02 a request for site plan and conditional use permit approval for an automotive lube facility based on the following findings: (The Council will need to make appropriate findings.)

FISCAL IMPACT:

This action will not have a financial impact on this fiscal year's budget expenditures.

ATTACHMENTS:

1. Town Center Overlay Zoning Map
2. Vicinity Map
3. Site Plan
4. Building Elevations
5. Project Narrative
6. November 5, 2020 Neighborhood Meeting Minutes
7. Excerpt of the May 1, 2001 Council Meeting Minutes
8. 2001 Spectrum Acoustical Engineers sound study



Town Center Land Use Map

Town Center Flex-Use District

Town Center Commercial Retail District

Town Center Residential District

Town Center Mixed Use Residential District

Town Center Civic District

Open Space District

Parking Access Points

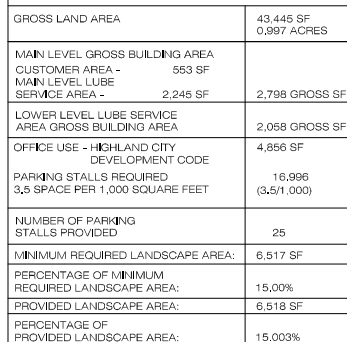
Designated Parking (Generally)

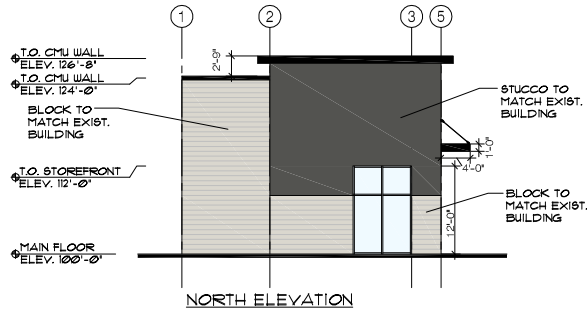


May, 2010

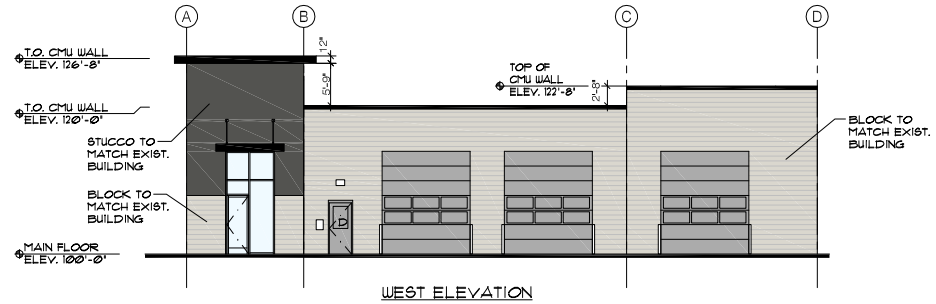
Attachment 2



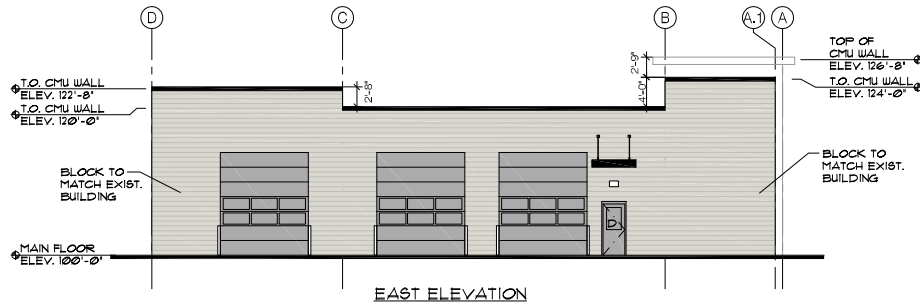




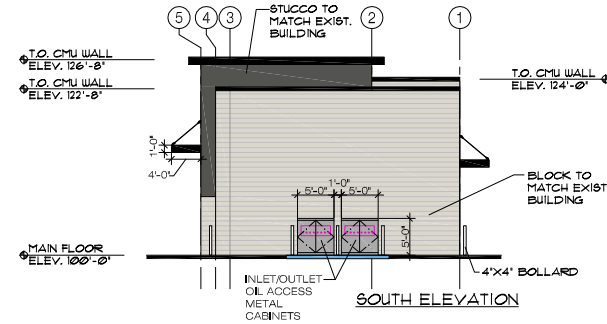
NORTH ELEVATION



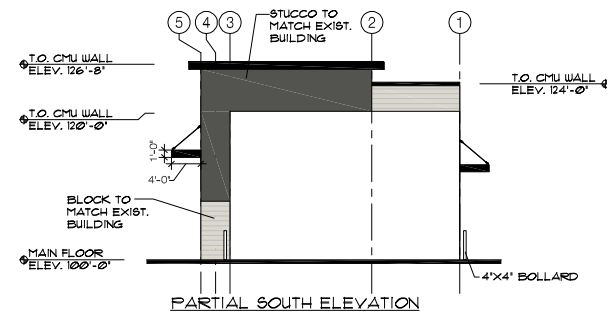
WEST ELEVATION



EAST ELEVATION



SOUTH ELEVATION



PARTIAL SOUTH ELEVATION

NOTE:
TINTED/CLEAR GLASS TO BE APPROVED
BY OWNER PRIOR TO WORK.

G=TINTED/CLEAR 1" INSULATED TEMPERED GLASS	29 U FACTOR 38 SHGC
T=TINTED/CLEAR 1" INSULATED TEMPERED GLASS	29 U FACTOR 38 SHGC
D=TINTED/CLEAR 1" INSULATED TEMPERED GLASS (DOORS TYP.)	29 U FACTOR 38 SHGC

EXTERIOR FENESTRATION NOTE
U-FACTOR FOR ALL WINDOWS/FENESTRATION TO BE
DETERMINED IN ACCORDANCE WITH THE REQUIREMENTS OF
THE NFRC 100, CERTIFIED BY AN INDEPENDENT LABORATORY,
AND LABELED AS SUCH BY THE MANUFACTURER. THE
STICKERS SHOULD BE LEFT ON THE WINDOWS UNTIL AFTER
THEY HAVE BEEN INSPECTED. SITE BUILD FENESTRATION
SHOULD BE PROVIDED WITH AN ONSITE CERTIFICATION
THROUGH NFRC.
U-FACTOR: .29
SHGC RATING: .38
(SOLAR HEAT GAIN COEFFICIENT RATING)

NOTE:
SIGNAGE TO BE APPROVED BY
HIGHLAND CITY.

OWNER TO OBTAIN A SEPARATE
SIGN PERMIT FROM HIGHLAND
CITY ZONING FOR ALL
PROPOSED SIGNS. ALL
SIGNAGE SHALL MEET THE
REQUIREMENTS OF IBC.

SIGN COMPANY TO
COORDINATE POWER
FOR SIGNAGE W/ OWNER
FIELD DETERMINE



SAMUEL J. BRADY
ARCHITECTS

200 E. South Temple
Suite 160
Salt Lake City, Utah 84111
(801) 595-1752
www.sambrady.com



10/19/2020

10908 NORTH
TOWN CENTER BLVD.

HIGHLAND, UTAH
LUBE CENTER

EXTERIOR
ELEVATIONS
PAPER SIZE (11X17)
SCALE: 1/16" = 1'-0"
PAPER SIZE (24X36)
SCALE: 1/8" = 1'-0"
OCTOBER 29, 2020
205100131-S5.dwg

A3.1

NOVEMBER 3, 2020

BURT BROTHERS LUBE CENTER
10908 NORTH TOWN CENTER BLVD.
HIGHLAND, UTAH

SITE PLAN APPROVAL

SITE PLAN PROJECT NARRATIVE

1. THE PROPOSED USE IS CONSISTENT WITH THE GENERAL PLAN AND IN COMPLIANCE WITH THE DEVELOPMENT CODE AND OTHER CITY CODES AND REGULATIONS.
2. THE EXTERIOR BUILDING MATERIALS INCLUDING CONCRETE BLOCK AND STUCCO ARE CONSISTENT WITH THE ADJACENT EXISTING BURT BROTHERS STORE PREVIOUSLY APPROVED.
3. THE SITE AND BUILDING DESIGN ARE CONSISTENT WITH THE EXISTING BURT BROTHERS STORE. THE EXTERIOR LIGHTING IS A WALL MOUNTED CUT OFF FIXTURE APPROPRIATE FOR THIS USE NEXT TO ADJACENT RESIDENTIAL PROPERTIES.
4. INGRESS AND EGRESS TO THE PROPERTY ARE EXISTING.
5. ALL DELIVERIES WILL BE TO THE ADJACENT EXISTING BURT BROTHERS STORE. VEHICULAR CIRCULATION INCLUDING EMERGENCY VEHICLES WILL COMPLY WITH CITY AND EMERGENCY REQUIREMENTS.
6. PEDESTRIAN AND VEHICLE ACCESS TO THE PUBLIC WAY TO COMPLY WITH CITY AND ACCESSIBILITY REQUIREMENTS.
7. TRAFFIC VOLUME WILL BE A MINIMAL INCREASE AND NO OFF-STREET PARKING OR LOADING WILL BE REQUIRED.
8. IMPACT TO PUBLIC SERVICES INCLUDING UTILITIES WILL BE MINIMAL. SCHOOLS AND RECREATION WILL NOT BE IMPACTED.
9. THE EXISTING TRASH ENCLOSURE PREVIOUSLY APPROVED AT THE ADJACENT EXISTING BURT BROTHERS STORE WILL BE USED FOR THIS PROJECT. MECHANICAL ROOF TOP UNITS WILL BE SCREENED THE SAME AS ADJACENT EXISTING BURT BROTHERS STORE PREVIOUSLY APPROVED.
10. THERE WILL NOT BE ANY OUTDOOR ACTIVITIES OR STORAGE.
11. THERE ARE FIVE EMPLOYEES AND THE HOURS OF OPERATION ARE 7:00 AM - 6:00 PM MONDAY THROUGH FRIDAY, 7:00 AM - 5:00 PM ON SATURDAY AND CLOSED ON SUNDAY TO MATCH THE HOURS OF OPERATION OF THE ADJACENT EXISTING BURT BROTHERS STORE PREVIOUSLY APPROVED.
12. THERE WILL NOT BE ANY ILLUMINATION CREATED BY THIS USE. NOISE, SMOKE, ODOR, DUST AND VIBRATION WILL BE THE SAME AS ADJACENT EXISTING BURT BROTHERS STORE PREVIOUSLY APPROVED.



November 6, 2020

**RE: Burt Brothers Lube Center Neighborhood meeting at
10918 North Town Center Blvd
Highland, UT.**

**Minutes of Neighborhood Meeting November 5, 2020
6:00 -7:00 pm at the above address.**

There was only one neighbor at the meeting:

5:59 pm Duane + Becky Richards had the following questions:

They asked about Landscaping: They were shown drawing L1.1

The following question was not related to the current proposed project:

They asked about any automobile access from the Residential Development to the South side of the existing Burt Brothers store. The understanding was that there would not be any access once the Residential Developer installs the Fence to match the existing fence per their previous approved agreement with Highland City.

They asked what the building would look like. They were shown the Building Elevations drawing A3.1

They asked about the East Fence. They were told that the Residential developer would be installing that Fence to match the existing fence per their previous agreement with Highland City.

They asked about Site Lighting. They were told the Site Lighting is expected to be on the NEW BUILDING ONLY on the exterior walls (wall mounted cut off downward light fixtures) as approved by Highland City. They were in favor of the site lighting on the building only.

Goodyear tire conditional use

discussion.

Discussion: The Developer, Richard Mendenhall, explained at the February 20, 2001 meeting the issue left unresolved related to the noise issue. He referred to the March 30, 2001 letter from Spectrum Acoustical Engineers (attached) as to this issue noting the following: (1) Highland City's noise ordinance states: "It is unlawful for any person or group . . . to create or permit any noise (regardless of its origin or definition) that is so loud as to be objectionable and bothersome between the hours of ten p.m. and seven a.m.", (2) The auto service center would produce noise below that of passing traffic and normal conversation (standard traffic noise calculations have a 10 decibel penalty for night time traffic), (3) Study was made on dissipation of the noise on a 50' radius and the primary impacts would be the public works and other businesses at 50 decibels. At 800' it would be at the 47 decibel range. (4) By standards of the ordinance the sounds from auto care centers are below the area considered to be a nuisance in other communities, and should follow safely by the guidelines in Highland City's ordinance. (5) Applicant will follow use as it relates to noise.

Mike Long reported he had obtained information on the location of tire stores and visited one site. He could barely hear the air wrenches from the cars going by, and indicated the new air wrench is quieter. One of his concerns was the architecture. He further indicated air wrenches and compressors are encased in the building and the applicant for Highland's proposed operation has elected to go with the new air wrenches, which is 80 decibels at the source.

Melissa Wright inquired about the site. Richard Mendenhall noted both sites were addressed to determine what is best for the community. Barry Edwards felt either location could be made to work, and didn't see that it makes a huge difference one place or the other. He noted Jan Bunce felt Goodyear Tire should go behind the grocery store and felt it matches with the PSD facility.

Ron Jewett indicated he would prefer seeing Goodyear Tire located closer to the highway, and that he liked the second location better because he didn't know how long it would take for the Town Center to develop. He favored a professional building behind Smith's.

Gary Phillippi indicated he once had an office above a tire shop and it wasn't a problem being so close. Richard Mendenhall indicated he had no reservation about the proposed site and indicated there would be 400' between the sites. He felt the advantage for the business and the site would be to get the Town Center started, and also that it is a pedestrian generator.

Boyd Wilson felt the entrance road could be developed with the Goodyear Tire site being more in the center. He noted if development starts off SR92 and is expanded in that direction, it may save the impact on 5600 West.

CONDITIONS OF APPROVAL

Richard Mendenhall noted the bay doors are planned to open on the interior and they don't plan to have a car wash with the proposed location behind the shopping center. Discussion ensued.

Motion: Mike Long moved to approve a conditional use permit for Goodyear Tire to sell tires and do light automotive services with the following same conditions placed on the conditional use permit for Smiths, including the use of low noise tools, such as air wrenches which emit no more than 85dB of noise at the source, no outside storage, no Sunday operation, and location would be to the easterly site of Town Center Boulevard: (1) that delivery trucks of goods and services to Goodyear Tire not use 5600 West or the 5600 West access; (2) that the hours of retail operation shall be limited to 7 a.m. and 9 p.m.; (3) that no product will be stored for sale or for removal or pick-up on the outside of the building, except for merchant association special sidewalk sales; (4) that retail operations will close Sunday so area neighbors can "peacefully enjoy their property", (5) that the applicant pay the impact fee for the Town Overlay Zone for all square footage approved in this action; pads are not approved, and impact fees will be paid by the

developer, and not by Goodyear Tire; (6) that the applicant and subsequent users/and or owners of approved pads be a member of the Town Center Business Association; (7) that room for a monument sign on the road be located; (8) that the approval is subject to submitting acceptable architectural elevations, (8) that project be subject to Town Center Overlay Zone. Motion was seconded by Gary Phillippi. Motion passed by unanimous vote.

12. Name Street on 10400 North, East of Alpine Highway, "LeGrande Adamson Way," or "LeGrande Adamson Boulevard"

Background: A request has been submitted to name the street of 10400 North east of the Alpine Highway "LeGrande Adamson Way" or "LeGrande Adamson Boulevard".

Discussion: Barry Edwards noted it has been common practice for cities to remember significant citizens through the naming of streets and other community facilities.

Mayor Adamson declared a conflict of interest since LeGrande Adamson was his uncle.

Neal Evans felt strongly that something should be done to recognize LeGrande Adamson and reported he made contact with Mike Long concerning placing this item on the agenda. Mayor Adamson noted that LeGrande Adamson would be honored, but would not seek the recognition. He noted LeGrande was Highland's oldest living resident of 85 years and was born in Highland, along with nine other brothers and sisters. He served as a bishop of the L.D.S. Church at age 29, served Highland as Justice of the Peace, and was a great man. He felt it would be appropriate to visit with the family and receive a consensus of the neighborhood. Neal Evans recommended placing a street sign with the name "J. LeGrande Adamson Way" at the corner of 10400 North and the Alpine Highway through the base of the hill. Discussion ensued. Neal Evans will talk to several of LeGrande's sons and the Hidden Oaks Homeowners Association, and report back to City Staff.

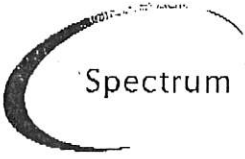
Motion: Mike Long moved to authorize a name addition to 10400 North east of the Alpine Highway, subject to approval of the Hidden Oaks Homeowner Association and the family of Le Grande Adamson. Motion was seconded by Gary Phillippi, and passed by unanimous vote.

13. Library Issue

Background: The City Council has been discussing whether to terminate the community library at Mt. Ridge Junior High School, inasmuch as Alpine and Cedar Hills have pulled out of the contract.

Discussion: The City Administrator recommended that the library be closed, that a voucher system be instituted, that the three cities get together and determine how to divide the assets, and the City cooperate with the other cities in any effort to further determine the library needs of our communities to resurrect the library under a different form. He further noted the following reasons for the recommendation: (1) it is falling completely upon the City to fund, (2) complaints received about the library included the following: the hours are not correct, it may not be meeting the use of a real library, (3) the times he has visited the library there haven't been very many people there, and (4) report from library staff is that usage has fallen off.

Barry Edwards noted that \$45,000 has been budgeted for library operations in the 2002 budget with his thought being that a portion would be used for a voucher system and a portion would be set aside for library operations in the future. He felt should Alpine and Cedar Hills come forward in the future with an interest in a library that Highland would have a nest egg. Mike Long indicated his interest for fostering a county-wide library system. Mayor Adamson indicated the past meetings he has attended with the County there has been discussion on a County-wide library system in hopes the County would take the responsibility and tax across the board for these services. Mayor Adamson recommended the City Council come back with a plan for a voucher system. Barry

Spectrum Acoustical Engineers

April 27, 2001

Westfield Properties
2744 Parleys Way
Salt Lake City, Utah 84109

Fax 467-7027

attn: Jeremy Doyle

Re: Proposed Goodyear Tire Shop, Highland, Utah

Per your request, we can provide the following calculated data for noise propagation from this operation, as based on data from the previous report of March 30, 2001.

Sound from this operation can be placed in two categories:

Typical long term averages from the overall operation, which is a composite of all of the sound events which occur during a typical time period, such as one hour.

Peak events, such as the operation of an air driven impact wrench, hammer blows, etc.

From the previous report, we can compute the following data, for noise levels which are referred to a distance of 50 feet from the shop, with doors open, during normal operation.

Typical sound levels, dB A

	Distance, feet				
	50'	100'	200'	400'	800'
Peak events					
to North & South	72	66	60	54	48
to West	70	62	58	50	44
Typical average, L ₉₀	65	61	57	51	45

For comparative purposes, the noise of a single modern car passing at 30 MPH, as heard from a distance of about 30 feet will be between 60 and 70 dB A. A table of the loudness of typical sounds, in dB A, ("A" weighted decibels) is attached.

Please call if there are further questions.

SPECTRUM ACOUSTICAL ENGINEERS

A handwritten signature in black ink, appearing to read 'Richard K. Fullmer', with a long horizontal flourish extending to the right.

Richard K. Fullmer P. E.

Acoustical Engineers Inc.

Consultants

Typical Noise Source dBA Levels

Noise Source	dBA
Noise at ear level from rustling leaves	20
Room in a quiet dwelling at midnight	32
Soft whisper at five feet (1.52m)	34
Large department store	50 to 65
Room with window air conditioner	55
Conversational speech	60 to 75
Self-service grocery store	60
Busy restaurant or canteen	65
Within typing pool (nine typewriters in use)	65
Passenger car at 50 ft (15.2m)	69
Vacuum cleaner in private home at 10 ft (3.05m)	69
Ringling alarm clock at two feet (.61m)	80
Loudly reproduced orchestral music in large room	82
Buses, trucks, motorcycles at 50 ft (15.2m)	82 to 85
Pneumatic tools at 50 ft (15.2m)	85
8-hour OSHA criteria — hearing conservation programs	85
Medium size automatic printing press plant	86
Bulldozer at 50 ft (15.2m)	87
Jackhammer at 50 ft (15.2m)	88
8-hour OSHA criteria — engineering or administrative noise controls	90
Heavy city traffic	90
Heavy diesel propelled vehicle at 25 ft (7.6m)	92
Grinders	93 to 95
Small air compressor	94
Hammermill	96
Plastic chipper	96
Cut-off saw	97
Home lawn mower	98
Multiple spot welder	98
Turbine condenser	98
Drive gear	103
Banging of steel plate	104
Hi-pressure gas leak	106
Magnetic drill press	106
Air chisel	106
Positive displacement blower	107
Large air compressor	108
Jet aircraft at 500 ft (152m) overhead	115
Human pain threshold	120
Inside jet engine test cell	150



Spectrum Acoustical Engineers

March 30, 2001

Westfield Properties
2744 Parleys Way
Salt Lake City, UT
84109

Attn.: Mr. Jeremy Doyle

Re.: Noise Impact for Proposed Goodyear Operation, at Highland, UT.

We have reviewed the site plan for this project, the community noise ordinance, and data for the equipment to be used in the tire shop. We have also reviewed data from previous similar projects.

Based on previous noise measurements the proposed Ingersol Rand model 2131 air driven impact wrenches, as specified for this project, are significantly quieter than preceding machines.

Noise Ordinances:

The Highland City Noise Ordinance states: "It is unlawful for any person or group ... to create or permit any noise (regardless of its origin or definition) that is so loud as to be objectionable and bothersome between the hours of ten p.m. and seven a.m.". We have been given to understand that this limit has been set at 65 dB A, which we assume would be taken at any adjacent property line.

Most noise ordinances address the night time period with more restrictive limits than during the day. For example, standard traffic noise calculations have a 10 decibel penalty for night time traffic.

More recent noise control ordinances, such as the Salt Lake County Noise Control Ordinance, address noise from a "Stationary Noise Source" (which would apply to this type of facility) as a time averaged limit for noise that can be allowed to cross into any affected property. Thus the noise constraint is placed on the noise as measured at the property line of any property other than the source site, and averaged over a time period no shorter than 10 minutes.

The basic metric used is L_{90} , which determinates a minimum sound level that is present for at least 90% of the time measurement period. A second limit is that the L_{10} cannot be greater than 15 decibels above the designated L_{90} . Thus short term noise events of up to 75 dB A could be acceptable in the 60 dB A Commercial Zone.

Normally applied L_{90} limits are:

Zoning	Time	
	7 AM to 10 PM	10 PM to 7 AM
Residential	55 dB A	50 dB A
Commercial	60 dB A	55 dB A
Industrial	80 dB A	75 dB A

Project Site Conditions:

The surrounding properties appear to be Commercially Zoned on all sides. The closest buildings would be a group of future commercial lots (at about 60 feet south of the Goodyear main building) and a future Phase 2 Shop (at about 100 feet to the west). The area to the east is apparently intended for a car wash., and the area north of this project is apparently vacant.

Noise Conditions:

According to previous noise measurements, typical sound levels for the equipment would be as follows:

	Sound Level, dB A
IR 2131 air wrenches, at a 4 feet distance	88 - 90
Typical peaks, impacts at tire machine, at 4'	90 - 92
Typical shop noise, at 5', outside open doors	75 - 78
Typical shop noise, at 50', outside open doors	60 - 65
Typical rotary screw air compressor at 3.5'	68

With the air compressor installed inside the shop building, it is unlikely that the operation of the compressor will be audible outside the building. Based on typical busy shop activities, the noise from the various hand held tools and tire equipment will produce a 55 to 58 L_{90} average at 50' from the open shop doors.

Conclusions - Off-Site Noise Impact:

We can calculate the noise level at the nearest property line to the south, at about 60 feet, to be about 56 dB A L_{90} , with no consideration for any noise barriers.

For the shop at 100 feet to the west, the noise level would be about 53 dB A L_{90} . The area at about 120 feet north of the building would have a noise level of about 51 dB A L_{90} .

As there will be no tire shop activities between the 10 PM and 7 AM night period, the noise impact from the tire shop to the surrounding properties can be expected to be well under the 60 dB A Salt Lake County daytime limit, and the assumed Highland City limit of 65 dB A.

For practical purposes, it can be expected that the overall noise impact from operation of the Goodyear shop will be comparable to the noise from passage of medium trucks through the local streets.

The above describes the noise impact to this site based on the information available at this time.

SPECTRUM ACOUSTICAL ENGINEERS

A handwritten signature in black ink, appearing to read 'Richard K. Fullmer', written in a cursive style.

Richard K. Fullmer P. E.



HIGHLAND CITY

CITY COUNCIL AGENDA REPORT ITEM #5

DATE: December 1, 2020
TO: Honorable Mayor and Members of the City Council
FROM: Rob Patterson
City Attorney
SUBJECT: Ordinance 2020-33: Amending Chapter 12.02 Free Expression
Regulation and Resolution 2020-33: Designation of Areas for Limited
Use of Expressive Activities *Legislative*

PURPOSE:

The City Council will consider a request by City Staff to amend Title 12, Chapter 02 of the City's Municipal Code related to the regulation of free expression, and to adopt a resolution designating certain areas within Highland City for limited use for expressive activities. The Council will take appropriate action.

BACKGROUND:

On September 1, 2020, the City Council adopted an ordinance that prohibited persons from impeding or blocking traffic. The purpose of that ordinance was to ensure that people were not, intentionally or otherwise, holding up traffic in response to protests, solicitors, or other activities. The ordinance is limited to regulating certain types of conduct that occurs in the roads and does not prohibit any expressive activity that safely takes place on sidewalks or other areas.

As was discussed during that September meeting, State law requires cities to create a permitting process to grant people exceptions from regulations on impeding traffic. Essentially, the city must have a method by which people can apply for an exception that permits them to protest, march, parade, or engage in other expressive activities that would be prohibited as an obstruction of traffic. The purpose of the proposed amendment and resolution is to have the City Council formally designate certain areas that can be used on a limited basis for expressive activities that are not otherwise available or open for public, expressive activity

In doing so, the City is constrained by the constitutional protections of expression and speech. The City **cannot** regulate or discriminate based on the content or subject matter of the expression. The City **can** impose reasonable time, place, and manner restrictions on how someone goes about their expression or speech.

Highland City Municipal Code, Title 12, Chapter 02, provides guidelines and standards for the City to follow in regulating and controlling expressive activities, consistent with the requirements of state law and constitutional protections of free speech. The proposed amendment adds a permitting process to this chapter to authorize the limited use of otherwise prohibited areas for expressive/free speech activities. As part of the amendment, it states that the City Council will provide, by resolution, for the areas that will be opened up for expressive conduct and any reasonable terms and conditions for such use. Accordingly, staff recommends that the Council adopt the code amendment and a resolution designating the areas to be opened up.

Areas to be opened up must be under the jurisdiction of the City. This prevents the City from authorizing the use of state roads/highways. As possible areas to be opened:

1. Streets around splash pad, city offices, public safety building;

Possible conditions on use of areas:

1. No more than two events in the same area per day.
2. No overlapping events in the same area.
3. No events during rush hours, 7-9 AM, 4-6 PM, or after 10 PM.
4. No event to last within a specific area for more than 2 hours.

FISCAL IMPACT:

This action will not have a financial impact on this fiscal year's budget.

RECOMMENDATION:

Staff recommends the Council **APPROVE** and **ADOPT** the proposed amendments and the proposed resolution. The Council will need to describe the areas to be opened up for expressive activity for the resolution as well as any limitations or conditions on such use.

PROPOSED MOTION:

1. I move that the City Council **ADOPT** the ordinance 2020-33 establishing section 12.02(G).
2. I move that the City Council **ADOPT** the resolution 2020-33 designating certain areas for limited use for expressive activity, and designate the following areas for such activity with the following conditions:
 - a. A loop from Town Center West and Town Center East from Town Center Parkway to 10890 North

- b. [The City Council will need to describe any limitations or conditions, e.g., no more than one permit per area per day, up to 2 hours each]

ALTERNATIVE MOTION:

I move that the City Council **DENY** the proposed changes to the Municipal Code.

ATTACHMENTS:

1. Proposed Ordinance 2020-33
2. Proposed Resolution 2020-33

ORDINANCE NO. 2020-33

AN ORDINANCE OF THE HIGHLAND CITY COUNCIL AMENDING HIGHLAND CITY MUNICIPAL CODE CHAPTER 12.02 FREE EXPRESSION REGULATIONS AS SHOWN IN THE OFFICAL FILE.

WHEREAS, all due and proper notices of public hearings and public meetings on this Ordinance held before the Highland City Council (the “City Council”) were given in the time, form, substance and manner provided by Utah Code; and

WHEREAS, the City Council finds that the adoption of this Ordinance is in the best interest of the residents of Highland; and

WHEREAS, the City Council held a public meeting on this Ordinance on December 1, 2020.

NOW, THEREFORE, BE IT ORDAINED BY THE Highland City Council as follows:

SECTION 1. The Highland Municipal Code Chapter 12.02 Free Expression Regulation is hereby amended by adding item G as follows:

G. The council may designate areas such as public streets, the interior of public buildings, and other limited or nonpublic forums for limited use for expressive activities as set forth below:

1. The designation of areas for limited use for expressive activities shall be done by resolution of the council.
2. The council may establish restrictions and conditions on the use of such areas in accordance with the requirements and limitations of this section, state law, and constitutional law.
3. Persons seeking to use an area designated for limited use for expressive activities shall first apply for a special event permit authorizing such use for a specified location and time.
4. A permit shall be granted to any applicant who agrees to comply with the terms and conditions of this section and the resolution designating the area for limited use for expressive activities. Applicants seeking to use the same area at the same time shall be granted permits on a first-come, first-served basis. In no event shall a permit be denied based on the content or subject of the expression. Requests seeking to use other areas may be submitted.
5. A person that is lawfully engaged in expressive activities pursuant to this section shall be exempt from City ordinances related to obstruction of public ways or the impeding of traffic.

SECTION 2: Should any part or provision of this Ordinance be declared by the courts to be unconstitutional or invalid, such decision shall not affect the validity of the Ordinances a whole or any part thereof other than the part so declared to be unconstitutional or invalid.

SECTION 3: This Ordinance shall be in full force and effect from December 1, 2020 or after the required approval and publication according to law.

PASSED AND ADOPTED by the Highland City Council, December 1, 2020

HIGHLAND CITY, UTAH

Rodney W. Mann, Mayor

ATTEST:

Stephannie Cottle, City Recorder

COUNCILMEMBER	YES	NO
Timothy A. Ball	☐	☐
Brittney P. Bills	☐	☐
Kurt Ostler	☐	☐
Kim Rodela	☐	☐
Scott L. Smith	☐	☐

RESOLUTION NO. 2020-33

A RESOLUTION DESIGNATING AREAS FOR LIMITED USE FOR EXPRESSIVE ACTIVITIES UNDER CITY CODE 12.02(G)

WHEREAS, the Highland City Council is authorized under Highland City Code 12.02(G) to designate areas such as public streets, the interior of public buildings, and other limited or nonpublic forums for limited use for expressive activities in accordance with city code, state law, and constitutional law;

WHEREAS, the City Council desires to designate certain areas within the City for limited use for expressive conduct;

WHEREAS, the City Council finds that the designation of these areas will enhance the ability of residents and citizens to exercise their constitutional rights to expression and speech;

NOW THEREFORE, BE IT RESOLVED by the Highland City Council as follows:

1. The City Council designates the following areas for limited use for expressive conduct:
 - a. A loop from Town Center West and Town Center East from Town Center Parkway to 10890 North
2. The City Council authorizes the limited use of the above-described areas for expressive activities, subject to the requirements of City Code 12.02(G) and the following conditions:
 - a. Anyone seeking to use these areas shall obtain a special event permit from the City that designates the specific time and place of the activity.
 - b. The use of the areas shall be peaceful and in accordance with all generally applicable ordinances, regulations, and statutes governing public safety, welfare, and health, provided that the use is not subject to City ordinances related to obstruction of public ways or the impeding of traffic.
 - c. [OTHER RESTRICTIONS OR CONDITIONS]

PASSED AND ORDERED PUBLISHED BY THE CITY COUNCIL OF HIGHLAND CITY, UTAH, this first day of December, 2020.

Rodney W. Mann, Mayor

ATTEST:

Stephannie Cottle, City Recorder

COUNCILMEMBER	YES	NO
Timothy A. Ball	☐	☐
Brittney P. Bills	☐	☐
Kurt Ostler	☐	☐
Kim Rodela	☐	☐
Scott L. Smith	☐	☐



CITY COUNCIL AGENDA REPORT ITEM #6

DATE: December 1, 2020
TO: Honorable Mayor and Members of the City Council
FROM: Rob Patterson
City Attorney
SUBJECT: Ordinance 2020-34: Municipal Code Amendment Prohibiting Targeted Residential Picketing *Legislative*

PURPOSE:

The City Council will consider a request by City Staff to adopt Title 9, Chapter 06 of the City's Municipal Code to prevent and impose a criminal punishment for targeted residential picketing. The Council will take appropriate action.

BACKGROUND:

This request stems from a few incidents that have occurred within Utah regarding protests and picketing directed towards a specific person at their house. Anti-mask protesters targeted the state epidemiologist and governor by protesting at their personal residences regarding the emergency mask orders issued by the state government. In Cedar Hills, people upset regarding a tax lien and foreclosure issue protested outside of a foreclosed house, which escalated into a dangerous situation that involved numerous police.

The purpose of this ordinance is to limit the ability to trap or harass people as they enter, exit, and use their private homes and subject the residents to unwanted messages. It does so through preventing people from picketing within 100 feet of the targeted residence. While we do not wish to limit people's ability to speak, protest, march, and otherwise express themselves in traditional ways, there is a significant risk of unlawful harassment, intimidation, or obstruction of accessing a personal, private residence, which is not constitutionally protected conduct.

Similar ordinances have been adopted by other entities in Utah, including Salt Lake City, Salt Lake County, Holladay, and Orem. The United States Supreme Court has upheld narrowly tailored regulations preventing targeted residential picketing based on the need to protect the rights of people to be free from being a captive audience to an unwanted message and residential privacy.

The key issues addressed by the proposed ordinance are:

1. Prevents picketing targeting a specific person within 100 feet of that person's residence, so long as the residence is not their place of business or place of a public meeting.
2. Does not otherwise impact or limit the ability to protest, march, go door-to-door, etc., near a person's residence on sidewalks or other public places, and does not restrict other types of communication directed at the person.

FISCAL IMPACT:

This action will not have a financial impact on this fiscal year's budget.

RECOMMENDATION:

Staff recommends the Council **APPROVE** and **ADOPT** the proposed amendments and the proposed resolution. The Council will need to describe the areas to be opened up for expressive activity for the resolution as well as any limitations or conditions on such use.

PROPOSED MOTION:

I move that the City Council **ADOPT** the ordinance 2020-34 establishing Chapter 9.06 Targeted Residential Picketing.

ALTERNATIVE MOTION:

I move that the City Council **DENY** the proposed changes to the Municipal Code.

ATTACHMENTS:

1. Proposed Ordinance

ORDINANCE NO. 2020-34

AN ORDINANCE OF THE HIGHLAND CITY COUNCIL ADDING HIGHLAND CITY MUNICIPAL CODE CHAPTER 9.06 TARGETED RESIDENTIAL PICKETING AS SHOWN IN THE OFFICAL FILE.

WHEREAS, all due and proper notices of public hearings and public meetings on this Ordinance held before the Highland City Council (the "City Council") were given in the time, form, substance and manner provided by Utah Code; and

WHEREAS, the City Council finds that the adoption of this Ordinance is in the best interest of the residents of Highland; and

WHEREAS, the City Council held a public meeting on this Ordinance on December 1, 2020.

NOW, THEREFORE, BE IT ORDAINED BY THE Highland City Council as follows:

SECTION 1. The Highland Municipal Code is hereby amended by adding Chapter 9.06 Targeted Residential Picketing as follows:

Chapter 9.06 TARGETED RESIDENTIAL PICKETING

9.06.010 Purpose

The protection of the home is of the highest importance. The public health and welfare and the good order of the community require that citizens enjoy in their homes and neighborhoods a feeling of wellbeing, tranquility, and privacy, and enjoy freedom from being a captive audience to unwanted speech in their homes. The practice of targeted picketing in residential areas causes emotional disturbance and distress to residents, and has the potential to incite breaches of the peace, result in unlawful harassment, and prevent residents from being able to access, use, or leave their property safely. Full opportunity exists for individuals to exercise their rights of free speech without resorting to the specific practice of targeted residential picketing, including but not limited to picketing, marching, or gathering in nearby public spaces, presenting grievances during city council meetings, communicating directly with government officers, sharing information through handbills or fliers, and other means. The provisions of this section are enacted for the purpose of protecting the significant public interests stated above and not to suppress free speech rights or any particular viewpoint.

9.06.020 Definitions

As used herein, the following terms are defined as follows:

"Picketing" means the stationing or posting of one or more persons to apprise the public, vocally or by standing or marching with signs, banners, sound amplification devices, or other means, of an opinion or a message.

"Residence" means any single-family, duplex, or multi-family dwelling that is not used as a targeted occupant's sole place of business or as a place of public meeting.

“Targeted Residential Picketing” means picketing that (1) is specifically directed or focused toward a residence, or one or more occupants of a residence, and (2) takes place within one hundred feet (100') of the property line of that residence.

9.06.030 Prohibition

It shall be unlawful for any person, acting alone or in concert with others, to engage in targeted residential picketing in Highland City.

9.06.040 Enforcement; Penalty

Any violation of this section is a class B misdemeanor.

SECTION 2: Should any part or provision of this Ordinance be declared by the courts to be unconstitutional or invalid, such decision shall not affect the validity of the Ordinances a whole or any part thereof other than the part so declared to be unconstitutional or invalid.

SECTION 3: This Ordinance shall be in full force and effect from December 1, 2020 or after the required approval and publication according to law.

PASSED AND ADOPTED by the Highland City Council, December 1, 2020

HIGHLAND CITY, UTAH

Rodney W. Mann, Mayor

ATTEST:

Stephannie Cottle, City Recorder

COUNCILMEMBER	YES	NO
Timothy A. Ball	☐	☐
Brittney P. Bills	☐	☐
Kurt Ostler	☐	☐
Kim Rodela	☐	☐
Scott L. Smith	☐	☐



CITY COUNCIL AGENDA REPORT ITEM #7

DATE: December 1, 2020
TO: Honorable Mayor and Members of the City Council
FROM: Rob Patterson
City Attorney
SUBJECT: Ordinance 2020-35: Amending Chapter 2.36 Community Trees
Legislative

PURPOSE:

The City Council will consider a request by City Staff to amend Title 2, Chapter 36 of the City's Municipal Code related to the management of trees within Highland City. The Council will take appropriate action.

BACKGROUND:

Highland City Municipal Code, Title 2, Chapter 36 governs how the City forester, City staff, and City residents can plant, maintain, modify, or remove public trees within the City. These include trees planted in parks and open spaces, parkways, and other publicly owned spaces. As currently adopted, the code is contradictory regarding who has authority to make decisions regarding public trees. The code points to the city forester, the Parks, Trails, and Tree Commission, the City zoning administrator, and the City Council as having overlapping authority over public trees.

This lack of clarity is most apparent as it regards section 2.36.130. This section grants City residents a legal entitlement to challenge and appeal routine, administrative staff decisions and actions regarding public trees to the City Council. Earlier this year, there was an issue regarding trees that were planted by residents in a public park without the City's approval. Due to the way the code is written, the City had to address this issue repeatedly at different levels of City administration, culminating with an appeal before the City Council, even though the law and rights involved were clear. The code required the City to follow this process, which required a significant investment of city resources and staff time.

After reviewing this process and the code, City staff recommends that the code be amended to clarify the roles of the various City agencies involved so that it is clear who has responsibility over public trees. In particular, City staff recommends that the Council

remove the right for residents to appeal any action of the city forester to the Council.

The key issues addressed by the proposed amendments are:

1. Removes the authority of the Parks, Trails, and Tree Commission to issue permits and make final decisions regarding the placement, modification, or removal of public trees. The Commission retains its role to support, recommend, and advise, consistent with the City Council's creation of the Commission earlier this year.
2. Clarifies that the City forester is the person responsible for making decisions on how, where, and when to plant, modify, or remove public trees, and to issue permits to residents for these purposes.
3. Clarifies that public trees includes trees in any public space, not just park strips or rights of way.
4. Removes the ability of residents to appeal staff actions regarding public trees to the City Council. Appeals regarding the City forester's denial of a permit to modify or remove a public tree would be appealed to the City administrator. Appeals regarding citations or civil nuisance actions would still be handled and appealed according to the normal processes for those actions.

FISCAL IMPACT:

This action will not have a financial impact on this fiscal year's budget and may reduce future administrative and appeal expenses.

RECOMMENDATION:

Staff recommends the Council **APPROVE** and **ADOPT** the proposed amendments.

PROPOSED MOTION:

I move that the City Council **ADOPT** the ordinance amending certain provisions of Title 2, Chapter 36 Community Trees.

ALTERNATIVE MOTION:

I move that the City Council **DENY** the proposed changes to the Municipal Code.

ATTACHMENTS:

1. Proposed Ordinance

ORDINANCE NO. 2020-35

AN ORDINANCE OF THE HIGHLAND CITY COUNCIL AMENDING HIGHLAND CITY MUNICIPAL CODE TITLE 2 CHAPTER 36 COMMUNITY TREES AS SHOWN IN THE OFFICAL FILE.

WHEREAS, all due and proper notices of public hearings and public meetings on this Ordinance held before the Highland City Council (the "City Council") were given in the time, form, substance and manner provided by Utah Code; and

WHEREAS, the City Council finds that the adoption of this Ordinance is in the best interest of the residents of Highland; and

WHEREAS, the City Council held a public meeting on this Ordinance on December 1, 2020.

NOW, THEREFORE, BE IT ORDAINED BY THE Highland City Council as follows:

SECTION 1. The Highland Municipal Code is hereby amended by adding Chapter 9.06 Targeted Residential Picketing as follows:

2.36.020 Definitions

As used in this chapter, the following terms are defined:

"City forester" means the Highland City Forester, who is responsible for administering this chapter.

"Historic or notable tree" means a tree that is botanically significant (i.e., the only one of its species in the site or the largest species in the state) or planted by a pioneer or present at the site of a historic event or location.

"Nonpublic trees" or "private trees" means trees that are not "public trees" now, or hereafter, growing on property other than "public" as defined in this section.

"Public trees" means all trees, shrubs, and plants growing in the any right-of-way or on any other property owned or maintained by the city-owned or maintained property.

"Right-of-way" means an the area located on or within any publicly owned land or easements designated for vehicular, pedestrian, or other types of transportation uses, including streets, bicycle paths, and trail corridors, whether improved or not adjacent to a publicly owned street or sidewalk.

"Tree topping" means the internodal cutting back (between the existing stem and/or branch nodes) of stems or branches resulting in the severe alteration of the specie's structural characteristics.

2.36.080 City Forester

The office of city forester is created for the purpose of administering the provisions of this chapter and such policies, recommendations, rules, and regulations of the community Parks, Trails, and Tree Commission as are approved by the city council. The city forester:

1. Shall have supervision of all public trees;
2. Shall, or direct staff to, plant, trim, spray, preserve, and remove public trees to promote safety and preserve the beauty of such public trees;
3. Shall direct the care of all the trees in the city that have been designated by the city council ~~or community Parks, Trails, and Tree Commission~~ as historical or notable trees;
4. ~~Shall review all applications for permits for removal, planting, or pruning of public trees and shall act on the same if so authorized or else refer such applications to the community Parks, Trails, and Tree Commission when it is required to act on the same.~~ Such permits shall be issued only if applied for in writing, and all applications shall contain such information as the city forester shall find reasonably necessary for a fair determination as to whether a permit should be issued. All permits may include such reasonable conditions as the ~~community Parks, Trails, and Tree Commission~~ or city forester may require in order to carry out their duties and responsibilities under this chapter;
5. The city forester shall attend the ~~community Parks, Trails, and Tree Commission~~ meetings ~~and serve as an ex-officio member of the community Parks, Trails, and Tree Commission.~~

2.36.090 Parks, Trails, and Tree Commission Planting Regulations

~~The community Parks, Trails, and Tree Commission shall make recommendations to the City Council and city forester regarding policies, plans, rules, and regulations for the management, maintenance, planting, and removal of public and private trees as set forth in Section 4.12.080(E). shall prepare a document designating the species of trees and shrubs that may be planted on each public street within the city. Upon approval of such a list by the city council no trees or shrubs, other than the kind designated, shall be planted on any public street or public place without the consent of the community Parks, Trails, and Tree Commission. The community Parks, Trails, and Tree Commission shall also prepare and submit to the city council rules and regulations establishing standards for the planting of trees and shrubs on public streets and public property. After approval of such rules and regulations by the city council, no trees or shrubs shall be planted other than in accordance with the standards so established, unless the written consent of the community Parks, Trails, and Tree Commission is obtained.~~

2.36.100 [Reserved] Removal Of Trees By The Commission

- ~~1. The city, through its community Parks, Trails, and Tree Commission, shall condemn and remove or order the removal of any public tree where the same is dead, diseased, or for any reason whatsoever deemed undesirable by the community Parks, Trails, and Tree Commission.~~
 - ~~2. The city, through its community Parks, Trails, and Tree Commission, shall have authority to condemn and remove or order to be removed any nonpublic tree when the community Parks, Trails, and Tree Commission shall find such action necessary to the public safety or to prevent the spread of disease or insects to public trees and places.~~
- ~~• The community Parks, Trails, and Tree Commission shall have authority, with notice to the abutting property owner, to remove, or order the removal, of any public tree, which has been planted upon any right-of-way or on any public property in violation of this chapter.~~

2.36.110 Injury To Trees Or Shrubs And Removal Of Trees

1. It is unlawful for any person to injure any public tree by spraying, cutting, girdling, topping, painting, whitewashing, or defacing in any manner or by root cutting or exposure; by placing oil or any injurious substance on the ground around any such tree or shrub; by tying animals to the same; by piling materials of any kind on or about the same; or by attaching signs, supports, wires, or other devices to any such tree or shrub.
2. It is unlawful for any person, firm, partnership, corporation, or organization of any kind to prune or remove any public tree within the city without first having obtained a written permit from the city forester. Any such permit shall state specifically the work to be done under it and shall voided thirty days after the date of its issue.
3. All public trees and stumps shall be removed at least twelve inches below the surface of the ground.
4. Whenever application is made for the removal of any public tree, the city forester shall require, as a condition for granting such a permit, that adequate replacement be made by the permittee if ~~the community Parks, Trails, and Tree Commission determines that~~ such replacement is desirable and in the interest of the city; the permittee may be required to sign an agreement to properly plant or pay for the planting of such replacement trees.

2.36.120 Public Trees

Private property owners have the following responsibilities:

1. It shall be the responsibility of any owner of private property abutting a city right-of-way on which public trees are located:
 - a. Provide water and general maintenance (i.e., fertilize, prune, spray, etc.);
 - b. Plant all trees at such locations and with such spacing as may be approved by the city forester;
 - c. Trim all trees so as not to cause a hazard or obstruct the view in public places or traffic or to interfere with street lights;
 - d. Treat or remove any tree due to conditions of decay, disease, or rot that constitute a hazard to other trees, plants or property or to persons using the public street or sidewalk;
 - e. The property owner is responsible for any cost to accomplish subsections (A)(1) through (A)(4) of this section.
2. If any tree covered by subsection A is planted in the right-of-way which fronts a lot owned or controlled by the person planting or growing the tree, the duties specified by subsection A of this section shall run with the land and shall become the duties of subsequent owners or controllers of the lot.
3. All work done to remove any public tree by a private party shall be done only pursuant to a permit being obtained.
4. Anyone planting a tree in the right-of-way or other public property must obtain a permit from the city forester ~~or community Parks, Trails, and Tree Commission~~.

5. The city forester shall supervise the maintenance of public trees ~~in the right of way of all public streets~~ and may prune or remove such trees when he or she determines such action to be in the best interest of the city.
6. Where sidewalk or curb damage due to tree roots occurs, the city forester shall be responsible for developing or approving corrective measures in consultation with the city engineer.

2.36.130 Review ~~By The City Council~~

1. The city council shall have the right to review the acts and ~~decisions recommendations~~ of the community Parks, Trails, and Tree Commission ~~and the city forester~~.
2. ~~Any person may appeal any ruling or order regarding a permit to be issued pursuant to this Chapter from the community Parks, Trails, and Tree Commission or the city forester by submitting a written appeal to the city council administrator, and the city council administrator shall hear review the matter, with or without a hearing, and make a final decision.~~

2.36.140 Violation And Penalty

~~The requirements of this Chapter may be enforced by civil or criminal penalty against A~~any person, firm, or corporation violating any of the ~~term~~ provisions of this Code, ~~not to exceed shall be guilty of~~ a class C misdemeanor, ~~and upon conviction thereof shall be punishable by~~ a fine of ~~not to exceed~~ seven hundred fifty dollars, ~~or by imprisonment for up to a term not to exceed~~ ninety days. In addition to such ~~criminal~~ penalty, the city may, in addition to any other remedy that may be provided by law, institute any appropriate proceeding to prevent, restrain, or abate any ~~construction or alteration act~~ in violation of this code.

2.36.150 Procedure For Violation

Whenever it becomes necessary to take action or to obtain compliance with one or more provisions of this code, the zoning administrator, ~~in consultation with the city forester or the planning administrator as appropriate~~, may issue a citation, institute abatement proceedings, or take other appropriate action as provided by law.

2.36.160 Appendix A – Arboricultural Standards And Specifications

...

F. Tree Pruning and Removal.

1. Purpose. This standard is intended to guide city crews and private contractors in the pruning and removal of city-owned trees in parking strips, parks and other Highland City property in compliance with Highland City Ordinance 1998-21.
2. General Standards for Tree Pruning.
 - a. All tree maintenance work on public trees shall be performed in accordance with the latest revisions of ANSI A300 and ANSI Z133.1 Standards. Copies of these national standards are available for review at the Highland City Office.
 - b. All public deciduous trees on improved properties should be pruned on a rotational basis of not more than five years.

- c. Any public tree which, because of habit of growth, age, condition or disease, becomes a public nuisance or a hazard to public safety or obstructs a clear view of streets, signs, signals or an intersection, shall be maintained in a manner that corrects the problem.
 - d. Hanging limb and branch growth shall be maintained thirteen feet above streets and eight feet above sidewalks.
 - e. Property owners are responsible for pruning their private trees from obstructing public rights-of-way and to the minimum height clearance required by city ordinance and this document. All line clearance around power lines shall be performed by U.P. & L the utility company responsible for the line.
 - f. Authority to prune street trees does not include the cutting back of sound, healthy tree branches which are in excess of six inches diameter, unless specifically prescribed by the city forester or if required by accepted arboricultural standards in the course of utility line clearance work and is coordinated with the city forester.
 - g. Tree branches shall be removed and controlled in such a manner as not to cause damage to other parts of the tree, other plants, and property.
 - h. Clean-up of branches, logs or any other debris resulting from a tree pruning or removing shall be promptly and properly accomplished. The work area shall be kept safe at all times until the clean-up operation is completed. Under no condition shall the accumulation of brush, branches, logs, or other debris be allowed upon a public property in such a manner as to cause a public hazard.
 - i. The use of climbing spurs or gaffs shall be permitted only in the case of tree removals or in aerial rescue emergencies.
 - j. Under no conditions shall it be considered proper to leave severed or partially cut limbs in a tree after the workers leave the scene of operations.
3. Tree Removal Standards. Street, ~~or~~ park, and other trees may be removed if, in the judgment of the city forester:
- a. The tree interferes with or creates a public nuisance or hazard to pedestrians or vehicular traffic, and cannot be properly maintained to remove such hazard, or is considered a public nuisance by the city forester;
 - b. The tree severely interferes with the growth and development of a more desirable tree;
 - c. The tree's aesthetic value is ~~so~~ low, and that the site would be enhanced visually or in usability by its removal;
 - d. The tree has been topped, thus producing an unsound branching structure conducive to severe storm damage, windthrow, and accelerated death;
 - e. The tree ~~is was~~ not approved for planting in parking strips.
4. Stump Removal Requirements and Standards.

- a. Persons performing stump removal duties shall have the immediate area investigated for utility lines and blue-stake as necessary, and wear all required safety eye and ear protection.
- b. All removal of public trees shall be done in a manner so that the remaining stump will be at least twelve inches below ground level unless special exemption is granted by the city forester.
- c. Excavation resulting from a tree or shrub removal must be promptly filled in to normal ground level with clean earth; the fill properly settled and free of debris.

SECTION 2: Should any part or provision of this Ordinance be declared by the courts to be unconstitutional or invalid, such decision shall not affect the validity of the Ordinances a whole or any part thereof other than the part so declared to be unconstitutional or invalid.

SECTION 3: This Ordinance shall be in full force and effect from December 1, 2020 or after the required approval and publication according to law.

PASSED AND ADOPTED by the Highland City Council, December 1, 2020

HIGHLAND CITY, UTAH

Rodney W. Mann, Mayor

ATTEST:

Stephannie Cottle, City Recorder

COUNCILMEMBER	YES	NO
Timothy A. Ball	☐	☐
Brittney P. Bills	☐	☐
Kurt Ostler	☐	☐
Kim Rodela	☐	☐
Scott L. Smith	☐	☐



CITY COUNCIL AGENDA REPORT

ITEM #8

DATE: December 1, 2020
TO: Honorable Mayor and Members of the City Council
FROM: Todd Trane, PE
City Engineer
SUBJECT: Construction Contract: Reconstruction of Culinary Well House #3
Administrative

PURPOSE:

The City Council will consider a request to approve a bid with VanCon Inc. for the reconstruction of Culinary Well House #3, and authorize the Mayor or City Administrator and City Recorder to execute the necessary contract documents. The Council will take appropriate action.

BACKGROUND:

Culinary Well #3 is located on the southwest corner of 10400 North and 6400 West. The structure housing the well was constructed in the 1970s. The building provides very poor ventilation for the well motor and the electrical is in need of replacement. This project has been planned for years as part of the Culinary Water Capital Projects and is funded for this fiscal year with a budget of \$475,075.

We recently reconstructed well house #2, and this is another step in the direction to prepare the system for chlorination. Chlorination is planned for our culinary system as part of upcoming capital projects. As part of this project, we have incorporated a chlorination room into the design. We will still need to retrofit at least one more well to be able to chlorinate the entire system. We will not start chlorination until that point.

City staff worked with BT Engineering to prepare bid documents for the design of the new well house. We bid the project with a base bid of the well house reconstruction with an additive of reconstructing the fencing around the property.

City staff pre-qualified 10 contractors to bid the project. All 10 contractors were present at the pre-bid meeting. We received bids from 6 contractors, with Vancon. Inc. providing the low bid of \$339,335.00 for the work. After evaluating the bids with our design consultant, staff recommends that the project be awarded to Vancon Inc.

VanCon Inc. performed the work on the well house #2 project this past year. Staff has been very pleased with the work completed on that project and recommends awarding the project to VanCon Inc. If this contract is awarded, construction will start as soon as contract documents can be finalized. The intent is to have this facility operational by June 1st, 2021.

FISCAL IMPACT:

This action will commit \$339,335.00 of Highland City funds to the Culinary Well #3 project. This project is currently part of our Culinary Master Plan and will be funded from the culinary enterprise fund.

RECOMMENDATION:

Staff recommends that the City Council **APPROVE** the contract with VanCon Inc. to proceed with the reconstruction of Culinary Well House #3 for \$339,335.00 and **AUTHORIZE** the City Administrator to execute the necessary contract documents for the project.

PROPOSED MOTION:

I move that the City Council **APPROVE** and **AUTHORIZE** the City Administrator to sign a contract with VanCon Inc. to proceed with the reconstruction of Culinary Well House #3 for \$339,335.00.

ALTERNATIVE MOTION:

I move that the City Council **REJECT** the bids for the reconstruction of Culinary Well House #3. (The Council should draft appropriate findings).

ATTACHMENTS:

1. Well House Plan Set
2. Bid Opening Results
3. Culinary Water Capital Project List

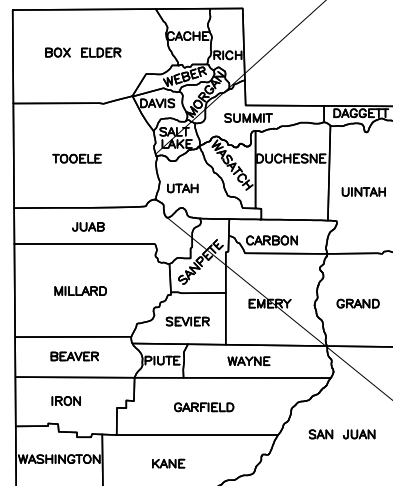
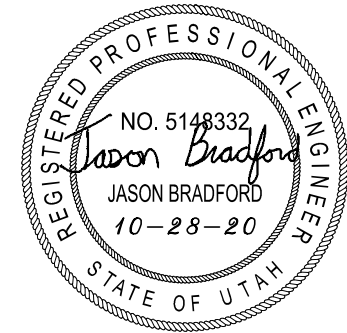


HIGHLAND CITY

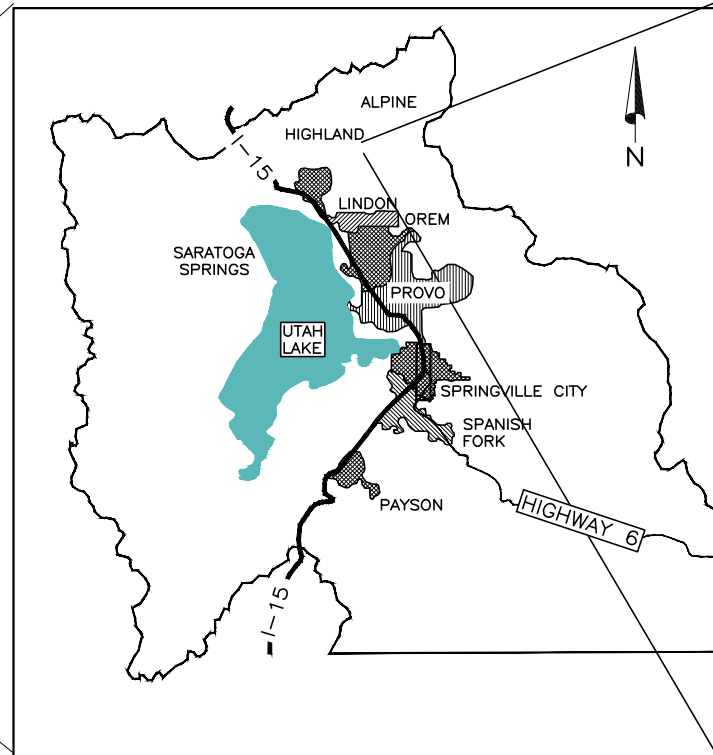
WELL #3 IMPROVEMENTS

OCTOBER 2020

BIDDING DRAWINGS



STATE OF UTAH



UTAH COUNTY



PROJECT LOCATION

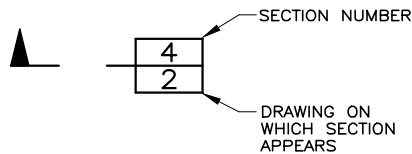
PROJECT LOCATION

FILE NAME: USERS\BRADY\DROPBOX\HIGHLAND CITY\WELL #3 UPGRADES\CAD\G-2 INDEX.DWG
FILE DATE: 10/28/2020 14:51:15 (JEB)

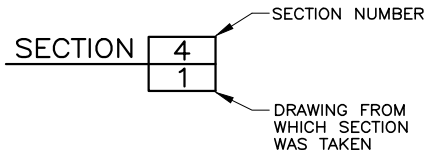
SECTION & DETAIL IDENTIFICATION

SECTION IDENTIFICATION

SECTION CUT ON DRAWING NO. 1:

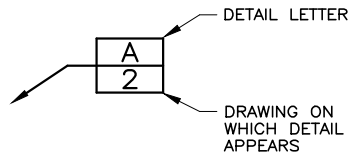


ON DRAWING NO. 2, THIS SECTION IS IDENTIFIED AS:

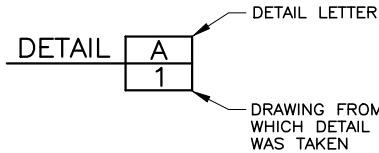


DETAIL IDENTIFICATION

DETAIL CALL-OUT ON DRAWING NO. 1:



ON DRAWING NO. 2, THIS DETAIL IS IDENTIFIED AS:



NOTES:

- IF SECTION CUT AND SECTION OR DETAIL CALL-OUT AND DETAIL ARE SHOWN ON SAME DRAWING, DRAWING NUMBER IS REPLACED BY A LINE.
- DETAIL LETTERS "I" AND "O" NOT USED.

LEGEND

_____ T-UG _____	EXISTING TELEPHONE LINE
_____ P-UG _____	EXISTING ELECTRIC LINE
_____ FD _____	EXISTING FIBER OPTICS LINE
_____ 2-G _____	EXISTING GAS LINE W/ DIAMETER
_____ 3-W _____	EXISTING WATER LINE W/ DIAMETER
___ WS ___ WS ___ WS ___	EXISTING WATER SERVICE
-----	EXISTING CULVERT
=====	EDGE OF ASPHALT
-----	EDGE OF DIRT/GRAVEL ROAD
-----	PROPERTY BOUNDARY / LOT LINE
-----	RIGHT-OF-WAY
-----	UTILITY EASEMENT
=====	NEW WATER LINE
-x-x-x-x-	FENCE LINE



POWER POLE



FIRE HYDRANT



WATER METER



EXISTING WATER VALVE



NEW WATER VALVE

ABBREVIATIONS

CLR. = CLEARANCE	OHP = OVERHEAD POWER LINE
DIA. = DIAMETER	PE = PLAIN END
DIP = DUCTILE IRON PIPE	PSI = POUNDS PER SQUARE INCH
EL. = ELEVATION	PVC = POLYVINYL CHLORIDE
FL = FLOW LINE	R.O.W. = RIGHT OF WAY
FLG = FLANGE	HP = HIGH PRESSURE
ID = INSIDE DIAMETER	SQ. = SQUARE
MAX. = MAXIMUM	STA. = STATION
MIN. = MINIMUM	THD. = THREAD
MJ = MECHANICAL JOINT	TYP. = TYPICAL
N.T.S. = NOT TO SCALE	UBC = UNTREATED BASE COURSE

INDEX OF DRAWINGS

SHEET NO.

TITLE

GENERAL

G-1	COVER SHEET
G-2	GENERAL NOTES, LEGEND & INDEX OF DRAWINGS
G-3	STRUCTURAL NOTES
G-4	STRUCTURAL SPECIAL INSPECTIONS

PUMP STATION

PS-1	SITE PLAN
PS-2	EXISTING PUMP STATION DEMOLITION
PS-3	BUILDING ELEVATIONS
PS-4	PUMP STATION PIPING – PLAN VIEW
PS-5	PUMP STATION PIPING – SECTION VIEW
PS-6	TYPICAL BUILDING SECTION
PS-7	WALL SECTION & SKYLIGHT DETAILS
PS-8	TYPICAL BUILDING DETAILS
PS-9	FOOTING & FOUNDATION PLAN
PS-10	ROOF FRAMING PLAN
PS-11	CHLORINATION PIPING DETAILS

ELECTRICAL

E1.1	ELECTRICAL LEGEND & GENERAL NOTES
E1.2	ELECTRICAL EQUIPMENT TAG LIST
E2.1	POWER & I&C ONELINE DIAGRAMS
E2.2	TYPICAL RVSS DIAGRAMS
E2.3	COMMON DIAGRAMS
E2.4	CP-1 CONTROL DIAGRAMS, SHT. 1
E2.5	CP-1 CONTROL DIAGRAMS, SHT. 2
E2.6	CP-2 CONTROL DIAGRAMS, SHT. 1
E2.7	CP-2 CONTROL DIAGRAMS, SHT. 2
E3.1	ELECTRICAL SCHEDULES
E4.1	ELECTRICAL SITE PLAN
E4.2	ELECTRICAL PLANS
E4.3	LIGHTING & HVAC PLANS
E5.1	CONTROL PANEL CP-1 ARRANGEMENT
E5.2	CONTROL PANEL CP-2 ARRANGEMENT
E6.1	ELECTRICAL DETAILS, SHT. 1
E6.2	ELECTRICAL DETAILS, SHT. 2
E6.3	ELECTRICAL DETAILS, SHT. 3
E6.4	ELECTRICAL DETAILS, SHT. 4

NOTES

GENERAL NOTES

- ALL WORK SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH THE CURRENT HIGHLAND CITY STANDARDS, PLANS AND SPECIFICATIONS, EXCEPT WHERE NOTED ON THESE PLANS.
- THE CONTRACTOR SHALL MEET ALL UTAH STATE DEPARTMENT OF ENVIRONMENTAL QUALITY AND U.S. EPA REQUIREMENTS WITH RESPECT TO THEIR MINIMUM RULES AND REGULATIONS.
- CONSTRUCTION OPERATIONS SHALL BE CONDUCTED, AND SIGNS, BARRICADES, AND FLASHERS SHALL BE PLACED; SO AS TO COMPLY WITH OSHA, UTAH STATE INDUSTRIAL COMMISSION, LOCAL SAFETY STANDARDS, AND MANUAL ON UNIFORM TRAFFIC CONTROL. CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLANS TO CITY FOR APPROVAL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES, INCLUDING WATER LINES, IRRIGATION DRAIN LINES, TELEPHONE CABLES, GAS LINES, AND ANY OTHER OBSTRUCTION DURING THE COURSE OF CONSTRUCTION AND INSTALLATION OF THE PIPELINES. SAID UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE RESTORED TO A CONDITION AT LEAST EQUAL TO THEIR ORIGINAL CONDITION.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN RIGHTS OF INGRESS AND EGRESS SHOULD HE VENTURE ONTO PRIVATE PROPERTY WHICH IS NOT INCLUDED IN OWNER ACQUIRED RIGHTS-OF-WAY AND EASEMENTS.
- UNLESS DETAILED, SPECIFIED OR INDICATED OTHERWISE, CONSTRUCTION SHALL BE AS INDICATED IN THE APPLICABLE TYPICAL DETAILS AND GENERAL NOTES. TYPICAL DETAILS ARE MEANT TO APPLY EVEN THOUGH NOT REFERENCED AT SPECIFIC LOCATIONS OR IN SPECIFIC DRAWINGS.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT ALL EXISTING IMPROVEMENTS DURING CONSTRUCTION AND SHALL REPLACE OR RESTORE ANY IMPROVEMENTS DAMAGED AS A RESULT OF THE CONSTRUCTION ACTIVITY AS DIRECTED BY THE ENGINEER.
- THIS PROJECT IS LOCATED IN HIGHLAND CITY LIMITS. THE CONTRACTOR SHALL OBTAIN ALL APPLICABLE PERMITS AND APPROVALS FROM GOVERNING AGENCY AND SHALL COMPLY WITH CITY REGULATIONS FOR TRAFFIC CONTROL, SAFETY, EXCAVATION IN CITY OWNED RIGHTS OF WAY, ETC.
- THE CONTRACTOR SHALL OBTAIN NOTICE OF INTENT, PREPARE STORM WATER POLLUTION PREVENTION PLAN, AND COMPLY WITH ALL UPDES REQUIREMENTS. AS A MINIMUM, CONTRACTOR SHALL CONTROL STORM WATER DISCHARGE USING APPROPRIATE BMP'S.

WATER PIPELINE NOTES

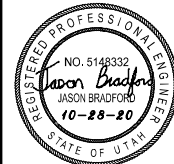
- CONTACT HIGHLAND CITY AT LEAST 72 HOURS IN ADVANCE OF ALL WATER SHUTDOWNS.
- ALL DUCTILE IRON PIPE AND ALL COMPRESSION COUPLINGS, MECHANICAL JOINTS, FLANGED JOINTS, VALVES, HYDRANTS AND FITTINGS INCLUDING TEES, WYES, ELBOWS, PLUGS, ETC. EXPOSED TO SOIL SHALL BE WRAPPED WITH 8 MIL THICK POLYETHYLENE FILM TUBE. ALL FITTINGS, VALVES AND EXPOSED NUTS & BOLTS SHALL BE LIBERALLY COATED WITH FM GREASE PRIOR TO WRAPPING. THE FILM SHALL BE HELD IN PLACE BY 2-INCH WIDE PLASTIC BACKED ADHESIVE TAPE EQUAL TO POLYKEN NO. 900 OR SCOTCHRAP NO. 50. THE TAPE SHALL BE INSTALLED TO TIGHTLY SECURE THE FILM TO THE PIPE. ENOUGH FILM SHALL BE USED TO OVERLAP ADJOINING SECTIONS OF FILM A MINIMUM OF ONE (1) FOOT.
- VALVES SHALL BE WRAPPED BY BRINGING THE WRAP ON THE ADJACENT PIPE OVER THE BELLS OR FLANGES OF THE VALVE AND SEALING WITH THE ADHESIVE TAPE. THE VALVE BODIES ARE THEN WRAPPED WITH A FLAT SHEET OF THE FILM PASSED UNDER THE VALVE BOTTOM AND BROUGHT UP AROUND THE BODY TO THE STEM AND FASTENED IN PLACE WITH THE ADHESIVE TAPE.
- ALL FITTINGS THAT REQUIRE CONCRETE BLOCKING SHOULD BE COMPLETELY WRAPPED PRIOR TO THE POURING OF THE CONCRETE THRUSTING BLOCK.
- POLYETHYLENE WRAP SHALL BE PROTECTED FROM THE SUN AND WEATHERING PRIOR TO USE. CARE SHALL BE EXERCISED DURING BACK FILLING OF THE PROTECTED AREAS TO PREVENT PUNCTURING OF THE FILM.
- MINIMUM COVER OVER TOP OF PIPE SHALL BE 4- FEET.
- CONTRACTOR SHALL POT HOLE UTILITIES AT ALL CROSSINGS SUFFICIENTLY IN ADVANCE OF LAYING PIPE TO ALLOW FOR ADJUSTMENTS OF NEW PIPELINE GRADE TO AVOID CONFLICTS.
- CONTRACTOR TO PROVIDE TEMPORARY BLOW OFF VALVES & FITTINGS TO FLUSH NEW PIPELINES. PROVIDE PLAN TO CITY FOR APPROVAL BEFORE BEGINNING CONSTRUCTION. TEMPORARY BLOWOFF & FITTINGS SHALL BE REMOVED PRIOR TO PUTTING NEW LINE INTO SERVICE.
- DEFLECTIONS IN PIPE JOINTS SHALL NOT EXCEED 5 DEGREES FOR DUCTILE IRON PIPE, 1 DEGREE FOR PVC PIPE OR MANUFACTURER'S PUBLISHED DEFLECTIONS.
- PROVIDE CONCRETE THRUST BLOCKS AND JOINT RESTRAINTS ON ALL BENDS, FITTINGS & VALVES, UNLESS SPECIFIED OTHERWISE.
- ELEVATIONS OF EXISTING WATER LINES ARE UNKNOWN. CONTRACTOR SHALL POTHOLE EXISTING WATER LINES AT CONNECTIONS TO VERIFY LOCATION AND ELEVATION. MODIFICATIONS TO CONNECTION DETAILS MAY BE REQUIRED, BASED ON THE INFORMATION OBTAINED.

BT ENGINEERING

FOR:
HIGHLAND CITY
5400 W CIVIC CENTER DR
HIGHLAND, UT 84003

CONTACT:
TODD TRANE
801-772-4508

HIGHLAND CITY
WELL #3 IMPROVEMENTS
GENERAL NOTES, LEGEND & INDEX OF DRAWINGS



NO.	DATE	REVISION	BY

PROJECT NO.: 001.20.002 DATE: OCTOBER 2020

DRAWN BY: JB CHECKED BY: TT

PROJECT MANAGER: T. TIMOTHY

GENERAL NOTES

FILE NAME: \\USERS\BRADF\DROPBOX\HIGHLAND CITY\WELL #3 UPGRADES\CAD\G-3 STRUCTURAL NOTES.DWG
FILE DATE: 10/28/2020 14:33:53 (JEB)

GENERAL NOTES:

- THE GENERAL CONTRACTOR AND SUB-CONTRACTORS SHALL PROVIDE SUFFICIENT SKILLED WORKMEN AND SUPERVISORS WHO SHALL BE PRESENT AT ALL TIMES DURING EXECUTION OF THE WORK. A PROJECT MANAGER, SHALL BE ASSIGNED BY THE GENERAL CONTRACTOR, AND SHALL BE RESPONSIBLE FOR THE DAILY COORDINATION OF THE PROJECT AND SHALL MAINTAIN ALL REQUIRED DRAWINGS, SPECIFICATIONS, REPORTS, AND OTHER ITEMS FOR REVIEW AT THE SITE.
- ALL CONSTRUCTION SHALL BE ACCORDING TO THE 2018 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC). AS AMENDED BY THE STATE OF UTAH.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND SAFETY IN AND AROUND THE JOB SITE AND/OR ADJACENT PROPERTIES.
- THE CONTRACTOR AND/OR OWNER SHALL KEEP LOADS ON THE STRUCTURE WITHIN THE LIMITS OF THE DESIGN LOADS BOTH DURING AND AFTER CONSTRUCTION.

DESIGN CRITERIA

- SIESMIC DESIGN CATEGORY: "D"
- SEISMIC SITE CLASS "D"
- Ss: 1.341g
- Si: 0.494g
- R: 5
- Q: 2.5
- Cd: 3.5
- ROOF LIVE LOAD: 35 PSF UNIFORM LOAD, WITH UNBALANCED LOADS PER ASCE 7.
- MAX SOIL BEARING PRESSURE: 1500 PSF. (NO SOILS REPORT PROVIDED)

STRUCTURAL NOTES:

REINFORCED CONCRETE:

- ALL CONCRETE CONSTRUCTION, INCLUDING BENDING OF BARS, SHALL COMPLY WITH ACI "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318).
- UNLESS CALLED OUT OTHERWISE ON THE PLANS, MINIMUM REINFORCEMENT OF CONCRETE WORK SHALL BE:
WALLS:
8" THICK OR LESS = USE #5 @ 16" E.W., E.F.
9" OR THICKER
SLABS:
8" THICK OR LESS - USE #4 @ 16" E.W.
- ALL WALL REINFORCEMENT AT CORNERS OR JUNCTIONS OF WALLS SHALL BE CONTINUOUS, LAPPED, OR TERMINATED IN A STANDARD 90 DEGREE HOOK. LAP SPLICES SHALL CONFORM WITH NOTE 6.
- UNLESS SHOWN OTHERWISE ALL BARS SHALL BE DOWELED. DOWELS SHALL BE THE SAME SIZE AND SPACING AS THE REINFORCEMENT WHICH IS TO BE SPLICED TO THE DOWELS.
- ALL REINFORCING BARS SHALL BE GRADE 60 AND SHALL CONFORM TO ASTM A-615, CURRENT REVISION. REINFORCING STEEL SHALL BE NEW AND FREE FROM RUST, OIL OR OTHER BOND INHIBITOR.
- ALL CONTINUOUS REINFORCING BARS SHALL LAP AT LEAST 40 BAR DIAMETERS. SPLICES SHALL BE MADE AWAY FROM POINTS OF MAXIMUM STRESS. MINIMUM LAP SHALL BE 18 IN.
- CONCRETE COVER OVER REINFORCEMENT SHALL BE AS FOLLOWS:
A. SURFACE NOT EXPOSED DIRECTLY TO THE GROUND, WATER OR WEATHER AFTER FORM REMOVAL:
CONCRETE SLABS IN BUILDINGS - - - - - 3/4"
CONCRETE SLABS IN WATER BEARING
B. SURFACES EXPOSED DIRECTLY TO THE GROUND, WATER OR WEATHER AFTER FORM REMOVAL:
FOR #5 BARS OR SMALLER - - - - - 1-1/2"
FOR #6 BARS OR LARGER - - - - - 2"
C. CONCRETE PLACED DIRECTLY AGAINST GROUND - - - 3"
D. REINFORCEMENT SHALL BE PLACED WITHIN A TOLERANCE OF ±1/4" OF POSITION SPECIFIED.
- CONCRETE CURING SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. SOME CONCRETE WORK REQUIRES WATER CURING, AS MEMBRANE CURING IS NOT ALLOWED. THE CONTRACTOR IS WARNED THAT WATER CURING IS DIFFICULT AT TIMES DUE TO WIND AND DRY CONDITIONS. THE CONTRACTOR SHALL STUDY REQUIREMENTS AND SHALL FURNISH ADEQUATE SYSTEMS TO PROVIDE WATER CURING WHERE REQUIRED. TOP OF WALLS SHALL BE KEPT VISIBLY MOIST AT ALL TIMES AND SHALL BE FLOODED NOT LESS THAN THREE TIMES DAILY.
A. FOR POURING CONCRETE DURING COLD WEATHER:
1. FOLLOW RECOMMENDATIONS CONTAINED IN PUBLICATION ACI 306R "COLD-WEATHER CONCRETING," CURRENT REVISION.
2. PROTECT CONCRETE WORK FROM PHYSICAL DAMAGE OR REDUCED STRENGTH WHICH COULD BE CAUSED BY FROST, FREEZING ACTIONS OR LOW TEMPERATURES.
3. WHEN AIR TEMPERATURE HAS FALLEN TO OR IS EXPECTED TO FALL BELOW 40°F OR 4°C, UNIFORMLY HEAT WATER AND AGGREGATES BEFORE MIXING TO OBTAIN A CONCRETE MIXTURE TEMPERATURE OF NOT LESS THAN 50°F OR 10°C, AND NOT MORE THAN 80°F OR 27°C AT TIME OF PLACEMENT.
4. CONCRETE SHALL BE AIR ENTRAINED WITH AIR CONTENT OF 6% +/- 1% BY VOLUME.
5. DO NOT USE FROZEN MATERIALS OR MATERIALS CONTAINING ICE OR SNOW. DO NOT PLACE CONCRETE ON FROZEN SUBGRADE OR ON SUBGRADE CONTAINING FROZEN MATERIALS.
6. DO NOT USE CALCIUM CHLORIDE, SALT OR OTHER MATERIALS CONTAINING ANTIFREEZE AGENTS OR CHEMICAL ACCELERATORS, UNLESS OTHERWISE APPROVED IN THE MIX DESIGN.
7. COVER AND HEAT CONCRETE FOR A MINIMUM OF 7 DAYS AS RECOMMENDED BY ACI 306R, CURRENT REVISION.
B. FOR POURING CONCRETE DURING HOT WEATHER:
FOLLOW RECOMMENDATIONS CONTAINED IN PUBLICATION ACI 305R "COLD-WEATHER CONCRETING," CURRENT REVISION.
PROTECT CONCRETE FROM FLASH CURING BY PROVIDING A WATER/MOISTURE CURE FOR 3 DAYS.
A 4500 PSI (WITH A 6-1/2 BAG MIX) IS RECOMMENDED FOR THESE CONDITIONS.
- NO BACKFILL SHALL BE PLACED AGAINST WALLS UNTIL CONCRETE HAS REACHED 85 PERCENT OF THE SPECIFIED STRENGTH AND THE CONNECTING SLABS AND BEAMS HAVE BEEN CAST AND HAVE REACHED 85 PERCENT OF THE SPECIFIED STRENGTH.
- CONCRETE TO HAVE A MIN. 28 DAY STRENGTH OF 4000 PSI FOR SLABS & 3500 PSI FOR FOOTINGS & FOUNDATION.

MASONRY WALL REINFORCING NOTES:

- WALL REINFORCEMENT SHALL BE PLACED AND GROUTED AS DESCRIBED IN THE SPECIFICATIONS AND SHALL CONFORM TO IBC REQUIREMENTS.
- ALL WALLS SHALL BE REINFORCED WITH A MINIMUM OF #5 VERTICAL REINFORCING GROUTED AT 32" O.C. AND (1) #5 @ 48" O.C. HORIZONTAL BOND BEAM. SEE WALL ELEVATION OR NOTE 5 FOR ADDITIONAL VERTICAL REINFORCEMENT ADJACENT TO WALL OPENINGS. WALLS TO SOLID GROUTED.
- ALL VERTICAL REINFORCING SHALL EXTEND TO ROOF LEVEL AND SHALL BE DOWELED TO THE FOOTING WITH MATCHING DOWELS.
- ALL DOWELS SHALL LAP WALL REINFORCING 48 DIA. AND EXTEND INTO FOUNDATION A MINIMUM OF 40 DIA. OR EXTEND 12 DIA. PLUS HAVE A STANDARD HOOK.
- A #5 VERTICAL BAR SHALL BE PLACED AND GROUTED AT ALL WALL CORNERS AND WALL INTERSECTIONS AND TWO #5 VERTICAL BARS SHALL BE PLACED AT JAMBS OF WALL OPENINGS AND SUCH BARS SHALL EXTEND THE FULL HEIGHT OF WALL AND BE ANCHORED IN THE ROOF BOND BEAM AND FOOTING AS SPECIFIED IN PARAGRAPH ABOVE.
- LINTELS FOR ALL OPENINGS SHALL BE AS SHOWN ON SHEET "TYPICAL BUILDING DETAILS", UNLESS OTHERWISE NOTED.
- ALL HORIZONTAL AND VERTICAL JOINTS ON MASONRY UNITS SHALL BE CONCAVE ON BOTH FACES UNLESS SHOWN OR SPECIFIED OTHERWISE.
- MASONRY CONTROL JOINTS IN WALLS SHALL BE INSTALLED AT 24'-0"± SPACING UNLESS SHOWN OTHERWISE.
- EXTERIOR WALL CELLS SHALL BE SOLID GROUTED.
- ALL REINFORCING BARS SHALL BE GRADE 60, AND SHALL CONFORM WITH: "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", ASTM A-615. REINFORCING BARS SHALL BE NEW, FREE FROM RUST, OIL OR OTHER BOND INHIBITOR. WELDABLE REBAR TO BE ASTM A-706.
- COLD WEATHER PLACEMENT OF MASONRY: IF THE LOW TEMPERATURE FOR ANY 24-HOUR PERIOD FOR THE FIRST SEVEN DAYS AFTER THE MASONRY IS PLACED OR GROUTED DROPS BELOW 40°F BUT REMAINS ABOVE 28°F, COVER MASONRY WITH INSULATED BLANKETS. IF THE TEMPERATURE DROPS BELOW 28°F FOR ANY PERIOD AS DESCRIBED ABOVE, APPLY HEAT AND INSULATED BLANKETS AND MAINTAIN A TEMPERATURE AT OR ABOVE 34°F FOR SEVEN DAYS.
- PROVIDE (2) #5 @ TOP OF WALLS (TYP.)
- ALL MASONRY TO HAVE SPECIAL INSPECTION PER TABLE 4 OF TMS 602-16 CODE (LEVEL 3) AND PER SPECIAL INSPECTION SECTION, SHEET G-4.
- ALL TERMINAL BARS TO HAVE HOOK @ END.

WOOD FRAMING NOTES

- FRAMING LUMBER: DOUGLAS FIR LARCH (SURFACED DRY NOT TO EXCEED 19% MAXIMUM MOISTURE CONTENT), CONFORMING TO NATIONAL DESIGN SPECIFICATIONS (NDS) SUPPLEMENTS FOR WOOD DESIGN VALUES AND APPLICABLE STANDARDS IN THE FOLLOWING GRADES:
A. SILLS: REDWOOD, OR PRESSURE TREATED, FOUNDATION GRADE.
B. PLATES @ TOP OF MASONRY WALLS: DOUGLAS FIR-LARCH, NO. 1, FB=1000 PSI MIN.
C. STUDS: DOUGLAS FIR-LARCH, OR HEMLOCK-FIR, STUD GRADE.
D. BEAMS, JOISTS, LEDGERS, POSTS & HEADERS: DOUGLAS FIR-LARCH, NO. 2 MIN., 900 PSI MIN.
E. ALL OTHER HORIZONTAL FRAMING MEMBERS: DOUGLAS FIR-LARCH, CONSTRUCTION GRADE.
F. ALL OTHER VERTICAL FRAMING MEMBERS: DOUGLAS FIR-LARCH, STANDARD OR BETTER GRADE.
G. SHEATHING: STANDARD EXTERIOR GRADE WITH EXTERIOR GLUE, APA RATED.
H. GLUE-LAM BEAMS: DOUGLAS FIR-LARCH, 2400 PSI WITH AITC STAMP FOR QUALITY
- PROVIDE SOLID BLOCKING AT LEAST 1-1/2" THICK AT ENDS AND AT EACH SUPPORT OF JOIST. PROVIDE APPROVED BRIDGING AT A MAXIMUM 8'-0" O.C. BETWEEN SUPPORTS.
- NAILING SHALL CONFORM TO STANDARD NAILING SCHEDULE 2304.10.1 OF INTERNATIONAL BUILDING CODE UNLESS NOTED OTHERWISE ON PLANS OR SCHEDULES. ALL NAILS SHALL BE COMMON NAILS.
- USE SIMPSON STRONG TIE (SST) HANGERS FOR ALL FLUSH CONNECTIONS. USE STRONGEST HANGER COMPATIBLE WITH MEMBER SIZE AND NAIL PER MANUFACTURER'S SPECIFICATION TO OBTAIN MAXIMUM LOAD CARRYING CAPACITY.
- ALL METAL HANGERS AND CONNECTORS SHALL BE "SIMPSON" OR EQUAL.
- SECURE SILL PLATE TO CONCRETE WITH 5/8" DIA. X 12" A.B. @ 32" O.C., AND 3" X 3" X 0.229" PLATE WASHERS, UNLESS NOTED OTHERWISE ON PLAN.
- DOUBLE TOP AND BOTTOM PLATES TO BE LAPPED 4'-0" AT SPLICE AND CONNECT WITH 16D COMMON NAILS @ 3" O.C., STAGGERED.
- NOTCHING OR DRILLING THROUGH ANY LUMBER MEMBER WILL NOT BE ALLOWED WITHOUT SPECIFIC APPROVAL OF STRUCTURAL ENGINEER.
- ROOF SHEATHING:
A. (5/8)" A.P.A. RATED STRUCTURAL II, EXTERIOR, PANEL INDEX #32/16, UNLESS NOTED OTHERWISE
B. NAIL WITH: 10D @ 6" O.C. - PANEL EDGES, UNLESS NOTED OTHERWISE 10D @ 12" O.C. - ALL ELSE, UNLESS NOTED OTHERWISE
C. INSTALL ROOF SHEATHING WITH "H" CLIPS.
- KEEP ALL MATERIAL CLEARLY IDENTIFIED WITH ALL GRADE MARKS LEGIBLE. KEEP ALL DAMAGED MATERIAL CLEARLY IDENTIFIED AS DAMAGED AND SEPARATELY STORED TO PREVENT ITS INADVERTENT USE. IN THE EVENT OF DAMAGE, IMMEDIATELY MAKE ALL REPAIRS AND REPLACEMENTS NECESSARY TO THE APPROVAL OF THE ENGINEER AND AT NO ADDITIONAL COST TO THE OWNER.
- PROVIDE 3" X 3" X 0.229" SLOTTED PLATE WASHERS AT ALL BOLTS IN PLATES, AND 2" DIAMETER PLATE WASHERS AT ALL BOLTS IN LEDGERS, BEAMS, AND COLUMNS. UNLESS OTHERWISE SPECIFIED, USE A307 BOLTS.
- PROVIDE SOLID BLOCKING UNDER ALL LOCATIONS WHERE CONCENTRATED LOADS ARE LOCATED, SUCH AS COLUMNS, POSTS, BEAMS, ETC. FULL SUPPORT MUST BE PROVIDED TO THE FOUNDATION.

STRUCTURAL NOTES

WOOD TRUSSES NOTES

- DESIGN TRUSSES FOR FOLLOWING CRITERIA:
LIVE LOAD = 35 PSF (SNOW) LIVE LOAD DEFLECTION = L/360 MAXIMUM
DEAD LOAD = 20 PSF
NOTE: ALL TRUSSES TO BE DESIGNED FOR DRIFT LOADS PER ASCE-7.
TRUSSES IN STORAGE AREA TO BE DESIGNED TO MEET ALL EQUIPMENT LOADS.
- PROVIDE BRIDGING AT TOP AND BOTTOM CHORDS AND STRUT BRACING, PER MANUFACTURER'S RECOMMENDATIONS.
- NO STRESS INCREASE ALLOWED FOR TRUSS DESIGN.
- DESIGN AND FABRICATION OF ALL TRUSSES SHALL COMPLY WITH REQUIREMENTS OF DESIGN SPECIFICATIONS FOR LIGHT METAL PLATE CONNECTED WOOD TRUSSES' BY THE TRUSS PLATE INSTITUTE.
- TRUSS MANUFACTURER SHALL DESIGN AND FABRICATE TRUSSES TO SUPPORT LOADS SHOWN ON DRAWINGS. COORDINATE DESIGN WITH ALL MECHANICAL EQUIPMENT AND SUSPENDED LOADS. SUBMIT DESIGN CALCULATIONS BEARING STAMP OF A REGISTERED PROFESSIONAL ENGINEER LICENSED BY THE STATE OF UTAH.
- SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION INDICATING, FRAMING PLAN, BRIDGING AND BRACING, DIAGRAM OF THE TRUSSES WITH DIMENSIONS, SIZE AND GRADE OF MEMBERS, SIZE AND LOCATION OF METAL PLATES, BEARING DETAILS AND INSTRUCTION FOR INSTALLATION.
- MOMENT COEFFICIENTS SHALL BE 1/8 FOR ONE AND TWO CONTINUOUS SPAN CONDITIONS AND 1/10 FOR THREE OR MORE CONTINUOUS SPAN CONDITIONS. LENGTH FACTOR FOR WEB DESIGN SHALL BE ONE. METAL PLATES AT COMPRESSION JOINTS SHALL BE DESIGNED FOR THE FULL LOAD WITHOUT CONSIDERING WOOD TO WOOD BEARING.
- ALL METAL PLATE DIMENSIONS SHALL BE INCREASED BY 10% ABOVE THAT REQUIRED BY THE ANALYSIS. ALLOWABLE STRESS FOR METAL PLATE SHALL NOT BE INCREASED FOR THE LOAD DURATION. METAL PLATES SHALL BE PRESSED OR ROLLED INTO MEMBERS TO OBTAIN FULL PENETRATION WITHOUT CRUSHING THE WOOD SURFACE.
- ALL METAL PLATES SHALL BE GALVANIZED STEEL AND SHALL BE ON BOTH SIDES OF EACH CONNECTION. SUBMIT A COPY OF THE I.C.B.O APPROVAL, INCLUDING ALLOWABLE STRESSES ESTABLISHED BY THIS COMMITTEE, FOR METAL PLATES USED.
- ALL LUMBER SHALL BE DOUGLAS FIR OR YELLOW PINE #1 GRADE. MOISTURE CONTENT SHALL NOT EXCEED 19% NOR SHALL BE LESS THAN 7%. HANDLING, STORAGE AND INSTALLATION OF ALL TRUSSES SHALL BE DONE SUCH THAT THE SPECIFIED MINIMUM AND MAXIMUM MOISTURE CONTENT LIMITS ARE NOT EXCEEDED. GRADE STAMPS SHALL APPEAR ON ALL MEMBERS.
- PRIOR TO FABRICATION, CONTRACTOR SHALL SUBMIT IN WRITING PROOF OF COMPLIANCE OF IN PLANT INSPECTION BY AN I.C.B.O. APPROVED INDEPENDENT INSPECTION AGENCY. SUBMIT SHOP DRAWINGS FOR TRUSS LAYOUT & DESIGN.
- A HURRICANE TIE IS TO BE INSTALLED AT EACH TRUSS TO DOUBLE TOP PLATE LOCATION OR AS SHOWN ON DRAWINGS.
- TRUSS MANUFACTURER IS RESPONSIBLE FOR ALL TRUSS HANGERS.

SUBMITTALS:

- THE FOLLOWING INFORMATION AND SUBMITTALS SHALL BE PROVIDED TO THE CONSTRUCTION MANAGER (CM) BEFORE FABRICATION AND/OR DELIVERY TO THE JOBSITE, NOT ALL MAY APPLY.
A. CONCRETE MIX DESIGNS.
B. CONCRETE REINFORCEMENT SHOP DRAWINGS.
C. MASONRY SPECIFICATIONS.
D. MASONRY MORTAR MIX DESIGNS.
E. MASONRY REINFORCEMENT SHOP DRAWINGS.
F. STRUCTURAL BACKFILL PIT LOCATION AND MATERIAL SPECIFICATION, IF USED ON SITE.
G. STRUCTURAL STEEL SHOP DRAWINGS.
H. OPEN WEB ROOF TRUSSES, SHOP DRAWINGS FROM MANUFACTURER.
I. OTHER SHOP DRAWINGS & SUBMITTALS AS DEEMED NECESSARY BY THE CONSTRUCTION MANAGER.

SOIL NOTES

- ALL ORGANIC MATERIALS, RUBBISH, UNSUITABLE FILL, TOPSOIL, ETC. SHALL BE REMOVED FROM BENEATH LOCATIONS OF PROPOSED FOOTINGS, CONCRETE SLABS AND ASPHALT PAVING.
- ALL FOOTINGS SHALL BE PLACED ON UNDISTURBED NATURAL SOIL OR ON COMPACTED STRUCTURAL FILL EXTENDING DOWN TO THE UNDISTURBED NATURAL SOIL. IMPORTED STRUCTURAL FILL SHALL BE COMPACTED TO 95% MAXIMUM RELATIVE DENSITY BASED ON ASTM D1557, OR AS DIRECTED BY THE GEOTECHNICAL REPORT, IF PROVIDED.
- SLABS SHALL BE PLACED ON COMPACTED GRANULAR BACKFILL.
- UNLESS OTHERWISE NOTED, STRUCTURAL BACKFILL SHALL CONFORM TO:
A. IMPORTED GRANULAR MATERIAL SHALL BE FREE OF ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES.
B. SHALL COMPLY WITH SPECIFICATIONS FOR GRADATIONS.
- ALL FREE WATER SHALL BE REMOVED FROM THE FOUNDATION EXCAVATION PRIOR TO PLACING CONCRETE.
- EXTERIOR FOOTINGS AND GRADE BEAMS SHALL BE LOCATED AT LEAST 30" BELOW FINISHED GRADE, AND MAINTAIN 6" BETWEEN FINISH GRADE AND WOOD FRAMING.
- CONTRACTOR SHALL REMOVE ALL UNSUITABLE FILL FROM UNDER ALL CONCRETE FLATWORK, PAVEMENT, BUILDINGS AND STRUCTURES, AND REPLACE WITH STRUCTURAL FILL COMPACTED TO 95% MAX. DRY DENSITY PER ASTM D-1557, OR AS DIRECTED BY THE GEOTECHNICAL REPORT, IF PROVIDED.

STEEL NOTES:

- ALL STRUCTURAL STEEL AND STRUCTURAL STEEL WORK SHALL COMPLY WITH "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS OF THE AISC" AND THE "AISC CODE OF STANDARD PRACTICE."
- ALL STRUCTURAL STEEL SHALL BE ASTM A36, UNLESS NOTED OTHERWISE. SEE PLAN.
- ALL WELDS AND WELDING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS OF "THE AMERICAN WELDING SOCIETY, USING ELECTRODES AS SPECIFIED THEREIN." WELDS TO BE MADE WITH E - 70xx ELECTRODES U.N.O.
- USE A307 BOLTS WITH PLATE WASHERS, UNLESS OTHERWISE SPECIFIED, FOR TYPICAL CONNECTIONS AND CONNECTIONS TO CONCRETE.
- USE A325 BOLTS WITH PLATE WASHERS, UNLESS OTHERWISE SPECIFIED, FOR STEEL TO STEEL CONNECTIONS.
- METAL FLASHING SHALL BE HOT DIP GALVANIZED, OR HAVE OTHER APPROVED EQUAL CORROSION RESISTANCE.
- MATERIAL SHALL COMPLY WITH THE FOLLOWING STANDARDS EXCEPT WHERE NOTED OTHERWISE.

TYPICAL BOLTS	ASTM A-307 GRADE A
HIGH STRENGTH BOLTS	ASTM A-325
ANCHOR BOLTS	ASTM A-307 GRADE A
NUTS FOR ANCHOR BOLTS	ASTM A-563 GRADE A
STEEL TUBES	ASTM A-500 GRADE B WITH YIELD STRENGTH EQUAL TO 46 KSI
STEEL PIPES	ASTM A-53 GRADE B TYPE E OR S
DEFORMED BAR ANCHORS	MANUFACTURED BY NELSON STUD CO.
HEADED STUD ANCHORS	ASTM A-108 MANUFACTURED BY NELSON STUD CO. OR EQUAL
ALL OTHER STEEL SHAPES	ASTM A-36 WITH YIELD STRENGTH EQUAL TO 36 KSI.

ANCHOR NOTES:

- ALL ANCHORS TO BE INSTALLED PER THE MANUFACTURER'S REQUIREMENTS. FOR BOTH MECHANICAL AND EPOXY TYPE ANCHORS THESE REQUIREMENTS INCLUDE, BUT IS NOT LIMITED TO:
A. PROPER HOLE DIAMETER, DEPTH, EDGE DISTANCES, AND SPACING.
B. PROPER HOLE PREPARATION AND CLEANOUT
C. WEATHER REQUIREMENTS TO BE FOLLOWED, ESPECIALLY FOR COLD WEATHER APPLICATIONS.
D. ALL STRUCTURAL ANCHORS TO COMPLY WITH THE CRACKED CONCRETE REQUIREMENTS OF THE CURRENT EDITION OF THE ACI 318.
- ANY EPOXY TYPE ANCHOR IS TO MEET THE CURRENT ANSI/NSF 61 REQUIREMENTS FOR DRINKING WATER SYSTEM COMPONENTS, WHERE APPLICABLE.

SEISMIC BRACKETS:

- CONTRACTOR TO SUBMIT FOR REVIEW AND APPROVAL SEISMIC BRACKETS FOR HVAC, MECHANICAL AND ELECTRICAL EQUIPMENT TO MEET LOCAL CODES.



NO.	DATE	REVISION	BY

PROJECT NO.:	DATE:
001.20.002	OCTOBER 2020
DRAWN BY:	CHECKED BY:
JB	TT
PROJECT MANAGER:	
T. TIMOTHY	

STRUCTURAL NOTES

FILE NAME: USERS\BRADY\DROPBOX\HIGHLAND CITY\WELL #3 UPGRADES\CAD\G-4 SPECIAL INSPECTION NOTES.DWG
FILE DATE: 10/28/2020 14:34:51 (JEB)

SPECIAL INSPECTION, MATERIAL TESTING
& STRUCTURAL OBSERVATION ITEMS
REQUIRED BY CHAPTER 17 OF THE 2018 IBC

STRUCTURAL STEEL (IBC 1705.2.1, 1705.11.1 & 1705.12.2)

Item	Detailed Instructions and Frequencies		
PRIOR TO WELDING (TABLE N5.4-1, AISC 360-10):			
Fit-up of fillet welds	☐ Continuous	☒ Periodic	Verify alignment, gaps at root, cleanliness of steel surfaces, and tack weld quality and location.
DURING WELDING (TABLE N5.4-2, AISC 360-10):			
Use of qualified welders	☐ Continuous	☒ Periodic	Verify that welders are appropriately qualified.
Welding techniques	☐ Continuous	☒ Periodic	Verify interpass and final cleaning, each pass is within profile limitations, and quality of each pass.
AFTER WELDING (TABLE N5.4-3, AISC 360-10):			
Welds cleaned	☐ Continuous	☒ Periodic	Verify that welds have been propyl cleaned.
Size, length, and location of welds	☒ Continuous	☐ Periodic	
Welds meet visual acceptance criteria	☒ Continuous	☐ Periodic	
Repair activities	☒ Continuous	☐ Periodic	
Document acceptance or rejection of welded joint/member	☒ Continuous	☐ Periodic	

CONCRETE CONSTRUCTION (IBC 1705.3 & 1705.12.1)

Item	Detailed Instructions and Frequencies		
Reinforcing steel, including prestressing tendons	☐ Continuous	☒ Periodic	Verify prior to placing concrete that reinforcing is of specified type, grade and size; that it is free of oil, dirt and rust; that it is located and spaced properly; that hooks, bends, ties, stirrups and supplemental reinforcement are placed correctly; that lap lengths, stagger and offsets are provided; and that all mechanical connections are installed per the manufacturer's instructions and/or evaluation report.
Post-installed anchors or dowels	☐ Continuous	☒ Periodic	All post-installed anchors/dowels shall be specially inspected as required by the approved ICC-ES report.
Use of required mix design	☐ Continuous	☒ Periodic	Verify that all mixes used comply with the approved construction documents; ACI 318: Ch. 4, 5.2-5.4; and IBC 1904.3, 1913.2, 1913.3.
Concrete sampling for strength tests, slump, air content, and temperature	☒ Continuous	☐ Periodic	
Concrete & shotcrete placement	☒ Continuous	☐ Periodic	
Curing temperature and techniques	☐ Continuous	☒ Periodic	Verify that the ambient temperature for concrete is kept at > 50°F for at least 7 days after placement. High-early-strength concrete shall be kept at > 50°F for at least 3 days. Accelerated curing methods may be used (see ACI 318: 5.11.3). The ambient temperature for shotcrete shall be > 40°F for the same period of time as noted for concrete. Shotcrete shall be kept continuously moist for at least 24 hours after
			shotcreting. All concrete materials, reinforcement, forms, fillers, and ground shall be free from frost. In hot weather conditions ensure that appropriate measures are taken to avoid plastic shrinkage cracking and that the specified water/cement ratio is not exceeded.
Strength verification	☐ Continuous	☒ Periodic	Verify that adequate strength has been achieved prior to the removal of shores and forms or the stressing of post-tensioned tendons.
Formwork	☐ Continuous	☒ Periodic	Verify that the forms are placed plumb and conform to the shapes, lines, and dimensions of the members as required by the approved construction documents.

MASONRY CONSTRUCTION (IBC 1705.4)

Item	Detailed Instructions and Frequencies		
PRIOR TO GROUTING (TABLE 1.19.2, TMS-402/ACI 530-11):			
Grout space	☐ Continuous	☒ Periodic	Verify that grout space is free of mortar droppings, debris, loose aggregate, and other deleterious materials and that cleanouts are provided per Article 3.2 D and 3.2 F of TMS-602/ACI 530.1-11. <i>Continuous inspection is required for Risk Category IV buildings.</i>
Grade, type, and size of reinforcement and anchor bolts, and prestressing tendons and anchorages	☐ Continuous	☒ Periodic	Verify that reinforcement, joint reinforcement, wall ties, anchor bolts and veneer anchors comply with the approved construction documents and Section 1.6 of TMS 402/ACI 530-11.
Placement of reinforcement, connectors, and prestressing tendons and anchorages	☐ Continuous	☒ Periodic	Verify that reinforcement, joint reinforcement, wall ties, anchor bolts and veneer anchors are installed in accordance with the approved construction documents and Articles 3.2 E, 3.4, and 3.6 A of TMS 602/ACI 530.1-11.
Proportions of site-prepared grout and prestressing grout for bonded tendons	☐ Continuous	☒ Periodic	Verify that grout is proportioned per ASTM C 476 and has a slump between 8-11 inches. Self-consolidated grout shall not be proportioned onsite. (see Articles 2.6 B and 2.4 G.1.b of TMS 602/ACI 530.1-11.
Construction of mortar joints	☐ Continuous	☒ Periodic	Verify that mortar joints are placed in accordance with Article 3.3 B of TMS 602/ACI 530.1-11.
DURING MASONRY CONSTRUCTION:			
Size and location of structural elements	☐ Continuous	☒ Periodic	Verify the locations of structural elements with respect to the approved plans and confirm that tolerances meet the requirements of Article 3.3 F of TMS 602/ACI 530.1-11.
Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction.	☐ Continuous	☒ Periodic	Verify that correct anchorages and connections are provided per the approved plans and Sections 1.16.4.3 and 1.17.1 of TMS 402/ACI 530-11.
Preparation, construction, and protection of masonry during cold weather (<40°F) or hot weather (>90°F).	☐ Continuous	☒ Periodic	Verify that cold-weather construction is performed in accordance with Article 1.8 C of TMS 602/ACI 530.1-11 and hot weather construction per Article 1.8 D of TMS 602/ACI 530.1-11.
MINIMUM TESTING:			
Verification of Slump Flow and Visual Stability Index (VSI) for self-consolidating grout	☐ Continuous	☒ Periodic	Compressive strength tests should be performed in accordance with ASTM C 1019 for slump flow and ASTM C 1611 for VSI.
Verification of f_m' and f_{AAC}'	☐ Continuous	☒ Periodic	Determine the compressive strength for each wythe by the “unit strength method” or by the “prism test method” as specified in Article 1.4 B of TMS 602/ACI 530.1-11 prior to construction. <i>For Risk Category IV buildings this should be verified at every 5,000ft² of construction.</i>
Verification of proportions of materials in premixed or pre-blended mortar and grout	☐ Continuous	☒ Periodic	Verify that proportions for mortar meet ASTM C 270 and proportions for grout meet ASTM C 476. This applies to <i>Risk Category IV buildings only.</i>

SOILS CONSTRUCTION (IBC 1705.6)

Item	Detailed Instructions and Frequencies		
Verify subgrade is adequate to achieve design bearing capacity	☐ Continuous	☒ Periodic	Prior to placement of concrete.
Verify excavations extend to proper depth and material	☐ Continuous	☒ Periodic	Prior to placement of compacted fill or concrete.
Verify that subgrade has been appropriately prepared prior to placing compacted fill	☐ Continuous	☒ Periodic	Prior to placement of compacted fill.
Perform classification and testing of compacted fill materials	☐ Continuous	☒ Periodic	All materials shall be checked at each lift for proper classifications and gradations not less than once for each 10,000ft² of surface area.
Verify proper materials, densities and lift thicknesses during placement and compaction.	☒ Continuous	☐ Periodic	

Special Inspectors Shall:

- Be approved by the Building Official prior to performing any duties;
- Provide proof of licensure as a special inspector by the State of Utah for each type of inspection;
- Inspection reports are to meet the requirements of IBC 1704.2.4;
- Inspection reports are to be submitted to the code consultant, architect, and the State of Utah Building Official within 48 hours of performing inspections;
- A final inspection report shall be submitted following completion of the project documenting the types of special inspections performed and a statement indicating that the structure is in compliance with the approved construction documents and applicable codes (see IBC 1704.2.4).

STRUCTURAL OBSERVATIONS (IBC 1704.6)

Structural observations shall be scheduled to verify rebar of concrete walls and footings prior to pouring of concrete

Structural observer shall be schedule when CMU block is scheduled to be installed to allow for periodic observations

Structural observer shall be contacted at least 3 business days prior to requested observations.

Structural Observer's Shall:

- Provide proof of licensure as a licensed professional/structural engineer by the State of Utah;
- If structural observations are performed by individuals other than the design professional in responsible charge, they should first be approved by the Building Official.
- At the conclusion of work a final structural observation report must be submitted to the Building Official noting any deficiencies which, to the best of the structural observer's knowledge, have not been resolved (see IBC 1704.5).

BT ENGINEERING

FOR:
HIGHLAND CITY
5400 W CIVIC CENTER DR
HIGHLAND, UT 84003

CONTACT:
TODD TRANE
801-772-4508

HIGHLAND CITY
WELL #3 IMPROVEMENTS
STRUCTURAL SPECIAL INSPECTIONS



NO.	DATE	REVISION	BY

PROJECT NO.:	DATE:
001.20.002	OCTOBER 2020
DRAWN BY:	CHECKED BY:
JB	TT
PROJECT MANAGER:	
T. TIMOTHY	

SPECIAL INSPECTIONS

FOR:
HIGHLAND CITY
5400 W CIVIC CENTER DR
HIGHLAND, UT 84003

CONTACT:
TODD TRANE
801-772-4508

HIGHLAND CITY
WELL #3 IMPROVEMENTS
SITE PLAN



NO.	DATE	REVISION	BY

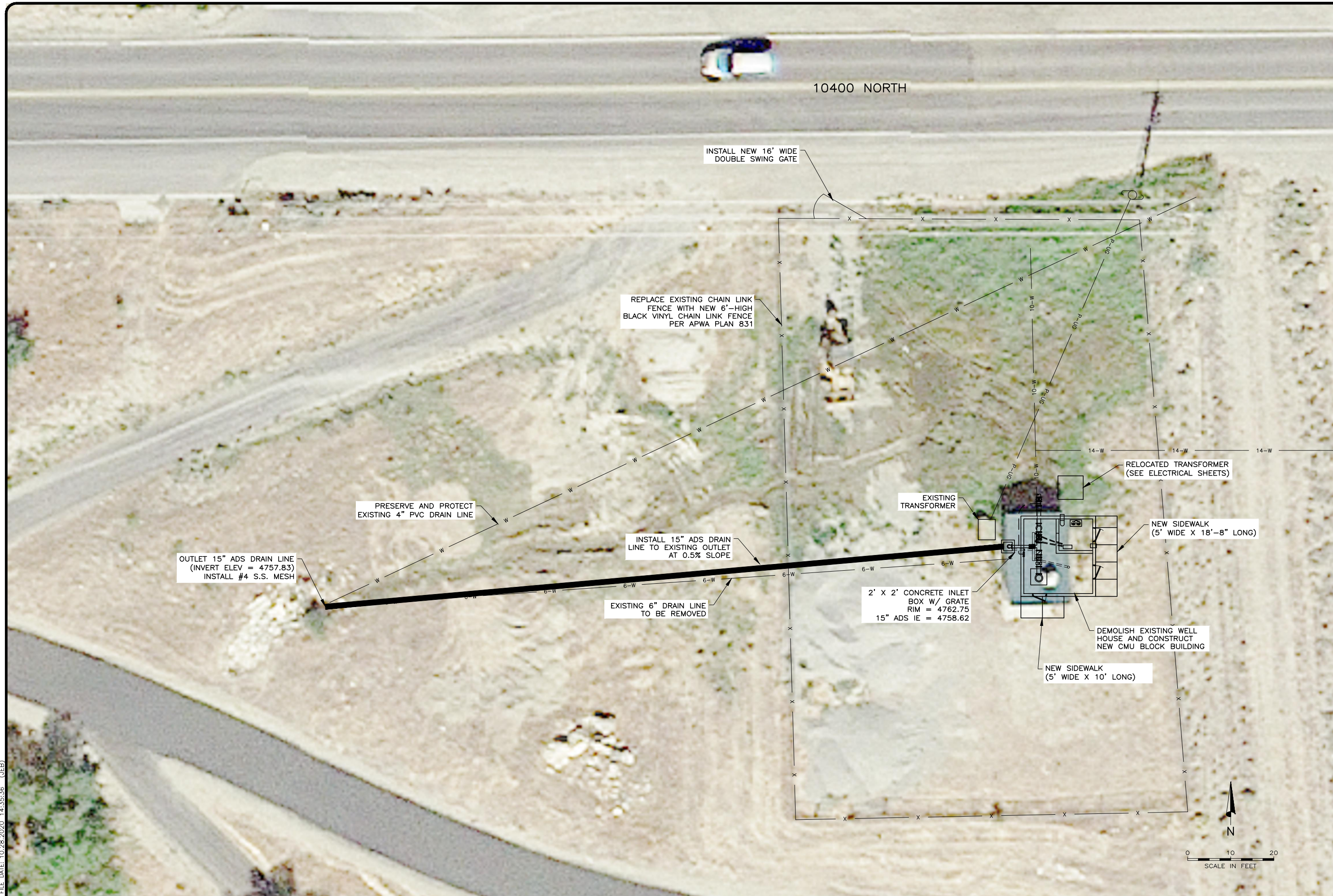
PROJECT NO.: 001.20.002
DATE: OCTOBER 2020

DRAWN BY: JB
CHECKED BY: TT

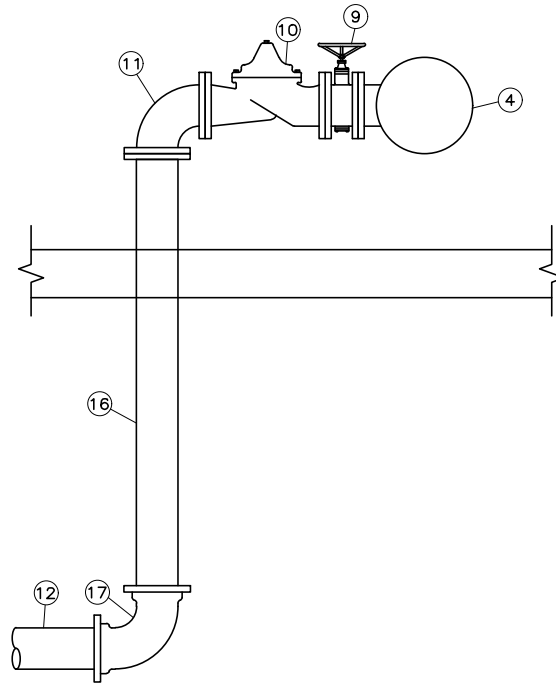
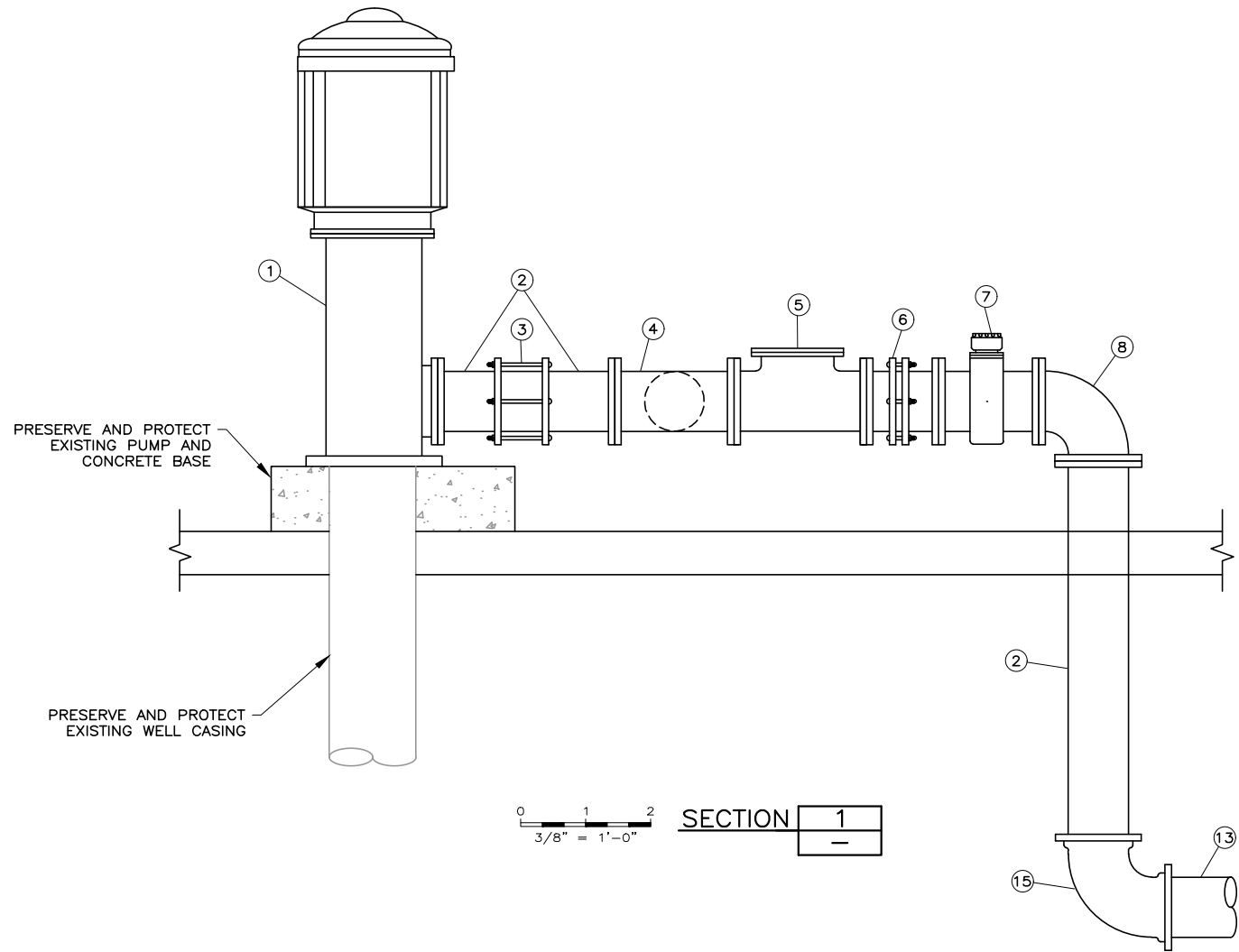
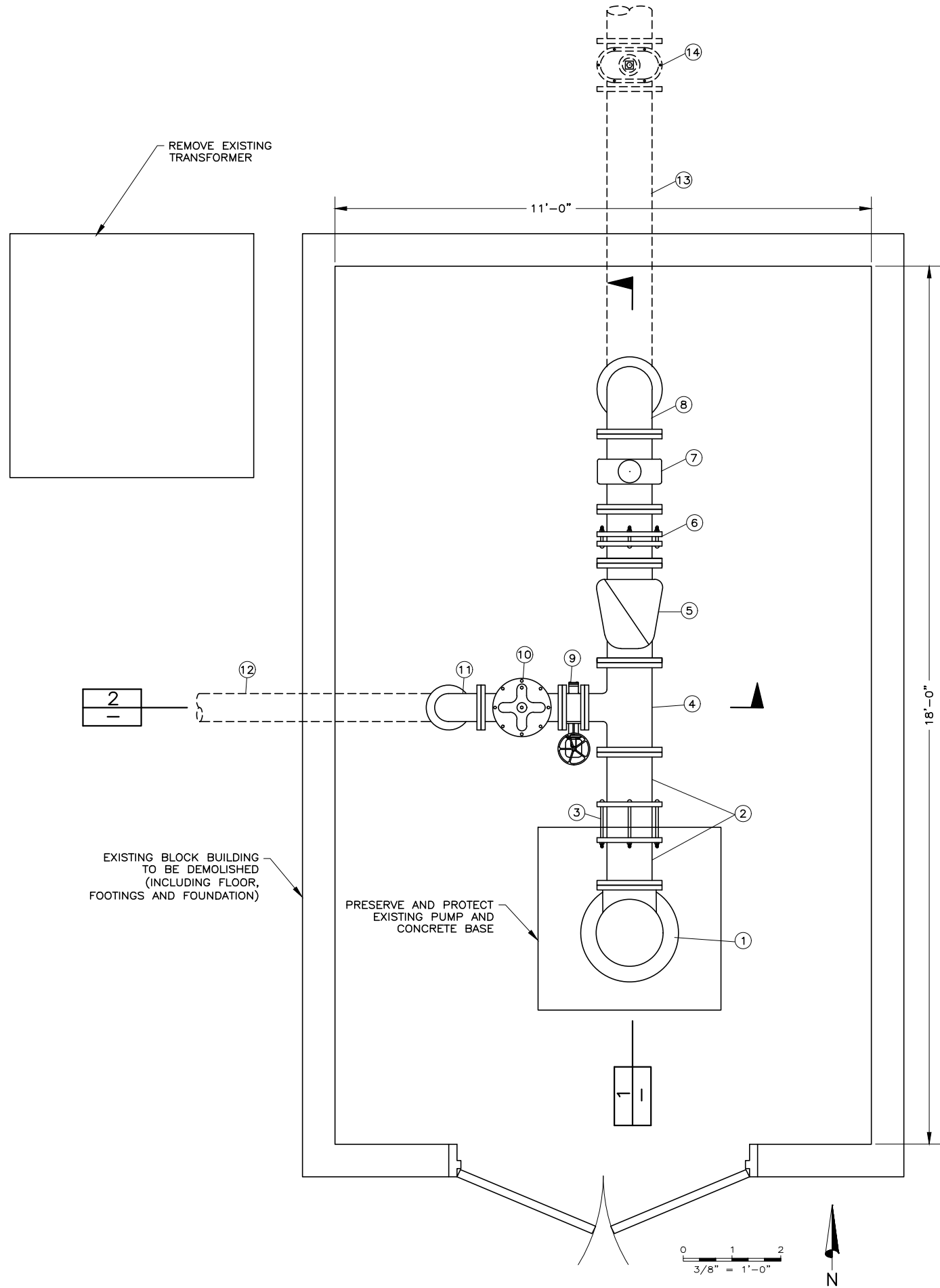
PROJECT MANAGER:
T. TIMOTHY

SITE PLAN
PS-1

FILE NAME: USERS\BRADY\DROPBOX\HIGHLAND CITY\WELL #3 UPGRADES\CAD\PS-1 SITE PLAN.DWG
FILE DATE: 10/28/2020 14:35:36 (JEB)



FILE NAME: \\USERS\BRADY\DROPBOX\HIGHLAND CITY\WELL #3 UPGRADES\CAD\PS-2 DEMOLITION PLAN.DWG
FILE DATE: 10/28/2020 14:36:11 (JEB)



VALVE & FITTING SCHEDULE			
NO.	DESCRIPTION	SIZE	JOINT
1.	VERTICAL TURBINE PUMP (250 HP)*	10"	FL
2.	DIP SPOOL	10"	FL X PE
3.	PIPE DRESSER COUPLING	10"	-
4.	DIP REDUCING TEE	10" X 6"	FL
5.	CHECK VALVE	10"	FL
6.	DISMANTLING JOINT*	10"	FL
7.	FLOW METER*	10"	FL
8.	90° DIP BEND	10"	FL
9.	BUTTERFLY VALVE WITH HANDWHEEL	6"	FL
10.	PUMP CONTROL VALVE	6"	FL
11.	90° DIP BEND	6"	FL
12.	DIP	6"	-
13.	DIP	10"	-
14.	BURIED BUTTERFLY VALVE	10"	MJ
15.	90° DIP BEND	10"	MJ
16.	DIP SPOOL	6"	FL X PE
17.	90° DIP BEND	6"	MJ

* PRESERVE AND PROTECT IN PLACE OR RE-USE IN NEW PIPING

BT ENGINEERING

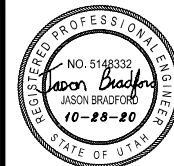
FOR:
HIGHLAND CITY
5400 W CIVIC CENTER DR
HIGHLAND, UT 84003
CONTACT:
TODD TRANE
801-772-4508

HIGHLAND CITY
WELL #3 IMPROVEMENTS
EXISTING PUMP STATION DEMOLITION

REGISTERED PROFESSIONAL ENGINEER
NO. 5148332
Jason Bradford
JASON BRADFORD
10-28-20
STATE OF UTAH

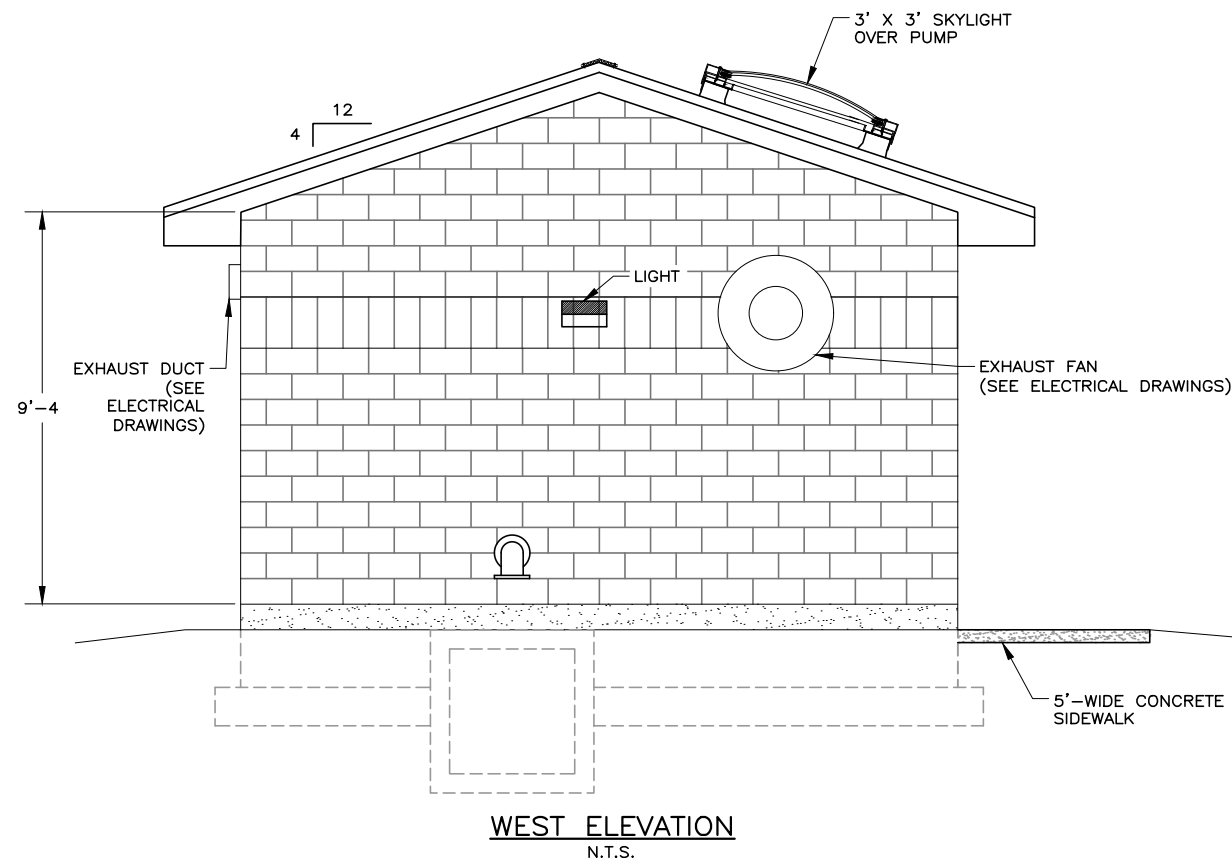
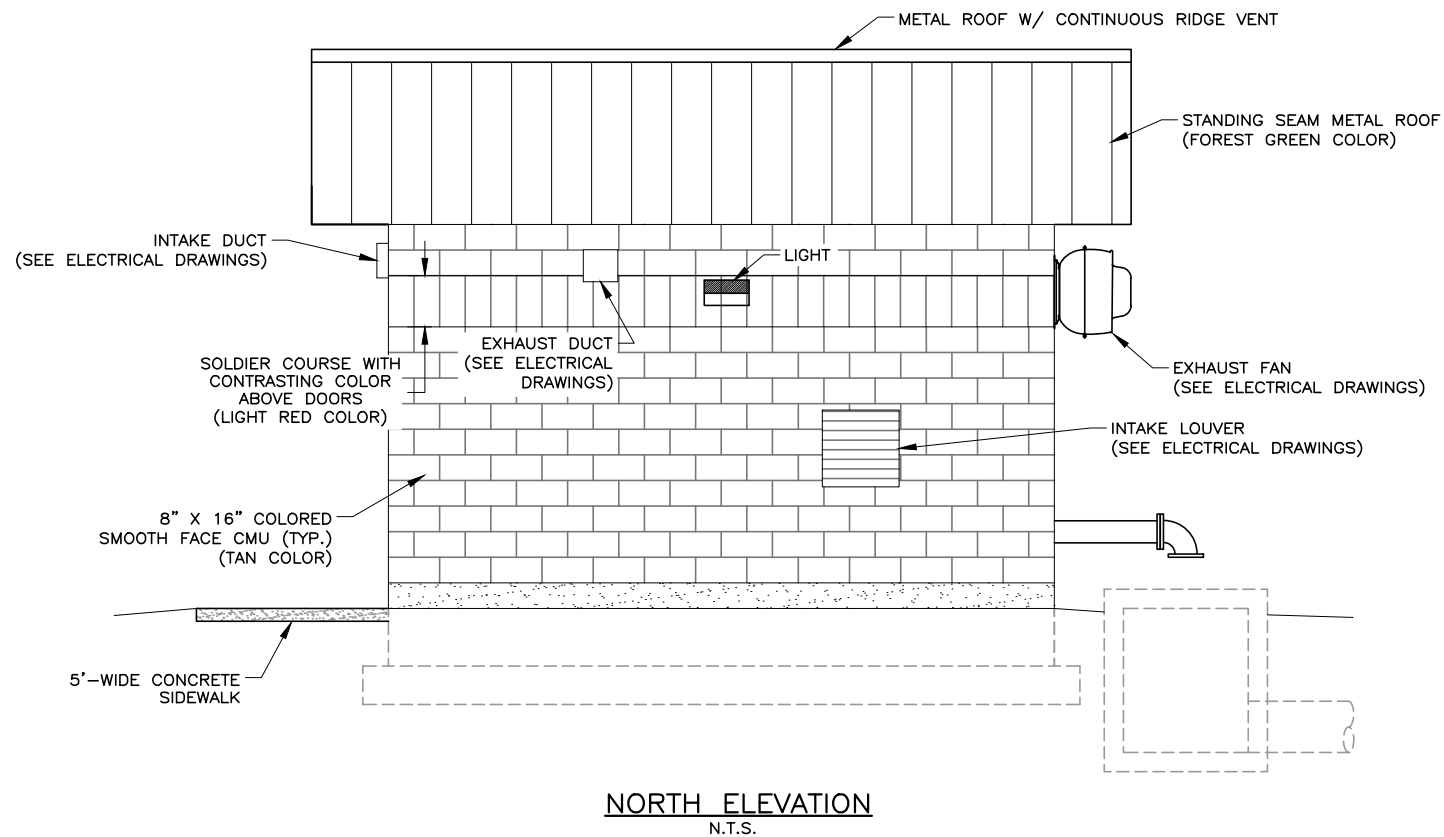
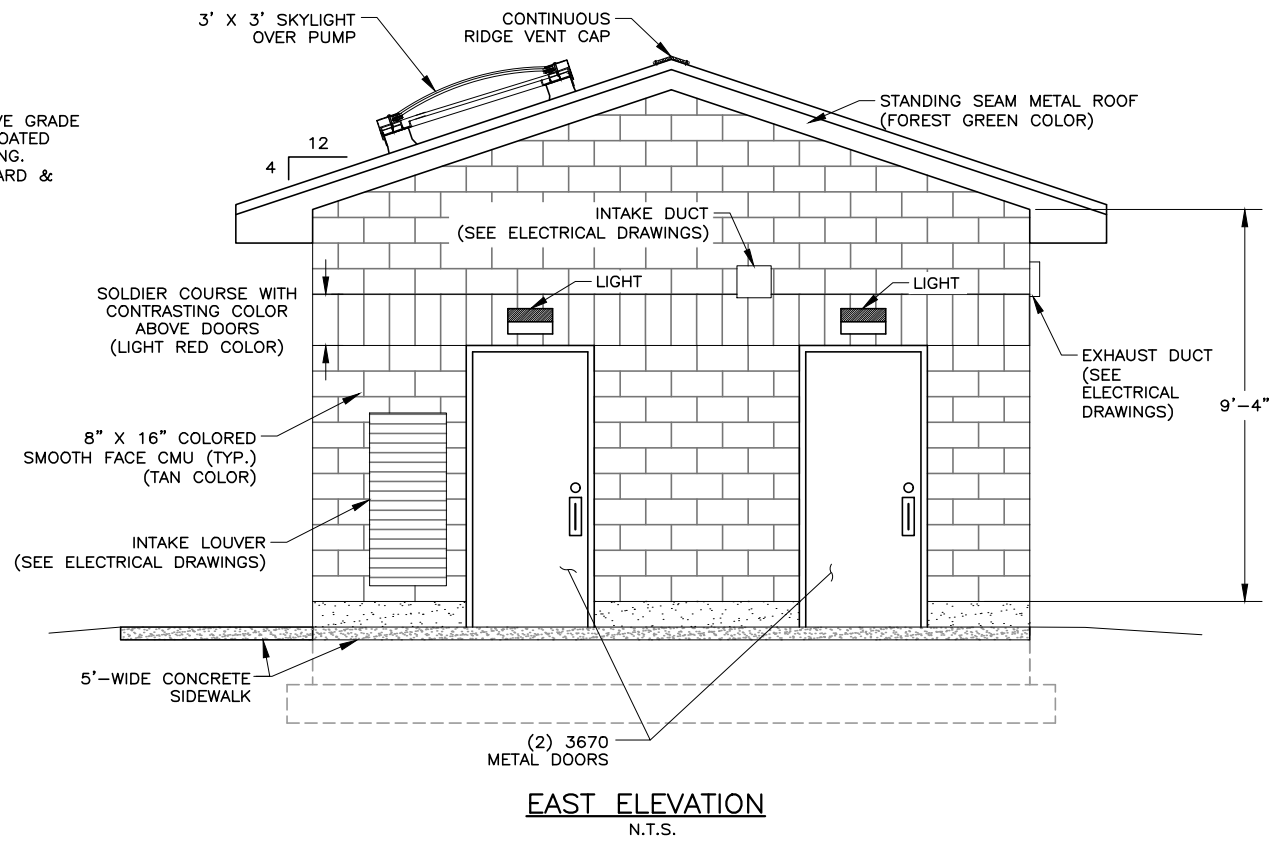
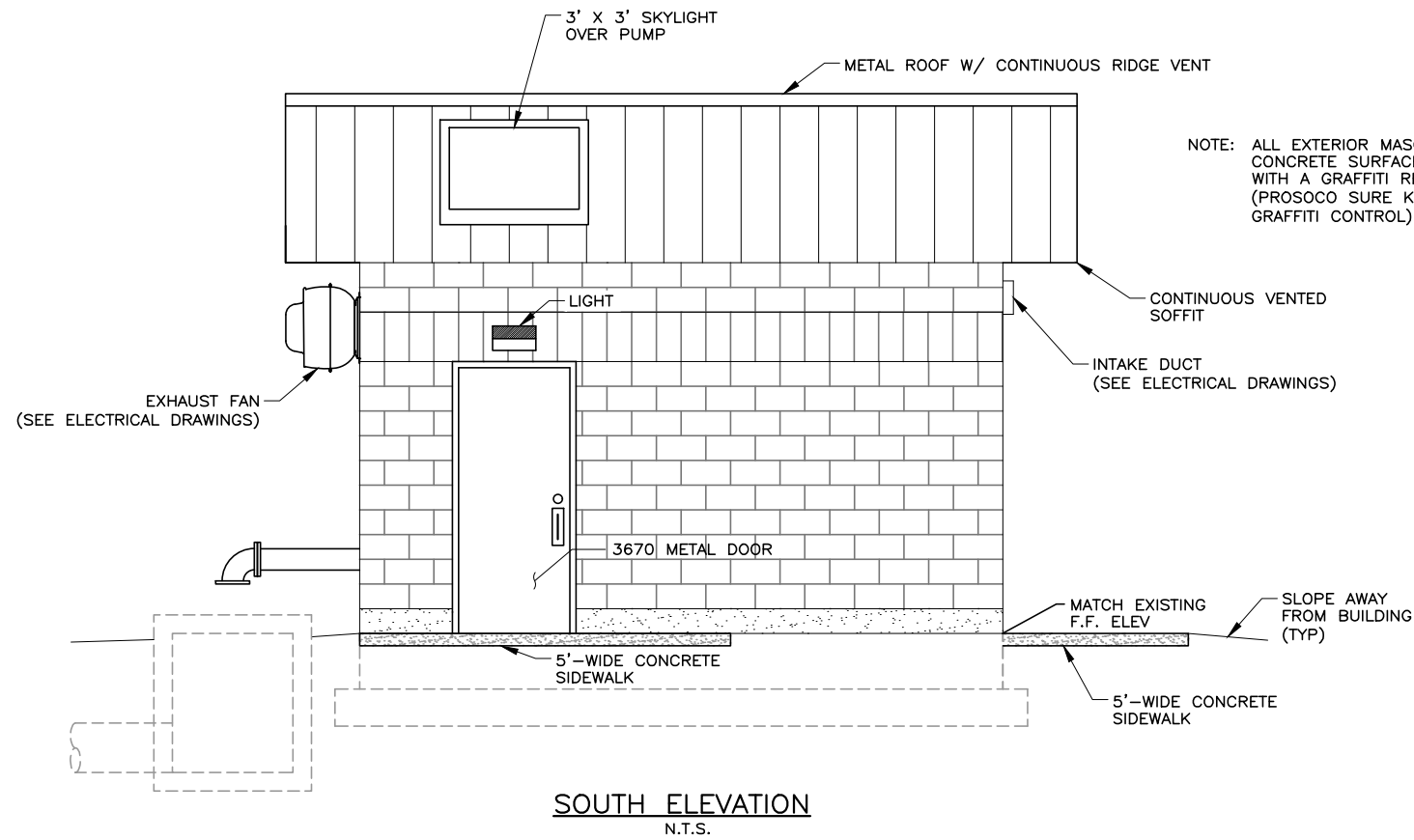
PROJECT NO.:
001.20.002
DATE:
OCTOBER 2020
DRAWN BY:
JB
CHECKED BY:
TT
PROJECT MANAGER:
T. TIMOTHY
PUMP STATION DEMOLITION
PS-2

HIGHLAND CITY
WELL #3 IMPROVEMENTS
BUILDING ELEVATIONS

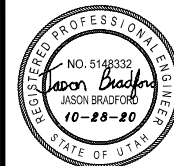


NO.	DATE	REVISION	BY

PROJECT NO.:	DATE:
001.20.002	OCTOBER 2020
DRAWN BY:	CHECKED BY:
JB	TT
PROJECT MANAGER:	
T. TIMOTHY	



HIGHLAND CITY
WELL #3 IMPROVEMENTS
PUMP STATION PIPING - PLAN VIEW



NO.	DATE	REVISION	BY
1	1-15-20	ADDENDUM #1	JB
2	1-27-20	DELETE DRAIN	JB

1			
2			

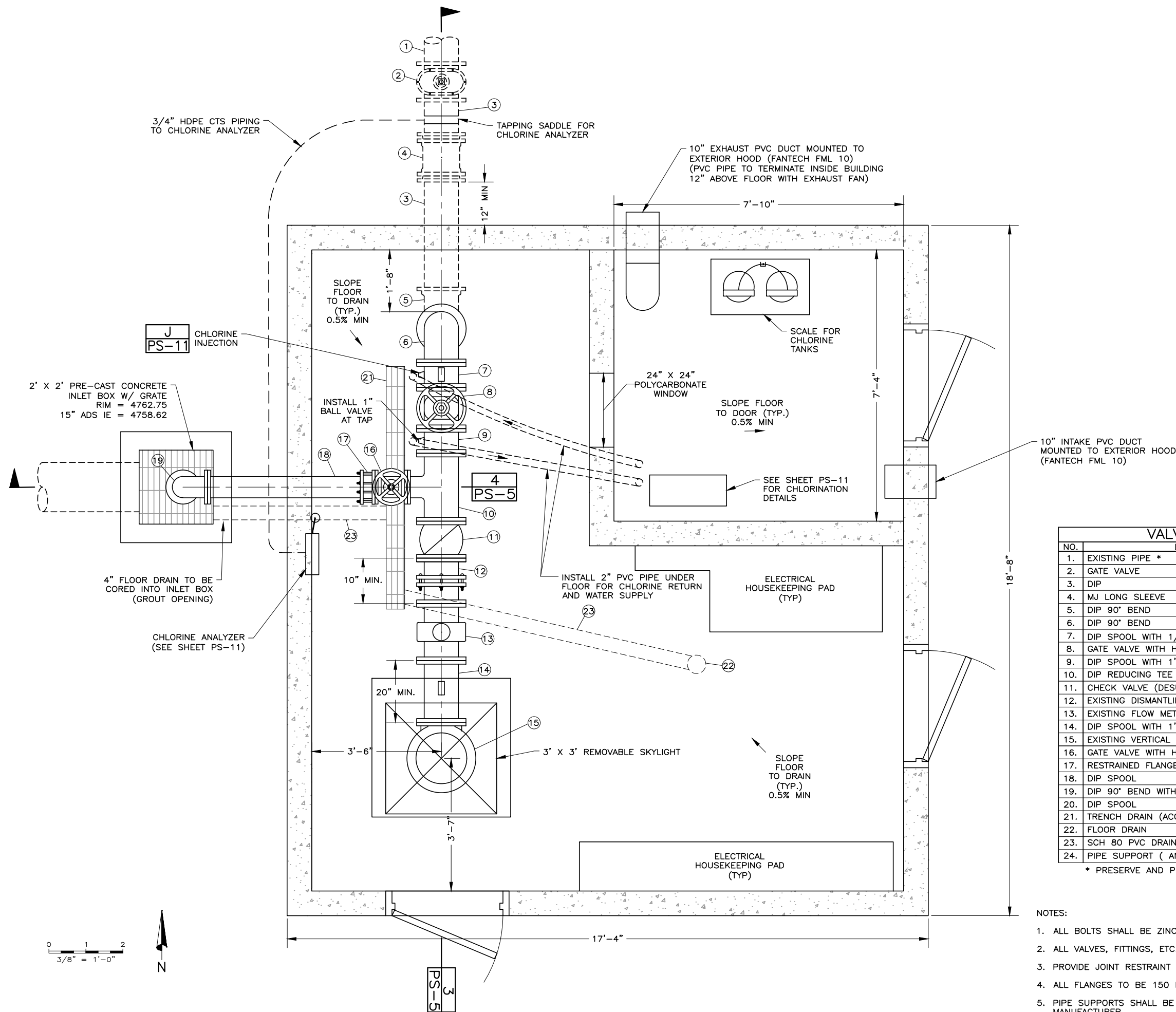
PROJECT NO.:	DATE:
001.20.002	OCTOBER 2020

DRAWN BY:	CHECKED BY:
JB	TT

PROJECT MANAGER:
T. TIMOTHY

PIPING - PLAN VIEW

PS-4



VALVE & FITTING SCHEDULE			
NO.	DESCRIPTION	SIZE	JOINT
1.	EXISTING PIPE *	10"	-
2.	GATE VALVE	10"	MJ
3.	DIP	10"	PE
4.	MJ LONG SLEEVE	10"	MJ
5.	DIP 90° BEND	10"	MJ
6.	DIP 90° BEND	10"	FL
7.	DIP SPOOL WITH 1/2" TAP ON TOP AND 1" TAP ON SIDE	10"	FL
8.	GATE VALVE WITH HAND WHEEL	10"	FL
9.	DIP SPOOL WITH 1" TAP ON SIDE	10"	FL
10.	DIP REDUCING TEE	10" X 6"	FL
11.	CHECK VALVE (DESURIK SERIES 600 OR EQUAL)	10"	FL
12.	EXISTING DISMANTLING JOINT *	10"	FL
13.	EXISTING FLOW METER *	10"	FL
14.	DIP SPOOL WITH 1" TAP ON TOP	10"	FL
15.	EXISTING VERTICAL TURBINE PUMP (250 HP) *	10"	FL
16.	GATE VALVE WITH HAND WHEEL	6"	FL
17.	RESTRAINED FLANGE COUPLING (ROMAC ALPHA OR EQUAL)	6"	FL
18.	DIP SPOOL	6"	FL X PE
19.	DIP 90° BEND WITH FLANGED #4 S.S. MESH SCREEN	6"	FL
20.	DIP SPOOL	10"	FL X PE
21.	TRENCH DRAIN (ACO KS100 W/ TYPE 450D S.S. GRATE)	2 METERS	-
22.	FLOOR DRAIN	4"	-
23.	SCH 80 PVC DRAIN PIPE & FITTINGS (1% MIN. SLOPE)	4"	WELD
24.	PIPE SUPPORT (ANVIL FIG. 264) W/1" GROUT PAD	SIZED FOR PIPE	

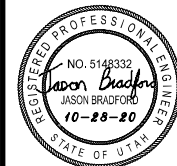
* PRESERVE AND PROTECT IN PLACE OR RE-USE IN NEW PIPING

NOTES:

- ALL BOLTS SHALL BE ZINC PLATED.
- ALL VALVES, FITTINGS, ETC. INSIDE VAULT SHALL BE PAINTED AS REQUIRED BY THE SPECS.
- PROVIDE JOINT RESTRAINT FOR ALL BURIED FITTINGS & VALVES.
- ALL FLANGES TO BE 150 LB.
- PIPE SUPPORTS SHALL BE ANCHORED TO THE CONCRETE SLABS. BOLT SIZE PER PIPE SUPPORT MANUFACTURER.

FOR:
HIGHLAND CITY
5400 W CIVIC CENTER DR
HIGHLAND, UT 84003
CONTACT:
TODD TRANE
801-772-4508

HIGHLAND CITY
WELL #3 IMPROVEMENTS
PUMP STATION PIPING – SECTION VIEW

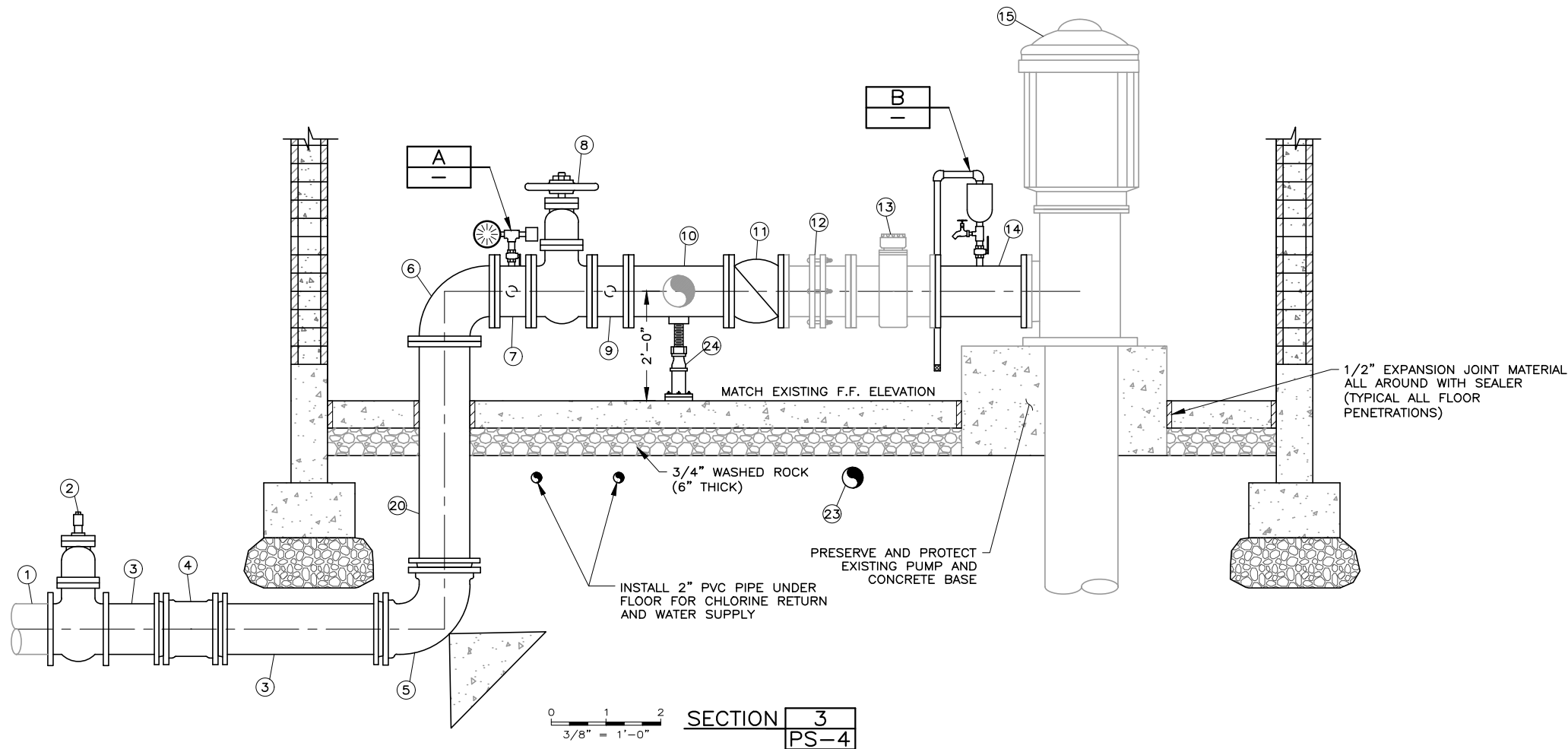


NO.	DATE	REVISION	BY

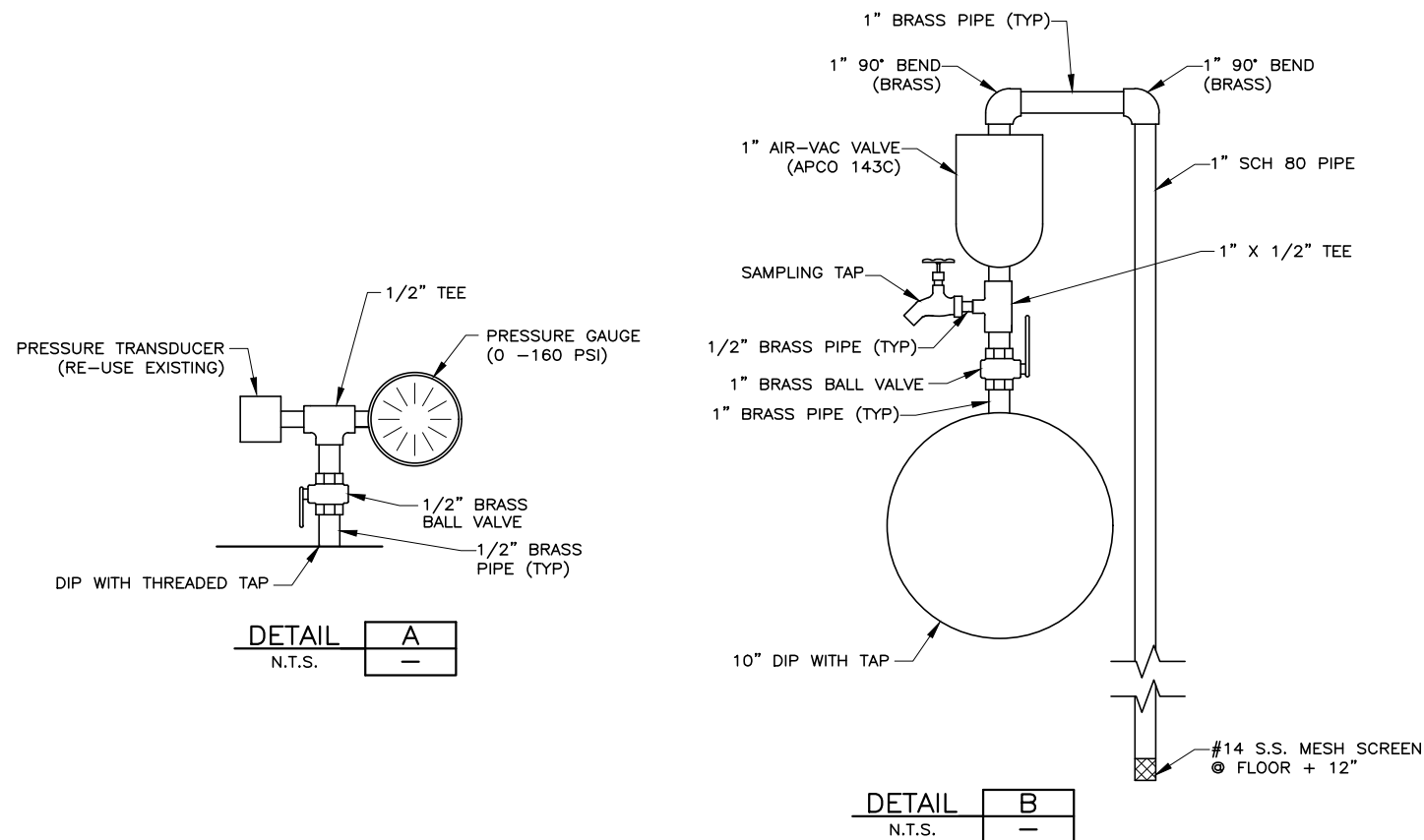
PROJECT NO.:	DATE:
001.20.002	OCTOBER 2020
DRAWN BY:	CHECKED BY:
JB	TT
PROJECT MANAGER:	
T. TIMOTHY	

PIPING - SECTION VIEW

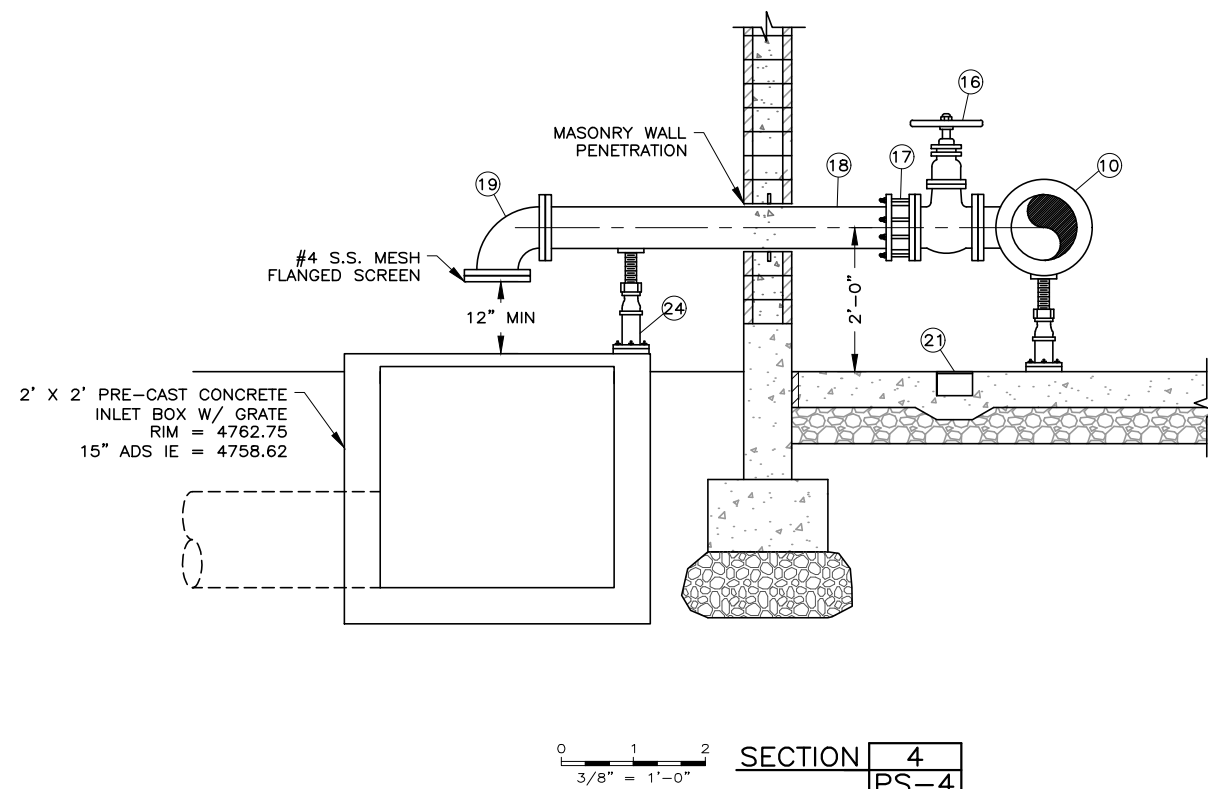
PS-5



SECTION 3
PS-4



DETAIL B
N.T.S.



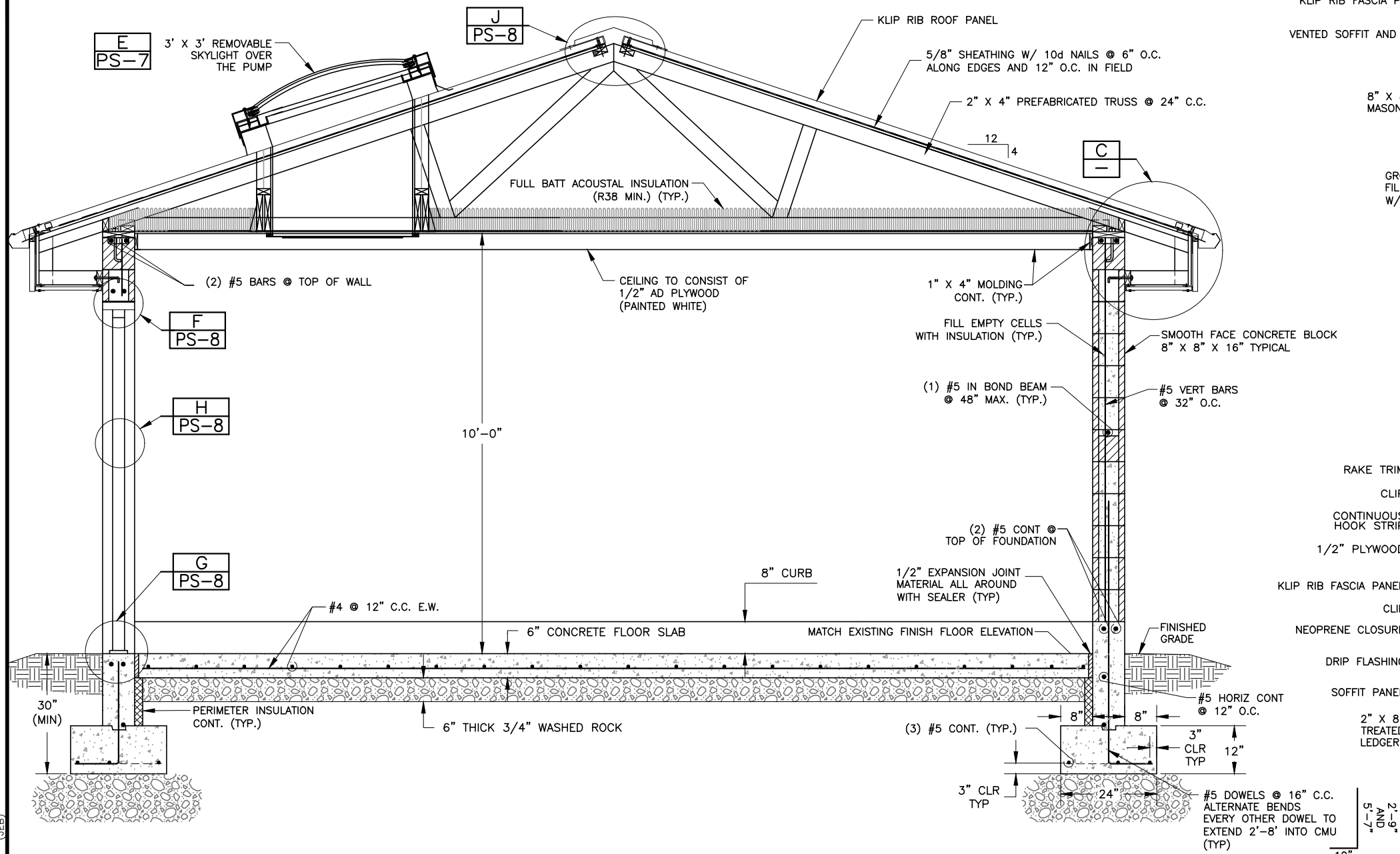
SECTION 4
PS-4



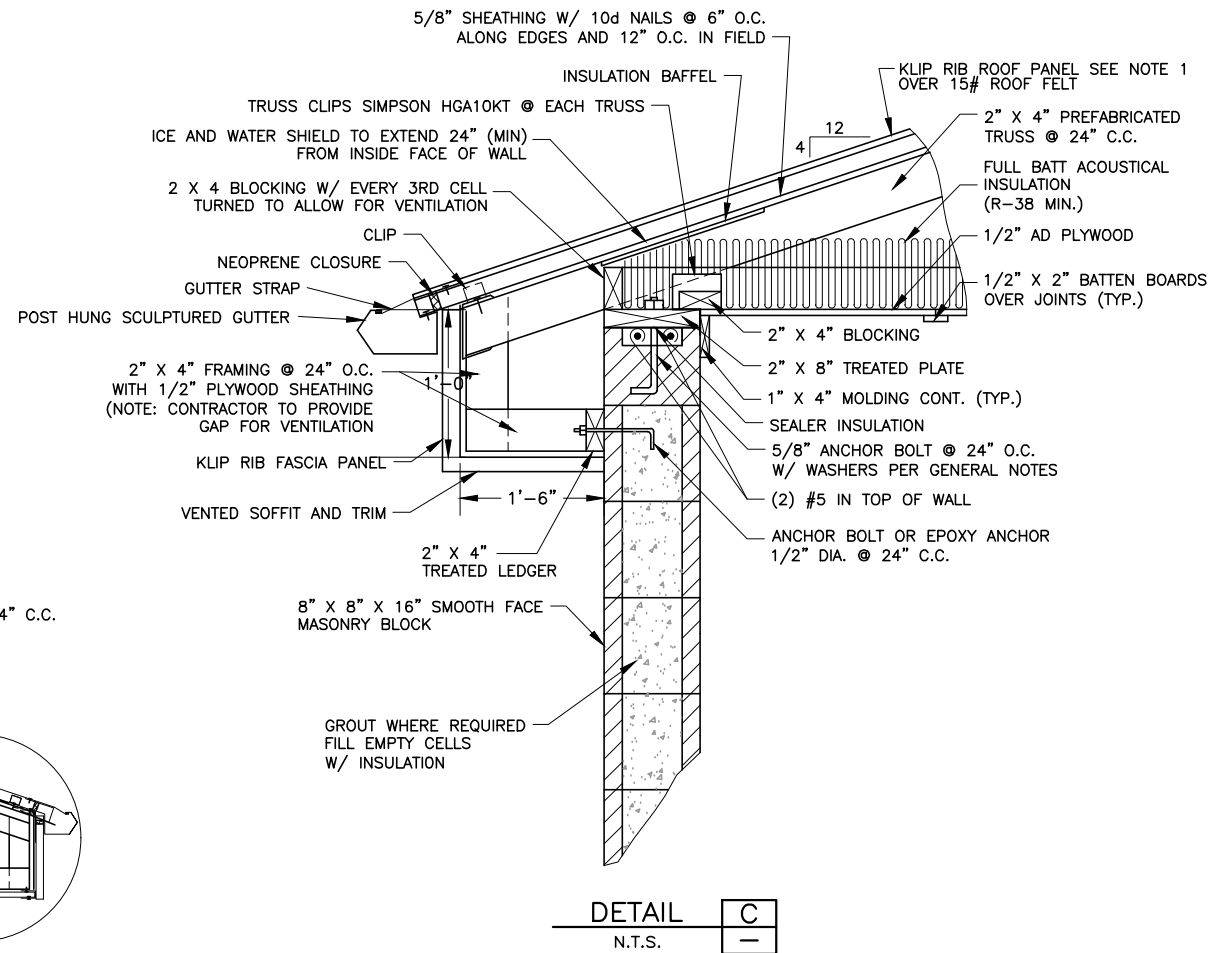
NO.	DATE	REVISION	BY
1	1-15-20	ADDENDUM #1	JB
PROJECT NO.:	DATE:		
001.20.002	OCTOBER 2020		
DRAWN BY:	CHECKED BY:		
JB	TT		
PROJECT MANAGER:			
T. TIMOTHY			
TYP. BUILDING SECTION			
PS-6			

CONCRETE FLOOR TO BE PAINTED AS FOLLOWS:	
SURFACE PREP	GRIND CONCRETE JOINTS AND FILL VOIDS WITH GROUT. APPLY RUB FINISH
PAINT PRIMER	APPLY EPOXY SURFACE, (SHERWIN-WILLIAMS STEEL-SEAM FT910 OR EQUAL), TO FILL AND SMOOTH HOLES IN CONCRETE SURFACE
FINISH COAT	SHERWIN-WILLIAMS ARMORSEAL TREAD-PLEX, OR EQUAL. 2 COATS OF 4-6 MILS DFT (2ND COAT WITH HI WEAR ADDITIVE). COLOR TO BE APPROVED BY OWNER (OFF-WHITE)

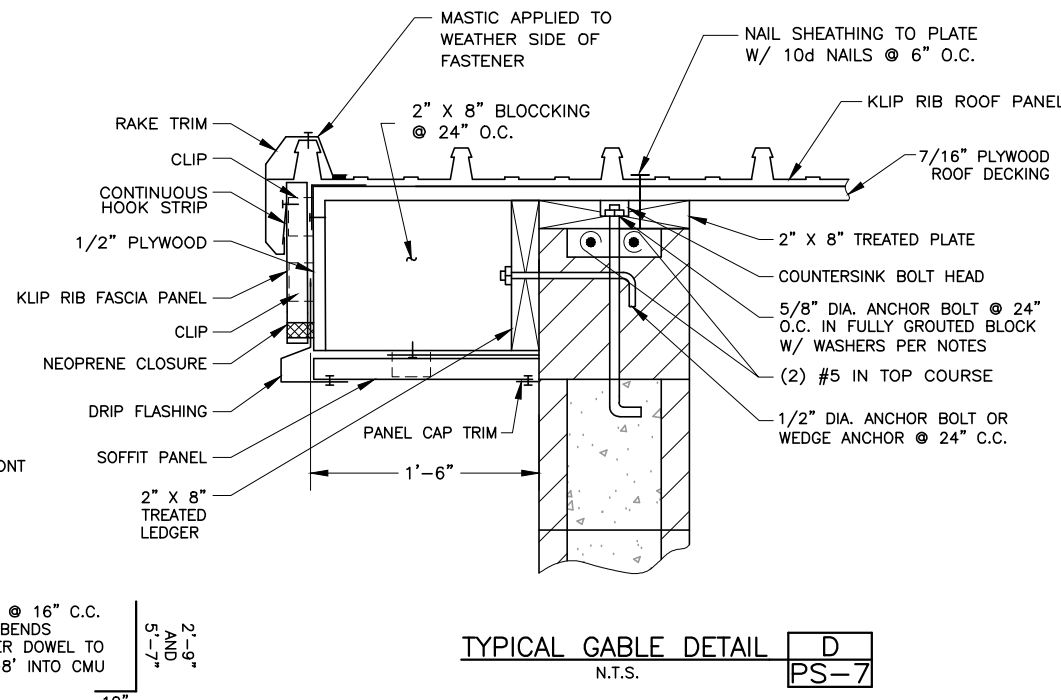
INTERIOR CMU MASONRY WALLS TO BE PAINTED AS FOLLOWS:	
PRIMER	SHERWIN-WILLIAMS LOXON ACRYLIC BLOCK SURFACER
FINISH COAT	SHERWIN-WILLIAMS PRE-CATALYZED WATERBASED EPOXY OR EQUAL (OFF-WHITE) SPREAD RATE = 2 COATS AT 300 TO 350 SF PER GALLON



TYPICAL WALL SECTION
N.T.S.



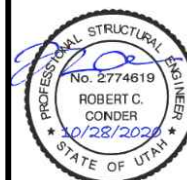
DETAIL C
N.T.S.



TYPICAL GABLE DETAIL D
N.T.S.

- NOTE:
1. ROOFING SYSTEM COLOR TO BE FOREST GREEN.
INSTALL ROOFING SYSTEM PER MANUFACTURER'S RECOMMENDATIONS.
 2. CEILING AND MOLDING TO BE PAINTED PER SPECIFICATIONS.

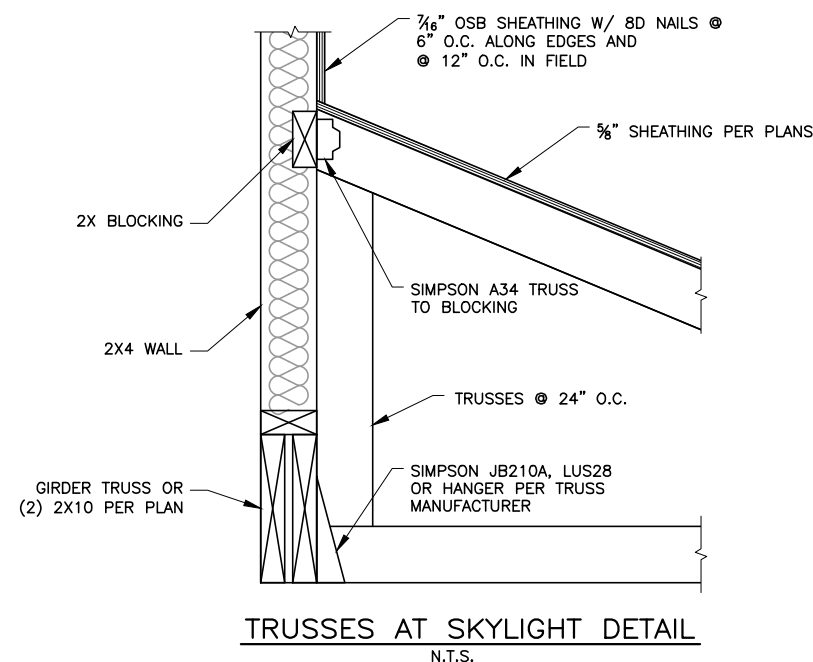
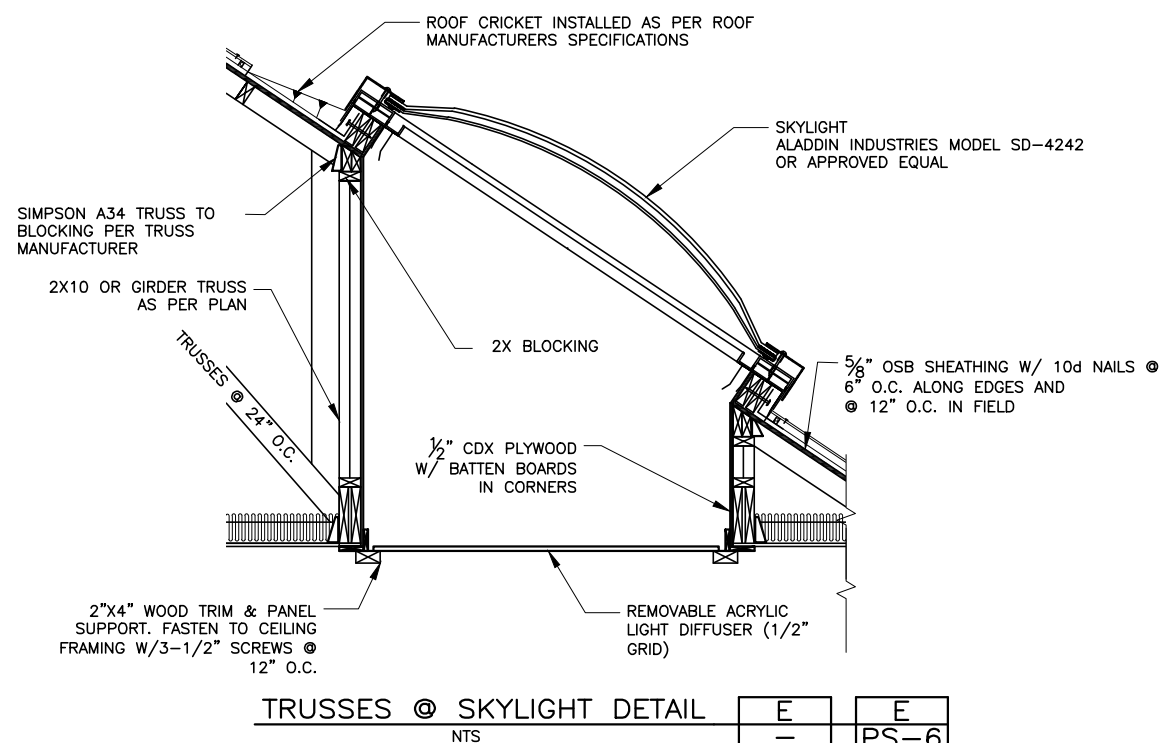
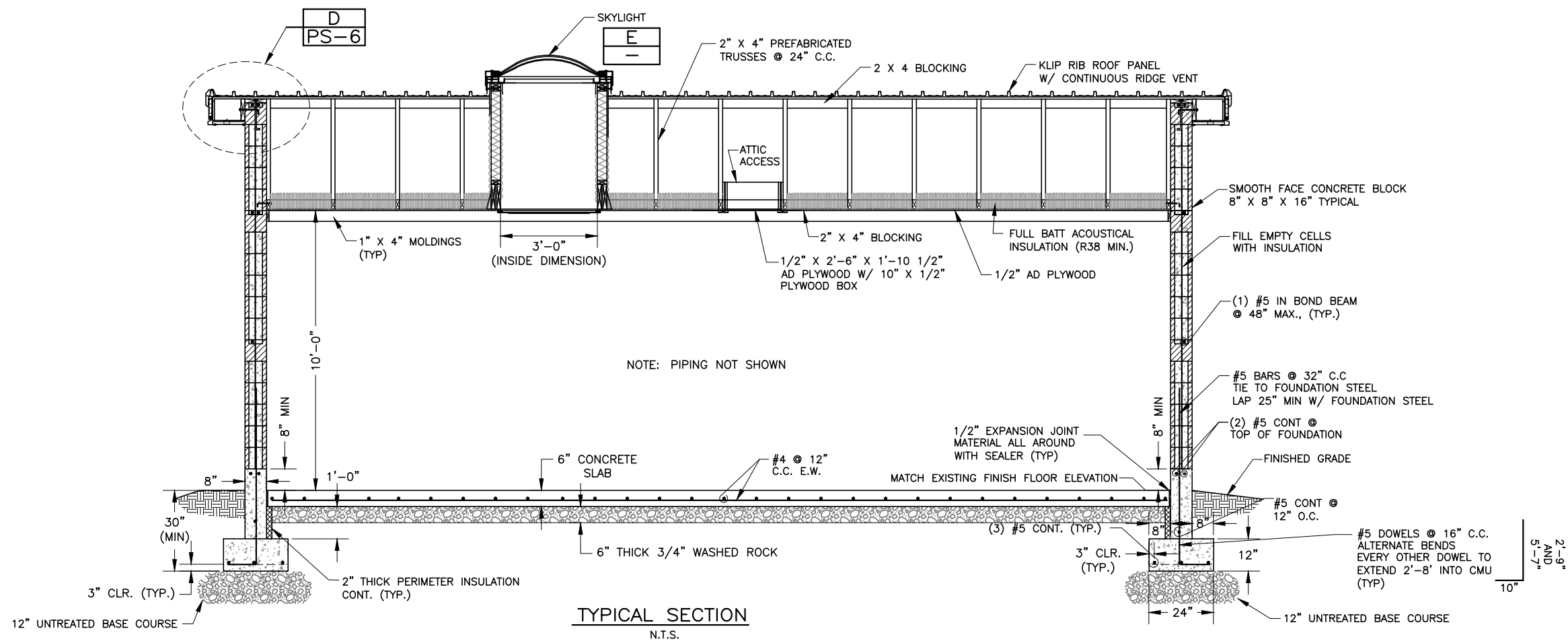
HIGHLAND CITY WELL #3 IMPROVEMENTS WALL SECTION & SKYLIGHT DETAILS

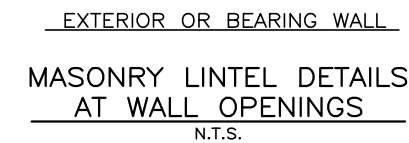
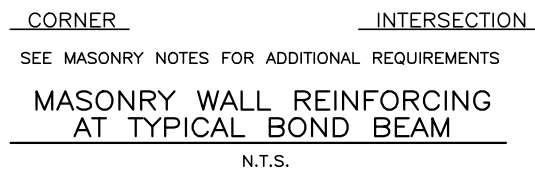
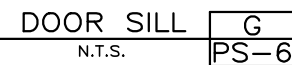
[illegible]

PROJECT NO.:	DATE:
001.20.002	OCTOBER 202
DRAWN BY:	CHECKED BY:
JB	TT
PROJECT MANAGER:	
T. TIMOTHY	

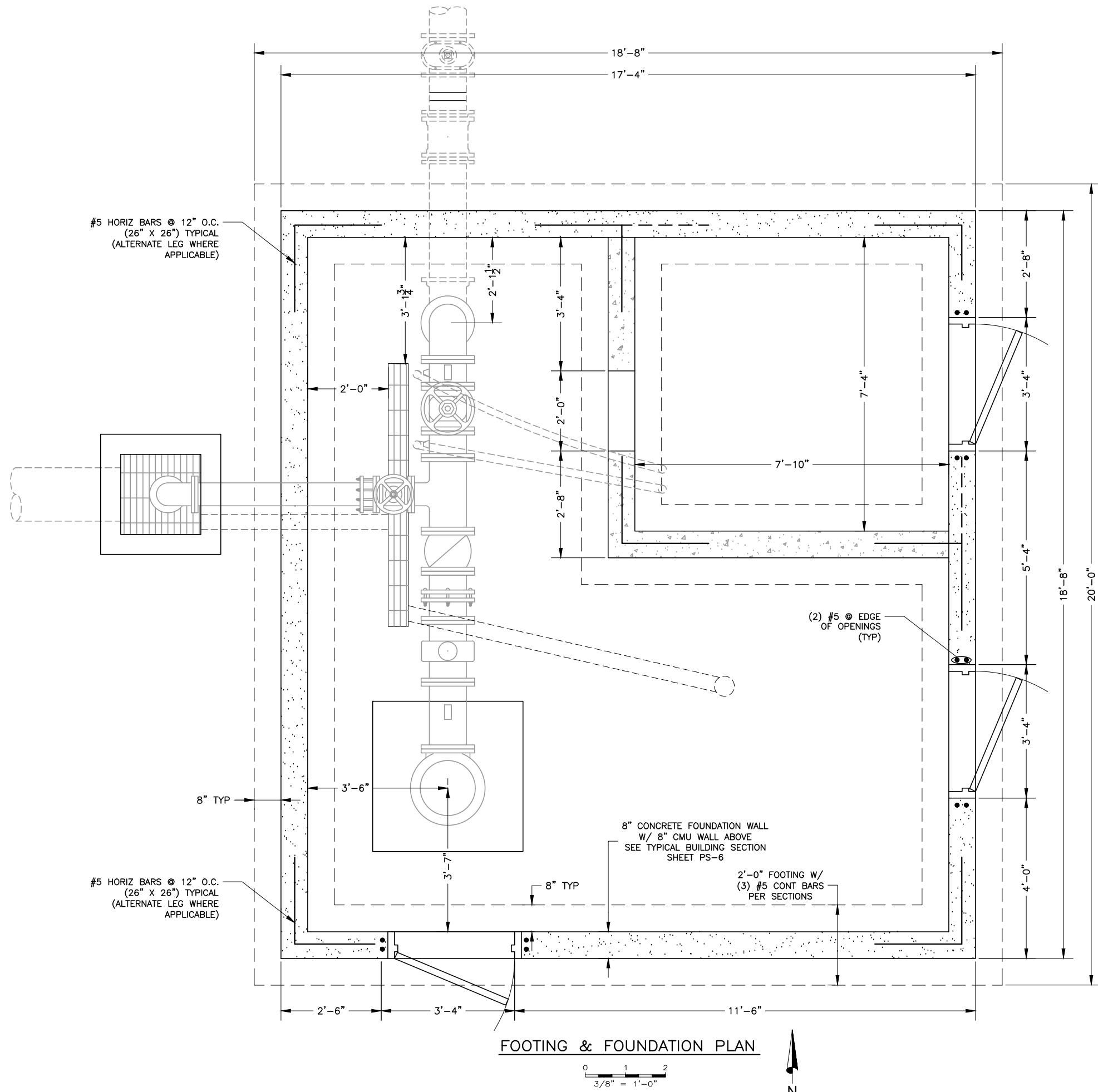
WALL SECTION & SKYLIGHT

PS-7





FILE NAME: \\BRADY\DROPBOX\HIGHLAND CITY\WELL #3 UPGRADES\CAD\PS-9 FOOTING AND FOUNDATION PLAN.DWG
FILE DATE: 10/28/2020 14:42:02 (JEB)



BT ENGINEERING

FOR:
HIGHLAND CITY
5400 W CIVIC CENTER DR
HIGHLAND, UT 84003

CONTACT:
TODD TRANE
801-772-4508

HIGHLAND CITY
WELL #3 IMPROVEMENTS
FOOTING & FOUNDATION PLAN

PROFESSIONAL STRUCTURAL ENGINEER
No. 2774619
ROBERT C. CONDER
10/28/2020
STATE OF UTAH

NO.	DATE	REVISION	BY

PROJECT NO.:
001.20.002

DATE:
OCTOBER 2020

DRAWN BY:
JB

CHECKED BY:
TT

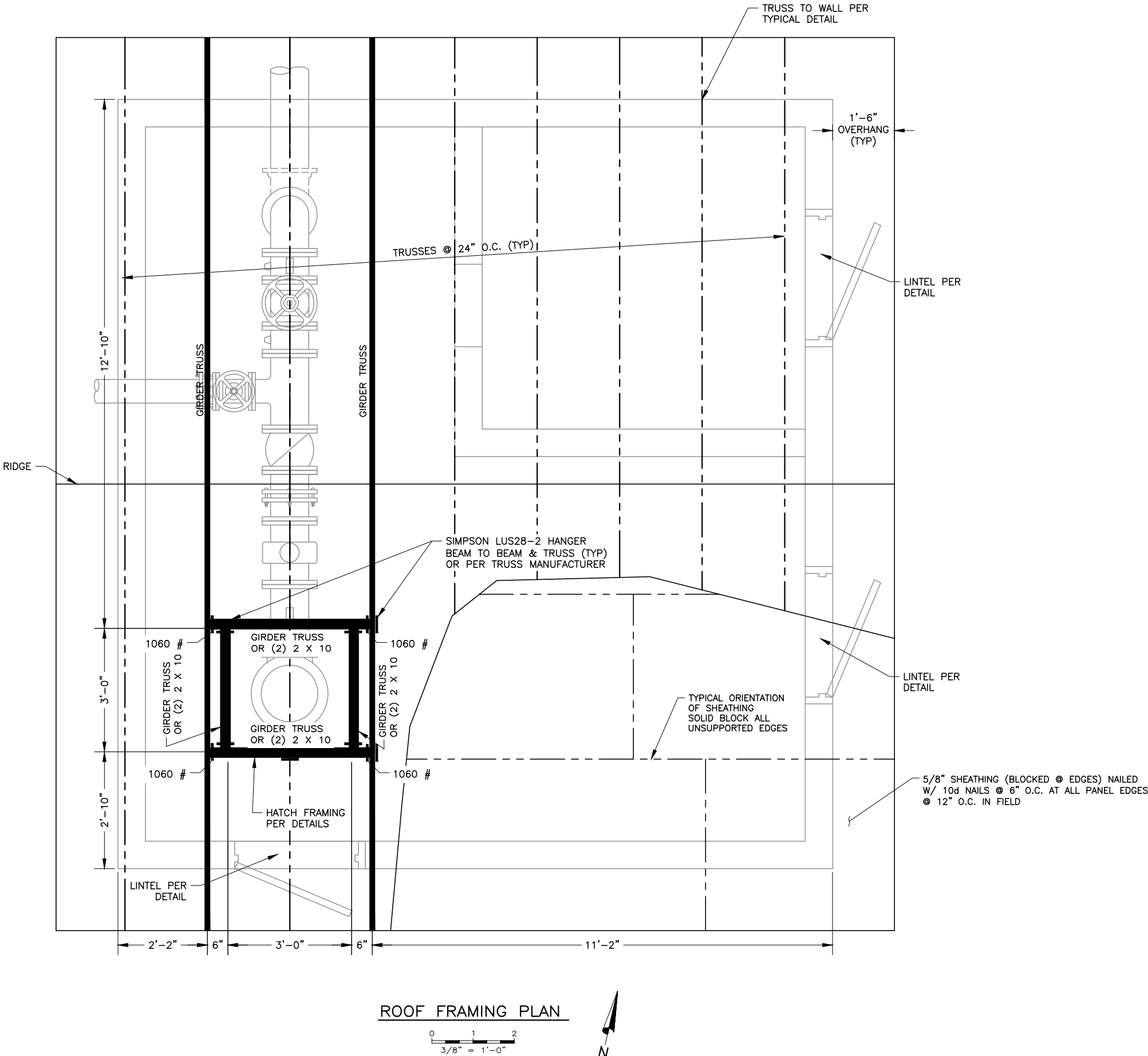
PROJECT MANAGER:
T. TIMOTHY

FOOTING & FOUNDATION
PS-9

FILE NAME: USERS\BRADY\DROPBOX\HIGHLAND CITY\WELL #3 UPGRADES\CAD\PS-10 ROOF FRAMING PLAN.DWG
FILE DATE: 10/28/2020 14:42:46 (JEB)

NOTES:

1. ALL NAILING PER IBC TABLE 2304.10.1, UNLESS NOTED OTHERWISE.
2. PROVIDE CLIP @ EACH TRUSS TO TOP PLATE PER DETAILS.
3. TRUSS MANUFACTURER TO PROVIDE ALL TRUSS TO TRUSS CONNECTIONS.
4. ALL STEEL IN CONTACT WITH TREATED PLATES OR MASONRY/CONCRETE TO BE GALVANIZED OR STAINLESS STEEL.
5. SEE STRUCTURAL NOTES (G-3) FOR TRUSS REQUIREMENTS.



BT ENGINEERING

FOR:
HIGHLAND CITY
5400 W CIVIC CENTER DR
HIGHLAND, UT 84003

CONTACT:
TODD TRANE
801-772-4508

HIGHLAND CITY

WELL #3 IMPROVEMENTS

ROOF FRAMING PLAN

PROFESSIONAL STRUCTURAL ENGINEER
No. 2774619
ROBERT C. CONDER
10/28/2020
STATE OF UTAH

NO.	DATE	REVISION	BY

PROJECT NO.: 001.20.002

DATE: OCTOBER 2020

DRAWN BY: JB

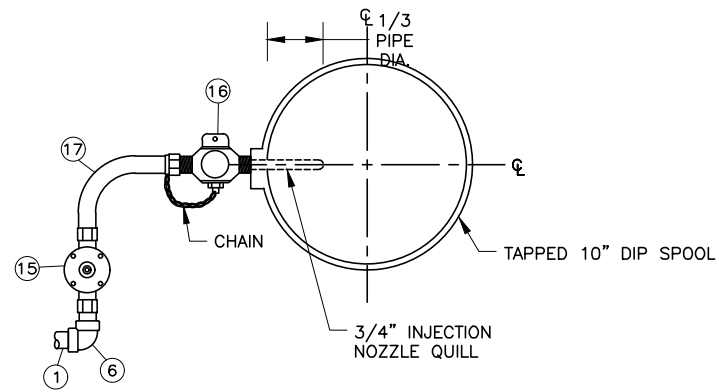
CHECKED BY: TT

PROJECT MANAGER: T. TIMOTHY

ROOF FRAMING

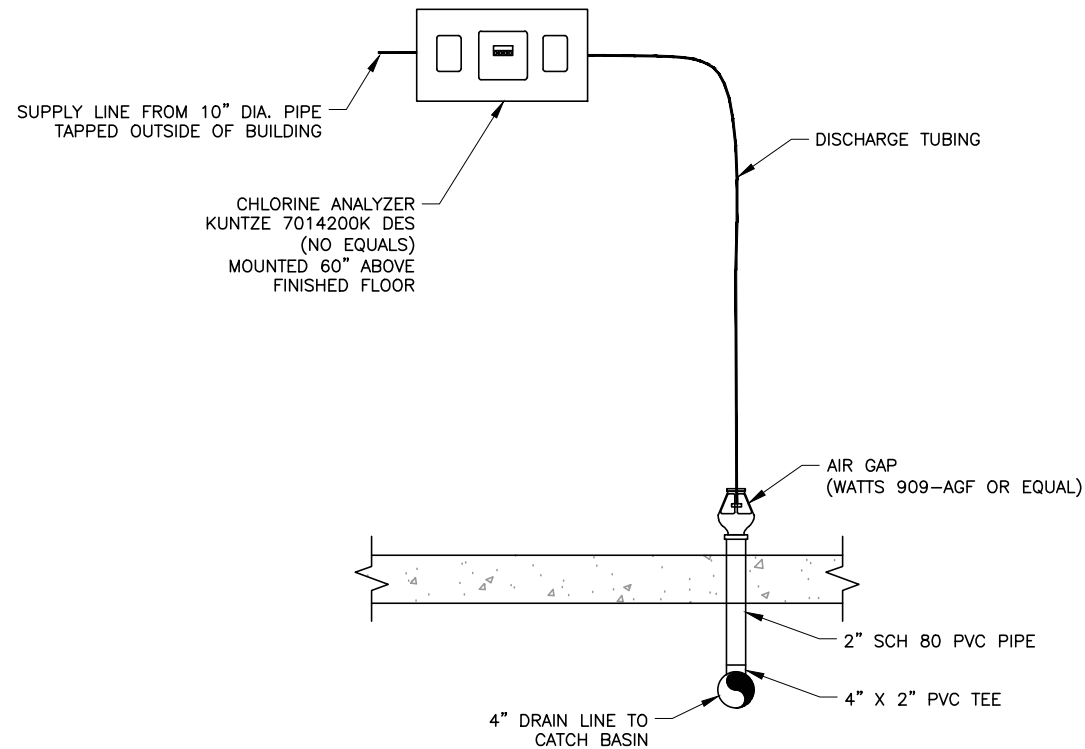
PS-10

FILE NAME: \\BRADY\DROPBOX\HIGHLAND CITY\WELL #3 UPGRADES\CAD\PS-11 CHLORINE DETAILS.DWG
FILE DATE: 10/28/2020 14:43:33 (JEB)

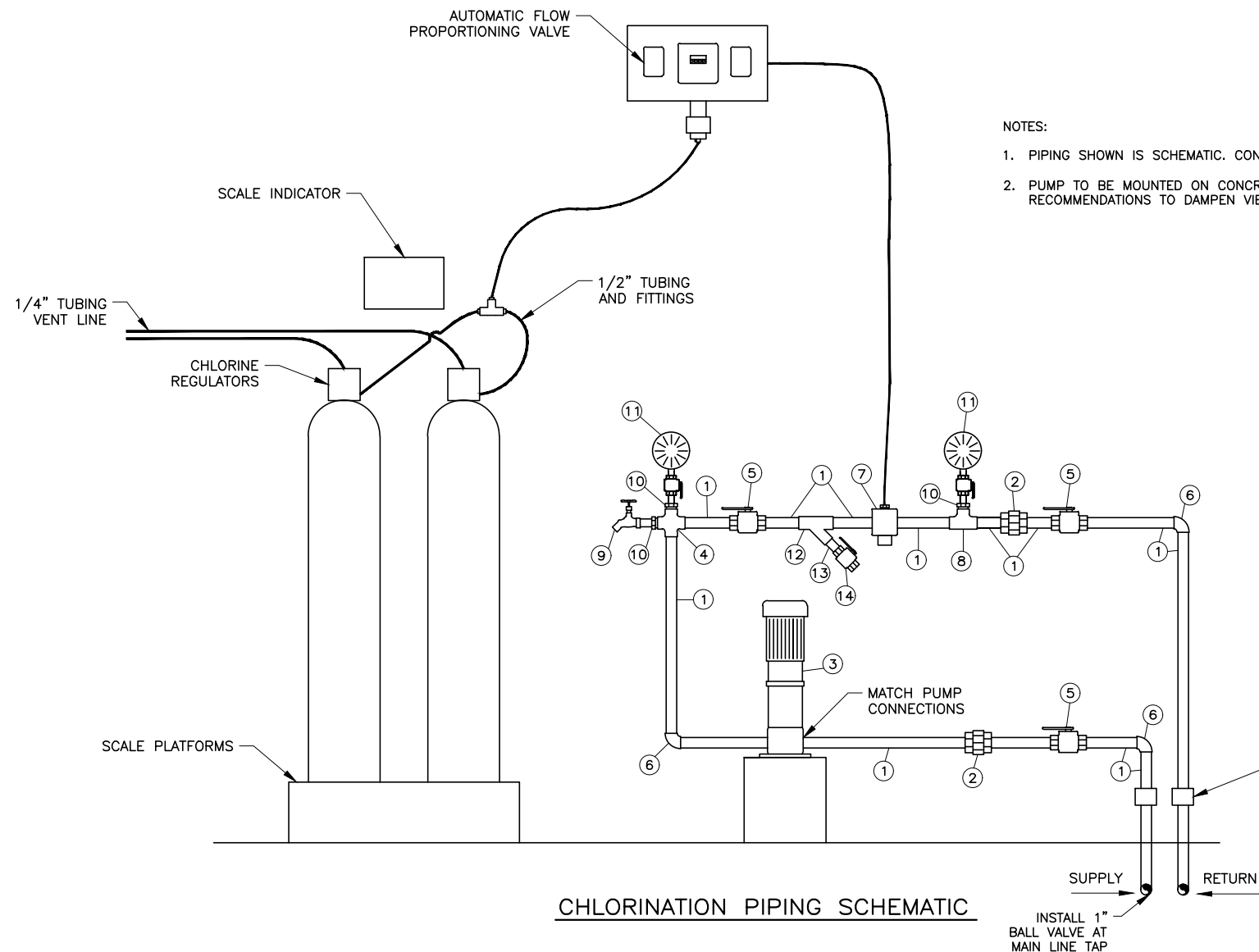


INJECTION DETAIL

K
PS-4



CHLORINE ANALYZER SCHEMATIC



CHLORINATION PIPING SCHEMATIC

- NOTES:
1. PIPING SHOWN IS SCHEMATIC. CONTRACTOR TO SPACE PIPING AS NECESSARY.
 2. PUMP TO BE MOUNTED ON CONCRETE BASE ABOVE FLOOR PER MANUFACTURER'S RECOMMENDATIONS TO DAMPEN VIBRATIONS.

VALVE & FITTING SCHEDULE			
NO.	DESCRIPTION	SIZE	JOINT
1.	PIPE (PVC SCH 80)	1"	THD
2.	UNION (PVC SCH 80)	1"	THD
3.	PUMP - SEE SPECIFICATIONS	1"	THD
4.	CROSS (PVC SCH 80)	1"	THD
5.	BALL VALVE (PVC SCH 80)	1"	THD
6.	ELBOW (PVC SCH 80)	1"	THD
7.	EJECTOR	1"	THD
8.	TEE (PVC SCH 80)	1"	THD
9.	HOSE BIBB (S.S. 316)	1/2"	THD
10.	HEX REDUCER (PVC)	1" X 1/2"	THD
11.	PRESSURE GAUGE (2 1/2" DIA.) W/ GAUGE COCK OR BALL VALVE (0-150 PSI)	1/2"	THD
12.	Y-STRAINER (PVC SCH 80)	1" X 3/4"	THD
13.	PIPE (PVC SCH 80)	3/4"	THD
14.	BALL VALVE (PVC SCH 80)	3/4"	THD
15.	ANTI-SIPHON DEVICE	1"	THD
16.	INJECTION CORP STOP	1"	THD
17.	FLEXIBLE PIPING	1"	THD

GENERAL DRAWING SYMBOLS AND REFERENCES	
	REFERENCE NOTE
	DEMOLITION NOTE
	REVISION NOTE
	IDENTIFICATION NOTE
	PHOTO REFERENCE
	HPE DETAIL BUBBLE
	EQUIPMENT REFERENCE
	WIRE SIZE REFERENCE
	PHOTO REFERENCE
	SECTION/ELEVATION REFERENCE
	EQUIPMENT ID TAG
PLAN SYMBOLS	
	CIRCUIT DISTRIBUTION PANELBOARD SURFACE MOUNTED
	CIRCUIT DISTRIBUTION PANELBOARD RECESSED
	POWER DISTRIBUTION PANELBOARD SURFACE OR FLOOR MOUNTED DOORS DESIGNATE FRONT OF PANEL MDP DESIGNATES MAIN DISTRIBUTION PANEL
	CONTROL PANEL ENCLOSURE
	LIGHTING CONTROL PANEL
	DISCONNECT
HVAC EQUIPMENT	
	UNIT HEATER, WALL MOUNTED
	UNIT HEATER, CEILING MOUNTED
	CONDENSING UNIT, PAD MOUNTED, SIDE DISCHARGE
	CONDENSING UNIT, PAD MOUNTED, UP FLOW
	ROOFTOP MOUNTED EQUIPMENT
MOTOR AND EQUIPMENT	
	MOTOR (HP SHOWN)
	FRACTIONAL HORSEPOWER MOTOR
	MOTOR STARTER, INDIVIDUAL, NOT LOCATED IN A MOTOR CONTROL CENTER (MCC) OR SIMILAR GROUP ASSEMBLY
	COMBINATION MOTOR STARTER ASSEMBLY, NOT LOCATED IN AN MCC OR SIMILAR ASSEMBLY
	MAGNETIC CONTACTOR ASSEMBLY, NOT LOCATED IN AN MCC OR SIMILAR ASSEMBLY
	DISCONNECT, NON-FUSED, 3 POLE, 100A RATED
	FUSED DISCONNECT SWITCH
	FIELD CONNECTION OR ELECTRICAL TERMINATION AT A FIELD DEVICE
	EQUIPMENT DESIGNATION

POWER ONE-LINE SYMBOLS	
	ANTENNA
	EQUIPMENT GROUND CONNECTION
	TRANSFER SWITCH ATS: AUTOMATIC TRANSFER SWITCH MTS: MANUAL TRANSFER SWITCH
	VARIABLE FREQUENCY DRIVE MOTOR CONTROLLER
	FUSED DISCONNECT SWITCH
	NON-FUSED DISCONNECT SWITCH
	COMBINATION STARTER
	MAGNETIC CONTROLLER
	MOTOR (HP SHOWN)
	GENERATOR
	CONDUCTOR WITH CALLOUT REFERENCE (SEE CONDUIT/CONDUCTOR SCHEDULE)
	POWER FACTOR CAPACITOR
	CIRCUIT BREAKER
	POWER FEED
	CONNECTION POINT
	LUG
	DELTA WYE
GROUNDING SYMBOLS	
	GROUND ROD (3/4" x 10' COPPER COATED STEEL)
	GROUND ROD (3/4" x 10' COPPER COATED STEEL) IN WELL
	BOLTED GROUND CONNECTION (ABOVE GROUND)
	WELDED GROUND CONNECTION (BELOW GRADE)
	GROUND CONDUCTOR (#2/0 BARE COPPER)
LIGHT SWITCHES	
	SINGLE POLE SWITCH
	GANGED SWITCHES IN COMMON BOX WITH COMMON COVER PLATE
	SWITCH SUPERScript MODIFIER, LOWER CASE LETTER INDICATES CIRCUIT CONTROLLER -- a,b,c ETC. MAY BE COMBINED WITH CIRCUIT NUMBER. EXAMPLE: 1a, 3b
	SWITCH SUBScript MODIFIER, UPPER CASE LETTER OR NUMBER: 2 = DOUBLE POLE 3 = THREE WAY 4 = FOUR WAY OC = MOTION OCCUPANCY SWITCH K = KEY OPERATED M = HORSEPOWER RATED MANUAL STARTER MC = MOMENTARY CONTACT, THREE POSITION MS = MANUAL (STARTER) OR SWITCH D = DIMMER S = SURFACE F = FLUSH
CONDUIT AND RACEWAYS	
	RACEWAY OR WIRING SYSTEM IN OR UNDER FLOOR OR CONCEALED IN WALL OR BEHIND STRUCTURE OR EQUIPMENT OR CONDUIT ROUTED BELOW GRADE IN CONCRETE ENCASEMENT
	FLEX CONDUIT
	RACEWAY OR WIRING SYSTEM ABOVE FLOOR LEVEL BELOW CEILING, EXPOSED
	HOMERUN: DESIGNATIONS INDICATE A ONE-LINE DIAGRAM OR PANELBOARD SCHEDULE REFERENCE
	JUNCTION BOX
	RACEWAY OR WIRING SYSTEM TURNED TOWARD THE VIEWER (UP ON PLAN DRAWINGS)
	RACEWAY OR WIRING SYSTEM TURNED AWAY FROM THE VIEWER (DOWN ON PLAN DRAWINGS)
	RACEWAY OR WIRING SYSTEM CHANGE IN ELEVATION OR DISTANCE FROM VIEWER
	CONDUIT STUB AND CAP

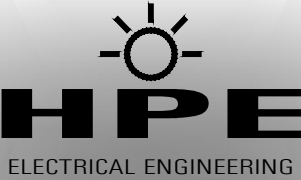
H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED
708 EAST 50 SOUTH
AMERICAN FORK, UT 84003
HPE PROJECT:20075
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

(801) 642-2051
FAX (801) 642-2154
©2020

GENERAL NOTES:

1. VERIFY ALL EQUIPMENT DIMENSIONS AND LOCATIONS BEFORE BEGINNING ROUGH-IN. CONSULT ALL APPLICABLE CONTRACT DRAWINGS AND SHOP DRAWINGS TO ENSURE NEC CODE CLEARANCE REQUIRED AROUND ALL ELECTRICAL EQUIPMENT.
2. CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENTS, ETC.) OF EQUIPMENT FURNISHED BEFORE BEGINNING ROUGH-IN.
3. SEE APPLICABLE SHOP DRAWINGS FOR ROUGH-IN LOCATION OF ALL EQUIPMENT, WIRING DEVICES, ETC.
4. THE ELECTRICAL CONTRACTOR SHALL NOTIFY AND COOPERATE WITH THE MECHANICAL CONTRACTOR SUCH THAT NO 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 THE OTHER AREAS.
5. ALL PENETRATIONS OF FLOORS, WALLS AND CEILINGS SHALL BE SEALED WITH APPROVED MATERIAL.
6. FOR PACKAGE EQUIPMENT PROVIDED ON THE PROJECT, SOME CONDUITS AND WIRES ARE SHOWN ON THE DRAWINGS, BUT IT IS EXPECTED THAT SOME ADDITIONAL CONDUITS AND WIRES MAY BE REQUIRED BY EQUIPMENT MANUFACTURERS TO COMPLETE INSTALLATION. IT IS INCUMBENT UPON THE GENERAL CONTRACTOR TO COORDINATE THIS REQUIREMENT WITH HIS SUBCONTRACTORS TO MAKE SURE THAT EQUIPMENT SUPPLIER PROVIDED ALL NECESSARY ELECTRICAL INFORMATION TO ELECTRICAL SUBCONTRACTOR FOR INCLUSION WHETHER SHOWN OR NOT SHOWN ON THE DRAWINGS.
7. IF OTHER THAN FIRST NAMED EQUIPMENT IS USED, IT SHALL BE CAREFULLY CHECKED FOR ELECTRICAL REQUIREMENTS AND CONTROL REQUIREMENTS OF ALTERNATE EQUIPMENT. SHOULD CHANGES OR ADDITIONS OCCUR IN ELECTRICAL WORK, OR THE WORK OF OTHER CONTRACTORS BE REVISED BY THE ALTERNATE EQUIPMENT, THE COST OF ALL CHANGES SHALL BE BORNE BY THE ELECTRICAL CONTRACTOR.
8. ITEMS TO BE CAREFULLY REMOVED, STORED AND REINSTALLED IN THE NEW BUILDING. COORDINATE WITH HIGHLAND CITY SCADA CONTRACTOR IGOR KOVELENKO, IC TECH (801-571-6740).
 - a. SCADA RTU ENCLOSURE
 - b. FLOW METER.
 - c. SYSTEM PRESSURE TRANSMITTER.
 - d. SCADA ANTENNA.

H.P.E. INC. ELECTRICAL ENGINEERS
POWER, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED
708 EAST 50 SOUTH,
AMERICAN FORK, UTAH, 84003
TEL. (801) 642-2051
FAX. (801) 642-2154



REV:	DATE:	DESCRIPTION:	BY:
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

HIGHLAND CITY
WELL #3 REBUILD
ADDRESS
HIGHLAND CITY, UT

ELECTRICAL
LEGEND &
GENERAL NOTES

COPYRIGHT (C) 2020 BY
HEGERHORST POWER ENGINEERING
INC, AMERICAN FORK, UTAH. ALL
RIGHTS RESERVED. UNAUTHORIZED
COPYING AND/OR USE IS ILLEGAL
AND SUBJECT TO PROSECUTION.

0" 1"
BAR IS ONE INCH ON ORIGINAL
DRAWING. IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING SCALE: AS SHOWN	
DRAWN BY: GDS	
DESIGNED BY: KBH	
ENGINEERED BY: KBH	
DATE: SEPTEMBER 2020	
SHEET NO.	HPE PROJECT NO.

CONDUIT/CONDUCTOR SCHEDULE *					
THHN, THWN, THWN-2					
AMP RATING	DRAWING ID TAG.	CONDUCTOR QTY.	CONDUCTOR SIZE	MIN. CONDUIT SIZE	EXCEPTIONS
20	212	2	#12	3/4"	
	312	3		3/4"	
	412	4		3/4"	
30	20	2	#10	3/4"	
	30	3		3/4"	
	40	4		3/4"	
50	28	2	#8	3/4"	
	38	3		3/4"	
	48	4		3/4"	
65	26	2	#6	3/4"	
	36	3		3/4"	
	46	4		3/4"	1"(C9)
85	24	2	#4	3/4"	1"(C2,C9)
	34	3		1"	3/4"(C4),1-1/4"(C9)
	44	4		1"	1-1/4"(C9)
115	22	2	#2	1"	
	32	3		1"	1-1/4"(C9)
	42	4		1-1/4"	
130	21	2	#1	1-1/4"	1"(C3,C4)
	31	3		1-1/4"	1"(C3)
	41	4		1-1/4"	1-1/2"(C2,C9,C10)
150	210	2	1/0	1-1/4"	
	310	3		1-1/4"	1-1/2"(C3,C9)
	410	4		1-1/2"	2"(C9)
175	220	2	2/0	1-1/4"	1-1/2"(C3,C4,C9)
	320	3		1-1/2"	
	420	4		2"	
200	230	2	3/0	1-1/2"	1-1/4(C4)
	330	3		1-1/2"	2"(C3,C9)
	430	4		2"	
230	240	2	4/0	1-1/2"	2"(C3)
	340	3		2"	
	440	4		2"	2-1/2"(C9)
255	225	2	250 KCMIL	2"	1-1/2"(C4)
	325	3		2"	2-1/2"(C1,C8)
	425	4		2-1/2"	2"(C4)
310	235	2	350 KCMIL	2"	2-1/2"(C9)
	335	3		2-1/2"	2"(C4)
	435	4		3"	2-1/2"(C1,C4)
380	250	2	500 KCMIL	2-1/2"	2"(C4)
	350	3		3"	2-1/2"(C1,C4)
	450	4		3"	3-1/2"(C9)
475	275	2	750 KCMIL	3"	
	375	3		3-1/2"	3"(C1,C7,C8)
	475	4		4"	3-1/2"(C1,C4,C8)

* CONDUCTOR QUANTITY DOES NOT INCLUDE GROUNDING CONDUCTOR. SEE EQUIPMENT GROUNDING CONDUCTORS FOR WIRE SIZE.

WHERE: C1 = ELECTRICAL METALLIC TUBING
C2 = ELECTRICAL NON-METALLIC TUBING
C3 = FLEXIBLE STEEL CONDUIT
C4 = INTERMEDIATE METALLIC CONDUIT
C7 = LIQUIDTIGHT FLEXIBLE METAL CONDUIT
C8 = RIGID METALLIC CONDUIT
C9 = PVC SCHEDULE 80 CONDUIT
C10 = PVC SCHEDULE 40 CONDUIT

GROUNDING ELECTRODE CONDUCTOR EQUIPMENT GROUNDING
SERVICE ENTRANCE OR SEPARATELY CONDUCTORS
DERIVED SYSTEM

COPPER CONDUCTOR	WIRE SIZE
#2 OR SMALLER	#8
1 OR 1/0	#6
2/0 OR 3/0	#4
>3/0 THRU 350 KCMIL	#2
>350 KCMIL THRU 600 KCMIL	1/0
>600 KCMIL THRU 1100 KCMIL	2/0
>1100 KCMIL	3/0

FUSE OR CB SIZE	SIZE (COPPER)
15	14
20	12
30	10
40	10
60	10
100	8
200	6
300	4
400	3
500	2
600	1
800	1/0
1000	2/0
1200	3/0
1600	4/0
2000	250
2500	350

HIGHLAND WELL NO. 3 TAG LIST HVAC EQUIPMENT					
TAG	DESCRIPTION	ITEM	LOCATION	SUPPLIED BY	INSTALLED BY
UBH-1	CHLORINE ROOM HEATER	BASEBOARD HEATER	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
EF-1	EXHAUST FAN, WELL ROOM	EXHAUST FAN	OUTSIDE	CONTRACTOR	CONTRACTOR
EF-2	EXHAUST FAN, CHLORINE ROOM	EXHAUST FAN	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
WH-1	WELL ROOM HEATER	UNIT HEATER	WELL ROOM	CONTRACTOR	CONTRACTOR

PUMPS AND EQUIPMENT					
TAG	DESCRIPTION	ITEM	LOCATION	SUPPLIED BY	INSTALLED BY
CBP-1	CHLORINE BOOSTER PUMP	PUMP	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
CP-1	MAIN CONTROL PANEL/RTU	ELECTRICAL CONTROL PANEL	WELL ROOM	SCADA CONTR.	CONTRACTOR
CP-2	CHLORINE BP & EF CONTROL PANEL	ELECTRICAL CONTROL PANEL	WELL ROOM	CONTRACTOR	CONTRACTOR
CTE	CURRENT TRANSFORMER ENCL.	UTILITY CT ENCLOSURE	OUTSIDE	CONTRACTOR	CONTRACTOR
MSD	MAIN SERVICE DISCONNECT	MAIN SERVICE DISCONNECT	OUTSIDE	CONTRACTOR	CONTRACTOR
P-1	WELL PUMP	PUMP	WELL ROOM	OWNER	OWNER
RVSS-1	WELL MOTOR CONTROLLER	MOTOR CONTROLLER, RVSS	WELL ROOM	OWNER	CONTRACTOR

NOTES: 1) RE-INSTALL OWNERS EXISTING RVSS IN NEW ENCLOSURE WITH NEW COMPONENTS AND WIRING. SEE E2.2.
2) CONDUCTORS TERMINATED BY SCADA CONTRACTOR.
3) EXISTING RTU TO BE REMOVED BY SCADA CONTRACTOR AND RE-INSTALLED IN NEW BUILDING.

SWITCHES					
TAG	DESCRIPTION	ITEM	LOCATION	SUPPLIED BY	INSTALLED BY
ASH-1	CHLORINE LEAK	SWITCH, ANALYSIS	WELL ROOM	CONTRACTOR	CONTRACTOR
LSH-1	WELL ROOM FLOOD	SWITCH, LEVEL	WELL ROOM	CONTRACTOR	CONTRACTOR
MTS	TRANSFER SWITCH	SWITCH, MANUAL TRANSFER	OUTSIDE	CONTRACTOR	CONTRACTOR
PSH-1	WELL HIGH DISCHARGE PRESSURE	SWITCH, PRESSURE	WELL ROOM	FUTURE	
ZS-1	WELL HATCH OPEN	SWITCH, POSITION	WELL ROOM	CONTRACTOR	CONTRACTOR
ZS-2	WELL DOOR OPEN	SWITCH, POSITION	WELL ROOM	CONTRACTOR	CONTRACTOR
ZS-3	CHLORINE DOOR OPEN	SWITCH, POSITION	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
ZS-4	WELL DOOR OPEN	SWITCH, POSITION	WELL ROOM	CONTRACTOR	CONTRACTOR

INSTRUMENTS					
TAG	DESCRIPTION	ITEM	LOCATION	SUPPLIED BY	INSTALLED BY
AIT-1	RESIDUAL CHLORINE ANALYZER	INDICATOR/TRANSMITTER, RESIDUAL CHLORINE	WELL ROOM	CONTRACTOR	CONTRACTOR
AL-1	LEAK ALARM LIGHT	ALARM LIGHT	OUTSIDE	CONTRACTOR	CONTRACTOR
FF-1	SYSTEM PUMPED FLOW ELEMENT	ELEMENT, FLOW	WELL ROOM	OWNER	CONTRACTOR
FIT-1	SYSTEM PUMPED FLOW	INDICATOR/TRANSMITTER, FLOW	WELL ROOM	OWNER	CONTRACTOR
LT-1	WELL DRAWDOWN LEVEL	TRANSMITTER, LEVEL	WELL ROOM	FUTURE	
PT-1	SYSTEM PRESSURE	TRANSMITTER, PRESSURE	WELL ROOM	OWNER	CONTRACTOR
TT-1	WELL ROOM TEMPERATURE	TRANSMITTER, TEMPERATURE	WELL ROOM	CONTRACTOR	CONTRACTOR
TT-2	CHLORINE ROOM TEMPERATURE	TRANSMITTER, TEMPERATURE	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
WTT 1A/1B	CHLORINE TANK SCALES	INDICATOR/TRANSMITTER, WEIGHT	CHLORINE ROOM	CONTRACTOR	CONTRACTOR

NOTES: 1) CAREFULLY REMOVE EXISTING, STORE AND RE-INSTALL IN NEW BUILDING.

VALVES					
TAG	DESCRIPTION	ITEM	LOCATION	SUPPLIED BY	INSTALLED BY
PV-1	CHLORINE PROPORTIONING VALVE	VALVE, CHLORINE PROPORTIONING	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
SV-1	WELL LUBE SOLENOID VALVE	VALVE, SOLENOID	WELL ROOM	OWNER	CONTRACTOR
SV-2	CHLORINE SAMPLING SV	VALVE, SOLENOID	WELL ROOM	CONTRACTOR	CONTRACTOR

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH AMERICAN FORK, UT 84003 FAX (801) 642-2154
HPE PROJECT:20075
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST ©2020

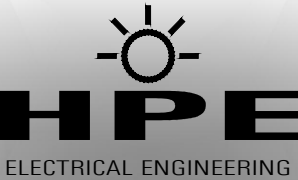
GENERAL NOTES:

1. REFER TO POWER ONE-LINE DIAGRAM FOR WIRE AND CONDUIT REQUIREMENTS.

SHEET KEYNOTES:

1. NOT USED.

H.P.E. INC. ELECTRICAL ENGINEERS
POWER, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED
708 EAST 50 SOUTH, AMERICAN FORK, UTAH, 84003
TEL. (801) 642-2051
FAX. (801) 642-2154



REV.	DATE:	DESCRIPTION:	BY:
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

HIGHLAND CITY
WELL #3 REBUILD
ADDRESS
HIGHLAND CITY, UT

ELECTRICAL
EQUIPMENT TAG
LIST

COPYRIGHT (C) 2020 BY
HEGERHORST POWER ENGINEERING
INC, AMERICAN FORK, UTAH. ALL
RIGHTS RESERVED. UNAUTHORIZED
COPYING AND/OR USE IS ILLEGAL
AND SUBJECT TO PROSECUTION.

0" VERIFY SCALE
0" 1"
BAR IS ONE INCH ON ORIGINAL
DRAWING. IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING SCALE:

AS SHOWN

DRAWN BY:

GDS

DESIGNED BY:

KBH

ENGINEERED BY:

KBH

DATE:

SEPTEMBER 2020

SHEET NO.

E1.2

HPE PROJECT NO.

20.075

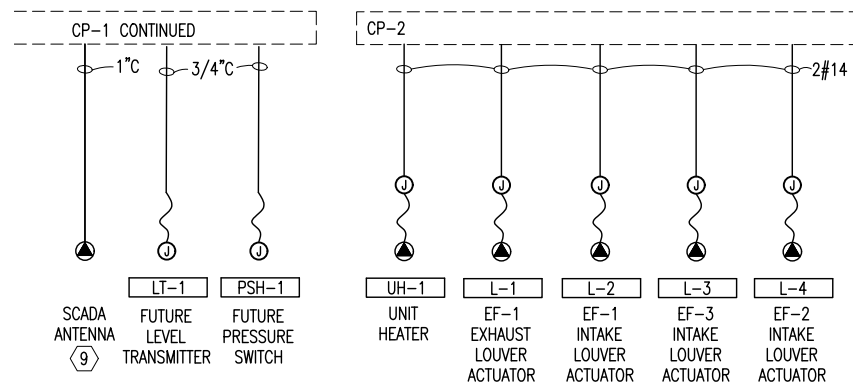
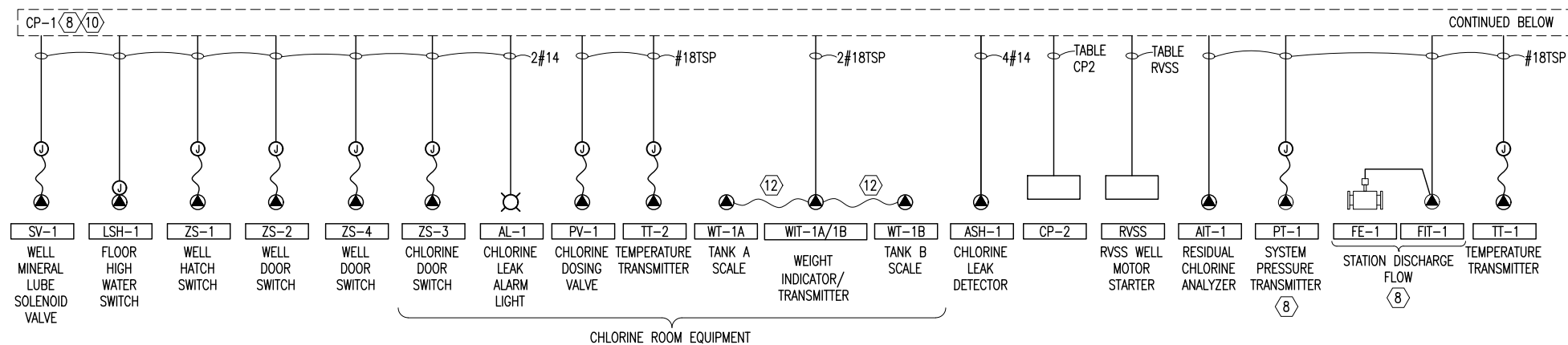
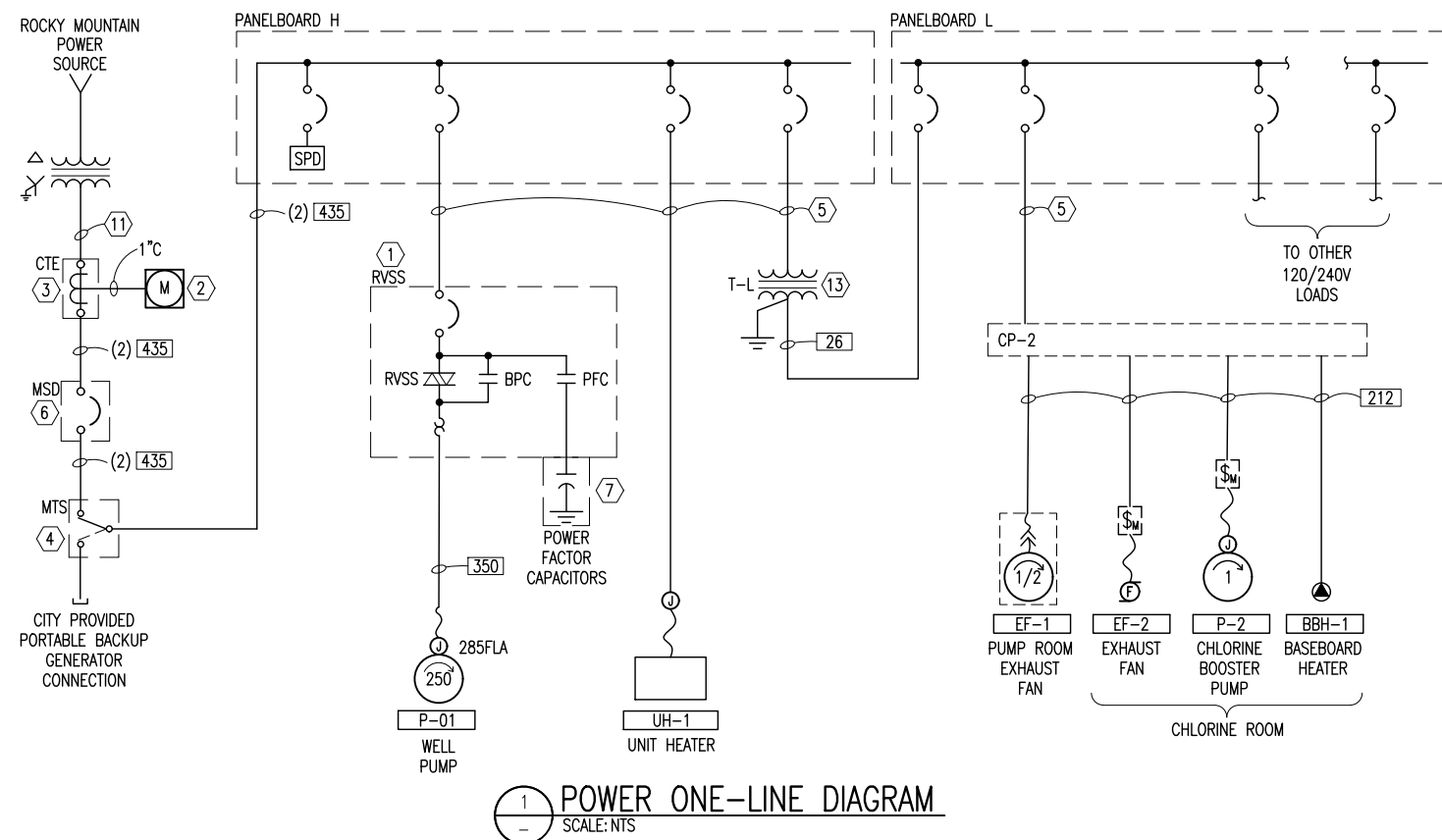


TABLE RVSS (CP-1 TO RVSS-1)			
CONDUIT SIZE	QTY	CONDUCTOR WIRE SIZE	SIGNAL DESCRIPTION
1" C	1	#14	COMMON INPUT
	1	#14	COMMON OUTPUT
	1	#14	WELL RVSS FAULT
	1	#14	WELL RVSS HOA IN HAND
	1	#14	WELL RVSS HOA IN REMOTE
	1	#14	WELL RVSS ON
	1	#14	WELL RVSS RUN
	3	#14	SPARE
	-	-	SPARE CONDUIT
	-	-	SPARE CONDUIT

TABLE CP2 (CP-1 TO CP-2)			
CONDUIT SIZE	QTY	CONDUCTOR WIRE SIZE	SIGNAL DESCRIPTION
1" C	1	#14	COMMON INPUT
	1	#14	COMMON OUTPUT
	1	#14	CHLORINE BOOSTER HOA IN AUTO
	1	#14	CHLORINE BOOSTER HOA IN HAND
	1	#14	CHLORINE BOOSTER ON
	1	#14	CHLORINE BOOSTER PUMP RUN
	1	#14	CHLORINE ROOM EXHAUST FAN HOA IN AUTO
	1	#14	CHLORINE ROOM EXHAUST FAN HOA IN HAND
	1	#14	CHLORINE ROOM EXHAUST FAN ON
	1	#14	CHLORINE ROOM EXHAUST FAN RUN
1" C	1	#14	WELL ROOM EXHAUST FAN HOA IN AUTO
	1	#14	WELL ROOM EXHAUST FAN HOA IN HAND
	1	#14	WELL ROOM EXHAUST FAN ON
	1	#14	WELL ROOM EXHAUST FAN RUN
	1	#14	WELL ROOM HEATER ON
	3	#14	SPARES
	-	-	SPARE CONDUIT
	-	-	SPARE CONDUIT
	-	-	SPARE CONDUIT
	-	-	SPARE CONDUIT

2 INSTRUMENT & CONTROL ONE-LINE DIAGRAM

SCALE: NTS

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH AMERICAN FORK, UT 84003 FAX (801) 642-2154
HPE PROJECT:20075
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

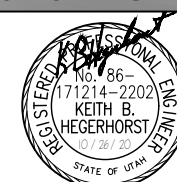
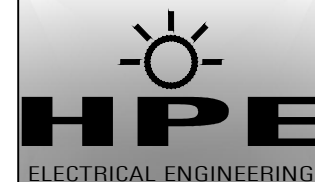
GENERAL NOTES:

- REFER TO CONDUIT/CONDUCTOR TABLE FOR WIRE AND CONDUIT REQUIREMENTS.
- REFER TO ELECTRICAL PLANS FOR EQUIPMENT AND DEVICE LOCATIONS.
- ALL INSTRUMENTATION AND CONTROL CONDUIT SHALL BE 3/4" EXCEPT AS NOTED.
- CONTACT ROCKY MOUNTAIN POWER BEFORE INSTALLING VAULTS AND CONDUIT. INSPECTION OF FACILITIES BY ROCKY MOUNTAIN POWER IS REQUIRED. MINIMUM 3 WORKING DAYS NOTICE FOR INSPECTIONS IS REQUIRED.
 - BART PEACOCK 801-319-3994
 - GARY MENDENHALL 801-372-9271
 - BROCK BATEMAN 385-208-6618
- REFER TO ELECTRICAL UTILITY INSTALLATION INFORMATION TABLE ON E1.2 FOR INFORMATION ON UTILITY SERVICE TO NEW BUILDING.

SHEET KEYNOTES:

- REMOVE THE RVSS CONTROLLER FROM THE EXISTING ENCLOSURE AND RE-INSTALL IN A NEW ENCLOSURE. REFER TO THE TYPICAL RVSS CONTROL DIAGRAM AS REQUIRED. PROVIDE ADDITIONAL COMPONENTS AS SHOWN ON THE TYPICAL WIRING DIAGRAM.
- METER SOCKET SUPPLIED AND INSTALLED BY CONTRACTOR AS REQUIRED BY UTILITY COMPANY. METER SUPPLIED AND INSTALLED BY UTILITY COMPANY.
- 600A (MIN.), 480V CT METERING ENCLOSURE AS REQUIRED BY UTILITY COMPANY. PROVIDE AND INSTALLED BY CONTRACTOR.
- 600A, 480V, 3-P, NEMA 3R MANUAL TRANSFER SWITCH. PROVIDE AND INSTALLED BY CONTRACTOR. PROVIDE REMOVABLE PLATE IN BOTTOM FOR OWNERS GENERATOR CABLES.
- REFER TO PANEL SCHEDULE FOR WIRE/CONDUIT CALLOUTS.
- 600A, 480V, 3-P CIRCUIT BREAKER. LABEL AS "MAIN SERVICE DISCONNECT" AND AS REQUIRED BY NEC 110.24.
- POWER FACTOR CAPACITORS MAY BE INSTALLED ABOVE RVSS MOTOR CONTROLLER. SIZE AS REQUIRED FOR 250 HP PUMP MOTOR TO CORRECT PF TO 95% OR BETTER.
- CONTRACTOR SHALL CAREFULLY REMOVE, STORE, AND RE-INSTALL AS REQUIRED.
- REMOVE ANTENNA, STORE, PROVIDE TO SCADA CONTRACTOR TO RE-INSTALL ON NEW WELL HOUSE. CONTRACTOR TO PROVIDE ANTENNA SUPPORT.
- ALL CONDUIT PENETRATIONS TO CP-1 SHALL BE ON BOTTOM OR SIDE. NO TOP ENTRY PERMITTED.
- TWO 4" CONDUITS WITH PULL ROPE, NEW SERVICE CONDUCTORS FROM EXISTING POLE BY POWER COMPANY.
- CABLES SUPPLIED BY MANUFACTURER WITH INDICATOR/TRANSMITTER UNIT.
- TRANSFORMER L: 10 KVA, 480 VAC PRI, 120/240 VAC SECONDARY.

H.P.E. INC. ELECTRICAL ENGINEERS
POWER, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED
708 EAST 50 SOUTH, AMERICAN FORK, UTAH, 84003
TEL. (801) 642-2051
FAX. (801) 642-2154



REV.	DATE:	DESCRIPTION:	BY:
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

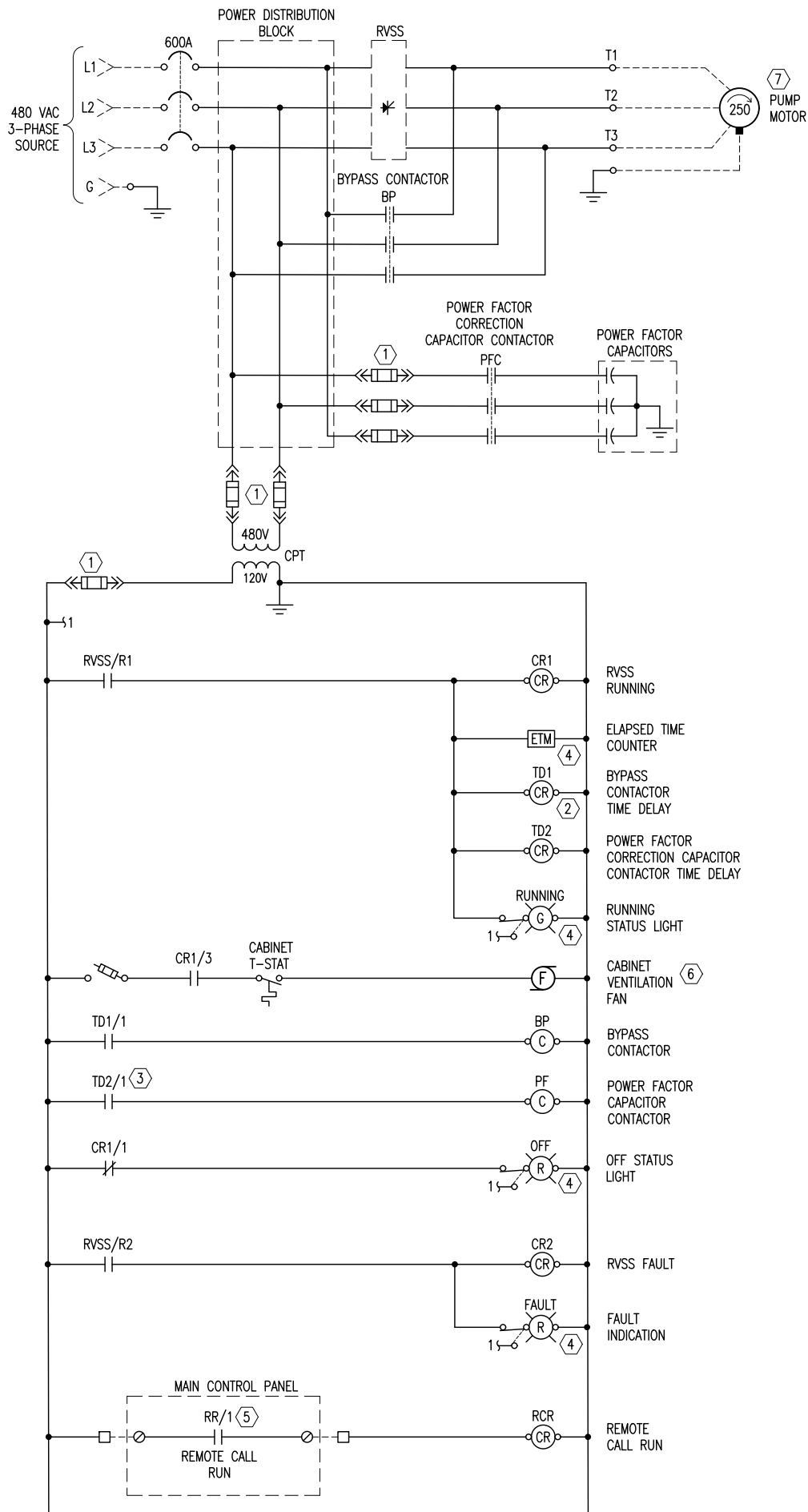
HIGHLAND CITY
WELL #3 REBUILD
ADDRESS
HIGHLAND CITY, UT

POWER & I&C ONE-LINE DIAGRAMS

COPYRIGHT (C) 2020 BY
HEGERHORST POWER ENGINEERING
INC, AMERICAN FORK, UTAH. ALL
RIGHTS RESERVED. UNAUTHORIZED
COPYING AND/OR USE IS ILLEGAL
AND SUBJECT TO PROSECUTION.

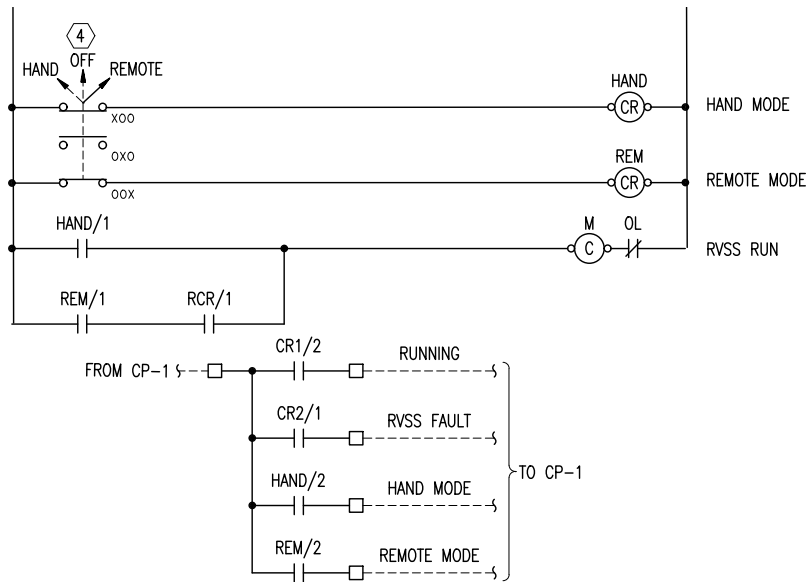
0" VERIFY SCALE 1"
BAR IS ONE INCH ON ORIGINAL
DRAWING. IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING SCALE:
AS SHOWN
DRAWN BY:
GDS
DESIGNED BY:
KBH
ENGINEERED BY:
KBH
DATE:
SEPTEMBER 2020
SHEET NO.
E2.1
HPE PROJECT NO.
20.075



CONTINUED ON UPPER RIGHT COLUMN

CONTINUED FROM LOWER LEFT COLUMN



TYPICAL RVSS CONTROL DIAGRAM

SCALE: NTS

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH AMERICAN FORK, UT 84003 FAX (801) 642-2154
HPE PROJECT:20075
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST ©2020

GENERAL NOTES:

- CONTROL DIAGRAM IS TYPICAL AND SHALL BE MODIFIED BY THE CONTRACTOR FOR THE SPECIFIC EQUIPMENT SUPPLIED.
- SUPPLIER SHALL SIZE FUSES.
- BYPASS CONTACTOR TIME DELAY FUNCTIONS MAY BE BUILT INTO THE RVSS UNIT.
- POWER FACTOR CAPACITORS SHALL BE ENERGIZED AFTER MOTOR IS RUNNING FULL SPEED AND ON THE BY-PASS CONTACTOR.
- DEVICE SHALL BE INSTALLED IN THE MOTOR CONTROLLER DOOR.
- EXISTING RVSS PHOTO. RVSS WEIGHT (APPROX): 55 LBS.
- CABINET VENTILATION FAN SHALL OPERATE WHEN WELL IS RUNNING AND CABINET TEMPERATURE IS ABOVE T-STAT SET POINT.
- EXISTING WELL MOTOR.

TERMINAL ID	CONTROL PANEL
☒	CP-1 MAIN CONTROL PANEL/RTU
☒	CP-2
☐	RVSS MOTOR CONTROLLER



PHOTO 1

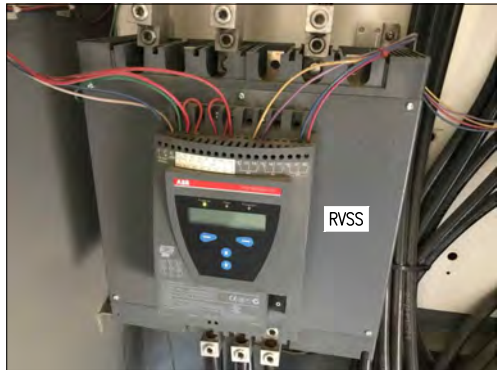


PHOTO 2

H.P.E. INC. ELECTRICAL ENGINEERS
POWER, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED
708 EAST 50 SOUTH, AMERICAN FORK, UTAH, 84003
TEL. (801) 642-2051
FAX. (801) 642-2154

HPE
ELECTRICAL ENGINEERING



REV.	DATE:	DESCRIPTION:	BY:
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

**HIGHLAND CITY
WELL #3 REBUILD
ADDRESS
HIGHLAND CITY, UT**

**TYPICAL RVSS
DIAGRAM**

COPYRIGHT (C) 2020 BY
HEGERHORST POWER ENGINEERING
INC, AMERICAN FORK, UTAH. ALL
RIGHTS RESERVED. UNAUTHORIZED
COPYING AND/OR USE IS ILLEGAL
AND SUBJECT TO PROSECUTION.

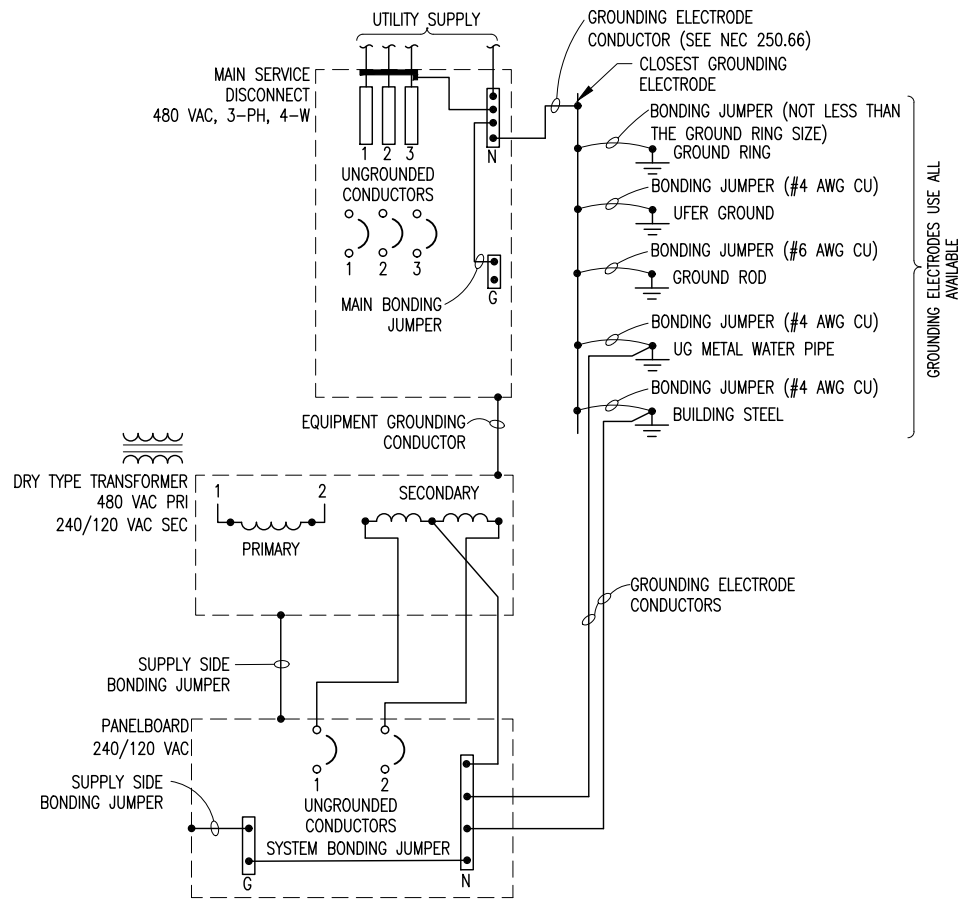
0" VERIFY SCALE 1"
BAR IS ONE INCH ON ORIGINAL
DRAWING. IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING SCALE:
AS SHOWN
DRAWN BY:
GDS
DESIGNED BY:
KBH
ENGINEERED BY:
KBH

DATE:
SEPTEMBER 2020
SHEET NO.

E2.2

HPE PROJECT NO.
20.075



SEPERATLY DERIVED 120-240V GROUNDING DIAGRAM
SCALE: NTS

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH FAX (801) 642-2154
AMERICAN FORK, UT 84003 ©2020
HPE PROJECT:20075
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

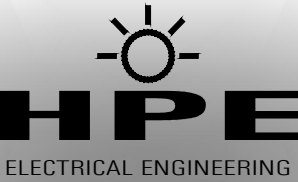
GENERAL NOTES:

1. NOT USED.

SHEET KEYNOTES:

1. NOT USED.

H.P.E. INC. ELECTRICAL ENGINEERS
POWER, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED
708 EAST 50 SOUTH, AMERICAN FORK, UTAH, 84003
TEL. (801) 642-2051
FAX. (801) 642-2154



REV:	DATE:	DESCRIPTION:	BY:
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

HIGHLAND CITY
WELL #3 REBUILD
ADDRESS
HIGHLAND CITY, UT

COMMON
DIAGRAMS

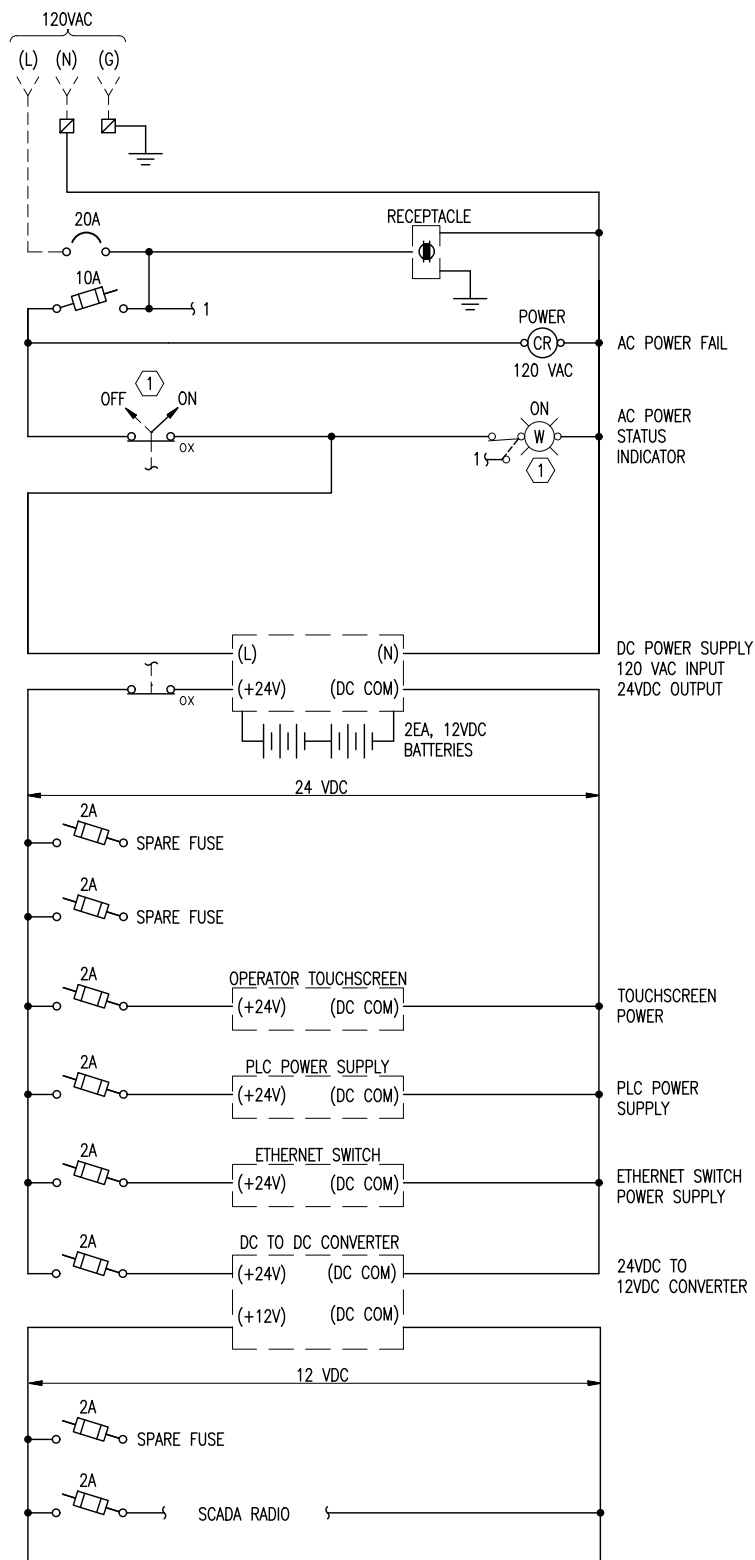
COPYRIGHT (C) 2020 BY
HEGERHORST POWER ENGINEERING
INC, AMERICAN FORK, UTAH. ALL
RIGHTS RESERVED. UNAUTHORIZED
COPYING AND/OR USE IS ILLEGAL
AND SUBJECT TO PROSECUTION.

0" VERIFY SCALE 1"
BAR IS ONE INCH ON ORIGINAL
DRAWING. IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING SCALE:
AS SHOWN
DRAWN BY:
GDS
DESIGNED BY:
KBH
ENGINEERED BY:
KBH

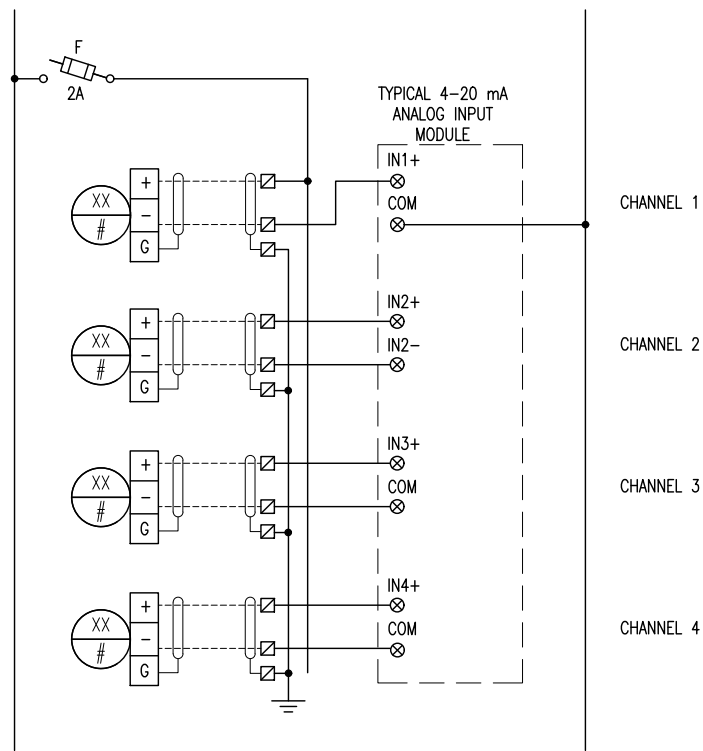
DATE:
SEPTEMBER 2020

SHEET NO. E2.3
HPE PROJECT NO. 20.075



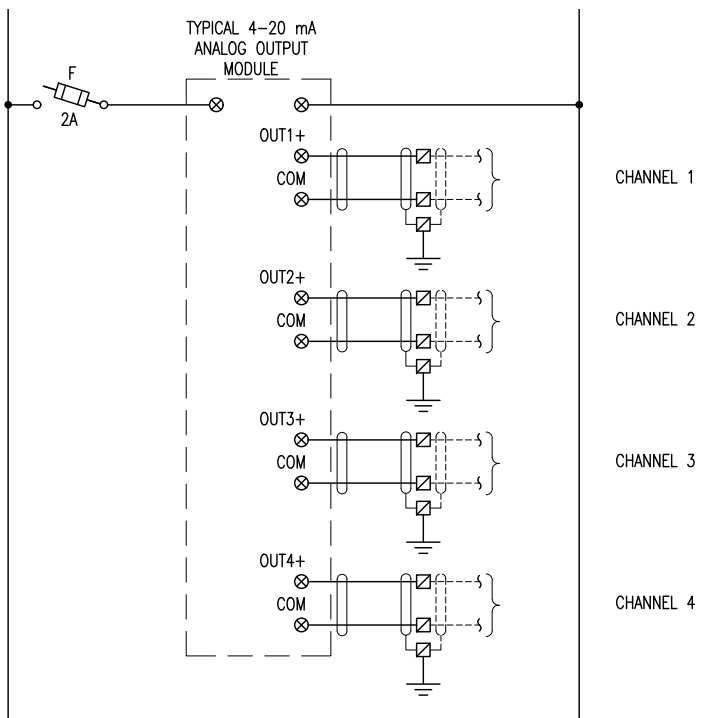
1
—
—

TYPICAL POWER LOGIC
SCALE: NTS



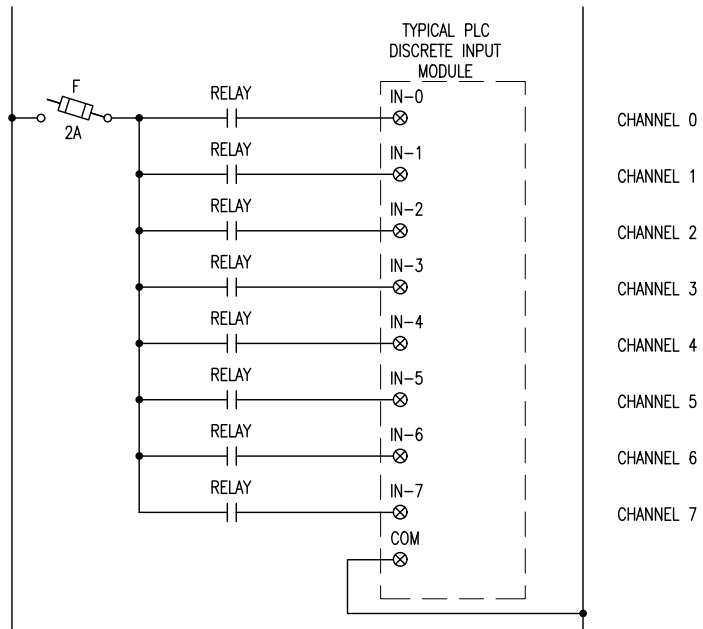
2
—
—

TYPICAL PLC ANALOG INPUT MODULE
SCALE: NTS



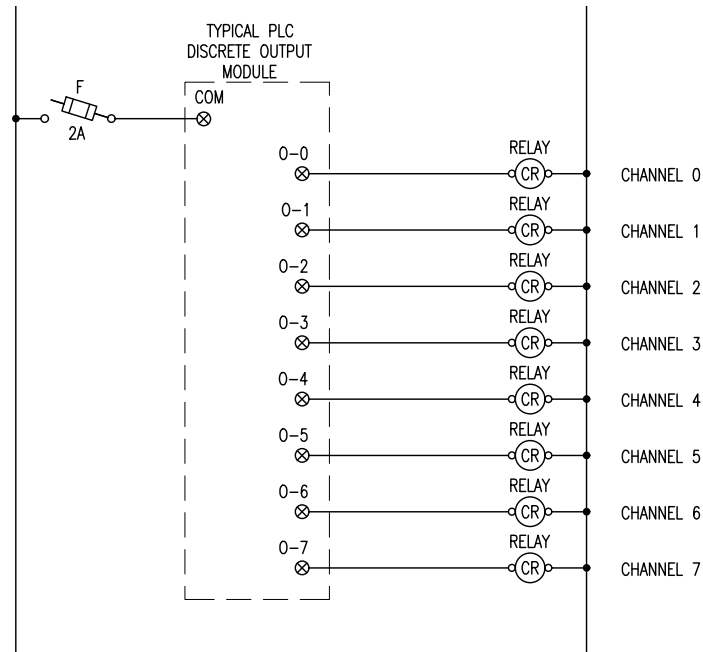
3
—
—

TYPICAL PLC ANALOG OUTPUT MODULE
SCALE: NTS



4
—
—

TYPICAL PLC DISCRETE INPUT MODULE
SCALE: NTS



5
—
—

TYPICAL PLC DISCRETE OUTPUT MODULE
SCALE: NTS

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH AMERICAN FORK, UT 84003 FAX (801) 642-2154
HPE PROJECT:20075
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

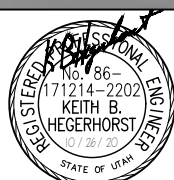
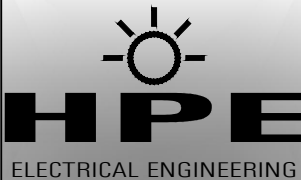
GENERAL NOTES:

1. DIAGRAM IS TYPICAL AND SHALL BE MODIFIED FOR THE SPECIFIC COMPONENTS SELECTED.
2. CONTRACTOR SHALL PROVIDE WIRE AND FUSE NUMBERS AS REQUIRED.
3. REFER TO E2.5 FOR TYPICAL INPUT/OUTPUT WIRING.

SHEET KEYNOTES:

1. INSTALL IN ENCLOSURE DOOR, AND AVAILABLE TO THE OPERATOR.

H.P.E. INC. ELECTRICAL ENGINEERS
POWER, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED
708 EAST 50 SOUTH, AMERICAN FORK, UTAH, 84003
TEL. (801) 642-2051
FAX. (801) 642-2154



REV:	DATE:	DESCRIPTION:	BY:
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

**HIGHLAND CITY
WELL #3 REBUILD
ADDRESS
HIGHLAND CITY, UT**

**CP-1 CONTROL
DIAGRAMS, SHT. 1**

COPYRIGHT (C) 2020 BY
HEGERHORST POWER ENGINEERING
INC, AMERICAN FORK, UTAH. ALL
RIGHTS RESERVED. UNAUTHORIZED
COPYING AND/OR USE IS ILLEGAL
AND SUBJECT TO PROSECUTION.

0" VERIFY SCALE 1"
BAR IS ONE INCH ON ORIGINAL
DRAWING. IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING SCALE:
AS SHOWN
DRAWN BY:
GDS
DESIGNED BY:
KBH
ENGINEERED BY:
KBH

DATE:
SEPTEMBER 2020

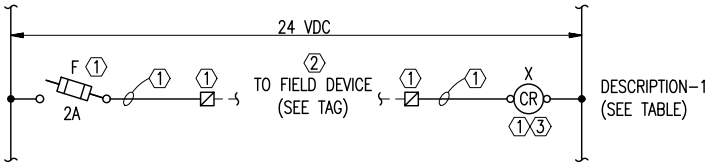
SHEET NO. HPE PROJECT NO.

E2.4

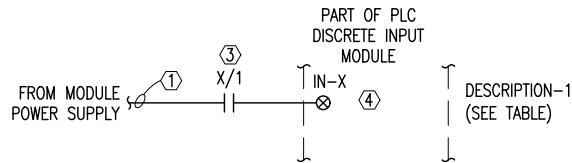
20.075

NOTES:

- CONTRACTOR SHALL ASSIGN FUSE, RELAY, TERMINAL AND WIRE NUMBERS AS REQUIRED.
- CONTRACTOR MAY COMBINE CONDUCTORS IN COMMON CONDUIT TO DEVICES IN SAME PROXIMITY.
- PROVIDE AN INTERPOSING RELAY AND WIRE RELAY CONTACT TO PLC INPUT AS INDICATED.
- CONTRACTOR SHALL ASSIGN PLC MODULE AND CHANNEL.



INTERPOSE RELAY LOGIC

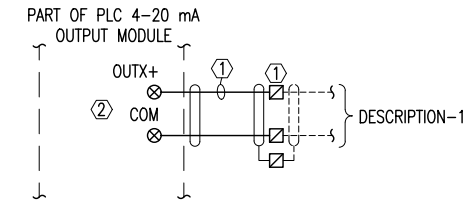


PLC DISCRETE INPUT LOGIC

1 DISCRETE INPUT REQUIREMENTS
SCALE: NTS

NOTES:

- CONTRACTOR SHALL ASSIGN FUSE, RELAY, TERMINAL AND WIRE NUMBERS AS REQUIRED.
- CONTRACTOR SHALL ASSIGN PLC MODULE AND CHANNEL.

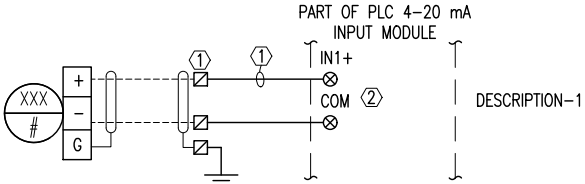


PLC ANALOG OUTPUT

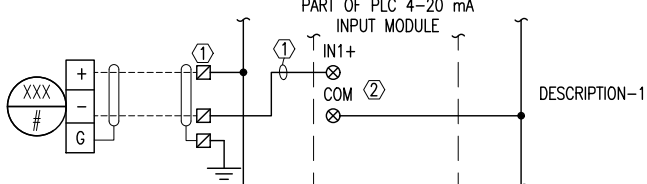
3 ANALOG OUTPUT REQUIREMENTS
SCALE: NTS

NOTES:

- CONTRACTOR SHALL ASSIGN FUSE, RELAY, TERMINAL AND WIRE NUMBERS AS REQUIRED.
- CONTRACTOR SHALL ASSIGN PLC MODULE AND CHANNEL.



PLC ANALOG INPUT TYPE 1

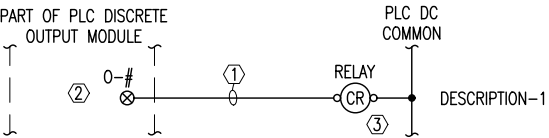


PLC ANALOG INPUT TYPE 2

2 ANALOG INPUT REQUIREMENTS
SCALE: NTS

NOTES:

- CONTRACTOR SHALL ASSIGN FUSE, RELAY, TERMINAL AND WIRE NUMBERS AS REQUIRED.
- CONTRACTOR SHALL ASSIGN PLC MODULE AND CHANNEL.
- PROVIDE AN INTERPOSING RELAY AND WIRE RELAY CONTACT TO PLC INPUT AS INDICATED.



PLC DISCRETE OUTPUT LOGIC



INTERPOSE RELAY LOGIC

4 DISCRETE OUTPUT REQUIREMENTS
SCALE: NTS

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH AMERICAN FORK, UT 84003 FAX (801) 642-2154
HPE PROJECT:20075
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

GENERAL NOTES:

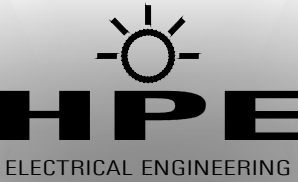
- NOT USED.

SHEET KEYNOTES:

- NOT USED.

TERMINAL ID	CONTROL PANEL
☒	CP-1 MAIN CONTROL PANEL/RTU
☒	CP-2
☐	RVSS MOTOR CONTROLLER

H.P.E. INC. ELECTRICAL ENGINEERS
POWER, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED
708 EAST 50 SOUTH, AMERICAN FORK, UTAH, 84003
TEL. (801) 642-2051
FAX. (801) 642-2154



REV:	DATE:	DESCRIPTION:	BY:
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

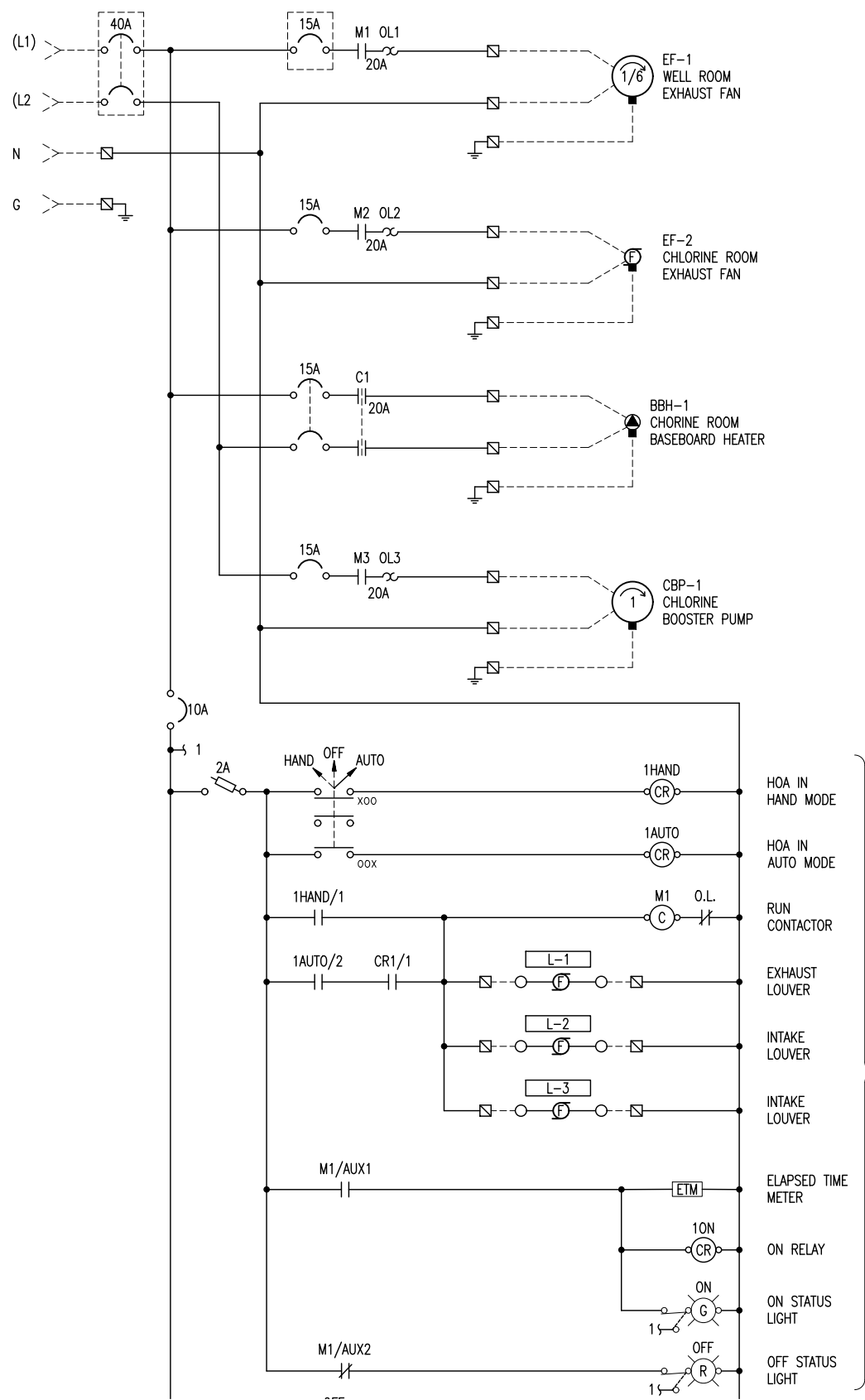
HIGHLAND CITY
WELL #3 REBUILD
ADDRESS
HIGHLAND CITY, UT

CP-1 CONTROL
DIAGRAMS, SHT. 2

COPYRIGHT (C) 2020 BY
HEGERHORST POWER ENGINEERING
INC, AMERICAN FORK, UTAH. ALL
RIGHTS RESERVED. UNAUTHORIZED
COPYING AND/OR USE IS ILLEGAL
AND SUBJECT TO PROSECUTION.

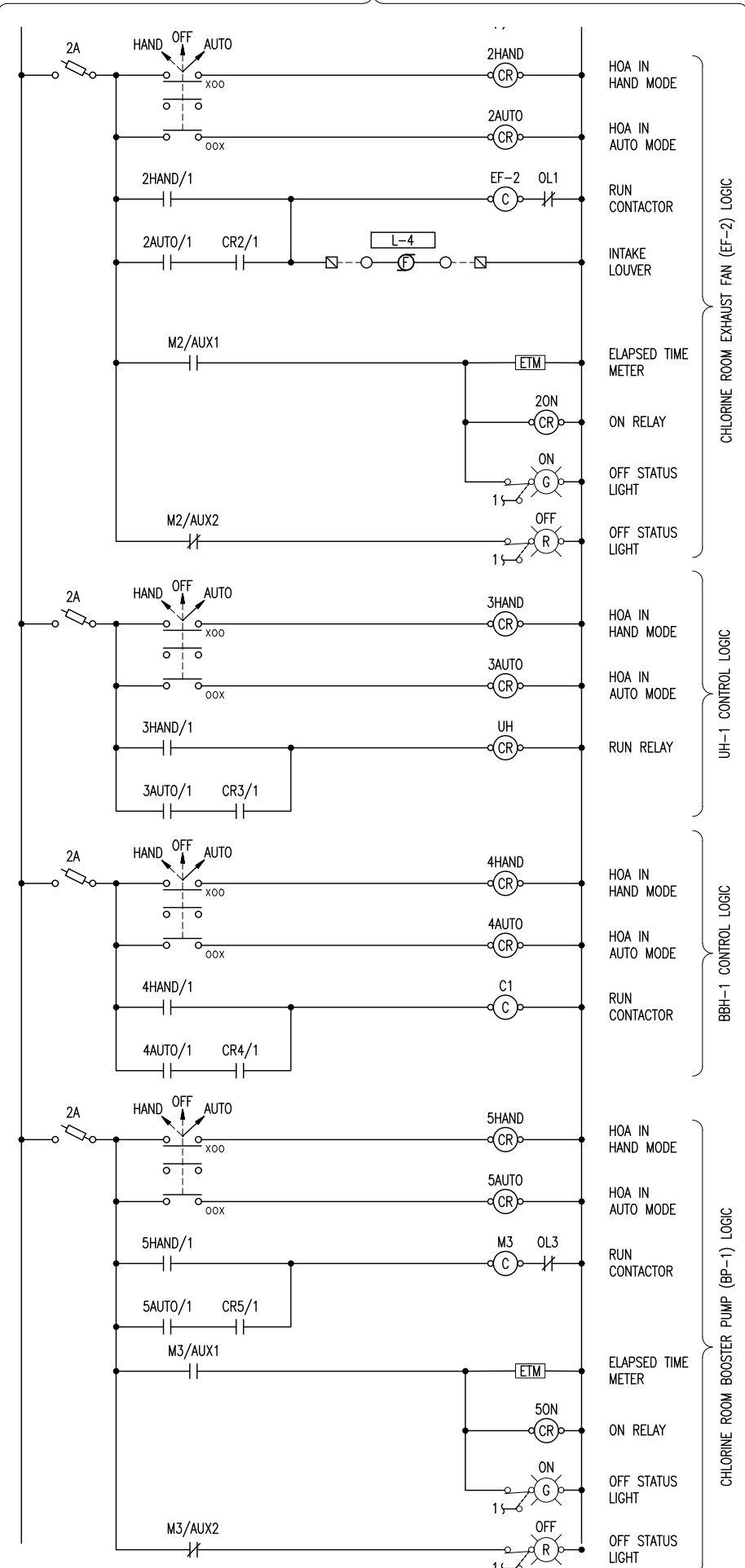
0" VERIFY SCALE 1"
BAR IS ONE INCH ON ORIGINAL
DRAWING. IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING SCALE: AS SHOWN	
DRAWN BY: GDS	
DESIGNED BY: KBH	
ENGINEERED BY: KBH	
DATE: SEPTEMBER 2020	
SHEET NO.	HPE PROJECT NO.



CONTINUED ON UPPER RIGHT COLUMN

CONTINUED FROM LOWER LEFT COLUMN



CONTINUED ON SHEET E2.7

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH AMERICAN FORK, UT 84003 FAX (801) 642-2154
HPE PROJECT:20075
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST ©2020

GENERAL NOTES:

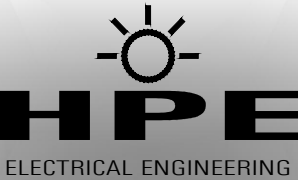
- 1. NOT USED.

SHEET KEYNOTES:

- 1. NOT USED.

TERMINAL ID	CONTROL PANEL
☒	CP-1 MAIN CONTROL PANEL/RTU
☒	CP-2
☐	RVSS MOTOR CONTROLLER

H.P.E. INC. ELECTRICAL ENGINEERS
POWER, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED
708 EAST 50 SOUTH, AMERICAN FORK, UTAH, 84003
TEL. (801) 642-2051
FAX. (801) 642-2154



REV.	DATE	DESCRIPTION	BY
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

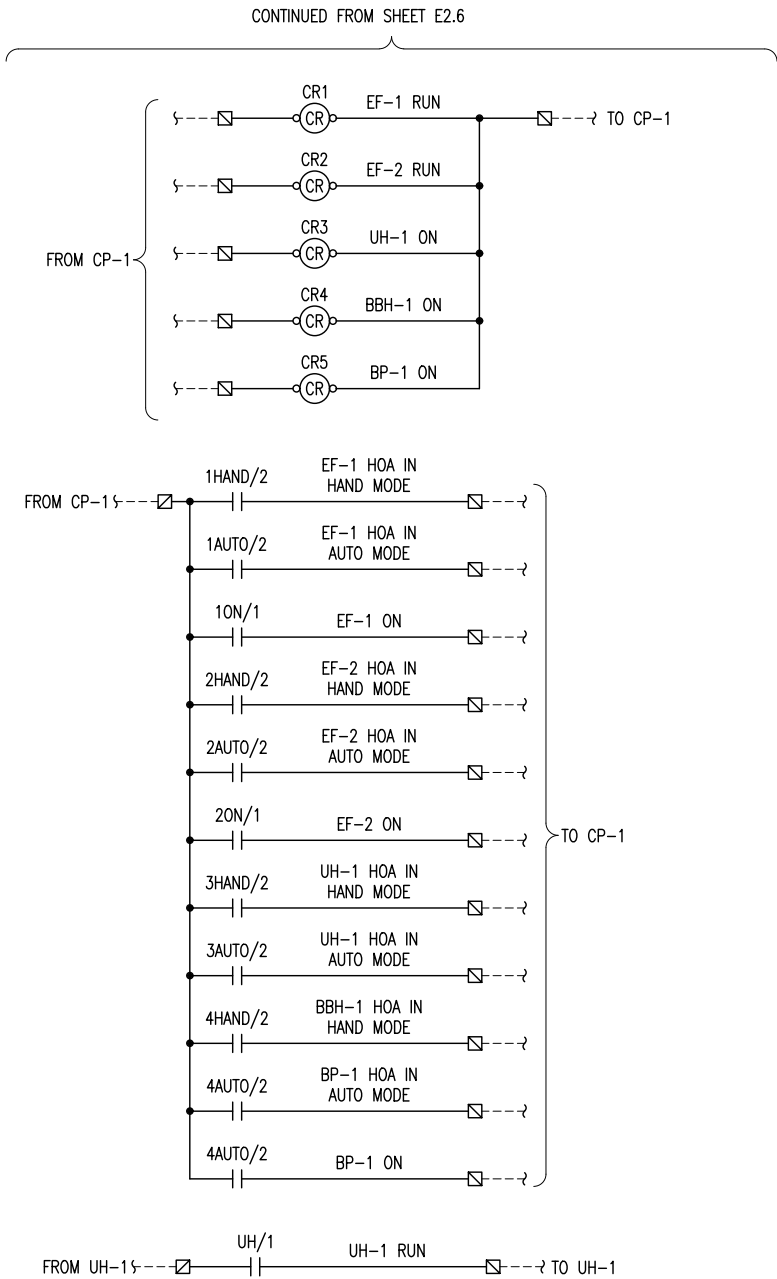
HIGHLAND CITY
WELL #3 REBUILD
ADDRESS
HIGHLAND CITY, UT

CP-2 CONTROL
DIAGRAMS, SHT. 1

COPYRIGHT (C) 2020 BY
HEGERHORST POWER ENGINEERING
INC, AMERICAN FORK, UTAH. ALL
RIGHTS RESERVED. UNAUTHORIZED
COPYING AND/OR USE IS ILLEGAL
AND SUBJECT TO PROSECUTION.

0" VERIFY SCALE 1"
BAR IS ONE INCH ON ORIGINAL
DRAWING. IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING SCALE: AS SHOWN
DRAWN BY: GDS
DESIGNED BY: KBH
ENGINEERED BY: KBH
DATE: SEPTEMBER 2020
SHEET NO. E2.6
HPE PROJECT NO. 20.075



1 CP-2 CONTROL DIAGRAMS
SCALE: NTS

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH AMERICAN FORK, UT 84003 FAX (801) 642-2154
HPE PROJECT:20075 ©2020
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

GENERAL NOTES:

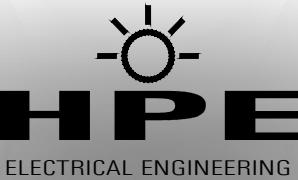
1. NOT USED.

SHEET KEYNOTES:

1. NOT USED.

TERMINAL ID	CONTROL PANEL
☒	CP-1 MAIN CONTROL PANEL/RTU
☒	CP-2
☐	RVSS MOTOR CONTROLLER

H.P.E. INC. ELECTRICAL ENGINEERS
POWER, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED
708 EAST 50 SOUTH, AMERICAN FORK, UTAH, 84003
TEL. (801) 642-2051
FAX. (801) 642-2154



REV.	DATE:	DESCRIPTION:	BY:
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

HIGHLAND CITY
WELL #3 REBUILD
ADDRESS
HIGHLAND CITY, UT

CP-2 CONTROL
DIAGRAMS, SHT. 2

COPYRIGHT (C) 2020 BY
HEGERHORST POWER ENGINEERING
INC, AMERICAN FORK, UTAH. ALL
RIGHTS RESERVED. UNAUTHORIZED
COPYING AND/OR USE IS ILLEGAL
AND SUBJECT TO PROSECUTION.

0" VERIFY SCALE 1"
BAR IS ONE INCH ON ORIGINAL
DRAWING. IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING SCALE: AS SHOWN	
DRAWN BY: GDS	
DESIGNED BY: KBH	
ENGINEERED BY: KBH	
DATE: SEPTEMBER 2020	
SHEET NO.	HPE PROJECT NO.

PANELBOARD H											
LOCATION: WELL PUMP ROOM			MFR: SQ. D COMPANY			600 AMPS			VOLTS: 480Y/277		
DIMENSIONS: 26"W X 52"H X 6.5"D			TYPE: I-LINE			X M.L.O.			PHASE: 3		
MOUNTING: SURFACE			NEMA: 3R			10,000 A.I.C.			WIRES: 4		
FEED: N/A						X SPD			FED FROM: UTILITY		
DESCRIPTION			WIRE SIZE	CONT. WATTS	N-CONT. WATTS	NO	PHASE LOADS				
							A		B		C
						CONT.	N-CONT.	CONT.	N-CONT.	CONT.	N-CONT.
-	3	SURGE PROTECTOR	-								
600	3	WELL PUMP (250 HP)	350	236,664		1	78,888	0	78,888	0	78,888
20	3	UNIT HEATER, UH-1 (5 KW)	312		5,000	2	0	1,667	0	1,667	0
25	2	TRANSFORMER L	20	4,729	1,470	4	2,519	555	2,210	915	
TOTAL WATTS:				241,393	6,470		81,407	2,222	81,098	2,582	78,888
CONTINUOUS LOAD:				241,393							
CONTINUOUS LOAD * 125%:				301,741							
NON-CONTINUOUS LOAD:				6,470							
DESIGN WATTS:				308,211							
MDL. RATING (AMPS):				371							

WELL TRANSFORMER L							
LOCATION: WELL PUMP ROOM		15.4 PRIMARY AMPS		PRIMARY VOLTS: 480			
DIMENSIONS: 70"W x 16"D x 77"H		30.8 SECONDARY AMPS		SECONDARY VOLTS: 240/120			
MOUNTING: 1-LOOR				KVA: 10			
FEED: SIDE		FED FROM:					
		PHASE LOADS					
		CONT. WATTS	N-CONT. WATTS	A		B	
				CONT.	N-CONT.	CONT.	N-CONT.
PANELBOARD L		4,729	1,470	2,519	555	2,210	915
TOTAL WATTS:		4,729	1,470	2,519	555	2,210	915
CONTINUOUS LOAD:		4,729					
CONTINUOUS LOAD * 125%:		5,911					
NON-CONTINUOUS LOAD:		1,470					
DESIGN WATTS:		7,381					

WELL PANELBOARD L																
LOCATION: WELL PUMP ROOM			MFR: SQUARE D			100 AMPS			VOLTS: 240/120							
DIMENSIONS: 20"W x 5.75"D x 44"H			TYPE: NQ			70 M.C.B.			PHASE: 1							
MOUNTING: SURFACE			NEMA: 1			10,000 A.I.C.			WIRLS: 3							
FEED: TOP						X SPD			FEED FROM:							
PHASE LOADS																
BKX		WIRE	CONT.	N-CONT.	A		B		N-CONT.		CONT.	WIRE	BKX			
A	P	SIZE	WATTS	WATTS	NO	CONT.	N-CONT.	CONT.	N-CONT.	NO	WATTS	WATTS	SIZE	A	P	
20	1	LTS, INTERIOR	212	152	1	152	0			2		-		70	2	
20	1	LTS, EXTERIOR	212	90	3			90	0	4		-		-	-	
20	1	RECP. CHL. ROOM	212		180	5	800	180		6		800	212	CP-1 MCP, SCADA RTU	20	1
20	1	RECP. INTERIOR			540	7		1,920	915	8	375	1,920	38	CP-2, VENTILATION & CHLORINE CP	40	2
20	1	CHLORINE LEAK DETECTOR (ASH 1)	212	50	9	1,467	375			10	375	1,417				
20	1	CHLORINE SCALE (WIT-1A/1B)	212	150	11			200	0	12		50	212	FLOW METER (FIT-1)	20	1
20	1	CHLORINE ANALYZER (AIT-1)	212	100	13	100	0			14				SPARE	20	1
20	1	SPARE			15			0	0	16						
20	1	SPARE			17	0	0			18						
TOTAL WATTS:				542	720	2,519	555	2,210	915		750	4,187				
CONTINUOUS LOAD:				4,729												
CONTINUOUS LOAD * 125%:				5,911												
NON-CONTINUOUS LOAD:				1,470												
DESIGN WATTS:				7,381												
MDL. RATING (AMPS):				31												

CONTROL PANEL CP-2									
LOCATION: WELL PUMP ROOM			MFR: CUSTOM			N/A AMPS		VOLTS: 240/120	
DIMENSIONS: BY CONTRACTOR			TYPE: N/A			90 M.C.B.		PHASE: 1	
MOUNTING: SURFACE			NEMA: 1			A.I.C.		WIRES: 3	
FED FROM: PANEL L									
DESCRIPTION			WIRE SIZE	CONT. WATTS	N-CONT. WATTS	PHASE LOADS			
						A		B	
				NO	CONT.	N-CONT.	CONT.	N-CONT.	
15	1	WELL ROOM EXHAUST FAN (1/2 HP)	212	1,176	1	1,176	0		
15	1	CHLORINE RM EXHAUST FAN (1/6 HP)	212	241	2	241	0		
15	2	BASEBOARD HEATER (FUT 750W)	212		750 3	0	375	0 375	
20	2	CHLORINE BOOSTER PUMP (1 HP)	212	1,920	4		1,920	0	
TOTAL WATTS:				3,337	750	1,417	375	1,920 375	
CONTINUOUS LOAD:				3,337					
CONTINUOUS LOAD * 125%:				4,171					
NON-CONTINUOUS LOAD:				750					
DESIGN WATTS:				4,921					
MDL. RATING (AMPS):				21					

FIXTURE SCHEDULE										
TYPE	DESCRIPTION		MANUFACTURER		FIX VA	LAMP	LUMENS	TEMPERATURE (KELVIN)	MOUNTING	NOTES:
F1	4" LED ENCLOSED INDUSTRIAL, FIBERGLASS HOUSING, DAMP LOCATION, MVOLT		METALUX	4VT2LE0-LD4-4-DR-UNV-L840-CD-1-U	38	LED	4000	4000	SURFACE	
F2	LED WALL MOUNTED FULL CUTOFF MINI ARFA WALL PACK FOR WFT LOCATIONS		LUMARK	XTOR21-PC1	18	LED	2135	4000	WALL	1)

NOTES: 1) PROVIDE BUILT-IN PHOTOCELL.

HVAC MECHANICAL EQUIPMENT SCHEDULE													
ITEM	DESCRIPTION	EQUIPMENT RATING				DISCONNECT				STARTER			
		VOLTS	PH	HP	WATTS	FIA	MCA	AMPS	VOLTS	POLE	TYPE	CONNECTION	REMARKS
BBH-1	BASEBOARD HEATER	120	1	-	750	6.25	-	-	-	-	-	HARD-WIRED	
EF-1	EXHAUST FAN	120	1	1/2	1,104	9.8	-	-	-	-	-	HARD-WIRED	
EF-2	EXHAUST FAN	120	1	1/6	528	4.3	-	-	-	-	-	HARD-WIRED	
UH-1	UNIT HEATER	480	3	-	5,000	6	-	-	-	-	-	HARD-WIRED	NOTE 1.

NOTES: 1. NO DISCONNECT REQUIRED AS LOAD IS WITHIN SITE OF PANELBOARD.
2

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED
708 EAST 50 SOUTH
AMERICAN FORK, UT 84003
HPE PROJECT:20075
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

(801) 642-2051
FAX (801) 642-2154
©2020

GENERAL NOTES:

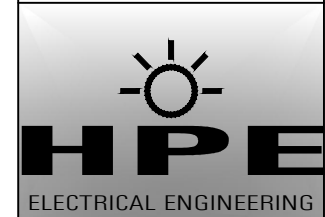
1. NOT USED.

SHEET KEYNOTES:

1. NOT USED.

H.P.E. INC. ELECTRICAL ENGINEERS
POWER, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED
708 EAST 50 SOUTH,
AMERICAN FORK, UTAH, 84003
TEL. (801) 642-2051
FAX. (801) 642-2154

Copyright © 2020 H.P.E. Inc. All Rights Reserved. No part of this publication may be reproduced without prior written permission from H.P.E. Inc.



REV:	DATE:	DESCRIPTION:	BY:
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

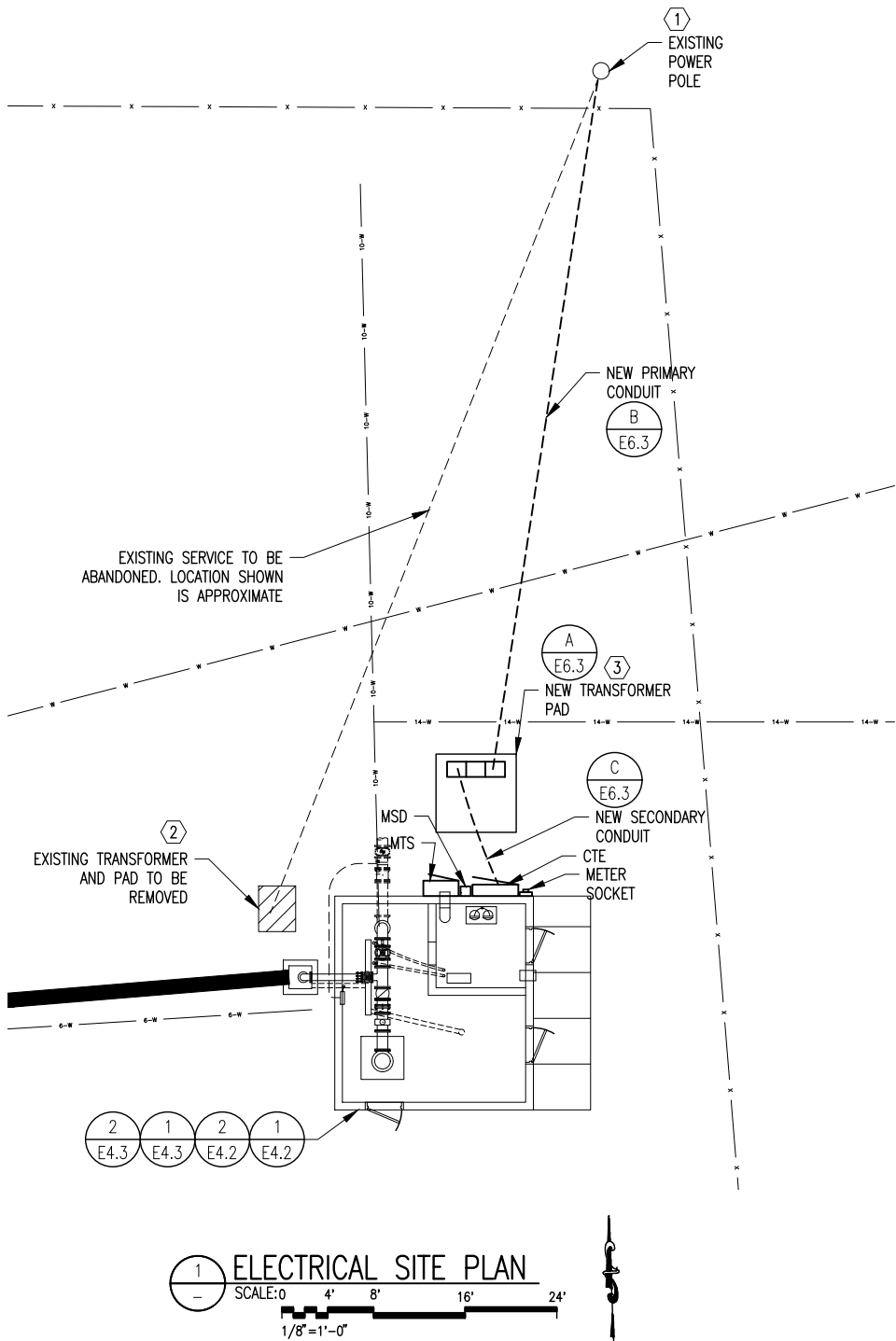
HIGHLAND CITY
WELL #3 REBUILD
ADDRESS
HIGHLAND CITY, UT

ELECTRICAL SCHEDULES

COPYRIGHT (C) 2020 BY
HEGERHORST POWER ENGINEERING
INC, AMERICAN FORK, UTAH. ALL
RIGHTS RESERVED. UNAUTHORIZED
COPYING AND/OR USE IS ILLEGAL
AND SUBJECT TO PROSECUTION.

0" VERIFY SCALE 1"
BAR IS ONE INCH ON ORIGINAL
DRAWING. IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING SCALE: AS SHOWN	
DRAWN BY: GDS	
DESIGNED BY: KBH	
ENGINEERED BY: KBH	
DATE: SEPTEMBER 2020	
SHEET NO. E3.1	HPE PROJECT NO. 20.075



1 ELECTRICAL SITE PLAN
SCALE: 0 4' 8' 16' 24'
1/8" = 1'-0"

ELECTRICAL UTILITY INSTALLATION		
UTILITY INFORMATION		
UTILITY COMPANY:	ROCKY MOUNTAIN POWER	
UTILITY COMPANY CONTACT:	CASEY WARE	
CONTACT INFORMATION:	PHONE: 435-636-6648	
WORK ORDER NUMBER:	6911020	
SERVICE PRIMARY	SUPPLIED BY:	INSTALLED BY:
PRIMARY TRENCHING/BACKFILL	-	CONTRACTOR
PRIMARY CONDUIT	CONTRACTOR	CONTRACTOR
PRIMARY CONDUCTOR	UTILITY COMPANY	UTILITY COMPANY
SERVICE TRANSFORMER	SUPPLIED BY:	INSTALLED BY:
TRANSFORMER PAD	CONTRACTOR	CONTRACTOR
TRANSFORMER	UTILITY COMPANY	UTILITY COMPANY
SERVICE SECONDARY	SUPPLIED BY:	INSTALLED BY:
SECONDARY TRENCHING/BACKFILL	-	CONTRACTOR
SECONDARY CONDUIT	CONTRACTOR	CONTRACTOR
SECONDARY CONDUCTOR	UTILITY COMPANY	UTILITY COMPANY
METERING EQUIPMENT	SUPPLIED BY:	INSTALLED BY:
METER	UTILITY COMPANY	UTILITY COMPANY
METER SOCKET	CONTRACTOR	CONTRACTOR
COMBO METER/MAIN	-	-
CURRENT TRANSFORMER ENCL.	CONTRACTOR	CONTRACTOR
CT ENCL. TO METER SOCKET WIRING	UTILITY COMPANY	UTILITY COMPANY
CT ENCL. TO METER SOCKET CONDUIT	CONTRACTOR	CONTRACTOR
MAIN SERVICE DISCONNECT	SUPPLIED BY:	INSTALLED BY:
CIRCUIT BREAKER	CONTRACTOR	CONTRACTOR
FUSED DISCONNECT SWITCH	-	-

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH FAX (801) 642-2154
AMERICAN FORK, UT 84003 ©2020
HPE PROJECT:20075
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

GENERAL NOTES:

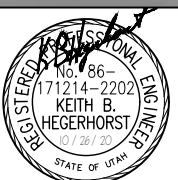
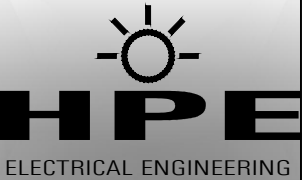
- REFER TO ONE-LINE DIAGRAM FOR CONDUIT/CONDUCTOR REQUIREMENTS.
- RMP WILL INSTALL NEW PRIMARY CONDUCTOR FROM POLE TO NEW TRANSFORMER.

SHEET KEYNOTES:

- APPROXIMATE LOCATION OF UTILITY POWER POLE.
- COORDINATE WITH UTILITY COMPANY FOR TRANSFORMER REMOVAL. CONTRACTOR SHALL REMOVE CONCRETE PAD.
- COORDINATE EXACT LOCATION OF TRANSFORMER PAD WITH OWNER DURING CONSTRUCTION. LOCATION SHOWN IS APPROXIMATE.

ROCKY MOUNTAIN POWER		COMMERCIAL / INDUSTRIAL CUSTOMER INFORMATION SHEET	
Please complete this form and return to the Estimator assigned to your job			
Business Information			
Name of Customer's Business: Highland City Corporation		Phone No.:	Request Number:
Address:		Fax No.:	
Person responsible for advance and contract billing (if different than monthly billing customer):			
Address: Street Address City, State, Zip		E-mail Address:	
Building Square Footage:		Note: Please breakdown into warehouse, office and manufacturing if applicable	
Hours of Operation (include days & hours):			
Service Description			
Desired Secondary Voltage: 3 Phase 277/480 V If 'other' list here		Note: Not all voltages may be available	
Panel Size (in Amps) 400		Number of Meters: 1 List addresses for each phase	
Nearest Pole or Equipment number:		Type of Service Desired: Underground	
Electrical Contractor: Phone #:			
Load List (attach additional sheets if necessary)			
Description	Phase and Voltage	New Load to be added	Load to be removed
HVAC (name plate rating)	1 Phase 120/240 V	-	-
Refrigeration Equipment	1 Phase 120/240 V	-	-
		Total connected Tons	0 Tons
Exhaust Fans	1 Phase 120/240 V	1	-
Gas/Fuel Pump	1 Phase 120/240 V	-	-
Small Motors (include motor codes)	3 Phase 277/480 V	2	-
Air Compressor	1 Phase 120/240 V	-	-
Swimming Pool	1 Phase 120/240 V	-	-
Largest Motor (not included above) & code	1 Phase 120/240 V	250	-
		Total connected HP	253 HP
Electric Heat	1 Phase 120/240 V	8	-
Water Heating	1 Phase 120/240 V	-	-
Lighting	1 Phase 120/240 V	0.5	-
Outlets	1 Phase 120/240 V	0.8	-
Office Equipment	1 Phase 120/240 V	-	-
Kitchen Equipment	1 Phase 120/240 V	-	-
Computers, Magnetic Power Supplies	1 Phase 120/240 V	0.6	-
Machinery	1 Phase 120/240 V	-	-
Thermoplastic Injection Equipment	1 Phase 120/240 V	-	-
Elevators	1 Phase 120/240 V	-	-
Boiler	1 Phase 120/240 V	-	-
Snow Melting	1 Phase 120/240 V	-	-
Signs	1 Phase 120/240 V	-	-
X-Ray Equipment	1 Phase 120/240 V	-	-
Washer/Drum	1 Phase 120/240 V	-	-
Miscellaneous	1 Phase 120/240 V	1.0	-
Heat Exchanger	1 Phase 120/240 V	-	-
Humidifier	1 Phase 120/240 V	-	-
Future	1 Phase 120/240 V	-	0
		Total connected kW	10.9 kW
It is important to provide the most accurate information available, as it is used by the Estimator to design PacificCorp's facilities and determine the customer's costs. Please sign and date this form before giving it to your estimator.			
Customer Signature		Date	
Name:			
• You may wish to consult a trained professional (electrician, engineer, etc.) prior to providing the information to your estimator.			
• Commercial metering can have many restrictions that should be discussed with the estimator prior to the purchase and installation of your metering equipment. There are also restrictions regarding meter marking. If your plans call for meter marking, please discuss this with your estimator.			
• Meters larger than 350 three phase or 150 single phase will require approval by our engineering department prior to installation in order to determine the acceptable starting current.			

H.P.E. INC. ELECTRICAL ENGINEERS
POWER, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED
708 EAST 50 SOUTH, AMERICAN FORK, UTAH, 84003
TEL. (801) 642-2051
FAX. (801) 642-2154



REV.	DATE	DESCRIPTION	BY
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

HIGHLAND CITY
WELL #3 REBUILD
ADDRESS
HIGHLAND CITY, UT
ELECTRICAL SITE
PLAN

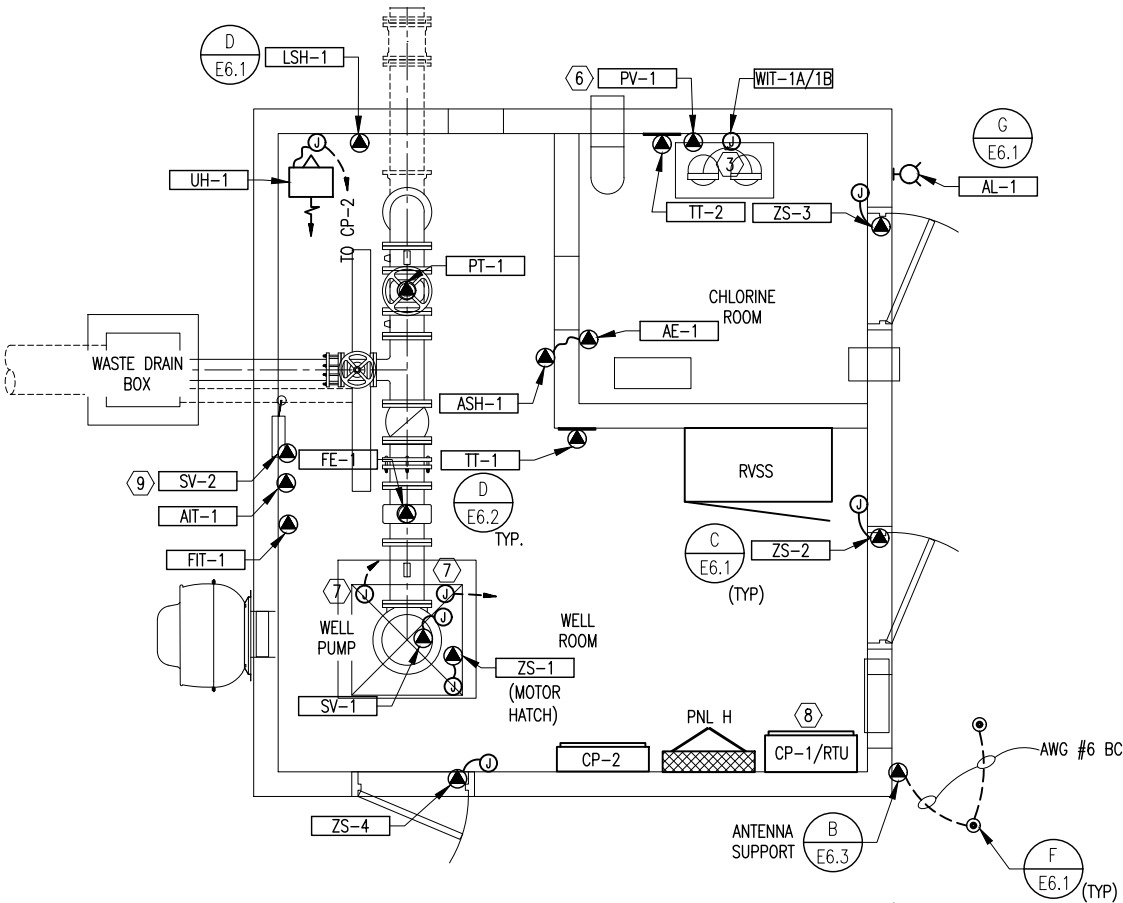
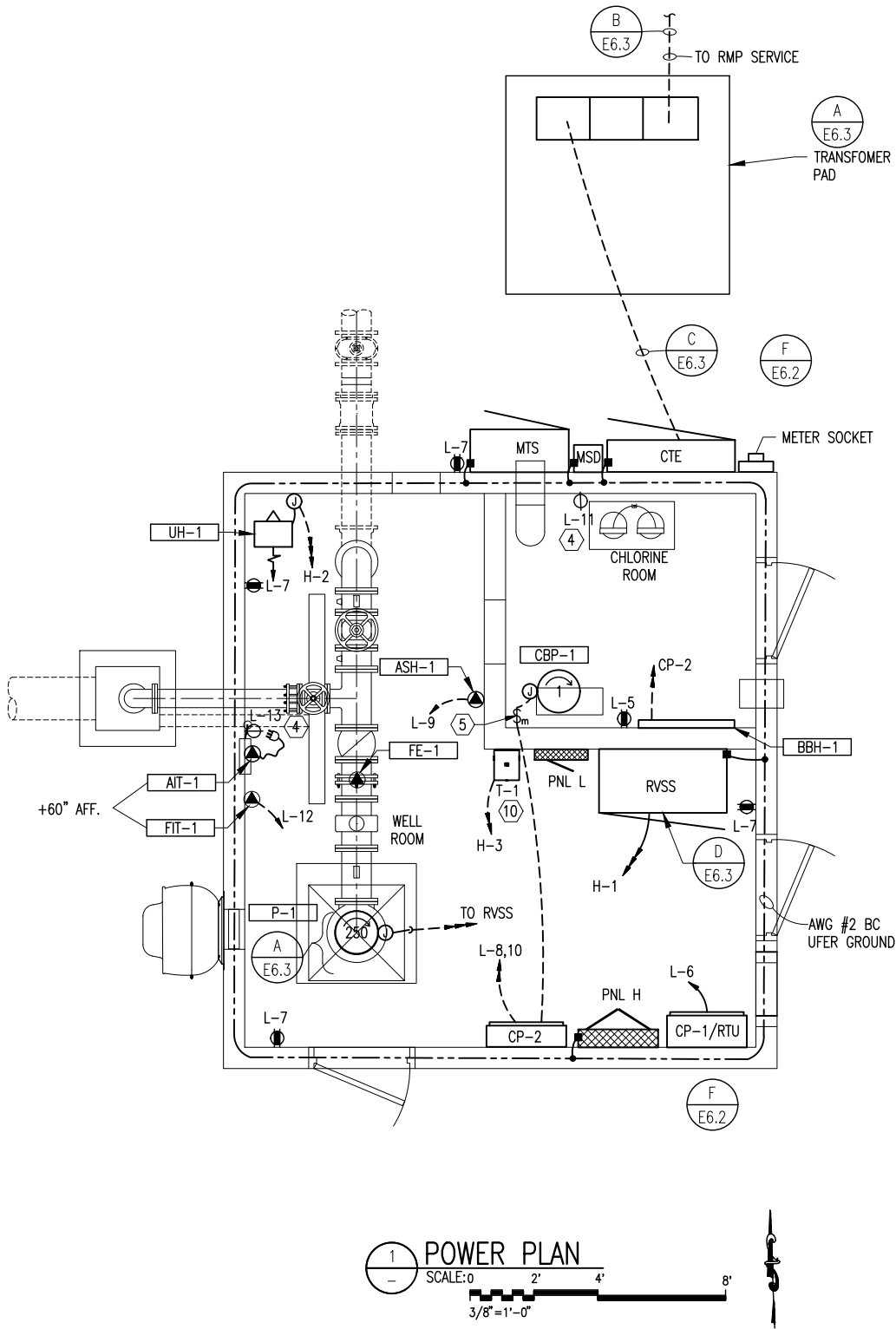
COPYRIGHT (C) 2020 BY
HEGERHORST POWER ENGINEERING
INC, AMERICAN FORK, UTAH. ALL
RIGHTS RESERVED. UNAUTHORIZED
COPYING AND/OR USE IS ILLEGAL
AND SUBJECT TO PROSECUTION.

0" VERIFY SCALE 1"
BAR IS ONE INCH ON ORIGINAL
DRAWING. IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING SCALE:
AS SHOWN
DRAWN BY:
GDS
DESIGNED BY:
KBH
ENGINEERED BY:
KBH
DATE:
SEPTEMBER 2020
SHEET NO. E4.1 HPE PROJECT NO. 20.075

SHEET KEYNOTES (CONTINUED):

10. INSTALL TRANSFORMER ABOVE PANELBOARD L.



H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH AMERICAN FORK, UT 84003 FAX (801) 642-2154
HPE PROJECT:20075
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

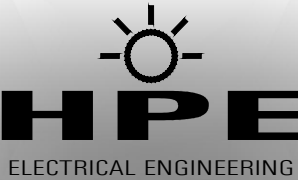
GENERAL NOTES:

1. REFER TO ONE-LINE DIAGRAMS, PANEL SCHEDULES AND CONDUIT/CONDUCTOR TABLE FOR WIRE AND CONDUIT REQUIREMENTS.

SHEET KEYNOTES:

1. INSTALL A RECESSED 4X4 ELECTRICAL BOX FOR THE CHLORINE LEAK ALARM LIGHT. LOCATE 6-IN ABOVE DOOR FRAME.
2. INSTALL A RECESSED ELECTRICAL JUNCTION BOX FOR THE CHLORINE GAS DETECTOR.
3. INSTALL A RECESSED 4X4 JUNCTION BOX FOR THE CHLORINE SCALE. INSTALL 6-IN ABOVE TOP OF SCALE INDICATOR/TRANSMITTER.
4. INSTALL A RECESSED 2X4 ELECTRICAL BOX FOR THE CHLORINE SCALE POWER OUTLET. LOCATE OUTLET 6-IN ABOVE INDICATOR/TRANSMITTER.
5. JUNCTION BOX FOR CHLORINE BOOSTER PUMP DISCONNECT MEANS. LOCATE THE 4X4 BOX ABOVE THE MOTOR HEIGHT.
6. VERIFY LOCATION OF DOSING VALVE PRIOR TO CONDUIT ROUGH-IN.
7. INSTALL A J-BOX AND CONDUIT FOR FUTURE WELL LEVEL TRANSMITTER AND FUTURE HIGH DISCHARGE PRESSURE SWITCH. DO NOT COMBINE INTO ONE CONDUIT, AS SIGNALS NEED TO BE IN SEPARATE CONDUITS.
8. CONDUITS TO CP-1 SHALL ENTER SIDES OR BOTTOM. NO TOP ENTRY PERMITTED.
9. FIELD LOCATE RESIDUAL CHLORINE SAMPLE LINE SOLENOID VALVE ABOVE OR NEAR ANALYZER.

H.P.E. INC. ELECTRICAL ENGINEERS
POWER, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED
708 EAST 50 SOUTH, AMERICAN FORK, UTAH, 84003
TEL. (801) 642-2051
FAX. (801) 642-2154



REV:	DATE:	DESCRIPTION:	BY:
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

HIGHLAND CITY
WELL #3 REBUILD
ADDRESS
HIGHLAND CITY, UT

ELECTRICAL
PLANS

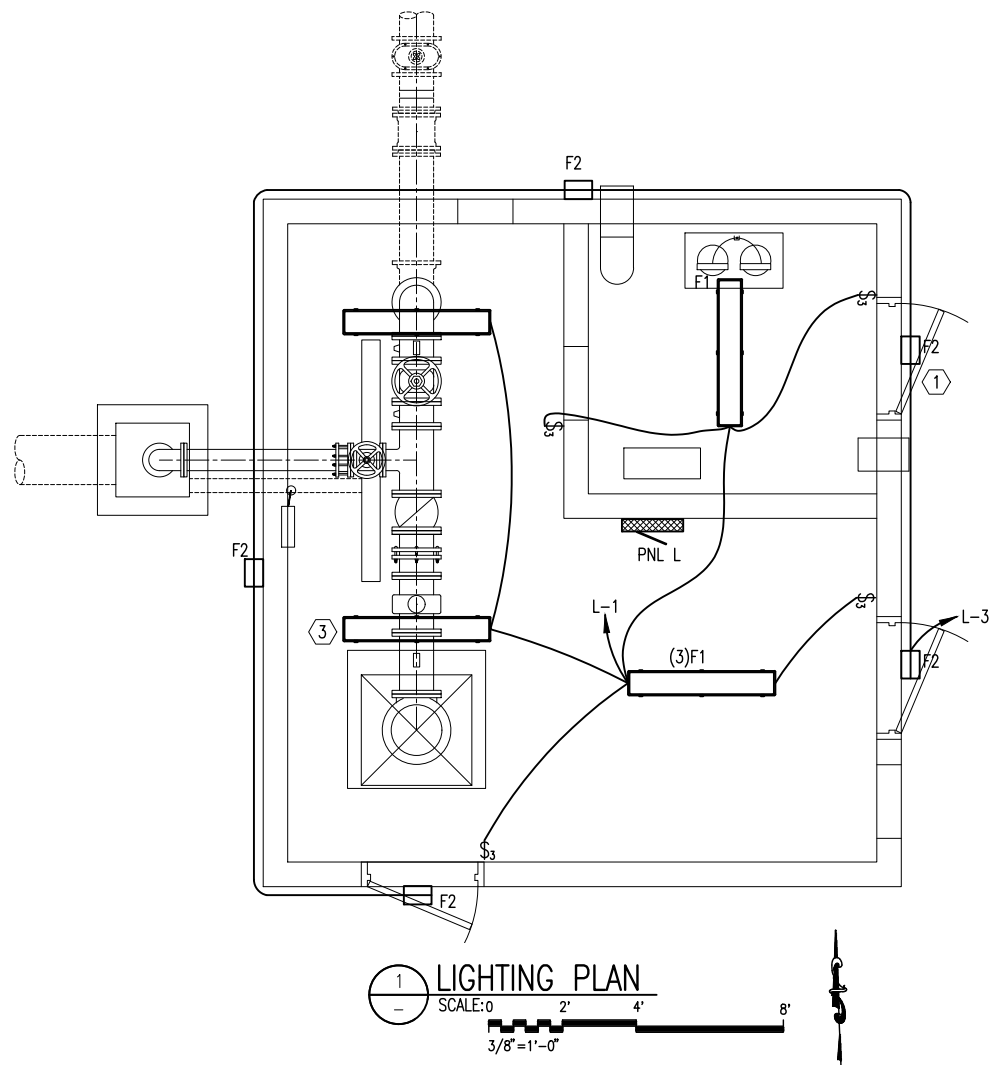
COPYRIGHT (C) 2020 BY
HEGERHORST POWER ENGINEERING
INC, AMERICAN FORK, UTAH. ALL
RIGHTS RESERVED. UNAUTHORIZED
COPYING AND/OR USE IS ILLEGAL
AND SUBJECT TO PROSECUTION.

0" VERIFY SCALE 1"
BAR IS ONE INCH ON ORIGINAL
DRAWING. IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING SCALE:
AS SHOWN
DRAWN BY:
GDS
DESIGNED BY:
KBH
ENGINEERED BY:
KBH
DATE:
SEPTEMBER 2020
SHEET NO.

E4.2

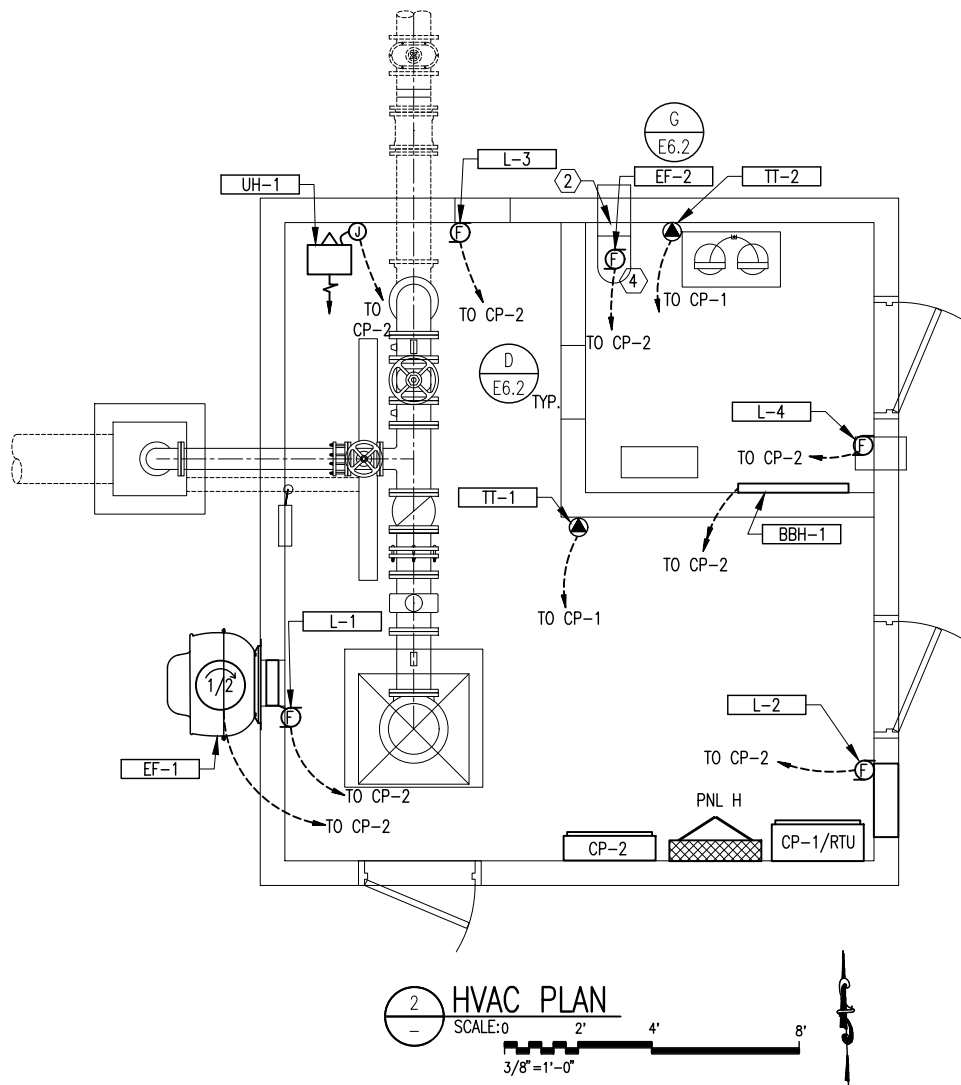
HPE PROJECT NO.
20.075



FAN SCHEDULE									
ID	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	AIR TYPE	AIR		ELECTRICAL		PHYSICAL
					AIRFLOW RATE (CFM)	TOTAL STATIC PRESSURE (IN WATER)	MOTOR SIZE (HP)	VOLTS/PH/Hz	
EF-1	GREENHECK/CW-161-B	SEE PLANS	DIRECT INLINE	EXHAUST	3161	0.125	1/2	120/1/60	24'-7/8 / 24'-7/8 / 28'-1/4 / 64
EF-2	FANTECH FR250	SEE PLANS	DIRECT INLINE	EXHAUST	553	0.4	241 (WATTS)	120/1/60	13'-1/4 / 13'-1/4 / 9'-1/4 / 13

HEATER SCHEDULE									
ID	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	TYPE	AIR		ELECTRICAL		PHYSICAL
					AIRFLOW RATE (CFM)	LOAD (BTUH)	KW	VOLTS/PH	
UH-1	QMARK / MUH-05-41	PUMP ROOM	UNIT HEATER	ELEC	350	17,000	5	480/3	7'-1/2 / 14' / 16' / 27
BBH-1	QMARK CB0754	CHLORINE ROOM	BASEBOARD HEATER	ELEC	-	2560	0.75	240/1	34' / 2'-3/8 / 8'-3/8 / 10

LOUVER SCHEDULE									
ID	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	AIR TYPE	AIR		PHYSICAL		NOTES
					MAXIMUM AIRFLOW RATE (CFM)	STATIC PRESSURE (IN WATER)	LENGTH	WIDTH	
L-1	UNITED ENERTECH/AFL-D-4	PUMP ROOM	LOUVER	EXHAUST			24' / 24' / 4		
L-2	UNITED ENERTECH/AFL-D-4	PUMP ROOM	DRAINABLE	INTAKE			24' / 54' / 4		
L-3	UNITED ENERTECH/AFL-D-4	PUMP ROOM	DRAINABLE	INTAKE			24' / 24' / 4		
L-4		CHLORINE ROOM		INTAKE					



H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH AMERICAN FORK, UT 84003 FAX (801) 642-2154
HPE PROJECT:20075
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

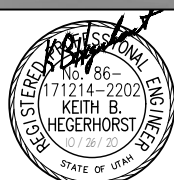
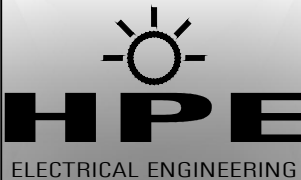
GENERAL NOTES:

1. FIXTURE SCHEDULE ON E3.1.
2. WIRE AND CONDUIT REQUIREMENTS SHOWN ON PANEL SCHEDULE AND CONDUIT/CONDUCTOR TABLE ON E1.2 OR I&C ONE-LINE DIAGRAM ON E2.1.
3. VERIFY ACTUAL LOCATION OF LOUVER ACTUATORS PRIOR TO CONDUIT ROUGH-IN. LOCATION SHOWN MAY NOT BE ACCURATE.
4. HEATING AND VENTILATION EQUIPMENT SHALL BE CONTROLLED BY CP-1, VIA CONTROLLERS IN CP-2.

SHEET KEYNOTES:

1. INSTALL OUTSIDE LIGHTS 8" ABOVE DOOR TO FIXTURE BOTTOM. MATCH HEIGHT FOR ALL FIXTURES.
2. PROVIDE WITH BACKDRAFT DAMPER.
3. ADJUST LOCATION AS REQUIRED TO ACCOMMODATE WELL ROOF HATCH.
4. CHLORINE ROOM EXHAUST FAN DUCT SHALL EXTEND TO +12-IN ABOVE THE FLOOR. FIELD LOCATE FAN IN DUCT AT SERVICABLE HEIGHT. PROVIDE MANUAL STARTER ON WALL NEAR FAN AND LABEL AS "CHLORINE ROOM EXHAUST FAN DISCONNECT".

H.P.E. INC. ELECTRICAL ENGINEERS
POWER, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED
708 EAST 50 SOUTH, AMERICAN FORK, UTAH, 84003
TEL. (801) 642-2051
FAX. (801) 642-2154



REV.	DATE	DESCRIPTION	BY
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

HIGHLAND CITY
WELL #3 REBUILD
ADDRESS
HIGHLAND CITY, UT

LIGHTING & HVAC PLANS

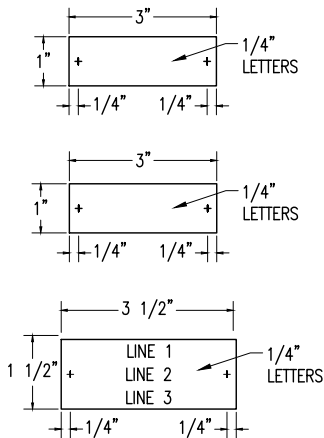
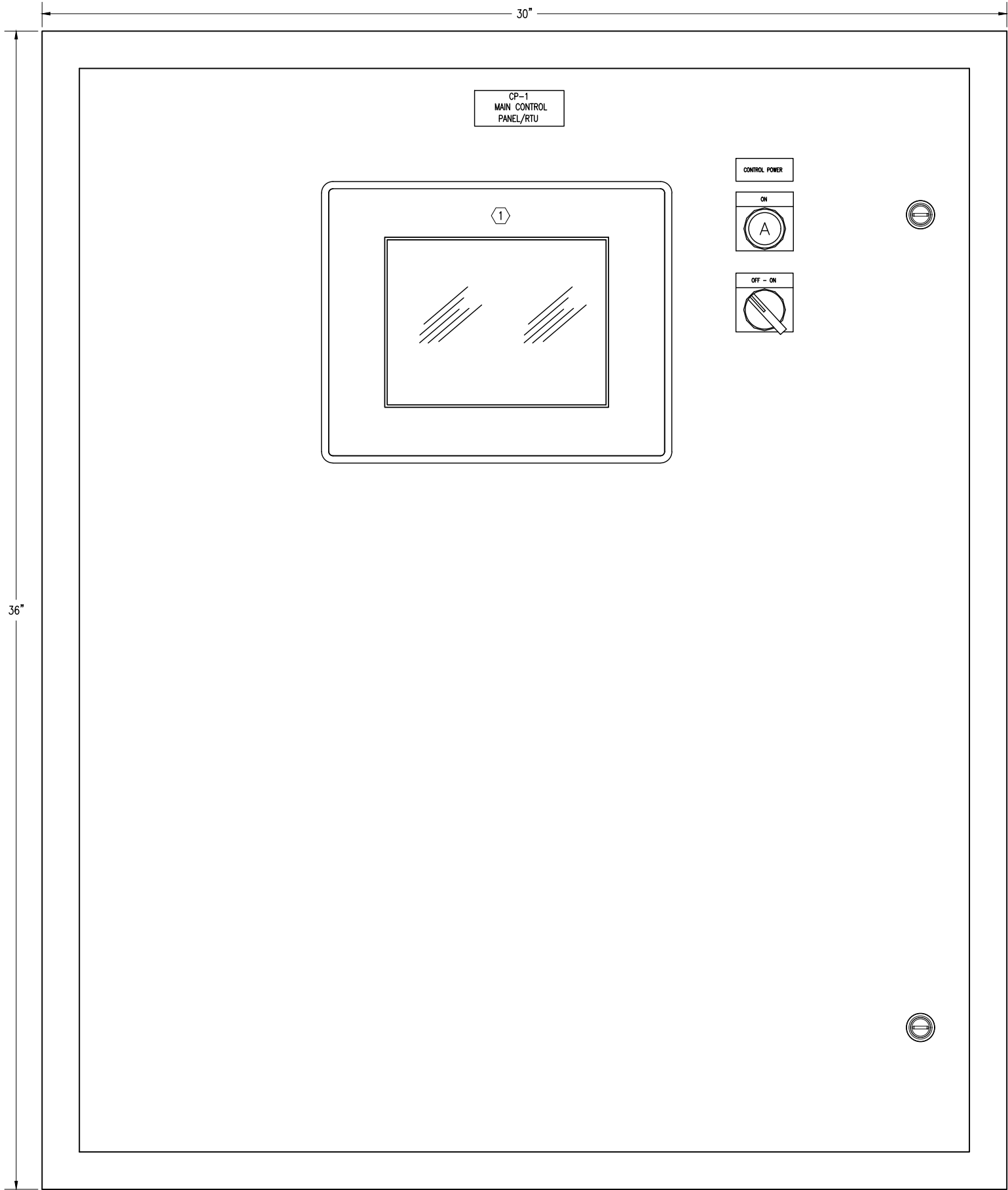
COPYRIGHT (C) 2020 BY
HEGERHORST POWER ENGINEERING
INC, AMERICAN FORK, UTAH. ALL
RIGHTS RESERVED. UNAUTHORIZED
COPYING AND/OR USE IS ILLEGAL
AND SUBJECT TO PROSECUTION.

0" VERIFY SCALE 1"
BAR IS ONE INCH ON ORIGINAL
DRAWING. IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING SCALE:
AS SHOWN
DRAWN BY:
GDS
DESIGNED BY:
KBH
ENGINEERED BY:
KBH
DATE:
SEPTEMBER 2020
SHEET NO. HPE PROJECT NO.

E4.3

20.075



2 NAMEPLATE DETAIL
SCALE: 6" = 1'-0"

TERMINAL ID	CONTROL PANEL
1	CP-1 MAIN CONTROL PANEL/RTU
2	CP-2
3	RVSS MOTOR CONTROLLER

CP-1 MAIN CONTROL PANEL I/O LIST				
DISCRETE INPUTS				
DESCRIPTION	FROM	TO	NOTES	
CHLORINE BOOSTER PUMP HOA IN AUTO	CP-2	CP-1		
CHLORINE BOOSTER PUMP HOA IN HAND	CP-2	CP-1		
CHLORINE BOOSTER PUMP RUNNING	CP-2	CP-1		
CHLORINE LEAK ALARM	ASH-1	CP-1		
CHLORINE RM. BBH HOA IN AUTO	CP-2	CP-1		
CHLORINE RM. BBH HOA IN HAND	CP-2	CP-1		
CHLORINE RM. BBH HOA ON	CP-2	CP-1		
CHLORINE RM. EXHAUST FAN (EF-2) HOA IN AUTO	CP-2	CP-1		
CHLORINE RM. EXHAUST FAN (EF-2) HOA IN HAND	CP-2	CP-1		
CHLORINE RM. EXHAUST FAN (EF-2) ON	CP-2	CP-1		
CHLORINE ROOM DOOR OPEN	ZS-3	CP-1		
WASTE VALVE IN SYSTEM POSITION	V-2	CP-1	1)	
WASTE VALVE IN WASTE POSITION	V-2	CP-1	1)	
WELL HIGH DISCHARGE PRESSURE	PS-1	CP-1	1)	
WELL ROOF HATCH OPEN	ZS-1	CP-1		
WELL ROOM DOOR OPEN	ZS-2	CP-1		
WELL ROOM EXHAUST FAN (EF-1) HOA IN AUTO	CP-2	CP-1		
WELL ROOM EXHAUST FAN (EF-1) HOA IN HAND	CP-2	CP-1		
WELL ROOM EXHAUST FAN (EF-1) ON	CP-2	CP-1		
WELL ROOM HIGH WATER ALARM	LSH-1	CP-1		
WELL ROOM UNIT HEATER (UH-1) HOA IN AUTO	CP-2	CP-1		
WELL ROOM UNIT HEATER (UH-1) HOA IN HAND	CP-2	CP-1		
WELL ROOM UNIT HEATER (UH-1) ON	CP-2	CP-1		
WELL RVSS FAULT	RVSS	CP-1		
WELL RVSS HOR IN HAND	RVSS	CP-1		
WELL RVSS HOR IN REMOTE	RVSS	CP-1		
WELL RVSS ON	RVSS	CP-1		

NOTES: 1) FUTURE DEVICE

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH AMERICAN FORK, UT 84003 FAX (801) 642-2154
HPE PROJECT:20075
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST ©2020

GENERAL NOTES:

- CP-1 BUILT AND PROVIDED BY SCADA CONTRACTOR. ENCLOSURE SHALL BE PROVIDED BY SCADA CONTRACTOR (SC) FOR INSTALLATION BY ELECTRICAL CONTRACTOR (EC). CONDUCTORS SHALL BE INSTALLED TO ENCLOSURE BY EC. LEAVE 5'-FT OF WIRE FOR TERMINATIONS BY SC. EC TO IDENTIFY WIRES TO EACH DEVICE.
- ENCLOSURE DIMENSIONS DETERMINED BY SC BASED ON REQUIRED COMPONENTS. DIMENSIONS SHOWN ARE AN EXAMPLE ONLY. COORDINATE WITH IC TECH AS REQUIRED DURING CONSTRUCTION.

SHEET KEYNOTES:

- OPERATOR TOUCHSCREEN: PROVIDE AND INSTALL AN 8-INCH COLOR TOUCH SCREEN.

DISCRETE OUTPUTS			
DESCRIPTION	FROM	TO	NOTES
CHLORINE BOOSTER PUMP RUN	CP-1	CP-2	
CHLORINE LEAK ALARM LIGHT	CP-1	AL-1	
CHLORINE LEAK ALARM REMOTE RESET	CP-1	ASH-1	
CHLORINE RM BASEBOARD HTR CMD ON	CP-1	CP-2	
CHLORINE RM EXHAUST FAN (EF-2) RUN	CP-1	CP-2	
LUBR SOLENOID VALVE OPLN	CP-1	SV-1	
UNIT HEATER NO. 1 CMD ON	CP-1	CP-2	
WASTE VALVE PILOT SOLENOID VALVE	CP-1	V-2	1)
WELL PUMP RUN	CP-1	RVSS	
WELL ROOM EXHAUST FAN (EF-1) RUN	CP-1	CP-2	

NOTES: 1) FUTURE DEVICE

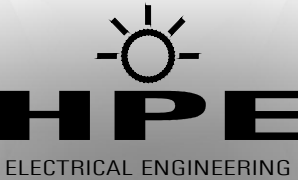
ANALOG INPUTS			
DESCRIPTION	FROM	TO	NOTES
CHLORINE RESIDUAL	AIT-1	CP-1	
CHLORINE ROOM TEMPERATURE	TT-2	CP-1	
CHLORINE TANK 1A WEIGHT	WIT-1A/1B	CP-1	
CHLORINE TANK 1B WEIGHT	WIT-1A/1B	CP-1	
STATION DISCHARGE LOW	FIT-1	CP-1	
STATION DISCHARGE PRESSURE	PT-1	CP-1	
WELL ROOM TEMPERATURE	TT-1	CP-1	
WELL LEVEL	LT-1	CP-1	1)

NOTES: 1) FUTURE DEVICE

ANALOG OUTPUTS			
DESCRIPTION	FROM	TO	NOTES
CHLORINE PROPORTIONING VALVE DOSE RATE	CP-1	PV-1	

NOTES: 1) FUTURE DEVICE

H.P.E. INC. ELECTRICAL ENGINEERS
POWER, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED
708 EAST 50 SOUTH, AMERICAN FORK, UTAH, 84003
TEL. (801) 642-2051
FAX. (801) 642-2154



REV.	DATE:	DESCRIPTION:	BY:
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

HIGHLAND CITY
WELL #3 REBUILD
ADDRESS
HIGHLAND CITY, UT

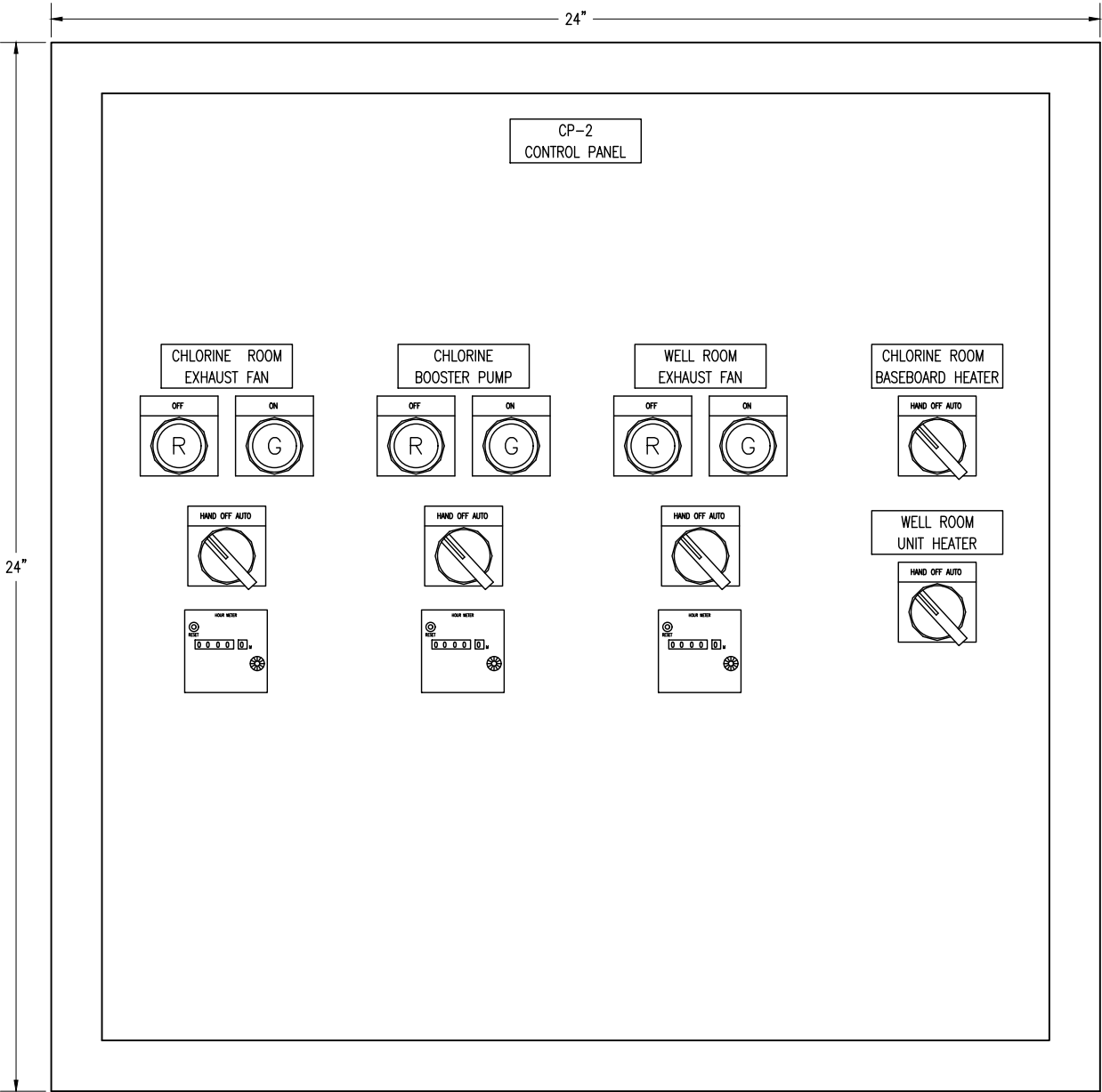
CONTROL PANEL
CP-1
ARRANGEMENT

COPYRIGHT (C) 2020 BY
HEGERHORST POWER ENGINEERING
INC, AMERICAN FORK, UTAH. ALL
RIGHTS RESERVED. UNAUTHORIZED
COPYING AND/OR USE IS ILLEGAL
AND SUBJECT TO PROSECUTION.

0" VERIFY SCALE 1"
BAR IS ONE INCH ON ORIGINAL
DRAWING. IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING SCALE:
AS SHOWN
DRAWN BY:
GDS
DESIGNED BY:
KBH
ENGINEERED BY:
KBH
DATE:
SEPTEMBER 2020
SHEET NO. E5.1 HPE PROJECT NO. 20.075

1 CONTROL PANEL CP-1 ARRANGEMENT
SCALE: 6" = 1'-0"



1 CP-2 PANEL ARRANGEMENT
- SCALE: 6" = 1'-0"

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH AMERICAN FORK, UT 84003 FAX (801) 642-2154
HPE PROJECT:20075 ©2020
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

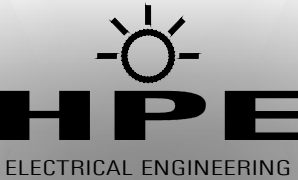
GENERAL NOTES:

- ENCLOSURE DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR. DIMENSIONS ARE APPROXIMATE.
- FOR TYPICAL WIRING DIAGRAM, REFER TO E2.6 AND E2.7. MODIFY AS REQUIRED FOR THE DEVICES SUPPLIED.

SHEET KEYNOTES:

- NOT USED.

H.P.E. INC. ELECTRICAL ENGINEERS
POWER, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED
708 EAST 50 SOUTH, AMERICAN FORK, UTAH, 84003
TEL. (801) 642-2051
FAX. (801) 642-2154



REV.	DATE:	DESCRIPTION:	BY:
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

HIGHLAND CITY
WELL #3 REBUILD
ADDRESS
HIGHLAND CITY, UT

CONTROL PANEL
CP-2
ARRANGEMENT

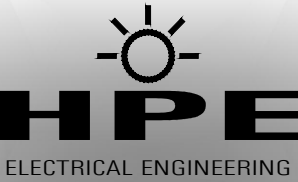
COPYRIGHT (C) 2020 BY
HEGERHORST POWER ENGINEERING
INC, AMERICAN FORK, UTAH. ALL
RIGHTS RESERVED. UNAUTHORIZED
COPYING AND/OR USE IS ILLEGAL
AND SUBJECT TO PROSECUTION.

0" VERIFY SCALE 1"
BAR IS ONE INCH ON ORIGINAL
DRAWING. IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING SCALE:
AS SHOWN
DRAWN BY:
GDS
DESIGNED BY:
KBH
ENGINEERED BY:
KBH

DATE:
SEPTEMBER 2020

SHEET NO. E5.2	HPE PROJECT NO. 20.075
-------------------	---------------------------



REV.	DATE:	DESCRIPTION:	BY:
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

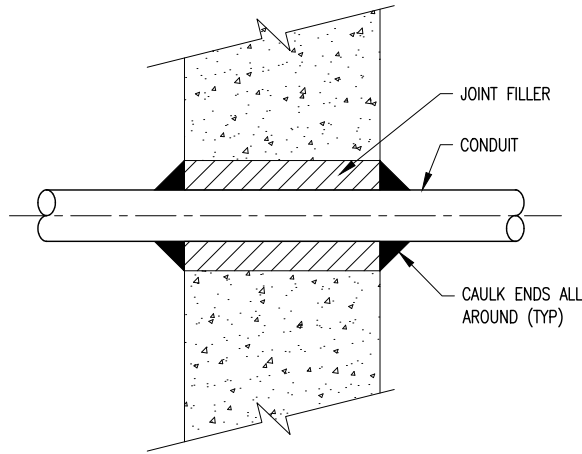
HIGHLAND CITY
WELL #3 REBUILD
ADDRESS
HIGHLAND CITY, UT

ELECTRICAL
DETAILS SHT. 1

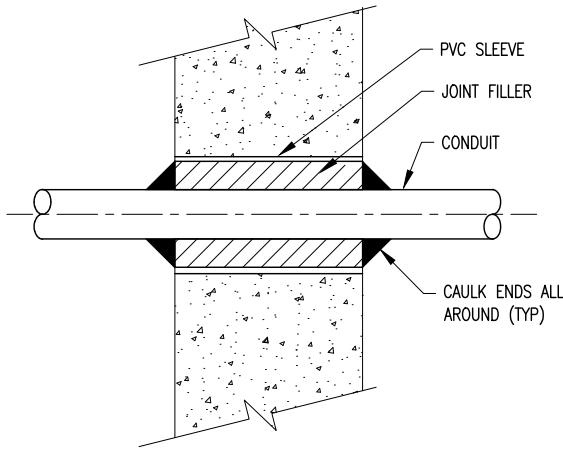
COPYRIGHT (C) 2020 BY
HEGERHORST POWER ENGINEERING
INC, AMERICAN FORK, UTAH. ALL
RIGHTS RESERVED. UNAUTHORIZED
COPYING AND/OR USE IS ILLEGAL
AND SUBJECT TO PROSECUTION.

0" VERIFY SCALE 1"
BAR IS ONE INCH ON ORIGINAL
DRAWING. IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES ACCORDINGLY.

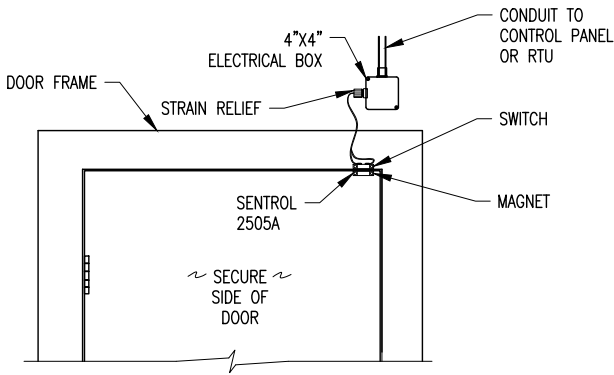
DRAWING SCALE: AS SHOWN	
DRAWN BY: GDS	
DESIGNED BY: KBH	
ENGINEERED BY: KBH	
DATE: SEPTEMBER 2020	
SHEET NO. E6.1	HPE PROJECT NO. 20.075



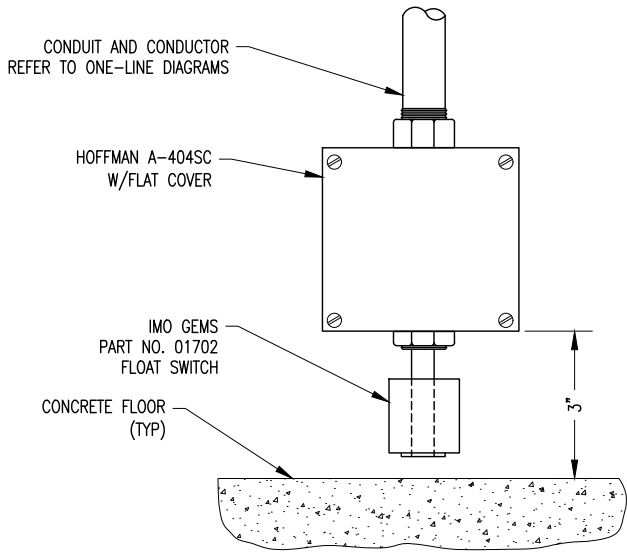
A EXISTING WALL CONDUIT PENETRATION
SCALE: 3" = 1'-0"



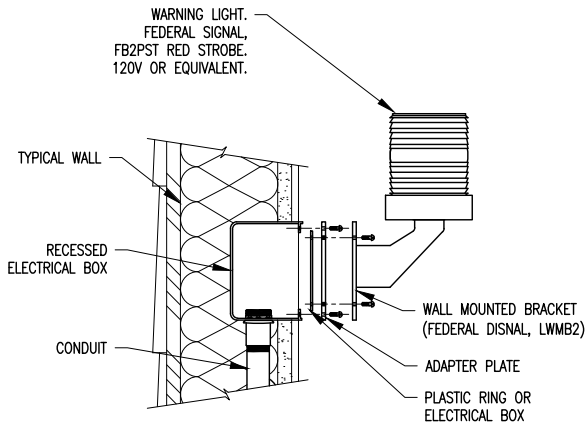
B NEW WALL CONDUIT PENETRATION
SCALE: 3" = 1'-0"



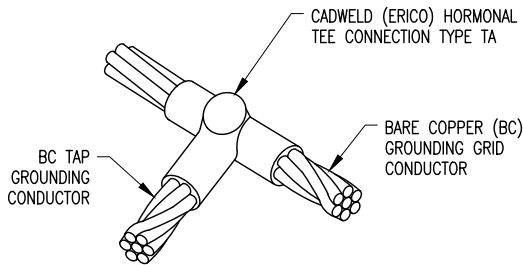
C DOOR POSITION SWITCH
SCALE: 1" = 1'-0"



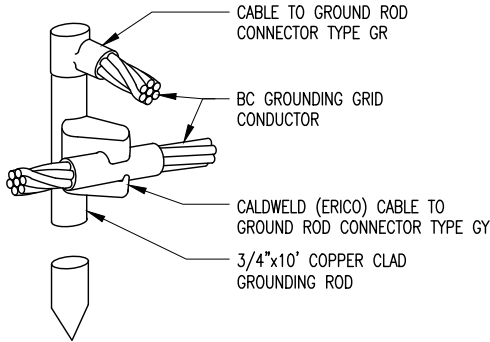
D FLOOR HIGH WATER SWITCH
SCALE: 6" = 1'-0"



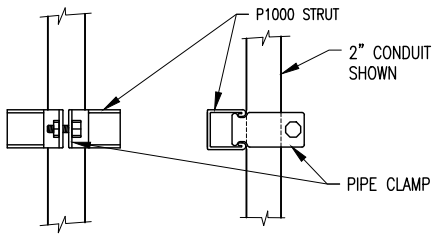
G ALARM LIGHT INSTALLATION
SCALE: 3" = 1'-0"



E WELDED GROUND CONNECTION
SCALE: 1" = 1'-0"



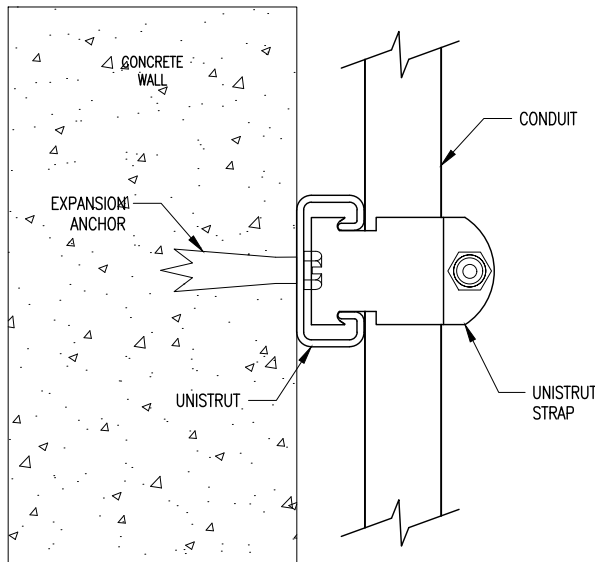
F GROUND ROD CONNECTION
SCALE: 6" = 1'-0"



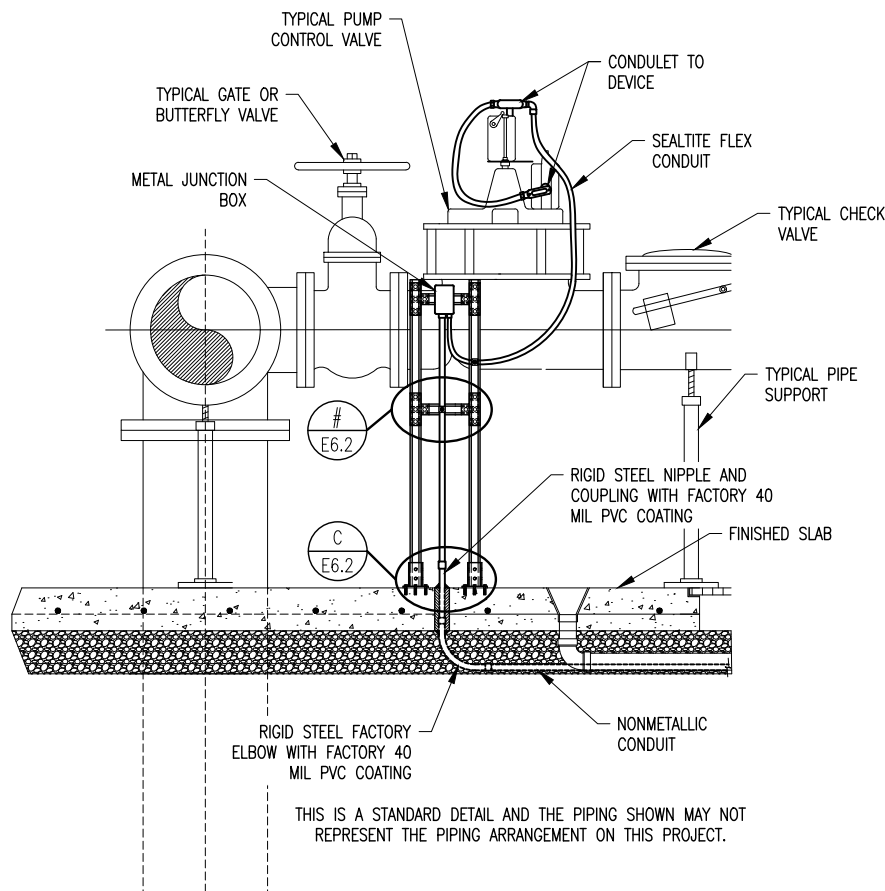
CONDUIT PIPE CLAMPS*			
SIZE	EMT	RGS	EMT/RGS
1/2"	P1426	P1111	-
3/4"	P1427	P1112	P1212
1"	P1428	P1113	P1213
1-1/4"	P1429	P1114	P1214
1-1/2"	P1430	P1115	P1215
2"	P1431	P1117	P1217
2-1/2"	P1118	P1118	-
3"	P1119	P1119	-
3-1/2"	P1120	P1120	-
4"	P1121	P1121	-

* = SUPPLIED WITH SLOTTED
HEAD SCREW AND NUT

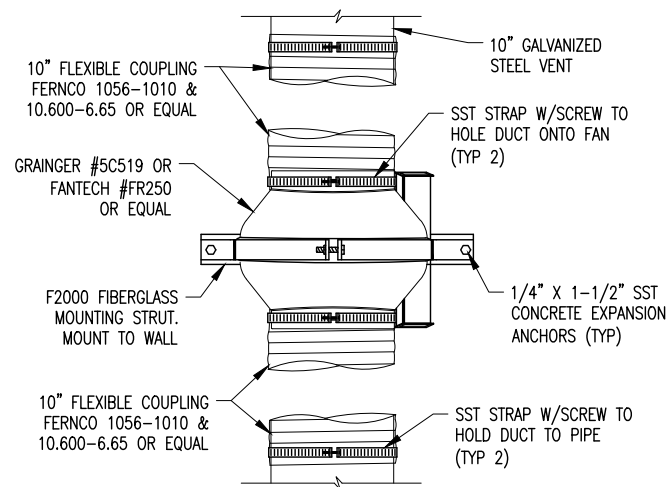
H CONDUIT SUPPORT CLAMP
SCALE: 3" = 1'-0"



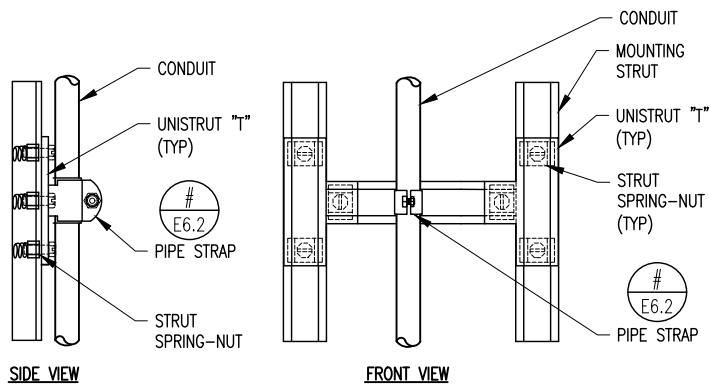
I CONDUIT SUPPORT
SCALE: 6" = 1'-0"



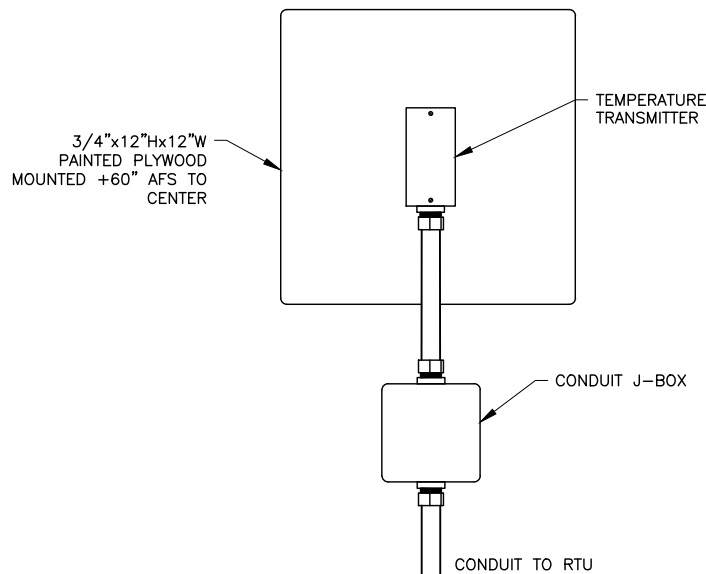
A CONDUIT SUPPORT
SCALE: 1" = 1'-0"



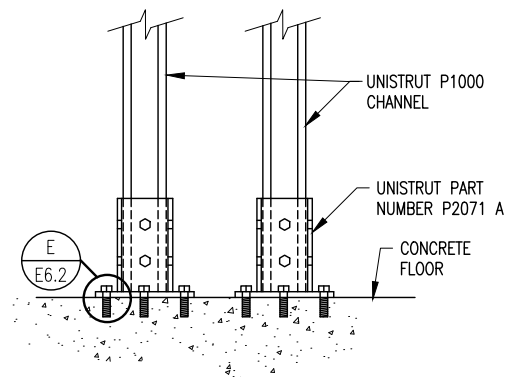
F 10 INCH INLINE DUCT FAN DETAIL
SCALE: 1 1/2" = 1'-0"



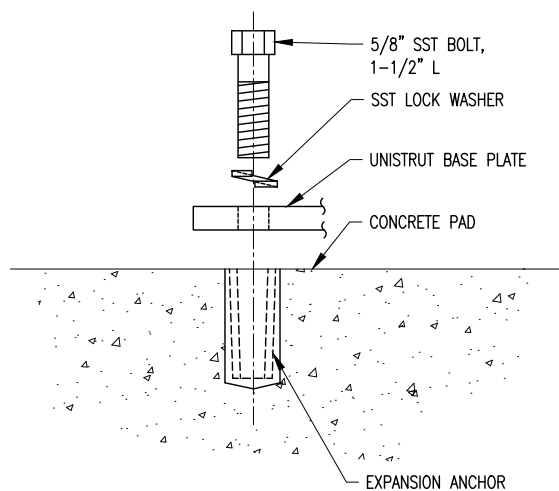
B SUPPORT BRACE DETAIL
SCALE: 3" = 1'-0"



D TEMPERATURE TRANSMITTER INSTALLATION
SCALE: 3" = 1'-0"



C SUPPORT BASE DETAIL
SCALE: 3" = 1'-0"

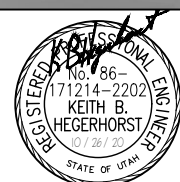


E BASE ANCHOR DETAIL
SCALE: 6" = 1'-0"

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH AMERICAN FORK, UT 84003 FAX (801) 642-2154
HPE PROJECT:20075
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

H.P.E. INC. ELECTRICAL ENGINEERS
POWER, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED
708 EAST 50 SOUTH, AMERICAN FORK, UTAH, 84003
TEL. (801) 642-2051
FAX. (801) 642-2154

HPE
ELECTRICAL ENGINEERING



REV.	DATE:	DESCRIPTION:	BY:
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

**HIGHLAND CITY
WELL #3 REBUILD
ADDRESS
HIGHLAND CITY, UT**

**ELECTRICAL
DSTAILS SHT. 2**

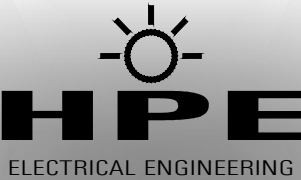
COPYRIGHT (C) 2020 BY
HEGERHORST POWER ENGINEERING
INC, AMERICAN FORK, UTAH. ALL
RIGHTS RESERVED. UNAUTHORIZED
COPYING AND/OR USE IS ILLEGAL
AND SUBJECT TO PROSECUTION.

0" VERIFY SCALE 1"
BAR IS ONE INCH ON ORIGINAL
DRAWING. IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING SCALE:
AS SHOWN
DRAWN BY:
GDS
DESIGNED BY:
KBH
ENGINEERED BY:
KBH
DATE:
SEPTEMBER 2020
SHEET NO. HPE PROJECT NO.

E6.2

20.075



REV.	DATE:	DESCRIPTION:	BY:
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

HIGHLAND CITY
WELL #3 REBUILD
ADDRESS
HIGHLAND CITY, UT

ELECTRICAL
DETAILS SHT. 3

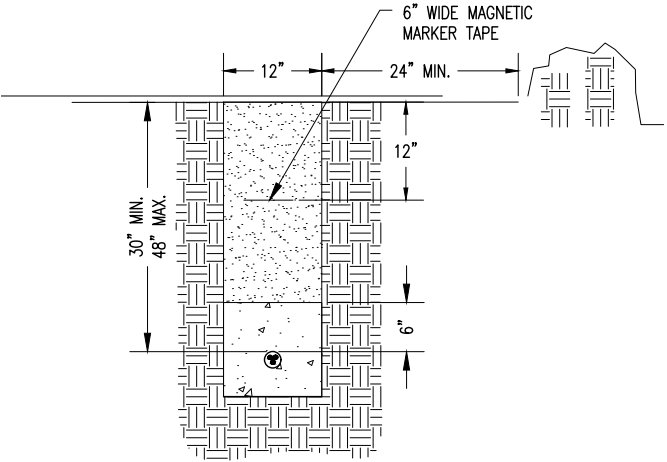
COPYRIGHT (C) 2020 BY
HEGERHORST POWER ENGINEERING
INC, AMERICAN FORK, UTAH. ALL
RIGHTS RESERVED. UNAUTHORIZED
COPYING AND/OR USE IS ILLEGAL
AND SUBJECT TO PROSECUTION.

0" VERIFY SCALE 1"
BAR IS ONE INCH ON ORIGINAL
DRAWING. IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES ACCORDINGLY.

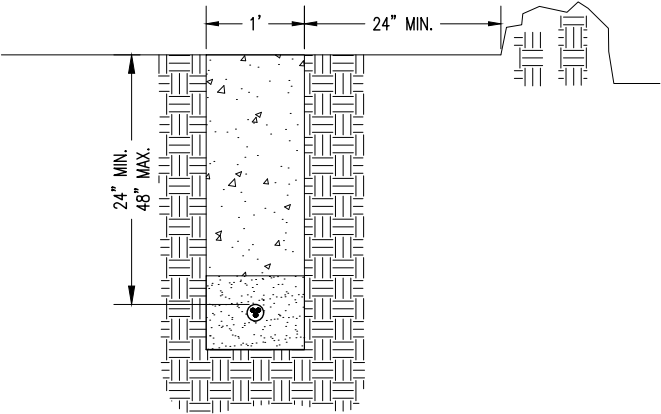
DRAWING SCALE:
AS SHOWN
DRAWN BY:
GDS
DESIGNED BY:
KBH
ENGINEERED BY:
KBH

DATE:
SEPTEMBER 2020

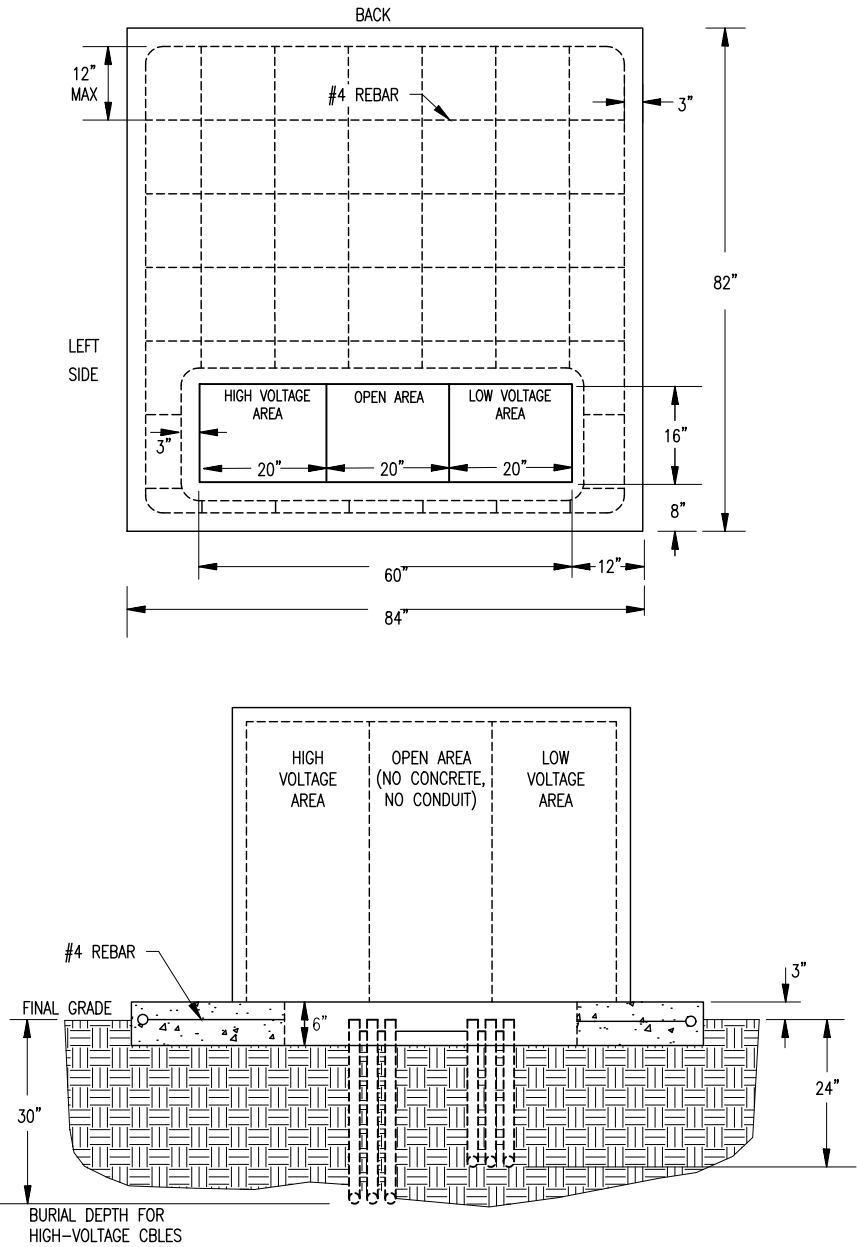
SHEET NO. E6.3 HPE PROJECT NO. 20.075



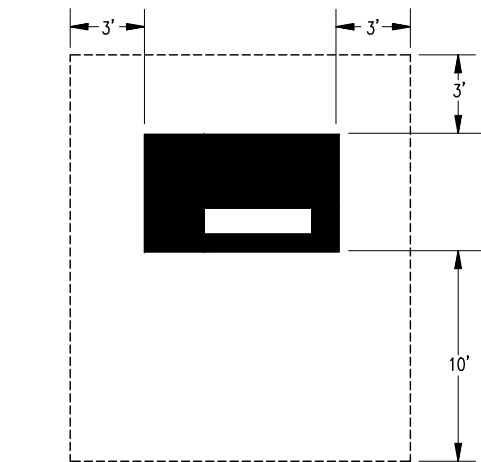
B RMP PRIMARY TRENCH INSTALLATION
SCALE: 1" = 1'-0"



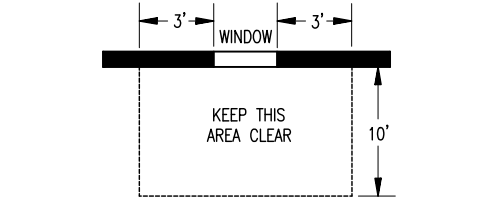
C RMP SECONDARY SERVICE TRENCH INSTALLATION
SCALE: 1" = 1'-0"



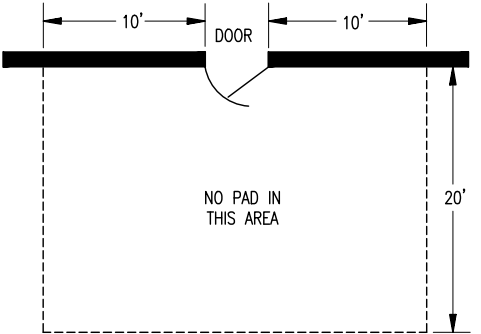
A ROCKY MOUNTAIN TRANSFORMER PAD
SCALE: 3/4" = 1'-0"



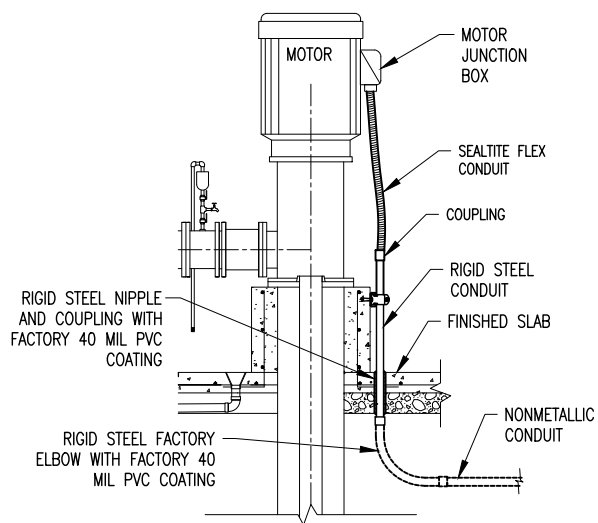
DETAIL "C"



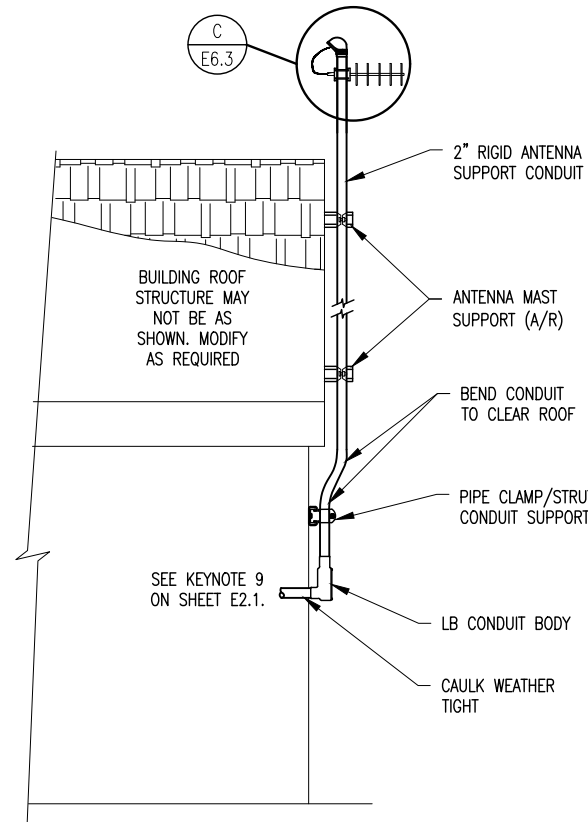
DETAIL "A"



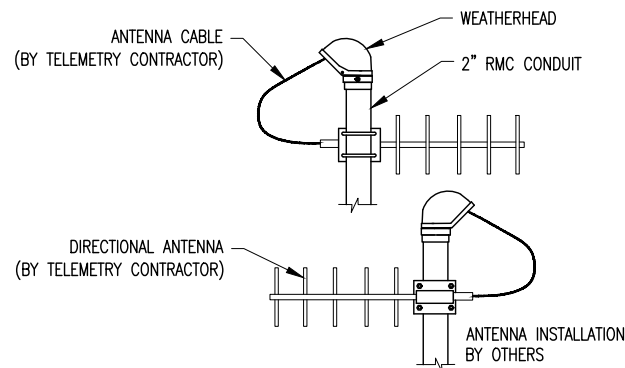
DETAIL "B"



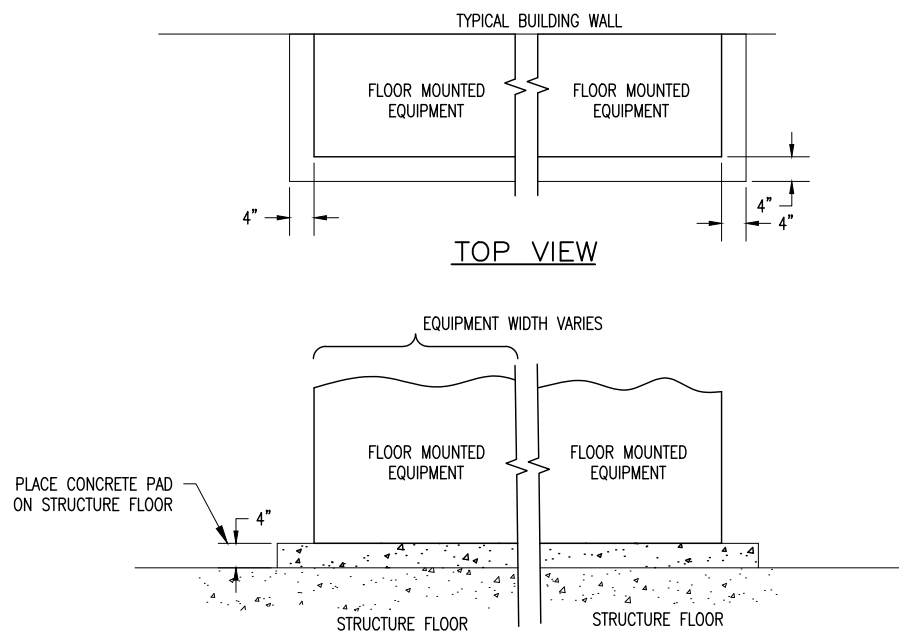
A VERTICAL MOTOR CONDUIT INSTALLATION
SCALE: 1/4" = 1'-0"



B TYPICAL ANTENNA SUPPORT
SCALE: 3/4" = 1'-0"



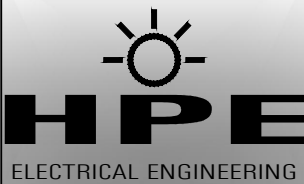
C ANTENNA WEATHERHEAD DETAIL
SCALE: 1 1/2" = 1'-0"



D FLOOR MOUNTED EQUIPMENT INSTALLATION
SCALE: 3/4" = 1'-0"

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH AMERICAN FORK, UT 84003 FAX (801) 642-2154
HPE PROJECT:20075
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST ©2020

H.P.E. INC. ELECTRICAL ENGINEERS
POWER, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED
708 EAST 50 SOUTH, AMERICAN FORK, UTAH, 84003
TEL. (801) 642-2051
FAX. (801) 642-2154



REV.	DATE:	DESCRIPTION:	BY:
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

HIGHLAND CITY
WELL #3 REBUILD
ADDRESS
HIGHLAND CITY, UT

ELECTRICAL
DETAILS SHT. 4

COPYRIGHT (C) 2020 BY
HEGERHORST POWER ENGINEERING
INC, AMERICAN FORK, UTAH. ALL
RIGHTS RESERVED. UNAUTHORIZED
COPYING AND/OR USE IS ILLEGAL
AND SUBJECT TO PROSECUTION.

0" VERIFY SCALE 1"
BAR IS ONE INCH ON ORIGINAL
DRAWING. IF NOT ONE INCH ON THIS
SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING SCALE:
AS SHOWN
DRAWN BY:
GDS
DESIGNED BY:
KBH
ENGINEERED BY:
KBH

DATE:
SEPTEMBER 2020

SHEET NO. E6.4	HPE PROJECT NO. 20.075
--------------------------	----------------------------------



Bid Opening

Well #3 Improvements 2020

Bid Opening: Highland City Offices
Date: 24-Nov-20
Time: 2:00 PM

Project Engineer: Tavis Timothy

For: Highland City
Well #3 Improvements 2020
5400 W Civic Center Dr.
Highland, UT 84003

Bidder	Total Base Bid	Additive Alternate Bid 6' Black Vinyl Fence
Dale Cox Contracting, Inc	\$ 461,098.00	\$ 36,060.00
Gerber Construction	\$ 384,000.00	\$ 27,045.00
VanCon	\$ 318,300.00	\$ 21,035.00
ProBuild	\$ 620,000.00	\$ 21,636.00
Corrio Construction	\$ 479,642.00	\$ 20,464.00
FX Construction	\$ 373,600.00	\$ 25,843.00
Nelson Brothers Construction	No Bid	No Bid
Bowen Construction Co	No Bid	No Bid
J. Lyne Roberts & Sons	No Bid	No Bid
COP Construction	No Bid	No Bid

Attested:

WATER APPENDIX B: WATER CAPITAL PROJECTS

HIGHLAND WATER USER RATE ANALYSIS - 2016 (Updated 5/1/2019)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Table 1: Total Water Rate and Impact Fee Eligible Projects							Inflation Rate	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
							3.50%	100%	104%	107%	111%	115%	119%	123%	127%	132%	136%	141%	146%	151%	156%	162%
Project Name	Component	State Property Growth Component	City Growth Component	Existing City Component	Construction Year	2016 Cost	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Construction Year Cost
15 Year Capital Projects																						
Well House #1 Replacement	Pumping	0%	0%	100%	2025	\$ 400,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 545,159	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Well House #2 Replacement	Pumping	0%	0%	100%	2020	400,000	-	-	-	-	459,009	-	-	-	-	-	-	-	-	-	-	459,009
Well House #3 Replacement	Pumping	0%	0%	100%	2021	400,000	-	-	-	-	-	475,075	-	-	-	-	-	-	-	-	-	475,075
Well House #4 Replacement	Pumping	0%	0%	100%	2035	150,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Well House #5 Replacement	Pumping	0%	0%	100%	2030	150,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	242,804	-
View Pointe Booster Station	General	0%	0%	100%	2045	50,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beacon Hill Booster Station	General	0%	0%	100%	2045	60,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
View Pointe Booster Station Dedicated Generator	General	0%	0%	100%	2018	65,000	-	-	24,500	-	-	-	-	-	-	-	-	-	-	-	-	24,500
Chlorination	General	0%	0%	100%	2021	160,000	-	-	-	-	-	190,030	-	-	-	-	-	-	-	-	-	190,030
SCADA System Upgrade	General	0%	0%	100%	2030	30,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48,561	-
VFD Replacement in Booster Stations	General	0%	0%	100%	2027	60,000	-	-	-	-	-	-	-	-	-	-	-	87,598	-	-	-	-
PRV Placement in Lower Zone	General	0%	0%	100%	2031	220,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11000 N. 12" Transmission Line	General	100%	0%	0%	2031	170,560	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Canal Blvd 12" Water Line	General	100%	0%	0%	2020	290,000	-	-	-	-	332,782	-	-	-	-	-	-	-	-	-	-	332,782
Southeast Area and Lone Peak High School	General	100%	0%	0%	2020	600,000	-	-	-	-	688,514	-	-	-	-	-	-	-	-	-	-	688,514
Impact Fee Facilities Plan	Administrative	0%	100%	0%	2015	9,300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Impact Fee Analysis	Administrative	0%	100%	0%	2015	3,750	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Capital Projects Total						\$ 3,218,610	\$ -	\$ -	\$ 24,500	\$ -	\$ 1,480,305	\$ 665,104	\$ -	\$ -	\$ -	\$ 545,159	\$ -	\$ 87,598	\$ -	\$ -	\$ 291,365	\$ 2,169,909
Table 2: Total Maintenance Projects																						
Description	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total						
R&R Projects																						
Concrete Sealing for Exposed Tank Roof	\$ -	\$ 56,355	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 56,355						
Well Maintenance	11,408	-	45,384	70,000	-	-	71,461	-	-	-	-	-	-	-	-	198,253						
Viewpointe Pump Station Maintenance	1,000	1,030	1,061	1,093	1,126	1,159	1,194	1,230	1,267	1,305	1,344	1,391	1,440	1,490	1,542	18,671						
Beacon Hill Pump Station Maintenance	1,200	1,236	1,273	1,311	1,351	1,391	1,433	1,476	1,520	1,566	1,613	1,669	1,728	1,788	1,851	22,406						
Replacement of Galvanized Services	5,000	5,150	5,305	5,464	5,628	5,796	5,970	6,149	6,334	6,524	6,720	6,955	7,199	7,451	7,711	93,355						
Hydrant Replacements	15,000	15,450	15,914	16,391	16,883	17,389	17,911	18,448	19,002	19,572	20,159	20,865	21,595	22,351	23,133	280,060						
PRV Maintenance	400	412	424	437	450	464	478	492	507	522	538	557	576	596	617	7,471						
SCADA System	2,000	2,060	2,122	2,185	2,251	2,319	2,388	2,460	2,534	2,610	2,688	2,782	2,879	2,980	3,085	37,342						
Meter Battery Replacement	-	4,200	9,800	14,000	18,200	22,400	26,600	30,800	35,000	39,200	43,400	44,919	46,491	48,118	49,802	432,931						
Annual R&R Total	\$ 36,008	\$ 85,893	\$ 81,282	\$ 110,881	\$ 45,888	\$ 50,918	\$ 127,435	\$ 61,055	\$ 66,163	\$ 71,297	\$ 76,462	\$ 79,138	\$ 81,908	\$ 84,775	\$ 87,742	\$ 1,146,844						
Table 3: Summary (All Projects Included)																						
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total						
State Property Growth Component	\$ -	\$ -	\$ -	\$ -	\$ 1,021,295	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,021,295						
City Growth Component	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Existing City Component	-	-	24,500	-	459,009	665,104	-	-	-	545,159	-	87,598	-	-	291,365	2,072,736						
Maintenance Projects	36,008	85,893	81,282	110,881	45,888	50,918	127,435	61,055	66,163	71,297	76,462	79,138	81,908	84,775	87,742	1,146,844						
	\$ 36,008	\$ 85,893	\$ 105,782	\$ 110,881	\$ 1,526,192	\$ 716,022	\$ 127,435	\$ 61,055	\$ 66,163	\$ 616,456	\$ 76,462	\$ 166,736	\$ 81,908	\$ 84,775	\$ 379,107	\$ 4,240,875						
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W



CITY COUNCIL AGENDA REPORT ITEM #9

DATE: December 1, 2020
TO: Honorable Mayor and Members of the City Council
FROM: Tyler Bahr, CSM
Finance Director
SUBJECT: PROPOSAL APPROVAL: 2021 Utility Rate Study Update.
Administrative

PURPOSE:

The City Council will consider a request to approve the proposal from Lewis, Young, Robertson, and Burningham, Inc. (LYRB) for the preparation of the 2021 Utility Rate Study Update for the amount of \$17,150 and authorize the Mayor or City Administrator and City Clerk to execute the necessary contract documents for the project. The Council will take appropriate action.

BACKGROUND:

The City last updated the water, sewer, storm water, and pressured irrigation utility rates in 2016. Utility rates should be updated every five (5) years to ensure they reflect current cost and current growth. The previous analyses were performed by Zions Public Finance, Inc. beginning in 2015, at a cost of \$40,000.

Two firms, LYRB and Zions, provided proposals to complete the rate study update: LYRB proposed a cost of \$17,150 and Zions' cost was \$24,000. Each firm was evaluated based on cost and schedule, qualifications and experience, understanding of the project, and project management.

It is anticipated that the update will be completed by April 2021. In addition to cost considerations, there are two primary differences between the two proposals: First, the LYRB project manager is local, while the Zions project manager is out of state. Second, the LYRB proposal included additional staff assistance with stakeholder meetings, City Council meetings, required public noticing, and ordinance preparation. For these reasons, staff is recommending that the Council approve the LYRB proposal.

FISCAL IMPACT:

The cost of the update (\$17,150) is included in the FY2021 approved budget under professional services within each of the utility funds.

RECOMMENDATION:

Staff recommends that the City Council approve the proposal from Lewis, Young, Robertson, and Burningham, Inc. (LYRB) for the preparation of the 2021 Utility Rate

Study Update for the amount of \$17,150 and authorize the Mayor or City Administrator and City Recorder to execute the necessary contract documents for the project.

PROPOSED MOTION:

I move that the City Council approve the proposal from Lewis, Young, Robertson, and Burningham, Inc. (LYRB) for the preparation of the 2021 Utility Rate Study Update for the amount of \$17,150 and authorize the Mayor or City Administrator and City Recorder to execute the necessary contract documents for the project.

ATTACHMENTS:

1. LYRB Proposal
2. Zions Proposal

November 2020

Tyler Bahr
Highland City
5400 W. Civic Center Drive
Highland, UT 84003

RE: WATER, SEWER, STORM WATER, AND PRESSURIZED IRRIGATION RATE STUDIES

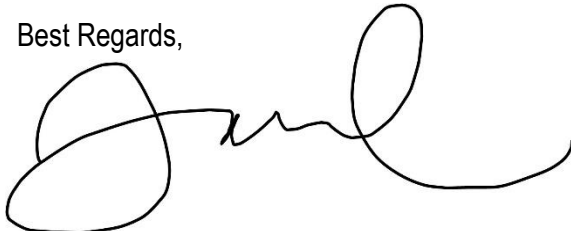
Dear Mr. Bahr,

The professionals at Lewis Young Robertson & Burningham, Inc. ("LYRB") have represented public and private clients for more than three decades. We would be privileged to continue our relationship with the City and provide our services to complete the referenced studies. LYRB is a Utah corporation headquartered in downtown Salt Lake City. The following summarizes the key strengths of LYRB:

- LYRB understands the inputs that are necessary for a defensible rate study. These inputs include the appropriate demand, capital needs as well repair and replacement funding, fixed vs. variable expenses, and performance benchmarks.
- LYRB has extensive experience with Highland City and is currently working with the City on updates to existing impact fees. We understand the complexities of navigating through these types of studies with legislative decision makers.
- LYRB's approach is concise and defensible. We reference all source information and provide formulas to ensure the information can be verified.
- We can meet the City's aggressive schedule to have impact fees adopted in early 2021.
- LYRB is experienced. We have completed over 400 fee studies (inclusive of many impact fee studies, water & sewer rate studies, business license fee studies, and many more) for entities of all sizes. This volume of experience with multiple 'repeat customers' provides evidence that we are well prepared to address all issues that may arise.
- LYRB's financial advisory expertise enables us to undertake all rate study matters with credit rating considerations and bond structuring in mind.
- LYRB can creatively help the City evaluate the proposed rates relative to desired conservation measures and environmental considerations.

Fred Philpot will serve as project lead and has worked with many entities on financial sustainability plans and rate studies. Should you have any questions regarding our proposal or additional services, please feel free to contact him directly. We look forward to working with you.

Best Regards,

A handwritten signature in black ink, appearing to read "Fred Philpot", with a large, stylized loop at the end.

Fred Philpot
VICE PRESIDENT

PROJECT TEAM

The professionals at LYRB have completed a broad range of rate studies. The LYRB Team will include **Fred Philpot** and **Teresa Pinkal**. Each team member has extensive experience with municipal finance advisory services, utility rate studies, impact fees, municipal fee studies, cost of service studies, feasibility analysis, etc. This project will be managed by Mr. Philpot, Vice President at LYRB, with support from Teresa Pinkal. **Laura Lewis** will also provide any financial advisory service advise on an as needed basis.

TEAM MEMBER	EXPERTISE	EXPERIENCE	MSRB	CONTACT
Laura D. Lewis, Principal	Client relations, transaction execution, idea implementation, bond issuance, long- term planning	25 Years	Series 7, 50 & 63	Office: 801.456.3912 Cell: 801.201.6842 laura@lewisyoung.com
Fred Philpot Vice President	User Rate and Impact Fee Analysis, Financial modeling, Presentations	14 Years, Hundreds of studies / analyses / modeling		Office: 801.456.3909 Cell: 801.243.0293 fred@lewisyoung.com
Teresa Pinkal	Quantitative Analysis	5 Years, Quantitative analysis / modeling support		Office: 801.456.3933 Cell: 801.362.2944 teresa@lewisyoung.com

PROPOSED APPROACH TO PROJECT

The City desires to retain a qualified consultant, in order to provide technical assistance to analyze and recommend rate structures for the water, sewer, storm water, and pressurized irrigation. The following summarizes the approach LYRB will take relating to each of these major elements, followed by a more detailed discussion.

PROJECT INITIATION & KICK-OFF MEETING.

LYRB will meet with City staff to begin the process of gathering and reviewing information, growth projections, historic demands, billing information, future capital project needs, and financing information related to the water, sewer, storm water and street lighting. LYRB will help the City develop key financial and management policies that will ensure implementation of the Capital Improvement Plans (CIPs), provide financial benchmarks such as cash reserves, debt service coverage ratios, and describe key management policies such as including inflationary increases each year, and adopting rates for a five-year period.

TASK: DEMAND PROJECTIONS AND MODELING. Based on existing market conditions, building permits, projects within the pipeline and historic growth in customer accounts, LYRB will establish 10-year growth projections for each of the customer classifications. This analysis will be based on available land-use data and utilizing building permit and water connection information.

TASK: REVENUE REQUIREMENT AND COST ALLOCATION. Based on the anticipated growth within the service area and desired water fee and usage assumptions, LYRB will project annual system revenues. LYRB will proportionately allocate the annual revenue requirements to each user class according to demand. LYRB will compare the forecasted revenues to historic revenue changes.

TASK: ALLOCATION OF DEPRECIATION/REPAIR & REPLACEMENT FUNDING. Based on the preliminary findings meeting, LYRB will build into the *pro forma* several scenarios regarding the funding of repair and replacement in order to extend the useful life of each utility assets. The funding of depreciation

which is traditionally a non-cash item is one means of estimating the amount of funding to implement a repair and replacement budget. Funding a capital repair and replacement budget or depreciation can reduce the City's need to issue debt and therefore decrease future interest expense.

-  **TASK: ANALYSIS OF REMAINING REVENUE FOR DEBT COVERAGE, CIP AND REPAIR/REPLACEMENT.** From the analysis above, LYRB will illustrate the net revenues available for the payment of outstanding debt, capital improvements, repair and replacement, and the funding of depreciation.
-  **TASK: RATE DESIGN AND SCENARIO ANALYSIS.** The rate design analysis will incorporate several scenarios. LYRB will review the existing rate structure as a baseline scenario to determine any deficiencies and establish base service measurements. The proposed rates will equitably distribute the total costs allocated to each user. Additionally, we will ensure the recommended rates can be easily administered with the City's current financial software and by staff.
-  **TASK: PRELIMINARY FINDINGS MEETINGS.** After the completion of the above items, LYRB will meet with City staff to review the preliminary findings of the models. This meeting will allow LYRB to provide a status update for the project and receive any feedback regarding model assumptions. Through coordination with the City, LYRB will develop several scenarios that will address the goals of the City, while balancing political and financial constraints.
-  **TASK: PREPARE DRAFT DOCUMENTS.** LYRB will prepare a written document based on the data collected and the analysis performed in the above tasks
-  **TASK: LEGISLATIVE WORK SESSIONS.** LYRB will present a summary of our scenario analysis and findings to the legislative body during a work session. This provides an opportunity to dive deeper into the analysis to review the complexities that are inherent in this type of work.
-  **TASK: PROVIDE FINAL RECOMMENDATIONS.** As the project approach is finalized and work is reviewed, LYRB will complete the written user rate analysis for all utilities. The written analysis will summarize recommendations regarding modifications to the existing rate schedules.
-  **TASK: HOLD PUBLIC HEARING AND FINAL ADOPTION OF RATES.** LYRB will prepare a presentation of findings for the public hearing. LYRB will present at the public hearing and will ensure the project transcript is complete.

GENERAL TIMELINE

TASK NAME	WEEK	DECEMBER				JANUARY				FEBRUARY			
		1	2	3	4	1	2	3	4	1	2	3	4
Notice to Proceed													
Kick-Off Meeting with Staff													
Information Gathering & Analysis													
Review Preliminary Models with Staff													
Prepare Scenarios for Work Session with Council													
Work Session with Council													
Finalize Scenario Analysis													
Prepare Final Recommendations													
Presentation of Final Rates and Public Hearing													

PROPOSED FEE

Shown below is the itemized scope of work by subtasks and estimated time to complete each task. The total combined price for the services provided as defined in the Scope of Work is not anticipated to exceed **\$17,150** based on the hourly assumptions shown below. LYRB will work with the City to address any costs that fall outside the scope of services identified herein. Increases to the scope of services will not be assessed until mutually agreed upon.

	HOURLY RATES	\$200	\$150	
	CONSULTING SERVICES	VICE PRESIDENT	SENIOR ANALYST	TOTALS
Task 1	Project "Kick-Off" Meeting	2.00	-	\$400
Task 2	Demand Analysis	4.00	2.00	\$1,100
Task 3	Revenue Requirement Analysis	8.00	6.00	\$2,500
Task 4	Cost of Service Analysis	12.00	6.00	\$3,300
Task 5	Rate Design Analysis	25.00	7.00	\$6,050
Task 6	Preliminary Findings Meeting	3.00	-	\$600
Task 7	Provide Draft Written Rate Analysis	2.00	6.00	\$1,300
Task 8	Presentation to the City Council	3.00	-	\$600
Task 9	Provide Final Written Rate Analysis	2.00	6.00	\$1,300
Total		61.00	33.00	\$17,150

LYRB strives to provide quality service at an affordable price. If we fail to achieve this goal, please contact us and we can re-evaluate our fee in order to provide you with the services you need.

October 23, 2020

Tyler Bahr
Highland City
5400 W. Civic Center Drive
Highland, UT 84003

Dear Mr. Bahr:

Zions Public Finance, Inc. (ZPFI) enthusiastically submit this proposal to prepare water, pressurized irrigation, sewer and storm water utility rate studies. We'll work closely with you to define policy upfront on what you want the rate structures to achieve and to create fees that will be billed fairly and defensibly across all user classes. The following summarizes the strengths of our proposal.

- Zions has extensive ratemaking experience including billing system design, public education, policy creation, financial modeling, etc.;
- Our primary focuses will be 1) revenue sufficiency, 2) equitable rate and billing structures, and 3) funding new capital projects;
- We continuously seek to develop rate and fee methods to build on data available from evolving GIS technologies and will seek to develop innovative rates based on information available;
- We will provide critical insight having previously worked with the City's utilities; and
- Susie Becker, a member of our Zions team, is an experienced and registered Municipal Advisor licensed with the Securities and Exchange Commission (SEC) who is qualified to provide financial advice, plan capital funding scenarios, and provide insights and recommendations related to bond issuance.

We are committed to providing an analysis that meets your needs and exceeds expectations while finishing on-time and within budget. The consultants at Zions have led over 350 municipal fees and we stay up-to-date on trends and challenges facing Utah utilities. We have been actively involved with the AWWA, Rural Water Users Workshop, Utah League of Cities and Towns, Utah Water Users Workshop, and Water Environment Association of Utah.

We look forward to the opportunity to work with Highland on this important project. Megan Weber Anderson of Zions Public Finance, Inc., will lead this project and will be the primary contact. Megan can be reached at (541) 270-7664 or by email at megan.weber@zionsbancorp.com.

Best Regards,

A handwritten signature in black ink that reads "Megan Weber".

Megan Weber Anderson, Senior Financial Analyst
Zions Public Finance, Inc.

Work Plan

Utility Rate Analyses

A user rate analysis typically includes two primary analyses: 1) the revenue requirement and financial planning and 2) the cost of service allocation and rate design.

Revenue Requirement Analysis

The rate structure will be based upon a standard revenue requirement analysis. The revenue requirement will be a financial forecast of the utilities for the next five years that will detail O&M expense, capital project expense, debt financing, cash balances and management of key financial metrics. The revenue requirement will detail the annual changes in revenues that will have to occur from growth in connections and increases in rates. The revenue requirement analysis is extremely helpful in communicating each utility's financial needs and rate needs to the City Council and the public.

Zions will rely on past financial statements, budgets, trend data, and interviews with staff to make reasonable financial projections. Future repair and replacement capital projects as well as growth-related projects that cannot be immediately funded with impact fees will also be included in the rate analyses. Our financial models are highly dynamic, and we can work with the City to quickly make multiple project cost scenarios and immediately see the impacts on rates.

Comprehensive Cost of Service Allocation and Rate Update

Our study will include a comprehensive review of cost allocation, customer classes, and rate structures to more properly allocate costs to each user. If it appears that one user class or even utility is subsidizing another or is paying too much of the overall costs, then different user classes and methods of cost allocation must be employed. Please note that this proposal outlines the general scope of cost allocation, but the final approach will be refined with the City and tailored to meet the City's needs and objectives.

Once we have defined a clear proposed rate structure, we will test the new bills against the old bills paid by each user class to identify any problems or inequities with the proposed rates. If there are problems, we will revise the proposed structure until it is more fair and equitable. We will stress the proposed rates in several different ways to find any possible issues that might arise to make sure that there are no unforeseen quirks in the new rate structure that would produce anything other than what we had originally envisioned. User rate classes for water and sewer will be based on meter sizes in the M4 AWWA manual with the potential flows. Rate classes for storm will be based on impervious square footage and pressurized irrigation will be based on irrigable square footage.

Project Schedule

ZPFI will provide an information needs list to the City detailing the data we need to complete the user rate analyses (including past budgets, current rate structure, current billings by customer classes and tiers, etc.). Given our previous utility rate study work with the City much of the historic data is already in our financial models and we will be looking to fill in the gaps between the previous user rate analyses and today. Once all necessary data has been received from the City, we can complete the user rate analyses within 45 days. We will work on the analyses concurrently to ensure project efficiency.

Fee Proposal

Utility	Proposed Fee
Culinary Water	\$6,500
Pressurized Irrigation	6,000
Sanitary Sewer	6,000
Storm Water	5,500
Total:	\$24,000

Resumes



Education

Bachelor of Science, Brigham Young University - Idaho

Megan Weber Anderson

Senior Financial Analyst

Zions Public Finance, Inc.

Municipal Consulting Group

megan.weber@zionsbancorp.com

208-501-7482

Megan joined the Zions Public Finance Municipal Consulting Group in 2011. Megan has over eleven years of experience with Impact Fee and User Rate Analyses for water, secondary water, sewer, and storm systems as well as Impact Fee Analyses and Impact Fee Facilities Plans for public safety and parks & recreation.

Megan's primary focus is financial analysis, report writing, presentation preparation, and familiarity with the Utah and Idaho Impact Fees Acts in order to ensure all Impact Fee Analyses completed by our team are done so in accordance with state laws.

Megan has volunteered on the Water For People committee, the charity of the American Water Works Association, helping with local fundraising efforts in Utah which benefit Water For People projects globally.

A Sample of Completed Projects Include:

- Highland City, User Rates and Impact Fee Analyses and User Rate and Impact Fee Review (2019)
- Riverton City, Storm Rate Analysis and City-wide Impact Fee Analyses
- Heber City, City-wide User Rate Analyses
- American Fork City, Public Safety Impact Fee Facilities Plans and Impact Fee Analyses
- City of Orem, Public Safety, Culinary Water, and Sanitary Sewer Impact Fee Analyses
- Provo City, Public Safety, Culinary Water, and Sanitary Sewer Impact Fee Analyses
- Hurricane Valley Fire District, Fire Impact Fee Facilities Plan and Impact Fee Analysis
- City of Ivins, Public Safety Impact Fee Facilities Plans and Impact Fee Analyses
- City of Chubbuck, Idaho, Public Safety and Parks & Recreation Impact Fee Analyses
- City of Rexburg, Idaho, Public Safety Impact Fee Analyses



Susan C. Becker, AICP

Vice President

Zions Public Finance, Inc. | Municipal Consulting Group

For the past 26 years, Susie has specialized in fee studies and economic consulting and planning and has been the lead consultant on some of the largest and most challenging projects in the intermountain region. Susie is currently working on funding mechanisms for the large Point of the Mountain project that spans Salt Lake and Utah counties, has testified before the Governor's Legislative Task Force on economic policies and procedures in Utah, has been involved with numerous fee studies, as well as the creation of a multitude of community reinvestment areas. Her experience stretches from issues such as affordable housing concerns in resort communities like McCall, ID, to redevelopment of a large deteriorating commercial center in Mesa, AZ – the Fiesta District to utility rates for a newly-incorporated entity. She has a MBA degree, AICP and a securities license (Series 50 and 52).

Education

Master of Business Administration,
University of Utah
MBA Ace and Dean's Scholar
Bachelor of Arts, Humanities,
Brigham Young University

Public Service and Affiliations

Municipal Securities Registered
Representative
American Institute of Certified
Planners (AICP)
University of Utah Business School
Alumni Association Board of
Directors
Urban Land Institute, Mentor
Utah Redevelopment Association
Utah Economic Alliance
Utah League of Cities and Towns,
Land Use Task Force
WFRC Economic Development

Selected Presentations

"Downtown Revitalization," Utah
League of Cities and Towns
"Basics of Market Analysis," Main
Street Annual Conferences
"Weathering the Economic Storm,"
Utah League of Cities and Towns
"Redevelopment in Utah," Utah
County and Davis County Economic
Alliance
"The Marriage of CDAs and SAA's,"
Utah League of Cities and towns
"Downtown Revitalization and
Economic Development,"
University of Utah School of
Architecture
"Economics and Planning," Utah
League of Cities and Towns
"Economic Development Policies and
Practices," Governor's Economic
Task Force and Utah Economic
Alliance
"Impacts of COVID-19 on Water
Utilities," AWWA

- TSSD Sewer Rates
- Clearfield City Culinary Water, Sewer and Storm Rate Impact Fees and User Rates
- Herriman Water Rates
- Saratoga Springs Storm and Sewer User Rates
- Saratoga Springs Parks and Recreation, Public Safety, Storm Water and Transportation Impact Fees
- Mesa, AZ Southwest Redevelopment Area Plan
- Farmington Culinary Water Rates
- Syracuse Impact Fees
- Herriman Impact Fees
- Layton Park and Transportation Impact Fees
- Marriott-Slaterville Secondary Water Fees
- Orem City Impact Fees
- Provo City Impact Fees
- Plain City Impact Fees
- Pleasant View Culinary Water Impact Fees and Rates
- South Weber Culinary Water and Sewer Impact Fees and User Rates
- Heber – All Utility Rates
- North Salt Lake Culinary Water and PI User Rates
- Eagle Mountain General Plan
- Salt Lake City Cemetery Financial Sustainability Analysis
- Salt Lake County Municipal Services District Feasibility Study
- Lake Point Sewer District Impact Fees
- American Fork Impact Fees
- Cottonwood Heights Storm Water Rates
- Murray City Storm Water Rates
- Summit County Planning and Engineering Fees
- Mountain Regional Water Rates and Impact Fees
- Moab Water and Sewer Rates
- Salem Water and PI Rates
- Public Works Options Study for Millcreek, Holladay and Taylorsville

**Education**

Bachelor of Science, Finance, Utah
State University

Bachelor of Science, Economics, Utah
State University

Aaron C. Montgomery**Financial Analyst**

Zions Public Finance, Inc.

Municipal Consulting Group

Aaron.Montgomery@zionsbancorp.com

801-844-8327

During his time with ZPFI, Aaron has specialized in real estate advisory, economic analysis, utility rate, and business licensing fee studies. He also provides in-depth geographic analysis through utilizing his skills in GIS to provide a detailed examination of project areas and comprehensive research of the information within project boundaries. Aaron prepares concise reports and presentations which effectively convey findings and recommendations.

In his past projects, Aaron has demonstrated that he has the ability to apply his knowledge of GIS to uncover additional trends which were applicable to the scope of the report. He has also proved his ability to utilize GIS tools to create maps that not only present relevant data but are also visually appealing to the recipient.

A sample of projects in Utah include:

- Heber City Utility Rate Study
- Moab Water Rate Study
- Summit County Storm Water Inspection Fees
- Summit County Engineering Fees
- Nibley Water Rate Study
- Summit County Development Fees
- Summit County Landfill Rate Study
- Riverton Sanitation Fee Study
- Sevier County Landfill Rate Study
- Millard County Landfill Rate Study
- Alcoholic Beverage Control Master Plan Update
- Syracuse Antelope Drive Corridor Market Study
- Marriott-Slaterville Business Licensing Fee Study
- Orem City Fee Study
- Taylorsville 5400 South Market Valuation
- Clearfield Market Analysis
- American Fork Meadows Crossing Economic Impacts
- Snyderville Basin Special Recreation District Needs Assessment

USER RATE ANALYSIS PAST PROJECT EXPERIENCE						
Entity	Culinary	PI	Storm	Sewer	Landfill	Total
Bear River Water Conservancy District	x					1
Blanding	x					1
Clearfield	x		x	x		3
Cottonwood Heights 2011			x			1
Cottonwood Heights 2020			x			1
Farmington	x					1
Heber City 2013	x	x	x	x		4
Heber City 2020	x	x	x	x		4
Herriman City 2011	x	x				2
Herriman City 2014	x	x				2
Herriman City 2015	x	x				2
Herriman City 2017	x	x				2
Heyburn, Idaho	x	x		x		3
Highland City	x	x	x	x		4
Kearns Improvement District	x			x		2
Ketchum City, Idaho	x			x		2
Lake Point Improvement District				x		1
Layton City	x					1
Lehi	x	x				2
Manila	x			x		2
Millard County					x	1
Moab	x		x			2
Mountain Regional Water SSD Rates	x					1
Murray City 2018	x					1
Murray City 2019			x			1
Nibley 2017				x		1
Nibley 2019	x					1
North Fork Special Service District	x					1
Park City	x		x			2
Pleasant Grove	x	x	x	x		4
Pleasant View	x					1
Powder Mountain	x			x		2
Riverside North Garland	x					1
Riverton City	x		x			2
Roy City	x			x		2
Roy Water Conservancy District		x				1
Salem	x	x				2
Saratoga Springs	x	x		x		3
South Davis Sewer District				x		1
South Jordan City	x		x			2
South Salt Lake				x		1
South Weber	x			x		2
Stansbury Park Improvement District	x			x		2

USER RATE ANALYSIS PAST PROJECT EXPERIENCE						
Entity	Culinary	PI	Storm	Sewer	Landfill	Total
Summit County					x	1
Taylorsville-Bennion Improvement District	x			x		2
Timber Lakes Water Special Service District	x					1
Weber Basin Water Conservancy District	x	x				2
Total Projects	37	15	12	19	2	85