CONTRACT DOCUMENTS

FOR THE CONSTRUCTION OF

ZONE 2 & 3 PUMP STATION PROJECT

Volume 2 of 2
Drawings

Herriman City

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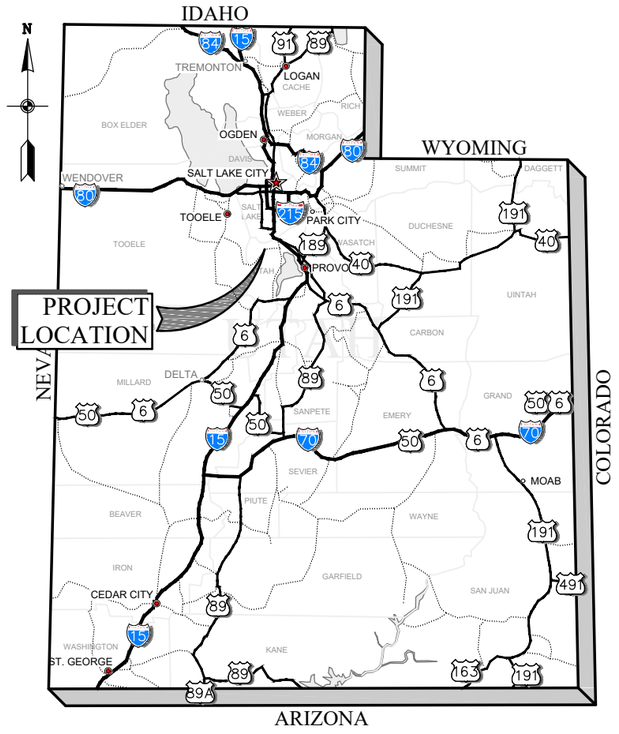
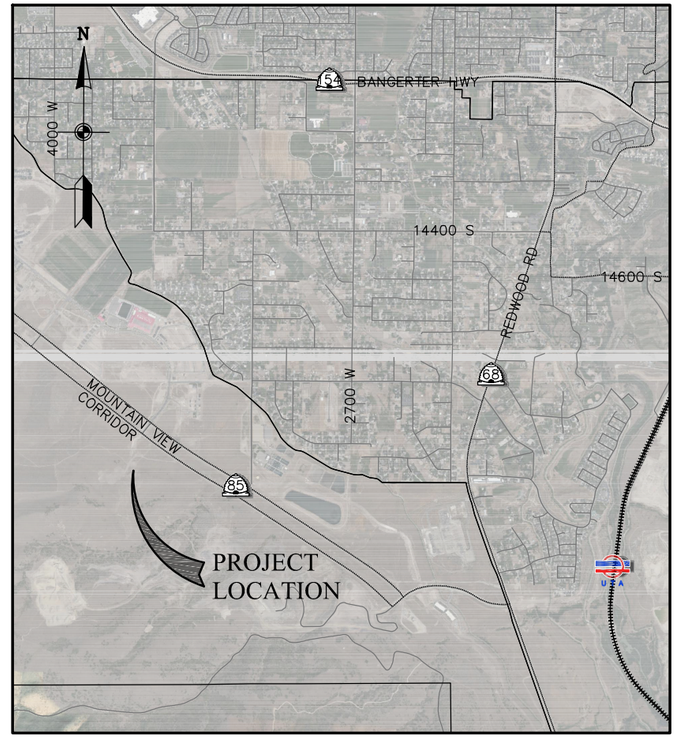
July 2024

DRAWINGS FOR CONSTRUCTION OF THE
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH



PROJECT LOCATION MAP



PROJECT VICINITY MAP

LANDSCAPE

STRUCTURAL

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7/9/2024

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BOWEN COLLINS & ASSOCIATES

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN E. NEIL
DRAWN S. DUCKWORTH
REVIEW
CHECKED A. MCKINNON
APPROVED E. NEIL

GENERAL
TITLE PAGE, PROJECT LOCATION, AND VICINITY MAPS

DATE: JULY 2024
PROJECT NUMBER 217-19-04

DRAWING NO.
G-01
SHEET 01 OF 72

P:\Herriman\217-19-04 - Zone 2 & 3 Major Water Improvements\2.0 Design Phase\2.9 Drawings\Pump Station\Sht\2171904_G-01.dwg Plotted: 7/10/2024 2:00 PM By: Eric Neil

ITEMS CROSSED OUT IN BLUE ARE NOT INCLUDED IN THIS CONTRACT

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BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
ERIC W. NEIL
7702647
07/09/2024

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HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

REVIEW
CHECKED E. NEIL
APPROVED E. NEIL

DESIGN
DESIGN R. GARCIA
DRAWN R. GARCIA

GENERAL
INDEX OF DRAWINGS

PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO.
G-02
SHEET 02 OF 72

@	AT
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS
AB	ANCHOR BOLT
ABBR	ABBREVIATION
ABS	ACRYLONITRILE–BUTADIENE–STYRENE
AC	ASPHALTIC CONCRETE OR ALTERNATING CURRENT OR ACTIVATED CARBON
ACI	AMERICAN CONCRETE INSTITUTE
ACP	ASPHALTIC CONCRETE PAVEMENT
ADDL	ADDITIONAL
ADJ	ADJACENT OR ADJUSTABLE
AER	AERATION
AFF	ABOVE FINISH FLOOR
AGGR	AGGREGATE
AH	AIR HANDLER
AIR CONT	AIR CONDITIONING
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AL	ALUMINUM, ALUM
ALTN	ALTERNATIVE, ALTERNATE
ANOD	ANODIZED
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APVD	APPROVED
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ARV	AIR RELEASE VALVE
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIAL
ASSY	ASSEMBLY
AUTO	AUTOMATIC
AUX	AUXILIARY
AVAR	AIR VACUUM AND AIR RELEASE VALVE
AWS	AMERICAN WELDING SOCIETY
AWWA	AMERICAN WATER WORKS ASSOCIATION
BC	BEGIN CURVE, BOLT CIRCLE
BF	BLIND FLANGE, BUTTERFLY VALVE
BFP	BACK FLOW PREVENTER
BFV	BUTTERFLY VALVE
BHD	BULKHEAD
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BLK	BLACK OR BLOCK
BLKG	BLOCKING
BLT	BOLT
BM	BEAM, BENCH MARK
BO	BLOW–OFF ASSEMBLY, BLOW–OFF
BOT	BOTTOM
BOW	BOTTOM OF WALL
BPS	BOOSTER PUMPING STATION
BPV	BACK PRESSURE VALVE
BRK	BRICK
B & S	BELL & SPIGOT
BTWN	BETWEEN
BTU	BRITISH THERMAL UNIT
BUR	BUILT–UP ROOFING
BVC	BEGIN VERTICAL CURVE
BW	BACK WASH, FILTER BACKWASH
C	CENTIGRADE OR CELSIUS
CAB	CABINET
CAP	CAPACITY
CARV	COMBINATION AIR RELEASE VALVE
CB	CATCH BASIN
CC	CENTER TO CENTER
CCP	CONCRETE CYLINDER PIPE
CD	CEILING DIFFUSER CHEMICAL DRAIN AND VENT
CER	CERAMIC
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CG	CHLORINE GAS
CHBD	CHALKBOARD
CHEM	CHEMICAL
CHG	CHANGE
CHKD PL	CHECKERED PLATE
CI	CAST IRON
CIP	CAST IRON PIPE
CISP	CAST IRON SOIL PIPE
CJ	CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CHLORINATOR, CHAIN LINK, CENTERLINE OR CHLORINE
CLR	CLEAR, CLEARANCE
CLST	CEMENT LINED STEEL PIPE
CM	CENTIMETER
CML & C	CEMENT MORTAR LINED AND COATED
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
COMM	COMMUNICATION
COMB	COMBINED
CONC	CONCRETE, CONCENTRIC
COND	CONDENSER, CONDENSATE
CONN	CONNECTION
CONST	CONSTRUCTION, CONSTRUCT
CONT	CONTINUED, CONTINUOUS, CONTINUATION
COORD	COORDINATE
COTG	CLEAN–OUT TO GRADE
COP	COPPER
CPLG	COUPLING
CPVC	CHLORINATED POLYVINYL CHLORIDE
CS	CAST STEEL OR CAUSTIC SODA
CTRD	CENTERED
CTR	CENTER
CTSK	COUNTERSUNK
CU FT	CUBIC FOOT
CU IN	CUBIC INCH
CU YD	CUBIC YARD
CULV	CULVERT
CV	CHECK VALVE
CW	COLD WATER
CWO	CHAIN WHEEL OPERATOR
CYL	CYLINDER
d	PENNY
D	DRAIN
DBA	DEFORMED ANCHOR
DBL	DOUBLE
DC	DIRECT CURRENT
DET	DETAIL
DEG	DEGREE
DEMO	DEMOLITION, DEMOLISH
DI	DUCTILE IRON, DROP INLET
DIA	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIFF	DIFFUSER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DISCH	DISCHARGE
DIR	DIRECTION
DIST	DISTANCE
DIV	DIVISION
D–LOAD	LOADING CONDITION FOR RCP
DMPR	DAMPER
DN	DOWN, DECANT
DOT	DEPARTMENT OF TRANSPORTATION
DP	DAMP PROOFING
DR	DOOR
DS	DRENCH SHOWER & EYE WASH, DOWNSPOUT
DWG	DRAWING
DWL	DOWEL
E(UG)	ELECTRICAL (UNDERGROUND)
E(OH)	ELECTRICAL (OVERHEAD POWER)
E	EAST
EA	EACH
EB	EXPANSION BOLT
EC	END CURVE
ECC	ECCENTRIC
EF	EACH FACE, EXHAUST FAN
EFF	EFFLUENT
EG	EXISTING GRADE
EL	ELEVATION
ELB	ELBOW
ELEV	ELEVATION
ELEC	ELECTRICAL, ELECTRONIC
EMB	EMBEDMENT
EMER	EMERGENCY
ENCL	ENCLOSURE
ENG	ENGINE
ENGR	ENGINEER
EOR	EDGE OF ROAD
EP	EDGE OF PAVEMENT
EPS	EXPANDED POLYSTYRENE
EQ	EQUAL
EQL SP	EQUALLY SPACED
EQUIP	EQUIPMENT
ETC	ETCETERA
EVAP	EVAPORATOR
EVC	END VERTICAL CURVE
EW	EACH WAY, EYE WASH
EXH	EXHAUST
EXP ANR	EXPANSION BOLT, ANCHOR
EXP JT	EXPANSION JOINT
EXIST	EXISTING
EXT	EXTERIOR, EXTENSION, EXTERNAL
F	FAHRENHEIT, FACE
FAB	FABRICATION, FABRICATE, OR FABRICATED
FB	FLAT BAR
FC	FLEXIBLE COUPLING
FCA	FLANGE COUPLING ADAPTER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDN	FOUNDATION
FDR	FEEDER
FEXT	FIRE EXTINGUISHER
FF	FLAT FACE, FAR FACE, FINISH FLOOR
F TO F	FACE TO FACE
FG	FINISH GRADE, FLOW GLASS
FH	FIRE HYDRANT
FLR	FLOOR
FL	FLOW LINE
FLEX	FLEXIBLE
FLG	FLANGE
FM	FORCE MAIN (SANITARY SEWER)
FND	FOUND
FNSH	FINISH
FO	FIBER OPTIC
FRP	FIBERGLASS REINFORCED PLASTIC
G	GAS
GA	GAGE, GAUGE
GAL	GALLON
GALV	GALVANIZED
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
GI	GALVANIZED IRON
GIS	GEOGRAPHIC INFORMATION SYSTEM
GL	GLASS
GLAZ	GLAZING
GLV	GLOBE VALVE
GND	GROUND
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRADE
GR BRK	GRADE BREAK, GRADE CHANGE
GRTG	GRATING
GRV	GROOVED
GV	GATE VALVE
GSP	GALVANIZED STEEL PIPE
GYP	GYPSUM BOARD
H	HEIGHT
HAS	HEADED ANCHOR STUD
HB	HOSE BIBB
HD	HUB DRAIN
HDPE	HIGH DENSITY POLYETHYLENE
HDR	HEADER
HDW	HARDWARE
HEX	HEXAGONAL
HGR	HANGER
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HP	HORSEPOWER, HIGH PRESSURE,HEAT PUMP, HIGH POINT
HR	HEATING RETURN, HOUR, HOSE RACK
HS	HIGH STRENGTH
HSS	HOLLOW STRUCTURAL SECTION
HTG	HEATING
HTR	HEATER
HV	HOSE VALVE
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HWL	HIGH WATER LEVEL
HWO	HANDWHEEL OPERATED
HYD	HYDRANT, HYDRAULIC
ICFM	INLET CUBIC FEET PER MINUTE
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCH
IN LB	INCH–POUND
INFL	INFLUENT
INSUL	INSULATING
IE	INVERT ELEVATION
INVT	INVERT
IPS	IRON PIPE SIZE
IRR	IRRIGATION
JT	JOINT
K	KELVIN, KILO OR THOUSAND POUNDS
KG	KILOGRAM
KV	KILOVOLT
KW	KILOWATT
KWH	KILOWATT HOUR
L	LEFT OR LITER
LAB	LABORATORY
LAV	LAVATORY
LB	POUND
LC	LENGTH OF CURVE
LF	LINEAR FEET
LG	LENGTH OR LONG
LH	LEFT HAND
LIP	LIP OF GUTTER
LL	LIVE LOAD
LLV	LONG LEG VERTICAL
LOL	LENGTH OF LINE
LP	LOW POINT
LR	LONG RADIUS
LT	LIGHT, LEFT
LVL	LEVEL
LWL	LOW WATER LEVEL
LWR	LOWER
M	METER, MALE (PIPE THREAD)
MACH	MACHINE
MAN	MAGNETIC
MAN	MANUAL
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL, MECHANISM
MEMB	MEMBRANE
MET	METAL
MFR	MANUFACTURER
MG	MILLION GALLONS
MGD	MILLION GALLONS PER DAY
MH	MANHOLE, MONORAIL HOIST
MI	MALLEABLE IRON
MID	MIDDLE
MIL	1/1,000 INCH
MIN	MINIMUM OR MINUTE
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MTL	METAL OR MATERIAL
MTG	MOUNTING
MTR	MOTOR
MPH	MILES PER HOUR
MWS	MAXIMUM WATER SURFACE
N	NORTH
NAVD	NORTH AMERICAN VERTICAL DATUM
NBS	NATIONAL BUREAU OF STANDARDS
NC	NORMALLY CLOSED
NE	NORTHEAST
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURES ASSOCIATION
NF	NEAR FACE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NUMBER OR NORMALLY OPEN
NOM	NOMINAL
NPT	NATIONAL PIPE THREAD
NS	NEAR SIDE
NTS	NOT TO SCALE
NW	NORTHWEST
OC	ON CENTER, OVER–CROSSING
OD	OUTSIDE DIAMETER, OVERALL DIMENSION
OF	OUTSIDE FACE
OH	OVERHEAD
OPER	OPERATOR, OPERATING
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
O TO O	OUT TO OUT
OVHD	OVERHEAD
OZ	OUNCE
PV	PAVEMENT
PC	PORTLAND CEMENT, POINT OF CURVE OR PRIMARY CLARIFIER
PCC	PORTLAND CEMENT CONCRETE
PCF	POUNDS PER CUBIC FOOT
PG	PRESSURE GAUGE
PE	PLAIN END, POLYELECTROLYTE POLYMER, POLYETHYLENE
pH	HYDROGEN ION CONCENTRATION
PI	PLANT INFLUENT, POINT OF INTERSECTION
PJF	PREMOLDED JOINT FILLER
PL	PLATE, PROPERTY LINE, PLACE
PLYWD	PLYWOOD
PM	PROPELLER METER
PMP	PUMP
PI	POINT OF BEGINNING
PT	POINT OF TANGENT
PJF	PREMOLDED JOINT FILLER
PL	PLATE, PROPERTY LINE, OR PLACE
PP	POTASSIUM PERMANGANATE
PPD	POUNDS PER DAY
PPH	POUNDS PER HOUR
PPM	PARTS PER MILLION
PR	PAIR
PRC	POINT OF REVERSE CURVE
PREFAB	PREFABRICATED
PRI	PRIMARY
PRV	PRESSURE REGULATING/REDUCING VALVE
PS	PRESSURE SWITCH, PUMP STATION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	POINT OF TANGENT, PRESSURE TREATED
PTDF	PRESSURE TREATED DOUGLAS FIR
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PW	POTABLE WATER
RAD	RADIUS
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN OR ROAD
RDCR	REDUCER, REDUCING
RECIRC	RECIRCULATION
RED	REDUCING
REF	REFERENCE, REFER
REG	REGULATING, REGISTER
REINF	REINFORCE, REINFORCED
REQD	REQUIRED
REV	REVISION
RF	ROOF, RAISED FACE
RND	ROUND
RPM	REVOLUTIONS PER MINUTE
RP	RADIUS POINT
RS	RAW SEWAGE
RST	REINFORCING STEEL, RESET
RT	REGULATING TANK, RADIOGRAPHIC, RIGHT
RV	ROOF VENT
R/W	RIGHT OF WAY
RW	RAW WATER
S	SOUTH, SECOND
SA	SAMPLE, SAMPLE LINE
SR	SUPPLY AIR REGISTER
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SD	STORM DRAIN
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SLP	SLOPE
SP	SPACING, STATIC PRESSURE
SPEC	SPECIFIED, SPECIFICATION
SPECS	SPECIFICATIONS
SPG	SPACING
SPKR	SPEAKER
SPLY	SUPPLY
SPRT	SUPPORT
SQ	SQUARE
SQ FT	SQUARE FOOT
SR	SUPPLY REGISTER
SS	SANITARY SEWER, SERVICE SINK
SST	STAINLESS STEEL
STA	STATION
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRL	STRUCTURAL
SYM	SYMBOL
SYMM	SYMMETRICAL
SYS	SYSTEM
T	THICKNESS, TOP, TOILET
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TAN	TANGENT
TBM	TEMPORARY BENCH MARK
TBC	TOP BACK OF CURB
TC	TOP OF CONCRETE
TDH	TOTAL DYNAMIC HEAD
TECH	TECHNICAL
TEL	TELEPHONE
TEMP	TEMPERATURE, TEMPORARY
THK	THICK
THR'D	THREADED
TK	TANK
TO	TOP OF
TOG	TOP OF GRADE
TOW	TOP OF WALL
TP	TELEPHONE POLE, TURNING POINT
TW	TOP OF WALL
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UD	UNDERDRAIN
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS OTHERWISE NOTED
USBR	U.S. BUREAU OF RECLAMATION
V	VALVE, VENT, VOLT, VACUUM
VAR	VARIES, OR VARIABLE
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VOL	VOLUME
VTC	VENT THROUGH CEILING
VTR	VENT THROUGH ROOF
VSS	VOLATILE SUSPENDED SOLIDS
W	WEST, WASTE, WIDE FLANGE (BEAM)
W/	WITH
W/O	WITHOUT
WC	WATER COLUMN OR WATER CLOSET
WCO	WALL CLEANOUT
WD	WOOD
WH	WATER HEATER
WS	WATER STOP, WATER SURFACE
WSP	WELDED STEEL PIPE
WSTP	WATER STOP
WT	WEIGHT
WWM	WELDED WIRE MESH
XMTR	TRANSMITTER
XS	EXTRA STRONG
YD	YARD
YR	YEAR

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER ERIC W. NEIL 7702647 STATE OF UTAH 07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
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REVIEW CHECKED A. MCKINNON APPROVED E. NEIL

DESIGN DESIGN E. NEIL DRAWN S. DUCKWORTH

GENERAL
ABBREVIATIONS

PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO. G-03
SHEET 03 OF 72

SECTION IDENTIFICATION

(1) SECTION CUT SHOWN ON DRAWING AS:

SECTION LETTER — A / C-10

DRAWING NUMBER WHERE THE SECTION IS SHOWN (SEE NOTE A)

(2) THIS SECTION IS IDENTIFIED AS: SECTION LETTER

SECTION — SCALE: AS DESIGNATED — A / M-1

DRAWING NUMBER WHERE THE SECTION CUT IS SHOWN (SEE NOTE A)

DETAIL IDENTIFICATION

(1) DETAIL IDENTIFICATION SHOWN ON DRAWING AS:

DETAIL NUMBER — 3 / C-10 — THE DETAIL NAME IS OPTIONAL AND LOCATED HERE, FOLLOWING DETAIL CALLOUT

DRAWING NUMBER WHERE THE DETAIL IS SHOWN

(2) THIS DETAIL IS IDENTIFIED AS: DETAIL NUMBER

DETAIL — SCALE: AS DESIGNATED (SEE NOTE A) — 3 / M-1

DRAWING NUMBER WHERE THE DETAIL IS SHOWN

TYPICAL DETAIL IDENTIFICATION

DETAIL NAME — NOT TO SCALE — C / 2000

TYPICAL DETAIL NUMBER, SEE INDEX OF DRAWINGS FOR LOCATION OF GENERAL DRAWINGS

DRAWING IDENTIFICATION SYSTEM

LETTER	DISCIPLINE
G	GENERAL
A	ARCHITECTURAL
GA	GENERAL ARCHITECTURAL DETAILS
C	CIVIL
GC	GENERAL CIVIL DETAILS
L	LANDSCAPE
GL	GENERAL LANDSCAPE DETAILS
S	STRUCTURAL
GS	GENERAL STRUCTURAL DETAILS
M	MECHANICAL
GM	GENERAL MECHANICAL DETAILS
E	ELECTRICAL
GE	GENERAL ELECTRICAL DETAILS
H	HVAC
GH	GENERAL HVAC DETAILS

S-02 — INDIVIDUAL DRAWING NUMBER; DISCIPLINE

NOTES:

A. IF PLAN AND SECTION (OR DETAIL CALL-OUT AND DETAIL) ARE SHOWN ON SAME DRAWING, DRAWING NUMBER IS REPLACED BY A HORIZONTAL LINE.

B. ELECTRICAL SYMBOLS SHOWN ON ELECTRICAL DRAWINGS. FOR WELDING SYMBOLS USE AMERICAN WELDING SOCIETY STANDARD SYMBOLS. SEE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL.

- COORDINATE IDENTIFICATION
- ELEVATION INDICATOR
- SECTION CORNER
- BENCH MARK
- MONUMENT INDICATOR
- POTHOLE
- TEST HOLE
- BORING HOLE
- SECTION LINE
- PROPERTY LINE
- EASEMENT
- PARCEL
- RIGHT-OF-WAY
- NEW ASPHALT
- EXISTING ASPHALT
- CENTERLINE
- CONTOUR LINE, FINISHED GRADE (4500)
- CONTOUR LINE, EXISTING GRADE (4500)
- FINISHED ELEVATION (4500.20)
- EXISTING ELEVATION (4500.20)
- CUT OR FILL SLOPE TO BE CONSTRUCTED (TOP / TOE)
- SILT FENCE
- FENCE
- RAILING
- DITCH
- CULVERT
- RIPRAP
- TREE LINE/VEGETATION
- EXISTING STRUCTURE OR FACILITY
- NEW STRUCTURE OR FACILITY
- FUTURE STRUCTURE OR FACILITY
- NEW PIPELINE (CIVIL SHEETS)
- NEW PIPELINE 10" DIA AND SMALLER (CIVIL SHEETS)
- EXISTING UTILTY PIPELINE
- ATMS — ATMS
- CTV — CABLE
- C(ug) — COMMUNICATION BURIED
- COMM — COMMUNICATION OVERHEAD
- P(ug) — ELECTRICAL BURIED
- OHP — ELECTRICAL OVERHEAD
- FO — FIBER OPTICS
- GAS — GAS
- IRR — IRRIGATION
- PETRO — PETROLEUM LINE
- SS — SANITARY SEWER
- SD — STORM DRAIN
- T(ug) — TELEPHONE BURIED
- TEL — TELEPHONE OVERHEAD
- W — WATERLINE
- Tv — CABLE BOX
- CATCH BASIN
- EB — ELECTRICAL BOX
- HYDRANT
- G — GAS MANHOLE
- S — SEWER MANHOLE
- D — STORM DRAIN MANHOLE
- T — TELEPHONE MANHOLE
- W — WATER MANHOLE
- WM — WATER METER

- POWER POLE
- TB — TELEPHONE BOX
- LIGHT POLE ONE LUMINAIRE
- LIGHT POLE TWO LUMINAIRS
- LIGHT POLE
- STREET LIGHT WITH BRACKET
- MASONRY
- STEEL
- INSULATION
- GRAVEL
- CONCRETE
- EARTH
- SAND
- ALUMINUM OR METAL DECKING
- CHECKERED PLATE
- GRATING (SPAN)
- PLASTIC, RUBBER OR NEOPRENE
- WOOD (ROUGH FRAMING) OR, OPENING OR DEPRESSION IN SLAB OR WALL
- DUCT (FIRST DIMENSION DUCT SIDE SHOWN, SECOND DIMENSION DUCT SIDE NOT SHOWN) (12 X 24)
- SUPPLY OR OUTSIDE AIR DUCT (FIRST DIMENSION, DUCT WIDTH) (24 X 12)
- EXHAUST OR RETURN AIR DUCT (FIRST DIMENSION, DUCT WIDTH) (24 X 12)
- CEILING SUPPLY DIFFUSER (SIZE IN INCHES) (SIZE / CFM)
- CEILING RETURN OR EXHAUST AIR GRILLE OR REGISTER (SIZE IN INCHES, WIDTH X HEIGHT) (SIZE / CFM)
- EXHAUST OR RETURN AIR GRILLE OR REGISTER (SIZE IN INCHES, WIDTH X HEIGHT) (SIZE / CFM)
- SUPPLY GRILLE OR REGISTER (SIZE IN INCHES, WIDTH X HEIGHT) (SIZE / CFM)
- AIR TURNING VANES IN DUCT
- DEFLECTING DAMPER (DD)
- FHC — FIRE HOSE CABINET
- FE — FIRE EXTINGUISHER
- UNIT HEATER
- PCOTG — PRESSURE CLEANOUT TO GRADE
- WCO — WALL CLEANOUT
- FCO — FLOOR CLEANOUT
- COTG — CLEANOUT TO GRADE
- BLOW OFF ASSEMBLY
- HUB DRAIN
- FLOOR DRAIN
- FLOOR SINK
- DRAIN TRAP

- CHANGE IN PIPING MATERIAL
- 24" RCP-RW — PIPE SIZE AND TYPE/FLUID ABBREVIATION (USE FOR EXISTING PIPE CALLOUT)
- 2" UW (2) — PIPE CALLOUT (SEE PIPING SCHEDULE)
- ME-2 — EQUIPMENT NUMBER (SEE EQUIPMENT SCHEDULE)
- BACKWATER VALVE
- BACKFLOW PREVENTER
- STOP GATE
- SLIDE GATE
- SLUICE GATE
- GATE VALVE, BURIED WITH VALVE BOX
- MUD VALVE
- BUTTERFLY VALVE, BURIED WITH VALVE BOX
- ECCENTRIC PLUG VALVE, BURIED WITH VALVE BOX
- LUBRICATED PLUG VALVE, BURIED WITH VALVE BOX
- GATE VALVE
- BUTTERFLY VALVE
- ECCENTRIC PLUG VALVE
- LUBRICATED PLUG VALVE
- GLOBE VALVE
- BALL VALVE
- DIAPHRAGM VALVE
- CHECK VALVE
- PRESSURE REGULATING VALVE
- BACK-PRESSURE VALVE
- MOTOR OPERATOR FOR VALVES (M = ELECTRIC, P = PNEUMATIC, H = HYDRAULIC) (M / P)
- TEMPERATURE CONTROL VALVE (T)
- SOLENOID SHIELD
- SOLENOID VALVE (S)
- MULTIPORT VALVE - 3 WAY
- MULTIPORT VALVE - 4 WAY
- FLOAT OPERATED VALVE
- NEEDLE VALVE
- PRESSURE RELIEF VALVE
- ANGLE VALVE
- HOSE BIBB (H/B)
- BUBBLER LEVEL CONTROL (B)
- CENTRIFUGAL OR TURBINE PUMP OR FAN
- METERING PUMP
- PROGRESSIVE CAVITY, POSITIVE DISPLACEMENT PUMP
- BLOWER OR COMPRESSOR
- INJECTOR OR EDUCTOR
- FLAME ARRESTER (F/A)
- AIR VACUUM AND AIR RELEASE ASSEMBLY
- METER (M)

- THERMOMETER
- ROOM THERMOSTAT (T)
- PRESSURE GAUGE (G)
- PRESSURE GAUGE WITH DIAPHRAGM SEAL
- PRESSURE SWITCH (S)
- PRESSURE SWITCH WITH DIAPHRAGM SEAL
- FLANGED FITTING
- WELDED FITTING
- MECHANICAL-TYPE FITTING (GROOVED)
- SCREWED, SOCKET-WELD, BELL AND SPIGOT OR HUBLESS FITTING
- SLEEVE-TYPE COUPLING
- FLANGED ADAPTER COUPLING
- FLANGED ADAPTER - SET SCREW TYPE
- EXPANSION JOINT
- MECHANICAL TYPE COUPLING
- EXPANSION JOINT
- EXPANSION LOOP
- FLEXIBLE COUPLING
- UNION
- QUICK DISCONNECT COUPLER
- CAPPED END OR PLUGGED END
- BLIND FLANGE
- REDUCER OR INCREASER
- ECCENTRIC REDUCER OR INCREASER
- CUT PIPE
- STRAINER
- THERMOSTATIC TRAP
- DRAIN
- FLOW TUBE
- MAGNETIC METER (M M)
- DENSITY METER (D M)
- PROPELLER METER (P M)
- ORIFICE PLATE AND FLANGES
- ROTAMETER (R)
- CONDENSATE TRAP (T)
- PIPE SUPPORT (IN PLAN ONLY)
- PULSATION DAMPENER
- AREA DRAIN (AD)
- LIQUID SURFACE EL
- PIPE ANCHOR

- 1 — REVISION WORK
- 3 — REFERENCE TO NOTE
- 1 — COLUMN LINE GRID
- A — WINDOW TYPE
- 05 — DOOR NUMBER
- 05 — ROOM NUMBER

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — ERIC W. NEIL — 7702647 — STATE OF UTAH — 07/09/2024

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

PROJECT
HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJ.
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED A. MCKINNON
APPROVED E. NEIL

DESIGN
DESIGN E. NEIL
DRAWN S. DUCKWORTH

GENERAL
SYMBOLS

PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO.
G-04
SHEET 04 OF 72

P:\Herriman\217-19-04 - Zone 2 & 3 Major Water Improvements\2.0 Design Phase\2.9 Drawings\Pump Station\Sht\2171904_G-04.dwg Plotted: 7/10/2024 1:59 PM By: Eric Neil

GENERAL NOTES:

1. SCALE OF THE DRAWINGS OR DETAILS ARE SHOWN IN TITLE BLOCK OR DIRECTLY UNDER THE PLAN OR DETAIL. THE SIZE OF THE ORIGINAL PLOTTED DRAWINGS IS 22"X34". CARE SHOULD BE TAKEN TO VERIFY THE SCALE BAR IN THE TITLE BLOCK AREA TO DETERMINE THE SCALE OF REDUCED REPRODUCTIONS.

2. CHANGES:
IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM CONSTRUCTION AS PER THE CONTRACT DOCUMENTS. ANY ADDITIONS, DELETIONS, OR CHANGES SHALL FIRST MEET WITH THE APPROVAL OF THE CONSTRUCTION MANAGER AND THE OWNER.

3. SYMBOLS:
SYMBOLS, LEGENDS, AND PIPE USE IDENTIFICATIONS SHOWN SHALL BE FOLLOWED THROUGHOUT THE PLANS, WHEREVER APPLICABLE. NOT ALL OF THE VARIOUS PIPING COMPONENTS ARE NECESSARILY USED IN THE PROJECT.

4. EXISTING FACILITIES:
THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING IMPROVEMENTS, WHICH ARE TO REMAIN IN PLACE, FROM DAMAGE. ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR RECONSTRUCTED TO ORIGINAL OR BETTER CONDITION TO THE SATISFACTION OF THE OWNER AT THE EXPENSE OF THE CONTRACTOR, UNLESS NOTED OTHERWISE.

5. EASEMENTS:
THE CONTRACTOR SHALL BE REQUIRED TO KEEP ALL CONSTRUCTION ACTIVITIES WITHIN THE ESTABLISHED RIGHTS-OF-WAY AND EASEMENTS AS SHOWN. THIS SHALL INCLUDE BUT NOT BE LIMITED TO, VEHICLES AND EQUIPMENT, LIMITS OF TRENCH EXCAVATION, AND EXCAVATED MATERIAL AND BACKFILL STORAGE. IF THE CONTRACTOR REQUIRES ADDITIONAL CONSTRUCTION EASEMENTS, IT SHALL BE SOLELY THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN SUCH EASEMENTS FROM INDIVIDUAL PROPERTY OWNERS.

6. PIPELINE CONSTRUCTION:
LAY PIPE TO UNIFORM GRADE BETWEEN INDICATED ELEVATION POINTS AND ALONG HORIZONTAL ALIGNMENT AS DEFINED IN THESE DRAWINGS. CONTRACTOR SHALL NOT DEVIATE FROM PROPOSED ALIGNMENT WITHOUT A WRITTEN APPROVAL BY THE CONSTRUCTION MANAGER. ALL FITTINGS REQUIRED FOR COMPLETION OF THE WORK ARE NOT SHOWN ON THE DRAWINGS. MAXIMUM PIPE DEFLECTION SHALL BE 1 DEGREE. ADDITIONAL FITTINGS REQUIRED TO MAINTAIN THE ALIGNMENT SHOWN IN THE PLANS SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

7. JOINTS AND FITTINGS:
SIZE OF FITTINGS SHOWN ON THE PLANS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE, UNLESS INDICATED OTHERWISE. TYPE OF JOINT AND FITTING MATERIAL SHALL BE THE SAME AS SHOWN FOR ADJACENT STRAIGHT RUN OF PIPE. ALL JOINTS SHALL BE WATER TIGHT.

8. UTILITY LOCATIONS:
EXISTING UTILITIES SHOWN ON PLANS ARE BASED ON A RECORD SEARCH BY LOCAL CONTROLLING AGENCIES AND ARE APPROXIMATELY LOCATED. EXISTING UTILITIES ARE SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING BLUE STAKES AND VERIFYING THE LOCATION OF, AND PRESERVING, ALL UTILITIES INCLUDING THOSE NOT SHOWN OR INCORRECTLY SHOWN ON THE PLANS. CONTRACTOR SHALL NOTIFY UTILITY COMPANIES TWO (2) WEEKS IN ADVANCE OF UTILITY CONFLICTS REQUIRING RELOCATION OF MAIN LINES, AND ONE (1) WEEK IN ADVANCE OF CONFLICTS REQUIRING RELOCATION OF SERVICE LATERALS.

9. SERVICE CONNECTIONS:
THE CONTRACTOR IS RESPONSIBLE FOR LOCATING SERVICE LINES FOR GAS, SEWER, WATER AND OTHER UTILITIES, AND REPAIRING DAMAGE TO SUCH LINES AS A RESULT OF THE CONTRACTOR'S OPERATIONS. IN GENERAL, SERVICE CONNECTIONS FOR UTILITIES ARE NOT SHOWN ON THE DRAWINGS.

10. EXCAVATION SAFETY:
EXCAVATION LIMITS SHOWN IN THE DRAWINGS ARE GRAPHICAL REPRESENTATIONS ONLY, AND DO NOT REPRESENT ACTUAL EXCAVATION LIMITS OR SAFE TRENCH CONDITIONS REQUIRED TO COMPLETE THE WORK. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONFORMANCE WITH LOCAL AND FEDERAL CODES GOVERNING SHORING AND BRACING OF EXCAVATIONS AND TRENCHES, AND FOR PROTECTION OF WORKERS. TRENCH EXCAVATION TO BE IN ACCORDANCE WITH OSHA SAFETY AND HEALTH STANDARDS FOR CONSTRUCTION (29 CFR 1926).

11. THRUST RESTRAINT:
CONTRACTOR SHALL PROTECT ADJACENT PRESSURE PIPELINES AND PROVIDE TEMPORARY THRUST RESTRAINT AS NECESSARY DURING CONSTRUCTION. ALL NEW PRESSURE PIPE AND FITTINGS SHALL HAVE THRUST RESTRAINED JOINTS, THRUST BLOCKS, THRUST TIES OR OTHER APPROVED RESTRAINT. THRUST PROTECTION SHALL BE ADEQUATE FOR TEST PRESSURE SPECIFIED.

12. SURVEY MONUMENTS:
CONTRACTOR SHALL NOT DESTROY, REMOVE, OR DISTURB ANY EXISTING SURVEY MONUMENTS WITHOUT AUTHORIZATION OF CONTROLLING AGENCY. NO PAVEMENT CUTTING OR REMOVAL SHALL BEGIN UNTIL ALL SURVEY MARKERS OR MONUMENT POINTS THAT HAVE THE POTENTIAL OF BEING DISTURBED BY THE CONSTRUCTION OPERATIONS HAVE BEEN PROPERLY REFERENCED BY A REGISTERED LAND SURVEYOR. ALL SURVEY MONUMENTS OR POINTS DISTURBED BY THE CONTRACTOR SHALL BE ACCURATELY RESET BY A REGISTERED LAND SURVEYOR AFTER ALL RESTORATION AND RESURFACING HAS BEEN COMPLETED.

13. TRACER WIRE: METALLIC TRACER WIRE AND WARNING TAPE SHALL BE PROVIDED ON ALL UTILITY LINES.

14. UTILITY CROSSINGS:
CONTRACTOR SHALL BACKFILL TRENCH AREAS WHERE NEW WATERLINES CROSS UNDER EXISTING BURIED UTILITIES WITH FLOWABLE FILL (CLSM) IN ACCORDANCE WITH SPECIFICATIONS IF STANDARD MECHANICAL COMPACTION EQUIPMENT CAN NOT ADEQUATELY COMPACT BACKFILL.

15. BURIED FITTINGS:
ALL BURIED REBAR, FITTINGS, COUPLINGS, VALVES AND MECHANICAL JOINT NUTS AND BOLTS ARE TO BE COATED WITH NON OXIDE GREASE CHEVRON FM 1 OR APPROVED EQUAL, COVERED WITH 8 MIL POLYETHYLENE SHEETING, AND TAPE WRAPPED WITH AWWA C209 OR 214, 70 MIL MIN THICKNESS.

16. STATIONING:
STATIONS AND LENGTHS SHOWN ON THE DRAWINGS ARE CENTERLINE OF PIPELINE. PROFILE DRAWINGS ARE HORIZONTAL PROJECTIONS OF THE PIPELINE CENTERLINE, UNLESS OTHERWISE NOTED.

17. UTILITY POTHOLING:
CONTRACTOR TO VERIFY DEPTHS OF BURIED UTILITIES IN THE FIELD BY POT HOLING A MINIMUM OF 400-FEET AHEAD OF PIPELINE CONSTRUCTION TO AVOID CONFLICTS WITH DESIGNED PIPELINE GRADE AND ALIGNMENT. IF A CONFLICT ARISES RESULTING FROM THE CONTRACTOR NEGLECTING TO POTHOLE UTILITIES, THE CONTRACTOR SHALL RESOLVE THE CONFLICT WITHOUT ADDITIONAL COST OR CLAIM TO THE OWNER AND IN A MANNER APPROVED BY THE ENGINEER.

18. FINAL RIM ELEVATIONS:
CONTRACTOR SHALL ADJUST GRADE OF NEW MANHOLE RIMS, VALVE BOXES, AND INLET GRATES TO MATCH FINAL GRADES.

19. PIPELINE PROTECTION:
CONTRACTOR SHALL IMPLEMENT MEASURES DURING CONSTRUCTION THAT WILL PREVENT RUNOFF, DEBRIS AND SEDIMENT FROM ENTERING UNFINISHED PORTIONS OF THE NEW PIPE DURING CONSTRUCTION.

20. CONSTRUCTION SURVEYING: CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION SURVEYING AND FOR LAYING OUT WORK.

21. AS-BUILT SURVEY: CONTRACTOR SHALL PERFORM SURVEY OF ALL IMPROVEMENTS AS INSTALLED, INCLUDING LOCATIONS AND DEPTHS OF BURIED FITTINGS AND VALVES, AND LOCATIONS OF ALL STRUCTURES, SURFACE IMPROVEMENTS AND FACILITIES ASSOCIATED WITH THIS PROJECT. THIS SURVEY INFORMATION SHALL BE INCORPORATED INTO THE RECORD DRAWINGS AND PROVIDED IN AUTOCAD FORMAT TO THE OWNER. COORDINATES SHALL BE IN THE LOCAL PROJECT COORDINATE SYSTEM, US SURVEY FEET.

22. RED-LINE DRAWINGS: CONTRACTOR SHALL MAINTAIN AND REGULARLY UPDATE RED-LINE DRAWINGS TO IDENTIFY CHANGES AND DEVIATIONS FROM THE DESIGN.

23. EROSION AND SEDIMENTATION CONTROL AND PERMIT:
CONTRACTOR SHALL CONSTRUCT BERMS AND/OR DRAINAGE DITCHES AS NEEDED TO KEEP STORM RUNOFF FROM ENTERING CONSTRUCTION EXCAVATIONS OR INTERFERING WITH CONSTRUCTION EFFORTS. CONTRACTOR SHALL INSTALL EXCELSIOR EROSION CONTROL MATTING ON ALL DISTURBED AREAS WITH SLOPES OF 2.5H:1V OR STEEPER. EROSION CONTROL MATS SHALL BE CURLEX TYPE I AS MANUFACTURED BY AMERICAN EXCELSIOR COMPANY, OR EQUAL. INSTALL AND ANCHOR PER MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTROL OF DRAINAGE AND EROSION DURING CONSTRUCTION AT CONSTRUCTION SITE, STAGING, AND SPOILS AREA. CONTRACTOR SHALL SUBMIT STORM RUNOFF CONTROL PLAN FOR APPROVAL BY ENGINEER AND OBTAIN A UPDES PERMIT FROM THE UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY.

24. MINIMUM DEPTH OF NEW PIPE: 5.0 FEET TO TOP OF PIPE UNLESS OTHERWISE SHOWN.

25. PRESSURE TEST ALL PIPELINES AS SHOWN ON THE DRAWINGS FOR TWO HOURS WITH ZERO LEAKAGE PER HERRIMAN CITY STANDARDS. IN THE CASE OF PIPELINES THAT FAIL TO PASS THE LEAKAGE TEST, THE CONTRACTOR SHALL DETERMINE THE CAUSE OF THE EXCESSIVE LEAKAGE, SHALL TAKE CORRECTIVE MEASURES NECESSARY TO REPAIR THE LEAKS, AND SHALL AGAIN TEST THE PIPELINES, ALL AT NO COST TO THE OWNER. SEE SPECIFICATIONS. ALL FLANGES, VALVES, FITTINGS, THRUST BLOCKS, ETC. SHALL BE RATED ACCORDINGLY.

26. MATERIALS FOR CULINARY USE: ALL MATERIALS FOR WATERLINES SHALL BE NSF 61 COMPLIANT FOR CULINARY WATER USE.

27. DEWATERING: IT IS NOT EXPECTED TO ENCOUNTER SIGNIFICANT QUANTITIES OF SURFACE WATER OR GROUNDWATER DURING EXCAVATIONS OR OTHER ACTIVITIES FOR THE WORK INDICATED BY THESE CONSTRUCTION DOCUMENTS. IF LARGE AMOUNTS OF WATER ARE ENCOUNTERED THAT HINDER PROGRESS OF THE WORK, THEN THE COSTS ASSOCIATED WITH DEWATERING, DIVERSION, DISPOSAL, ETC. WILL BE THE SUBJECT OF A NEGOTIATED CHANGE TO COMPENSATE THE CONTRACTOR FOR ADDITIONAL WORK. IF REQUIRED, THEN GROUNDWATER AND SURFACE WATER CONTROL SHALL BE PERFORMED AND RESPONSIBLY HANDLED BY THE CONTRACTOR ACCORDING TO AND IN COMPLIANCE WITH ALL GOVERNING AUTHORITIES. IF GROUNDWATER AND/OR SURFACE WATER PUMPING AND DIVERSION IS REQUIRED, IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE AND RESPOND TO THESE NEEDS WITHOUT RELIANCE ON INFORMATION PROVIDED BY THE ENGINEER OR OWNER.

28. VEGETATION: CONTRACTOR SHALL REMOVE AND DISPOSE OF TREES AND VEGETATION AS REQUIRED TO INSTALL IMPROVEMENTS.

29. SURFACE RESTORATION:
THE CONTRACTOR SHALL SEED AREAS OF DISTURBANCE FOR THE CONSTRUCTION OF THE PROPOSED WATERLINES AND PUMP STATION SITE WHERE NOT PAVED, LANDSCAPED OR OTHERWISE COVERED BY IMPROVEMENTS. SEEDING SHALL BE DRILLED UNLESS SLOPES ARE NOT CONDUCTIVE TO DRILL SEEDING. IN SUCH AREAS, HYDROSEED WITH HYDRO MULCH AND TACKIFIER SHALL BE USED. SEEDING SHALL OCCUR IN THE FALL MONTHS FROM OCTOBER 1 TO NOVEMBER 1, UNLESS OTHERWISE APPROVED BY OWNER. CONTRACTOR SHALL MINIMIZE EXCAVATION OF EXISTING VEGETATION. VEGETATION SUCH AS SAGEBRUSH AND OAK SHALL BE CUT AT THE BASE OR DRIVEN OVER AND NOT EXCAVATED. THIS WILL ALLOW FOR THE SPECIES TO REESTABLISH FROM THE EXISTING ROOT SYSTEM. THE CONTRACTOR WILL BE RESPONSIBLE TO RESEED AREAS THAT ARE BARE DUE TO NO SEED GERMINATION FOR ONE YEAR FOLLOWING THE PROJECT ACCEPTANCE BY THE OWNER. TOPSOIL TO BE STOCKPILED AND RE-USED ONCE TRENCHING AND PIPE CONSTRUCTION IS COMPLETE. THE CONTRACTOR SHALL INSTALL SILT FENCES AROUND WATER BODIES SUCH AS CANALS, ETC. THAT ARE NEAR AREAS FOR STORING POTENTIAL EXCESS FILL FROM THE PIPELINE EXCAVATION OR BEING CROSSED DURING CONSTRUCTION.

30. ALL APWA REFERENCES IN CONSTRUCTION DRAWINGS REFER TO 2017 APWA STANDARDS AND SPECIFICATIONS.

31. ALL DUCTILE IRON FITTINGS SHALL BE MADE IN THE U.S.A. BY TYLER UNION OR APPROVED EQUAL AND HAVE MEGALUGS OR APPROVED EQUAL ON ALL MECHANICAL JOINTS.

32. INSTALL TRACER WIRE PER HERRIMAN CITY REQUIREMENTS.

33. PLACE PERMANENT, CONTINUOUS MAGNETIC PLASTIC TAPE, 6" WIDE BY 4 MILS THICK ABOVE WATERLINES PER THE DETAILS. TAPE SHALL READ "CAUTION BURIED INSTALLATION BELOW".

34. THE OPEN ENDS OF ALL PIPELINES UNDER CONSTRUCTION SHALL BE COVERED AND EFFECTIVELY SEALED AT THE END OF EACH DAY'S WORK.

35. ALL MATERIALS WHICH MAY CONTACT DRINKING WATER, INCLUDING PIPES, GASKETS, LUBRICANTS, AND O-RINGS SHALL BE ANSI-CERTIFIED AS MEETING THE REQUIREMENTS OF NSF STANDARD 61, DRINKING WATER SYSTEM COMPONENTS – HEALTH EFFECTS. TO PERMIT FIELD VERIFICATION OF THIS CERTIFICATION, ALL SUCH COMPONENTS SHALL BE APPROPRIATELY STAMPED WITH THE NSF LOGO.

36. ALL TYPES OF INSTALLED WATER PIPE SHALL BE PRESSURE TESTED AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA STANDARD C600-99.

37. CONTRACTOR SHALL PERFORM CHLORINATION TEST, PRESSURE TEST, AND BACTERIA TEST. ALL WATERLINES INSTALLED SHALL BE DISINFECTED IN ACCORDANCE WITH THE "AMERICAN WATER WORKS ASSOCIATION STANDARD FOR DISINFECTING WATER MAINS" (AWWA C651). ALL CHLORINATED WATER SHALL BE DISPOSED OF IN ACCORDANCE WITH THE UTAH DEPT OF ENVIROMENTAL QUALITY RULES AND REQUIREMENTS FOR SURFACE DISCHARGE AND COORDINATED WITH HERRIMAN CITY.

38. CONTRACTOR MUST CONFORM TO CURRENT HERRIMAN CITY STANDARDS WHERE APPLICABLE REGARDING THE CONSTRUCTION OF THE PUMP STATION PROJECT.

39. COORDINATE WITH OTHER CONTRACTORS, PROJECTS, FACILITIES AND IMPROVEMENTS AS REQUIRED THAT ARE ADJACENT TO OR THAT OTHERWISE EFFECT THE WORK REQUIRED HEREIN.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
ERIC W. NEIL
7702647
STATE OF UTAH
07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED A. MCKINNON
APPROVED E. NEIL

DESIGN
DESIGN E. NEIL
DRAWN S. DUCKWORTH

GENERAL
GENERAL NOTES

PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO.
G-05
SHEET 05 OF 72

FLUID ABBREVIATION	FUNCTION (SEE NOTE 5)	PIPING MATERIAL (SEE SCHEDULE AT RIGHT)				FIELD TEST REQUIRMENTS (SEE NOTE 3 AND NOTE 4)		
		EXPOSED PIPING (SEE NOTE 14)		BURIED PIPING (SEE NOTE 13)		MIN TEST PRESSURE PSI	TEST MEDIUM	LEAKAGE ALLOWANCE (SEE NOTE 2)
		2" DIA & SMALLER	2 1/2 " DIA & LARGER	2" DIA & SMALLER	2 1/2 " DIA & LARGER			
AV	AIR VENT	8, 16, 24	8, 16, 24	16, 24	16, 24, 29	NOTE 7	--	--
CLS	CHLORINE SOLUTION	16	--	16	--	125	WATER	A
D	DRAIN	27, 11	11, 27	27	11, 12, 27	NOTE 6	WATER	A, E
OF	OVERFLOW	--	11, 16, 27	--	11, 16, 27	3	WATER	A
PW	POTABLE WATER	16, 24	8, 16, 24	16, 24	8, 11, 16, 24,	150	WATER	A
RD	ROOF DRAIN	16	16	--	16	3	3	A
SD	STORM DRAIN	16	--	16	22	NOTE 7	--	--
SS	SANITARY SEWER	11, 27	11, 27	--	11, 27	NOTE 18	AIR	--
UD	UNDER DRAIN	--	--	--	27	--	--	--
V	VENT	16, 24	2, 16	16, 24	2, 16	15 IN HG	NOTE 7	A

TYPICAL PIPE DESIGNATION:

PIPE SIZE
FLUID ABBREVIATION
PIPE MATERIAL

2" PW (2) — PIPE CALLOUT (SEE PIPING SCHEDULE THIS SHEET)

GENERAL NOTES:

1. ALTHOUGH SEVERAL PIPING MATERIALS ARE SHOWN THAT MAY BE USED FOR A GIVEN FUNCTION, ONLY THE CALLED OUT PIPING MATERIAL SHOWN ON THE CONSTRUCTION DRAWINGS AND SPECIFICATION SHALL BE USED. THE CONTRACTOR DOES NOT HAVE THE OPTION TO USE A DIFFERENT MATERIAL.

DRAWING NOTES:

1. PROPRIETARY NAMES HAVE BEEN QUOTED FOR IDENTIFICATION PURPOSES ONLY. SUBSTITUTIONS WILL BE PERMITTED SUBJECT TO REQUIREMENTS OF THE SPECIFICATIONS.
2. LEAKAGE ALLOWANCE IS AS FOLLOWS:
   (A) PIPES SO DESIGNATED SHALL SHOW ZERO LEAKAGE.
   (B) PIPES SO DESIGNATED SHALL SHOW ZERO LEAKAGE FOR UNBURIED PIPE AND NOT MORE THAN 0.002 GALLON PER HOUR PER INCH DIAMETER PER 100 FEET OF BURIED PIPE.
   (C) PIPES SO DESIGNATED SHALL NOT SHOW A LEAKAGE OF MORE THAN 0.15 GALLON PER HOUR PER INCH OF DIAMETER PER 100 FEET OF PIPE.
   (D) PIPES SO DESIGNATED SHALL NOT SHOW A LOSS OF PRESSURE OF MORE THAN 5 PERCENT.
   (E) PIPES SO DESIGNATED SHALL NOT SHOW A LOSS OF VACUUM OR MORE THAN 4 INCHES MERCURY COLUMN.
3. FOR FIELD TEST PROCEDURES AND ADDITIONAL TEST REQUIREMENTS, SEE PIPING SECTION OF SPECIFICATIONS.
4. ANY DEVIATION FROM THE PIPING MATERIALS OR FIELD TEST REQUIREMENTS SHOWN WILL BE NOTED IN THE SPECIFICATIONS OR ON THE DRAWINGS.
5. PIPING GROUP NUMBER SHOWN THUS * SHALL BE INSULATED, SEE PIPING SECTION OF SPECIFICATIONS FOR INSULATING MATERIALS.
6. STATIC WATER TEST WITH SURFACE 5 FEET ABOVE HIGH POINT OF PIPE.
7. INSPECTION AND TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE PLUMBING CODE.
8. NO APPARENT LEAKS UNDER NORMAL OPERATING CONDITIONS.
9. INSPECTION AND TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS.
10. PIPING MATERIALS SHALL BE IN ACCORDANCE WITH NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS.
11. FOR VALVES 4 INCHES AND LARGER SEE VALVE SCHEDULE. FOR SPECIAL VALVES SEE SPECIFICATIONS.
12. FOR PIPE LINING AND COATING, SEE SPECIFICATIONS.
13. EXPOSED PIPING SHALL BE PAINTED IN ACCORDANCE WITH SPECIFICATIONS. COLORS TO BE SELECTED BY ENGINEER.
14. PIPING MATERIAL SHALL BE NON-ABRASIVE FLEXIBLE RUBBER HOSE AND QUICK CONNECTION COUPLINGS WITH GROUP NO. 1 AT EQUIPMENT.
15. VALVES 2-1/2 INCH AND SMALLER MAY HAVE SCREWED ENDS VALVES 3 INCH AND LARGER SHALL HAVE FLANGED ENDS. UNLESS OTHERWISE SHOWN OR SPECIFIED.

PIPE MATERIAL SCHEDULE (SEE NOTE 4)

GROUP NO.	PIPE	FITTINGS	VALVES
8	WELDED STEEL, AWWA C200.	WELDED, STEEL, AWWA C200, FABRICATED.	AS INDICATED ON DRAWINGS.
11	DUCTILE IRON, ANSI A21.51, (AWWA C151), CLASS 51 (350 PSI), BELL AND SPIGOT, MECHANICAL JOINTS, MECHANICAL COUPLINGS (AWWA C111), OR 125 PSI FLANGED (TYPICAL SERVICE – WATER LINES) PER SPECIFICATION SECTION 02565.	DUCTILE IRON OR CAST IRON, ANSI A21.10 OR AWWA C110, BELL AND SPIGOT, MECHANICAL COUPLINGS, FLANGED OR MECHANICAL JOINTS (AWWA C111), 250 PSI (PRESSURE RATING) 12-INCHES AND SMALLER, 150 PSI (PRESSURE RATING) 14-INCHES AND LARGER, WITH 125 PSI ANSI B16.1 FLANGES.	GATE, AWWA C500, 'O' RING SEALS, MECHANICAL JOINT ENDS, MUELLER A-2360; BUTTERFLY, AWWA C-504, ECCENTRIC PLUG, DEZURIK SERIES 118; BALL, PRATT.
14	STAINLESS STEEL, TYPE 316, ASTM A312, SCHEDULE 40S.	STAINLESS STEEL, TYPE 316 ANSI B16.3, SCREWED, 150 PSI, ANSI B16.9, BUTT-WELDED, SCHEDULE 40S, OR 150 PSI FLANGED.	STAINLESS STEEL, BALL, FLANGED, JAMESBURY TYPE A/D150F. CHECK, LADISH, NO. 5272 OR AS SHOWN ON DRAWINGS.
16	POLYVINYL, CHLORIDE, SCHEDULE 80, NORMAL IMPACT, ASTM D1785.	POLYVINYL CHLORIDE, SCHEDULE 80, NORMAL IMPACT, SOCKET SOLVENT WELD JOINTS, ASTM D2467.	POLYVINYL CHLORIDE, BALL, DIAPHRAGM, BUTTERFLY, BALL OR LIFT CHECK. NIBCO/CHEMTROL OR HILLS-MCCANNA.
17	POLYPROPYLENE, ASTM D4101, SCHEDULE 40, WITH HEAT FUSED JOINTS.	POLYPROPYLENE, SCHEDULE 40, DRAINAGE TYPE WITH HEAT FUSED SOCKET JOINTS.	--------
18	FIBERGLASS REINFORCED PLASTIC, ASTM D2996, FILAMENT WOUND, SOCKET AND SPIGOT ENDS, ADHESIVE BONDED.	FIBERGLASS REINFORCED PLASTIC, FILAMENT-WOUND, SOCKET ENDS, ADHESIVE BONDED, OR FIBERGLASS FLANGED.	PLASTIC LINED, FLANGED, FLANGES TO MATCH 150 PSI ANSI B16.5 DIMENSIONS, OR AS INDICATED ON DRAWINGS.
19	POLYVINYL CHLORIDE PRESSURE PIPE ASTM D2241 WITH BELL AND SPIGOT JOINTS.	CAST IRON, 150 PSI, FOR POLYVINYL CHLORIDE PIPE, AWWA C110 CEMENT MORTAR LINED, AWWA C104.	GATE, AWWA C500, 'O' RING SEALS, MECHANICAL JOINT ENDS, MUELLER A-2360; BUTTERFLY, AWWA C-504, ECCENTRIC PLUG, DEZURIK SERIES 118; BALL, PRATT.
20			
21			
22	REINFORCED CONCRETE, ASTM C76, GASKETED.	SAME AS GROUP NO. 8	--------
24	COPPER, ASTM B88, TYPE K, SOFT TEMPERED WHERE BURIED, HARD TEMPERED WHERE EXPOSED.	WROUGHT COPPER OR CAST BRONZE, ANSI B16.22, SOLDER JOINT, 150 PSI, OR COMPRESSION FITTINGS, (FOR OXYGEN PIPING USE SILVER SOLDER, FOR COMPRESSED AIR PIPING USE 95-5 TIN-ANTIMONY SOLDER).	BRONZE, SOLDER JOINT, GLOBE, CRANE NO. 1310 OR STOCKHAM B-14T. CHECK, CRANE NO. 1342 OR 36, OR STOCKHAM B-309 OR B-345. GATE, CRANE NO. 426, OR STOCKHAM B-104 OR B-105.
27	POLYVINYL CHLORIDE GRAVITY SEWER PIPE, SDR 35 ASTM D3034, BELL AND SPIGOT.	POLYVINYL CHLORIDE, ANSI/ASTM D3034 & F679, BELL AND/OR SPIGOT, DRAIN, WASTE, AND VENT	--------
35	CENTRIFUGALLY CAST FIBERGLASS REINFORCED POLYMER MORTAR PIPE, SN-46, PER ASTM D3262 WITH FILAMENT WOUND SLEEVE COUPLINGS WITH ELASTOMERIC MEMBRANE GASKET JOINTS PER ASTM D-4161.	SAME MATERIAL, CONSTRUCTION AND JOINT DESIGN AS THE MAIN SEWER PIPE.	--------
36	HIGH DENSITY POLYETHYLENE WATER PIPE PER AWWA C906-99 AND ASTM F714, FROM PE4710 HIGH DENSITY POLYETHYLENE RESIN COMPOUND MEETING A MINIMUM CELL CLASSIFICATION 445574C PER ASTM D3350 AND ASTM F714, WITH BLUE STRIPE, DR-11 RATING	SAME MATERIAL, CONSTRUCTION AND JOINT DESIGN AS THE MAIN PIPE.	--------
39	STAINLESS STEEL, TYPE 304L, ASTM A774, SCH 105, 6-INCH AND SMALLER	STAINLESS STEEL, TYPE 304L, ANSI B16.9 BUTTWELDED, SCH 105 OR 150 PSI FLANGED.	STAINLESS STEEL, AS INDICATED ON DRAWINGS
44	PVC SOLID WALL PIPE, ASTM D 2665. DRAIN, WASTE, AND VENT.	PVC SOCKET FITTINGS: ASTM D 2665, SOCKET TYPE, MADE TO ASTM D 3311, DRAIN, WASTE, AND VENT PATTERNS.	

PIPE MATERIAL SCHEDULE
SCALE: NTS
M 3009

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — ERIC W. NEIL — 7702647 — STATE OF UTAH — 07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

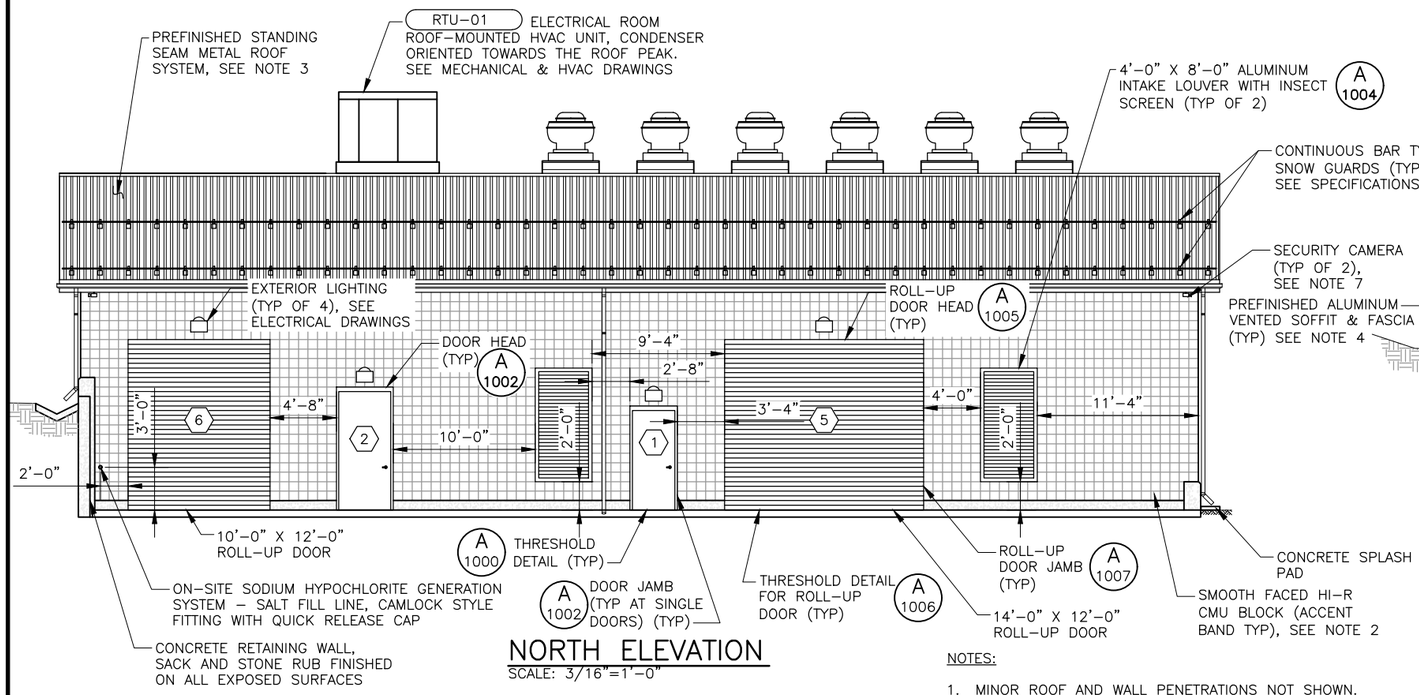
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN E. NEIL | DRAWN S. DUCKWORTH | CHECKED A. MCKINNON | APPROVED E. NEIL | REVIEW

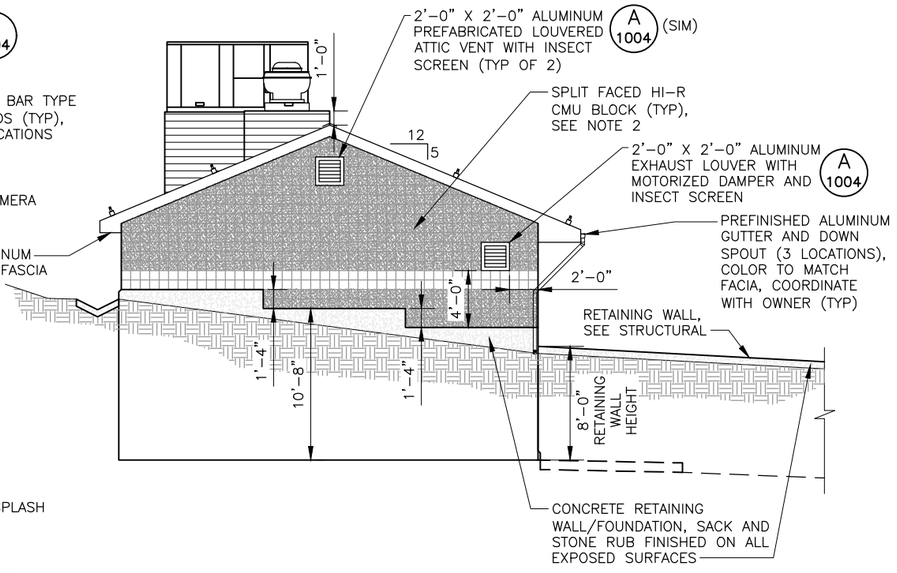
GENERAL
PIPE MATERIAL SCHEDULE

PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO. G-06
SHEET 06 OF 72



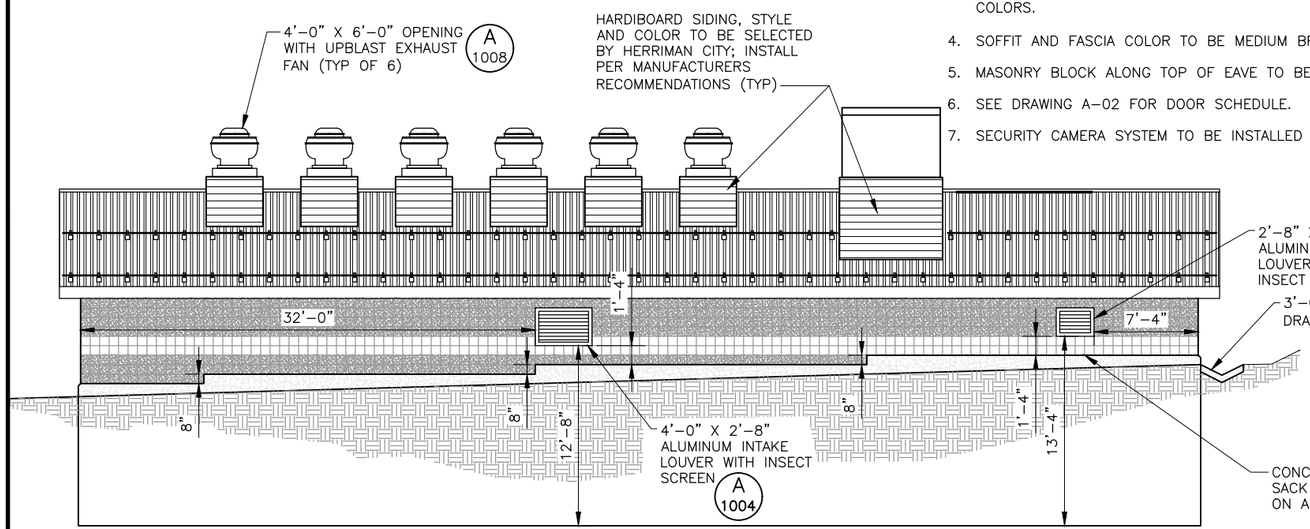
NORTH ELEVATION
SCALE: 3/16"=1'-0"



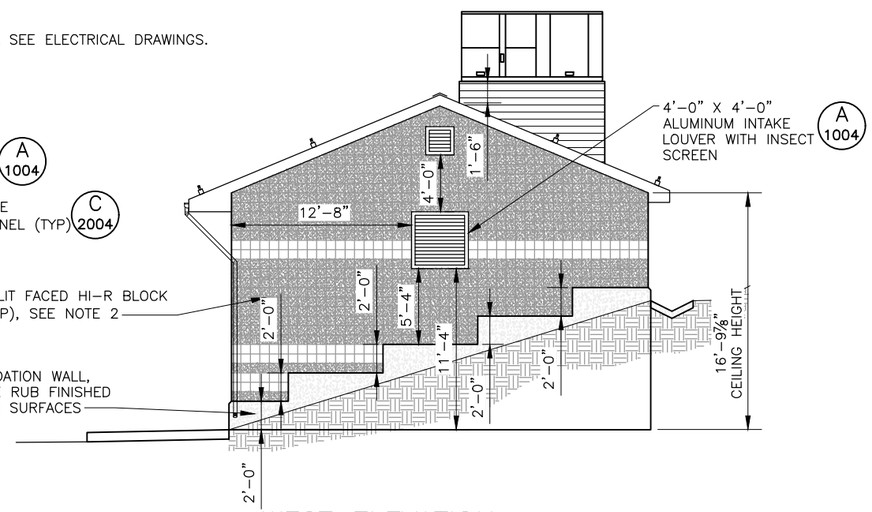
EAST ELEVATION
SCALE: 3/16"=1'-0"

NOTES:

1. MINOR ROOF AND WALL PENETRATIONS NOT SHOWN.
2. MASONRY WALL – 8X12X16 HI-R CMU BLOCK. SPLIT FACE AND SMOOTH FACE TO HAVE SINGLE SCORE. SPLIT FACE BLOCK SHALL BE LEHI #26 U BARK-U COLOR AND THE SMOOTH FACED BLOCK SHALL BE WASATCH MIDDLE SCHOOL (WSM), COLORS TO MATCH ZONE 1 EAST PUMP STATION PER HERRIMAN CITY. REFER TO STRUCTURAL DRAWINGS FOR REINFORCING, FILL VOID CELLS WITH INSULATION AND WITH INTEGRAL WATER REPELLANT IN BLOCK AND MORTAR. APPLY ANTI-GRAFFITI COATING ON ALL EXTERIOR SURFACES, PROVIDE SUBMITTAL FOR APPROVAL. FINISH WITH CLEAR COAT WATER REPELLANT BLOCK SEALER AT EXTERIOR AND INTERIOR SURFACES.
3. PREFINISHED STANDING SEAM METAL ROOF SYSTEM OVER 30# FELT WITH ICE AND WATER SHIELD AT EVE. COLOR TO BE MEDIUM BRONZE FROM MANUFACTURERS STANDARD COLORS.
4. SOFFIT AND FASCIA COLOR TO BE MEDIUM BRONZE PER HERRIMAN CITY TO MATCH ROOF COLOR. ALSO PAINT ALL METAL ON BUILDING TO MATCH. (TRIM, VENTS, DOORS, ETC.)
5. MASONRY BLOCK ALONG TOP OF EAVE TO BE SMOOTH FACE TO PROVIDE FLUSH SURFACE FOR SOFFIT INSTALLATION.
6. SEE DRAWING A-02 FOR DOOR SCHEDULE.
7. SECURITY CAMERA SYSTEM TO BE INSTALLED BY OTHERS, SEE ELECTRICAL DRAWINGS.



SOUTH ELEVATION
SCALE: 3/16"=1'-0"



WEST ELEVATION
SCALE: 3/16"=1'-0"

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER ERIC W. NEIL 7702647 STATE OF UTAH 07/09/2024

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			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED A. MCKINNON APPROVED E. NEIL

DESIGN DESIGN E. NEIL DRAWN N. ROGERS

ARCHITECTURAL

BUILDING ELEVATIONS

PROJECT NUMBER 217-19-04

DATE: JULY 2024

DRAWING NO. A-01

SHEET 07 OF 72

P:\Herriman\217-19-04 - Zone 2 & 3 Major Water Improvements\2.0 Design Phase\2.9 Drawings\Pump Station\Sht\2171904_A-01.dwg Plotted: 7/10/2024 1:57 PM By: Eric Neil

FINISH AND FLOOR SCHEDULE

RM. NO. (000)	ROOM NAME	FLOOR	WALLS, WAINSCOTS, BASES, DOORS												CEILING		REMARKS
			NORTH			EAST			SOUTH			WEST					
			WALL	WAINSCOT	BASE	WALL	WAINSCOT	BASE	WALL	WAINSCOT	BASE	WALL	WAINSCOT	BASE	TYPE	HEIGHT	
101	PUMP ROOM	SEALED CONCRETE SC-1	SC-2	---	---	SC-2	---	---	SC-2	---	---	SC-2	---	---	5/8 GYPSUM, P-1	–	PROVIDE 1X3 CROWN MOLD PAINTED
102	ELECTRICAL ROOM	SEALED CONCRETE SC-1	SC-2	---	---	SC-2	---	---	SC-2	---	---	SC-2	---	---	5/8 GYPSUM, P-1	–	PROVIDE 1X3 CROWN MOLD PAINTED
103	CHLORINE ROOM	SEALED CONCRETE SC-1	SC-2	---	---	SC-2	---	---	SC-2	---	---	SC-2	---	---	5/8 GYPSUM, P-1	–	PROVIDE 1X3 CROWN MOLD PAINTED

INTERIOR COLOR SCHEDULE (CONTRACTOR TO VERIFY ALL COLOR SELECTIONS WITH OWNER & ARCHITECT)

MARK	MATERIAL	MANUFACTURER	COLOR	STYLE NUMBER	GENERAL NOTES
SC-1	FLOOR SEALER	RAIN GUARD	CLEAR	FLOOR LOC WITH MICRO LOC	REFER TO SPECIFICATION 09 90 00
SC-2	WALL SEALER	ProSoCo	CLEAR	SURE KLEAN WEATHER SEAL BLOK-GUARD	REFER TO SPECIFICATION 09 90 00
P-1	PAINT	SHERWIN WILLIAMS	EXTRA WHITE	SW7006 SEMI-GLOSS	CEILING REFER TO SPECIFICATION 09 90 00
P-2	PAINT	SHERWIN WILLIAMS	PER HERRIMAN CITY	SEMI-GLOSS	DOORS FRAME REFER TO SPECIFICATION 09 90 00 MATCH OWNERS STANDARD COLORS
P-3	PAINT	POWDER COAT	PER HERRIMAN CITY	POWDER COAT SYSTEM	DOORS FRAMES AND LOUVERS REFER TO EXTERIOR ELEVATIONS FOR COLOR OWNERS STANDARD COLORS

GENERAL NOTES

1. ALL EQUIPMENT HOUSE KEEPING PADS THRU-OUT PROJECT SHALL MATCH FLOOR FINISH.
2. EXTERIOR DOORS, FRAMES, LOUVERS AND TRIM: REFER TO EXTERIOR ELEVATIONS FOR EXTERIOR COLOR SCHEDULE.

DOOR SCHEDULE

NO. (00)	DOOR SIZE			DOOR TYPE	DOOR MAT.	DOOR FINISH	OPENING DETAILS			FRAME TYPE	FRAME MAT.	FRAME FINISH	RATING	HRDW. GROUP	REMARKS
	WIDTH	HEIGHT	THICK.				HEAD	JAMB	SILL THRES						
1	3'-0"	7'-0"	1 3/4"	D-1	HM	P-2	A/1002	A/1002	A/1000	F-1	HM	P-2	---	2	REFER TO EXTERIOR ELEVATION FOR EXTERIOR COLORS, SEE NOTES BELOW.
2	3'-8"	8'-4"	1 3/4"	D-3	HM	P-2	A/1002	A/1002	A/1000	F-1	HM	P-2	---	4	REFER TO EXTERIOR ELEVATION FOR EXTERIOR COLORS, SEE NOTES BELOW.
3	3'-8"	7'-0"	1 3/4"	D-1	HM	P-2	A/1002	A/1002	A/1000	F-1	HM	P-2	---	5	INTERIOR DOOR, COLOR TO BE DETERMINED BY HERRIMAN CITY, SEE NOTES BELOW.
4	3'-8"	7'-0"	1 3/4"	D-1	HM	P-2	A/1002	A/1002	A/1000	F-1	HM	P-2	---	3	INTERIOR DOOR, COLOR TO BE DETERMINED BY HERRIMAN CITY, SEE NOTES BELOW.
5	14'-0"	12'-0"	1"	D-2	STEEL	P-3	A/1005	A/1007	A/1006	---	STEEL	P-3	---	1	COILING INSULATED DOOR / MANUAL OPERATER, COLOR TO BE DETERMINED BY HERRIMAN CITY.
6	10'-0"	12'-0"	1"	D-2	STEEL	P-3	A/1005	A/1007	A/1006	---	STEEL	P-3	---	1	COILING INSULATED DOOR / MANUAL OPERATOR, COLOR TO BE DETERMINED BY HERRIMAN CITY.
7	3'-0"	7'-0"	1 3/4"	D-1	HM	P-2	A/1002	A/1002	A/1000	F-1	HM	P-2	---	5	INTERIOR DOOR, COLOR TO BE DETERMINED BY HERRIMAN CITY, SEE NOTES BELOW.

NOTES:
1. SEE DRAWING A-01 AND M-01 FOR DOOR LOCATIONS.
2. ALL DOORS AND FRAMES TO BE INSULATED.
3. SEE SHEET M-01 FOR INTERIOR DOOR LOCATION.

DOOR TYPES

DOOR HARDWARE

HARDWARE GROUP 1

QTY	DESCRIPTION	MODEL	FINISH	MANUFACTURER	NOTES
1	BRUSH GASKET	18400_NB	AL	PEMKO	1
* REMAINING BALANCE OF DOOR HARDWARE TO BE PROVIDED BY DOOR SUPPLIER					

HARDWARE GROUP 2

QTY	DESCRIPTION	MODEL	FINISH	MANUFACTURER	NOTES
3	HINGES	BB5002 NRP 4.5" X 4.5"	630/US32D	BOMMER	
1	CLOSER	4040XP-3049SCNS HCUSH	630/US32D	LCN	
1	WALL STOP/BUMPER	409 – CONCAVE WALL STOP	630/US32D	ROCKWOOD	
1	PROTECTION/KICK PLATE	K0150 – 10" X 36" X 0.05"	630/US32D	ROCKWOOD	3
1	SWEEP/DOOR BOTTOM	315_N-C	AL	PEMKO	
1	PERIMETER GASKET/WEATHER STRIP	303_S-C	AL	PEMKO	
1	LOCKSET-SINGLE CYL. DEADBOLT	J-SERIES JD60	630/US32D	SCHLAGE	2
2	DOOR PULL	S10D-SAT	626/US26D	SCHLAGE	
1	STRIKE	10-025 – ANSI STRIKE	626/US26D	SCHLAGE	

HARDWARE GROUP 3

QTY	DESCRIPTION	MODEL	FINISH	MANUFACTURER	NOTES
3	HINGES	BB5002 NRP 4.5" X 4.5"	630/US32D	BOMMER	
1	CLOSER	4040XP-3049SCNS HCUSH	630/US32D	LCN	
1	WALL STOP/BUMPER	409 – CONCAVE WALL STOP	630/US32D	ROCKWOOD	
1	PROTECTION/KICK PLATE	K0150 – 10" X 44" X 0.05"	630/US32D	ROCKWOOD	3
1	SWEEP/DOOR BOTTOM	315_N-C	AL	PEMKO	
1	PERIMETER GASKET/WEATHER STRIP	303_S-C	AL	PEMKO	
2	DOOR PULL	S10D-SAT	626/US26D	SCHLAGE	
1	STRIKE	10-025 – ANSI STRIKE	626/US26D	SCHLAGE	

HARDWARE GROUP 4

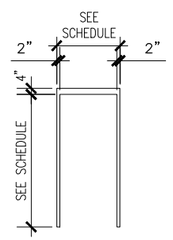
QTY	DESCRIPTION	MODEL	FINISH	MANUFACTURER	NOTES
3	HINGES	BB5002 NRP 4.5" X 4.5"	630/US32D	BOMMER	
1	CLOSER	4040XP-3049SCNS HCUSH	630/US32D	LCN	
1	WALL STOP/BUMPER	409 – CONCAVE WALL STOP	630/US32D	ROCKWOOD	
1	PROTECTION/KICK PLATE	K0150 – 10" X 44" X 0.05"	630/US32D	ROCKWOOD	3
1	SWEEP/DOOR BOTTOM	315_N-C	AL	PEMKO	
1	PERIMETER GASKET/WEATHER STRIP	303_S-C	AL	PEMKO	
1	EXIT DEVICE/CRASH BAR	5000E048	AL	CAL ROYAL	
2	DOOR PULL-ENTRANCE	8000/L	626/US26D	CAL ROYAL	2
1	STRIKE	938	626/US26D	CAL ROYAL	

HARDWARE GROUP 5

QTY	DESCRIPTION	MODEL	FINISH	MANUFACTURER	NOTES
3	HINGES	BB5002 NRP 4.5" X 4.5"	630/US32D	BOMMER	
1	CLOSER	4040XP-3049SCNS HCUSH	630/US32D	LCN	
1	WALL STOP/BUMPER	409 – CONCAVE WALL STOP	630/US32D	ROCKWOOD	
1	PROTECTION/KICK PLATE	K0150 – 10" X 44" X 0.05"	630/US32D	ROCKWOOD	3
1	SWEEP/DOOR BOTTOM	315_N-C	AL	PEMKO	
1	PERIMETER GASKET/WEATHER STRIP	303_S-C	AL	PEMKO	
1	EXIT DEVICE/CRASH BAR	5000E048	AL	CAL ROYAL	
2	DOOR PULL-PASSAGE	8000/PAS	626/US26D	CAL ROYAL	
1	STRIKE	938	626/US26D	CAL ROYAL	

NOTES:
1. BRUSH GASKET TO RUN CONTINUOUS AT HEAD.
2. CONTRACTOR TO COORDINATE WITH OWNER TO VERIFY LOCKSET IS KEYED TO MATCH OWNER REQUIREMENTS.
3. TO BE INSTALLED ON THE INTERIOR SIDE OF THE DOOR.

FRAME TYPES



TYPE F-1

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
ERIC W. NEIL
7702647
07/09/2024

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN
DESIGN E. NEIL
DRAWN E. NEIL

REVIEW
CHECKED A. MCKINNON
APPROVED E. NEIL

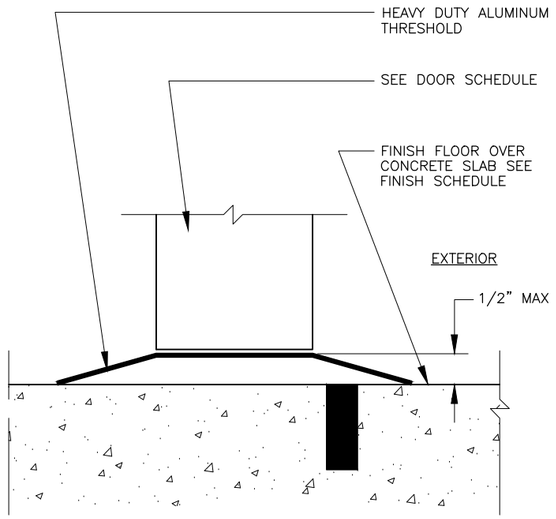
ARCHITECTURAL

FINISH SCHEDULE AND DOOR SCHEDULE

DATE: JULY 2024
PROJECT NUMBER 217-19-04

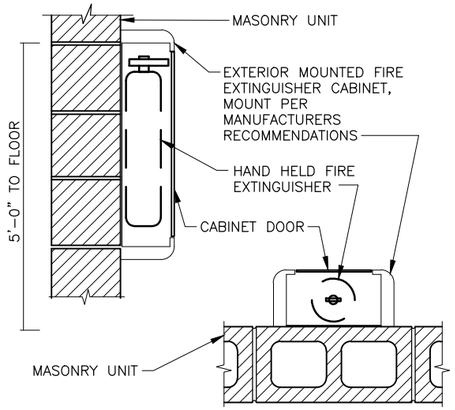
DRAWING NO.
A-02

SHEET 08 OF 72



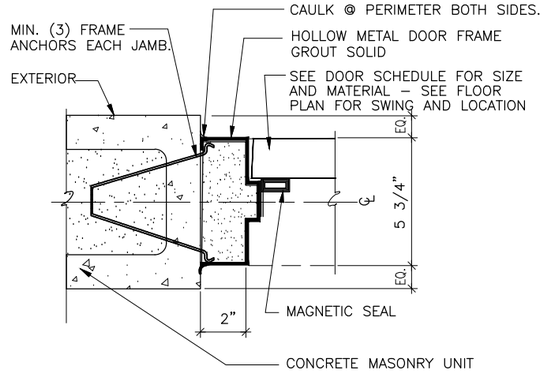
THRESHOLD
SCALE: NONE

A
1000



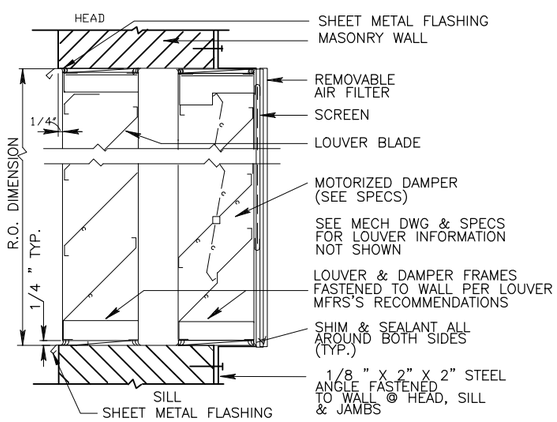
SURFACE MOUNTED FIRE EXTINGUISHER
SCALE: NONE

A
1001



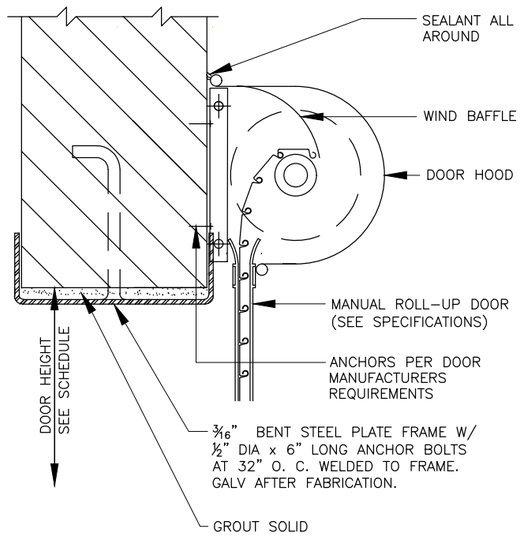
DOOR JAMB (HEAD SIM)
SCALE: NONE

A
1002



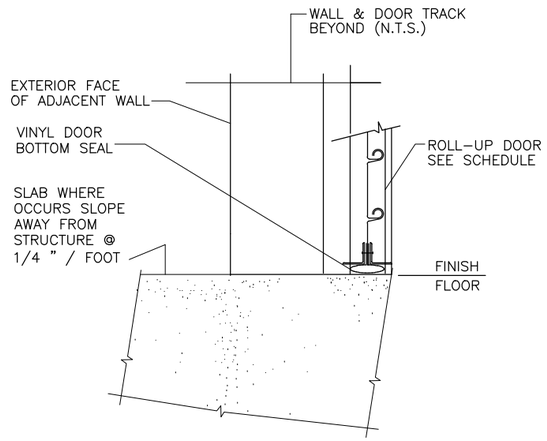
LOUVER W/ DAMPER
SCALE: NONE JAMB SIMILAR

A
1004



HEAD AT ROLL – UP DOOR (MANUAL)
SCALE: NONE

A
1005



THRESHOLD AT ROLL–UP DOOR
SCALE: NONE

A
1006

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
ERIC W. NEIL
7702647
07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

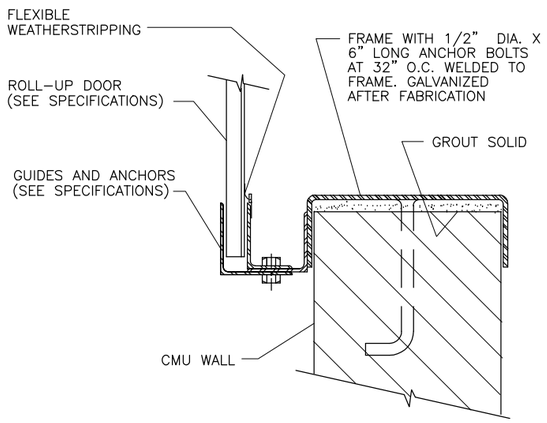
REVIEW
CHECKED A. MCKINNON
APPROVED E. NEIL

DESIGN
DESIGN E. NEIL
DRAWN E. NEIL

ARCHITECTURAL
GENERAL ARCHITECTURAL DETAILS - 1

DATE: JULY 2024
PROJECT NUMBER 217-19-04

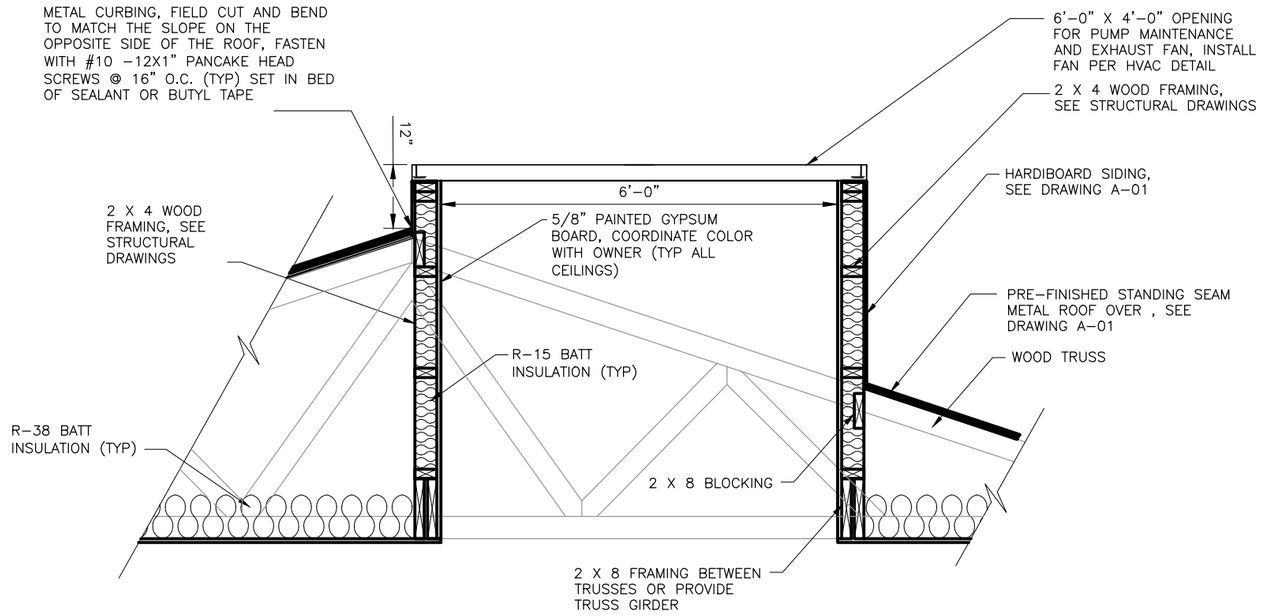
DRAWING NO.
GA-01
SHEET 09 OF 72



JAMB AT ROLL-UP DOOR

SCALE: NONE

A 1007



INSULATED ROOF OPENING

SCALE: NONE

A 1008

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER ERIC W. NEIL 7702647 STATE OF UTAH 07/09/2024

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HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

DESIGN E. NEIL
DRAWN E. NEIL
REVIEW
CHECKED A. MCKINNON
APPROVED E. NEIL

ARCHITECTURAL
GENERAL ARCHITECTURAL DETAILS - 2
DATE: JULY 2024
PROJECT NUMBER 217-19-04

DRAWING NO. GA-02
SHEET 10 OF 72

GENERAL STRUCTURAL NOTES

GENERAL

1. THE SPECIFICATIONS AND REQUIREMENTS INDICATED ON THIS SHEET ARE INTENDED AS A BASIC SUMMARY OF THE MATERIAL CONSTRUCTION AND INSPECTION REQUIREMENTS FOR THIS PROJECT. ADDITIONAL REQUIREMENTS ARE GIVEN IN THE PROJECT SPECIFICATIONS. IN THE EVENT OF A CONFLICT BETWEEN THESE GENERAL NOTES, INFORMATION SHOWN THE DRAWINGS AND THE REQUIREMENTS GIVEN IN THE PROJECT SPECIFICATIONS, THE ENGINEER SHALL BE CONTACTED TO DETERMINE WHICH PROVISION GOVERNS.
2. FOR LOCATION AND DIMENSIONS OF SLEEVES, CURBS, OPENINGS, AND DEPRESSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS, SEE ARCHITECTURAL, CIVIL, MECHANICAL, AND ELECTRICAL DRAWINGS. THE CONTRACTOR SHALL VERIFY AND COORDINATE PENETRATIONS SHOWN ON THE OTHER PROJECT DRAWINGS, WHETHER THEY ARE SHOWN ON THE STRUCTURAL DRAWINGS OR NOT.
3. EMBEDDED ITEMS, SUCH AS PIPE SLEEVES, CONDUITS, AND INSERTS SHALL ALL BE RIGIDLY INSTALLED IN PLACE BEFORE CONCRETE IS POURED. SEE ARCHITECTURAL, CIVIL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR ITEMS REQUIRING SLEEVES AND EMBEDMENTS IN CONCRETE, WHICH ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS.
4. NO STRUCTURAL MEMBER SHALL BE CUT FOR PIPES, DUCTS, ETC. UNLESS SPECIFICALLY DETAILED OR APPROVED IN WRITING BY THE ENGINEER.
5. DESIGN DETAILS AS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND APPLY TO ALL SIMILAR SITUATIONS OCCURRING ON THE PROJECT, WHETHER OR NOT THEY ARE SPECIFICALLY REFERENCED IN EACH LOCATION. CONSULT THE ENGINEER FOR CONCURRENCE PRIOR TO CONSTRUCTION.
6. SUBMIT DRAWINGS AND RECEIVE REVIEW OF ALL STRUCTURAL RELATED SHOP DRAWINGS PRIOR TO ERECTION OR CONSTRUCTION.
7. APPLICABLE BUILDING CODE FOR THE PROJECT IS THE 2018 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).

SITE PREPARATION NOTES

1. SITE PREPARATION NOTES FOR THIS PROJECT ARE BASED ON RECOMMENDATIONS CONTAINED IN A SOILS REPORT BY GERHART COLE INC., DATED NOVEMBER 20, 2020, ALONG WITH ANY ADDENDA THERETO, WHICH HAVE BEEN PREPARED FOR THIS PROJECT. A REFERENCE COPY IS INCLUDED IN THE APPENDIX OF THE SPECIFICATIONS. FOOTINGS AND FOUNDATIONS AS SHOWN ON DRAWINGS MAY VARY IF THE SUBSURFACE SOIL CONDITIONS VARY FROM THOSE FOUND IN THE SOILS REPORT.
2. ALL SURFACE MATERIALS SUCH AS VEGETATION (INCLUDING THE ROOT ZONE), DISTURBED OR LOOSE NATIVE SOILS SHALL BE REMOVED AND REPLACED WITH STRUCTURAL FILL.
3. FOOTINGS SHALL BEAR UPON A MINIMUM OF ONE FOOT OF COMPACTED STRUCTURAL FILL. THE WIDTH OF THE STRUCTURE FILL SHALL BE EQUAL TO THE WIDTH OF THE FOOTING PLUS TWO FEET FOR EVERY FOOT OF FILL.
4. THE OWNER'S GEOTECHNICAL ENGINEER OR SPECIAL INSPECTOR SHALL OBSERVE THE NATURAL SOILS AT THE TIME OF FOOTING EXCAVATION TO DETERMINE THE SUITABILITIY OF THE NATURAL SOILS FOR SUPPORTING THE FOOTINGS.
5. STRUCTURAL FILL SHALL CONSIST OF WELL GRADED GRANULAR MATERIAL WITH A MAXIMUM SIZE OF 2 INCHES AND LESS THAN 20% PASSING THE NO. 200 SIEVE. ALL FINES SHALL HAVE A LIQUID LIMIT LESS THAN 20 AND A PLASITICITY INDEX LESS THAN 7.
6. STRUCTURAL FILL BELOW FOOTINGS AND BELOW SLAB ON GRADE SHALL BE PLACED IN MAXIMUM 8 INCH LOOSE LIFTS AND COMPACTED TO AT LEAST 95% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D-1557 AND SHALL BE COMPACTED AT A MOISTURE CONTENT WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT.
7. BACKFILL AROUND WALLS SHALL BE COMPACTED TO 90% OF MAXIMUM DENSTIY AS DETERMINED BY ASTM D-1557.
8. SLABS ON GRADE SHALL BE UNDERLAIN BY A MINIMUM OF 4" OF FREE-DRAINING GRANULAR MATERIAL. GRANULAR MATERIAL SHALL BE PLACED UPON PROPERLY PREPARED SUBGRADE AS DESCRIBED ABOVE.
9. COMPACTION OF STRUCTURAL FILL SHALL BE OBSERVED AND TESTED BY OWNER'S TESTING LABORATORY TO ENSURE THAT THE ABOVE REQUIREMENTS ARE ACHIEVED.

FORMWORK, SHORING, AND BRACING

1. CONFORM TO ACI 347 "RECOMMENDED PRACTICE FOR CONCRETE FORMWORK" FOR DESIGN AND CONSTRUCTION OF CONCRETE FORMWORK AND BRACING. CONTRACTOR IS RESPONSIBLE FOR DESIGN AND CONSTRUCTION OF FORMWORK AND BRACING.
2. STRUCTURES AS SHOWN ON THESE DRAWINGS INDICATE THE FINAL CONDITION ONLY AND DO NOT INCLUDE THE NECESSARY COMPONENTS OR EQUIPMENT FOR STRUCTURAL STABILITY DURING CONSTRUCTION. BUILDING RETAINING WALLS SHALL NOT BE BACKFILLED UNTIL THE ROOF FRAMING AND ROOF SHEATHING IS COMPLETE.

CONCRETE

1. ALL CONCRETE CONSTRUCTION TO CONFORM TO ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE," INCLUDING BAR BENDS AND HOOKS UNLESS SPECIFICALLY DETAILED OTHERWISE ON THESE DRAWINGS.
2. THE MINIMUM COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE:

FOOTINGS	4,000 PSI
FOUNDATION WALLS	4,000 PSI
INTERIOR SLABS ON GRADE	4,000 PSI
EXTERIOR FLAT WORK	4,500 PSI

3. A STATEMENT OF MIX DESIGN FOR ALL CONCRETE SHALL BE SUBMITTED TO AND REVIEWED BY THE STRUCTURAL ENGINEER PRIOR TO COMMENCING WORK.
4. THE VARIOUS CONCRETE ITEMS ARE ASSIGNED TO THE FOLLOWING EXPOSURE CATEGORIES AND CLASSES PER SECTION 19.3 OF ACI 318-14:

FOOTINGS	F1, S1, W0, C1
FOUNDATION WALLS	F1, S1, W1, C1
INTERIOR SLABS ON GRADE	F0, S0, W0, C0
EXTERIOR FLAT WORK	F3, S1, W1, C1

5. NON-STRUCTURAL ELEMENTS, SUCH AS ENCASEMENTS AND LEAN CONCRETE TO HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI.
6. USE CEMENT CONFORMING TO ASTM C150, TYPE II, LOW ALKALI OR ASTM C1157, TYPE MS.
7. ALL CONSTRUCTION JOINTS, EXPANSION JOINTS, AND OTHER TYPES OF JOINTS, OTHER THAN THOSE SPECIFICALLY SHOWN ON THE DRAWINGS TO BE APPROVED BY THE ENGINEER PRIOR TO PLACING CONCRETE.
8. PROVIDE 3/4-INCH CHAMFER AT ALL EXPOSED EDGES AND CORNERS UNLESS NOTED OTHERWISE.
9. BEFORE PLACING THE SECOND POUR AT CONSTRUCTION JOINTS, THOROUGHLY CLEAN AND ROUGHEN ALL JOINT SURFACES TO A MINIMUM AMPLITUDE OF 1/4 INCH.

REINFORCEMENT STEEL

1. PROVIDE REINFORCEMENT STEEL CONFORMING TO ASTM A615, GRADE 60 EXCEPT WHERE WELDING IS PERMITTED BY THE ENGINEER. PROVIDE STEEL CONFORMING TO ASTM A706 WHEN WELDING IS PERMITTED.
2. PROVIDE WELDED WIRE FABRIC CONFORMING TO ASTM A185.
3. DIMENSIONS GIVEN FOR REINFORCING BARS ARE TO BAR CENTERS UNLESS NOTED OTHERWISE. BAR COVER IS THE CLEAR DISTANCE BETWEEN BAR AND CONCRETE SURFACE. CLEARANCE FOR REINFORCEMENT BARS PER THE FOLLOWING UNLESS SHOWN OTHERWISE:

WHEN PLACED AGAINST GROUND	3"
FORMED SURFACES IN CONTACT WITH THE GROUND OR EXPOSED TO THE WEATHER	2"
INTERIOR WALL SURFACES	1"
ALL OTHER CONCRETE SURFACES	2"

4. CONTINUE WALL CORNER AND WALL INTERSECTION REINFORCEMENT BARS AROUND CORNERS AND THROUGH COLUMNS OR PILASTERS. EXTEND REINFORCEMENT INTO CONNECTING WALLS AND LAP ON THE OPPOSITE FACE OF THE CONNECTING WALLS.
5. UNLESS OTHERWISE NOTED, ALL HOOKS SHOWN ARE 90° STANDARD HOOK AS DEFINED IN ACI 318-14.
6. LAP VERTICAL WALL BARS WITH DOWELS FROM BELOW AND EXTEND THROUGH SLABS ABOVE TO TOP FACE. BEND AND/OR LAP TO TOP SLAB REINFORCEMENT AS INDICATED.
7. UNLESS OTHERWISE INDICATED, CONTRACTOR MAY SPLICE CONTINUOUS SLAB OR LONGITUDINAL BEAM BARS AT LOCATIONS OF HIS CHOOSING, EXCEPT THAT TOP BAR SPLICES ARE TO BE LOCATED AT MIDSPAN AND BOTTOM BAR SPLICES ARE TO BE LOCATED AT SUPPORTS. MINIMUM LAP REQUIREMENTS ARE AS FOLLOWS UNLESS OTHERWISE INDICATED.

LAP LENGTHS* – CONCRETE

BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11
CONCRETE DESIGN STRENGTH = 4000 PSI								
LAP LENGTH	1'-8"	2'-0"	2'-5"	3'-6"	4'-0"	5'-0"	6'-2"	7'-5"
CONCRETE DESIGN STRENGTH = 4500 PSI								
LAP LENGTH	1'-8"	2'-0"	2'-4"	3'-4"	3'-9"	4'-9"	5'-10"	7'-0"

*ASSUMES 2" MINIMUM CLEARANCE TO SURFACE

MASONRY

1. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90 GRADE N AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI BASED ON THE NET SECTION FOR REGULAR CMU AND 2000 PSI FOR HI-R BLOCK.
2. PROVIDE MORTAR CONFORMING TO ASTM C270, TYPE S, HYDRATED. DO NOT USE MASONRY CEMENT.
3. PROVIDE GROUT CONFORMING TO ASTM C476 WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2000 PSI FOR REGULAR CMU AND 2000 PSI FOR HI-BLOCK.
4. DESIGN f'm FOR MASONRY ASSEMBLIES IS 2000 PSI FOR REGULAR CMU OR HI-R BLOCK.
5. GROUT ALL CMU WALLS SOLID.
6. PLACE THE MASONRY UNITS IN RUNNING BOND UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS.
7. MASONRY WALL REINFORCEMENT SHALL BE PLACED IN GROUTED CELLS. UNLESS NOTED OTHERWISE ON THE DRAWINGS, REINFORCE MASONRY WALLS AS FOLLOWS:

WIDTH	HORIZ REINF	VERT REINF
8" CMU	(2) #4 @ 48"	#5 @ 32" (CENTER OF WALL)
12" HI-R CMU	(1) #4 @ 16"	#5 @ 24" (PER S/4214)

8. ALL HORIZONTAL REINFORCING AT ENDS OF WALLS SHALL TERMINATE WITH A HOOK AROUND VERTICAL REINFORCING.
9. REINFORCEMENT PROTECTION (COVER) SHALL HAVE A MINIMUM COVERAGE OF 2" FROM OUTSIDE FACE OF MASONRY. THERE SHALL BE A MINIMUM OF ½" GROUT BETWEEN REINFORCING STEEL AND MASONRY UNITS.
10. ALL VERTICAL REINFORCING BARS SHALL BE DOWELED TO STRUCTURE BELOW WITH BARS OF SAME SIZE AND SPACING. LAP REINFORCING BARS AS FOLLOWS UNLESS OTHERWISE NOTED ON THE DRAWINGS:

LAP LENGTHS – MASONRY (f'm = 2,000 psi)

BAR SIZE	#3	#4	#5	#6	#7	#8	#9
8" WALL SINGLE MAT (CENTER IN WALL)							
LAP LENGTH	1'-0"	1'-0"	1'-7"	3'-1"	4'-3"	MECH	MECH
12" HI-R MASONRY (SEE S/4213)							
LAP LENGTH	1'-0"	1'-5"	2'-3"	4'-5"	6'-2"	MECH	MECH

MECH = MECHANICAL SPLICE REQUIRED

11. AN ADDITIONAL VERTICAL BAR (MATCHING WALL REINFORCEMENT) SHALL BE PLACED AT EACH CORNER, AND ENDS OF WALLS.
12. AT ALL OPENINGS GROUT WALL SOLID FOR FULL HEIGHT AT JAMBS OF OPENINGS, ONE CELL FOR EACH 4'-0" OF SPAN OR PORTION THEREOF (EXAMPLE: FOR 6'-0" SPAN, GROUT TWO CELLS AT EACH SIDE OF OPENING). REINFORCE EACH GROUTED CELL WITH STANDARD VERTICAL WALL REINFORCING BARS, TYPICAL, U.N.O.
13. AT MASONRY BEAMS ABOVE OPENINGS HORIZONTAL REINFORCING BARS IN THE BOTTOM OF THE MASONRY BEAM SHALL EXTEND 2'-0" BEYOND THE EDGE OF THE OPENING OR SHALL BE HOOKED IF REQUIRED. DO NOT SPLICE HORIZONTAL TOP AND/OR BOTTOM REINFORCING BARS IN MASONRY BEAM, TYPICAL, U.N.O.
14. MASONRY BEAMS SHALL BE BUILT AS AN INTEGRAL PART OF THE SUPPORT. NO TOOTHING OR DOWELLING ONLY WILL BE PERMITTED AT SUPPORTS.
15. AT SMALL OPENINGS IN MASONRY WALLS (NOT SHOWN ON DRAWINGS) PROVIDE (1) #5 ON ALL SIDES OF OPENINGS WITH A MINIMUM PROJECTION OF 2'-0" BEYOND EDGES.
16. STOP GROUT POURS 1/2" BELOW TOP OF BLOCK UNITS BETWEEN GROUT LIFTS.
17. ALL ANCHOR BOLTS TO BE PLACED IN GROUTED CELLS.

STRUCTURAL STEEL

1. UNLESS NOTED OTHERWISE, PROVIDE STRUCTURAL STEEL CONFORMING TO ASTM A36. ROLLED WIDE FLANGE SHAPES TO CONFORM TO ASTM A992. PIPE TO CONFORM TO ASTM A53, TYPE E OR S, GRADE B. STRUCTURAL TUBING TO CONFORM TO ASTM A1085. FABRICATE AND ERECT ALL STRUCTURAL STEEL IN CONFORMANCE WITH AISC SPECIFICATIONS.
2. USE ONLY CERTIFIED WELDERS FOR ALL WELDING WORK. USE FILLER METAL HAVING A MINIMUM TENSILE STRENGTH OF 70 KSI AND PERFORM ALL WORK IN ACCORDANCE WITH THE CURRENT STRUCTURAL WELDING CODE (AWS D1.1).
3. UNLESS OTHERWISE NOTED, COAT ALL STRUCTURAL STEEL COMPONENTS WITH PAINT OR OTHER PROTECTIVE COATINGS AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
4. STRUCTURAL STEEL EMBEDDED INTO CONCRETE TO BE CLEAN AND FREE OF PAINT, OIL, OR DIRT.

LUMBER

1. SAWN FRAMING LUMBER SHALL COMPLY WITH THE LATEST EDITION OF THE GRADING RULES OF THE WESTERN WOOD PRODUCTS ASSOCIATION (WWPA) OR THE WEST COAST LUMBER INSPECTION BUREAU (WCLIB). ALL SAWN LUMBER SHALL BE STAMPED WITH THE GRADE MARK OF AN APPROVED LUMBER GRADING AGENCY. SAWN LUMBER SHALL BE DOUGLAS FIR LARCH HEM FIR #2 FOR BETTER MINIMUM GRADE, UNLESS NOTED OTHERWISE IN CONSTRUCTION DOCUMENTS.
2. WOOD CONNECTORS SHOWN ON THESE DRAWINGS SHALL BE PRODUCTS OF SIMPSON STRONG-TIE, INC. UNLESS NOTED OTHERWISE. HARDWARE BY OTHER MANUFACTUERES MAY BE USED PROVIDED THEY ARE OF EQUIVALENT CAPACITY AND HAVE CURRENT ICC-ES APPROVALS. SUBSTITUTIONS MUST BE APPROVED BY THE STRUCTURAL ENGINEEER. INSTALL ALL CONNECTORS WITH ALL FASTENERS REQUIRED BY THE MANUFACTURER'S SPECIFICATIONS UNLESS NOTED OTHERWISE.
3. ALL NAILS SHALL BE COMMON NAILS.
4. ALL STRUCTURAL WOOD PANELS SHALL BE STRUCTURAL II APA RATED SHEATHING, AND MUST CONFORM TO THE FOLLOWING NOMINAL THICKNESS AND SPAN RATING, UNLESS NOTED OTHERWISE:

THICKNESS	SPAN RATING
19/32"	40 / 20

5. FULL WIDTH SHEATHING PANELS SHALL BE USED WHENEVER POSSIBLE.
6. ALL FRAMING AT ADJOINING PANEL EGES IN SHEAR WALLS SHALL BE DOUBLE 2x MEMBERS OR GREATER. BLOCKING MEMBERS AT PANEL EDGES MAY BE LAID FLAT AT THE CONTRACTOR'S OPTION.

PRE-MANUFACTURED ROOF TRUSS NOTES

1. SEE NOTES ON SHEET S-03

EPOXY ANCHORS

1. EPOXY ANCHORS SHALL BE AN ADHESIVE ANCHOR SYSTEM AS LISTED BELOW:
   A. HILTI HIT-HY 200 OR HIT-RE 500 V3
   B. ITW RED HEAD O6+, A7+ OR G5
   C. SIMPSON AT, SET OR SET-3G
2. ANCHOR RODS SHALL BE ASTM A193 GRADE B7, DIAMETER AS INDICATED ON DRAWINGS, THREADED AND GALVANIZED.

DEFERRED SUBMITTALS

1. FOR THIS PROJECT THE FOLLOWING ARE DEFERRED SUBMITTALS;
   A. METAL PLATED ROOF TRUSSES

LOADING CRITERIA

1. BUILDING RISK CATEGORY: IV
2. DEAD LOAD: CALCULATED FROM UNIT WEIGHT
3. LIVE LOADS:
   ALL FLOORS: 100 PSF
   FRP GRATING: H5 TRUCK (4,000 LB WHEEL LOAD MAX)
4. LATERAL EARTH PRESSURE (EFP)
   ACTIVE (LEVEL): 38 PCF
   ACTIVE SEISMIC: 19 PCF
   ACTIVE (SLOPE AT 2:1 BACKFILL FOR RETAINING WALLS): 55 PCF
   AT-REST (LEVEL FOR BUILDING WALLS): 59 PCF
5. WIND LOAD:
   BASIC WIND SPEED: 115 MPH
   EXPOSURE: C
6. SNOW LOAD:
   GROUND SNOW LOAD: 42 PSF
   FLAT ROOF SNOW LOAD: 39 PSF
   SNOW EXPOSURE COEFFICIENT: 1.0
   SNOW IMPORTANCE FACTOR: 1.2
   SNOW THERMAL FACTOR: 1.1
7. SEISMIC LOAD:
   PROCEDURE: EQUIVALENT LATERAL FORCE
   SITE CLASS: D
   IMPORTANCE FACTOR: 1.5
   SEISMIC DESIGN CATEGORY: D
   SPECTRAL RESPONSE COEF:
   S_{DS}: 0.79g
   S_{D1}: null
   BASIC SEISMIC-FORCE-RESISTING SYSTEM:
   SPECIAL REINFORCED MASONRY SHEAR WALLS
   R = 5, OMEGA = 2.5, C_d = 3.5
8. FROST DEPTH: 30 INCHES
9. ALLOWABLE SOIL BEARING CAPACITY: 5,000 PSF

SPECIAL INSPECTIONS

1. SPECIAL INSPECTION IN ACCORDANCE WITH APPROPRIATE SECTIONS OF IBC 2018, CHAPTER 17 IS REQUIRED FOR THE PROJECT.
2. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE, TO THE BUILDING OFFICIAL AND THE ENGINEER.
3. AN APPLICATION FOR OFF-SITE FABRICATION SHALL BE SUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL PRIOR TO FABRICATION.
4. A CERTIFICATE OF COMPLIANCE FOR OFF-SITE FABRICATION SHALL BE COMPLETED AND SUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL PRIOR TO ERECTION OF PREFABRICATED COMPONENTS. SPECIAL INSPECTION REQUIRED PER IBC SECTION 1704.2.
5. SPECIAL INSPECTION ITEMS REQUIRED PER LIST BELOW. CONTINUOUS OR PERIODIC INSPECTIONS IS DESIGNATED WITH A (C) OR (P).

CONCRETE: (TABLE 1705.3, 2018 IBC)
A. PLACING REINFORCEMENT STEEL. ----------P
B. WELDING REINFORCEMENT STEEL (IF APPROVED BY ENGINEER). ----------C
C. PLACING ANCHOR BOLTS AND EMBEDDED PLATES. ----------P
D. VERIFY APPLICABLE CONCRETE MIX BEING USED. ----------P
E. SAMPLING CONCRETE FOR STRENGTH TESTS. ----------C
F. CURING TECHNIQUES AND APPLICATION. ----------P

MASONRY (LEVEL B): (TMS 402/ACI 530/ASCE 5 AND TMS 602/ACI 530.1/ASCE 6)
A. VERIFICATION OF APPROVED SUBMITTAL DOCUMENTS FOR MATERIALS. ----------P
B. VERIFICATION OF PROPORTIONS OF SITE-PREPARED MORTAR AND GROUT. ----------P
C. PREPARATION OF REQUIRED GROUT AND MORTAR SPECIMENS AND PRISMS. ----------P
D. PLACEMENT OF MASONRY UNITS AND JOINTS. ----------P
E. GROUT SPACE PRIOR TO GROUTING. ----------P
F. PLACEMENT OF GROUT. ----------C
G. VERIFY SIZE AND LOCATION OF STRUCTURAL ELEMENTS. ----------P
H. VERIFY TYPE, SIZE, AND LOCATION OF ANCHORS. ----------P
I. VERIFY SIZE, TYPE, AND LOCATION OF REINFORCEMENT. ----------P
J. VERIFY PROTECTION OF MASONRY DURING COLD AND HOT WEATHER. ----------P

STEEL: (CHAPTER N, AISC 360-16)
A. VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS, AND WASHERS, INCLUDING IDENTIFICATION MARKINGS TO CONFIRM ASTM REQUIREMENTS SPECIFIED IN APPROVED CONSTRUCTION DOCUMENTS. ----------P
B. MANUFACTURERS' CERTIFIED MILL TEST REPORTS. ----------P
C. FIELD WELDED CONNECTIONS.

SOILS: (IBC TABLE 1705.6)
A. VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE FOR FOOTING SUPPORT. ----------P
B. VERIFY EXCAVATIONS ARE TO PROPER DEPTH. ----------P
C. VERIFY PROPERTIES OF COMPACTED FILL PRIOR TO PLACEMENT MEET REQUIREMENTS OF PROJECT. ----------P
D. PRIOR TO PLACEMENT OF COMPACTED FILL OBSERVE SUBGRADE AND VERIFY THAT THE SITE HAS BEEN PREPARED PROPERLY. ----------P
E. VERIFY PROPER USE OF COMPACTED FILL INCLUDING PROPER MATERIALS, COMPACTION DENSITIES AND LIFT THICKNESS. ----------C

STRUCTURAL OBSERVATION

BOWEN COLLINS & ASSOCIATES SHALL BE NOTIFIED BY THE CONTRACTOR 5 BUSINESS DAYS BEFORE THE COMPLETION OF THE ITEMS LISTED IN THIS SECTION SO THAT STRUCTURAL OBSERVATION MAY BE PERFORMED IN ACCORDANCE WITH IBC SECTION 1704.5. THE OBSERVATIONS WILL BE PERFORMED AT THE DISCRETION OF BOWEN COLLINS & ASSOCIATES. COMPLETED OBSERVATION REPORTS WILL BE SUBMITTED TO THE BUILDING OFFICIAL.

A. MASONRY WALLS BEFORE FIRST GROUT PLACEMENT.
B. ROOF SHEATHING AT COMPLETION OF ROOF NAILING.

BOWEN COLLINS & ASSOCIATES

STEPHEN D. COHEN — STATE OF UTAH — PROFESSIONAL ENGINEER — STRUCTURAL — #7766558 — 07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

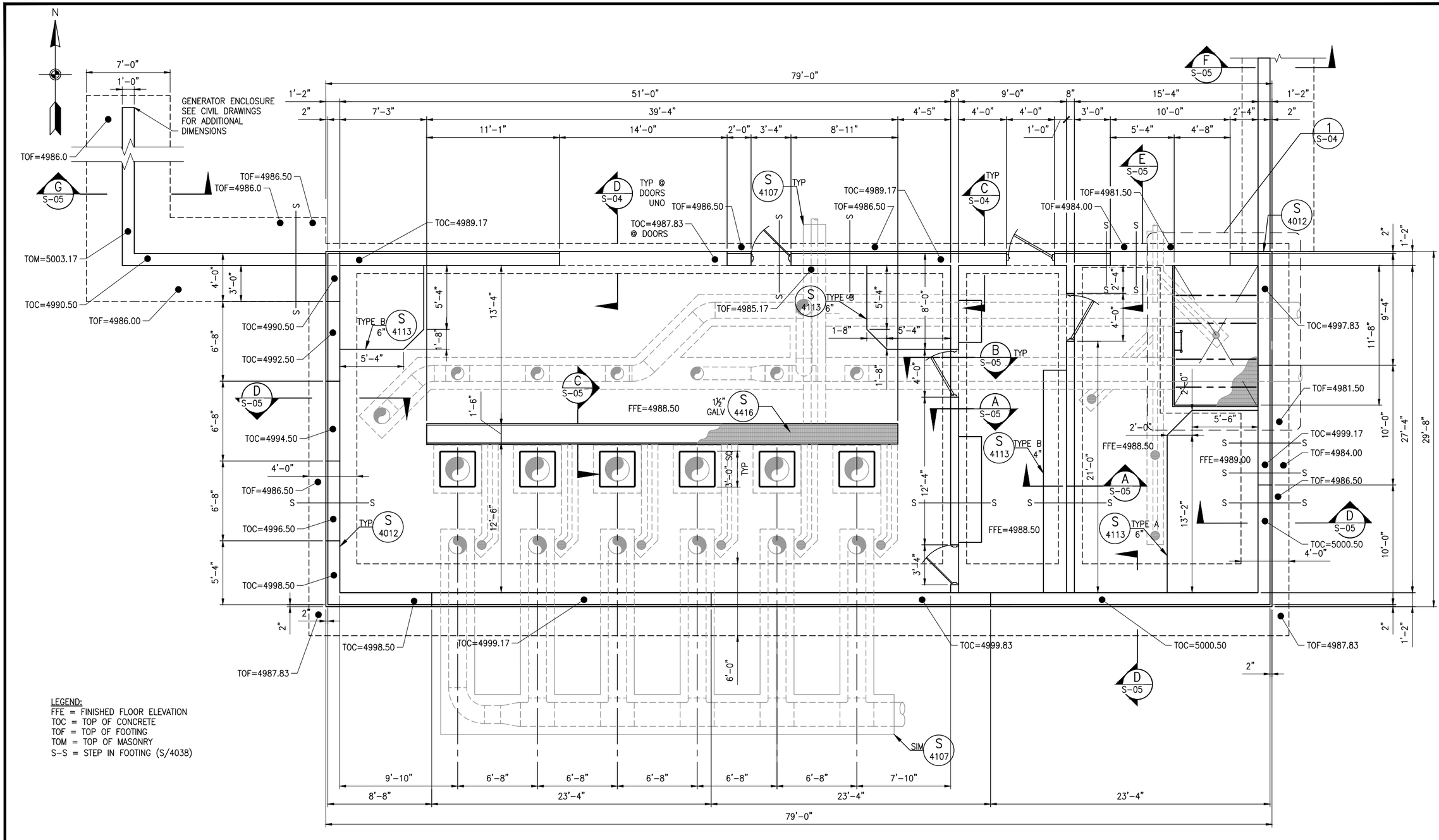
REVIEW: CHECKED S. COHEN, APPROVED S. COHEN
DESIGN: DESIGN S. COHEN, DRAWN K. SMOOT

STRUCTURAL
PUMP STATION
STRUCTURAL GENERAL NOTES

DATE: JULY 2024
PROJECT NUMBER 217-19-04

DRAWING NO. S-01
SHEET 37 OF 72

P:\Herriman\217-19-04 - Zone 2 & 3 Major Water Improvements\2.0 Design Phase\2.9 Drawings\Pump Station\Sht\2171904_S-01.dwg Plotted: 7/10/2024 2:57 PM By: Eric Neil



LEGEND:
FFE = FINISHED FLOOR ELEVATION
TOC = TOP OF CONCRETE
TOF = TOP OF FOOTING
TOM = TOP OF MASONRY
S-S = STEP IN FOOTING (S/4038)

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

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — STEPHEN D. COHEN — #7766558 — STATE OF UTAH — STRUCTURAL — 07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED S. COHEN
APPROVED S. COHEN

DESIGN
DESIGN S. COHEN
DRAWN K. SMOOT

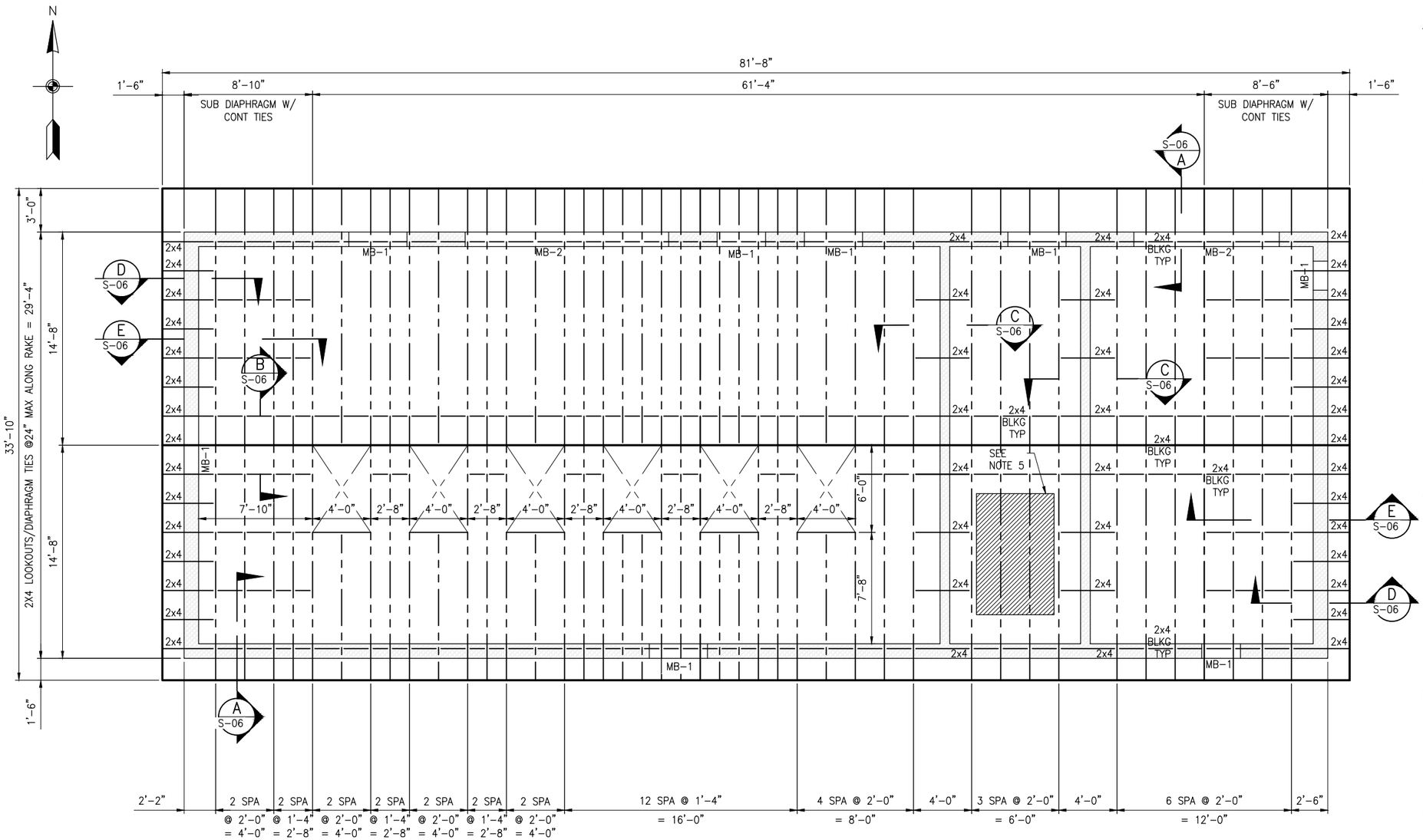
ARCHITECTURAL

PUMP STATION FLOOR PLAN

PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO.
S-02
SHEET 38 OF 72

P:\Herriman\217-19-04 - Zone 2 & 3 Major Water Improvements\2.0 Design Phase\2.9 Drawings\Pump Station\Sht\2171904_S-02.dwg Plotted: 7/10/2024 2:56 PM By: Eric Neil



ROOF PLAN

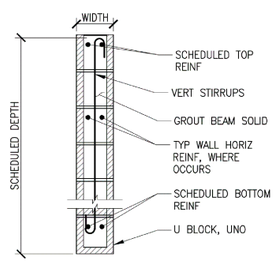
SCALE: 1/4"=1'-0"

PLAN NOTES:

1. SEE STRUCTURAL NOTES ON SHEET S-01 FOR ADDITIONAL INFORMATION.
2. VERIFY ALL ROUGH OPENING DIMENSIONS WITH MECHANICAL AND ARCHITECTURAL DRAWINGS AND MANUFACTURER'S INSTRUCTIONS.
3. ROOF SHEATHING SHALL BE 19/32" STRUCTURAL SHEATHING. STAGGER ADJACENT PANEL EDGES. BLOCK ALL PANEL EDGES W/ FLAT 2x4 BLOCKING. ATTACH BLOCKING TO TRUSSES USING SIMPSON Z2 FRAMING ANCHORS. NAIL WITH 10d NAILS AS FOLLOWS:
   - AT PERIMETER EDGES OF BUILDING NAIL AT 2½ INCHES OC,
   - AT OTHER PANEL EDGES AT 4 INCHES OC (INCLUDING FLAT 2x4 BLOCKING),
   - AT INTERMEDIATE SUPPORTS AT 12 INCHES OC,
   - NAIL TO INTERIOR SUPPORTS AT 2½ INCHES ON CENTER.
4. AT SKYLIGHTS, 2x4 INFILL FRAMING IS REQUIRED AT BOTH TOP (ROOF) AND BOTTOM (CEILING) CHORDS OF THE TRUSSES (A/1008).
5. PLATFORM FOR HVAC UNIT. COORDINATE EQUIPMENT WEIGHT W/ EQUIPMENT SUPPLIER. TRUSS MANUFACTURER SHALL INCLUDE WEIGHT IN DESIGN OF TRUSSES. TRUSSES AND ROOF SHEATHING SHALL BE CONTINUOUS BELOW PLATFORM. FRAME PLATFORM 2x6 @ 16" OC FOR LID AND 2x4 WALLS AROUND PERIMETER ON TOP OF ROOF TRUSSES. PROVIDE 2X4 FRAMING BELOW STUD WALL BETWEEN TRUSSES. SHEATH LID AND WALLS WITH 19/32" STRUCTURAL SHEATHING.
6. FOR TYPICAL MASONRY WALL DETAILS SEE SHEET GS-03. REINFORCE WALLS PER STRUCTURAL NOTES ON S-01, UNO.
7. MASONRY BEAMS (MB-#) OVER OPENINGS SHALL BE REINFORCED PER MASONRY BEAM SCHEDULE. USE MB-1 FOR ALL OPENINGS WITH SPAN LESS THAN 4'-0".

MASONRY BEAM SCHEDULE

MARK	WIDTH	DEPTH	REINFORCEMENT		
			BOTTOM	TOP	VERTICAL
MB-1	8"	16"	(2)#5	--	WALL
MB-2	8"	32"	(2)#5	(2)#5	#4@16"



PRE-MANUFACTURED TRUSS NOTES

1. METAL PLATED WOOD TRUSSES SHALL BE MANUFACTURED AS SPECIFIED IN ANSI/TPI 1. MANUFACTURER OF TRUSSES USING METAL PLATE CONNECTORS SHALL RETAIN AN APPROVED AGENCY TO MAKE NONSCHEDULED INSPECTIONS OF TRUSS MANUFACTURING AND DELIVERY OPERATIONS. THE INSPECTION SHALL COVER ALL PHASES OF TRUSS OPERATIONS, INCLUDING LUMBER STORAGE, HANDLING, CUTTING FIXTURES, PRESSES OR ROLLERS, MANUFACTURING, BUNDLING AND BANDING.
2. THE TRUSS FABRICATOR SHALL BE RESPONSIBLE FOR DETERMINING THE SIZE AND GRADE OF LUMBER REQUIRED FOR EACH TRUSS MEMBER IN ACCORDANCE WITH LOADING SPECIFICATIONS GIVEN. WHERE MEMBER SIZE IS INDICATED ON THE DRAWINGS, THE FABRICATOR SHALL DETERMINE THE REQUIRED GRADE OF LUMBER. GRADES INDICATED ON DRAWINGS ARE MINIMUMS ONLY.
3. PRIOR TO FABRICATION, THE TRUSS FABRICATOR SHALL SUBMIT DESIGN CALCULATIONS AND SHOP DRAWINGS FOR EACH TRUSS TO THE ENGINEER FOR REVIEW. CALCULATIONS SHALL INCLUDE MEMBER LOADS, FORCES AND CRITICAL STRESSES, AND MID-SPAN DEFLECTIONS. CALCULATIONS AND DRAWINGS SHALL ALSO INDICATE TYPE AND LOCATION OF BRACING REQUIRED BOTH DURING CONSTRUCTION AND PERMANENTLY. CALCULATIONS SHALL BEAR THE STAMP AND SIGNATURE OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF UTAH.
4. MOMENT COEFFICIENTS USED IN THE TRUSS DESIGN SHALL BE ⅛ FOR ONE AND TWO SPAN CONDITIONS AND 1/10 FOR THREE OR MORE SPANS. THE EFFECTIVE LENGTH FACTOR USED FOR WEBS SHALL BE 1.0
5. TOOTHED METAL PLATES AT CONNECTOR JOINTS SHALL BE DESIGNED FOR THE FULL MEMBER DESIGN LOADS WITHOUT CONSIDERING WOOD TO WOOD BEARING. A STRESS INCREASE FOR THE VALUE OF A CONNECTOR WILL NOT BE ALLOWED IN ANY CIRCUMSTANCE. NET AREA OF METAL GUSSET PLATES SHALL BE LARGER BY 25% THAN THAT REQUIRED BY CALCULATED STRESSES. INCREASED PLATE SIZE SHALL BE MADE BY INCREASING THE PLATE DIMENSION IN EACH DIRECTION. THE AREA UNDERNEATH THE GUSSET PLATE FOR A DISTANCE OF 1/2 INCH ON EITHER SIDE OF CONNECTORS SHALL BE BALANCED ON THE JOINT AS STRESSES REQUIRE AND DIMENSIONED AS TO THEIR LOCATIONS. ONLY ONE CONNECTION PER JOINT PER SIDE WILL BE ALLOWED.
6. MINIMUM SIZE OF ANY CONNECTOR SHALL BE 15 SQ. IN. MINIMUM BITE OF ANY GUSSET PLATE ON A TRUSSED MEMBER SHALL BE 2-1/2 INCHES.
7. SPLICES IN TOP AND BOTTOM CHORDS SHALL OCCUR AT A JOINT OR WITHIN ONE-QUARTER OF THE SPAN OF A PANEL OF THE TRUSS. EACH SECTION OF THE CHORD MEMBER SHALL BE INVOLVED IN TWO JOINTS PRIOR TO BEING SPLICED.
8. THE FOLLOWING DESIGN CRITERIA SHALL BE USED:
   TOP CHORD SNOW LOAD = 39 PSF (LD = 1.0)
   TOP CHORD DEAD LOAD = 14 PSF
   BOT CHORD DEAD LOAD = 7 PSF
   BOT CHORD LIVE LOAD =(10) PSF*
   *(W/O TOP CHORD SNOW LOAD)
   TOTAL = 60 PSF
9. THE TRUSSES SHALL BE DESIGNED FOR BOTH BALANCED AND UNBALANCED LOAD CASES. FOR THE UNBALANCED LOAD CASE THE WINDWARD SIDE SHALL HAVE NO SNOW LOAD AND THE LEEWARD SIDE SHALL USE 50 PSF (I.E. Is X Pg).

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL STRUCTURAL ENGINEER STEPHEN D. COHEN #7766558 STATE OF UTAH
07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

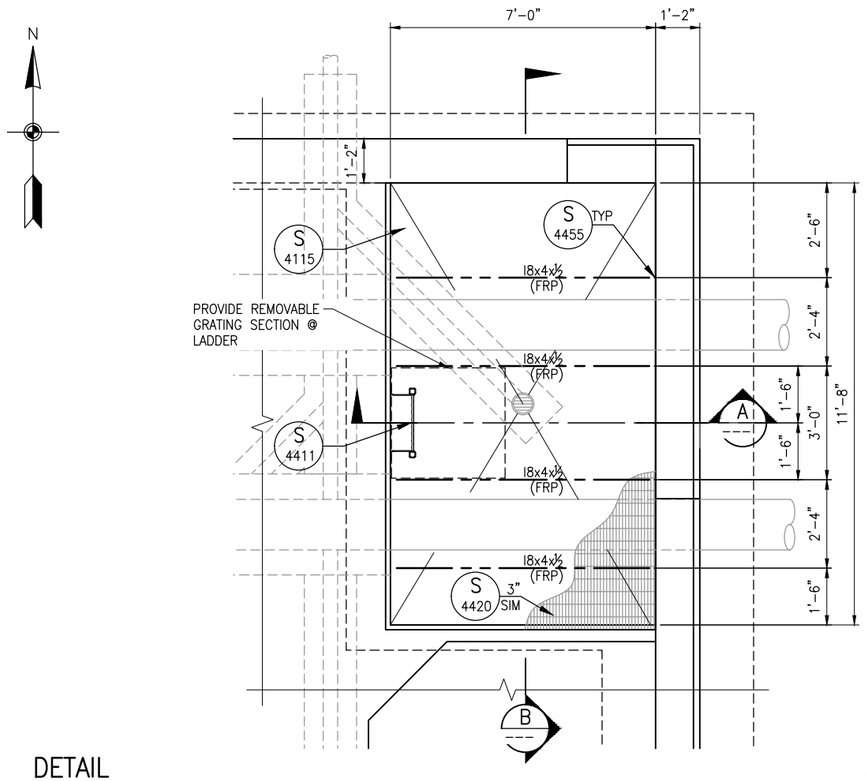
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW S. COHEN
CHECKED S. COHEN
APPROVED S. COHEN

DESIGN S. COHEN
DRAWN K. SMOOT

STRUCTURAL
PUMP STATION ROOF PLAN
DATE: JULY 2024
PROJECT NUMBER 217-19-04

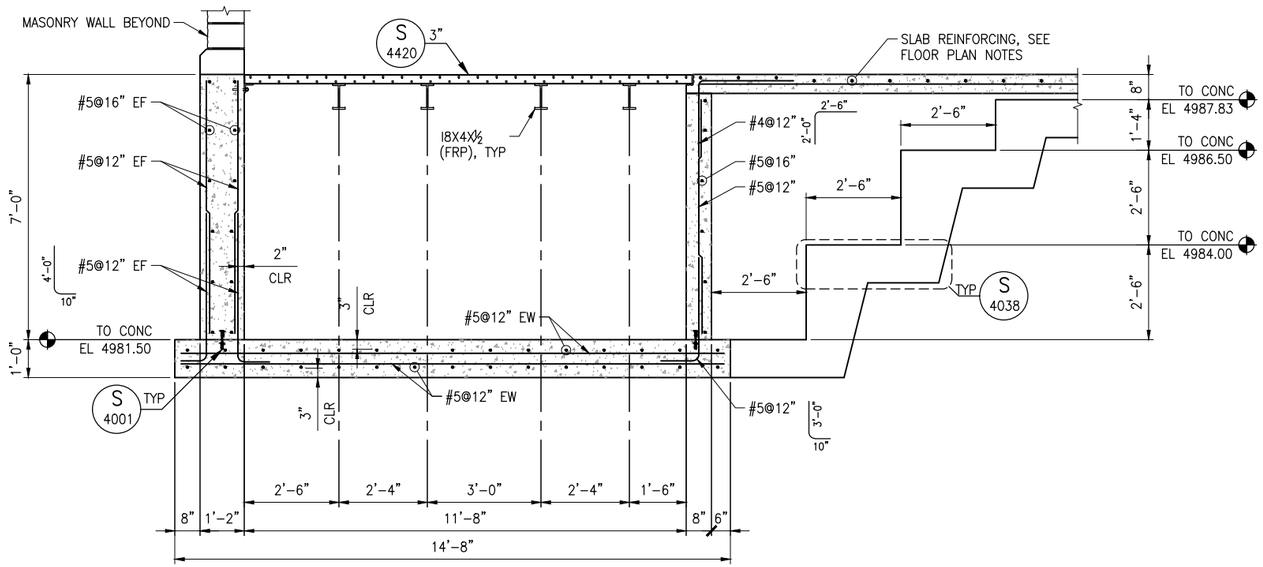
DRAWING NO. S-03
SHEET 39 OF 72



DETAIL

SCALE: 1/2"=1'-0"

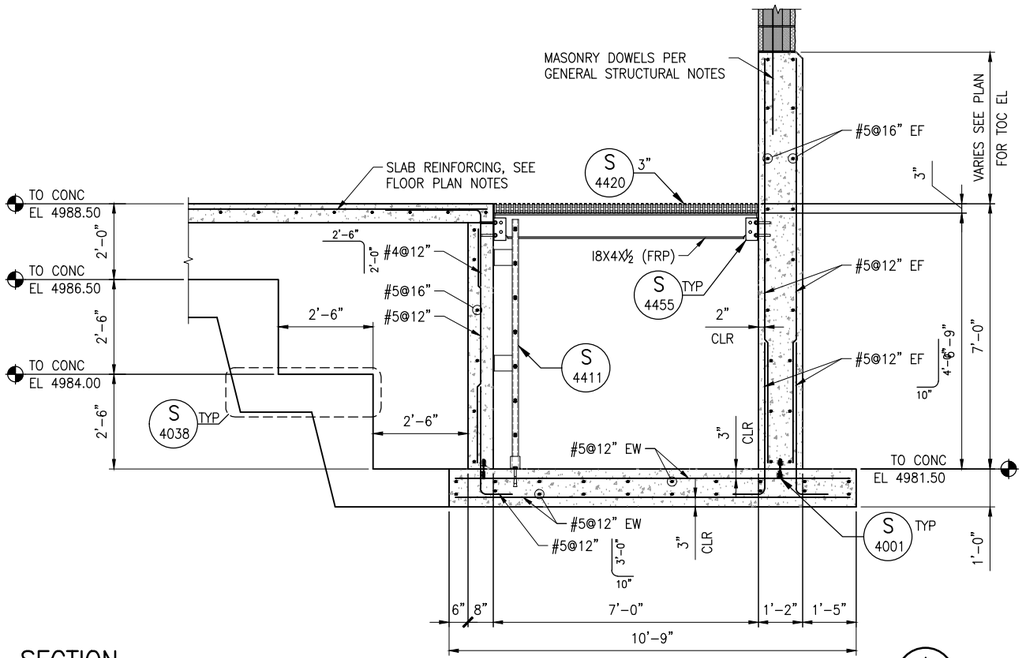
1 / S-02



SECTION

SCALE: 1/2"=1'-0"

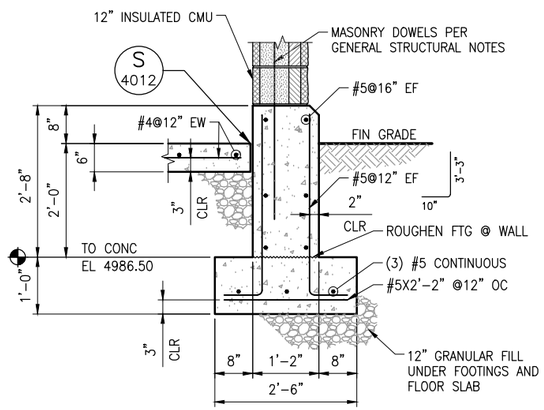
B / ---



SECTION

SCALE: 1/2"=1'-0"

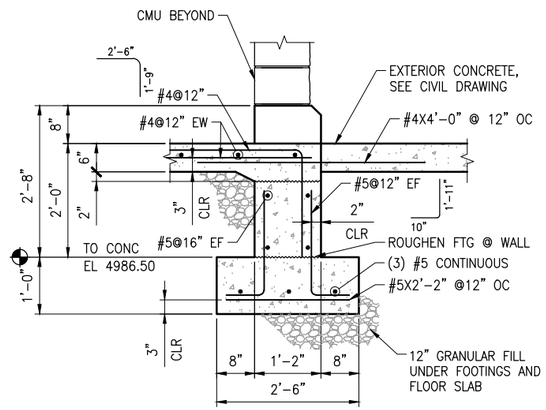
A / ---



SECTION

SCALE: 3/4"=1'-0"

C / S-02



SECTION

SCALE: 3/4"=1'-0"

D / S-02

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL STRUCTURAL ENGINEER STEPHEN D. COHEN #7766558 STATE OF UTAH

07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED S. COHEN
APPROVED S. COHEN

DESIGN
DESIGN S. COHEN
DRAWN K. SMOOT

STRUCTURAL

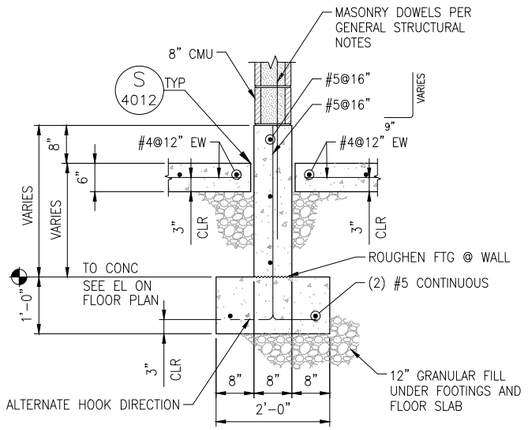
PUMP STATION
SECTIONS AND DETAILS - 1

PROJECT NUMBER 217-19-04
DATE: JULY 2024

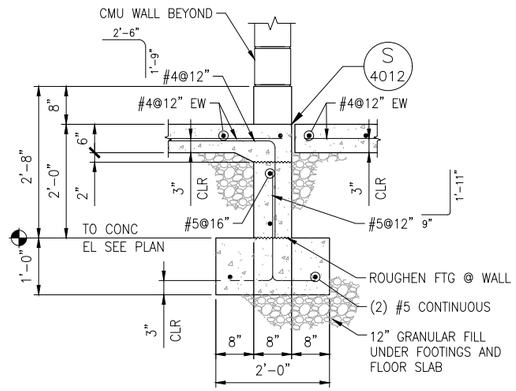
DRAWING NO.
S-04

SHEET 40 OF 72

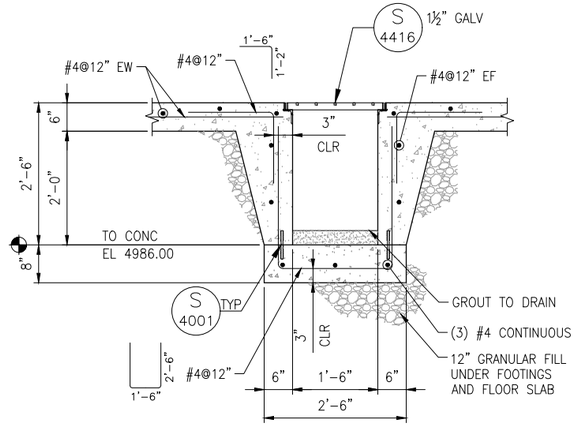
P:\Herriman\217-19-04 - Zone 2 & 3 Major Water Improvements\2.0 Design Phase\2.9 Drawings\Pump Station\Sht\2171904_S-04.dwg Plotted: 7/10/2024 2:55 PM By: Eric Neil



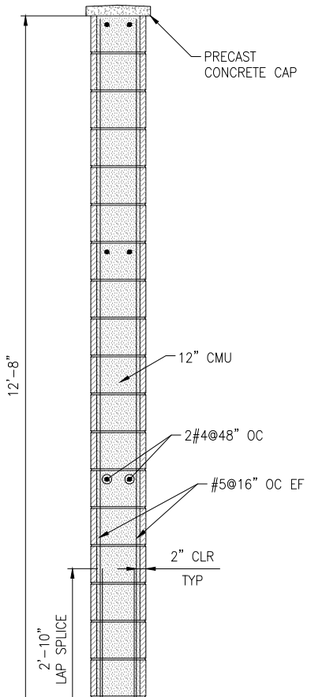
SECTION A
SCALE: 3/4"=1'-0"
S-02



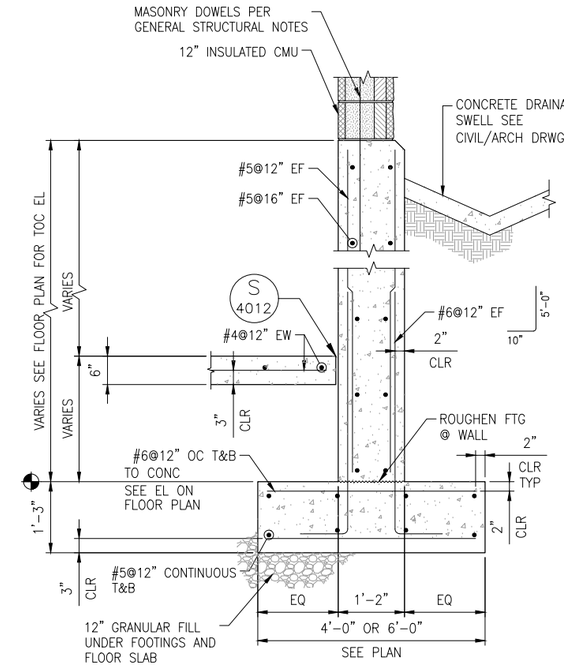
SECTION B
SCALE: 3/4"=1'-0"
S-02



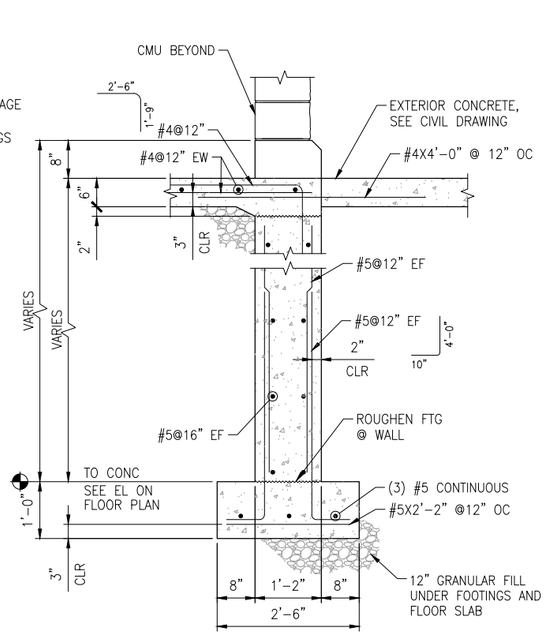
SECTION C
SCALE: 3/4"=1'-0"
S-02



SECTION G
SCALE: 3/4"=1'-0"
S-02



SECTION D
SCALE: 3/4"=1'-0"
S-02



SECTION E
SCALE: 3/4"=1'-0"
S-02

SECTION F
SCALE: 3/4"=1'-0"
S-02

RETAINING WALL SCHEDULE								
H_w	t_w	C	W	t_b	A BAR	B BAR	C BAR	D BAR
6'	10"	2'-11"	4'-9"	12"	#5@16"	#4@16"	#5@16"	#5@10"
8'	10"	3'-8"	6'-0"	12"	#5@12"	#4@16"	#5@12"	#5@11"
10'	12"	4'-6"	7'-0"	12"	#6@12"	#4@12"	#6@12"	#5@13"

RETAINING WALL NOTES:

1. USE A GRANULAR BACKFILL MATERIAL BEHIND RETAINING WALL.
2. PROVIDE WEAKENED PLANE CONTROL JOINTS OR VERTICAL CONSTRUCTION JOINTS AT APPROXIMATELY 20'-0" OC.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL STRUCTURAL ENGINEER STEPHEN D. COHEN #7766558 STATE OF UTAH 07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED S. COHEN
APPROVED S. COHEN

DESIGN
DESIGN S. COHEN
DRAWN K. SMOOT

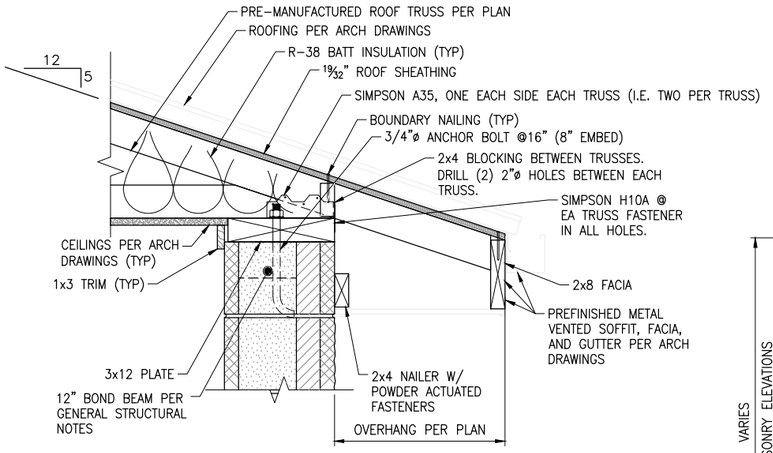
STRUCTURAL

PUMP STATION
SECTION AND DETAILS - 2

DATE: JULY 2024
PROJECT NUMBER 217-19-04

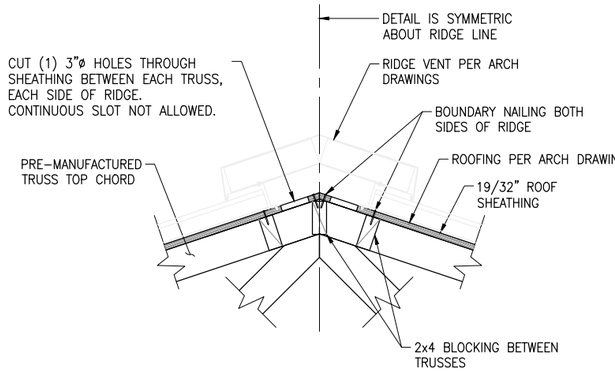
DRAWING NO.
S-05

SHEET 41 OF 72



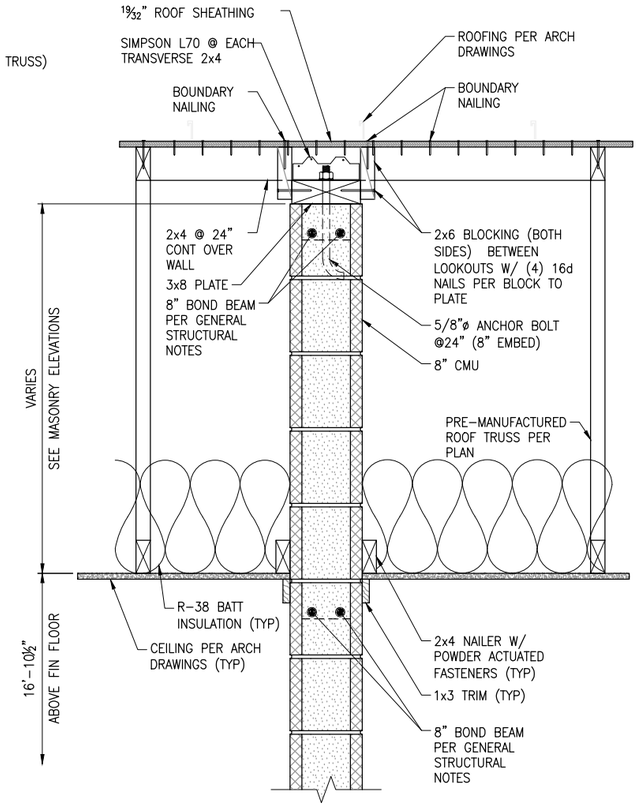
SECTION
SCALE: 1-1/2"=1'-0"

A S-03



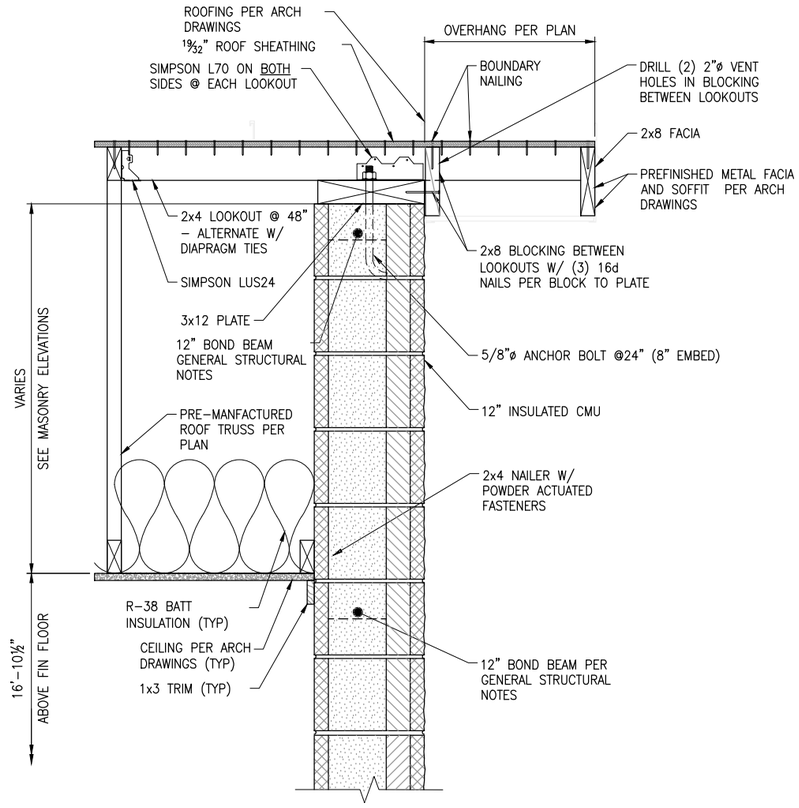
SECTION
SCALE: 1-1/2"=1'-0"

B S-03



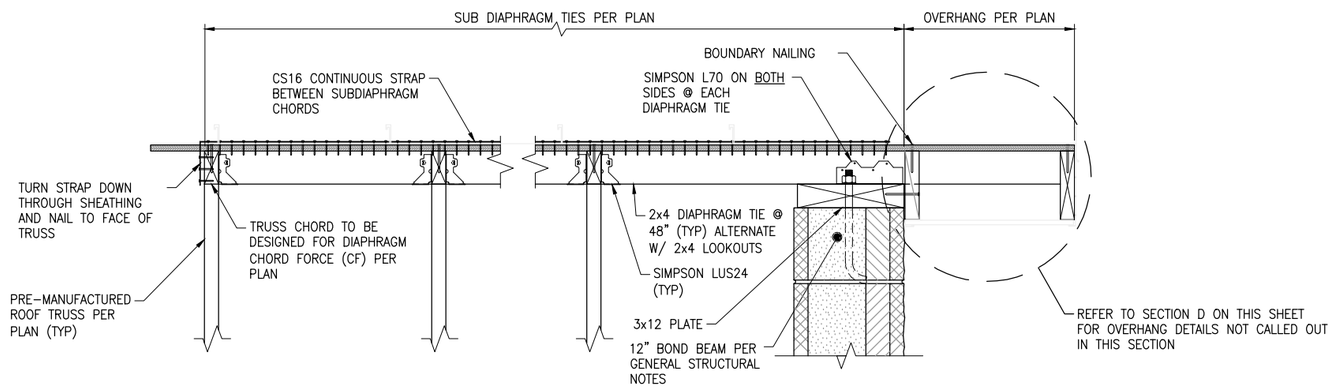
SECTION
SCALE: 1-1/2"=1'-0"

C S-03



SECTION
SCALE: 1-1/2"=1'-0"

D S-03



SECTION
SCALE: 1-1/2"=1'-0"

E S-03

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL STRUCTURAL ENGINEER STEPHEN D. COHEN #7766558 STATE OF UTAH
07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED S. COHEN
APPROVED S. COHEN

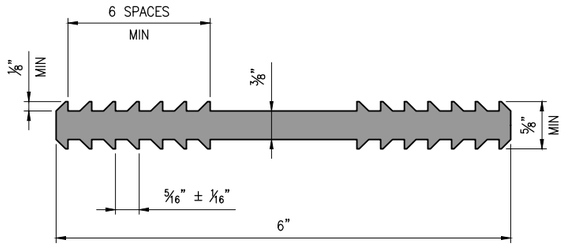
DESIGN
DESIGN S. COHEN
DRAWN K. SMOOT

STRUCTURAL
PUMP STATION
SECTIONS AND DETAILS - 3

DATE: JULY 2024
PROJECT NUMBER 217-19-04

DRAWING NO.
S-06

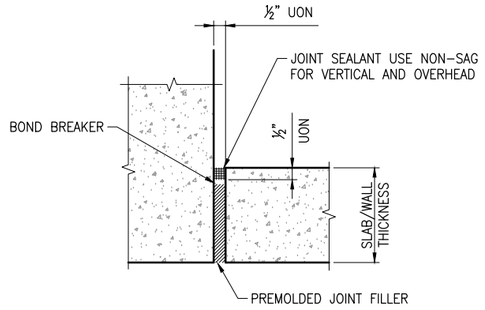
SHEET 42 OF 72



WATERSTOP

NOT TO SCALE

S 4001

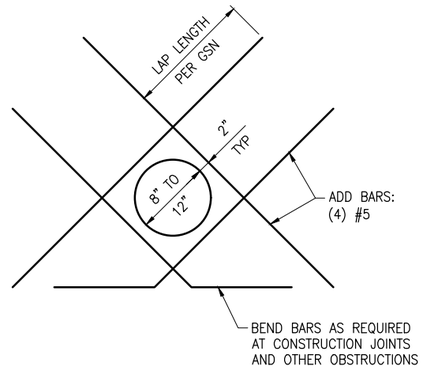


NOTE:
DISCONTINUE ALL REINFORCING AT JOINT.
REINFORCING IS NOT SHOWN FOR CLARITY.

EXPANSION JOINT

NOT TO SCALE

S 4012



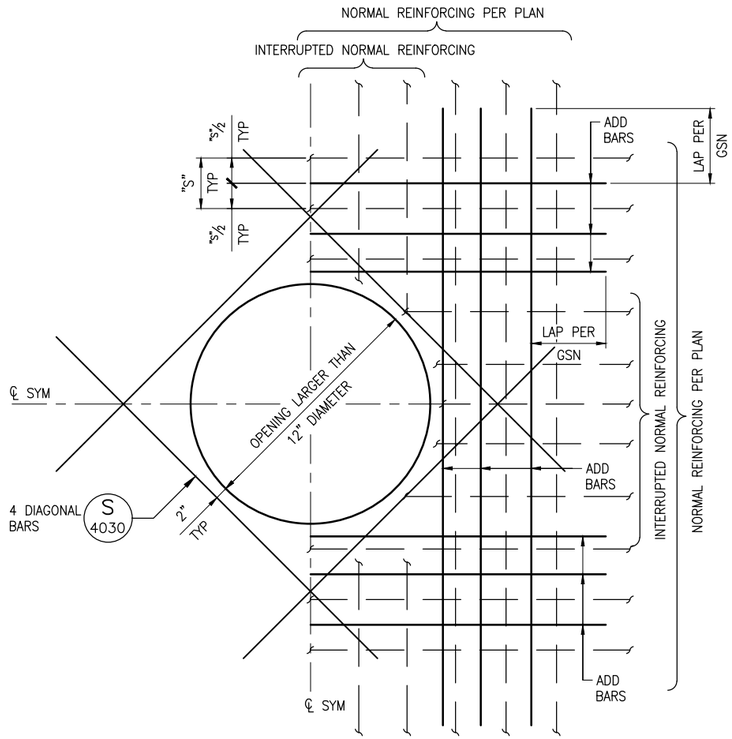
DETAIL NOTES:

1. THIS DETAIL TO BE USED WHEN CALLED FOR ON THE DRAWINGS OR WHEN NO OTHER DETAIL IS SPECIFIED.
2. CUT NORMAL REINFORCING 2" CLEAR OF OPENING.
3. DIAGONAL BARS TO BE PLACED:
   - AT CENTERLINE OF WALL OR SLAB WHERE SINGLE MAT OF REINFORCEMENT IS PROVIDED.
   - AT EACH FACE OF WALL OR SLAB WHERE TWO MATS OF REINFORCEMENT ARE PROVIDED.
   - NO ADDITIONAL REINFORCING REQUIRED FOR OPENINGS SMALLER THAN 8".

DIAGONAL REINFORCEMENT AT CIRCULAR OPENINGS

NOT TO SCALE

S 4030



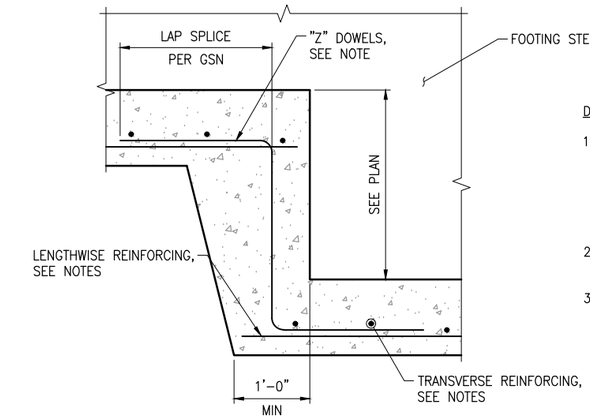
DETAIL NOTES:

1. THIS DETAIL TO BE USED FOR OPENINGS LARGER THAN 12"ø AND WHEN CALLED FOR ON THE DRAWINGS OR WHEN NO OTHER ADDITIONAL REINFORCING IS SPECIFIED. FOR OPENINGS SMALLER THAN 12"ø, USE DETAIL S/4030.
2. AREA OF ADD BARS AT EACH EDGE OF OPENING IN EACH DIRECTION SHALL MATCH ½ THE CROSS SECTIONAL AREA OF THE INTERRUPTED BARS. BARS UP TO TWO BAR SIZES LARGER THAN NORMAL REINFORCING MAY BE USED. FIT ADD BARS WITHIN A DISTANCE OF 2X WALL/SLAB THICKNESS FROM EDGE OF OPENING.
3. CUT NORMAL REINFORCING 2" CLEAR OF OPENING.
4. PROVIDE STANDARD ACI HOOKS ON BARS/DOWELS IF STRAIGHT EXTENSION PAST THE OPENING CANNOT BE ACHIEVED.
5. PLACE ADD BARS IN SAME PLANES AS NORMAL REINFORCING INDICATED.
6. PLACE #5 ADD DIAGONAL CORNER BARS UNDER NORMAL REINFORCING INDICATED.
7. WHEN AN INTERSECTING SLAB OR WALL OCCURS WITHIN ONE WALL/SLAB THICKNESS OF THE EDGE OF OPENING, NO ADD BARS ARE REQUIRED ON THAT SIDE.

ADDITIONAL REINFORCING AT CIRCULAR OPENINGS IN WALLS/SLABS

NOT TO SCALE

S 4036



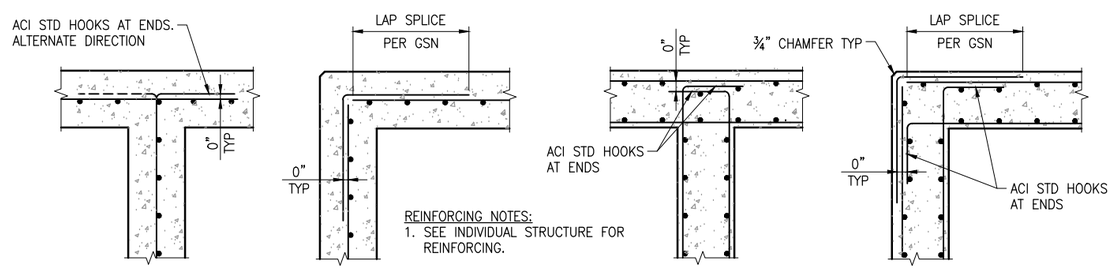
DETAIL NOTES:

1. REINFORCING MATS IN FOOTING STEPS TO MATCH ADJACENT FOOTING (I.E. WHERE ADJACENT FOOTING HAS A SINGLE MAT OF REINFORCING ONLY A SINGLE MAT IS REQUIRED IN THE FOOTING STEPS, IF ADJACENT FOOTING HAS DOUBLE MAT OF REINFORCING THEN A DOUBLE MAT IS REQUIRED IN THE FOOTING STEPS).
2. "Z" DOWELS TO MATCH SIZE AND SPACING OF ADJACENT FOOTING LENGTHWISE REINFORCING.
3. LENGTHWISE AND TRANSVERSE FOOTING STEP REINFORCING TO MATCH SIZE AND SPACING OF ADJACENT FOOTING.

REINFROCEMENT AT FOOTING STEP

NOT TO SCALE

S 4038



SINGLE-CURTAIN REINFORCING

DOUBLE-CURTAIN REINFORCING

WALL REINFORCING AT CORNERS AND JUNCTIONS

NOT TO SCALE

S 4039

BOWEN COLLINS & ASSOCIATES

STEPHEN D. COHEN #7606558 PROFESSIONAL STRUCTURAL ENGINEER STATE OF UTAH
07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN
DESIGN S. COHEN
DRAWN K. SMOOT

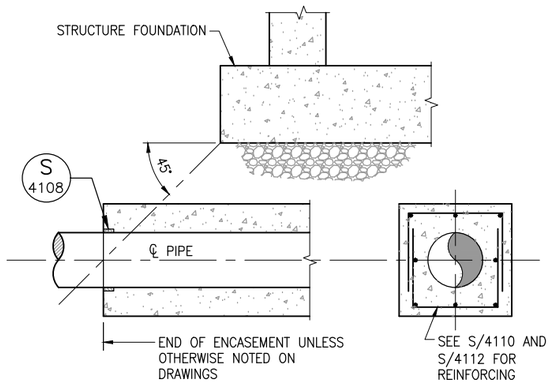
REVIEW
CHECKED S. COHEN
APPROVED S. COHEN

STRUCTURAL

GENERAL STRUCTURAL DETAILS - 1

PROJECT NUMBER 217-19-04
DATE: JULY 2024

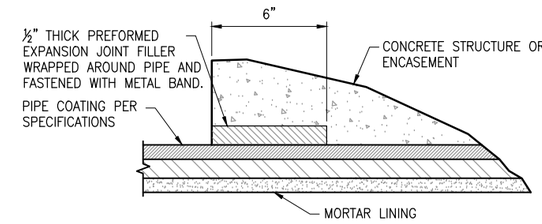
DRAWING NO.
GS-01
SHEET 43 OF 72



PIPE ENCASEMENT END

NOT TO SCALE

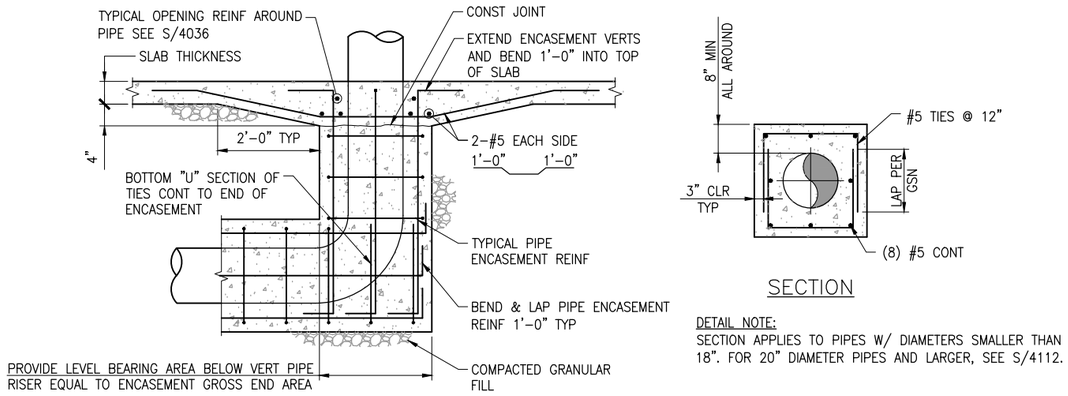
S 4107



PIPE ENCASEMENT END

NOT TO SCALE

S 4108



ELEVATION

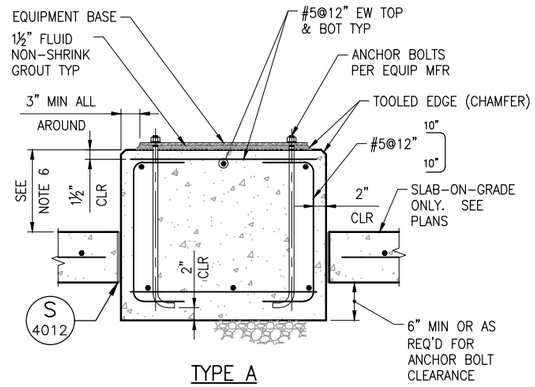
SECTION

DETAIL NOTE:
SECTION APPLIES TO PIPES W/ DIAMETERS SMALLER THAN 18". FOR 20" DIAMETER PIPES AND LARGER, SEE S/4112.

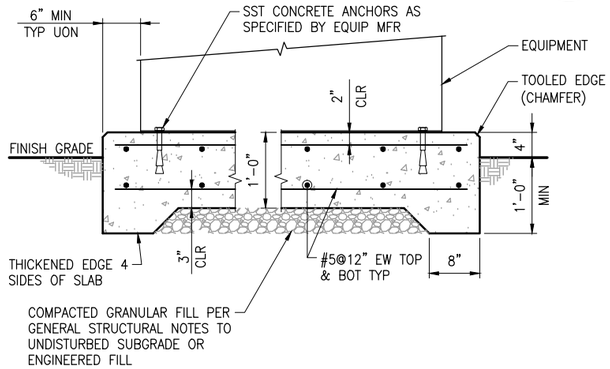
PIPE ENCASEMENT UNDER STRUCTURES

NOT TO SCALE

S 4110

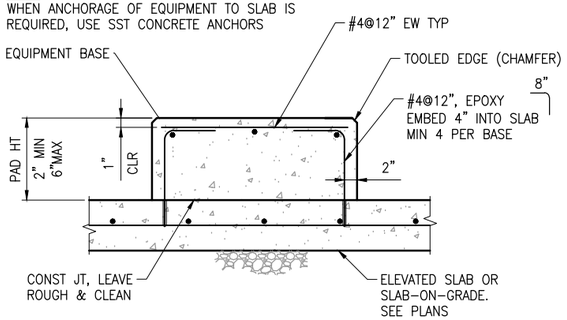


TYPE A



TYPE C

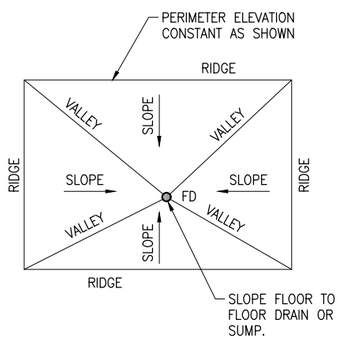
NOTE:
WHEN ANCHORAGE OF EQUIPMENT TO SLAB IS REQUIRED, USE SST CONCRETE ANCHORS



TYPE B

EQUIPMENT PAD NOTES

1. PAD SIZE SHALL BE MINIMUM INDICATED OR AS SHOWN ON THE DRAWINGS. VERIFY ALL PAD SIZE REQUIREMENTS WITH EQUIPMENT SHOP DRAWINGS OF ACTUAL EQUIPMENT FURNISHED AND OBTAIN ENGINEER'S APPROVAL OF FINAL DIMENSIONS.
2. THE SIZE, NUMBER, TYPE, LOCATION, AND THREAD PROJECTION OF THE ANCHOR BOLTS SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER, AND SHALL BE AS APPROVED BY THE ENGINEER. ANCHOR BOLTS SHALL BE HELD IN POSITION WITH TEMPLATES MATCHING THE EQUIPMENT BASE PLATE, WHILE PAD IS BEING POURED.
3. INSTALL EQUIPMENT BASES LEVEL UNLESS SPECIFIED OTHERWISE.
4. TYPE "A" DETAIL SHALL BE USED ONLY FOR SLABS ON GRADE AND AT GRADE. THE SURROUNDING FLOOR SLAB SHALL NOT BE PLACED UNTIL THE EXACT SIZE AND LOCATION OF THE EQUIPMENT PAD IS KNOWN.
5. WEDGES OR SHIMS SHALL BE USED TO SUPPORT THE BASE WHILE THE NON-SHRINK GROUT IS PLACED. TEMPORARY LEVELING NUTS SHALL BE BACKED OFF. IF LEFT IN PLACE, THE WEDGES AND SHIMS SHALL NOT BE EXPOSED TO VIEW.
6. HEIGHT OF PADS SHALL BE MINIMUM REQUIRED FOR ANCHOR BOLT CLEARANCE. COORDINATE ANCHOR BOLT LENGTH WITH EQUIPMENT MANUFACTURER.



FLOOR SLOPE

NOT TO SCALE

S 4115

EQUIPMENT PAD DETAILS

NOT TO SCALE

S 4113

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER STRUCTURAL STATE OF UTAH STEPHEN D. COHEN #7766558 07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED S. COHEN
APPROVED S. COHEN

DESIGN
DESIGN S. COHEN
DRAWN K. SMOOT

STRUCTURAL

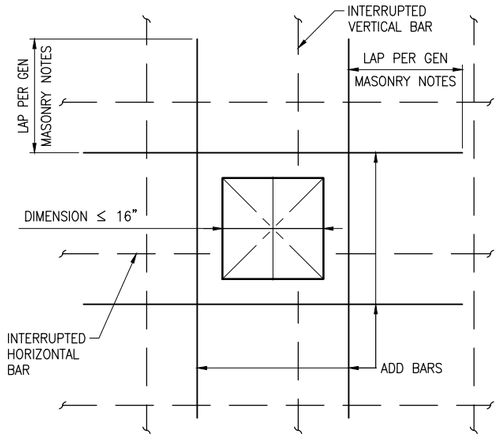
GENERAL STRUCTURAL DETAILS - 2

PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO.
GS-02

SHEET 44 OF 72

P:\Herriman\217-19-04 - Zone 2 & 3 Major Water Improvements\2.0 Design Phase\2.9 Drawings\Pump Station\Sht\2171904_GS-02.dwg Plotted: 7/10/2024 3:02 PM By: Eric Neil



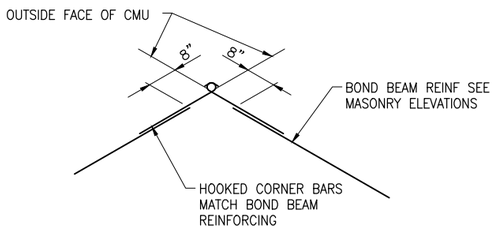
DETAIL NOTES:

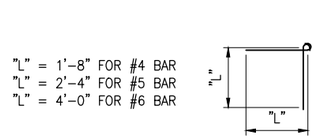
1. THIS DETAIL IS TO BE USED FOR OPENINGS LESS THAN 16" IN ANY DIRECTION AND WHEN CALLED FOR ON THE DRAWINGS OR WHEN NO OTHER ADDITIONAL REINFORCING IS SPECIFIED. SEE ELEVATIONS FOR OPENINGS LARGER THAN 16".
2. ADD BARS AT EACH EDGE OF OPENING IN EACH DIRECTION SHALL MATCH THE CROSS SECTIONAL AREA OF THE INTERRUPTED BAR. WHERE NO BARS ARE INTERRUPTED PROVIDE #4 MINIMUM. FIT ADD BARS WITHIN THE ADJACENT CELLS FROM THE EDGE OF THE OPENING.
3. CUT NORMAL REINFORCING 2" CLEAR OF OPENING.
4. PROVIDE STANDARD ACI HOOKS ON BARS/DOWELS IF STRAIGHT EXTENSION PAST THE OPENING CANNOT BE ACHIEVED.
5. PLACE ADD BARS IN SAME PLANES AS NORMAL REINFORCING INDICATED.

REINFORCEMENT AT MASONRY OPENING

NOT TO SCALE

S 4211

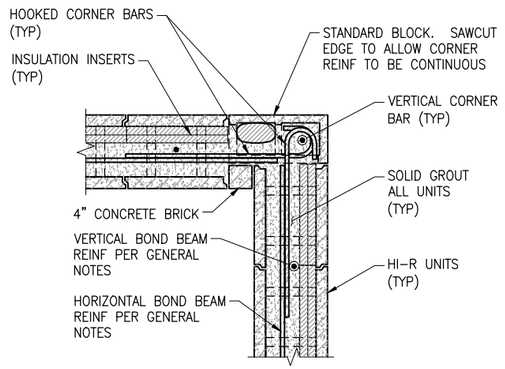


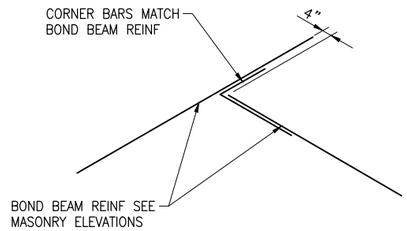


BOND BEAM CORNER DETAIL

NOT TO SCALE

S 4212

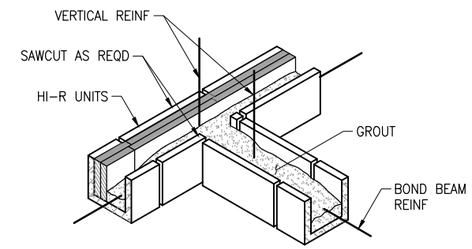


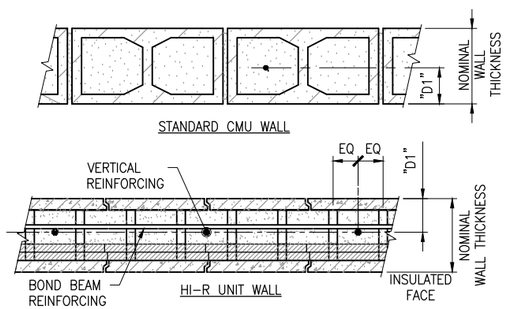


BOND BEAM INTERSECTION DETAIL

NOT TO SCALE

S 4213



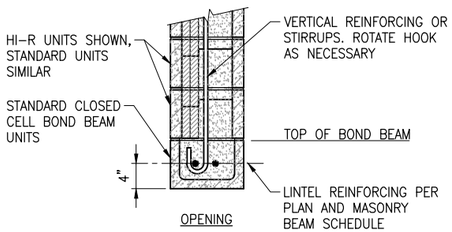


VERTICAL BAR LOCATION	
NOMINAL WALL THICKNESS	"D1"
12" HI-R	4.6"
8" CMU	3.81"

VERTICAL WALL STEEL LOCATION

NOT TO SCALE

S 4214



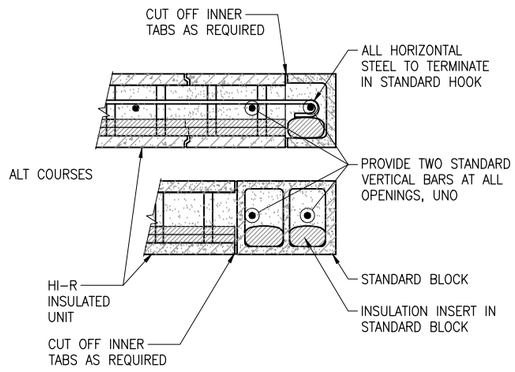
DETAIL NOTES:

1. SEE MASONRY BEAM SCHEDULE FOR REQUIRED REINFORCING. MINIMUM IS (1) #5 BAR.
2. NO LAPS ALLOWED IN BEAM REINFORCING WITHIN 2'-0" OF EDGE OF OPENING.

LINTEL BEAM SECTION

NOT TO SCALE

S 4215



DOOR OR WINDOW JAMB

NOT TO SCALE

S 4219

GENERAL MASONRY NOTES

1. THE NUMBER AND SIZE OF FOOTING DOWELS REQUIRED TO THE FOUNDATION SHALL BE PER MASONRY WALL ELEVATIONS AND FOUNDATION DETAILS.
2. WHERE MASONRY ELEVATIONS INDICATE MASONRY CONTROL JOINTS (MCJ), THE BOND BEAM STEEL SHALL BE CONTINUOUS OR DISCONTINUOUS AS SHOWN ON THE ELEVATION. WHERE STEEL IS TO BE CONTINUOUS, RAKE MORTAR JOINT ON BOTH SIDES OF WALL AND APPLY SEALANT TO MATCH CONTROL JOINT DETAILS.
3. FOR LOCATIONS OF PIPE SLEEVES, CONDUITS, AND OTHER MECHANICAL AND ELECTRICAL PENETRATIONS, REFER TO PERTINENT UTILITY DRAWINGS.
4. SEE ARCHITECTURAL ELEVATIONS AND DETAILS FOR LOCATION OF MASONRY FINISH(S).
5. ALL BLOCK SIZES (NOMINAL) ARE INDICATED ON THE FOUNDATION PLAN.
6. SPECIAL INSPECTION PER APPROPRIATE SECTIONS OF THE 2015 INTERNATIONAL BUILDING CODE ARE REQUIRED.
7. ALL WALLS ON THIS PROJECT ARE TO BE SOLID GROUTED REGARDLESS OF WHETHER GROUT IS SHOWN ON GENERAL DETAILS OR NOT.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL STRUCTURAL ENGINEER STEPHEN D. COHEN #7766558 STATE OF UTAH 07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

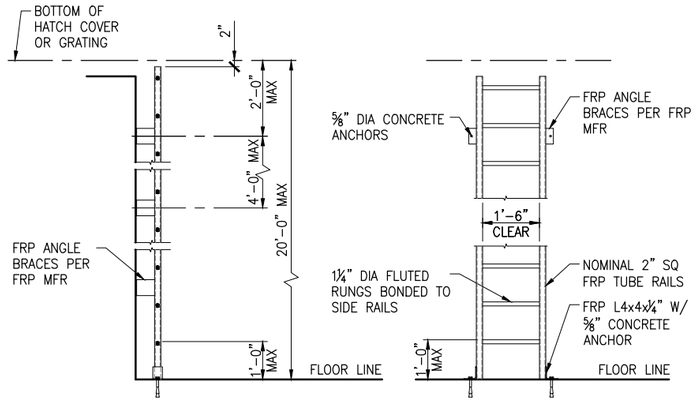
REVIEW S. COHEN
CHECKED S. COHEN
APPROVED S. COHEN

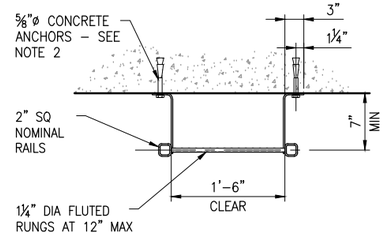
DESIGN S. COHEN
DRAWN K. SMOOT

STRUCTURAL
GENERAL STRUCTURAL DETAILS - 3

PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO. GS-03
SHEET 45 OF 72





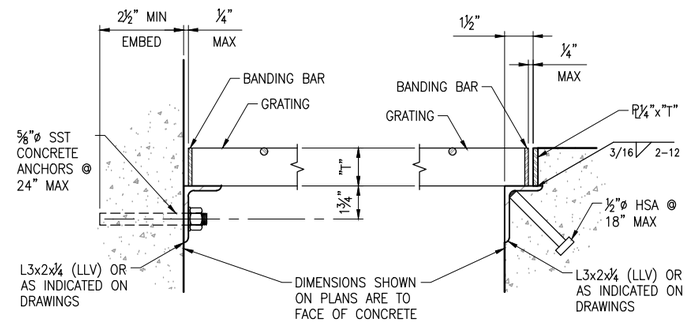
LADDER NOTES:

1. FABRICATE ALL LADDER COMPONENTS FROM FRP.
2. USE 316 STAINLESS STEEL FOR ANCHORS & FASTENERS.
3. FABRICATE AND INSTALL LADDERS TO COMPLY WITH OSHA AND ANSI STANDARDS.

FIXED LADDER (FIBERGLASS)

NOT TO SCALE

S 4411



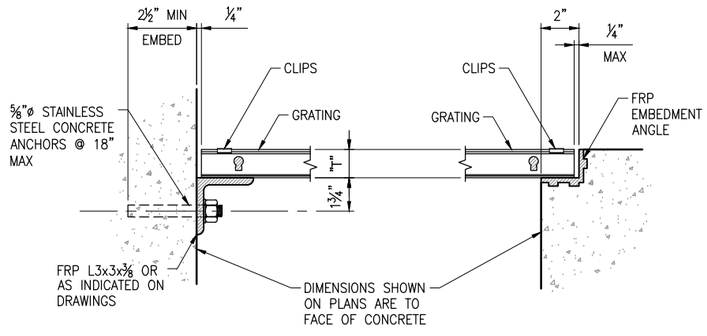
DETAIL NOTES:

1. GRATING DEPTH "T" AS NOTED ON DRAWINGS.
2. ALL EDGES AND OPENINGS ARE TO BE BANDED.
3. WEIGHT OF INDIVIDUAL GRATING SECTION SHALL NOT EXCEED 80 LBS.
4. METAL BEARING BARS ARE TO BE DEPTH "T"x3/16" @ 1 3/16" OC. CROSS BARS ARE TO BE AT 4" OC.
5. PROVIDE A MINIMUM OR 4 CLIPS PER GRATING PANEL AND LOCATE APPROXIMATELY 4" FROM PANEL CORNERS. MAXIMUM SPACING OF CLIPS IS 3'-0".
6. MATERIALS:
   ALUMINUM GRATING – USE ALUMINUM ANGLE SUPPORTS AND STAINLESS STEEL BOLTS AND CLIPS.
   GALVANIZED STEEL GRATING – USE GALVANIZED STEEL SUPPORTS, BOLTS, AND CLIPS. HOT-DIP GALVANIZE AFTER FABRICATION.
   STAINLESS STEEL GRATING – USE 316 STAINLESS STEEL ANGLE SUPPORTS, BOLTS, AND CLIPS.

METAL GRATING

NOT TO SCALE

S 4416



DETAIL NOTES:

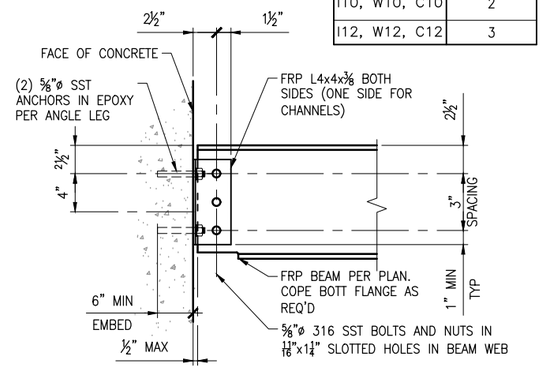
1. UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL GRATING IS FIBERGLASS.
2. GRATING DEPTH "T" AS NOTED ON DRAWINGS.
3. WEIGHT OF INDIVIDUAL GRATING SECTION SHALL NOT EXCEED 80 LBS.
4. AT FLOW METER VAULT IN CHEMICAL ROOM USE FIBERGRATE H15830 OR APPROVED EQUAL FRP GRATING PRODUCT.
5. PROVIDE A MINIMUM OR 4 CLIPS PER GRATING PANEL AND LOCATE APPROXIMATELY 4" FROM PANEL CORNERS. MAXIMUM SPACING OF CLIPS IS 3'-0".
6. MATERIALS:
   FRP GRATING – USE PULTRUED FRP GRATING WITH FRP ANGLE SUPPORTS AND CLIPS AND STAINLESS STEEL BOLTS.

FIBERGLASS GRATING

NOT TO SCALE

S 4420

CONNECTION SCHEDULE	
FRP SECTION	ROWS OF BOLTS
I8, W8, C8	2
I10, W10, C10	2
I12, W12, C12	3



FIBERGLASS BEAM CONNECTION

NOT TO SCALE

S 4455

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL STRUCTURAL ENGINEER STEPHEN D. COHEN #7766558 STATE OF UTAH 07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED S. COHEN APPROVED S. COHEN

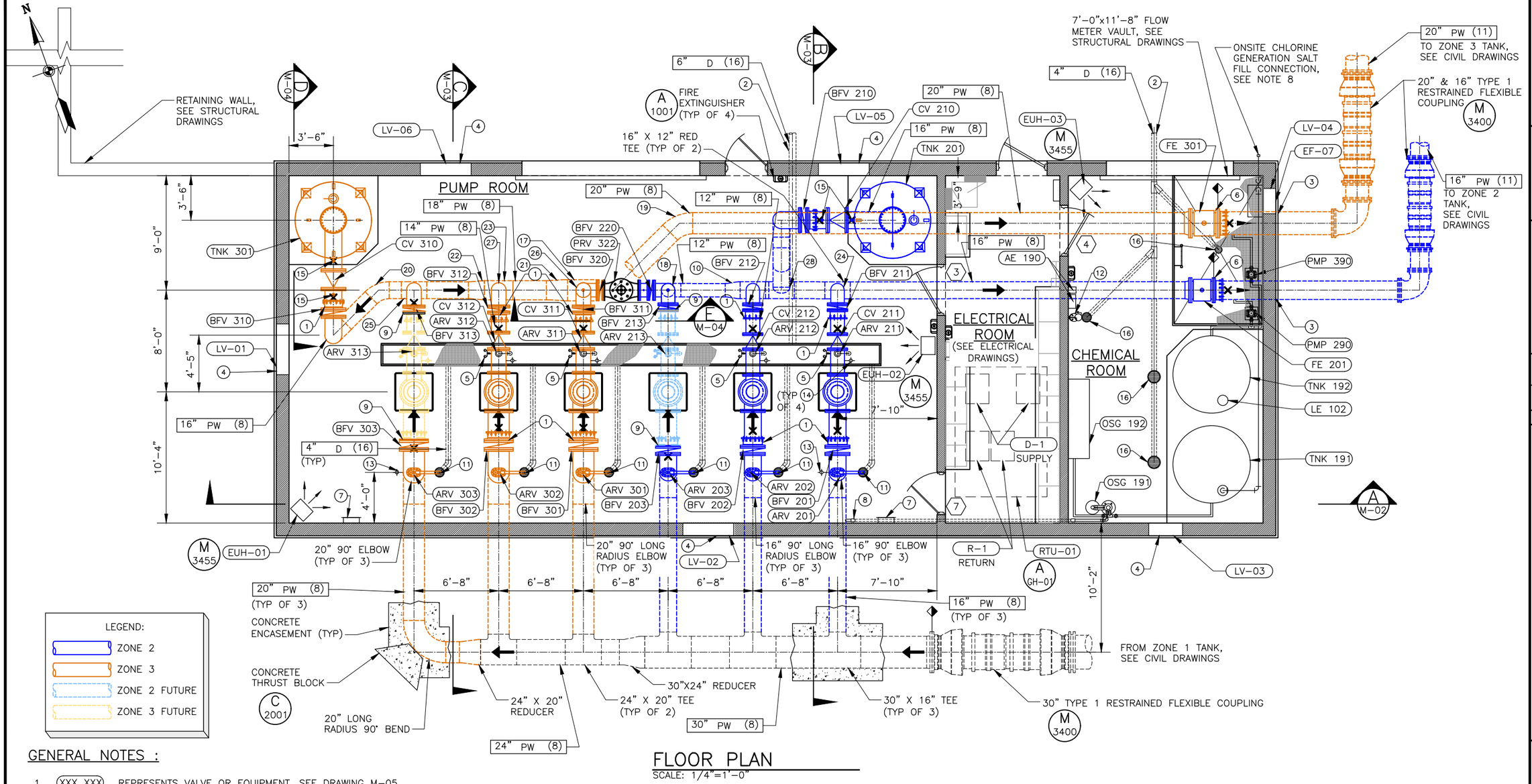
DESIGN S. COHEN DRAWN K. SMOOT

STRUCTURAL
GENERAL STRUCTURAL DETAILS - 4

PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO. GS-04
SHEET 46 OF 72

P:\Herriman\217-19-04 - Zone 2 & 3 Major Water Improvements\2.0 Design Phase\2.9 Drawings\Pump Station\Sht2171904_GS-04.dwg Plotted: 7/10/2024 3:01 PM By: Eric Neil



FLOOR PLAN

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

GENERAL NOTES :

1. (XXX XXX) REPRESENTS VALVE OR EQUIPMENT, SEE DRAWING M-05.
2. (XXX-XX) REPRESENTS HVAC EQUIPMENT, SEE DRAWING H-01.
3. XX" XX (XX) REPRESENTS PIPE MATERIAL, SEE DRAWING G-06.
4. MINIMUM SLOPE FOR ALL 4" DRAIN SHALL BE ¼"/FT AND 6" DRAIN PIPES SHALL BE ⅛"/FT
5. ✕ – REPRESENTS LOCATION OF PIPE SUPPORTS (IN PLAN VIEW ONLY). SEE M 3389
6. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR REGARDING FINAL LOCATION OF CONDUITS.
7. COORDINATE LOCATION OF ALL PIPE PENETRATIONS WITH STRUCTURAL DRAWINGS.
8. SALT FILL LINE TO HAVE MINIMUM OF 1.0% SLOPE TOWARDS THE BRINE TANK ONCE IT HAS ENTERED THE CHEMICAL ROOM.
9. (X) – REPRESENTS DOOR SCHEDULE, SEE DRAWING A-02.

MATERIAL SCHEDULE:

1. RESTRAINED DISMANTLING JOINT COUPLING
2. SEE CIVIL DRAWINGS FOR CONTINUATION
3. SLEEVED PIPE OPENING METHOD "A" (M 3307)
4. PROVIDE MOTORIZED DAMPER TO OPEN WHEN EXHAUST FAN IS RUNNING
5. PRESSURE SWITCH AND PRESSURE INDICATING TRANSMITTER ASSEMBLY (M 3001)
6. INSULATING FLANGE (M 3572)
7. HOSE RACK (M 3006)
8. 2" SDR-7 POLY WATER SUPPLY AND CONNECTION FOR ON-SITE CHLORINE GENERATION EQUIPMENT. ROUTE PIPING UNDER FLOOR TO CHEMICAL ROOM (M 3167)
9. INSTALL BLIND FLANGE ON BUTTERFLY VALVE
10. 16" X 12" REDUCER
11. 12" FLOOR DRAIN (M 3802)
12. EMERGENCY EYE WASH STATION
13. HOSE BIB
14. SAMPLE TAP (M 3000) (SIM)
15. SURGE TANK BYPASS TO BE INSTALLED ABOVE CHECK VALVE, SEE DRAWING M-04
16. 12" FLOOR DRAIN WITH 'P' TRAP (M 3802) (SIM)
17. 20"X14" TEE
18. 12" 90° SIDE ELBOW
19. 20" 45° BEND (TYP OF 2)
20. 16" 45° BEND
21. 20"X18" REDUCER
22. 18"X16" REDUCER
23. 18"X14" TEE
24. 12" 90° BEND (TYP OF 3)
25. 16"X14" TEE
26. 14"X12" 90° SIDE ELBOW
27. 14" 90° BEND (TYP OF 2)
28. 16" TEE (ROTATED 45°)

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER ERIC W. NEIL 7702647 STATE OF UTAH 07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION
HERRIMAN, UTAH

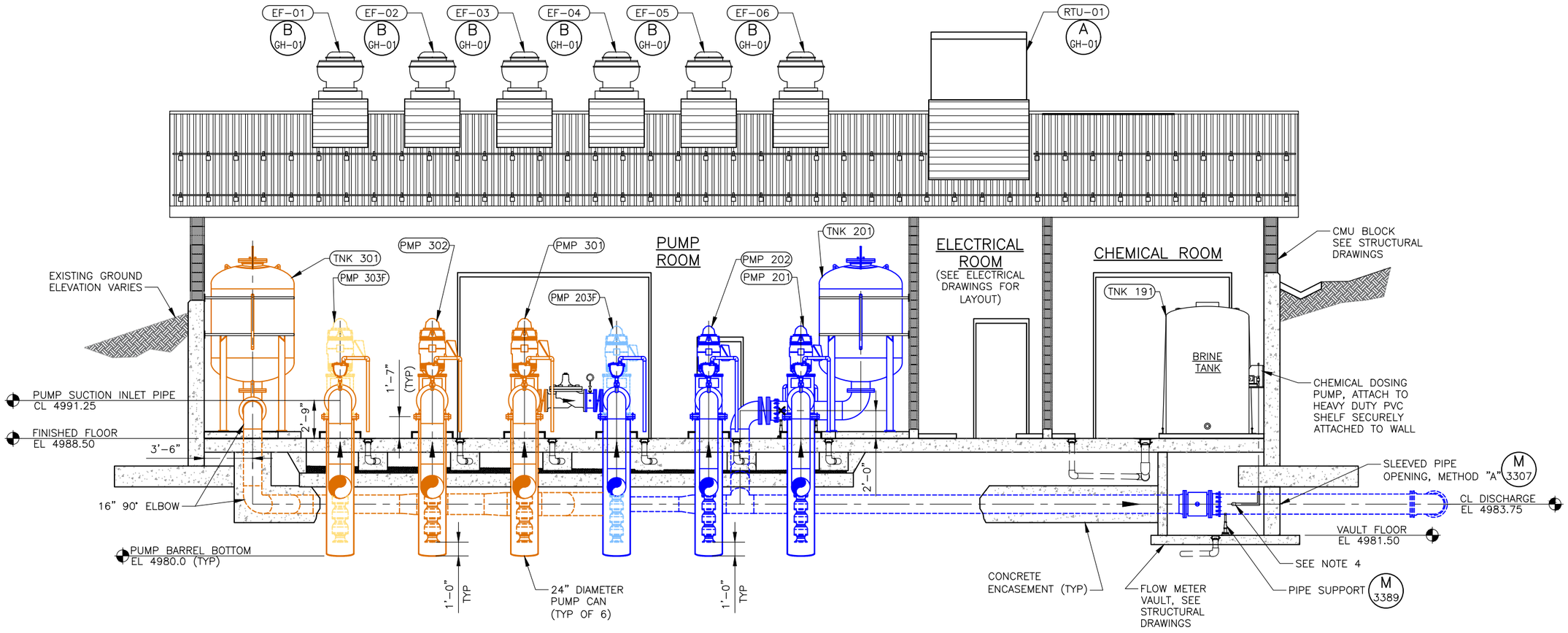
REVIEW CHECKED A. MCKINNON APPROVED E. NEIL

DESIGN DESIGN E. NEIL DRAWN R. GARCIA

MECHANICAL
PUMP STATION MECHANICAL PLAN
DATE: JULY 2024
PROJECT NUMBER 217-19-04

DRAWING NO. M-01
SHEET 47 OF 72

P:\Herriman\217-19-04 - Zone 2 & 3 Major Water Improvements\2.0 Design Phase\2.9 Drawings\Pump Station\Sht\2171904_M-01.dwg Plotted: 7/25/2024 1:48 PM By: Eric Neil



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

A M-01

LEGEND:
- ZONE 2
- ZONE 3
- ZONE 2 FUTURE
- ZONE 3 FUTURE

GENERAL NOTES :

1. (XXX XXX) REPRESENTS VALVE OR EQUIPMENT, SEE DRAWING M-05.
2. (XXX-XX) REPRESENTS HVAC EQUIPMENT, SEE DRAWING H-01.
3. [XX" XX (XX)] REPRESENTS PIPE MATERIAL, SEE DRAWING G-06.
4. PROVIDE 1-1/2" CONNECTION LOCATED AT OR BELOW CENTERLINE OF THE 16" PIPE. TAP INTO PIPE WITH HASTELLOY C-276 INJECTION QUILL (SAFE-T-FLO MODEL EB-159-S-H-8-0-02 OR APPROVED EQUAL), STRAINER, AND REDUCER TO 1/2". ALL PIPING AND FITTINGS SHALL BE SCH 80 PVC.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER ERIC W. NEIL 7702647 STATE OF UTAH 07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

REVIEW
CHECKED A. MCKINNON
APPROVED E. NEIL

DESIGN
DESIGN E. NEIL
DRAWN R. GARCIA

MECHANICAL
PUMP STATION MECHANICAL SECTION - 1

PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO.
M-02
SHEET 48 OF 72

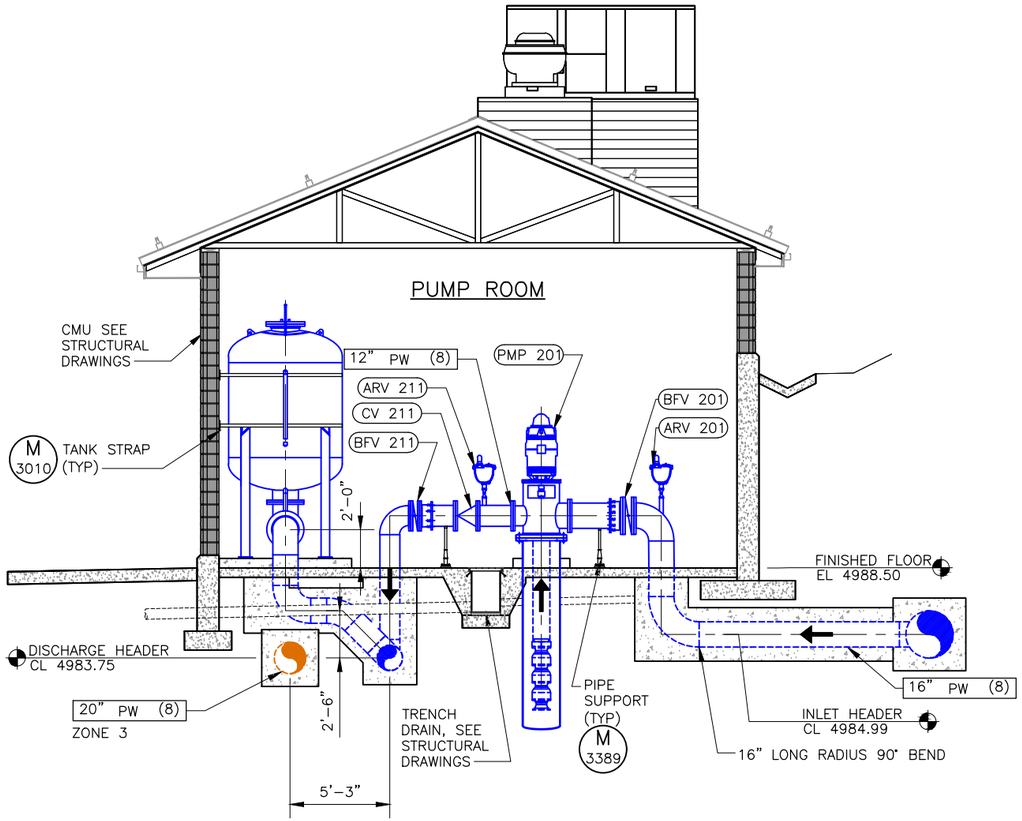
P:\Herriman\217-19-04 - Zone 2 & 3 Major Water Improvements\2.0 Design Phase\2.9 Drawings\Pump Station\Sht\2171904_M-02.dwg Plotted: 7/25/2024 2:00 PM By: Eric Neil

LEGEND:

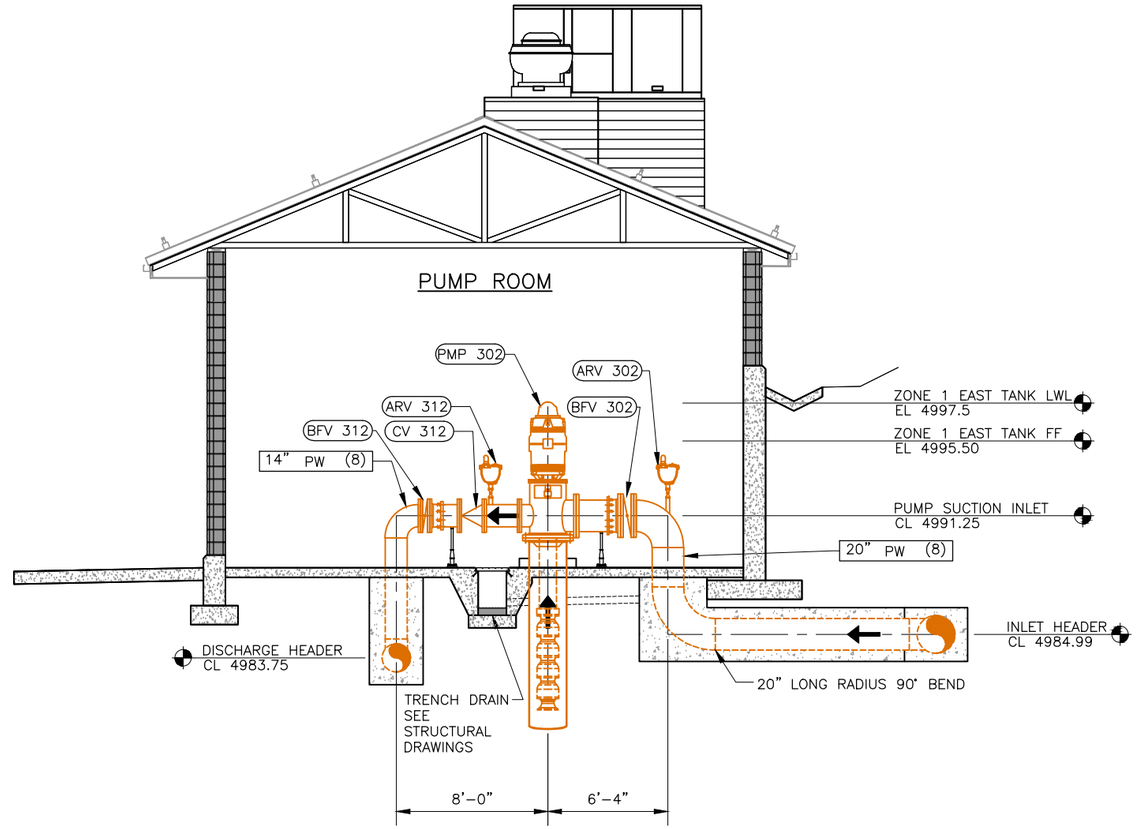
- ZONE 2
- ZONE 3
- ZONE 2 FUTURE
- ZONE 3 FUTURE

GENERAL NOTES :

1. (XXX XXX) REPRESENTS VALVE OR EQUIPMENT, SEE DRAWING M-05.
2. XX" XX (XX) REPRESENTS PIPE MATERIAL, SEE DRAWING G-06.
3. COORDINATE LOCATION OF ALL PIPE PENETRATIONS WITH STRUCTURAL DRAWINGS.



ZONE 2 SECTION
SCALE: 1/4"=1'-0"
B M-01



ZONE 3 SECTION
SCALE: 1/4"=1'-0"
C M-01

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
ERIC W. NEIL
7702647
07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
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HERRIMAN CITY
ZONE 2 & 3 PUMP STATION
HERRIMAN, UTAH

REVIEW
CHECKED A. MCKINNON
APPROVED E. NEIL

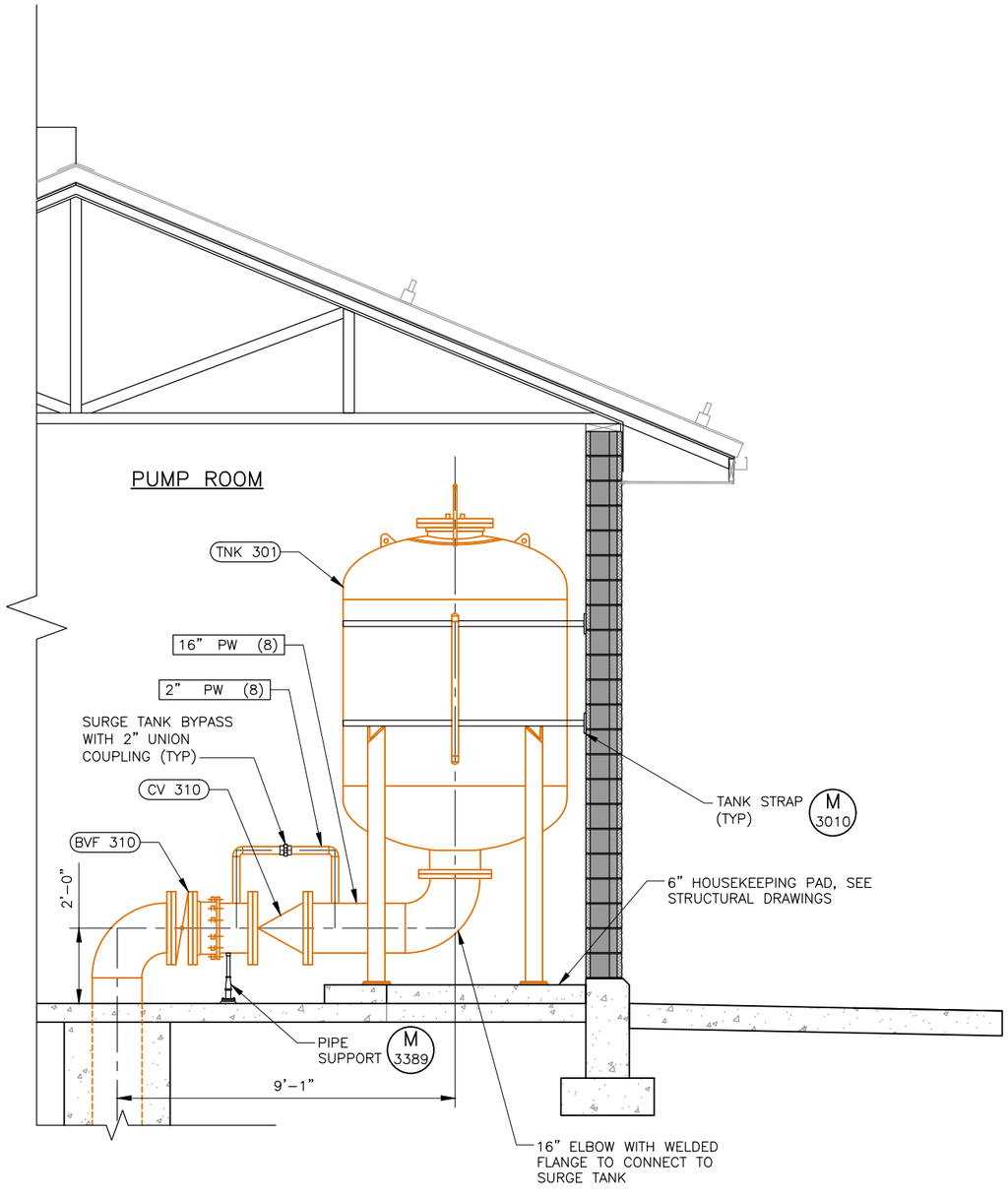
DESIGN
DESIGN E. NEIL
DRAWN R. GARCIA

MECHANICAL
PUMP STATION MECHANICAL SECTION - 2

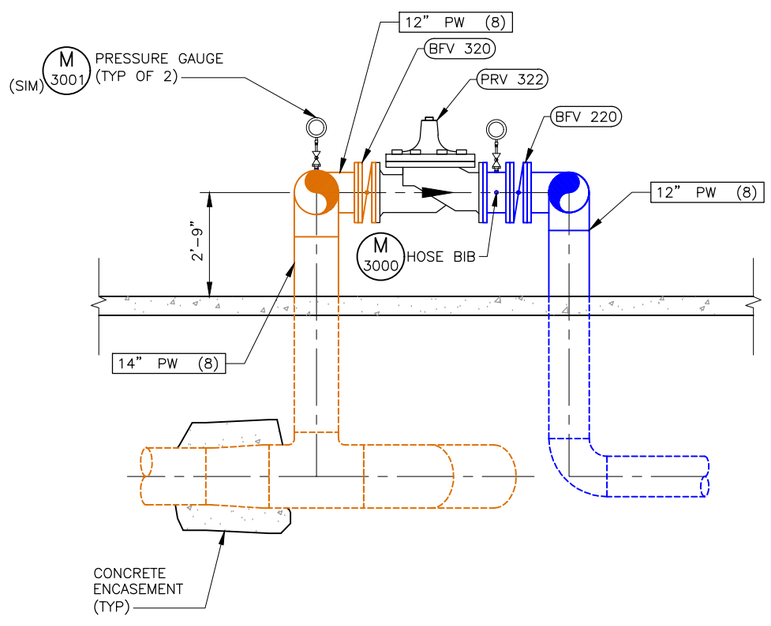
PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO.
M-03
SHEET 49 OF 72

P:\Herriman\217-19-04 - Zone 2 & 3 Major Water Improvements\2.0 Design Phase\2.9 Drawings\Pump Station\Sht\2171904_M-03.dwg Plotted: 7/25/2024 2:22 PM By: Eric Neil



SECTION D
SCALE: 1/2"=1'-0"
M-01



SECTION E
SCALE: 1/2"=1'-0"
M-01

LEGEND:
- ZONE 2
- ZONE 3
- ZONE 2 FUTURE
- ZONE 3 FUTURE

GENERAL NOTES :

1. (XXX XXX) REPRESENTS VALVE OR EQUIPMENT, SEE DRAWING M-05.
2. [XX" XX (XX)] REPRESENTS PIPE MATERIAL, SEE DRAWING G-06.
3. COORDINATE LOCATION OF ALL PIPE PENETRATIONS WITH STRUCTURAL DRAWINGS.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
ERIC W. NEIL
7702647
STATE OF UTAH
07/09/2024

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

REVIEW
CHECKED A. MCKINNON
APPROVED E. NEIL

DESIGN
DESIGN E. NEIL
DRAWN R. GARCIA

MECHANICAL
PUMP STATION MECHANICAL SECTION - 3

PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO.
M-04
SHEET 50 OF 72

P:\Herriman\217-19-04 - Zone 2 & 3 Major Water Improvements\2.0 Design Phase\2.9 Drawings\Pump Station\Sht\2171904_M-04.dwg Plotted: 7/25/2024 2:37 PM By: Eric Neil

VALVE SCHEDULE (CV, CHV, BFV, CAV)

SEE SPECIFICATIONS, DRAWINGS AND DETAILS. VERIFY QUANTITIES, LOCATIONS, TYPES, SIZES, SERVICE AND INSTALLATION REQUIREMENTS. NOT ALL EQUIPMENT MAY BE LISTED. ALL VALVES ANSI/AWWA FLANGED UNLESS NOTED OTHERWISE.

EQUIPMENT TAG NUMBERS	LOCATION	SERVICE	TYPE - WORKING PRESSURE	SIZE/CAPACITY	OPERATOR	REMARKS	ELEC. POWER
CV 211, 212, 213F	PUMP ROOM	POTABLE WATER - PUMP CHECK	SILENT CHECK VALVE - 100 PSI	12"/1,050 GPM	N/A	2 VALVES + 1 FUTURE	N/A
CV 311, 312, 313F	PUMP ROOM	POTABLE WATER - PUMP CHECK	SILENT CHECK VALVE - 150 PSI	14"/2,200 GPM	N/A	2 VALVES + 1 FUTURE	N/A
CV 210	PUMP ROOM	POTABLE WATER - SURGE TANK CHECK	SILENT CHECK VALVE - 100 PSI	16"	N/A	TO HAVE (2) 2" HOLES DRILLED INTO CENTER OF VALVE PER MANUFACTURER RECOMMENDATIONS	N/A
CV 310	PUMP ROOM	POTABLE WATER - SURGE TANK CHECK	SILENT CHECK VALVE - 150 PSI	16"	N/A	TO HAVE (2) 2" HOLES DRILLED INTO CENTER OF VALVE PER MANUFACTURER RECOMMENDATIONS	N/A
BFV 101, 102	VALVE VAULT	POTABLE WATER - TANK ISOLATION	AWWA RS BUTTERFLY VALVE - 150 PSI	30"	MAN. HANDWHEEL	2 VALVES	N/A
BFV 103	VALVE VAULT	POTABLE WATER - PUMP STATION ISOLATION	AWWA RS BUTTERFLY VALVE - 150 PSI	30"	MAN. HANDWHEEL W/ O/C LIMIT SWITCH	1 VALVE	24 VDC
BFV 201, 202, 203	PUMP ROOM	POTABLE WATER - PUMP ISOLATION (SUCTION)	AWWA RS BUTTERFLY VALVE - 150 PSI	16"	MAN. HANDWHEEL	3 VALVES	N/A
BFV 301, 302, 303	PUMP ROOM	POTABLE WATER - PUMP ISOLATION (SUCTION)	AWWA RS BUTTERFLY VALVE - 150 PSI	20"	MAN. HANDWHEEL	3 VALVES	N/A
BFV 211, 212, 213	PUMP ROOM	POTABLE WATER - PUMP ISOLATION (DISCHARGE)	AWWA RS BUTTERFLY VALVE - 100 PSI	12"	MAN. HANDWHEEL	3 VALVES	N/A
BFV 311, 312, 313	PUMP ROOM	POTABLE WATER - PUMP ISOLATION (DISCHARGE)	AWWA RS BUTTERFLY VALVE - 150 PSI	14"	MAN. HANDWHEEL	3 VALVES	N/A
BFV 210	PUMP ROOM	POTABLE WATER - SURGE TANK ISOLATION	AWWA RS BUTTERFLY VALVE - 100 PSI	16"	MAN. HANDWHEEL	1 VALVE	N/A
BFV 220	PUMP ROOM	POTABLE WATER - PRV ISOLATION	AWWA RS BUTTERFLY VALVE - 100 PSI	12"	MAN. HANDWHEEL	1 VALVE	N/A
BFV 310	PUMP ROOM	POTABLE WATER - SURGE TANK ISOLATION	AWWA RS BUTTERFLY VALVE - 150 PSI	16"	MAN. HANDWHEEL	1 VALVE	N/A
BFV 320	PUMP ROOM	POTABLE WATER - PRV ISOLATION	AWWA RS BUTTERFLY VALVE - 150 PSI	12"	MAN. HANDWHEEL	1 VALVE	N/A
PRV 322	PUMP ROOM	POTABLE WATER - PRESSURE REDUCING AND SUSTAINING VALVE	CLA-VAL MODEL 92-01 - OWNER TO PROVIDE PRESSURE SETTING	12"	N/A	HORIZONTAL, FLANGED INSTALLATION	N/A
ARV 201, 202, 203, 211, 212, 213F	PUMP ROOM	POTABLE WATER - AIR VALVE	COMB. AIR/VAC, AIR RELEASE - 100 PSI, SEE DETAIL M/3143	2"/700-1,100 GPM	N/A	5 VALVES - THREADED 1 VALVE-THREADED FUTURE	N/A
ARV 301, 302, 303, 311, 312, 313F	PUMP ROOM	POTABLE WATER - AIR VALVE	COMB. AIR/VAC, AIR RELEASE - 150 PSI, SEE DETAIL M/3143	2"/1,450-2,200 GPM	N/A	5 VALVES - THREADED 1 VALVE-THREADED FUTURE	N/A

F=FUTURE

PUMP SCHEDULE (PMP)

PUMP SCHEDULE - SEE SPECIFICATIONS, DRAWINGS AND DETAILS. VERIFY QUANTITIES, LOCATIONS, TYPES, SIZES, SERVICE AND INSTALLATION REQUIREMENTS. NOT ALL EQUIPMENT MAY BE LISTED.

EQUIPMENT TAG NUMBERS	LOCATION	SERVICE	TYPE	SIZE/CAPACITY/EACH	MOTOR HP/EACH	REMARKS	ELECTRICAL POWER
PMP 201, 202	PUMP ROOM	POTABLE WATER	VERTICAL TURBINE, BARREL-MOUNTED	700 GPM @ 163 FT. TDH	50	2 PUMPS	480V, 3P, 60 HZ, VARIABLE SPEED
PMP 203F	PUMP ROOM	POTABLE WATER	VERTICAL TURBINE, BARREL-MOUNTED	1,050 GPM @ 163 FT. TDH	75	FUTURE PUMP	480V, 3P, 60 HZ, VARIABLE SPEED
PMP 301, 302	PUMP ROOM	POTABLE WATER	VERTICAL TURBINE, BARREL-MOUNTED	1,467 GPM @ 281 FT. TDH	150	2 PUMPS	480V, 3P, 60 HZ, VARIABLE SPEED
PMP 303F	PUMP ROOM	POTABLE WATER	VERTICAL TURBINE, BARREL-MOUNTED	2,200 GPM @ 281 FT. TDH	250	FUTURE PUMP	480V, 3P, 60 HZ, VARIABLE SPEED
PMP 290	CHEMICAL ROOM	CHEMICAL INJECTION	GRUNDFOS DHM 251 HYDRAULIC PISTON DIAPHRAM DOSING PUMP	11 L/HR MAX @ 360 PSI	0.09 KW	1 PUMP	230V, 3P, 50/60 HZ, VARIABLE SPEED
PMP 390	CHEMICAL ROOM	CHEMICAL INJECTION	GRUNDFOS DHM 251 HYDRAULIC PISTON DIAPHRAM DOSING PUMP	11 L/HR MAX @ 360 PSI	0.09 KW	1 PUMP	230V, 3P, 50/60 HZ, VARIABLE SPEED

F=FUTURE

MISCELLANEOUS MECHANICAL EQUIPMENT SCHEDULE (FE, TNK, LE, OSG, GEN)

MISCELLANEOUS MECHANICAL EQUIPMENT SCHEDULE - SEE SPECIFICATIONS, DRAWINGS AND DETAILS. VERIFY QUANTITIES, LOCATIONS, TYPES, SIZES, SERVICE AND INSTALLATION REQUIREMENTS. NOT ALL EQUIPMENT MAY BE LISTED.

EQUIPMENT TAG NUMBERS	LOCATION	SERVICE	TYPE	SIZE/CAPACITY/EACH	MOTOR HP/EACH	REMARKS	ELECTRICAL POWER
FE/FIT 201	CHEMICAL ROOM	FLOW METER - MAG METER	ROSEMOUNT 8750W OR ENDRESS HAUSER PROMAG 400	16"	N/A	75 PSI WORKING PRES. 95 PSI TEST PRESSURE	120V, 1P
FE/FIT 301	CHEMICAL ROOM	FLOW METER - MAG METER	ROSEMOUNT 8750W OR ENDRESS HAUSER PROMAG 400	20"	N/A	150 PSI WORKING PRES. 190 PSI TEST PRESSURE	120V, 1P
TNK 201	PUMP ROOM	HYDRAULIC SURGE CONTROL - DISCHARGE	BLADDER STYLE HYDROPNEUMATIC STEEL TANK	16"/1,500 GAL	N/A	75 PSI WORKING PRES. 95 PSI TEST PRESSURE	N/A
TNK 301	PUMP ROOM	HYDRAULIC SURGE CONTROL - DISCHARGE	BLADDER STYLE HYDROPNEUMATIC STEEL TANK	16"/1,500 GAL	N/A	150 PSI WORKING PRES. 190 PSI TEST PRESSURE	N/A
TNK 191	CHEMICAL ROOM	BRINE STORAGE TANK - ON SITE CHLORINE GENERATION SYSTEM	POLY TANK WITH SECONDARY CONTAINMENT	4.0 FT. DIA, 360 GAL	N/A	TO BE PROVIDED BY OSG EQUIPMENT SUPPLIER	N/A
TNK 192	CHEMICAL ROOM	0.8% SODIUM HYPOCHLORITE STORAGE TANK - ON SITE CHLORINE GENERATION SYSTEM	POLY TANK WITH SECONDARY CONTAINMENT	6.0 FT. DIA, 1500 GAL	N/A	N/A	N/A
AE/AIT 190	CHEMICAL ROOM	COLORIMETRIC CHLORINE ANALYZER	HACH CL 17SC OR APPROVED EQUAL, TO INCLUDE CONTROLLER FOR LOCAL READOUT AND SCADA CONNECTION	0-10 MG/L	N/A	TO BE SUPPLIED WITH 6 MONTHS SUPPLY OF REQUIRED SOLUTIONS, ROUTE WASTE TO FLOOR DRAIN	120V, 1P
LE/LIT 102	CHEMICAL ROOM	LEVEL SENSOR	ULTRASONIC	1-1/2"	N/A	N/A	N/A
PE/PIT 101	VALVE VAULT	PRESSURE INDICATING TRANSMITTER	INSTRUMENT TO BE PROVIDED BY HERRIMAN CITY	1/2"	N/A	N/A	24 VDC
OSG 191	CHEMICAL ROOM	ON SITE CHLORINE GENERATOR - WATER SOFTENER	TO BE DETERMINED BY OSG EQUIPMENT SUPPLIER	TO BE DETERMINED BY OSG EQUIPMENT SUPPLIER	N/A	STARTUP BY MANUFACTURER	120V, 1P
OSG 192	CHEMICAL ROOM	ON SITE CHLORINE GENERATOR	PSI TECHNOLOGIES - MICROCLOR MC-80	80 PPD	N/A	STARTUP BY MANUFACTURER	480V, 3P (FLA: 12A)
GEN 150	OUTSIDE ENCLOSURE	STANDBY POWER SUPPLY	DIESEL ENGINE-GENERATOR	800 KW	N/A	"CATERPILLAR"	480V, 3P, 60 HZ, ATS

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER ERIC W. NEIL 7702647 STATE OF UTAH 07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED A. MCKINNON
APPROVED E. NEIL

DESIGN
DESIGN E. NEIL
DRAWN R. GARCIA

MECHANICAL

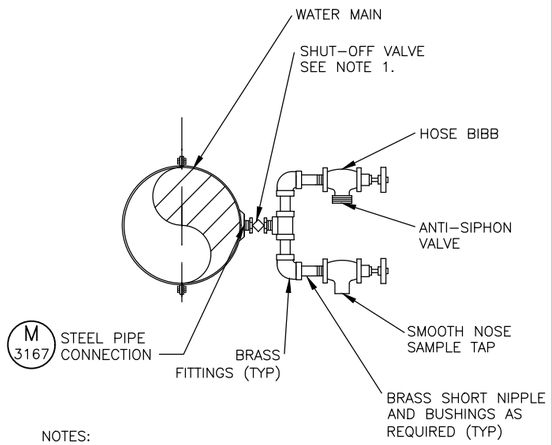
MECHANICAL EQUIPMENT SCHEDULE

DATE: JULY 2024
PROJECT NUMBER 217-19-04

DRAWING NO.
M-05

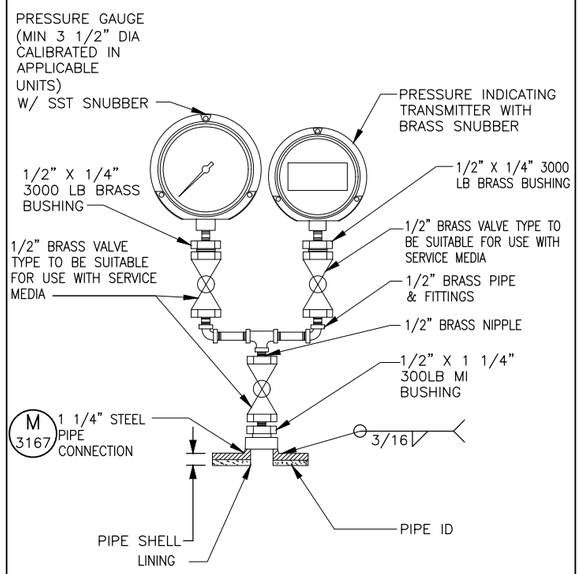
SHEET 51 OF 72

P:\Herriman\217-19-04 - Zone 2 & 3 Major Water Improvements\2.0 Design Phase\2.9 Drawings\Pump Station\Sht\2171904_M-05.dwg Plotted: 7/10/2024 2:58 PM By: Eric Neil

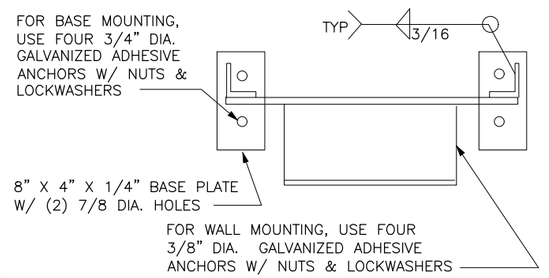


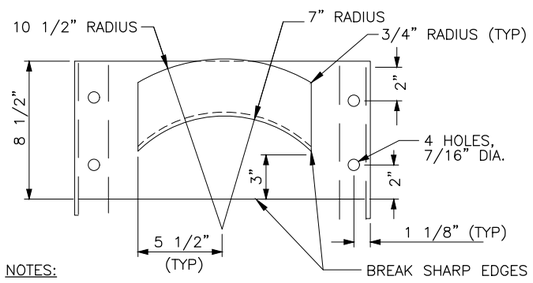
NOTES:
1. ALL HOSE BIBBS TO BE CONTROLLED BY SHUT–OFF VALVES (BALL VALVES) AT MAIN CONTROL BRANCH.
2. FOR SIZE AND LOCATION SEE DRAWINGS.
3. ALL FITTINGS, VALVES, NIPPLES, GAUGES AND WELDS SHALL BE ABLE TO MEET OR EXCEED TEST PRESSURE.
4. ROTATE AS DIRECTED BY OWNER.
5. PROVIDE PRV TO REDUCE MAIN LINE PRESSURE

HOSE BIB/SAMPLE TAP
NTS — M 3000



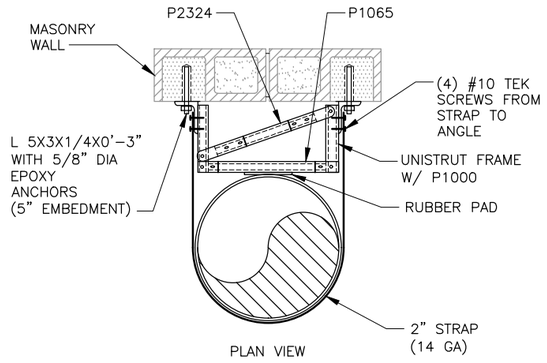
PRESSURE SWITCH AND PRESSURE INDICATING TRANSMITTER
SCALE: NTS — M 3001





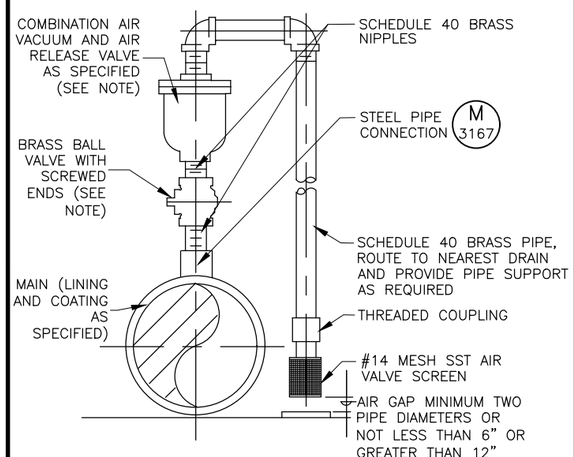
NOTES:
1. WHERE HOSE RACK IS FREE–STANDING, PROVIDE (2) STL. 2 X 2 X 1/4" BASE PLATES. (OMIT BASE PLATES WHERE ANGLES CAN BE SET IN CONCRETE.)
2. CONSTRUCTION: B GA. STEEL SHEET, ALL WELDED, GALVANIZED AFTER FABRICATION.

HOSE RACK
NTS — M 3006



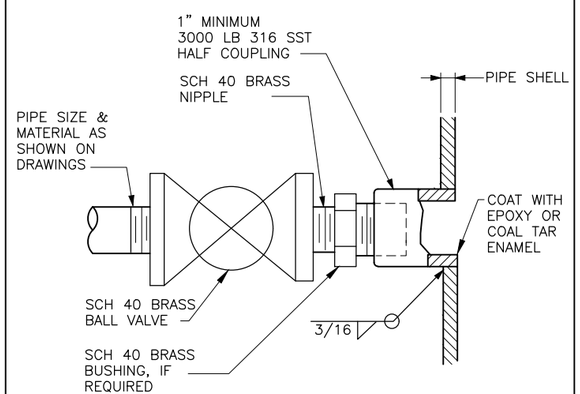
PLAN VIEW

TANK STRAPPING
SCALE: NTS — M 3010

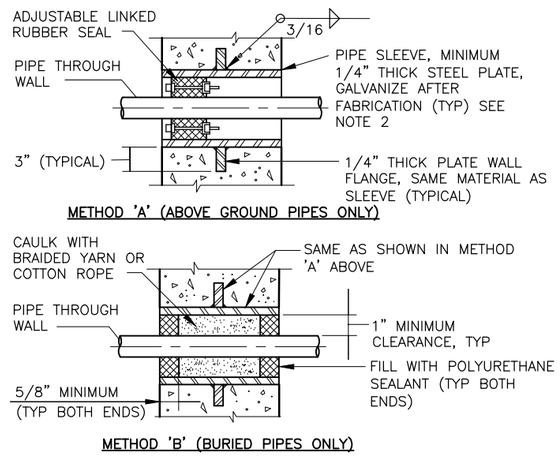


NOTES:
1. FOR PIPING SYSTEM WITH SERVICE PRESSURE CLASS GREATER THAN 150 PSI. ALL COMPONENTS FURNISHED SHALL BE SUITABLE FOR THE HIGHER PRESSURE.
2. AIR RELEASE VALVE SIMILAR.

COMBINATION AIR VACUUM AND AIR RELEASE VALVE ASSEMBLY
SCALE: NTS — M 3143



PIPE CONNECTION 2 1/2" AND SMALLER
SCALE: NTS — M 3167



1. FOR WATER BEARING WALLS, USE METHOD 'A' WITH ADJUSTABLE LINKED RUBBER SEAL AT BOTH ENDS.
2. SLEEVES ARE NOT REQUIRED IN CORE DRILLED WALLS, PENETRATIONS THROUGH EXISTING WALLS, OR FLOORS

SLEEVED PIPE OPENING
SCALE: NTS — M 3307

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — ERIC W. NEIL — 7702647 — STATE OF UTAH — 07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW — CHECKED A. MCKINNON — APPROVED E. NEIL

DESIGN — DESIGN E. NEIL — DRAWN S. DUCKWORTH

MECHANICAL

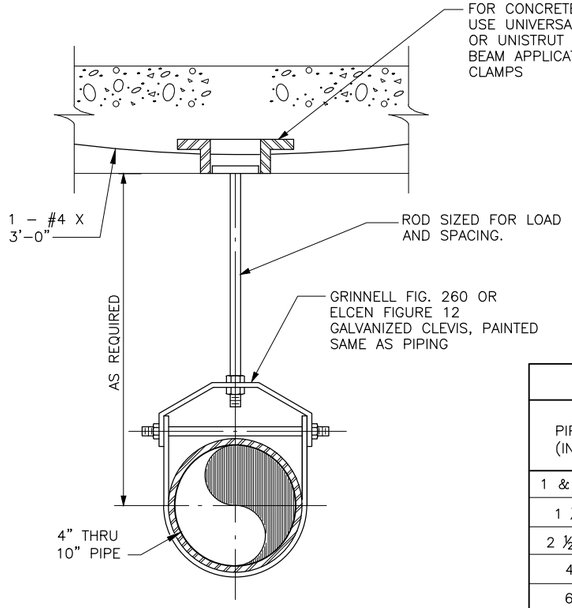
GENERAL MECHANICAL DETAILS - 1

DATE: JULY 2024 — PROJECT NUMBER 217-19-04

DRAWING NO. GM-01

SHEET 52 OF 72

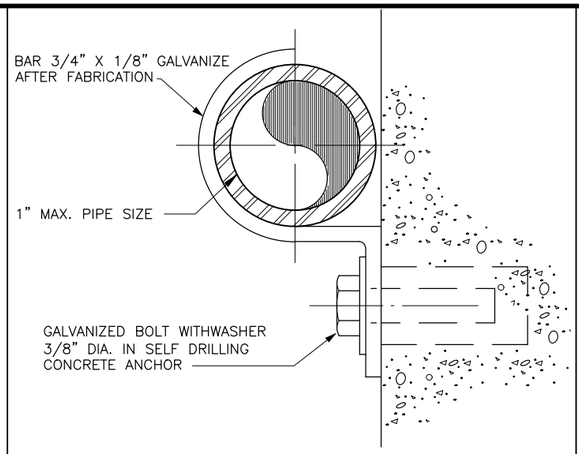
P:\Herriman\217-19-04 - Zone 2 & 3 Major Water Improvements\2.0 Design Phase\2.9 Drawings\Pump Station\Sht\2171904_GM-01.dwg Plotted: 7/10/2024 3:11 PM By: Eric Neil



NOTES:
1. FOR INSULATED PIPES. USE GRINNELL FIG. 167 OR ELCEN FIGURE 219 INSULATION PROTECTION SHIELD.
2. TOTAL LOADING ON EACH CONCRETE INSERT OR OTHER TYPE HANGER ROD ANCHOR SHALL NOT EXCEED MFR'S RECOMMENDED LOADINGS.

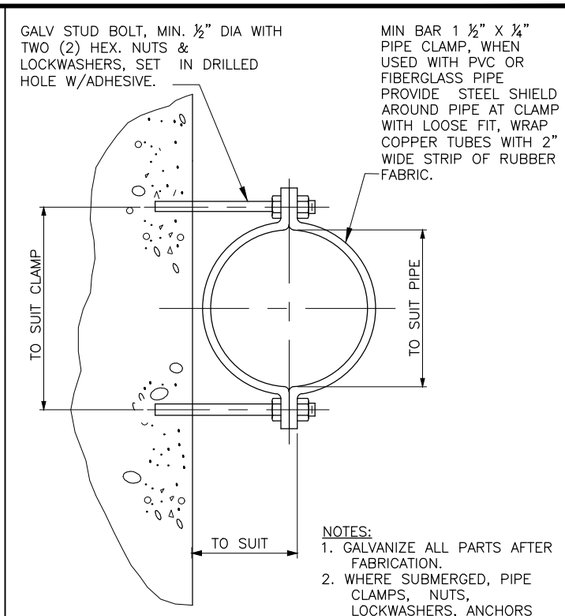
PIPE HANGER RODS AND SUPPORT SPACING					
PIPE DIA. (INCHES)	ROD DIA. (INCHES)	MAX SUPPORT SPACING (FEET)		WEIGHT LIMIT (LBS.)	
		STL. PIPE	C.I. PIPE	TYPE 'A'	TYPE 'B'
1 & SMALLER	3/8	6	5	610	1700
1 ¼ TO 2	3/8	9	5	610	1700
2 ½ TO 3 ½	1/2	12	5	1130	3200
4 TO 5	5/8	14	5	1430	3800
6 TO 8	3/4	16	5	1430	3800
10 TO 12	7/8	18	--	1430	3800
14 TO 16	1	20	--	1430	3800

PIPE HANGER
SCALE: NTS — M 3353



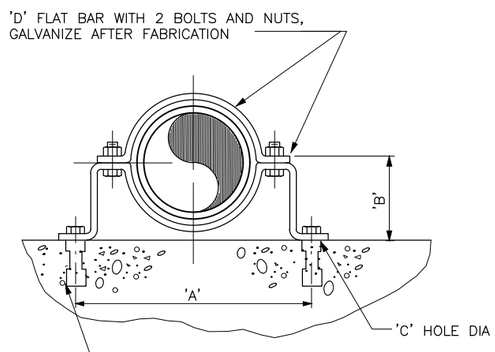
NOTES:
1. WHERE SUBMERGED, PIPE CLAMP, BOLT, WASHER, SHIELD AND SELF DRILLING CONCRETE ANCHOR TO BE TYPE 316 STAINLESS STEEL.
2. WHEN USED WITH PVC OR FIBERGLASS PIPE, PROVIDE STEEL SHIELD AROUND PIPE AT CLAMP WITH LOOSE FIT, WRAP COPPER TUBES WITH 2" WIDE STRIP OF RUBBER FABRIC.

PIPE CLAMP FOR INDIVIDUAL PIPES
SCALE: NTS — M 3370



NOTES:
1. GALVANIZE ALL PARTS AFTER FABRICATION.
2. WHERE SUBMERGED, PIPE CLAMPS, NUTS, LOCKWASHERS, ANCHORS AND SHIELDS TO BE TYPE 16 STAINLESS STEEL.

PIPE CLAMP
SCALE: NTS — M 3371

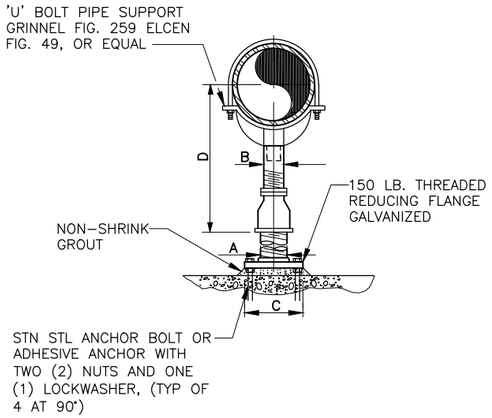


DIMENSION TABLE					
PIPE SIZE	A	B SEE NOTE 3 BELOW	C HOLE DIA.	D FLAT BAR SIZE	LOAD RATING LBS. *
0–¾"	5–15/16"	2–½"	7/16"	3/16" X 1–¼"	300
1"	6–¼"	2–5/8"	7/16"	3/16" X 1–¼"	300
1–¼"	6–1/16"	2–¾"	7/16"	3/16" X 1–¼"	300
1–½"	6–15/16"	3"	7/16"	3/16" X 1–¼"	300
2"	8–15/16"	3–3/16"	7/16"	¼" X 1–¼"	500
2–½"	8–⅞"	3–7/16"	7/16"	¼" X 1–¼"	500
3"	9–⅛"	3–¾"	7/16"	¼" X 1–¼"	500
3–½"	10–1/16"	4"	7/16"	¼" X 1–¼"	500
4"	10–9/16"	4–¼"	9/16"	¼" X 1–½"	600
5"	11–¾"	4–¾"	9/16"	¼" X 1–½"	600
6"	14–⅜"	5–5/16"	9/16"	⅜" X 1–½"	850
8"	16–⅝"	6–5/16"	9/16"	⅜" X 1–½"	850

* SAFETY FACTOR OF 5

NOTES:
1. WHERE SUBMERGED, OR WHERE SHOWN ON DRAWINGS, PIPE CLAMP, ANCHOR, SHIELD, NUTS, AND LOCKWASHERS TO BE TYPE 316 STAINLESS STEEL.
2. WHEN USED WITH PVC OR FIBERGLASS PIPE, PROVIDE STEEL SHIELD AROUND PIPE AT CLAMP, WITH LOOSE FIT, WRAP COPPER TUBES WITH 2" STRIP OF RUBBER FABRIC.
3. FOR FLANGED PIPING, INCREASE 'B' DIMENSION AS REQUIRED.

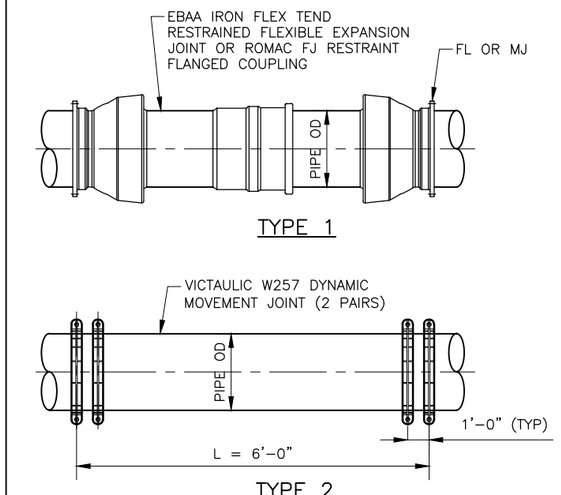
PIPE CLAMP FOR INDIVIDUAL PIPES
SCALE: NTS — M 3372



NOTE:
ENTIRE UNIT SHALL BE GALVANIZED AFTER FABRICATION.

DIMENSION TABLE					
PIPE SIZE	A	B	C	D MIN	D MAX
12"	3"	2–1/2"	9"	15–5/8"	19–3/4"
16"	4"	3"	11"	19–7/8"	22–1/4"
24"	6"	4"	13–1/2"	26–1/2"	28–1/4"

ADJUSTABLE PIPE SUPPORT WITH U–BOLT
SCALE: NTS — M 3389



NOTES:
1. BURIED BOLTS, NUTS AND WASHERS SHALL BE TYPE 316 STAINLESS STEEL.
2. GREASE AND WRAP COUPLINGS AND HARDWARE WITH WAX TAPE COATING PER NOTES 15 AND 16, DRAWING G–05.

RESTRAINED FLEXIBLE COUPLING
SCALE: NTS — M 3400

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — ERIC W. NEIL — 7702647 — 07/09/2024

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			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW — CHECKED A. MCKINNON — APPROVED E. NEIL

DESIGN — DESIGN E. NEIL — DRAWN S. DUCKWORTH

MECHANICAL

GENERAL MECHANICAL DETAILS - 2

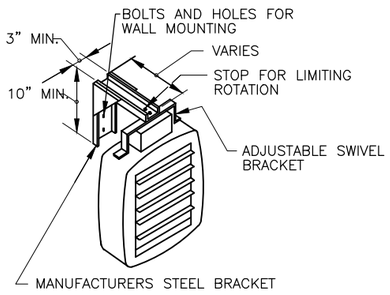
PROJECT NUMBER 217-19-04

DATE: JULY 2024

DRAWING NO. GM-02

SHEET 53 OF 72

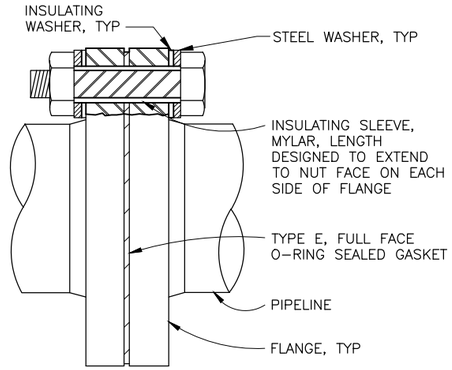
P:\Herriman\217-19-04 - Zone 2 & 3 Major Water Improvements\2.0 Design Phase\2.9 Drawings\Pump Station\Sht\2171904_GM-02.dwg Plotted: 7/10/2024 3:09 PM By: Eric Neil



NOTES:
1. HEATER TO BE CONTROLLED FROM INTERNAL THERMOSTAT.
2. SEE ELECTRICAL DWGS FOR WIRING DETAILS.

ELECTRIC UNIT HEATER MOUNTED
SCALE: NTS

M 3455

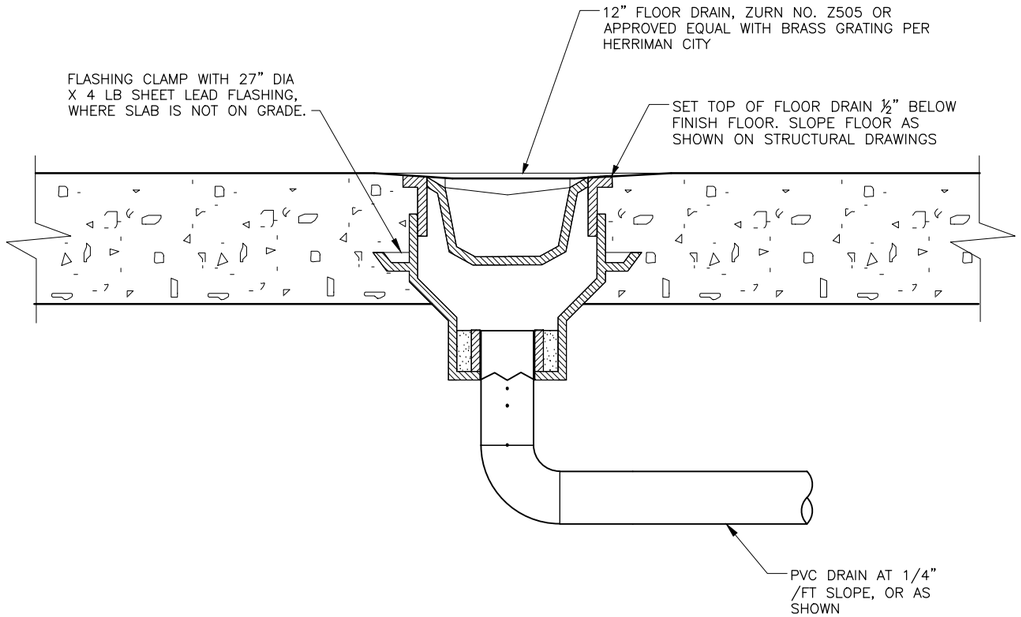


NOTES:

1. ABOVE GRADE ISULATING FLANGE INSTALLATION SHOWN.
2. FOR BURIED OR SUBMERGED INSULATING FLANGE INSTALLATION DO NOT INSTALL INSULATING WASHER ON PROTECTED SIDE OF INSULATING FLANGE.
3. COAT BURIED OR SUBMERGED INSULATING FLANGES WITH PRIMER AND FILLER MASTIC AFTER ASSEMBLING JOINT AND WRAP WITH BUTYL RUBBER ADHESIVE, POLYETHYLENE TAPE.
4. TEST COMPLETED JOINT FOR ELECTRICAL ISOLATION AND REPAIR AS REQUIRED.

INSULATED FLANGE
SCALE: NTS

M 3572



FLOOR DRAIN
SCALE: NTS

M 3802

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
ERIC W. NEIL
7702647
STATE OF UTAH
07/09/2024

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN
DESIGN E. NEIL
DRAWN S. DUCKWORTH

REVIEW
CHECKED A. MCKINNON
APPROVED E. NEIL

MECHANICAL
GENERAL MECHANICAL DETAILS - 3

PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO.
GM-03
SHEET 54 OF 72

LEGEND

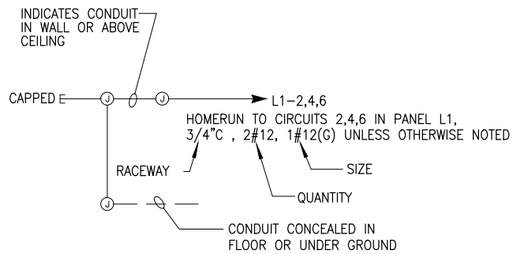
SYMBOL	LIGHTING
	RECESSED TROFFER
	WALL MOUNTED LINEAR FIXTURE
	SURFACE MOUNTED LINEAR FIXTURE
	SUSPENDED LINEAR FIXTURE
	SHADED FIXTURE INDICATES EMERGENCY BALLAST
	RECESSED DOWNLIGHT
	WALL MOUNTED FIXTURE
	POLE MOUNTED AREA LIGHT
	WALL MOUNT EXIT LIGHT (W/ DIRECTIONAL ARROWS)
	SURFACE MOUNTED DOWNLIGHT
	EMERGENCY WALL LIGHT, SINGLE
	EMERGENCY WALL LIGHT, DOUBLE

SYMBOL	DEVICES & POWER
$3	SWITCH – SPST 3 THREE WAY 4 FOUR WAY WP WEATHER PROOF EXP EXPLOSION PROOF M MANUAL MOTOR DISCONNECT/STARTER T TIMER MC MOMENTARY CONTACT HC HANDICAPPED
	RECEPTACLE – SIMPLEX
GFI WP	RECEPTACLE – DUPLEX GFI GROUND FAULT INTERRUPT WP WEATHER RESISTANT DEVICE W/ WHILE–IN–USE COVER
	RECEPTACLE – DOUBLE DUPLEX SAME INDICATORS AS SHOWN FOR DUPLEX
J J	J–BOX, J–BOX WALL MOUNTED, 4"x4"x2 1/8" DEEP UNLESS NOTED OTHERWISE
T	J–BOX, CONDUIT, PULL STRING BY EC THERMOSTAT, SUPPLIED AND INSTALLED BY MC
PP	POWER POLE
	LCS (LOCAL CONTROL STATION)
	EMERGENCY PUSHBUTTON
PC	PHOTOCELL
	SPECIAL PURPOSE CONNECTION, BOX INDICATES FLOOR MOUNTING, WORK AS NOTED
	PANELBOARD, MOUNTING AS INDICATED ON PANEL SCHEDULE
	COMBINATION STARTER
	DISCONNECT SWITCH
	CONTACTOR
	CIRCUIT BREAKER
	TRANSFORMER, DRY–TYPE
	TRANSFORMER, PAD MOUNTED

SYMBOL	GROUNDING
	GROUND ROD
	GROUND ROD WITH GROUND TEST WELL
	GROUND RISER FROM REBAR
	MECHANICALLY CRIMPED OR WELDED GROUND CONNECTIONS
	GROUND CABLE: EMBEDDED IN CONCRETE BURIED IN EARTH EXPOSED

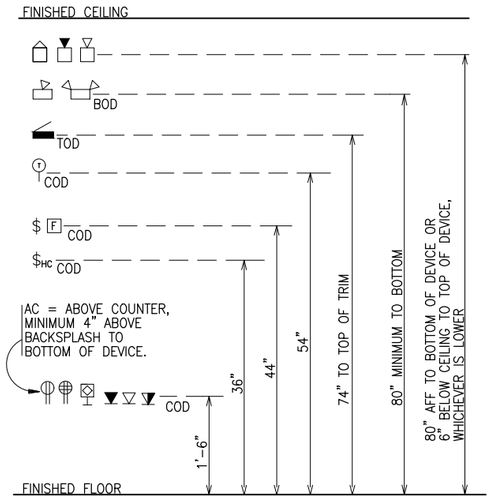
SYMBOL	SCHEMATIC
TR	SELECTOR SWITCH 2 POSITION
TR	NORMALLY OPEN TIME DELAY CLOSING AFTER COIL ENERGIZED
TR	NORMALLY CLOSED TIME DELAY OPENING AFTER COIL ENERGIZED
W	INDICATOR LIGHT
	REMOTE DEVICE CONNECTION
	CLOSED RELAY CONTACT
	OPEN RELAY CONTACT
	TERMINAL TO EXTERNAL REMOTE DEVICE
	WIRE TERMINAL OR CONNECTION POINT
	LIMIT SWITCH
CR	CONTROL RELAY
	VT/PT CPT
HAND OFF AUTO	SELECTOR SWITCH 3 POSITION MAINTAINED CONTACT
	LEVEL SWITCH CLOSES ON FALLING LEVEL
	LEVEL SWITCH CLOSES ON RISING LEVEL
	CONTROL SWITCH PUSHBUTTON, MOMENTARY CONTACT N.C.
	GROUND CONNECTION
	SOLENOID
	FLOW SWITCH CLOSES ON LOW FLOW
	PRESSURE SWITCH CLOSES ON RISING PRESSURE
	TRANSFORMER W/ DELTA–Y AND GROUND
M	UTILITY METER, UTILITY CT
	CIRCUIT BREAKER
	ELECTRICAL PANEL
	FUSE
2	MOTOR STARTER NEMA SIZE AS NOTED
	DISCONNECT SWITCH SIZE AS NOTED
AHF	ACTIVE HARMONIC FILTER
PHF	PASSIVE HARMONIC FILTER
M	MOTOR (10 HORSEPOWER NOTED)
SPD	SURGE PROTECTION DEVICE
PQM	POWER QUALITY METER
VFD	VARIABLE FREQUENCY DRIVE
PMR	PUMP MONITOR RELAY
RVSS	REDUCED VOLTAGE SOFT STARTER
dV/dt	dV/dt FILTER

CIRCUITING SYMBOLS



2–1/2"C = ONE 2.5" CONDUIT
(3) 1/2"C = THREE 0.5" CONDUITS
(3) 2–1/2"C = THREE 2.5" CONDUITS

INTERIOR BOX MOUNTING HEIGHTS



SYMBOL	ABBREVIATIONS AND MISCELLANEOUS
ATS	AUTOMACTIC TRANSFER SWITCH
EC	ELECTRICAL CONTRACTOR
MC	MECHANICAL CONTRACTOR
GC	GENERAL CONTRACTOR
C	CONDUIT
GND, G	GROUND
BOD	BOTTOM OF DEVICE
COD	CENTER OF DEVICE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BLG	BELOW GRADE
AC	ABOVE COUNTER, 4" ABOVE BACK SPLASH
BC	BELOW COUNTER, 4" BELOW COUNTER TOP
W/	WITH
a,b,c	SWITCH DESIGNATION
UON	UNLESS OTHERWISE NOTED
UG	UNDERGROUND
WP	WEATHER PROOF
FO	FIBER OPTIC
MD	MEDIUM VOLTAGE
X / X	INDICATES STANDARD DETAIL
XXX	EQUIPMENT TAG NUMBER
X,XXX	FAULT CURRENT VALUE
XXX	CONDUIT TAG

GENERAL NOTES:

1. NOT ALL SYMBOLS SHOWN ARE USED.
2. 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.
3. CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENTS, ETC.) OF EQUIPMENT FURNISHED BEFORE BEGINNING ROUGH–IN.
4. SEE APPLICABLE SHOP DRAWINGS FOR ROUGH–IN LOCATION OF ALL EQUIPMENT, WIRING DEVICES, ETC.
5. 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.
6. ALL PENETRATIONS OF FLOORS, WALLS AND CEILINGS SHALL BE SEALED WITH APPROVED MATERIAL.
7. 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.
8. 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 THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
9. IT IS THE ELECTRICAL SUBCONTRACTOR'S RESPONSIBILITY TO RECEIVE THE COMPLETE SET OF PLANS IN ORDER TO ENSURE THAT ALL ITEMS RELATED TO ELECTRICAL POWER AND CONTROL SYSTEMS ARE COMPLETELY ACCOUNTED FOR.
10. ALL EQUIPMENT DIMENSIONS SHOWN ON PLANS AND ELEVATIONS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL USE THE SHOP DRAWINGS FOR PROPER LAYOUT, FOUNDATION AND PAD, ETC. FOR FINAL INSTALLATION WITHOUT ANY ADDITIONAL COST TO THE OWNER.
11. THE DRAWINGS GENERALLY ILLUSTRATE THE APPROXIMATE DESIRED LOCATION AND ARRANGEMENT OF OUTLETS, CONDUIT RUNS, EQUIPMENT AND OTHERS ITEMS. DETERMINE EXACT LOCATIONS IN THE FIELD BASED ON PHYSICAL SIZE AND ARRANGEMENT OF EQUIPMENT, FINISHED ELEVATIONS, EASEMENT LOCATIONS, AND OTHER OBSTRUCTIONS. LOCATIONS SHOWN ON THE DRAWINGS, HOWEVER, SHALL BE ADHERED TO AS CLOSELY AS POSSIBLE.
12. THE ELECTRICAL INSTALLATION SHALL COMPLY WITH THE CURRENT VERSION OF THE NEC, LOCAL, AND STATE CODES.
14. CONDUIT PENETRATIONS SHALL BE MADE PER SPECIFICATIONS AND DETAILS. E 5011 E 5012

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12849767 JOSHUA JAY LAKE STATE OF UTAH 07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

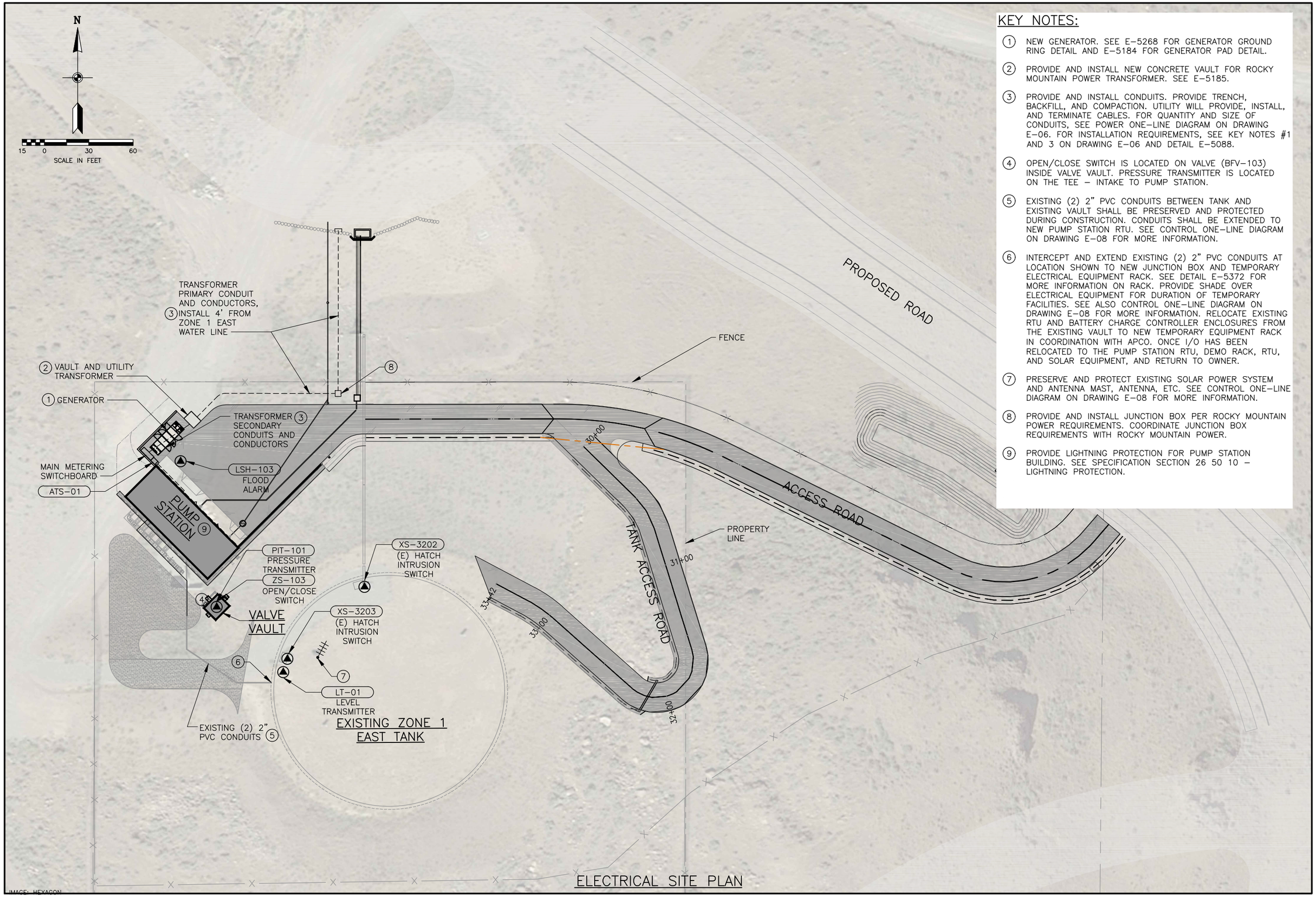
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED S. CAVANAUGH
APPROVED J. LAKE

DESIGN
DESIGN J. LAKE
DRAWN T. TANNER

ELECTRICAL
ELECTRICAL NOTES, LEGEND, AND SCHEDULE
DATE: JULY 2024
PROJECT NUMBER 217-19-04

DRAWING NO.
E-01
SHEET 55 OF 72



ELECTRICAL SITE PLAN

IMAGE: HEXAGON

KEY NOTES:

1. NEW GENERATOR. SEE E-5268 FOR GENERATOR GROUND RING DETAIL AND E-5184 FOR GENERATOR PAD DETAIL.
2. PROVIDE AND INSTALL NEW CONCRETE VAULT FOR ROCKY MOUNTAIN POWER TRANSFORMER. SEE E-5185.
3. PROVIDE AND INSTALL CONDUITS. PROVIDE TRENCH, BACKFILL, AND COMPACTION. UTILITY WILL PROVIDE, INSTALL, AND TERMINATE CABLES. FOR QUANTITY AND SIZE OF CONDUITS, SEE POWER ONE-LINE DIAGRAM ON DRAWING E-06. FOR INSTALLATION REQUIREMENTS, SEE KEY NOTES #1 AND 3 ON DRAWING E-06 AND DETAIL E-5088.
4. OPEN/CLOSE SWITCH IS LOCATED ON VALVE (BFV-103) INSIDE VALVE VAULT. PRESSURE TRANSMITTER IS LOCATED ON THE TEE - INTAKE TO PUMP STATION.
5. EXISTING (2) 2" PVC CONDUITS BETWEEN TANK AND EXISTING VAULT SHALL BE PRESERVED AND PROTECTED DURING CONSTRUCTION. CONDUITS SHALL BE EXTENDED TO NEW PUMP STATION RTU. SEE CONTROL ONE-LINE DIAGRAM ON DRAWING E-08 FOR MORE INFORMATION.
6. INTERCEPT AND EXTEND EXISTING (2) 2" PVC CONDUITS AT LOCATION SHOWN TO NEW JUNCTION BOX AND TEMPORARY ELECTRICAL EQUIPMENT RACK. SEE DETAIL E-5372 FOR MORE INFORMATION ON RACK. PROVIDE SHADE OVER ELECTRICAL EQUIPMENT FOR DURATION OF TEMPORARY FACILITIES. SEE ALSO CONTROL ONE-LINE DIAGRAM ON DRAWING E-08 FOR MORE INFORMATION. RELOCATE EXISTING RTU AND BATTERY CHARGE CONTROLLER ENCLOSURES FROM THE EXISTING VAULT TO NEW TEMPORARY EQUIPMENT RACK IN COORDINATION WITH APCO. ONCE I/O HAS BEEN RELOCATED TO THE PUMP STATION RTU, DEMO RACK, RTU, AND SOLAR EQUIPMENT, AND RETURN TO OWNER.
7. PRESERVE AND PROTECT EXISTING SOLAR POWER SYSTEM AND ANTENNA MAST, ANTENNA, ETC. SEE CONTROL ONE-LINE DIAGRAM ON DRAWING E-08 FOR MORE INFORMATION.
8. PROVIDE AND INSTALL JUNCTION BOX PER ROCKY MOUNTAIN POWER REQUIREMENTS. COORDINATE JUNCTION BOX REQUIREMENTS WITH ROCKY MOUNTAIN POWER.
9. PROVIDE LIGHTNING PROTECTION FOR PUMP STATION BUILDING. SEE SPECIFICATION SECTION 26 50 10 - LIGHTNING PROTECTION.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12849767 JOSHUA JAY LAKE STATE OF UTAH 07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED S. CAVANAUGH
APPROVED J. LAKE

DESIGN
DESIGN J. LAKE
DRAWN J. LAKE

ELECTRICAL
ELECTRICAL SITE PLAN

PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO.
E-02
SHEET 56 OF 72

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GENERAL NOTES:

1. FOR SITE INFORMATION REFER TO THE ELECTRICAL SITE PLAN ON DRAWING E–02.
2. REFER TO POWER ONE–LINE DIAGRAM ON DRAWING E–06, PANEL SCHEDULE LP–1 ON DRAWING E–07, AND CONTROL ONE–LINE DIAGRAMS ON DRAWINGS E–08 AND E–9 FOR CONDUIT, CONDUCTORS, CABLES, AND ELECTRICAL EQUIPMENT INFORMATION.
3. ALL INDOOR OUTLETS ARE GFCI WITH WEATHER PROOF COVER AND MOUNTED 48" ABOVE FINISHED FLOOR. ALL OUTSIDE WEATHER RESISTANT GFCI OUTLETS SHALL HAVE A WHILE–IN–USE WEATHER PROOF COVER, HUBBLE, METALLIC WP26E OR WP26EH. MOUNT OUTLETS 48" MIN ABOVE FINISH GRADE.
4. FOR ROUTING OF FEEDER CONDUITS, SEE DRAWING E–04.
5. SUPPORT ELECTRICAL CONDUITS ON SUPPORTS INDEPENDENT OF PIPING. SUPPORTING THE ELECTRICAL CONDUIT OFF PIPING WILL NOT BE ALLOWED. ALL CONDUITS WILL BE EMBEDDED IN THE WALLS AND ROUTED ABOVE CEILING AND BELOW SLAB. CONDUITS TO EQUIPMENT IN THE CENTER OF ROOM WILL BE BELOW SLAB AND AVOID RUNNING ACROSS OPEN SPACES. SWITCHES, RECEPTACLES, AND ALL OTHER ELECTRICAL BOXES SHALL BE INSTALLED SO THAT THEY ARE FLUSH WITH THE BLOCK. ALL CONDUIT TO BE CONCEALED EXCEPT FOR STRAIGHT RUN FROM FLOOR PENETRATION TO EQUIPMENT. REQUEST PERMISSION OF THE ENGINEER BEFORE RUNNING ANY OTHER EXPOSED CONDUIT.

KEY NOTES:

(1) INSTALL HOUSEKEEPING PAD UNDER MCC–01, FUTURE MCC–02, AND RTU PER STRUCTURAL DRAWINGS.

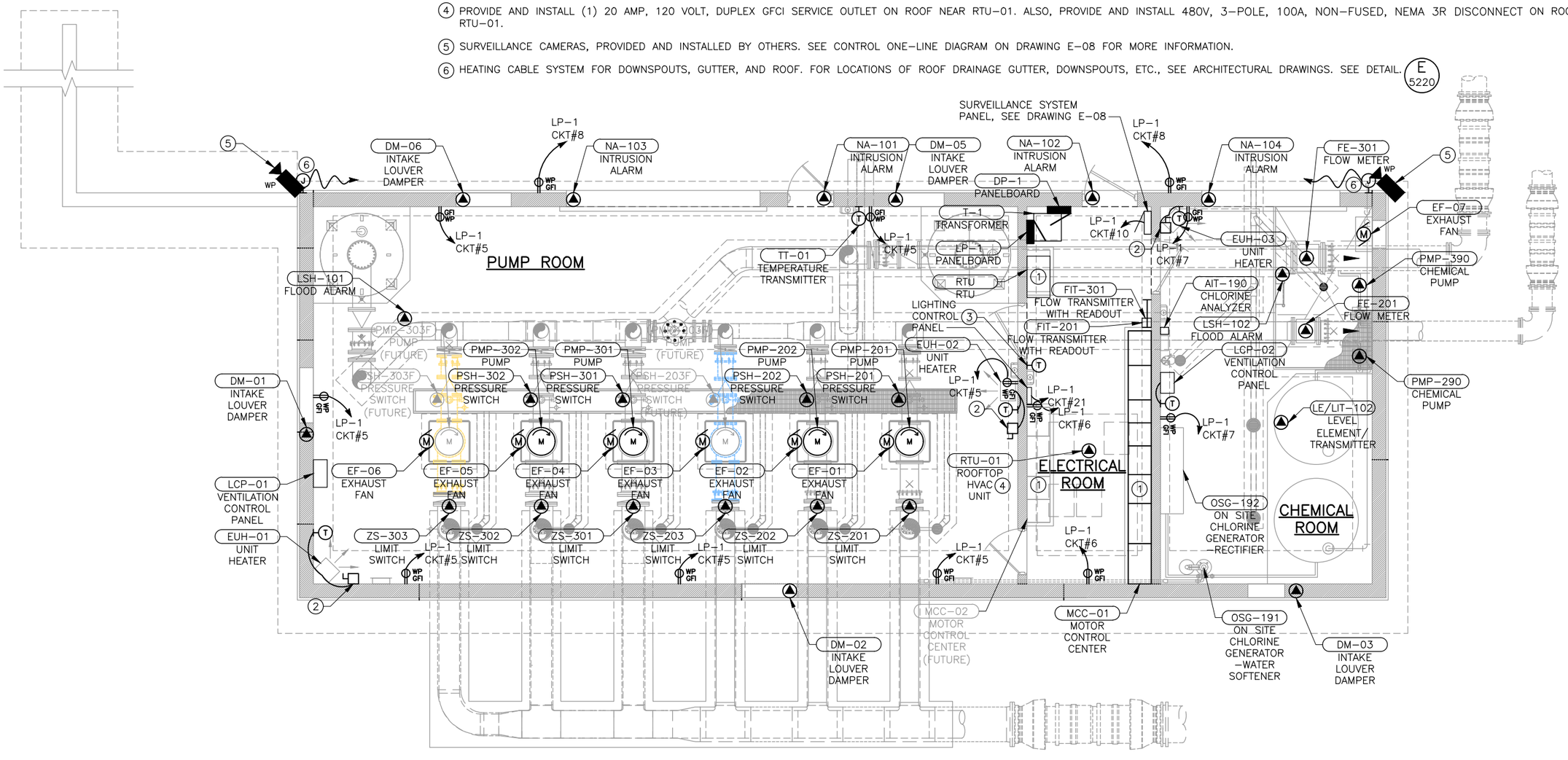
(2) 480V, 3–POLE, 30A, NON–FUSED, NEMA 1 DISCONNECT FOR UNIT HEATER.

(3) THERMOSTAT FOR RTU–01.

(4) PROVIDE AND INSTALL (1) 20 AMP, 120 VOLT, DUPLEX GFCI SERVICE OUTLET ON ROOF NEAR RTU–01. ALSO, PROVIDE AND INSTALL 480V, 3–POLE, 100A, NON–FUSED, NEMA 3R DISCONNECT ON ROOF NEAR RTU–01.

(5) SURVEILLANCE CAMERAS, PROVIDED AND INSTALLED BY OTHERS. SEE CONTROL ONE–LINE DIAGRAM ON DRAWING E–08 FOR MORE INFORMATION.

(6) HEATING CABLE SYSTEM FOR DOWNSPOUTS, GUTTER, AND ROOF. FOR LOCATIONS OF ROOF DRAINAGE GUTTER, DOWNSPOUTS, ETC., SEE ARCHITECTURAL DRAWINGS. SEE DETAIL. E 5220



POWER AND CONTROLS PLAN

SCALE: 1/4"=1'–0"

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
No. 12649767
JOSHUA JAY LAKE
STATE OF UTAH
07/09/2024

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED S. CAVANAUGH
APPROVED J. LAKE

DESIGN
DESIGN J. LAKE
DRAWN T. TANNER

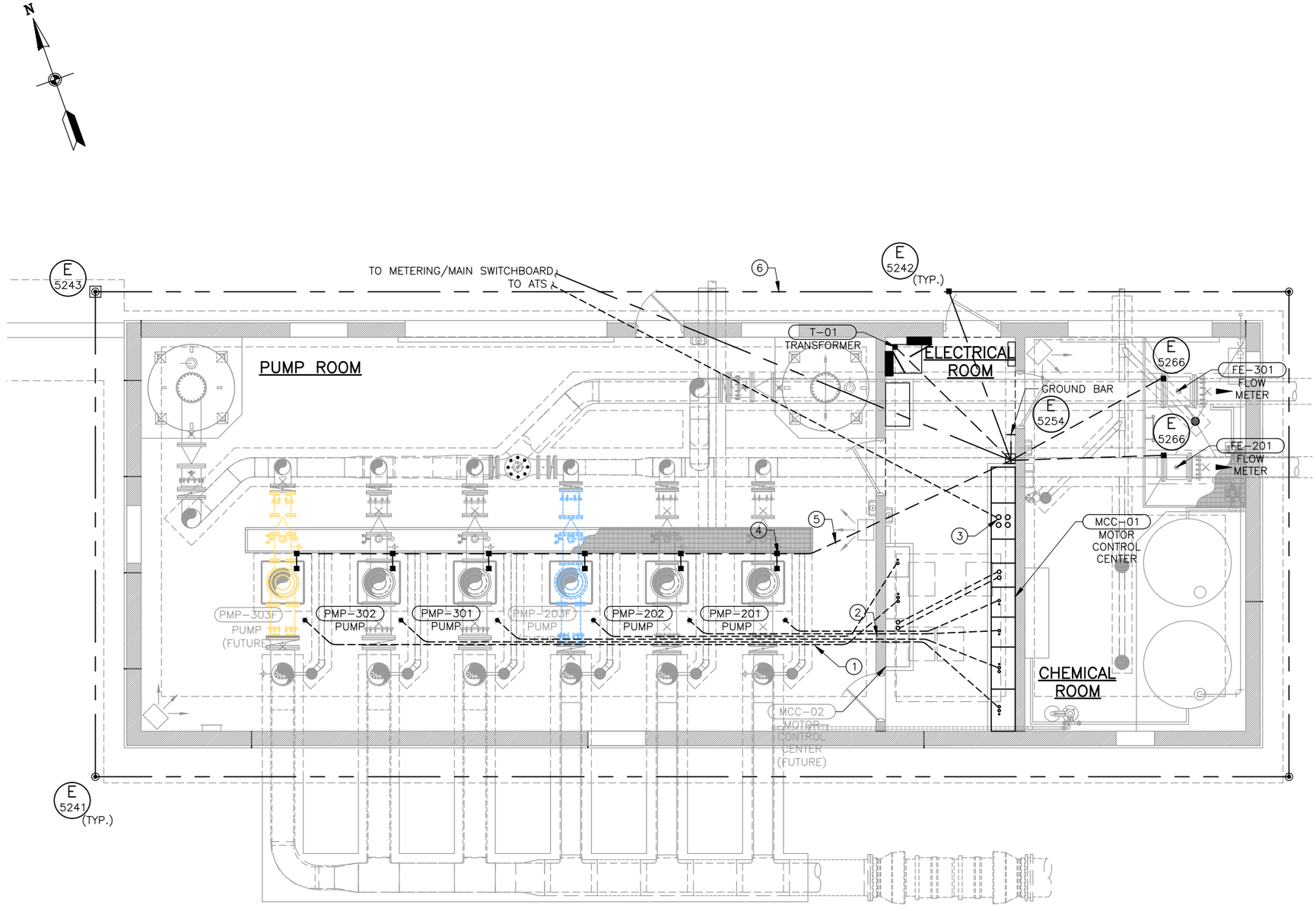
ELECTRICAL

POWER & INSTRUMENTATION PLAN

PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO.
E-03

SHEET 57 OF 72



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

GENERAL NOTES:

1. FOR SITE INFORMATION REFER TO THE ELECTRICAL SITE PLAN ON DRAWING E-02.
2. ALL BARE COPPER GROUND CABLES FOR CONNECTIONS FROM EQUIPMENT INSIDE THE PUMP STATION TO THE GROUND BAR SHALL BE RUN INSIDE PVC CONDUIT WHERE PENETRATING THROUGH SLAB. ALL BARE COPPER GROUND CABLES FOR CONNECTIONS FROM EQUIPMENT OUTSIDE THE PUMP STATION TO THE GROUND BAR SHALL BE RUN INSIDE PVC CONDUIT FROM STUBBED POINT JUST OUTSIDE PUMP STATION FOUNDATION TO THE GROUND BAR INSIDE.

KEY NOTES:

(1) PUMP FEEDER CONDUIT TO BE ROUTED IN SPACE SHOWN, 3" TO 11" BELOW PUMP ROOM CONCRETE SLAB.

(2) WHERE CONDUIT PENETRATE STEM WALL, PROVIDE AND SEAL CONDUIT SLEAVE. TYPICAL.

(3) REFERENCE POWER AND CONTROL ONE-LINE DIAGRAMS FOR QUANTITY OF CONDUIT TO EQUIPMENT. TYPICAL.

(4) PROVIDE #3/0 AWG BARE COPPER GROUND CONNECTION BETWEEN UFER AND PUMP MOTOR. TYPICAL.

(5) UFER GROUND. RUN BARE COPPER CONDUCTOR IN PUMP ROOM CONCRETE SLAB.

(6) GROUND RING. RUN BARE COPPER CONDUCTOR A MINIMUM OF 36" BELOW GRADE, 24" MINIMUM FROM BUILDING FOOTING.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12849767 JOSHUA JAY LAKE STATE OF UTAH 07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

REVIEW
CHECKED S. CAVANAUGH
APPROVED J. LAKE

DESIGN
DESIGN J. LAKE
DRAWN T. TANNER

ELECTRICAL
FEEDER CONDUIT AND GROUNDING PLAN

DATE: JULY 2024
PROJECT NUMBER 217-19-04

DRAWING NO.
E-04
SHEET 58 OF 72

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GENERAL NOTES:

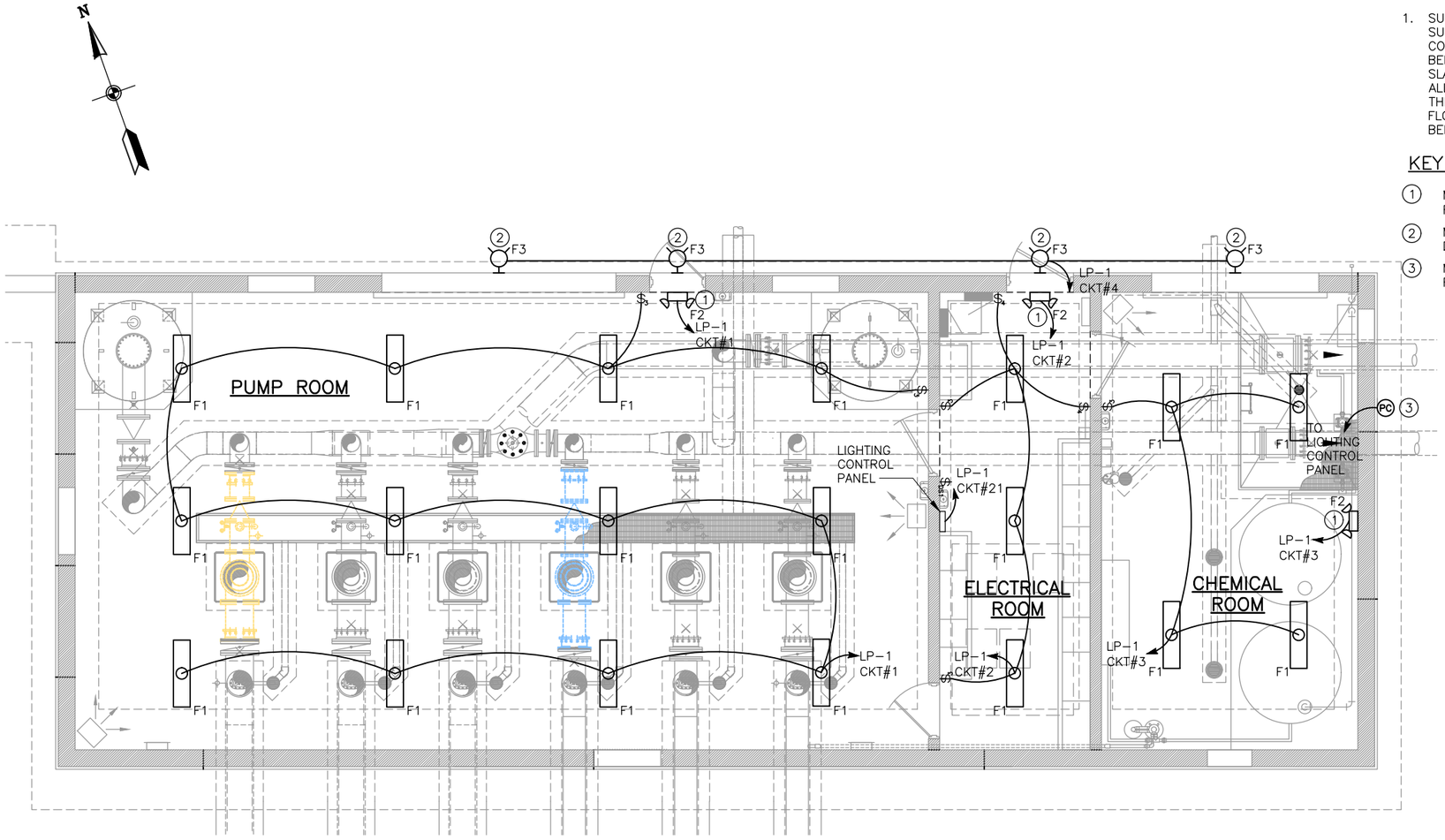
1. SUPPORT ELECTRICAL CONDUITS ON SUPPORTS INDEPENDENT OF PIPING. SUPPORTING THE ELECTRICAL CONDUIT OFF PIPING WILL NOT BE ALLOWED. ALL CONDUITS WILL BE EMBEDDED IN THE WALLS AND ROUTED ABOVE CEILING AND BELOW SLAB. CONDUITS TO EQUIPMENT IN THE CENTER OF ROOM WILL BE BELOW SLAB AND AVOID RUNNING ACROSS OPEN SPACES. SWITCHES, RECEPTACLES, AND ALL OTHER ELECTRICAL BOXES SHALL BE INSTALLED SO THAT THEY ARE FLUSH WITH THE BLOCK. ALL CONDUIT TO BE CONCEALED EXCEPT FOR STRAIGHT RUN FROM FLOOR PENETRATION TO EQUIPMENT. REQUEST PERMISSION OF THE ENGINEER BEFORE RUNNING ANY OTHER EXPOSED CONDUIT.

KEY NOTES:

(1) MOUNT EMERGENCY LIGHTS APPROXIMATELY 8' ABOVE FINISHED FLOOR.

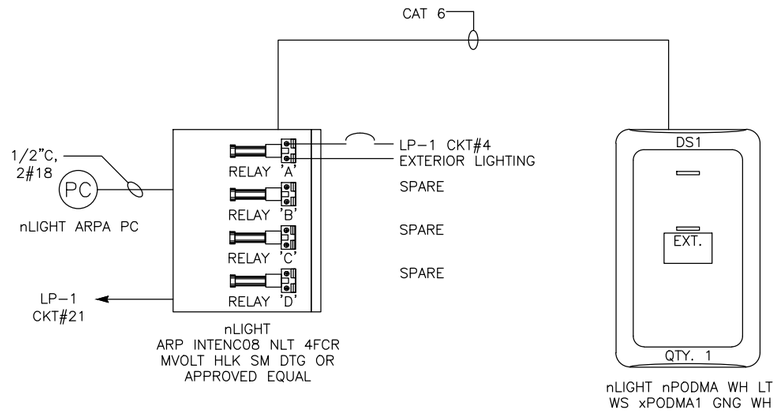
(2) MOUNT WALL PACK LIGHTS AS SHOWN ON ARCHITECTURAL DRAWING A-01.

(3) MOUNT PHOTOCELL UNDER SOFFIT AND ADJUST TO 1 FOOTCANDLE.



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

FIXTURE SCHEDULE							
SYMBOL	DESCRIPTION	MANUFACTURER	CATALOG NO.	VA	LAMP	MOUNTING	NOTES
F1	ENCLOSED INDUSTRIAL, FIBERGLASS HOUSING GASKETED, LED, 120 VOLT, WITH CMB MOUNTING BRACKET. 6000 LUMENS	HOLOPHANE	EVT4 6000LM PCL MD MVOLT 40K 80CRI CMB	49	LED	CEILING, CHAIN SUSPENDED	CHAIN HANG FIXTURE AT 12' ABOVE FINISHED FLOOR
F2	EMERGENCY LIGHT WITH TWO HEADS, 90 MIN BATTERY POWER, WET LOCATION, 120 VAC	HOLOPHANE	DM30 WL LED	2.7	LED	WALL	
F3	WALL PACK LED, EXTERIOR WALL MOUNTED 120 VOLT AC, BLACK.	HOLOPHANE	W4GLED 10C 1000 40K T3M 120 BKSDP	39	LED	WALL	



EXTERIOR LIGHTING CONTROL DETAIL
SCALE: NTS

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12849767 JOSHUA JAY LAKE STATE OF UTAH 07/09/2024

REVISIONS

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HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED S. CAVANAUGH APPROVED J. LAKE

DESIGN DESIGN J. LAKE DRAWN T. TANNER

ELECTRICAL
LIGHTING PLAN

PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO. E-05
SHEET 59 OF 72

GENERAL NOTES:

1. FOR EQUIPMENT LOCATIONS REFER TO THE ELECTRICAL SITE PLAN ON DRAWING E–02 AND THE POWER AND CONTROLS PLAN ON DRAWING E–03.
2. SUPPORT ELECTRICAL CONDUITS ON SUPPORTS INDEPENDENT OF PIPING. SUPPORTING THE ELECTRICAL CONDUIT OFF PIPING WILL NOT BE ALLOWED. ALL CONDUITS WILL BE EMBEDDED IN THE WALLS AND ROUTED ABOVE CEILING AND BELOW SLAB. CONDUITS TO EQUIPMENT IN THE CENTER OF ROOM WILL BE BELOW SLAB AND AVOID RUNNING ACROSS OPEN SPACES. SWITCHES, RECEPTACLES, AND ALL OTHER ELECTRICAL BOXES SHALL BE INSTALLED SO THAT THEY ARE FLUSH WITH THE BLOCK. ALL CONDUIT TO BE CONCEALED EXCEPT FOR STRAIGHT RUN FROM FLOOR PENETRATION TO EQUIPMENT. REQUEST PERMISSION OF THE ENGINEER BEFORE RUNNING ANY OTHER EXPOSED CONDUIT.
3. AVAILABLE FAULT CURRENT IN AMPS [XX,XXX]. CONTRACTOR IS RESPONSIBLE TO VERIFY THAT EQUIPMENT SCCR (SHORT CIRCUIT CURRENT RATING) EXCEEDS THE AVAILABLE FAULT CURRENT VALUE.
4. FOR ROUTING OF FEEDER CONDUITS, SEE DRAWING E–04.
5. PERFORM POWER SYSTEM STUDIES IN ACCORDANCE WITH SPECIFICATION SECTION 26 05 73 – POWER SYSTEM STUDIES.

KEY NOTES:

(1) PRIMARY SERVICE BY ROCKY MOUNTAIN POWER. CONTRACTOR SHALL PROVIDE AND INSTALL CONDUIT FROM THE SWITCHGEAR (SEE DRAWING E–11) TO THE ROCKY MOUNTAIN POWER TRANSFORMER. THE CONDUIT SHALL BE GREY, SCHEDULE 40 PVC, WITH FIBERGLASS LONG SWEEP ELBOWS. TRANSITIONS FROM BELOW GRADE TO ABOVE GROUND SHALL BE MADE WITH A LONG SWEEP, PVC WRAPPED GALVANIZED RIGID STEEL ELBOW. PROVIDE AND INSTALL MULE TAPE IN ACCORDANCE WITH ROCKY MOUNTAIN POWER REQUIREMENTS. CONDUCTORS SHALL BE INSTALLED BY ROCKY MOUNTAIN POWER.

(2) CONTRACTOR SHALL PROVIDE AND INSTALL TRANSFORMER PAD, SEE DETAIL. TRANSFORMER PROVIDED AND INSTALLED BY ROCKY MOUNTAIN POWER.

(3) CONTRACTOR SHALL PROVIDE AND INSTALL CONDUIT FROM THE TRANSFORMER TO THE MAIN METERING SWITCHBOARD. THE CONDUIT SHALL BE GREY, SCHEDULE 40 PVC, WITH FIBERGLASS LONG SWEEP ELBOWS. TRANSITIONS FROM BELOW GRADE TO ABOVE GROUND SHALL BE MADE WITH A LONG SWEEP, PVC WRAPPED GALVANIZED RIGID STEEL ELBOW. PROVIDE AND INSTALL MULE TAPE IN ACCORDANCE WITH ROCKY MOUNTAIN POWER REQUIREMENTS. CONDUCTORS SHALL BE INSTALLED BY ROCKY MOUNTAIN POWER.

(4) PROVIDE AND INSTALL CONDUITS, CONDUCTORS, AND CABLES FOR TEMPERATURE SWITCHES, MOTOR WINDING HEATERS, AND PRESSURE SWITCHES. SEE CONTROL ONE–LINE DIAGRAM ON DRAWING E–09 FOR CONDUIT, CONDUCTOR, CABLE SIZES AND QUANTITY.

(5) REFER TO PUMP MOTOR CONTROL DIAGRAM ON DRAWING E–10.

(6) 3–POLE BREAKER SHALL BE PROVIDED WITH GROUND FAULT PROTECTION AND ENERGY REDUCING MAINTENANCE SWITCH WITH LOCAL STATUS INDICATOR.

(7) STUB AND CAP CONDUIT(S). PROVIDE AND INSTALL PULL STRING FOR INSTALLATION OF FUTURE CONDUCTORS.

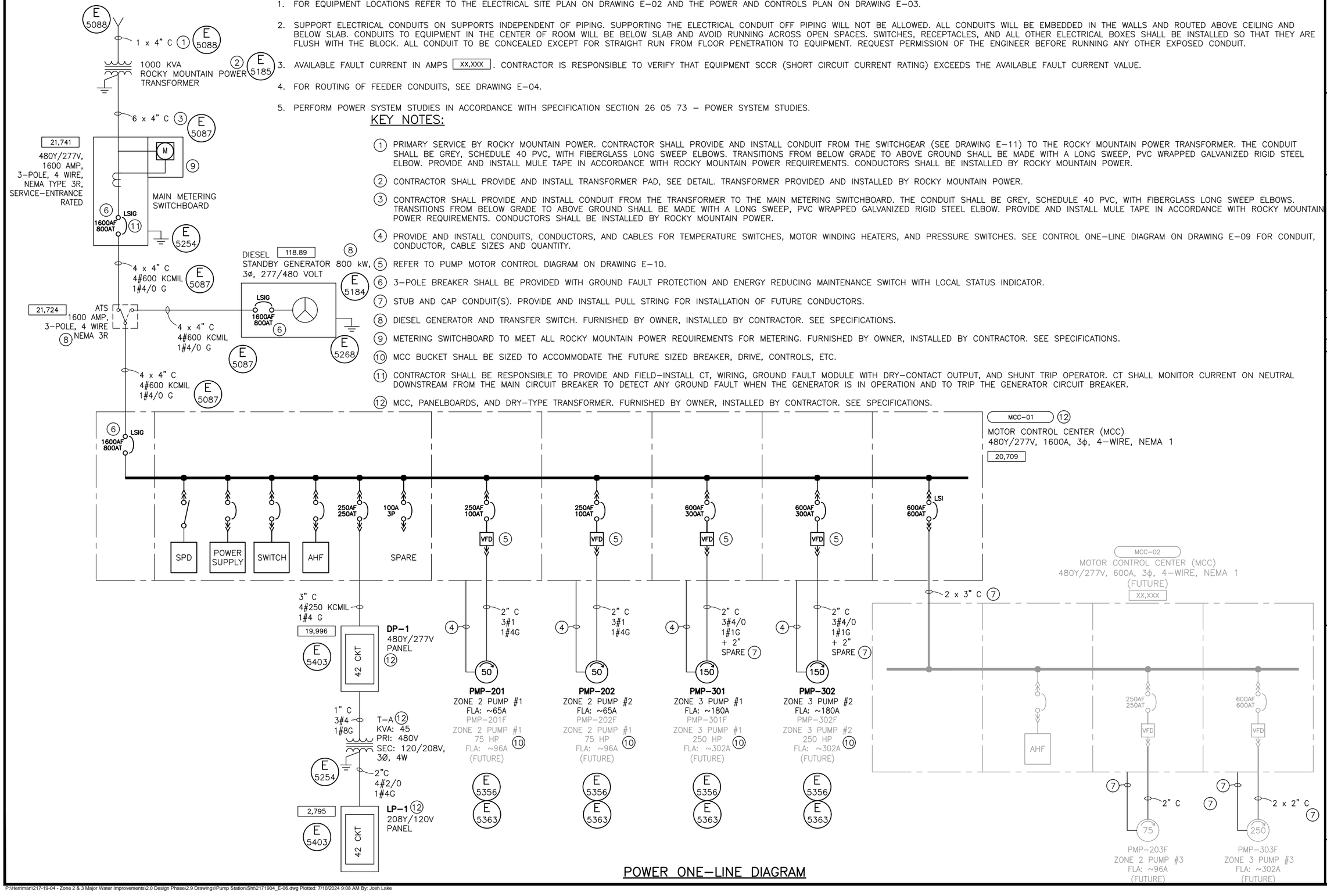
(8) DIESEL GENERATOR AND TRANSFER SWITCH. FURNISHED BY OWNER, INSTALLED BY CONTRACTOR. SEE SPECIFICATIONS.

(9) METERING SWITCHBOARD TO MEET ALL ROCKY MOUNTAIN POWER REQUIREMENTS FOR METERING. FURNISHED BY OWNER, INSTALLED BY CONTRACTOR. SEE SPECIFICATIONS.

(10) MCC BUCKET SHALL BE SIZED TO ACCOMMODATE THE FUTURE SIZED BREAKER, DRIVE, CONTROLS, ETC.

(11) CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND FIELD–INSTALL CT, WIRING, GROUND FAULT MODULE WITH DRY–CONTACT OUTPUT, AND SHUNT TRIP OPERATOR. CT SHALL MONITOR CURRENT ON NEUTRAL DOWNSTREAM FROM THE MAIN CIRCUIT BREAKER TO DETECT ANY GROUND FAULT WHEN THE GENERATOR IS IN OPERATION AND TO TRIP THE GENERATOR CIRCUIT BREAKER.

(12) MCC, PANELBOARDS, AND DRY–TYPE TRANSFORMER. FURNISHED BY OWNER, INSTALLED BY CONTRACTOR. SEE SPECIFICATIONS.



POWER ONE–LINE DIAGRAM

P:\Herriman\217-19-04 - Zone 2 & 3 Major Water Improvements\2.0 Design Phase\2.9 Drawings\Pump Station\Sht\2171904_E-06.dwg Plotted: 7/10/2024 9:08 AM By: Josh Lake

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12849767 JOSHUA JAY LAKE STATE OF UTAH 07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN J. LAKE
DRAWN T. TANNER
REVIEW
CHECKED S. CAVANAUGH
APPROVED J. LAKE

ELECTRICAL
POWER ONE-LINE DIAGRAM
DATE: JULY 2024
PROJECT NUMBER 217-19-04

DRAWING NO. E-06
SHEET 60 OF 72

NAME: MCC-01

UPDATED:	6/5/24
EQUIPMENT RATING:	1600A
LOCATION:	ELECTRICAL ROOM
TOTAL AMPS:	718.0 A
TOTAL VOLT-AMPS:	596.76 kVA
VOLTAGE L-L:	480 V
NOTES:	1.

NOTE	SPACE	DESCRIPTION	A	B	C	DEMAND AMPS
	1	SPD				0.0 A
	2	POWER SUPPLY				0.0 A
	3	SWITCH				0.0 A
	4	AHF				0.0 A
	5	PMP-201 (50 HP)	18,013	18,013	18,013	65.0 A
	6	PMP-202 (50 HP)	18,013	18,013	18,013	65.0 A
	7	PMP-301 (150 HP)	62,354	62,354	62,354	225.0 A
	8	PMP-302 (150 HP)	49,883	49,883	49,883	180.0 A
	9	DP-1	53,913	46,255	51,798	182.8 A
	10	SPARE	0	0	0	0.0 A

LOAD SUMMARY MCC-01 (INITIAL)

NAME: MCC-01

UPDATED:	6/5/24
EQUIPMENT RATING:	1600A
LOCATION:	ELECTRICAL ROOM
TOTAL AMPS:	1452.0 A
TOTAL VOLT-AMPS:	1207.41 kVA
VOLTAGE L-L:	480 V
NOTES:	1.

NOTE	SPACE	DESCRIPTION	A	B	C	DEMAND AMPS
	1	SPD				0.0 A
	2	POWER SUPPLY				0.0 A
	3	SWITCH				0.0 A
	4	AHF				0.0 A
	5	PMP-201 (75 HP)	26,604	26,604	26,604	96.0 A
	6	PMP-202 (75 HP)	26,604	26,604	26,604	96.0 A
	7	PMP-203 (75 HP)	26,604	26,604	26,604	96.0 A
	8	PMP-301 (250 HP)	104,616	104,616	104,616	377.5 A
	9	PMP-302 (250 HP)	83,693	83,693	83,693	302.0 A
	10	PMP-303 (250 HP)	83,693	83,693	83,693	302.0 A
	11	DP-1	53,913	46,255	51,798	182.8 A
	12	SPARE	0	0	0	0.0 A

LOAD SUMMARY MCC-01 (BUILDOUT)

GENERAL NOTES:

A. POWER CONDUCTORS FOR CIRCUITS FED FROM DP-1 AND LP-A SHALL BE #12 AWG AND CONDUIT SHALL BE 3/4" UNLESS OTHERWISE NOTED.

B. REFER TO THE ELECTRICAL SITE PLAN ON DRAWING E-02, THE POWER AND CONTROLS PLAN ON DRAWING E-03, AND LIGHTING PLAN ON DRAWING E-05 FOR EQUIPMENT LOCATIONS.

KEY NOTES: (#)

1. PROVIDE AND INSTALL 1"C WITH 3#3 AND 1#8G.
2. SEE POWER ONE-LINE DIAGRAM ON DRAWING E-06 FOR CONDUIT AND CONDUCTOR SIZES AND QUANTITIES.
3. PROVIDE AND INSTALL 1"C WITH 2#6 AND 1#10G.
4. PROVIDE AND INSTALL 1"C WITH 2#10 AND 1#10G.

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION

PANEL: DP-1 **VOLT:480/277** **AMP:250** **PHASE:3 WIRE:4**

LOCATION (ROOM #):	ELECTRICAL ROOM	NOTE:	---
MFG:	SEE SPECIFICATION	AIC RATING:	SEE ONE-LINE
TYPE:	NEMA TYPE 1	GROUND BUS:	YES
TYPE OF MAIN:	MLO	MOUNTING:	SURFACE
FEEDER:	SEE ONE-LINE	FED FROM:	SEE ONE-LINE

CIRCUIT DESCRIPTION	PL	BRK AMP	CKT NO	A	B	C	CKT NO	BRK AMP	PL	CIRCUIT DESCRIPTION	
MICROCLOR MC-80 OSG-192	3	20	1	3,326 19,954			2	80	3	ROOFTOP HVAC UNIT RTU-01	(1)
"	*	**	3		3,326 19,954		4	**	*	"	
"	*	**	5			3,326 19,954	6	**	*	"	
UNIT HEATER EUH-01	3	20	7	2,500 2,500			8	20	3	UNIT HEATER EUH-02	
"	*	**	9		2,500 2,500		10	**	*	"	
"	*	**	11			2,500 2,500	12	**	*	"	
UNIT HEATER EUH-03	3	20	13	3,334 11,516			14	70	3	LP-A VIA T-A	(2)
"	*	**	15		3,334 5,390		16	**	*	"	
"	*	**	17			3,334 9,824	18	**	*	"	
SPARE	3	20	19	0 0			20	20	3	SPARE	
"	*	**	21		0 0		22	**	*	-	
"	*	**	23			0 0	24	**	*	-	
SPARE	3	20	25	0 0			26	20	3	SPARE	
"	*	**	27		0 0		28	**	*	-	
"	*	**	29			0 0	30	**	*	-	
SPARE	1	20	31	0 0			32	20	3	SPARE	
SPARE	1	20	33		0 0		34	**	*	-	
SPARE	1	20	35			0 0	36	**	*	-	
SPARE	1	20	37	0 0			38	20	3	SPARE	
SPARE	1	20	39		0 0		40	**	*	-	
SPARE	1	20	41			0 0	42	**	*	-	
PHASE TOTALS				43,130	37,004	41,438					
TOTAL WATTS				121,572							
TOTAL AMPS				146						6/5/24	

PANEL SCHEDULE DP-1

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION

PANEL: LP-1 **VOLT:208/120** **AMP:225** **PHASE:3 WIRE:4**

LOCATION (ROOM #):	ELECTRIC ROOM	NOTE:	---
MFG:	SEE SPECIFICATION	AIC RATING:	SEE ONE-LINE
TYPE:	NEMA TYPE 1	GROUND BUS:	YES
TYPE OF MAIN:	150 AMP MCB	MOUNTING:	SURFACE
FEEDER:	SEE ONE-LINE	FED FROM:	SEE ONE-LINE

CIRCUIT DESCRIPTION	PL	BRK	CKT NO	A	B	C	CKT NO	BRK AMP	PL	CIRCUIT DESCRIPTION	
PUMP ROOM LIGHTING	1	20	1	591 150			2	20	1	ELECTRICAL ROOM LIGHTING	
CHEMICAL ROOM LIGHTING	1	20	3		199 156		4	20	1	EXTERIOR LIGHTING	
PUMP ROOM RECEPTACLES	1	20	5			1260 360	6	20	1	ELECTRICAL ROOM RECEPTACLES	
CHEMICAL ROOM RECEPTACLES	1	20	7	360 360			8	20	1	EXTERIOR RECEPTACLES	
HVAC UNIT (RTU-01) SERVICE OUTLET	1	20	9		180 180		10	20	1	SURVEILLANCE SYSTEM PANEL	
RTU PANEL	1	20	11			400 1000	12	20	1	WATER SOFTENER OSG-191	
GENERATOR LOAD CENTER	2	50	13	4115 0			14	20	1	SPARE	(3)
"	*	**	15		4115 0		16	20	1	SPARE	
VENTILATION CONTROL PANEL LCP-01-EF-01/02	1	20	17			1392 1392	18	20	1	VENTILATION CONTROL PANEL LCP-01-EF-03/04	
VENTILATION CONTROL PANEL LCP-01-EF-05/06	1	20	19	1392 528			20	20	1	VENTILATION CONTROL PANEL LCP-02-EF-07	
LIGHTING CONTROL PANEL	1	20	21		500 0		22	20	1	SPARE	
DEICING SYSTEM	2	30	23			1980 1980	24	30	2	DEICING SYSTEM	(4)
"	*	**	25	1980 1980			26	**	*	"	
SPARE	1	20	27		0 0		28	20	1	SPARE	
SPARE	1	20	29			0 0	30	20	1	SPARE	
SPARE	1	20	31	0 0			32	15	1	SPARE	
SPARE	1	20	33		0 0		34	20	1	SPARE	
SPARE	1	20	35			0 0	36	20	1	SPARE	
CHEMICAL INJECTION PUMP PMP-290	3	20	37	30 30			38	20	3	CHEMICAL INJECTION PUMP PMP-390	
"	*	**	39		30 30		40	**	*	"	
"	*	**	41			30 30	42	**	*	"	
PHASE TOTALS				11516	5390	9824					
TOTAL WATTS				26730							
TOTAL AMPS				74						6/5/24	

PANEL SCHEDULE LP-1

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12649767 JOSHUA JAY LAKE STATE OF UTAH 07/09/2024

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			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED S. CAVANAUGH APPROVED J. LAKE

DESIGN DESIGN J. LAKE DRAWN T. TANNER

ELECTRICAL

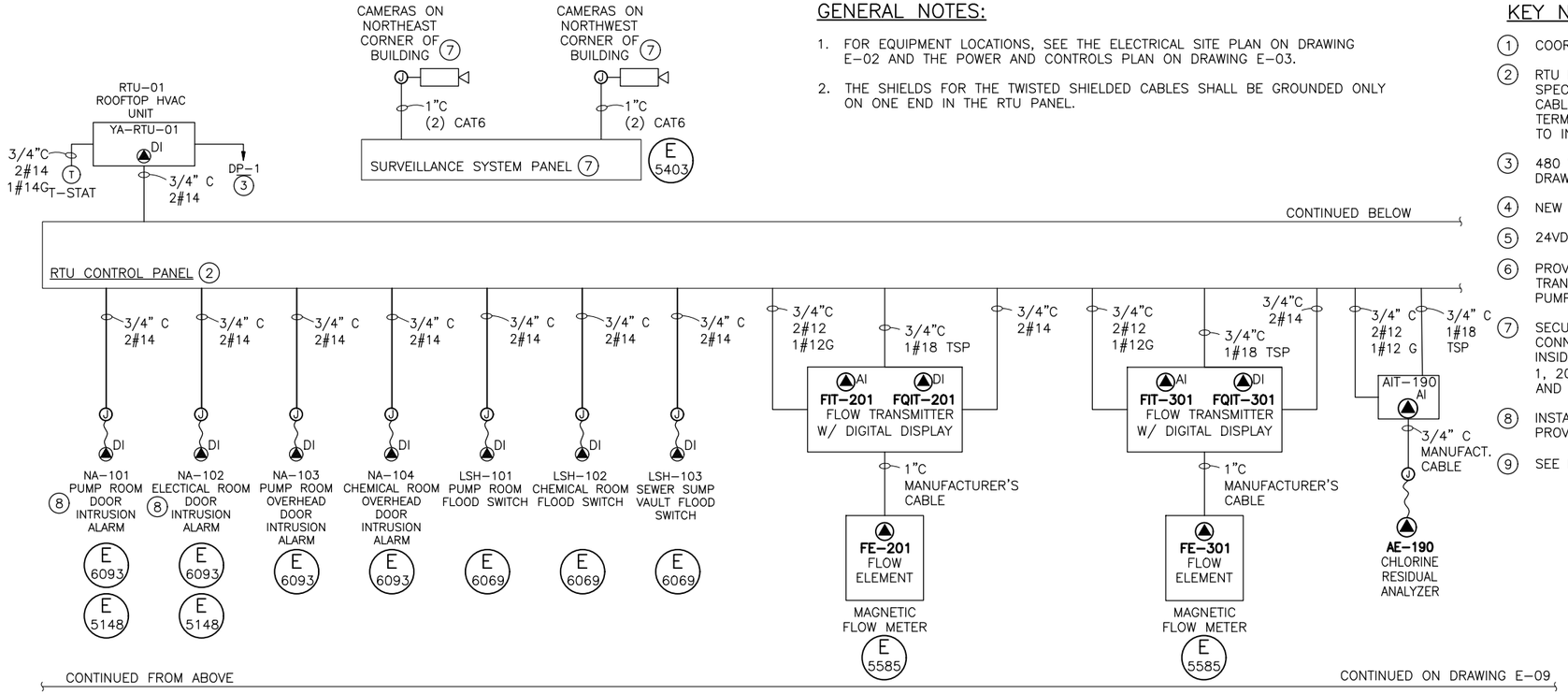
LOAD SUMMARY AND PANEL SCHEDULES

DATE: JULY 2024 PROJECT NUMBER 217-19-04

DRAWING NO. E-07

SHEET 61 OF 72

P:\HERRIMAN\217-19-04 - ZONE 2 & 3 MAJOR WATER IMPROVEMENTS\2.0 DESIGN PHASE\2.9 DRAWINGS\PUMP STATION\SHT\2171904_E-07.dwg Plotted: 7/9/2024 4:27 PM By: Josh Lake



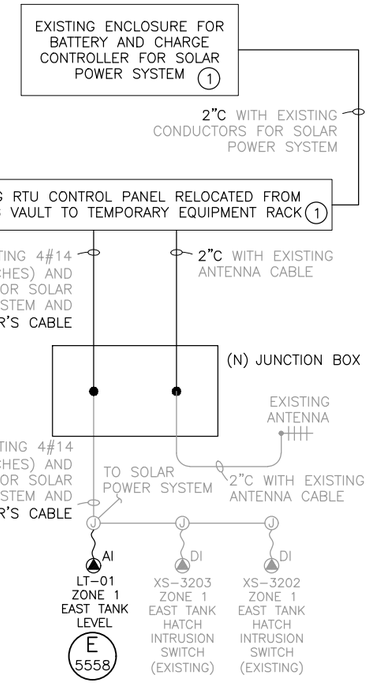
GENERAL NOTES:

1. FOR EQUIPMENT LOCATIONS, SEE THE ELECTRICAL SITE PLAN ON DRAWING E-02 AND THE POWER AND CONTROLS PLAN ON DRAWING E-03.
2. THE SHIELDS FOR THE TWISTED SHIELDED CABLES SHALL BE GROUNDED ONLY ON ONE END IN THE RTU PANEL.

KEY NOTES:

1. COORDINATE WITH APCO TO RELOCATE AND MOUNT EQUIPMENT.
2. RTU PANEL SUPPLIED BY INTEGRATOR UNDER THE CONTRACTOR. SEE SPECIFICATION. PROVIDE AND INSTALL ALL INSTRUMENTATION, CONDUIT, CABLES, AND CONDUCTORS. LABEL ALL CONDUCTORS AT BOTH ENDS. TERMINATE CABLES AND CONDUCTORS ON BOTH ENDS. PROVIDE ASSISTANCE TO INTEGRATOR TO PERFORM POINT-TO-POINT CHECKOUT OF THE SYSTEM.
3. 480 VOLT 3-PHASE POWER, REFER TO THE POWER ONE-LINE DIAGRAM ON DRAWING E-06.
4. NEW ANTENNA CABLE PROVIDED BY OTHERS AND INSTALL BY CONTRACTOR.
5. 24VDC LOOP POWERED INSTRUMENT.
6. PROVIDE AND INSTALL NEW MANUFACTURER'S CABLE FOR SUBMERSIBLE LEVEL TRANSMITTER. COIL SUFFICIENT LENGTH OF CABLE TO REACH NEW RTU IN PUMP STATION.
7. SECURITY CAMERAS PROVIDED AND INSTALLED BY SECURITY CONTRACTOR. CONNECT TO NETWORK SWITCH PROVIDED BY THE SECURITY CONTRACTOR INSIDE THE SURVEILLANCE SYSTEM PANEL. PROVIDE AND INSTALL NEMA TYPE 1, 20"Hx20"Wx6"D ENCLOSURE FOR SURVEILLANCE SYSTEM PANEL. PROVIDE AND INSTALL RECEPTACLE INSIDE ENCLOSURE.
8. INSTALL CONDUIT AND BOXES AT EACH MAN DOOR ENTRANCE PER DETAIL TO PROVISION FOR FUTURE ACCESS CONTROL.
9. SEE KEY NOTE #11 ON DRAWING E-06 FOR MORE INFORMATION.

CONTROL ONE-LINE DIAGRAM



DURING CONSTRUCTION CONTROL ONE-LINE DIAGRAM

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12849767 JOSHUA JAY LAKE STATE OF UTAH 07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED S. CAVANAUGH APPROVED J. LAKE

DESIGN J. LAKE DRAWN T. TANNER

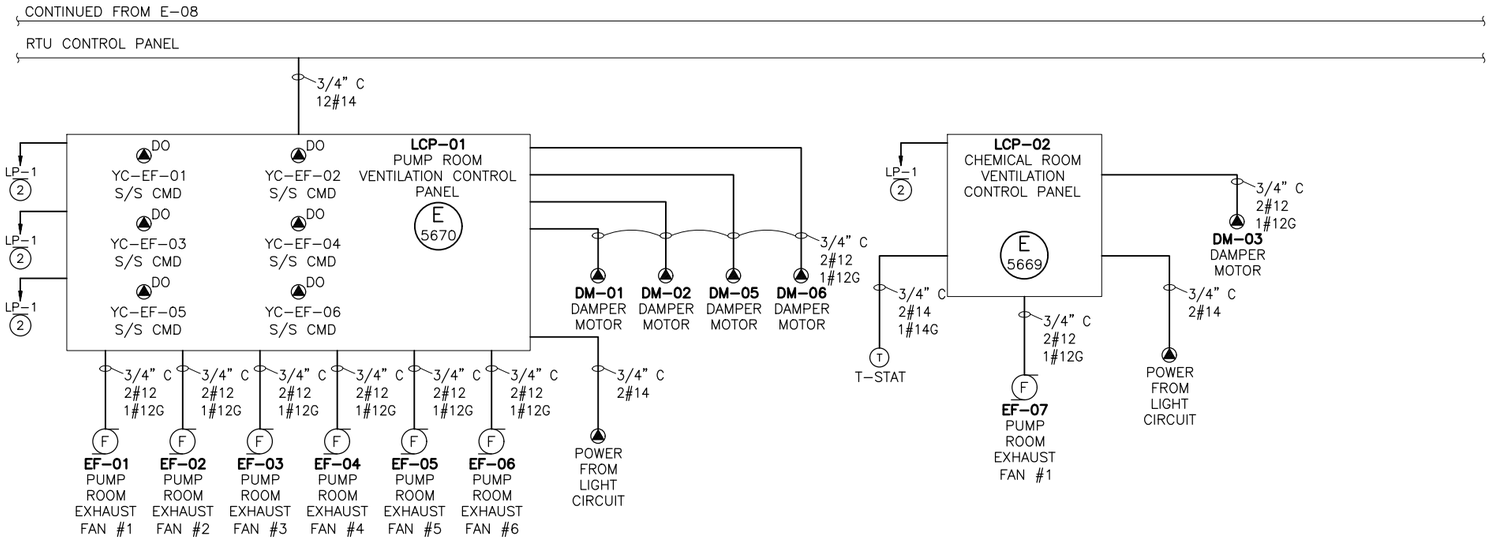
ELECTRICAL
CONTROL ONE-LINE DIAGRAM - 1

DATE: JULY 2024 PROJECT NUMBER 217-19-04

DRAWING NO. E-08

SHEET 62 OF 72

P:\HERRIMAN\217-19-04 - ZONE 2 & 3 MAJOR WATER IMPROVEMENTS\2.0 DESIGN PHASE\2.9 DRAWINGS\PUMP STATION\SHT\2171904_E-08.dwg Plotted: 7/9/2024 4:27 PM By: Josh Lake



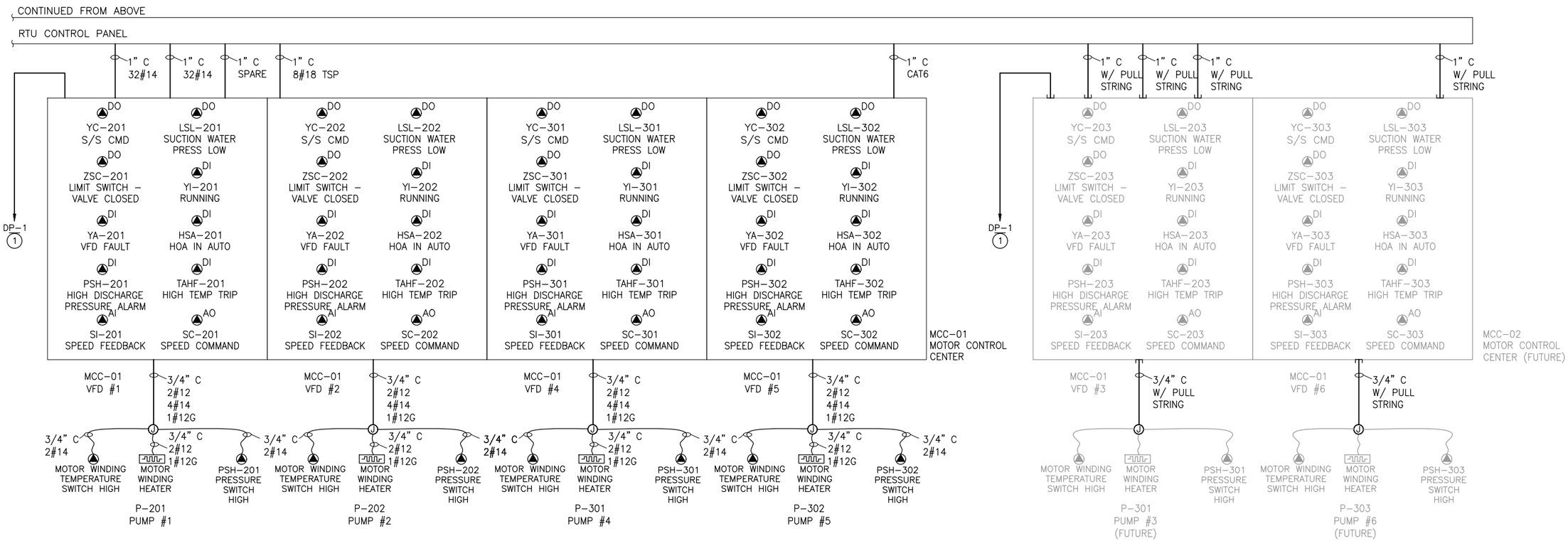
GENERAL NOTES:

1. FOR EQUIPMENT LOCATIONS, SEE THE ELECTRICAL SITE PLAN ON DRAWING E-02 AND THE POWER AND CONTROLS PLAN ON DRAWING E-03.
2. THE SHIELDS FOR THE TWISTED SHIELDED CABLES SHALL BE GROUNDED ONLY ON ONE END IN THE RTU PANEL.

KEY NOTES:

(1) 480 VOLT 3-PHASE POWER, REFER TO THE POWER ONE-LINE DIAGRAM ON DRAWING E-06.

(2) 120 VAC POWER. REFER TO PANEL SCHEDULE LP-1 FOR CIRCUIT NUMBER.



CONTROL ONE-LINE DIAGRAM (CONT. FROM DRAWING E-08)

P:\HERRIMAN\217-19-04 - ZONE 2 & 3 MAJOR WATER IMPROVEMENTS\2.0 DESIGN PHASE\2.9 DRAWINGS\PUMP STATION\SHT\217190 4_E-09.dwg Plotted: 7/9/2024 4:27 PM By: Josh Lake

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
No. 12649767
JOSHUA JAY LAKE
STATE OF UTAH
07/09/2024

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			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

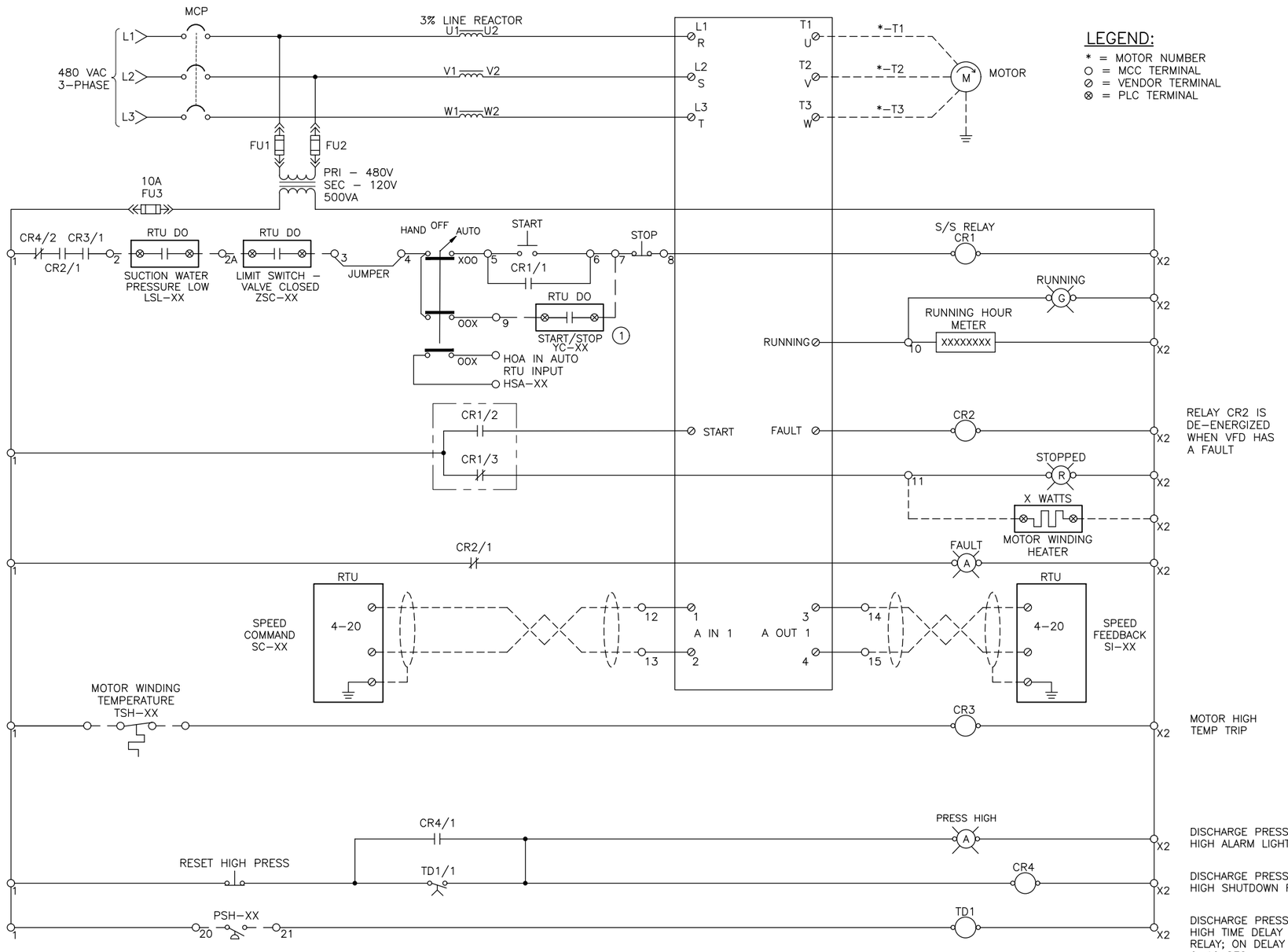
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN J. LAKE
DRAWN T. TANNER
REVIEW
CHECKED S. CAVANAUGH
APPROVED J. LAKE

ELECTRICAL
CONTROL ONE-LINE DIAGRAM - 2

PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO.
E-09
SHEET 63 OF 72



LEGEND:

* = MOTOR NUMBER
○ = MCC TERMINAL
⊘ = VENDOR TERMINAL
⊗ = PLC TERMINAL

GENERAL NOTES:

1. THIS IS A GENERIC WIRING DIAGRAM OF A VARIABLE FREQUENCY DRIVE. DEPENDING ON THE MANUFACTURER, THE ACTUAL WIRING DIAGRAM MAY DIFFER SLIGHTLY.
2. INSTALL COOLING FANS, TO PREVENT VFD FROM OVERHEATING.
3. VFD KEYPAD SHALL BE ACCESSIBLE ON FRONT DOOR OF ENCLOSURE.

KEY NOTES:

(1) RTU OUTPUT TO START AND STOP PUMP.

PUMP MOTOR CONTROL DIAGRAM

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12849767 JOSHUA JAY LAKE STATE OF UTAH 07/09/2024

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HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
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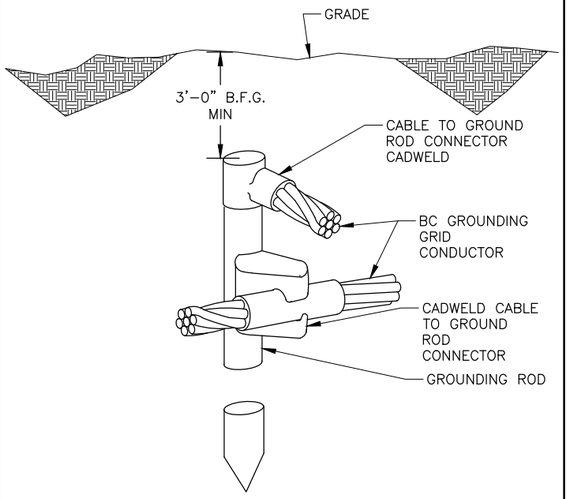
REVIEW CHECKED S. CAVANAUGH
APPROVED J. LAKE

DESIGN DESIGN J. LAKE
DRAWN T. TANNER

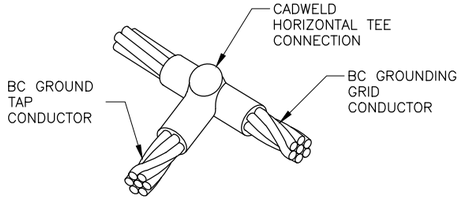
ELECTRICAL
PUMP MOTOR CONTROL DIAGRAM
PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO. E-10
SHEET 64 OF 72

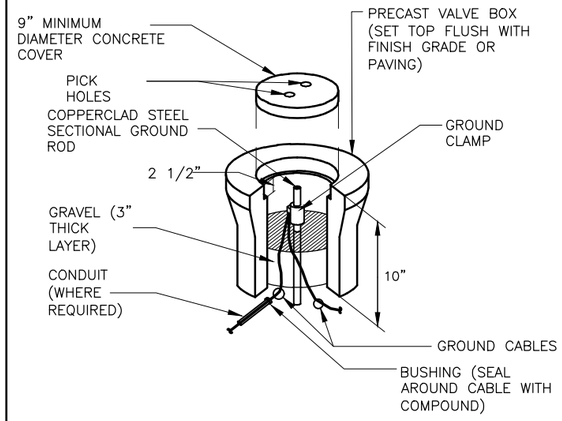
P:\HERRIMAN\217-19-04 - ZONE 2 & 3 MAJOR WATER IMPROVEMENTS\2.0 DESIGN PHASE\2.9 DRAWINGS\PUMP STATION\SHT\2171904_E-10.dwg Plotted: 7/9/2024 4:27 PM By: Josh Lake



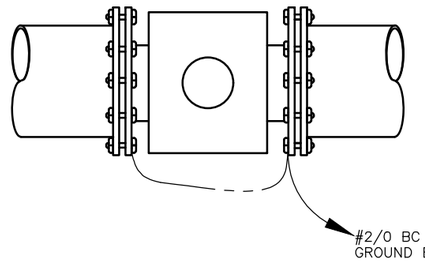
GROUND ROD CONNECTION (E 5241)
SCALE: NTS



GROUND TAP DETAIL (E 5242)
SCALE: NTS



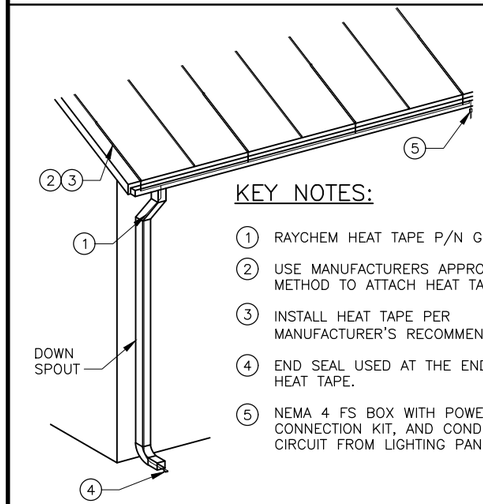
GROUND ROD AND WELL (E 5243)
SCALE: NTS



NOTES:

1. BOND THE STAINLESS STEEL GROUNDING RINGS OF THE FLOW ELEMENT TO THE GROUND BAR IN THE ELECTRICAL ROOM. REFER TO DRAWING E-03 AND DETAIL E-5017.

MAGNETIC FLOW METER GROUNDING (E 5266)
SCALE: NTS



KEY NOTES:

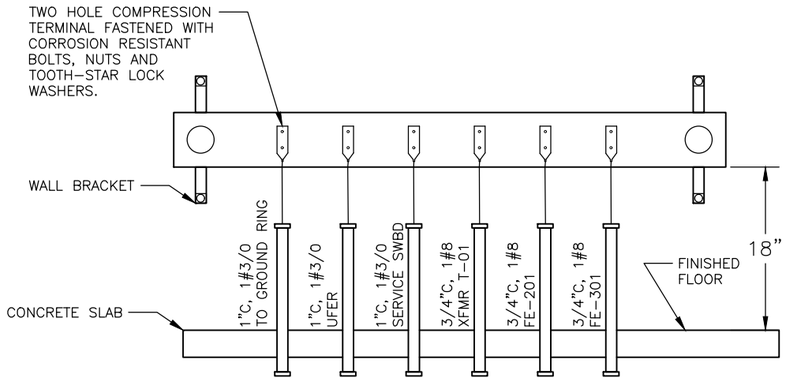
1. RAYCHEM HEAT TAPE P/N GM2XT.
2. USE MANUFACTURERS APPROVED METHOD TO ATTACH HEAT TAPE.
3. INSTALL HEAT TAPE PER MANUFACTURER'S RECOMMENDATIONS.
4. END SEAL USED AT THE END OF ALL HEAT TAPE.
5. NEMA 4 FS BOX WITH POWER CONNECTION KIT, AND CONDUIT WITH CIRCUIT FROM LIGHTING PANEL

GENERAL NOTES:

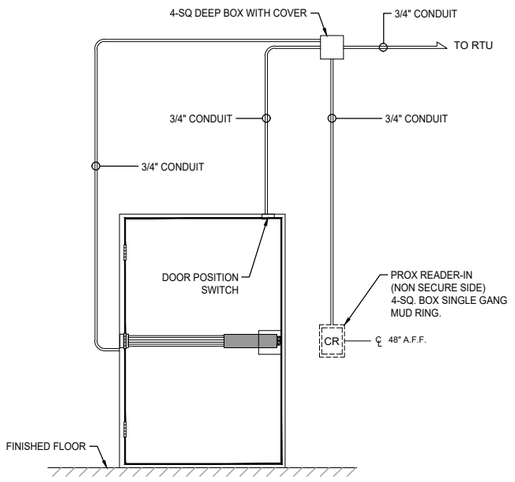
1. THE HEAT TAPE ITEMS SHOWN IN DETAIL ARE MANUFACTURED BY RAYCHEM OR APPROVED EQUAL.

TYPICAL HEAT TAPE INSTALLATION FOR STANDING SEAM METAL ROOF (E 5220)
SCALE: NTS

NOTES
1. ALL CONDUCTORS SHALL BE IN CONDUIT WHERE PENETRATING CONCRETE, UNLESS SHOWN OTHERWISE
2. ALL CONDUITS SHALL HAVE A BELL END AT ABOVE GRADE END.



GROUND BAR DETAIL (E 5254)
SCALE: NTS



SINGLE DOOR ACCESS CONTROL DETAIL (E 5148)
SCALE: NTS

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12649767 JOSHUA JAY LAKE STATE OF UTAH 07/09/2024

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

REVIEW CHECKED S. CAVANAUGH APPROVED J. LAKE

DESIGN DESIGN J. LAKE DRAWN T. TANNER

ELECTRICAL

GENERAL ELECTRICAL DETAILS - 1

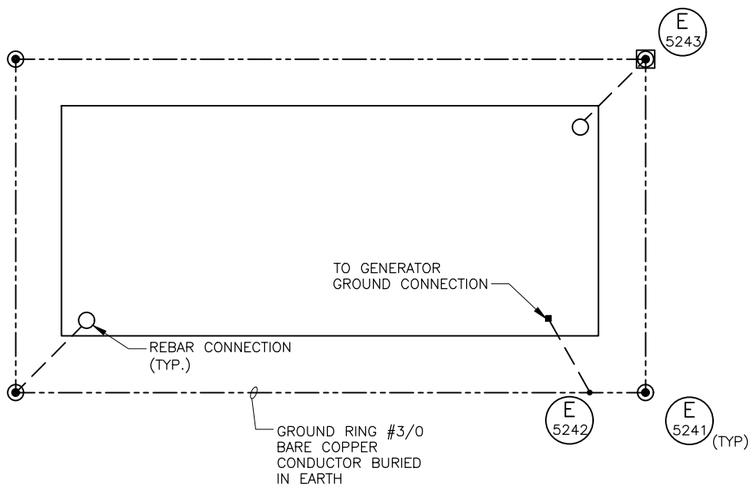
PROJECT NUMBER 217-19-04

DATE: JULY 2024

DRAWING NO. GE-01

SHEET 65 OF 72

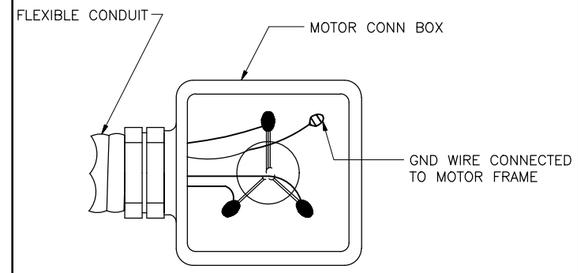
NOTES
1. REFER TO GENERAL NOTES ON DRAWING E-03 FOR GROUND GRID INFORMATION.



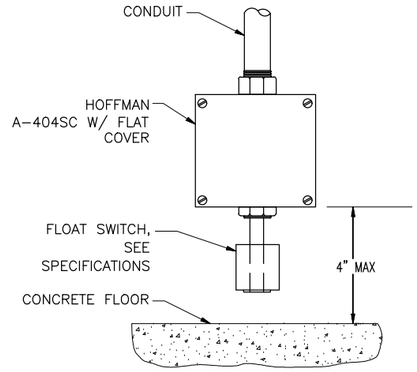
GENERATOR GROUND RING DETAIL
SCALE: NTS — E 5268

NOTES:
1. LUGGED AND BOLTED, INSULATED WITH 1/2 LAPPED LAYER OF VARNISHED CAMBRIC TAPE AND TWO 1/2 LAPPED LAYERS OF VINYL PLASTIC ELECTRICIANS TAPE WITH IRREGULAR SURFACES PADDED PER SPEC.

(TYPICAL FOR NON STAR-DELTA STARTED MOTORS)

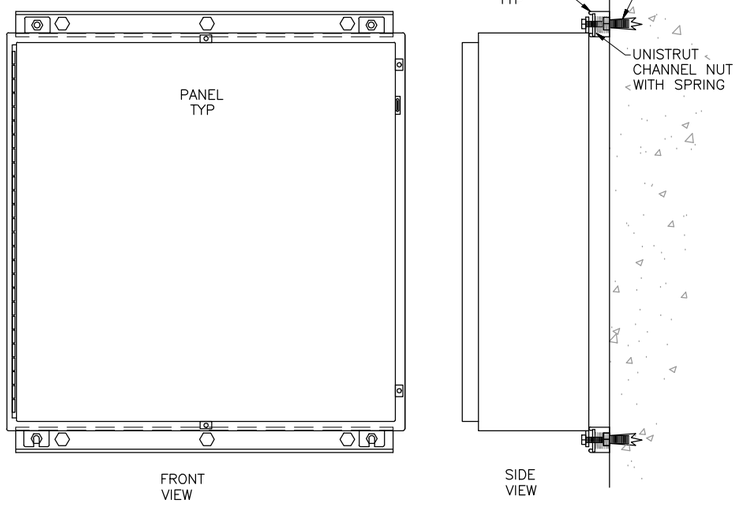


MOTOR GROUND
SCALE: NTS — E 5356



FLOOD SWITCH INTALLATION DETAIL
SCALE: NTS — I 6069

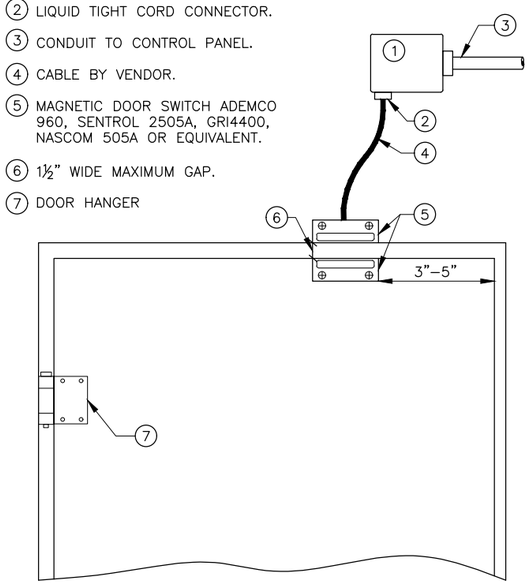
NOTES
1. MOUNT PANEL OR INDICATING TRANSMITTER AT ABOUT 4' TO 5' ABOVE FINISHED FLOOR UNLESS OTHERWISE SPECIFIED IN DRAWINGS.



TYPICAL PANEL MOUNTING DETAIL ON WALL
SCALE: NTS — E 5403

ROLL-UP DOOR SECURITY SWITCH INSTALLATION DETAIL
SCALE: NTS — E 6092

NOTES:
1. JUNCTION BOX.
2. LIQUID TIGHT CORD CONNECTOR.
3. CONDUIT TO CONTROL PANEL.
4. CABLE BY VENDOR.
5. MAGNETIC DOOR SWITCH ADEMCO 960, SENTROL 2505A, GRI4400, NASCOM 505A OR EQUIVALENT.
6. 1½" WIDE MAXIMUM GAP.
7. DOOR HANGER



DOOR INTRUSION SWITCH INSTALLATION DETAIL
SCALE: NTS — E 6093

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — No. 12849767 — JOSHUA JAY LAKE — STATE OF UTAH — 07/09/2024

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW — CHECKED S. CAVANAUGH — APPROVED J. LAKE

DESIGN — DESIGN J. LAKE — DRAWN T. TANNER

ELECTRICAL

GENERAL ELECTRICAL DETAILS - 2

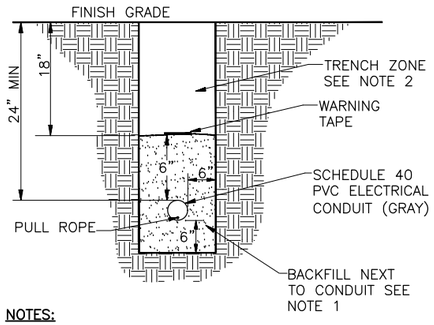
PROJECT NUMBER 217-19-04

DATE: JULY 2024

DRAWING NO. GE-02

SHEET 66 OF 72

P:\HERRIMAN\217-19-04 - ZONE 2 & 3 MAJOR WATER IMPROVEMENTS\2.0 DESIGN PHASE\2.9 DRAWINGS\PUMP STATION\SHT\2171904_GE-02.dwg Plotted: 7/9/2024 4:27 PM By: Josh Lake



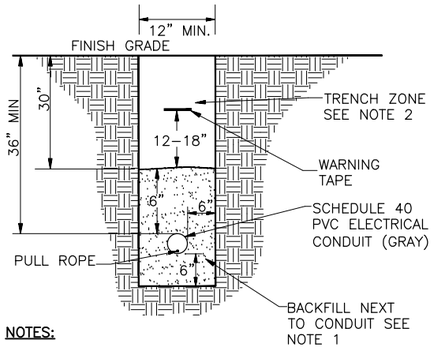
NOTES:

1. BACKFILL MATERIAL SHALL BE TYPE C COMPACTED TO 95% PER ASTM D 1557. SEE SPECIFICATION 31 23 00.
2. NATIVE MATERIAL MEETING SPECIFICATION 31 23 00 FOR SUITABLE MATERIAL MAY BE USED FOR TRENCH ZONE BACKFILL IN UNIMPROVED AREAS, COMPACT TO 85%.
3. FOR MORE THAN ONE CONDUIT OF THE SAME VOLTAGE IN TRENCH ALLOW 6 INCHES BETWEEN CONDUITS.
4. REFER TO POWER ONE-LINE DIAGRAM FOR CONDUIT SIZES.

CONDUIT TRENCH DETAIL

SCALE: NTS

E 5087



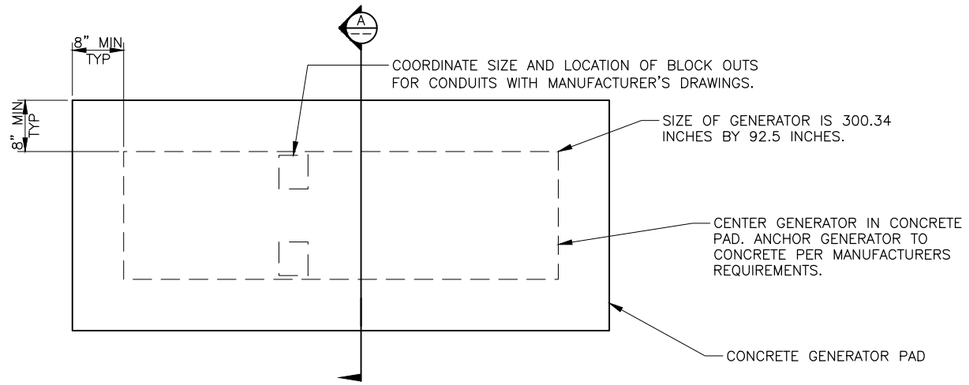
NOTES:

1. BACKFILL MATERIAL SHALL BE TYPE C COMPACTED TO 95% PER ASTM D 1557. SEE SPECIFICATION 31 23 00. BACKFILL MATERIAL SHALL BE CAPABLE OF PASSING THROUGH A 3/4" SIEVE.
2. NATIVE MATERIAL MEETING SPECIFICATION 31 23 00 FOR SUITABLE MATERIAL MAY BE USED FOR TRENCH ZONE BACKFILL IN UNIMPROVED AREAS, COMPACT TO 85%.
3. FOR MORE THAN ONE CONDUIT OF THE SAME VOLTAGE IN TRENCH ALLOW 6 INCHES BETWEEN CONDUITS.
4. REFER TO POWER ONE-LINE DIAGRAM FOR CONDUIT SIZES.

ROCKY MOUNTAIN POWER CONDUIT TRENCH DETAIL

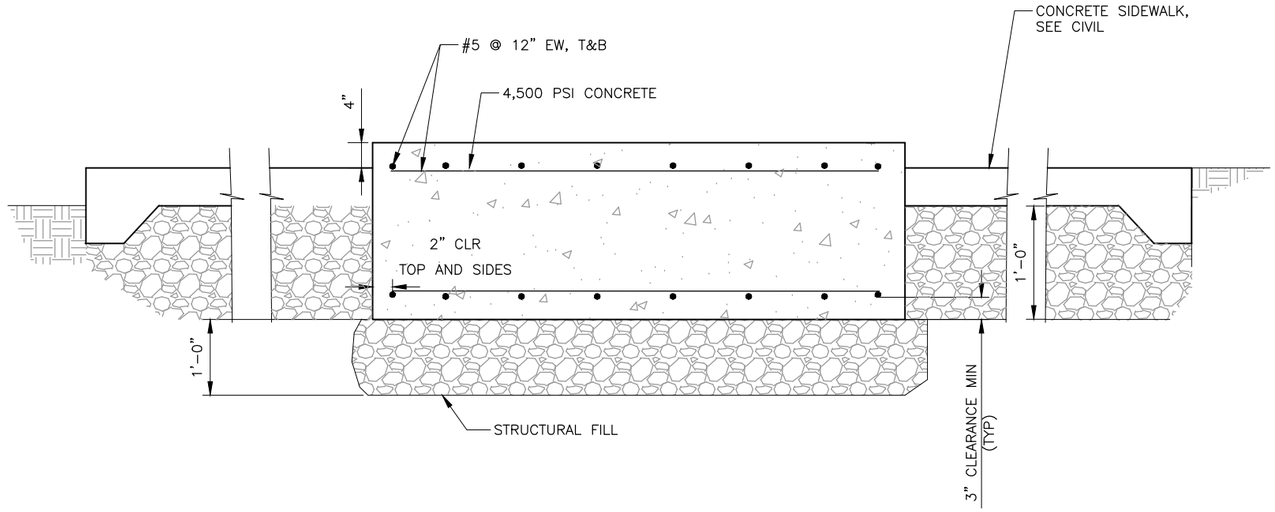
SCALE: NTS

E 5088



PLAN

SCALE: NTS



SECTION A

SCALE: NTS

EQUIPMENT PAD DETAIL

SCALE: NTS

E 5184

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12849767 JOSHUA JAY LAKE STATE OF UTAH 07/09/2024

REVISIONS

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HERRIMAN CITY

ZONE 2 & 3 PUMP STATION PROJECT

HERRIMAN, UTAH

VERIFY SCALE

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REVIEW CHECKED S. CAVANAUGH APPROVED J. LAKE

DESIGN DESIGN J. LAKE DRAWN T. TANNER

ELECTRICAL

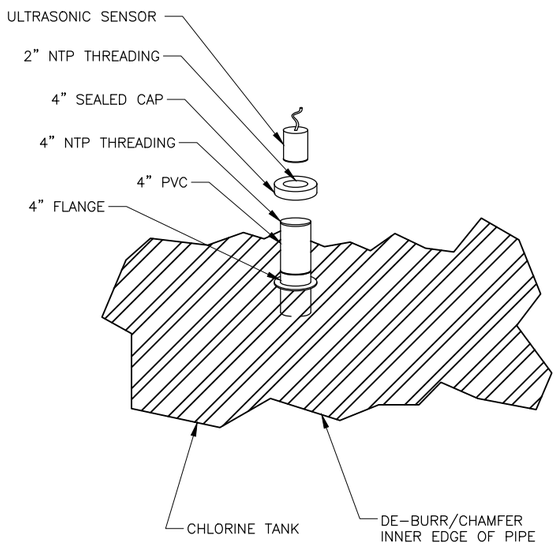
GENERAL ELECTRICAL DETAILS - 3

PROJECT NUMBER 217-19-04

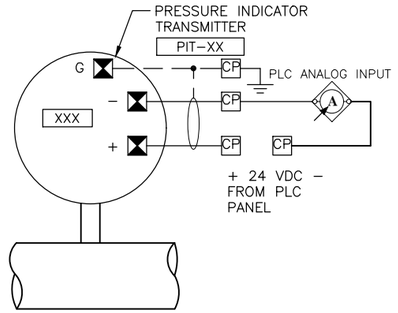
DATE: JULY 2024

DRAWING NO. GE-03

SHEET 67 OF 72



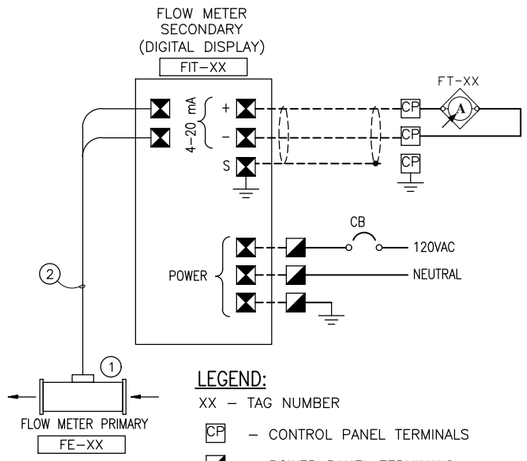
ULTRASONIC SENSOR DETAIL (I 6146)
SCALE: NTS



LEGEND:
XX – TAG NUMBER
CP – CONTROL PANEL TERMINALS
– PRESSURE TRANSMITTER TERMINALS

PRESSURE TRANSMITTER SCHEMATIC (E 5581)
SCALE: NTS

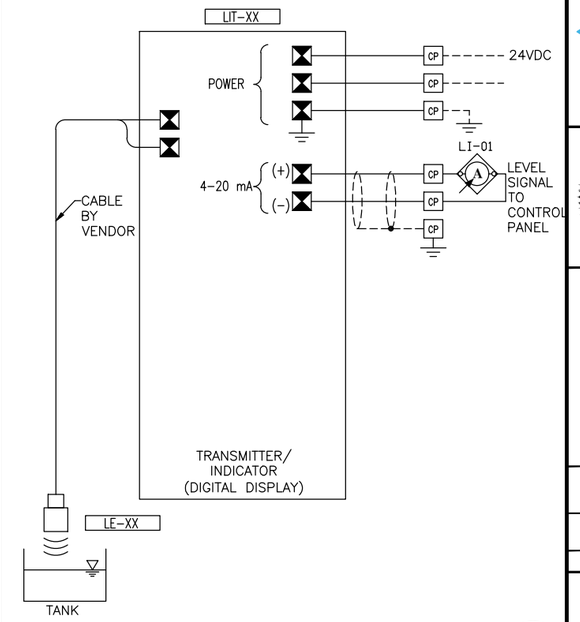
NOTES:
1. GROUND FLOW METER PRIMARY AS REQUIRED BY MANUFACTURERS.
2. CABLE BY VENDOR OR RECOMENDED BY VENDOR.



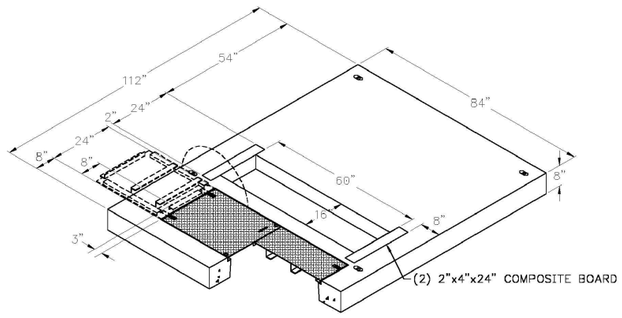
LEGEND:
XX – TAG NUMBER
CP – CONTROL PANEL TERMINALS
– POWER PANEL TERMINALS
– FLOW METER DISPLAY TERMINALS

TYPICAL FLOW METER SCHEMATIC (E 5585)
SCALE: NTS

LEGEND:
CP PUMP CONTROL PANEL TERMINALS
RTU RTU CONTROL PANEL TERMINALS



ULTRASONIC CONTROL SCHEMATIC (E 5558)
SCALE: NTS



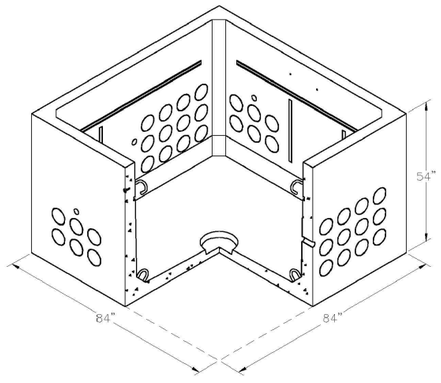
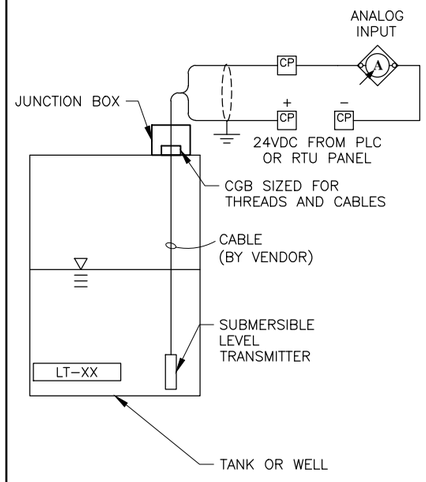


Figure 3—Padvault for 2.4–25 kV Three-Phase 1000–2500 kVA Transformer (SI#7992958)

POWER TRANSFORMER PAD DETAIL (E 5185)
SCALE: NTS



LEGEND:
XX – TAG NUMBER
CP – CONTROL PANEL TERMINALS

TYPICAL SUBMERSIBLE LEVEL TRANSDUCER (I 6130)
SCALE: NTS

NOT USED (E 50XX)
SCALE: NTS

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12649767 JOSHUA JAY LAKE STATE OF UTAH 07/09/2024

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

REVIEW CHECKED S. CAVANAUGH APPROVED J. LAKE

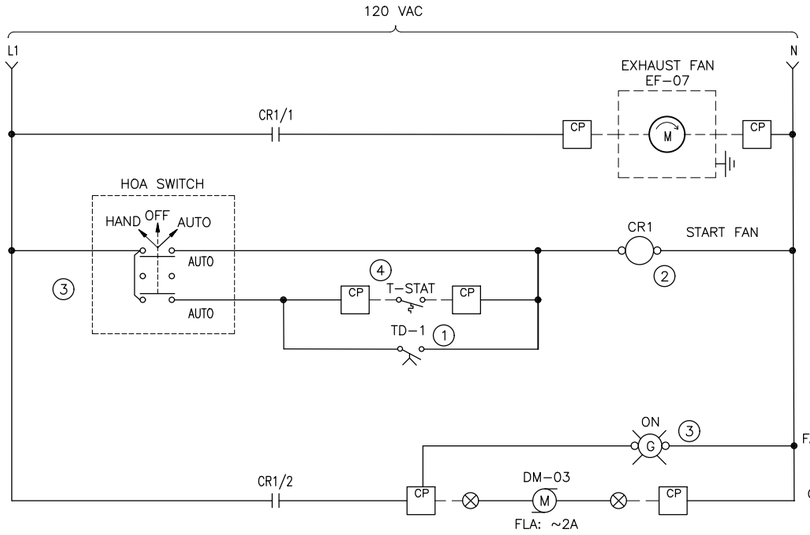
DESIGN DESIGN J. LAKE DRAWN T. TANNER

ELECTRICAL
GENERAL ELECTRICAL DETAILS - 4

DATE: JULY 2024 PROJECT NUMBER 217-19-04

DRAWING NO. GE-04

SHEET 68 OF 72

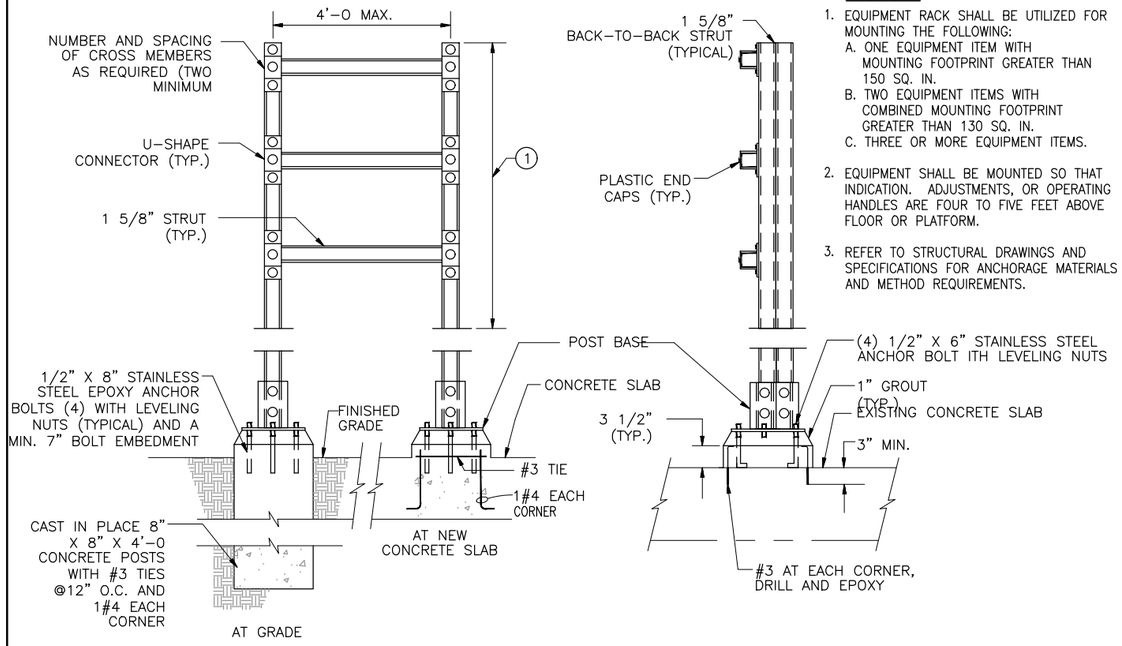


KEY NOTES:

1. CONTACT SHALL CLOSE IMMEDIATELY WHEN LIGHTS ARE TURNED ON AND HOA SWITCH IS IN AUTO. CONTACT SHALL REMAIN CLOSED AFTER LIGHTS ARE TURNED OFF FOR AN ADJUSTABLE AMOUNT OF TIME (0–30 MIN. AT LEAST). SET TIME DELAY TO 20 MIN.
2. RELAY SHALL BE HORSEPOWER RATED FOR SPECIFIC VENT FAN MOTOR.
3. PILOT LIGHT AND SELECTOR SWITCH MOUNTED ON DOOR OF CONTROL PANEL.
4. TEMPERATURE SET BY OWNER.

CHEMICAL ROOM VENTILATION CONTROL PANEL SCHEMATIC — E 5669

SCALE: NTS

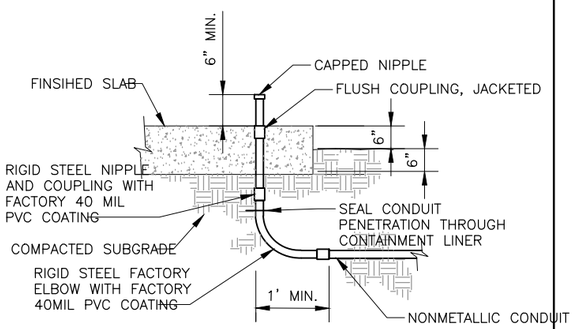


NOTES:

1. EQUIPMENT RACK SHALL BE UTILIZED FOR MOUNTING THE FOLLOWING:
   A. ONE EQUIPMENT ITEM WITH MOUNTING FOOTPRINT GREATER THAN 150 SQ. IN.
   B. TWO EQUIPMENT ITEMS WITH COMBINED MOUNTING FOOTPRINT GREATER THAN 130 SQ. IN.
   C. THREE OR MORE EQUIPMENT ITEMS.
2. EQUIPMENT SHALL BE MOUNTED SO THAT INDICATION. ADJUSTMENTS, OR OPERATING HANDLES ARE FOUR TO FIVE FEET ABOVE FLOOR OR PLATFORM.
3. REFER TO STRUCTURAL DRAWINGS AND SPECIFICATIONS FOR ANCHORAGE MATERIALS AND METHOD REQUIREMENTS.

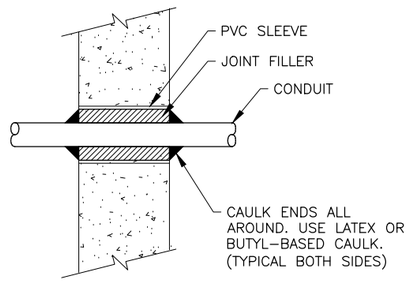
EQUIPMENT RACK DETAIL — E 5372

SCALE: NTS



CONDUIT PLACEMENT DETAIL — E 5011

SCALE: NTS



CONDUIT PENETRATION THRU WALL OR SLAB — E 5012

SCALE: NTS

NOT USED — E 50XX

SCALE: NTS

NOT USED — E 5188

SCALE: NTS

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12849767 JOSHUA JAY LAKE STATE OF UTAH 07/09/2024

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			REVISIONS

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN J. LAKE
DRAWN T. TANNER
REVIEW
CHECKED S. CAVANAUGH
APPROVED J. LAKE

ELECTRICAL

GENERAL ELECTRICAL DETAILS - 5

PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO. GE-05
SHEET 69 OF 72

P:\HERRIMAN\217-19-04 - ZONE 2 & 3 MAJOR WATER IMPROVEMENTS\2.0 DESIGN PHASE\2.9 DRAWINGS\PUMP STATION\SHT\217190 4_GE-05.dwg Plotted: 7/9/2024 4:28 PM By: Josh Lake

LEGEND:

CP — CONTROL PANEL TERMINALS

— — EXTERNAL CONNECTION

NOTES:

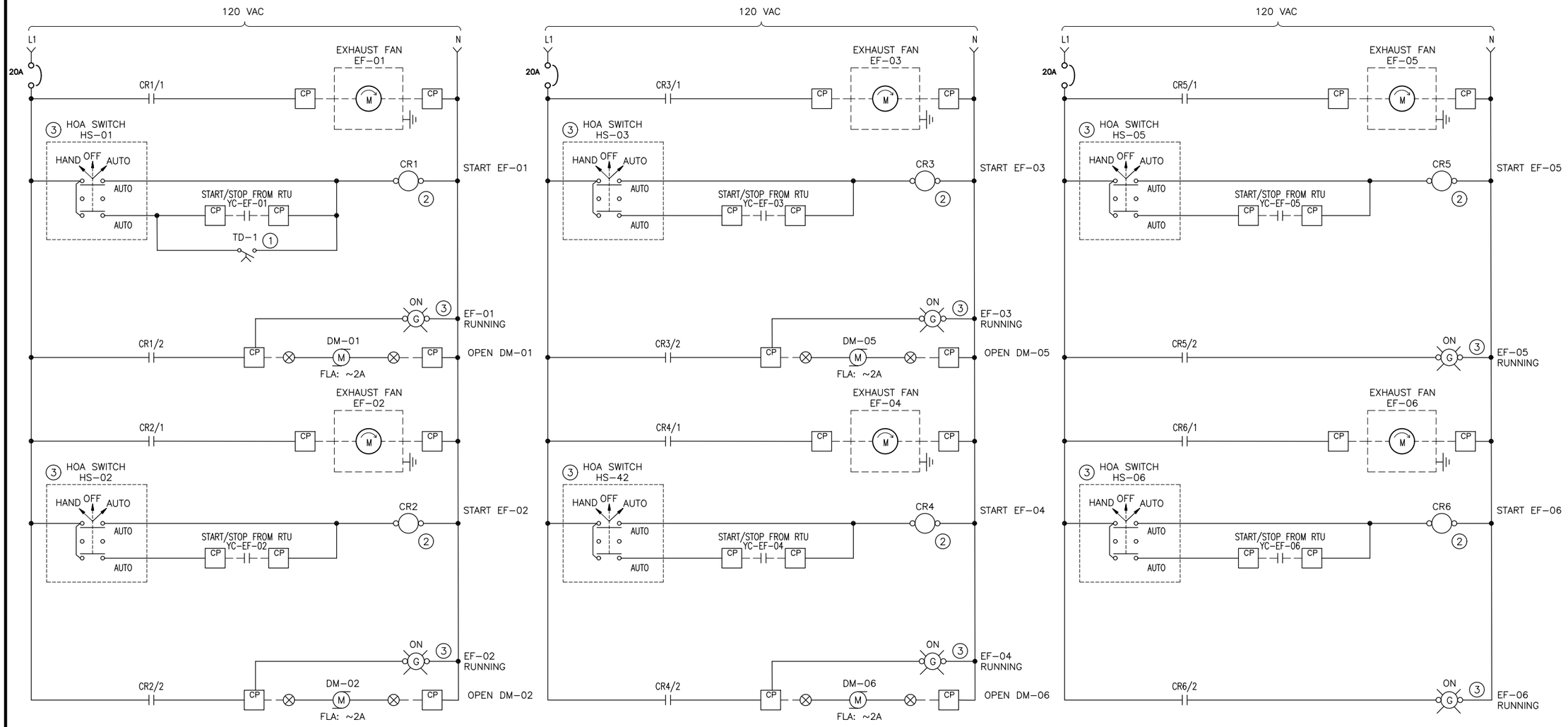
1. OWNER SHALL COORDINATE WITH RTU PROGRAMMER TO SET TEMPERATURE AT WHICH EF-01 TURNS ON. CONSECUTIVE FANS SHALL TURN ON IN 2 DEGREE INCREMENTS.

KEY NOTES:

(1) CONTACT SHALL CLOSE IMMEDIATELY WHEN LIGHTS ARE TURNED ON AND HOA SWITCH IS IN AUTO. CONTACT SHALL REMAIN CLOSED AFTER LIGHTS ARE TURNED OFF FOR AN ADJUSTABLE AMOUNT OF TIME (0-30 MIN. AT LEAST). SET TIME DELAY TO 20 MIN. THIS IS ONLY FOR EXHAUST FAN EF-01.

(2) RELAY SHALL BE HORSEPOWER RATED FOR SPECIFIC VENT FAN MOTOR.

(3) PILOT LIGHT AND SELECTOR SWITCH MOUNTED ON DOOR OF CONTROL PANEL.



PUMP ROOM VENTILATION CONTROL PANEL SCHEMATIC

SCALE: NTS

E 5670

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
No. 12849767
JOSHUA JAY LAKE
STATE OF UTAH
07/09/2024

REVISIONS

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HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED S. CAVANAUGH
APPROVED J. LAKE

DESIGN
DESIGN J. LAKE
DRAWN T. TANNER

ELECTRICAL

GENERAL ELECTRICAL DETAILS - 6

PROJECT NUMBER 217-19-04

DATE: JULY 2024

DRAWING NO.
GE-06

SHEET 70 OF 72

ROOFTOP AIR CONDITIONER SCHEDULE (ELECTRIC HEAT)

SYMBOL	MANUF & MODEL #	SERVES	SA CFM	OSA CFM	E.S.P. IN W.G.	ELECTRIC HEATING		COOLING			ELECTRICAL				EER	DIMENSIONS: LENGTH / WIDTH / HEIGHT	OPER. WT. (LBS)	SCHEDULE NOTES
						kW	DELTA T	AMB. AIR (DB)	AMB. AIR (WB)	NET TOTAL CAPACITY MBH	V - Ø - Hz	COMPRESSOR #	MCA	MOCP				
RTU–01	TRANE THH180	ELEC ROOM	6,000	400	0.5	30	21	95	68	180	460 - 3 - 60	2	72	80	12.1	123 / 87 / 59	2,300	1,2,3,4,5,6,7

1. E.S. P. DOES NOT INCLUDE LOSSES THROUGH ACCESSORIES.
2. RATED MINIMUM INPUT AT SEA LEVEL.
3. PROVIDE ONE 20 AMP, 120 VOLT, DUPLEX GFCI SERVICE OUTLET. FACTORY INSTALLED, FIELD WIRED.
4. PROVIDE WITH ELECTRIC RESISTANCE HEATER. PROVIDE WITH SINGLE POINT POWER ENTRY KIT.
5. PROVIDE SMOKE DETECTOR IN SUPPLY AND RETURN AIR DUCT FOR ALL UNITS OVER 2,000 CFM. FACTORY CONNECTED TO SHUT DOWN THE RTU. PROVIDE ALARM CONTACT TO BE TIED INTO THE OWNERS SCADA SYSTEM.
6. PROVIDE WITH 100% OUTSIDE AIR ECONOMIZER AND POWERED EXHAUST.
7. PROVIDE MERV 13 FILTERS.

ELECTRIC UNIT HEATER SCHEDULE

SYMBOL	SERVES	ELECTRICAL		MANUFACTURER AND MODEL NUMBER	REMARKS
		KW	V - Ø - Hz		
EUH–01	PUMP ROOM	7.5	480/3/60	MODINE HER7.5	1,2
EUH–02	PUMP ROOM	7.5	480/3/60	MODINE HER7.5	1,2
EUH–03	CHEMICAL ROOM	10	480/3/60	MODINE HEX10	1,2,3

1. PROVIDE WITH SURFACE MOUNTING ADAPTER.
2. UNIT SHALL REMOTE THERMOSTAT INSTALLED 48" AFF ON THE WALL BELOW THE UNIT.
3. RATED FOR HARSH ENVIRONMENT WITH NEMA 4X ELECTRICAL CONNECTION.

LOUVER SCHEDULE

SYMBOL	TYPE	SERVICE	LOCATION	MAX CFM	THROAT SIZE	MAXIMUM VELOCITY	MINIMUM FREE AREA REQUIRED	MANUF. & MODEL #	SCHEDULE NOTES
LV–01	EXTERIOR WALL	INTAKE	PUMP ROOM	1,035	48X48	500 FPM	8 SQ FT	AMERICAN WARMING LE-48	1,2,3,4,6
LV–02	EXTERIOR WALL	INTAKE	PUMP ROOM	1,035	48X32	500 FPM	5.3 SQ FT	AMERICAN WARMING LE-48	1,2,3,4
LV–03	EXTERIOR WALL	INTAKE	CHEM ROOM	1,035	32X24	500 FPM	2 SQ FT	AMERICAN WARMING LE-48	1,2,3,4
LV–04	EXTERIOR WALL	EXHAUST	CHEM ROOM	1,035	24X24	900 FPM	1.2 SQ FT	AMERICAN WARMING LE-48	1,2,3,5
LV–05	EXTERIOR WALL	INTAKE	PUMP ROOM	8,000	48X96	500 FPM	16 SQ FT	AMERICAN WARMING LE-48	1,2,3,4
LV–06	EXTERIOR WALL	INTAKE	PUMP ROOM	8,000	48X96	500 FPM	16 SQ FT	AMERICAN WARMING LE-48	1,2,3,4

1. MAXIMUM NC = 30 @ MAXIMUM CFM NOTED.
2. DIFFUSER SHALL BE PROVIDED PER SCHEDULE OR EQUAL BY APPROVED MANUFACTURER IN SPECIFICATIONS.
3. COORDINATE COLOR FINISH WITH CLIENT FROM STANDARD COLORS PROVIDED BY MANUFACTURER.
4. PROVIDE WITH AUTOMATIC DAMPER. TIE CONTROLS TO OPEN DAMPER WHEN ASSOCIATED EXHAUST FAN IN TURNED ON.
5. PROVIDE WITH BACKDRAFT DAMPER. COORDINATE EXACT SIZE WITH EXHAUST FAN OUTLET.
6. IN ADDITION TO OPERATION BASED ON TEMPERATURE, EXHAUST FAN EF-01 AND LOUVER LV-01 TO OPERATE WHEN THE ROOM IS OCCUPIED. CONFIGURE CONTROLS TO OPERATE EF-01 AND LV-01 WHEN PUMP ROOM LIGHTS ARE ON.

DIFFUSER AND GRILLE SCHEDULE

SYMBOL	TYPE	MAX CFM	NECK SIZE	DUCT SIZE	CEILING TYPE	BLOW	MANUF. & MODEL #	NOTES
D–1	SIDEWALL	5000	28 X 22	28 X 22	N / A	2--WAY	PRICE 520	1,2,4,5,6
R–1	SIDEWALL	5000	28 X 22	28 X 22	N / A	2--WAY	PRICE 535	1,3,4,5,6

1. FINISH SHALL BE STANDARD WHITE.
2. MAXIMUM NC 35 AT SUPPLY CFM LISTED.
3. MAXIMUM NC 47 AT RETURN CFM LISTED.
4. PROVIDE TRANSITION TO DIFFUSER NECK SIZE AS REQUIRED TO DUCT WORK SHOWN ON PLAN.
5. PROVIDE PER SCHEDULE OR EQUAL BY APPROVED MANUFACTURER IN SPECIFICATIONS.
6. PROVIDE DUAL SUPPLY AND RETURN DUCTS AS SHOWN ON DRAWING M-01. IF SINGLE DUCTS ARE DESRIED, THE MINIMUM SIZE IS 32X30.

EXHAUST FAN SCHEDULE

SYMBOL	MANUF. & MODEL No.	SERVES	C.F.M.	ESP IN. WG.	MOTOR			OPER. WT. (LBS)	DIMENSTIONS: LENGTH / WIDTH / HEIGHT	SCHEDULE NOTES
					V - Ø - Hz	HP	RPM			
EF–01	ACME PRN126	PUMP ROOM	1,500	0.3	120 - 1 - 60	1 / 4	1750	38	21 / 21 / 17	1,2,3,4
EF–02	ACME PRN126	PUMP ROOM	1,500	0.3	120 - 1 - 60	1 / 4	1750	38	21 / 21 / 17	1,2,3
EF–03	ACME PRN126	PUMP ROOM	1,500	0.3	120 -1 - 60	1 / 4	1750	38	21 / 21 / 17	1,2,3
EF–04	ACME PRN126	PUMP ROOM	1,500	0.3	120 -1 - 60	1 / 4	1750	38	21 / 21 / 17	1,2,3
EF–05	ACME PRN126	PUMP ROOM	1,500	0.3	120 -1 - 60	1 / 4	1750	38	21 / 21 / 17	1,2,3
EF–06	ACME PRN126	PUMP ROOM	1,500	0.3	120 -1 - 60	1 / 4	1750	38	21 / 21 / 17	1,2,3
EF–07	ACME FQ129WBP	CHEMICAL ROOM	1,035	0.25	120 -1 - 60	1 / 8	1550	57	21 / 29 / 21	1,2

1. PROVIDE EXHAUST FAN WITH BACK DRAFT DAMPER.
2. ELECTRICAL TO PROVIDE CONTROLS TO OPERATE EXHAUST FAN WHEN THERMOSTAT GETS ABOVE AN ADJUSTABLE SETPOINT. OPEN ASSOCIATED AUTO DAMPERS ON LOUVERS WHEN FAN IS OPERATING.
3. PROVIDE WITH SLOPED ROOF CURB.
4. IN ADDITION TO OPERATION BASED ON TEMPERATURE, EXHAUST FAN EF-01 AND LOUVER LV-01 TO OPERATE WHEN THE ROOM IS OCCUPIED. CONFIGURE CONTROLS TO OPERATE EF-01 AND LV-01 WHEN PUMP ROOM LIGHTS ARE ON.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER ERIC W. NEIL 7702647 STATE OF UTAH 07/09/2024

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
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HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

REVIEW
CHECKED E. NEIL
APPROVED E. NEIL

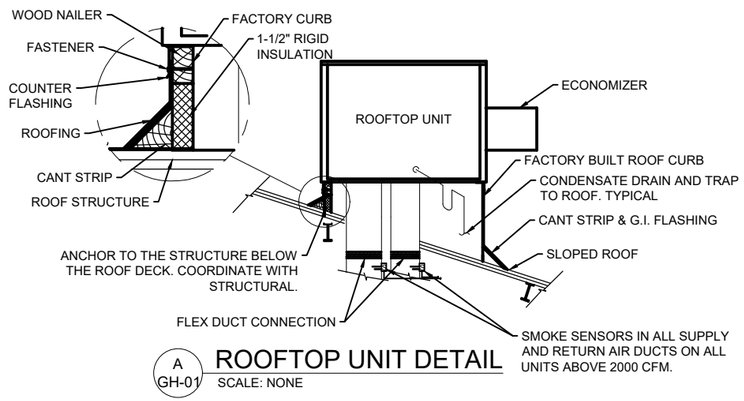
DESIGN
DESIGN WHW
DRAWN WHW

HVAC
HVAC EQUIPMENT SCHEDULES

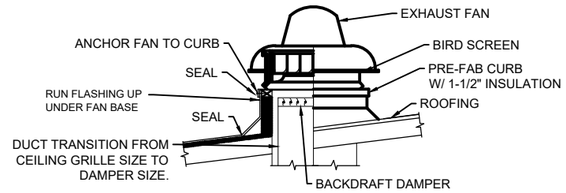
PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO. H-01
SHEET 71 OF 72

P:\Herriman\217-19-04 - Zone 2 & 3 Major Water Improvements\2.0 Design Phase\2.9 Drawings\Pump Station\Sht\2171904_H-01.dwg Plotted: 7/10/2024 3:06 PM By: Eric Neil



A GH-01 **ROOFTOP UNIT DETAIL**
SCALE: NONE



B GH-01 **ROOF MOUNTED EXHAUST FAN DETAIL**
SCALE: NONE

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
ERIC W. NEIL
7702647
STATE OF UTAH
07/09/2024

NO.	DATE	REV. BY	DESCRIPTION

REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

HERRIMAN CITY
ZONE 2 & 3 PUMP STATION PROJECT
HERRIMAN, UTAH

REVIEW
CHECKED E. NEIL
APPROVED E. NEIL

DESIGN
DESIGN WHW
DRAWN WHW

HVAC

GENERAL HVAC DETAILS

PROJECT NUMBER 217-19-04
DATE: JULY 2024

DRAWING NO.
GH-01
SHEET 72 OF 72

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