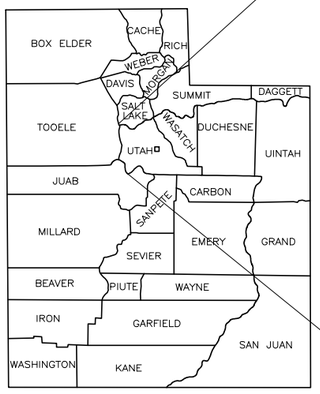
SPRINGVILLE CITY

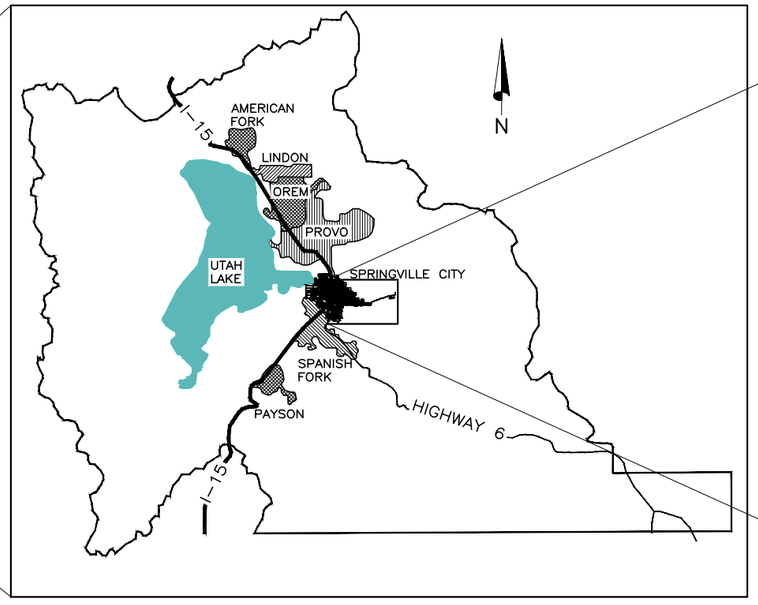
BURT SPRINGS RENOVATION

BIDDING DRAWINGS

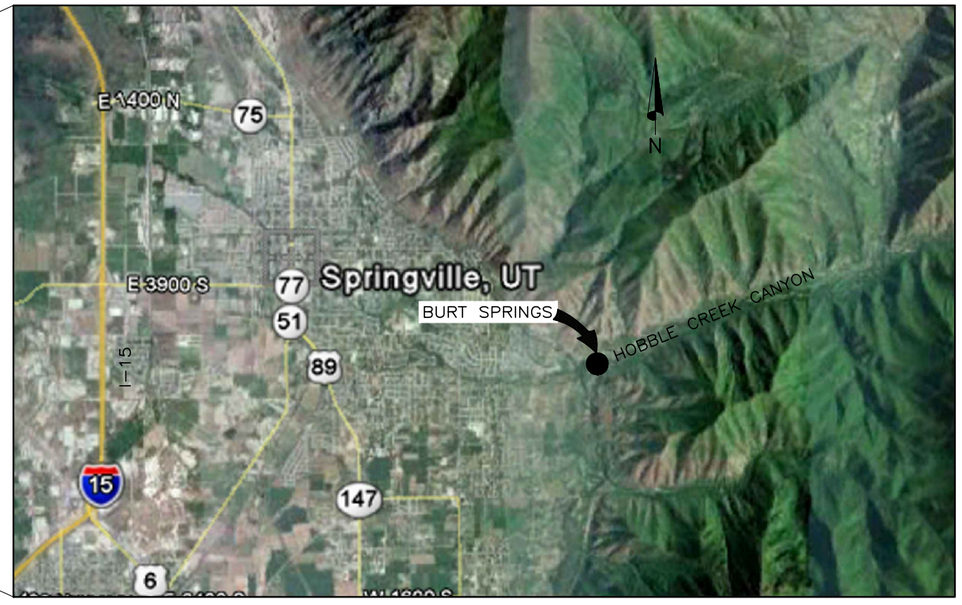
JULY 2023



STATE OF UTAH



UTAH COUNTY



PROJECT LOCATION

HANSEN, ALLEN & LUCE DESIGN TEAM

MARVIN E. ALLEN, P.E. – PRINCIPAL IN CHARGE
MICHAEL M. CHAMBERS, P.E. – PROJECT MANAGER / PROJECT ENGINEER

ROBERT C. CONDER, S.E. – STRUCTURAL ENGINEER
(CONDER ENGINEERING)

KEITH B. HEGERHORST, P.E. – ELECTRICAL ENGINEER
(HPE, INC. ELECTRICAL ENGINEERS)

TAYLOR GROBERG, P.E. – HVAC
(BLUEFIELD ENGINEERING)

HANSEN ALLEN & LUCE inc
ENGINEERS

859 W. SOUTH JORDAN PKWY,
STE. 200
SOUTH JORDAN, UTAH 84095
(801) 566-5599

SPRINGVILLE CITY

BRADLEY D. STAPLEY, P.E. – PUBLIC WORKS DIRECTOR
801-491-2780

JEFF ANDERSON, P.E. – ASSIST PUBLIC WORKS
DIRECTOR / CITY ENGINEER
801-491-2719

TYSON BARTLETT – WATER SUPERINTENDENT
385-985-7058

SHAWN BARKER, P.E. – WATER SUPERVISOR
801-489-2742

CITY OFFICE
110 S MAIN
SPRINGVILLE, UTAH 84663

REGISTERED PROFESSIONAL ENGINEER
No. 182750
MICHAEL M. CHAMBERS
4/24/23
STATE OF UTAH

PROFESSIONAL STRUCTURAL ENGINEER
No. 2774619
ROBERT C. CONDER
5/3/2023
STATE OF UTAH

FILE NAME: PROJECTS\260 - SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\G-1 COVER.DWG
FILE DATE: 7.27.2023 14:59:45 (CAH)

2/02

NOTES

GENERAL NOTES

1. CONTRACTOR SHALL MEET ALL UTAH STATE DEPARTMENT OF ENVIRONMENTAL QUALITY AND U.S. EPA REQUIREMENTS WITH RESPECT TO THEIR RULES AND REGULATIONS FOR DRINKING WATER SYSTEMS.
2. CONSTRUCTION OPERATIONS SHALL BE CONDUCTED, AND SIGNS, BARRICADES, AND FLASHERS SHALL BE PLACED; SO AS TO COMPLY WITH OSHA, UTAH STATE INDUSTRIAL COMMISSION, LOCAL SAFETY STANDARDS, AND MANUAL ON UNIFORM TRAFFIC CONTROL.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES, INCLUDING WATER LINES, IRRIGATION DRAIN LINES, TELEPHONE CABLES, GAS LINES, AND ANY OTHER OBSTRUCTION DURING THE COURSE OF CONSTRUCTION AND INSTALLATION OF THE PIPELINES.
4. CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN RIGHTS OF INGRESS AND EGRESS SHOULD HE VENTURE ONTO PRIVATE PROPERTY WHICH IS NOT INCLUDED IN CITY OR OWNER ACQUIRED RIGHTS-OF-WAY AND EASEMENTS.
5. UNLESS DETAILED, SPECIFIED OR INDICATED OTHERWISE, CONSTRUCTION SHALL BE AS INDICATED IN THE APPLICABLE TYPICAL DETAILS, GENERAL NOTES AND CITY STANDARDS. TYPICAL DETAILS ARE MEANT TO APPLY EVEN THOUGH NOT REFERENCED AT SPECIFIC LOCATIONS OR IN SPECIFIC DRAWINGS.
6. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT ALL EXISTING IMPROVEMENTS DURING CONSTRUCTION AND SHALL REPLACE OR RESTORE ANY IMPROVEMENTS DAMAGED AS A RESULT OF THE CONSTRUCTION ACTIVITY AS DIRECTED BY THE ENGINEER.
7. CONTRACTOR SHALL OBTAIN ALL APPLICABLE PERMITS AND APPROVALS FROM SPRINGVILLE CITY AND UDOT AND SHALL COMPLY WITH UDOT REGULATIONS FOR TRAFFIC CONTROL, SAFETY, EXCAVATION IN RIGHTS OF WAY, ETC. CONTRACTOR TO ANTICIPATE USE OF BARRICADES ALONG HIGHWAY 6.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE DESIGN AND IMPLEMENTATION OF THE DEWATERING SYSTEM.

SPRING CONSTRUCTION NOTES

1. ALL CONSTRUCTION TO BE PERFORMED PER CURRENT SPRINGVILLE CITY STANDARDS.
2. CONTACT SPRINGVILLE CITY AT LEAST 72 HOURS IN ADVANCE OF ALL WATER SHUTDOWNS.
3. CONTRACTOR SHALL POT HOLE UTILITIES AT ALL CROSSINGS 200' IN ADVANCE OF LAYING PIPE TO ALLOW FOR ADJUSTMENTS OF NEW PIPELINE GRADE TO AVOID CONFLICTS.
4. DEFLECTIONS IN PIPE JOINTS SHALL NOT EXCEED 1.0 DEGREE FOR PVC PIPE, 3 DEGREES FOR DIP FITTINGS, OR MANUFACTURER'S PUBLISHED DEFLECTIONS.
5. ALL MATERIALS THAT WILL COME INTO CONTACT WITH THE SPRING WATER SHALL BE NSF APPROVED PER UTAH DDW REQUIREMENTS.
6. ALL CONSTRUCTION ACTIVITIES SHALL COMPLY WITH UTAH DDW REQUIREMENTS.

⚠1 SURVEY CONTROL

THE BASE PROJECT COORDINATE, LATITUDE, LONGITUDE AND STATE PLAN COORDINATE (UT-CENTRAL, NAD 83 W/ GEOID 2012B) WAS ESTABLISHED ON THE UTCO CONTROL POINT MONUMENT T8SR3E01SW (70-50) AS FOLLOWS:

BASE PROJECT COORDINATE: N = 7,221,568.27 E = 1,623,663.57

STATE PLANE COORDINATE: Y = 2,201,138.410 X = 494,893.647 (NADA83 METRIC)

GEODETIC POSITION: (N) LAT = 40°08'42.21463" (W) LONG 111°33'35.74745"

BASE PROJECT ELEVATION: 4828.77 (RTK NAVD 88 GEOID 12A)

GPS SCALE FACTORS ARE AS FOLLOWS:

AVERAGE PROJECTION SCALE FACTOR 0.99991343

PRIMARY HORIZONTAL AND VERTICAL CONTROL WAS ESTABLISHED USING THE OBSERVED UTCO MONUMENT T8SR3E01SW (70-50) AS THE BASE POINT, A TWO POINT CALIBRATION WAS COMPLETE TO TIE THE SURVEY DATA TO THE STATE CONTROL POINTS.

T8SR3E01SWN: 7,221,568.27 E: 1,623,663.57 ELEV: 4828.77 (H,V) PT #101

T8SR3E01WQN: 7,224,198.91 E: 1,623,663.18 ELEV: 4893.24 (H) PT #104

INDEX OF DRAWINGS

SHEET NO.	GENERAL
G-1	COVER SHEET
G-2	INDEX OF DRAWINGS & GENERAL NOTES
G-3	SYMBOLS & LEGEND
G-4	ABBREVIATIONS
⚠1 G-5	OVERALL PROJECT AREA
	ARCHITECTURAL
A-1	ELEVATIONS
A-2	SCHEDULES & DETAILS
A-3	DETAILS
	CIVIL
C-1	OVERALL SITE & GRADING PLAN
C-2	ENLARGED SITE & GRADING PLAN
C-3	PUMP HOUSE PLAN
C-4	PUMP HOUSE SECTIONS
C-5	PUMP DETAILS
C-6	SPRING COLLECTION PIPE DETAILS
C-7	MISCELLANEOUS DETAILS I
C-8	MISCELLANEOUS DETAILS II
C-9	CHLORINATION DETAILS
⚠1 C-10	CHLORINATION & TANK DETAILS
C-11	CHAIN LINK FENCING DETAILS
	PLAN & PROFILE
PP-1	16-INCH WATERLINE STA 1+00 TO STA 5+88.36
PP-2	SPRING COLLECTION STA 1+00 TO STA 4+90.80
	STRUCTURAL
S-1	GENERAL STRUCTURAL NOTES
S-2	GENERAL SPECIAL INSPECTION
S-3	PUMP HOUSE FOUNDATION PLAN
S-4	PUMP HOUSE SLAB & WALL PLAN
S-5	PUMP HOUSE ROOF PLAN
S-6	PUMP HOUSE SECTIONS
S-7	TYPICAL MASONRY DETAILS
S-8	TYPICAL ROOF DETAILS
S-9	SPRING BOX DETAILS
S-10	JUNCTION BOX DETAILS
S-11	MISCELLANEOUS STRUCTURAL DETAILS I
S-12	MISCELLANEOUS STRUCTURAL DETAILS II
S-13	MISCELLANEOUS STRUCTURAL DETAILS III
	HVAC
H-1	HVAC PLAN
H-2	HVAC LOADS
H-3	HVAC SPECIFICATIONS
H-4	HVAC SPECIFICATIONS
H-5	HVAC SPECIFICATIONS

	ELECTRICAL
E-1.1	LEGEND
E-1.2	TABLES AMD TAG LIST
E-2.1	POWER ONE-LINE DIAGRAM
E-2.2	INST. & CONTROL ONE-LINE DIAGRAM
E-2.3	TYPICAL VFD CONTROL DIAGRAM
E-2.4	MAIN CP DIAGRAM, SHT. 1
E-2.5	MAIN CP DIAGRAM, SHT. 2
E-2.6	DIAGRAMS, SHT. 1
E-2.7	CP-3 SMALL MOTOR CONTROL PANEL
E-2.8	EXISTING 125 HP VFD
E-3.1	SCHEDULES
E-4.1	SITE PLAN
E-4.2	BUILDING POWER PLAN
E-4.3	INSTRUMENTATION AND CONTROL PLAN
E-4.4	LIGHTING PLAN
E-4.5	HVAC POWER PLAN
E-5.1	CP-1 MAIN CONTROL PANEL
E-5.2	CP-2 AND CP-3 CONTROL PANELS
E-5.3	ENCLOSURE ARRANGEMENTS
E-6.1	DETAILS, SHT. 1
E-6.2	DETAILS, SHT. 2
E-6.3	DETAILS, SHT. 3
E-6.4	DETAILS, SHT. 4

FILE NAME: PROJECTS\260 - SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\G-2 GENERAL NOTES & INDEX__R1.DWG
FILE DATE: 7.27.2023 13:58:39 (CAH)

HANSEN ALLEN & LUCE INC ENGINEERS

REGISTERED PROFESSIONAL ENGINEER No. 182750 MICHAEL M. CHAMBERS 7/24/23 STATE OF UTAH

PROJECT ENGINEER

DESIGNED MMC	3					
DRAFTED CAH	2					
CHECKED MEA	⚠1	6/9/2023	PREVIOUS BID CHANGES	CAH	MMC	
DATE MAY 2023	NO.	DATE	REVISIONS	BY	APVD.	

SCALE NONE

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
GENERAL
INDEX OF DRAWINGS & GENERAL NOTES

SHEET G-2
260.42.210

7/04

SECTION, DETAIL & ELEVATION IDENTIFICATION

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

SECTION IDENTIFICATION

SECTION CUT ON SHEET C-1:

1 / C-4 — SECTION NUMBER; SHEET ON WHICH SECTION APPEARS

ON SHEET C-4, THIS SECTION IS IDENTIFIED AS:

SECTION 1 / C-1 — SECTION NUMBER; SHEET ON WHICH SECTION APPEARS

DETAIL IDENTIFICATION

DETAIL CALL-OUT ON SHEET C-1:

A / C-4 — DETAIL LETTER; SHEET ON WHICH DETAIL APPEARS

ON SHEET C-4, THIS DETAIL IS IDENTIFIED AS:

DETAIL A / C-1 — DETAIL LETTER; SHEET ON WHICH DETAIL APPEARS

ELEVATION IDENTIFICATION

ELEVATION CALL-OUT ON SHEET C-6:

1 / A-1 — ELEVATION NUMBER; SHEET ON WHICH ELEVATION APPEARS

ON SHEET A-1, THIS ELEVATION IS IDENTIFIED AS:

ELEVATION 1 / C-6 — ELEVATION NUMBER; SHEET ON WHICH ELEVATION APPEARS

LEGEND

EXISTING

Line label	Description
4-G	EXISTING GAS LINE W/ SIZE
GS GS GS	EXISTING GAS SERVICE
10-W	EXISTING WATER LINE W/ SIZE
WS WS WS	EXISTING WATER SERVICE
15-SS	EXISTING SANITARY SEWER W/ SIZE
SL SL SL	EXISTING SANITARY SEWER LATERAL
24-SD	EXISTING STORM DRAIN W/ SIZE
12-IRR	EXISTING IRRIGATION W/ SIZE
FO-UG	EXISTING FIBER OPTIC LINE
T-UG	EXISTING UNDERGROUND TELEPHONE
C-TV-UG	EXISTING CABLE TV
P-UG	EXISTING UNDERGROUND POWER LINE
P-OH	EXISTING OVERHEAD POWER LINE
X	EXISTING FENCE LINE
TBC	EXISTING TOP BACK OF CURB
LOG	EXISTING LIP OF GUTTER
	EXISTING RAILROAD TRACKS
	EXISTING PROPERTY LINE
R O W	EXISTING RIGHT-OF-WAY
	EXISTING ASPHALT
4200	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR

Symbol	Description	Symbol	Description
	EXISTING FIRE HYDRANT	SS	EXISTING SANITARY SEWER MANHOLE
	EXISTING POWER POLE	SD	EXISTING STORM DRAIN MANHOLE
	EXISTING POWER / LIGHT POLE COMBO	W	EXISTING WATER MANHOLE
	EXISTING LIGHT POLE	G	EXISTING GAS MANHOLE
	EXISTING GUY WIRE	P	EXISTING POWER MANHOLE
P	EXISTING POWER BOX	T	EXISTING TELEPHONE MANHOLE
EM	EXISTING POWER METER	F	EXISTING FIBER OPTICS MANHOLE
T	EXISTING TELEPHONE BOX	IRR	EXISTING IRRIGATION MANHOLE
F	EXISTING FIBER OPTIC BOX	WM	EXISTING WATER METER
	EXISTING CABLE BOX	CO	EXISTING SEWER CLEANOUT
	EXISTING SIGNAL POLE		EXISTING VALVES
	EXISTING SIGNAL / LIGHT POLE COMBO		EXISTING REDUCERS
	EXISTING SIGNAL BOX		EXISTING SD CATCH BASIN
	EXISTING TRAFFIC LOOP		EXISTING SD CATCH BASIN / JUNCTION BOX
	EXISTING TRAFFIC BOX		EXISTING SD JUNCTION BOX
	EXISTING IRRIGATION BOX	SD	EXISTING SD CLEANOUT BOX
	EXISTING SIGN	SD	EXISTING SD COMBO CATCH BASIN / CLEANOUT BOX
	EXISTING TREE		

NEW

Line label	Description
4200	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	NEW PROPERTY LINE
	NEW UTILITY LINE
P/E	PERMANENT EASEMENT
C/E	CONSTRUCTION EASEMENT
R	RIDGE LINE
GB	GRADE BREAK
	FLOW LINE
	RETAINING WALL

Description	Description
NEW MANHOLE	NEW WATER VALVE
NEW STORM DRAIN BOX	NEW GATE VALVE
NEW INLET BOX	NEW BUTTERFLY VALVE
NEW FIRE HYDRANT	NEW PLUG VALVE
	NEW CAP

HATCHING

Hatch	Hatch
CONCRETE (PLAN)	GRATING
CONCRETE (SECTION)	EARTH
GROUT	AGGREGATE
BRICK (PLAN)	GRAVEL
CMU (PLAN)	RIPRAP
CMU (SECTION)	SAND
STEEL (SECTION)	ASPHALT

CONTROL SYMBOLS

Symbol	Description	Symbol	Description
BM-##	EXISTING BENCH MARK		EXISTING SURVEY MONUMENT
	EXISTING HORIZONTAL CONTROL POINT		EXISTING SECTION MONUMENT
	EXISTING VERTICAL CONTROL POINT		GEOTECHNICAL BORING
	EXISTING HORIZONTAL & VERTICAL CONTROL POINT		

NOTE:
SURVEY OF EXISTING RING & COVER IS FROM CENTER OF THE COVER.

MISCELLANEOUS

Symbol	Description	Symbol	Description
104	ROOM NUMBER	4	FITTING SCHEDULE
D1	DOOR NUMBER	A	KEY NOTES
W1	WINDOW NUMBER	A	COORDINATE POINT
M-1	METER SCHEDULE	ø	DIAMETER
P-1	PUMP SCHEDULE	∠	ANGLE
V-1	VALVE SCHEDULE	℄	CENTERLINE
FE-X	NEW FIRE EXTINGUISHER TYPE (1, 2, 3, OR 4)		
CTS-8	CATHODIC TEST STATION		

FILE NAME: PROJECTS\260 - SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\G-3 SYMBOLS & LEGEND.DWG
FILE DATE: 5.1.2023 08:01:32 (CAH)

7/04

HANSEN ALLEN & LUCE INC ENGINEERS

REGISTERED PROFESSIONAL ENGINEER No. 182750 MICHAEL M. CHAMBERS 4/24/23 STATE OF UTAH

PROJECT ENGINEER

		NO.	DATE	REVISIONS	BY	APVD.
DESIGNED	MMC	3				
DRAFTED	CAH	2				
CHECKED	MEA	1				
DATE	MAY 2023	NO.	DATE	REVISIONS	BY	APVD.

SCALE NONE

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
GENERAL
SYMBOLS & LEGEND

SHEET G-3
260.42.210

@	AT
A	AIR/AMPERE
A/C	AIR CONDITIONING
A/R	AIR RELEASE
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
AB	ANCHOR BOLT
ABAN	ABANDON
ABND	ABANDONED
ABBR	ABBREVIATION
AC	ASPHALTIC CONCRETE / ALTERNATING CURRENT
ACI	AMERICAN CONCRETE INTERNATIONAL
ACOUS	ACOUSTIC / ACOUSTICAL
ACP	ASBESTOS CEMENT PIPE / ASPHALTIC CONCRETE PAVEMENT
ADD	ADDITIONAL
ADH	ADHESIVE
ADJ	ADJUSTABLE / ADJACENT
AFF	ABOVE FINISHED FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM / ALUM
AMB	AMBIENT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APA	AMERICAN PLYWOOD ASSOCIATION (ENGINEERED WOOD ASSOCIATION)
API	AMERICAN PETROLEUM INSTITUTE
APPD	APPROVED
APPROX	APPROXIMATE
APPURTS	APPURTENANCES
APWA	AMERICAN PUBLIC WORKS ASSOCIATION
ARV	AIR RELEASE VALVE
ARCH	ARCHITECTURE
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AT	ACOUSTICAL TILE
ATM	ATMOSPHERE
AUTO	AUTOMATIC
AUX	AUXILIARY
AVAR	AIR VACUUM AND AIR RELEASE
AVE	AVENUE
AWG	AMERICAN WIRE GAGE
AWPA	AMERICAN WOOD PRESERVERS ASSOCIATION
AWS	AMERICAN WELDING SOCIETY
AWWA	AMERICAN WATER WORKS ASSOCIATION
B&S	BELL AND SPIGOT
B/W	BACK OF WALL / BACK OF WALK
BC	BEGIN CURVE / BOLT CIRCLE / BETWEEN CENTERS / BACK OF CURVE
BCR	BEGIN CURB RETURN
BDRY	BOUNDARY
BF	BLIND FLANGE
BFP	BACKFLOW PREVENTER
BFV	BUTTERFLY VALVE
BGS	BELOW GROUND SURFACE
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BLK	BLACK / BLOCK
BLKG	BLOCKING
BLVD	BOULEVARD
BM	BEAM / BENCHMARK
BOA	BLOW-OFF ASSEMBLY
BOO	BOTTOM OF OPENING
BOP	BOTTOM OF PIPE
BOT	BOTTOM
BPV	BACK PRESSURE VALVE
BRG	BEARING
BRK	BRICK / BREAK
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
BV	BALL VALVE
BVC	BEGIN VERTICAL CURVE
BWV	BACK WATER VALVE
C	CENTIGRADE / CHANNEL / CEMENT
C&G	CURB AND GUTTER
CAB	CABINET / CRUSHED AGGREGATE BASE
CAP	CAPACITY
CATS	CASING TEST STATION
CB	CATCH BASIN / CHALKBOARD / CURB
CC	CENTER TO CENTER
CD	CEILING DIFFUSER
CEM	CEMENT
CF	CURB FACE / CUBIC FOOT
CFH	CUBIC FOOT PER HOUR
CFM	CUBIC FOOT PER MINUTE
CFS	CUBIC FOOT PER SECOND
CHEM	CHEMICAL
CHG	CHANGE
CHKD	CHECKERED
CI	CAST IRON
CIP	CAST IRON PIPE / CAST IN PLACE
CIPP	CAST IN PLACE PIPE
CISP	CAST IRON SOIL PIPE
CJ	CONSTRUCTION JOINT / CONTROL JOINT
CL	CHLORINE GAS / CHLORINATOR / CENTERLINE
CLF	CHAIN LINK FENCE
CLG	CEILING
CLR	CLEAR / CLEARANCE
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMC	CEMENT MORTAR-COATED
CML	CEMENT MORTAR-LINED
CML&C	CEMENT MORTAR-LINED AND COATED
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COTG	CLEANOUT TO GRADE
COL	COLUMN
COMM	COMMUNICATION CABLE
COMP	COMPRESSOR
CONC	CONCRETE / CONCENTRIC
COND	CONDENSER / CONDENSATE
CONN	CONNECTION
CONST	CONSTRUCT / CONSTRUCTION
CONT	CONTINUED / CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
COR	CORNER
CPLG	COUPLING
CPVC	CHLORINATE POLYVINYL PIPE
CSP	CORRUGATED STEEL PIPE
CSTS	CURRENT SPAN TEST STATION
CT	CERAMIC TILE
CTR	CENTER
CTS	CORROSION TEST STATION
CTSK	COUNTERSINK
CU	COPEER / CUBIC
CV	CHECK VALVE
CY	CUBIC YARD
CYL	CYLINDER
d	PENNY
DAD	DOUBLE ACTING DOOR
DB	DIRECT BURY
DBL	DOUBLE
DC	DIRECT CURRENT
DEG	DEGREE
DET	DETAIL
DF	DRINKING FOUNTAIN / DOUGLAS FIR
DG	DOOR GRILL
DH	DOUBLE HUNG
DI	DUCTILE IRON
DIP	DUCTILE IRON PIPE
DIA	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIM	DIMENSION
DIR	DIRECTION
DISCH	DISCHARGE
DIST	DISTANCE
DL	DEAD LOAD
DMH	DROP MANHOLE
DMJ	DISMANTLING JOINT
DN	DOWN
DO	DISSOLVED OXYGEN
DR	DOOR / DRAIN
DT	DRAIN TILE
DWG	DRAWING
DWLS	DOWELS
DWY	DRIVEWAY
E	EAST
E/O	EAST OF
EA	EACH
EB	EXPANSION BOLT OR ANCHOR
EC	END OF CURVE
ECC	ECCENTRIC
ECR	END CURB RETURN
EF	EACH FACE / EXHAUST FAN
EFF	EFFLUENT
EG	EXISTING GRADE / EDGE OF GUTTER / EXHAUST GRILLE / EXHAUST GAS
EGL	ENERGY GRADE LINE
EL	ELEVATION
ELEC	ELECTRIC / ELECTRONIC
EN	EDGE NAILING
ENCL	ENCLOSURE
ENG	ENGINE
ENGR	ENGINEER
ENT	ENTRANCE
EO	EDGE OF OIL / EMERGENCY OVERFLOW
EOP	EDGE OF PAVEMENT
EQ	EQUAL
EQUIP	EQUIPMENT
ES	EACH SIDE
ESEW	EMERGENCY SHOWER / EYE WASH
ESMT	EASEMENT
ETB	EMULSION TREATED BASE
ETC	ET CETERA
EUH	ELECTRIC UNIT HEATER
EVAP	EVAPORATOR
EVC	END VERTICAL CURVE
EW	EACH WAY / EYE WASH
EX	EXISTING
EXC	EXCAVATION / EXCAVATE
EXH	EXHAUST
EX-HY	EXTRA HEAVY
EXIST	EXISTING
EXP	EXPANSION / EXPOSED
EXT	EXTERIOR / EXTENSION
EXTR	EXTRUDED
F	FAHRENHEIT / FINISH
F TO F	FACE TO FACE
F&C	FRAME AND COVER
F&I	FURNISH AND INSTALL
FAB	FABRICATE / FABRICATION / FABRICATED
FAI	FRESH AIR INTAKE
FB	FLAT BAR / FLOOR BEAM / FIELD BLOCK
FC	FLEXIBLE COUPLING
FCA	FLANGE COUPLING ADAPTER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDR	FEEDER
FE	FIRE EXTINGUISHER
FEM	FEMALE (PIPE THREAD)
FF	FLAT FACE / FAR FACE / FINISH FLOOR
FG	FINISH GRADE / FIBER GLASS
FH	FIRE HYDRANT / FLAT HEAD
FIG	FIGURE
FIN	FINISHED
FIX	FIXTURE
FL	FLOWLINE
FLEX	FLEXIBLE
FLG	FLANGE / FLOORING
FLGD	FLANGED
FLR	FLOOR
FLSG	FLASHING
FM	FACTORY MUTUAL (LAB APPROVED) / FORCE MAIN
FMH	FLEXIBLE METAL HOSE
FN	FIELD NAIL
FND	FOUNDATION
FOC	FACE OF CONCRETE / FIBER OPTIC CABLE
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FOW	FACE OF WALL
FPC	FLEXIBLE PIPE COUPLING
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FPTS	FOREIGN PIPE TEST STATION
FR	FRAME
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FINISHD SURFACE / FAR SIDE / FLOOR SINK / FORGED STEEL
FT	FEET / FOOT
FTG	FOOTING
FUR	FURRING
FUT	FUTURE
FV	FIELD VERIFY
FW	FINISH WATER
FWD	FORWARD
G	GAS
GA	GAGE / GAUGE
GAL	GALLON
GALV	GALVANIZED
GANC	GUT ANCHOR
GB	GRADE BREAK
GC	GROOVED COUPLING
GE	GROOVED END
GEN	GENERAL / GENERATOR
GFA	GROOVED FLANGE ADAPTOR
GI	GALVANIZED IRON
GIP	GALVANIZED IRON PIPE
GL	GLASS / GROUND LINE / GRADE LINE
GLB	GLUE LAMINATED BEAM / GLULAM
GLV	GLOBE VALVE
GM	GAS METER
GP	GUY POLE
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRADE / GUARDRAIL
GRD	GROUND
GRTG	GRATING
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
GVL	GRAVEL
GYP	GYPSUM
H	HIGH / HEIGHT
H&V	HEATING AND VENTILATING
H/B	HOSE BIBB
HC	HOUSE CONNECTION
HD	HUB DRAIN
HDPE	HIGH-DENSITY POLYETHYLENE PIPE
HDR	HEADER
HDW	HARDWARE
HDWL	HEADWALL
HEX	HEXAGONAL
HG	MERCURY
HGL	HYDRAULIC GRADE LINE
HGR	HANGER
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HP	HIGH POINT / HORSEPOWER / HIGH PRESSURE / HIGH PERFORMANCE
HPG	HIGH PRESSURE GAS
HR	HEAT RETURN / HOUR / HANDRAIL
HSL	HORIZONTALLY SLOTTED
HSS	HOLLOW STRUCTURAL SECTION
HTG	HEATING
HTR	HEATER
HV	HORIZONTAL AND VERTICAL CONTROL POINT
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HW	HOT WATER / HEADWORK
HWD	HARDWOOD
HWL	HIGH WATER LEVEL
HWO	HANDWHEEL OPERATED
HYD	HYDRAULIC / HYDRANT
I/O	INPUT/OUTPUT
I&C	INSTRUMENTATION & CONTROL
I&O	INSIDE AND OUTSIDE
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
I.F.	INSIDE FACE
IJTS	INSULATING JOINT TEST STATION
IN	INCH
INCL	INCLUDE / INCLUDING
INF	INFLUENT
INSL	INSULATION / INSULATING / INSULATED
INSP	INSPECTION
INST	INSTRUMENT
INT	INTERIOR
INV	INVERT
IP	IRON PIPE
IPS	IRON PIPE SIZE
IRRIG	IRRIGATION
JAN	JANITOR
JC	JUNCTION CHAMBER
JCT	JUNCTION
JS	JUNCTION STRUCTURE
JSTS	JOISTS
JT	JOINT
k	KILO
K	KELVIN / KARAT
kg	KILOGRAM
KIP	THOUSAND POUNDS
km	KILOMETER
kV	KILOVOLT
KVA	KILOVOLT AMPHERE
kW	KILOWATT
kWh	KILOWATT HOUR
L	LETTER / LENGTH / ANGLE
LAB	LABORATORY
LAM	LAMINATED
LAT	LATERAL
LAV	LAVATORY
LB	POUND
LCP	LOCAL CONTROL PANEL
LCS	LOCAL CONTROL STATION
LD	LOCAL DEPRESSION
LDG	LANDING
LF	LINEAR FOOT
LG	LENGTH / LONG
LH	LAMP HOLE / LEFT HAND
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION
LOL	LAYOUT LINE
LONG	LONGITUDINAL
LP	LOW POINT / LOW PRESSURE / LAMP POST
LPG	LIQUID PETROLEUM GAS
LT	LEFT / LIGHT
LW	LOW WATER
LWL	LOW WATER LEVEL
LWR	LOWER
m	METER
M	MALE (PIPE THREAD)
mA	MILLIAMPS
MACH	MACHINE
MAG	MAGNETIC
MAINT	MAINTENANCE
MAN	MANUAL
MAS	MASONRY
MAT	MATERIAL
MAX	MAXIMUM
MB	MAILBOX / MACHINE BOLT
MCC	MOTOR CONTROL CENTER
MCJ	MASONRY CONTROL JOINT
MCR	MIDDLE OF CURB RETURN
MDD	MAX DRY DENSITY
MEAS	MEASURE
MECH	MECHANICAL
MED	MEDIUM
MEM	MEMBER
MFR	MANUFACTURER
MFRD	MANUFACTURED
MG	MILLION GALLON
MGD	MILLION GALLON PER DAY
MH	MANHOLE / MAINTENANCE HOLE
MHW	MEAN HIGH WATER
MI	MALLEABLE IRON / MILE
MICRON	1/1,000,000 METER
MIL	MILITARY / 1/1,000TH INCH
MIN	MINIMUM / MINUTE
MIR	MIRROR
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MK	MARK
MLW	MEAN LOW WATER
mm	MILLIMETER
MO	MOTOR OPERATED / MASONRY OPENING
MOD	MODEL
MON	MONUMENT
MOR	MORTAR
MSL	MEAN SEA LEVEL
MTC	MECHANICAL-TYPE COUPLING
MTD	MOUNTED
MTG	MOUNTING
MTL	METAL / MATERIAL
MTR	MOTOR
MWS	MAXIMUM WATER SURFACE
N	NORTH
NaOCL	SODIUM HYPOCHLORITE
NaOH	SODIUM HYDROXIDE (CAUSTIC SODA)
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NF	NEAR FACE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NG	NATURAL GRADE / NATURAL GAS
NIC	NOT IN CONTRACT
NO.	NUMBER / NORMALLY OPEN
NOM	NOMINAL
NPS	NOMINAL PIPE SIZE
NPT	NATIONAL PIPE THREAD
NPW	NON-POTABLE WATER
NRCP	NON-REINFORCED CONCRETE PIPE
NRS	NON-RISING STEM
NS	NEAR SIDE
NTS	NOT TO SCALE
NW	NORTHWEST
OBJ	OBJECT
OC	ON CENTER / OVER-CROSSING
OD	OUTSIDE DIAMETER / OVERALL DIMENSION
OE	OUTER EDGE
O.F.	OVERFLOW / OUTSIDE FACE
OFD	OVERFLOW DRAIN
OG	ORIGINAL GROUND
OH	OVERHEAD
OHP	OVERHEAD POWER LINE
OHW	OVERHEAD POWER WIRE
OPER	OPERATOR / OPERATING
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
OS&Y	OUTSIDE SCREW AND YOKE
OSA	OUTSIDE AIR
OSHA	OCCUPATIONAL SAFETY AND HEALT ADMINISTRATION
OWG	OIL, WATER, GAS
OZ	OUNCE
P	POLE / PAGE / PIPE
P/S	POLE AND SHELF
PA	PLANTING AREA
PART	PARTITION
PAVMT	PAVEMENT
PB	POLYBUTYLENE / PULL BOX
PC	POINT OF CURVATURE / PORTLAND CEMENT
PCC	PORTLAND CEMENT CONCRETE / POINT OF COMPOUND CURVE
PCOTG	PRESSURE CLEANOUT TO GRADE
PCVC	POINT OF COMPOUND VERTICAL CURVE
PE	POLYETHYLENE / PLAIN END / PLANT EFFLUENT
PG	PRESSURE GAGE
pH	HYDROGEN ION CONCENTRATION
PI	PLANT INFLUENT / POINT OF INTERSECTION
PK	PARKING
PL	PLATE / PROPERTY LINE /PLACE
PLAS	PLASTER / PLASTIC
PLT	PLANT
PLWD	PLYWOOD
PM	PRESSED METAL
PNEU	PNEUMATIC
PNL	PANEL
POB	POINT OF BEGINNING
POC	POINT OF CONNECTION
POT	POINT OF TANGENT
PP	POWER POLE / POLYPROPYLENE
PPD	POUNDS PER DAY
PPH	POUNDS PER HOUR
PPM	POUNDS PER MINUTE / PARTS PER MILLION
PR	PAIR
PRC	POINT OF REVERSE CURVE
PRCT	PRECAST
PREFAB	PREFABRICATED
PRESS	PRESSURE
PROF	PROFILE
PROP	PROPERTY
PRV	PRESSURE REGULATING, RELIEF, OR REDUCING VALVE
PRVC	POINT OF REVERSE VERTICAL CURVE
PS	PRESSURE SWITCH / PUMP STATION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
PSV	PRESSURE SUSTAINING VALVE
PT	POINT OF TANGENCY / PAINT
PTFE	POLYTETRAFLUOROETHYLENE (TEFLON)
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PVDF	POLYVINYLIDENE FLUORIDE (KYNAR)
PW	POTABLE WATER
QTY	QUANTITY
QUAD	QUADRANGLE / QUADRANT
R	RADIUS / RISER / RATE OF SLOPE
R/W	RIGHT-OF-WAY
RAC	RECYCLED ASPHALT CONCRETE
RAG	RETURN AIR GRILLE
RAP	RECYLCED ASPHALT PAVEMENT
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD / ROOF DRAIN / ROUND
RED	REDUCER / REDUCING
REF	REFERENCE / REFER / REFRIGERATOR
REG	REGULATING
REINF	REINFORCE / REINFORCED
REQD	REQUIRED
RESIL	RESILIENT
RET	RETAINING / RETURN
REV	REVISION
REW	RECLAIMED WATER
RF	ROOF / RAISED FOUNDATION / ROUGH FACE
RFG	ROOFING
RGE	REGISTERED GEOTECHNICAL ENGINEER
RH	REDHEAD / RIGHT HAND
RM	ROOM
RMP	ROCKY MOUNTAIN POWER
RO	ROUGH OPENING / REVERSE OSMOSIS
RP	RADIUS POINT
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
R/R	REMOVE AND REPLACE
RS	RISING STEM
RT	RIGHT
RTU	REMOTE TERMINAL UNIT
RW	REDWOOD
RWL	RAINWATER LEADER
S	SOUTH / SINK / SECOND / SLOPE
S/O	SOUTH OF
SA	SAMPLE
SAN	SANITARY
SBR	STYRENE BUTADIENE (RUBBER)
SCCP	STEEL CYLINDER CONCRETE PIPE
SCR	SCREWED
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SD	SANITARY DRAIN AND VENT / SMOKE DETECTOR
SDR	STANDARD THERMOPLASTIC PIPE DIMENSION RATIO / STORM DRAIN
SEC	SECONDARY / SECTION
SF	SQUARE FOOT (FEET)
SH	SHOWER
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SLDG	SLIDING
SLG	SLUICE GATE
SOG	SLAB ON GRADE
SOL	SOLUTION
SP	STATIC PRESSURE
SPD	SUMP PUMP DRAIN
SPEC	SPECIFICATION
SQ	SQUARE
SQ IN	SQUARE INCH
SS	STAINLESS STEEL / SANITARY SEWER / SERVICE SINK
SSB	SELECT SUB-BASE
SSPWC	STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION
ST	STREET / STATE
STA	STATION
STC	SLEEVE-TYPE COUPLING
STD	STANDARD
STK	STAKE
STL	STEEL
STM	STEAM
STN	STAINLESS
STR	STRAIGHT / STRUCTURAL
STRUCT	STRUCTURE
SUBFL	SUB-FLOOR
SUCT	SUCTION
SUSP	SUSPEND / SUSPENDED
SV	SOLENOID VALVE
SW	SIDEWALK / SOUTHWEST
SWGR	SWITCHGEAR
SWR	SIDEWALL REGISTER
SY	SQUARE YARD
SYM	SYMMETRICAL / SYMBOL
T	THERMOSTAT / TREAD OF STAIR / TANGENT
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TAN	TANGENT
TBC	TOP BACK OF CURB
TBE	THREAD BOTH ENDS
TBG	TUBING
TBM	TEMPORARY BENCH MARK
TCE	TEMPORARY CONSTRUCTION EASEMENT
TCV	TEMPERATURE CONTROL VALVE
TDH	TOTAL DYNAMIC HEAD
TECH	TECHNICAL
TEL	TELEPHONE
TEMP	TEMPERATURE / TEMPORARY
TF	TOP OF FOOTING
TH	TEST HOLE
THK	THICK / THICKNESS
THR	THRESHOLD
THRD	THREADED
TK	TANK / TACK
TL	TRAVERSE LINE
TOB	TOP OF BAFFLE
TOC	TOP OF CONCRETE
TOE	THREAD ONE END
TOG	TOP OF GRATING
TOM	TOP OF MASONRY
TOP	TOP OF PIPE
TOPO	TOPOGRAPHIC
TOS	TOP OF STEEL / TOP OF SLAB
TOW	TOP OF WALL
TP	TELEPHONE POLE / TURNING POINT / TEST PIT
TRANS	TRANSMITTER / TRANSITION / TRANSMISSION
TS	TRAFFIC SIGNAL
TV	THERMOSTATIC VALVE
TW	THERMOMETER WELL / TRAVELED WAY
TWS	TRACER WIRE STATION
TYP	TYPICAL
UB	UNION BONNET
UBC	UNIFORM BUILDING CODE / UNTREATED BASE COURSE
UC	UNDER-CROSSING
UCE	UTILITY CORRIDOR EASEMENT
UDOT	UTAH DEPARTMENT OF TRANSPORTATION
UG	UNDERGROUND
UGC	UNDERGROUND CONDUIT
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UNID	UNIDENTIFIED
UNK	UNKNOWN
UNO	UNLESS NOTED OTHERWISE
UOI	UNLESS OTHERWISE INDICATED
UPS	UNINTERRUPTABLE POWER SUPPLY
USA	UNDERGROUND SERVICE ALERT
USGS	UNITED STATES GEOLOGICAL SURVEY
UW	UTILITY WATER
V	VALVE / VERTICAL / VENT / VOLT
VAC	VACUUM
VAR	VARIES / VARIABLE
VB	VALVE BOX
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VOL	VOLUME
VPI	VERTICAL POINT OF INTERSECTION
VSL	VERTICALLY SLOTTED
VTR	VENT THRU ROOF
VWM	VERIFY WITH MANUFACTURER
W	WEST / WASTE / WIDTH / WIDE FLANGE / WATER
W/	WITH
W/O	WEST OF / WITHOUT
WC	WATER COLUMN / WATER CLOSET
WCO	WALL CLEANOUT
WD	WOOD
WDW	WINDOW
WH	WATER HEATER
WI	WROUGHT IRON
WM	WATER METER
WOG	WATER, OIL, OR GAS
WP	WATERPROOFING / WORKING PRESSURE
WPJ	WEAKEN PLANE JOINT
WS	WATER SURFACE
WSP	WELDED STEEL PIPE
WSTP	WATERSTOP
WT	WEIGHT / WATER TIGHT
WWF	WELDED WIRE FABRIC
WWP	WORKING WATER PRESSURE
XCONN	CROSS CONNECTION
XS	EXTRA STRONG
XSEC	CROSS SECTION
XXS	DOUBLE EXTRA STRONG
YD	YARD
YR	YEAR
Z	ZERO / ZONE

PROJECT ABBREVIATIONS

SLDR	SOLDERED
PERF	PERFORATED

FILE NAME: PROJECTS\260 - SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\G-4 ABBREVIATIONS.DWG
FILE DATE: 5.1.2023 08:02:18 (CAH)

7/04

HANSEN ALLEN & LUCE inc ENGINEERS

REGISTERED PROFESSIONAL ENGINEER — No. 162750 — MICHELA M. CAMBRON — 5/1/23 — STATE OF UTAH

PROJECT ENGINEER

DESIGNED	MMC	3				
DRAFTED	STD	2				
CHECKED	MEA	1				
DATE	MAY 2023	NO.	DATE	REVISIONS	BY	APVD.

SCALE: NONE

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
GENERAL
ABBREVIATIONS

SHEET G-4

260.42.210



GENERAL NOTES:

1. SPRING FLOWS AND CONSTRUCTION DEWATERING FLOWS SHALL BE DISCHARGED TO THE EXISTING DITCH AND INTO THE POND.

2. CONTRACTOR SHALL OBTAIN A CONSTRUCTION DEWATERING PERMIT FROM THE STATE AND MEET ALL PERMIT MONITORING REQUIREMENTS.

FILE NAME: PROJECTS\260 – SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\G-5 OVERALL PROJECT AREA.DWG
FILE DATE: 7.27.2023 12:58:27 (JRB)

HANSEN ALLEN & LUCE INC ENGINEERS

REGISTERED PROFESSIONAL ENGINEER No. 182750 MICHAEL M. CHAMBERS 7/24/23 STATE OF UTAH

PROJECT ENGINEER

DESIGNED	MMC	3				
DRAFTED	JRB	2				
CHECKED	MEA	1	07/27/23	REVISED FOR REBID	JRB	MMC
DATE	MAY 2023	NO.	DATE	REVISIONS	BY	APVD.

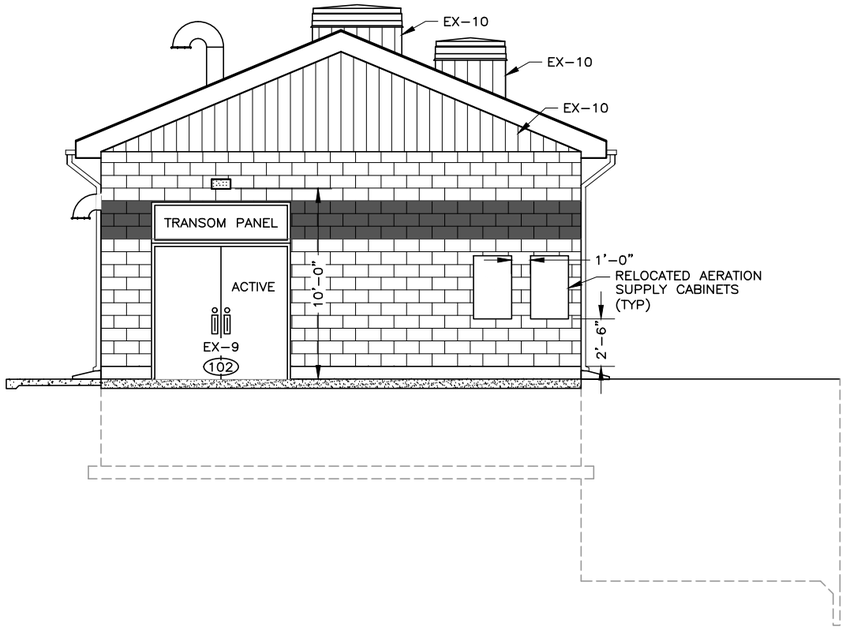
SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

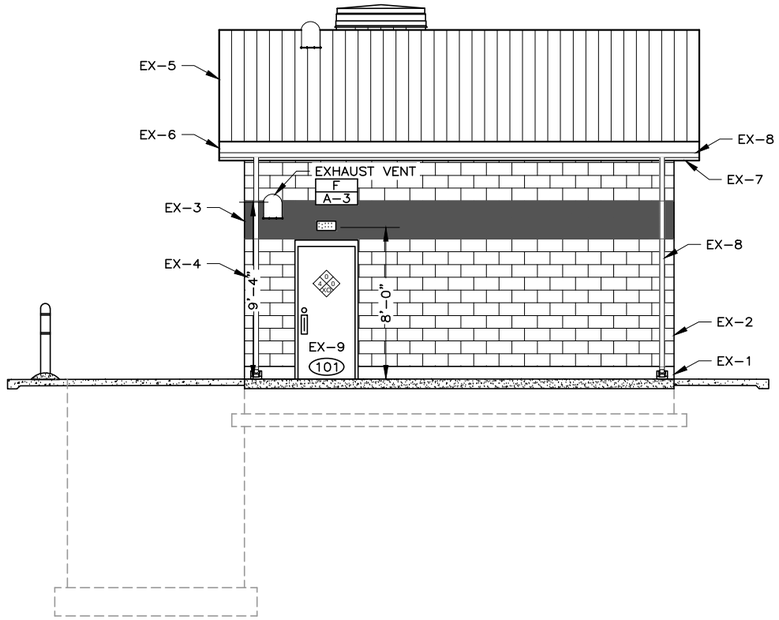
BURT SPRINGS RENOVATION
CIVIL
OVERALL PROJECT AREA

SHEET G-5
260.42.210

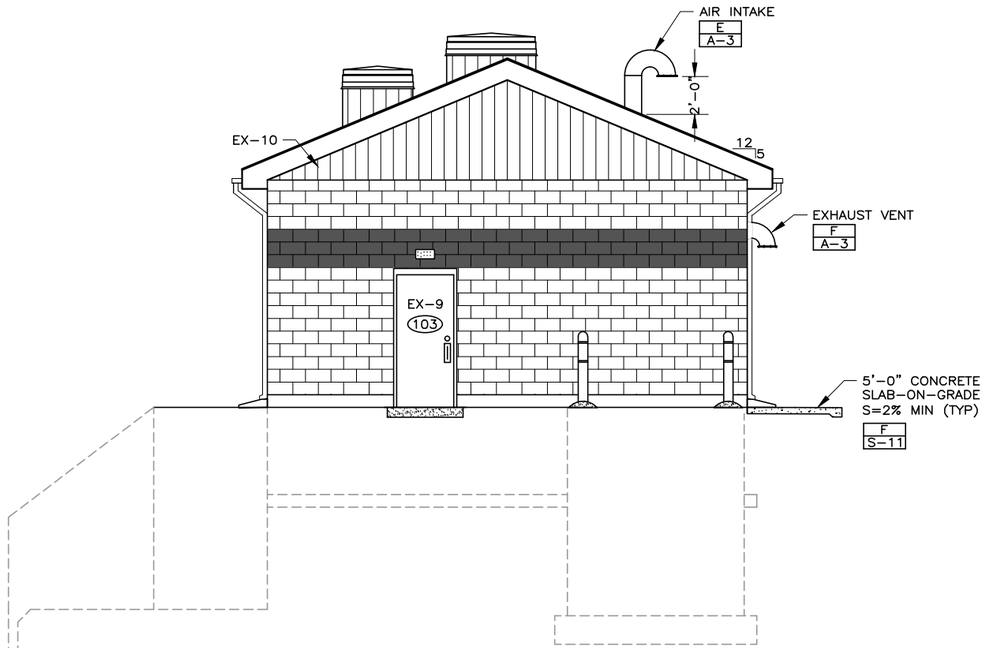
7/04



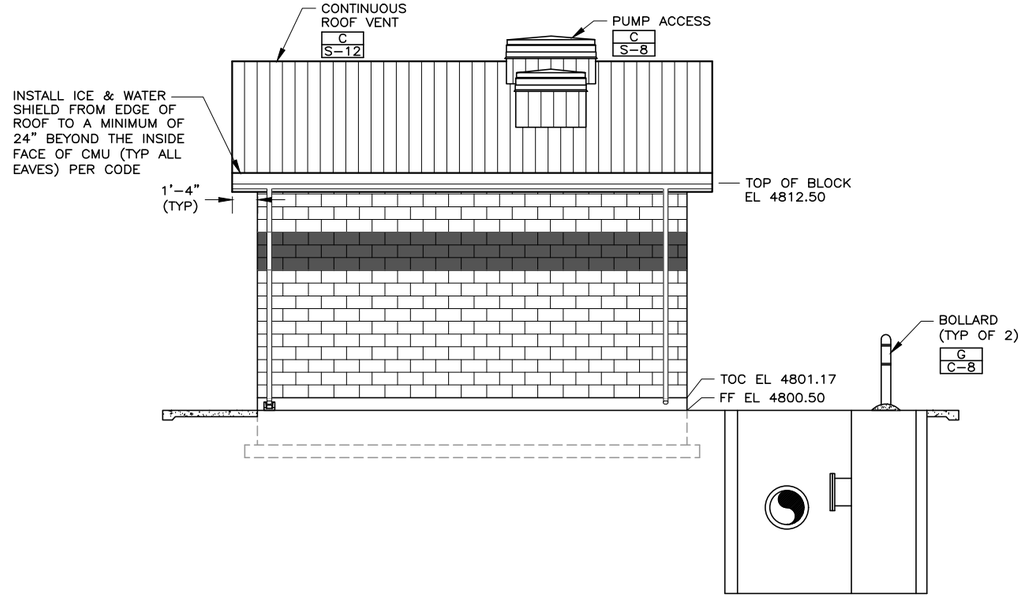
NORTH ELEVATION 1 / C-3



EAST ELEVATION 2 / C-3



SOUTH ELEVATION 3 / C-3



WEST ELEVATION 4 / C-3

GENERAL SHEET NOTE:

SEE SHEET C-2 FOR EXTERIOR CONCRETE SLAB-ON-GRADE LOCATIONS AND DIMENSIONS.

0 4 8
SCALE IN FEET

FILE NAME: PROJECTS\260 - SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\A-1 ELEVATIONS.DWG
FILE DATE: 5.1.2023 16:17:55 (CAH)

HANSEN ALLEN & LUCE inc ENGINEERS

REGISTERED PROFESSIONAL ENGINEER No. 282750 MICHAEL A. ALLEN Mechanical 7/12/23 STATE OF UTAH
PROJECT ENGINEER

DESIGNED	MMC	3					
DRAFTED	CAH	2					
CHECKED	MEA	1					
DATE	MAY 2023	NO.	DATE	REVISIONS		BY	APVD.

SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ARCHITECTURAL
ELEVATIONS

SHEET A-1

260.42.210

7/04

DOOR SCHEDULE

TAG NO.	DOOR						FRAME					DETAILS			HARDWARE	REMARKS
	WIDTH	HEIGHT	THICK	TYPE	MATERIAL	FINISH	WIDTH	HEIGHT	DEPTH	FRAME MAT	FRAME FINISH	HEAD	JAMB	THRESHOLD		
101 103	3'–0"	7'–0"	1 3/4"	(A) SINGLE (A/A–2)	HM	NOTE 1,2	3'–4"	7'–4"	7 3/4"	HM	NOTE 1,3	A/A–3	B/A–3	C/A–3	100 (SEE NOTE 4)	EXTERIOR W/ HAZARD SIGN (B/–), 101 ONLY
102	3'–6"	7'–0"	1 3/4"	(B) DOUBLE (A/A–2)	HM	NOTE 1,2	7'–4"	7'–2" DOOR 2'–2" TRANSOM	7 3/4"	HM	NOTE 1,3	A/A–3	B/A–3	C/A–3	200 (SEE NOTE 4)	W/ TRANSOM (SEE NOTE 3)

INTERIOR PAINTING SCHEDULE

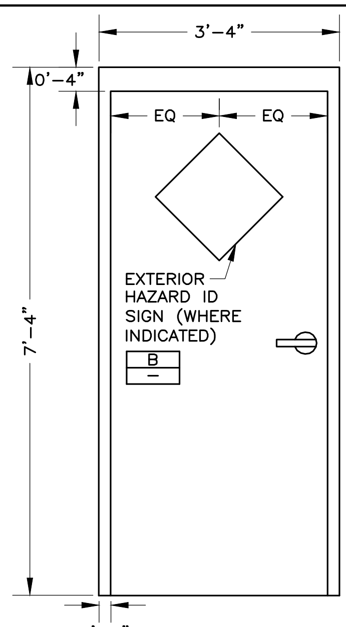
ITEM / ROOM	MATERIAL	COLOR	REMARKS
FLOOR / 101	CONCRETE	GRAY	SYSTEM #9 CLEAN AND PREPARE FLOOR, SIKAFLEX CONCRETE FLOOR EDGE, COAT FLOOR AND CONCRETE STEM WALL (ADD FINE AGGREGATE TO FLOOR)
FLOOR / 102	CONCRETE	GRAY	SYSTEM #10 CLEAN AND PREPARE FLOOR, SIKAFLEX CONCRETE FLOOR EDGE, COAT FLOOR AND CONCRETE STEM WALL (ADD FINE AGGREGATE TO FLOOR)
WALLS / 101	MASONRY	WHITE	SYSTEM #12
WALLS / 102	MASONRY	WHITE	SYSTEM #13
CEILING / ALL	PLYWOOD	WHITE	SYSTEM #15 WITH BCX OR BETTER PLYWOOD ("B" SURFACE EXPOSED) AND #2 OR BETTER DF BATTEN BOARDS
PIPING / 101	METAL	BLUE	SYSTEM #3 EXPOSED PIPE, VALVES & FITTINGS TO BE PAINTED

GENERAL SHEET NOTES:

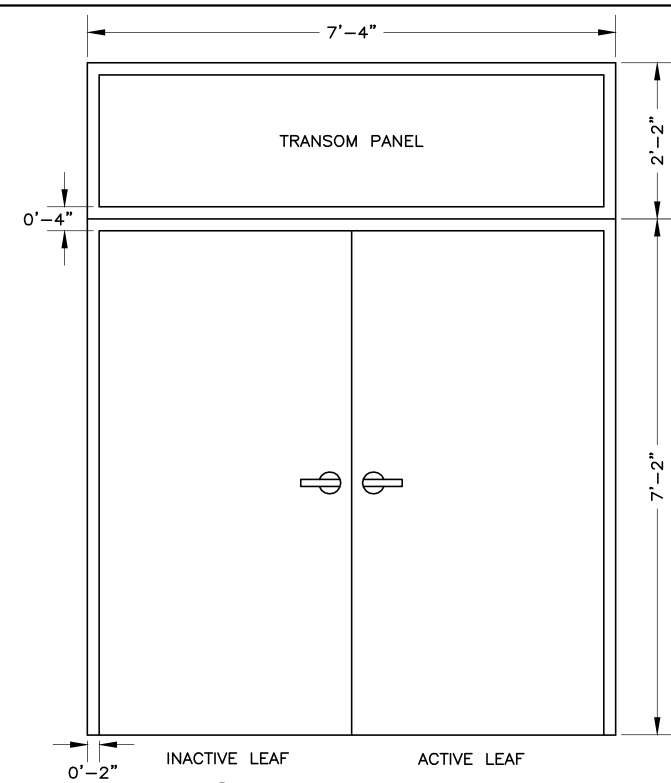
1. SEE SPECIFICATIONS SECTION 09 90 00 PAINTING AND FINISHES FOR TYPICAL FINISH.
2. ALL HOLLOW METAL DOORS AND FRAMES SHALL BE GALVANIZED.
3. TRANSOM PANEL TO BE REMOVABLE HOLLOW METAL INSULATED TYPE. OPENING HEIGHT AFTER REMOVAL SHALL BE 9FT (MIN). TRANSOM COLOR SHALL MATCH DOOR COLOR.
4. SEE SPECIFICATIONS SECTION 08 10 00 FOR HARDWARE & SECURITY REQUIREMENTS.
5. OWNER TO MAKE FINAL SELECTION ON ALL ARCHITECTURAL COLORS BASED ON COLOR SAMPLES PROVIDED BY CONTRACTOR.
6. BLOCK SHALL BE MOUNTAIN BROWN OR SONOMA. PROVIDE COLOR SAMPLES TO OWNER FOR FINAL SELECTION. PROVIDE MORTAR SAMPLES TO MATCH COLOR OF CMU FOR OWNER SELECTION.

EXTERIOR COLOR SCHEDULE

MARK	MATERIAL	MANUFACTURER	FINISH	COLOR	REMARKS
EX–1	CONCRETE	CONTRACTOR	STONE RUB	NATURAL	
EX–2	CMU	SUNROC	SMOOTH	OWNER (SEE NOTE 6)	10"W X 8"H X 16"L COAT OUTSIDE WALLS W/ GRAFFITI COAT
EX–3	CMU	SUNROC	SPLIT FACE	OWNER (SEE NOTE 6)	10"W X 8"H X 16"L COAT OUTSIDE WALLS W/ GRAFFITI COAT
EX–4	MORTAR	SPEC–MIX	SMOOTH	OWNER (SEE NOTE 6)	CONCAVE JOINTS
EX–5	METAL ROOF	FABRAL	GALVALUME	DOVE GRAY	2" STANDING SEAM
EX–6	STEEL FACIA	FABRAL	GALVALUME	DOVE GRAY	
EX–7	STEEL SOFFIT	FABRAL	GALVALUME	DOVE GRAY	CONTINUOUS VENTED
EX–8	STEEL GUTTER / DOWN SPOUT	FABRAL	GALVALUME	DOVE GRAY	4" DEEP, 4" WIDE, DOWN SPOUT 6" X 6" GUTTER
EX–9	DOORS	TBD	SMOOTH	MATCH ROOFING	SYSTEM #6 FACTORY PRIMED
EX–10	STEEL SIDING	FABRAL	GALVALUME	DOVE GRAY	2" REVEAL: 2 PENCIL RIBS

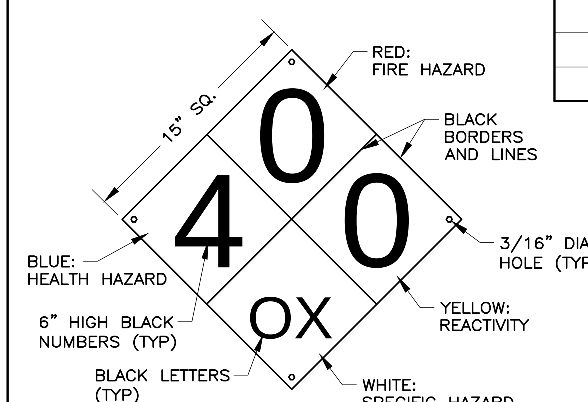


(A) FLUSH DOOR



(B) DBL FLUSH DOOR

DETAIL A / –



HAZARD TYPES AND LEVELS			
NO.	BLUE: HEALTH HAZARD	RED: HAZARD	YELLOW: REFACTIVITY
0	NORMAL MATERIAL	WILL NOT BURN	STABLE
1	SLIGHTLY HAZARDOUS	ABOVE 200° F	UNSTABLE IF HEATED
2	HAZARDOUS	ABOVE 100° F NOT EXCEEDING 200° F	VIOLENT CHEMICAL CHANGE
3	EXTREME DANGER	BELOW 100° F	SHOCK AND HEAT MAY DETONATE
4	DEADLY	BELOW 73° F	MAY DETONATE

DETAIL NOTES:

1. DIAMOND HAZARD MATERIALS SIGN SHALL CORRECTLY IDENTIFY THE HAZARDOUS MATERIALS CONTAINED WITHIN THE CHEMICAL STORAGE ROOMS IN ACCORDANCE WITH NFPA 704.
2. DIAMOND SIGN SHALL BE SURFACE MOUNTED ADJACENT TO OR ON ALL CHEMICAL ROOM ENTRY DOORS.

SPECIFIC HAZARD:	
ACID:	ACID
ALKALI:	ALK
CORROSIVE:	COR
OXIDIZER:	OX
RADIOACTIVE:	☢
USE NO WATER	~~W~~

NFPA MATERIAL HAZARD IDENTIFICATION SIGN B / –

FILE NAME: PROJECTS\260 – SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\A–2 ARCHITECTUAL SCHEDULES & DETAILS.DWG
FILE DATE: 5.24.2023 10:21:34 (CAH)

7/04

HANSEN ALLEN & LUCE INC ENGINEERS

PROJECT ENGINEER

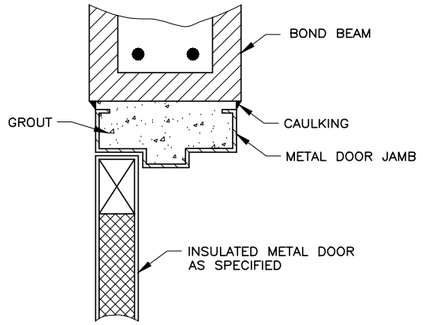
		NO.	DATE	REVISIONS	BY	APVD.
DESIGNED	MMC	3				
DRAFTED	CAH	2				
CHECKED	MEA	1				
DATE	MAY 2023					

SCALE: NOT TO SCALE

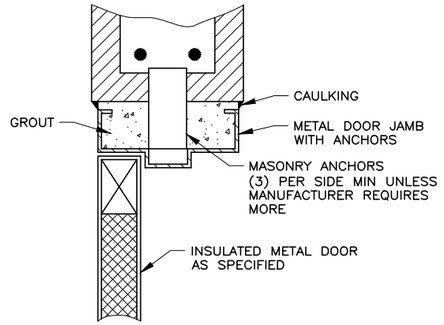
SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ARCHITECTURAL
SCHEDULES & DETAILS

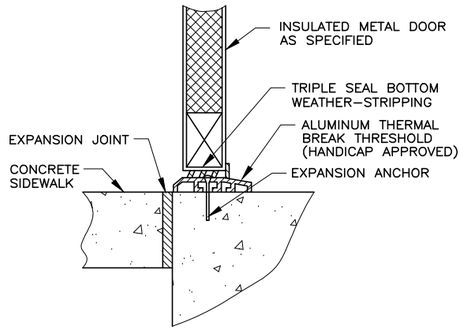
SHEET A–2
260.42.210



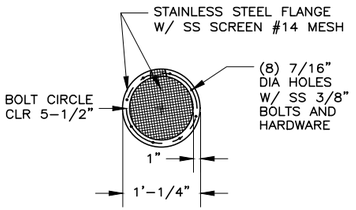
DOOR HEADER | A | A–2



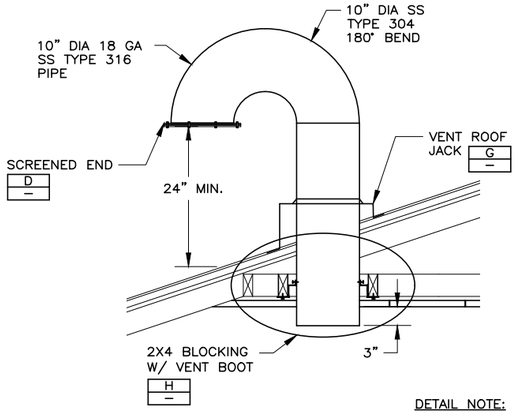
DOOR JAMB | B | A–2



DOOR SILL | C | A–2



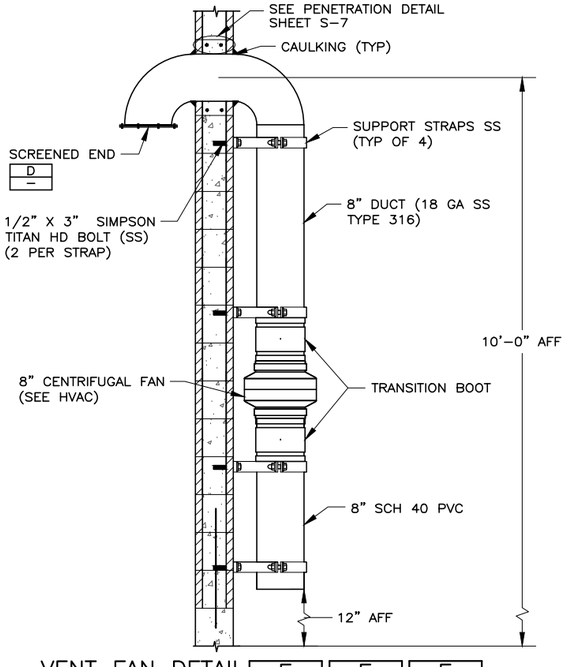
DETAIL | D | –



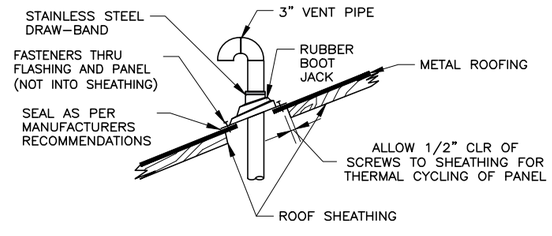
DETAIL NOTE:

VENT PIPING TO BE 18 GA STAINLESS STEEL.

ROOF VENT DETAIL | E | A–1 | E | C–3



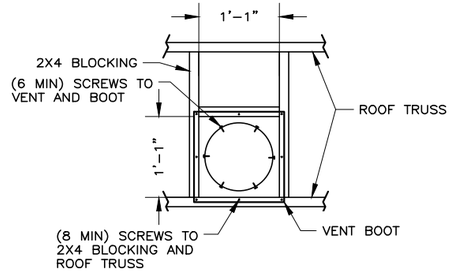
VENT FAN DETAIL | F | A–1 | F | C–3 | F | C–9



DETAIL NOTE:

INSTALL PIPE BETWEEN STANDING SEAMS.

VENT ROOF JACK | G | –



BLOCKING W/ ROOF VENT | H | –

FILE NAME: PROJECTS\260 – SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\A–3 DETAILS.DWG
FILE DATE: 5.1.2023 08:45:00 (CAH)

7/04

KAMSEN ALLEN & LOCE, INC. ENGINEERS

REGISTERED PROFESSIONAL ENGINEER — NO. 762750 — MICHELM. CHAMBERS — 5/12/23 — STATE OF UTAH

PROJECT ENGINEER

DESIGNED	MMC	3			
DRAFTED	DD	2			
CHECKED	MEA	1			
DATE	MAY 2023	NO.	DATE	REVISIONS	BY / APVD.

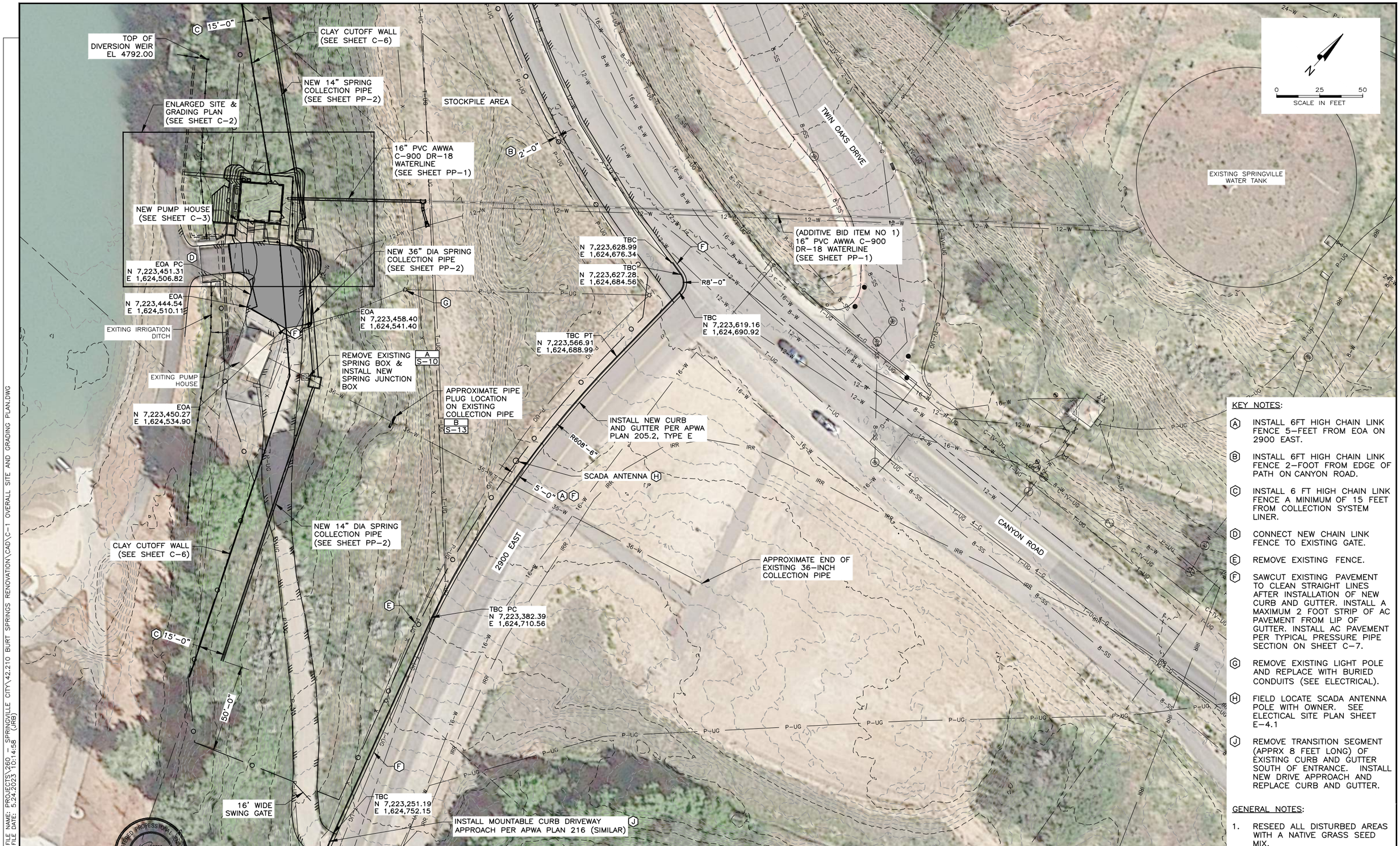
SCALE: NOT TO SCALE

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ARCHITECTURAL
DETAILS

SHEET A–3

260.42.210



KEY NOTES:

- (A) INSTALL 6FT HIGH CHAIN LINK FENCE 5-FEET FROM EOA ON 2900 EAST.
- (B) INSTALL 6FT HIGH CHAIN LINK FENCE 2-FOOT FROM EDGE OF PATH ON CANYON ROAD.
- (C) INSTALL 6 FT HIGH CHAIN LINK FENCE A MINIMUM OF 15 FEET FROM COLLECTION SYSTEM LINER.
- (D) CONNECT NEW CHAIN LINK FENCE TO EXISTING GATE.
- (E) REMOVE EXISTING FENCE.
- (F) SAWCUT EXISTING PAVEMENT TO CLEAN STRAIGHT LINES AFTER INSTALLATION OF NEW CURB AND GUTTER. INSTALL A MAXIMUM 2 FOOT STRIP OF AC PAVEMENT FROM LIP OF GUTTER. INSTALL AC PAVEMENT PER TYPICAL PRESSURE PIPE SECTION ON SHEET C-7.
- (G) REMOVE EXISTING LIGHT POLE AND REPLACE WITH BURIED CONDUITS (SEE ELECTRICAL).
- (H) FIELD LOCATE SCADA ANTENNA POLE WITH OWNER. SEE ELECTICAL SITE PLAN SHEET E-4.1
- (J) REMOVE TRANSITION SEGMENT (APPRX 8 FEET LONG) OF EXISTING CURB AND GUTTER SOUTH OF ENTRANCE. INSTALL NEW DRIVE APPROACH AND REPLACE CURB AND GUTTER.

GENERAL NOTES:

1. RESEED ALL DISTURBED AREAS WITH A NATIVE GRASS SEED MIX.

FILE NAME: PROJECTS\260 - SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\C-1 OVERALL SITE AND GRADING PLAN.DWG
FILE DATE: 5.24.2023 10:14:58 (JRB)

HANSEN ALLEN & LUCE INC. ENGINEERS

LICENSED PROFESSIONAL ENGINEER — No. 182750 — MICHELLE A. ALLEN — STATE OF UTAH — PROJECT ENGINEER

DESIGNED	MMC	3				
DRAFTED	JRB	2				
CHECKED	MEA	1				
DATE	MAY 2023	NO.	DATE	REVISIONS	BY	APVD.

SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
CIVIL
OVERALL SITE & GRADING PLAN

SHEET C-1
260.42.210

7/04



KEY NOTES:

(A) RELOCATE EXISTING AERATION SUPPLY CABINETS FROM EXISTING PUMP HOUSE. PROVIDE NEW VALVES, PRESSURE GAUGES, AND POLYMER BOXES. EXTEND PIPING TO CONNECT TO EXISTING PIPES ON WEST SIDE OF THE DITCH.

(B) REMOVE EXISTING 2-INCH PVC AERATION PIPES AS NEEDED TO INSTALL NEW CONCRETE HEADWALL.

(C) SAWCUT EXISTING PAVEMENT TO CLEAN, STRAIGHT LINE PRIOR TO INSTALLING NEW AC PAVEMENT.

(D) COORDINATE WITH CITY AND ENGINEER BEFORE REMOVING ANY TREES.

(E) INSTALL AC PAVEMENT PER TYPICAL PRESSURE PIPE SECTION ON SHEET C-7.

GENERAL NOTES:

1. RESEED ALL DISTURBED AREAS WITH A NATIVE GRASS SEED MIX.
2. CONTRACTOR SHALL PROVIDE THE DESIGN, INSTALLATION, AND REMOVAL OF TRENCH AND/OR BUILDING SHORING, IF NEEDED.

FILE NAME: PROJECTS\260 - SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\C-2 LARGE SITE AND GRADING PLAN_R1.DWG
FILE DATE: 7.27.2023 12:51:12 (JRB)

HANSEN ALLEN & LUCE INC ENGINEERS

REGISTERED PROFESSIONAL ENGINEER No. 182750 MICHAEL M. CHAMBERS 7/24/23 STATE OF UTAH
PROJECT ENGINEER

DESIGNED	MMC	3				
DRAFTED	CAH	2				
CHECKED	MEA	1	07/27/23	REVISED FOR REBID	JRB	MMC
DATE	MAY 2023	NO.	DATE	REVISIONS	BY	APVD.

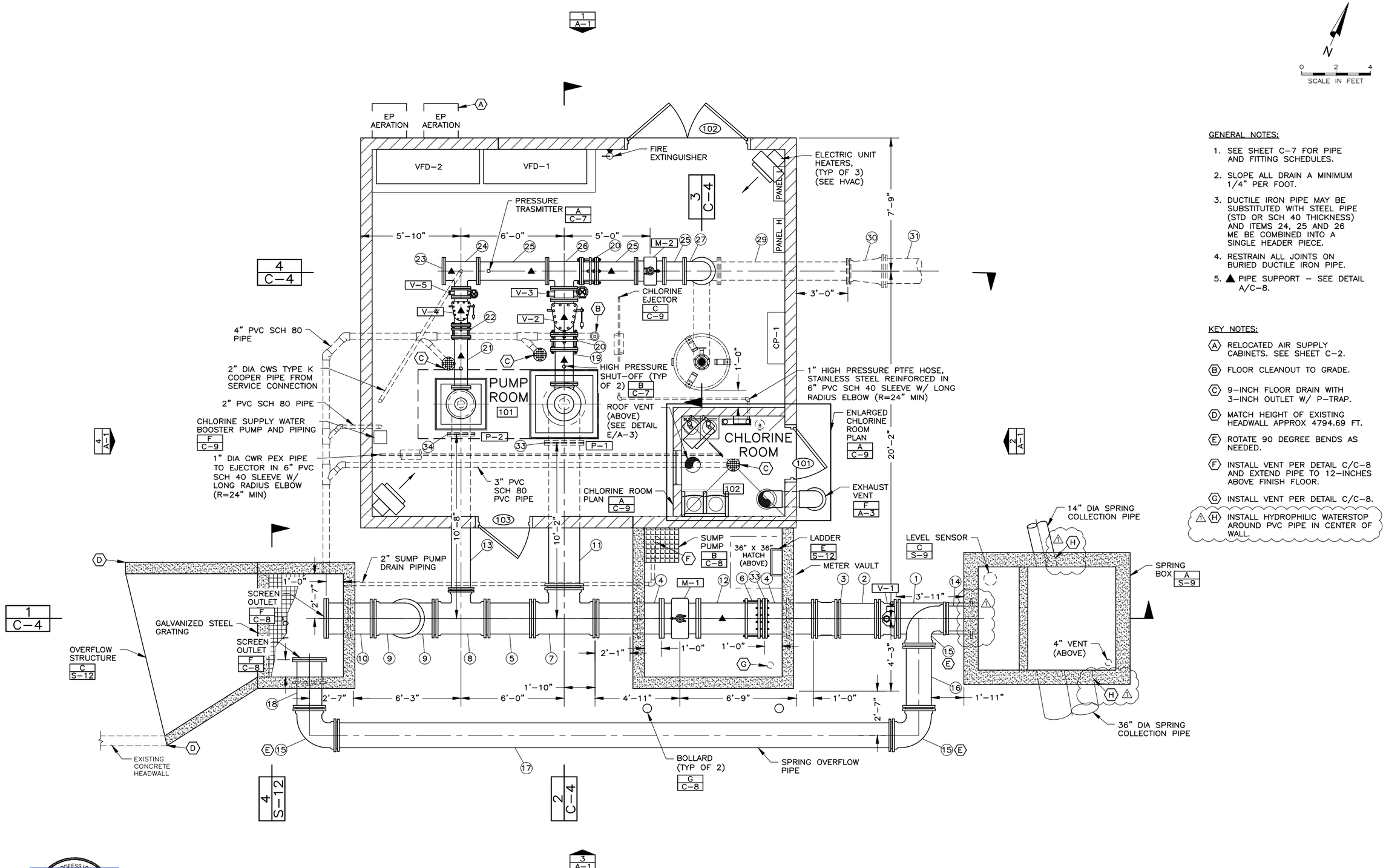
SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
CIVIL
ENLARGED SITE & GRADING PLAN

SHEET C-2
260.42.210

7/04



GENERAL NOTES:

1. SEE SHEET C-7 FOR PIPE AND FITTING SCHEDULES.
2. SLOPE ALL DRAIN A MINIMUM 1/4" PER FOOT.
3. DUCTILE IRON PIPE MAY BE SUBSTITUTED WITH STEEL PIPE (STD OR SCH 40 THICKNESS) AND ITEMS 24, 25 AND 26 ME BE COMBINED INTO A SINGLE HEADER PIECE.
4. RESTRAIN ALL JOINTS ON BURIED DUCTILE IRON PIPE.
5. ▲ PIPE SUPPORT – SEE DETAIL A/C-8.

KEY NOTES:

- (A) RELOCATED AIR SUPPLY CABINETS. SEE SHEET C-2.
- (B) FLOOR CLEANOUT TO GRADE.
- (C) 9-INCH FLOOR DRAIN WITH 3-INCH OUTLET W/ P-TRAP.
- (D) MATCH HEIGHT OF EXISTING HEADWALL APPROX 4794.69 FT.
- (E) ROTATE 90 DEGREE BENDS AS NEEDED.
- (F) INSTALL VENT PER DETAIL C/C-8 AND EXTEND PIPE TO 12-INCHES ABOVE FINISH FLOOR.
- (G) INSTALL VENT PER DETAIL C/C-8.
- (H) INSTALL HYDROPHILIC WATERSTOP AROUND PVC PIPE IN CENTER OF WALL.

FILE NAME: PROJECTS\260 – SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\C-3 PUMP HOUSE PLAN__R1.DWG
FILE DATE: 7.18.2023 09:29:30 (CAH)

HANSEN ALLEN & LUCE inc ENGINEERS

REGISTERED PROFESSIONAL ENGINEER — NO. 162750 — MICHAEL A. ITO — 7/24/23 — STATE OF UTAH

PROJECT ENGINEER

DESIGNED	MMC	3				
DRAFTED	CAH	2				
CHECKED	MEA	1	6/9/2023	PREVIOUS BID CHANGES	CAH	MMC
DATE	MAY 2023	NO.	DATE	REVISIONS	BY	APVD.

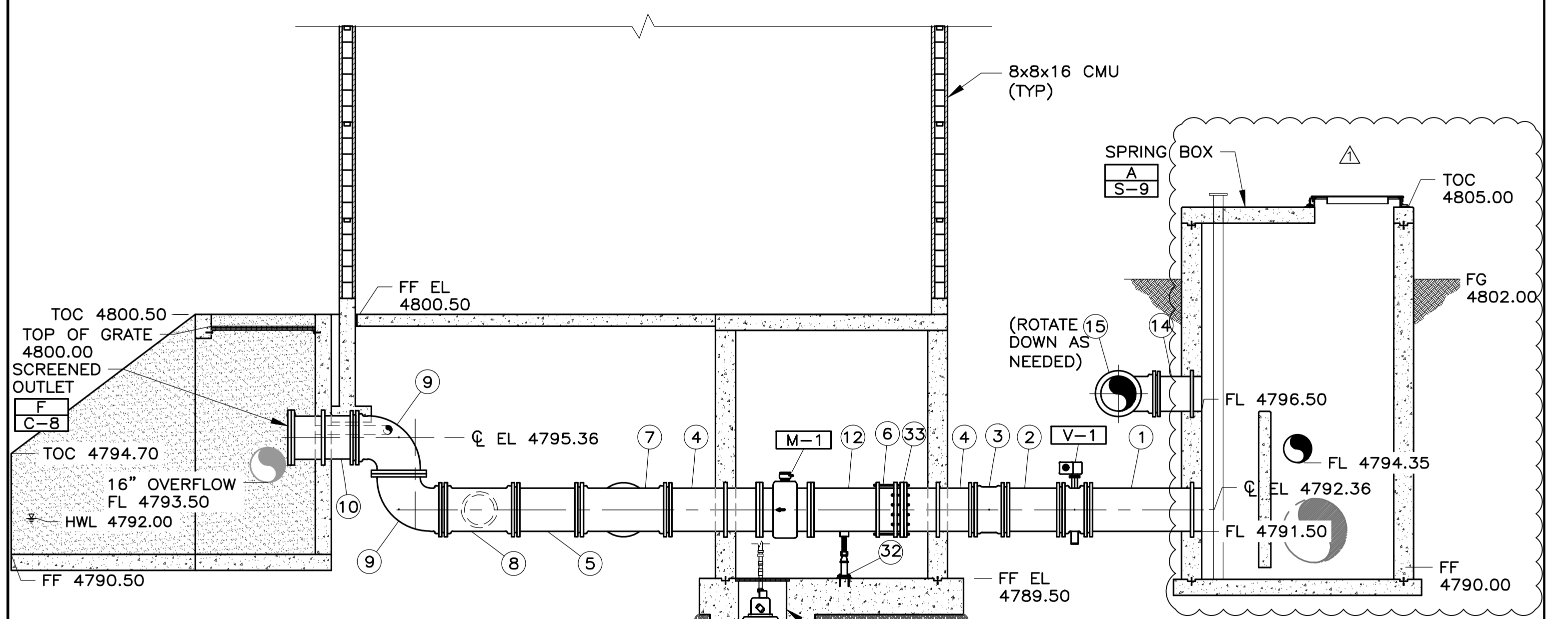
SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
CIVIL
PUMP HOUSE PLAN

SHEET C-3
260.42.210

7/04

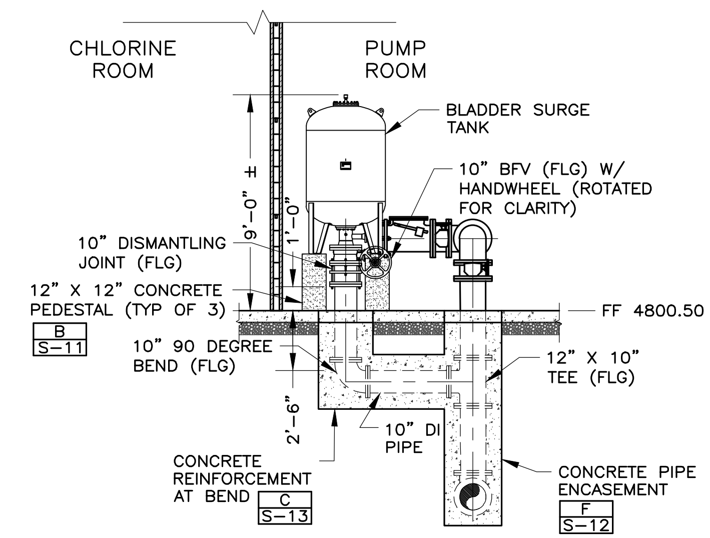


DETAIL NOTE:

RESTRAIN ALL MJ JOINTS.

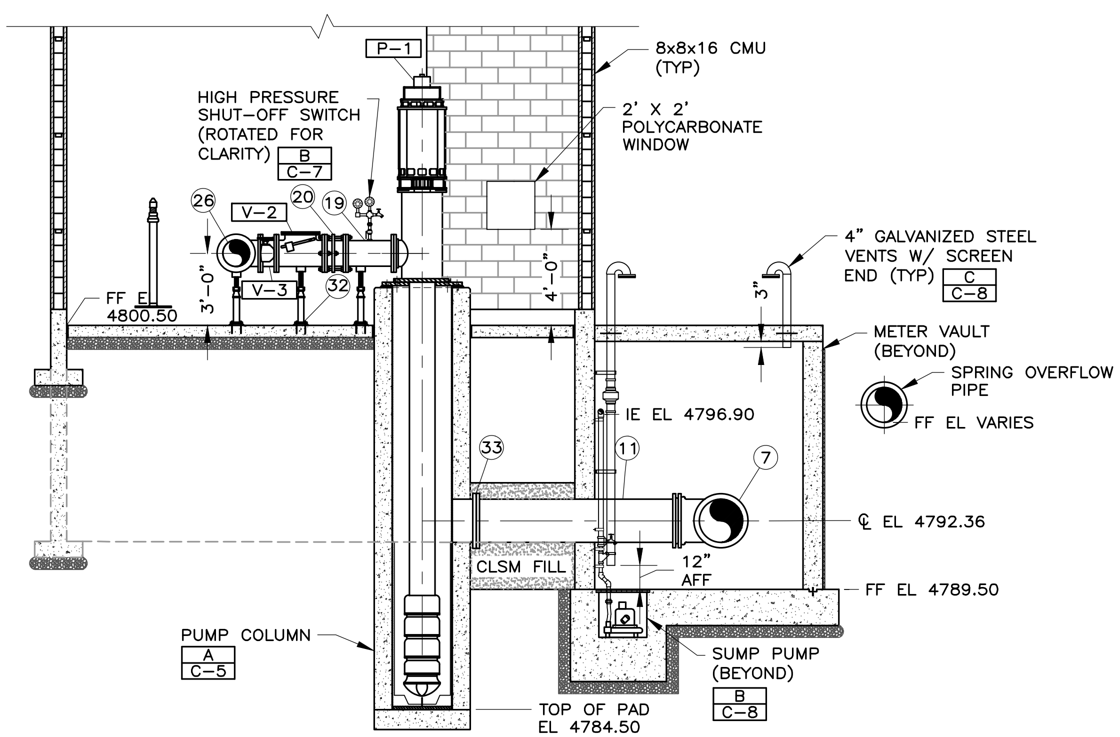
SECTION 1 C-2 / 1 C-3

0 4 8 SCALE IN FEET



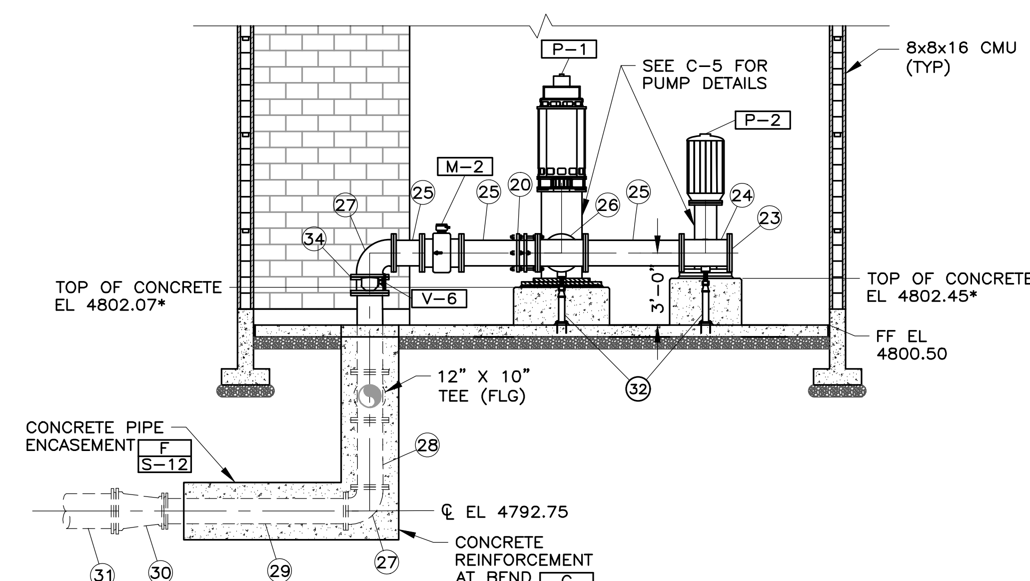
SECTION 4 C-3

0 4 8 SCALE IN FEET



SECTION 2 C-3

0 4 8 SCALE IN FEET



SECTION 4 C-3

0 4 8 SCALE IN FEET

GENERAL SHEET NOTES:

1. SEE SHEET C-7 FOR PIPE, VALVE, & FITTING SCHEDULE.
2. SEE STRUCTURAL SHEETS FOR REINFORCEMENT REQUIREMENTS.
3. ⚠1 THE SPRING COLLECTION BOX SHALL BE DISINFECTING AFTER ALL ITEMS HAVE BEEN INSTALLED. FOLLOW PROCEDURES SIMILAR TO AWWA C651.

FILE NAME: PROJECTS\260 - SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\C-4 PUMP HOUSE SECTIONS__R1.DWG
FILE DATE: 7.18.2023 09:30:07 (CAH)

HANSEN ALLEN & LUCE INC ENGINEERS

REGISTERED PROFESSIONAL ENGINEER No. 182750 MICHAEL M. CHAMBERS 4/24/23 STATE OF UTAH

PROJECT ENGINEER

		NO.	DATE	REVISIONS	BY	APVD.
DESIGNED	MMC	3				
DRAFTED	CAH	2				
CHECKED	MEA	⚠1	6/9/2023	PREVIOUS BID CHANGES	CAH	MMC
DATE	MAY 2023					

SCALE: AS SHOWN

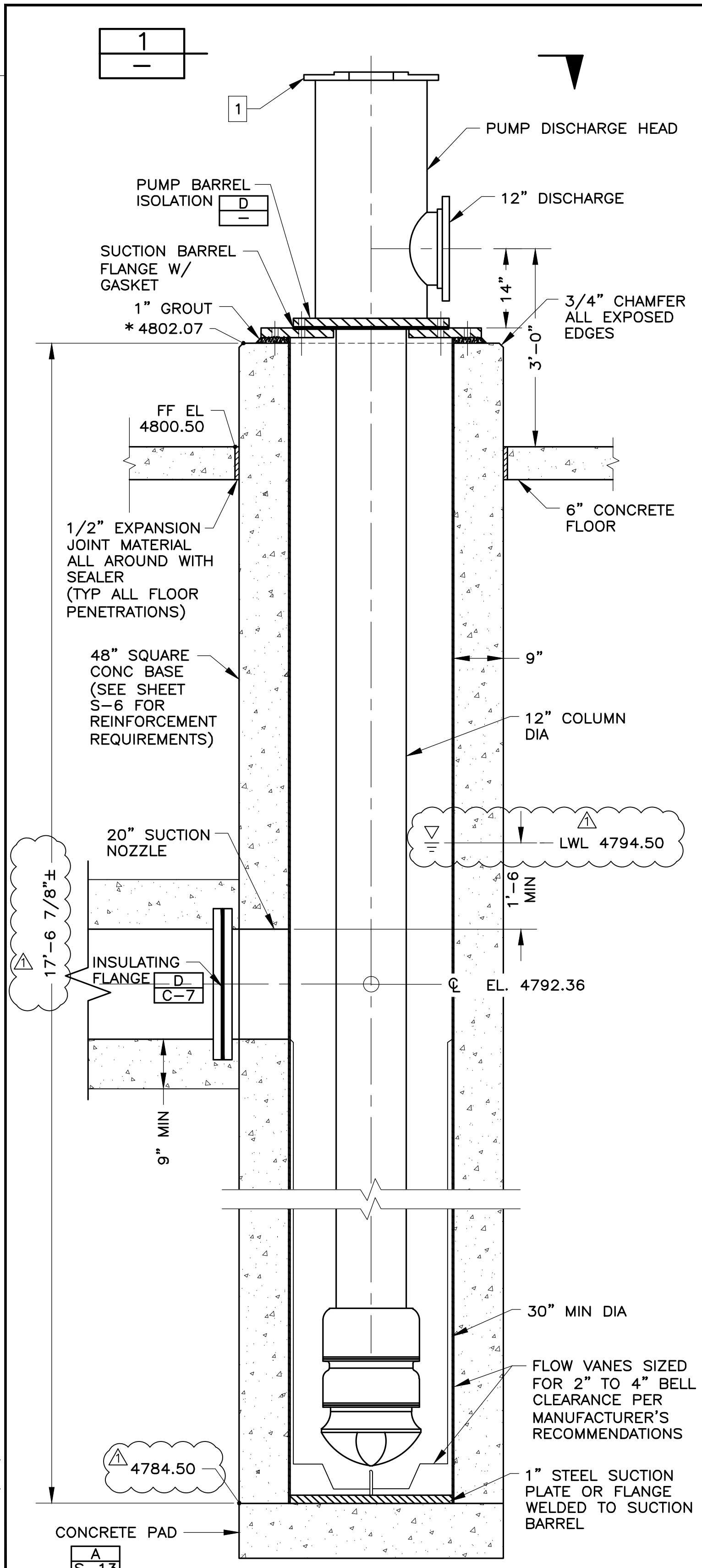
SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
CIVIL
PUMP HOUSE SECTIONS

SHEET C-4

260.42.210

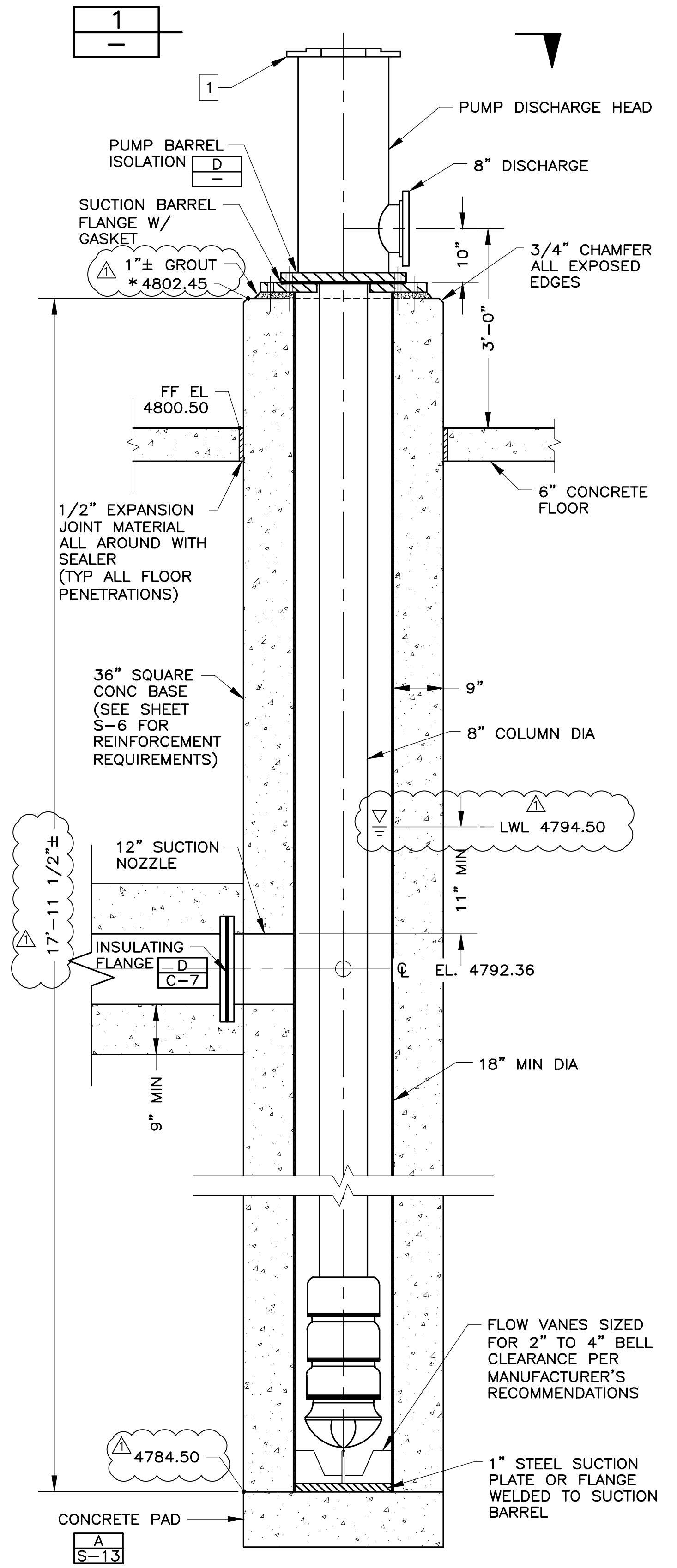
7/04



*ASSUMES 2 1/8" SOLE PLATE

P–1 | A C–4 | A S–6

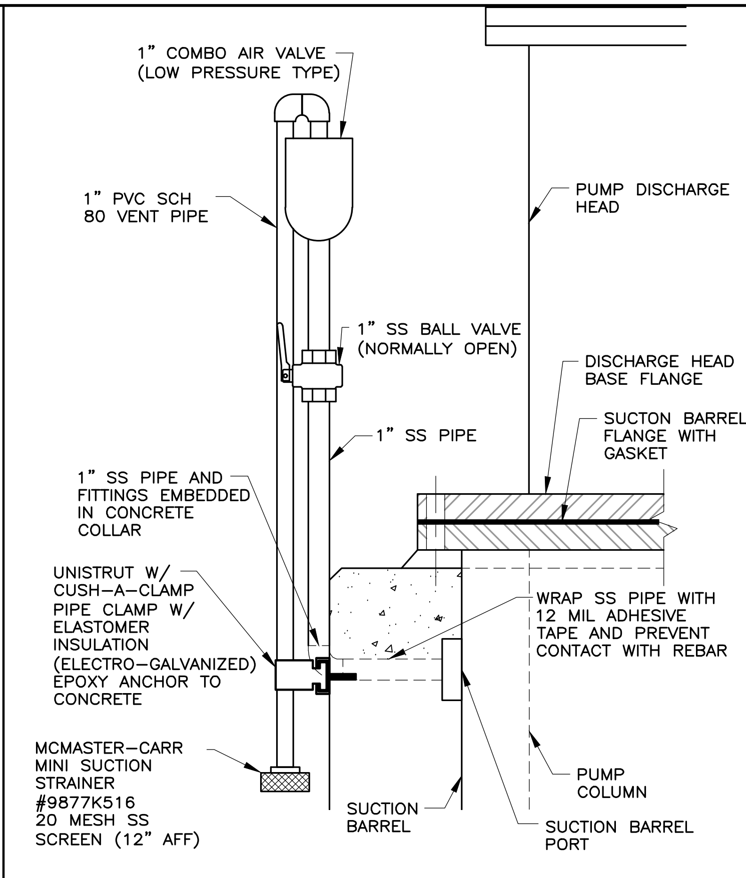
SCALE IN FEET (0 1 2)



*ASSUMES 1 1/2" SOLE PLATE

P–2 | B C–4 | B C–7 | B S–6

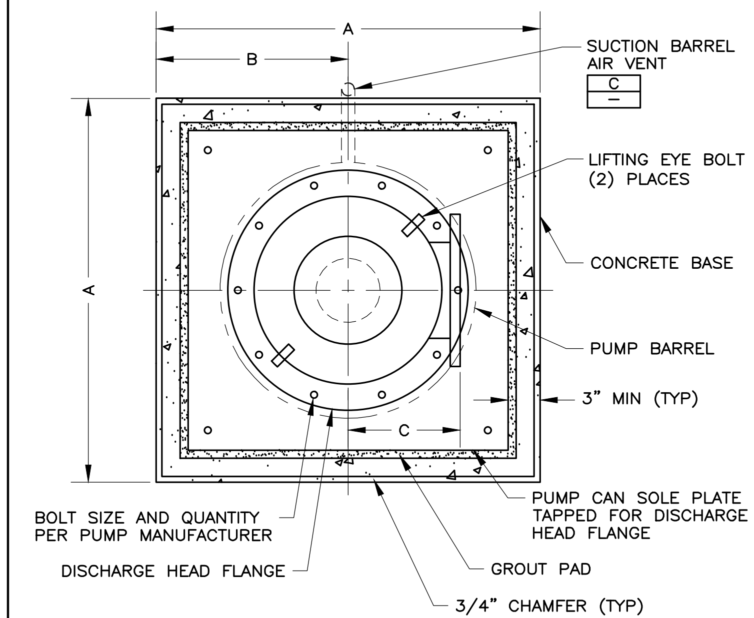
SCALE IN FEET (0 1 2)



SUCTION BARREL AIR VENT | C —

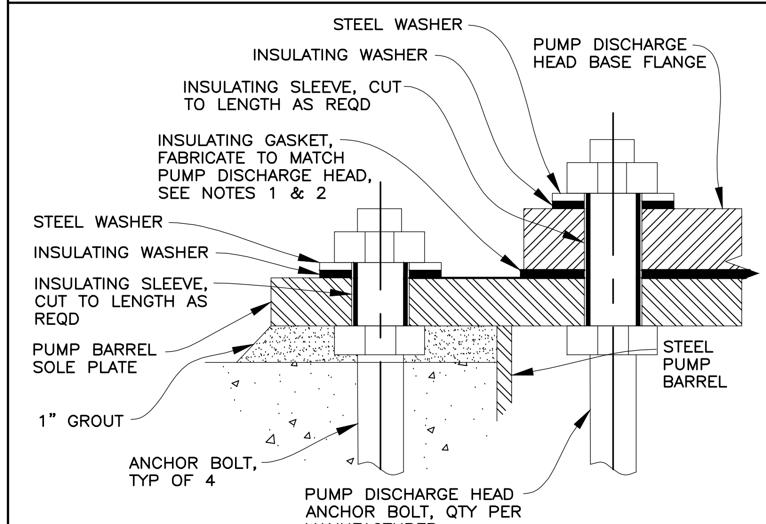
NTS

PUMPS	A	B	C
P–1	48"	24"	23"
P–2	36"	18"	15"



PUMP DISCHARGE HEAD | 1 —

NTS



DETAIL NOTES:

1. INSULATING GASKET, SLEEVES, AND WASHERS SHALL BE PHENOLIC OR G10 FIBERGLASS.
2. GASKET SHALL BE FULL FACE AND SHALL EXTEND BEYOND SOLE PLATE EDGES BY 1/8 INCH.
3. WHERE SHIMMING OF PUMP IS REQUIRED, PLACE METAL SHIMS ON TOP OF INSULATING GASKET, SHIMS SHALL HAVE A MINIMUM SURFACE AREA OF 16 SQUARE INCHES.
4. ALL METALLIC PIPE PENETRATIONS OR CONNECTIONS TO PUMP DISCHARGE HEAD OR PUMP BARREL SHALL BE ELECTRICALLY ISOLATED FROM DISCHARGE HEAD AND PUMP BARREL, PROPOSED OR EXISTING PIPE PENETRATIONS ARE NOT SHOWN.
5. CONTRACTOR TO TEST ELECTRICALLY ISOLATION OF DISCHARGE HEAD FROM PUMP BARREL.

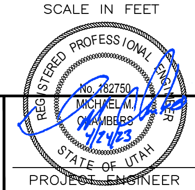
PUMP BARREL ISOLATION | D —

GENERAL SHEET NOTES:

1. DIMENSION, SIZES, STAGES, ETC. SHOWN, ARE BASED ON THE DESIGN PUMP SHOWN IN THE SPECIFICATIONS. ACTUAL PARAMETERS MAY VARY BASED ON PUMP MANUFACTURER'S PROPOSED PUMP.
2. PUMP MOUNTING SURFACE MUST BE LEVEL ENOUGH AND PUMP CAN PLUMB TO ENSURE THE SUCTION BELL CAN BE CENTERED WITHIN 2.5% OF THE SUCTION BELL DIAMETER.
3. PUMP BASE DESIGN IS BASED ON MOTOR WEIGHT OF 1800 LBS AND DISCHARGE HEAD OF 775 LBS. PUMP BASE DIMENSION MAY NEED TO BE REVISED IF MOTOR WEIGHT VARIES FROM THIS ASSUMPTION.
4. PROVIDE 1/2" ASPHALT EXPANSION JOINT BETWEEN PUMP BASE AND CONCRETE SLAB FLOOR.
5. ALL PIPING BELOW BUILDING SLAB AND FOOTING SHALL BE PRESSURE TESTED PRIOR TO ENCASING IN CONCRETE.
6. SUCTION BARREL SHALL BE 0.375 INCH MIN THICKNESS FABRICATED STEEL PER SECTION 40 05 13 13. CONTRACTOR SHALL VERIFY DIMENSIONS WITH PUMP MANUFACTURER. LINE AND COAT PUMP BARREL PER SECTION 09 90 00.
7. CONTRACTOR/PUMP MANUFACTURER SHALL CONFIRM, BEFORE BIDDING, THAT SUCTION BARREL DIMENSIONS ARE ADEQUATE AND MEETS HYDRAULIC INSTITUTE STANDARDS FOR THE PUMP BEING PROVIDED. CONTRACTOR / PUMP MANUFACTURER SHALL MAKE ANY ADJUSTMENT REQUIRED TO MEET HI STANDARDS AT NO ADDITIONAL COST TO OWNER.
8. BACKFILL AROUND PUMP CAN AND CONCRETE ENCASED PIPES WITH STRUCTURAL FILL. COMPACT TO 95% MAX DRY DENSITY (ASTM D1557).

FILE NAME: PROJECTS\260 – SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\C-5 PUMP DETAILS__R1.DWG
FILE DATE: 7.18.2023 09:32:07 (CAH)

HANSEN ALLEN & LUCE INC ENGINEERS



PROJECT ENGINEER

DESIGNED	MMC	RCC	3			
DRAFTED	CAH		2			
CHECKED	MEA	RCC	⚠1	6/9/2023	PREVIOUS BID CHANGES	CAH / MMC
DATE	MAY 2023		NO.	DATE	REVISIONS	BY / APVD.

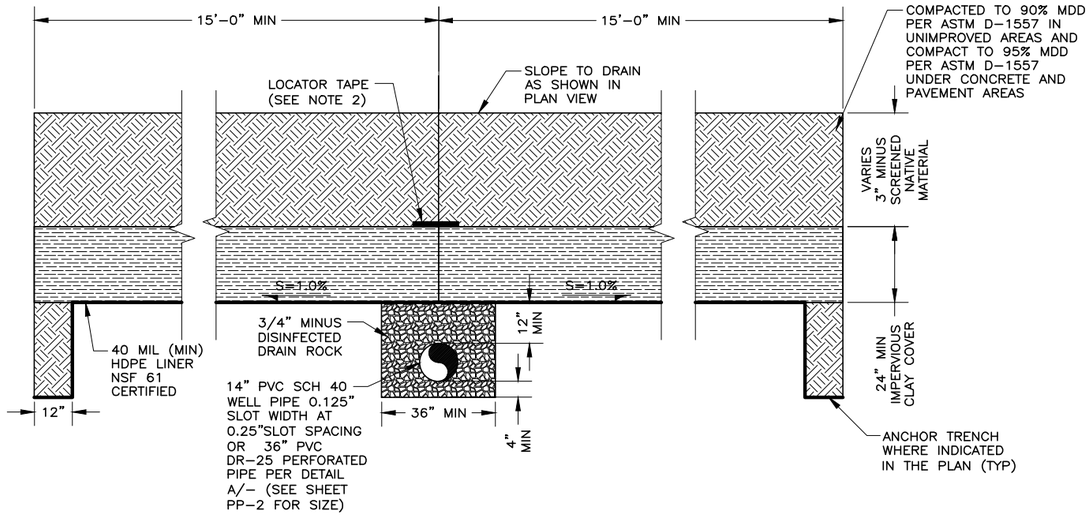
SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

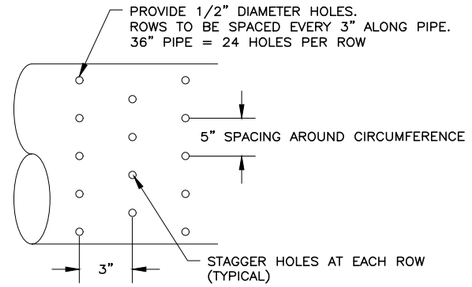
BURT SPRINGS RENOVATION
CIVIL
PUMP DETAILS

SHEET C–5
260.42.210

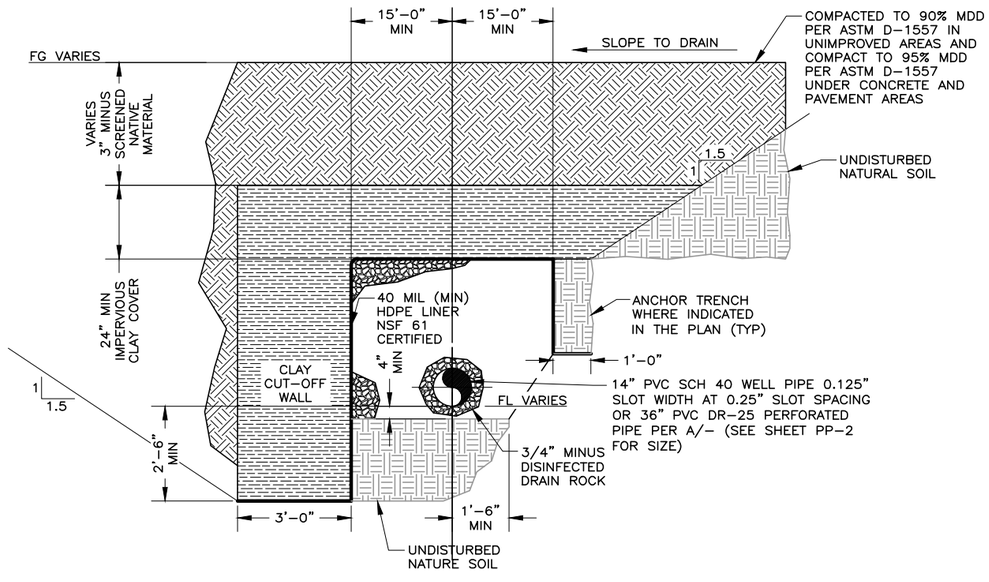
7/04



TYPICAL COLLECTION PIPE SECTION



36" PERFORATED PVC PIPE DETAIL	A	A
NTS	–	PP-2



CLAY CUT-OFF WALL DETAIL

GENERAL SHEET NOTES:

1. TRENCH DEPTH VARIES AND SHALL BE CONSTRUCTED TO ALLOW COLLECTION PIPE TO SLOPE TOWARDS THE JUNCTION BOX OR SPRING BOX AT A MINIMUM SLOPE OF 0.01 FT/FT.
2. PLACE LOCATOR TAPE BETWEEN IMPERVIOUS CLAY COVER AND NATIVE SOIL.
3. DIVERT SURFACE WATER AWAY FROM SPRING COLLECTION PIPE.
4. CLAY SHALL BE CLASSIFICATION CL ASTM 2487, HOMOGENEOUS, UNIFORM, AND FREE OF ORGANIC MATTER, FROZEN MATERIAL, DEBRIS, ROCKS AND DELETERIOUS MATERIAL.
5. FILTER FABRIC TO BE MIRAFI 180N, OR APPROVED EQUAL.
6. CLAY LAYERS TO BE PLACED AT 95% COMPACTION PER ASTM 1557 MODIFIED PROCTOR WITH ±2% OPTIMUM MOISTURE CONTENT
7. SPLICE LINER BY FOLDING OR WELDING.
8. ⚠ DEWATERING OF SITE TO BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. IF THE DEWATERING WATER CONTAINS CHLORINE, USE VITA D-CHLOR ASCORBIC ACID TABLETS OR APPROVED EQUAL, PRIOR TO DISCHARGING.
9. PIPE AND ALL OTHER MATERIALS THAT WILL BE IN CONTACT WITH SPRING WATER TO BE NSF 61 APPROVED.
10. ⚠ PIPE SHALL BE 36-INCH PVC C900 DR-25 PERFORATED PER DETAIL "A" OR 14-INCH PVC SCH 40 WELL PIPE PER SPECIFICATIONS SECTION 33 05 07.1 PARAGRAPH 2.3.
11. GRAVEL TO BE 3/4" MINUS PER SPECIFICATIONS.
12. 3/4-INCH MINUS WASHED ROCK SHALL BE DISINFECTED BY SATURATING THE ROCK IN CHLORINATED WATER WITH A FREE CHLORINE RESIDUAL OF AT LEAST 50 MGL/L. SATURATION MAY BE COMPLETE BY PLACING THE WATER IN A BEDDING OR GRAVEL BOX FOR AT LEAST 60 SECONDS. GRAVEL SHALL BE IMMEDIATELY PLACED IN THE TRENCH WHEN REMOVED FROM THE BOX.
13. CONTRACTOR SHALL KEEP ALL MATERIALS, IE. PIPE, GRAVEL, LINER, THAT WILL BE POTENTIALLY IN CONTACT WITH FINISHED DRINKING WATER CLEAN OF ANY MUD OR OTHER ORGANIC MATERIAL.

REGISTERED PROFESSIONAL ENGINEER
No. 262750
MICHAEL M. CRAIG
9/12/23
STATE OF UTAH

PROJECT ENGINEER

DESIGNED	MMC
DRAFTED	CAH
CHECKED	MEA
DATE	MAY 2023

NO.	DATE	REVISIONS	BY	APVD.
3				
2				
⚠ 1	6/9/2023	PREVIOUS BID CHANGES	CAH	MMC

SCALE
NOT TO SCALE

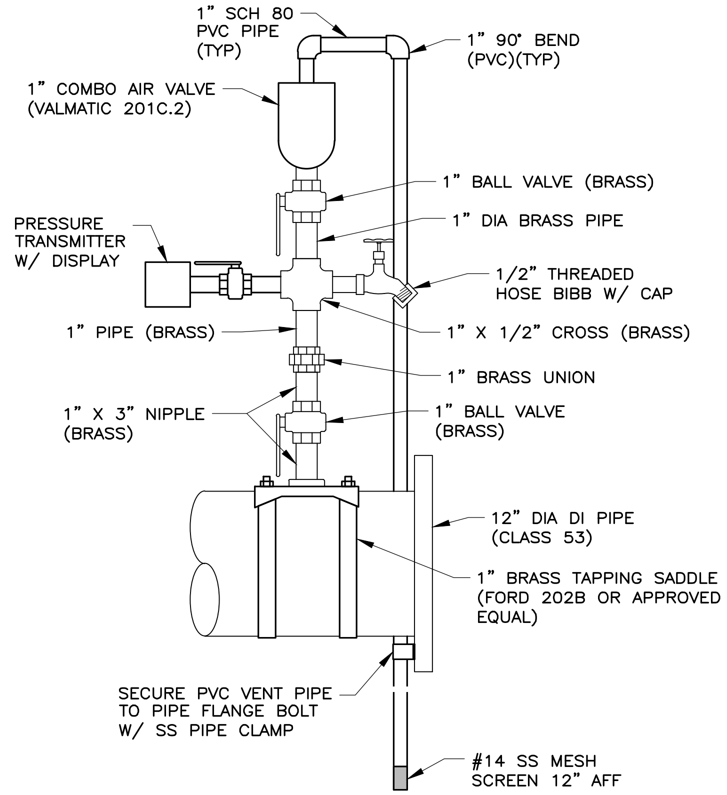
SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
CIVIL
SPRING COLLECTION PIPE DETAILS

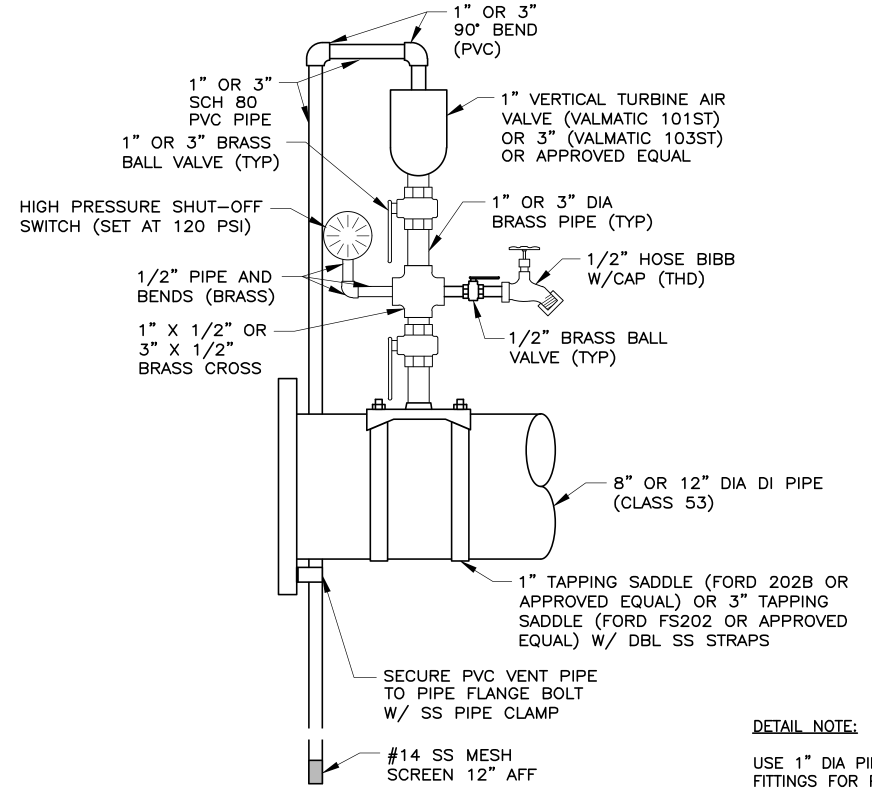
SHEET
C-6
260.42.210

FILE NAME: PROJECTS\260 SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\C-6 COLLECTION PIPE DETAIL_R1.DWG
FILE DATE: 7.18.2023 09:33:27 (CAH)

7/04



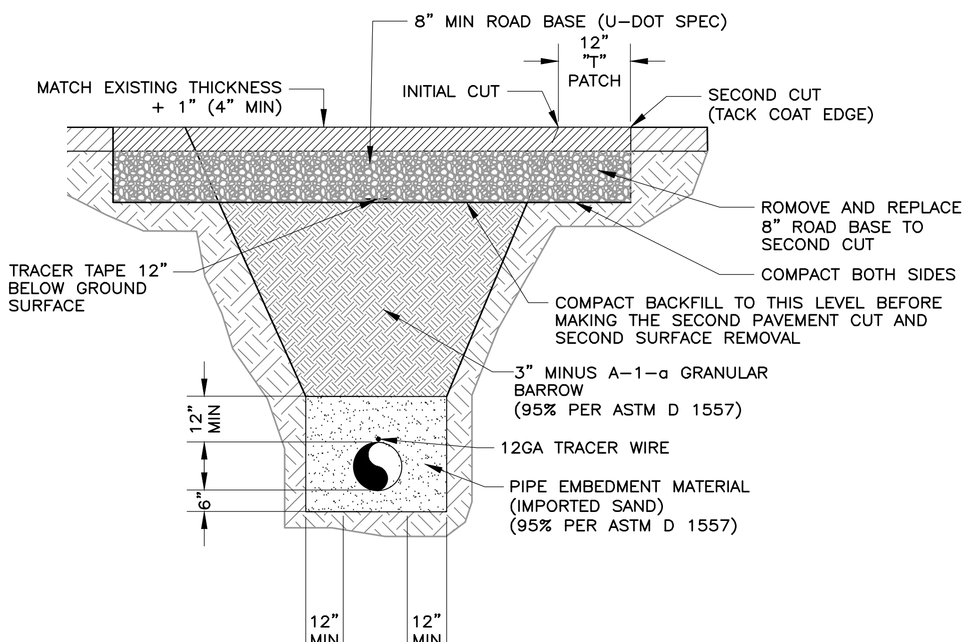
PRESSURE TRANSMITTER A / C–3



DETAIL NOTE:

USE 1" DIA PIPE AND FITTINGS FOR PUMP P–2 PIPING AND 3" DIA PIPE AND FITTINGS FOR PUMP P–1 PIPING.

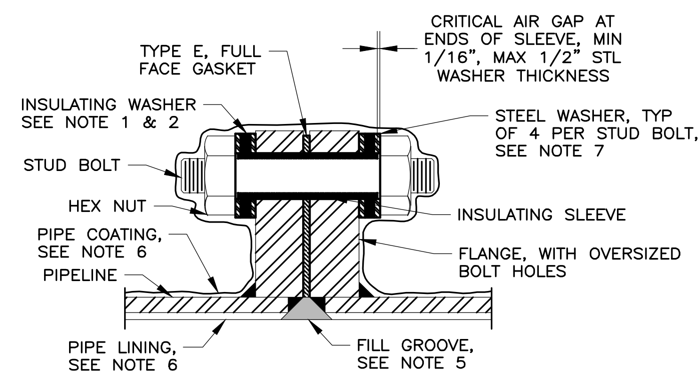
HIGH PRESSURE SHUTOFF SWITCH B / C–3, B / C–4



SECTION NOTE:

ALL DUCTILE IRON PIPE INSIDE OF / UNDER BUILDING, SHALL BE CLASS 53.

TYPICAL PRESSURE PIPE SECTION C / –



DETAIL NOTES:

1. DOUBLE INSULATING WASHER SET FOR VAULT OR EXPOSED FLANGES.
2. SINGLE INSULATING WASHER SET FOR BURIED OR SUBMERGED FLANGES, PLACE INSULATORS ON UNPROTECTED SIDE OF FLANGE.
3. TEST COMPLETED JOINT FOR ELECTRICAL ISOLATION AS SPECIFIED AND REPAIR AS REQUIRED.
4. COAT BURIED OR IMMERSED INSULATING FLANGES FOR 12–INCHES MINIMUM ON EACH SIDE OF FLANGE WITH PIPELINE DIELECTRIC JOINT COATING OR HEAT SHRINK SLEEVE.
5. FILL INTERIOR GAP BETWEEN FLANGES WITH DIELECTRIC FILLER OR SEALANT COMPATIBLE WITH SPECIFIED PIPE LINING.
6. EXTEND SPECIFIED PIPE LINING TO FACE OF FLANGE AND COAT INTERIOR OF MORTAR LINED PIPE FOR TWO PIPE DIAMETERS WITH NSF APPROVED EPOXY AT 20 MILS DFT.
7. FOR PIPE LESS THAN 36–INCHES DIAMETER, DELETE INNER STEEL WASHERS.

INSULATING FLANGE D / C–4, D / C–5

FITTING SCHEDULE

NO.	DESCRIPTION	SIZE	JOINT
1.	DIP CLASS 53 SPOOL W/ 3" SEEP RING	20"	PE X PE
2.	DIP CLASS 53 SPOOL	20"	PE X PE
3.	DI LONG SOLID SLEEVE	20"	MJ X MJ
4.	DIP CLASS 53 SPOOL W/ 3" SEEP RING	20"	FLG X PE
5.	DIP CLASS 53 SPOOL	20"	PE X PE
6.	DISMANTLING JOINT W/ SS TIE RODS	20"	FLG
7.	DI TEE	20"	MJ
8.	DI TEE	20" X 12"	MJ
9.	DI 90 DEG BEND	20"	FLG X MJ
10.	DIP CLASS 53 SPOOL W/ 3" SEEP RING AND SCREEN	20"	FLG X PE
11.	DIP CLASS 53 SPOOL	20"	FLG X PE
12.	DIP CLASS 53 SPOOL	20"	FLG X FLG
13.	DIP CLASS 53 SPOOL	12"	FLG X PE
14.	DIP CLASS 53 SPOOL W/ 3" SEEP RING	16"	PE X PE
15.	DI 90 DEG BEND	16"	MJ
16.	DIP CLASS 53 SPOOL	16"	PE X PE
17.	DIP CLASS 53 PIPE	16"	MJ
18.	DIP CLASS 53 SPOOL W/ 3" SEEP RING AND SCREEN	16"	FLG X PE
19.	DIP CLASS 53 SPOOL W/ 3" SADDLE	12"	FLG
20.	DISMANTLING JOINT W/ SS TIE RODS	12"	FLG
21.	DIP CLASS 53 SPOOL W/ 1" SADDLE	8"	FLG
22.	DISMANTLING JOINT W/ SS TIE RODS	8"	FLG
23.	DI BLIND FLANGE	12"	FLG
24.	DI TEE W/ 1" TAP	12" X 8"	FLG
25.	DIP CLASS 53 SPOOL W/ 1" TAP WHERE SHOWN	12"	FLG
26.	DI TEE	12"	FLG
27.	DI 90 DEG BEND	12"	FLG
28.	DIP CLASS 53 SPOOL	12"	FLG
29.	DIP CLASS 53 SPOOL	12"	FLG X PE
30.	DI REDUCER (RESTRAINED)	12" X 16"	MJ
31.	PVC C900 DR–18 PIPE (RESTRAIN ALL JOINTS)	16"	PO
32.	PIPE SUPPORT (SEE DETAIL A/C–8)	–	–
33.	INSULATING FLANGE (SEE DETAIL D ON THIS SHEET)	20"	–
34.	INSULATING FLANGE (SEE DETAIL D ON THIS SHEET)	12"	–

METER SCHEDULE

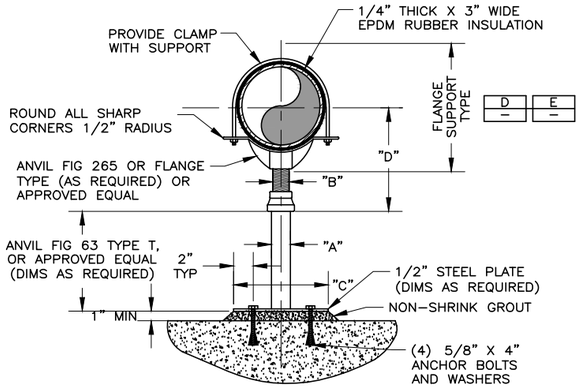
NO.	DESCRIPTION	SIZE	JOINT
M–1	MAG METER	20"	FLG
M–2	MAG METER	12"	FLG

PUMP SCHEDULE

NO.	DESCRIPTION	OUTLET SIZE	INLET SIZE	MOTOR SIZE
P–1	VERTICAL TURBINE PUMP (3,600 GPM)	12"	20"	200 HP
P–2	VERTICAL TURBONE PUMP (800 GPM)	8"	12"	40 HP

VALVE SCHEDULE

NO.	DESCRIPTION	SIZE	JOINT
V–1	BUTTERFLY VALVE W/ VALVE BOX	20"	MJ
V–2	CHECK VALVE	12"	FLG
V–3	BUTTERFLY VALVE W/ HANDWHEEL	12"	FLG
V–4	CHECK VALVE	8"	FLG
V–5	BUTTERFLY VALVE W/ HANDWHEEL	8"	FLG
V–6	BUTTERFLY VLAVE W/ HANDWHEEL	12"	FLG



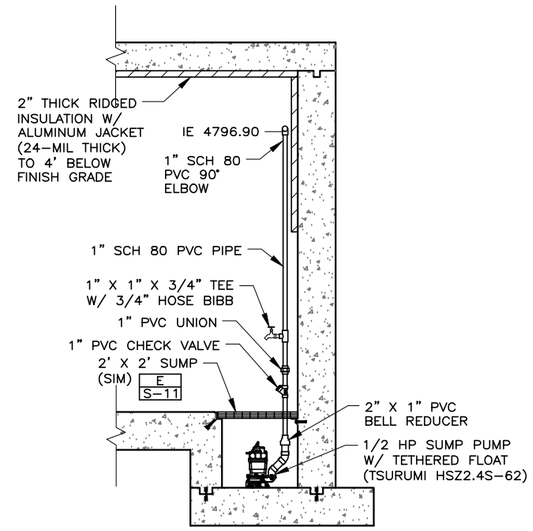
ADJUSTABLE PIPE SUPPORT SCHEDULE IN INCHES					
PIPE SIZE	"A"	"B"	"C"	"D" MIN	"D" MAX
8	3	3	8	12 1/2	16 3/4
10	4	3	8	13 3/4	18 1/4
12	5	3	10	14 5/8	19 1/8
14	5	3	10	15 13/16	20 5/16
16	5	3	10	16 13/16	21 5/16
18	6	4	10	19 1/8	23 5/8
20	8	4	14	20 1/8	24 5/8

TABLE NOTE: DIMENSIONS SHOWN ABOVE ARE MINIMUM VALUES BASED ON ANVIL FIGURE 265 AND FIGURE 63, TYPE T. VALUES MAY VARY BASED ON PIPE SUPPORT MANUFACTURER PROVIDE ON THE PROJECT.

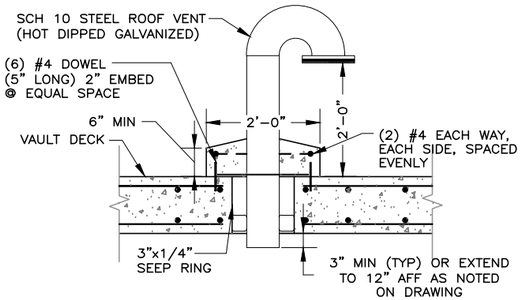
DETAIL NOTE:

ALL PIPE SUPPORTS SHALL BE HOT DIPPED GALVANIZED AFTER MANUFACTURE.

PIPE SUPPORT | A C-3 | A C-7



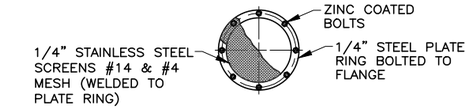
SUMP PUMP | B C-3 | B C-4



INLET VENT

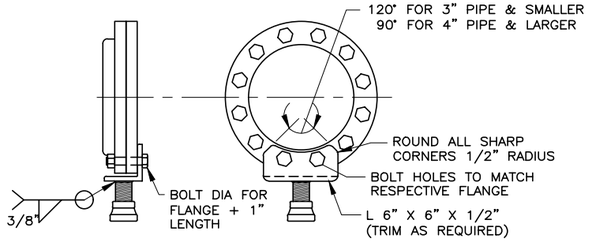
DETAIL NOTE:

DECK REINFORCEMENT NOT TO BE CUT AT VENT LOCATIONS, BARS TO BE BENT AROUND VENTS.



4" SCREENED OUTLET

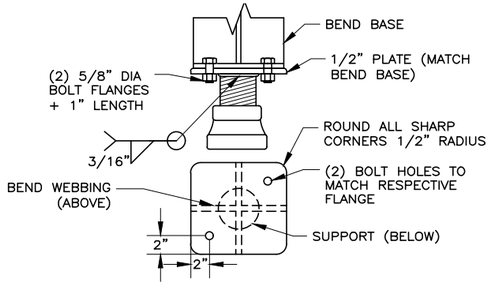
4" AIR VENT DETAIL | C C-4 | C S-9 | C S-10



DETAIL NOTE:

ALL PIPE SUPPORTS SHALL BE HOT DIPPED GALVANIZED AFTER MANUFACTURE.

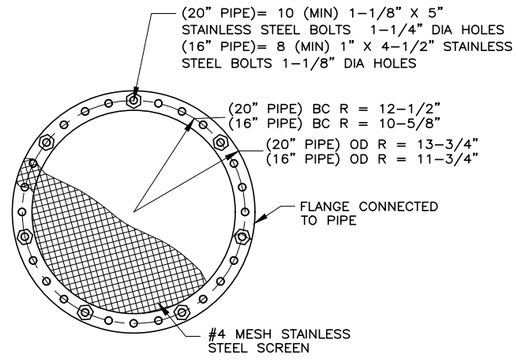
FLANGE SUPPORT | D —



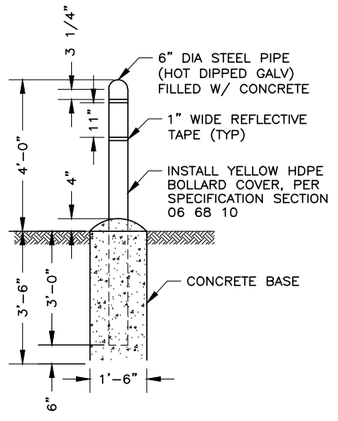
DETAIL NOTE:

ALL PIPE SUPPORTS SHALL BE HOT DIPPED GALVANIZED AFTER MANUFACTURE.

FLANGE SUPPORT | E —



16" & 20" SCREENED OUTLET DETAIL NTS | F C-3 | F C-14



TYPICAL BOLLARD NTS | G A-1 | G C-2 | G C-3

FILE NAME: PROJECTS\260 — SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\C-8 MISCELLANEOUS DETAILS.DWG
FILE DATE: 5.3.2023 11:56:41 (CAH)

7/04

HANSEN ALLEN & LUCE ENGINEERS

REGISTERED PROFESSIONAL ENGINEER — No. 7627501 — MICHAEL M. CHRISTENSEN — 5/17/23 — STATE OF UTAH
PROJECT ENGINEER

DESIGNED	MMC
DRAFTED	CAH
CHECKED	MEA
DATE	MAY 2023

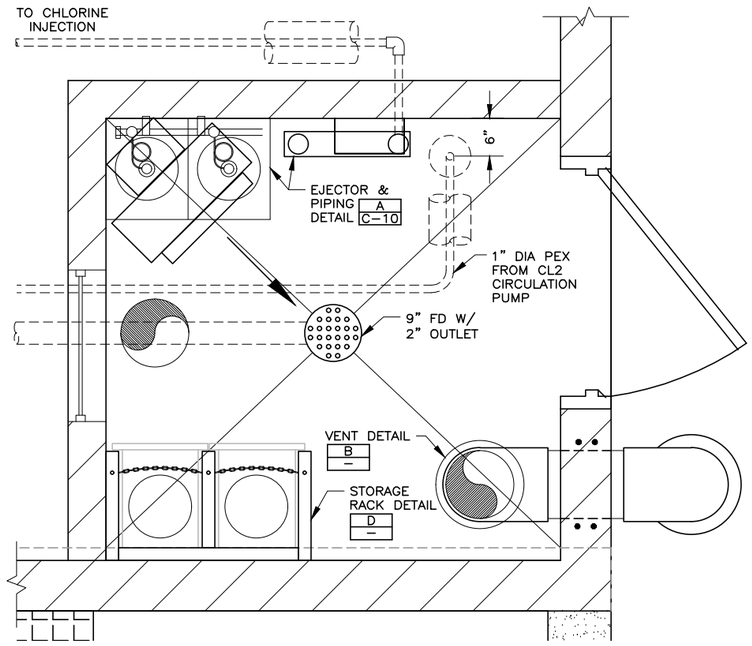
NO.	DATE	REVISIONS	BY	APVD.
3				
2				
1				

SCALE: NOT TO SCALE

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
CIVIL
MISCELLANEOUS DETAILS II

SHEET C-8
260.42.210

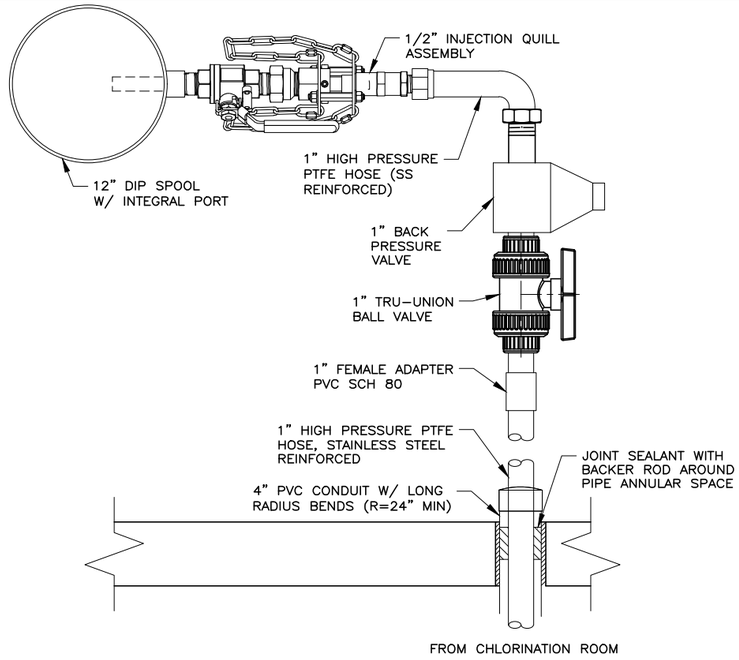


ENLARGED CHLORINE ROOM PLAN A C-3

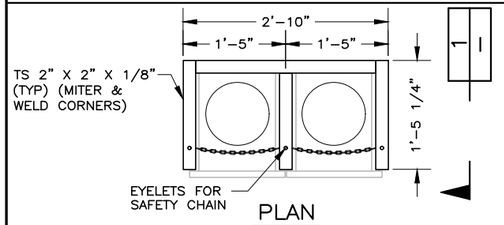
0 1 2
SCALE IN FEET

CHLORINE INJECTION FITTING SCHEDULE

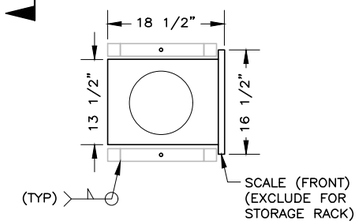
NO.	DESCRIPTION	SIZE	JOINT
1.	COPPER PIPE (TYPE K)	2"	SLDR
2.	BALL VALVE (BRONZE)	2"	THD X SLDR
3.	NIPPLE (BRONZE)	2"	THD
4.	DIELECTRIC UNION	2"	THD
5.	CROSS	2" X 2" X 1" X 1"	THD
6.	HEX REDUCER	2" X 1/2"	THD
7.	UNION	2"	THD
8.	TEE	2"	THD
9.	AIR GAP (WATTS 909-AGF)	2"	THD
10.	NIPPLE (BRONZE)	1"	THD
11.	BALL VALVE	1"	THD
12.	DIELECTRIC UNION	1"	THD
13.	CHLORINE BOOSTER PUMP	1"	THD
14.	BALL VALVE (BRONZE)	1"	THD
15.	Y-STRAINER (W/ BLOW DOWN VALVE)	1"	THD
16.	UNION	1"	THD
17.	HEX ADAPTER	1" X 1/2"	THD
18.	TEE	1"	THD
19.	CHECK VALVE (BRONZE)	1"	THD
20.	PEX	1"	FUSION
21.	MALE ADAPTER	1"	THD X SLDR
22.	BALL VALVE	1/2"	THD
23.	PRESSURE GAUGE (0-200 PSI W/ 4 1/2" FACE)	1/2"	THD
24.	AIR VAC	1/2"	THD
25.	PIPE AND FITTINGS (PVC SCH 80)	1/2"	THD
26.	HOSE BIBB	1/2"	THD



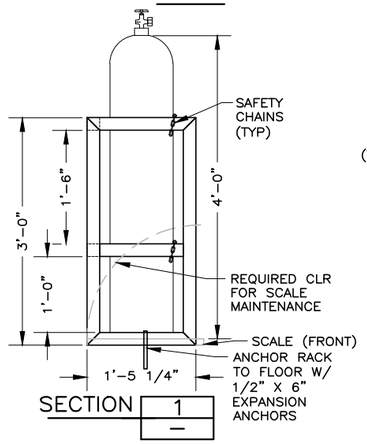
INJECTION DETAIL C C-3
NTS



PLAN



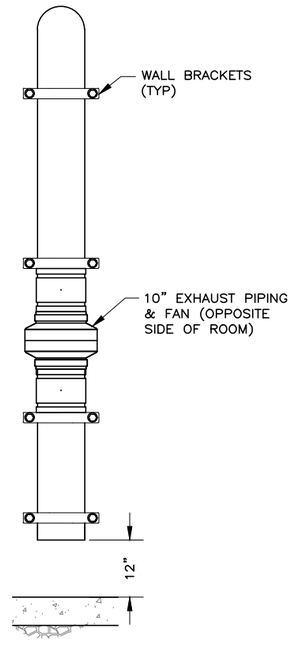
SCALE PLAN



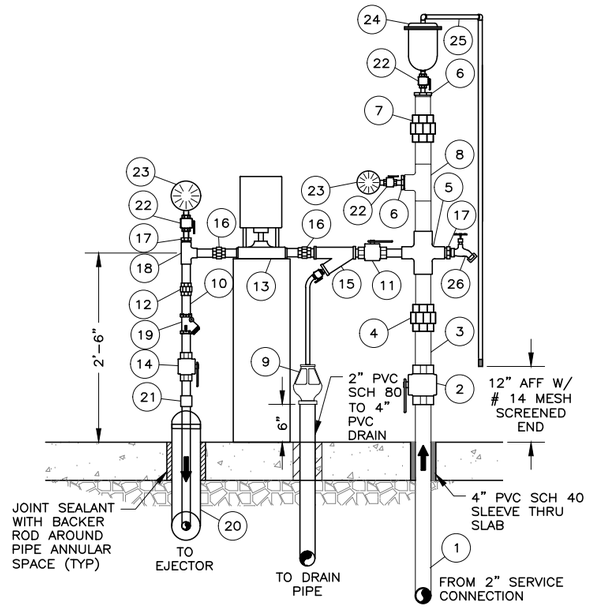
SECTION 1 —

DETAIL NOTE:
CYLINDER RACK TO BE POWDER COATED (SAFETY YELLOW) AFTER FABRICATION.

CHLORINE CYLINDER STORAGE RACK DETAIL D —
NTS



EXHAUST FAN DETAIL B —
NTS



DETAIL NOTE:
PIPING TO BE TYPE 306 SS UNLESS OTHERWISE NOTED.

CHLORINATION WATER SUPPLY BOOSTER INJECTION DETAIL F C-3
NTS

FILE NAME: PROJECTS\260 — SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\C-9 CHLORINATION DETAILS.DWG
FILE DATE: 5.1.2023 10:50:39 (CMH)

HANSEN ALLEN & LUCE, INC. ENGINEERS

PROFESSIONAL ENGINEER No. 752750 MICHAEL E. ALLEN STATE OF UTAH 5/1/23

PROJECT ENGINEER

DESIGNED	MMC	3					
DRAFTED	DD	2					
CHECKED	MEA	1					
DATE	MAY 2023	NO.	DATE	REVISIONS		BY	APVD.

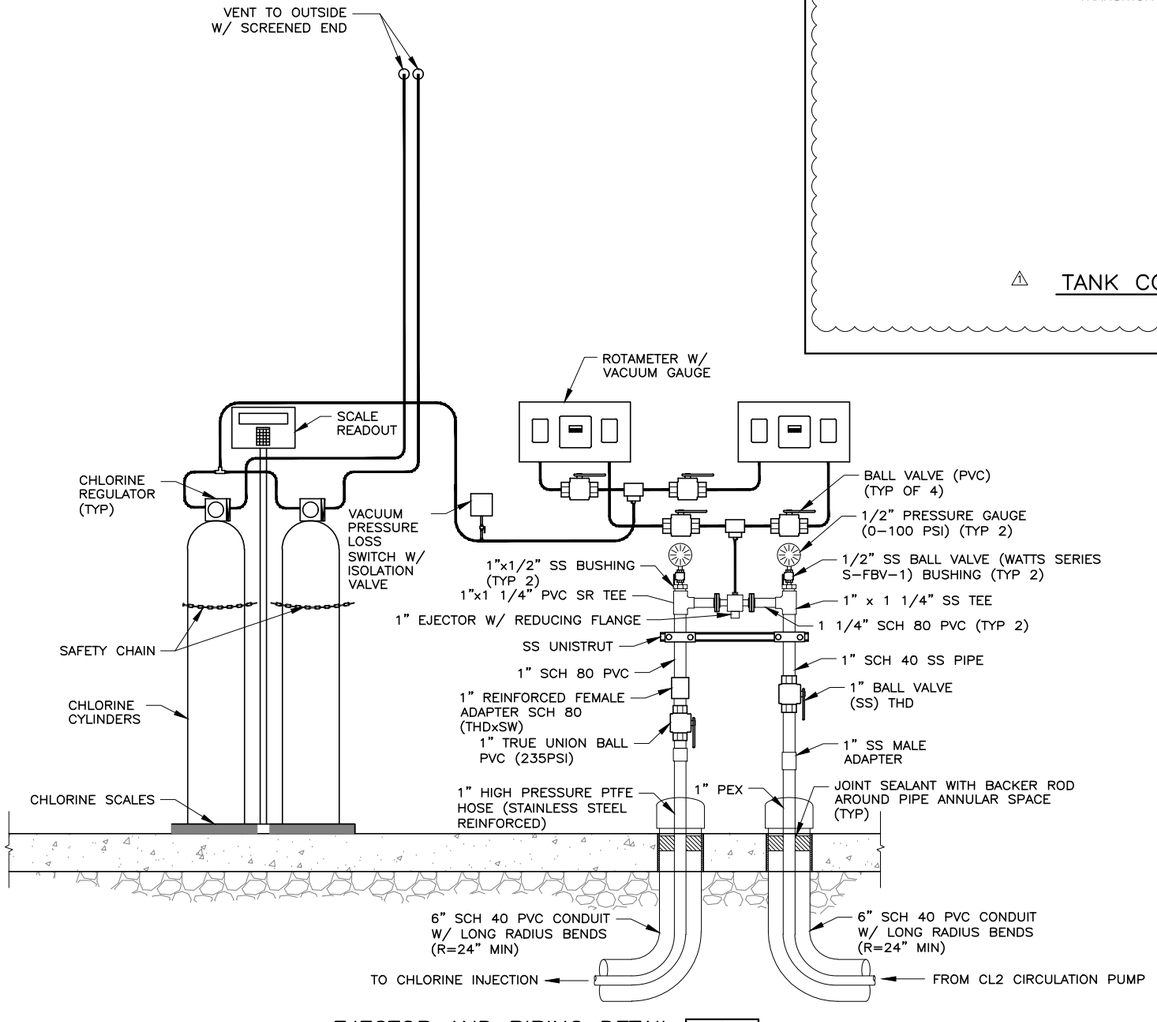
SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

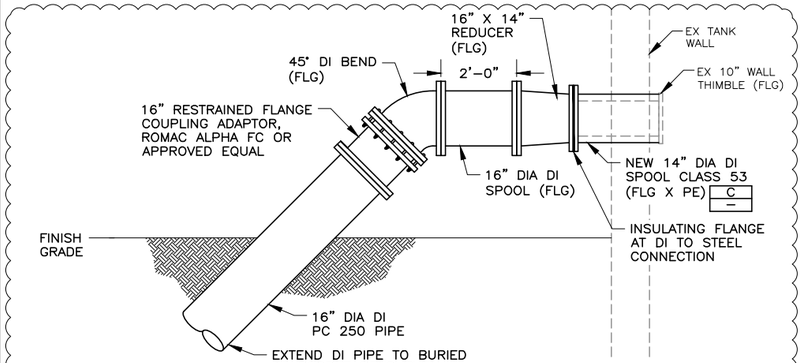
BURT SPRINGS RENOVATION
CIVIL
CHLORINATION DETAILS

SHEET C-9
260.42.210

7/04



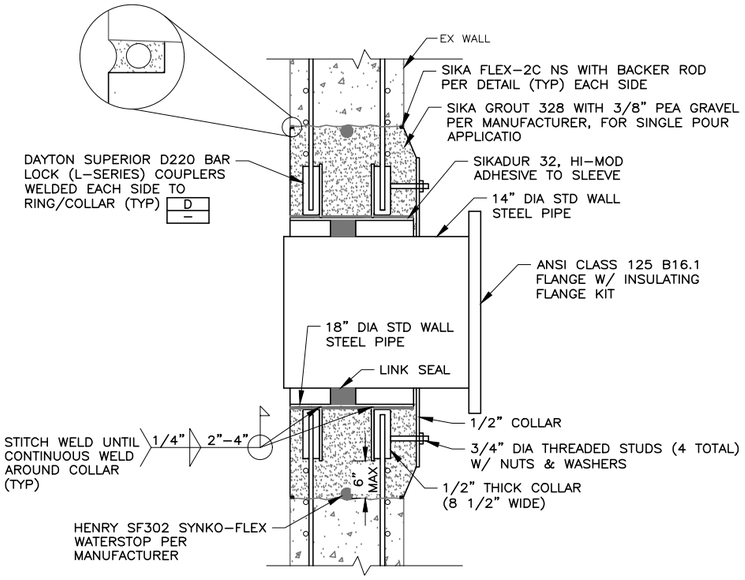
EJECTOR AND PIPING DETAIL — A / C-9
NTS



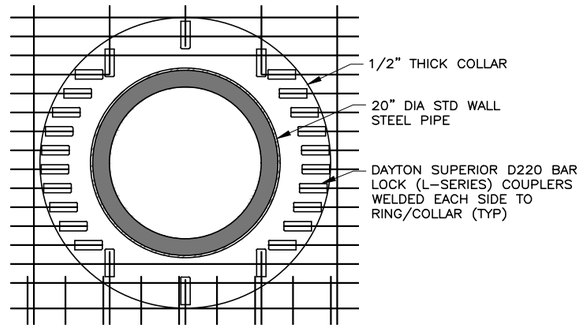
DETAIL NOTES:

1. CONTRACTOR SHALL VERIFY ALL ELEVATIONS, SIZES, PIPES ETC. PRIOR TO PURCHASING MATERIALS. NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. EXPOSED DI PIPE SHALL BE COATED PER SYSTEM #7 AND BURIED DI PIPE SHALL BE COATED PER SYSTEM #8 AND POLY WRAPPED.
3. THE DI REDUCER, SPOOL AND 45 DEGREE BEND MAY BE REPLACED WITH EPOXY LINED AND COATED STD WALL STEEL PIPE.

⚠ TANK CONNECTION — B / PP-1
NTS



⚠ CONNECTION DETAIL — C / —
NTS



⚠ CONNECTION COUPLER LOCATION — D / —
NTS

FILE NAME: PROJECTS\260 - SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\C-10 CHLORINATION DETAILS_R1.DWG
FILE DATE: 7.18.2023 09:34:23 (CAH)

HANSEN ALLEN & LUCE ENGINEERS

REGISTERED PROFESSIONAL ENGINEER — No. 182750 — MICHEL A. MIBBS — 7/12/23 — STATE OF UTAH
PROJECT ENGINEER

DESIGNED	MMC	3			
DRAFTED	CAH	2			
CHECKED	MEA	⚠ 1	6/9/2023	PREVIOUS BID CHANGES	CAH / MMC
DATE	MAY 2023	NO.	DATE	REVISIONS	BY / APVD.

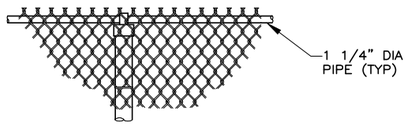
SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

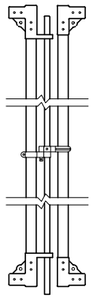
BURT SPRINGS RENOVATION
CIVIL
CHLORINATION & TANK DETAILS

SHEET: C-10
260.42.210

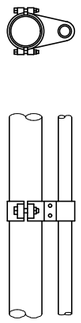
7/04



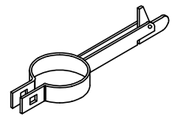
TWISTED & BARBED SELVAGE
TYPE II



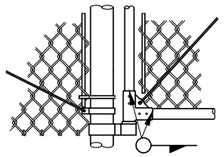
DROP ROD ASSEMBLY



TOP GATE HINGE

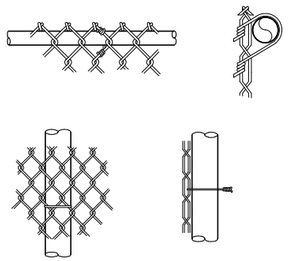


GATE KEEPER

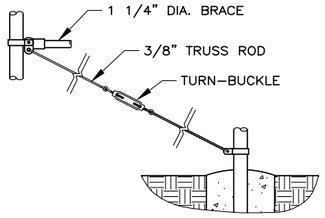


BOTTOM GATE HINGE AND GATE DETAIL

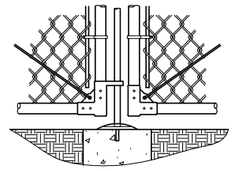
TYPE III



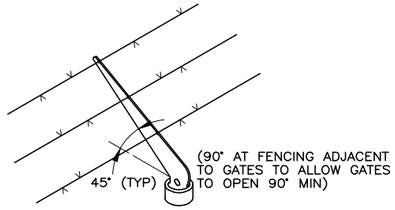
PIPE POST TIE



BRACE AND TRUSS CONNECTIONS



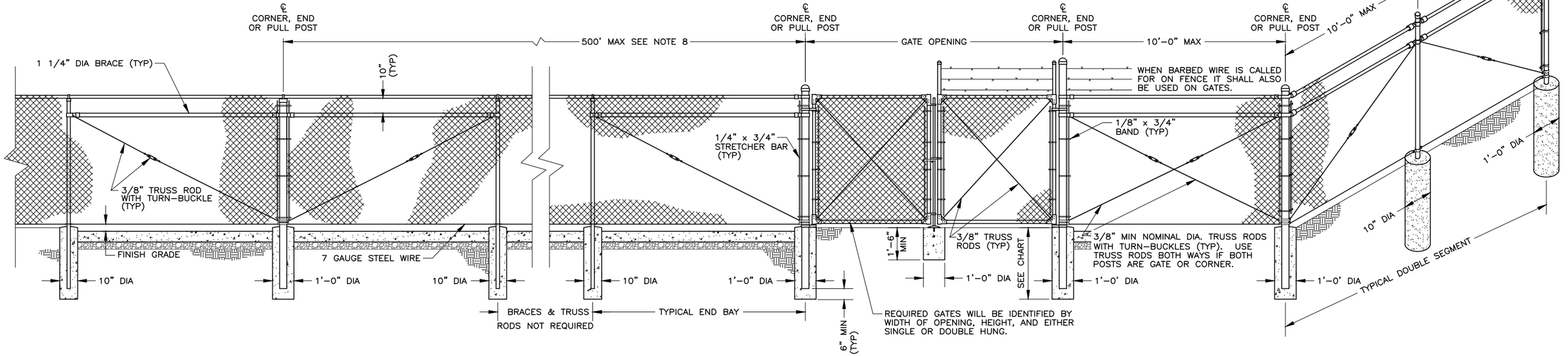
CENTER GATE STOP AND GATE DETAIL



COMBINATION CAP AND BARBED WIRE SUPPORTING ARM

GENERAL NOTES:

1. MATERIALS, CONSTRUCTION, AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH PROJECT STANDARD SPECIFICATIONS AND INSTALLED PER THE MANUFACTURER'S REQUIREMENTS.
2. USE TYPE II TOP SUPPORT (TWISTED & BARBED SELVAGE).
3. BARB WIRE SHALL BE USED ONLY WHEN DESIGNATED ON THE PLANS OR IN THE SPECIFICATIONS.
4. TWISTED AND BARBED SELVAGE TOP AND BOTTOM SHALL BE USED ON FENCES 5–FEET HIGH OR GREATER.
5. KNUCKLED SELVAGE ON TOP AND TWISTED AND BARBED ON BOTTOM SHALL BE USED ON FENCES LESS THAN 5–FEET.
6. ALL STEEL PIPE MEMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION A 120 SCHEDULE 40 HOT DIPPED ZINC COATED HIGH TENSILE STEEL PIPE OR TRIPLE COATED PIPE MADE FROM STEEL CONFORMING TO ASTM 569.
7. POSTS SHALL BE STEEL SCHEDULE 40 PIPE OR TRIPLE COATED HIGH TENSILE STEEL PIPE OF THE SIZE SHOWN IN THE CHART. WEIGHT IN POUNDS PER FOOT WITH A TOLERANCE OF 5%.
8. LINE POSTS SHALL BE LOCATED AT EQUAL SPACING FOR EACH SEGMENT WITH A MAXIMUM SPACING AS FOLLOWS:
   A. TANGENT SECTIONS TO 500–FOOT RADIUS NOT MORE THAN 10–FEET.
   B. UNDER 500–FOOT RADIUS TO 200–FOOT RADIUS NOT MORE THAN 8–FEET.
   C. UNDER 200–FOOT RADIUS TO 100–FOOT RADIUS NOT MORE THAN 6–FEET.
   D. UNDER 100–FOOT RADIUS NOT MORE THAN 5–FEET.
9. TRUSS RODS AND BRACES SHALL NOT BE REQUIRED FOR FABRIC HEIGHT LESS THAN 5–FEET.
10. TENSION WIRE SHALL BE 7 GAUGE ZINC COIL SPRING STEEL TENSION WIRE.
11. ALL PIPES, WIRES AND FABRICS TO BE GALVANIZED.



HEIGHT	GATE OPENING	GATE POST	GATE FRAME
UNDER 6 FEET	SINGLE TO 6' OR DOUBLE TO 12'	2"	1"
	SINGLE OVER 6' TO 8' OR DOUBLE OVER 12' TO 16'	2 1/2"	1 1/2"
	SINGLE OVER 8' TO 12' OR DOUBLE 16' TO 24'	3 1/2"	
6 FEET AND OVER	SINGLE OVER 6' OR DOUBLE TO 12'	2 1/2"	1 1/2"
	SINGLE OVER 6' TO 12' OR DOUBLE OVER 12' TO 24'	3 1/2"	
	SINGLE OVER 12' TO 18' OR DOUBLE OVER 24' TO 36'	6"	
	SINGLE OVER 18' OR DOUBLE OVER 36'	8"	

HEIGHT OF FABRIC	DEPTH OF POSTS	LENGTH OF END, CORNER OR PULL POST	LENGTH OF LINE POST HOLES	SIZE OF POSTS							
				END, CORNER, & PULL POSTS				LINE POST MIN SIZE			
				NOM. SIZE	OUTSIDE DIA.	PIPE WEIGHT ASTM A–120	PIPE WEIGHT TRIPLE COATED	NOM. SIZE	OUTSIDE DIA.	PIPE WEIGHT ASTM A–120	PIPE WEIGHT TRIPLE COATED
7'	3'	10'	9'–8"	2 1/2"	2.875"	5.79	4.64	2"	2.375"	3.65	3.11
6'	3'	9'	8'–8"	2 1/2"	2.875"	5.79	4.64	2"	2.375"	3.65	3.11
5'	3'	8'	7'–8"	2"	2.375"	3.65	3.11	1 1/2"	1.900"	2.72	2.23
4'	3'	6'	5'–8"	2"	2.375"	3.65	3.11	1 1/2"	1.900"	2.72	2.23
3'	3'	5'	4'–8"	2"	2.375"	3.65	3.11	1 1/2"	1.900"	2.72	2.23

REGISTERED PROFESSIONAL ENGINEER
No. 452750
RICHARD M. WHITAKER
7/24/23
STATE OF UTAH
PROJECT ENGINEER

HANSEN ALLEN & LUCE, Inc.
ENGINEERS

DESIGNED	MMC	3			
DRAFTED	CAH	2			
CHECKED	MEA	1			
DATE	MAY 2023	NO.	DATE	REVISIONS	BY APVD.

SCALE: NOT TO SCALE

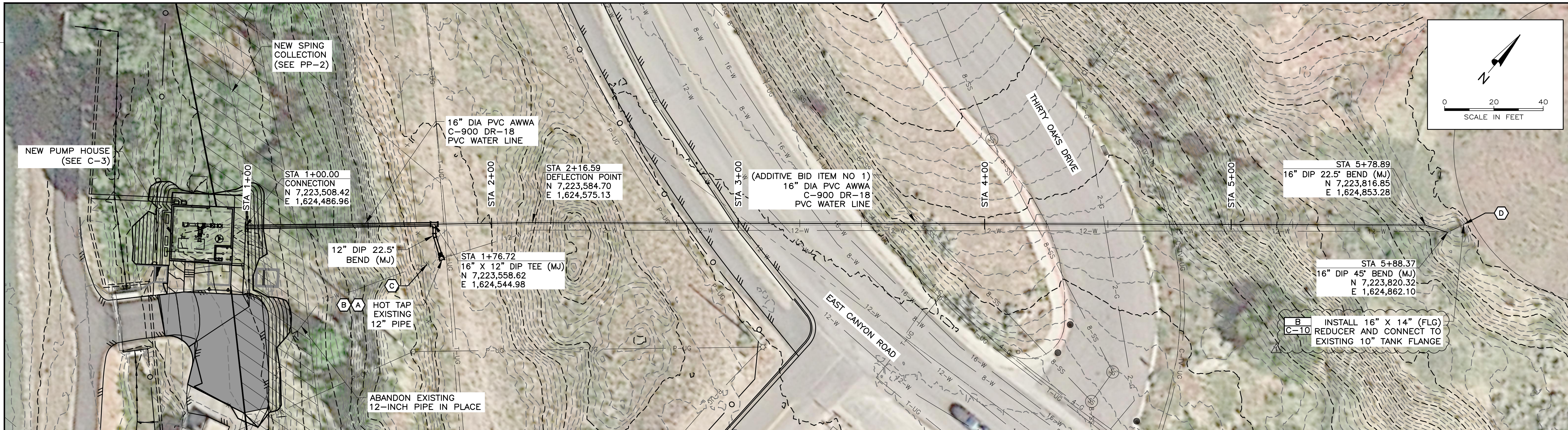
SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
CIVIL
CHAIN LINK FENCING DETAILS

SHEET C–11
260.42.210

FILE NAME: PROJECTS\260_SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\C-11 CHAIN LINK FENCING DETAILS.DWG
FILE DATE: 6.1.2023 11:37:54 (CAH)

7/04



GENERAL NOTES:

1. PROVIDE JOINT RESTRAINTS AT ALL WATERLINE BENDS AND CONNECTIONS.
2. RESTRAIN ALL JOINTS AND FITTINGS ON NEW 16-INCH PVC C900 DR18 WATERLINE.
3. INSTALL 16-INCH PIPELINE PER TYPICAL PRESSURE PIPE SECTION ON SHEET C-7.

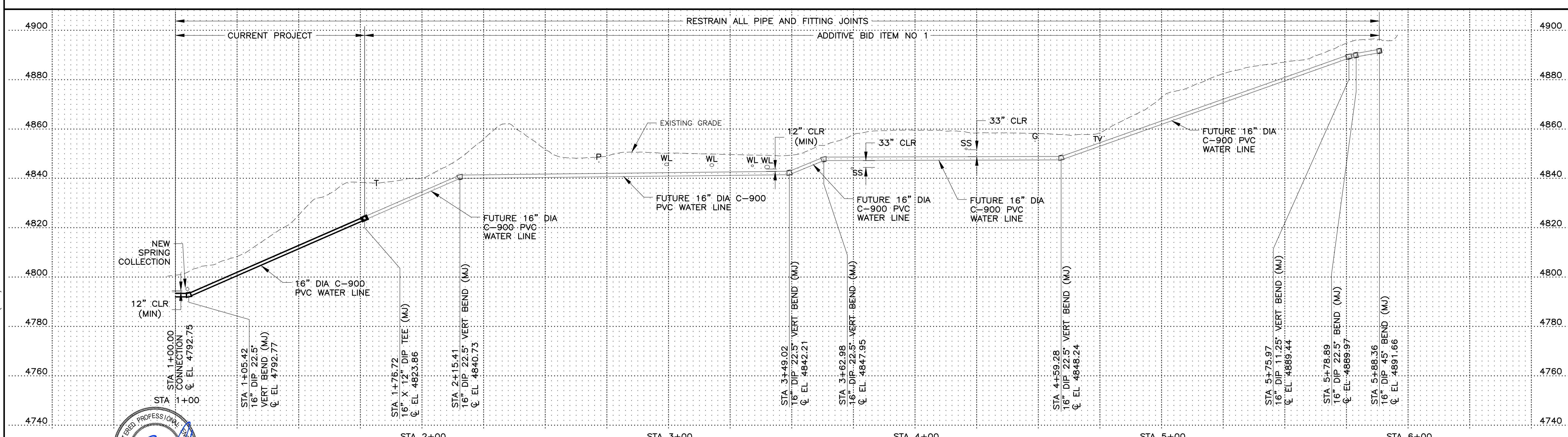
KEY NOTES:

(A) POTHOLE EXISTING 12-INCH WATERLINE TO DETERMINE EXACT LOCATION AND MATERIAL PRIOR TO BEGINNING WORK. FIELD COORDINATE WITH OWNER AND ENGINEER ANY ADJUSTMENTS REQUIRED TO PROPOSED CONNECTION LOCATION OR ELEVATION OF NEW PIPELINE.

(B) HOT TAP EXISTING 12-INCH PIPELINE AND INSTALL A 12-INCH GATE VALVE (MJ X FLG).

(C) AFTER COMPLETION AND STARTUP OF NEW PUMP STATION, CUT EXISTING 12-INCH PIPE AND INSTALL A MJ CAP WITH JOINT RESTRAINT AND THRUST BLOCK.

(D) CONTRACTOR SHALL VERIFY LOCATION, SIZE, AND ELEVATION OF EXISTING TANK CONNECTION PRIOR TO PURCHASING MATERIAL.



FILE NAME: PROJECTS\260 - SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\PP-1 16 INCH PIPE_R1.DWG
FILE DATE: 7.18.2023 09:35:48 (CAH)

HANSEN ALLEN & LUCE INC ENGINEERS

REGISTERED PROFESSIONAL ENGINEER No. 182750 MICHAEL M. CHAMBERS 4/24/23 STATE OF UTAH

PROJECT ENGINEER

		NO.	DATE	REVISIONS	BY	APVD.
DESIGNED	MCC	3				
DRAFTED	JRB	2				
CHECKED	MEA	1	6/09/23	PREVIOUS BID CHANGES	JRB	MMC
DATE	MAY 2023					

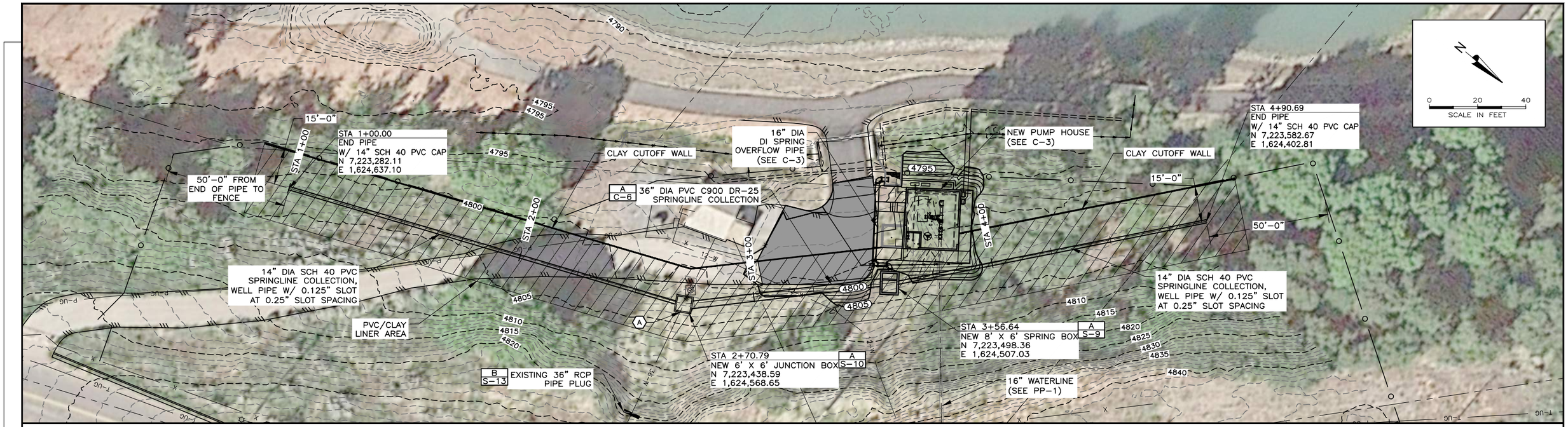
SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
PLAN & PROFILE - 16 INCH PIPE
STA. 1+00 TO STA. 5+88.36

SHEET PP-1
260.42.210

7/04

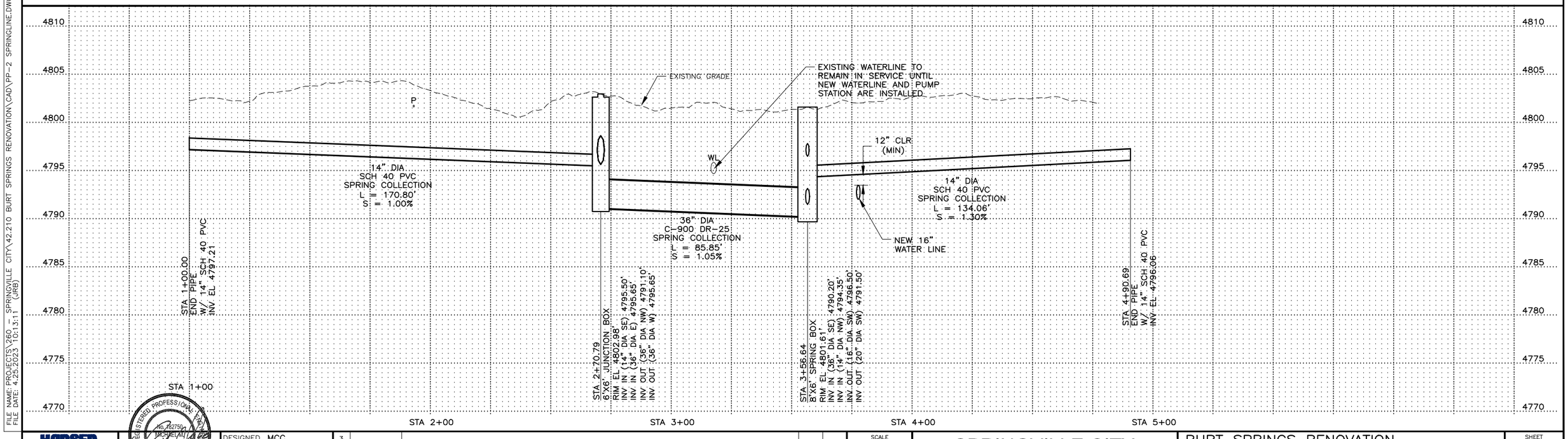


GENERAL NOTES:

1. ALL SPRING COLLECTION PIPE, FITTINGS, AND MATERIALS SHALL BE NSF 61 CERTIFIED.
2. PVC PRIMER AND SOLVENT SHALL BE NSF 61 CERTIFIED.
3. EXISTING SPRING COLLECTION PIPE AND JUNCTION BOX MUST REMAIN IN SERVICE UNTIL THE NEW JUNCTION BOX, SPRING BOX, BYPASS PIPE, AND OVERFLOW STRUCTURE HAVE BEEN COMPLETED AND TESTED.
4. COORDINATE WITH OWNER AND ENGINEER PRIOR TO REMOVING ANY TREES. SPRING COLLECTION PIPE MAY BE ADJUSTED, IF POSSIBLE, TO AVOID TREE REMOVAL.
5. INSTALL SPRING COLLECTION PIPE AND CLAY CUTOFF WALL PER TYPICAL DETAILS ON SHEET C-6.

KEY NOTES:

(A) CAST NEW COLLECTION BOX CONCRETE AROUND EXISTING 36-INCH RCP SPRING COLLECTION PIPE. WET CUT 36-INCH RCP WITH DIAMOND WIRE SAW AFTER COMPLETION OF NEW COLLECTION PIPE AND BYPASS PIPE.



FILE NAME: PROJECTS\260 - SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\PP-2 SPRINGLINE.DWG
FILE DATE: 4.25.2023 10:13:11 (JRB)

HANSEN ALLEN & LUCE inc ENGINEERS

REGISTERED PROFESSIONAL ENGINEER No. 762750 MICHAEL C. ANDERSEN STATE OF UTAH

PROJECT ENGINEER

DESIGNED	MCC	3				
DRAFTED	JRB	2				
CHECKED	MEA	1				
DATE	MAY 2023	NO.	DATE	REVISIONS	BY	APVD.

SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
PLAN & PROFILE – SPRINGLINE COLLECTION
STA 1+00 TO STA 4+90.69

SHEET: PP-2
260.42.210

7/04

GENERAL STRUCTURAL NOTES

GENERAL NOTES:

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

DESIGN CRITERIA

1.	RISK CATEGORY:	II
2.	IMPORTANCE FACTOR, I_e :	1.00
3.	IMPORTANCE FACTOR, I_e :	1.00
4.	WIND SPEED (3 SECOND GUST):	105 MPH;
	EXPOSURE:	"C"
5.	SEISMIC DESIGN CATEGORY: "D"	
	SITE CLASS:	"D"
	Ss :	1.292g
	Fa:	1.2
	Sds:	1.034g
	S1:	0.489g
	Fv:	NULL
	Sd1 :	NULL
	R:	5
	Ωo:	2.5
	Cd:	3.5
6.	ROOF DEAD LOAD:	20 PSF
7.	GROUND SNOW LOAD (Pg):	43 PSF
8.	ROOF LIVE/SNOW LOAD (Ps):	30.1 PSF
9.	ROOF LIVE/SNOW LOAD (UNBALANCED)	43 PSF
10.	SOILS REPORT PROVIDED BY:	AGEC, INC #1150617
	ALLOWABLE SOIL BEARING PRESSURE:	1500 PSF
	COEFFICIENT OF FRICTION (u):	0.35
	AT-REST PRESSURE:	65 pcf
	SEISMIC INCREASE:	+15 pcf (80 pcf total)
	ACTIVE PRESSURE:	50 pcf
	SEISMIC INCREASE:	+30pcf (80 pcf total)
	PASSIVE PRESSURE:	250 pcf
	SEISMIC DECREASE:	-30 pcf (220 pcf total)

STRUCTURAL NOTES:

REINFORCED CONCRETE:

1. ALL CONCRETE CONSTRUCTION, INCLUDING BENDING OF BARS, SHALL COMPLY WITH ACI "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318).
2. UNLESS CALLED OUT OTHERWISE ON THE PLANS, MINIMUM REINFORCEMENT OF CONCRETE FOR PUMP STATION WORK SHALL BE:
   WALLS:
   8" THICK OR LESS - USE #5 @ 16" E.W.
   9" OR THICKER - USE #5 @ 12" E.W., E.F.
   SLABS:
   8" THICK OR LESS - USE #4 @ 16" E.W.
3. ALL WALL REINFORCEMENT AT CORNERS OR JUNCTIONS OF WALLS SHALL BE CONTINUOUS, LAPPED, OR TERMINATED IN A STANDARD 90 DEGREE HOOK. LAP SPLICES SHALL CONFORM WITH NOTE 6.
4. UNLESS SHOWN OTHERWISE ALL BARS SHALL BE DOWELED. DOWELS SHALL BE THE SAME SIZE AND SPACING AS THE REINFORCEMENT WHICH IS TO BE SPLICED TO THE DOWELS.
5. ALL REINFORCING BARS SHALL BE GRADE 60 AND SHALL CONFORM TO ASTM A-615, CURRENT REVISION. REINFORCING STEEL SHALL BE NEW AND FREE FROM RUST, OIL OR OTHER BOND INHIBITOR.
6. ALL CONTINUOUS REINFORCING BARS SHALL LAP AT LEAST 40 BAR DIAMETERS. SPLICES SHALL BE MADE AWAY FROM POINTS OF MAXIMUM STRESS. MINIMUM LAP SHALL BE 18 IN.
7. CONCRETE COVER OVER REINFORCEMENT SHALL BE AS FOLLOWS:
   7.1. SURFACE NOT EXPOSED DIRECTLY TO THE GROUND, WATER OR WEATHER AFTER FORM REMOVAL:
   CONCRETE SLABS IN BUILDINGS - - - - - 3/4"
   7.2. CONCRETE SLABS IN WATER BEARING SURFACES EXPOSED DIRECTLY TO THE GROUND, WATER OR WEATHER AFTER FORM REMOVAL:
   FOR #5 BARS OR SMALLER- - - - - 1-1/2"
   FOR #6 BARS OR LARGER- - - - 2"
   7.3. CONCRETE PLACED DIRECTLY AGAINST GROUND - - - - 3"
   7.4. REINFORCEMENT SHALL BE PLACED WITHIN A TOLERANCE OF ±1/4" OF POSITION SPECIFIED.
8. CONCRETE CURING SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. SOME CONCRETE WORK REQUIRES WATER CURING, AS MEMBRANE CURING IS NOT ALLOWED. CONTRACTOR IS WARNED THAT WATER CURING IS DIFFICULT AT TIMES DUE TO WIND AND DRY CONDITIONS. CONTRACTOR SHALL STUDY REQUIREMENTS AND SHALL FURNISH ADEQUATE SYSTEMS TO PROVIDE WATER CURING WHERE REQUIRED. TOP OF WALLS SHALL BE KEPT VISIBLY MOIST AT ALL TIMES AND SHALL BE FLOODED NOT LESS THAN THREE TIMES DAILY.
   A. FOR POURING CONCRETE DURING COLD WEATHER:
      1. FOLLOW RECOMMENDATIONS CONTAINED IN PUBLICATION ACI 306R "COLD-WEATHER CONCRETING," CURRENT REVISION.
      2. PROTECT CONCRETE WORK FROM PHYSICAL DAMAGE OR REDUCED STRENGTH WHICH COULD BE CAUSED BY FROST, FREEZING ACTIONS OR LOW TEMPERATURES.
      3. WHEN AIR TEMPERATURE HAS FALLEN TO OR IS EXPECTED TO FALL BELOW 40°F OR 4°C, UNIFORMLY HEAT WATER AND AGGREGATES BEFORE MIXING TO OBTAIN A CONCRETE MIXTURE TEMPERATURE OF NOT LESS THAN 50°F OR 10°C, AND NOT MORE THAN 80°F OR 27°C AT TIME OF PLACEMENT. CONCRETE SHALL BE AIR ENTRAINED WITH AIR CONTENT OF 6% +/- 1% BY VOLUME.



REINFORCED CONCRETE CONT.

   4. CONCRETE SHALL BE AIR ENTRAINED WITH AIR CONTENT OF 6% +/- 1% BY VOLUME.
   5. DO NOT USE FROZEN MATERIALS OR MATERIALS CONTAINING ICE OR SNOW. DO NOT PLACE CONCRETE ON FROZEN SUBGRADE OR ON SUBGRADE CONTAINING FROZEN MATERIALS.
   6. DO NOT USE CALCIUM CHLORIDE, SALT OR OTHER MATERIALS CONTAINING ANTIFREEZE AGENTS OR CHEMICAL ACCELERATORS, UNLESS OTHERWISE APPROVED IN THE MIX DESIGN.
   7. COVER AND HEAT CONCRETE FOR A MINIMUM OF 7 DAYS AS RECOMMENDED BY ACI 306R, CURRENT REVISION.

B. FOR POURING CONCRETE DURING HOT WEATHER:
   FOLLOW RECOMMENDATIONS CONTAINED IN PUBLICATION ACI 305R "COLD-WEATHER CONCRETING," CURRENT REVISION.
   PROTECT CONCRETE FROM FLASH CURING BY PROVIDING A WATER/MOISTURE CURE FOR 3 DAYS.
   A 4500 PSI (WITH A 6-1/2 BAG MIX) IS RECOMMENDED FOR THESE CONDITIONS.

9. NO BACKFILL SHALL BE PLACED AGAINST WALLS UNTIL CONCRETE HAS REACHED 85 PERCENT OF THE SPECIFIED STRENGTH AND THE CONNECTING SLABS AND BEAMS HAVE BEEN CAST AND HAVE REACHED 85 PERCENT OF THE SPECIFIED STRENGTH.
10. CONCRETE FOR PUMP STATION & VAULTS TO HAVE A MIN 28 DAY STRENGTH OF 4000 PSI FOR SLABS AND CONCRETE IN CONTACT WITH WATER & 3500 PSI FOR FOOTINGS & FOUNDATION. PORTLAND CEMENT SHALL BE TYPE II OR TYPE V.

MASONRY WALL REINFORCING NOTES:

1. WALL REINFORCEMENT SHALL BE PLACED AND GROUTED AS DESCRIBED IN THE SPECIFICATIONS AND SHALL CONFORM TO IBC REQUIREMENTS.
2. ALL WALLS SHALL BE REINFORCED WITH A MINIMUM OF #5 VERTICAL REINFORCING PARTIALLY-GROUTED AT 32" OC AND (1) #5 @ 48" OC HORIZONTAL BOND BEAM. SEE WALL ELEVATION OR NOTE 5 FOR ADDITIONAL VERTICAL REINFORCEMENT ADJACENT TO WALL OPENINGS.
3. ALL VERTICAL REINFORCING SHALL EXTEND TO ROOF LEVEL AND SHALL BE DOWELED TO THE FOOTING WITH MATCHING DOWELS.
4. ALL DOWELS SHALL LAP WALL REINFORCING 48 DIA AND EXTEND INTO FOUNDATION A MINIMUM OF 40 DIA OR EXTEND 12 DIA PLUS HAVE A STANDARD HOOK.
5. A #5 VERTICAL BAR SHALL BE PLACED AND GROUTED AT ALL WALL CORNERS AND WALL INTERSECTIONS AND TWO #5 VERTICAL BARS SHALL BE PLACED AT JAMBS OF WALL OPENINGS AND SUCH BARS SHALL EXTEND THE FULL HEIGHT OF WALL AND BE ANCHORED IN THE ROOF BOND BEAM AND FOOTING AS SPECIFIED IN PARAGRAPH ABOVE. (SEE DETAILS ON SHEET S-7)
6. LINTELS FOR ALL OPENINGS SHALL BE AS SHOWN ON SHEET S-7. "TYPICAL WALL DETAILS", UNLESS OTHERWISE NOTED.
7. ALL HORIZONTAL AND VERTICAL JOINTS ON MASONRY UNITS SHALL BE CONCAVE ON BOTH FACES UNLESS SHOWN OR SPECIFIED OTHERWISE.
8. MASONRY CONTROL JOINTS IN WALLS SHALL BE INSTALLED AT 24'-0"± SPACING UNLESS SHOWN OTHERWISE.
9. WALL CELLS SHALL BE PARTIALLY GROUTED.
10. ALL REINFORCING BARS SHALL BE GRADE 60, AND SHALL CONFORM WITH: "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", ASTM A-615. REINFORCING BARS SHALL BE NEW, FREE FROM RUST, OIL OR OTHER BOND INHIBITOR. WELDABLE REBAR TO BE ASTM A-706.
11. COLD WEATHER PLACEMENT OF MASONRY: IF THE LOW TEMPERATURE FOR ANY 24-HOUR PERIOD FOR THE FIRST SEVEN DAYS AFTER THE MASONRY IS PLACED OR GROUTED DROPS BELOW 40°F BUT REMAINS ABOVE 28°F, COVER MASONRY WITH INSULATED BLANKETS. IF THE TEMPERATURE DROPS BELOW 28°F FOR ANY PERIOD AS DESCRIBED ABOVE, APPLY HEAT AND INSULATED BLANKETS AND MAINTAIN A TEMPERATURE AT OR ABOVE 34°F FOR SEVEN DAYS.
12. PROVIDE (2) #5 @ TOP OF WALLS (TYP)
13. ALL MASONRY TO HAVE SPECIAL INSPECTION PER TABLE 1704.5.1 OF IBC.
14. ALL TERMINAL BARS TO HAVE HOOK AT END.

WELDING

1. WELDS SHALL CONFORM TO AMERICAN WELDING SOCIETY (AWS), LATEST EDITION:
   D1.1, STRUCTURAL WELDING CODE - STEEL
   D1.2, STRUCTURAL WELDING CODE - ALUMINUM
   D1.3, STRUCTURAL WELDING CODE - SHEET STEEL
   D1.4, STRUCTURAL WELDING CODE - REINFORCING STEEL
   D1.6, STRUCTURAL WELDING CODE - STAINLESS STEEL
2. REPAIR WELDS FOUND DEFECTIVE IN ACCORDANCE WITH AWS D1.1, SEC 5.26.
3. USE INTERMITTENT WELDS AT FIELD WELDS OF EMBED PLATES AND ANGLES TO AVOID SPALLING OR CRACKING OF THE EXISTING CONCRETE.

WOOD FRAMING NOTES

1. FRAMING LUMBER: DOUGLAS FIR LARCH (SURFACED DRY NOT TO EXCEED 19% MAXIMUM MOISTURE CONTENT), CONFORMING TO NATIONAL DESIGN SPECIFICATIONS (NDS) SUPPLEMENTS FOR WOOD DESIGN VALUES AND APPLICABLE STANDARDS IN THE FOLLOWING GRADES:
   A. SILLS: REDWOOD, OR PRESSURE TREATED, FOUNDATION GRADE.
   B. PLATES @ TOP OF MASONRY WALLS: DOUGLAS FIR-LARCH, NO. 1, FB=1000 PSI MIN
   C. STUDS: DOUGLAS FIR-LARCH, OR HEMLOCK-FIR, STUD GRADE.
   D. BEAMS, JOISTS, LEDGERS, POSTS & HEADERS: DOUGLAS FIR-LARCH, NO. 2 MIN, 900 PSI MIN
   E. ALL OTHER HORIZONTAL FRAMING MEMBERS: DOUGLAS FIR-LARCH, CONSTRUCTION GRADE.
   F. ALL OTHER VERTICAL FRAMING MEMBERS: DOUGLAS FIR-LARCH, STANDARD OR BETTER GRADE.
   G. SHEATHING: STANDARD EXTERIOR GRADE WITH EXTERIOR GLUE. APA RATED.
   H. GLUE-LAM BEAMS: DOUGLAS FIR-LARCH, 2400 PSI WITH AITC STAMP FOR QUALITY
2. PROVIDE SOLID BLOCKING AT LEAST 1-1/2" THICK AT ENDS AND AT EACH SUPPORT OF JOIST. PROVIDE APPROVED BRIDGING AT A MAXIMUM 8'-0" OC BETWEEN SUPPORTS.
3. NAILING SHALL CONFORM TO STANDARD NAILING SCHEDULE 2304.10.1 OF INTERNATIONAL BUILDING CODE UNLESS NOTED OTHERWISE ON PLANS OR SCHEDULES. ALL NAILS SHALL BE COMMON NAILS.

WOOD FRAMING NOTES CONT.

4. USE SIMPSON STRONG TIE (SST) HANGERS FOR ALL FLUSH CONNECTIONS. USE STRONGEST HANGER COMPATIBLE WITH MEMBER SIZE AND NAIL PER MANUFACTURER'S SPECIFICATION TO OBTAIN MAXIMUM LOAD CARRYING CAPACITY.
5. ALL METAL HANGERS AND CONNECTORS SHALL BE "SIMPSON" OR EQUAL.
6. SECURE SILL PLATE TO CONCRETE WITH 5/8" DIA X 12" AB @ 8" OC UNLESS NOTED OTHERWISE ON PLAN.
7. DOUBLE TOP AND BOTTOM PLATES TO BE LAPPED 4'-0" AT SPLICE AND CONNECT WITH 16D COMMON NAILS @ 3" OC, STAGGERED.
8. NOTCHING OR DRILLING THROUGH ANY LUMBER MEMBER WILL NOT BE ALLOWED WITHOUT SPECIFIC APPROVAL OF STRUCTURAL ENGINEER.
9. ROOF SHEATHING:
   A. 5/8" APA RATED STRUCTURAL II, EXTERIOR, PANEL INDEX #32/16, UNLESS NOTED OTHERWISE
   B. NAIL WITH: 10D @ 6" OC - PANEL EDGES, UNLESS NOTED OTHERWISE
      10D @ 12" OC - ALL ELSE, UNLESS NOTED OTHERWISE
   C. INSTALL ROOF SHEATHING WITH "H" CLIPS.
10. KEEP ALL MATERIAL CLEARLY IDENTIFIED WITH ALL GRADE MARKS LEGIBLE. KEEP ALL DAMAGED MATERIAL CLEARLY IDENTIFIED AS DAMAGED AND SEPARATELY STORED TO PREVENT ITS INADVERTENT USE. IN THE EVENT OF DAMAGE, IMMEDIATELY MAKE ALL REPAIRS AND REPLACEMENTS NECESSARY TO THE APPROVAL OF THE ENGINEER AND AT NO ADDITIONAL COST TO THE OWNER.
11. PROVIDE 3"X3"X1/4" SLOTTED PLATE WASHERS AT ALL BOLTS IN PLATES, AND 2" DIAMETER PLATE WASHERS AT ALL BOLTS IN LEDGERS, BEAMS, AND COLUMNS. UNLESS OTHERWISE SPECIFIED, USE A307 BOLTS.
12. PROVIDE SOLID BLOCKING UNDER ALL LOCATIONS WHERE CONCENTRATED LOADS ARE LOCATED, SUCH AS COLUMNS, POSTS, BEAMS, ETC. FULL SUPPORT MUST BE PROVIDED TO THE FOUNDATION.

WOOD TRUSSES NOTES

1. DESIGN TRUSSES FOR FOLLOWING CRITERIA:
   DESIGN DEAD AND LIVE LOAD PER "DESIGN CRITERIA ON THIS SHEET"
   LIVE LOAD DEFLECTION = L/480 MAXIMUM

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

SUBMITTALS:

1. THE FOLLOWING INFORMATION AND SUBMITTALS SHALL BE PROVIDED TO THE ENGINEER BEFORE FABRICATION AND/OR DELIVERY TO THE JOBSITE, NOT ALL MAY APPLY.
   A. CONCRETE MIX DESIGNS.
   B. CONCRETE REINFORCEMENT AND TENDON SHOP DRAWINGS.
   C. MASONRY SPECIFICATIONS.
   D. MASONRY MORTAR MIX DESIGNS.
   E. MASONRY REINFORCEMENT SHOP DRAWINGS.
   F. STRUCTURAL BACKFILL PIT LOCATION AND MATERIAL SPECIFICATION, IF USED ON SITE.
   G. STRUCTURAL STEEL SHOP DRAWINGS.
   H. OPEN WEB ROOF TRUSSES, SHOP DRAWINGS FROM MANUFACTURER.
   I. OTHER SHOP DRAWINGS & SUBMITTALS AS DEEMED NECESSARY BY THE CONSTRUCTION MANAGER.
   J. SPECIAL INSPECTION PER SHEET S-2.

SOIL NOTES

1. SOILS REPORT WAS PREPARED FOR THE SITE BY AGEC, INC #1150617. ALL RECOMMENDATIONS CONTAINED IN THE REPORT SUPERSEEDS ALL NOTES IN DRAWINGS, EXCEPT CONTRACTOR'S DEWATERING ENGINEER SHALL MAKE HIS OWN ESTIMATES FOR DEWATERING QUANTITIES AND SHALL NOT RELY ON ESTIMATES PROVIDED IN AGEC REPORT.
2. ALL ORGANIC MATERIALS, RUBBISH, UNSUITABLE FILL, TOPSOIL, ETC. SHALL BE REMOVED FROM BENEATH LOCATIONS OF PROPOSED FOOTINGS, CONCRETE SLABS AND ASPHALT PAVING. NOTE THAT THE GEOTECHNICAL REPORT INIDCATES OF AROUND 4 FEET OF FILL ON THIS SITE.
3. CONTRACTOR SHALL DESIGN AND INSTALL GROUND IMPROVEMENTS AS RECOMMENDED IN THE AGEC REPORT AND ACCORDING TO THE PROJECT SPECIFICATIONS. ALL FOOTINGS SHALL BE PLACED ON 2 FEET (MIN) OF STRUCTURAL FILL EXTENDING DOWN TO THE NATURAL SOIL, AND SHALL BE COMPACTED TO AT LEAST 95% MDD BASED ON ASTM D-1557.
4. SLABS SHALL BE PLACED ON COMPACTED GRANULAR BACKFILL COMPACTED PER GEOTECHNICAL REPORT.
5. UNLESS OTHERWISE NOTED, STRUCTURAL BACKFILL SHALL CONFORM TO:
   A. IMPORTED GRANULAR MATERIAL SHALL BE FREE OF ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES.
   B. SHALL COMPLY WITH SPECIFICATIONS FOR GRADATIONS.
6. ALL FREE WATER SHALL BE REMOVED FROM THE FOUNDATION EXCAVATION PRIOR TO PLACING CONCRETE.
7. EXTERIOR FOOTINGS AND GRADE BEAMS SHALL BE LOCATED AT LEAST 30" BELOW FINISHED GRADE, AND MAINTAIN 6" BETWEEN FINISH GRADE AND WOOD FRAMING.
8. CONTRACTOR SHALL REMOVE ALL UNSUITABLE FILL FROM UNDER ALL CONCRETE FLATWORK, PAVEMENT, BUILDINGS AND STRUCTURES, ACCORDING TO THE GEOTECHNICAL REPORT AND REPLACE WITH STRUCTURAL FILL COMPACTED TO 95% MAX. DRY DENSITY PER ASTM D-1557 OR AS PER GEOTECHNICAL REPORT.
9. GEOTECHNICAL REPORT RECOMMENDS SUPPORT FABRIC PRIOR TO PLACEMENT OF ANY FREE-DRAINING GRAVEL. THIS FABRIC IS TO WRAP AROUND GRAVEL TO PREVENT INTRUSION OF ADJACENT SOIL PARTICLES INTO THE AIR VOIDS IN THE GRAVEL.

ANCHOR NOTES:

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

SEISMIC BRACKETS:

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

STRUCTURAL STEEL AND METAL FABRICATIONS:

1. ALL STRUCTURAL STEEL AND STRUCTURAL STEEL WORK SHALL COMPLY WITH "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS OF THE AISC" AND THE "AISC CODE OF STANDARD PRACTICE."
2. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING:

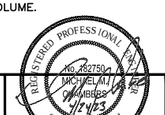
W-SHAPES	A992
MISCELLANEOUS SHAPES INCLUDING ANGLES, CHANNELS, PLATES, ETC.	A36
SQUARE OR RECTANGULAR STEEL	A500, GRADE B
TUBING STEEL PIPE	CLASS 53, GRADE B

3. STRUCTURAL STEEL SHALL BE FABRICATED AND ERRECTED IN CONFORMANCE WITH THE AISC MANUAL OF STEEL CONSTRUCTION, CURRENT EDITION, AND CURRENT OSHA STANDARDS.
4. ALL WELDS AND WELDING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS OF "THE AMERICAN WELDING SOCIETY, USING ELECTRODES AS SPECIFIED THEREIN." WELDS TO BE MADE WITH E - 70XX ELECTRODES UNO
5. BOLTS SHALL BE HIGH STRENGTH BOLTS CONFORMING TO THE FOLLOWING, EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE:

UNLESS SHOWN OTHERWISE	A325-N
SLIP CRITICAL	A325-SC
ANCHOR BOLTS (AB)	
STAINLESS STEEL	F593, AISI TYPE 316, CONDITION CW
STEEL	F1554, GR 36
GALVANIZED STEEL	F1554, GR 36/A153
MACHINE BOLTS (MB)	A307

6. USE A307 BOLTS WITH PLATE WASHERS, UNLESS OTHERWISE SPECIFIED, FOR TYPICAL CONNECTIONS AND CONNECTIONS TO CONCRETE.
7. USE A325 BOLTS WITH PLATE WASHERS, UNLESS OTHERWISE SPECIFIED, FOR STEEL TO STEEL CONNECTIONS.
8. ITEMS TO EMBEDDED IN CONCRETE SHALL BE CLEAN AND FREE OF OIL, DIRT AND PAINT.
9. NO HOLES OTHER THAN THOSE SPECIFICALLY DETAILED SHALL BE ALLOWED THROUGH STRUCTURAL STEEL MEMBERS. NO CUTTING OR BURNING OF STRUCTURAL STEEL IS PERMITTED WITHOUT THE APPROVAL OF THE ENGINEER.
10. METAL FLASHING SHALL BE HOT DIP GALVANIZED, OR HAVE OTHER APPROVED EQUAL CORROSION RESISTANCE.
11. MATERIAL SHALL COMPLY WITH THE FOLLOWING STANDARDS UNO:

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



PROJECT ENGINEER

DESIGNED	MMC	3				
DRAFTED	DD	2				
CHECKED	MEA	1				
DATE	MAY 2023	NO.	DATE	REVISIONS	BY	APVD.

SCALE: NONE

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
STRUCTURAL
GENERAL STRUCTURAL NOTES

SHEET: S-1
260.42.210

FILE NAME: PROJECTS\260 - SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD'S-1 STRUCTURAL NOTES.DWG
FILE DATE: 5.3.2023 16:22:00 (CAH)

7/04

GENERAL SPECIAL INSPECTIONS

SCHEDULE OF SPECIAL INSPECTIONS APPLICABLE TO THIS PROJECT

MATERIAL/ACTIVITY	TYPE OF INSPECTION	C/P *	EXTENT/REFERENCE	INSP INITIALS	INSP DATE
GENERAL					
Pre-construction conference	Meeting with Owner, Contractor and Registered Design Professional to discuss Special Inspection procedures	P	Scheduled by DCRA with the Contractor prior to commencement of work		
EARTHWORK					
Site preparation (building)	Field testing and inspection	P	Field Review; IBC 1705.6		
Fill material (building)	Review submittals, field testing and inspection	P	Field Review; IBC 1705.6		
Fill compaction (building)	In-place density tests, lift thickness	C	Field Review; IBC 1705.6		
Excavation	Field inspection and verification of proper depth	P	Field Review; IBC 1705.6		
Foundation sub-grade	Field inspection of foundation subgrade prior to placement of concrete	P	Field Review; IBC 1705.6		
DEEP FOUNDATION ELEMENTS					
Materials	Review product, sizes, and lengths	C	Submittal and Field Review; IBC1705.7, 1705.8, 1705.9		
Test piles	Monitor driving of test piles	C	Field Review; IBC 1705.8, .9 or .10		
Installation	Monitor drilling, placement, plumb, driving of piles, including recording blows per foot, cut off, and tip elevation	C	Field Review; IBC 1705.2, 1705.3, 1705.7		
Load test	Monitor pile load test	C	Field Review; IBC 1705.8, .9 or .10		
MASONRY (Level__; Building Risk Category) TYPICAL FOR LEVEL B AND RISK CATEGORY I,II,III					
Materials	Review of products supplied versus certificate of compliance and material submitted	P	Submittal & Field Review; ACI 530/ASCE 5; ACI 530.1/ASCE 6; IBC 1705.4, 1708		
Strength	Testing/review of strength	C	Submittal & Field Review; ACI 530/ASCE 5; ACI 530.1/ASCE 6; IBC 1705.4, 2105.2.2, 2105.3		
Mortar and Grout	Inspection of proportioning and mixing. Placement of mortar only.	C	Field Review; IBC 1705.4; ACI 530/ASCE 5; ACI 530.1/ASCE 6		
Grout placement, including pre-stressing grout	Verification to ensure compliance	C	Field Review; IBC 1705.4; ACI 530/ASCE 5; ACI 530.1/ASCE 6		
Grout space	Verification to ensure compliance	P	Field Review; IBC 1705.4; ACI 530/ASCE 5;ACI 530.1/ASCE 6; TMS 602		
Mortar, grout, and prism specimens	Observe Preparation	C	Field Review; IBC 1704.5, ACI 530.1; ASCE 6;		
Reinforcement, pre-stressing tendons, and connections	Inspect condition, size, location, and spacing	P	Field Review; IBC 1704.5; ACI 530/ASCE 5; ACI 530.1/ASCE 6		
Welding of reinforcing bars	Inspection and testing of welds	C	Field Review; IBC 1705.4; ACI 530/ASCE 5;ACI 530.1/ ASCE 6		
Pre-stressing force	Verify application and measurement	C	Field Review; IBC 1705.4; ACI 530/ASCE 5; ACI 530.1/ASCE 6		
Protection	Inspect procedures for protection during cold and hot weather	P	Field Review; IBC 1705.4,; ACI 530/ASCE 5; ACI 530.1/ASCE 6		
Anchorage	Inspection of anchorages	P	Field Review; ACI 530.1/ASCE 6, ASCE 6; IBC 1705.4; ACI 530/ASCE 5		
Masonry installation	Inspection of placement of masonry and joints (Periodic after the first 5000sq.ft)	C	Field Review; ACI 530/ASCE 5; ACI 530.1/ASCE 6; IBC 1705.4		
Grouting of pre-stressed tendons	Field inspection	C	Field Review; ACI 318: 18.18.4; IBC 1705.3		
Application of forces for pre-stressed concrete	Field inspection	C	Field Review; ACI 318: 18.20; IBC 1705.3		
CONCRETE					
Materials	Review product supplied versus certificates of compliance and mix design	P	Submittal & Field Review; IBC 1705.3; ACI 318: Ch. 4 and 5; IBC 1904.2, 1910.2, 1903.3		
Installation of reinforcing steel, including Pre-stressed tendons and anchor bolts as well as welding	Field inspection of placement	P	Submittal and Field Review; ACI 318:3.5, 3.5.2 3.8.6 & Ch. 7 8.1.3 and 21.2.8; AWS D1.4; IBC 1705.3, 1908.5, 1909.1, 1910.4		
Formwork installation	Field inspection	P	Field Review; ACI 318: 6.1.1; IBC 1705.3		
Concreting operations and placement	Field inspection of placement/sampling	C	Field Review; ACI 318: 5.6, 5.8, 5.9-10; ASTM C 172, C 31; IBC 1705.3, 1910.6, 1910.7, 1910.8, 1910.10		
Concrete curing	Field inspection of curing process	P	Field Review; ACI 318: 5.11-13; IBC 1705.3, 1910.9		
Concrete strength	Evaluation of concrete strength		Laboratory Testing; ACI 318: 6.2; IBC 1705.3		

P = PERIODIC INSPECTION
C = CONTINUOUS INSPECTION

SCHEDULE OF SPECIAL INSPECTIONS APPLICABLE TO THIS PROJECT

MATERIAL/ACTIVITY	TYPE OF INSPECTION	C/P *	EXTENT/REFERENCE	INSP INITIALS	INSP DATE
PRECAST CONCRETE					
Verify fabrication/QC procedures In-plant	Inspection of plant and QC procedures**		Submittal or Field Review; IBC 1705.3		
Erection and installation	Review submittals and as-built assemblies; Field inspection of in-place precast		Submittal and Field Review; ACI 318; Ch. 16; IBC Table 1705.3		
STRUCTURAL STEEL					
Verify fabrication/QC procedures	In-plant inspection of fabrication/quality control procedures or submit Certificate of Compliance	P	IBC 1704.2.5, IBC 1704.2.5.1, 1704.2.5.2, 1705.2		
Bolts, nuts, and washers – materials	Material identification markings Review of Certificate of Compliance	P	Submittal & Field Review; IBC 1705.2.1; IBC 1705.2.2; IBC 1706; ASTM; AISC 360, Section A3.3		
Bolts, nuts, washers – installation	Inspection of insitu high-strength bolts, snug-tight joints, pre-tensioned and bearing type, and slip connections	C	Submittal & Field Review; IBC 1705.2.1, 1705.2.2;, AISC 360 Section M2.5		
Structural steel – materials	Material identification markings and review of Certificate of Compliance	P	Submittal & Field Review; IBC 1705.2.1, 1705.2.2, 1706; ASTM A6, A568		
Structural steel details – installation	Inspection of member locations, structural details for bracing, connections, stiffening	P	Submittal & Field Review; IBC 1705.2.1, 1705.2.2, AISC 360		
Weld filler materials and welder certs	Review of identification markings, certificate of compliance, and welder certifications	P	Submittal & Field Review; ASTM AISC 360 A3.5		
Welds	Inspection and testing of welds	C	Field Review; IBC 1705.2.2.1; AWS D1.1, D1.3		
Cold-formed metal deck – materials	Review of identification marking manufacturer's certified test results	P	Submittal and Field Review; IBC 1705.2.2; ASTM		
Cold-formed metal deck – installation	Review laps and welds	P	Submittal and Field Review; IBC 1705.2.2, AWS D1.3		
Cold-formed light frame construction – welds	Review welding operation	P	IBC 1705.10, 1705.10.2, 1705.10.3		
Cold form light frame construction wind resistance – screws	Review screw attachment bolting, anchoring hold downs, bracing, diaphragms, struts	P	Field Review; IBC 1705.10, 1705.10.2, 1705.10.3		
Cold-formed steel trusses spanning 60' or greater	Inspection of temporary and permanent restraints/bracing	C	Field review IBC 1705.2.2.2		
WOOD					
Verify fabrication/QC procedures	In-plant inspection of fabrication/quality control procedures** or submit Certificate of Compliance	P	Submittal or Field Review; IBC 1704.2.5, 1705.5, 1705.5.2		
Metal plate connected wood/metal trusses spanning 60' or more	Review approved submittal and installation of restraint/bracing	P	Field Review; IBC 1704.2.5, 1705.5, 1705.2		
Joist Hangers – Materials/Installation	Review manufacturer's material and test standards	P	Field Review; IBC 1711, ASTM D 1761		
High-Load Diaphragms – Installation	Review submittal and as-built assemblies; inspection of sheathing, framing size, nail and staple diameter and length, number of fastener lines, and fastener spacing.	C	IBC 1705.5, 1705.5.1		
Wood Shear Walls–installation	Review nailing, bolting, anchoring, fastening, Diaphragms, struts, braces, and hold downs when fasteners are <4" on center.	P	Field Review; IBC1705.10.1		

GENERAL SHEET NOTES:

1. THE SPECIAL INSPECTOR IS RESPONSIBLE FOR ENSURING THE PUBLICATIONS USED FOR INSPECTION CRITERIA ARE THE MOST CURRENT AND UP TO DATE.
2. FAILURE OF INSPECTABLE AREAS ARE TO BE NOTED AND SUBMITTED TO OWNER, ENGINEER OF RECORD, AND CONTRACTOR IF CORRECTIONS REQUIRE A FOLLOW UP INSPECTION AND CANNOT BE MADE COMPLETED "ON THE SPOT".
3. DOCUMENTATION FOR INSPECTIONS MUST BE COMPLETED AND SUBMITTED IN ACCORDANCE WITH CONTRACT REQUIREMENTS, INTERNATIONAL BUILDING CODE (LATEST EDITION), AND MANUAL FOR SPECIAL INSPECTIONS" (LATEST EDITION), OR AS AGREED UPON WITH OWNER, ENGINEER OF RECORD, AND CONTRACTOR.
4. SPECIAL INSPECTION DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY FOR ANY REQUIRED INSPECTIONS BY THE BUILDING OFFICIAL. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING INSPECTIONS WITH THE BUILDING DEPARTMENT AND COORDINATING SPECIAL INSPECTIONS.
5. SPECIFIED CONCRETE AND MASONRY TESTING DURING CONSTRUCTION WILL BE CONTRACTOR FURNISHED. SPECIFIED LAB TEST, MIXES, AND SIMILAR TESTING TO VERIFY MATERIAL QUALITY AND CONFORMANCE TO THE SPECIFICATIONS, REQUIRING SUBMITTAL FOR REVIEW AND ACCEPTANCE, SHALL BE THE RESPONSIBILITY OF CONTRACTOR.
6. STRUCTURAL OBSERVATIONS (PROVIDED BY ENGINEER) IS REQUIRED IN ACCORDANCE WITH IBC SECTION 110 AND CHAPTER 17 AS INDICATED IN THE STATEMENT OF SPECIAL INSPECTION. CONTRACTOR SHALL PROVIDE 48 HOURS NOTICE TO ENGINEER PRIOR TO PLACING CONCRETE OR COVERING UP ANY WORK.
7. CONTRACTOR WILL PROVIDE SPECIAL INSPECTIONS.

PROFESSIONAL STRUCTURAL ENGINEER — No. 2774619 — ROBERT C. CONDER — 5/3/2023 — STATE OF UTAH

REGISTERED PROFESSIONAL ENGINEER — No. 762750 — MICHELLE M. ANIBBAS — 12/23 — STATE OF UTAH

HANSEN ALLEN & LUCE, Inc. ENGINEERS

PROJECT ENGINEER

DESIGNED	MMC	3					
DRAFTED	DD	2					
CHECKED	MEA	1					
DATE	MAY 2023	NO.	DATE	REVISIONS		BY	APVD.

SCALE: NONE

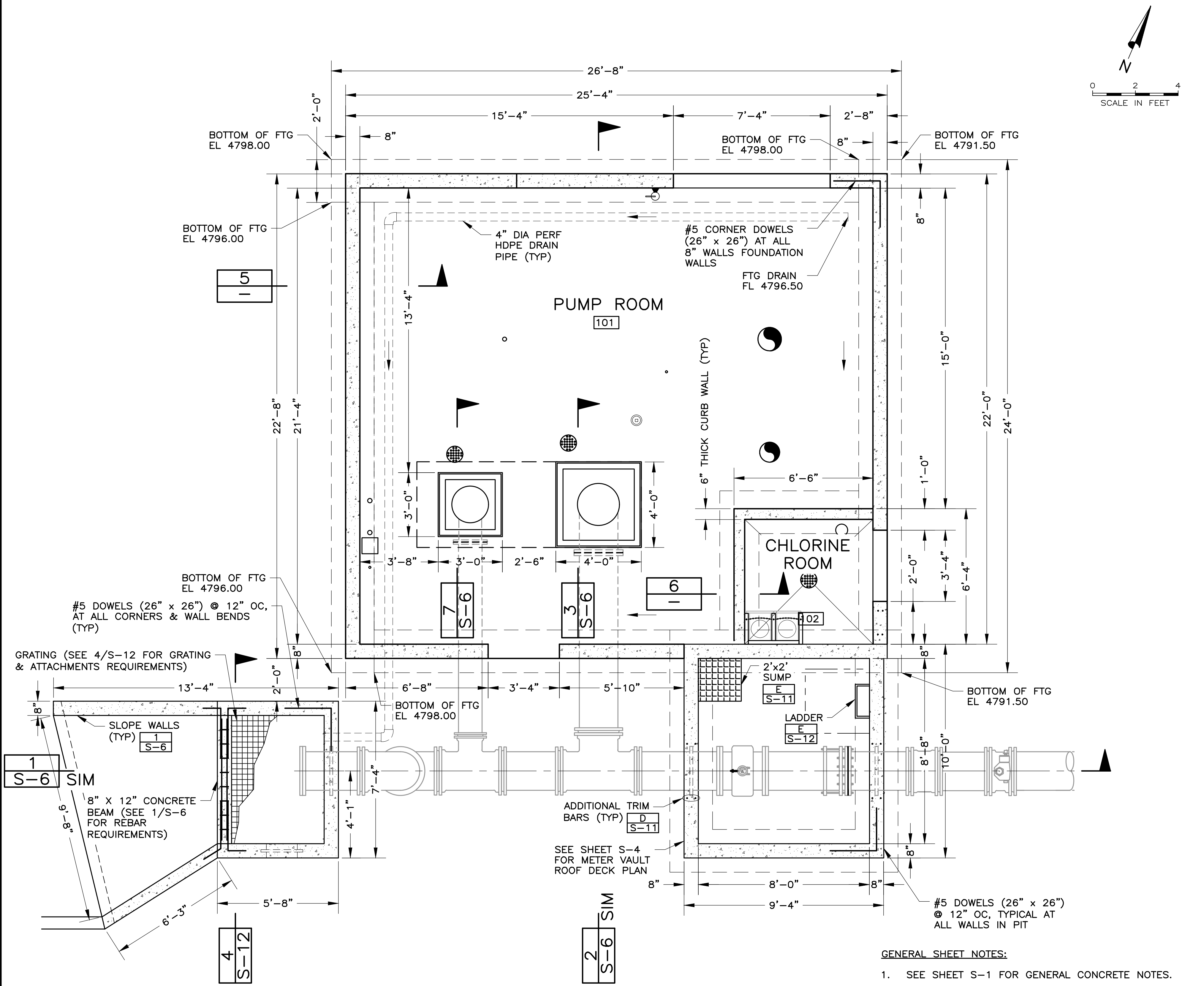
SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

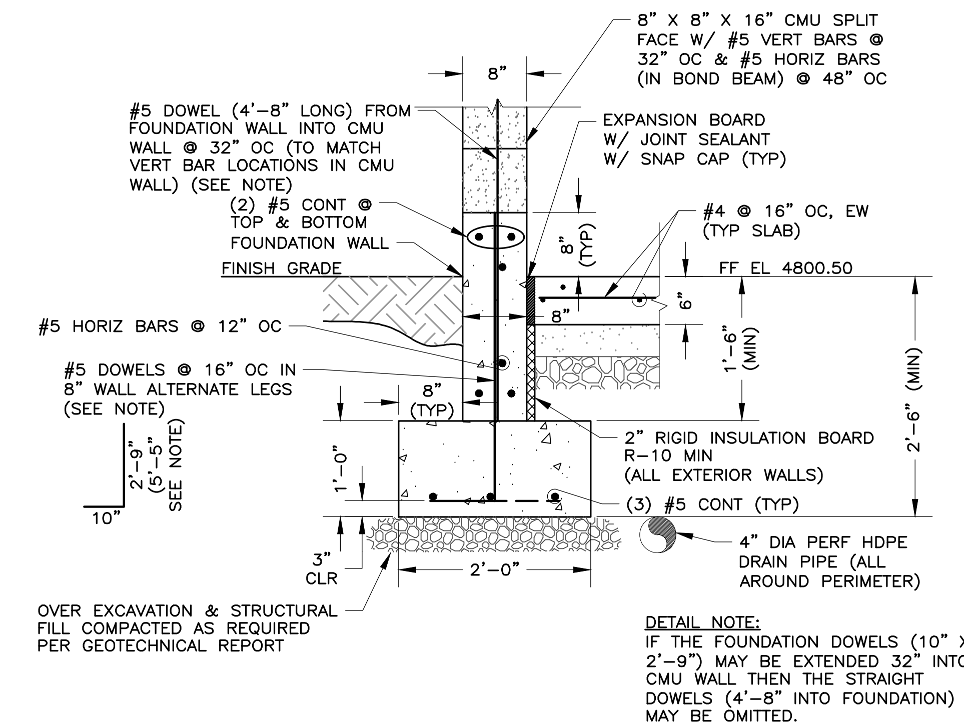
BURT SPRINGS RENOVATION
STRUCTURAL
GENERAL SPECIAL INSPECTIONS

SHEET: S-2
260.42.210

FILE NAME:PROJECTS\260 – SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\S-2 SPECIAL INSPECTIONS.DWG
FILE DATE: 5.3.2023 16:23:23 (CAH)

7/04

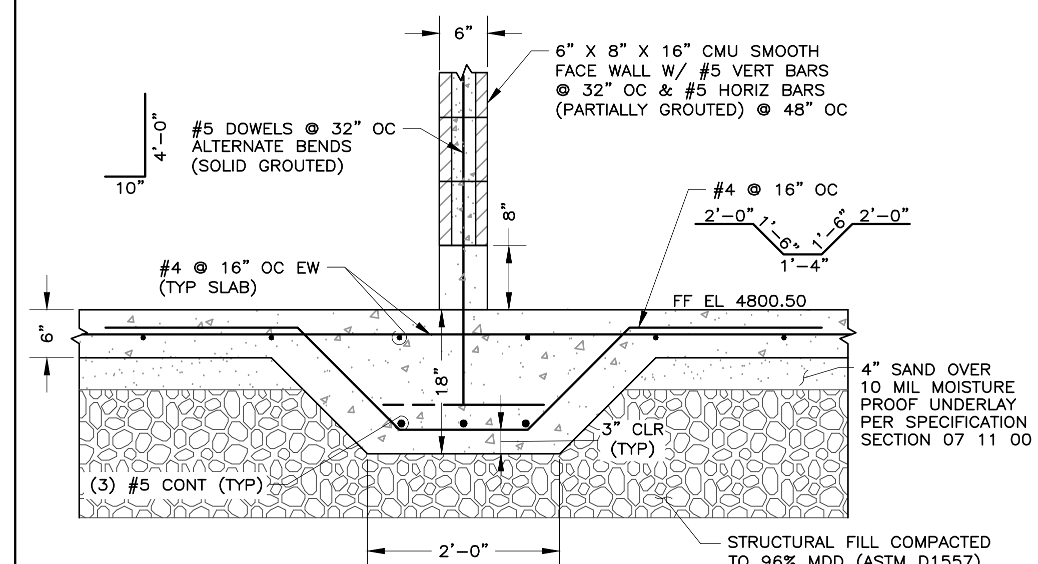




DETAIL NOTE:
IF THE FOUNDATION DOWELS (10" X 2'-9") MAY BE EXTENDED 32" INTO CMU WALL THEN THE STRAIGHT DOWELS (4'-8" INTO FOUNDATION) MAY BE OMITTED.

TYPICAL 8" FOUNDATION SECTION 5/– 5/S-4 5/S-6

0 .5 1
SCALE IN FEET



THICKENED SLAB FOR MASONRY WALL SECTION 6/– 6/S-4

0 .5 1
SCALE IN FEET

GENERAL SHEET NOTES:

1. SEE SHEET S-1 FOR GENERAL CONCRETE NOTES.
2. EAST SIDE FOOTING WALL SHALL EXTEND DOWN TO 4791.50 FEET. INSTALL 40 MIL HDPE LINER AGAINST CONCRETE FOOTING WALL AND OMIT CLAY LINER ALONG EAST SIDE OF PUMP STATION AND METER VAULT.
3. INSTALL 4-INCH DIA PERF DRAIN PIPE WITH 6" OF 3/4-INCH WASHED ROCK ALL AROUND AND WRAPPED IN NON-WOVEN GEOTEXTILE FABRIC.
4. METER VAULT WAS NOT DESIGNED FOR ANY VEHICULAR TRAFFIC.

FILE NAME: PROJECTS\260 - SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\S-3 PUMP HOUSE FOUNDATION PLAN.DWG
FILE DATE: 5.24.2023 09:47:53 (CAH)

PROFESSIONAL STRUCTURAL ENGINEER No. 2774619 ROBERT C. CONDER 5/3/2023 STATE OF UTAH

REGISTERED PROFESSIONAL ENGINEER No. 182750 MICHAEL M. CHAMBERS 4/24/23 STATE OF UTAH

HANSEN ALLEN & LUCE INC ENGINEERS

PROJECT ENGINEER

DESIGNED	MMC	3			
DRAFTED	DD	2			
CHECKED	MEA	1			
DATE	MAY 2023	NO.	DATE	REVISIONS	BY / APVD.

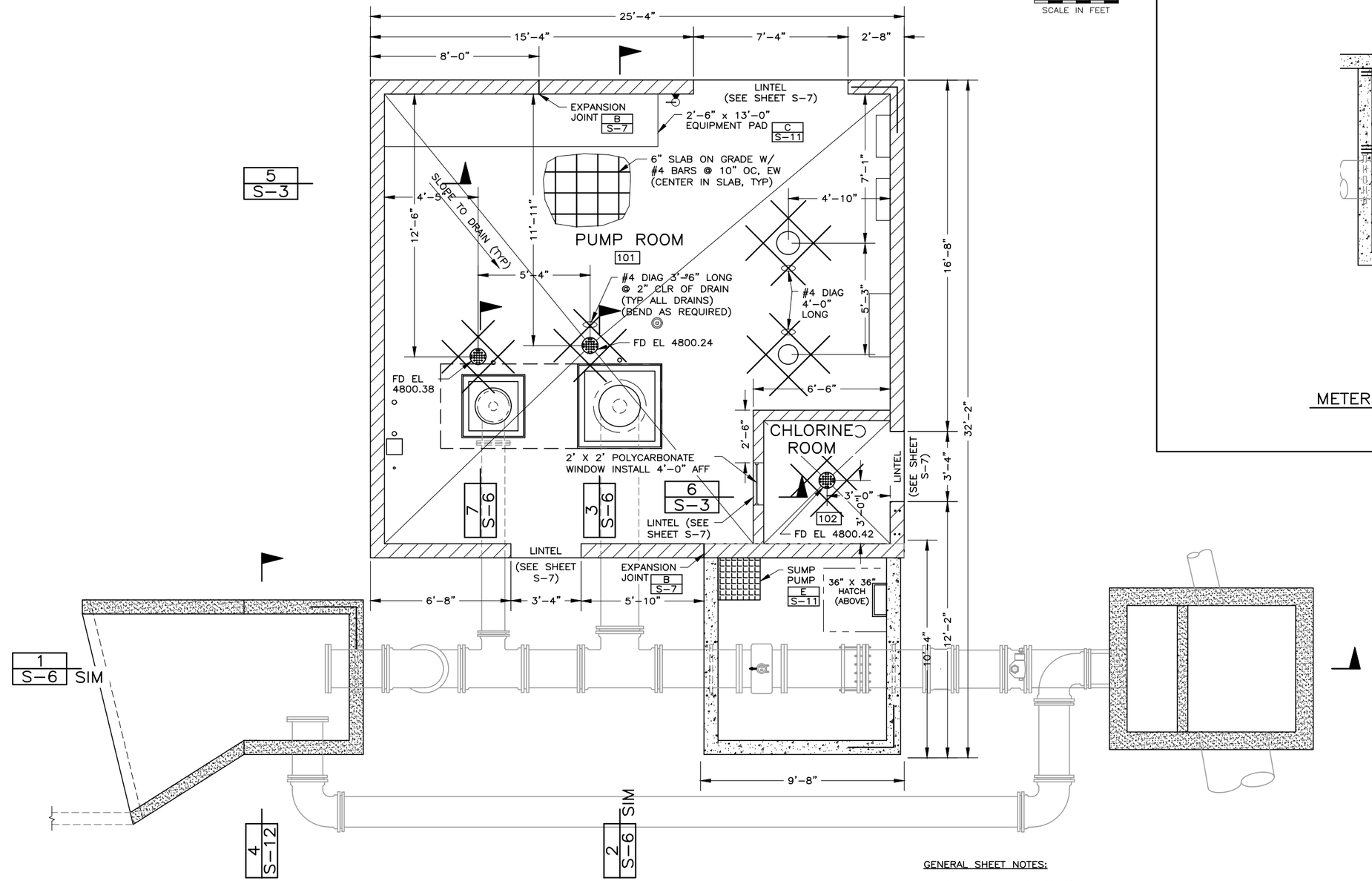
SCALE: AS SHOWN

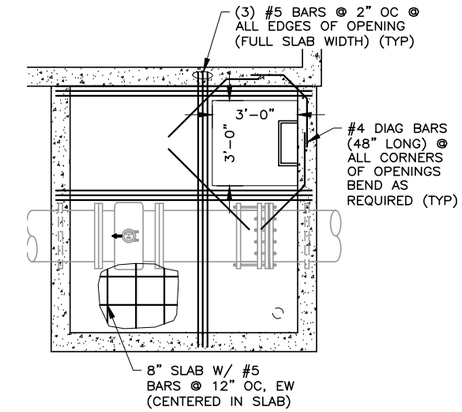
SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
STRUCTURAL
PUMP HOUSE FOUNDATION PLAN

SHEET S-3
260.42.210

7/04





METER VAULT ROOF SLAB PLAN

0 2 4
SCALE IN FEET

GENERAL SHEET NOTES:

1. SEE SHEET S-1 FOR GENERAL MASONRY NOTES.
2. SEE SHEET SHEET S-7 FOR TYPICAL MASONRY DETAILS.
3. INSTALL 4" SAND OVER 10 MIL MOISTURE PROOF UNDERLAY PER SPECIFICATION SECTION 07 11 00 UNDER ENTIRE FLOOR SLAB.

PROFESSIONAL STRUCTURAL ENGINEER No. 2774619 ROBERT C. CONDER 5/3/2023 STATE OF UTAH

REGISTERED PROFESSIONAL ENGINEER No. 762750 MICHAEL M. ALLRED 5/12/23 STATE OF UTAH

HANSEN ALLEN & LUCE, Inc. ENGINEERS

PROJECT ENGINEER

DESIGNED	MMC	3				
DRAFTED	DD	2				
CHECKED	MEA	1				
DATE	MAY 2023	NO.	DATE	REVISIONS	BY	APVD.

SCALE: AS SHOWN

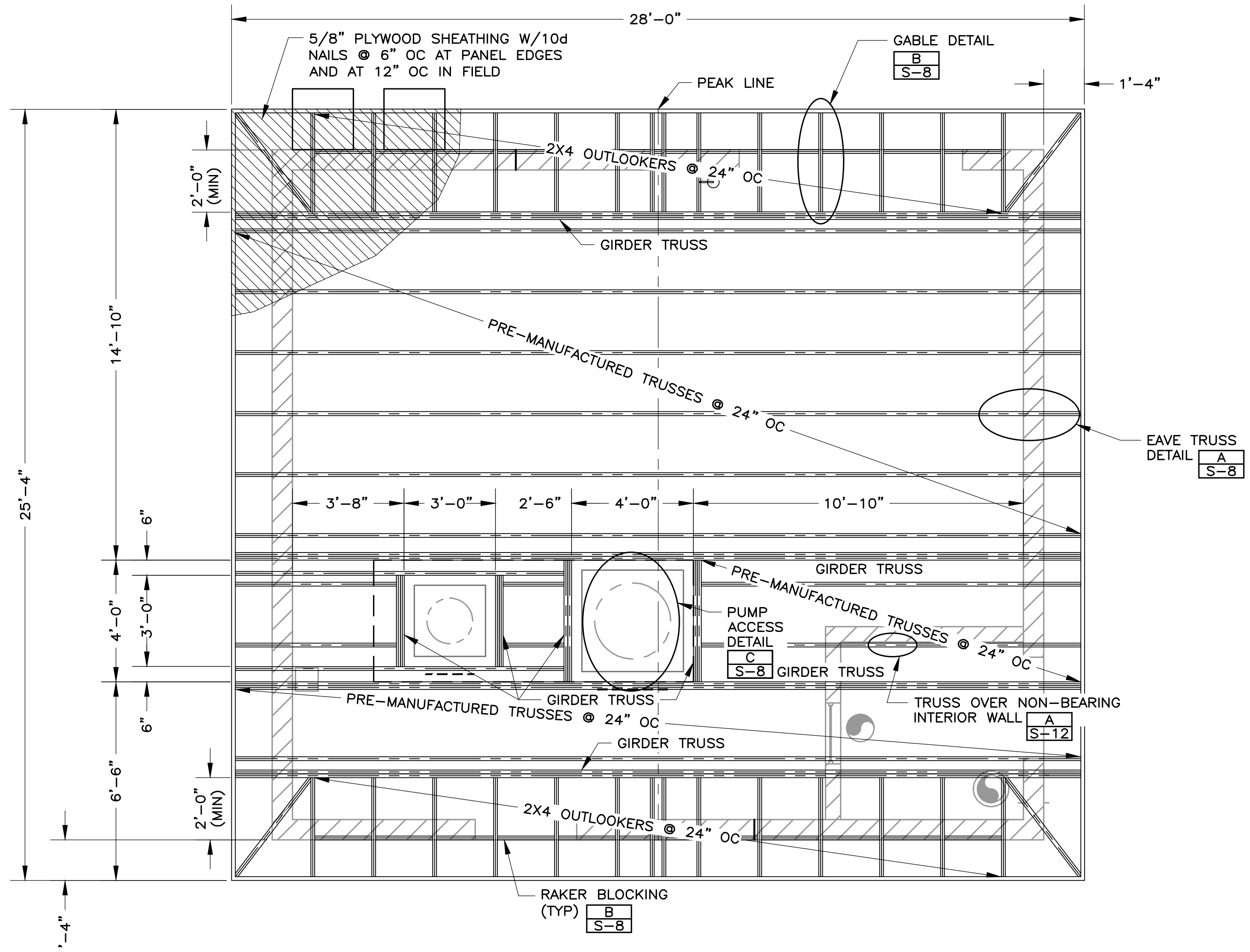
SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

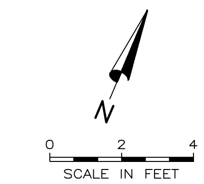
BURT SPRINGS RENOVATION
STRUCTURAL
PUMP HOUSE SLAB & WALL PLAN

SHEET S-4
260.42.210

FILE NAME: PROJECTS\260 - SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\S-4 PUMP HOUSE SLAB AND WALL PLAN.DWG
FILE DATE: 5.3.2023 16:24:54 (CAH)

7/04





GENERAL SHEET NOTES:

1. SEE SHEET S-1 FOR GENERAL TRUSS AND FRAMING NOTES AND LOADING REQUIREMENTS.
2. INSTALL ICE & WATER SHIELD FROM EDGE OF ROOF TO A MINIMUM OF 24" BEYOND THE INSIDE FACE OF CMU (TYP ALL EAVES), PER CODE.

FILE NAME: PROJECTS\260 - SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\S-5 PUMP HOUSE ROOF PLAN.DWG
FILE DATE: 5.3.2023 16:25:55 (CAH)

PROFESSIONAL STRUCTURAL ENGINEER No. 2774619 ROBERT C. CONDER 5/3/2023 STATE OF UTAH

REGISTERED PROFESSIONAL ENGINEER No. 182750 MICHAEL M. CHAMBERS 5/4/23 STATE OF UTAH

HANSEN ALLEN & LUCE INC ENGINEERS	PROJECT ENGINEER	DESIGNED MMC	3				
		DRAFTED CAH	2				
		CHECKED MEA	1				
		DATE MAY 2023	NO.	DATE	REVISIONS	BY	APVD.

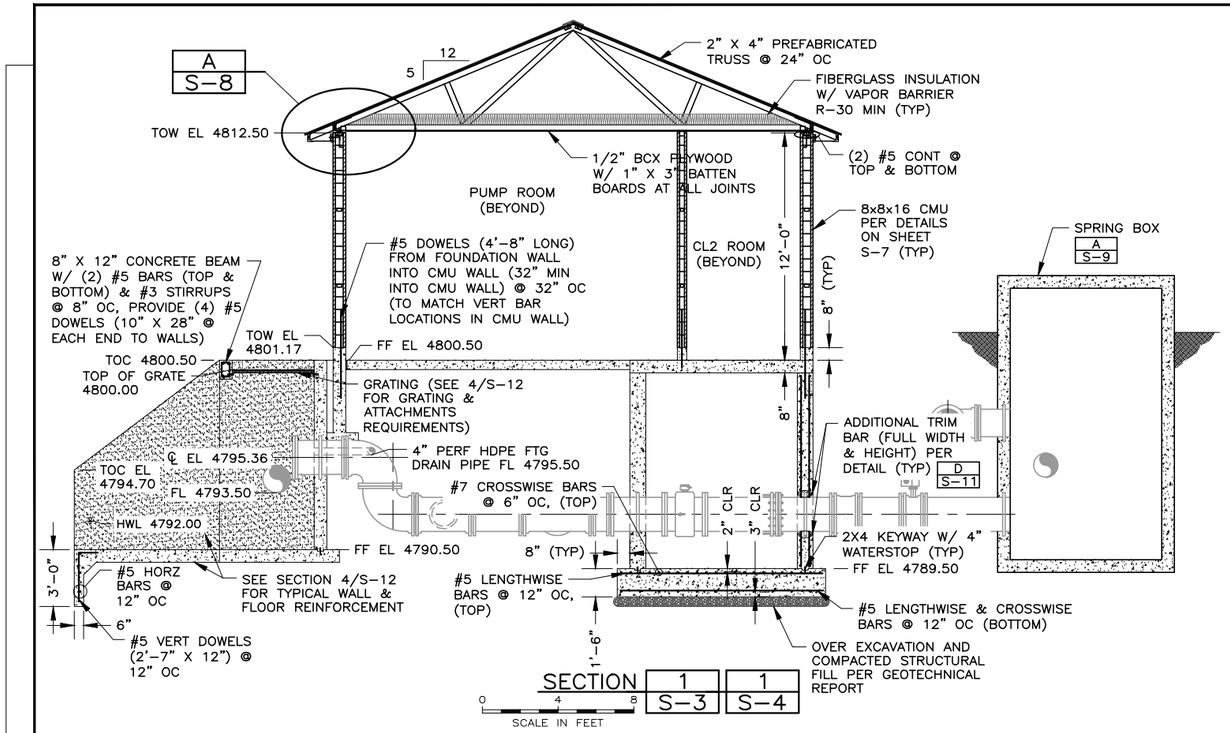
SCALE AS SHOWN

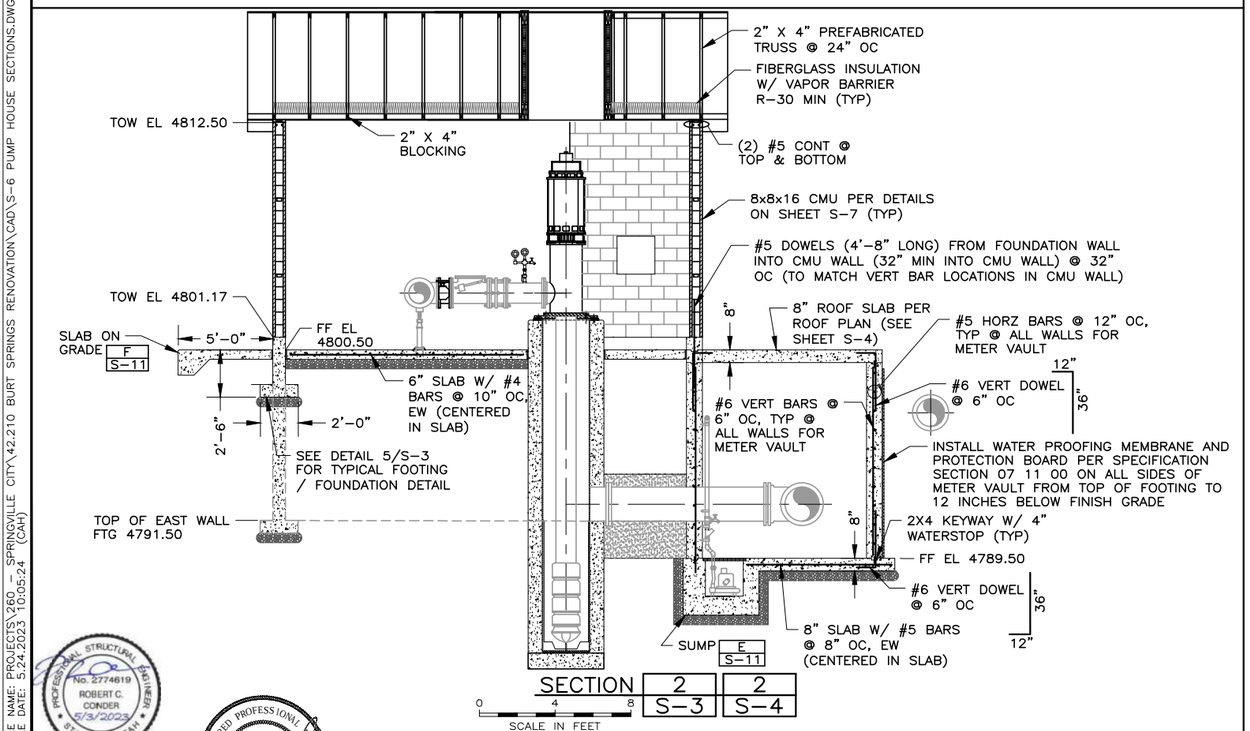
SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

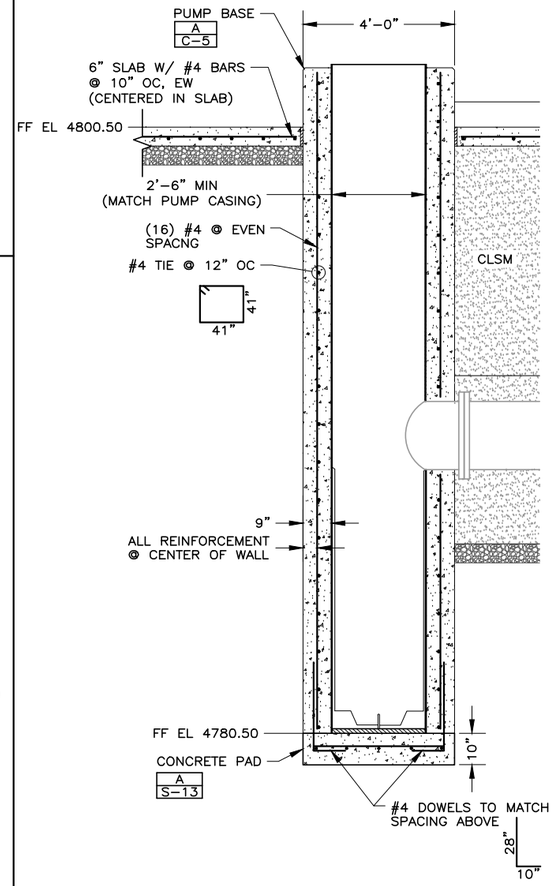
BURT SPRINGS RENOVATION
STRUCTURAL
PUMP HOUSE ROOF PLAN

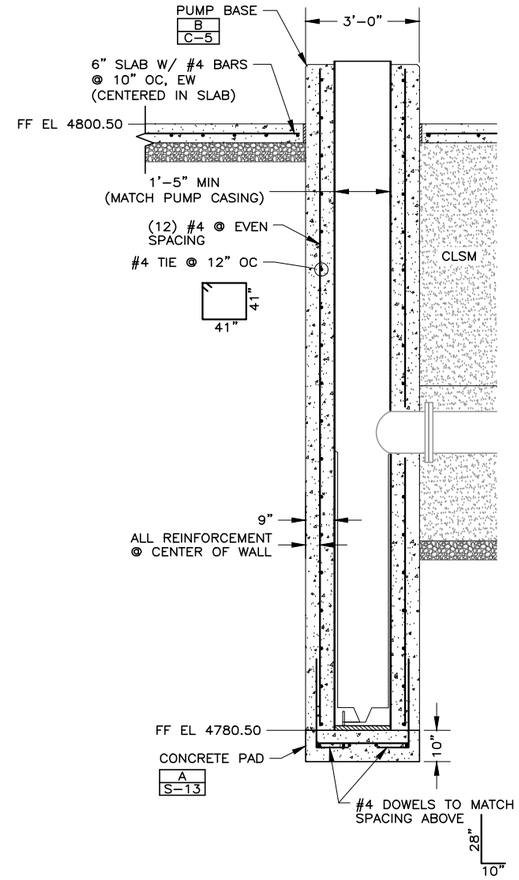
SHEET S-5
260.42.210

7/04









PROFESSIONAL STRUCTURAL ENGINEER
No. 2774619
ROBERT C. CONDER
5/3/2023
STATE OF UTAH

REGISTERED PROFESSIONAL ENGINEER
No. 7827504
MICHELA A. CHAMBERS
4/24/23
STATE OF UTAH
PROJECT ENGINEER

FILE NAME: PROJECTS\260 - SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\S-6 PUMP HOUSE SECTIONS.DWG
FILE DATE: 5.24.2023 10:05:24 (CAH)

HANSEN ALLEN & LUCE, inc. ENGINEERS

DESIGNED	MMC	3			
DRAFTED	CAH	2			
CHECKED	MEA	1			
DATE	MAY 2023	NO.	DATE	REVISIONS	BY / APVD.

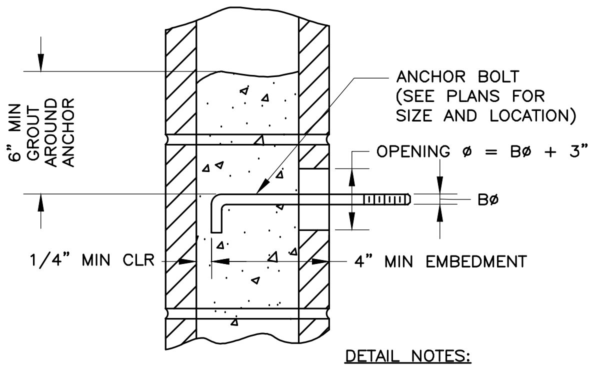
SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
STRUCTURAL
PUMP HOUSE SECTIONS

SHEET S-6
260.42.210

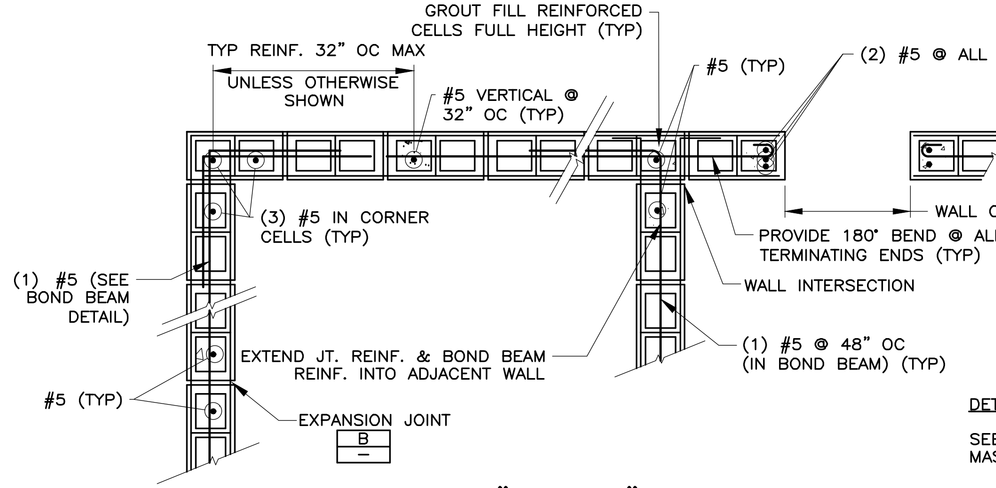
7/04



DETAIL NOTES:

1. SET ANCHOR BOLTS WITH TEMPLATE.
2. CUT BLOCK WEB AS REQUIRED TO ALLOW PLACEMENT OF ANCHOR BOLT AND 1/2" MINIMUM OF GROUT BETWEEN ANCHOR BOLT AND BLOCK.
3. STAINLESS STEEL WEDGE OR SCREW ANCHORS MAY BE USED IN LIEU OF ANCHOR BOLTS. CONTACT ENGINEER W/ ALT IF DESIRED.

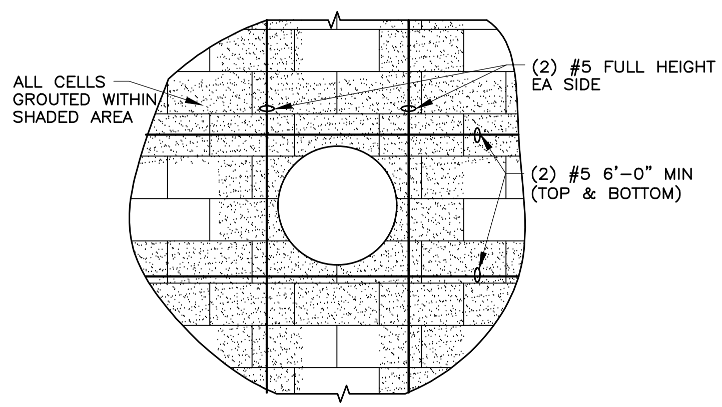
ANCHOR BOLTS IN MASONRY
NTS



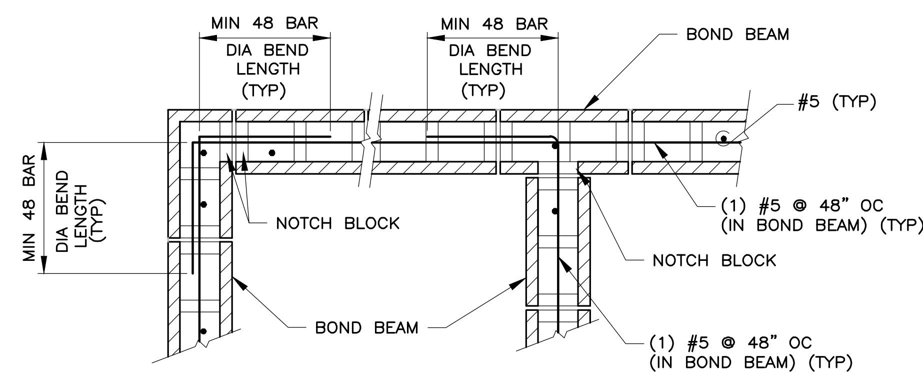
DETAIL NOTE:

SEE SHEET S-1 FOR MASONRY NOTES.

TYPICAL MASONRY 6" AND 8" MASONRY WALL REINFORCING
NTS



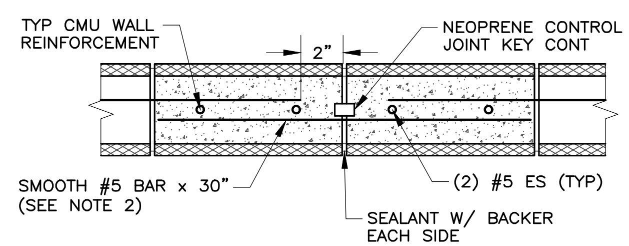
PIPE PENETRATION THROUGH MASONRY WALLS
NTS



DETAIL NOTE:

SEE SHEET S-1 FOR MASONRY NOTES.

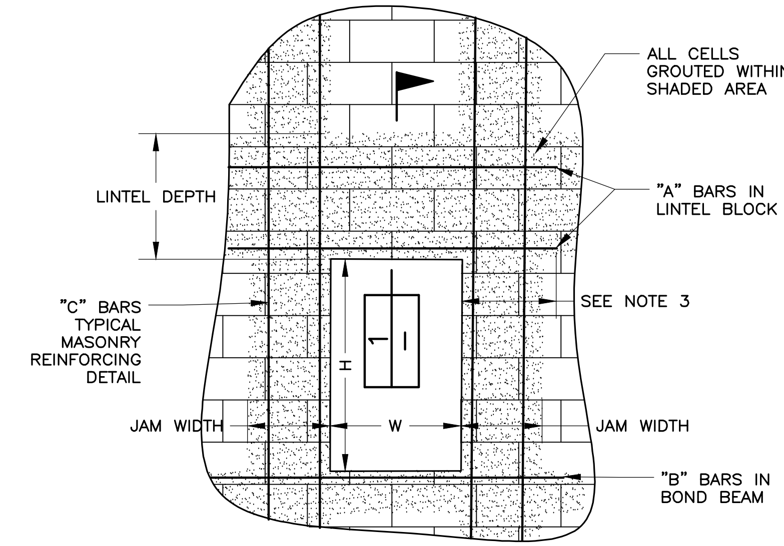
MASONRY 6" AND 8" WALL REINFORCING AT TYPICAL BOND BEAM
NTS



DETAIL NOTES:

1. EXACT LOCATIONS OF JOINTS TO BE DETERMINED BY THE CONTRACTOR & APPROVED BY THE ENGINEER. SPACING OF JOINTS TO NOT EXCEED 24' MAX.
2. SMOOTH BARS ACROSS JOINT SHALL MATCH HORIZONTAL BAR SPACING. PREVENT BOND BETWEEN BAR AND GROUT ON ONE SIDE OF JOINT WITH GREASE FILLED PVC SLEEVE. CAP AND SIZE SLEEVES TO ALLOW ONE INCH OF MOVEMENT BEYOND END OF PANELS.
3. ROOF LEVEL CHORD REINF. SHALL BE CONTINUOUS THROUGH CONTROL JOINT.
4. CONTROL JOINTS SHALL NOT INTERSECT LINTELS.

MASONRY EXPANSION JOINT DETAIL B / – B / S-4
NTS



DETAIL NOTES:

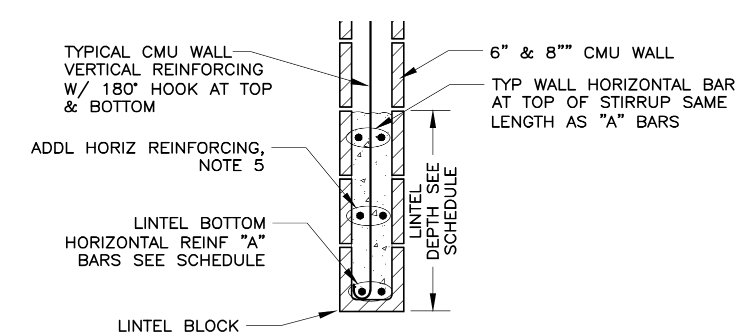
1. USE BAR QUANTITIES AND SIZES GIVEN IN LINTEL SCHEDULE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
2. EXTEND "C" BARS 48 BAR DIAMETERS, BUT NOT LESS THAN 2'-0" BEYOND TOP AND BOTTOM OF OPENING EXCEPT THAT WHEN "H" OR "W" EXCEEDS 2'-0". "C" BARS SHALL EXTEND FULL HEIGHT. WHERE THERE IS LESS THAN 8'-0" BETWEEN ADJACENT OPENINGS, EXTEND REINFORCING CONTINUOUS TO 2'-8" BEYOND FURTHEST OPENING.
3. "A" AND "B" BARS SHALL EXTEND 48 BAR DIAMETERS, BUT NOT LESS THAN 2'-0" EACH SIDE OF THE OPENINGS.
4. FOR BARS SIZES. MATCH TYPICAL WALL REINFORCING AS SHOWN ON THE BUILDING WALL SECTIONS.
5. FOR LINTEL DEPTH EQUAL TO OR GREATER THAN 48", PROVIDE ADDITIONAL LAYER OF HORIZONTAL REINFORCEMENT AT 12" FROM BOTTOM OF LINTEL. MATCH SIZE OF TYPICAL WALL HORIZONTAL REINFORCEMENT.
6. MATCH TYPICAL #5 VERTICAL WALL REINFORCEMENT FOR STIRRUPS ("S" SHAPED STIRRUPS WITH HOOKS AT BOTH TOP & BOTTOM).
7. FOR INTERIOR 10" CMU WALLS, INSTALL LINTELS WITH (2) #5 BARS ABOVE, ON EACH SIDE AND (1) #5 BAR BELOW OPENINGS.

CMU OPENING REINF SCHEDULE 10" WALLS

W	LINTEL DEPTH	STIRRUP SIZE / SPACING	A BARS	B BARS	C BARS	JAMB WIDTH
UP TO 4'-0"	1'-4"	#5 @ 32"	(2) #5	(1) #5	SEE NOTE	16"
UP TO 8'-0"	2'-0"	#5 @ 32"	(2) #5	(1) #5		16"

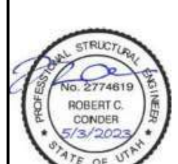
NOTE: SEE "TYPICAL MASONRY WALL REINFORCING" DETAIL THIS SHEET FOR JAMB BAR REQUIREMENTS.

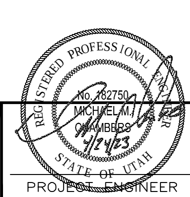
MASONRY LINTEL DETAILS AT WALL OPENINGS
NTS



MASONRY LINTEL DETAILS 1 / –
NTS

FILE NAME: PROJECTS\260 – SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\S-7 TYPICAL MASONRY DETAILS.DWG
FILE DATE: 5.3.2023 16:28:04 (CAH)





7/04

HANSEN ALLEN & LUCE INC ENGINEERS

PROJECT ENGINEER

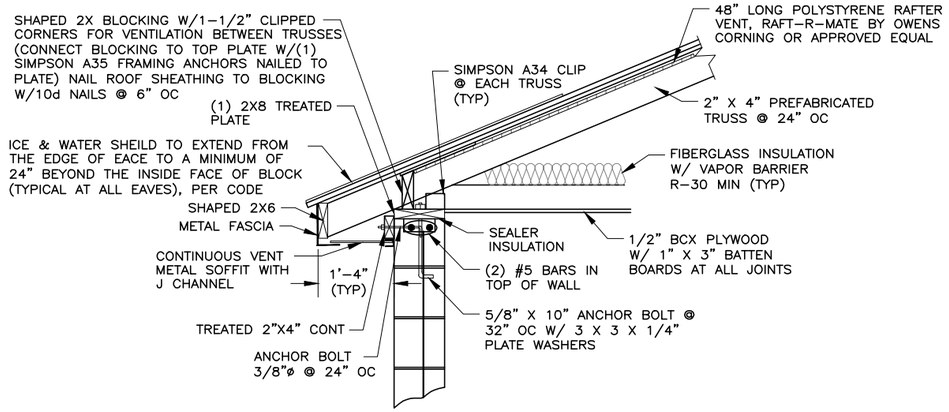
DESIGNED	MMC	3			
DRAFTED	DD	2			
CHECKED	MEA	1			
DATE	MAY 2023	NO.	DATE	REVISIONS	BY / APVD.

SCALE: AS SHOWN

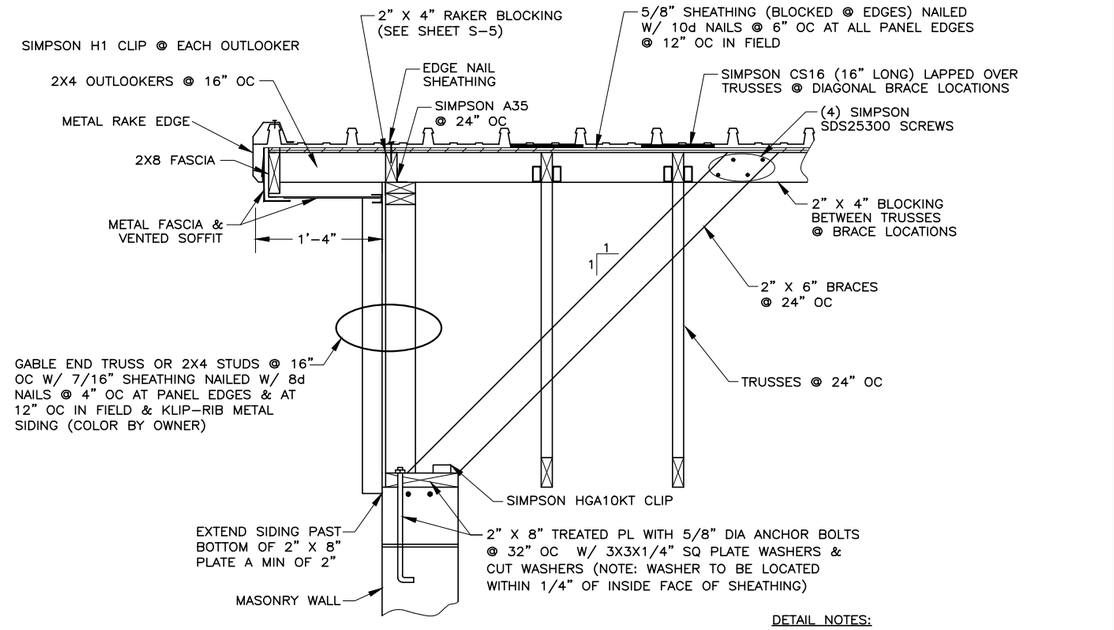
SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
STRUCTURAL
TYPICAL MASONRY DETAILS

SHEET S-7
260.42.210



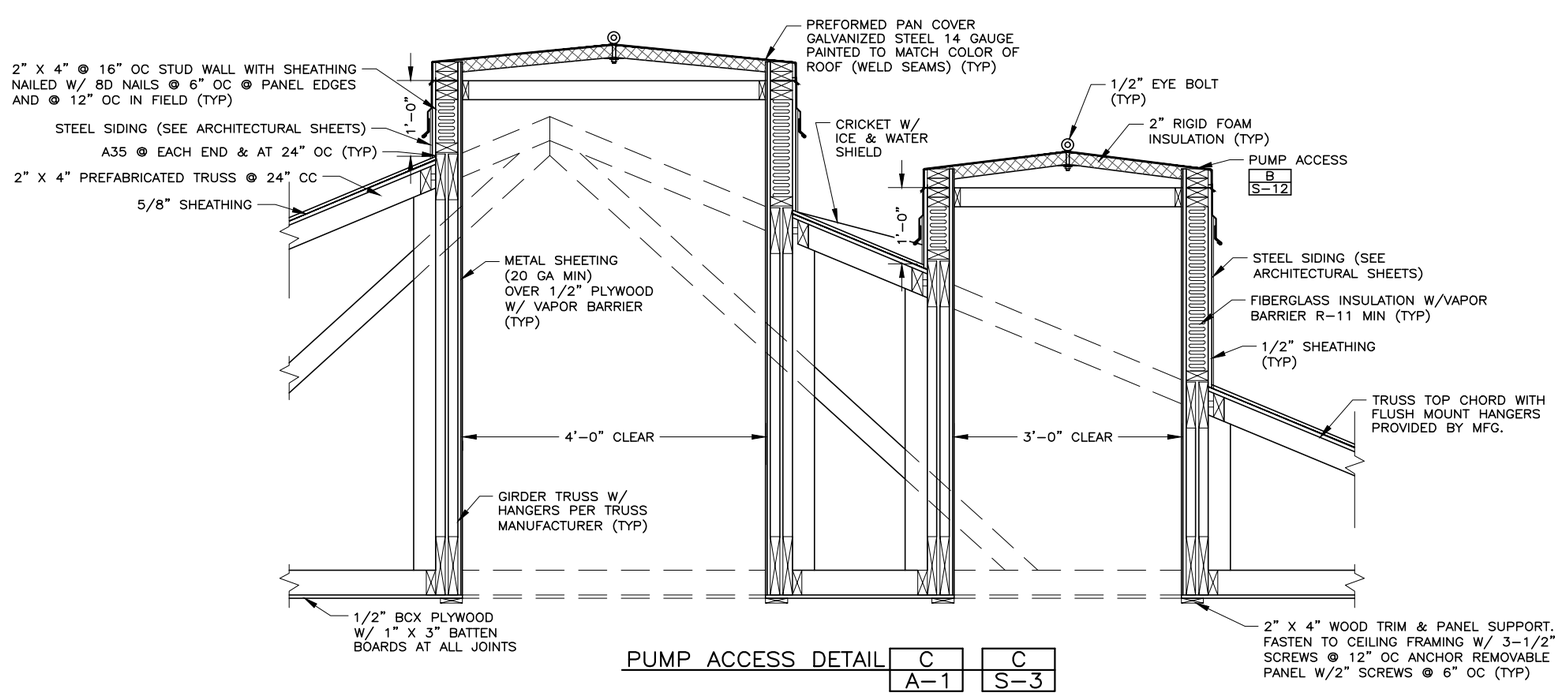
EAVE-TRUSS DETAIL | A / S-5 | A / S-6



TYPICAL GABLE DETAIL | B / S-5

DETAIL NOTES:

1. CONTRACTOR TO VERIFY DETAIL WITH TRUSS MANUFACTURER'S DETAILS. INSTALL WHICHEVER IS MORE RESTRICTIVE.
2. ROOFING SYSTEM COLOR TO BE SELECTED BY OWNER. INSTALL ROOFING SYSTEM PER MANUFACTURER'S RECOMMENDATIONS.



PUMP ACCESS DETAIL | C / A-1 | C / S-3

DETAIL NOTE:

CONTRACTOR TO VERIFY PUMP ACCESS IS CENTERED OVER EACH PUMP.

FILE NAME: PROJECTS\260 - SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\S-8 TYPICAL ROOF DETAILS.DWG
FILE DATE: 5.3.2023 16:29:16 (CAH)

PROFESSIONAL STRUCTURAL ENGINEER No. 2774619 ROBERT C. CONDER 5/3/2023 STATE OF UTAH

REGISTERED PROFESSIONAL ENGINEER No. 282750 MICHELLE M. ANDERSON 5/4/23 STATE OF UTAH

HANSEN ALLEN & LUCE ENGINEERS

PROJECT ENGINEER

DESIGNED	MMC	3			
DRAFTED	DD	2			
CHECKED	MEA	1			
DATE	MAY 2023	NO.	DATE	REVISIONS	BY APVD.

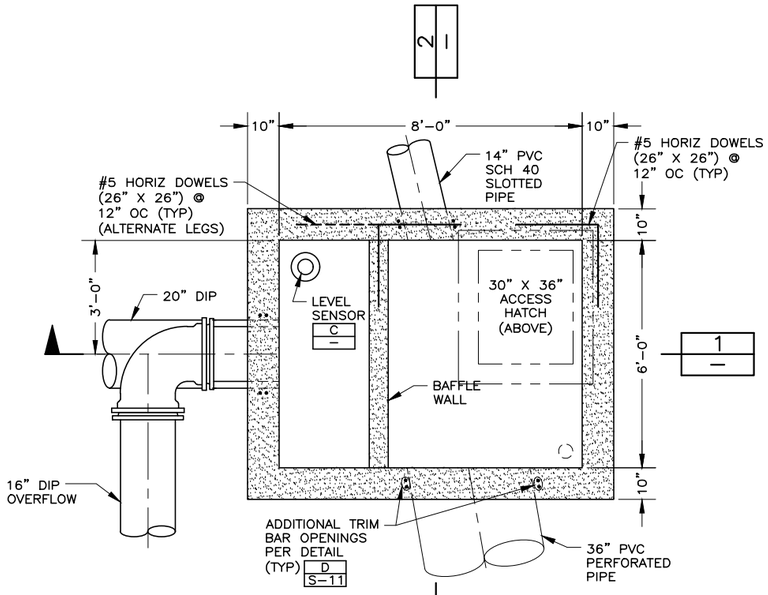
SCALE: NOT TO SCALE

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
STRUCTURAL
TYPICAL ROOF DETAILS

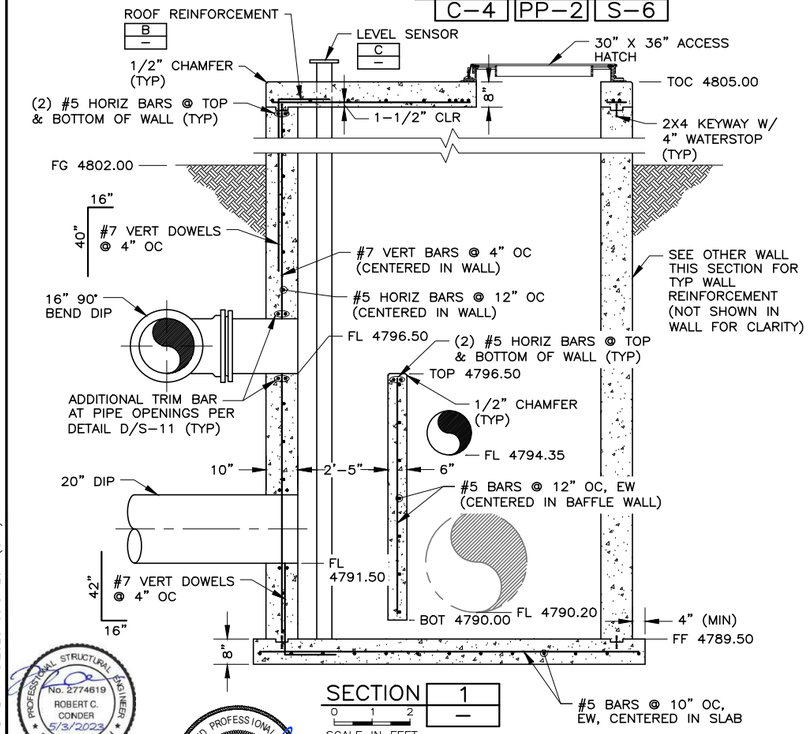
SHEET S-8
260.42.210

7/04

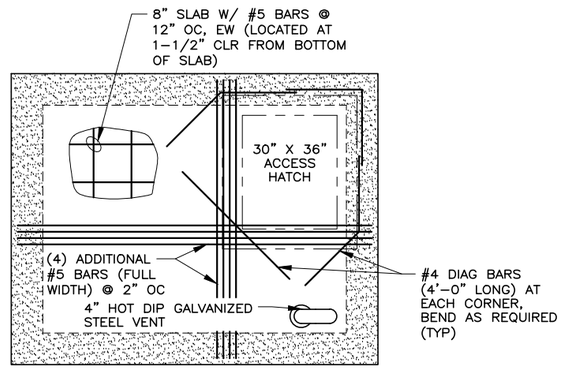


SPRING BOX FLOOR PLAN

A —	A C-2	A C-3
A C-4	A PP-2	A S-6



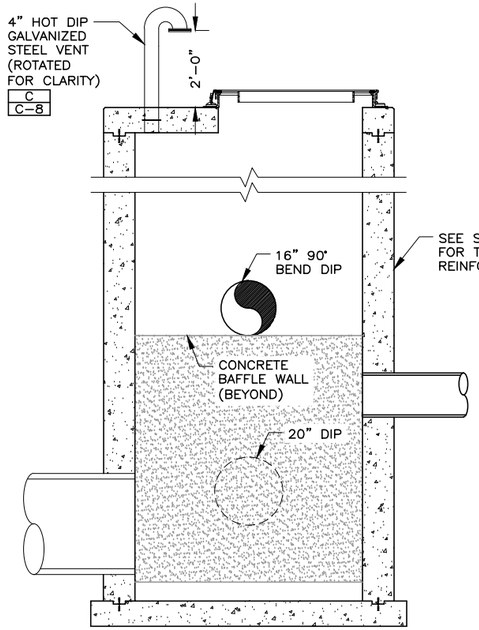
SECTION 1 — 0 1 2 — SCALE IN FEET



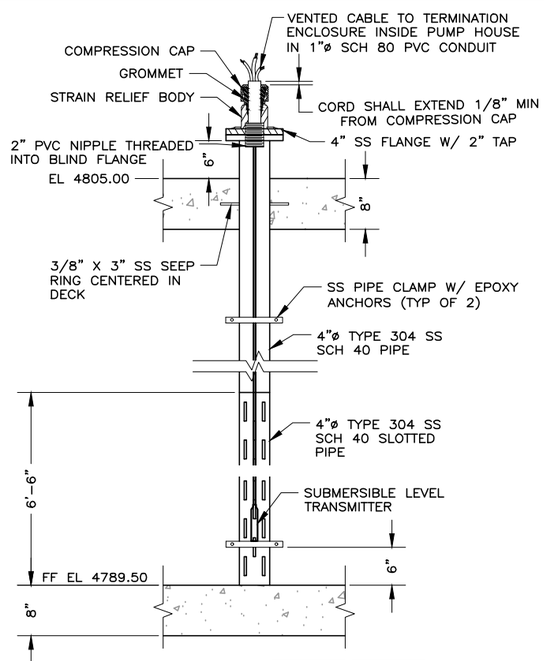
ROOF REINFORCEMENT PLAN — B — 0 1 2 — SCALE IN FEET

⚠ GENERAL SHEET NOTE:

THE SPRING COLLECTION BOX SHALL BE DISINFECTED AFTER ALL ITEMS HAVE BEEN INSTALLED. FOLLOW PROCEDURES SIMILAR TO AWWA C651.



SECTION 2 — 0 1 2 — SCALE IN FEET



LEVEL SENSOR — NTS — C — C-3

PROFESSIONAL STRUCTURAL ENGINEER — No. 2774619 — ROBERT C. CONDER — 5/3/2023 — STATE OF UTAH

REGISTERED PROFESSIONAL ENGINEER — No. 762750 — MICHAEL A. ALLEN — 7/24/23 — STATE OF UTAH

HANSEN ALLEN & LUCE inc ENGINEERS — PROJECT ENGINEER

DESIGNED	MMC	3					
DRAFTED	CAH	2					
CHECKED	MEA	1	6/9/2023	PREVIOUS BID CHANGES		CAH	MMC
DATE	MAY 2023	NO.	DATE	REVISIONS		BY	APVD.

SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

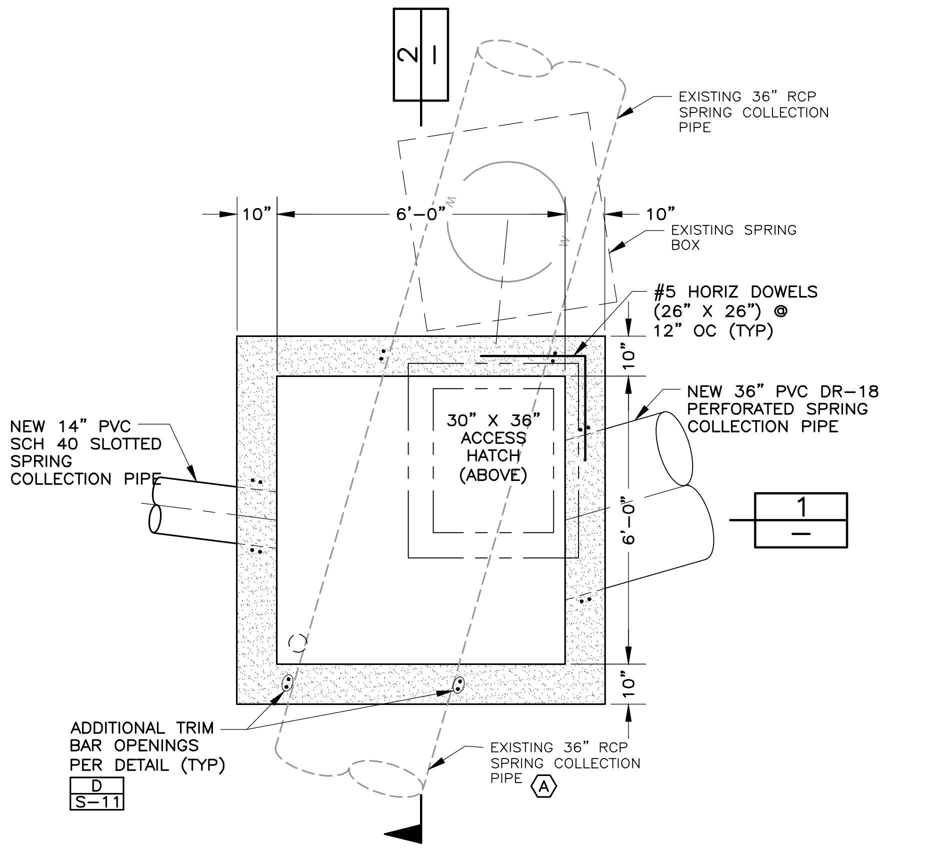
BURT SPRINGS RENOVATION
STRUCTURAL
SPRING BOX DETAILS

SHEET S-9

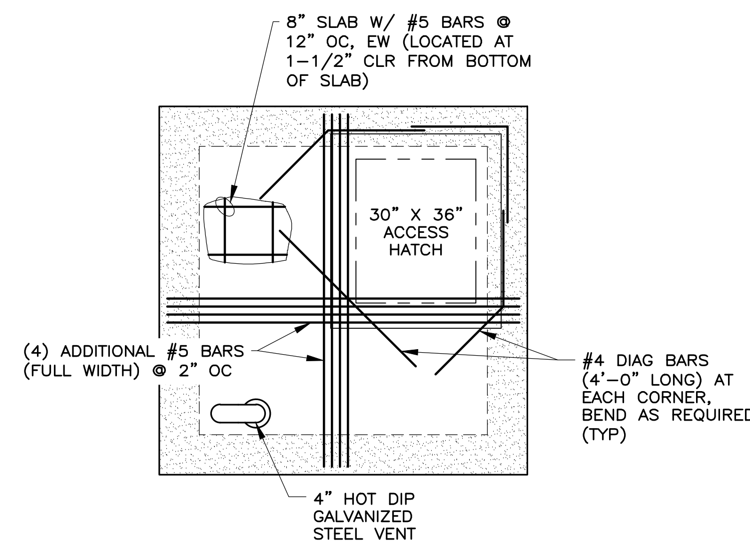
260.42.210

FILE NAME: PROJECTS\260 - SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\S-9 SPRING BOX DETAILS_R1.DWG
FILE DATE: 7.18.2023 09:37:20 (CAH)

7/04

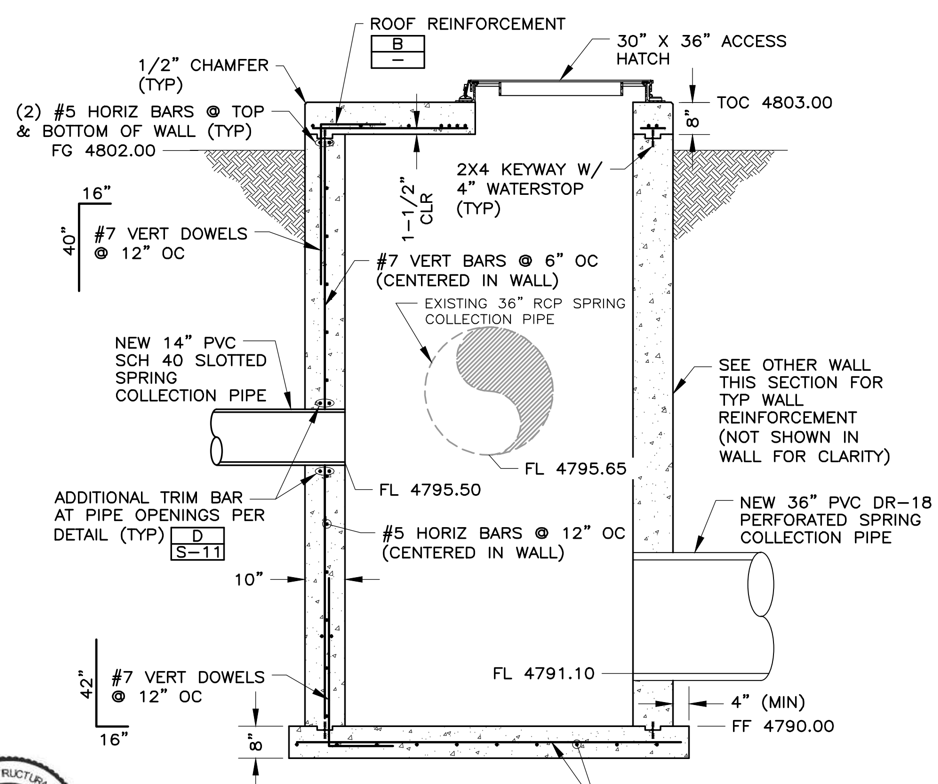


JUNCTION BOX FLOOR PLAN A/– A/C-1 A/PP-2



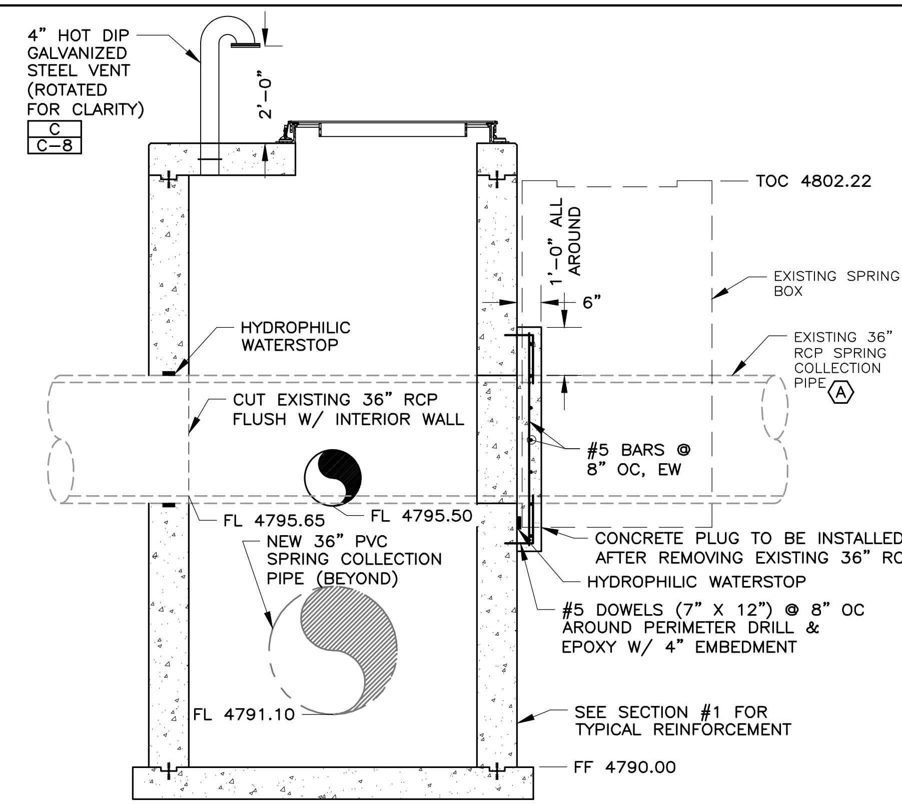
ROOF REINFORCEMENT PLAN B/–

0 1 2 SCALE IN FEET



SECTION 1/–

0 1 2 SCALE IN FEET



SECTION 2/–

0 1 2 SCALE IN FEET

⚠1 GENERAL SHEET NOTE:

THE SPRING COLLECTION BOX SHALL BE DISINFECTED AFTER ALL ITEMS HAVE BEEN INSTALLED. FOLLOW PROCEDURES SIMILAR TO AWWA C651.

SHEET KEY NOTES:

(A) CONSTRUCT NEW CAST-IN-PLACE BOX AROUND EXISTING 36-INCH RCP PIPE. SAWCUT EXISTING PIPE WITH DIAMOND CABLE SAW AND REMOVE AFTER COMPLETION OF NEW SPRING BOX AND OVERFLOW TO DITCH.

FILE NAME: PROJECTS\260 – SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\S-10 JUNCTION BOX DETAILS__R1.DWG
FILE DATE: 7.18.2023 09:38:18 (CAH)

PROFESSIONAL STRUCTURAL ENGINEER No. 2774619 ROBERT C. CONDER 5/3/2023 STATE OF UTAH

REGISTERED PROFESSIONAL ENGINEER No. 182750 MICHAEL M. CHAMBERS 7/24/23 STATE OF UTAH

HANSEN ALLEN & LUCE INC ENGINEERS

PROJECT ENGINEER

DESIGNED	MMC	3				
DRAFTED	CAH	2				
CHECKED	MEA	⚠1	6/9/2023	PREVIOUS BID CHANGES	CAH	MMC
DATE	MAY 2023	NO.	DATE	REVISIONS	BY	APVD.

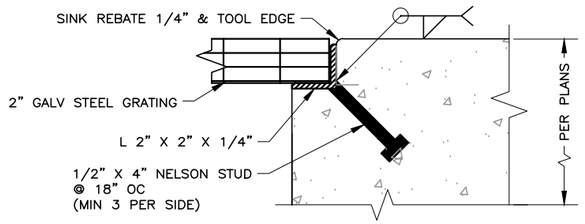
SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
STRUCTURAL
JUNCTION BOX DETAILS

SHEET S-10
260.42.210

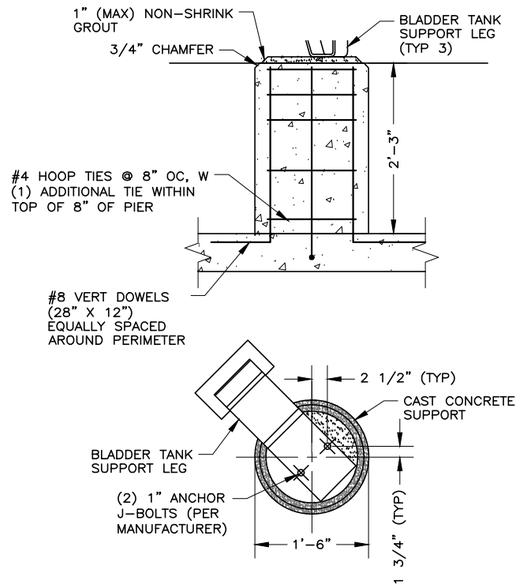
7/04



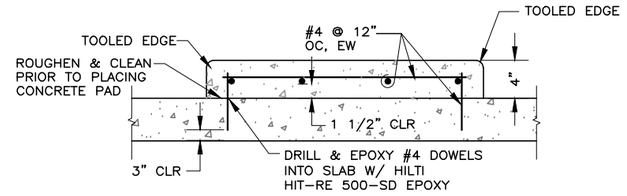
DETAIL NOTE:

HOT DIP GALVANIZE AFTER FABRICATION.

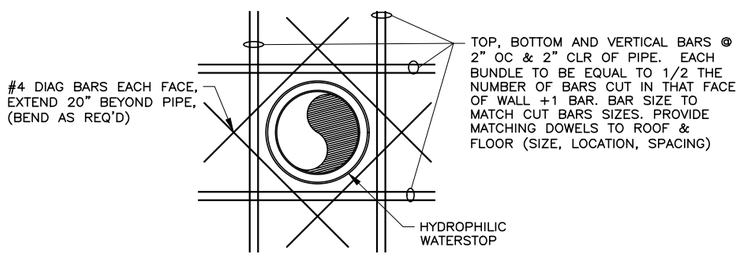
REBATE | A | — | NTS



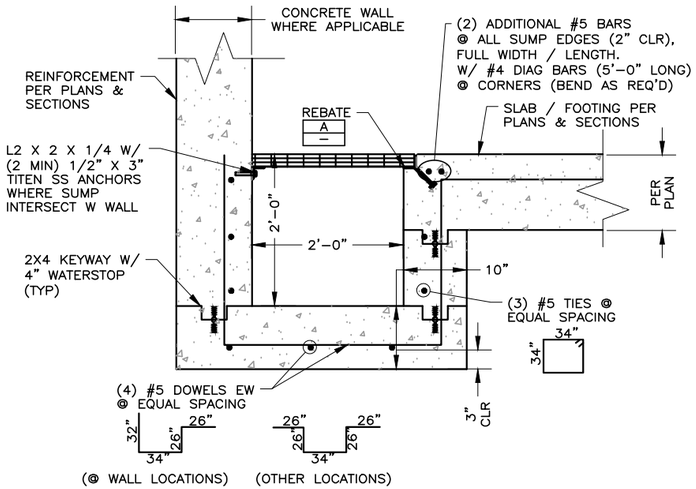
BLADDER TANK CONCRETE SUPPORT ((3) TOTAL) | B | C-4



EQUIPMENT PAD | C | S-4 | NTS



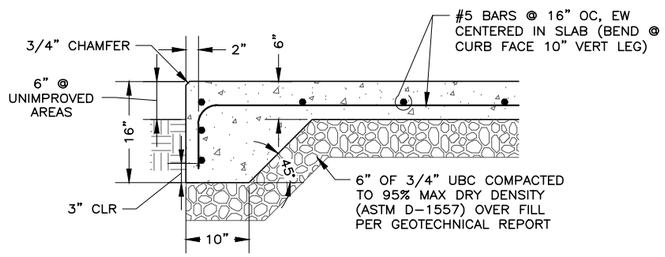
CAST-IN WALL PENETRATION FOR CONCRETE WALLS | D | S-6 | D | S-9 | D | S-10 | NTS



DETAIL NOTE:

WHERE POSSIBLE, POUR BOX MONOLITHICALLY WITH SLABS. IF NOT POSSIBLE, PROVIDE 2X4 KEYWAY WITH WATERSTOP AT ALL JOINTS.

PUMP STATION SUMP DETAIL | E | C-8 | E | S-3 | E | S-4 | NTS



EXTERIOR SLAB-ON-GRAB DETAIL | F | A-1 | F | C-2 | F | S-6 | NTS

FILE NAME: PROJECTS\260 - SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\S-11 MISC DETAILS.DWG
FILE DATE: 5.3.2023 16:31:99 (CAH)

PROFESSIONAL STRUCTURAL ENGINEER — No. 2774619 — ROBERT C. CONDER — 5/3/2023 — STATE OF UTAH

REGISTERED PROFESSIONAL ENGINEER — No. 7827501 — MICHAEL A. MEA — 5/24/23 — STATE OF UTAH

PROJECT ENGINEER

HANSEN ALLEN & LUCE, Inc. ENGINEERS

DESIGNED	MMC	RCC	
DRAFTED	CAH		
CHECKED	MEA	RCC	
DATE	MAY 2023		

NO.	DATE	REVISIONS	BY	APVD.
3				
2				
1				

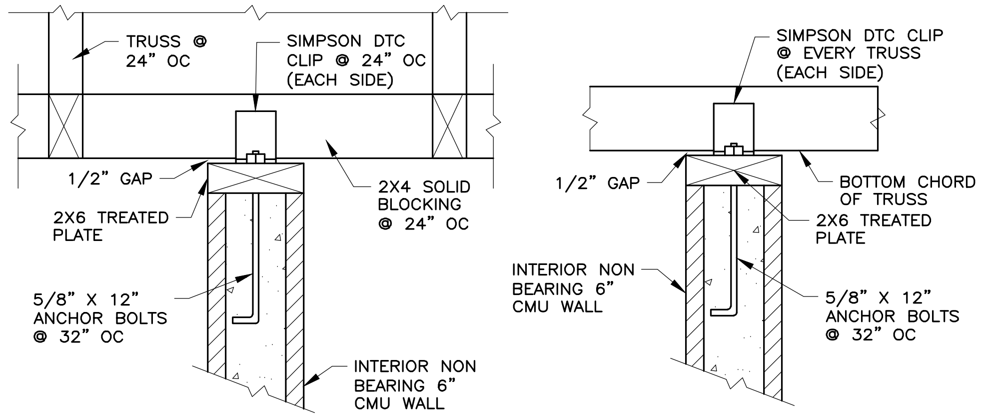
SCALE: NOT TO SCALE

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
STRUCTURAL
MISCELLANEOUS DETAILS I

SHEET S-11
260.42.210

7/04



PARALLEL TO TRUSS

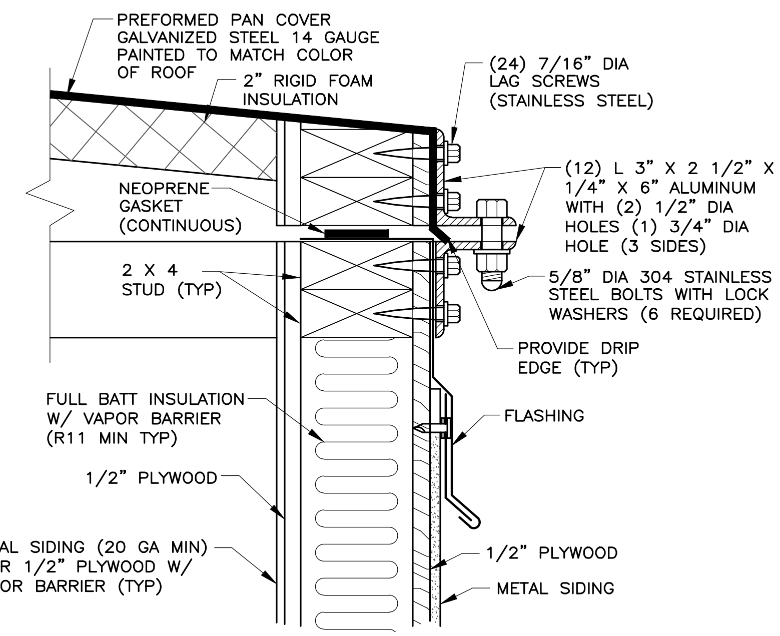
PERPENDICULAR TO TRUSS

DETAIL NOTE:

DTC CLIP TO BE INSTALLED PER MFG TO ALLOW FOR TRUSS DEFLECTIONS.

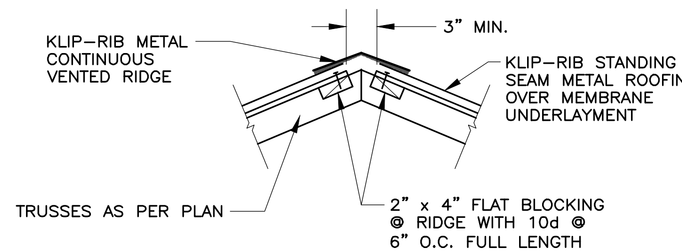
TRUSS OVER NON-BEARING INTERIOR WALL | A / S-5

NTS



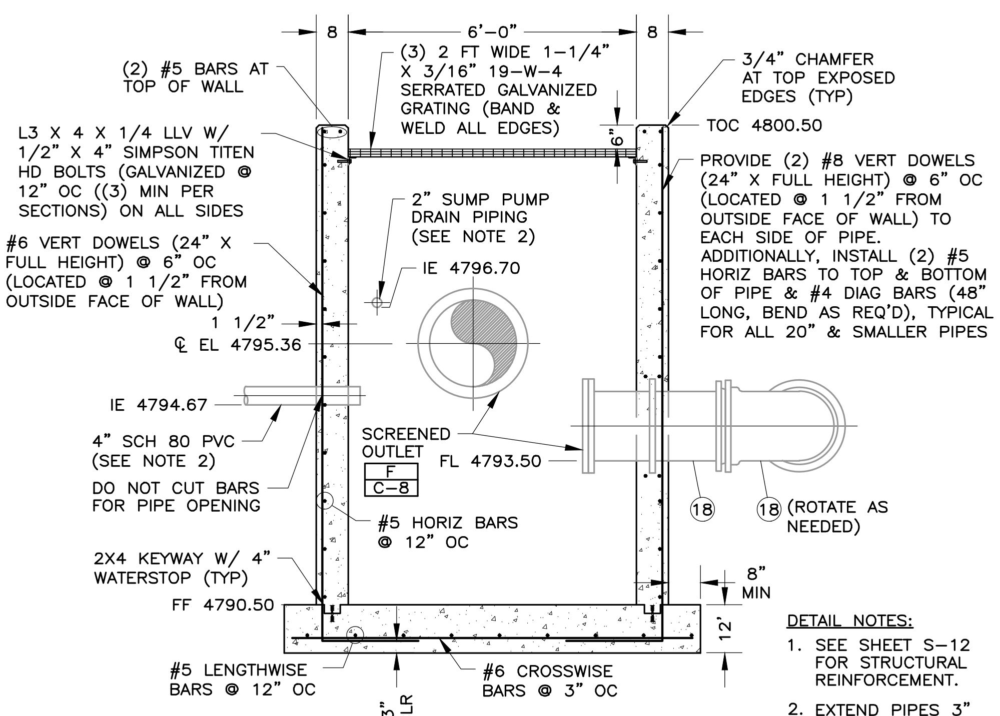
PUMP ACCESS FASTENER DETAIL | B / S-8

NTS



CONTINUOUS ROOF VENT & CAP | C / A-1

NTS

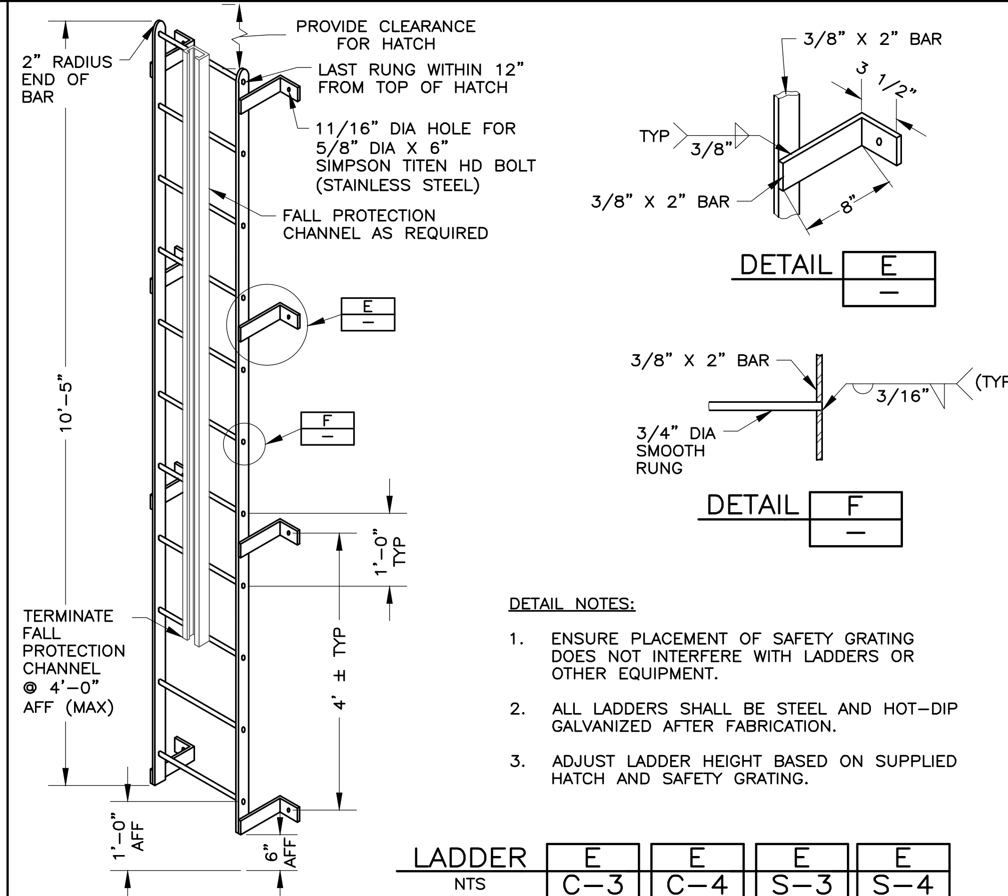


OVERFLOW SECTION | 4 / C-2 | 4 / C-3 | 4 / S-3

0 2 4 SCALE IN FEET

DETAIL NOTES:

1. SEE SHEET S-12 FOR STRUCTURAL REINFORCEMENT.
2. EXTEND PIPES 3" BEYOND WALL AND INSTALL 1/4" SS MESH ON END. SECURE WITH SS CLAMP.
3. RESTRAIN ALL MJ JOINTS.

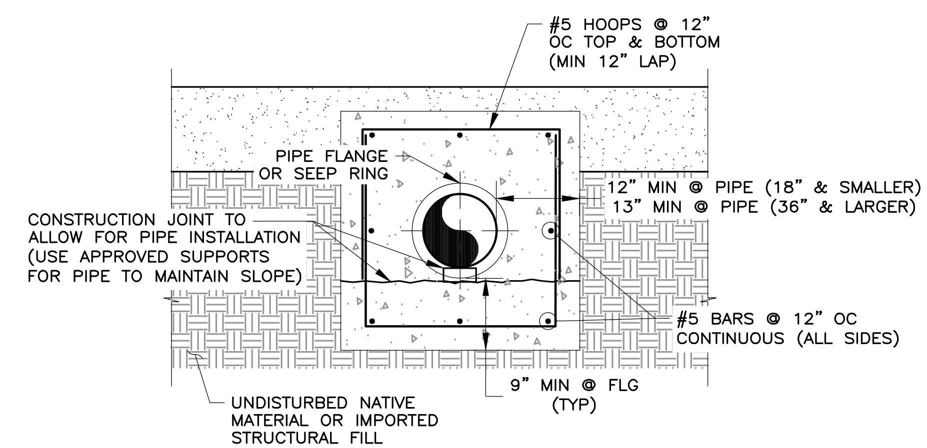


DETAIL NOTES:

1. ENSURE PLACEMENT OF SAFETY GRATING DOES NOT INTERFERE WITH LADDERS OR OTHER EQUIPMENT.
2. ALL LADDERS SHALL BE STEEL AND HOT-DIP GALVANIZED AFTER FABRICATION.
3. ADJUST LADDER HEIGHT BASED ON SUPPLIED HATCH AND SAFETY GRATING.

LADDER | E / C-3 | E / C-4 | E / S-3 | E / S-4

NTS



TYPICAL PIPE ENCASEMENT SECTION | F / C-4

FILE NAME: PROJECTS\260 - SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\S-12 MISC DETAILS.DWG
FILE DATE: 5.24.2023 09:54:58 (CAH)

PROFESSIONAL STRUCTURAL ENGINEER No. 2774619 ROBERT C. CONDER 5/3/2023 STATE OF UTAH

REGISTERED PROFESSIONAL ENGINEER No. 182750 MICHAEL M. CHAMBERS 4/24/23 STATE OF UTAH

HANSEN ALLEN & LUCE INC ENGINEERS

PROJECT ENGINEER

DESIGNED	MMC	3		
DRAFTED	CAH	2		
CHECKED	MEA	1		
DATE	MAY 2023	NO.	DATE	REVISIONS

BY APVD.

SCALE: AS SHOWN

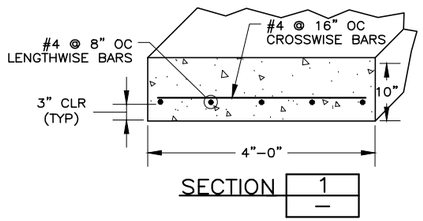
SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
STRUCTURAL
MISCELLANEOUS DETAILS II

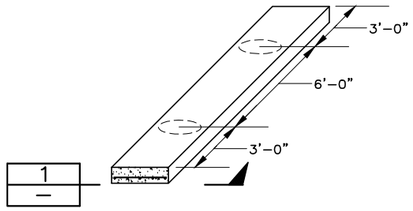
SHEET S-12

260.42.210

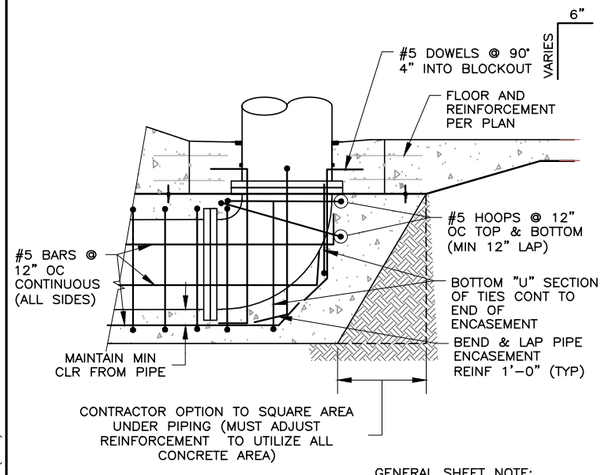
7/04



SECTION 1 / —



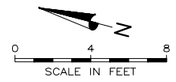
CONCRETE PAD DETAIL — NTS — A / C–5 — A / S–3

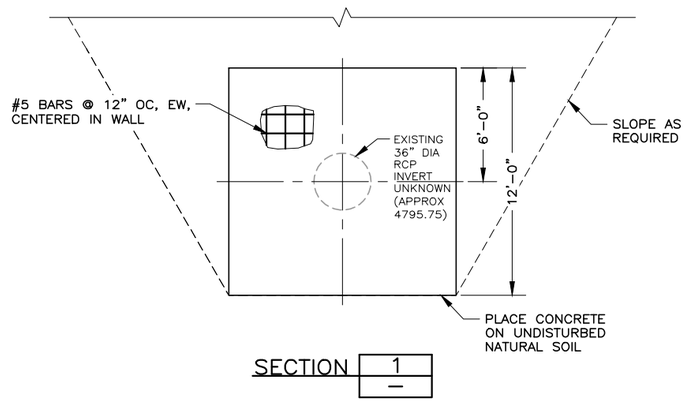


GENERAL SHEET NOTE:

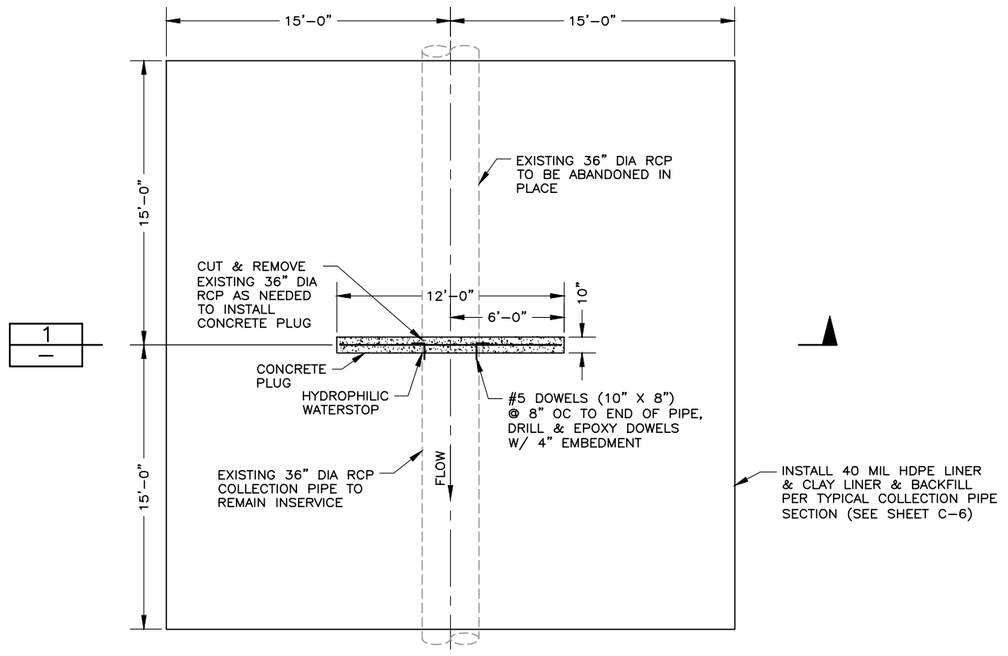
PROVIDE JOINT RESTRAINT FOR ALL FITTINGS THIS SHEET.

TYPICAL PIPE REINFORCEMENT ENCASEMENT SECTION @ BEND — NTS — C / C–4





SECTION 1 / —



CONCRETE PIPE PLUG — B / C–1 — B / PP–2

FILE NAME: PROJECTS\260 – SPRINGVILLE CITY\42.210 BURT SPRINGS RENOVATION\CAD\S–13 PUMP DETAIL.DWG
FILE DATE: 5.3.2023 16:34:22 (CAH)

PROFESSIONAL STRUCTURAL ENGINEER — No. 2774619 — ROBERT C. CONDER — 5/3/2023 — STATE OF UTAH

REGISTERED PROFESSIONAL ENGINEER — No. 762750 — MICHELM. ABBOTT — 5/12/23 — STATE OF UTAH

HANSEN ALLEN & LUCE ENGINEERS

PROJECT ENGINEER

DESIGNED	MMC	RCC	3		
DRAFTED	CAH		2		
CHECKED	MEA	RCC	1		
DATE	MAY 2023		NO.	DATE	REVISIONS

BY | APVD.

SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
STRUCTURAL
MISCELLANEOUS DETAILS III

SHEET S–13

260.42.210

7/04

ELECTRIC HEATER SCHEDULE

ID	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	AIR			ELECTRICAL		PHYSICAL	NOTES
				AIRFLOW RATE (CFM)	LOAD (BTU/H)	TEMP. RISE DB (°F)	HEAT CAPACITY (KW)	VOLT/PH/HZ	LENGTH/ HEIGHT/ WIDTH (INCH)	
UH-1	Q-MARK MUH 0541 5KW	PUMP ROOM	ELECTRIC	350	17,050	85	5	480 / 3 / 60	14 / 16 / 8	1,2,3
UH-2	Q-MARK MUH 0541 5KW	PUMP ROOM	ELECTRIC	350	17,050	85	5	480 / 3 / 60	14 / 16 / 8	1,2,3
UH-3	Q-MARK MUH-03-41 3KW	CHLORINE ROOM	ELECTRIC	150	10,230	-.-	3	480 / 3 / 60	14 / 16 / 8	1,2,3

1. PROVIDE WITH FACTORY WALL MOUNT BRACKET.
2. PROVIDE WITH FINGER PROOF FAN GUARD.
3. COORDINATE WITH ARCHITECTURAL.

FAN SCHEDULE

ID	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	AIR		FAN		ELECTRICAL		PHYSICAL	NOTES
				MAXIMUM AIRFLOW RATE (CFM)	STATIC PRESSURE (IN. WATER)	FAN WHEEL DIAMETER (IN)	STATIC EFFICIENCY (%)	MOTOR SIZE HP (WATTS)	VOLT/PH/HZ	LENGTH/ WIDTH/ HEIGHT (IN)	
EF-1	FANTECH FR225	CHLORINE AREA	INLINE-PLASTIC	332	0.5	8	70	150 WATTS	120 / 1 / 60	13 / 13 / 10	1,2,3

1. TIE TO LIGHT SWITCH.
2. TIED TO LINE VOLTAGE THERMOSTAT AND TO CHLORINE SENSOR FOR EMERGENY USE.
3. PROVIDE WITH BACKDRAFT DAMPER.

MITSUBISHI OUTDOOR UNIT SCHEDULE

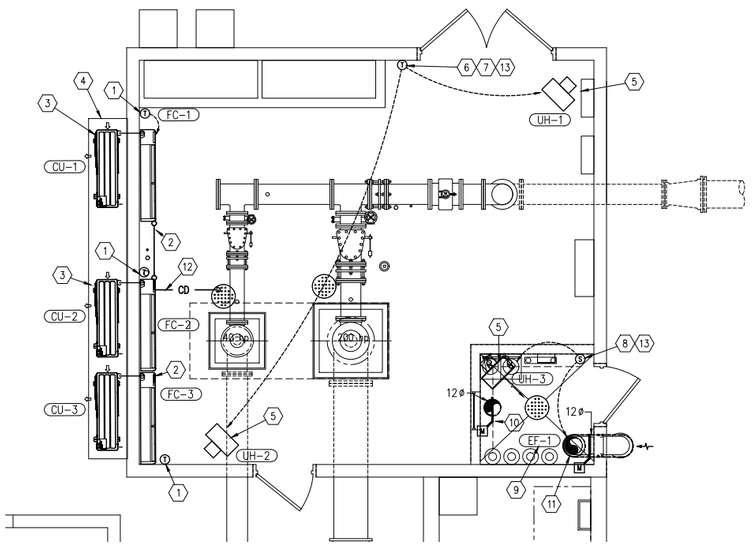
ID	APPROVED MANUFACTURER AND NOMINAL TONAGE	LOCATION	AMBIENT AIR HTG / CLG (DEG F)	COOLING CAPACITY NOMINAL (MBH)	HEATING CAPACITY NOMINAL (MBH)	REFRIG. TYPE	COP (47F / 17F)	ELECTRICAL				PHYSICAL DATA			NOTES
								FUSE (AMPS)	FAN OUTPUT (W)	CONNECTION #1			SOUND IN ANECHOIC (dB)	WEIGHT (LBS)	DIMENSIONS LN / WD / HT (IN)	
										VOLT / PH	MCA (AMPS)	MOCP (AMPS)				
CU-1	MITSUBISHI PUZ-A36N	GROUND	0 / 98	36	40	R-410	3.8 / 2.7	30	-.-	208 / 1	25	31	48	214	42 / 14 / 52	1,2
CU-2	MITSUBISHI PUZ-A36N	GROUND	0 / 98	36	40	R-410	3.8 / 2.7	30	-.-	208 / 1	25	31	48	214	42 / 14 / 52	1,2
CU-3	MITSUBISHI PUZ-A36N	GROUND	0 / 98	36	40	R-410	3.8 / 2.7	30	-.-	208 / 1	25	31	48	214	42 / 14 / 52	1,2

1. INCLUDE LOW AMBIENT HOOD KIT WITH ACCOCIATED WIND BAFFLES FOR 100% LOW AMBIENT COOLING TO -10F
2. PROVIDE WITH DRAIN PAN AND BASE PAN HEATER.

MITSUBISHI INDOOR UNIT SCHEDULE

ID	MANUFACTURER AND MODEL NUMBER	TYPE	USE TYPE	AIR			FAN	REFRIGERANT			ELECTRICAL		PHYSICAL	NOTES
				MAXIMUM AIRFLOW RATE (CFM)	OUTSIDE AIRFLOW RATE (CFM)	CAP 97 F ODB 75 F IDB (BTU/H)	CAP 5 F ODB 70 F IDB (BTU/H)	EXT. STATIC PRESS. (IN H2O)	TYPE	GAS PRESS. SIZE (IN)	LIQUID PRESS. SIZE (IN)	UNIT ONLY MCA (AMPS)	VOLT/PH/HZ	LENGTH/ WIDTH/ HEIGHT - WEIGHT (IN) - (LBS)	
FC-1	MITSUBISHI PKA - A36K	WALL MOUNTED	HTG	920	-	-.-	38,000	0.6	R410A	5/8	3/8	1	208 / 1 / 60	51 / 18 / 15 46	1
			CLG	920	-	36,000	-.-								
FC-2	MITSUBISHI PKA - A36K	WALL MOUNTED	HTG	920	-	-.-	38,000	0.6	R410A	5/8	3/8	1	208 / 1 / 60	51 / 18 / 15 46	1
			CLG	920	-	36,000	-.-								
FC-3	MITSUBISHI PKA - A36K	WALL MOUNTED	HTG	920	-	-.-	38,000	0.6	R410A	5/8	3/8	1	208 / 1 / 60	51 / 18 / 15 46	1
			CLG	920	-	36,000	-.-								

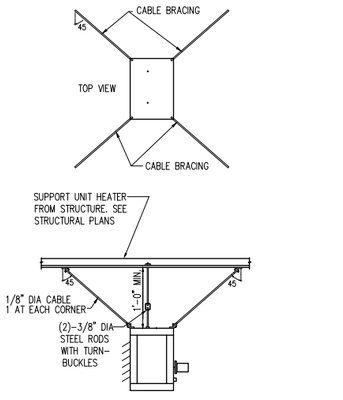
1. POWERED FROM OUTDOOR UNIT.



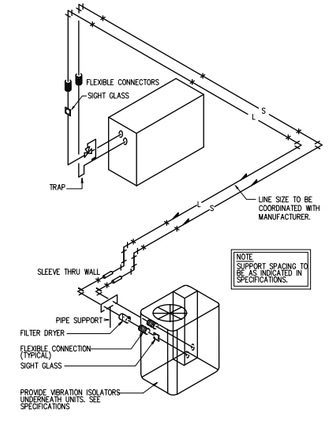
1 H-1 PUMP STATION HVAC PLAN
SCALE: 1/4" = 1'-0"

MECHANICAL KEYED NOTES

1. WIRED MITSUBISHI CONTROLLER.
2. PIPE CONDENSATE FROM COOLING COIL PAN TO FLOOR DRAIN.
3. INSTALL WITH PROPER MAINTENANCE ACCESS AS PER MANUFACTURER.
4. 4" HOUSEKEEPING PAD.
5. PROVIDE WITH FACTORY WALL MOUNTING BRACKETS. PROVIDE WITH WALL MOUNTED THERMOSTAT. TYPICAL.
6. COORDINATE CONTROLS WITH ELECTRICAL. TYPICAL.
7. COORDINATE EXACT LOCATION WITH OWNER. TYPICAL.
8. TEMPERATURE CONTROL FOR CHLORINE ROOM TO BE BY ELECTRICAL.
9. CORROSION RESISTANT FAN.
10. PROVIDE BACKDRAFT DAMPER.
11. RUN INTAKE TO 12" ABOVE FINISHED FLOOR. COORDINATE WITH HANSEN ALLEN AND LUCE.
12. INSTALL 1-1/2 PVC IN FLOOR SLAB TO TRENCH DRAIN. VERIFY WITH DRAIN CONSTRUCTION FOR PENETRATION LOCATION.
13. HOA CONTROLLER LOCATION TO BE BY ELECTRICAL.



ELECTRIC HEATER DETAIL
NO SCALE
2 H-1



TYPICAL REFRIGERANT SCHEME
NO SCALE
3 H-1

COMMISSIONING CHECKLIST

THE FOLLOWING SEQUENCE IS TO BE VERIFIED BY THE CONTRACTOR AND RETURNED TO THE ENGINEER AT JOB COMPLETION WITH AS-BUILT RED LINES. COORDINATE WITH SPECIFICATIONS.

PUMP ROOM SEQUENCE

COOLING: MAINTAIN 80 DEG. MAX WITH 5 DEGREE DEAD-BAND.

WHEN THE PUMP MOTOR IS RUNNING:
FC-1,2,3 - ON/AUTO;
VENTILATION COOLING SYSTEM - ON/AUTO
UH-1,2 - OFF.

WHEN THE PUMP MOTORS ARE OFF (MANUAL OPERATION ONLY):
FC-1,2,3 - ON/AUTO;
VENTILATION COOLING SYSTEM - ON/AUTO
UH-1,2 - OFF.

HEATING: MAINTAIN 55 DEGREES WITH 5 DEGREE DEAD-BAND.
FC-1,2,3 - PRIMARY;
VENTILATION COOLING SYSTEM - ON/AUTO
UH-1,2 - ON/AUTO.

CHLORINE ROOM:
HEATING - 55 DEGREES WITH 5 DEGREE DEAD-BAND.
COOLING - VENTILATION FAN ONLY.

THESE DOCUMENTS ARE INCOMPLETE WITHOUT FULL COORDINATION WITH BLUEFIELD ENGINEERING.

LICENSED PROFESSIONAL ENGINEER
No. 260219
E. TAYLOR GROBERG
12/12/22
STATE OF UTAH

HANSEN ALLEN & LUCE inc ENGINEERS

blue field engineering

DESIGNED	TG	3				
DRAFTED	BLUEFIELD	2			.	
CHECKED	BLUEFIELD	1				
DATE	NOVEMBER 2022	NO.	DATE	REVISIONS	BY	APVD.

SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
HVAC
PLAN

SHEET: H-1

260.42.210

ASHRAE/ACCA COMPLIANCE FORM FOR STANDARD 183

Building or Zone Name:

Burt Springs Ren

Location or Address:

Springville, UT 84663

Design Conditions:

	Cooling	Heating
Weather Data Used	Provo Municipal, UT, US	
Indoor Dry Bulb Design Temperature	78 °F	70 °F
Indoor Design Relative Humidity	50 %	34 %

Load Calculation Method:
(Indicate which of the following methods is used.)

- ☑ **CLTD/CLF** — Cooling Load Tempratture Difference / Cooling Load Factor methods
- ☐ **HB** — Heat Balance methods
- ☐ **TETD/TA** — Total Equivalent Temperature Difference / Time Averaging methods
- ☐ **TFM** — Transfer Function methods
- ☐ **RTS** — Radiant Time Series methods
- ☐ **OTHER** (please specify) _____

The undersigned attests that the above information is correct and that the procedures used to perform the load calculations comply with ANSI/ASHRAE/ACCA Standard 183

Signed: Gregory P. Mockett **Date:**

Digitally signed by Gregory P. Mockett
DN: C=US, E=greg@bluefieldengineering.com, O=Bluefield Engineering, CN=Gregory P. Mockett
Date: 2022.11.22 10:25:49-07'00'

Submitted by: **Date:** Nov 22, 2022

wrightsoft

Right-Suite® Universal 2022 Short Form
Burt Springs Ren
Bluefield Engineering LLC

81 S 700 E, American Fork, UT 84003 Phone: 801 692-0858

Job:
Date: Nov 22, 2022
By:

Project Information

For: Burt Springs Pump Renovation
Springville, UT 84663

		Htg	Clg
Outside db	(°F)	5	100
Outside RH	(%)	-	15
Outside wb	(°F)	-	64
Daily range	(°F)	-	30
Moisture diff.	(gr/lb)	-	-34

		Htg	Clg
Inside db	(°F)	70	78
Inside RH	(%)	-	50
Inside wb	(°F)	-	64
Design TD	(°F)	65	22

Heating Equipment

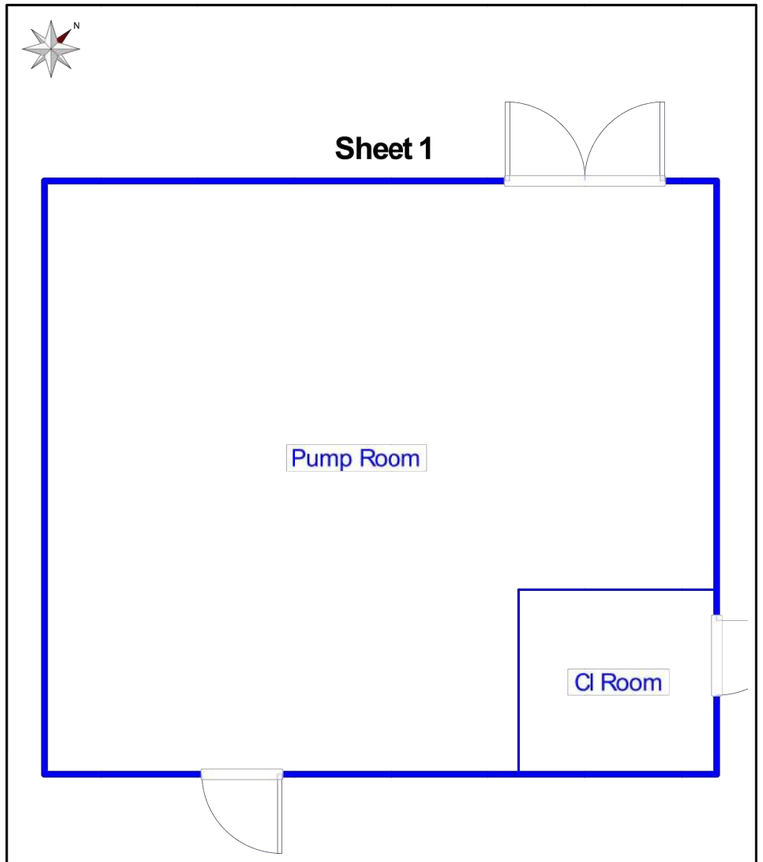
Make		
Model		
Type	Gas furnace	
Efficiency	80 AFUE	
Heating Input	0	MBtuh
Heating Output	0	MBtuh
Humidifier	4.3	gpd
Leaving Air Temp	70.0	°F
Actual Heating Fan	3752	cfm

Cooling Equipment

Make		
Model		
Type	Split AC	
COP / EER / SEER	0	
Sensible Cooling	0	MBtuh
Latent Cooling	0	MBtuh
Total Cooling	0	MBtuh
Leaving Air Temp	55.0	°F
Actual Cooling Fan	3752	cfm

Equipment Location	Burt Springs Ren	
System Type	PEAKCV	
Fan Motor Heat Type	PACKAGE	
Fan & Motor Combined Efficiency	0	%
Static Pressure Across Fan	0	in H2O

NAME	Area ft²	Heat Loss	Sensible Gain	Latent Gain	Htg cfm	Clg cfm	Time
Pump Room	521	40819	78945	-556	3227	3651	Jul 1700 LDT
Cl Room	53	6429	2236	3	525	101	Jul 1700 LDT
Burt Springs Ren	574	47248	81180	-553	3752	3752	Jul 1700 LDT



Job #:	Bluefield Engineering LLC	Scale: 1 : 43
Performed for: Burt Springs Pump Renovation Springville, UT 84663	81 S 700 E American Fork, UT 84003 Phone: 801 692-0858	Page 1 Right-Suite® Universal 2022 22.0.04 RSU01326 2022-Nov-22 10:24:47 ...Renovation - Loads - 221122.rup

THESE DOCUMENTS ARE INCOMPLETE WITHOUT FULL COORDINATION WITH BLUEFIELD ENGINEERING.

LICENSED PROFESSIONAL ENGINEER
NO. 260219
E. TAYLOR GROBERG
12/12/22
STATE OF UTAH

HANSEN ALLEN & LUCE inc ENGINEERS

blue field engineering

DESIGNED	TG	3					
DRAFTED	BLUEFIELD	2				•	
CHECKED	BLUEFIELD	1					
DATE	NOVEMBER 2022	NO.	DATE	REVISIONS		BY	APVD.

SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
HVAC
LOADS

SHEET H-2
260.42.210

DIVISION 22/23 – PLUMBING/HVAC

SECTION 22 0500/23 0500
COMMON WORK RESULTS FOR PLUMBING/HVAC

GENERAL CONDITIONS:

The General Conditions of the Contract, with the amendments, supplements, forms and requirements in Division 1, and herewith made a part of this Division.

All sections of Division 15 shall comply with the Mechanical General Requirements. The standards established in this section as to quality of materials and equipment, the type and quality of workmanship, mode of operations, safety rules, code requirements, etc., shall apply to all sections of this Division as though they were repeated in each Division.

SCOPE OF WORK:

The project described herein is Burt Springs Pump House. This work shall include all labor, materials, equipment, fixtures, and devices for the entire mechanical work and a complete operating, tested and commissioned installation.

Section 23 Index:

SECTION 23 0500 – COMMON WORK RESULTS FOR HVAC PIPING
SECTION 23 0553 – IDENTIFICATION FOR HVAC PIPING & EQUIPMENT
SECTION 23 3113 – METAL DUCTS
SECTION 23 3300 – AIR DUCT ACCESSORIES
SECTION 23 3423 – HVAC POWER VENTILATORS
SECTION 23 6800 – MODULAR AIR-HANDLERS
SECTION 23 0900 – TEMPERATURE CONTROLS
SECTION 23 0593 – TESTING, ADJUSTING AND BALANCING AND MAINTENANCE MANUALS
SECTION 23 0822 – LOUVERS
SECTION 23 9900 – CONTROLS SEQUENCE

SYSTEM DESCRIPTION:

CODES & ORDINANCES:

All work shall be executed in accordance with all underwriters, public utilities, local and state rules and regulations applicable to the trade affected. Should any change in the plans and Specifications be required to comply with these regulations, the Contractor shall notify the Engineer before the time of submitting his bid. After entering into contract, the Contractor will be held to complete all work necessary to meet these requirements without extra expense to the Owner. Where work required by drawings or specifications is above the standard required, it shall be done as shown or specified.

Applicable codes are as follows:
2018 International Mechanical Code
2018 International Building Code
2018 International Plumbing Code
Utah State Boiler Code

SUBMITTALS AND SHOP DRAWINGS:

Submittals:

As soon as possible after the contract is awarded, but in no case more than 5 calendar days thereafter, the Contractor shall submit to the Engineer four (4) copies of the descriptive literature covering products and materials to be used in the installation of mechanical systems for this project. The review of the submitted data will require a minimum of [7] days. If the Contractors schedule requires return of submitted literature in less than the allotted time, the Contractor shall accelerate his submittal delivery date. The Contractor shall resubmit all items requiring re-review within 7 days of returned submittals. Refer to each specification section for items requiring submittal review. Written approval of the Owner's Representative shall be obtained before installing any such equipment or materials for the project. The submittals shall be prepared in an orderly manner, contained in a 3-ring loose-leaf binder with index and identification tabs each item or group of items and for each specification section. All items shall be submitted at one time except automatic temperature control drawings and seismic restraint drawings which may be submitted separately within 60 days of the contract award date. Partial submittals will not be reviewed until the complete submittal is received.

Submitted literature shall bear the Contractor's stamp, indicating that he has checked all equipment being submitted; that each item will fit into the available space with the accesses shown on the drawings; and, further, that each item conforms to the capacity and quality standards given in the contract documents.

Coordination Drawings: Detail major elements, components, and systems of plumbing and HVAC equipment and materials in relationship with other systems, installations, and building components. Show space requirements for installation and access. Indicate if sequence and coordination of installations are important to efficient flow of the Work. Include the following:

a. Planned piping and duct layout, including specialty locations and access areas.
b. Clearances for installing and maintaining insulation.
c. Clearances for servicing and maintaining equipment, accessories, and specialties, including space for disassembly required for periodic maintenance.
d. Equipment and accessory service connections and support details.
e. Exterior wall and foundation penetrations.
f. Fire-rated wall and floor penetrations.
g. Sizes and location of required concrete pads and bases.
h. Scheduling, sequencing, movement, and positioning of large equipment into building during construction.
i. Floor plans, elevations, and details to indicate penetrations in floors, walls, and ceilings and their relationship to other penetrations and installations.

Submitted literature shall clearly indicate performance, quality, and utility requirements; shall show dimension and size of connection points; and shall include derating factors that were applied for each item of equipment to provide capacity at job site elevation. Temperature control submittals shall include piping and wiring diagrams, sequence of operation and equipment. Equipment must fit into the available space with allowance for operation, maintenance, etc. Factory piped and wired equipment shall include shop drawings for all internal wiring and piping furnished with the unit.

Submitted literature shall clearly show all required field install wiring, piping, and accessory installations required by the Contractor to provide a complete operating system.

Review by the Owner's Representative is for general conformance of the submitted equipment to the project specification. In no way does such review relieve this Contractor of his obligation to furnish equipment and materials that comply in detail to the specification nor does it relieve the Contractor of his obligation to determine actual field dimensions and conditions that may affect his work. Regardless of any items overlooked by the submittal review, the requirements of the contract drawings and specifications must be followed and are not waived or superseded in any way by the review.

The contractor is to review equipment by description, catalog number, and manufacturer's names. Standards of quality have been established by the Engineer for certain manufactured equipment items and specialties that are to be furnished by this Division. Alternate products and equipment may be proposed for use only if specifically named in the specifications or if given written prior approval in published addenda. Design equipment is the equipment listed on the drawings or if not listed on the drawings is the equipment first named in the specifications.

Alternate Equipment:

The Contractor should protect himself with the supplier of alternate named equipment. Alternate named equipment will be reviewed only one time.

Should alternate equipment be submitted and be rejected, it shall not be resubmitted for review and it shall be the responsibility of this contractor. The contractor shall only submit on design equipment on future submittals. Incomplete submittal data will be rejected.

If the Engineer is required to do additional design work to incorporate changes caused by submitting equipment or products, different than the design equipment specified, as defined above, the contractor shall reimburse the engineer for additional time and expenses at the engineers current, recognized, hourly rates.

DRAWINGS AND MEASUREMENTS:

Drawings:

The contract document drawings show the general design, arrangements, and extent of the system. In certain cases, the drawings may include details that show more nearly exact locations and arrangements; however, the locations, as shown diagrammatically, are to be regarded as general.

It shall be the work of this Section to make such slight alterations as may be necessary to make adjustable parts fit to fixed parts, leaving all complete and in proper shape when done. All dimensions given on the drawings shall be verified as related to this work and with the Engineer's office before work is started.

This Section shall carefully study building sections, space, clearances, etc., and then provide offsets in piping or ductwork as required to accommodate the building structure without additional cost to the Owner. In any case and at any time, a change in location required by obstacles or the installation of other trades not shown on the mechanical plans shall be made without charge.

The drawings shall not be scaled for roughing in measurements nor shall they be used as shop drawings. Where drawings are required for these purposes or where drawings must be made from field measurements, the Contractor shall take the necessary measurements and prepare the drawings. Shop drawings of the various subcontractors shall be coordinated to eliminate all interferences and to provide sufficient space for the installation of all equipment, piping, ductwork, etc.

The drawings and specifications have been prepared to supplement each other and they shall be interpreted as an integral unit with items shown on one and not the other being furnished and installed as though shown and called out on both.

Record Drawings:

Record drawings for all systems and sections of this Division shall be furnished as work of this Section. Blue-line white prints of floor plans shall be furnished by the Engineer's office. These prints shall be accurately and neatly marked in colored pencil, showing all changes from schematics. Installation and commissioning checklists that are provided on the drawings are to be initialed and dated upon completion.

These drawings shall be reviewed with the Engineer's at least once each month, shall be submitted at time of final inspection, and shall be checked for accuracy. Failure to keep record drawings up-to-date shall be cause for withholding monthly payments.

CONTRACTOR'S USE OF BUILDING EQUIPMENT:

The Contractor may use equipment such as electric motors, fans, heat exchangers, filters, etc., with the written permission of the Owner. As each piece of equipment is used (such as electric motors and fans), maintenance procedures approved by the manufacturer are to be followed. A careful record is to be kept of the length of the time the equipment is used, maintenance procedures followed, and any difficulty encountered. The record is to be submitted to the Owner upon acceptance. All fan belts and filter media (such as bearings) shall be carefully inspected just prior to acceptance. Any excessive wear noted shall require replacement. Any damage by Contractor to be replaced by Contractor.

EXISTING CONDITIONS:

The Contractor shall carefully examine all existing conditions that might affect the mechanical system and shall compare these conditions with all drawings and specifications for work included under this contract. He shall, at such time, ascertain and check all conditions that may affect his work. No allowance shall subsequently be made in his behalf for an extra expense incurred as a result of his failure or neglect to make such examination. This Contractor shall include in his bid proposal all necessary allowances to repair or replace any item that will remain or will be removed, and any item that will be damaged or destroyed by new construction.

The Contractor shall remove all abandoned piping, etc., required by new construction and cap or plug openings. No capping, etc., shall be exposed in occupied areas. All openings of items removed shall be sealed to match adjacent surfaces.

The Contractor shall verify the exact location of all existing services, utilities, piping, etc., and make connections to existing systems as required or as shown on the drawings. The exact location of each utility line, together with size and elevation, shall be established before any on-site lines are installed. Should elevation or size of existing main utility lines make connections to them impossible as shown on drawings, then notification of such shall immediately be given to the Owners Representative for a decision.

EQUIPMENT CAPACITIES:

Capacities shown for equipment in the specifications and on the drawings are the minimum acceptable. No equipment shall be considered as an alternate without prior approval of the design Engineer.

All equipment shall give the specified capacity and performance at the job-site elevation of [4200] feet above sea level. Manufacturers' standard ratings shall be adjusted accordingly. All capacities and performances listed on drawings or in specifications are for job-site conditions.

SEISMIC REQUIREMENTS FOR EQUIPMENT:

All equipment must be furnished structurally adequate to withstand seismic forces as outlined in the Uniform Building Code for seismic Zone 3. Equipment bases shall be designed for direct attachment of seismic snubbers and/or seismic anchors. Coordinate with structural.

COOPERATION WITH OTHER TRADES:

The general contractor shall be responsible for job site coordination. The Contractor shall refer to other drawings and parts of this specification that cover work of other trades that is carried on in conjunction with the mechanical work such that all work can proceed without interference resulting from lack of coordination.

The Contractor shall properly size and locate all openings, chases, sleeves, equipment bases, and accesses. He shall provide accurate wiring diagrams to the Electrical Contractor for all equipment furnished under this Division.

The ceiling cavity must be carefully reviewed and coordinated with all trades. In the event of conflict, the installation of the mechanical equipment and piping shall be in the following order: plumbing, waste, and soil lines; supply, return, and exhaust ductwork; water piping; medical gases; fire protection piping; and pneumatic control piping.

The mechanical Contractor shall insure that the installation of all piping, ducts and equipment is in compliance with Articles 110-16 and 384-4 of the National Electrical Code relative to proper clearances in front of and over all electrical panels and equipment. No piping or ductwork will be allowed to run over an electrical panel.

RESPONSIBILITY OF CONTRACTOR:

The Contractor is responsible for the installation of a satisfactory piece of work in accordance with the true intent of the drawings and specifications. He shall provide, as a part of his work and without expense, all incidental items required even though these items are not particularly specified or indicated. The installation shall be made so that its several component parts will function together as a workable system and shall be left with all equipment properly adjusted and in working order. (The Contractor shall familiarize the Owner's Representative with maintenance and lubrication instructions as prepared by the Contractor and shall explain and fully instruct him relative to operating, servicing, and maintenance of them.) Part of training package and P.M. program.

UNFIT OR DAMAGED WORK:

Any part of this installation that fails, is unfit, or becomes damaged during construction, shall be replaced or otherwise made good. The cost of such remedy shall be the responsibility of this Division and general contractor.

WORKMANSHIP:

Workmanship shall be the best quality of its kind for the respective industries, trades, crafts, and practices, and shall be acceptable in every respect to the Owner's representative. Nothing contained herein shall relieve the Contractor from making good and perfect work in all details in construction. All work shall be performed under the directories of any licensed journeyman. Contractor shall maintain a licensed journeyman on site at all times during construction.

SAFETY REGULATION:

The Contractor shall comply with all local and OSHA safety requirements in performance with this work. (See General Conditions). This Contractor shall be required to provide equipment, supervision, construction, procedures, and all other necessary items to assure safety to life and property.

ELECTRICAL SERVICES:

Motors:

All motors required under this Division shall be furnished and installed as work of this Division. All motor-starting equipment, unless otherwise specified in Division 15 shall be furnished as work of Division 16, Electrical. Motors shall be name plated with Class F insulation as manufactured by Lincoln Electric, US Motors, General Electric, Allis Chalmers, Century, or Reliance, designed for quiet continuous operations with maximum (Class B) 90oC resistance heating rise with 40oC ambient temperature at full load and rated speed and voltage individually specified with minimum 1.15 service factor. Motors shall be all of the same make except those incorporated in packaged units. All motors shall be provided with ball bearings and conduit connection boxes. Lifting eyes shall be provided on motors 1-1/2 horsepower and larger.

Unless otherwise specified, motors 3/4 horsepower and larger shall be 3 phase, 60 cycle, and motors 1/2 horsepower and smaller shall be single phase, 60 cycle. Contractor is to coordinate with available power voltage and phase. Refer to fan and equipment schedules on drawings for voltage characteristics, horsepower, size, etc. All single-phase motors shall have thermal overload protection. If motor-starting equipment is included in packaged units, all three phases shall have overload protection. All motors shall have a power factor of 85 percent or better. All motors 20 horsepower and larger shall be manufacturers Premium Efficiency grade and shall meet the NEMA MG 1-12.54" efficiency ratings for energy efficient motors. All two speed motors, unless otherwise specified, shall be 1800/1200 rpm dual winding type. All 3 phase motors shall be designed and manufactured to be capable of speed control through a variable frequency drive controller.

Motors and other electrical control equipment installed in damp or moist areas or in areas of other special conditions shall be designed and approved for the installation. Motors and electrical equipment in explosive locations shall be approved for those locations. Motors located outside buildings shall be totally enclosed.

Electric Wiring:

All equipment control wiring and all boiler control wiring, water heater control wiring, pump interlocks, automatic temperature control wiring including all necessary contacts, relays, and interlocks, whether low or line voltage, except power wiring, shall be furnished and installed as work of this Division.

All equipment that requires an electrical connection shall be furnished so that it will operate properly and deliver full capacity on the electrical service available and also satisfy the requirements under "Motors," as specified above.

The Mechanical Contractor must refer to the electrical control equipment and wiring shown on the diagrams. Any changes or additions required by specific equipment furnished shall be the complete responsibility of the Contractor furnishing the equipment.

The Mechanical Contractor must coordinate with the Electrical Contractor to insure that all required components of control work are included and fully understood. No additional cost shall accrue to the Owner as a result of lack of such coordination.

WORK, MATERIALS, AND QUALITY OF EQUIPMENT:

Unless otherwise specified, all materials shall be new and of the best quality of their respective kinds and all labor shall be done in a most thorough and workmanlike manner. Work shall be performed by a licensed electrician.

Products or equipment of any of the manufacturers cited herein or any of the products approved by the Addenda may be used. However, where lists of products are cited herein, the one first listed in the design equipment used in drawings and schedules to establish size, quality, function, and capacity standards. If other than design equipment is used, it shall be carefully checked for access to equipment, electrical and control requirements, valving, and piping. Should changes or additions occur in piping, valving, electrical work, etc., or if the work of other Contractors would be revised by the alternate equipment, the cost of all changes shall be borne as work of this Division.

Pipe of foreign manufacture will not be acceptable.

The access to equipment shown on the drawings are the minimum acceptable space requirements. No equipment that reduces or restricts accessibility to this or any other equipment will be considered.

END OF SECTION 22 0500/23 0500

THESE DOCUMENTS ARE INCOMPLETE WITHOUT FULL COORDINATION WITH BLUEFIELD ENGINEERING.

LICENSED PROFESSIONAL ENGINEER
NO. 260219
E. TAYLOR GROBERG
12/12/22
STATE OF UTAH

HANSEN ALLEN & LUCE, inc. ENGINEERS

blue field engineering

DESIGNED	TG	3				
DRAFTED	BLUEFIELD	2				
CHECKED	BLUEFIELD	1				
DATE	NOVEMBER 2022	NO.	DATE	REVISIONS	BY	APVD.

SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
HVAC
HVAC SPECIFICATIONS

SHEET
H-3
260.42.210

DIVISION 22/23 – PLUMBING/HVAC

SECTION 22 0500/23 0500
COMMON WORK RESULTS FOR PLUMBING/HVAC PIPING

PRODUCTS

SUBMITTALS
Product Data: For each type of pipe hanger, channel support system component, and thermal-hanger shield insert indicated.
Shop Drawings: Signed and sealed by a qualified professional engineer for multiple piping supports and trapeze hangers. Include design calculations and indicate size and characteristics of components and fabrication details.
Welding Certificates: Copies of certificates for welding procedures and operators.

QUALITY ASSURANCE
Welding: Qualify processes and operators according to ASME Boiler and Pressure Vessel Code: Section IX, "Welding and Brazing Qualifications."
Engineering Responsibility: Design and preparation of Shop Drawings and calculations for multiple pipe supports, trapeze, equipment anchorage, and seismic restraint by a qualified professional engineer.
Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of hangers and supports that are similar to those indicated for this Project in material, design, and extent.

SUPPORTING DEVICES
Hanger and Pipe Attachments: Factory fabricated with galvanized coatings; nonmetallic coated for hangers in direct contact with copper tubing.
Building Attachments: Powder-actuated-type, drive-pin attachments with pullout and shear capacities appropriate for supported loads and building materials; UL listing and FM approval for fire-protection systems.
Mechanical-Anchor Fasteners: Insert-type attachments with pullout and shear capacities appropriate for supported loads and building materials; UL listing and FM approval for fire-protection systems.

EXECUTION
Install piping free of sags and bends.
Install fittings for changes in direction and branch connections.
Install sleeves for pipes passing through concrete walls, gypsum-board partitions, and concrete floor and roof slabs.
Exterior Wall, Pipe Penetrations: Mechanical sleeve seals installed in steel or cast-iron pipes for wall sleeves.
Fire-Barrier Penetrations: Seal pipe penetrations with through-penetration firestop systems specified in Division 7.
Install unions adjacent to each valve and at final connection to each piece of equipment.
Install dielectric coupling and nipple fittings to connect piping materials of dissimilar metals in water and steam piping.
Install building attachments within concrete or to structural steel. Install additional attachments at concentrated loads, including valves, flanges, guides, strainers, expansion joints, and at changes in direction of piping.
Install powder-actuated drive-pin fasteners in concrete after concrete is cured. Do not use in lightweight concrete or in slabs less than 4 inches thick.
Install mechanical-anchor fasteners in concrete after concrete is cured. Do not use in lightweight concrete or in slabs less than 4 inches thick.
Support fire-protection system piping independent of other piping.
Load Distribution: Install hangers and supports so piping live and dead loading and stresses from movement will not be transmitted to connected equipment.
Pipe Hanger and Support Installation: Comply with MSS SP-69 and MSS SP-89. Install hangers, supports, clamps, and attachments as required to properly support piping from building structure.
Channel Support System Installation: Arrange for grouping of parallel runs of piping and support together on field-assembled channel systems.
1. Field assemble and install according to manufacturer's written instructions.
Install building attachments within concrete slabs or attach to structural steel. Space attachments within maximum piping span length indicated in MSS SP-69. Install additional attachments at concentrated loads, including valves, flanges, guides, strainers, and expansion joints, and at changes in direction of piping. Install concrete inserts before concrete is placed; fasten inserts to forms and install reinforcing bars through openings at top of inserts.
Install mechanical-anchor fasteners in concrete after concrete is placed and completely cured. Install fasteners according to manufacturer's written instructions.
Install hangers and supports complete with necessary inserts, bolts, rods, nuts, washers, and other accessories.
Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.
Load Distribution: Install hangers and supports so that piping live and dead loads and stresses from movement will not be transmitted to connected equipment.
Pipe Slopes: Install hangers and supports to provide indicated pipe slopes and so maximum pipe deflections allowed by ASME B31.9, "Building Services Piping," is not exceeded.
PAINTING
Touching Up: Where cleaning and touch up painting is not specified in Division 9, Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
Apply paint by brush or spray to provide a minimum dry film thickness of 2.0 mils.
Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION 22 0500/23 0500

DIVISION 22/23 – PLUMBING/HVAC

SECTION 22 0553/23 0553
IDENTIFICATION FOR PLUMBING/HVAC PIPING & EQUIPMENT

SUBMITTALS
Product Data: For identification materials and devices.
Samples: Of color, lettering style, and graphic representation required for each identification material and device.

QUALITY ASSURANCE
Comply with ASME A13.1, "Scheme for the Identification of Piping Systems" for lettering size, length of color field, colors, and viewing angles of identification devices.

PRODUCTS

Products specified are for applications referenced in other Division 15 Sections. If more than single type is specified for listed applications, selection is Installer's option.
Equipment Nameplates: Metal permanently fastened to equipment with data engraved or stamped.
Data: Manufacturer, product name, model number, serial number, capacity, operating and power characteristics, labels of tested compliances, and essential data
Location: Accessible and visible.
Stencils: Standard stencils, prepared with letter sizes conforming to recommendations of ASME A13.1. Minimum letter height is 1-1/4 inches for ducts, and 3/4 inch for access door signs and similar operational instructions.
Stencil Paint: Exterior, oil-based, alkyd gloss black enamel, unless otherwise indicated. Paint may be in pressurized spray-can form.
Identification Paint: Exterior, oil-based, alkyd enamel in colors according to ASME A13.1, unless otherwise indicated.
Snap-On Plastic Pipe Markers: Manufacturer's standard preprinted, semi-rigid, snap-on type. Include color-coding according to ASME A13.1, unless otherwise indicated.
Pipes with OD, Including Insulation, Less Than 6 Inches: Full-band pipe markers, extending 360 degrees around pipe at each location.
Pipes with OD, Including Insulation, 6 Inches and Larger: Either full-band or strip-type pipe markers, at least 3 times letter height and of length required for label.

Lettering: Manufacturer's standard preprinted captions as selected by Engineer.
Lettering: Use piping system terms indicated and abbreviate only as necessary for each application length.
Arrows: Either integrally with piping system service lettering, to accommodate both directions, or as separate unit, on each pipe marker to indicate direction of flow.
Plastic Duct Markers: Manufacturer's standard laminated plastic, in the following color codes:
Green: Cold-air supply.
Yellow: Hot-air supply.
Blue: Exhaust, outside, return, and mixed air.
Hazardous Material Exhausts: Use colors and designs recommended by ASME A13.1.
Terminology: Include direction of airflow; duct service such as supply, return, and exhaust; duct origin, duct destination, and design flow.
Plastic Tape: Manufacturer's standard color-coded, pressure-sensitive, self-adhesive, vinyl tape, at least 3 mils thick.
Width: 1-1/2 inches on pipes with OD, including insulation, less than 6 inches; 2-1/2 inches for larger pipes.
Color: Comply with ASME A13.1, unless otherwise indicated.
Valve Tags: Stamped or engraved with 1/4-inch letters for piping system abbreviation and 1/2-inch sequenced numbers. Include 5/32-inch hole for fastener.
Material: 0.032-inch- thick, polished brass..
Size: 1-1/2-inches diameter, unless otherwise required.
Indicate valve service and normal position on valve. Example Cold water, N.O.
Valve Tag Fasteners: Brass, wire-link or beaded chain; or brass S-hooks.
Valve Tag Fasteners: Brass, wire-link chain; beaded chain; or S-hooks.
Access Panel Markers: 1/16-inch- thick, engraved plastic-laminate markers, with abbreviated terms and numbers corresponding to concealed valve. Provide 1/8-inch center hole for attachment.
Plastic Equipment Markers: Manufacturer's standard laminated plastic, in the following color codes:
Green: Cooling equipment and components.
Yellow: Heating equipment and components.
Brown: Energy reclamation equipment and components.
Blue: Equipment and components that do not meet criteria above.
Hazardous Equipment: Use colors and designs recommended by ASME A13.1.
Terminology: Match schedules as closely as possible. Include the following:
(a) Name and plan number.
(b) Equipment service.
(c) Design capacity.
(d) Other design parameters such as pressure drop, entering and leaving conditions, and speed.
Size: 2-1/2 by 4 inches for control devices, dampers, and valves; 4-1/2 by 6 inches for equipment.
Lettering and Graphics: Coordinate names, abbreviations, and other designations used in mechanical identification with corresponding designations indicated. Use numbers, letters, and terms indicated for proper identification, operation, and maintenance of mechanical systems and equipment.
Multiple Systems: Identify individual system number and service if multiple systems of same name are indicated.

EXECUTION

Install pipe markers on each system. Include arrows showing normal direction of flow.
Marker Type: Stenciled markers with painted, color-coded bands complying with ASME A13.1.
Marker Type: Plastic markers, with application systems. Install on pipe insulation segment where required for hot, non-insulated pipes.
Fasten markers on pipes and insulated pipes by one of following methods:
Snap-on application of pre-tensioned, semi-rigid plastic pipe marker.
Adhesive lap joint in pipe marker overlap.
Laminated or bonded application of pipe marker to pipe or insulation.
Taped to pipe or insulation with color-coded plastic adhesive tape, not less than 3/4 inch wide, lapped a minimum of 1-1/2 inches at both ends of pipe marker, and covering full circumference of pipe.
Taped to pipe or insulation with color-coded plastic adhesive tape, not less than 1-1/2 inches wide, lapped a minimum of 3 inches at both ends of pipe marker, and covering full circumference of pipe.
Locate pipe markers and color bands where piping is exposed in finished spaces; machine rooms; accessible maintenance spaces such as shafts, tunnels, and plenums; and exterior nonconcealed locations according to the following:
Near each valve and control device.
Near each branch connection, excluding short takeoffs for fixtures and terminal units. Mark each pipe at branch, where flow pattern is not obvious.
Near penetrations through walls, floors, ceilings, or nonaccessible enclosures.
At access doors, manholes, and similar access points that permit view of concealed piping.
Near major equipment items and other points of origination and termination.
Spaced at a maximum of 50-foot intervals along each run. Reduce intervals to 25 feet in areas of congested piping and equipment.
On piping above removable acoustical ceilings, except omit intermediately spaced markers.

VALVE TAGS
Install on valves and control devices in piping systems, except check valves, valves within factory-fabricated equipment units, plumbing fixture supply stops, shutoff valves, faucets, convenience and lawn-watering hose connections, and HVAC terminal devices and similar roughing-in connections of end-use fixtures and units. Indicate service and normal position of all tagged valve and control devices. List tagged valves in valve schedule.
Tag Material: Brass.

3.3 EQUIPMENT SIGNS AND MARKERS

Install engraved plastic-laminate signs or equipment markers on or near each major item of mechanical equipment. Include signs for the following general categories of equipment:
Main control and operating valves, including safety devices and hazardous units such as gas outlets.
Fire department hose valves and hose stations.
Meters, gages, thermometers, and similar units.
Fuel-burning units, including furnaces and heaters.
Fans, blowers, primary balancing dampers, and mixing boxes.
Packaged HVAC central-station and zone-type units.
Tanks and pressure vessels.
Strainers, filters, water-treatment systems, and similar equipment.

Optional Sign Types: Stenciled signs may be provided instead of engraved plastic, at Installer's option, where lettering larger than 1-inch high is needed for proper identification because of distance from normal location of required identification.
Lettering Size: Minimum 1/4 inch for name of units if viewing distance is less than 24 inches, 1/2 inch for viewing distances up to 72 inches, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal lettering.
Terms on Signs: Distinguish between multiple units, indicate operational requirements, indicate safety and emergency precautions, warn of hazards and improper operations, and identify units.

Duct Systems: Identify air supply, return, exhaust, intake, and relief ducts with duct markers; or provide stenciled signs and arrows showing service and direction of flow.

Location: Locate signs near points where ducts enter into concealed spaces and at maximum intervals of 50 feet in each space where ducts are exposed or concealed by removable ceiling system.

ADJUSTING AND CLEANING

Relocate mechanical identification materials and devices that have become visually blocked by work of this or other Divisions.
Clean faces of identification devices and glass frames of valve charts.

END OF SECTION 22 0553/23 0553

DIVISION 23 – HVAC

SECTION 23 3113
METAL DUCTS

GENERAL

1. Duct system design, as indicated, has been used to select and size air-moving and -distribution equipment and other components of air system. Changes to layout or configuration of duct system must be specifically approved in writing by Architect. Accompany requests for layout modifications with calculations showing that proposed layout will provide original design results without increasing system total pressure.

2. Duct material: galvanized, sheet steel, lock-forming quality; ASTM A 653/A 653M, coating designation; mill-phosphatized finish for surfaces of ducts exposed to view.

3. Underground duct shall be PVC pipe or PVC coated galvanized steel encased in concrete.

4. Duct liner: Comply with NFPA 90A or NFPA 90B and NAIMA's "Fibrous Glass Duct Liner Standard." ASTM C 1071 with coated surface exposed to airstream to prevent erosion of glass fibers.
a. Thickness: 1".
b. Thermal Conductivity (k-Value): .26 at 75 deg Fmean temperature.
c. Fire-Hazard Classification: Maximum flame-spread rating of 25 and smoke-developed rating of 50, when tested according to ASTM C 411.
d. Liner Adhesive: Comply with NFPA 90A or NFPA 90B and ASTM C 916.

5. Round duct: Diameter as applied to flat-oval ducts in this Article is the diameter of the size of round duct that has a circumference equal to perimeter of a given size of flat-oval duct.
a. Round Ducts: Fabricate supply ducts of galvanized steel according to SMACNA's "HVAC Duct Construction Standards--Metal and Flexible."
b. Branch supply ducts are to be Unico system low temperature insulated round duct supply kits.
c. Fittings are to be Unico system fittings.

6. Rectangular duct: Fabricate ducts, elbows, transitions, offsets, branch connections, and other construction with galvanized, sheet steel, according to SMACNA's "HVAC Duct Construction Standards--Metal and Flexible." Comply with requirements for metal thickness, reinforcing types and intervals, tie-rod applications, and joint types and intervals.
a. Lengths: Fabricate rectangular ducts in lengths appropriate to reinforcement and rigidity class required for pressure classification.
b. Materials: Free from visual imperfections such as pitting, seam marks, roller marks, stains, and discolorations.

7. Static-Pressure Classifications: Unless otherwise indicated, construct ducts to the following:
a. Supply Ducts: 3" wg.
b. Return Ducts: 2" wg, negative pressure.
c. Exhaust Ducts: 2" wg, negative pressure.
8. Cross Breaking or Cross Beading: Cross break or cross bead duct sides 19" and larger and .0359" thick or less, with more than 10ø of unbraced panel area, unless ducts are lined.

END OF SECTION 23 3113

DIVISION 23 – HVAC

SECTION 23 3300
AIR DUCT ACCESSORIES

GENERAL

1. Volume dampers: Factory fabricated with required hardware and accessories. Stiffen damper blades for stability. Include locking device to hold single-blade dampers in a fixed position without vibration. Close duct penetrations for damper components to seal duct consistent with pressure class.

2. Pressure Classifications of or Higher: End bearings or other seals for ducts with axles full length of damper blades and bearings at both ends of operating shaft.

3. Fire Dampers: Labeled to UL 555.
a. Fire Rating: One and one-half and three hours.
b. Frame: SMACNA Type B with blades out of airstream; fabricated with roll-formed, thick galvanized steel; with mitered and interlocking corners.
c. Provide access door though ductwork and other systems for damper access.
d. Fusible Link: Replaceable, 165° rated as indicated.
4. Manufactured Turning Vanes: Fabricate of 1.5" wide, curved blades set 3/4" o.c.; support with bars perpendicular to blades set 2" o.c.; and set into side strips suitable for mounting in ducts.

5. Flexible Ducts, Insulated: Factory-fabricated, insulated, round duct, with an outer jacket enclosing 1.5" thick, glass-fiber insulation around a continuous inner liner.

END OF SECTION 23 3300

DIVISION 23 – HVAC

SECTION 23 3423
HVAC POWER VENTILATORS

GENERAL
1. Fan description: Coordiante with Electrical Engineering Plans. Corrosion resistant as requried. Centrifugal fans designed for installing in ceiling or wall, or for concealed in-line applications.
2. Housing: Galvanized steel lined with acoustical insulation. Plastic for corrosion resistant areas.
3. Fan Wheel: Centrifugal wheels directly mounted on motor shaft. Fan shrouds, motor, and fan wheel shall be removable for service.
4. Grille: Stainless-steel, louvered grille with flange on intake and thumbscrew attachment to fan housing.
5. Electrical Requirements: Junction box for electrical connection on housing and receptacle for motor plug-in.
6. Variable-Speed Controller: Solid-state control to reduce speed from 100 percent to less than 50 percent.
7. Accessories: Manufacturer's standard roof jack or wall cap, and transition fittings.
8. Provide wall cap and room grille with each fan.

END OF SECTION 23 3423

THESE DOCUMENTS ARE INCOMPLETE WITHOUT FULL COORDINATION WITH BLUEFIELD ENGINEERING.

LICENSED PROFESSIONAL ENGINEER
LIC. 260219
E. TAYLOR GROBERG
12/12/22
STATE OF UTAH

HANSEN ALLEN & LUCE inc ENGINEERS

blue field engineering

DESIGNED	TG	3				
DRAFTED	BLUEFIELD	2				
CHECKED	BLUEFIELD	1				
DATE	NOVEMBER 2022	NO.	DATE	REVISIONS	BY	APVD.

SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
HVAC
HVAC SPECIFICATIONS

SHEET
H-4
260.42.210

DIVISION 23 – HVAC

SECTION 23 68 00
MODULAR AIR HANDLING UNITS

PART 1 GENERAL

1.01 WORK INCLUDED

A. Modular Air Handling Units.

1.02 REFERENCES

A. AMCA 300 – Reverberant Method for Sound Testing of Fans.
B. AMCA 301 – Method for Publishing Sound Ratings for Air Moving Devices.
C. ANSI/AFBMA 9 – Load Ratings and Fatigue Life for Ball Bearings.
D. ANSI/UL 900 – Test Performance of Air Filter Units.
E. ARI 260 – Standard for Sound Rating of Ducted Air Moving and Conditioning Equipment
F. ARI 410 – Standard for Forced Circulation Air–Cooling and Air–Heating Coils.
G. ARI 430 – Standard for Central Station Air Handling Units.
H. ARI 1060 Air–To–Air Energy Recovery Ventilation Equipment
I. ASHRAE 68 – Laboratory Method of Testing In–Duct Sound Power Measurement Procedure for Fans.
J. ASTMB 117 – Standard Practice for Operation Salt Spray Apparatus
K. NEMA MG1 – Motors and Generators
L. NFPA 90 A & B – Installation of Air Conditioning and Ventilation Systems and Installation of Warm Air Heating and Air Conditioning Systems.
M. SMACNA – HVAC Duct Construction Standards.
N. UL 1995 – Heating and Cooling Equipment

1.03 QUALITY ASSURANCE

A. Air Coils: Certify capacities, pressure drops and selection procedures in accordance with current ARI 410 Standard.
B. Certify air–handling units in accordance with ARI 430.
C. ISO 9001 Certification.

1.04 SUBMITTALS

A. Submit unit performance including: capacity, nominal and operating performance.
B. Submit Mechanical Specifications for unit and accessories describing construction, components and options.
C. Submit shop drawings indicating overall dimensions as well as installation, operation and service clearances. Indicate lift points and recommendations. Indicate unit shipping split locations, and split dimensions, installation and operating weights including dimensions.
D. Provide fan curves with specified operating point clearly plotted.
E. Submit data on electrical requirements. Include safety and start–up instructions.
F. Submit sound data certified to ARI 260.

1.05 REGULATORY REQUIREMENTS

A. Unit shall be manufactured to conform to UL 1995 Standard and shall be listed by either UL/CUL or ETL. Units shall be provided with listing agency label affixed to unit. In the event the unit is not UL/CUL or ETL approved, the contractor shall, at his/her expense provide for a field inspection by a UL/CUL or ETL representative to verify conformance. If necessary, contractor shall perform modifications to the unit to comply with UL/CUL or ETL as directed by the representative, at no additional expense to the owner.
B. Certify air–handling units in accordance with ARI 430. If air–handling units are not certified in accordance with ARI 430, contractor shall be responsible for expenses associated with testing of units after installation to verify performance of fan(s). Any costs incurred to adjust fans to meet scheduled capacities shall be the sole responsibility of the contractor.
C. Certify air–handling coils in accordance with ARI 410. If air–handling coils are not certified in accordance with ARI 410, contractor shall be responsible for expenses associated with testing of coils after installation to verify performance of coil(s). Any costs incurred to adjust coils to meet scheduled capacities shall be the sole responsibility of the contractor.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Comply with manufacturer's installation instructions for rigging, unloading, and transporting units.
B. Units shall ship fully assembled up to practical shipping and rigging limitations. Units not shipped fully assembled shall have tags and airflow arrows on each section to indicate location and orientation in direction of airflow. Shipping splits shall be clearly defined on submittal drawings. Cost associated with non conformance to shop drawings shall be the responsibility of the manufacturer. Each section shall have lifting lugs or shipping skid to allow for field rigging and final placement of section.
C. Deliver units to jobsite with fan motor(s), sheave(s), and belt(s) completely assembled and mounted in units.
D. Store in clean dry place and protect from weather and construction traffic. Handle carefully to avoid damage to components, enclosures, and finish.

1.07 START–UP AND OPERATING REQUIREMENTS

A. Do not operate units for any purpose, temporary or permanent, until ductwork is clean, filters in place, bearings lubricated (if applicable), condensate properly trapped, piping connections verified and leak–tested, belts aligned and tensioned, all shipping braces removed, bearing set screws torqued, and fan has been test run under observation.

1.08 WARRANTY

A. The equipment manufacturer shall provide, at no additional cost, a standard parts warranty that covers a period of one year from unit start–up or 18 months from shipment, whichever occurs first. This warrants that all products are free from defects in material and workmanship and shall meet the capacities and ratings set forth in the equipment manufacturer's catalog and bulletins.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Approved manufacturer shall be Trane, with pre–approved alternates considered. Manufacturers not pre–approved, must obtain pre–approval in writing from consulting engineer prior to bid day. Alternates must comply with all performance and features as called for in this specification. Job awarded on basis of specified equipment. Alternate will be evaluated and considered after job is awarded.
B. Manufacturer must clearly define any exceptions made to Plans and Specifications. Any deviations in layout or arrangement shall be submitted to consulting engineer prior to bid date. Acceptance of deviation(s) from specifications shall be in the form of written approval from the consulting engineer. Mechanical Contractor is responsible for expenses that occur due to exceptions made.
C. Approved Custom Manufacturers
1. Trane
2. Temtrol
3. System Aire
4. Haakon

2.02 GENERAL

A. Unit layout and configuration shall be as defined in project plans and schedule.
B. Provide unit mounting legs to support all sections of unit and raise unit for proper trapping. Contractor will be responsible for providing a housekeeping pad when unit mounting device is not of sufficient height to properly trap unit. Unit mounting devices not constructed of galvanized steel shall be chemically cleaned and coated with both a rust–inhibiting primer and finished coat of rust–inhibiting enamel.

2.03 UNIT CASING

A. Unit shall be constructed of a complete structural frame with removable panels. Unit manufacturer shall ship separate segments so unit can be broken down for ease of installation in tight spaces. The entire air handler shall be constructed of galvanized steel. Casing finished to meet ASTMB 117 250–hour salt–spray test. The removal of side panels shall not affect the structural integrity of the unit. All removable panels shall be gasketed to minimize air leakage. All doors shall have gasketing around full perimeter to prevent air leakage. Contractor shall be responsible to provide connection flanges and all other framework that is needed to properly support the unit.

B. Construct casing sections capable of operating from –4"wg to +6"wg .

C. Access panels and/or access doors shall be available on both sides of the unit in all sections to allow easy access to drain pan, coil(s), motor, drive components and bearings for cleaning, inspection, and maintenance. If panels are not removable, then manufacturer shall provide access sections with doors between all internal components to ensure access and cleanability of the air handler.

D. Access doors shall be double wall construction to prevent damage to insulation during routine maintenance.
E. Access panels and doors shall be fully removable without the use of specialized tools to allow complete access of all interior surfaces.
F. Door hardware shall be surface mounted to minimize penetrations in the door casing that could lead to air leakage paths.
G. All joints between exterior panels and structural frames, as well as joints between module frames, shall be properly sealed and gasketed to provide an air seal.
H. Insulation – High density – Insulation shall be encased in double–wall casing between exterior and interior solid panel such that no insulation can erode to the airstream. Foil facing on insulation is not an acceptable alternate to double wall construction. Insulation shall have a minimum R–Value of 8 and shall be UL listed. The installation shall comply with NFPA–90A and B requirements.

2.04 FANS

A. Provide fans of type and class as specified on the schedule. Fan shafts shall be solid, coated with a rust–inhibiting coating, and properly designed so that fan shaft does not pass through first critical speed as unit comes up to rated RPM. All fans shall be statically and dynamically tested by the manufacturer for vibration and alignment as an assembly at the operating RPM to meet design specifications. Fans controlled by variable frequency drives shall be statically and dynamically tested for vibration and alignment at speeds between 25% and 100% of design RPM. If fans are not factory–tested for vibration and alignment, the contractor shall be responsible for cost and labor associated with field balancing and certified vibration performance. Fan wheels shall be keyed to fan shafts to prevent slipping.

B. Provide grease lubricated ball bearings selected for L–50 200,000–hour average life per ANSI/AFBMA 9. Greasable bearings shall have lubrication lines extended to the drive side of the unit. Lubrication lines shall be a clear, high–pressure, polymer to aid in visual inspection. Extend both grease lubrication lines to drive side of unit and rigidly attach to drive side bearing support with zerk fittings. If extended lubrication lines are not provided, manufacturer shall provide permanently lubricated bearing with engineering calculations for proof of bearing life.

C. Fans shall be mounted on isolation bases. Internally–mounted motor shall be on the same isolation base. Fan and motor shall be internally isolated with spring isolators. Flexible canvas ducts shall be installed between fan and unit casing to ensure complete isolation. Flexible canvas ducts shall comply with NFPA 90A and UL 181 requirements. If fans and motors are not internally isolated, then the entire unit shall be externally isolated from the building, including supply and return duct work, piping, and electrical connections. External isolation shall be furnished by the contractor in order to avoid transmission of noise and vibration through the ductwork and building structure.

D. Fan modules shall have a minimum of one access door located on the drive side of the unit to allow inspection and maintenance of the fan, motor, and drive components. Construct door(s) per Section 2.03 paragraphs D, E, and F.

E. Belts shall be enclosed as required by OSHA standard 29 CFR 1910 to protect worker from accidental contact with the belts and sheaves.

F. MOTORS AND DRIVES

1. All motors and drives shall be factory–installed and run tested. All motors shall be installed on a slide base to permit adjustment of belt tension. Slide base shall be designed to accept all motor sizes offered by the air–handler manufacturer for that fan size to allow a motor change in the future, should airflow requirements change.
2. Fan Motors shall be heavy duty, open drip–proof (ODP)high efficiency, operable at 460 volts, 60Hz, 3–phase
3. Motors shall be selected to operate continuously at 104 F (40 C) ambient without tripping of overloads. Motors shall have a +/– 10 percent voltage utilization range to protect against voltage variation. Motors shall be in compliance with EPACT when applicable. Motors shall have Class F Insulation.
4. V–Belt Drive shall be constant pitch rated at 1.2 times the motor nameplate.
5. Manufacturer shall provide for each fan a nameplate with the following information to assist air balance contractor in start up and service personnel in maintenance:
a. Fan and motor sheave part number
b. Fan and motor bushing part number
c. Number of belts and belt part numbers
d. Fan design RPM and motor HP
e. Belt tension and deflection
f. Center distance between shafts

6. Combination Starter / Disconnect – A combination starter / disconnect is provided for each fan motor. Each starter / disconnect is properly sized, factory mounted, and wired to the fan motor to facilitate temporary heating, cooling, ventilation, and/or timely completion of the project. Starter / disconnects include a circuit breaker disconnect with a through–the–door interlocking handle spring loaded and designed to rest only in the full "ON" or "OFF" state and is lockable in these states. A concealed defeater mechanism allows entry into the enclosure when the handle is in the "ON" position. Cover mounted controls include a Hand–Off–Auto switch and a reset button. Also included are fused control transformers, one N.O. auxiliary contact, and manual reset overloads. Starter/disconnects have full metal NEMA type 1 enclosure with a durable painted finish.

2.05 COILS

A. Install coils such that headers and return bends are enclosed by unit casing to ensure that if condensate forms on the header or return bends, it is captured by the drainpan under the coil.
B. Coils shall be manufactured with plate fins to minimize water carryover and maximize airside thermal efficiency. Fin tube holes shall have drawn and belled collars to maintain consistent fin spacing to ensure performance and air pressure drop across the coil as scheduled. Tubes shall be mechanically expanded and bonded to fin collars for maximum thermal conductivity. Use of soldering or tinning during the fin–to–tube bonding process is not acceptable due to the inherent thermal stress and possible loss of bonding at that joint.
C. Construct coil casings of galvanized steel. End supports and tube sheets shall have belled tube holes to minimize wear of the tube wall during thermal expansion and contraction of the tube.
D. All coils shall be completely cleaned prior to installation into the air handling unit. Complete fin bundle in direction of airflow shall be degreased and steam cleaned to remove any lubricants used in the manufacturing of the fins, or dirt that may have accumulated, in order to minimize the chance for water carryover.
E. On stacked cooling coils, intermediate drain pans shall be installed between the coils. Intermediate drain pans shall have drop tubes to guide condensate to the main drain pan, thus preventing flooding of lower coils that would result in moisture carryover.

2.06 BASE–LEVEL DRAIN PANS

A. Insulation shall be encased between exterior and interior walls. Units with cooling coils shall have drain pans under complete cooling coil section that extend beyond the air–leaving side of the coil to ensure capture of all condensate in section. Cooling coil drain pans shall be sloped in 2 planes, pitched toward drain connections to ensure complete condensate drainage when unit is installed level and trapped per manufacturer's requirements. See section 2.05, paragraph E for specifications on intermediate drain pans between cooling coils.
B. Units with heating coils shall have a drain pan under complete heating coil section sloped in 2 planes and pitched toward drain connections to ensure proper drainage during cleaning and to capture water in the event of a coil failure.
C. All drain pan connections supplied by unit manufacturer including, piping, and piping connections extending from stainless steel drain pans shall be constructed of stainless steel. The contractor is responsible to ensure the unit is installed level, trapped in accordance with the manufacturer's requirements, and visually inspected to ensure proper drainage of condensate.
D. Flat drain pans shall be acceptable in sections that may have incidental, but not continuous contact with moisture. Flat drainpans shall be accessible for cleaning.

2.07 FILTERS

A. Provide factory–fabricated filter section of the same construction and finish as unit casings. Filter section shall have filter guides and access door(s) extending the full height of the casing to facilitate filter removal. Construct doors in accordance with Section 2.03, paragraphs D, E, and F. Provide filter blockoffs as required to prevent air bypass around filters.
B. Filter type, efficiency, and arrangement shall be provided as defined in project plans and schedule. Filters shall be removable from one side of filter section(s).
C. Manufacturer shall provide one set of startup filters and an additional 1 set of operational filters.
D. Provide aluminum screen prefilter.

END OF SECTION 23680

DIVISION 23 – HVAC

SECTION 23 0900
TEMPERATURE CONTROLS

GENERAL
1. A programmable temperature contoller shall be located in each zone and shall control the air handler, exhaust fan and unit heaters according to documented sequence to maintain the space temperature setpoint. Coordinate with electrical.

2. Exhaust fans shall also operate based on hand–off–auto wall switch.

END OF SECTION 23 0900

DIVISION 23 – HVAC

SECTION 23 0593
TESTING, ADJUSTING, BALANCING AND MAINTENANCE MANUALS

GENERAL

1. All air and water systems to be tested and balanced by an independent testing and balancing firm approved by the engineer. All systems shall be adjusted to perform within 5% of the design document requirements. A complete report shall be provided at the completion of the work.
2. Each system shall be commissioned to insure correct operation. A complete report shall be provided at the completion of the work.
3. Complete maintenance and operations manuals shall be provided for all equipment in the building.

END OF SECTION 23 0593

DIVISION 23 – HVAC

SECTION 23 0822
LOUVERS

GENERAL
1. EXAMINATION
1.1 Examine substrates and openings for compliance with requirements for installation tolerances and other conditions affecting performance.
1.2 Proceed with installation only after unsatisfactory conditions have been corrected.
2. PREPARATION
2.1 Clean Opening thoroughly prior to installation.
2.2 Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
3 INSTALLATION
3.1 Install louvers at locations as indicated on the drawings and in accordance with manufacturer's instructions.
3.2 Install louvers plumb, level, in plane of wall, and in alignment with adjacent work.
3.3 Install joint sealants as specified in Section 079000.
4 CLEANING
4.1 Clean exposed surfaces of louvers with water and mild soap or detergent not harmful to finish taking care to remove fingerprints and soil. Thoroughly rinse surfaces and dry. Do not let soil accumulate during construction period.
4.2 Touch–up, repair, or replace louvers damaged during installation and construction so that no evidence remains of the corrective work.
END OF SECTION 23 0822

DIVISION 23 – HVAC

SECTION 23 9900
CONTROLS SEQUENCE

1. PUMP ROOM:
1.1. Heating: UH to be provided with integral stat at set to 55 deg. F.
1.2. Cooling: Fan coils to be controlled by wired stats to maintain space temperature setpoint. Space temp sensor by others, wired to RTU.
1.3. Heat:
1.3.1. Heating existing unit heater Start<50 deg. F.
1.3.2. existing unit heater Stop > 55 deg. F. Space temperature.
1.4. Cool:

END OF SECTION 23 9900

THESE DOCUMENTS ARE INCOMPLETE WITHOUT FULL COORDINATION WITH BLUEFIELD ENGINEERING.

LICENSED PROFESSIONAL ENGINEER
No. 260219
E. TAYLOR GROBERG
12/12/22
STATE OF UTAH

HANSEN ALLEN & LUCE inc ENGINEERS

blue field engineering

DESIGNED TG	3				
DRAFTED BLUEFIELD	2			•	
CHECKED BLUEFIELD	1				
DATE NOVEMBER 2022	NO.	DATE	REVISIONS	BY	APVD.

SCALE
AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
HVAC
HVAC SPECIFICATIONS

SHEET
H–5
260.42.210

POWER ONE-LINE SYMBOLS

THIS IS A STANDARD LEGEND NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT

- ANTENNA
- EQUIPMENT GROUND CONNECTION
- TRANSFER SWITCH
  ATS: AUTOMATIC TRANSFER SWITCH
  MTS: MANUAL TRANSFER SWITCH
- VFD — VARIABLE FREQUENCY DRIVE MOTOR CONTROLLER
- F — FUSED DISCONNECT SWITCH
- NON-FUSED DISCONNECT SWITCH
- COMBINATION STARTER
- MAGNETIC CONTROLLER
- HP — MOTOR (HP SHOWN)
- GENERATOR
- WIRE — CONDUCTOR WITH CALLOUT REFERENCE (SEE CONDUIT/CONDUCTOR SCHEDULE)
- POWER FACTOR CAPACITOR
- CIRCUIT BREAKER
- POWER FEED
- CONNECTION POINT
- LUG
- DELTA WYE

- M — UTILITY METERING SOCKET WITH CIRCUIT BREAKER
- M — EXISTING UTILITY METERING SOCKET
- M — UTILITY METERING SOCKET
- M — FUTURE UTILITY METERING SOCKET
- UTILITY METERING CURRENT TRANSFORMER
- MOTOR STARTER
- SURGE PROTECTOR
- TRANSFORMER
- FUSED SWITCH
- FUSE IN HOLDER
- PNL — EXISTING POWER DISTRIBUTION PANEL
- PNL — POWER DISTRIBUTION PANEL
- PNL — FUTURE POWER DISTRIBUTION PANEL

CONTROL ONE-LINE SYMBOLS

THIS IS A STANDARD LEGEND NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT

- ENCLOSURE OR CONTROL PANEL
- A-XX — HOME RUN TO POWER PANEL "A" CIRCUIT "XX"
- R — LIGHT
  A: AMBER LENS
  G: GREEN LENS
  R: RED LENS
  W: WHITE LENS
- COMBINATION MOTOR STARTER
  F: FUSED
  BLANK: CIRCUIT BREAKER
- NUMBER — EQUIPMENT IDENTIFICATION TAG
- ELECTRICAL CONNECTION POINT
- SINGLE RECEPTACLE

PLAN SYMBOLS

THIS IS A STANDARD LEGEND NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT

EQUIPMENT

- CIRCUIT DISTRIBUTION PANELBOARD SURFACE MOUNTED
- CIRCUIT DISTRIBUTION PANELBOARD RECESSED
- POWER DISTRIBUTION PANELBOARD SURFACE OR FLOOR MOUNTED
  DOORS DESIGNATE FRONT OF PANEL
  MDP DESIGNATES MAIN DISTRIBUTION PANEL
- CONTROL PANEL ENCLOSURE
- LIGHTING CONTROL PANEL
- DISCONNECT
- COMBO STARTER/DISCONNECT

HVAC EQUIPMENT

- UNIT HEATER, WALL MOUNTED
- UNIT HEATER, CEILING MOUNTED
- CONDENSING UNIT, PAD MOUNTED, SIDE DISCHARGE
- CONDENSING UNIT, PAD MOUNTED, UP FLOW
- ROOFTOP MOUNTED EQUIPMENT

GENERAL DRAWING SYMBOLS

THIS IS A STANDARD LEGEND NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT

- ① — REFERENCE NOTE
- 1 — DEMOLITION NOTE
- 1 — REVISION NOTE
- 1 — IDENTIFICATION NOTE
- NO — PHOTO REFERENCE
- ## — EQUIPMENT REFERENCE
- XXX — WIRE SIZE REFERENCE
- PHOTO XXX XXXX — PHOTO REFERENCE
- # / SHEET — SECTION/ELEVATION REFERENCE

LIGHT SWITCHES

THIS IS A STANDARD LEGEND NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT

- $ — SINGLE POLE SWITCH
- $$ — GANGED SWITCHES IN COMMON BOX WITH COMMON COVER PLATE
- $a — SWITCH SUPERSCRIPT MODIFIER, LOWER CASE LETTER INDICATES CIRCUIT CONTROLLER -- a,b,c ETC. MAY BE COMBINED WITH CIRCUIT NUMBER. EXAMPLE: 1a, 3b
- $3 — SWITCH SUBSCRIPT MODIFIER, UPPER CASE LETTER OR NUMBER:
  2 = DOUBLE POLE
  3 = THREE WAY
  4 = FOUR WAY
  K = KEY OPERATED
  M = HORSEPOWER RATED MANUAL STARTER
  MC = MOMENTARY CONTACT, THREE POSITION
  MS = MANUAL (STARTER) OR SWITCH
  D = DIMMER
  S = SURFACE
  F = FLUSH
  WP = WEATHER PROOF

CONDUIT AND RACEWAYS

THIS IS A STANDARD LEGEND NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT

- RACEWAY OR WIRING SYSTEM IN OR UNDER FLOOR OR CONCEALED IN WALL OR BEHIND STRUCTURE OR EQUIPMENT OR CONDUIT ROUTED BELOW GRADE IN CONCRETE ENCASEMENT
- FLEX CONDUIT
- RACEWAY OR WIRING SYSTEM ABOVE FLOOR LEVEL BELOW CEILING, EXPOSED
- HOMERUN: DESIGNATIONS INDICATE A ONE-LINE DIAGRAM OR PANELBOARD SCHEDULE REFERENCE
- J — JUNCTION BOX
- RACEWAY OR WIRING SYSTEM TURNED TOWARD THE VIEWER (UP ON PLAN DRAWINGS)
- RACEWAY OR WIRING SYSTEM TURNED AWAY FROM THE VIEWER (DOWN ON PLAN DRAWINGS)
- RACEWAY OR WIRING SYSTEM CHANGE IN ELEVATION OR DISTANCE FROM VIEWER
- CONDUIT STUB AND CAP

GROUNDING SYMBOLS

THIS IS A STANDARD LEGEND NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT

- GROUND ROD (3/4" x 10' COPPER COATED STEEL)
- GROUND ROD (3/4" x 10' COPPER COATED STEEL) IN WELL
- BOLTED GROUND CONNECTION (ABOVE GROUND)
- WELDED GROUND CONNECTION (BELOW GRADE)
- GROUND CONDUCTOR

WIRING DEVICES

THIS IS A STANDARD LEGEND NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT

- 20 AMP RATED RECEPTACLE
  SINGLE STROKE = SINGLE
  DOUBLE STROKE = DUPLEX
  RECEPTACLE MODIFIERS:
  X-X = CIRCUIT NUMBER
  AF = ARC FAULT CIRCUIT INTERRUPTER
  S = SURFACE MOUNTED
  IG = ISOLATED GROUND
  WP = WEATHER PROOF
- EXISTING RECEPTACLE
- 220V RECEPTACLE
- GFCI RECEPTACLE
- ELECTRICAL CONNECTION
- J — JUNCTION BOX
- P — PHOTOELECTRIC CONTROL UNIT
- T — THERMOSTAT LOCATION
- CARD READER (ENTRY KEY PAD)

LIGHTING SYMBOLS

THIS IS A STANDARD LEGEND NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT

- F1 — DESIGNATES FIXTURE NUMBER - REFER TO FIXTURE SCHEDULE
- PC — PHOTOCELL

LED FIXTURES

- SURFACE OR RECESSED 1X4 FIXTURE

EXTERIOR LIGHTS

- WALL PAK FIXTURE

MOTOR AND EQUIPMENT

THIS IS A STANDARD LEGEND NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT

- HP — MOTOR (HP SHOWN)
- F — FRACTIONAL HORSEPOWER MOTOR
- $T_{WP} — WEATHERPROOF THERMAL DISCONNECT SWITCH
- MOTOR STARTER, INDIVIDUAL, NOT LOCATED IN A MOTOR CONTROL CENTER (MCC) OR SIMILAR GROUP ASSEMBLY
- COMBINATION MOTOR STARTER ASSEMBLY, NOT LOCATED IN AN MCC OR SIMILAR ASSEMBLY
- MAGNETIC CONTACTOR ASSEMBLY, NOT LOCATED IN AN MCC OR SIMILAR ASSEMBLY
- XXXA — DISCONNECT, NON-FUSED, 3 POLE, 100A RATED
- F — FUSED DISCONNECT SWITCH
- FIELD CONNECTION OR ELECTRICAL TERMINATION AT A FIELD DEVICE
- XXXXX — EQUIPMENT DESIGNATION

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

©2023
HPE PROJECT:22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

GENERAL NOTES:

1. VERIFY ALL EQUIPMENT DIMENSIONS AND LOCATIONS BEFORE BEGINNING ROUGH-IN. CONSULT ALL APPLICABLE CONTRACT DRAWINGS AND SHOP DRAWINGS TO ENSURE NEC CODE CLEARANCE REQUIRED AROUND ALL ELECTRICAL EQUIPMENT.
2. CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENTS, ETC.) OF EQUIPMENT FURNISHED BEFORE BEGINNING ROUGH-IN.
3. SEE APPLICABLE SHOP DRAWINGS FOR ROUGH-IN LOCATION OF ALL EQUIPMENT, WIRING DEVICES, ETC.
4. THE ELECTRICAL CONTRACTOR SHALL NOTIFY AND COOPERATE WITH THE MECHANICAL CONTRACTOR SUCH THAT NO PIPING, OR EQUIPMENT FOREIGN TO THE OPERATION OF THE ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED IN, ENTER OR PASS THROUGH ELECTRICAL ROOMS OR SPACES; OR ABOVE OR BELOW ELECTRICAL EQUIPMENT IN THE OTHER AREAS.
5. ALL PENETRATIONS OF FLOORS, WALLS AND CEILINGS SHALL BE SEALED WITH APPROVED MATERIAL.
6. FOR PACKAGE EQUIPMENT PROVIDED ON THE PROJECT, SOME CONDUITS AND WIRES ARE SHOWN ON THE DRAWINGS, BUT IT IS EXPECTED THAT SOME ADDITIONAL CONDUITS AND WIRES MAY BE REQUIRED BY EQUIPMENT MANUFACTURERS TO COMPLETE INSTALLATION. IT IS INCUMBENT UPON THE GENERAL CONTRACTOR TO COORDINATE THIS REQUIREMENT WITH HIS SUBCONTRACTORS TO MAKE SURE THAT EQUIPMENT SUPPLIER PROVIDED ALL NECESSARY ELECTRICAL INFORMATION TO ELECTRICAL SUBCONTRACTOR FOR INCLUSION WHETHER SHOWN OR NOT SHOWN ON THE DRAWINGS.
7. IF OTHER THAN FIRST NAMED EQUIPMENT IS USED, IT SHALL BE CAREFULLY CHECKED FOR ELECTRICAL REQUIREMENTS AND CONTROL REQUIREMENTS OF ALTERNATE EQUIPMENT. SHOULD CHANGES OR ADDITIONS OCCUR IN ELECTRICAL WORK, OR THE WORK OF OTHER CONTRACTORS BE REVISED BY THE ALTERNATE EQUIPMENT, THE COST OF ALL CHANGES SHALL BE BORNE BY THE ELECTRICAL CONTRACTOR.

Sheet List Table

Sheet Number	Sheet Title
E-1.1	LEGEND
E-1.2	TABLES AND TAG LIST
E-2.1	POWER ONE-LINE DIAGRAM
E-2.2	INST. & CONTROL ONE-LINE DIAGRAM
E-2.3	TYPICAL VFD CONTROL DIAGRAM
E-2.4	CP-1 MAIN CP DIAGRAM, SHT. 1
E-2.5	CP-1 MAIN CP DIAGRAM, SHT. 2
E-2.6	DIAGRAMS, SHT. 1
E-2.7	CP-3 SMALL MOTOR CONTROL PANEL
E-2.8	EXISTING 125 HP VFD
E-3.1	SCHEDULES
E-4.1	SITE PLAN
E-4.2	BUILDING POWER PLAN
E-4.3	INSTRUMENTATION AND CONTROL PLAN
E-4.4	LIGHTING PLAN
E-4.5	HVAC POWER PLAN
E-5.1	CP-1 MAIN CONTROL PANEL
E-5.2	CP-2 AND CP-3 CONTROL PANELS
E-5.3	ENCLOSURE ARRANGEMENTS
E-6.1	DETAILS, SHT. 1
E-6.2	DETAILS, SHT. 2
E-6.3	DETAILS, SHT. 3
E-6.4	DETAILS, SHT. 4

REGISTERED PROFESSIONAL ENGINEER — No. 86-171214-2202 KEITH B. HEGERHORST — 05/19/2023 — STATE OF UTAH

FILE NAME:
FILE DATE:
10/07

HANSEN ALLEN & LUCE, INC. ENGINEERS

PROJECT ENGINEER

DESIGNED	KBH		
DRAFTED	KBH		
CHECKED	KBH		
DATE	APR. 2023		

NO.	DATE	REVISIONS	BY	APVD.
3				
2				
1				

SCALE: NONE

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ELECTRICAL
LEGEND

SHEET E-1.1

260.42.210

CONDUIT/CONDUCTOR SCHEDULE
THHN, THWN, THWN-2

AMP RATING	DRAWING ID TAG.	CONDUCTOR QTY.*	CONDUCTOR SIZE	MIN. CONDUIT SIZE	EXCEPTIONS
20** 20+	212	2	#12	3/4"	
	312	3		3/4"	
	412	4		3/4"	
30** 30+	20	2	#10	3/4"	
	30	3		3/4"	
	40	4		3/4"	
40** 50+	28	2	#8	3/4"	
	38	3		3/4"	
	48	4		3/4"	
55** 65+	26	2	#6	3/4"	
	36	3		3/4"	
	46	4		3/4"	1"(C9)
70** 85+	24	2	#4	3/4"	1"(C2,C9)
	34	3		1"	3/4"(C4),1-1/4"(C9)
	44	4		1"	1-1/4"(C9)
95** 115+	22	2	#2	1"	
	32	3		1"	1-1/4"(C9)
	42	4		1-1/4"	
110** 130+	21	2	#1	1-1/4"	1"(C3,C4)
	31	3		1-1/4"	1"(C3)
	41	4		1-1/4"	1-1/2"(C2,C9,C10)
150	210	2	1/0	1-1/4"	
	310	3		1-1/4"	1-1/2"(C3,C9)
	410	4		1-1/2"	2"(C9)
175	220	2	2/0	1-1/4"	1-1/2"(C3,C4,C9)
	320	3		1-1/2"	
	420	4		2"	
200	230	2	3/0	1-1/2"	1-1/4(C4)
	330	3		1-1/2"	2"(C3,C9)
	430	4		2"	
230	240	2	4/0	1-1/2"	2"(C3)
	340	3		2"	
	440	4		2"	2-1/2"(C9)
255	225	2	250 KCMIL	2"	1-1/2"(C4)
	325	3		2"	2-1/2"(C1,C8)
	425	4		2-1/2"	2"(C4)
310	235	2	350 KCMIL	2"	2-1/2"(C9)
	335	3		2-1/2"	2"(C4)
	435	4		3"	2-1/2"(C1,C4)
380	250	2	500 KCMIL	2-1/2"	2"(C4)
	350	3		3"	2-1/2"(C1,C4)
	450	4		3"	3-1/2"(C9)
475	275	2	750 KCMIL	3"	
	375	3		3-1/2"	3"(C1,C7,C8)
	475	4		4"	3-1/2"(C1,C4,C8)

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

WHERE: C1 = ELECTRICAL METALLIC TUBING "**" = 60°C RATING
C2 = ELECTRICAL NON-METALLIC TUBING "+" = 75°C RATING
C3 = FLEXIBLE STEEL CONDUIT
C4 = INTERMEDIATE METALLIC CONDUIT
C7 = LIQUIDTIGHT FLEXIBLE METAL CONDUIT
C8 = RIGID METALLIC CONDUIT
C9 = PVC SCHEDULE 80 CONDUIT
C10 = PVC SCHEDULE 40 CONDUIT
"**" = RATED AMPACITY AT 60°C
"+" = RATED AMPACITY AT 75°C
USE 60°C CONDUCTOR RATING WHEN TERMINATION RATINGS ARE NOT PUBLISHED

GROUNDING ELECTRODE CONDUCTOR SERVICE ENTRANCE OR SEPARATELY DERIVED SYSTEM

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

REGISTERED PROFESSIONAL ENGINEER
No. 86-171214-2202
KEITH B. HEGERHORST
05/19/2023
STATE OF UTAH

EQUIPMENT GROUNDING CONDUCTORS

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

TAG LIST

HVAC EQUIPMENT

DWG ID	TAG	DESCRIPTION	LOCATION	SUPPLIED BY	INSTALLED BY
67	CU-1	CONDENSING UNIT	BUILDING EXTERIOR	CONTRACTOR	CONTRACTOR
68	CU-2	CONDENSING UNIT	BUILDING EXTERIOR	CONTRACTOR	CONTRACTOR
69	CU-3	CONDENSING UNIT	BUILDING EXTERIOR	CONTRACTOR	CONTRACTOR
70	UH-1	UNIT HEATER	PUMP ROOM	CONTRACTOR	CONTRACTOR
71	UH-2	UNIT HEATER	PUMP ROOM	CONTRACTOR	CONTRACTOR
72	UH-3	UNIT HEATER	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
73	EF-1	EXHAUST FAN	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
74	FC-1	FAN COIL	PUMP ROOM	CONTRACTOR	CONTRACTOR
75	FC-2	FAN COIL	PUMP ROOM	CONTRACTOR	CONTRACTOR
76	FC-3	FAN COIL	PUMP ROOM	CONTRACTOR	CONTRACTOR

SWITCHES

DWG ID	TAG	DESCRIPTION	LOCATION	SUPPLIED BY	INSTALLED BY
57	PSH-1	PUMP HIGH DISCHARGE PRESSURE	PUMP ROOM	CONTRACTOR	CONTRACTOR
58	PSH-2	PUMP HIGH DISCHARGE PRESSURE	PUMP ROOM	CONTRACTOR	CONTRACTOR
59	LSH-1	FLOOR HIGH WATER LEVEL	PUMP ROOM	CONTRACTOR	CONTRACTOR
60	HS-1	CBP HOR SWITCH	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
63	LSH-2	FLOOR HIGH WATER LEVEL	METER VAULT	CONTRACTOR	CONTRACTOR

INSTRUMENTATION

DWG ID	TAG	DESCRIPTION	LOCATION	SUPPLIED BY	INSTALLED BY
31	FE-1	SPRINGS FLOW ELEMENT	METER VAULT	CONTRACTOR	CONTRACTOR
32	FIT-1	SPRINGS FLOW INDICATOR/TRANSMITTER	PUMP ROOM	CONTRACTOR	CONTRACTOR
33	TT-1	TEMPERATURE TRANSMITTER	PUMP ROOM	CONTRACTOR	CONTRACTOR
34	PT-1	SYSTEM DISCHARGE PRESSURE	PUMP ROOM	CONTRACTOR	CONTRACTOR
36	WIT-1/2	CHLORINE WEIGHT SCALE	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
37	WE-1	CHLORINE TANK - 1 WEIGHT ELEMENT	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
38	WE-2	CHLORINE TANK - 2 WEIGHT ELEMENT	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
40	TT-2	TEMPERATURE TRANSMITTER	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
41	ASH-1	CHLORINE GAS DETECTOR	PUMP ROOM	CONTRACTOR	CONTRACTOR
42	AE-1	CHLORINE GAS PROBE	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
43	FE-2	FLOW ELEMENT	PUMP ROOM	CONTRACTOR	CONTRACTOR
44	FIT-2	PUMPED FLOW INDICATOR/TRANSMITTER	PUMP ROOM	CONTRACTOR	CONTRACTOR
45	LT-1	LEVEL TRANSMITTER	SPRING BOX	CONTRACTOR	CONTRACTOR

SECURITY

DWG ID	TAG	DESCRIPTION	LOCATION	SUPPLIED BY	INSTALLED BY
51	ZS-1	ROOF HATCH POSITION SWITCH	PUMP ROOM	CONTRACTOR	CONTRACTOR
52	ZS-2	ROOF HATCH POSITION SWITCH	PUMP ROOM	CONTRACTOR	CONTRACTOR
53	ZS-3A	DOOR POSITION SWITCH	PUMP ROOM	CONTRACTOR	CONTRACTOR
54	ZS-3B	DOOR POSITION SWITCH	PUMP ROOM	CONTRACTOR	CONTRACTOR
55	ZS-4	DOOR POSITION SWITCH	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
56	ZS-5	DOOR POSITION SWITCH	PUMP ROOM	CONTRACTOR	CONTRACTOR
61	ZS-6	HATCH POSITION SWITCH	SPRING BOX	CONTRACTOR	CONTRACTOR
62	ZS-7	HATCH POSITION SWITCH	METER VAULT	CONTRACTOR	CONTRACTOR
64	ZS-8	HATCH POSITION SWITCH	DIVERSION BOX	CONTRACTOR	CONTRACTOR

PUMP AND EQUIPMENT

DWG ID	TAG	DESCRIPTION	LOCATION	SUPPLIED BY	INSTALLED BY
10	CP-1	MAIN CONTROL PANEL/RTU	PUMP ROOM	CONTRACTOR	CONTRACTOR
11	CP-2	RELAY CONTROL PANEL	PUMP ROOM	CONTRACTOR	CONTRACTOR
12	CP-3	SMALL MOTOR CONTROL PANEL	PUMP ROOM	CONTRACTOR	CONTRACTOR
13	MDP	MAIN DISTRIBUTION PANELBOARD	PUMP ROOM	CONTRACTOR	CONTRACTOR
14	UMS	UTILITY METER SOCKET	BUILDING EXTERIOR	CONTRACTOR	CONTRACTOR
15	MSD	MAIN SERVICE DISCONNECT	BUILDING EXTERIOR	CONTRACTOR	CONTRACTOR
16	BP-1	200 HP PUMP MOTOR	PUMP ROOM	CONTRACTOR	CONTRACTOR
17	BP-2	40 HP PUMP MOTOR	PUMP ROOM	CONTRACTOR	CONTRACTOR
18	PNL-L	PANELBOARD L	PUMP ROOM	CONTRACTOR	CONTRACTOR
20	XFMR-L	TRANSFOMER L	PUMP ROOM	CONTRACTOR	CONTRACTOR
21	VFD-1	VFD 200 HP MOTOR CONTROLLER	PUMP ROOM	CONTRACTOR	CONTRACTOR
22	VFD-2	VFD 40 HP MOTOR CONTROLLER	PUMP ROOM	RELOCATED	CONTRACTOR
23	XFMR-U	UTILITY TRANSFORMER	SITE	UTILITY	UTILITY
24	CTE	CT METERING ENCLOSURE	BUILDING EXTERIOR	UTILITY	UTILITY
25	AER-1	AERATOR CONTROL PANEL	BUILDING EXTERIOR	RELOCATED	CONTRACTOR
26	AER-2	AERATOR CONTROL PANEL	BUILDING EXTERIOR	RELOCATED	CONTRACTOR
27	SP-1	SUMP PUMP	METER VAULT	CONTRACTOR	CONTRACTOR
28	RE-1	RADIO ENCLOSURE	SITE	CONTRACTOR	CONTRACTOR
29	AL-1	CHLORINE LEAK ALARM LIGHT	BUILDING EXTERIOR	CONTRACTOR	CONTRACTOR
30	CBP-1	CHLORINE BOOSTER PUMP	PUMP ROOM	CONTRACTOR	CONTRACTOR
35	SEC-1	SECTIONALIZING CABINET	SITE	UTILITY	UTILITY
46	AM-1	ANTENNA MAST	SITE	CONTRACTOR	CONTRACTOR
47	AM-2	ANTENNA MAST	BUILDING EXTERIOR	CONTRACTOR	CONTRACTOR
83	F1	FIXTURE TYPE F1	PUMP ROOM	CONTRACTOR	CONTRACTOR
84	F2	FIXTURE TYPE F2	PUMP ROOM	CONTRACTOR	CONTRACTOR
85	F3	FIXTURE TYPE F3	SITE	CONTRACTOR	CONTRACTOR

VALVES

DWG ID	TAG	DESCRIPTION	LOCATION	SUPPLIED BY	INSTALLED BY
39	CPV-1	LOW FLOW CHLORINE PROPORTIONING VALVE	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
48	CPV-2	HIGH FLOW CHLORINE PROPORTIONING VALVE	CHLORINE ROOM	CONTRACTOR	CONTRACTOR

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

©2023
HPE PROJECT:22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

PROJET ENCLOSURES

DESIG.	DESCRIPTION	ENCLOSURES H (IN)	(W (IN)	D (IN)	NOTES
CP-1	MAIN CONTROL PANEL/RTU	36	30	12	1)
CP-2	RELAY CONTROL PANEL	16	20	8	1)
CP-3	SMALL MOTOR CONTROL PANEL	24	24	12	1)
RE-1	RADIO ENCLOSURE	24	24	10	1)
VFD-1	VFD 200 HP MOTOR CONTROLLER	90	32	20	1)
VFD-2	VFD 40 HP MOTOR CONTROLLER	72	36	26	2)

NOTES: 1) ANTICIPATED DIMENSIONS.
2) EXISTING RELOCATED EQUIPMENT.

FILE NAME:
FILE DATE:

HANSEN ALLEN & LUCE, Inc. ENGINEERS

PROJECT ENGINEER

DESIGNED KBH	3						
DRAFTED KBH	2						
CHECKED KBH	1						
DATE APR. 2023	NO.	DATE	REVISIONS		BY	APVD.	

SCALE: NONE

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ELECTRICAL
TABLES AND TAG LIST

SHEET E-1.2
260.42.210

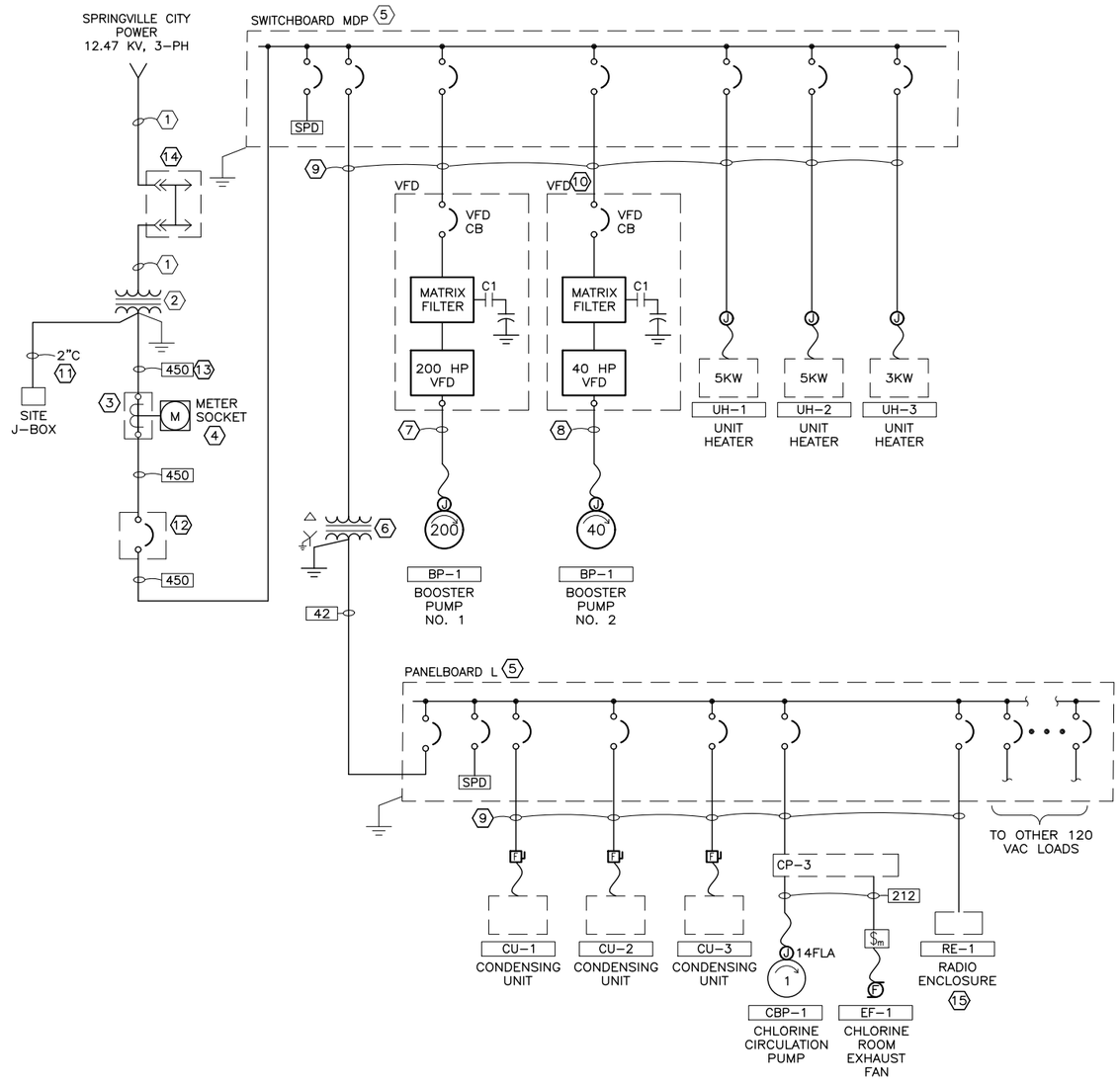
10/07

ELECTRICAL UTILITY INSTALLATION

UTILITY INFORMATION

UTILITY COMPANY:	SPRINGVILLE CITY POWER
UTILITY COMPANY CONTACT:	
CONTACT INFORMATION:	PHONE:
WORK ORDER NUMBER:	

	SUPPLIED BY:	INSTALLED BY:
SERVICE PRIMARY		
PRIMARY TRENCHING/BACKFILL	-	CONTRACTOR
PRIMARY CONDUIT	CONTRACTOR	CONTRACTOR
PRIMARY CONDUCTOR	UTILITY COMPANY	UTILITY COMPANY
SERVICE TRANSFORMER		
TRANSFORMER PAD	CONTRACTOR	CONTRACTOR
TRANSFORMER	UTILITY COMPANY	UTILITY COMPANY
SERVICE SECONDARY		
SECONDARY TRENCHING/BACKFILL	-	CONTRACTOR
SECONDARY CONDUIT	CONTRACTOR	CONTRACTOR
SECONDARY CONDUCTOR	CONTRACTOR	CONTRACTOR
METERING EQUIPMENT		
METER	UTILITY COMPANY	UTILITY COMPANY
METER SOCKET	CONTRACTOR	CONTRACTOR
COMBO METER/MAIN	-	-
CURRENT TRANSFORMER ENCL.	CONTRACTOR	CONTRACTOR
CT ENCL. TO METER SOCKET WIRING	UTILITY COMPANY	UTILITY COMPANY
CT ENCL. TO METER SOCKET CONDUIT	CONTRACTOR	CONTRACTOR
MAIN SERVICE DISCONNECT		
CIRCUIT BREAKER	CONTRACTOR	CONTRACTOR
FUSED DISCONNECT SWITCH	-	-



POWER ONE-LINE DIAGRAM

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

©2023

HPE PROJECT:22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

GENERAL NOTES:

1. FOR WIRE AND CONDUIT REQUIREMENTS, REFER TO ONE-LINE DIAGRAM ON E-2.1, THEN REFER TO THE CONDUCTOR/CONDUIT TABLE ON E-1.2.
2. REFER TO THE ELECTRICAL UTILITY INSTALLATION TABLE FOR CONTRACTOR AND UTILITY RESPONSIBILITIES.
3. INSTALL ALL UTILITY EQUIPMENT, CONDUIT AND WIRE AS REQUIRED BY SPRINGVILLE CITY ELECTRICAL REQUIREMENTS AND STANDARDS MANUAL ON SPRINGVILLE CITY WEB SITE.

SHEET KEYNOTES:

1. PRIMARY CONDUIT: 4"C, WITH PULL TAPE.
2. UTILITY TRANSFORMER: 300 KVA, 12,47 KV PRIMARY, 480Y/277 V SECONDARY. PROVIDED AND INSTALLED BY UTILITY COMPANY. PROVIDE PAD AS REQUIRED BY THE UTILITY COMPANY.
3. CURRENT TRANSFORMER ENCLOSURE: PROVIDED AND INSTALLED AS REQUIRED BY THE UTILITY COMPANY.
4. METER SOCKET; PROVIDED AND INSTALLED AS REQUIRED BY THE UTILITY COMPANY.
5. REFER TO THE PANELBOARD SCHEDULES FOR ADDITIONAL PANELBOARD INFORMATION AND CB RATINGS.
6. TRANSFORMER: 30 KVA, 480 VAC PRIMARY, 208Y/ 120 VAC SECONDARY.
7. 3"C, 3C-350KCMIL SHIELDED VFD CABLE (BELDEN 29534 OR APPROVED EQUAL).
8. 1-1/2"C, 3C-#6 SHIELDED VFD CABLE (BELDEN 29504 OR APPROVED EQUAL).
9. CIRCUIT ID PROVIDED IN PANELBOARD SCHEDULES, THEN REFER TO THE CONDUIT/CONDUCTOR TABLE ON E-1.2 FOR THE WIRE AND CONDUIT REQUIREMENTS.
10. THE EXISTING SITE BUILDING HAS A 125 HP MITSUBISHI VFD. CONTRACTOR SHALL REMOVE THIS MOTOR CONTROLLER AND RE-PURPOSE IT AS THE 40 HP VFD. REFER TO E-2.8 FOR ADDITIONAL INFORMATION.
11. INSTALL A 2"C WITH A PULL STRING FROM THE UTILITY TRANSFORMER SECONDARY WINDOW TO A NEW PULL BOX INSTALLED NEAR THE REMOVED WOOD POLE SITE LIGHT. REFER TO SITE PLAN FOR LOCATION. CONDUIT IS FOR CITY UNMETERED STREET LIGHT CIRCUIT. WIRE AND TERMINATIONS BY SPRINGVILLE CITY POWER.
12. MAIN SERVICE DISCONNECT: 480 VAC, 400A CIRCUIT BREAKER, NEMA 3R ENCLOSURE. LABEL AS "MAIN SERVICE DISCONNECT" AND AS REQUIRED BY NEC 110.24.
13. SPRINGVILLE CITY POWER WILL ASSIST THE CONTRACTOR TO TERMINATE CONTRACTOR PROVIDED AND INSTALLED SECONDARY CONDUCTORS AT UTILITY TRANSFORMER. COORDINATE DURING CONSTRUCTION AS REQUIRED.
14. SECTIONALIZING CABINET PROVIDED AND INSTALLED BY SPRINGVILLE CITY POWER AND WILL BE LOCATED NEAR THE EXISTING PUMP STATION UTILITY TRANSFORMER.
15. SCADA RADIO ENCLOSURE SHALL BE LOCATED AT THE SCADA ANTENNA TOWER. REFER TO SITE PLAN E-4.1 FOR LOCATION.

FILE NAME:
FILE DATE:

REGISTERED PROFESSIONAL ENGINEER
No. 86-171214-2202
KEITH B. HEGERHORST
05/19/2023
STATE OF UTAH

HANSEN ALLEN & LUCE Inc. ENGINEERS

PROJECT ENGINEER

DESIGNED	KBH	3					
DRAFTED	KBH	2					
CHECKED	KBH	1					
DATE	APR. 2023	NO.	DATE	REVISIONS		BY	APVD.

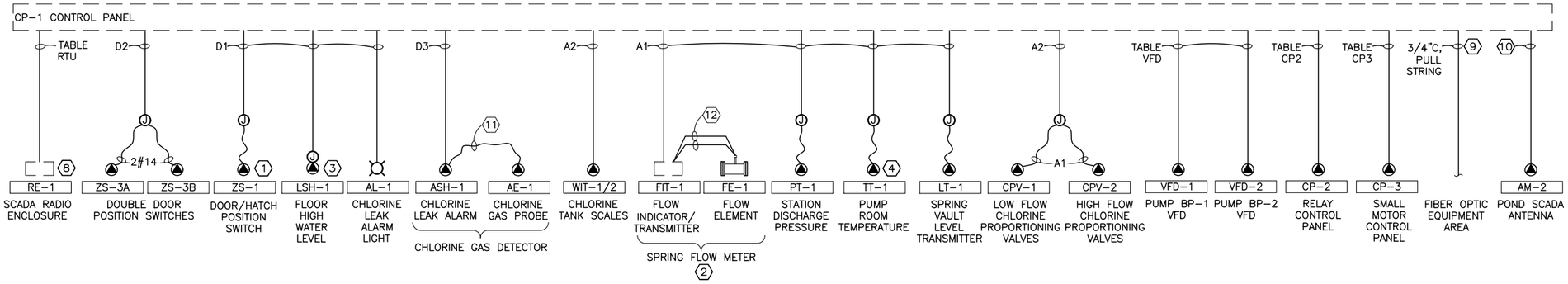
SCALE: NONE

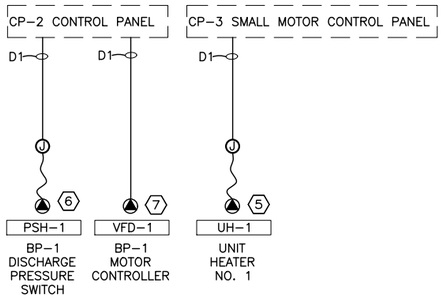
SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ELECTRICAL
POWER ONE-LINE DIAGRAM

SHEET E-2.1
260.42.210

10/07





INSTRUMENTATION AND CONTROL ONE-LINE DIAGRAMS

COMMON I&C WIRE/CONDUIT TABLE

IDENT.	CONDUIT SIZE	CONDUCTOR QTY	CONDUCTOR SIZE	SIGNAL DESCRIPTION
A1	3/4"	1	#18TSP	1 ANALOG SIGNAL
A2	3/4"	2	#18TSP	2 ANALOG SIGNALS
A3	3/4"	3	#18TSP	3 ANALOG SIGNALS
IDENT.	CONDUIT SIZE	CONDUCTOR QTY	CONDUCTOR SIZE	SIGNAL DESCRIPTION
D1	3/4"	2	#14	1 COMMON, 1 DISCRETE SIG.
D2	3/4"	3	#14	1 COMMON, 2 DISCRETE SIG.
D3	3/4"	4	#14	1 COMMON, 3 DISCRETE SIG.
D4	3/4"	5	#14	1 COMMON, 4 DISCRETE SIG.

TABLE VFD (CP-1 TO VFD)

CONDUIT SIZE	CONDUCTOR QTY	CONDUCTOR SIZE	SIGNAL DESCRIPTION
3/4"	1	#14	COMMON OUTPUT
	1	#14	COMMON INPUT
	1	#14	VFD ENABLE (RUN)
	1	#14	VFD FILTER HIGH TEMP.
	1	#14	VFD HOA IN AUTO
	1	#14	VFD HOA IN HAND
	1	#14	VFD LOW PRESS. SHUTDOWN
	1	#14	VFD STATUS FAULT
	1	#14	VFD STATUS RUNNING
	4	#14	SPARE
1"	1	#18TSP	VFD SPEED STATUS
	1	#18TSP	VFD SPEED CONTROL
1"	1	CAT 5	VFD PARAMETERS
1"	1	PS	PULL STRING

TABLE CP2 (CP-1 TO CP-2)

CONDUIT SIZE	CONDUCTOR QTY	CONDUCTOR SIZE	CP-1 TO CP-2 SIGNAL DESCRIPTION
3/4"	1	#14	COMMON
	1	#14	P-1 HIGH DISCHARGE PRESSURE
	1	#14	P-2 HIGH DISCHARGE PRESSURE
	2	#14	SPARE

TABLE RTU (CP-1 TO RE-1)

CONDUIT SIZE	CONDUCTOR QTY	CONDUCTOR SIZE	CP-1 TO RE-1 SIGNAL DESCRIPTION
1"	1	#24TSP	RS485 COMMUNICATIONS
1"	1	PS	SPARE CONDUIT W/PULL STRING

TABLE CP3 (CP-1 TO CP-3)

CONDUIT SIZE	CONDUCTOR QTY	CONDUCTOR SIZE	CP-1 TO CP-3 SIGNAL DESCRIPTION
3/4"	1	#14	COMMON INPUT
	1	#14	COMMON OUTPUT
	1	#14	CBP-1 CALL TO RUN
	1	#14	CBP-1 HOA IN AUTO
	1	#14	CBP-1 HOA IN HAND
	1	#14	CBP-1 RUNNING
	1	#14	EF-1 CALL TO RUN
	1	#14	EF-1 HOA IN AUTO
	1	#14	EF-1 HOA IN HAND
	1	#14	EF-1 RUNNING
	1	#14	UNIT HEATER UH-1 RUN
	1	#14	UNIT HEATER UH-2 RUN
	1	#14	UNIT HEATER UH-3 RUN
	2	#14	SPARE

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH FAX (801) 642-2154
AMERICAN FORK, UT 84003
©2023
HPE PROJECT:22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

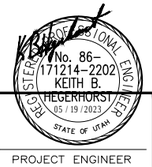
GENERAL NOTES:

1. REFER TO INSTRUMENTATION AND CONTROL PLANS FOR EQUIPMENT AND DEVICE LOCATIONS.

SHEET KEYNOTES:

1. SHOWN FOR PUMP ROOM ROOF HATCH SWITCH ZS-1. REPEAT FOR DOOR SWITCHES ZS-4, ZS-5 AND HATCH SWITCHES ZS-2, ZS-6, ZS-7 AND ZS-8.
2. SHOWN FOR FE/FIT-1, SPRING FLOW METER. REPEAT FOR FE/FIT-2 STATION PUMPED FLOW METER.
3. SHOWN FOR PUMP ROOM HIGH FLOOR LEVEL SWITCH LSH-1. REPEAT FOR THE METER VAULT HIGH FLOOR LEVEL SWITCH LSH-2.
4. SHOWN FOR PUMP ROOM TEMPERATURE TRANSMITTER. TT-1. REPEAT FOR CHLORINE ROOM TEMPERATURE TRANSMITTER TT-2.
5. SHOWN FOR UH-1. DUPLICATE FOR UH-2 AND UH-3.
6. SHOWN FOR PUMP 1 HIGH DISCHARGE PRESSURE SWITCH PSH-1. REPEAT FOR PUMP 2 PSH-2.
7. SHOWN FOR VFD-1 HIGH PRESSURE SHUTDOWN. REPEAT FOR VFD-2 HIGH PRESSURE SHUTDOWN.
8. SCADA RADIO ENCLOSURE IS LOCATED AT THE SCADA ANTENNA TOWER. REFER TO THE SITE PLAN FOR THE LOCATION.
9. CONDUIT FOR FUTURE FO PATCH CABLE.
10. 1"C, ANTENNA COAX BY SCADA CONTRACTOR.
11. CABLE SUPPLIED WITH PROBE.
12. TWO 1" CONDUITS FOR DATA AND POWER CABLES SUPPLIED WITH METER, INSTALLED BY CONTRACTOR.

FILE NAME:
FILE DATE:



HANSEN ALLEN & LUCE, Inc. ENGINEERS

PROJECT ENGINEER

DESIGNED	KBH	3					
DRAFTED	KBH	2					
CHECKED	KBH	1					
DATE	APR. 2023	NO.	DATE	REVISIONS		BY	APVD.

SCALE: NONE

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ELECTRICAL
INST. & CONTROL ONE-LINE DIAGRAM

SHEET E-2.2
260.42.210

10/07

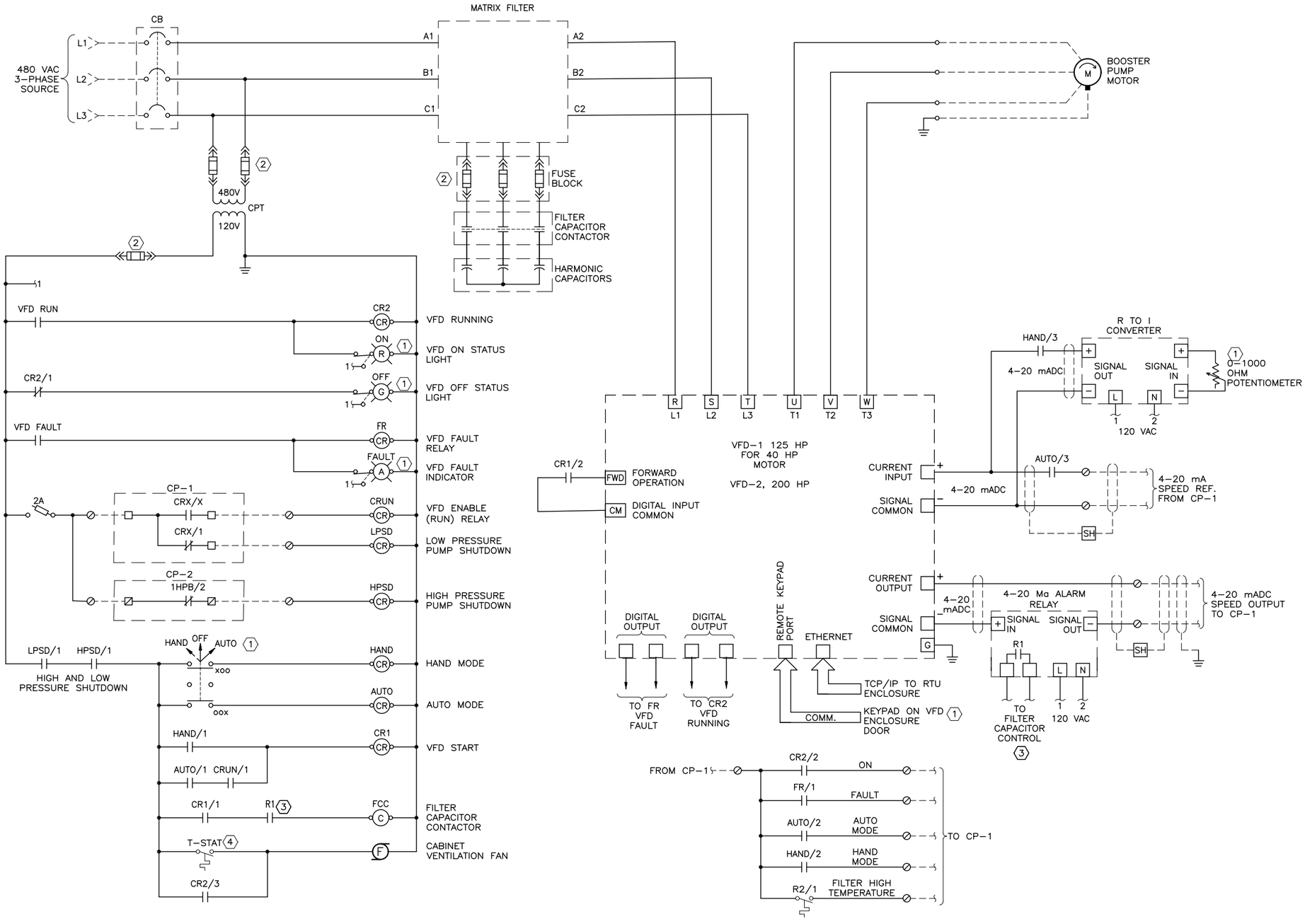
H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH FAX (801) 642-2154
AMERICAN FORK, UT 84003
©2023
HPE PROJECT:22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

GENERAL NOTES:

1. CONTROL WIRING DIAGRAM SHOWN IS CONCEPTUAL AND SHALL BE MODIFIED AS REQUIRED FOR THE SPECIFIC VFD SUPPLIED.
2. MODIFY THE VFD WIRING AS REQUIRED IN THE RELOCATED 125 HP VFD TO BECOME THE MOTOR CONTROLLER FOR THE 40 HP PUMP MOTOR.

SHEET KEYNOTES:

1. INSTALL DEVICE ON ENCLOSURE DOOR AND ACCESSIBLE TO OPERATOR.
2. FUSES SIZED BY VFD SUPPLIER.
3. FILTER CAPACITORS SHALL BE DE-ENERGIZED WHEN VFD IS OPERATING LESS THAN 30HZ.
4. VFD CIRCULATION FAN SHALL BE THERMOSTATICALLY CONTROLLED AND RUN WHEN VFD IS RUNNING.



TERMINAL LEGEND:

- □ CP-1 MAIN CONTROL PANEL.
- ▨ CP-2 RELAY CONTROL PANEL
- ▧ CP-3 EXHAUST FAN CONTROL PANEL
- ⊘ VFD MOTOR CONTROLLER
- ⦸ RE-1 SCADA RADIO ENCLOSURE
- ○ FIELD TERMINAL

REGISTERED PROFESSIONAL ENGINEER No. 86-171214-2202 KEITH B. HEGERHORST 05/19/2023 STATE OF UTAH

DESIGNED	KBH	3					
DRAFTED	KBH	2					
CHECKED	KBH	1					
DATE	APR. 2023	NO.	DATE	REVISIONS		BY	APVD.

PROJECT ENGINEER

SCALE: NONE

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ELECTRICAL
TYPICAL VFD CONTROL DIAGRAM

SHEET E-2.3
260.42.210

FILE NAME:
FILE DATE:
10/07

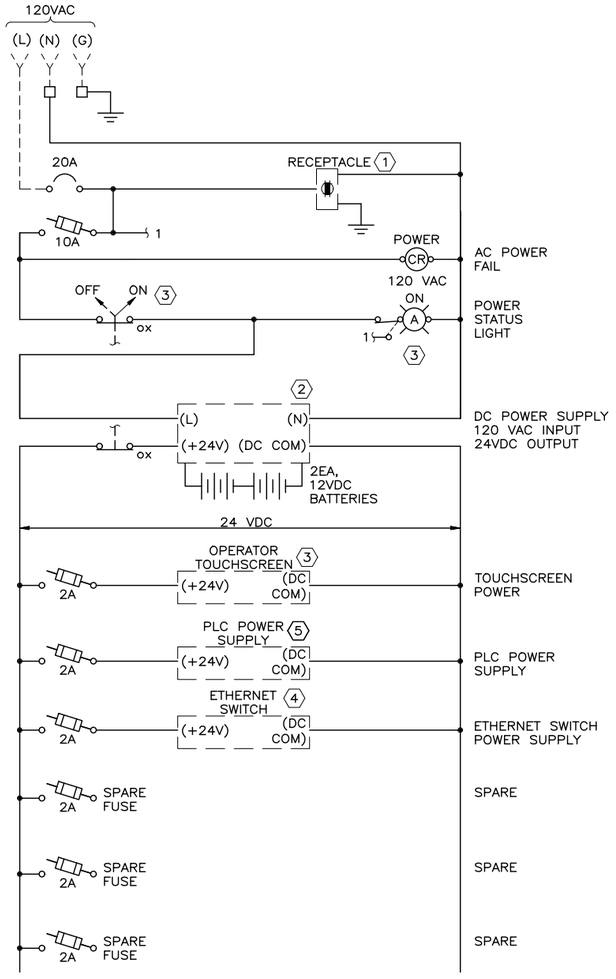
H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH FAX (801) 642-2154
AMERICAN FORK, UT 84003
©2023
HPE PROJECT: 22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

GENERAL NOTES:

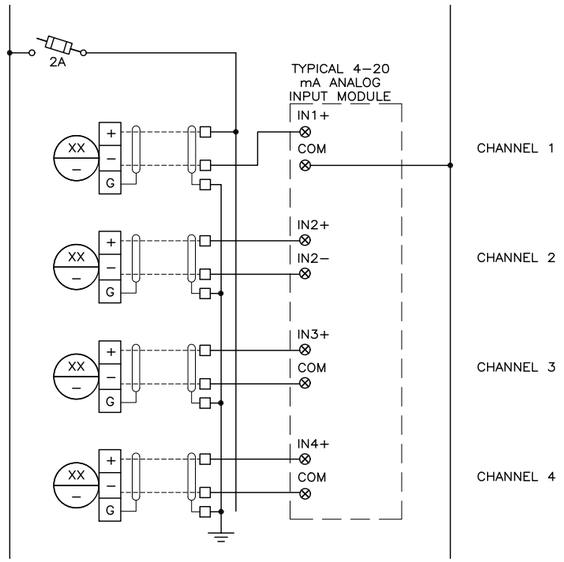
1. THIS DIAGRAM IS TYPICAL AND INDICATES THE BASIC CONTROL PANEL CONTROL DIAGRAM. THE CONTRACTOR SHALL MODIFY AS REQUIRED FOR THE DEVICES AND PLC MODULES USED. FOUR OR EIGHT CHANNEL MODULES HAVE BEEN SHOWN. PROVIDED MULTI-CHANNEL I/O MODULES AS REQUIRED.
2. CONTRACTOR SHALL PREPARE A CONTROL DIAGRAM BASED ON THE DEVICES SUPPLIED, INCLUDING WIRE, FUSE AND TERMINAL NUMBERS AS REQUIRED. THE PLC I/O SHOWN IS GENERIC.

SHEET KEYNOTES:

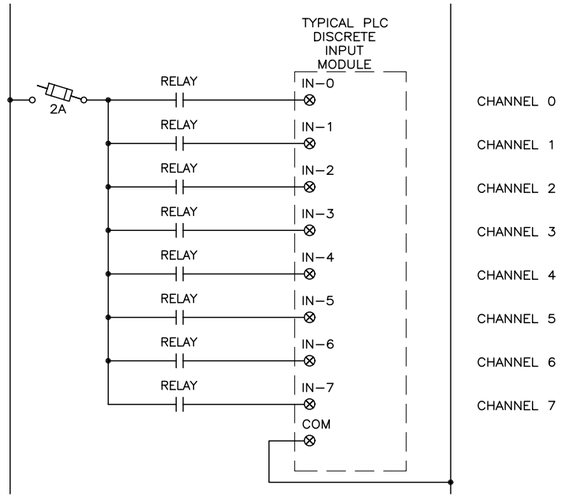
1. PROVIDE A DUPLEX GFCI RECEPTACLE IN THE ENCLOSURE.
2. PROVIDE A 120VAC:24VDC POWER SUPPLY/BATTERY CHARGER COMPLETE WITH BATTERY CAPACITY TO PROVIDE 2 HOURS OF PANEL OPERATION UPON THE LOSS OF UTILITY POWER OR PROVIDE 120VAC UNINTERRUPTIBLE POWER SUPPLY.
3. DEVICE SHALL BE INSTALLED IN THE ENCLOSURE DOOR AND AVAILABLE TO THE OPERATOR.
4. PROVIDE A MULIT-PORT ETHERNET SWITCH AS REQUIRED. PROVIDE A MINIMUM OF 2 SPARE PORTS.
5. CITY PLC: EMERSON RX3i (NO EQUAL), WITH APPROPRIATE I/O MODULES FOR THE I/O LIST SHOWN ON E-5.1



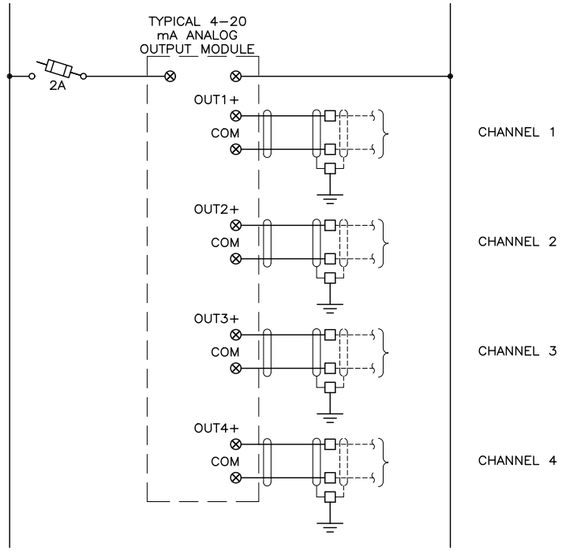
TYPICAL POWER LOGIC WIRING



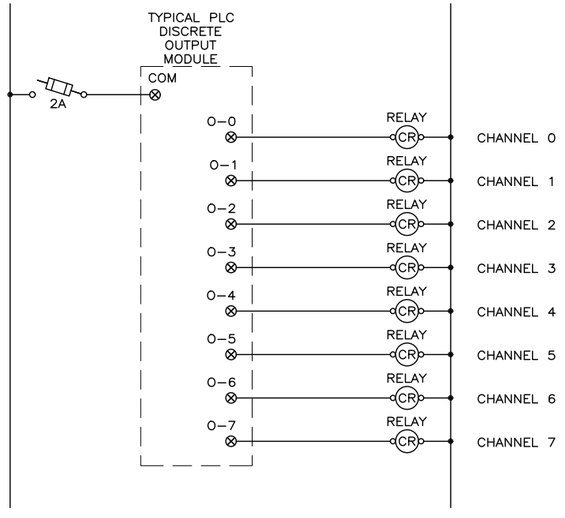
TYPICAL ANALOG INPUT MODULE WIRING



TYPICAL DISCRETE INPUT MODULE WIRING



TYPICAL ANALOG OUTPUT MODULE WIRING



TYPICAL DISCRETE OUTPUT MODULE WIRING

TERMINAL LEGEND:

- □ CP-1 MAIN CONTROL PANEL.
- ▨ CP-2 RELAY CONTROL PANEL
- ▧ CP-3 EXHAUST FAN CONTROL PANEL
- ⊘ VFD MOTOR CONTROLLER
- ⦸ RE-1 SCADA RADIO ENCLOSURE
- ○ FIELD TERMINAL

FILE NAME:
FILE DATE:

REGISTERED PROFESSIONAL ENGINEER
No. 86-171214-2202
KEITH B. HEGERHORST
05/19/2023
STATE OF UTAH

HANSEN ALLEN & LUCE, Inc. ENGINEERS

PROJECT ENGINEER

DESIGNED	KBH
DRAFTED	KBH
CHECKED	KBH
DATE	APR. 2023

NO.	DATE	REVISIONS	BY	APVD.
3				
2				
1				

SCALE: NONE

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ELECTRICAL
CP-1 MAIN CP DIAGRAM, SHT. 1

SHEET E-2.4
260.42.210

10/07

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH FAX (801) 642-2154
AMERICAN FORK, UT 84003
©2023
HPE PROJECT: 22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

GENERAL NOTES:

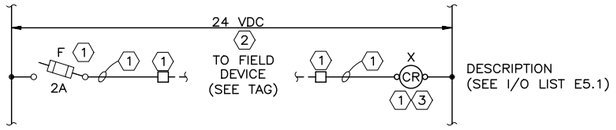
1. REFER TO E-2.4 FOR GENERAL NOTES.

SHEET KEYNOTES:

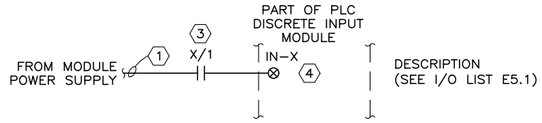
1. KEYNOTES ARE SHOWN IN EACH DIAGRAM.

NOTES:

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



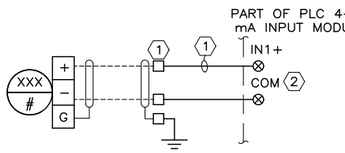
INTERPOSE RELAY LOGIC



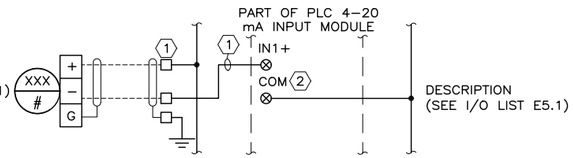
PLC DISCRETE INPUT LOGIC

NOTES:

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



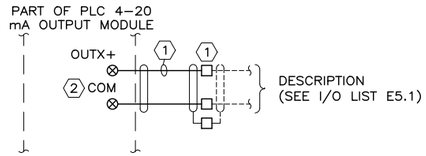
PLC ANALOG INPUT TYPE 1



PLC ANALOG INPUT TYPE 2

NOTES:

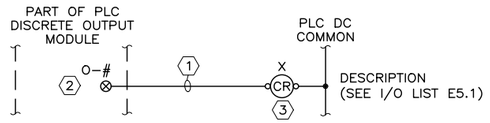
1. CONTRACTOR SHALL ASSIGN FUSE, RELAY, TERMINAL AND WIRE NUMBERS AS REQUIRED.
2. CONTRACTOR SHALL ASSIGN PLC MODULE AND CHANNEL.



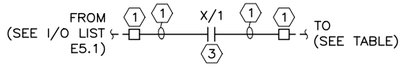
PLC ANALOG OUTPUT

NOTES:

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



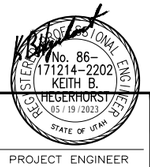
PLC DISCRETE OUTPUT LOGIC



INTERPOSE RELAY LOGIC

TYPICAL INPUT AND OUTPUT SIGNAL WIRING

FILE NAME:
FILE DATE:



PROJECT ENGINEER

DESIGNED	KBH	3				
DRAFTED	KBH	2				
CHECKED	KBH	1				
DATE	APR. 2023	NO.	DATE	REVISIONS	BY	APVD.

SCALE: NONE

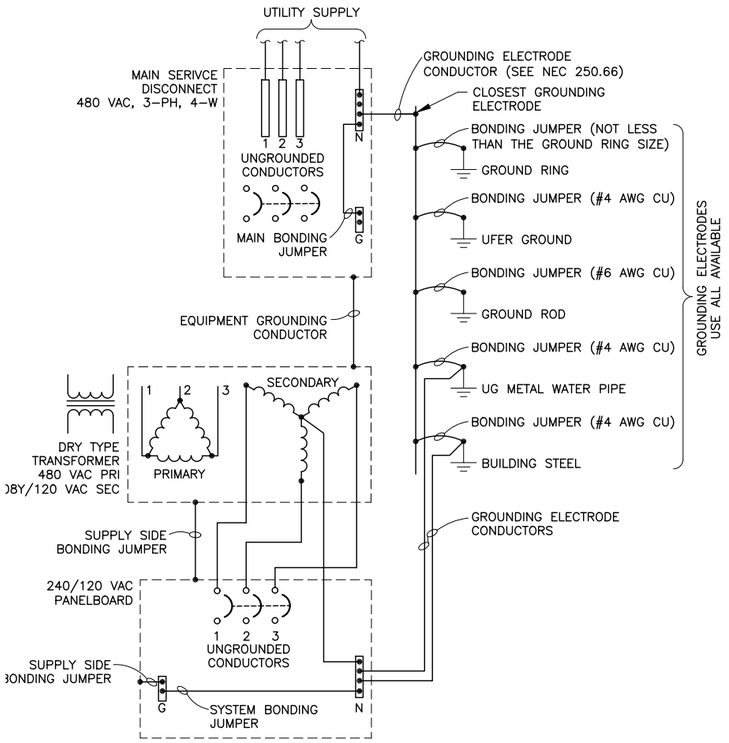
SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ELECTRICAL
CP-1 MAIN CP DIAGRAM, SHT. 2

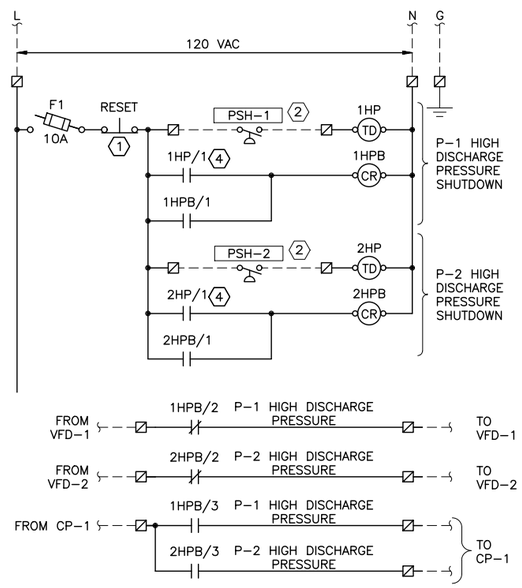
SHEET E-2.5
260.42.210

HANSEN ALLEN & LUCE ENGINEERS

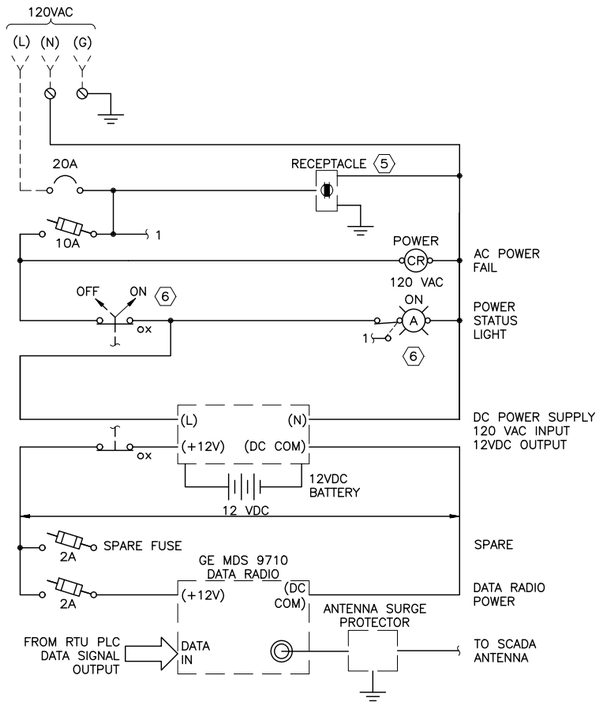
10/07



GROUNDING DIAGRAM



③ CP-2 RELAY CONTROL PANEL WIRING



③ RE-1 CONTROL PANEL DIAGRAM

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH FAX (801) 642-2154
AMERICAN FORK, UT 84003
©2023
HPE PROJECT:22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

GENERAL NOTES:

1. CONTRACTOR SHALL PROVIDE FUSE, TERMINAL AND WIRE NUMBERS AS REQUIRED.

SHEET KEYNOTES:

1. DEVICE LOCATED IN ENCLOSURE DOOR AND AVAILABLE TO THE OPERATOR.
2. DEVICE LOCATED NEAR PUMP.
3. WIRING DIAGRAM IS TYPICAL AND SHALL BE MODIFIED AS REQUIRED FOR THE PROVIDED DEVICES.
4. CONTACT CLOSES AFTER 3 SECOND TIME DELAY.
5. PROVIDE A DUPLEX RECEPTACLE IN ENCLOSURE. PROVIDE A LABEL "5A MAXIMUM LOAD".
6. DEVICE INSTALLED ON INTERIOR SWING-OUT PANEL AND AVAILABLE TO THE OPERATOR WHEN THE OUTER DOOR IS OPEN.

TERMINAL LEGEND:

- □ CP-1 MAIN CONTROL PANEL.
- ▨ CP-2 RELAY CONTROL PANEL
- ▧ CP-3 EXHAUST FAN CONTROL PANEL
- ⊘ VFD MOTOR CONTROLLER
- ⦸ RE-1 SCADA RADIO ENCLOSURE
- ○ FIELD TERMINAL

FILE NAME:
FILE DATE:

REGISTERED PROFESSIONAL ENGINEER
No. 86-171214-2202
KEITH B. HEGERHORST
05/19/2023
STATE OF UTAH

PROJECT ENGINEER

DESIGNED KBH	3					
DRAFTED KBH	2					
CHECKED KBH	1					
DATE APR. 2023	NO.	DATE	REVISIONS	BY	APVD.	

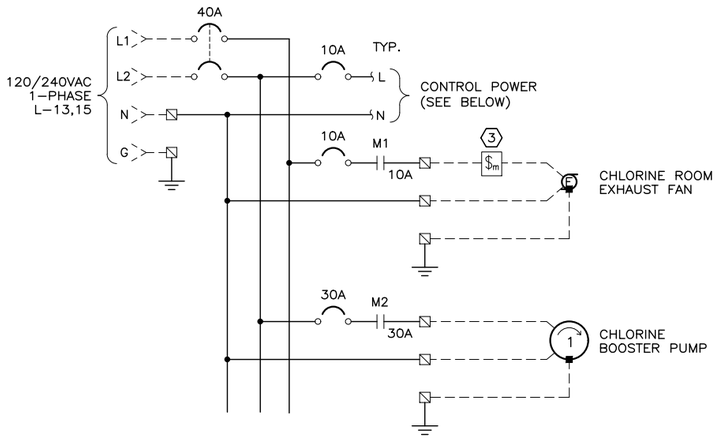
SCALE: AS SHOWN

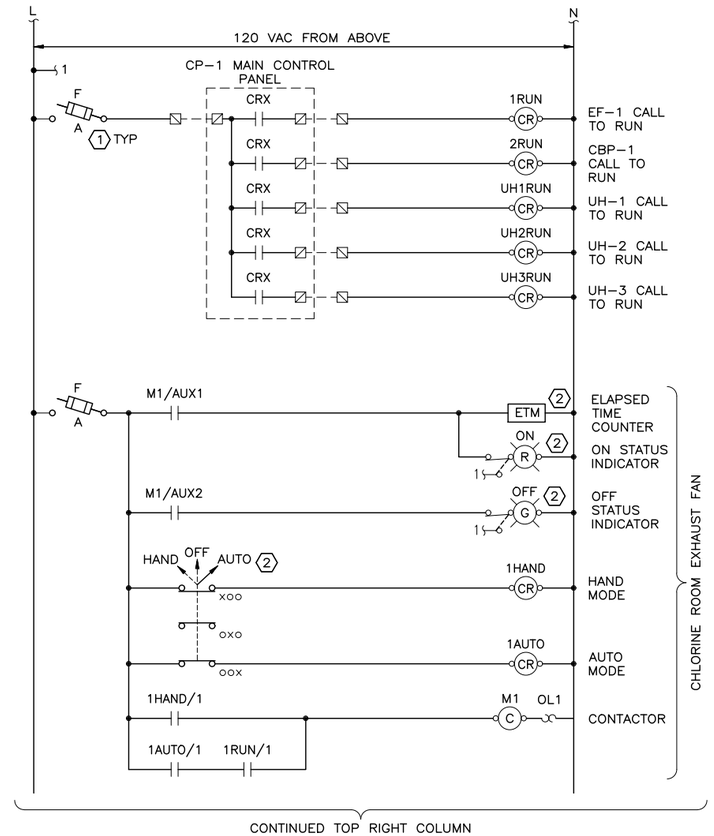
SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ELECTRICAL
DIAGRAMS, SHT. 1

SHEET E-2.6
260.42.210

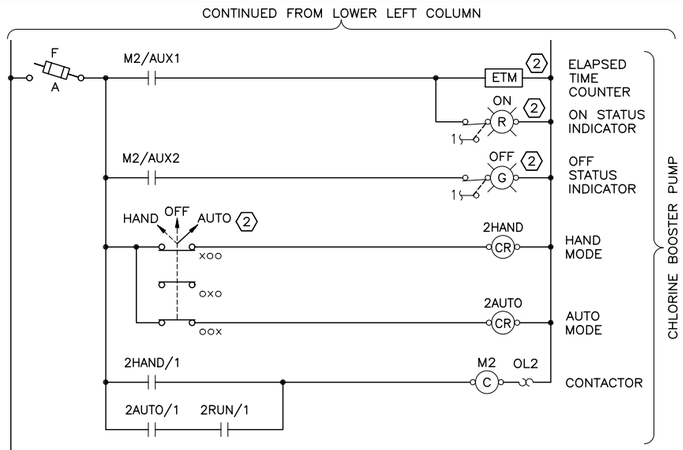
10/07

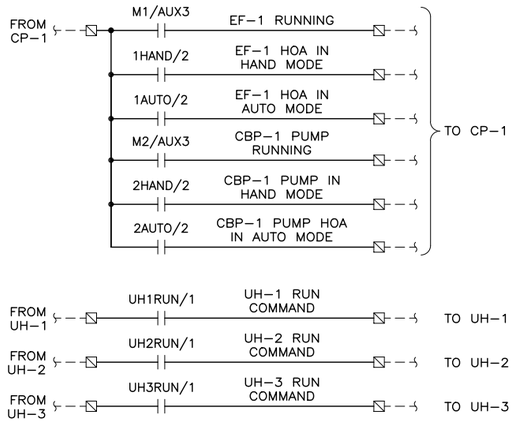




CONTINUED TOP RIGHT COLUMN

CONTINUED FROM LOWER LEFT COLUMN





CP–3 SMALL MOTOR CONTROL PANEL

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642–2051
708 EAST 50 SOUTH FAX (801) 642–2154
AMERICAN FORK, UT 84003
©2023
HPE PROJECT: 22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

GENERAL NOTES:

1. REFER TO E5.1 FOR TYPICAL ENCLOSURE ARRANGEMENT.
2. CONTRACTOR SHALL PROVIDE FUSE, TERMINAL AND WIRE NUMBERS AS REQUIRED.
3. DIAGRAM IS CONCEPTUAL AND SHALL BE MODIFIED FOR THE PROVIDED DEVICES.

SHEET KEYNOTES:

1. FUSE RATINGS DETERMINED BY CONTRACTOR.
2. DEVICE SHALL BE INSTALLED IN ENCLOSURE DOOR AND AVAILABLE TO THE OPERATOR.
3. PROVIDE A 1–POLE MANUAL STARTER AS THE MOTOR DISCONNECT. FIELD LOCATE NEAR MOTOR, AND LABEL AS "EXHAUST FAN DISCONNECT".

FILE NAME:
FILE DATE:



PROJECT ENGINEER

DESIGNED	KBH	3					
DRAFTED	KBH	2					
CHECKED	KBH	1					
DATE	APR. 2023	NO.	DATE	REVISIONS		BY	APVD.

SCALE: NONE

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ELECTRICAL
CP–3 SMALL MOTOR CONTROL PANEL

SHEET
E–2.7
260.42.210

10/07

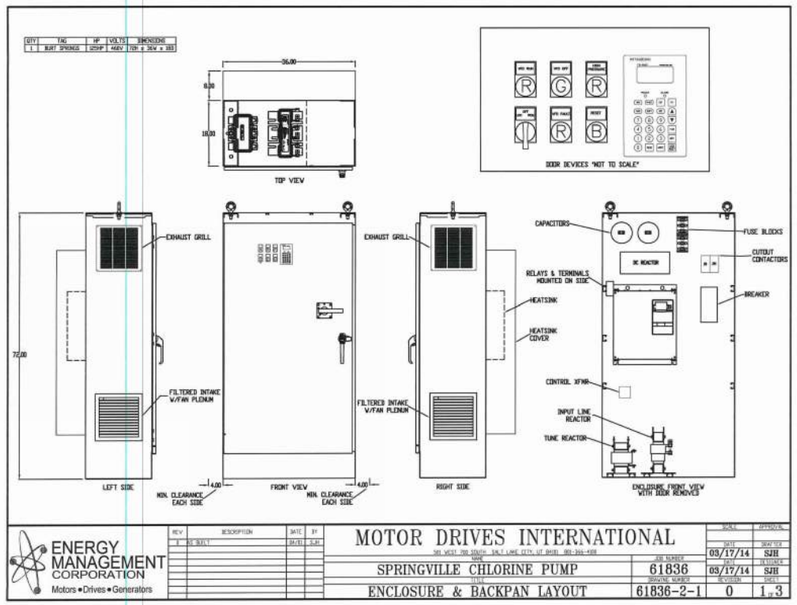
H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH FAX (801) 642-2154
AMERICAN FORK, UT 84003
©2023
HPE PROJECT:22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

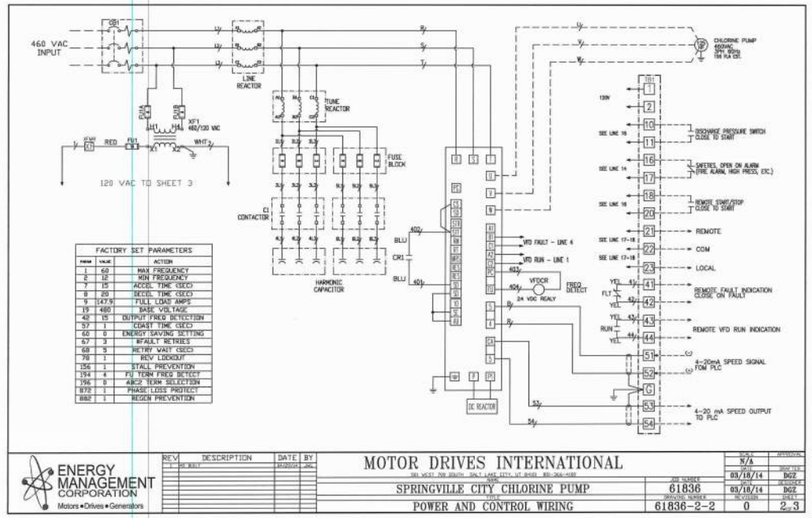
GENERAL NOTES:

1. ENCLOSURE DIMENSIONS ARE 36-IN WIDE, 18-IN DEEP AND 72-IN HIGH. EXISTING DRAWINGS PROVIDED FOR INFORMATION. FULL SIZE DRAWINGS (8-1/2X11) CAN BE PROVIDED DURING CONSTRUCTION UPON REQUEST.
2. CHANGES REQUIRED:
   - 2.1. REPLACE THE EXISTING 225A CIRCUIT BREAKER WITH A 90A CIRCUIT BREAKER.
   - 2.2. REPLACE THE 125 HP HARMONIC FILTER WITH A 40 HP HARMONIC FILTER, AND UPDATE THE FUSES AS REQUIRED.
   - 2.3. RE-PROGRAM THE VFD PARAMETERS FOR THE 40 HP MOTOR.

SHEET KEYNOTES:

1. NOT USED.





FACTORY SET PARAMETERS		
PARAM	VALUE	ACTION
1	60	MAX FREQUENCY
6	12	MIN FREQUENCY
7	15	ACCEL TIME (SEC)
8	20	DECEL TIME (SEC)
9	[47.5]	FULL LOAD AMPS
19	480	BASE VOLTAGE
42	15	OUTPUT FREQ DETECTION
57	1	COAST TIME (SEC)
60	6	ENERGY SAVING SETTING
67	3	#FAULT RETRIES
68	5	RETRY WAIT (SEC)
79	1	REV LOCKOUT
156	1	STALL PREVENTION
194	4	FU TERM FREQ DETECT
196	0	ARCE TERM SELECTION
872	1	PHASE LOSS PROTECT
882	1	REGEN PREVENTION

REGISTERED PROFESSIONAL ENGINEER
No. 86-171214-2202
KEITH B. HEGERHORST
05/19/2023
STATE OF UTAH

FILE NAME:
FILE DATE:

HANSEN ALLEN & LUCE, Inc. ENGINEERS

PROJECT ENGINEER

DESIGNED KBH
DRAFTED KBH
CHECKED KBH
DATE APR. 2023

NO.	DATE	REVISIONS	BY	APVD.
3				
2				
1				

SCALE: NONE

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ELECTRICAL
EXISTING 125 HP VFD

SHEET E-2.8
260.42.210

10/07

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH FAX (801) 642-2154
AMERICAN FORK, UT 84003
©2023
HPE PROJECT:22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

PANELBOARD MDP

LOCAITON: PUMP ROOM | MFGR: SQUARE D COMPANY | 400 AMPS | VOLTS: 480Y/277
DIMENSIONS: | TYPE: I-LINE | X M.L.O | PHASE: 3
MOUNTING: SURFACE | NEMA: 3R | 65,000 A.I.C. | WIRES: 4
FEED: BOTTOM | X SURGE PROTECTION | FED FROM: MSD

BRKR A	P	DESCRIPTION	CIRCUIT ID	CONT. WATTS	N-CONT. WATTS	NO	PHASE LOADS A CONT.	A N-CONT.	B CONT.	B N-CONT.	C CONT.	C N-CONT.
40	3	TRANSFORMER L1	38	10,324	10,543	1	3,180	5,091	7,144	5,451	480	4,551
350	3	BOOSTER PUMP VFD-1	350	199,296		2	66,432	0	66,432	0	66,432	0
90	3	BOOSTER PUMP VFD-2	36		43,181	3	0	14,394	0	14,394	0	14,394
20	3	UNIT HEATER UH-1	312		5,000	4	0	1,667	0	1,667	0	1,667
20	3	UNIT HEATER UH-2	312		5,000	5	0	1,667	0	1,667	0	1,667
20	3	UNIT HEATER UH-3	312		3,000	6						
		TOTAL WATTS:		199,296	53,181		66,432	17,727	66,432	17,727	66,432	17,727
		CONTINUOUS LOAD:		199,296								
		CONTINUOUS LOAD * 125%:		249,120								
		NON-CONTINUOUS LOAD:		53,181								
		DESIGN WATTS:		302,301								
		MIN. RATING (AMPS):		364								

TRANSFORMER L

LOCAITON: PUMP ROOM | 34.4 PRIMARY AMPS | PRIMARY VOLTS: 480
DIMENSIONS: 30"W x 20"D x 30"H | 79.5 SECONDARY AMPS | SECONDARY VOLTS: 208Y/120
MOUNTING: FLOOR | KVA: 30
FEED: BOTTOM | FED FROM: MDP

	CONT. WATTS	N-CONT. WATTS	PHASE LOADS A CONT.	A N-CONT.	B CONT.	B N-CONT.	C CONT.	C N-CONT.
PANELBOARD L	10,804	15,094	3,180	5,091	7,144	5,451	480	4,551
TOTAL WATTS:	10,804	15,094	3,180	5,091	7,144	5,451	480	4,551
CONTINUOUS LOAD:	10,804							
CONTINUOUS LOAD * 125%:	13,505							
NON-CONTINUOUS LOAD:	15,094							
DESIGN WATTS:	28,599							

PANELBOARD L

LOCAITON: PUMP ROOM | MFGR: SQUARE D | 100 AMPS | VOLTS: 208Y/120
DIMENSIONS: 20"W x 5.75"D x 56"H | TYPE: NQ | 90 M.C.B. | PHASE: 3
MOUNTING: SURFACE | NEMA: 1 | 10,000 A.I.C. | WIRES: 4
FEED: BOTTOM | X SPD | FED FROM: XFMR-L

BRKR A	P	DESCRIPTION	CIRCUIT ID	CONT. WATTS	N-CONT. WATTS	NO	PHASE LOADS A CONT.	A N-CONT.	B CONT.	B N-CONT.	C CONT.	C N-CONT.	NO	N-CONT. WATTS	CONT. WATTS	CIRCUIT ID	DESCRIPTION	BRKR A	P
20	1	RECPT. OUTSIDE	212		720	1	500	720					2		500	212	MAIN CONTROL PANEL/RTU CP-1	20	1
20	1	RECPT. INTERIOR	212		1,080	3			1,584	1,080			4		1,584	212	RECPT. SUMP PUMP	20	1
20	1	RECPT, CHLORINE RM.	212		180	5					50	180	6		50	212	SPRING FLOW METER	20	1
20	1	LTS., INTERIOR	212	190		7	240	0					8		50	212	PUMPED FLOW METER	30	1
20	1	LTS., EXTERIOR	212	54		9			154	0			10		100	212	CHLORINE LEAK ALARM	20	1
30	2	CONDENSING UNIT CU-1	20		2,080	11					100	2,080	12		100	212	CHLORINE PROPORTIONING VALVES	20	1
-	-	-	-		2,080	13	100	2,080					14		100	212	CHLORINE TANK SCALE	20	1
30	2	CONDENSING UNIT CU-2	20		2,080	15			2,070	2,080			16	0	2,070	20	SMALL MOTOR CONTROL PANEL CP-3	30	1
-	-	-	-		2,080	17					150	2,080	18		150	212	RELAY CONTROL PANEL CP-2	20	1
30	2	CONDENSING UNIT CU-3	20		2,080	19	0	2,080					20				SPARE	20	1
-	-	-	-		2,080	21			1,176	2,080			22		1,176	212	METER VAULT SUMP PUMP SP-1	20**	1
20	2	FAN COIL UNIT FC-1	212		106	23					0	106	24				SPARE	20	1
-	-	-	-		106	25	2,160	106					26		2,160	20	AERATOR #1	25	1
20	2	FAN COIL UNIT FC-2	212		106	27			2,160	106			28		2,160	20	AERATOR #2	25	1
-	-	-	-		106	29					180	106	30		180	20	RADIO ENCLOSURE	20	1
20	2	FAN COIL UNIT FC-3	212		106	31	180	106					32		180	3/4"C	FIBER OPTIC EQUIPMENT (FUT)	20	1
-	-	-	-		106	33			0	106			34				SPARE	20	1
	1	AVAILABLE SPACE				35					0	0	36				SPARE	20	1
	1	AVAILABLE SPACE				37	0	0					38				AVAILABLE SPACE		1
	1	AVAILABLE SPACE				39			0	0			40				AVAILABLE SPACE		1
	1	AVAILABLE SPACE				41					0	0	42				AVAILABLE SPACE		1
		TOTAL WATTS:		244	15,094		3,180	5,091	7,144	5,451	480	4,551		0	10,560				
		CONTINUOUS LOAD:		10,804															
		CONTINUOUS LOAD * 125%:		13,505															
		NON-CONTINUOUS LOAD:		15,094															
		DESIGN WATTS:		28,599															
		MIN. RATING (AMPS):		79															

** PROVIDE GFC CIRCUIT BREAKER FOR SUMP PUMP CIRCUIT.

SMALL MOTOR CONTROL PANEL CP-3

LOCATION: PUMP ROOM | MFGR: CUSTOM | VOLTS: 120
DIMENSIONS: 24"W x 12"D x 24"H | TYPE: | PHASE: 1
MOUNTING: SURFACE | NEMA: 1 | WIRES: 3
FEED: BOTTOM | FED FROM: PNLBD L

BRKR A	P	DESCRIPTION	CIRCUIT ID	CONT. WATTS	N-CONT. WATTS	NO	PHASE LOADS A CONT.	A N-CONT.
10	1	CONTROL POWER		15		1	15	0
15	1	EXHAUST FAN EF-1	212	150		2	150	0
20	1	CHLORINE BOOSTER PUMP	212	1,920		3	1,920	0
		SPACE						
		TOTAL WATTS:		2,070	0		2,070	0
		CONTINUOUS LOAD:		2,070				
		CONTINUOUS LOAD * 125%:		2,588				
		NON-CONTINUOUS LOAD:		0				
		DESIGN WATTS:		2,588				
		MIN. RATING (AMPS):		22				

EQUIPMENT SCHEDULE

ITEM	DESCRIPTION	EQUIPMENT RATING VOLTS	PH	HP	WATTS	FLA	MCA	DISCONNECT AMPS	VOLTS	POLES	NEMA	FUSE	CONNECTION	STARTER TYPE	STARTER NEMA SIZE	NOTES
CBP-1	CHLORINE BOOSTER PUMP	120	1	1	1,920	16		-	-	-	-	-	HARD-WIRED	FVNR	0	1)
CP-1	MAIN CONTROL PANEL/RTU	120	1	-	500	4.17		-	-	-	-	-	HARD-WIRED	N/A	-	
CP-2	RELAY CONTROL PANEL	120	1	-	120	1		-	-	-	-	-	N/A	N/A	-	
CP-3	SMALL MOTOR CONTROL PANEL	120			2,070	17.3		-	-	-	-	-	HARD-WIRED	FVNR	-	4)
FIT-1	FLOW METER (SPRINGS)	120	1	-	50	-		-	-	-	-	-	HARD-WIRED	N/A	-	
FIT-2	FLOW METER (STATION)	120	1	-	50	-		-	-	-	-	-	HARD-WIRED	N/A	-	
BP-1	BOOSTER PUMP NO. 1	460	3	200	190,992	240	-	-	-	-	-	-	HARD-WIRED	VFD	200 HP	
BP-2	BOOSTER PUMP NO. 2	460	3	40	44,565	56		-	-	-	-	-	HARD-WIRED	VFD	40 HP	
RE-1	RADIO ENCLOSURE	120	1	-	100	0.83		-	-	-	-	-	N/A	N/A	-	
SP-1	SUMP PUMP	120	1	0.5	1,176	9.8		-	-	-	-	-	PLUG/RECPT	INCL.	-	2)
VFD-1	MOTOR CONTROLLER	480	3	-	-	-		-	-	-	-	-	HARD-WIRED	VFD	200A	
VFD-2	MOTOR CONTROLLER	480	3	-	-	-		-	-	-	-	-	HARD-WIRED	VFD	125A	3)

NOTES: 1) PROVIDE MANUAL STARTER AS DISCONNECT MEANS.
2) PROVIDE WATERTIGHT PLUG/RECPT AS DISCONNECT MEANS.
3) RELOCATED BY CONTRACTOR FROM EXISING BUILDING.
4) REFER TO CONTROL DIAGRAM FOR INFORMATION.

HVAC MECHANICAL EQUIPMENT SCHEDULE

ITEM	DESCRIPTION	LOCATION	EQUIPMENT RATING VOLTS	PH	HP	WATTS	FLA	MCA	DISCONNECT AMPS	VOLTS	POLES	NEMA	FUSE	CONNECTION	STARTER TYPE	STARTER NEMA SIZE	NOTES
CU-1	CONDENSING UNIT	OUTSIDE	208		-	4,160	20	25	30	240	3	3R		HARD-WIRED	N/A	INCL.	
CU-2	CONDENSING UNIT	OUTSIDE	208		-	4,160	20	25	30	240	3	3R		HARD-WIRED	N/A	INCL.	
CU-3	CONDENSING UNIT	OUTSIDE	208		-	4,160	20	25	30	240	3	3R		HARD-WIRED	N/A	INCL.	
EF-1	EXHAUST FAN	CHLORINE ROOM	120	1	F	150	1.25	-	-	-	-	-	-	HARD-WIRED	FVNR		1)
FC-1	FAN COIL UNIT	PUMP ROOM	208	1	F	166	0.8	1	-	-	-	-	-	HARD-WIRED	-	N/A	
FC-2	FAN COIL UNIT	PUMP ROOM	208	1	F	166	0.8	1	-	-	-	-	-	HARD-WIRED	-	N/A	
FC-3	FAN COIL UNIT	PUMP ROOM	208	1	F	166	0.8	1	-	-	-	-	-	HARD-WIRED	-	N/A	
UH-1	UNIT HEATER	PUMP ROOM	480	3	F	5,000	6.02	-	30	600	3	1	NF	HARD-WIRED	INCL.	N/A	
UH-2	UNIT HEATER	PUMP ROOM	480	3	F	5,000	6.02	-	30	600	3	1	NF	HARD-WIRED	INCL.	N/A	
UH-3	UNIT HEATER	CHLORINE ROOM	480	3	F	3,000	3.61	-	30	600	3	4X	NF	HARD-WIRED	INCL.	N/A	

NOTES: 1) PROVIDE MANUAL STARTER AS LOCAL DISCONNECT MEANS.
2)

FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER NAME	MANUFACTURER CATALOG NO.	FIX VA	LAMP	LUMENS	KELVIN	MOUNTING	NOTES:
F1	4' LED ENCLOSED INDUSTRIAL, FIBERGLASS HOUSING, DAMP LOCATION, MVOLT	METALUX	4VT2-LDS-6-DR-UNV-L840-CD-1-U	53	LED	6000	4000	SURFACE	
F2	LED WALL MOUNTED FULL CUTOFF MINI AREA WALL PACK FOR WET LOCATIONS	LUMARK	AXCS1-MSP/DIM-L12 ISHH-01	14	LED	1806	4000	WALL	1)
F3	GALVANIZED 20 FOOT SQUARE STRAIGHT STEEL POLE WITH 6-IN LONG 2-3/8" TENON	STEEL POLES	SSS-6-X-20-S-G-6-X-X	-	-	-	-	-	

NOTES: 1) BUILT-IN PHOTOCELL

GENERAL NOTES:

1. NOT USED.

SHEET KEYNOTES:

1. NOT USED.

REGISTERED PROFESSIONAL ENGINEER
No. 86-171214-2202
KEITH B. HEGERHORST
05/19/2023
STATE OF UTAH

FILE NAME:
FILE DATE:

HANSEN ALLEN & LUCE, Inc. ENGINEERS

PROJECT ENGINEER

DESIGNED	KBH	3			
DRAFTED	KBH	2			
CHECKED	KBH	1			
DATE	APR. 2023	NO.	DATE	REVISIONS	BY APVD.

SCALE: NONE

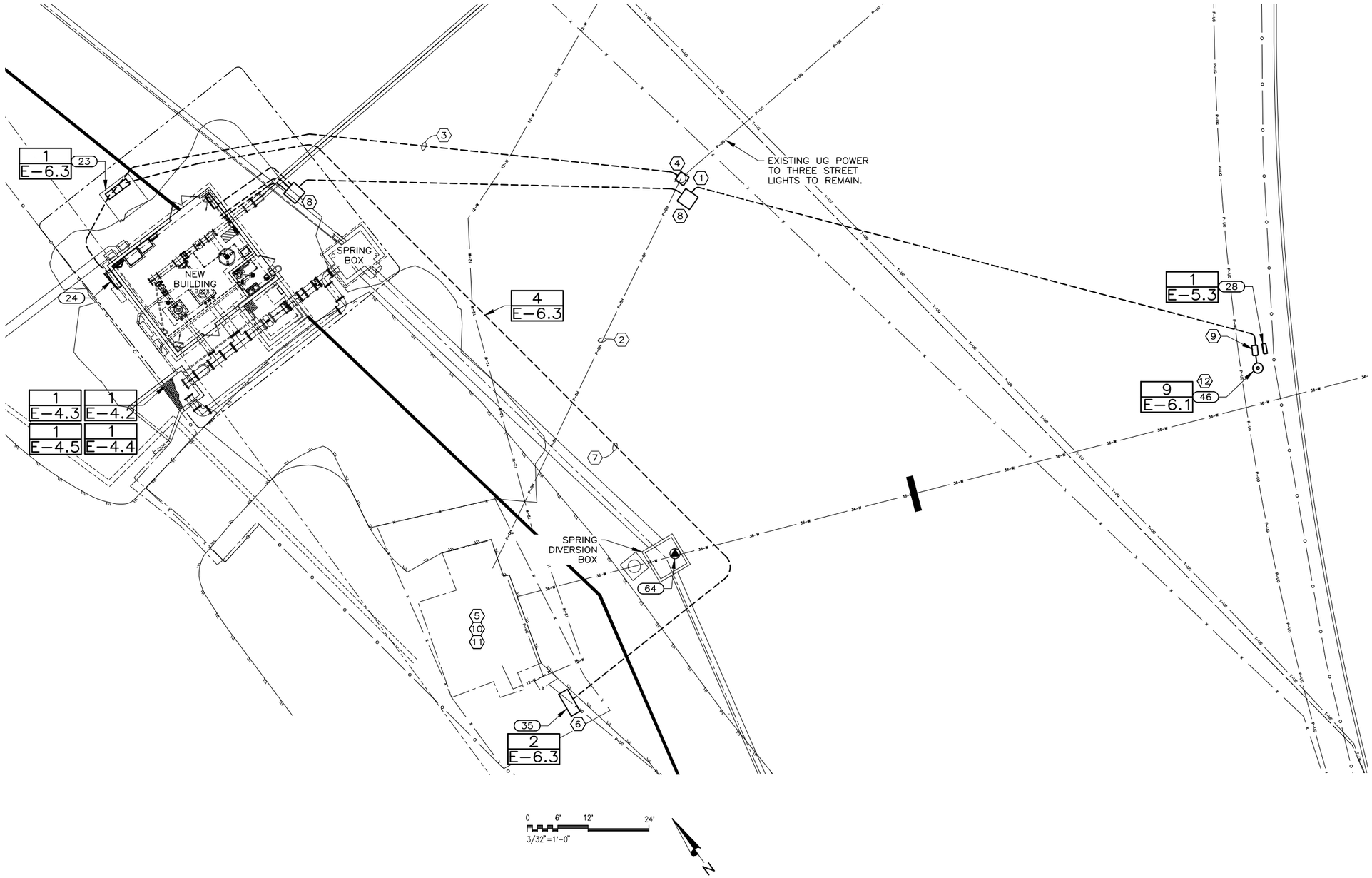
SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ELECTRICAL
SCHEDULES

SHEET E-3.1
260.42.210

10/07

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH FAX (801) 642-2154
AMERICAN FORK, UT 84003
©2023
HPE PROJECT:22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST



SITE PLAN ITEMS (E-4.1)

DRAWING ID	TAG	DESCRIPTION	LOCATION
23	XFMR-U	UTILITY TRANSFORMER	SITE
24	CTE	CT METERING ENCLOSURE	BUILDING EXTERIOR
28	RE-1	RADIO ENCLOSURE	SITE
35	SEC-1	SECTIONALIZING CABINET	SITE
46	AM-1	ANTENNA MAST	SITE
64	ZS-8	HATCH POSITION SWITCH	DIVERSION BOX
85	F3	FIXTURE TYPE F3	SITE

GENERAL NOTES:

1. REFER TO THE POWER ONE-LINE DIAGRAM FOR CIRCUIT ID. THEN REFER TO THE CONDUIT/CONDUCTOR TABLE ON E1.2 FOR THE WIRE AND CONDUIT REQUIREMENTS.
2. SITE CONDUIT ROUTES MAY BE MODIFIED AS REQUIRED FOR THE TERRAIN. DO NOT ROUTE ELECTRICAL CONDUITS THROUGH SPRING COLLECTION AREA. COORDINATE TRENCH LOCATIONS WITH CIVIL ENGINEER AND SPRINGVILLE CITY WATER DURING CONSTRUCTION.

SHEET KEYNOTES:

1. LIGHT POLE TO BE REMOVED BY SPRINGVILLE CITY POWER.
2. EXISTING OVERHEAD POWER SOURCE FOR STREET LIGHTS TO BE REMOVED BY SPRINGVILLE CITY POWER.
3. NEW 1-1/2"C FROM TRANSFORMER SECONDARY WINDOW TO J-BOX. PROVIDE PULL TAPE IN CONDUIT. CONDUCTORS TO BE PROVIDED AND INSTALLED BY SPRINGVILLE CITY POWER.
4. NEW 24"X 24" CONCRETE POLYMER PULL BOX. INSTALL BOX NEAR PREVIOUS POLE LOCATION SO SPRINGVILLE CITY POWER CAN RE-FEED POWER TO THE THREE EXISTING UNMETERED STREET LIGHTS.
5. EXISTING BURT SPRINGS PUMP STATION TO BE DECOMMISSIONED. REMOVE 125 HP PUMP VFD MOTOR CONTROLLER TO BE RE-INSTALLED IN THE NEW PUMP STATION TO CONTROL THE 40 HP PUMP.
6. LOCATION OF THE EXISTING BURT SPRINGS UTILITY TRANSFORMER. TRANSFORMER TO BE REMOVED BY SPRINGVILLE CITY POWER. COORDINATE WITH THE POWER COMPANY TO INSTALL A NEW SECTIONALIZING CABINET IN THE SAME LOCATION. POWER SOURCE FOR THE NEW STATION UTILITY TRANSFORMER WILL ORIGINATE AT THE SECTIONALIZING CABINET.
7. NEW UNDERGROUND SERVICE FROM SECTIONALIZING CABINET TO NEW PAD-MOUNTED TRANSFORMER. CONTRACTOR TO INSTALL CONDUIT. CONDUCTOR PROVIDED AND INSTALLED BY SPRINGVILLE CITY POWER.
8. 36"X36" CONCRETE POLYMER PULL BOX FOR FIBER OPTIC AND RADIO SIGNAL CONDUITS.
9. 24"X13" CONCRETE POLYMER PULL BOX.
10. CONTRACTOR SHALL CAREFULLY REMOVE ANTENNA FOR THE IRRIGATION POND TELEMETRY SYSTEM AND RE-INSTALL ANTENNA ON NEW ANTENNA MAST ON NEW BUILDING.
11. EXISTING CCTV CAMERA SYSTEM AND ANTENNA TO BE REMOVED BY SPRINGVILLE CITY.
12. PROVIDE TYPE F3 LIGHT POLE FOR THE ANTENNA MAST. REFER TO FIXTURE SCHEDULE ON E-3.1. INSTALL 2" WEATHERHEAD ON POLE TENON FOR ANTENNA COAX.

FILE NAME:
FILE DATE:

REGISTERED PROFESSIONAL ENGINEER No. 86-171214-2202 KEITH B. HEGERHORST 05/19/2023 STATE OF UTAH
PROJECT ENGINEER

DESIGNED	KBH	3				
DRAFTED	KBH	2				
CHECKED	KBH	1				
DATE	APR. 2023	NO.	DATE	REVISIONS	BY	APVD.

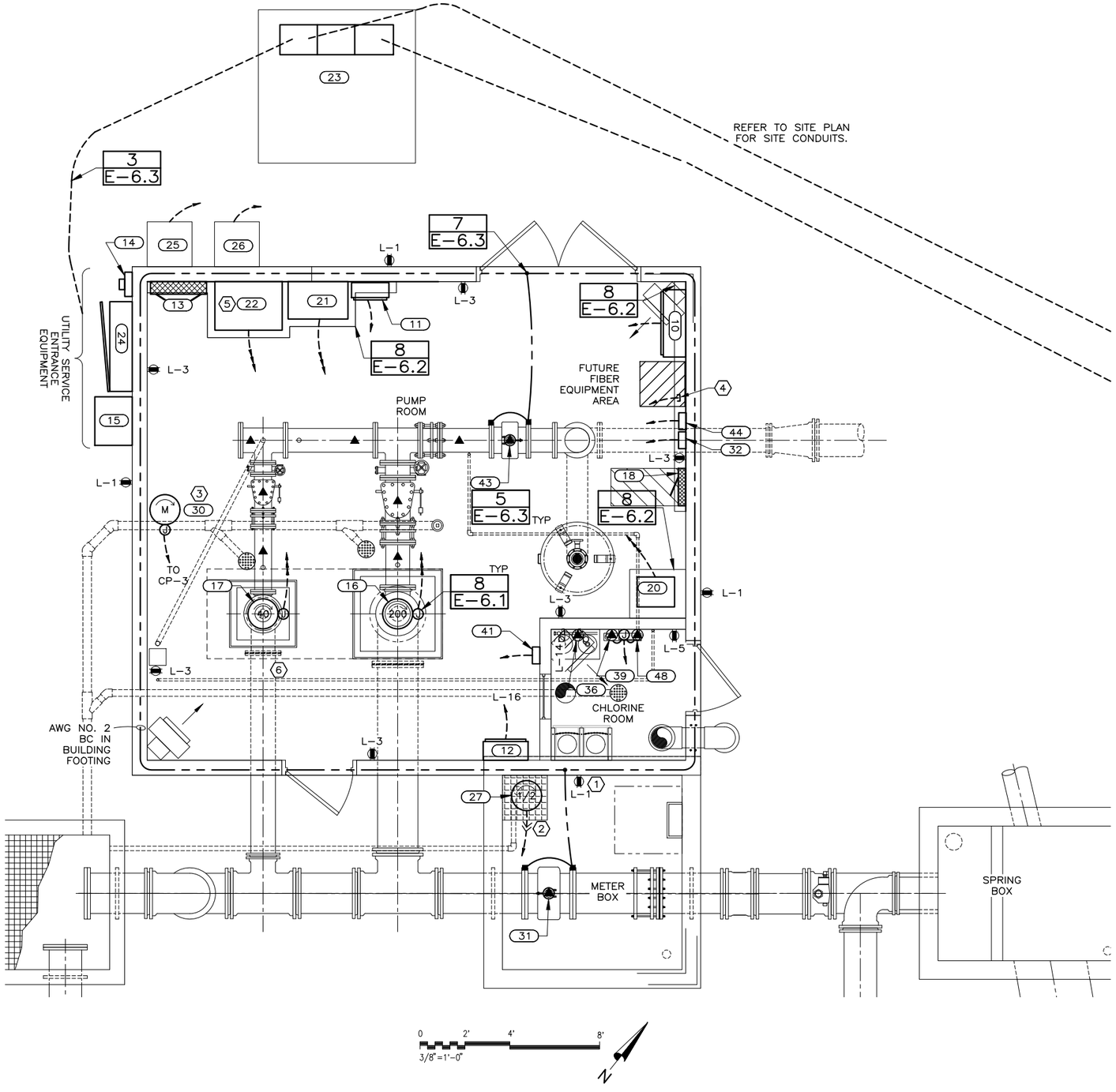
SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ELECTRICAL
SITE PLAN

SHEET E-4.1
260.42.210

10/07



H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH FAX (801) 642-2154
AMERICAN FORK, UT 84003
©2023
HPE PROJECT:22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

POWER PLAN ITEMS (E-4.2)

DRAWING ID	TAG	DESCRIPTION	POWER SOURCE	LOCATION
10	CP-1	MAIN CONTROL PANEL/RTU	L-2	PUMP ROOM
11	CP-2	RELAY CONTROL PANEL	L-18	PUMP ROOM
12	CP-3	SMALL MOTOR CONTROL PANEL	L-16	PUMP ROOM
13	MDP	MAIN DISTRIBUTION PANELBOARD	MSD	PUMP ROOM
14	UMS	UTILITY METER SOCKET	N/A	BUILDING EXTERIOR
15	MSD	MAIN SERVICE DISCONNECT	U. XRMR	BUILDING EXTERIOR
16	BP-1	200 HP PUMP MOTOR	VFD-1	PUMP ROOM
17	BP-2	40 HP PUMP MOTOR	VFD-2	PUMP ROOM
18	PNL-L	PANELBOARD L	XFMR L	PUMP ROOM
20	XFMR-L	TRANSFOMER L	MDP-1	PUMP ROOM
21	VFD-1	VFD 200 HP MOTOR CONTROLLER	MDP-2	PUMP ROOM
22	VFD-2	VFD 40 HP MOTOR CONTROLLER	MDP-3	PUMP ROOM
23	XFMR-U	UTILITY TRANSFORMER	UTILITY	SITE
24	CTE	CT METERING ENCLOSURE	N/A	BUILDING EXTERIOR
25	AER-1	AERATOR CONTROL PANEL	L-26	BUILDING EXTERIOR
26	AER-2	AERATOR CONTROL PANEL	L-28	BUILDING EXTERIOR
27	SP-1	SUMP PUMP	L-22	METER VAULT
30	CBP-1	CHLORINE BOOSTER PUMP	CP-3	PUMP ROOM
31	FE-1	SPRINGS FLOW ELEMENT	-	METER VAULT
32	FIT-1	SPRINGS FLOW INDICATOR/TRANSMITTER	L-6	PUMP ROOM
36	WIT-1/2	CHLORINE WEIGHT SCALE	L-14	CHLORINE ROOM
39	CPV-1	LOW FLOW CHLORINE PROPORTIONING VALVE	L-12	CHLORINE ROOM
41	ASH-1	CHLORINE GAS DETECTOR	L-10	PUMP ROOM
43	FE-2	FLOW ELEMENT	-	PUMP ROOM
44	FIT-2	PUMPED FLOW INDICATOR/TRANSMITTER		PUMP ROOM
48	CPV-2	HIGH FLOW CHLORINE PROPORTIONING VALVE		CHLORINE ROOM

GENERAL NOTES:

1. POWER SOURCE OR "HOME RUN" SHOWN IN THE ITEM TABLE. POWER SOURCE FOR RECEPTACLES SHOWN BY EACH DEVICE.
2. FOR WIRE AND CONDUIT REQUIREMENTS, REFER TO ONE-LINE DIAGRAM ON E-2.1 OR THE PANELBOARD SCHEDULES FOR THE CIRCUIT ID, THEN REFER TO THE CONDUCTOR/CONDUIT TABLE ON E-1.2 FOR THE WIRE AND CONDUIT REQUIREMENTS.
3. INSTALL ALL INTERIOR RECEPTACLES AT +36-IN ABOVE THE FLOOR. INSTALL ALL EXTERIOR RECEPTACLES AT +18-IN ABOVE FINISHED SURFACE AND PROVIDE IN-SERVICE W/P COVER PLATE.

SHEET KEYNOTES:

1. INSTALL RECEPTACLE +18-IN ABOVE TOP OF METER VAULT.
2. FOR THE SUMP PUMP DISCONNECT MEANS PROVIDE A WATERTIGHT PLUG/RECEPTACLE.
3. REFER TO L/C-9 FOR INSTALLATION REQUIREMENTS FOR CHLORINE BOOSTER PUMP.
4. INSTALL A 3/4"C WITH PULL STRING FROM PANELBOARD L TO THE LOCATION OF THE FUTURE FIBER OPTIC EQUIPMENT.
5. REFER TO E-2.1, KEYNOTE 10. REFER TO E-2.8 FOR THE ELECTRICAL DRAWING FOR THE 125 HP VFD ENCLOSURE. FULL SIZE DRAWINGS WILL BE PROVIDED UPON REQUEST DURING CONSTRUCTION.
6. INSTALL RECEPTACLE FOR CHLORINE TANK SCALE +6" ABOVE TOP INDICATOR/TRANSMITTER.

FILE NAME:
FILE DATE:

REGISTERED PROFESSIONAL ENGINEER No. 86-171214-2202 KEITH B. HEGERHORST 05/19/2023 STATE OF UTAH

HANSEN ALLEN & LUCE, INC. ENGINEERS

DESIGNED	KBH	3					
DRAFTED	KBH	2					
CHECKED	KBH	1					
DATE	APR. 2023	NO.	DATE	REVISIONS	BY	APVD.	

PROJECT ENGINEER

SCALE: AS SHOWN

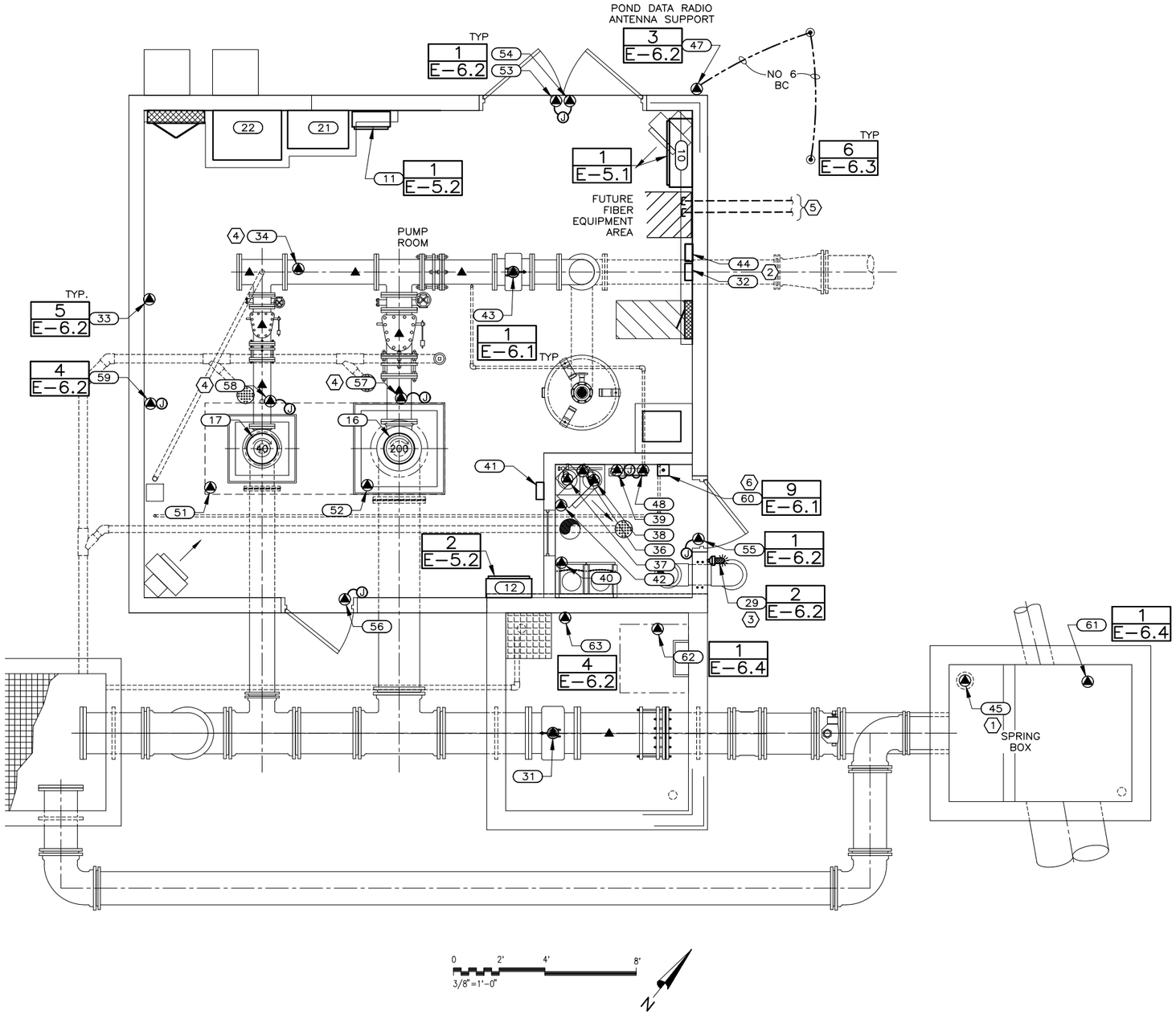
SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ELECTRICAL
BUILDING POWER PLAN

SHEET E-4.2
260.42.210

10/07

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH FAX (801) 642-2154
AMERICAN FORK, UT 84003
©2023
HPE PROJECT:22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST



INSTR. & CONTROL PLAN ITEMS (E-4.3)

DRAWING ID	TAG	DESCRIPTION	LOCATION
10	CP-1	MAIN CONTROL PANEL/RTU	PUMP ROOM
11	CP-2	RELAY CONTROL PANEL	PUMP ROOM
12	CP-3	SMALL MOTOR CONTROL PANEL	PUMP ROOM
16	BP-1	200 HP PUMP MOTOR	PUMP ROOM
17	BP-2	40 HP PUMP MOTOR	PUMP ROOM
21	VFD-1	VFD 200 HP MOTOR CONTROLLER	PUMP ROOM
22	VFD-2	VFD 40 HP MOTOR CONTROLLER	PUMP ROOM
29	AL-1	CHLORINE LEAK ALARM LIGHT	BUILDING EXTERIOR
31	FE-1	SPRINGS FLOW ELEMENT	METER VAULT
32	FIT-1	SPRINGS FLOW INDICATOR/TRANSMITTER	PUMP ROOM
33	TT-1	TEMPERATURE TRANSMITTER	PUMP ROOM
34	PT-1	SYSTEM DISCHARGE PRESSURE	PUMP ROOM
36	WIT-1/2	CHLORINE WEIGHT SCALE	CHLORINE ROOM
37	WE-1	CHLORINE TANK - 1 WEIGHT ELEMENT	CHLORINE ROOM
38	WE-2	CHLORINE TANK - 2 WEIGHT ELEMENT	CHLORINE ROOM
39	CPV-1	LOW FLOW CHLORINE PROPORTIONING VALVE	CHLORINE ROOM
40	TT-2	TEMPERATURE TRANSMITTER	CHLORINE ROOM
41	ASH-1	CHLORINE GAS DETECTOR	PUMP ROOM
42	AE-1	CHLORINE GAS PROBE	CHLORINE ROOM
43	FE-2	FLOW ELEMENT	PUMP ROOM
44	FIT-2	PUMPED FLOW INDICATOR/TRANSMITTER	PUMP ROOM
45	LT-1	LEVEL TRANSMITTER	SPRING BOX
47	AM-2	ANTENNA MAST	BUILDING EXTERIOR
48	CPV-2	HIGH FLOW CHLORINE PROPORTIONING VALVE	CHLORINE ROOM
51	ZS-1	ROOF HATCH POSITION SWITCH	PUMP ROOM
52	ZS-2	ROOF HATCH POSITION SWITCH	PUMP ROOM
53	ZS-3A	DOOR POSITION SWITCH	PUMP ROOM
54	ZS-3B	DOOR POSITION SWITCH	PUMP ROOM
55	ZS-4	DOOR POSITION SWITCH	CHLORINE ROOM
56	ZS-5	DOOR POSITION SWITCH	PUMP ROOM
57	PSH-1	PUMP HIGH DISCHARGE PRESSURE	PUMP ROOM
58	PSH-2	PUMP HIGH DISCHARGE PRESSURE	PUMP ROOM
59	LSH-1	FLOOR HIGH WATER LEVEL	PUMP ROOM
60	HS-1	CBP HOR SWITCH	CHLORINE ROOM
61	ZS-6	HATCH POSITION SWITCH	SPRING BOX
62	ZS-7	HATCH POSITION SWITCH	METER VAULT
63	LSH-2	FLOOR HIGH WATER LEVEL	METER VAULT

GENERAL NOTES:

1. FOR WIRE AND CONDUIT REQUIREMENTS, REFER TO THE INSTRUMENTATION AND CONTROL ONE-LINE DIAGRAM ON E-2.2.

SHEET KEYNOTES:

1. REFER TO INSTALLATION DETAIL ON S-9.
2. INSTALL INDICATOR +66" TO TOP OF UNIT.
3. INSTALL ALARM LIGHT 6-IN ABOVE TOP OF DOOR.
4. REFER TO INSTALLATION DETAIL ON C-7.
5. INSTALL (2) 2"C WITH PULL STRINGS FROM THE FUTURE FIBER OPTIC EQUIPMENT AREA TO NEAR THE SCADA ANTENNA TOWER. IDENTIFY FIELD LOCATION ON AS-BUILT DRAWINGS.
6. INSTALL SWITCH 12" ABOVE CHLORINE BOOSTER PUMP. PROVIDE LABEL "CHLORINE BOOSTER PUMP".

FILE NAME:
FILE DATE:

HANSEN ALLEN & LUCE, INC. ENGINEERS

REGISTERED PROFESSIONAL ENGINEER
No. 86-171214-2202
KEITH B. HEGERHORST
05/19/2023
STATE OF UTAH

PROJECT ENGINEER

DESIGNED	KBH	3				
DRAFTED	KBH	2				
CHECKED	KBH	1				
DATE	APR. 2023	NO.	DATE	REVISIONS	BY	APVD.

SCALE: AS SHOWN

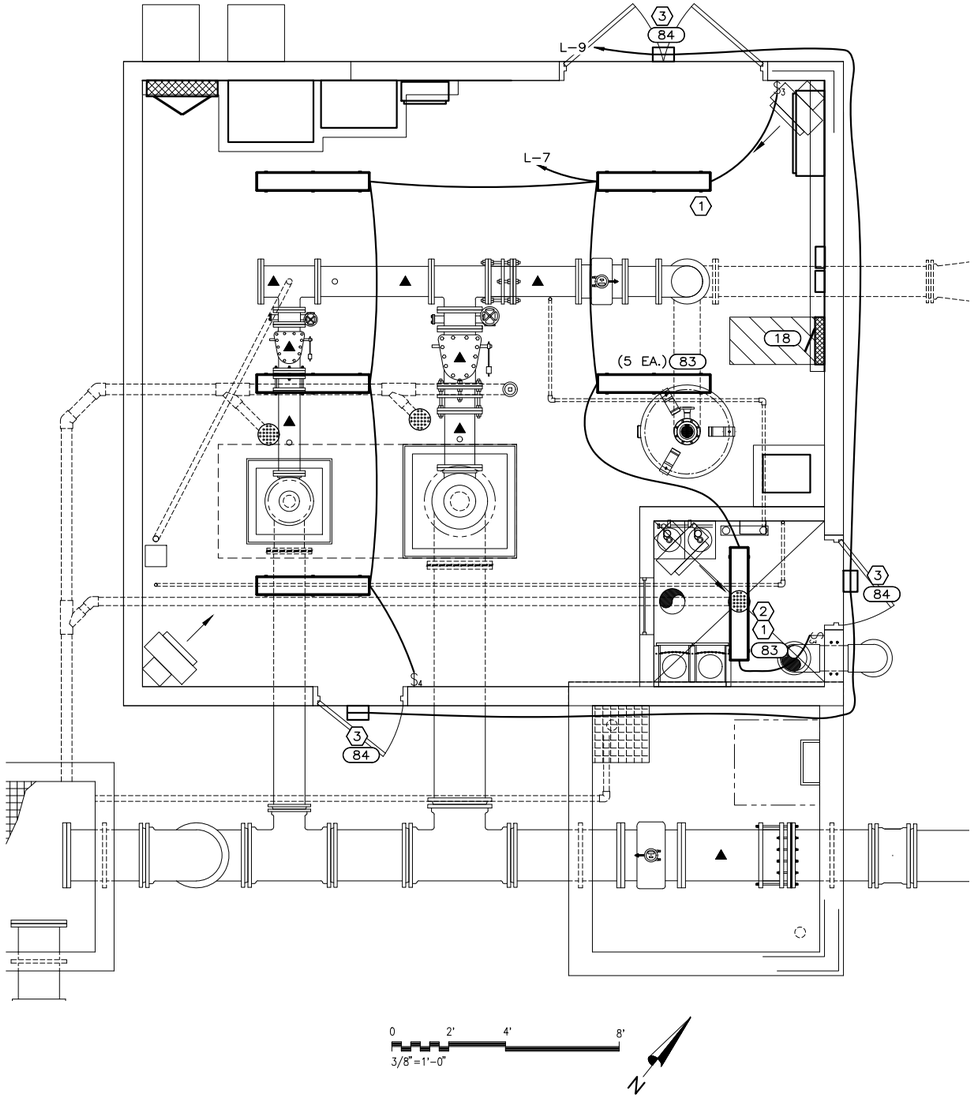
SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ELECTRICAL
INSTRUMENTATION AND CONTROL PLAN

SHEET E-4.3
260.42.210

10/07

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH FAX (801) 642-2154
AMERICAN FORK, UT 84003
©2023
HPE PROJECT:22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST



LIGHTING PLAN ITEMS (E-4.4)

DRAWING ID	TAG	DESCRIPTION	LOCATION
18	PNL-L	PANELBOARD L	PUMP ROOM
83	F1	FIXTURE TYPE F1	PUMP ROOM
84	F2	FIXTURE TYPE F2	PUMP ROOM

GENERAL NOTES:

1. FOR WIRE AND CONDUIT REQUIREMENTS, REFER TO THE PANELBOARD SCHEDULES FOR THE CIRCUIT ID, THEN REFER TO THE CONDUCTOR/CONDUIT TABLE ON E-1.2 FOR THE WIRE AND CONDUIT REQUIREMENTS.
2. REFER TO FIXTURE SCHEDULE ON E-3.1.

SHEET KEYNOTES:

1. THIS FIXTURE SHALL BE SUPPLIED WITH A 90-MINUTE BATTERY AND SHALL OPERATE ON LOSS OF UTILITY POWER.
2. CHLORINE ROOM FIXTURE SHALL BE SWITCHED WITH THE PUMP ROOM FIXTURES.
3. INSTALL FIXTURE 8-INCHES ABOVE AND CENTERED ON DOOR.

FILE NAME:
FILE DATE:

REGISTERED PROFESSIONAL ENGINEER
No. 86-171214-2202
KEITH B. HEGERHORST
05/19/2023
STATE OF UTAH

HANSEN ALLEN & LUCE, Inc. ENGINEERS

PROJECT ENGINEER

DESIGNED	KBH	3				
DRAFTED	KBH	2				
CHECKED	KBH	1				
DATE	APR. 2023	NO.	DATE	REVISIONS	BY	APVD.

SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ELECTRICAL
LIGHTING PLAN

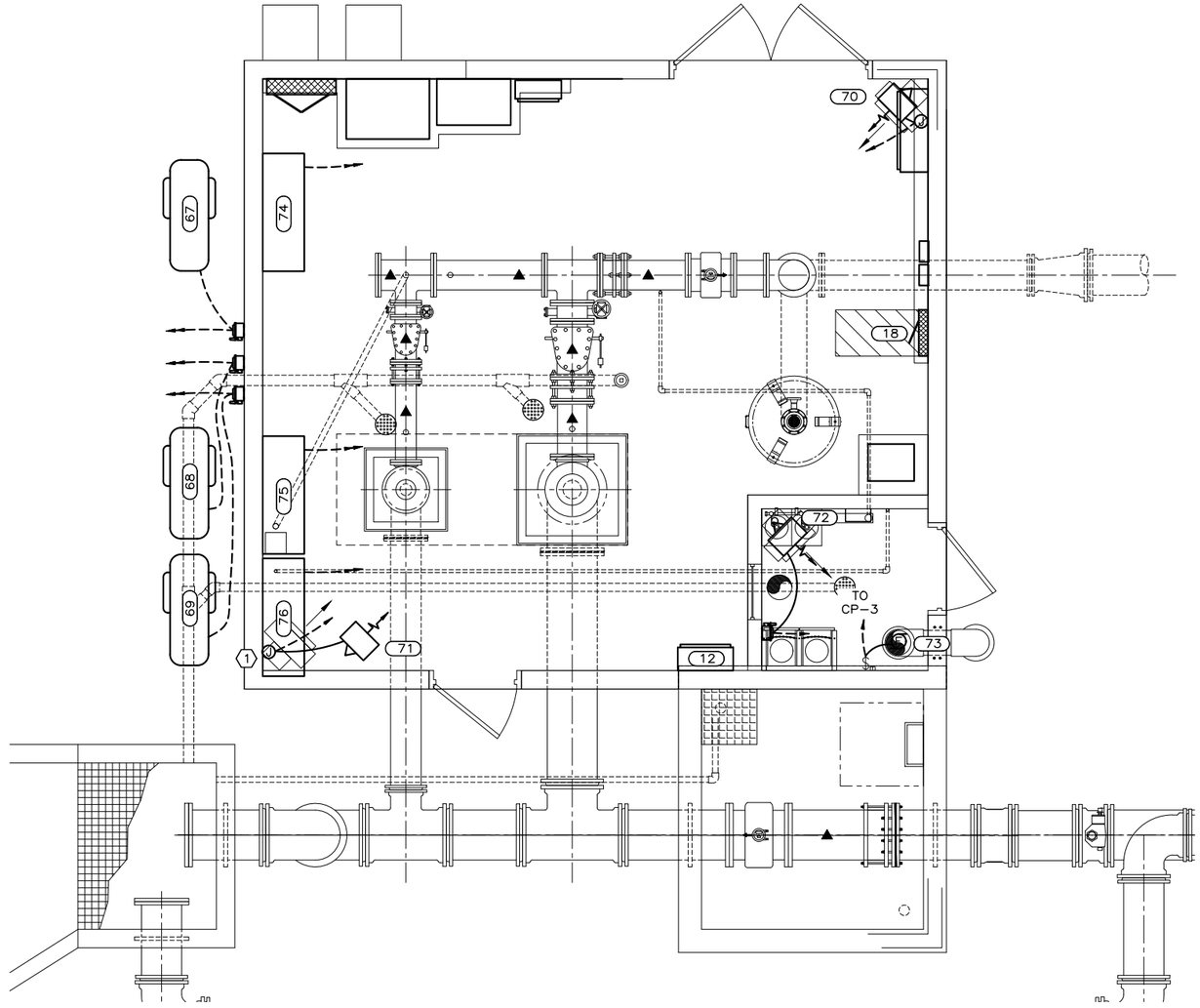
SHEET E-4.4
260.42.210

10/07

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED
708 EAST 50 SOUTH
AMERICAN FORK, UT 84003
(801) 642-2051
FAX (801) 642-2154
©2023

HPE PROJECT:22.077

FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: **KEITH HEGERHORST**



HVAC PLAN ITEMS (E-4.5)

DRAWING ID	TAG	DESCRIPTION	POWER SOURCE	LOCATION
12	CP-3	SMALL MOTOR CONTROL PANEL	L-16	PUMP ROOM
18	PNL-L	PANELBOARD L	XFMR L	PUMP ROOM
67	CU-1	CONDENSING UNIT	L-11,13	BUILDING EXTERIOR
68	CU-2	CONDENSING UNIT	L-15,17	BUILDING EXTERIOR
69	CU-3	CONDENSING UNIT	L-19,21	BUILDING EXTERIOR
70	UH-1	UNIT HEATER	MDP-4	PUMP ROOM
71	UH-2	UNIT HEATER	MDP-5	PUMP ROOM
72	UH-3	UNIT HEATER	MDP-6	CHLORINE ROOM
73	EF-1	EXHAUST FAN	CP-3	CHLORINE ROOM
74	FC-1	FAN COIL	L-23,25	PUMP ROOM
75	FC-2	FAN COIL	L-27,29	PUMP ROOM
76	FC-3	FAN COIL	L-31,33	PUMP ROOM

GENERAL NOTES:

1. POWER SOURCE OR "HOME RUN" SHOWN IN THE ITEM LIST TABLE.
2. FOR WIRE AND CONDUIT REQUIREMENTS, REFER TO ONE-LINE DIAGRAM ON E2.1 OR THE PANELBOARD SCHEDULES FOR THE CIRCUIT ID, THEN REFER TO THE CONDUCTOR/CONDUIT TABLE ON E-1.2 FOR THE WIRE AND CONDUIT REQUIREMENTS.
3. COORDINATE WITH MECHANICAL CONTRACTOR FOR FINAL LOCATIONS OF ALL HVAC EQUIPMENT.

SHEET KEYNOTES:

1. INSTALL J-BOX BELOW AIR HANDLER AND WIRE TO UNIT HEATER.

FILE NAME:
FILE DATE:

REGISTERED PROFESSIONAL ENGINEER
No. 86-171214-2202
KEITH B. HEGERHORST
05/19/2023
STATE OF UTAH

HANSEN ALLEN & LUCE, Inc. ENGINEERS

PROJECT ENGINEER

DESIGNED	KBH	3				
DRAFTED	KBH	2				
CHECKED	KBH	1				
DATE	APR. 2023	NO.	DATE	REVISIONS	BY	APVD.

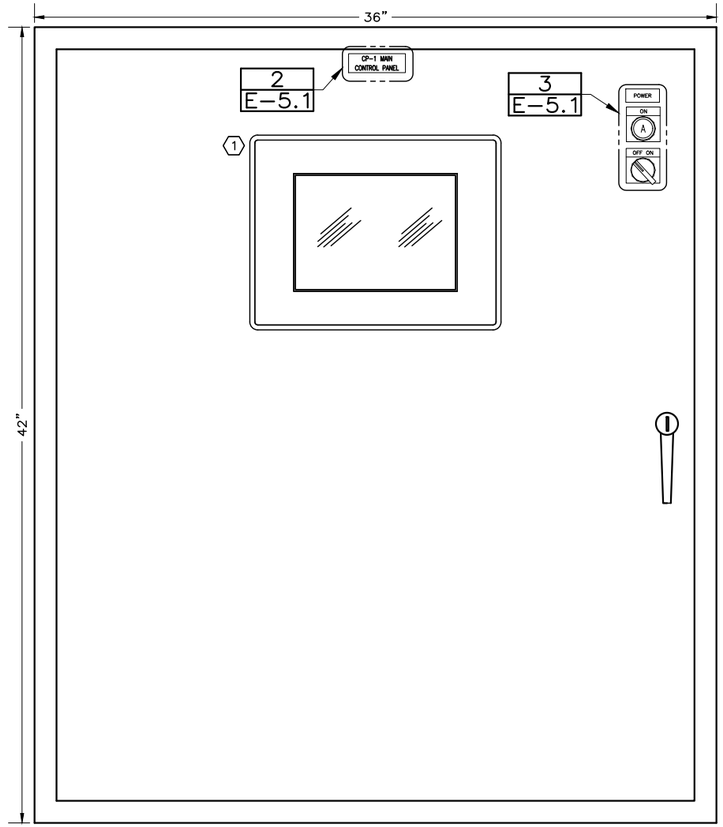
SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

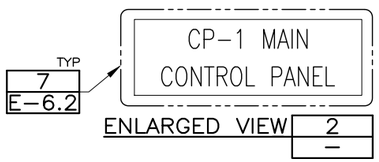
BURT SPRINGS RENOVATION
ELECTRICAL
HVAC POWER PLAN

SHEET E-4.5
260.42.210

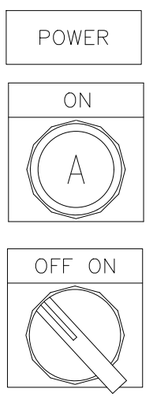
10/07



CP-1 MAIN CONTROL PANEL 1
3" = 1'-0" E-4.3



ENLARGED VIEW 2
—



ENLARGED VIEW 3
—

CP-1 MAIN CONTROL PANEL I/O LIST

DISCRETE INPUTS

DESCRIPTION	FROM	TO	NOTES
CHLORINE BOOSTER PUMP HOA IN AUTO	CP-3	CP-1	
CHLORINE BOOSTER PUMP HOA IN HAND	CP-3	CP-1	
CHLORINE BOOSTER PUMP RUNNING	CP-3	CP-1	
CHLORINE LEAK ALARM	ASH-1	CP-1	
CHLORINE ROOM DOOR OPEN	ZS-5	CP-1	
CHLORINE ROOM EXHAUST FAN HOA IN HAND	CP-3	CP-1	
CHLORINE ROOM EXHAUST FAN RUNNING	CP-3	CP-1	
CHLORINE ROOM EXHAUST FAN RUNNING	CP-3	CP-1	
METER VAULT HATCH OPEN	ZS-7	CP-1	
METER VAULT HIGH WATER	LSH-2	CP-1	
PUMP NO. 1 FILTER HIGH TEMPERATURE	VFD-1	CP-1	
PUMP NO. 1 HIGH DISCHARGE PRESSURE	CP-2	CP-1	
PUMP NO. 1 VFD FAULT	VFD-1	CP-1	
PUMP NO. 1 VFD HOA IN AUTO	VFD-1	CP-1	
PUMP NO. 1 VFD HOA IN HAND	VFD-1	CP-1	
PUMP NO. 1 VFD RUNNING	VFD-1	CP-1	
PUMP NO. 2 FILTER HIGH TEMPERATURE	VFD-2	CP-1	
PUMP NO. 2 HIGH DISCHARGE PRESSURE	CP-2	CP-1	
PUMP ROOM DOOR A OPEN	ZS-3A	CP-1	
PUMP RODM DOOR B OPEN	ZS-3B	CP-1	
PUMP ROOM DOOR OPEN	ZS-4	CP-1	
PUMP RODM HIGH WATER	LSH-1	CP-1	
PUMP ROOM RDOF HATCH OPEN	ZS-1	CP-1	
PUMP ROOM ROOF HATCH OPEN	ZS-2	CP-1	
SPRING DIVERSION BOX HATCH OPEN	ZS-8	CP-1	
SPRING VAULT HATCH OPEN	ZS-6	CP-1	

NOTES: 1)

DISCRETE OUTPUTS

DESCRIPTION	FROM	TO	NOTES
CHLORINE BOOSTER PUMP RUN COMMAND	CP-1	CP-3	
CHLORINE LEAK ALARM	CP-1	AL-1	
CHLORINE LEAK ALARM REMDTE RESET	CP-1	ASH-1	
CHLORINE RM. UNIT HEATER UH-3 COMMAND ON	CP-1	CP-3	
CHLORINE ROOM EF COMMAND RUN	CP-1	CP-3	
PUMP NO. 1 LOW PRESSURE SHUTDOWN	CP-1	VFD-1	
PUMP NO. 1 VFD COMMAND RUN	CP-1	VFD-1	
PUMP NO. 2 LOW PRESSURE SHUTDOWN	CP-1	VFD-2	
PUMP NO. 2 VFD COMMAND RUN	CP-1	VFD-2	
PUMP RM. UNIT HEATER UH-1 COMMAND ON	CP-1	CP-3	
PUMP RM. UNIT HEATER UH-2 COMMAND ON	CP-1	CP-3	

NOTES: 1)

ANALOG INPUTS

DESCRIPTION	FROM	TO	NOTES
CHLORINE ROOM TEMPERATURE	TT-2	CP-1	
CHLORINE TANK 1 WEIGHT	WIT-1/2	CP-1	
CHLORINE TANK 2 WEIGHT	WIT-1/2	CP-1	
PUMP NO. 1 RUNNING SPEED	VFD-1	CP-1	
PUMP NO. 2 RUNNING SPEED	VFD-2	CP-1	
PUMP ROOM TEMPERATURE	TT-1	CP-1	
PUMPED FLOW RATE	FIT-2	CP-1	
SPRING FLOW RATE	FIT-1	CP-1	
SPRING VAULT WATER LEVEL	LT-1	CP-1	
STATION DISCHARGE PRESSURE	PT-1	CP-1	

NOTES: 1)

ANALOG OUTPUTS

DESCRIPTION	FROM	TO	NOTES
CHLORINE DOSING VALVE POSITION COMMAND	CP-1	CPV-1	
CHLORINE DOSING VALVE POSITION COMMAND	CP-1	CPV-2	
PUMP NO. 1 VFD COMMAND SPEED	CP-1	VFD-1	
PUMP NO. 2 VFD COMMAND SPEED	CP-2	VFD-2	

NOTES: 1)

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH FAX (801) 642-2154
AMERICAN FORK, UT 84003
©2023
HPE PROJECT:22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

GENERAL NOTES:

1. INTERNAL COMPONENTS AND ARRANGEMENT NOT SHOWN ON THESE DRAWINGS AND SHALL BE PROVIDED BY THE CONTRACTOR.
2. FOR WIRE AND CONDUIT REQUIREMENTS, REFER TO THE TYPICAL CONTROL PANEL DIAGRAMS ON E-2.4/E-2.5.
3. ENCLOSURE SIZE AS ANTICIPATED. CONTRACTOR SHALL SIZE ENCLOSURE BASED ON THE PROVIDED COMPONENTS AND ARRANGEMENT.
4. CONTRACTOR SHALL PROVIDE FUSE, TERMINAL AND WIRE NUMBERS AS REQUIRED.

SHEET KEYNOTES:

1. PROVIDE AND INSTALL A 10" COLOR OPERATOR TOUCH SCREEN.

REGISTERED PROFESSIONAL ENGINEER
No. 86-171214-2202
KEITH B. HEGERHORST
05/19/2023
STATE OF UTAH

FILE NAME:
FILE DATE:
10/07

HANSEN ALLEN & LUCE Inc. ENGINEERS

PROJECT ENGINEER

DESIGNED	KBH	3					
DRAFTED	KBH	2					
CHECKED	KBH	1					
DATE	APR. 2023	NO.	DATE	REVISIONS		BY	APVD.

SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ELECTRICAL
CP-1 MAIN CONTROL PANEL

SHEET E-5.1
260.42.210

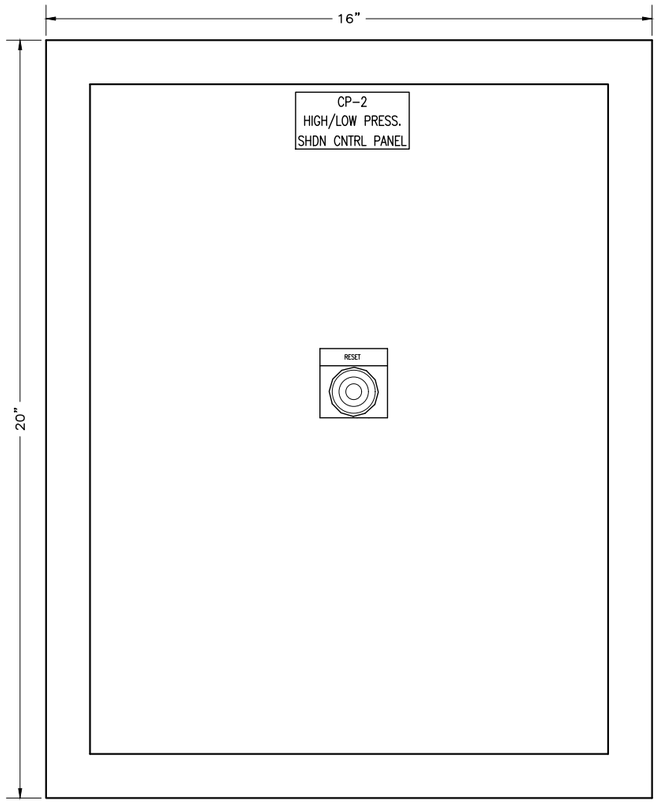
H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH FAX (801) 642-2154
AMERICAN FORK, UT 84003
©2023
HPE PROJECT: 22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

GENERAL NOTES:

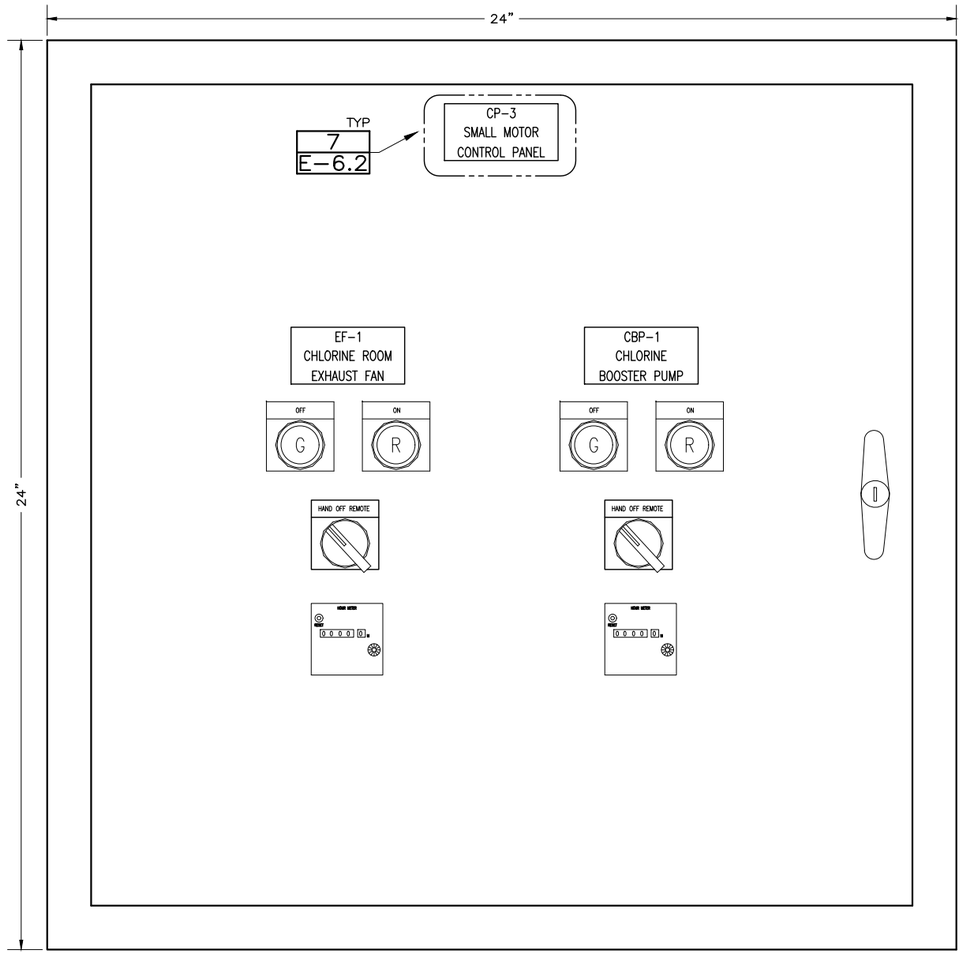
1. TYPICAL CONTROL DIAGRAM SHOWN ON E-2.7.
2. ENCLOSURE DIMENSIONS ARE AS ANTICIPATED. DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FOR THE SELECTED COMPONENTS.
3. INTERNAL ARRANGEMENT NOT SHOWN AND DETERMINED BY THE CONTRACTOR FOR THE PROVIDED DEVICES.

SHEET KEYNOTES:

1. NOT USED.



CP-2 TYPICAL ARRANGEMENT 1
6" = 1'-0" E-4.3



CP-3 TYPICAL ARRANGMENT 2
6" = 1'-0" E-4.3

FILE NAME:
FILE DATE:

REGISTERED PROFESSIONAL ENGINEER
No. 86-171214-2202
KEITH B. HEGERHORST
05/19/2023
STATE OF UTAH

PROJECT ENGINEER

DESIGNED KBH	3					
DRAFTED KBH	2					
CHECKED KBH	1					
DATE APR. 2023	NO.	DATE	REVISIONS	BY	APVD.	

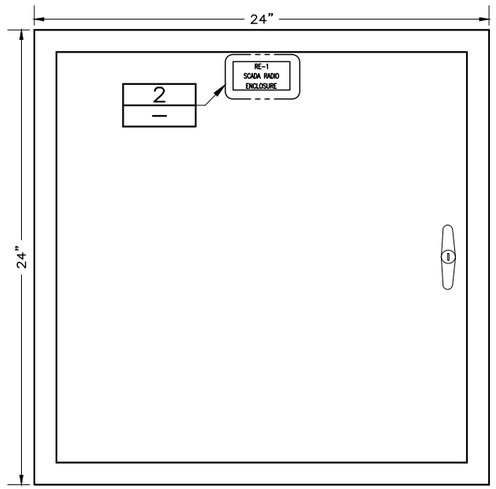
SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ELECTRICAL
CP-2 AND CP-3 CONTROL PANELS

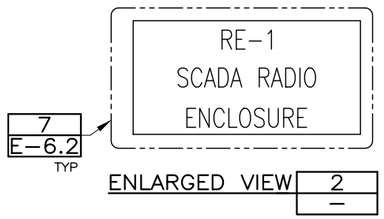
SHEET E-5.2
260.42.210

10/07



RE–1 SCADA RADIO ENCLOSURE 1 / E–4.1 ⟨1⟩

3" = 1'–0"



ENLARGED VIEW 2 / –

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642–2051
708 EAST 50 SOUTH FAX (801) 642–2154
AMERICAN FORK, UT 84003
©2023
HPE PROJECT:22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

GENERAL NOTES:

1. DIMENSIONS SHOWN ARE AS ANTICIPATED. CONTRACTOR SHALL MODIFY DIMENSIONS AS REQUIRED FOR THE INTERNAL COMPONENTS.
2. INTERNAL COMPONENT ARRANGEMENT SHALL BE DETERMINED BY THE CONTRACTOR.

SHEET KEYNOTES:

1. SCADA RADIO ENCLOSURE: PROVIDE A LOCKABLE NEMA 12 STEEL ENCLOSURE WITH AN INTERNAL PANEL, INTERIOR SWING–OUT PANEL (NOT SHOWN) AND STAINLESS STEEL HARDWARE. REFER TO E–2.6 FOR A TYPICAL WIRING DIAGRAM.

REGISTERED PROFESSIONAL ENGINEER
No. 86–171214–2202
KEITH B. HEGERHORST
05/19/2023
STATE OF UTAH

FILE NAME:
FILE DATE:

10/07

HANSEN ALLEN & LUCE, Inc. ENGINEERS

PROJECT ENGINEER

DESIGNED KBH	3					
DRAFTED KBH	2					
CHECKED KBH	1					
DATE APR. 2023	NO.	DATE	REVISIONS	BY	APVD.	

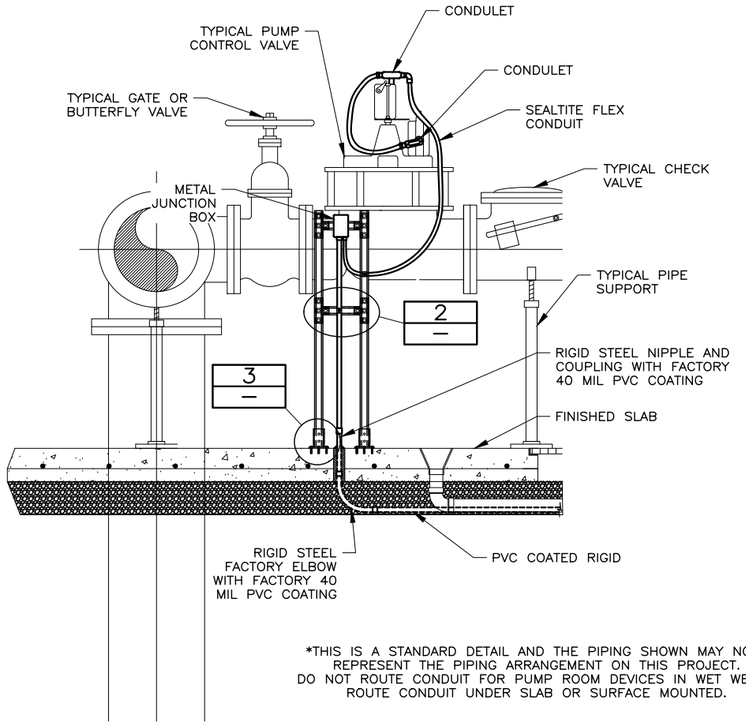
SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ELECTRICAL
ENCLOSURE ARRANGEMENTS

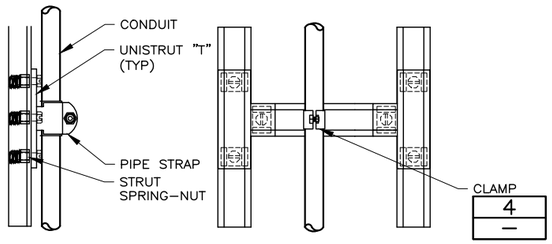
SHEET E–5.3
260.42.210

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH FAX (801) 642-2154
AMERICAN FORK, UT 84003
©2023
HPE PROJECT:22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

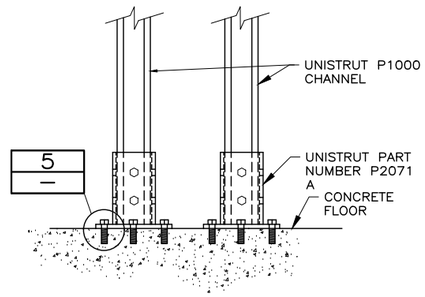


*THIS IS A STANDARD DETAIL AND THE PIPING SHOWN MAY NOT REPRESENT THE PIPING ARRANGEMENT ON THIS PROJECT. DO NOT ROUTE CONDUIT FOR PUMP ROOM DEVICES IN WET WELL. ROUTE CONDUIT UNDER SLAB OR SURFACE MOUNTED.

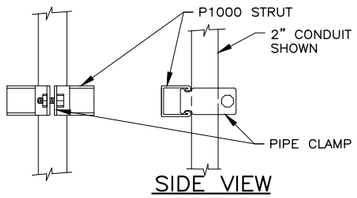
CONDUIT INSTALLATION 1
1" = 1'-0" E-4.3



SUPPORT BRACKET INSTALLATION 2
3" = 1'-0" —



SUPPORT BASE INSTALLATION 3
3" = 1'-0" —

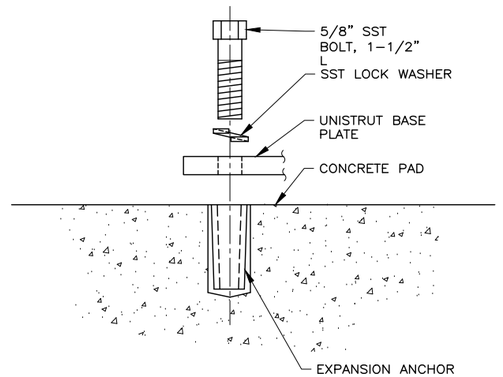


SIDE VIEW

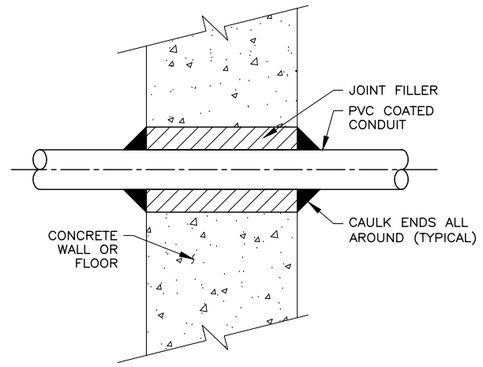
CONDUIT PIPE CLAMPS*			
SIZE	EMT	RGS	EMT/RGS
1/2"	P1426	P1111	—
3/4"	P1427	P1112	P1212
1"	P1428	P1113	P1213
1-1/4"	P1429	P1114	P1214
1-1/2"	P1430	P1115	P1215
2"	P1431	P1117	P1217
2-1/2"	P1118	P1118	—
3"	P1119	P1119	—
3-1/2"	P1120	P1120	—
4"	P1121	P1121	—

* = SUPPLIED WITH SLOTTED HEAD SCREW AND NUT

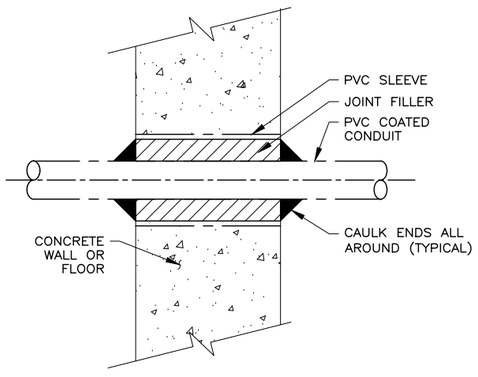
TYPICAL CONDUIT CLAMP



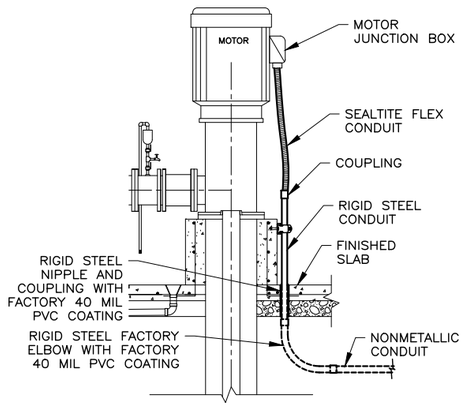
BASE ANCHOR INSTALLATION 5
6" = 1'-0" —



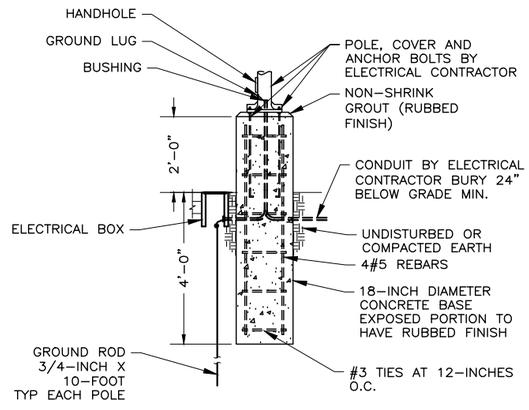
CONDUIT PENETRATION THRU EXISTING CONCRETE OR WALL



CONDUIT PENETRATION THRU NEW CONCRETE OR WALL



TYPICAL MOTOR CONDUIT INSTALLATION 8
1/4" = 1'-0" E-4.2



ANTENNA SUPPORT BASE 9
1/2" = 1'-0" E-4.1

FILE NAME:
FILE DATE:

REGISTERED PROFESSIONAL ENGINEER No. 86-171214-2202 KEITH B. HEGERHORST 05/19/2023 STATE OF UTAH

HANSEN ALLEN & LUCE ENGINEERS

PROJECT ENGINEER

DESIGNED	KBH	3					
DRAFTED	KBH	2					
CHECKED	KBH	1					
DATE	APR. 2023	NO.	DATE	REVISIONS		BY	APVD.

SCALE: AS SHOWN

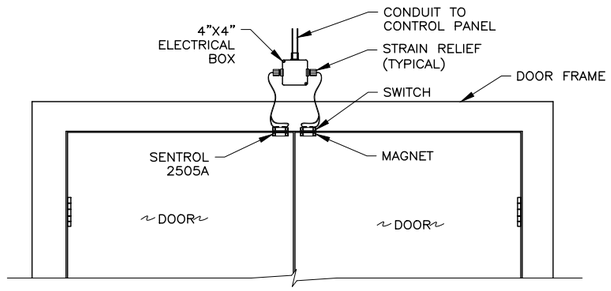
SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

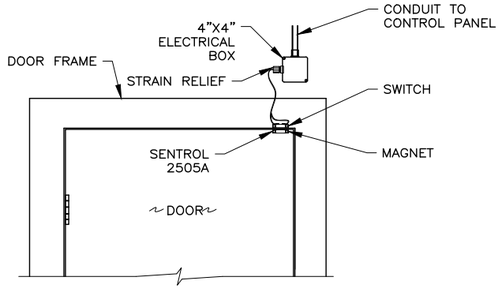
BURT SPRINGS RENOVATION
ELECTRICAL
DETAILS, SHT. 1

SHEET E-6.1
260.42.210

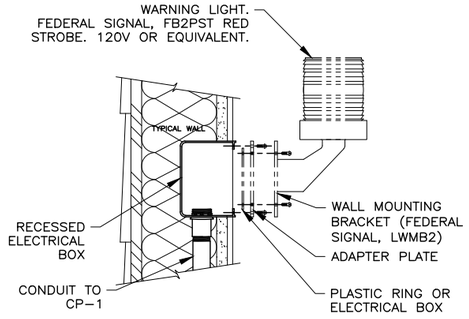
10/07

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH FAX (801) 642-2154
AMERICAN FORK, UT 84003
©2023
HPE PROJECT:22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

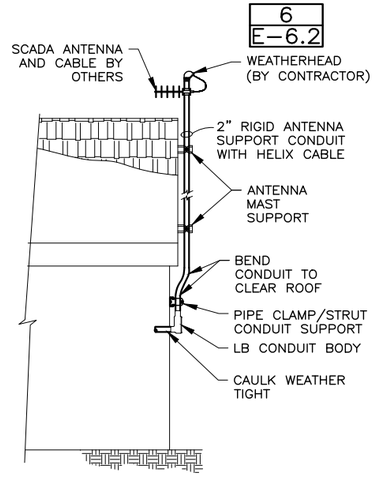




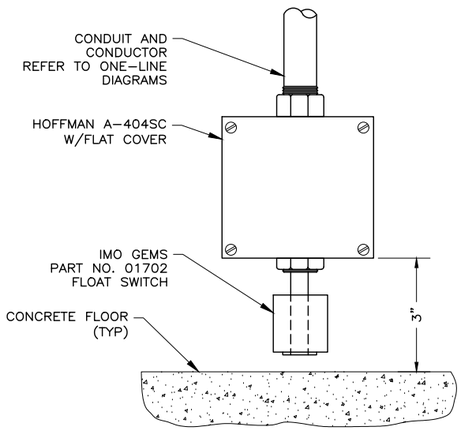
DOOR POSITION SWITCH INSTALLATION 1
1" = 1'-0" E-4.3



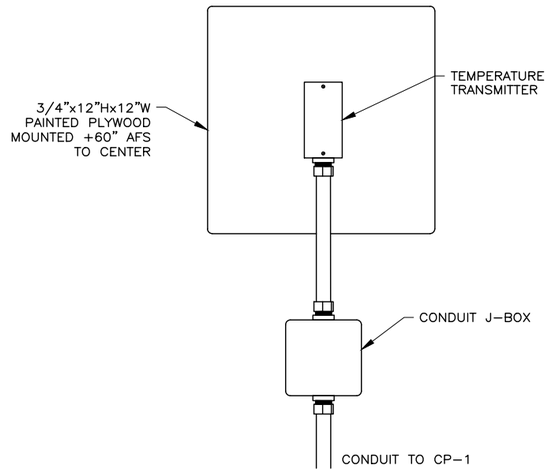
ALARM LIGHT DETAIL 2
3" = 1'-0" E-4.3



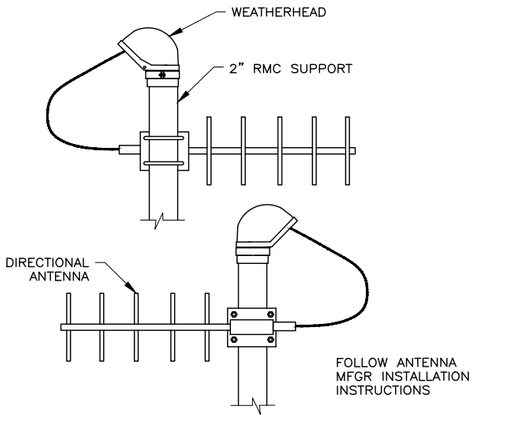
SCADA ANTENNA SUPPORT 3
1/2" = 1'-0" E-4.3



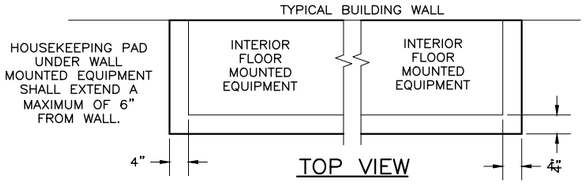
FLOOR LEVEL SWITCH INSTALLATION 4
6" = 1'-0" E-4.3

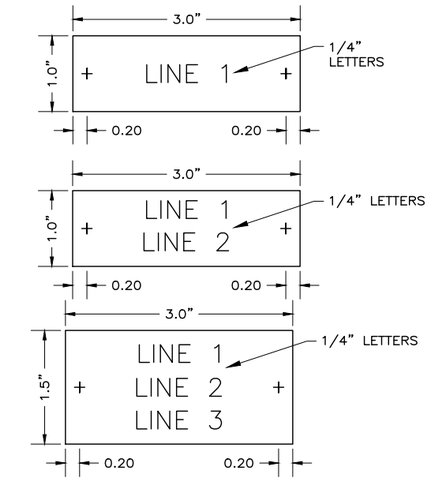


TEMPERATURE TRANSMITTER INSTALLATION 5
3" = 1'-0" E-4.3

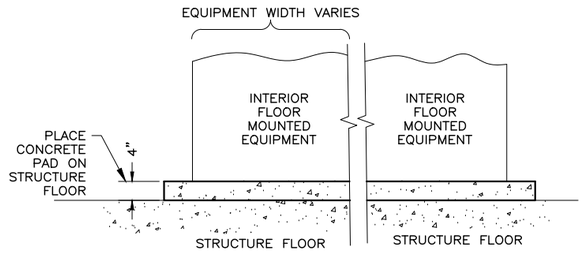


ANTENNA WEATHERHEAD INSTALLATION 6
3" = 1'-0" —





NAMEPLATE DETAIL 7 | 2 | 2
1" = 1'-0" E-5.2 | E-5.1 | E-5.3



ELEVATION VIEW

EQUIPMENT HOUSEKEEPING PADS 8
3/4" = 1'-0" E-4.2

REGISTERED PROFESSIONAL ENGINEER No. 86-171214-2202 KEITH B. HEGERHORST 05/19/2023 STATE OF UTAH

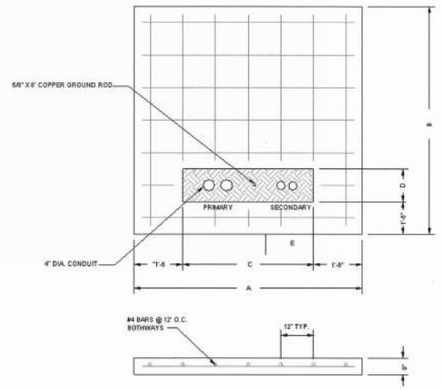
FILE NAME:
FILE DATE:

HANSEN ALLEN & LUCE, Inc. ENGINEERS	DESIGNED KBH	3					SCALE AS SHOWN
	DRAFTED KBH	2					SPRINGVILLE CITY 110 SOUTH MAIN SPRINGVILLE, UTAH 84663
	CHECKED KBH	1					BURT SPRINGS RENOVATION ELECTRICAL DETAILS, SHT. 2
PROJECT ENGINEER	DATE APR. 2023	NO.	DATE	REVISIONS	BY	APVD.	SHEET E-6.2 260.42.210

10/07

H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH FAX (801) 642-2154
AMERICAN FORK, UT 84003
©2022
HPE PROJECT:22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

THREE-PHASE TRANSFORMER CONCRETE PAD WITHOUT CT RACK



Transformer Pad Dimensions

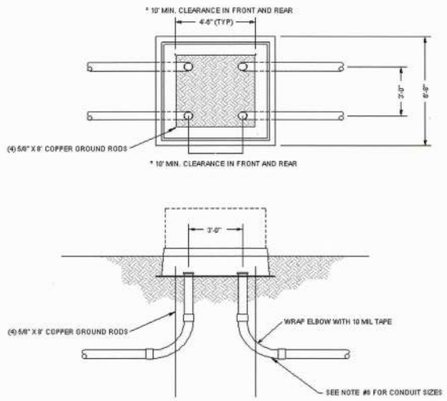
Transformer Rating	Dimensions A	B	C	D	E
75 – 500 KVA	78"	84"	42"	15"	20"
750 – 2500 KVA	96"	96"	60"	16"	30"

SPRINGVILLE CITY
ELECTRICAL REQUIREMENTS
& STANDARDS MANUAL
PAD MOUNTED TRANSFORMERS

ELECTRIC 5.6
PAD MOUNTED TRANSFORMERS
SCALE: NONE
DATE: 8.28.07
REV:
REV DATE:7.16.13

TRANSFORMER PAD DETAIL 1
1' = 1'-0" E-4.1

SECTIONALIZERS AND SWITCHES CONDUIT PLACEMENT FOR SWITCHES

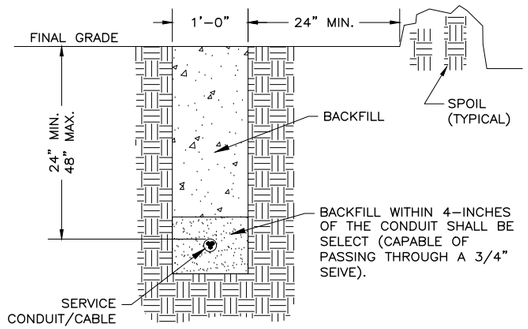


Notes:
1. All 90 degree elbows shall be rigid steel and PVC wrapped.
2. Bases will be provided by Springville City and installed by the developer.
3. The developer shall provide and install all ground rods (5/8" x 8' copper clad steel) and subsequent materials to complete the installation.
4. Conduit sizes and locations will be provided by Springville City on the subdivision electrical plans.
5. Support all conduits during backfilling keeping them as vertical as possible.

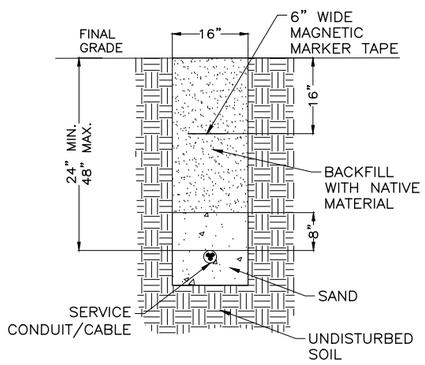
SPRINGVILLE CITY
ELECTRICAL REQUIREMENTS
& STANDARDS MANUAL
SECTIONALIZERS AND SWITCHES

ELECTRIC 7.2
SECTIONALIZERS AND SWITCHES
SCALE: NONE
DATE: 8.28.07
REV:
REV DATE: 7.16.13

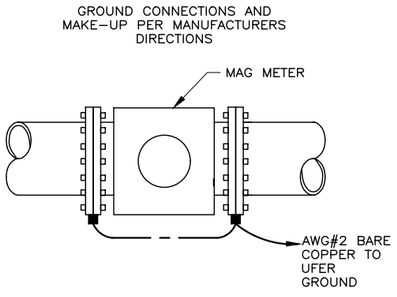
SECTIONALIZER INSTALLATION 2
1' = 1'-0" E-4.1



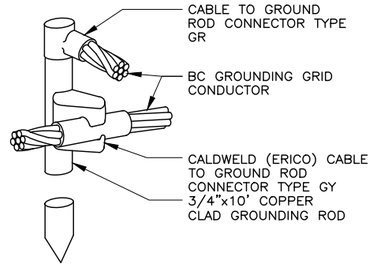
SECONDARY CONDUIT TRENCH 3
1" = 1'-0" E-4.2



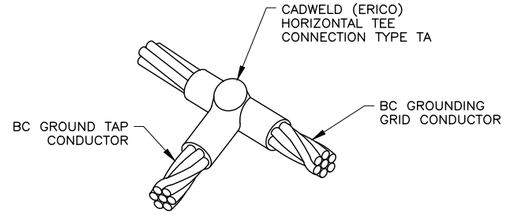
PRIMARY CONDUIT TRENCH 4
1" = 1'-0" E-4.1



FLOW METER GROUNDING DETAIL 5
1 1/2" = 1'-0" E-4.2



GROUND ROD CONNECTION 6
6" = 1'-0" E-4.3



WELDED GROUND TEE CONNETION 7
1' = 1'-0" E-4.2

FILE NAME:
FILE DATE:

REGISTERED PROFESSIONAL ENGINEER
No. 86-171214-2202
KEITH B. HEGERHORST
05/19/2023
STATE OF UTAH

HANSEN ALLEN & LUCE, Inc. ENGINEERS

PROJECT ENGINEER

DESIGNED	KBH	3				
DRAFTED	KBH	2				
CHECKED	KBH	1				
DATE	APR. 2023	NO.	DATE	REVISIONS	BY	APVD.

SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ELECTRICAL
DETAILS, SHT. 3

SHEET E-6.3
260.42.210

10/07

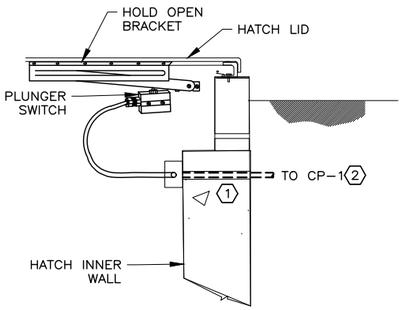
H.P.E. INC. ELECTRICAL ENGINEERS
POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS
HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051
708 EAST 50 SOUTH FAX (801) 642-2154
AMERICAN FORK, UT 84003
©2023
HPE PROJECT:22.077
FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

GENERAL NOTES:

1. NOT USED.

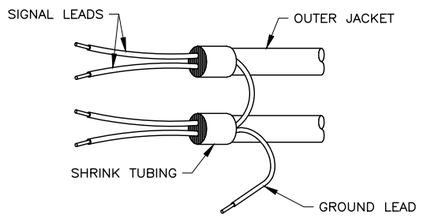
SHEET KEYNOTES:

1. SEAL CONDUIT PENETRATION WITH SILICONE.
2. CONDUIT SHALL EXIT HATCH BELOW SOIL AND REMAIN SECURE TO CP-1.

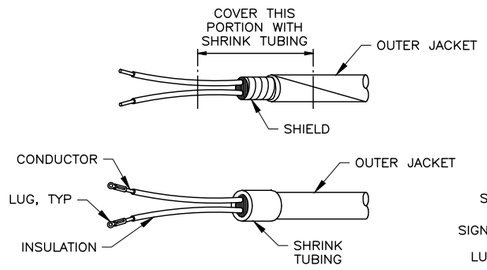


HATCH POSITION SWITCH INSTALLATION 1
3/4" = 1'-0" E-4.3



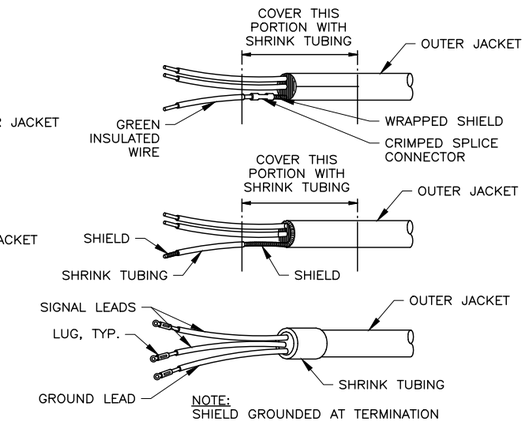


UNACCEPTABLE METHOD OF GROUNDING CONTROL CABLE SHIELD NTS



NOTE:
SHIELD NOT GROUNDED AT TERMINATION.

TERMINATION OF SHIELDED CONTROL CABLE NTS



NOTE:
SHIELD GROUNDED AT TERMINATION

TERMINATION OF SHIELDED CONTROL CABLE NTS

SIGNAL WIRE TERMINATIONS

FILE NAME:
FILE DATE:

REGISTERED PROFESSIONAL ENGINEER
No. 86-171214-2202
KEITH B. HEGERHORST
05/19/2023
STATE OF UTAH
PROJECT ENGINEER

DESIGNED KBH	3					
DRAFTED KBH	2					
CHECKED KBH	1					
DATE APR. 2023	NO.	DATE	REVISIONS	BY	APVD.	

SCALE: AS SHOWN

SPRINGVILLE CITY
110 SOUTH MAIN
SPRINGVILLE, UTAH 84663

BURT SPRINGS RENOVATION
ELECTRICAL
DETAILS, SHT. 4

SHEET E-6.4
260.42.210

10/07