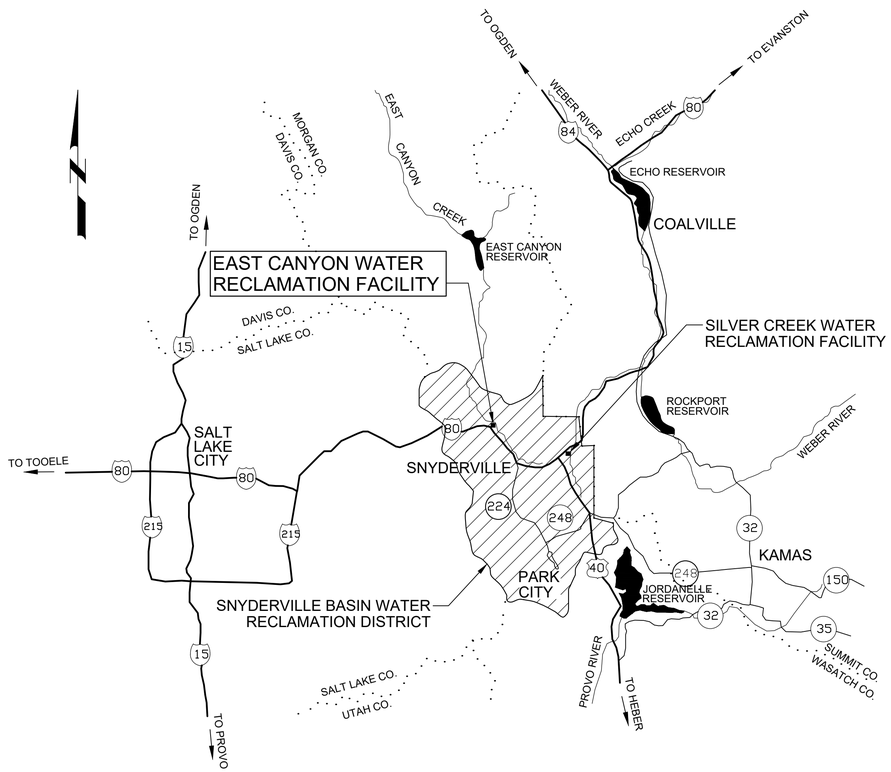
SBWRD

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT

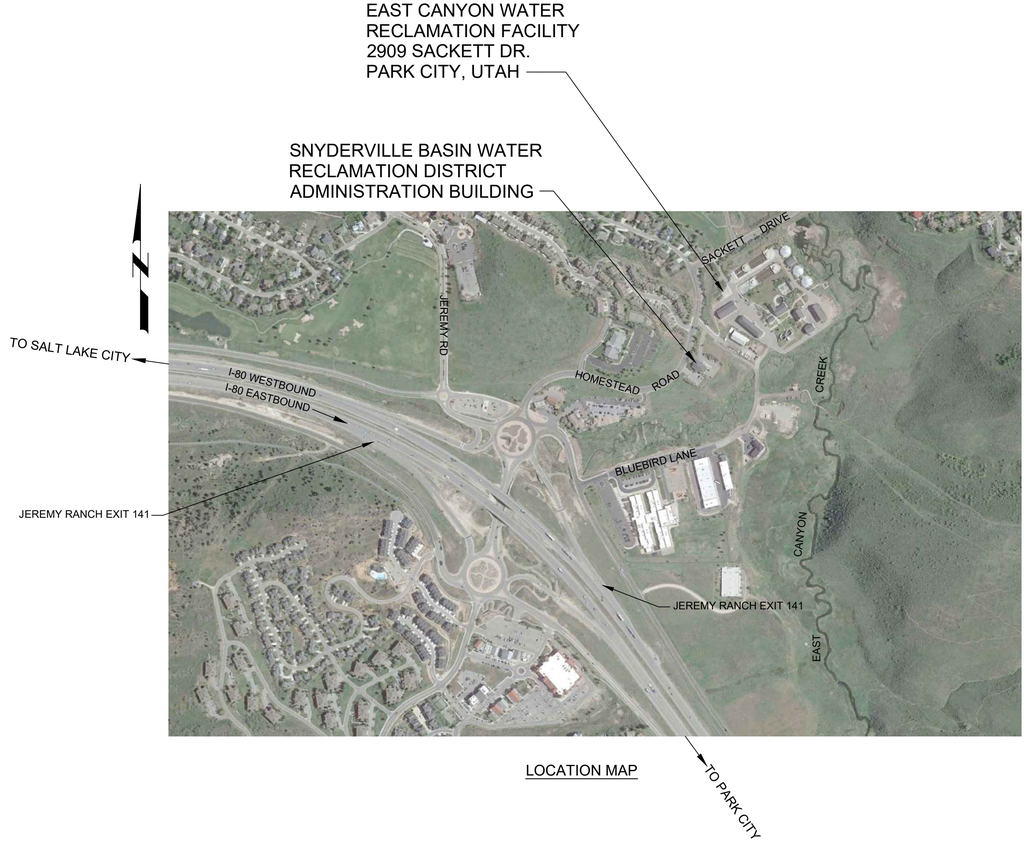
DEWATERING EQUIPMENT PREPURCHASE



VICINITY MAP

MAY 2025

VOLUME 1 OF 1



LOCATION MAP

carollo®

REGISTERED PROFESSIONAL ENGINEER
No. 12399681-2202
ERIN R. ANDERSEN
STATE OF UTAH

JOB NO.	204042
DRAWING NO.	00G01
SHEET NO.	1 OF 42

LAST SAVED BY: tdietz

PROJECT NO. 11599A10 FILE NAME: 204042_00G01.dwg

SHEET NO.	DRAWING NO.	DESCRIPTION
		(G) - GENERAL
1	00G01	COVER SHEET
2	00G02	DRAWING INDEX
3	00G03	GENERAL NOTES, LEGENDS AND SYMBOLS
4	00G04	ABBREVIATIONS
5	00G05	PIPE SCHEDULE
		(D) - DEMOLITION
6	00D01	SOLIDS BUILDING LOWER PLAN
7	00D02	SOLIDS BUILDING UPPER PLAN
8	00D03	SOLIDS BUILDING SECTION
		(S) - STRUCTURAL
9	00GS01	STRUCTURAL GENERAL NOTES
10	00TS01	TYPICAL DETAILS STRUCTURAL 1
11	00TS02	TYPICAL DETAILS STRUCTURAL 2
12	00TS03	TYPICAL DETAILS STRUCTURAL 3
13	00S01	SOLIDS BUILDING PLANS
14	00S02	SOLIDS BUILDING SECTIONS AND DETAILS 1
15	00S03	SOLIDS BUILDING SECTIONS AND DETAILS 2
		(M) - MECHANICAL
16	00GM01	GENERAL LEGEND AND SYMBOLS
17	00TM01	TYPICAL DETAILS MECHANICAL 1
18	00M01	SOLIDS BUILDING LOWER PLAN
19	00M02	SOLIDS BUILDING INTERMEDIATE PLAN
20	00M03	SOLIDS BUILDING UPPER PLAN
21	00M04	SOLIDS BUILDING SECTION 1
22	00M05	SOLIDS BUILDING SECTION 2
		(E) - ELECTRICAL
23	00GE01	LEGEND
24	00GE02	ABBREVIATIONS
25	00TE01	TYPICAL DETAILS ELECTRICAL 1
26	00DE01	MCC-S DEMO ELEVATION
27	00DE02	MCC-S DEMO ONE-LINE DIAGRAM
28	00E01	MCC-S ELEVATION
29	00E02	MCC-S ONE-LINE DIAGRAM
30	00E03	SOLIDS BUILDING POWER AND CONTROL PLAN
		(N) - INSTRUMENTATION
31	00GN01	SYMBOLS AND ABBREVIATIONS 1
32	00GN02	SYMBOLS AND ABBREVIATIONS 2
33	00GN03	SYMBOLS AND ABBREVIATIONS 3
34	00GN04	SYMBOLS AND ABBREVIATIONS 4
35	00GN05	SAMPLE LOOP DRAWING
36	00GN06	EQUIPMENT TAGGING
37	00TN01	TYPICAL DETAIL INSTRUMENTATION 1
38	00N10	ROTARY PRESS FLOCCULATOR 1 P&ID
39	00N11	ROTARY PRESS 1 P&ID
40	00N12	ROTARY PRESS FLOCCULATOR 2 P&ID
41	00N13	ROTARY PRESS 2 P&ID
42	00N14	AIR COMPRESSOR P&ID

X - INDICATES DRAWINGS NOT CONTAINED IN THIS SUBMITTAL

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED CTA
DATE MAY 2025

Digitally signed by Erin R. Andersen
Date: 2025.05.30 10:59:05 -06'00'
REGISTERED PROFESSIONAL ENGINEER
No. 12399681-2202
ERIN R. ANDERSEN
STATE OF UTAH

carollo®

SBWRD

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
GENERAL
DRAWING INDEX

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

JOB NO. 204042
DRAWING NO. 00G02
SHEET NO. 2 OF 42

LAST SAVED BY: dletz

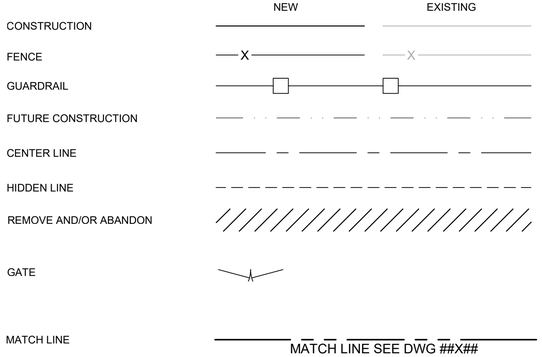
PROJECT NO.:
FILE NAME: 204042_00G02.dwg

GENERAL NOTES

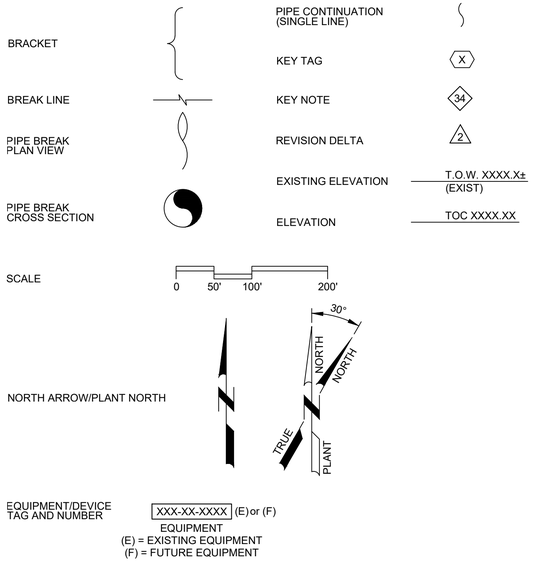
1. FOLLOWING NOTES ARE GENERAL AND APPLY TO ALL SHEETS OF THESE CONTRACT DOCUMENTS AS IF THEY WERE WRITTEN IN THEIR ENTIRETY ON EACH SHEET.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE STARTING WORK AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING CONDITIONS INCLUDING LOCATION AND DIMENSIONS OF ALL EXISTING CONSTRUCTION AND UTILITIES. CONTRACTOR SHALL NOTIFY ENGINEER IF THERE IS A CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND EXISTING CONSTRUCTION BEFORE PROCEEDING WITH WORK.
3. UNLESS DETAILED, SPECIFIED, OR OTHERWISE INDICATED ON THE DRAWINGS, CONSTRUCTION SHALL BE AS INDICATED IN THE APPLICABLE TYPICAL DETAILS AND GENERAL NOTES. TYPICAL DETAILS SHALL APPLY EVEN THOUGH NOT REFERENCED AT SPECIFIC LOCATIONS ON DRAWINGS.
4. WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF WORK, DETAILS SHALL BE IN THE SAME AS FOR OTHER SIMILAR WORK.
5. CONTRACTOR SHALL COMPLY WITH LOCAL CONSTRUCTION STORM WATER DISCHARGE REGULATIONS AND REQUIREMENTS.
6. PRIOR TO EXCAVATION FOR NEW STRUCTURES, ELECTRICAL CONDUIT, FABRICATION OF NEW PIPING AND/OR OTHER PROPOSED UTILITIES, CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL EXISTING PIPING AND UTILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL TEMPORARILY RELOCATE CONFLICTING EXISTING UTILITIES AT TIE-IN/CONNECTION LOCATIONS AND REINSTALL THEM AS REQUIRED TO ELIMINATE THE CONFLICT AT NO ADDITIONAL COST TO THE OWNER.
7. ALL PIPELINES 12" AND LARGER SHALL HAVE A MINIMUM COVER OF 36" UNLESS THE COVER DEPTH IS SPECIFICALLY INDICATED ON THE DRAWINGS. PIPE SMALLER THAN 12" SHALL HAVE A MINIMUM COVER OF 30" UNLESS NOTED OTHERWISE. PIPES SHALL BE ROUTED AS SHOWN UNLESS MINOR REVISIONS ARE NECESSARY TO MISS EXISTING PIPES, STRUCTURES, ETC. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL FITTINGS AND ADAPTERS REQUIRED TO MAKE THE ROUTING CHANGES AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL INCLUDE COST FOR THIS IN THE BID.
8. EXISTING FACILITY AND UTILITY INFORMATION SHOWN ON THE DRAWINGS WAS OBTAINED FROM AVAILABLE RECORDS OR ELECTRONIC FILES. NEITHER THE OWNER NOR ENGINEER ASSUMES ANY RESPONSIBILITY FOR FACILITIES AND UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN. THE CONTRACTOR SHALL FIELD VERIFY ALL LOCATIONS, SIZES, MATERIAL TYPES, AND ELEVATIONS SHOWN AROUND OR NEAR AREAS OF NEW CONSTRUCTION PRIOR TO START OF CONSTRUCTION.
9. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT FROM DAMAGE EXISTING FACILITIES AND UTILITIES SHOWN OR NOT SHOWN THAT ARE TO REMAIN IN PLACE. ALL FACILITIES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE EXPEDITIOUSLY REPAIRED OR RECONSTRUCTED TO THE ORIGINAL OR BETTER CONDITION AT THE CONTRACTOR'S EXPENSE WITHOUT ADDITIONAL COMPENSATION.
10. CONTRACTOR SHALL MAKE CONNECTIONS TO EXISTING PIPE, EQUIPMENT, ETC. AS REQUIRED AND SHALL PROVIDE ALL FITTINGS, ADAPTERS, AND APPURTENANCES REQUIRED TO MAKE THE CONNECTIONS. PROVIDE ALL SUPPORTS REQUIRED FOR A RIGIDLY SUPPORTED COMPLETE AND WORKING SYSTEM.
11. ADJUST ALL VALVE BOXES, VAULTS, PULL BOXES, AND MANHOLES TO FINISHED GRADE UNLESS OTHERWISE SHOWN OR DIRECTED. MANHOLES IN OPEN FIELDS SHALL BE SET TWELVE INCHES ABOVE FINISHED GRADE AND VAULTS SHALL BE SIX INCHES ABOVE FINISHED GRADE.
12. THE CONTRACTOR SHALL CONTACT THE PROPER UTILITY REPRESENTATIVE AS FOLLOWS FOR QUESTIONS OR COORDINATION OF CONSTRUCTION RELATED TO EXISTING UTILITIES.

    STATE/REGION/MUNICIPALITY SPECIFIC: 1-800-662-4111
13. CONTRACTOR SHALL VERIFY THAT PIPING SHOWN TO BE ABANDONED OR AS ABANDONED PREVIOUSLY IS NO LONGER IN SERVICE. LINES IN SERVICE SHALL BE MAINTAINED UNTIL NO LONGER REQUIRED BY THE PLANT.
14. ALL EXISTING PIPES THAT ARE TO BE ABANDONED IN PLACE OR REMOVED MAY NOT BE SHOWN. WHERE PIPING IS TO BE ABANDONED AND MUST REMAIN IN SERVICE UNTIL COMPLETION OF OTHER PHASES OF WORK, AND IT CONFLICTS WITH NEW PIPING, TEMPORARILY RELOCATE PIPING AS REQUIRED TO MAINTAIN SERVICE BY THE PLANT.
15. CONTRACTOR SHALL REROUTE THE EXISTING PIPING IF REQUIRED TO MISS THE PROPOSED STRUCTURES. THE EXISTING PIPE SHALL REMAIN IN SERVICE UNTIL NEW PIPING IS READY TO BE PLACED INTO SERVICE. DOWNTIME SHALL BE A MAXIMUM OF 2 HOURS, UNLESS SPECIFIED OR SHOWN OTHERWISE.
16. ALL SIDEWALKS TO BE 3'-0" WIDE UNLESS SHOWN OTHERWISE.
17. THE CONTRACTOR SHALL TAKE SPECIAL PRECAUTIONS IN THE VICINITY OF ANY OVERHEAD ELECTRIC LINES. CONTRACTOR SHALL ABIDE BY THE NATIONAL ELECTRIC CODE AND ANY REQUIREMENT BY THE OWNER OF THE ELECTRIC LINES.
18. PROVIDE ALL SHEETING/SHORING REQUIRED TO PROTECT EXISTING STRUCTURES, PIPES AND FACILITIES.
19. CONTRACTOR SHALL VERIFY LOCATION OF ALL ARCHITECTURAL, MECHANICAL, AND ELECTRICAL ITEMS BEFORE PLACING ANY STRUCTURAL STEEL OR CONCRETE. ALSO, STRUCTURAL DIMENSIONS AND OPENINGS CONTROLLED BY ARCHITECTURAL, MECHANICAL, OR ELECTRICAL EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
20. MECHANICAL AND ELECTRICAL EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES, AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS, THAT ARE REQUIRED BY OTHER CONTRACT DRAWINGS, SHALL BE PROVIDED PRIOR TO CASTING CONCRETE.

LINE WORK



SYMBOLS

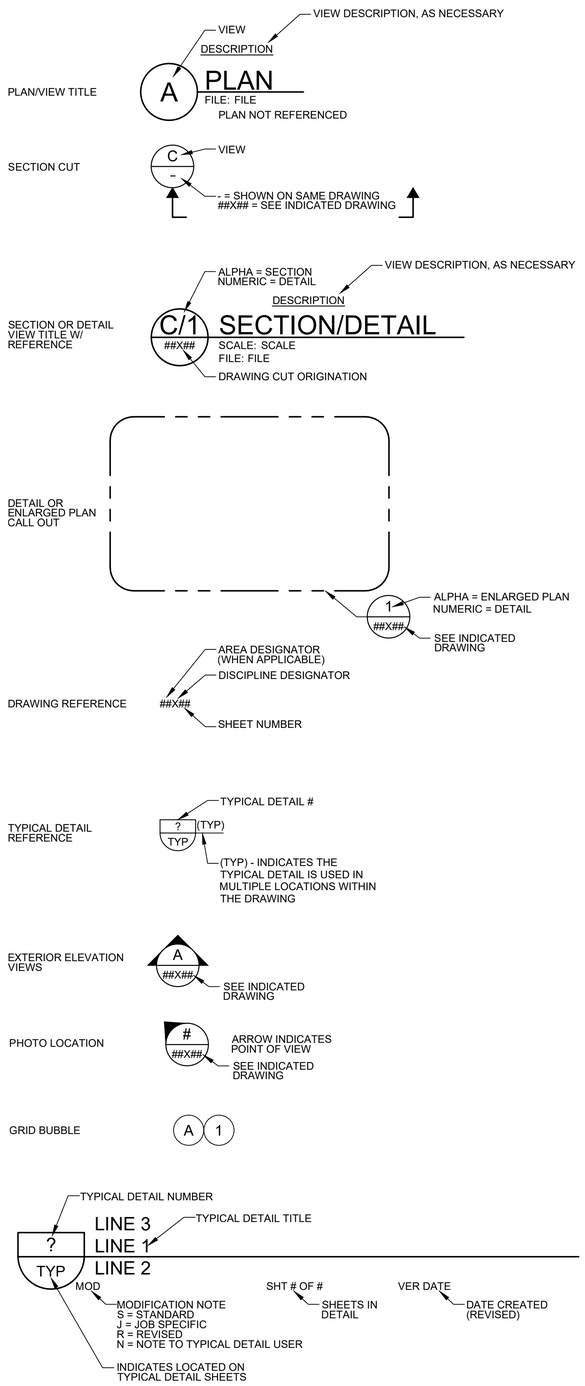


UNDERGROUND/ OVERHEAD WARNING (STATE/REGION SPECIFIC)

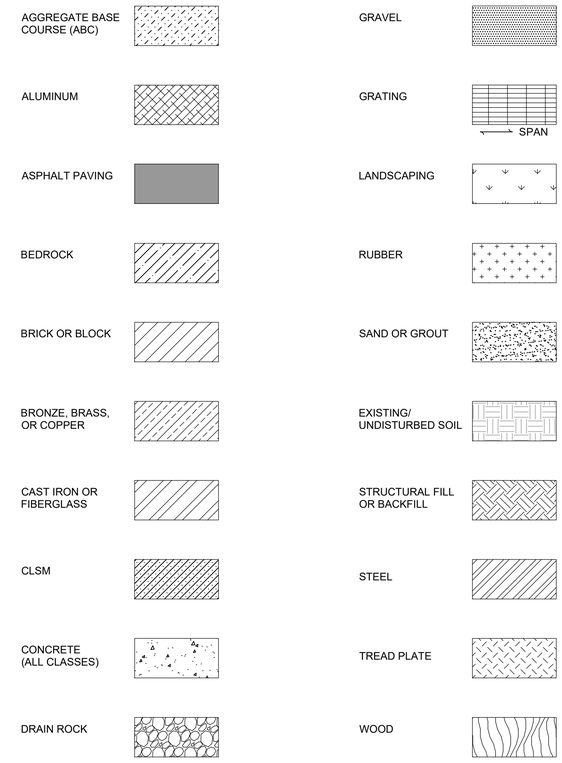
811
Know what's below.
Call before you dig.

Avoid overhead power line contact. It's costly.
Call before you
OVERHEAD
1-888-221-7070

DETAIL REFERENCES



HATCH PATTERNS



MISCELLANEOUS

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED CTA
DATE MAY 2025

Digitally signed by Erin R. Andersen
Date: 2025.05.07 09:45:31 -06'00'
REGISTERED PROFESSIONAL ENGINEER
No. 12399681-2202
ERIN R. ANDERSEN
STATE OF UTAH

carollo

SBWRD

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
GENERAL
NOTES, LEGEND, AND SYMBOLS

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

JOB NO. 204042
DRAWING NO. 00G03
SHEET NO. 3 OF 42

LAST SAVED BY: tdietz

PROJECT NO.:
FILE NAME: 204042_00G03.dwg

@	AT (MEASUREMENT)
△	DEFLECTION ANGLE, CENTRAL ANGLE
#	NUMBER (REBAR Ø)

A

AB	ANCHOR BOLT
ABC	AGGREGATE BASE COURSE
ABS	ACRYLONITRILE BUTADIENE STYRENE
AC	ASPHALTIC CONCRETE
ACB	AIR CIRCUIT BREAKER
ACI	AMERICAN CONCRETE INSTITUTE
ACP	ASBESTOS CEMENT PIPE
ACU	AIR CONDITIONING UNIT
AD	AREA DRAIN
ADDL	ADDITIONAL
ADJ	ADJACENT, ADJUST, ADJUSTABLE
ADMIN	ADMINISTRATION
ADR	ACCESS DOOR
AED	AREA EQUIPMENT DRAIN
AER	AERAT(ION)(OR)
AFC	AFTERCOOLER
AFF	ABOVE FINISHED FLOOR
AFM	AIR FLOW MONITOR
AHU	AIR HANDLING UNIT
AIC	AIR COMPRESSOR
AIL	AIR INTAKE LOUVER
ALT	ALTERNATE
AL	ALUMINUM
ANCH	ANCHOR
ANV	ANGLE VALVE
APPROX	APPROXIMATE, APPROXIMATELY
ARCH	ARCHITECTURAL
ARV	AIR RELEASE VALVE
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AV	ACID VENT
AVG	AVERAGE
AVV	AIR AND VACUUM VALVE
AW	ACID WASTE

B

BC	BEGIN CURVE, BRASS CAP, BACK OF CURB, BOLT CIRCLE
BCKR	BACKER BOARD
BCM	BATCHMETER
BD	BOARD
BDD	BACKDRAFT DAMPER
BDR	BASIN DRAIN LINE
BF	BLIND FLANGE
BFG	BELOW FINISHED GRADE
BFP	BELT FILTER PRESS
BFV	BUTTERFLY VALVE
BG	BREAK GLASS HAND SWITCH
BKW	BACKWASH
BLDG	BUILDING
BLK	BLOCK
BLKHD	BULKHEAD
BLR	PROCESS BLOWER
BM	BEAM, BENCH MARK
BO	BOTTOM OF
BOTT	BOTTOM
BOTTS	BOTTOM SLUDGE
BPV	BACK PRESSURE VALVE
BRG	BEARING
BSP	BLACK STEEL PIPE
BTU	BRITISH THERMAL UNITS
BTWN	BETWEEN
BV	BALL VALVE
BWCCP	BAR-WRAPPED CONCRETE CYLINDER PIPE

C

C	CLOSE, CONDUIT CHANNEL (STRUCTURAL)
CA	CONCRETE ANCHOR
CAUSTIC	CAUSTIC SOLUTION (CONCENTRATED OR DILUTE)
CB	CATCH BASIN
CC	CENTER OF CURVATURE, CENTER TO CENTER
CCB	CHLORINE CONTACT BASIN
CD	CEILING DIFFUSER, CONDENSATE DRAIN
CDL	CHEMICAL DRAIN LINE
CDT	CONDUIT
CEF	CEILING EXHAUST FAN
CF	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CHEMD	CHEMICAL DRAIN
CHF	CHEMICAL FEEDER
CHKD PL	CHECKERED PLATE
CI	CAST IRON
CIP	CAST IRON PIPE
CIRC	CIRCUMFERENTIAL/CIRCUMFERENCE
CJ	CONSTRUCTION JOINT
CKA	CHECK VALVE, ANGLE
CKB	CHECK VALVE, BALL
CKF	CHECK VALVE, FLAP
CKS	CHECK VALVE, SWING
CL	CENTER LINE
CLK	CHAIN LINK
CLD	CHLORINE LEAK DETECTOR
CLL	CHLORINE LIQUID
CLP	CHLORINE GAS (PRESSURE)
CLR	CLEAR
CLS	CHLORINE SOLUTION
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CLV	CHLORINE GAS (VACUUM)
CML	CEMENT MORTAR LINED
CMLC	CEMENT MORTAR LINED AND COATED
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CNV	CONVEYOR
CO	CLEANOUT
COL(S)	COLUMN(S)
CONC	CONCRETE
CONN	CONNECT, CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS OR CONTINUATION OR (D) (OUS)
CORR	CORRUGATE(D), CORROSION
CP	CONTROL POINT
CPLG	COUPLING
CPT	CARPET
CPVC	CHLORINATED POLYVINYL CHLORIDE
CS	CARBON STEEL, CIRCULATING SLUDGE
CSP	CHEMICAL SUMP PUMP, CORRUGATED STEEL PIPE
CT	CURRENT TRANSFORMER, CERAMIC TILE
CTJ	CONTROL JOINT
CTL	CONTROL
CTR	CENTER, CENTERED
CTSK	COUNTERSUNK
CU	CUBIC
CUP	COPPER PIPE
CV	CHECK VALVE
CW	COLD WATER
CWV	COMBINATION WASTE AND VENT
CY	CUBIC YARD

D

D	DEPTH, DIGITAL OR DISCRETE, DRAIN
D/W	DRIVEWAY
DBL	DOUBLE
DDR	DESICCANT DRYER
DEG or °	DEGREE
DEMO	DEMOLISH, DEMOLITION
DET	DETAIL
DFL	DECANT/FILTRATE
DG	DOOR GRILLE
DIA or Ø	DIAMETER
DIAG	DIAGONAL
DIF	DIFFUSER
DIG	DIGESTER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DISCH	DISCHARGE
DIW	DEIONIZED WATER
DL	DEAD LOAD, DRAIN LINE
DLV	DOOR LOUVER
DMP	DAMPER
DMS	DIAPHRAGM SEAL
DN	DOWN
do	DITTO
DO	DOOR OPENING
DP	DEEP (OR DEPTH)
DPV	DIAPHRAGM VALVE
DR	DOOR, DRAIN
DRT	DRIP TRAP
DRV	DRAIN VALVE
DS	DIGESTED SLUDGE, DOWN SPOUT
DSW	DISTILLED WATER, DOOR SWITCH
DUC	DUST COLLECTOR
DUH	DUCT HEATER UNIT
DW	DISTILLED WATER
DWD	DEWATERING DRAIN
DWG(S)	DRAWING(S)
DWL(S)	DOWEL(S)

E

E	EAST
EA	EACH
EC	END OF CURVE
ECC RED	ECCENTRIC REDUCER
ECU	EVAPORATOR COOLING UNIT
ED	EQUIPMENT DRAIN
EF	EXHAUST FAN, EACH FACE
EFF	EFFLUENT
EG	EXHAUST GRILLE
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM
EJ	EXPANSION JOINT
EJR	INJECTOR/EDUCTOR
EL	ELEVATION
ELEC	ELECTRICAL
ELL	ELBOW
EMBED	EMBEDMENT
EMH	ELECTRICAL MANHOLE
EP	EDGE OF PAVEMENT
EPS	EXPANDED POLYSTYRENE
EPV	ECCENTRIC PLUG VALVE
EQ	EQUAL
EQUIP	EQUIPMENT
ER	EXHAUST REGISTER
ES	EACH SIDE
ESEW	EMERGENCY SHOWER AND EYE WASH
ESMT	EASEMENT
ESS	EMERGENCY HAND SWITCH
ET	ELECTRICALLY HEAT TRACED
EUH	ELECTRIC UNIT HEATER
EVR	EVAPORATOR
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EWEF	EACH WAY EACH FACE
EWH	ELECTRIC WATER HEATER, EXHAUST
EX	EXISTING
EXIST	EXISTING
EXP	EXPANSION, EXPANSION TANK
EXPO	EXPOSED
EXT	EXTERIOR

F

FACT	FACTORY
FAD	FOUL AIR DUCT
FB	FLAT BAR
FBW	FILTER BACKWASH
FC	FACE OF CURB, FLEXIBLE COUPLING
FCA	FLANGE COUPLING ADAPTER
FCO	FLOOR CLEANOUT
FCU	FAN COIL UNIT
FD	FIRE DAMPER, FLOOR DRAIN, FOUND
FDC	FIRE DEPARTMENT CONNECTION
FDL	FLOOR DRAIN LINE
FDR	FEEDER
FEFF	FINAL EFFLUENT
FG	FLAP GATE
FH	FIRE HYDRANT
FILT	FILTRATE
FIN	FINISH
FIN FL	FINISHED FLOOR
FIN GR	FINISHED GRADE
FL	FLOOR, FLOW LINE
FLA	FOUL AIR
FLD	FILTER DRAIN
FLE	FILTER EFFLUENT
FLEX	FLEXIBLE
FLG	FLANGE, OR FLANGED
FLR	FILTER
FM	FORCE MAIN
FND	FOUNDATION
FO	FUEL OIL
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FPM	FEET PER MINUTE
FPP	FLEXIBLE PLASTIC PIPE
FRP	FIBERGLASS REINFORCED PLASTIC
FRPP	FIBERGLASS REINFORCED PLASTIC PIPE
FRS	FROTH SPRAY
FS	FAR SIDE
FSTN	FASTEN(ED)
FT or '	FOOT, FEET
FTG	FOOTING
FUP	FUEL DISPENSER
FV	FLAP VALVE
FW	FLUSHING WATER, FINISHED WATER
FX	FIRE EXTINGUISHER
FXC	FIRE EXTINGUISHER CABINET
FXE	FIRE EXTINGUISHER - ELECTRICAL

G

G	GAS, GROUND, GUTTER
GA	GAUGE or GAGE
GAL	GALLONS
GALV	GALVANIZE(D)
GAV	GRAVITY VENTILATOR
GB	GRADE BREAK
GBT	GRAVITY BELT THICKENER
GC	GROOVED COUPLING
GEL	GRAVITY EXHAUST LOUVER
GEN	GENERAL, GENERATOR
GL	GLASS
GLV	GLOBE VALVE
GM	GAS METER
GND	GROUND
GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
GR	GRADE
GRTG	GRATING
GRV	GRAVITY VENTILATOR
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
GYP	GYPSUM

H

H	EXPLOSION-PROOF, HIGH, HORIZONTAL
H1E	HOOK ONE END
H2E	HOOK TWO ENDS
HAS	HEADED ANCHOR STUD
HB	HOSE BIBB
HDPE	HIGH DENSITY POLYETHYLENE
HDW	HARDWARE
HDWL	HEADWALL
HEF	HOOD EXHAUST FAN
HGT	HEIGHT
HORIZ	HORIZONTAL
HP	HEAT PUMP, HORSEPOWER, HIGH PRESSURE
HPA	HIGH PRESSURE AIR
HPT	HIGH POINT
HPU	HEAT PUMP UNIT AIR
HR	HANDRAIL, HOSE REEL, HOUR
HSF	HOOD SUPPLY FAN
HSS	HOLLOW STRUCTURAL SECTION (STEEL)
HTX	HEAT EXCHANGER
HV	HOSE VALVE
HW	HOT WATER
HWL	HIGH WATER LEVEL
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HxW	HEIGHT BY WIDTH
HYD	HYDRANT

I

IA	INSTRUMENT AIR
ID	INSIDE DIAMETER, INSIDE DIMENSION, IDENTIFICATION
I.F.	INSIDE FACE
IN or "	INCHES
INCL	INCLUDE, INCLUDING
INF	INFLUENT
INJ	INJECTOR
INSTR	INSTRUMENTATION
INSUL	INSULAT(E)(ED)(ING)(ION)
INT	INTERIOR
INV	INVERT
IP	IRON PIPE
ISR	INTRINSICALLY SAFE RELAY

J

JST	JOIST
JT	JOINT

K

KGV	KNIFE GATE VALVE

L

L	ANGLE (STRUCTURAL), LENGTH, LOUVER
LAB	LABORATORY
LAV	LAVATORY
LB(S)	POUND(S)
LDF	LIQUID DIESEL FUEL
LDFR	LIQUID DIESEL FUEL RETURN
LF	LINEAL FEET
LG	LONG
LH	LEFT HAND
LHR	LEFT HAND REVERSE
LHRA	LEFT HAND REVERSE ACTIVE
LHRB	LEFT HAND REVERSE BEVEL
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LP	LOW PRESSURE
LPA	LOW PRESSURE AIR
LPG	LIQUIFIED PROPANE GAS
LPT	LOW POINT
LR	LONG RADIUS
LS	LAB SINK
LT	LEFT
LWL	LOW WATER LEVEL

M

M	MOTOR
MAINT	MAINTENANCE
MAN	MANUAL
MASY	MASONRY
MATL	MATERIAL
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MB	MACHINE BOLT
MC	MECHANICAL COUPLING
MCJ	MASONRY CONTROL JOINT
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MET	METAL
MFR	MANUFACTURER
MG/L	MILLIGRAMS PER LITER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MIX	MIXER
MJ	MECHANICAL JOINT
MK	MARK
ML	MIXED LIQUOR
MO	MASONRY OPENING
MOD	MODIFIED
MOIST	MOISTURE
MON	MONUMENT
MOS	MOISTURE SEPARATOR
MPM	METERING PUMP
MS	MOP SINK
MTD	MOUNTED

N

N	NORTH, NEUTRAL
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NEV	VALVE, NEEDLE
NG	NATURAL GRADE, NATURAL OR LP GAS
NIC	NOT IN CONTRACT
NO., #	NUMBER
NOM	NOMINAL
NPT	NATIONAL PIPE THREAD
NPW	NON-POTABLE WATER
NS	NEAR SIDE
NTS	NOT TO SCALE

O

O	OPEN
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER
OD	OUTSIDE DIAMETER, OUTSIDE DIMENSION
OED	OPEN EQUIPMENT DRAIN
O.F.	OUTSIDE FACE
OFL	OVERFLOW
OPNG	OPENING
OPP	OPPOSITE
OPP HND	OPPOSITE HAND
OZ	OUNCE

P

P	POLE
PBL	POLYMER BLENDER
PC	POINT OF CURVATURE
PCC	PLANT CONTROL CENTER
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PCP	PROGRESSIVE CAVITY PUMP
PD	POSITIVE DISPLACEMENT, PLANT DRAIN
PD, PLD	PULSATION DAMPENER
PDP	POSITIVE DISPLACEMENT PUMP
PE	PLAIN END
PERP	PERPENDICULAR
PG	PRESSURE GAUGE
PH	PHASE, PHYSICALLY HANDICAPPED
PI	POINT OF INTERSECTION
PIV	POST INDICATOR VALVE
PL	PLATE, PROPERTY LINE
PLAS	PLASTIC
PLCS	PLACES
PLS	POLYMER SOLUTION
PLWD	PLYWOOD
PMP	PUMP
PNL(S)	PANEL(S)
POL	POLYMER
POLY	POLYETHYLENE
POS	POSITION
POW	POTABLE WATER
PP	POWER POLE
PPMV	PARTS PER MILLION (VOLUME)
PRC	POINT OF REVERSE CURVATURE
PREFAB	PREFABRICATED
PRG	PRESSURE REGULATOR
PRI	PRIMARY
PROJ	PROJECTION
PRR	PRESSURE OR VACUUM RELIEF VALVE
PRV	PRESSURE REDUCING VALVE, PRESSURE REGULATION VALVE, PRESSURE RELIEF VALVE
PS	PUMP STATION, PIPE SUPPORT
PSF	POUNDS PER SQUARE FOOT
PSG	PRESSURE GAUGE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	POINT, POINT OF TANGENCY
PV	PLUG VALVE
PVC	POINT OF VERTICAL CURVATURE, POLYVINYL CHLORIDE
PVDF	POLYVINYLIDENE FLUORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVT	POINT OF VERTICAL TANGENCY
PLW	PLANT WATER

Q

QTY	QUANTITY

R

R	RISER
R/W or R.O.W.	RIGHT OF WAY
RAD	RADIUS, RADIAL
RAS	RETURN ACTIVATED SLUDGE
RCP	REINFORCED CONCRETE PIPE
RCCP	REINFORCED CONCRETE CYLINDER PIPE
RD	ROOF DRAIN
RDL	ROOF DRAIN LINE
RDOF	ROOF DRAIN OVERFLOW
RECIRC	RECIRCULATING
RED	REDUCER, ROOF EQUIPMENT DRAIN
REF	REFERENCE
REG	REGULATOR, REGULATING
REINF	REINFORCE(D)(ING)(MENT)
REJ	RUBBER EXPANSION JOINT
REQD	REQUIRED
RER	REACTOR
RES	RESERVOIR
REV	REVISION, REVERSE
RF	RETURN FAN
RG	RETURN GRILLE RUBBER GASKET
RH	RIGHT HAND
RHR	RIGHT HAND REVERSE
RHRA	RIGHT HAND REVERSE ACTIVE
RHRB	RIGHT HAND REVERSE BEVEL
RLS	REGISTERED LAND SURVEYOR
RM	ROOM
RO	ROUGH OPENING
ROT	ROTAMETER
RP	RADIUS POINT
RPM	REVOLUTIONS PER MINUTE
RPMP	REINFORCED PLASTIC MORTAR PIPE
RR	RETURN REGISTER
RT	RIGHT
RTF	ROTARY FEEDER
RTU	ROOF TOP UNIT
RUD	RUPTURE DISK
RW	RECLAIMED WATER, REUSE WATER
RWR	RECLAIMED WATER RETURN
RWW	RAW WASTEWATER

S

S/W	SIDEWALK
S	SOUTH, SWITCH, SLOPE
SA	SAMPLE
SC	SECONDARY CLARIFIER
SCB	SCRUBBER
SCD	SMOKE CONTROL DAMPER
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SCO	SURFACE CLEANOUT
SCR	BAR SCREEN
SCR	SILICON CONTROL RECTIFIER
SD	SMOKE DETECTOR, SPLITTER DAMPER, STORM DRAIN
SDL	SUMP DISCHARGE DRAIN LINE
SDO	SLUDGE DRAWOFF
SE	SECONDARY EFFLUENT
SEC	SECONDARY, SECOND
SECT	SECTION
SED	SEDIMENTATION
SEP	SEPTAGE
SF	SUPPLY FAN
SFW	SOFTENED WATER
SG	SUPPLY GRILLE
SGS	STORE FRONT GLAZING SYSTEM
SHD	SHOWER DRAIN
SHDR	SOLIDS HANDLING-RECYCLE
SHR	SHOWER
SHT	SHEET
SIM	SIMILAR
SK	SKIMMINGS
SL	SLOPE, SLUDGE
SLC	SLUDGE COLLECTOR DRIVE
SLG	SLIDE GATE
SLV	SLEEVE VALVE
SMP	SAMPLER, SUMP PUMP
SN	SUPERNATANT OR SUBNATANT
SOL	SOLUTION
SP	STATIC PRESSURE, SET POINT
SPD	SUMP PUMP DRAIN
SPDT	SINGLE POLE DOUBLE THROW
SPEC(S)	SPECIFICATION(S)
SPL	SPLITTER BOX
SPR	SPARE
SPS	SAMPLE SINK
SPW	SAMPLE WATER
SQ	SQUARE
SQ FT	SQUARE FEET
SQ IN(S)	SQUARE INCH(ES)
SR	SHORT RADIUS, SUPPLY REGISTER
SRL	SCRUBBER RECIRCULATION LIQUID (CAUSTIC)
SS	SANITARY SEWER, SELECTOR SWITCH
SSK	SERVICE SINK
SSL	SECONDARY SLUDGE
SST	STAINLESS STEEL
ST	SLUDGE TRANSFER
STA	STATION
STB	STABILIZER
STD(S)	STANDARDS(S)
STIFF	STIFFENER
STIR	STIRRUPS
STL	STEEL
STM	STEAM
STP	STEEL PIPE
STR	STRAINER
STRUCT	STRUCTURAL
SUG	SLUICE GATE
SUPT	PIPE SUPPORT, SUPPORT
SV	SERVICE VALVE, SHUTOFF VALVE, SOLENOID VALVE
SW	SANITARY WASTE
SWR	SEAL WATER
SYM	SYMMETRICAL
SYN	SYNTHETIC

T

T	TANGENT LENGTH, THERMOSTAT, TIMER, TREAD
T&B	TOP AND BOTTOM
TAS	THREADED ANCHOR STUD
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TCV	TEMPERATURE CONTROL VALVE
TDH	TOTAL DYNAMIC HEAD
TDR	TIME DELAY RELAY, TOWEL DISPENSER/RECEPTACLE
TEL	TELEPHONE
TH	TEST HOLE
THK	THICKENER, THICKNESS, THICK
TKS	THICKENED SLUDGE
TLV	TELESCOPING VALVE
TMH	TELEPHONE MANHOLE
TMP	TEMPERATURE
TNK	TANK
T.O.	TOP OF
TOC	TOP OF CONCRETE
TOG	TOP OF GRATING
TOM	TOP OF MASONRY
TOS	TOP OF STEEL
T.O.W.	TOP OF WALL
TR	TRIAD (THREE CONDUCTOR SHIELDED CABLE), TIMING RELAY
TS	THICKENER SUPERNATANT OR SUBNATANT
TSD	THICKENED SLUDGE DECANT
TSPL	TURBIDIMETER SAMPLE
TSTAT	THERMOSTAT
TTB	TELEPHONE TERMINAL BOARD
TUR	TURBINE
TV	TURNING VANES
TWV	THREE-WAY VALVE
TYP	TYPICAL

U

UC	UNDERCUT
UG	UNDERGROUND
UHMWPE	ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE
UHMW	ULTRA HIGH MOLECULAR WEIGHT
UNO	UNLESS NOTED OTHERWISE
US	UTILITY SINK

V

V	VALVE
VAR	VARIES
VB	VALVE BOX
VCP	VITRIFIED CLAY PIPE
VEC	VINYL ESTER COATING
VERT	VERTICAL
VFR	VOLUMETRIC FEEDER
VG	VACUUM GAUGE, VALLEY GUTTER
VOL	VOLUME
VRV	VACUUM REGULATING VALVE
VTR	VENT THROUGH ROOF

W

W	WEST, WIDTH
W/	WITH
W/O	WITHOUT
WAS	WASTE ACTIVATED SLUDGE
WCO	WALL CLEANOUT
WEF	WALL EXHAUST FAN
WF	WALL FITTING, WASH FOUNTAIN
WH	WATER HEATER
WI	WEIGHT INDICATOR
WL	WALL LOUVER, WATER LEVEL
WM	WATER METER
WOD	WASTE OIL DRAIN
WP	WEATHERPROOF, WATERPROOF
WPT	WORKING POINT
WRG	WEIR GATE
WRS	WATER SOFTENER
WS	WATER SURFACE
WSTP	WATERSTOP
WT	WALK THROUGH, WEIGHT
WTF	WATER TREATMENT FACILITY
WTP	WATER TREATMENT PLANT
WTR	WATER
WV	WATER CONTROL VALVE
WW	WASTEWATER
WWF	WELDED WIRE FABRIC
WWTF	WASTEWATER TREATMENT FACILITY
WWTP	WASTEWATER TREATMENT PLANT

Y

Y	WYE
YCO	YARD CLEANOUT
YH	YARD HYDRANT

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED CTA
DATE MAY 2025

Digitally signed by Erin R. Andersen
DN: cn=Erin R. Andersen, o=Carollo Engineers, Inc., ou=Salt Lake City, email=eandersen@carollo.com, c=US
Date: 2025.05.30 08:57:39 -06'00'

REGISTERED PROFESSIONAL ENGINEER
No. 12399681-2202
ERIN R. ANDERSEN
STATE OF UTAH

carollo®

SBWRD

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
GENERAL
ABBREVIATIONS

VERIFY SCALES
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JOB NO. 204042
DRAWING NO. 00G04
SHEET NO. 4 OF 42

LAST SAVED BY: tdietz

PROJECT NO.:
FILE NAME:204042_00G04.dwg

PIPING SCHEDULE											
FLOW STREAM IDENTIFIER	SERVICE	PIPE SIZE (1)	MATERIAL	PRESSURE CLASS/WALL THICKNESS	PIPE SPEC. SECTION	JOINTS/FITTINGS	LINING	COATING	TESTING		NOTES
									METHOD	PRESSURE (PSI)	
CA	COMPRESSED AIR										
	EXPOSED	2" AND LESS	BSP	SCH 40		SCRD, FL, GE			AM	150	
D	DRAINS										
	BURIED	ALL SIZES	PVC	SCH 40 DWV	15400	SW			GR		
	EXPOSED	ALL SIZES	PVC	SCH 40 DWV	15400	SW			GR		
PD	PROCESS DRAIN										
	EXPOSED	LESS THAN 4"	PVC	SCH 80	15249	SW/FL			LH	10	
	EXPOSED	4" AND LARGER	DIP	DIPRA 150	15211	FL/GE			LH	10	
POL	POLYMER										
	EXPOSED	ALL SIZES	PVC	SCH 80	15230	SW			HH	50	
UW	UTILITY WATER										
	EXPOSED	ALL SIZES	PVC	SCH 80	15249	SW/FL			HH	150	
V	VENT										
	EXPOSED	ALL SIZES	PVC	SCH 40 DWV	15400	SW/FL			GR		
WAS	WASTE ACTIVATED SLUDGE										
	EXPOSED	ALL SIZES	DIP	DIPRA 150	15211	FL or GE			HH	30	

NOTES:

(1) NOMINAL DIAMETER (INCHES)

PIPE MATERIAL AND JOINT/FITTING ABBREVIATIONS:

BW	BUTT WELD
B&SP	BELL AND SPIGOT
BSP	BLACK STEEL PIPE
BF	BARBED FITTING
CF	COMPRESSION FITTING
CI	CAST IRON
CISP	CAST IRON SOIL PIPE
CL	
CM	CEMENT MORTAR
CTP	COAL TAR PITCH
DIP	DUCTILE IRON PIPE
DWV	DRAIN, WASTE AND VENT
FL	FLANGE
FRP	FIBERGLASS PIPE
GA	GAUGE, PRECEDED BY THE DESIGNATION
GE	GROOVED END PIPE
GSP	GALVANIZED STEEL PIPE
MJ	MECHANICAL JOINT
MDPE	MEDIUM PRESSURE POLYETHENE
NPS	NOMINAL PIPE SIZE, FOLLOWED BY THE NUMBER IN INCHES
PE	POLYETHYLENE
PTC	PUSH-TO-CONNECT
PVC	POLYVINYL CHLORIDE
R-B&SP	RESTRAINED BELL AND SPIGOT
RMJ	RESTRAINED MECHANICAL JOINT
RPVC	REINFORCED POLYVINYL CHLORIDE TUBING
SCH	SCHEDULE, FOLLOWED BY THE DESIGNATION
SCRD	SCREWED-ON/THREADED
SST	STAINLESS STEEL
SW	SOLVENT WELD

LINING AND COATING ABBREVIATIONS:

ACR	ACRYLIC COATING
CM	CEMENT MORTAR
CP	CARRIER PIPE
EPP	EPOXY POLYURETHANE COATING
FA	FIELD APPLIED COATING
GC	GEL COAT
GL	GLASS LINED
HSE	
I	INSULATED (ONLY)
P	PAINTED
POL	POLYETHYLENE LINED
PE	POLYETHYLENE-WRAPPED
PEE	POLYETHYLENE ENCASEMENT
PVC	POLYVINYL CHLORIDE
CE	CERAMIC EPOXY
CT	COAL TAR ENAMEL
CTX	COAL TAR EPOXY
TW	TAPE WRAPPED
FP	FLUOROPOLYMER
R	RUBBER LINING
EPX	EPOXY LINED

TEST PRESSURE METHOD:

AM	AIR METHOD
GR	GRAVITY METHOD
HH	HIGH HEAD METHOD
LH	LOW HEAD METHOD
SC	SPECIAL CASE

REV	DATE	BY	DESCRIPTION

DESIGNED EA
DRAWN TJD
CHECKED CTA
DATE MAY 2025

Digitally signed by Erin R. Andersen
Contact info: eandersen@carollo.com
Date: 2025.05.14 15:23:47 -06'00'

REGISTERED PROFESSIONAL ENGINEER
No. 12399681-2202
ERIN R. ANDERSEN
STATE OF UTAH

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
GENERAL
PIPE SCHEDULE

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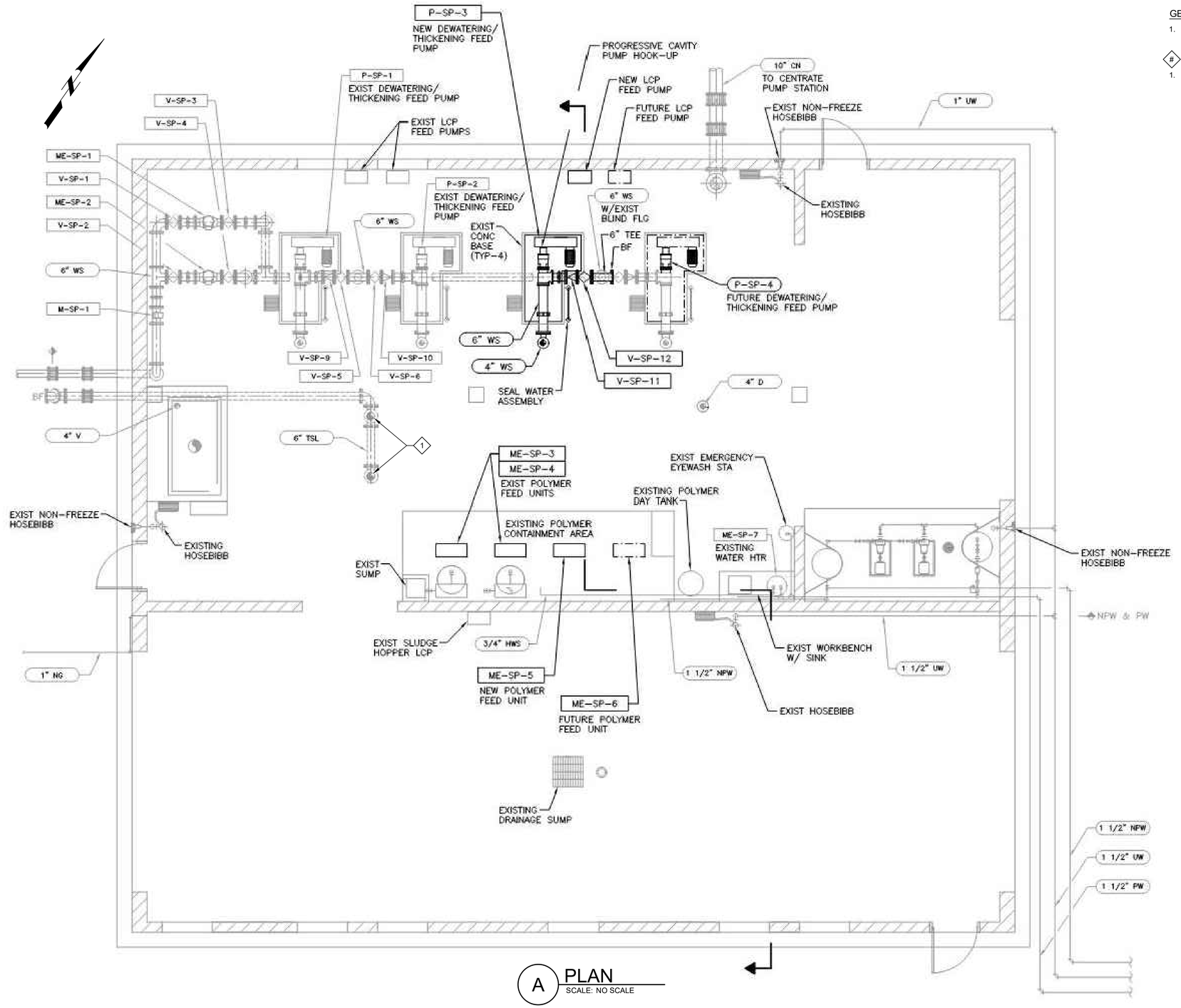
JOB NO. 204042
DRAWING NO. 00G05
SHEET NO. 5 OF 42

LAST SAVED BY: dietz

PROJECT NO.:204042-100000 FILE NAME:204042_00G05.dwg



A PLAN
SCALE: NO SCALE

GENERAL NOTES:

1. FOR CONSTRUCTION SEQUENCING AND CONSTRAINTS SEE SECTION 01140.

KEY NOTES:

1. CUT EXISTING 6" TSL PIPE STUBS FLUSH WITH THE ADJACENT FLOOR. FILL ABANDONED PIPE WITH NON-SHRINK GROUT AND RESTORE THE FINISH FLOOR TO MATCH EXISTING CONDITIONS. COMPLETED WORK SHALL BE FREE OF PROJECTIONS OR TRIPPING HAZARDS.

REV	DATE	BY	DESCRIPTION

DESIGNED EAR
DRAWN DCS
CHECKED CTA
DATE MAY 2025

REGISTERED PROFESSIONAL ENGINEER
No. 12399681-2202
ERIN R. ANDERSEN
STATE OF UTAH

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SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
DEMOLITION
SOLIDS PROCESS BUILDING
LOWER PLAN

VERIFY SCALES
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0 1"
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JOB NO. 204042
DRAWING NO. 00D01
SHEET NO. 6 OF 42

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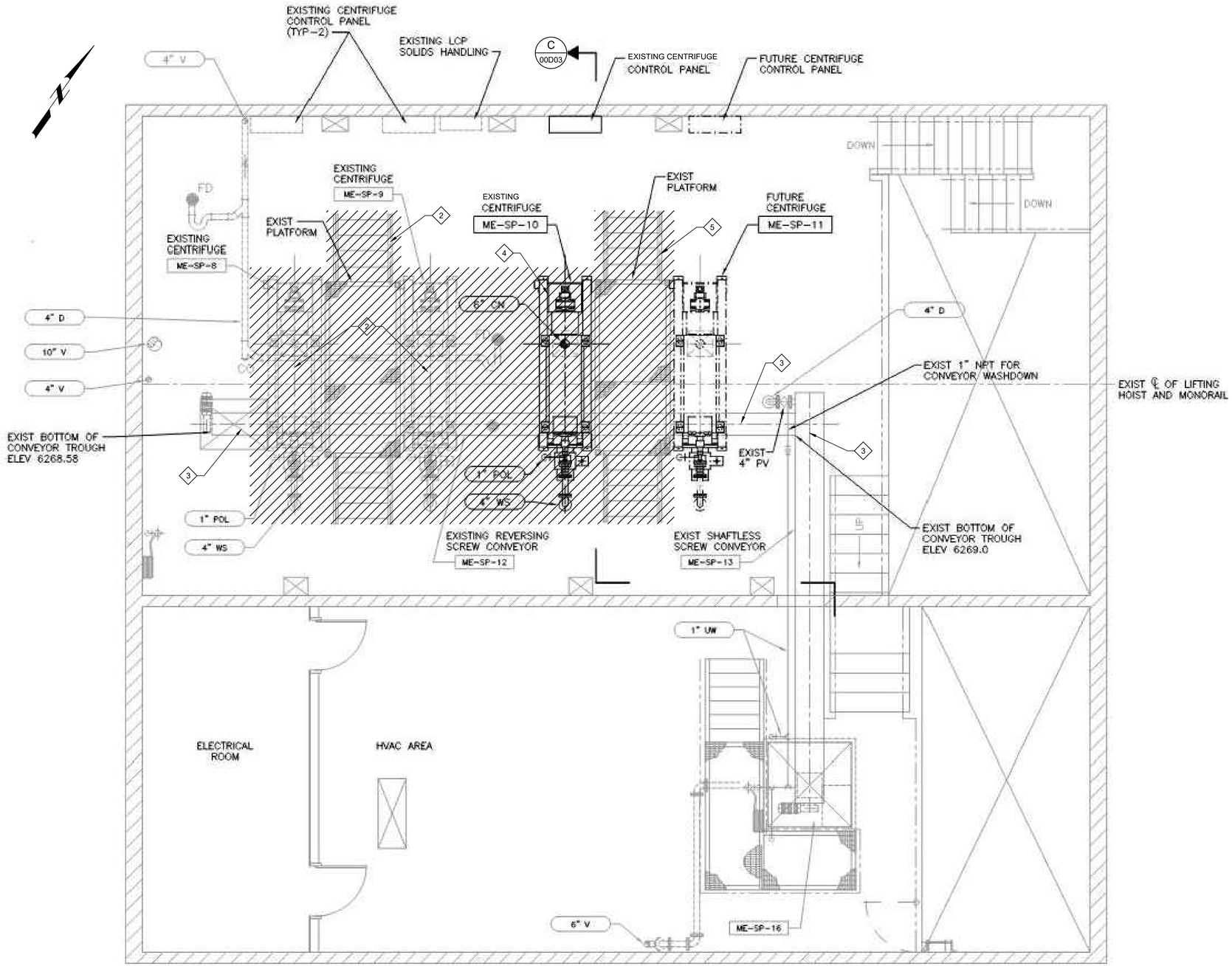
PROJECT NO.:204042-100000 FILE NAME: 204042_00D01.dwg



B PLAN
SCALE: NO SCALE

GENERAL NOTES:

1. FOR CONSTRUCTION SEQUENCING AND CONSTRAINTS SEE SECTION 01140.

KEY NOTES:

1. REMOVE CENTRIFUGE NO. 1 AND 2 WITH ASSOCIATED SLUDGE FEED, POLYMER AND DRAIN PIPING.
2. REMOVE EXISTING PLATFORM AND STAIRS.
3. EXISTING SLUDGE CONVEYOR SHALL REMAIN IN PLACE AND OPERATIONAL THROUGH THE DURATION OF THE PROJECT.
4. FOLLOWING THE INSTALLATION AND COMMISSIONING OF ONE NEW ROTARY PRESS DEWATERING SYSTEMS, REMOVE CENTRIFUGE NO. 3 AND ASSOCIATED SLUDGE FEED, POLYMER AND DRAIN PIPING.
4. FOLLOWING THE INSTALLATION AND COMMISSIONING OF ONE NEW ROTARY PRESS DEWATERING SYSTEMS, REMOVE EAST ACCESS PLATFORM AND STAIRS.

REV	DATE	BY	DESCRIPTION

DESIGNED EAR
DRAWN DCS
CHECKED CTA
DATE MAY 2025

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SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
DEMOLITION
SOLIDS PROCESS BUILDING
UPPER PLAN

VERIFY SCALES
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JOB NO. 204042
DRAWING NO. 00D02
SHEET NO. 7 OF 42

LAST SAVED BY: tdietz

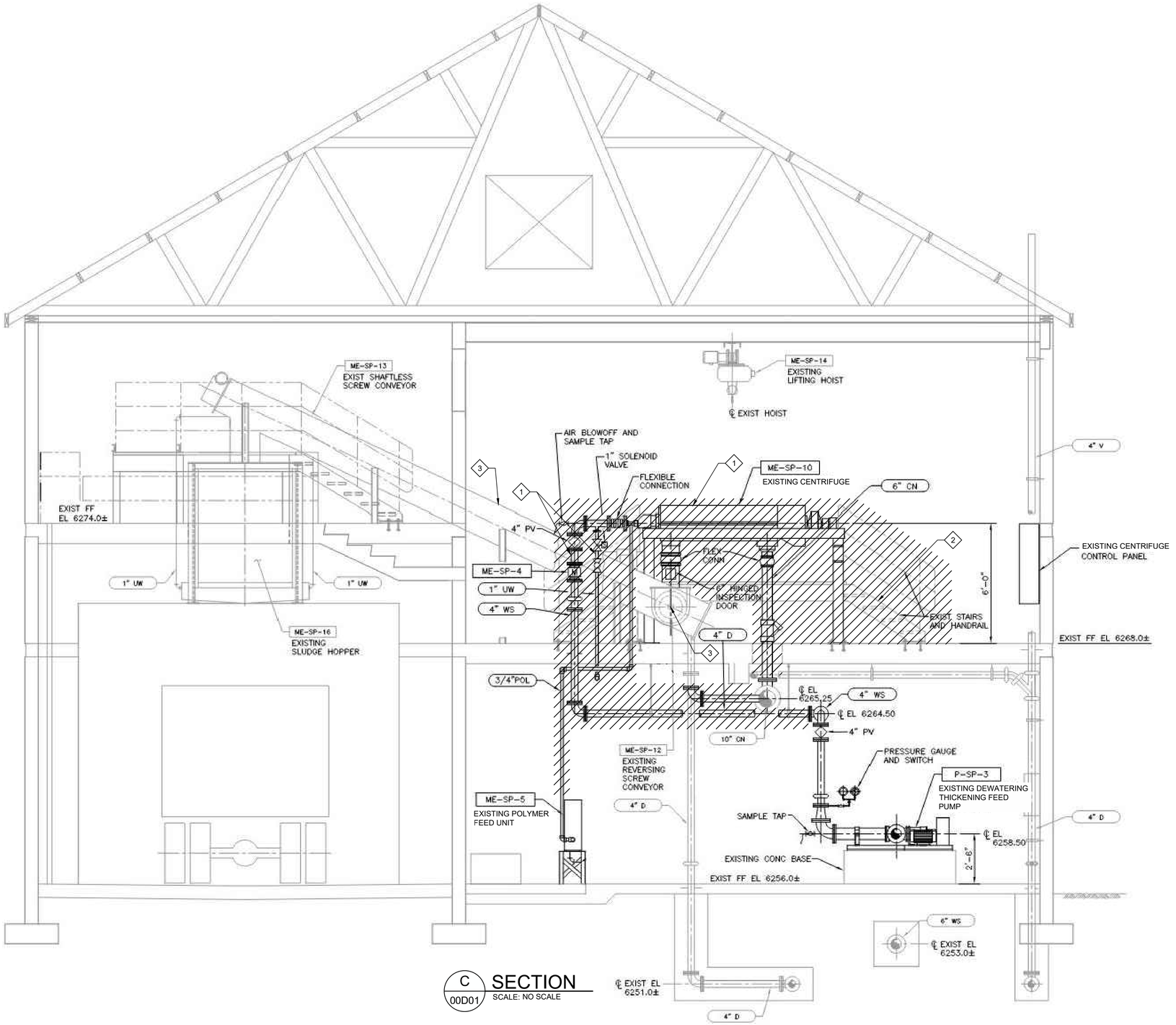
PROJECT NO.:204042-100000 FILE NAME:204042_00D02.dwg

GENERAL NOTES:

1. FOR CONSTRUCTION SEQUENCING AND CONSTRAINTS SEE SECTION 01140.

KEY NOTES:

1. REMOVE EXISTING CENTRIFUGE DEWATERING EQUIPMENT AND ASSOCIATED SLUDGE FEED PIPING, POLYMER PIPING AND 6" DRAIN PIPING.
2. REMOVE EXISTING PLATFORM AND STAIRS.
3. EXISTING SLUDGE CONVEYOR SHALL REMAIN IN PLACE AND OPERATIONAL THROUGH THE DURATION OF THE PROJECT.



C 00D01 SECTION
SCALE: NO SCALE

REV	DATE	BY	DESCRIPTION

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DATE MAY 2025

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ERIN R. ANDERSEN
STATE OF UTAH

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SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
DEMOLITION
SOLIDS PROCESS BUILDING SECTION

VERIFY SCALES
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JOB NO. 204042
DRAWING NO. 00D03
SHEET NO. 8 OF 42

LAST SAVED BY:tdietz

PROJECT NO.:204042-100000 FILE NAME:204042_00D03.dwg

GENERAL NOTES:

1. USE STRUCTURAL DRAWINGS IN CONJUNCTION WITH PROJECT DRAWINGS BY OTHER DISCIPLINES AND WITH THE SPECIFICATIONS.

2. UNLESS DETAILED. SPECIFIED OR INDICATED OTHERWISE, CONSTRUCTION SHALL BE AS INDICATED IN THE GENERAL NOTES AND TYPICAL DETAILS.

3. PRESENTATION CONVENTIONS FOR STRUCTURAL DRAWINGS:

   A. SCREENED LINE WORK INDICATES EXISTING CONDITIONS.
   B. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED SIZES.
   C. PLANS ARE TREATED AS HORIZONTAL SECTIONS. (I.E.: "PLAN AT ELEVATION 110" SHOWS CONSTRUCTION AT END BELOW ELEVATION 110.)

4. VERIFY DIMENSIONS AND CONDITIONS BEFORE BEGINNING WORK. ADVISE ENGINEER IMMEDIATELY OF DISCREPANCIES BETWEEN EXISTING CONDITIONS AND DIMENSIONS, AND INFORMATION SHOWN ON THESE DRAWINGS. CONFIRM THE FOLLOWING BEFORE PREPARATION AND SUBMITTAL OF SHOP DRAWINGS:

   A. DIMENSIONS AND WEIGHTS FOR EQUIPMENT SELECTED.
   B. SIZES AND LOCATIONS OF EQUIPMENT PADS FOR EQUIPMENT SELECTED.

5. TYPICAL DETAILS ARE INCLUDED ON THE "TS" DRAWINGS.

   A. TYPICAL DETAILS ARE INTENDED TO APPLY AT LOCATIONS DESCRIBED BY THEIR TITLES, EVEN WHEN NOT SPECIFICALLY REFERENCED ON THE DRAWINGS.
   B. IN STRUCTURAL TYPICAL DETAILS, ORIENTATION OF BARS IN EACH MAT OF REINFORCEMENT (WHETHER "LINES" OR "DOTS" ARE CLOSER TO THE FACE OF THE CONCRETE) IS GENERALLY ARBITRARY. SEE DRAWINGS OF EACH STRUCTURE FOR ORIENTATION REQUIRED AT THAT STRUCTURE.

6. DRAWINGS PREPARED BY OTHER DISCIPLINES INCLUDE OPENINGS, ANCHORS, PIPES, CONDUITS, AND OTHER ITEMS THAT EMBEDDED INTO OR PASS THROUGH STRUCTURES.

   A. CONFIRM SIZE AND LOCATIONS OF OPENINGS, PENETRATIONS AND EMBEDMENT FOR ITEMS AND EQUIPMENT FURNISHED.
   B. IN GENERAL, OPENINGS, EMBEDMENTS, AND PENETRATIONS LESS THAN 12 INCHES IN DIAMETER ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS.
   C. SEE MECHANICAL DRAWINGS FOR DETAILS OF PIPE PENETRATION, PIPE SUPPORTS AND ASSOCIATED STRUCTURAL REQUIREMENTS.
   D. SEE MECHANICAL DRAWINGS FOR EQUIPMENT PADS AND PIPE SUPPORTS.

STRUCTURAL DESIGN CRITERIA - GENERAL:

SEE DRAWINGS OF INDIVIDUAL STRUCTURES FOR SPECIFIC DESIGN CRITERIA BASED ON THESE OVERALL CRITERIA FOR THE SITE.

1. BUILDING CODE:

   A. 2021 INTERNATIONAL BUILDING CODE ("IBC 2021") WITH ASCE 7-16.

2. STRUCTURE RISK CATEGORY: III.

3. DEAD LOADS: CALCULATED FOR STRUCTURE SELF-WEIGHT.

4. LIVE LOADS:

   A. FLOOR LIVE LOAD: 100 PSF.
   B. GRATING CHECKERED PLATE: 100 PSF (UNO).
   C. EQUIPMENT LOADS: SEE PLANS.

5. EARTHQUAKE DESIGN DATA:

	0.2 SECOND	*1.0 SECOND
A. SITE CLASS: C.		
B. MAPPED SPECTRAL RESPONSE ACCELERATIONS:	Ss = 0.60 g	S1 = 0.22 g
C. SITE COEFFICIENTS:	Fa = 1.26	Fv = 1.50
D. DESIGN SPECTRAL RESPONSE ACCELERATIONS:* (*5% DAMPED)	Sds = 0.50 g	Sd1= 0.18 g

6. CONSTRUCTION LOADS:

   STRUCTURES HAVE BEEN DESIGNED FOR OPERATION LOADS ON COMPLETED FACILITIES. UNTIL CONSTRUCTION IS COMPLETE AND MEMBERS HAVE ACHIEVED THEIR DESIGN STRENGTH, PROTECT STRUCTURES AS REQUIRED BY SHORING, BRACING AND BALANCING.

GEOTECHNICAL REPORT / FOUNDATION DESIGN CRITERIA:

1. GEOTECHNICAL INVESTIGATION REPORT:

   TITLE: EAST CANYON WATER RECLAMATION FACILITY EXPANSION.
   PREPARED BY: AGEC APPLIED GEOTECH.
   REPORT NO: 1210492 DATED: 01/27/2023.

2. FOUNDATION DESIGNS ARE BASED ON RECOMMENDATIONS IN THE GEOTECHNICAL INVESTIGATION REPORT.

   A. NET ALLOWABLE BEARING PRESSURE: 3000 PSF.
   B. GROUNDWATER EL _____.

TYPICAL STRUCTURAL MATERIALS:

1. MATERIALS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

2. SEE PROJECT SPECIFICATIONS AND NOTES ON THE DRAWINGS OF SPECIFIC STRUCTURES FOR DETAILED AND LOCATION-SPECIFIC REQUIREMENTS.

REINFORCING STEEL (FOR CONCRETE AND MASONRY):

1. DEFORMED BARS:
   A. TYPICAL: ASTM A615, GRADE 60.
   B. WHERE INDICATED ON THE DRAWINGS: ASTM A706.

CONCRETE:

1. NORMAL DENSITY.

2. MINIMUM SPECIFIED CONCRETE COMPRESSIVE STRENGTH, f'c (AT 28 DAYS UNO).

   A. STRUCTURES: "CLASS A" OR "CLASS A-NA" f'c = 4500 PSI.

STRUCTURAL STEEL:

1. SECTIONS

   A. SHAPES W, WT: ASTM A 992 (Fy = 50 KSI)
   B. SHAPES S, ST, M, MT, HP, C, MC, L: ASTM A 36 (Fy = 36 KSI)
   C. PLATES AND BARS: ASTM A 36 (Fy = 36 KSI)
   D. PIPES: ASTM A 53, GRADE B (Fy = 35 KSI)
   E. HOLLOW STRUCTURAL SECTION:
      ROUND: ASTM A 500, GRADE C (Fy = 46 KSI)
      SQUARE AND RECTANGULAR: ASTM A 500, GRADE C (Fy = 50 KSI)

2. CONNECTIONS:

   A. BOLTS- STEEL TO-STEEL:
      ASTM F 3125 GRADE A325 HIGH-STRENGTH BOLTS, WITH LOAD INDICATOR WASHERS.
   B. BOLTS- STEEL TO CONCRETE OR MASONRY:
      ANCHOR BOLTS WITH HEX FORGED HEAD.
      ASTM F 1554, GRADE 36 GALVANIZED.
   C. WELDS- SHIELDED METAL ARC PROCESS USING E70-XX ELECTRODES.

STRUCTURAL ALUMINUM:

1. SECTIONS:

   A. SHAPES: ASTM B308, ALLOY 6061-T6
   B. SHEET AND PLATE: ASTM B209,ALLOY 6061-T6

2. BOLTED CONNECTION-BOLTS AND ANCHOR BOLTS:

   A. STAINLESS STEEL-TYPE 316, ASTM F593, GRADE B8M, CLASS 1, HEAVY HEX.

3. WELDED CONNECTIONS:

   A. GAS METAL ARC (MIG) OR GAS TUNGSTEN ARC (TIG) PROCESS USING FILLER ALLOY 4043 ELECTRODES.

CONSTRUCTION:

CONFORM TO THE FOLLOWING REQUIREMENTS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

EXCAVATION AND BACKFILLING:

1. EXPOSE AND PREPARE SUBGRADE AS SHOWN ON THE DRAWINGS AND SPECIFIED. OBTAIN ENGINEER'S OBSERVATION OF SUBGRADE SURFACES, AS EXPOSED AND AS PREPARED, BEFORE PROCEEDING WITH FOUNDATION CONSTRUCTION.

CONCRETE:

1. SEE SC001/TYP FOR CONCRETE NOTES, INCLUDING CLEAR COVER AND LAP SPLICE LENGTH REQUIREMENTS FOR REINFORCING.

2. PROVIDE CHAMFER AT EXPOSED EDGES OF CAST-IN-PLACE CONCRETE. SEE SPECIFICATIONS 03102 FOR CHAMFERS.

3. WELDING OF REINFORCING IS NOT PERMITTED UNLESS DETAILED ON THE DRAWINGS OR ACCEPTED IN ADVANCE BY THE ENGINEER.

4. MAINTAIN MINIMUM 3 INCHES CLEAR CONCRETE COVER BETWEEN REINFORCING AND EMBEDMENTS.

5. FINISH CONCRETE AS SPECIFIED IN SECTION 03366.

STEEL AND ALUMINUM-CONNECTIONS:

1. BOLTED:

   A. MADE USING 3/4 -INCH DIAMETER BOLTS.
   B. HAVING A MINIMUM OF 2 BOLTS, SPACED NOT CLOSER THAN 3 INCHES ON CENTER.
   C. WITH A DISTANCE OF AT LEAST 1 1/2 INCHES FROM CENTER OF BOLT TO ANY EDGE OF A PLATE OR STRUCTURAL ELEMENT.

2. WELDED:

   A. FILLET WELDS: PER AWS CODE BASED ON THE THICKNESS OF THE MATERIALS BEING JOINED, AND FULL LENGTH OF THE JOINT.

3. INTERFACE BETWEEN MATERIALS:

   A. AT BOLTED CONNECTIONS THAT INCLUDE DIFFERENT METALS (E.G.;STEEL AND STAINLESS STEEL, OR ALUMINUM AND STEEL) PROVIDE ISOLATING SLEEVES AND WASHERS AS SPECIFIED IN SECTION 05190.
   B. WHERE ALUMINUM IS IN CONTACT WITH MASONRY OR CONCRETE, COAT ALUMINUM SURFACES AS SPECIFIED IN SECTION 00960.

4. POST-INSTALLED ANCHORS IN CONCRETE:

   A. INSTALL IN FULL COMPLIANCE WITH ACCEPTED BUILDING CODE EVALUATION REPORT AND MANUFACTURER'S INSTRUCTIONS.
   B. DO NOT CUT, DAMAGE, OR INTERRUPT EXISTING REINFORCEMENT TO INSTALL ANCHORS. USE NON-DESTRUCTIVE TESTING EQUIPMENT TO IDENTIFY LOCATIONS OF REINFORCEMENT IN MEMBERS BEFORE DRILLING-HOLES FOR ANCHORS.

METAL FABRICATIONS:

1. HANDRAILS AND GUARDRAILS:

   A. ALUMINUM, EXCEPT WHERE OTHER MATERIALS ARE NOTED.

2. GRATING:

   A. ALUMINUM WITH TYPE 316 STAINLESS STEEL FASTENERS, UNLESS OTHERWISE NOTED.
   B. GRATING AND ITS SEATS OR SUPPORTS SHALL BE THE SAME MATERIAL.
   C. UNLESS INDICATED ON THE DRAWINGS AS "REMOVABLE GRATING", SECURELY FASTEN GRATING TO SUPPORTS AS INDICATED IN SR601/TYP.

3. COVER PLATES:

   A. ALUMINUM WITH TYPE 316 STAINLESS STEEL FASTENERS, UNLESS OTHERWISE NOTED.
   B. COVER PLATE AND ITS SEATS OR SUPPORTS SHALL BE THE SAME MATERIAL.

SPECIAL INSPECTION:

1. SPECIAL INSPECTION IS REQUIRED FOR THE FOLLOWING STRUCTURAL MATERIALS AND CONSTRUCTION. SEE SPECIFICATION SECTION 01455 FOR DETAILS.

2. DIVISION 2 SITE CONSTRUCTION (EARTHWORK):

   A. EXCAVATION DEPTH.
   B. ADEQUACY OF EXPOSED SURFACE TO PROVIDE REQUIRED SUPPORT.
   C. PREPARATION OF SOILS/SURFACES SUPPORTING CONSTRUCTION.
   D. FILL AND BACKFILL.

3. DIVISION 3 CONCRETE:

   A. LOCATIONS.
   B. FORMWORK AND MEMBER SIZES.
   C. REINFORCING STEEL.
   D. ANCHORS: CAST-IN AND POST-INSTALLED.
   E. CONCRETE MIX AND PLACEMENT.

4. DIVISION 5 METALS:

   A. GENERAL ALL METALS:
      1) MEMBER LOCATIONS:
      2) MEMBER SIZES/TYPES.
      3) ANCHORS-CAST-IN AND BUILT-IN ANCHOR BOLTS.
      4) ANCHORS-POST-INSTALLED MECHANICAL AND ADHESIVE.

   B. STRUCTURAL STEEL
      1) HIGH-STRENGTH BOLTING.
      2) WELDING.

   C. STRUCTURAL ALUMINUM.
      1) BOLTING.
      2) WELDING.

STRUCTURAL SYMBOLS:

1. SEE DRAWING 00G03 FOR KEY TO DRAWING TITLES AND SECTION CUTS, AND FOR DEFINITION OF MATERIALS SHADING PATTERNS.

2. WELDING: SYMBOLS: IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY (AWS) A2.4.

STRUCTURAL ABBREVIATIONS:

1. SEE DRAWING 00G04 FOR GENERAL LIST OF ABBREVIATIONS USED ON DRAWINGS.

2. ABBREVIATIONS FOR NAMES OF TECHNICAL GROUPS MAY BE FOUND IN THE PROJECT SPECIFICATIONS.

3. STRUCTURAL MEMBERS:

   A. STEEL: ABBREVIATIONS AND DESIGNATIONS ARE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION'S STEEL CONSTRUCTION MANUAL, CURRENT EDITION.
   B. ALUMINUM: ABBREVIATIONS AND DESIGNATIONS ARE IN ACCORDANCE WITH THE ALUMINUM ASSOCIATION'S ALUMINUM DESIGN MANUAL, CURRENT EDITION.

DEFERRED DESIGN SUBMITTALS

AS DEFINED IN THE BUILDING CODE, DEFERRED DESIGN SUBMITTALS ARE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION, AND THAT ARE SUBSEQUENTLY SUBMITTED TO THE BUILDING OFFICIAL.

DEFERRED DESIGN SUBMITTALS FOR THE PROJECT INCLUDE:

1. DIVISION 3 CONCRETE.

   A. 03055 - ADHESIVE ANCHORING TO CONCRETE.

2. DIVISION 5 METALS.

   A. 05500 - HANDRAILS AND GUARDRAILS.
      05500 - GRATING.

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED JMY
DATE MAY 2025

Digitally signed by D. Craig Brinck
Contact info: Carollo Engineers
Date: 2025.05.01 13:54:11 -06'00'

PROFESSIONAL STRUCTURAL ENGINEER
No. 7882644-2203
D. CRAIG BRINCK
STATE OF UTAH

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
STRUCTURAL
GENERAL NOTES

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

JOB NO. 204042
DRAWING NO. 00GS01
SHEET NO. 9 OF 42

LAST SAVED BY: tdietz

PROJECT NO.
FILE NAME: 204042_00GS01.dwg

1. SEE DIVISION 03 SPECIFICATION FOR REQUIREMENTS FOR CONCRETE CONSTRUCTION.
2. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, MINIMUM REINFORCEMENT OF CONCRETE WALLS OR SLABS SHALL BE AS FOLLOWS. CONTACT ENGINEER FOR LOCATIONS INSIDE CONCRETE.
   10" THICK OR LESS: .....#5 @ 12" EACH WAY.
   MORE THAN 10" THICK: .....#5 @ 12" EACH WAY, EACH FACE.
3. WALL REINFORCEMENT AT CORNERS OR JUNCTIONS OF WALLS SHALL BE CONTINUOUS, LAP SPLICED, OR TERMINATED IN AN ACI STANDARD 90 DEGREE HOOK. SEE DETAIL SC310/TYP.
4. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, DOWELS BETWEEN ADJACENT CONCRETE PLACEMENTS SHALL BE THE SAME SIZE AND SPACING AS THE REINFORCEMENT WHICH IS SPLICED TO THE DOWELS.
5. SLAB, BEAM AND COLUMN REINFORCING BARS SHALL HAVE A MINIMUM EXTENSION OR ANCHORAGE INTO SUPPORTS IN ACCORDANCE WITH ACI 318 AND ACI 350.
6. PROVIDE STIRRUP SUPPORT BARS SHALL BE TO SECURE TOP BARS AGAINST DISPLACEMENT AS REQUIRED.
7. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, CONCRETE COVER OVER #11 AND SMALLER REINFORCING BARS SHALL BE AS FOLLOWS:

A. SLABS AND JOISTS:

FORMED CONCRETE SURFACES AND UNFORMED TOP SURFACES FOR DRY CONDITIONS
#7 BARS AND SMALLER.....1"
#8 BARS AND LARGER.....1 1/2"
FORMED CONCRETE SURFACES AND UNFORMED TOP SURFACES EXPOSED TO WEATHER, IN CONTACT WITH SOIL OR FLUIDS, OR LOCATED OVER FLUIDS.....2"

B. BEAMS AND COLUMNS:

FORMED CONCRETE SURFACES FOR DRY CONDITIONS:
STIRRUPS, SPIRALS, AND TIES.....1 1/2"
PRINCIPAL REINFORCEMENT.....2"
FORMED CONCRETE SURFACES EXPOSED TO WEATHER, IN CONTACT WITH SOIL OR FLUIDS, OR IN BEAMS LOCATED OVER FLUIDS:
STIRRUPS AND TIES.....2"
PRINCIPAL REINFORCEMENT.....2 1/2"

C. WALLS:

FORMED CONCRETE SURFACES FOR DRY CONDITIONS:
#7 BARS AND SMALLER.....1"
#8 BARS AND LARGER.....1 1/2"
FORMED CONCRETE SURFACES EXPOSED TO WEATHER, OR IN CONTACT WITH SOIL OR FLUIDS.....2"

SC001 TYP — REINFORCED CONCRETE - NOTES

D. FOOTINGS AND SLABS ON GRADE:

FORMED VERTICAL CONCRETE SURFACES.....2"
AT UNFORMED CONCRETE SURFACES CAST AGAINST SOIL, ROCK, OR CONCRETE WORK MATS.....3"
TOP SURFACE OF FOOTINGS AND SLABS.....SAME AS SLABS

8. WATERSTOPS:
   A. PROVIDE WATERSTOPS AT JOINTS IN SLABS AND WALLS OF LIQUID-CONTAINING STRUCTURES, AND PORTIONS OF STRUCTURES BELOW THE DESIGN GROUNDWATER LEVEL. MAKE WATERSTOPS CONTINUOUS THROUGH STRUCTURE, SPLICING WATERSTOPS IN SLABS WITH WATERSTOPS IN WALLS.
   B. END WATERSTOPS 3" BELOW TOP OF WALLS. WHERE TOP OF WALL IS COVERED BY A SLAB WITHOUT WATERSTOPS, CONTINUE WATERSTOP TO WALL/SLAB JOINT. WHERE TOP OF WALL IS COVERED BY A SLAB WITH WATERSTOPS, MAKE WATERSTOPS CONTINUOUS, SPLICING WATERSTOPS IN WALLS WITH WATERSTOPS IN SLAB.
9. CURE CONCRETE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. WHERE WATER CURING IS SPECIFIED, MEMBRANE CURING IS NOT ALLOWED.
   A. THE CONTRACTOR IS WARNED THAT WATER CURING IS DIFFICULT AT TIMES DUE TO WIND AND DRY CONDITIONS. STUDY SPECIFICATION REQUIREMENTS AND FURNISH ADEQUATE SYSTEMS TO PROVIDE WATER CURING WHERE REQUIRED.
   B. KEEP WATER CURED SURFACES VISIBLY MOIST AT ALL TIMES. FLOOD TOPS OF WALLS NOT LESS THEN 3 TIMES DAILY.
10. DO NOT PLACE BACKFILL AGAINST WALLS UNTIL:
   A. WALLS HAVE BEEN CAST TO FULL HEIGHT OF STRUCTURE AND CONCRETE HAS REACHED THE MINIMUM SPECIFIED COMPRESSIVE STRENGTH (f'c).
   B. CONNECTING SLABS AND BEAMS HAVE BEEN CAST AND CONCRETE IN THOSE ELEMENTS HAS REACHED THE MINIMUM SPECIFIED COMPRESSIVE STRENGTH (f'c).
11. LAP SPLICES:
   A. SEE TABLE 1 OF THIS DETAIL FOR LAP SPLICE LENGTHS.
   B. WHEN MULTIPLE BARS ARE SPLICED AT THE SAME SECTION, THE "CLEAR BAR SPACING" IS DEFINED AS THE MINIMUM CLEAR DISTANCE BETWEEN THE BARS OUTSIDE THE SPLICE LENGTH MINUS ONE BAR DIAMETER.
   C. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, BARS AT A LAP SPLICE SHALL BE IN CONTACT WITH EACH OTHER.
   D. "TOP BARS" ARE HORIZONTAL REINFORCEMENT AT LOCATIONS WHERE MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.
12. FORM EXPOSED CONCRETE CORNERS AND EDGES WITH 3/4" CHAMFER UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

SC001 TYP — REINFORCED CONCRETE - NOTES

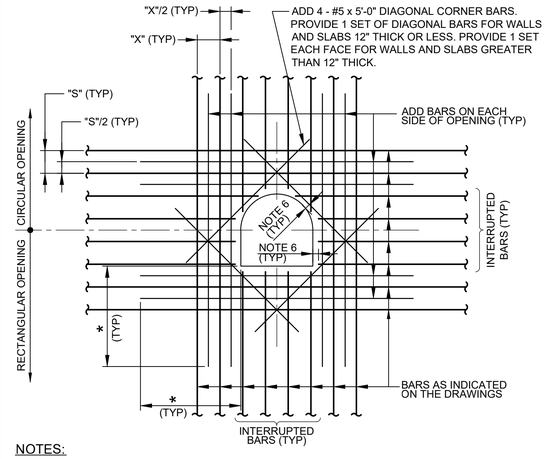
TABLE 1: REINFORCING BAR LAP SPLICES: f'c = 4000 PSI, Fy = 60,000 PSI

BAR SIZE	MINIMUM COVER (BAR DIA)	MINIMUM CLEAR BAR SPACING (BAR DIA)	LAP SPLICE LENGTH (INCHES)	
			TOP BARS	OTHER BARS
#4	MORE THAN 1	MORE THAN 2	32 *	25 *
	MORE THAN 2	MORE THAN 4	20	16
#5	MORE THAN 1	MORE THAN 2	40 *	31 *
	MORE THAN 2	MORE THAN 4	26	20
#6	MORE THAN 1	MORE THAN 2	48 *	37 *
	MORE THAN 2	MORE THAN 4	30	24
#7	MORE THAN 1	MORE THAN 2	70 *	54 *
	MORE THAN 2	MORE THAN 4	43	33
#8	MORE THAN 1	MORE THAN 2	81 *	62 *
	MORE THAN 2	MORE THAN 4	50	38
#9	MORE THAN 1	MORE THAN 2	90 *	70 *
	MORE THAN 2	MORE THAN 4	56	42
#10	MORE THAN 1	MORE THAN 2	104 *	81 *
	MORE THAN 2	MORE THAN 4	62	48
#11	MORE THAN 1	MORE THAN 2	114 *	88 *
	MORE THAN 2	MORE THAN 4	69	54

REINFORCING BAR LAP SPLICE TABLE NOTES:

1. TABULATED SPLICE LENGTHS ARE APPLICABLE ONLY WHEN BOTH REQUIREMENTS FOR MINIMUM COVER AND FOR MINIMUM CLEAR BAR SPACING ARE SATISFIED.
2. * = IF THE CLEAR BAR SPACING IS LESS THAN OR EQUAL TO TWO BAR DIAMETERS, OR THE COVER IS LESS THAN OR EQUAL TO ONE BAR DIAMETER, THE LAP SPLICE LENGTH SHALL BE INCREASED BY 50 PERCENT.

SC001 TYP — REINFORCED CONCRETE - NOTES

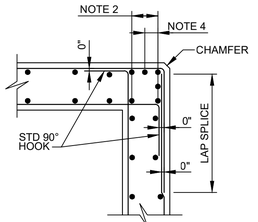


NOTES:

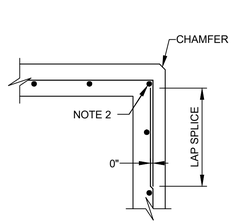
1. AREA OF ADD BARS AT EACH EDGE OF OPENING IN EACH DIRECTION SHALL BE EQUAL TO OR GREATER THAN 1/2 THE CROSS SECTIONAL AREA OF THE INTERRUPTED BARS.
2. PROVIDE STANDARD ACI HOOKS ON BARS IF STRAIGHT EXTENSION PAST THE OPENING, CANNOT BE ACHIEVED.
3. PLACE ADD BARS IN SAME PLANES AS INTERRUPTED REINFORCING.
4. PLACE #5 DIAGONAL BARS ON INSIDE OF INTERRUPTED REINFORCING.
5. * DIMENSION EQUALS OPENING DIMENSION MEASURED PERPENDICULAR TO ADD BARS PLUS LAP SPLICE LENGTH.
6. 2" CLEAR TO CONCRETE OPENINGS OR OUTSIDE FACE OF PIPES AND PIPE SLEEVES. DO NOT OVERCUT REINFORCEMENT FOR EASIER PLACEMENT OF WEEP RINGS AND FLANGES.
7. ADD BARS ARE NOT REQUIRED AT SIDES OF OPENINGS PARALLEL TO AND WITHIN 6" OF A WALL OR BEAM.

SC012 TYP — CONCRETE - REINFORCEMENT - ADDITIONAL REINF AT OPENINGS - SLABS AND WALLS

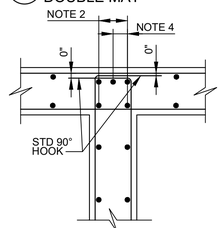
N 12/18/2023



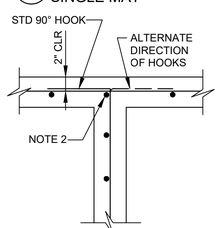
A — DETAIL - CORNER: DOUBLE MAT



B — DETAIL - CORNER: SINGLE MAT



C — DETAIL - INTERSECTION: DOUBLE MAT

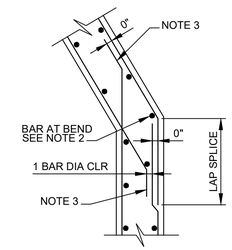


D — DETAIL - INTERSECTION: SINGLE MAT

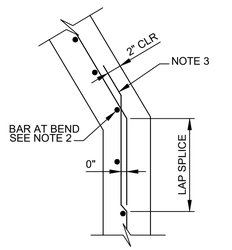
NOTES:

1. BAR SIZE, SPACING, AND ORIENTATION OF BAR LAYERS SHALL BE AS INDICATED ON THE DRAWINGS.
2. AT INTERSECTION, MAKE BAR SIZE THE LARGER OF BAR SIZES IN CONNECTING WALLS. PLACE BARS IN SAME LAYERS AS AT CONNECTING WALLS (TYP).
3. BAR TAILS: 12 BAR DIAMETERS PLUS 12".
4. EXTERIOR VERTICAL BARS SHALL BE PROVIDED AT A SPACING THAT DOES NOT EXCEED THE SPACING SPECIFIED ON THE DRAWINGS REGARDLESS OF THE WALL THICKNESS.

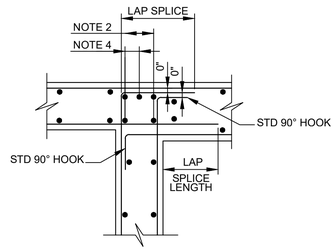
SC310 TYP — CONCRETE - REINFORCEMENT - WALL CORNERS AND INTERSECTIONS



E — DETAIL - INTERSECTION: DOUBLE MAT

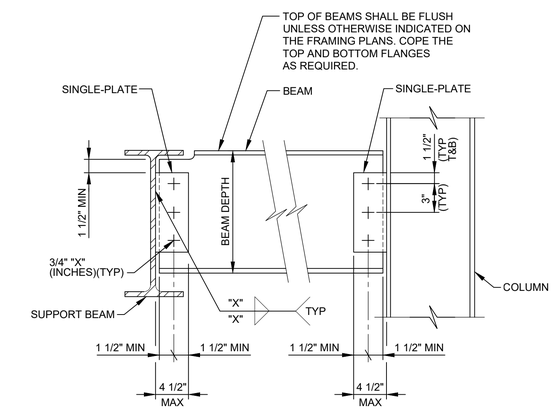


F — DETAIL - INTERSECTION: SINGLE MAT



G — DETAIL - INTERSECTION: CHANGE IN WALL THICKNESS

SC310 TYP — CONCRETE - REINFORCEMENT - WALL CORNERS AND INTERSECTIONS



BEAM DEPTH (INCHES)	NUMBER OF BOLTS PER PLATE	PLATE THICKNESS (INCHES)	FILLET WELD SIZE "X" (INCHES)
8-10	2	1/4	3/16
12-16	3	1/4	3/16
18-21	5	3/8	5/16
24-30	7	3/8	5/16

NOTE:

1. SCHEDULE APPLIES TO ALL BEAMS UNLESS NUMBER OF BOLTS PER LEG IS OTHERWISE INDICATED ON THE FRAMING PLAN BY (#) WHERE NUMBER INSIDE SYMBOL = NUMBER OF BOLTS.
2. PROVIDE HORIZONTAL SHORT SLOTTED HOLES IN BEAM WEB AT ONE END.

SH601 TYP — STEEL – CONNECTION – W BM TO W BM / COL SHEAR TAB - BEAM BOLTED / SUPPT WELDED

N 01/30/2025

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED JMY
DATE MAY 2025

Digitally signed by D. Craig Brinck
Contact Info: Carollo Engineers, Inc.
Date: 2025.05.23 11:37:37 -06'00'

PROFESSIONAL STRUCTURAL ENGINEER — No. 7882644-2203 — D. CRAIG BRINCK — STATE OF UTAH

carollo

SBWRD

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT

DEWATERING EQUIPMENT PREPURCHASE

TYPICAL DETAILS

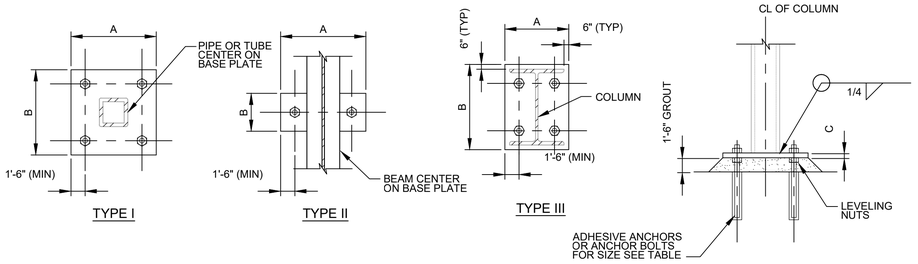
STRUCTURAL 1

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

JOB NO. 204042
DRAWING NO. 00TS01
SHEET NO. 10 OF 42

LAST SAVED BY: tdietz

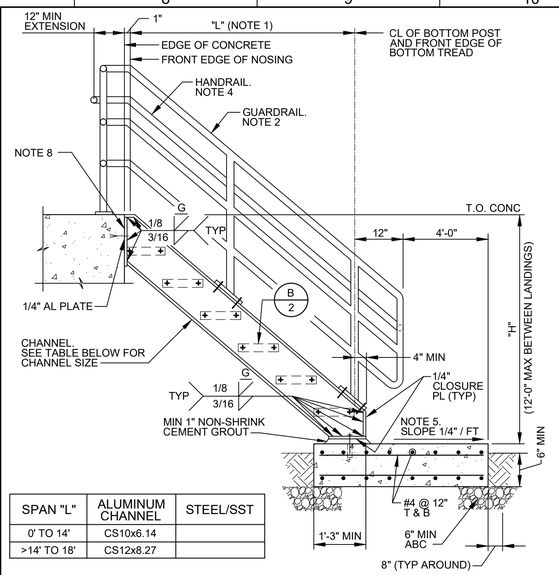
PROJECT NO. 204042-100000 FILE NAME: 204042_00TS01.dwg



BASE PLATE	BASE PLATE TYPE	BASE PLATE A" x B" x C"	BOLTS				COMMENTS
			MAT	NUMBER	DIA	EMBED	
B1	I	11"X11"X5/8"	STL	4	3/4	8	

SH901 TYP — COLUMN BASE PLATE

04/22/2025



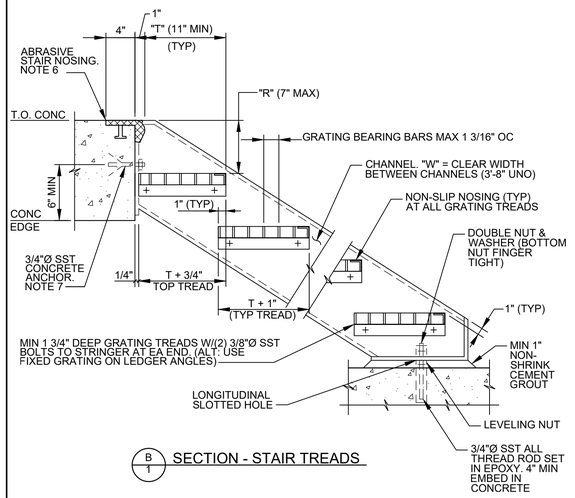
SPAN "L"	ALUMINUM CHANNEL	STEEL/SST
0' TO 14'	CS10x6.14	
>14' TO 18'	CS12x8.27	

A — ELEVATION - STAIRS

ALUMINUM STAIR & GUARDRAIL UNLESS OTHERWISE NOTED

SR244 TYP — STAIR - RISER TOP - 3 RAIL GUARDRAIL

N — SHEET 1 OF 3 — 09/11/2024



B/1 SECTION - STAIR TREADS

SR244 TYP — STAIR - RISER TOP - 3 RAIL GUARDRAIL

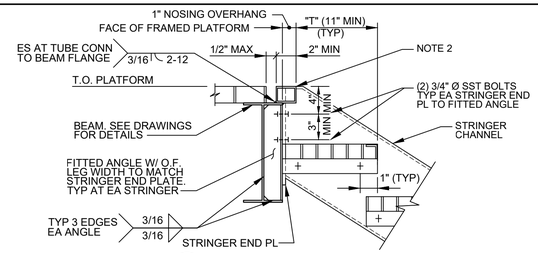
N — SHEET 2 OF 3 — 09/11/2024

NOTES:

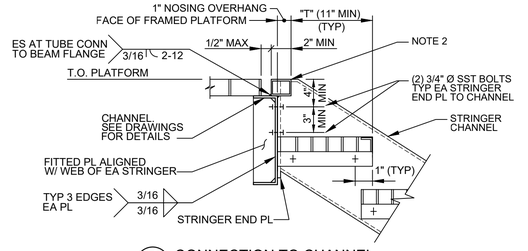
1. SEE DRAWINGS FOR DIMENSIONS "H", "L", "R", "T" AND "W".
2. SEE DETAIL SR401/TYP FOR GUARDRAIL NOTES AND DETAIL SR416/TYP FOR GUARDRAIL DETAILS.
3. COAT ALUMINUM SURFACES IN CONTACT WITH CONCRETE, AND INSTALL ISOLATION SLEEVES AND WASHERS BETWEEN DISSIMILAR METALS AS SPECIFIED.
4. PROVIDE HANDRAIL EXTENSIONS AS SHOWN AT BOTH SIDES OF STAIR, UNLESS HANDRAIL IS CONTINUOUS (AS AT SWITCHBACK STAIR).
5. AT EXTERIOR STAIRS, PROVIDE CONCRETE SLAB ON GRADE UNLESS OTHERWISE INDICATED ON THE DRAWINGS. MINIMUM CONCRETE SLAB WIDTH = STAIR CLEAR WIDTH ("W") PLUS 2'-0" (12" EACH SIDE). EDGE TOP CORNERS OF SLAB TO 1/4" RADIUS.
6. ABRASIVE STAIR NOSING: PROVIDE 2" CLEAR BETWEEN END OF STAIR NOSING AND VERTICAL/INSIDE FACE OF STAIR STRINGER. TOOL A GROOVE, 1/8" WIDE BY FULL WIDTH AND THICKNESS OF NOSING AT EACH END OF NOSING. CONTINUE TOOLED JOINT DOWN VERTICAL FACE OF NOSING AT RISER. FILL TOOLED GROOVE WITH SYNTHETIC RUBBER SEALING COMPOUND.
7. INSTALL CONCRETE ANCHORS MINIMUM 6" FROM BOTTOM AND 6" FROM SIDES/EDGES OF CONCRETE.
8. CONNECTION TO CONCRETE SHOWN. SEE DETAIL SR250/TYP FOR CONNECTION AT METAL FRAMING.

SR244 TYP — STAIR - RISER TOP - 3 RAIL GUARDRAIL

N — SHEET 3 OF 3 — 09/11/2024



A — CONNECTION TO BEAM



B — CONNECTION TO CHANNEL

NOTES:

1. INSTALL ISOLATION SLEEVES AND DIELECTRIC BREAKS BETWEEN DISSIMILAR METALS. SEE SPECIFICATIONS.
2. TUBE NOSING. TUBE LENGTH = WIDTH BETWEEN STRINGER CHANNELS MINUS 1/2" EACH END ("W"-1"). WELD TO TOP AND VERTICAL FACE OF BEAM OR CHANNEL. CAP ENDS. COAT TOP AND VERTICAL OUTSIDE FACE OF TUBE WITH NON-SLIP ABRASIVE.

SR250 TYP — STAIR - RISER TOP - CONNECTIONS

N — 12/12/2024

NOTES:

1. PROVIDE GUARDRAILS AT STAIRS AND AT OPEN SIDED WALKING SURFACES THAT ARE ELEVATED MORE THAN 30" ABOVE GRADE OR ADJACENT CONSTRUCTION.
2. WHERE EQUIPMENT IS LOCATED LESS THAN 10' FROM EDGE OF ROOF AND ELEVATED MORE THAN 30" ABOVE GRADE OR ADJACENT CONSTRUCTION, PROVIDE 42" HIGH GUARDRAIL FORMING A PROTECTIVE BARRIER. PARAPET WALL 42" OR MORE IN HEIGHT MAY BE THE GUARDRAIL AT ROOF LOCATIONS.
3. SEE DRAWINGS AND SPECIFICATIONS FOR GUARDRAIL MATERIAL TYPE(S).
4. PROVIDE HANDRAIL AT BOTH SIDES OF EVERY STAIR HAVING 2 OR MORE RISERS.
5. PROVIDE CONTINUOUS HANDRAIL GRIPPING SURFACES FOR THE FULL LENGTH OF THE STAIR.
6. PROVIDE HANDRAIL EXTENSIONS AT BOTH SIDES OF STAIRS AT TOP AND BOTTOM. HANDRAIL EXTENSION ON STAIR MOUNTED GUARDRAIL MAY BE OMITTED WHERE IT IS PERPENDICULAR TO AND IMPEDES EXIT FLOW.
7. MAKE INSIDE HANDRAIL ON SWITCHBACK STAIRS CONTINUOUS.
8. FOR WALL MOUNTED HANDRAILS, PROVIDE SINGLE RAIL WITH TOP OF RAIL AT 2'-10" HEIGHT ABOVE LANDINGS OR TREAD NOSINGS. PROVIDE MATCHING HANDRAIL ON OPPOSITE SIDE.
9. GUARDRAIL SHALL BE FIXED UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
10. PLACE CENTER OF EMBEDDED POSTS 6" FROM EDGE OF CONCRETE AND 6" FROM FRONT EDGE OF CONCRETE STAIR NOSINGS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
11. PLACE GUARDRAIL POSTS OPPOSITE EACH OTHER WHERE RAILINGS ARE PARALLEL.
12. FOR GUARDRAIL POSTS MOUNTED TO BEAM OR STAIR CHANNEL, PROVIDE MANUFACTURERS REINFORCED CONNECTION FROM POST TO PLATE. PLATE AND REINFORCED INSERTS SHALL BE ALUMINUM OR STAINLESS STEEL.
13. PROVIDE SLIDING JOINTS AT 24' MAX SPACING FOR EXPANSION OF RAIL AND KICKPLATE. LOCATE SLIDING JOINTS NEAR FACE OF POST. GAP AT TIME OF INSTALLATION SHALL BE BASED ON TEMPERATURE OF GUARDRAIL. PROVIDE 1/4" GAP AT 100°F AND 5/8" GAP AT 0°F. INTERPOLATE GAP FOR OTHER INSTALLATION TEMPERATURES. AT CONCRETE EXPANSION JOINTS, PROVIDE MINIMUM 1" GAP IN SLIDING JOINTS BUT NOT LESS THAN WIDTH OF CONCRETE EXPANSION JOINT. MAKE INSERT SLEEVES IN RAILS LONG ENOUGH TO ALLOW FOR THE FULL RANGE OF MOVEMENT.
14. MATERIAL FOR KICKPLATE CHANNEL SLIDING JOINT PLATES, SHALL BE OF THE SAME MATERIAL AS THE GUARDRAIL.
15. JOINTS FOR WELDED STAINLESS STEEL GUARDRAIL AND HANDRAIL SHALL BE COPED, WELDED, AND GROUND SMOOTH.
16. PROVIDE KICKPLATE AT ALL LOCATIONS EXCEPT AT SLOPING GUARDRAIL ON STAIRS AND WHERE GUARDRAIL IS MOUNTED ON A 4" MIN CURB. KICKPLATE MAY BE EXTRUDED OR BENT PLATE AND SHALL BE ATTACHED WITH SST BOLTS IN 5/16" x 3/4" SLOTTED HOLES. BOLT KICKPLATE TO POST WITH BOTTOM 1/4" CLEAR ABOVE FLOOR. FOR SIDE MOUNTED GUARDRAIL, PROVIDE STANDARD SPACER BLOCK BETWEEN POST AND KICKPLATE TO MAINTAIN 1/4" MAX CLEAR SPACING. HAND TIGHTEN AND CENTER PUNCH BOLT THREADS TO LOCK.
17. COAT ALUMINUM SURFACES IN CONTACT WITH CONCRETE AS SPECIFIED. PROVIDE NEOPRENE GASKET BETWEEN ALUMINUM AND STEEL.

SR401 TYP — GUARDRAILS & HANDRAILS - NOTES

N — 09/25/2024

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED JMY
DATE MAY 2025

Digitally signed by D. Craig Brinck
Contact Info: dbrinck@carollo.com
Date: 2025.05.01 11:57:11 -06'00'
PROFESSIONAL STRUCTURAL ENGINEER
No. 7882644-2203
D. CRAIG BRINCK
STATE OF UTAH

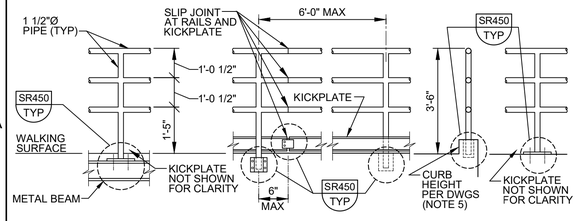
SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
TYPICAL DETAILS
STRUCTURAL 2

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

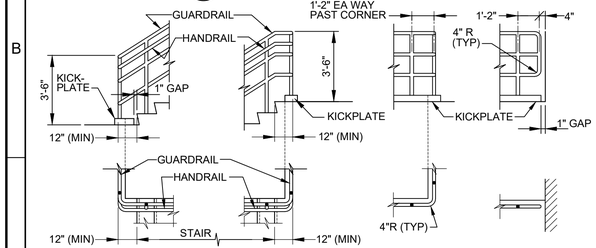
JOB NO. 204042
DRAWING NO. 00TS02
SHEET NO. 11 OF 42

LAST SAVED BY: tdietz

PROJECT NO. 204042-100000 FILE NAME: 204042_00TS02.dwg



A - GUARDRAIL ELEVATION



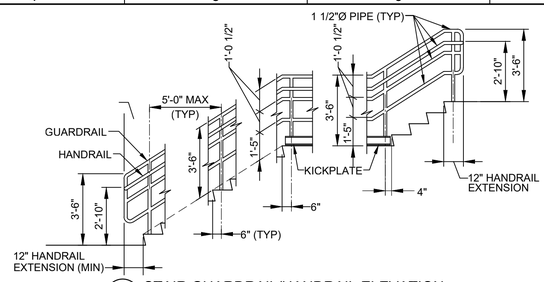
B - GUARDRAIL CORNERS & ENDS
SEE DRAWINGS FOR POST MOUNTING CONDITIONS

ALUMINUM GUARDRAIL UNLESS OTHERWISE NOTED.

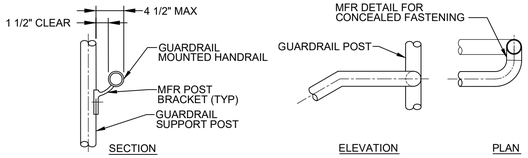
SR416 TYP — GUARDRAIL - 3 RAIL

N

SHEET 1 OF 3 12/13/2024



C - STAIR GUARDRAIL/HANDRAIL ELEVATION
(SEE DRAWINGS FOR POST MOUNTING CONDITIONS)



D - POST BRACKET

E - TERMINATION AT POST

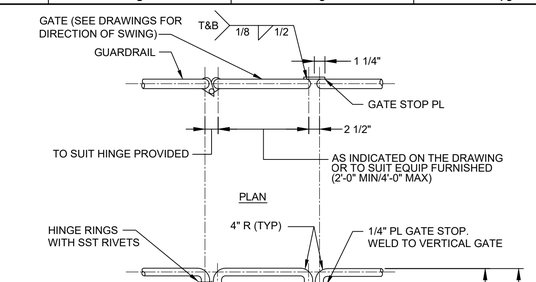
NOTES:

1. DETAIL IS APPLICABLE AT PRIVATE STAIRS IN F, H, AND S OCCUPANCIES FOR "OPERATOR ONLY" ACCESS. DETAILS AND INSTALLATION SHALL COMPLY WITH THE BUILDING CODE.
2. SEE SPECIFICATIONS AND DETAIL SR401/TYP FOR ADDITIONAL REQUIREMENTS.
3. VARIOUS POST MOUNTING DETAILS ARE ILLUSTRATED. SEE DRAWINGS AND DETAIL SR450/TYP FOR SPECIFIC MOUNTING REQUIREMENTS.
4. HANDRAIL EXTENSIONS ARE REQUIRED ON BOTH SIDES OF STAIR, EXCEPT WHERE INSIDE HANDRAIL IS CONTINUOUS AT SWITCHBACK STAIR.
5. AT CURB, USE EMBEDDED OR TOP MOUNTED POST AS INDICATED ON THE DRAWINGS.

SR416 TYP — GUARDRAIL - 3 RAIL

N

SHEET 2 OF 3 12/13/2024

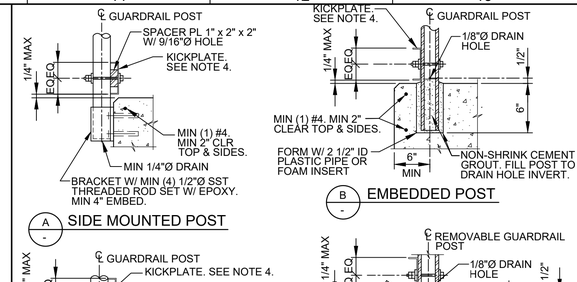


F - GATE

SR416 TYP — GUARDRAIL - 3 RAIL

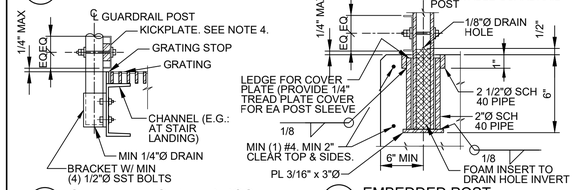
N

SHEET 3 OF 3 12/13/2024



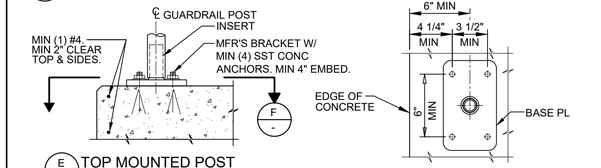
A - SIDE MOUNTED POST

B - EMBEDDED POST



C - CHANNEL MOUNTED POST

D - EMBEDDED POST - REMOVABLE



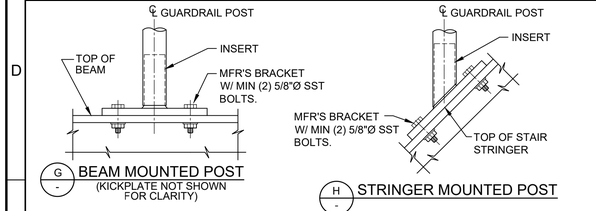
E - TOP MOUNTED POST
(KICKPLATE NOT SHOWN FOR CLARITY)

F - PLAN

SR450 TYP — GUARDRAIL - POST MOUNTING

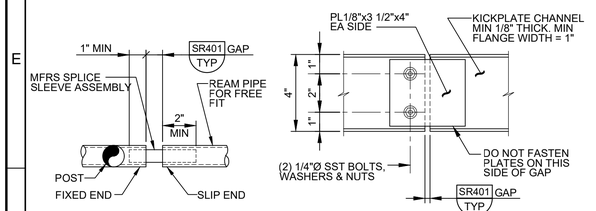
N

SHEET 1 OF 2 09/25/2024



G - BEAM MOUNTED POST
(KICKPLATE NOT SHOWN FOR CLARITY)

H - STRINGER MOUNTED POST



J - RAIL SLIP JOINT - PLAN

K - KICKPLATE JOINT - ELEVATION

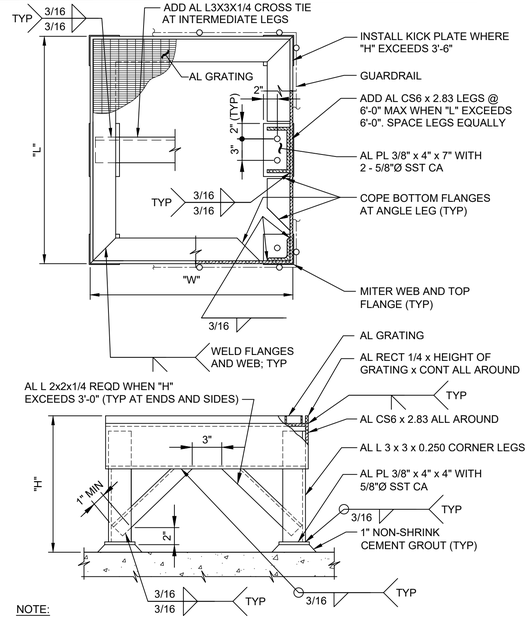
NOTES:

1. FOR ADDITIONAL REQUIREMENTS, SEE DETAIL SR401/TYP.
2. SEE DRAWINGS FOR MATERIAL TYPES.
3. COAT ALUMINUM SURFACES IN CONTACT WITH CONCRETE OR DISSIMILAR METALS AS SPECIFIED.
4. KICKPLATE CONNECTION AT POST: MIN 3/4" HORIZONTAL SLOTTED HOLE IN CHANNEL W/ MIN 1/4"Ø BOLT. PROVIDE WASHER AND DOUBLE NUTS. INSIDE NUT FINGER-TIGHT TO PERMIT EXPANSION AND CONTRACTION.

SR450 TYP — GUARDRAIL - POST MOUNTING

N

SHEET 2 OF 2 09/25/2024



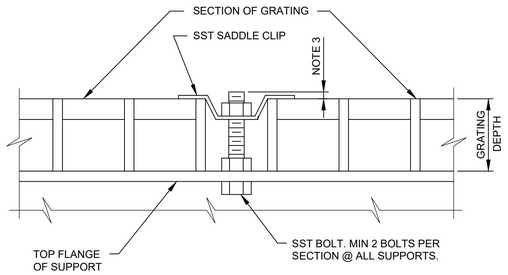
NOTE:

1. PLATFORM DIMENSIONS "L", "W" AND "H" ARE INDICATED ON THE DRAWINGS.

SR510 TYP — PLATFORM - COLUMN SUPPORTED - ALUMINUM

N

09/11/2024



NOTES:

1. GRATING FASTENERS SHALL BE INSTALLED WHERE INDICATED ON THE DRAWINGS.
2. GRATING FASTENERS SHALL BE INSTALLED AT EACH CORNER OF EACH PANEL AND AT SPACING NOT TO EXCEED 8'-0".
3. RECESS THE GRATING CLIP WITHIN THE DEPTH OF THE GRATING TO AVOID A TRIPPING HAZARD.

SR601 TYP — GRATING - FASTENERS

12/18/2023

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED JMY
DATE MAY 2025

Digitally signed by D. Craig Brinck
Contact info: Carollo Engineers
Date: 2025.05.21 15:57:11 -06'00'

PROFESSIONAL STRUCTURAL ENGINEER
No. 7882644-2203
D. CRAIG BRINCK
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SBWRD

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT

DEWATERING EQUIPMENT PREPURCHASE

TYPICAL DETAILS

STRUCTURAL 3

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

JOB NO. 204042
DRAWING NO. 00TS03
SHEET NO. 12 OF 42

LAST SAVED BY: tdietz

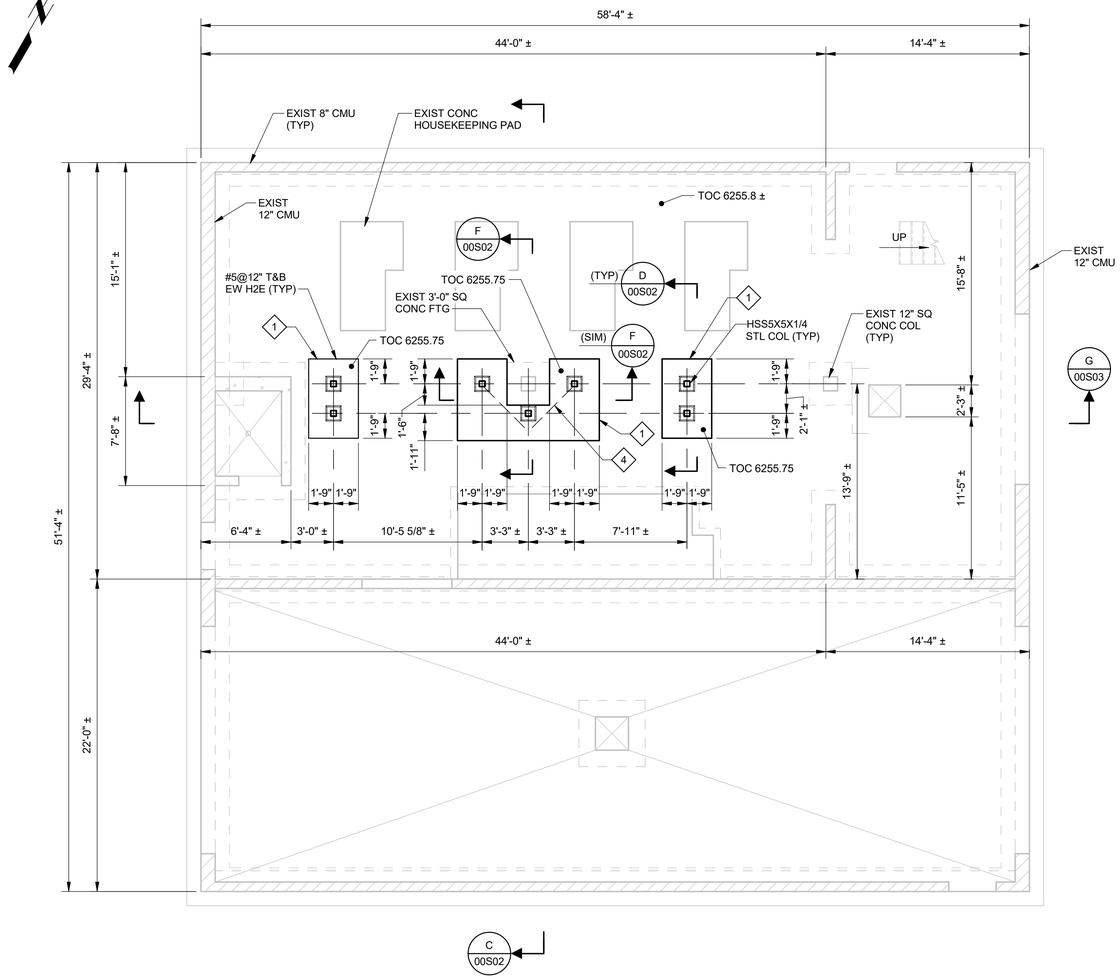
PROJECT NO. 204042-100000 FILE NAME: 204042_00TS03.dwg

GENERAL NOTES:

1. FOR STRUCTURAL GENERAL NOTES SEE DRAWING 00GS01.

KEY NOTES:

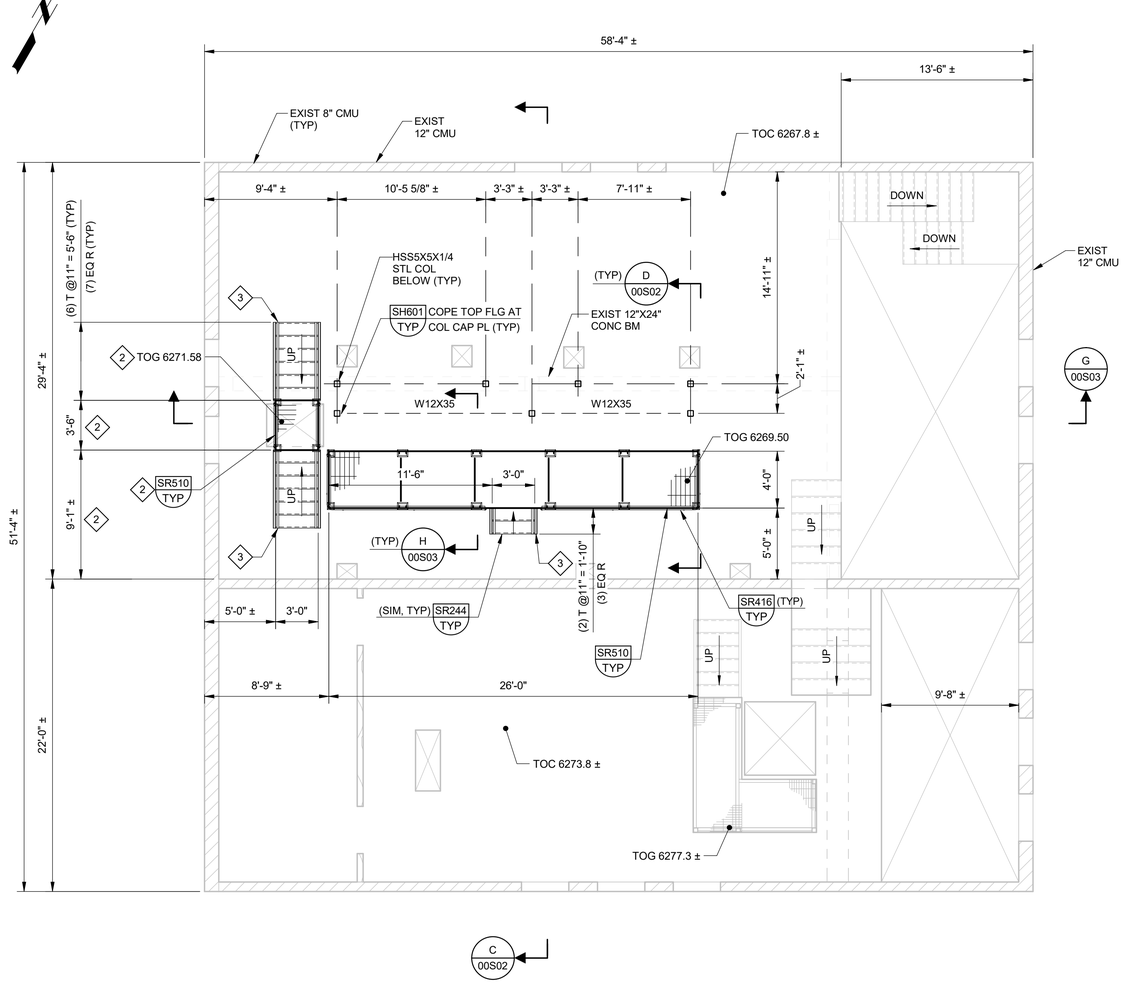
1. NEW FOOTING. TOP FLUSH WITH EXISTING FINISHED FLOOR.
2. CONTRACTOR FIELD VERIFY THAT HEIGHT AND LENGTH ARE SUFFICIENT TO CLEAR THE SCREW CONVEYOR.
3. HANDRAIL EXTENSION NOT REQUIRED.
4. #4 X 4'-0" LONG CORNER BARS T&B



FOUNDATION

A PLAN

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



UPPER

B PLAN

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

REV	DATE	BY	DESCRIPTION

DESIGNED CB
DRAWN TJD
CHECKED JMY
DATE MAY 2025

Digitally signed by D. Craig Brinck
Contact info: craig@carollo.com
Date: 2025.05.12 09:45:47 -06'00'

PROFESSIONAL STRUCTURAL ENGINEER
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carollo

SBWRD

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT

DEWATERING EQUIPMENT PREPURCHASE

STRUCTURAL

SOLIDS BUILDING PLANS

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

JOB NO. 204042
DRAWING NO. 00S01
SHEET NO. 13 OF 42

PLOT DATE: 5/12/2025 9:45:47 AM

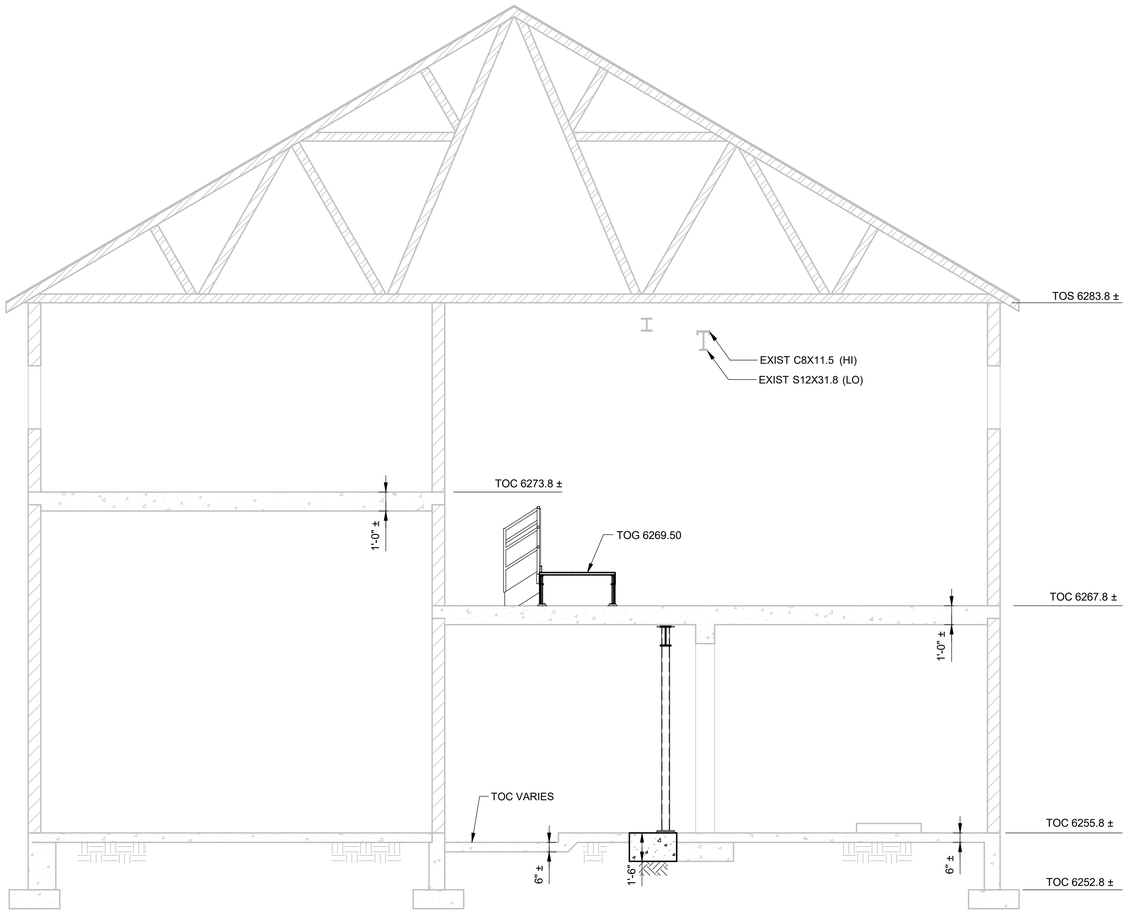
FILE NAME: R:\d0513524\204042_00S9801.rvt

GENERAL NOTES:

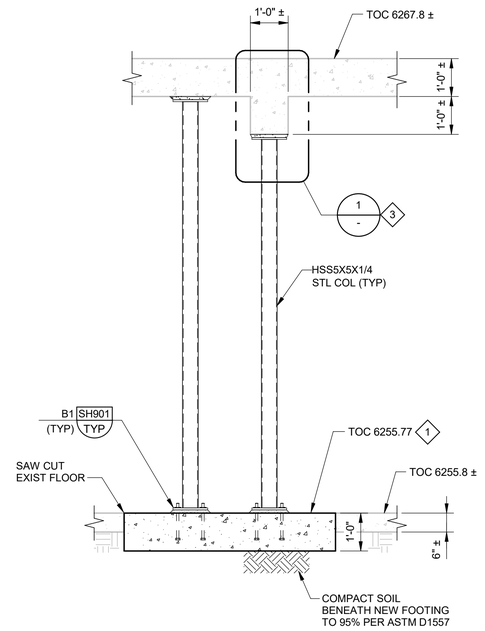
1. FOR STRUCTURAL GENERAL NOTES SEE DRAWING 00GS01.

KEY NOTES:

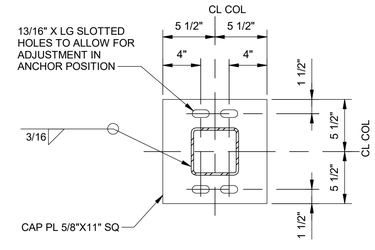
1. NEW FOOTING. TOP FLUSH WITH EXISTING FINISHED FLOOR.
2. LOCATE EXIST REINFORCING PRIOR TO DRILLING. DO NOT DRILL THROUGH EXIST REINFORCING. NOTIFY ENGINEER IF REINFORCING IS ENCOUNTERED DURING DRILLING.
3. TYPICAL AT BEAM SUPPORT COLUMNS. SLAB SUPPORT COLUMNS SIMILAR.



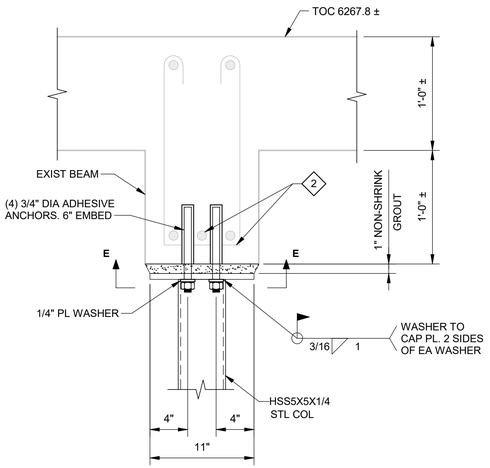
C SECTION 00S01
SCALE: 1/4" = 1'-0"



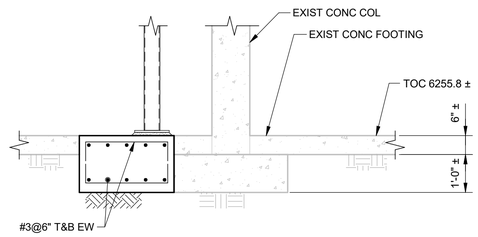
D SECTION 00S01
SCALE: 1/2" = 1'-0"



SECTION E-E



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



F SECTION 00S01
SCALE: 1/2" = 1'-0"

REV	DATE	BY	DESCRIPTION

DESIGNED CB
DRAWN TJD
CHECKED JMY
DATE MAY 2025

Digitally signed by D. Craig Brinck
Contact info: cbrinck@carollo.com
Date: 2025.05.12

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STATE OF UTAH

carollo

SBWRD

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT

DEWATERING EQUIPMENT PREPURCHASE

STRUCTURAL

SOLIDS BUILDING SECTIONS AND DETAILS 1

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

JOB NO. 204042
DRAWING NO. 00S02
SHEET NO. 14 OF 42

PLOT DATE: 5/12/2025 9:45:48 AM

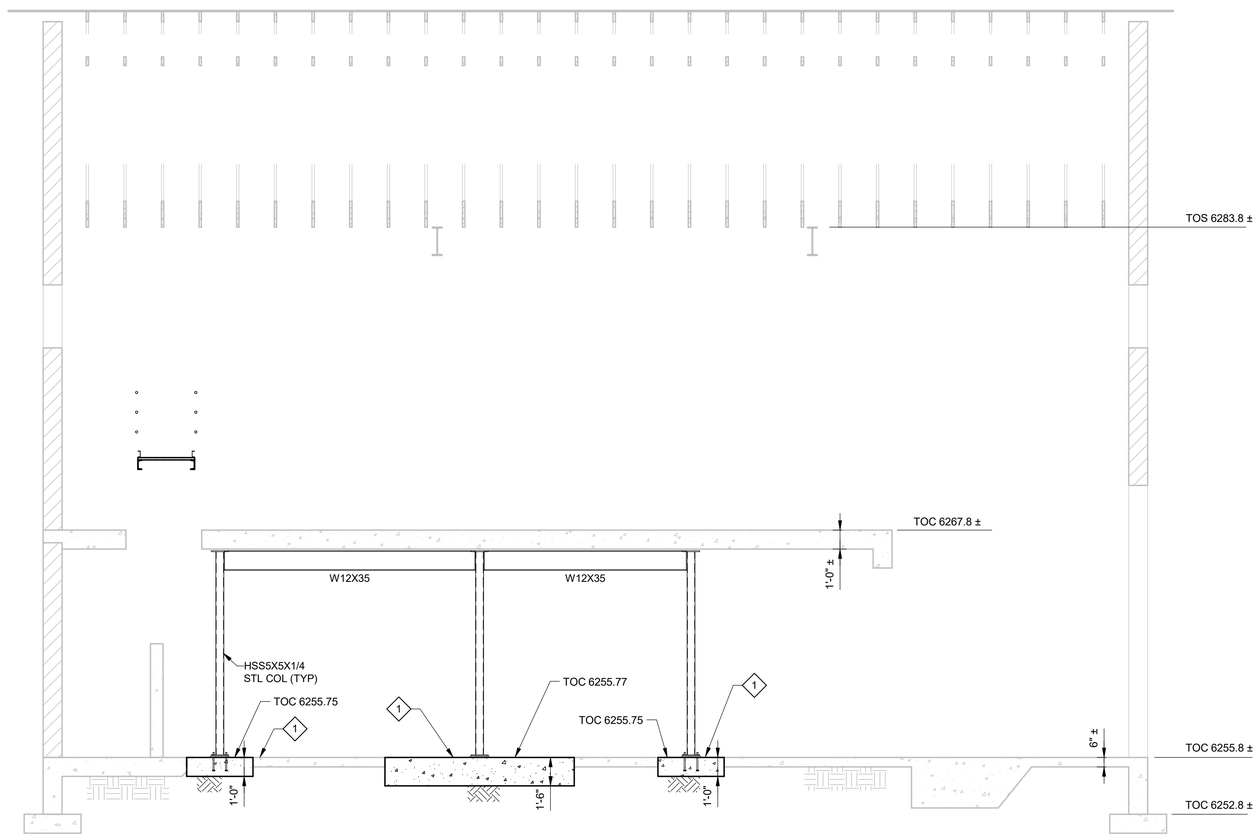
FILE NAME: R:\d0513524\204042_00S9801.rvt

GENERAL NOTES:

1. FOR STRUCTURAL GENERAL NOTES SEE DRAWING 00GS01.

KEY NOTES:

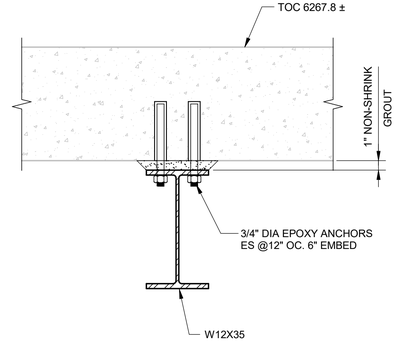
1. NEW FOOTING. TOP FLUSH WITH EXISTING FINISHED FLOOR.



G SECTION

00S01

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



H SECTION

00S01

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

REV	DATE	BY	DESCRIPTION

DESIGNED CB
DRAWN TJD
CHECKED JMY
DATE MAY 2025

Digitally signed by D. Craig Brinck
Contact Info: Carollo Engineers, Inc.
Date: 2025.05.12 09:45:48 -06'00'

PROFESSIONAL STRUCTURAL ENGINEER
No. 7882644-2203
D. CRAIG BRINCK
STATE OF UTAH

carollo®

SBWRD

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT

DEWATERING EQUIPMENT PREPURCHASE

STRUCTURAL

SOLIDS BUILDING
SECTIONS AND DETAILS 2

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

JOB NO. 204042
DRAWING NO. 00S03
SHEET NO. 15 OF 42

PLOT DATE: 5/12/2025 9:45:48 AM

FILE NAME: R:\d0513524\204042_00S9801.rvt

PIPING SYMBOLS

DOUBLE LINE	SINGLE LINE	DESCRIPTION
		WELDED JOINT
		GROOVED END JOINT
		FLANGED JOINT
		HUB & SPIGOT JOINT (RUBBER GASKET)
		PUSH-ON JOINT (RESTRAINED)
		ADAPTER SIDE GROOVED END ADAPTER FLANGE
		FLANGED COUPLING ADAPTER
		FLANGED COUPLING ADAPTER WITH THRUST TIES
		FLEXIBLE COUPLING
		FLEXIBLE COUPLING WITH THRUST TIES
		METAL BELLOWS EXP JOINT
		ELASTOMER BELLOWS EXP JOINT
		FLEXIBLE COUPLING ADAPTER
		DISMANTLING JOINT
		EXPANSION COMPENSATOR
		ELBOW UP
		ELBOW DOWN
		TEE UP
		TEE DOWN
		LATERAL UP
		LATERAL DOWN
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER (FOT. FOB)
		UNION
		CAP
		ANCHOR
		ELBOW, 90 DEGREE
		CROSS
		TEE
		ELBOW, 45 DEGREE
		ELBOW, 22.5 DEGREE
		ELBOW, 11.25 DEGREE
		LATERAL

SINGLE LINE	DESCRIPTION
	GATE VALVE
K	KNIFE GATE VALVE
	BUTTERFLY VALVE
V	CHARACTERIZED BALL CONTROL VALVE
	BALL VALVE
	GLOBE VALVE
	3-WAY GLOBE TYPE MIXING VALVE
	FOUR WAY VALVE
	PINCH VALVE
	DIAPHRAGM VALVE
	PLUG VALVE
	LUBRICATED PLUG VALVE
	ECCENTRIC PLUG VALVE
	CONCENTRIC PLUG VALVE
	SWING CHECK VALVE
	WAFER CHECK VALVE
	BALL CHECK VALVE
	DUAL CHECK VALVE
	CHECK BACKFLOW PREVENTER
	HOSE VALVE
	MUD VALVE (PLAN VIEW)
	NEEDLE VALVE
	CONE VALVE
	PRESSURE RELIEF PRESSURE-REDUCING REGULATOR
	TELESCOPING VALVE
	THREE WAY VALVE AIR OPERATED
M	THREE WAY VALVE MOTOR OPERATED
S	THREE WAY VALVE SOLENOID OPERATED
	VACUUM VALVE
	BACKPRESSURE REGULATOR SELF-CONTAINED
	BACKPRESSURE REGULATOR W/ EXTERNAL PRESSURE TAP
	PRESSURE-REDUCING REGULATOR: SELF-CONTAINED
	PRESSURE-REDUCING REGULATOR W/EXTERNAL PRESSURE TAP

MECHANICAL SYMBOLS

SINGLE LINE	DESCRIPTION
	AIR OR CHEMICAL DIFFUSER
	QUICK DISCONNECT HIGH PRESSURE AIR OR FLUSHING
	BATCHMETER
	AIR VENT
	BASKET STRAINER
	BLOWER
	CALIBRATION COLUMN
	COMPRESSOR/TURBINE
	COMPRESSOR: RECIPROCATING
	DIAPHRAGM SEAL
	DRAIN
	EJECTOR OR EDUCTOR
M	ELECTRIC MOTOR
	EQUIPMENT DRAIN
	EXPANSION JOINT, FLEXIBLE VIBRATION JOINT
	FAN: EXHAUST/SUPPLY
	FILTER
	FIRE HYDRANT
	FLAME ARRESTER
	FLAME ARRESTER WITH THERMALLY OPERATED VALVE
	FLOOR DRAIN
	FLOW SWITCH
	GAUGE: PRESSURE
	GAUGE: DIFFERENTIAL PRESSURE
	WEIR
	MIXER
	OIL OR MOISTURE TRAP
	PRIMARY LEVEL ELEMENT: BUBBLER
	PRIMARY LEVEL ELEMENT: ELECTRODE
	PRIMARY LEVEL ELEMENT: FLOAT SWITCH
	PRIMARY LEVEL ELEMENT: FLUID
	PRIMARY LEVEL ELEMENT: INVERTED COLUMN

SINGLE LINE	DESCRIPTION
	PRIMARY LEVEL ELEMENT: RADAR
	PRIMARY LEVEL ELEMENT: ULTRASONIC
	PRIMARY FLOW ELEMENT: FLUME
X	PRIMARY FLOW ELEMENT: X = C - CORIOLIS X = M - MAGNETIC X = P - PROPELLER X = PT - PITOT TUBE X = R - ROTAMETER X = T - TURBINE X = TH - THERMAL X = U - ULTRASONIC X = D - DENSITY
	PRIMARY FLOW ELEMENT: ORIFICE PLATE
	PRIMARY FLOW ELEMENT: VENTURI TUBE
	PRIMARY FLOW ELEMENT: WEIR
	PULSATION DAMPENER
	PUMP: CENTRIFUGAL
	PUMP: DIAPHRAGM
	PUMP: METERING
	PUMP: PLUNGER
	PUMP: PERISTALTIC TUBE METERING
	PUMP: PROGRESSIVE CAVITY
	PUMP: RECIPROCATING
	PUMP: ROTARY
	PUMP: SCREW
	PUMP: SUBMERSIBLE
	PUMP: VERTICAL LIFT
	PIPE REDUCER: CONCENTRIC
	PIPE REDUCER: ECCENTRIC (FOT, FOB)
	ROTARY CHEMICAL FEEDER
	RUPTURE DISK
	SAMPLE PORT
	SIGHT GLASS
	SLIDE GATE
	SLUICE GATE
	STRAINER: WYE TYPE

SINGLE LINE	DESCRIPTION
	STRAINER: WYE TYPE WITH BLOWOFF
	THERMOMETER
	VALVE: ANGLE
	VALVE: AIR RELIEF
	PIPE MATERIAL CHANGE

IDENTIFICATION SYMBOLS

CHEMICAL INJECTION POINT — CHEMICAL / DWG NO.

PIPE DESIGNATOR — PIPE SIZE, FLOW STREAM, "X" XXX (E) or (F)

SIZE FLOW STREAM
(E) = EXISTING FLOW STREAM
(F) = FUTURE FLOW STREAM

CONTINUATION TAG — UNIQUE IDENTIFIER, CONTINUATION FROM DWG NO., CONTINUATION TO DWG NO., A, B, C

EQUIPMENT / VALVE TAG — XXX-XX-XXXX (E) or (F), EQUIPMENT

(E) = EXISTING EQUIPMENT
(F) = FUTURE EQUIPMENT

KEY TAG — X

LINE SYMBOLS

PIPE ABOVE OR BELOW GROUND	———
PIPE UNDERNEATH SLAB OR STRUCTURE	— — — — — — — — — —
FUTURE	— · · — · · — · · —
EXISTING	———
DEMO	▨

PROCESS LINE SYMBOLS

PRIMARY PROCESS FLOW IN PIPE	———
SECONDARY PROCESS FLOW IN PIPE	———
PRIMARY PROCESS FLOW IN CHANNEL	——— — — ———
SECONDARY PROCESS FLOW IN CHANNEL	——— — — ———

FLOW STREAM IDENTIFIER

ABBREVIATION		DESCRIPTION
CA	=	COMPRESSED AIR
PD	=	PLANT DRAIN
POL	=	POLYMER
UW	=	UTILITY WATER
V	=	VENT
WAS	=	WASTE ACTIVATED SLUDGE

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED CTA
DATE MAY 2025

Digitally signed by Erin R. Andersen
Date: 2025.05.14 15:04:47 -06'00'
REGISTERED PROFESSIONAL ENGINEER — No. 12399681-2202 — ERIN R. ANDERSEN — STATE OF UTAH

carollo®

SBWRD

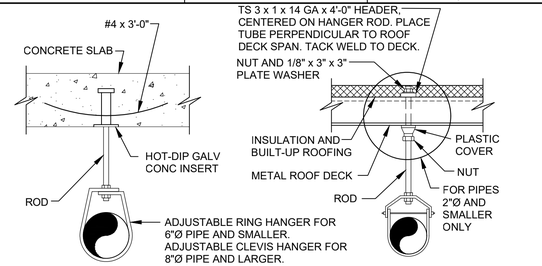
SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
MECHANICAL
GENERAL LEGEND AND SYMBOLS

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

JOB NO. 204042
DRAWING NO. 00GM01
SHEET NO. 16 OF 42

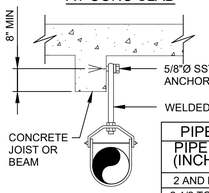
LAST SAVED BY: dscheele

PROJECT NO. 204042-100000 FILE NAME: 204042_00GM01.dwg



AT CONC SLAB

AT METAL DECK



AT CONC JOIST OR BEAM

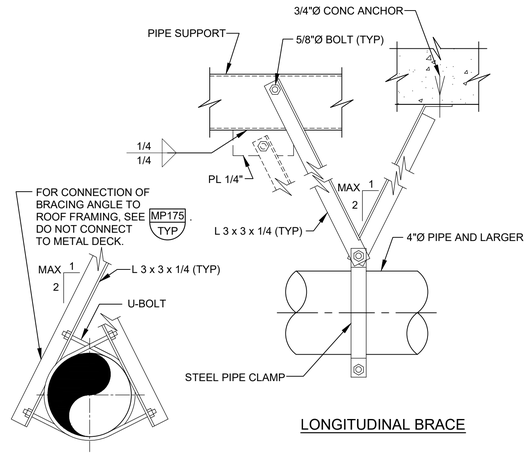
PIPE HANGER RODS AND SUPPORT SPACING		
PIPE DIA (INCHES)	ROD DIA (INCHES)	MAX SUPPORT SPACING
2 AND LESS	3/8	5 FEET
2 1/2 TO 3 1/2	1/2	10 FEET
4 TO 5	5/8	10 FEET
6	3/4	10 FEET
8	7/8	10 FEET
10	7/8	10 FEET
12	7/8	10 FEET

NOTES:

1. ISOLATE ALL COPPER PIPE FROM SUPPORT WITH PVC TAPE.
2. REFER TO THE SPECIFICATIONS FOR MATERIAL REQUIREMENTS.
3. PROVIDE ADDITIONAL HANGER AT EACH SIDE OF ALL VALVES 4 INCHES AND LARGER.

MP132 TYP — PIPE SUPPORT - OVERHEAD ROD W/ ADJUSTABLE RING OR CLEVIS

N — SHEET 1 OF 2 — 09/18/23



LONGITUDINAL BRACE

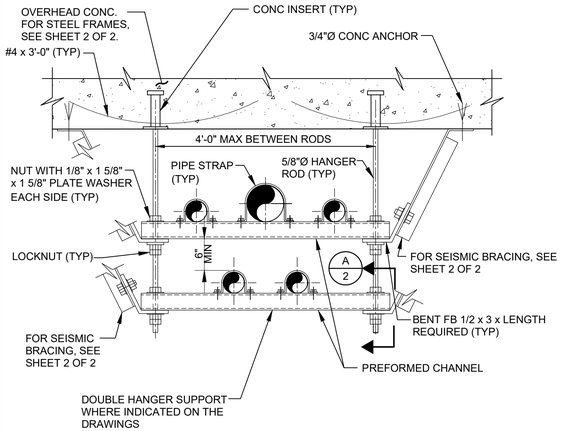
TRANSVERSE BRACE

NOTES:

1. MAXIMUM LONGITUDINAL BRACE SPACING = 20'-0".
2. MAXIMUM TRANSVERSE BRACE SPACING = 20'-0".
3. DO NOT CONNECT BRACE TO BOTTOM OF ROOF BEAM OR C8 PIPE SUPPORT, EXCEPT AS SHOWN IN MP175 TYP.
4. USE LONGITUDINAL AND TRANSVERSE BRACES FOR PIPES 4" AND LARGER.

MP132 TYP — PIPE SUPPORT - OVERHEAD ROD W/ ADJUSTABLE RING OR CLEVIS

N — SHEET 2 OF 2 — 09/18/23

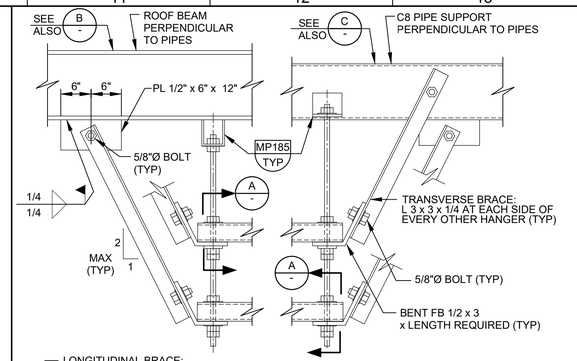


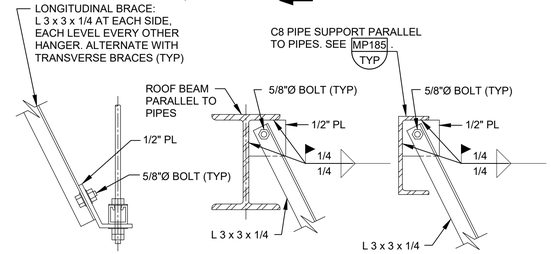
NOTES:

1. HANGER SPACING SHALL BE BASED ON MAXIMUM SPAN ALLOWABLE FOR ANY INDIVIDUAL PIPE.
2. ALL-THREAD ROD SHALL BE USED ONLY FOR DOUBLE SUPPORTS.
3. REFER TO THE SPECIFICATIONS FOR MATERIAL REQUIREMENTS.

MP175 TYP — PIPE SUPPORT - OVERHEAD TRAPEZE - DOUBLE BEAM

N — SHEET 1 OF 2 — 10/05/23

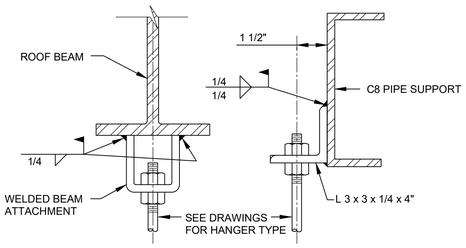




A - SECTION B - SECTION C - SECTION

MP175 TYP — PIPE SUPPORT - OVERHEAD TRAPEZE - DOUBLE BEAM

N — SHEET 2 OF 2 — 10/05/23



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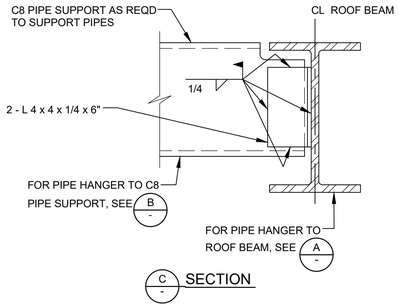


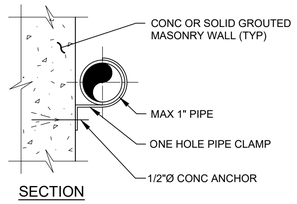
C - SECTION

NOTES:

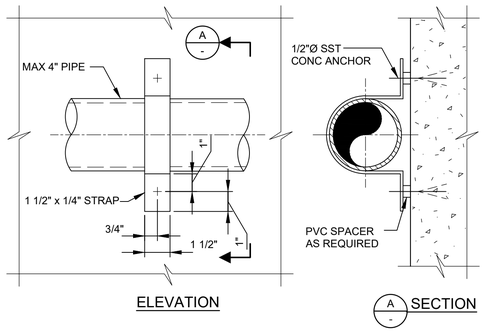
1. REFER TO THE SPECIFICATIONS FOR MATERIAL REQUIREMENTS.

MP185 TYP — PIPE SUPPORT - OVERHEAD CONNECTIONS TO STEEL FRAMING

10/05/23



SECTION



ELEVATION

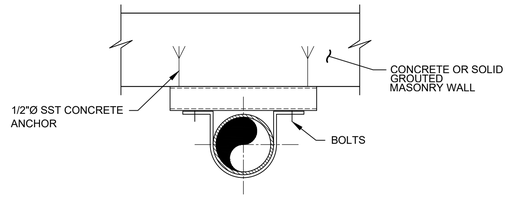
A - SECTION

NOTE:

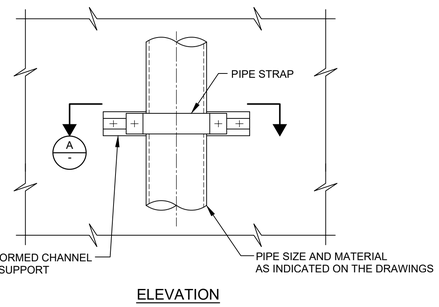
1. REFER TO THE SPECIFICATIONS FOR MATERIAL REQUIREMENTS.

MP215 TYP — PIPE SUPPORT - WALL - PIPE CLIP

12/23/24



A - SECTIONAL PLAN



ELEVATION

NOTE:

1. REFER TO THE SPECIFICATIONS FOR MATERIAL REQUIREMENTS.

MP253 TYP — PIPE SUPPORT - PREFORMED CHANNEL: SURFACE MOUNTED

12/17/24

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED CTA
DATE MAY 2025

Digitally signed by Erin R. Andersen
Original text: Erin R. Andersen
Date: 2025.05.30 08:47:39 -06'00'
REGISTERED PROFESSIONAL ENGINEER
No. 12399681-2202
ERIN R. ANDERSEN
STATE OF UTAH

carollo

SBWRD

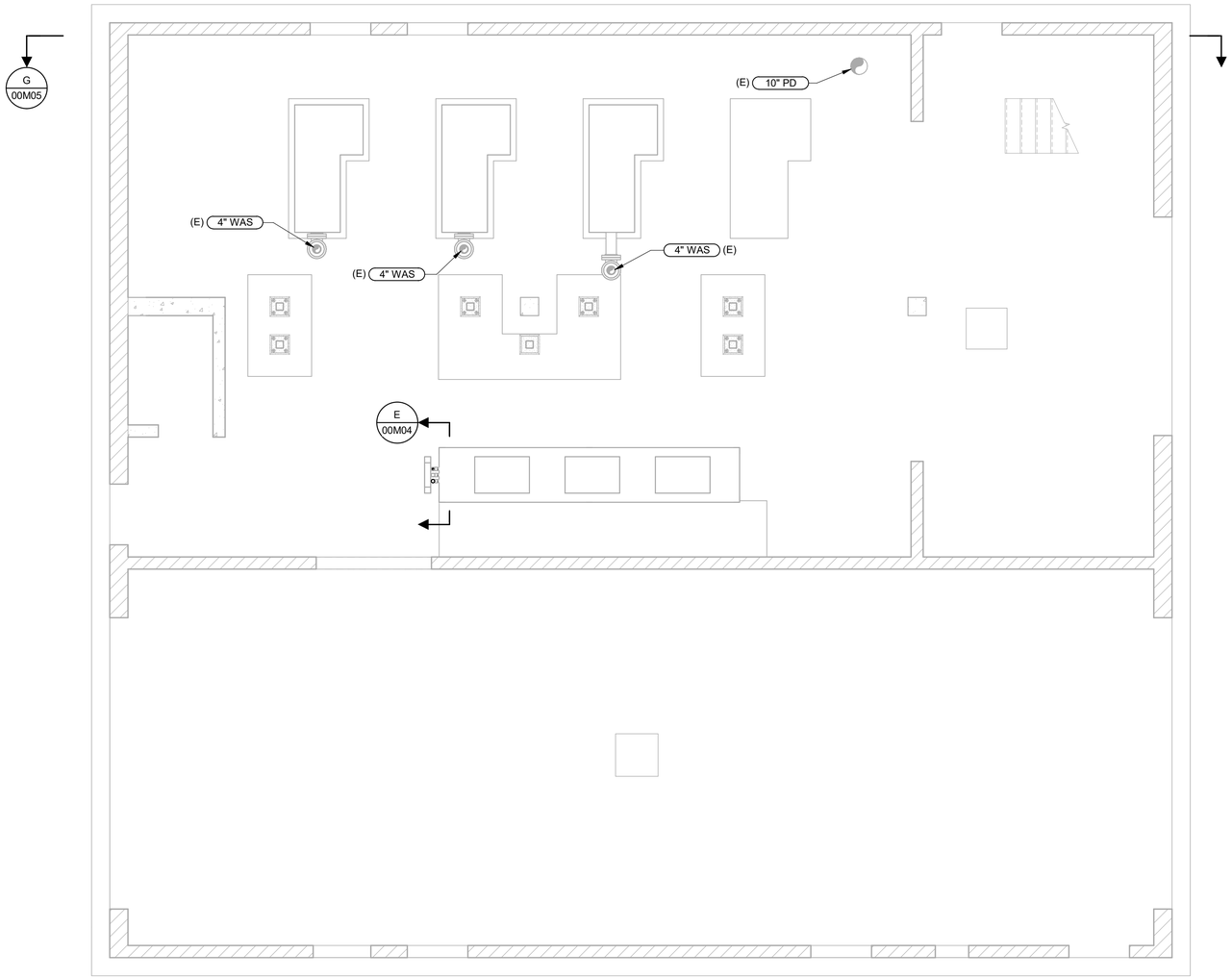
SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
TYPICAL DETAILS
MECHANICAL 1

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

JOB NO. 204042
DRAWING NO. 00TM01
SHEET NO. 17 OF 42

LAST SAVED BY: dscheele

PROJECT NO. 204042-100000 FILE NAME: 204042_00TM01.dwg



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

REV	DATE	BY	DESCRIPTION

DESIGNED ERA
DRAWN DCS
CHECKED CTA
DATE MAY 2025

Digitally signed by Erin R. Andersen
Original date: 5/13/2025 2:21:44 PM

REGISTERED PROFESSIONAL ENGINEER
No. 12399681-2202
ERIN R. ANDERSEN
STATE OF UTAH

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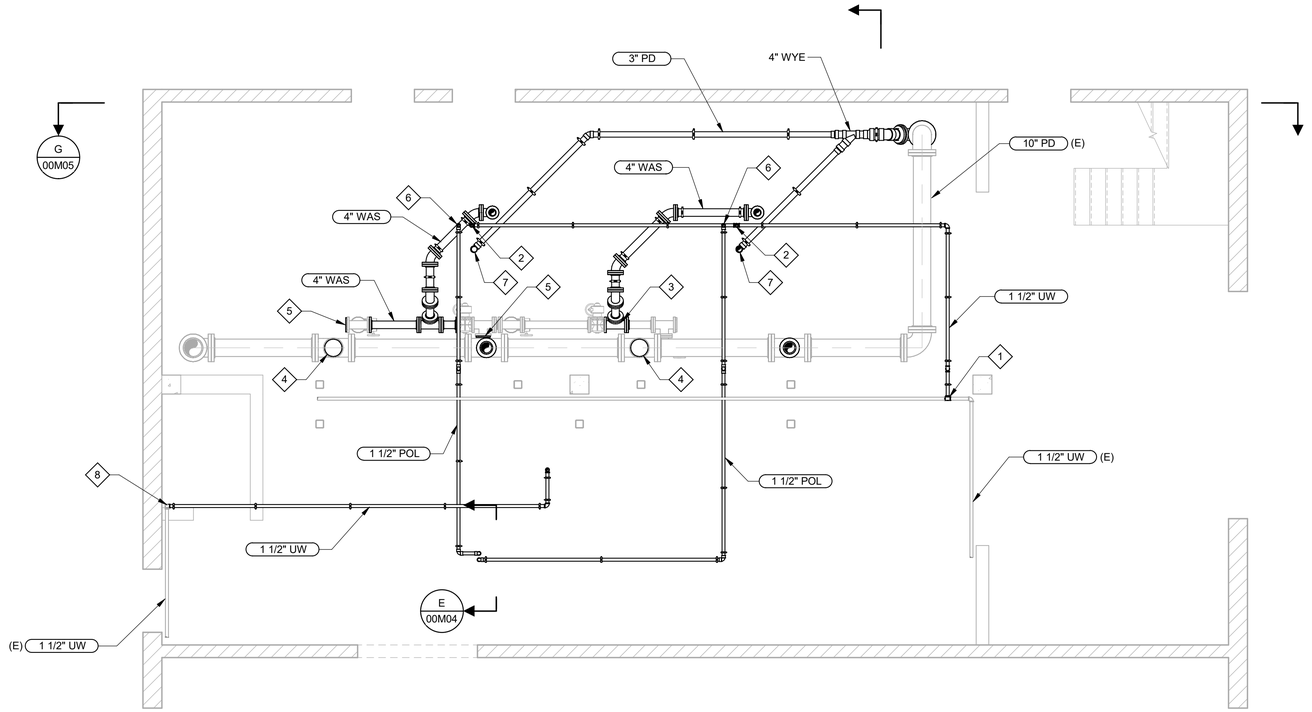
SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
MECHANICAL
SOLIDS BUILDING LOWER PLAN

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

JOB NO. 204042
DRAWING NO. 00M01
SHEET NO. 18 OF 42

PLOT DATE: 5/13/2025 2:21:44 PM
FILE NAME: R:\Id0513536\204042_00M0801.rvt



GENERAL NOTES:

1. SUPPORT PIPING SUSPENDED BENEATH THE FLOOR SLAB PER DETAIL MP132/TYP OR MP215/TYP. SUPPORTS TO BE SPACED AT 5'-0" O.C.
2. EXISTING LIGHT FIXTURES MAY BE IN CONFLICT WITH NEW PROCESS PIPING AND STRUCTURAL BEAM. WHERE THIS IS THE CASE, LIGHT FIXTURES MAY NEED TO BE RELOCATED. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL DETAILS.

KEY NOTES:

1. INSTALL A NEW 1 1/2" TEE IN THE EXISTING UTILITY WATER LINE. COORDINATE WITH THE OWNER PRIOR TO UTILITY WATER SHUTDOWN.
2. 1 1/2" UTILITY WATER LINE. CORE DRILL THROUGH THE FLOOR TO CONNECT TO THE NEW ROTARY PRESS FLOCCULATOR.
3. TURN EXISTING TEE 135 DEGREES AND CONNECT NEW WAS PIPING.
4. INSTALL 6" BLIND FLANGE ON DRAIN LINE TEE.
5. INSTALL 4" BLIND FLANGE.
6. 1 1/2" POLYMER PIPE. CORE DRILL THROUGH THE SLAB TO CONNECT TO THE ROTARY PRESS FLOCCULATOR.
7. 3" SLUDGE RECIRCULATION OUTLET. CORE DRILL THROUGH THE SLAB TO CONNECT TO THE ROTARY PRESS FLOCCULATOR.
8. REPLACE THE EXISTING UTILITY WATER LINE ON THE CEILING WITH 1 1/2" UTILITY WATER PIPING. ROUTE THROUGH THE SLAB TO SUPPLY ROTARY PRESS UTILITY WATER MANIFOLD.

B PLAN

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

REV	DATE	BY	DESCRIPTION

DESIGNED ERA
DRAWN DCS
CHECKED CTA
DATE MAY 2025

Digitally signed by Erin R. Andersen
Date: 2025.05.13 15:14:48 -06'00'
REGISTERED PROFESSIONAL ENGINEER
No. 12399681-2202
ERIN R. ANDERSEN
STATE OF UTAH

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
MECHANICAL
SOLIDS BUILDING INTERMEDIATE PLAN

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

JOB NO. 204042
DRAWING NO. 00M02
SHEET NO. 19 OF 42

PLOT DATE: 5/13/2025 3:14:48 PM

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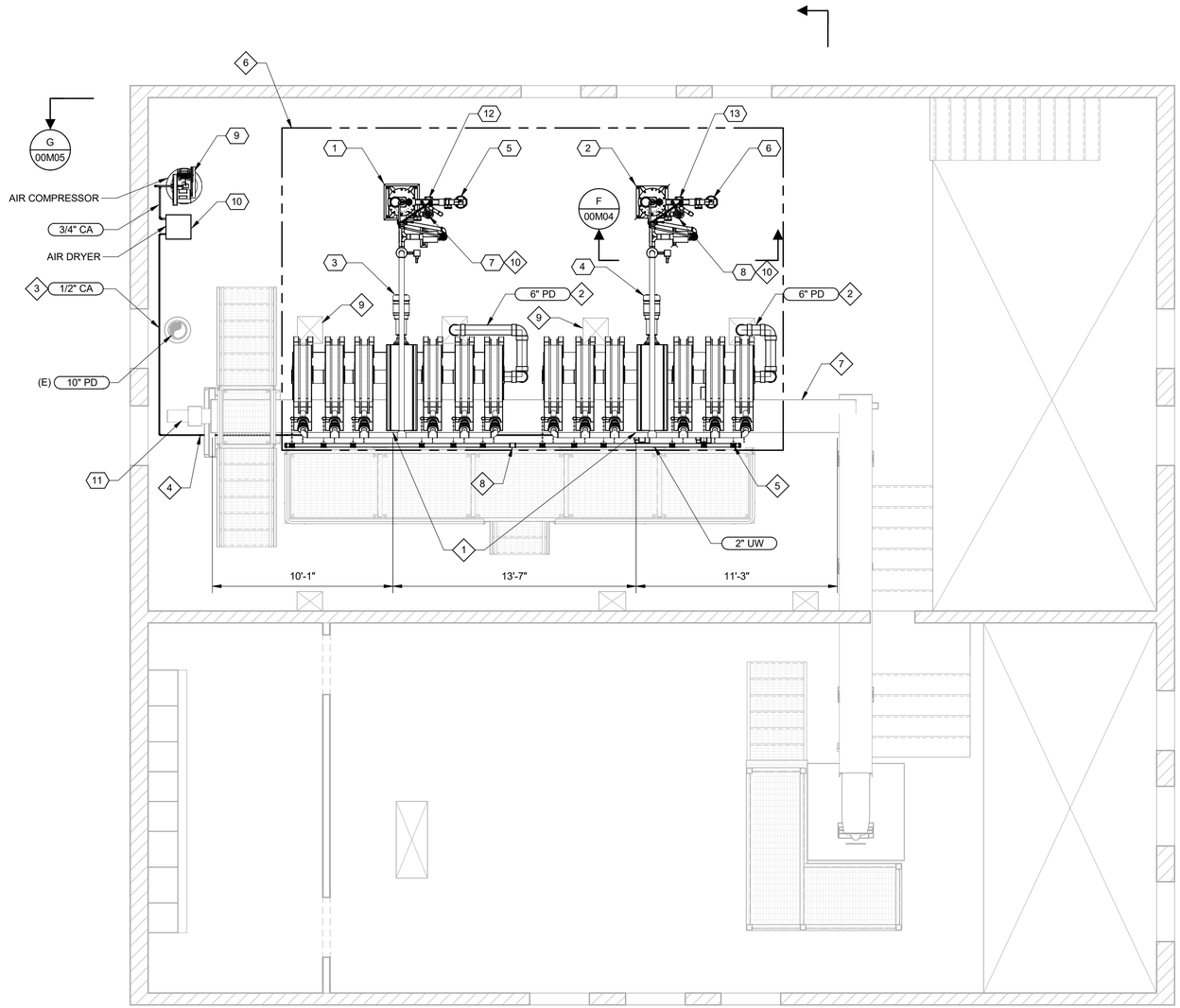

D
00M04

C PLAN

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

KEY NOTES:

1. PROVIDE/MAINTAIN A POINT OF ACCESS IN THE SLUDGE CONVEYOR COVER IN THE LOCATIONS SHOWN TO ALLOW FOR MAINTENANCE OF THE CONVEYOR SHAFT BEARINGS.
2. ROUTE 6 INCH PROCESS DRAIN LINE THROUGH THE EXISTING FLOOR OPENING AND CONNECT TO 10 INCH DRAIN LINE BELOW. PROVIDE NEW CHECKER PLATE COVER SIZED TO FULLY ENCLOSE THE FLOOR OPENING AROUND THE PIPE.
3. RUN COMPRESSED AIR ALONG THE FLOOR, UNDER THE EXISTING SLUDGE CONVEYOR AND TO EACH ROTARY PRESS PER MANUFACTURER RECOMMENDATIONS.
4. INSTALL A UNION FITTING IN THE COMPRESSED AIR LINE ON EITHER SIDE OF THE FLOOR OPENING. TO ALLOW FOR PIPING TO BE DISASSEMBLED, IF NECESSARY.
5. PROVIDE 2 INCH UTILITY WATER MANIFOLD WITH 1 INCH FLEXIBLE CONNECTION (BRAIDFLEX TUBING OR EQUAL), WITH A 1 INCH BALL VALVE, TO EACH OF THE ROTARY PRESS CHANNELS. TUBING SHALL BE INSTALLED WITH 6 INCHES OF SLACK. SUPPORT 2 INCH MANIFOLD PIPING OFF THE ACCESS PLATFORM PER DETAIL MP253/TYP.
6. IF CONTRACTOR DESIRES TO INSTALL ROTARY PRESS AS AN ASSEMBLED UNIT, PROVIDE SHORING FOR FLOOR SLAB IN THIS AREA. DESIGN SHORING TO SUPPORT ROLLING 15,000 LB LOAD. OTHERWISE DISASSEMBLE ROTARY PRESS AND RE-ASSEMBLE IN PLACE. EXISTING MONORAIL CAPACITY LIMITED TO 2 TONS.
7. PROVIDE NEW 3/4" THICK POLYCARBONATE COVER ON THE EXISTING SLUDGE CONVEYOR WITH OPENINGS FOR THE ROTARY PRESS SLUDGE CHUTES AND ACCESS TO THE CONVEYOR SHAFT BEARINGS.
8. 1 1/2" X 2" TEE.
9. PROVIDE NEW CHECKER PLATE COVER OVER THE EXISTING FLOOR OPENING.
10. PROVIDE PROPORTIONAL CONTROL VALVE ON THE POLYMER FEED LINE TO THE FLOCCULATOR PER MANUFACTURER RECOMMENDATIONS.

KEY TAGS:

1	FLC-26110	ROTARY PRESS FLOCCULATOR 1
2	FLC-26130	ROTARY PRESS FLOCCULATOR 2
3	RPR-26120	ROTARY PRESS 1
4	RPR-26140	ROTARY PRESS 2
5	FE-26119	ROTARY PRESS SLUDGE FLOW METER 1
6	FE-26139	ROTARY PRESS SLUDGE FLOW METER 2
7	FE-26115	ROTARY PRESS POLYMER FLOW METER 1
8	FE-26135	ROTARY PRESS POLYMER FLOW METER 2
9	ARC-26100	AIR COMPRESSOR
10	DRY-26101	AIR DRYER
11	ME-SP-12	SCREW CONVEYOR (EXISTING)
12	FCV-26115	POLYMER FLOW CONTROL VALVE 1
13	FCV-26136	POLYMER FLOW CONTROL VALVE 2

REV	DATE	BY	DESCRIPTION

DESIGNED ERA
DRAWN DCS
CHECKED CTA
DATE MAY 2025

Digitally signed by Erin R. Andersen
Date: 2025.05.13 14:21:48 -06'00'
REGISTERED PROFESSIONAL ENGINEER
No. 12399681-2202
ERIN R. ANDERSEN
STATE OF UTAH

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SBWRD

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
MECHANICAL
SOLIDS BUILDING UPPER PLAN

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

JOB NO. 204042
DRAWING NO. 00M03
SHEET NO. 20 OF 42

PLOT DATE: 5/13/2025 2:21:48 PM

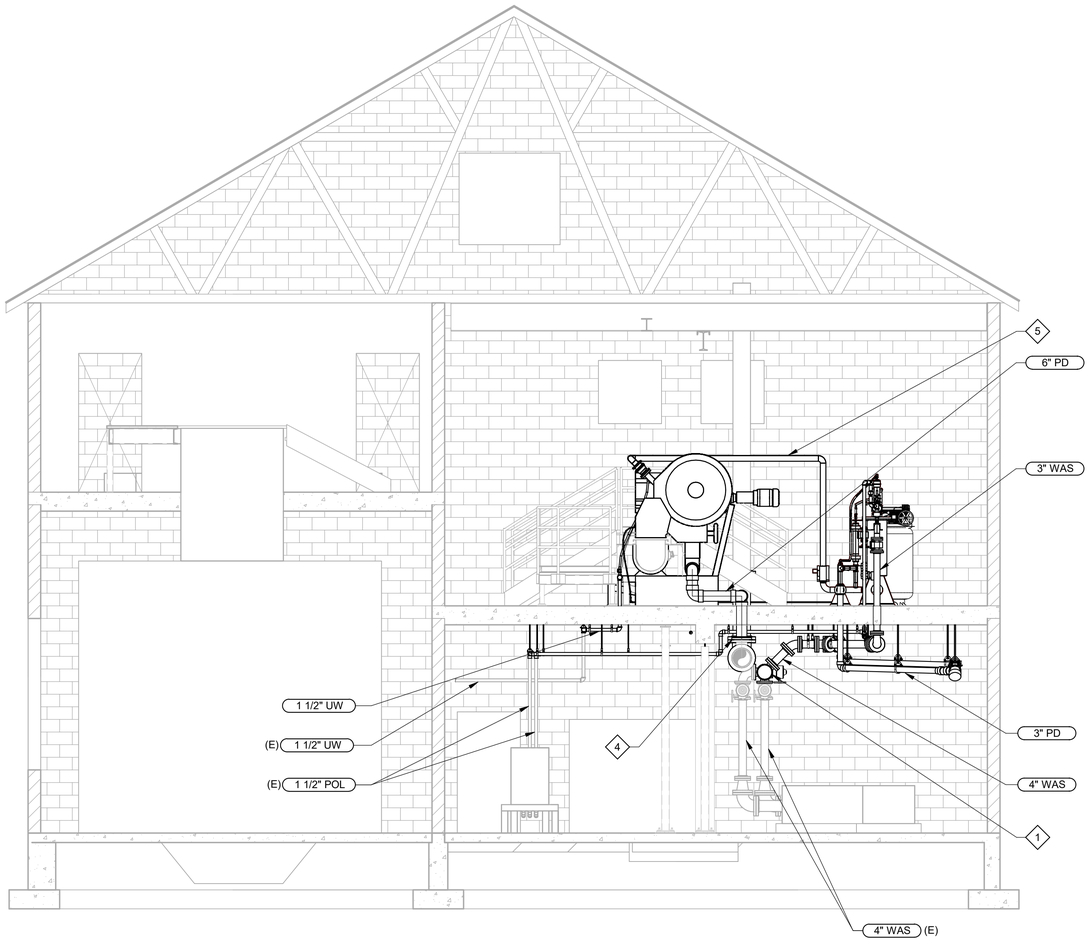
FILE NAME: R:\d0513536\204042_00M0801.rvt

GENERAL NOTES:

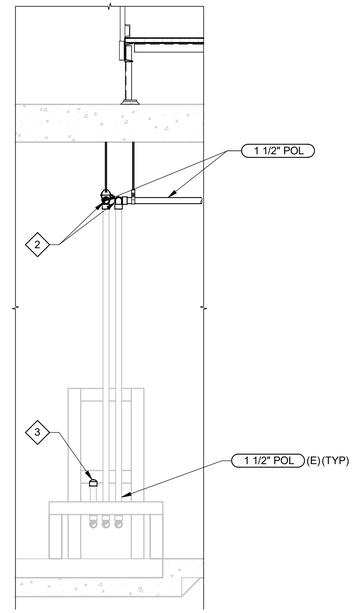
1. SUPPORT PIPING SUSPENDED BENEATH THE FLOOR SLAB PER DETAIL MP132/TYP OR MP215/TYP. SUPPORTS TO BE SPACED AT 5'-0" O.C.

KEY NOTES:

1. TURN EXISTING TEE 135 DEGREES AND CONNECT NEW WAS PIPING.
2. CONNECT TO THE EXISTING POLYMER PIPING AND ROUTE UNDER THE NEW AND EXISTING STRUCTURAL BEAMS TO THE NEW ROTARY PRESS FLOCCULATOR.
3. INSTALL A SCH 80 CAP ON THE EXISTING POLYMER PIPE DOWNSTREAM OF THE 90 DEGREE BEND.
4. CONNECT NEW PVC DRAIN PIPING TO EXISTING DUCTILE IRON FLANGE USING PVC FLANGE ADAPTER. PROVIDE NEW STAINLESS STEEL HARDWARE.
5. PIPING FROM FLOCCULATOR TO ROTARY PRESS PROVIDED BY EQUIPMENT MANUFACTURER.
6. 3" MAGNETIC FLOW METER PROVIDED BY EQUIPMENT MANUFACTURER.
7. POINT OF CONNECTION TO FLOCCULATOR 3" FLG X VIC PIPE.
8. 4"X3" REDUCING 90 DEG BEND WITH VIC ENDS.
9. CORE DRILL HOLE FOR NEW 3" WAS PIPE.
10. 2" DIA POLYMER INLET CONNECTION.
11. 3" SLUDGE RECIRCULATING CONNECTION.
12. 1 1/2" DIA UW CONNECTION.
13. 2" MAGNETIC FLOW METER PROVIDED BY EQUIPMENT MANUFACTURER.
14. CORE DRILL THROUGH THE FLOOR FOR NEW 3" PD LINE.
15. PROVIDE PROPORTIONAL CONTROL VALVE ON THE POLYMER FEED LINE TO THE FLOCCULATOR PER MANUFACTURER RECOMMENDATIONS.



D SECTION (00M01)
SCALE: 1/4" = 1'-0"



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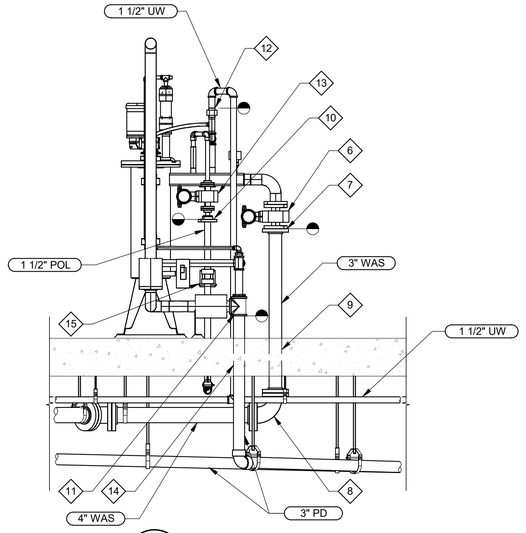

F SECTION (00M02)
SCALE: 1/2" = 1'-0"

REV	DATE	BY	DESCRIPTION

DESIGNED ERA
DRAWN DCS
CHECKED CTA
DATE MAY 2025

Digitally signed by Erin R. Andersen
Contact info: Carollo Engineers, Inc.
REGISTERED PROFESSIONAL ENGINEER
No. 12399681-2202
ERIN R. ANDERSEN
STATE OF UTAH

carollo®

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SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
MECHANICAL
SOLIDS BUILDING SECTION 1

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

JOB NO. 204042
DRAWING NO. 00M04
SHEET NO. 21 OF 42

PLOT DATE: 5/13/2025 2:21:53 PM

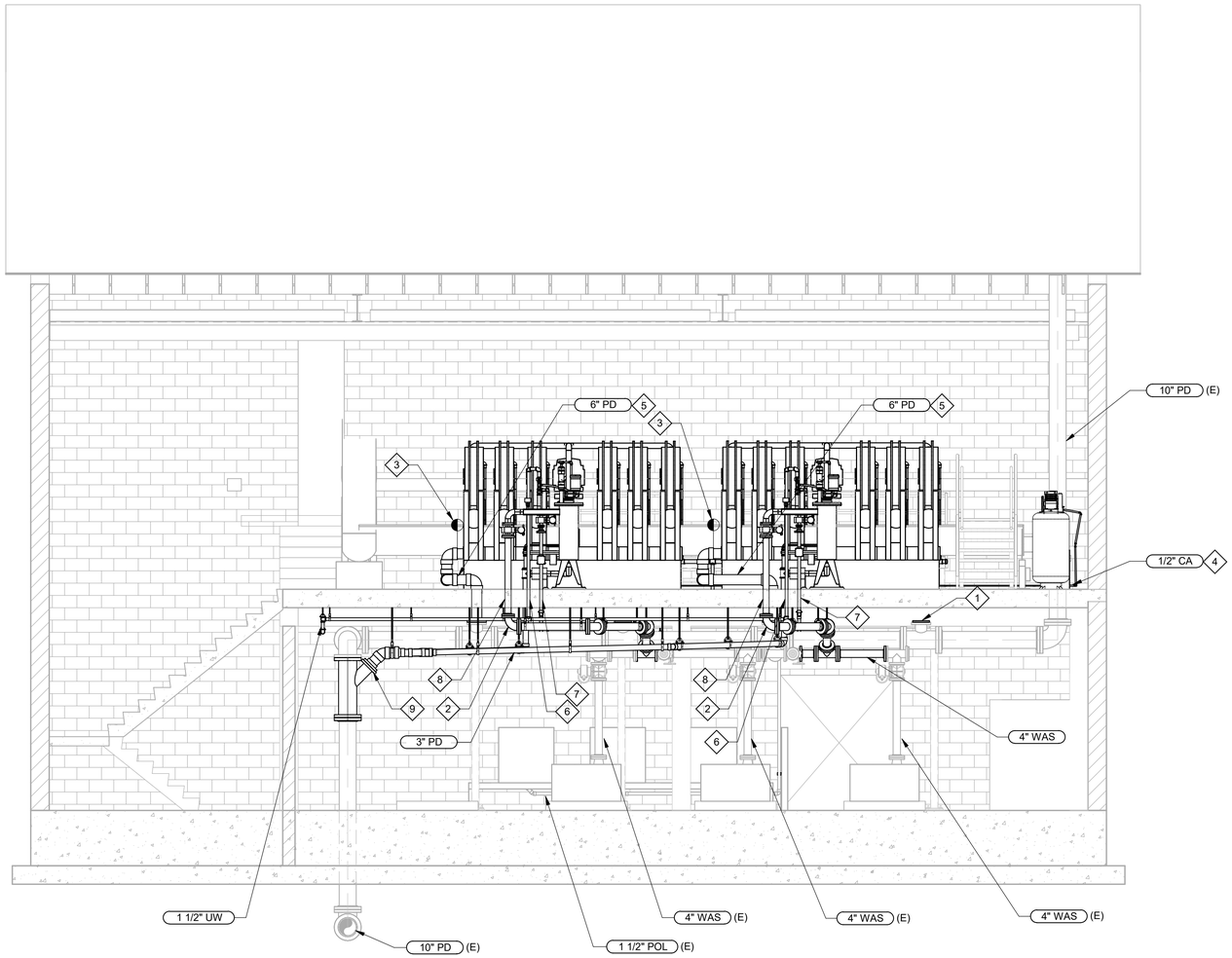
FILE NAME: R:\d0513536\204042_00M0801.rvt

GENERAL NOTES:

1. SUPPORT PIPING SUSPENDED BENEATH THE FLOOR SLAB PER DETAIL MP132/TYP OR MP215/TYP. SUPPORTS TO BE SPACED AT 5'-0" O.C.

KEY NOTES:

1. PROVIDE NEW 6" BLIND FLANGE (TYP OF TWO).
2. 4" WAS PIPING TO NEW FLOCCULATOR. TRANSITION TO 3" WAS JUST BEFORE FLOOR PENETRATION, SEE SECTION F/00M04.
3. POINT OF CONNECTION TO FILTRATE DRAIN.
4. RUN COMPRESSED AIR ALONG THE FLOOR UNDER THE EXISTING SLUDGE CONVEYOR TO EACH CHANNEL OF THE ROTARY PRESS PER MANUFACTURER RECOMMENDATIONS.
5. ROUTE 6" PROCESS DRAIN LINE TO THE EXISTING OPENING IN THE FLOOR SCH 80 PVC AND CONNECT TO 10" DRAIN LINE BELOW. PROVIDE NEW CHECKER PLATE COVER SIZED TO FULLY ENCLOSE THE FLOOR OPENING AROUND THE PIPE.
6. CORE DRILL HOLE FOR NEW 1 1/2" DIA UW LINE.
7. CORE DRILL HOLE FOR NEW 1 1/2" DIA POLYMER LINE. INCREASE POLYMER LINE TO 2" DIA ABOVE THE FLOOR SLAB.
8. CORE DRILL HOLE FOR NEW 3" WAS PIPE.
9. PROVIDE DUCTILE IRON 4"X10" WYE. TRANSITION PROCESS DRAIN PIPING UPSTREAM OF THE 4" BRANCH TO SCH 80 PVC.



G SECTION

00M01

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

REV	DATE	BY	DESCRIPTION

DESIGNED ERA
DRAWN DCS
CHECKED CTA
DATE MAY 2025

Digitally signed by Erin R. Andersen
Date: 2025.05.13 15:14:51 -06'00'
REGISTERED PROFESSIONAL ENGINEER
No. 12399681-2202
ERIN R. ANDERSEN
STATE OF UTAH

carollo

SBWRD

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
MECHANICAL
SOLIDS BUILDING SECTION 2

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

JOB NO. 204042
DRAWING NO. 00M05
SHEET NO. 22 OF 42

PLOT DATE: 5/13/2025 3:14:51 PM

FILE NAME: R:\d0513536\204042_00M0801.rvt

ELECTRICAL PLAN SYMBOLS

IDENTIFICATION SYMBOLS

EQUIP # — EQUIPMENT AND INSTRUMENT IDENTIFICATION

EQUIPMENT/INSTRUMENT LOCATOR

LUMINAIRE IDENTIFICATION
a = CIRCUIT DESIGNATION
b = DEVICE SWITCHED FROM
c = MOUNTING HEIGHT IN FEET TO BOTTOM OF FIXTURE
X = LUMINAIRE TYPE, REFER TO THE LUMINAIRE SCHEDULE

XXXX — CONDUIT IDENTIFICATION
XXXX = CONDUIT NUMBER, REFER TO CONDUIT SCHEDULE
UNLESS OTHERWISE NOTED, GROUPED CONDUITS ARE LABELED LEFT TO RIGHT OR TOP TO BOTTOM.

INDICATES KEYNOTE X
(PERTAINS ONLY TO SHEET WHERE NOTE IS FOUND)

DISCONNECT SWITCH
A = TYPE, REFER TO DISCONNECT SCHEDULE

CAMERA

LUMINAIRES

LINEAR FIXTURE

2' X 2' LAY-IN TROFFER

2' X 4' LAY-IN TROFFER

LUMINAIRE POLE MOUNTED

LUMINAIRE, EMERGENCY BATTERY-POWERED

LUMINAIRE, EMERGENCY/EXIT BATTERY-POWERED

LUMINAIRE, EMERGENCY BATTERY-POWERED REMOTE

LUMINAIRE, SURFACE OR PENDANT MOUNTED

LUMINAIRE, WALL MOUNTED

LUMINAIRE, FLOOD/SPOT

LUMINAIRE, EXIT ONE OR TWO FACES AS INDICATED. ARROW POINTS IN DIRECTION OF EGRESS.

SWITCHES/RECEPTACLES

SINGLE POLE SWITCH
a = CIRCUIT DESIGNATION
b = DEVICE SWITCHED DESIGNATION
c = TYPE
2 = DOUBLE POLE SWITCH
3 = THREE-WAY SWITCH
3P = THREE POSITION SWITCH
4 = FOUR-WAY SWITCH
K = KEY OPERATED SWITCH
F = SWITCH AND FUSESTAT HOLDER
P = SWITCH AND PILOT LIGHT
T = THERMOSTAT
D = DIMMER SWITCH
L = LOW VOLTAGE LIGHT SWITCH
M = MANUAL MOTOR STARTER
N = NETWORKED SINGLE OR MULTIPLE SWITCH LOCATIONS
WP = WEATHER PROOF
REFER TO ABBREVIATIONS LEGEND FOR ALL OTHER DESIGNATIONS.

OCCUPANCY SENSOR
X = REFERENCE LIGHTING CONTROL COMPONENT SCHEDULE
a = CIRCUIT DESIGNATION
b = DEVICE SWITCHED DESIGNATION
c = MOUNTING HEIGHT IN FEET TO BOTTOM OF SENSOR

PE — PHOTOCELL

SWITCH AND SINGLE RECEPTACLE
a = CIRCUIT DESIGNATION
b = DEVICE TYPE DESIGNATION

DUPLEX RECEPTACLE

QUADRUPLEX RECEPTACLE

IN FLOOR DUPLEX RECEPTACLE

IN FLOOR QUADRUPLEX RECEPTACLE

DUPLEX RECEPTACLE w/SPLIT WIRE

DEDICATED RECEPTACLE

SPECIAL PURPOSE RECEPTACLE

WELDING RECEPTACLE
a = CIRCUIT DESIGNATION
b = DISCONNECT TYPE

TWIST LOCK RECEPTACLE
a = AMP RATING

TELEPHONE OUTLET

DATA COMMUNICATIONS OUTLET
a = NETWORK SWITCH

FIRE ALARM

FACP — FIRE ALARM CONTROL PANEL

RACEWAY

EXPOSED CONDUIT

BREAK AND CONTINUATION IN CONDUIT RUN

EXPOSED CONDUIT HIDDEN BEHIND WALLS, FLOORS OR OTHER STRUCTURES

UNDERGROUND CONDUIT, DIRECT BURIED OR IN DUCT BANK

CONDUIT IN SLAB

CONDUIT VERTICAL CHANGE IN DIRECTION

CONDUIT CAP

J — JUNCTION BOX

CONDUIT SEAL

CONDUIT TEE

DUCT BANK
APPROXIMATE DIMENSIONS SHOWN ON DUCT BANK SECTIONS

CONDUIT SIZE AND CONDUCTORS

INDIVIDUAL CONDUCTORS

W"C-(3-X (Ø), 1-Y (N) & 1-Z (G))

W"C (WHERE INDICATED): W = CONDUIT TRADE SIZE

3-X (Ø):
3 = QUANTITY
X = SIZE OF CONDUCTORS
(Ø) = DESIGNATES PHASE CONDUCTORS

1-Y (N) (WHERE INDICATED):
1 = QUANTITY
Y = SIZE OF CONDUCTORS
(N) = DESIGNATES NEUTRAL CONDUCTORS

1-Z (G) (WHERE INDICATED):
1 = QUANTITY
Z = SIZE OF CONDUCTORS
(G) = DESIGNATES GROUND CONDUCTORS

U{3-X (Ø) & 1-X (G)}
U = NUMBER OF PARALLEL RUNS

VFD CONDUCTORS

U{[N/C-X (Ø) & INTEGRAL (G)]:VFD}
U = NUMBER OF PARALLEL RUNS
N/C = NUMBER OF PHASE CONDUCTORS IN CABLE
X = SIZE OF CONDUCTORS
VFD = VFD CABLE

MULTI CONDUCTOR CABLES

K/2/C#16S
K (WHERE INDICATED) = NUMBER OF PAIRS
2/C#16S = TWO CONDUCTOR, 16 GAUGE, TWISTED SHIELDED PAIR

K/3/C#16S
K (WHERE INDICATED) = NUMBER OF TRIPLETS
3/C#16S = THREE CONDUCTOR, 16 GAUGE, TWISTED SHIELDED TRIPLETS

U{[N/C-X (Ø) & INTEGRAL (G)]:MC}
U = NUMBER OF PARALLEL RUNS
MC = MULTICONDUCTOR CABLE
N/C = NUMBER OF PHASE CONDUCTORS IN THE CABLE
X = SIZE OF CONDUCTORS

FIBER OPTIC CABLES

FO/N
N = NUMBER OF INDIVIDUAL FIBERS

GROUNDING

UNDERGROUND GROUND CABLE
#4/0 SDBC UNLESS OTHERWISE NOTED

GROUND ROD

GROUND ROD AND GROUND WELL

ELECTRICAL ONE-LINE SYMBOLS

MEDIUM VOLTAGE

52 — CIRCUIT BREAKER, MEDIUM VOLTAGE
a = CIRCUIT BREAKER NUMBER
b = FRAME SIZE

ANSI RELAY DEVICE
a = ANSI DEVICE FUNCTION
b = QUANTITY

MEDIUM VOLTAGE DISCONNECT SWITCH NON-FUSED CUT OUT

MEDIUM VOLTAGE DISCONNECTING FUSE SINGLE FUSE CUT OUT

MEDIUM VOLTAGE DISCONNECTING FUSE DOUBLE FUSE CUT OUT

MEDIUM VOLTAGE SINGLE FUSE

MEDIUM VOLTAGE DOUBLE FUSE

MEDIUM VOLTAGE LIVE FRONT TERMINATOR

MEDIUM VOLTAGE ELBOW

MEDIUM VOLTAGE TEE

MEDIUM VOLTAGE CONTACTOR

MEDIUM VOLTAGE STARTER

MOV-ELBOW ARRESTER

LOW VOLTAGE

LOW VOLTAGE CIRCUIT BREAKER
a = TYPE
MCP = MOTOR CIRCUIT PROTECTOR
TM = THERMAL MAGNETIC
SS = SOLID STATE
b = FRAME SIZE (MANUFACTURER TO DETERMINE FRAME SIZE UNLESS INDICATED)
c = NUMBER OF POLES
d = TRIP SETTING (AT = AMP TRIP) (AC = MCP CONTINUOUS RATING)
e = DESIGNATION
f = INTERRUPTING RATING

LOW VOLTAGE CIRCUIT BREAKER AUXILIARY OPERATOR
* = S = SHUNT TRIP
= G = GROUND FAULT INTERRUPTER
= V = SOLENOID KEY RELEASE

A — DISCONNECT SWITCH
A = TYPE, REFER TO DISCONNECT SCHEDULE

B — FUSED DISCONNECT SWITCH
B = TYPE, REFER TO DISCONNECT SCHEDULE
b = FUSE RATING

FUSE

COMBINATION STARTER WITH CONTROL POWER TRANSFORMER
a = CIRCUIT BREAKER DISCONNECT, TYPE AS NOTED
b = STARTER TYPE REFER TO THE SPECIFICATIONS FOR STARTER DEFINITIONS.
c = NEMA STARTER SIZE
d = OVERLOAD

MOTOR STARTER/DRIVES:
a = DEVICE TYPE
VFD-6 = 6-PULSE VFD
VFD-18 = 18-PULSE VFD
VFD-RH = REDUCED HARMONIC VFD (18-PULSE OR ACTIVE FRONT END AS DEFINED IN THE SPECIFICATIONS)
RVSS = REDUCED VOLTAGE SOLID STATE STARTER
RVAT = REDUCED VOLTAGE AUTO TRANSFORMER
a/B = DEVICE WITH BYPASS STARTER. REFER TO THE SPECIFICATIONS

b = INPUT OPTIONS
LL = LINE REACTOR
PHF = PASSIVE HARMONIC FILTER

c = OUTPUT OPTIONS
LR = LOAD REACTOR
DV/DT = Dv/dt FILTER
SWF = SINE WAVE FILTER

EQUIPMENT ENCLOSURE

MISCELLANEOUS

HP — MOTOR
HP = HORSEPOWER RATING
FULL LOAD AMPS AS NOTED

PACKAGED EQUIPMENT
LOAD RATING AS INDICATED
a = RATED LOAD
b = UNIT(HP, KW, KVA) AS INDICATED

TRANSFORMER
a = DEVICE I.D.
b = KVA RATING
c = NUMBER OF PHASES
d = PRIMARY VOLTAGE
e = SECONDARY VOLTAGE
f,g = CONNECTION TYPE SYMBOL
h = IMPEDANCE

GROUNDED WYE CONNECTION

DELTA CONNECTION

G — ENGINE-GENERATOR RATINGS AS INDICATED ON THE DRAWINGS
a = KVA/KW
b = VOLTAGE/CONNECTION
c = PHASE
d = WIRE
e = PF

CURRENT TRANSFORMER WITH SHORTING TERMINAL BLOCK
a = QUANTITY
b = RATIO

POTENTIAL TRANSFORMER
a = QUANTITY
b = RATIO
c,d = CONNECTION TYPE SYMBOL

SSM — SOLID STATE MULTIFUNCTION METER

ATP — AMPERE TEST POINT

VTP — VOLTAGE TEST POINT

UTILITY METER

LIGHTNING ARRESTER

SPD — SURGE PROTECTIVE DEVICE

DRAWOUT CONNECTION

GROUND

CAPACITOR

BATTERY

K — KIRK KEY INTERLOCK

LOAD BANK

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED CAC
DATE MAY 2025

REGISTERED PROFESSIONAL ENGINEER — No. 5329023 — GUY C. EHLERS — STATE OF UTAH

carollo

SBWRD

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
ELECTRICAL
LEGEND

VERIFY SCALES
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0 1"
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JOB NO. 204042
DRAWING NO. 00GE01
SHEET NO. 23 OF 42

LAST SAVED BY: tdietz

PROJECT NO.

FILE NAME: 204042_00GE01.dwg

ABBREVIATIONS

A	AMP
ABS	ABSOLUTE
AC	ALTERNATING CURRENT
ACK	ACKNOWLEDGE
ACTR	ACTUATOR
AF	AMP FRAME
AFC	AUTOMATIC FREQUENCY CONTROL
AIC	AMP INTERRUPTING CAPACITY
AM	AMMETER
ANN	ANNUNCIATOR
ANT	ANTENNA
APU	AUXILIARY POWER UNIT
ARM	ARMORED CABLE
AS	AMMETER SWITCH
ASYM	ASYMMETRICAL
AT	AMP TRIP
ATO	AUTOMATIC THROW OVER
ATP	AMMETER TEST POINT
ATS	AUTOMATIC TRANSFER SWITCH
AUTO XFMR	AUTOMATIC TRANSFORMER
AUX	AUXILIARY
AWG	AMERICAN WIRE GAGE
B	BELL
BAT	BATTERY
BFG	BELOW FINISHED GRADE
BHP	BRAKE HORSEPOWER
BKR	BREAKER
BRF	BELOW RAISED FLOOR
C	CONDUIT / CONTINUOUS LOAD
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CCW	COUNTER CLOCKWISE
CKT	CIRCUIT
COAX	COAXIAL CABLE
COM	COMMON
COMM	COMMUNICATION
CPT	CONTROL POWER TRANSFORMER
CR	CONTROLLED RECEPTACLE
CS	CONTROL SWITCH
CT	CURRENT TRANSFORMER
CV	CONTROL VALVE
CW	CLOCKWISE / COOL WHITE
DC	DIRECT CURRENT
DCS	DISTRIBUTED CONTROL SYSTEM
DCU - X	DISTRIBUTED CONTROL UNIT NO. X
DEMO	DEMOLITION
DISC	DISCONNECT SWITCH
DM	DEMAND METER
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
DS	DOOR SWITCH
E/G	EMERGENCY GENERATOR
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
ENG	ENGINE
ENT	ELECTRICAL NON-METALLIC TUBING
EP	EXPLOSION PROOF
ETM	ELAPSED TIME METER
F	SUB-FED
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FDR	FEEDER
FLA	FULL LOAD AMPS
FLX	FLEXIBLE CONDUIT
FO	FIBER OPTIC
FRC	FIBERGLASS RIGID CONDUIT
FREQ	FREQUENCY
FU	FUSE
FU SW	FUSED SWITCH
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
FWD	FORWARD

G	GROUND / EQUIPMENT GROUND / GROUND FAULT
GEN	GENERATOR
GRC	GALVANIZED STEEL RIGID CONDUIT
GFCI	GROUND FAULT CIRCUIT INTERRUPTER (RECEPTACLE)
GFI	GROUND FAULT INTERRUPTER (BREAKER)
GFR	GROUND FAULT RELAY
H	HOT-LEG
HF	HIGH FREQUENCY
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HR	HOUR
HSTAT	HUMIDISTAT
HV	HIGH VOLTAGE
HVAC	HEATING/VENTILATION/AIR CONDITIONING
HZ	HERTZ
I	INSTANTANEOUS / INTERMITTENT LOAD
IC	INTERRUPTING CAPACITY
IJB	INSTRUMENT JUNCTION BOX
IMC	INTERMEDIATE METAL CONDUIT
INST	INSTANTANEOUS
INT	INTERLOCK
INTERCOM	INTERCOMMUNICATION
J	JUNCTION BOX
K	KEY INTERLOCK
KA	KILOAMP
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KVAR	KILOVAR (REACTANCE)
KW	KILOWATT
KWD	KILOWATT DEMAND
KWH	KILOWATT HOUR
L	LONG-TIME
L-B	LINE-BUS
L-G	LINE-GROUND
LA	LIGHTNING ARRESTOR
LBL	LABEL
LC	LIGHTING CONTACTOR
LCP- X	LOCAL CONTROL PANEL NO. X
LL	LEAD-LAG LOAD REACTOR
LP	LIGHT POLE
LP - X	LIGHTING PANEL NO. X
LTG	LIGHTING
LV	LOW VOLTAGE
LVL	LEVEL
M-X	MOTOR CONTROLLER NO. X
MA	MILLIAMPERE
MCA	MOTOR CIRCUIT AMPS
MCC - X	MOTOR CONTROL CENTER NO. X
MCP	MOTOR CIRCUIT PROTECTOR
MH	MANHOLE / MOUNTING HEIGHT
MLO	MAIN LUGS ONLY
MOD	MOTOR OPERATED DAMPER
MOV	METAL OXIDE VARISTOR
MPR	MOTOR PROTECTION RELAY
MS-X	MOTOR STARTER NO. X
MSP	MOTOR STARTING PANEL
MTO	MANUAL THROW OVER
MTR-X	MOTOR NO. X
MTS	MANUAL TRANSFER SWITCH
MV	MEGAVOLT
MVA	MEGAVOLT-AMPERES
MVS	MEDIUM VOLTAGE SWITCH
MW	MEGAWATT
N	NEUTRAL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NFC	NONMETALLIC FLEXIBLE CONDUIT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NP	NAMEPLATE

O	OPEN OR OPENED
OH	OVERHEAD
OL	OVERLOAD RELAY
P	POLE
PA	PUBLIC ADDRESS
PB	PUSHBUTTON / PULL BOX
PCS	PVC COATED GALVANIZED STEEL CONDUIT
PCM	PROCESS CONTROL MODULE
PE	PHOTOCELL
PF	POWER FACTOR
PFCC	POWER FACTOR CORRECTION CAPACITOR
PFR	PHASE FAILURE RELAY
PH	PHASE
PNL	PANEL
PPX	POWER PANEL NO. X
PRI	PRIMARY
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE RIGID PLASTIC CONDUIT
PWR	POWER
RAC	RIGID ALUMINUM CONDUIT
RECPT	RECEPTACLE
REV	REVERSE
RF	RADIO FREQUENCY
RMS	ROOT MEAN SQUARED
RVAT	REDUCED VOLTAGE AUTO TRANSFORMER
RVNR	REDUCED VOLTAGE NON-REVERSING
RVSS	REDUCED VOLTAGE SOLID STATE
S	SHIELD / SHORT-TIME
SA	SURGE ARRESTER
SC	SHORT CIRCUIT
SDBC	SOFT DRAWN BARE COPPER
SFL	SUB FEED LUGS
SLT	SEALTIGHT LIQUIDTIGHT FLEXIBLE CONDUIT
SM	SURFACE MOUNTED
SP	SINGLE POLE
SPD	SURGE PROTECTIVE DEVICE
SPDT	SINGLE POLE DOUBLE THROW
SPST	SINGLE POLE SINGLE THROW
SPKR	SPEAKER
SS	SOLID STATE
STB	SHORTING TERMINAL BLOCK
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
TACH	TACHOMETER
TB - X	TERMINAL BLOCK - UNIT X
TC	THERMOCOUPLE / TIME CLOCK / TRAY CABLE
TD	TEMPERATURE DETECTOR RELAY
TE	TOTALLY ENCLOSED
TEFC	TOTALLY ENCLOSED FAN COOLED
TENV	TOTALLY ENCLOSED NON-VENTILATILATED
TERM	TERMINAL
TJB	TERMINAL JUNCTION BOX
TM	THERMAL MAGNETIC
TP	TWISTED PAIR
TS	TEMPERATURE SWITCH
TS1W	TWO SPEED CONSEQUENT POLE, ONE WINDING
TS2W	TWO SPEED SEPARATE WINDING
TSTAT	THERMOSTAT
UHF	ULTRA HIGH FREQUENCY
UNG	UNGROUNDED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UVR	UNDER VOLTAGE RELAY

V	VOLT
VA	VOLT AMPERE
VAR	VARMETER
VCP	VENDOR CONTROL PANEL
VFD	VARIABLE FREQUENCY DRIVE
VHF	VERY HIGH FREQUENCY
VM	VOLTMETER
VP	VAPORPROOF
VR	VOLTAGE REGULATOR
VS	VOLTAGE SWITCH
VT	VOLTAGE TRANSFORMER
VTP	VOLTAGE TEST POINT
W	WATT / WEST
WT	WATER TIGHT
WP	WEATHER PROOF
XFMR	TRANSFORMER

NOTES:

1. REFER TO SPECIFICATIONS AND OTHER DRAWINGS FOR ADDITIONAL ABBREVIATIONS.

POWER DEVICE FUNCTION NUMBERS

1	MASTER ELEMENT
2	TIME-DELAY STARTING OR CLOSING RELAY
3	CHECKING OR INTERLOCKING RELAY
4	MASTER CONTACTOR
5	STOPPING DEVICE
6	STARTING CIRCUIT BREAKER
7	ANODE CIRCUIT BREAKER
8	CONTROL POWER DISCONNECTING DEVICE
9	REVERSING DEVICE
10	UNIT SEQUENCE SWITCH
11	MULTIFUNCTION DEVICE
12	OVER-SPEED DEVICE
13	SYNCHRONOUS-SPEED DEVICE
14	UNDER-SPEED DEVICE
15	SPEED OR FREQUENCY MATCHING DEVICE
16	DATA COMMUNICATIONS DEVICE
17	SHUNTING OR DISCHARGE SWITCH
18	ACCELERATING OR DECELERATING DEVICE
19	STARTING-TO-RUNNING TRANSITION CONTACTOR
20	ELECTRICALLY OPERATED VALVE
21	DISTANCE RELAY
22	EQUALIZER CIRCUIT BREAKER
23	TEMPERATURE CONTROL DEVICE
24	VOLTS PER HERTZ RELAY
25	SYNCHRONIZING OR SYNCHRONISM-CHECK DEVICE
26	APPARATUS THERMAL DEVICE
27	UNDERVOLTAGE RELAY
27N	GROUND FAULT UNDERVOLTAGE RELAY
28	FLAME DETECTOR
29	ISOLATING CONTACTOR
30	ANNUNCIATOR RELAY
31	SEPARATE EXCITATION DEVICE
32	DIRECTIONAL POWER RELAY
33	POSITION SWITCH
34	MASTER SEQUENCE DEVICE
35	BRUSH-OPERATING OR SLIP-RING SHORT-CIRCUITING DEVICE
36	POLARITY DEVICE
37	UNDERCURRENT OR UNDERPOWER RELAY
38	BEARING PROTECTIVE DEVICE
39	MECHANICAL CONDITION MONITOR
40	FIELD RELAY
41	FIELD CIRCUIT BREAKER
42	RUNNING CIRCUIT BREAKER
43	MANUAL TRANSFER OR SELECTOR DEVICE
44	UNIT SEQUENCE STARTING RELAY
45	ABNORMAL ATMOSPHERIC CONDITION MONITOR
46	REVERSE-PHASE OR BALANCE CURRENT RELAY
47	PHASE-BALANCE OR PHASE-SEQUENCE VOLTAGE RELAY
48	INCOMPLETE SEQUENCE RELAY
49	MACHINE OR TRANSFORMER THERMAL RELAY
50	INSTANTANEOUS OVERCURRENT RELAY
51	AC TIME OVERCURRENT RELAY
52	AC CIRCUIT BREAKER
53	FIELD EXCITATION RELAY
54	TURNING GEAR ENGAGING DEVICE
55	POWER FACTOR RELAY
56	FIELD APPLICATION RELAY
57	SHORT-CIRCUITING OR GROUNDING DEVICE
58	RECTIFICATION FAILURE RELAY
59	OVERVOLTAGE RELAY
60	VOLTAGE OR CURRENT BALANCE RELAY
61	DENSITY SWITCH OR SENSOR
62	TIME-DELAY STOPPING OR OPENING RELAY
63	PRESSURE SWITCH
64	GROUND DETECTOR RELAY
65	GOVERNOR
66	NOTCHING OR JOGGING DEVICE
67	AC DIRECTIONAL OVERCURRENT RELAY
68	BLOCKING OR OUT OF STEP RELAY
69	PERMISSIVE CONTROL DEVICE
70	RHEOSTAT
71	LIQUID LEVEL SWITCH
72	DC CIRCUIT BREAKER
73	LOAD-RESISTOR CONTACTOR
74	ALARM RELAY
75	POSITION CHANGING MECHANISM
76	DC OVERCURRENT RELAY
77	TELEMETERING DEVICE
78	PHASE-ANGLE MEASURING RELAY
79	AC RECLOSING RELAY
80	FLOW SWITCH
81	FREQUENCY RELAY
82	DC LOAD MEASURING RECLOSING RELAY
83	AUTOMATIC SELECTIVE CONTROL OR TRANSFER RELAY
84	OPERATING MECHANISM
85	PILOT COMMUNICATIONS, CARRIER OR PILOT-WIRE RELAY
86	LOCKOUT RELAY
87	DIFFERENTIAL PROTECTIVE RELAY
88	AUXILIARY MOTOR OR MOTOR GENERATOR
89	LINE SWITCH
90	REGULATING DEVICE
91	VOLTAGE DIRECTIONAL RELAY
92	VOLTAGE AND POWER DIRECTIONAL RELAY
93	FIELD-CHANGING CONTACTOR
94	TRIPPING OR TRIP-FREE RELAY

COMMONLY USED SUFFIX LETTER APPLIED TO POWER DEVICE FUNCTION NUMBERS

A	ALARM ONLY
B	BUS PROTECTION
G	GROUND FAULT PROTECTION (RELAY CT IN A SYSTEM NEUTRAL CIRCUIT OR GENERATOR PROTECTION)
GS	GROUND FAULT PROTECTION (RELAY CT IN TOROIDAL OR GROUND SENSOR TYPE)
L	LINE PROTECTION
M	MOTOR PROTECTION
N	GROUND FAULT PROTECTION (RELAY COIL CONNECTED IN RESIDUAL CT CIRCUIT)
T	TRANSFORMER PROTECTION
V	VOLTAGE
P	PHASE PROTECTION

ABBREVIATIONS

AFD	ARC FLASH DETECTOR
CLK	CLOCK OR RIMING SOURCE
DDR	DYNAMIC DISTURBANCE RECORDER
DFR	DIGITAL FAULT RECORDER
ENV	ENVIRONMENTAL DATA
HIZ	HIGH IMPEDANCE FAULT DETECTOR
HMI	HUMAN MACHINE INTERFACE
HST	HISTORIAN
LGC	SCHEME LOGIC
MET	SUBSTATION METERING
PDC	PHASOR DATA CONCENTRATOR
PMU	PHASOR MEASUREMENT UNIT
PQM	POWER QUALITY MONITOR
RIO	REMOTE I/O DEVICE
RTU	REMOTE TELEMETRY UNIT/REMOTE TERMINAL UNIT
SER	SEQUENCE OF EVENTS RECORDER
TCM	TRIP CIRCUIT MONITOR

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED CAC
DATE MAY 2025

Digitally signed by Guy C. Ehlers
Contact Info: Carollo Engineers, Inc.
Date: 2025.05.30 08:58:39 -06'00'
REGISTERED PROFESSIONAL ENGINEER
No. 5329023
GUY C. EHLERS
STATE OF UTAH

carollo®

SBWRD

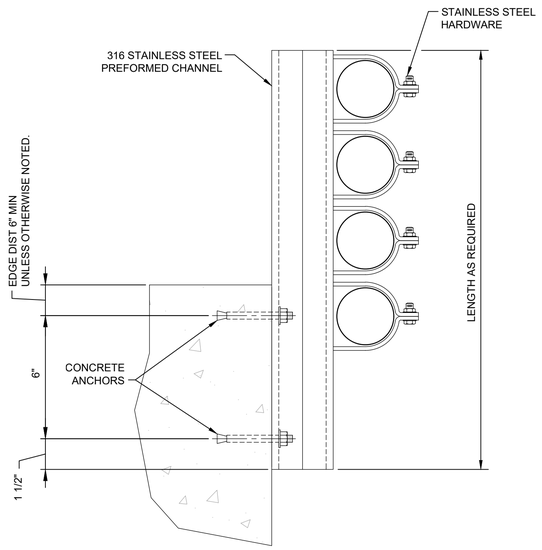
SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
ELECTRICAL
ABBREVIATIONS

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

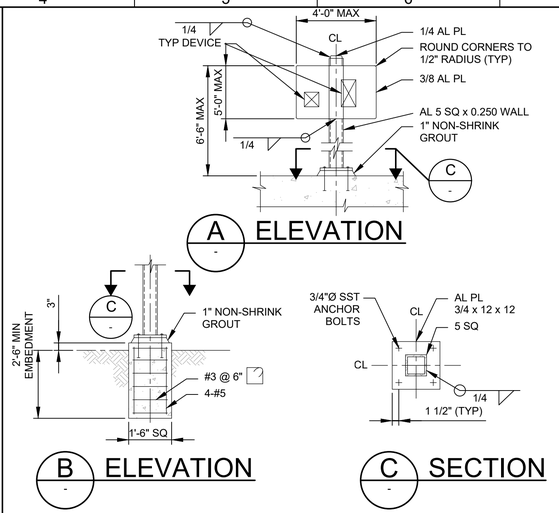
JOB NO. 204042
DRAWING NO. 00GE02
SHEET NO. 24 OF 42

LAST SAVED BY: tdietz

PROJECT NO.
FILE NAME: 204042_00GE02.dwg



EM103 CONDUIT SUPPORT
TYP



GENERAL NOTES:

1. USE ELEVATION B WHERE A SEPARATE FOUNDATION IS REQUIRED.
2. COAT ALUMINUM SURFACES IN CONTACT W/ CONCRETE PER SPECIFICATIONS.
3. USE STAINLESS STEEL FASTENERS FOR MOUNTING DEVICES.
4. WEIGHT OF DEVICE(S) SHALL NOT EXCEED 300 POUNDS.

EM202 DEVICE SUPPORT AND MOUNTING
TYP

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED CAC
DATE MAY 2025

REGISTERED PROFESSIONAL ENGINEER
No. 5329023
GUY C. EHLERS
STATE OF UTAH

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
TYPICAL DETAILS
ELECTRICAL 1

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

JOB NO. 204042
DRAWING NO. 00TE01
SHEET NO. 25 OF 42

LAST SAVED BY: tdietz

PROJECT NO. 204042-100000 FILE NAME: 204042_00TE01.dwg

GENERAL ELECTRIC 8000–LINE

SPACE	SPACE	SPACE	S409	S417	SPACE	SPACE
S400	SPACE	SPACE	S410	S418	S422	SPACE
					SPACE	
SPACE	S406	SPACE	SPACE	S419	SPACE	SPACE
S401	S407	S408	S411	S420	SPACE	S423
S402			S412			
S403			S413	SPACE	SPACE	
S404			S414	S421		
S405			S415		SPACE	
SPACE			S416			

① (S401, S402, S403)

A ELEVATION – MCC "S"
ESP01 NTS

KEY NOTES

1. LABEL CIRCUIT BREAKERS ONCE FEEDING DEWATERING CENTRIFUGES AS "SPARE".

REV	DATE	BY	DESCRIPTION

DESIGNED GE
DRAWN GE
CHECKED CAC
DATE MAY 2025

REGISTERED PROFESSIONAL ENGINEER
No. 5329023
GUY C. EHLERS
STATE OF UTAH

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
ELECTRICAL
MCC-S DEMO ELEVATION

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

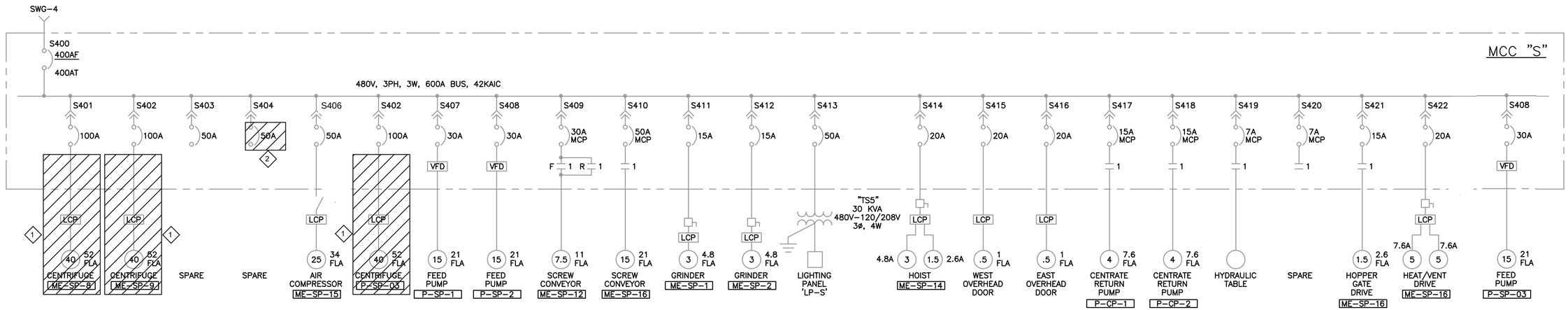
JOB NO. 204042
DRAWING NO. 00DE01
SHEET NO. 26 OF 42

LAST SAVED BY: tdietz

PROJECT NO. 204042-100000 FILE NAME: 204042_00DE01.dwg

KEY NOTES

1. DEMOLISH EXISTING CENTRIFUGES, ASSOCIATED EXPOSED CONDUIT, WIRE, AND CONTROLS. SURRENDER EQUIPMENT TO OWNER.
2. REPLACE BREAKER ONLY IF POSSIBLE. IF NOT POSSIBLE (DUE TO BREAKER OBSOLESCENCE), REPLACE ENTIRE BUCKET.



REV	DATE	BY	DESCRIPTION

DESIGNED GE
DRAWN GE
CHECKED CAC
DATE MAY 2025

REGISTERED PROFESSIONAL ENGINEER
No. 5329023
GUY C. EHLERS
STATE OF UTAH

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
ELECTRICAL
MCC-S DEMO
ONE-LINE DIAGRAM

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

JOB NO. 204042
DRAWING NO. 00DE02
SHEET NO. 27 OF 42

LAST SAVED BY: tdietz

PROJECT NO. 204042-100000 FILE NAME: 204042_00DE02.dwg

GENERAL ELECTRIC 8000–LINE

SPACE						
S400	SPACE	SPACE	S409	S417	SPACE	SPACE
	SPACE	SPACE		S418	S422	SPACE
	S406	SPACE	S410		SPACE	
SPACE			SPACE	S419	SPACE	SPACE
S401	S407	S408	S411	S420	SPACE	S423
S402			S412			
S403			S413	SPACE	SPACE	
S404			S414	S421		
S405			S415		SPACE	
SPACE			S416			

A ELEVATION – MCC "S"
ESP01 NTS

S403 VCP2-26120
FOURNIER
POWER PANEL

S404 ARC-26100
AIR
COMPRESSOR

REV	DATE	BY	DESCRIPTION

DESIGNED GE
DRAWN GE
CHECKED CAC
DATE MAY 2025

REGISTERED PROFESSIONAL ENGINEER
No. 5329023
GUY C. EHLERS
STATE OF UTAH

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
ELECTRICAL
MCC-S
ELEVATION

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

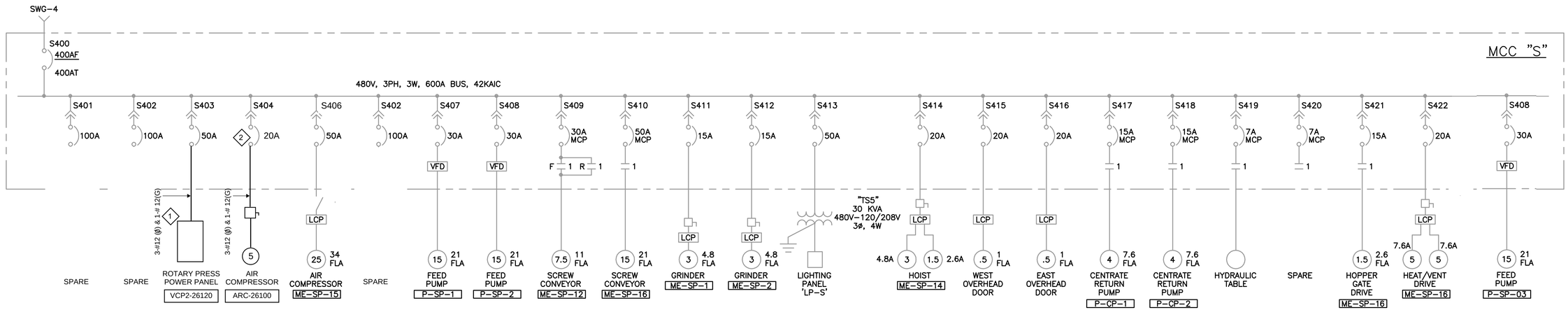
JOB NO. 204042
DRAWING NO. 00E01
SHEET NO. 28 OF 42

LAST SAVED BY: tdietz

PROJECT NO. 204042-100000 FILE NAME: 204042_00E01.dwg

KEY NOTES

1. FURNISH AND INSTALL ROTARY PRESS POWER PANEL.
2. REPLACE EXISTING BREAKER WITH TRIP UNIT SHOWN. REFER TO KEYNOTE 2 ON 00DE02.



REV	DATE	BY	DESCRIPTION

DESIGNED GE
DRAWN GE
CHECKED CAC
DATE MAY 2025

Digitally signed by Guy C. Ehlers
Date: 2025.05.21 13:09:54 -06'00'
REGISTERED PROFESSIONAL ENGINEER
No. 5329023
GUY C. EHLERS
STATE OF UTAH

carollo®

SBWRD

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT

DEWATERING EQUIPMENT PREPURCHASE

ELECTRICAL

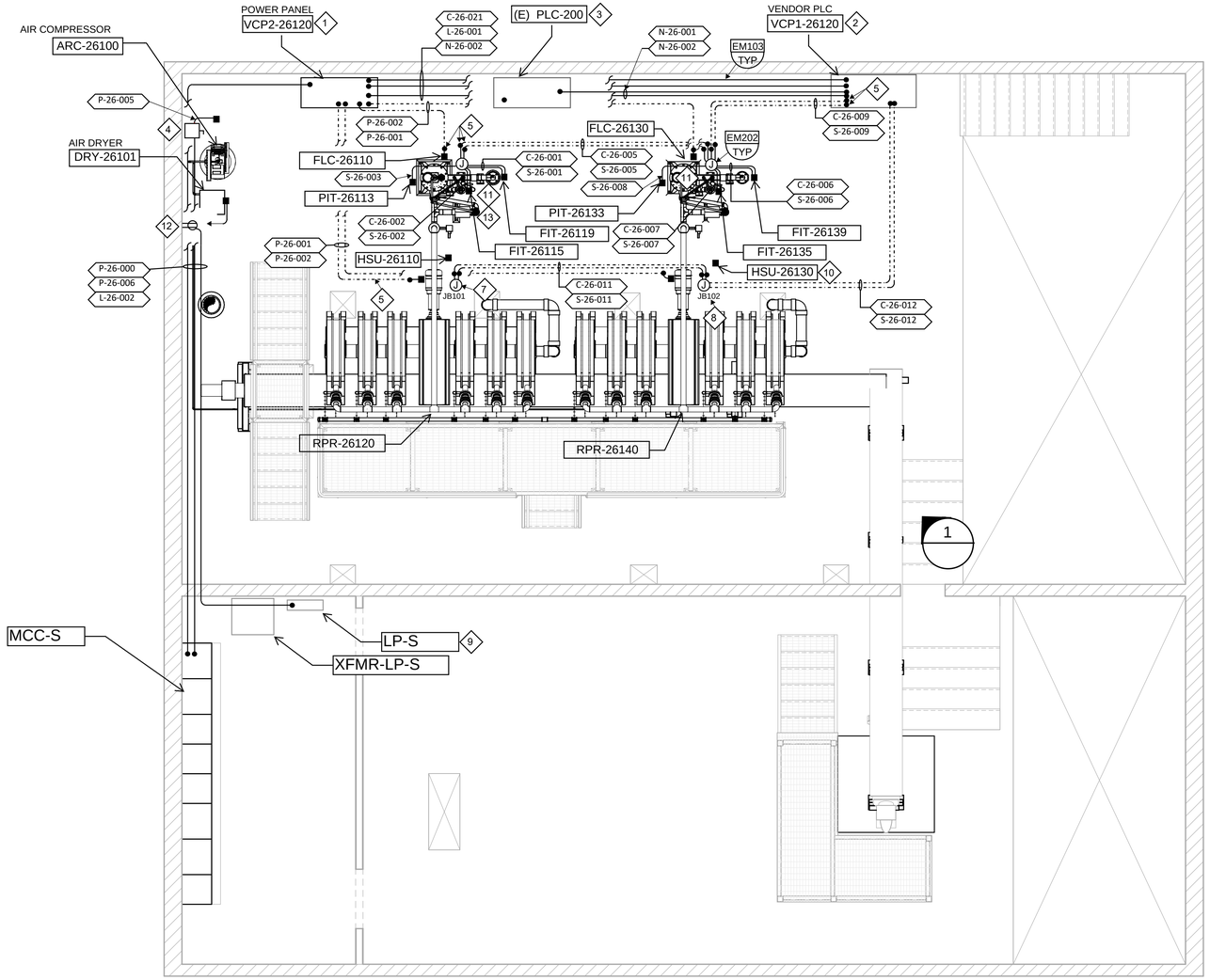
MCC-S
ONE-LINE DIAGRAM

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

JOB NO. 204042
DRAWING NO. 00E02
SHEET NO. 29 OF 42

LAST SAVED BY: tdietz

PROJECT NO. 204042-100000 FILE NAME: 204042_00E02.dwg

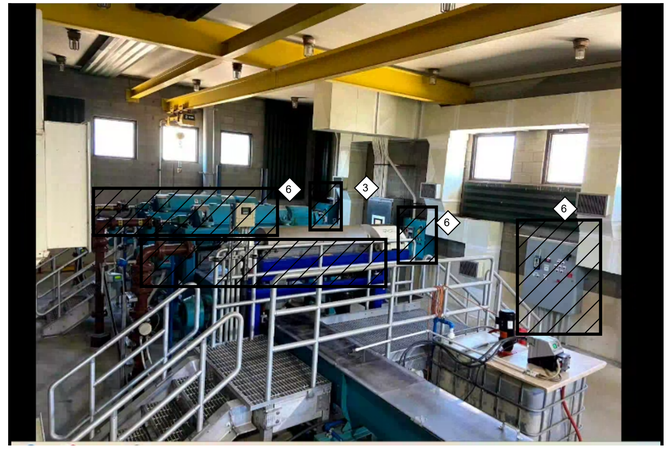


GENERAL NOTES

1. DEPICTIONS OF EXISTING EQUIPMENT IS PROVIDED BY OTHERS. AS SUCH, NO GUARANTEES OF ACCURACY ARE IMPLIED. FIELD VERIFY EXISTING SITE CONDITIONS PRIOR TO PERFORMING THE WORK.
2. EXISTING LIGHTING MAY INTERFERE WITH NEW PROCESS PIPING AND STRUCTURAL MODIFICATIONS. IF SO, PROVIDE J-BOX AT THE LOCATION(S) OF EXISTING LIGHTS. MOVE LIGHT(S) TO AVOID OBSTRUCTION(S) AND PROVIDE CONDUIT AND WIRE FROM LIGHT(S) TO J-BOX, AND RE-CONNECT. FIELD INVESTIGATE PRIOR TO PERFORMING WORK.

(#) KEY NOTES:

1. FOURNIER POWER PANEL CONTAINING ROTARY PRESS VFDs. DESIGNATED AS LPP101 BY FOURNIER.
2. FOURNIER PLC PANEL. DESIGNATED AS LCP101 BY FOURNIER.
3. EXISTING PLANT PLC PANEL
4. DISCONNECT: 600 VAC, 3P, 30A, NEMA 4X.
5. TO PREVENT TRIP HAZARDS: CORE DRILL THE EXISTING FLOOR SLAB. RUN CONDUIT EXPOSED, WITH CONDUIT ATTACHED TO CEILING OF BASEMENT BELOW. CORE DRILL PENETRATIONS UNDER OR NEAR EQUIPMENT WHERE CONDUIT IS TO TERMINATE. TYP.
6. DEMOLISH EXISTING CONTROL PANELS.
7. JB101. PROVIDED BY VENDOR
8. JB102. PROVIDED BY VENDOR
9. PROVIDE 20 AMP, 1- POLE CIRCUIT BREAKER(S) FOR LP-S. PROVIDE NEW LIGHTING PANEL SCHEDULE. COORDINATE CIRCUIT(S) TO BE USED WITH THE OWNER
10. E-STOP IS PRE-WIRED TO J-BOX BY VENDOR. TYP.
11. PROVIDE CONDUIT AND WIRE (NOT SHOWN) FOR FLOCCULATOR DEWATERING AND RECIRCULATION VALVES ROUTED TO NEARBY J-BOXES. TYP-2 FLOCCULATORS.
12. PROVIDE RECEPTACLE FOR AIR DRYER
13. PROVIDE CONDUIT AND WIRE (NOT SHOWN) FOR POLYMER PROPORTIONING VALVES FCV-26115 AND FCV-26135. SEE DRAWING 00M03. TYP-2 UNITS



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

1 PHOTO

REV	DATE	BY	DESCRIPTION

DESIGNED GE
DRAWN GE
CHECKED CAC
DATE MAY 2025

Digitally signed by Guy C. Ehlers
Date: 2025.05.12 08:57:46 -06'00'
REGISTERED PROFESSIONAL ENGINEER
No. 5329023
GUY C. EHLERS
STATE OF UTAH

carollo

SBWRD

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
ELECTRICAL
SOLIDS BUILDING
POWER AND CONTROL PLAN

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

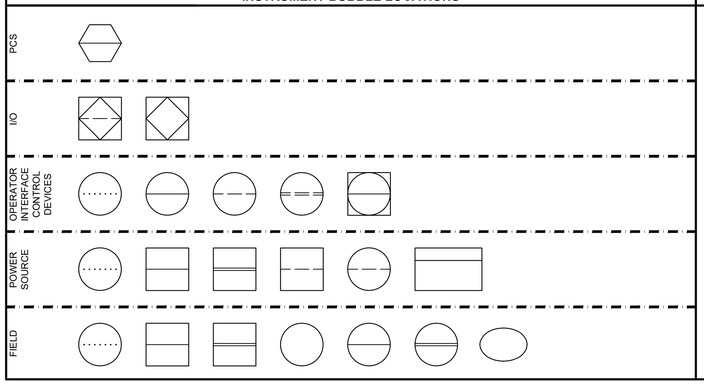
JOB NO. 204042
DRAWING NO. 00E03
SHEET NO. 30 OF 42

PLOT DATE: 5/12/2025 8:57:46 AM
FILE NAME: R:\id0513536\204042_00M0801.rvt

SYMBOL	DRAWING VISIBLE FIELDS	FIELD - 1	FIELD - 2	FIELD - 3	FIELD - 4	FIELD - 5	FIELD - 6	FIELD - 7	FIELD - 8
HMI/SCADA SYSTEM OPERATOR INTERFACE TERMINAL	1 - TAG111 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - DESCRIPTION 6 - EXISTING/FUTURE	REFER 1 2	REFER 3	ACTION ALARM SP - NUMERIC STATUS - SET POINT TREND	DESCRIPTION 2 5	DESCRIPTION	E - EXISTING F - FUTURE		
HARDWIRED I/O POINT	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE 7 - IO TABLE	REFER 1 2 4	REFER 3	AI - ANALOG INPUT AO - ANALOG OUTPUT DI - DISCRETE INPUT DO - DISCRETE OUTPUT RTD - RTD INPUT	DESCRIPTION	PAC - PROGRAMMABLE AUTOMATION CONTROLLER NO. PLC - PROGRAMMABLE LOGIC CONTROLLER NO. RIO - REMOTE I/O VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE		
NETWORK / SOFT I/O	1 - TAG 2 - LOOP NUMBER 3 - PROTOCOL 4 - PANEL 5 - PLC 6 - EXISTING/FUTURE 7 - IO TABLE 8 - SWITCH/SEGMENT	REFER 1 2	REFER 3	COMMUNICATION PROTOCOL CNET - CONTROLNET DNET - DEVICENET EIP - ETHERNET/IP FF - FOUNDATION FIELDBUS HART-IP - HART OVER ETHERNET MANF - MFR. PROPRIETARY MBRTU - MODBUS RTU MB+ - MODBUS PLUS MBTCP - MODBUS TCP DP - PROFIBUS DP PA - PROFIBUS PA PNET - PROFINET SNMP - SNMPv3 HTTP - WEB SERVER (TCP/IP)	DESCRIPTION	PAC - PROGRAMMABLE AUTOMATION CONTROLLER NO. PLC - PROGRAMMABLE LOGIC CONTROLLER NO. RIO - REMOTE I/O VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE		
LOCAL OPERATOR INTERFACE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1 2	REFER 3	ACTION ALARM SP - NUMERIC STATUS - SET POINT TREND	DESCRIPTION	LOI - LOCAL OPERATOR INTERFACE NO. LCP - LOCAL CONTROL PANEL NO. PCM - PROCESS CONTROL MODULE NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE		
PILOT DEVICE OPERATOR INTERFACE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1 2	REFER 3	AM - AUTO/MANUAL BYPASS - BY PASS ESD - EQUIPMENT SHUTDOWN HOA - HAND/OFF/AUTO LOR - LOCAL/OFF/REMOTE LOS - LOCK OUT STOP LS - LEAD/STANDBY LSR - LOCAL/STOP/REMOTE OC - OPEN/CLOSE OO - OFF/ON OSC - OPEN/STOP/CLOSE RST - RESET SEL - SELECT SPD - SPEED SS - START/STOP ST - STOP	DESCRIPTION 2 5	LCP - LOCAL CONTROL PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. RVSS - REDUCED VOLTAGE SOLID STARTER NO. VCP - VENDOR CONTROL PANEL NO. VFD - VARIABLE FREQUENCY DRIVE NO.	E - EXISTING F - FUTURE		
POWER DEVICE PRIMARY FUNCTION OPERATOR ACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - VOLTAGE-POLE 5 - LOCATION 6 - EXISTING/FUTURE	CB - CIRCUIT BREAKER DISC - DISCONNECT FU - FUSE	REFER 3	TM - THERMAL MAGNETIC CIRCUIT BREAKER	24VDC - 1P 24VDC - 2P 24VAC - 1P 48VDC - 2P 120VAC - 1P 208VAC - 2P 208VAC - 3P 240VAC - 2P 240VAC - 3P 480VAC - 3P 2400VAC - 3P 4160VAC - 3P	DP - DISTRIBUTION PANEL NO. LCP - LOCAL CONTROL PANEL NO. LP - LIGHTING PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. PP - POWER PANEL NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE		
POWER DEVICE AUXILIARY FUNCTION OPERATOR ACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - DESCRIPTION 4 - DESCRIPTION 5 - DESCRIPTION 6 - EXISTING/FUTURE	DISC - DISCONNECT	REFER 3	DESCRIPTION	DESCRIPTION	DESCRIPTION	E - EXISTING F - FUTURE		
POWER DEVICE PRIMARY FUNCTION OPERATOR INACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - VOLTAGE-POLE 5 - LOCATION 6 - EXISTING/FUTURE	CB - CIRCUIT BREAKER FU - FUSE	REFER 3	MCP - MOTOR CIRCUIT PROTECTOR SS - SOLID STATE CIRCUIT BREAKER TM - THERMAL MAGNETIC CIRCUIT BREAKER	24VDC - 1P 24VDC - 2P 24VAC - 1P 48VDC - 2P 120VAC - 1P 208VAC - 2P 208VAC - 3P 240VAC - 2P 240VAC - 3P 480VAC - 3P 2400VAC - 3P 4160VAC - 3P	DP - DISTRIBUTION PANEL NO. LCP - LOCAL CONTROL PANEL NO. LP - LIGHTING PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. PP - POWER PANEL NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE		
FIELD EQUIPMENT STARTER / DRIVE CUBICLE / CABINET	1 - TAG 2 - LOOP NUMBER 3 - TYPE 4 - VOLTAGE-POLE 5 - POWER SOURCE 6 - EXISTING/FUTURE	MS - MOTOR STARTER RVAT - REDUCED VOLTAGE AUTO TRANSFORMER STARTER RVSS - REDUCED VOLTAGE SOLID STATE STARTER VFD - VARIABLE FREQUENCY DRIVE	REFER 3	FVNR - FULL VOLTAGE NON-REVERSING STARTER FVR - FULL VOLTAGE REVERSING STARTER PWS - PART-WINDING STARTER RVAT - REDUCED VOLTAGE AUTO RVSS - REDUCED VOLTAGE SOLID STATE STARTER TS1W - TWO SPEED SINGLE WINDING TS2W - TWO SPEED TWO WINDINGS VFD - VARIABLE FREQUENCY DRIVE	120VAC - 1P 208VAC - 2P 208VAC - 3P 240VAC - 2P 240VAC - 3P 480VAC - 3P 2400VAC - 3P 4160VAC - 3P	LCP - LOCAL CONTROL PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE		

SYMBOL	DRAWING VISIBLE FIELDS	FIELD - 1	FIELD - 2	FIELD - 3	FIELD - 4	FIELD - 5	FIELD - 6	FIELD - 7	FIELD - 8
INSTRUMENT PRIMARY ELEMENT	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1	REFER 3	DESCRIPTION 5	DESCRIPTION 6 7	AREA NO. BUILDING NO. ROOM NO.	E - EXISTING F - FUTURE		
INSTRUMENT/ CONTROL ELEMENT PRIMARY FUNCTION OPERATOR ACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - DESCRIPTION 6 - EXISTING/FUTURE	REFER 1	REFER 3	DESCRIPTION 5	DESCRIPTION 6 7	DESCRIPTION INT - INTEGRAL REM - REMOTE	E - EXISTING F - FUTURE		OUT - OUTDOOR
INSTRUMENT/ CONTROL ELEMENT AUXILIARY FUNCTION OPERATOR ACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1	REFER 3	DESCRIPTION	DESCRIPTION 6 7	DESCRIPTION	E - EXISTING F - FUTURE		
INSTRUMENT/ CONTROL ELEMENT PRIMARY FUNCTION OPERATOR INACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1 3 XR - PROTECTION RELAY CR - CONTROL RELAY XR - INTERPOSING RELAY	REFER 3	DESCRIPTION	DESCRIPTION 6 7	DESCRIPTION	E - EXISTING F - FUTURE		
INSTRUMENT/ CONTROL ELEMENT AUXILIARY FUNCTION OPERATOR INACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1 3 XR - PROTECTION RELAY CR - CONTROL RELAY XR - INTERPOSING RELAY	REFER 3	DESCRIPTION	DESCRIPTION 6 7	DESCRIPTION	E - EXISTING F - FUTURE		
FIELD EQUIPMENT NON-POWERED	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION/SIZE 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1	REFER 3	DESCRIPTION	DESCRIPTION 6 7	AREA NO. BUILDING NO. ROOM NO.	E - EXISTING F - FUTURE		
FIELD EQUIPMENT PRIMARY FUNCTION POWERED	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1	REFER 3	DESCRIPTION	DESCRIPTION 6 7	AREA NO. BUILDING NO. ROOM NO.	E - EXISTING F - FUTURE		
FIELD EQUIPMENT AUXILIARY FUNCTION POWERED	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	MWH - MOTOR WINDING HEATER TSH - TEMPERATURE SWITCH XSH - TORQUE SWITCH	REFER 3	DESCRIPTION	DESCRIPTION 6 7	DESCRIPTION	E - EXISTING F - FUTURE		

INSTRUMENT BUBBLE LOCATIONS



NOTES

1. INSTRUMENT TAG IDENTIFICATION LETTERS TABLE
2. OPERATOR PILOT DEVICE LEGEND
3. EQUIPMENT TAGGING TABLE
4. I/O TYPE DESIGNATIONS
5. INSTRUMENT TYPE DESIGNATIONS TABLE
6. FURNISHED BY:
   - FBO FURNISHED BY OWNER
   - FBV FURNISHED BY VENDOR
7. PROVIDED BY:
   - PBO PROVIDED BY OWNER
   - PBV PROVIDED BY VENDOR

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED CE
DATE MAY 2025

Digitally signed by Matthew G.Hatch
Contact Info: I agree to the terms of use
Date: 2025.05.27 14:39:39 -06'00'

REGISTERED PROFESSIONAL ENGINEER
No. 5612657
MATTHEW G. HATCH
STATE OF UTAH

carollo

SBWRD

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT

DEWATERING EQUIPMENT PREPURCHASE

INSTRUMENTATION

SYMBOLS AND ABBREVIATIONS 1

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

JOB NO. 204042
DRAWING NO. 00GN01
SHEET NO. 31 OF 42

LAST SAVED BY: CRollins

PROJECT NO. 204042-100000 FILE NAME: 204042_00GN01.dwg

INSTRUMENT TAG IDENTIFICATION LETTERS

MEASURED VARIABLE / INSTRUMENTATION FUNCTION		ELEMENT	TRANSMITTER	INDICATING TRANSMITTER	CONVERTER TRANSDUCER, RELAY SPECIAL DEVICES	INDICATOR	RECORDER	CONTROL/COMMAND	INDICATING CONTROLLER	RECORDING CONTROLLER	SWITCH	SWITCH LOW LOW	SWITCH LOW	SWITCH HIGH	SWITCH HIGH HIGH	SWITCH COMBINATION HIGH LOW	ACTION	ALARM LOW LOW	ALARM LOW	ALARM HIGH	ALARM HIGH HIGH	TOTALIZE INDICATOR TRANSMITTER	VALVE	GAUGE	LIGHT	SPEED SETTING
A	ANALYSIS	AE	AT	AIT	AY	AI	AR	AC	AIC	ARC	AS	ASLL	ASL	ASH	ASHH	ASHL		AALL	AAL	AAH	AAHH				AL	
C	CONDUCTIVITY	CE	CT	CIT	CY	CI	CR	CC	CIC	CRC	CS	CSLL	CSL	CSH	CSHH	CSHL		CALL	CAL	CAH	CAHH				CL	
D	DENSITY	DE	DT	DIT	DY	DI	DR	DC	DIC	DRC	DS	DSLL	DSL	DSH	DSHH	DSHL		DALL	DAL	DAH	DAHH				DL	
E	VOLTAGE												ESL													
F	FLOW	FE	FT	FIT	FY	FI	FR	FC	FIC	FRC	FS	FSLL	FSL	FSH	FSHH	FSHL		FALL	FAL	FAH	FAHH	FQI	FCV	FG	FL	
H	HAND (MANUAL)*							HC			HS*						HA*						HV		HL	HSS
I	CURRENT		IT	IIT	IY	II	IR	IC	IIC	IRC	IS	ISLL	ISL	ISH	ISHH			IALL	IAL	IAH	IAHH				IL	
J	POWER					JS																				
K	TIME				KY	KI	KR	KC	KIC	KRC	KS	KSLL	KSL	KSH	KSHH			KALL	KAL	KAH	KAHH		KV		KL	
L	LEVEL	LE	LT	LIT	LY	LI	LR	LC	LIC	LRC	LS	LSLL	LSL	LSH	LSHH	LSHL		LALL	LAL	LAH	LAHH		LCV	LG	LL	
M	MOISTURE OR HUMIDITY	ME	MT	MIT	MY	MI	MR	MC	MIC	MRC	MS	MSLL	MSL	MSH	MSHH			MALL	MAL	MAH	MAHH				ML	
N	USER'S CHOICE																									
P	PRESSURE OR VACUUM	PE	PT	PIT	PY	PI	PR	PC	PIC	PRC	PS	PSLL	PSL	PSH	PSHH	PSHL		PALL	PAL	PAH	PAHH		PCV		PL	
PD	DIFFERENTIAL PRESSURE		PDT	PDIT	PDY	PDI	PDR	PDC	PDIC	PDRC	PDS	PDSLL	PDSL	PDSH	PDSHH			PDALL	PDAL	PDAH	PDAHH		PDCV		PDL	
Q	QUANTITY	QE	QT	QIT	QY	QI	QR				QS	QSLL	QSL	QSH	QSHH			QALL	QAL	QAH	QAHH					
R	RADIATION																									
S	SPEED	SE	ST	SIT	SY	SI	SR	SC	SIC	SRC	SS	SSLL	SSL	SSH	SSHH			SALL	SAL	SAH	SAHH					
T	TEMPERATURE	TE	TT	TIT	TY	TI	TR	TC	TIC	TRC	TS	TSLL	TSL	TSH	TSHH	TSHL		TALL	TAL	TAH	TAHH		TCV		TL	
TD	DIFFERENTIAL TEMPERATURE		TDT	TDIT	TDY	TDI	TDR	TDC	TDIC	TDRC	TDS	TDSLL	TDSL	TDSH	TDSHH			TDALL	TDAL	TDAH	TDAHH		TDCV		TDL	
U	MULTIVARIABLE					UI	UR	UC	UIC	URC	US														UL	
V	VISCOSITY	VE	VT	VIT	VY	VI	VR	VC	VIC	VRC	VS	VSLL	VSL	VSH	VSHH			VALL	VAL	VAH	VAHH				VL	
W	WEIGHT	WE	WT	WIT	WY	WI	WR				WS	WSLL	WSL	WSH	WSHH			WALL	WAL	WAH	WAHH					
X	UNCLASSIFIED	XE	XT	XIT	XY	XI	XR	XC	XIC	XRC	XS	XSLL	XSL	XSH	XSHH			XALL	XAL	XAH	XAHH		XCV	XG	XL	
XV	VIBRATION	XVE	XVT		XVY	XVI	XVR				XVS			XVSH	XVSHH					XVAH	XVAHH				XVL	
Y	STATUS					YI																			YL	
Z	POSITION	ZE	ZT	ZIT	ZY	ZI		ZC**			ZS**												ZV		ZL**	

OPERATOR PILOT DEVICE LEGEND

DEVICE TYPE / PILOT DEVICE FUNCTION	LOCAL-OFF-REMOTE (LOR) OR LOCAL-STOP-REMOTE (LSR)	STOP(SP)	START (ST)	HAND-OFF-AUTO (HOA) HAND-OFF-REMOTE (HOR)	OFF-ON (OO)	SELECT (SEL)	OPEN-STOP-CLOSE (OSC)	JOG OPEN-HOLD-CLOSE (JOHC)	SEMIAUTO-AUTO-MANUAL (SAAM)	LEAD-LAG-STANDBY (LLGS)	AUTO-MANUAL (AM)	OPEN-CLOSE (OC)	LOW-HIGH (LH)	RESET (RST)	SPEED (SPD)	START-STOP (STSP)	EQUIPMENT SHUTDOWN (ESD)	BYPASS (BYP)			SILENCE	POSITION (POS)
PILOT DEVICE TAG (HAND SWITCHES)	HSA	HSB	HSC	HSD	HSE	HSF	HSG	HSH	HIS	HSJ	HSM	HSO	HSQ	HSR	HSS	HST	HSU	HSV	HSW	HSX	HSY	HSZ

I/O TYPE DESIGNATIONS

RNG	RUNNING	SPDC	SPEED COMMAND
FAIL	FAILED/FAULT	SPDF	SPEED FEEDBACK
FWD	RUNNING FORWARD	REM	LOR IN REMOTE
FAST	RUNNING HIGH	LOC	LOR IN LOCAL
SLOW	RUNNING LOW	AUTO	HOA IN AUTO
REV	RUNNING REVERSE	HAND	HOA IN HAND
SVC	SOLENOID VALVE CLOSE	RST	RESET
SVO	SOLENOID VALVE OPEN		
RUN	RUN		
SLWC	MOTOR START LOW		
REVC	MOTOR START REVERSE		

INSTRUMENT TYPE DESIGNATIONS

CGD	COMBUSTIBLE GAS DETECTOR	PTOF	PULSE TIME OF FLIGHT
COND	CONDUCTIVITY	RTD	RESISTANCE TEMP DETECTOR
DO	DISSOLVED OXYGEN	SB	SLUDGE BLANKET
FMCW	FREQ. MODULATED CONT. WAVE	SC	STREAMING CURRENT
ISB	INTRINSIC SAFETY BARRIER	SD	SLUDGE DEPTH
LEL	LOWER EXPLOSIVE LIMIT	TDR	TIME DOMAIN REFLECTOMETRY
MLSS	MIXED LIQUOR SUSPENDED SOLIDS	TOC	TOTAL ORGANIC CARBON
ORG	UV 504	TSS	TOTAL SUSPENDED SOLIDS
ORP	OXIDATION REDUCTION POTENTIAL	TURB	TURBIDITY
PSUB	PRESSURE SUBMERSIBLE	UVI	UV INTENSITY
PC	PARTICLE COUNTER	UVT	UV TRANSMITTANCE

SPECIFIC ABBREVIATIONS

HTR	HEATER
HTU	HEAT TRACE UNIT
MWH	MOTOR WINDING HEATER
SV	SOLENOID VALVE
SPD	SURGE PROTECTIVE DEVICE
UPS	UNINTERRUPTIBLE POWER SUPPLY
YLA	STATUS AUTO PILOT LIGHT
YLR	STATUS REMOTE PILOT LIGHT
YL1	STATUS RUNNING PILOT LIGHT
YL2	ALARM FAILED/FAULT PILOT LIGHT

P&ID LINE SYMBOLS

- INSTRUMENT OR CONNECTION TO PROCESS
- PNEUMATIC SIGNAL
- ELECTRIC SIGNAL
- HYDRAULIC SIGNAL
- CAPILLARY TUBE
- INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK)

PROCESS LINE SYMBOLS

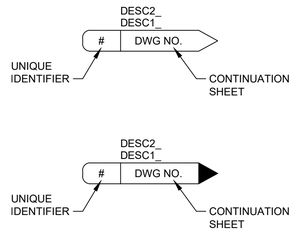
- PRIMARY PROCESS FLOW IN PIPE
- SECONDARY PROCESS FLOW IN PIPE
- PRIMARY PROCESS FLOW IN CHANNEL
- SECONDARY PROCESS FLOW IN CHANNEL
- HEAT TRACE

DESIGNATIONS

- EQUIPMENT ENCLOSURE
- EXISTING
- FUTURE

MISCELLANEOUS P&ID SYMBOLS

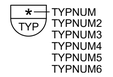
- PROCESS CONTINUATION
- SIGNAL CONTINUATION



- PIPE CALLOUT

- SCHEMATIC DETAIL

- TYPICAL DETAIL



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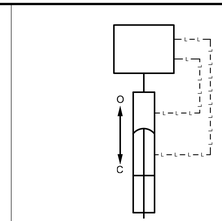
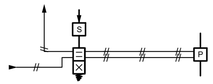
ACTUATORS

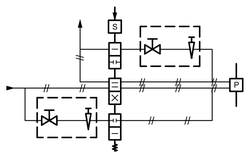
- DIAPHRAGM
- ELECTRIC HYDRAULIC
- ELECTRIC
- HAND
- HYDRAULIC
- MOTOR
- PNEUMATIC
- SOLENOID



HYDRAULIC MODULATING



PNEUMATIC SINGLE SOLENOID OPEN/CLOSE



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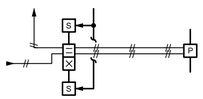
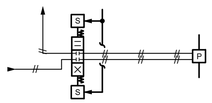


PNEUMATIC DUAL SOLENOID OPEN/CLOSE



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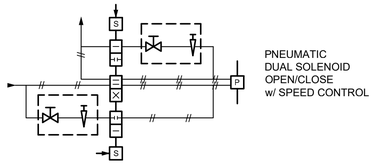

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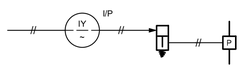
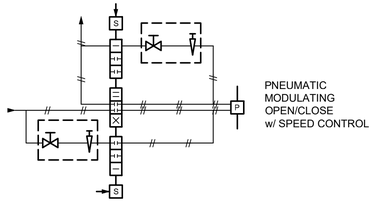


PNEUMATIC MODULATING



PNEUMATIC MODULATING OPEN/CLOSE w/ SPEED CONTROL

PIPING

- AIR GAP
- BLIND FLANGE
- CAPPED OR PLUGGED
- CONCENTRIC INCREASER
- CONCENTRIC REDUCER
- DRAIN
- ECCENTRIC INCREASER
- FLANGED CONNECTION
- TEE
- UNION
- ECCENTRIC REDUCER
- EXPANSION COUPLING
- EXPANSION JOINT VIBRATION CENTER
- FLEXIBLE CONNECTION
- QUICK DISCONNECT

PUMPS

- AIR DRIVEN
- CENTRIFUGAL
- CHEMICAL FEED DIAPHRAGM
- DIAPHRAGM
- GEAR
- LOBE
- PERISTALTIC OR HOSE
- PISTON
- PROGRESSIVE CAVITY

OR SUBMERSIBLE

- VERTICAL TURBINE
- VERTICAL CHOPPER
- WATER CHAMP

BLOWERS/ COMPRESSORS/FANS

- CENTRIFUGAL SINGLE STAGE BLOWER/FAN
- CENTRIFUGAL MULTI STAGE BLOWER
- RECIPROCATING COMPRESSOR
- SCREW COMPRESSOR
- FAN
- LIQUID RING COMPRESSOR
- ROTARY LOBE BLOWER

CHECK VALVES

- BACK FLOW PREVENTER
- BALL
- DIAPHRAGM CHECK
- DOUBLE FLAP
- FLAPPER
- SLANTING CHECK VALVE
- SPRING LOADED GENERAL
- SPRING LOADED SWING
- SWING

PRESSURE VALVES

- BACKPRESSURE REGULATING SELF CONTAINED
- BACKPRESSURE REGULATING EXTERNAL TAP
- PRESSURE REDUCING SELF CONTAINED
- PRESSURE REDUCING EXTERNAL PRESSURE TAP
- REGULATING
- PRESSURE RELIEF
- VACUUM RELIEF

VALVES

- 3-WAY
- 3-WAY PLUG
- 4-WAY
- AIR-RELIEF
- ANGLE
- BALL
- BALL V-NOTCH
- BUTTERFLY
- BUTTERFLY-BURIED VALVE BOX
- CONE
- DIAPHRAGM
- FLOAT
- GATE
- GATE-BURIED VALVE BOX
- GLOBE
- HOSE
- MISCELLANEOUS
- MUD
- NEEDLE
- PINCH
- PLUG ECCENTRIC
- PLUG ECCENTRIC w-VALVE BOX
- PLUG ECCENTRIC LUBRICATED
- PLUG ECCENTRIC LUBRICATED BURIED VALVE BOX
- PLUG CONCENTRIC
- PLUG CONCENTRIC -BURIED VALVE BOX
- PLUG CONCENTRIC LUBRICATED
- PLUG CONCENTRIC LUBRICATED BURIED VALVE BOX
- PUMP DISCHARGE
- TELESCOPING

VALVE DESIGNATIONS	
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
FO	FAIL OPEN
FC	FAIL CLOSE
FLP	FAIL LAST POSITION

MISC

- AIR / CHEMICAL DIFFUSER
- BASKET STRAINER
- BLOW-OFF SILENCER
- CALIBRATION COLUMN
- COALESCER
- DESICCANT DRYER
- EDUCTOR/EJECTOR
- EQUIPMENT/ INSTRUMENT LOCATOR
- EYEWASH
- FILTER
- FILTER SEPARATOR
- FINE FILTER
- FIRE ALARM/SENSOR
- FLAME ARRESTER
- FLAME ARRESTER w/THERMALLY OPERATED VALVE
- FLOW CONDITIONER
- GAS CANNON
- GRINDER
- HEAT EXCHANGER
- HOIST
- HORIZONTAL MIXER
- HOSE CONNECTION
- INLET STRAINER
- INLINE STATIC MIXER
- INLINE DUCT BALANCING DAMPER
- LOUVER OR BACKDRAFT DAMPER
- MATERIAL CHANGE
- MIXER
- NOZZLE
- ORIFICE RESTRICTION
- PERISTALTIC COMPOSITE SAMPLER

OR PULSATION DAMPENER

- REFRIGERATED DRYER
- RUPTURE DISK
- SAMPLE PORT
- SIGHT TUBE
- SMOKE DETECTOR
- STRAINER - MECHANICALLY CLEANED
- STRAINER WITH BLOW OFF
- STRAINER WYE TYPE
- VAPOR HEATER
- VAPORIZER
- VENT
- VENT TO ATMOSPHERE

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FLOW

- CORIOLIS
- MAGNETIC
- ORIFICE
- PADDLE WHEEL
- PISTON
- ANNUBAR
- PITOT TUBE
- POSITIVE-DISPLACEMENT
- PROPELLER-TURBINE
- ROTAMETER
- SHUTTLE
- THERMAL
- ULTRASONIC
- ULTRASONIC BIOGAS
- V-CONE
- VENTURI TUBE OR FLOW NOZZLE
- VORTEX

FLUMES

- LEOPOLD-LAGCO
- PALMER-BOWLUS
- PARSHALL
- REGULAR CUTTHROAT
- TRAPEZOIDAL

GATES

SIDE VIEW	PLAN VIEW
	FLAP
	KNIFE
SLIDE	SLIDE
SLUICE	SLUICE
STOP	STOP
	WEIR
	BUTTERFLY

LEVELS

- BUBBLER
- CAPACITANCE
- DIFFERENTIAL PRESSURE (TANK)
- DISPLACEMENT
- ELECTRODE
- BALL FLOAT
- INVERTED COLUMN
- PROBE
- RADAR PTOF
- RADAR (FREQUENCY MODULATED CONTINUOUS WAVE)
- RADAR TDR
- SUSPENDED/ SUBMERSIBLE
- TUNING FORK
- ULTRASONIC

NETWORKS

CABLE CALLOUTS AND ABBREVIATIONS

- 24/FO-SM — F — F — FIBER LINE REPRESENTS ONE 24-STRAND FIBER OPTIC CABLE
- (2) 24/FO-SM — F — F — FIBER LINE REPRESENTS TWO 24-STRAND FIBER OPTIC CABLES
- (1) 24/FO-SM EA. — F F — F F — EACH FIBER LINE REPRESENTS ONE 24-STRAND FIBER OPTIC CABLE
- (4) — C — C — COPPER LINE REPRESENTS FOUR COPPER ETHERNET CABLES
- (2) EA. — F F — F F — EACH COPPER LINE REPRESENTS TWO COPPER ETHERNET CABLES

FIBER ABBREVIATIONS

##/FO-XX
- ## = STRAND COUNT
- FO = FIBER OPTIC

XX = MODE
- SM = SINGLE MODE
- MM = MULTIMODE

NETWORK ABBREVIATIONS

BMS	= BUILDING MANAGEMENT SYSTEM
BSN	= BUSINESS NETWORK
FCN	= FIELD CONTROL NETWORK
MIN	= MAINTENANCE INFORMATION NETWORK
PCN	= PROCESS CONTROL NETWORK
PLCN	= PLC NETWORK
SCN	= SECURITY CONTROL NETWORK
PCN-W	= WIRELESS PROCESS CONTROL NETWORK
NR	= NETWORK RACK
NP	= NETWORK PANEL
ES	= ETHERNET SWITCH
FPP	= FIBER PATCH PANEL

VLAN SYMBOLS

- = BUSINESS NETWORK
- = SECURITY CONTROL NETWORK
- = BUILDING MANAGEMENT SYSTEM
- = PROCESS CONTROL NETWORK
- = WIRELESS PROCESS CONTROL NETWORK
- = MAINTENANCE INFORMATION NETWORK
- = PLC NETWORK
- = FIELD CONTROL NETWORK

PRESSURE/VACUUM

PRESSURE

- PI — GAUGE
- PSH / PE — PRESSURE SWITCH
- PIT / PE — PRESSURE TRANSMITTER
- MANOMETER

DIFFERENTIAL PRESSURE

- PDI — GAUGE DIFFERENTIAL INDICATOR
- PDSL / PDE — DIFFERENTIAL PRESSURE SWITCH
- PDIT / PDE — DIFFERENTIAL PRESSURE TRANSMITTER

PRESSURE SEALS

- SEAL ANNULAR
- SEAL DIAPHRAGM
- SEAL SANITARY

EXAMPLE

PSH / PE — PRESSURE SWITCH

TEMPERATURE

- TEMPERATURE w/THERMOWELL
- TEMPERATURE GAUGE
- T — THERMOMETER

WEIGHT

- PLATFORM SCALE

WEIRS

SIDE VIEW	PLAN VIEW
RECTANGULAR w/o END CONTRACTIONS	RECTANGULAR w/o END CONTRACTIONS
RECTANGULAR w/ END CONTRACTIONS	RECTANGULAR w/ END CONTRACTIONS
V-NOTCH (TRIANGULAR)	V-NOTCH (TRIANGULAR)
TRAPEZOIDAL (CIPOLLETTI)	TRAPEZOIDAL (CIPOLLETTI)

NETWORK LINE SYMBOLS

- COPPER ETHERNET — C C C C C C
- DUPLEX FIBER PATCH — FP FP FP FP FP FP
- FIBER OPTIC ETHERNET — F F F F F F
- WIRELESS — W W W W W W
- PROFIBUS DP — PBD PBD PBD PBD PBD PBD
- PROFIBUS PA — PBA PBA PBA PBA PBA PBA
- SERIAL DATA

MISCELLANEOUS NETWORK SYMBOLS

NETWORK CABLE CONTINUATIONS

TOP OF PAGE STYLE CONTINUATION

DESC 3
DESC 2
DESC 1 — CONTINUATION SHEET
DWG NO. — UNIQUE IDENTIFIER
(#)

BOTTOM/LEFT OF PAGE STYLE CONTINUATION

(#) — UNIQUE IDENTIFIER, CONTINUATION SHEET
DWG NO.
DESC 1
DESC 2
DESC 3

FIELD NETWORK DEVICE

PLC TAG / PANEL TAG — PROTOCOL / SEGMENT #
DEVICE SPECIFIC SYMBOL
TAG
DESC 1
DESC 2
DESC 3
P&ID DRAWING REFERENCE

NETWORK EQUIPMENT CALLOUT

TAG
DESC 1

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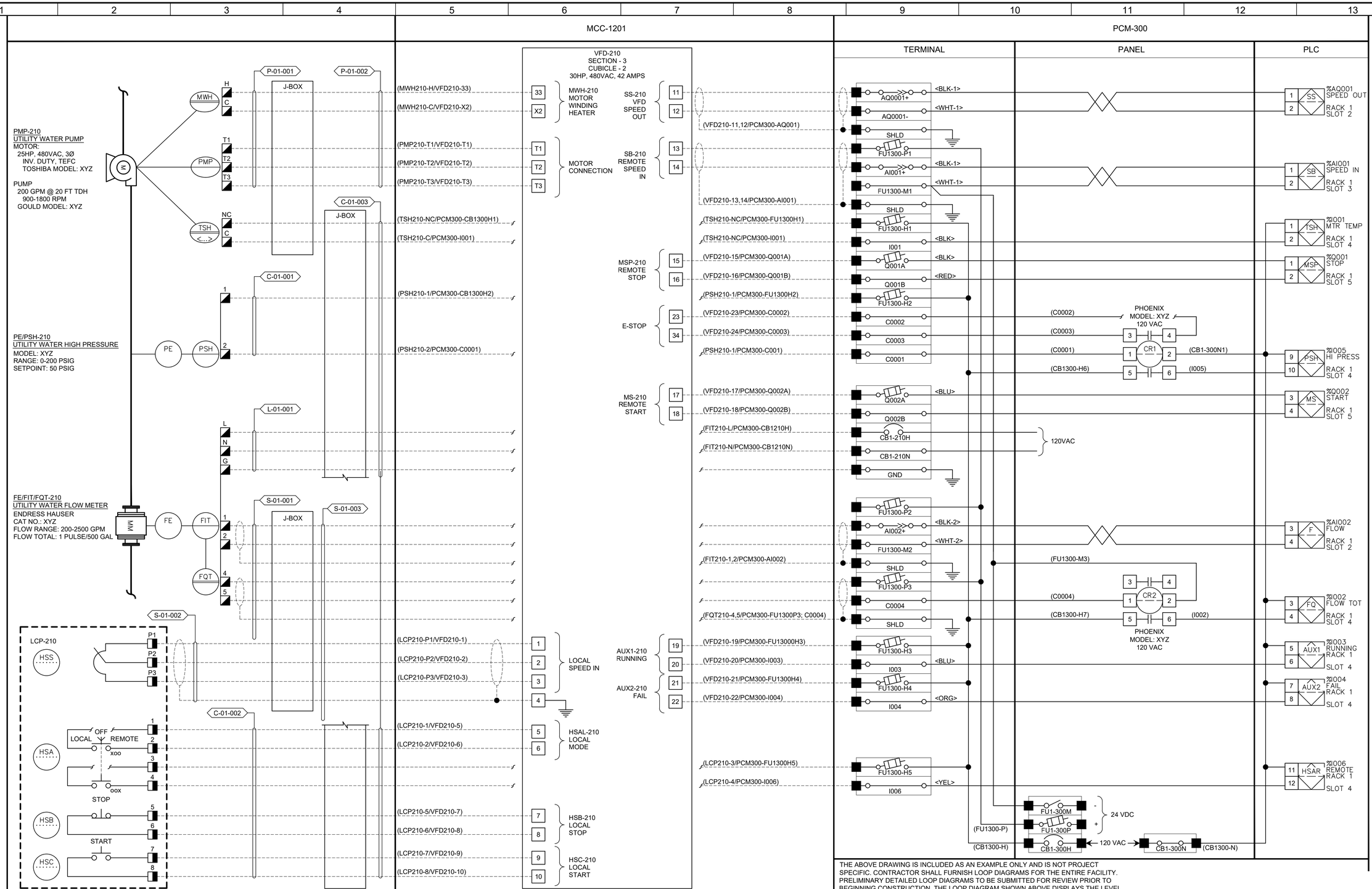

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EQUIPMENT DESCRIPTOR			
XXX		**XXX**	
AB	AERATION BASIN	GRI	GRINDER
AER	AERATOR	GRD	GRIT DEWATERING UNIT (CYCLONE)
AHU	AIR HANDLING UNIT	GRW	GRIT WASHER
ARC	AIR COMPRESSOR	GTW	GATEWAY
ARF	AIR FILTER	HPU	HYDRAULIC POWER UNIT
ARR	ARRESTOR	IC	ISOLATION CONTACTOR
ATS	AUTOMATIC TRANSFER SWITCH	INJ	INJECTOR
AUG	AUGER	LAG	LAGOON
AVR	AIR VACUUM RELIEF	INM	INDUCTION MIXER
BAR	BAR SCREEN	MAU	MAKE-UP AIR UNIT
BAS	BASIN	MIX	MIXER
BC	BYPASS CONTACTOR	MS	MOTOR STARTER
BFP	BELT FILTER PRESS	MPR	MOTOR PROTECTION RELAY
BIT	BIO TOWER	MTR	MOTOR
BLO	BLOWER	NP	NETWORK PANEL
BOI	BOILER	NR	NETWORK RACK
BUR	BURNER	OZG	OZONE GENERATOR
CAL	CALIBRATION COLUMN	PBU	POLYMER BLENDING UNIT
CB	CIRCUIT BREAKER	PCM	PROCESS CONTROL MODULE
CC	COMMUNICATIONS CABINET	PDC	POWER DISTRIBUTION CENTER
CEN	CENTRIFUGE	PLO	PLOW
CHI	CHILLER	PMP	PUMP
CHL	CHLORINATOR	PPR	PUMP PROTECTION RELAY
CLA	CLASSIFIER	PQM	POWER QUALITY METER
CLR	CLARIFIER	PRE	PRESS
CLU	CLUTCH	PUD	PULSATION DAMPENER
COA	COALESCER	REC	RECEIVER
COL	COLLECTOR	RVSS	REDUCED VOLTAGE STARTER
CON	CONVEYOR	RIO	REMOTE IO PANEL
COO	COOLER	RES	RESERVOIR
COS	COMPOSITE SAMPLER	RUD	ROLL UP DOOR
CPT	CONTROL POWER TRANSFORMER	SCB	SCRUBBER
CF	CARTRIDGE FILTER	SCR	SCREEN
CR	CONTROL RELAY	SCW	SCREW
CRN	BRIDGE CRANE/HOIST/MONORAIL	SEL	SEAL
CYC	CYCLONE CLASSIFER	SF	SUPPLY FAN
DAM	DAMPER	SHA	SHAKER
DCD	DC DRIVE	SLA	SLAKER
DEC	DECARBONATOR	SLC	SLUDGE COLLECTOR
DGC	DIGESTER GAS CONDITIONING	SPD	SURGE PROTECTION DEVICE
DIF	DIFFUSER	SRR	STIRRER
DIG	ANAEROBIC DIGESTER	STR	STRAINER
DIS	DISTRIBUTOR	SV	SOLENOID VALVE
DISC	DISCONNECT	SWC	SCREENING WASHER COMPACTOR
DRY	DRYER	THI	THICKENER
DSC	DUST COLLECTOR	TIP	TIPPING TROUGH
EDU	EDUCTOR	TNK	TANK
EF	EXHAUST FAN	TRA	TRAP
ES_	ETHERNET SWITCH	UPS	UNINTERRUPTIBLE POWER SUPPLY
ERD	ENERGY RECOVERY DEVICE	UVB	UV BANK
EUH	ELECTRIC UNIT HEATER	UVR	ULTRAVIOLET REACTOR
EVP	EVAPORATOR	VAL	VALVE
EXC	EXCHANGER	LCP	LOCAL CONTROL PANEL
FACP	FIRE ALARM CONTROL PANEL	VCP	VENDOR CONTROL PANEL
FAN	FAN	VFD	VARIABLE FREQUENCY DRIVE
FDR	FEEDER	WEL	WELL
FLA	FLARE	*CV	* CONTROL VALVE
FLC	FLOCCULATOR	*V	* VALVE
FLT	FILTER	*CG	* CONTROL GATE
FU	FUSE	*G	* GATE
GAT	GATE		* = A (ANALYTICAL), F (FLOW), L (LEVEL)
GEN	ENGINE GENERATOR		P (PRESSURE), T (TEMPERATURE)
GRC	GRIT CHAMBER		

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INSTRUMENTATION
EQUIPMENT TAGGING

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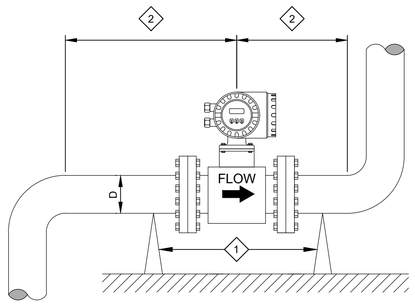


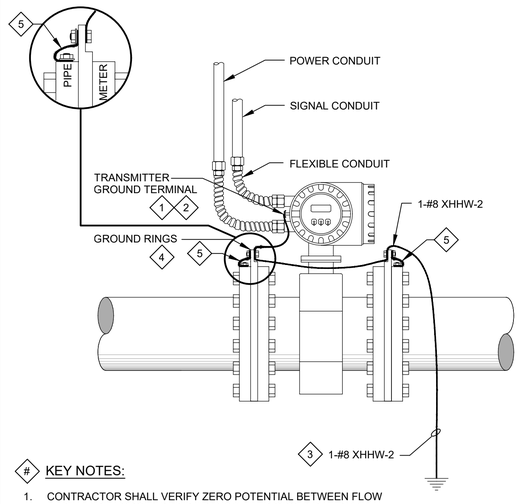
GENERAL NOTES:

1. FOLLOW MANUFACTURER'S RECOMMENDED MAXIMUM TORQUE SETTINGS. DO NOT OVER-TORQUE FLANGE BOLTS. OVERTIGHTENING THE FASTENERS WILL DEFORM SEALING FACES OR DAMAGE THE LINE.
2. ALWAYS TIGHTEN FLANGE BOLTS UNIFORMLY AND IN DIAGONALLY OPPOSITE SEQUENCE.
3. MOUNT METER SO THAT IT REMAINS FULLY FLOODED.
4. FOR METERS SPECIFIED WITH ZERO DIAMETER FEATURE, REFER TO THE MECHANICAL DRAWINGS FOR INSTALLATION.

◇# KEY NOTES:

1. PIPE SUPPORTS BY MECHANICAL CONTRACTOR. NO SUPPORTS SHALL BE INSTALLED AT THE METER HOUSING.
2. INSTALL METER SUCH THAT THERE ARE NO PIPE BENDS FOR 5 PIPE DIAMETERS UPSTREAM AND 3 PIPE DIAMETERS DOWNSTREAM OF THE METER.

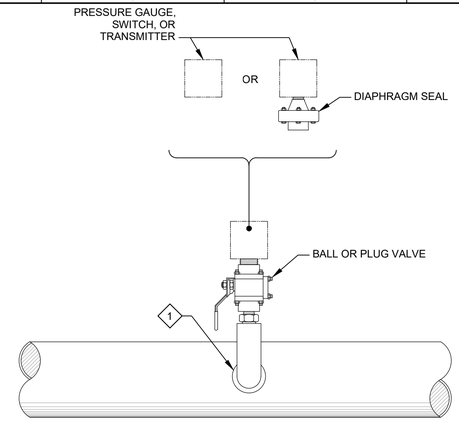
NF130 TYP — MAGNETIC FLOWMETER MOUNTING DETAIL



◇# KEY NOTES:

1. CONTRACTOR SHALL VERIFY ZERO POTENTIAL BETWEEN FLOW TUBE, EARTH GROUND AND TRANSMITTER GROUND TERMINAL.
2. CONNECT TRANSMITTER GROUND TERMINAL TO GROUND RINGS.
3. CONNECT METER BODY TO EARTH GROUND POTENTIAL.
4. EQUALIZE POTENTIAL VIA GROUND RINGS BETWEEN FLUID AND MAGMETER.
5. PROVIDE BONDING JUMPER ON CONDUCTIVE PIPES.

NF136 TYP — INTEGRAL MAGNETIC FLOWMETER GROUNDING DETAIL



GENERAL NOTES:

1. PROVIDE DIAPHRAGM SEALS IF REQUIRED BY INSTRUMENT DATA SHEETS OR SPECIFICATIONS.
2. PROVIDE INSTRUMENT ASSEMBLY WITH 1" VALVES AND PIPING, OR AS APPROVED BY ENGINEER. USE STAINLESS STEEL OR AS REQUIRED FOR COMPATIBILITY WITH PROCESS FLUID. PROVIDE FITTINGS FOR INSTRUMENT CONNECTIONS AS REQUIRED.
3. REFER TO MECHANICAL DRAWINGS FOR INSTRUMENT LOCATION AND PROCESS PIPE ORIENTATION.

◇# KEY NOTES:

1. PROVIDE SIDE-TAP PROCESS CONNECTION. THREADED TAP OR SADDLE CONNECTION FOR DUCTILE IRON PIPE. WELD-O-LET OR THREAD-O-LET FOR WELDED PIPE. TEE OR REDUCING TEE FOR NON-METALLIC PIPE AND PIPES 1" OR SMALLER.

NP503 TYP — ISOLATING PRESSURE INSTRUMENT MOUNTING DETAIL

N

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED CDS
DATE MAY 2025

Digitally signed by Matthew G. Hatch
Contact info: mghatch@carollo.com
Date: 2025.05.30 07:57:47 -06'00'

REGISTERED PROFESSIONAL ENGINEER
No. 5612657
MATTHEW G. HATCH
STATE OF UTAH

carollo

SBWRD

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT
DEWATERING EQUIPMENT PREPURCHASE
TYPICAL DETAILS
INSTRUMENTATION 1

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

JOB NO. 204042
DRAWING NO. 00TN01
SHEET NO. 37 OF 42

LAST SAVED BY: tdietz

PROJECT NO. 204042-100000 FILE NAME: 204042_00TN01.dwg

GENERAL NOTES:

1. UNLESS OTHERWISE NOTED, ALL EQUIPMENT AND PIPING ON THIS DRAWING SHALL BE PROVIDED BY THE ROTARY PRESS SUPPLIER.

KEY NOTES:

1. PROVIDE MODBUS TCP COMMUNICATION VIA NEW CAT. 6 ETHERNET CABLE TO EXISTING NETWORK SWITCH OR ROUTER IN PLC-200 PANEL. CONNECTION TO PLANT DATA NETWORK SHALL BE ISOLATED FROM ROTARY PRESS VENDOR INTERNAL NETWORK.
2. ROTARY PRESS VENDOR POWER PANEL INCLUDES VFD's FOR ROTARY PRESSES AND FLOCCULATORS.
3. PROVIDE NEW CAT. 6 ETHERNET CABLE.

I/O

VCP 26120 — MBTCP ROTARY FAN PRESS — PLC-200

POWER SOURCE

CB 26120 — 480VAC-3P — MCC-S

FIELD

120VAC POWER

ROTARY PRESS VENDOR POWER PANEL

VCP2 26120

CONTINUED ON DWG 00N11

FLC 26110 FBV

MWH 26110 FBV

TSH 26110 FBV

ROTARY PRESS VENDOR CONTROL PANEL

VCP1 26120

CONTINUED ON DWG 00N11

FIT 26119 FBV

FE 26119 MAGNETIC FBV

ZT 26115

HSA 26115 LSR

HSG 26115 OSC

ZSOC <...>

FCV 26115

DISC 26115

FIT 26115 FBV

FE 26115 MAGNETIC FBV

PIT 26113 FBV

PE 26113 PRESSURE FBV

HSU 26110 ESD FBV

PI 26112 FBV

UTILITY

POLYMER

E

VAL 26115

MM

MM

DEWATERING FEED PUMPS

SLUDGE SAMPLER FBV

ROTARY PRESS 1 — 1 — 00N11

FE-26119 ROT PRESS 1 SLUDGE FLOW — NF130 TYP NF136

FE-26115 ROT PRESS 1 POLYMER FLOW — NF130 TYP NF136

PE-26113 ROT PRESS 1PRESSURE TRANSMITTER

FLC-26110 ROTARY PRESS FLOCCULATOR 1

FCV-26115 POLYMER CONTROL VALVE

PI-26112 ROT PRESS 1 UT WATER PRESS GAUGE — NP503 TYP

REV	DATE	BY	DESCRIPTION

DESIGNED MGH
DRAWN CGR
CHECKED CDS
DATE MAY 2025

Digitally signed by Matthew G. Hatch
Contact Info: Carollo Engineers
Date: 2025.05.21 14:54:51 -06'00'

REGISTERED PROFESSIONAL ENGINEER — No. 5612657 — MATTHEW G. HATCH — STATE OF UTAH

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SNYDERVILLE BASIN WATER RECLAMATION DISTRICT

DEWATERING EQUIPMENT PREPURCHASE

INSTRUMENTATION

ROTARY PRESS FLOCCULATOR 1 P&ID

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

JOB NO. 204042
DRAWING NO. 00N10
SHEET NO. 38 OF 42

LAST SAVED BY: CRollins

PROJECT NO. 204042-100000 FILE NAME: 204042_00N10.dwg

GENERAL NOTES:

1. UNLESS OTHERWISE NOTED, ALL EQUIPMENT AND PIPING ON THIS DRAWING SHALL BE PROVIDED BY THE ROTARY PRESS SUPPLIER.

I/O

POWER SOURCE

FIELD

CONTINUED ON DWG 00N10

VCP1-26120 CONTINUED

CONTINUED ON DWG 00N12

CONTINUED ON DWG 00N10

VCP2-26120 CONTINUED

CONTINUED ON DWG 00N12

MWH 26120

RPR 26120

TSH 26120

COMPRESSED AIR

4 | 00N14

WASH WATER

FLOCCULATOR 1 SLUDGE

1 | 00N10

PI 26121 FBV

PI 26122 FBV

PI 26123 FBV

PI 26124 FBV

PI 26125 FBV

PI 26126 FBV

VAL 26121 FBV

VAL 26122 FBV

VAL 26123 FBV

VAL 26124 FBV

VAL 26125 FBV

VAL 26126 FBV

VAL 26120 FBV

VAL 26129 FBV

XS 26121 CAKE DETECT FBV

XS 26122 CAKE DETECT FBV

XS 26123 CAKE DETECT FBV

XS 26124 CAKE DETECT FBV

XS 26125 CAKE DETECT FBV

XS 26126 CAKE DETECT FBV

ZS 26121 CHUTE SAFETY FBV

ZS 26122 CHUTE SAFETY FBV

ZS 26123 CHUTE SAFETY FBV

ZS 26124 CHUTE SAFETY FBV

ZS 26125 CHUTE SAFETY FBV

ZS 26126 CHUTE SAFETY FBV

E ME-SP 12

CONTINUED ON DWG 00N13

FILTRATE AND WASTE FROM ROTARY PRESS 2

2 | 00N13

FILTRATE AND WASTE TO CENTRATE PUMP STATION

ME-SP-12
SCREW CONVEYOR

RPR-26120
ROTARY PRESS 1

REV	DATE	BY	DESCRIPTION

DESIGNED MGH
DRAWN CGR
CHECKED CDS
DATE MAY 2025

Digitally signed by Matthew G. Hatch
Contact Info: Carollo Engineers, PC
Date: 2025.05.30 14:39:31 -06'00'

REGISTERED PROFESSIONAL ENGINEER
No. 5612657
MATTHEW G. HATCH
STATE OF UTAH

carollo

SBWRD

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT

DEWATERING EQUIPMENT PREPURCHASE

INSTRUMENTATION

ROTARY PRESS 1 P&ID

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
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JOB NO. 204042
DRAWING NO. 00N11
SHEET NO. 39 OF 42

LAST SAVED BY: CRollins

PROJECT NO. 204042-100000 FILE NAME: 204042_00N11.dwg

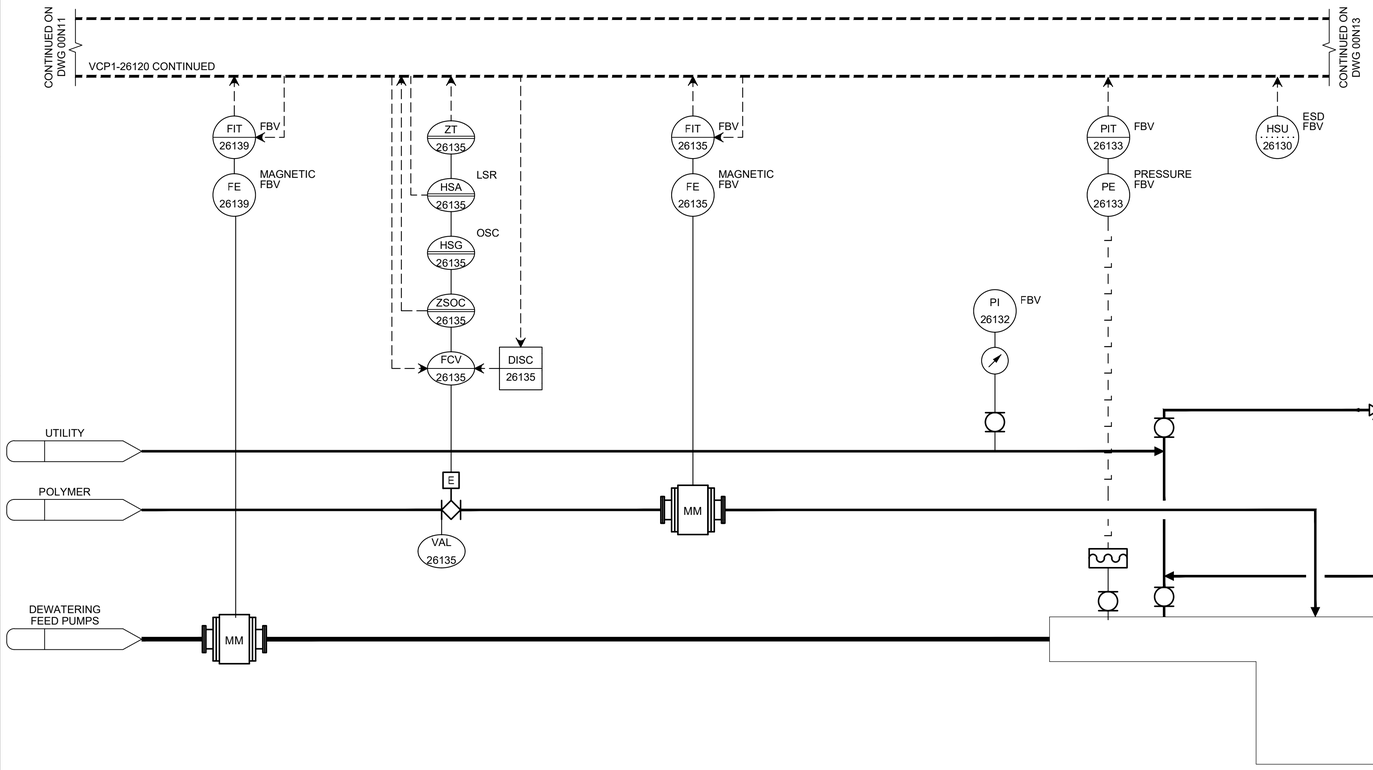
GENERAL NOTES:

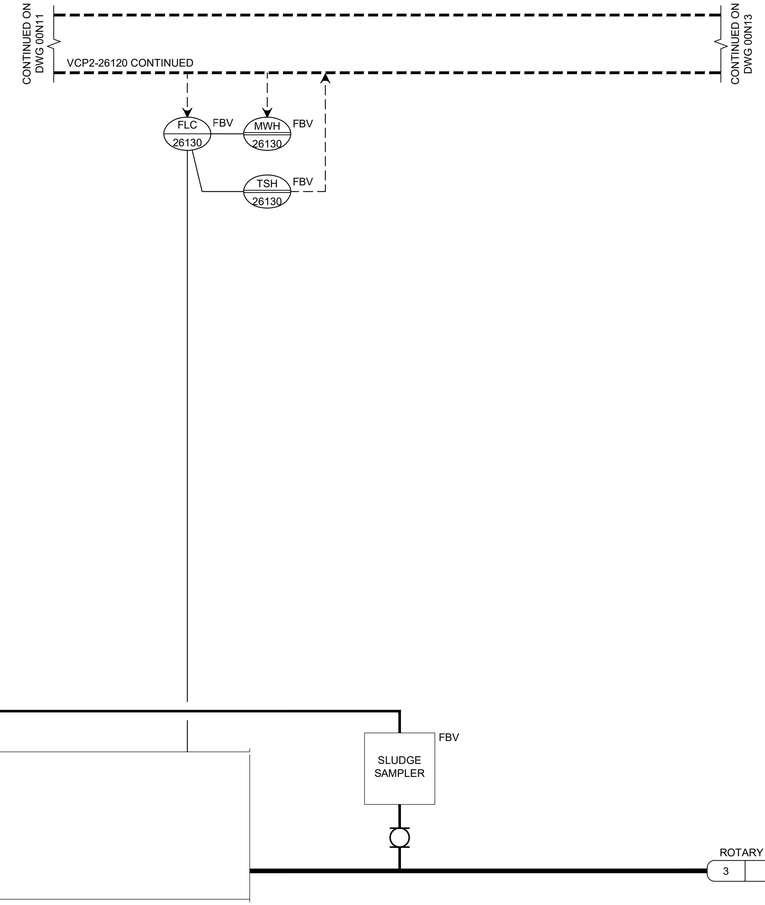
1. UNLESS OTHERWISE NOTED, ALL EQUIPMENT AND PIPING ON THIS DRAWING SHALL BE PROVIDED BY THE ROTARY PRESS SUPPLIER.

I/O

POWER SOURCE

FIELD





FE-26139 ROT PRESS 2 SLUDGE FLOW — * TYP — NF130 NF136

FE-26135 ROT PRESS 2 POLYMER FLOW

PE-26133 ROT PRESS 2 PRESSURE TRANSMITTER

FCV-26135 POLYMER CONTROL VALVE

PI-26132 ROT PRESS 2 UT WATER PRESS GAUGE — * TYP — NP503

FLC-26130 ROTARY PRESS FLOCCULATOR 2

REV	DATE	BY	DESCRIPTION

DESIGNED MGH
DRAWN CGR
CHECKED CDS
DATE MAY 2025

Digitally signed by Matthew G. Hatch
Contact Info: Carollo Engineers
Date: 2025.05.21 14:54:47 -06'00'

REGISTERED PROFESSIONAL ENGINEER
No. 5612657
MATTHEW G. HATCH
STATE OF UTAH

carollo®

SBWRD

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT

DEWATERING EQUIPMENT PREPURCHASE

INSTRUMENTATION

ROTARY PRESS FLOCCULATOR 2 P&ID

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

JOB NO. 204042
DRAWING NO. 00N12
SHEET NO. 40 OF 42

LAST SAVED BY: CRollins

PROJECT NO. 204042-100000 FILE NAME: 204042_00N12.dwg

GENERAL NOTES:

1. UNLESS OTHERWISE NOTED, ALL EQUIPMENT AND PIPING ON THIS DRAWING SHALL BE PROVIDED BY THE ROTARY PRESS SUPPLIER.

I/O

POWER SOURCE

FIELD

CONTINUED ON DWG 00N12

VCP1-26120 CONTINUED

CONTINUED ON DWG 00N12

VCP2-26120 CONTINUED

MWH 26140

RPR 26140

TSH 26140

COMPRESSED AIR

5 00N14

WASH WATER

FLOCCULATOR 2 SLUDGE

3 00N12

P

VAL 26140 FBV

PI 26141 FBV

PI 26142 FBV

PI 26143 FBV

PI 26144 FBV

PI 26145 FBV

PI 26146 FBV

VAL 26141 FBV

VAL 26142 FBV

VAL 26143 FBV

VAL 26144 FBV

VAL 26145 FBV

VAL 26146 FBV

XS 26141 CAKE DETECT FBV

XS 26142 CAKE DETECT FBV

XS 26143 CAKE DETECT FBV

XS 26144 CAKE DETECT FBV

XS 26145 CAKE DETECT FBV

XS 26146 CAKE DETECT FBV

ZS 26141 CHUTE SAFETY FBV

ZS 26142 CHUTE SAFETY FBV

ZS 26143 CHUTE SAFETY FBV

ZS 26144 CHUTE SAFETY FBV

ZS 26145 CHUTE SAFETY FBV

ZS 26146 CHUTE SAFETY FBV

CONTINUED ON DWG 00N11

EXISTING TRUCK LOADING

FILTRATE AND WASTE TO CENTRATE PUMP STATION

2 00N11

P

VAL 26149 FBV

RPR-26140
ROTARY PRESS 2

LAST SAVED BY: CRollins

REV	DATE	BY	DESCRIPTION

DESIGNED MGH
DRAWN CGR
CHECKED CDS
DATE MAY 2025

Digitally signed by Matthew G. Hatch
Contact Info: Carollo Engineers, Inc.
Date: 2025.05.30 14:39:47 -06'00'

REGISTERED PROFESSIONAL ENGINEER
No. 5612657
MATTHEW G. HATCH
STATE OF UTAH

carollo

SBWRD

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT

DEWATERING EQUIPMENT PREPURCHASE

INSTRUMENTATION

ROTARY PRESS 2 P&ID

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

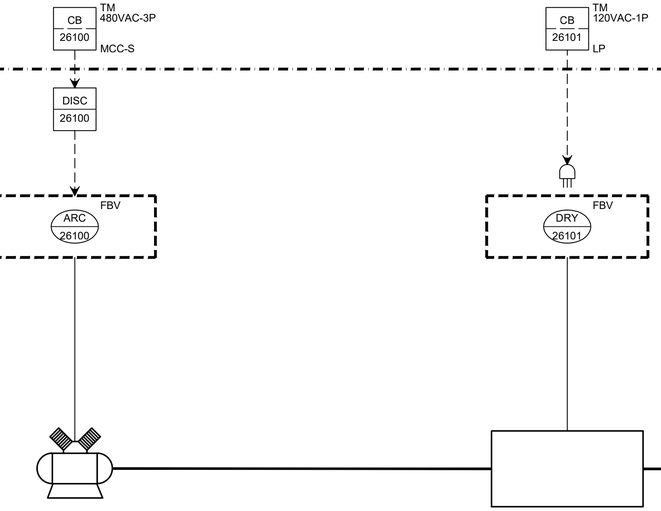
JOB NO. 204042
DRAWING NO. 00N13
SHEET NO. 41 OF 42

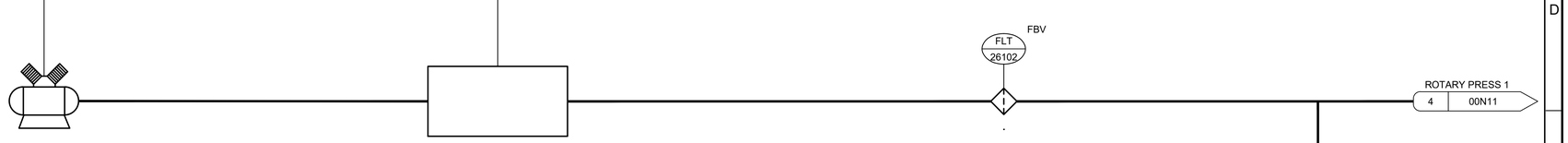
PROJECT NO. 204042-100000 FILE NAME: 204042_00N13.dwg

I/O

POWER SOURCE

FIELD





ARC-26100
AIR COMPRESSOR

DRY-26101
REFRIGERANT AIR DRYER

FLT-26102
AIR FILTER

LAST SAVED BY: CRollins

REV	DATE	BY	DESCRIPTION

DESIGNED MGH
DRAWN KIK
CHECKED CDS
DATE MAY 2025

Digitally signed by Matthew G. Hatch
Contact info: cds@carollo.com
Date: 2025.05.21

REGISTERED PROFESSIONAL ENGINEER
No. 5612657
MATTHEW G. HATCH
STATE OF UTAH

carollo

SBWRD

SNYDERVILLE BASIN WATER RECLAMATION DISTRICT

DEWATERING EQUIPMENT PREPURCHASE

INSTRUMENTATION

AIR COMPRESSOR P&ID

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

JOB NO. 204042
DRAWING NO. 00N14
SHEET NO. 42 OF 42

PROJECT NO. 204042-100000 FILE NAME: 204042_00N14.dwg