June 10, 2019

Anna Mauss, P.E.
Colorado Water Conservation Board
1313 Sherman Street #718
Denver, CO 80203

Re: Erger's Pond Augmentation Station Project Summary

Dear Ms. Mauss,

This memorandum is intended to provide a summary of the construction phase of the Erger's Pond Augmentation Station project. This project was developed to help the City of Brighton meet its augmentation requirements. The project consisted of constructing two raw water pump stations at an existing reservoir known as Erger's Pond, which is located adjacent to the South Platte River. The Riverside pump station and diversion structure is used to fill Erger's Pond with free water from the South Platte River. The Pondside pump station is used to pump water back to the South Platte River when augmentation is required. The reservoir filling pump station has a firm capacity of 50 CFS. It also has a 5'x5' gravity box culvert that can divert flows dependent on river elevation, but is designed for 110 CFS diversion during historical maximum flows in the river. The reservoir emptying pump station has a firm capacity of 15 CFS augmentation back to the river. The project consists of 9 submersible pumps, three wet wells, 36" – 10" PVC and DIP piping, butterfly valves, self-cleaning intake cone screens, intake structures, outlet structures, grouted riprap, and all the required metering and controls for pump station functionality.

The City of Brighton began construction of Erger's Pond Augmentation Station project in April 2018. Resources were focused first on completing the Riverside pump station. This was conducted in an effort to have the Riverside pump station functional in early spring of 2019 in order capture free river and fill Erger's Pond. A coffer dam was built and sheet piling was installed in the river in order to create a dry work environment to construct the diversion structures and wet wells. The diversion structures, piping, and wet wells were constructed per plan. During construction of the Riverside wet wells, the existing reservoir's slurry wall was determined to be in a different location as previously thought and shown on the design documents. Instead of the expected two pipe penetrations through the slurry wall, the slurry wall crossed through the where the wet well structure was designed to be located. Due to design and space constraints, the wet well structure could not be relocated even though it hadn't been built at this time. This was one of the largest challenges in the project. This required a comprehensive and elaborate slurry wall repair. Collaboration occurred between the City of Brighton, design engineer, and contractor to develop a solution for a successful repair of the slurry wall without affecting the project schedule. The repair was made with extensive field testing and construction observation. Once completed, the slurry wall repair was determined to be adequate and effective. After the slurry wall was repaired, the gravity box culvert and the grouted riprap rundown into Erger's Pond were constructed. At this

point, most of the infrastructure was installed at the River Side pump station. The coffer dam and sheet piling were removed and the river was reestablished to its original location. This left only the controls and electrical components to be installed for full pump station functionality and the opportunity to capture free river water. Finally, the controls and electrical components were installed, which gave the City the ability to meter water from the river. On March 25, 2019, the gravity box culvert was opened and the City began to fill Erger's Pond with free river water. On March 27, 2019, the submersible pumps were turned on and the City began pumping water into Erger's Pond. Substantial completion was granted for the Riverside pump station on March 27, 2019.

During construction of the Riverside pump station, the contractor placed another crew to begin construction of the Pondside pump station. The wet well, piping, metering, and valve vault were all constructed. Another slurry wall repair was necessary during the Pondside pump station construction. However, this slurry wall repair was due to a pipe penetration. Adequate testing and oversight ensured an effective slurry wall repair at this location as well. The electrical room was built, and all electrical components and controls were installed. In late April 2019, startup of the Pondside pump station occurred. Substantial completion was granted for the Pondside pump station on May 15, 2019.

The pump stations now give the City the ability to utilize the reservoir for water storage by diverting free water from the river into Erger's Pond, and pumping that water back to the river at later times when it is necessary to meet augmentation requirements. This system of operation helps to benefit the South Platte River as a whole. During times of high flows and free river, water can be diverted and stored. During times when the river is typically lower and the City has augmentation requirements, water can be pumped back into the river to maintain healthy river flows.

The Erger's Pond Augmentation station was an outstanding project. Everyone involved, City of Brighton staff, the design engineer, and the contractor, were instrumental in the project being successful.

The City of Brighton appreciates being able to work with the Colorado Water Conservation Board on this project. If you have any questions, please feel free to contact me.

Jake Hebert
Project Manager
City of Brighton

Brighton℠

Erger's Pond

Augmentation Station
City of Brighton, CO
ISSUED FOR CONSTRUCTION
MARCH, 2018

BURNS & MCDONNELL PROJECT NO. 86831

COLORADO REGISTERED
ANTHONY C. BEESON
40915
PROFESSIONAL ENGINEER
3/23/18

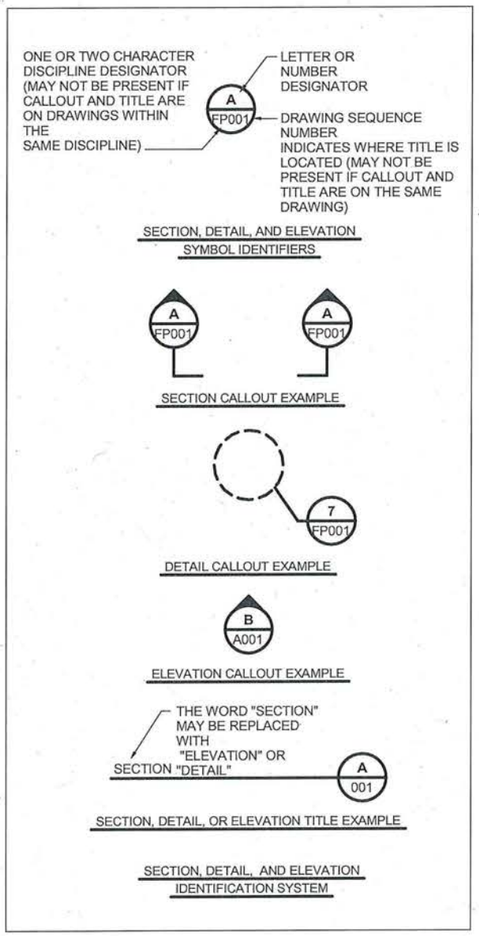
no.	date	by	ckd	description
0	3/23/18	AB	JS	ISSUED FOR CONSTRUCTION

BURNS McDONNELL

Erger's Pond Augmentation Station

City of Brighton
86381

Cover



Brighton℠

Erger's Pond
Augmentation Station
City of Brighton, CO

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10	C201	EROSION AND SEDIMENTATION CONTROL PLAN I
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no.	date	by	ckd	description
0	3/23/18	AB	JS	ISSUED FOR CONSTRUCTION

BURNS McDONNELL

Erger's Pond Augmentation Station

City of Brighton
86381

Index

GENERAL NOTES:

1. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT LEAST THREE BUSINESS DAYS PRIOR TO CONSTRUCTION, NOT INCLUDING DAY OF NOTIFICATION. CALL 811 OR 1-(800) 922-1987.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS PRIOR TO THE COMMENCEMENT OF ANY WORK ON THE PROJECT, OR AS APPROVED BY THE OWNER. CONTRACTOR SHALL COORDINATE ALL REQUIRED INSPECTIONS WITH THE APPROPRIATE ADMINISTRATIVE AUTHORITY. ALL COSTS ASSOCIATED WITH OBTAINING PERMITS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL CONFINE ALL GRADING AND CONSTRUCTION ACTIVITIES TO WITHIN THE OWNER'S PROPERTY AND ANY PERMANENT AND/OR TEMPORARY EASEMENTS.
4. CONTRACTOR SHALL PROVIDE ADEQUATE ACCESS TO EXISTING SITE FACILITIES ON THE PROJECT SITE DURING CONSTRUCTION AT ALL TIMES. ACCESS AND PARKING FACILITIES SHALL BE SUBJECT TO THE OWNER'S APPROVAL.
5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER-OF-RECORD OF ANY PROBLEM IN CONFORMING TO THE APPROVED LINE AND GRADE FOR ANY ELEMENT OF THE PROPOSED IMPROVEMENTS PRIOR TO ITS CONSTRUCTION.
6. THE CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL NECESSARY TO COMPLETE THE WORK, INCLUDING ANY MOBILIZATION OF EQUIPMENT ON PUBLIC ROADWAYS. ALL TRAFFIC CONTROL DEVICES AND METHODS OF CONTROLLING TRAFFIC THROUGH CONSTRUCTION ZONES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (M.U.T.C.D.), FEDERAL HIGHWAY ADMINISTRATION, AND ALL REVISIONS THERETO (INCLUDING STATE SUPPLEMENTS).
7. UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS; AND, THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS POSSIBLE THERE MAY BE OTHERS, THE EXISTENCE OF WHICH ARE PRESENTLY NOT KNOWN OR SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATION AND TO AVOID DAMAGE THERETO. CONTRACTOR SHALL PROVIDE THE COST OF ANY POTHOLING OR UNDERGROUND INVESTIGATIONS DEEMED NECESSARY TO IDENTIFY AND LOCATE EXISTING FACILITIES AND/OR UTILITIES.
8. UNLESS NOTED OTHERWISE, ALL EXISTING FACILITIES ARE TO REMAIN UNDISTURBED AND USED IN PLACE. THE CONTRACTOR SHALL PROVIDE PROTECTIONS NECESSARY TO PREVENT DAMAGE AND SHALL REPAIR AND/OR REPLACE ALL EXISTING FACILITIES DAMAGED DURING CONSTRUCTION ACTIVITIES. EXISTING FACILITIES NOTED FOR REMOVAL SHALL BE REMOVED AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL NECESSARY UTILITY RELOCATIONS WITH THE APPROPRIATE UTILITY COMPANY.
10. THE CONTRACTOR IS RESPONSIBLE FOR THE PREVENTION OF DAMAGE TO ADJACENT PROPERTY. NO PERSON SHALL EXCAVATE ON LAND SO CLOSE TO THE PROPERTY LINE AS TO ENDANGER ANY ADJOINING IMPROVEMENTS, SIDEWALK, ALLEY OR UTILITY WITHOUT SUPPORTING AND PROTECTING SUCH PROPERTY FROM SETTLING, OR OTHER DAMAGE THAT MIGHT RESULT FROM THE WORK.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY MONUMENTATION, AND WILL BE REQUIRED TO RE-ESTABLISH ANY MONUMENTATION WHICH IS DAMAGED OR DESTROYED DURING CONSTRUCTION OPERATIONS. SUCH MONUMENTATION SHALL BE RE-ESTABLISHED BY A LICENSED LAND SURVEYOR IN ACCORDANCE WITH STATE LAWS.
12. CONTRACTOR SHALL PROVIDE TEMPORARY THRUST RESTRAINTS AND PIPE SUPPORTS FOR ANY EXISTING FACILITIES AND UTILITIES AS REQUIRED PERFORMING THE WORK. ANY EXISTING RESTRAINT OR SUPPORT SYSTEMS SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE IF DAMAGED.
13. CONTRACTOR IS RESPONSIBLE FOR THE SAFE AND SECURE STORAGE OF GOODS, MATERIALS, AND EQUIPMENT ONSITE. CONTRACTOR SHALL COORDINATE THE FINAL LOCATION OF STORAGE AND STAGING AREAS WITH THE OWNER PRIOR TO CONSTRUCTION.
14. TREES AND SHRUBS WITHIN THE CONSTRUCTION LIMITS, WHICH ARE IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION, SHALL BE TRIMMED AND/OR REMOVED AND DISPOSED OF BY THE CONTRACTOR WITH OWNER APPROVAL. TREES AND SHRUBS WHICH ARE NOT IN DIRECT CONFLICT SHALL BE SAVED AND PROTECTED FROM DAMAGE.
15. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY POWER, PROCESS, AND UTILITY SERVICE BYPASSES AND CONNECTIONS REQUIRED BY THE WORK AND TO SUSTAIN CONTINUOUS OPERATIONS OF THE FACILITY. COSTS ASSOCIATED WITH ELECTRICITY RATES FOR THE PROJECT SHALL BE PAID FOR BY THE OWNER.
16. CONTRACTOR SHALL COORDINATE THE FINAL LOCATION OF STORAGE AND STAGING AREAS WITH THE OWNER PRIOR TO CONSTRUCTION.
17. CONTRACTOR SHALL CONFORM TO ALL NATIONAL AND STATE DEWATERING REGULATIONS AND REQUIREMENTS. CONTRACTOR SHALL OBTAIN COLORADO DISCHARGE PERMIT SYSTEM, PERMIT BEFORE ANY CONSTRUCTION INVOLVING THE DEWATERING OF THE SOUTH PLATTE RIVER.
18. NO ACTIVITY MAY USE UNSUITABLE MATERIAL (e.g. TRASH, DEBRIS, CAR BODIES, ASPHALT, ECT.). MATERIAL USED FOR CONSTRUCTION OR DISCHARGED MUST BE FREE FROM TOXIC POLLUTANTS IN TOXIC AMOUNTS (SEE SECTION 307 OF THE CLEAN WATER ACT).
19. TEMPORARY FILLS MUST BE REMOVED IN THEIR ENTIRETY AND THE AFFECTED AREAS RETURNED TO PRE-CONSTRUCTION ELEVATIONS. ALL DISTURBED AREAS SHALL BE RESTORED TO THE PRECONSTRUCTION CONDITIONS.

DEMOLITION NOTES:

1. CONTRACTOR SHALL PRESERVE ALL EXISTING VEGETATION, WHERE POSSIBLE. MISCELLANEOUS AND MINOR REMOVALS (INCLUDING BUT NOT LIMITED TO WALLS, POSTS, SIGNS, GUY WIRES, SMALL AREAS OF PAVEMENT, UTILITY SERVICE LINES, SMALL DIAMETER TREES, SHRUBS, ETC.) MAY NOT HAVE BEEN SHOWN IN THE PLAN BUT ARE CONSIDERED OBLIGATORY TO THE CONTRACT. CONTRACTOR SHALL EVALUATE EXPECTED REMOVALS PRIOR TO BID, AND WILL BE REQUIRED TO REMOVE ALL CONFLICTS WITH THE PROPOSED CONSTRUCTION AT NO ADDITIONAL COST TO THE PROJECT.CONTRACTOR SHALL VERIFY ANY DEMOLITION WITH THE OWNER BEFORE PROCEEDING WITH DEMOLITION.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL DELINEATE PROPERTY LINES AND THE CONSTRUCTION LIMITS FOR REVIEW BY THE ENGINEER AND OWNER. ORANGE CONSTRUCTION FENCING SHALL BE PLACED ALONG PRIVATE PROPERTY LIMITS TO PREVENT DISTURBANCE OUTSIDE OF THE CONSTRUCTION LIMITS, AND AS REQUESTED BY THE OWNER.
3. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION STAKING OF THE PROJECT.
4. THE CONTRACTOR SHALL BACKFILL AND COMPACT TRENCHES ACCORDING TO THE SPECIFICATIONS. CRUSHED AGGREGATE BASE COURSE SHALL BE COMPACTED IN THE TRENCHES AS SURFACE TREATMENT.
5. UTILITIES AND UTILITY APPURTENANCES SHALL BE REMOVED AS NECESSARY TO AVOID CONFLICTS WITH THE PROPOSED CONSTRUCTION. UTILITY PIPES TO BE ABANDONED SHALL BE LEFT IN PLACE, FILLED WITH CLSM, CUT AND PLUGGED. CONTRACTOR SHALL CONFIRM THAT ALL UTILITY REMOVAL/ABANDONMENTS ARE PROPERLY CAPPED AT THE CONNECTION POINTS TO MAIN LINES. PRIOR TO DEMOLITION OF UTILITIES. WHERE CALLED OUT IN THE PLAN TO BE REMOVED, UTILITIES MAY BE ABANDONED IN PLACE ONLY WITH OWNER APPROVAL.
6. CONTRACTOR SHALL COORDINATE ALL UTILITY REMOVALS AND RELOCATIONS WITH THE RESPECTIVE UTILITY COMPANY. COST OF ALL UTILITY COORDINATION SHALL BE INCIDENTAL TO THE PROJECT. CONTRACTOR SHALL COORDINATE TEMPORARY SUPPORT OF UTILITIES, AND SHALL BE REQUIRED TO PROVIDE SUPPORTS AT NO COST TO THE PROJECT IF NOT PERFORMED BY THE UTILITY OWNER.
7. CONTRACTOR SHALL SEQUENCE THE WORK (INCLUDING RELOCATION OF UTILITIES) SO THAT ALL SERVICES TO OTHER ARE NOT DISTURBED.
8. DEMOLITION WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION.
9. CONTRACTOR SHALL RESTORE ALL GRAVEL SURFACING THAT IS DAMAGED DUE TO CONSTRUCTION ACTIVITIES, WITH A MINIMUM 8" OF AGGREGATE SURFACING.

ABBREVIATIONS:

@	AT	ICV	IRRIGATION CONTROL VALVE
Ø	DIAMETER	INV	INVERT
'	FOOT OR FEET	LF	LINEAR FEET
"	INCH OR INCHES	LP	LIGHT POLE
#	NUMBER	MAX	MAXIMUM
%	PERCENT	MH	MANHOLE
APPROX	APPROXIMATE	MIN	MINIMUM
ASPH	ASPHALT	N	NORTH OR NORTHING
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS	N/A	NOT APPLICABLE
ATG	ADJUST TO GRADE	OC	ON CENTER
BC	BACK OF CURB	PC	POINT OF CURVATURE
BLDG	BUILDING	PI	POINT OF INTERSECTION
BO	BY OTHERS	PCC	PORTLAND CEMENT CONCRETE
BOP	BOTTOM OF PIPE	PP	POWER POLE
BSC	BOLTED SLEEVE COUPLING	PRC	POINT OF REVERSE CURVATURE
C&G	CURB AND GUTTER	PROP	PROPOSED
CATV	CABLE TELEVISION	PT	POINT OF TANGENCY
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION	PVMT	PAVEMENT
CL	CENTERLINE	R	RADIUS
CIS	CENTER IN SLAB	R&R	REMOVE AND REPLACE
CMP	CORRUGATED METAL PIPE	R/W OR ROW	RIGHT-OF-WAY
CNTR	CENTER	RCP	REINFORCED CONCRETE PIPE
CO	CLEAN-OUT	S	SOUTH
CONC	CONCRETE	SAN	SANITARY
CONSTR	CONSTRUCTION	SCH	SCHEDULE
CP	CONTROL POINT	SDWK	SIDEWALK
DESC	DESCRIPTION	SL	SLUDGE
DIA	DIAMETER	SPEC	SPECIFICATION
DIP	DUCTILE IRON PIPE	STA	STATION
DND	DO NOT DISTURB	STD	STANDARD
DWG	DRAWING	STRUC	STRUCTURAL
E	EAST OR EASTING	TBA	TO BE ABANDONED
EBOX	ELECTRIC BOX	TBD	TO BE DETERMINED
EFF	EFFLUENT	TBR	TO BE REMOVED
ELEC	ELECTRIC	TBR&R	TO BE REMOVED AND REPLACED
EL OR ELEV	ELEVATION	TBRBO	TO BE REMOVED BY OTHERS
EQA	EDGE OF ASPHALT	TBR&RBO	TO BE REMOVED AND REPLACED BY OTHERS
ESMT	EASEMENT	TC	TOP OF CURB
ETC	ETCETERA	TH	THICKNESS
EXIST	EXISTING	TOW	TOP OF WALL
EXP	EXPANSION	TP	TOP OF PAVEMENT
FC	FACE OF CURB	TPED	TELEPHONE PEDESTAL
FF	FINISHED FLOOR	TRANSF	TRANSFORMER
FG	FINISHED GRADE	TYP	TYPICAL
FH	FIRE HYDRANT	UIP	USE IN PLACE
FL	FLOWLINE	W	WEST
FT	FOOT OR FEET	W/	WITH
GAL	GALLON	WM	WATER METER
GM	GAS METER	WMH	WATER MANHOLE
GS	GALVANIZED STEEL	WTR	WATER
HDPE	HIGH DENSITY POLYETHYLENE	WV	WATER VALVE
HMA	HOT MIX ASPHALT	WWF	WELDED WIRE FABRIC
HP	HIGHPOINT		

CIVIL LEGEND AND SYMBOLOGY

SCREENED OR GRAYSCALE ITEMS REPRESENT EXISTING FEATURES

LINE SYMBOLOGY

R/W	RIGHT-OF-WAY LINE	ST	STORM SEWER (EXIST)
℄	PROPERTY LINE	ST	STORM SEWER (PROP)
P/E	PERMANENT EASEMENT	5600	EXISTING CONTOUR
T/E	TEMPORARY EASEMENT	5600	PROPOSED CONTOUR
U/E	UTILITY EASEMENT		RAILROAD TRACKS
E	ELECTRIC LINE (OVERHEAD)	X	CHAINLINK FENCE
E	ELECTRIC LINE (BURIED)	XX	BARBED WIRE FENCE
CATV	CABLE TV		SILT FENCE
FO	FIBER OPTIC (OVERHEAD)		GUARDRAIL
FO	FIBER OPTIC		EDGE OF WATER
G	GAS LINE		FLOWLINE (WITH DIRECTION)
T	TELEPHONE LINE (OVERHEAD)	IRR	IRRIGATION LINE
T	TELEPHONE LINE (BURIED)		GRADING LIMITS
SS	SANITARY SEWER		TOP OF SLOPE
	SAN SEWER PROCESS PIPE		TOE OF SLOPE
W	WATERLINE	FP	FLOODPLAIN LIMITS
	EDGE OF PAVEMENT		

SYMBOLS (UTILITIES)

S	SANITARY SEWER MH	E	ELECTRIC MANHOLE	FO	FIBER OPTIC BOX
ST	STORM MANHOLE	EB	ELECTRIC BOX/HANDHOLE		LIGHT POLE
T	TELEPHONE MH	EP	ELECTRIC PEDESTAL		LIGHT POLE W/ ARM
TP	TELEPHONE PEDESTAL	ET	ELECTRIC TRANSFORMER		POWER POLE
GV	GAS VALVE	W	WATER MANHOLE		GUY
GM	GAS METER	WM	WATER METER	TR	TRAFFIC BOX
MO	MONITORING WELL	WV	WATER VALVE		TRAFFIC SIGN
TV	CABLE TV PEDESTAL		FIRE HYDRANT	W	WELL
CO	CLEANOUT		YARD HYDRANT		

SYMBOLS (MISC)

- PROJECT CONTROL POINT
- SHRUB
- DECIDUOUS TREE
- CONIFEROUS TREE
- TREE LINE
- BOLLARD
- MAIL BOX
- IRRIGATION CONTROL VALVE
- BORE HOLE
- BENCHMARK

PATTERNS

- UNDISTURBED EARTH
- COMPACTED FILL
- ROCK
- EXISTING GRAVEL
- PROPOSED AGGREGATE SURFACING
- SWAMP
- WATER
- HMA PAVEMENT
- CONCRETE
- RIPRAP

no.	date	by	ckd	description
0	3/23/18	GHC	NT	ISSUED FOR CONSTRUCTION

NICHOLAS TESSITORE 41295 3-23-18 PROFESSIONAL ENGINEER

BURNS McDONNELL

date: MARCH 2018	detailed: G. CANALES
designed: G. CANALES	checked: N. TESSITORE

Brighton COLORADO

Adams County, Colorado

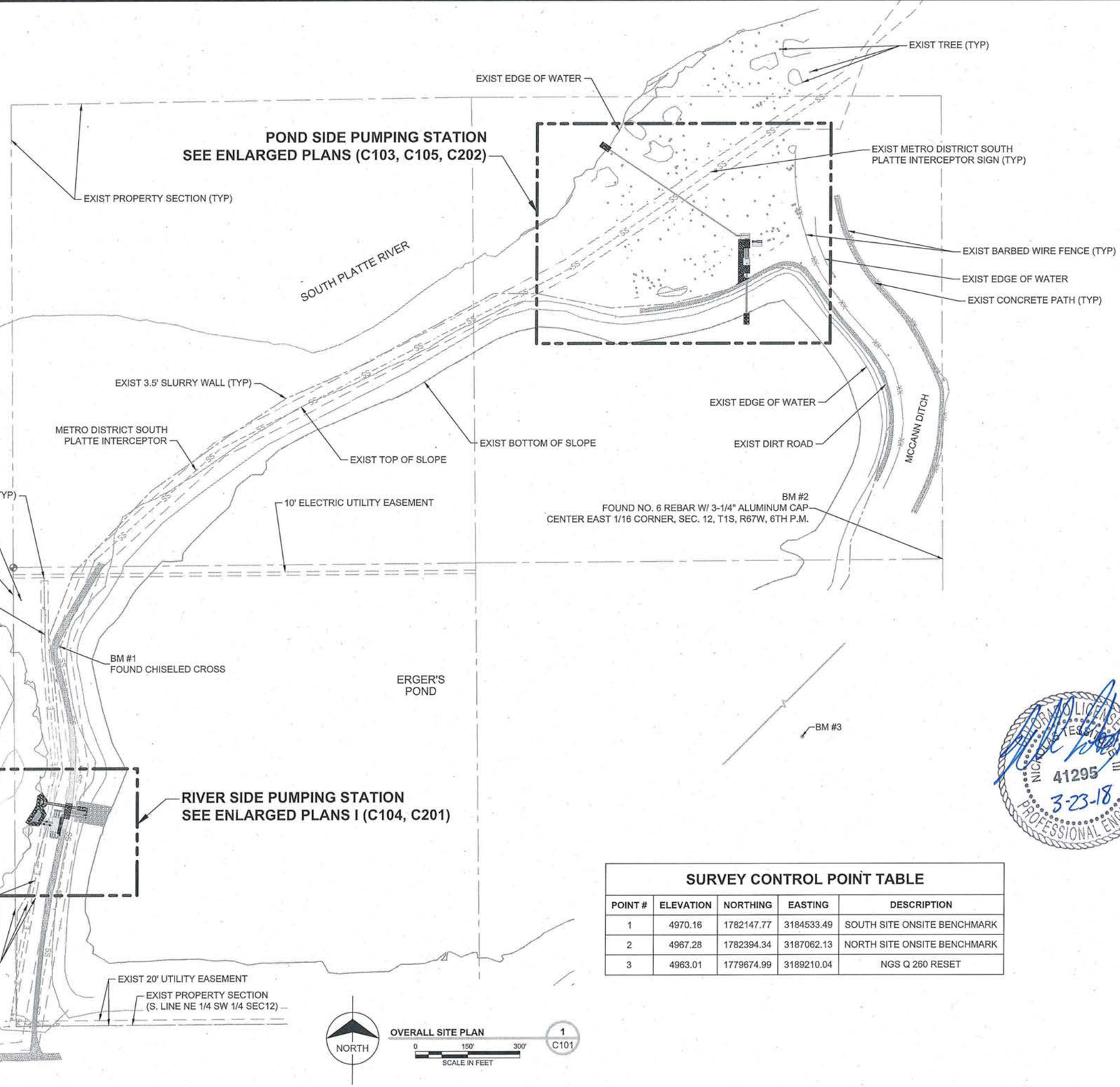
ERGER'S POND

CIVIL NOTES, LEGEND AND ABBREVIATIONS

project: 86381	contract:
drawing: C001	rev.: 0
sheet 3 of 77 sheets	
file	

SURVEY CONTROL NOTES:

1. BENCHMARK INFORMATION: A GPS DERIVED ONSITE BENCHMARK WAS ESTABLISHED FOR THE SOUTH SURVEYED SITE, BEING A CHISELED CROSS, 194'± NORTH OF THE END OF SURVEYED CONCRETE PATH, WITH AN ELEVATION OF 4970.16 FEET. A GPS DERIVED ONSITE BENCHMARK WAS ESTABLISHED FOR THE NORTH SURVEYED SITE, BEING A FOUND NO. 6 REBAR WITH 3-1/4" ALUMINUM CAP, AT THE CENTER EAST 1/16 CORNER, SECTION 12, 155'± SOUTHEAST OF THE END OF SURVEYED CONCRETE PATH, WITH AN ELEVATION OF 4967.28 FEET. A CHECK SHOT, 0.1'±, WAS TAKEN ON NGS POINT q 260 RESET, BEING A NGS LOGO CAP SET IN CONCRETE RETAINING WALL, STAMPED "Q 260 RESET, 1956" LOCATED 3.2 MILES FROM SITE, WITH A PUBLISHED ELEVATION OF 4963.01 FEET (NAVD88) NO DIFFERENTIAL LEVELING WAS PERFORMED TO ESTABLISH THIS ELEVATION.
2. BEARING AND COORDINATES ARE SURFACE VALUES AND ARE RELATIVE TO THE HARN COLORADO CENTRAL ZONE COORDINATE SYSTEM (US FT). SURFACE VALUES ARE SCALED FROM GRID VALUES USING A COMBINED SCALE FACTOR OF 1.00 (UNLESS NOTED OTHERWISE).
3. CONTRACTOR SHALL CONFIRM ALL PROJECT CONTROL POINTS (HORIZONTAL AND VERTICAL LOCATION) PRIOR TO CONSTRUCTION, AND PROVIDE DOCUMENTATION TO THE ENGINEER THAT CONFIRMS THE CONTROL INFORMATION SHOWN IN THE TABLE IS ACCURATE. CONTRACTOR SHALL IDENTIFY ANY LOST, OBLITERATED, OR NON-ACCURATE SURVEY CONTROL POINTS.
4. CONTRACTOR SHALL SET ADDITIONAL TEMPORARY CONTROL POINTS BASED ON THE SURVEY CONTROL POINTS AS NEEDED DURING CONSTRUCTION. CONTRACTOR SHALL ASSURE THAT TEMPORARY CONTROL POINTS ARE SET PRIOR TO OBLITERATING EXISTING PROJECT CONTROL POINTS WITHIN THE LIMITS OF THE WORK.



SURVEY CONTROL POINT TABLE

POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
1	4970.16	1782147.77	3184533.49	SOUTH SITE ONSITE BENCHMARK
2	4967.28	1782394.34	3187062.13	NORTH SITE ONSITE BENCHMARK
3	4963.01	1779674.99	3189210.04	NGS Q 260 RESET

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0	3/23/18	GHC	NT	ISSUED FOR CONSTRUCTION

NICHOLAS TESSITORE 41295 ILLINOIS PROFESSIONAL ENGINEER 3-23-18

BURNS McDONNELL

date MARCH 2018	detailed G. CANALES
designed G. CANALES	checked N. TESSITORE

Brighton COLORADO

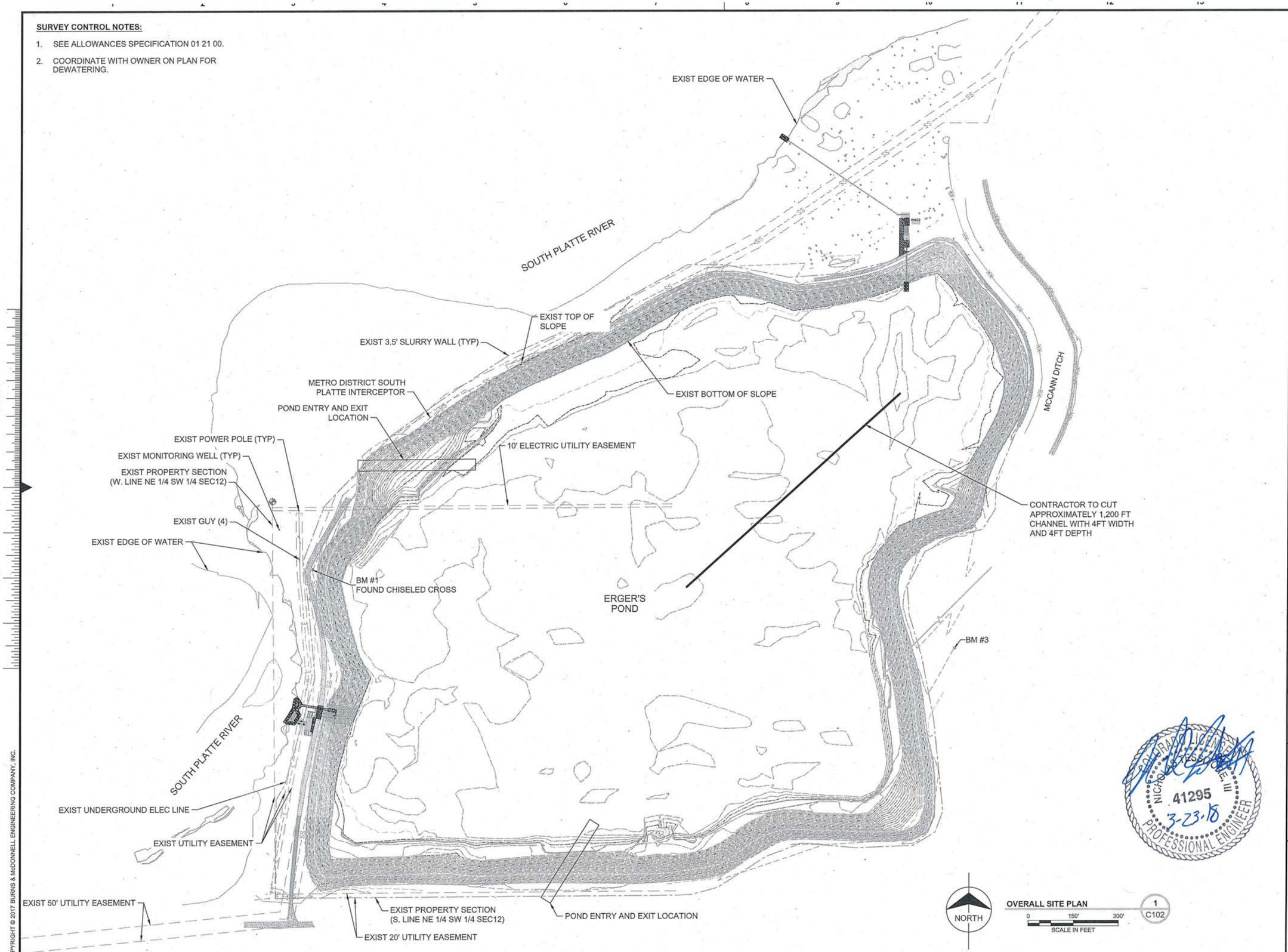
Adams County, Colorado

ERGER'S POND
OVERALL SITE PLAN

project 86381	contract
drawing C101	rev. 0
sheet 4 of 77 sheets	
file	

SURVEY CONTROL NOTES:

1. SEE ALLOWANCES SPECIFICATION 01 21 00.
2. COORDINATE WITH OWNER ON PLAN FOR DEWATERING.



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BURNS McDONNELL

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MARCH 2018	G. CANALES
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ERGER'S POND

POND DEWATERING PLAN PER ALLOWANCE

project	contract
86381	

drawing **C102** – rev. **0**

sheet 5 of 77 sheets

file

EXIST EDGE OF WATER

SOUTH PLATTE RIVER

EXIST METRO DISTRICT SOUTH PLATTE INTERCEPTOR (DND)

EXIST UTILITY EASEMENT

EXIST TREE (TYP)

EXIST PVC TUBE T-POST (TYP) (DND)

EXIST METRO DISTRICT SOUTH PLATTE INTERCEPTOR SIGN (DND)

EXIST MONITORING WELL (TYP) (DND)

EXIST PVC TUBE T-POST (TBR)

EXIST TREE (TBR)

EXIST TREE (TBR)

EXIST TREE (TBR)

EXIST TREE (TBR)

EXIST TREE (TBR)

EXIST TREE (TBR)

EXIST BARBED WIRE FENCE (DND)

BORE HOLE (3/4" DIA PVC) (DND)

EXIST TREE (TBR)

EXIST TREE (TBR)

EXIST TREE (TYP)

EXIST TREE (TYP)

EXIST BARBED WIRE FENCE

EXIST TREE (TBR)

EXIST DIRT ROAD

EXIST 3.5' SLURRY WALL
(REPAIR WHERE NECESSARY - SEE C501)

EXIST EDGE OF WATER

ERGER'S POND

DEMOLITION LEGEND

LIMITS OF DEMOLITION

DEMOLITION NOTES:
1. SEE NOTES ON SHEET C001

NORTH

ENLARGED DEMOLITION PLAN II 1 C103

0 12.5' 25 50'
SCALE IN FEET

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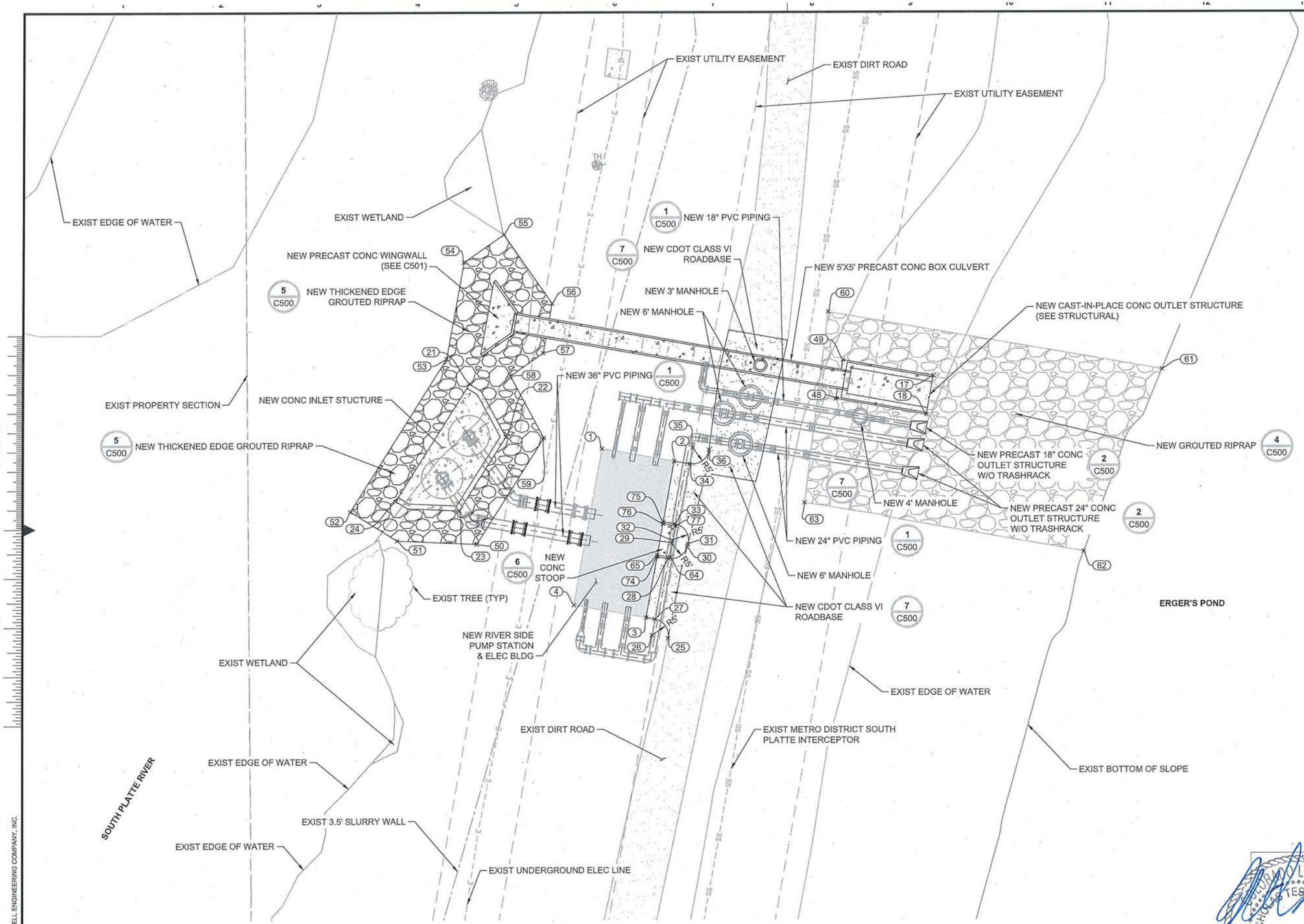
ERGER'S POND
ENLARGED DEMOLITION PLAN

project 86381	contract
drawing C103	rev. 0
sheet 6 of 77 sheets	
file	

NICHOLAS TESSITORE III
41295
3-23-18
PROFESSIONAL ENGINEER



NOTES:
1. GRADE FROM ALL PROPOSED GRADING POINTS AT 4:1 SLOPE TO MEET EXISTING.
2. DIRT ROAD TO BE REPLACED AS NEEDED FOR DISTURBANCE.
3. SEE PROCESS DRAWINGS FOR YARD PIPING.

NORTH

ENLARGED SITE PLAN I 1 C104

0 7.5' 15' 30'
SCALE IN FEET

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ERGER'S POND
ENLARGED SITE PLAN I

project	contract
86381	

drawing C104 – rev. 0

sheet 7 of 77 sheets
file

NICHOLAS TESSITORE III
41295
3-23-18
PROFESSIONAL ENGINEER

SOUTH PLATTE RIVER

NEW PRECAST 18" CONC OUTLET STRUCTURE W/O TRASHRACK — 2 / C500

NEW THICKENED EDGE GROUTED RIPRAP — 5 / C500

EXIST EDGE OF WATER

NEW 18" PVC PIPING — 1 / C500

EXIST UTILITY EASEMENT

EXIST PVC TUBE T-POST (TYP)

EXIST TREE (TYP)

EXIST MONITORING WELL

EXIST METRO DISTRICT SOUTH PLATTE INTERCEPTOR SIGN

EXIST TREE (TYP)

EXIST METRO DISTRICT SOUTH PLATTE INTERCEPTOR

NEW POND SIDE VAULT

NEW POND SIDE ELEC BLDG

EXIST BARBED WIRE FENCE

NEW CONC CONDENSER PAD

NEW 18" PVC PIPING — 1 / C500

NEW CDOT CLASS VI ROAD BASE — 7 / C500

NEW 10" PVC PIPING — 1 / C500

BORE HOLE (3/4" DIA PVC)

NEW POND SIDE WET WELL PUMP STATION

NEW 24" PVC PIPING — 1 / C500

EXIST TREE (TYP)

EXIST BARBED WIRE FENCE

EXIST DIRT ROAD

EXIST MONITORING WELL

EXIST SLURRY WALL

EXIST TOP OF SLOPE

EXIST EDGE OF WATER

ERGER'S POND

NEW GROUTED RIPRAP — 4 / C500

NEW 24" INTAKE W/ TRASHRACK — 2 / C500

NOTES:
1. GRADE FROM ALL PROPOSED GRADING POINTS AT 4:1 SLOPE TO MEET EXISTING.

NORTH

ENLARGED SITE PLAN II — 1 / C105

0 30' 60'
SCALE IN FEET

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ERGER'S POND
ENLARGED SITE PLAN II

project	contract
86381	

drawing **C105** rev. **0**

sheet 8 of 77 sheets

file

NICHOLAS TESSITORE III 41295 PROFESSIONAL ENGINEER 3-23-18

Scale For Microfilming
Millimeters
Inches

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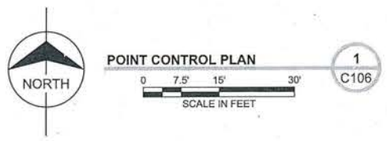
POINT TABLE				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
1	4970.00	1781663.06	3184514.50	PUMP STATION CORNER
2	4970.50	1781659.19	3184536.49	PUMP STATION CORNER
3	4970.50	1781611.42	3184528.08	PUMP STATION CORNER
4	4970.00	1781615.29	3184506.09	PUMP STATION CORNER
5	4963.50	1783328.10	3186477.12	VAULT CORNER
6	4963.50	1783328.10	3186504.12	VAULT CORNER
7	4964.00	1783311.10	3186504.12	VAULT CORNER
8	4964.00	1783311.10	3186477.12	VAULT CORNER
9	4962.63	1783302.97	3186512.25	BUILDING CORNER
10	4962.22	1783302.97	3186538.59	BUILDING CORNER
11	4961.84	1783291.64	3186538.59	BUILDING CORNER
12	4962.58	1783291.64	3186512.25	BUILDING CORNER
13	4964.00	1783258.34	3186486.62	PUMP STATION CORNER
14	4963.50	1783258.34	3186504.12	PUMP STATION CORNER
15	4964.00	1783238.84	3186504.12	PUMP STATION CORNER
16	4964.00	1783238.84	3186486.62	PUMP STATION CORNER
17	4960.03	1781685.17	3184615.32	EDGE OF OUTLET
18	4959.00	1781673.35	3184613.23	EDGE OF OUTLET
19	4962.00	1783303.22	3186511.25	CORNER OF CONC PAD
20	4962.00	1783307.72	3186515.75	CORNER OF CONC PAD
21	4961.49	1781682.91	3184474.04	CORNER OF INLET PROTECTION STRUCTURE
22	4967.02	1781666.74	3184485.16	CORNER OF INLET PROTECTION STRUCTURE
23	4967.77	1781644.17	3184471.04	CORNER OF INLET PROTECTION STRUCTURE
24	4962.75	1781647.09	3184451.63	CORNER OF INLET PROTECTION STRUCTURE
25	4969.43	1781605.09	3184534.80	START OF CURVE
26	4969.38	1781606.03	3184529.89	CENTER OF CURVE
27	4970.23	1781610.95	3184530.76	START OF CURVE
28	4970.15	1781629.35	3184534.85	START OF CURVE
29	4970.43	1781634.28	3184535.72	CENTER OF CURVE
30	4969.41	1781633.06	3184540.57	START OF CURVE
31	4969.41	1781633.87	3184540.77	START OF CURVE
32	4970.43	1781635.09	3184535.92	CENTER OF CURVE
33	4970.17	1781640.01	3184536.79	START OF CURVE
34	4970.09	1781658.35	3184541.25	START OF CURVE
35	4969.33	1781663.27	3184542.12	CENTER OF CURVE
36	4969.40	1781662.65	3184547.08	START OF CURVE
37	4965.08	1783181.79	3186466.21	START OF CURVE
38	4963.65	1783190.67	3186461.62	CENTER OF CURVE
39	4964.74	1783190.67	3186471.62	START OF CURVE
40	4965.04	1783200.78	3186501.62	START OF CURVE
41	4963.66	1783209.44	3186496.62	CENTER OF CURVE
42	4964.21	1783209.44	3186486.62	START OF CURVE
43	4964.00	1783214.84	3186486.62	EDGE OF ROAD
44	4964.00	1783214.84	3186504.12	EDGE OF ROAD
45	4964.00	1783287.10	3186486.62	EDGE OF ROAD

POINT TABLE				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
46	4964.00	1783287.10	3186504.12	EDGE OF ROAD
47	4964.00	1783311.10	3186471.62	EDGE OF ROAD
48	4967.83	1781678.22	3184585.66	EDGE OF OUTLET STRUCTURE
49	4968.13	1781690.03	3184587.74	EDGE OF OUTLET STRUCTURE
50	4967.74	1781633.92	3184476.42	EDGE OF RIPRAP
51	4964.15	1781635.00	3184452.11	EDGE OF RIPRAP
52	4960.10	1781643.92	3184437.85	EDGE OF RIPRAP
53	4959.81	1781690.51	3184467.00	EDGE OF RIPRAP
54	4959.41	1781719.95	3184472.20	EDGE OF RIPRAP
55	4967.48	1781728.44	3184484.33	EDGE OF RIPRAP
56	4968.29	1781707.37	3184499.08	EDGE OF RIPRAP
57	4967.62	1781692.27	3184496.41	EDGE OF RIPRAP
58	4966.67	1781685.30	3184486.47	EDGE OF RIPRAP
59	4967.84	1781666.38	3184496.73	EDGE OF RIPRAP
60	4969.03	1781704.69	3184583.20	EDGE OF RIPRAP
61		1781687.10	3184684.95	EDGE OF RIPRAP
62	1.00	1781631.50	3184661.39	EDGE OF RIPRAP
63	4967.45	1781646.51	3184576.25	EDGE OF RIPRAP
64	4970.42	1781629.85	3184535.39	CONCRETE STOOP CORNER
65	4970.50	1781630.54	3184531.45	CONCRETE STOOP CORNER
66		1783068.52	3186488.40	EDGE OF RIPRAP
67		1783098.86	3186488.40	EDGE OF RIPRAP
68		1783098.86	3186503.40	EDGE OF RIPRAP
69		1783068.52	3186503.40	EDGE OF RIPRAP
70		1783578.89	3186073.28	EDGE OF RIPRAP
71		1783591.33	3186081.67	EDGE OF RIPRAP
72	4958.24	1783575.26	3186105.48	EDGE OF RIPRAP
73	4958.45	1783562.83	3186097.10	EDGE OF RIPRAP
74	4970.50	1781629.97	3184531.35	EDGE OF DRIVE
75	4970.50	1781640.64	3184533.23	EDGE OF DRIVE
76	4970.50	1781640.06	3184533.12	CONCRETE STOOP CORNER
77	4970.42	1781639.37	3184537.06	CONCRETE STOOP CORNER

NOTES:
1. POINT NUMBERS WITH NO ELEVATION ARE DESIGNATED TO MATCH EXISTING GRADE.



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BURNS McDONNELL

date	detailed
MARCH 2018	G. CANALES
designed	checked
G. CANALES	N. TESSITORE

Brighton COLORADO

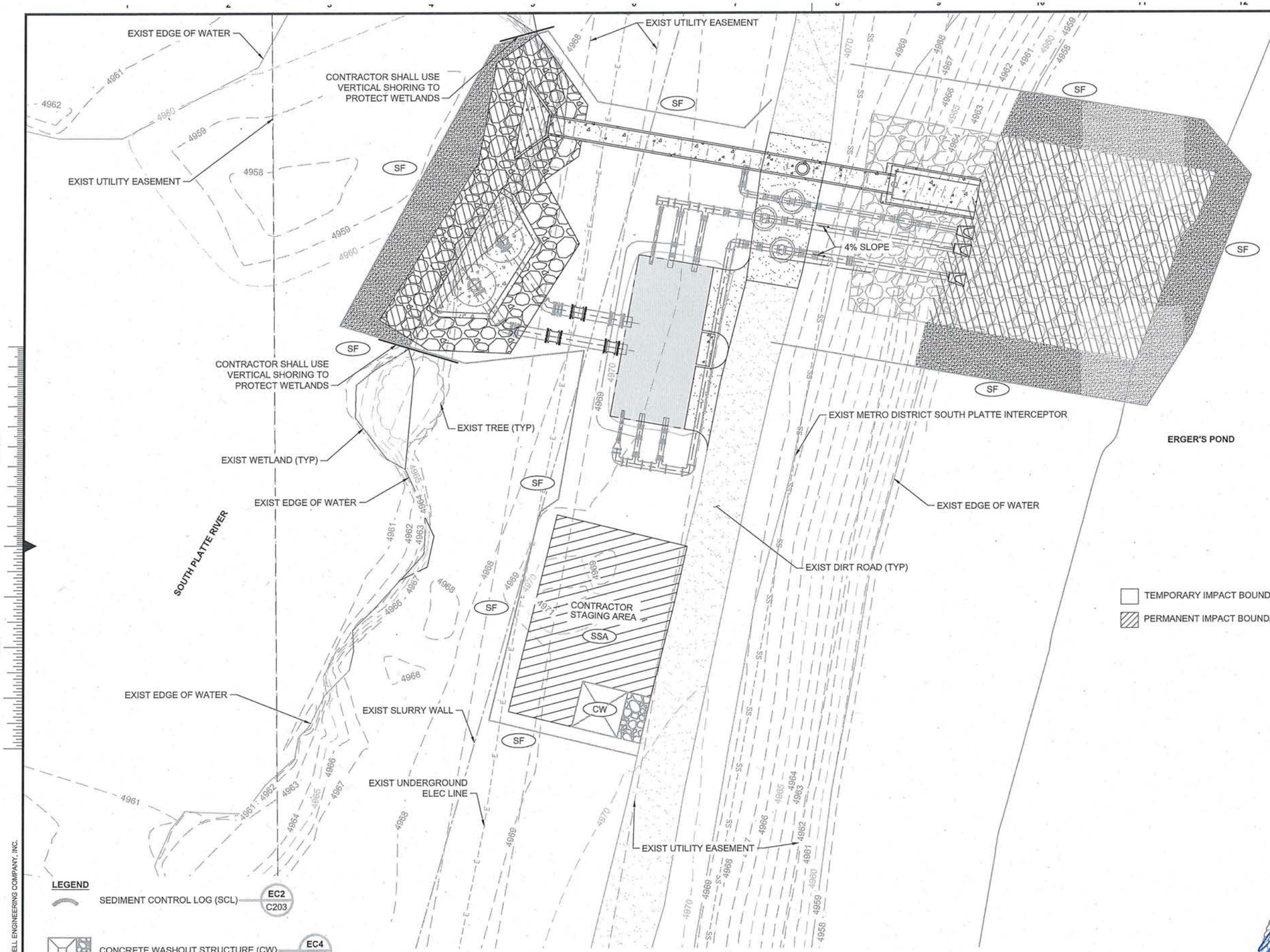
Adams County, Colorado

ERGER'S POND
POINT CONTROL PLAN

project	contract
86381	

drawing **C106** — rev. **0**

sheet 9 of 77 sheets
file



EROSION & SEDIMENTATION CONTROL PLAN NOTES:

1. A STABILIZED ENTRANCE/EXIT IS REQUIRED AT ALL ACCESS POINTS WHERE VEHICLES CAN ACCESS THE CONSTRUCTION SITE FROM PUBLIC ROADS. ANY ACCESS POINTS NOT SHOWN ON THE PLANS THAT THE CONTRACTOR ELECTS TO USE SHALL HAVE A VEHICLE TRACKING PAD INSTALLED AT THE ENTRANCE/EXIT LOCATION. SEE C204.

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Adams County, Colorado

ERGER'S POND
EROSION AND SEDIMENTATION CONTROL PLAN I

project 86381	contract
drawing C201	rev. 0
sheet 10 of 77 sheets	
file	

NICHOLAS TESSITORE 41295 PROFESSIONAL ENGINEER 3-23-18

EROSION & SEDIMENTATION CONTROL PLAN NOTES:
1. A STABILIZED ENTRANCE/EXIT IS REQUIRED AT ALL ACCESS POINTS WHERE VEHICLES CAN ACCESS THE CONSTRUCTION SITE FROM PUBLIC ROADS. ANY ACCESS POINTS NOT SHOWN ON THE PLANS THAT THE CONTRACTOR ELECTS TO USE SHALL HAVE A VEHICLE TRACKING PAD INSTALLED AT THE ENTRANCE/EXIT LOCATION.

no.	date	by	ckd	description
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EXIST EDGE OF WATER
NEW THICKENED EDGE GROUTED RIPRAP
SOUTH PLATTE RIVER
EXIST UTILITY EASEMENT
EXIST PVC TUBE T-POST (TYP)
EXIST MONITORING WELL (TYP)
EXIST METRO DISTRICT SOUTH PLATTE INTERCEPTOR SIGN
EXIST TREE (TYP)
EXIST METRO DISTRICT SOUTH PLATTE INTERCEPTOR
NEW DRIVEWAY (TYP)
EXIST BARBED WIRE FENCE
BORE HOLE (3/4" DIA PVC)
NEW CONC CONDENSER PAD
CONTRACTOR STAGING AREA
SSA
CW
EXIST TREE (TYP)
EXIST BARBED WIRE FENCE
EXIST SLURRY WALL
EXIST DIRT ROAD
EXIST TREE (TYP)
EXIST EDGE OF WATER
ERGER'S POND
NEW GROUTED RIPRAP
TEMPORARY IMPACT BOUNDARY
PERMANENT IMPACT BOUNDARY

LEGEND
- SEDIMENT CONTROL LOG (SCL) — EC2 C203
- CONCRETE WASHOUT STRUCTURE (CW) — EC4 C204
- SILT FENCE (SF) — EC1 C203
- STABALIZED STAGING AREA (SSA) — EC3 C203

NORTH

EROSION CONTROL PLAN II — 1 C202

0 30' 60'
SCALE IN FEET

Millimeters
Inches
Scale For Microfilming

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ERGER'S POND
EROSION AND SEDIMENTATION CONTROL PLAN II

project: 86381	contract:
drawing: C202	rev.: 0
sheet: 11 of 77 sheets	
file:	

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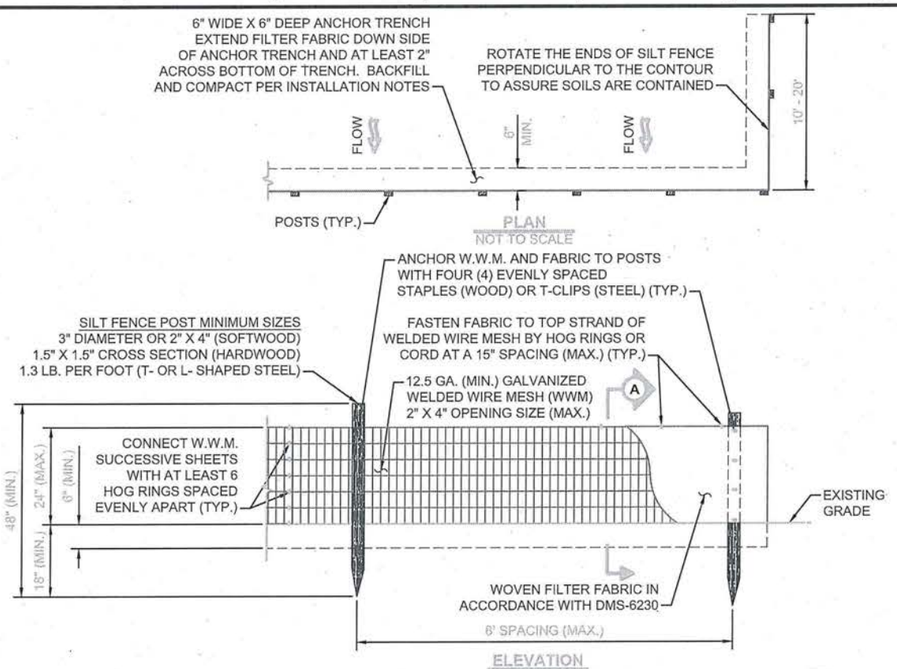


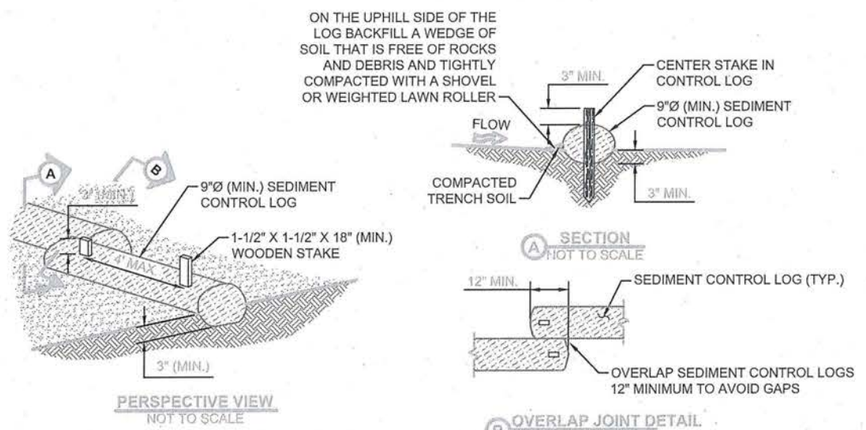
INSTALLATION NOTES:

1. SEE SEDIMENT AND EROSION CONTROL PLAN FOR GENERAL LOCATION OF SILT FENCE. CONTRACTOR MAY MODIFY LOCATIONS AND QUANTITIES WITH APPROVAL FROM ENGINEER AND/OR OWNER.
2. SILT FENCE SHALL BE APPROVED AND INSTALLED PRIOR TO BEGINNING ANY LAND DISTURBING ACTIVITIES.
3. SILT FENCE SHALL BE PLACED AWAY FROM THE TOE OF A SLOPE TO ALLOW FOR WATER PONDING. IT SHALL BE INSTALLED AT LEAST 5 FEET BEYOND THE LIMITS OF GRADING.
4. ANCHOR TRENCH SHALL BE EXCAVATED USING A TRENCHER OR SILT FENCE INSTALLATION DEVICE. GRADERS, BACKHOES OR OTHER SIMILAR EQUIPMENT SHALL NOT BE USED FOR INSTALLATION.
5. COMPACTION OF THE ANCHOR TRENCH BACKFILL SHALL BE COMPLETED BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING. THE COMPACTION EFFORT SHALL BE SUFFICIENT TO PREVENT THE SILT FENCE FROM BEING PULLED OUT BY HAND.
6. WIRE MESH AND FABRIC SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE POSTS, THERE SHALL BE NO NOTICEABLE SAG BETWEEN POSTS AFTER INSTALLATION.
7. STAPLES USED TO ANCHOR MESH AND FABRIC TO POSTS SHALL BE 3/4" HEAVY DUTY STAPLES WITH 1/2" LEGS MINIMUM.
8. SILT FENCE SHALL BE INSTALLED AS CLOSE TO ON THE CONTOUR AS POSSIBLE. AT THE END OF A RUN OF SILT FENCE IT SHALL BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A J-HOOK. THE EXTENSION OF THE PERPENDICULAR SECTION SHOULD BE A SUFFICIENT LENGTH TO PREVENT RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE.

MAINTENANCE NOTES:

1. THE CONTRACTOR SHALL INSPECT SILT FENCE WEEKLY AND MAINTAIN IT IN AN EFFECTIVE CONDITION. IT SHALL ALSO BE INSPECTED WITHIN 24 HOURS AFTER A STORM EVENT AND REPAIRS SHOULD BE COMPLETED AS NEEDED.
2. SEDIMENT ACCUMULATED UPSTREAM OF SILT FENCE SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT DEPTH IS GREATER THAN 6 INCHES.
3. CONTRACTOR IS RESPONSIBLE FOR COST AND LABOR OF REPAIRING OR REPLACING SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING OR COLLAPSE.
4. SILT FENCE SHALL REMAIN IN PLACE UNTIL UPSTREAM DISTURBED AREA HAS BEEN STABILIZED OR IT IS REPLACED BY ANOTHER EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.
5. SILT FENCE SHALL BE REMOVED AT THE END OF CONSTRUCTION. AFTER REMOVAL OF THE THE FABRIC, WIRE MESH AND POSTS THE DISTURBED AREAS SHALL BE TOP-SOILED, SEEDED AND MULCHED.

SILT FENCE DETAIL (SF) — EC1 — C201, C202
NOT TO SCALE



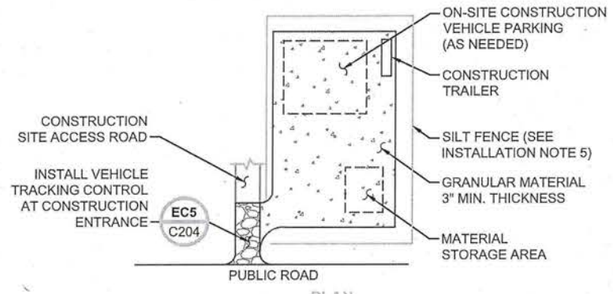
INSTALLATION NOTES:

1. SEE SEDIMENT AND EROSION CONTROL PLAN FOR GENERAL LOCATION OF SEDIMENT CONTROL LOGS. CONTRACTOR MAY MODIFY LOCATIONS AND QUANTITIES WITH APPROVAL FROM ENGINEER AND/OR OWNER.
2. SEDIMENT CONTROL LOGS SHALL BE APPROVED AND INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES IN THE LOCATIONS THAT WILL NOT BE DISTURBED. LOGS LOCATED IN AREAS THAT WILL BE GRADED SHALL BE INSTALLED AS SOON AS POSSIBLE AFTER GRADING HAS BEEN COMPLETED.
3. SEDIMENT CONTROL LOGS SHOULD BE AVOIDED IN CONCENTRATED HIGH FLOW AREAS.
4. SEDIMENT CONTROL LOGS SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 3 INCHES.

MAINTENANCE NOTES:

1. THE CONTRACTOR SHALL INSPECT THE SEDIMENT CONTROL LOGS WEEKLY AND MAINTAIN THEM IN AN EFFECTIVE CONDITION. THEY SHALL ALSO BE INSPECTED WITHIN 24 HOURS AFTER A STORM EVENT AND REPAIRS SHOULD BE COMPLETED AS NEEDED.
2. SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOGS SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT DEPTH IS WITHIN 1/2 THE HEIGHT OF THE CREST OF THE LOG.
3. SEDIMENT CONTROL LOGS THAT ARE SHOWN IN RIPRAP LINED DRAINAGE CHANNELS DO NOT NEED TO BE INSTALLED IF RIPRAP IS INSTALLED DURING CHANNEL CONSTRUCTION. IF RIPRAP IS NOT INSTALLED DURING CHANNEL CONSTRUCTION, THE SEDIMENT CONTROL LOGS SHALL BE TEMPORARILY INSTALLED UNTIL COMMENCING THE RIPRAP INSTALLATION.
4. SEDIMENT CONTROL LOGS SHALL BE REMOVED AT THE END OF CONSTRUCTION. AFTER REMOVAL OF THE LOGS THE DISTURBED AREAS SHALL BE TOPSOILED, SEEDED AND MULCHED.

SEDIMENT CONTROL LOG DETAIL (SCL) — EC2 — C201, C202
NOT TO SCALE



INSTALLATION NOTES:

1. SEE SEDIMENT AND EROSION CONTROL PLAN FOR GENERAL LOCATION OF STAGING AREA. CONTRACTOR MAY MODIFY LOCATION AND SIZE OF STABILIZED STAGING AREA WITH APPROVAL FROM ENGINEER AND/OR OWNER.
2. STABILIZED STAGING AREA SHALL BE SIZED APPROPRIATELY TO FULLY CONTAIN PARKING, STORAGE, AND UNLOADING AND LOADING OPERATIONS.
3. STAGING AREA SHALL BE STABILIZED PRIOR TO ANY OTHER OPERATIONS ON THE SITE.
4. THE STABILIZED STAGING AREA SHALL CONSIST OF 2-4" AGGREGATE A MINIMUM OF 8 INCHES THICK.
5. STAGING AREA SHALL BE CONTAINED WITHIN THE SITE'S PERIMETER BMPS, OR HAVE ADDITIONAL PERIMETER BMPS (SILT FENCE) INSTALLED AROUND STAGING AREA.

MAINTENANCE NOTES:

1. THE CONTRACTOR SHALL INSPECT THE STABILIZED STAGING AREA WEEKLY AND MAINTAIN IT IN AN EFFECTIVE CONDITION. IT SHALL ALSO BE INSPECTED WITHIN 24 HOURS AFTER A STORM EVENT AND REPAIRS OR CLEAN OUT OF UPSTREAM SEDIMENT SHOULD BE COMPLETED AS NEEDED.
2. THE CONTRACTOR SHALL PROVIDE ADDITIONAL THICKNESS OF AGGREGATE MATERIAL IF ANY RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.
3. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING AND LOADING OPERATIONS.
4. ANY ACCUMULATED DIRT OR MUD SHALL BE REMOVED FROM THE SURFACE OF THE STABILIZED STAGING AREA.
5. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED AND THE AREA TOPSOILED, SEEDED AND MULCHED.

STABILIZED STAGING AREA DETAIL (SSA) — EC3 — C201, C202
NOT TO SCALE

no.	date	by	ckd	description
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MARCH 2018	G. CANALES
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G. CANALES	N. TESSITORE

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
EROSION & SEDIMENTATION CONTROL DETAILS I

project	contract
86381	

drawing **C203** rev. **0**

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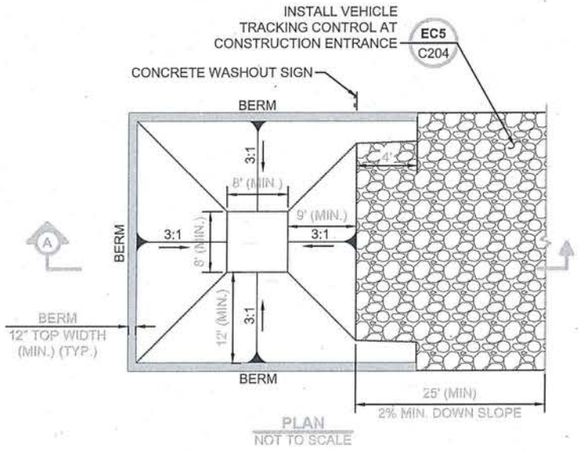
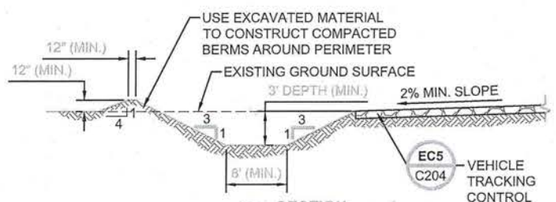


PLAN
NOT TO SCALE



A SECTION
NOT TO SCALE

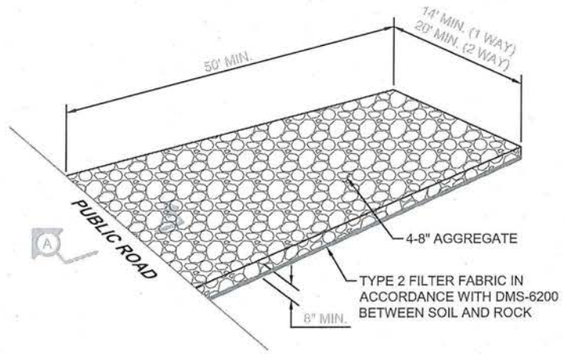
INSTALLATION NOTES:

1. SEE SEDIMENT AND EROSION CONTROL PLAN FOR LOCATION OF CONCRETE WASHOUT AREA.
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATION MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION.

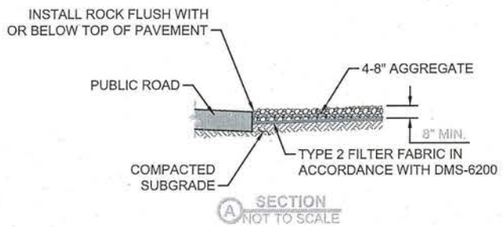
MAINTENANCE NOTES:

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED, ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE. CONCRETE WASTE MATERIALS SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
2. THE CONTRACTOR SHALL INSPECT THE CONCRETE WASHOUT AREA WEEKLY AND MAINTAIN IT IN AN EFFECTIVE CONDITION. IT SHALL ALSO BE INSPECTED WITHIN 24 HOURS AFTER A STORM EVENT AND REPAIRS OR CLEAN OUT OF SEDIMENT SHOULD BE COMPLETED AS NEEDED.
3. THE CONCRETE WASHOUT AREA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
4. THE CONCRETE WASHOUT AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE CONCRETE WASTE SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS. AFTER REMOVAL OF THE WASTE MATERIAL THE AREA SHALL BE GRADED SMOOTH, TOPSOILED, SEEDED AND MULCHED.

CONCRETE WASHOUT AREA DETAIL (CWA) — EC4
NOT TO SCALE — C201, C202



PLAN
NOT TO SCALE



A SECTION
NOT TO SCALE

INSTALLATION NOTES:

1. THE VEHICLE TRACKING PAD SHALL BE SIZED APPROPRIATELY TO ALLOW PROPER TRAFFIC FLOW AND TO PREVENT TRACKING OF SEDIMENT OFF-SITE. IF TRACKING PAD IS NOT EFFECTIVE AT CONTAINING SEDIMENT THE CONTRACTOR SHALL STOP OPERATIONS AND MAKE MODIFICATIONS TO THE TRACKING PAD TO PREVENT OFF-SITE TRACKING OF SEDIMENT.
2. VEHICLE TRACKING PAD SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
3. THE TRACKING PAD SHALL CONSIST OF 4-8" AGGREGATE A MINIMUM OF 8 INCHES THICK. A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE TRACKING PAD PRIOR TO THE PLACEMENT OF AGGREGATE.
4. A STABILIZED ENTRANCE/EXIT IS REQUIRED AT ALL ACCESS POINTS WHERE VEHICLES CAN ACCESS THE CONSTRUCTION SITE FROM PUBLIC ROADS. ANY OTHER ACCESS POINTS NOT SHOWN ON THE PLANS THAT THE CONTRACTOR ELECTS TO USE SHALL HAVE A VEHICLE TRACKING PAD INSTALLED AT THOSE ENTRANCE/EXIT LOCATIONS.

MAINTENANCE NOTES:

1. THE CONTRACTOR SHALL INSPECT THE VEHICLE TRACKING PAD WEEKLY AND MAINTAIN IT IN AN EFFECTIVE CONDITION. IT SHALL ALSO BE INSPECTED WITHIN 24 HOURS AFTER A STORM EVENT AND REPAIRS SHOULD BE COMPLETED AS NEEDED.
2. THE CONTRACTOR SHALL PROVIDE ADDITIONAL THICKNESS OF AGGREGATE MATERIAL IF ANY RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED. ROCK SHALL BE RE-APPLIED OR RE-GRADED AS NECESSARY TO MAINTAIN A CONSTANT DEPTH OF THE AGGREGATE.
3. SEDIMENT TRACKED ONTO PAVED ROADS SHALL BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT SHALL NOT BE WASHED INTO DRAINAGE SWALES, DITCHES, STORM SEWERS, OR RIVERS.
4. ALL AGGREGATE USED FOR THE VEHICLE TRACKING PAD SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE AGGREGATE MATERIAL SHALL BE REMOVED AND EITHER SURFACED WITH GRAVEL OR TOPSOILED, SEEDED AND MULCHED PER THE PLANS.

VEHICLE TRACKING CONTROL PAD DETAIL (VTC) — EC5
NOT TO SCALE — C203, C204

no.	date	by	ckd	description
0	3/23/18	GHC	NT	ISSUED FOR CONSTRUCTION

BURNS McDONNELL

date	detailed
MARCH 2018	G. CANALES
designed	checked
G. CANALES	N. TESSITORE

Brighton COLORADO
Adams County, Colorado

ERGER'S POND
EROSION & SEDIMENTATION CONTROL DETAILS II

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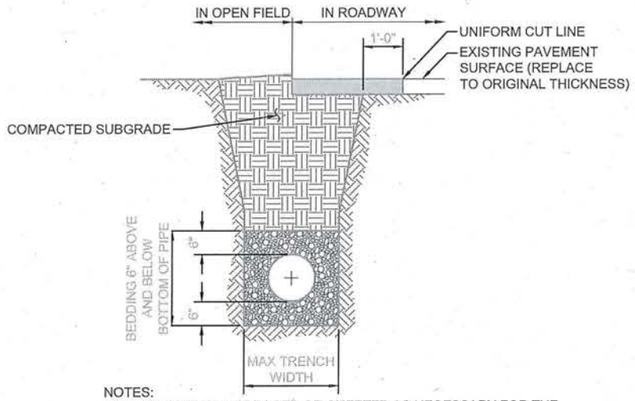
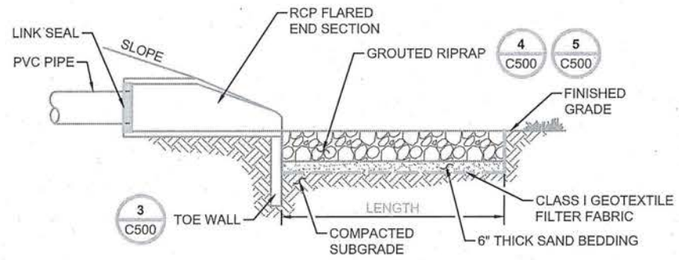
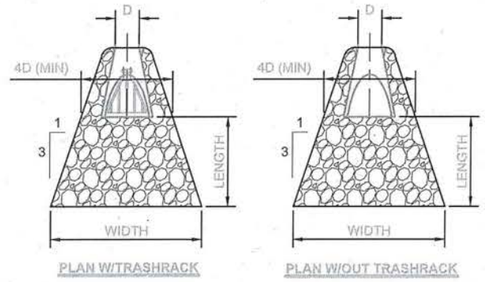


NOTES:
1. TRENCH TO BE BRACED OR SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKMEN AND THE PROTECTION OF OTHER UTILITIES IN ACCORDANCE WITH ALL OSHA REGULATIONS.
2. TRENCH WIDTHS AND BEDDING MATERIALS SHALL BE AS SPECIFIED IN THE SPECIFICATIONS.
3. TOP OF PATCHING SURFACE SHALL MATCH ELEVATION OF EXISTING SURFACE.

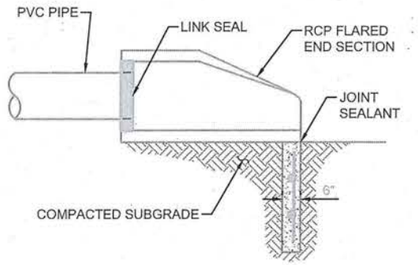
UTILITY TRENCH — 1 — C104, C105

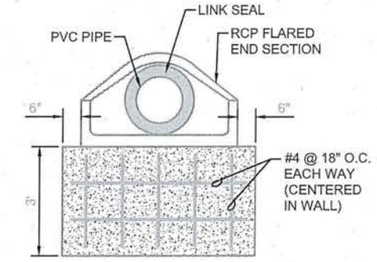




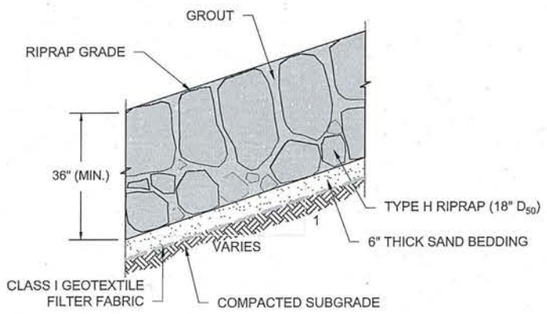
NOTE:
1. SEE PLANS FOR OUTLET PROTECTION DIMENSIONS
2. RIPRAP SHALL MEET THE REQUIREMENTS OF THE CITY OF BRIGHTON.
3. CONTRACTOR TO COORDINATE WITH PRECAST OUTLET MANUFACTURER FOR TYPICAL TRASH RACK WITH HINGE. SEE CIVIL SITE PLANS FOR MORE INFORMATION

RIPRAP PROTECTION — 2 — C104, C105

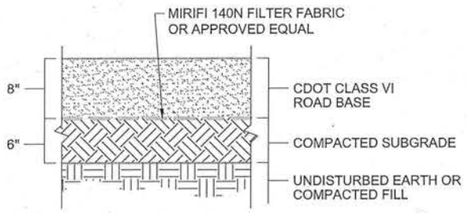




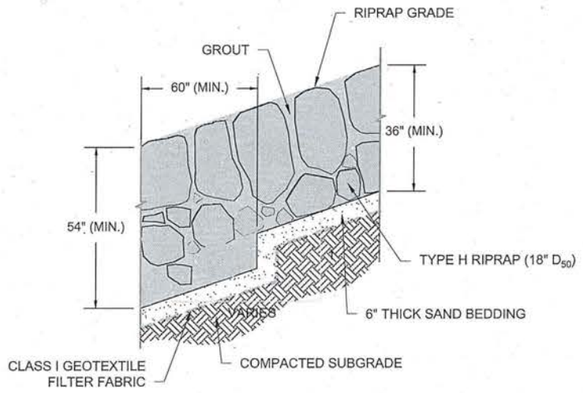
FLARED END SECTION TOE WALL — 3 — C500
NOT TO SCALE



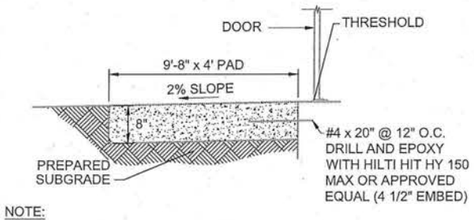
GROUTED RIPRAP — 4 — C104, C105, C500
NOT TO SCALE



ROAD BASE SECTION — 7 — C104, C105
NOT TO SCALE



THICKENED EDGE GROUTED RIPRAP — 5 — C104, C105, C500
NOT TO SCALE



NOTE:
1. CONCRETE STOOP SHALL BE INSTALLED TO MATCH EXISTING GRADE, AT EXTERIOR ELECTRICAL BUILDING DOORS.
2. SEE STRUCTURAL SPECIFICATIONS FOR SLAB REINFORCEMENT SPECIFICATION.

CONCRETE STOOP — 6 — C104
NOT TO SCALE

NICHOLAS G. CANALES 41295 3-23-18 PROFESSIONAL ENGINEER

no.	date	by	ckd	description
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BURNS McDONNELL

date: MARCH 2018	detailed: G. CANALES
designed: G. CANALES	checked: N. TESSITORE

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
CIVIL DETAILS

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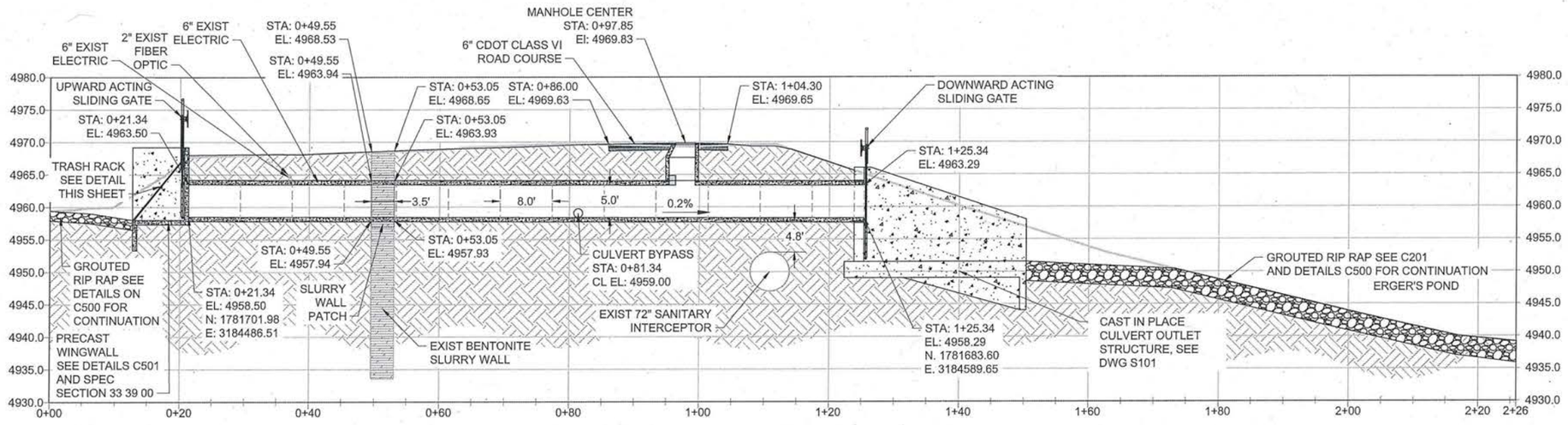


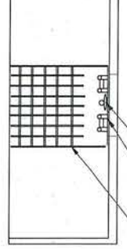
BOX CULVERT PROFILE

0 10' 20'

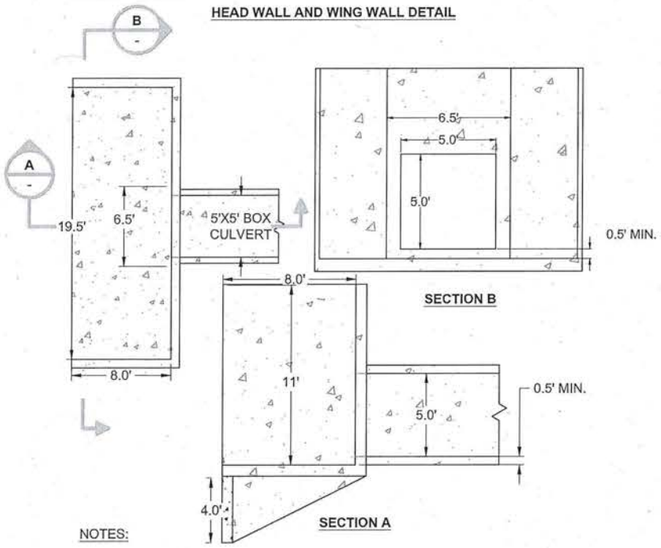
SCALE IN FEET

HEAD WALL AND WING WALLTRASH RACK DETAIL

TRASH RACK SHOWN IN LIFTED POSITION

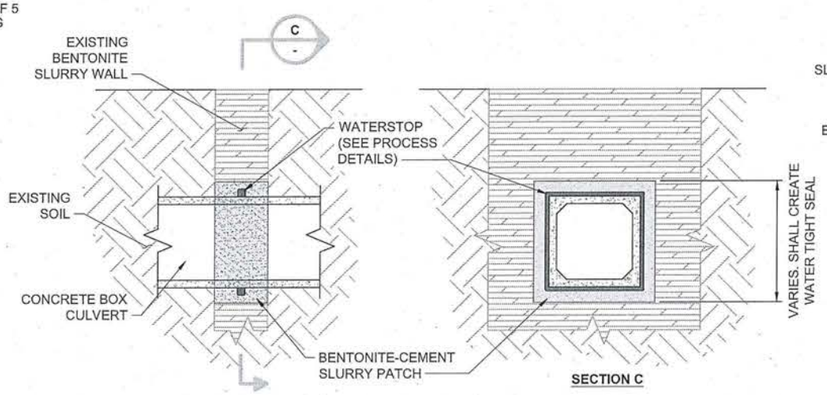


HEAD WALL AND WING WALL DETAIL



NOTES:

1. CONTRACTOR TO PROVIDE HINGED TRASH RACK COVERING ENTIRE INTAKE OPENING. MATERIAL SHALL BE HOT DIPPED GALVANIZED STEEL BARS AND PERIMETER BARS. HINGE MATERIAL SHALL BE 304 SS. BAR DIMENSIONS SHALL BE A MINIMUM OF 3/8" X 2" AT 3" CENTER TO CENTER SPACING. COORDINATE MANUFACTURING OF HINGE TRASH RACK WITH MANUFACTUER OF SLIDE GATE, AS WELL AS PRE CAST MANUFACTUER FOR LOADING, DIMENSIONS, AND MOUNTING. TRASH RACK MANUFACTUER SHALL HAVE A MIN OF 5 YEARS OF EXPERIENCE. PROVIDE PULLY SYSTEM FOR LIFTING GATE.
2. CONTRACTOR TO COORDINATE WITH PRE-CAST MANUFACTURER FOR A STAMPED DESIGN OF THE WALL AND SUBMITT FOR APPROVAL. SUBMERGED ACTIVE SOIL PRESSURES ARE 85 (PCF) PER THE KUMAR GEOTECH REPORT. THE ENTIRE SOILS REPORT AVALIABLE UPON REQUEST. THE STRUCTURE SHALL CONFORM TO STRUCTURAL CONCRETE DESIGN CODE ACI 318. CONTRACTOR TO COORDINATE INFROMATION ON SLIDE GATE AND THE TRASH RACK LOADING, MOUNTING, ECT TO PRECAST MANUFACTUER.

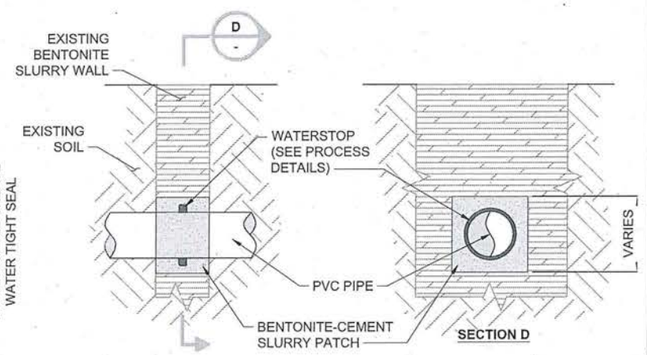


SLURRY WALL BOX CULVERT PENETRATION DETAIL

NOT TO SCALE

SLURRY WALL BOX CULVERT PENETRATION NOTES:

1. BOX CULVERT PENETRATION POINT, AS WELL AS ANY DAMAGE TO EXISTING SLURRY WALL, SHALL BE REPAIRED USING BENTONITE-CEMENT SLURRY. SAW CUT IF NECESSARY AND REPAIR ALL CUT WALL PORTIONS.
2. BENTONITE-CEMENT PATCH SHALL BE APPLIED SO AS TO COMPLETELY FILL ANY HOLES OR CRACKS RESULTING FROM BOX CULVERT PENETRATION OR RELATED CONSTRUCTION ACTIVITIES.
3. BENTONITE-CEMENT PATCH MUST MATCH OR EXCEED THE THICKNESS OF THE SLURRY WALL, PRE-CONSTRUCTION.
4. SEE SPECIFICATION 03 30 00 FOR BENTONITE-CEMENT SLURRY COMPOSITION AND STRENGTH REQUIREMENTS.
5. SEE CIVIL AND PROCESS DRAWINGS FOR BOX CULVERT PENETRATION LOCATION.



SLURRY WALL PIPE PENETRATION DETAIL

NOT TO SCALE

SLURRY WALL PVC PIPE PENETRATION NOTES:

1. 36" AND 24" PVC PIPE PENETRATION LOCATIONS, AS WELL AS ANY DAMAGE TO EXISTING SLURRY WALL, SHALL BE REPAIRED USING BENTONITE-CEMENT SLURRY.
2. BENTONITE-CEMENT PATCH SHALL BE APPLIED SO AS TO COMPLETELY FILL ANY HOLES OR CRACKS RESULTING FROM PIPE PENETRATION OR RELATED CONSTRUCTION ACTIVITIES.
3. BENTONITE-CEMENT PATCH MUST MATCH OR EXCEED THE THICKNESS OF THE SLURRY WALL, PRE-CONSTRUCTION.
4. SEE SPECIFICATION 31 30 00 FOR BENTONITE-CEMENT SLURRY COMPOSITION AND STRENGTH REQUIREMENTS.
5. PIPE PENETRATION SLURRY PATCH WILL BE REQUIRED FOR 36" RIVER SIDE WET WELL PUMP STATION INTAKE LINES (SEE DRAWING D003), AND FOR 24" POND SIDE WET WELL PUMP STATION INTAKE LINE (SEE DRAWING D006).

no.	date	by	ckd	description
0	3/23/18	GHC	NT	ISSUED FOR CONSTRUCTION

NICHOLAS TESSITORE 41295 3-23-18 PROFESSIONAL ENGINEER

BURNS McDONNELL

date	detailed
MARCH 2018	E. VIK
designed	checked
E. VIK	N. TESSITORE

Brighton COLORADO

Adams County, Colorado

ERGER'S POND

BOX CULVERT PROFILE AND SLURRY WALL DETAILS

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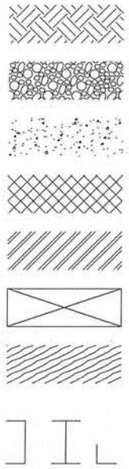
ABBREVIATIONS

ABV	ABOVE
AFF	ABOVE FINISH FLOOR
ACOUS	ACOUSTICAL
ALUM	ALUMINUM
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
@	AT
BM	BEAM
BRG	BEARING
BTWN	BETWEEN
BD	BOARD
BOT	BOTTOM
CLG	CEILING
CTR	CENTER
CL	CENTERLINE
CER	CERAMIC
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CMU	CONCRETE MASONRY UNIT
CONT	CONTINOUS
CLJ	CONTROL JOINT
CORR	CORRUGATED
Ø OR DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DS	DOWNSPOUT
DT	DOUBLT TEE
DWG	DRAWING
EA	EACH
EW	EACH WAY
EWC	ELECTRICAL WATER COOLER
ELEC	ELECTRICAL
EL	ELEVATION
ELEV	ELEVATOR
EQ	EQUAL
EQUIP	EQUIPMENT
EF	EXHAUST FAN
EJ	EXPANSION JOINT
EXP	EXPANSION
EIFS	EXTERIOR INSULATION FINISH SYSTEM
FF	FINSIHED FLOOR
FT	FEET
FIN	FINISH
FE	FIRE EXTINGUISHER
FL	FLOOR
FD	FLOOR DRAIN
GA	GAUGE
GB	GLASS BLOCK
GALV	GALVANIZED
GEN	GENERAL
GFM	GROUND FACE MASONRY
GYP	GYPSUM
GWB	GYPSUM WALLBOARD
HC	HANDICAPPED
HDW	HARDWARE
HVAC	HEATING, VENTILATING, AIR CONDITIONING
H	HIGH
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HLB	HORIZONTAL LOUVER BLIND
HR	HOUR
INC	INCORPORATED
INSUL	INSULATION
JAN	JANITOR
JT	JOINT
JST	JOIST
LH	LEFT HAND
LHR	LEFT HAND REVERSE
L	LONG
LF	LINEAL FEET
LBS	POUNDS
MFG	MANUFACTURER
MO	MASONRY OPENING
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MTL	METAL
MEZZ	MEZZANINE
MIN	MINIMUM
NOM	NOMINAL
NIC	NOT IN CONTRACT
NO	NUMBER
OC	ON CENTER
OPNG	OPENING
PL	PLATE
LB	POUND
RAD	RADIUS
REF	REFERENCE
REINF	REINFORCE
REQ'D	REQUIRED
RA	RETURN AIR
RH	RIGHT HAND
RHR	RIGHT HAND REVERSE
RHRA	RIGHT HAND REVERSE ACTIVE
RD	ROOF DRAIN
RM	ROOM
SCHED	SCHEDULE
S	SINK
SHT	SHEET
SIM	SIMILAR
SPECS	SPECIFICATIONS
SQ	SQUARE
SST	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURAL
SUSP	SUSPENDED
TKNS	THICKNESS
THRU	THROUGH
TOC	TOP OF CONCRETE
TOM	TOP OF MASONRY
TOS	TOP OF STEEL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VTR	VENT THROUGH ROOF
WF	WASH FOUNTAIN
WT	WEIGHT
W	WIDE
W/	WITH
W/O	WITHOUT

SYMBOLS LEGEND

● FE	FIRE EXTINGUISHER 10 LB BRACKET MOUNTED MULTIPURPOSE CHEMICAL (4-A:80-B:C)

MATERIALS LEGEND



BUILDING CODE INFORMATION

APPLICABLE CODES:
- INTERNATIONAL BUILDING CODE, 2012 EDITION
- INTERNATIONAL FIRE CODE, 2012 EDITION
- INTERNATIONAL MECHANICAL CODE, 2012 EDITION
- INTERNATIONAL PLUMBING CODE, 2012 EDITION
- NATIONAL ELECTRIC CODE, 2014 EDITION
- NFPA 820

OCCUPANCY TYPE (SECT 302): F-2, LOW-HAZARD FACTORY INDUSTRIAL

CONSTRUCTION TYPE (TABLE 601): II-B

ALLOWABLE HEIGHT AND AREA (TABLE 503):
- F-2 OCCUPANCY
- ACTUAL AREA = 230 SQ FT & 200 SQ FT
- ALLOWABLE AREA = 23,000 SQ FT
- ACTUAL HEIGHT = 10'-0"
- ALLOWABL HEIGHT = 50'

OCCUPANT LOAD:
- 200 SQ FT / 300 SF PER OCCUPANT = 1 OCCUPANTS
- MIN OF 1 EXIT REQ'D TO EXTERIOR OF BLDG.

TRAVEL DISTANCE:
- 300 FT - NOT EXCEEDED

NFPA 820:
- PER TABLE 4.2, ROW 16: PUMPING STATIONS (WET WELLS) SHALL BE CONSTRUCTED OF NON-COMBUSTIBLE, LIMITED COMBUSTIBLES, OR LOW FLAME SPREAD MATERIALS. NON-COMBUSTIBLES USED.

FIRE PROTECTION:
- AUTOMATIC SPRINKLERS NOT REQUIRED

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODES AND STANDARDS AS LISTED OR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
2. THE CONTRACTOR SHALL INCLUDE ALL WORK REQUIRED TO COMPLY WITH ALL APPLICABLE CODES AND STANDARDS AS.LISTED OR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
3. DIMENSIONS SHALL GOVERN. DETAILS SHALL GOVERN OVER PLANS AND ELEVATIONS. LARGE SCALE DETAILS OR PLANS SHALL GOVERN OVER SMALL SCALE DETAILS OR PLANS. DO NOT SCALE DRAWINGS.
4. THE GENERAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL EXIT SIGNS, EMERGENCY LIGHTING SYSTEMS, ALARM SYSTEMS AND AUTOMATIC SPRINKLER SYSTEMS AS REQUIRED BY APPLICABLE CODES AND STANDARDS OR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
5. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MANUFACTURER'S RECOMMENDED MAINTENANCE PROCEDURES AND SCHEDULES.
6. ANY MANUFACTURER'S OR BRAND NAME PRODUCTS INDICATED OR SPECIFIED ARE DONE SO TO ESTABLISH A MINIMUM LEVEL OF QUALITY.
7. ALL CONSTRUCTION SHALL MEET OR EXCEED LOCAL INDUSTRY STANDARDS. DETAILS ARE PROVIDED TO INDICATE MINIMUM QUALITY AND TO GIVE STANDARDS OF CONSTRUCTION. IF A CONDITION IS NOT SPECIFICALLY DETAILED, SUBMIT A SIMILAR DETAIL FOR GUIDE AND APPROVAL.
8. THE LETTERS I, O, AND Q ARE NOT USED TO INDICATE DETAILS, SECTIONS OR ELEVATIONS.
9. PROVIDE PRESERVATIVE-TREATED WOOD AT ALL LOCATIONS WHERE WOOD IS IN DIRECT CONTACT WITH CONCRETE OR MASONRY.
10. PROVIDE 3/4" FIRE-RETARDANT TREATED PLYWOOD BACKING AT ALL ELECTRICAL, PHONE, AND SECURITY SYSTEM PANELS.
11. PROVIDE WATER-RESISTANT GYPSUM BOARD AT ALL LOCATIONS.
12. PAINT, STAIN, OR COAT ALL EXPOSED SURFACES OF CONSTRUCTION UNLESS NOTED OTHERWISE OR IF SURFACES ARE PRE-FINISHED.
13. ALL OPENING DIMENSIONS ARE NOMINAL. THE CONTRACTOR SHALL FIELD MEASURE ALL OPENINGS AND COORDINATE WITH THE APPROPRIATE SUPPLIER FOR ALL DOORS AND WINDOWS.
14. ALL CONDUITS, PLUMBING, PIPING, DUCTWORK, AND OTHER EQUIPMENT EXPOSED TO VIEW SHALL BE LOCATED PARALLEL OR PERPENDICULAR TO THE STRUCTURAL FRAMING SYSTEM.
15. PROVIDE GALVANIC PROTECTION BETWEEN DISSIMILAR MATERIALS, WHERE REQUIRED.
16. ARCHITECTURAL DETAILS ARE APPLICABLE WHERE INDICATED BY SECTION CUT, BY NOTE, OR BY DETAIL TITLE. INCORPORATE SIMILAR DETAILS AT SIMILAR CONDITIONS UNLESS NOTED OTHERWISE. THE CONTRACTOR MAY REQUEST A CLARIFICATION IF REQUIRED, OTHERWISE THE MORE STRINGENT REQUIREMENTS SHALL CONTROL.
17. SEAL ALL EXTERIOR BUILDING JOINTS AT BOTH THE EXTERIOR AND INTERIOR SURFACES AGAINST MOISTURE AND AIR INFILTRATION.
18. SEAL AROUND ALL DOOR AND WINDOW FRAME, WALL-MOUNTED FIXTURES AND EQUIPMENT TO ADJACENT WALL SURFACES.
19. THE CONTRACTOR SHALL REVIEW THE DIMENSIONS OF ALL EQUIPMENT IN THE PROJECT REGARDLESS OF THE SOURCE AND COORDINATE ACCESS TO THE SPACE AND VERIFY CLEAR FLOOR SPACE IS PROVIDED AS REQUIRED TO ENSURE EASE OF INSTALLATION.
20. ALL WORK MUST BE OF GOOD QUALITY, FREE FROM DEFECTS, AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
21. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL PENETRATIONS IN THE STRUCTURE FOR THE PROPER INSTALLATION OF THE WORK. REFER TO STRUCTURAL DRAWINGS FOR SECONDARY FRAMING AND OR REINFORCING REQUIRED AT PENETRATIONS IN STEEL, CONCRETE OR MASONRY.
22. THE CONTRACTOR SHALL PROVIDE ACCESS DOORS OR PANELS AS REQUIRED FOR SERVICING OF PIPING, DUCTWORK, CABLE TRAYS, FIRE DAMPERS AND SIMILAR APPLICATIONS. ALL PROPOSED ACCESS DOOR LOCATIONS TO BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION.
23. PROVIDE ALL HVAC, PLUMBING, GAS OR ELECTRIC SERVICE CONNECTIONS TO CASEWORK, FIXTURES, SIGNAGE, OR EQUIPMENT INDICATED (WHETHER UNITS ARE INSTALLED BY CONTRACTOR OR BY OTHERS).
24. BRACE PARTITIONS, SUSPENDED CEILINGS, SOFFITS, SUSPENDED ITEMS, ETC. ONLY TO STRUCTURAL ELEMENTS ABOVE. DO NOT ANCHOR TO ROOF DECK, PLUMBING / SPRINKLER PIPES, DUCTWORK, ELECTRICAL CONDUIT OR SIMILAR ELEMENTS.
25. ALL MATERIALS USED FOR CONSTRUCTION SHALL BE NEW AND UNDAMAGED. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL WORK SHOWN.
26. THE CONTRACTOR SHALL BECOME FULLY ACQUAINTED WITH CONDITIONS RELATED TO THE WORK. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE ACTUAL CONDITIONS SHALL BE REPORTED TO THE DESIGN PROFESSIONALS FOR RESOLUTION PRIOR TO PROCEEDING WITH THE WORK.
27. EACH INSTALLER MUST EXAMINE SUBSTRATE AND/OR CONDITIONS UNDER WHICH THE WORK WILL BE INSTALLED AND REPORT TO THE CONTRACTOR IN WRITING ANY CONDITIONS DETRIMENTAL TO THE PROPER AND TIMELY EXECUTION OF THE INSTALLERS WORK. DO NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED. INSTALLATION SHALL CONSTITUTE ACCEPTANCE OF THE SUBSTRATE AND/OR CONDITIONS.
28. "TYPICAL" (TYP) AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITIONS OR DIMENSION IS THE SAME OR REPRESENTATIVE FOR SIMILAR CONDITIONS THROUGHOUT.
29. CONTROL JOINTS (CJ) SHALL BE INSTALLED AT ALL PARTITIONS. CJ AT GYPSUM PARTITIONS SHALL BE MAXIMUM 30'-0" O.C., CJ AT CONCRETE MASONRY UNIT PARTITIONS SHALL BE MAXIMUM 20'-0" O.C., UNLESS OTHERWISE NOTED ON DRAWINGS. REFER TO ELEVATION DRAWINGS FOR EXTERIOR CONTROL JOINT LOCATIONS. REVIEW CJ LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.
30. NON-BEARING PARTITIONS SHALL BE ISOLATED FROM THE BUILDING STRUCTURE TO PREVENT TRANSFER OF BUILDING LOADS FROM THE STRUCTURE TO THE PARTITIONS.
31. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR DESIGNATED CONSTRUCTION STAGING LOCATIONS, STORAGE AREAS, AND CONSTRUCTION SEQUENCING.

COLORADO REGISTERED ANDREW E. HUNDLEY 34267 3/23/18 PROFESSIONAL ENGINEER

no.	date	by	ckd	description
0	3/23/18	KDT	AEH	ISSUED FOR CONSTRUCTION

BURNS McDONNELL

date MARCH 2018	detailed K. THURMAN
designed K. THURMAN	checked A. HUNDLEY

Brighton COLORADO

Adams County, Colorado

ERGER'S POND

ARCHITECTURAL NOTES AND ABBREVIATIONS

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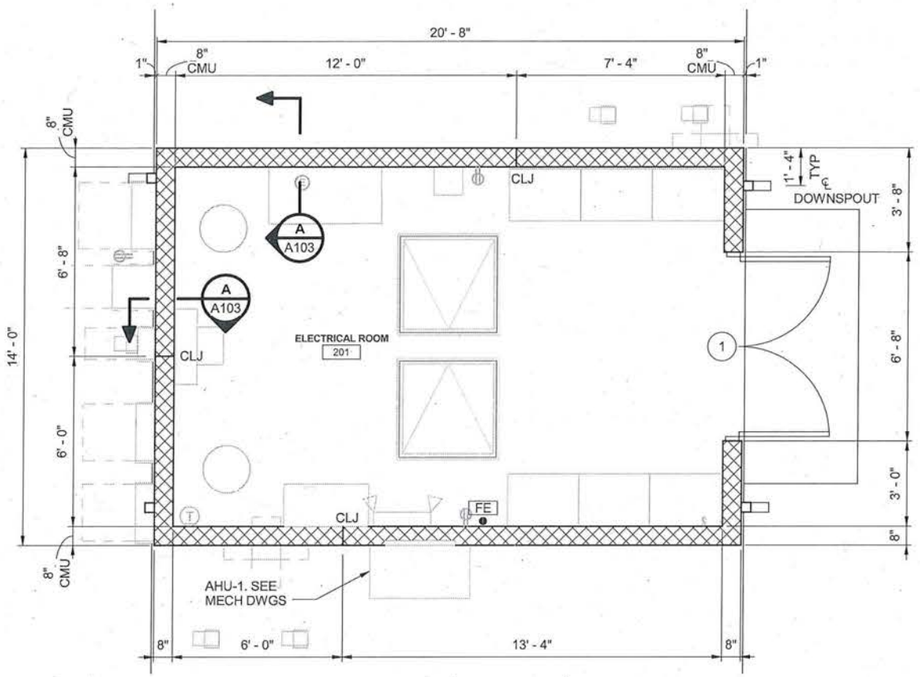
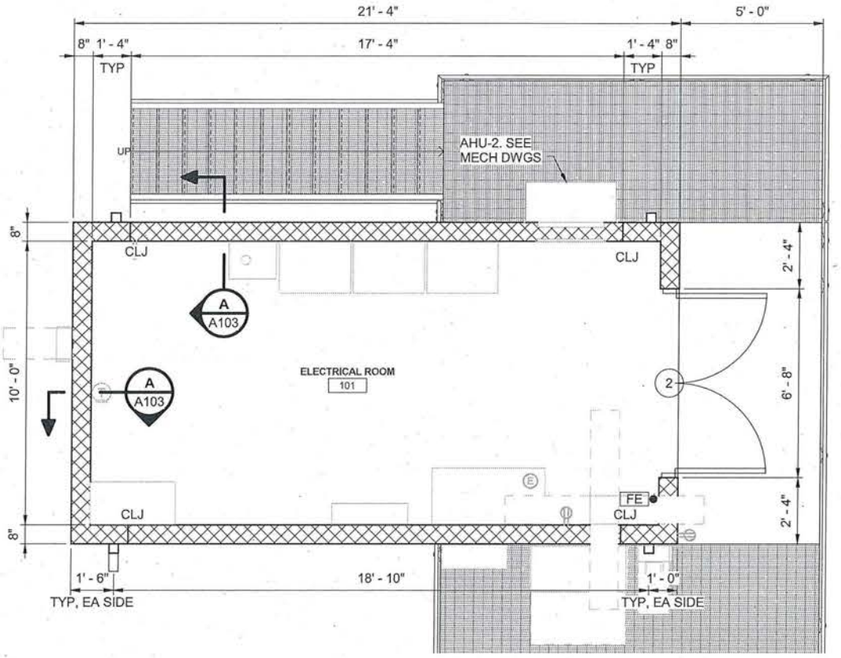


RIVER SIDE ELECTRICAL ROOM
FLOOR PLAN

0 2' 4' 6'
SCALE IN FEET

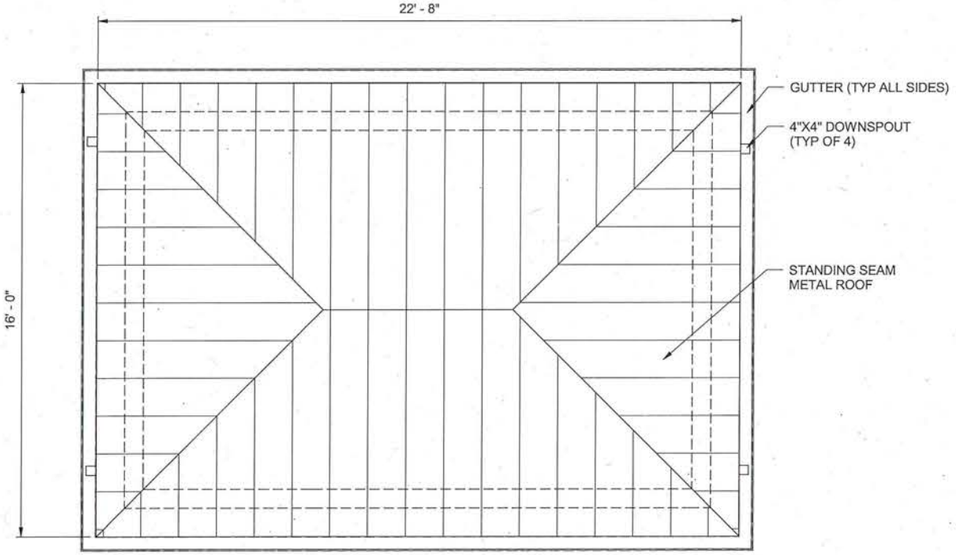
NORTH



POND SIDE ELECTRICAL ROOM
FLOOR PLAN

0 2' 4' 6'
SCALE IN FEET

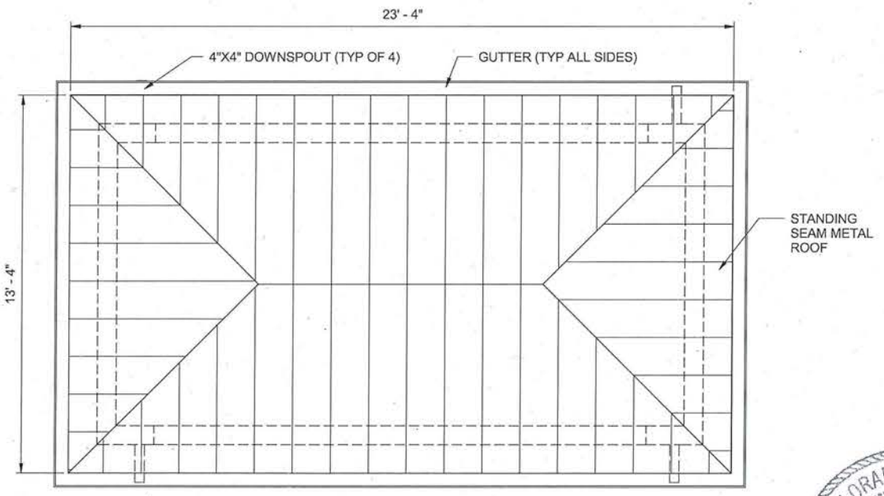
NORTH



RIVER SIDE ELECTRICAL ROOM
ROOF PLAN

0 2' 4' 6'
SCALE IN FEET

NORTH



POND SIDE ELECTRICAL ROOM
ROOF PLAN

0 2' 4' 6'
SCALE IN FEET

NORTH

COLORADO REGISTERED
ARDEN ERIC HUNDLEY
34267
3/23/18
PROFESSIONAL ENGINEER

no.	date	by	ckd	description
0	3/23/18	KDT	AEH	ISSUED FOR CONSTRUCTION

BURNS McDONNELL

date MARCH 2018	detailed K. THURMAN
designed K. THURMAN	checked A. HUNDLEY

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
ELECTRICAL BUILDING FLOOR PLAN

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Millimeters
Inches
Scale For Microfilming

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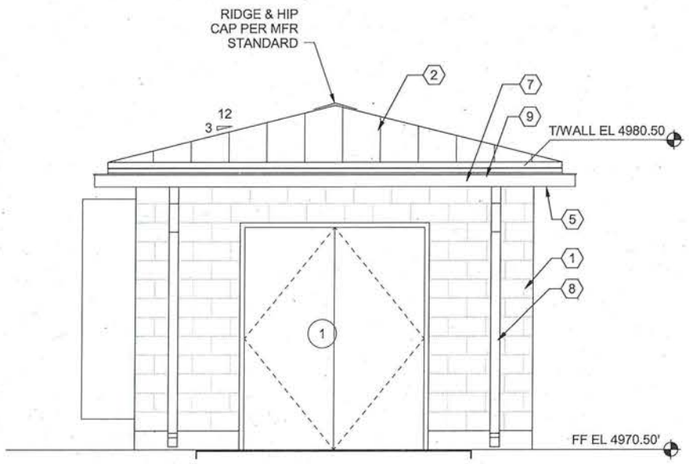

RIVER SIDE ELECTRICAL ROOM EAST

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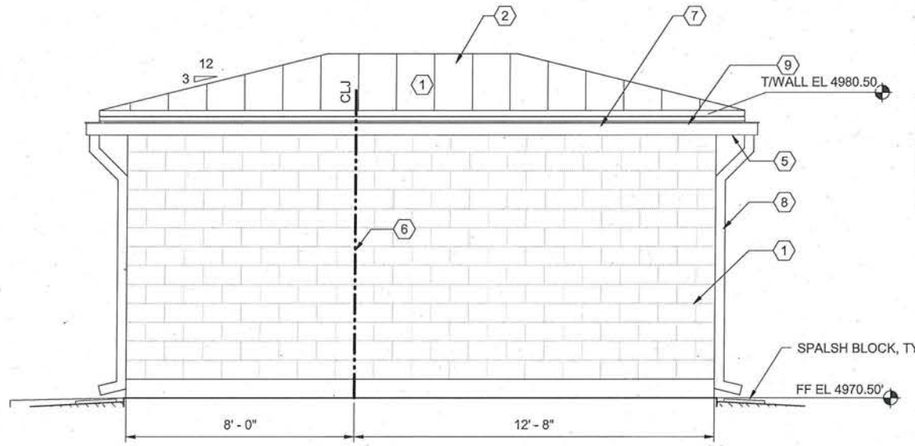
SCALE IN FEET



RIVERSIDE ELECTRICAL ROOM NORTH

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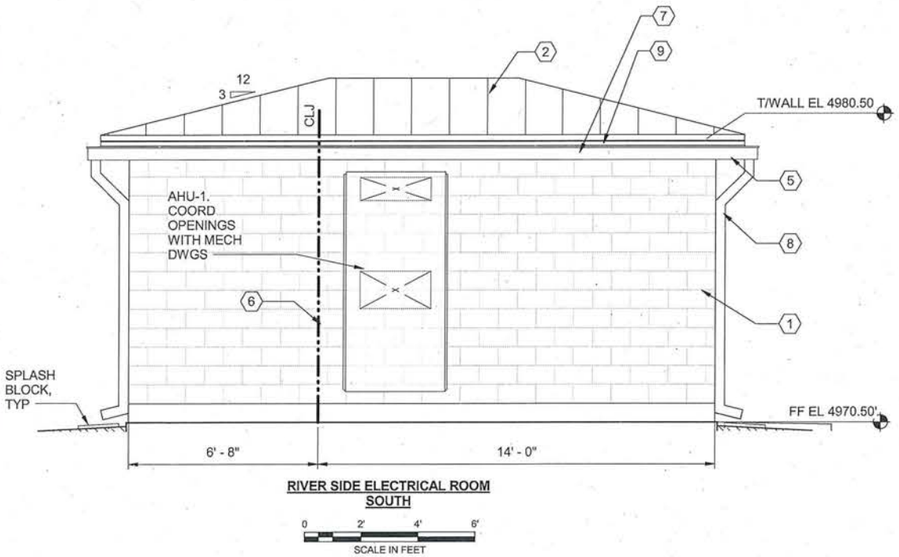
SCALE IN FEET



RIVER SIDE ELECTRICAL ROOM SOUTH

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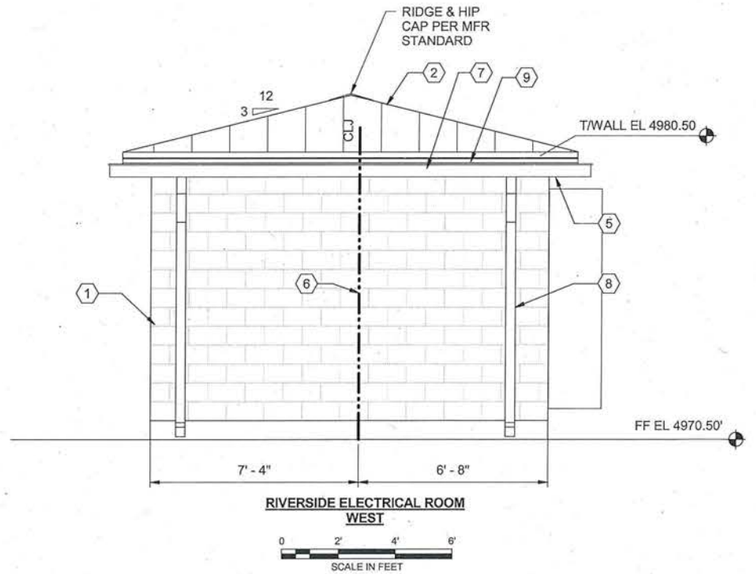
SCALE IN FEET



RIVERSIDE ELECTRICAL ROOM WEST

0 2' 4' 6'
SCALE IN FEET

EXTERIOR FINISH KEY NOTES	#
8"X8"X16" SMOOTH FACE ROBINSON BLOCK ADOBE TAN OR EQUAL WITH WHITE MORTAR. APPLY PROSOCO BLOK-GUARD AND GRAFFITI CONTROL CLEAR COAT TO EXTERIOR	1
BERRIDGE 24 GA ZEE-LOCK STANDING SEAM ROOF OR EQUAL, COLONIAL RED	2
SACK RUBBED CONCRETE WITH GRAFFITI CONTROL CLEAR COAT	3
CLEAR ANODIZED ALUMINUM HAND RAIL PER STRUCT DWGS	4
PERFORRATED SOFFIT BERRIDGE FW-1025 OR EQUAL, COLONIAL RED	5
SIKAFLEX 1A SEALANT IN CONTROL JOINTS, RED WOOD TAN	6
BERRIDGE FLUTTED FASCIA PANEL OR EQUAL. MATCH ROOF COLOR	7
4"X4" OPEN FACED ALUMINUM DOWNSPOUT, COLONIAL RED	8
6"X6" SQUARE GUTTER WITH GUTTER HANGERS AT 2'-6" OC	9

no.	date	by	ckd	description
0	3/23/18	KDT	AEH	ISSUED FOR CONSTRUCTION

COLORADO REGISTERED ANDREW E. HUNDLEY 34267 PROFESSIONAL ENGINEER
3/23/18

BURNS McDONNELL

date MARCH 2018	detailed K. THURMAN
designed K. THURMAN	checked A. HUNDLEY

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
RIVER SIDE ELECTRICAL BUILDING ELEVATIONS

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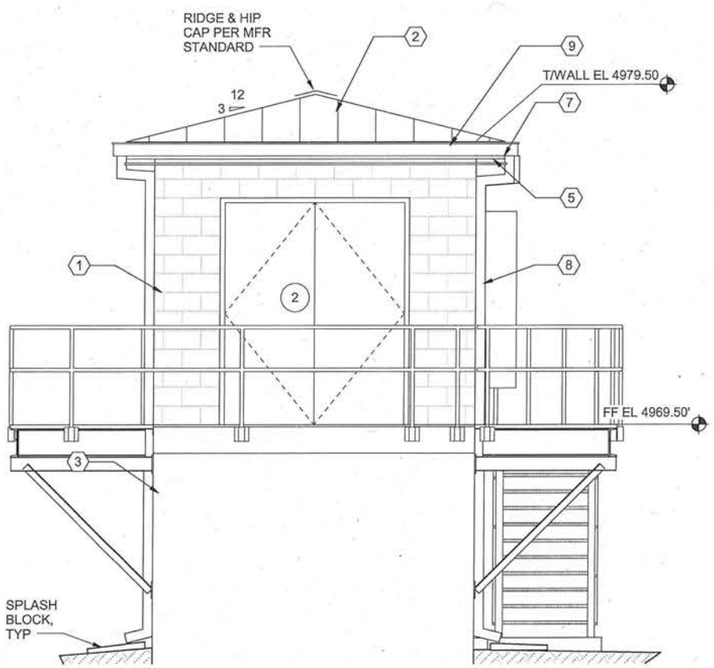
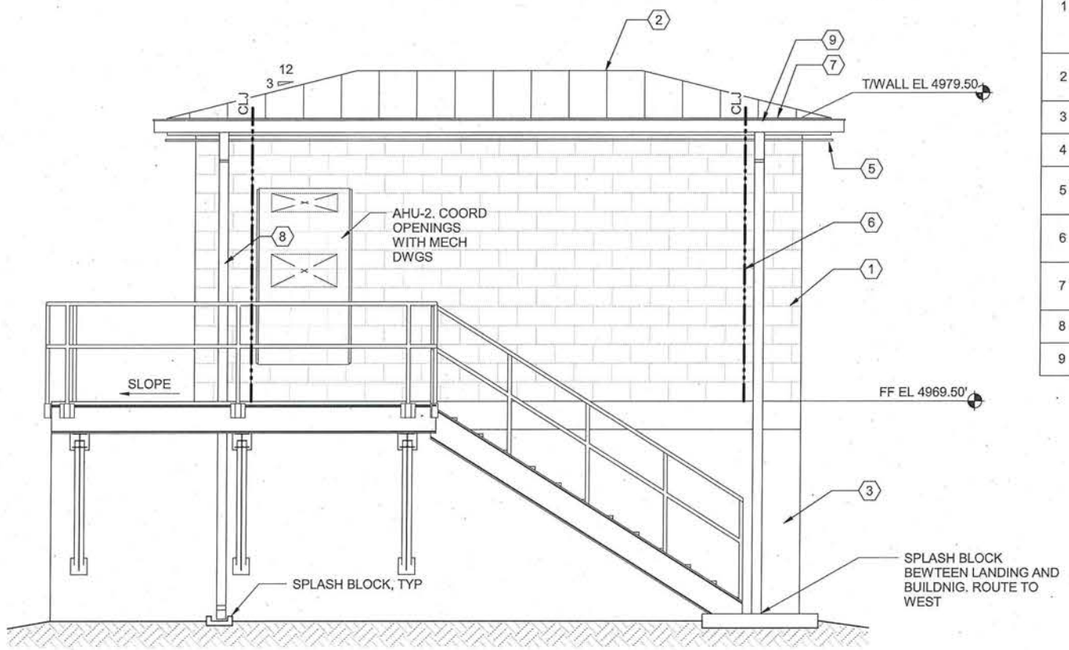


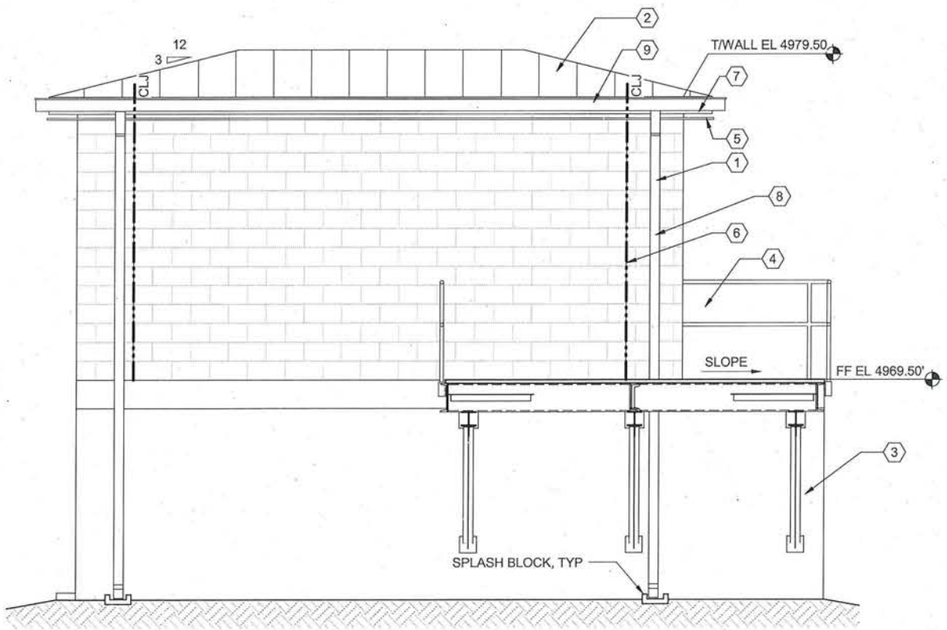
POND SIDE ELECTRICAL ROOM
EAST

0 2' 4' 6'
SCALE IN FEET



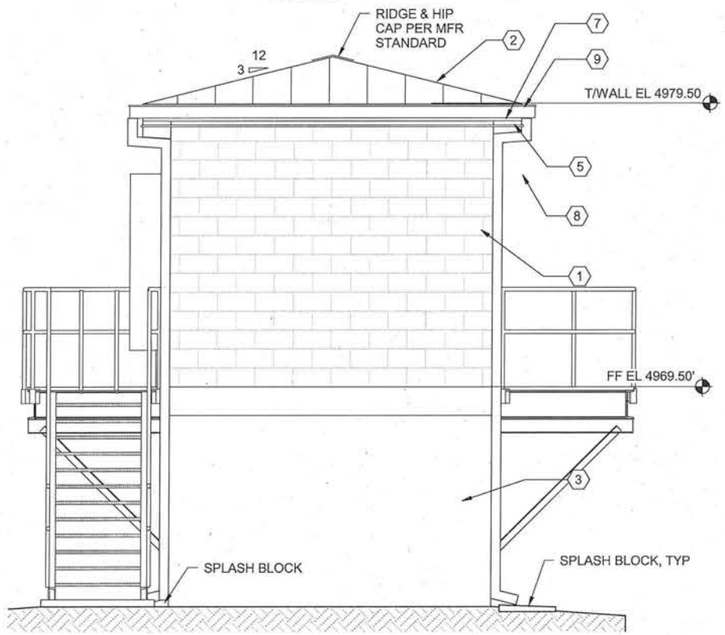
POND SIDE ELECTRICAL ROOM
NORTH

0 2' 4' 6'
SCALE IN FEET



POND SIDE ELECTRICAL ROOM
SOUTH

0 2' 4' 6'
SCALE IN FEET



POND SIDE ELECTRICAL ROOM
WEST

0 2' 4' 6'
SCALE IN FEET

EXTERIOR FINISH KEY NOTES

1	8"X8"X16" SMOOTH FACE ROBINSON BLOCK ADOBE TAN OR EQUAL WITH WHITE MORTAR. APPLY PROSOCO BLOK-GUARD AND GRAFFITI CONTROL CLEAR COAT TO EXTERIOR
2	BERRIDGE 24 GA ZEE-LOCK STANDING SEAM ROOF OR EQUAL, COLONIAL RED
3	SACK RUBBED CONCRETE WITH GRAFFITI CONTROL CLEAR COAT
4	CLEAR ANODIZED ALUMINUM HAND RAIL PER STRUCT DWGS
5	PERFORRATED SOFFIT BERRIDGE FW-1025 OR EQUAL, COLONIAL RED
6	SIKAFLEX 1A SEALANT IN CONTROL JOINTS, RED WOOD TAN
7	BERRIDGE FLUTTED FASCIA PANEL OR EQUAL. MATCH ROOF COLOR
8	4"X4" OPEN FACED ALUMINUM DOWNSPOUT, COLONIAL RED
9	6"X6" SQUARE GUTTER WITH GUTTER HANGERS AT 2'-6" OC

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BURNS McDONNELL

date MARCH 2018	detailed K. THURMAN
designed K. THURMAN	checked A. HUNDLEY

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
POND SIDE ELECTRICAL BUILDING ELEVATIONS

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COLORADO REGISTERED ANDREW E. HUNDLEY 34267 PROFESSIONAL ENGINEER 3/23/18

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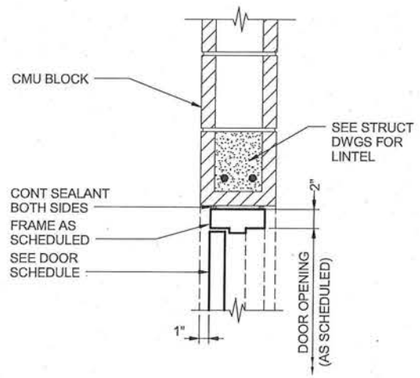
DOOR SCHEDULE

DOOR NUMBER	DOOR SIZE PAIR	DOOR SIZE WIDTH	DOOR SIZE HEIGHT	DOOR TYPE	DOOR MATERIAL	DOOR FINISH	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	ASSEMBLY RATING	DETAIL HEAD	DETAIL JAMB	DETAIL SILL	HARDWARE SET	REMARKS
1	x	3' - 2"	7' - 10"	F	HOLLOW METAL	PAINTED		HOLLOW METAL	PAINTED	-	4	5	6	001	-
2	x	3' - 2"	7' - 10"	F	HOLLOW METAL	PAINTED		HOLLOW METAL	PAINTED	-	4	5	6	001	-

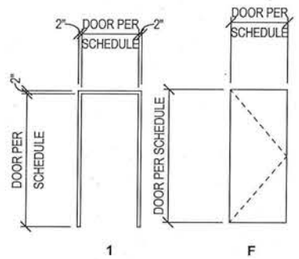
ROOM FINISH SCHEDULE

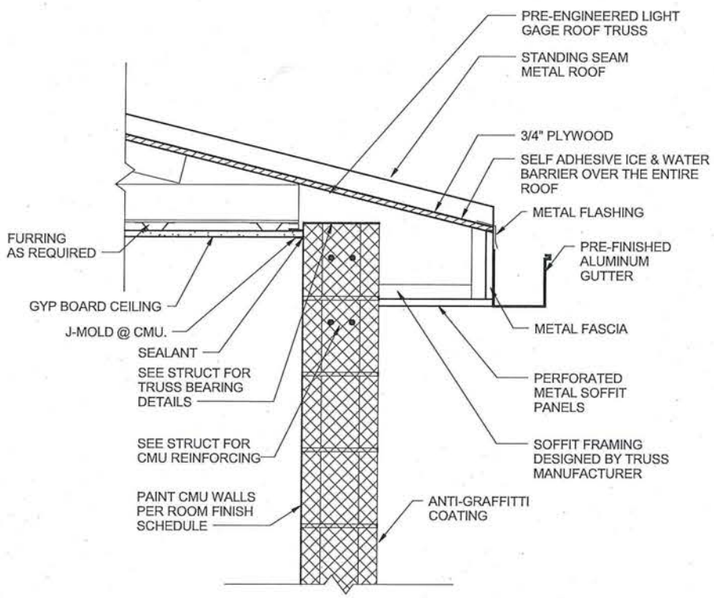
ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALLS	CEILING	REMARKS
101	ELECTRICAL ROOM	10	20	31	41	10' CEILING HEIGHT
201	ELECTRICAL ROOM	10	20	31	41	10' CEILING HEIGHT

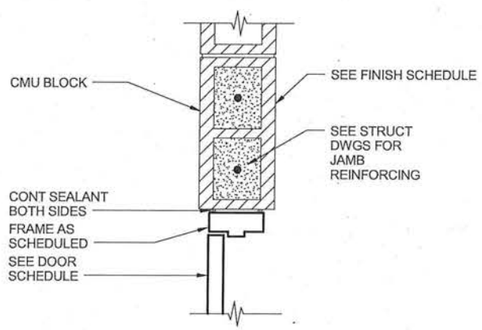
FINISH LEGEND
10 - NO FINISH
20 - NO BASE
31 - PAINT ON CMU
41 - PAINT ON GYP BOARD



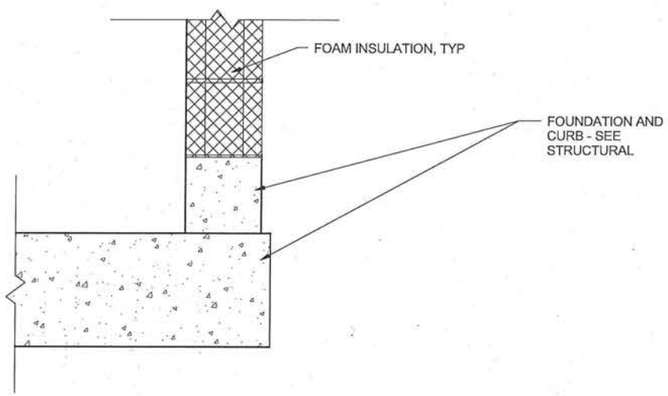
HEAD 4

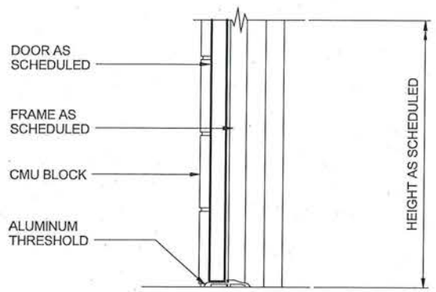






JAMB 5





SILL 6

SECTION A100

0 1/2' 1' 1 1/2'
SCALE IN FEET

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0	3/23/18	KDT	AEH	ISSUED FOR CONSTRUCTION

BURNS McDONNELL

date MARCH 2018	detailed K. THURMAN
designed K. THURMAN	checked A. HUNDLEY

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
SCHEDULES AND DETAILS

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COLORADO REGISTERED ANDREW E. HUNDLEY 34267 3/23/18 PROFESSIONAL ENGINEER

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Scale For Microfilming
Millimeters
Inches

STANDARD ABBREVIATIONS

AA	- ALUMINUM ASSOCIATION
AB	- ANCHOR BOLT
ABT	- ABOUT
ACI	- AMERICAN CONCRETE INSTITUTE
ADH	- ADHESIVE
AGGR	- AGGREGATE
AHR	- ANCHOR
AISI	- AMERICAN IRON AND STEEL INSTITUTE
AISC	- AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AL, ALUM	- ALUMINUM
ALTN	- ALTERNATE
ANSI	- AMERICAN NATIONAL STANDARDS INSTITUTE
ARCH	- ARCHITECT
ASTM	- AMERICAN SOCIETY FOR TESTING OF MATERIALS
AWS	- AMERICAN WELDING SOCIETY
(B)	- BOTTOM
BC	- BOLT CIRCLE
BETW	- BETWEEN
BLDG	- BUILDING
BM	- BEAM
BO	- BOTTOM OF
BOC	- BOTTOM OF CONCRETE
BOS	- BOTTOM OF STEEL
BOT	- BOTTOM
B/P	- BASE OF PIER
BRG	- BEARING
BRKT	- BRACKET
C/C	- CENTER TO CENTER
CL	- CENTER LINE
CF	- CUBIC FEET
CHKR	- CHECKER
CIR	- CIRCLE
CJ	- CONSTRUCTION JOINT
CLR	- CLEAR
CLJ	- CONTROL JOINT
CMU	- CONCRETE MASONRY UNIT
CO	- CONCRETE OPENING
CONC	- CONCRETE
CONT	- CONTINUOUS
COL	- COLUMN
COTR	- CONTRACTING OFFICER
COR	- CORNER
COORD	- COORDINATE
CRSI	- CONCRETE REINFORCING STEEL INSTITUTE
CTR	- CENTER
CTRD	- CENTERED
CY	- CUBIC YARD
DBL	- DOUBLE
DET	- DETAIL
DIAG	- DIAGONAL
DIA	- DIAMETER
DIM	- DIMENSION
DK	- DECKING
DL	- DEAD LOAD
DN	- DOWN
DWL	- DOWEL
DWG	- DRAWING
E	- EAST
EA	- EACH
EF	- EACH FACE
EJ	- EXPANSION JOINT
EL	- ELEVATION
ELEC	- ELECTRICAL
EMBED	- EMBEDMENT
EQ	- EQUAL
EQUIV	- EQUIVALENT
EQ SP	- EQUALLY SPACED
EQUIP	- EQUIPMENT
EXIST	- EXISTING
EW	- EACH WAY
FD	- FLOOR DRAIN
FDN	- FOUNDATION
FTG	- FOOTING
FF	- FAR FACE
FL	- FLOOR
FNSH	- FINISH
FS	- FAR SIDE
FT	- FEET
GA	- GAGE
GALV	- GALVANIZE
GB	- GRADE BEAM
GND	- GROUND
GR	- GRADE
GRTG	- GRATING
HG	- HIGH
HR	- HANDRAIL
HPT	- HIGH POINT
HORIZ	- HORIZONTAL
HS	- HIGH STRENGTH
IBC	- INTERNATIONAL BUILDING CODE
ID	- INSIDE DIAMETER
IF	- INSIDE FACE
IJ	- ISOLATION JOINT
IN	- INCHES
JT	- JOINT
KSI	- KIPS PER SQUARE INCH
L	- ANGLE
LB	- POUND
LD	- DEVELOPMENT LENGTH
LG	- LONG
LL	- LIVE LOAD
LLH	- LONG LEG HORIZONTAL
LLO	- LONG LEG OUTSTANDING
LLV	- LONG LEG VERTICAL
LONG	- LONGITUDINAL
LPT	- LOW POINT
LS	- LAP SPLICE
MATL	- MATERIAL
MAX	- MAXIMUM
MC	- MOMENT CONNECTION
MECH	- MECHANICAL
MFR	- MANUFACTURER
MH	- MANHOLE
MIN	- MINIMUM
MISC	- MISCELLANEOUS
MK	- MARK
NA	- NOT APPLICABLE
NF	- NEAR FACE
NOM	- NOMINAL
NIC	- NOT IN CONTRACT
NTS	- NOT TO SCALE
NO	- NUMBER
NS	- NEAR SIDE
OC	- ON CENTER
OD	- OUTSIDE DIAMETER
OF	- OUTSIDE FACE
OPNG	- OPENING
OPP	- OPPOSITE
OSHA	- OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OZ	- OUNCE
PCF	- POUNDS PER CUBIC FOOT
PERP	- PERPENDICULAR
PL	- PLATE
PLC	- PLACES
PLF	-POUNDS PER LINEAR FOOT
PREFAB	- PREFABRICATED
PS	- PIPE SUPPORT
PSF	- POUNDS PER SQUARE FOOT
PSI	- POUNDS PER SQUARE INCH
PVC	- POLYVINYL CHLORIDE
RAD	- RADIUS
RD	- ROOF DRAIN
REF	- REFERENCE
REINF	- REINFORCE
REQD	- REQUIRED
REV	- REVISION
RM	- ROOM
S	- SOUTH
SB	- SHEAR BAR
SCHED	- SCHEDULE
SH	- SHEET
SIM	- SIMILAR
SLP	- SLOPE
SP	- SPACE
SPEC	- SPECIFICATION

GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE ALL STRUCTURAL WORK WITH WORK SHOWN ON ALL OTHER DRAWINGS.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS OF EXISTING CONSTRUCTION AND REPORT ANY DISCREPANCIES FROM THE CONTRACT OR REFERENCE DRAWINGS TO THE ENGINEER PRIOR TO COMMENCING WITH WORK. IN NO CASE SHALL WORKING DIMENSIONS BE SCALED FROM THE STRUCTURAL DRAWINGS.
3. THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, SHORING AND TEMPORARY BRACING TO PROVIDE STRUCTURAL STABILITY DURING CONSTRUCTION.
4. IF CERTAIN FEATURES ARE NOT FULLY SHOWN OR CALLED FOR ON THE CONTRACT DRAWINGS OR SPECIFICATIONS, THEIR CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS FOR SIMILAR CONDITIONS THAT ARE SHOWN OR CALLED FOR, WITH THE APPROVAL OF THE ENGINEER. WHERE SECTIONS VARY, CONTRACTOR SHALL PROVIDE FOR SMOOTH TRANSITIONS BETWEEN THEM, UNLESS NOTED OTHERWISE.
5. ALL PRODUCTS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS WRITTEN INSTRUCTIONS AND RECOMMENDATIONS, UNLESS NOTED OTHERWISE.

CAST-IN-PLACE CONCRETE

1. ALL CONCRETE SHALL BE DESIGNED AND PLACED IN ACCORDANCE WITH ACI 318-11 & ACI 350-06.
2. ALL CONCRETE SHALL MEET THE FOLLOWING REQUIREMENTS:
   f'c: 4500 PSI AT 28 DAYS
   SLUMP: 4"-6" AIR: 6%±1.5%
3. BEFORE CONCRETE WORK BEGINS, THE PROPOSED CONCRETE MIX DESIGN, ALONG WITH COLLABORATING DATA SHOWING COMPLIANCE WITH THESE REQUIREMENTS, SHALL BE SUBMITTED FOR APPROVAL.
4. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4", UNO
5. ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE SHALL HAVE A BITUMASTIC COATING.

REINFORCING

1. ALL REINFORCING BARS SHALL BE ASTM A615, GRADE 60.
2. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 AND SHALL BE FLAT SHEET. ROLLED FABRIC WILL NOT BE ALLOWED.
3. UNLESS OTHERWISE INDICATED, THE MINIMUM LENGTH OF LAP SPLICES AND EMBEDMENTS SHALL BE AS NOTED IN THE TABLE ON SHEET .
4. NO WELDED OR MECHANICAL SPLICES SHALL BE ALLOWED.
5. HEATING OF REINFORCING BARS SHALL NOT BE ALLOWED.
6. POSITION OF REINFORCING STEEL SHALL BE MAINTAINED BY BOLSTERS, CHAIRS AND ACCESSORIES IN ACCORDANCE WITH ACI-117 AND THE CRSI MANUAL OF STANDARD PRACTICE.
7. REPOSITIONING OF REINFORCING TO AVOID INTERFERENCE WITH EMBEDDED ITEMS SHALL BE APPROVED BY THE ENGINEER PRIOR TO WORK.

PROTECTION FOR REINFORCEMENT

1. THE FOLLOWING CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT (UNLESS OTHERWISE NOTED). SEE ACI 117 FOR CONSTRUCTION TOLERANCES:

   CONCRETE CAST AGAINST & PERMANENTLY EXPOSED TO EARTH = 3"

   CONCRETE EXPOSED TO EARTH, LIQUID, WEATHER OR CAST AGAINST A CONCRETE WORK MAT:
   SLABS, WALLS & FOOTINGS = 2"
   BEAMS & COLUMNS:
   STIRRUPS, SPIRALS & TIES = 2"
   PRIMARY REINFORCEMENT = 2 1/2"

   CONDITIONS NOT COVERED ABOVE:
   SLABS AND WALLS = 1 1/2"
   BEAMS AND COLUMNS:
   STIRRUPS, SPIRALS & TIES = 1 1/2"
   PRIMARY REINFORCEMENT = 2"

FOUNDATION EXCAVATION

1. ALL INFORMATION CONTAINED ON THE FOUNDATION DRAWINGS IS BASED ON TWO REPORTS ENTITLED "GEOTECHNICAL ENGINEERING STUDY PROPOSED ELECTRICAL BUILDING AND METER VAULT, ERGERS POND, BRIGHTON, CO" PREPARED BY KUMAR & ASSOCIATES PROJECT NO.16-1-322, JUNE 21 2016" & "GEOTECHNICAL ENGINEERING STUDY PROPOSED PUMP HOUSE AND INTAKE STRUCTURES, ERGERS POND, BRIGHTON, CO" PREPARED BY KUMAR & ASSOCIATES PROJECT NO.15-1-513, OCTOBER 7, 2015" THE ABOVE DOCUMENTS ARE NOT PART OF THE CONTRACT. IN THE EVENT OF DISCREPANCIES BETWEEN THE ABOVE DOCUMENT AND THE FOUNDATION DRAWINGS, THE FOUNDATION DRAWINGS SHALL GOVERN.
2. THE IN-PLACE MATERIALS SHOULD BE SCARIFIED AND RECOMPACTED PRIOR TO PLACEMENT OF THE FLOOR SLABS. IF BACKFILL IS USED TO DEVELOP SUBGRADE ABOVE EXCAVATIONS, THOSE FILL MATERIALS SHOULD BE PLACED IN LOOSE LIFTS NOT TO EXCEED 8 INCHES THICK, ADJUSTED IN MOISTURE CONTENT AS RECOMMENDED IN THE GEOTECHNICAL REPORT AND COMPACTED TO AT LEAST 98% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY.

MISCELLANEOUS MATERIALS

GROUT FOR EQUIPMENT BASE PLATES SHALL BE NON-SHRINK NON-METALLIC HIGH STRENGTH GROUT. GROUT SHALL BE FIVE STAR GROUT BY U.S. GROUT CORPORATION OR APPROVED EQUAL. ALL GROUTING REQUIRES CURING THE EXPOSED SURFACE WITH CURING AND SEALING COMPOUND IMMEDIATELY AFTER INSTALLATION.
BONDING AGENT SHALL BE SIKADUR 32, HI-MOD BY SIKA CORPORATION OR APPROVED EQUAL.

JOINTS

EXPANSION, CONSTRUCTION, AND CRACK CONTROL JOINTS SHALL BE PROVIDED IN ACCORDANCE WITH STANDARD DETAILS AND AS LOCATED OR DETAILED ON THE DRAWINGS. ANY OTHERS DEEMED NECESSARY SHALL BE APPROVED BY THE ENGINEER PRIOR TO WORK.
CONCRETE EDGES THAT ARE TO RECEIVE JOINT SEALANT SHALL BE PLACED AGAINST NON-OILED FORMS. THE NON-OILED PORTION SHALL EXTEND A MINIMUM OF 2 1/2" FROM THE EDGE TO BE SEALED.
JOINTS RECEIVING SEALANT SHALL BE COATED WITH PRIMER, IF REQUIRED BY THE SEALANT MANUFACTURER. JOINT PREPARATION AND APPLICATION PRIMER AND SEALANT SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

MASONRY

SEE DRAWING S502 FOR MASONRY DETAILS AND DESIGN NOTES.

STRUCTURAL STEEL

STRUCTURAL WIDE FLANGE SHAPES: ASTM A992, GRADE 50
STRUCTURAL TUBES: ASTM A500 GRADE B
STRUCTURAL PIPE: ASTM A53, GRADE B (t>0.625")
ASTM A500, GRADE B (t<0.625")
PLATES AND BARS: ASTM A36
OTHER STRUCTURAL SHAPES: ASTM A36
UNLESS NOTED OTHERWISE, PRIMARY BOLTED CONNECTIONS SHALL BE BEARING TYPE USING HIGH-STRENGTH BOLTS CONFORMING TO ASTM A325 WITH NUTS CONFORMING TO ASTM A563, GRADE DH. SIZE OF BOLTS SHALL BE 3/4"Ø UNLESS OTHERWISE NOTED ON THE DRAWINGS AND SHALL HAVE ONE PLAIN HARDENED WASHER AND ONE LOAD INDICATOR WASHER. TENSION CONTROL BOLTS MAY BE USED IN LIEU OF LOAD INDICATOR WASHERS. BOLT AND NUT THREADS SHALL BE LUBRICATED. PRIMARY BOLTED CONNECTIONS SHALL CONFORM TO AISC "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS".
ALL PRIMARY CONNECTIONS SHALL HAVE A MINIMUM OF 2 BOLTS, UNO.
WELDING ELECTRODES SHALL BE SERIES E70XX CONFORMING TO THE AMERICAN WELDING SOCIETY SPECIFICATIONS A5.1 OR A5.5
ERECTION BOLTS, COLUMN BASE PLATE SHIMS AND TEMPORARY FASTENINGS REQUIRED FOR ERECTION SHALL BE FURNISHED BY THE STEEL ERECTOR.
MINIMUM BOLT HOLE EDGE DISTANCE SHALL BE MAINTAINED PER TABLE J3.4
AXIALLY STRESSED MEMBERS MEETING AT A POINT SHALL HAVE THEIR GRAVITY AXIS MEET AT A POINT (UNO).
ALL DIAGONAL TENSION BRACING (LONG SINGLE ANGLE OR ROD) SHALL HAVE THE FOLLOWING DRAW. FOR
LENGTHS 0" TO 10'-0" NONE FOR LENGTHS
10'-0" TO 20'-0": 1/16" FOR LENGTHS 20'-0" TO
35'-0": 1/8" FOR LENGTHS 35'-0" AND
OVER: 3/16"
ALL DESIGN, FABRICATION, AND ERECTION SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE AISC SPECIFICATIONS, THE AWS CODE, AND THE OSHA STANDARDS.
SUBSTITUTIONS OF SPECIFIED MEMBER SIZE OR CHANGE IN DETAILS OR DIMENSIONS OF ANY KIND SHALL NOT BE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER.
FIELD BURNING AND CUTTING IS NOT PERMITTED EXCEPT BY THE SPECIFIC APPROVAL OF THE FIELD ENGINEER.
THE CONTRACTOR SHALL PROVIDE ADDITIONAL GUYS AND BRACING DURING CONSTRUCTION TO RESIST STRESSES DUE TO WIND LOADS, PILES OF MATERIAL OR ERRECTION LOADS.
ALL STEEL SHALL BE GALVANIZED PER SPECIFICATION SECTION 05 05 13

COLD FORMED STEEL FRAMING

COLD-FORMED STEEL FRAMING SHALL BE DESIGNED, FABRICATED, AND ERECTED IN ACCORDANCE WITH AISI COLD-FORMED STEEL DESIGN MANUAL AND SSMA OR LGSI PUBLICATIONS AS APPLICABLE.
FRAMING MEMBERS: ASTM A653 GRADE 33, Fy = 33 KSI, UNLESS NOTED OTHERWISE. ASTM A653 GRADE 50, Fy = 50 KSI, FOR MATERIAL THICKNESS 54 MILS OR GREATER AND WHERE INDICATED AS "(50)". ALL LGSI SHAPES SHALL HAVE MINIMUM YIELD STRENGTH OF 55 KSI AND MINIMUM ULTIMATE STRENGTH OF 67.7 KSI.
FINISH: HOT-DIP GALVANIZE TO PROVIDE A COATING CLASS OF G60.
MECHANICAL FASTENERS: CORROSION-RESISTANT-COATED, SELF-DRILLING, SELF-THREADING STEEL DRILL SCREWS WITH LOW PROFILE HEADS BENEATH SHEATHING AND MANUFACTURER'S STANDARD HEADS ELSEWHERE.
BOLTS: ASTM A325, GALVANIZED.
WELDING: IN ACCORDANCE WITH AWS D1.1 OR D1.3, AS APPLICABLE.

CONCRETE ANCHORS

1. POST INSTALLED CONCRETE ANCHOR MANUFACTURERS AND ADHESIVES FOR POST INSTALLED REINFORCING BARS SHALL BE THOSE LISTED IN SPECIFICATION 03 16 00. ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. SUBSTITUTIONS REQUIRE STAMPED CALCULATIONS SEE SPECIFICATIONS.
2. ALL PERSONNEL INSTALLING ADHESIVE ANCHORS SHALL BE ACI ADHESIVE ANCHOR CERTIFIED.
3. INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.
4. THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.
5. ANCHOR CAPACITY IS DEPENDANT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
6. EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. REINFORCING BARS SHALL NOT BE CUT UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT. CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD WHEN INTERFERENCES OCCUR.
7. ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE HAVING A MINIMUM AGE OF 21 DAYS AT TIME OF ANCHOR INSTALLATION.

DESIGNER NOTES:

1. STRUCTURAL DESIGN WAS PREPARED USING THE FOLLOWING DATA:
   A. INTERNATIONAL BUILDING CODE, 2012 EDITION
   B. ACI 318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
   C. AISC MANUAL FOR STEEL CONSTRUCTION, 14TH EDITION
   D. ACI 530 BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES
   E. ASCE 7 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, 2010 EDITION
   F. ACI 350 BUILDING CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES
   G. AISI S100 NORTH AMERICAN STANDARD FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURES
2. RISK CATEGORY: II
   IMPORTANCE FACTOR: 1.00
   SITE SOIL CLASS: D
   SPECTRAL RESPONSE: Ss = 0.168, S1 = 0.056
   Sds = 0.179, Sd1 = 0.089
   SEISMIC DESIGN CATEGORY: B
   BASIC SEISMIC FORCE RESISTING SYSTEM: ORDINARY MASONRY SHEAR WALLS
   RESPONSE MODIFICATION FACTOR: R = 2
   SEISMIC RESPONSE COEFFICIENT: Cs = 0.0896
   ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE
3. ULTIMATE DESIGN WIND SPEED: 115 MPH 3-SECOND GUST
   NOMINAL DESIGN WIND SPEED: 89 MPH 3-SECOND GUST
   RISK CATEGORY: II
   EXPOSURE CATEGORY: C
   TOPOGRAPHIC FACTOR: 1.0
   INTERNAL PRESSURE COEFFICIENT: ±0.18
   COMPONENTS & CLADDING STRENGTH DESIGN LOADS:
   STANDING SEAM ROOF PANELS (CORNER ZONE 3):
   17PSF, -68PSF
4. LIVE LOADS: STAIR, WALKWAYS, PLATFORMS - 100 PSF
   ELECTRICAL ROOM - 250 PSF
5. WHEEL LOADS: HS-20
6. SNOW LOADS:
   GROUND SNOW LOAD = 30 PSF
   FLAT ROOF SNOW LOAD = 30 PSF NON REDUCIBLE
   EXPOSURE FACTOR = C
   IMPORTANCE FACTOR = 1.0
   THERMAL FACTOR = 1.2
7. SOIL PROPERTIES:
   SOIL ALLOWABLE BEARING PRESSURE (UNO): 2,500 PSF
8. FLOOD DESIGN DATA:
   ELEVATION OF LOWEST FLOOR = 4969.5 FT

COLORADO LICENSED
EVAN D. THURMAN
48424
3/23/18
PROFESSIONAL ENGINEER

no.	date	by	ckd	description
0	3/23/18	KDT	BLS	ISSUED FOR CONSTRUCTION

BURNS McDONNELL

date MARCH 2018	detailed K. THURMAN
designed K. THURMAN	checked B. SNYDER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
STRUCTURAL NOTES AND ABBREVIATIONS

project 86381	contract
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file	

Millimeters
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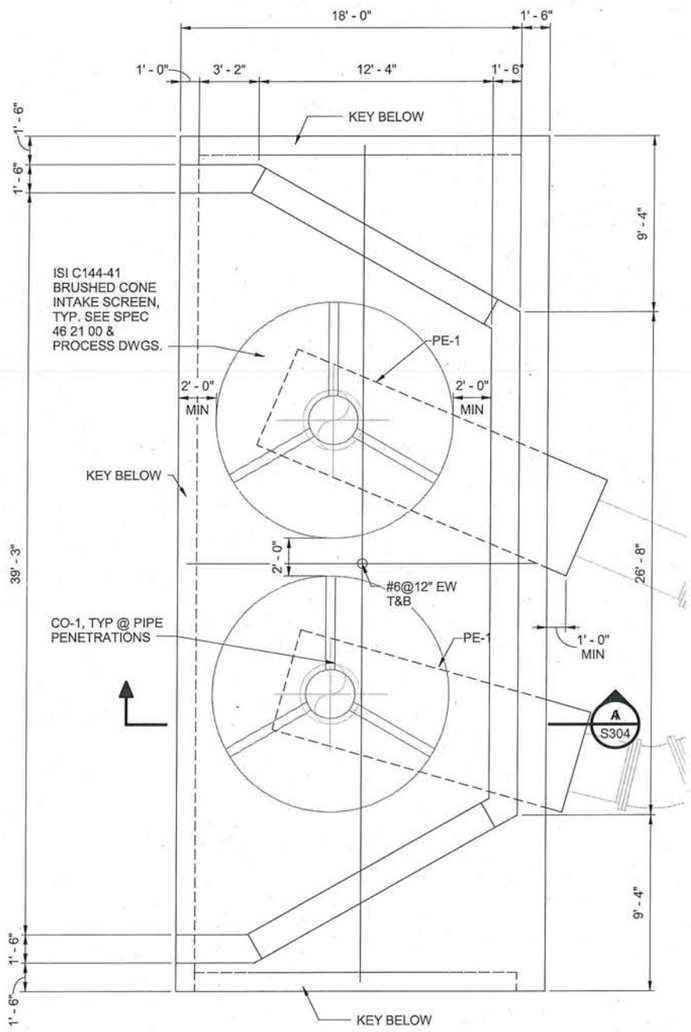


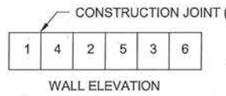
DIVERSION STRUCTURE

0 2' 4' 8'
SCALE IN FEET

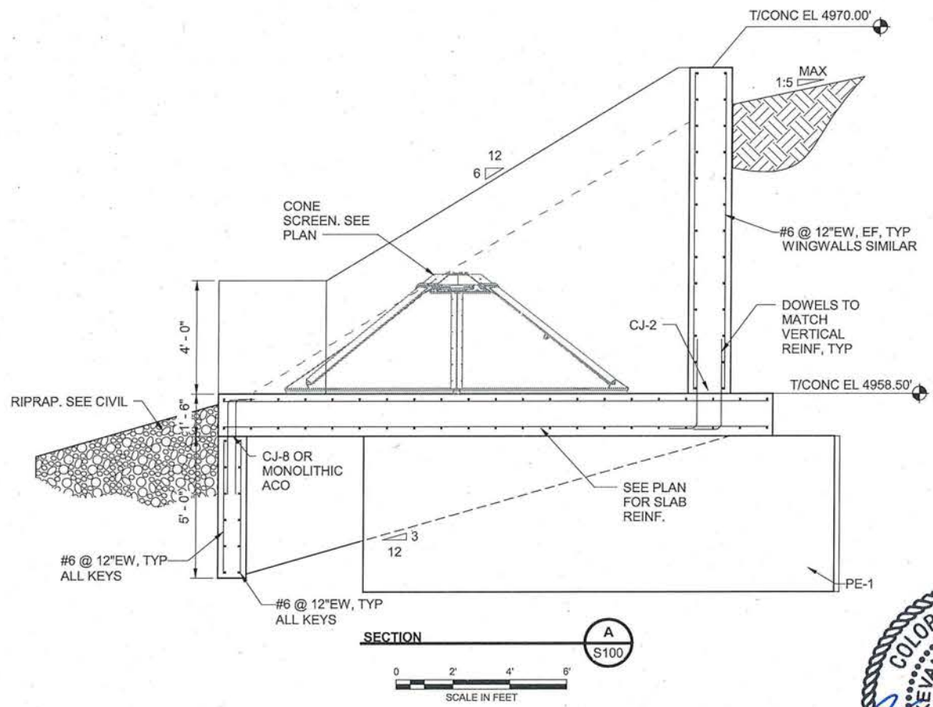
NORTH

NOTES:

1. SEE SHEET S001 FOR GENERAL STRUCTURAL NOTES.
2. SEE SHEET S500 FOR TYPICAL CONCRETE DETAILS.
3. ALL CONCRETE USED IN WATER CONTAINING BASIN WALLS SHALL BE PLACED BY PUMPING IN ACCORDANCE WITH THE SPECIFICATION SECTION 03 30 00.
4. WALL AND SLAB CONSTRUCTION JOINTS SHALL BE LOCATED AND SUBMITTED TO THE ENGINEER PRIOR TO REBAR FABRICATION AS INDICATED IN THE SPECIFICATION SECTION 03 30 00, PART 3.01, SECTION C. SEE SHEET FOR CONSTRUCTION JOINT TYPES.
5. HATCH SCHEDULE ON SHEET S505
6. MAXIMUM LENGTH OF WALL TO BE PLACED IN A SINGLE POUR IS 25'-0" AND ALTERNATED AS SHOWN BELOW. ALLOW 14 DAY CURE TIME PRIOR TO PLACING ADJACENT SECTION UNLESS SHORTER CURE TIME IS APPROVED BY ENGINEER. NUMBER SEQUENCE BELOW IS FOR EXAMPLE ONLY.



WALL PLACEMENT SEQUENCE DIAGRAM



SECTION A S100

0 2' 4' 6'
SCALE IN FEET

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0	3/23/18	KDT	BLS	ISSUED FOR CONSTRUCTION

BURNS McDONNELL

date MARCH 2018	detailed K. THURMAN
designed K. THURMAN	checked B. SNYDER

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Adams County, Colorado

ERGER'S POND
RIVER SIDE INLET STRUCTURE DETAILS

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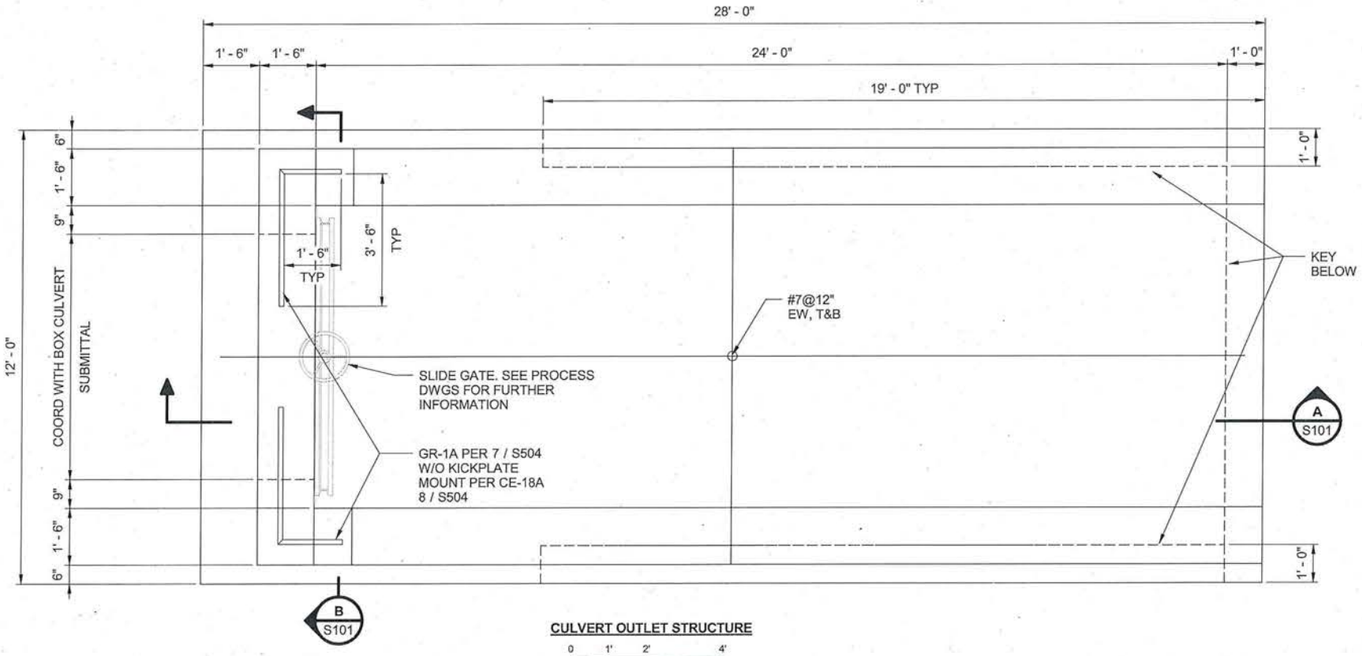
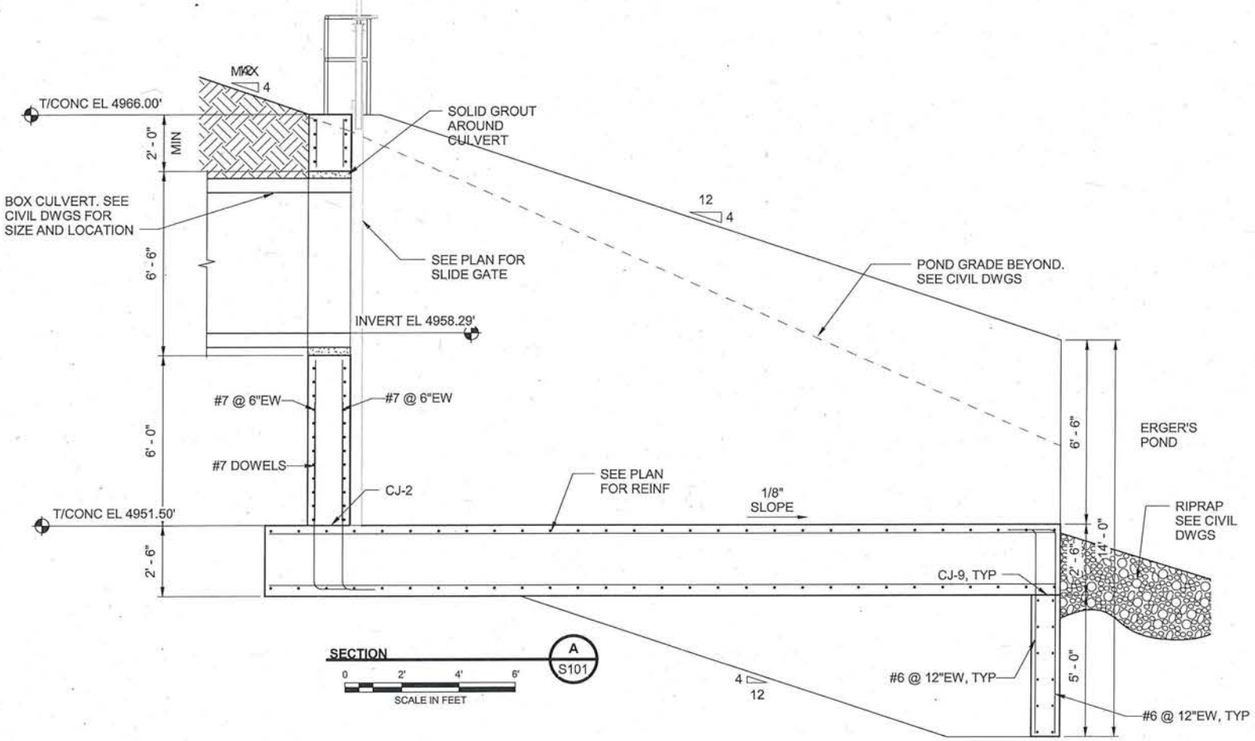
48424
PROFESSIONAL ENGINEER
3/23/18



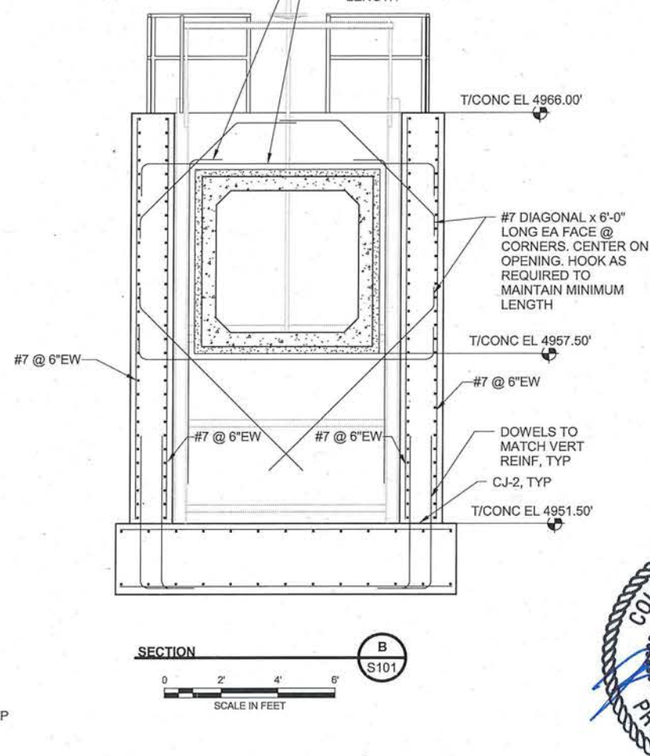
CULVERT OUTLET STRUCTURE

0 1' 2' 4'
SCALE IN FEET



SECTION A S101

0 2' 4' 6'
SCALE IN FEET



SECTION B S101

0 2' 4' 6'
SCALE IN FEET

NOTES:

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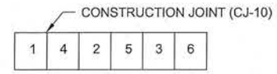

WALL ELEVATION

WALL PLACEMENT SEQUENCE DIAGRAM

no.	date	by	ckd	description
0	3/23/18	KDT	BLS	ISSUED FOR CONSTRUCTION

BURNS McDONNELL

date MARCH 2018	detailed K. THURMAN
designed K. THURMAN	checked B. SNYDER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
RIVER SIDE CULVERT OUTLET STRUCTURE

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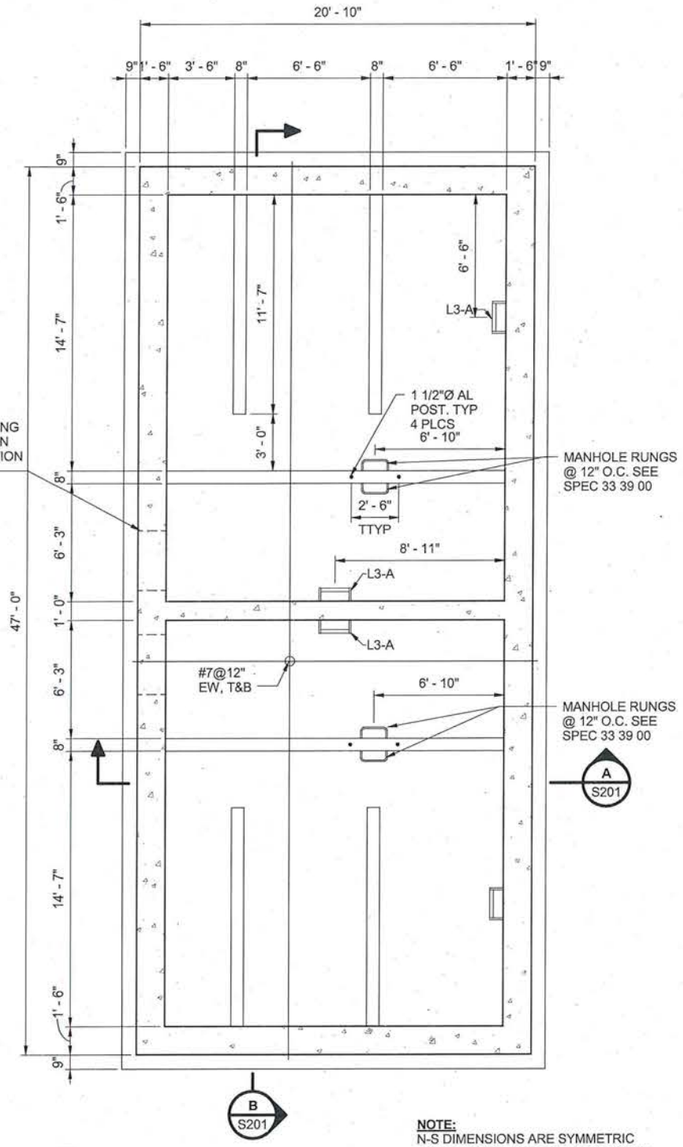
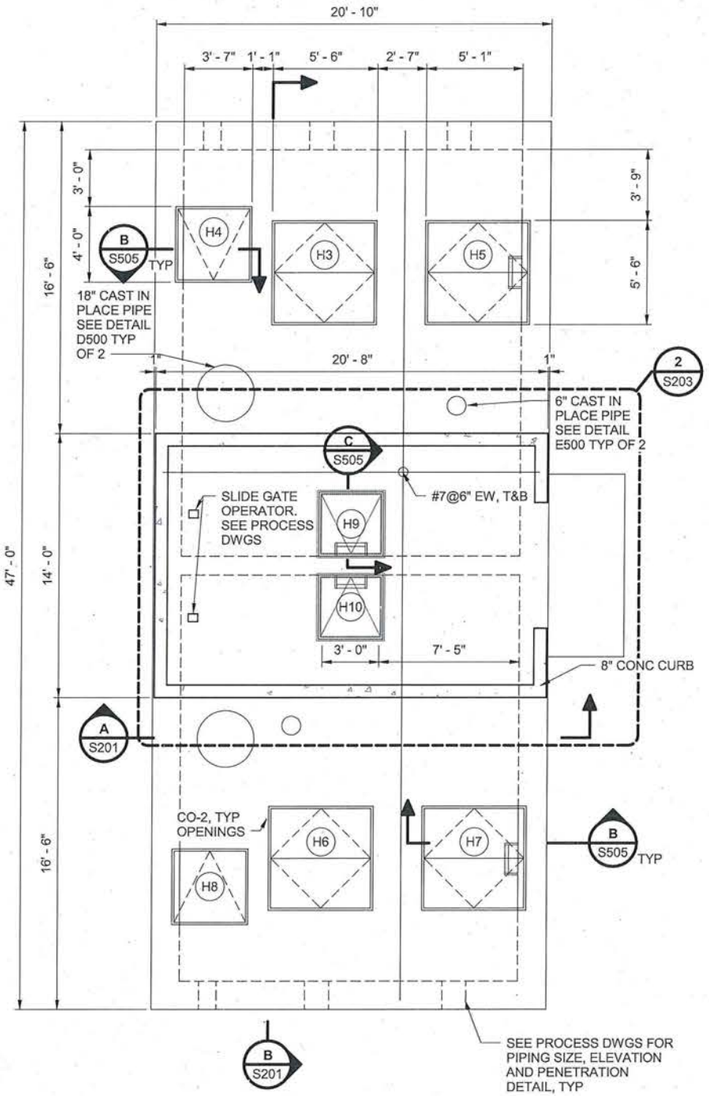


NOTE:
N-S DIMENSIONS ARE SYMMETRIC ABOUT CENTERLINE OF STRUCTURE

RIVER SIDE WET WELL FOUNDATION PLAN

0 2' 4' 8'
SCALE IN FEET

NORTH



RIVER SIDE WET WELL TOP PLAN

0 2' 4' 8'
SCALE IN FEET

NORTH

NOTES:

1. SEE SHEET S001 FOR GENERAL STRUCTURAL NOTES.
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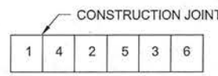

WALL PLACEMENT SEQUENCE DIAGRAM

no.	date	by	ckd	description
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BURNS McDONNELL

date	detailed
MARCH 2018	K. THURMAN
designed	checked
K. THURMAN	B. SNYDER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
RIVER SIDE WET WELL PLAN

project	contract
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drawing **S200** — rev. **0**

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file

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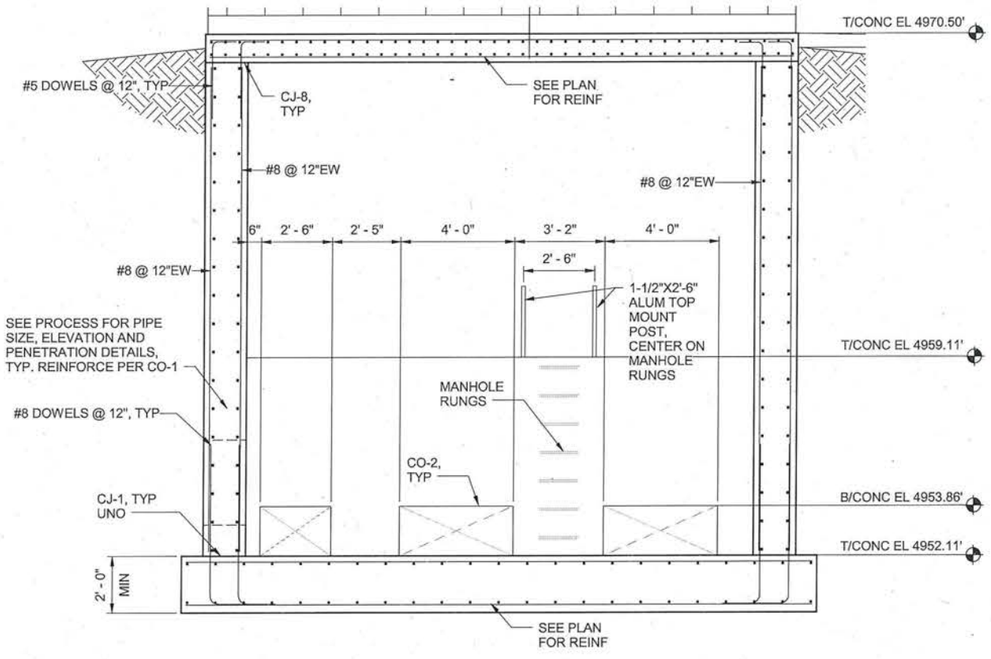
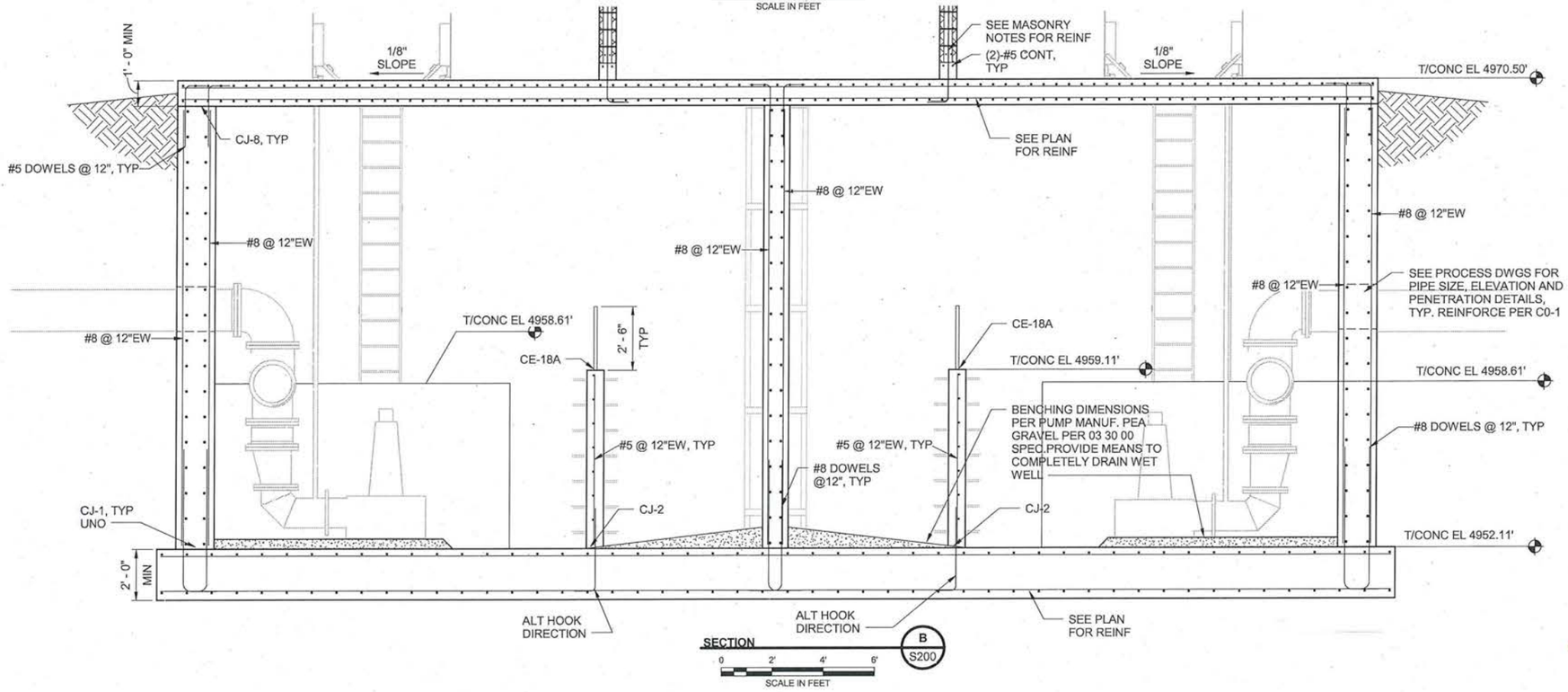


SECTION A S200

SCALE IN FEET



SECTION B S200

SCALE IN FEET

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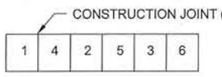

WALL PLACEMENT SEQUENCE DIAGRAM

no.	date	by	ckd	description
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COLORADO LICENSED KEVAN D. THURMAN 48424 PROFESSIONAL ENGINEER 3/23/18

BURNS McDONNELL

date	detailed
MARCH 2018	K. THURMAN
designed	checked
K. THURMAN	B. SNYDER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND

RIVER SIDE WET WELL SECTIONS

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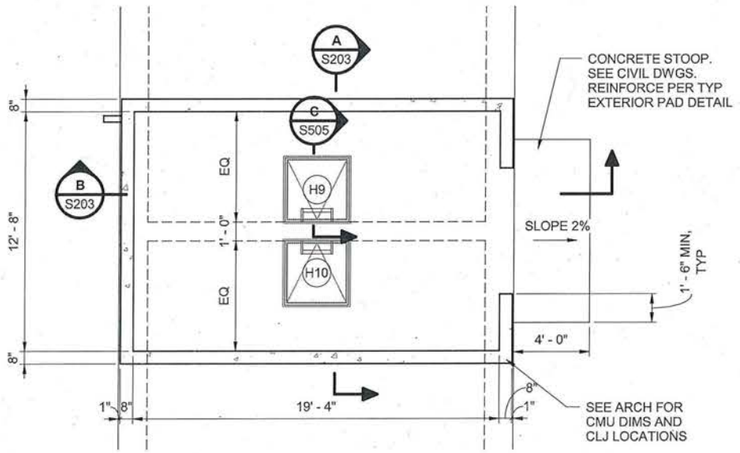
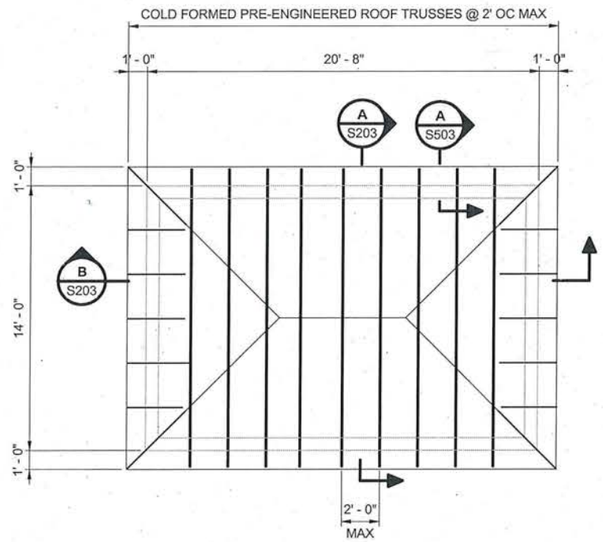


RIVER SIDE ELECTRICAL ROOM
TOP PLAN

0 2' 4' 8'
SCALE IN FEET

NORTH



RIVER SIDE ELECTRICAL ROOM
ROOF PLAN

0 2' 4' 8'
SCALE IN FEET

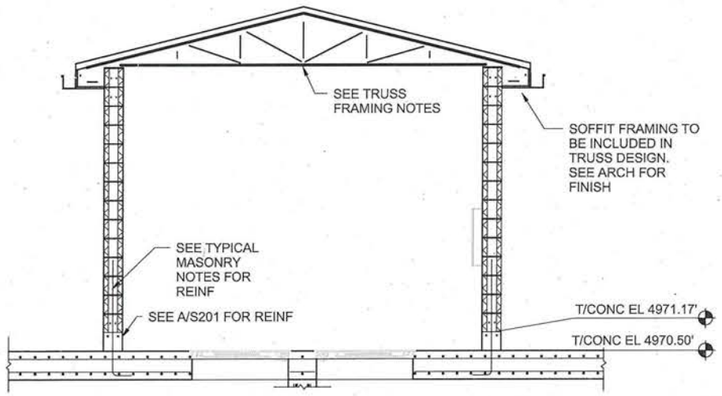
NORTH

NOTES:

1. SEE SHEET S001 FOR GENERAL STRUCTURAL NOTES.
2. SEE SHEET S502 FOR TYPICAL MASONRY NOTES & DETAILS.

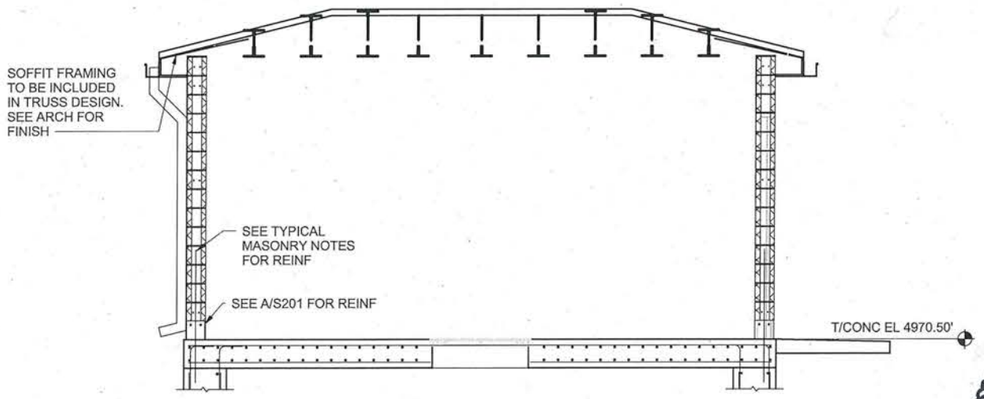
TRUSS ROOF FRAMING SYSTEM NOTES:

1. ROOF FRAMING MANUFACTURER TO PROVIDE A COMPLETE ROOF FRAMING SYSTEM DESIGN INCLUDING ALL PRIMARY AND JACK TRUSSES, LATERAL BRIDGING OR BRACING AND OVERHANG SOFFIT, STAMPED BY A COLORADO PROFESSIONAL ENGINEER.
2. DESIGN LOADS:
   A. SUPERIMPOSED DEAD LOAD = 10 PSF (INCLUDES 5 PSF FOR MECH/ELEC LOADS, 5 PSF ROOF & INSULATION)
   B. ROOF SNOW LOAD = 25.2 PSF APPLY DRIFT AND UNBALANCED LOADS PER DIAGRAM THIS SHEET.
   C. SEE DIAPHRAGM SHEAR DIAGRAM THIS DRAWING.
   D. WIND:
      TRUSS UPLIFT = 26 PSF MAX
      DECKING UPLIFT = 68 PSF, TYP
      = 91 PSF @ OVERHANG
3. TRUSSES SHALL BE SHEATHED WITH 3/4" MINIMUM PLYWOOD PANELS.
4. ATTACH PANELS TO FRAMING USING #8 COUNTERSUNK SCREWS CONFORMING TO ASTM C1513. FASTENER SPACING SHALL BE 6" MAXIMUM AT PANEL EDGES AND 12" MAXIMUM ON EACH INTERMEDIATE SUPPORT.
5. FRAMING SHOWN IS A FOR REPRESENTATION ONLY. MANUFACTURER TO DETERMINE APPROPRIATE FRAMING BASED ON PROVIDED LOADS.



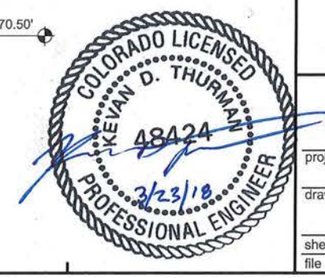
SECTION A S203

0 2' 4' 6'
SCALE IN FEET



SECTION B S203

0 2' 4' 6'
SCALE IN FEET



no.	date	by	ckd	description
0	3/23/18	KDT	BLS	ISSUED FOR CONSTRUCTION

BURNS McDONNELL

date	detailed
MARCH 2018	K. THURMAN
designed	checked
K. THURMAN	B. SNYDER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
RIVER SIDE ELECTRICAL ROOM

project	contract
86381	

drawing **S203** — rev. **0**

sheet 26 of 77 sheets
file

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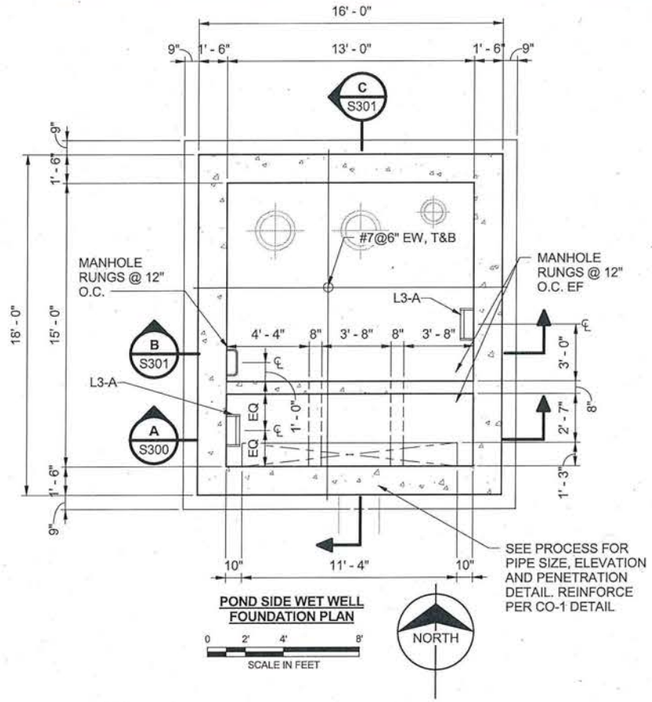
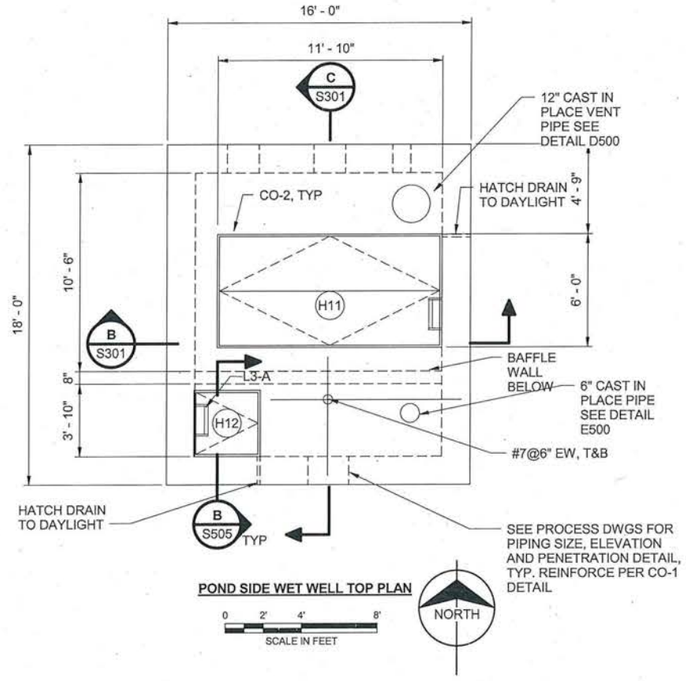
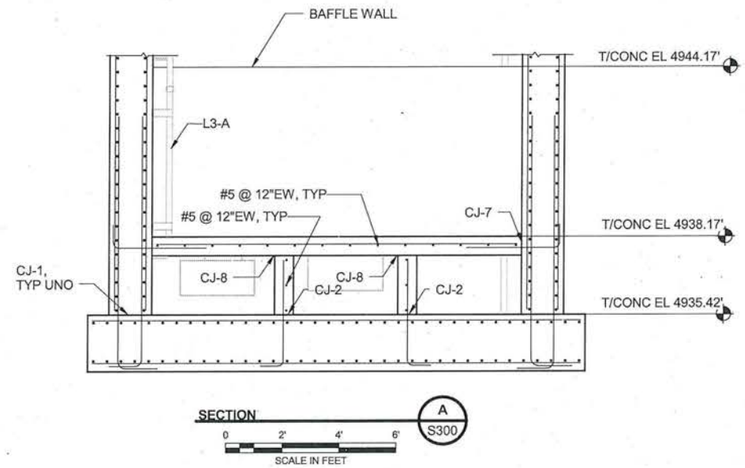
Millimeters
Scale For Microfilming
Inches

A B C D E F G H I

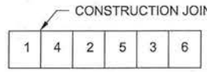






NOTES:

1. SEE SHEET S001 FOR GENERAL STRUCTURAL NOTES.
2. SEE SHEET S500 FOR TYPICAL CONCRETE DETAILS.
3. ALL CONCRETE USED IN WATER CONTAINING BASIN WALLS SHALL BE PLACED BY PUMPING IN ACCORDANCE WITH THE SPECIFICATION SECTION 03 30 00.
4. WALL AND SLAB CONSTRUCTION JOINTS SHALL BE LOCATED AND SUBMITTED TO THE ENGINEER PRIOR TO REBAR FABRICATION AS INDICATED IN THE SPECIFICATION SECTION 03 30 00, PART 3.01, SECTION C. SEE SHEET FOR CONSTRLS501N JOINT TYPES.
5. HATCH SCHEDULE ON SHEET S505
6. MAXIMUM LENGTH OF WALL TO BE PLACED IN A SINGLE POUR IS 25'-0" AND ALTERNATED AS SHOWN BELOW. ALLOW 14 DAY CURE TIME PRIOR TO PLACING ADJACENT SECTION UNLESS SHORTER CURE TIME IS APPROVED BY ENGINEER. NUMBER SEQUENCE BELOW IS FOR EXAMPLE ONLY.



WALL PLACEMENT SEQUENCE DIAGRAM

no.	date	by	ckd	description
0	3/23/18	KDT	BLS	ISSUED FOR CONSTRUCTION

BURNS McDONNELL

date MARCH 2018	detailed K. THURMAN
designed K. THURMAN	checked B. SNYDER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND

POND SIDE WET WELL PLAN

project 86381	contract
drawing S300 —	rev. 0
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file	

COLORADO LICENSED KEVAN D. THURMAN 48424 PROFESSIONAL ENGINEER 3/23/18

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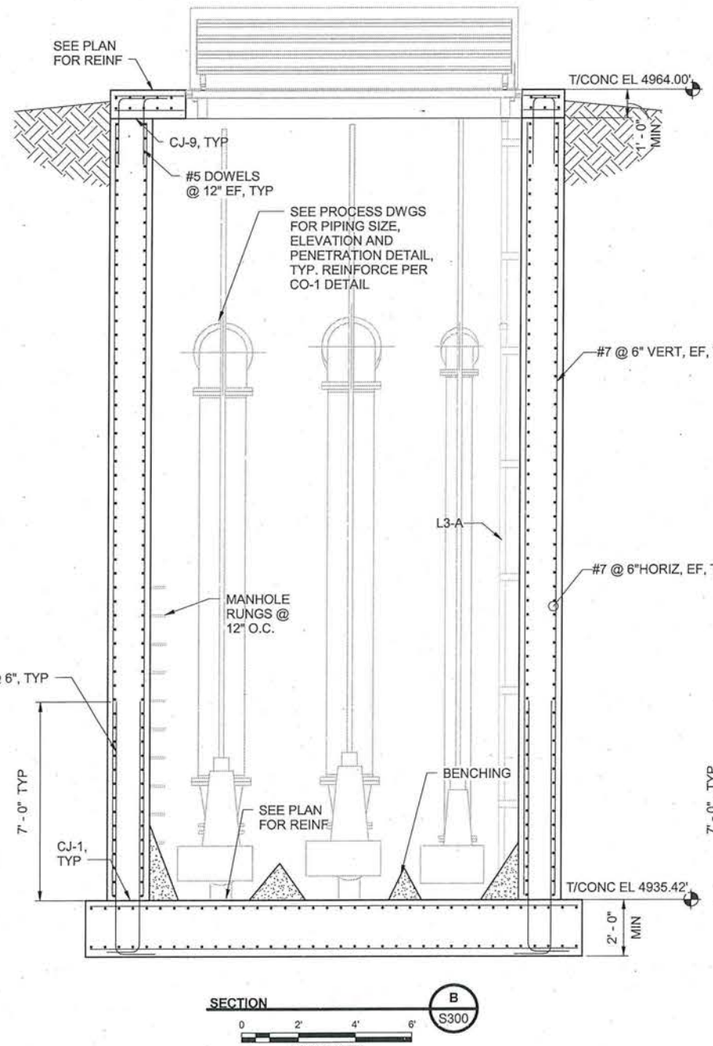
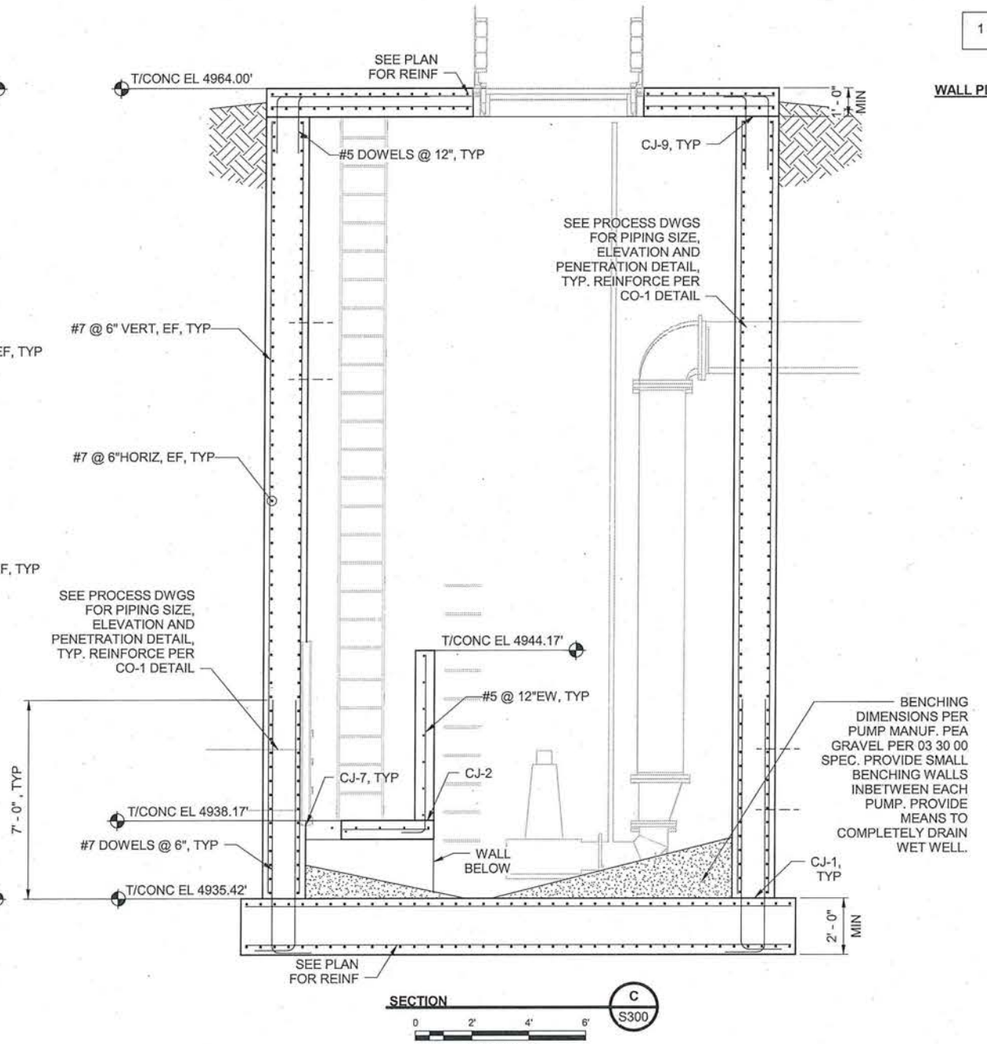


SECTION B S300

0 2' 4' 6'

SCALE IN FEET



SECTION C S300

0 2' 4' 6'

SCALE IN FEET

NOTES:

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CONSTRUCTION JOINT (CJ-10)

1	4	2	5	3	6

WALL ELEVATION

WALL PLACEMENT SEQUENCE DIAGRAM

no.	date	by	ckd	description
0	3/23/18	KDT	BLS	ISSUED FOR CONSTRUCTION

COLORADO LICENSED KEVAN D. THURMAN 48424 PROFESSIONAL ENGINEER 3/23/18

BURNS McDONNELL

date	detailed
MARCH 2018	K. THURMAN
designed	checked
K. THURMAN	B. SNYDER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND

POND SIDE WET WELL SECTIONS

project	contract
86381	

drawing **S301** — rev. **0**

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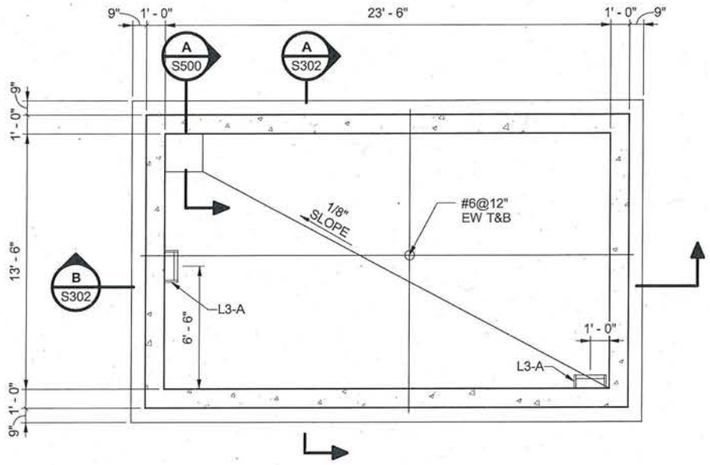
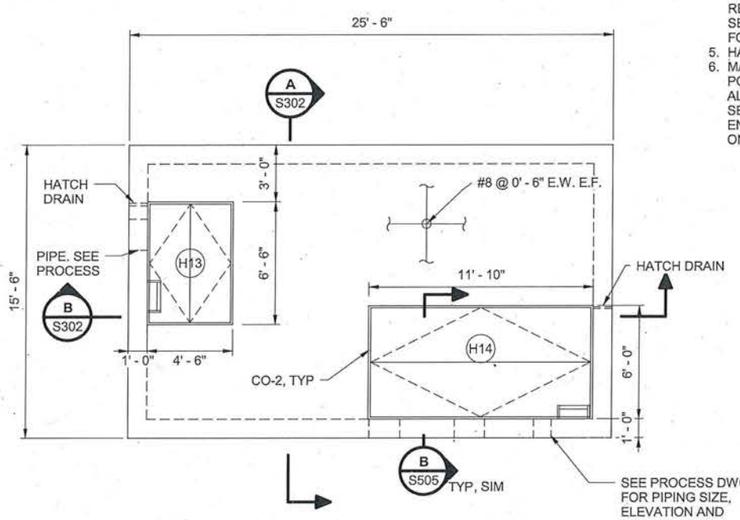


POND SIDE VAULT FOUNDATION PLAN

0 2' 4' 8'

SCALE IN FEET

NORTH



POND SIDE VAULT TOP PLAN

0 2' 4' 8'

SCALE IN FEET

NORTH

NOTES:

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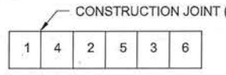
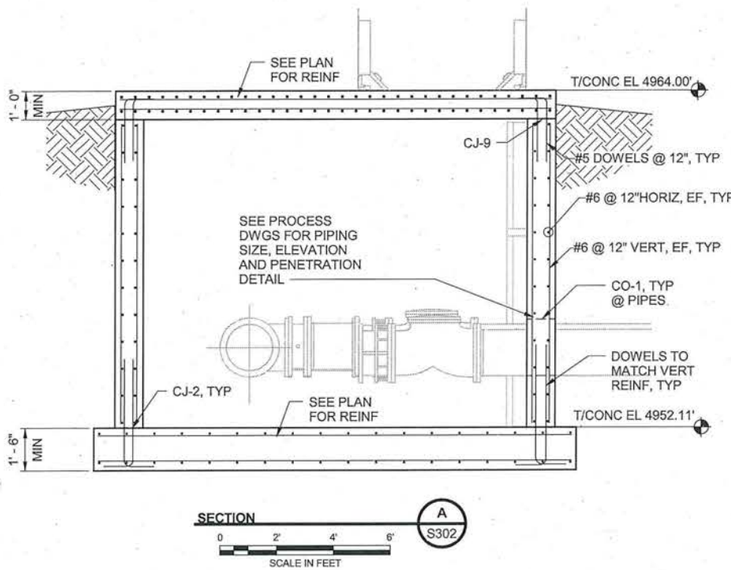


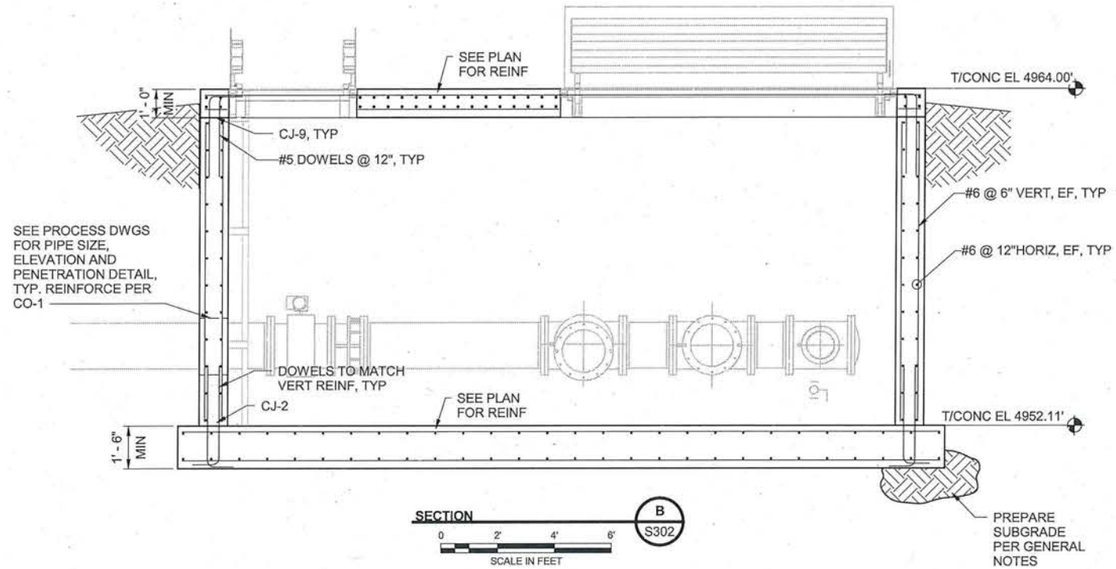
WALL PLACEMENT SEQUENCE DIAGRAM



SECTION A S302

0 2' 4' 6'

SCALE IN FEET



SECTION B S302

0 2' 4' 6'

SCALE IN FEET

no.	date	by	ckd	description
0	3/23/18	KDT	BLS	ISSUED FOR CONSTRUCTION

COLORADO LICENSED KEVAN D. THURMAN 48424 PROFESSIONAL ENGINEER 3/23/18

BURNS McDONNELL

date	detailed
MARCH 2018	K. THURMAN
designed	checked
K. THURMAN	B. SNYDER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
POND SIDE VAULT

project	contract
86381	

drawing **S302** — rev. **0**

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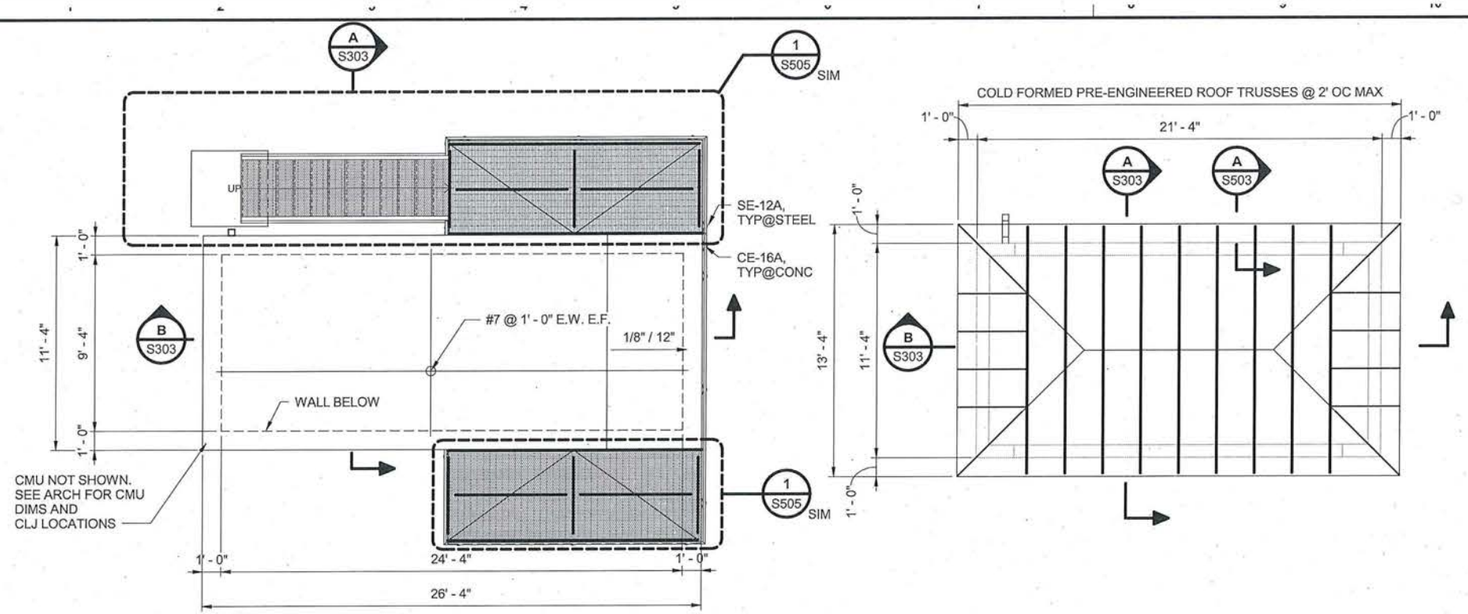
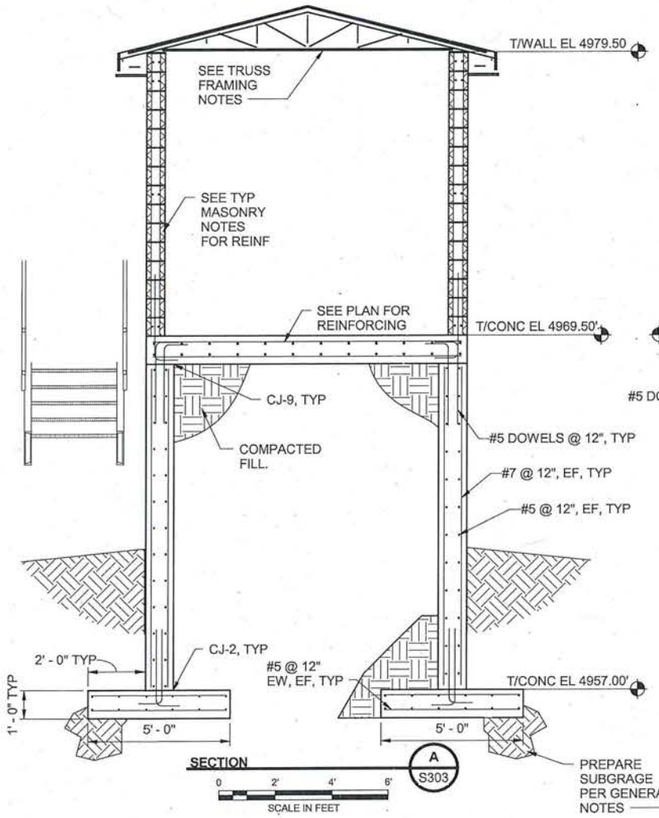


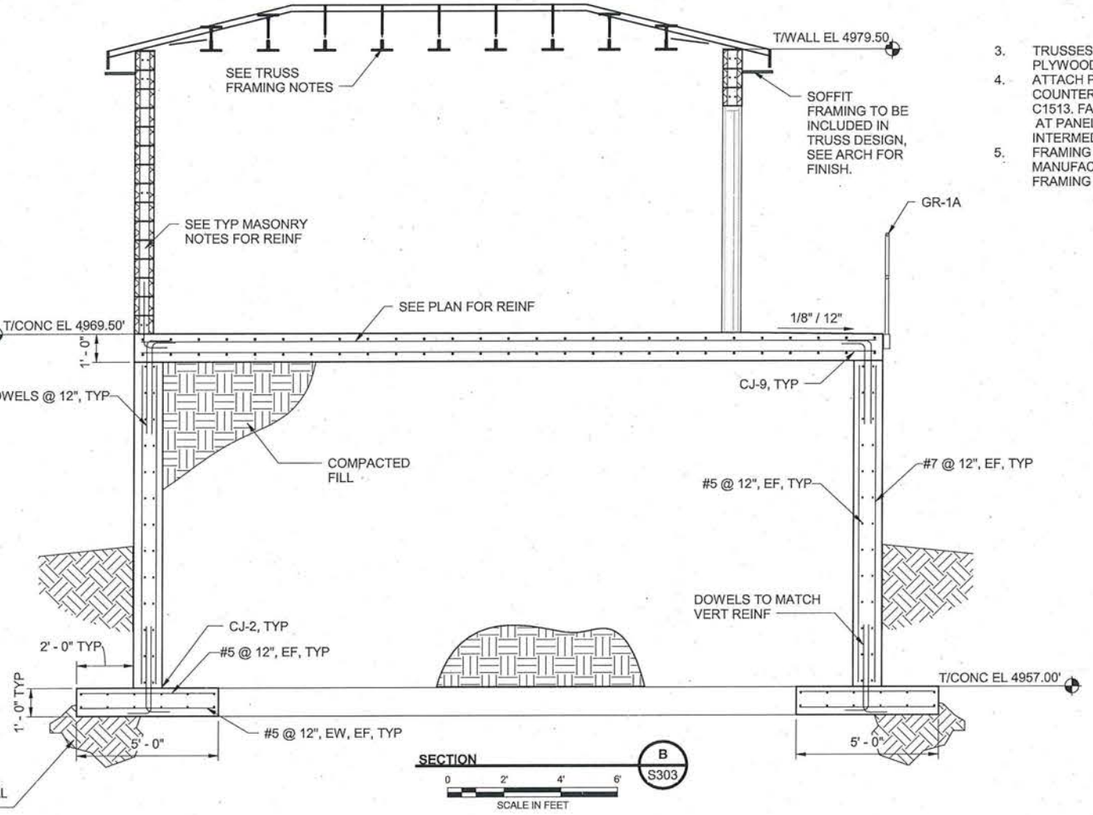
POND SIDE ELECTRICAL ROOM TOP PLAN

SCALE IN FEET

POND SIDE ELECTRICAL ROOM ROOF PLAN

SCALE IN FEET





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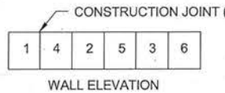

WALL ELEVATION

WALL PLACEMENT SEQUENCE DIAGRAM

TRUSS ROOF FRAMING SYSTEM NOTES:

1. ROOF FRAMING MANUFACTURER TO PROVIDE A COMPLETE ROOF FRAMING SYSTEM DESIGN INCLUDING ALL PRIMARY AND JACK TRUSSES, LATERAL BRIDGING OR BRACING AND OVERHANG SOFFIT, STAMPED BY A COLORADO PROFESSIONAL ENGINEER.
2. DESIGN LOADS:
   A. SUPERIMPOSED DEAD LOAD = 10 PSF (INCLUDES 5 PSF FOR MECH/ELEC LOADS, 5 PSF ROOF & INSULATION)
   B. ROOF SNOW LOAD = 25.2 PSF APPLY DRIFT AND UNBALANCED LOADS PER DIAGRAM THIS SHEET.
   C. SEE DIAPHRAGM SHEAR DIAGRAM THIS DRAWING.
   D. WIND:
      TRUSS UPLIFT = 26 PSF MAX
      DECKING UPLIFT = 68 PSF, TYP
      = 91 PSF @ OVERHANG
3. TRUSSES SHALL BE SHEATHED WITH 3/4" MINIMUM PLYWOOD PANELS.
4. ATTACH PANELS TO FRAMING USING #8 COUNTERSUNK SCREWS CONFORMING TO ASTM C1513. FASTENER SPACING SHALL BE 6" MAXIMUM AT PANEL EDGES AND 12" MAXIMUM ON EACH INTERMEDIATE SUPPORT.
5. FRAMING SHOWN IS A FOR REPRESENTATION ONLY. MANUFACTURER TO DETERMINE APPROPRIATE FRAMING BASED ON PROVIDED LOADS.

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COLORADO LICENSED
KEVAN D. THURMAN
48424
PROFESSIONAL ENGINEER
3/23/18

BURNS McDONNELL

date MARCH 2018	detailed K. THURMAN
designed K. THURMAN	checked B. SNYDER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
POND SIDE ELECTRICAL ROOM

project 86381	contract
drawing **S303** —	rev. **0**
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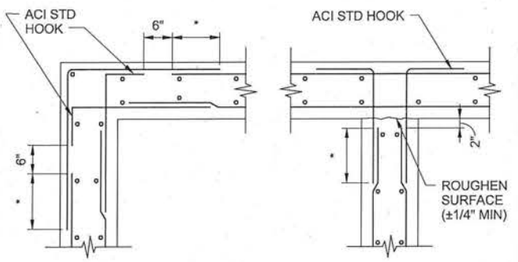
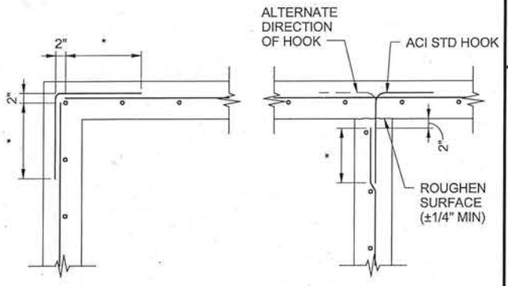




1. USE AT ALL CORNERS FOR ALL CONCRETE MEMBERS INCLUDING THICKENED SLAB ON GRADE, WALLS, CURBS, BEAMS, GRADE BEAMS AND SLABS, UNLESS INDICATED OTHERWISE.
2. * TYPICAL CONCRETE REINFORCEMENT LAP SLICE PER TABLE (THIS SHEET) UNLESS INDICATED OTHERWISE.

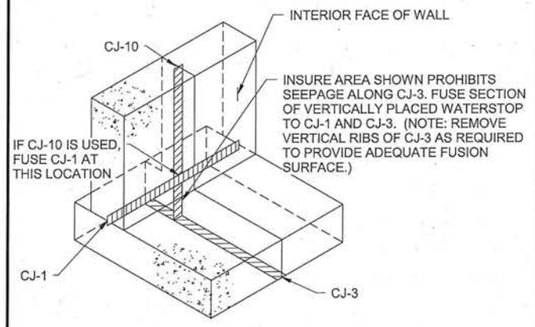
TYPICAL CORNER BAR DETAILS
NOT TO SCALE

CONCRETE REINFORCEMENT SPLICE AND EMBEDMENT TABLE

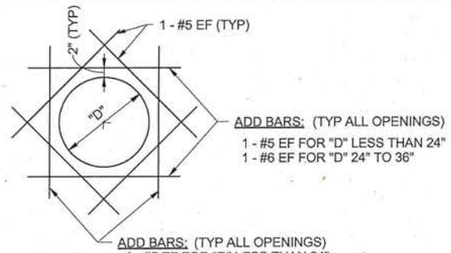
BAR SIZE	SPLICES (IN)		EMBEDMENT (IN)		
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	HOOKED BARS
3	15	12	12	12	5
4	20	15	15	12	7
5	25	19	19	15	9
6	29	23	23	18	10
7	48	37	37	29	12
8	61	47	47	36	14
9	75	58	58	44	15
10	91	70	70	54	17
11	109	84	84	65	19
14	NOT ALLOWED		113	87	33
18			180	138	43

1. TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 12" OF FRESH CONCRETE CAST BELOW THE BAR.
2. LAP SPLICES REQUIRED FOR MASONRY ARE INDICATED ON DRAWING

LAP SPLICE TABLE
NOT TO SCALE

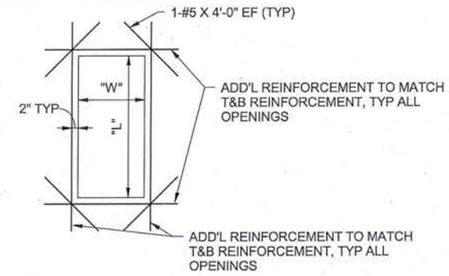


CONSTRUCTION JOINT INTERSECTION DETAIL
NOT TO SCALE



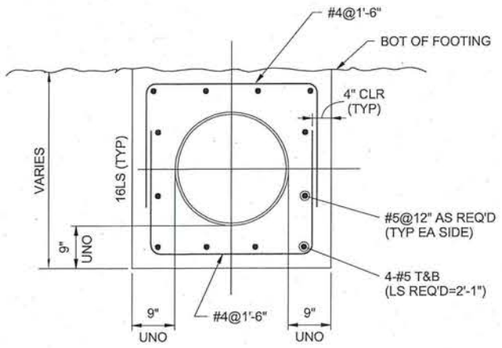
1. ALL BAR MINIMUM LENGTHS TO BE ("D" + 3'-6") WITH BARS CENTERED ON OPENING.
2. FOR OPENINGS LESS THAN 12" IN DIAMETER, THE ADD BARS ARE NOT REQUIRED IF NO REINFORCING IS CUT BY THE OPENING.
3. HOOK ADDITIONAL BARS WHEN PERPENDICULAR WALL OR SLAB PROHIBITS ADD'L BARS FROM BEING CENTERED ON THE OPENING
4. REINFORCE OPENINGS WITH "D" LARGER THAN 36" AS INDICATED ON THE DRAWINGS. IF NOT INDICATED CONTACT THE ENGINEER.

ROUND CONCRETE OPENING - CO-1
NOT TO SCALE

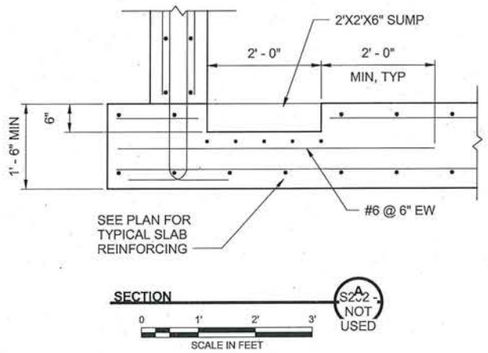


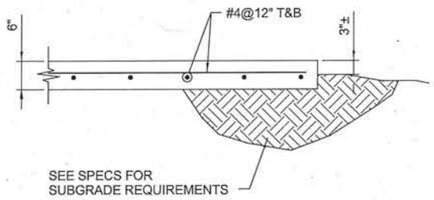
1. ALL MINIMUM LENGTHS TO BE (L OR W + 3'-6") WITH BARS CENTERED ON OPENING.
2. FOR OPENINGS (W,L) LESS THAN 12", THE ADD BARS ARE NOT REQUIRED IF NO REINFORCING IS CUT BY THE OPENING.
3. HOOK ADDITIONAL BARS WHEN PERPENDICULAR WALL OR SLAB PROHIBITS ADD'L BARS FROM BEING CENTERED IN OPENING.
4. REINFORCE OPENINGS WITH "L" OR "W" LARGER THAN 36" AS INDICATED ON THE DRAWINGS. IF NOT INDICATED CONTACT THE ENGINEER.

SQUARE OR RECTANGULAR SLAB CO-2



TYPICAL PIPE ENCASEMENT PE-1
NOT TO SCALE





NOTE: SLAB FOR SWITCHGEAR & MISC HVAC EQUIPMENT. SEE CIVIL DWGS FOR LOCATION. COORDINATE SIZE W/ EQUIPMENT MANUFACTURER.

TYPICAL EXTERIOR HVAC/ELEC EQUIPMENT SLAB
NOT TO SCALE

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KEVAN D. THURMAN
48424
PROFESSIONAL ENGINEER
3/23/18

BURNS McDONNELL

date	detailed
MARCH 2018	K. THURMAN
designed	checked
K. THURMAN	B. SNYDER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
STANDARD CONCRETE DETAILS

project	contract
86381	

drawing **S500** — rev. **0**

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file

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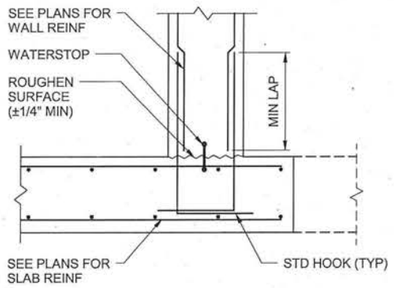
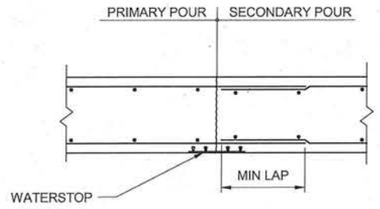
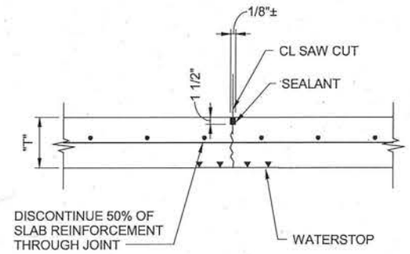


1. SEE SPEC SECTION 03 30 00 FOR BEDDING & GROUT REQUIREMENTS.
2. WALL REINFORCEMENT MAY BE SINGLE LAYER, SEE PLANS.

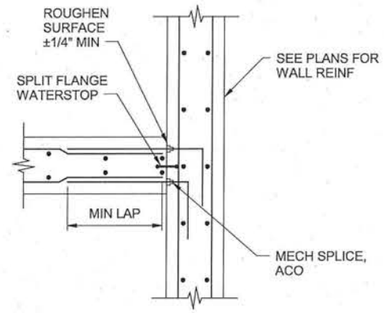
CJ-1 WITH WATERSTOP
CJ-2 WITHOUT WATERSTOP



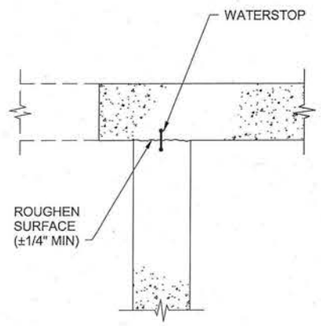
CJ-3 WITH WATERSTOP
CJ-4 WITHOUT WATERSTOP



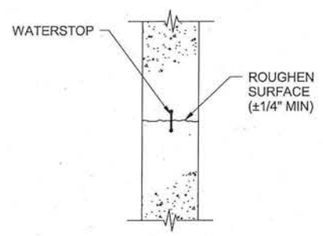
CJ-5 WITH WATERSTOP
CJ-6 WITHOUT WATERSTOP



CJ-7

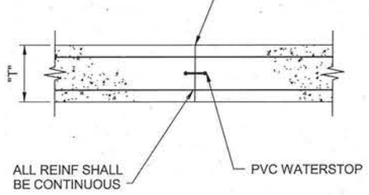


CJ-8 WITH WATERSTOP
CJ-9 WITHOUT WATERSTOP



SEE SPEC SECTION 03300 FOR BEDDING & GROUT REQUIREMENTS.

CJ-10 WITH WATERSTOP
CJ-11 WITHOUT WATERSTOP



CJ-12

no.	date	by	ckd	description
0	3/23/18	KDT	BLS	ISSUED FOR CONSTRUCTION

BURNS McDONNELL

date	detailed
MARCH 2018	K. THURMAN
designed	checked
K. THURMAN	B. SNYDER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
STANDARD CONCRETE DETAILS II

project	contract
86381	

drawing **S501** — rev. **0**

sheet 32 of 77 sheets
file

COLORADO LICENSED KEVAN D. THURMAN 48424 PROFESSIONAL ENGINEER 3/23/18

3/29/2018 10:04:21 AM

Scale For Microfilming: Millimeters / Inches

CONCRETE MASONRY UNIT (CMU) NOTES:

A. GENERAL
1. ENGINEERED MASONRY IS DESIGNED IN ACCORDANCE WITH "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" ACI 530/ ASCE 5/ TMS 402, 2008
2. UNITS: ASTM C90, TYPE II NORMAL WEIGHT EXCEPT OVEN-DRY WEIGHT SHALL NOT BE LESS THAN 119 PCF.
   COMPRESSIVE STRENGTH = 1900 PSI MINIMUM
   MORTAR: ASTM C270 TYPE S = 1800 PSI
   ASSEMBLY/PRISM MINIMUM COMPRESSIVE STRENGTH, f'm = 1500 PSI
   GROUT: ASTM C476, MINIMUM COMPRESSIVE STRENGTH = 2000 PSI
   REINFORCING STEEL BARS: Fy = 60,000 PSI
3. FULLY GROUT ALL CELLS CONTAINING REINFORCING STEEL OR ANCHORS.
4. CONSOLIDATE GROUT IN ASSEMBLED WALLS.
5. USE FULL CONTACT LAP SPLICES FOR REINFORCING STEEL IN CMU WALLS AS FOLLOWS:
   #4 BARS: MINIMUM 24 INCHES
   #5 BARS: MINIMUM 30 INCHES
   #6 BARS: MINIMUM 36 INCHES
6. USE RUNNING BOND PATTERN, UNLESS INDICATED OTHERWISE
7. PROVIDE SUPPORT AT THE TOP OF WALLS, UNLESS INDICATED OTHERWISE. SEE NOTE E.

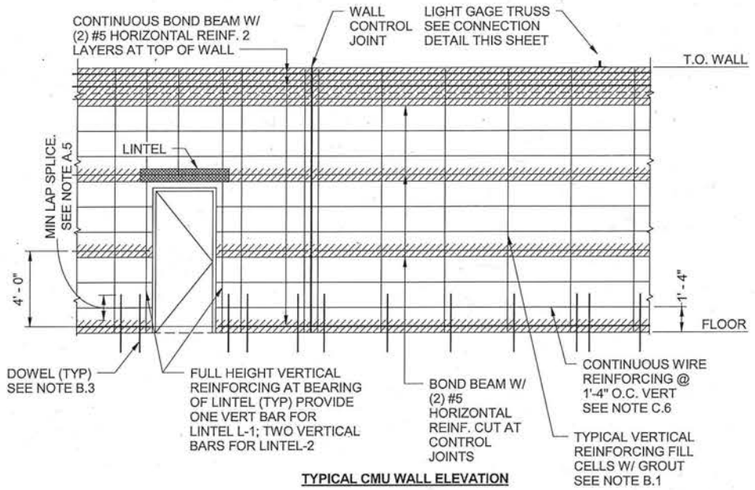
B. VERTICAL REINFORCING
1. UNLESS NOTED OTHERWISE INDICATED, PROVIDE (1) #5 VERTICAL CENTERED IN THE WALL AT THE FOLLOWING SPACING: 48"
2. PROVIDE AN ADDITIONAL VERTICAL REINFORCEMENT AT EACH SIDE OF CONTROL JOINTS, AT INTERSECTION OF EXTERIOR WALLS, AND AT EACH SIDE OF ALL MASONRY OPENINGS GREATER THAN 10" IN WIDTH. IN OPENINGS MORE THAN 24" PROVIDE ADDITIONAL VERTICAL REINFORCEMENT IN TWO ADJACENT CELLS ON EACH SIDE OF THE OPENING. ADDED VERTICAL REINFORCEMENT SHALL BE CONTINUOUS FOR THE FULL HEIGHT OF WALL UNO. SEE ADD BAR DETAIL ON THIS DWG.
3. PROVIDE FOUNDATION DOWEL SAME SIZE AND LOCATION AS VERTICAL BARS IN THE WALL ABOVE. SHALL BE LOCATED AT EACH VERTICAL WALL REINFORCEMENT AND SHALL EXTEND A MINIMUM OF 18" (450mm) INTO THE CONCRETE FOUNDATION WALL. AT THICKENED SLABS, EXTEND DOWELS TO WITHIN 2" (50mm) OF THE BOTTOM OF SLAB AND PROVIDE A STANDARD 90° HOOK.
4. EXTEND ALL VERTICAL BARS FROM THE BOTTOM COURSE THROUGH THE TOP MOST BOND BEAM.
5. PROVIDE VERTICAL REINFORCEMENT IN ALL CELLS UNDER AND ONE ON EACH SIDE IF A CONCRETE BEAM IS SUPPORTED BY MASONRY WALL (LOAD BEARING WALLS ONLY).

C. HORIZONTAL REINFORCING
1. CONSTRUCT BOND BEAMS USING (2) #5 HORIZONTAL UNO.
2. PROVIDE BOND BEAMS AT 4'-0" MAX VERTICAL SPACING WHERE NOT INDICATED ON DRAWING, OR AT OTHER ELEVATIONS AS INDICATED.
3. LOCATE BOND BEAMS AT THE BOTTOM-MOST COURSE AND THE TOP-MOST OR AT THE SECOND FROM TOP-MOST COURSE AS PRACTICAL.
4. PROVIDE BOND BEAM BELOW ALL MASONRY OPENINGS AND EXTEND A MINIMUM OF 16" BEYOND EACH SIDE OF OPENING.
5. DISCONTINUE BOND BEAM REINFORCEMENT AT WALL CONTROL JOINTS EXCEPT AT ELEVATED FLOOR AND ROOF LEVELS.
6. PROVIDE HORIZONTAL JOINT REINFORCEMENT AT EVERY OTHER COURSE OR A MAXIMUM 16" SPACING. BEGIN JOINT REINFORCING AT THE TOP OF SECOND BLOCK COURSE ABOVE FLOOR SLAB.
7. DISCONTINUE HORIZONTAL JOINT REINFORCEMENT AT CONTROL JOINTS.

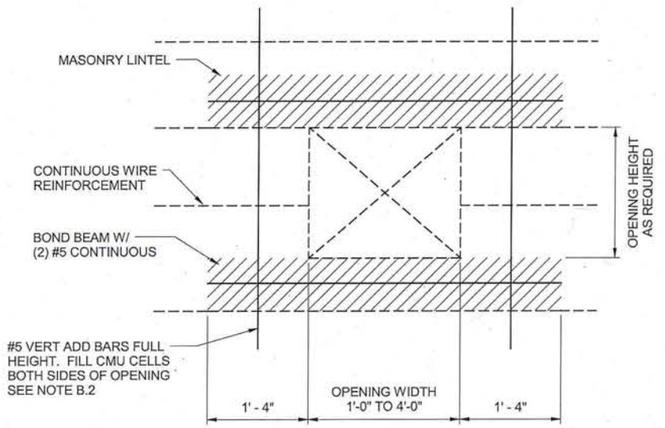
D. CONTROL JOINT
1. USE PREMOLDED CONTROL JOINT KEY INSERTS WITH SASH BLOCK; USE CORRUGATED METAL SEPARATOR AT BOND BEAM LOCATIONS.
2. LOCATE CONTROL JOINT WHERE INDICATED ON THE ARCHITECTURAL FLOOR PLANS; OR WHEN NOT INDICATED AS LISTED BELOW:
   a. LOCATE APPROXIMATELY 1/2 THE WALL HEIGHT FROM WALL INTERSECTIONS. LOCATE AT SPACING NOT GREATER THAN 24'-0" IN INTERIOR WALLS; 15'-0" IN EXTERIOR WALLS.
   b. AVOID CREATING SLIP PLANES AT DOOR OR WINDOW LOCATIONS.
   c. LOCATE ABOVE EXPANSION AND CONTROL JOINTS IN SUPPORTING CONCRETE FLOOR, BEAMS, OR WALLS.
   d. DO NOT PROVIDE INTERMEDIATE CONTROL JOINTS IN PARAPET WALLS UNLESS SO INDICATED ON THE ARCHITECTURAL DRAWINGS.
3. EXPANSION / CONTRACTION JOINTS:
   a. PROVIDE A MINIMUM 3/4" GAP BETWEEN THE TOP OF THE CMU WALL AND THE BOTTOM OF THE CONCRETE STRUCTURE, EXCEPT AT LOAD BEARING WALLS.
   b. PROVIDE A MINIMUM 3/4" GAP BETWEEN THE END OF AN INTERIOR CMU WALL AND THE SIDE OF A CONCRETE BEAM.
   c. PROVIDE CONTINUOUS COMPRESSIBLE FILLER OR FIRE SAFEING INSULATION AS REQUIRED (FULL WIDTH AND FULL LENGTH) OF THE SAME THICKNESS AS THE JOINT.

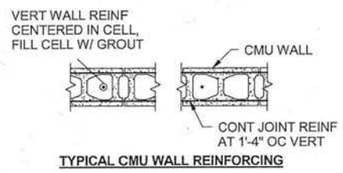
E. TOP CLIP SUPPORTS:
1. PROVIDE BENT PLATE SUPPORTS OR DIAGONAL BRACING SUPPORT AT EVERY VERTICAL REINFORCEMENT LOCATION AND AS LISTED BELOW, EXCEPT AT LOAD-BEARING WALLS.
2. LOCATE AT DISCONTINUOUS ENDS OF WALLS, AT EACH SIDE OF INTERMEDIATE CONTROL JOINTS, AND AT EACH SIDE ABOVE OPENINGS WIDER THAN 6'-6".
3. TWO CELLS UNDER EACH TOP CLIP SHALL BE FULLY GROUTED. SOLID MASONRY UNITS MAY BE PROVIDED.

F. LINTELS:
1. PROVIDE MASONRY LINTELS ABOVE OPENINGS IN MASONRY WALLS AS REQUIRED. SEE DETAILS ON THIS DRAWING.

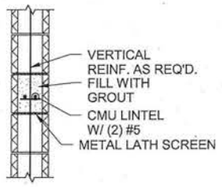


TYPICAL CMU WALL ELEVATION

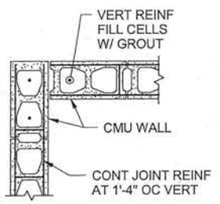




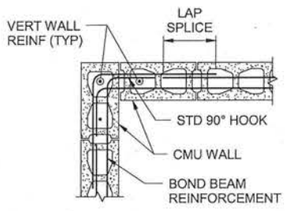
TYPICAL CMU WALL REINFORCING



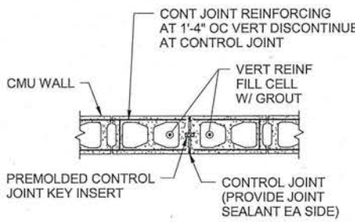
TYPICAL BOND BEAM



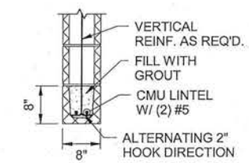
TYPICAL CMU WALL CORNER DETAIL



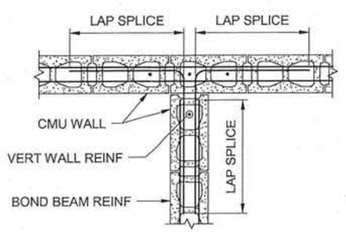
TYPICAL CMU WALL CORNER DETAIL AT BOND BEAMS



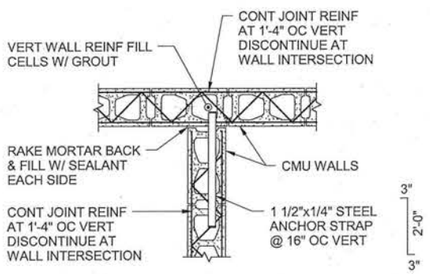
TYPICAL CONTROL JOINT DETAIL



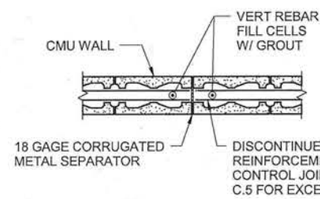
LINTEL L-1
TYPICAL FOR MASONRY OPENINGS UP TO 4'-0" WIDE. PROVIDE 8" BEARING AT EACH END.



TYPICAL CMU WALL INTERSECTION DETAIL AT BOND BEAMS



TYPICAL CMU WALL INTERSECTION DETAIL



TYPICAL CONTROL JOINT DETAIL AT BOND BEAMS

COLORADO LICENSED
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PROFESSIONAL ENGINEER
3/23/18

no.	date	by	ckd	description
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BURNS McDONNELL

date MARCH 2018	detailed K. THURMAN
designed K. THURMAN	checked B. SNYDER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
STANDARD MASONRY DETAILS

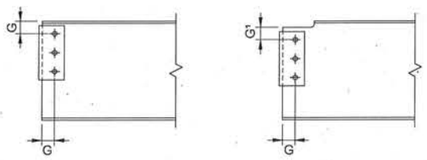
project 86381	contract
drawing **S502**	rev. **0**
sheet 33 of 77 sheets	
file	

Scale For Microfilming: Millimeters / Inches

3/29/2018 10:04:21 AM

NOTES:

1. UNLESS NOTED OTHERWISE, ALL BEAM TO W COLUMN CONNECTIONS SHALL BE TABLE 10-2 CASE 1 WITH SHOP WELDS.
2. UNLESS NOTED OTHERWISE, ALL BEAM TO HSS COLUMN CONNECTIONS SHALL BE TABLE 10-10A WITH SHOP WELDS.
3. UNLESS NOTED OTHERWISE ALL BEAM TO BEAM CONNECTIONS SHALL BE TABLE 10-2 CASE 1 WITH SHOP WELDS.
4. THE SYMBOL NUMBER INDICATES THE MINIMUM NUMBER OF ROWS OF HIGH STRENGTH BOLTS FOR THAT END CONNECTION. END CONNECTIONS SHALL BE STANDARD "FRAMED BEAM" OF AISC STEEL CONSTRUCTION MANUAL 14TH EDITION. UNLESS OTHERWISE INDICATED, THE FOLLOWING MINIMUMS APPLY.



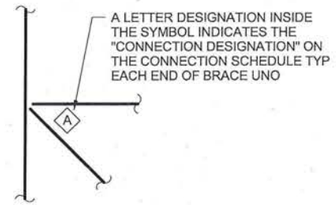
G & G' = 2" MIN FOR STD HOLES (G' = 1 1/4" MIN FOR BEAMS LESS THAN A W12).
MINIMUM CLIP ANGLE THICKNESS SHALL BE 5/16" BEAM TO BEAM CONNECTION. TABLE 10-2 CASE 1 WELDS TO BE 3/16".
MINIMUM CLIP ANGLE THICKNESS SHALL BE 3/8" BEAM TO COLUMN CONNECTION. TABLE 10-2 CASE 1 WELDS TO BE 3/16".
MINIMUM SHEAR TAB THICKNESS SHALL BE 3/8" BEAM TO COLUMN CONNECTION. TABLE 10-10 WELDS SHALL BE MINIMUM 1/4".

5. WHERE NO STANDARD "FRAMED BEAM" CONNECTIONS SYMBOL (X ⬡) IS INDICATED, BEAM END CONNECTIONS SHALL BE IN ACCORDANCE WITH THESE NOTES AND WITH THE FOLLOWING MINIMUM NUMBER OF HIGH STRENGTH BOLTS:

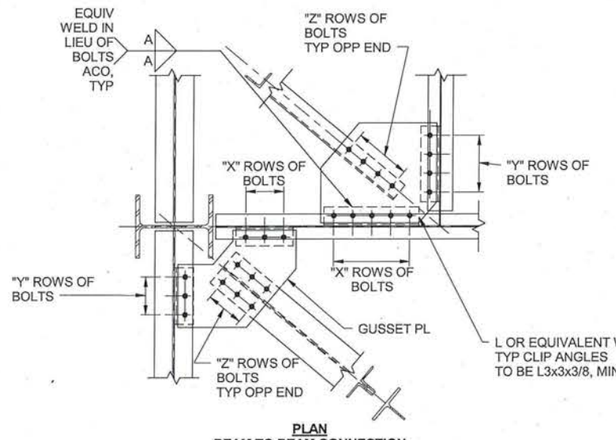
C6, W6, OR LESS	= 2 ROWS	W21	= 4 ROWS
C8 OR W8	= 2 ROWS	W24	= 5 ROWS
C10 OR W10	= 2 ROWS	W27	= 7 ROWS
C12 OR W12	= 2 ROWS	W30	= 7 ROWS
W14	= 3 ROWS	W33	= 8 ROWS
C15 OR W16	= 3 ROWS	W36	= 8 ROWS
W 18	= 4 ROWS		

6. THE NUMBER OF BOLTS AND NUMBER OF ROWS OF BOLTS INDICATED OR STATED IS THE MINIMUM NUMBER OF BOLTS OR ROWS. PROVIDE ADDITIONAL BOLTS OR CONNECTION DEVICES, IF NECESSARY, TO COMPLY WITH OSHA REGULATION 29CFR1926 SUBPART R-STEEL ERECTION.
7. ROWS OF BOLTS: THE NUMBER OF FASTENERS IN A VERTICAL LINE.
8. BEAM CONNECTIONS ARE BASED ON THE USE OF STANDARD HOLES AS DEFINED BY AISC STEEL CONSTRUCTION MANUAL 14TH EDITION. OVERSIZED AND LONG-SLOTTED HOLES ARE NOT PERMITTED.
9. BEAM CONNECTION GAGE SHALL BE 5 1/2" MAX. GAGE MAY BE REDUCED AT FABRICATOR'S OPTION.

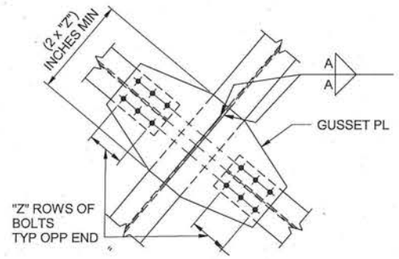
TYPICAL BEAM CONNECTIONS — 1 / S505



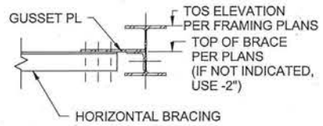
IF NO DESIGNATION GIVEN ON THE PLANS, BRACING CONNECTION VALUES SHALL BE AS FOLLOWS:
X=Y=Z=2
A=3/16"
FULL LENGTH WELD
GUSSET PLATE: 3/8"



PLAN
BEAM TO BEAM CONNECTION



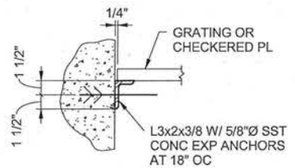
PLAN
INTERSECTION CONNECTION



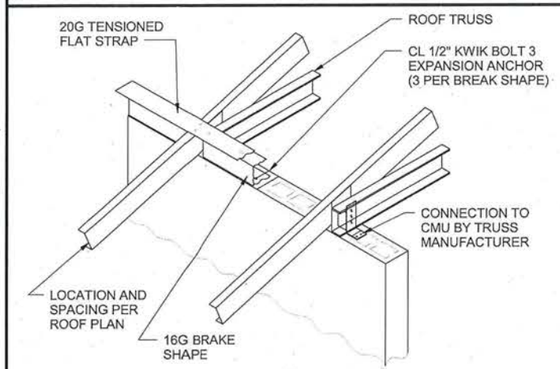
SECTION

NOTES:
A. WHEN NOT EQUAL, THE AXIS OF "X" AND "Y" ROWS OF BOLTS SHALL BE GIVEN ON PLANS.
B. AXIS OF "Z" ROWS OF BOLTS IS PARALLEL TO CENTERLINE OF BRACING.

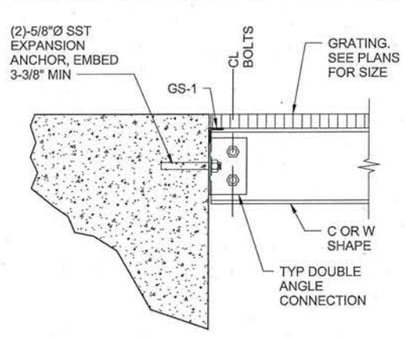
HORIZONTAL BRACING CONNECTIONS — 2 / S505
NOT TO SCALE



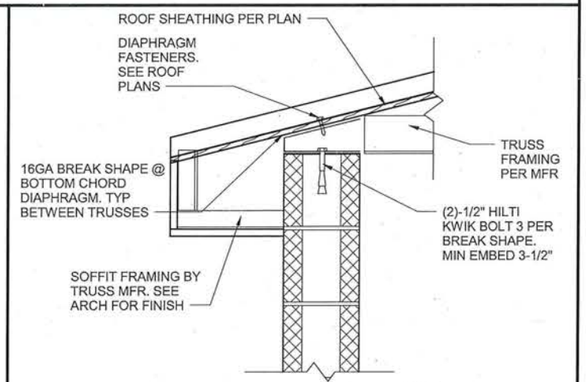
GS-1 — 3
NOT TO SCALE



DIAPHRAGM TO CMU CONNECTION — 4
NOT TO SCALE



BEAM TO CONCRETE CONNECTION — 5
NOT TO SCALE



SECTION — A / S203
0 1/2" 1' 1 1/2"
SCALE IN FEET

no.	date	by	ckd	description
0	3/23/18	KDT	BLS	ISSUED FOR CONSTRUCTION

BURNS McDONNELL

date MARCH 2018	detailed K. THURMAN
designed K. THURMAN	checked B. SNYDER

Brighton COLORADO

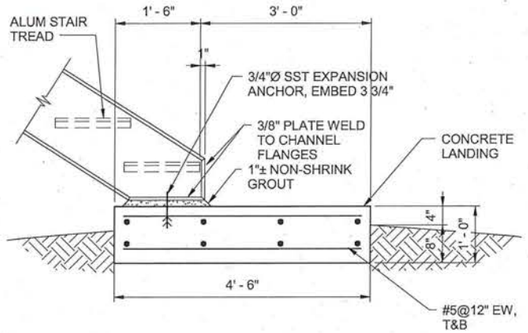
Adams County, Colorado

ERGER'S POND
STANDARD STEEL DETAILS

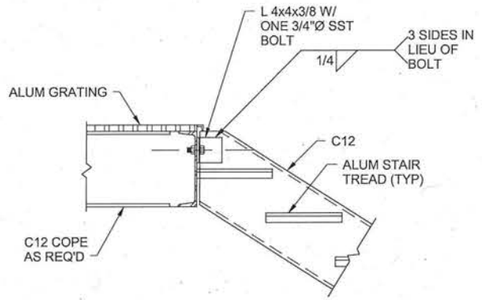
project 86381	contract
drawing S503 —	rev. 0
sheet 34 of 77 sheets	
file	

COLORADO LICENSED KEVAN D. THURMAN 48424 PROFESSIONAL ENGINEER 3/23/18

3/29/2018 10:04:22 AM



SR-1A 1 S505
NOT TO SCALE



SR-8A 2 S505
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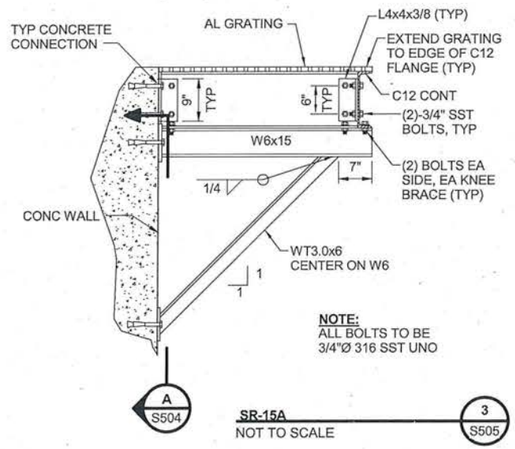
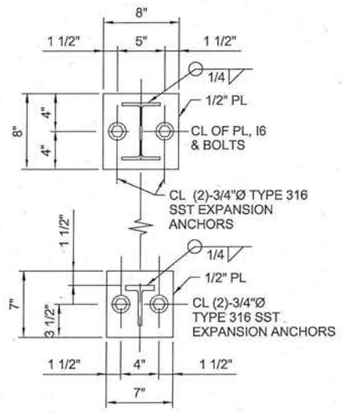


A S504

SR-15A 3 S505
NOT TO SCALE



SECTION A

no.	date	by	ckd	description
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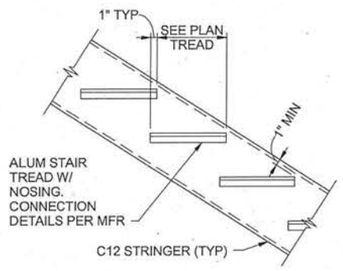
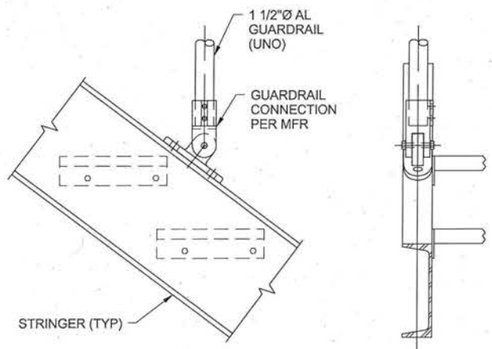
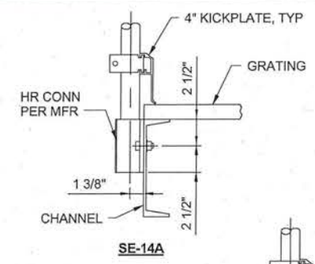


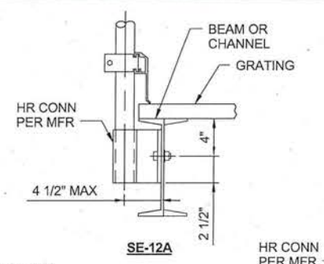
SR-11A 4 S505
NOT TO SCALE



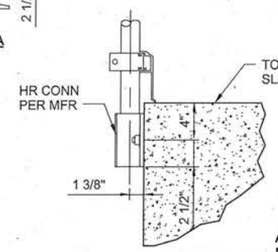
SR-12A 5 S505
NOT TO SCALE



SE-14A

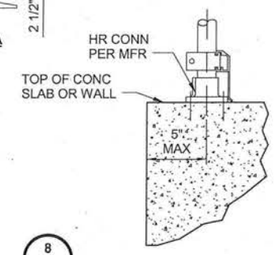


SE-12A

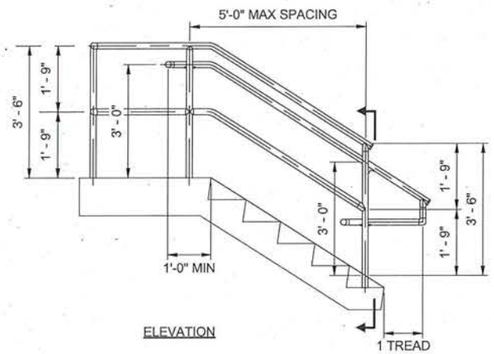


CE-16A

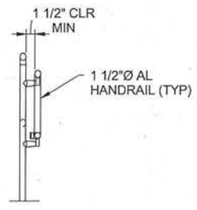
ALUMINUM GUARDRAIL MOUNTING 8
NOT TO SCALE



CE-18A

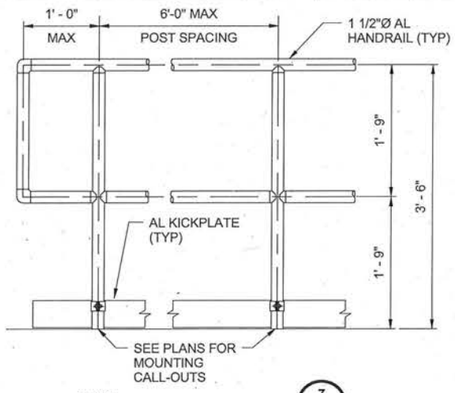


ELEVATION



SECTION

HR-2A 6
NOT TO SCALE



GR-1A 7
NOT TO SCALE

BURNS McDONNELL

date	detailed
MARCH 2018	K. THURMAN
designed	checked
K. THURMAN	B. SNYDER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
STANDARD STAIR DETAILS

project	contract
86381	

drawing **S504** — rev. **0**

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file

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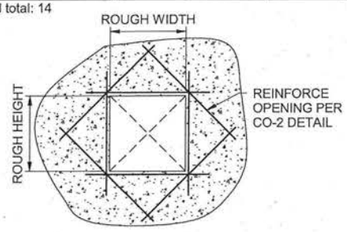
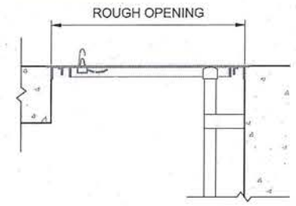
Scale For Microfilming: Millimeters / Inches

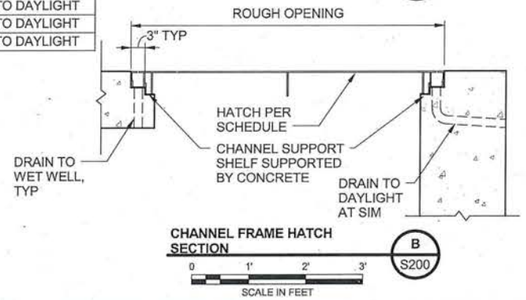
HATCH SCHEDULE						
MARK	OPENING HEIGHT	OPENING WIDTH	ROUGH HEIGHT	ROUGH WIDTH	BILCO MODEL NUMBER	NOTES
H1	6' - 0"	4' - 0"	6' - 6"	4' - 6"	JD-3AL H20	DRAIN TO DAYLIGHT
H2	6' - 0"	4' - 0"	6' - 6"	4' - 6"	JD-3AL H20	DRAIN TO DAYLIGHT
H3	5' - 0"	5' - 0"	5' - 6"	5' - 6"	JD-4AL H20	DRAIN TO WET WELL
H4	3' - 6"	3' - 6"	4' - 0"	4' - 0"	J-5AL H20	DRAIN TO WET WELL
H5	5' - 0"	5' - 0"	5' - 6"	5' - 6"	JD-4AL H20	DRAIN TO WET WELL
H6	5' - 0"	5' - 0"	5' - 6"	5' - 6"	JD-4AL H20	DRAIN TO WET WELL
H7	5' - 0"	5' - 0"	5' - 6"	5' - 6"	JD-4AL H20	DRAIN TO WET WELL
H8	3' - 6"	3' - 6"	4' - 0"	4' - 0"	J-5AL H20	DRAIN TO WET WELL
H9	3' - 0"	3' - 0"	3' - 4 3/4"	3' - 4 3/4"	K-4	DRAIN TO DAYLIGHT
H10	3' - 0"	3' - 0"	3' - 4 3/4"	3' - 4 3/4"	K-4	DRAIN TO DAYLIGHT
H11	11' - 4"	5' - 6"	11' - 10"	6' - 0"	CUSTOM	DRAIN TO WET WELL
H12	3' - 0"	3' - 0"	3' - 6"	3' - 6"	J-4AL H20	DRAIN TO DAYLIGHT
H13	6' - 0"	4' - 0"	6' - 6"	4' - 6"	JD-3AL H20	DRAIN TO DAYLIGHT
H14	11' - 4"	5' - 6"	11' - 10"	6' - 0"	CUSTOM	DRAIN TO DAYLIGHT

Grand total: 14



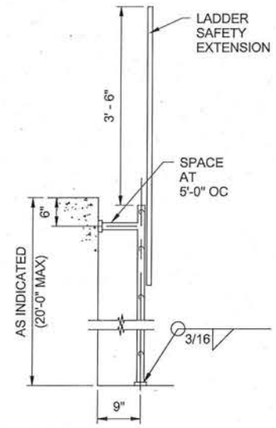


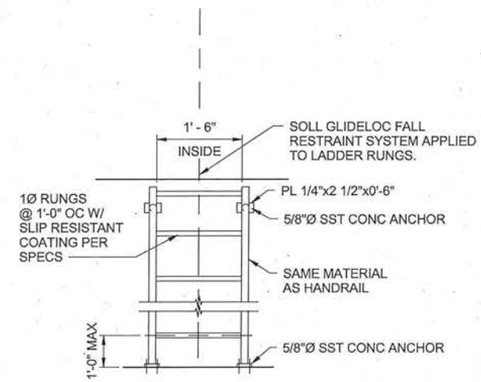
ANGLE FRAME HATCH SECTION — C / S200



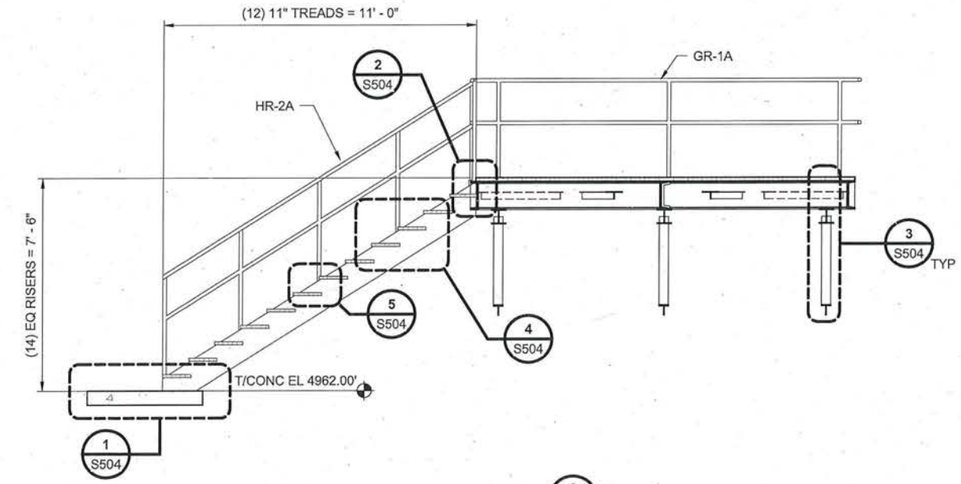
CHANNEL FRAME HATCH SECTION — B / S200

SCALE IN FEET: 0, 1', 2', 3'



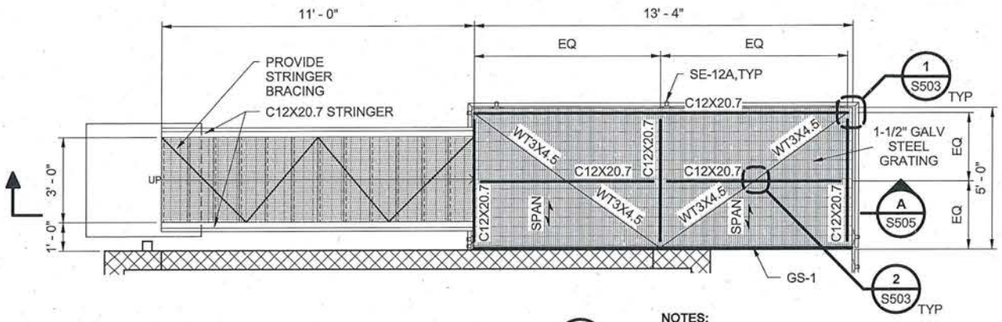


WITH LADDER SAFETY DEVICE
L-3A
NOT TO SCALE



SECTION — A / S505

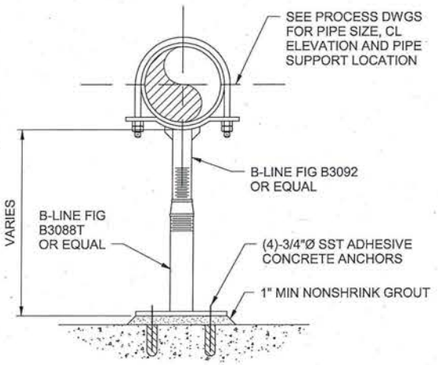
SCALE IN FEET: 0, 2', 4', 6'



STAIR 1 — 1 / S303

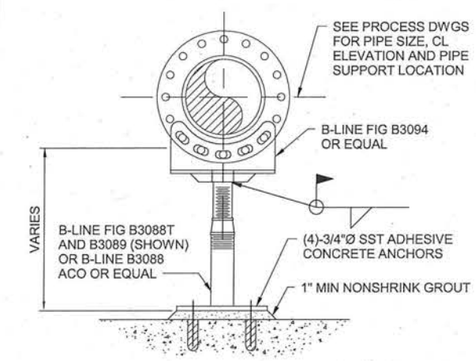
SCALE IN FEET: 0, 2', 4', 6'

NOTES:
1. PROVIDE SERRATED FINISH OR OTHER SLIP RESISTANT FINISH ON ALL GRATING. SEE SPECS.
2. NO STAIR AT SIM.



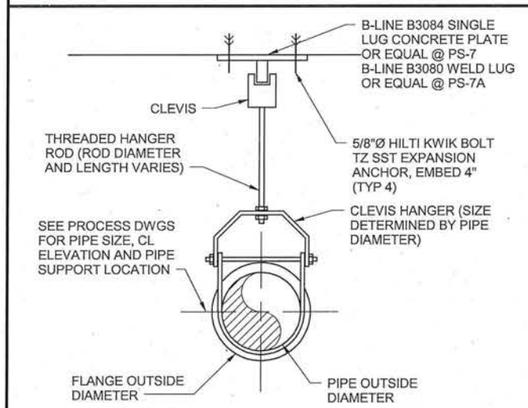
NOTES:
1. USE SST IN WET WELLS OTHERWISE COAT PIPE SYSTEM USING SYSTEM D-1 AS SPECIFIED IN SECTION 09 90 00.

ADJUSTABLE PIPE & VALVE SUPPORT DETAIL PS-1
NOT TO SCALE



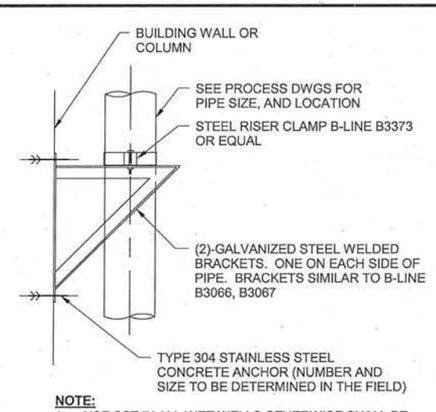
NOTES:
1. PROVIDE SST IN WET WELLS OTHERWISE COAT PIPE SYSTEM USING SYSTEM D-1 AS SPECIFIED IN SECTION 09 90 00.

ADJUSTABLE PIPE & VALVE SUPPORT DETAIL PS-3
NOT TO SCALE



NOTE:
1. USE SST IN ALL WET WELLS OTHERWISE SHALL BE GALVANIZED.

CEILING PIPE SUPPORT DETAIL PS-7
NOT TO SCALE



NOTE:
1. USE SST IN ALL WET WELLS OTHERWISE SHALL BE GALVANIZED.

WALL (VERTICAL) PIPE SUPPORT DETAIL PS-9
NOT TO SCALE

no.	date	by	ckd	description
0	3/23/18	KDT	BLS	ISSUED FOR CONSTRUCTION

COLORADO LICENSED KEVAN D. THURMAN 48424 3/23/18 PROFESSIONAL ENGINEER

BURNS McDONNELL

date MARCH 2018	detailed K. THURMAN
designed K. THURMAN	checked B. SNYDER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
STANDARD DETAILS

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HVAC LEGEND

- CONTROL DAMPER, MOTOR OPERATED (M)
- MANUAL BALANCE DAMPER
- BACKDRAFT DAMPER (BD)
- ACCESS DOOR (AD) ACCESS PANEL (AP) (AD)
- DAMPERS: SMOKE (SD) - FIRE SMOKE (F/SD) - (AD)
- SECURITY BARS
- FLEXIBLE DUCT CONNECTION
- RECTANGLUAR ELBOW WITH TURNING VANES
- RECTANGULAR TEE WITH TURNING VANES
- RECTANGULAR RADIUS ELBOW
- RISE IN RESPECT TO AIR-FLOW (R)
- DROP IN RESPECT TO AIR-FLOW (D)
- SQUARE OR RECTANGULAR TO ROUND TRANSITION
- SUPPLY AIR OR OUTSIDE AIR DUCT SECTION
- RETURN AIR DUCT SECTION
- EXHAUST AIR DUCT SECTION
- ROUND FLEXIBLE DUCT (5'-0" MAX LENGTH)
- SQUARE OR RECTANGULAR SUPPLY DIFFUSER
- RETURN AIR DIFFUSER
- EXHAUST AIR DIFFUSER
- THERMOSTAT (T)
- CARBON DIOXIDE MONITOR (CO2)
- HUMIDISTAT (H)
- LINEAR SLOT DIFFUSER
- VAV- VARIABLE AIR VOLUME TERMINAL BOX
- (3'-0") FINNED TUBE RADIATION. LENGTH OF ELEMENT SHOWN IN PARENTHESIS
- EMERGENCY SHUT-OFF SWITCH (ESS)
- MOTOR (M)
- CEILING FAN CONTROL PANEL (CF)

DETAIL/SECTION TITLE

NUMBER = DETAIL DESIGNATOR
LETTER = SECTION DESIGNATOR

DETAIL — A / M-001

DRAWING WHERE DETAIL/SECTION IS TAKEN

DETAIL/ENLARGED CALLOUT SYMBOL

INDICATES LIMITS OF DETAIL/SECTION

DETAIL/SECTION DESIGNATOR — A / M-001

DRAWING WHERE DETAIL/SECTION IS DRAWN

SECTION CUT SYMBOL

INDICATES PERSPECTIVE AND LIMITS OF SECTION

SECTION DESIGNATOR — A / M-003

DRAWING WHERE SECTION IS DRAWN

MECHANICAL ABBREVIATIONS

12"Ø	ROUND DUCT DIMENSION
24x1	RECTANGULAR DUCT DIMENSION (INCHES)
24x12	RECTANGULAR DUCT DIMENSION (INCHES)
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
ARF	ABOVE RAISED FLOOR
ARV	AIR RELEASE VALVE
BBO	BOILER BLOW-OFF
BLWDN	BLOWDOWN
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BP	BOOSTER PUMP
BPP	BOILER PRIMARY PUMP
BW	BUTT WELD
BWW	ACKWASH WATER
CF	CEILING FAN
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CL	CENTER LINE OF PIPE ELEVATION
CONC	CONCENTRIC
COND	COOLING COIL CONDENSATE DRAIN
CR	CONDENSATE RETURN
CT	CHEMICAL TREATMENT
CTB	COOLING TOWER BLOWDOWN
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
D	DRAIN
DE	DIESEL EXHAUST
DH	DEHUMIDIFIER
DIW	DEIONIZED WATER
DN	DOWN
DRG	DIFFUSER, REGISTER, GRILLE
EA	EXHAUST AIR
EF	EXHAUST FAN
EG	EXHAUST GRILLE
EL	ELEVATION
ELL	ELBOW
ER	EXHAUST REGISTER
ET	EXPANSION TANK
EXIST	EXISTING
F	FAN
FCU	FAN COIL UNIT
FD	FEEDWATER
FF	FLAT FACED
FO	FLAT OVAL
FOB	FLAT ON BOTTOM
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOT	FLAT ON TOP
HWB	HOT WATER BOILER
HWP	HOT WATER PUMP
HWR	HEATING HOT WATER RETURN
HWS	HEATING HOT WATER SUPPLY
IA	INSTRUMENT AIR
INVT EL	INVERT ELEVATION
L	LOUVER
LR	LONG RADIUS
MA	MIXED AIR
MJ	MECHANICAL JOINT
MW	MAKE-UP WATER (AFTER BACKFLOW PREVENTER)
MW	MAKE-UP WATER (AFTER BACKFLOW PREVENTER)
NC	NORMALLY CLOSED (FAIL POSITION)
NG	NATURAL GAS
NO	NORMALLY OPEN (FAIL POSITION)
OA	OUTSIDE AIR
OB	OPPOSED BLADE
OD	OVERFLOW DRAIN
PB	PARALLEL BLADE
PCR	PUMP CONDENSATE RETURN
PCW	PROCESS COLD WATER
PFX	PLATE AND FRAME HEAT EXCHANGER
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
R	RELIEF LINE
RA	RETURN AIR
RED	REDUCER-REDUCING
RG	REFRIGERANT HOT GAS DISCHARGE
RL	EFRIGERANT LIQUID
RMJ	RESTRAINED MECHANICAL JOINT
RS	REFRIGERANT SUCTION
RWR	RADIATION WATER RETURN
RWS	RADIATION WATER SUPPLY
SA	SUPPLY AIR
SCH	SCHEDULE
SCR	SPRING RETURN CLOSED
SHR	SHORT RADIUS
SO	SLIP ON
SP	STATIC PRESSURE SENSOR
SR	SUPPLY REGISTER
ST	STEAM TRAP
STM	STEAM
SW	SOCKET WELD
TA	TRANSFER AIR
TOA	TREATED OUTSIDE AIR
TOC	TOP OF CONCRETE
TOD	TOP OF DUCT
TOS	TOP OF STEEL
UH	UNIT HEATER
V	VENT
VAV	VARIABLE AIR VOLUME
VRF	VARIABLE REFRIGERANT FLOW
WE	WELD END
WN	WELD NECK

GENERAL NOTES:

1. LEGEND IS GENERAL IN NATURE AND MAY INDICATE MORE INFORMATION THAN IS APPLICABLE TO PROJECT. SEE PLANS FOR SPECIFIC SYMBOLS AND ABBREVIATIONS.
2. PROVIDE ALL MATERIALS, VALVES, HANGERS, ETC. AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED, AND AS REQUIRED BY CODE.
3. INSTALL ALL MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.
4. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH STRUCTURAL, CIVIL, ELECTRICAL WORK, ETC., SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS.
5. LOCATE ALL MECHANICAL EQUIPMENT FOR UNOBSTRUCTED ACCESS TO UNIT ACCESS PANELS, CONTROLS, AND VALVING.
6. VERIFY DIMENSIONS AND CONNECTION SIZE WITH FURNISHED EQUIPMENT.
7. ALL ELEVATIONS ARE ABOVE FINISHED FLOOR TO BOTTOM OF DUCT, PIPE, OR PIPE INSULATION UNLESS NOTED OTHERWISE.
8. DUCT DIMENSIONS INDICATED REFER TO SHEET METAL DIMENSIONS. SHEET METAL SIZE SHALL BE AIR OPENING DIMENSION PLUS THE THICKNESS OF ACOUSTICAL LINER WHERE LINER IS INSTALLED. WHERE LINER IS NOT INSTALLED, AIR OPENING SIZE AND SHEET METAL SIZE SHALL BE THE SAME.
9. DUCT STATIC PRESSURE CLASSIFICATION: UNLESS OTHERWISE INDICATED, CONSTRUCT DUCTS ON THE DISCHARGE SIDE OF FANS TO HAVE 1.0 IN. W.C. POSITIVE PRESSURE AND DUCTS ON THE INLET SIDE OF EQUIPMENT TO HAVE 1.0 IN. W.C. NEGATIVE PRESSURE CLASSIFICATIONS. DUCTS ON OUTLET SIDE OF AHU'S SHALL HAVE 3.0 INCH POSITIVE PRESSURE CLASS DUCT.
10. COORDINATE ALL WALL PENETRATIONS WITH STRUCTURAL AND ARCHITECTURAL PLANS.
11. INSTALL TEMPERATURE CONTROLS AT 48" ABOVE FINISHED FLOOR AND COORDINATE WITH OTHER DEVICES LOCATED ON WALLS. COORDINATE WITH ARCHITECTURAL WALL FINISHES.
12. CONTRACTOR SHALL AIR BALANCE ALL GRILLES TO CFM'S SHOWN ON PLANS.

no.	date	by	ckd	description
0	3/23/18	BR	TC	ISSUED FOR CONSTRUCTION

COLORADO LICENSED — THOMAS S. CLAY — 51001 — 3/23/18 — PROFESSIONAL ENGINEER

BURNS McDONNELL

date: MARCH 2018	detailed: B. RICH
designed: B. RICH	checked: T.CLAY

Brighton COLORADO

Adams County, Colorado

ERGER'S POND

MECHANICAL GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS

project: 86381	contract:
drawing: M001	rev.: 0
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file	

Millimeters — Scale For Microfilming — Inches

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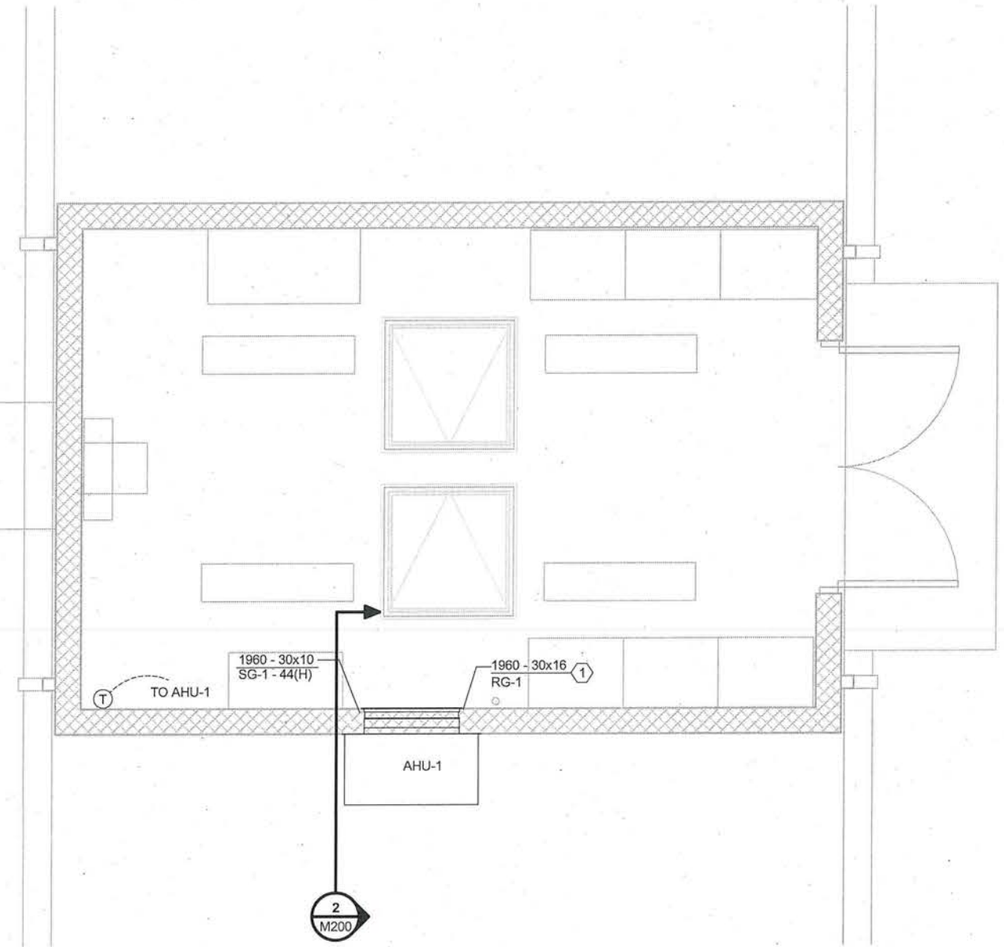
GENERAL NOTES:

1. CONTRACTOR SHALL INSTALL AHU AS RECOMMENDED BY THE UNIT MANUFACTURER.
2. CONTRACTOR SHALL MOUNT/ SUPPORT UNIT AS RECOMMEND BY UNIT MANUFACTURER.
3. PROVIDE MATERIALS TO EXTEND AND ROUTE DRAIN STRAIGHT DOWN 2" ABOVE GRADE. USE UV RESISTANT AND OUTDOOR RATED TUBING.

KEYED NOTES:

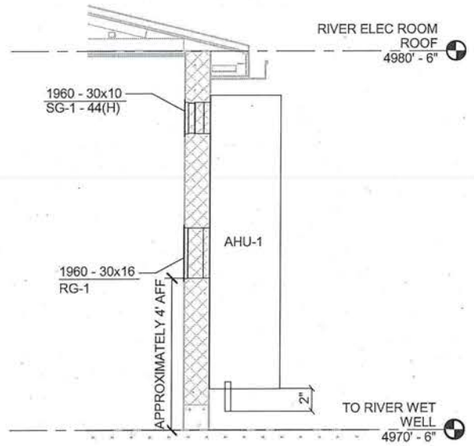
(1) RETURN GRILLE IS LOCATED BELOW THE SUPPLY GRILLE.



RIVER SIDE ELECTRICAL ROOM

0 1' 2' 4'
SCALE IN FEET

NORTH



SECTION LOOKING EAST 2 M200

0 1' 2' 4'
SCALE IN FEET

COLORADO LICENSED
THOMAS P. CLAY
51001
3/23/18
PROFESSIONAL ENGINEER

no.	date	by	ckd	description
0	3/23/18	BR	TC	ISSUED FOR CONSTRUCTION

BURNS McDONNELL

date	detailed
MARCH 2018	B. RICH
designed	checked
B. RICH	T.CLAY

Brighton COLORADO

Adams County, Colorado

ERGER'S POND

RIVER SIDE ELECTRICAL ROOM HVAC PLAN

project	contract
86381	

drawing **M200** — rev. **0**

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file

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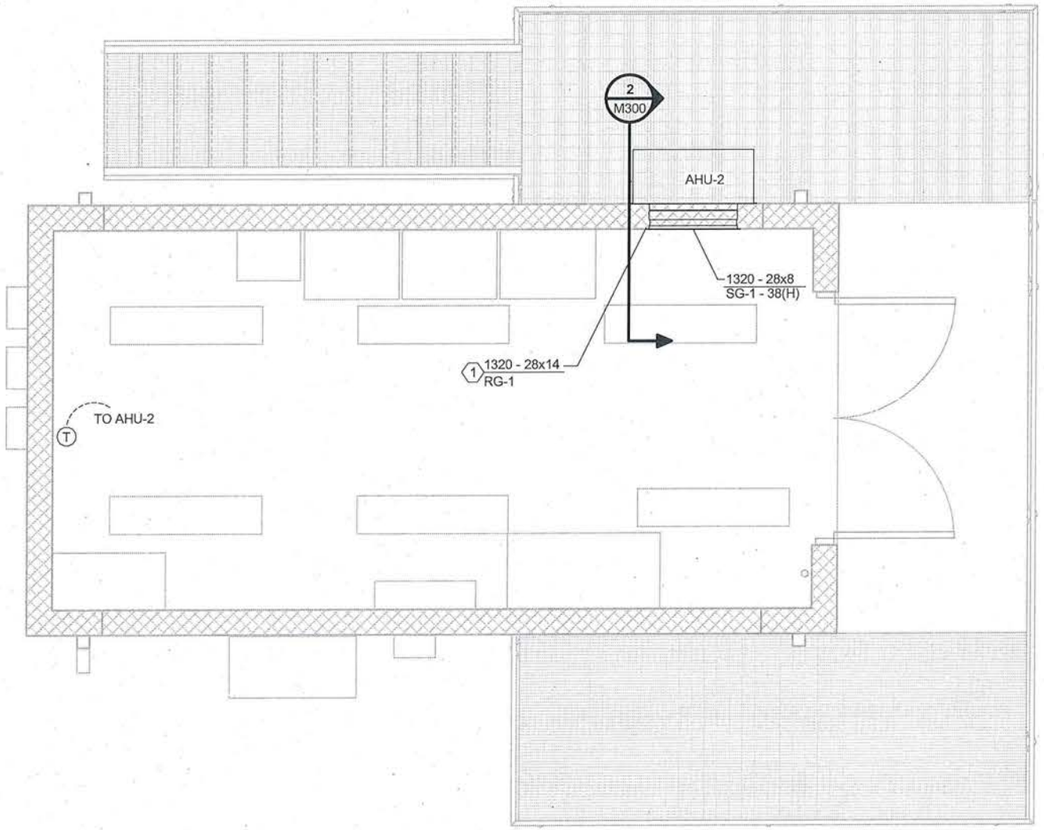


POND SIDE ELECTRICAL ROOM

0 1' 2' 4'

SCALE IN FEET

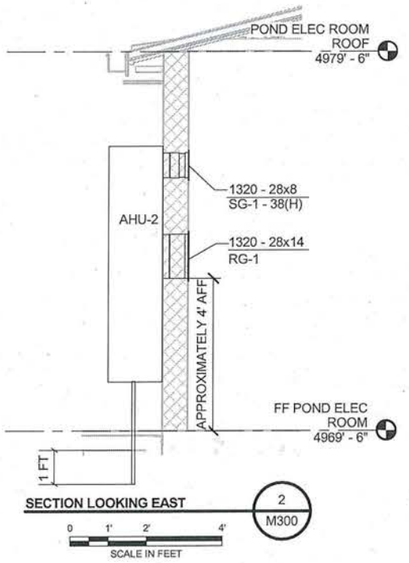
NORTH

GENERAL NOTES:

1. CONTRACTOR SHALL INSTALL AHU AS RECOMMENDED BY THE UNIT MANUFACTURER.
2. CONTRACTOR SHALL MOUNT/ SUPPORT UNIT AS RECOMMEND BY UNIT MANUFACTURER.
3. PROVIDE MATERIALS TO EXTEND AND ROUTE DRAIN 1 FT BELOW GRATING. USE UV RESISTANT AND OUTDOOR RATED TUBING.

KEYED NOTES:

(1) RETURN GRILLE IS LOCATED BELOW THE SUPPLY GRILLE.



SECTION LOOKING EAST (2 / M300)

0 1' 2' 4'

SCALE IN FEET

COLORADO LICENSED
THOMAS S. CLAY
51000
3/23/18
PROFESSIONAL ENGINEER

no.	date	by	ckd	description
0	3/23/18	BR	TC	ISSUED FOR CONSTRUCTION

BURNS McDONNELL

date	detailed
MARCH 2018	B. RICH
designed	checked
B. RICH	T.CLAY

Brighton COLORADO

Adams County, Colorado

ERGER'S POND

POND SIDE ELECTRICAL ROOM HVAC PLAN

project	contract
86381	

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file

Scale For Microfilming: Millimeters / Inches

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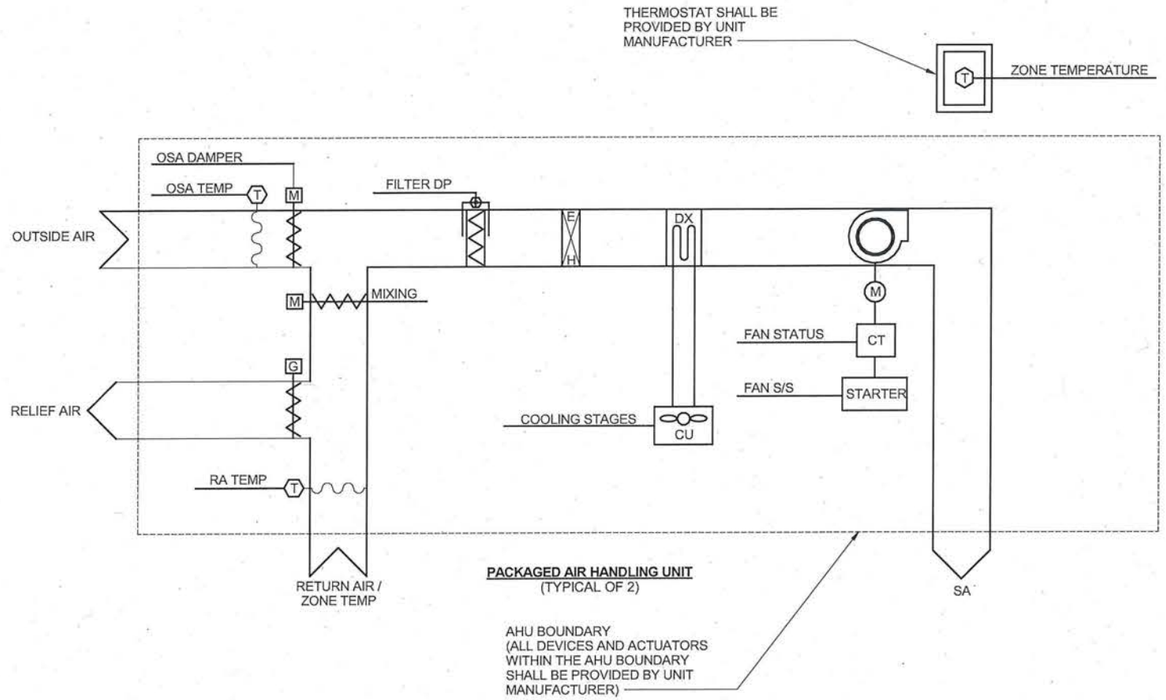

PACKAGED AIR HANDLING UNIT SEQUENCE OF CONTROLS:

A. ALL DEVICES AND CONTROLS PROVIDED BY UNIT MANUFACTURER. ALL REQUIRED SET-POINTS AND ALARMS SHALL BE INSTALLED AS INDICATED WITH UNIT MAUFACTURER'S STANDARD SEQUENCE OF OPERATIONS.

COOLING MODE SET-POINT: 80 F
HEATING MODE SET-POINT: 60 F

no.	date	by	ckd	description
0	3/23/18	BR	TC	ISSUED FOR CONSTRUCTION

COLORADO LICENSED
THOMAS S. CLAY
51001
3/23/18
PROFESSIONAL ENGINEER

BURNS McDONNELL

date	detailed
MARCH 2018	B. RICH
designed	checked
B. RICH	T.CLAY

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
SCHEMATIC SEQUENCE AND POINTS LIST

project	contract
86381	

drawing **M501** — rev. **0**

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PACKAGED, OUTDOOR, CENTRAL-STATION AIR-HANDLING UNIT SCHEDULE			
NUMBER		AHU-1	AHU-2
LOCATION DWG NO.		M200	M300
ROOM NUMBER SERVED		RIVER SIDE	POND SIDE
SITE ELEVATION	FT	4,970	4,980
ENERGY EFFICIENCY RATIO (EER)		10	10
SUPPLY-AIR FAN			
AIRFLOW	CFM	1,960	1,320
EXTERNAL STATIC PRESSURE	IN WG	0.2	0.2
FAN SPEED - SUPPLY		CONSTANT	CONSTANT
MOTOR SIZE - SUPPLY	HP	1/2	1/3
MOTOR SPEED - SUPPLY	RPM	1070	1100
DRIVE		-	-
SUPPLY-AIR REFRIGERANT COIL			
TOTAL COOLING CAPACITY	MBH	46.2	32
SENSIBLE COOLING CAPACITY	MBH	43.6	29.5
ENTERING-AIR DRY-BULB TEMPERATURE	DEG F	80	80
LEAVING-AIR DRY-BULB TEMPERATURE	DEG F	55	55
MAX ROWS / MAX FPI		-	-
OUTDOOR-AIR REFRIGERANT COIL			
AMBIENT-AIR TEMPERATURE	DEG F	90/59	90/59
FAN MOTOR SIZE - OUTDOOR-AIR REFRIGERANT COIL	HP	1/3	1/5
NO. OF FANS		1	1
COMPRESSORS			
TYPE		RECIPROCATING	SCROLL
NUMBER OF COMPRESSORS		1	1
HOT-GAS BYPASS VALVE		NO	NO
HEATING COIL			
TYPE		ELECTRIC	ELECTRIC
WINTER OUTSIDE AIR TEMPERATURE	DEG F	-1.4	-1.4
ENTERING AIR TEMPERATURE	DEG F	60	60
INPUT HEAT LOAD	kW	9	9
MIN OUTPUT HEATING LOAD	kW	9	8
FILTERS			
OUTDOOR-AIR FILTER TYPE		THROWAWAY	THROWAWAY
EFFICENCY		MERV 7	MERV 7
THICKNESS	IN	1"	1"
INITIAL PRESSURE LOSS	IN WG	0.05	0.05
FINAL PRESSURE LOSS	IN WG	0.15	0.15
ELECTRICAL CHARACTERISTICS			
VOLTS		460	460
PHASE		3	3
HERTZ		60	60
MINIMUM CIRCUIT AMPACITY		18	17
MAXIMUM OVERCURRENT PROTECTION		20	20
BASIS OF DESIGN			
MANUFACTURER		BARD	BARD
MODEL		W60LAAC09	W36AAAC09
APPROXIMATE UNIT WEIGHT	LBS	540	380
NOTES:		1,2	1,2

NOTES:

1. CONTRACTOR SHALL INSTALL CONDENSATE TRAP PER THE HVAC TRAP DRAIN DETAIL ON THIS DRAWING OR AS REQUIRED BY THE UNIT MANFACTURER.
2. CONTRACTOR SHALL MOUNT/ SUPPORT UNIT AS RECOMMEND BY UNIT MANUFACTURER.

DIFFUSER, REGISTER AND GRILLE SCHEDULE							
TYPE	SG-1	RG-1					
FACE TYPE	H-22	SQ					
MOUNTING	S	S					
PATTERN	D-D	FX					
DAMPER	NONE	NONE					
ACCESSORIES	NONE	NONE					
MATERIAL	AL	AL					
FINISH	W-E	W-E					
NOISE CRITERIA (NC)	40	20					
BASIS OF DESIGN							
MANUFACTURER	PRICE	PRICE					
MODEL	620	80					
BLADE SPACING	3/4"	1/2"					
NOTES	1	1					

FACE TYPE:
- RD - ROUND
- H-R - HALF ROUND
- SQ - SQUARE
- PR - PERFORATED
- LR - LINEAR
- H-S - HORIZ. STRAIGHT BLADES
- V-S - VERT. STRAIGHT BLADES
- H-22 - HORIZ. 22° FIXED BLADES
- H-45 - HORIZ. 45° FIXED BLADES

ACCESSORIES:
- E-D - EQUALIZING DEFLECTORS
- S-R - SMUDGE RING
- P-R - PLASTER RING
- EXTR - EXTRACTOR
- B-O-B - BLANK OFF BAFFLES
- OP-KY - OPERATING KEYS

PATTERNS:
- FX - FIXED
- 2-P - 2 POSITION
- ADJ - ADJUSTABLE
- 1-W - 1 WAY
- 2-W - 2 WAY
- 3-W - 3 WAY
- 4-W - 4 WAY
- IND - INDUCTION
- S-D - SINGLE DEFLECTION
- D-D - DOUBLE DEFLECTION

FINISHES:
- A-E - ALUMINUM ENAMEL
- W-E - WHITE ENAMEL
- A-A - ALUMINUM ANODIZED

MOUNTING:
- S-M - SURFACE MOUNTED
- FL - FLUSH
- L-I - LAY IN
- S-W - SIDE WALL
- D - DUCT

MATERIALS:
- ST - STEEL
- AL - ALUMINUM

DAMPERS:
- O-B - OPPOSED BLADE
- BTFY - BUTTERFLY
- ITGL - INTEGRAL

NOTES:

1. MANUFACTURER AND MODEL INDICATED ARE USED AS THE BASIS OF DESIGN. CONTRACTOR MAY PROVIDE EQUIVALENT PRODUCTS FROM THE FOLLOWING MANUFACTURERS: ANEMOSTAT, HART & COOLEY INC, KRUEGER,TITUS OR TUTTLE & BAILEY.

COLORADO LICENSED
THOMAS S. CLAY
51001
3/23/18
PROFESSIONAL ENGINEER

no.	date	by	ckd	description
0	3/23/18	BR	TC	ISSUED FOR CONSTRUCTION

BURNS McDONNELL

date MARCH 2018	detailed B. RICH
designed B. RICH	checked T.CLAY

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
MECHANICAL SCHEDULES

project 86381	contract
drawing **M701** —	rev. **0**
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Scale For Microfilming: Millimeters / Inches

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SINGLE LINE PIPING

- NEW
- EXISTING
- 18" — PIPE SIZE AND DIRECTION OF FLOW
- GATE VALVE (GV) OR MUD VALVE (MV)
- GLOBE VALVE
- BUTTERFLY VALVE (BFV)
- CHECK VALVE (CV)
- STOP CHECK VALVE
- PLUG VALVE (PV)
- 3-WAY VALVE
- ANGLE VALVE
- RELIEF OR BACKPRESSURE VALVE
- HOSE GATE DRAIN VALVE
- PINCH VALVE
- NEEDLE VALVE
- DIAPHRAM VALVE
- BALL VALVE (BV)
- (P) SELF-CONTAINED PRESSURE REDUCING (REGULATING VALVE)
- (S) SOLENOID VALVE
- BP — BACKFLOW PREVENTER
- VB — VACUUM BREAKER
- MS — MOISTURE SEPARATOR
- T — IN-LINE TOTALIZING FLOW METER
- LOCKED OPEN
- LOCKED CLOSED
- NO — NORMALLY OPEN
- NC — NORMALLY CLOSED
- FLEXIBLE HOSE
- EXPANSION ELEMENT (JOINT)
- FLEXIBLE BALL JOINT
- BASKET TYPE STRAINER
- TEE TYPE STRAINER
- Y-TYPE STRAINER
- FLANGED COUPLING ADAPTER (FCA)
- RETAINER FLANGE
- DRAINER ASSEMBLY
- INSULATING FLANGE (I.F.)
- RESTRICTING ORIFICE
- SIGHT FLOW INDICATOR
- ELBOW TURNING DOWN
- ELBOW TURNING UP
- TYPICAL PIPE BREAK
- PIPES IN SECTION
- TEE TURNING DOWN
- TEE TURNING UP
- ABOVE / PIPES CROSSING / BELOW
- ABOVE / PIPES CROSSING WITH BREAK-OUT TO SHOW PIPES OR EQUIPMENT BELOW / BELOW

- M — IN-LINE FLOW METER
- LAZER DOPPLER / ULTRASONIC LEVEL FLOW METER
- CLEANOUT (CO)
- DISCHARGE ELBOW ASSEMBLY
- STRAIGHTENING VANE
- REMOVABLE PLUG
- REMOVABLE CAP
- WELDED CAP
- BF — BLIND FLANGE
- DRIP POCKET ASSEMBLY
- STEAM TRAP ASSEMBLY
- AC — AIR COCK
- HB — HOSE BIBB
- WH — WALL HYDRANT
- PIPE ANCHOR
- PIPE GUIDE
- REDUCER
- UNION
- C — QUICK DISCONNECT COUPLING
- VENT THROUGH ROOF
- INJECTOR
- CENTRIFUGAL PUMP
- DIAPHRAGM METERING PUMP
- (A) AIR RELEASE VALVE
- VACUUM VALVE
- (AV) AIR AND VACUUM VALVE
- (V) VACUUM TRAP
- WATER SURFACE (WS)
- PULSATION DAMPENER W/ ISOLATION BALL VALVE
- CALIBRATION COLUMN
- ROTAMETER
- STATIC MIXER
- GAUGE SEAL
- DIAPHRAM PROTECTED PRESSURE SWITCH
- PC — CHEMICAL APPLICATION POINT
- PIPE SUPPORT LOCATION
- PRV — PRESSURE REDUCING VALVE
- AIR-VAC VALVE

DOUBLE LINE PIPING

- PLUG VALVE
- BUTTERFLY VALVE
- FLANGED COUPLING ADAPTOR
- REDUCER
- FLANGED PIPING
- DOUBLE BOLTED SLEEVE COUPLING
- EXPANSION JOINT
- MECHANICAL JOINT PIPING
- HARNESSED SLEEVE COUPLING
- PUMP CONTROL VALVE
- CHECK VALVE
- BALL VALVE
- A/O — AIR/OIL CYLINDER
- PLUG VALVE
- INLINE STRAINER
- DISMANTLING JOINT
- ELBOW TURNING DOWN
- ELBOW TURNING UP
- ABOVE / PIPES CROSSING / BELOW
- TYPICAL PIPE BREAK
- ABOVE / PIPES CROSSING WITH BREAK-OUT TO SHOW PIPES OR EQUIPMENT BELOW / BELOW
- PIPES IN SECTION

- AIR VAC
- GLOBE VALVE
- STRAINER
- MAG METER

LINETYPES

- EXISTING
- NEW CONSTRUCTION
- FUTURE CONSTRUCTION

VALVE OPERATORS

- (S) SOLENOID
- (D) DIAPHRAGM
- (M) MOTOR

TAGS

- 74 — EQUIPMENT TAG
- 145 — VALVE TAG

NOTES:

1. THIS IS A STANDARD PROCESS LEGEND AND NOT ALL ITEMS OR EQUIPMENT AS DESIGNATED HEREON ARE USED ON THIS PROJECT.
2. THIS SHEET ONLY APPLIES TO PROCESS DRAWINGS LABELED DXXX.

ABBREVIATIONS

AAG	ABOVE AT GRADE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BD	BLOWDOWN
BFV	BUTTERFLY VALVE
BOC	BOTTOM OF CONCRETE
BV	BALL VALVE
CA	COMPRESSED AIR
CI	CAST IRON
CL	CENTERLINE
CP	COAGULANT PUMP
CO	CLEANOUT
CV	CHECK VALVE
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DR	DRAIN
DV	DRAIN VALVE
DWG	DRAWING
EL	ELEVATION
FCA	FLANGED COUPLING ADAPTER
FF	FINISHED FLOOR
FM	FORCE MAIN
FP	FIRE PROTECTION
FRP	FIBERGLASS REINFORED PLASTIC
FW	FINISHED WATER
HGL	HYDRAULIC GRADE LINE
HWL	HIGH WATER LEVEL
ID	INNER DIAMETER
IE	INVERT ELEVATION
INV	INVERT
LWL	LOWER WATER LEVEL
MAX	MAXIMUM
MF	MEMBRANE FILTRATION
MG	MILLION GALLONS
MGD	MILLION GALLONS PER DAY
MIN	MINIMUM
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NPW	NON POTABLE WATER
OC	ON CENTER
OVE	OVERHEAD ELECTRIC
OVF	OVERFLOW
PCV	PUMP CONTROL VALVE
PCW	POTABLE COLD WATER
PD	PROCESS DRAIN
PRV	PRESSURE REDUCING VALVE
PS	PIPE SUPPORT
PSI	POUNDS PER SQUARE INCH
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PW	POTABLE WATER
RED	REDUCER
RW	RAW WATER LINE
SAN	SANITARY SEWER
SAV	SURGE ANTICIPATION VALVE
SCH	SCHEDULE
SG	SLUICE GATE
SQ	SQUARE
SST	STAINLESS STEEL
TBD	TO BE DETERMINED
TBR	TO BE REMOVED
TEMP	TEMPORARY
THRU	THROUGH
TOC	TOP OF CONCRETE
TOS	TOP OF STEEL
TOW	TOP OF WALL
UGE	UNDERGROUND ELECTRIC
UGT	UNDERGROUND TELEPHONE
UNO	UNLESS NOTED OTHERWISE
VT	VERTICAL TURBINE
W	WATER SUPPLY LINE
WS	WATER SURFACE

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COLORADO REGISTERED ANTHONY C. BEESON 40[illegible] PROFESSIONAL ENGINEER
3/23/18

BURNS McDONNELL

date MARCH 2018	detailed C. SEDNEK
designed A. BEESON	checked J. SCHAEFER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND

PROCESS GENERAL NOTES ABBREVIATIONS AND LEGEND

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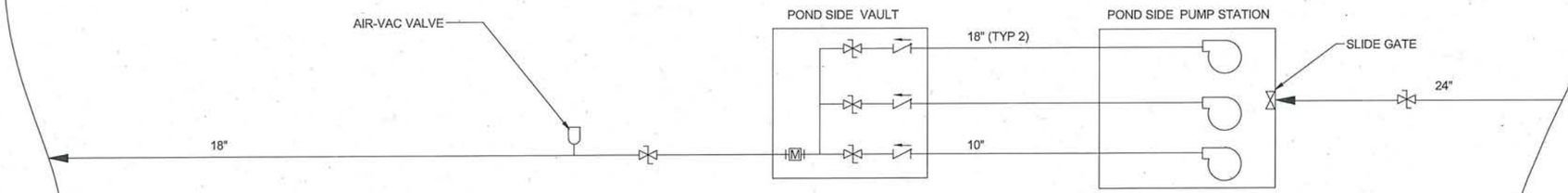
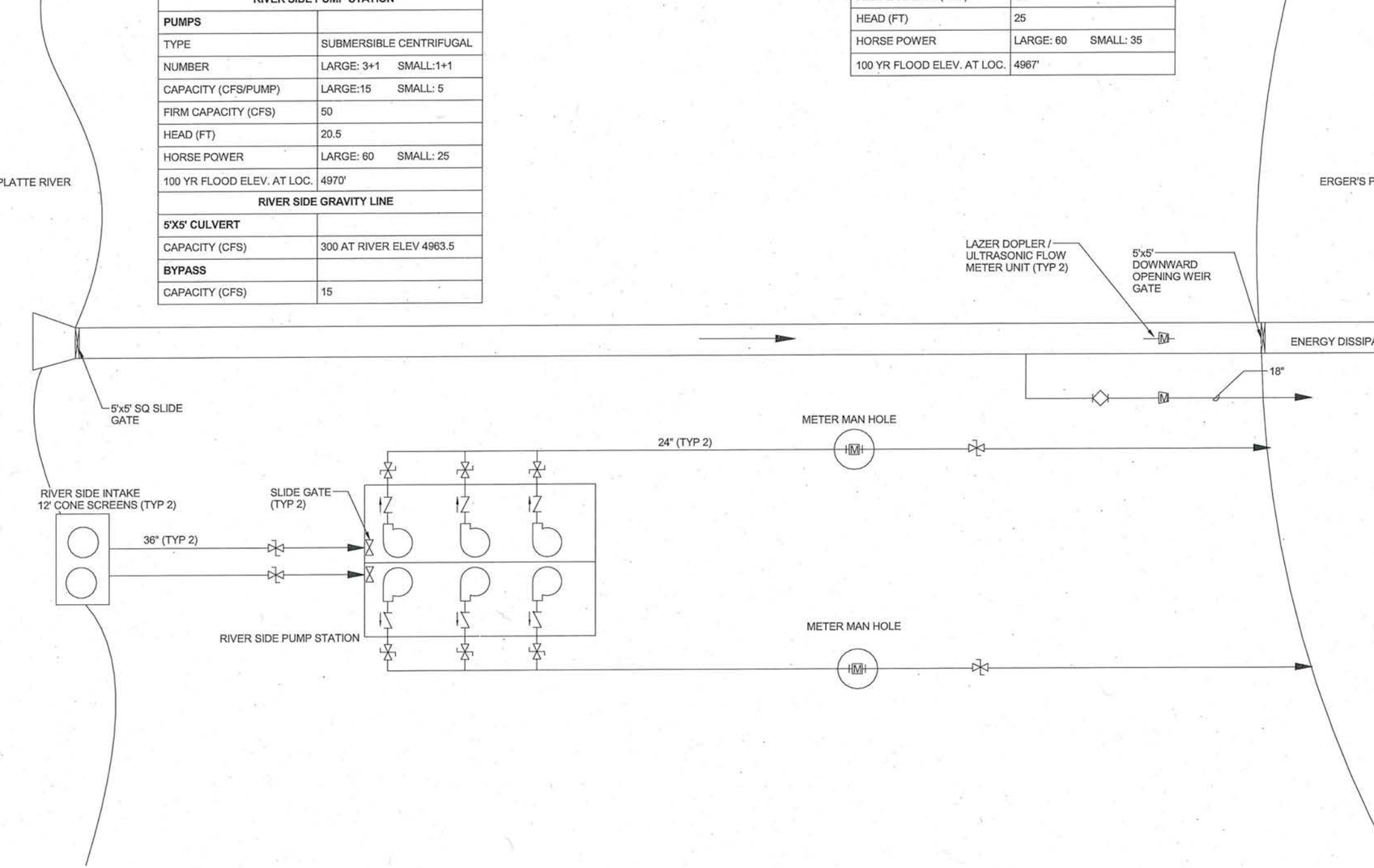


POND SIDE PUMP STATION	
PUMPS	
TYPE	SUBMERSIBLE CENTRIFUGAL
NUMBER	LARGE: 1+1 SMALL:1
CAPACITY (CFS/PUMP)	LARGE:10 SMALL: 5
FIRM CAPACITY (CFS)	15
HEAD (FT)	25
HORSE POWER	LARGE: 60 SMALL: 35
100 YR FLOOD ELEV. AT LOC.	4967'

RIVER SIDE PUMP STATION	
PUMPS	
TYPE	SUBMERSIBLE CENTRIFUGAL
NUMBER	LARGE: 3+1 SMALL:1+1
CAPACITY (CFS/PUMP)	LARGE:15 SMALL: 5
FIRM CAPACITY (CFS)	50
HEAD (FT)	20.5
HORSE POWER	LARGE: 60 SMALL: 25
100 YR FLOOD ELEV. AT LOC.	4970'
RIVER SIDE GRAVITY LINE	
5'X5' CULVERT	
CAPACITY (CFS)	300 AT RIVER ELEV 4963.5
BYPASS	
CAPACITY (CFS)	15



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COLORADO REGISTERED ANTHONY C. BEESON 40916 PROFESSIONAL ENGINEER
3/23/18

BURNS McDONNELL

date	detailed
MARCH 2018	C. SEDNEK
designed	checked
A. BEESON	J. SCHAEFER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
PROCESS FLOW SCHEMATIC

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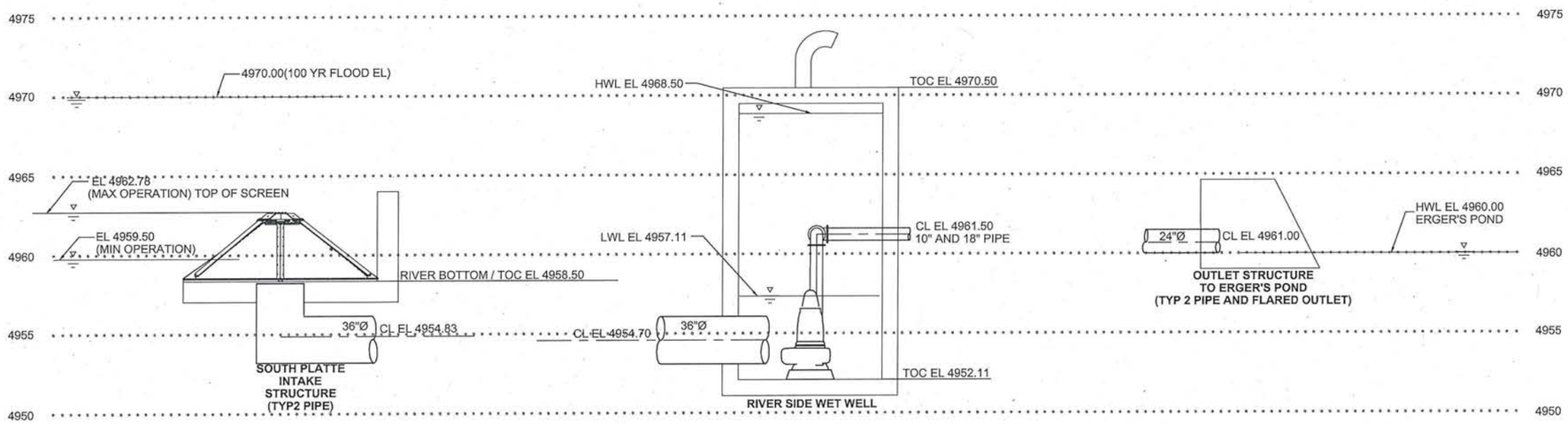
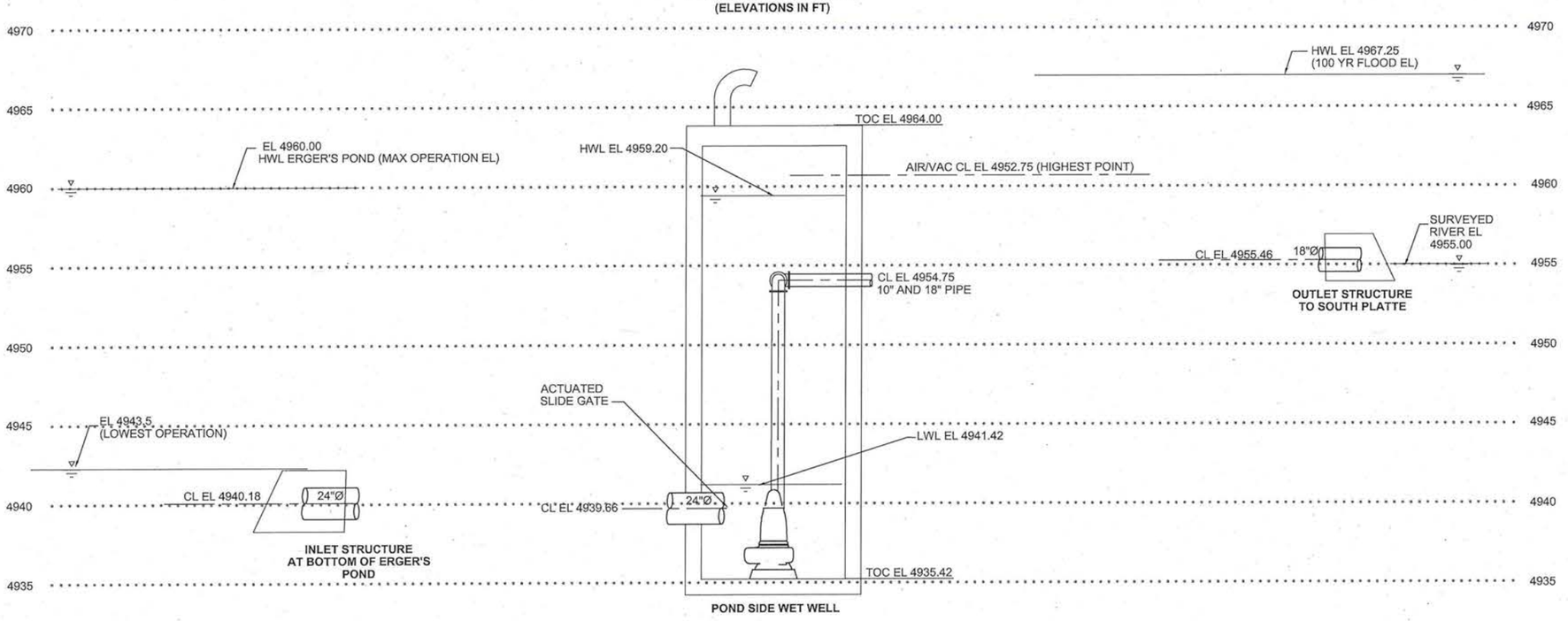
RIVER SIDE PUMPING SYSTEM
(ELEVATIONS IN FT)



POND SIDE PUMPING SYSTEM
(ELEVATIONS IN FT)



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BURNS McDONNELL

Adams County, Colorado

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MARCH 2018	C. SEDNEK
designed	checked
A. BEESON	J. SCHAEFER

Brighton COLORADO

ERGER'S POND
HYDRAULIC PROFILE

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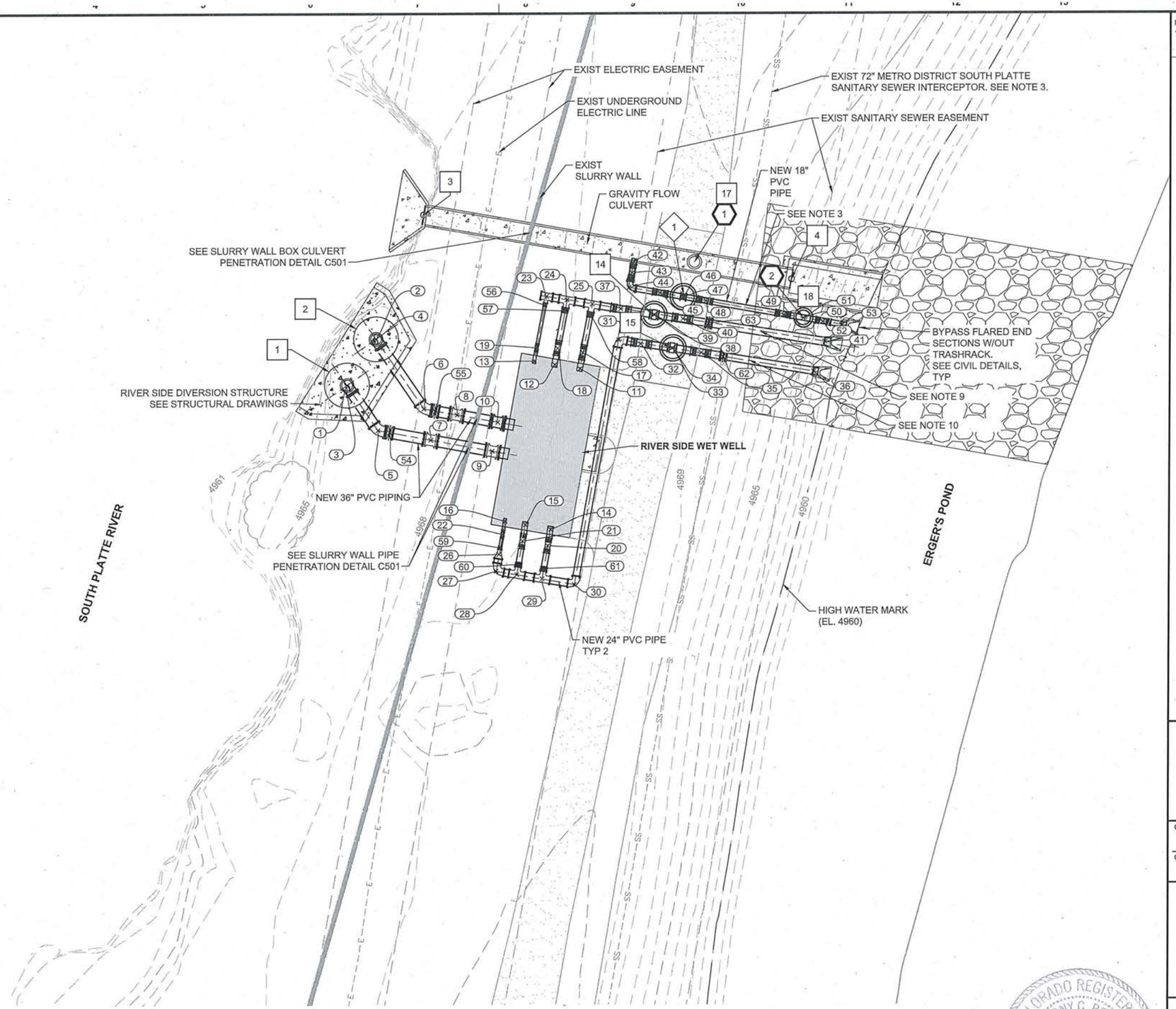
YARD PIPING PLAN NOTES:

1. UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS; AND THEREFORE, LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS POSSIBLE THERE MAY BE OTHERS, THE EXISTENCE OF WHICH ARE PRESENTLY NOT KNOWN OR SHOWN. POTHOLE OR INVESTIGATE UNDERGROUND UTILITIES AS NECESSARY TO IDENTIFY AND LOCATE EXISTING FACILITIES.
2. UNLESS NOTED OTHERWISE, ALL EXISTING FACILITIES ARE TO REMAIN UNDISTURBED AND USED IN PLACE. PROVIDE PROTECTIONS NECESSARY TO PREVENT DAMAGE AND REPAIR AND/OR REPLACE ALL EXISTING FACILITIES DAMAGED DURING CONSTRUCTION ACTIVITIES.
3. MAINTAIN A MINIMUM 5'-0" VERTICAL DISTANCE BETWEEN THE TOP EXTERIOR OF THE 72" METRO DISTRICT SANITARY SEWER INTERCEPTOR AND THE BOTTOM EXTERIOR OF THE 5X5 FT CULVERT, 18" BYPASS, AND BOTH 24" PUMP DISCHARGE PIPES.
4. FOR PIPE PENETRATIONS SEE D200 FOR TYPE AND D500 FOR DETAILS.
5. SEE D009 FOR EQUIPMENT AND VALVE SCHEDULES, FOR ALL DIAMOND AND RECTANGULAR CALLOUTS.
6. BEVEL PVC AT ALL BUTTERFLY CONNECTIONS PER BUTTERFLY VALVE MANUFACTURER RECOMMENDATIONS.
7. FULLY RESTRAIN ALL PVC FROM RIVER SIDE WET WELL TO RIVER SIDE PUMP STATION OUTLETS AT ERGER'S POND.
8. ALL BURIED DIP SHALL BE WRAPPED IN POLYETHYLENE ENCASEMENT AND INSTALLED CORROSION CONTROL PER D501 DETAILS. INSTALLATION SHALL CONFORM TO CURRENT CITY OF BRIGHTON PUBLIC WORKS STANDARDS AND SPECIFICATIONS.
9. CONTRACTOR SHALL PROVIDE JOINT MAX 10 FT FROM BURIED BUTTERFLY VALVE. JOINT DEFLECTIONS OF APPROX 2.5 % SHALL BE USED AT EACH JOINT TO MAINTAIN REQUIRED ELEVATIONS.
9. CONTRACTOR SHALL PROVIDE JOINT MAX 5 FT FROM BURIED BUTTERFLY VALVE. JOINT DEFLECTIONS OF APPROX 2.5 % SHALL BE USED AT EACH JOINT TO MAINTAIN REQUIRED ELEVATIONS.

KEYED NOTES:

1. INSTALL LASER FLOW METER INTO MANHOLE. SEE METER SPECIFICATION 40 91 00.
2. INSTALL LASER FLOW METER INTO 4' MAN HOLE. SEE METER SPECIFICATION 40 91 00. SEE LASER FLOW METER IN MANHOLE DETAIL D-DWGS PROCESS DETAILS.



RIVER SIDE YARD PIPING PLAN

0 7.5' 15' 30'
SCALE IN FEET

NORTH

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BURNS McDONNELL

date	detailed
MARCH 2018	C. SEDNEK
designed	checked
A. BEESON	J. SCHAEFER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
RIVER SIDE YARD PIPING PLAN

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3/23/18

CONTROL POINT TABLE - RIVER SIDE (XX)

PT #	LOCATION	SIZE (INCHES)	MATERIAL	DESCRIPTION	NORTHING	EASTING	CENTERLINE ELEVATION (FEET)	ORIENTATION
1	RIVER INTAKE	36	DIP	RIVER INTAKE STRUCTURE AT TOC	1781654.19	3184465.81	4958.50	-
2	RIVER INTAKE	36	DIP	RIVER INTAKE STRUCTURE AT TOC	1781667.09	3184473.87	4958.50	-
3	RIVER INTAKE	36	DIP	90° BEND	1781654.19	3184465.81	4954.83	VERTICAL
4	RIVER INTAKE	36	DIP	90° BEND	1781667.09	3184473.87	4954.83	VERTICAL
5	RIVER INTAKE	36	DIP	22.5° BEND	1781641.55	3184474.52	4954.79	HORIZONTAL
6	RIVER INTAKE	36	DIP	45° BEND	1781647.56	3184487.34	4954.77	HORIZONTAL
7	RIVER INTAKE	36	PVC	SINGLE SOLID SLEEVE STRUCTURE	1781638.83	3184489.30	4954.75	-
8	RIVER INTAKE	36	PVC	SINGLE SOLID SLEEVE STRUCTURE	1781645.84	3184496.63	4954.75	-
9	RIVER INTAKE	36	PVC	SINGLE SOLID SLEEVE STRUCTURE	1781635.70	3184508.39	4954.71	-
10	RIVER INTAKE	36	PVC	SINGLE SOLID SLEEVE STRUCTURE	1781643.78	3184507.91	4954.72	-
11	WET WELL TO M.H.	18	DIP	CONCRETE WALL PIPE PENETRATION	1781658.65	3184530.82	4961.50	-
12	WET WELL TO M.H.	18	DIP	CONCRETE WALL PIPE PENETRATION	1781659.86	3184523.76	4961.50	-
13	WET WELL TO M.H.	10	DIP	CONCRETE WALL PIPE PENETRATION	1781660.81	3184518.08	4961.50	-
14	WET WELL TO M.H.	18	DIP	CONCRETE WALL PIPE PENETRATION	1781613.81	3184522.76	4961.50	-
15	WET WELL TO M.H.	18	DIP	CONCRETE WALL PIPE PENETRATION	1781615.11	3184515.71	4961.50	-
16	WET WELL TO M.H.	10	DIP	CONCRETE WALL PIPE PENETRATION	1781616.10	3184510.01	4961.50	-
17	WET WELL TO M.H.	18	DIP/PVC	DOUBLE SLEEVE STRUCTURE CONNECTION	1781663.17	3184531.62	4961.50	-
18	WET WELL TO M.H.	18	DIP/PVC	DOUBLE SLEEVE STRUCTURE CONNECTION	1781664.43	3184524.56	4961.50	-
19	WET WELL TO M.H.	10	DIP/PVC	DOUBLE SLEEVE STRUCTURE CONNECTION	1781664.53	3184518.73	4961.50	-
20	WET WELL TO M.H.	18	DIP/PVC	DOUBLE SLEEVE STRUCTURE CONNECTION	1781609.27	3184522.00	4961.50	-
21	WET WELL TO M.H.	18	DIP/PVC	DOUBLE SLEEVE STRUCTURE CONNECTION	1781610.57	3184514.95	4961.50	-
22	WET WELL TO M.H.	10	DIP/PVC	DOUBLE SLEEVE STRUCTURE CONNECTION	1781612.44	3184509.37	4961.50	-
23	WET WELL TO M.H.	24X10X24	DIP	TEE	1781678.89	3184521.40	4961.50	HORIZONTAL
24	WET WELL TO M.H.	24X18X24	DIP	TEE	1781677.96	3184527.12	4961.50	HORIZONTAL
25	WET WELL TO M.H.	24X18X24	DIP	TEE	1781676.77	3184534.24	4961.50	HORIZONTAL
26	WET WELL TO M.H.	10X24	DIP	REDUCER	1781606.85	3184508.39	4961.50	HORIZONTAL
27	WET WELL TO M.H.	24	DIP	90° BEND	1781602.14	3184507.57	4961.50	HORIZONTAL
28	WET WELL TO M.H.	24X18X24	DIP	TEE	1781601.17	3184513.37	4961.50	HORIZONTAL
29	WET WELL TO M.H.	24X18X24	DIP	TEE	1781599.98	3184520.43	4961.50	HORIZONTAL
30	WET WELL TO M.H.	24	DIP	90° BEND	1781598.35	3184529.42	4961.50	HORIZONTAL
31	WET WELL TO M.H.	24	DIP	90° BEND	1781666.77	3184541.61	4961.50	HORIZONTAL
32	WET WELL TO M.H.	24	DIP/PVC	DOUBLE SLEEVE STRUCTURE CONNECTION	1781665.62	3184547.76	4961.50	-
33	METER M.H.	24	-	6' MANHOLE LID CENTER	1781664.39	3184556.51	4969.00	-
34	METER M.H.	24	-	6' MANHOLE INVERT	1781664.39	3184556.51	4958.50	-
35	OUTLET	24	DIP/PVC	DOUBLE SLEEVE STRUCTURE CONNECTION	1781663.07	3184564.61	4961.50	-
36	OUTLET	24	PVC	PIPE END	1781657.83	3184595.96	4963.75	-
37	WET WELL TO M.H.	24	DIP/PVC	DOUBLE SLEEVE STRUCTURE CONNECTION	1781675.39	3184542.18	4961.50	-
38	METER M.H.	24	-	6' MANHOLE INVERT	1781673.74	3184551.47	4958.5	-
39	METER M.H.	24	-	6' MANHOLE LID CENTER	1781673.74	3184551.47	4969.00	-
40	OUTLET	24	DIP/PVC	DOUBLE SLEEVE STRUCTURE CONNECTION	1781672.58	3184559.47	4961.50	-
41	OUTLET	24	PVC	PIPE END	1781666.15	3184599.15	4963.63	-
42	CULVERT BYPASS	18	DIP	CONCRETE CULVERT PIPE PENETRATION	1781688.53	3184545.84	4959.00	-
43	CULVERT BYPASS	18	DIP/PVC	DOUBLE SLEEVE STRUCTURE CONNECTION	1781685.44	3184545.30	4959.03	-

NOTES: SEE D-DWG DETAILS FOR MANHOLE DIMENSIONS. METER M.H. SHARE THE SAME DETAIL ON D502.

COLORADO REGISTERED ANTHONY C. BEESON 40918 PROFESSIONAL ENGINEER
3/23/18

no.	date	by	ckd	description
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BURNS McDONNELL

date	detailed
MARCH 2018	C. SEDNEK
designed	checked
A. BEESON	J. SCHAEFER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
RIVER SIDE YARD PIPING SCHEDULE I

project	contract
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drawing **D005** — rev. **0**

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CONTROL POINT TABLE - RIVER SIDE (XX)

PT #	LOCATION	SIZE (INCHES)	MATERIAL	DESCRIPTION	NORTHING	EASTING	CENTERLINE ELEVATION (FEET)	ORIENTATION
44	CULVERT BYPASS	18	DIP	90° BEND ROTATED APPROX 9 DEG. UPWARD, ON THE EAST FACE	1781681.33	3184544.46	4958.88	HORIZONTAL
45	CULVERT BYPASS	18	DIP/PVC	DOUBLE SLEEVE STRUCTURE CONNECTION	1781679.78	3184553.09	4960.14	1781679.78
46	CULVERT BYPASS	18	-	6' MANHOLE INVERT	1781678.66	3184559.54	4957.14	1781678.66
47	CULVERT BYPASS	18	-	6' MANHOLE LID CENTER	1781678.66	3184559.54	4969.53	1781678.66
48	CULVERT BYPASS	18	DIP/PVC	DOUBLE SLEEVE STRUCTURE CONNECTION	1781677.57	3184565.87	4960.14	1781677.57
49	CULVERT BYPASS	18	DIP/PVC	DOUBLE SLEEVE STRUCTURE CONNECTION	1781673.63	3184587.64	4961.64	1781673.63
50	CULVERT BYPASS	18	-	4' MANHOLE INVERT	1781672.75	3184593.06	4960.89	1781672.75
51	CULVERT BYPASS	18	-	4' MANHOLE LID CENTER	1781672.75	3184593.06	4965.45	1781672.75
52	CULVERT BYPASS	18	DIP/PVC	DOUBLE SLEEVE STRUCTURE CONNECTION	1781671.72	3184598.51	4961.64	1781671.72
53	CULVERT BYPASS	18	PVC	BYPASS PIPE END	1781670.05	3184608.42	4961.75	1781670.05

BURIED VALVE TABLE- RIVER SIDE PUMPING STATION (XX)

PT #	LOCATION	SIZE (INCHES)	DESCRIPTION	NORTHING	EASTING	CENTERLINE ELEVATION (FEET)	OPERATOR	LINE (ORIENTATION) SHAFT	
54	RIVER INTAKE	36	DIRECT BURIED BUTTERFLY VALVE	1781640.96	3184477.74	4954.79	MANUAL 2" SQUARE AWWA NUT	HORIZONTAL	HORIZONTAL
55	RIVER INTAKE	36	DIRECT BURIED BUTTERFLY VALVE	1781646.96	3184490.56	4954.77	MANUAL 2" SQUARE AWWA NUT	HORIZONTAL	HORIZONTAL
56	WET WELL TO M.H.	10	DIRECT BURIED BUTTERFLY VALVE	1781676.43	3184520.94	4961.50	MANUAL 2" SQUARE AWWA NUT	HORIZONTAL	HORIZONTAL
57	WET WELL TO M.H.	18	DIRECT BURIED BUTTERFLY VALVE	1781674.82	3184526.58	4961.50	MANUAL 2" SQUARE AWWA NUT	HORIZONTAL	HORIZONTAL
58	WET WELL TO M.H.	18	DIRECT BURIED BUTTERFLY VALVE	1781673.57	3184533.64	4961.50	MANUAL 2" SQUARE AWWA NUT	HORIZONTAL	HORIZONTAL
59	WET WELL TO M.H.	10	DIRECT BURIED BUTTERFLY VALVE	1781608.66	3184508.70	4961.50	MANUAL 2" SQUARE AWWA NUT	HORIZONTAL	HORIZONTAL
60	WET WELL TO M.H.	18	DIRECT BURIED BUTTERFLY VALVE	1781604.06	3184513.85	4961.50	MANUAL 2" SQUARE AWWA NUT	HORIZONTAL	HORIZONTAL
61	WET WELL TO M.H.	18	DIRECT BURIED BUTTERFLY VALVE	1781602.87	3184520.92	4961.50	MANUAL 2" SQUARE AWWA NUT	HORIZONTAL	HORIZONTAL
62	OUTLET	24	DIRECT BURIED BUTTERFLY VALVE	1781661.98	3184570.78	4961.63	MANUAL 2" SQUARE AWWA NUT	HORIZONTAL	HORIZONTAL
63	OUTLET	24	DIRECT BURIED BUTTERFLY VALVE	1781671.32	3184566.61	4961.63	MANUAL 2" SQUARE AWWA NUT	HORIZONTAL	HORIZONTAL

COLORADO REGISTERED
ANTHONY C. BEESON
40916
PROFESSIONAL ENGINEER
3/23/18

BURNS McDONNELL

date	detailed
MARCH 2018	C. SEDNEK
designed	checked
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Brighton COLORADO

Adams County, Colorado

ERGER'S POND
RIVER SIDE YARD PIPING SCHEDULE II

project	contract
86381	
drawing	rev.
D006	0
sheet 47 of 77 sheets	
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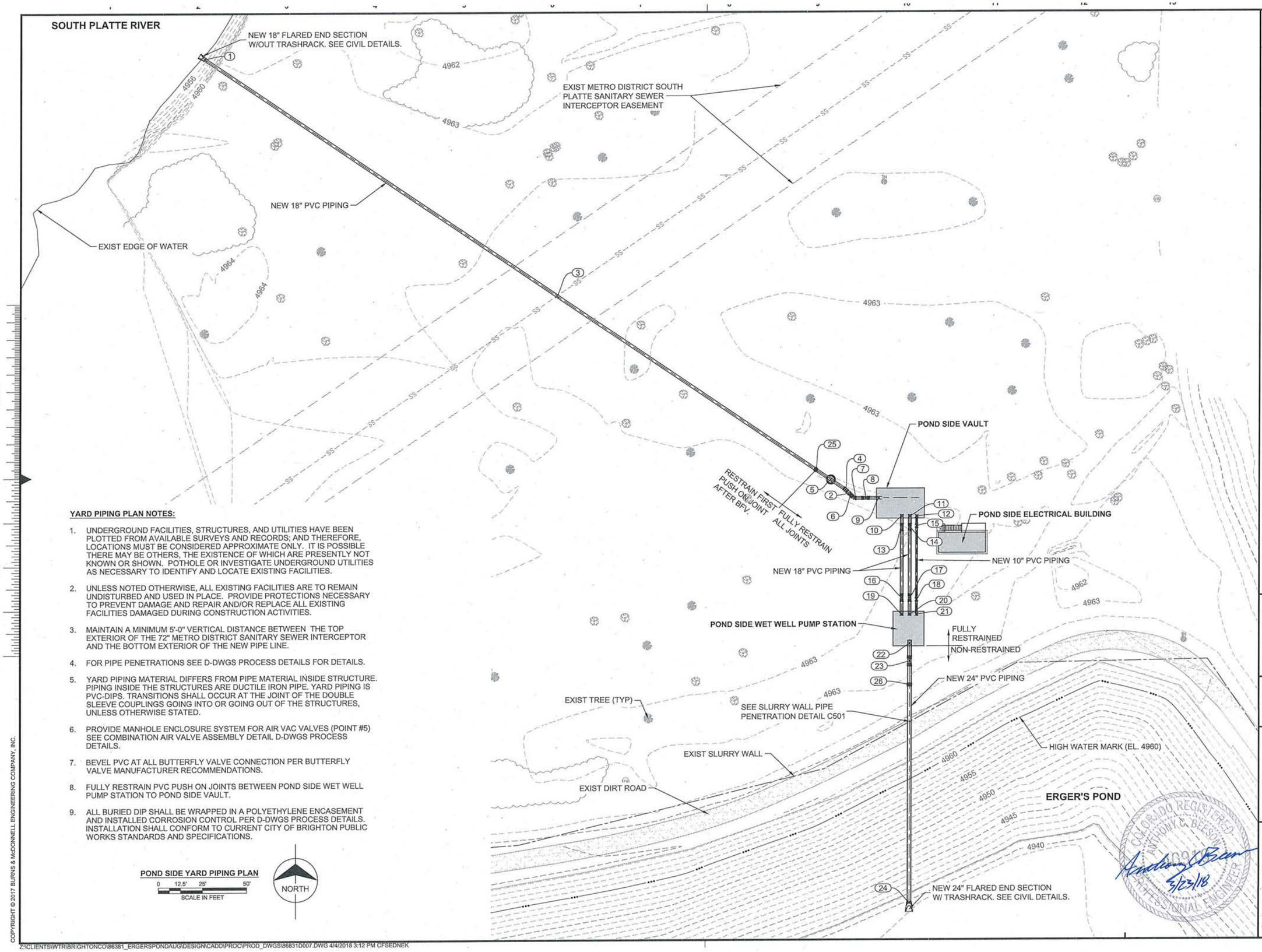
Scale For Microfilming
Millimeters
Inches



YARD PIPING PLAN NOTES:

1. UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS; AND THEREFORE, LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS POSSIBLE THERE MAY BE OTHERS, THE EXISTENCE OF WHICH ARE PRESENTLY NOT KNOWN OR SHOWN. POTHOLE OR INVESTIGATE UNDERGROUND UTILITIES AS NECESSARY TO IDENTIFY AND LOCATE EXISTING FACILITIES.
2. UNLESS NOTED OTHERWISE, ALL EXISTING FACILITIES ARE TO REMAIN UNDISTURBED AND USED IN PLACE. PROVIDE PROTECTIONS NECESSARY TO PREVENT DAMAGE AND REPAIR AND/OR REPLACE ALL EXISTING FACILITIES DAMAGED DURING CONSTRUCTION ACTIVITIES.
3. MAINTAIN A MINIMUM 5'-0" VERTICAL DISTANCE BETWEEN THE TOP EXTERIOR OF THE 72" METRO DISTRICT SANITARY SEWER INTERCEPTOR AND THE BOTTOM EXTERIOR OF THE NEW PIPE LINE.
4. FOR PIPE PENETRATIONS SEE D-DWGS PROCESS DETAILS FOR DETAILS.
5. YARD PIPING MATERIAL DIFFERS FROM PIPE MATERIAL INSIDE STRUCTURE. PIPING INSIDE THE STRUCTURES ARE DUCTILE IRON PIPE. YARD PIPING IS PVC-DIPS. TRANSITIONS SHALL OCCUR AT THE JOINT OF THE DOUBLE SLEEVE COUPLINGS GOING INTO OR GOING OUT OF THE STRUCTURES, UNLESS OTHERWISE STATED.
6. PROVIDE MANHOLE ENCLOSURE SYSTEM FOR AIR VAC VALVES (POINT #5) SEE COMBINATION AIR VALVE ASSEMBLY DETAIL D-DWGS PROCESS DETAILS.
7. BEVEL PVC AT ALL BUTTERFLY VALVE CONNECTION PER BUTTERFLY VALVE MANUFACTURER RECOMMENDATIONS.
8. FULLY RESTRAIN PVC PUSH ON JOINTS BETWEEN POND SIDE WET WELL PUMP STATION TO POND SIDE VAULT.
9. ALL BURIED DIP SHALL BE WRAPPED IN A POLYETHYLENE ENCASEMENT AND INSTALLED CORROSION CONTROL PER D-DWGS PROCESS DETAILS. INSTALLATION SHALL CONFORM TO CURRENT CITY OF BRIGHTON PUBLIC WORKS STANDARDS AND SPECIFICATIONS.

POND SIDE YARD PIPING PLAN

0 12.5' 25' 50'
SCALE IN FEET

NORTH

no.	date	by	ckd	description
0	3/23/18	AB	JS	ISSUED FOR CONSTRUCTION

BURNS McDONNELL

date MARCH 2018	detailed C. SEDNEK
designed A. BEESON	checked J. SCHAEFER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND

POND SIDE YARD PIPING PLAN

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COLORADO REGISTERED ANDREW C. BEESON 40971 PROFESSIONAL ENGINEER 3/23/18

Scale For Microfilming
Millimeters
Inches

CONTROL POINT TABLE - POND SIDE PUMPING STATION (XX)

PT #	LOCATION	SIZE (INCHES)	MATERIAL	DESCRIPTION	NORTHING	EASTING	CENTERLINE ELEVATION (FEET)	ORIENTATION
1	OUTLET TO RIVER	18	PVC	OUTLET TO RIVER	1783571.87	3186097.11	4955.46	
2	OUTLET TO RIVER	18	DIP	45° BEND	1783325.44	3186461.37	4957.64	VERTICAL
3	OUTLET TO RIVER	18	PVC	6.9' CLEARANCE ABOVE METRO DISTRICT SANITARY SEWER INTERCEPTOR	1783437.53	3186296.27	4956.65	
4	OUTLET TO RIVER	18	DIP	11.25° BEND	1783327.25	3186459.55	4957.65	HORIZONTAL
5	OUTLET TO RIVER	18	PVC	3" COMBINATION AIR VALVE SEE DETAIL D500, (ELEV. IS TOP OF PIPE)	1783333.09	3186451.10	4958.42	
6	OUTLET TO RIVER	18	DIP	45° BEND	1783324.18	3186462.62	4954.99	VERTICAL
7	OUTLET TO RIVER	18	DIP	45° BEND	1783322.60	3186464.20	4954.98	HORIZONTAL
8	OUTLET TO RIVER	18	PVC/DIP	DOUBLE SLEEVE STRUCTURE CONNECTION	1783322.60	3186470.85	4954.95	
9	VAULT	18	DIP	CONCRETE WALL PIPE PENETRATION	1783322.60	3186478.38	4954.95	
10	VAULT	18	DIP	CONCRETE WALL PIPE PENETRATION	1783312.31	3186491.40	4954.95	
11	VAULT	18	DIP	CONCRETE WALL PIPE PENETRATION	1783312.31	3186495.91	4954.95	
12	VAULT	10	DIP	CONCRETE WALL PIPE PENETRATION	1783312.33	3186499.74	4954.95	
13	WET WELL TO VAULT	18	PVC/DIP	DOUBLE SLEEVE STRUCTURE CONNECTION	1783305.96	3186491.40	4954.95	
14	WET WELL TO VAULT	18	PVC/DIP	DOUBLE SLEEVE STRUCTURE CONNECTION	1783305.95	3186495.91	4954.95	
15	WET WELL TO VAULT	10	PVC/DIP	DOUBLE SLEEVE STRUCTURE CONNECTION	1783306.71	3186499.74	4954.95	
16	WET WELL TO VAULT	18	PVC/DIP	DOUBLE SLEEVE STRUCTURE CONNECTION	1783266.07	3186491.40	4954.75	
17	WET WELL TO VAULT	18	PVC/DIP	DOUBLE SLEEVE STRUCTURE CONNECTION	1783266.07	3186495.91	4954.75	
18	WET WELL TO VAULT	10	PVC/DIP	DOUBLE SLEEVE STRUCTURE CONNECTION	1783265.06	3186499.75	4954.75	
19	WET WELL	18	DIP	CONCRETE WALL PIPE PENETRATION	1783256.76	3186491.40	4954.75	
20	WET WELL	18	DIP	CONCRETE WALL PIPE PENETRATION	1783256.76	3186495.91	4954.75	
21	WET WELL	10	DIP	CONCRETE WALL PIPE PENETRATION	1783256.80	3186499.74	4954.75	
22	WET WELL	24	DIP	CONCRETE WALL PIPE PENETRATION	1783240.26	3186495.90	4939.66	
23	INTAKE FROM POND	24	PVC/DIP	DOUBLE SLEEVE STRUCTURE CONNECTION	1783230.29	3186495.90	4939.66	
24	INTAKE FROM POND	24	PVC	INLET FROM ERGER'S POND	1783093.63	3186495.90	4940.18	

BURIED VALVE TABLE - POND SIDE PUMPING STATION (XX)

PT #	LOCATION	SIZE (INCHES)	DESCRIPTION	NORTHING	EASTING	CENTERLINE ELEVATION (FEET)	OPERATOR	LINE (ORIENTATION) SHAFT	
25	OUTLET TO RIVER	18	DIRECT BURIED BUTTERFLY VALVE	1783338.77	3186442.69	4957.58	MANUAL 2" SQ. AWWA NUT	HORIZONTAL	HORIZONTAL
26	INTAKE FROM POND	24	DIRECT BURIED BUTTERFLY VALVE	1783216.95	3186495.90	4939.71	MANUAL 2" SQ. AWWA NUT	HORIZONTAL	HORIZONTAL

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COLORADO REGISTERED ANTHONY C. BEESON 40911 PROFESSIONAL ENGINEER
3/23/18

BURNS McDONNELL

date MARCH 2018	detailed C. SEDNEK
designed A. BEESON	checked J. SCHAEFER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
POND SIDE YARD PIPING SCHEDULE

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INTERIOR VALVE SCHEDULE

NUMBER	TAG	LOCATION	VALVE TYPE	SIZE (INCHES)	VALVE ENDS	PRESSURE CLASS	ACTUATOR TYPE	LINE ORIENTATION	SHAFT ORIENTATION	DRAWING
1	EPRS-PV-151	RIVER SIDE PS	PLUG VALVE	18"	FLG x FLG	150	ELECTRIC MOTOR	HORIZONTAL	HORIZONTAL	D004
2	EPRS-CV-114	RIVER SIDE PS	CHECK VALVE	10"	FLG x FLG	150	-	VERTICAL	NA	D200
3	EPRS-CV-124	RIVER SIDE PS	CHECK VALVE	10"	FLG x FLG	150	-	VERTICAL	NA	D200
4	EPRS-CV-115	RIVER SIDE PS	CHECK VALVE	18"	FLG x FLG	150	-	VERTICAL	NA	D200
5	EPRS-CV-116	RIVER SIDE PS	CHECK VALVE	18"	FLG x FLG	150	-	VERTICAL	NA	D200
6	EPRS-CV-125	RIVER SIDE PS	CHECK VALVE	18"	FLG x FLG	150	-	VERTICAL	NA	D200
7	EPRS-CV-126	RIVER SIDE PS	CHECK VALVE	18"	FLG x FLG	150	-	VERTICAL	NA	D200
8	EPPS-CV-216	POND SIDE PS	CHECK VALVE	10"	FLG x FLG	150	-	HORIZONTAL	NA	D301
9	EPPS-CV-215	POND SIDE PS	CHECK VALVE	18"	FLG x FLG	150	-	HORIZONTAL	NA	D301
10	EPPS-CV-214	POND SIDE PS	CHECK VALVE	18"	FLG x FLG	150	-	HORIZONTAL	NA	D301
11	EPPS-BFV-217	POND SIDE VAULT	BUTTERFLY	18"	FLG x FLG	150	HANDWHEEL	HORIZONTAL	HORIZONTAL	D301
12	EPPS-BFV-218	POND SIDE VAULT	BUTTERFLY	18"	FLG x FLG	150	HANDWHEEL	HORIZONTAL	HORIZONTAL	D301
13	EPPS-BFV-219	POND SIDE VAULT	BUTTERFLY	10"	FLG x FLG	150	HANDWHEEL	HORIZONTAL	HORIZONTAL	D301

EQUIPMENT SCHEDULE

NUMBER	TAG	DESCRIPTION	LOCATION	SPECIFICATION SECTION	DRAWING	NOTES
1	EPRS-CS-101	CONE SCREEN	RIVER SIDE INLET STRUCTURE	46 21 00	D004	CONE SCREEN 1
2	EPRS-CS-102	CONE SCREEN	RIVER SIDE INLET STRUCTURE	46 21 00	D004	CONE SCREEN 2
3	EPRS-SG-001	SLIDE GATE	RIVER SIDE GRAVITY CULVERT	35 20 16	D004	SEE SPECIFICATION SCHEDULE 35 20 16
4	EPRS-WG-001	WEIR GATE	RIVER SIDE GRAVITY CULVERT	35 20 16	D004	SEE SPECIFICATION SCHEDULE 35 20 16
5	EPRS-SP-111	SUBMERSIBLE PUMP	RIVER SIDE WET WELL	33 32 22	D200	SMALL PUMP 1
6	EPRS-SP-121	SUBMERSIBLE PUMP	RIVER SIDE WET WELL	33 32 22	D200	SMALL PUMP 2
7	EPRS-SP-112	SUBMERSIBLE PUMP	RIVER SIDE WET WELL	33 32 22	D200	LARGE PUMP 1
8	EPRS-SP-122	SUBMERSIBLE PUMP	RIVER SIDE WET WELL	33 32 22	D200	LARGE PUMP 2
9	EPRS-SP-113	SUBMERSIBLE PUMP	RIVER SIDE WET WELL	33 32 22	D200	LARGE PUMP 3
10	EPRS-SP-123	SUBMERSIBLE PUMP	RIVER SIDE WET WELL	33 32 22	D200	LARGE PUMP 4
11	EPPS-SP-211	SUBMERSIBLE PUMP	POND SIDE WET WELL	33 32 22	D300	SMALL PUMP 1
12	EPPS-SP-212	SUBMERSIBLE PUMP	POND SIDE WET WELL	33 32 22	D300	LARGE PUMP 1
13	EPPS-SP-213	SUBMERSIBLE PUMP	POND SIDE WET WELL	33 32 22	D300	LARGE PUMP 2
14	EPRS-FE/FIT-131	24" MAGNETIC FLOW METER	METER MANHOLE	40 91 00	D201	
15	EPRS-FE/FIT-132	24" MAGNETIC FLOW METER	METER MANHOLE	40 91 00	D201	
16	EPPS-FE/FIT-221	18" MAGNETIC FLOW METER	POND SIDE VAULT	40 91 00	D301	
17	EPRS-FE/FIT-142	DOPPLER/ULTRA SONIC FLOW METER	RIVER SIDE GRAVITY CULVERT	40 91 00	D004 AND D501	LOCATED IN THE 5'WX5'H GRAVITY CULVERT
18	EPRS-FE/FIT-152	DOPPLER/ULTRA SONIC FLOW METER	RIVER SIDE GRAVITY CULVERT BYPASS	40 91 00	D004 AND D501	LOCATED IN THE MANHOLE FOR THE 18" GRAVITY FLOW CULVERT BYPASS LINE
21	EPRS-SG-101	SLIDE GATE	RIVER SIDE WET WELL	35 20 16	D200	SEE SPECIFICATION SCHEDULE 35 20 16
22	EPRS-SG-102	SLIDE GATE	RIVER SIDE WET WELL	35 20 16	D200	SEE SPECIFICATION SCHEDULE 35 20 16
23	EPPS-SG-101	SLIDE GATE	POND SIDE WET WELL	35 20 16	D300	SEE SPECIFICATION SCHEDULE 35 20 16

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COLORADO REGISTERED ANTHONY C. BEESON 40916 PROFESSIONAL ENGINEER
3/23/18

BURNS McDONNELL

date	detailed
MARCH 2018	C. SEDNEK
designed	checked
A. BEESON	J. SCHAEFER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
EQUIPMENT AND VALVE SCHEDULE

project	contract
86381	

drawing D009 — rev. 0

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file

Millimeters
Scale For Microfilming
Inches

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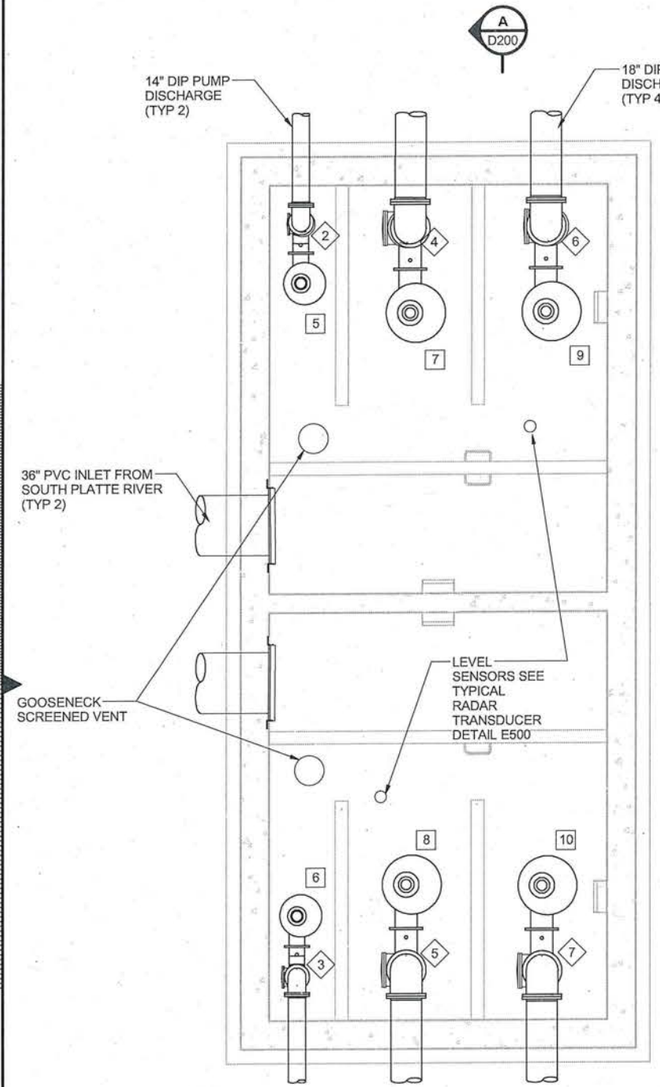
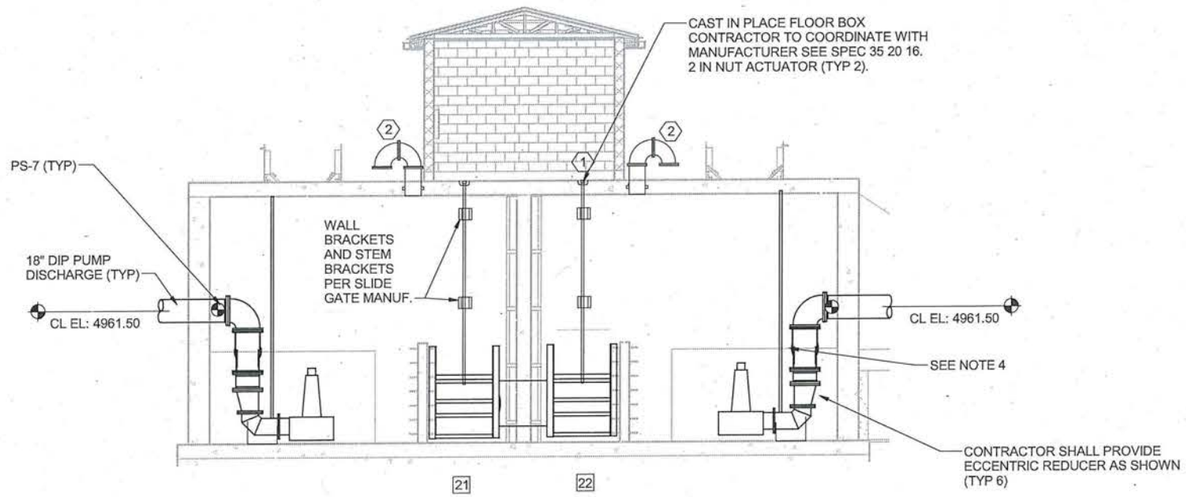


RIVER SIDE WET WELL FLOOR PLAN

0 2' 4' 8'

SCALE IN FEET

NORTH



SECTION A D200

0 4' 8' 12'

SCALE IN FEET

NOTES:

1. SEE STRUCTURAL DETAILS FOR PIPE SUPPORTS.
2. PS-9 SUPPORTS SHALL BE INSTALLED JUST BELOW THE CHECK VALVE.
3. ALL PIPE PENETRATIONS, OTHER THAN GOOSENECK VENTS SHALL USE DOUBLE LINK SEAL(TYP 8), SEE DETAILS D501.
4. IF NECESSARY FOR FIT AND FOR ACCESS ROTATE CHECK VALVE 90 DEGREES ON ITS VERTICAL AXIS.
5. CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH MANUFACTURER TO SUPPLY AND INSTALL SUPPORT BRACKETS AND FINAL BRACKETS FOR ALL PUMP RAILS.

KEYED NOTES:

1. CONTRACTOR TO PROVIDE ONE OPERATOR FOR BOTH SLIDE GATES. PROVIDE A T-HANDLE WRENCH BY TROY-VALVE-HD SUPPLY (303)394-0004. T-HANDLE WRENCH SOLID CAST IRON, WITH A STAINLESS STEEL 2" SQURE NUT OPERATOR. THE HORIZONTAL LENGTH OF THE HANDLE OF THE T-BAR SHALL BE 18".
2. INSTALL 18" PAINTED-CARBON STEEL, GOOSENECK SCREENED VENT, PER VENT DETAIL, DRAWING D500.

no.	date	by	ckd	description
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COLORADO REGISTERED ANTHONY C. BEESON 40916 PROFESSIONAL ENGINEER 3/23/18

BURNS McDONNELL

date MARCH 2018	detailed C. SEDNEK
designed A. BEESON	checked J. SCHAEFER

Brighton COLORADO

Adams County, Colorado

ERGER'S POND

RIVER SIDE WET WELL FLOOR PLAN AND SECTIONS

project 86381	contract
drawing D200 —	rev. 0
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Millimeters Scale For Microfilming Inches

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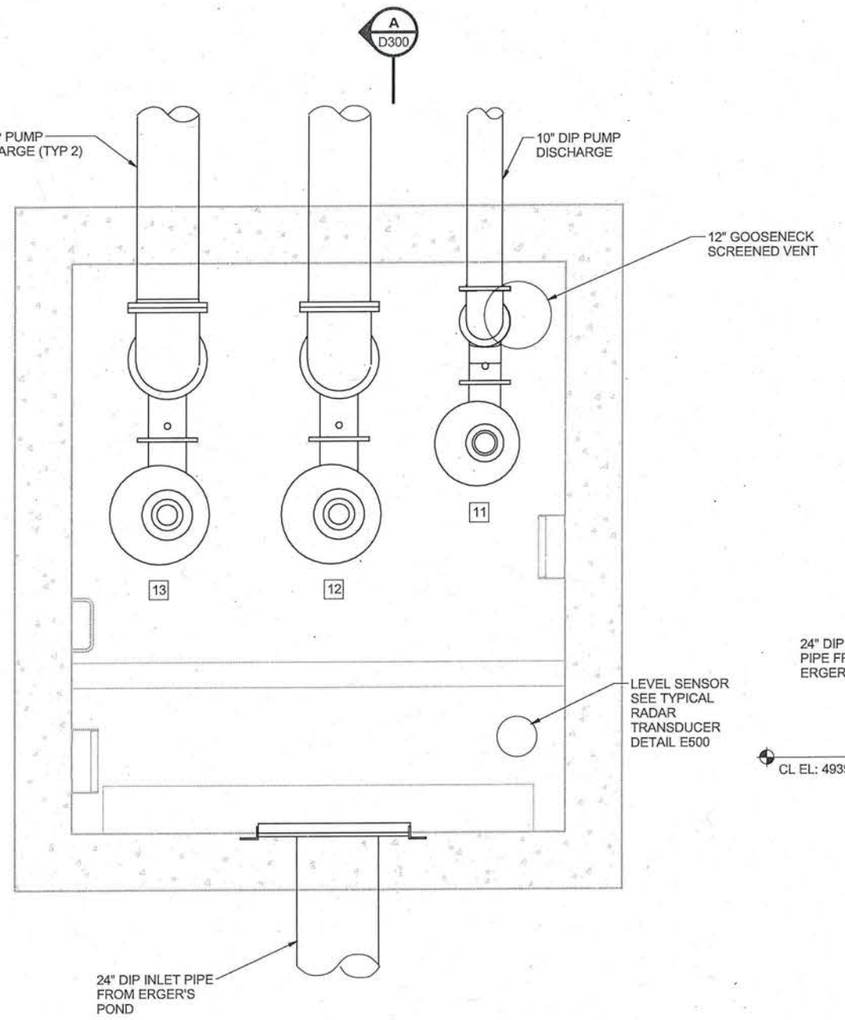

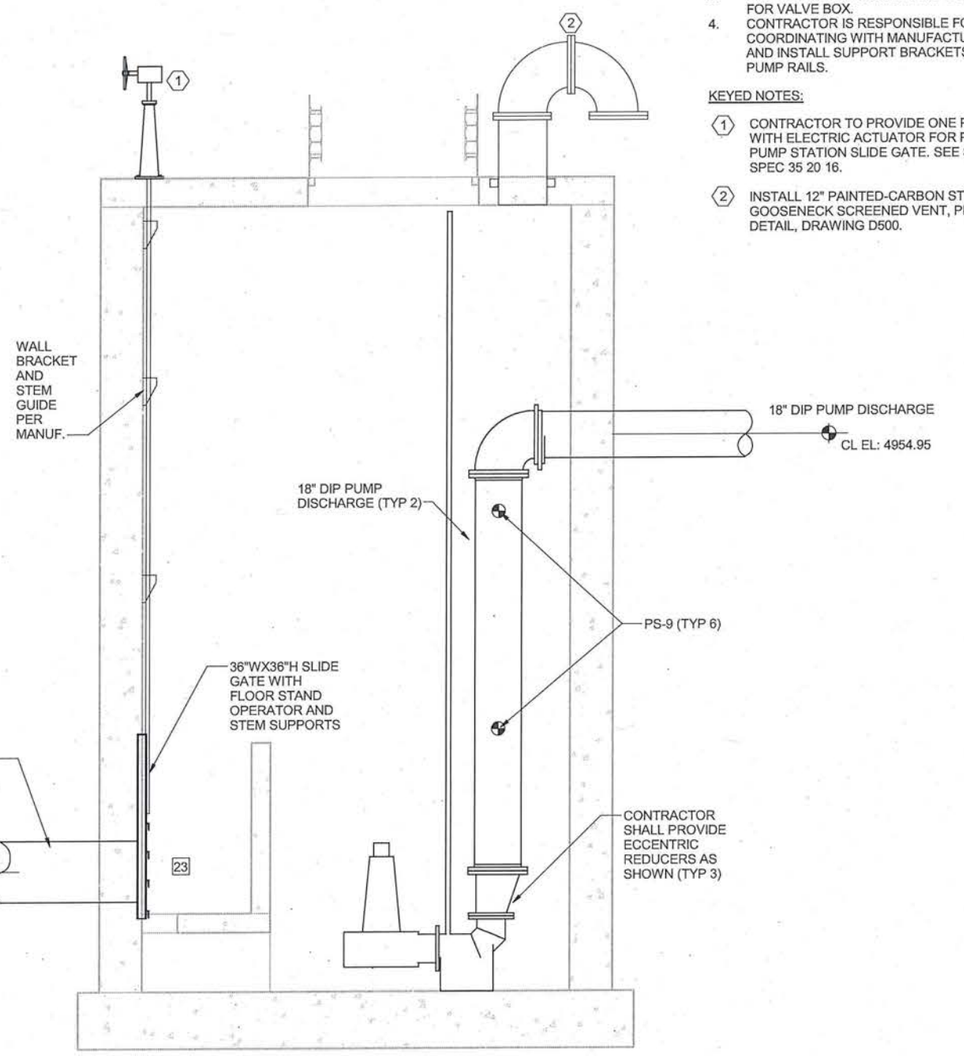

SECTION A D300

0 2' 4' 6'
SCALE IN FEET

FLOOR PLAN

0 1' 2' 4'
SCALE IN FEET

NORTH

NOTES:
1. SEE STRUCTURAL DWGS FOR PIPE SUPPORT DETAILS.
2. ALL PIPE PENETRATIONS SHALL USE DOUBLE LINK SEAL(TYP 4), SEE DETAILS D501.
3. PROVIDE CAST IRON TOP AND COVER TYPICAL FOR VALVE BOX.
4. CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH MANUFACTURER TO SUPPLY AND INSTALL SUPPORT BRACKETS FOR ALL THE PUMP RAILS.

KEYED NOTES:

(1) CONTRACTOR TO PROVIDE ONE PEDESTAL WITH ELECTRIC ACTUATOR FOR POND SIDE PUMP STATION SLIDE GATE. SEE SCHEDULE AND SPEC 35 20 16.

(2) INSTALL 12" PAINTED-CARBON STEEL, GOOSENECK SCREENED VENT, PER VENT DETAIL, DRAWING D500.

no.	date	by	ckd	description
0	3/23/18	AB	JS	ISSUED FOR CONSTRUCTION

Millimeters
Inches
Scale For Microfilming

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BURNS McDONNELL

date MARCH 2018	detailed C. SEDNEK
designed A. BEESON	checked J. SCHAEFER

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Adams County, Colorado

ERGER'S POND
POND SIDE WET WELL FLOOR PLAN AND SECTIONS

project 86381	contract
drawing D300	rev. 0
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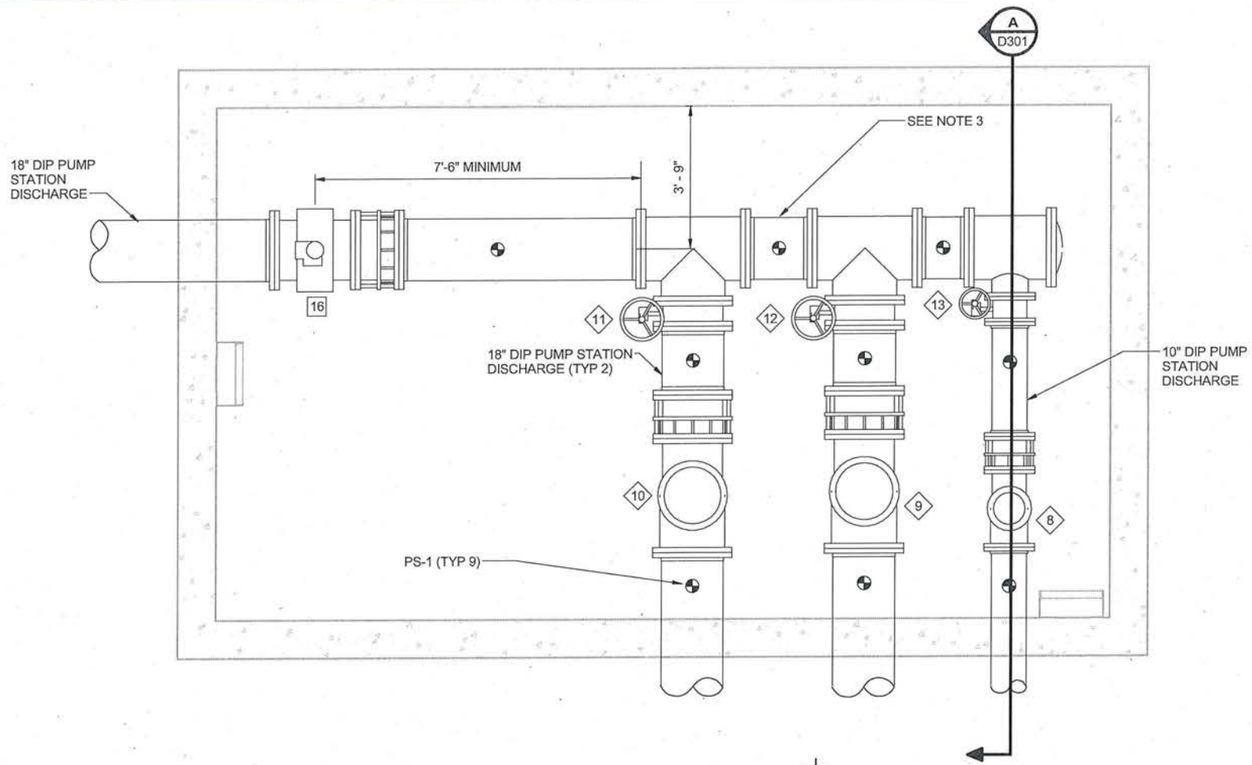
COLORADO REGISTERED ANTHONY C. BEESON 40918 PROFESSIONAL ENGINEER
3/23/18



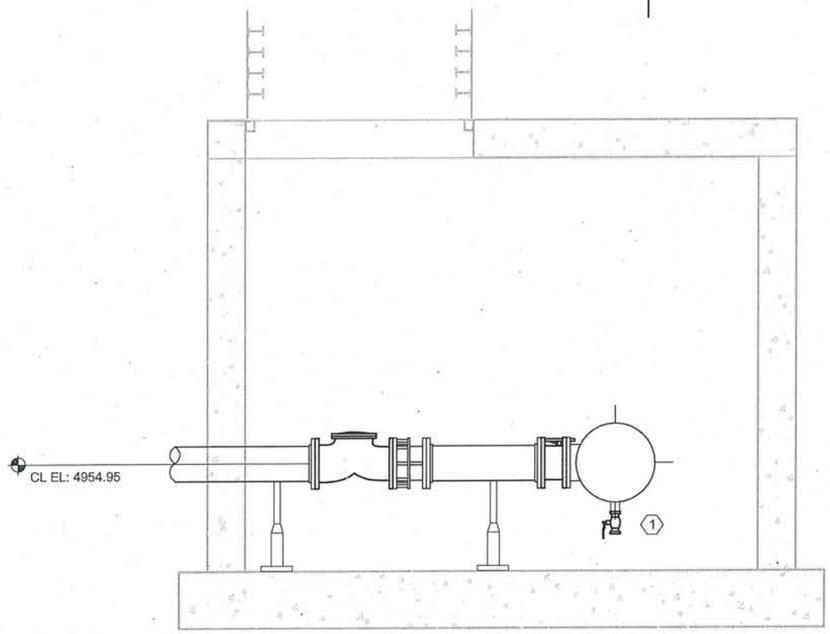
NOTES:
1. SEE STRUCTURAL DWGS FOR PIPE SUPPORT DETAILS.
2. ALL PIPE PENETRATIONS SHALL USE DOUBLE LINK SEAL(TYP 4), SEE DETAILS D501.
3. FACTORY INSTALLED THREADED CONNECTION/TAPPED BOSS FOR PRESSURE TRANSDUCER SEE DETAIL E500.

KEYED NOTES:

(1) FACTORY INSTALLED 2" THREADED CONNECTION/TAPPED BOSS, STEMING FROM DIP. CONNECTION PIPE SHALL BE STAINLESS STEEL AND VALVE SHALL BE BRONZE, RATED FOR 150PSI SERVICE. COUPLINGS OR UNIONS SHALL BE INSULATED STYLE. BALL VALVE SHALL BE APOLLO 32-100 SERIES THREADED CONNECTION, PORT VALVE WITH LEVER OR SIMILAR.

POND SIDE VAULT FLOOR PLAN

0 1' 2' 4'
SCALE IN FEET



SECTION A D301

0 1' 2' 4'
SCALE IN FEET

no.	date	by	ckd	description
0	3/23/18	AB	JS	ISSUED FOR CONSTRUCTION

BURNS McDONNELL

date	detailed
MARCH 2018	C. SEDNEK
designed	checked
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Adams County, Colorado

ERGER'S POND
POND SIDE VAULT FLOOR PLAN

project	contract
86381	

drawing D301 — rev. 0

sheet 53 of 77 sheets
file

COLORADO REGISTERED ANTHONY C. BEESON 40918 PROFESSIONAL ENGINEER
3/23/18

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Millimeters
Inches

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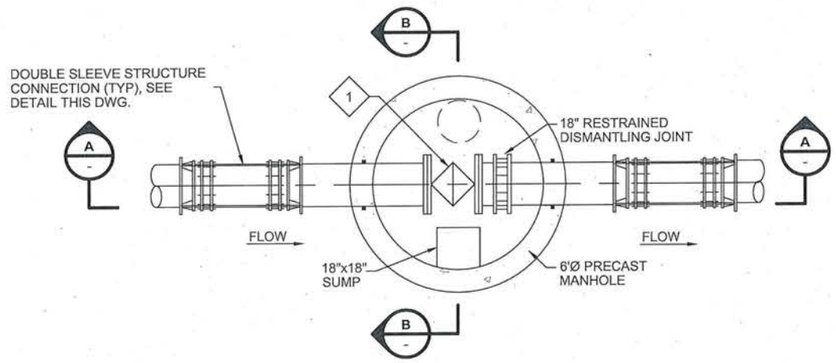
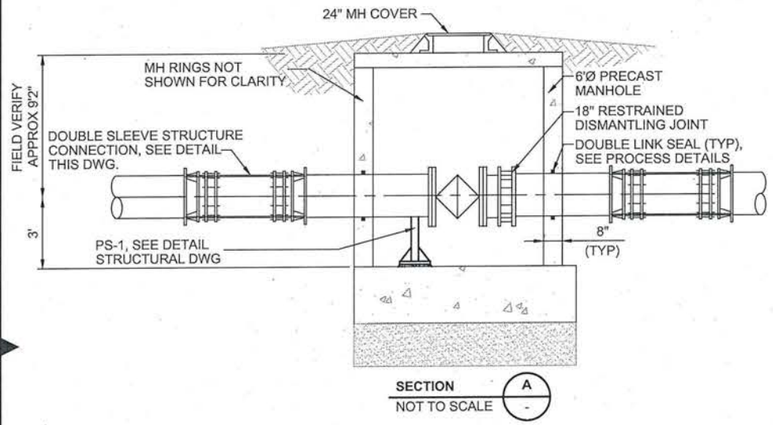


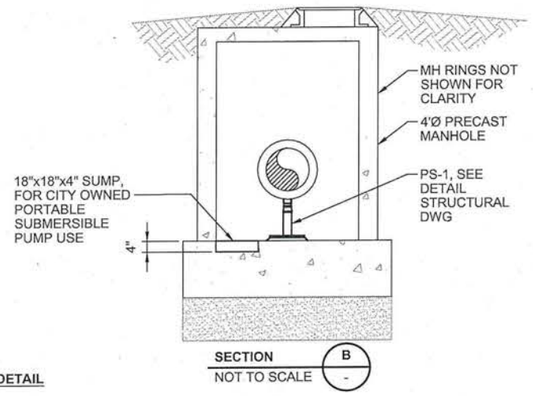
NEW PLUG VALVE MH PLAN
NOT TO SCALE

NOTES:

1. SLOPE MANHOLE FLOOR TO ALLOW WATER TO DRAIN INTO SUMP.
2. PROVIDE 18" OF CDOT CLASS I AGGREGATE AS SUBGRADE.
3. COAT INTERIOR PIPING WITH TNEMEC N140 SYSTEM OR EQUAL.
4. PROVIDE MANHOLE STEPS AT 12" ON CENTER AS MANUFACTURED BY MA INDUSTRIES, MODEL PS2-F OR EQUAL.
5. MANHOLE SHALL CONFORM TO THE CITY OF BRIGHTON STANDARDS AND SPECIFICATIONS.
6. APPLY COAL TAR COATING TO EXTERIOR WALLS FROM BASE TO FINISHED GRADE IN TWO COATS WITH A MINIMUM DRY THICKNESS OF 12 MILS PER COAT. COATING SHALL BE AS MANUFACTURED BY CARBOLINE BITUMASTIC 300M OR EQUAL.
7. TONGUE AND GROOVED JOINTS SHALL BE SEALED WITH REM-NEK PREFORMED FLEXIBLE JOINT SEALANT (OR EQUAL) WITH EXTERNAL CONWRAP CS-212 JOINT SEALANT WRAP (OR EQUAL).
8. PRECAST CONCRETE SECTIONS SHALL CONFORM TO ASTM C478.
9. MANHOLE MANUFACTURER SHALL COORDINATE WALL THICKNESS WITH LINK-SEAL MANUFACTURER.
10. PROVIDE FLANGE INSULATING GASKET KIT WITH LEVES AND WASHERS, ON EACH SIDE OF THE PLUG VALVE
11. ALL DIP COATINGS SHALL BE EPOXY COATED AND LINED THROUGH M.H.

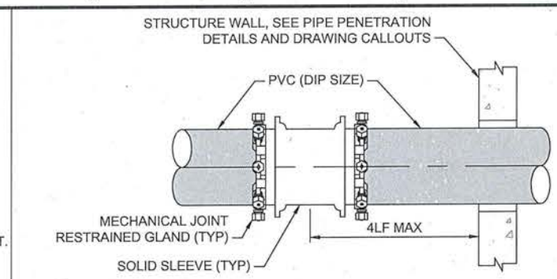


SECTION A
NOT TO SCALE

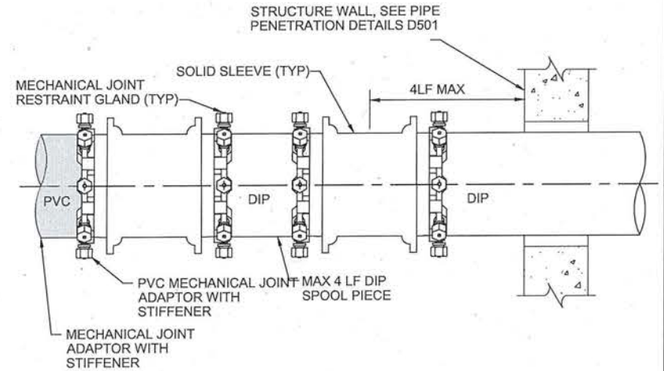


SECTION B
NOT TO SCALE

PLUG VALVE IN MANHOLE DETAIL
NOT TO SCALE

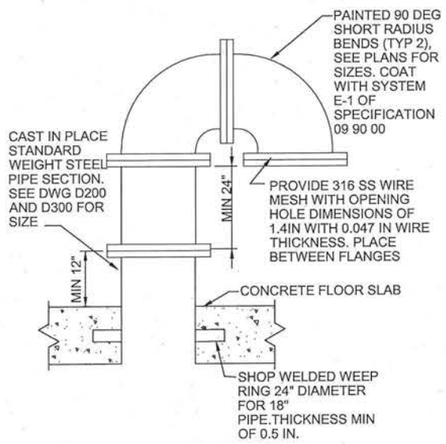


SOLID SLEEVE CONNECTION
NOT TO SCALE

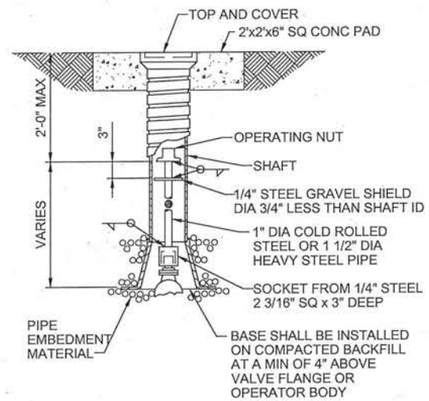


NOTES:
1. THIS IS THE DUCTILE IRON PIPE AND PVC-DIPS PIPE SETTLING COULPLING SYSTEM.
2. LUG TYPE, TIE BOLT DIAMETER, AND NUMBER OF RETAINING RODS VARIES BY PIPE DIAMETER AND DESIGN PRESSURE. CONFORM TO AWWA-M11.

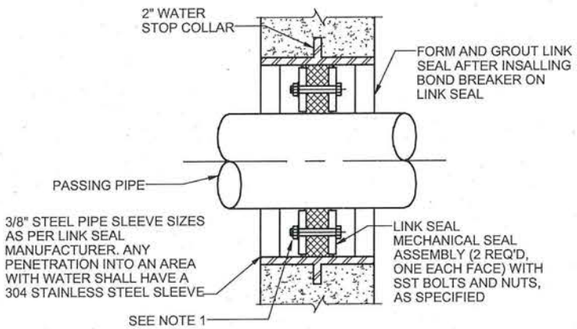
DOUBLE SLEEVE STRUCTURE CONNECTION DETAIL
NOT TO SCALE



VENT DETAIL
NOT TO SCALE



SCREW SHAFT TYPE VALVE BOX DETAIL
NOT TO SCALE



NOTE:
1. PROVIDE SOLID BLOCK TO TRANSMIT THE WEIGHT OF THE PIPE TO THE WALL AND NOT THE LINK SEAL. THE MASONRY BLOCK SHALL BE MOUNTED UNDERNEATH THE PIPE FOR 90° CENTERED IN THE MIDDLE OF THE PIPE.
2. FOR PIPE PENETRATION DIAMETERS 8INCHES OR LESS.

SINGLE LINK SEAL DETAIL
NOT TO SCALE

no.	date	by	ckd	description
0	3/23/18	AB	JS	ISSUED FOR CONSTRUCTION

BURNS McDONNELL

date MARCH 2018	detailed C. SEDNEK
designed A. BEESON	checked J. SCHAEFER

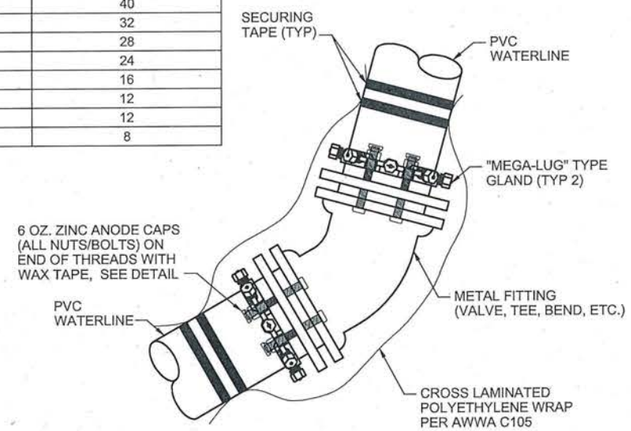
Brighton COLORADO

Adams County, Colorado

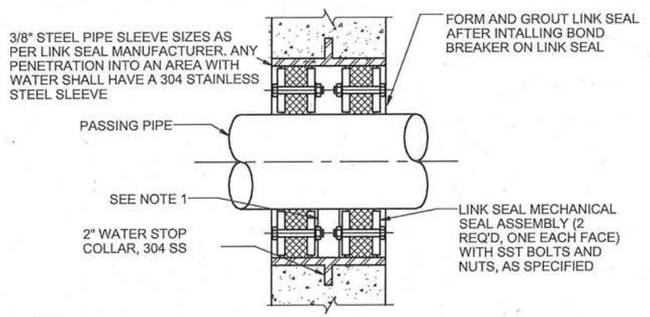
ERGER'S POND
PROCESS DETAILS I

project 86381	contract
drawing D500	rev. 0
sheet 54 of 77 sheets	
file	

FITTING SIZE	# 6 OZ. ZINC CAPS REQ'D
36"	48
30"	40
24"	32
20"	28
18"	24
12"	16
8"	12
6"	12
4"	8

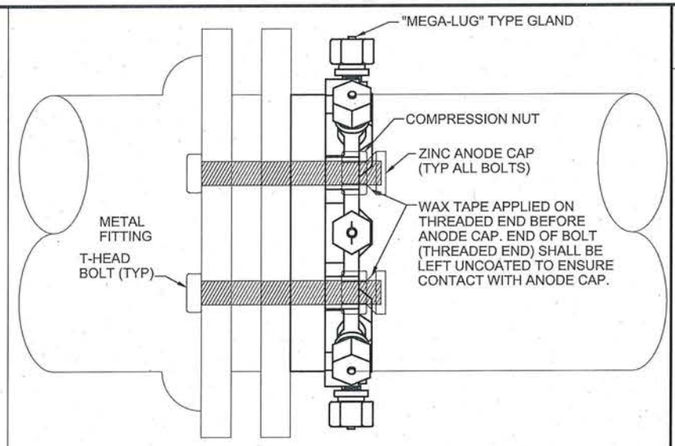


PVC PIPE CATHODIC PROTECTION - METAL FITTING
NOT TO SCALE



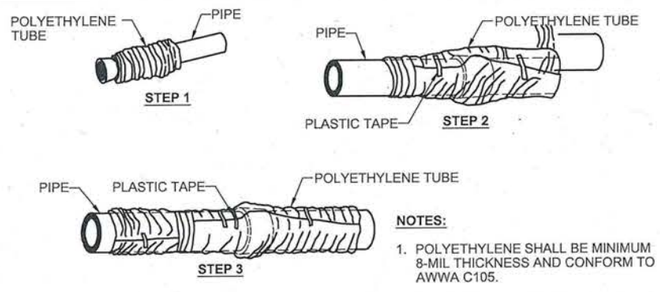
NOTE:
1. PROVIDE SOLID BLOCK TO TRANSMIT THE WEIGHT OF THE PIPE TO THE WALL AND NOT THE LINK SEAL. THE MASONRY BLOCK SHALL BE MOUNTED UNDERNEATH THE PIPE FOR 90° CENTERED IN THE MIDDLE OF THE PIPE.
2. FOR PIPE PENETRATION DIAMETERS GREATER THAN 8INCHES.

DOUBLE LINK SEAL DETAIL
NOT TO SCALE



PVC PIPE CATHODIC PROTECTION - ZINC ANODE CAP WITH WAX TAPE
NOT TO SCALE

no.	date	by	ckd	description
0	3/23/18	AB	JS	ISSUED FOR CONSTRUCTION



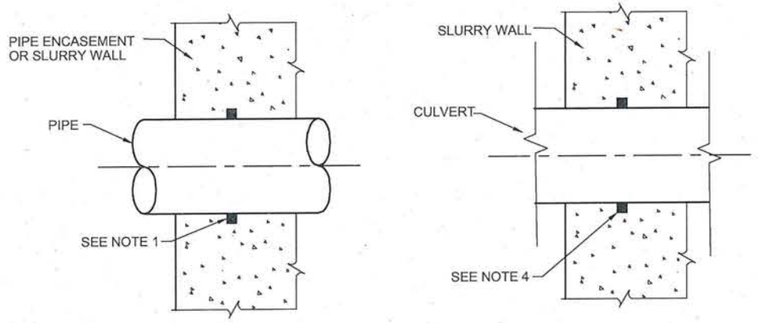
NOTES:
1. POLYETHYLENE SHALL BE MINIMUM 8-MIL THICKNESS AND CONFORM TO AWWA C105.
2. TAPE SHALL BE 2" POLYKEN NO 900, SCOTCHWRAP NO 50, OR EQAUL.

STEP 1- PLACE TUBE OF POLYETHYLENE MATERIAL ON PIPE PRIOR TO LOWERING IT INTO TRENCH.

STEP 2- PULL THE TUBE OVER THE LENGTH OF THE PIPE. TAPE TUBE TO PIPE AT JOINT. FOLD MATERIAL AROUND THE ADJACENT SPIGOT END AND WRAP WITH TAPE TO HOLD THE PLASTIC TUBE IN PLACE.

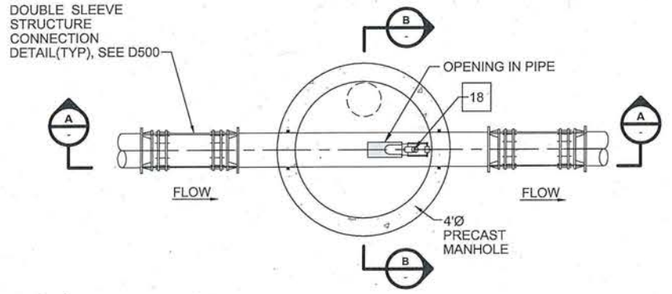
STEP 3- OVERLAP FIRST TUBE WITH ADJACENT TUBE AND SECURE WITH PLASTIC ADHESIVE TAPE. THE POLYETHYLENE TUBE MATERIAL COVERING THE PIPE SHALL BE LOOSE. EXCESS MATERIAL SHALL BE NEATLY DRAWN UP AROUND THE PIPE BARREL, FOLDED ON TOP OF PIPE AND TAPED IN PLACE.

FIELD INSTALLATION-POLYETHYLENE WRAP
(FOR DUCTILE IRON PIPE ONLY)
NOT TO SCALE

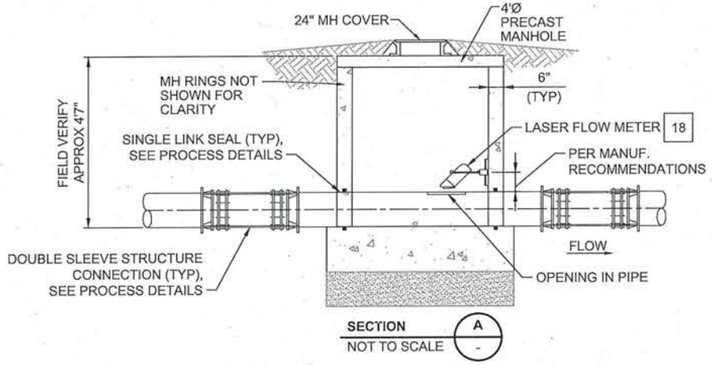


NOTES:
1. Rx WATERSTOP FOR DUCTILE IRON PIPE, SYNCO FLEX WATERSTOP FOR PVC PIPE. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE WATERSTOP ON PIPE AT CENTER OF SLURRY WALL OR AT BOTH ENDS OF ENCASEMENT.
3. FOR CULVERT PROVIDE SYNCO FLEX WATER STOP FOR CONCRETE.
4. PROVIDE WATERSTOP ON CULVERT AT CENTER OF SLURRY WALL.

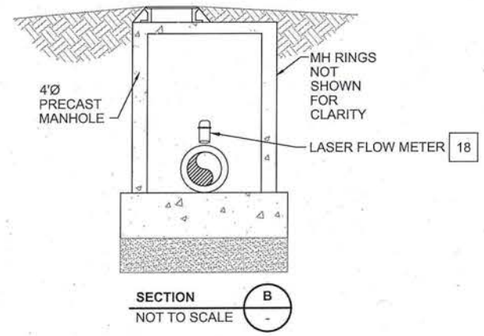
ENCASED PIPE WATERSTOP DETAIL
NOT TO SCALE



NEW LASER FLOW METER MH PLAN
NOT TO SCALE



SECTION A
NOT TO SCALE



SECTION B
NOT TO SCALE

NOTES:
1. BENCH MANHOLE FLOOR TO MAINTAIN FLOW THROUGH MANHOLE.
2. PROVIDE 18" OF CDOT CLASS I AGGREGATE AS SUBGRADE.
3. COAT INTERIOR PIPING WITH TNEMEC N140 SYSTEM OR EQUAL.
4. PROVIDE MANHOLE STEPS AT 12" ON CENTER AS MANUFACTURED BY MA INDUSTRIES, MODEL PS2-F OR EQUAL.
5. MANHOLE SHALL CONFORM TO THE CITY OF BRIGHTON STANDARDS AND SPECIFICATIONS.
6. APPLY COAL TAR COATING TO EXTERIOR WALLS FROM BASE TO FINISHED GRADE IN TWO COATS WITH A MINIMUM DRY THICKNESS OF 12 MILS PER COAT. COATING SHALL BE AS MANUFACTURED BY CARBOLINE BITUMASTIC 300M OR EQUAL.
7. TONGUE AND GROOVED JOINTS SHALL BE SEALED WITH REM-NEK PREFORMED FLEXIBLE JOINT SEALANT (OR EQUAL) WITH EXTERNAL CONWRAP CS-212 JOINT SEALANT WRAP (OR EQUAL).
8. PRECAST CONCRETE SECTIONS SHALL CONFORM TO ASTM C478.
9. MANHOLE MANUFACTURER SHALL COORDINATE WALL THICKNESS WITH LINK-SEAL MANUFACTURER
11. ALL DIP COATINGS SHALL BE EPOXY COATED AND LINED THROUGH M.H.

LASER FLOW METER IN MANHOLE DETAIL
NOT TO SCALE

BURNS McDONNELL

date	detailed
MARCH 2018	C. SEDNEK
designed	checked
A. BEESON	J. SCHAEFER

Brighton COLORADO
Adams County, Colorado

ERGER'S POND
PROCESS DETAILS II

project	contract
86381	

drawing **D501** — rev. **0**

sheet 55 of 77 sheets
file

COLORADO REGISTERED ANTHONY C. BEESON 40811 PROFESSIONAL ENGINEER
3/23/18

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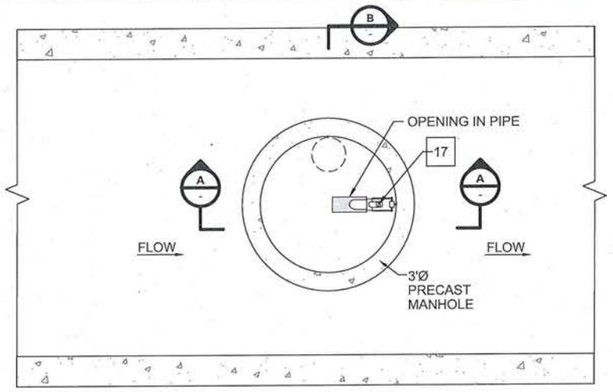
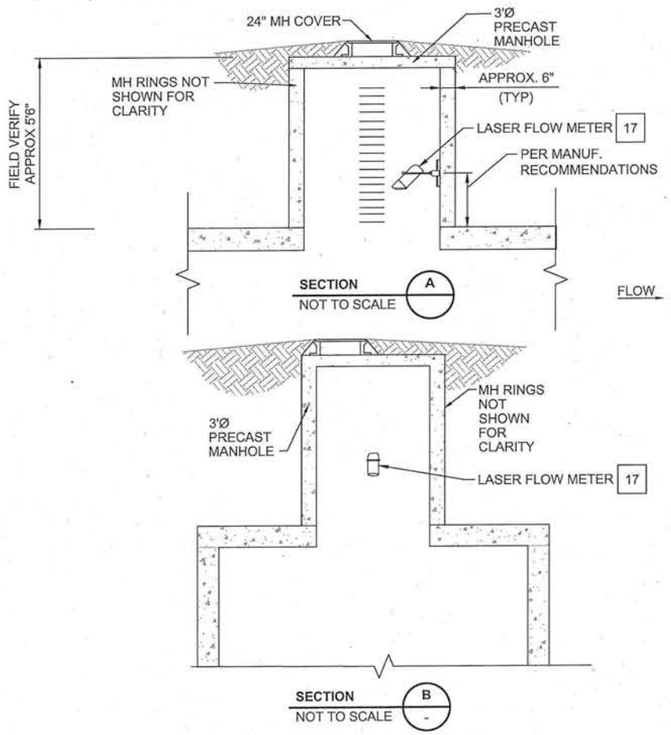
Scale For Microfilming: Millimeters / Inches



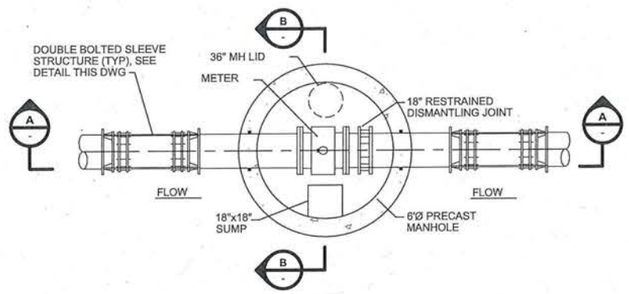
NEW LASER FLOW METER MH ABOVE CULVERT PLAN
NOT TO SCALE



NOTES:

1. PROVIDE MANHOLE STEPS AT 12" ON CENTER AS MANUFACTURED BY MA INDUSTRIES, MODEL PS2-F OR EQUAL.
2. MANHOLE SHALL CONFORM TO THE CITY OF BRIGHTON STANDARDS AND SPECIFICATIONS.
3. APPLY COAL TAR COATING TO EXTERIOR WALLS FROM BASE TO FINISHED GRADE IN TWO COATS WITH A MINIMUM DRY THICKNESS OF 12 MILS PER COAT. COATING SHALL BE AS MANUFACTURED BY CARBOLINE BITUMASTIC 300M OR EQUAL.
4. TONGUE AND GROOVED JOINTS SHALL BE SEALED WITH REM-NEK PREFORMED FLEXIBLE JOINT SEALANT (OR EQUAL) WITH EXTERNAL CONWRAP CS-212 JOINT SEALANT WRAP (OR EQUAL).
5. PRECAST CONCRETE SECTIONS SHALL CONFORM TO ASTM C478.
6. M.H. SHALL BE DESIGNED AND STAMPED BY 5X5 FT CULVERT MANUFACTURER. M.H. TO CULVERT CONNECTIONS SHALL BE SIGNED AND STAMPED BY5X5 FT CULVERT MANUFACTURER.

LASER FLOW METER IN MANHOLE DETAIL
NOT TO SCALE



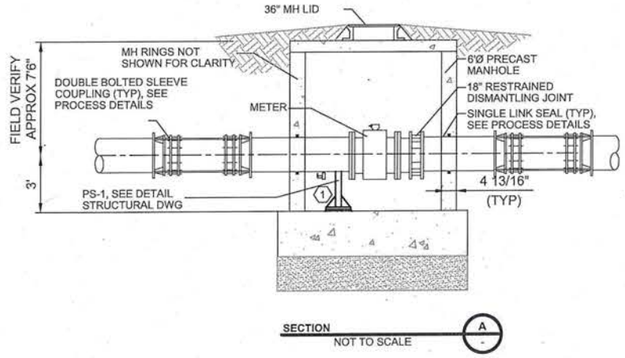
NEW PLUG VALVE MH PLAN
NOT TO SCALE

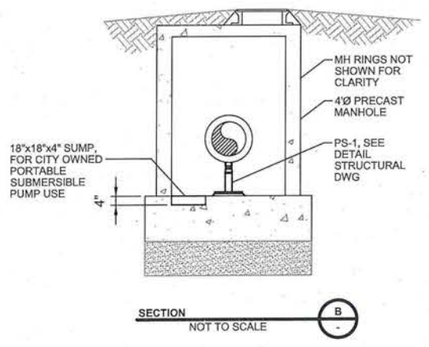
NOTES:

1. SLOPE MANHOLE FLOOR TO ALLOW WATER TO DRAIN INTO SUMP.
2. PROVIDE 18" OF CDOT CLASS I AGGREGATE AS SUBGRADE.
3. COAT INTERIOR PIPING WITH TNEMEC N140 SYSTEM OR EQUAL.
4. PROVIDE MANHOLE STEPS AT 12" ON CENTER AS MANUFACTURED BY MA INDUSTRIES, MODEL PS2-F OR EQUAL.
5. MANHOLE SHALL CONFORM TO THE CITY OF BRIGHTON STANDARDS AND SPECIFICATIONS.
6. APPLY COAL TAR COATING TO EXTERIOR WALLS FROM BASE TO FINISHED GRADE IN TWO COATS WITH A MINIMUM DRY THICKNESS OF 12 MILS PER COAT. COATING SHALL BE AS MANUFACTURED BY CARBOLINE BITUMASTIC 300M OR EQUAL.
7. TONGUE AND GROOVED JOINTS SHALL BE SEALED WITH REM-NEK PREFORMED FLEXIBLE JOINT SEALANT (OR EQUAL) WITH EXTERNAL CONWRAP CS-212 JOINT SEALANT WRAP (OR EQUAL).
8. PRECAST CONCRETE SECTIONS SHALL CONFORM TO ASTM C478.
9. MANHOLE MANUFACTURER SHALL COORDINATE WALL THICKNESS WITH LINK-SEAL MANUFACTURER.
10. PROVIDE INSULATING COUPLINGS ON METER FLANGES.
11. ALL DIP COATINGS SHALL BE EPOXY COATED AND LINED THROUGH M.H.

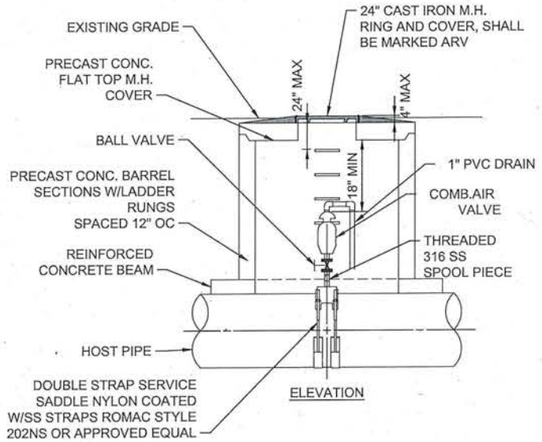
KEYED NOTES:

(1) FACTORY INSTALLED 2" THREADED CONNECTION/TAPPED BOSS, STEMMING FROM DIP. CONNECTION PIPE SHALL BE STAINLESS STEEL AND VALVE SHALL BE BRONZE, RATED FOR 150 PSI SERVICE. COUPLINGS OR UNIONS SHALL BE INSULATED STYLE. BALL VALVE SHALL BE APOLLO 32-100 SERIES THREADED CONNECTION, PORT VALVE WITH LEVER OR SIMILAR. (TYP 2)





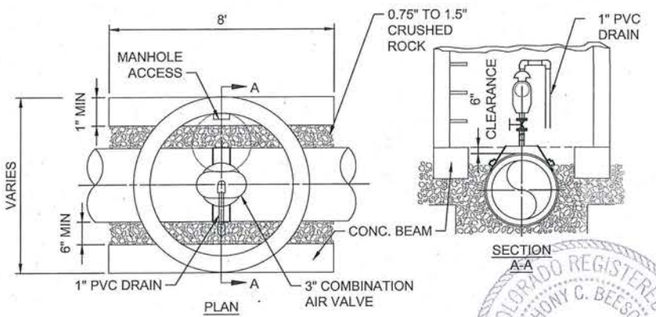
FLOW METER IN MANHOLE DETAIL
NOT TO SCALE



NOTES:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF VAULT LAYOUT AND FITTINGS FOR APPROVAL.
2. COMBINATION AIR VALVE SIZES ARE LISTED ON THE CONTROL POINT SCHEDULE SEE D005 AND D007.
3. FOR APPROVED MANUFACTURER'S AND MODEL NUMBERS OF FITTINGS, REFER TO SPECIFICATIONS.
4. ISOLATION VALVES SHALL BE BALL STYLE WITH HAND LEVER AND SHALL BE THREADED OR FLANGED, AS APPROVED.
5. STRUCTURE SHALL BE H20 LOAD RATED.

HOST PIPE SIZE	MH ID
12" AND SMALLER	4'-0"
14" TO 24"	5'-0"
30" TO 36"	6'-0"
42" TO 48"	7'-0"
54" AND LARGER	AS APPROVED BY ENGINEER



COMBINATION AIR VALVE ASSEMBLY
NOT TO SCALE

no.	date	by	ckd	description
0	3/23/18	AB	JS	ISSUED FOR CONSTRUCTION

BURNS McDONNELL

date: MARCH 2018	detailed: C. SEDNEK
designed: A. BEESON	checked: J. SCHAEFER

Brighton COLORADO

ERGER'S POND
Adams County, Colorado

PROCESS DETAILS III

project: 86381 | contract:

drawing: **D502** | rev.: **0**

sheet 56 of 77 sheets

file

COLORADO REGISTERED ANTHONY C. BEESON 0037... PROFESSIONAL ENGINEER
3/23/18

Scale For Microfilming: Millimeters / Inches

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LIGHT FIXTURE SYMBOLS

- CEILING OR SURFACE MOUNTED FIXTURE
- RECESSED FIXTURE
- WALL MOUNTED FIXTURE
- SURFACE MOUNTED BATTERY PACK, LIGHT
- SINGLE FACE EXIT LIGHT, ARROW DENOTES DIRECTION OF EGRESS, NO ARROW DENOTES NO EGRESS DIRECTION
- DOUBLE FACE EXIT LIGHT, ARROW DENOTES DIRECTION OF EGRESS, NO ARROW DENOTES NO EGRESS DIRECTION
- POLE MOUNTED AREA LIGHT
- SURFACE OR PENDANT FLUORESCENT FIXTURE
- OS — SURFACE OR PENDANT FLUORESCENT FIXTURE W/ OCCUPANCY SENSOR
- R — RECESSED FLUORESCENT FIXTURE
- SURFACE OR PENDANT EMERGENCY FLUORESCENT FIXTURE WITH BATTERY BALLAST
- R — RECESSED EMERGENCY FLUORESCENT FIXTURE WITH BATTERY BALLAST

GROUNDING SYMBOLS

- GROUNDING ROD
- GROUNDING TEST WELL
- B — BARE COPPER GROUND CONDUCTOR (COUNTERPOISE)
- EXOTHERMIC WELD FROM CONNECTION
- EXOTHERMIC WELD FROM COUNTERPOISE TO STRUCTURAL STEEL

SYMBOL MODIFIERS

E	EXISTING
EP	EXPLOSION PROOF
G	GROUNDED
N	NEW
WP	WEATHERPROOF

PLAN SYMBOLS

- DUPLEX RECEPTACLE, NEMA 5-20R, 18" AFF UON
- DUPLEX RECEPTACLE, NEMA 5-20R, WITH GND FAULT CKT INTERRUPTER, 18" AFF UON
- X — SINGLE SPECIAL PURPOSE RECEPTACLE, "X" INDICATES NEMA STYLE IN SCHEDULE
- QUADRUPLEX RECEPTACLE, NEMA 5-20R, 18" AFF UON
- MULTIOUTLET ASSEMBLY, SURFACE MOUNTED, NEMA 5-15R RECEPTACLES ON "X" INCH CENTERS — X IN
- J — JUNCTION BOX
- PB — PUSHBUTTON STATION "OPEN," "CLOSE," "STOP." NEMA 13
- DISCONNECT SWITCH, SURFACE MOUNTED
- MOTOR CONTROLLER
- COMBINATION MOTOR STARTER, SURFACE MOUNTED
- PANELBOARD, SURFACE MOUNTED
- H — HANDHOLE
- M — MANHOLE
- CONDUIT AND WIRING ENTERING/LEAVING EQUIPMENT, OR CONDUIT TURNING UP OR DOWN
- X — KEYED NOTE, "X" INDICATES KEYED NOTE NUMBER
- S — WALL SWITCH, 20A, 120/277V RATED, (AC ONLY), SINGLE POLE SINGLE THROW, MOUNT 46" AFF UON
- S_3 — WALL SWITCH, 20A, 120/277V RATED, (AC ONLY), THREE WAY (SINGLE POLE DOUBLE THROW), MOUNT 46" AFF UON
- S_M — MOTOR RATED SWITCH WITH THERMAL OVERLOADS
- PC — INTEGRAL PHOTOELECTRIC CELL AND RELAY (PHOTOCONTROL)
- OS — INTEGRAL OCCUPANCY SENSOR AND RELAY
- TELEPHONE OUTLET, SURFACE MOUNTED 60" AFF UON
- TELEPHONE OUTLET, RECESSED MOUNTED 18" AFF UON
- DATA PORT, RECESSED MOUNTED 18" AFF UON
- M — MOTOR
- LC — LIGHTING CONTACTOR
- X — WIRING RUN CONCEALED IN CEILING OR WALL. CONDUCTOR SIZES ARE NOTED IN THE PANEL SCHEDULES. ARROWHEAD DENOTES HOMERUN. "X" INDICATES PANEL NAME AND CIRCUIT NUMBER. ALL CONDUITS SHALL HAVE A GREEN EQUIPMENT GROUNDING CONDUCTOR
- X — SAME AS ABOVE EXCEPT EXPOSED IN CEILING OR ON WALL
- X — SAME AS ABOVE EXCEPT CONCEALED IN FLOOR
- C — FEEDER AND/OR CIRCUIT IDENTIFIER SYMBOL. SEE SCHEDULE FOR WIRE AND CONDUIT SIZES
- X-Y — UNDERGROUND CONDUIT AND CONDUCTORS. CONDUIT QUANTITY SHOWN IN POSITION "X". CONDUIT SIZE SHOWN IN POSITION "Y". CONDUCTOR SIZE AND QUANTITY AS SHOWN
- CONDUIT AND WIRING CONTINUATION
- DRY TYPE TRANSFORMER
- T — PAD MOUNTED OIL FILLED TRANSFORMER
- EM — EMERGENCY MANUAL ALARM PUSH BUTTON

ONE-LINE AND SCHEMATIC SYMBOLS

- C — CONTROL RELAY COIL
- M — MOTOR STARTER COIL
- NORMALLY OPEN CONTACT
- NORMALLY CLOSED OR OVERLOAD CONTACT
- CONNECTED CONDUCTORS
- PRESSURE SWITCH (N.C.) (OPENS ON PRESSURE RISE)
- PRESSURE SWITCH (N.C.) (OPENS ON PRESSURE DROP)
- TEMPERATURE SWITCH (N.C.) (OPENS ON TEMPERATURE DROP)
- OPEN SWITCH WITH TIME DELAY CLOSING
- OPEN SWITCH WITH TIME DELAY OPENING
- 1200AS / 3P — DISCONNECT SWITCH, NON-FUSED, LOAD BREAK, "1200A, 3P" INDICATES A "1200 AMPS, 3 POLE SWITCH"
- DISCONNECT SWITCH, FUSED, LOAD BREAK, FUSE AMPERE RATING (NUMERAL) AND U.L. CLASS SHOWN NEXT TO SYMBOL
- FUSE, AMPERE RATING (NUMERAL) AND U.L. CLASS SHOWN NEXT TO SYMBOL
- MOTOR THERMAL OVERLOAD PROTECTOR
- INTEGRAL PHOTOELECTRIC CELL AND RELAY (PHOTOCONTROL)
- CAPACITOR
- WH — WATTHOUR METER WITH DEMAND REGISTER
- L / R — LOCAL-OFF-REMOTE SELECTOR SWITCH
- H / O / A — HAND-OFF-AUTO SELECTOR SWITCH
- XX — PLC INPUT/OUTPUT, WHERE XX=DO IS DIGITAL OUTPUT, AND XX=DI IS DIGITAL INPUT
- ETM — ELAPSED TIME METER
- XXX — CONTACTOR COIL

HEAVY LINE INDICATES WIRING REMOTE FROM DEVICE.

- PUSHBUTTON-NORMALLY OPEN-MOMENTARY
- PUSHBUTTON-NORMALLY CLOSED-MOMENTARY
- LIGHTNING ARRESTER
- G — ENGINE-GENERATOR
- INTERLOCK SYSTEM

ONE-LINE & SCHEMATIC SYMBOLS

- POWER TRANSFORMER, kVA RATING, WINDING VOLTAGES, AND CONNECTIONS ARE SHOWN NEXT TO SYMBOL
- PT — POTENTIAL TRANSFORMER, CONNECTIONS AS SHOWN
- CTS — CURRENT TRANSFORMER
- CT — CORE BALANCED CURRENT TRANSFORMER
- GROUNDING CONNECTION. WHEN USED WITH TRANSFORMER WINDING SYMBOL IT DENOTES A NEUTRAL GROUNDING CONNECTION (ON SECONDARY SIDE ONLY)
- GROUNDING WYE WINDING CONNECTION
- DELTA WINDING CONNECTION
- RELAY OR CONTACTOR CONTACTS
- SEPARABLE CONNECTOR OR CONNECTION FOR DRAWOUT ASSEMBLIES
- CONDUCTOR CONNECTION
- 1200A / 3P / LSIG — CIRCUIT BREAKER , MOLDED CASE, TRIP CURRENT (A) AND QUANTITY OF POLES (P) SHOWN. LSIG DENOTES:
  - L - LONGTIME
  - S - SHORT TIME
  - I - INSTANTANEOUS
  - G - GROUND

GENERAL NOTES:

1. EQUIPMENT FAULT CURRENT RATINGS INDICATED ARE BASED ON UTILITY TRANSFORMER IMPEDANCE NOTED ON ONE-LINE DIAGRAM. NOTIFY ENGINEER IMMEDIATELY IF ACTUAL TRANSFORMER IMPEDANCE IS DIFFERENT THAN INDICATED.
2. NEW EQUIPMENT AND CIRCUITING SHOWN WITH DARK LINE WEIGHT. EXISTING EQUIPMENT AND CIRCUITING SHOWN WITH LIGHT LINE WEIGHT.

NEMA AREA TYPES DEFINED PER
3. CURRENT REVISION OF NEMA 250.

ONE-LINE & SCHEMATIC SYMBOLS CONT.

- (A) (B) — (A) LIMIT SWITCH-NORMALLY CLOSED (B) LIMIT SWITCH-NORMALLY CLOSED-HELD OPEN
- (A) (B) — (A) LIMIT SWITCH-NORMALLY OPEN (B) LIMIT SWITCH-NORMALLY OPEN-HELD CLOSED
- (A) (B) — (A) FLOW ACTUATED SWITCH-OPENING ON INCREASE IN FLOW (B) FLOW ACTUATED SWITCH-CLOSING ON INCREASE IN FLOW
- (A) (B) — (A) TEMPERATURE ACTUATED SWITCH-OPENING ON RISING TEMPERATURE (B) TEMPERATURE ACTUATED SWITCH-CLOSING ON RISING TEMPERATURE
- (A) (B) — PRESSURE OR VACUUM ACTUATED SWITCH (A) OPENING ON RISING PRESSURE (B) CLOSING ON RISING PRESSURE
- (A) (B) — LIQUID LEVEL ACTUATED SWITCH (A) OPENING ON RISING LEVEL (B) CLOSING ON RISING LEVEL
- (A) (B) — (A) CLOSED SWITCH WITH TIME DELAY OPENING (TDO) AFTER ENERGIZATION (B) OPEN SWITCH WITH TIME DELAY CLOSING (TDC) AFTER ENERGIZATION
- (A) (B) — (A) CLOSED SWITCH WITH TIME DELAY CLOSING (TDC) AFTER DE-ENERGIZATION (B) OPEN SWITCH WITH TIME DELAY OPENING (TDO) AFTER DE-ENERGIZATION
- EQUIPMENT ENCLOSURE
- XXXHP — MOTOR, XXX DENOTES MOTOR HP
- X — INDICATING LIGHT, X DENOTES COLOR

R-RED	A-AMBER
G-GREEN	W-WHITE
B-BLUE	O-ORANGE

- DMS — DIGITAL METERING SYSTEM
- PM — PHASE MONITOR
- VFD — VARIABLE FREQUENCY DRIVE
- SPD — SURGE PROTECTIVE DEVICE
- HCU — HARMONIC CORRECTION UNIT
- TORQUE SWITCH
- SOLENOID VALVE
- N / E / L — AUTOMATIC TRANSFER SWITCH WITH BYPASS ISOLATION
- LINE REACTOR
- ANTENNA

ABBREVIATIONS

A	AMPERES
AC	ALTERNATING CURRENT
AF	AMPS FRAME
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
A.I.C.	AMPERE INTERRUPTING CAPACITY
AMPS	AMPERES
AS	AMPS SYMMETRICAL
AT	AMPS TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
AWG	AMERICAN WIRE GAGE
C	CONDUIT
CALC	CALCULATED
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CL	CURRENT LIMITING
CS	CONE SCREEN
CP	CONTROL PANEL
DC	DIRECT CURRENT
DS	DISCONNECT SWITCH
DV	DISCHARGE VALVE
EA	EACH
EF	EXHAUST FAN
EPPS	ERGER'S POND POND SIDE
EPRS	ERGER'S POND RIVER SIDE
PV	PLUG VALVE
SP	SUBMERSIBLE PUMP
WG	WEIR GATE

ABBREVIATIONS (CONT'D)

EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
EXT	EXTERIOR
FLA	FULL LOAD AMPS
FMC	FLEXIBLE METAL CONDUIT
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
GRC	GALVANIZED RIGID STEEL CONDUIT
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HZ	HERTZ
ISC	INTERRUPTING SHORT CIRCUIT
JBOX	JUNCTION BOX
kVA	KILOVOLT AMPERES
kV	KILOVOLTS
kWH	KILOWATT HOURS
LC	LIGHTING CONTACTOR
L-L	LINE-TO-LINE
L-N	LINE-TO-NEUTRAL
LTG	LIGHTING
MCC	MOTOR CONTROL CENTER
MD	MOTORIZED DAMPER
MH	METAL HALIDE
MFR	MANUFACTURER
MIN	MINIMUM
MTD	MOUNTED
MTG	MOUNTING
N.C.	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NEUT	NEUTRAL
NF	NON-FUSED
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE
OD	OVERHEAD DOOR
OH	OVERHEAD
OL	OVER LOAD
P	POLE
PE	PHOTOELECTRIC
PLC	PROGRAMMABLE LOGIC CONTROLLER
PH	PHASE
PM	PHASE MONITOR
PNL	PANELBOARD
PRI	PRIMARY
PVC	POLYVINYL CHLORIDE
RECPT	RECEPTACLE
REQ'D	REQUIRED
RGS	RIGID GALVANIZED STEEL
RTU	ROOF TOP UNIT
RVSS	REDUCED VOLTAGE SOLID STATE
SEC	SECONDARY
SPACE	SPACE ONLY (NO BREAKER)
SPARE	SPARE BREAKER
SPECS	CONTRACT SPECIFICATIONS
SS	SOLID STATE
SWBD	SWITCHBOARD
SYM.	SYMMETRICAL
T-STAT	THERMOSTAT
TSP	TWISTED SHIELDED PAIR
TYP	TYPICAL
U.L.	UNDERWRITER'S LABORATORIES
UON	UNLESS OTHERWISE NOTED
V	VOLTS
VA	VOLT-AMPERES
VFD	VARIABLE FREQUENCY DRIVE
W	WATTS
WH	WATER HEATER
WP	WEATHERPROOF
W/	WITH
1/C	SINGLE CONDUCTOR CABLE
Ø	PHASE
+	USED WITH A NUMERAL WHICH DENOTES HEIGHT OF ITEM ABOVE FINISHED FLOOR LEVEL

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COLORADO LICENSED — SCOTT D. SPARROW — 0047762 — 3/23/18 — PROFESSIONAL ENGINEER

BURNS McDONNELL

date: MARCH 2018	detailed: P. HUNTZINGER
designed: A. O'DONNELL	checked: K. SPARROW

Brighton COLORADO

Adams County, Colorado

ERGER'S POND

ELECTRICAL GENERAL NOTES ABBREVIATION AND LEGEND

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Millimeters / Inches — Scale For Microfilming

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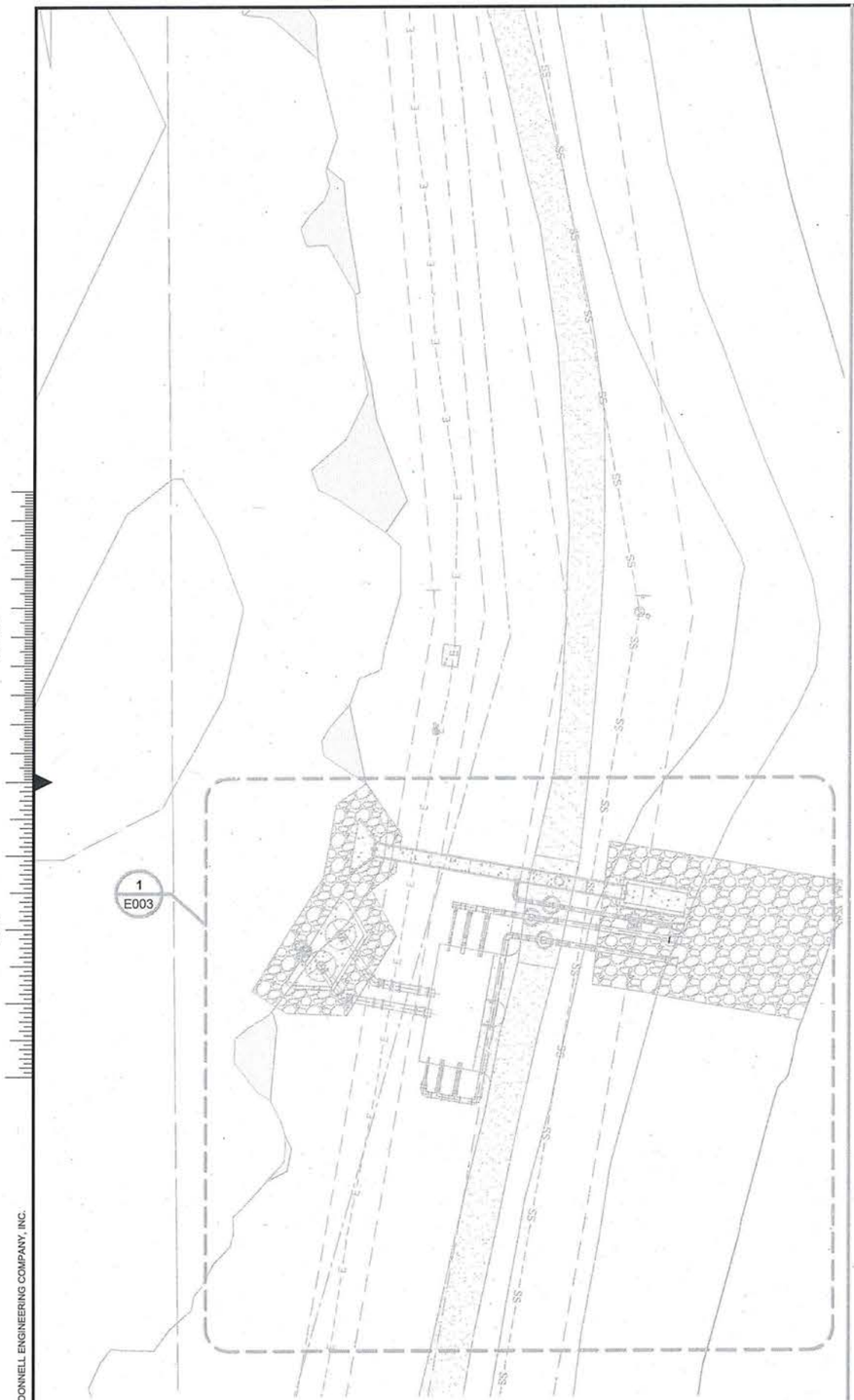
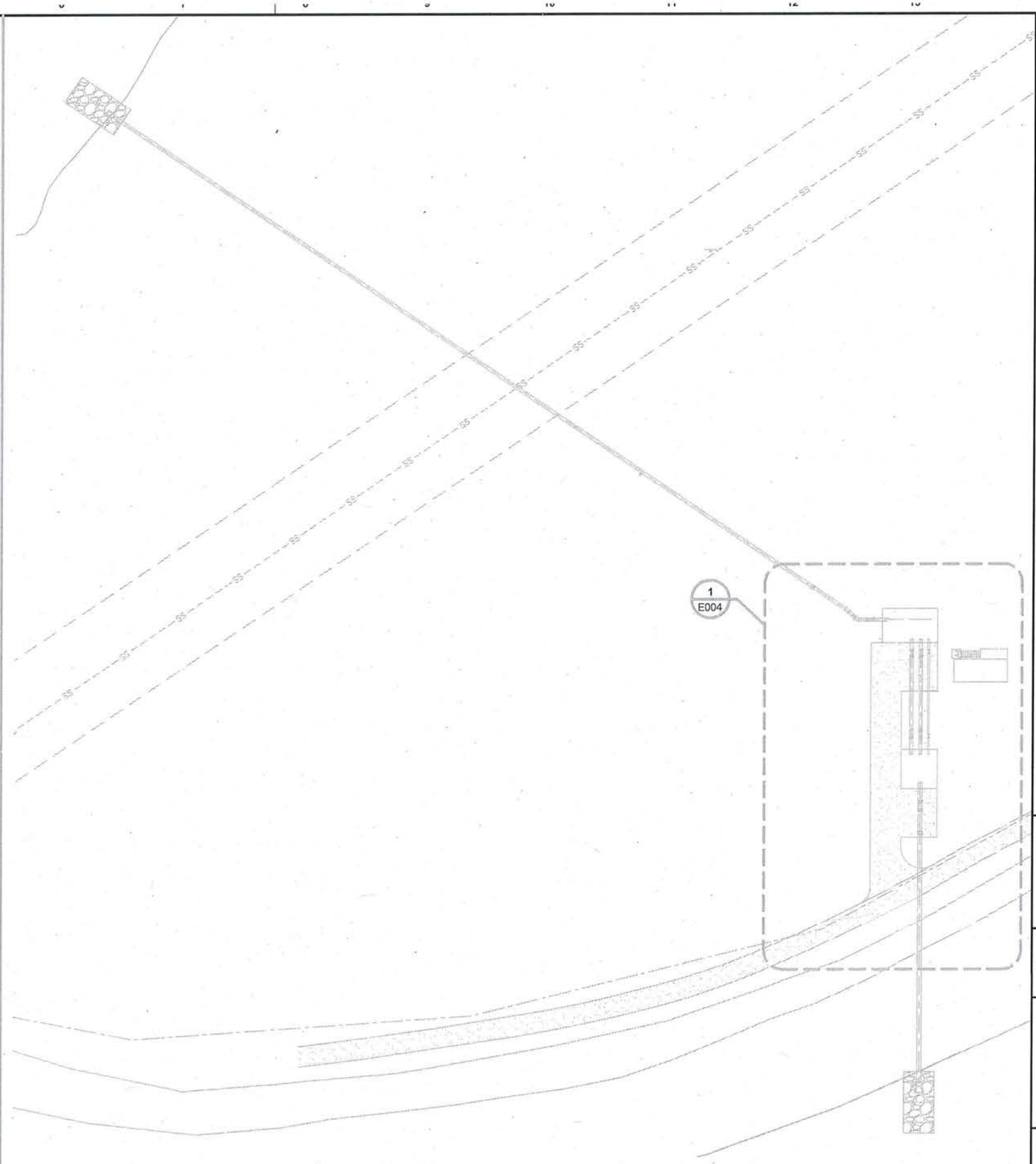


OVERALL RIVER SIDE ELECTRICAL SITE PLAN

0 30' 60'
SCALE IN FEET

NORTH



OVERALL POND SIDE ELECTRICAL SITE PLAN

0 30' 60'
SCALE IN FEET

NORTH

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COLORADO LICENSED
KEVIN SCOTT SPARROW
0047762
3/23/18
PROFESSIONAL ENGINEER

BURNS McDONNELL

date	detailed
MARCH 2018	P. HUNTZINGER
designed	checked
A. O'DONNELL	K. SPARROW

Brighton COLORADO

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ERGER'S POND
OVERALL ELECTRICAL SITE PLANS

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86381	CONTRACT
drawing	rev.
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Millimeters
Inches
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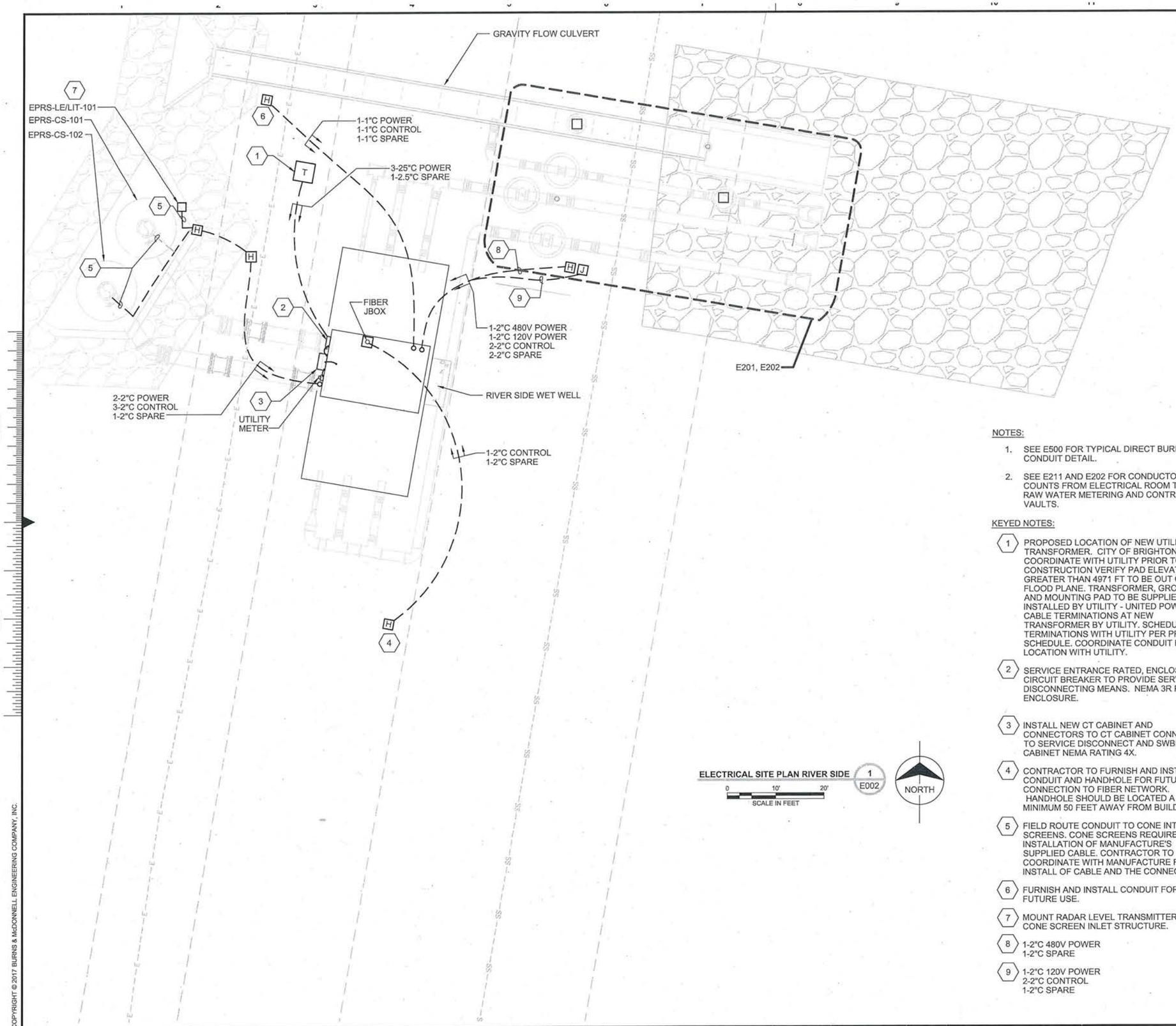

ELECTRICAL SITE PLAN RIVER SIDE 1 E002

0 10' 20'
SCALE IN FEET

NORTH

NOTES:

1. SEE E500 FOR TYPICAL DIRECT BURIED CONDUIT DETAIL.
2. SEE E211 AND E202 FOR CONDUCTOR COUNTS FROM ELECTRICAL ROOM TO RAW WATER METERING AND CONTROL VAULTS.

KEYED NOTES:

1. PROPOSED LOCATION OF NEW UTILITY TRANSFORMER. CITY OF BRIGHTON TO COORDINATE WITH UTILITY PRIOR TO CONSTRUCTION VERIFY PAD ELEVATION IS GREATER THAN 4971 FT TO BE OUT OF THE FLOOD PLANE. TRANSFORMER, GROUNDING AND MOUNTING PAD TO BE SUPPLIED AND INSTALLED BY UTILITY - UNITED POWER. CABLE TERMINATIONS AT NEW TRANSFORMER BY UTILITY. SCHEDULE TERMINATIONS WITH UTILITY PER PROJECT SCHEDULE. COORDINATE CONDUIT ENTRY LOCATION WITH UTILITY.
2. SERVICE ENTRANCE RATED, ENCLOSED CIRCUIT BREAKER TO PROVIDE SERVICE DISCONNECTING MEANS. NEMA 3R RATED ENCLOSURE.
3. INSTALL NEW CT CABINET AND CONNECTORS TO CT CABINET CONNECTS TO SERVICE DISCONNECT AND SWBD-1. CT CABINET NEMA RATING 4X.
4. CONTRACTOR TO FURNISH AND INSTALL CONDUIT AND HANDHOLE FOR FUTURE CONNECTION TO FIBER NETWORK. HANDHOLE SHOULD BE LOCATED A MINIMUM 50 FEET AWAY FROM BUILDING.
5. FIELD ROUTE CONDUIT TO CONE INTAKE SCREENS. CONE SCREENS REQUIRE FIELD INSTALLATION OF MANUFACTURE'S SUPPLIED CABLE. CONTRACTOR TO COORDINATE WITH MANUFACTURE FOR INSTALL OF CABLE AND THE CONNECTIONS.
6. FURNISH AND INSTALL CONDUIT FOR FUTURE USE.
7. MOUNT RADAR LEVEL TRANSMITTER TO CONE SCREEN INLET STRUCTURE.
8. 1-2"C 480V POWER
   1-2"C SPARE
9. 1-2"C 120V POWER
   2-2"C CONTROL
   1-2"C SPARE

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0047762
3/23/18
PROFESSIONAL ENGINEER

BURNS McDONNELL

date	detailed
MARCH 2018	P. HUNTZINGER
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Adams County, Colorado

ERGER'S POND
ELECTRICAL SITE PLAN RIVER SIDE

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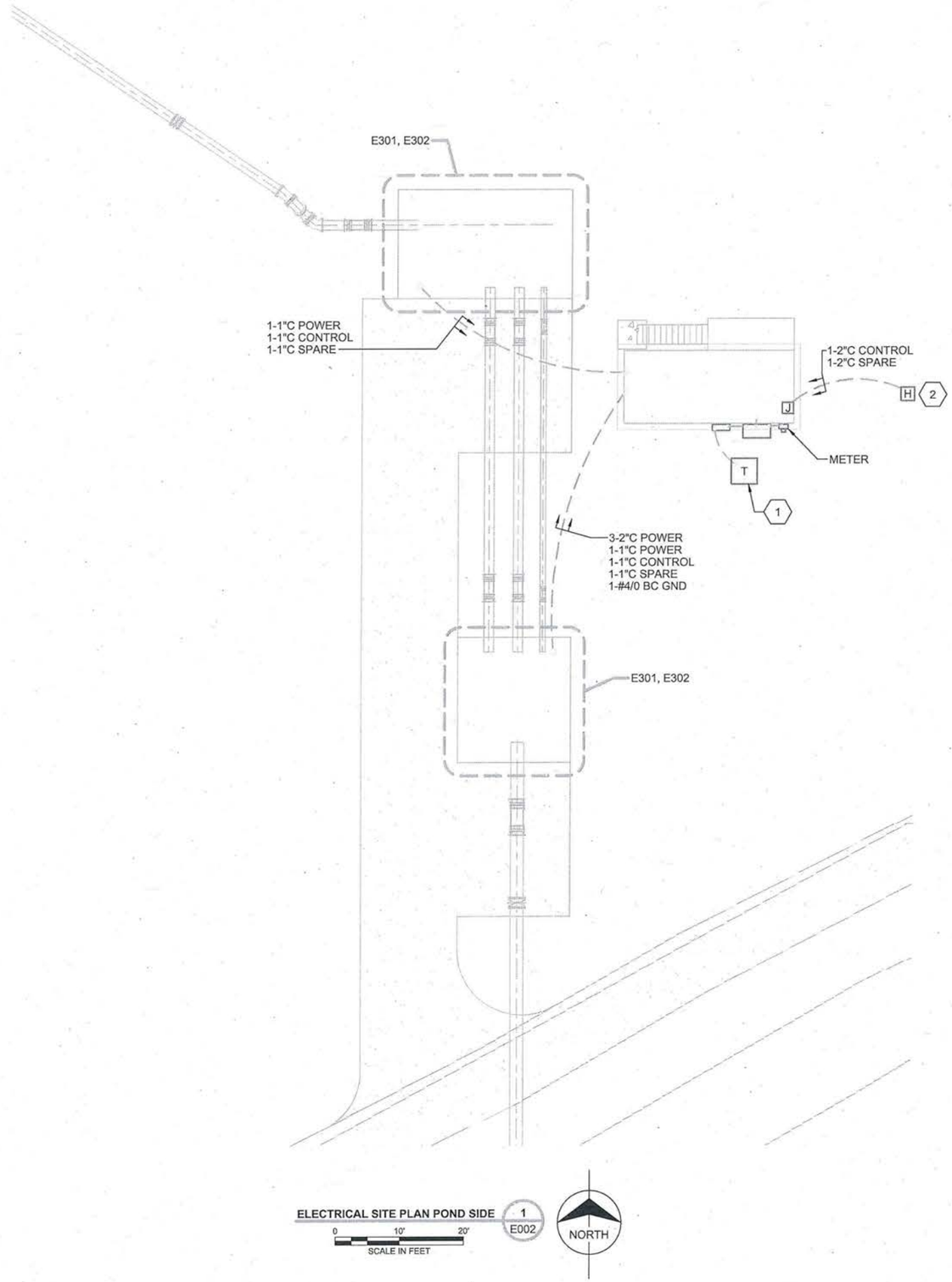

ELECTRICAL SITE PLAN POND SIDE 1 E002

0 10' 20'

SCALE IN FEET

NORTH

NOTES:

1. SEE E500 FOR TYPICAL DIRECT BURIED CONDUIT DETAIL.
2. SEE E301 AND E302 FOR CONDUCTOR COUNTS FROM ELECTRICAL ROOM TO PUMP VAULT AND METER VAULT.

KEYES NOTES:

1. PROPOSED LOCATION OF NEW UTILITY TRANSFORMER. CITY OF BRIGHTON TO COORDINATE WITH UTILITY PRIOR TO CONSTRUCTION VERIFY PAD ELEVATION IS GREATER THAN 4971 FT TO BE OUT OF THE FLOOD PLANE. TRANSFORMER, GROUNDING AND MOUNTING PAD TO BE SUPPLIED AND INSTALLED BY UTILITY - UNITED POWER. CABLE TERMINATIONS AT NEW TRANSFORMER BY UTILITY. SCHEDULE TERMINATIONS WITH UTILITY PER PROJECT SCHEDULE. COORDINATE CONDUIT ENTRY LOCATION WITH UTILITY.
2. CONTRACTOR TO FURNISH AND INSTALL CONDUIT AND HANDHOLE FOR FUTURE CONNECTION TO FIBER NETWORK. HANDHOLE SHOULD BE LOCATED A MINIMUM 50 FEET AWAY FROM BUILDING.

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ERGER'S POND
ELECTRICAL SITE PLAN II POND SIDE

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86381	CONTRACT

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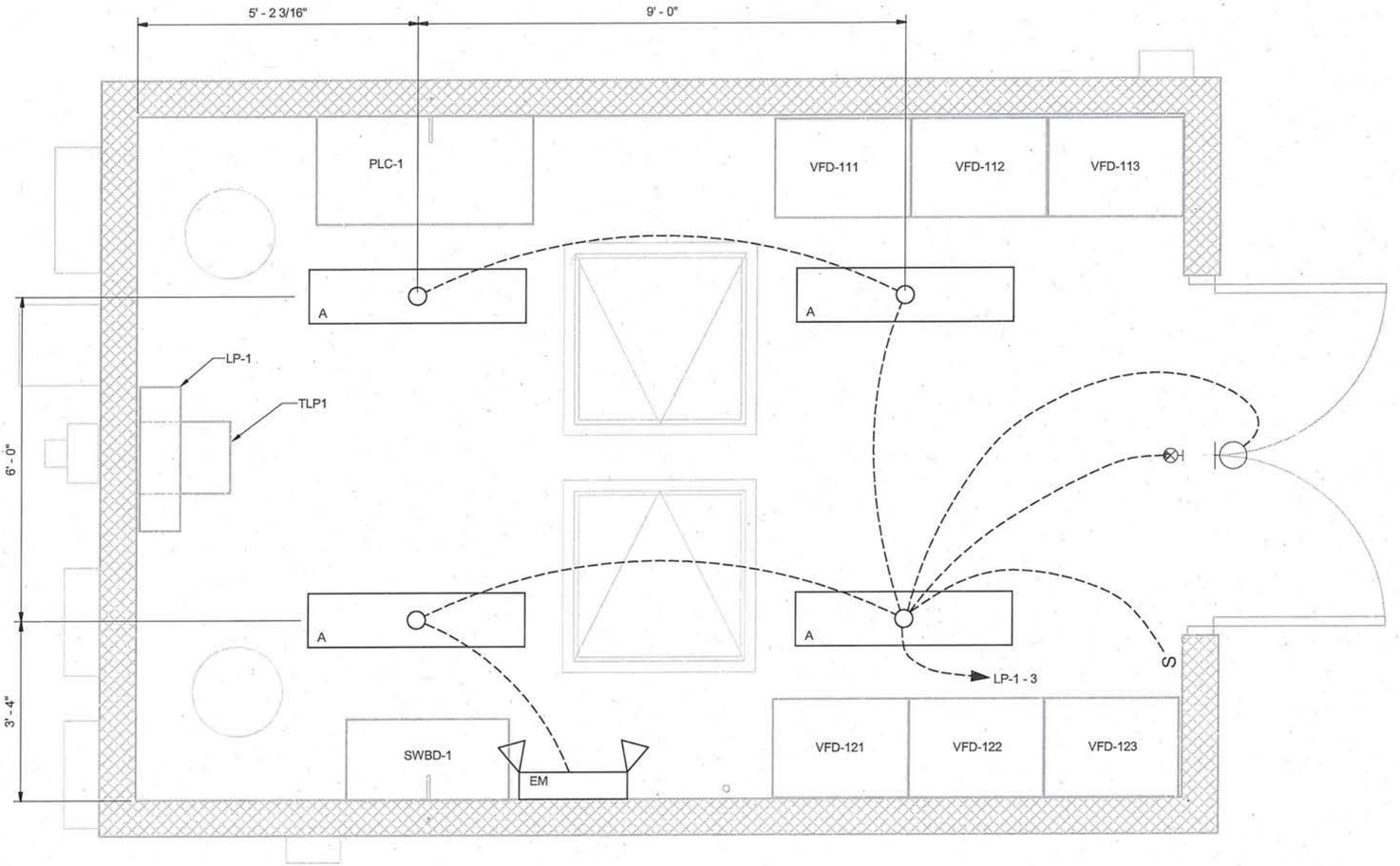

ELECTRICAL ROOM RIVER SIDE

0 1' 2' 3'

SCALE IN FEET

NORTH

LIGHT FIXTURE SCHEDULE

FIXTURE DESIGNATION	DESCRIPTION	VOLTAGE	LAMPS		MIN. CU FLOOR 20% WALL = 50%		MIN. EFF.	INPUT VA	REMARKS
			QUANT.	TYPE	RCR=2	RCR=6			
A	4' INDUSTRIAL LED STRIP FIXTURE, VAPORLITE. EATON METALUX 4VT2-LD4-6-DR-UNV-L840-CD1-U	120		LED				56	
○	RAB LIGHTING EXTERIOR FIXTURE WPLED26 WITH BATTERY PACK	120		LED				31.2	FIXTURE TO INCLUDE PHOTOCELL AND BATTERY PACK
⊗	SINGLE FACE EXIST SIGN WITH BATTERY BACKUP, LED, WET LOCATION, SELF DIAGNOSTICS, LITHONIA NO. LVSW1R120277ELNUM4X	120		LED				1	
EM	LED EMERGENCY LIGHT, LITHONIA EU2-LEDOM12	120		LED				1.8	

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ELECTRICAL LIGHTING PLAN AND LIGHT FIXTURE SCHEDULE RIVER SIDE

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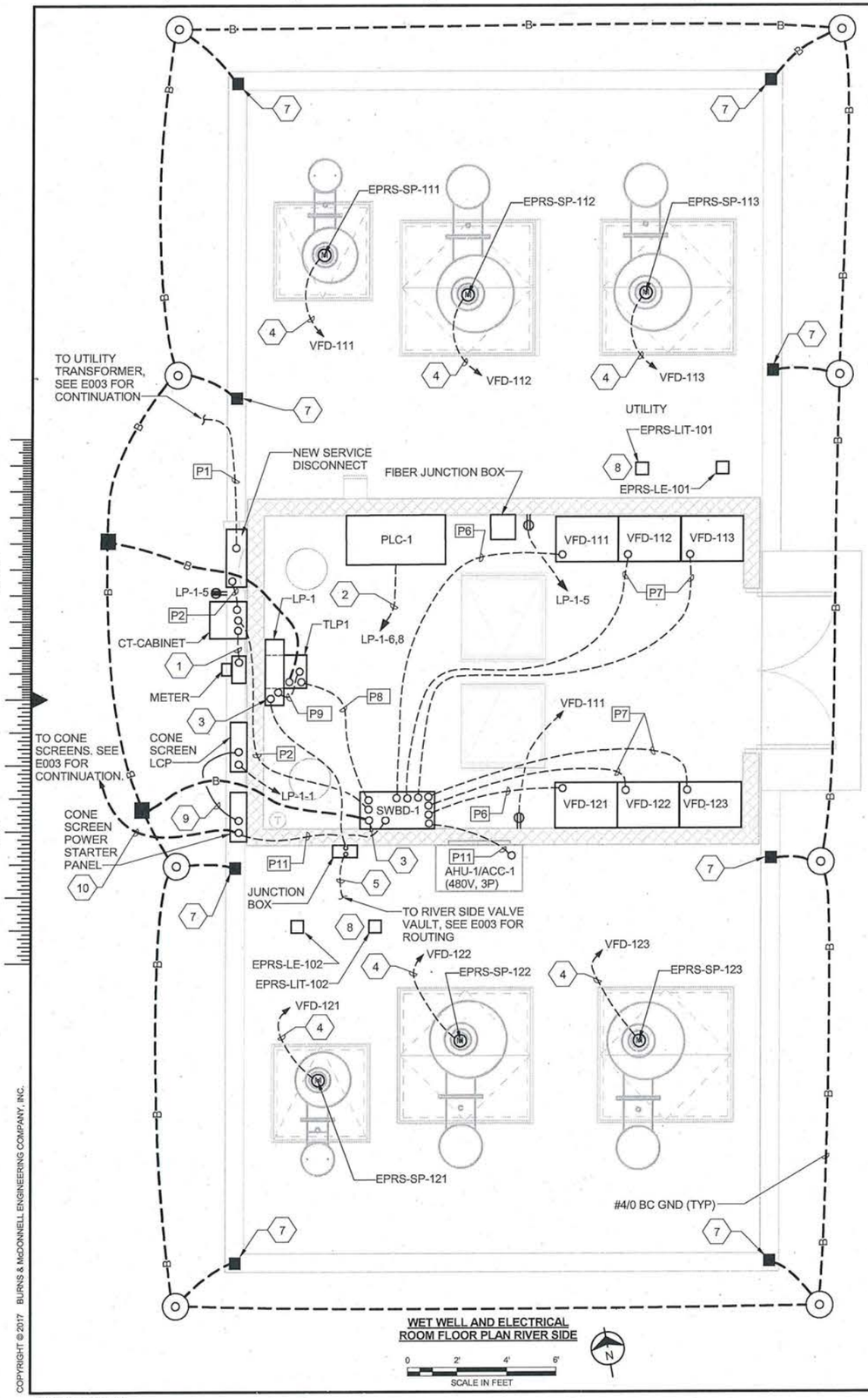
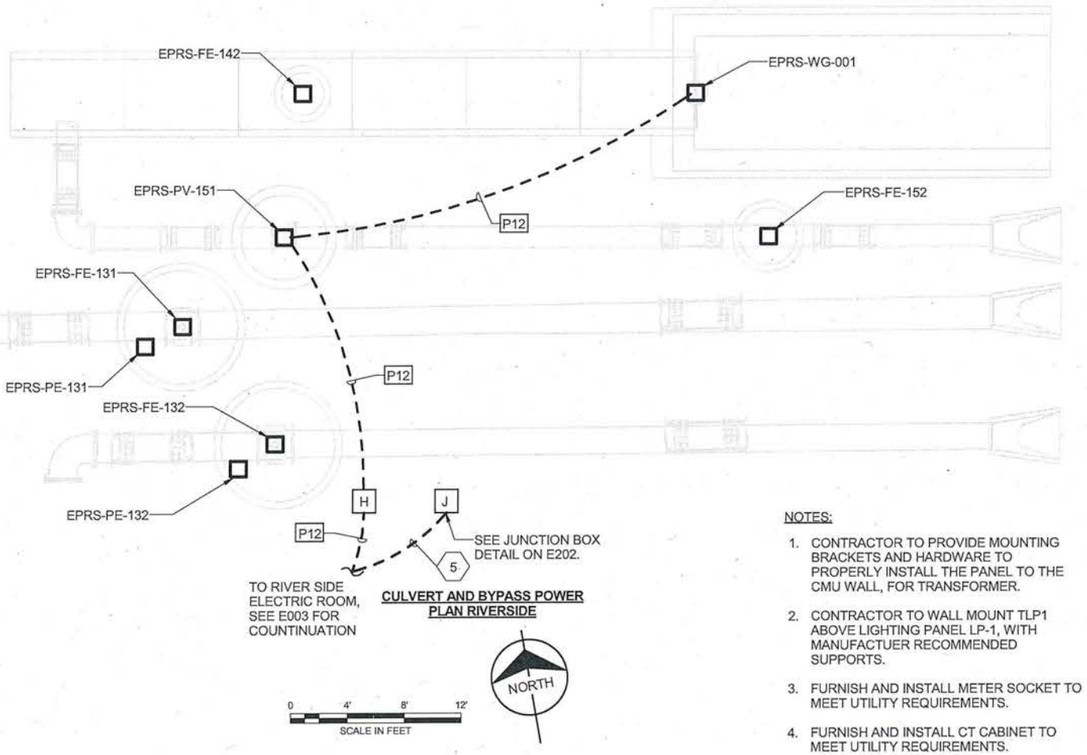


WET WELL AND ELECTRICAL ROOM FLOOR PLAN RIVER SIDE

SCALE IN FEET



CULVERT AND BYPASS POWER PLAN RIVERSIDE

NOTES:

1. CONTRACTOR TO PROVIDE MOUNTING BRACKETS AND HARDWARE TO PROPERLY INSTALL THE PANEL TO THE CMU WALL, FOR TRANSFORMER.
2. CONTRACTOR TO WALL MOUNT TLP1 ABOVE LIGHTING PANEL LP-1, WITH MANUFACTUER RECOMMENDED SUPPORTS.
3. FURNISH AND INSTALL METER SOCKET TO MEET UTILITY REQUIREMENTS.
4. FURNISH AND INSTALL CT CABINET TO MEET UTILITY REQUIREMENTS.

KEYED NOTES:

1. CONDUCTORS AND METER BY UTILITY. FURNISH AND INSTALL CONDUIT TO MEET UTILITY REQUIREMENTS.
2. SEE E203 FOR CABLE AND CONDUIT SIZE.
3. ROUTE GROUNDING CONDUCTOR EMBEDDED IN TOP CONCRETE FLOOR WITH 6' SLACK FOR CONNECTION TO EQUIPMENT.
4. MANUFACTURER SUPPLIED CABLE. CONTRACTOR TO COORDINATE CABLE LENGTH,CONDUCTOR SIZE, AND CONDUIT SIZE WITH MANUFACTURER. FURNISH AND INSTALL 2" CONDUIT AS A MINIMUM. CONTRACTOR TO COORDINATE CONDUIT SIZE WITH MANUFACTURER CABLE SIZE. IF NEEDED, CONDUIT TO BE UPSIZED AT NO ADDITIONAL COST TO CONTRACT.
5. 2-#12, #12 GND, 2" C. (LP-1-2)
6. MANUFACTURER'S CABLE, 1"C
7. CONNECT GROUND GRID TO BOTTOM MAT OF STRUCTURAL STEEL (REBAR).
8. FIELD RACK MOUNT TRANSMITTER, SEE RACK DETAIL ON E300.
9. 4-#12, #12 GND, 1"C
10. 2 SETS (MANUFACTURER'S CALBE, 2"C)

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ERGER'S POND

ELECTRICAL POWER PLAN RIVER SIDE

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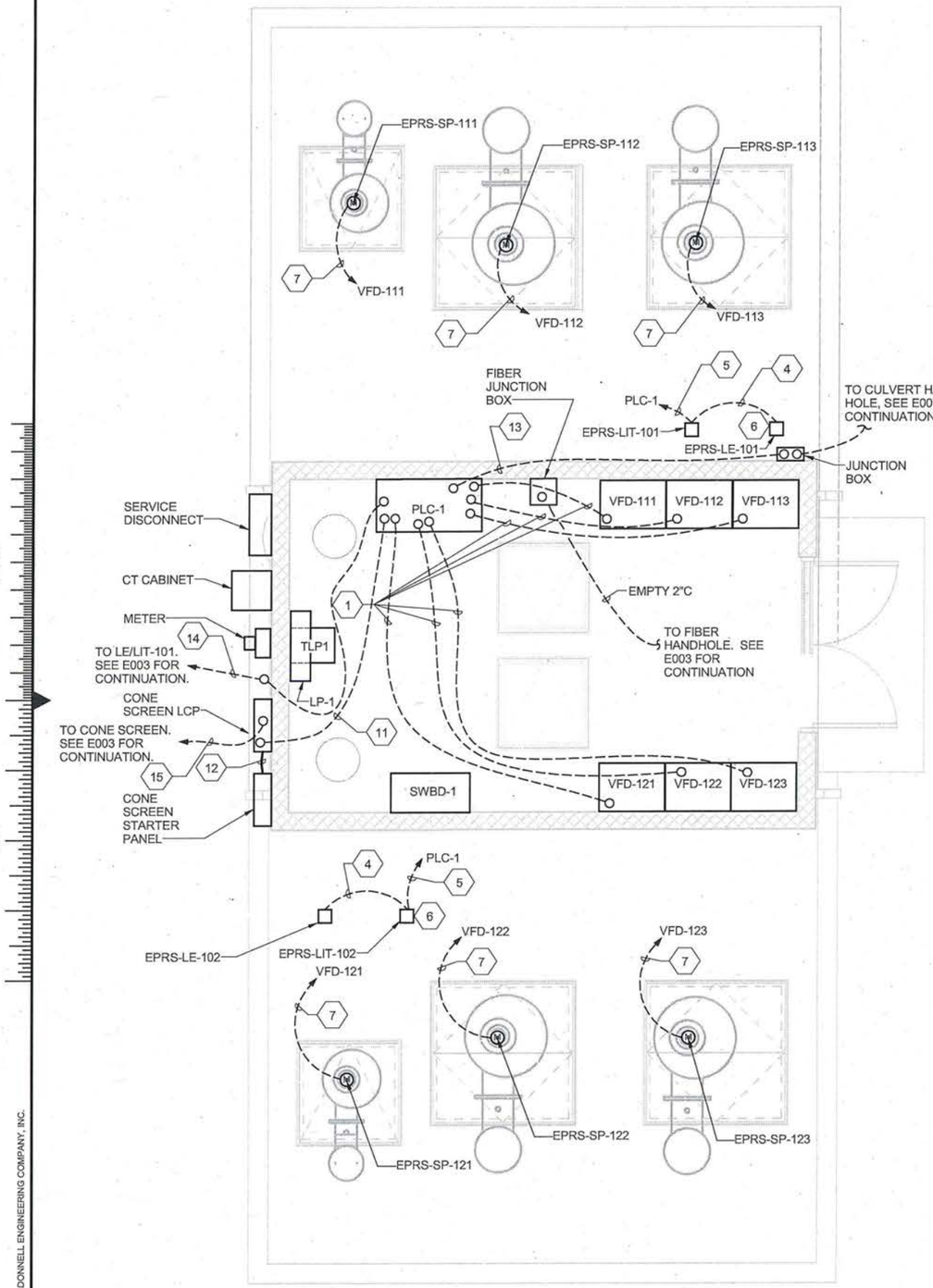
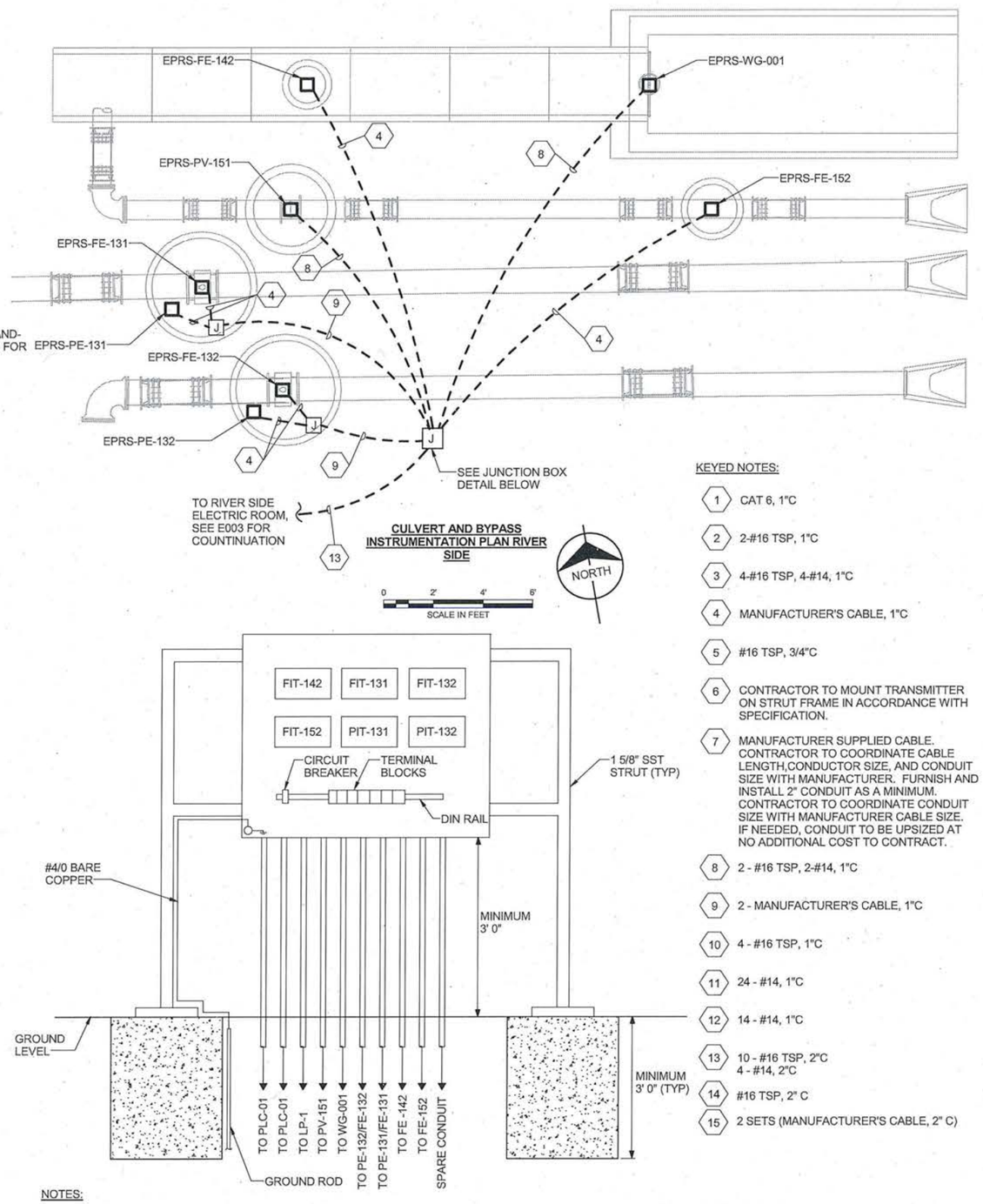


WET WELL AND ELECTRICAL ROOM INSTRUMENTATION AND CONTROL FLOOR PLAN RIVER SIDE



CULVERT AND BYPASS INSTRUMENTATION PLAN RIVER SIDE

KEYED NOTES:

1. CAT 6, 1"C
2. 2-#16 TSP, 1"C
3. 4-#16 TSP, 4-#14, 1"C
4. MANUFACTURER'S CABLE, 1"C
5. #16 TSP, 3/4"C
6. CONTRACTOR TO MOUNT TRANSMITTER ON STRUT FRAME IN ACCORDANCE WITH SPECIFICATION.
7. MANUFACTURER SUPPLIED CABLE. CONTRACTOR TO COORDINATE CABLE LENGTH,CONDUCTOR SIZE, AND CONDUIT SIZE WITH MANUFACTURER. FURNISH AND INSTALL 2" CONDUIT AS A MINIMUM. CONTRACTOR TO COORDINATE CONDUIT SIZE WITH MANUFACTURER CABLE SIZE. IF NEEDED, CONDUIT TO BE UPSIZED AT NO ADDITIONAL COST TO CONTRACT.
8. 2 - #16 TSP, 2-#14, 1"C
9. 2 - MANUFACTURER'S CABLE, 1"C
10. 4 - #16 TSP, 1"C
11. 24 - #14, 1"C
12. 14 - #14, 1"C
13. 10 - #16 TSP, 2"C
    4 - #14, 2"C
14. #16 TSP, 2" C
15. 2 SETS (MANUFACTURER'S CABLE, 2" C)

NOTES:

1. CONTRACTOR TO PROVIDE SUBMITTAL WITH PANEL HEAT CALCULATIONS FOR ENGINEER REVIEW. PANEL HEAT CALCULATIONS TO BE PERFORMED AND STAMPED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF COLORADO.
2. CONTRACTOR TO FURNISH AND INSTALL ALL NECESSARY COMPONENTS FOR AN ENVIRONMENTAL TEMPERATURE CONTROL SYSTEM. ENVIRONMENTAL TEMPERATURE CONTROL SYSTEM SHALL BE SIZED TO MAINTAIN PANEL TEMPERATURE FOR ENTIRE PANEL. SYSTEM TO INCLUDE HEATING AND COOLING AS NECESSARY.

RIVER SIDE JUNCTION BOX DETAIL
NOT TO SCALE

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COLORADO LICENSED
KEVIN SCOTT SPARROW
0047762
PROFESSIONAL ENGINEER
3/23/18

BURNS McDONNELL

date	detailed
MARCH 2018	P. HUNTZNGER
designed	checked
A. O'DONNELL	K. SPARROW

Brighton COLORADO
Adams County, Colorado

ERGER'S POND
ELECTRICAL INSTRUMENTATION AND CONTROL PLAN RIVER SIDE

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PANELBOARD : LP-1
LOCATION: POND SIDE ELECTRICAL ROOM
SUPPLY FROM: TLP1
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

VOLTAGE: 120/208 WYE
PHASE: 3
WIRES: 4

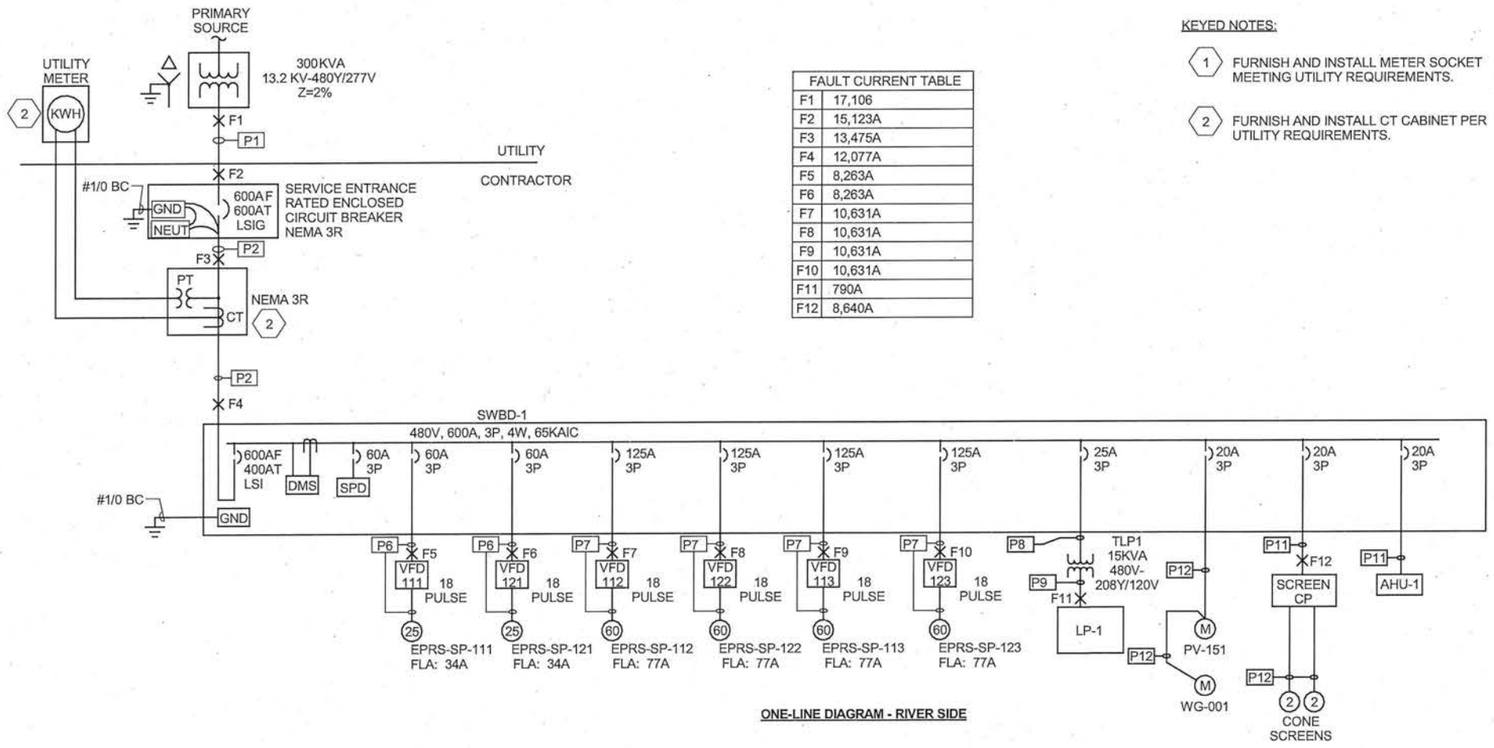
A.I.C. RATING: 22 KAIC
MAINS TYPE: MCB
MAINS RATING: 100 A
MCB RATING: 100 A

#	BKR	P	LOAD SERVED	WIRE/GROUND/CONDUIT	A	B	C	WIRE/GROUND/CONDUIT	LOAD SERVED	P	BKR	#
1	20	1	CONE SCREEN LCP	2-#12, #12 GND. IN 3/4"C	0.9	0.6		2-#12, #12 GND. IN 1"C	FE-131 & FE-132	1	20	2
3	20	1	LIGHTING	2-#12, #12 GND. IN 3/4"C		0.36	0.6	2-#12, #12 GND. IN 1"C	FE-142 & FE-152	1	20	4
5	20	1	RECEPTACLES	2-#12, #12 GND. IN 3/4"C			0.48	2-#12, #12 GND. IN 3/4"C	PLC UTILITY POWER	1	20	6
7	20	1	SPARE	-	0	0.25		2-#12, #12 GND. IN 3/4"C	PLC UPS POWER	1	20	8
9	20	1	SPARE	-		0	0	-	SPARE	1	20	10
11	20	1	SPARE	-			0	-	SPARE	1	20	12
13	-	1	SPACE	-	0	0		-	SPACE	1	-	14
15	-	1	SPACE	-		0	0	-	SPACE	1	-	16
17	-	1	SPACE	-			0	-	SPACE	1	-	18
19	-	1	SPACE	-	0	0		-	SPACE	1	-	20
21	-	1	SPACE	-		0	0	-	SPACE	1	-	22
23	-	-	SPACE	-			0	-	SPACE	-	-	24
25	-	-	SPACE	-	0	0		-	SPACE	-	-	26
27	-	-	SPACE	-		0	0	-	SPACE	-	-	28
29	-	-	SPACE	-			0	-	SPACE	-	-	30
				TOTAL LOAD:	1.65 kVA	0.96 kVA	0.6 kVA					
				TOTAL AMPS:	13.7	8	5					

PANEL TOTALS	
TOTAL CONNECTED LOAD:	3.21 kVA
TOTAL ESTIMATED DEMAND LOAD:	3.21 kVA
TOTAL CONNECTED CURRENT:	26.75
TOTAL ESTIMATED DEMAND:	26.75

CONDUIT AND CONDUCTOR SCHEDULE		
NO.	CONDUIT	CONDUCTORS
P1	3 - 2.5" PVC SCH 80	3 SET (4 - #3/0)
P2	3 - 2.5" GRC	3 SET (4 - #3/0, #1 GND)
P3	3 -2.5" PVC SCH 80	3 SETS (4-#3/0)
P4	3 - 2.5" GRC	3 SET (4 - #3/0, #1 GND)
P5	2" GRC	3 - #3, #8 GND
P6	1.25" GRC	3 - #6, #10 GND
P7	1.5" GRC	3 - #1, #6 GND
P8	1" GRC	3 - #10, #12 GND
P9	1.5" GRC	4 - #4, #8 GND
P10	1" PVC SCH-80	3 - #12, #12 GND
P11	1" GRC	3 - #12, #12 GND
P12	2" PVC SCH-80	3-#12, #12 GND

SWBD-1 LOAD SUMMARY			
LOAD	CONNECTED kVA	DEMAND FACTOR	DEMAND kVA
EPRS-SP-111 (25 HP)	28.27	1	28.27
EPRS-SP-121 (25 HP)	28.27	0	0
EPRS-SP-112 (60 HP)	64.02	1	64.02
EPRS-SP-122 (60 HP)	64.02	1	64.02
EPRS-SP-113 (60 HP)	64.02	1	64.02
EPRS-SP-123 (60 HP)	64.02	0	0
PANELBOARD LP-1	3.21	1	3.21
ACTUATORS	3.3	1	3.3
CONE SCREENS	8.4	1	8.4
AHU-1	4.2	1	4.2
TOTAL	331.71	72.18	239.43
AMPS AT 480V	399		288
LARGEST MOTOR FLA x 0.25	19		19
FEEDER AMPS	418		307



ONE-LINE DIAGRAM - RIVER SIDE

FAULT CURRENT TABLE	
F1	17,106
F2	15,123A
F3	13,475A
F4	12,077A
F5	8,263A
F6	8,263A
F7	10,631A
F8	10,631A
F9	10,631A
F10	10,631A
F11	790A
F12	8,640A

KEYED NOTES:

1. FURNISH AND INSTALL METER SOCKET MEETING UTILITY REQUIREMENTS.
2. FURNISH AND INSTALL CT CABINET PER UTILITY REQUIREMENTS.

no.	date	by	ckd	description
0	3/23/18	AO	KS	ISSUED FOR CONSTRUCTION

COLORADO LICENSED
KEVIN SCOTT SPARROW
0047762
3/23/18
PROFESSIONAL ENGINEER

BURNS McDONNELL

date	detailed
MARCH 2018	J. ABBOTT
designed	checked
A. O'DONNELL	K. SPARROW

Brighton COLORADO
Adams County, Colorado

ERGER'S POND
ELECTRICAL ONE-LINE DIAGRAM AND PANELBOARD SCHEDULE RIVER SIDE

project	contract
86381	

drawing E203 — rev. 0

sheet 64 of 77 sheets
file

Millimeters
Scale For Microfilming
Inches

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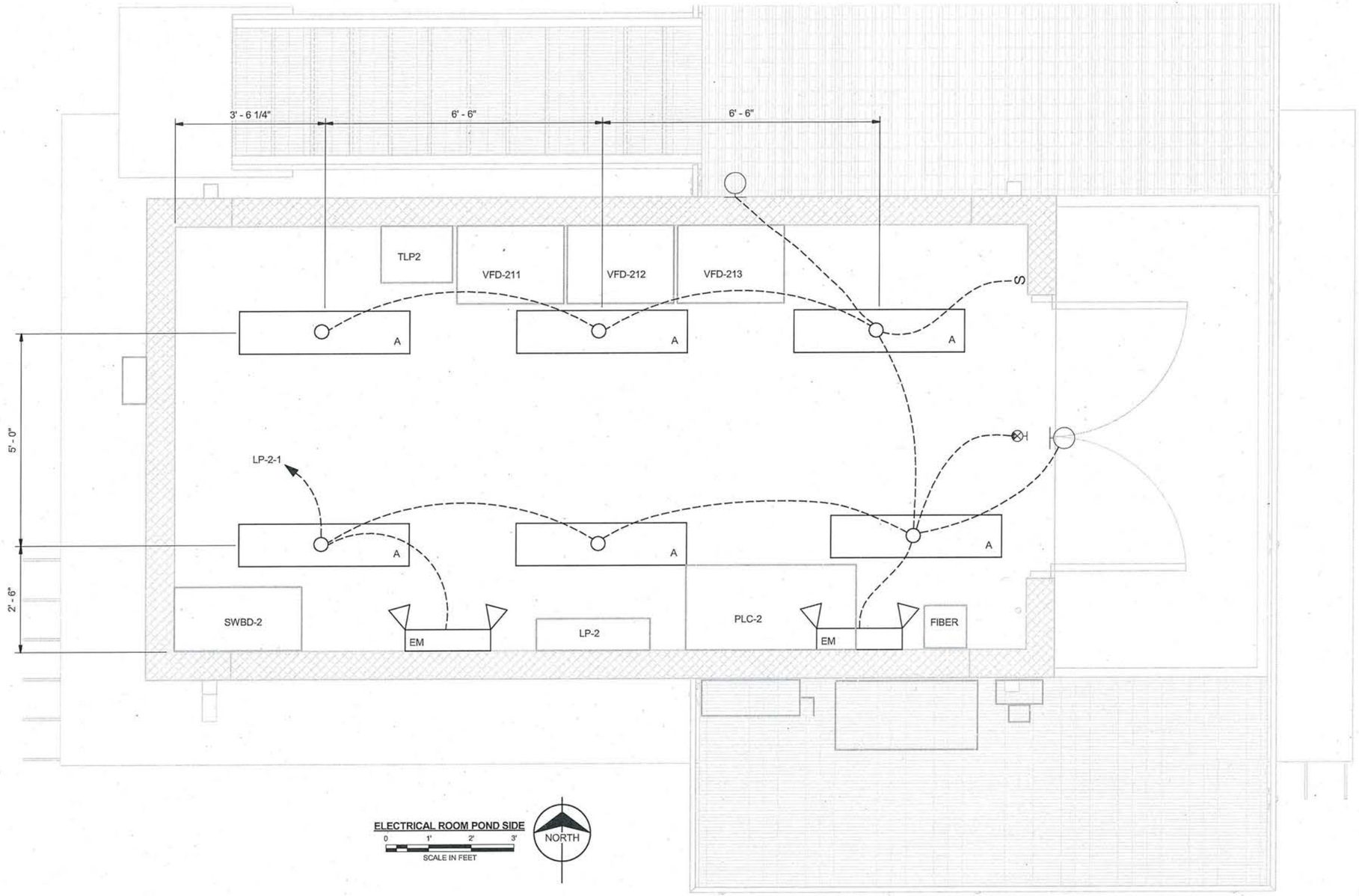

ELECTRICAL ROOM POND SIDE

0 1' 2' 3'

SCALE IN FEET

NORTH

LIGHT FIXTURE SCHEDULE

FIXTURE DESIGNATION	DESCRIPTION	VOLTAGE	LAMPS		MIN. CU FLOOR 20% WALL = 50%		MIN. EFF.	INPUT VA	REMARKS
			QUANT.	TYPE	RCR=2	RCR=6			
A	4' INDUSTRIAL LED STRIP FIXTURE, VAPORLITE. EATON METALUX 4VT2-LD4-6-DR-UNV-L840-CD1-U	120		LED				56	
	RAB LIGHTING EXTERIOR FIXTURE WPLED26 WITH BATTERY PACK	120		LED				31.2	FIXTURE TO INCLUDE PHOTOCELL AND BATTERY PACK
	SINGLE FACE EXIST SIGN WITH BATTERY BACKUP, LED, WET LOCATION, SELF DIAGNOSTICS, LITHONIA NO. LVSW1R120277ELNUM4X	120		LED				1	
EM	LED EMERGENCY LIGHT, LITHONIA EU2-LEDOM12	120		LED				1.8	

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KEVIN SCOTT SPARROW
0047762
PROFESSIONAL ENGINEER
3/23/18

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ERGER'S POND

ELECTRICAL LIGHTING PLAN POND SIDE

project	contract
86381	

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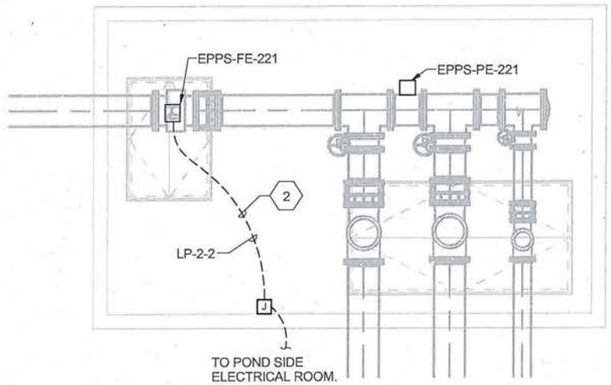
NOTES:

1. FURNISH AND INSTALL METER SOCKET TO MEET UTILITY REQUIREMENTS.
2. FURNISH AND INSTALL CT CABINET TO MEET UTILITY REQUIREMENTS.

KEYED NOTES:

1. CONDUCTORS AND METER BY UTILITY CONDUIT AND METER SOCKET BY CONTRACTOR. METER SOCKET SHALL MEET UTILITY REQUIREMENTS.
2. SEE E303 FOR CABLE AND CONDUIT SIZE.
3. ROUTE GROUNDING CONDUCTOR EMBEDDED IN TOP CONCRETE FLOOR WITH 6' SLACK FOR CONNECTION TO EQUIPMENT.
4. MANUFACTURER SUPPLIED CABLE. CONTRACTOR TO COORDINATE CABLE LENGTH,CONDUCTOR SIZE, AND CONDUIT SIZE WITH MANUFACTURER. FURNISH AND INSTALL 2" CONDUIT AS A MINIMUM. CONTRACTOR TO COORDINATE CONDUIT SIZE WITH MANUFACTURER CABLE SIZE. IF NEEDED, CONDUIT TO BE UPSIZED AT NO ADDITIONAL COST TO CONTRACT.
5. 3-#12, #12 GND, 1"C
6. CONNECT GROUND GRID TO BOTTOM MAT OF STRUCTURAL STEEL (REBAR).
7. FIELD RACK MOUNT TRANSMITTER, SEE RACK DETAIL ON E500

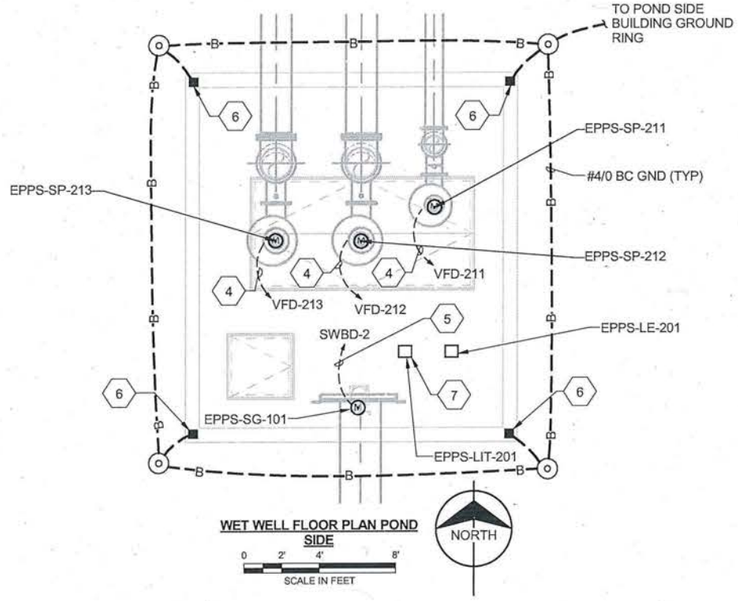


VALVE VAULT FLOOR PLAN POND SIDE

0 2' 4' 8'

SCALE IN FEET

NORTH

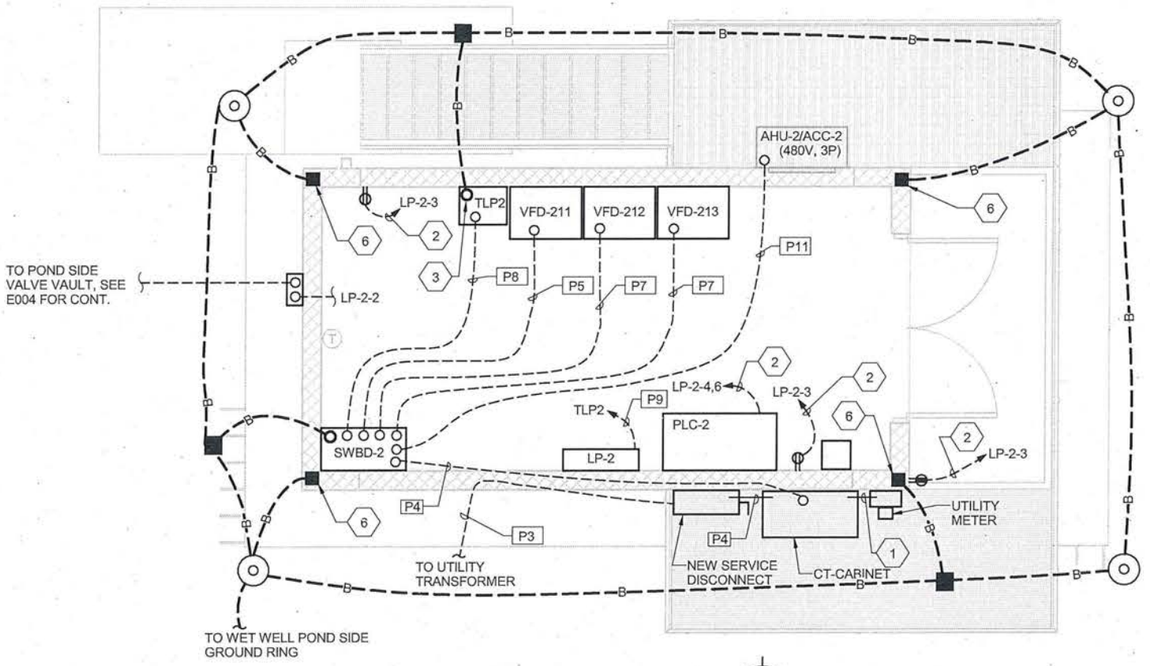


WET WELL FLOOR PLAN POND SIDE

0 2' 4' 8'

SCALE IN FEET

NORTH



ELECTRICAL ROOM FLOOR PLAN POND SIDE

0 2' 4' 6'

SCALE IN FEET

NORTH

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BURNS McDONNELL

date	detailed
MARCH 2018	P. HUNTZINGER
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Adams County, Colorado

ERGER'S POND

ELECTRICAL POWER PLAN POND SIDE

project	contract
86381	

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Millimeters Scale For Microfilming Inches

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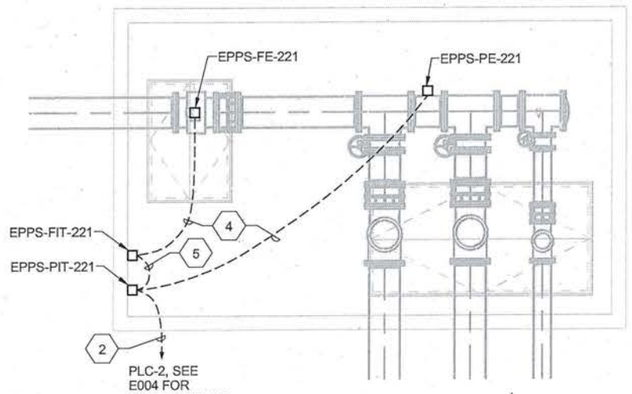
KEYED NOTES:

1. CAT 6E, 1"C
2. 2#16 TSP, 1"C
3. 4-#14, 3/4"C
4. MANUFACTURER'S CABLE. 3/4"C
5. #16 TSP, 3/4"C
6. MANUFACTURER SUPPLIED CABLE. CONTRACTOR TO COORDINATE CABLE LENGTH,CONDUCTOR SIZE, AND CONDUIT SIZE WITH MANUFACTURER. FURNISH AND INSTALL 2" CONDUIT AS A MINIMUM. CONTRACTOR TO COORDINATE CONDUIT SIZE WITH MANUFACTURER CABLE SIZE. IF NEEDED, CONDUIT TO BE UPSIZED AT NO ADDITIONAL COST TO CONTRACT.
7. 2-#16 TSP, 2-#14, 3/4"C
8. 5 - #16 TSP, 4 - #14, 1"C
9. 3-2"C POWER
   1-1"C POWER
   1-1"C CONTROL

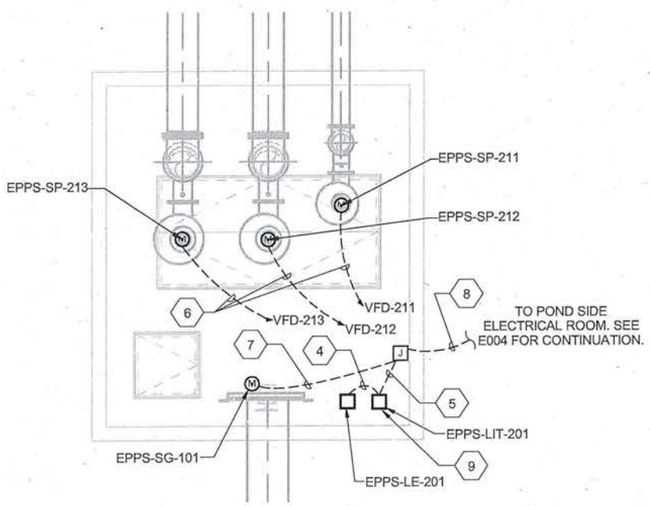


VALVE VAULT FLOOR PLAN POND SIDE

0 2' 4' 8'

SCALE IN FEET

NORTH

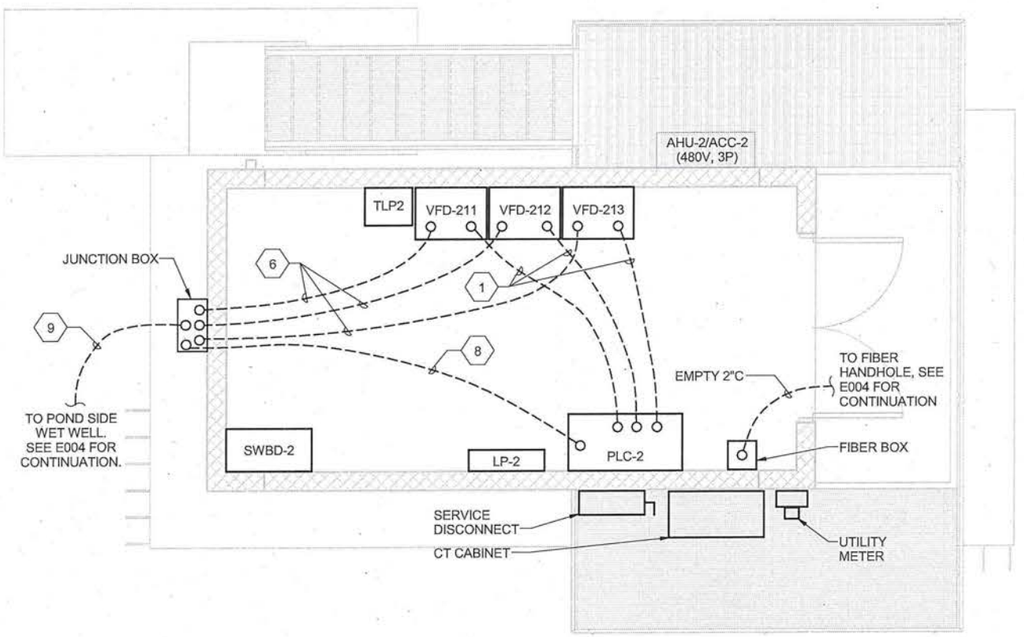


WET WELL FLOOR PLAN POND SIDE

0 2' 4' 8'

SCALE IN FEET

NORTH



ELECTRICAL ROOM INSTRUMENTATION AND CONTROL FLOOR PLAN POND SIDE

0 2' 4' 8'

SCALE IN FEET

NORTH

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KEVIN SCOTT SPARROW
0047762
PROFESSIONAL ENGINEER
3/23/18

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Adams County, Colorado

ERGER'S POND

ELECTRICAL INSTRUMENTATION AND CONTROL PLAN POND SIDE

project	contract
86381	

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Millimeters Inches Scale For Microfilming

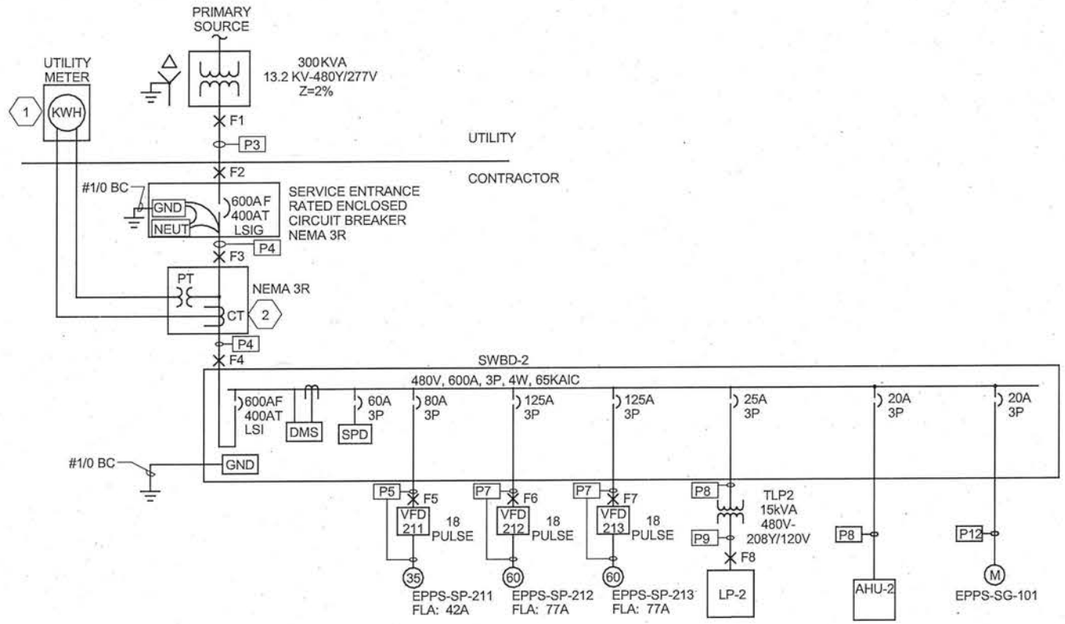
PANELBOARD : LP-2
LOCATION:
SUPPLY FROM: TLP1
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

VOLTAGE: 120/208 WYE
PHASE: 3
WIRES: 4

A.I.C. RATING: 22 KAIC
MAINS TYPE: MCB
MAINS RATING: 100 A
MCB RATING: 100 A

#	BKR	P	LOAD SERVED	WIRE/GROUND/CONDUIT	A	B	C	WIRE/GROUND/CONDUIT	LOAD SERVED	P	BKR	#
1	20	1	LIGHTING	2-#12, #12 GND. IN 3/4"C	0.4	0.2		2-#12, #12 GND. IN 3/4"C	FE-221	1	20	2
3	20	1	RECEPTACLES	2-#12, #12 GND. IN 3/4"C		0.45	0.15	2-#12, #12 GND. IN 3/4"C	PLC UTILITY POWER	1	20	4
5	20	1	SPARE	-			0	0.15	2-#12, #12 GND. IN 3/4"C	PLC UPS POWER	1	20	6
7	20	1	SPARE	-	0			-	SPARE	1	20	8
9	20	1	SPARE	-		0	0	-	SPARE	1	20	10
11	20	1	SPARE	-			0	0	-	SPARE	1	20	12
13	-	1	SPACE	-	0	0		-	SPACE	1	-	14
15	-	1	SPACE	-		0	0	-	SPACE	1	-	16
17	-	1	SPACE	-			0	0	-	SPACE	1	-	18
19	-	1	SPACE	-	0	0		-	SPACE	1	-	20
21	-	1	SPACE	-		0	0	-	SPACE	1	-	22
23	-	-	SPACE	-			0	0	-	SPACE	-	-	24
25	-	-	SPACE	-	0	0		-	SPACE	-	-	26
27	-	-	SPACE	-		0	0	-	SPACE	-	-	28
29	-	-	SPACE	-			0	0	-	SPACE	-	-	30
				TOTAL LOAD:	0.6 kVA	0.6 kVA	0.15 kVA					
				TOTAL AMPS:	5	5	1.2					

PANEL TOTALS	
TOTAL CONNECTED LOAD:	1.35 kVA
TOTAL ESTIMATED DEMAND LOAD:	1.35 kVA
TOTAL CONNECTED CURRENT:	11.25 A
TOTAL ESTIMATED DEMAND:	11.25 A



ONE-LINE DIAGRAM - POND SIDE

CONDUIT AND CONDUCTOR SCHEDULE		
NO.	CONDUIT	CONDUCTORS
P1	3 - 2.5" PVC SCH 80	3 SET (4 - #3/0)
P2	3 - 2.5" GRC	3 SET (4 - #3/0, #1 GND)
P3	3 -2.5" PVC SCH 80	3 SETS (4-#3/0)
P4	3 - 2.5" GRC	3 SET (4 - #3/0, #1 GND)
P5	2" GRC	3 - #3, #8 GND
P6	1.25" GRC	3 - #6, #10 GND
P7	1.5" GRC	3 - #1, #6 GND
P8	1" GRC	3 - #10, #12 GND
P9	1.5" GRC	4 - #4, #8 GND
P10	1" PVC SCH-80	3 - #12, #12 GND
P11	1" GRC	3 - #12, #12 GND
P12	2" PVC SCH-80	3 - #12, #12 GND

SWBD-2 LOAD SUMMARY			
LOAD	CONNECTED kVA	DEMAND FACTOR	DEMAND kVA
EPPS-SP-211 (35 HP)	34.91	1	34.91
EPPS-SP-212 (60 HP)	64.02	1	64.02
EPPS-SP-213 (60 HP)	64.02	0	0
PANELBOARD LP-2	1.35	1	1.35
AHU-2	6.15	1	6.15
EPPS-SG-101	4.15	1	4.15
TOTAL	174.59	63.3%	110.58
AMPS AT 480V	210		133
LARGEST MOTOR FLA x 0.25	19		19
FEEDER AMPS	229		152

KEYED NOTES:

1. FURNISH AND INSTALL METER SOCKET MEETING UTILITY REQUIREMENTS.
2. FURNISH AND INSTALL CT CABINET PER UTILITY REQUIREMENTS.

FAULT CURRENT TABLE	
F1	16,938A
F2	15,047A
F3	13,402A
F4	12,005A
F5	8,538A
F6	10,573A
F7	10,573A
F8	790A

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COLORADO LICENSED
KEVIN SCOTT SPARROW
00047762
3/23/18
PROFESSIONAL ENGINEER

BURNS McDONNELL

date	detailed
MARCH 2018	P. HUNTZINGER
designed	checked
A. O'DONNELL	K. SPARROW

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Adams County, Colorado

ERGER'S POND
ELECTRICAL ONE-LINE DIAGRAM AND PANELBOARD AND LIGHT FIXTURE SCHEDULES

project	contract
86381	

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sheet 68 of 77 sheets
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Millimeters
Inches
Scale For Microfilming

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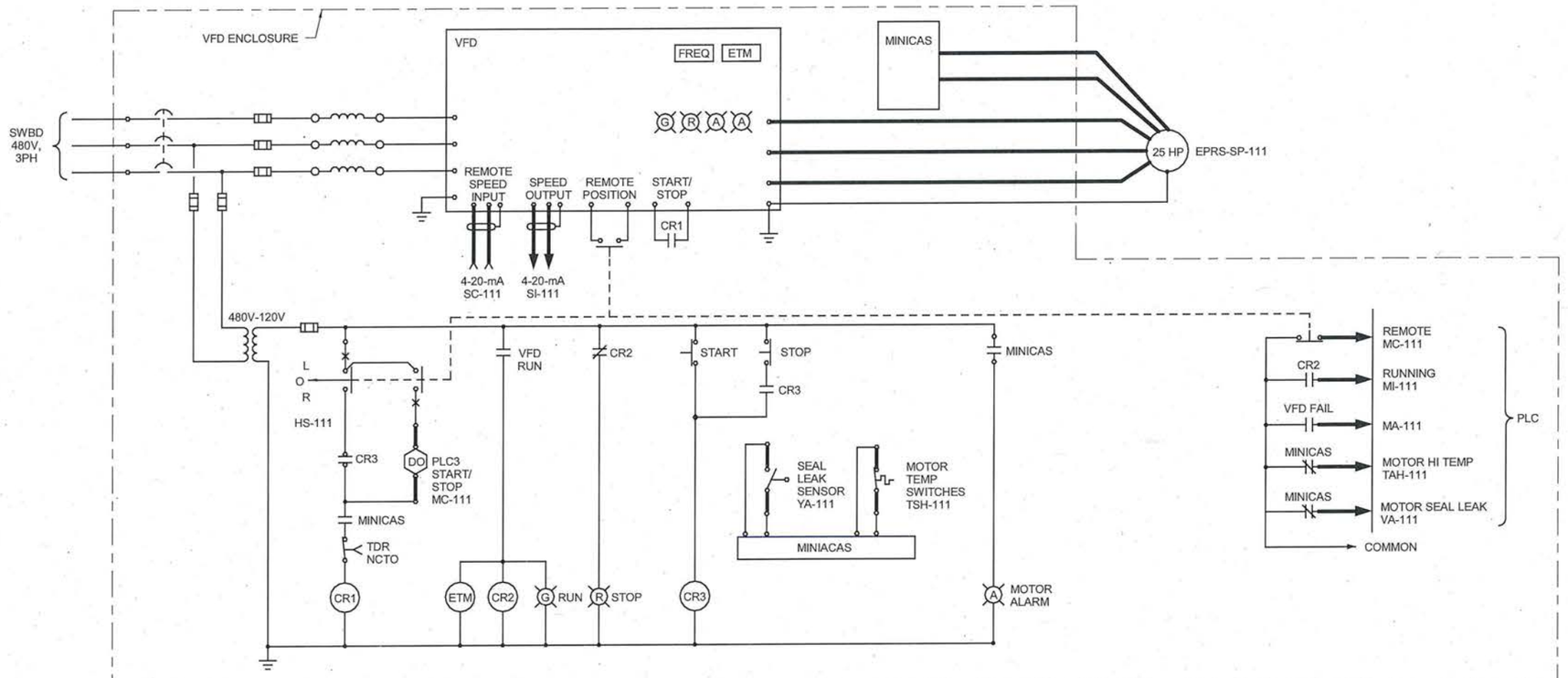

TABLE OF CORRESPONDING DEVICES									
NO	HP	REMOTE	RUNNING	START/STOP	SPEED CONTROL	SPEED IND	SEAL LEAK	VFD FAILED	MOTOR HI TEMP
EPRS-SP-111	25	HS-111	MI-111	MC-111	SC-111	SI-111	YA-111	MA-111	TAH-111
EPRS-SP-112	25	HS-112	MI-112	MC-112	SC-112	SI-112	YA-112	MA-112	TAH-112
EPRS-SP-113	60	HS-113	MI-113	MC-113	SC-113	SI-113	YA-113	MA-113	TAH-113
EPRS-SP-121	60	HS-121	MI-121	MC-121	SC-121	SI-121	YA-121	MA-121	TAH-121
EPRS-SP-122	60	HS-122	MI-122	MC-122	SC-122	SI-122	YA-122	MA-122	TAH-122
EPRS-SP-123	60	HS-123	MI-123	MC-123	SC-123	SI-123	YA-123	MA-123	TAH-123
EPPS-SP-211	35	HS-211	MI-211	MC-211	SC-211	SI-211	YA-211	MA-211	TAH-211
EPPS-SP-212	60	HS-212	MI-212	MC-212	SC-212	SI-212	YA-212	MA-212	TAH-212
EPPS-SP-213	60	HS-213	MI-213	MC-213	SC-213	SI-213	YA-213	MA-213	TAH-213

SUMP PUMP CONTROL SCHEMATIC

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BURNS McDONNELL

date MARCH 2018	detailed P. HUNTZINGER
designed A. O'DONNELL	checked K. SPARROW

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Adams County, Colorado

ERGER'S POND
TYPICAL PUMP CONTROL SCHEMATIC

project 86381	contract
drawing E400 —	rev. 0
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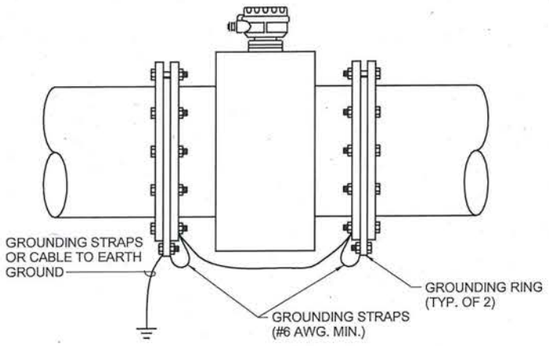
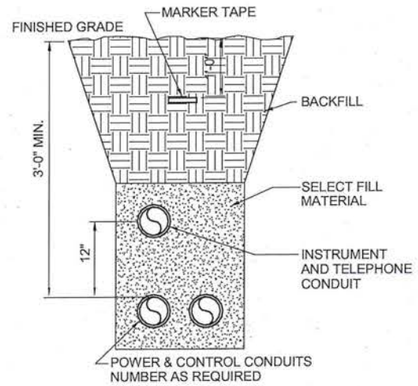
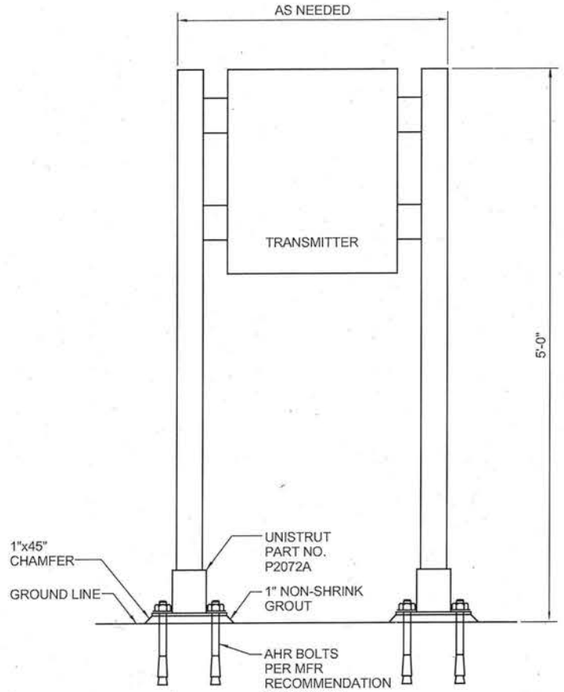
file	



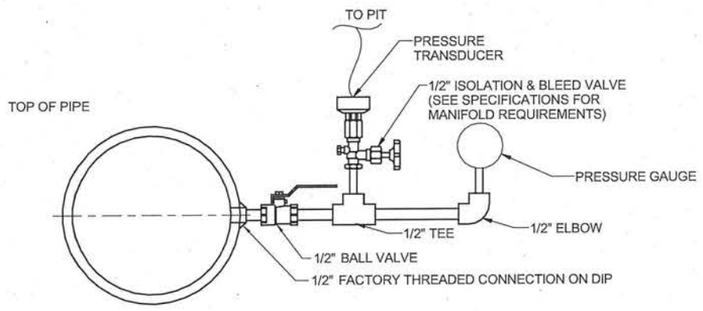
TYPICAL MAGNETIC FLOWMETER GROUNDING DETAIL
NOT TO SCALE



TYPICAL CONDUIT TRENCH DETAIL
NOT TO SCALE

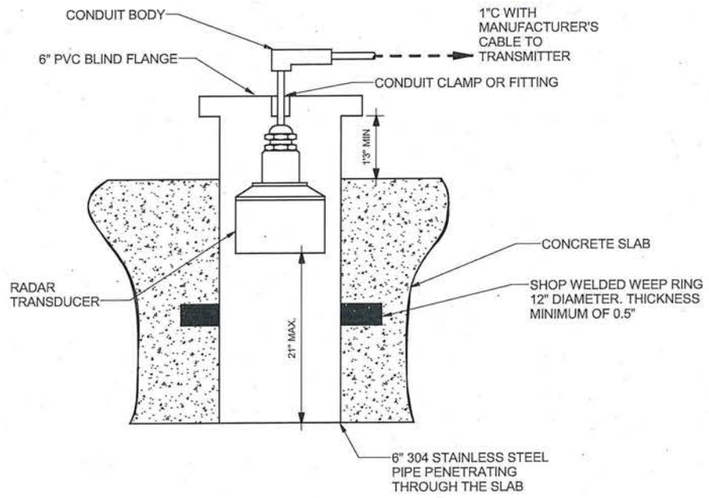


TRANSMITTER RACK SUPPORT DETAIL
NOT TO SCALE



*ALL PLUMBING TO BE STAINLESS STEEL TYPE 316

TYPICAL PRESSURE TRANSDUCER DETAIL
NOT TO SCALE



NOTES:
1. CENTERLINE OF TRANSDUCER SHALL BE AT LEAST FOUR FEET FROM INSIDE EDGE OF TANK WALL.

2. SEE STRUCTURAL DRAWINGS FOR CAST IN PLACE SLEEVE, SEAL, AND GROUT INFORMATION.

TYPICAL RADAR TRANSDUCER DETAIL
NOT TO SCALE

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KEVIN SCOTT SPARROW
0041762
3/23/18
PROFESSIONAL ENGINEER

BURNS McDONNELL

date	detailed
MARCH 2018	P. HUNTZINGER
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A. O'DONNELL	K. SPARROW

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ERGER'S POND
ELECTRICAL SECTIONS AND DETAILS

project	contract
86381	

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Inches

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INSTRUMENT AND FUNCTION SYMBOLS

- UNDEFINED INTERLOCK LOGIC
- XXXX-XX #### — FIELD MOUNT INSTRUMENT
- XXXX-XX #### — PANEL MOUNTED INSTRUMENT
- XXXX-XX #### — CONTROL OR DISPLAY FUNCTION VIA THE OPERATOR INTERFACE WITH THE DISTRIBUTED CONTROL SYSTEM. (FUNCTION OPERATOR ACCESSIBLE)
- XXXX-XX #### — CONTROL OR DISPLAY FUNCTION VIA THE OPERATOR INTERFACE WITH THE DISTRIBUTED CONTROL SYSTEM. (FUNCTION NOT NORMALLY ACCESSIBLE TO THE OPERATOR)
- XXXX-XX #### — COMPUTER INTERFACE WITH PROCESS (FUNCTION NOT NORMALLY ACCESSIBLE TO THE OPERATOR)
- XXXX-XX #### — DIGITAL LOGIC CONTROL INTEGRAL TO THE DISTRIBUTED CONTROL SYSTEM. (FUNCTION NOT NORMALLY ACCESSIBLE TO THE OPERATOR)
- XXXX-XX #### — INSTRUMENT IDENTIFICATION
  - NUMERIC IDENTIFICATION
  - FACILITY LOCATION
    EPRS - ERGERS POND RIVER SIDE
    EPPS - ERGERS POND POND SIDE

SELF-ACTUATED REGULATORS AND VALVES

- PRESSURE-REDUCING REGULATOR, SELF-CONTAINED, WITH HANDWHEEL ADJUSTABLE SET POINT
- PRESSURE-REDUCING REGULATOR WITH EXTERNAL PRESSURE TAP
- DIFFERENTIAL-PRESSURE-REDUCING REGULATOR WITH INTERNAL AND EXTERNAL PRESSURE TAP
- BACKPRESSURE REGULATOR, SELF CONTAINED
- BACKPRESSURE REGULATOR WITH EXTERNAL PRESSURE TAP
- PI — PRESSURE-REDUCING REGULATOR WITH INTEGRAL OUTLET PRESSURE RELIEF VALVE AND OPTIONAL PRESSURE INDICATOR
- PRESSURE RELIEF OR SAFETY VALVE, GENERAL SYMBOL
- PRESSURE RELIEF OR SAFETY VALVE, STRAIGHT-THROUGH PATTERN, SPRING- OR WEIGHT-LOADED, OR WITH INTEGRAL PILOT
- VACUUM RELIEF VALVE, GENERAL SYMBOL

P & ID SYMBOLS

- —XX— INSTRUMENT SUPPLY OR CONNECTION TO PROCESS.
  XX DENOTES POWER SUPPLY:
  XX = AS = AIR SUPPLY
  ES = ELECTRIC SUPPLY
  GS = GAS SUPPLY
  HS = HYDRAULIC SUPPLY
  IA = INSTRUMENT AIR
  NS = NITROGEN SUPPLY
  PA = PLANT AIR
  SS = STEAM SUPPLY
  WS = WATER SUPPLY
- UNDEFINED SIGNAL
- PNEUMATIC SIGNAL
- ELECTRIC SIGNAL
- INSTRUMENT CONNECTIONS TO PROCESS AND EQUIPMENT
- HYDRAULIC SIGNAL
- CAPILLARY TUBE
- ELECTROMAGNETIC OR SONIC SIGNAL (GUIDED)
- ELECTROMAGNETIC OR SONIC SIGNAL (NOT GUIDED)
- INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK)
- MECHANICAL LINK
- PUMP
- BLOWER
- ELECTRIC MOTOR
- CHECK VALVE
- DIAPHRAGM SEAL

CONTROL VALVE BODY SYMBOLS

- GENERAL VALVE
- ANGLE
- BUTTERFLY VALVE
- ROTARY VALVE
- THREE-WAY VALVE
- FOUR-WAY VALVE
- GLOBE VALVE
- DIAPHRAGM
- HAND CONTROL VALVE IN PROCESS LINE
- RESTRICTION ORIFICE (ORIFICE PLATE, CAPILLARY TUBE OR MULTI-STAGE TYPE) IN PROCESS LINE

ACTUATOR SYMBOLS

- M — ROTARY MOTOR AND GEAR ASSEMBLY/MOTOR ACTUATED
- S — SOLENOID
- HAND ACTUATOR OR HANDWHEEL
- DIAPHRAGM, SPRING OPPOSED
- ELECTRO-PNEUMATIC CONVERTER

PRIMARY ELEMENT SYMBOLS

- AVERAGING PITOT TUBE FLOW ELEMENT
- FLUME
- WEIR
- TURBINE OR PROPELLER TYPE FLOW ELEMENT
- POSITIVE-DISPLACEMENT TYPE FLOW TOTALIZING INDICATOR
- VORTEX FLOW SENSOR
- M — MAGNETIC FLOWMETER

INSTRUMENT IDENTIFICATION

LETTER	FIRST-LETTER: MEASURED OR INITIATING VARIABLE	FIRST-LETTER: MODIFIER	SUCCEEDING-LETTERS: READOUT OR PASSIVE FUNCTION	SUCCEEDING-LETTERS: OUTPUT FUNCTION	SUCCEEDING-LETTERS: MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE			CONTROL, CLOSE	
D	USER'S CHOICE	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO			
G	USER'S CHOICE		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOTOR	MOMENTARY			MIDDLE INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION	OPEN	
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

no.	date	by	ckd	description
0	3/23/18	AO	KS	ISSUED FOR CONSTRUCTION

COLORADO LICENSED — KEVIN SCOTT SPARROW — 0047762 — PROFESSIONAL ENGINEER — 3/23/18

BURNS McDONNELL

date: MARCH 2018	detailed: P. HUNTZINGER
designed: A. O'DONNELL	checked: K. SPARROW

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
INSTRUMENTATION & CONTROL LEGEND

project: 86381	contract:
drawing: I001	rev.: 0
sheet 71 of 77 sheets	
file	

Millimeters
Inches
Scale For Microfilming

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SCADA

CONTROL PANEL
PLC I/O

OPERATOR INTERFACE/ CONTROL DEVICES

FIELD
POWER SOURCE

EPRS-LI 101
EPRS-LAH 101

EPRS-MC 101 | EPRS-TAH 101 | EPRS-MI 101 | EPRS-MC 102 | EPRS-TAH 102
EPRS-MA 101 | EPRS-EA 101 | EPRS-MI 102 | EPRS-MA 102 | EPRS-EA 102

EPRS-EA 100 | EPRS-MC 101 | EPRS-TAH 101 | EPRS-MI 102 | EPRS-MC 102 | EPRS-TAH 102
EPRS-MA 100 | EPRS-MA 101 | EPRS-EA 101 | EPRS-MI 101 | EPRS-MA 102 | EPRS-EA 102

EPRS-LI 101

CONE SCREEN PACKAGED CONTROL PANEL

EPRS-CS-101

EPRS-LIT 101
EPRS-LE 101

FROM RIVER (NOT SHOWN)

EPRS-CS-101

TO RIVERSIDE WETWELL NORTH I201

EPRS-CS-102

EPRS-CS-102

TO RIVERSIDE WETWELL SOUTH I202

Millimeters
Inches
Scale For Microfilming

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COLORADO LICENSED
KEVIN SCOTT SPARROW
0047762
PROFESSIONAL ENGINEER
3/23/18

BURNS McDONNELL

date	detailed
MARCH 2018	P. HUNTZINGER
designed	checked
A. O'DONNELL	K. SPARROW

Brighton COLORADO

Adams County, Colorado

ERGER'S POND

PIPING AND INSTRUMENTATION DIAGRAM
RIVER SIDE CONE SCREEN

project	contract
86381	

drawing I200 — rev. 0

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SCADA

CONTROL PANEL
PLC I/O

OPERATOR INTERFACE/ CONTROL DEVICES

FIELD | POWER SOURCE

EPRS-HS 111 | EPRS-SI 111 | EPRS-MC 111 | EPRS-TAH 111
EPRS-SC 111 | EPRS-YA 111 | EPRS-MI 111 | EPRS-MA 111

EPRS-HS 112 | EPRS-SI 112 | EPRS-MC 112 | EPRS-TAH 112
EPRS-SC 112 | EPRS-YA 112 | EPRS-MI 112 | EPRS-MA 112

EPRS-HS 113 | EPRS-SI 113 | EPRS-MC 113 | EPRS-TAH 113
EPRS-SC 113 | EPRS-YA 113 | EPRS-MI 113 | EPRS-MA 113

EPRS-LI 101 | EPRS-PI 131 | EPRS-FI 131

VFD-111
VFD 480VAC-3P

VFD-112
VFD 480VAC-3P

VFD-113
VFD 480VAC-3P

EPRS-LIT 101
EPRS-PIT 131
EPRS-PE 131
EPRS-FIT 131
EPRS-FE 131 M
EPRS-LE 101

DISCHARGE TO POND (NOT SHOWN)

EPRS-YA 111 / EPRS-TSH 111 — EPRS-SP-111
EPRS-YA 113 / EPRS-TSH 112 — EPRS-SP-112
EPRS-YA 113 / EPRS-TSH 113 — EPRS-SP-103

FROM EPRS-CS-101 I200

RIVER SIDE NORTH WETWELL

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COLORADO LICENSED
SCOTT KYLE SPARROW
0047762
3/23/18
PROFESSIONAL ENGINEER

BURNS McDONNELL

date	detailed
MARCH 2018	P. HUNTZINGER
designed	checked
A. O'DONNELL	K. SPARROW

Brighton COLORADO

Adams County, Colorado

ERGER'S POND

PIPING AND INSTRUMENTATION DIAGRAM
RIVER SIDE PUMPING

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Millimeters
Scale For Microfilming
Inches

SCADA

CONTROL PANEL — PLC I/O

OPERATOR INTERFACE/ CONTROL DEVICES

FIELD — POWER SOURCE

EPRS-HS 121 | EPRS-SI 121 | EPRS-MC 121 | EPRS-TAH 121
EPRS-SC 121 | EPRS-YA 121 | EPRS-MI 121 | EPRS-MA 121

EPRS-HS 122 | EPRS-SI 122 | EPRS-MC 122 | EPRS-TAH 122
EPRS-SC 122 | EPRS-YA 122 | EPRS-MI 122 | EPRS-MA 122

EPRS-HS 123 | EPRS-SI 123 | EPRS-MC 123 | EPRS-TAH 123
EPRS-SC 123 | EPRS-YA 123 | EPRS-MI 123 | EPRS-MA 123

EPRS-LI 102 | EPRS-PI 132 | EPRS-FI 132

EPRS-HS 121 | EPRS-MC 121 | EPRS-SC 121 | EPRS-MI 121 | EPRS-SI 121 | EPRS-MA 121 | EPRS-TAH 121 | EPRS-YA 121

EPRS-HS 122 | EPRS-MC 122 | EPRS-SC 122 | EPRS-MI 122 | EPRS-SI 122 | EPRS-MA 122 | EPRS-TAH 122 | EPRS-YA 122

EPRS-HS 123 | EPRS-MC 123 | EPRS-SC 123 | EPRS-MI 123 | EPRS-SI 123 | EPRS-MA 123 | EPRS-TAH 123 | EPRS-YA 123

EPRS-LI 102 | EPRS-PI 132 | EPRS-FI 132

EPRS-HS 121 | EPRS-MA 121 | EPRS-YA 121
EPRS-SC 121 | EPRS-MC 121 | EPRS-TAH 121
EPRS-SI 121 | EPRS-MI 121

EPRS-HS 122 | EPRS-MA 122 | EPRS-YA 122
EPRS-SC 122 | EPRS-MC 122 | EPRS-TAH 121
EPRS-SI 122 | EPRS-MI 122

EPRS-HS 123 | MA-EPRS 123 | EPRS-YA 123
EPRS-SC 123 | EPRS-MC 123 | EPRS-TAH 123
EPRS-SI 123 | EPRS-MI 123

EPRS-LI 101 | EPRS-PI 132 | EPRS-FI 132

VFD-121
VFD 480VAC-3P

VFD-122
VFD 480VAC-3P

VFD-123
VFD 480VAC-3P

EPRS-LIT 102 | EPRS-PIT 132 | EPRS-FIT 132

EPRS-PE 132

EPRS-FE 132 M

DISCHARGE TO POND (NOT SHOWN)

EPRS-LE 102

EPRS-YA 121 | EPRS-TSH 121 — EPRS-SP-121

EPRS-YA 122 | EPRS-TSH 122 — EPRS-SP-122

EPRS-YA 123 | EPRS-TSH 123 — EPRS-SP-123

FROM EPRS-CS-102 I200

RIVER SIDE SOUTH WETWELL

Scale For Microfilming
Millimeters
Inches

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COLORADO LICENSED
KEVIN SCOTT SPARROW
0047762
3/23/18
PROFESSIONAL ENGINEER

BURNS McDONNELL

date	detailed
MARCH 2018	P. HUNTZINGER
designed	checked
A. O'DONNELL	K. SPARROW

Brighton COLORADO

Adams County, Colorado

ERGER'S POND

PIPING AND INSTRUMENTATION DIAGRAM
RIVER SIDE

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SCADA

CONTROL PANEL

PLC I/O

OPERATOR INTERFACE/ CONTROL DEVICES

FIELD | POWER SOURCE

EPRS-ZI 151
EPRS-HS 151
EPRS-FC 151

EPRS-FI 142

EPRS-FI 152

EPRS-ZI 143
EPRS-HS 143
EPRS-FC 143

EPRS-HS 151
EPRS-ZI 151
EPRS-ZO 151

EPRS-FI 142

EPRS-FI 152

EPRS-HS 143
EPRS-ZI 143
EPRS-ZO 143

EPRS-FC 151
EPRS-HS 151
EPRS-ZI 151

EPRS-FI 142

EPRS-FI 152

EPRS-FC 143
EPRS-HS 143
EPRS-ZI 143

EPRS-HS 151
EPRS-ZIT 151
EPRS-FC 151

EPRS-FIT 142

EPRS-FIT 152

EPRS-HS 143
EPRS-ZIT 143
EPRS-FC 143

EPRS-FE 142
M

EPRS-FE 152
M

FROM RIVER (NOT SHOWN)

TO POND (NOT SHOWN)

TO POND (NOT SHOWN)

Millimeters

Inches

Scale For Microfilming

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COLORADO LICENSED
KEVIN SCOTT SPARROW
0047762
3/23/18
PROFESSIONAL ENGINEER

BURNS McDONNELL

date	detailed
MARCH 2018	P. HUNTZINGER
designed	checked
A. O'DONNELL	K. SPARROW

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Adams County, Colorado

ERGER'S POND

PIPING AND INSTRUMENTATION RIVER SIDE COVERT AND BYPASS

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SCADA

CONTROL PANEL — PLC I/O

OPERATOR INTERFACE/ CONTROL DEVICES

FIELD POWER SOURCE

EPRS-ZI 101
EPRS-HS 101
EPRS-FC 101

EPPS-HS 211 | EPPS-SI 211 | EPPS-MC 211 | EPPS-GS-MA 211
EPPS-SC 211 | EPPS-TAH 211 | EPPS-MI 211 | EPPS-YA 211

EPPS-HS 212 | EPPS-SI 212 | EPPS-MC 212 | EPPS-MA 212
EPPS-SC 212 | EPPS-TAH 212 | EPPS-MI 212 | EPPS-YA 212

EPPS-HS 213 | EPPS-SI 213 | EPPS-MC 213 | EPPS-MA 213
EPPS-SC 213 | EPPS-TAH 213 | EPPS-MI 213 | EPPS-YA 213

EPPS-LI 201 | EPPS-PI 221 | EPPS-FI 221

EPRS-HS 101
EPRS-ZI 101
EPRS-ZO 101

EPRS-FC 101
EPRS-HS 101
EPRS-ZI 101

EPRS-HS 101
EPRS-ZIT 101
EPRS-FC 101

VFD-211
VFD 480VAC-3P

VFD-212
VFD 480VAC-3P

VFD-213
VFD 480VAC-3P

EPPS-LIT 201 | EPPS-PIT 221 | EPPS-FIT 221

EPPS-PE 221 | EPPS-FE 221

DISCHARGE TO RIVER (NOT SHOWN)

EPPS-LE 201

EPPS-YA 211 | EPPS-TSH 211 — EPPS-SP-211

EPPS-YA 212 | EPPS-TSH 212 — EPPS-SP-212

EPPS-YA 213 | EPPS-TSH 213 — EPPS-SP-213

FROM POND INTAKE (NOT SHOWN)

SLIDE GATE

POND SIDE WETWELL

Scale For Microfilming
Millimeters
Inches

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COLORADO LICENSED
KEVIN SCOTT SPARROW
0047762
PROFESSIONAL ENGINEER
3/23/18

BURNS McDONNELL

date MARCH 2018	detailed P. HUNTZINGER
designed A. O'DONNELL	checked K. SPARROW

Brighton COLORADO

Adams County, Colorado

ERGER'S POND

PIPING AND INSTRUMENTATION DIAGRAM
POND SIDE PUMPING

project 86381	contract
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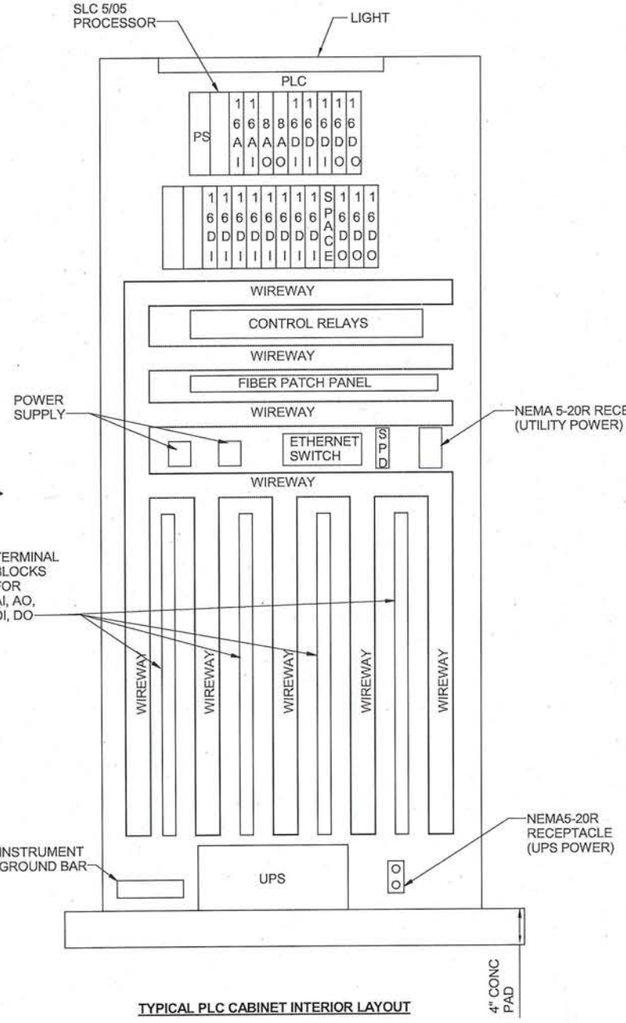
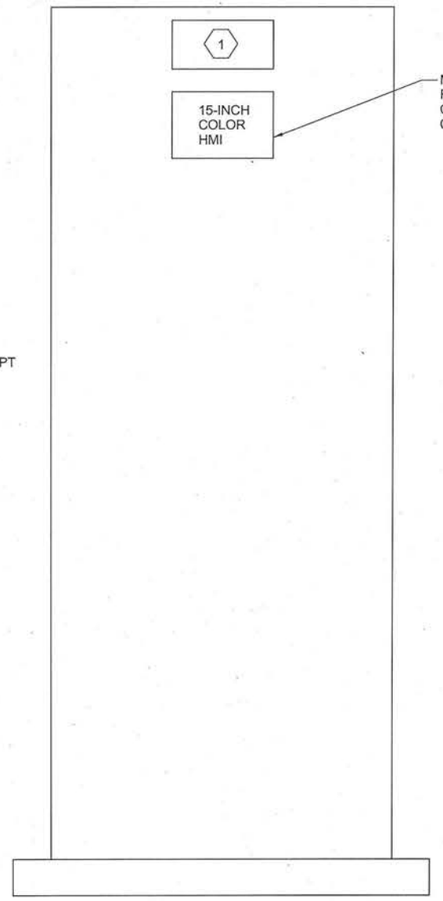
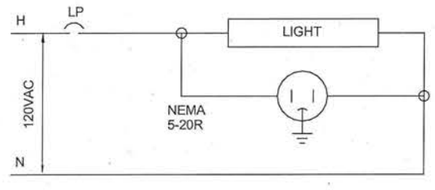
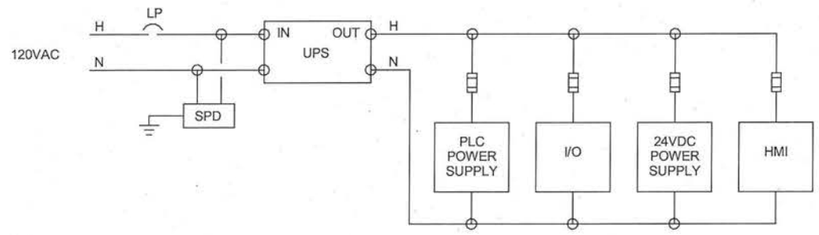


TYPICAL PLC CABINET INTERIOR LAYOUT



PLC CABINET FRONT ELEVATON





TYPICAL PLC CABINET WIRING DIAGRAM

NOTES:

1. ALL CHANNELS FOR EACH I/O MODULE SHALL BE INDIVIDUALLY FUSED.
2. CIRCUIT BREAKERS AND FUSES TYPE AND SIZE TO MEET APPLICABLE CODE REQUIREMENTS.
3. PLC CHASIS TO BE SIZED BY CONTRACTOR TO MEET I/O REQUIREMENTS.
4. ETHERNET SWITCH AND OTHER NETWORKING EQUPIMENT TO BE FURNISHED AND INSTALLED BY OWNER. COORDINATE SPACE FOR REQUIRED EQUIPMENT WITH OWNER AND ENGINEER.

KEYED NOTES:

(1) PLC CABINET LABEL SHALL READ AS INDICATED PER FACILITY:
RIVER SIDE: "PLC-1"
POND SIDE: "PLC-2"

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BURNS McDONNELL

date: MARCH 2018	detailed: P. HUNTZINGER
designed: A. O'DONNELL	checked: K. SPARROW

Brighton COLORADO

Adams County, Colorado

ERGER'S POND
PLC CABINET DETAILS

project: 86381	contract:
drawing: I500 —	rev.: 0
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