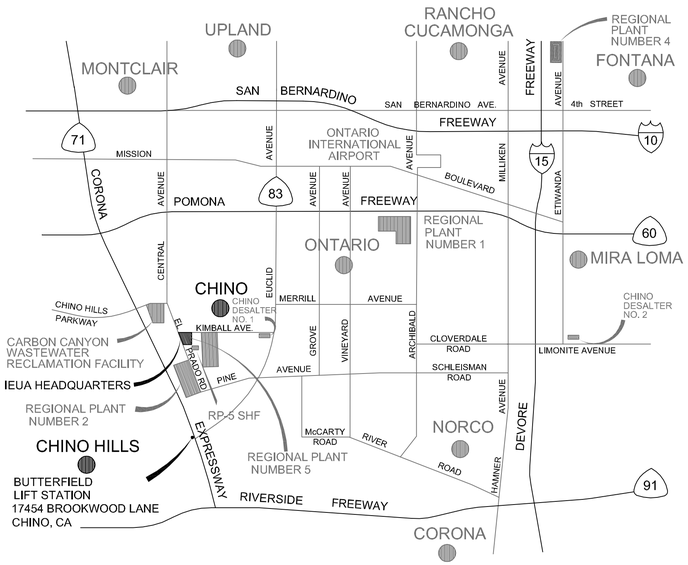
ENGINEERING DRAWINGS

BUTTERFIELD – 100%



VICINITY MAP

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Inland Empire Utilities Agency

A MUNICIPAL WATER DISTRICT

BUTTERFIELD LIFT STATION UPGRADES

PROJECT NO. EN19006
DATE: 10/15/2019
SUBMITTAL 100%
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PROJECT LOCATION MAP

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E	10/15/19	SK	SK	SUBMITTAL 100%
D	05/31/19	SK	SK	SUBMITTAL 90%
C	05/07/19	SK	SK	SUBMITTAL 90% (QA/QC)
B	12/21/18	SK	SK	SUBMITTAL 90% (DRAFT)
A	07/20/18	SK	SK	SUBMITTAL 50%

RECOMMENDED BY:

DATE

JASON MARSEILLES, PE
PROJECT MANAGER

APPROVED BY:

DATE

JERRY BURKE, P.E. QSD
DEPUTY MANAGER OF ENGINEERING

APPROVED BY:

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SHAUN J. STONE, P.E.
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BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

COVER SHEET

SHEET: G-01
SHEET NO.: 1 OF 19
PROJECT NO.:
DRAWING NO.:

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GENERAL

1	G-01	COVER SHEET
2	G-02	DRAWING INDEX
3	G-03	SYMBOLS AND GENERAL ABBREVIATIONS

MECHANICAL

4	M-01	GENERAL NOTES AND EQUIPMENT SCHEDULE
5	M-10	PUMP LIFT STATION - GENERAL ARRANGEMENT ISOMETRIC
6	M-11	PUMP ROOM - EQUIPMENT AND PIPING DEMOLITION PLAN
7	M-12	PUMP ROOM - DEMOLITION SECTIONS AND DETAILS
8	M-13	PUMP ROOM - DEMOLITION SECTIONS AND DETAILS
9	M-14	PUMP ROOM - EQUIPMENT AND PIPING NEW INSTALLATION PLAN
10	M-15	PUMP ROOM - NEW INSTALLATION SECTIONS AND DETAILS
11	M-16	PUMP ROOM - NEW INSTALLATION SECTIONS AND DETAILS

ELECTRICAL

12	E-01	SYMBOLS AND LEGEND
13	E-02	GENERAL NOTES & ABBREVIATIONS
14	E-03	SINGLE LINE DIAGRAMS
15	E-04	POWER AND INSTRUMENT PLAN
16	E-05	CONTROL SCHEMATICS, LIFT PUMP

INSTRUMENTATION

17	I-01	INSTRUMENTATION LEGEND
18	I-02	INSTRUMENTATION LEGEND
19	I-03	BUTTERFIELD LIFT STATION - P&ID

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B	12/21/18	SK	SK	SUBMITTAL 90% (DRAFT)
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BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

DRAWING INDEX

SHEET
G-02

SHEET NO.
2 OF 19

PROJECT NO.

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GENERAL SYMBOLS

- AGGREGATE SURFACE COURSE
- DRAIN ROCK
- PEA GRAVEL
- AGGREGATE BASE
- GRAVEL
- ASPHALT CONCRETE PAVING
- NEW CONCRETE
- MASONRY OR CONCRETE BLOCK
- GRATING
- CHECKER PLATE
- STEEL
- ALUMINUM
- WOOD
- OPENING OR DEPRESSION IN SLAB OR WALL
- 1095 / S.46 / EG — SURVEYED POINT
- 286 — EXISTING CONTOUR
- 286 — FINISHED GRADE CONTOUR
- GROUND LINE
- BUSHES OR TREE LINE
- SHRUBS OR TREE
- S — EXISTING SEWER LINE
- T — EXISTING TELEMETRY OR TELEPHONE LINE
- G — EXISTING GAS LINE
- W — EXISTING WATER LINE
- SD — EXISTING STORM DRAIN
- E — EXISTING ELECTRICAL CONDUIT OR DUCT BANK
- FLOW LINE
- PL — PROPERTY LINE
- -x-x-x- — EXISTING FENCE
- X-X-X — NEW FENCE
- R-R-R — RIDGE LINE
- CHANGE IN PIPE MATERIAL
- RAILING
- TO BE DEMOLISHED
- TO BE ABANDONED
- TO BE MODIFIED
- TOP / TOE — CUT OR FILL SLOPE TO BE CONSTRUCTED
- ℄ — CENTERLINE
- Ø — DIAMETER
- ∠ — ANGLE
- @ — AT
- Δ — DEFLECTION ANGLE
- 293.90 FG — FINISHED ELEVATION
- 4"-D — PIPE CALLOUT (SEE PIPING SCHEDULE)
- UNION
- REDUCER
- ECCENTRIC REDUCER

- S OR M — S = SOLENOID VALVE; M = MOTOR OPERATED VALVE
- PRESSURE REDUCING VALVE SELF CONTAINED
- PRESSURE REDUCING VALVE W/ EXTERNAL PRESSURE TAP
- PRESSURE SAFETY VALVE
- ANGLE RELIEF VALVE
- C.B. / D.I. — CATCH BASIN OR DRAIN INLET
- SB-1 — TEST BORINGS (SB OR B) DRILL HOLE (DH)
- B.M. — BENCH MARK
- HORI□ONTAL AND VERTICAL CONTROL POINT
- W.M. — WATER METER
- G.M. — GAS METER
- COTG — CLEAN OUT TO GRADE
- TP, PP, OR LP — TELEPHONE, POWER OR LIGHT POLE
- GUY — GUY WIRE
- FH — FIRE HYDRANT
- MH — MANHOLE
- CHECK VALVE
- BALL VALVE
- GATE VALVE
- GATE VALVE, BURIED W/ VALVE BOX
- GLOBE VALVE
- BUTTERFLY VALVE OR DAMPER
- BUTTERFLY VALVE, BURIED W/ VALVE BOX
- ECCENTRIC PLUG VALVE
- 3-WAY VALVE
- 4-WAY VALVE
- ANGLE VALVE
- SLUICE OR SLIDE GATE
- AIR RELEASE AND VACUUM RELIEF COMBINATION VALVE
- SLEEVE TYPE FLEXIBLE COUPLING
- GROOVED TYPE COUPLING
- HOSE COUPLING
- HOSE BIBB
- NEW PIPELINE (12"Ø AND LARGER)
- NEW PIPELINE (SMALLER THAN 12"Ø)

GENERAL ABBREVIATIONS

AB	ANCHOR BOLT OR AGGREGATE BASE
ABAN	ABANDONED
AC	ASPHALT CONCRETE
ADDL	ADDITIONAL
AL	ALUMINUM
APPROX	APPROXIMATE
BF	BLIND FLANGE
BFV	BUTTERFLY VALVE
BC	BEGINNING OF CURVE
BLDG	BUILDING
BO	BLOWOFF
BOS	BOTTOM OF STEEL
BET	BETWEEN
BOD	BOTTOM OF DUCT BANK
BOT	BOTTOM
BOW	BACK OF WALL
BM	BENCH MARK, OR BEAM
BV	BALL VALVE
BVC	BEGIN VERTICAL CURVE
CAB	CRUSHED AGGREGATE BASE
CALTRANS	CALIFORINA DEPARTMENT OF TRANSPORTATION
CB	CATCH BASIN, COMMUNICATION BOX
CBC	CALIFORNIA BUILDING CODE
C/C	CENTER TO CENTER
CD	CONDENSATE DRAIN
CHKD	CHECKERED
CJ	CONSTRUCTION JOINT
CI	CAST IRON
CIRC	CIRCULAR
CL, ℄	CENTER LINE
CL	CLASS OR CHAIN LINK FENCE
CLR	CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CML&C	CEMENT MORTAR LINED & COATED
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
COL	COLUMN
CON	CONCENTRIC
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CP	CONTROL POINT AND COORDINATE POINT
CPLG	COUPLING
CTRL	CONTROL
CTSK	COUNTERSUNK
CU	CUBIC
C&G	CURB AND GUTTER
CV	CHECK VALVE
CYL	CYLINDER
DB	DUCT BANK
DBD	DEFERRED BOLTING DEVICE
DBL	DOUBLE
DEPT	DEPARTMENT
DET	DETAIL
DFU	DRAIN FIXTURE UNITS
DH	DRILL HOLE
DI	DRAIN INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DIA	DIAGONAL
DISCH	DISCHARGE
DMH	DRAIN MAINHOLE
DN	DOWN
DWG	DRAWING
E OR (E)	EAST/EASTING OR EXISTING
EA	EACH, EXHAUST AIR
EC	END OF CURVE
ECC	ECCENTRIC
ECMT	ENCASEMENT
ED	EQUIPMENT DRAIN
EF	EACH FACE
EFF	EFFLUENT
EL, ELEV	ELEVATION
ELEC	ELECTRICAL
ELL, ELB	ELBOW
EMBED	EMBEDDED
EMH	ELECTRICAL MAINHOLE
EP	EDGE OF PAVEMENT
EQ	EQUAL
ES	EACH SIDE
EVC	END VERTICAL CURVE
EW	EACH WAY
EX, EXIST, (E)	EXISTING
EXP JT	EXPANSION JOINT
FCA	FLANGED COUPLING ADAPTER
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FDB	FLOW DISTRIBUTION BOX
FF	FINISH FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT
FIN	FINISH
FJB	FLOW JUNCTION BOX
FL	FLOW LINE
FLEX	FLEXIBLE
FLG	FLANGE
FLR	FLOOR
FM	FORCE MAIN
FOW	FRONT OF WALL
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FINISH SURFACE OR FLOOR SINK
FT	FOOT OR FEET
FTG	FOOTING
G	GAS
GA	GAGE
GAL	GALLONS
GALV	GALVANI□ED
GB	GRADE BREAK
GEN	GENERAL
GL	GROUND LINE
GPM	GALLONS PER MINUTE
GR	GRADE
GSP	GALVANI□ED STEEL PIPE
GV	GATE VALVE
HB	HOSE BIBB
HDG	HOT-DIPPED GALVANI□ED
HGL	HYDRAULIC GRADE LINE
HH	HANDHOLE
HORI□	HORI□ONTAL
HP	HORSEPOWER, HIGH PRESSURE, OR HIGH POINT
HSS	HOLLOW STRUCTURAL SECTION
HWL	HIGH WATER LEVEL
HYDRO	HYDROPNEUMATIC
IF	INSIDE FACE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCHES
INV	INVERT
IRR	IRRIGATION
JT	JOINT
L	LENGTH OF CURVE OR LENGTH
LCP	LOCAL CONTROL PANEL
LG	LENGTH OR LONG
LL/BB	LONG LEGS BACK TO BACK
LLH	LONG LEGS HORI□ONTAL
LLV	LONG LEGS VERTICAL
LP	LOW PRESSURE, LOW POINT, OR LIGHT POLE
LR	LONG RADIUS
LWL	LOW WATER LEVEL
MAX	MAXIMUM
MB	MACHINED BOLT
MGD	MILLION GALLONS PER DAY
MTRL	MATERIAL
MH	MANHOLE
MIN	MINIMUM
MFR'S	MANUFACTURER'S
MO	MASONRY OPENING
N, (N)	NORTH/NORTHING OR NEW
NC	NORMALLY CLOSED
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN, NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OVERFLOW OR OUTSIDE FACE
OPER	OPERATED OR OPERATOR
OPNG	OPENING
OSA	OUTSIDE AIR
PB	PULL BOX, POWER BOX
PC	POINT OF CURVE (BEGIN CURVE), PIECE
PCC	PORTLAND CEMENT CONRETE
PGRM	PROGRAM
PL	PLATE OR PROPERTY LINE
PI	POINT OF INTERSECTION
PLBG	PLUMBING
PLC	PROGRAMMABLE LOGIC CONTROLLER
PLCS	PLACES
POC	POINT OF CONNECTION
PP	POWER POLE
PRESS	PRESSURE
PRV	PRESSURE REGULATING VALVE
PSI	POUNDS PER SQUARE INCH
PSV	PRESSURE RELIEF VALVE
PS	PUMP STATION
PT	POINT OF TANGENCY, POINT
PW	PLANT WATER, POTABLE WATER
PV	PLUG VALVE
PVC	POLYVINYL CHLORINE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
R OR (R)	RADIUS, RETURN OR RIDGE
RA	RETURN AIR
RAD	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REBAR	REINFORCEMENT BARS
RED	REDUCER
REF	REFERENCE
REINF	REINFORCING, REINFORCEMENT
REQ'D	REQUIRED
RET	RETURN
REV	REVISION
R/W	RIGHT-OF-WAY
S	SOUTH, SLOPE OR SEWER
SA	SAMPLE, SUPPLY AIR
SAN	SANITARY SEWER
SB	SIGNAL PULL BOX
SCH	SCHEDULE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SECT	SECTION
SF	SQUARE FOOT
SHT	SHEET
SIM	SIMILAR
SL/BB	SHORT LEG BACK TO BACK
SLV	SHORT LEG VERTICAL
SMH	SEWER MANHOLE
SOV	SHUT OFF VALVE
SP	STATIC PRESSURE
SPEC	SPECIFICATIONS OR SPECIAL
SQ	SQUARE
SS	STAINLESS STEEL OR SANITARY SEWER
STA	STATION
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRUCT	STRUCTURE OR STRUCTURAL
SUP	SUPPORT
SYM	SYMMETRICAL
SW	SEAL WATER SWITCH OR SERVICE WATER
SWBD	SWITCHBOARD
T	TANGENT LENGTH OR TELEPHONE
T&B	TOP & BOTTOM
TC	TOP OF CURB
TEL	TELEPHONE
TEMP	TEMPORARY
TG	TOP OF GUTTER OR TOP OF GRATE
THK	THICK
TOC	TOP OF CONCRETE
TOF	TOP OF FILL, TOP OF FLOOR
TOG	TOP OF GRATING
TOP	TOP OF PIPE
TOS	TOP OF STEEL
TS	THICKENED SLUDGE, TOP OF SLOPE
TW	TOP OF WALL
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UNKN	UNKNOWN
V	VENT
VAR	VARIOUS, VARIES
VLT	VAULT
VERT	VERTICAL
VPI	VERTICAL POINT OF INFLECTION
VTR	VENT THROUGH ROOF
W	WEST, WATER, WIDTH, WIDE
W/	WITH (PREFIX)
W/O	WITHOUT (PREFIX)
WC	WATER COLUMN
WCO	WALL CLEAN OUT
WH	WATER HEATER
WS	WATER SURFACE
WP	WORK POINT
WS	WATER SURFACE, WATERSTOP
WSFU	WATER SUPPLY FIXTURE UNITS
WSP	WELDED STEEL PIPE
WT	WEIGHT
WWF	WELDED WIRE FABRIC
XFRM	TRANSFORMER
YD	YARD

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BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

SYMBOLS AND GENERAL ABBREVIATIONS

SHEET G-03
SHEET NO. 3 OF 19
PROJECT NO.
DRAWING NO.

GENERAL NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO COMMENCING THE WORK.

2. THE CONTRACTOR SHALL COORDINATE WITH THE DISTRICT TO IDENTIFY, CONFIRM AND ISOLATE THE EXISTING PROCESS AND UTILITY LINES AS WELL AS DE-ENERGI□E THE POWER PRIOR TO COMMENCING THE WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE DISTRICT FOR EQUIPMENT, PROCESS AND UTILITY PIPES ISOLATION, AND DRAINING OF TANKS AND PIPES PRIOR TO COMMENCING THE DEMOLITION AND/OR INSTALLATION WORK. THE CONTRACTOR SHALL DISPOSE OF CHEMICALS WITHIN THE PLANT AS DIRECTED BY THE DISTRICT.

3. THE CONTRACTOR SHALL NOTIFY THE DISTRICT ONE (1) WEEK IN ADVANCE PRIOR TO DISCONNECTION/DEMOLITION OF ANY EXISTING EQUIPMENT.

4. VALVES, PIPES AND FITTINGS END CONNECTIONS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL USE A SUITABLE CONNECTION TYPE, CASE BY CASE, BASED ON THE PIPE SERVICE AND PRESSURE, ROUTING LOCATION (ABOVE/BELOW GRADE), PIPE MATERIAL, PIPE SI□E, CONNECTION ACCESSIBILITY, ETC. (THREADED, WELDED, CEMENT WELDED, FLANGED, RIGID OR FLEXIBLE GROOVED COUPLINGS, COUPLING SUCH AS DEPEND-O-LOK/DRESSER/SMITH BLAIR/EBAA/ROMAC, ETC. ALL COUPLINGS SHALL BE AXIAL RESTRAINED, THRUST BLOCKS ARE NOT ACCEPTABLE. RIGID GROOVED COUPLINGS SHALL BE USED ON ABOVE GRADE APPLICATIONS AND FLEXIBLE GROOVED COUPLINGS ON BURIED APPLICATIONS. FLEXIBLE GROOVED COUPLINGS ON ABOVE GRADE APPLICATION SHALL BE USED ONLY WHERE ANGULAR DEFLECTION/MISALIGNMENT OR THERMAL GROWTH HAS TO BE ACCOMMODATED.

5. THE CONTRACTOR SHALL RECYCLE ALL DEMOLISHED MATERIALS AND DISPOSE OF IN COMPLIANCE WITH CURRENT CITY OF CHINO, COUNTY OF SAN BERNARDINO, STATE AND FEDERAL REGULATIONS.

6. THE CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORTS, AS NEEDED, TO PIPES ADJACENT TO DEMOLISHED PIPES. WHEN SUPPORTS ARE BEING REMOVED ALONG WITH PIPE REMOVAL, EVALUATE THE INTEGRITY OF THE REMAINING PIPES AND PROVIDE ADEQUATE SUPPORTS.

7. THE CONTRACTOR SHALL PLUG, CAP OR BLIND FLANGE ALL OPEN PIPE ENDS RESULTING FROM DEMOLITION WITH THE LIKE MATERIAL.

8. THE CONTRACTOR SHALL CUT AND CAP MINIMUM ONE FOOT (1'-0") BELOW GRADE ALL ABANDONED BURIED PIPES AND CONDUITS RESULTING FROM DEMOLITION.

9. THE CONTRACTOR SHALL REMOVE, IF POSSIBLE, OR CUT FLUSH WITH THE CONCRETE SURFACE ALL SUPPORTS AND ANCHOR BOLTS RESULTING FROM DEMOLITION AND SHALL PATCH ANY RESULTING CONCRETE HOLES WITH EPOXY GROUT.

10. THE CONTRACTOR SHALL FIELD ROUTE, INSTALL ISOLATION VALVES, AND ADEQUATELY SUPPORT HOSE BIBB, SEAL WATER, DRAINS, VENT LINES, ETC. ALL DRAINS SHALL BE SLOPED MINIMUM 0.4% AND SHALL BE FIELD ROUTED TO THE NEAREST FLOOR DRAIN.

11. THE CONTRACTOR SHALL INSTALL SEAL WATER FLUSHING TO PUMPS MECHANICAL SEAL AS APPLICABLE, SEAL WATER FLUSHING SHALL BE PROVIDED IN COMPLIANCE WITH PUMP MANUFACTURER RECOMMENDATIONS.

12. PIPE PENETRATIONS SHALL BE PER MECHANICAL DETAILS UNLESS OTHERWISE NOTED ON THE DRAWING.

13. ALL YARD PIPES ENTERING STRUCTURES SHALL BE PROVIDED WITH TWO FLEXIBLE COUPLINGS (MJ IS CONSIDERED A FLEXIBLE COUPLING) ADEQUATELY SPACED, WITHIN 6 FEET OF A STRUCTURE WALL, TO ELIMINATE PIPE STRESSES INDUCED BY SETTLING STRUCTURES WHETHER OR NOT THE FLEXIBLE COUPLINGS ARE SHOWN ON THE DRAWINGS.

14. IN CASE OF CONFLICT BETWEEN THIS DRAWING AND DETAILED EQUIPMENT SPECIFIC DRAWING AND/OR SPECIFICATIONS, THE LATTER WILL TAKE PRECEDENCE.

PUMP SCHEDULE

ITEM NO	PUMP TAG NO	PUMP TYPE	LOCATION	DWG. NO		SERVICE	RATED CAPACITY (GPM)	RATED HEAD OR PRESSURE (FT TDH)	DRIVE	RATED SPEED	POWER	SPECIFICATION SECTION
				MECH.	P&ID							
1	PMP-01	SELF-PRIMING CENTRIFUGAL	PUMP ROOM	M-11	I-03	LIFT	1065	120	BELT	1750 RPM	75 HP□480 V, 3PH, 60 H□	11196
2	PMP-02	SELF-PRIMING CENTRIFUGAL	PUMP ROOM	M-11	I-03	LIFT	1065	120	BELT	1750 RPM	75 HP□480 V, 3PH, 60 H□	11196
3	PMP-03	SELF-PRIMING CENTRIFUGAL	PUMP ROOM	M-11	I-03	LIFT	650	70	BELT	1750 RPM	40 HP□480 V, 3PH, 60 H□	NOTE A
4	PMP-04	SELF-PRIMING CENTRIFUGAL	PUMP ROOM	M-11	I-03	LIFT	650	70	BELT	1750 RPM	40 HP□480 V, 3PH, 60 H□	NOTE A

NOTE A: THE PUMPS PMP-03 AND 04 SHALL BE RETROFIT WITH NEW BELT SHEAVES, NEW BELTS AND NEW 40 HP ELECTRIC MOTORS. THE PUMP SPEED SHALL BE CHANGED TO 1350 RPM. ELECTRIC MOTOR SHALL BE PREMIUM EFFICIENCY, TEFC SUITABLE FOR 480V, 3 PH, 60 H□ IN COMPLIANCE WITH SECTION 16460 REQUIREMENTS. SHEAVES AND BELTS SHALL COMPLY WITH SECTION 11000 REQUIREMENTS.

VALVE SCHEDULE

ITEM NO.	VALVE SCHEDULE			QTY	DWG. NO.		OPERATOR TYPE	OPERATING PRESSURE (PSIG)	MAX. PRESSURE (PSIG)	POWER SUPPLY	FLOW	REMOTE HAND CONTROL	VALVE SPEC □	ACTUATOR SPEC □	REMARKS
	VALVE TAG NO.	SI□E (INCH)	TYPE		MECH	P&ID									
1	N/A	3	VACUUM RELIEF VALVE, AVR1	1	M-10	I-03	N/A	56	60	N/A	800 CFM	N/A	15113	N/A	
1	N/A	2	AIR RELEASE VALVE, ARV2	1	M-10	I-03	N/A	56	60	N/A	10 CFM	N/A	15113	N/A	

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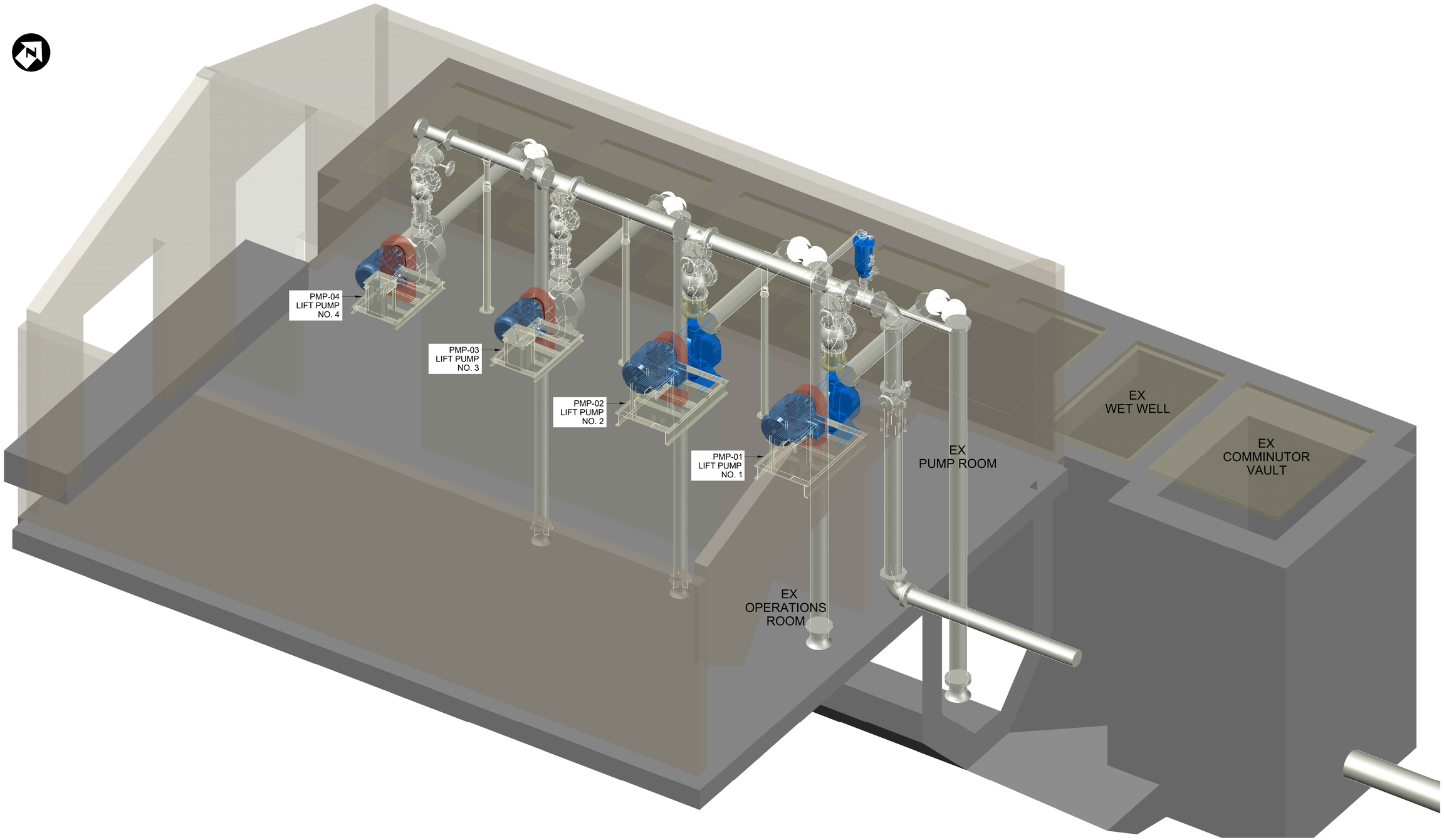
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BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

GENERAL NOTES AND EQUIPMENT SCHEDULE

SHEET M-01
SHEET NO. 4 OF 19
PROJECT NO.
DRAWING NO.



ISOMETRIC VIEW

SCALE: NTS

NOTES:

1. FOR GENERAL NOTES, SEE DWG. M-01.

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SHEET M-10

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

Designed	DT	07/2018
Drawn	DT	07/2018
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		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
E	05/31/19	ID	SK	SUBMITTAL 90%
D	05/07/19	ID	SK	SUBMITTAL 90% (QA/QC)
C	12/21/18	ID	SK	SUBMITTAL 90% (DRAFT)
B	07/20/18	ID	SK	SUBMITTAL 50%
A	10/15/19	ID	SK	SUBMITTAL 100%

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PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

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BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

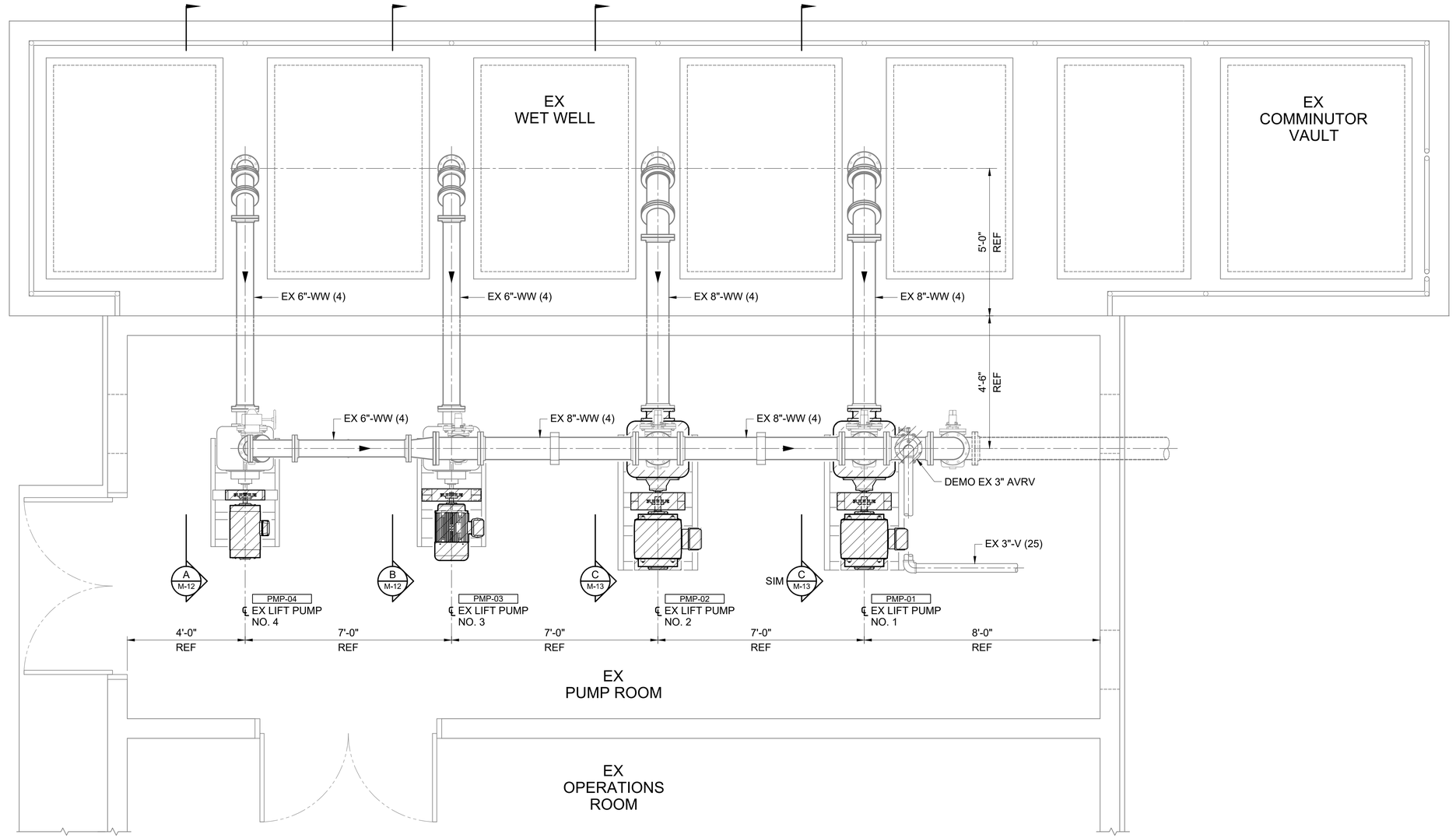
PUMP LIFT STATION GENERAL ARRANGEMENT ISOMETRIC

SHEET NO. 5 OF 19

PROJECT NO.

DRAWING NO.

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

NOTES:

1. FOR GENERAL NOTES, SEE DWG. M-01.

LEGEND:

DEMOLISH:

2' 1' 0 2' 4'

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

SUBMITTAL 100% - 10/15/2019

SHEET M-11

SHEET NO. 6 OF 19

PROJECT NO.

DRAWING NO.

BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

PUMP ROOM
EQUIPMENT AND PIPING
DEMOLITION PLAN

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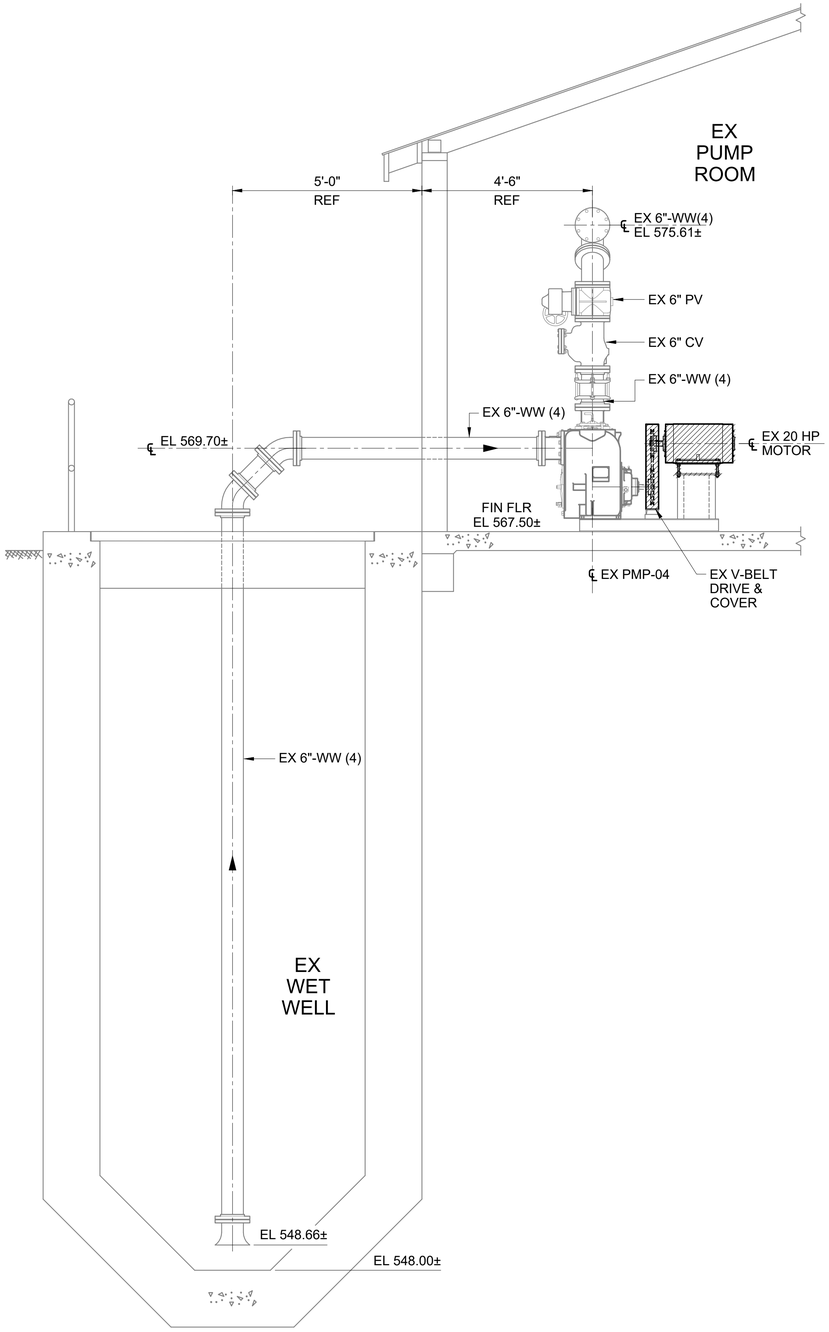
SCALE
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0" 1"

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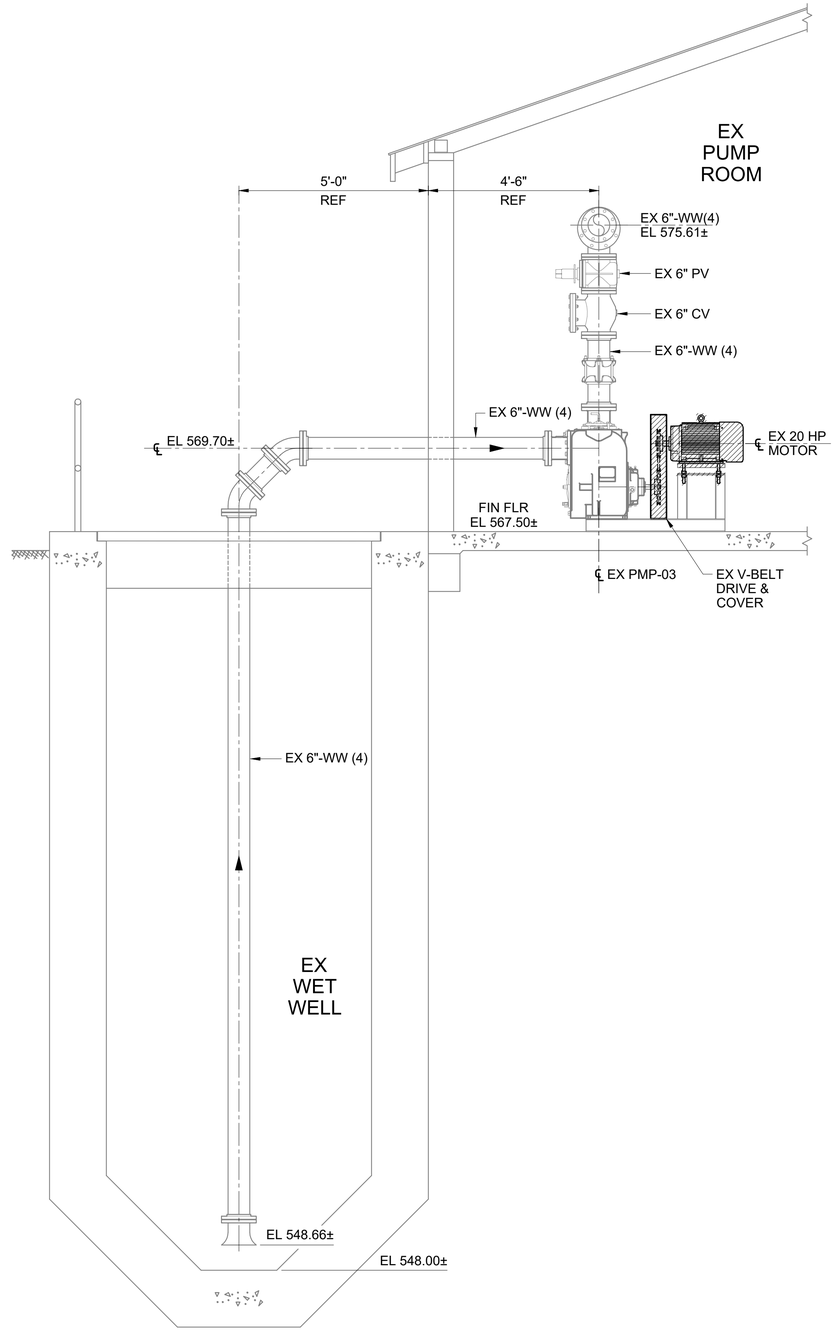
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A M-11 SECTION
SCALE: 1/2"=1'-0"



B M-11 SECTION
SCALE: 1/2"=1'-0"

NOTES:

1. FOR GENERAL NPOTES, SEE DWG. M-01
2. DEMO EX. 20 HP MOTORS OF EX. PUMPS NO. 3 AND NO. 4, INCLUDING MOTOR ADJUSTMENT/BELT TENSIONING BASES, V-BELTS, SHEAVES, AND BELT DRIVE COVERS.
3. PROTECT ALL REMAINING EQUIPMENT, EQUIPMENT BASES, PIPING, SUPPORTS, INSTRUMENTS, CONDUITS, ETC. IN PLACE DURING DEMOLITIONS AND NEW INSTALLATIONS.

LEGEND:

DEMOLISH:

2' 1' 0 2' 4'
SCALE: 1/2"=1'-0"

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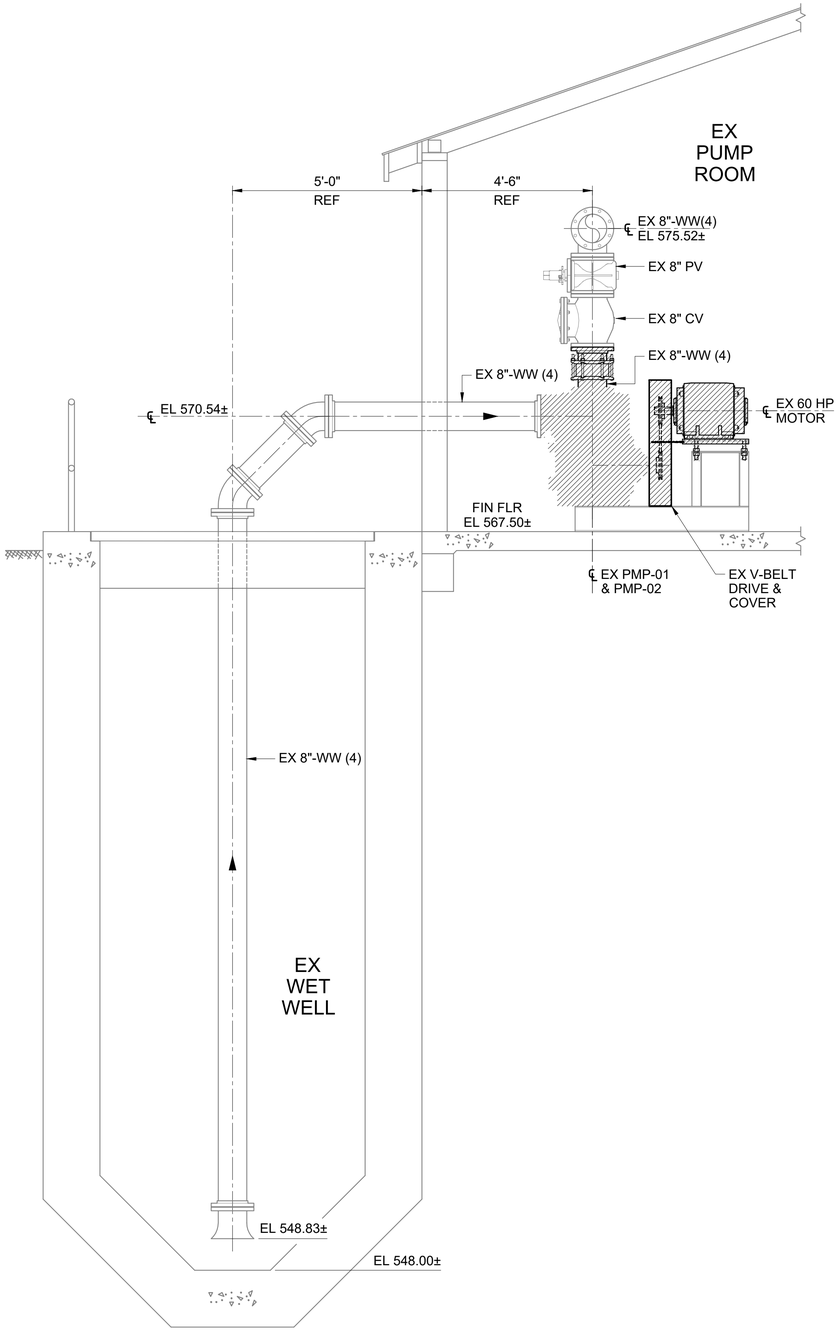
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BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

PUMP ROOM DEMOLITION SECTIONS AND DETAILS

SHEET M-12
SHEET NO. 7 OF 19
PROJECT NO.
DRAWING NO.

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C / M-11 SECTION
SCALE: 1/2"=1'-0"

NOTES:

1. FOR GENERAL NOTES, SEE DWG. M-01.
2. DEMOLISH EXISTING PUMPS NO. 1 AND NO. 2 INCLUDING 60 HP MOTORS, MOTOR ADJUSTMENT/BELT TENSIONING BASES, V-BELTS, SHEAVES, BELT DRIVE COVERS, AND PIPE SPOOLS OF PUMP DISCHARGES.
3. PROTECT ALL REMAINING EQUIPMENT, EQUIPMENT BASES, PIPING, SUPPORTS, INSTRUMENTS, CONDUITS, ETC. IN PLACE DURING DEMOLITIONS AND NEW INSTALLATIONS.

LEGEND:

DEMOLISH:

2' 1' 0 2' 4'
SCALE: 1/2"=1'-0"

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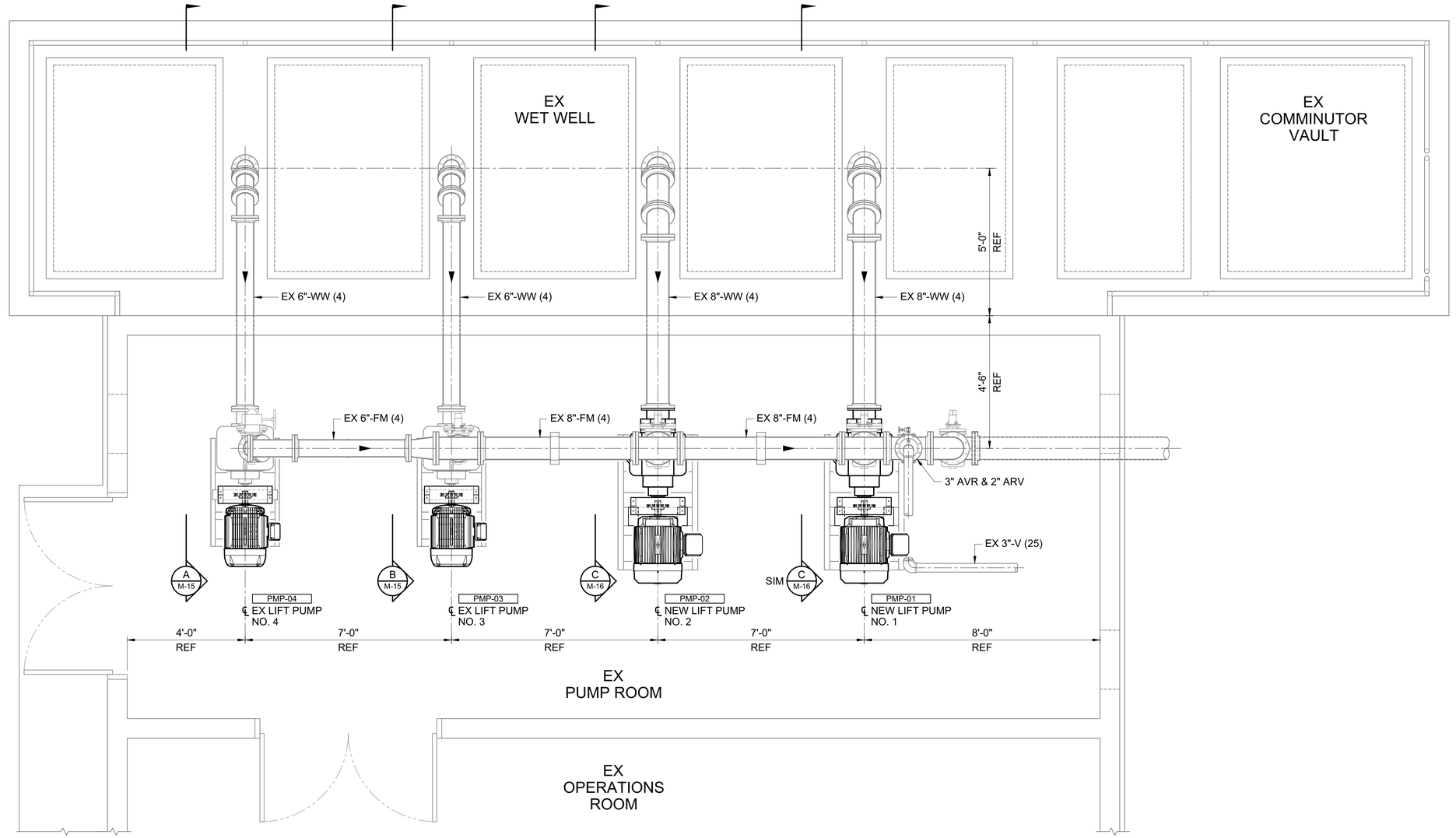
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BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

PUMP ROOM
DEMOLITION SECTIONS AND DETAILS

SHEET M-13
SHEET NO. 8 OF 19
PROJECT NO.
DRAWING NO.

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

NOTES:

1. FOR GENERAL NOTES, SEE DWG. M-01

2' 1' 0 2' 4'
SCALE: 1/2"=1'-0"

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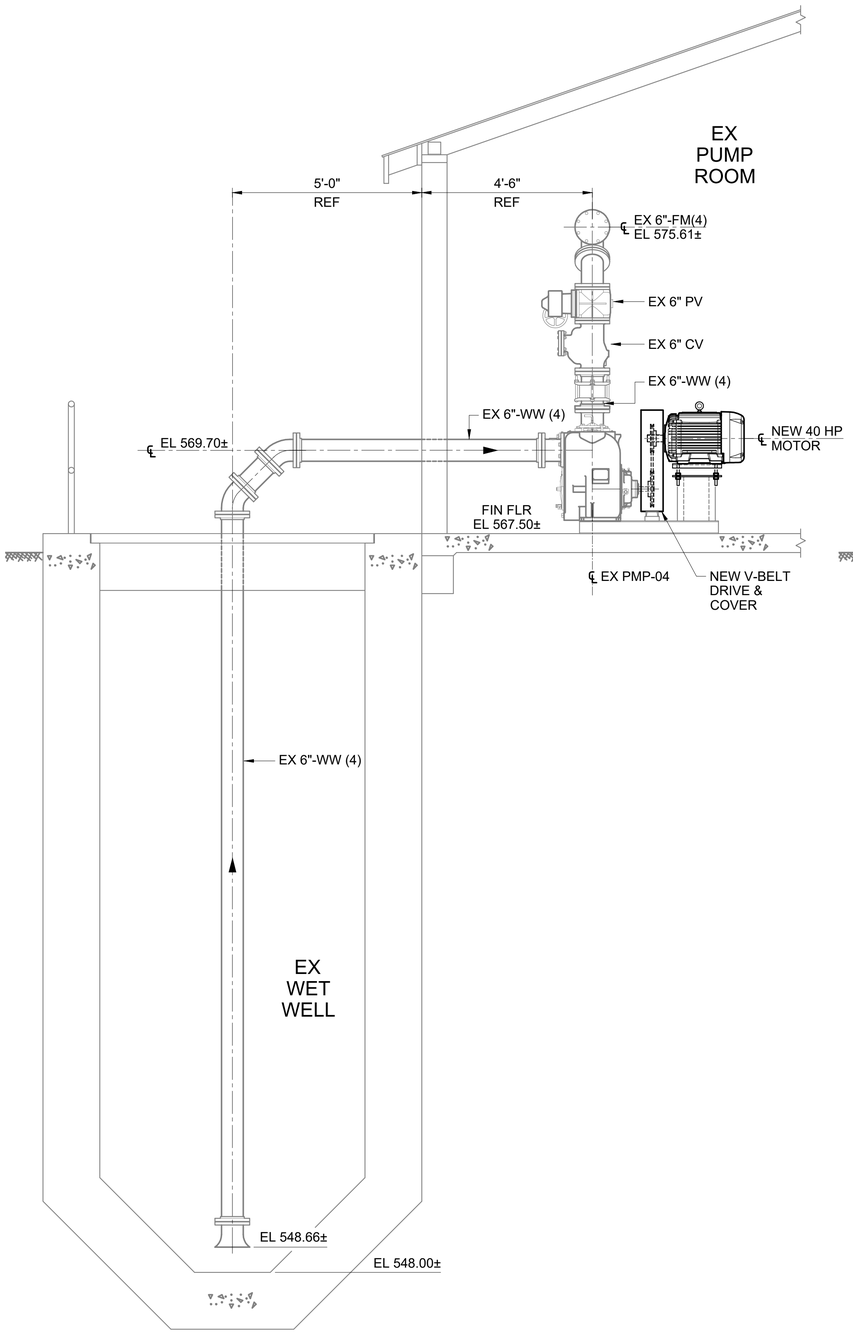
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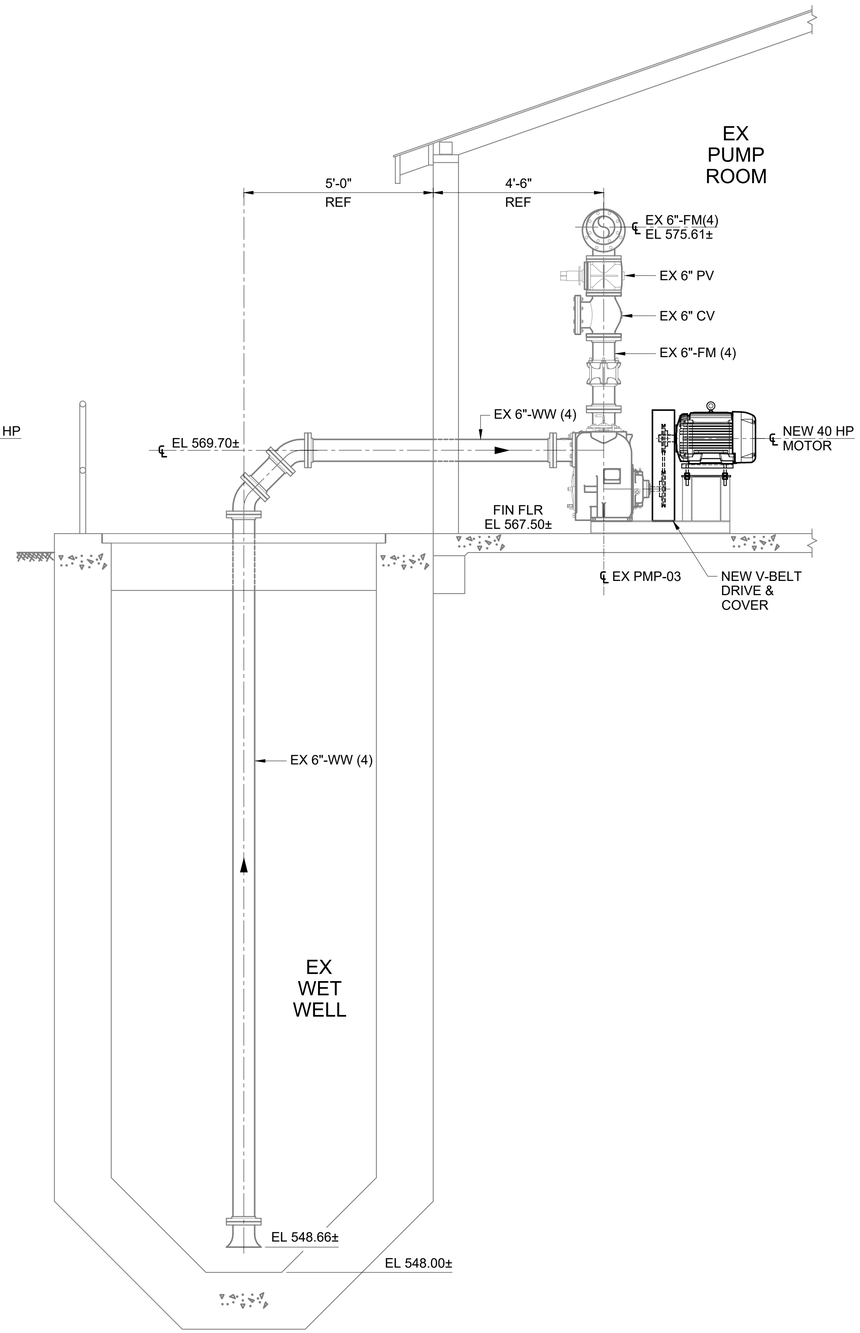
BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

PUMP ROOM
EQUIPMENT AND PIPING
NEW INSTALLATION PLAN

SHEET M-14
SHEET NO. 9 OF 19
PROJECT NO.
DRAWING NO.



A M-14 SECTION
SCALE: 1/2"=1'-0"



B M-14 SECTION
SCALE: 1/2"=1'-0"

NOTES:

1. FOR GENERAL NOTES, SEE DWG. M-01.
2. PROVIDE NEW 40 HP, FOOT MOUNT ELECTRIC MOTORS FOR EXISTING PUMPS PMP-03 AND PMP-04. MOTORS SHALL BE PREMIUM EFFICIENCY TEFC IN COMPLIANCE WITH SECTION 16460 REQUIREMENTS. PROVIDE NEW MOTOR ADJUSTMENT/BELT TENSIONING BASES TO MATCH EXISTING PUMP FRAMES.
3. PROVIDE NEW SHEAVES WITH OD SUITABLE FOR THE REDUCTION RATIO REQUIRED AND ID HUBS TO MATCH EXISTING PUMP INPUT SHAFT DIAMETER AND NEW MOTOR SHAFT DIAMETER. SHEAVES AND BELTS SHALL COMPLY WITH SECTIONS 11000 AND 11196 REQUIREMENTS.
4. PROVIDE NEW SHEAVE AND BELT APPROVED OSHA COVERS.

2' 1' 0 2' 4'
SCALE: 1/2"=1'-0"

PARSONS
100 WEST WALNUT STREET
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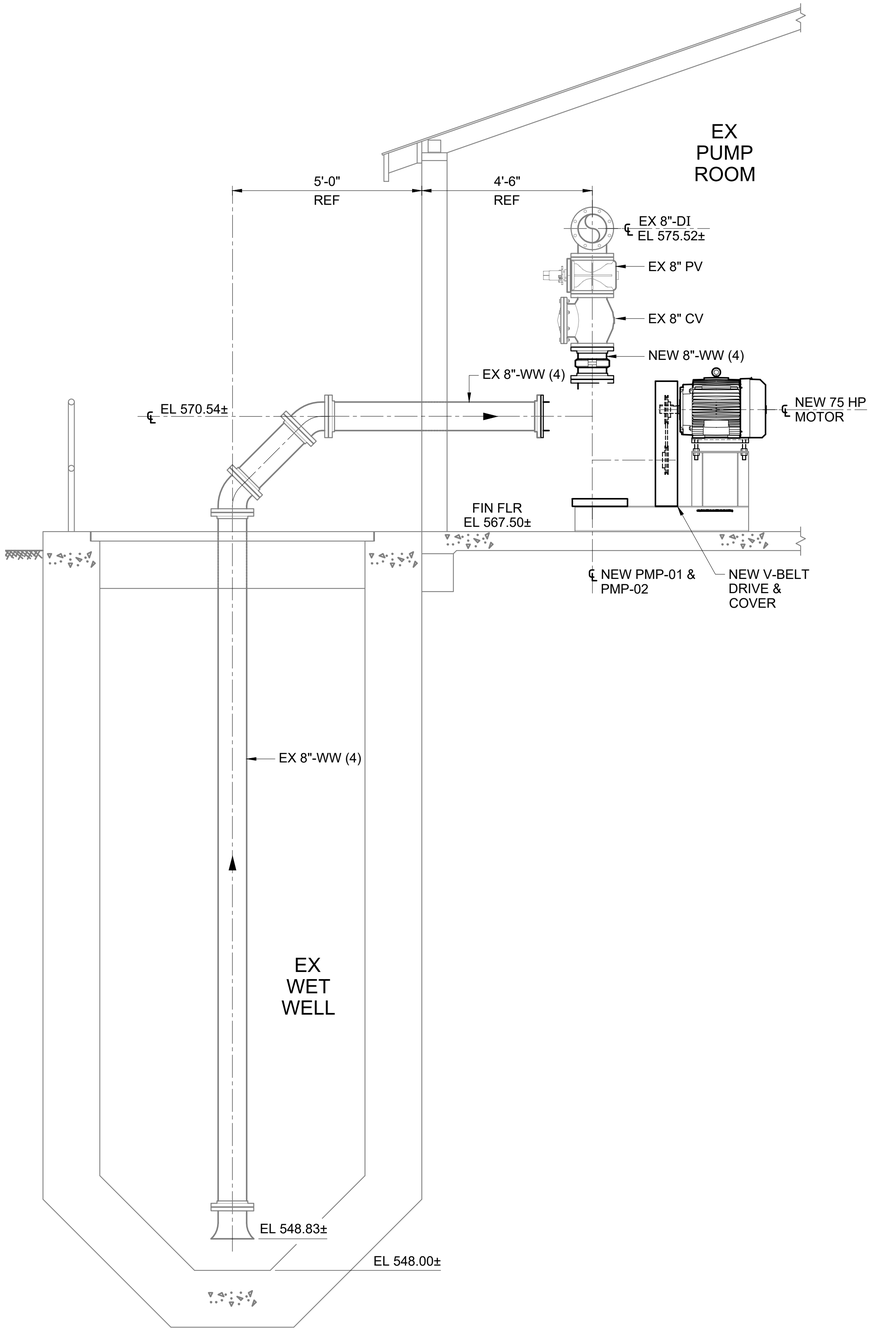
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BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

PUMP ROOM NEW INSTALLATION SECTIONS AND DETAILS

SHEET M-15
SHEET NO. 10 OF 19
PROJECT NO.
DRAWING NO.

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C / M-14 SECTION
SCALE: 1/2"=1'-0"

NOTES:

1. FOR GENERAL NOTES, SEE DWG. M-01.
2. PROVIDE NEW PUMPS PMP-01 AND PMP-02 WITH 75 HP, FOOT MOUNT ELECTRIC MOTORS. PUMPS SHALL COMPLY WITH SECTIONS 11000, 11175 AND 11196 REQUIREMENTS. MOTORS SHALL BE PREMIUM EFFICIENCY TEFC IN COMPLIANCE WITH SECTION 16460 REQUIREMENTS. PROVIDE NEW MOTOR ADJUSTMENT/BELT TENSIONING BASES TO MATCH EXISTING PUMP FRAMES.
3. SHEAVES AND BELTS SHALL COMPLY WITH SECTIONS 11000 AND 11196 REQUIREMENTS.
4. PROVIDE NEW SHEAVE AND BELT APPROVED OSHA COVERS.

2' 1' 0 2' 4'
SCALE: 1/2"=1'-0"

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BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

PUMP ROOM
NEW INSTALLATION
SECTIONS AND DETAILS

SHEET M-16
SHEET NO. 11 OF 19
PROJECT NO.
DRAWING NO.

SINGLE LINE DIAGRAMS

- TRANSFORMER, RATING AS NOTED
- PLUG-IN TYPE EQUIPMENT, CIRCUIT NUMBER AS NOTED
  M = MAIN, GM = GENERATOR MAIN
- FUSE
- AT / AF — LOW VOLTAGE CIRCUIT BREAKER, 3 POLE UNLESS OTHERWISE NOTED
  AF = AMPERE FRAME RATING
  AT = AMPERE TRIP SETTING
- MCC MOUNTED COMBINATION STARTER
- 30A — COMBINATION CONTACTOR, SI□E AS NOTED
- 75 — MOTOR, HORSEPOWER AS NOTED
- GROUND
- VT(3)480/120V — VOLTAGE TRANSFORMER, RATIO AND NUMBER OF VT'S AS NOTED
- 100/5 (3) — CURRENT TRANSFORMER, RATIO AND NUMBER OF CT'S AS NOTED
- 50/5 (1) — □ERO SEQUENCE CURRENT TRANSFORMER, RATIO AND NUMBER OF CT'S AS NOTED
- BUS
- ELECTRICAL ENCLOSURE OUTLINE
- GENERATOR
- 60A — DISCONNECT SWITCH, SI□E AS NOTED
- FUSED DISCONNECT SWITCH, SI□E AS NOTED
- SOLID-STATE REDUCED VOLTAGE STARTER MOTOR
- A — AMMETER
- V — VOLTMETER
- AS — AMMETER SWITCH
- PM — POWER MONITOR
- VS — VOLTMETER SWITCH
- E — E: ELECTRICAL INTERLOCK
  K: KEY INTERLOCK
- ∅ — PHASE
- G — DENOTES GREEN LIGHT

PLANS

- CONDUIT RUN EXPOSED UNLESS OTHERWISE NOTED
- CONDUIT RUN UNDERGROUND OR BELOW GRADE UNLESS OTHERWISE NOTED
- BARE COPPER GROUND IN SLAB OR IN UNDERGROUND GROUND GRID, SI□E AS NOTED
- LP1-1/3,7 — HOME RUN TO PANEL "LP1". CIRCUIT NOS 1,3,7. CONDUCTORS SHALL BE □12 UNLESS OTHERWISE NOTED. CONDUIT SHALL BE 3/4" UNLESS OTHERWISE NOTED. RUNS NOT MARKED SHALL BE 3/4" WITH 2□12 & 1□12 GROUND. CONDUIT SHOWN IS 3/4" WITH 5□12 & 1□12 GROUND, CIRCUIT NOS. 1 & 3 WITH COMMON NEUTRAL & CIRCUIT NO. 7 WITH SEPARATE NEUTRAL.
- CONDUIT RUN - CHANGE IN ELEVATION
- CONDUIT UP (OUT TOP OF EQUIPMENT)
- CONDUIT DOWN (OUT BOTTOM OF EQUIPMENT)
- CONDUIT STUBBED OUT AND CAPPED
- FLEXIBLE LIQUID-TIGHT CONDUIT
- WALL / FLOOR — 120V SINGLE RECEPTACLE, NEMA CONFIGURATION 5-20
- 120V DUPLEX RECEPTACLE, NEMA CONFIGURATION 5-20
- JB — RACEWAY BOX, "JB" JUNCTION BOX, "MH" MANHOLE "HH" HANDHOLE, "PB" PULLBOX, "TB" TERMINAL BOX
- J — JUNCTION BOX, SI□E AS REQUIRED BY CODE
- T — THERMOSTAT, T'STAT
- PC — PHOTOCELL
- PS — CONTROL DEVICE
  VLV = VALVE
  PS = PRESSURE SWITCH
  TS = TEMPERATURE SWITCH
  □S = LIMIT SWITCH
  LE = LEVEL ELEMENT
  LS = AMBIENT LTG. SENSOR
  MS = MOTION SENSOR
- SS — PUSHBUTTON STATION, "SS" START-STOP, "LOS" LOCKOUT-STOP, "HOA" HAND-OFF-AUTO, "LOR" LOCAL-OFF-REMOTE, "E-STOP" EMERGENCY STOP.
- DISCONNECT SWITCH. SI□E AS NOTED

PLANS

- POWER PANEL, CONTROL PANEL, ETC
- MOTOR CONTROL CENTER
- GROUND CONNECTION BOLTED TYPE OR GROUND INSERT
- GROUND CONNECTION - EXOTHERMIC TYPE
- S_m — MANUAL MOTOR STARTER WITH THERMAL OVERLOAD PROTECTION AND RED PILOT LIGHT IN NEMA 1 ENCLOSURE, PAD LOCKABLE IN "OFF" POSITION
- GROUND ROD WITH CADWELDED GROUND WIRE
- GROUND WELL
- FIELD INSTRUMENT
- SV — SOLENOID VALVE
- H — HEATER
- M — MOTOR OPERATED VALVE

GENERAL

- HEAVY LINES ARE PROPOSED WORK
- LIGHT LINES ARE EXISTING WORK
- LIGHT BROKEN LINES ARE FUTURE WORK OR BY OTHERS
- REMOVE OR DEMOLISH
- 1 — DENOTES REFERENCES TO KEYED NOTE 1
  I.E. - "SEE KEYED NOTE 1"

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Checked	JK	12/2017 Date

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SCALE
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BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

ELECTRICAL
SYMBOLS AND LEGEND

SHEET E-01
SHEET NO. 12 OF 19
PROJECT NO.
DRAWING NO.

GENERAL NOTES

RACEWAYS:

1. ALL CONDUITS ARE SHOWN DIAGRAMMATICALLY AND THEY SHALL BE ROUTED TO SUIT THE FIELD CONDITIONS MEETING THE REQUIREMENTS OF NEC AND THE SPECIFICATIONS.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL FITTINGS, JUNCTION BOXES, PULL BOXES, SUPPORTS, AND HARDWARES REQUIRED FOR RACEWAY SYSTEMS.

3. CONNECTION OF RIGID CONDUIT TO DEVICES OR EQUIPMENT WHICH MAY BE SUBJECT TO MOVEMENT, VIBRATION, EXPANSION OR CONTRACTION SHALL BE MADE WITH LIQUID-TIGHT FLEXIBLE CONDUIT, WHERE REQUIRED. FLEXIBLE CONDUIT SHALL HAVE AN INTEGRAL COPPER GROUNDING CONDUCTOR OR GROUNDING JUMPER SHALL BE INSTALLED.

4. ALL STEEL CONDUITS NOT TERMINATING DIRECTLY TO THE ENCLOSURES OF MOTOR CONTROL EQUIPMENTS, CONTROL CABINETS, ETC. SHALL BE PROVIDED WITH GROUNDING BUSHING AND GROUNDED TO THE ENCLOSURES.

5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL SLEEVES AND OPENINGS REQUIRED FOR THE PASSAGE OF RACEWAYS OR CABLES EVEN IF THEY ARE NOT SHOWN ON THE DRAWINGS.

GROUNDING:

1. ALL METALLIC STRUCTURES, METAL ENCLOSURES AND ELECTRICAL EQUIPMENT, SUCH AS STRUCTURAL STEEL, METALLIC RACEWAYS, SWITCHING EQUIPMENT, PANELS, ELECTRICAL EQUIPMENT ENCLOSURES AND CABINETS, MOTORS, TRANSFORMERS, ETC. SHALL BE PERMANENTLY AND EFFECTIVELY GROUNDED AND GROUND CONNECTIONS SHALL BE MADE TO THE PLANT GROUND GRIDS. THE BONDING JUMPER CONDUCTORS SHALL BE SI□ED PER NEC UNLESS OTHERWISE SHOWN.

2. GROUNDING ELECTRODE SYSTEM FOR EACH SERVICE SHALL BE BONDED TOGETHER TO METAL FRAMES OF BUILDING OR STRUCTURES.

SINGLE LINE DIAGRAMS:

1. SINGLE LINE DIAGRAMS SHOW MAJOR PLANT ELECTRICAL DISTRIBUTION SYSTEMS INCLUDING POWER SOURCES, VOLTAGE LEVELS OF EACH SYSTEMS, MAJOR DISTRIBUTION EQUIPMENT AND THEIR CONNECTIONS, PROTECTION EQUIPMENT AND DEVICES, MAJOR UTILI□ATION EQUIPMENT AND DEVICES, AND THEIR CONTROL, ETC.

ELECTRICAL PLANS:

1. WHERE RACEWAYS ARE INDICATED AS HOME RUNS, THE CONTRACTOR SHALL INSTALL ALL RACEWAY REQUIRED. RACEWAY ROUTINGS SHALL BE CONTRACTOR'S CHOICE AND IN STRICT ACCORDANCE WITH THE NEC AND CUSTOMARY INSTALLATION PRACTICES. RACEWAY SHALL BE ENCASED, EXPOSED, CONCEALED, OR UNDER FLOOR AS INDICATED OR REQUIRED.

2. EXACT LOCATIONS OF FIELD DEVICES MAY NOT BE SHOWN IN THE ELECTRICAL PLAN DRAWINGS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE ACTUAL LOCATIONS OF THE FIELD DEVICES AND INSTALL CONDUITS AND WIRES REQUIRED TO MAKE THE SYSTEM COMPLETE.

3. ROUTINGS SHALL BE ADJUSTED TO AVOID OBSTRUCTIONS. COORDINATE WITH ALL OTHER TRADES PRIOR TO INSTALLATION OF RACEWAYS. LACK OF SUCH COORDINATION SHALL NOT BE JUSTIFICATION FOR EXTRA COMPENSATION, AND REMOVAL AND RE-INSTALLATION TO RESOLVE CONFLICTS SHALL BE AT NO EXTRA COST TO THE OWNER.

EQUIPMENT ANCHORING:

1. POST-INSTALLED ANCHOR BOLTS SHALL HAVE AN ACTIVE ICC EVAULATION REPORT AT TIME OF CONSTRUCTION. THEIR CAPACITIES LISTED IN THE REPORT SHALL BE BASED ON TESTING IN CRACKED CONCRETE.

2. 316SS ADHESIVE ANCHORING SYSTEM SHALL BE USED IN CORROSIVE WET, IN DRY, INDOOR OR OUTDOOR AREAS.

3. CONTRACTOR SHALL SUBMIT CALCULATIONS FOR ANCHORING SYSTEM FOR MCC TO CONSTRUCTION MANAGER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. CALCULATIONS SHALL CONSIDER ALL APPLICABLE LOADS ON ANCHORING AND SHALL INCLUDE ANCHOR BOLT CAPACITIES AS MODIFIED BY SPACING AND EDGED DISTANCE, BASE PLATE STRESSES, AND CONCRETE BEARING STRESSES.

MISCELLANEOUS:

1. CIRCUITS OF DIFFERENT SYSTEM VOLTAGE SHALL BE INSTALLED IN SEPARATE RACEWAYS, AND PULL BOXES. THE SYSTEM VOLTAGE LEVELS ARE:

   a. 120-480 VOLT
   b. INSTRUMENTATION LESS THAN 50 VOLT DC
   c. TELEPHONE AND COMMUNICATION.

ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
AF	AMPERE FRAME RATING
AFF	ABOVE FINISHED FLOOR
AL	ALUMINUM
AMP	AMPERES, AMPERAGE
AS	AMMETER SWITCH, ADJUSTABLE SPEED
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER
BD	BUS DUCT, BUSWAY
BKR	BREAKER
BLDG	BUILDING
C	CONDUIT
CAB	CABINET
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CO	CONDUIT ONLY
COMPR	COMPRESSOR
COMPT	COMPARTMENT
CP	CONTROL PANEL
CPB	CONTROL PULL BOX
CR	CONTROL RELAY
CT	CURRENT TRANSFORMER
CU	COPPER
D	DEPTH
DC	DIRECT CURRENT
DEG	DEGREE
DIA	DIAMETER
DISC	DISCONNECT
DISTR	DISTRIBUTION
DP	DISTRIBUTION PANEL BOARD
DPDT	DOUBLE POLE DOUBLE THROW
DS	DISCONNECT SWITCH
DWG	DRAWING
(E)/EXIST	EXISTING
EA	EACH
EL, ELEV	ELEVATION
ELEC/ELECT	ELECTRICAL
EMERG	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EP	EXPLOSION PROOF
EQPT	EQUIPMENT
ETM	ELAPSE TIME METER
EXH	EXHAUST
F	FREQUENCY
FDR	FEEDER
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FUT	FUTURE
GALV	GALVANI□ED
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
G, GND	GROUND
H	HEIGHT
HOA	HAND-OFF-AUTO
HP	HORSEPOWER
HT	HEIGHT
HV	HIGH VOLTAGE
H□	HERT□ (CYCLES PER SECOND)

IC	INTERRUPTING CAPACITY
IND	INDICATION
INFO	INFORMATION
INST	INSTANTANEOUS
INSTR	INSTRUMENT
I/O	INPUT/OUTPUT
IPB	INSTRUMENTATION PULL BOX
JB, J/B	JUNCTION BOX
J BOX	JUNCTION BOX
KAIC	KILOAMPERE INTERRUPTING AND WITHSTAND CAPACITY
kcmil	THOUSAND CIRCULAR MIL
KV	KILOVOLT
KVA	KILOVOLT-AMPERES
KW	KILOWATTS
LC	LIGHTING CONTACTOR
LCB	LOCAL CONTROL BOARD
LCP	LOCAL CONTROL PANEL
LP	LIGHTING PANEL
LS	LEVEL SWITCH, LIMIT SWITCH
LV	LOW VOLTAGE
MA	MILLIAMPS
MAN	MANUAL
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MFGR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MS	MANUAL MOTOR STARTER
MT, MTD	MOUNT, MOUNTED
MTG	MOUNTING
MTR	MOTOR
MTS	MANUAL TRANSFER SWITCH
N	NEUTRAL
NA	NON-AUTOMATIC OR NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEG	NEGATIVE
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN, NUMBER
NOS	NUMBERS
NP	NAMEPLATE
NTS	NOT TO SCALE
OC	OPENING COIL, OR ON CENTER
O/H	OVERHEAD
P	POLE, POWER
PB	PUSH BUTTON, POWER PULL BOX
PF	POWER FACTOR
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
PNLBD	PANELBOARD
PP	POWER PANEL
PR	PAIR
PRI.	PRIMARY
PVC	POLYVINYL CHLORIDE
PW	PART WINDING
PWR	POWER
R	TO BE REMOVED
REC	RECEPTACLE
REQ'D	REQUIRED
REF	REFERENCE
RGS	RIGID GALVANI□ED STEEL
SCE	SOUTHERN CALIFORNIA EDISON
SCH	SCHEDULE
SEC	SECONDS, SECONDARY
SECT	SECTION
SEL SW	SELECTOR SWITCH
SEQ	SEQUENCE
SHLD	SHIELDED
SHT	SHEET
SIG	SIGNAL
SP	SPARE
SPDT	SINGLE POLE DOUBLE THROW
SPEC	SPECIFICATION
SRVS	SOLID-STATE REDUCED VOLTAGE STARTER MOTOR
STD	STANDARD
STL	STEEL
STR	STARTER
SV	SOLENOID VALVE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYS	SYSTEM
TB	TERMINAL BOX
TD	TIME DELAY
TDR	TIME DELAY RELAY
TEMP	TEMPERATURE, OR TEMPORARY
TERM	TERMINAL
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
V	VOLTS, VOLTAGE
VA	VOLT AMPERES
W	WIDTH
WP	WEATHERPROOF
XFMR, TX	TRANSFORMER
Y	WYE

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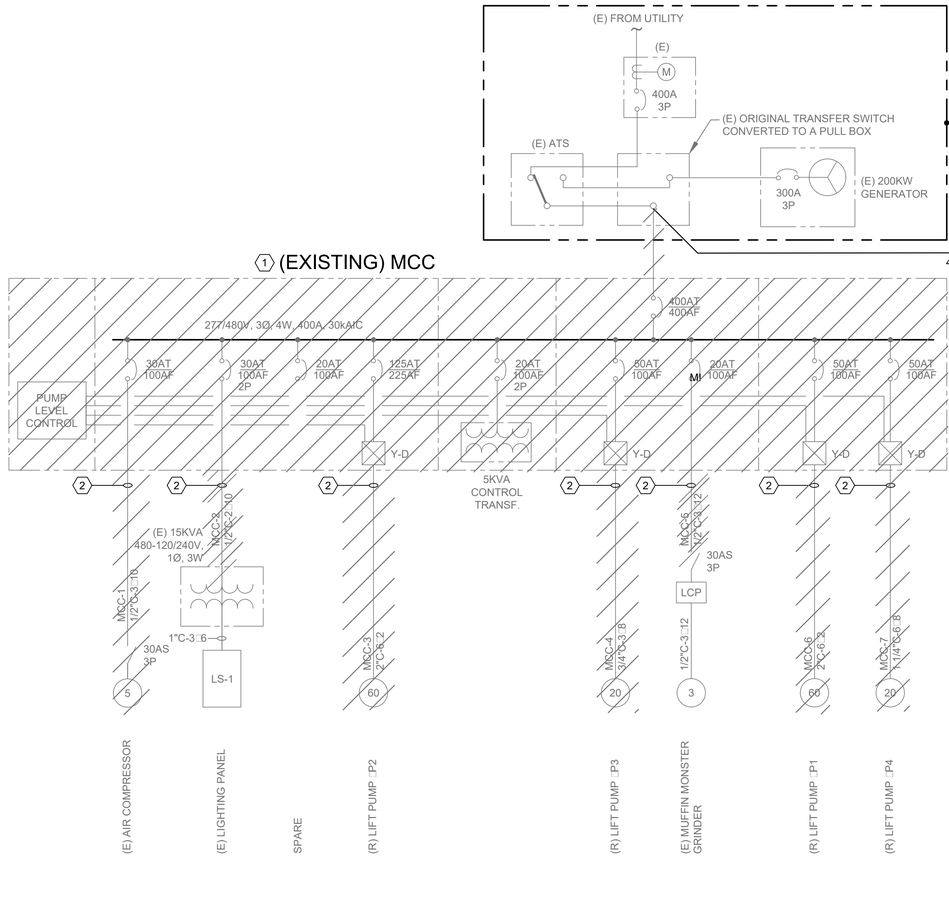
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BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

ELECTRICAL
GENERAL NOTES & ABBREVIATIONS

SHEET E-02
SHEET NO. 13 OF 19
PROJECT NO.
DRAWING NO.

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DEMOLITION ONE LINE DIAGRAM

NTS

MCC "RLS" SINGLE LINE DIAGRAM

NTS

NOTES:

1. SEE DRAWINGS E-01, AND E-02 FOR SYMBOLS & LEGEND AND GENERAL NOTES & ABBREVIATIONS.

KEY NOTES:

(1) EXISTING MCC TO BE REMOVED.

(2) REMOVED EXISTING FEEDER CONDUCTORS, CONDUIT TO BE ABANDONED IN PLACE, CUT FLUSH TO THE FLOOR AND CAPPED.

SEQUENCE OF CONSTRUCTION:

1. INSTALL NEW MCC "RLS".
2. FROM MCC "RLS", INSTALL POWER AND CONTROL CABLES/CONDUCTORS. DO NOT CONNECT UNTIL STEP 4 BELOW.
3. SUBMIT TO IEUA FOR APPROVAL A SHUT DOWN SCHEDULE TWO WEEKS PRIOR TO THE WORK. TURN OFF POWER FROM UTILITY AND GENERATOR, PROVIDE A FEEDER FROM THE LOAD SIDE OF THE TRANSFER SWITCH, AND CONNECT TO "RLS".
4. HAVING ENERGI□ED "RLS" AND EXISTING MCC:
   - REMOVE AND REPLACE OLD EQUIPMENT/FEEDER ONE AT A TIME WITH NEW ONE. MAKE CONNECTION WITH NEW FEEDER FROM MCC "RLS".
   - TEST AND THEN ENERGI□E THE EQUIPMENT THE PROCESS IS REPEATED FOR THE NEXT EQUIPMENT.
   - UNTIL ALL EQUIPMENT ARE REPLACED AND CONNECTED TO MCC "RLS".
5. AFTER ALL LOADS ARE TRANSFERRED TO MCC RLS:
   - REMOVE (E) MCC MAIN FEEDER.
   - REMOVE EXISTING MCC AND PUMP LEVEL CONTROL SECTION.

MAXIMUM DEMAND LOAD FOR MCC - RLS

1.	LIFT PUMP □P1	=	77KVA
2.	LIFT PUMP □P2 (STANDBY)	=	0KVA
3.	LIFT PUMP □P3	=	32KVA
4.	LIFT PUMP □P4 (STANDBY)	=	0KVA
5.	MUFFIN MONSTER	=	4KVA
6.	AIR COMPRESSOR	=	6KVA
7.	LIGHTING PANEL	=	15KVA
	25% OF LARGEST MOTOR LOAD	=	20KVA
	SUB-TOTAL	=	154KVA
	20% SPARE CAPACITY FOR FUTURE	=	31KVA
	TOTAL	=	185KVA
	185KVA □ 480/277V	=	223AMPS

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BUTTERFIELD LIFT STATION UPGRADES
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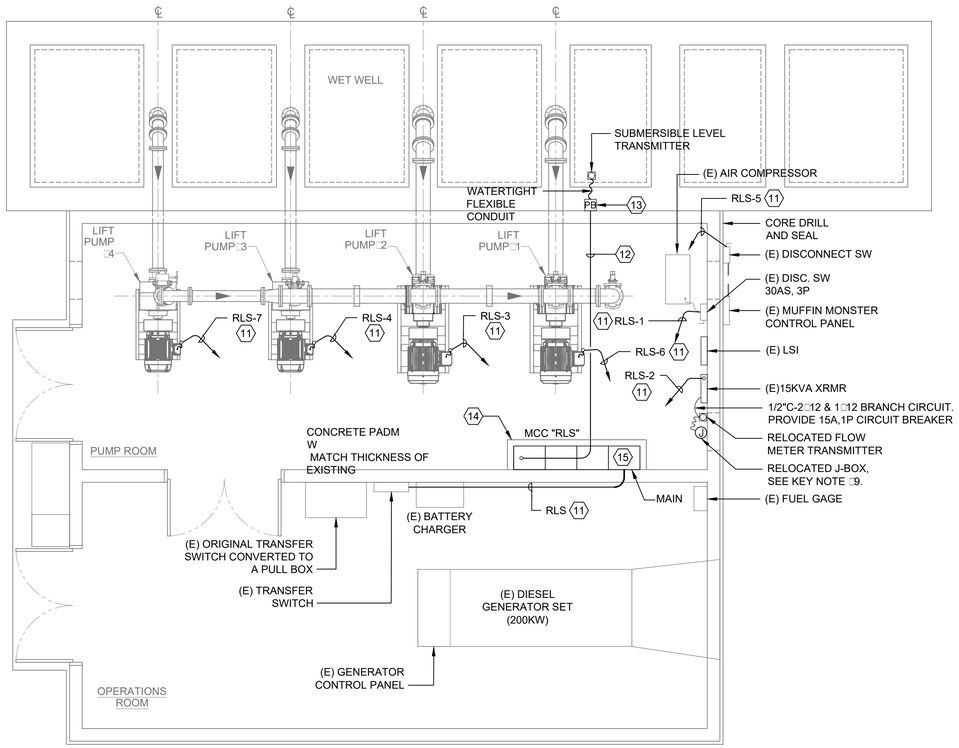
ELECTRICAL
SINGLE LINE DIAGRAMS

SHEET
E-03

SHEET NO.
14 OF 19

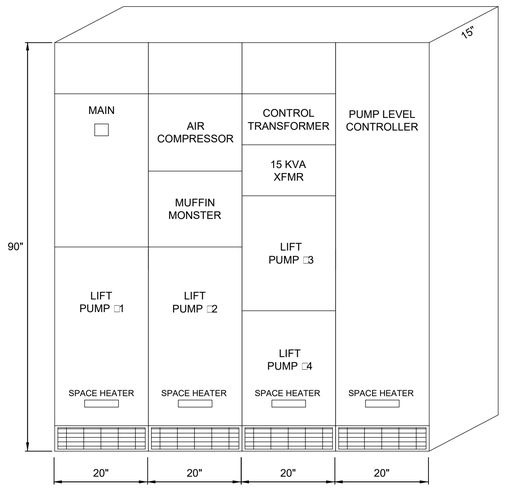
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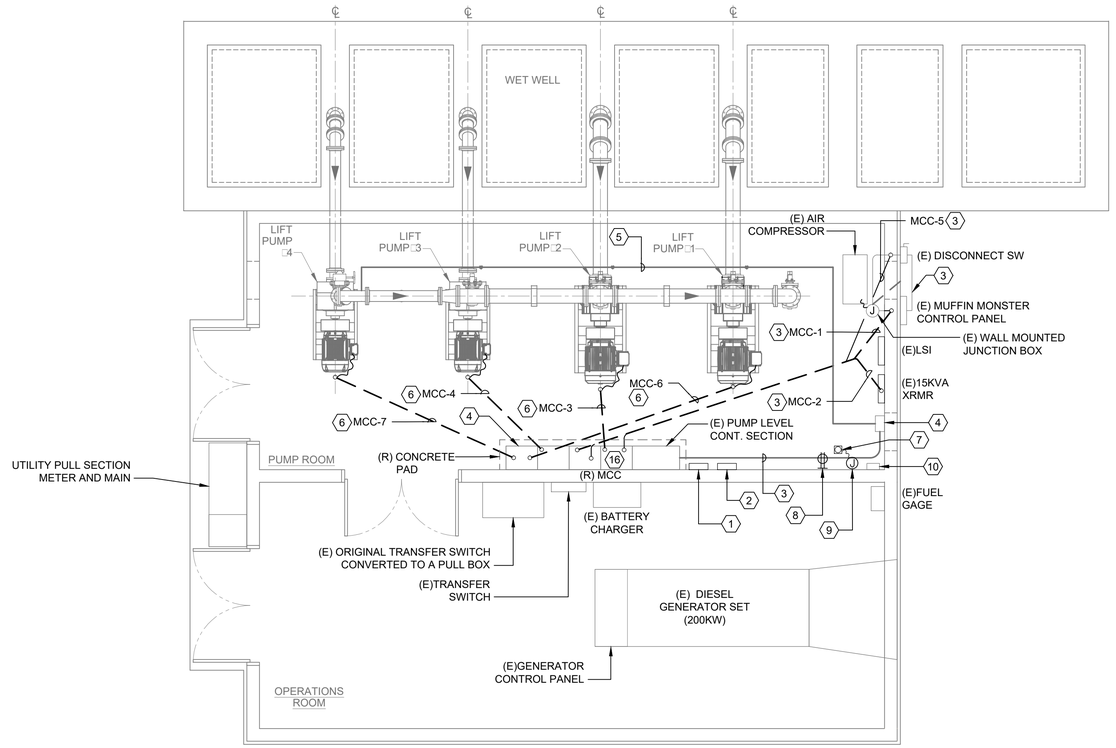
ELECTRICAL PLAN

SCALE: 1/4=1'-0"



1 / E-04 MCC "RLS" ELEVATION

NOT TO SCALE



ELECTRICAL DEMOLITION PLAN

SCALE: 1/4=1'-0"

NOTES:

1. PRIOR TO THE DEMOLITION WORK CONTRACTOR SHALL VISIT THE SITE AND FAMILIARI□E WITH THE EXISTING POWER/SIGNAL/CONTROL SYSTEMS CONDITIONS/CONNECTIONS IN ORDER TO AVOID CONFLICTS.
2. INFORMATION PROVIDED IS FROM RECORDS DRAWINGS PREPARED BY HALL AND FOREMAN, INC DATED 10/87 AND VISUAL INSPECTION. THIS IS THE BEST INFORMATION AVAILABLE.
3. SEE DRAWING E-03 FOR CONDUIT AND WIRE INFORMATION.

KEY NOTES:

1. REMOVE ABANDONED FLOW METER AND ASSOCIATED RACEWAYS.
2. REMOVED ABANDONED BATH ACCUMULATOR AND ASSOCIATED RACEWAYS.
3. REMOVE EMPTY WALL MOUNTED RACEWAYS.
4. REMOVE ABANDONED WALL MOUNTED CABINET.
5. REMOVE ABANDONED OVERHEAD RACEWAYS.
6. DISCONNECT CONDUCTORS AT BOTH ENDS AND REMOVE. CUT AND CAP CONDUIT FLUSH TO FLOOR. REFER TO DRAWING E-03 FOR SEQUENCE OF CONSTRUCTION.
7. EXISTING FLOW METER TRANSMITTER TO BE RELOCATED. SEE ELECTRICAL PLAN THIS DRAWING FOR NEW LOCATION.
8. REMOVE RECEPTACLE OUTLET AND ASSOCIATED BRANCH CIRCUIT.
9. EXISTING SURFACE MOUNTED JUNCTION BOX TO BE RELOCATED. SEE ELECTRICAL PLAN THIS DRAWING FOR NEW LOCATION.. PROVIDE BLANK COVER FOR JUNCTION BOX
10. EXISTING FLOOR MOUNTED PULL BOX TO REMAIN.
11. REFER TO DRAWING E-03, MCC "RLS" SINGLE LINE DIAGRAM FOR FEEDER CONDUIT & WIRES SI□ES.
12. 1" CONDUIT WITH VENDOR TWISTED PAIR CABLE, VERIFY AND COORDINATE INSTALLATION WITH THE CABLE AND SUBMERSIBLE LEVEL TRANSMITTER VENDOR.
13. 12"X 12"X 6" WP PULL BOX MOUNTED AT 24" AFF.
14. MCC CONCRETE PAD, MATCH THICKNESS OF EXISTING PAD. SEE STRUCTURAL DRAWING FOR MORE INFORMATION.
15. EXTEND EXISTING MCC GROUND WIRE AND CONNECT IT TO NEW MCC GROUND BUS BAR.
16. SAVE EXISTING GROUND WIRE TO BE EXTENDED AND CONNECTED TO NEW MCC.

4' 2' 0 4' 8'

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

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BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

ELECTRICAL
POWER AND INSTRUMENT PLAN

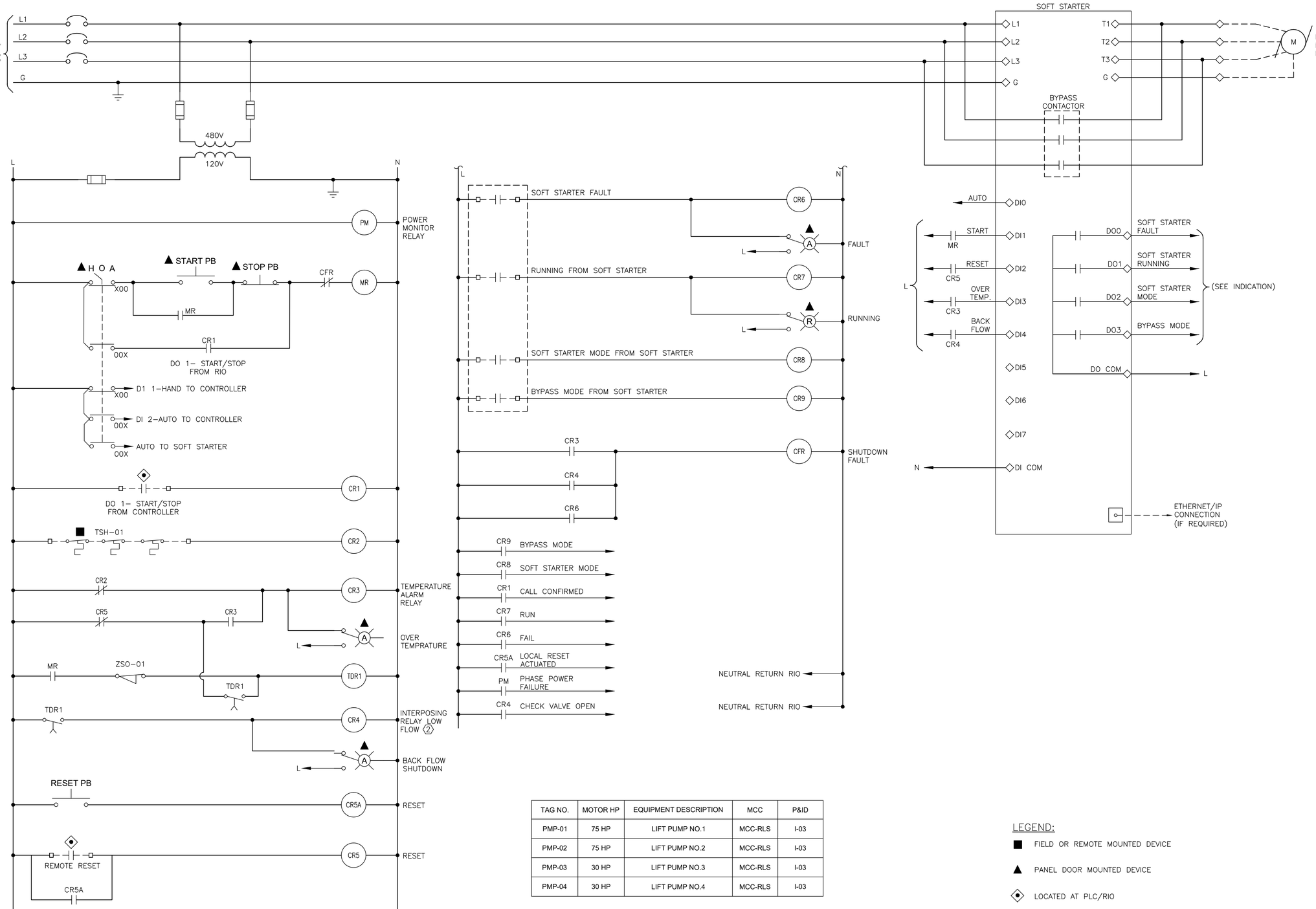
SHEET E-04

SHEET NO. 15 OF 19

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NOTES:

1. SEE DWGS. E-01 THRU E-02 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.
2. CONTRACTOR TO FILED VERIFY EXISTING PUMP CONTROLS BEFORE STARTING ANY WORK.

KEY NOTES:

(1) CONTRACTOR SHALL SUBMIT CONTROL DIAGRAMS WITH UNIQUE WIRE NUMBERS AND TERMINAL BLOCK NUMBERS FOR EACH WIRE AND TERMINAL BLOCK, TYPICAL FOR EVERY PUMP.

(2) INTERPOSING RELAY SHALL BE 2-POLE.

TAG NO.	MOTOR HP	EQUIPMENT DESCRIPTION	MCC	P&ID
PMP-01	75 HP	LIFT PUMP NO.1	MCC-RLS	I-03
PMP-02	75 HP	LIFT PUMP NO.2	MCC-RLS	I-03
PMP-03	30 HP	LIFT PUMP NO.3	MCC-RLS	I-03
PMP-04	30 HP	LIFT PUMP NO.4	MCC-RLS	I-03

LEGEND:

- ■ FIELD OR REMOTE MOUNTED DEVICE
- ▲ PANEL DOOR MOUNTED DEVICE
- ◈ LOCATED AT PLC/RIO

EMERGENCY OVERFLOW POND PUMP PMP-15411 (1)

TYPICAL TO PUMPS SHOWN IN THE TABLE, EXCEPT RELAY CALLOUTS

INTERPOSING RELAY CABINET

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BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

ELECTRICAL
CONTROL SCHEMATICS
LIFT PUMP

SHEET E-05
SHEET NO. 16 OF 19
PROJECT NO.
DRAWING NO.

MECHANICAL EQUIPMENT SYMBOLS

- PUMP: PLUNGER
- COMPRESSOR: RECIPROCATING
- PUMP: VERTICAL TURBINE
- PUMP: PROGRESSIVE CAVITY
- PUMP: RECIPROCATING
- PUMP: DIAPHRAGM
- PUMP: CENTRIFUGAL
- PUMP: ROTARY
- PUMP: SCREW
- PUMP: SUBMERSIBLE
- PUMP: POSITIVE DISPLACEMENT
- PUMP: CHOPPER
- PUMP: PERISTALTIC
- PUMP: METERING
- PUMP: SUBMERSIBLE AXIAL PROPELLER
- BLOWER OR FAN
- MIXER
- ELECTRIC MOTOR (M)
- AIR OR CHEMICAL DIFFUSER
- SILENCER
- GRINDER
- AIR FILTER
- OR
- FLAME ARRESTOR
- SUCTION DIFFUSER
- POSITIVE DISPLACEMENT BLOWER
- CATALYST
- HEAT EXCHANGER
- MEMBRANE CASSETTE
- GAS FILTER

VALVE AND GATE SYMBOLS

- VALVE: GATE
- VALVE: KNIFE GATE (K)
- VALVE: GLOBE
- VALVE: BALL
- VALVE: THREE WAY
- VALVE: FOUR WAY
- VALVE: DIAPHRAGM
- VALVE: BUTTERFLY
- VALVE: DOUBLE LEAF CHECK
- VALVE: FLAP CHECK
- VALVE: PLUG
- VALVE: PLUG 3-WAY
- VALVE: ANGLE
- VALVE: NEEDLE
- VALVE: BALL CHECK
- VALVE: SWING CHECK
- VALVE: PRESSURE RELIEF
- VALVE: THERMAL SHUTOFF
- VALVE: TELESCOPING
- PRESSURE-REDUCING INTERNAL REGULATING
- BACKPRESSURE REGULATOR INTERNAL
- PRESSURE-REDUCING REGULATOR W/EXTERNAL PRESSURE TAP
- BACKPRESSURE REGULATOR W/EXTERNAL PRESSURE TAP
- GATE: SLIDE
- GATE: SLUICE
- AIR RELEASE VALVE
- VACUUM BREAKER
- AIR RELEASE VALVE/VACUUM BREAKER
- VALVE: MUD
- PRESSURE VACUUM RELIEF VALVE
- PUMP DISCHARGE VALVE

VALVE AND GATE SYMBOLS

- DIAPHRAGM
- PISTON DOUBLE ACTING CYLINDER
- SOLENOID (S)
- ELECTRIC MOTOR (M)
- ELECTRO-HYDRAULIC (E/H)
- I/P CONVERTER (I/P)
- PISTON SPRING TO OPEN
- PISTON SPRING TO CLOSE
- LINEAR (L)

THE FOLLOWING ADDITIONAL DESIGNATIONS MAY BE UTILI□ED ADJACENT TO SOME VALVE OR GATE SYMBOLS.

FC	FAILS CLOSED
FIP	FAILS IN LAST POSITION
FO	FAILS OPEN
LC	LOCKS CLOSED
LO	LOCKS OPEN
NC	NORMALLY CLOSED
NO	NORMALLY OPEN

PRIMARY ELEMENT SYMBOLS

- BUBBLER TUBE / BUBBLER ASSEMBLY (B)
- LEVEL PROBE
- ORIFICE PLATE
- VENTURI TUBE
- FLUME
- WEIR
- PROPELLER (P) OR TURBINE (T) METER
- AVERAGING PITOT TUBE
- MAGNETIC FLOWMETER (M)
- THERMAL FLOWMETER (T)
- SONIC FLOWMETER
- PADDLE WHEEL FLOWMETER (X)
- ULTRASONIC LEVEL METER
- RADAR LEVEL METER
- ROTAMETER
- FLOAT TYPE LEVEL SWITCH (LS)
- SUBMERSIBLE PRESSURE TYPE

MISCELLANEOUS SYMBOLS

- HIGH PRESSURE QUICK CONNECTION
- AIR VENT
- SEAL - DIAPHRAGM
- SEAL - ANNULAR
- REDUCER - CONCENTRIC
- REDUCER - ECCENTRIC
- PULSATION DAMPENER
- RUPTURE DISK
- DRAIN
- PURGE ASSEMBLY (P)
- INLINE STATIC MIXER
- IA — FIELD DEVICE INSTRUMENT AIR SUPPLY
- HPA — FIELD DEVICE HIGH PRESSURE AIR SUPPLY
- ROTATING BEACON
- CALIBRATION COLUMN
- HORN
- DAMPERS, VANES
- EXPANSION JOINT
- FLEXIBLE CONNECTION
- FLANGE
- Y-STRAINER
- SPRAY NO□□LE
- ES — ELECTRICAL SUPPLY POWER
- HOSE BIBB
- FLOW CONDITIONER
- THERMOWELL

GENERAL NOTES

1. EXISTING STRUCTURES, EQUIPMENT, PIPING, INSTRUMENTS AND CONTROLS ARE SHOWN IN LIGHTER SHADING (I.E. SCREENED). INFORMATION FOR EXISTING SYSTEMS WERE TAKEN FROM THE EXISTING RECORD DRAWING SET FOR SAN BERNADINO COUNTY WATERWORKS DISTRICT NO. 8 "BUTTERFIELD SEWAGE LIFT STATION" DATED 10/30/87.
2. DATALINK LINES ON THE P&IDs ONLY DEPICT COMMUNICATIONS BETWEEN THE COMPONENTS/EQUIPMENT SHOWN.

W:\Pasadena Sector\Projects\EUA\RP-1&RP-5_Treatment_Systems\3_ Detailed Design Phase\3.1_CAD\5.IN\WORK\Butterfield Ranch LS\I-01 last saved by P006540D on 10/15/19 plotted 10/15/2019 1:01:56 PM

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Designed	RA/ID	07/2018
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Checked	IM	07/2018
		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
D	10/15/19	RA	SK	SUBMITTAL 100%
C	05/31/19	RA	SK	SUBMITTAL 90%
B	12/21/18	RA	SK	SUBMITTAL 90% (DRAFT)
A	07/20/18	RA	SK	SUBMITTAL 50%

RECOMMENDED BY:

PROJECT MANAGER _____ DATE _____

SCALE
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0" 1"

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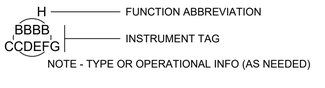
SUBMITTAL 100% - 10/15/2019

BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

INSTRUMENTATION LEGEND

SHEET I-01
SHEET NO. 17 OF 19
PROJECT NO.
DRAWING NO.

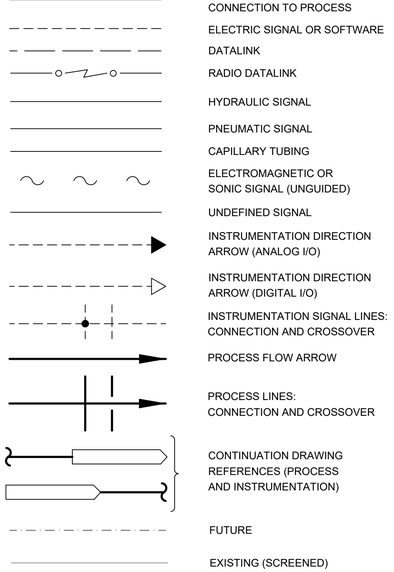
INSTRUMENT OR FUNCTION SYMBOLS



BARS DIVIDING ABOVE SYMBOLS

NONE	FIELD LOCATION
═══	AUXILIARY LOCATION, OPERATOR ACCESSIBLE
= = =	AUXILIARY LOCATION, OPERATOR INACCESSIBLE
———	PRIMARY LOCATION, OPERATOR ACCESSIBLE
– – –	PRIMARY LOCATION, OPERATOR INACCESSIBLE

LINE SYMBOLS



EQUIPMENT TAGGING

EQUIPMENT TAGGING GUIDELINE:

BBBB - CC

- BBBB — EQUIPMENT TECHNICAL DESCRIPTOR (SEE TABLE 1)
- CC — SEQUENCE NUMBER

FUNCTION DESIGNATORS

∆	DIFFERENCE
÷	DIVIDING
×	MULTIPLYING
√	ROOT EXTRACTION
Σ	SUMMING
Σ /n	AVERAGING
>	HIGH SELECTING
<	LOW SELECTING
⊁	HIGH LIMITING
⊀	LOW LIMITING
f(x)	NONLINEAR OR UNSPECIFIED FUNCTION
REV	REVERSE ACTING
SRG	SPLIT-RANGING
%	PROPORTIONAL CONTROL ACTION
∫	INTEGRAL CONTROL ACTION
d/dt	DERIVATIVE CONTROL ACTION
1-0	ON-OFF CONTROL ACTION
△1-0	DIFFERENTIAL GAP CONTROL ACTION

□/□ CONVERT FROM/TO, WHERE:
A= ANALOG I=CURRENT
D= DIGITAL O=ELECTROMAG, SONIC
E= VOLTAGE P=PNEUMATIC
H= HYDRAULIC R=RESISTANCE

FUNCTION ABBREVIATIONS

OSC	OPEN-STOP-CLOSE SELECTOR
OPN	OPEN
CLS	CLOSE
OPLM	OPEN LIMIT
CLLM	CLOSED LIMIT
OPCM	OPEN COMMAND
CLCM	CLOSE COMMAND
FAIL	FAIL
HHAL	HIGH HIGH ALARM
HAL	HIGH ALARM
LAL	LOW ALARM
LLAL	LOW LOW ALARM
STAT	STATUS
HOR	HAND-OFF-REMOTE SELECTOR
HOA	HAND-OFF-AUTO SELECTOR
HAND	HAND
AUTO	AUTO
ENBL	ENABLE
LOR	LOCAL-OFF-REMOTE SELECTOR
LOC	LOCAL
REM	REMOTE
OFF	OFF
ON	ON
FOR	FORWARD-OFF-REMOTE SELECTOR
FWD	FORWARD
REV	REVERSE
DS	DUTY-STANDBY SELECTOR
DUTY	DUTY
STBY	STANDBY
STRT	START
STOP	STOP
SLOS	START-LOCKOUT STOP
ESTP	EMERGENCY STOP
JOG	JOG
OUT	OUT
IN	IN
EXTD	EXTEND
RTCT	RETRACT
LEAK	LEAK DETECTION
PV	PROCESS VARIABLE
CV	CONTROL VARIABLE
DIFF	DIFFERENTIAL
EOT	END OF TRAVEL
OL	MOTOR OVERLOAD
PWR	POWER ON
PMR	PUMP MONITOR RELAY
RST	ALARM RESET
SIL	ALARM SILENCE
CG	COMBUSTIBLE GAS
COND	CONDUCTIVITY
H2S	SODIUM HYPOCHLORITE
NH3	AMMONIA
pH	pH
POS	POSITION
ALM	ALARM

MISCELLANEOUS ABBREVIATIONS

HIM	HUMAN INTERFACE MODULE
OIT	OPERATOR INTERFACE TERMINAL

TABLE 1 - EQUIPMENT/INSTRUMENT TECHNICAL DESCRIPTORS

EQUIPMENT		INSTRUMENTS		CONTROL EQUIPMENT	
TECHNICAL DESCRIPTOR	DESCRIPTION OF TECHNICAL OBJECT	TECHNICAL DESCRIPTOR	DESCRIPTION OF TECHNICAL OBJECT	TECHNICAL DESCRIPTOR	DESCRIPTION OF TECHNICAL OBJECT
ACT	ACTUATOR	AAHH/H/L/LL	ANALYTICAL ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW	IANT	ANTENNA
AC	AIR CONDITIONER	AIC	ANALYTICAL CONTROL	IAPP	APPLICATION SERVER
ARV	AIR RELEASE VALVE	AE	ANALYTICAL ELEMENT	IBB	BROADBAND HARDWARE
AVRV	AIR RELEASE / VACUUM RELIEF VALVE	AIT	ANALYTICAL INDICATING TRANSMITTER	ICP	CONTROL PROCESSOR
ASPR	AIR SEPARATOR	AI	ANALYTICAL INDICATION	IDAS	DATA SERVER
ATS	AUTOMATIC TRANSFER SWITCH	ASHH/H/L/LL	ANALYTICAL SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW	IDCP	DISTRIBUTED CONTROL PROCESSOR
BFP	BACKFLOW PREVENTER	AT	ANALYTICAL TRANSMITTER	IEWS	ENGINEERING WORKSTATION
BSN	BASIN	BE	BURNER ELEMENT	IFOP	FIBER OPTIC PANEL
BAT	BATTERY	IAHH/H	CURRENT - OVERCURRENT ALARM HIGH-HIGH / HIGH	IHIS	HISTORIAN SERVER
BLDR	BLENDER	IAL/LL	CURRENT - UNDERCURRENT ALARM LOW / LOW-LOW	IHMI	HMI SERVER
BO	BLOW OFF	II	CURRENT INDICATION	IINF	INFRASTRUCTURE SERVER
BLWR	BLOWER	PDAHH/H/L/LL	DIFFERENTIAL PRESSURE ALARM HIGH-HIGH / HIGH / LOW / LOW-LOW	ILCP	LOCAL CONTROL PANEL
BLR	BOILER	PDIC	DIFFERENTIAL PRESSURE INDICATING CONTROL	ILCS	LOCAL CONTROL STATION
BCC	BRANCH CIRCUIT CONTROLLER	PDIT	DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	IMCP	MASTER CONTROL PANEL
BLDG	BUILDING	PDI	DIFFERENTIAL PRESSURE INDICATION	IMED	MEDIA CONVERTER
BNR	BURNER	PDT	DIFFERENTIAL PRESSURE TRANSMITTER	IWAV	MICROWAVE HARDWARE
BD	BUS DUCT	YA	FAIL INDICATION	IRTR	NETWORK ROUTER
CANN	CANNON	BA	FIRE ALARM	ISEC	NETWORK SECURITY HARDWARE
CPS	CATHODIC PROTECTION STATION	FAHH/H/L/LL	FLOW ALARM HIGH-HIGH / HIGH / LOW / LOW-LOW	ISWT	NETWORK SWITCH
CNFG	CENTRIFUGE	FE	FLOW ELEMENT	IOIT	OPERATOR INTERFACE TERMINAL
CHNL	CHANNEL	FIC	FLOW INDICATING CONTROL	IOWS	OPERATOR WORKSTATION
CVLV	CHECK VALVE	FIT	FLOW INDICATING TRANSMITTER	IPLC	PLC
CHLR	CHILLER	FI	FLOW INDICATION	IPS	POWER SUPPLY
CCB	CHLORINE CONTACT BASIN	FS	FLOW SWITCH	IPRT	PRINTER
CHUT	CHUTE	FSHH/H/L/LL	FLOW SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW	IRAC	RACO ALARM HARDWARE
CLF	CLARIFIER	FQI	FLOW TOTALI□ER INDICATION	IRIO	REMOTE I/O PANEL
COGN	COGENERATION	FQT	FLOW TOTALI□ER TRANSMITTER	IRIR	REMOTE I/O RACK
COMP	COMPRESSOR	FT	FLOW TRANSMITTER	IRTU	REMOTE TERMINAL UNIT PANEL
COND	CONDENSER	HC	HAND CONTROL	ISCN	SCANNER
CVR	CONVEYOR	HS	HAND SWITCH	ITC	THIN CLIENT
CRAN	CRANE	HSI	HAND SWITCH STATUS INDICATION	IWFI	WIFI HARDWARE
DAM	DAM	LAHH/H/L/LL	LEVEL ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW		
DMP	DAMPER	LDAHH/H/L/LL	DIFFERENTIAL LEVEL ALARM HIGH-HIGH / HIGH / LOW / LOW-LOW		
DS	DISCONNECT SWITCH	LDI	DIFFERENTIAL LEVEL INDICATION		
DP	DISTRIBUTION PANELBOARD	LE	LEVEL ELEMENT		
DRV	DRIVE	LIC	LEVEL INDICATING CONTROL		
DRYR	DRYER	LIT	LEVEL INDICATING TRANSMITTER		
ENG	ENGINE	LG	LEVEL SIGHT GLASS		
ECU	EVAPORATIVE COOLING UNIT	LS	LEVEL SWITCH		
EYEW	EYE WASH	LSHH/H/L/LL	LEVEL SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW		
FAN	FAN	LY	LEVEL SWITCH INTERPOSING RELAY		
FCU	FAN COIL UNIT	LT	LEVEL TRANSMITTER		
FDR	FEEDER	MAHH/H/L/LL	MOISTURE ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW		
FLTR	FILTER	MSHH/H/L/LL	MOISTURE SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW		
FLAR	FLARE	□AHH/H/L/LL	POSITION ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW		
FLCL	FUEL CELL	□Y	POSITION COMMAND		
GATE	GATE	□T	POSITION FEEDBACK		
GEN	GENERATOR	□S	POSITION SWITCH		
GNDR	GRINDER	□SC	POSITION SWITCH CLOSE		
HFLT	HARMONIC FILTER	□SO	POSITION SWITCH OPEN		
HXGR	HEAT EXCHANGER	JI	POWER INDICATION		
HRS	HEAT RECOVERY SILENCER	JQ	POWER TOTALI□ATION		
IWS	INSTANTANEOUS WATER HEATER	PAHH/H/L/LL	PRESSURE ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW		
LVL	LEVELER	PE	PRESSURE ELEMENT		
LP	LIGHTING PANEL	PIC	PRESSURE INDICATING CONTROL		
LVR	LOUVER	PIT	PRESSURE INDICATING TRANSMITTER		
LUBS	LUBE OIL SYSTEM	PI	PRESSURE INDICATION		
MH	MANHOLE	PS	PRESSURE SWITCH		
MTS	MANUAL TRANSFER SWITCH	PSHH/H/L/LL	PRESSURE SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW		
CASS	MEMBRANE CASSETTE	PT	PRESSURE TRANSMITTER		
MXR	MIXER	YY	PUMP MONITOR RELAY		
MTR	MOTOR	XC	REMOTE RESET		
MCC	MOTOR CONTROL CENTER	XCR	REMOTE START COMMAND		
MCP	MOTOR CONTROL PANEL	XCS	REMOTE STOP COMMAND		
PIPE	PIPE	YI	RUN STATUS		
PRV	PRESSURE RELIEF VALVE	KQI	RUN TIME		
PMP	PUMP	SAHH/H/L/LL	SPEED ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW		
APMP	AIR PUMP	SC	SPEED COMMAND		
SMP	SAMPLER	SE	SPEED ELEMENT		
SCRN	SCREEN	SI	SPEED INDICATION		
SCR	SELECTIVE CATALYTIC REDUCER	SSL	SPEED SWITCH LOW		
SHWR	SHOWER	TAHH/H/L/LL	TEMPERATURE ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW		
SLCR	SILENCER	TE	TEMPERATURE ELEMENT		
SILO	SILO	TIT	TEMPERATURE INDICATING TRANSMITTER		
SOLR	SOLAR	TI	TEMPERATURE INDICATION		
SV	SOLENOID VALVE	TSHH/H/L/LL	TEMPERATURE SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW		
STNR	STRAINER	TT	TEMPERATURE TRANSMITTER		
SWBD	SWITCHBOARD	KY	TIMER		
SWGR	SWITCHGEAR	NAHH/H/L/LL	TORQUE ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW		
TNK	TANK	NIT	TORQUE INDICATING TRANSMITTER		
TTR	TIPPING TROUGH	NI	TORQUE INDICATION		
TWR	TOWER	NSHH/H/L/LL	TORQUE SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW		
TX	TRANSFORMER	VAHH/H/L/LL	VIBRATION ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW		
UPS	UNINTERRUPTIBLE POWER SUPPLY	VE	VIBRATION ELEMENT		
VLV	VALVE	VIT	VIBRATION INDICATING TRANSMITTER		
MVLV	MANUAL VALVE	VI	VIBRATION INDICATION		
VFD	VARIABLE FREQUENCY DRIVE	VSHH/H/L/LL	VIBRATION SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW		
VRF	VARIABLE REFRIGERANT FLOW	VT	VIBRATION TRANSMITTER		
WSH	WASHER	EAHH/H	VOLTAGE - OVERVOLTAGE ALARM HIGH-HIGH / HIGH		
WFLT	WATER FILTER	EALL/L	VOLTAGE - UNDERVOLTAGE ALARM LOW / LOW-LOW		
WH	WATER HEATER	EI	VOLTAGE INDICATION		
WW	WET WELL	WE	WEIGHT ELEMENT		
WND	WIND TURBINE	WIT	WEIGHT INDICATING TRANSMITTER		
		WI	WEIGHT INDICATION		
		WR	WEIGHT RECORDER		

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ENGINEER'S STAMP

Designed	RA/ID	07/2018
Drawn	RA	07/2018
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REV. NO.	DATE	BY	APRVD	DESCRIPTION
D	10/15/19	RA	SK	SUBMITTAL 100%
C	05/31/19	RA	SK	SUBMITTAL 90%
B	12/21/18	RA	SK	SUBMITTAL 90% (DRAFT)
A	07/20/18	RA	SK	SUBMITTAL 50%

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

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Chino Hills, California 91709

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BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

INSTRUMENTATION LEGEND

SHEET I-02
SHEET NO. 18 OF 19
PROJECT NO.
DRAWING NO.

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NOTES:

1. THE CONTRACTOR SHALL REPLACE THE IMPELLER ON THE EXISTING PUMP. REFER TO MECHANICAL SPECIFICATIONS FOR DETAILS.
2. I/O SIGNALS SHOWN FOR LIFT PUMP NO. 1 ARE TYPICAL FOR LIFT PUMPS NO. 2, 3 AND 4.

LEVEL SCADA CONTROL PANEL

I/O

FLOAT □2 HIGH-HIGH LEVEL LSHH-11

FLOAT □1 HIGH LEVEL LSH-11

LIFT STATION PRIMARY LEVEL LIT-10A

LIFT STATION SECONDARY LEVEL LIT-10B

BUBBLER PANEL

LIFT PUMP NO. 1 HOA IN HAND HSI-01H

LIFT PUMP NO. 1 HOA IN AUTO HSI-01D

LIFT PUMP NO. 1 BYPASS MODE HSI-01I

LIFT PUMP NO. 1 SOFT START MODE HSI-01J

LIFT PUMP NO. 1 CALL CONFIRMED HSI-01K

LIFT PUMP NO. 1 RUN STATUS YI-01

LIFT PUMP NO. 1 FAIL YA-01C

LIFT PUMP NO. 1 HIGH TEMP ALARM TSH-01

LIFT PUMP NO. 1 LOCAL RESET ACTUATED HSI-01L

LIFT PUMP NO. 1 PHASE/POWER FAILURE YA-01E

LIFT PUMP NO. 1 CHECK VALVE OPEN □SO-01

LIFT PUMP NO. 1 START HC-01A

LIFT PUMP NO. 1 REMOTE RESET HC-01C

NOTE 2

FIELD

480V — HOA HS 03A — START HS 03B — RUNNING YL 03A — HIGH TEMP YL 03C — STOP HS 03C — FAIL YL 03B — BACK-FLOW YL 03D — PMP-03 MCC-01

480V — HOA HS 01A — START HS 01B — RUNNING YL 01A — HIGH TEMP YL 01C — STOP HS 01C — FAIL YL 01B — BACK-FLOW YL 01D — PMP-01 MCC-01

480V — HOA HS 04A — START HS 04B — RUNNING YL 04A — HIGH TEMP YL 04C — STOP HS 04C — FAIL YL 04B — BACK-FLOW YL 04D — PMP-04 MCC-01

480V — HOA HS 02A — START HS 02B — RUNNING YL 02A — HIGH TEMP YL 02C — STOP HS 02C — FAIL YL 02B — BACK-FLOW YL 02D — PMP-02 MCC-01

3"

FIT 01

FE 01

8" RS

10" RS

TO MOUNTAIN AVE LIFT STATION 78I-01

6" RS

8" RS

TSH 04 — SO 04 — LIFT PUMP NO. 4 PMP-04 NOTE 1

TSH 03 — SO 03 — LIFT PUMP NO. 3 PMP-03 NOTE 1

TSH 02 — SO 02 — LIFT PUMP NO. 2 PMP-02

TSH 01 — SO 01 — LIFT PUMP NO. 1 PMP-01

HYDRAULIC POWER PACK

LSHH 11

LSH 11

FROM SEWER

BUTTERFIELD LIFT STATION

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SHEET I-03

BUTTERFIELD LIFT STATION UPGRADES
PROJECT NO. EN19006

BUTTERFIELD LIFT STATION
P&I

SHEET NO. 19 OF 19

PROJECT NO.

DRAWING NO.

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Checked	IM	12/2017 Date

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D	05/31/19	RA	SK	SUBMITTAL 90%
C	12/21/18	RA	SK	SUBMITTAL 90% (DRAFT)
B	07/20/18	RA	SK	SUBMITTAL 50%
A	12/18/17	RA	SK	SUBMITTAL 30%

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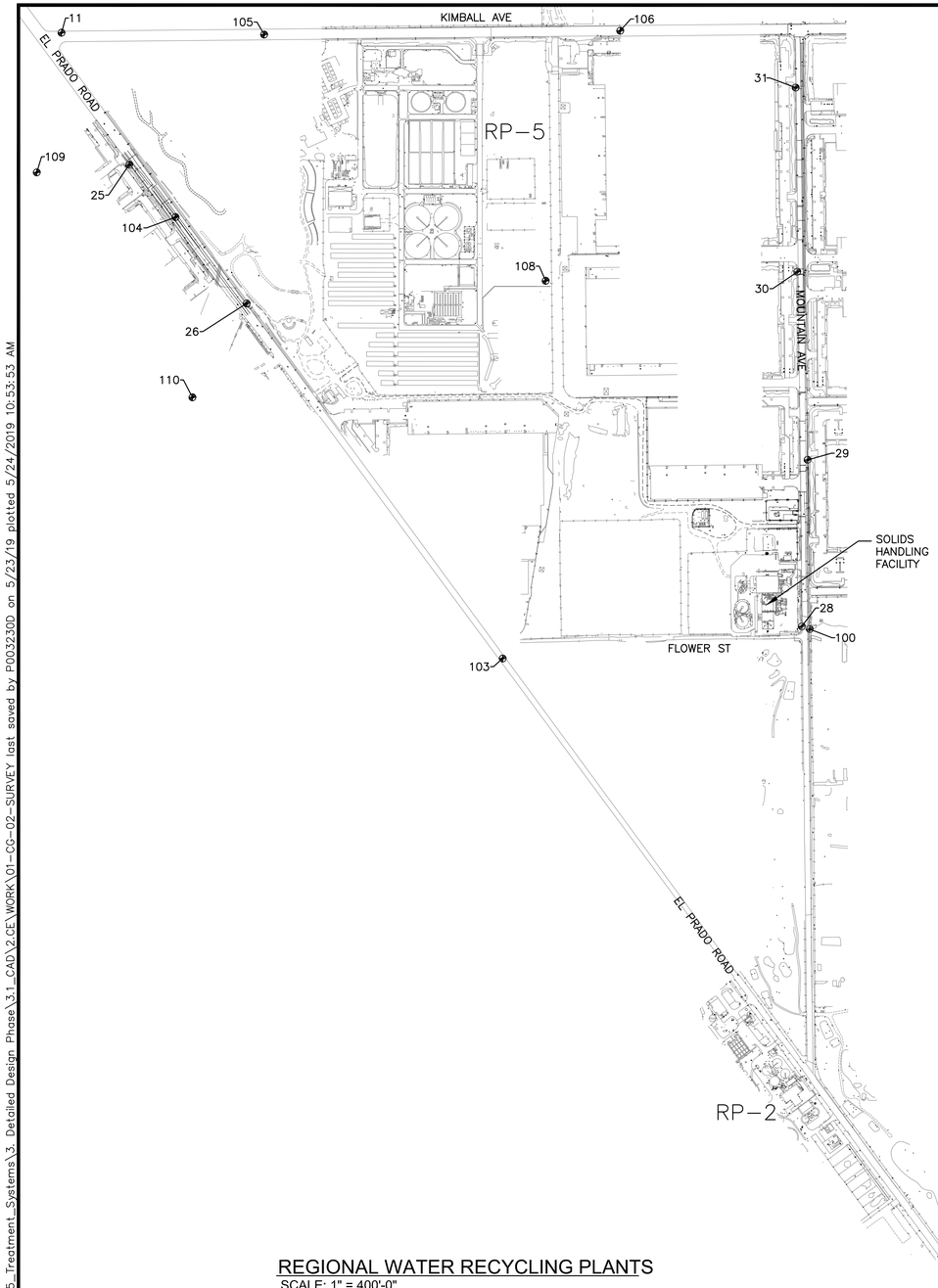
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ENGINEERING DRAWINGS

MTN VIEW LIFT STATION – 90%



REGIONAL WATER RECYCLING PLANTS
SCALE: 1" = 400'-0"

0 200' 400' 800' 1200'
SCALE: 1" = 400'-0"

SURVEY NOTE:

1. THE INFORMATION SHOWN HEREON WAS GATHERED BY A FIELD SURVEY PERFORMED IN JULY AND AUGUST 2017 SURVEY PERFORMED BY BLAIR, CHURCH & FLYNN CONSULTING ENGINEERS ON JULY 12, 2017.
2. THIS SURVEY IS BASED ON THE CALIFORNIA COORDINATE SYSTEM (CCS83), ZONE 5. DISTANCES ARE GRID DISTANCES IN US SURVEY FEET.
3. SHIFT THE RECORD DRAWINGS FROM POINT 24 AS SHOWN IN RP-5 Master Base.dwg FILE TO POINT 209. COORDINATE INFORMATION DISPLAYED BELOW:

POINT #24
NORTHING: 1811007.4417
EASTING: 6658539.2817

POINT #209
NORTHING: 1811009.9929
EASTING: 6658537.3765

BASIS OF BEARINGS:

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM (CCS83), ZONE 5, BASED ON A GPS/GNSS FAST STATIC CONTROL SURVEY TIED TO THE LEICA SMARTNET CORS NETWORK. THE BEARING OF THE CENTERLINE OF KIMBALL AVENUE AS ESTABLISHED BY THESE OBSERVATIONS IS NORTH 89°24'27" EAST. THE BEARING OF SAID LINE, AS SHOWN ON RECORD OF SURVEY 99-0038 FILED FOR RECORD AUGUST 23, 1999 IN BOOK 112 OF RECORD OF SURVEY, AT PAGES 33 AND 34, SAN BERNARDINO COUNTY RECORDS IS NORTH 89°24'28" EAST.

SITE BENCHMARK:

1. ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). ELEVATIONS ARE ESTABLISHED BY A GPS/GNSS FAST STATIC CONTROL SURVEY TIED TO THE LEICA SMARTNET CORS NETWORK.
2. CITY OF CHINO BENCHMARK 157-63 (PT # 237)

PROJECT ELEVATION – 588.182'

PUBLISHED ELEVATION – 588.380'

RECORD DRAWINGS ELEVATION CONVERSION:

ADD 2.16' TO ELEVATION SHOWN ON RP-5 PROJECT NO. EN95028 AS-BUILT DRAWINGS.

PRIMARY CONTROL TABLE

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
11	1811029.24	6658644.17	574.69	1" BRASS CAP
12	1811105.65	6664643.80	585.33	1" BRASS CAP
13	1805348.84	6666713.60	554.52	1" BRASS CAP
17	1803477.17	6661941.24	531.55	1" BRASS CAP
25	1810316.98	6659008.92	570.64	1" BRASS CAP
26	1809569.04	6659642.12	561.65	1" BRASS CAP
28	1807827.59	6662635.56	567.19	1" BRASS CAP
29	1808725.59	6662669.85	572.78	1" BRASS CAP
30	1809740.34	6662613.99	578.88	1" BRASS CAP
31	1810733.10	6662602.81	584.96	1" BRASS CAP

SECONDARY CONTROL TABLE

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
100	1807812.55	6662678.46	566.64	FLIGHT CROSS
101	1804254.70	6663538.78	543.45	FLIGHT CROSS
102	1803994.11	6661399.03	534.44	FLIGHT CROSS
103	1807654.45	6661022.28	560.18	FLIGHT CROSS
104	1810034.44	6659258.23	564.62	FLIGHT CROSS
105	1811019.02	6659736.29	573.54	FLIGHT CROSS
106	1811039.65	6661656.25	584.06	FLIGHT CROSS
107	1811061.65	6663864.56	588.78	FLIGHT CROSS
108	1809691.44	6661254.71	573.62	FLIGHT CROSS
109	1810276.09	6658510.60	570.37	FLIGHT CROSS
110	1809062.40	6659350.15	565.23	FLIGHT CROSS

SURVEYOR'S STATEMENT:

THIS SURVEY WAS PERFORMED BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE PROFESSIONAL LAND SURVEYORS' ACT. THE DATA WAS COLLECTED WITH ACCEPTED INDUSTRY STANDARDS AND HORIZONTAL AND VERTICAL MEASUREMENTS ARE TO A TENTH OF A FOOT (0.1')

RANDELL SCOTT WEST, CA. P.L.S. #8663 *DATE*

Blair, Church & Flynn CONSULTING ENGINEERS

CONSULTANT
Blair, Church & Flynn Consulting Engineers
451 Clovis Avenue, Suite 200
Clovis, California 93612
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PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

Designed	HS	12/2017
Drawn	HS	12/2017
Checked	BL	12/2017
		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
D	05/31/19	HS	SK	SUBMITTAL 90%
C	12/21/18	HS	SK	SUBMITTAL 90% (DRAFT)
B	07/20/18	HS	SK	SUBMITTAL 50%
A	12/18/17	HS	SK	SUBMITTAL 30%

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

REF. & REV.

REGIONAL WATER RECYCLING PLANT
CONTROL SURVEY

DR. BY: JRS
CH. BY: RSW
DATE: 10/27/2017
SCALE AS NOTED
SHEET NO. 1
OF 1 SHEETS

SUBMITTAL 90% - 05/31/2019

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

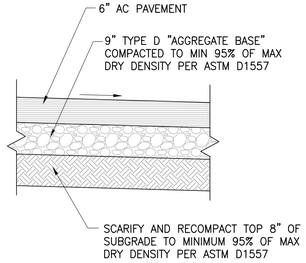
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

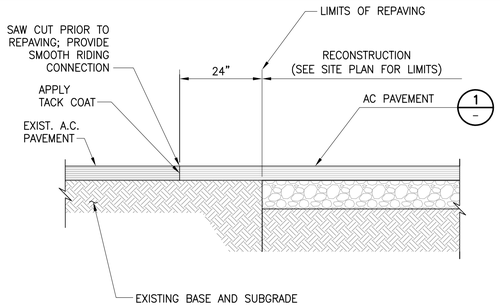
TOPOGRAPHIC SURVEY
CONTROL POINTS

SHEET CG-02
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

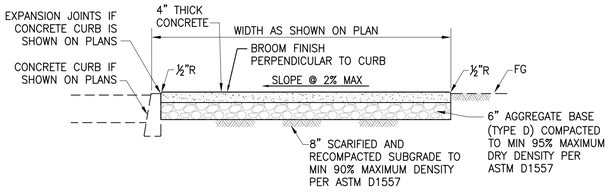
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AC PAVEMENT — 1 VAR
SCALE: NTS



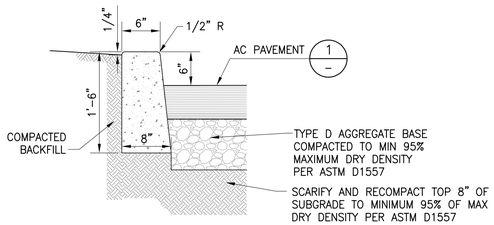
AC PAVEMENT CONNECTION — 2 VAR
SCALE: NTS



NOTE:

1. ALL SIDEWALK WIDTHS SHOWN INCLUDE THE WIDTH OF TOP OF CURB AND THE WIDTH OF CONCRETE SLAB, UNLESS INDICATED OTHERWISE.
2. SIDEWALK JOINTS SHALL BE CONSTRUCTED TO DIVIDE THE SURFACE INTO RECTANGULAR AREAS.
3. TRANSVERSE CONTRACTION JOINTS PER DETAIL 7/CG–11 SHALL BE SPACED AT A DISTANCE EQUAL TO THE SIDEWALK WIDTH OR 5 FEET ON CENTER, WHICHEVER IS LESS, AND SHALL BE CONTINUOUS ACROSS THE SLAB.
4. LONGITUDINAL CONTRACTION JOINTS PER DETAIL 7/CG–11 SHALL BE CONSTRUCTED ALONG THE CENTERLINE OF ALL SIDEWALKS 10 FEET OR MORE IN WIDTH.
5. TRANSVERSE EXPANSION JOINTS PER DETAIL 8/G–11 SHALL BE INSTALLED AT SIDEWALK RETURNS AND OPPOSITE EXPANSION JOINTS IN ADJOINING CURBS.
6. WHERE THE SIDEWALK IS NOT IN CONTACT WITH THE CURB, TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AS INDICATED.
7. EXPANSION JOINTS SHALL BE FORMED ABOUT STRUCTURES AND FEATURES WHICH PROJECT THROUGH OR INTO THE SIDEWALK PAVEMENT, USING JOINT FILLER OF THE TYPE, THICKNESS, AND WIDTH INDICATED.
8. EXPANSION JOINTS SHALL BE CONSTRUCTED BETWEEN SIDEWALKS AND CURBS THAT ABUT THE SIDEWALK LONGITUDINALLY.

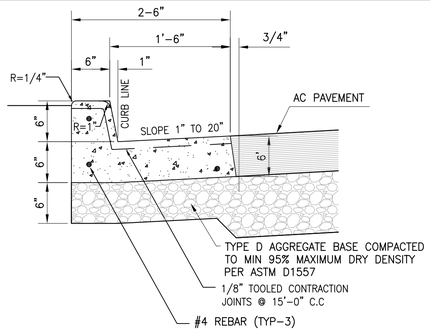
CONCRETE SIDEWALK — 3 VAR
SCALE: NTS



NOTE:

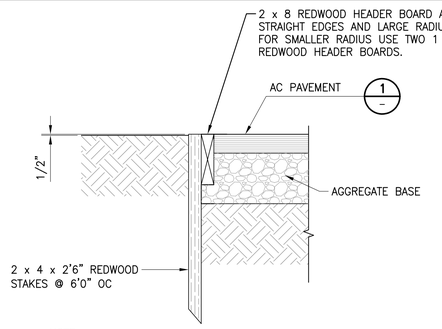
1. PROVIDE TRANSVERSE EXPANSION JOINTS WITH 1½–INCH PRE–MOLDED JOINT FILLER AT BC'S, EC'S AND 60–FOOT MAXIMUM SPACING BETWEEN RETURNS.
2. INSTALL EXPANSION JOINTS WHERE CURBS ARE CONSTRUCTED AGAINST CONCRETE SIDEWALK AND CONCRETE PAVEMENT.
3. EXTEND ALL EXPANSION JOINTS COMPLETELY THROUGH, VERTICALLY AND HORIZONTALLY.
4. CONSTRUCT WEAKENED–PLANE JOINTS (1½–INCH DEEP SCORE) AT MAXIMUM 10–FOOT SPACING BETWEEN CURB RETURNS WITHIN 12 HOURS OF THE PLACEMENT OF THE CONCRETE.
5. CONSTRUCT NEW CURBS ADJACENT TO EXISTING CURBS HAVING A BATTER OTHER THAN SHOWN FOR THE NEW CURBS WITH A TRANSITION SECTION BETWEEN THE CURBS HAVING DIFFERENT BATTERS. THE MINIMUM TRANSITION LENGTH SHALL BE 5.0 FEET.

CONCRETE CURB — 4 VAR
SCALE: NTS



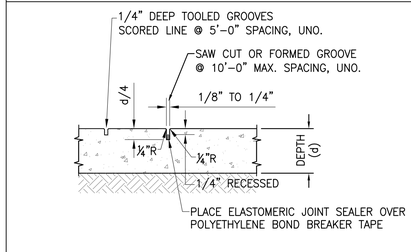
NOTE:
EXPANSION JOINTS SHALL BE 1/4" WIDE @ 60' MAXIMUM SPACING AND AT END OF CURB RETURNS

CONCRETE CURB AND GUTTER — 5 VAR
SCALE: NTS



NOTE:
1. HEADER BOARDS AND STAKES SHALL BE ALL HEART REDWOOD

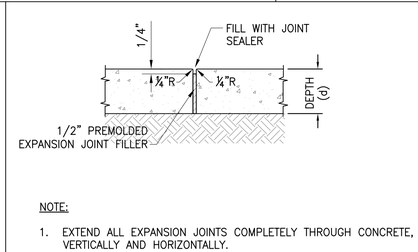
REDWOOD HEADER — 6 VAR
SCALE: NTS



NOTE:

1. CONSTRUCT WEAKENED–PLANE JOINTS WITHIN 12 HOURS OF THE PLACEMENT OF CONCRETE.

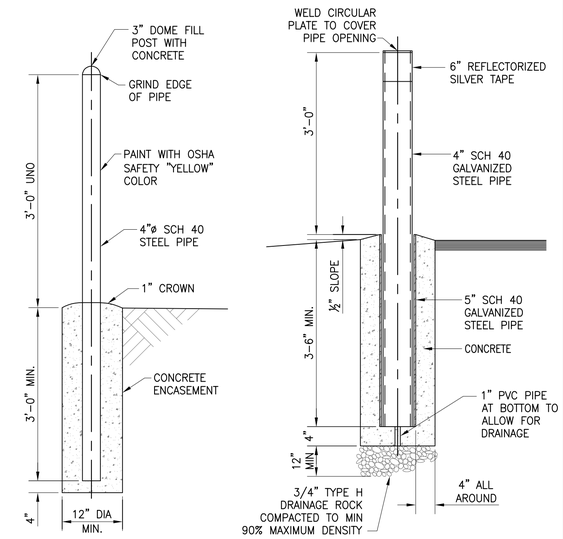
WEAKENED PLANE JOINT — 7 VAR
SCALE: NTS



NOTE:

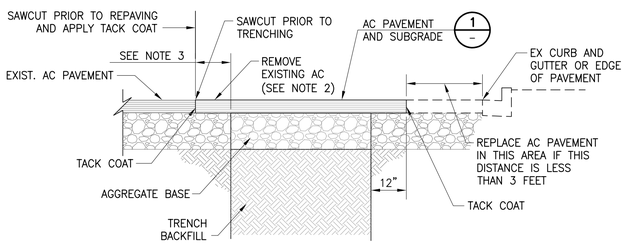
1. EXTEND ALL EXPANSION JOINTS COMPLETELY THROUGH CONCRETE, VERTICALLY AND HORIZONTALLY.

EXPANSION JOINT — 8 VAR
SCALE: NTS



NOTE: PROVIDE TYPE "A" PERMANENT GUARD POST UNLESS OTHERWISE INDICATED.

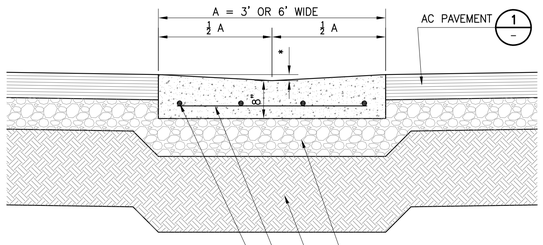
GUARD POST — 9 VAR
SCALE: NTS



TRENCH RESTORATION NOTES:

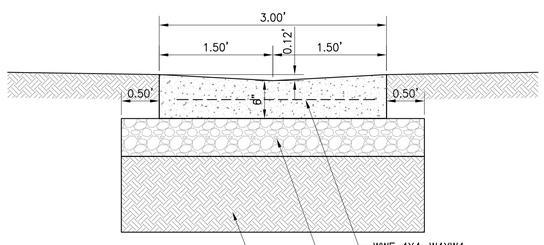
1. PAVEMENT STRUCTURE SHALL BE EQUAL TO OR BETTER THAN EXISTING IN THICKNESS AND QUALITY.
2. THE EXISTING PAVEMENT MAY VARY IN THICKNESS. CONTRACTOR SHALL BE RESPONSIBLE FOR SAWCUTTING, EXCAVATION, DISPOSAL, AND RESTORATION OF AC PAVEMENT AND BASE, REGARDLESS OF ACTUAL PAVEMENT THICKNESS AT NO ADDITIONAL COST TO THE CITY.
3. REPAVING LIMIT IS A MINIMUM OF 12 INCHES FROM EDGE OF TRENCH. COLD MIX MAY BE USED TEMPORARILY FOR A MAXIMUM OF 7 DAYS. KEEP COLD MIX PATCHED/ REPAIRED AT ALL TIMES. IF TEMPORARY PAVEMENT IS NECESSARY FOR MORE THAN 7 DAYS, THE CONTRACTOR SHALL INSTALL 3–INCH THICK AC WITH ¾"–INCH AGGREGATE FULL DEPTH UNTIL PERMANENT PAVING IS INSTALLED.
4. REPLACE ALL OBLITERATED PAVEMENT MARKINGS. PUT IN TEMPORARY PAVEMENT MARKINGS AS NECESSARY. TEMPORARY PAVEMENT MARKINGS SHALL BE MAINTAINED BY THE CONTRACTOR, UNTIL PERMANENT MARKINGS ARE REPLACED.
5. BEFORE SAW CUTTING, DETERMINE IF AC IS UNDERLAYED WITH GEOFABRIC. IF SO, SAW CUT SHALL BE DEEP ENOUGH TO CUT THROUGH FABRIC TO ELIMINATE LAMINATION SEPARATION.
6. FINAL PAVEMENT SHALL HAVE A UNIFORM WIDTH.

PAVEMENT TRENCH RESTORATION DETAIL — 10 VAR
SCALE: NTS



*GUTTER DEPTH:
0.08" FOR A = 3' WIDE
0.12" FOR A = 6' WIDE

CONCRETE CROSS GUTTER — 11 VAR
SCALE: NTS



NOTE:

1. TRANSVERSE CONTRACTION JOINTS PER DETAIL 7/CG–11 SHALL BE SPACED 5 FEET ON CENTER
2. EXPANSION JOINTS SHALL BE FORMED ABOUT STRUCTURES USING JOINT FILLER OF THE TYPE, THICKNESS, AND WIDTH INDICATED

CONCRETE CENTER GUTTER — 12 VAR
SCALE: NTS

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(626) 440 - 2000

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Drawn	HS	07/2018	
Checked	BL	07/2018	Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
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PROJECT MANAGER DATE

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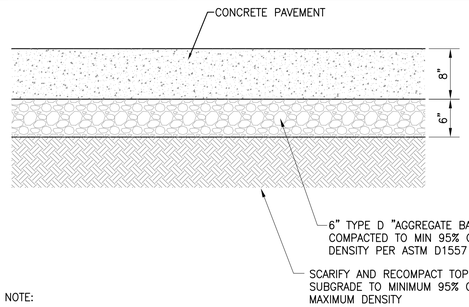
SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 1

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SHEET NO.: X OF
PROJECT NO.:
DRAWING NO.:

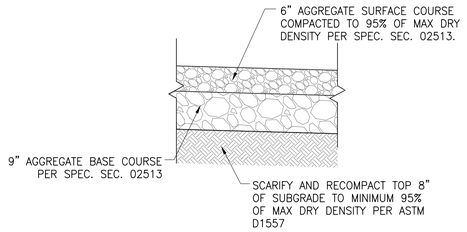
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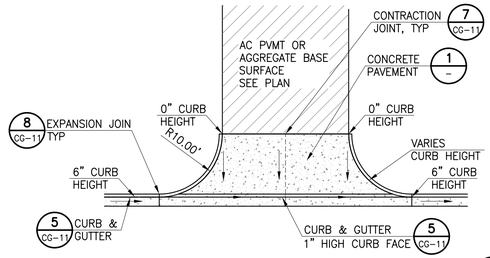
NOTE:

1. DRIVEWAY JOINTS SHALL BE CONSTRUCTED TO DIVIDE THE SURFACE INTO RECTANGULAR AREAS.
2. TRANSVERSE CONTRACTION JOINTS PER DETAIL 7/CG-11 SHALL BE SPACED AT A DISTANCE EQUAL TO THE DRIVEWAY WIDTH OR 5 FEET ON CENTER, WHICHEVER IS LESS, AND SHALL BE CONTINUOUS ACROSS THE SLAB.
3. LONGITUDINAL CONTRACTION JOINTS PER DETAIL 7/CG-11 SHALL BE CONSTRUCTED ALONG THE CENTERLINE OF DRIVEWAY 10 FEET OR MORE IN WIDTH.
4. TRANSVERSE EXPANSION JOINTS PER DETAIL 8/G-11 SHALL BE INSTALLED AT DRIVEWAY RETURNS AND OPPOSITE EXPANSION JOINTS IN ADJOINING CURBS.
5. WHERE THE SIDEWALK IS NOT IN CONTACT WITH THE CURB, TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AS INDICATED.
6. EXPANSION JOINTS SHALL BE FORMED ABOUT STRUCTURES AND FEATURES WHICH PROJECT THROUGH OR INTO THE DRIVEWAY PAVEMENT, USING JOINT FILLER OF THE TYPE, THICKNESS, AND WIDTH INDICATED.
7. EXPANSION JOINTS SHALL BE CONSTRUCTED BETWEEN DRIVEWAY AND CURBS THAT ABUT THE DRIVEWAY LONGITUDINALLY.

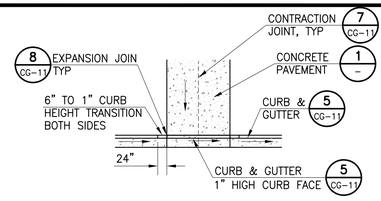
CONCRETE PAVEMENT/DRIVEWAY SECTION 1 VAR
SCALE: NTS



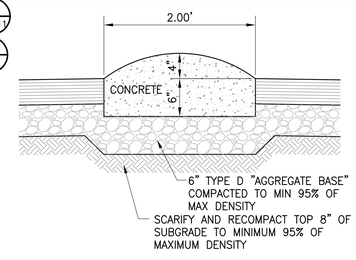
AGGREGATE SURFACE 2 VAR
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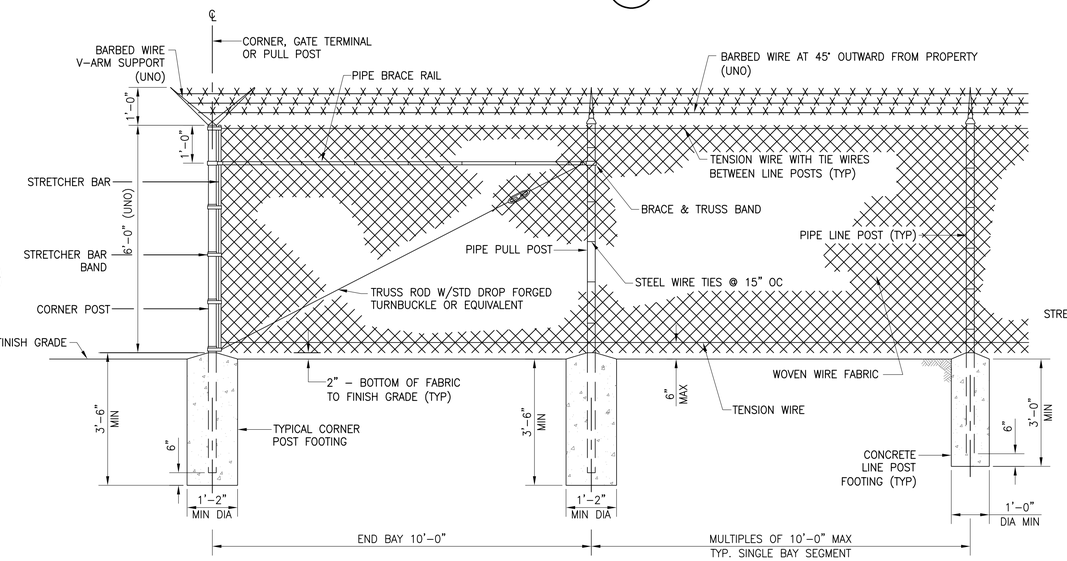
DRIVEWAY APPROACH 3 VAR
SCALE: NTS



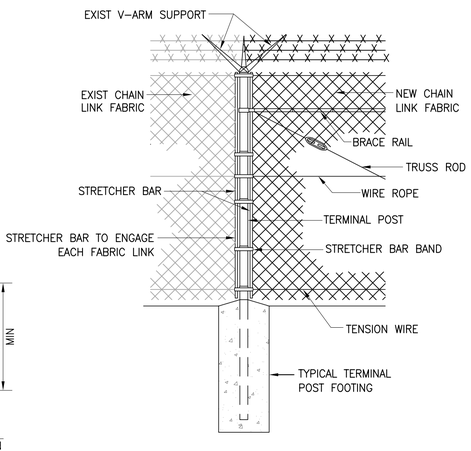
CONCRETE DRIVEWAY 4 VAR
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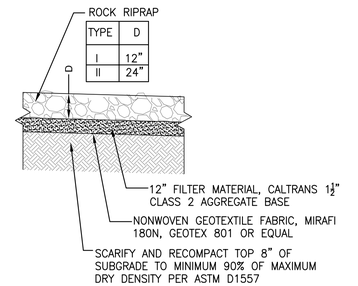
CONTAINMENT CURB 6 VAR
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CHAIN LINK FENCE 7 VAR
SCALE: NTS

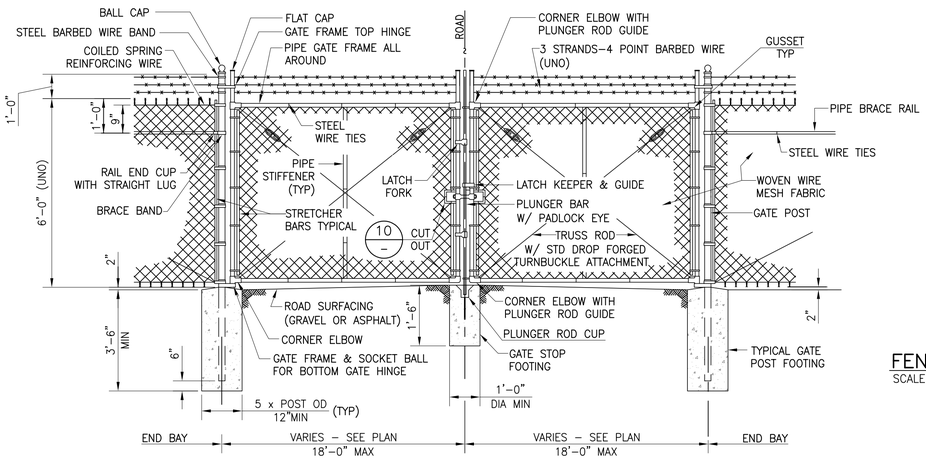


EXISTING FENCE TIE-IN 9 VAR
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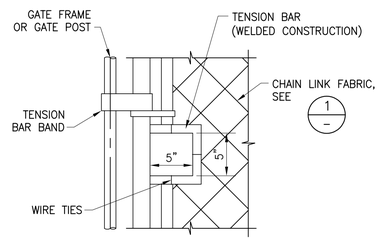


ROCK RIPRAP 11 VAR
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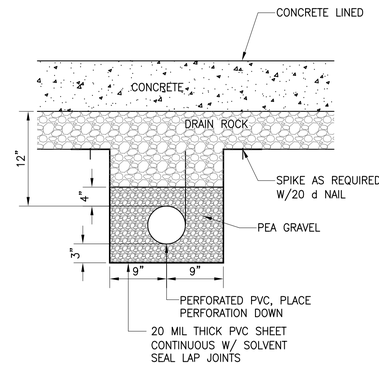
ROAD INTERSECTION CROSS GUTTER 5 VAR
SCALE: NTS



DOUBLE SWING GATE 8 VAR
SCALE: NTS



FENCE CUTOUT FOR CHAIN AND LOCK 10 VAR
SCALE: NTS



POND UNDERDRAIN 12 VAR
SCALE: NTS

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Designed	HS	07/2018
Drawn	HS	07/2018
Checked	BL	07/2018
		Date

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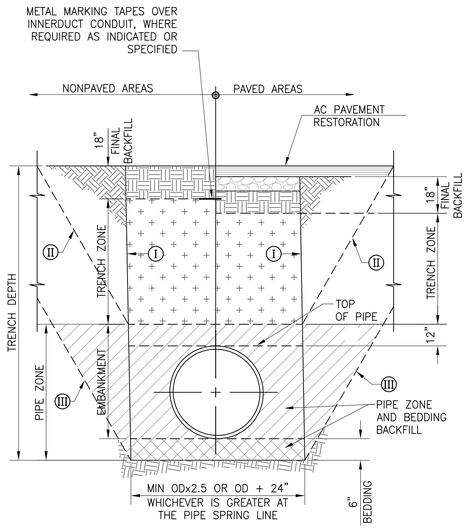
SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 2

SHEET CG-12
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

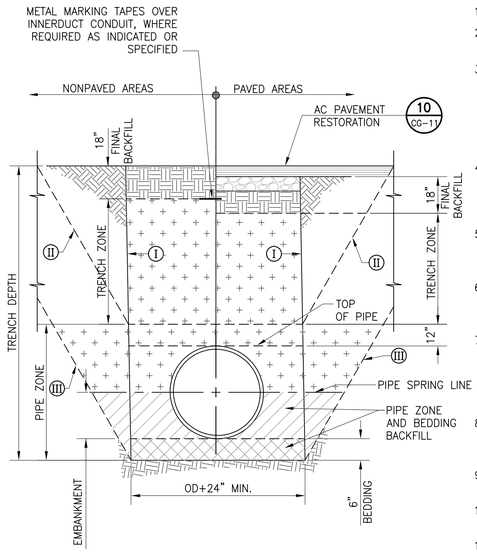
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plotted 5/30/19



NOTES:

1. FLEXIBLE PIPE REFERS TO ALL STEEL, DUCTILE IRON, AND PLASTIC PIPES.
2. DEFINITIONS OF FINAL BACKFILL, BEDDING, EMBEDMENT, PIPE AND TRENCH ZONES AND PIPE AND UTILITY BACKFILL REQUIREMENTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
3. TYPICAL TRENCH SECTIONS, (I) VERTICAL TRENCH WALLS, (II) COMBINATION OF VERTICAL AND SLOPING TRENCH WALLS, AND (III) SLOPING TRENCH WALLS, ARE TO BE USED ONLY WHERE STABLE, COMPACT SOIL CONDITIONS EXIST. IF BOULDER OR LARGE OBSTRUCTIONS ARE ENCOUNTERED, TRENCH SECTIONS MAY BE DEEPER OR WIDER THAN SHOWN; THE ENGINEER SHOULD BE ADVISED SHOULD THIS OCCUR. UNLESS SPECIFICALLY DESIGNATED ON PLANS, SLOPING TRENCH WALL SECTION (III) SHALL NOT BE USED WITHOUT APPROVAL OF THE ENGINEER.
4. TRENCH SECTIONS OTHER THAN THE TYPICAL SECTIONS SHOWN MAY BE UTILIZED PROVIDED THAT THEY COMPLY WITH APPLICABLE LOCAL, STATE (CAL-OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS. DOCUMENTATION SUPPORTING THIS COMPLIANCE AND THE PIPE DESIGN CALCULATIONS PREPARED BY A PROFESSIONAL ENGINEER SHALL BE SUBMITTED TO THE ENGINEER.
5. THE NEED FOR TRENCH PROTECTIVE SYSTEMS SHALL BE DETERMINED IN CONSIDERATION OF APPLICABLE LOCAL, (CAL-OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS AND GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
6. UNSUPPORTED VERTICAL AND/OR SLOPING TRENCH WALLS SHALL NOT BE STEEPER THAN ALLOWED BY APPLICABLE LOCAL, (CAL-OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS UNLESS SUPPORTING DOCUMENTATION IS SUBMITTED ACCORDING TO AFOREMENTIONED SAFETY STANDARDS.
7. PROTECTION SYSTEMS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE LOCAL, (CAL-OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS. SUPPORTING DOCUMENTATION SHALL BE SUBMITTED TO THE ENGINEER REGARDING THE DESIGN OF SHORING, BRACING, SLOPING OR OTHER PROTECTION SYSTEMS AND THEIR COMPLIANCE WITH APPLICABLE LOCAL, (CAL-OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS.
8. A STAIRWAY, LADDER, RAMP OR OTHER SAFE MEANS OF EGRESS SHALL BE LOCATED IN TRENCH EXCAVATIONS 4.0 FEET OR MORE IN DEPTH SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL FOR EMPLOYEES/WORKERS PER CCR, TITLE 8 SECTION 1541.
9. VOIDS LEFT WHEN REMOVING SHEETING AND SHORING SHALL BE FILLED WITH CONTROLLED LOW STRENGTH MATERIAL IN ACCORDANCE WITH SPECIFICATION SECTION 02210.
10. DETECTABLE METALLIC LOCATING TAPE SHALL BE PLACED ABOVE ALL BURIED PLASTIC PIPELINES AND OTHER PIPELINES THAT ARE NOT COMPRISED AT LEAST IN PART OF MAGNETIC COMPONENTS IN ACCORDANCE WITH THE EARTHWORK AND RESPECTIVE PIPING SECTIONS OF THE SPECIFICATIONS.
11. IF OVER-EXCAVATION DUE TO POOR FOUNDATION MATERIAL IS ORDERED BY THE ENGINEER, THE BACKFILL MATERIAL SHALL BE PROVIDED IN ACCORDANCE WITH THE EARTHWORK SECTION OF THE SPECIFICATIONS.
12. IF DURING CONSTRUCTION, THE WATER TABLE IS DISCOVERED TO BE ABOVE THE TRENCH BOTTOM, THE ENGINEER SHALL BE NOTIFIED, AND APPROPRIATE DEWATERING SHALL BE IMPLEMENTED TO LOWER THE WATER LEVEL BELOW THE TRENCH BOTTOM IN ACCORDANCE WITH THE DEWATERING REQUIREMENTS PROVIDED IN THE SPECIFICATIONS. BACKFILL MATERIAL SHALL BE PROVIDED IN ACCORDANCE WITH THE EARTHWORK SECTION OF THE SPECIFICATIONS OR AS ORDERED BY THE ENGINEER.

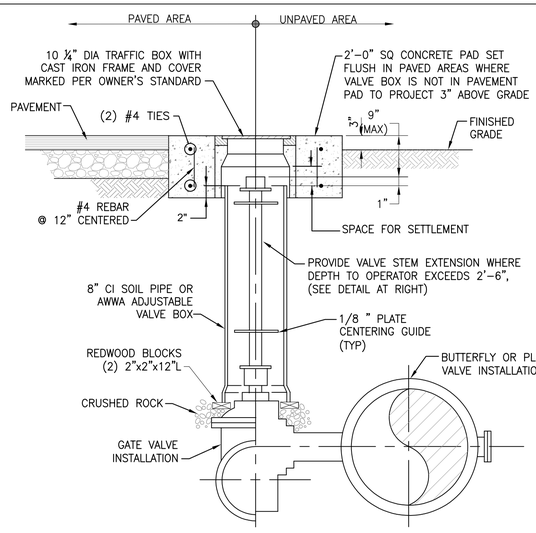
SECTION: TYPICAL TRENCH FOR FLEXIBLE PIPE (1 VAR)
SCALE: NTS



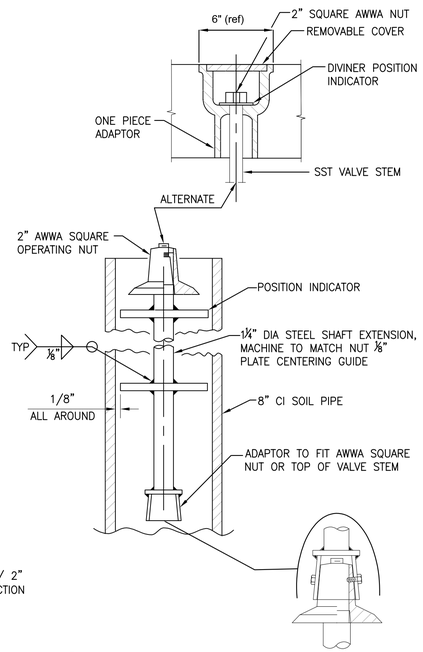
NOTES:

1. RIGID PIPE REFERS TO ALL TYPES OF REINFORCED AND NON-REINFORCED CONCRETE PIPE AND CLAY PIPE.
2. DEFINITIONS OF FINAL BACKFILL, BEDDING, EMBEDMENT, PIPE AND TRENCH ZONES AND PIPE AND UTILITY BACKFILL REQUIREMENTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
3. TYPICAL TRENCH SECTIONS, (I) VERTICAL TRENCH WALLS, (II) COMBINATION OF VERTICAL AND SLOPING TRENCH WALLS, AND (III) SLOPING TRENCH WALLS, ARE TO BE USED ONLY WHERE STABLE, COMPACT SOIL CONDITIONS EXIST. IF BOULDER OR LARGE OBSTRUCTIONS ARE ENCOUNTERED, TRENCH SECTIONS MAY BE DEEPER OR WIDER THAN SHOWN; THE ENGINEER SHOULD BE ADVISED SHOULD THIS OCCUR. UNLESS SPECIFICALLY DESIGNATED ON PLANS, SLOPING TRENCH WALL SECTION (III) SHALL NOT BE USED WITHOUT APPROVAL OF THE ENGINEER.
4. TRENCH SECTIONS OTHER THAN THE TYPICAL SECTIONS SHOWN MAY BE UTILIZED PROVIDED THAT THEY COMPLY WITH APPLICABLE LOCAL, STATE (CAL-OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS. DOCUMENTATION SUPPORTING THIS COMPLIANCE AND THE PIPE DESIGN CALCULATIONS PREPARED BY A PROFESSIONAL ENGINEER SHALL BE SUBMITTED TO THE ENGINEER.
5. THE NEED FOR TRENCH PROTECTIVE SYSTEMS SHALL BE DETERMINED IN CONSIDERATION OF APPLICABLE LOCAL, (CAL-OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS AND GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
6. UNSUPPORTED VERTICAL AND/OR SLOPING TRENCH WALLS SHALL NOT BE STEEPER THAN ALLOWED BY APPLICABLE LOCAL, (CAL-OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS UNLESS SUPPORTING DOCUMENTATION IS SUBMITTED ACCORDING TO AFOREMENTIONED SAFETY STANDARDS.
7. PROTECTION SYSTEMS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE LOCAL, (CAL-OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS. SUPPORTING DOCUMENTATION SHALL BE SUBMITTED TO THE ENGINEER REGARDING THE DESIGN OF SHORING, BRACING, SLOPING OR OTHER PROTECTION SYSTEMS AND THEIR COMPLIANCE WITH APPLICABLE LOCAL, (CAL-OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS.
8. A STAIRWAY, LADDER, RAMP OR OTHER SAFE MEANS OF EGRESS SHALL BE LOCATED IN TRENCH EXCAVATIONS 4.0 FEET OR MORE IN DEPTH SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL FOR EMPLOYEES/WORKERS PER CCR, TITLE 8 SECTION 1541.
9. VOIDS LEFT WHEN REMOVING SHEETING AND SHORING SHALL BE FILLED WITH CONTROLLED LOW STRENGTH MATERIAL IN ACCORDANCE WITH SPECIFICATION SECTION 02210.
10. IF OVER-EXCAVATION DUE TO POOR FOUNDATION MATERIAL IS ORDERED BY THE ENGINEER, THE BACKFILL MATERIAL SHALL BE PROVIDED IN ACCORDANCE WITH THE EARTHWORK SECTION OF THE SPECIFICATIONS.
11. IF DURING CONSTRUCTION, THE WATER TABLE IS DISCOVERED TO BE ABOVE THE TRENCH BOTTOM, THE ENGINEER SHALL BE NOTIFIED, AND APPROPRIATE DEWATERING SHALL BE IMPLEMENTED TO LOWER THE WATER LEVEL BELOW THE TRENCH BOTTOM IN ACCORDANCE WITH THE DEWATERING REQUIREMENTS PROVIDED IN THE SPECIFICATIONS. BACKFILL MATERIAL SHALL BE PROVIDED IN ACCORDANCE WITH THE EARTHWORK SECTION OF THE SPECIFICATIONS OR AS ORDERED BY THE ENGINEER.

SECTION: TYPICAL TRENCH FOR RIGID PIPE (2 VAR)
SCALE: NTS

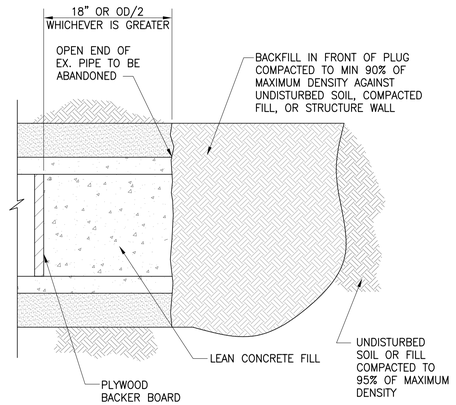


EXTENSION STEM

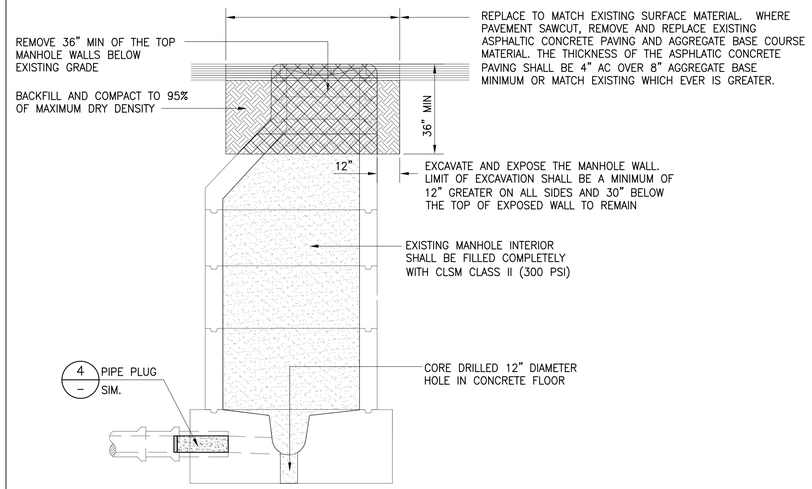


NOTES:
1. ALL BURIED VALVES SHALL BE PROVIDED W/ EXTENSION STEM OPERATOR W/ 2" SQ AWWA NUT WITHIN 36" OF VALVE BOX COVER. NUT IS TO INDICATE DIRECTION OF ROTATION TO OPEN VALVE.
2. COAT BURIED PIPE AND VALVE BOX PER SPECIFICATIONS.
3. CLEAN VALVE BOX OF ALL DEBRIS AND SOIL.
4. VALVE TYPE AS INDICATED ON THE DRAWINGS.

VALVE BOX INSTALLATION (3 VAR)
SCALE: NTS



ABANDON PIPE PLUG DETAIL (4 VAR)
SCALE: NTS



ABANDON EXISTING MANHOLE (5 VAR)
SCALE: NTS

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D	05/31/19	HS	SK	SUBMITTAL 90%
C	05/07/19	HS	SK	SUBMITTAL 90% (QA/QC)
B	12/21/18	HS	SK	SUBMITTAL 90% (DRAFT)
A	07/20/18	HS	SK	SUBMITTAL 50%

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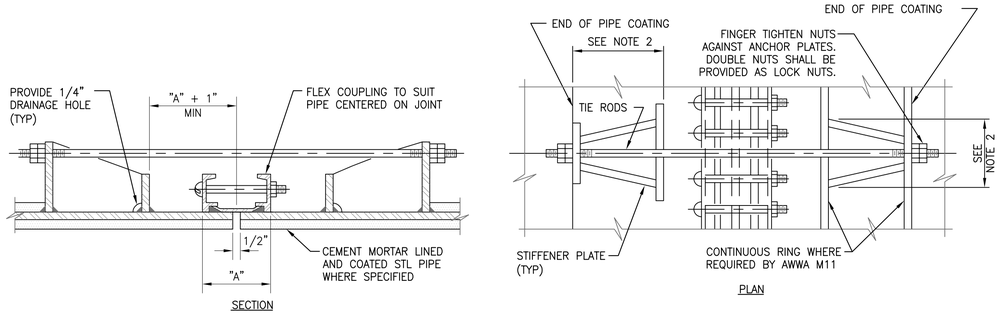
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REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 3

SHEET: SK
SHEET NO.: X OF
PROJECT NO.:
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NOTES:

1. ALL EXPOSED FLEXIBLE COUPLINGS SHALL HAVE TIE RODS UNLESS SPECIFICALLY INDICATED OTHERWISE ON THE DRAWINGS.
2. DESIGN SHALL BE BASED ON TEST PRESSURE.
3. ANCHOR LUGS AND TIE RODS FOR STEEL PIPE SHALL BE DESIGNED BY PIPE MANUFACTURER IN ACCORDANCE WITH THE AWWA M11 STEEL WATER PIPE MANUAL.
4. GRIND ALL CORNERS SMOOTH.
5. COAT ALL EXPOSED STEEL SURFACES WITH FUSION-BONDED EPOXY PER SPECIFICATIONS.
6. THE COUPLING SLEEVE SHALL BE 7 INCHES LONG FOR PIPE DIAMETERS UP TO 30 INCHES AND 10 INCHES LONG FOR PIPE DIAMETERS GREATER THAN 30 INCHES.

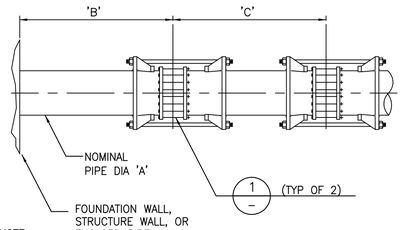
STEEL PIPE FLEXIBLE COUPLING TIE-DOWN

SCALE: NTS

1 / VAR

DIMENSIONS IN INCHES		
'A'	'B'	'C'
6	24	60
8	24	60
12	26	60
16	26	60
18	26	60
24	26	60
30	28	66
36	28	66
42	32	66
48	38	78
54	38	78
60	38	78
72	40	96
84	42	96

FOR 150 PSI OR LESS DESIGN PRESSURE ONLY



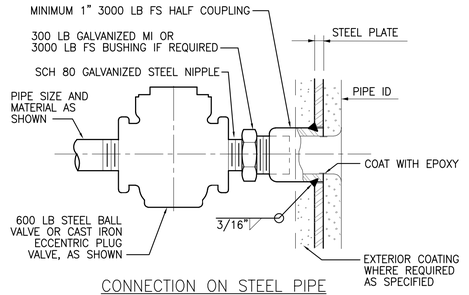
NOTE:

1. FOR PIPE DIA "A" NOT LISTED IN THE ABOVE TABLE, USE NEXT SIZE UP UNLESS OTHERWISE NOTED.
2. PROVIDE "C" DIMENSIONS AS SHOWN IN TABLE ABOVE OR ON THE DRAWINGS WHERE INDICATED WHICHEVER IS GREATER
3. THE MINIMUM LENGTH OF COUPLING SLEEVES SHALL BE 7 INCHES FOR PIPE DIAMETERS UP TO 24 INCHES AND 10 INCHES FOR PIPE DIAMETERS GREATER THAN 24 INCHES.

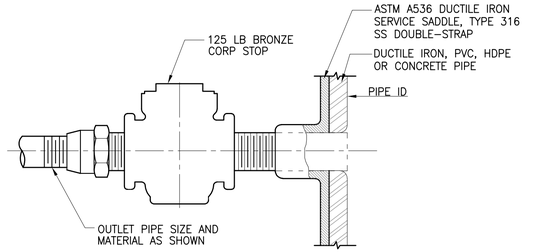
RESTRAINED DOUBLE COUPLING HARNESS SET

SCALE: NTS

2 / VAR



CONNECTION ON STEEL PIPE



CONNECTION ON DUCTILE IRON, PVC, HDPE AND CONCRETE PIPE

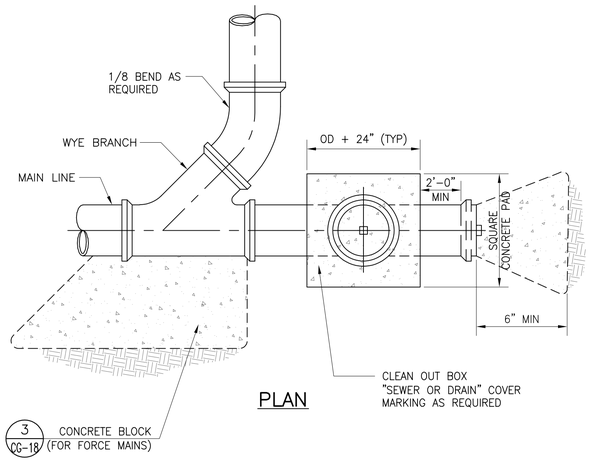
PIPE CONNECTION FOR 2" AND SMALLER OUTLET PIPE

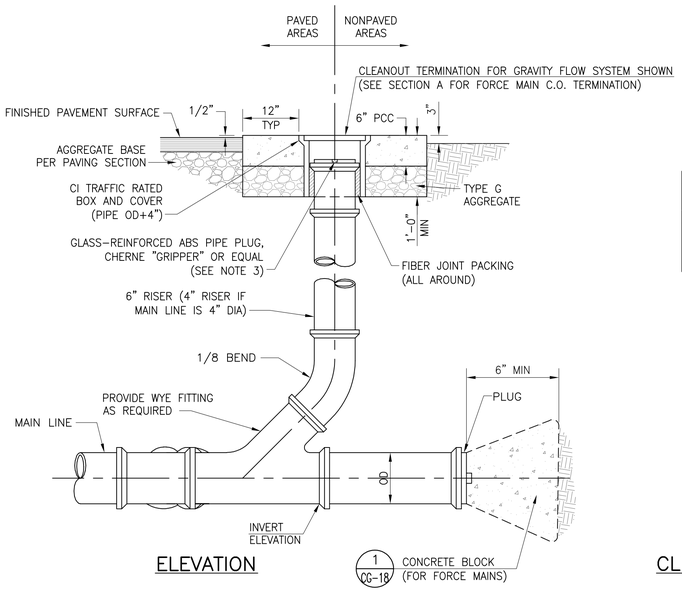
SCALE: NTS

3 / VAR

NOTES:

1. INSTALL FITTINGS AND REDUCERS AS REQUIRED.
2. FOR CLEANOUTS ON FORCE MAINS, PROVIDE CONCRETE BLOCKS, JOINTS AND FITTINGS, SCREW ON BRASS PLUG OR FLANGED END PIPE WITH A BLIND FLANGE CAP TO WITHSTAND THE FIELD TEST PRESSURE.
3. SEE SECTION A FOR ALTERNATE PRESSURE CLEANOUT TERMINATION ON FORCE MAINS.

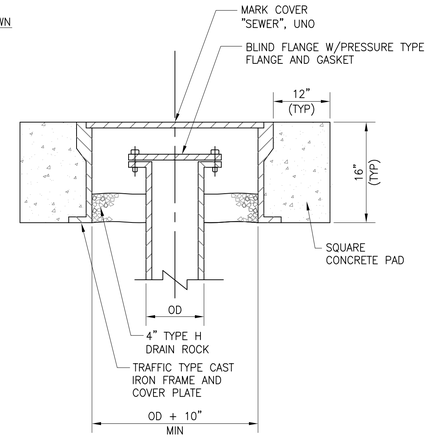




CLEANOUT TO GRADE (COTG)

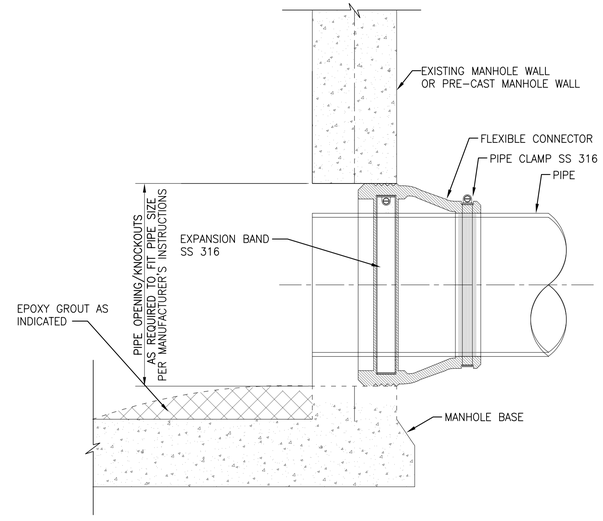
SCALE: NTS

4 / VAR



CLEANOUT BOX FOR FORCE MAINS

A / –



PIPE TO MANHOLE / CATCH BASIN

SCALE: NTS

5 / VAR

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D	05/31/19	HS	SK	SUBMITTAL 90%
C	05/07/19	HS	SK	SUBMITTAL 90% (QA/QC)
B	12/21/18	HS	SK	SUBMITTAL 90% (DRAFT)
A	07/20/18	HS	SK	SUBMITTAL 50%

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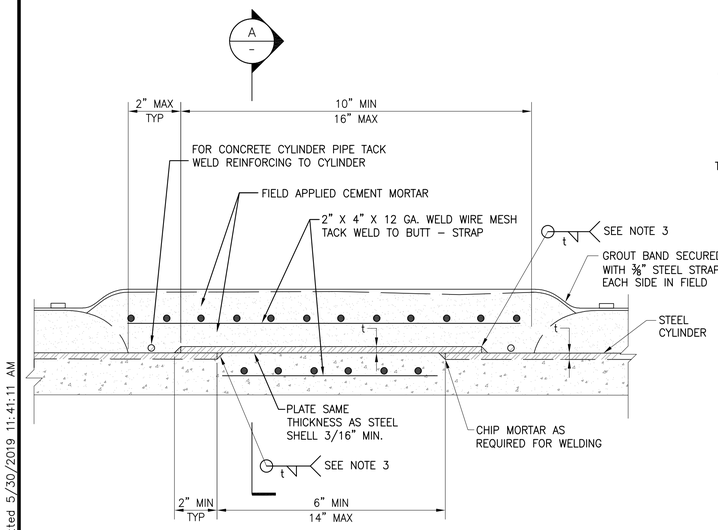
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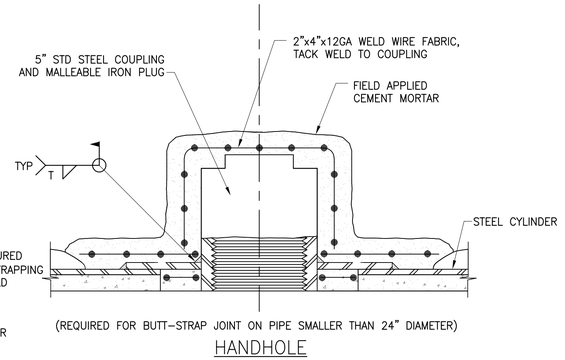
REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 4

SHEET: CG-14
SHEET NO.: X OF
PROJECT NO.:
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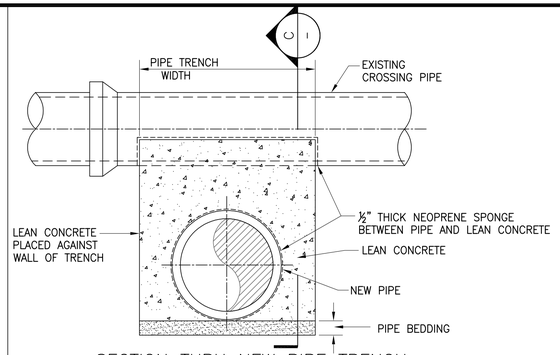
HANDHOLE

NOTE:

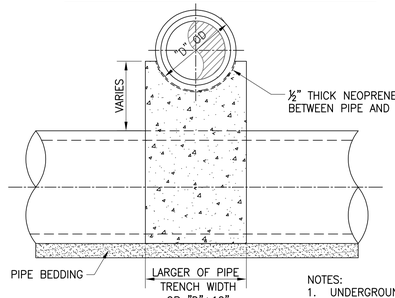
1. BUTT–STRAP JOINTS SHALL BE USED FOR PURPOSE OF CLOSURE ONLY AT LOCATIONS SHOWN.
2. HANDLE DETAIL SHALL BE USED WHENEVER MORTAR NEEDS TO BE APPLIED TO PIPE INTERIOR.
3. WELD OUTSIDE ON PIPES SMALLER THAN 36" DIAMETER. WELD INSIDE ON PIPES GREATER THAN OR EQUAL TO 36" DIAMETER.
4. BUTT–STRAP SHALL BE FURNISHED IN TWO PIECES AND SHIPPED LOOSE FOR FIELD JOINING.

BUTT–STRAP JOINT WITH TYPE A COATING — 1 / VAR

SCALE: NTS



SECTION THRU NEW PIPE TRENCH

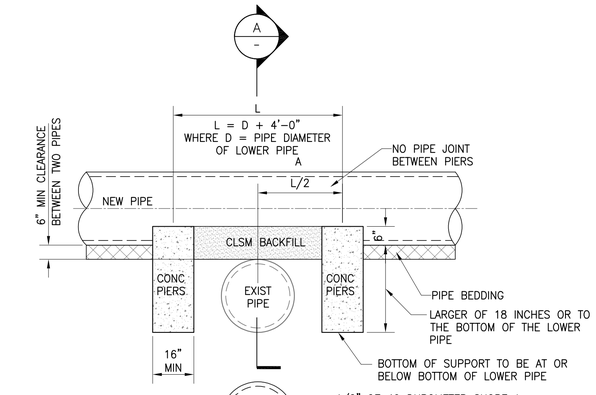


SECTION — C / – — SCALE: NTS

NOTES:
1. UNDERGROUND UTILITY SUPPORTS SHALL BE PROVIDED WHEN MINIMUM CLEARANCE OF 12 INCHES CANNOT BE PROVIDED.
2. EXISTING PIPE OR DUCT SHALL BE FIRMLY SUPPORTED DURING INSTALLATION OF NEW PIPE AND SUPPORT.

PIPE SUPPORT ACROSS TRENCH — 5 / VAR

SCALE: NTS

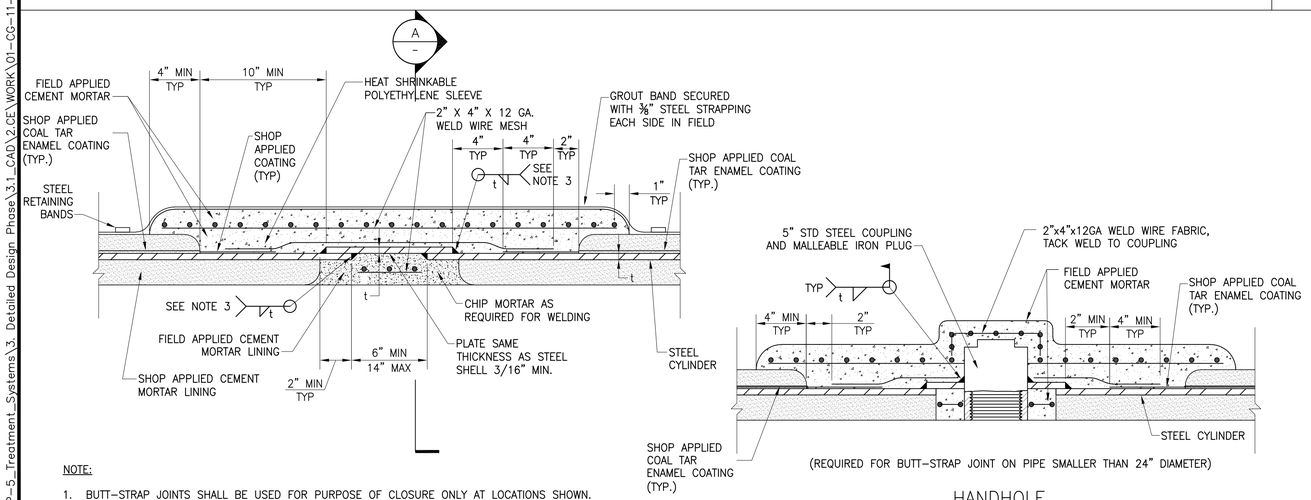


SECTION — A / – — SCALE: NTS

NOTES:
1. PROVIDE PIERS ONLY WHEN LARGE DIAMETER PIPE (15" OR LARGER) CROSSES OVER EXISTING PIPELINE WITH VERTICAL CLEARANCE LESS THAN 12"
2. PIERS SHALL BE CONSTRUCTED ON UNDISTURBED EARTH. CONCRETE SHALL BE LEAN CONCRETE PER SPECIFICATION SECTION 03300

CONC PIERS FOR UTILITY AND PIPE CROSSINGS — 6 / VAR

SCALE: NTS



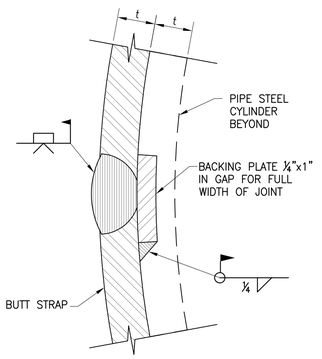
HANDHOLE

NOTE:

1. BUTT–STRAP JOINTS SHALL BE USED FOR PURPOSE OF CLOSURE ONLY AT LOCATIONS SHOWN.
2. HANDLE DETAIL SHALL BE USED WHENEVER MORTAR NEEDS TO BE APPLIED TO PIPE INTERIOR.
3. WELD OUTSIDE ON PIPES SMALLER THAN 36" DIAMETER. WELD INSIDE ON PIPES GREATER THAN OR EQUAL TO 36" DIAMETER.
4. BUTT–STRAP SHALL BE FURNISHED IN TWO PIECES AND SHIPPED LOOSE FOR FIELD JOINING.

BUTT–STRAP JOINT WITH TYPE B COATING — 2 / VAR

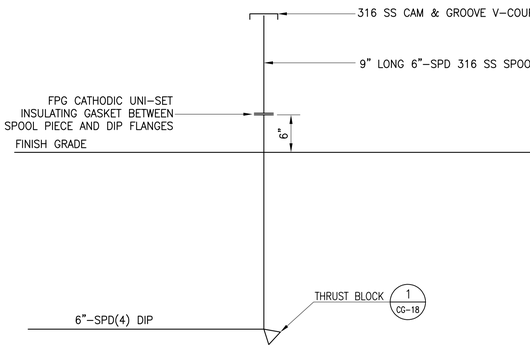
SCALE: NTS



BUTT–STRAP SPLICE

(SEE JOINT SECTION FOR COATING AND LINING DETAILS)

SECTION — A / – — SCALE: NTS



PIPE RISER PUMP DRAIN CONNECTION — 4 / VAR

SCALE: NTS

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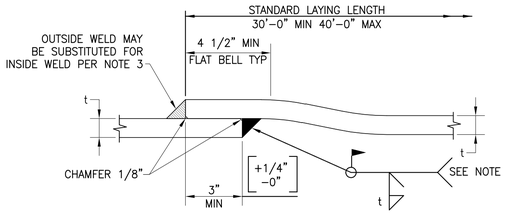
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PROJECT NO. EN19001 & EN19006

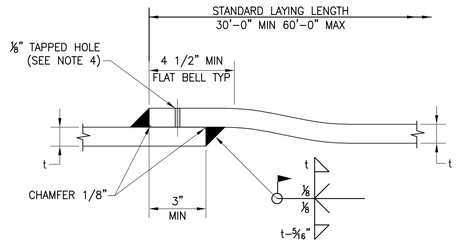
TYPICAL CIVIL DETAILS 5

SHEET CG-15
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PROJECT NO.
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SINGLE WELDED LAP JOINT



DOUBLE WELDED LAP JOINT

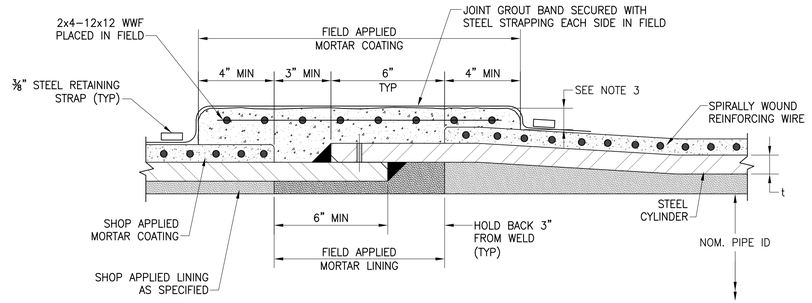
NOTES:

1. ALL FIELD WELDED JOINTS SHALL BE SINGLE WELDED LAP JOINTS UNLESS INDICATED OTHERWISE.
2. SINGLE WELD JOINTS SHALL BE PENETRANT TESTED PER SPECIFICATIONS.
3. WELD OUTSIDE ON PIPE SMALLER THAN 36" DIAMETER. WELD INSIDE ON PIPE GREATER THAN OR EQUAL TO 36" DIAMETER.
4. AFTER FIELD WELDING, PLUG WELD TAPPED HOLES UPON COMPLETION OF TESTS.
5. SEE DETAILS 2 AND 3 FOR JOINT COATING AND LINING REQUIREMENTS.

FIELD WELDED JOINTS

SCALE: NTS

1 VAR



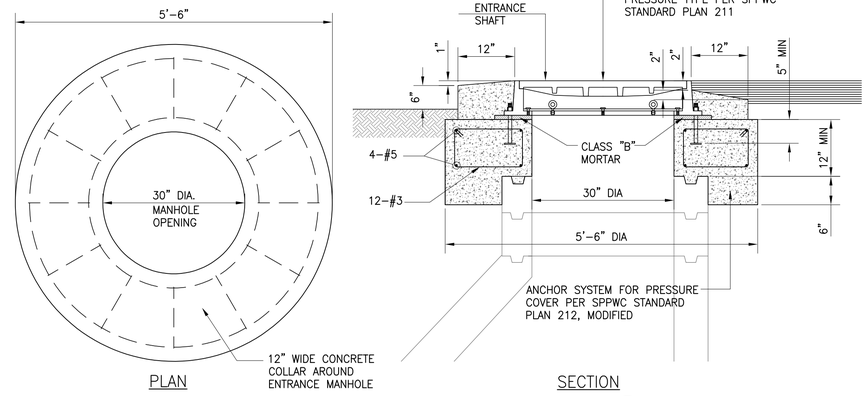
NOTES:

1. DOUBLE-WELDED JOINT SHOWN. SEE DETAIL 1 HEREON FOR DETAILS OF ALTERNATIVE WELDED JOINTS.
2. FOR PIPE SMALLER THAN 24" DIAMETER, DAUB BELL AT END OF LINING BEFORE STABBING AND THEN SWAB SMOOTH. FOR PIPE 24" DIAMETER AND LARGER, POINT AFTER ASSEMBLY.
3. FIELD APPLIED MORTAR SHALL BE 1" MIN THICK IF POUR OR ¾" MIN THICK IF PNEUMATICALLY PLACED.

FIELD WELDED LAP JOINTS WITH TYPE "A" COATING

SCALE: NTS

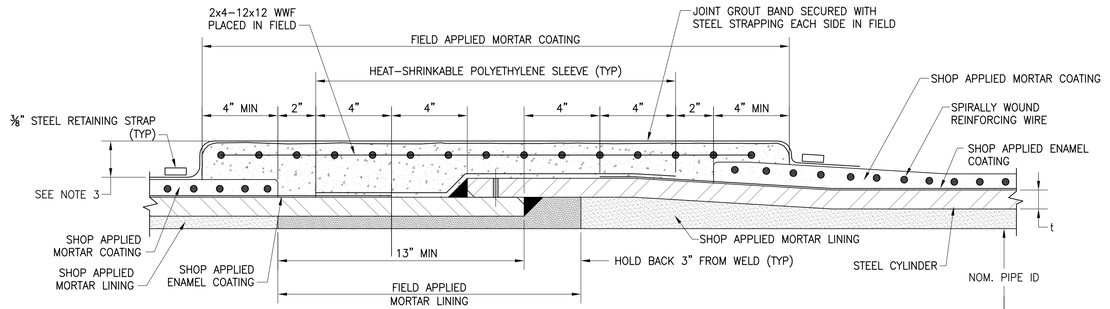
2 VAR



PRESSURE MANHOLE FRAME ANCHOR

SCALE: NTS

5 VAR



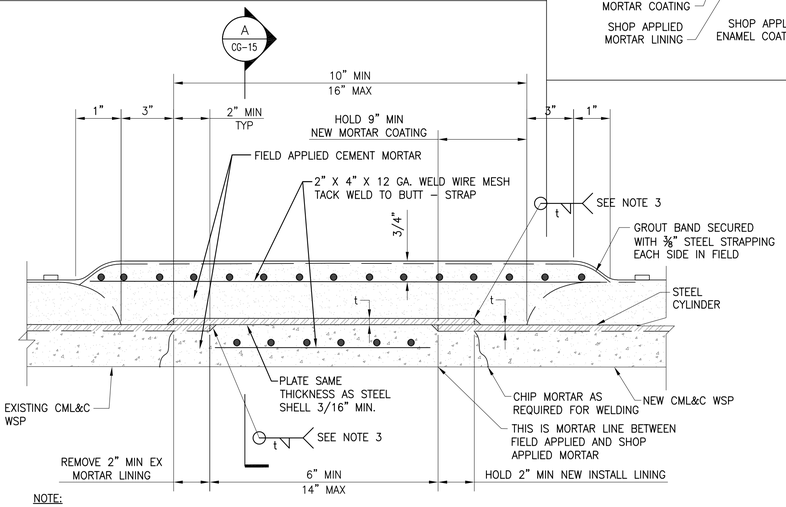
NOTES:

1. DOUBLE-WELDED JOINT SHOWN. SEE DETAIL 1 HEREON FOR DETAILS OF ALTERNATIVE WELDED JOINTS.
2. FOR PIPE SMALLER THAN 24" DIAMETER, DAUB BELL AT END OF LINING BEFORE STABBING AND THEN SWAB SMOOTH. FOR PIPE 24" DIAMETER AND LARGER, POINT AFTER ASSEMBLY.
3. FIELD APPLIED MORTAR SHALL BE 1" MIN. THICKNESS IF POURED OR ¾" MIN. THICKNESS IF PNEUMATICALLY POURED.

FIELD WELDED LAP JOINTS WITH TYPE "B" COATING

SCALE: NTS

3 VAR



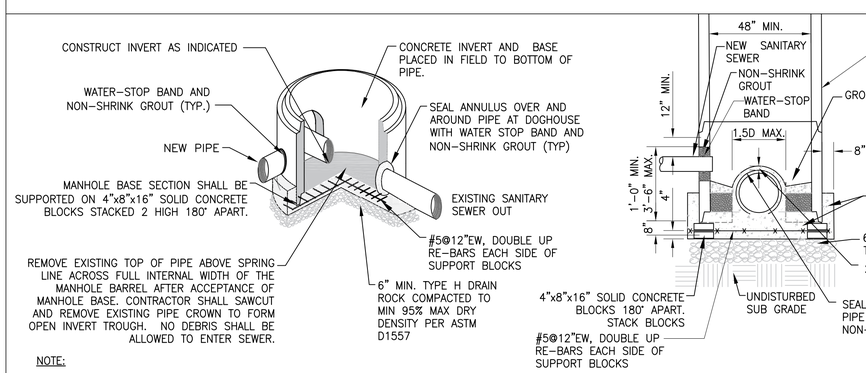
NOTE:

1. BUTT-STRAP JOINTS SHALL BE USED FOR PURPOSE OF CLOSURE ONLY AT LOCATIONS SHOWN.
2. HANDLE DETAIL SHALL BE USED WHENEVER MORTAR NEEDS TO BE APPLIED TO PIPE INTERIOR.
3. WELD OUTSIDE ON PIPES SMALLER THAN 36" DIAMETER. WELD INSIDE ON PIPES GREATER THAN OR EQUAL TO 36" DIAMETER.
4. BUTT-STRAP SHALL BE FURNISHED IN TWO PIECES AND SHIPPED LOOSE FOR FIELD JOINING.

BUTT-STRAP JOINT AT CONNECTIONS TO EXISTING CML&C STEEL PIPE

SCALE: NTS

4 VAR



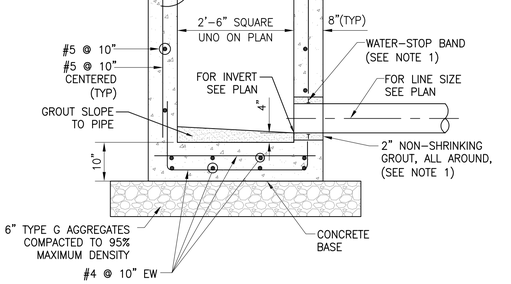
NOTE:

1. APPLY CONCRETE BONDING AGENT TO ALL INTERFACES BETWEEN PRECAST CONCRETE AND CAST-IN-PLACE CONCRETE.
2. DEBRIS SHALL NOT BE ALLOWED TO ENTER SEWER SYSTEM AT ANY TIME DURING CONSTRUCTION.

DOGHOUSE MANHOLE BASE

SCALE: NTS

7 VAR



NOTES:

1. ALTERNATIVELY, WATERTIGHT FLEXIBLE BOOT CONNECTORS MAY BE PROVIDED PER DETAIL 5 ON SHEET CG-14.

CATCH BASIN DETAIL

SCALE: NTS

6 VAR

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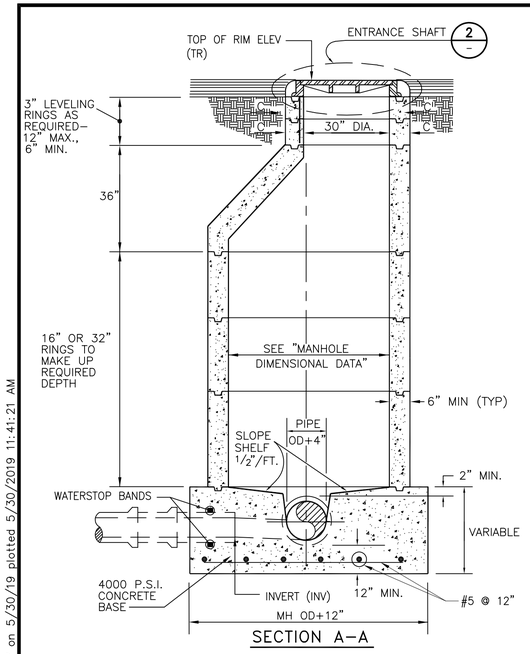
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REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

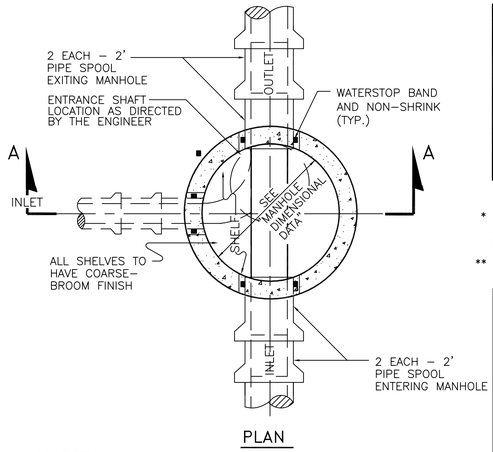
TYPICAL CIVIL DETAILS 6

SHEET CG-16
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

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SECTION A–A



PLAN

MANHOLE DIMENSIONAL DATA		
MANHOLE DIAMETER	TYPE	MAX PIPE OUTSIDE DIAMETER
48"	PRECAST CONCRETE	22"
60"	PRECAST CONCRETE	32"
72"	PRECAST CONCRETE	38"
84"	PRECAST CONCRETE	44"
96"	PRECAST CONCRETE	50"

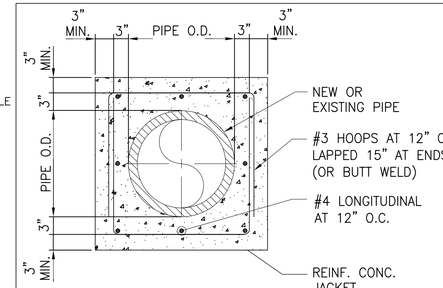
* THE TABLE PROVIDES MINIMUM MANHOLE DIAMETERS REQUIRED FOR CONNECTION OF PIPES TO THE MANHOLE IF MANHOLE DIAMETERS ARE NOT INDICATED ON THE DRAWINGS

** IF CONNECTIONS AND TEES ARE REQUIRED, USE NEXT HIGHER DIAMETER MANHOLE.

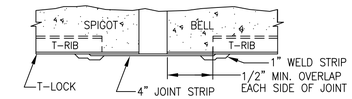
NOTES

1. PRECAST MANHOLE SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE AND SPEC. SEC 02701 AND BE DESIGNED FOR AASHTO H20 LOADING.
2. MATERIALS, EMBEDMENT, PLACEMENT, AND COMPACTION OF GRANULAR EMBEDMENT AND COMPACTED BACKFILL WILL CONFORM TO THE AGENCY'S STANDARD SPECIFICATIONS FOR PIPE BEDDING AND TRENCH BACKFILL.
3. PROVIDE PROTECTIVE LINING ON THE ENTIRE INTERIOR CONCRETE SURFACE PER SPECIFICATION SECTION 02618 – PROTECTIVE LINING FOR SEWER MANHOLE AND WET WELL.

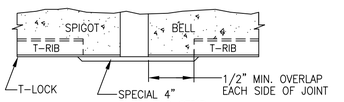
TYPICAL SEWER MANHOLE DETAIL — 1 / VAR
SCALE: NTS



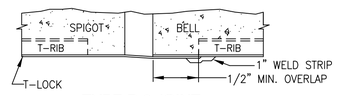
CONCRETE ENCASEMENT — 5 / –
SCALE: NTS



TYPE P–1 JOINT

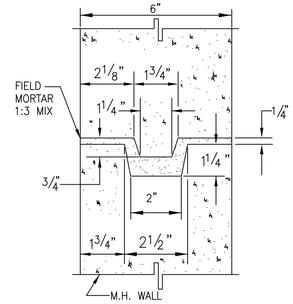


TYPE P-3 JOINT

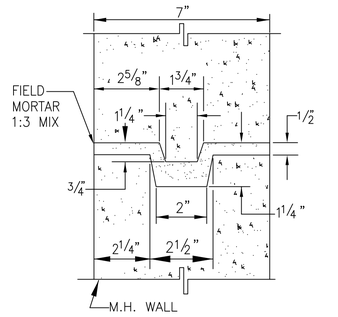


TYPE P-2 JOINT

FIELD JOINTS FOR T–LOCK LINED PIPE — 3 / –
SCALE: NTS

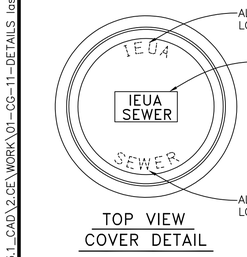


KEY WAY DETAIL FOR 5' OR LESS DIAMETER MANHOLES
NO SCALE



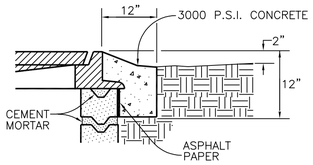
KEY WAY DETAIL FOR 6' OR GREATER DIAMETER MANHOLES
NO SCALE

MANHOLE WALL KEY WAY DETAILS — 4 / –
SCALE: NTS

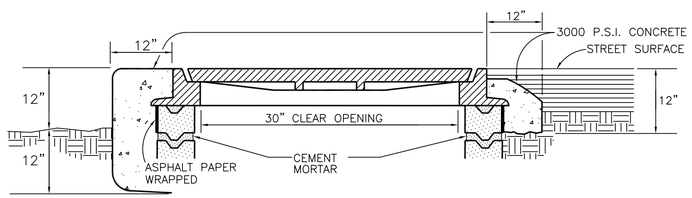


TOP VIEW COVER DETAIL

NOTE:
MANHOLE FRAME & COVER SHALL BE ALHAMBRA FOUNDRY TYPE A–1252 OR LONG BEACH IRON WORKS TYPE X–106 B OR APPROVED EQUAL. FRAME & COVER SHALL BE BITUMINOUS COATED AND WEIGH A MINIMUM OF 430 LBS. THE COVER SHALL HAVE TWO PICK HOLES.

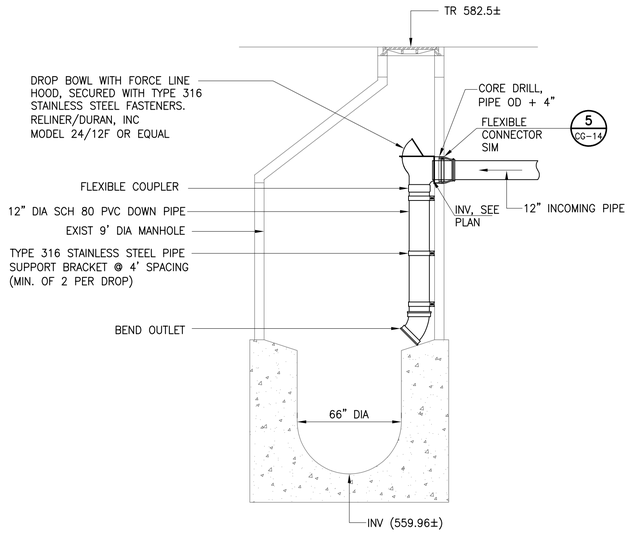


ROADWAY SHOULDER

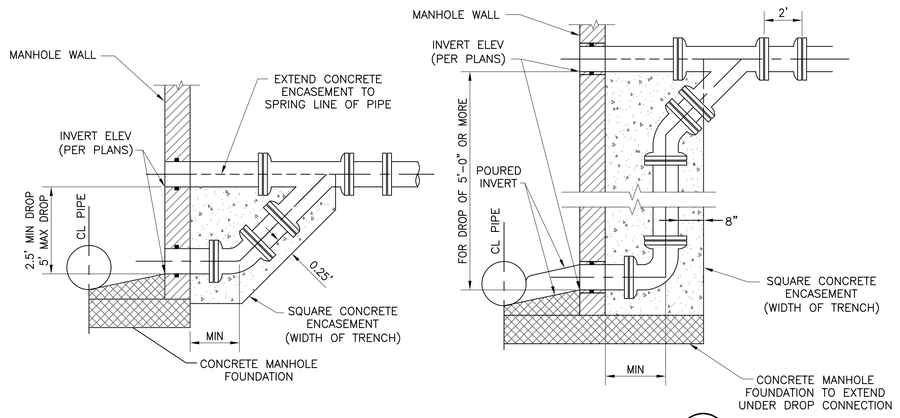


ROADWAY

MANHOLE FRAME AND COVER — 2 / VAR
SCALE: NTS



FORCEMAIN TO MANHOLE CONNECTION — 6 / VAR
SCALE: NTS



DROP MANHOLE DETAILS — 7 / VAR
SCALE: NTS

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A	07/20/18	HS	SK	SUBMITTAL 50%

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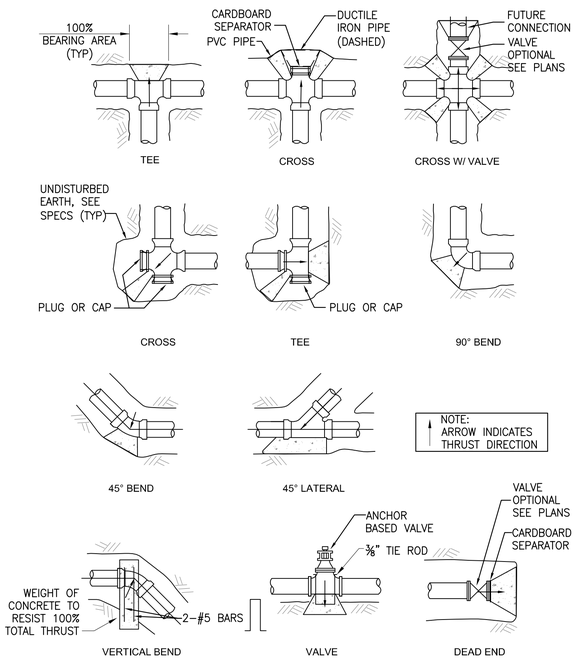
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REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 7

SHEET CG-17
SHEET NO. X OF
PROJECT NO.
DRAWING NO.



THRUST PER PSI OF WATER PRESSURE AT VARIOUS FITTINGS				
PIPE SIZE	DEAD END OR TEE	90° ELBOW	45° ELBOW	22½° ELBOW
4	19	27	15	7
6	39	55	30	15
8	67	94	51	26
10	109	154	84	43
12	155	218	119	61
14	210	296	161	82
16	275	383	209	106
18	351	494	269	137
20	434	611	333	169
24	623	878	478	244

EXAMPLE:

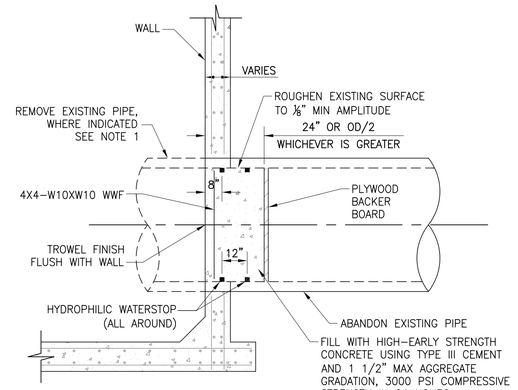
8 INCH 90° ELBOW, PRESSURE = 94 PSI FROM TABLE:
THRUST = 94 X 200 = 18,800 LBS
ASSUMED BEARING STRENGTH OF SOIL (SEE NOTE 2) = 2000 LB/SQ FT
18,800/2,000 = 9.4 SQ FT AREA OF BEARING REQUIRED FOR THRUST BLOCK

NOTES:

1. IN USING THE ABOVE TABLES, USE THE MAXIMUM INTERNAL PRESSURE ANTICIPATED (I.E. HYDROSTATIC TEST PRESSURE, POSSIBLE SURGE PRESSURE DUE TO PUMP SHUT-OFF, ETC.)
2. 2000 LB/SQ FT IS ASSUMED SAFE BEARING LOAD OF SOIL, FOR ACTUAL CALCULATIONS USE SOILS REPORT DEFINITION OF SAFE BEARING LOAD. IF SOILS REPORT NOT AVAILABLE USE AVERAGE SOIL (SAND AND GRAVEL WITH CLAY) WITH AN APPROXIMATE BEARING STRENGTH OF 2000 LB/SQ FT.
3. FITTINGS SHOWN FOR RUBBER GASKETED JOINTS ARE FOR PVC, CAST IRON OR DUCTILE IRON PIPE INSTALLATIONS. THRUST BLOCKS ARE NOT REQUIRED ON PVC PIPE WITH SOLVENT WELD JOINTS, FLANGED JOINTS OR RESTRAINED JOINTS.
4. CONCRETE BEARING SHALL BE 100% AND PLACEMENT OF CONCRETE SHALL NOT INTERFERE OR OBSTRUCT FITTING ASSEMBLY, SEE SPECS
5. FOR FIRE HYDRANT THRUST BLOCKING, SEE FIRE HYDRANT INSTALLATION DETAIL

CONCRETE THRUST BLOCKS FOR DUCTILE IRON, CAST IRON AND PVC PIPE

SCALE: NTS — 1 / VAR

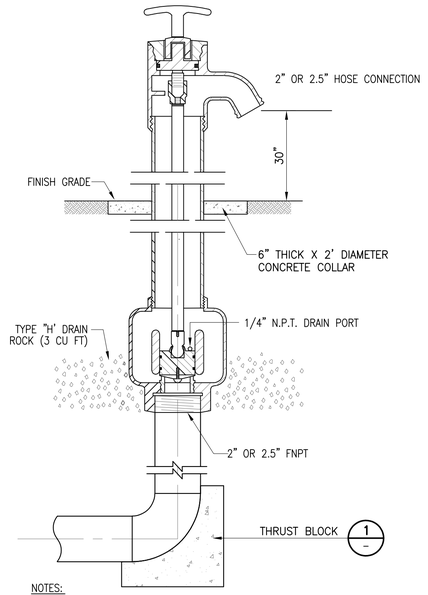


NOTES:

1. REFER TO SPECIFICATION SECTION 02600 FOR CONSTRUCTION OF MANHOLE VAULTS OVER EXISTING PIPELINE.
2. CONTRACTOR MAY SUBMIT AN ALTERNATE DETAIL SUBJECT TO APPROVAL.

ABANDONMENT SEAL FOR JUNCTION BOX PIPE OPENING

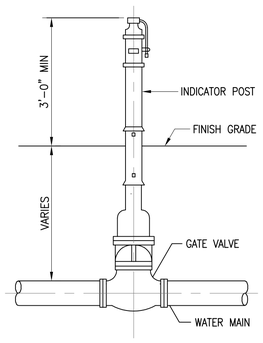
SCALE: NTS — 2 / VAR



NOTES:
1. PROVIDE CONTROL KEY TO OPERATE VALVE STEM.
2. SEE PLANS FOR SUPPLY LINE AND HOSE CONNECTION SIZES.

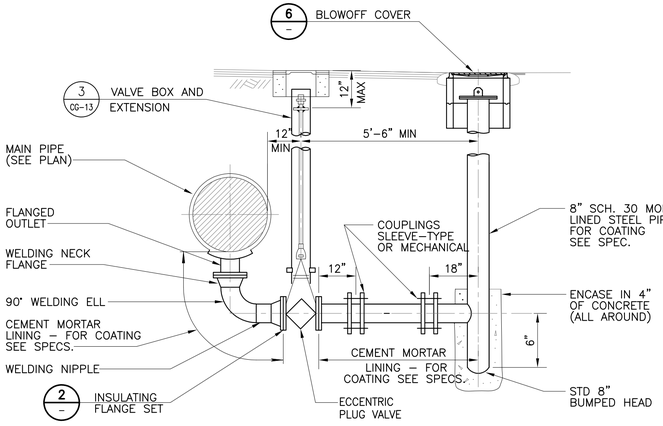
POST HYDRANT

SCALE: NTS — 3 / VAR



POST INDICATOR VALVE

SCALE: NTS — 4 / VAR

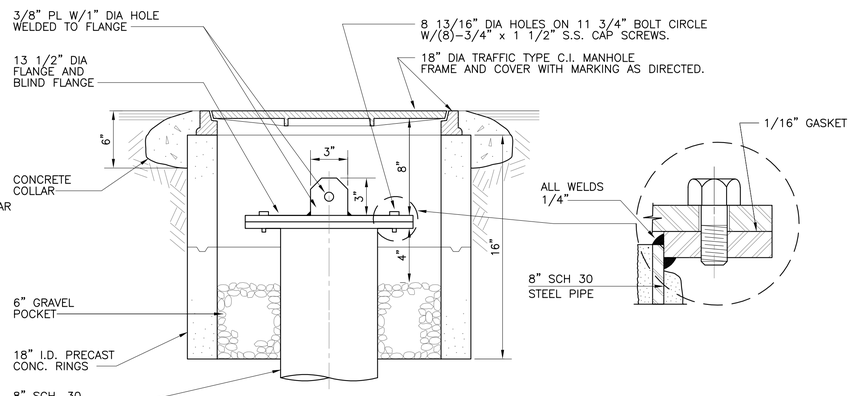


NOTES:

1. FLANGE AND BLIND FLANGE SAME CLASS AS PIPELINE.
2. CEMENT 1/16" THICK FULL COVER GASKET TO FLANGE.
3. ALL EXPOSED FERROUS SURFACES OF BURIED PIPE AND APPURTENANCES TO BE PROVIDED WITH PROTECTIVE COATINGS PER SPECIFICATIONS.
4. PROVIDE STAINLESS STEEL NUTS, BOLTS AND WASHERS TO BURIED FLANGES AND COUPLINGS EXCEPT FOR NON-METALLIC WASHERS AS PART OF INSULATING FLANGE SET.

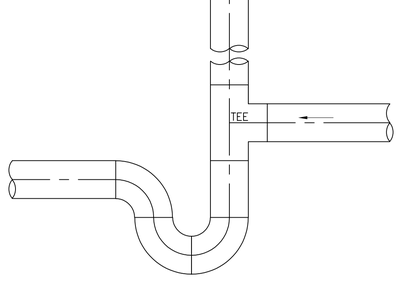
BLOW-OFF

SCALE: NTS — 5 / VAR



BLOW-OFF COVER

SCALE: NTS — 6 / VAR



P-TRAP WITH CLEAN OUT

SCALE: NTS — 7 / VAR

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A	07/20/18	HS	SK	SUBMITTAL 50%

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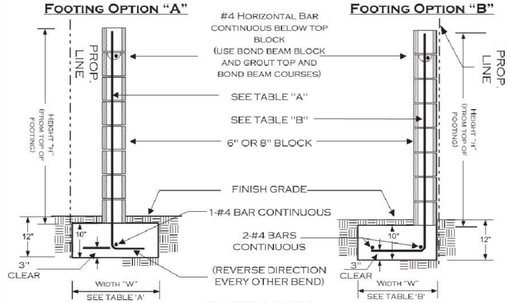
REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 8

SHEET CG-18
SHEET NO. X OF
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FOOTING OPTION "A"



FOOTING OPTION "B"

INSPECTIONS REQUIRED:

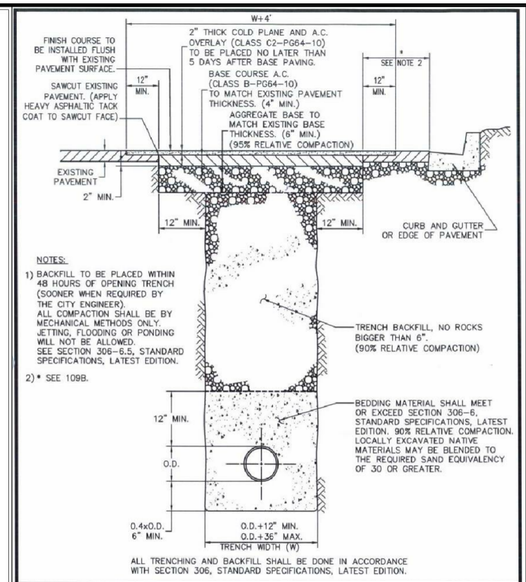
1.) Foundation; Excavation, trench clean with steel in place and supported 3" above and away from the surrounding earth/dirt.
2.) Steel/Pre-grout; Bond beam and vertical steel inspection prior to placing grout.
3.) Final; After grout is place, prior to any decorative cap placement.

TABLE "A"			TABLE "B"		
"H"	"W"	VERTICAL REINF. (#5 STEEL MAX)	"H"	"W"	VERTICAL REINF. (#5 STEEL MAX)
3'	17"	48" O.C.	3'	19"	48" O.C.
4'	20"	48" O.C.	4'	22"	48" O.C.
5'	23"	48" O.C.	5'	29"	48" O.C.
6'	29"	24" O.C.	6'	34"	24" O.C.

CITY of CHINO

MASONRY WALL STANDARD

13220 Central Avenue, Chino, CA 91710
(909) 334-3251
Fax (909) 334-3729
2/5/2015
1 of 1



ALL TRENCHING AND BACKFILL SHALL BE DONE IN ACCORDANCE WITH SECTION 306, STANDARD SPECIFICATIONS, LATEST EDITION.

APPROVED	CITY ENGINEER	DATE	CITY OF CHINO PUBLIC WORKS DEPARTMENT
		10/25/17	

DATE	REVISION	BY	STANDARD DRAWING	No.
			TRENCH BACKFILL & ROADWAY REPAIR	109 A

1) ALL EXISTING STRIPING, RAISED PAVEMENT MARKERS (RPM'S), AND LOOP DETECTORS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE REINSTALLED TO THE SATISFACTION OF THE CITY ENGINEER.

2) IF THE OUTER EDGE OF A UTILITY TRENCH CUT IS LESS THAN 4 FEET FROM THE EDGE OF GUTTER, THE CURB WHERE NO GUTTER EXISTS, OR THE EDGE OF PAVEMENT WHERE NO CURB EXISTS, THE REMAINING PORTION OF THE EXISTING PAVEMENT SECTION SHALL BE REMOVED AND REPLACED IN-KIND PRIOR TO THE GRIND AND OVERLAY PORTION OF THE UTILITY TRENCH CUT STREET RESURFACING TO THE SATISFACTION OF THE CITY ENGINEER.

3) IF TWO (2) OR MORE TRENCH OPENINGS ARE LESS THAN FIVE (5) FEET APART, THE REMAINING PORTION OF THE EXISTING PAVEMENT SECTION SHALL BE REMOVED AND REPLACED IN-KIND PRIOR TO THE GRIND AND OVERLAY PORTION OF THE UTILITY TRENCH CUT STREET RESURFACING TO THE SATISFACTION OF THE CITY ENGINEER.

4) IF THE UTILITY TRENCH CUT IS WITHIN EXISTING CONCRETE PAVEMENT, THE ENTIRE CONCRETE PANEL AFFECTED BY THE UTILITY TRENCH CUT SHALL BE RESTORED IN-KIND.

5) ALL ASPHALT CONCRETE PLACED FOR THE UTILITY TRENCH CUT STREET RESURFACING SHALL BE APPLIED BY A PAVING MACHINE IN ORDER TO ELIMINATE THE UNEVEN "WASHBOARD" EFFECT THAT RESULTS FROM THE MANUAL PLACEMENT OF ASPHALT OVERLAY.

6) PAVEMENT SURFACES MADE OF SPECIAL MATERIALS (I.E. PAVERS, STAMPED CONCRETE, RUBBERIZED ASPHALT) SHALL BE RESTORED IN-KIND.

7) PRIOR TO THE PLACEMENT OF PERMANENT PAVING, THE EXISTING PAVEMENT SHALL BE CUT TO A NEAT STRAIGHT LINE. ANY CRACKED PAVEMENT ADJACENT TO THE TRENCH SHALL BE REMOVED.

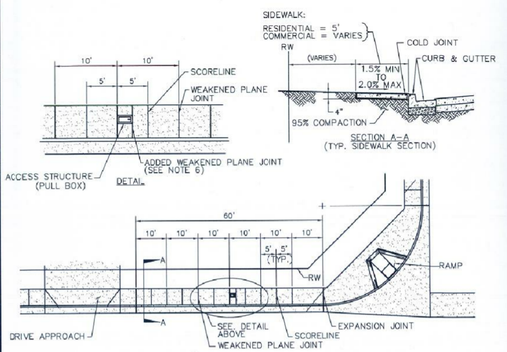
8) ALL LIQUIDS GENERATED BY SAWCUTTING SHALL BE COLLECTED AND DISPOSED OF OFF-SITE.

9) ALL USA MARKINGS SHALL BE REMOVED WITHIN 30 DAYS OF COMPLETION OF CONSTRUCTION.

10) THE USE OF CONTROLLED LOW STRENGTH MATERIAL (CLSM) FOR TRENCH BACKFILL SHALL BE SPECIFICALLY APPROVED BY THE CITY ENGINEER.

APPROVED	CITY ENGINEER	DATE	CITY OF CHINO PUBLIC WORKS DEPARTMENT
		10/25/17	

DATE	REVISION	BY	STANDARD DRAWING	No.
			TRENCH BACKFILL & ROADWAY REPAIR	109 B



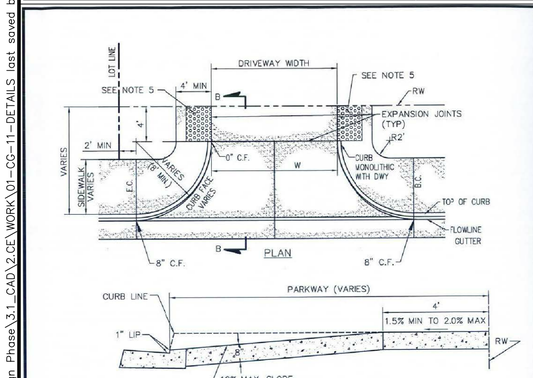
NOTES:

1. PRIOR TO THE REMOVAL OF AN EXISTING SIDEWALK, THE SIDEWALK SHALL BE SAWCUT AT AN EXISTING SCORELINE OR JOINT.
2. A SUITABLE HERBICIDE SHALL BE APPLIED TO THE SUBGRADE WHERE THE SIDEWALK IS TO BE CONSTRUCTED.
3. THE CONCRETE SHALL BE CLASS 520-C-2500 PCC, CURED WITH WHITE PIGMENTED COMPOUND.
4. THE SIDEWALK SHALL HAVE SCORELINES PLACED AT 5' INTERVALS, WEAKENED PLANE JOINTS AT 10' INTERVALS AND 1/2" PAPER EXPANSION JOINTS AT 60' INTERVALS. SIDEWALK JOINTS SHALL ALIGN WITH CURB JOINTS.
5. TREE WELLS SHALL BE PROVIDED IN SIDEWALKS 9' WIDE OR WIDER. (SEE STANDARD DRAWING 600.)
6. PULL BOXES, METER BOXES, VAULTS OR ANY ACCESS STRUCTURE CONSTRUCTED IN A SIDEWALK SHALL BE POSITIONED SO THAT ONE SIDE OF THE ACCESS STRUCTURE IS ADJACENT TO AN EXPANSION JOINT OR A WEAKENED PLANE JOINT. AN ADDITIONAL WEAKENED PLANE JOINT SHALL BE PLACED ADJACENT TO THE OPPOSITE SIDE OF THE STRUCTURE.
7. PROVIDE A MINIMUM OF 3' SIDEWALK CLEARANCE AROUND ANY ABOVE GROUND OBSTRUCTION. 4' MINIMUM CLEARANCE IS REQUIRED WHEN THERE IS SUFFICIENT RIGHT-OF-WAY.
8. SIDEWALK WIDTH LESS THAN 5' WIDE SHALL BE SPECIFICALLY APPROVED BY THE CITY ENGINEER AND WILL REQUIRE 5' X 5' PASSING ZONES AT 200' INTERVALS.

APPROVED	CITY ENGINEER	DATE	CITY OF CHINO PUBLIC WORKS DEPARTMENT
		12/14/17	

DATE	REVISION	BY	STANDARD DRAWING	No.
			SIDEWALK	230

NOTE:
1. ANCHOR RING SHALL BE THE SAME MATERIAL AS THE ADJOINING PIPE. 5/8"X4" FOR 30"-ALP PIPE, 3/8"X1" FOR 8"-HW OR SMALLER PIPE
2. 30"-ALP: #5 @ 6" OC, EW; 8"-HW OR SMALLER PIPE: #5 @ 12" OC, EW

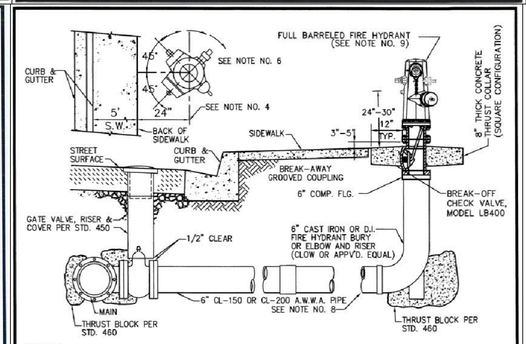


NOTES:

1. ALL EXISTING P.S.C. TO BE REMOVED SHALL BE SAWCUT AT THE JOIN.
2. CONCRETE SHALL BE CLASS 520-C-2500, CURED WITH WHITE PIGMENTED COMPOUND.
3. A 6" MINIMUM OF AGGREGATE BASE SHALL BE PROVIDED UNDER DRIVEWAY APPROACH.
4. THE MINIMUM DRIVEWAY WIDTH SHALL BE 30'. THE MAXIMUM WIDTH MAY BE 40' BUT SHALL NOT EXCEED 50% OF THE LOT FRONTAGE.
5. TRUNCATED DOMES ARE REQUIRED WHEN STOP CONTROLS OR A TRAFFIC SIGNAL IS PRESENT AT THE DRIVEWAY.
6. B.C. OR E.C. SHALL BE A MINIMUM OF 2' FROM LOT LINE PROLONGATION.

APPROVED	CITY ENGINEER	DATE	CITY OF CHINO PUBLIC WORKS DEPARTMENT
		12/14/17	

DATE	REVISION	BY	STANDARD DRAWING	No.
			INDUSTRIAL/ COMMERCIAL DRIVEWAY APPROACH	250

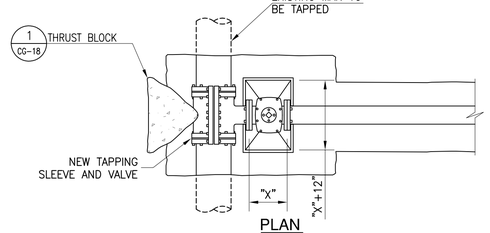


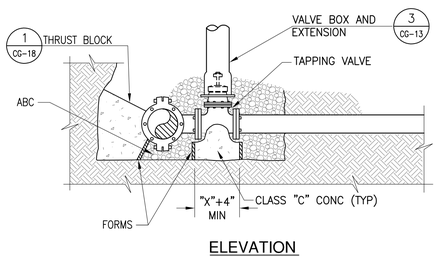
NOTES:

1. THE FIRE HYDRANT OUTLET SHALL BE SET AT 45° TO THE STREET.
2. THE FIRE HYDRANT SHALL BE SET PERPENDICULAR TO THE STREET.
3. MAINTAIN 5' CLEAR DISTANCE BETWEEN THE FIRE HYDRANT AND ALL OBJECTS.
4. INSTALL THE FIRE HYDRANT 24" BEHIND THE CURB-FACE WHERE SIDEWALK DOES NOT EXIST. WHERE THE EXISTING SIDEWALK IS MORE THAN 5' WIDE OR WHERE THE EXISTING SIDEWALK IS NOT CURB-ADJACENT. WHERE THE SIDEWALK IS CURB-ADJACENT AND 5' WIDE OR LESS, INSTALL THE FIRE HYDRANT 24" BEHIND THE EXISTING SIDEWALK.
5. INSTALLATION OF A GATE VALVE FOR "HOT-TAP" MAY BE PERMITTED ONLY WITH THE APPROVAL OF THE CITY ENGINEER.
6. ROTATE THE FIRE HYDRANT CLOCKWISE ONLY FOR THE CORRECT ORIENTATION TO THE STREET.
7. CONSULT THE GENERAL NOTES FOR FIRE HYDRANT SPECIFICATIONS.
8. ALL WATER MAINS INSTALLED IN AND SOUTH OF SCHAEFER AVE SHALL BE CLASS 200 AND MEET A.W.W.A. SPECIFICATIONS (REF. "GENERAL NOTES" FOR WATER PLANS).
9. FIRE HYDRANTS SHALL BE FULL BARRELED; CLOW "EL RANCHO" SERIES, HIGH PRESSURE WET BARREL (SERIES 2010), JAMES JONES NO. 3708 OR AVK MODEL 24-42.
10. WHERE BRAND NAMES ARE CALLED OUT, EQUALS MAY BE USED WHEN APPROVED IN WRITING PRIOR TO CONSTRUCTION.
11. EXPOSED AREAS OF THE FIRE HYDRANT SHALL BE PAINTED WITH TWO (2) COATS OF "VISTA NO 999 METAL PRIME" PRIMER AND TWO (2) COATS OF "VISTA CAUTION YELLOW" HIGH-GLOSS ENAMEL (OR APPROVED EQUALS).
12. FOR THE REQUIREMENTS FOR REFLECTIVE MARKERS, SEE THE GENERAL NOTES AND STD DWG NO 445.
13. THE 8" THICK CONCRETE THRUST COLLAR MUST BE INSTALLED PRIOR TO CHARGING THE FIRE HYDRANT ASSEMBLY.
14. FIRE HYDRANT AND BREAK-OFF CHECK VALVE ARE TO BE EIGHT-BOLT PATTERN.

APPROVED	CITY ENGINEER	DATE	CITY OF CHINO PUBLIC WORKS DEPARTMENT
		3/7/17	

DATE	REVISION	BY	STANDARD DRAWING	No.
			FIRE HYDRANT ASSEMBLY (W / BREAK-OFF CHECK VALVE)	445 A

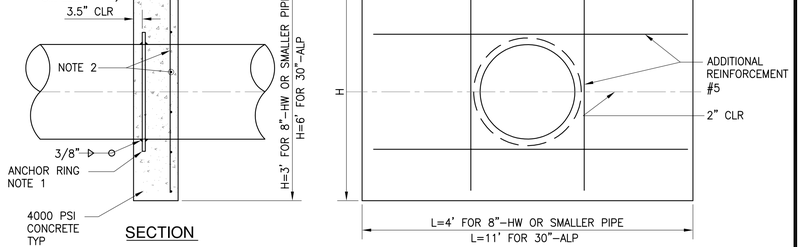




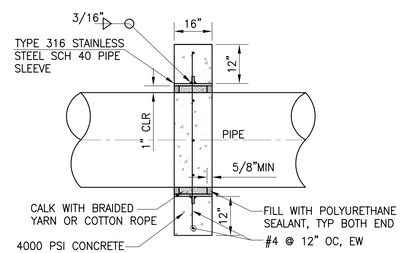
NOTES:

1. INSTALL PERMANENT THRUST BLOCKING UNDER VALVE BEFORE TAP IS MADE. JOINTS AND BOLTS SHALL BE CLEAR OF CONCRETE
2. TAPPING SLEEVE TO BE PLACED 18" MIN FROM ANY BELL, COUPLING, VALVE, OR FITTING.

TAPPING SLEEVE AND VALVE — 1 VAR
SCALE: NTS



CONCRETE ANCHOR BLOCK — 2
SCALE: NTS



CONCRETE GUIDE BOX — 3
SCALE: NTS

REV. NO.	DATE	BY	APRVD	DESCRIPTION
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C	05/07/19	HS	SK	SUBMITTAL 90% (QA/QC)
B	12/21/18	HS	SK	SUBMITTAL 90% (DRAFT)
A	07/20/18	HS	SK	SUBMITTAL 50%

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

Designed HS 07/2018
Drawn HS 07/2018
Checked BL 07/2018
Date

REVIEWED BY:
PROJECT MANAGER DATE

SCALE
AS SHOWN
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A MUNICIPAL WATER DISTRICT

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6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

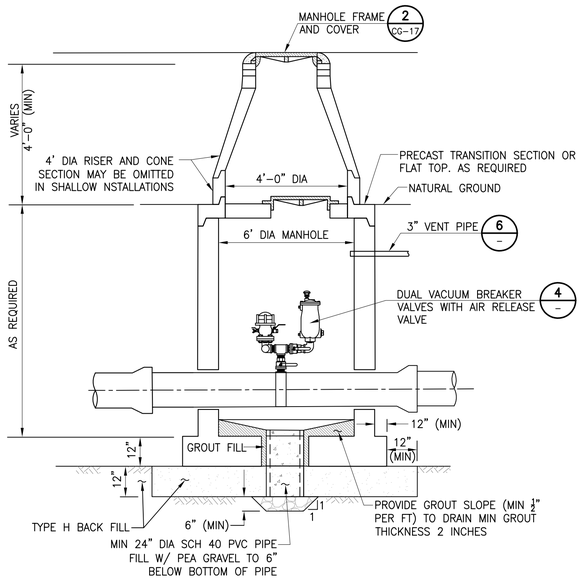
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SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

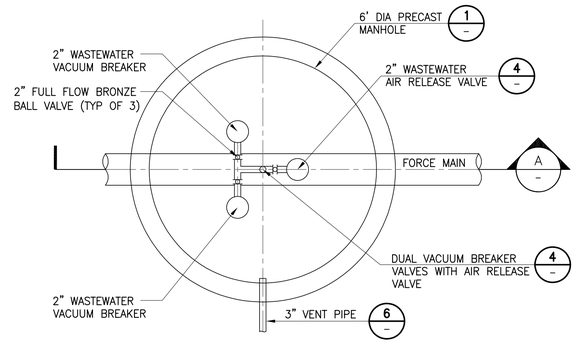
TYPICAL CIVIL DETAILS 9

SHEET CG-19
SHEET NO. X OF
PROJECT NO.
DRAWING NO.



DUAL VACUUM BREAKERS
WITH AIR RELEASE VALVE
MANHOLE SECTION

1
–



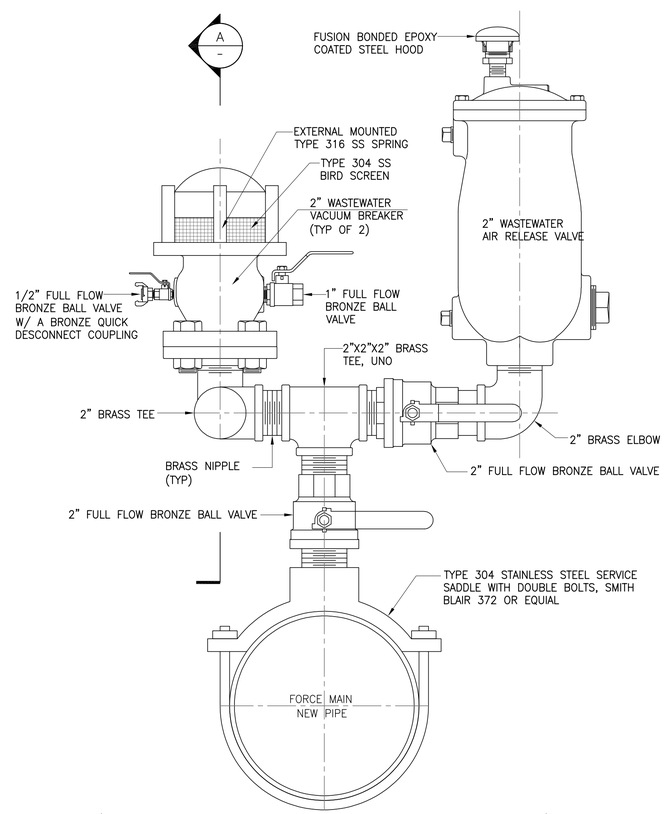
FOR EXISTING FORCE MAIN

1. REMOVE EXISTING 1" AIR VALVE. INSTALL BRASS NIPPLE AND 2"X2"X1" TEE VERTICALLY. SEE SHEET CP-07 AT STA 59+50.
2. REMOVE EXISTING 2" AIR VALVE. INSTALL BRASS NIPPLE AND 2"X2"X2" TEE VERTICALLY. SEE SHEET CP-08 AT STA 108+20.
3. FOR NEW INSTALLATION ON EXISTING FORCE MAIN, INSTALL 2" HOT TAP WITH CORP STOP PER DETAIL 3 ON SHEET CG-14. SEE SHEETS CP-01 & CP-09 AT STA 118+40.

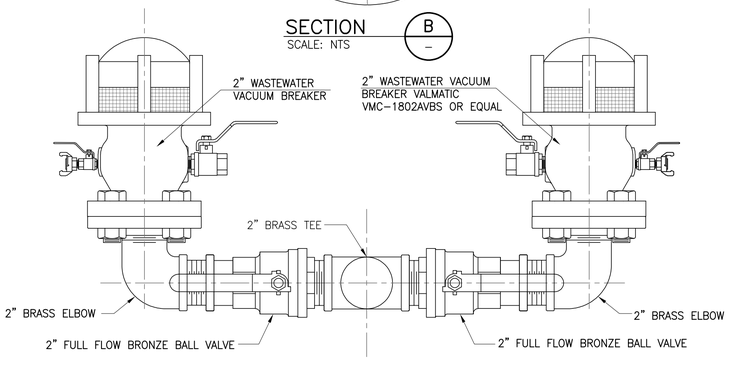
DUAL VACUUM BREAKERS
WITH AIR RELEASE VALVE
MANHOLE PLAN

SCALE: NTS

2
VAR



SECTION B
SCALE: NTS

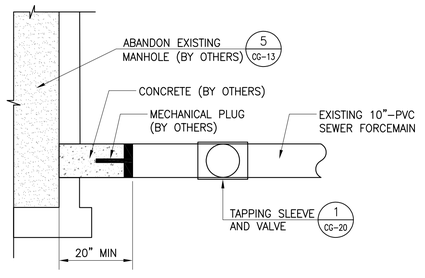


SECTION A
SCALE: NTS

DUAL VACUUM BREAKERS
WITH AIR RELEASE VALVE

SCALE: NTS

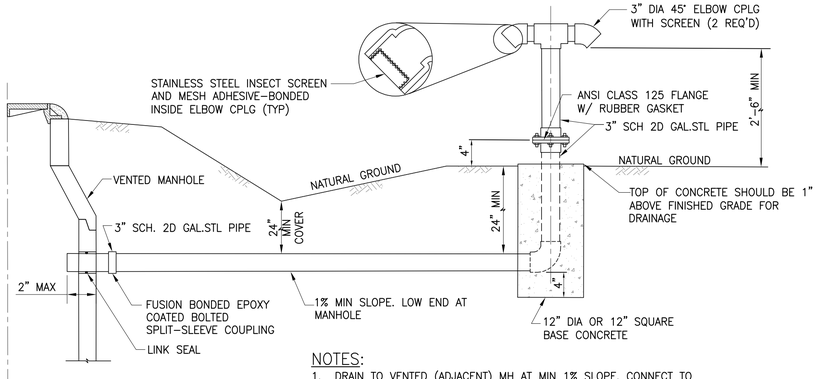
4
–



CONNECTION TO EXISTING
SEWER FORCE MAIN

SCALE: NTS

3
VAR



NOTES:

1. DRAIN TO VENTED (ADJACENT) MH AT MIN 1% SLOPE. CONNECT TO MANHOLE WITH SPECIFIED CONNECTOR.
2. WHEN VENT CROSSES DRAINAGE DITCH. PROVIDE CEMENT STABILIZED SAND BEDDING.
3. THE VENT IS TO BE INSTALLED WITHIN THE RIGHT OF WAY.

MANHOLE VENT PIPE

SCALE: NTS

6
–

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PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

Designed	HS	07/2018
Drawn	HS	07/2018
Checked	BL	07/2018
		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
D	05/31/19	HS	SK	SUBMITTAL 90%
C	05/07/19	HS	SK	SUBMITTAL 90% (QA/QC)
B	12/21/18	HS	SK	SUBMITTAL 90% (DRAFT)
A	07/20/18	HS	SK	SUBMITTAL 50%

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
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A MUNICIPAL WATER DISTRICT

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Telephone (909) 993-1600

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Post Office Box 9020
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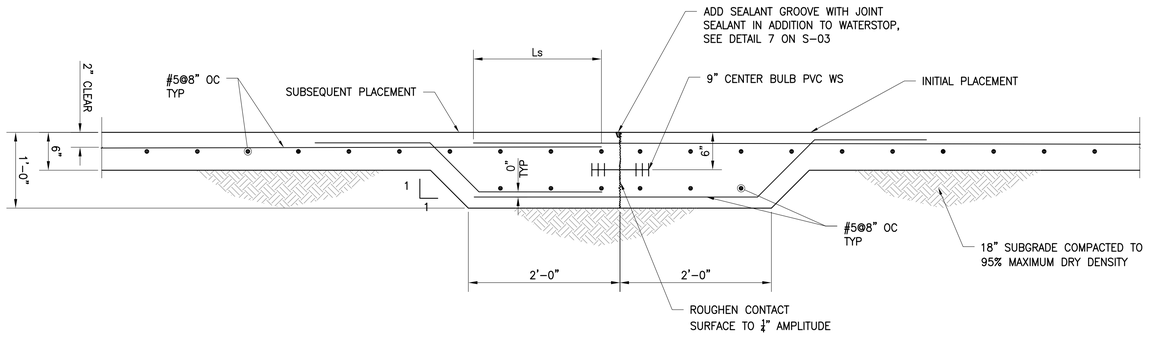
REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 10

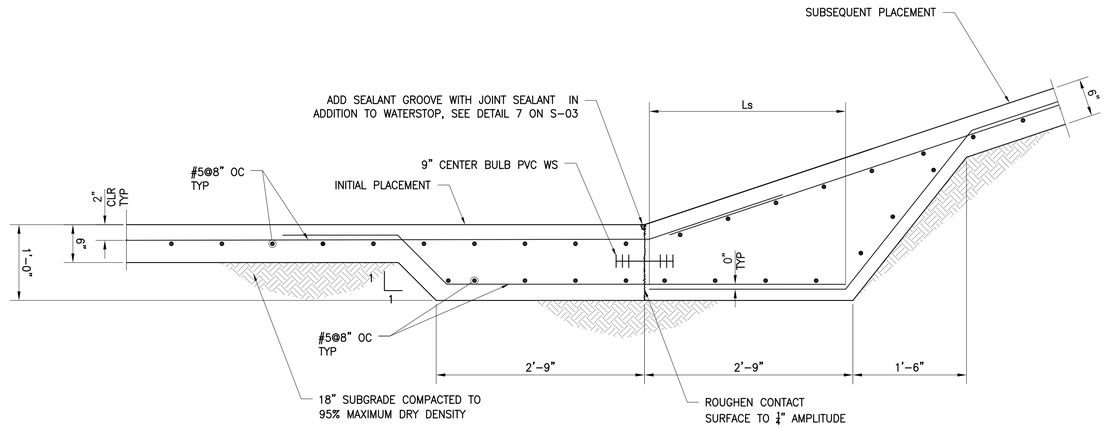
SHEET	CG-20
SHEET NO.	X OF
PROJECT NO.	
DRAWING NO.	

NOTE:

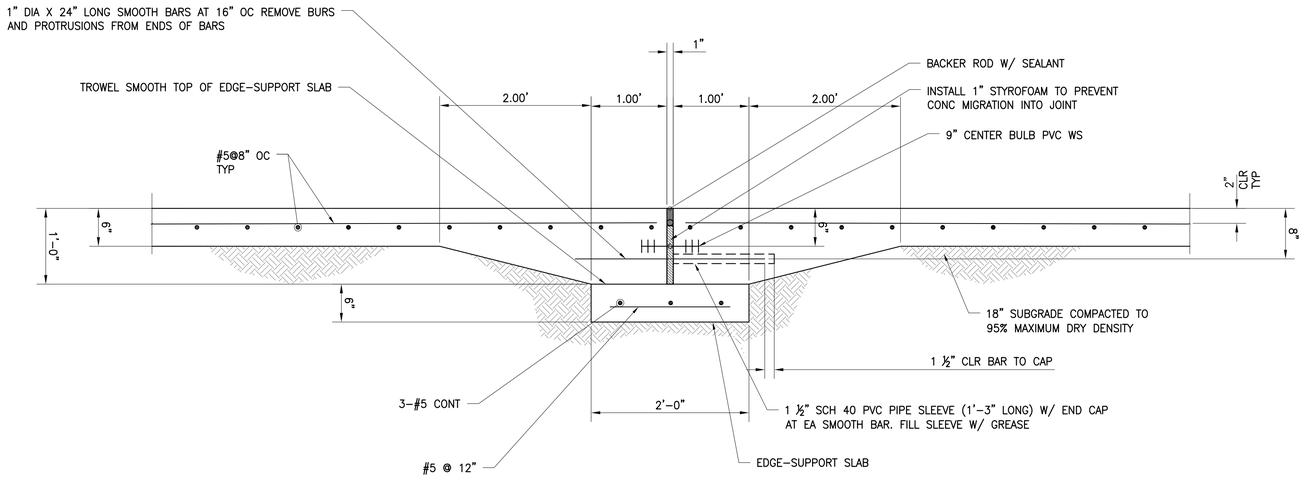
1. FOR STRUCTURAL NOTES AND TYPICAL STRUCTURAL DETAILS, SEE SHEET S-01 THROUGH S-19



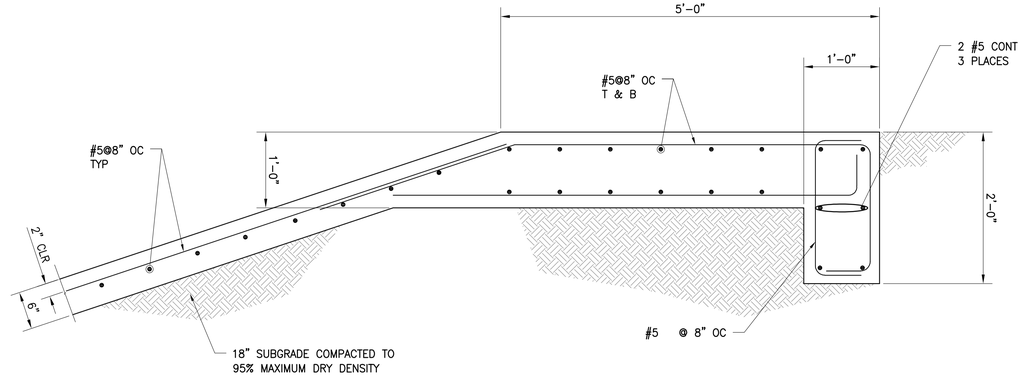
CONSTRUCTION JOINT SECTION AND DETAIL — A / CH-28
SCALE: NTS



CONCRETE DETAIL AT BERM TOE — C / CH-28
SCALE: NTS



EXPANSION JOINT SECTION AND DETAIL — B / CH-28
SCALE: NTS



CONCRETE DETAIL AT BERM CROWN — D / CH-28
SCALE: NTS

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ENGINEER'S STAMP

Designed	MA	12/2018
Drawn	JD	12/2018
Checked	MA	12/2018
		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
D	05/31/19	HS	SK	SUBMITTAL 90%
C	05/07/19	HS	SK	SUBMITTAL 90% (QA/QC)
B	12/21/18	HS	SK	SUBMITTAL 90% (DRAFT)
A	07/20/18	MA	SK	SUBMITTAL 50%

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PROJECT MANAGER DATE

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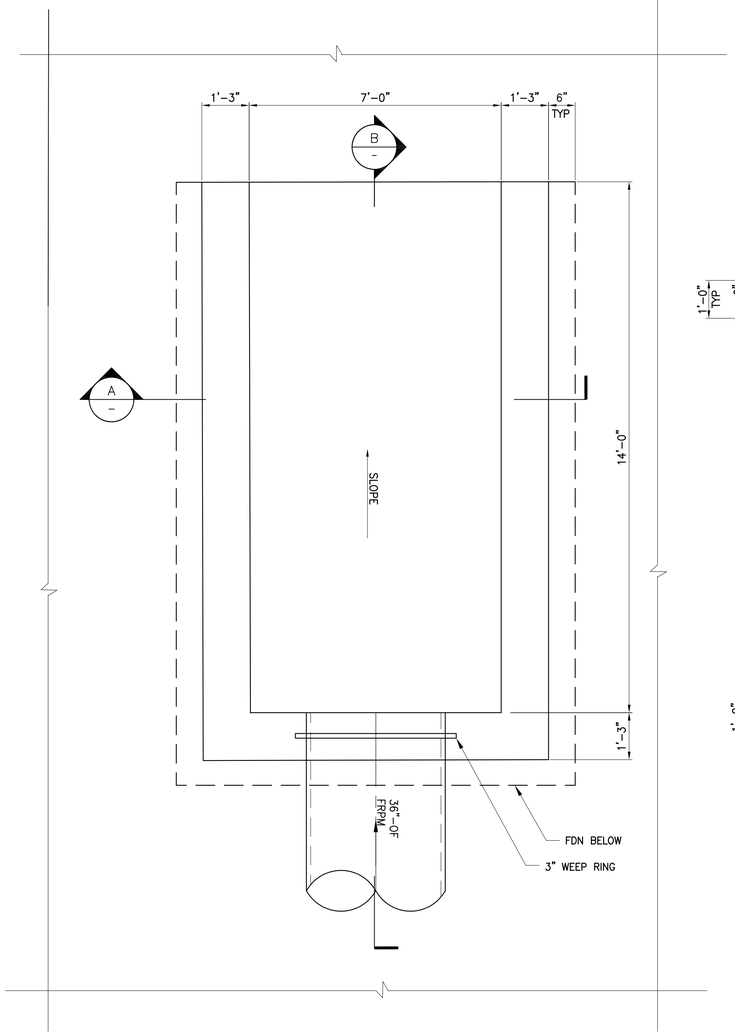
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REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

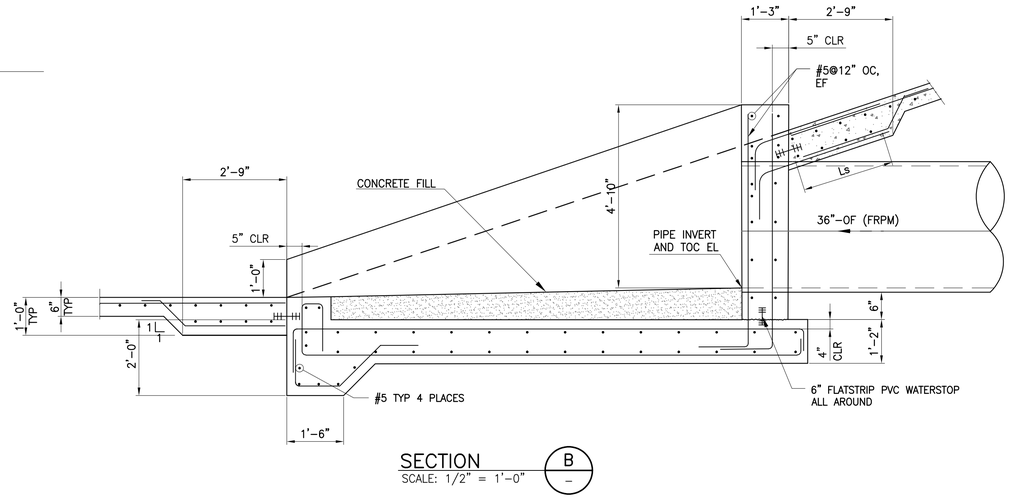
TYPICAL CIVIL DETAILS 11

SHEET CG-21
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

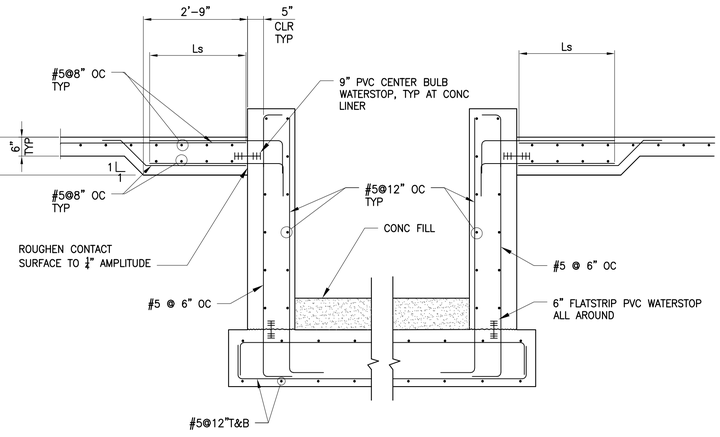


PLAN

36"-OF HEADWALL DETAIL
SCALE: 1/2" = 1'-0"
1 / CH-28



SECTION
SCALE: 1/2" = 1'-0"
B / –



SECTION
SCALE: 1/2" = 1'-0"
A / –

NOTE:

1. FOR STRUCTURAL NOTES AND TYPICAL STRUCTURAL DETAILS, SEE SHEET S-01 THROUGH S-17

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100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

Designed	MA	12/2018
Drawn	JD	12/2018
Checked	MA	12/2018
		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
D	05/31/19	HS	SK	SUBMITTAL 90%
C	05/07/19	HS	SK	SUBMITTAL 90% (QA/QC)
B	12/21/18	HS	SK	SUBMITTAL 90% (DRAFT)
A	07/20/18	MA	SK	SUBMITTAL 50%

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
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0" 1"

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Telephone (909) 993-1600

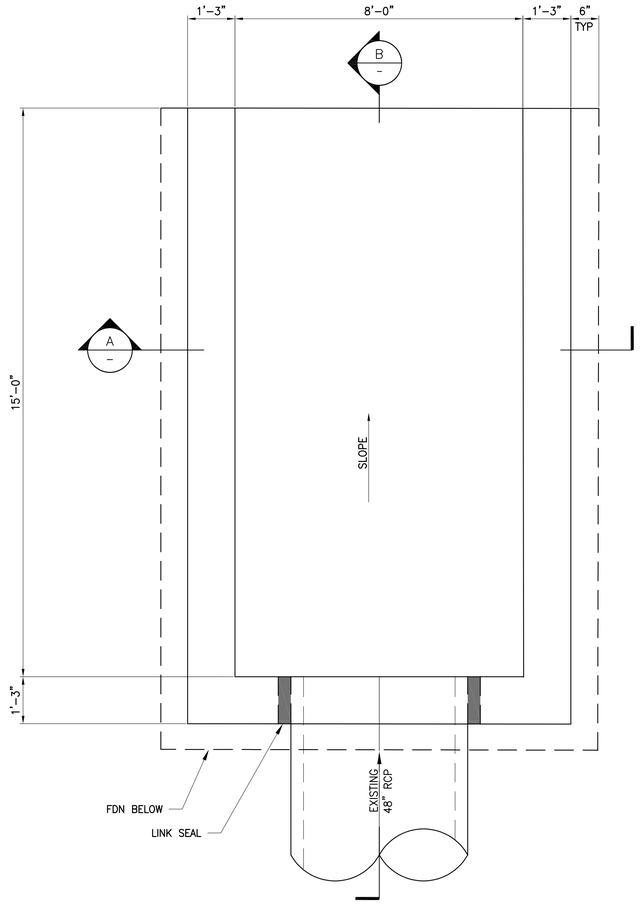
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SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 12

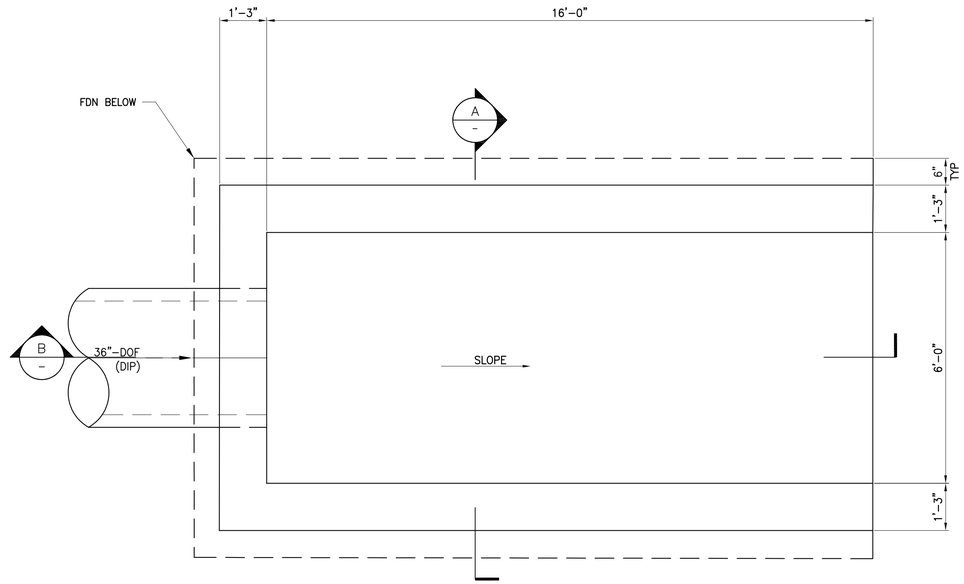
SHEET CG-22
SHEET NO. X OF
PROJECT NO.
DRAWING NO.



PLAN

48"-EQF HEADWALL DETAIL (1 / CH-28)

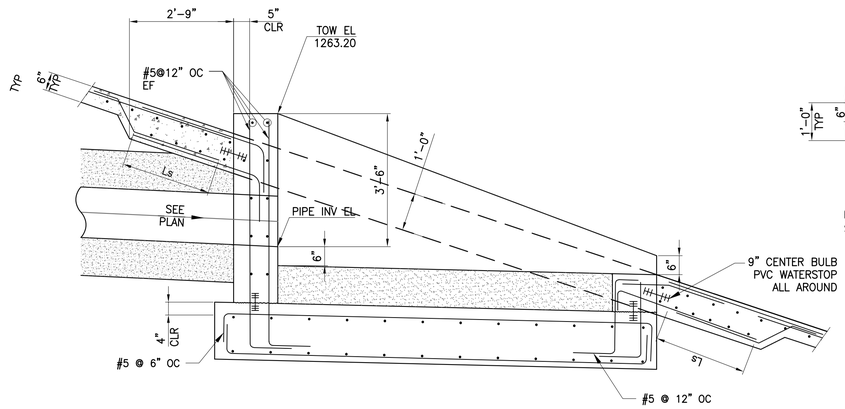
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PLAN

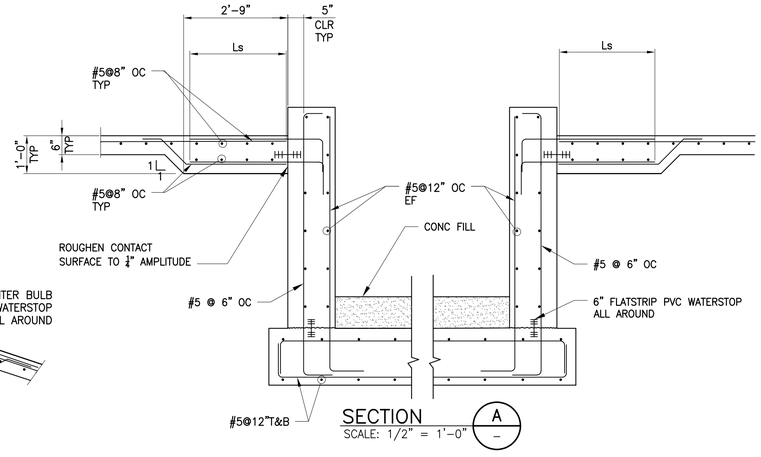
36"-DOF HEADWALL DETAIL (2 / CH-28)

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



SECTION (B / –)

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



SECTION (A / –)

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

NOTE:

1. FOR STRUCTURAL NOTES AND TYPICAL STRUCTURAL DETAILS, SEE SHEET S-01 THROUGH S-17

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		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
D	05/31/19	HS	SK	SUBMITTAL 90%
C	05/07/19	HS	SK	SUBMITTAL 90% (QA/QC)
B	12/21/18	HS	SK	SUBMITTAL 90% (DRAFT)
A	07/20/18	MA	SK	SUBMITTAL 50%

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PROJECT MANAGER DATE

SCALE
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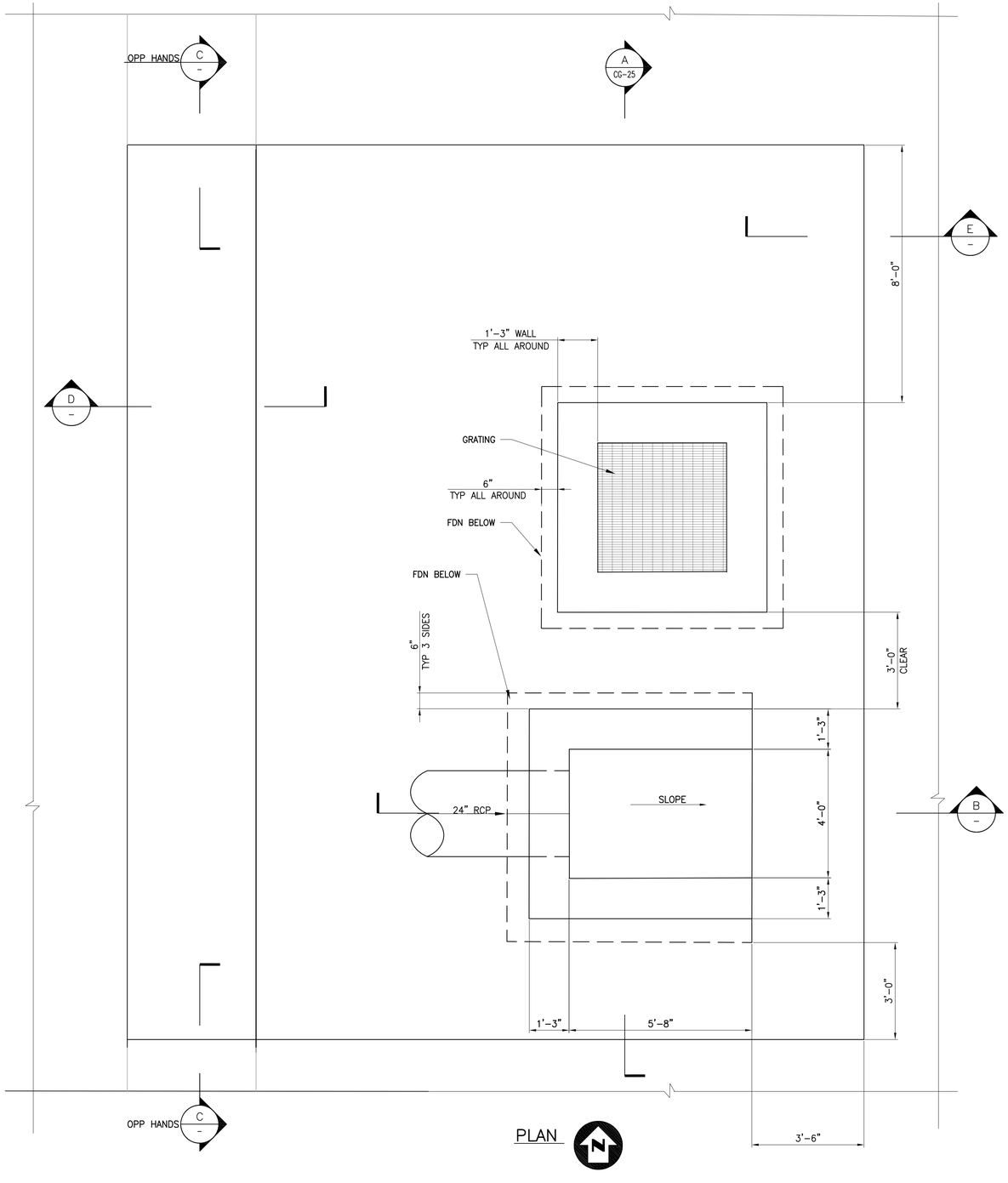
REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 13

SHEET	CG-23
SHEET NO.	X OF
PROJECT NO.	
DRAWING NO.	

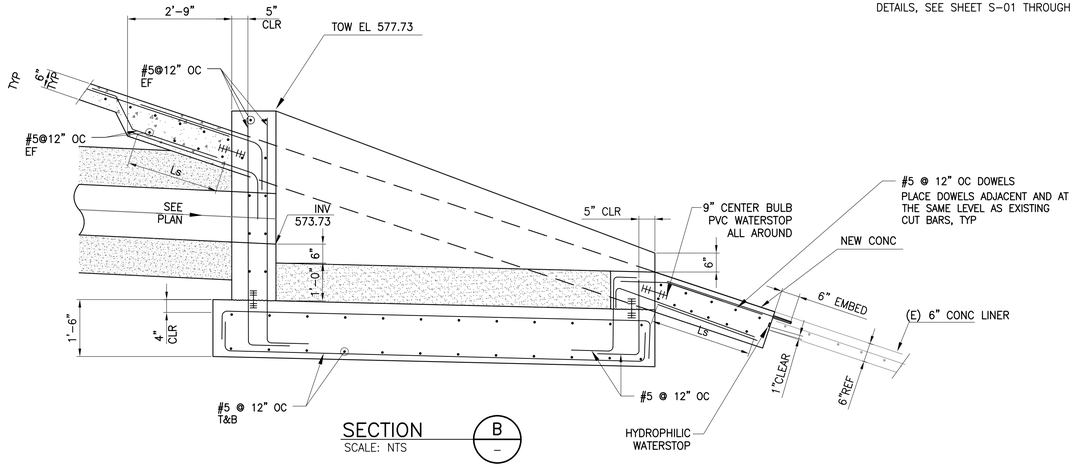
NOTE:

1. FOR STRUCTURAL NOTES AND TYPICAL STRUCTURAL DETAILS, SEE SHEET S-01 THROUGH S-17

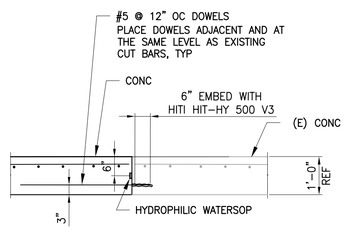


PLAN

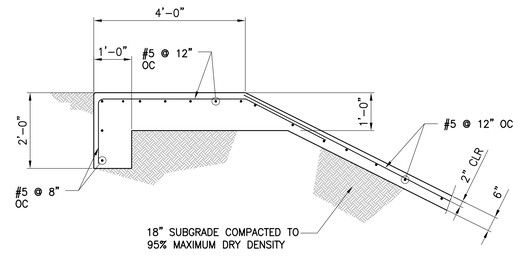
EMERGENCY STORAGE BASIN
SCALE: 1/2" = 1'-0"
1
CY-04



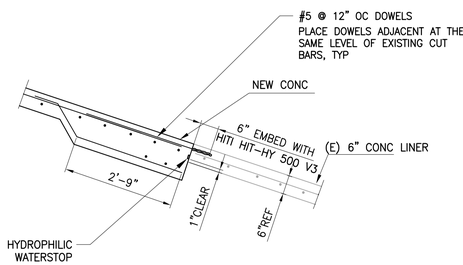
SECTION
SCALE: NTS
B



SECTION
SCALE: NTS
C



SECTION
SCALE: NTS
D



SECTION
SCALE: NTS
E

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A	07/20/18	MA	SK	SUBMITTAL 50%

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REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
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TYPICAL CIVIL DETAILS 14

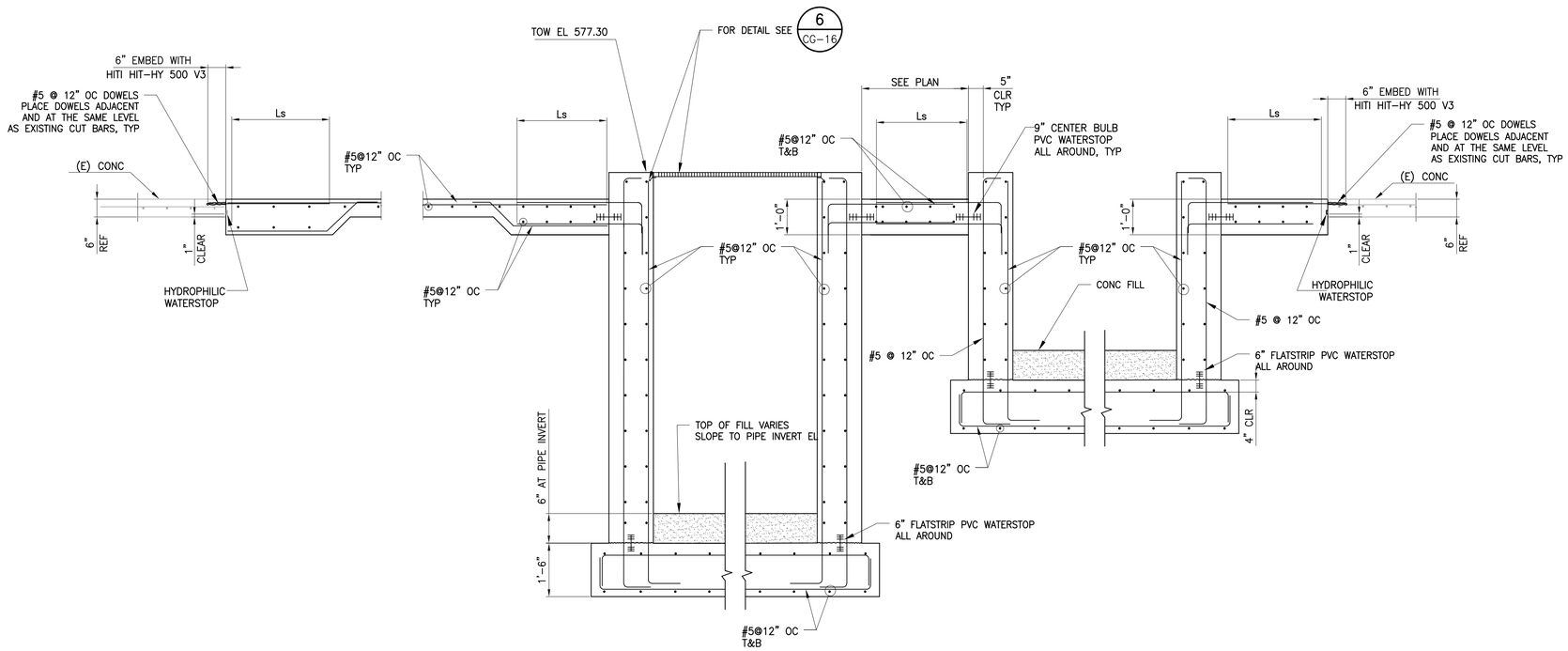
SHEET
CG-24

SHEET NO.
X OF

PROJECT NO.

DRAWING NO.

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SECTION A CG-24
SCALE: NTS

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Checked	MA	05/2019
		Date

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A	07/20/18	MA	SK	SUBMITTAL 50%

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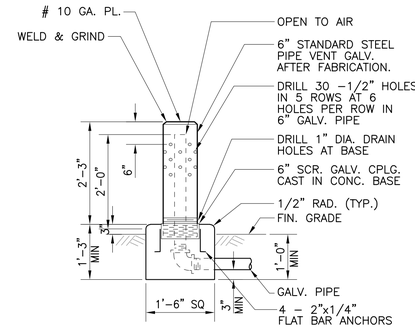
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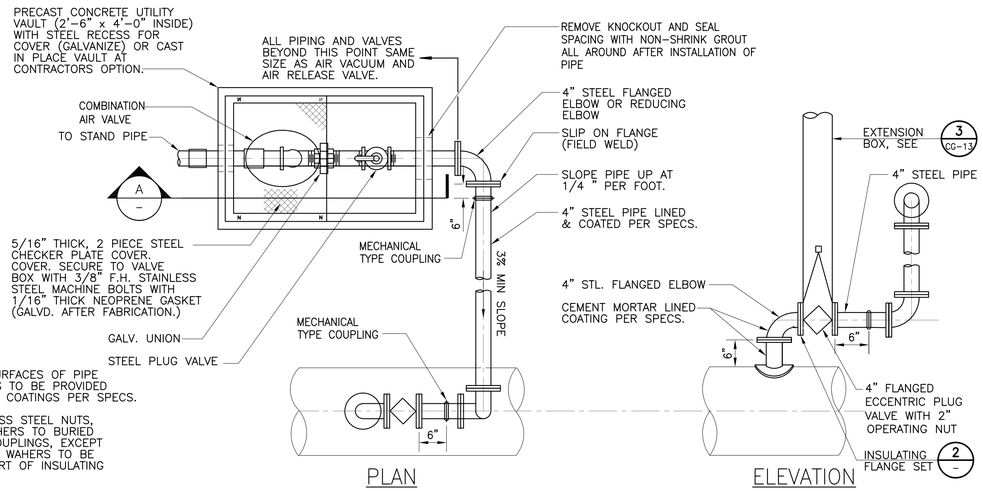
REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 15

SHEET CG-25
SHEET NO. X OF
PROJECT NO.
DRAWING NO.



STANDPIPE



PLAN

ELEVATION

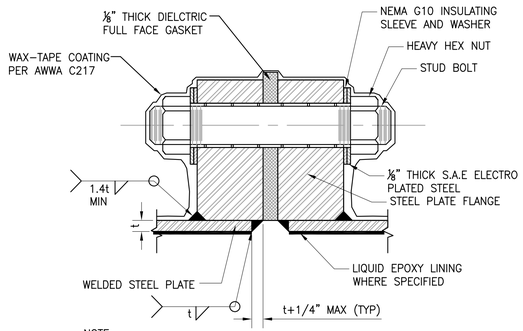
NOTES:

1. ALL FERROUS SURFACES OF PIPE AND APURTANCES TO BE PROVIDED WITH PROTECTIVE COATINGS PER SPECS.
2. PROVIDE STAINLESS STEEL NUTS, BOLTS AND WASHERS TO BURIED FLANGES AND COUPLINGS, EXCEPT FOR NONMETALIC WAHERS TO BE PROVIDED AS PART OF INSULATING FLANGE SET.

AIR VACUUM AND AIR RELEASE VALVE ASSEMBLY – WATER

SCALE: NTS

1 VAR



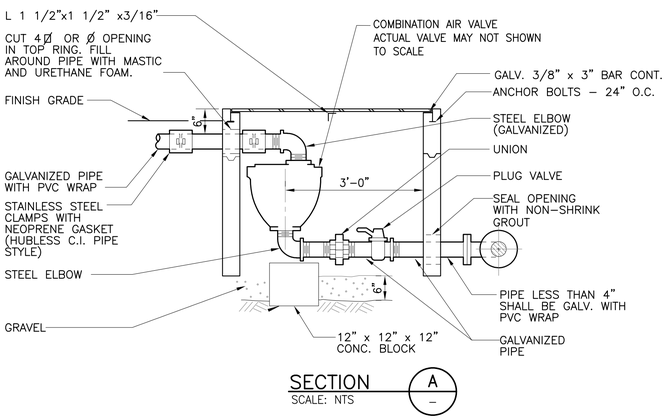
NOTE:

1. NUTS, STUDS AND WASHERS SHALL BE S.S. TYPE 316
2. WELD FLANGES TO PIPE BEFORE EPOXY LINING IS APPLIED

INSULATING JOINT DETAIL

SCALE: NTS

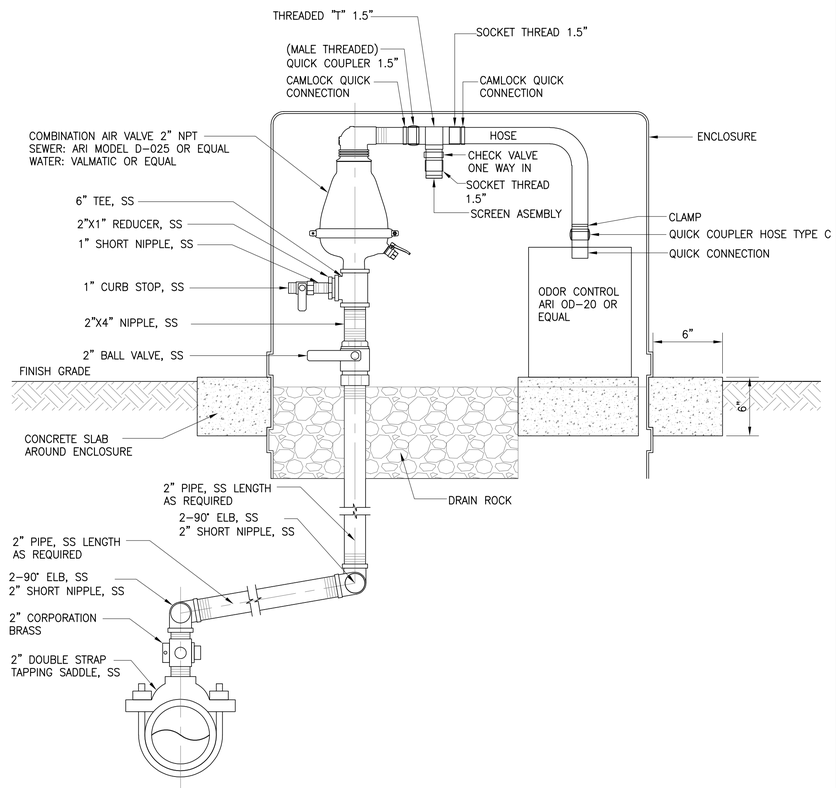
2 VAR



SECTION

SCALE: NTS

A –



AIR VACUUM AND AIR RELEASE VALVE ASSEMBLY – SEWER

SCALE: NTS

3 VAR

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C	05/07/19	HS	SK	SUBMITTAL 90% (QA/QC)
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A	07/20/18	HS	SK	SUBMITTAL 50%

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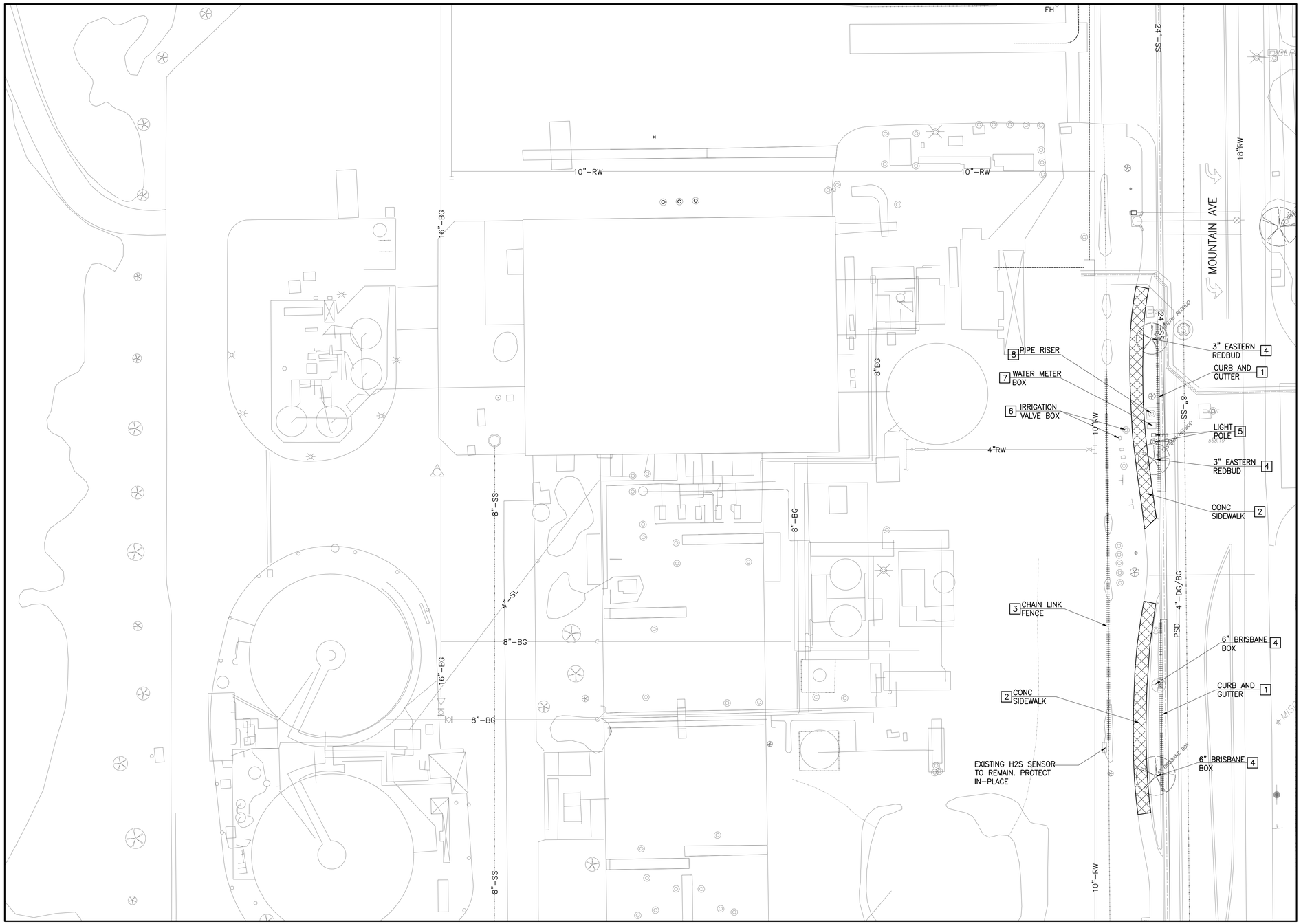
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REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

TYPICAL CIVIL DETAILS 13

SHEET	CG-24
SHEET NO.	X OF
PROJECT NO.	
DRAWING NO.	

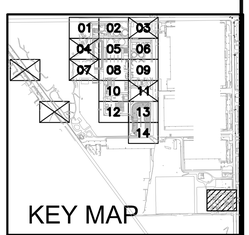


NOTES

1. SEE SHEET G-04 FOR LEGEND AND ABBREVIATIONS
2. SEE SHEET CG-01 FOR GENERAL NOTES.
3. SEE SHEET CD-00 FOR THE DEMOLITION PLAN DRAWING INDEX.
4. SEE SHEET CH-15 FOR SITE IMPROVEMENT.
5. SEE SHEET CY-15 FOR YARD PIPING PLAN.
6. PROTECT ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON PLANS AT ALL TIMES UNLESS INDICATED TO BE REMOVED OR RELOCATED.
7. PERFORM DEMOLITION IN ACCORDANCE WITH THE REQUIREMENTS OF SPEC. SEC. 02500 – DEMOLITION.
8. REFER TO GRADING AND PIPING PLANS FOR ADDITIONAL INFORMATION ON LIMITS OF DEMOLITION.

DEMOLITION NOTES

1. DEMOLISH CONCRETE CURB AND GUTTER.
2. DEMOLISH CONCRETE SIDEWALK.
3. DEMOLISH CHAIN LINK FENCE.
4. REMOVE AND RELOCATE TREE, SEE SHEET CH-15 FOR NEW TREE LOCATION.
5. REMOVE AND RELOCATE LIGHT POLE AND PULL BOX. SEE SHEET CH-15 FOR NEW LIGHT POLE LOCATION.
6. RELOCATE IRRIGATION VALVE BOX. NEW LOCATION TO BE DETERMINED ON FIELD.
7. ADJUST TOP ELEVATION OF WATER METER BOX TO DRIVEWAY FINISH GRADE.
8. ADJUST TOP OF EXISTING RECYCLE WATER PIPE RISER TO 3' BELOW FINISH GRADE.



0 10' 20' 40' 60'
SCALE: 1" = 20'-0"

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REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

MOUNTAIN AVE LIFT STATION
DEMOLITION PLAN

SHEET CD-11
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

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B	07/20/18	HS	SK	SUBMITTAL 50%
A	12/18/17	HS	SK	SUBMITTAL 30%

REVIEWED BY:

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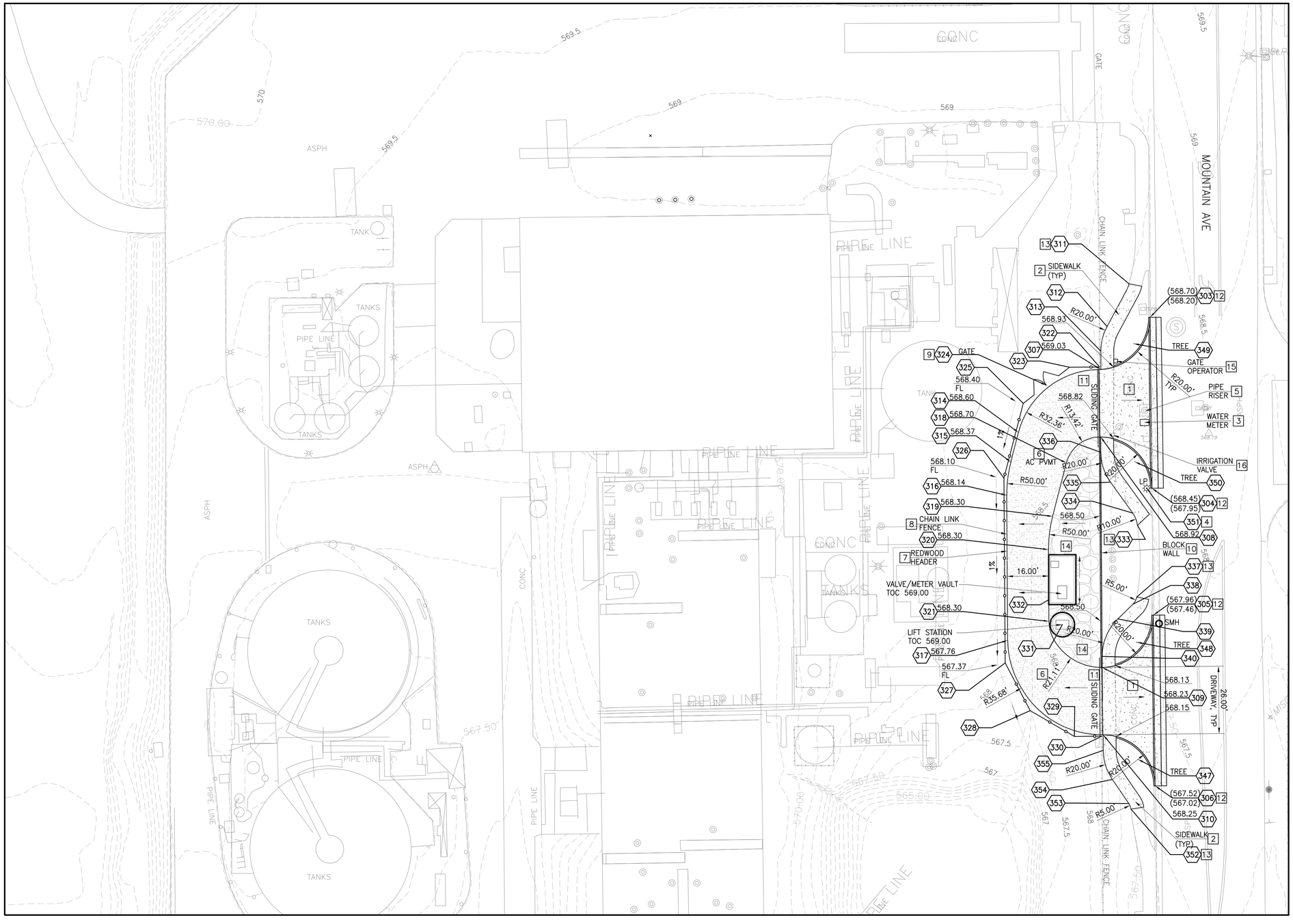
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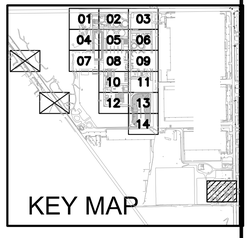
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NOTES

1. SEE SHEET G-04 FOR LEGEND AND ABBREVIATIONS
2. SEE SHEET CG-01 FOR GENERAL NOTES.
3. SEE SHEET CH-00 FOR THE PAVING AND GRADING DRAWING INDEX.
4. SEE SHEET CD-11 FOR SITE AND YARD PIPING DEMOLITION,
5. FOR PAVING AND GRADING COORDINATES (#) SEE SHEETS CH-26 & CH-27.

CONSTRUCTION NOTES

1. CONSTRUCT INDUSTRIAL/COMERCIAL DRIVEWAY APPROACH PER CITY OF CHINO STANDARD DRAWING NO. 250. SEE SHEET CG-19.
2. CONSTRUCT 5' WIDE CONCRETE SIDEWALK PER CITY OF CHINO STANDARD DRAWING NO. 230. SEE SHEET CG-19.
3. REMOVE EXISTING WATER METER BOX AND REPLACE WITH TRAFFIC RATED BOX. ADJUST ELEVATION TO PROPOSED DRIVEWAY GRADE.
4. NEW LOCATION OF RELOCATE EXISTING STREET LIGHT.
5. ADJUST ELEVATION OF EXISTING RECYCLE WATER PIPE RISER TO 3' BELOW FINISH GRADE.
6. CONSTRUCT AC PAVEMENT PER DETAIL 1 ON SHEET CG-11.
7. CONSTRUCT REDWOOD HEADER PER DETAIL 6 ON SHEET CG-11.
8. CONSTRUCT 6' HIGH CHAIN LINK FENCE WITH BARB WIRE PER DETAIL 7 ON SHEET CG-12.
9. CONSTRUCT 12' WIDE CHAIN LINK FENCE DOUBLE SWING GATE WITH BARB WIRE PER DETAIL 8 ON SHEET CG-12.
10. CONSTRUCT 6' HIGH BLOCK WALL PER CITY OF CHINO STANDARD DETAIL "MASONRY WALL STANDARD". SEE SHEET CG-19.
11. CONSTRUCT 26' WIDE STEEL TUBULAR SLIDING GATE WITH AUTOMATIC GATE OPENER AND PAVEMENT CENSOR.
12. JOIN EXISTING CONCRETE CURB AND GUTTER, EXPANSION JOINT PER DETAIL 8 ON SHEET CG-11.
13. JOIN EXISTING CONCRETE SIDEWALK, EXPANSION JOINT PER DETAIL 8 ON SHEET CG-11.
14. CONSTRUCT 3" COMPACTED GRAVEL (TYPE E) SURFACE OVER TYPE WF-2 WOVEN GEOTEXTILE.
15. LOCATION OF GATE OPERATOR CONCRETE PAD.
16. IRRIGATION VALVE TO BE FIELD RELOCATED.

0 10' 20' 40' 60'

SCALE: 1" = 20'-0"

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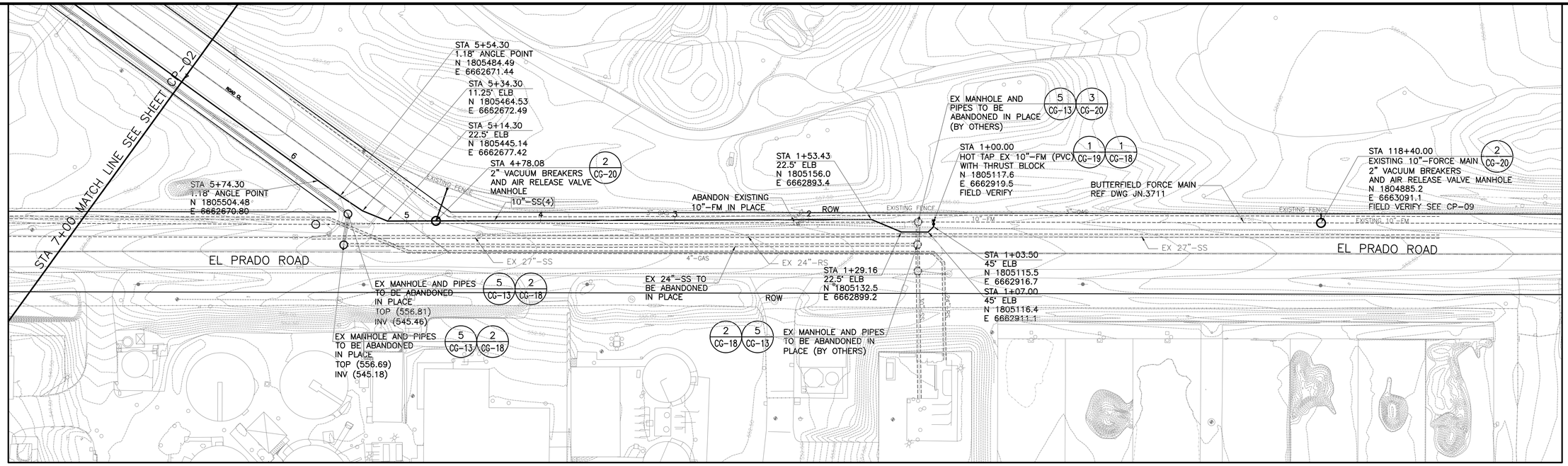
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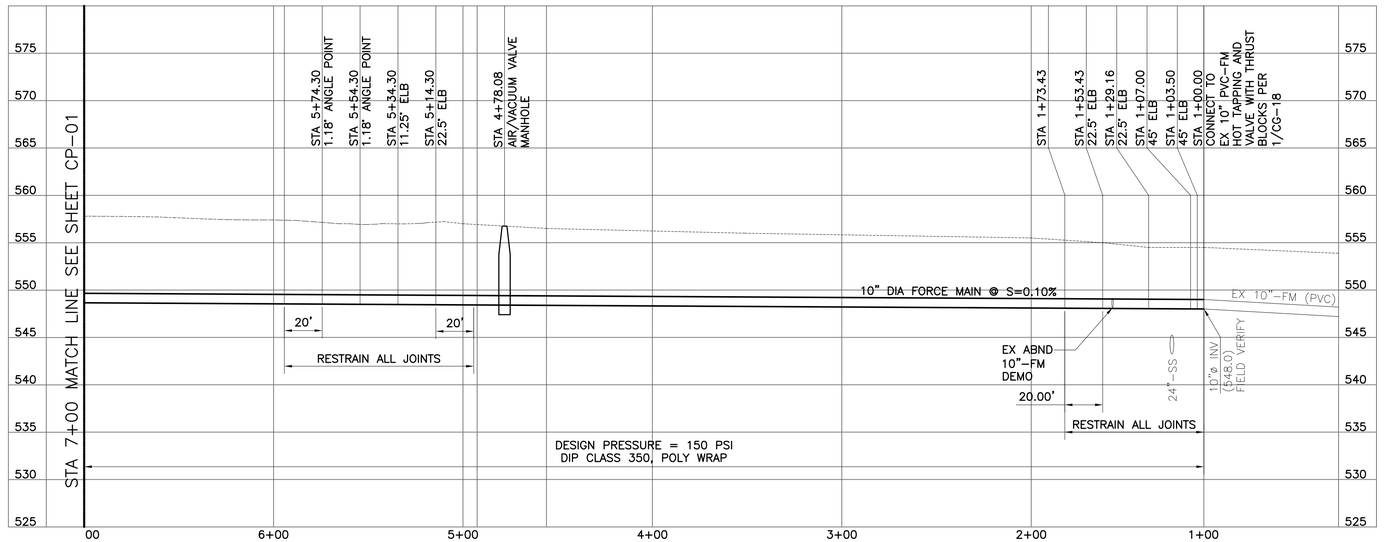
PAVING AND GRADING PLAN MOUNTAIN AVE LIFT STATION

SHEET CH-15
SHEET NO. X OF
PROJECT NO.
DRAWING NO.



PLAN

SCALE: 1" = 40'-0"



PROFILE

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

NOTES:

1. SEE SHEET G-04 FOR SYMBOLS AND GENERAL ABBREVIATIONS LIST.
2. SEE SHEET G-05 FOR PIPING ABBREVIATIONS LIST.
3. SEE SHEET CG-01 FOR GENERAL NOTES.
4. FOR UNDERGROUND PIPING MATERIAL SEE SHEET G-11 THRU G-13.
5. FOR TYPICAL TRENCH DETAIL AND SECTION SEE SHEET CG-13.
6. ROADWAY REPAIR PER CITY OF CHINO PUBLIC WORKS DEPARTMENT STANDARD DRAWINGS NO 109A & 109B. SEE SHEET CG-19.
7. CONTRACTOR SHALL VERIFY THE DEPTH AND LOCATION OF ALL UTILITY CONNECTIONS IN THE FIELD PRIOR TO THE START OF CONSTRUCTION.

KEY MAP

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

0 20' 40' 80' 120'
SCALE: HORIZ 1" = 40'-0"

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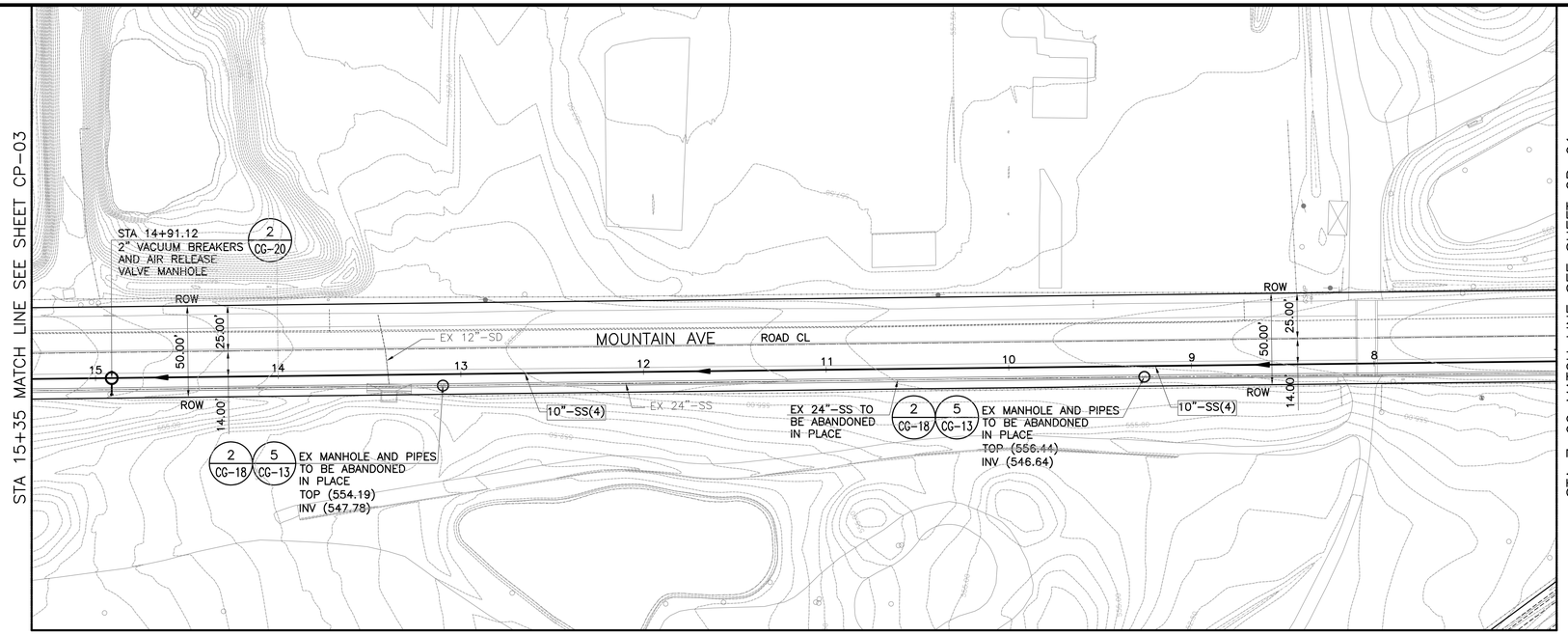
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PROJECT NO. EN19001 & EN19006

BUTTERFIELD FORCE MAIN
PLAN AND PROFILE 1
STA 1+00 TO STA 7+00

SHEET CP-01
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

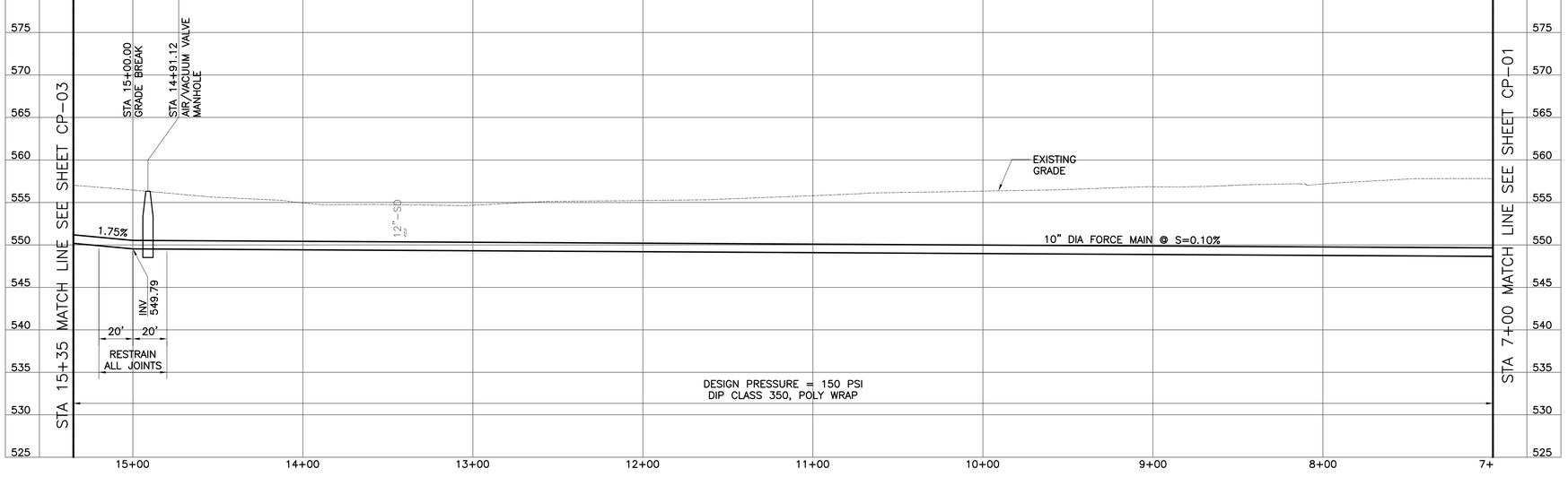
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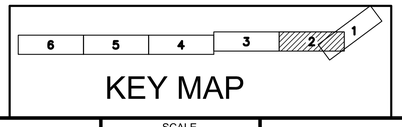
PLAN
SCALE: 1" = 40'-0"

NOTES:

1. SEE SHEET G-04 FOR SYMBOLS AND GENERAL ABBREVIATIONS LIST.
2. SEE SHEET G-05 FOR PIPING ABBREVIATIONS LIST.
3. SEE SHEET CG-01 FOR GENERAL NOTES.
4. FOR UNDERGROUND PIPING MATERIAL SEE SHEET G-11 THRU G-13.
5. FOR TYPICAL TRENCH DETAIL AND SECTION SEE SHEET CG-13.
6. ROADWAY REPAIR PER CITY OF CHINO PUBLIC WORKS DEPARTMENT STANDARD DRAWINGS NO 109A & 109B. SEE SHEET CG-19.
7. CONTRACTOR SHALL VERIFY THE DEPTH AND LOCATION OF ALL UTILITY CONNECTIONS IN THE FIELD PRIOR TO THE START OF CONSTRUCTION.



PROFILE
SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"



KEY MAP

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

0 20' 40' 80' 120'
SCALE: HORIZ 1" = 40'-0"

SUBMITTAL 90% - 05/31/2019

SHEET CP-02

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

Designed	HS	12/2017
Drawn	HS	12/2017
Checked	BL	12/2017
		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
E	05/31/19	HS	SK	SUBMITTAL 90%
D	05/07/19	HS	SK	SUBMITTAL 90% (QA/QC)
C	12/21/18	HS	SK	SUBMITTAL 90% (DRAFT)
B	07/20/18	HS	SK	SUBMITTAL 50%
A	12/18/17	HS	SK	SUBMITTAL 30%

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

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A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

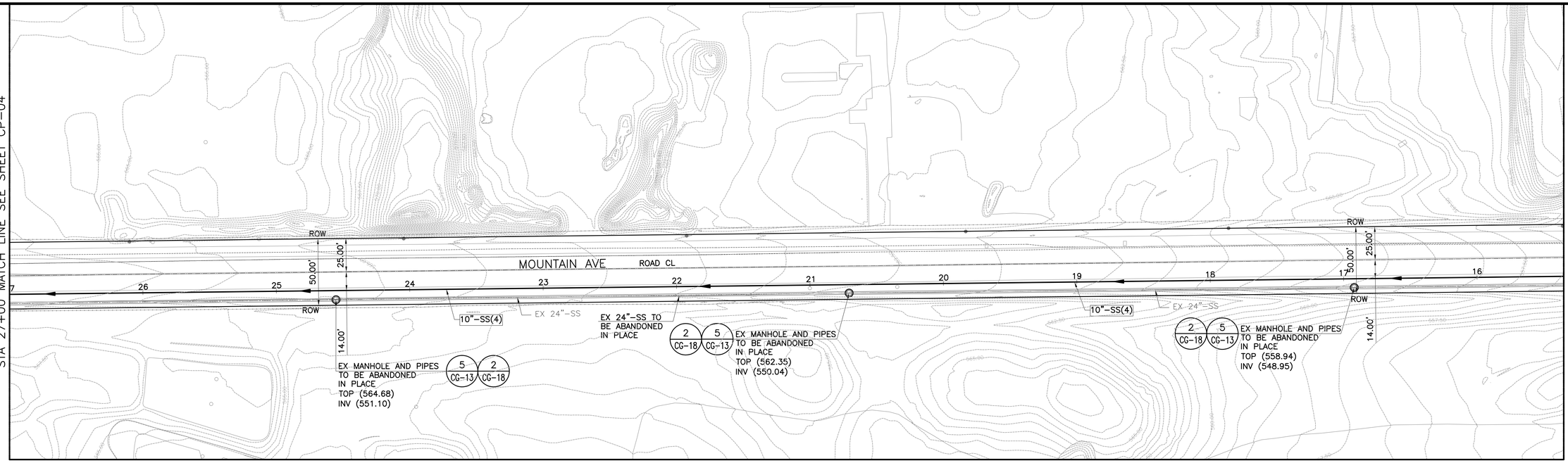
REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

BUTTERFIELD FORCE MAIN
PLAN AND PROFILE 2
STA 7+00 TO STA 15+35

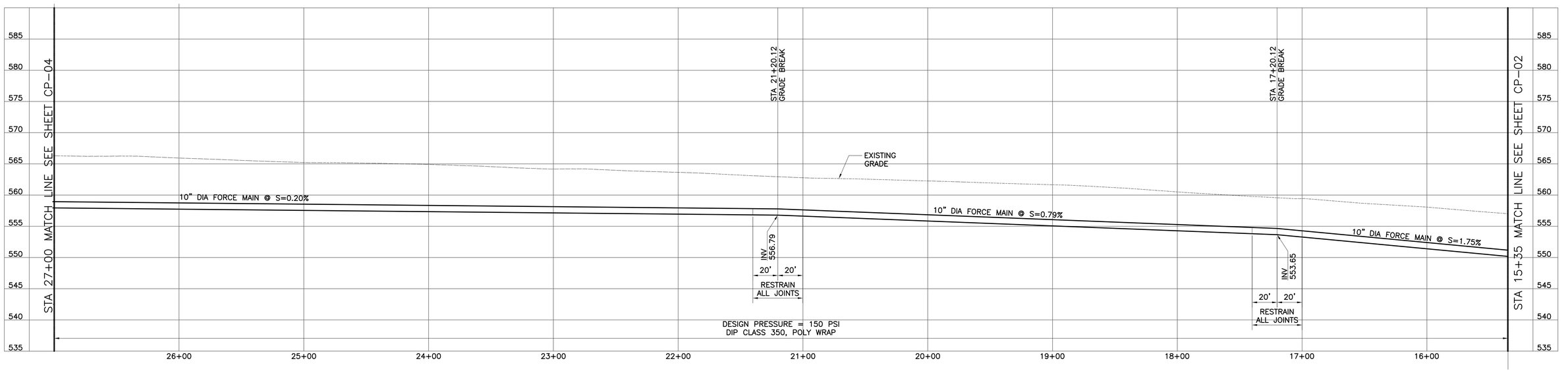
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

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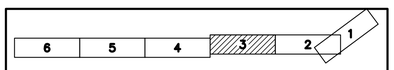
PLAN
SCALE: 1" = 40'-0"



NOTES:

1. SEE SHEET G-04 FOR SYMBOLS AND GENERAL ABBREVIATIONS LIST.
2. SEE SHEET G-05 FOR PIPING ABBREVIATIONS LIST.
3. SEE SHEET CG-01 FOR GENERAL NOTES.
4. FOR UNDERGROUND PIPING MATERIAL SEE SHEET G-11 THRU G-13.
5. FOR TYPICAL TRENCH DETAIL AND SECTION SEE SHEET CG-13.
6. ROADWAY REPAIR PER CITY OF CHINO PUBLIC WORKS DEPARTMENT STANDARD DRAWINGS NO 109A & 109B. SEE SHEET CG-19.
7. CONTRACTOR SHALL VERIFY THE DEPTH AND LOCATION OF ALL UTILITY CONNECTIONS IN THE FIELD PRIOR TO THE START OF CONSTRUCTION.

PROFILE
SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"



KEY MAP

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"
0 20' 40' 80' 120'
SCALE: HORIZ 1" = 40'-0"

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

Designed	HS	12/2017
Drawn	HS	12/2017
Checked	BL	12/2017
		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
D	05/31/19	HS	SK	SUBMITTAL 90%
C	12/21/18	HS	SK	SUBMITTAL 90% (DRAFT)
B	07/20/18	HS	SK	SUBMITTAL 50%
A	12/18/17	HS	SK	SUBMITTAL 30%

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
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0" 1"

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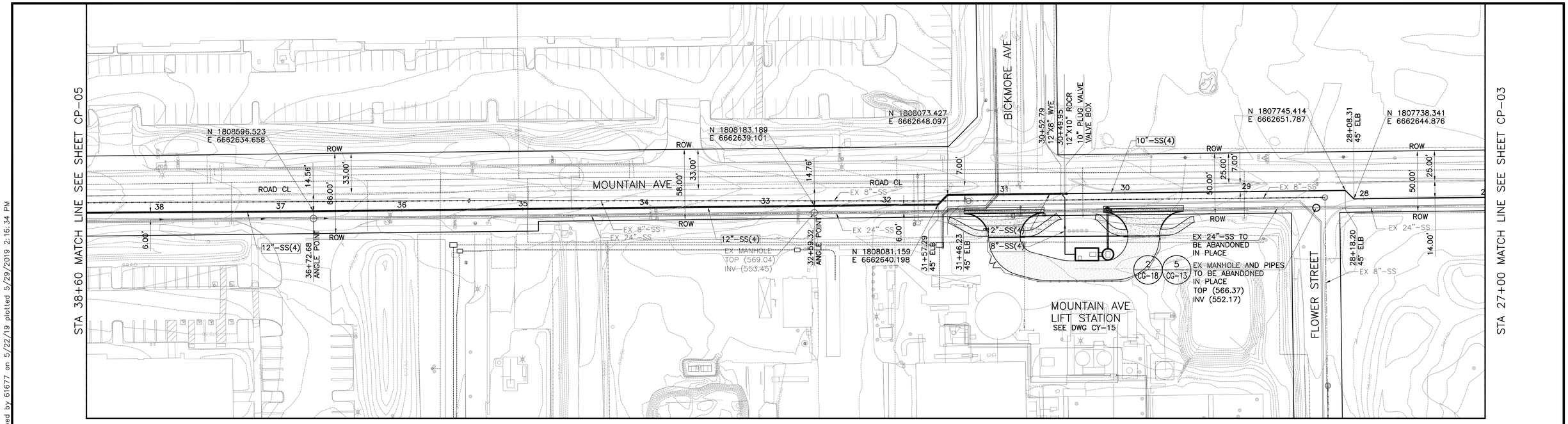
SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

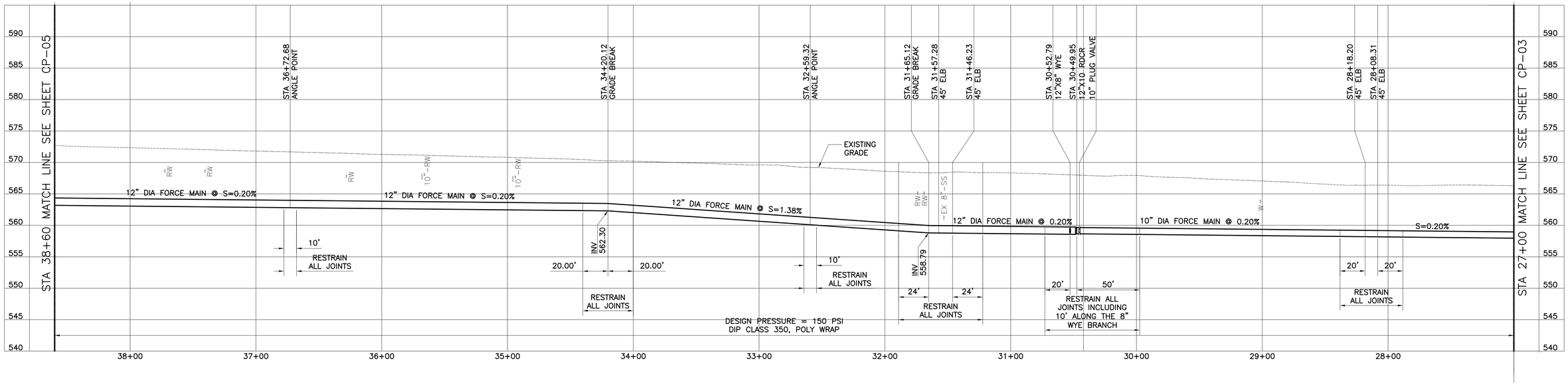
BUTTERFIELD FORCE MAIN PLAN AND PROFILE 3 STA 15+35 TO STA 27+00

SHEET CP-03
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

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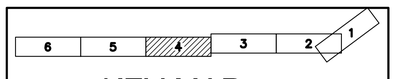
PLAN
SCALE: 1" = 40'-0"



NOTES:

1. SEE SHEET G-04 FOR SYMBOLS AND GENERAL ABBREVIATIONS LIST.
2. SEE SHEET G-05 FOR PIPING ABBREVIATIONS LIST.
3. SEE SHEET CG-01 FOR GENERAL NOTES.
4. FOR UNDERGROUND PIPING MATERIAL SEE SHEET G-11 THRU G-13.
5. FOR TYPICAL TRENCH DETAIL AND SECTION SEE SHEET CG-13.
6. ROADWAY REPAIR PER CITY OF CHINO PUBLIC WORKS DEPARTMENT STANDARD DRAWINGS NO 109A & 109B. SEE SHEET CG-19.
7. CONTRACTOR SHALL VERIFY THE DEPTH AND LOCATION OF ALL UTILITY CONNECTIONS IN THE FIELD PRIOR TO THE START OF CONSTRUCTION.

PROFILE
SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"



KEY MAP

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

0 20' 40' 80' 120'
SCALE: HORIZ 1" = 40'-0"

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

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Drawn	HS	12/2017
Checked	BL	12/2017
		Date

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E	05/31/19	HS	SK	SUBMITTAL 90%
D	05/07/19	HS	SK	SUBMITTAL 90% (QA/QC)
C	12/7/18	HS	SK	SUBMITTAL 90% (DRAFT)
B	07/20/18	HS	SK	SUBMITTAL 50%
A	12/18/17	HS	SK	SUBMITTAL 30%

REVIEWED BY:

PROJECT MANAGER DATE

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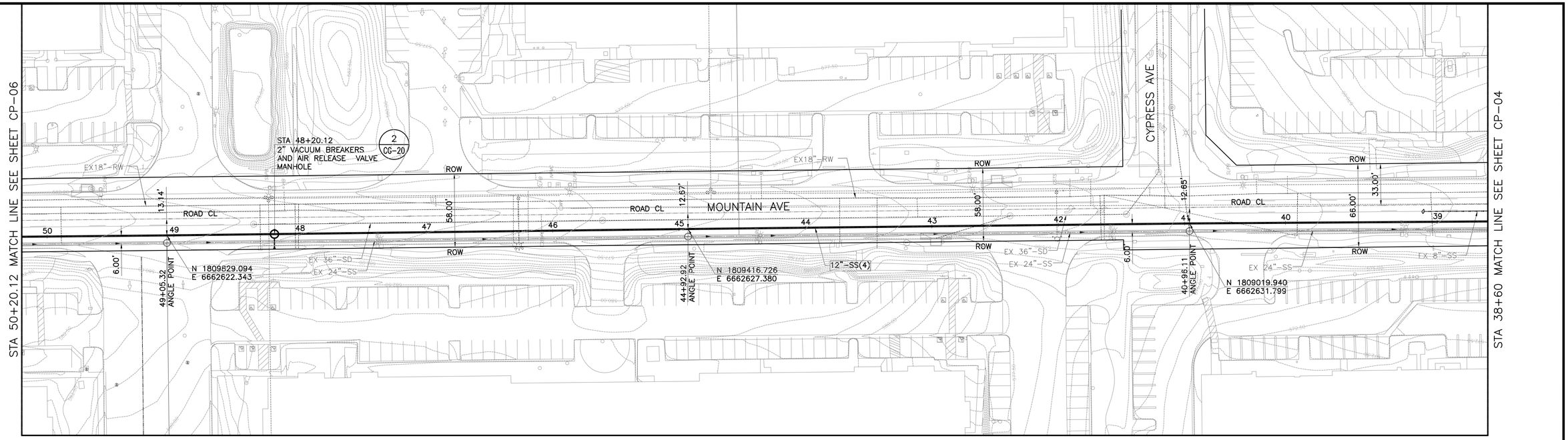
SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

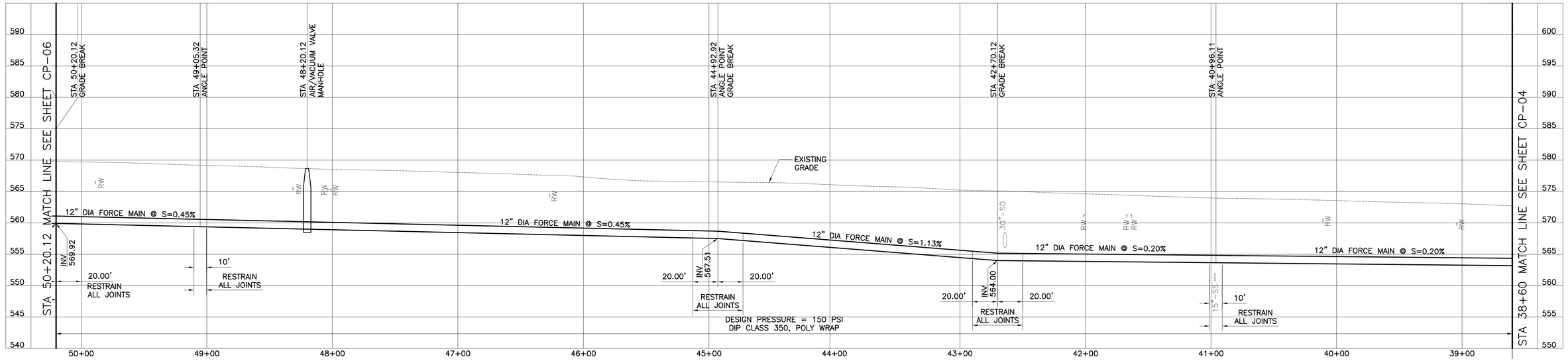
BUTTERFIELD FORCE MAIN PLAN AND PROFILE 4 STA 27+00 TO STA 38+60

SHEET CP-04
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

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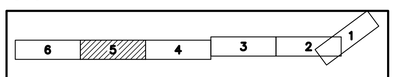
PLAN
SCALE: 1" = 40'-0"



NOTES:

1. SEE SHEET G-04 FOR SYMBOLS AND GENERAL ABBREVIATIONS LIST.
2. SEE SHEET G-05 FOR PIPING ABBREVIATIONS LIST.
3. SEE SHEET CG-01 FOR GENERAL NOTES.
4. FOR UNDERGROUND PIPING MATERIAL SEE SHEET G-11 THRU G-13.
5. FOR TYPICAL TRENCH DETAIL AND SECTION SEE SHEET CG-13.
6. ROADWAY REPAIR PER CITY OF CHINO PUBLIC WORKS DEPARTMENT STANDARD DRAWINGS NO 109A & 109B. SEE SHEET CG-19.
7. CONTRACTOR SHALL VERIFY THE DEPTH AND LOCATION OF ALL UTILITY CONNECTIONS IN THE FIELD PRIOR TO THE START OF CONSTRUCTION.

PROFILE
SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"



KEY MAP

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"
0 20' 40' 80' 120'
SCALE: HORIZ 1" = 40'-0"

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		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
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D	05/07/19	HS	SK	SUBMITTAL 90% (QA/QC)
C	12/21/18	HS	SK	SUBMITTAL 90% (DRAFT)
B	07/20/18	HS	SK	SUBMITTAL 50%
A	12/18/17	HS	SK	SUBMITTAL 30%

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
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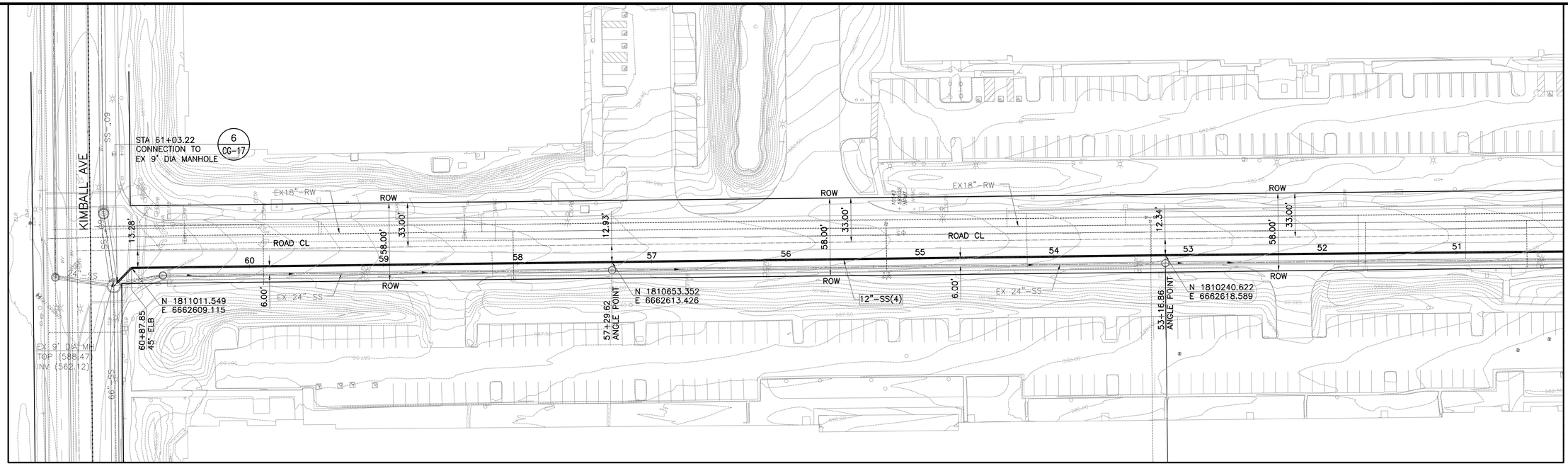
SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

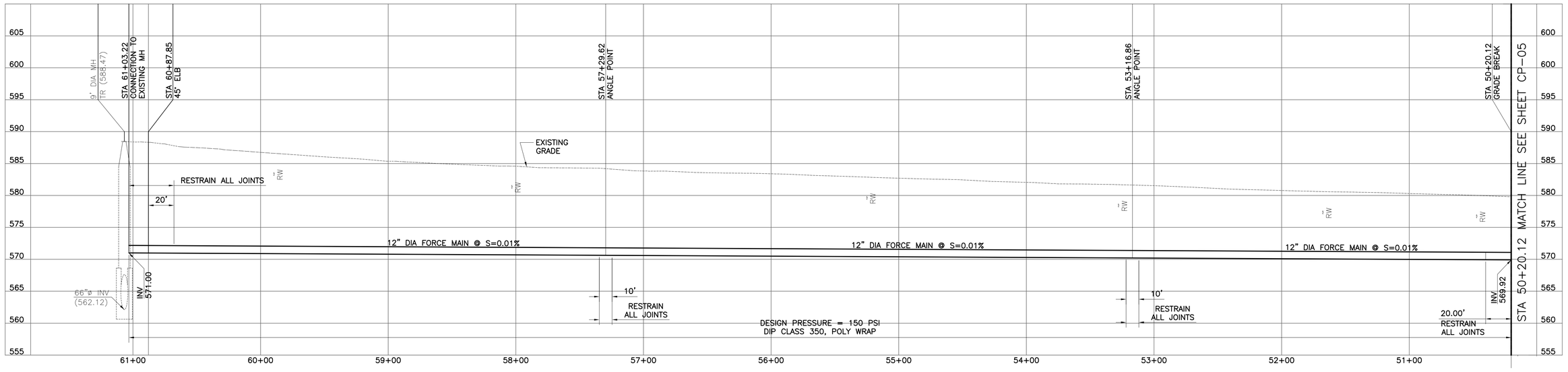
BUTTERFIELD FORCE MAIN PLAN AND PROFILE 5 STA 38+60 TO STA 50+20.12

SHEET CP-05
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

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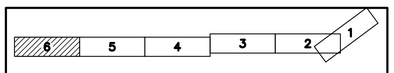
PLAN
SCALE: 1" = 40'-0"



NOTES:

1. SEE SHEET G-04 FOR SYMBOLS AND GENERAL ABBREVIATIONS LIST.
2. SEE SHEET G-05 FOR PIPING ABBREVIATIONS LIST.
3. SEE SHEET CG-01 FOR GENERAL NOTES.
4. FOR UNDERGROUND PIPING MATERIAL SEE SHEET G-11 THRU G-13.
5. FOR TYPICAL TRENCH DETAIL AND SECTION SEE SHEET CG-13.
6. ROADWAY REPAIR PER CITY OF CHINO PUBLIC WORKS DEPARTMENT STANDARD DRAWINGS NO 109A & 109B. SEE SHEET CG-19.
7. CONTRACTOR SHALL VERIFY THE DEPTH AND LOCATION OF ALL UTILITY CONNECTIONS IN THE FIELD PRIOR TO THE START OF CONSTRUCTION.

PROFILE
SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"



KEY MAP

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

0 20' 40' 80' 120'
SCALE: HORIZ 1" = 40'-0"

PARSONS
100 WEST WALNUT STREET
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(626) 440 - 2000

ENGINEER'S STAMP

Designed	HS	12/2017
Drawn	HS	12/2017
Checked	BL	12/2017
		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
E	05/31/19	HS	SK	SUBMITTAL 90%
D	05/07/19	HS	SK	SUBMITTAL 90% (QA/QC)
C	12/21/18	HS	SK	SUBMITTAL 90% (DRAFT)
B	07/20/18	HS	SK	SUBMITTAL 50%
A	12/18/17	HS	SK	SUBMITTAL 30%

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
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Telephone (909) 993-1600

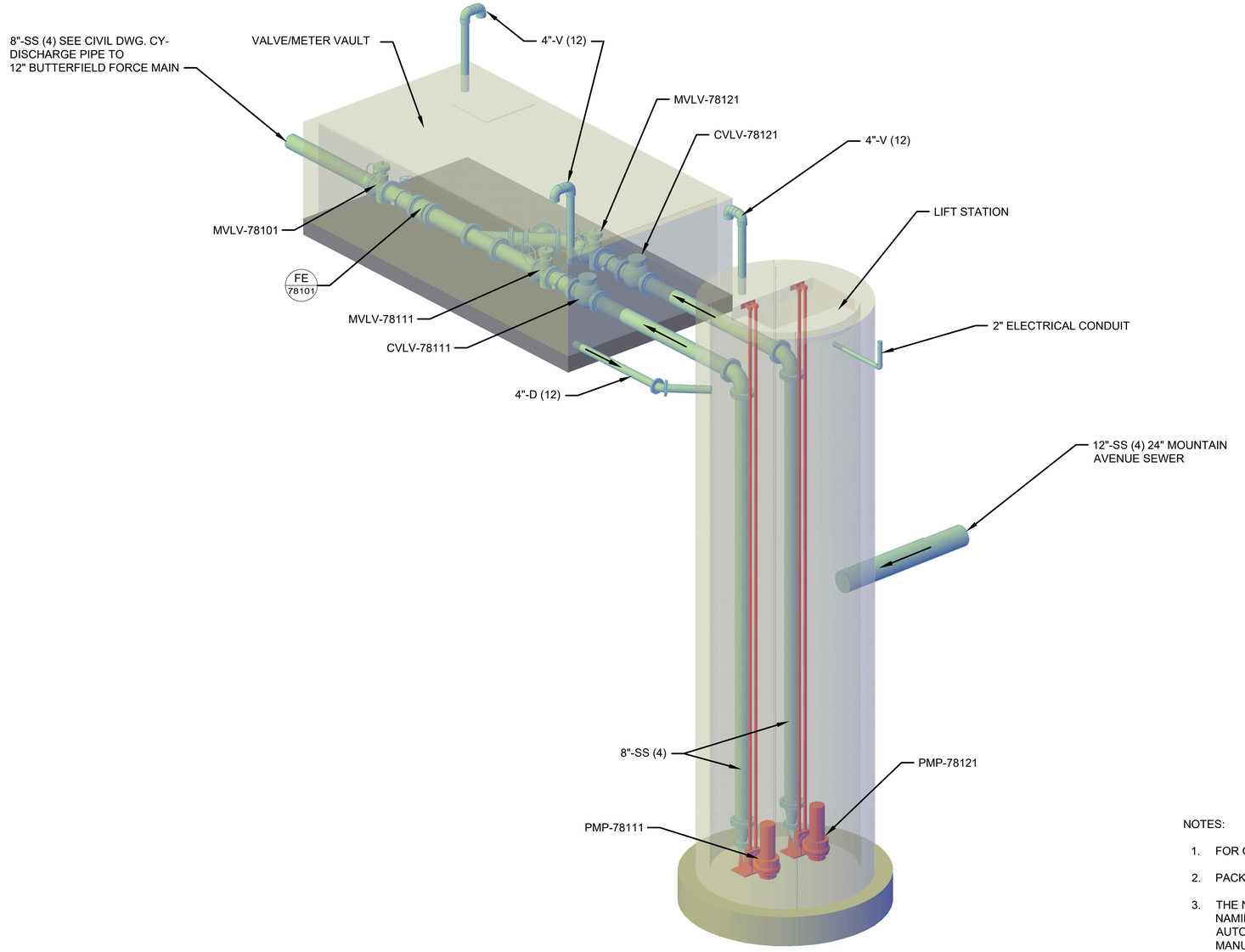
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SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

BUTTERFIELD FORCE MAIN
PLAN AND PROFILE 6
STA 50+20.12 TO STA 61+03.22

SHEET	CP-06
SHEET NO.	X OF
PROJECT NO.	
DRAWING NO.	



ISOMETRIC VIEW
SCALE: NTS

NOTES:

1. FOR GENERAL NOTES, SEE DWG. M-01.
2. PACKAGE LIFT STATION DRAWINGS ARE BASED ON JENSEN PRODUCT.
3. THE NAMED PACKAGE LIFT STATION MANUFACTURER IS FOR OUTLINE DESIGN PURPOSE. NAMING THE MANUFACTURER'S PRODUCT ABOVE DOES NOT IMPLY THAT THEIR PRODUCT IS AUTOMATICALLY SELECTED. MANUFACTURERS LISTED UNDER PARAGRAPH "REFERENCE MANUFACTURERS, OR EQUAL" SECTION 11250 AND WHOSE PRODUCTS WILL FULLY COMPLY WITH SPECIFICATION REQUIREMENTS WILL BE CONSIDERED "EQUAL". COST ASSOCIATED WITH ANY DESIGN MODIFICATIONS TO ACCOMMODATE "EQUAL" PRODUCT SHALL BE INCLUDED IN THE CONTRACTOR'S BID. AFTER CONTRACT AWARD, ANY STRUCTURAL/MECHANICAL/ELECTRICAL/I&C MODIFICATION INCURRED TO INSTALL AN "EQUAL" PRODUCT SHALL BE BORNE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

PARSONS
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ENGINEER'S STAMP

Designed	ID	07/2018
Drawn	JD	07/2018
Checked	ID	07/2018
		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
E	05/31/19	ID	SK	SUBMITTAL 90%
D	05/07/19	ID	SK	SUBMITTAL 90% (QA/QC)
C	12/21/18	ID	SK	SUBMITTAL 90% (DRAFT)
B	07/20/18	ID	SK	SUBMITTAL 50%
A	12/18/17	ID	SK	SUBMITTAL 30%

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
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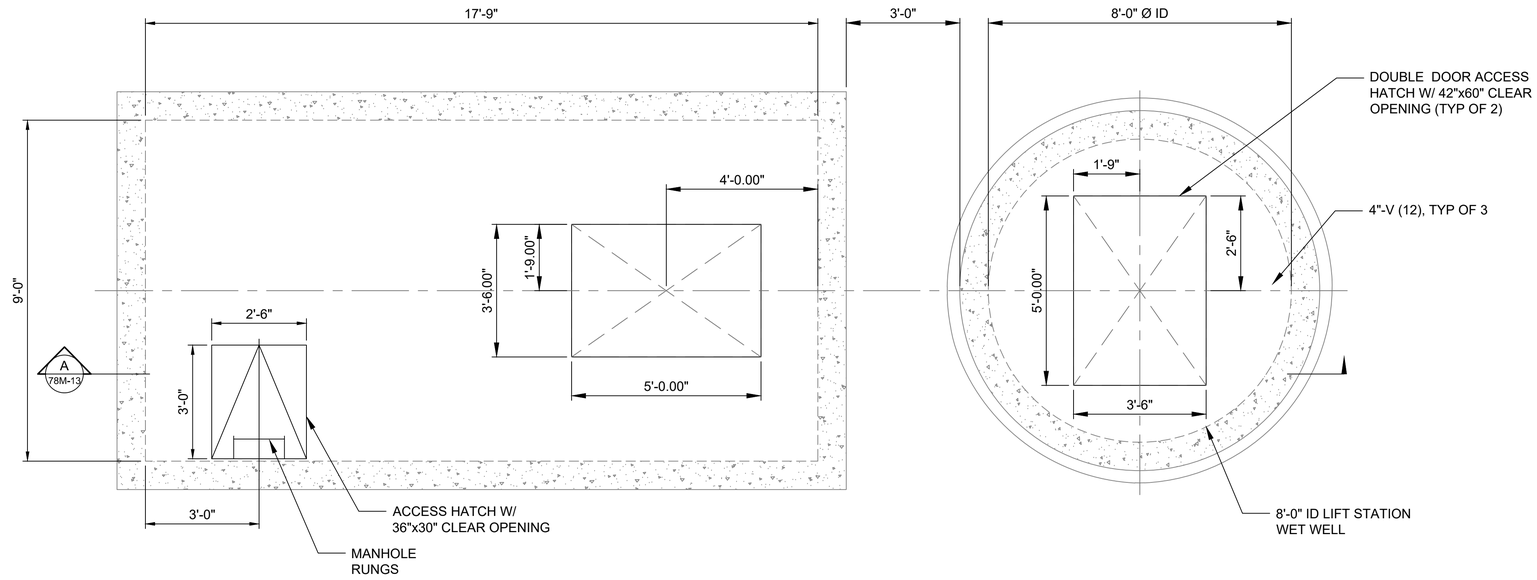
SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

MOUNTAIN AVE LIFT STATION GENERAL ARRANGEMENT ISOMETRIC

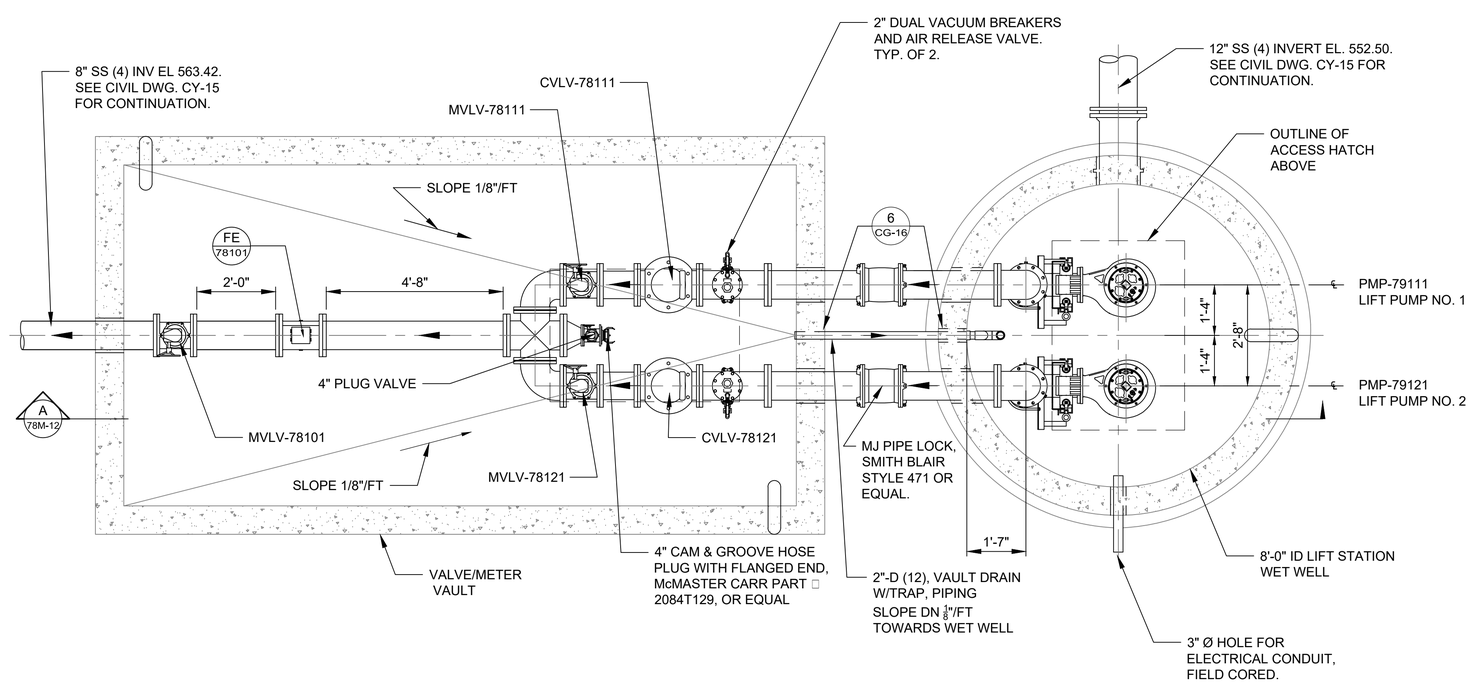
SHEET	78M-10
SHEET NO.	X OF
PROJECT NO.	
DRAWING NO.	

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TOP PLAN

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



BASE PLAN

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

NOTES:

1. FOR GENERAL NOTES, SEE DWG. M-01.

2' 1' 0 2' 4'

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

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
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ENGINEER'S STAMP

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B	07/20/18	ID	SK	SUBMITTAL 50%
A	12/18/17	ID	SK	SUBMITTAL 30%

REVIEWED BY:

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SCALE

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0" 1"

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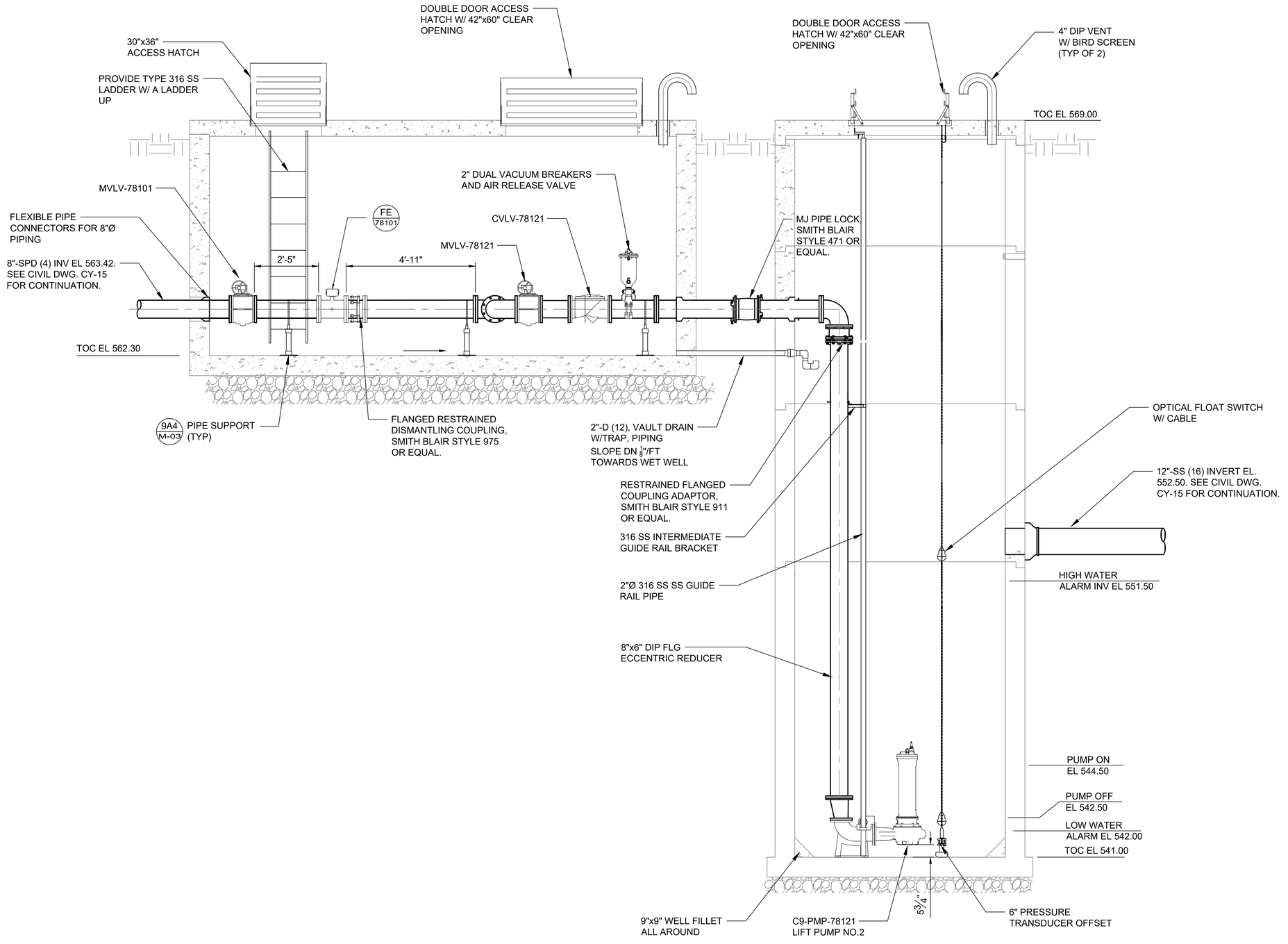
SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

MOUNTAIN AVE LIFT STATION PLANS

SHEET 78M-11
SHEET NO. X OF
PROJECT N0.
DRAWING NO.

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A / 78M-12 SECTION
SCALE: 1/2"=1'-0"

NOTES:

1. FOR GENERAL NOTES, SEE DWG. M-01.

2' 1' 0 2' 4'
SCALE: 1/2"=1'-0"

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

ENGINEER'S STAMP

Designed	ID	12/2017
Drawn	RD	12/2017
Checked	ID	12/2017
		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
B	05/31/19	ID	SK	SUBMITTAL 90%
A	05/07/19	ID	SK	SUBMITTAL 90% (QA/QC)

REVIEWED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

SUBMITTAL 90% - 05/31/2019

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

MOUNTAIN AVE LIFT STATION
SECTION

SHEET 78M-12
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

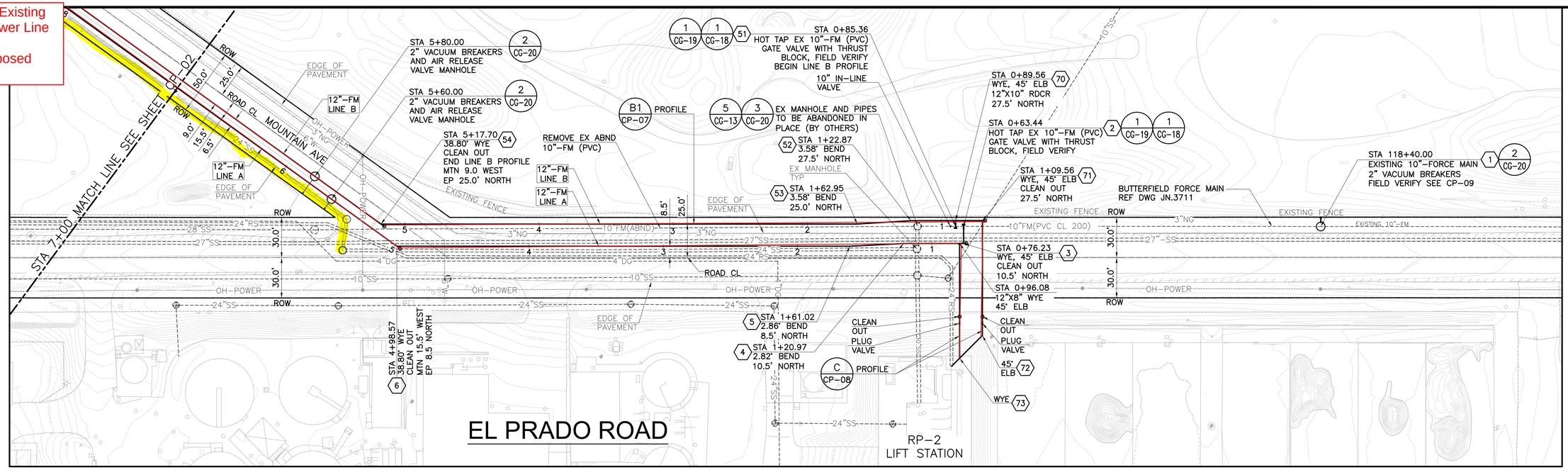
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ENGINEERING DRAWINGS

BUTTERFIELD FORCE MAIN – Marked Up

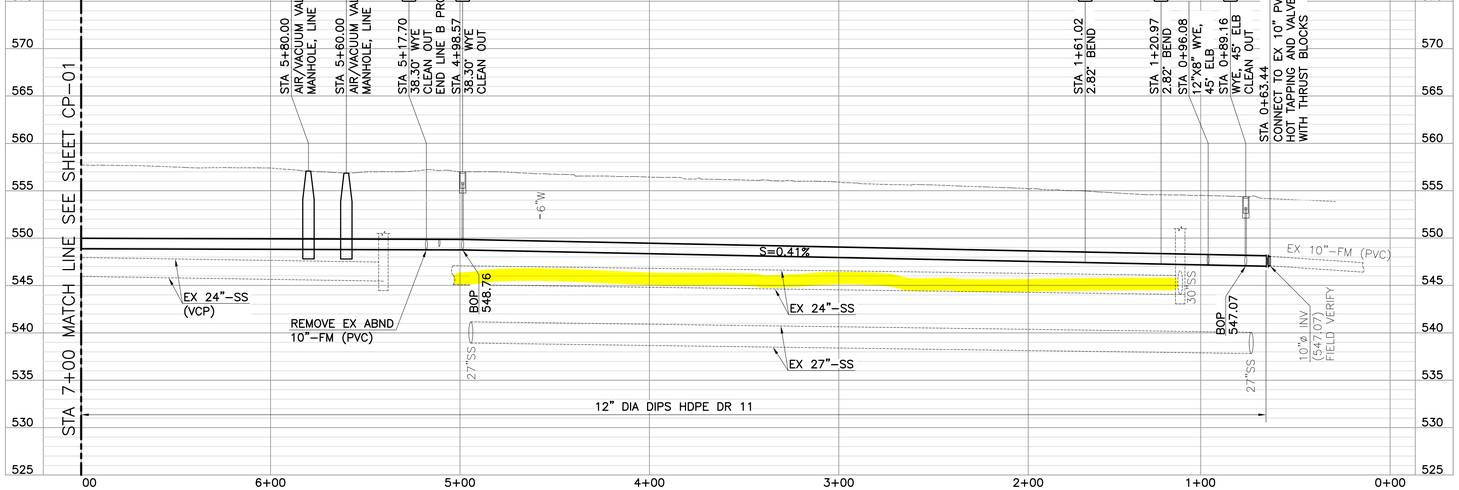
Yellow Highlight = Existing 24-inch Gravity Sewer Line

Red Outline = Proposed Dual Force Main



PLAN

SCALE: 1" = 40'-0"



PROFILE

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

KEY MAP

SCALE: VERT 1" = 8'-0"

SCALE: HORIZ 1" = 40'-0"

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

Designed	HS	03/2023
Drawn	HS	03/2023
Checked	BL	03/2023
		Date

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RECOMMENDED BY:

PROJECT MANAGER DATE 10/31/19

SCALE
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Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

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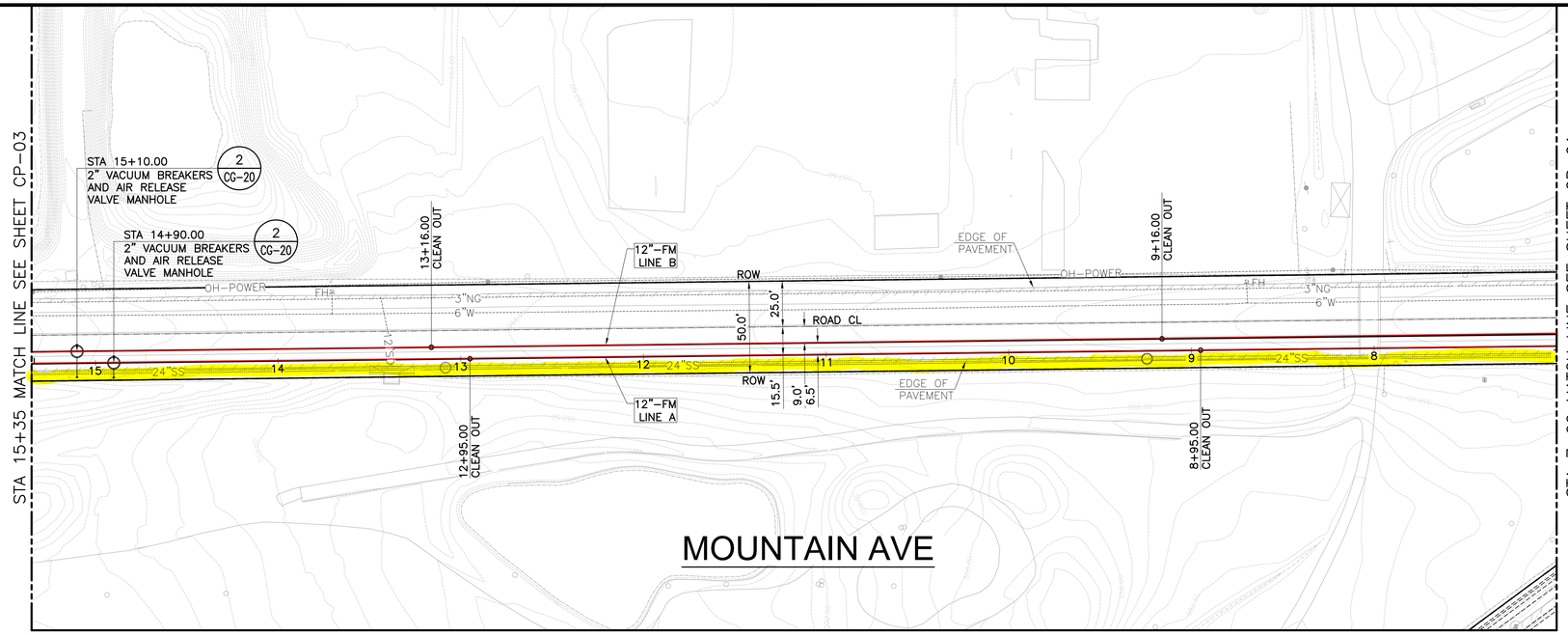
DRAFT - NOT FOR CONSTRUCTION

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

BUTTERFIELD FORCE MAIN
PLAN AND PROFILE 1
STA 1+00 TO STA 7+00

SHEET CP-01
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

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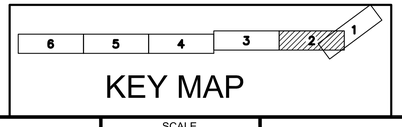
PLAN

SCALE: 1" = 40'-0"



PROFILE

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"



KEY MAP

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

0 20' 40' 80' 120'
SCALE: HORIZ 1" = 40'-0"

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SHEET CP-02

SHEET NO. X OF

PROJECT NO.

DRAWING NO.

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

BUTTERFIELD FORCE MAIN
PLAN AND PROFILE 2
STA 7+00 TO STA 15+35

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(626) 440 - 2000

Designed	HS	03/2023
Drawn	HS	03/2023
Checked	BL	03/2023
		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION

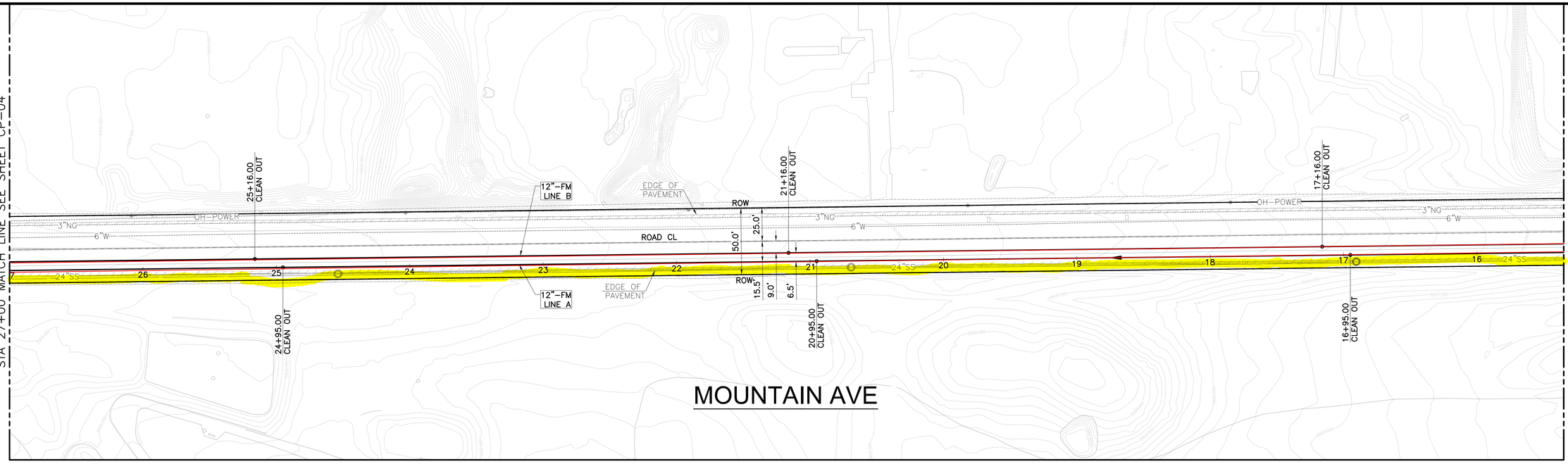
RECOMMENDED BY:

PROJECT MANAGER DATE 10/31/19

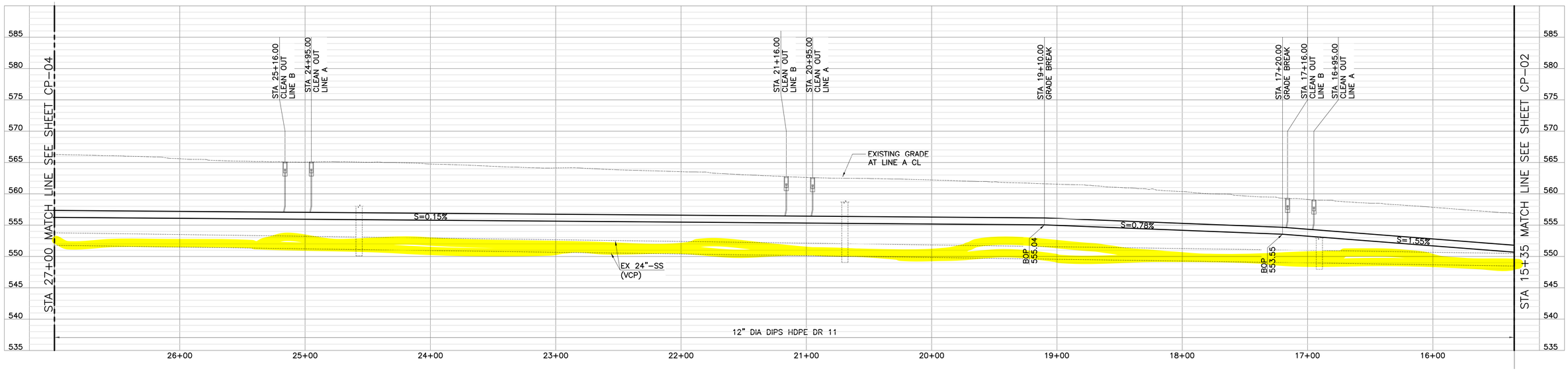
SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

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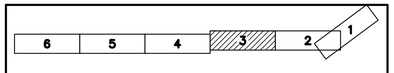
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PLAN
SCALE: 1" = 40'-0"



PROFILE
SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"



KEY MAP

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

0 20' 40' 80' 120'
SCALE: HORIZ 1" = 40'-0"

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SHEET CP-03

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

Designed	HS	03/2023
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		Date

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RECOMMENDED BY:

PROJECT MANAGER DATE 10/31/19

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

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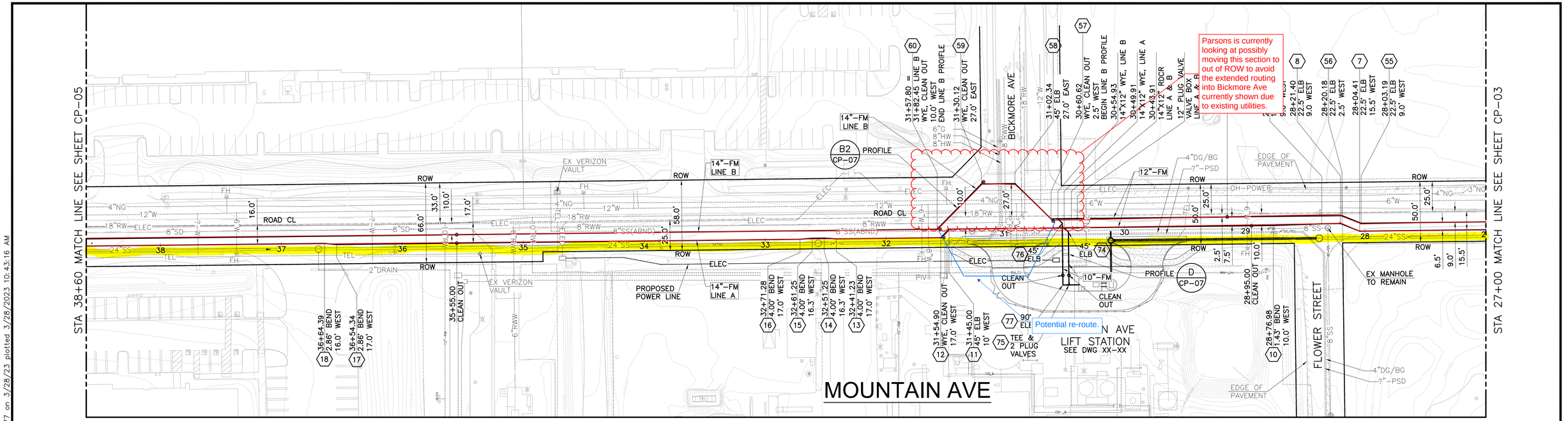
REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

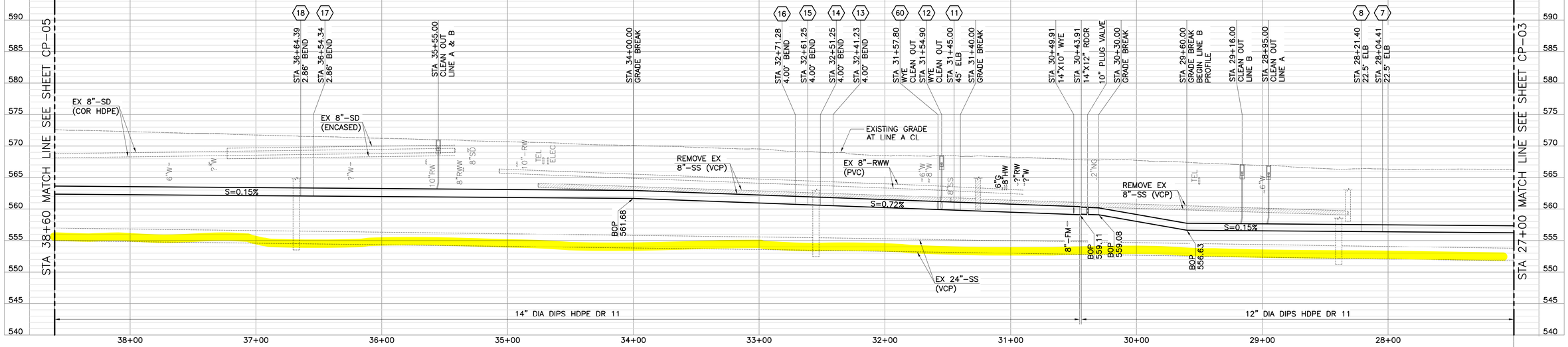
BUTTERFIELD FORCE MAIN
PLAN AND PROFILE 3
STA 15+35 TO STA 27+00

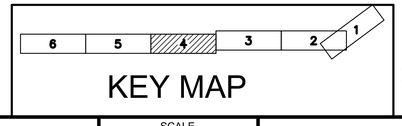
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

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KEY MAP

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

0 20' 40' 80' 120'
SCALE: HORIZ 1" = 40'-0"

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SHEET CP-04

SHEET NO. X OF

PROJECT NO.

DRAWING NO.

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

Designed	HS	03/2023
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PROJECT MANAGER DATE 10/31/19

SCALE
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0" 1"

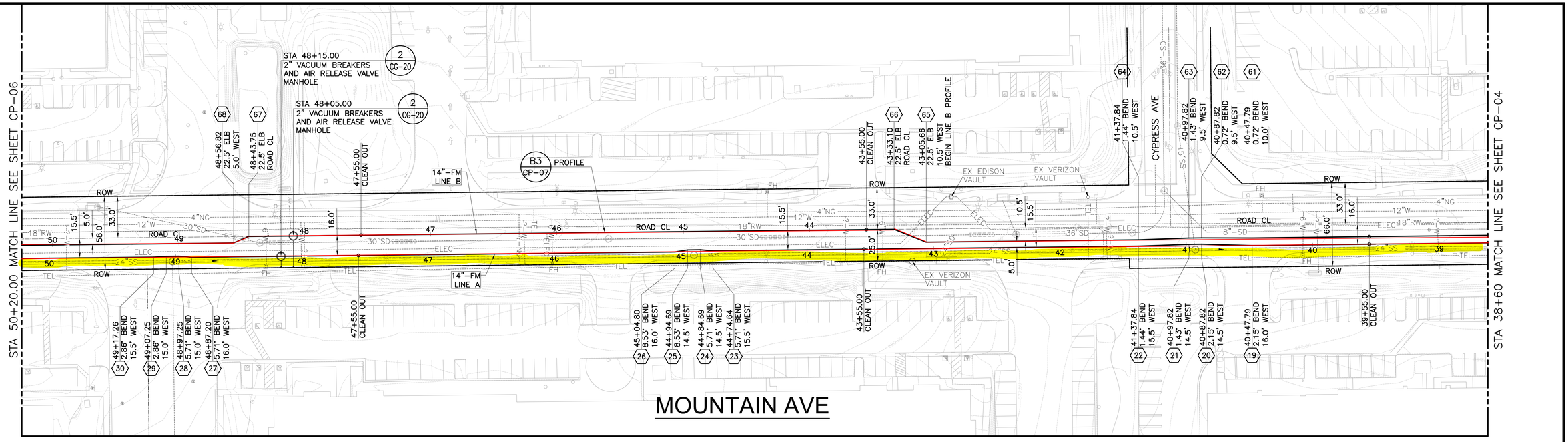
Inland Empire Utilities Agency
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6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

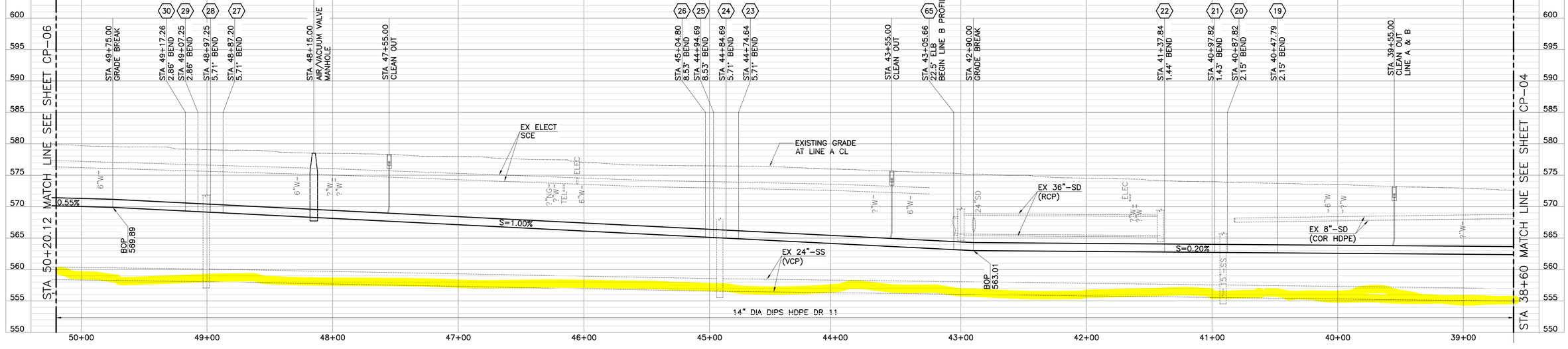
MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

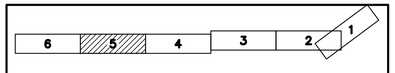
BUTTERFIELD FORCE MAIN PLAN AND PROFILE 4 STA 27+00 TO STA 38+60



PLAN
SCALE: 1" = 40'-0"



PROFILE
SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"



KEY MAP

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

0 20' 40' 80' 120'
SCALE: HORIZ 1" = 40'-0"

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SHEET CP-05

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

Designed	HS	03/2023
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RECOMMENDED BY:

PROJECT MANAGER DATE 10/31/19

SCALE
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0" 1"

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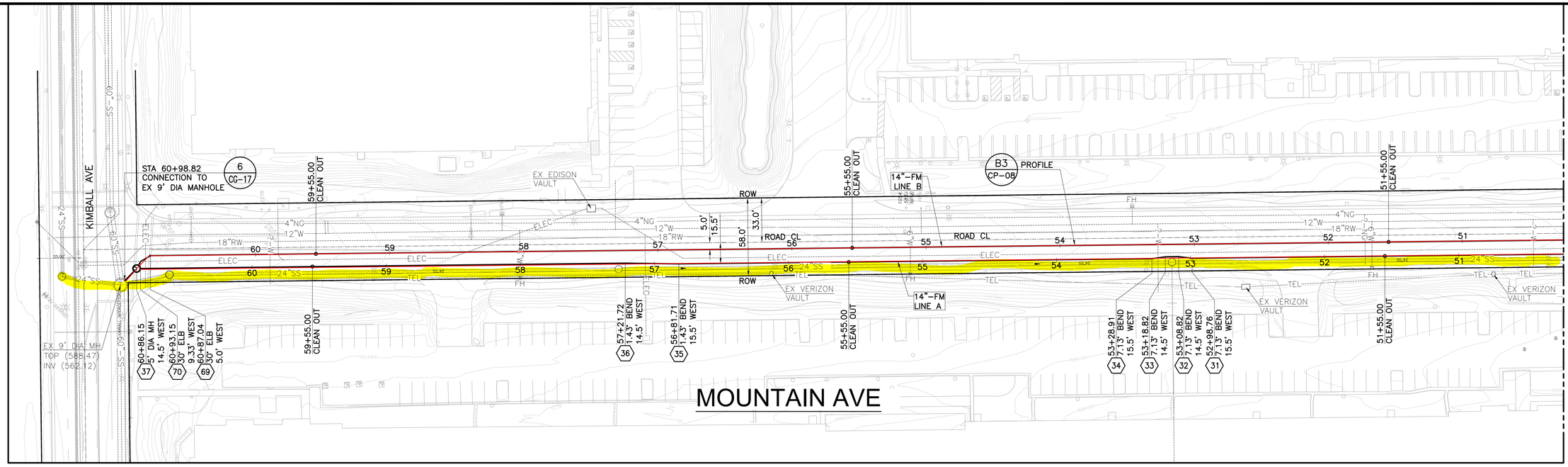
REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

BUTTERFIELD FORCE MAIN
PLAN AND PROFILE 5
STA 38+60 TO STA 50+20.12

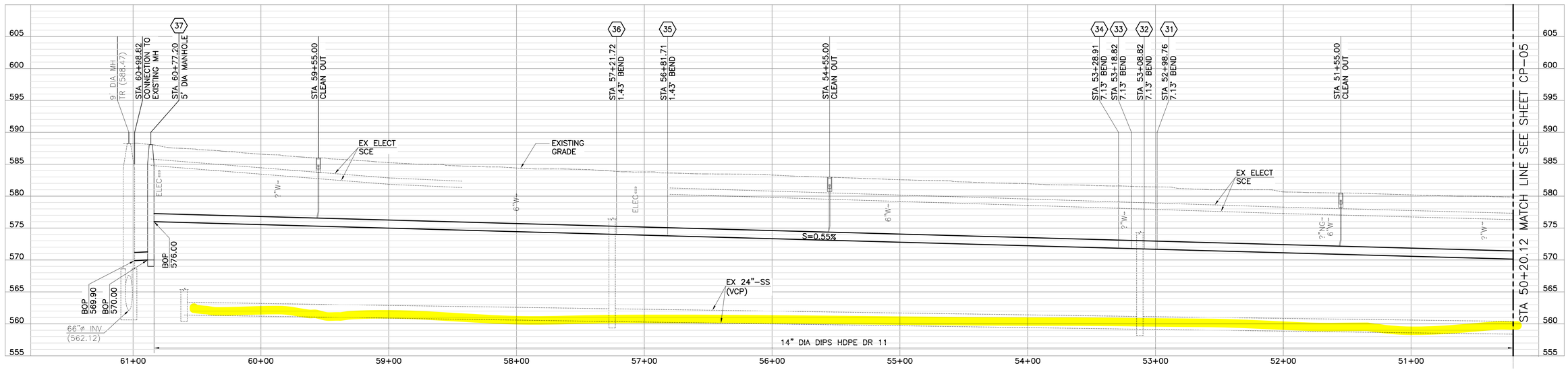
SHEET NO. X OF
PROJECT NO.
DRAWING NO.

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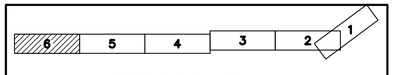
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PLAN
SCALE: 1" = 40'-0"



PROFILE
SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"



KEY MAP

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

0 20' 40' 80' 120'
SCALE: HORIZ 1" = 40'-0"

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SHEET CP-06

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

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RECOMMENDED BY:

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SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

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A MUNICIPAL WATER DISTRICT

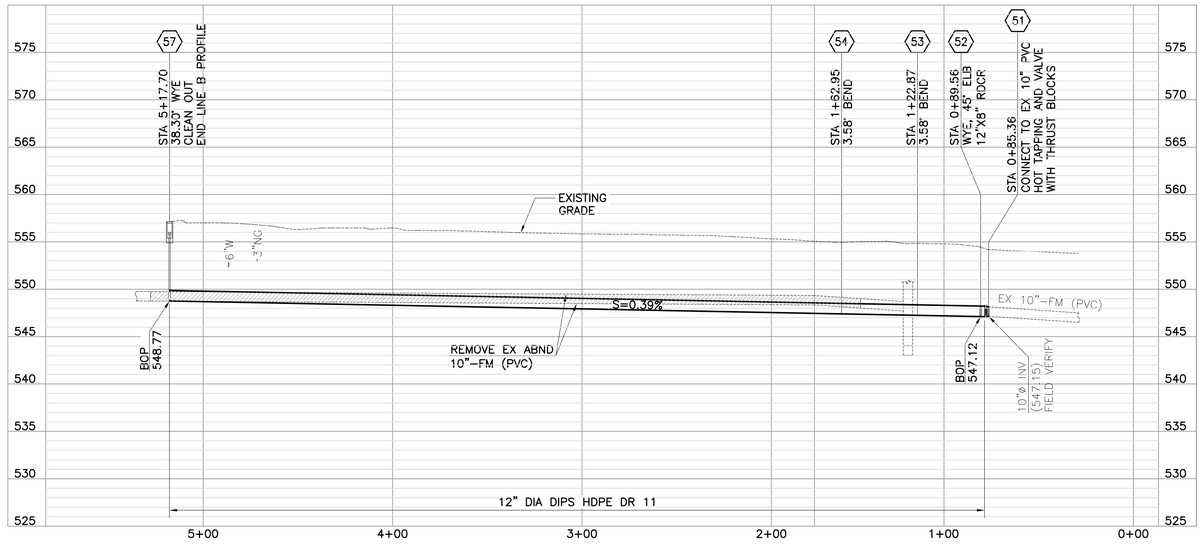
OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

BUTTERFIELD FORCE MAIN
PLAN AND PROFILE 6
STA 50+20.12 TO STA 61+03.22

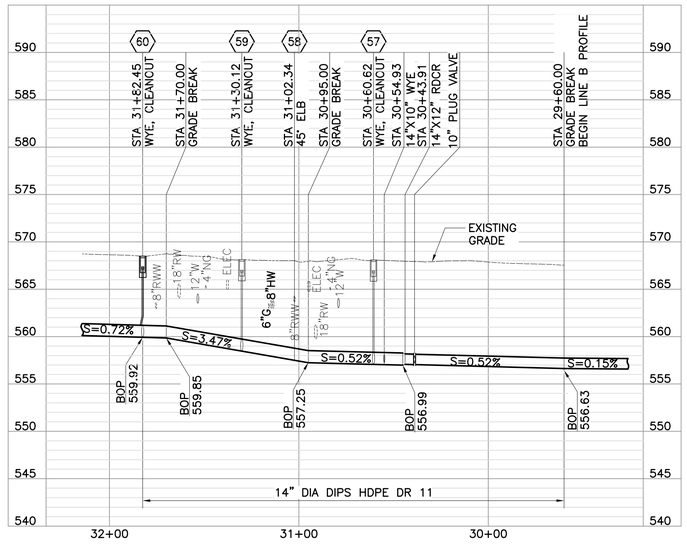
SHEET NO. X OF
PROJECT NO.
DRAWING NO.



LINE B 0+85.36 TO 5+17.70 PROFILE

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

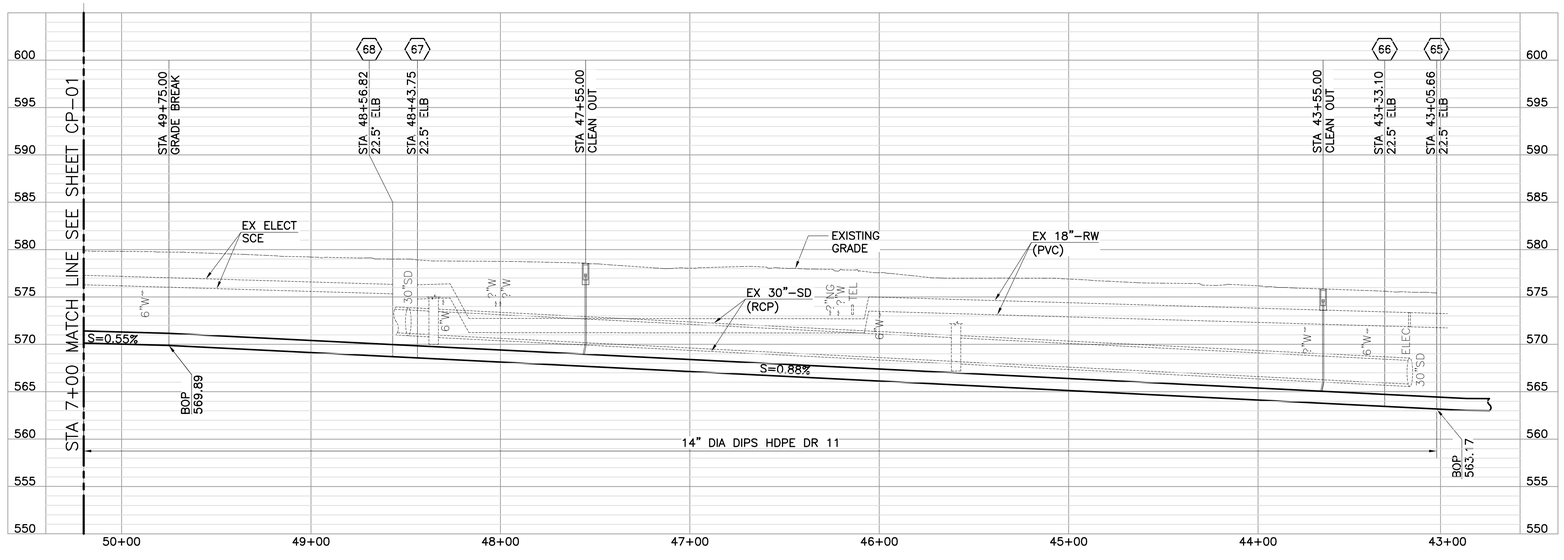
B1
CP-01



LINE D 29+60.00 TO 3+82.45 PROFILE

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

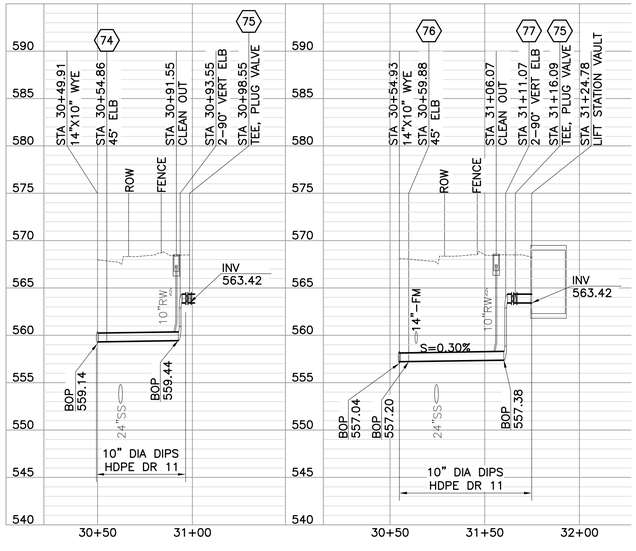
B2
CP-04



LINE B 43+05.66 TO 50+20.00 PROFILE

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

B3
CP-05



LINE D PROFILES MOUNTAIN AVE LIFT STATION

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

D
CP-04

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

0 20' 40' 80' 120'
SCALE: HORIZ 1" = 40'-0"

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SHEET CP-07

SHEET NO. X OF

PROJECT NO.

DRAWING NO.

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

Designed	HS	03/2023
Drawn	HS	03/2023
Checked	BL	03/2023
		Date

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RECOMMENDED BY:

PROJECT MANAGER DATE 10/31/19

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

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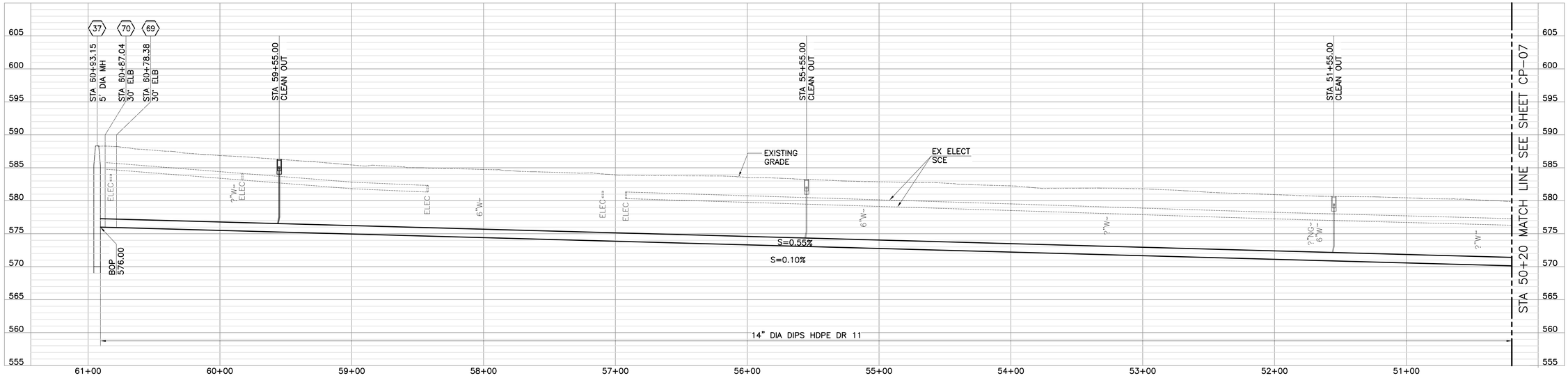
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Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

BUTTERFIELD FORCE MAIN PROFILES

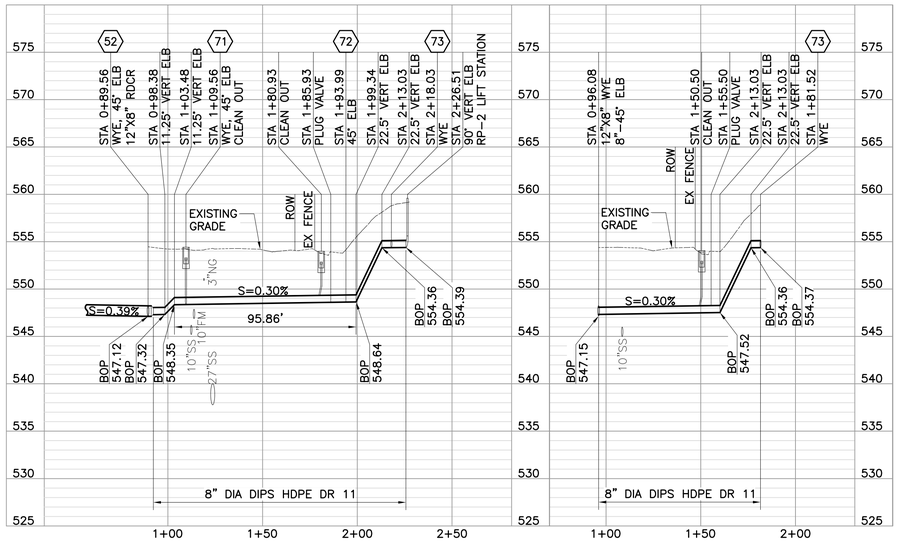
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LINE B 50+20 TO 60+93.15 PROFILE

B3 / CP-05

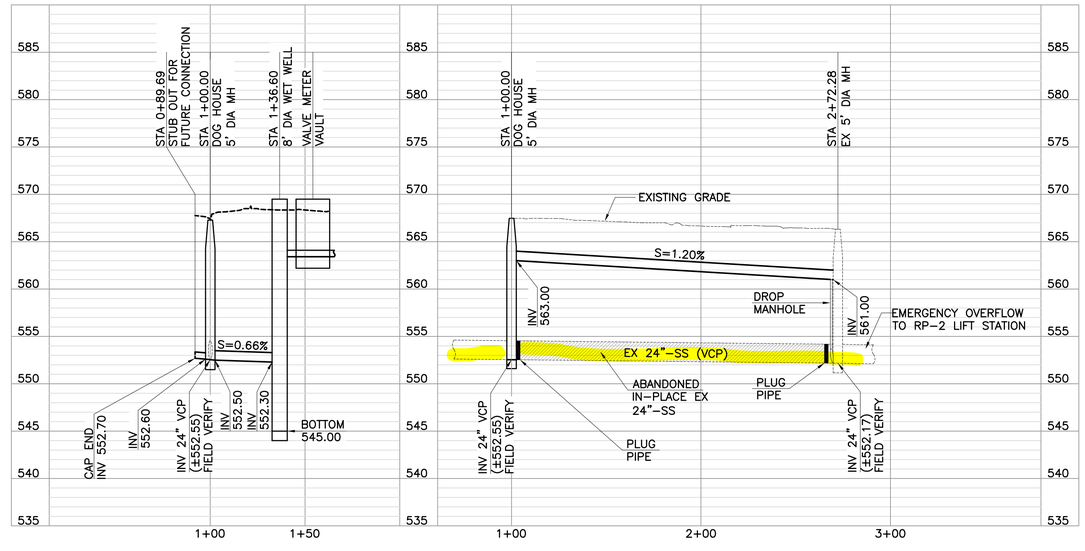
SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"



LINE C PROFILE RP-2 LIFT STATION

C / CP-01

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"



LINE E1 – 12"-SS PROFILE MOUNTAIN AVE LIFT STATION

E1 / CP-04

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

LINE E2 – 12"-SS PROFILE EMERGENCY OVERFLOW

E2 / CP-04

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

0 20' 40' 80' 120'
SCALE: HORIZ 1" = 40'-0"

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SHEET CP-08

REGIONAL WATER RECYCLING PLANT NO. 5 (RP-5)
PROJECT NO. EN19001 & EN19006

BUTTERFIELD FORCE MAIN PROFILES

SHEET NO. X OF

PROJECT NO.

DRAWING NO.

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

Designed	HS	03/2023
Drawn	HS	03/2023
Checked	BL	03/2023
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PROJECT MANAGER DATE 10/31/19

SCALE
AS SHOWN
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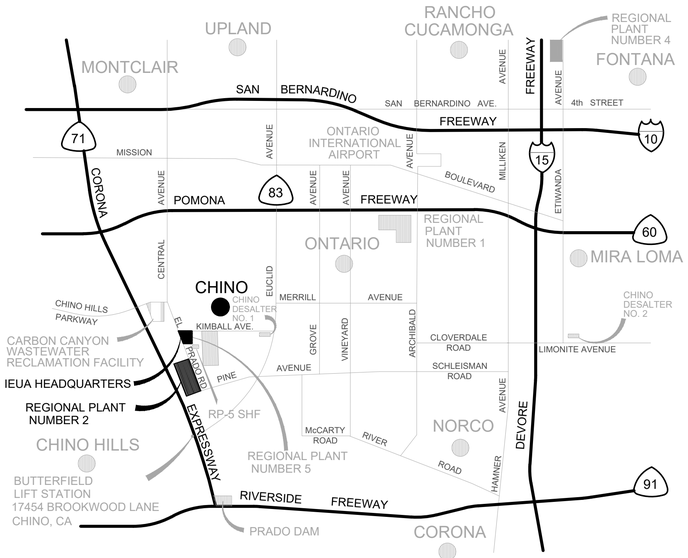
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ENGINEERING DRAWINGS

RP2 LIFT STATION – 60%



N

VICINITY MAP

NOT TO SCALE

Inland Empire Utilities Agency

A MUNICIPAL WATER DISTRICT

REGIONAL WATER RECYCLING PLANT NO. 5 OFFSITE FACILITIES PROJECTS RP-2

PROJECT NO. EN19001.03

DATE: OCTOBER 2023

60% SUBMITTAL



N

PROJECT LOCATION MAP

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DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.1 General\Work\RP-2 Lift Station\G-01 COVER SHEET.dwg
DATE: Oct 18, 2023 12:14pm USER: p0045935
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PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

Designed	GM	10/2023
Drawn	GM	10/2023
Checked	JLM	10/2023
		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
0	10/2023	GM	SK	60% SUBMITTAL

RECOMMENDED BY:

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SCALE
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Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

COVER SHEET

SHEET G-01
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

GENERAL

G-01	COVER SHEET
G-02	DRAWING INDEX
G-03	SYMBOLS AND GENERAL ABBREVIATIONS
G-04	PIPE SCHEDULE SHEET 1
G-05	PIPE SCHEDULE SHEET 2

CIVIL

CG-21	TYPICAL CIVIL DETAILS 1
CG-22	TYPICAL CIVIL DETAILS 2
CH-02	RP-2 LIFT STATION PAVING, GRADING AND YARD PIPING PLAN
CP-20	FORCE MAIN PROFILES

STRUCTURAL

62SD-01	RP-2 LIFT STATION EXISTING WET WELL DEMOLITION PLAN
62S-01	RP-2 LIFT STATION BOTTOM AND TOP PLANS
62S-02	RP-2 LIFT STATION SECTIONS
62S-03	RP-2 LIFT STATION SECTIONS
62S-04	RP-2 LIFT STATION SECTION
62S-10	RP-2 ELECTRICAL PLATFORM FOUNDATION AND PLATFORM FRAMING PLANS
62S-11	RP-2 ELECTRICAL PLATFORM SECTIONS
62S-12	RP-2 ELECTRICAL PLATFORM SECTIONS

MECHANICAL

M-01	GENERAL NOTES
M-02	PUMP AND VALVE SCHEDULES
M-03	MECHANICAL STANDARD DETAILS SHEET, 1
M-04	MECHANICAL STANDARD DETAILS SHEET, 2
M-05	MECHANICAL STANDARD DETAILS SHEET, 3
M-06	MECHANICAL STANDARD DETAILS SHEET, 4
62MD-01	RP-2 LIFT STATION DEMOLITION PLAN
62MD-02	RP-2 LIFT STATION DEMOLITION SECTION
62M-01	RP-2 LIFT STATION PLAN
62M-02	RP-2 LIFT STATION SECTIONS

ELECTRICAL

E-01	ELECTRICAL SYMBOLS AND LEGEND
E-02	ELECTRICAL GENERAL NOTES & ABBREVIATIONS
E-03	RP-2 LIFT STATION ELECTRICAL SINGLE LINE DIAGRAM
E-04	BUTTERFIELD FORCE MAIN PLAN AND PROFILE 4 STA 27+00 TO STA 38+60
E-05	BUTTERFIELD FORCE MAIN PLAN AND PROFILE 5 STA 38+60 TO STA 50+20.12
E-06	ELECTRICAL CONTROL SCHEMATICS LIFT PUMP
62E-01	RP-2 LIFT STATION ELECTRICAL PLAN
ED-01	RP-2 LIFT STATION ELECTRICAL SINGLE LINE DIAGRAM (DEMOLITION)
ED-02	RP-2 LIFT STATION ELECTRICAL DEMOLITION PLAN

INSTRUMENTATION

I-01	INSTRUMENTATION LEGEND
I-02	INSTRUMENTATION LEGEND
62I-01	RP-2 LIFT STATION P&ID

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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

DRAWING INDEX

SHEET G-02
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

GENERAL SYMBOLS

- AGGREGATE BASE SURFACE
- DRAIN ROCK
- GRAVEL SURFACE PEA GRAVEL
- AGGREGATE BASE
- ASPHALT CONCRETE PAVING
- NEW CONCRETE
- MASONRY OR CONCRETE BLOCK
- GRATING
- CHECKER PLATE
- STEEL
- ALUMINUM
- WOOD
- OPENING OR DEPRESSION IN SLAB OR WALL
- 1095 S.46 EG — SURVEYED POINT
- 286 — EXISTING CONTOUR
- 286 — FINISHED GRADE CONTOUR
- GROUND LINE
- BUSHES OR TREE LINE
- SHRUBS OR TREE
- S — EXISTING SEWER LINE
- T — EXISTING TELEMETRY OR TELEPHONE LINE
- G — EXISTING GAS LINE
- W — EXISTING WATER LINE
- SD — EXISTING STORM DRAIN
- E — EXISTING ELECTRICAL CONDUIT OR DUCT BANK
- FLOW LINE
- PROPERTY LINE
- EXISTING FENCE
- NEW FENCE
- RIDGE LINE
- CHANGE IN PIPE MATERIAL
- RAILING
- TO BE DEMOLISHED
- TO BE ABANDONED
- TO BE MODIFIED
- TOP / TOE — CUT OR FILL SLOPE TO BE CONSTRUCTED
- ℄ — CENTERLINE
- Ø — DIAMETER
- ∠ — ANGLE
- @ — AT
- Δ — DEFLECTION ANGLE
- 293.90 FG — FINISHED ELEVATION
- 4"-D — PIPE CALLOUT (SEE PIPING SCHEDULE)
- UNION
- REDUCER
- ECCENTRIC REDUCER

- C.B. D.I. — CATCH BASIN OR DRAIN INLET
- SB-1 — TEST BORINGS (SB OR B) DRILL HOLE (DH)
- B.M. — BENCH MARK
- HORIZONTAL AND VERTICAL CONTROL POINT
- W.M. — WATER METER
- G.M. — GAS METER
- COTG — CLEAN OUT TO GRADE
- TP, PP, OR LP — TELEPHONE, POWER OR LIGHT POLE
- GUY — GUY WIRE
- FH — FIRE HYDRANT
- MH — MANHOLE
- SLEEVE TYPE FLEXIBLE COUPLING
- GROOVED TYPE COUPLING
- HOSE COUPLING
- HOSE BIBB
- NEW PIPELINE (12"Ø AND LARGER)
- NEW PIPELINE (SMALLER THAN 12"Ø)

NOTE:

1. SEE DWGS. GH-01, GP-01, AND I-01 FOR ADDITIONAL SYMBOLS.

GENERAL ABBREVIATIONS

AB	ANCHOR BOLT OR AGGREGATE BASE
ABAN	ABANDONED
AC	ASPHALT CONCRETE
ADDL	ADDITIONAL
AL	ALUMINUM
APPROX	APPROXIMATE
BF	BLIND FLANGE
BFV	BUTTERFLY VALVE
BC	BEGINNING OF CURVE
BCR	BEGIN CURB RETURN
BLDG	BUILDING
BO	BLOWOFF
BOS	BOTTOM OF STEEL
BET	BETWEEN
BOD	BOTTOM OF DUCT BANK
BOT	BOTTOM
BOW	BACK OF WALL
BM	BENCH MARK, OR BEAM
BV	BALL VALVE
BVC	BEGIN VERTICAL CURVE
CAB	CRUSHED AGGREGATE BASE
CALTRANS	CALIFORINA DEPARTMENT OF TRANSPORTATION
CB	CATCH BASIN, COMMUNICATION BOX
CBC	CALIFORNIA BUILDING CODE
C/C	CENTER TO CENTER
CD	CONDENSATE DRAIN
CFM	CUBIC FEET PER MINUTE
CHKD	CHECKERED
CJ	CONSTRUCTION JOINT
CI	CAST IRON
CIRC	CIRCULAR
CL, ℄	CENTER LINE
CL	CLASS OR CHAIN LINK FENCE
CLR	CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CML&C	CEMENT MORTAR LINED & COATED
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
COL	COLUMN
CON	CONCENTRIC
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CP	CONTROL POINT AND COORDINATE POINT
CPLG	COUPLING
CTRL	CONTROL
CTSK	COUNTERSUNK
CU	CUBIC
C&G	CURB AND GUTTER
CV	CHECK VALVE
CYL	CYLINDER
DB	DUCT BANK
DBD	DEFERRED BOLTING DEVICE
DBL	DOUBLE
DEPT	DEPARTMENT
DET	DETAIL
DFU	DRAIN FIXTURE UNITS
DH	DRILL HOLE
DI	DRAIN INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DIA	DIAGONAL
DISCH	DISCHARGE
DMH	DRAIN MAINHOLE
DN	DOWN
DWG	DRAWING
E OR (E)	EAST/EASTING OR EXISTING
EA	EACH, EXHAUST AIR
EC	END OF CURVE
ECC	ECCENTRIC
ECMT	ENCASEMENT
ECR	END CURB RETURN
ED	EQUIPMENT DRAIN
EF	EACH FACE
EFF	EFFLUENT
EL, ELEV	ELEVATION
ELEC	ELECTRICAL
ELL, ELB	ELBOW
EMBED	EMBEDDED
EMH	ELECTRICAL MAINHOLE
EP	EDGE OF PAVEMENT
EQ	EQUAL
ES	EACH SIDE
EVC	END VERTICAL CURVE
EW	EACH WAY
EX, EXIST, (E)	EXISTING
EXP JT	EXPANSION JOINT
FCA	FLANGED COUPLING ADAPTER
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FDB	FLOW DISTRIBUTION BOX
FF	FINISH FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT
FIN	FINISH
FJB	FLOW JUNCTION BOX
FL	FLOW LINE
FLEX	FLEXIBLE
FLG	FLANGE
FLR	FLOOR
FM	FORCE MAIN
FOW	FRONT OF WALL
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FINISH SURFACE OR FLOOR SINK
FT	FOOT OR FEET
FTG	FOOTING
G	GAS
GA	GAGE
GAL	GALLONS
GALV	GALVANIZED
GB	GRADE BREAK
GEN	GENERAL
GL	GROUND LINE
GPM	GALLONS PER MINUTE
GPD	GALLONS PER DAY
GR	GRADE
GRTG	GRATING
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
HB	HOSE BIBB
HDG	HOT-DIPPED GALVANIZED
HGL	HYDRAULIC GRADE LINE
HH	HANDHOLE
HORIZ	HORIZONTAL
HP	HORSEPOWER, HIGH PRESSURE, OR HIGH POINT
HSS	HOLLOW STRUCTURAL SECTION
HWL	HIGH WATER LEVEL
HYDRO	HYDROPNEUMATIC
IF	INSIDE FACE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCHES
INV	INVERT
IRR	IRRIGATION
JT	JOINT
L	LENGTH OF CURVE OR LENGTH
LCP	LOCAL CONTROL PANEL
LG	LENGTH OR LONG
LL/BB	LONG LEGS BACK TO BACK
LLH	LONG LEGS HORIZONTAL
LLV	LONG LEGS VERTICAL
LP	LOW PRESSURE, LOW POINT, OR LIGHT POLE
LR	LONG RADIUS
LWL	LOW WATER LEVEL
MAX	MAXIMUM
MB	MACHINED BOLT
MGD	MILLION GALLONS PER DAY
MTRL	MATERIAL
MH	MANHOLE
MIN	MINIMUM
MFR'S	MANUFACTURER'S
MO	MASONRY OPENING
N, (N)	NORTH/NORTHING OR NEW
NC	NORMALLY CLOSED
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN, NUMBER
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OVERFLOW OR OUTSIDE FACE
OPER	OPERATED OR OPERATOR
OPNG	OPENING
PB	PULL BOX, POWER BOX
PC	POINT OF CURVE (BEGIN CURVE), PIECE
PCC	PORTLAND CEMENT CONRETE
PGRM	PROGRAM
PL	PLATE OR PROPERTY LINE
PI	POINT OF INTERSECTION
PIV	POST INDICATOR VALVE
PLBG	PLUMBING
PLC	PROGRAMMABLE LOGIC CONTROLLER
PLCS	PLACES
POC	POINT OF CONNECTION
PP	POWER POLE
PRESS	PRESSURE
PRV	PRESSURE REGULATING VALVE
PSI	POUNDS PER SQUARE INCH
PSV	PRESSURE RELIEF VALVE
PS	PUMP STATION
PT	POINT OF TANGENCY, POINT
PW	POTABLE WATER
PV	PLUG VALVE
PVC	POLYVINYL CHLORINE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
R OR (R)	RADIUS, RETURN OR RIDGE
RA	RETURN AIR
RAD	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REBAR	REINFORCEMENT BARS
RED	REDUCER
REF	REFERENCE
REINF	REINFORCING, REINFORCEMENT
REQ'D	REQUIRED
RET	RETURN
REV	REVISION
R/W	RIGHT-OF-WAY
S	SOUTH, SLOPE OR SEWER
SA	SAMPLE, SUPPLY AIR
SAN	SANITARY SEWER
SB	SIGNAL PULL BOX
SCH	SCHEDULE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SECT	SECTION
SF	SQUARE FOOT
SHT	SHEET
SIM	SIMILAR
SL/BB	SHORT LEG BACK TO BACK
SLV	SHORT LEG VERTICAL
SMH	SEWER MANHOLE
SOV	SHUT OFF VALVE
SP	STATIC PRESSURE
SPEC	SPECIFICATIONS OR SPECIAL
SQ	SQUARE
SS	STAINLESS STEEL OR SANITARY SEWER
STA	STATION
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRUCT	STRUCTURE OR STRUCTURAL
SUP	SUPPORT
SYM	SYMMETRICAL
SW	SEAL WATER SWITCH OR SERVICE WATER
SWBD	SWITCHBOARD
T	TANGENT LENGTH OR TELEPHONE
T&B	TOP & BOTTOM
TC	TOP OF CURB
TEL	TELEPHONE
TEMP	TEMPORARY
TG	TOP OF GUTTER OR TOP OF GRATE
THK	THICK
TOC	TOP OF CONCRETE
TOF	TOP OF FILL, TOP OF FLOOR
TOG	TOP OF GRATING
TOP	TOP OF PIPE
TOS	TOP OF STEEL
TS	THICKENED SLUDGE, TOP OF SLOPE
TW	TOP OF WALL
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UNKN	UNKNOWN
V	VENT
VAR	VARIOUS, VARIES
VLT	VAULT
VERT	VERTICAL
VPI	VERTICAL POINT OF INFLECTION
VTR	VENT THROUGH ROOF
W	WEST, WATER, WIDTH, WIDE
W/	WITH (PREFIX)
W/O	WITHOUT (PREFIX)
WC	WATER COLUMN
WCO	WALL CLEAN OUT
WH	WATER HEATER
WS	WATER SURFACE
YH	YARD HYDRANT
WP	WORK POINT
WS	WATER SURFACE, WATERSTOP
WSFU	WATER SUPPLY FIXTURE UNITS
WSP	WELDED STEEL PIPE
WT	WEIGHT
WWF	WELDED WIRE FABRIC
XFRM	TRANSFORMER
YD	YARD

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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

SYMBOLS AND GENERAL ABBREVIATIONS

SHEET G-03
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

TABLE 1 - PIPING SCHEDULE

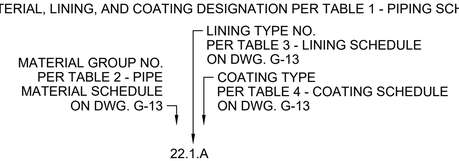
ITEM NO.	PROCESS FLUID ABBREVIATION	PROCESS FLUID	PIPE MATERIAL (REFER TO PIPE MATERIAL, LINING, AND COATING SCHEDULES ON DWG. G-13)								FIELD TEST REQUIREMENTS (SEE NOTE 4)		
			EXPOSED PIPING				BURIED PIPING				MINIMUM TEST PRESSURE (PSIG)	TEST MEDIUM	LEAKAGE ALLOWANCE
			3½" & SMALLER	4" TO 6"	8" TO 12"	14" & LARGER	3½" & SMALLER	4" TO 6"	8" TO 12"	14" & LARGER			
12	D	DRAIN	12.1.C	12.1.C	12.1.C	29.1.A	12.1.A	32.1.A	32.1.A	--	25	WATER	NO LEAKAGE
25	FW	FIRE WATER (NOTE 10)	21.1.C	4.1.C	4.1.C	4.1.C	21.1.F	4.2.D	4.2.D	4.2.D	150	WATER	NOTE 4
37	OF	OVERFLOW	--	21.5.C/27.5.C/ 4.5.C	27.5.C/4.5.C	27.5.C/4.5.C	--	21.5.F/27.5.B/ 4.5.D/32.1.A	27.5.B/4.5.D/ 31.1.A/12.1.A	4.6.D	25	WATER	NO LEAKAGE
41	PD	PLANT DRAIN	12.1.C	12.1.C	12.1.C	-	12.1.A	32.1.A	32.1.A	12.1.A	NOTE 5	WATER	NOTE 3
51	RS	RAW SEWAGE	--	4.5.C	4.5.C	4.5.C/27.5.C	--	4.5.D	4.5.C	4.5.D/27.5.B	50	WATER	NO LEAKAGE
52	RW	RECYCLED WATER	12.1.A	21.5.C/27.5.C/ 4.5.C	27.5.C/4.5.C	27.5.C/4.5.C	--	21.5.F/27.5.B/ 4.5.D	27.5.B/4.5.D	27.5.B/4.5.D	50	WATER	NO LEAKAGE
56	SD	STORM DRAIN	11.1.C	1.1.D/15.1.C	1.1.D/15.1.C	1.1.D/15.1.C	16.1.A	32.1.A	32.1.A	16.1.A/19.1.A	NOTES 3 TO 5	WATER	NOTES 3 TO 5
60	SS	SANITARY SEWER	--	--	--	--	--	4.5.D/32.1.A	4.5.D/32.1.A	4.5.D/16.1.A	NOTE 6	N/A	NOTE 4
64	V	VENT	12.1.C	12.1.C	12.1.C	--	12.1.C	12.1.C	12.1.C	--	N/A	N/A	N/A
67	W1	POTABLE WATER	3.1.A/12.1.C	3.1.A/12.1.A/ 4.2.C	4.2.C/12.1.C	4.2.C	--	32.1.A	32.1.A	--	185	WATER	NOTE 4/ NOTE 7
68	W3	WATER, NON POTABLE CHLORINATED, PLANT WATER	30.1.A/12.1.C/ 24.1.A	4.2.C/12.1.C	4.2.C/12.1.C	4.2.C	12.1.A	32.1.A	32.1.A	15.1.A	150	WATER	NOTE 4
70	W1*	FIRE WATER (POTABLE WATER)	--	--	--	--	--	32.1.A	32.1.A	15.1.A	150	WATER	NOTE 4

NOTES:

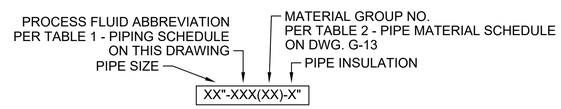
1. UNLESS OTHERWISE NOTED ON THE DRAWINGS, PIPE MATERIALS, FITTINGS, LININGS, AND COATINGS SHALL CONFORM TO THE PIPE SCHEDULES. ALSO SEE DRAWINGS AND SPECIFICATIONS FOR PLUMBING PIPING MATERIAL AND ADDITIONAL REQUIREMENTS.
2. WHERE MORE THAN ONE TYPE OF PIPE MATERIAL, LINING, AND COATING IS LISTED FOR A PARTICULAR PIPING SERVICE, ONLY THE CALLED OUT PIPE MATERIAL SHOWN ON THE CONTRACT DOCUMENTS (CIVIL/MECHANICAL DRAWINGS) SHALL BE USED. THE CONTRACTOR DOES NOT HAVE THE OPTION TO PROVIDE A DIFFERENT PIPE MATERIAL. HOWEVER THE CONTRACTOR MAY SUBMIT A REQUEST FOR PIPE MATERIAL, LINING, AND COATING SUBSTITUTION FOR APPROVAL. PROVIDE REASONING AND CREDIT (AS APPLICABLE) TO THE OWNER FOR EACH SUBSTITUTION. ALL APPROVED SUBSTITUTION SHALL BE AT NO COST TO THE OWNER.
3. WHERE THE PIPE MATERIAL GROUP CALL OUT IS MISSING, THE CONTRACTOR SHALL ALLOW FOR PIPE MATERIAL GROUP AS LISTED BELOW AND SUBMIT A REQUEST FOR PIPE MATERIAL GROUP/LINING AND COATING APPROVAL BEFORE FABRICATION. PIPE LINING AND COATING AS SHOWN IN THE PIPE SCHEDULE AS APPLICABLE FOR PROCESS FLUID IN QUESTION.
   A. PROCESS PIPES WITHIN MBR STRUCTURE:
      - PIPE SIZES ½" TO 3 ½"-GROUP 30;
      - PIPE SIZES 4" AND LARGER-GROUP 29.
   B. PROCESS PIPES OUTSIDE OF MBR STRUCTURE:
      - PIPE SIZES ½" TO 3 ½" GROUP 30;
      - PIPE SIZES 4" TO 6" GROUP 4;
      - PIPE SIZES 8" TO 12" GROUP 4;
      - PIPE SIZES 14" TO 30" GROUP 4;
      - PIPE SIZES 36" AND LARGER GROUP 27.
   C. CHEMICAL PIPES:
      - ALL PIPE SIZES ABOVE GRADE-GROUP 10;
      - ALL PIPE SIZES BELOW GRADE-GROUP 14.
4. LEAKAGE ALLOWANCE SHALL BE AS SPECIFIED IN SPECIFICATION SECTIONS 02762 AND 02763 FOR PRESSURE AND GRAVITY PIPELINES, RESPECTIVELY.
5. SEE SPECIFICATION SECTIONS 02762 AND 02763 FOR FIELD TEST PROCEDURES AND ADDITIONAL TEST REQUIREMENTS.
6. STATIC WATER TEST WITH A TEST HEAD OF A MINIMUM OF 5 FEET ABOVE THE HIGH POINT OF THE PIPELINE UNLESS OTHERWISE SPECIFIED.
7. INSPECTION AND TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE PLUMBING CODE.
8. WHERE A PIPE PENETRATES THROUGH THE WALL OF A STRUCTURE AND EXTENDS INTO THE SOIL OUTSIDE, TWO AXIAL RESTRAINED FLEXIBLE JOINTS SHALL BE PROVIDED AT THE BURIED PORTION OF THE PIPE WHETHER OR NOT SUBJECT JOINTS ARE SPECIFICALLY SHOWN ON THE CONTRACT DRAWINGS.
   a. STEEL PIPES SHALL BE PROVIDED WITH FLEXIBLE COUPLINGS IN COMPLIANCE WITH SECTION 02611, DETAILS 1 & 2 DWG. CG-14 AND AWWA M11 REQUIREMENTS.
   b. DUCTILE IRON PIPES SHALL BE PROVIDED WITH FLEXIBLE JOINTS IN COMPLIANCE WITH SECTION 02630 AND NOTE 54 DWG. CG-01.
   c. PVC/HDPE 12" AND SMALLER AND STEEL PIPES 4" AND SMALLER SHALL BE PROVIDED WITH AXIAL RESTRAINED FLEXIBLE COUPLINGS IN COMPLIANCE WITH DETAILS 5 & 6/CG-19, ROMAC INDUSTRIES ARMORLOCK, OR EQUAL. FLEXIBLE COUPLING SHALL HAVE 316 STAINLESS STEEL HOUSING.
   d. ALL JOINTS/COUPLINGS RESILIENT GASKET/SEALS RESILIENT MATERIAL SHALL BE CHEMICALLY INNERT/RESSISTANT TO THE FLUID CONVEYED THROUGH THE PIPE.
9. FLEXIBLE JOINTS OF BURIED PIPES THAT ARE SUBJECT TO PRESSURE SHALL BE HARNESSED FOR INTERNAL PRESSURES NOT LESS THAN THE TEST PRESSURES SPECIFIED IN TABLE 1. THRUST BLOCKS ARE NOT ACCEPTABLE.
10. INSPECTION AND TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS.
11. PIPING MATERIAL SHALL BE IN ACCORDANCE WITH APPLICABLE NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS.
12. ALL BURIED CHEMICAL CONVEYANCE PIPES SHALL BE DOUBLE CONTAINED IN COMPLIANCE WITH SECTION 15000, PARAGRAPH 2.15 REQUIREMENTS.
13. THE CONTRACTOR MAY PROVIDE EITHER FIBERGLASS DUCT, GROUP 5 WITH FIBERGLASS DAMPERS IN COMNPLIANCE WITH SECTION 11870 REQUIREMENTS OR STAINLESS STEEL DUCT, GROUP 29 WITH STAINLESS STEEL DAMPERS IN COMPLIANCE WITH SECTION 11870 REQUIREMENTS.
14. MAX. RECOMMENDED PRESSURE BY DOUBLE WALL EXHAUST DUCT MANUFACTURER.

1. PIPE MATERIAL, LINING, AND COATING DESIGNATION PER TABLE 1 - PIPING SCHEDULE ON THIS DRAWING:

LEGEND:



2. TYPICAL PIPE DESIGNATION ON DRAWINGS:



DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.1 General\Work\RP-2 Lift Station\G-04 PIPE SCHEDULE - 1.dwg USER: p0045935
DATE: Oct 18, 2023 12:57pm XREFS: IEUA Border

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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

PIPE SCHEDULE SHEET 1

SHEET G-04
SHEET NO. OF 000
PROJECT NO.
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TABLE 2 - PIPE MATERIAL SCHEDULE

GROUP NO.	PIPE	FITTINGS
1	CAST IRON SOIL, ANSI/ASTM A74, SERVICE WEIGHT, BELL AND SPIGOT OR HUBLESS.	CAST IRON SOIL, ANSI/ASTM A74, SERVICE WEIGHT, BELL AND SPIGOT OR HUBLESS.
3	COPPER TUBE, TYPE K, SOFT TEMPERED WHERE BURIED, HARD TEMPERED WHERE EXPOSED, IN COMPLIANCE WITH SECTION 15010.	WROUGHT COPPER OR CAST BRONZE, SOLDER JOINTS, CLASS 150#, OR COMPRESSION FITTINGS, IN COMPLIANCE WITH SECTION 15010.
4	DUCTILE IRON EXPOSED - SPECIAL THICKNESS CLASS 53, FOR GROOVED PIPE ENDS, THICKNESS CLASS IN COMPLIANCE WITH SECTION 02630 FOR FLANGED PIPE ENDS. BURIED - ANSI/AWWA C151/AS1.51, BELL AND SPIGOT, MECHANICAL JOINTS, MECHANICAL COUPLINGS OR FLANGED.	DUCTILE IRON EXPOSED - SPECIAL THICKNESS CLASS 53, FOR GROOVED FITTINGS, THICKNESS CLASS IN COMPLIANCE WITH SECTION 02630 FOR FLANGE ADAPTORS. BURIED - ANSI/AWWA C110/A21.10, BELL AND SPIGOT, MECHANICAL JOINTS, MECHANICAL COUPLINGS OR FLANGED, IN COMPLIANCE WITH SECTION 02630.
11	POLYVINYL CHLORIDE (PVC) SCHEDULE 40, IN COMPLIANCE WITH SECTION 15016.	POLYVINYL CHLORIDE (PVC) SCHEDULE 40, SOLVENT WELDED JOINTS, IN COMPLIANCE WITH SECTION 15016.
12	POLYVINYL CHLORIDE (PVC) SCHEDULE 80, IN COMPLIANCE WITH SECTION 15016.	POLYVINYL CHLORIDE (PVC) SCHEDULE 80, SOLVENT WELDED JOINTS, IN COMPLIANCE WITH SECTION 15016.
15	POLYVINYL CHLORIDE (PVC) AWWA C900 BELL AND SPIGOT, RUBBER GASKET JOINTS IN COMPLIANCE WITH SECTION 02646.	AXIAL RESTRAINED DUCTILE IRON AWWA C110, FOR POLYVINYL CHLORIDE PIPE, IN COMPLIANCE WITH SECTIONS 02630 AND 02645.
16	POLYVINYL CHLORIDE (PVC) ASTM D3034 AND F679 FOR GRAVITY SEWER SYSTEM, BELL AND SPIGOT, IN COMPLIANCE WITH SECTIONS 02644 AND 02645.	POLYVINYL CHLORIDE (PVC) FOR GRAVITY SEWER SYSTEM, BELL AND SPIGOT, IN COMPLIANCE WITH SECTIONS 02644 AND 02645.
19	REINFORCED CONCRETE, TONGUE AND GROOVE WITH RUBBER GASKET JOINTS, IN COMPLIANCE WITH SECTION 02616.	SAME AS GROUP NO. 27, CERAMIC EPOXY LINING PER LINING TYPE NO. 5, REINFORCED CEMENT MORTAR COATING PER COATING TYPE B.

TABLE 2 - PIPE MATERIAL SCHEDULE

GROUP NO.	PIPE	FITTINGS
21	STEEL, ASTM A53 OR A106, BLACK, SCHEDULE 40, SEAMLESS OR WELDED, IN COMPLIANCE WITH SECTIONS 15000 AND 15010.	2-1/2" AND SMALLER SIZES - MALLEABLE IRON, BLACK, THREADED PER ANSI B16.3, CLASS 150# FLANGE OR STEEL, BLACK, BUTT WELDED PER ANSI B16.9, SCHEDULE 40, CLASS 150# FLANGE, IN COMPLIANCE WITH SECTIONS 15000 AND 15010. 3" AND LARGER SIZES - STEEL, BLACK, BUTT WELDED PER ANSI B16.9, SCHEDULE 40, CLASS 150# FLANGE, IN COMPLIANCE WITH SECTIONS 15000 AND 15010.
24	STEEL, ASTM A53 OR A106, BLACK, SCHEDULE 80, SEAMLESS, IN COMPLIANCE WITH SECTIONS 15000 AND 15010.	FORGED STEEL, BLACK, SOCKET WELDED OR THREADED PER ANSI B16.11, CLASS 3000# OR STEEL PER ANSI B16.9, BUTT WELDED, SCHEDULE 80.
27	STEEL, FABRICATED PER AWWA C200, IN COMPLIANCE WITH SECTIONS 02611 AND 02612.	STEEL, FABRICATED PER AWWA C200 AND C208, IN COMPLIANCE WITH SECTION 02611 AND 02612.
29	STAINLESS STEEL 316L SCHEDULE 10S, IN COMPLIANCE WITH SECTION 15010.	STAINLESS STEEL 316L SCHEDULE 10S, IN COMPLIANCE WITH SECTION 15010.
30	STAINLESS STEEL 316L SCHEDULE 40S FOR PIPES SIZES 10" AND SMALLER, SCHEDULE STANDARD FOR PIPES SIZES 12" AND LARGER, IN COMPLIANCE WITH SECTION 15010.	STAINLESS STEEL 316L SCHEDULE 40S FOR PIPES SIZES 10" AND SMALLER, SCHEDULE STANDARD FOR PIPES SIZES 12" AND LARGER, IN COMPLIANCE WITH SECTION 15010.
31	FIBERGLASS REINFORCED POLYMER MORTAR (FRPM) JACKING PIPE, ASTM D3262, IN COMPLIANCE WITH SECTION 02656.	FIBERGLASS REINFORCED POLYMER MORTAR (FRPM) JACKING FITTINGS, ASTM D3262, IN COMPLIANCE WITH SECTION 02656.
32	HDPE (HIGH DENSITY POLYETHYLENE), AWWA C906, IN COMPLIANCE WITH SECTION 02642, DR 32,5 FOR GRAVITY LINES AND DR 13.5 FOR PRESSURE LINES.	HDPE (HIGH DENSITY POLYETHYLENE), ASTM C906, FUSION WELDED FITTINGS WITH FLANGED ADAPTORS FOR VALVES AND EQUIPMENT CONNECTION, IN COMPLIANCE WITH SECTION 02642

TABLE 3 - LINING SCHEDULE

TYPE NO.	LINING
1	BARE UNLINED.
2	CEMENT MORTAR LINING, DUCTILE IRON PIPES AND FITTINGS, IN COMPLIANCE WITH SECTION 02630. CEMENT MORTAR LINING, STEEL PIPES AND FITTINGS PER AWWA C205, IN COMPLIANCE WITH SECTIONS 02651 AND 02653.
3	EPOXY LINING PER AWWA C210, IN COMPLIANCE WITH SECTION 09800, SYSTEM 108A.
4	AMINE EPOXY LINING PER AWWA C203, IN COMPLIANCE WITH SECTION 09800, SYSTEM 103.
5	CERAMIC EPOXY LINING PER AWWA C210, IN COMPLIANCE WITH SECTION 09800, SYSTEM 109B.
6	GLASS LINING, IN COMPLIANCE WITH SECTION 15000.

TABLE 4 - COATING SCHEDULE

TYPE	COATING
A	BARE UNCOATED.
B	LIQUID CERAMIC EPOXY IN COMPLIANCE WITH SECTION 09800, SYSTEM 109B AND AWWA C210, AND REINFORCED CEMENT MORTAR OVERCOAT IN COMPLIANCE WITH AWWA C205 AND SECTIONS 02611 & 02612 FOR STEEL PIPES.
C	EPOXY COATING PER SECTION 09800: 1. SYSTEM 4 - PVC AND GALVANIZED PIPES. 2. SYSTEM 5 AND AWWA C210 - EXPOSED METAL PIPES. 3. SYSTEM 12 - FRP PIPES AND DUCTS. 4. SYSTEM 100 - PVC PIPES IN CHLORINATED ROOM. 5. SYSTEM 108A AND AWWA C210 - BURIED METAL PIPES.
D	ZINC COATING WITH BITUMINOUS TOP COAT AND POLYWRAP IN COMPLIANCE WITH SECTION 02630.
E	AMINE EPXOY COATING PER AWWA C203 AND SECTION 09800, SYSTEM 103.
F	PVC TAPE WRAPPING PER SECTION 09800, SYSTEM 200.
G	FIELD INSTALLED INSULATION PER SECTION 15250.

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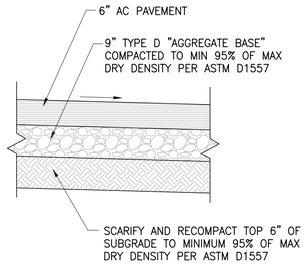
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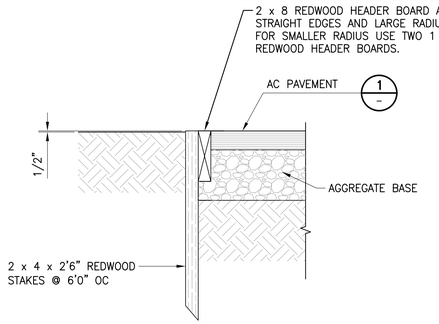
PIPE SCHEDULE SHEET 2

SHEET G-05
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

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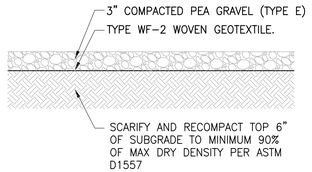


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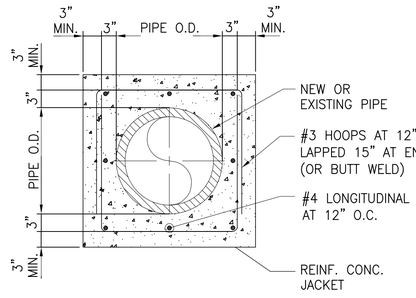


NOTE:
1. HEADER BOARDS AND STAKES SHALL BE ALL HEART REDWOOD

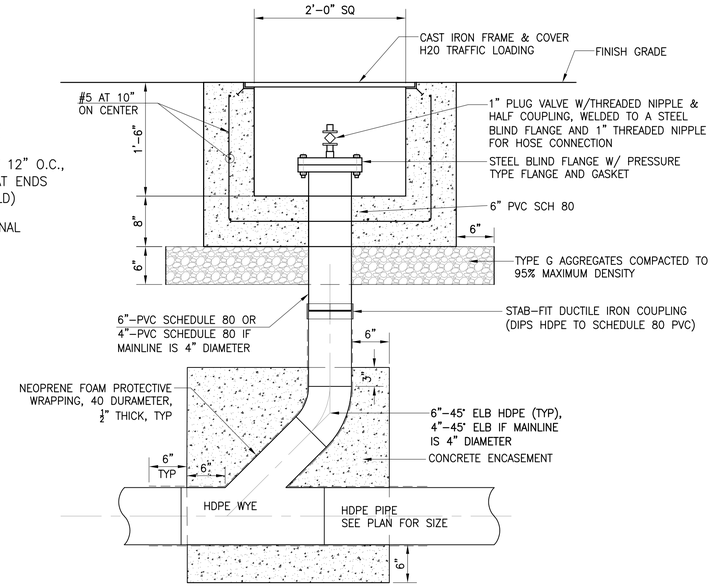
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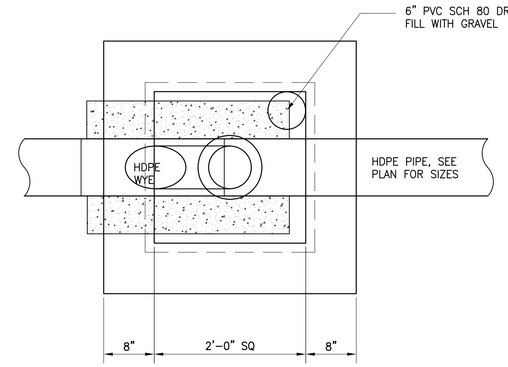
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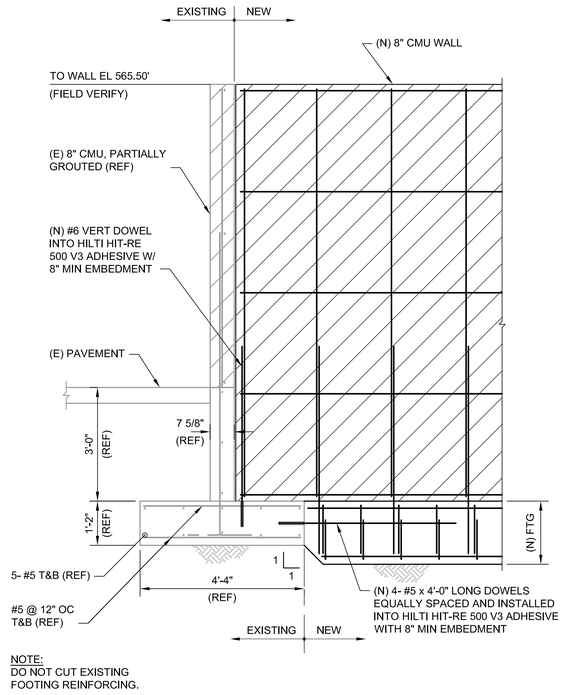


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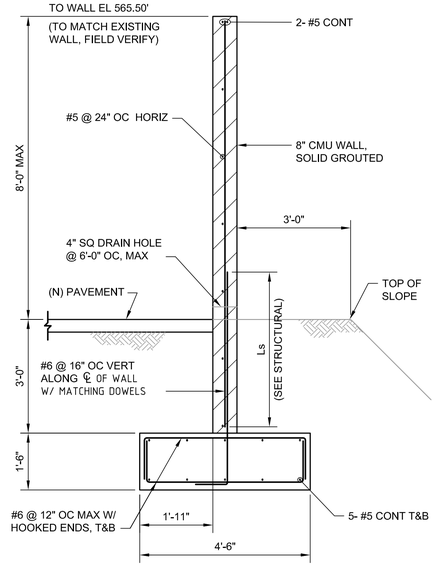
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IN–LINE PRESSURE CLEANOUT 6 VAR
SCALE: NTS



NOTE:
DO NOT CUT EXISTING FOOTING REINFORCING.

CONNECTION TO EXISTING CMU WALL FENCE 4 VAR
SCALE: NTS



NOTE:
FOR STRUCTURAL NOTES AND TYPICAL DETAILS, SEE STRUCTURAL DRAWINGS

CMU WALL FENCE 5 VAR
SCALE: NTS

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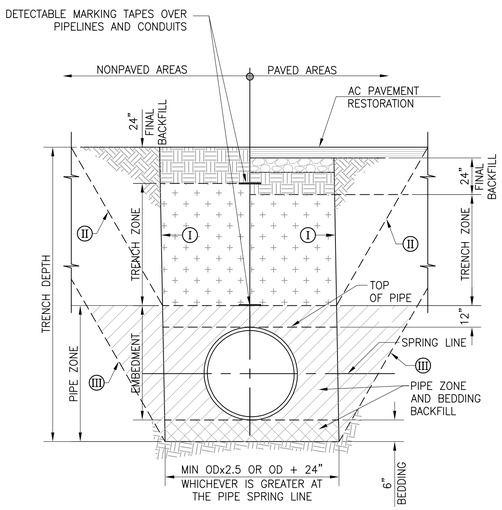
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RP–5 OFFSITE FACILITIES PROJECTS
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TYPICAL CIVIL DETAILS 1

SHEET CG–21
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NOTES:

1. FLEXIBLE PIPE REFERS TO ALL STEEL, DUCTILE IRON, AND PLASTIC PIPES.
2. DEFINITIONS OF FINAL BACKFILL, BEDDING, EMBEDMENT, PIPE AND TRENCH ZONES AND PIPE AND UTILITY BACKFILL REQUIREMENTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
3. TYPICAL TRENCH SECTIONS, (I) VERTICAL TRENCH WALLS, (II) COMBINATION OF VERTICAL AND SLOPING TRENCH WALLS, AND (III) SLOPING TRENCH WALLS, ARE TO BE USED ONLY WHERE STABLE, COMPACT SOIL CONDITIONS EXIST. IF BOULDER OR LARGE OBSTRUCTIONS ARE ENCOUNTERED, TRENCH SECTIONS MAY BE DEEPER OR WIDER THAN SHOWN; THE ENGINEER SHOULD BE ADVISED SHOULD THIS OCCUR. UNLESS SPECIFICALLY DESIGNATED ON PLANS, SLOPING TRENCH WALL SECTION (III) SHALL NOT BE USED WITHOUT APPROVAL OF THE ENGINEER.
4. TRENCH SECTIONS OTHER THAN THE TYPICAL SECTIONS SHOWN MAY BE UTILIZED PROVIDED THAT THEY COMPLY WITH APPLICABLE LOCAL, STATE (CAL–OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS. DOCUMENTATION SUPPORTING THIS COMPLIANCE AND THE PIPE DESIGN CALCULATIONS PREPARED BY A PROFESSIONAL ENGINEER SHALL BE SUBMITTED TO THE ENGINEER.
5. THE NEED FOR TRENCH PROTECTIVE SYSTEMS SHALL BE DETERMINED IN CONSIDERATION OF APPLICABLE LOCAL, (CAL–OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS AND GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
6. UNSUPPORTED VERTICAL AND/OR SLOPING TRENCH WALLS SHALL NOT BE STEEPER THAN ALLOWED BY APPLICABLE LOCAL, (CAL–OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS UNLESS SUPPORTING DOCUMENTATION IS SUBMITTED ACCORDING TO AFOREMENTIONED SAFETY STANDARDS.
7. PROTECTION SYSTEMS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE LOCAL, (CAL–OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS AND REGULATIONS. SUPPORTING DOCUMENTATION SHALL BE SUBMITTED TO THE ENGINEER REGARDING THE DESIGN OF SHORING, BRACING, SLOPING OR OTHER PROTECTION SYSTEMS AND THEIR COMPLIANCE WITH APPLICABLE LOCAL, (CAL–OSHA), AND FEDERAL (OSHA) SAFETY STANDARDS.
8. A STAIRWAY, LADDER, RAMP OR OTHER SAFE MEANS OF EGRESS SHALL BE LOCATED IN TRENCH EXCAVATIONS 4.0 FEET OR MORE IN DEPTH SO AS TO REQUIRE NO MORE THAN 25 FEET OF LATERAL TRAVEL FOR EMPLOYEES/WORKERS PER CCR, TITLE 8 SECTION 1541.
9. VOIDS LEFT WHEN REMOVING SHEETING AND SHORING SHALL BE FILLED WITH CONTROLLED LOW STRENGTH MATERIAL IN ACCORDANCE WITH SPECIFICATION SECTION 02210.
10. DETECTABLE METALLIC LOCATING TAPE SHALL BE PLACED ABOVE ALL BURIED PLASTIC PIPELINES AND OTHER PIPELINES THAT ARE NOT COMPRISED AT LEAST IN PART OF MAGNETIC COMPONENTS IN ACCORDANCE WITH THE EARTHWORK AND RESPECTIVE PIPING SECTIONS OF THE SPECIFICATIONS.
11. IF OVER–EXCAVATION DUE TO POOR FOUNDATION MATERIAL IS ORDERED BY THE ENGINEER, THE BACKFILL MATERIAL SHALL BE PROVIDED IN ACCORDANCE WITH THE EARTHWORK SECTION OF THE SPECIFICATIONS.
12. IF DURING CONSTRUCTION, THE WATER TABLE IS DISCOVERED TO BE ABOVE THE TRENCH BOTTOM, THE ENGINEER SHALL BE NOTIFIED, AND APPROPRIATE DEWATERING SHALL BE IMPLEMENTED TO LOWER THE WATER LEVEL BELOW THE TRENCH BOTTOM IN ACCORDANCE WITH THE DEWATERING REQUIREMENTS PROVIDED IN THE SPECIFICATIONS. BACKFILL MATERIAL SHALL BE PROVIDED IN ACCORDANCE WITH THE EARTHWORK SECTION OF THE SPECIFICATIONS OR AS ORDERED BY THE ENGINEER.

SECTION: TYPICAL TRENCH FOR FLEXIBLE PIPE

SCALE: NTS

1 / VAR

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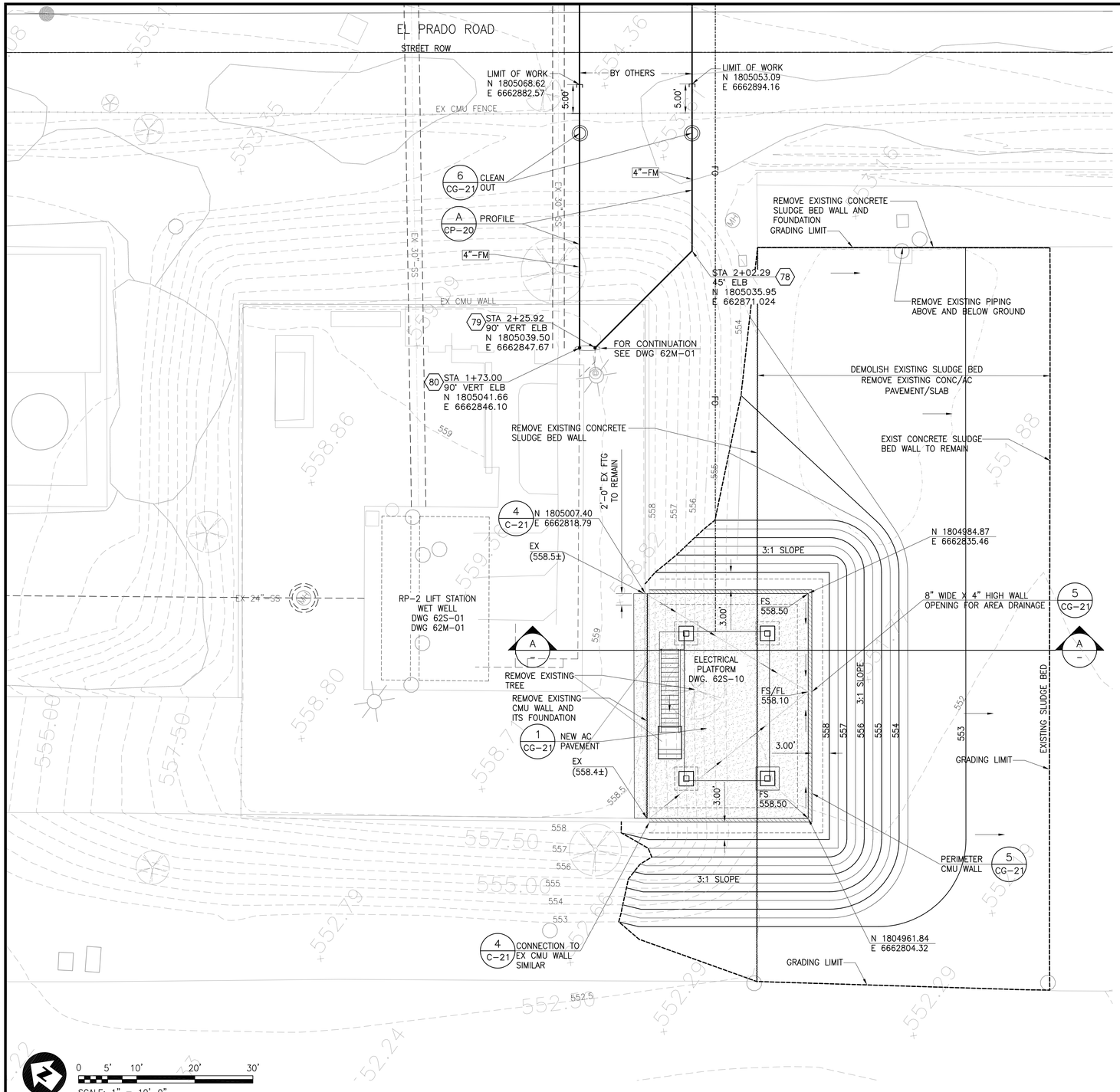
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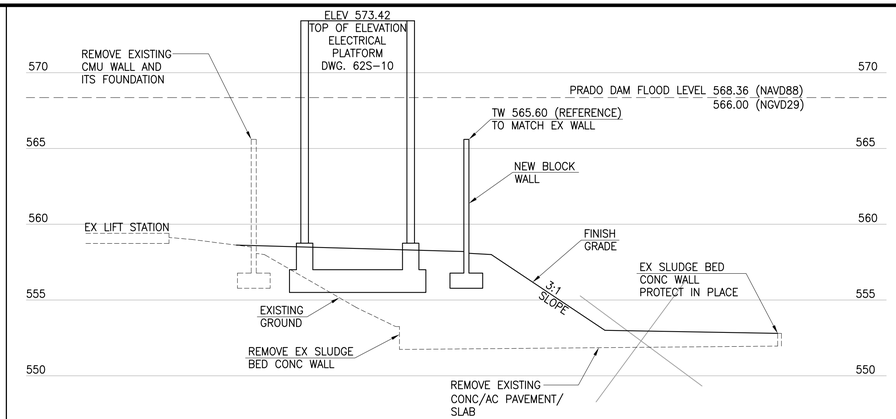
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RP–5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

TYPICAL CIVIL DETAILS 2

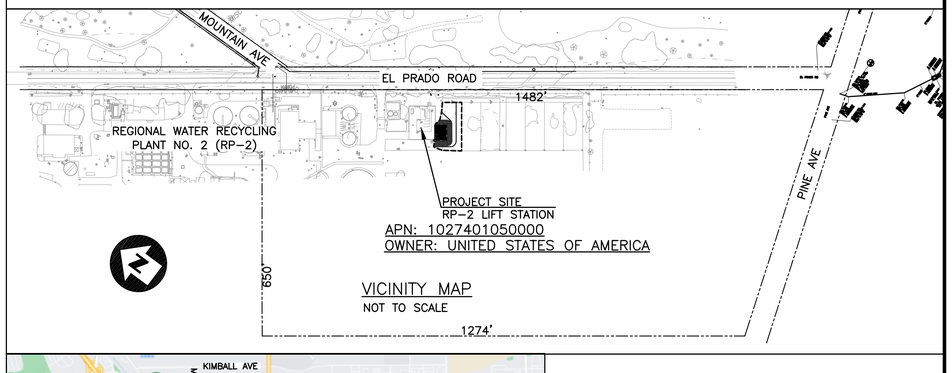
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SHEET NO. OF 000
PROJECT NO.
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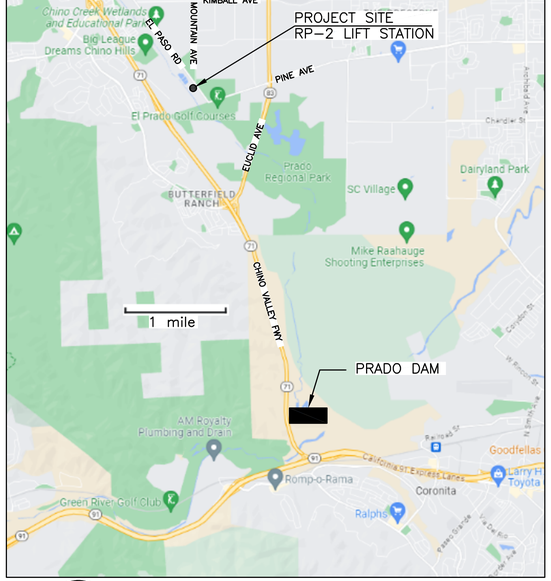
GRADING SECTION A-A

SCALE: HORIZ 1" = 10'-0"
VERT 1" = 5'-0"



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VICINITY MAP
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LOCATION MAP
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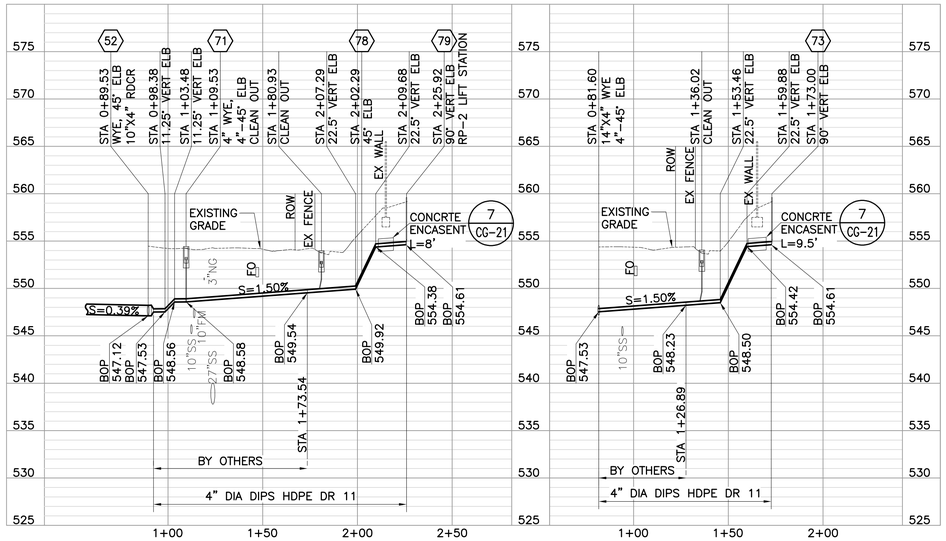
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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03
RP-2 LIFT STATION
PAVING, GRADING AND
YARD PIPING PLAN

SHEET CH-02
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.



LINE C PROFILE RP-2 LIFT STATION

A / CH-02

SCALE: HORIZ 1" = 40'-0"
VERT 1" = 8'-0"

0 4' 8' 16' 24'
SCALE: VERT 1" = 8'-0"

0 20' 40' 80' 120'
SCALE: HORIZ 1" = 40'-0"

Underground Service Alert
811
TWO WORKING DAYS BEFORE YOU DIG

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

Designed	HS	10/2023
Drawn	HS	10/2023
Checked	BL	10/2023
		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
0	10/2023	HS	SK	60% SUBMITTAL

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

PROFILES

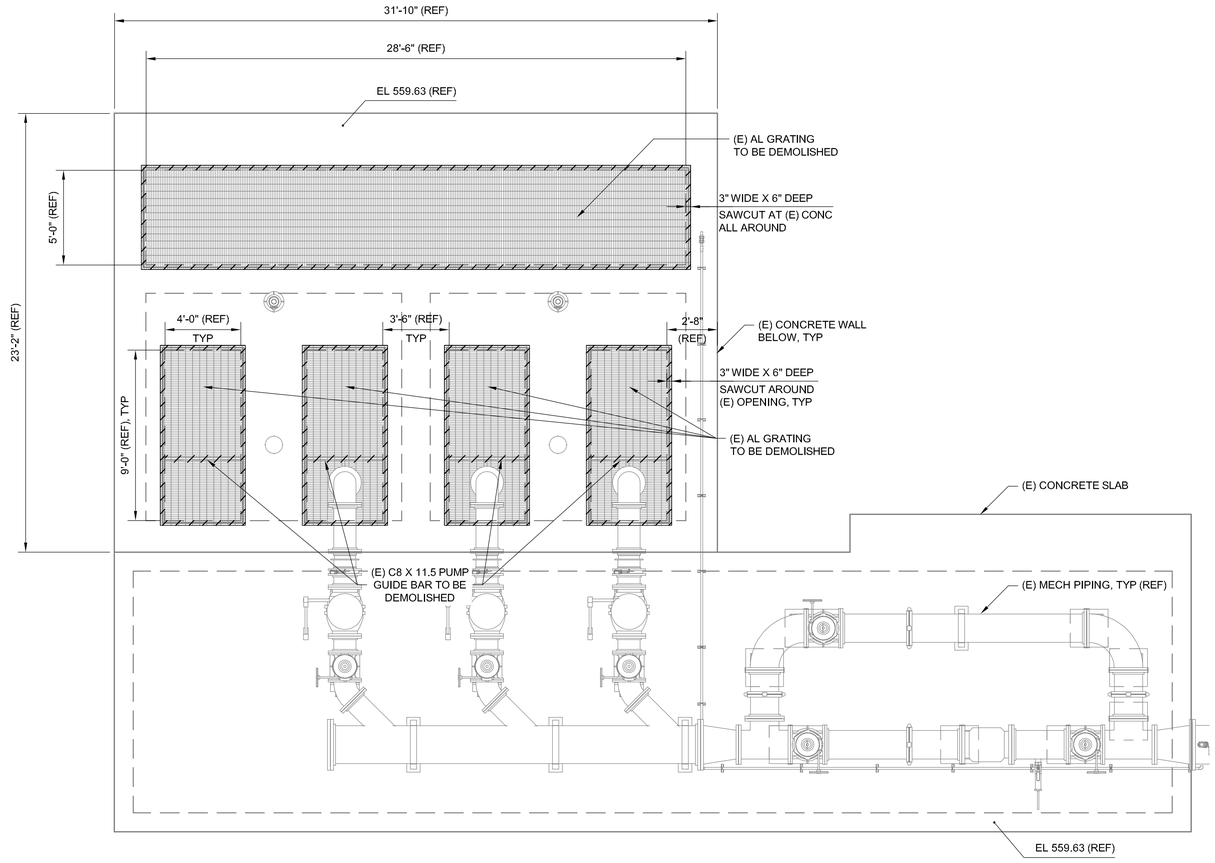
SHEET	CP-20
SHEET NO.	OF 000
PROJECT NO.	
DRAWING NO.	

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.2 Civil\WORK\LS-05-CP-20.dwg USER: 61677
DATE: Oct 18, 2023 8:22am XREFS: IEUA Border XC-MTN-FM-PROF

LEGEND:

EXISTING INSTALLATIONS TO BE DEMOLISHED

EXISTING ALUMINUM GRATING



TOP DEMOLITION PLAN AT TOC EL 559.63

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

0' 1' 2' 4' 8' 12'

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

DWG: W:\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.5 StructuralWork\62SD-01 - DEMOLITION PLANS.dwg USER: p008814D
DATE: Oct 16, 2023 10:50am XREFS: IEUA Border 62SD-01_TOP DEMO PLAN

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Checked	MA	10/2023 Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
0	10/2023	MC	MA	60% SUBMITTAL

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
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0" 1"

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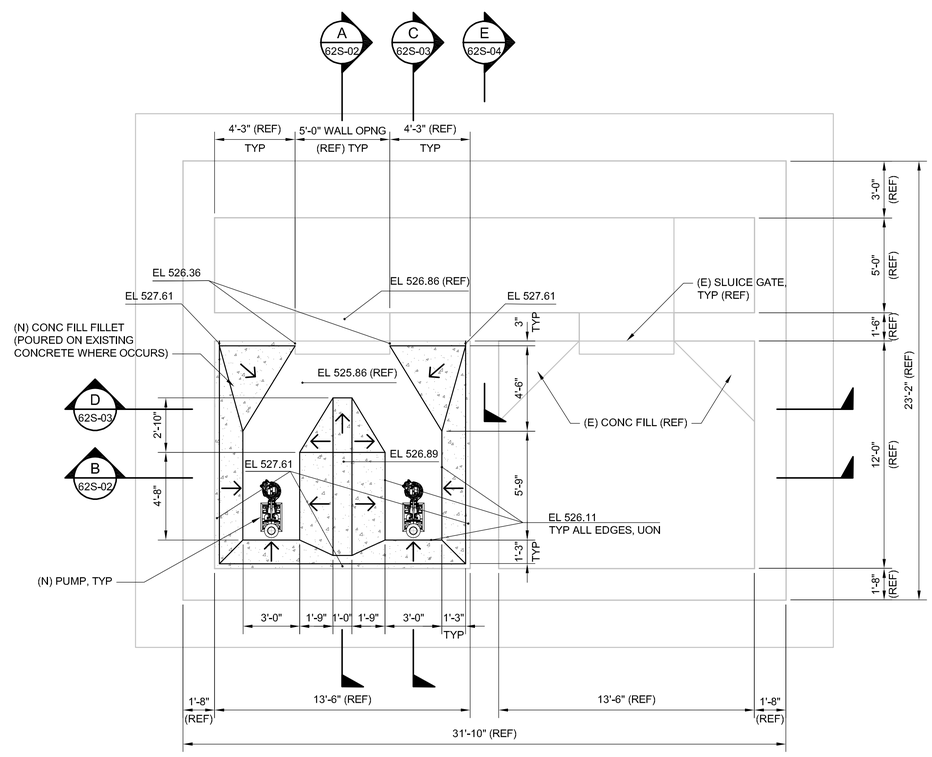
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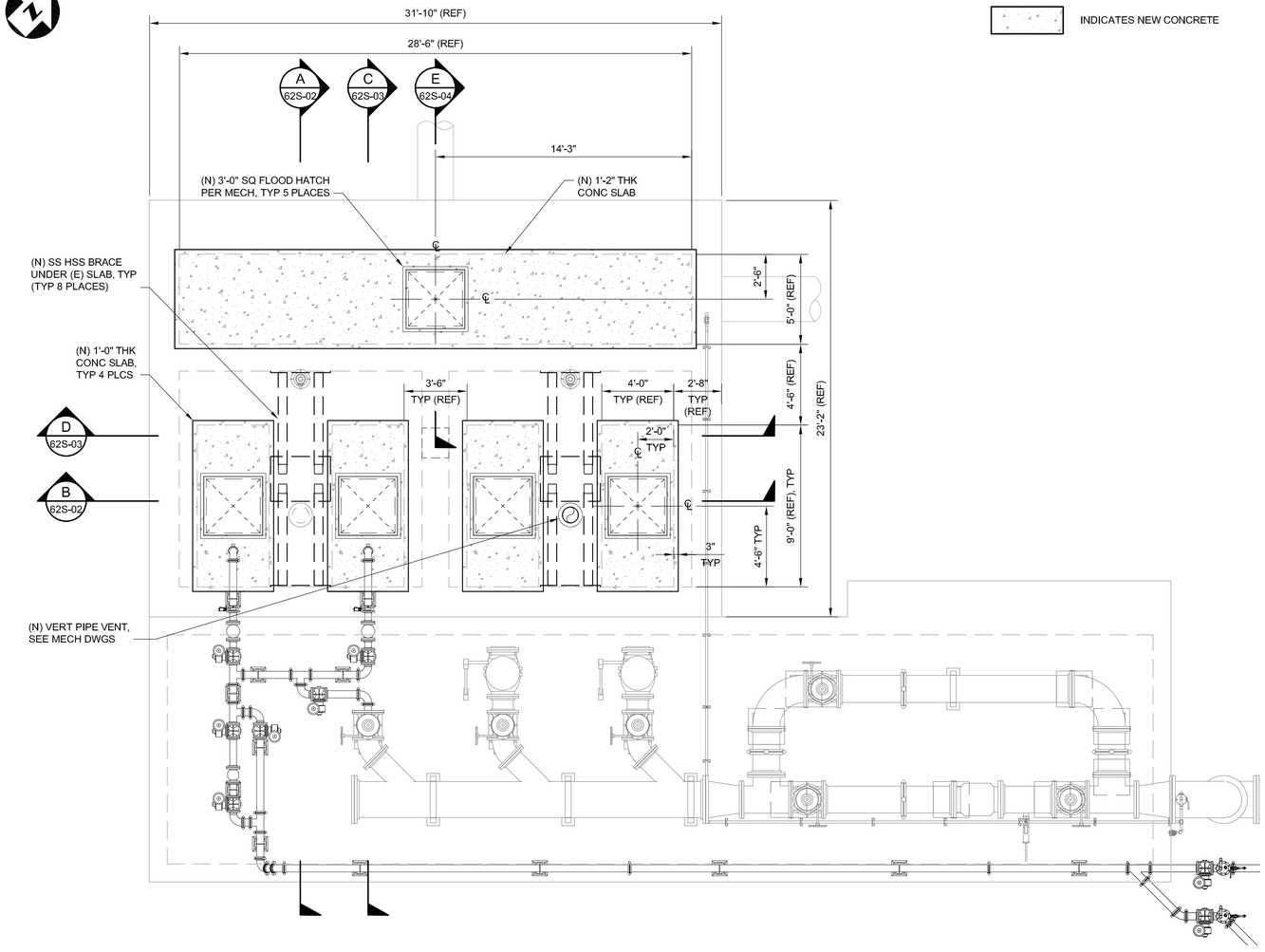
RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03
RP-2 LIFT STATION
EXISTING WETWELL
DEMOLITION PLAN

SHEET 62SD-01
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.



BOTTOM PLAN AT TOC EL 525.86, UON

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



TOP PLAN AT TOC EL 599.63

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

LEGEND:

INDICATES NEW CONCRETE

0' 1' 2' 4' 8' 12'

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

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		Date

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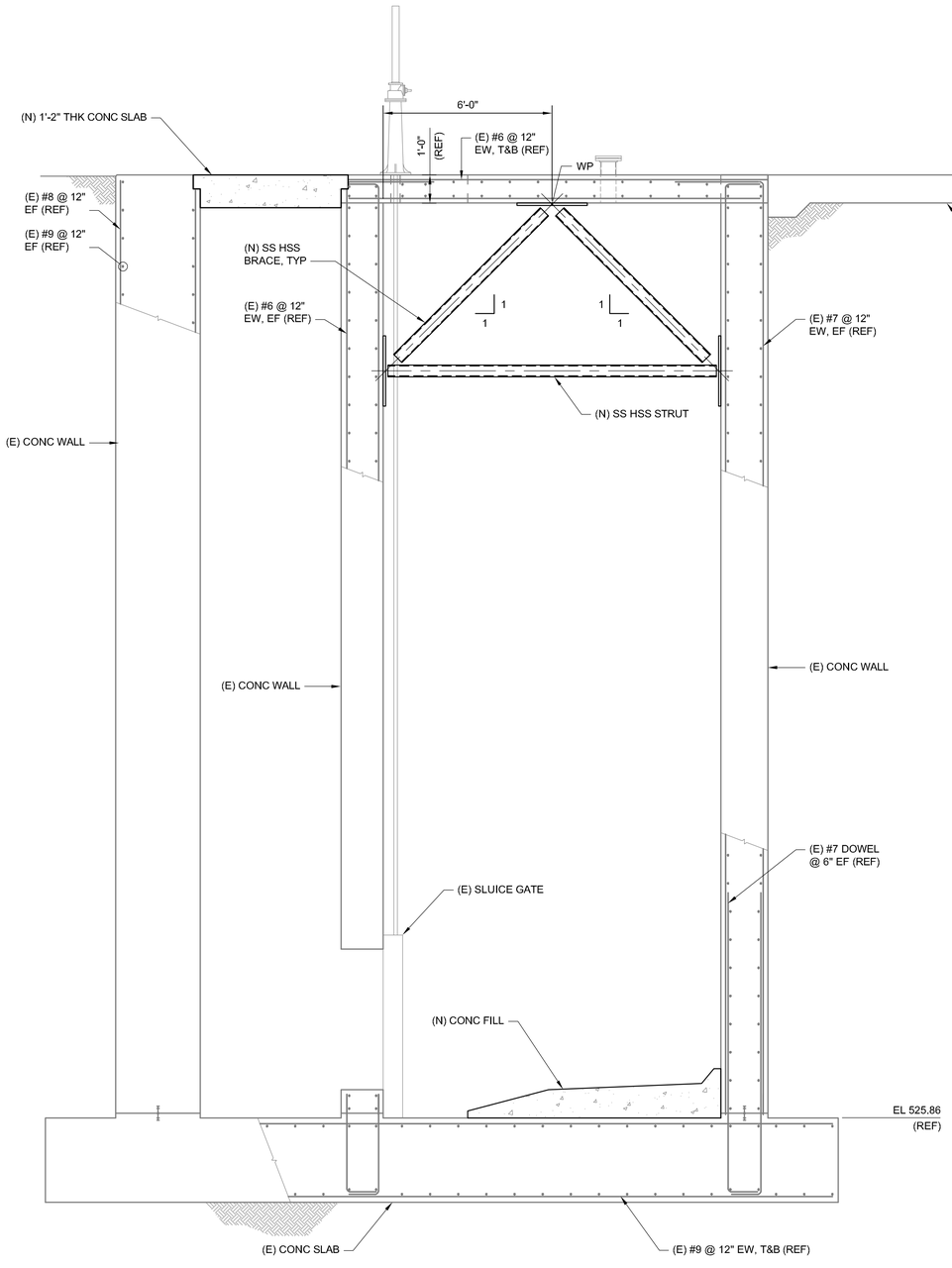
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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

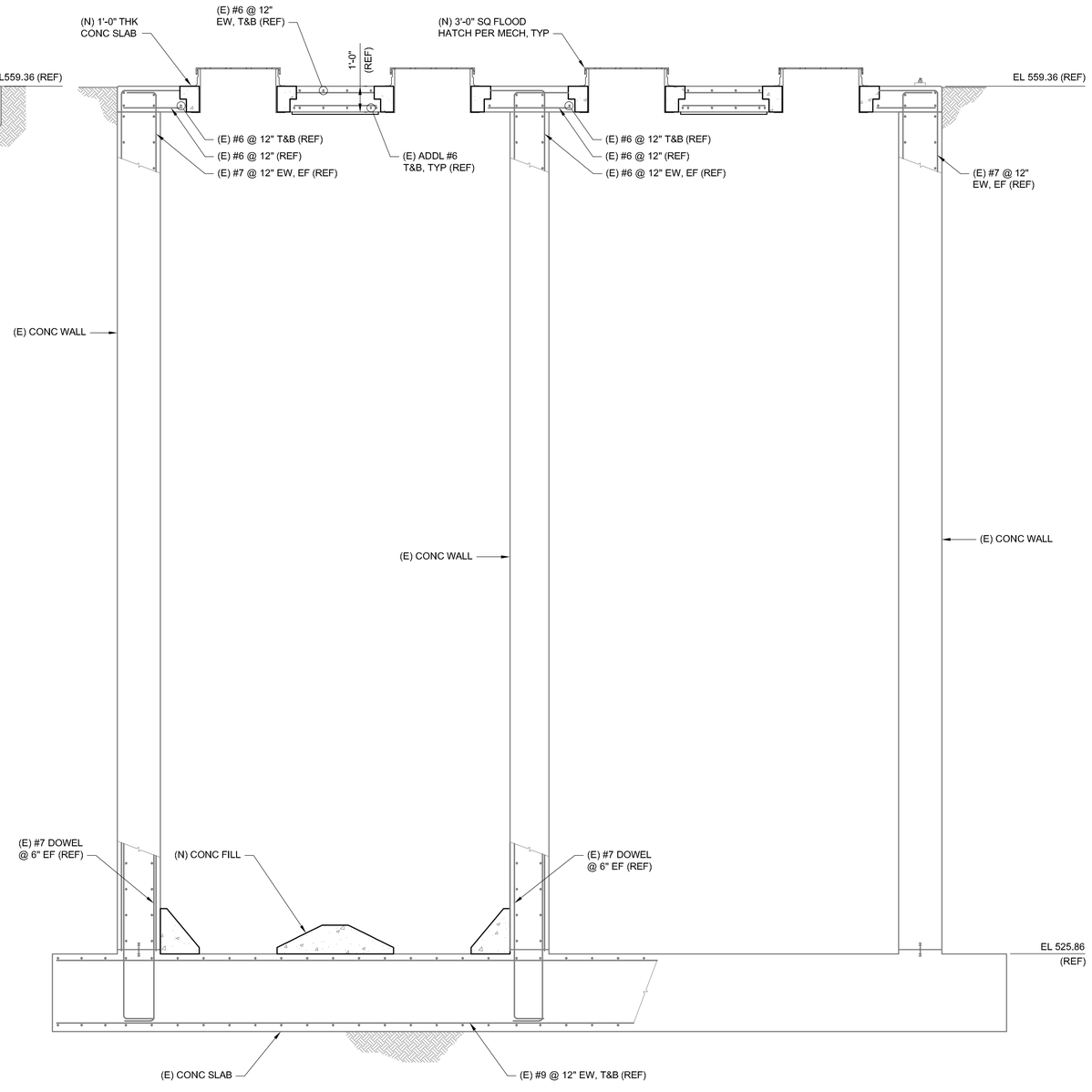
RP-2 LIFT STATION
BOTTOM AND TOP PLANS

SHEET 62S-01
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

DWG: W:\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.5 StructuralWork\62S-01 - STRUCTURAL PLANS.dwg USER: p0088814D
DATE: Oct 19, 2023 3:49pm XREFS: IEUA Border 62S-01_BOTTOM PLAN 62S-01_TOP PLAN



SECTION A
SCALE : 3/8 = 1'-0"
62S-01



SECTION B
SCALE : 3/8 = 1'-0"
62S-01

0' 1' 2' 4' 6'
SCALE : 3/8" = 1'-0"

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SHEET 62S-02

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 LIFT STATION
SECTIONS

SHEET NO. OF 000

PROJECT NO.

DRAWING NO.

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

Designed	MC	10/2023
Drawn	SL	10/2023
Checked	MA	10/2023
		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
0	10/2023	MC	MA	60% SUBMITTAL

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PROJECT MANAGER DATE

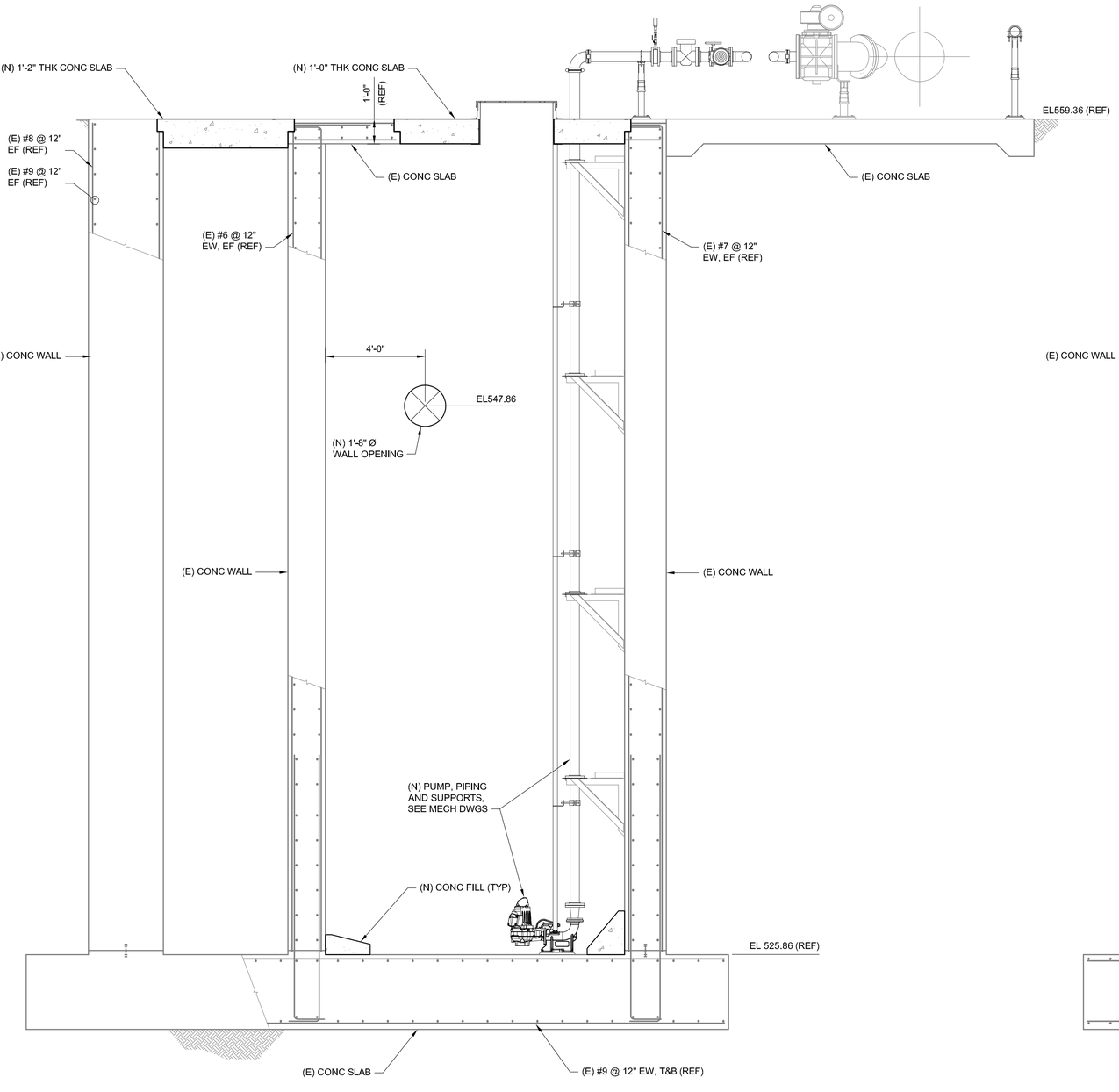
SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

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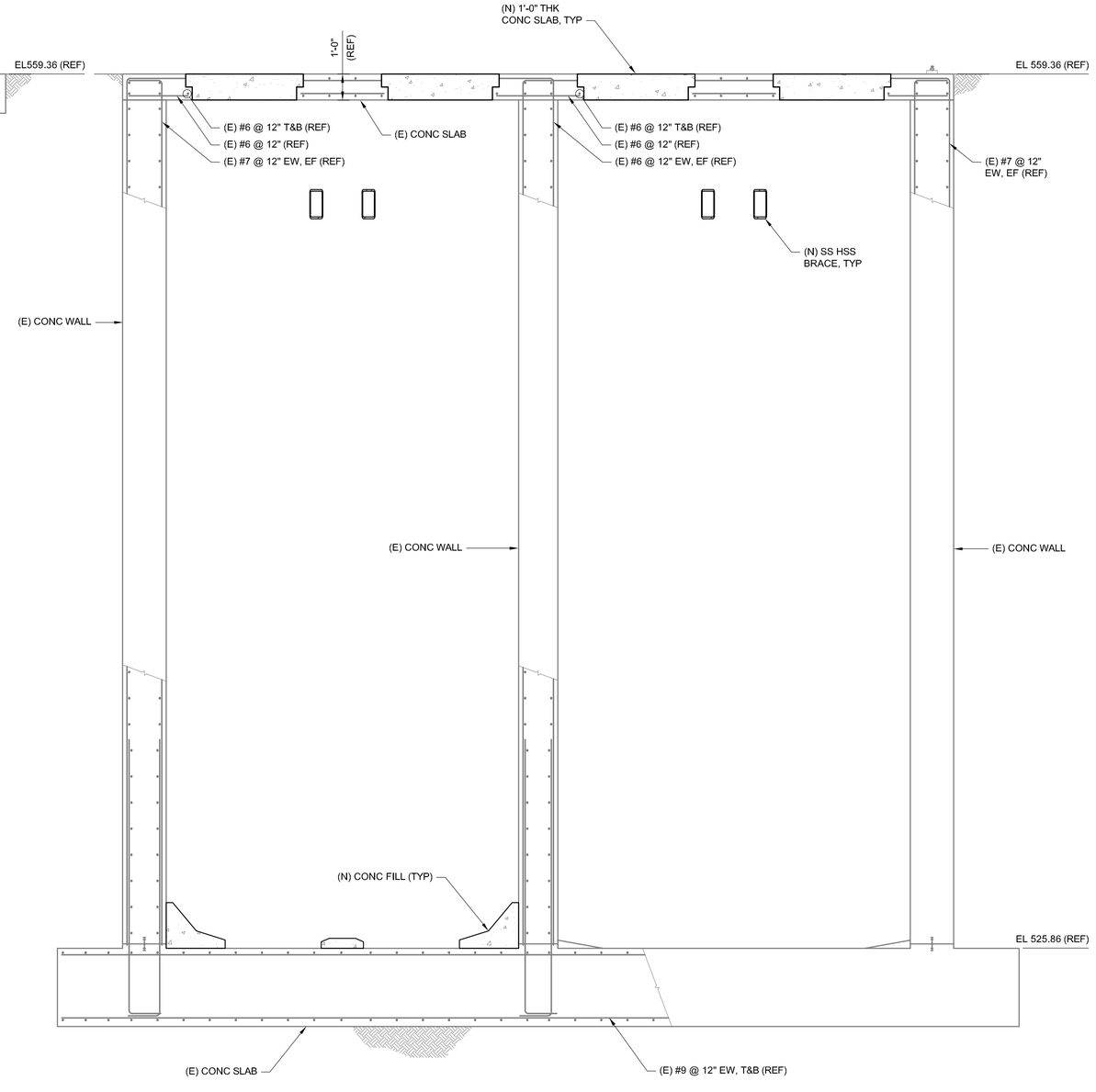
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DWG: W:\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.5 StructuralWork\62S-02 - SECTIONS.dwg USER: p008814D
DATE: Oct 19, 2023 3:11pm XREFS: IEUA Border 62S-02_SEC_A 62S-02_SEC_B



SECTION C
SCALE : 3/8 = 1'-0"
62S-01



SECTION D
SCALE : 3/8 = 1'-0"
62S-01

0' 1' 2' 4' 6'
SCALE : 3/8" = 1'-0"

DWG: W:\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.5 StructuralWork\62S-03 - SECTIONS.dwg USER: p008814D
DATE: Oct 16, 2023 1:10pm XREFS: IEUA Border 62S-03_SEC_C 62S-03_SEC_D

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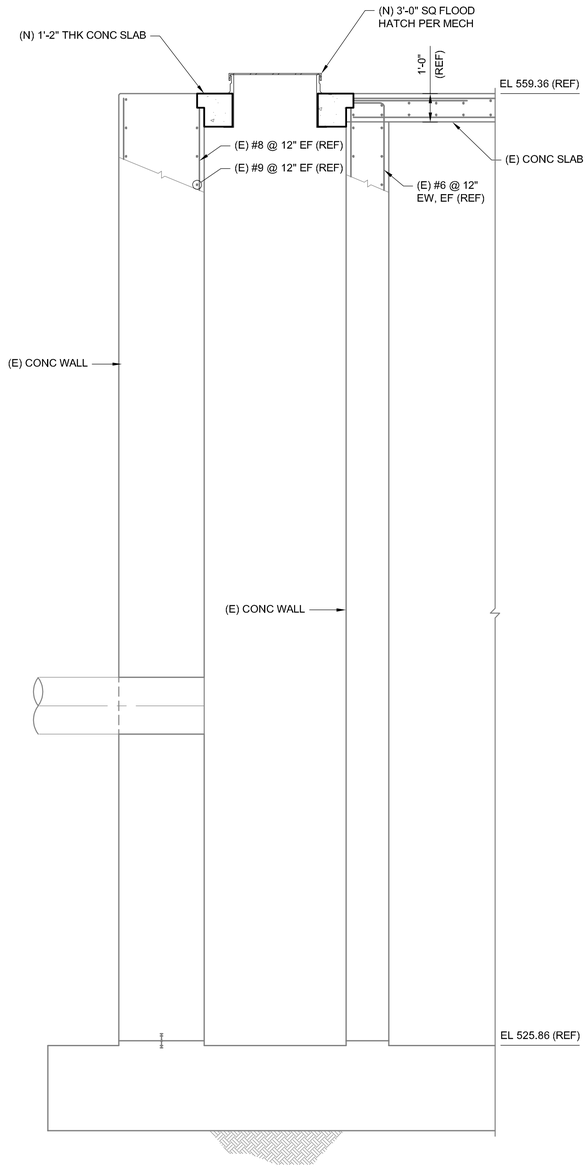
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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 LIFT STATION SECTIONS

SHEET 62S-03
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.



SECTION E
SCALE : 3/8 = 1'-0"
62S-01

0' 1' 2' 4' 6'
SCALE : 3/8" = 1'-0"

DWG: W:\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.5 Structural\Work\62S-04 - SECTION.dwg USER: p008814D
DATE: Oct 16, 2023 1:35pm XREFS: IEUA Border 62S-03_SEC_E

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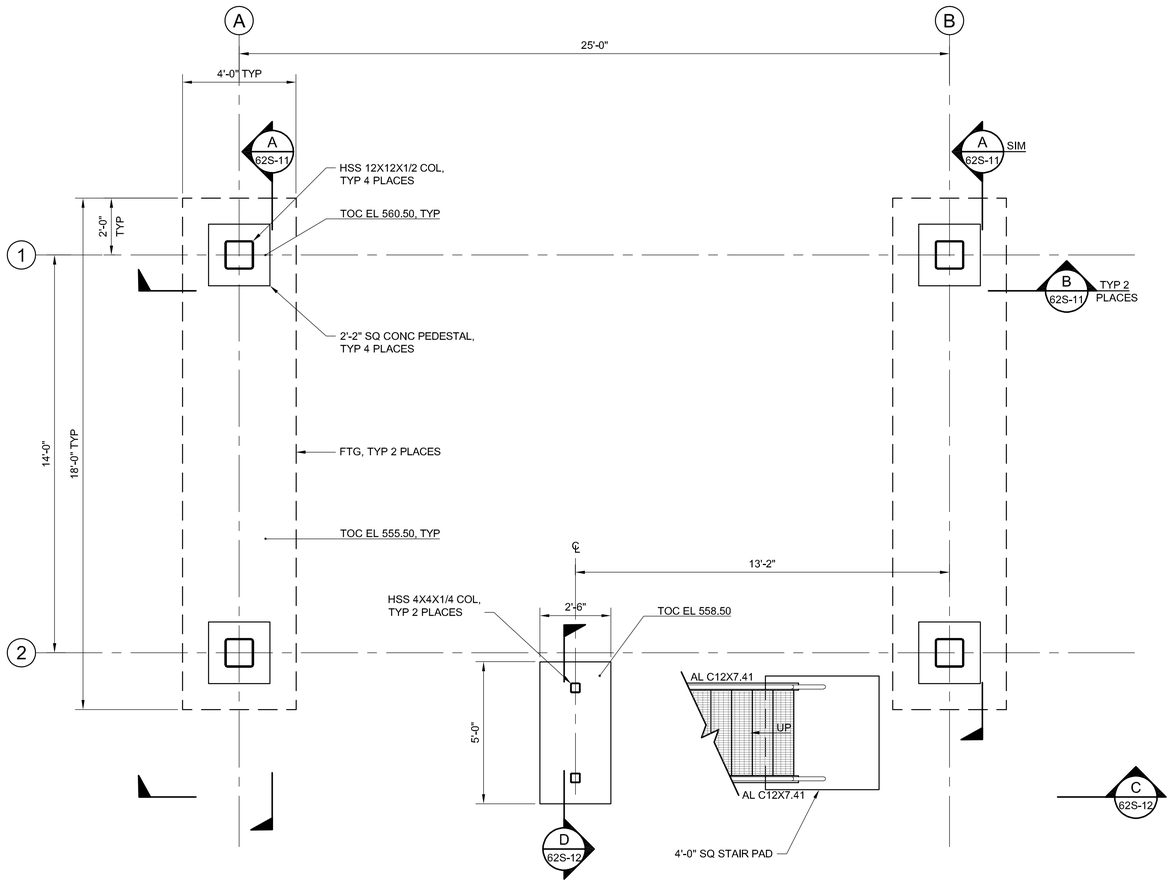
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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

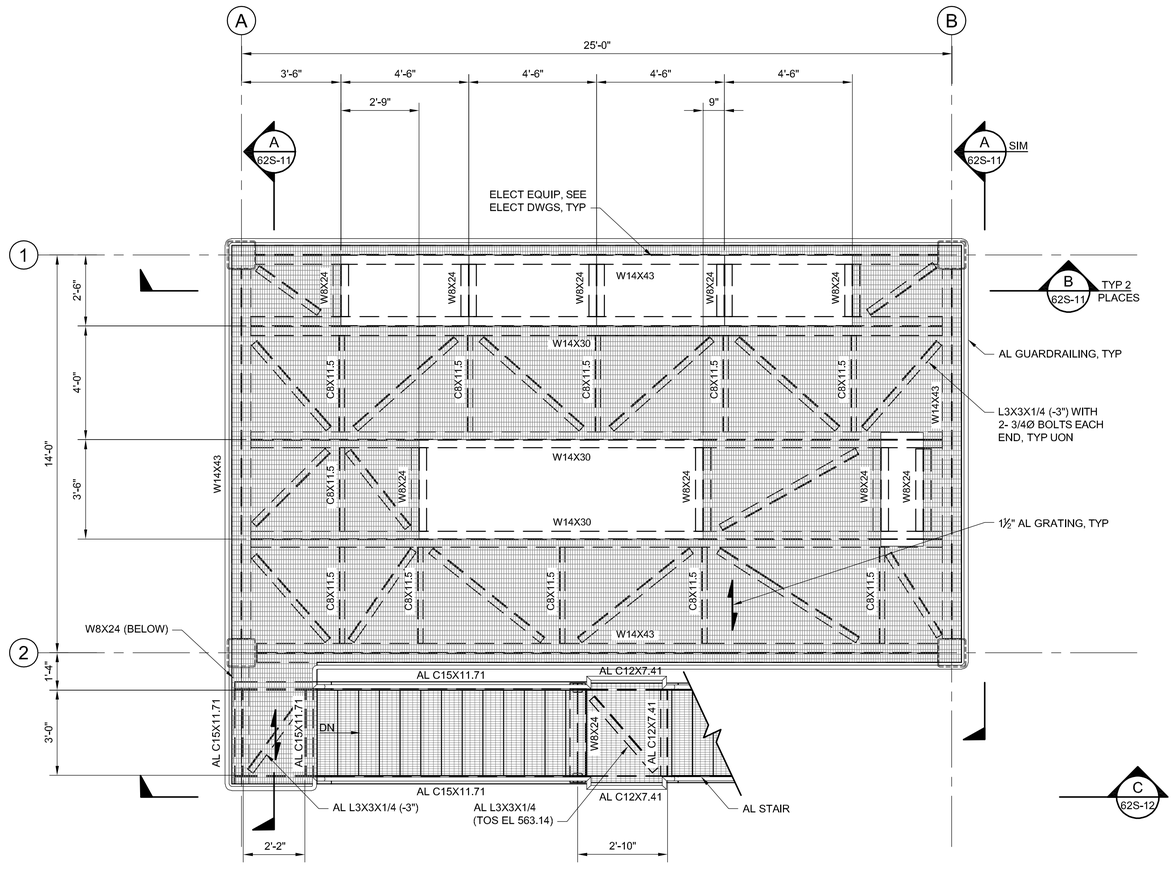
RP-2 LIFT STATION
SECTION

SHEET 62S-04
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.



FOUNDATION PLAN

SCALE : 3/8" = 1'-0"



PLATFORM FRAMING PLAN AT TOS EL 573.42, UON

SCALE : 3/8" = 1'-0"

0' 1' 2' 4' 6'

SCALE : 3/8" = 1'-0"

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100 WEST WALNUT STREET
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Designed	MC	10/2023
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0	10/2023	MC	MA	60% SUBMITTAL

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SCALE
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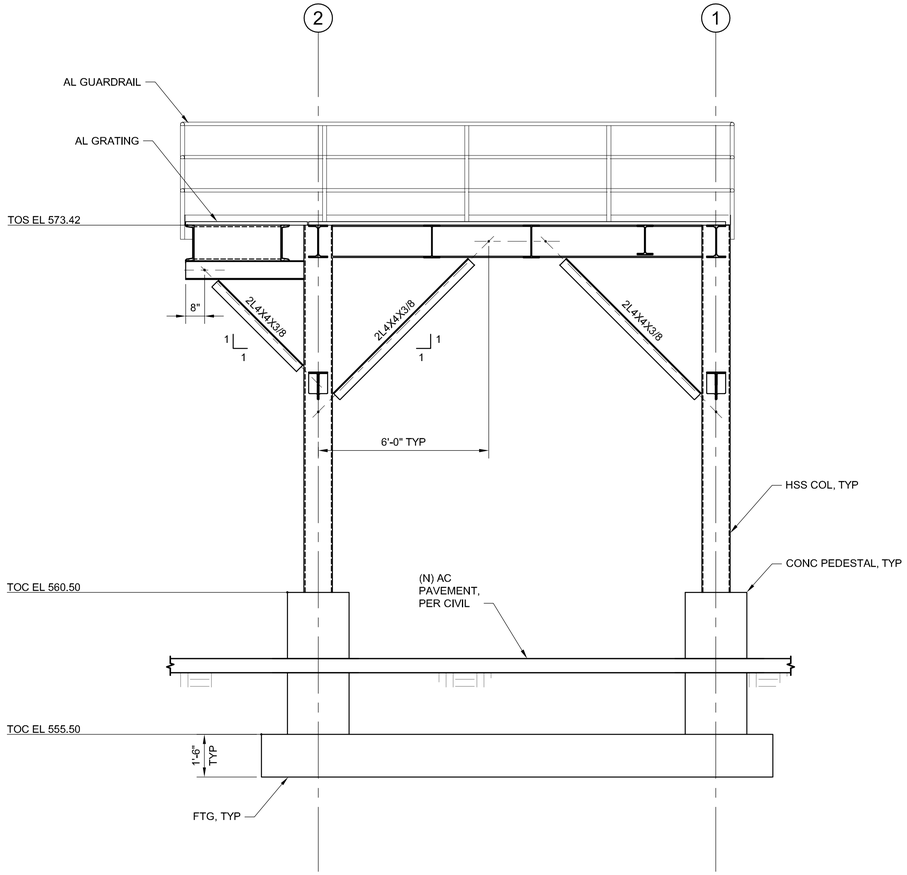
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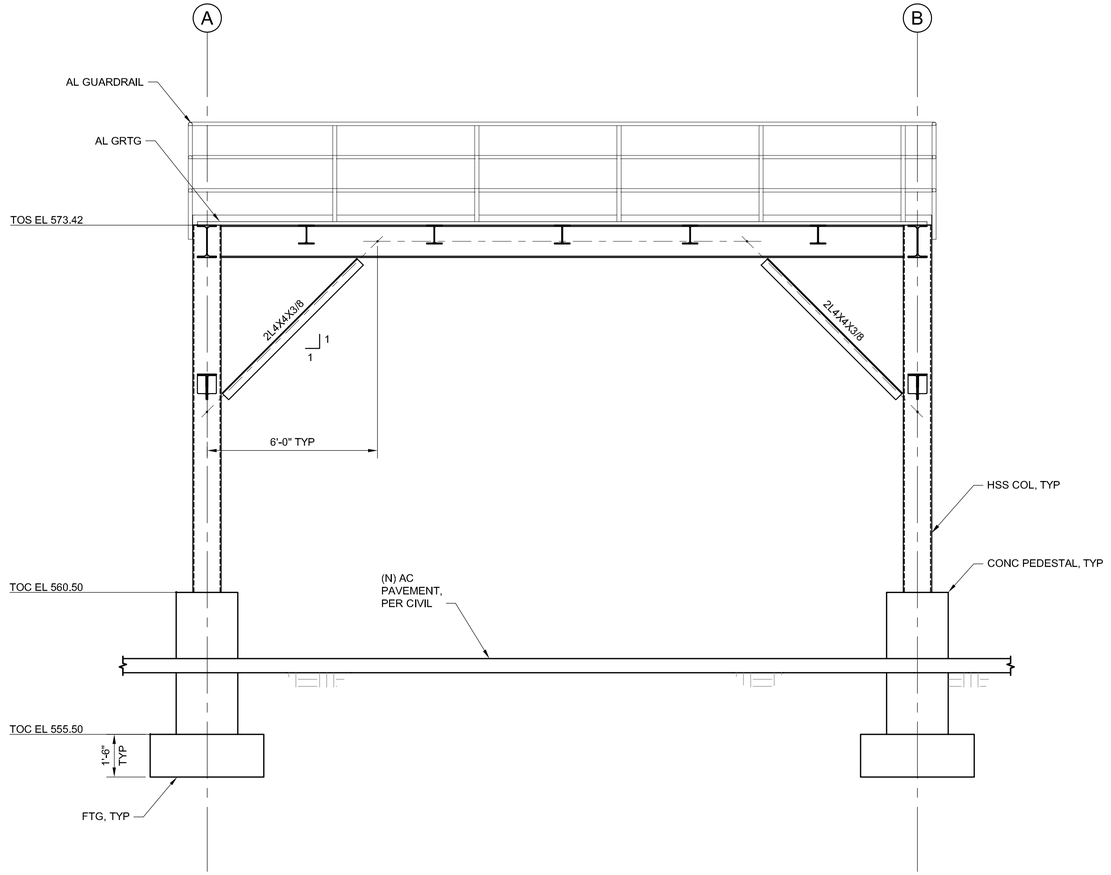
RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03
RP-2 ELECTRICAL PLATFORM
FOUNDATION AND PLATFORM
FRAMING PLANS

SHEET	62S-10
SHEET NO.	OF 000
PROJECT NO.	
DRAWING NO.	

DWG: W:\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.5 Structural\Work\62S-10 - STRUCTURAL PLANS.dwg USER: p008814D
DATE: Oct 19, 2023 3:03pm XREFS: IEUA Border 62S-10_FND_EL558-5 62S-10_FRM_EL573-5



SECTION A
SCALE : 3/8 = 1'-0"
62S-10



SECTION B
SCALE : 3/8 = 1'-0"
62S-10

0' 1' 2' 4' 6'
SCALE : 3/8" = 1'-0"

DWG: W:\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.5 Structural\Work\62S-11 - SECTIONS.dwg USER: p008814D
DATE: Oct 16, 2023 2:23pm XREFS: IEUA Border 62S-11_SEC_A 62S-11_SEC_B

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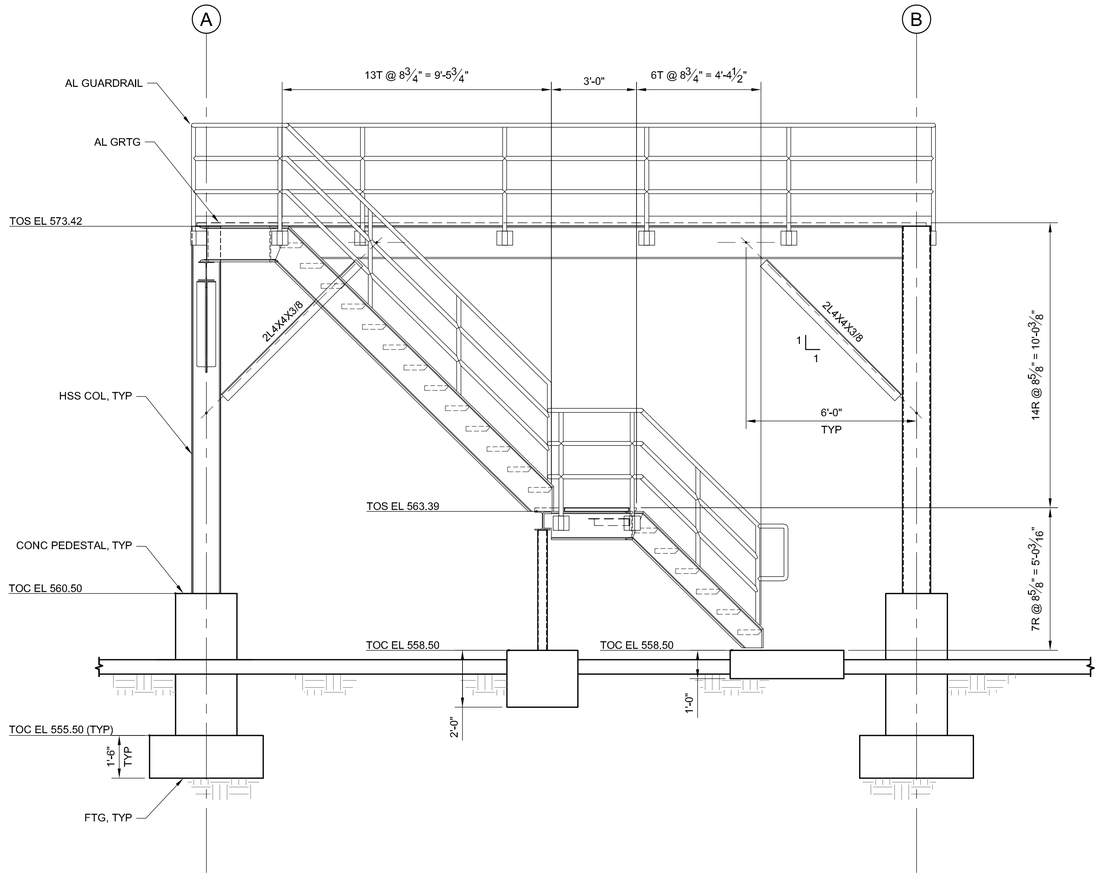
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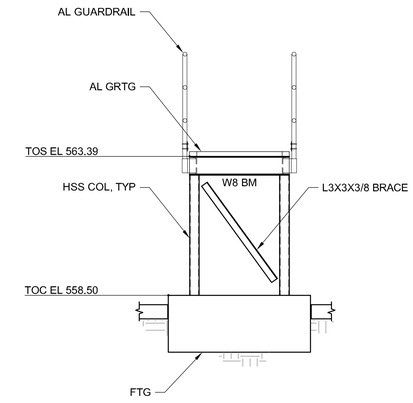
RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 ELECTRICAL PLATFORM SECTIONS

SHEET 62S-11
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.



SECTION C
SCALE : 3/8 = 1'-0"
62S-10



SECTION D
SCALE : 3/8 = 1'-0"
62S-10

0' 1' 2' 4' 6'
SCALE : 3/8" = 1'-0"

DWG: W:\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.5 Structural\Work\62S-12 - SECTIONS.dwg USER: p008814D
DATE: Oct 16, 2023 2:31pm XREFS: IEUA Border 62S-12_SEC_C 62S-12_SEC_D

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Designed	MC	10/2023
Drawn	SL	10/2023
Checked	MA	10/2023
		Date

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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 ELECTRICAL PLATFORM SECTIONS

SHEET 62S-12
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

GENERAL NOTES

A. ALL DIMENSIONS AND ELEVATIONS ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO COMMENCING THE WORK.

B. DEMO OF EXISTING FACILITIES/EQUIPMENT/STRUCTURES SHALL BE SEQUENCED PER SPECIFICATION SECTION 01014 "SEQUENCE OF CONSTRUCTION".

C. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO IDENTIFY, CONFIRM AND ISOLATE THE EXISTING PROCESS AND UTILITY LINES AS WELL AS DE-ENERGIZE THE POWER PRIOR TO COMMENCING THE WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE OWNER FOR EQUIPMENT, PROCESS AND UTILITY PIPES ISOLATION AND DRAINING OF TANKS AND PIPES PRIOR TO COMMENCING THE DEMOLITION AND/OR INSTALLATION WORK. THE CONTRACTOR SHALL DISPOSE OF CHEMICALS WITHIN THE PLANT AS DIRECTED BY THE OWNER.

D. THE CONTRACTOR SHALL NOTIFY THE OWNER ONE (1) WEEK IN ADVANCE PRIOR TO DISCONNECTION/DEMOLITION OF ANY EXISTING EQUIPMENT.

E. VALVES, PIPES AND FITTINGS END CONNECTIONS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC. PIPING CONNECTIONS SHALL BE PER THE PIPE SCHEDULE. CONTRACTOR DEVIATION REQUESTS FROM PIPE SCHEDULE REQUIREMENTS SHALL BE SUBMITTED ON A CASE BY CASE BASIS FOR ENGINEERS APPROVAL WITH AN RFI. ALL COUPLINGS SHALL BE AXIAL RESTRAINED, THRUST BLOCKS ARE NOT ACCEPTABLE.

F. THE CONTRACTOR SHALL RECYCLE ALL DEMOLISHED MATERIALS AND DISPOSE OF IN COMPLIANCE WITH CURRENT CITY OF CHINO, COUNTY OF SAN BERNARDINO, STATE AND FEDERAL REGULATIONS.

G. THE CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORTS, AS NEEDED, TO PIPES ADJACENT TO DEMOLISHED PIPES. WHEN SUPPORTS ARE BEING REMOVED ALONG WITH PIPE REMOVAL, EVALUATE THE INTEGRITY OF THE REMAINING PIPES AND PROVIDE ADEQUATE SUPPORTS.

H. THE CONTRACTOR SHALL PLUG, CAP OR BLIND FLANGE ALL OPEN PIPE ENDS RESULTING FROM DEMOLITION WITH THE LIKE MATERIAL.

I. THE CONTRACTOR SHALL CUT AND CAP MINIMUM ONE FOOT (1'-0") BELOW GRADE ALL ABANDONED BURIED PIPES AND CONDUITS RESULTING FROM DEMOLITION.

J. THE CONTRACTOR SHALL REMOVE, IF POSSIBLE, OR CUT FLUSH WITH THE CONCRETE SURFACE ALL SUPPORTS AND ANCHOR BOLTS RESULTING FROM DEMOLITION AND SHALL PATCH ANY RESULTING CONCRETE HOLES WITH EPOXY GROUT.

K. THE CONTRACTOR SHALL FIELD ROUTE, INSTALL ISOLATION VALVES, AND ADEQUATELY SUPPORT HOSE BIBB, SEAL WATER, DRAINS, VENT LINES, ETC. ALL DRAINS SHALL BE SLOPED MINIMUM 0.4% AND SHALL BE FIELD ROUTED TO THE NEAREST FLOOR DRAIN.

L. PIPE PENETRATIONS SHALL BE PER DWG. M-03, DETAILS 1 TO 7, UNLESS OTHERWISE NOTED ON THE DRAWING:

1. CAST IN PLACE PIPE SPOOL PER DETAIL 3 OR 4/M-03 PENETRATING NEW CONCRETE FLOORS OR CONCRETE WALLS BELOW GRADE AND/OR BELOW WATER LEVEL..
2. PIPE PENETRATION PER DETAIL 5/M-03 PENETRATING NEW CONCRETE FLOORS OR CONCRETE/MASONRY WALL ABOVE GRADE AND/OR NEW CONCRETE WALL MIN. 3 FT ABOVE WATER LEVEL..
3. PIPE PENETRATION PER DETAIL 6A/M-03 PENETRATING EXISTING CONCRETE FLOORS OR WALLS BELOW GRADE AND/OR BELOW WATER LEVEL.
4. PIPE PENETRATION PER DETAIL 6B/M-03 PENETRATING EXISTING CONCRETE FLOORS OR WALLS ABOVE GRADE.
5. PROVIDE PIPE PENETRATION PER DETAIL 7/M-03 PENETRATING EXISTING CONCRETE COVERS, TYP USED FOR FOUL AIR DUCT PENETRATIONS.

M. ALL YARD PIPES ENTERING STRUCTURES SHALL BE PROVIDED WITH TWO FLEXIBLE COUPLINGS ADEQUATELY SPACED, SEE DWG. G-04, NOTE 8 REQUIREMENTS.

N. FOR INSTRUMENT CONNECTION DETAILS, SEE DWGS. XX THROUGH XX.

O. IN CASE OF CONFLICT BETWEEN THIS DRAWING AND DETAILED EQUIPMENT SPECIFIC DRAWING AND/OR SPECIFICATIONS, THE LATTER WILL TAKE PRECEDENCE.

P. FOR ALL EXISTING STRUCTURES, EQUIPMENT AND PIPES LAYOUT SEE IEUA PROJECT NO. EN95028 PLANS.

Q. SEE DWG. XX FOR EQUIPMENT TAGGING GUIDELINES. UNLESS OTHERWISE NOTED, ALL EQUIPMENT TAG NUMBERS ARE PREFIXED BY FACILITY DESIGNATION "C5".

R. RIGID GROOVED COUPLINGS SHALL BE USED ON ABOVE GRADE APPLICATIONS AND FLEXIBLE GROOVED COUPLING ON BURIED APPLICATIONS, TYP. FLEXIBLE GROOVED COUPLINGS ON ABOVE GRADE APPLICATION SHALL BE USED ONLY WHERE ANGULAR DEFLECTION/MISALIGNMENT OR THERMAL GROWTH HAS TO BE ACCOMMODATED.

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

Designed	ID	10/2023
Drawn	GM	10/2023
Checked	ID	10/2023
		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
0	10/2023	GM	ID	60% SUBMITTAL

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
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0" 1"

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60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

GENERAL NOTES

SHEET M-01
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.3 Mechanical\WORK_M-01.dwg USER: p0045935
DATE: Oct 18, 2023 1:20pm XREFS: IEUA Border

PUMP SCHEDULE

ITEM NO	PUMP TAG NO	PUMP NAME	LOCATION	DWG. NO		TYPE	SERVICE	RATED CAPACITY	RATED HEAD OR PRESSURE	RATED SPEED	POWER	SPECIFICATION SECTION	REMARKS
				MECH.	P&ID								
1	PMP-04111 & 04121	RP-2 LIFT PUMPS	AREA 62, RP-2 PUMP STATION	62M-01	62I-01	NON CLOG RAIL MOUNT SUBMERSIBLE PUMP	RAW SEWAGE (RS)	110 GPM	82 FT TDH	3600 RPM	7.5 HP, 480V, 3 PH, 60 HZ	11227	
2	PMP-04111 & 04121	MOUNTAIN AVENUE LIFT PUMPS	AREA 78, MOUNTAIN AVENUE PUMP STATION	78M-01	78I-01	NON CLOG RAIL MOUNT SUBMERSIBLE PUMP	RAW SEWAGE (RS)	620 GPM	46 FT TDH	1800 RPM	15 HP, 480V, 3 PH, 60 HZ	11227 & 11250	
3	PMP-01 & 02	BUTTERFIELD LIFT STATION	AREA XX, BUTTERFIELD PUMP STATION	XXM-XX	XXI-01	HORIZONTAL SELF PRIMING CENTRIFUGAL PUMP	RAW SEWAGE (RS)	1064 GPM	132 FT TDH	1550 RPM	75 HP, 480V, 3 PH, 60 HZ	11196	

VALVE SCHEDULE

ITEM NO.	VALVE SCHEDULE			QTY	DWG. NO.		OPERATOR TYPE	OPERATING PRESSURE (PSIG)	MAX. PRESSURE (PSIG)	POWER SUPPLY	FLOW	REMOTE HAND CONTROL	VALVE SPEC #	ACTUATOR SPEC #	REMARKS
	VALVE TAG NO.	SIZE (INCH)	TYPE		MECH	P&ID									
1	N/A	4	PLUG VALVE PV2	8		62I-01	LEVER	30 PSIG	50 PSIG	N/A	110 GPM	N/A	15110	N/A	
2	N/A	4	CHECK VALVE CV1	2		62I-02	N/A	30 PSIG	50 PSIG	N/A	110 GPM	N/A	15105	N/A	
3	N/A	2	PLUG VALVE PV2	5		62I-02	LEVER	30 PSIG	50 PSIG	N/A	N/A	N/A	15110	N/A	AVRV, ARV AND SAMPLE PORT ISOLATION VALVES
4	N/A	2	AIR VACUUM RELEASE VALVES AVRV 2	2		62I-03	N/A	30 PSIG	50 PSIG	N/A	15 SCFM	N/A	15113	N/A	
5	N/A	3	AIR RELEASE VALVES ARV 2	1		62I-04	N/A	30 PSIG	50 PSIG	N/A	1 SCFM	N/A	15113	N/A	
6	MVLV-04101, 04111 & 04121	8	PLUG VALVE PV2	3		78I-01	MANUAL GEAR OPERATOR WITH HANDWHEEL	30 PSIG	50 PSIG	N/A	620 GPM	N/A	15110	15101	
7	CVLV-04111 & 04121	8	CHECK VALVE CV1	2		78I-02	N/A	30 PSIG	50 PSIG	N/A	620 GPM	N/A	15105	N/A	PROVIDE LEVER AND SPRING OR LEVER AND WEIGHT PER VALVE MANUFACTURER RECOMMENDATIONS
8	MVLV-04102	10	PLUG VALVE PV2	1		78I-01	MANUAL GEAR OPERATOR WITH HANDWHEEL	30 PSIG	50 PSIG	N/A	620 GPM	N/A	15110	15101	
9	N/A	4	PLUG VALVE PV2	1		78I-01	LEVER	30 PSIG	50 PSIG	N/A	N/A	N/A	15110	N/A	
10	N/A	3	PLUG VALVE PV2	2		78I-01	LEVER	30 PSIG	50 PSIG	N/A	N/A	N/A	15110	N/A	AVRV ISOLATION VALVE
11	N/A	2	PLUG VALVE PV2	1		78I-01	LEVER	30 PSIG	50 PSIG	N/A	N/A	N/A	15110	N/A	ARV ISOLATION VALVE
12	N/A	3	AIR VACUUM RELEASE VALVES AVRV 2	2		78I-01	N/A	30 PSIG	50 PSIG	N/A	90 SCFM	N/A	15113	N/A	
13	N/A	2	AIR RELEASE VALVES ARV 2	1		78I-01	N/A	30 PSIG	50 PSIG	N/A	5 SCFM	N/A	15113	N/A	

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0	10/2023	GM	ID	60% SUBMITTAL

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SCALE
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Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
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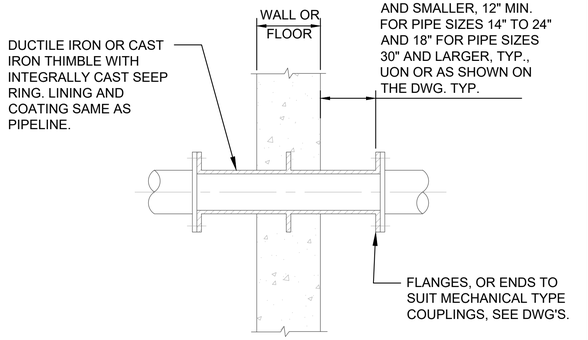
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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

PUMP AND VALVE SCHEDULES

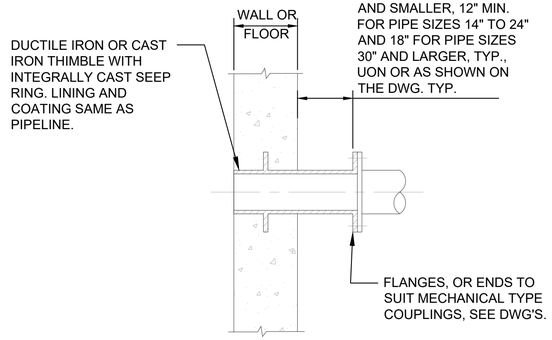
SHEET M-02
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.3 Mechanical\WORK_M-02.dwg USER: p0045935
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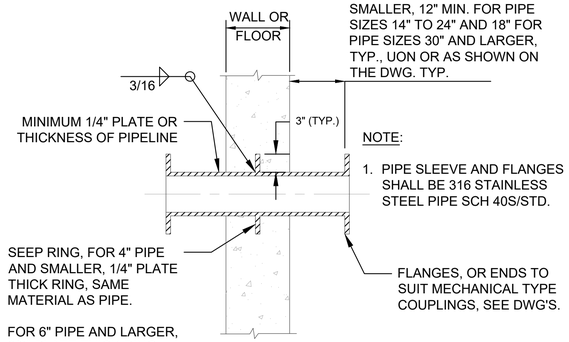
DUCTILE IRON PIPE

1 VAR PIPE PENETRATION DETAIL
SCALE: NTS



DUCTILE IRON PIPE

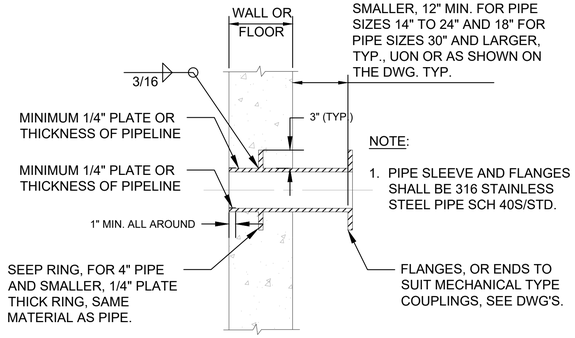
2 VAR PIPE PENETRATION DETAIL
SCALE: NTS



NOTE:
1. PIPE SLEEVE AND FLANGES SHALL BE 316 STAINLESS STEEL PIPE SCH 40S/STD.

FABRICATED PIPE

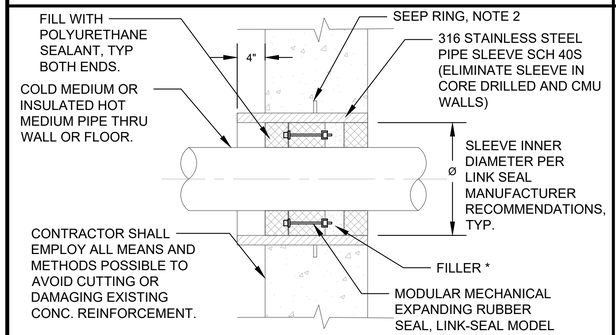
3 VAR PIPE PENETRATION DETAIL
SCALE: NTS



NOTE:
1. PIPE SLEEVE AND FLANGES SHALL BE 316 STAINLESS STEEL PIPE SCH 40S/STD.

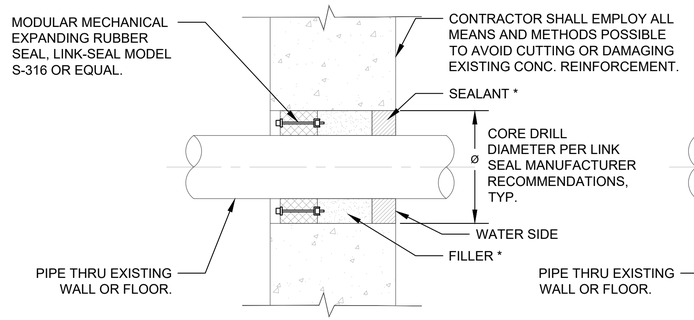
FABRICATED PIPE

4 VAR PIPE PENETRATION DETAIL
SCALE: NTS

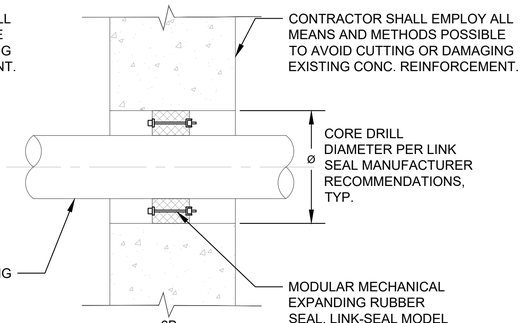


NOTES:
1. PROVIDE SQUARE OPENING THROUGH CMU WALL.
2. SEEP RING, FOR 4" PIPE AND SMALLER, 1/4" PLATE THICK RING, SAME MATERIAL AS PIPE. FOR 6" PIPE AND LARGER, 3/8" PLATE THICK RING, SAME MATERIAL AS PIPE.

5 VAR PIPE PENETRATION DETAIL
SCALE: NTS



6A

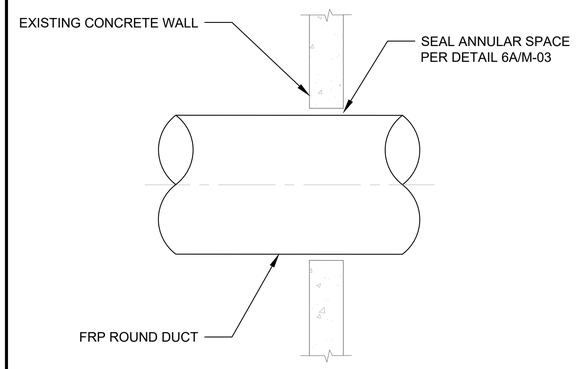


6B

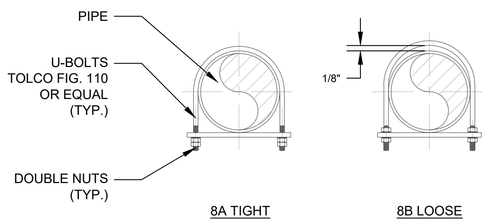
* PER MODULAR RUBBER SEAL MANUFACTURER'S RECOMMENDATION

EXIST WALL OR FLOOR, 6A BELOW & 6B ABOVE WATER SURFACE CONDITION

6 VAR PIPE PENETRATION DETAIL
SCALE: NTS



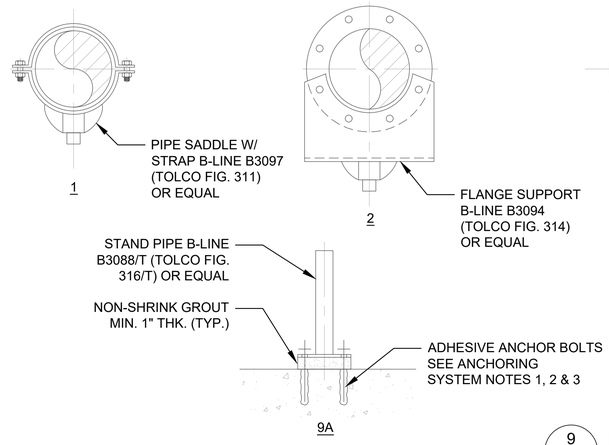
7 VAR FRP DUCT WALL PENETRATION DETAIL
SCALE: NTS



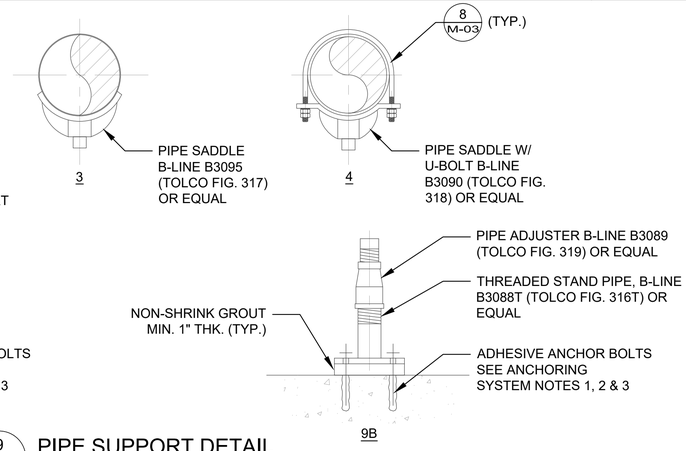
8A TIGHT 8B LOOSE

NOTES:
1. U-BOLTS AND FASTENERS MATERIAL SHALL BE 316 STAINLESS STEEL.
2. PROVIDE 10 GA STAINLESS STEEL SHIELD COMPLETELY AROUND FRP PIPE. LENGTH OF SHIELD SHALL BE 1/3 OF PIPE DIAMETER. WRAP COPPER TUBES WITH 2" WIDE STRIP RUBBER FABRIC.

8 VAR PIPE SUPPORT DETAIL
SCALE: NTS



9A



9B

9 VAR PIPE SUPPORT DETAIL
SCALE: NTS

ANCHORING SYSTEM NOTES:
1. POST-INSTALLED ADHESIVE ANCHOR BOLTS, SHALL BE ADHESIVE TYPE AND SHALL HAVE AN ACTIVE ICC REPORT AT TIME OF CONSTRUCTION. THEIR CAPACITIES LISTED IN THE REPORT SHALL BE BASED ON TESTING IN CRACKED CONCRETE. REFERENCE HILTI HIT RE 500 V3, SIMPSON SET 3G, OR ENGINEER APPROVED EQUAL.
2. USE 316SS ADHESIVE ANCHORING SYSTEM IN ALL AREAS.
3. THE CONTRACTOR SHALL SUBMIT CALCULATIONS AND DETAILS FOR ANCHORING SYSTEM TO CONSTRUCTION MANAGER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. CALCULATIONS SHALL INCLUDE ALL APPLICABLE LOADS ON ANCHORING AND SHALL INCLUDE ANCHOR BOLT CAPACITIES AS MODIFIED BY SPACING AND EDGED DISTANCE, BASE PLATE STRESSES, AND CONCRETE BEARING STRESSES. ALL CALCULATIONS AND DWG'S SHALL BE SIGNED AND STAMPED BY CALIFORNIA REGISTERED CIVIL OR STRUCTURAL ENGINEER.
4. PIPE SUPPORTS MATERIAL SHALL BE 316L STAINLESS STEEL.

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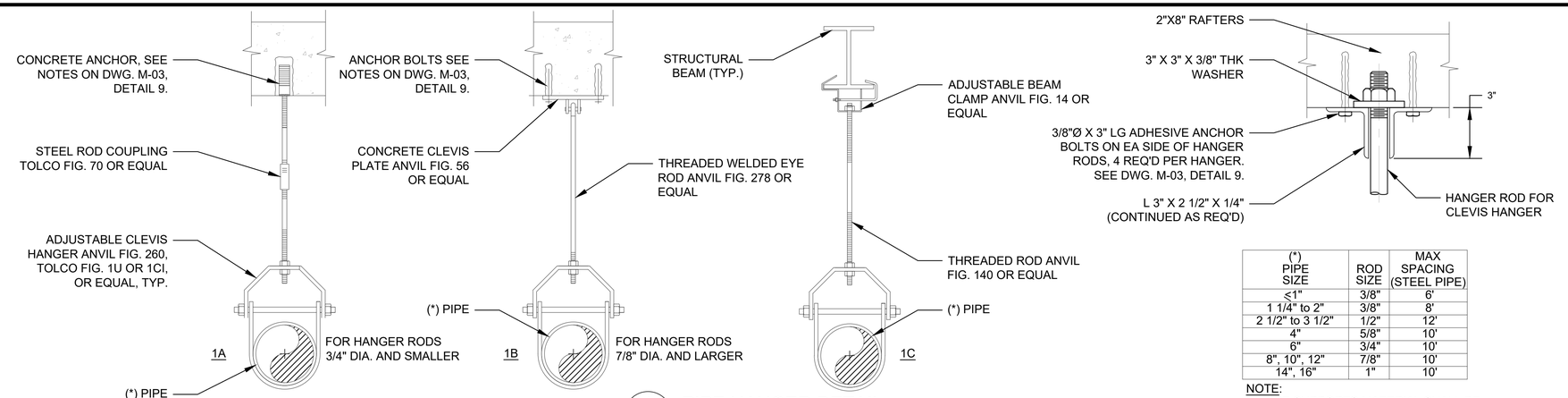
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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

MECHANICAL STANDARD DETAILS, SHEET 1

SHEET M-03
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

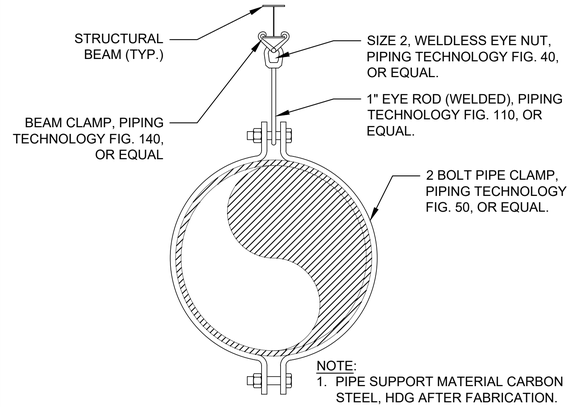
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DATE: Oct 18, 2023 1:25pm XREFS: IEUA Border



(*) PIPE SIZE	ROD SIZE	MAX SPACING (STEEL PIPE)
≤1"	3/8"	6'
1 1/4" to 2"	3/8"	8'
2 1/2" to 3 1/2"	1/2"	12'
4"	5/8"	10'
6"	3/4"	10'
8", 10", 12"	7/8"	10'
14", 16"	1"	10'

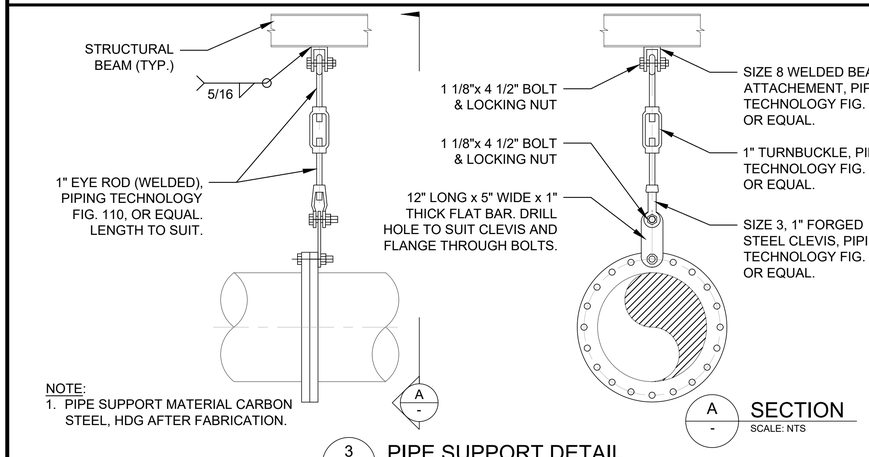
NOTE:
1. PIPE SUPPORTS MATERIAL SHALL BE CARBON STEEL HOT DIP GALVANIZED.

1 VAR **PIPE HANGER DETAIL**
SCALE: NTS



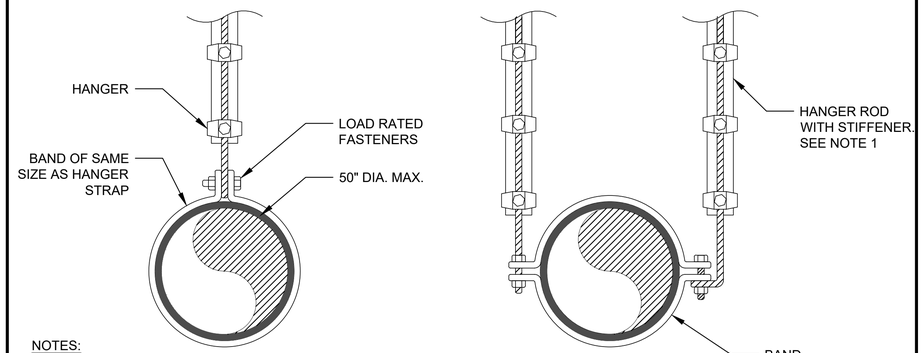
NOTE:
1. PIPE SUPPORT MATERIAL CARBON STEEL, HDG AFTER FABRICATION.

2 VAR **PIPE SUPPORT DETAIL**
SCALE: NTS



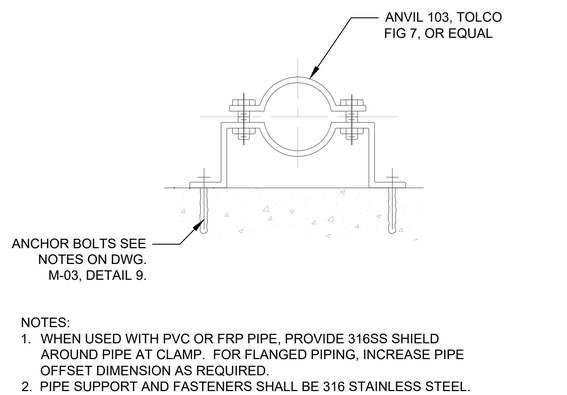
NOTE:
1. PIPE SUPPORT MATERIAL CARBON STEEL, HDG AFTER FABRICATION.

3 VAR **PIPE SUPPORT DETAIL**
SCALE: NTS



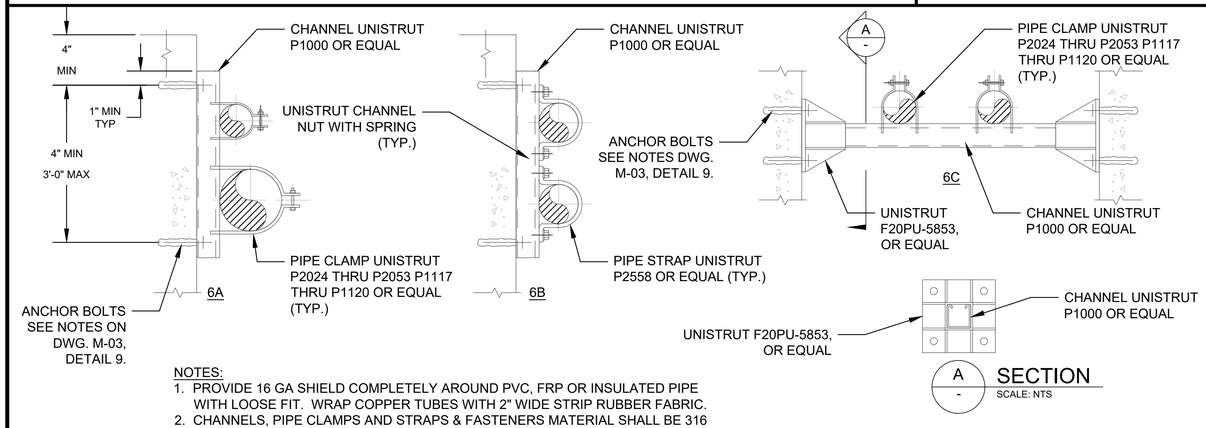
NOTES:
1. STIFFENER USED ONLY FOR ROD LENGTH LONGER THAN APPROVED UNBRACED LENGTH.
2. DO NOT EXCEED ALLOWABLE LOAD LIMITS.
3. DUCT SUPPORT MATERIAL CARBON STEEL HDG.

4 VAR **ROUND DUCTWORK DETAIL**
SCALE: NTS



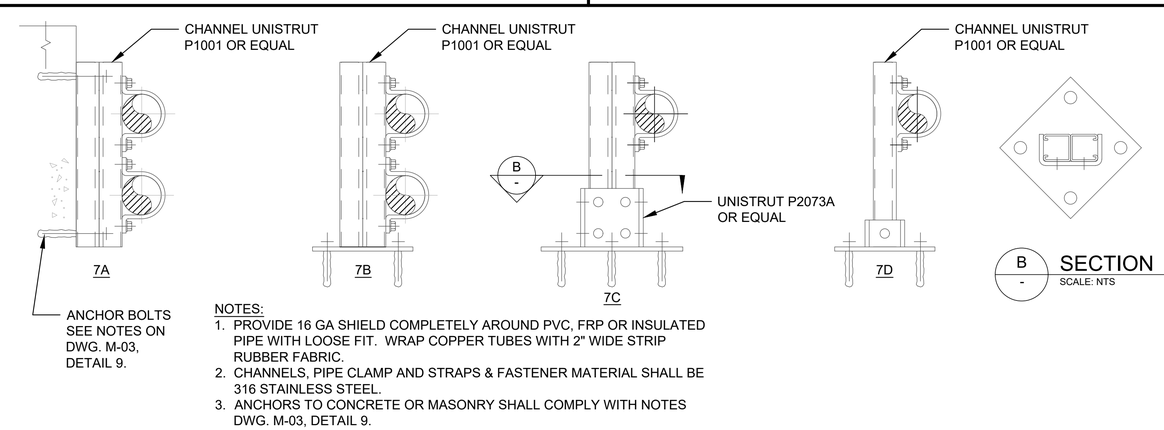
NOTES:
1. WHEN USED WITH PVC OR FRP PIPE, PROVIDE 316SS SHIELD AROUND PIPE AT CLAMP. FOR FLANGED PIPING, INCREASE PIPE OFFSET DIMENSION AS REQUIRED.
2. PIPE SUPPORT AND FASTENERS SHALL BE 316 STAINLESS STEEL.

5 VAR **PIPE CLAMP DETAIL**
SCALE: NTS



NOTES:
1. PROVIDE 16 GA SHIELD COMPLETELY AROUND PVC, FRP OR INSULATED PIPE WITH LOOSE FIT. WRAP COPPER TUBES WITH 2" WIDE STRIP RUBBER FABRIC.
2. CHANNELS, PIPE CLAMPS AND STRAPS & FASTENERS MATERIAL SHALL BE 316 STAINLESS STEEL.

6 VAR **FLUSH MOUNTED PIPE SUPPORT DETAIL**
SCALE: NTS



NOTES:
1. PROVIDE 16 GA SHIELD COMPLETELY AROUND PVC, FRP OR INSULATED PIPE WITH LOOSE FIT. WRAP COPPER TUBES WITH 2" WIDE STRIP RUBBER FABRIC.
2. CHANNELS, PIPE CLAMP AND STRAPS & FASTENER MATERIAL SHALL BE 316 STAINLESS STEEL.
3. ANCHORS TO CONCRETE OR MASONRY SHALL COMPLY WITH NOTES DWG. M-03, DETAIL 9.

7 VAR **FLUSH MOUNTED PIPE SUPPORT DETAIL**
SCALE: NTS

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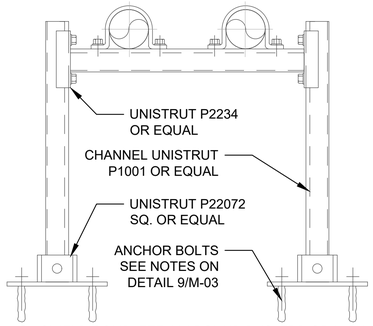
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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

MECHANICAL STANDARD DETAILS, SHEET 2

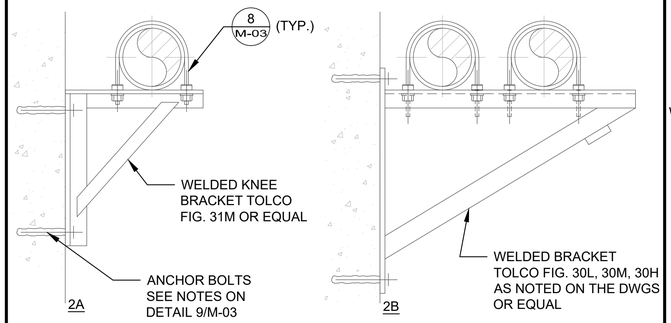
SHEET M-04
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

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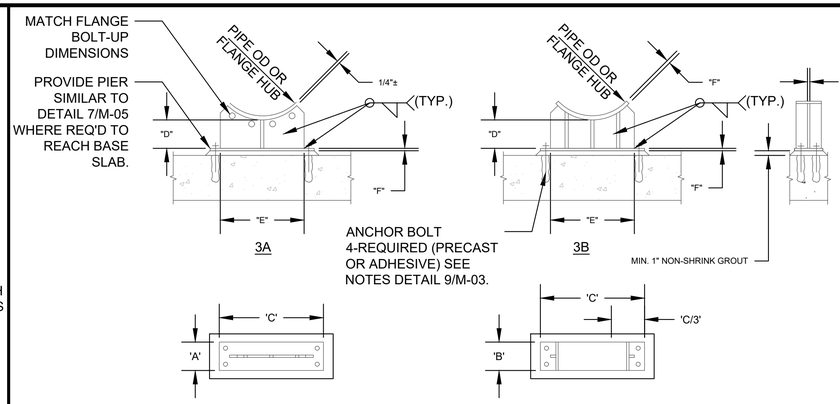
NOTES:
1. PROVIDE 16 GA SHIELD COMPLETELY AROUND PVC, FRP OR INSULATED PIPE WITH LOOSE FIT. WRAP COPPER TUBES WITH 2" WIDE STRIP RUBBER FABRIC.
2. CHANNEL, PIPE STRAP AND FASTENER MATERIAL SHALL BE 316 STAINLESS STEEL.
3. ANCHORS TO CONCRETE OR MASONRY SHALL COMPLY WITH NOTES ON DWG. M-03, DETAIL 9.

1 VAR PIPE SUPPORT DETAIL
SCALE: NTS



NOTES:
1. BRACKETS MATERIAL FOR DRY EXPOSED INSTALLATION SHALL BE CARBON STEEL HOT DIP GALVANIZED.
2. BRACKET MATERIAL FOR WET EXPOSED OR SUBMERGED INSTALLATION SHALL BE 316L STAINLESS STEEL.

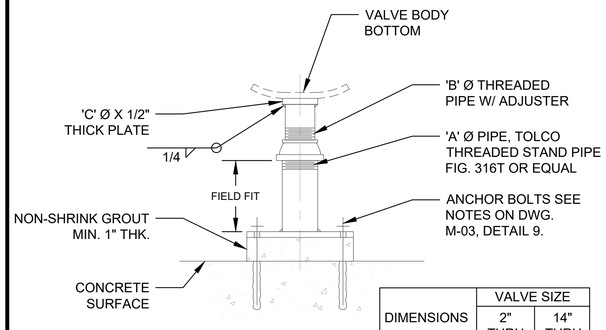
2 VAR PIPE BRACKET DETAIL
SCALE: NTS



PIPE/FLANGE SUPPORT SCHEDULE						
PIPE DIA	A	B	C	D	E	F
4	6	6	12	6	10	3/8
6 TO 8	6	6	16	6	14	3/8
10 TO 16	6	6	25	8	22	3/8
18	6	6	27	10	24	3/8
20	8	8	29	10	26	3/8
24	8	8	34	10	30	3/8
30	8	8	34	12	30	3/8
36	8	8	38	12	34	1/2
40	8	8	42	12	38	1/2
42	10	10	42	12	38	1/2
48	10	10	50	14	46	1/2
54	10	10	54	14	50	1/2

NOTE:
1. VALVE/PIPE SUPPORT MATERIAL CS ASTM A36, HDG AFTER FABRICATIONS.

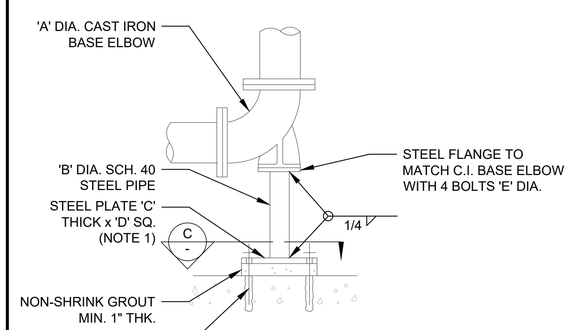
3 VAR VALVE/PIPE SUPPORT DETAIL
SCALE: NTS



NOTE:
1. PIPE SUPPORTS MATERIAL CARBON STEEL HOT DIP GALVANIZED.

DIMENSIONS	VALVE SIZE	
	2" THRU 12"	14" THRU 24"
'A'	3"	6"
'B'	2 1/2"	4"
'C'	3 1/2"	4 1/2"

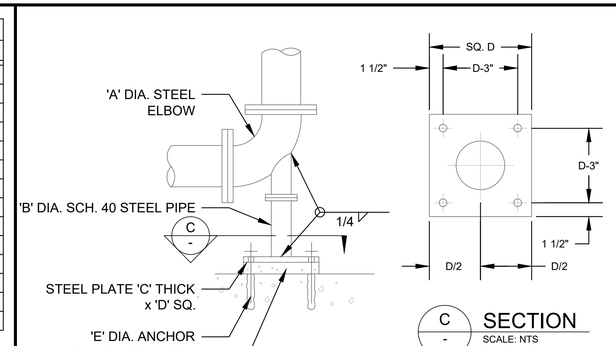
4 VAR VALVE SUPPORT DETAIL
SCALE: NTS



NOTES:
1. SEE SECTION C, DWG. M-04, DETAIL 6.
2. PIPE SUPPORT MATERIAL CARBON STEEL HDP.

ELBOW	DIMENSIONS IN INCHES			
'A' DIA.	'B' DIA.	'C' THICK	'D' SQ.	'E' DIA.
4	2	3/8	6	5/8
6	2 1/2	3/8	7	5/8
8	4	1/2	9	5/8
10	4	1/2	9	5/8
12	6	1/2	11	3/4
14	6	1/2	11	3/4
16	6	1/2	11	3/4
18	8	1/2	13 1/2	3/4
20	8	1/2	13 1/2	3/4
24	8	1/2	13 1/2	3/4
30	10	3/4	16	7/8
36	12	3/4	19	7/8
42	16	3/4	23 1/2	1
48	18	3/4	25	1 1/8

5 VAR DUCTILE IRON PIPE SUPPORT DETAIL
SCALE: NTS

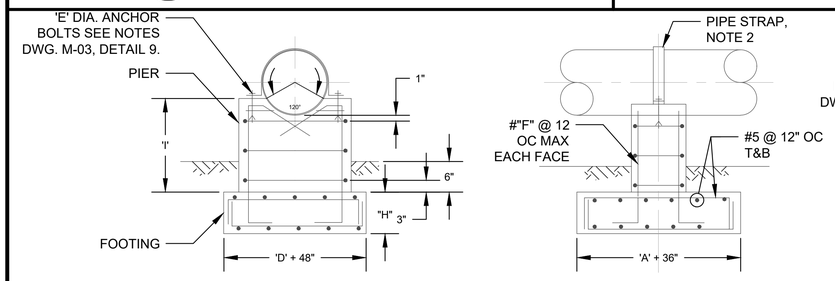


C - SECTION
SCALE: NTS

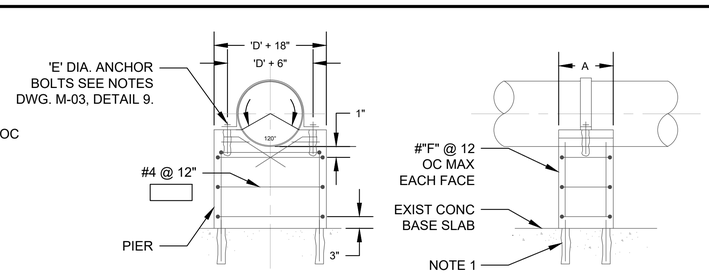
ELBOW	DIMENSIONS IN INCHES			
'A' DIA.	'B' DIA.	'C' THICK	'D' SQ.	'E' DIA.
4	2	3/8	6	5/8
6	2 1/2	3/8	7	5/8
8	4	1/2	9	5/8
10	4	1/2	9	5/8
12	6	1/2	11	3/4
14	6	1/2	11	3/4
16	6	1/2	11	3/4
18	8	1/2	13 1/2	3/4
20	8	1/2	13 1/2	3/4
24	8	1/2	13 1/2	3/4
30	10	3/4	16	7/8
36	12	3/4	19	7/8
42	16	3/4	23 1/2	1
48	18	3/4	25	1 1/8

NOTE:
1. PIPE SUPPORTS MATERIAL & FINISH SAME AS BASE PIPE.

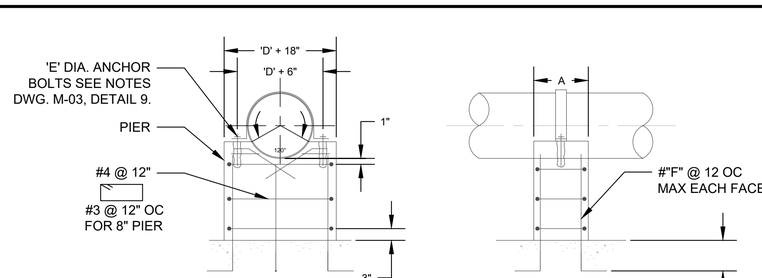
6 VAR STEEL PIPE SUPPORT DETAIL
SCALE: NTS



7A NEW PIER ON ISOLATED FOOTING



7B NEW PIER ON EXISTING CONCRETE SLAB



7C NEW PIER ON NEW CONCRETE FLOOR

NOTES:
1. EMBED USING HILTI HIT-RE 500 V3, OR SIMPSON SET 3G ADHESIVE SYSTEM IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION TO DEVELOP FULL STRENGTH OF BAR. SUBMIT CALCULATION PER NOTES ON DWG. M-03, DETAIL 9.
2. PIPE STRAP AND FASTENER MATERIAL SHALL BE 316 STAINLESS STEEL. PIPE STRAP MIN. WIDTH 2" FOR PIPES 14 TO 24", 2 1/2" FOR PIPES 30" T O 48", 3" FOR PIPES 54" AND LARGER.
3. FOR ANCHOR PIPE SUPPORT STRAP SHALL BE TIGHTENED AROUND THE PIPE, FOR GUIDE PIPE SUPPORT STRAP SHALL BE LOOSE (⅛" CLEARANCE) RESPECTIVELY.
4. ON All GUIDES, PROVIDE 1/8" TEFLON SHEET BETWEEN PIPE AND CONCRETE PEDESTAL COVERING THE ENTIRE CONTACT AREA.

PIPE SIZE (D)	A	E	F	G	H	I (MAX)
14" TO 20"	10"	¾"	#5	10"	1'-6"	4'-6"
24" TO 36"	12"	¾"	#6	12"	2'-0"	4'-6"
42" TO 60"	16"	¾"	#6	12"	2'-6"	4'-6"

7 VAR PIPE SUPPORT ON CONCRETE PEDESTAL DETAIL
SCALE: NTS

PARSONS
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(626) 440 - 2000

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PROJECT MANAGER DATE

SCALE
AS SHOWN
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0" 1"

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A MUNICIPAL WATER DISTRICT

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Chino, California 91708
Telephone (909) 993-1600
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Post Office Box 9020
Chino Hills, California 91709

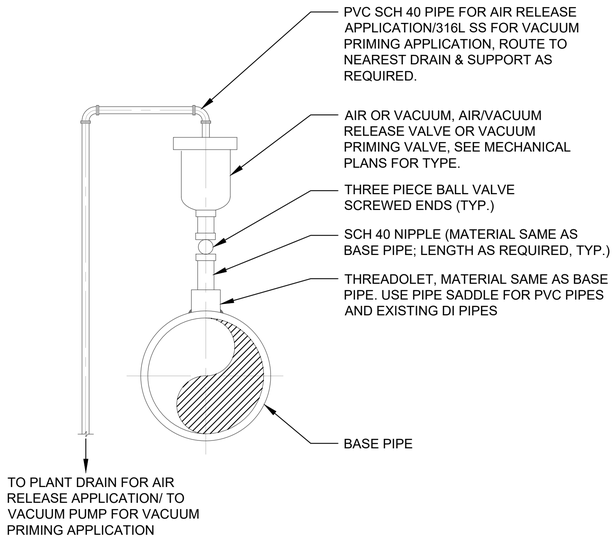
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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

MECHANICAL STANDARD DETAILS, SHEET 3

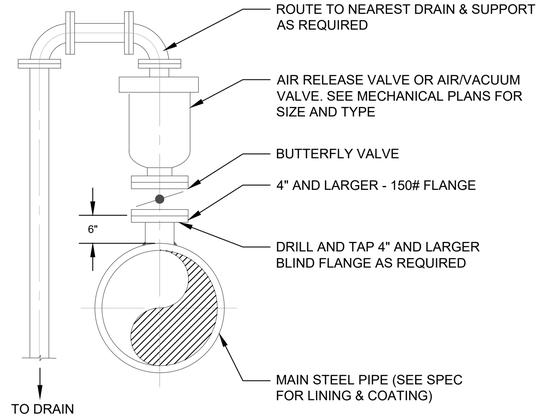
SHEET M-05
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.3 Mechanical\WORK_M-05.dwg USER: p0045935
DATE: Oct 18, 2023 1:28pm XREFS: IEUA Border



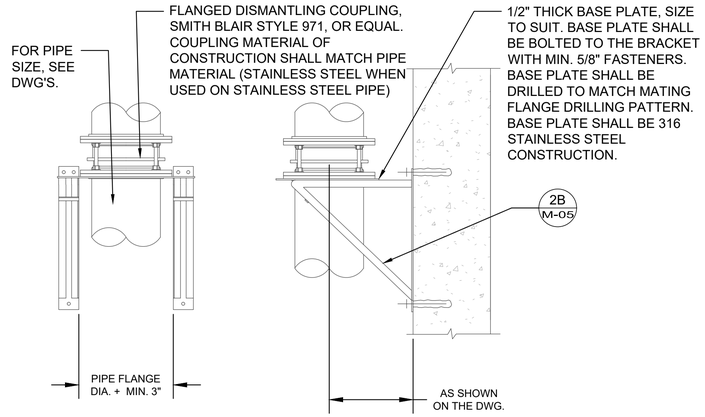
1 VAR AIR VACUUM AND AIR RELIEF VALVE (3" AND SMALLER) DETAIL

SCALE: NTS



2 VAR AIR VACUUM AND AIR RELIEF VALVE (4" AND LARGER) DETAIL

SCALE: NTS



9 VAR VERTICAL PIPE SUPPORT

SCALE: NTS

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.3 Mechanical\WORK_M-06.dwg USER: p0045935
DATE: Oct 18, 2023 1:30pm XREFS: IEUA Border

PARSONS
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		Date

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PROJECT MANAGER DATE

SCALE
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0" 1"

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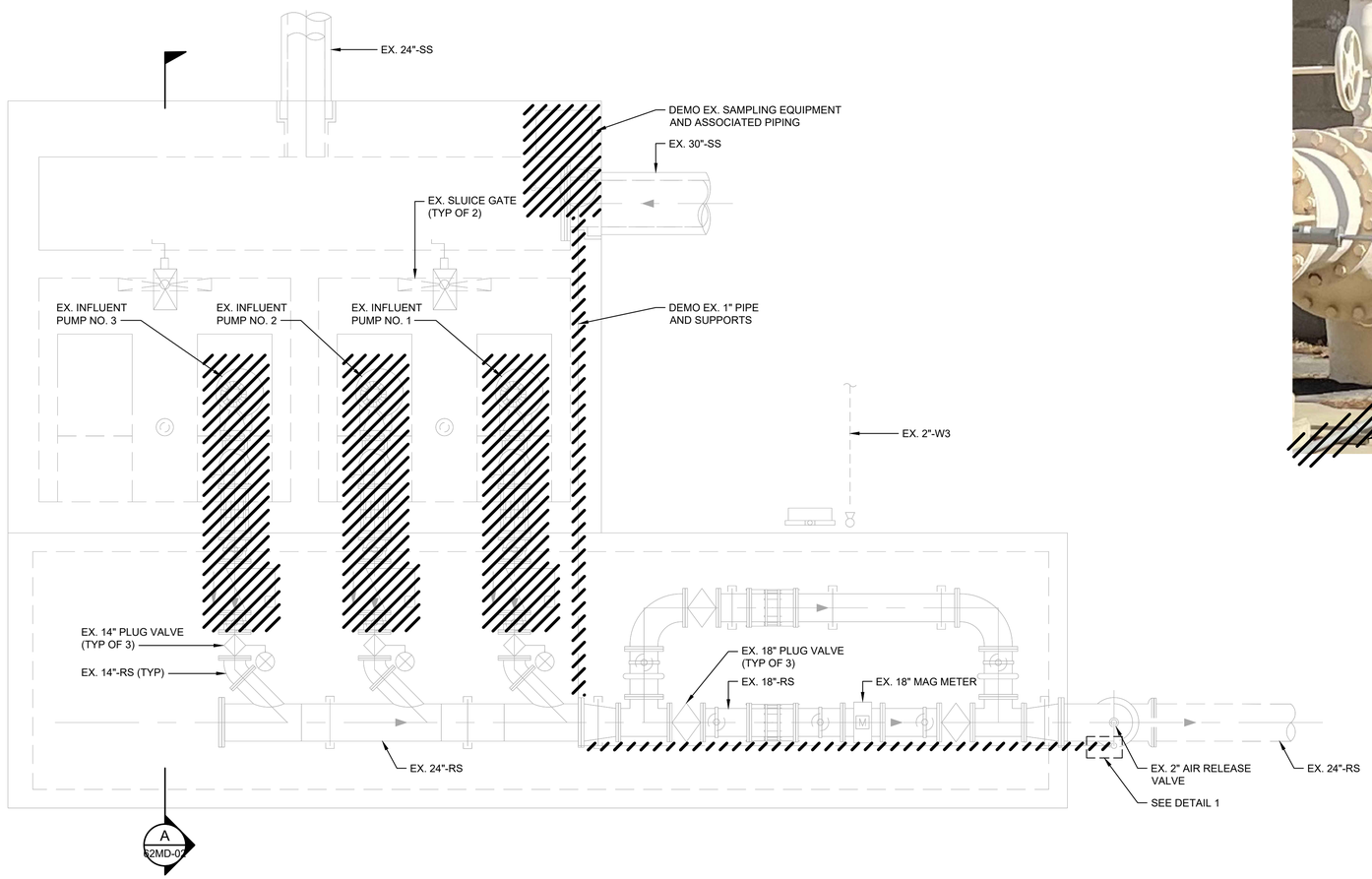
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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

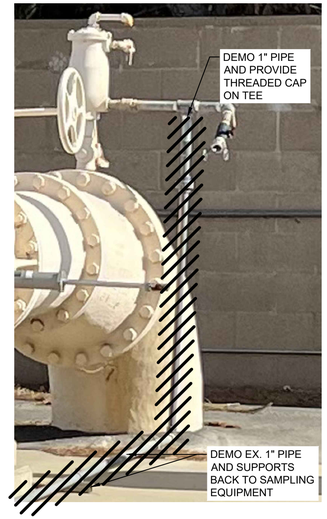
MECHANICAL STANDARD DETAILS, SHEET 4

SHEET M-06
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.



DEMOLITION PLAN

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



DETAIL 1

SCALE : N.T.S.

NOTES

1. FOR GENERAL NOTES, SEE DWG. M-01.

LEGEND:

DEMO:

0' 1' 2' 4' 8' 12'

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

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Checked	ID	10/2023
		Date

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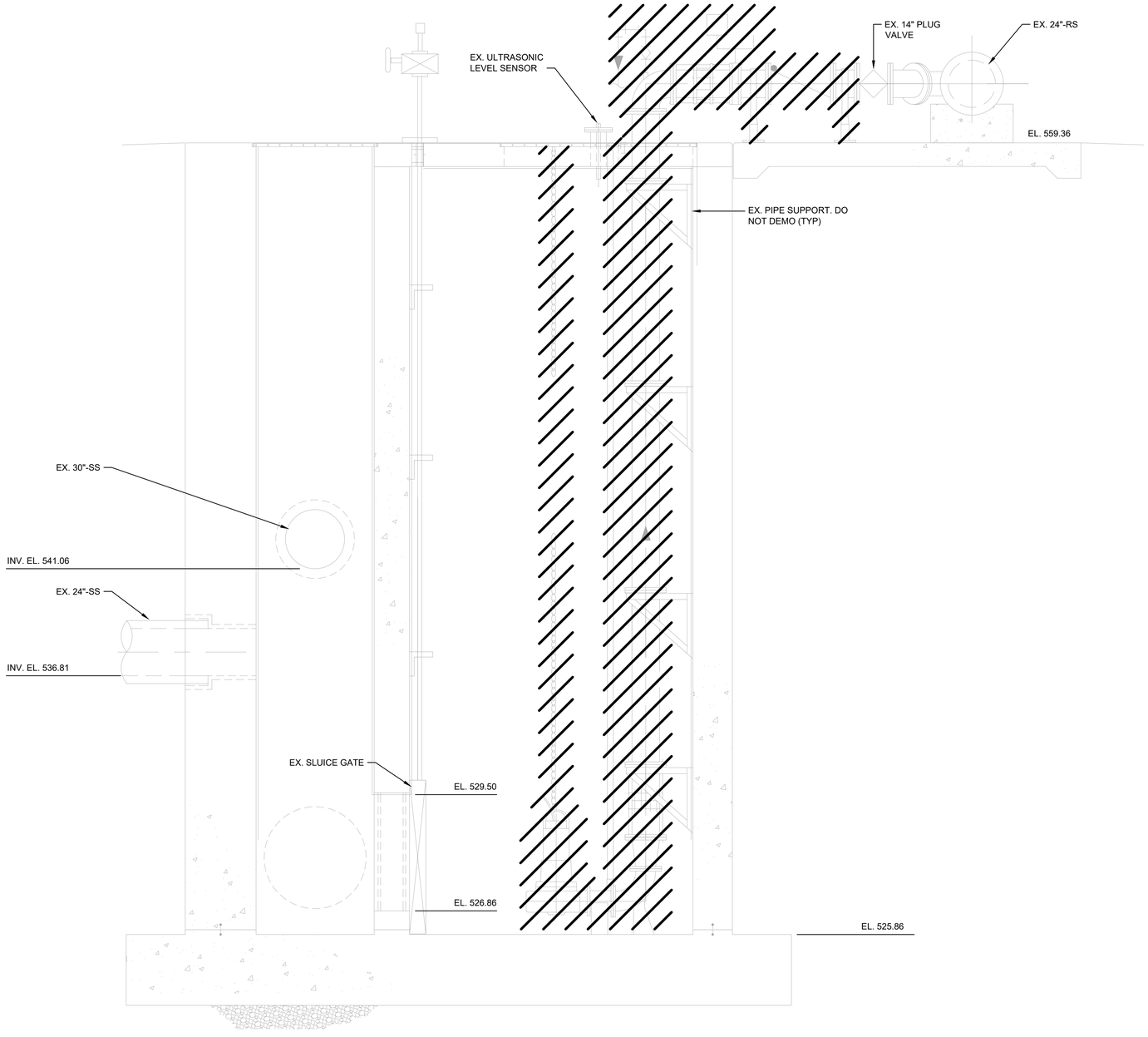
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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 LIFT STATION
DEMOLITION PLAN

SHEET 62MD-01
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.3 Mechanical\WORK\62MD-01.dwg USER: p0045935
DATE: Oct 18, 2023 2:35pm XREFS: IEUA Border m-62pp01 S-62FP01



SECTION A
SCALE : 3/8" = 1'-0"
62MD-01

NOTES

1. FOR GENERAL NOTES, SEE DWG. M-01.

LEGEND:

DEMO:

0' 1' 2' 4' 6'
SCALE : 3/8" = 1'-0"

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.3 Mechanical\WORK\62MD-02.dwg USER: p0045935
DATE: Oct 18, 2023 2:38pm XREFS: IEUA Border M-62PS01 S-62SC01

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Checked	ID	10/2023
		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
0	10/2023	GM	ID	60% SUBMITTAL

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SCALE
AS SHOWN
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0" 1"

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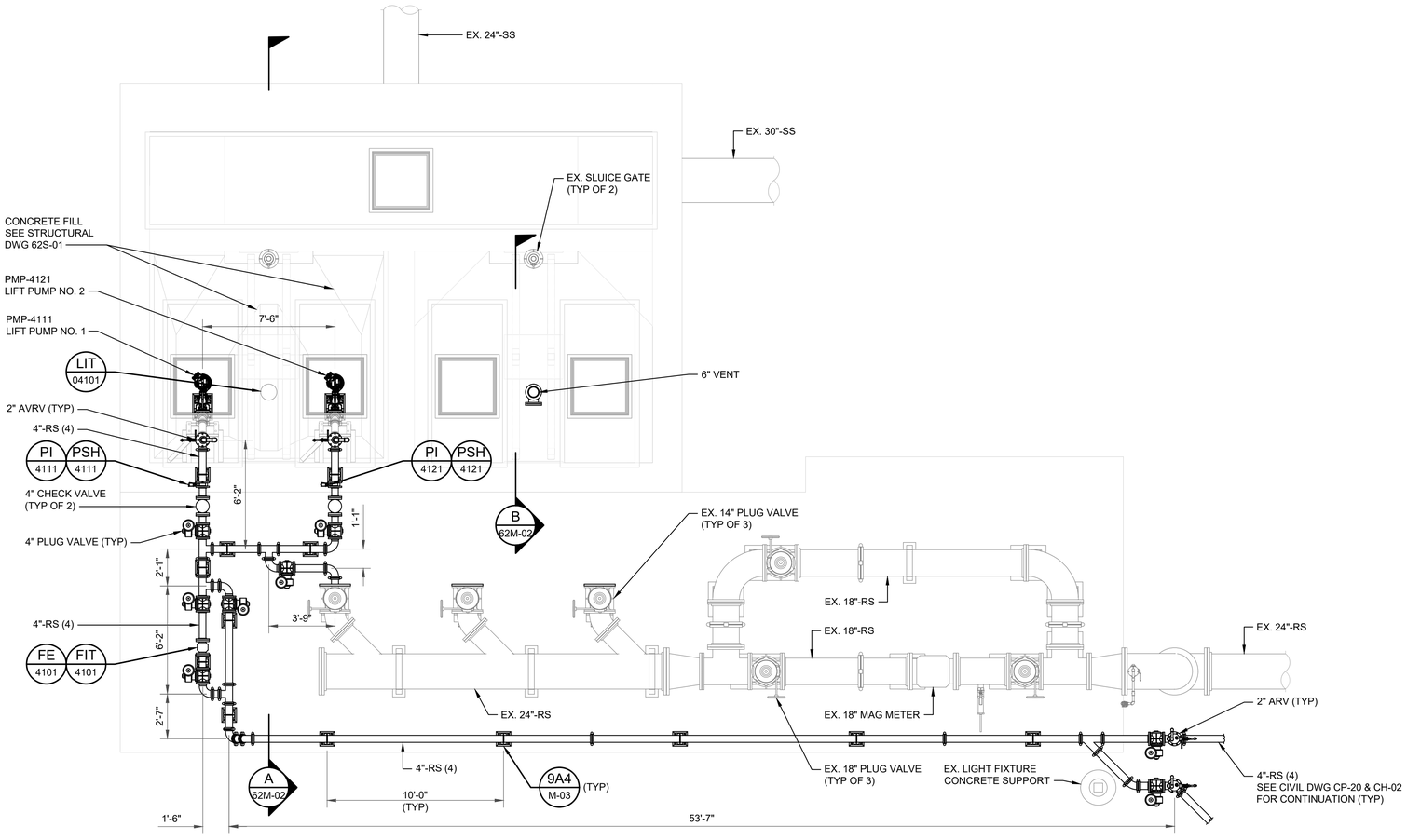
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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 LIFT STATION DEMOLITION SECTION

SHEET 62MD-02
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.



PLAN

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

NOTES

1. FOR GENERAL NOTES, SEE DWG. M-01.

0' 1' 2' 4' 8' 12'

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

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.3 Mechanical\WORK\62M-01.dwg USER: p0045935
DATE: Oct 18, 2023 1:32pm XREFS: IEUA Border RP-2 LS PLAN

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		Date

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SCALE
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0" 1"

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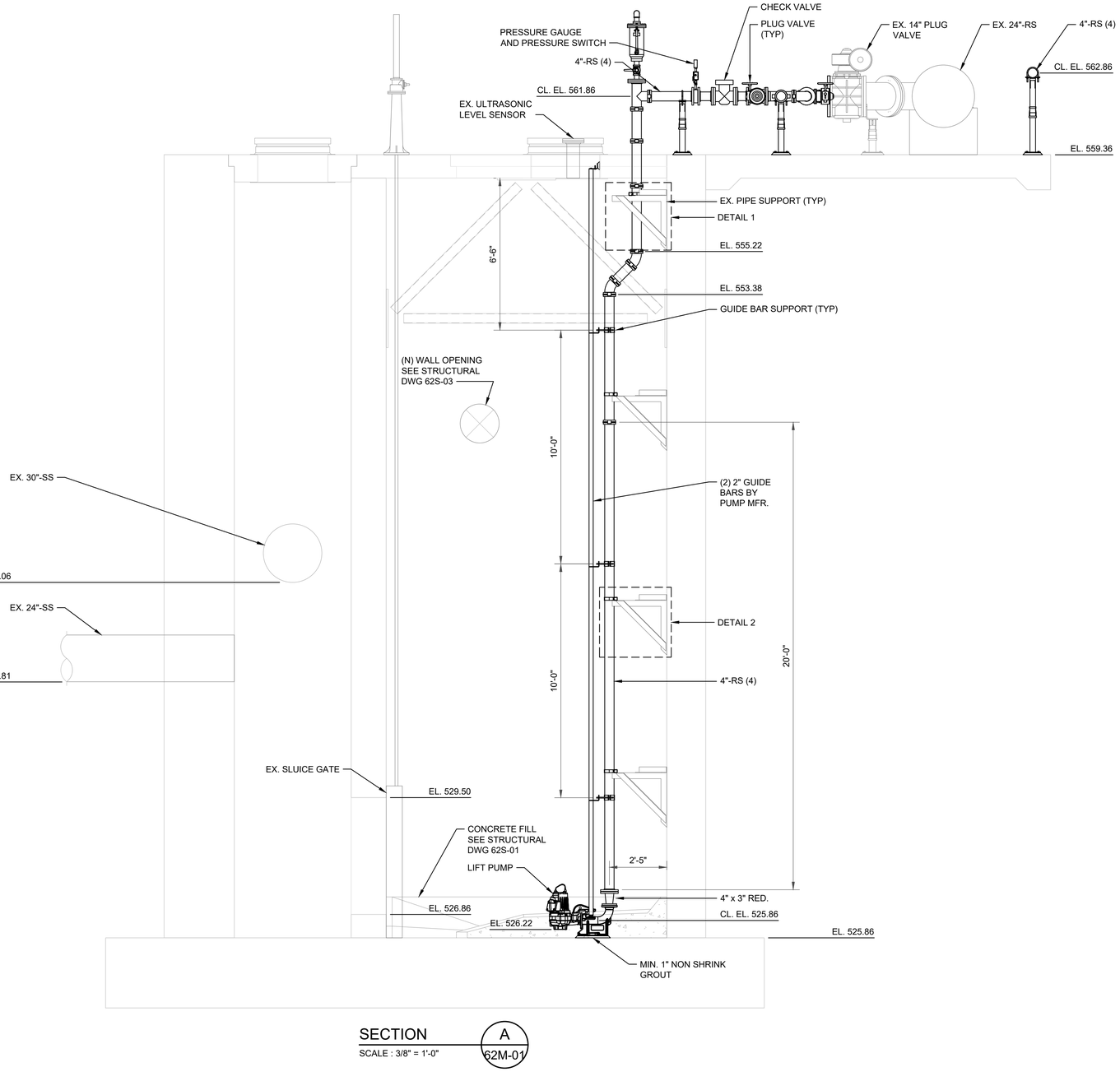
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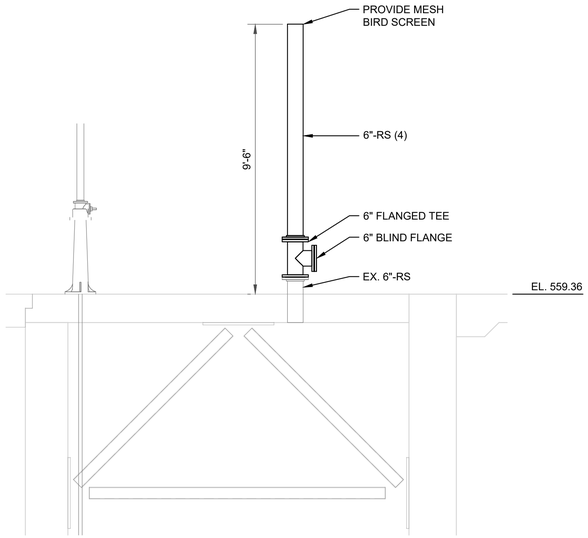
RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 LIFT STATION PLAN

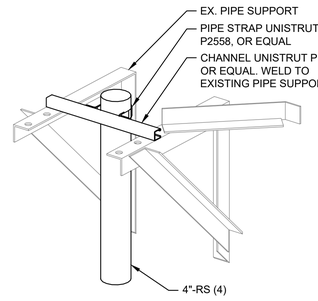
SHEET 62M-01
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.



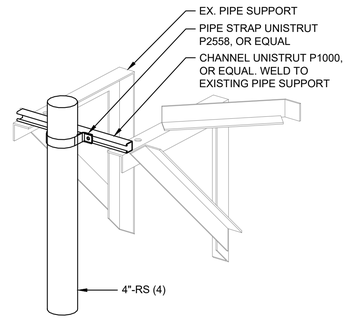
SECTION A
SCALE : 3/8" = 1'-0"
62M-01



SECTION B
SCALE : 3/8" = 1'-0"
62M-01



DETAIL 1
SCALE : N.T.S.



DETAIL 2
SCALE : N.T.S.

NOTES

1. FOR GENERAL NOTES, SEE DWG. M-01.

0' 1' 2' 4' 6'
SCALE : 3/8" = 1'-0"

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
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Drawn	GM	10/2023
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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 LIFT STATION
SECTIONS

SHEET 62M-02
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

DWG: W:\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.3 Mechanical\WORK\62M-02.dwg USER: p0045935
DATE: Oct 18, 2023 2:20pm XREFS: IEUA Border RP-2 LS SECTION A RP-2 LS SECTION B RP-2 LS DETAIL 1 RP-2 LS DETAIL 2

SINGLE LINE DIAGRAMS

- TRANSFORMER, RATING AS NOTED
- PLUG-IN TYPE EQUIPMENT, CIRCUIT NUMBER AS NOTED
  M = MAIN, GM = GENERATOR MAIN
- FUSE
- LOW VOLTAGE CIRCUIT BREAKER, 3 POLE UNLESS OTHERWISE NOTED
  AF = AMPERE FRAME RATING
  AT = AMPERE TRIP SETTING
- MCC MOUNTED COMBINATION STARTER
- 30A — COMBINATION CONTACTOR, SIZE AS NOTED
- 75 — MOTOR, HORSEPOWER AS NOTED
- GROUND
- VT(3)480/120V — VOLTAGE TRANSFORMER, RATIO AND NUMBER OF VT'S AS NOTED
- 100/5 (3) — CURRENT TRANSFORMER, RATIO AND NUMBER OF CT'S AS NOTED
- 50/5 (1) — ZERO SEQUENCE CURRENT TRANSFORMER, RATIO AND NUMBER OF CT'S AS NOTED
- BUS
- ELECTRICAL ENCLOSURE OUTLINE
- GENERATOR
- 60A — DISCONNECT SWITCH, SIZE AS NOTED
- FUSED DISCONNECT SWITCH, SIZE AS NOTED
- SOLID-STATE REDUCED VOLTAGE STARTER MOTOR
- A — AMMETER
- V — VOLTMETER
- AS — AMMETER SWITCH
- PM — POWER MONITOR
- VS — VOLTMETER SWITCH
- E — E: ELECTRICAL INTERLOCK, K: KEY INTERLOCK
- Ø — PHASE
- G — DENOTES GREEN LIGHT

PLANS

- CONDUIT RUN EXPOSED UNLESS OTHERWISE NOTED
- CONDUIT RUN UNDERGROUND OR BELOW GRADE UNLESS OTHERWISE NOTED
- BARE COPPER GROUND IN SLAB OR IN UNDERGROUND GROUND GRID, SIZE AS NOTED
- LP1-1/3,7 — HOME RUN TO PANEL "LP1". CIRCUIT NOS 1,3,7. CONDUCTORS SHALL BE #12 UNLESS OTHERWISE NOTED. CONDUIT SHALL BE 3/4" UNLESS OTHERWISE NOTED. RUNS NOT MARKED SHALL BE 3/4" WITH 2#12 & 1#12 GROUND. CONDUIT SHOWN IS 3/4" WITH 5#12 & 1#12 GROUND, CIRCUIT NOS. 1 & 3 WITH COMMON NEUTRAL & CIRCUIT NO. 7 WITH SEPARATE NEUTRAL.
- CONDUIT RUN - CHANGE IN ELEVATION
- CONDUIT UP (OUT TOP OF EQUIPMENT)
- CONDUIT DOWN (OUT BOTTOM OF EQUIPMENT)
- CONDUIT STUBBED OUT AND CAPPED
- FLEXIBLE LIQUID-TIGHT CONDUIT

WALL FLOOR

- 120V SINGLE RECEPTACLE, NEMA CONFIGURATION 5-20
- 120V DUPLEX RECEPTACLE, NEMA CONFIGURATION 5-20
- JB — RACEWAY BOX, "JB" JUNCTION BOX, "MH" MANHOLE "HH" HANDHOLE, "PB" PULLBOX, "TB" TERMINAL BOX
- J — JUNCTION BOX, SIZE AS REQUIRED BY CODE
- T — THERMOSTAT, T'STAT
- PC — PHOTOCELL
- PS — CONTROL DEVICE
  VLV = VALVE
  PS = PRESSURE SWITCH
  TS = TEMPERATURE SWITCH
  ZS = LIMIT SWITCH
  LE = LEVEL ELEMENT
  LS = AMBIENT LTG. SENSOR
  MS = MOTION SENSOR
- SS — PUSHBUTTON STATION, "SS" START-STOP, "LOS" LOCKOUT-STOP, "HOA" HAND-OFF-AUTO, "LOR" LOCAL-OFF-REMOTE, "E-STOP" EMERGENCY STOP.
- DISCONNECT SWITCH. SIZE AS NOTED

PLANS

- POWER PANEL, CONTROL PANEL, ETC
- MOTOR CONTROL CENTER
- GROUND CONNECTION BOLTED TYPE OR GROUND INSERT
- GROUND CONNECTION - EXOTHERMIC TYPE
- S_m — MANUAL MOTOR STARTER WITH THERMAL OVERLOAD PROTECTION AND RED PILOT LIGHT IN NEMA 1 ENCLOSURE, PAD LOCKABLE IN "OFF" POSITION
- GROUND ROD WITH CADWELDED GROUND WIRE
- GROUND WELL
- FIELD INSTRUMENT
- SV — SOLENOID VALVE
- H — HEATER
- M — MOTOR OPERATED VALVE

GENERAL

- HEAVY LINES ARE PROPOSED WORK
- LIGHT LINES ARE EXISTING WORK
- LIGHT BROKEN LINES ARE FUTURE WORK OR BY OTHERS
- REMOVE OR DEMOLISH
- 1 — DENOTES REFERENCES TO KEYED NOTE 1
  I.E. - "SEE KEYED NOTE 1"

PARSONS
100 WEST WALNUT STREET
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0	10/2023	KL	MH	60% SUBMITTAL

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PROJECT MANAGER DATE

SCALE
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0" 1"

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A MUNICIPAL WATER DISTRICT
OFFICE ADDRESS
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Chino, California 91708
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Post Office Box 9020
Chino Hills, California 91709

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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

ELECTRICAL
SYMBOLS AND LEGEND

SHEET E-01
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

DWG: \\capas01fs01\PW\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.6 Electrical\Work\RP-2 Lift Station\E-01.dwg USER: p0014446
DATE: Oct 20, 2023 11:00am XREFS: IEUA Border

GENERAL NOTES

RACEWAYS:

1. ALL CONDUITS ARE SHOWN DIAGRAMMATICALLY AND THEY SHALL BE ROUTED TO SUIT THE FIELD CONDITIONS MEETING THE REQUIREMENTS OF NEC AND THE SPECIFICATIONS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL FITTINGS, JUNCTION BOXES, PULL BOXES, SUPPORTS, AND HARDWARES REQUIRED FOR RACEWAY SYSTEMS.
3. CONNECTION OF RIGID CONDUIT TO DEVICES OR EQUIPMENT WHICH MAY BE SUBJECT TO MOVEMENT, VIBRATION, EXPANSION OR CONTRACTION SHALL BE MADE WITH LIQUID-TIGHT FLEXIBLE CONDUIT, WHERE REQUIRED. FLEXIBLE CONDUIT SHALL HAVE AN INTEGRAL COPPER GROUNDING CONDUCTOR OR GROUNDING JUMPER SHALL BE INSTALLED.
4. ALL STEEL CONDUITS NOT TERMINATING DIRECTLY TO THE ENCLOSURES OF MOTOR CONTROL EQUIPMENTS, CONTROL CABINETS, ETC. SHALL BE PROVIDED WITH GROUNDING BUSHING AND GROUNDED TO THE ENCLOSURES.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL SLEEVES AND OPENINGS REQUIRED FOR THE PASSAGE OF RACEWAYS OR CABLES EVEN IF THEY ARE NOT SHOWN ON THE DRAWINGS.

GROUNDING:

1. ALL METALLIC STRUCTURES, METAL ENCLOSURES AND ELECTRICAL EQUIPMENT, SUCH AS STRUCTURAL STEEL, METALLIC RACEWAYS, SWITCHING EQUIPMENT, PANELS, ELECTRICAL EQUIPMENT ENCLOSURES AND CABINETS, MOTORS, TRANSFORMERS, ETC. SHALL BE PERMANENTLY AND EFFECTIVELY GROUNDED AND GROUND CONNECTIONS SHALL BE MADE TO THE PLANT GROUND GRIDS. THE BONDING JUMPER CONDUCTORS SHALL BE SIZED PER NEC UNLESS OTHERWISE SHOWN.
2. GROUNDING ELECTRODE SYSTEM FOR EACH SERVICE SHALL BE BONDED TOGETHER TO METAL FRAMES OF BUILDING OR STRUCTURES.

SINGLE LINE DIAGRAMS:

1. SINGLE LINE DIAGRAMS SHOW MAJOR PLANT ELECTRICAL DISTRIBUTION SYSTEMS INCLUDING POWER SOURCES, VOLTAGE LEVELS OF EACH SYSTEMS, MAJOR DISTRIBUTION EQUIPMENT AND THEIR CONNECTIONS, PROTECTION EQUIPMENT AND DEVICES, MAJOR UTILIZATION EQUIPMENT AND DEVICES, AND THEIR CONTROL, ETC.

ELECTRICAL PLANS:

1. WHERE RACEWAYS ARE INDICATED AS HOME RUNS, THE CONTRACTOR SHALL INSTALL ALL RACEWAY REQUIRED. RACEWAY ROUTINGS SHALL BE CONTRACTOR'S CHOICE AND IN STRICT ACCORDANCE WITH THE NEC AND CUSTOMARY INSTALLATION PRACTICES. RACEWAY SHALL BE ENCASED, EXPOSED, CONCEALED, OR UNDER FLOOR AS INDICATED OR REQUIRED.
2. EXACT LOCATIONS OF FIELD DEVICES MAY NOT BE SHOWN IN THE ELECTRICAL PLAN DRAWINGS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE ACTUAL LOCATIONS OF THE FIELD DEVICES AND INSTALL CONDUITS AND WIRES REQUIRED TO MAKE THE SYSTEM COMPLETE.
3. ROUTINGS SHALL BE ADJUSTED TO AVOID OBSTRUCTIONS. COORDINATE WITH ALL OTHER TRADES PRIOR TO INSTALLATION OF RACEWAYS. LACK OF SUCH COORDINATION SHALL NOT BE JUSTIFICATION FOR EXTRA COMPENSATION, AND REMOVAL AND RE-INSTALLATION TO RESOLVE CONFLICTS SHALL BE AT NO EXTRA COST TO THE OWNER.

EQUIPMENT ANCHORING:

1. POST-INSTALLED ANCHOR BOLTS SHALL HAVE AN ACTIVE ICC EVAULATION REPORT AT TIME OF CONSTRUCTION. THEIR CAPACITIES LISTED IN THE REPORT SHALL BE BASED ON TESTING IN CRACKED CONCRETE.
2. 316SS ADHESIVE ANCHORING SYSTEM SHALL BE USED IN CORROSIVE WET, IN DRY, INDOOR OR OUTDOOR AREAS.
3. CONTRACTOR SHALL SUBMIT CALCULATIONS FOR ANCHORING SYSTEM FOR MCC TO CONSTRUCTION MANAGER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. CALCULATIONS SHALL CONSIDER ALL APPLICABLE LOADS ON ANCHORING AND SHALL INCLUDE ANCHOR BOLT CAPACITIES AS MODIFIED BY SPACING AND EDGED DISTANCE, BASE PLATE STRESSES, AND CONCRETE BEARING STRESSES.

MISCELLANEOUS:

1. CIRCUITS OF DIFFERENT SYSTEM VOLTAGE SHALL BE INSTALLED IN SEPARATE RACEWAYS, AND PULL BOXES. THE SYSTEM VOLTAGE LEVELS ARE:
   a. 120-480 VOLT
   b. INSTRUMENTATION LESS THAN 50 VOLT DC
   c. TELEPHONE AND COMMUNICATION.

ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
AF	AMPERE FRAME RATING
AFF	ABOVE FINISHED FLOOR
AL	ALUMINUM
AMP	AMPERES, AMPERAGE
AS	AMMETER SWITCH, ADJUSTABLE SPEED
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER
BD	BUS DUCT, BUSWAY
BKR	BREAKER
BLDG	BUILDING
C	CONDUIT
CAB	CABINET
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CO	CONDUIT ONLY
COMPR	COMPRESSOR
COMPT	COMPARTMENT
CP	CONTROL PANEL
CPB	CONTROL PULL BOX
CR	CONTROL RELAY
CT	CURRENT TRANSFORMER
CU	COPPER
D	DEPTH
DC	DIRECT CURRENT
DEG	DEGREE
DIA	DIAMETER
DISC	DISCONNECT
DISTR	DISTRIBUTION
DP	DISTRIBUTION PANEL BOARD
DPDT	DOUBLE POLE DOUBLE THROW
DS	DISCONNECT SWITCH
DWG	DRAWING
(E)/EXIST	EXISTING
EA	EACH
EL, ELEV	ELEVATION
ELEC/ELECT	ELECTRICAL
EMERG	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EP	EXPLOSION PROOF
EQPT	EQUIPMENT
ETM	ELAPSE TIME METER
EXH	EXHAUST
F	FREQUENCY
FDR	FEEDER
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FUT	FUTURE
GALV	GALVANIZED
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
G, GND	GROUND
H	HEIGHT
HOA	HAND-OFF-AUTO
HP	HORSEPOWER
HT	HEIGHT
HV	HIGH VOLTAGE
HZ	HERTZ (CYCLES PER SECOND)

IC	INTERRUPTING CAPACITY
IND	INDICATION
INFO	INFORMATION
INST	INSTANTANEOUS
INSTR	INSTRUMENT
I/O	INPUT/OUTPUT
IPB	INSTRUMENTATION PULL BOX
JB, J/B	JUNCTION BOX
J BOX	JUNCTION BOX
KAIC	KILOAMPERE INTERRUPTING AND WITHSTAND CAPACITY
kcmil	THOUSAND CIRCULAR MIL
KV	KILOVOLT
KVA	KILOVOLT-AMPERES
KW	KILOWATTS
LC	LIGHTING CONTACTOR
LCB	LOCAL CONTROL BOARD
LCP	LOCAL CONTROL PANEL
LP	LIGHTING PANEL
LS	LEVEL SWITCH, LIMIT SWITCH
LV	LOW VOLTAGE
MA	MILLIAMPS
MAN	MANUAL
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MFGR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MS	MANUAL MOTOR STARTER
MT, MTD	MOUNT, MOUNTED
MTG	MOUNTING
MTR	MOTOR
MTS	MANUAL TRANSFER SWITCH
N	NEUTRAL
NA	NON-AUTOMATIC OR NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEG	NEGATIVE
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN, NUMBER
NOS	NUMBERS
NP	NAMEPLATE
NTS	NOT TO SCALE
OC	OPENING COIL, OR ON CENTER
O/H	OVERHEAD
P	POLE, POWER
PB	PUSH BUTTON, POWER PULL BOX
PF	POWER FACTOR
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
PNLBD	PANELBOARD
PP	POWER PANEL
PR	PAIR
PRI.	PRIMARY
PVC	POLYVINYL CHLORIDE
PW	PART WINDING
PWR	POWER
R	TO BE REMOVED

REC	RECEPTACLE
REQ'D	REQUIRED
REF	REFERENCE
RGS	RIGID GALVANIZED STEEL
SCE	SOUTHERN CALIFORNIA EDISON
SCH	SCHEDULE
SEC	SECONDS, SECONDARY
SECT	SECTION
SEL SW	SELECTOR SWITCH
SEQ	SEQUENCE
SHLD	SHIELDED
SHT	SHEET
SIG	SIGNAL
SP	SPARE
SPDT	SINGLE POLE DOUBLE THROW
SPEC	SPECIFICATION
SRVS	SOLID-STATE REDUCED VOLTAGE STARTER MOTOR
STD	STANDARD
STL	STEEL
STR	STARTER
SV	SOLENOID VALVE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYS	SYSTEM
TB	TERMINAL BOX
TD	TIME DELAY
TDR	TIME DELAY RELAY
TEMP	TEMPERATURE, OR TEMPORARY
TERM	TERMINAL
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
V	VOLTS, VOLTAGE
VA	VOLT AMPERES
W	WIDTH
WP	WEATHERPROOF
XFMR, TX	TRANSFORMER
Y	WYE

DWG: \\capas01fs01\PW\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.6 Electrical\Work\RP-2 Lift Station\E-02.dwg USER: p0014446
DATE: Oct 20, 2023 10:57am XREFS: IEUA Border

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SCALE
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Chino, California 91708
Telephone (909) 993-1600
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Post Office Box 9020
Chino Hills, California 91709

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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

ELECTRICAL
GENERAL NOTES & ABBREVIATIONS

SHEET E-02
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

MOUNTING: INSIDE MCC LS	PANEL: 62LP	TYPE: NEMA 1	LOCATION: RP-2
VOLTAGE: 120/240 Volts, 1Ø, 3W	AIC SYM: 18,000		100 AMP BUS 50A AMP MAIN CB

DESCRIPTION	VOLT-AMPERES PHASE A	VOLT-AMPERES PHASE B	LTG	REC	MISC	POLE	BKR	CIR	CIR	BKR	POLE	MISC	REC	LTG	VOLT-AMPERES PHASE A	VOLT-AMPERES PHASE B	DESCRIPTION
C5-ILCP-04100	300				1	1	20	1	2	20	1	1			300		C5-ILCP-04100
FIT-04100		100			1	1	20	3	4	20	1						SPARE
POLE LIGHT	50					1	20	5	6	20	1			2	290		LIGHTS
GEN BATTERY CHARGER		100			1	1	20	7	8	20	1		2			360	RECEPTACLES
GENERATOR HEATER	250					1	20	9	10	20	1	1			200		LY-27101
SPARE						1	20	11	12	20	1						SPARE
SPACE								13	14								SPACE
SPACE								15	16								SPACE
SPACE								17	18								SPACE
SPACE								19	20								SPACE
SPACE								21	22								SPACE
SPACE								23	24								SPACE
VA PER PHASE	600	200													790	360	VA PER PHASE
											TOTAL VA PER PHASE				1390	560	
											TOTAL CONNECTED VA				1950		

CONTINUOUS LOAD 290 x1.25 = 362.5 VA
+ OTHER = 1660.0 VA
TOTAL LOAD = 2022.5 VA

8.43 AMPS @ 120/240 Volts, 1Ø, 3W

NOTES:

1. SEE DRAWINGS E-01 AND E-02 FOR SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.

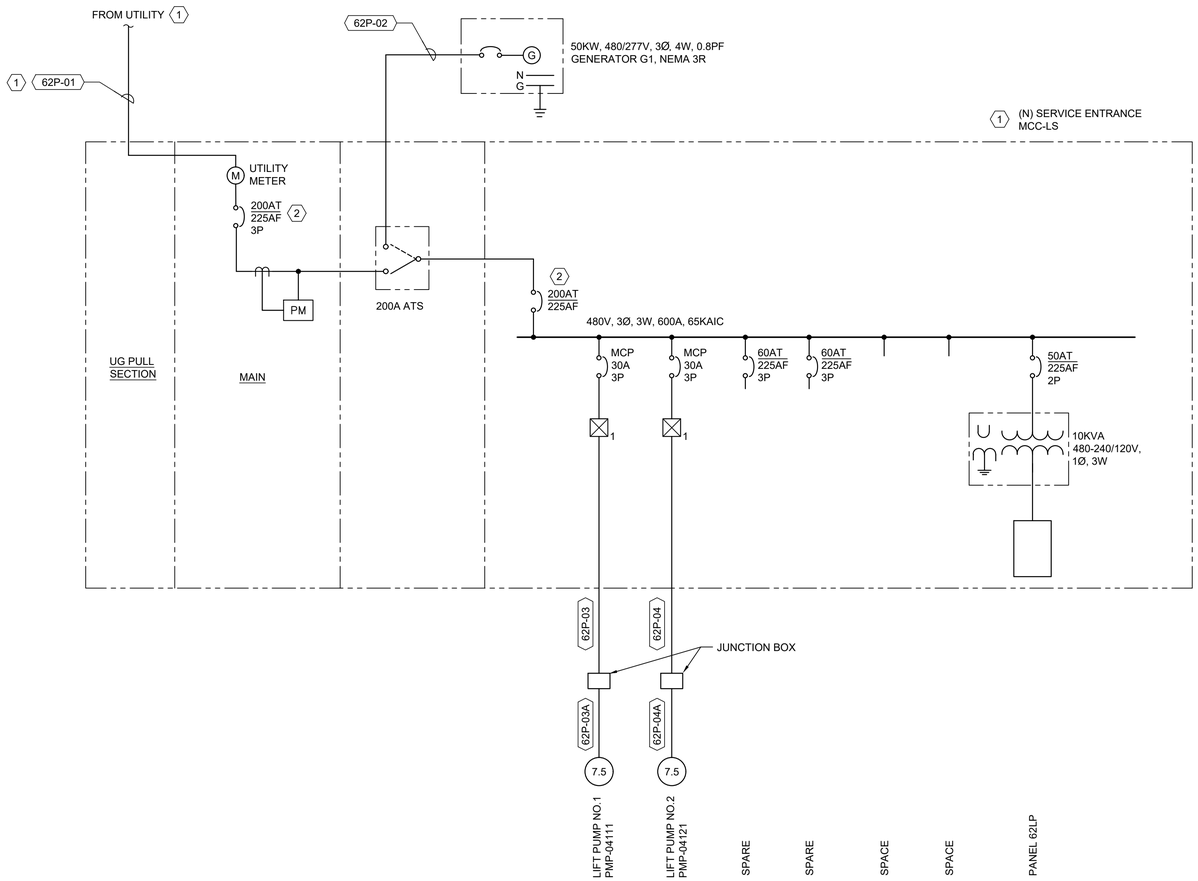
KEY NOTES:

(1) PER UTILITY'S REQUIREMENTS.

(2) WITH ELECTRONIC TRIP UNIT.

MAXIMUM LOAD FOR MCC-LS:

1. LIFT PUMP # P1	=	9KVA
2. LIFT PUMP # P2	=	0KVA
3. LIGHTING PANEL	=	10KVA
25% OF LARGEST MOTOR LOAD	=	3KVA
SUB-TOTAL	=	22KVA
20% SPARE CAPACITY FOR FUTURE	=	5KVA
TOTAL	=	27KVA
27KVA@480V	=	33A



MCC LS SINGLE LINE DIAGRAM

SCALE: NTS

CABLE NO.	VOLTAGE CLASS VOLT, UON	CONDUIT SIZE	CONDUCTORS SIZE	FROM	TO	ELECTRICAL DWGS	INSTR DWGS	REMARK
F-01		2"	(1) FO CABLE	(E) PC-3	C5-ILCP-78100	E-04, E-05	78I-05	REFER TO MOUNTAIN AVE LIFT STATION PROJECT
F-02		2"	(1) FO CABLE	(E) PC-3	C5-ILCP-04100	62E-01, E-04, E-05	62I-01	24 STRAND MM
62P-01	480V	PER UTILITY REQ.	PER UTILITY REQ.	SCE XFMR	MCC LS	E-04, E-05, 62E-01		CONDUCTOR TO BE PROVIDED BY UTILITY COMPANY
62P-02	480V	2"	4#4 & 1#8G	GENERATOR	MCC LS (ATS)	62E-01		
62P-03	480V	1"	3#12, 1#12G & 2#12	MCC LS	JUNCTION BOX	62E-01	62I-01	PUMP MONITOR RELAY LOCATED INSIDE JB
62P-03A	480V	1"	VENDOR CABLE	JUNCTION BOX	LIFT PUMP NO.1 PMP-04111	62E-01	62I-01	
62P-04	480V	1"	3#12, 1#12G & 2#12	MCC LS	JUNCTION BOX	62E-01	62I-01	PUMP MONITOR RELAY LOCATED INSIDE JB
62P-04A	480V	1"	VENDOR CABLE	JUNCTION BOX	LIFT PUMP NO.2 PMP-04121	62E-01	62I-01	
62L-01	120V	1"	4#12 & 1#12G	PANEL 62LP	C5-ILCP-04100	62E-01	62I-01	CKT # 1,2
62L-02	120V	1"	2#12 & 1#12G	PANEL 62LP	FIT-04101	62E-01	62I-01	CKT # 3
62L-03	120V	1"	(2) 2#12 & 1#12G	PANEL 62LP	GENERATOR HEATER & BATTERY CHARGER	62E-01	62I-01	CKT # 7,9
62L-04	120V	1"	2#12 & 1#12G	PANEL 62LP	INTERPOSING RELAY LY-27101	62E-01	62I-01	CKT # 10
62C-01		1"	4/C #14	PUMP MONITOR RELAY	MCC LS (PMP-04111)	62E-01	62I-01	
62C-03		1"	4/C #14	PUMP MONITOR RELAY	MCC LS (PMP-04121)	62E-01	62I-01	
62C-05		1"	2/C #14	PSH-04111	MCC LS	62E-01	62I-01	
62C-06		1"	2/C #14	PSH-04121	MCC LS	62E-01	62I-01	
62C-07		1"	2/C #14	LSLL-04102	LY-27101	62E-01	62I-01	
62C-08		1"	(2) 10/C #14	MCC-LS	C5-ILCP-04100	62E-01	62I-01	FOR PMP-04111 & PMP-04121
62C-09		1"	2/C #14	LY-27101	MCC LS (PMP-04111)	62E-01	62I-01	
62C-10		1"	2/C #14	LY-27101	MCC LS (PMP-04121)	62E-01	62I-01	
62C-11		1"	2/C #14	LY-27102	C5-ILCP-04100	62E-01	62I-01	
62S-01		1"	2/C #16 SHLD	LIT-04101	C5-ILCP-04100	62E-01	62I-01	
62S-02		1"	2/C #16 SHLD	FIT-04101	C5-ILCP-04100	62E-01	62I-01	
62S-02A		1"	VENDOR CABLE	FE-04101	FIT-04101	62E-01	62I-01	
62S-03		1"	(1) CAT 6 CABLE	MCC LS	C5-ILCP-04100	62E-01	62I-01	
62S-04		1-1/2"	(4) 2/C #16 SHLD	MCC LS (PMP-04111)	C5-ILCP-04100	62E-01	62I-01	
62S-05		1-1/2"	(4) 2/C #16 SHLD	MCC LS (PMP-04121)	C5-ILCP-04100	62E-01	62I-01	

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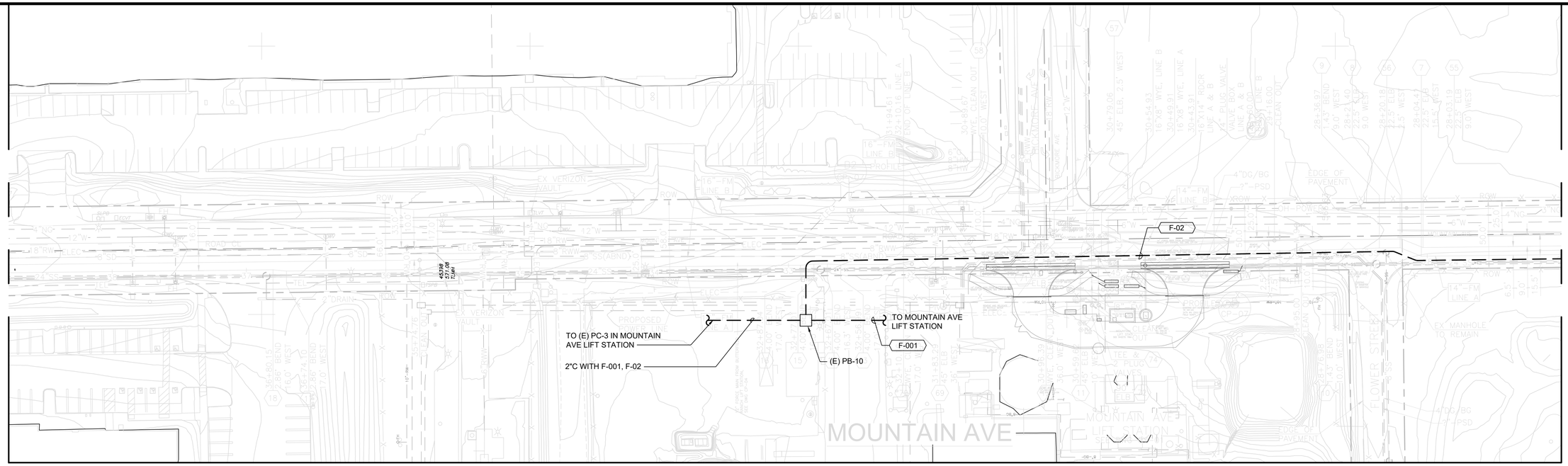
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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

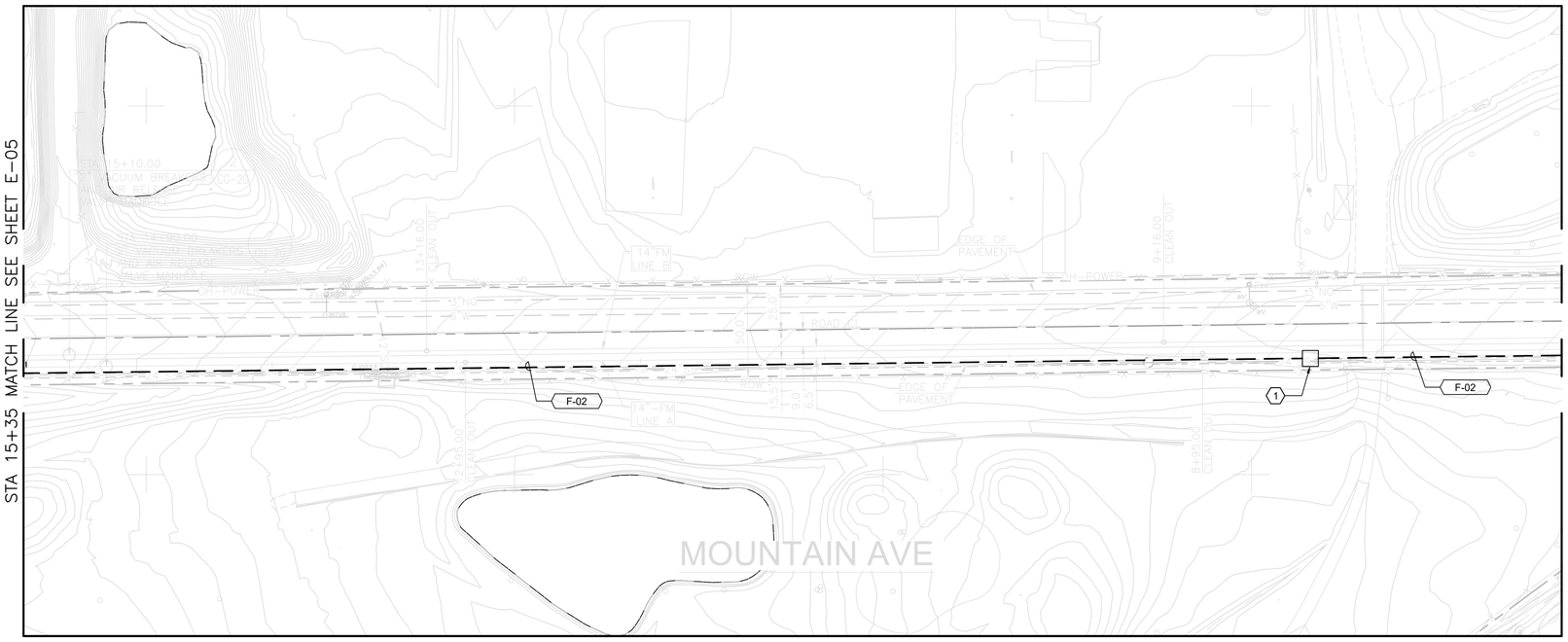
RP-2 LIFT STATION
ELECTRICAL
SINGLE LINE DIAGRAM

SHEET E-03
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

DWG: \\capas01fs01\PW\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6 Electrical\Work\RP-2 Lift Station\E-03.dwg USER: p0014446
DATE: Oct 20, 2023 10:47am XREFS: IEUA Border



PLAN
SCALE: 1" = 40'-0"



PLAN
SCALE: 1" = 40'-0"

KEY NOTES:

1 24" X 36" UNDERGROUND PULL BOX, TRAFFIC RATED.

0 20' 40' 80' 120'
SCALE: HORIZ 1" = 40'-0"

DWG: \\capas015s01\PW\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.6 Electrical\Work\RP-2 Lift Station\E-04.dwg USER: p0014446
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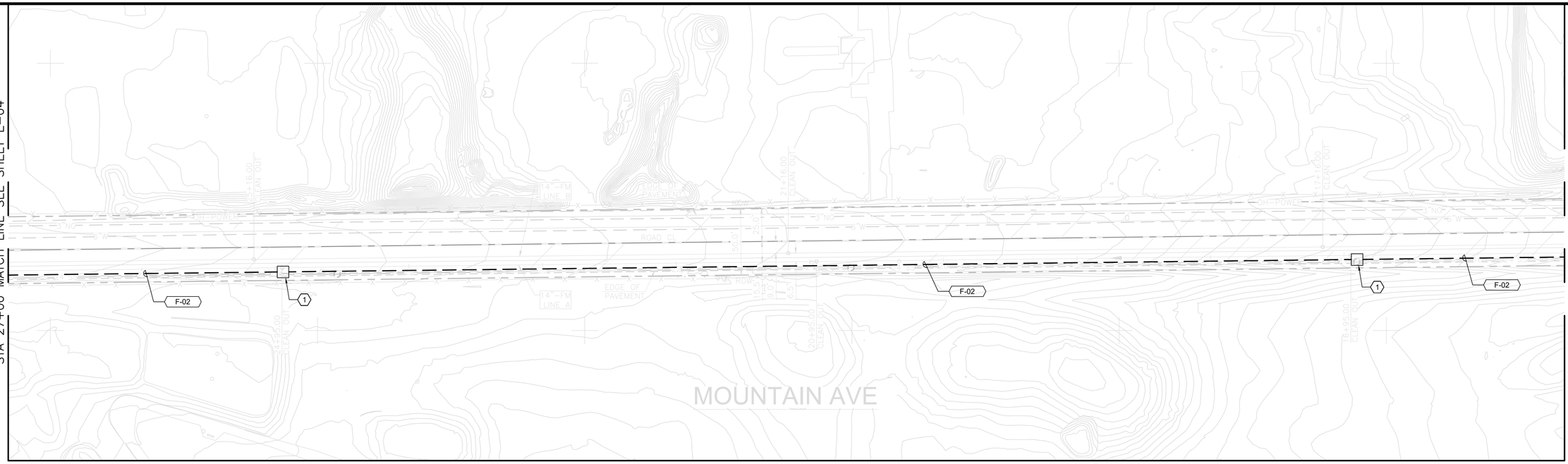
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RP-5 OFFSITE FACILITIES PROJECTS
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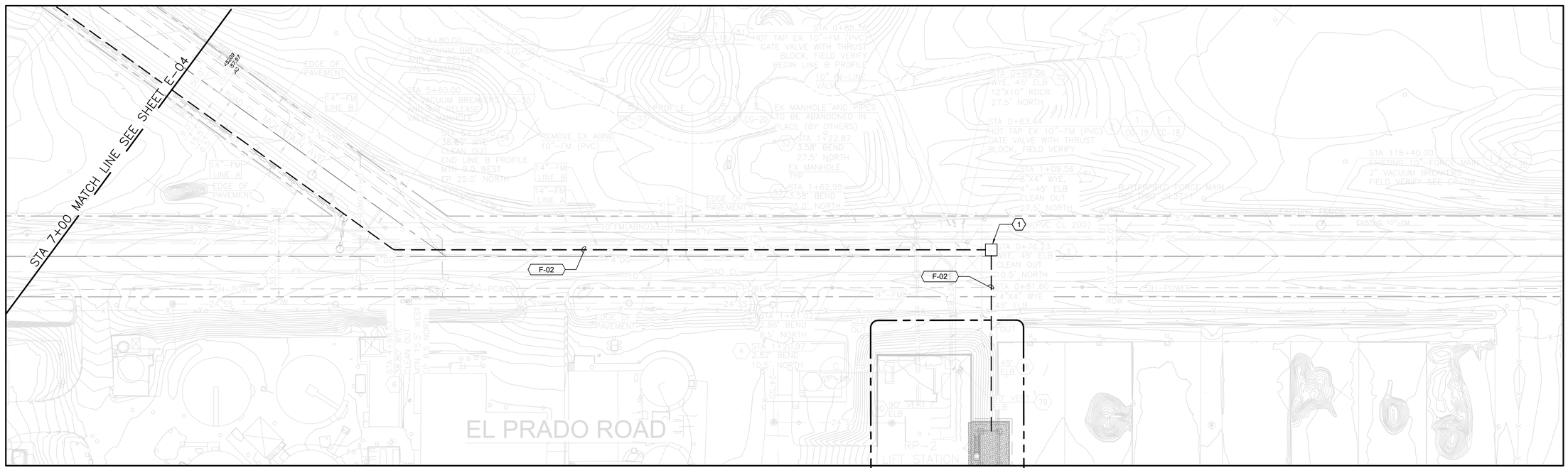
BUTTERFIELD FORCE MAIN
PLAN AND PROFILE 4
STA 27+00 TO STA 38+60

SHEET E-04
SHEET NO. x OF 000
PROJECT NO.
DRAWING NO.

DWG: \\capas01fs01\PW\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.6 Electrical\Work\RP-2 Lift Station\IE-05.dwg USER: p0014446
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PLAN
SCALE: 1" = 40'-0"



PLAN
SCALE: 1" = 40'-0"

SEE DWG. 62E-01 FOR RP-2 LIFT STATION ELECTRICAL PLAN

KEY NOTES:

(1) 24" X 36" UNDERGROUND PULL BOX, TRAFFIC RATED.

0 20' 40' 80' 120'
SCALE: HORIZ 1" = 40'-0"

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SHEET E-05

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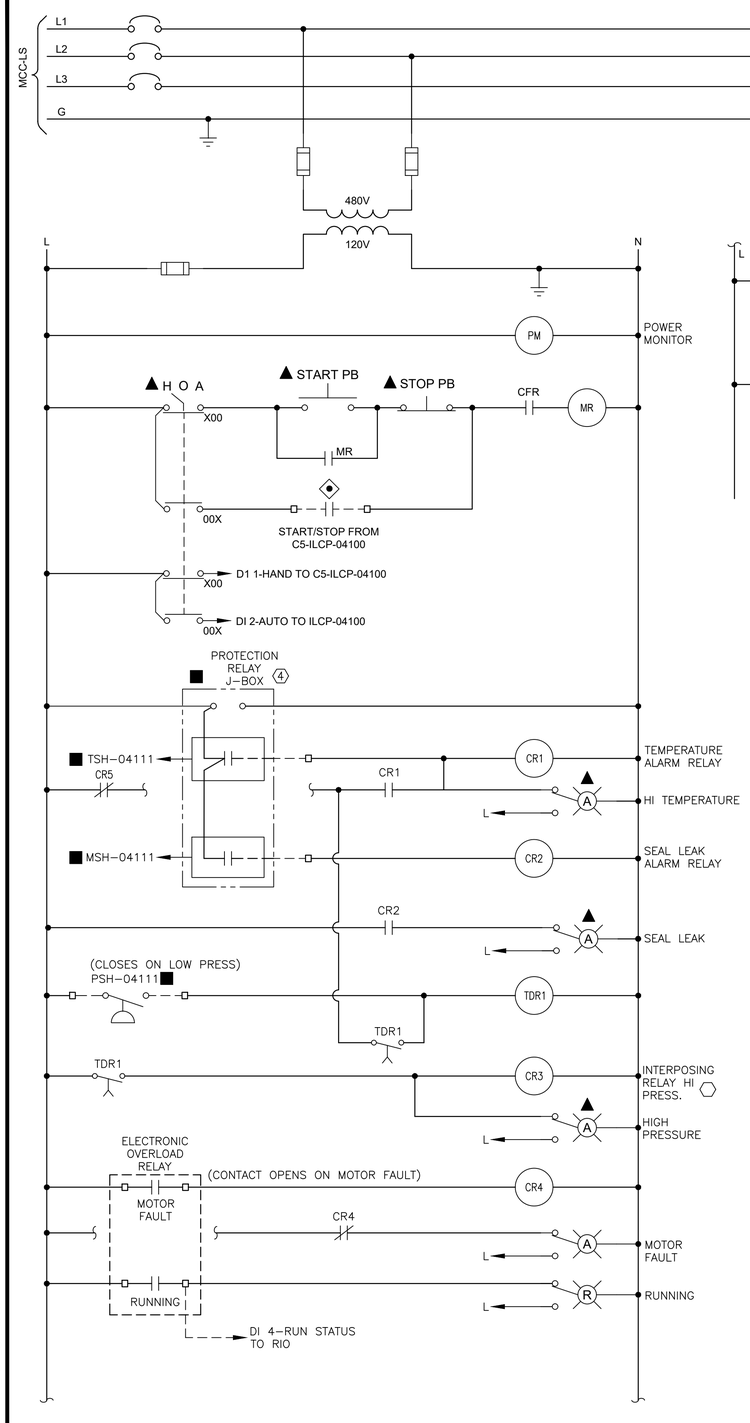
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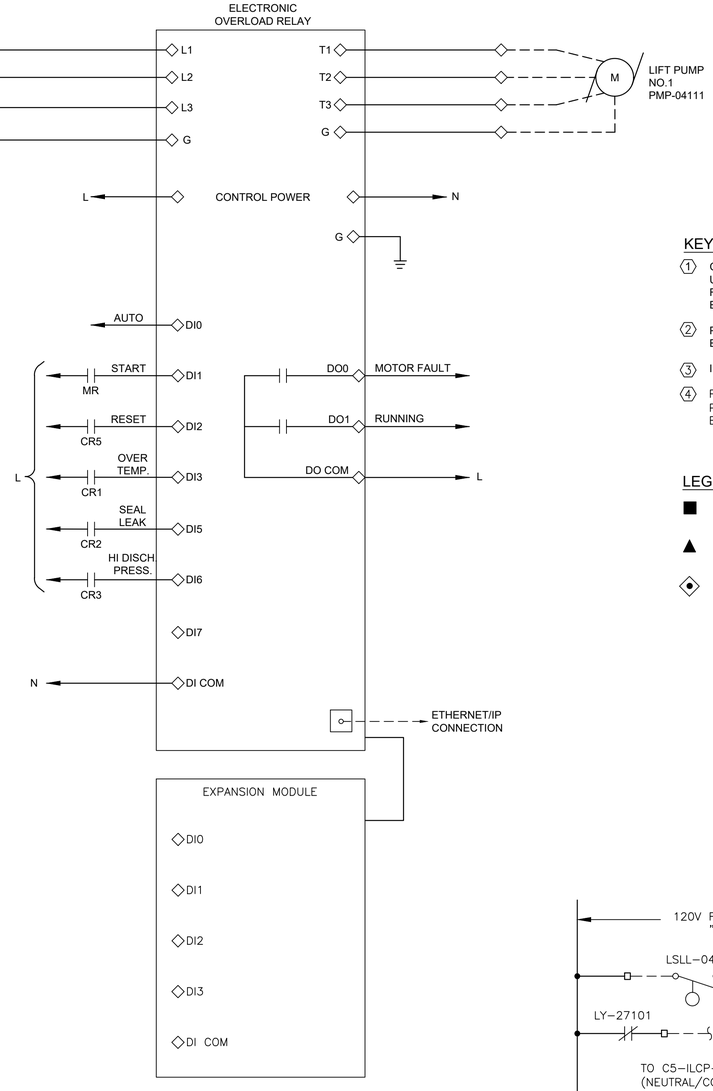
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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

BUTTERFIELD FORCE MAIN
PLAN AND PROFILE 5
STA 38+60 TO STA 50+20.12

SHEET NO. OF 000
PROJECT NO.
DRAWING NO.





NOTES:

1. SEE DWGS. E-01 AND E-02 FOR SYMBOLS, ABBREVIATIONS AND GENERAL NOTES.
2. CONTRACTOR TO FIELD VERIFY EXISTING PUMP CONTROLS BEFORE STARTING ANY WORK.

KEY NOTES:

1. CONTRACTOR SHALL SUBMIT CONTROL DIAGRAMS WITH UNIQUE WIRE NUMBERS AND TERMINAL BLOCK NUMBERS FOR EACH WIRE AND TERMINAL BLOCK, TYPICAL FOR EACH PUMP.
2. PROVIDE MINIMUM OF 1-SPARE RELAY CONTACT FOR EACH INTERPOSING RELAY.
3. INTERPOSING RELAY SHALL BE 2-POLE.
4. PROTECTION RELAY SHALL BE INSTALLED IN THE PROTECTION RELAY/SPLICE BOX AS SHOWN ON ELECTRICAL PLAN DWGS.

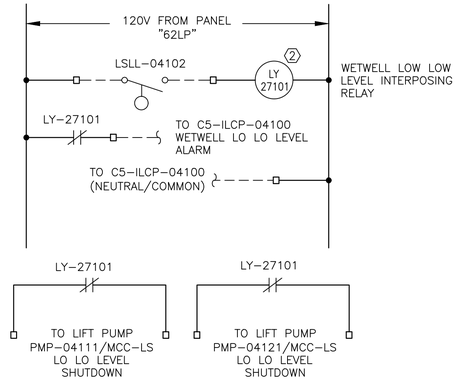
LEGEND:

- ■ FIELD OR REMOTE MOUNTED DEVICE
- ▲ PANEL DOOR MOUNTED DEVICE
- ◆ LOCATED AT SCADA CONTROL PANEL

TAG NO.	MOTOR HP	EQUIPMENT DESCRIPTION	MCC	P&ID
PMP-04111	7.5 HP	LIFT PUMP NO.1	MCC-LS	62I-01
PMP-04121	7.5 HP	LIFT PUMP NO.2	MCC-LS	62I-01

LIFT PUMP PMP-04111 (1)

TYPICAL TO PUMPS SHOWN IN THE TABLE, EXCEPT RELAY CALLOUTS



INTERPOSING RELAY CABINET

DWG: \\capas01fs01\PW\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.6 Electrical\Work\RP-2 Lift Station\E-06.dwg USER: p0014446
DATE: Oct 20, 2023 10:02am XREFS: IEUA Border

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

Designed	KL	10/2023
Drawn	GC	10/2023
Checked	MH	10/2023
		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
0	10/2023	KL	MH	60% SUBMITTAL

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PROJECT MANAGER DATE

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0" 1"

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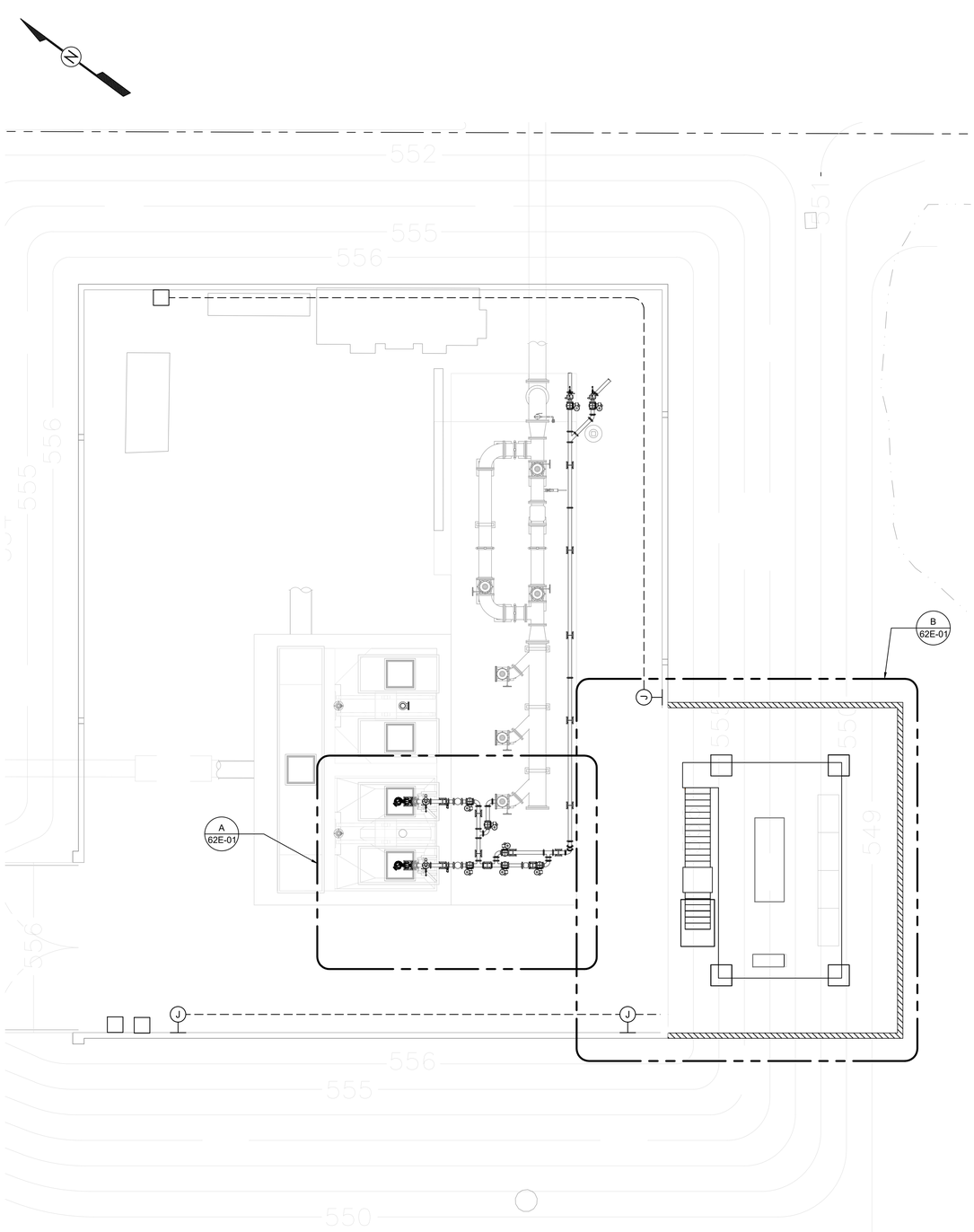
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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

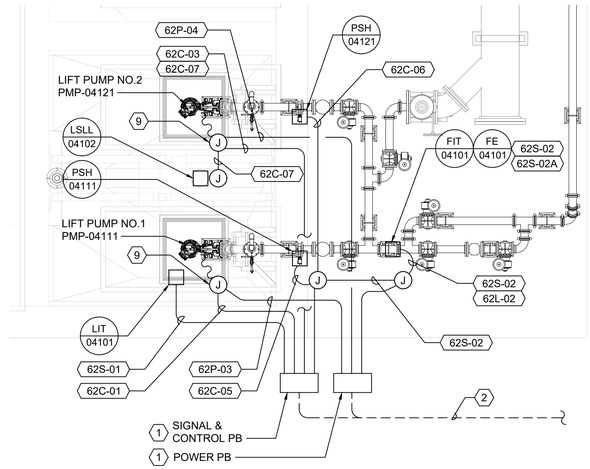
ELECTRICAL
CONTROL SCHEMATICS
LIFT PUMPS

SHEET E-06
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.



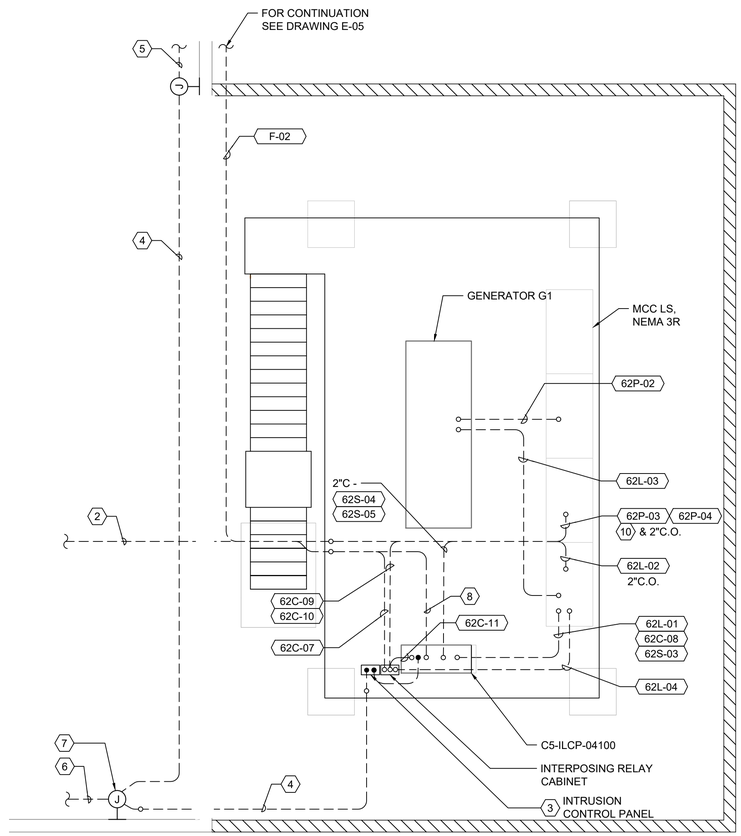
RP2 LIFT STATION PLAN

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



DETAIL "A"

SCALE: 3" = 1'-0"



DETAIL "B"

SCALE: 3" = 1'-0"

GENERAL NOTES:

1. SEE DRAWINGS E-01 AND E-02 FOR SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.

KEY NOTES:

1. 18" x 18" PULL BOX, NEMA 3R.
2. 2"C W/ 62S-01 & 62S-02.
   2"C W/ 62C-01, 62C-02, 62C-03, 62C-04, 62C-05, 62C-06 & 62C-07.
   62P-03
   62P-04
   62L-02
   (3) 2"C.O.
3. NEW LOCATION OF RELOCATED INTRUSION CONTROL PANEL IN PLATFORM. PROVIDE NEMA 3R ENCLOSURE AND RELOCATE CIRCUIT BOARD, BATTERY, ETC. FROM EXISTING ENCLOSURE TO NEW ENCLOSURE. SIZE OF NEW ENCLOSURE SHALL MATCH EXISTING ENCLOSURE.
4. 1"C W/ NEW INTRUSION CABLES.
5. SURFACE MOUNTED 3/4" WITH NEW INTRUSION CABLES.
6. INSTALL NEW INTRUSION CABLES IN EXISTING 3/4"C.
7. PROVIDE J-BOX TO INTERCEPT EXISTING 3/4"C. FIELD VERIFY BEST LOCATION OF INTERCEPTION.
8. 2"C W/ 62S-01 & 62S-02.
   F-02
   2"C.O.
9. PUMP MONITOR RELAY LOCATED INSIDE JUNCTION BOX.
10. 2"C W/ 62C-01, 62C-02, 62C-03, 62C-04, 62C-05, 62C-06, 62C-09, 62C-10
    2"C W/ 62S-04, 62S-05

0 5' 10'

SCALE: 3" = 1'-0"

0 10' 20'

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

DWG: \\capas015\01\PW\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.6 ElectricalWork\RP-2 Lift Station\62E-01.dwg USER: p0014446
DATE: Oct 20, 2023 10:49am XREFS: IEUA Border 20kopo C-xutil C-01UP03 legalot m-62pp01 S-62FP01 20COGRID XC-MTN-SITE-EX XC-MTN-SITE-NW RP-2 LS PLAN IEUA_S-RP2 - Structural Plan

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

Designed	KL	10/2023
Drawn	GC	10/2023
Checked	MH	10/2023
		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
0	10/2023	KL	MH	60% SUBMITTAL

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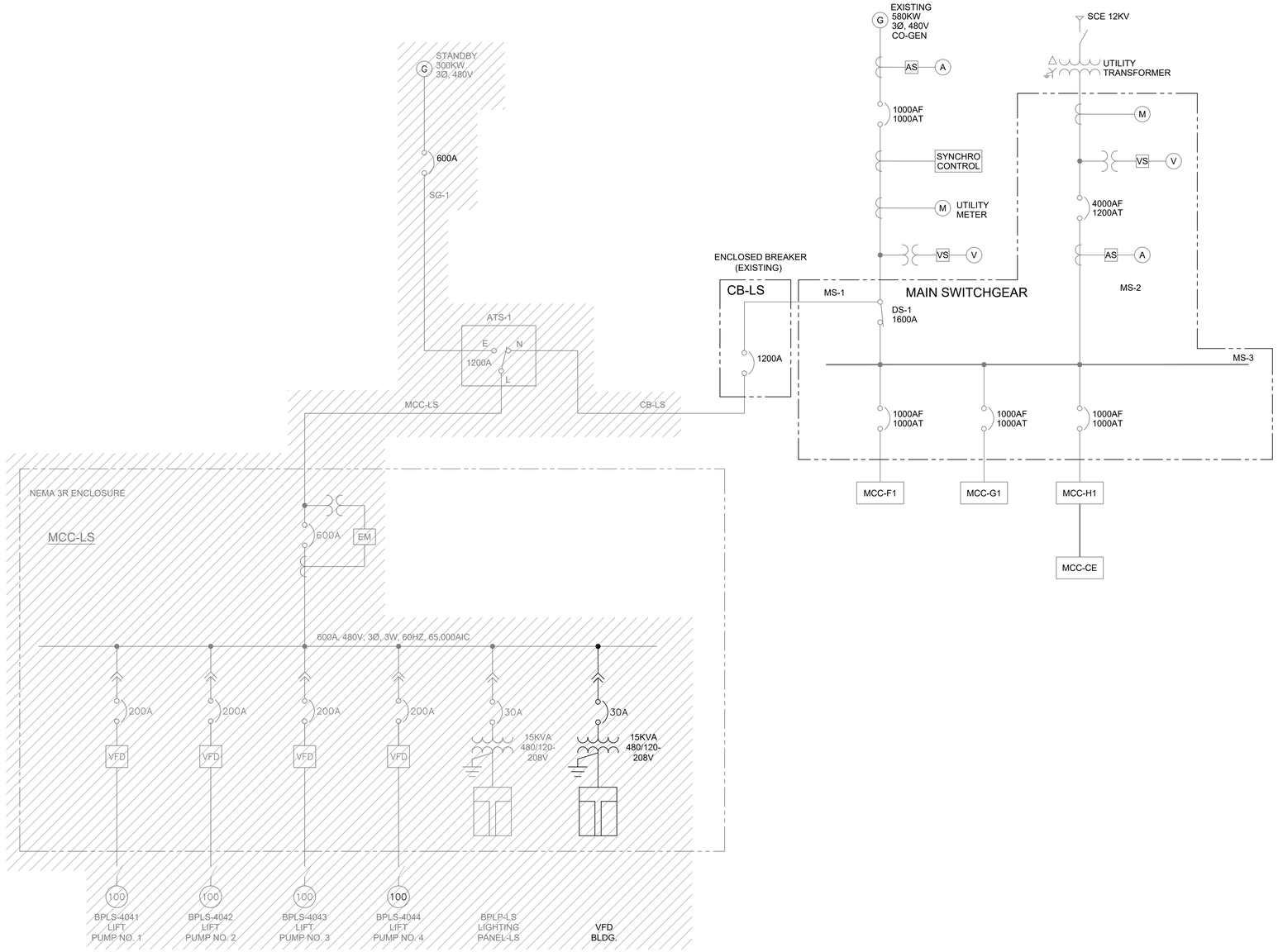
RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 LIFT STATION
ELECTRICAL PLAN

SHEET	62E-01
SHEET NO.	OF 000
PROJECT NO.	
DRAWING NO.	

GENERAL NOTES:

1. SEE DRAWINGS E-01 AND E-02 FOR SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.



RP-2 LIFT PUMP STATION SINGLE LINE DIAGRAM

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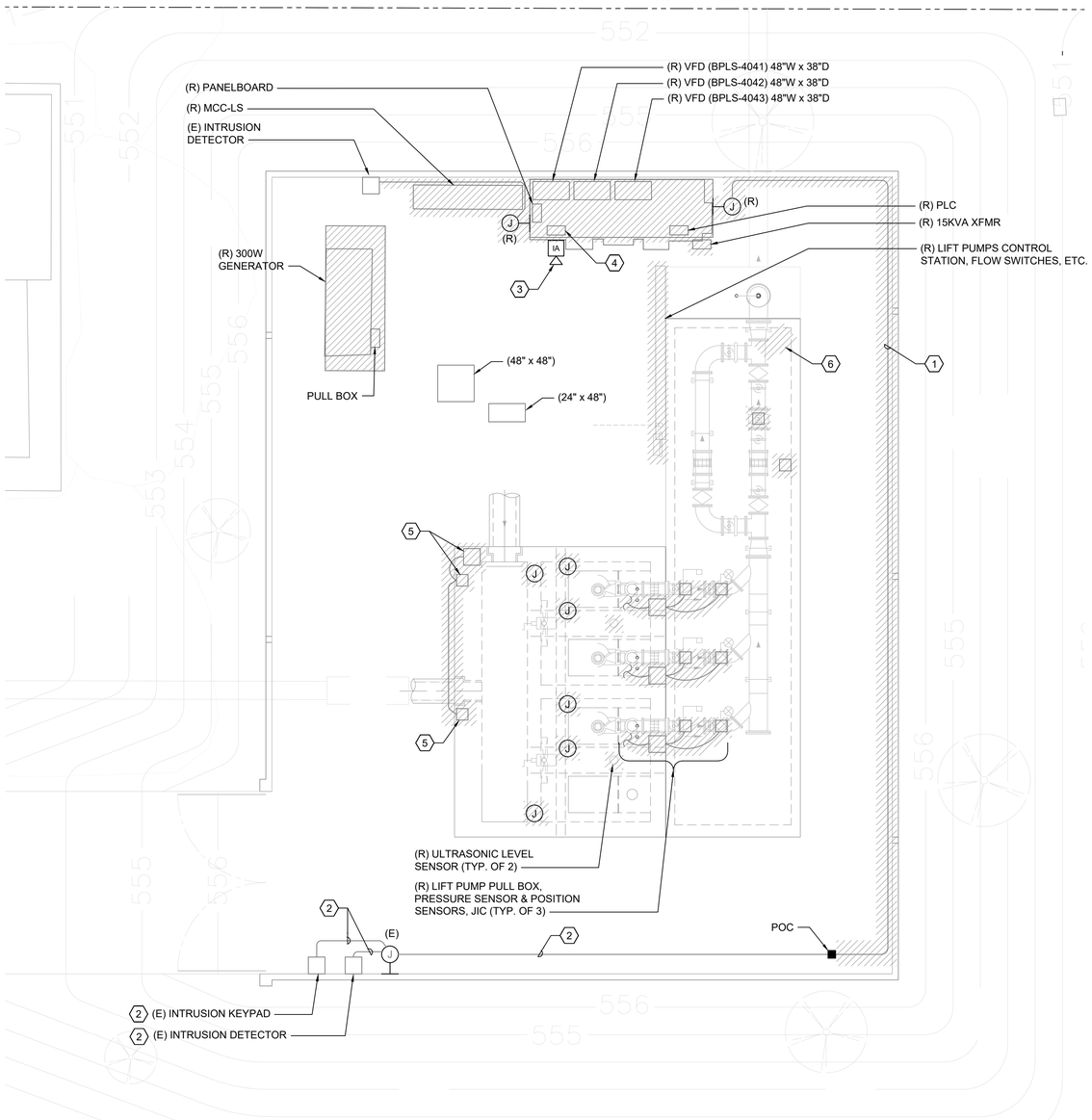
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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 LIFT STATION
ELECTRICAL SINGLE LINE
DIAGRAM (DEMOLITION)

SHEET ED-01
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

DWG: \\capas015r01\PW\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.6 Electrical\Work\RP-2 Lift Station\ED-01.dwg USER: p0014446
DATE: Oct 20, 2023 11:17am XREFS: IEUA Border 20topo C-xuld C-01UP03 legalot m-62pp01 S-62FP01 20COGRID XC-MTN-SITE-EX XC-MTN-SITE-NW RP-2 LS PLAN IEUA_S-RP2 - Structural Plan



RP-2 LIFT STATION ELECTRICAL DEMOLITION PLAN

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

GENERAL NOTES:

1. SEE DRAWINGS E-01 AND E-02 FOR SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.

KEY NOTES:

1. (R) 3/4"C WITH INTRUSION CABLES.
2. (E) 3/4"C WITH INTRUSION CABLES. REMOVE INTRUSION CABLES. RE-USE 3/4"C FOR NEW CABLES.
3. (E) INTRUSION ALARM HORN/STROBE TO BE RELOCATED.
4. (E) INTRUSION CONTROL PANEL TO BE RELOCATED.
5. (R) EXISTING SAMPLING STATION AND ITS ASSOCIATED TRANSMITTER, RACEWAY, WIRINGS, ETC..
6. DISCONNECT AND REMOVE POLE LIGHT BRANCH CIRCUIT.

0 1' 2'

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

DWG: \\capas016d01\PW\Pasadena Sector\Projects\IEUA\Off-Site Facilities\7.0 Design\7.6 Drawings (By Discipline)\7.6.6 Electrical\Work\RP-2 Lift Station\ED-02.dwg USER: p0014446
DATE: Oct 20, 2023 11:21am XREFS: IEUA Border 20topo C-xutil C-01UP03 legalot m-62ppd01 S-62FP01 20COGRID XC-MTN-SITE-EX

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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 LIFT STATION ELECTRICAL DEMOLITION PLAN

SHEET	ED-02
SHEET NO.	OF 000
PROJECT NO.	
DRAWING NO.	

MECHANICAL EQUIPMENT SYMBOLS

- PUMP: PLUNGER
- COMPRESSOR: RECIPROCATING
- COMPRESSOR: ROTARY SCREW
- PUMP: VERTICAL TURBINE
- PUMP: PROGRESSIVE CAVITY
- PUMP: RECIPROCATING
- PUMP: DIAPHRAGM
- PUMP: CENTRIFUGAL
- PUMP: ROTARY LOBE
- PUMP: GEAR
- PUMP: SCREW
- PUMP: SUBMERSIBLE
- PUMP: POSITIVE DISPLACEMENT
- PUMP: CHOPPER
- PUMP: PERISTALTIC
- PUMP: METERING
- PUMP: SUBMERSIBLE AXIAL PROPELLER
- BLOWER
- MIXER
- ELECTRIC MOTOR (M)
- FAN
- AIR OR CHEMICAL DIFFUSER
- SILENCER
- GRINDER
- AIR FILTER
- OR
- FLAME ARRESTOR
- POSITIVE DISPLACEMENT BLOWER
- CATALYST
- HEAT EXCHANGER
- MEMBRANE CASSETTE
- GAS FILTER
- DEMISTER
- SUCTION DIFFUSER
- LUBRICATOR

VALVE AND GATE SYMBOLS

- VALVE: GATE
- VALVE: KNIFE GATE (K)
- VALVE: GLOBE
- VALVE: BALL
- VALVE: THREE WAY
- VALVE: FOUR WAY
- VALVE: DIAPHRAGM
- VALVE: BUTTERFLY
- VALVE: DOUBLE LEAF CHECK
- VALVE: FLAP CHECK
- VALVE: PLUG
- VALVE: PLUG 3-WAY
- VALVE: ANGLE
- VALVE: NEEDLE
- VALVE: BALL CHECK
- VALVE: SWING CHECK
- BACKFLOW PREVENTER
- VALVE: PRESSURE RELIEF
- VALVE: THERMAL SHUTOFF
- VALVE: TELESCOPING
- VALVE: SEISMIC (S)
- PRESSURE-REDUCING INTERNAL REGULATING
- BACKPRESSURE REGULATOR INTERNAL
- PRESSURE-REDUCING REGULATOR W/EXTERNAL PRESSURE TAP
- BACKPRESSURE REGULATOR W/EXTERNAL PRESSURE TAP
- GATE: SLIDE
- GATE: SLUICE
- STOP LOG
- AIR RELEASE VALVE
- VACUUM BREAKER
- AIR RELEASE VALVE/VACUUM BREAKER
- VALVE: MUD
- PRESSURE VACUUM RELIEF VALVE
- PUMP DISCHARGE VALVE

VALVE AND GATE SYMBOLS

- DIAPHRAGM
- PISTON DOUBLE ACTING CYLINDER
- SOLENOID (S)
- ELECTRIC MOTOR (M)
- ELECTRO-HYDRAULIC (E/H)
- I/P CONVERTER (I/P)
- PISTON SPRING TO OPEN
- PISTON SPRING TO CLOSE
- LINEAR (L)

THE FOLLOWING ADDITIONAL DESIGNATIONS MAY BE UTILIZED ADJACENT TO SOME VALVE OR GATE SYMBOLS.

FC	FAILS CLOSED
FIP	FAILS IN LAST POSITION
FO	FAILS OPEN
LC	LOCKS CLOSED
LO	LOCKS OPEN
NC	NORMALLY CLOSED
NO	NORMALLY OPEN

PRIMARY ELEMENT SYMBOLS

- BUBBLER TUBE BUBBLER ASSEMBLY (B)
- LEVEL PROBE
- ORIFICE PLATE
- VENTURI TUBE
- FLUME
- WEIR
- PROPELLER (P) OR TURBINE (T) METER
- AVERAGING PITOT TUBE
- MAGNETIC FLOW ELEMENT (M)
- THERMAL FLOW ELEMENT (T)
- SONIC FLOW ELEMENT
- PADDLE WHEEL FLOW ELEMENT (X)
- ULTRASONIC LEVEL ELEMENT
- RADAR LEVEL ELEMENT
- GUIDED WAVE RADAR LEVEL ELEMENT
- ROTAMETER
- FLOAT TYPE LEVEL SWITCH (LS)
- SUBMERSIBLE PRESSURE TYPE
- TSS ELEMENT (D)

MISCELLANEOUS SYMBOLS

- HIGH PRESSURE QUICK CONNECTION
- AIR VENT
- SEAL - DIAPHRAGM
- SEAL - ANNULAR
- REDUCER - CONCENTRIC
- REDUCER - ECCENTRIC
- PULSATION DAMPENER
- RUPTURE DISK
- DRAIN
- PURGE ASSEMBLY (P)
- INLINE STATIC MIXER
- IA — FIELD DEVICE INSTRUMENT AIR SUPPLY
- HPA — FIELD DEVICE HIGH PRESSURE AIR SUPPLY
- BEACON
- CALIBRATION COLUMN
- HORN
- DAMPERS, VANES
- EXPANSION JOINT
- FLEXIBLE CONNECTION
- FLANGE
- Y-STRAINER
- SPRAY NOZZLE
- ES — ELECTRICAL SUPPLY POWER
- HOSE BIBB
- FLOW CONDITIONER
- THERMOWELL
- DT — DRIP TRAP
- FLOAT DRAIN
- STATIC MIXER
- STRAINER
- P TRAP
- SSE — SAFETY SHOWER AND EYEWASH STATION

GENERAL NOTES

1. EXISTING STRUCTURES, EQUIPMENT, PIPING, INSTRUMENTS AND CONTROLS ARE SHOWN IN LIGHTER SHADING (I.E. SCREENED). INFORMATION FOR EXISTING SYSTEMS WERE TAKEN FROM THE EXISTING RECORD DRAWING SET FOR IEUA "REGIONAL PLANT 5 WATER RECLAMATION FACILITY PROJECT NO. EN95028", DATED 7/05.
2. DATALINK LINES ON THE P&IDs ONLY DEPICT COMMUNICATIONS BETWEEN THE COMPONENTS/EQUIPMENT SHOWN. REFERENCE THE APPLICABLE SCADA NETWORK ARCHITECTURE DRAWINGS.
3. REFERENCE ELECTRICAL SINGLE LINE DIAGRAMS FOR POWER FEED INFORMATION.
4. ONLY CRITICAL ETHERNET/IP INTERFACE SIGNALS BETWEEN PLANT SCADA AND VENDOR-SUPPLIED CONTROLLERS ARE SHOWN. ALL CONTROL, STATUS AND ALARM SIGNALS SHOWN ON THE VENDOR-SUPPLIED OIT SCREENS SHALL BE AVAILABLE TO THE PLANT SCADA SYSTEM VIA DIRECT ADDRESSING.

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

Designed	RA	10/2023
Drawn	RA	10/2023
Checked	IM	10/2023
		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
0	10/2023	RA	SK	60% SUBMITTAL

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PROJECT MANAGER DATE

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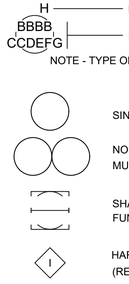
60% SUBMITTAL - 10/2023

RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

INSTRUMENTATION LEGEND

SHEET I-01
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

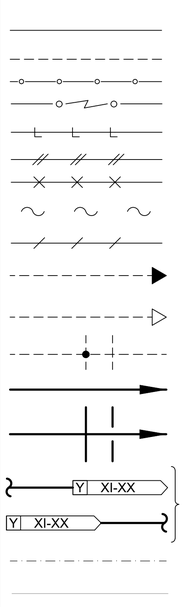
INSTRUMENT OR FUNCTION SYMBOLS



BARS DIVIDING ABOVE SYMBOLS

NONE	FIELD LOCATION
═══	AUXILIARY LOCATION, OPERATOR ACCESSIBLE
= = =	AUXILIARY LOCATION, OPERATOR INACCESSIBLE
———	PRIMARY LOCATION, OPERATOR ACCESSIBLE
– – –	PRIMARY LOCATION, OPERATOR INACCESSIBLE

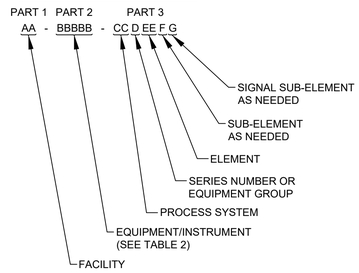
LINE SYMBOLS



- MAJOR PROCESS PIPING OR FLOW CHANNEL
- SECONDARY OR MISCELLANEOUS PROCESS PIPING
- INSTRUMENT SUPPLY OR CONNECTION TO PROCESS
- ELECTRIC SIGNAL OR SOFTWARE
- DATALINK
- RADIO DATALINK
- HYDRAULIC SIGNAL
- PNEUMATIC SIGNAL
- CAPILLARY TUBING
- ELECTROMAGNETIC OR SONIC SIGNAL (UNGUIDED)
- UNDEFINED SIGNAL
- INSTRUMENTATION DIRECTION ARROW (ANALOG/INTEGER I/O)
- INSTRUMENTATION DIRECTION ARROW (DIGITAL/BOOLEAN I/O)
- INSTRUMENTATION SIGNAL LINES: CONNECTION AND CROSSOVER
- PROCESS FLOW ARROW
- PROCESS LINES: CONNECTION AND CROSSOVER
- CONTINUATION DRAWING REFERENCES (PROCESS AND INSTRUMENTATION)
- FUTURE
- EXISTING (SCREENED)

EQUIPMENT TAGGING

EQUIPMENT TAGGING GUIDELINE:



EXAMPLES:

W5-FIT-2C411 - TAG NUMBER
W5 - RP-5
FIT - FLOW TRANSMITTER
2C - SECONDARY - MBR
4 - SERIES "4"
1 - SUBGROUP "1"
1 - ELEMENT "1"

W5-HS-02361E - TAG NUMBER
W5 - RP-5
HS - HAND SWITCH
02 - PRELIMINARY - INFLUENT PUMPING
3 - SERIES "3"
6 - SUBGROUP "6"
1 - ELEMENT "1"
E - SUB-ELEMENT "E"

FUNCTION DESIGNATORS

∆	DIFFERENCE
÷	DIVIDING
×	MULTIPLYING
√	ROOT EXTRACTION
Σ	SUMMING
Σ /n	AVERAGING
>	HIGH SELECTING
<	LOW SELECTING
⊣	HIGH LIMITING
⊢	LOW LIMITING
f(x)	NONLINEAR OR UNSPECIFIED FUNCTION
REV	REVERSE ACTING
SRG	SPLIT-RANGING
%	PROPORTIONAL CONTROL ACTION
∫	INTEGRAL CONTROL ACTION
d/dt	DERIVATIVE CONTROL ACTION
1-0	ON-OFF CONTROL ACTION
△1-0	DIFFERENTIAL GAP CONTROL ACTION
/	CONVERT FROM/TO, WHERE:

A= ANALOG I=CURRENT
D= DIGITAL O=ELECTROMAG, SONIC
E= VOLTAGE P=PNEUMATIC
H= HYDRAULIC R=RESISTANCE

FUNCTION ABBREVIATIONS

ALM	ALARM
AUTO	AUTO
CG	COMBUSTIBLE GAS
CLCM	CLOSE COMMAND
CLLM	CLOSED LIMIT
CLS	CLOSE
COND	CONDUCTIVITY
CV	CONTROL VARIABLE
DS	DUTY-STANDBY SELECTOR
DIFF	DIFFERENTIAL
DUTY	DUTY
ENBL	ENABLE
EOT	END OF TRAVEL
E-STOP	EMERGENCY STOP
EXTD	EXTEND
FAIL	FAIL
FOR	FORWARD-OFF-REMOTE SELECTOR
FWD	FORWARD
JOG	JOG
JR	JOG REVERSE
H2S	HYDROGEN SULFIDE
HAL	HIGH ALARM
HAND	HAND
HHAL	HIGH HIGH ALARM
HOA	HAND-OFF-AUTO SELECTOR
HOR	HAND-OFF-REMOTE SELECTOR
IN	IN
LAL	LOW ALARM
LEAK	LEAK DETECTION
LLAL	LOW LOW ALARM
LOC	LOCAL
LOR	LOCAL-OFF-REMOTE SELECTOR
OCA	OPEN-CLOSE-AUTO SELECTOR
OFF	OFF
OL	MOTOR OVERLOAD
ON	ON
OP	OPERATION (MODE)
OPCM	OPEN COMMAND
OPLM	OPEN LIMIT
OPN	OPEN
OSC	OPEN-STOP-CLOSE SELECTOR
OUT	OUT
NaOCl	SODIUM HYPOCHLORITE
NH3	AMMONIA
pH	pH
PMR	PUMP MONITOR RELAY
POS	POSITION
PV	PROCESS VARIABLE
PWR	POWER ON
REM	REMOTE
REV	REVERSE
RST	ALARM RESET
RTCT	RETRACT
RX	RECEIVER
SIL	ALARM SILENCE
SLOS	START-LOCKOUT STOP
STAT	STATUS
STBY	STANDBY
STRT	START
STOP	STOP
TX	TRANSMITTER

MISCELLANEOUS ABBREVIATIONS

DC	DISTRIBUTED CONTROLS
HIM	HUMAN INTERFACE MODULE
MM	MULTIMODE (FO)
MPR	MOTOR PROTECTION RELAY
OIT	OPERATOR INTERFACE TERMINAL
PEM	PUMP ELECTRONIC MODULE
POT	POTENTIOMETER
SM	SINGLE-MODE (FO)
VFD	VARIABLE FREQUENCY DRIVE

TABLE 2 - EQUIPMENT/INSTRUMENT TECHNICAL DESCRIPTORS

EQUIPMENT		INSTRUMENTS		CONTROL EQUIPMENT	
TECHNICAL DESCRIPTOR	DESCRIPTION OF TECHNICAL OBJECT	TECHNICAL DESCRIPTOR	DESCRIPTION OF TECHNICAL OBJECT	TECHNICAL DESCRIPTOR	DESCRIPTION OF TECHNICAL OBJECT
ACT	ACTUATOR	AAHH/H/L/LL	ANALYTICAL ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW	VAHH/H/L/LL	VIBRATION ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW
AC	AIR CONDITIONER	AIC	ANALYTICAL CONTROL	VE	VIBRATION ELEMENT
ARV	AIR RELEASE VALVE	AE	ANALYTICAL ELEMENT	VIT	VIBRATION INDICATING TRANSMITTER
AVRV	AIR RELEASE / VACUUM RELIEF VALVE	AIT	ANALYTICAL INDICATING TRANSMITTER	VI	VIBRATION INDICATION
ASPR	AIR SEPARATOR	AI	ANALYTICAL INDICATION	VSHH/H/L/LL	VIBRATION SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW
ATS	AUTOMATIC TRANSFER SWITCH	ASHH/H/L/LL	ANALYTICAL SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW	VT	VIBRATION TRANSMITTER
BFP	BACKFLOW PREVENTER	AT	ANALYTICAL TRANSMITTER	VAT	VIBRATION TRANSMITTER FAILURE
BSN	BASIN	AAT	ANALYTICAL TRANSMITTER FAILURE	EAHH/H	VOLTAGE - OVERVOLTAGE ALARM HIGH-HIGH / HIGH
BAT	BATTERY	YX	AVAILABLE	EALL/L	VOLTAGE - UNDERVOLTAGE ALARM LOW / LOW-LOW
BLDR	BLENDER	BE	BURNER ELEMENT	EI	VOLTAGE INDICATION
BO	BLOW OFF	IAHH/H	CURRENT - OVERCURRENT ALARM HIGH-HIGH / HIGH	WE	WEIGHT ELEMENT
BLWR	BLOWER	IAL/LL	CURRENT - UNDERCURRENT ALARM LOW / LOW-LOW	WIT	WEIGHT INDICATING TRANSMITTER
BLR	BOILER	II	CURRENT INDICATION	WI	WEIGHT INDICATION
BCC	BRANCH CIRCUIT CONTROLLER	PDAHH/H/L/LL	DIFFERENTIAL PRESSURE ALARM HIGH-HIGH / HIGH / LOW / LOW-LOW	WR	WEIGHT RECORDER
BLDG	BUILDING	PDIC	DIFFERENTIAL PRESSURE INDICATING CONTROL	WT	WEIGHT TRANSMITTER
BNR	BURNER	PDIT	DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	WAT	WEIGHT TRANSMITTER FAILURE
BD	BUS DUCT	PDI	DIFFERENTIAL PRESSURE INDICATION		
CANN	CANNON	PDT	DIFFERENTIAL PRESSURE TRANSMITTER		
CAU	CARBON ADSORPTION UNIT	PDAT	DIFFERENTIAL PRESSURE TRANSMITTER FAILURE		
CPS	CATHODIC PROTECTION STATION	YA	FAIL INDICATION		
CNFG	CENTRIFUGE	YAQ	FAIL COUNTER		
CHNL	CHANNEL	BA	FIRE ALARM		
CVLV	CHECK VALVE	FAHH/H/L/LL	FLOW ALARM HIGH-HIGH / HIGH / LOW / LOW-LOW		
CHLR	CHILLER	FE	FLOW ELEMENT		
CCB	CHLORINE CONTACT BASIN	FIC	FLOW INDICATING CONTROL		
CHUT	CHUTE	FIT	FLOW INDICATING TRANSMITTER		
CLF	CLARIFIER	FI	FLOW INDICATION		
COGN	COGENERATION	FS	FLOW SWITCH		
COMP	COMPRESSOR	FSHH/H/L/LL	FLOW SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW		
COND	CONDENSER	FQI	FLOW TOTALIZER INDICATION		
CVR	CONVEYOR	FQT	FLOW TOTALIZER TRANSMITTER		
CRAN	CRANE	FT	FLOW TRANSMITTER		
DAM	DAM	FAT	FLOW TRANSMITTER FAILURE		
DMP	DAMPER	RAL	FREQUENCY - UNDER-FREQUENCY		
DS	DISCONNECT SWITCH	HC	HAND CONTROL		
DP	DISTRIBUTION PANELBOARD	HS	HAND SWITCH		
DRV	DRIVE	HSI	HAND SWITCH STATUS INDICATION		
DRYR	DRYER	LAHH/H/L/LL	LEVEL ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW		
ENG	ENGINE	LDAHH/H/L/LL	DIFFERENTIAL LEVEL ALARM HIGH-HIGH / HIGH / LOW / LOW-LOW		
ECU	EVAPORATIVE COOLING UNIT	LDI	DIFFERENTIAL LEVEL INDICATION		
EYEW	EYE WASH	LE	LEVEL ELEMENT		
FAN	FAN	LIC	LEVEL INDICATING CONTROL		
FCU	FAN COIL UNIT	LIT	LEVEL INDICATING TRANSMITTER		
FDR	FEEDER	LG	LEVEL SIGHT GLASS		
FLTR	FILTER	LS	LEVEL SWITCH		
FLAR	FLARE	LSHH/H/L/LL	LEVEL SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW		
FLCL	FUEL CELL	LY	LEVEL SWITCH INTERPOSING RELAY		
GATE	GATE	LT	LEVEL TRANSMITTER		
GEN	GENERATOR	LAT	LEVEL TRANSMITTER FAILURE		
GNDR	GRINDER	YL	LIGHT - INDICATION LIGHT		
HFLT	HARMONIC FILTER	MAHH/H/L/LL	MOISTURE ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW		
HXGR	HEAT EXCHANGER	MSHH/H/L/LL	MOISTURE SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW		
HRS	HEAT RECOVERY SILENCER	KS	NUMBER OF STARTS		
IWS	INSTANTANEOUS WATER HEATER	ZAHH/H/L/LL	POSITION ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW		
LVL	LEVELER	ZY	POSITION COMMAND		
LP	LIGHTING PANEL	ZT	POSITION FEEDBACK		
LCS	LOCAL CONTROL STATION	ZS	POSITION SWITCH		
LVR	LOUVER	ZSC	POSITION SWITCH CLOSE		
LUBS	LUBE OIL SYSTEM	ZSO	POSITION SWITCH OPEN		
MH	MANHOLE	JI	POWER INDICATION		
MTS	MANUAL TRANSFER SWITCH	JQ	POWER TOTALIZATION		
CASS	MEMBRANE CASSETTE	PAHH/H/L/LL	PRESSURE ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW		
MXR	MIXER	PE	PRESSURE ELEMENT		
MTR	MOTOR	PIC	PRESSURE INDICATING CONTROL		
MCC	MOTOR CONTROL CENTER	PIT	PRESSURE INDICATING TRANSMITTER		
MCP	MOTOR CONTROL PANEL	PI	PRESSURE INDICATION		
PIPE	PIPE	PS	PRESSURE SWITCH		
PRV	PRESSURE RELIEF OR REGULATING VALVE	PSHH/H/L/LL	PRESSURE SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW		
		PT	PRESSURE TRANSMITTER		
PMP	PUMP	PAT	PRESSURE TRANSMITTER FAILURE		
APMP	AIR PUMP	YY	PUMP MONITOR RELAY		
SMP	SAMPLER	XC	REMOTE RESET		
SCRN	SCREEN	XCR	REMOTE START COMMAND		
SCR	SELECTIVE CATALYTIC REDUCER	XCS	REMOTE STOP COMMAND		
SHWR	SHOWER	YI	RUN STATUS		
SLCR	SILENCER	KQI	RUN TIME		
SILO	SILO	SAHH/H/L/LL	SPEED ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW		
SOLR	SOLAR	SC	SPEED COMMAND		
SV	SOLENOID VALVE	SE	SPEED ELEMENT		
STNR	STRAINER	SI	SPEED INDICATION		
SWBD	SWITCHBOARD	SSL	SPEED SWITCH LOW		
SWGR	SWITCHGEAR	TAHH/H/L/LL	TEMPERATURE ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW		
TNK	TANK	TE	TEMPERATURE ELEMENT		
TTR	TIPPING TROUGH	TIT	TEMPERATURE INDICATING TRANSMITTER		
TWR	TOWER	TI	TEMPERATURE INDICATION		
TX	TRANSFORMER	TSHH/H/L/LL	TEMPERATURE SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW		
UPS	UNINTERRUPTIBLE POWER SUPPLY	TT	TEMPERATURE TRANSMITTER		
VLV	VALVE	TAT	TEMPERATURE TRANSMITTER FAILURE		
MVLV	MANUAL VALVE	KY	TIMER		
VFD	VARIABLE FREQUENCY DRIVE	NAHH/H/L/LL	TORQUE ALARM HIGH-HIGH / HIGH/ LOW / LOW-LOW		
VRF	VARIABLE REFRIGERANT FLOW	NIT	TORQUE INDICATING TRANSMITTER		
WSH	WASHER	NI	TORQUE INDICATION		
WFLT	WATER FILTER	NSHH/H/L/LL	TORQUE SWITCH HIGH-HIGH / HIGH / LOW / LOW-LOW		
WH	WATER HEATER	NT	TORQUE TRANSMITTER		
WW	WET WELL	NAT	TORQUE TRANSMITTER FAILURE		
WND	WIND TURBINE				

CONTROL EQUIPMENT

TECHNICAL DESCRIPTOR	DESCRIPTION OF TECHNICAL OBJECT
IANT	ANTENNA
IAPP	APPLICATION SERVER
IBB	BROADBAND HARDWARE
ICP	CONTROL PROCESSOR
IDAS	DATA SERVER
IDCP	DISTRIBUTED CONTROL PROCESSOR
IEWS	ENGINEERING WORKSTATION
IFOP	FIBER OPTIC PANEL
IHIS	HISTORIAN SERVER
IHMI	HMI SERVER
IINF	INFRASTRUCTURE SERVER
ILCP	LOCAL CONTROL PANEL
ILCS	LOCAL CONTROL STATION
IMCP	MASTER CONTROL PANEL
IMED	MEDIA CONVERTER
IWAV	MICROWAVE HARDWARE
INIP	NETWORK INTERFACE PANEL
IRTR	NETWORK ROUTER
ISEC	NETWORK SECURITY HARDWARE
ISWT	NETWORK SWITCH
IOIT	OPERATOR INTERFACE TERMINAL
IOWS	OPERATOR WORKSTATION
IPLC	PLC
IPS	POWER SUPPLY
IPRT	PRINTER
IRAC	RACO ALARM HARDWARE
IRIO	REMOTE I/O PANEL
IRIR	REMOTE I/O RACK
IRTU	REMOTE TERMINAL UNIT PANEL
ISCN	SCANNER
ITC	THIN CLIENT
IWFI	WIFI HARDWARE

PARSONS
100 WEST WALNUT STREET
PASADENA, CALIFORNIA 91124
(626) 440 - 2000

Designed	RA	10/2023
Drawn	RA	10/2023
Checked	IM	10/2023
		Date

REV. NO.	DATE	BY	APRVD	DESCRIPTION
0	10/2023	RA	SK	60% SUBMITTAL

RECOMMENDED BY:

PROJECT MANAGER DATE

SCALE
AS SHOWN
Bar Scale shown below is one inch on original drawing. If NOT one inch on this sheet, adjust scales accordingly.
0" 1"

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

OFFICE ADDRESS
6075 Kimball Avenue
Chino, California 91708
Telephone (909) 993-1600

MAILING ADDRESS
Post Office Box 9020
Chino Hills, California 91709

60% SUBMITTAL - 10/2023

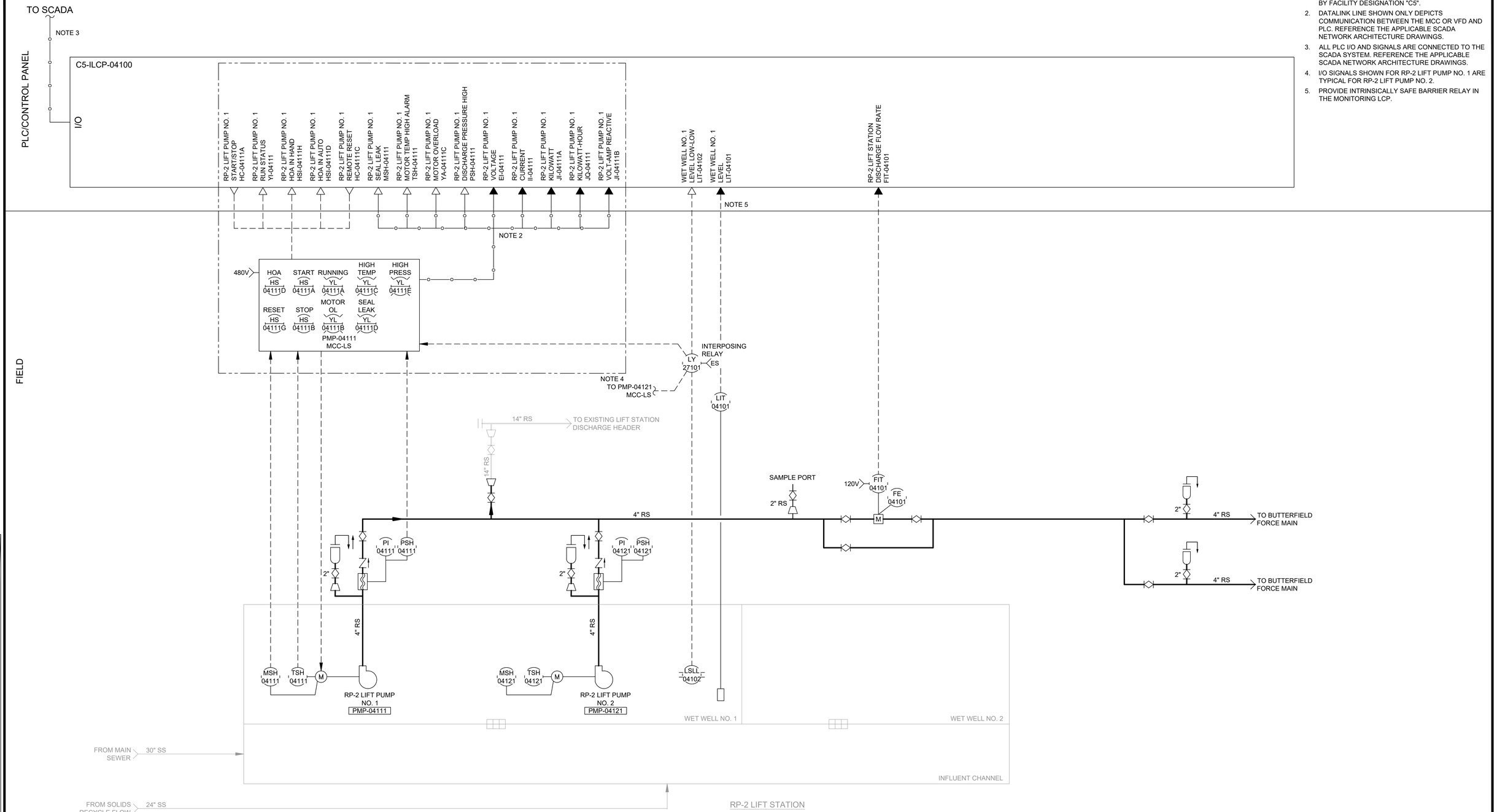
RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

INSTRUMENTATION LEGEND

SHEET I-02
SHEET NO. OF 000
PROJECT NO.
DRAWING NO.

NOTES:

1. UNLESS OTHERWISE NOTED, ALL INSTRUMENTS, EQUIPMENT AND I/O TAG NUMBERS ARE PREFIXED BY FACILITY DESIGNATION "C5".
2. DATALINK LINE SHOWN ONLY DEPICTS COMMUNICATION BETWEEN THE MCC OR VFD AND PLC. REFERENCE THE APPLICABLE SCADA NETWORK ARCHITECTURE DRAWINGS.
3. ALL PLC I/O AND SIGNALS ARE CONNECTED TO THE SCADA SYSTEM. REFERENCE THE APPLICABLE SCADA NETWORK ARCHITECTURE DRAWINGS.
4. I/O SIGNALS SHOWN FOR RP-2 LIFT PUMP NO. 1 ARE TYPICAL FOR RP-2 LIFT PUMP NO. 2.
5. PROVIDE INTRINSICALLY SAFE BARRIER RELAY IN THE MONITORING LCP.



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RP-5 OFFSITE FACILITIES PROJECTS
PROJECT NO. EN19001.03

RP-2 LIFT STATION P&ID

SHEET	62I-01
SHEET NO.	OF 000
PROJECT NO.	
DRAWING NO.	