

CITY OF SPARKS MARINA CANAL CIRCULATING PUMP PWP #WA-2022-361

MAY 2022

ENGINEER

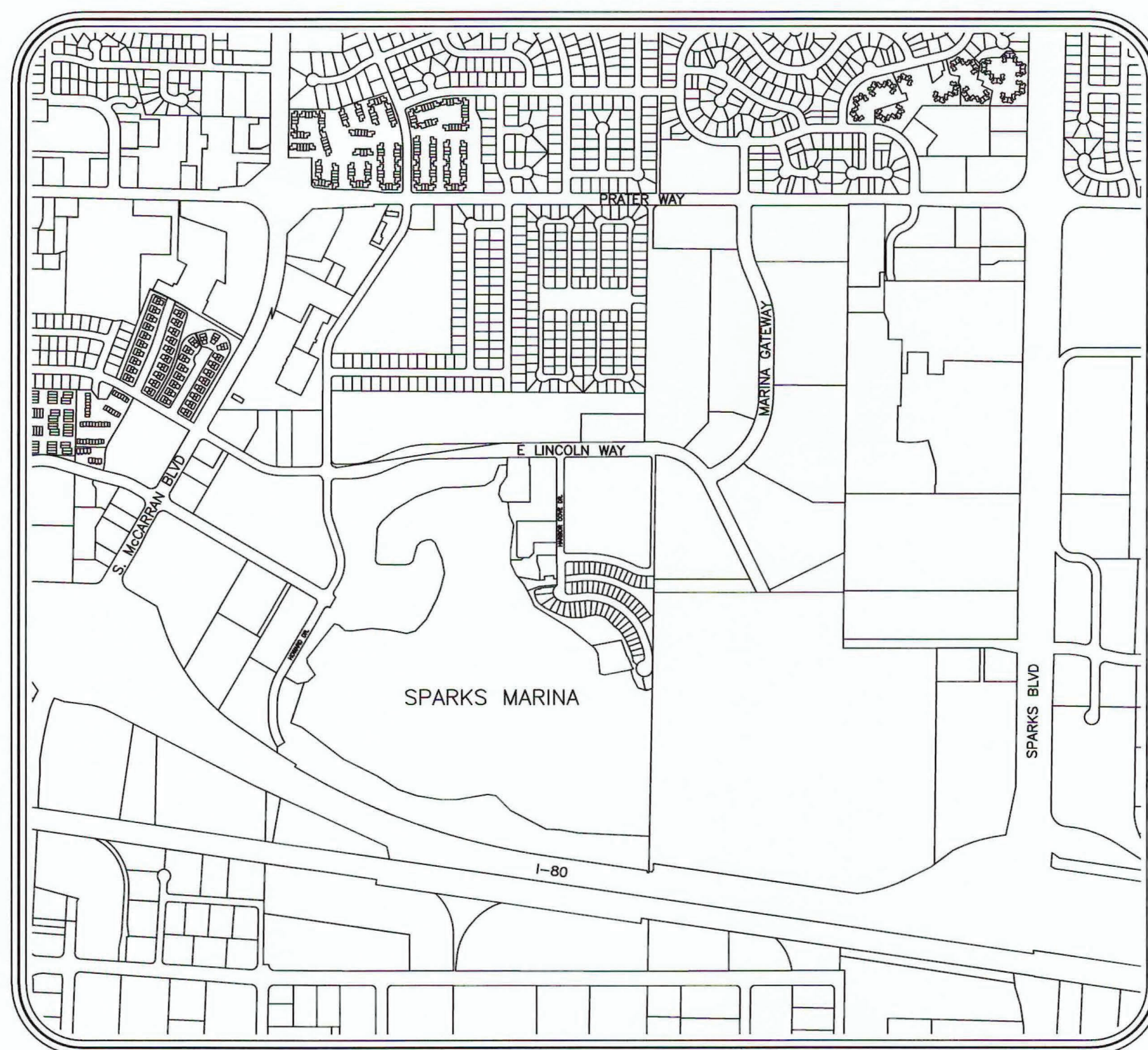
CITY OF SPARKS OFFICIALS

ED LAWSON	.....	MAYOR
DONALD ABBOTT	.....	COUNCIL MEMBER WARD 1
DIAN VANDERWELL	.....	COUNCIL MEMBER WARD 2
PAUL ANDERSON	.....	COUNCIL MEMBER WARD 3
CHARLENE BYBEE	.....	COUNCIL MEMBER WARD 4
KRISTOPHER DAHIR	.....	COUNCIL MEMBER WARD 5
NEIL KRUTZ	.....	CITY MANAGER

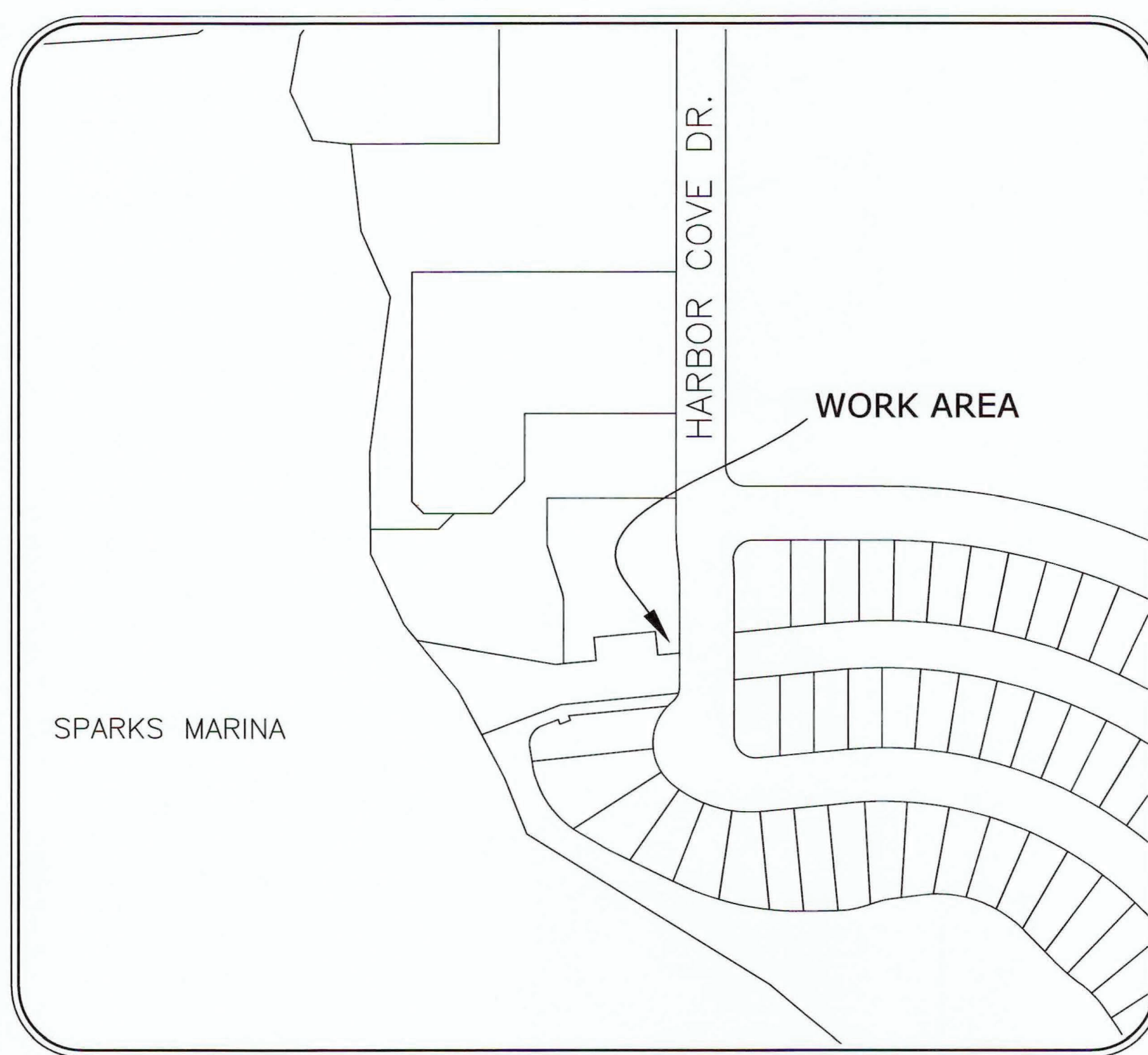


BID #21/22-017

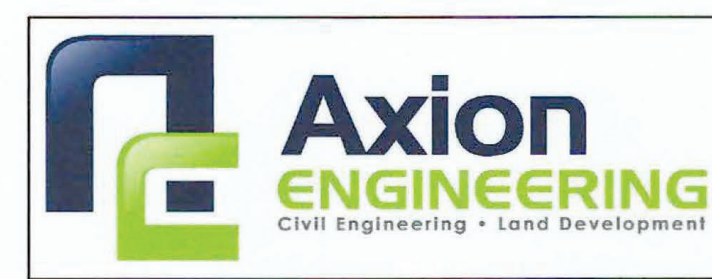
APPROVED BY: Jon R. Ericson DATE: 5/24/22
JON R. ERICSON, P.E., P.T.O.E.
CITY ENGINEER



VICINITY MAP



SITE PLAN



683 EDISON WAY – RENO, NEVADA 89502
PH 775-771-5554 / FX 775-357-8421

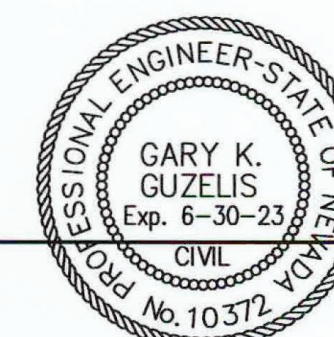
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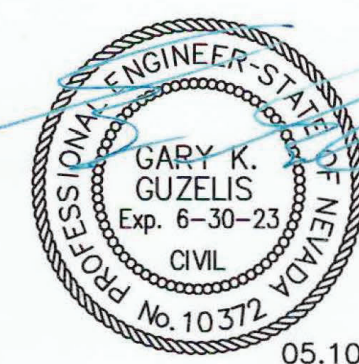
ABBREVIATIONS

AC	ASPHALT CEMENT	LF	LINEAR FEET
BC	BEGINNING OF CURVE	LP	LOW POINT
BF	.....	BOTTOM OF FOOTING	M.D.D.	.....	MAXIMUM DRY DENSITY
BFC	.....	BACK FACE OF CURB	MIN.	.....	MINIMUM
BVC	.....	BEGINNING OF VERTICAL CURVE	MPOC	.....	MID POINT OF CURVE
CB	.....	CATCH BASIN	MW	.....	MONITORING WELL
CL	.....	CENTERLINE	PI	.....	POINT OF INTERSECTION
DI	.....	DROP INLET	PCC	.....	POINT OF COMPOUND CURVATURE
DIP	.....	DUCTILE IRON PIPE	PRC	.....	POINT OF REVERSE CURVATURE
ELEV.	.....	ELEVATION	PVC	.....	POLYVINYL CHLORIDE
EC	.....	END OF CURVE	R	.....	RADIUS
EP	.....	EDGE OF PAVEMENT	REF.	.....	REFERENCE
EVC	.....	END OF VERTICAL CURVE	RET.	.....	RETURN
EXIST.	.....	EXISTING	RCP	.....	REINFORCED CONCRETE PIPE
(e)	.....	EXISTING	RMJ	.....	RESTRAINED MECHANICAL JOINT
FCA	.....	FLANGED COUPLING ADAPTER	RT.	.....	RIGHT
FF	.....	FINISH FLOOR	R/W	.....	RIGHT OF WAY
FFC	.....	FRONT FACE OF CURB	SD	.....	STORM DRAIN
FG	.....	FINISH GRADE	SS	.....	SANITARY SEWER
FHA	.....	FIRE HYDRANT ASSEMBLY	SF	.....	SQUARE FEET
FL	.....	FLANGE	SSMH	.....	SANITARY SEWER MANHOLE
FTG	.....	FITTING	SDMH	.....	STORM DRAIN MANHOLE
G	.....	GAS	S	.....	SLOPE
GB	.....	GRADE BREAK	SL	.....	STREET LIGHT
HORIZ.	.....	HORIZONTAL	SOWF	.....	SLIP ON WELD FLANGE
IE	.....	INVERT ELEVATION	STA.	.....	STATION
LAT.	.....	LATERAL	TC	.....	TOP OF CURB
LT.	.....	LEFT	VC	.....	VERTICAL CURB
			VPI	.....	VERTICAL POINT OF INTERSECTION
			WSP	.....	WELDED STEEL PIPE

APPROVED BY: GARY K. GUZELIS DATE: 05.10.22
GARY K. GUZELIS, P.E.
AXION ENGINEERING



TITLE SHEET

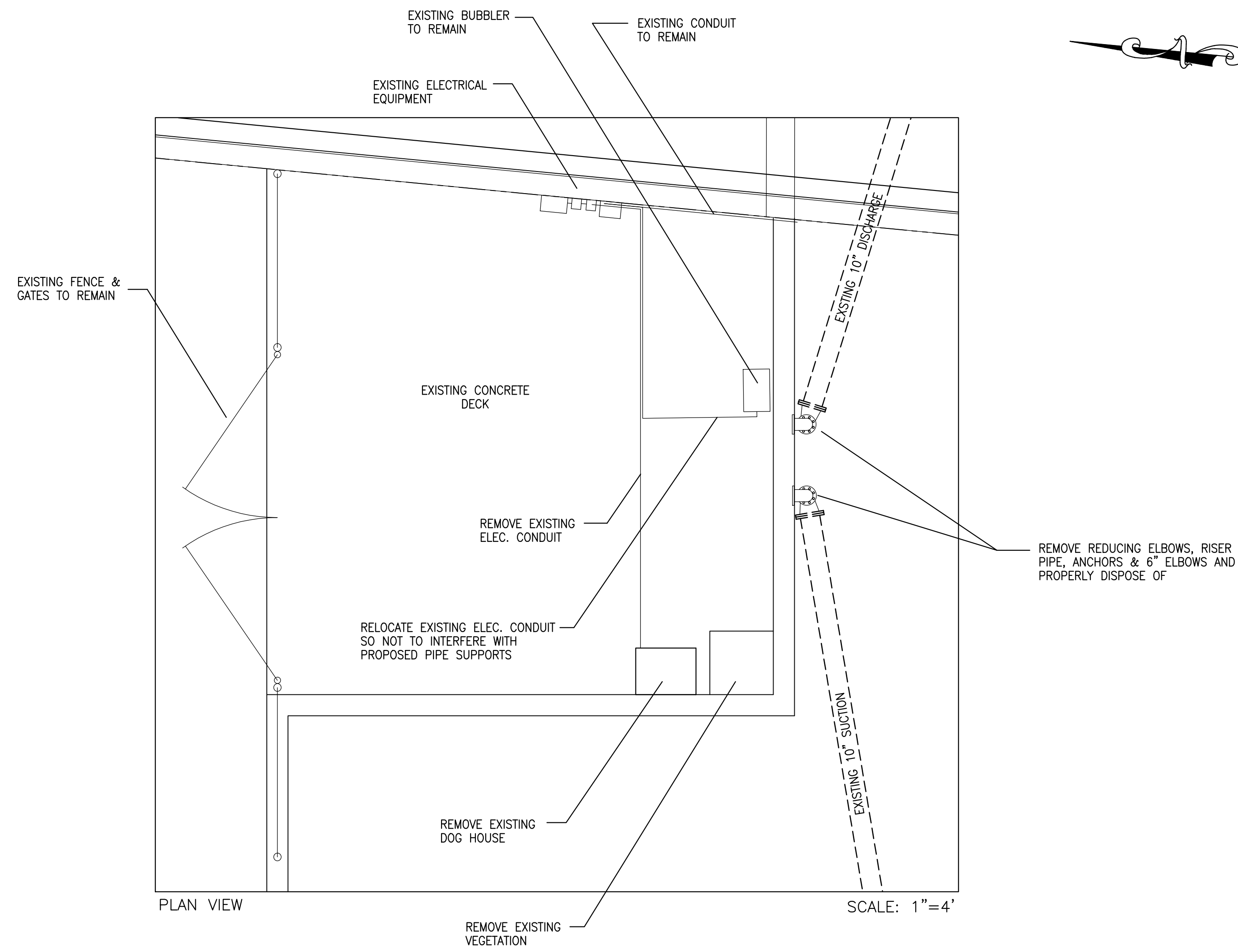


**MARINA CANAL CIRCULATING PUMP
CIVIL IMPROVEMENT PLANS**
TITLE SHEET
SPARKS, NEVADA

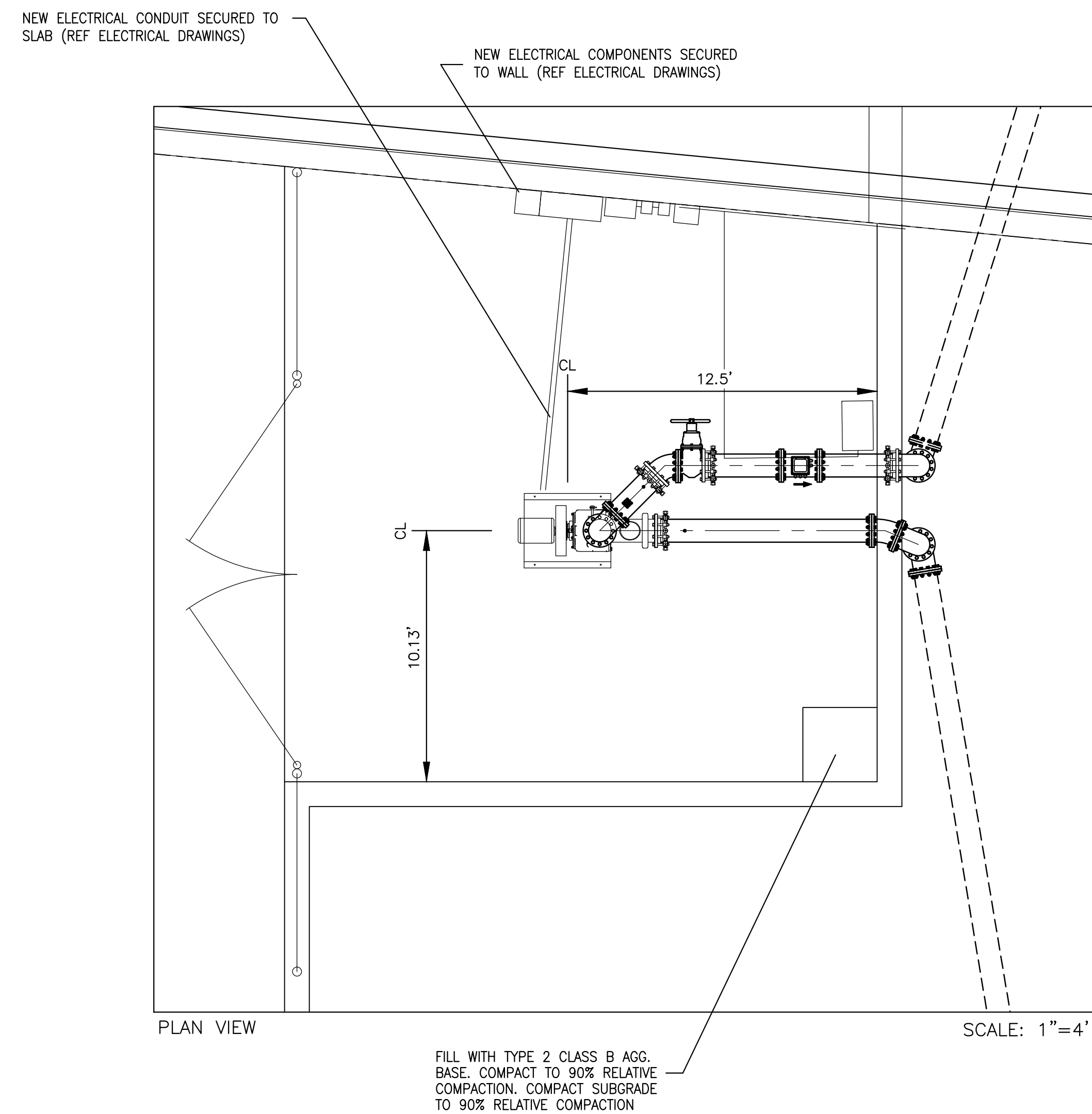
revisions	

drawn:	GKG
checked:	GKG
date:	MAY 2022
scale:	
project no:	19029

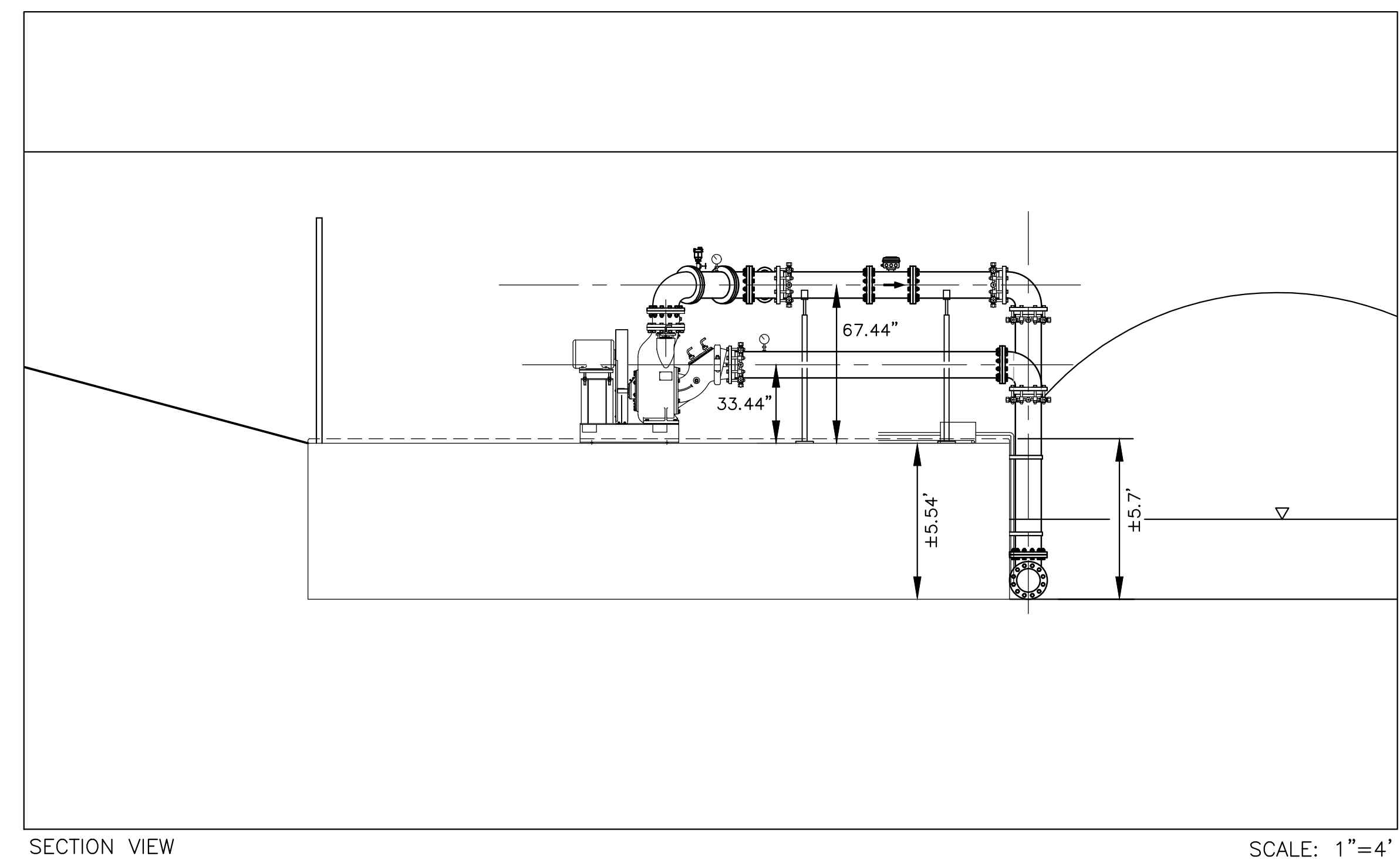
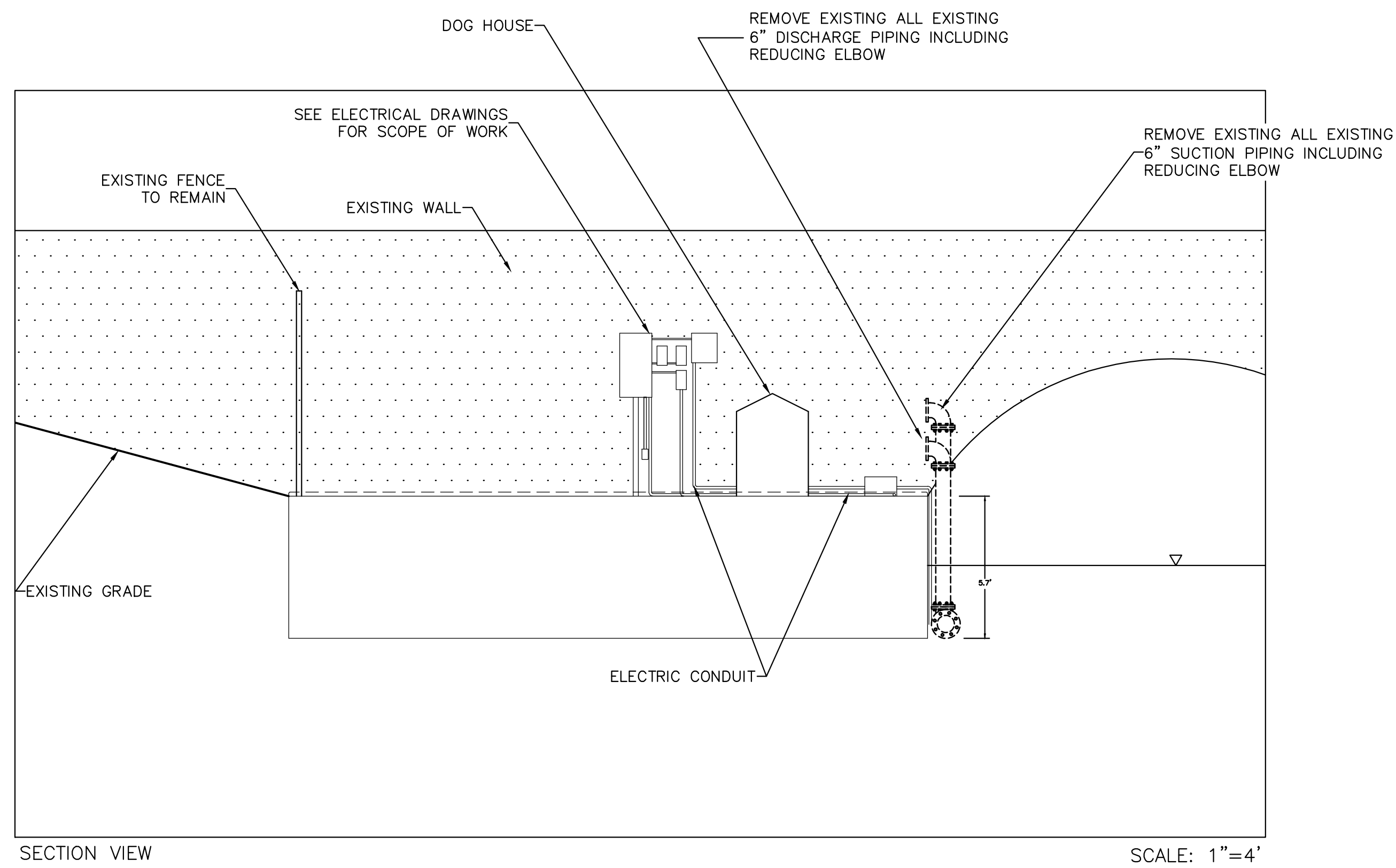
C-1



DEMOLITION PLAN



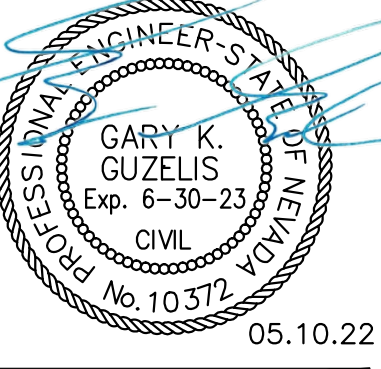
SITE PLAN



**MARINA CANAL CIRCULATION PUMP
PUMP IMPROVEMENT PLANS
SITE PLAN
SPARKS, NEVADA**

revisions	

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date: MAY 2022
scale:
project no: 19029



**MARINA CANAL CIRCULATION PUMP
 PUMP IMPROVEMENT PLANS**
 PIPING PLAN
 SPARKS, NEVADA

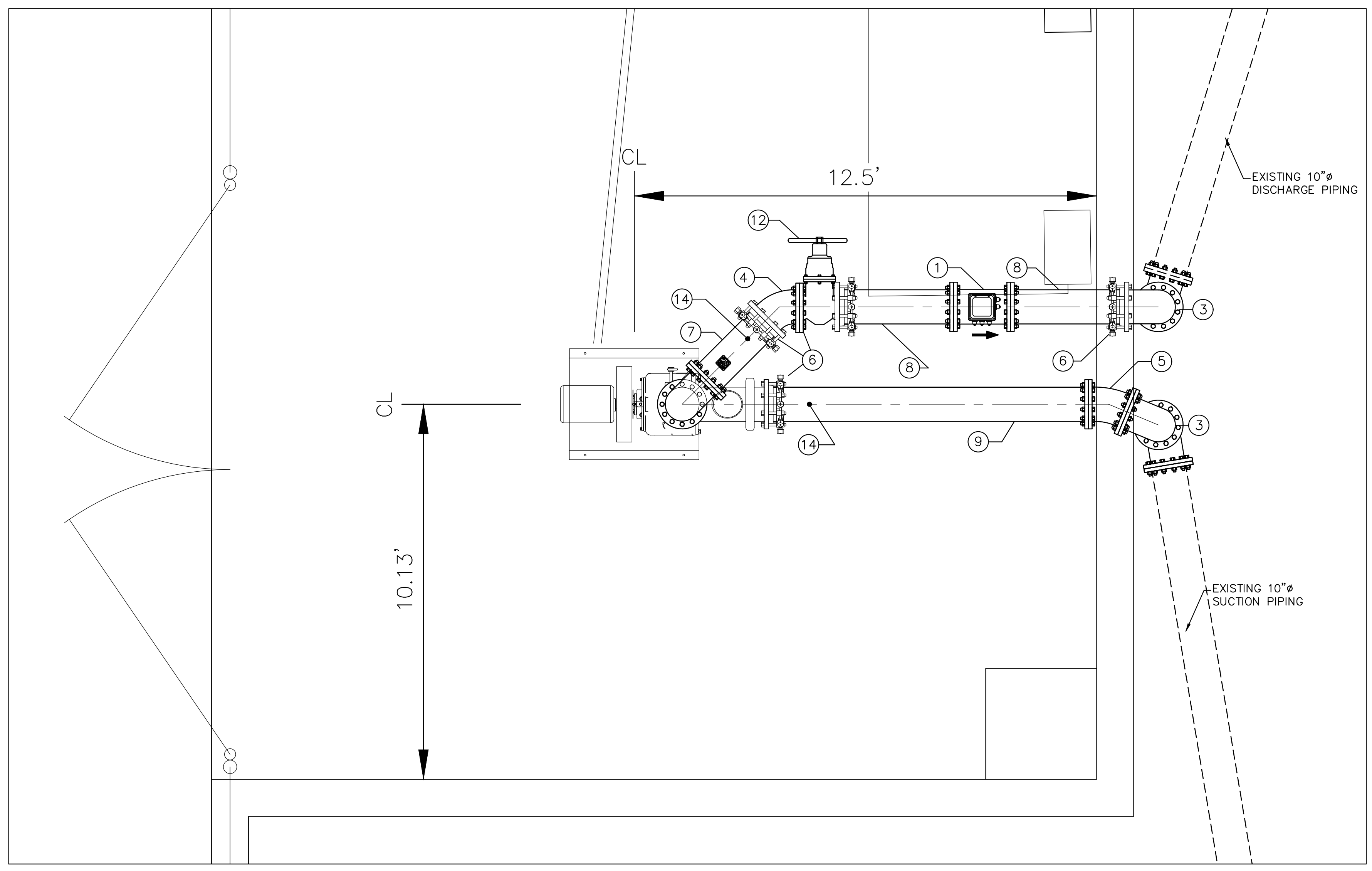
revisions	

drawn: GKG
 checked: GKG
 date: MAY 2022
 scale:
 project no: 19029

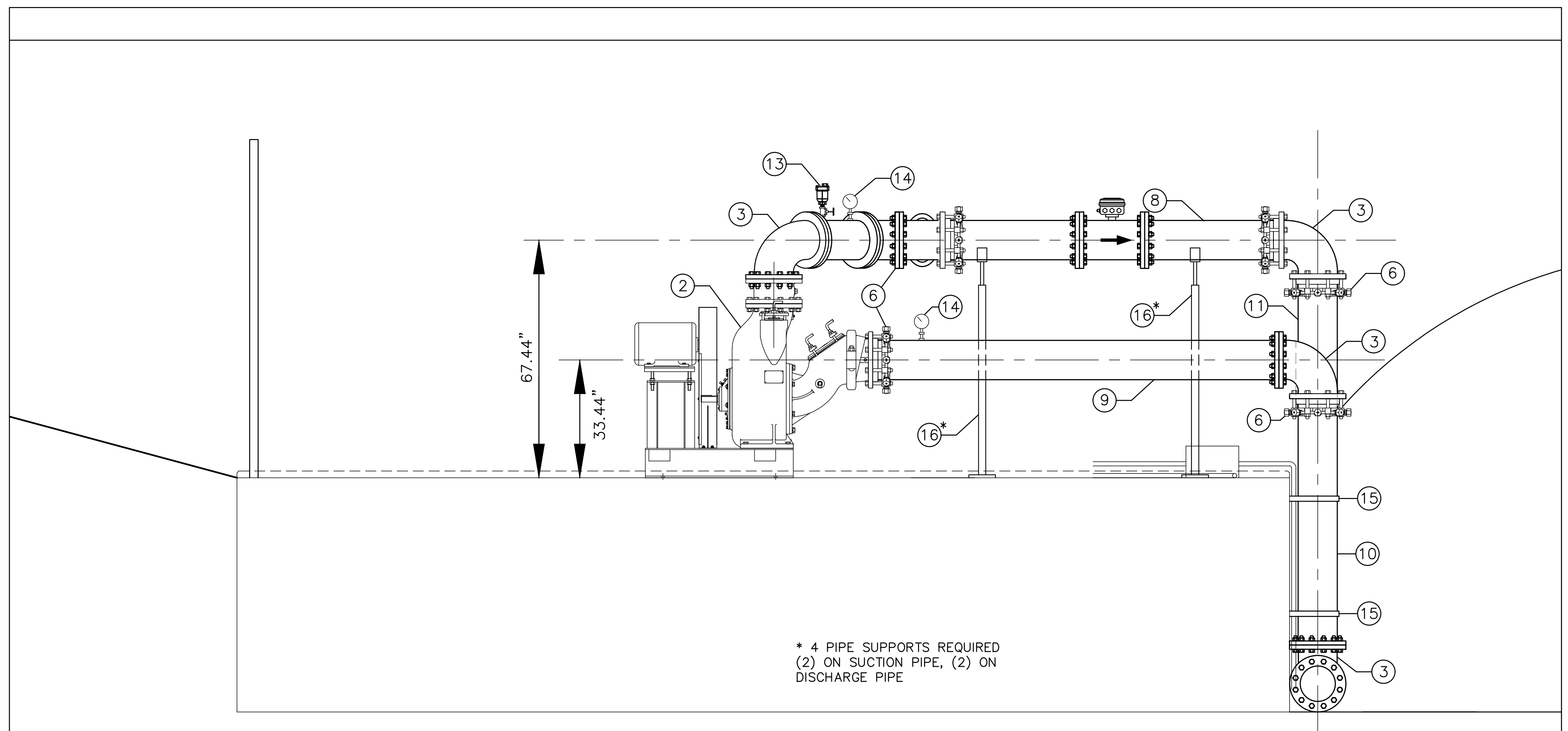


MATERIAL LIST		
ITEM No.	QTY.	DESCRIPTION
1	1	MCCROMETER DURA MAG 10" FLOW METER w/REMOTE DISPLAY MOUNTED ADJACENT TO SCADA RTU, AC POWER, 420mA ANALOG OUT, 50' POWER & ANALOG CABLES.
2	1	GORMAN RUPP T10A3S-B 10" SELF PRIMING CENTRIFUGAL PUMP MOUNTED ON 41546-719 BASE, 15 HP 1,800 RPM 10"x10", 14.75" IMPELLER, 254T FRAME, 3 PHASE 208-230/460VAC TEFC MOTOR (NO SUBSTITUTES)
3	5	10"Ø 90° DUCTILE IRON FLANGED ELBOW
4	1	10"Ø 45° DUCTILE IRON FLANGED ELBOW
5	1	10"Ø 22.5" DUCTILE IRON FLANGED ELBOW
6	6	10"Ø RESTRAINED FLANGE COUPLING ADAPTER
7	*LF	10"Ø FLxFL DUCTILE IRON SPOOL (±27" FIELD DETERMINE)
8	*LF	10"Ø FLxPE DUCTILE IRON SPOOL (±37" FIELD DETERMINE)
9	*LF	10"Ø FLxPE DUCTILE IRON SPOOL (±103" FIELD DETERMINE)
10	*LF	10"Ø FLxPE DUCTILE IRON SPOOL (±70" FIELD DETERMINE)
11	*LF	10"Ø FLxPE DUCTILE IRON SPOOL (±104" FIELD DETERMINE)
12	1	10"Ø FLxFL GATE VALVE
13	1	APCO AIR RELEASE VALVE
14	2	PRESSURE GAUGE (SEE DETAIL SHEET)
15	4	STAINLESS STEEL PIPE ANCHOR
16	4	ADJUSTABLE PIPE SUPPORT, BOLTED TO FLOOR WITH MORTAR LEVELING PAD

* LF = FIELD DETERMINE

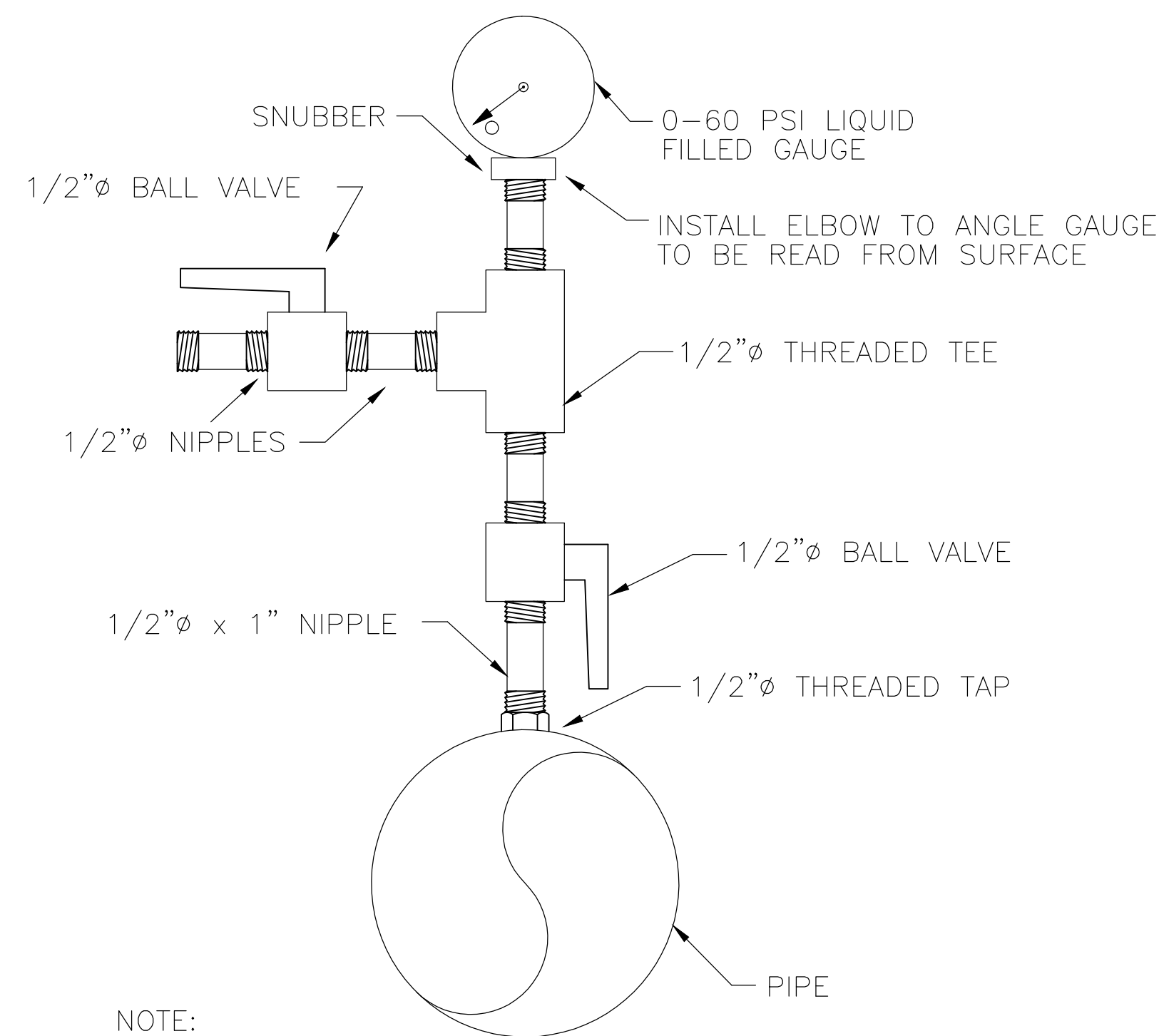


PLAN VIEW
PIPING PLAN
 SCALE: 1"=2'



SECTION VIEW
 SCALE: 1"=2'

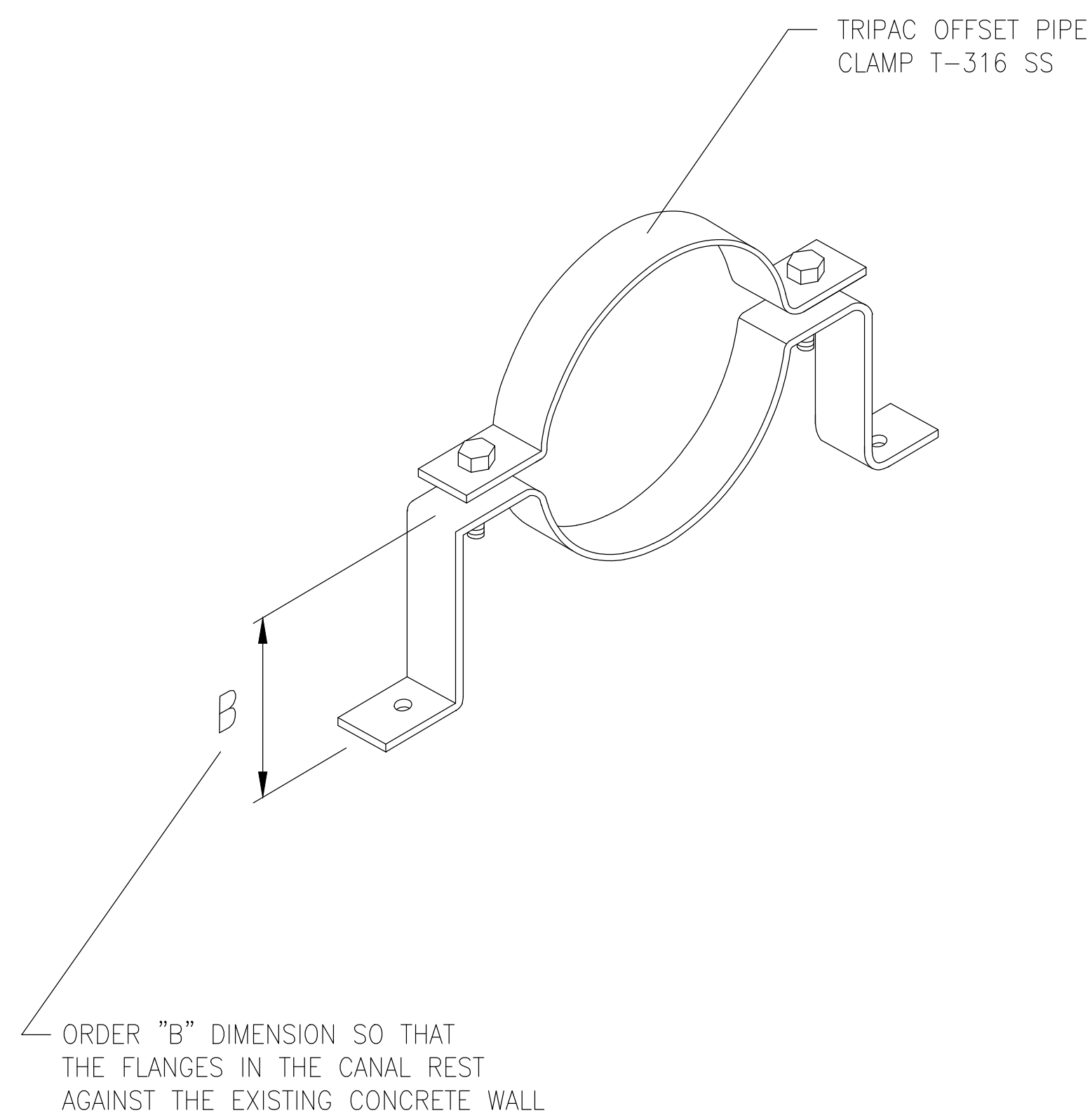
* 4 PIPE SUPPORTS REQUIRED
 (2) ON SUCTION PIPE, (2) ON DISCHARGE PIPE



NOTE:

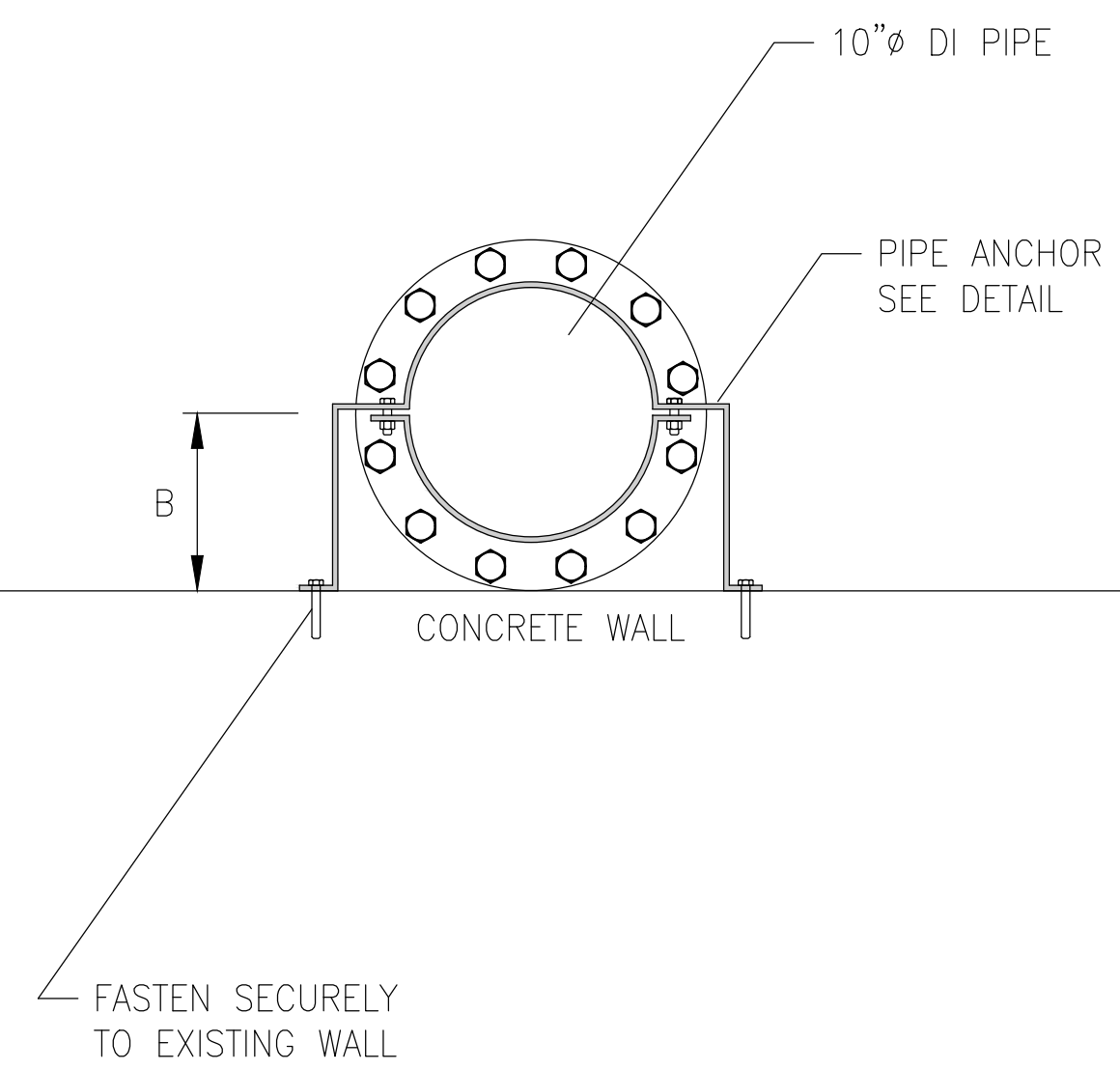
- 1) ALL FITTINGS SHALL BE BLACK STEEL
- 2) BALL VALVES SHALL BE BRASS

PRESSURE GAUGE



ORDER "B" DIMENSION SO THAT THE FLANGES IN THE CANAL REST AGAINST THE EXISTING CONCRETE WALL

PIPE CLAMP



FASTEN SECURELY TO EXISTING WALL

PIPE CLAMP

**MARINA CANAL CIRCULATION PUMP
PUMP IMPROVEMENT PLANS
DETAIL SHEET
SPARKS, NEVADA**

revisions

drawn: GKG
checked: GKG
date: MAY 2022
scale:
project no: 19029

NOTES: (THIS SHEET ONLY)

- ① EXISTING NV ENERGY TRANSFORMER SECONDARY GROUND ROD.
- ② EXISTING MAIN ELECTRICAL SERVICE GROUND.

FEEDER SCHEDULE													
FR	FROM	TO	QUANTITY PARALLEL	CONDUIT	CONDUCTORS	LOAD PHASES	LOAD VOLTAGE	LOAD CURRENT	LOAD P. FACTOR	APPROX LENGTH	VOLTAGE DROP %	CONDUCTOR RESISTANCE	CONDUCTOR REACTANCE
1	(E) PANEL FI	(N) PUMP CONTROLLER	1	2"	(4) - #4 Cu # (1) - #8 Cu GND	3	208	52	0.85	25'	0.41%	0.490	0.051

NOTES:
 1. ALL PVC CONDUIT SHALL BE SCHEDULE 40 UNLESS OTHERWISE NOTED.
 2. ALL PVC CONDUIT SHALL CARRY AN EQUIPMENT GROUNDING CONDUCTOR SIZED ACCORDING TO NEC T. 250-102.
 3. ALL CONDUCTORS SHALL BE COPPER WIRE TYPE THRU/THIN 90° RATED INSULATION.
 4. ALL UTILITY CONDUITS SHALL BE INSTALLED ACCORDING TO UTILITY COMPANY STANDARDS.
 5. FEEDER LENGTHS ARE FOR ENGINEER'S PURPOSES ONLY, AND ARE NOT TO BE USED FOR BIDDING.

Panel Schedule by Jensen Engineering Inc.

PANEL 'FI' 208 / 120 VOLT 3 PHASE 4 WIRE 100 AMPERE MAIN (E) 125 AMPERE BUS

LOCATION EXISTING AS SHOWN MOUNTING EXISTING INTERRUPTING EXISTING A.I.C.

CIRCUIT NUMBER	LOAD			CIRCUIT BREAKER	BUS	CIRCUIT BREAKER	LOAD			
	LINE A	LINE B	LINE C				LINE A	LINE B	LINE C	
1	**	**	**	3 100		3 100	(E) MAIN BREAKER			
2						3	(N) PUMP CONTROLLER **	6500	6500	6500
3										
4										
5										
6										
7						20	SCADA/RTU	500		
8							(N) SPARE			
9						20	(N) SPARE			
10										
11						5	(N) FLOW METER TRANSMITTER			500
12										
13							SPACE			
14							SPACE			
15							SPACE			
16							SPACE			
17							SPACE			
18							SPACE			
19							SPACE			
20							SPACE			
21							SPACE			
22							SPACE			
23							SPACE			
24							SPACE			
25							SPACE			
26							SPACE			
27							SPACE			
28							SPACE			
29							SPACE			
30							SPACE			
SUB TOTALS								1000	6500	1000
LINE TOTALS								1000	6500	1000
LINE AMPS								58	54	58
TOTAL KVA LOAD								2050		

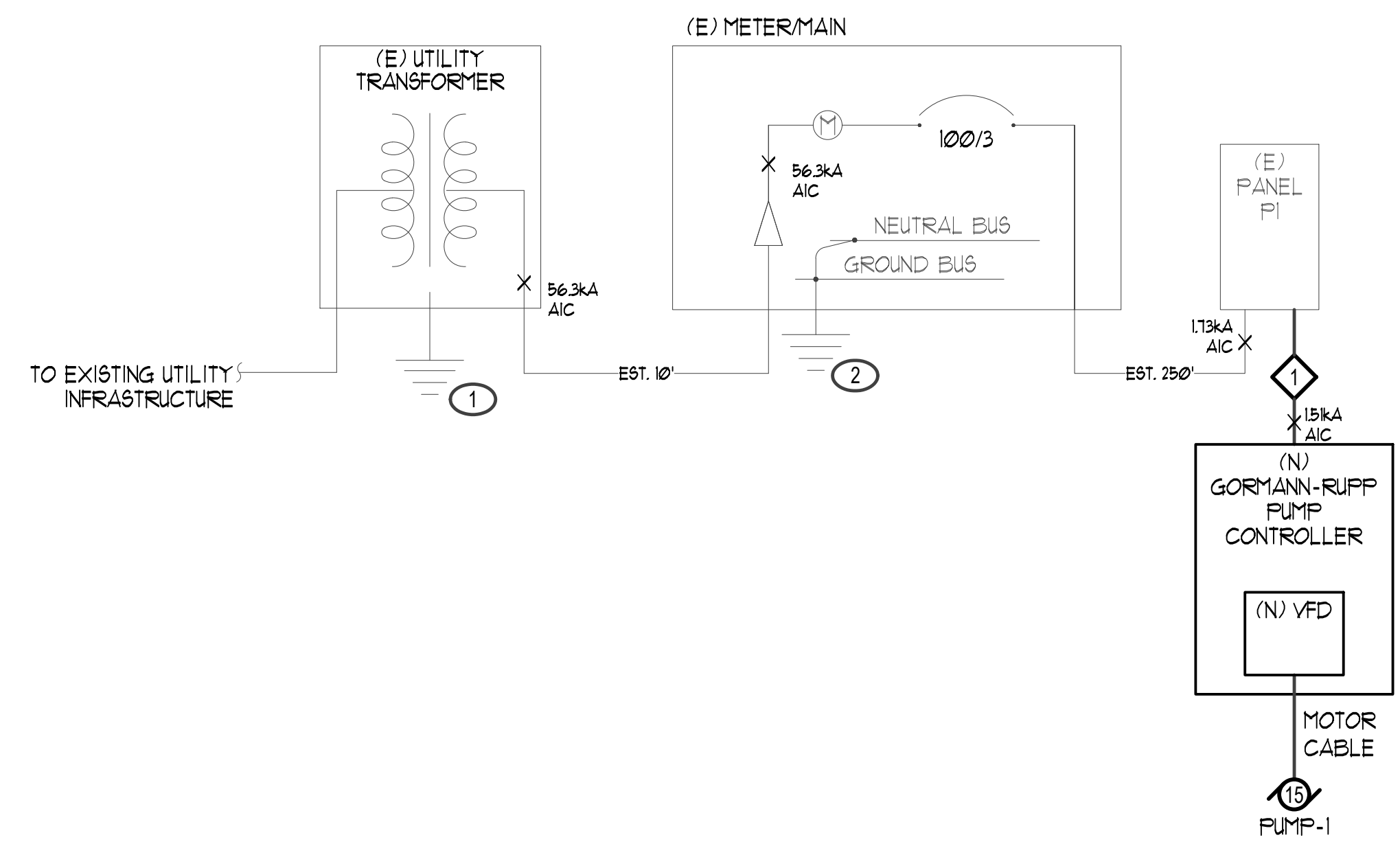
NOTES: ** INDICATES A NEW BREAKER INSTALLED IN EXISTING PANEL. NEW BREAKERS ARE TO MATCH PANEL MANUFACTURER.

MSB SCHEDULE

POS	DESCRIPTION	BREAKER SIZE	KVA LOAD
1	(E) PANEL FI	100/3	2050
TOTAL KVA LOAD:			2050
@ 208V, 3φ =			57 AMPERES

ELECTRICAL SERVICE LOAD SUMMARY

DESCRIPTION	LOAD (kVA)	
PUMP 1 (15HP)	17.40	
PANEL FI	3.00	
CONNECTED LOAD TOTAL		20.40
AMPS @ 208V, 3φ =		57 AMPERES
+25% LARGEST MOTOR (10HP)		4.35
+25% CONTINUOUS LOAD		0.15
NEC OCPD LOAD:		25.5
NEC OCPD AMPS @ 208V, 3φ =		71 AMPERES
EXISTING BUS: 125-AMP		
EXISTING OCPD: 100-AMP		



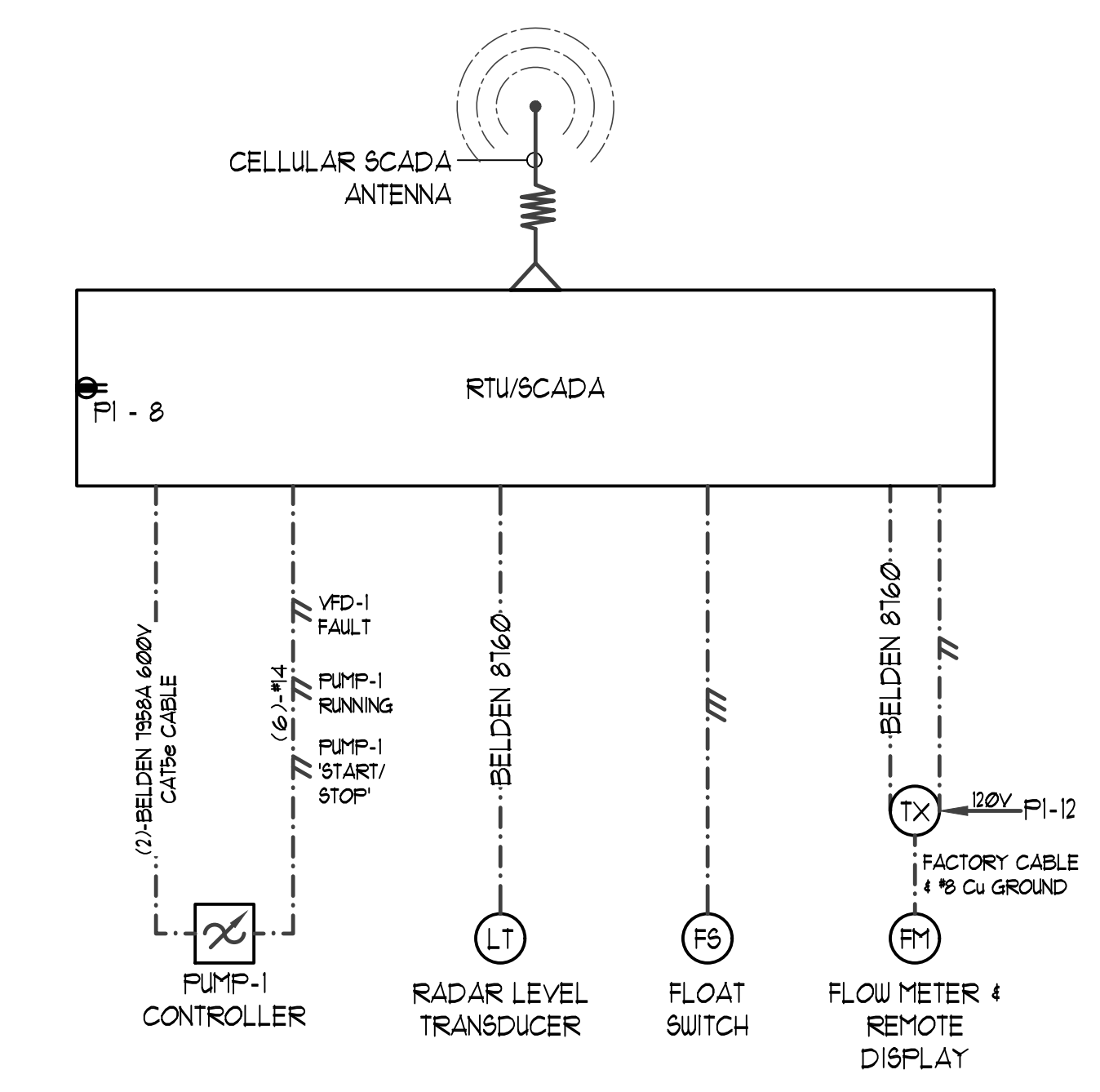
SINGLE-LINE DIAGRAM
SCALE: NOT TO SCALE

SCADA/RTU GENERAL SPECIFICATIONS

- QUALIFICATIONS FOR THE INSTRUMENTATION & SCADA PANEL SYSTEM INTEGRATOR: SYSTEM INTEGRATOR SHALL PROVIDE ALL MATERIALS, LABOR, EQUIPMENT, TOOLS, AND TRANSPORTATION NECESSARY TO DESIGN, MANUFACTURE, FURNISH, INSTALL, AND TEST EQUIPMENT TO BE INTEGRATED INTO A COMPLETE FUNCTIONING WATER SYSTEM SCADA AND MONITORING SYSTEM. THE SYSTEM INTEGRATOR SHALL BE RESPONSIBLE FOR THE CALIBRATION OF THE PRIMARY MEASUREMENT DEVICES USED FOR SYSTEM MONITORING AND CONTROL. SYSTEMS INTEGRATOR SHALL PROVIDE ALL REQUIRED PROGRAMMING & INTEGRATION WITH CITY OF SPARKS' MASTER SCADA SYSTEM. ACCEPTABLE INTEGRATORS: AS SPECIFIED, RETAINED, AND PAID FOR BY CITY OF SPARKS.
- CONTRACTOR TO PROVIDE ALL SIGNAL CABLES/CONDUCTORS AND SHALL BE INSTALLED IN CONDUIT (1" MINIMUM UNLESS OTHERWISE NOTED).
- COLOR CODE SIGNAL WIRES AS FOLLOWS:
AC = YELLOW
DC = BLUE
- PROVIDE FUTURE & SPARE I/O CAPACITY, MINIMUM 6 SPARE EACH FOR DISCRETE & ANALOG (INPUT, & OUTPUT), 24-TOTAL.
- SCADA CABINET TO BE ALL INCLUSIVE FOR MONITORING, CONTROLLING, ALARM REPORTING, AND COMMUNICATION AS REQUIRED FOR THE LISTED SIGNALS. INCLUDE ALL REQUIRED RELAYS, TERMINATION BLOCKS, WIRING, FUSES, PROGRAMMABLE LOGIC CONTROLLER, ANALOG & DISCRETE I/O, NEMA-4 CABINET, CABINET BACKPANEL, SWING-OUT DOOR KIT, PANDUIT, POWER SUPPLY, 24-HOUR BATTERY BACK-UP WITH BATTERY CHARGER, RADIO EQUIPMENT, A DEDICATED CONVENIENCE RECEPTACLE, AN INDUSTRIAL 10/100 MANAGED ETHERNET 8-PORT SWITCH, CABLING, ETC.
- RTU TO HAVE PASSWORD PROTECTED, PROGRAMMABLE SET-POINTS FOR LISTED CONTROL ITEMS THROUGH COLOR LED-BACKLIT TOUCH-SCREEN OIT BASED ON MONITORING, ALARM, & COMMUNICATION REQUIREMENTS. SETS POINTS SHALL INCLUDE PUMP 'START/STOP' AS WELL AS PROGRAMMING FOR FLOW.
- SUBMIT SCADA CABINET EQUIPMENT, LAYOUTS, AND WIRING DIAGRAMS FOR ENGINEERING APPROVAL PRIOR TO MANUFACTURE.
- PROVIDE COMMISSIONING & AN OPERATION/MAINTENANCE MANUAL AND INSTRUCTION FOR ALL INSTALLED EQUIPMENT. SUBMIT MANUALS FOR ENGINEERING REVIEW AND APPROVAL.
- TRAIN OWNER'S KEY PERSONNEL IN OPERATION OF ALL SET-POINTS, OPERATIONS, FUNCTIONS, ETC. ALLOW AT LEAST 4-HOURS OF TRAINING IN ADDITION TO START-UP.
- PROVIDE CELLULAR BASED SCADA LINK.
- REMOTE ACCESSIBLE OPERATOR INTERFACE REQUIRED FOR MONITORING ALARM REPORTING AND CONTROL. INTERFACE TO BE ACCESSIBLE FROM A MOBILE DEVICE PLATFORM.
- SAMSARA 1G-21 IS ACCEPTABLE FOR COMBINED RTU/CELLULAR LINK. IF SAMSARA CANNOT SUPPORT MONITORING INPUTS LISTED, COORDINATE WITH ENGINEER FOR MONITORING/ALARM ADJUSTMENTS.

SCADA/RTU PERFORMANCE SPECIFICATION

- CONTROL SYSTEM INTEGRATOR SHALL PROVIDE AND INSTALL COMPLETE LIFT-STATION COMMUNICATION SYSTEM INCLUDING REMOTE TERMINAL UNIT (RTU), INSTRUMENTATION, CABLING, EQUIPMENT, TERMINATIONS, PROGRAMMING, CALIBRATION, ETC.
- RTU SYSTEM SHALL MONITOR PUMP STATION FUNCTIONS AS FOLLOWS:
 - CANAL 'DEPTH'
 - FLOW METER 'RATE'
 - RTU SYSTEM SHALL GENERATE AND TRANSMIT ALARM CONDITIONS AS FOLLOWS:
 - RTU 'INTRUSION'
 - VFD #1 'FAULT'
 - RTU PRIMARY POWER 'FAILURE'
 - RTU SYSTEM SHALL PROVIDE CONTROL FOR SYSTEM ELEMENTS AS FOLLOWS:
 - MAIN-BREAKER SHUNT-TRIP
 - PUMP-1 'START/STOP'
 - RTU SYSTEM SHALL PROVIDE COMMUNICATIONS AS FOLLOWS:
 - CITY OF SPARKS MASTER SYSTEM (CELLULAR)



SCADA/RTU DIAGRAM
SCALE: NOT TO SCALE

AXION ENGINEERING
Civil Engineering & Land Development

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Exp. 8/30/2023
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No. 10483
5-11-2022

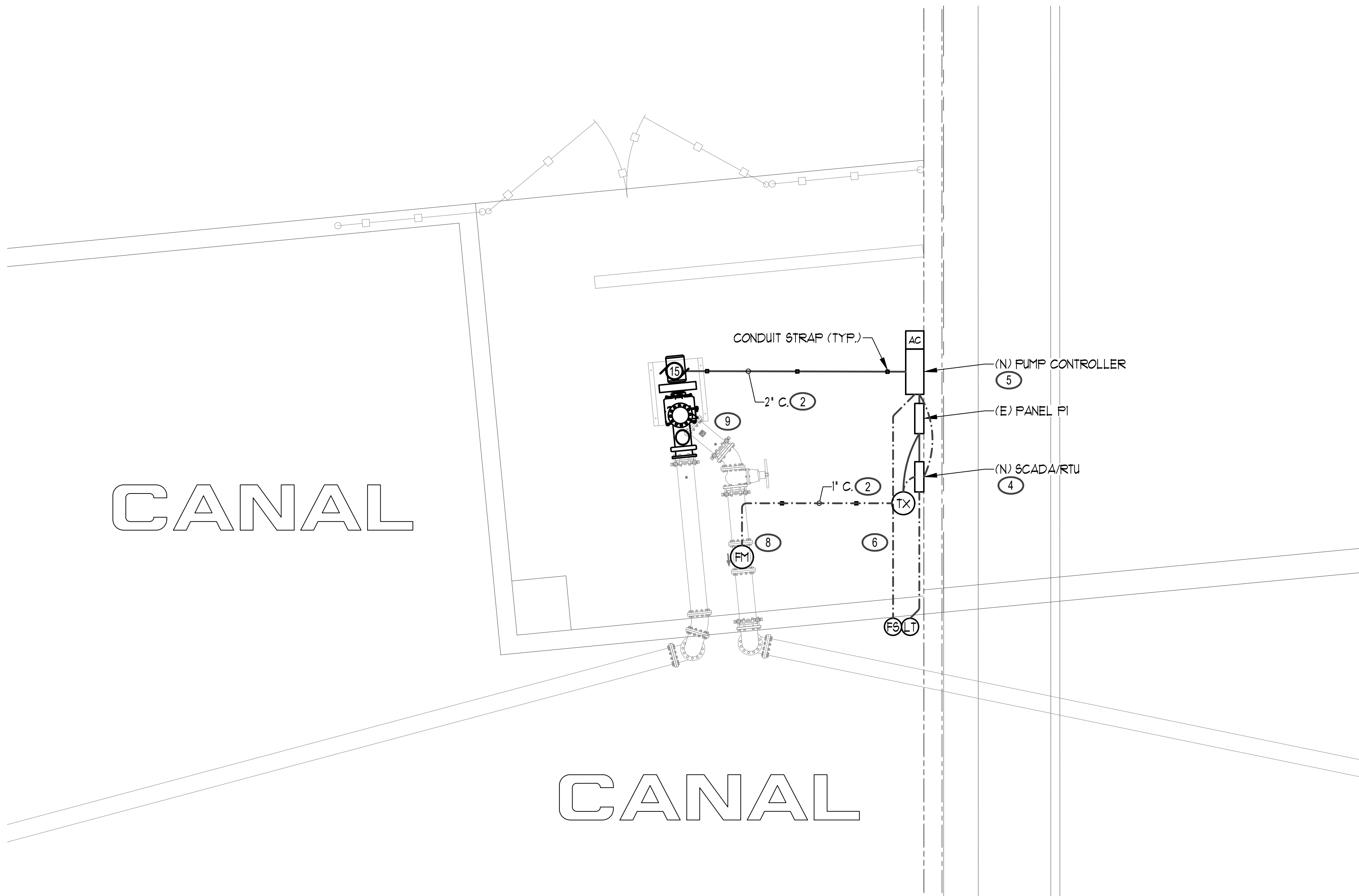
**MARINA CIRCULATION PUMP
MARINA CANAL CIRCULATION PUMP
SINGLE-LINE & SCADA DIAGRAMS
SPARKS, NEVADA**

revisions

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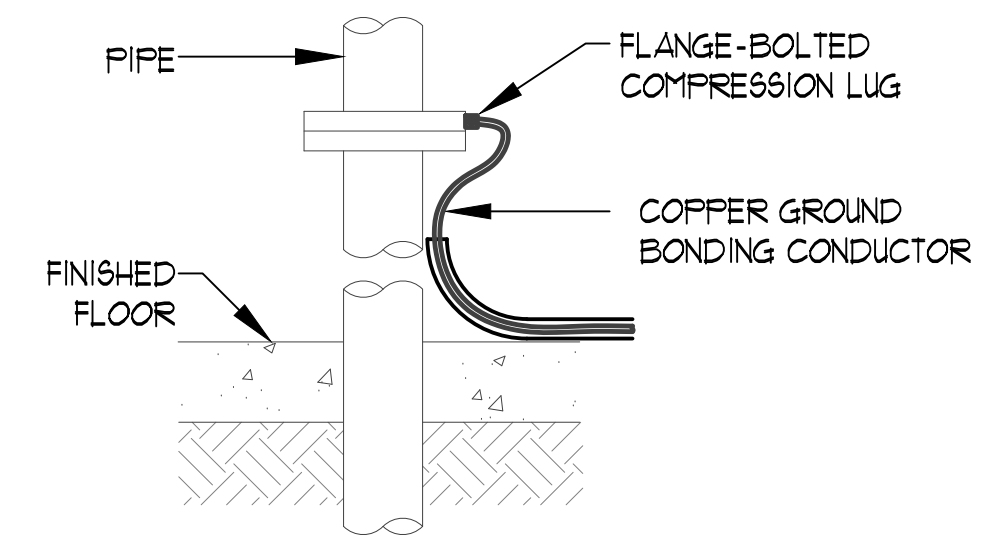
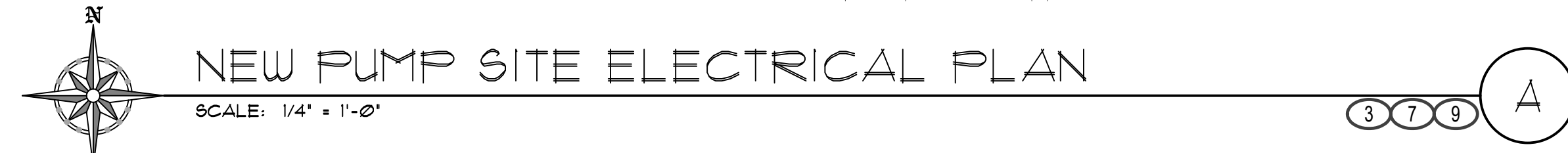
ELECTRICAL SYMBOLS AND NOMENCLATURE

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	DOUBLE-OUTLET 'DUPLEX' RECEPTACLE		1-φ, 1-POLE CIRCUIT PATH (1/2" CONDUIT, (2) - #12 CU, UN) ABOVE FLOOR
	DOUBLE-OUTLET 'DUPLEX' GFI-TYPE RECEPTACLE		1-φ, 2-POLE CIRCUIT PATH (1/2" CONDUIT, (3) - #12 CU, UN) ABOVE FLOOR
	DOUBLE-OUTLET 'DUPLEX' RECEPTACLE WITH USB CONNECTIONS		3-φ, 3-POLE CIRCUIT PATH (1/2" CONDUIT, (4) - #12 CU, UN) ABOVE FLOOR
	QUADRUPLE-OUTLET 'QUAD' RECEPTACLE		RETURN CIRCUIT TO PANEL 'HOMERUN' (CIRCUIT AS NOTED) ABOVE FLOOR
	SPECIAL RECEPTACLE (VOLTAGE/CONFIGURATION AS NOTED)		1-φ, 1-POLE CIRCUIT PATH (1/2" CONDUIT, (2) - #12 CU, UN) BELOW FLOOR
	SPECIAL RECEPTACLE (VOLTAGE/CONFIGURATION AS NOTED)		1-φ, 2-POLE CIRCUIT PATH (1/2" CONDUIT, (3) - #12 CU, UN) BELOW FLOOR
	JUNCTION BOX		3-φ, 3-POLE CIRCUIT PATH (1/2" CONDUIT, (4) - #12 CU, UN) BELOW FLOOR
	THERMOSTAT		RETURN CIRCUIT TO PANEL 'HOMERUN' (CIRCUIT AS NOTED) BELOW FLOOR
	FLOOR MOUNT RECEPTACLE		CIRCUIT BREAKER (AMPS/POLES AS NOTED)
	SAFETY DISCONNECT SWITCH (SIZE/VOLTAGE/CONFIGURATION AS NOTED)		FUSE (AMPS/POLES AS NOTED)
	TELEPHONE/DATA JUNCTION BACKBOX		48" MOUNTING HEIGHT AFF. (ACTUAL HEIGHT AS NOTED)
	SINGLE-POLE TOGGLE SWITCH (VOLTAGE AS REQUIRED)		ABOVE FINISHED FLOOR
	MULTI-STATION 'THREE-WAY' TOGGLE SWITCH (VOLTAGE AS REQUIRED)		ABOVE FINISHED GRADE
	SOLID STATE DIMMING SWITCH (VOLTAGE AS REQUIRED)		AUTOMATIC TRANSFER SWITCH
	MOTOR-RATED TOGGLE SWITCH (VOLTAGE AS REQUIRED)		CONDUIT
	OCCUPANCY SENSING (MOTION SENSOR) SWITCH		CIRCUIT BREAKER
	1' CONDUIT INTO ACCESSIBLE CEILING SPACE		CEILING
	PANELBOARD (NAME/AMP/PHASE/VOLTAGE/CONFIGURATION AS NOTED)		DEMOLISH
	TRANSFORMER (NAME/KVA RATING/PHASE/VOLTAGE AS NOTED)		EXISTING
	MECHANICAL EQUIPMENT INDICATOR		FUTURE
	PHOTO ELECTRIC CELL		FIRE ALARM CONTROL PANEL
	TIME CLOCK		FURNISHED BY OTHERS
	DUCT DETECTOR FIRE ALARM SYSTEM COMPONENT		GROUND FAULT INTERRUPTING TYPE LOW VOLTAGE
	SMOKE DETECTOR FIRE ALARM SYSTEM COMPONENT		MAIN CIRCUIT BREAKER
	HEAT DETECTOR FIRE ALARM SYSTEM COMPONENT		MAIN SWITCH BOARD
	CONTACTOR		NEW
	HORN/STROBE COMBINATION FIRE ALARM SYSTEM COMPONENT		NIGHT LIGHT
	SHUNT TRIP STATION		REMOVE AND REPLACE
	EMERGENCY STOP (MYSHROOM-STYLE PUSH-BUTTON)		TYPICAL
	MOTOR (HORSEPOWER AS NOTED)		UNDER GROUND
	SHEET NOTE INDICATOR		UNLESS OTHERWISE NOTED
	SHEET/EQUIPMENT NOTE INDICATOR		WEATHER PROOF
	EQUIPMENT NOTE INDICATOR		TRANSFORMER
	REVISION 'DELTA' NOTE INDICATOR		
	FEEDER NOTE INDICATOR		
	DETAIL/SHEET NOTE INDICATOR		

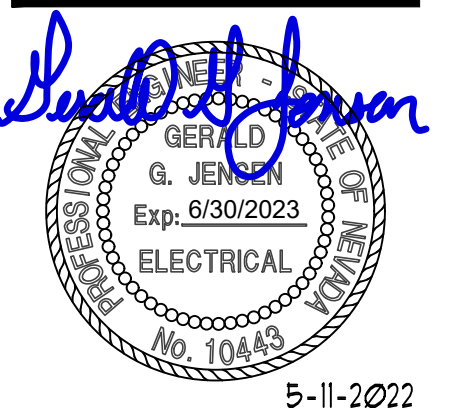


NOTES: (THIS SHEET ONLY)

- ① DRILL A HOLE INTO THE FLANGE FOR GROUNDING LUG CONNECTION WITH A DIAMETER LESS THAN 1/2 OF FLANGE THICKNESS.
- ② ELECTRICAL CONTRACTOR SHALL SECURE CONDUIT ONTO CONCRETE PAD. ENSURE ALL NECESSARY EQUIPMENT IS INSTALLED CORRECTLY FOR A COMPLETE AND WORKING SYSTEM.
- ③ ELECTRICAL CONTRACTOR AND SYSTEMS INTEGRATOR SHALL COORDINATE AND VERIFY WITH PUMP MANUFACTURER/SUPPLIER FOR ALL POWER REQUIREMENTS, CONTROLS REQUIREMENTS, AND FINAL LOCATIONS FOR ALL NEW EQUIPMENT PRIOR TO ROUGH-IN.
- ④ ELECTRICAL CONTRACTOR SHALL COORDINATE WITH SYSTEM INTEGRATOR FOR THE INSTALLATION OF A NEW PUMP-STATION SCADA/RTU PANEL. NEW SCADA/RTU PANEL SHALL MONITOR AND CONTROL PUMP-STATION. SEE SCADA/RTU DIAGRAM FOR DETAILS AND REQUIREMENTS.
- ⑤ PUMP CONTROLLER SHALL BE GORMANN-RUPP, NO SUBSTITUTIONS SHALL BE ALLOWED.
- ⑥ ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND SECURING CONDUIT TO WALL FOR NEW CANAL LEVEL TRANSDUCER. COORDINATE REQUIREMENTS OF CONDUIT WITH SYSTEMS INTEGRATOR PRIOR TO ROUGH IN. ENSURE ALL NECESSARY EQUIPMENT IS INSTALLED CORRECTLY PER MANUFACTURER'S INSTRUCTION FOR A COMPLETE AND WORKING SYSTEM.
- ⑦ ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL UNUSED AND DEMOLISHED ELECTRICAL EQUIPMENT WITHIN THE PROJECT AREA.
- ⑧ ELECTRICAL CONTRACTOR SHALL VERIFY WITH CITY OF SPARKS FOR FINAL LOCATION OF FLOW METER REMOTE DISPLAY (ADJACENT TO RTU). COORDINATE WITH SYSTEMS INTEGRATOR TO ENSURE ALL MOUNTING HARDWARE AND CABLING IS PROVIDED FOR A COMPLETE AND WORKING SYSTEM.
- ⑨ ELECTRICAL CONTRACTOR SHALL GROUND METAL PIPING SYSTEM PER NEC 250, AND FLOW METER MANUFACTURER'S REQUIREMENTS.



GROUND BONDING DETAIL
SCALE: NOT TO SCALE



MARINA CIRCULATION PUMP
MARINA CANAL CIRCULATION PUMP
PUMP SITE ELECTRICAL PLAN
SPARKS, NEVADA

revisions	

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project no: G28721CF