

**ADDENDUM #2**  
**EAST INTERCEPTOR SANITARY SEWER OVERFLOW STORAGE FACILITY – PHASE 3**  
**CITY OF DULUTH**  
**PROJECT 0891SN**  
**BID NUMBER 10-0299**  
**JUNE 17, 2010**

**NOTICE**

Page 1 of 3

This Addendum is issued to modify, explain or correct the original drawings, specifications and/or previous addendums and is hereby made a part of the Contract Documents. Please note receipt of this Addendum on the Request for Bid. The bid date remains unchanged from the Addendum #1 amendment.

**PROJECT MANUAL**

**DIVISION 23 – HEATING, VENTILATING, AND AIR CONDITIONING**

**Section 23 55 16 – Indirect Heating and Ventilating Units**

Page 23 55 16-2, Paragraph 2.01 A:

**ADD**           “A.    Acceptable Manufacturer: Industrial Commercial Equipment (I.C.E.)”

**DIVISION 26 – CONTROL PANEL CONSTRUCTION**

**Section 26 90 10 – Control Panel Constructiton**

Page 26 90 10 -5, Paragraph 2.03 – C.19- a:

**CHANGE**    “a.    Enclosures are painted front, sides, top, and back with a baked on epoxy paint, color to be selected by owner to match other Duluth Control Panels. Control panels shall receive application of anti-graffiti protective coating”.

**DIVISION 33 – UTILITIES**

**DELETE**    Section 33 01 30.72 LINING SEWERS (CIPP) from the Project Manual and disregard all references to this section. Bidders shall reference the City of Duluth 2009 Standard Construction Specifications for applicable sewer lining requirements.

**PROJECT DRAWINGS**

**Drawing G-4**

**CLARIFICATION**    Location noted for pavers on the existing storage facility is incorrect, refer to Landscape Plans for the correct locations and styles of pavers.

Drawing E-2

**CHANGE** Move Y3 site lights shown to the north of the storage facility to new location south of the retaining wall. The concrete bases and conduits for these fixtures are installed under Phase II. Luminaries, poles, and wiring shall be provided under this contract.

**CLARIFICATION** Existing transformer and meter for service to restroom facility are located S.E. of the restroom facility and N.N.W. of the fence for the City's SCADA System Trailer, refer to DRAWING G-4.

**CLARIFICATION** All heavy line weight conduit runs to site lighting are new, direct buried, and sized by contractor to carry the wiring shown on the revised detail 26 14 10 attached to this addendum.

**CLARIFICATION** The circle shown S.W. of the Lifts Station utility transformer is on existing light pole base, in which the existing wiring to the bridge wall pack lighting is accessible.

**DELETE** Delete Note 17 referenced to the Y3 site lights shown to the south of the storage facility. Provide concrete bases per detail 26 52 53, luminaries, poles, and wiring under this contract.

Drawing E-3

**ADD** Homerun circuit RF-LP-1 (5) to the site lighting control panel identified by Plan Note No. 5 on Toilet Building Plan Power.

Drawing E-4

**ADD** Homerun circuit SUG-LP-4 (9) to the site lighting control panel identified by Plan Note 12 on Garage Building Plan Power.

**ADD** Plan Note No. 13 as "13. Control station for north and south garage door openers. Provide by garage door manufacturer and wired by contract.

**CHANGE** The two devices located at the north and south manddoors on the Garage Building Plan Power and identified by Plan Note No. 8 should be referenced to Plan Note No. 13.

**CLARIFICATION** The 5 cord reels located above the work bench including the following: 1 – double duplex receptacle, 1 – work light (provided by contractor), 1 box with 100A lugs for connection of 15hp/208V motor, 1 box with 100A lugs for connection of 15 hp/240V motor, 1 box with 100A lugs for connection of 40hp/480V motor.

Drawing E-5

- CHANGE** On restroom facility one-line diagram, change site lighting control panel from existing to new and delete reference to Plan Note No. 6.
- CHANGE** On restroom facility one-line diagram, change panel RF-LP-1 from existing to new and delete reference to Plan Note No. 5
- CHANGE** Change Plan Note No. 5 to read “Not Used”.
- CHANGE** Change Plan Note No. 6 to read “Not Used”.

Drawing E-6

- REPLACE** Replace Drawing E-6 in it's entirety with attached Drawing E-6.

Drawing E-10

- REPLACE** Replace Drawing E-10 in it's entirety with the attached Drawing E-10.

Drawing E-11

- CHANGE** On fixture schedule for Type Y3 fixture, change the number of luminaires per pole from “1” to “5” and change luminaire model number to “CL12-400PMH-RN-240-EB-YK-SF”.
- ADD** On fixture schedule, add the following note to Type Y3 fixture: “Provide remote ballast mounted in base of pole for each luminaire. Coordinate exact requirements with manufacture to match City of Duluth standard lighting unit requirements. Aim flood lights to provide lighting coverage of the top of the storage tank facility.”

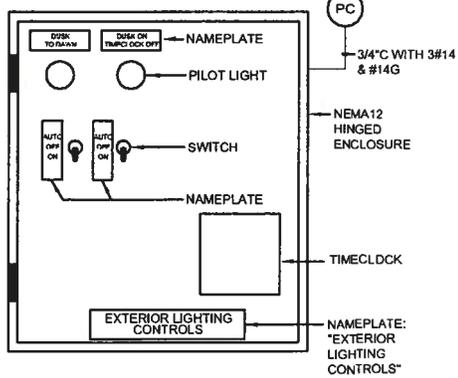
Drawing E-13

- REPLACE** Replace Detail 26 14 10 in it's entirety with the attached “Detail 26 14 10”.

Drawing E-14

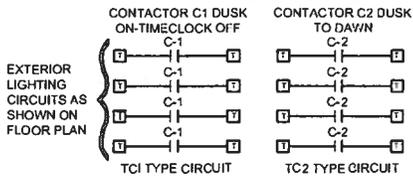
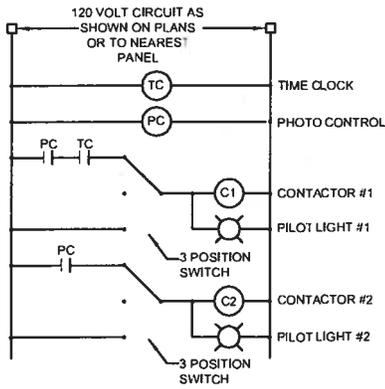
- REPLACE** Replace “Cord Reel Contactor Wiring Detail” in it's entirety with the attached “Cord Reel Contactor Wiring Detail”.

END OF ADDENDUM



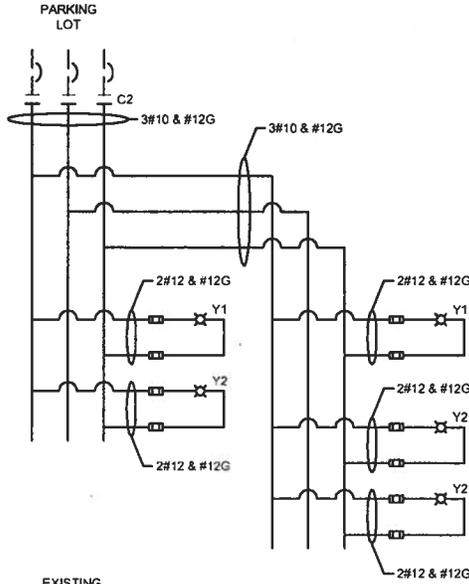
**COMPONENTS:**

- TIMECLOCK:** PARAGON EL72/120 ELECTRONIC SEVEN DAY
- PHOTOCONTROL:** INTERMATIC-K4221 MOUNT WHERE SHOWN ON FLOOR PLANS, OR IF NOT SHOWN, ON NORTH SIDE OF BUILDING.
- CONTACTORS:** "SQUARE D" 8903-L040-V02 MINIMUM CONFIGURATION, PROVIDE ADDITIONAL CONTACTOR POLES IF REQUIRED.
- PILOT LIGHTS:** 120 VOLT LED TYPE. PROVIDE ENGRAVED LABEL INDICATING "DUSK TO DAWN" AND "DUSK DN-TIMECLOCK OFF".
- 3-POSITION SWITCHES:** CENTER OFF TYPE, HEAVY DUTY TOGGLE SWITCH. PROVIDE ENGRAVED LABEL FOR EACH SWITCH "AUTO-OFF-ON".

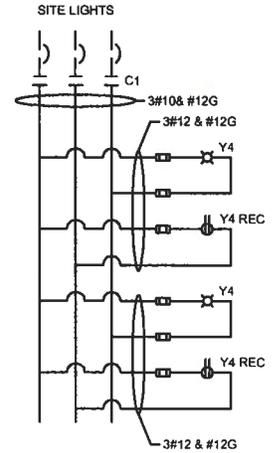


□ = TERMINAL STRIP

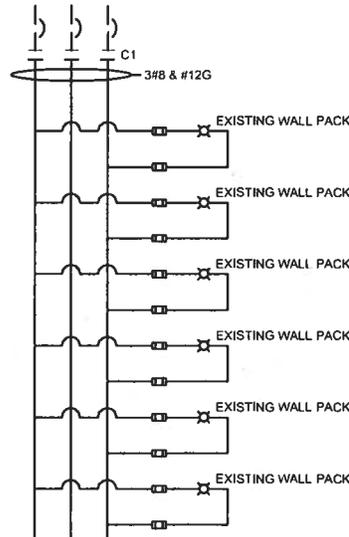
**GARAGE LCP**



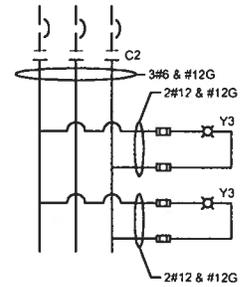
**RESTROOM LCP**



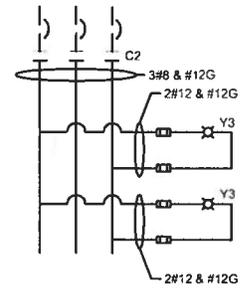
**EXISTING BRIDGE WALL PACK LIGHTING**



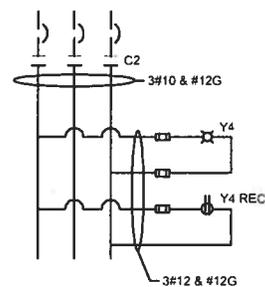
**NORTH SITE LIGHTS**

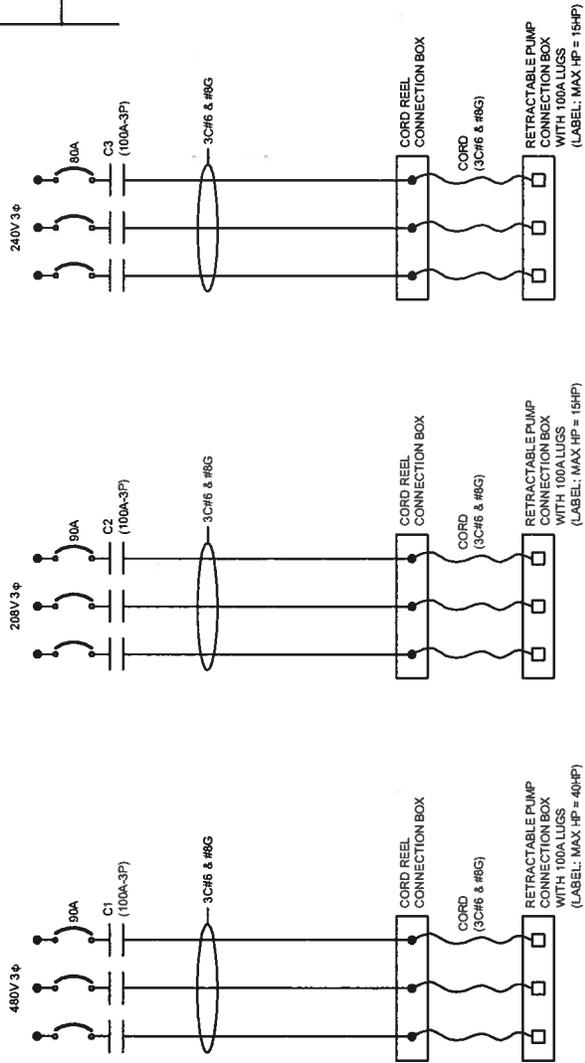
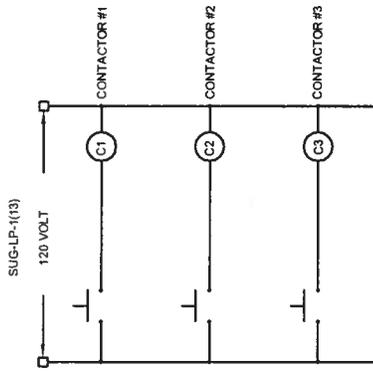


**SOUTH SITE LIGHTS**



**RELOCATED Y4 SITE LIGHT**





**CORD REEL CONTACTOR WIRING DETAIL**

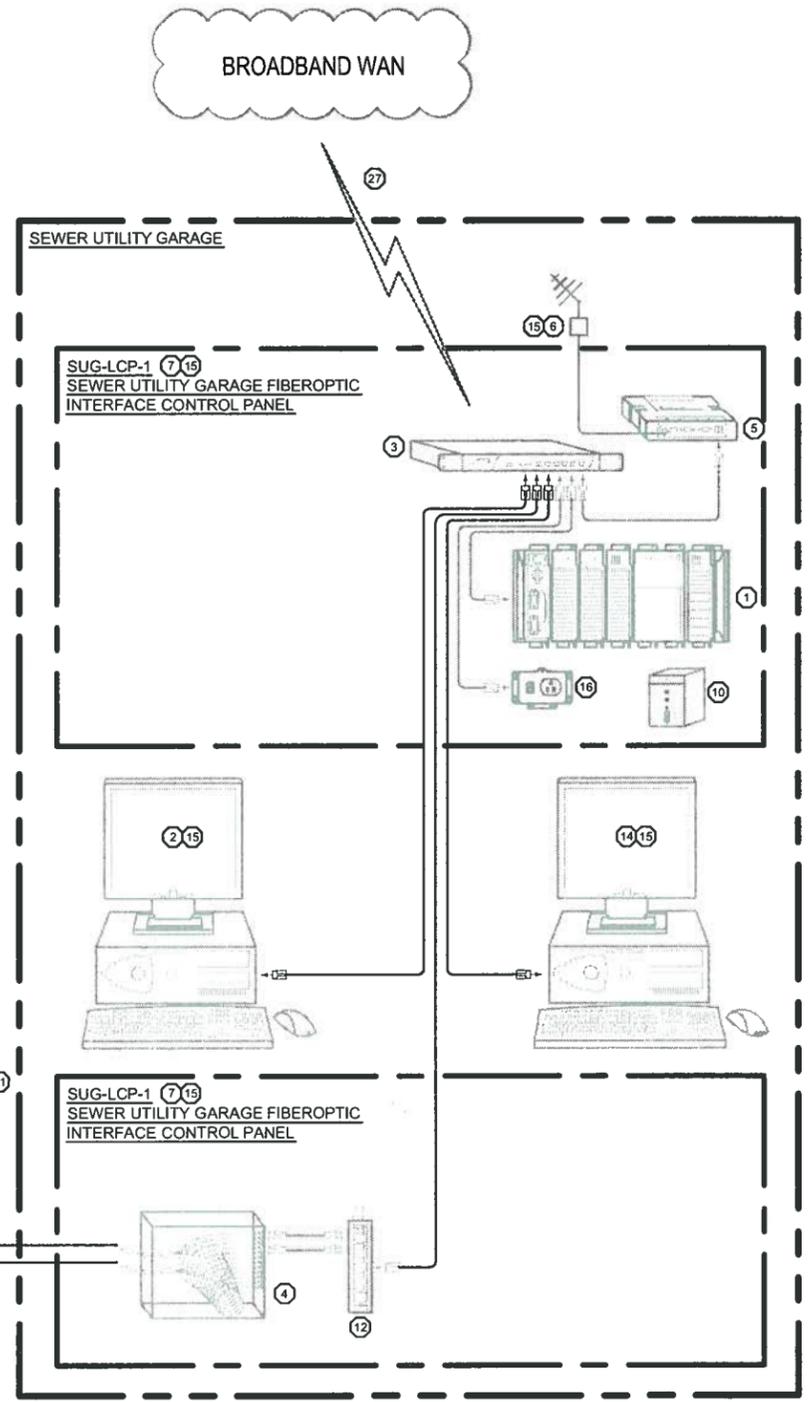
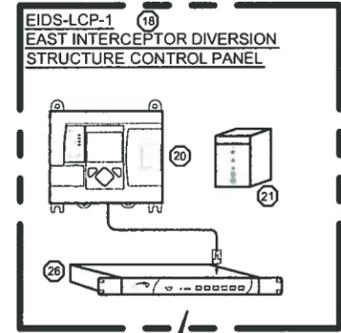
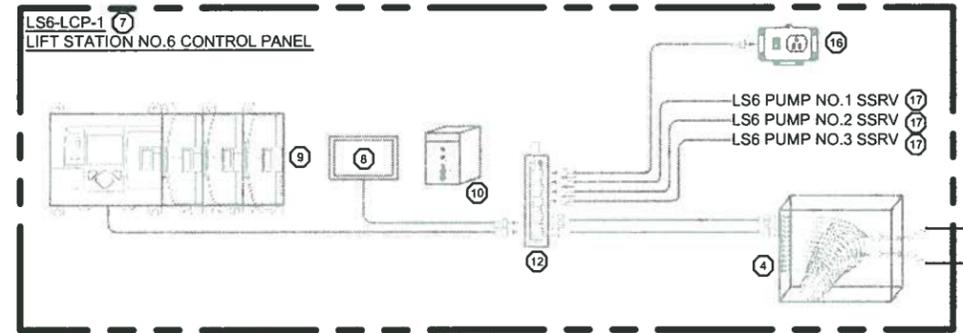
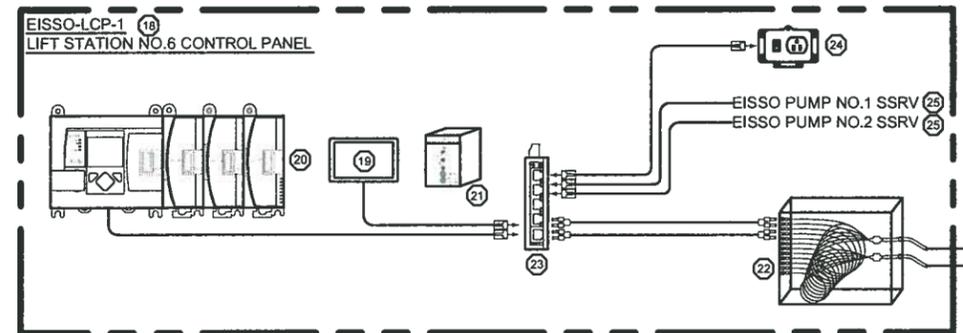
NIS

**GENERAL NOTES:**

1. CONTRACTOR SHALL BE RESPONSIBLE FOR DOCUMENTING AND LABELING ALL COMMUNICATIONS SYSTEM CABLING.
2. CONTRACTOR SHALL CONFIGURE ALL ETHERNET SWITCHING EQUIPMENT TO PROVIDE OPTIMAL NETWORK PERFORMANCE.
3. ETHERNET CABLES SHALL BE INDUSTRIAL UTP CABLE AS SPECIFIED.
4. THIS INFORMATION IS A DIAGRAM AND PROVIDES MINIMUM GUIDELINES AND INTENT FOR THE SYSTEM REQUIREMENTS. THE SYSTEM SYSTEM INTEGRATOR SHALL PROVIDE A COMPLETE AND OPERABLE SYSTEM. EQUIPMENT AND MATERIALS SHALL NOT LIMITED TO ITEMS SHOWN AND SPECIFIED HEREIN.

**PLAN NOTES:**

1. EXISTING SCADA SYSTEM PLC, ALLEN-BRADLEY COMPACT LOGIX, TO REMAIN AND BE MODIFIED.
2. EXISTING SCADA SYSTEM COMPUTER WORK STATION TO REMAIN AND BE MODIFIED.
3. EXISTING SONICWALL BROADBAND SECURITY APPLIANCE/SWITCH TO REMAIN AND BE MODIFIED.
4. EXISTING FIBER OPTIC PATCH PANEL TO REMAIN. TERMINATE ALL NEW FIBER STRANDS ON EXISTING PANEL.
5. EXISTING SCADA SYSTEM RADIO TO REMAIN.
6. EXISTING SCADA SYSTEM RADIO ANTENNA TO REMAIN. RELOCATE TO SEWER UTILITY GARAGE FACILITY AS SHOWN ON THE PLANS AND PROVIDE NEW ANTENNA CABLE AS NEEDED TO ACCOMMODATE PROPOSED LOCATION.
7. EXISTING CONTROL PANEL TO REMAIN AND BE MODIFIED.
8. EXISTING OPERATOR INTERFACE TERMINAL, ALLEN-BRADLEY PANELVIEW 600, TO REMAIN AND BE MODIFIED.
9. EXISTING ALLEN BRADLEY MICRO-LOGIX 1400 PLC, REFER TO P&ID, TO REMAIN AND BE MODIFIED.
10. EXISTING UPS TO REMAIN.
11. NEW 6-STRAND MULTIMODE FIBER OPTIC CABLE INSTALLED IN PROPOSED AND EXISTING DUCTBANK SYSTEM.
12. EXISTING HISCHMANN SPIDER II SERIES ETHERNET SWITCH WITH 2-100BASE-FX PORTS AND 8-10/100BASE-TX PORTS TO REMAIN.
13. NOT USED.
14. EXISTING OFFICE PC TO BE RELOCATED TO SEWER UTILITY GARAGE FACILITY AND RECONNECTED TO CITY NETWORK. COORDINATE WITH CITY MIS DEPARTMENT.
15. EQUIPMENT IS PRESENTLY LOCATED IN THE CITY'S SCADA SYSTEM TRAILER AND SHALL BE RELOCATED TO THE SEWER UTILITY GARAGE FACILITY AS PART OF THIS CONTRACT.
16. EXISTING PROGRAMMING PORT, GRACE INDUSTRIES P-R2-F3R0, TO REMAIN.
17. EXISTING ETHERNET CONNECTION TO SSRV TO REMAIN.
18. CONTROL PANEL TO BE PROVIDED UNDER THIS CONTRACT.
19. OPERATOR INTERFACE TERMINAL, ALLEN-BRADLEY PANELVIEW 600, TO BE PROVIDED UNDER THIS CONTRACT.
20. ALLEN BRADLEY MICRO-LOGIX 1400 PLC, REFER TO P&ID, TO BE PROVIDED UNDER THIS CONTRACT.
21. UPS TO BE PROVIDED UNDER THIS CONTRACT.
22. FIBER OPTIC PATCH PANEL TO BE PROVIDED UNDER THIS CONTRACT. TERMINATE ALL NEW FIBER STRANDS ON EXISTING PANEL.
23. HISCHMANN SPIDER II SERIES ETHERNET SWITCH WITH 2-100BASE-FX PORTS AND 8-10/100BASE-TX PORTS TO BE PROVIDED UNDER THIS CONTRACT.
24. PROGRAMMING PORT, GRACE INDUSTRIES P-R2-F3R0, TO BE PROVIDED UNDER THIS CONTRACT.
25. ETHERNET CONNECTION TO SSRV TO BE PROVIDED UNDER THIS CONTRACT.
26. SONICWALL BROADBAND SECURITY APPLIANCE/SWITCH TO BE PROVIDED UNDER THIS CONTRACT. INCORPORATE SITE INTO EXISTING SCADA SYSTEM NETWORK.
27. EXISTING HIGH SPEED DATA CONNECTION BETWEEN LIFT STATION NO.6 AND CITY HALL TO BE RELOCATED TO NEW SEWER UTILITY GARAGE FACILITY. COORDINATE WITH CITY MIS DEPARTMENT.
28. HIGH SPEED DSL CONNECTION PROVIDED UNDER THIS CONTRACT.



**SCADA SYSTEM NETWORK ARCHITECTURE**  
NTS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 SIGNATURE: *Fred Mierwani* REG. NO. 20610 DATE 5/17/2010  
 I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 SIGNATURE: *Howard D. Smith* REG. NO. 46875 DATE 5/17/2010

Prepared by: KTE  
 Checked by: RJU

NUM	REVISIONS	DATE

CITY PROJ. NO. 0891SN

EAST INTERCEPTOR S.S.O.  
STORAGE FACILITY PHASE 3

SHEET NO. E-6 CONTROL PANEL ELEVATION DETAILS

PANEL I.D.	AMPS	PHASE	MAIN CB AMPS:	AIC					
400	3	3	400	22,000					
TYPE: DISTRIBUTION PANEL									
MOUNT: SURFACE									
WIRE: 4									
VOLTAGE 480/277									
TYPE	CIRCUIT DESIGNATION	KVA	BREAKER	CKT	CKT	BREAKER	KVA	CIRCUIT DESIGNATION	TYPE
Panel	SUGLP1	6.56	225	3	1	2		SUG-LP-2	X
Panel		6.93		3	4				X
Panel		7.48		5	6				X
M	AIR COMPRESSOR	2.11	15	3	7	8	20	PRESS. WASHER	M
M		2.11		9	10				M
M		2.11		11	12				M
M	MAU-1	0.58	15	3	13	14	90	CORD DROP	X
M		0.58		15	16				X
M		0.58		17	18				X
				19	20				
				21	22				
				23	24				
				25	26				
				27	28				
				29	30				
				31	32				
				33	34				
				35	36				
				37	38				
				39	40				
				41	42				
TOTAL LINE-NEUTRAL KVA		9.25	9.62	10.17			9.65	9.65	9.65
TOTAL CONNECTED KVA		57.99		THIS PANEL		TOTAL ESTIMATED KVA DEMAND		57.99	
TOTAL CONNECT AMPS		69.76		THIS PANEL		TOTAL ESTIMATED AMP DEMAND		69.76	
TOTALS BY TYPE		R (RECEPTACLES)		0.00		ESTIMATED DEMAND		5.03	
		L (LIGHTING)		0.00				2.09	
		M (MOTORS)		17.22				21.11	
		X		19.80				25.12	
		A (AC)		0.00				0.00	
		E (ELEC. HEAT)		0.00				4.64	
		K (KITCHEN EQUIPMENT)		0.00				0.00	
								NEC 220-56 TABLE 6 AND OVER @ 0.65 DEMAND.	

PANEL I.D.	AMPS	PHASE	MAIN CB AMPS:	AIC					
100	3	3	100	22,000					
TYPE: 250VAC LIGHTING AND APPLIANCE PANEL									
MOUNT: SURFACE									
WIRE: 3									
VOLTAGE 120/240									
TYPE	CIRCUIT DESIGNATION	KVA	BREAKER	CKT	CKT	BREAKER	KVA	CIRCUIT DESIGNATION	TYPE
X	CORD DROP	3.20	80	3	1	2	20	JIB CRANE **	M
X		3.20		3	4				M
X		3.20		5	6				M
X	WELDER	4.80	50	2	7	8		SPACE	
X		4.80		9	10			SPACE	
	SPACE			11	12			SPACE	
	SPACE			13	14			SPACE	
	SPACE			15	16			SPACE	
	SPACE			17	18			SPACE	
	SPACE			19	20			SPACE	
	SPACE			21	22			SPACE	
	SPACE			23	24			SPACE	
	SPACE			25	26			SPACE	
	SPACE			27	28			SPACE	
	SPACE			29	30			SPACE	
	SPACE			31	32			SPACE	
	SPACE			33	34			SPACE	
	SPACE			35	36			SPACE	
	SPACE			37	38			SPACE	
	SPACE			39	40			SPACE	
	SPACE			41	42			SPACE	
TOTAL LINE-NEUTRAL KVA		8.00	8.91	3.20			0.00	0.00	0.00
TOTAL CONNECTED KVA		19.20		THIS PANEL		TOTAL ESTIMATED KVA DEMAND		19.20	
TOTAL CONNECT AMPS		46.19		THIS PANEL		TOTAL ESTIMATED AMP DEMAND		46.19	
TOTALS BY TYPE		R (RECEPTACLES)		0.00		ESTIMATED DEMAND		0.00	
		L (LIGHTING)		0.00				0.00	
		M (MOTORS)		0.00				0.00	
		X		19.20				19.20	
		A (AC)		0.00				0.00	
		E (ELEC. HEAT)		0.00				0.00	
		K (KITCHEN EQUIPMENT)		0.00				0.00	
								NEC 220-56 TABLE 6 AND OVER @ 0.65 DEMAND.	

PANEL I.D.	AMPS	PHASE	MAIN CB AMPS:	AIC						
225	3	3	225	22,000						
TYPE: 250VAC LIGHTING AND APPLIANCE PANEL										
MOUNT: SURFACE										
WIRE: 4										
VOLTAGE 120/208										
TYPE	CIRCUIT DESIGNATION	KVA	BREAKER	CKT	CKT	BREAKER	KVA	CIRCUIT DESIGNATION	TYPE	
R	SHOP PRESS	0.90	20	1	1	2	20	GARAGE RCPTS	R	
R	DRILL PRESS	0.90	20	1	3	4	20	GARAGE RCPTS	R	
R	GARAGE RCPTS	0.90	20	1	5	6	20	GARAGE RCPTS	R	
R	PARTS WASHER	0.90	20	1	7	8	20	MEZZ RCPTS	R	
R	CORD REEL	0.36	20	1	9	10	20	STOR RCPTS	R	
L	WORK LIGHT	0.60	20	1	11	12	20	OFFICE RCPTS	R	
X	CR CONTACTOR	0.36	20	1	13	14	20	OFFICE RCPTS	R	
X	MAU-1 CTRL PNL	1.40	20	1	15	16	20	REFRIG RCPT	R	
M	ACCU-1	0.72	15	3	17	18	20	MICROWAVE	R	
M		0.72		19	20	1	0.90	WASH BAY RCPT	R	
M		0.72		21	22	20	1	SPACE		
M	EF-1	1.92	20	1	23	24	20	SPACE		
X	B-2 CTRL PNL	1.40	20	1	25	26	20	SPACE		
M	HRU-1	0.18	20	1	27	28	90	3	2.80	CORD DROP
E	F-1	1.18	20	1	29	30		2.80		X
E	B-2	1.80	15	1	31	32		2.80		X
E	P-6	0.53	15	1	33	34	20	1	1.18	GARAGE DOOR
E	P-7	0.30	15	1	35	36	20	1	1.18	GARAGE DOOR
E	P-8	0.30	15	1	37	38	20	1	1.18	WORK BAY DR
E	P-9	0.30	15	1	39	40	40	2	3.00	WATER HTR
E	P-10	0.30	15	1	41	42		3.00		E
	SPACE			43	44				SPACE	
	SPACE			45	46				SPACE	
	SPACE			47	48				SPACE	
	SPACE			49	50				SPACE	
	SPACE			51	52				SPACE	
	SPACE			53	54				SPACE	
	SPACE			55	56				SPACE	
	SPACE			57	58				SPACE	
	SPACE			59	60				SPACE	
	SPACE			61	62				SPACE	
	SPACE			63	64				SPACE	
	SPACE			65	66				SPACE	
	SPACE			67	68				SPACE	
	SPACE			69	70				SPACE	
	SPACE			71	72				SPACE	
	SPACE			73	74				SPACE	
	SPACE			75	76				SPACE	
	SPACE			77	78				SPACE	
	SPACE			79	80	100	3	2.44	SUGLP4	Panel
	SPACE			81	82			2.64		Panel
	SPACE			83	84			2.13		Panel
TOTAL LINE-NEUTRAL KVA		9.38	4.39	5.92			8.76	11.59	10.75	
TOTAL CONNECTED KVA		48.40		THIS PANEL		TOTAL ESTIMATED KVA DEMAND		47.60		
TOTAL CONNECT AMPS		134.34		THIS PANEL		TOTAL ESTIMATED AMP DEMAND		132.12		
TOTALS BY TYPE		R (RECEPTACLES)		10.52		ESTIMATED DEMAND		10.80		
		L (LIGHTING)		0.60				4.83		
		M (MOTORS)		7.80				8.98		
		X		11.56				12.28		
		A (AC)		0.00				0.00		
		E (ELEC. HEAT)		10.71				10.71		
		K (KITCHEN EQUIPMENT)		0.00				0.00		
								NEC 220-56 TABLE 6 AND OVER @ 0.65 DEMAND.		

PANEL I.D.	AMPS	PHASE	MAIN CB AMPS:	AIC					
100	3	3	100	18,000					
TYPE: 250VAC LIGHTING AND APPLIANCE PANEL									
MOUNT: SURFACE									
WIRE: 4									
VOLTAGE 120/208									
TYPE	CIRCUIT DESIGNATION	KVA	BREAKER	CKT	CKT	BREAKER	KVA	CIRCUIT DESIGNATION	TYPE
L	EXTERIOR LIGHTS	0.25	20	1	1	2	20	SUG-MCP-1	X
L	GARAGE/MEZZ LTS	1.48	20	1	3	4	20	SUG-LCP-1	X
L	STOR/RR/OFC LTS	1.25	20	1	5	6		SPACE	
R	SCADA WORKSTA	0.90	20	1	7	8		SPACE	
R	SCADA WORKSTA	0.90	20	1	9	10		SPACE	
	SPARE		20	1	11	12		SPACE	
TOTAL LINE-NEUTRAL KVA		1.16	2.38	1.25			0.90	11.50	0.00
TOTAL CONNECTED KVA		5.79		THIS PANEL		TOTAL ESTIMATED KVA DEMAND		5.79	
TOTAL CONNECT AMPS		16.07		THIS PANEL		TOTAL ESTIMATED AMP DEMAND		16.07	
TOTALS BY TYPE		R (RECEPTACLES)		1.80		ESTIMATED DEMAND		1.80	
		L (LIGHTING)		2.99				2.99	
		M (MOTORS)		0.00				0.00	
		X		1.00				1.00	
		A (AC)		0.00				0.00	
		E (ELEC. HEAT)		0.00				0.00	
		K (KITCHEN EQUIPMENT)		0.00				0.00	
								NEC 220-56 TABLE 6 AND OVER @ 0.65 DEMAND.	

PANEL I.D.	AMPS	PHASE	MAIN CB AMPS:	AIC						
100	3	3	100	18,000						
TYPE: 250VAC LIGHTING AND APPLIANCE PANEL										
MOUNT: SURFACE										
WIRE: 4										
VOLTAGE 120/208										
TYPE	CIRCUIT DESIGNATION	KVA	BREAKER	CKT	CKT	BREAKER	KVA	CIRCUIT DESIGNATION	TYPE	
L	LIGHTS	0.33	20	1	1	2	20	2	1.00	PARKING LOT
R	RECEPTACLES	1.08	20	1	3	4		1.00		SITE LIGHTING
M	OH DOOR	1.18	20	1	5	6	20	2	0.75	BRIDGE
X	IRRIGATION CTRL	0.96	20	1	7	8		0.75		SITE LIGHTING
X	LIGHTING CTRL PNL	0.36	20	1	9	10	20	2	0.20	EXISTING
	SPARE		20	1	11	12		0.20		SITE LIGHTING
	SPARE		20	1	13	14				SPACE
	SPARE		20	1	15	16				SPACE
	SPARE		20	1	17	18				SPACE
	SPARE		20	1	19	20				