KEYNOTES

A. SEE SHEET E12 FOR PANEL "HV" PANEL SCHEDULE.

B. PANEL "LV2" SHALL BE CONTAINED IN A MINI POWER CENTER, 480–120/208OV, 3 PHASE, 4 WIRE, 30KVA DRY TYPE TRANSFORMER WITH COPPER WINDINGS, INTEGRAL 90 AMPERE PRIMARY AND 100 AMPERE SECONDARY CIRCUIT BREAKERS, 18,000 AMPERE PRIMARY CIRCUIT BREAKER FAULT RATING, 24 BRANCH CIRCUIT BREAKER PANEL SPACES (SEE PANEL SCHEDULE ON SHEET E12 FOR REQUIRED BREAKERS), NEMA 3R ENCLOSURE, CUTLER–HAMMER P48G28T30CU–F, OR EQUAL.

C. JUNCTION BOXES SHALL BE A MINIMUM 12" x14" x 6" DEEP. COIL 3 FEET OF SPARE CONDUCTORS IN EACH BOX.

D. PROVIDE DISCONNECT SWITCH FOR 120 VOLT POWER FEED. DISCONNECT SWITCH SHALL BE A SPST SNAP SWITCH WITH 20 AMPERE RATED CONTACTS AT 277 VOLTS, HOUSED IN A GALVANIZED CAST IRON ENCLOSURE WITH PROVISIONS FOR LOCKING IN THE OFF POSITION, CROUSE–HINDS EDSC3129, OR EQUAL.

E. 16" FLANGED MAGNETIC FLOW METER, 600–19,000 GPM RANGE, POLYURETHANE LINER, 316L BULLET NOSE ELECTRODES, INTEGRAL GROUNDING ELECTRODES, ANSI CLASS 150 CARBON STEEL FLANGES, TUBE MOUNTED TRANSMITTER WITH 4–20mA HART FLOW RATE OUTPUT, LCD READOUT IN U.S. GPM UNITS, TUBE MOUNTED TRANSMITTER WITH NEMA 4X ENCLOSURE RATING, 120VAC, ENDRESS & HAUSER 53W4H–ULGB1AA0BAA2, WITH DTSP–AA1AR3 SUN SHADE.

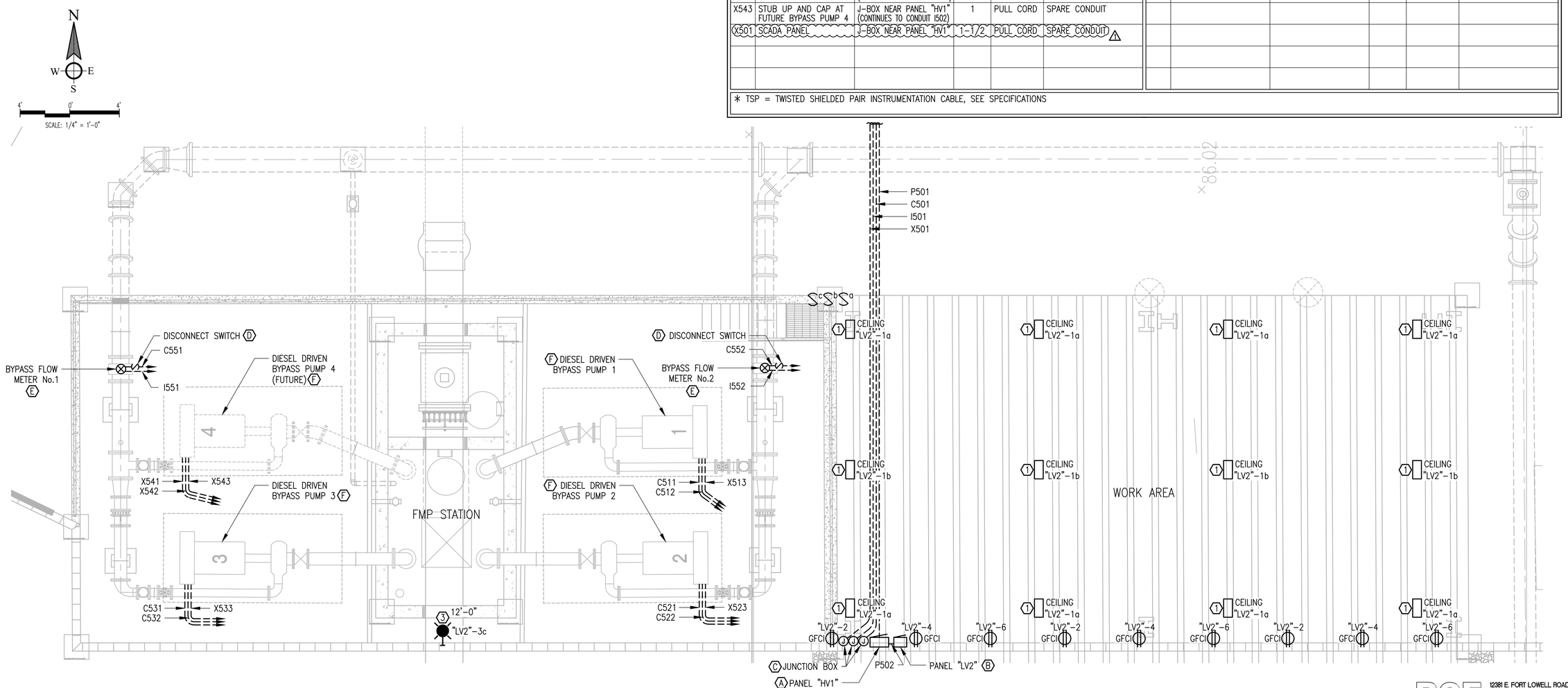
F. DIESEL ENGINE DRIVEN PUMPS SHALL BE PROVIDED WITH GODWIN PRIMEGUARD 2 CONTROLLERS, OR EQUAL, CAPABLE OF COMMUNICATING TO THE PROGRAMMABLE LOGIC CONTROLLER (PLC) IN THE SCADA PANEL (REFERENCE DRAWINGS E30 TO E36). PROVIDE COMMUNICATIONS INTERFACE EQUIPMENT AT THE PLC AND COMMUNICATIONS CABLING TO THE CONTROLLERS PER THE ENGINE DRIVEN PUMP MANUFACTURER'S RECOMMENDATIONS. COMMUNICATIONS SHALL INCLUDE SUMP LEVEL, ENGINE RUN STATUS, ALARM CONDITIONS AND OTHER INFORMATION (SEE PROGRAMMING NOTES ON SHEET E36). PROVIDE ONE SPARE COMMUNICATIONS CABLE IN CONDUIT I502 FOR FUTURE PUMP 4 COMMUNICATIONS. △1

CONDUIT SCHEDULE – 500 SERIES

NO.	FROM	TO	CONDUIT	WIRE	COMMENT
C501	SCADA PANEL	J–BOX NEAR PANEL "HV1" (SEE C512, C522, C532, X543)	1–1/2	32#12, #14G	RUN AND FAULT SIGNALS (16#14 ARE SPARE) C
P501	PANEL "HV"–38,40,42 CIRCUIT BREAKER	PANEL "HV1"	2	3#1, #8G	480 VOLT, 3ø POWER
I501	SCADA PANEL	J–BOX NEAR PANEL "HV1" (SEE CONDUITS I551,I552)	1–1/2	4TSP*, #14G	FLOW SIGNALS (2TSP ARE SPARE) C
I502	SCADA PANEL	J–BOX NEAR PANEL "HV1" (SEE I513, I523, I533, X543)	1–1/2	F	ENGINE COMMUNICATIONS TO SCADA PANEL
P502	PANEL "HV1"–2,4,6	PANEL "LV2" MINI POWER CENTER	1	3#2, #8G	480 VOLT, 3ø POWER
C511	PANEL "LV2"–8,10	BYPASS PUMP 1	1	3#12, #12G	120 VOLT, 1ø POWER FOR BAT. CHGR. & HEATER
C512	BYPASS PUMP 1	J–BOX NEAR PANEL "HV1" (CONTINUES TO CONDUIT C501)	1	8#14, #14G	RUN AND FAULT SIGNALS (4#14 ARE SPARE) C
I513	BYPASS PUMP 1	J–BOX NEAR PANEL "HV1" (CONTINUES TO CONDUIT I502)	1	F	ENGINE COMMUNICATIONS TO SCADA PANEL
C521	PANEL "LV2"–12,14	BYPASS PUMP 2	1	3#12, #12G	120 VOLT, 1ø POWER FOR BAT. CHGR. & HEATER
C522	BYPASS PUMP 2	J–BOX NEAR PANEL "HV1" (CONTINUES TO CONDUIT C501)	1	8#14, #14G	RUN AND FAULT SIGNALS (4#14 ARE SPARE) C
I523	BYPASS PUMP 1	J–BOX NEAR PANEL "HV1" (CONTINUES TO CONDUIT I502)	1	F	ENGINE COMMUNICATIONS TO SCADA PANEL
C531	PANEL "LV2"–16,18	BYPASS PUMP 3	1	3#12, #12G	120 VOLT, 1ø POWER FOR BAT. CHGR. & HEATER
C532	BYPASS PUMP 3	J–BOX NEAR PANEL "HV1" (CONTINUES TO CONDUIT C501)	1	8#14, #14G	RUN AND FAULT SIGNALS (4#14 ARE SPARE) C
I533	BYPASS PUMP 3	J–BOX NEAR PANEL "HV1" (CONTINUES TO CONDUIT I502)	1	F	ENGINE COMMUNICATIONS TO SCADA PANEL
X541	PANEL "LV2"–16,18	STUB UP AND CAP AT FUTURE BYPASS PUMP 4	1	PULL CORD	SPARE CONDUIT
X542	STUB UP AND CAP AT FUTURE BYPASS PUMP 4	J–BOX NEAR PANEL "HV1" (CONTINUES TO CONDUIT C501)	1	PULL CORD	SPARE CONDUIT
X543	STUB UP AND CAP AT FUTURE BYPASS PUMP 4	J–BOX NEAR PANEL "HV1" (CONTINUES TO CONDUIT I502)	1	PULL CORD	SPARE CONDUIT
X501	SCADA PANEL	J–BOX NEAR PANEL "HV1"	1–1/2	PULL CORD	SPARE CONDUIT △1

NO.	FROM	TO	CONDUIT	WIRE	COMMENT
C551	PANEL "LV2"–17	BYPASS FLOW METER No.1	1	2#12, #12G	120 VOLT POWER
I551	BYPASS FLOW METER No.1	J–BOX NEAR PANEL "HV1" (CONTINUES TO CONDUIT I501)	1	1TSP*, #14G	FLOW SIGNAL
C552	PANEL "LV2"–19	BYPASS FLOW METER No.2	1	2#12, #12G	120 VOLT POWER
I552	BYPASS FLOW METER No.2	J–BOX NEAR PANEL "HV1" (CONTINUES TO CONDUIT I501)	1	1TSP*, #14G	FLOW SIGNAL

* TSP = TWISTED SHIELDED PAIR INSTRUMENTATION CABLE, SEE SPECIFICATIONS



FMP STATION AND WORK AREA ELECTRICAL PLAN

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

RCE RICHARD CANNEY ENGINEERING
12381 E. FORT LOWELL ROAD
TUCSON, ARIZONA 85749
PHONE: (520) 615-8006
FAX: (520) 615-6495
E-MAIL: canney@att.net

NO.	REVISION	APPV'D.	DATE
△1	REVISIONS DURING BIDDING	RPC	7/18/16

Registered Professional Engineer (Civil) CERTIFICATE NO. 14502 RICHARD P. CANNEY 9/8/15 ARIZONA U.S.A. EXPIRES 6/30/17

DESIGNED BY : R.P.C.
DRAWN BY : R.P.C.
CHK'D BY (DESIGN) : M.F.T.
CHK'D BY (FIELD ENGR) :
FIELD BOOK NO. :

PIMA COUNTY
REGIONAL WASTEWATER
RECLAMATION DEPARTMENT

PIMA COUNTY WASTEWATER RECLAMATION
201 North Stone Avenue * Tucson, Arizona 85701-1207 * Phone: (520) 740-6500

CONTINENTAL RANCH
REGIONAL PUMP STATION
UPGRADE DESIGN
DETAILED
ELECTRICAL PLANS

R-2014-079
G-2014-078

Date: SEPT. 8, 2015

SCALE: HORIZ. : 1/4" = 1'
VERT. : N/A

SHEET NO. : E106
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RCE JOB No. 13107
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