

CONTINUED ON DWG. BS-SAN-Y-509-02

**NOTES:**

1. INSTALL 45FT. POLES.
2. LIGHTNING ARRESTERS TO BE INSTALLED APPROX. EVERY 600FT. SEE DETAIL 2 ON DRAWING BS-SAN-Y-550-01. FIELD TO DETERMINE
3. POWER POLES AND METERING ON WEST SIDE OF PAZZELLI RD. TO BE PROVIDED BY ELECTRIC UTILITY NYSEG.
4. OVERHEAD POWER LINE PROVIDED AND INSTALLED BY DTE
5. CONTRACTOR TO INSTALL 45FT POLE. NYSEG WILL INSTALL PRIMARY METERING EQUIPMENT
6. POLE LINE EXTENSION IS DTE OWNED.
7. CUSTOMER OWNED POLES ARE DESIGNED FOR FUTURE 3-PHASE ADDITION.

**LEGEND**

- PROPOSED ELECTRIC POWER POLE CONTROL BY CONTRACTOR
- XXX POWER POLE NUMBER
- BY UTILITY OVERHEAD POWER LINE POLE
- BOM NUMBER
- OVERHEAD POWER LINE
- GROUNDING ROD (DETAIL G01 DWG. BS-SAN-Y-503-02)
- ARR POLE MOUNTED ARRESTERS

**APPROVED FOR CONSTRUCTION**

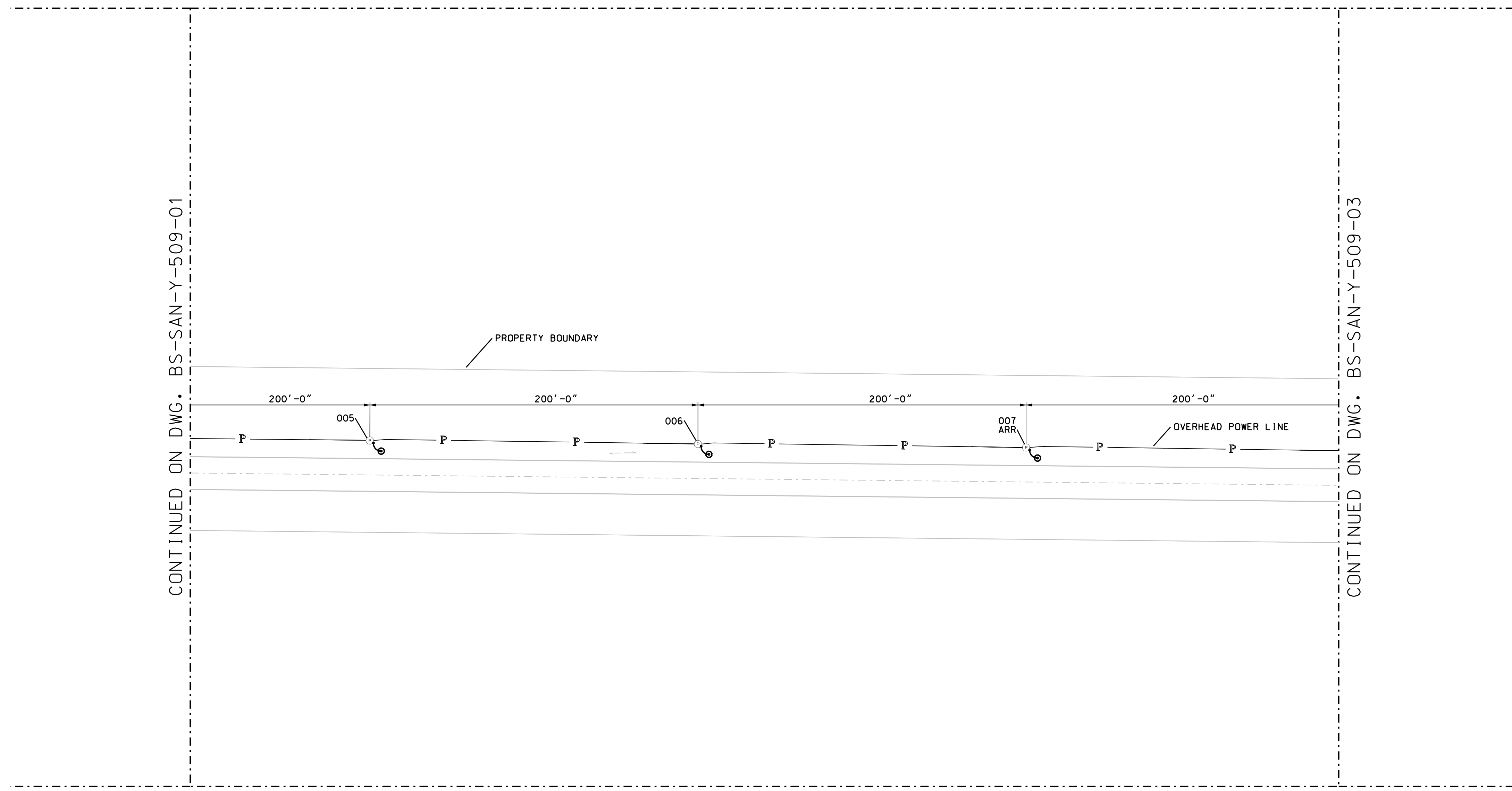
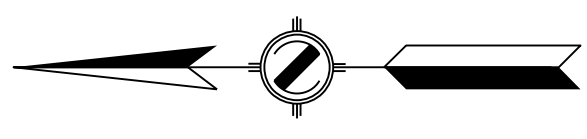
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DESIGN PRESSURE	PSIG		0	11/04/11	ISSUED FOR BID	JMS	JTM	ADP	VC												INVEST BY:	
MAXIMUM TEST PRESSURE	PSIG		1	11/14/11	RE-ISSUED FOR BID	TR	JTM	ADP	VC												DRAWN BY: JMS	04/12/12
MINIMUM TEST PRESSURE	PSIG		2	01/23/12	REVISED FOR BID	TR	JTM	ADP	VC												APPROVALS	DATE
TEST DURATION	HRS		3	03/16/12	ISSUED FOR REVIEW	JML	TR	ADP	VC												DRIFT CHK:	
TEST MEDIUM	AIR <input type="checkbox"/> N2 <input type="checkbox"/>		4	04/11/12	RE-ISSUED FOR BID	JAD	TR	ADP	VC												CORR CHK:	
	CO2 <input type="checkbox"/> H2O <input type="checkbox"/>		5	05/18/12	PHASE-1 ISSUED FOR BID	JMS	TR	ADP	VC												ENG CHK:	
CERTIFICATION CHART REQUIRED	YES <input type="checkbox"/> NO <input type="checkbox"/>		6	07/16/12	ISSUED FOR CONSTRUCTION	MRR	TR	ADP	VC												ENG APPR:	
TEST DATE																						
DESIGN SPEC #		DATE																				



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FAX 630-353-7777  
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DRAWING TITLE	
BLUESTONE SANFORD M&R SITE ENLARGED ELECTRICAL PLAN	
DRAWING NUMBER	PROJECT / JOB NO
BS-SAN-Y-509	
SHEET 1 OF 6	SCALE: 1" = 40'

DO NOT SCALE THIS DRAWING.  
USE DIMENSIONS ONLY



**NOTES:**

1. INSTALL 45FT. POLES.
2. LIGHTNING ARRESTERS TO BE INSTALLED APPROX. EVERY 600FT. SEE DETAIL 2 ON DRAWING BS-SAN-Y-550-01. FIELD TO DETERMINE
3. POLE LINE EXTENSION IS DTE OWNED.
4. CUSTOMER OWNED POLES ARE DESIGNED FOR FUTURE 3-PHASE ADDITION.

**LEGEND**

- PROPOSED ELECTRIC POWER POLE
- XXX POWER POLE NUMBER
- EXISTING OVERHEAD POWER LINE POLE
- BOM NUMBER
- OVERHEAD POWER LINE
- GROUNDING ROD (DETAIL G01 DWG. BS-SAN-Y-503-02)
- ARR POLE MOUNTED ARRESTERS

APPROVED FOR CONSTRUCTION

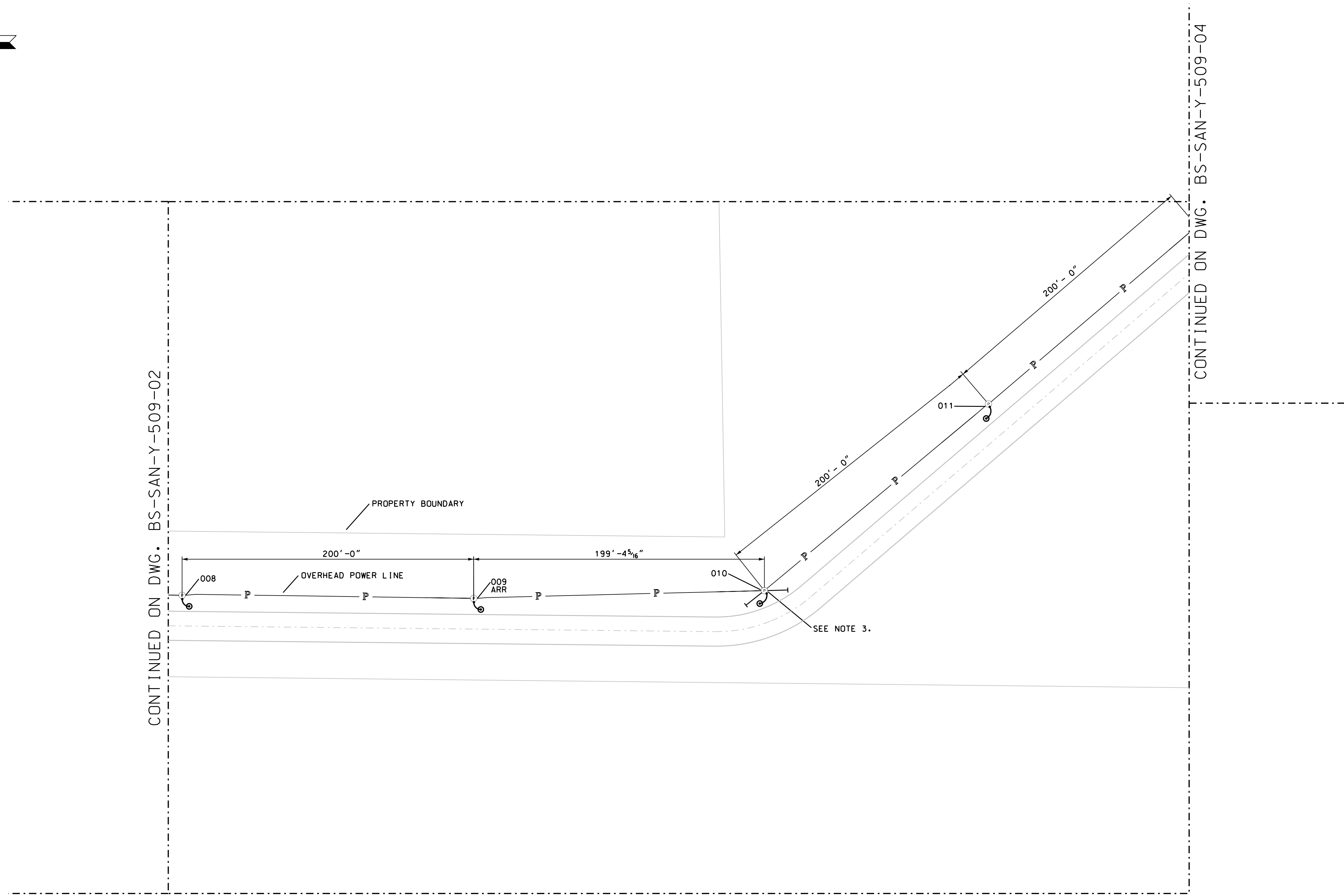
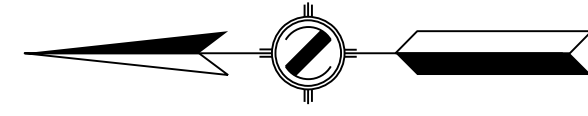
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DESIGN PRESSURE	PSKG		0	11/04/11	ISSUED FOR BID	JMS	JTM	ADP	VC										REV. NO.	BY	DATE	REV. NO.	BY	DATE	INVEST BY:	
MAXIMUM TEST PRESSURE	PSKG		1	11/14/11	RE-ISSUED FOR BID	TR	JTM	ADP	VC																DRAWN BY:	
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	CO2 <input type="checkbox"/> H2O <input type="checkbox"/>		5	05/18/12	PHASE-1 ISSUED FOR BID	JMS	TR	ADP	VC																ENG CHK:	
CERTIFICATION CHART REQUIRED	YES <input type="checkbox"/> NO <input type="checkbox"/>		6	07/16/12	ISSUED FOR CONSTRUCTION	MRR	TR	ADP	VC																ENG APPR:	
TEST DATE																									DO NOT SCALE THIS DRAWING. USE DIMENSIONS ONLY.	
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DRAWING TITLE	
BLUESTONE SANFORD M&R SITE ENLARGED ELECTRICAL PLAN	
DRAWING NUMBER	PROJECT / JOB NO
BS-SAN-Y-509	
SHEET 2 OF 6	SCALE: 1" = 40'



- NOTES:**
1. INSTALL 45FT. POLES.
  2. LIGHTNING ARRESTERS TO BE INSTALLED APPROX. EVERY 600FT. SEE DETAIL 2 ON DRAWING BS-SAN-Y-550-01.
  3. SEE DETAIL 1 ON DRAWING BS-SAN-Y-550-01. FIELD TO DETERMINE.
  4. POLE LINE EXTENSION IS DTE OWNED.
  5. CUSTOMER OWNED POLES ARE DESIGNED FOR FUTURE 3-PHASE ADDITION.

- LEGEND**
- PROPOSED ELECTRIC POWER POLE
  - XXX POWER POLE NUMBER
  - EXISTING OVERHEAD POWER LINE POLE
  - BOM NUMBER
  - OVERHEAD POWER LINE
  - PROPOSED ANCHOR
  - GROUNDING ROD (DETAIL G01 DWG. BS-SAN-Y-503 SHEET 02)
  - ARR POLE MOUNTED ARRESTERS

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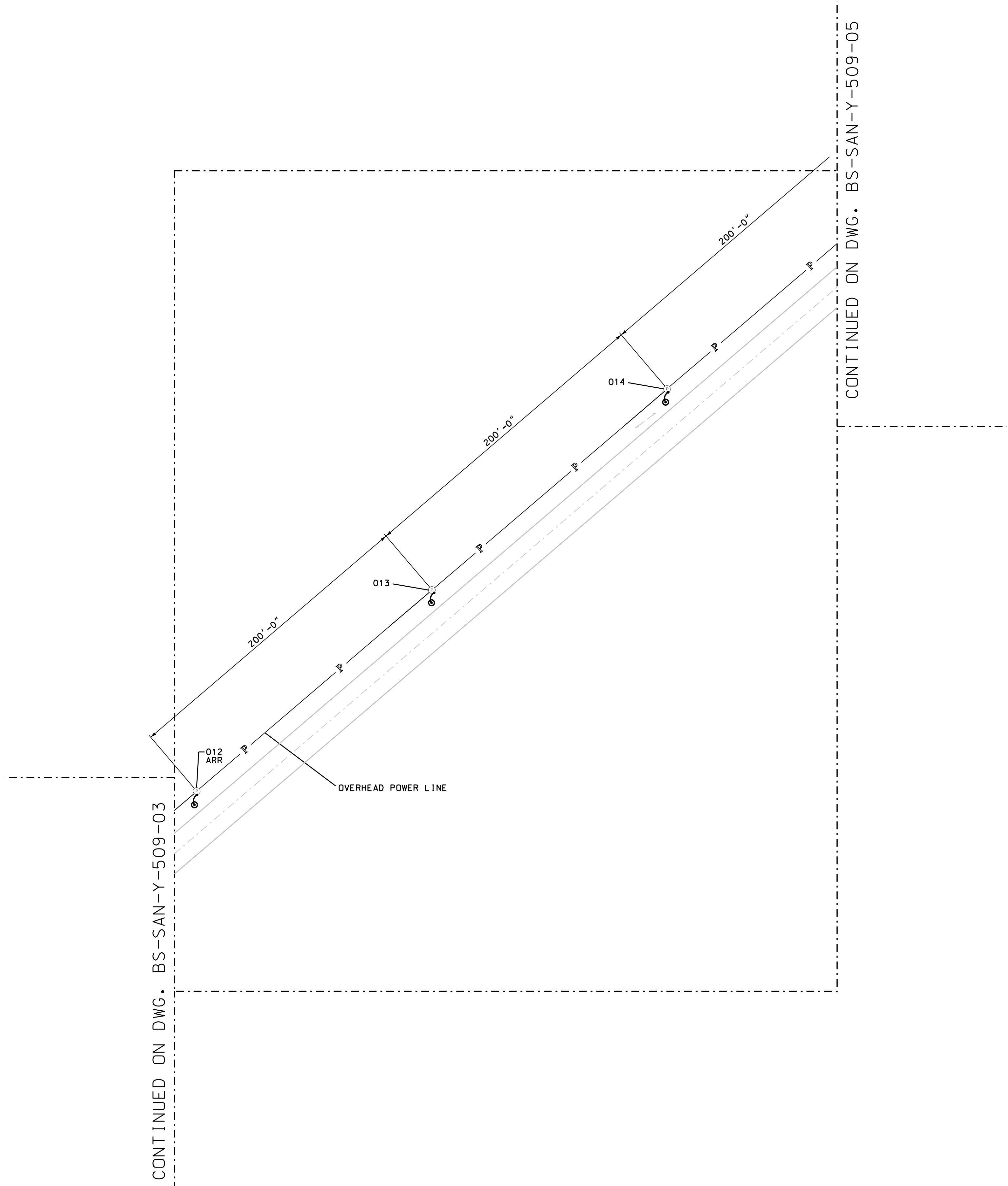
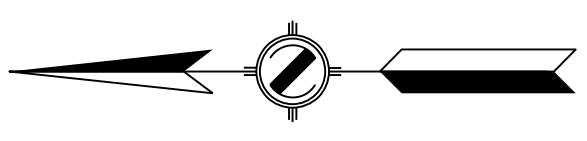
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		TEST MEDIUM	ARR <input type="checkbox"/> NZ <input type="checkbox"/>	4	04/11/12	RE-ISSUED FOR BID	JMS	TR	ADP	VC												CORR CHK:	
			CO2 <input type="checkbox"/> H2O <input type="checkbox"/>	5	05/18/12	PHASE-1 ISSUED FOR BID	JMS	TR	ADP	VC												ENG CHK:	
		CERTIFICATION CHART REQUIRED	YES <input type="checkbox"/> NO <input type="checkbox"/>	6	07/16/12	ISSUED FOR CONSTRUCTION	MRR	TR	ADP	VC												ENG APPR:	
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DRAWING TITLE	
BLUESTONE SANFORD M&R SITE ENLARGED ELECTRICAL PLAN	
DRAWING NUMBER	PROJECT /JOB NO
BS-SAN-Y-509	
SHEET 3 OF 6	SCALE: 1" = 40'



**NOTES:**

1. INSTALL 40FT. POLES.
2. LIGHTNING ARRESTERS TO BE INSTALLED APPROX. EVERY 600FT. SEE DETAIL 2 ON DRAWING BS-SAN-Y-550-01. FIELD TO DETERMINE
3. POLE LINE EXTENSION IS DTE OWNED.
4. CUSTOMER OWNED POLES ARE DESIGNED FOR FUTURE 3-PHASE ADDITION.

**LEGEND**

- PROPOSED ELECTRIC POWER POLE
- XXX POWER POLE NUMBER
- EXISTING OVERHEAD POWER LINE POLE
- BOM NUMBER
- OVERHEAD POWER LINE
- GROUNDING ROD (DETAIL G01 DWG. BS-SAN-Y-503-02)
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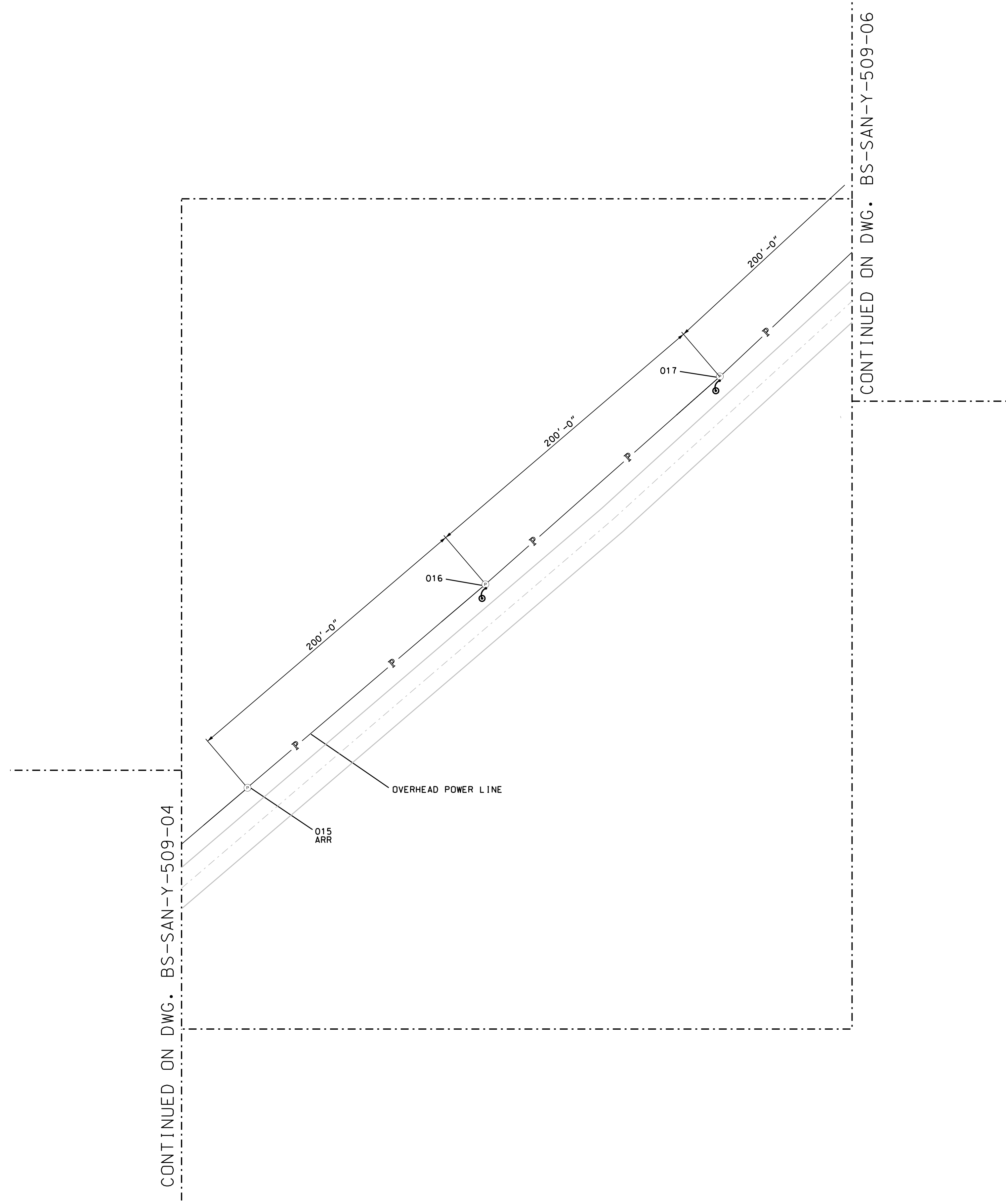
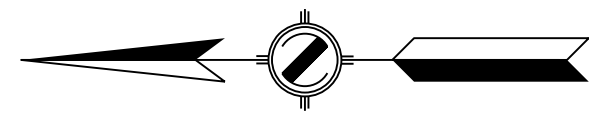
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		TEST MEDIUM	ARR	NO	4	04/11/12	RE-ISSUED FOR BID	JML	TR	ADP	VC											CORR CHK:	
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		TEST DATE																				DO NOT SCALE THIS DRAWING. USE DIMENSIONS ONLY	
BS-SAN-Y-509-4.dgn	7/16/2012	DESIGN SPEC #																					



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DRAWING TITLE	
BLUESTONE SANFORD M&R SITE ENLARGED ELECTRICAL PLAN	
DRAWING NUMBER	PROJECT /JOB NO
BS-SAN-Y-509	
SHEET 4 OF 6	SCALE 1" = 40'



**NOTES:**

1. INSTALL 40FT. POLES.
2. LIGHTNING ARRESTERS TO BE INSTALLED APPROX. EVERY 600FT. SEE DETAIL 2 ON DRAWING BS-SAN-Y-550-01. FIELD TO DETERMINE
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**LEGEND**

- PROPOSED ELECTRIC POWER POLE
- XXX POWER POLE NUMBER
- EXISTING OVERHEAD POWER LINE POLE
- BOM NUMBER
- OVERHEAD POWER LINE
- GROUNDING ROD (DETAIL G01 DWG. BS-SAN-Y-503 SHEET 02)
- ARR POLE MOUNTED ARRESTERS

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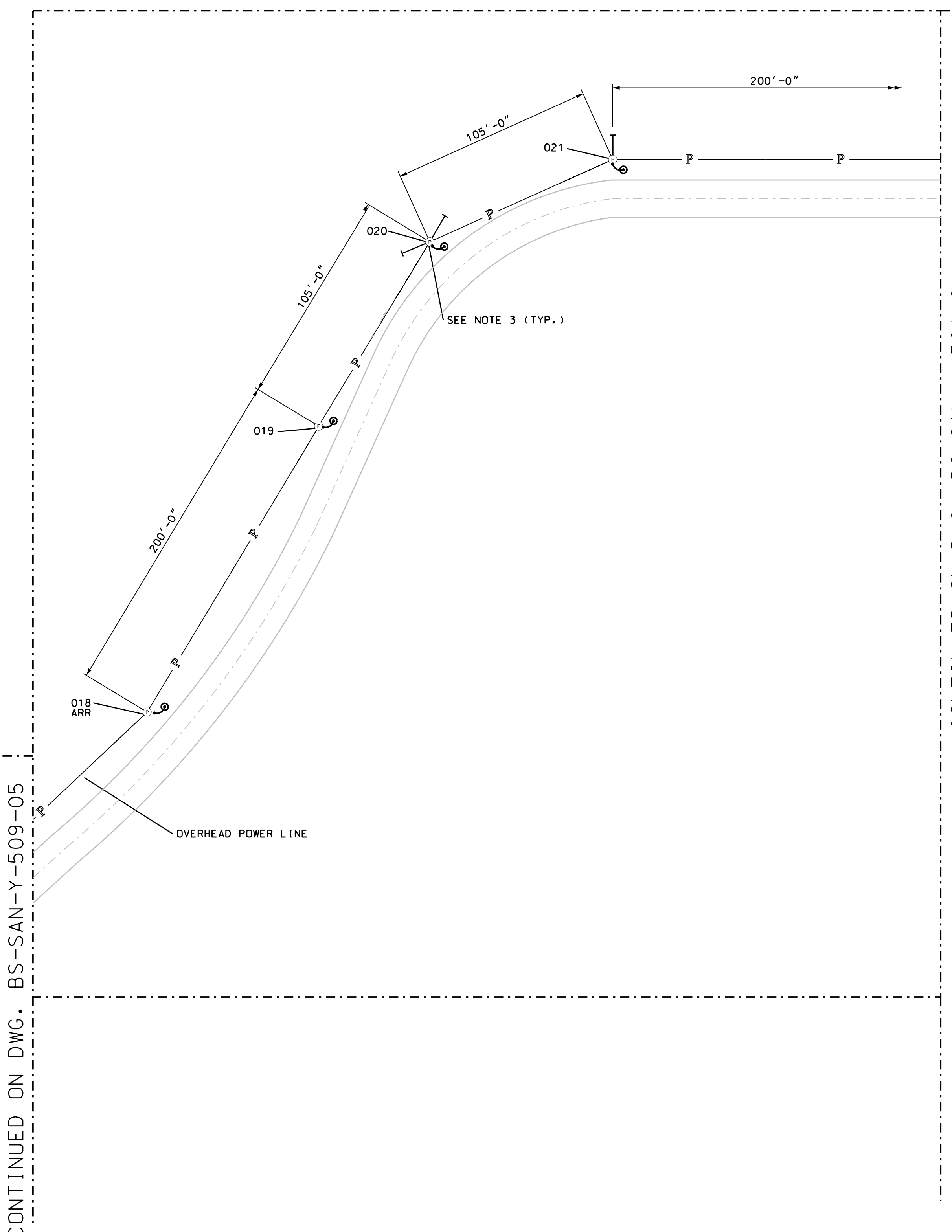
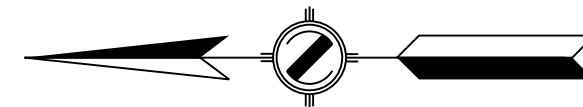
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		TEST MEDIUM	ARR	<input type="checkbox"/> NZ	<input type="checkbox"/>	4	04/11/12	RE-ISSUED FOR BID	JML	TR	ADP	VC														CORR CHK:	
			CO2	<input type="checkbox"/> HSD	<input type="checkbox"/>	5	05/18/12	PHASE-1 ISSUED FOR BID	JMS	TR	ADP	VC														ENG CHK:	
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DRAWING TITLE	
BLUESTONE SANFORD M&R SITE ENLARGED ELECTRICAL PLAN	
DRAWING NUMBER	PROJECT / JOB NO
BS-SAN-Y-509	
SHEET 5 OF 6	SCALE: 1" = 40'



- NOTES:**
1. INSTALL 40FT. POLES.
  2. LIGHTNING ARRESTERS TO BE INSTALLED APPROX. EVERY 600FT. SEE DETAIL 2 ON DRAWING BS-SAN-Y-550-01. FIELD DETERMINE
  3. SEE DETAIL 1 ON DRAWING BS-SAN-Y-550-01.
  4. POLE LINE EXTENSION IS DTE OWNED.
  5. CUSTOMER OWNED POLES ARE DESIGNED FOR FUTURE 3-PHASE ADDITION.

- LEGEND**
- PROPOSED ELECTRIC POWER POLE
  - XXX POWER POLE NUMBER
  - EXISTING OVERHEAD POWER LINE POLE
  - BOM NUMBER
  - OVERHEAD POWER LINE
  - PROPOSED ANCHOR
  - GROUNDING ROD (DETAIL G01 DWG. BS-SAN-Y-503 SHEET 02)
  - ARR POLE MOUNTED ARRESTERS

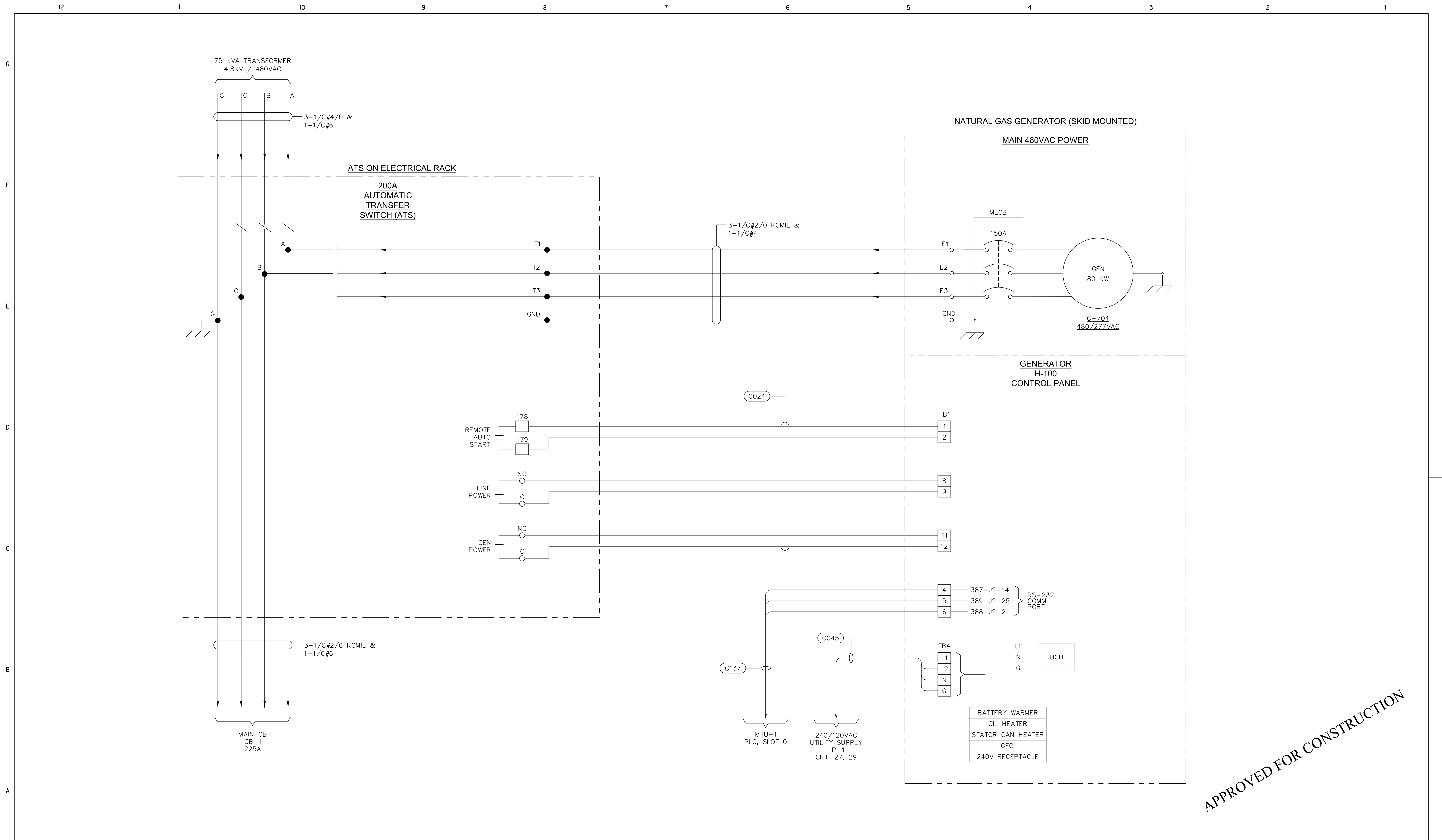
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DRAWING NUMBER	PROJECT / JOB NO
BS-SAN-Y-509	
SHEET 6 OF 6	SCALE: 1" = 40'



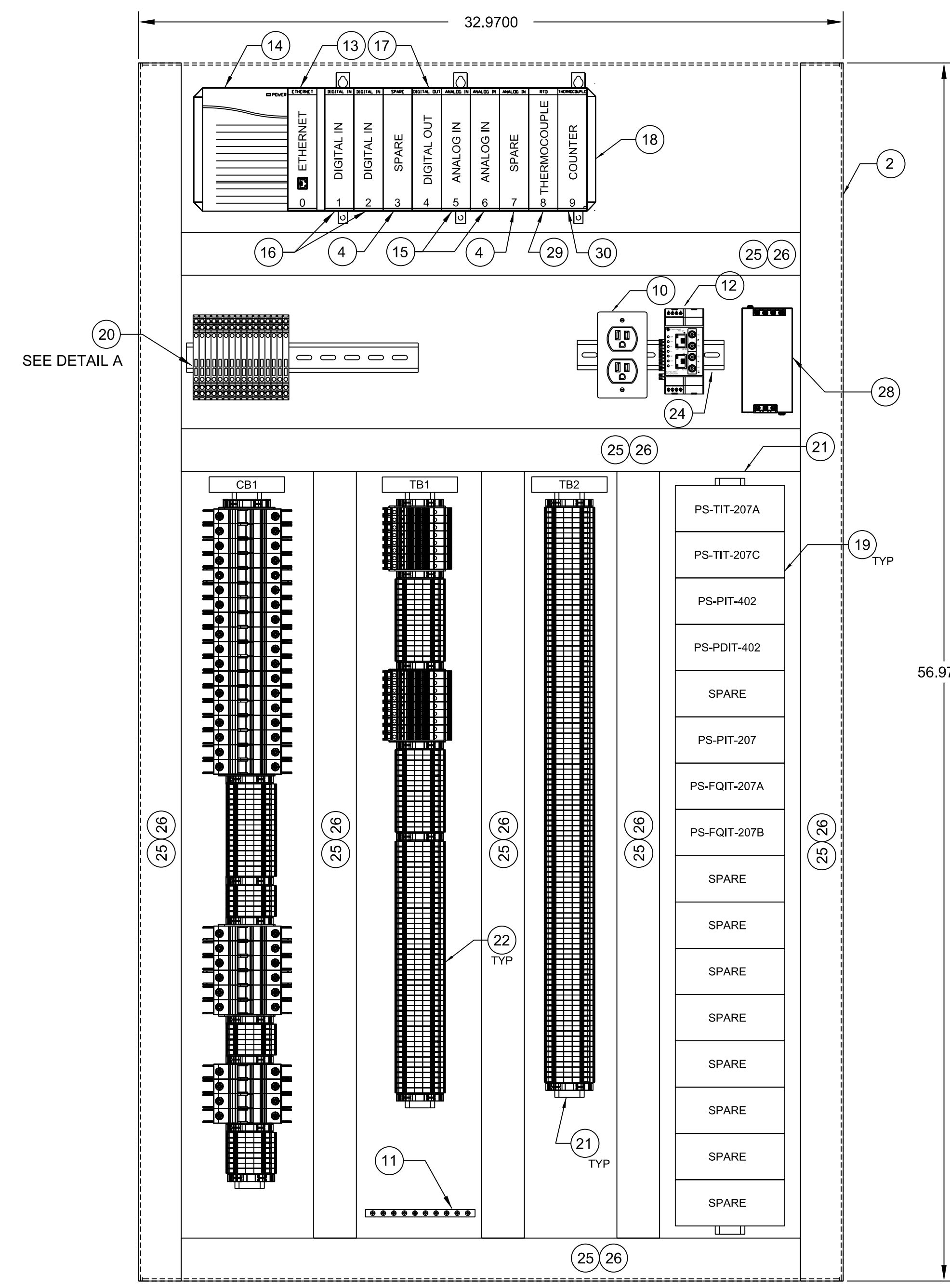
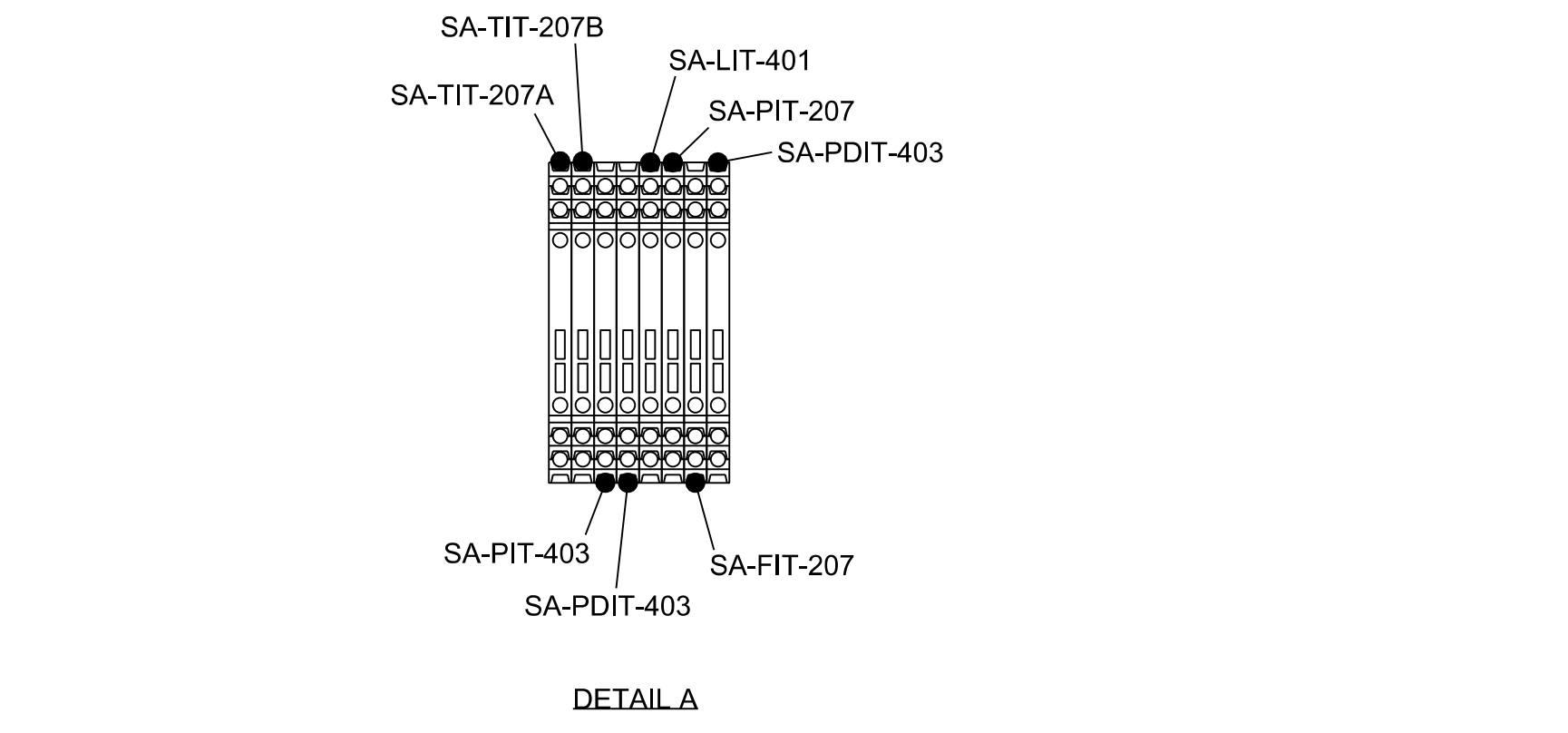
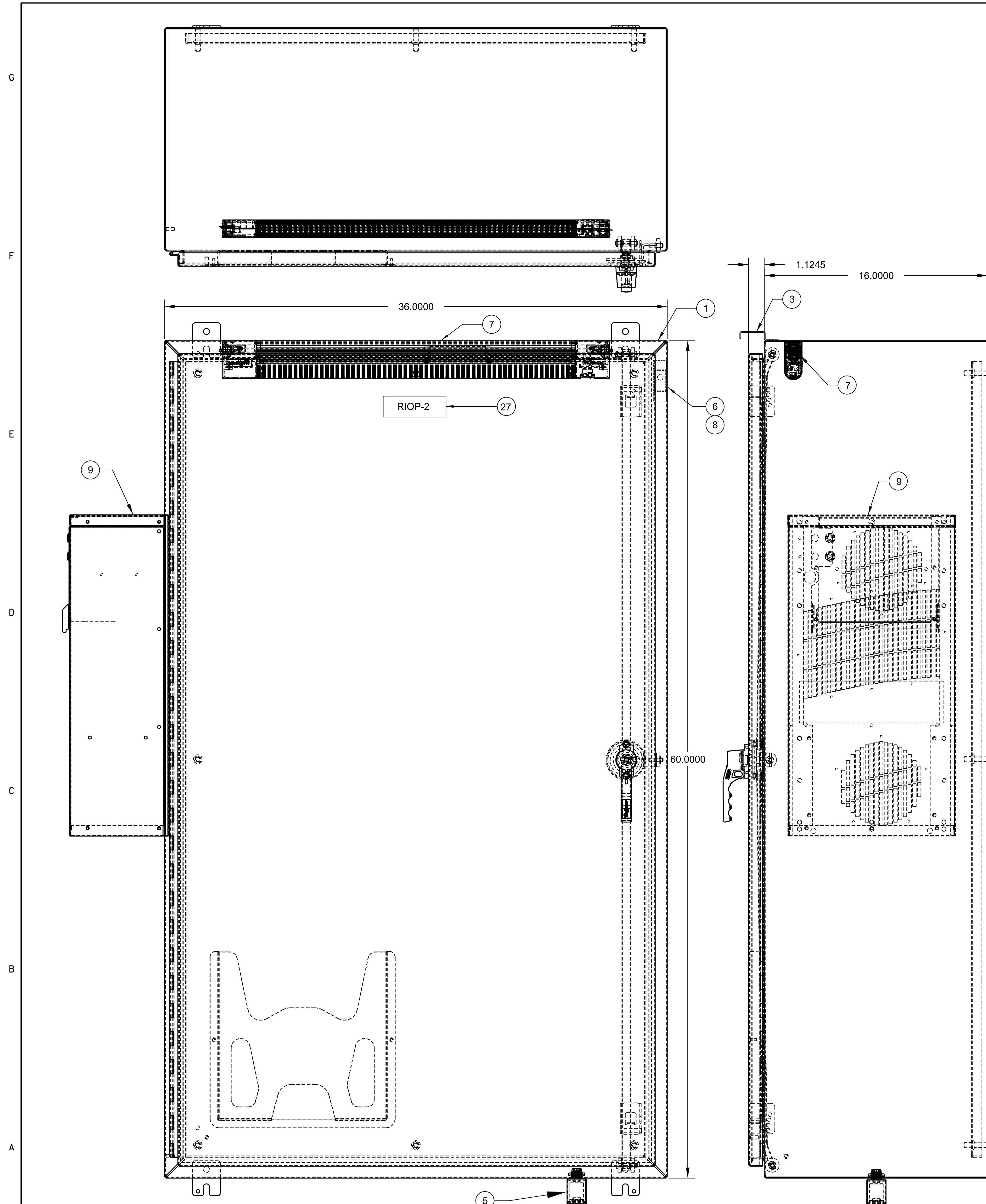
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		MINIMUM TEST PRESSURE	PSIG																				
		TEST DURATION	HRS																				
		TEST MEDIUM	AIR	<input type="checkbox"/>	NE	<input type="checkbox"/>																	
		CERTIFICATION CHART REQUIRED	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>																	
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DRAWING TITLE		BLUESTONE SANFORD M&R SITE GENERATOR AND ATS SWITCH WIRING SCHEMATIC	
DRAWING NUMBER	PROJECT /JOB NO		
BS-SAN-Y-510			
SHEET 1 OF 1	SCALE: NONE		



PARTS LIST		
BOM #	QTY	MATERIAL LIST
1	1	ENCLOSURE, TYPE 4X, SS, 60"X36"X16", HOFFMAN #A60H3616SSLP3PT
2	1	PANEL, 57"X33", HOFFMAN, #A60P36G
3	1	DRIP SHIELD, HOFFMAN #ADK36SS6
4	2	EMPTY SLOT FILLER, ALLEN-BRADLEY #1756-N2
5	1	DRAIN/VENT, TYPE 4X, SS, HOFFMAN #AVDR4SS4
6	1	DOOR ACTIVATED SWITCH, REMOTE, HOFFMAN #ALFSWD
7	1	PANELIGHT FLOURESCENT ENCLOSURE LIGHT, 120VAC, 28IN. HOFFMAN #LF120V28
8	1	MOUNTING BRACKET KIT FOR LIGHT, HOFFMAN #PDLFBRKT
9	1	CABLE, DOOR SWITCH, 18IN LONG, HOFFMAN #LDSSWITCH18
10	1	HEAT EXCHANGER, CLIMAGUARD W/ HEATER OPT, 120VAC, HOFFMAN #TX231416100
11	1	DIN RAIL 20A RECEPTACLE, 120VAC, GFCI, WEIDMULLER #6720005423
12	1	GROUND BAR, 12 TAPS, ILSCO #D167-12
13	1	ETHERNET RING SWITCH, 4-PORT, ULTRA ELECTRONICS #EOTec 2104-55
14	1	ETHERNET INTERFACE MODULE, ALLEN BRADLEY #1756-ENBT
15	1	POWER SUPPLY, 16A, ALLEN-BRADLEY #1756-PA75
16	2	ANALOG INPUT MODULE, 8PT, ALLEN-BRADLEY #1756-IF8 W/ REMOVABLE TERM BLOCKS #1756-TBCH
17	2	DIGITAL DC INPUT MODULE, 16PT, ALLEN-BRADLEY #1756-IB16 W/ REMOVABLE TERM BLOCKS #1756-TBNH
18	1	DIGITAL DC ISOLATED OUTPUT MODULE, 16PT, ALLEN-BRADLEY #1756-OW16I W/ REMOVABLE TERM BLOCKS #1756-TBCH
19	1	10 SLOT CHASSIS, ALLEN-BRADLEY #1756-A10
20	16	QUINT-POWER SUPPLY, 100-240 AC/24VDC, SA, PHOENIX CONTACT #2938581
21	16	MTL SURGE PROTECTOR, MTL #SD32X
22	16	DIN RAIL, 35MM, ALLEN-BRADLEY #1492-DR5
23	16	END BARRIER, ALLEN-BRADLEY #1492-N36
24	16	END ANCHORS, ALLEN-BRADLEY #1492-N23
25	232	TUBULAR SCREW W/ PRESSURE PLATE TERMINAL BLOCKS, ALLEN-BRADLEY #1492-F1
26	37	FUSIBLE SWITCH W/NEON BLOWN FUSE IND, 24VDC, MAX 12A ALLEN-BRADLEY #1492-H5
27	22	DIN RAIL MOUNTED CIRCUIT BREAKER, NOM. VOLT: 277VAC, 10A, ALLEN-BRADLEY #1489-A1C100
28	1	DIN RAIL MOUNTED CIRCUIT BREAKER, MAX VOLT: 48VDC, 10A, ALLEN-BRADLEY #1489-D1C100
29	4	DIN RAIL MOUNTED CIRCUIT BREAKER, MAX VOLT: 48VDC, 15A, ALLEN-BRADLEY #1489-D1C150
30	1	DIN RAIL MOUNTED CIRCUIT BREAKER, MAX VOLT: 48VDC, 20A, ALLEN-BRADLEY #1489-D1C200
31	25	AS REQ'D WIRE DUCT, 2"X4"X6", PANDUIT #F2X4WH6
32	26	AS REQ'D DUCT COVER, 2"X4", PANDUIT #C2WH6
33	27	AS REQ'D NAME PLATE, LINE 1: RIOP-2, BY PANEL SHOP
34	1	POWER SUPPLY, 480W, ALLEN-BRADLEY #1606-XLS480E
35	1	POWER SUPPLY MOUNTING BRACKET, ALLEN-BRADLEY #1606-XLB
36	1	ANALOG I/O MODULE, THERMOCOUPLE W/ 1 C/C (#94238301), 6 ISOLATED PT, ALLEN-BRADLEY #1756-IT6I
37	1	REMOVABLE TERMINAL BLOCK FOR ANALOG I/O MODULES, ALLEN-BRADLEY #1756-TBCH
38	1	CONTROL LOGIX HIGH-SPEED COUNTER MODULE, ALLEN-BRADLEY #1756-HSC W/ 1756-TBCH

APPROVED FOR CONSTRUCTION

REFERENCE DRAWINGS	NUMBER	DESIGN PRESSURE	PSIG	NO.	DATE	REVISION	DRWN BY	DRFT CHK	CORR CHK	ENG APPR	NO.	DATE	REVISION	DRWN BY	DRFT CHK	CORR CHK	ENG APPR	APPROVED FOR CONST.	APPROVED FOR BIDDING	CREDITS	DATE	
		DESIGN PRESSURE	PSIG	0	03/16/12	ISSUED FOR REVIEW	JML	TR	ADP	VC										INVEST BY:		
		MAXIMUM TEST PRESSURE	PSIG	1	04/11/12	ISSUED FOR BID	JML	TR	ADP	VC										DRAWN BY:	JML	01/31/12
		MINIMUM TEST PRESSURE	PSIG	2	05/18/12	PHASE-1 ISSUED FOR BID	JMS	TR	ADP	VC										APPROVALS		
		TEST DURATION	HRS	3	05/25/12	ISSUED FOR PANEL BID	JMS	TR	ADP	VC										DRFT CHK:		
		TEST MEDIUM	AFR	4	07/16/12	ISSUED FOR CONSTRUCTION	MRR	TR	ADP	VC										CORR CHK:		
			CO2																	ENG CHK:		
			H2O																	ENG APPR:		
		CERTIFICATION CHART REQUIRED	YES																	DO NOT SCALE THIS DRAWING.		
		TEST DATE																		USE DIMENSIONS ONLY		
		DESIGN SPEC #																				
		DATE																				



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DRAWING TITLE	
BLUESTONE SANFORD M&R SITE RIOP-2 ENCLOSURE & PANEL LAYOUT WBOM	
DRAWING NUMBER	PROJECT /JOB NO
BS-SAN-Y-513	
SHEET 1 OF 12	SCALE NONE



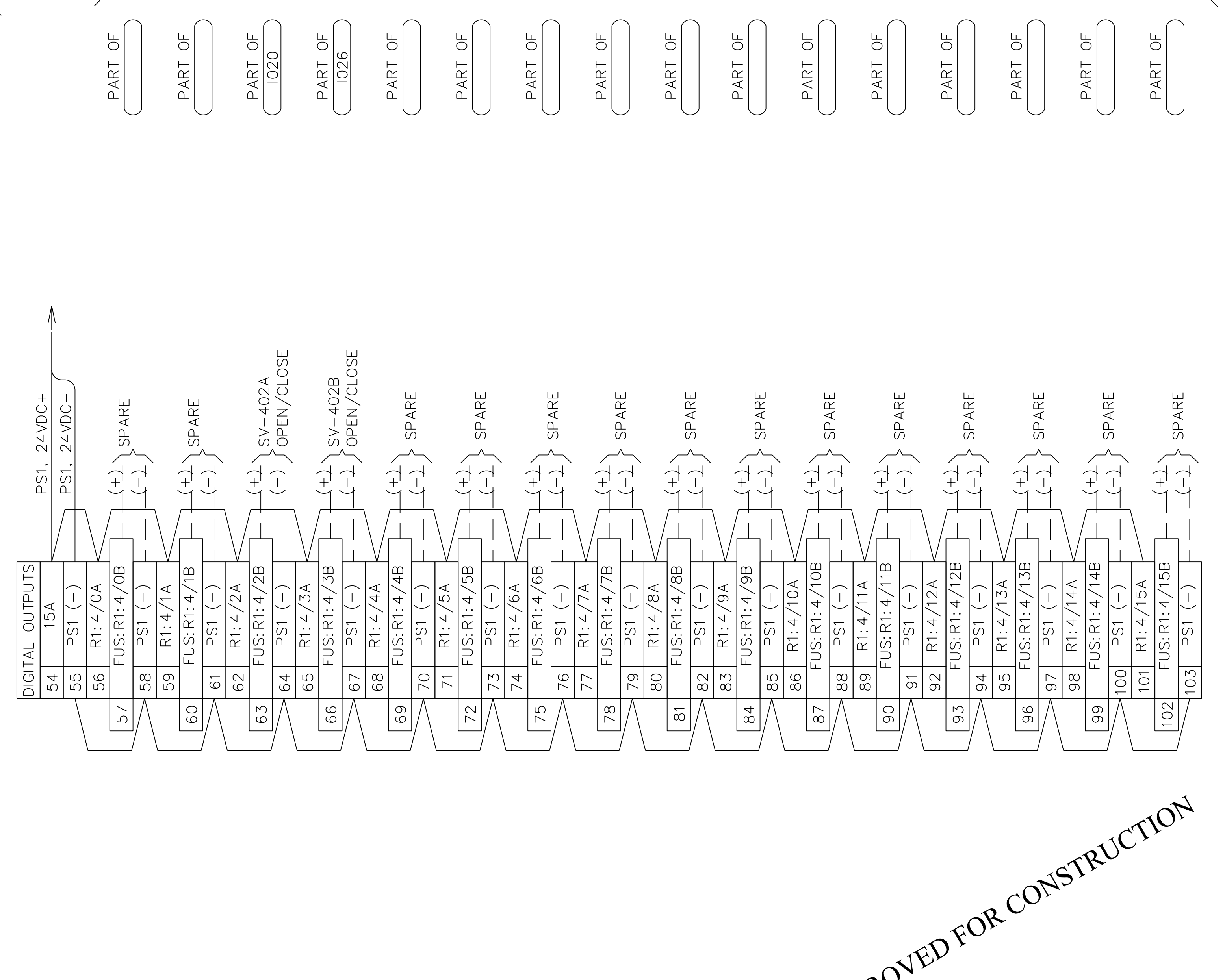
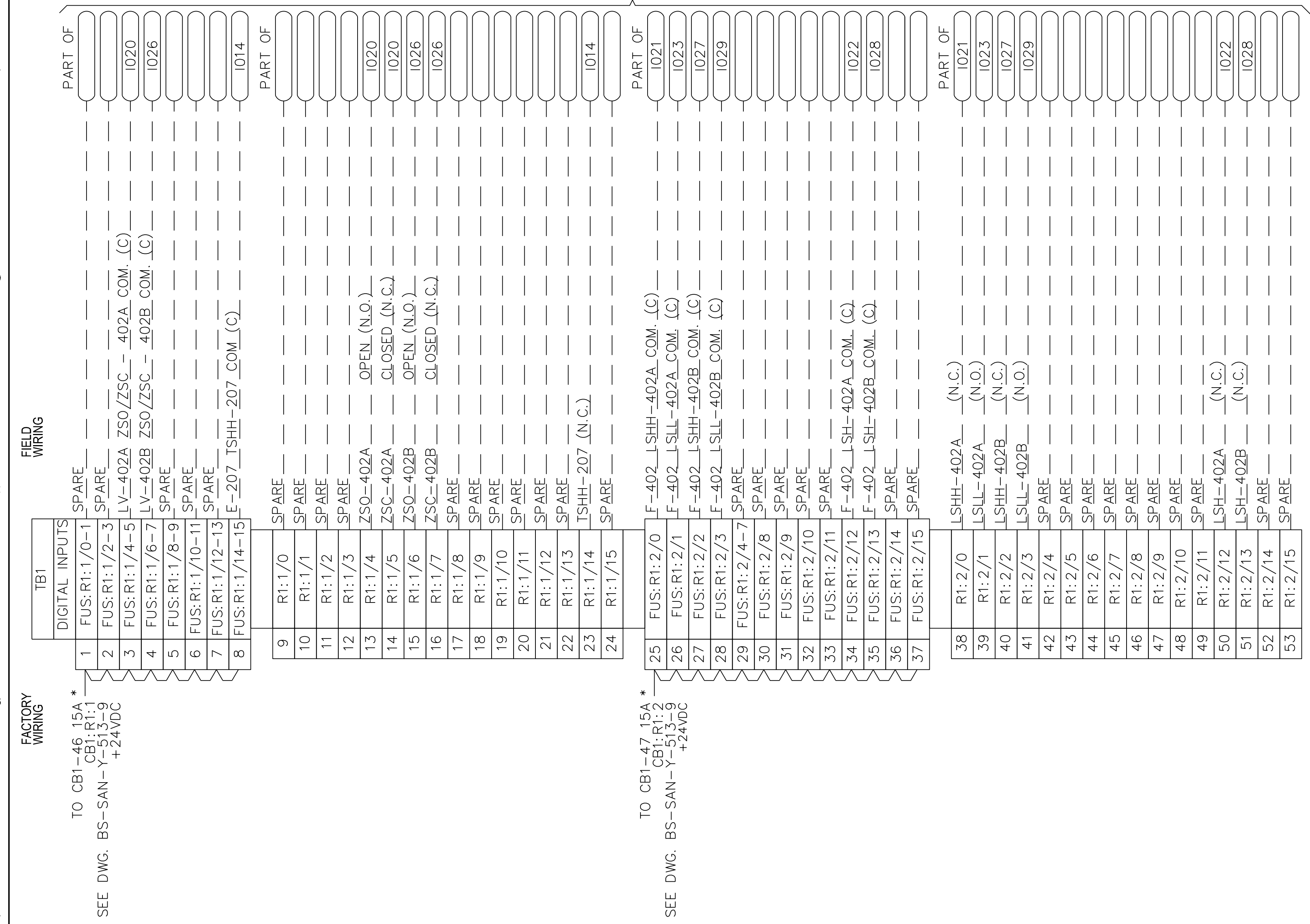
CONSTRUCTION NOTES:  
 1.) FIELD TO VERIFY INTERCONNECTION WIRING AND TERMINATION POINTS BASED ON FINAL CERTIFIED VENDOR DRAWINGS.  
 2.) UNLESS OTHERWISE NOTED, WIRING LABEL NUMBER IS TO BE THE SAME AS THE TERMINAL

\*COLORED TERMINAL BLOCK WITH LARGE MARKING SURFACE, AND LABELED AS INDICATED.

LEGEND  
 ■ RIOP TERMINAL BLOCK  
 — WIRING BY PANEL FABRICATOR  
 - - - WIRING BY CONTRACTOR


SEE DWG BS-SAN-Y-513-5


SEE DWG BS-SAN-Y-513-6



APPROVED FOR CONSTRUCTION

REFERENCE DRAWINGS	NUMBER	PRESSURE TEST SPECIFICATIONS	NO.	DATE	REVISION	DRWN BY	DFT CHK	CORR CHK	ENG CHK	ENG APPR	APPROVED FOR CONST.	APPROVED FOR BIDDING	CREDITS	DATE
DESIGN PRESSURE		PSIG	0	03/16/12	ISSUED FOR REVIEW	JML	TR	ADP	VG				INVEST BY:	
MAXIMUM TEST PRESSURE		PSIG	1	04/11/12	ISSUED FOR BID	JMS	TR	ADP	VG				DRAWN BY: JML	01/31/12
MINIMUM TEST PRESSURE		PSIG	2	05/18/12	PHASE-1 ISSUED FOR BID	JMS	TR	ADP	VG				APPROVALS	DATE
TEST DURATION		HRS	3	05/25/12	ISSUED FOR PANEL BID	DRV	TR	ADP	VG				DRAFT CHK:	
TEST MEDIUM		AIR <input type="checkbox"/> H <sub>2</sub> O <input type="checkbox"/>	4	07/16/12	ISSUED FOR CONSTRUCTION	MRR	TR	ADP	VG				CORR CHK:	
CERTIFICATION CHART REQUIRED		YES <input type="checkbox"/> NO <input type="checkbox"/>											ENG CHK:	
TEST DATE													ENG APPR:	
DESIGN SPEC #	1/16/2012												DO NOT SCALE THIS DRAWING. USE DIMENSIONS ONLY	

  
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DRAWING TITLE

**BLUESTONE SANFORD M&R SITE  
 RIOP-2  
 TERMINAL BLOCK LAYOUT (TBI)**

DRAWING NUMBER

**BS-SAN-Y-513**

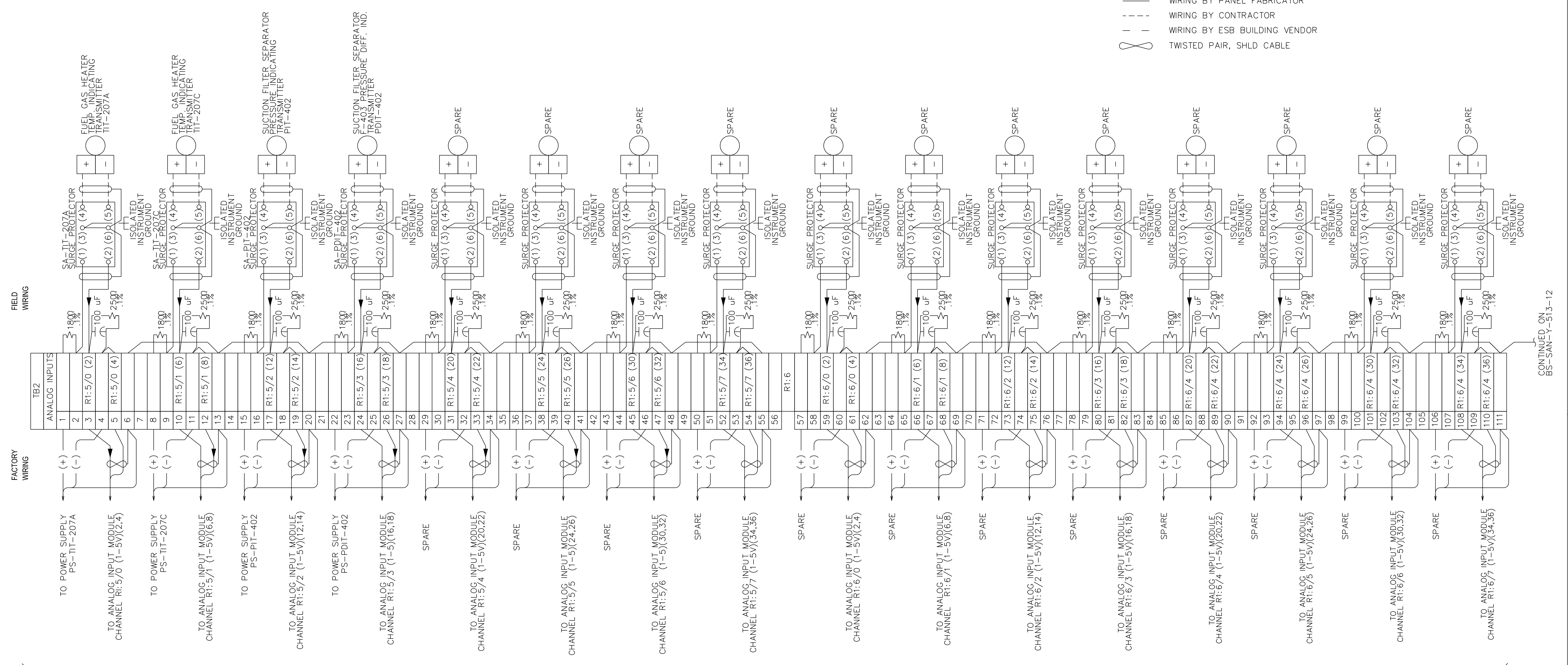
SHEET 10 OF 12 SCALE: NONE

PROJECT /JOB NO

**CONSTRUCTION NOTES:**  
 1. FIELD TO VERIFY INTERCONNECTION WIRING AND TERMINATION POINTS BASED ON FINAL CERTIFIED VENDOR DRAWINGS.

**LEGEND**  
 ■ CIA TERMINAL BLOCK  
 ⊗ 480V MCC TERMINAL BLOCK  
 ▲ VFD TERMINAL BLOCK  
 — WIRING BY PANEL FABRICATOR  
 - - - WIRING BY CONTRACTOR  
 - - - WIRING BY ESB BUILDING VENDOR  
 ∞ TWISTED PAIR, SHLD CABLE

**REFERENCE DRAWING**  
 BS-SAN-Y-513-7 RIOP-2 SCHEMATICS, ANALOG INPUT MODULE



SEE DWG BS-SAN-Y-513-7

CONTINUED ON  
 BS-SAN-Y-513-12

**APPROVED FOR CONSTRUCTION**

REFERENCE DRAWINGS	NUMBER	PRESSURE TEST SPECIFICATIONS	NO.	DATE	REVISION	DRN BY	DFT CHK	CORR CHK	ENG APPR	ENG APPR	NO.	DATE	REVISION	DRN BY	DFT CHK	CORR CHK	ENG APPR	ENG APPR	APPROVED FOR CONST.	APPROVED FOR BIDDING	CREDITS	DATE
		DESIGN PRESSURE	PSIG	0	03/16/12	JML	TR	ADP	VC				ISSUED FOR REVIEW								INVEST BY:	
		MAXIMUM TEST PRESSURE	PSIG	1	04/11/12	JML	TR	ADP	VC				ISSUED FOR BID								DRAWN BY: JML	01/31/12
		MINIMUM TEST PRESSURE	PSIG	2	05/18/12	JMS	TR	ADP	VC				PHASE-1 ISSUED FOR BID								APPROVALS	DATE
		TEST DURATION	HRS	3	07/16/12	MRR	TR	ADP	VP				ISSUED FOR CONSTRUCTION									
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		TEST DATE																				
BS-SAN-Y-513-11.dwg	T/16/2012	DESIGN SPEC. #																				

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DRAWING TITLE	
BLUESTONE SANFORD M&R SITE RIOP-2 TERMINAL BLOCK LAYOUT (TB2)	
DRAWING NUMBER	PROJECT /JOB NO
BS-SAN-Y-513	
SHEET 11 OF 12	SCALE: NONE

DO NOT SCALE THIS DRAWING.  
 USE DIMENSIONS ONLY

**CONSTRUCTION NOTES:**

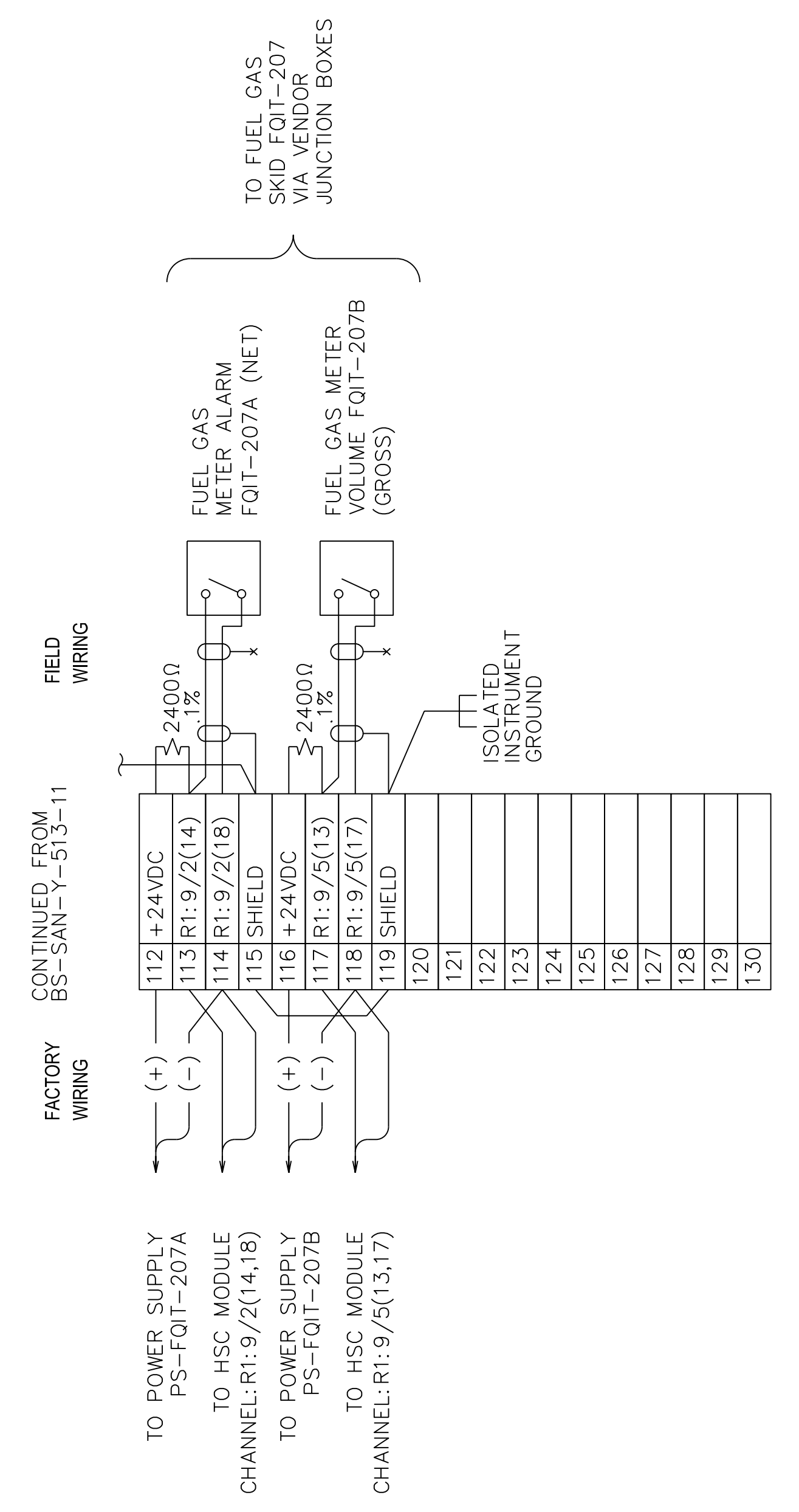
1. FIELD TO VERIFY INTERCONNECTION WIRING AND TERMINATION POINTS BASED ON FINAL CERTIFIED VENDOR DRAWINGS.

**LEGEND**

- CIA TERMINAL BLOCK
- ⊗ 480V MCC TERMINAL BLOCK
- ▲ VFD TERMINAL BLOCK
- WIRING BY PANEL FABRICATOR
- - - WIRING BY CONTRACTOR
- · - WIRING BY ESB BUILDING VENDOR
- ∞ TWISTED PAIR, SHLD CABLE

**REFERENCE DRAWING**

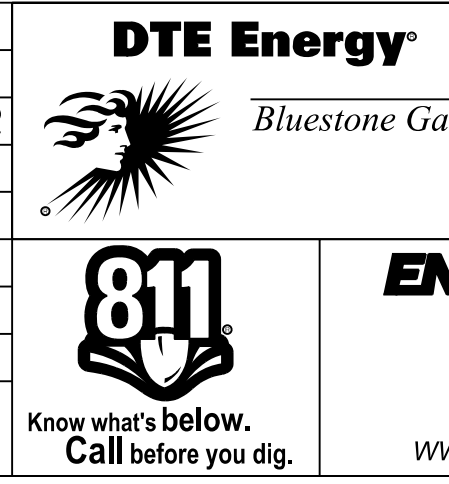
- BS-SAN-Y-513-7 RIOP-2 SCHEMATICS, ANALOG INPUT MODULE
- ET1 VENDOR DRAWINGS



SEE DWG BS-SAN-Y-513-8

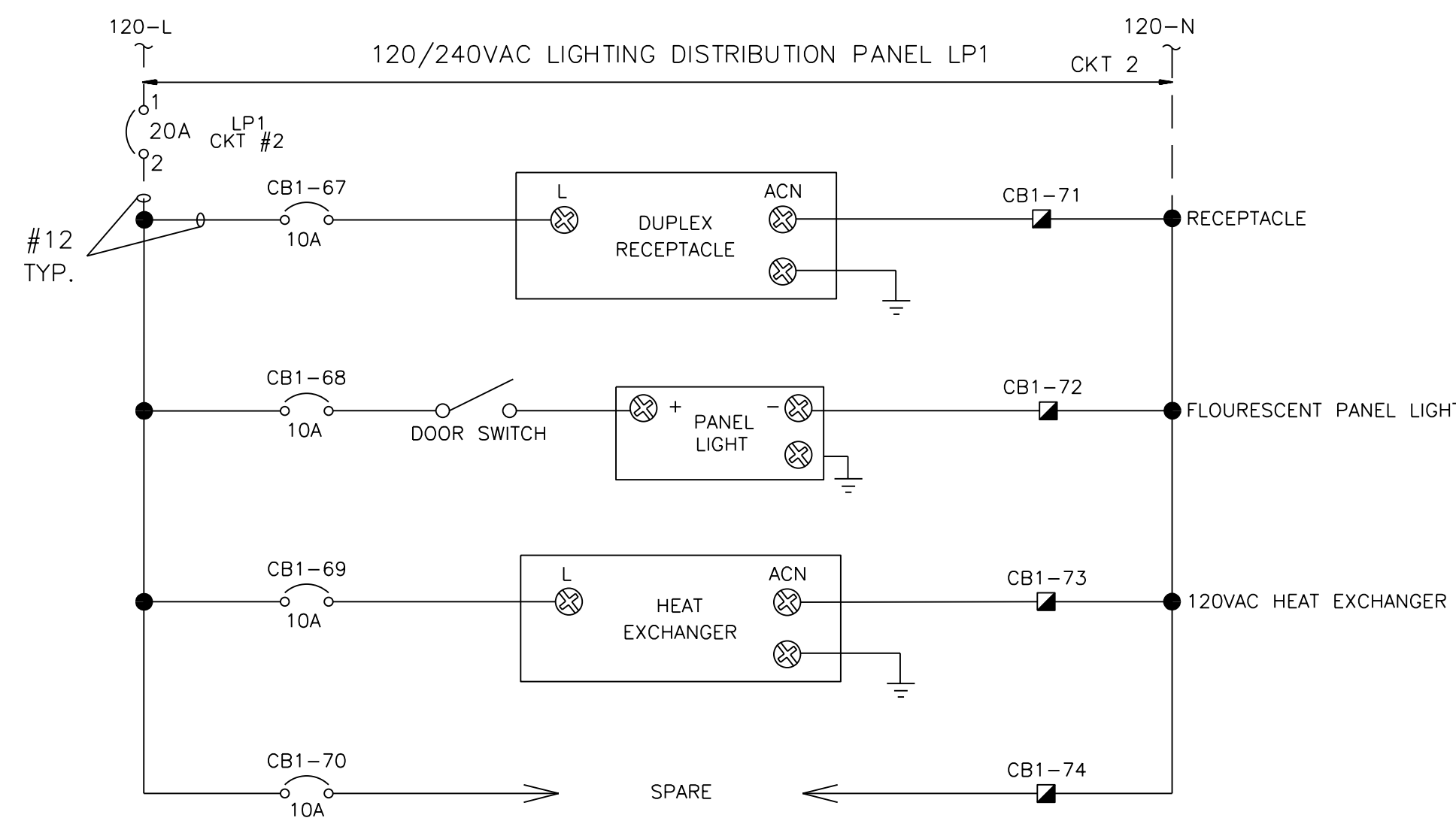
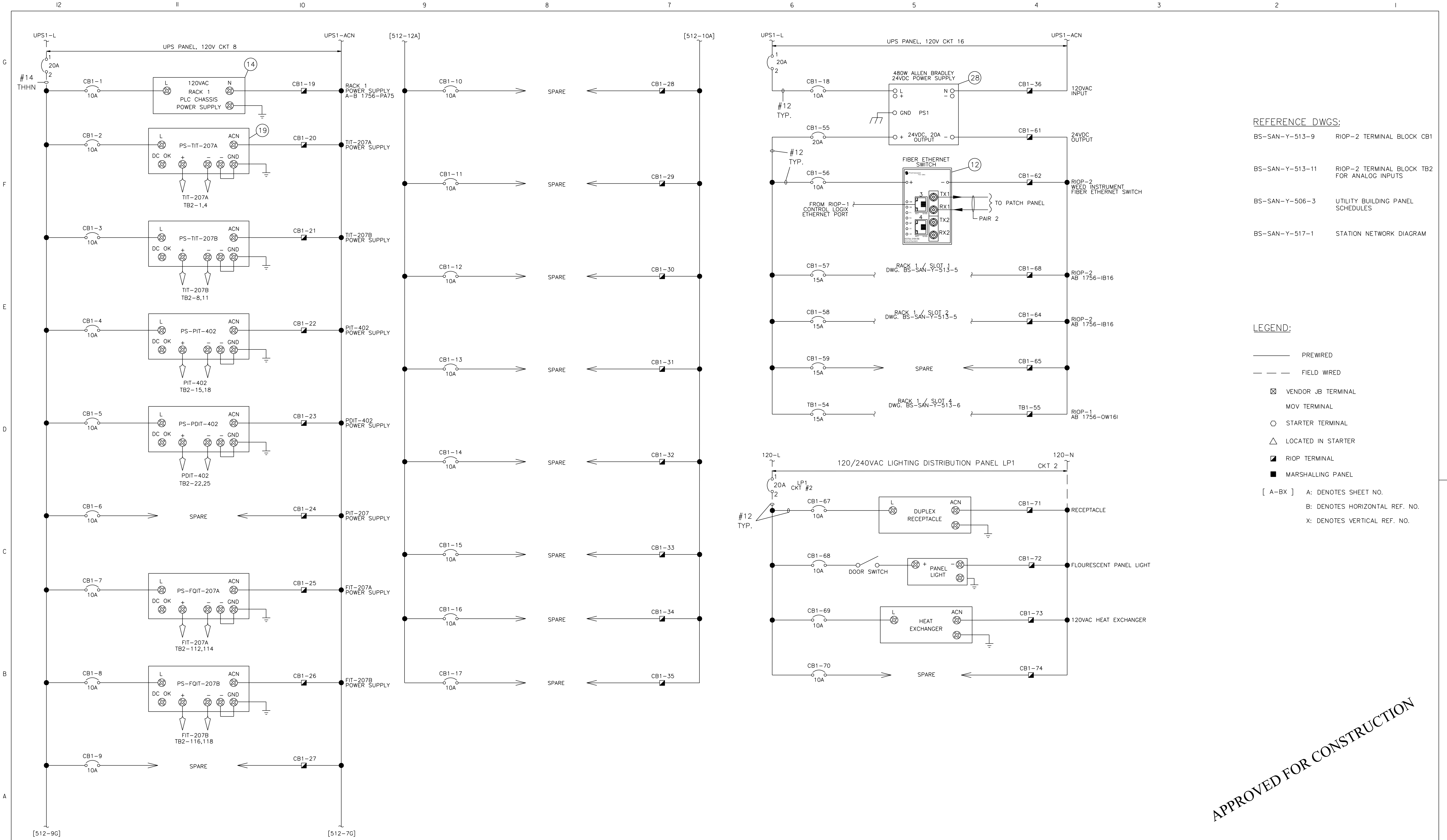
APPROVED FOR CONSTRUCTION

REFERENCE DRAWINGS	NUMBER	DESCRIPTION	NO.	DATE	REVISION	DRWN BY	DRFT CHK	CORR CHK	ENG CHK	ENG APPR	NO.	DATE	REVISION	DRWN BY	DRFT CHK	CORR CHK	ENG CHK	ENG APPR	APPROVED FOR CONST.	APPROVED FOR BEDDING	CREDITS	DATE
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		TEST MEDIUM																				
		CERTIFICATION CHART REQUIRED																				
		TEST DATE																				
		DESIGN SPEC #																				



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DRAWING TITLE	
BLUESTONE SANFORD M&R SITE RIOP-2 TERMINAL BLOCK LAYOUT (TB2 CONT)	
DRAWING NUMBER	PROJECT / JOB NO
BS-SAN-Y-513	
SHEET 12 OF 12	SCALE: NONE



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REFERENCE DRAWINGS	NUMBER	DESIGN PRESSURE	NO.	DATE	REVISION	DRWN	CHK	APPR	NO.	DATE	REVISION	DRWN	CHK	APPR	NO.	DATE	REVISION	DRWN	CHK	APPR	NO.	DATE	REVISION	DRWN	CHK	APPR	NO.	DATE	REVISION
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		MINIMUM TEST PRESSURE	PSIG	2	05/18/12	JMS	TR	ADP	VC																				
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		CERTIFICATION CHART REQUIRED	YES																										
		TEST DATE																											
		DESIGN SPEC #																											

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DRAWING TITLE  
**BLUESTONE SANFORD M&R SITE  
RIOP-2  
POWER DISTRIBUTION**

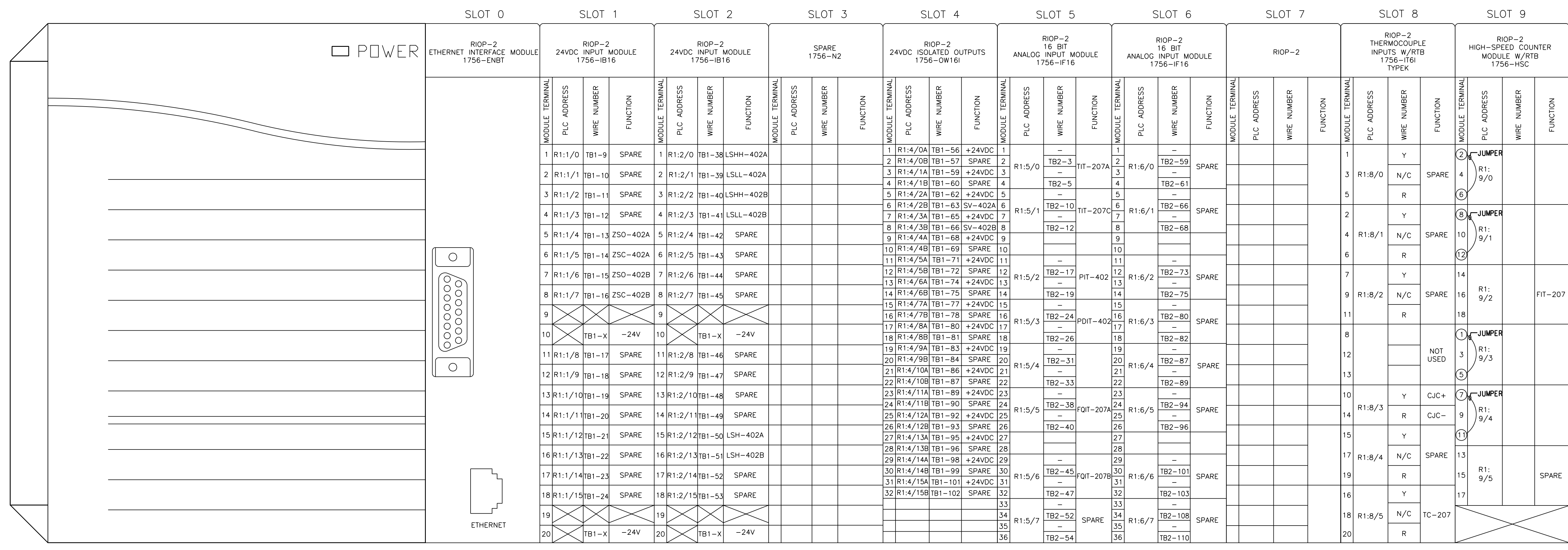
DRAWING NUMBER  
BS-SAN-Y-513

SHEET 3 OF 12 SCALE: NONE

DO NOT SCALE THIS DRAWING. USE DIMENSIONS ONLY.

12 11 10 9 8 7 6 5 4 3 2 1

G  
F  
E  
D  
C  
B  
A



DWG  
BS-SAN-Y-513-5

DWG  
BS-SAN-Y-513-6

DWG  
BS-SAN-Y-513-7

DWG  
BS-SAN-Y-512-8

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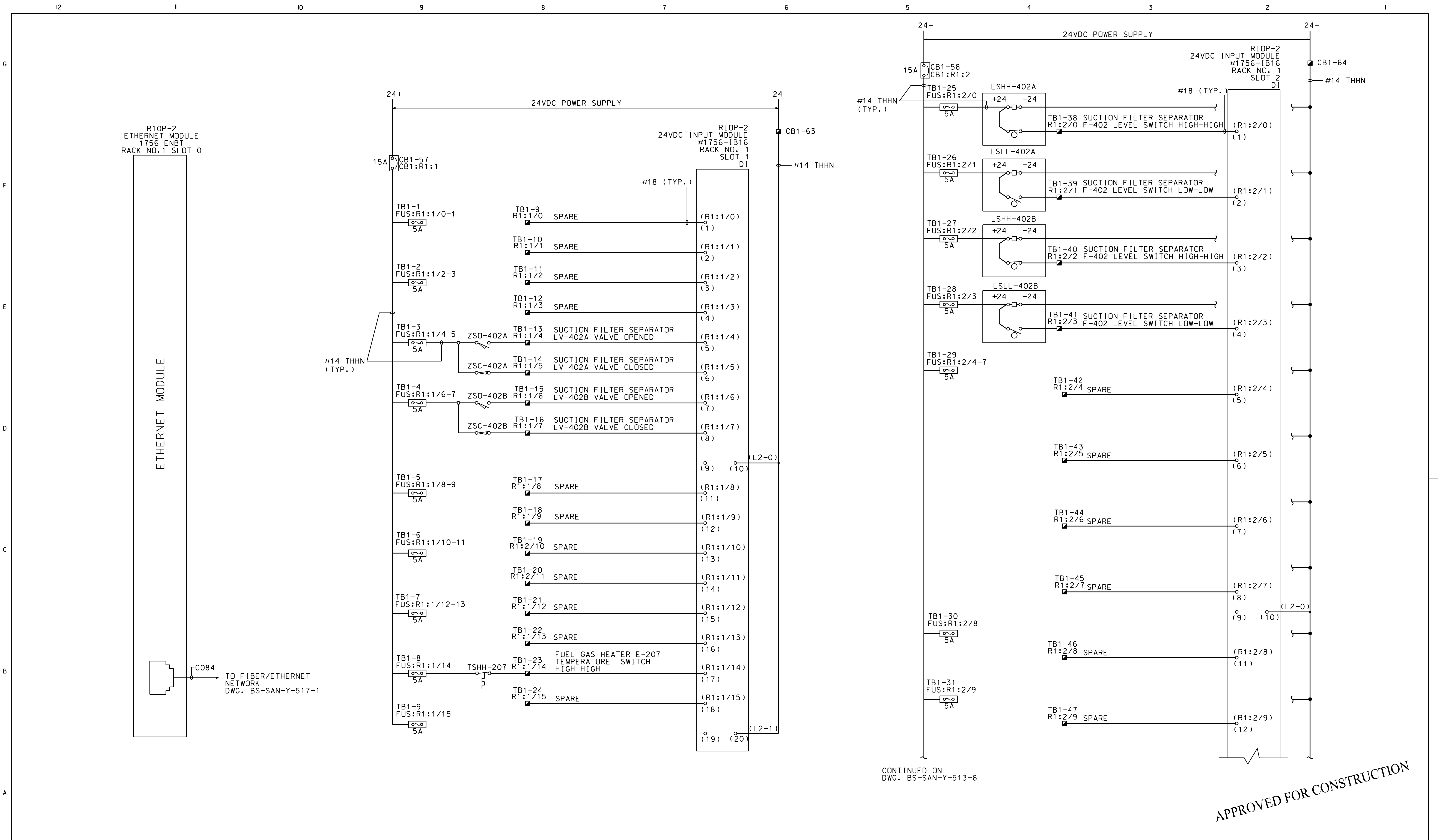
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MAXIMUM TEST PRESSURE	PSIG	04/11/12	ISSUED FOR BID	JML	TR	ADP	VC									01/31/12
MINIMUM TEST PRESSURE	PSIG	05/18/12	PHASE-1 ISSUED FOR BID	JMS	TR	ADP	VC									
TEST DURATION	HRS	05/25/12	ISSUED FOR PANEL BID	DRV	TR	ADP	VC									
TEST MEDIUM	AIR <input type="checkbox"/> N2 <input type="checkbox"/>	07/16/12	ISSUED FOR CONSTRUCTION	MRR	TR	ADP	VC									
	CO2 <input type="checkbox"/> H2O <input type="checkbox"/>															
CERTIFICATION CHART REQUIRED	YES <input type="checkbox"/> NO <input type="checkbox"/>															
TEST DATE																
DESIGN SPEC #																
DO NOT SCALE THIS DRAWING. USE DIMENSIONS ONLY.																

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DRAWING TITLE BLUESTONE SANFORD M&R SITE RIOP-2 RACK 1 STUFFING CHART	
DRAWING NUMBER BS-SAN-Y-513	PROJECT /JOB NO
SHEET 4 OF 12	SCALE NONE



CONTINUED ON  
DWG. BS-SAN-Y-513-6

APPROVED FOR CONSTRUCTION

REFERENCE DRAWINGS	NUMBER	DESCRIPTION	NO.	DATE	REVISION	DRWN BY	DRFT CHK	CORR CHK	ENG CHK	ENG APPR	NO.	DATE	REVISION	DRWN BY	DRFT CHK	CORR CHK	ENG CHK	ENG APPR	APPROVED FOR CONST.	APPROVED FOR BIDDING	CREDITS	DATE
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		MAXIMUM TEST PRESSURE	PSIG	03/16/12	ISSUED FOR REVIEW	JML	TR	ADP	VG												DRAWN BY: MRR	11/15/11
		MINIMUM TEST PRESSURE	PSIG	04/11/12	RE-ISSUED FOR BID	JMS	TR	ADP	VG													
		TEST DURATION	HRS	05/18/12	PHASE-1 ISSUED FOR BID	JMS	TR	ADP	VG													
		TEST MEDIUM	AIR <input type="checkbox"/> N2 <input type="checkbox"/>	05/25/12	ISSUED FOR PANEL BID	DRV	TR	ADP	VG													
			CO2 <input type="checkbox"/> H2O <input type="checkbox"/>	07/16/12	ISSUED FOR CONSTRUCTION	MRR	TR	ADP	VG													
		CERTIFICATION CHART REQUIRED	YES <input type="checkbox"/> NO <input type="checkbox"/>																			
		TEST DATE																				
		DESIGN SPEC #																				

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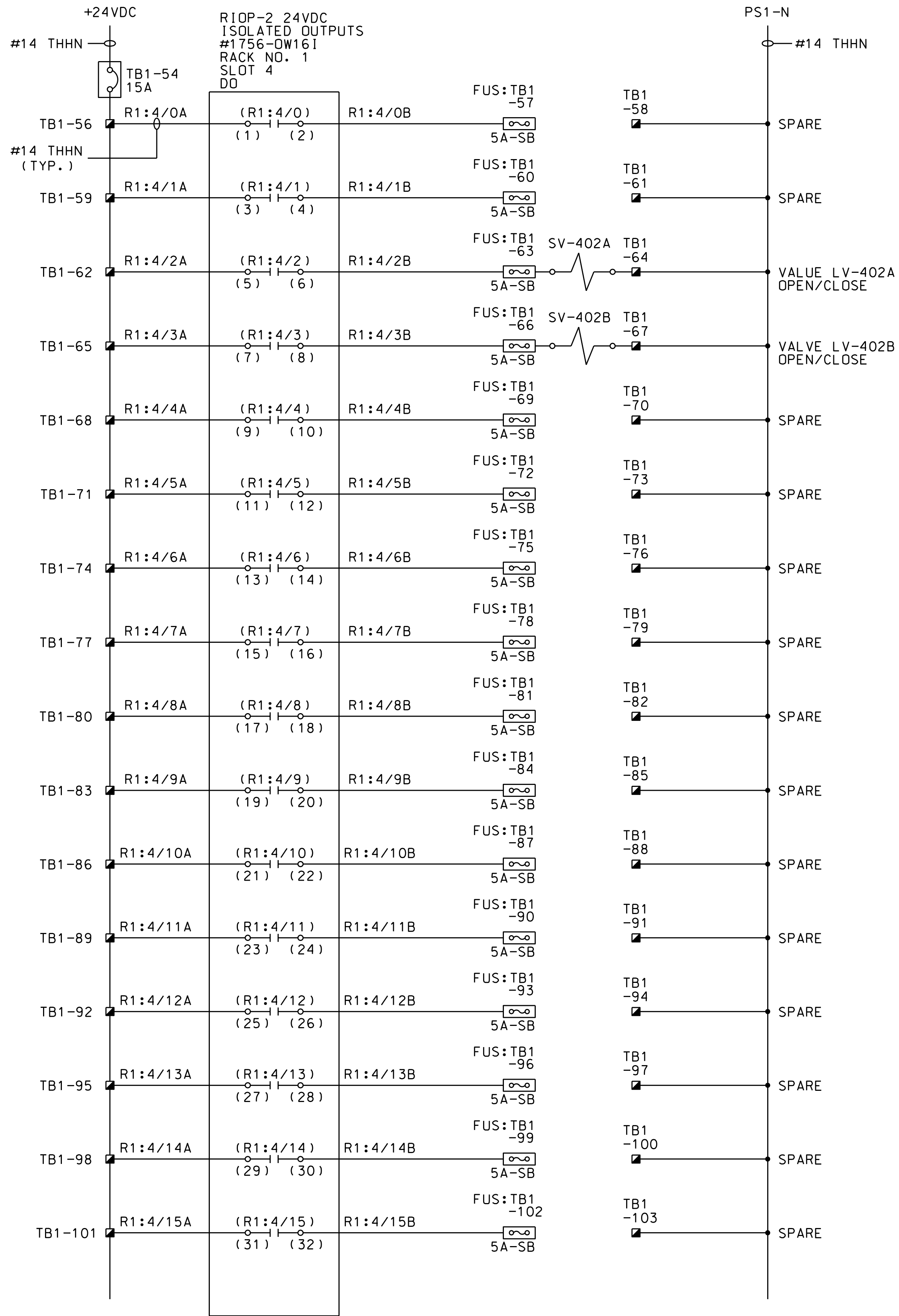
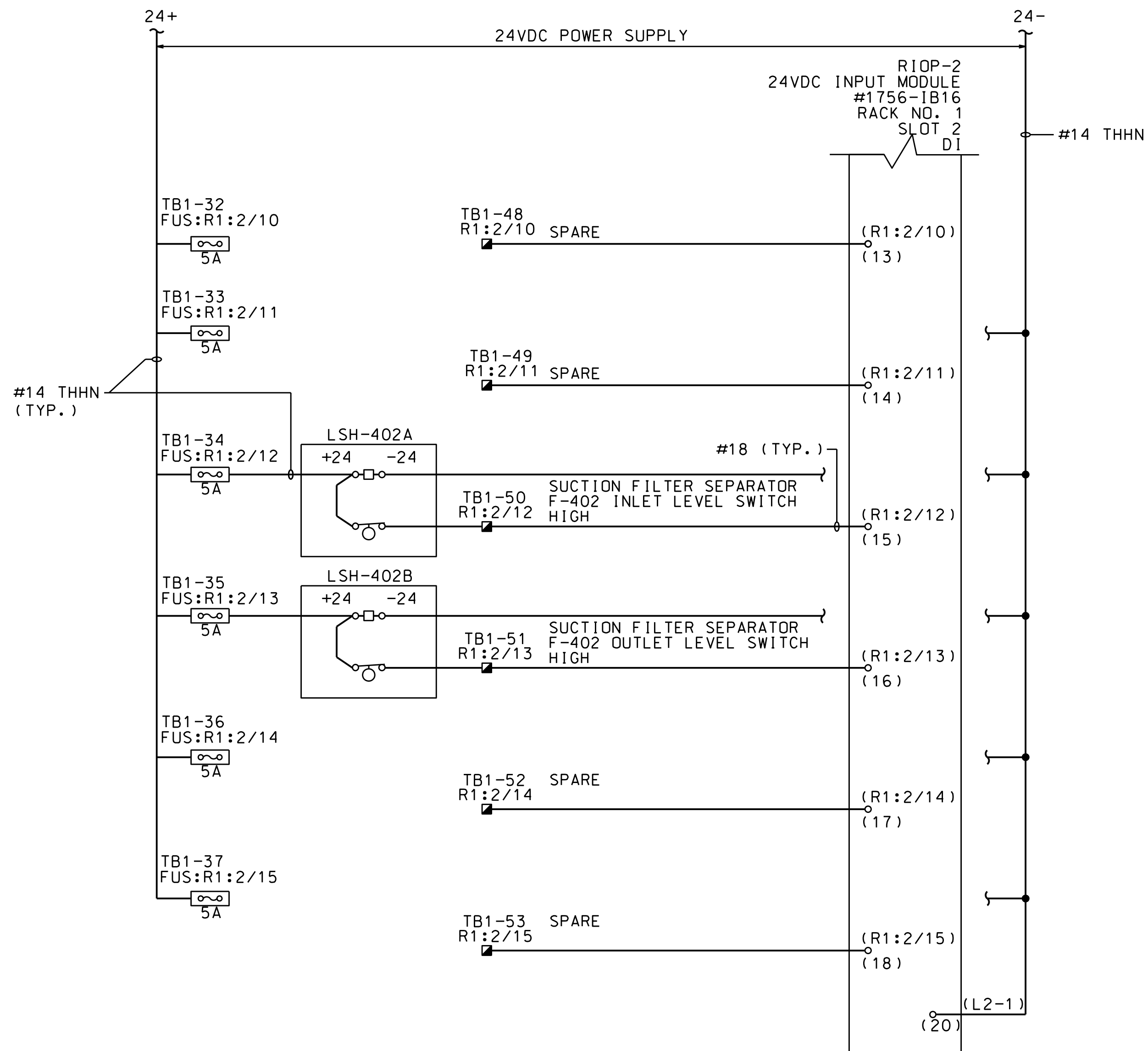
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DRAWING TITLE  
BLUESTONE SANFORD M&R SITE  
RIOP2 IO SCHEMATICS

DRAWING NUMBER  
BS-SAN-Y-513

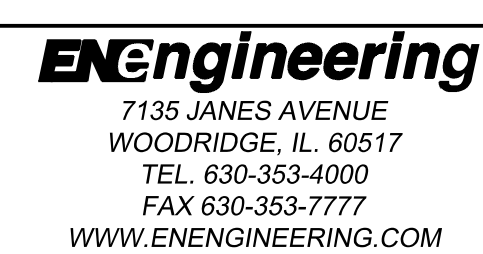
SHEET 5 OF 12 SCALE: NONE

CONTINUED FROM  
DWG. BS-SAN-Y-513-5



APPROVED FOR CONSTRUCTION

REFERENCE DRAWINGS	NUMBER	DESIGN PRESSURE	PSIG	NO.	DATE	REVISION	DRWN BY	DRFT CHK	CORR CHK	ENG CHK	ENG APPR	NO.	DATE	REVISION	DRWN BY	DRFT CHK	CORR CHK	ENG CHK	ENG APPR	APPROVED FOR CONST.	APPROVED FOR BIDDING	CREDITS	DATE
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			CO2 <input type="checkbox"/> H2O <input type="checkbox"/>	5	07/16/12	ISSUED FOR CONSTRUCTION	MRR	TR	ADP	VG													
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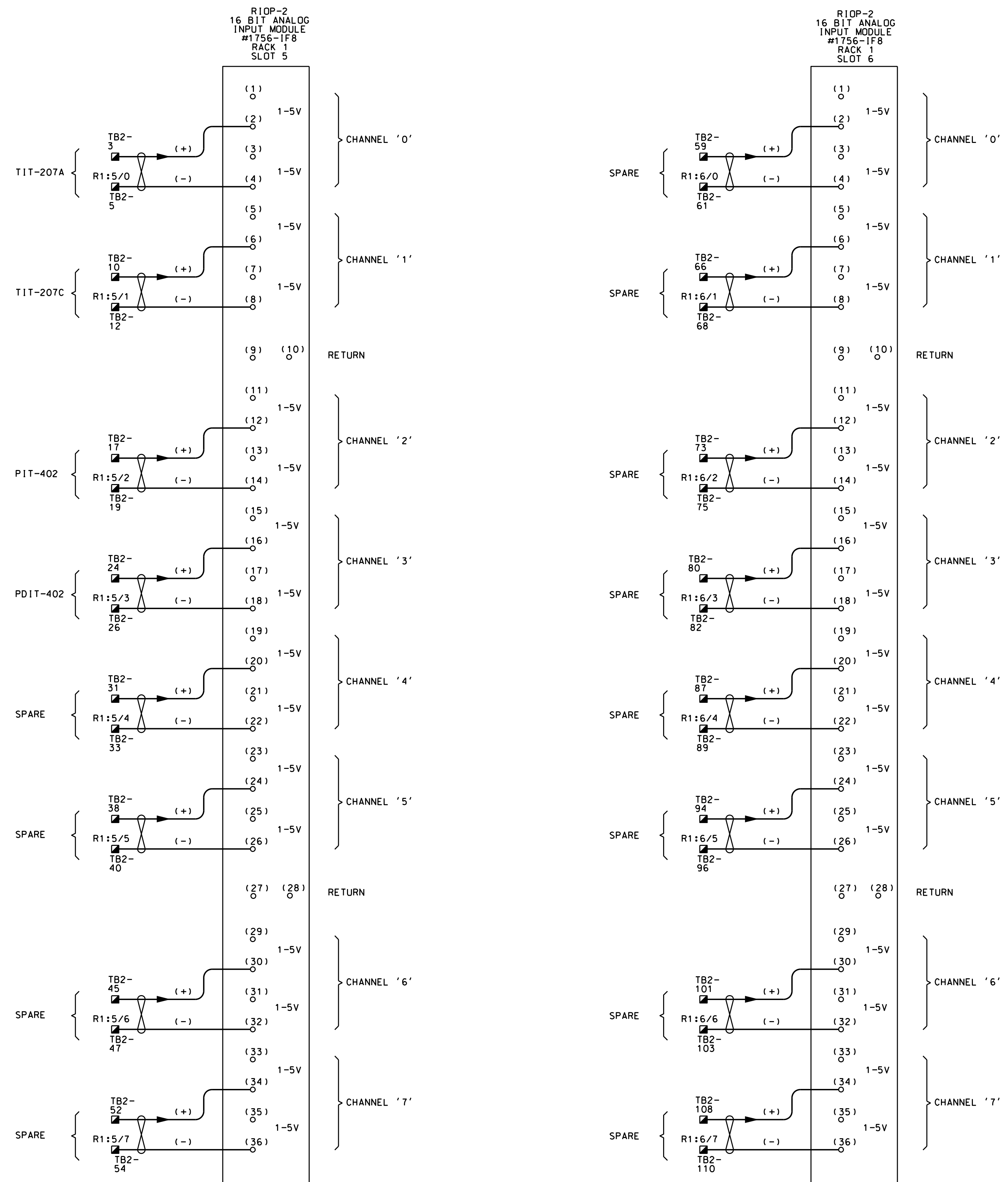
DRAWING TITLE  
BLUESTONE SANFORD M&R SITE  
RIOP-2 IO SCHEMATICS

DRAWING NUMBER  
BS-SAN-Y-513

PROJECT /JOB NO

SHEET 6 OF 12 SCALE: NONE

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SPARE #1756-N2 RACK1 SLOT 7

FILLER

APPROVED FOR CONSTRUCTION

REFERENCE DRAWINGS	NUMBER	PRESSURE TEST SPECIFICATIONS	NO.	DATE	REVISION	DRWN	DRFT	CORR	ENG	ENG	NO.	DATE	REVISION	DRWN	DRFT	CORR	ENG	ENG	APPROVED FOR CONST.	APPROVED FOR BIDDING	CREDITS	DATE					
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		MAXIMUM TEST PRESSURE	PSK3	1	03/16/12	JML	TR	ADP	VC																DRAWN BY:	MRR	11/15/11
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		TEST DATE																									
		DESIGN SPEC #																									



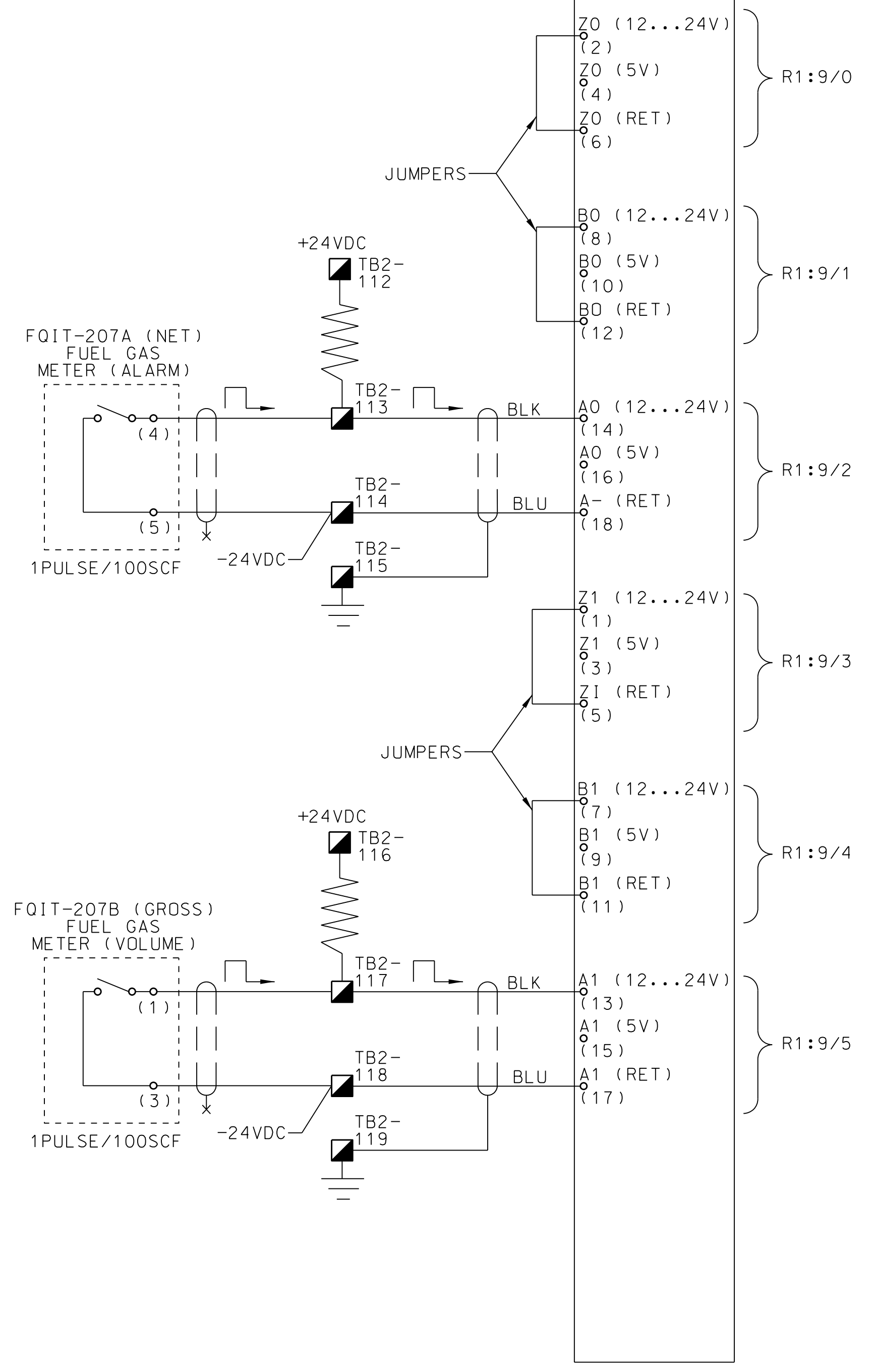
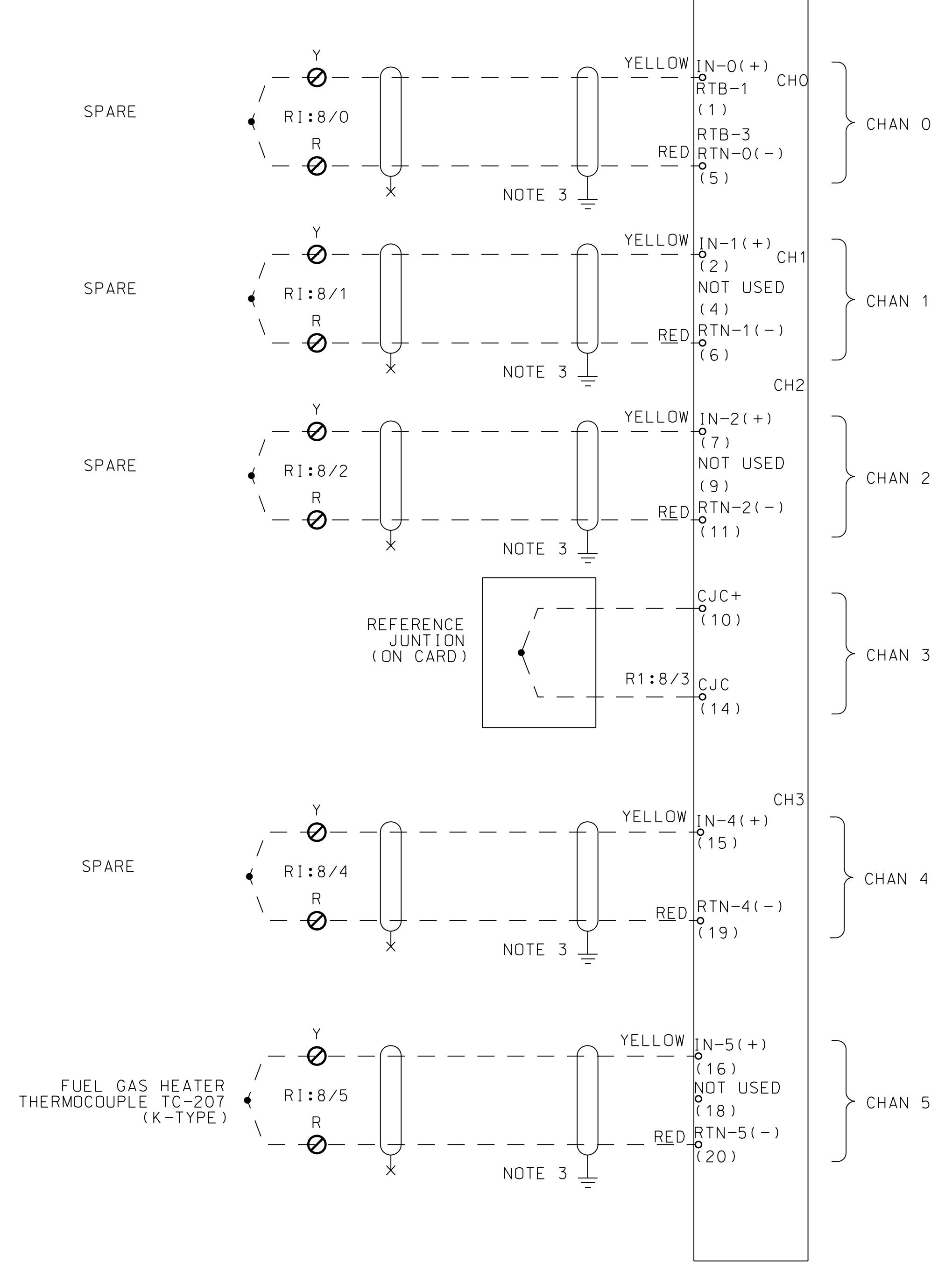
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DRAWING TITLE	
BLUESTONE SANFORD M&R SITE R10P-2 I/O SCHEMATICS	
DRAWING NUMBER	PROJECT / JOB NO
BS-SAN-Y-513	
SHEET 7 OF 12	SCALE: NONE



RIOP-2  
THERMOCOUPLE INPUTS W/RTB  
#1756-1T61  
RACK NO. 1  
SLOT 8

RIOP-2  
HIGH-SPEED COUNTER MODULE W/RTB  
#1756-HSC  
RACK NO. 1  
SLOT 9



- NOTE(S):
1. TERMINAL STRIP + WIRE IN RIOP SHALL BE SUITABLE FOR TYPE K TC.
  2. EXTERNAL WIRING WILL BE ON HOLD FOR PHASE 2 OF PROJECT.
  3. FIELD TO DETERMINE SHIELD TERMINATION.

LEGEND

W	WHITE CABLE COLOR
R	RED CABLE COLOR
Y	YELLOW CABLE COLOR
RTB	REMOVABLE TERMINAL BLOCK
-----	FIELD WIRING
⏏	INSTRUMENT GROUND

APPROVED FOR CONSTRUCTION

REFERENCE DRAWINGS	NUMBER	DESIGN PRESSURE	PSIG	NO.	DATE	REVISION	DRWN BY	DRFT CHK	COOR CHK	ENG APPR	NO.	DATE	REVISION	DRWN BY	DRFT CHK	COOR CHK	ENG APPR	APPROVED FOR CONST.	APPROVED FOR BIDDING	CREDITS	DATE	
				0	05/12/18	PHASE-1 ISSUED FOR BID	JMS	TR	ADP	VC												
				1	07/16/12	ISSUED FOR CONSTRUCTION	MRR	TR	ADP	VC											MRR	11/15/11

DESIGN SPEC #	DATE	TEST MEDIUM	AFR	N2	CO2	H2O	CERTIFICATION CHART REQUIRED	YES	NO	TEST DATE

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DRAWING TITLE	BLUESTONE SANFORD M&R SITE RIOP-2 IO SCHEMATICS
DRAWING NUMBER	BS-SAN-Y-513
PROJECT / JOB NO	
SHEET 8 OF 12	SCALE: NONE

**CONSTRUCTION NOTES:**

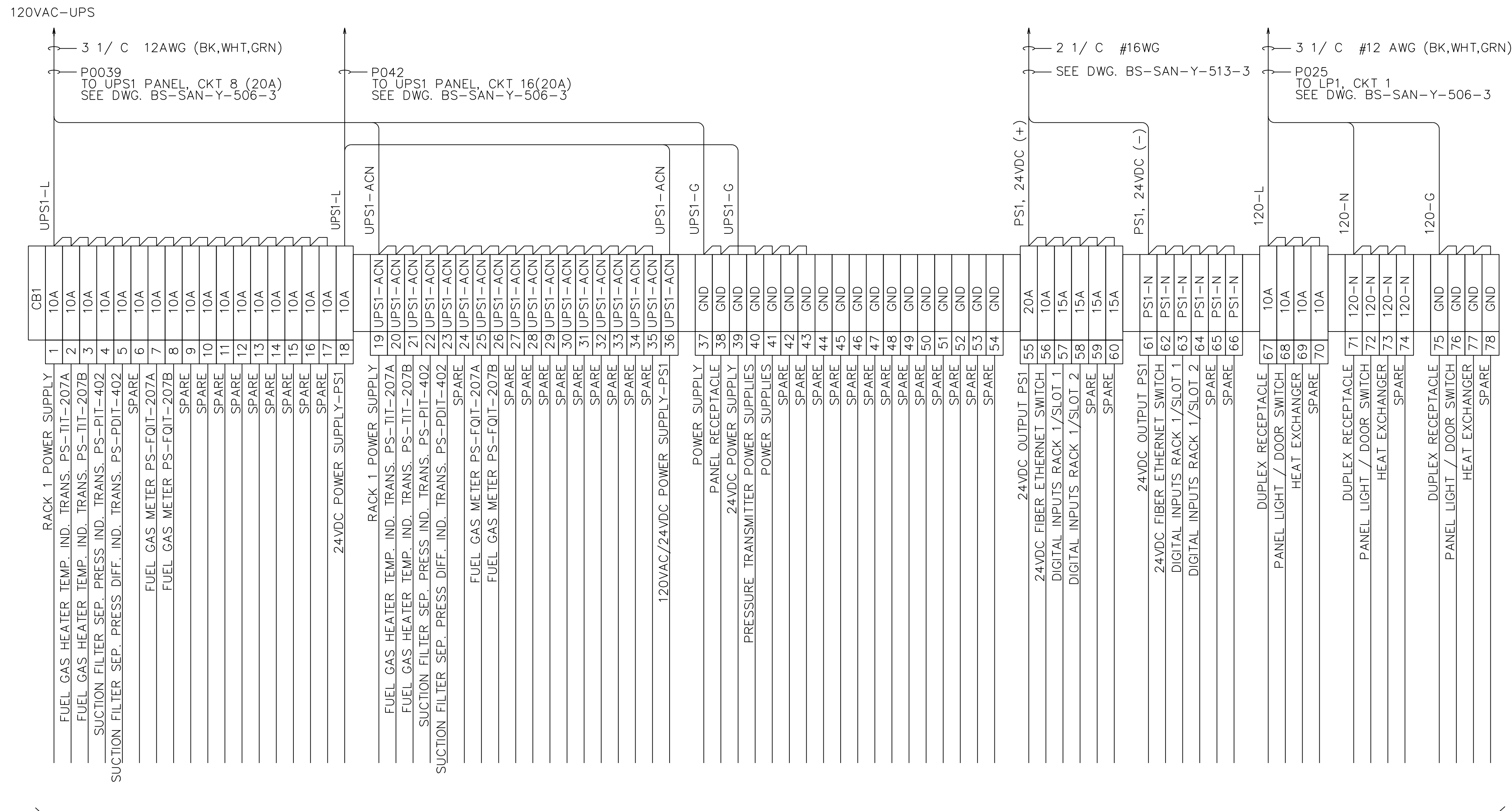
- 1.) FIELD TO VERIFY INTERCONNECTION WIRING AND TERMINATION POINTS BASED ON FINAL CERTIFIED VENDOR DRAWINGS.
- 2.) UNLESS OTHERWISE NOTED, WIRING LABEL NUMBER IS TO BE THE SAME AS THE TERMINAL BLOCK NUMBER.

**REFERENCE DRAWING**

- BS-SAN-Y-506-3 UTILITY BUILDING UPS DISTRIBUTION PANEL AND LIGHTING DISTRIBUTION PANEL
- BS-SAN-Y-513 RIOP-2-FILTER SEPARATOR & SLUG CATCHER AREA DIGITAL INPUT & OUTPUT SCHEMATIC DIAGRAMS.
- BS-SAN-Y-513-3 RIOP-2 PANEL POWER DISTRIBUTION

**LEGEND**

- ▣ RIOP TERMINAL BLOCK
- ⊗ 480V MCC TERMINAL BLOCK
- ▲ VFD TERMINAL BLOCK
- WIRING BY PANEL FABRICATOR
- - - WIRING BY CONTRACTOR
- ∞ TWISTED PAIR, SHLD CABLE



BS-SAN-Y-513-3

APPROVED FOR CONSTRUCTION

REFERENCE DRAWINGS	NUMBER	DESIGN PRESSURE	PSIKG	NO.	DATE	REVISION	DRWN BY	DRFT CHK	CORR CHK	ENG CHK	ENG APPR	NO.	DATE	REVISION	DRWN BY	DRFT CHK	CORR CHK	ENG CHK	ENG APPR	APPROVED FOR CONST.	APPROVED FOR BIDDING	CREDITS	DATE
				0	03/16/12	ISSUED FOR REVIEW	JML	TR	ADP	VG													
				1	04/11/12	ISSUED FOR BID	JMS	TR	ADP	VG												JML	01/31/12
				2	05/18/12	PHASE-1 ISSUED FOR BID	JMS	TR	ADP	VG													
				3	05/25/12	ISSUED FOR PANEL BID	DRV	TR	ADP	VG													
				4	07/16/12	ISSUED FOR CONSTRUCTION	MRR	TR	ADP	VG													

<p>DESIGN PRESSURE</p> <p>MAXIMUM TEST PRESSURE</p> <p>MINIMUM TEST PRESSURE</p> <p>TEST DURATION</p> <p>TEST MEDIUM</p> <p>CERTIFICATION CHART REQUIRED</p> <p>TEST DATE</p>	<p>ARI <input type="checkbox"/> N2 <input type="checkbox"/></p> <p>CO2 <input type="checkbox"/> H2O <input type="checkbox"/></p> <p>YES <input type="checkbox"/> NO <input type="checkbox"/></p>	<p>DESIGN SPEC #</p> <p>DATE</p>
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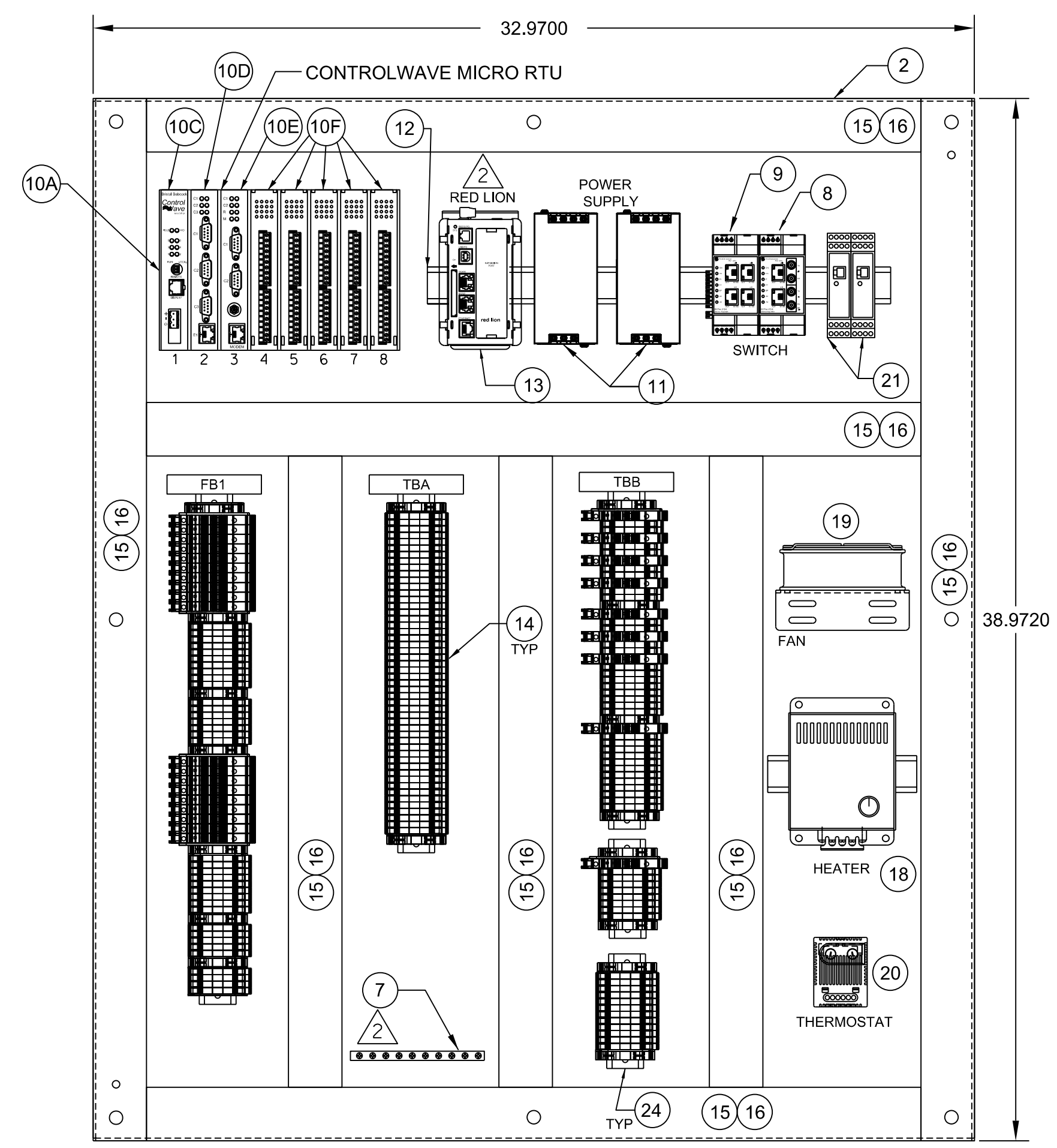
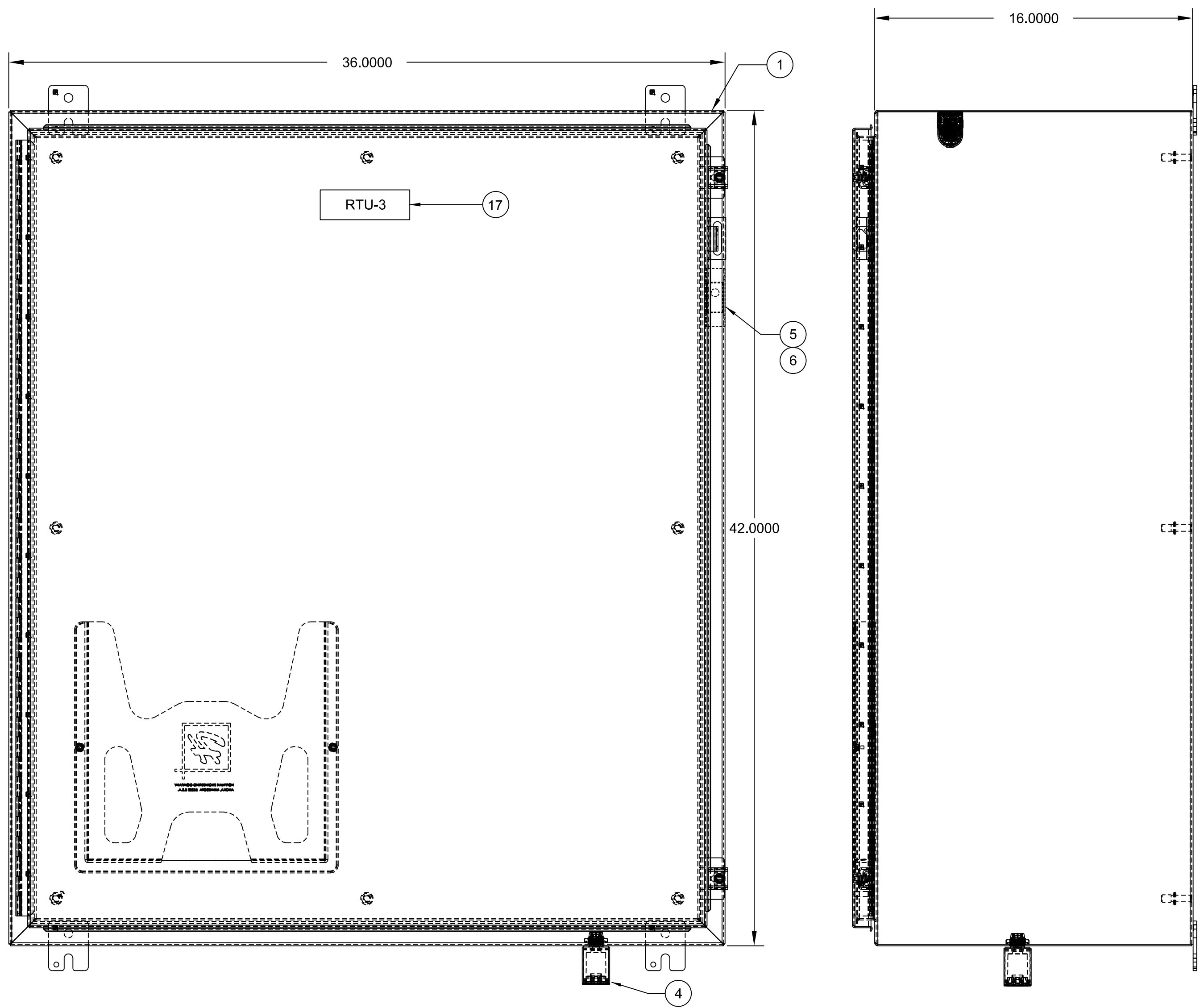
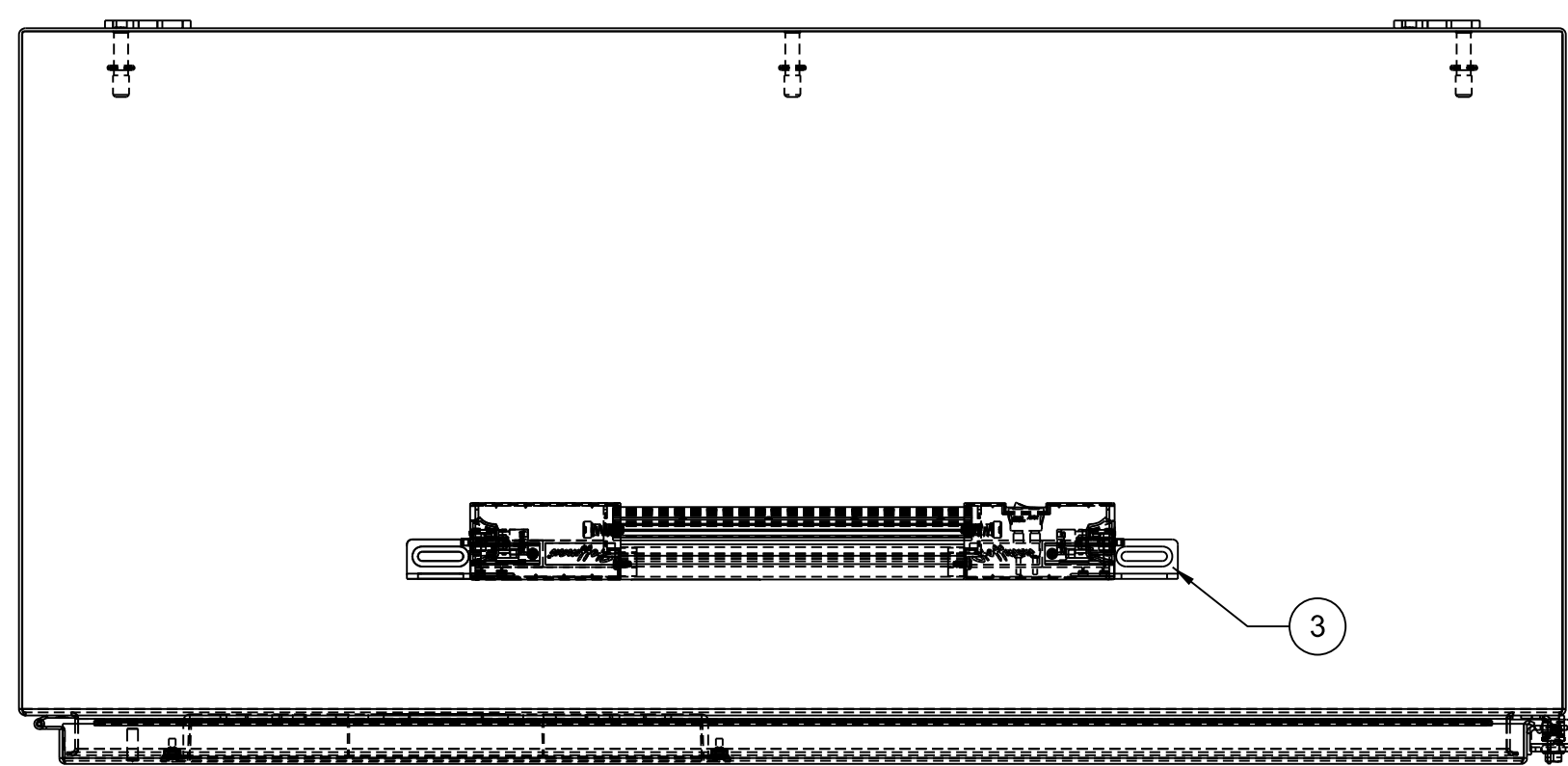
<p>DO NOT SCALE THIS DRAWING. USE DIMENSIONS ONLY</p>	<p><b>DTE Energy</b> Bluestone Gathering</p>	<p><b>ENEngineering</b> 7135 JAMES AVENUE WOODRIDGE, IL 60517 TEL 630-353-4000 FAX 630-353-7777 WWW.ENENGINEERING.COM</p>	<p>DRAWING TITLE</p> <p>BLUESTONE SANFORD M&amp;R SITE RIOP-2 TERMINAL BLOCK LAYOUT (CB1)</p>
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<p>DRAWING NUMBER</p> <p>BS-SAN-Y-513</p>	<p>PROJECT /JOB NO</p>
---	------------------------

<p>SHEET 9 OF 12</p>	<p>SCALE: NONE</p>
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BOM#		QTY		MATERIAL LIST	
1	1	ENCLOSURE, TYPE 12, WALLMOUNT, 42"X36"X16", HOFFMAN #A423616LP			
2	1	PANEL, 39"X33", HOFFMAN, #A42P36			
3	1	LIGHT, ENCLOSURE, PANELITE LED HOFFMAN, #LED24V15			
4	1	DRAIN/VENT, TYPE 4, NONMETALLIC, HOFFMAN #AVDRANM			
5	1	DOOR ACTIVATED SWITCH, REMOTE, HOFFMAN #ALFSWD			
6	1	CABLE, DOOR SWITCH, 18IN LONG, HOFFMAN #LDSWITCH18			
7	1	GROUND BAR, 12 TAPS, ILSCO #D167-12			
8	1	ETHERNET RING SWITCH, 4-PORT (2-RJ45/2-FIBER, MM ST), ULTRA ELECTRONICS #EOTec 2104-55			
9	1	ETHERNET RING SWITCH, EXPANSION MODULE 4-PORT RJ-45, ULTRA ELECTRONICS #EOTec 2C52			
10A	1	BRISTOL RTU #CWM-3-0-05-00-3-1-1-05-22-22-22-22-00-0 INCLUDES:			
10B	-	BASE HOUSING - 8 SLOT PANEL MOUNT BASE			
10C	-	SLOT 1-INTERNAL POWER SUPPLY, PSSM MODULE W/ MODE SWITCH, PART #396657-02-8			
10D	-	SLOT 2 - CPU MODULE W/ 150MHZ CPU/1M SR, 64M SDR, 16M FLASH 1-ENET & 2 - RS232 & 1 - RS485			
10E	-	SLOT 3 - ECOM MODULE 4 PORT COMM; 2 - RS232, 2 - ISOLATED RS485			
10F	-	I/O SLOTS 4-8 - MIXED 6 DIO, 4 AI, 2 HSC, 1AO, WITH LEADS DRY CONTACT DI, EXT. SOURCED 1-5V OR 4-20MA, PART #396897-04-5 REMOTE			
11	2	QUINT-POWER SUPPLY, 100-240AC/24DC, 10A, PHEONIX CONTACT #2866763			
12	AS REQ'D	DIN RAIL, 35MM, ALLEN-BRADLEY #1492-DR5			
13	1	DATA STATION PLUS CONTROLLER, 24VDC, REDLION #DSPGT000			
14	20	END BARRIER, ALLEN-BRADLEY #1492-N36			
	20	END ANCHORS, ALLEN-BRADLEY #1492-N23			
	105	TUBULAR SCREW W/ PRESSURE PLATE TERMINAL BLOCKS, ALLEN-BRADLEY #1492-F1			
	36	FUSIBLE SWITCH W/NEON BLOWN FUSE IND, 24VDC, MAX 12A ALLEN-BRADLEY #1492-H5			
15	AS REQ'D	WIRE DUCT, 2"X4"X6", PANDUIT #F2X4WH6			
16	AS REQ'D	DUCT COVER, 2"X4", PANDUIT #C2WH6			
17	AS REQ'D	NAME PLATE, LINE 1: RTU-3, BY PANEL SHOP			
18	1	PANEL HEATER, 200W, 120VAC, HOFFMAN #DAH2001A			
19	1	COOLING FAN, 24VDC, HOFFMAN #A4AXFN24			
19	1	FAN MOUNTING BRACKET, AIN, HOFFMAN #ABRKT4			
20	1	DUAL THERMOSTAT, HOFFMAN ADLTEMP			
21	2	ANALOG SIGNAL DUPLICATOR, DIN-RAIL MOUNTED, 24V, 1.5W, GM INTERNATIONAL #D1052X			

APPROVED FOR CONSTRUCTION

REFERENCE DRAWINGS	NUMBER	PRESSURE TEST SPECIFICATIONS	NO.	DATE	REVISION	DRN BY	DFT CHK	CORR CHK	ENG CHK	ENG APPR	NO.	DATE	REVISION	DRN BY	DFT CHK	CORR CHK	ENG CHK	ENG APPR	APPROVED FOR CONST.	APPROVED FOR BIDDING	CREDITS	DATE
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		TEST MEDIUM	AIR	<input type="checkbox"/>	N2	<input type="checkbox"/>																
		CERTIFICATION CHART REQUIRED	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>																
		TEST DATE																				
		DESIGN SPEC #																				

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DRAWING TITLE		BLUESTONE SANFORD M&R SITE RTU-3 ENCLOSURE & PANEL LAYOUT WBOM	
DRAWING NUMBER		BS-SAN-Y-514	
PROJECT /JOB NO			
SHEET 1 OF 12		SCALE: NONE	

**CONSTRUCTION NOTES:**

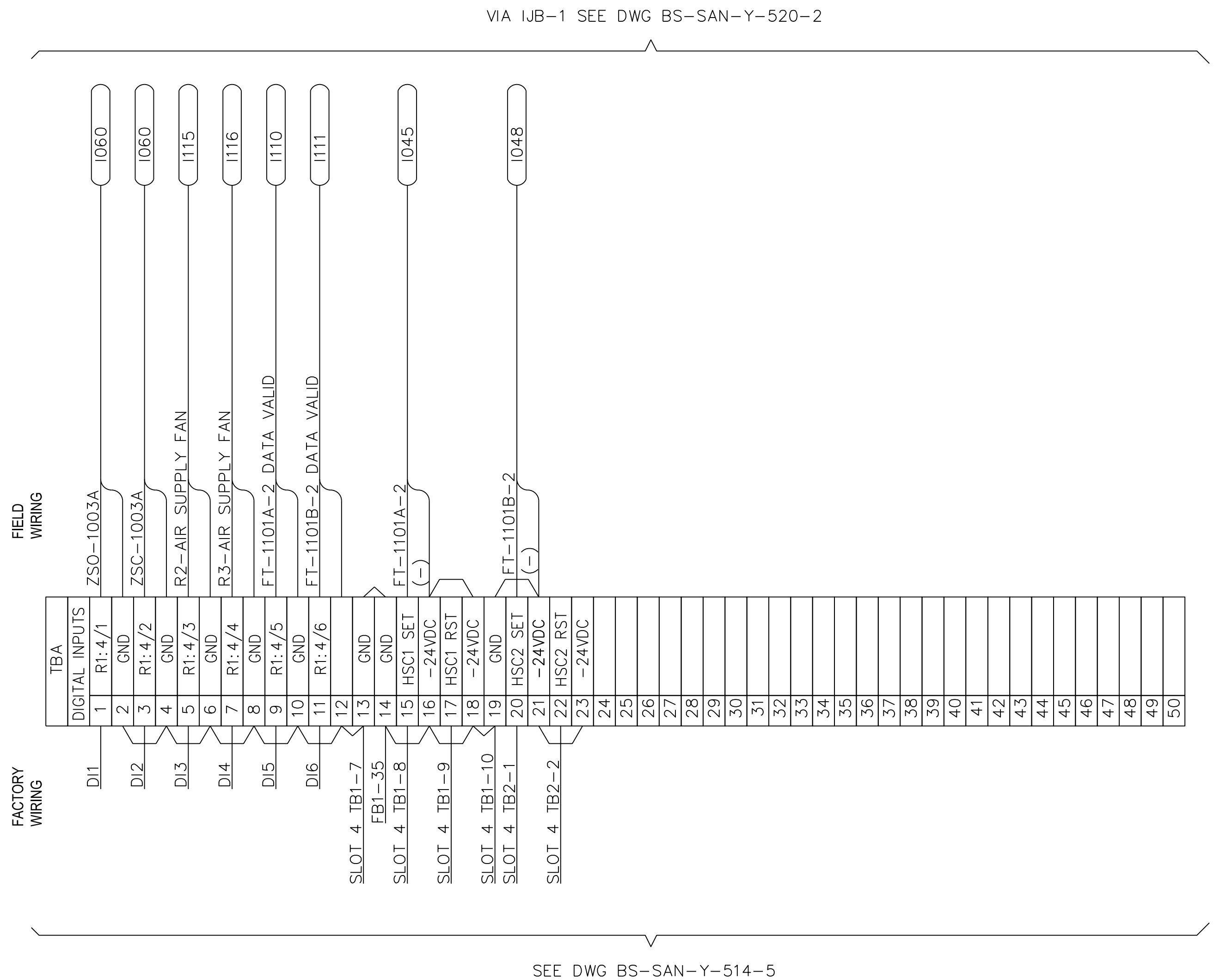
1. FIELD TO VERIFY INTERCONNECTION WIRING AND TERMINATION POINTS BASED ON FINAL CERTIFIED VENDOR DRAWINGS.

**LEGEND**

- CIA TERMINAL BLOCK
- ⊗ 480V MCC TERMINAL BLOCK
- ▲ VFD TERMINAL BLOCK
- WIRING BY PANEL FABRICATOR
- - - WIRING BY CONTRACTOR
- WIRING BY ESB BUILDING VENDOR
- ∞ TWISTED PAIR, SHLD CABLE

**REFERENCE DRAWING**

- BS-SAN-Y-514-5 RTU-3 SCHEMATICS, I/O
- BS-SAN-Y-514-6 RTU-3 SCHEMATICS, I/O
- BS-SAN-Y-520-2 IJB-1 (GAS QUALITY BUILDING WIRING DIAGRAM)



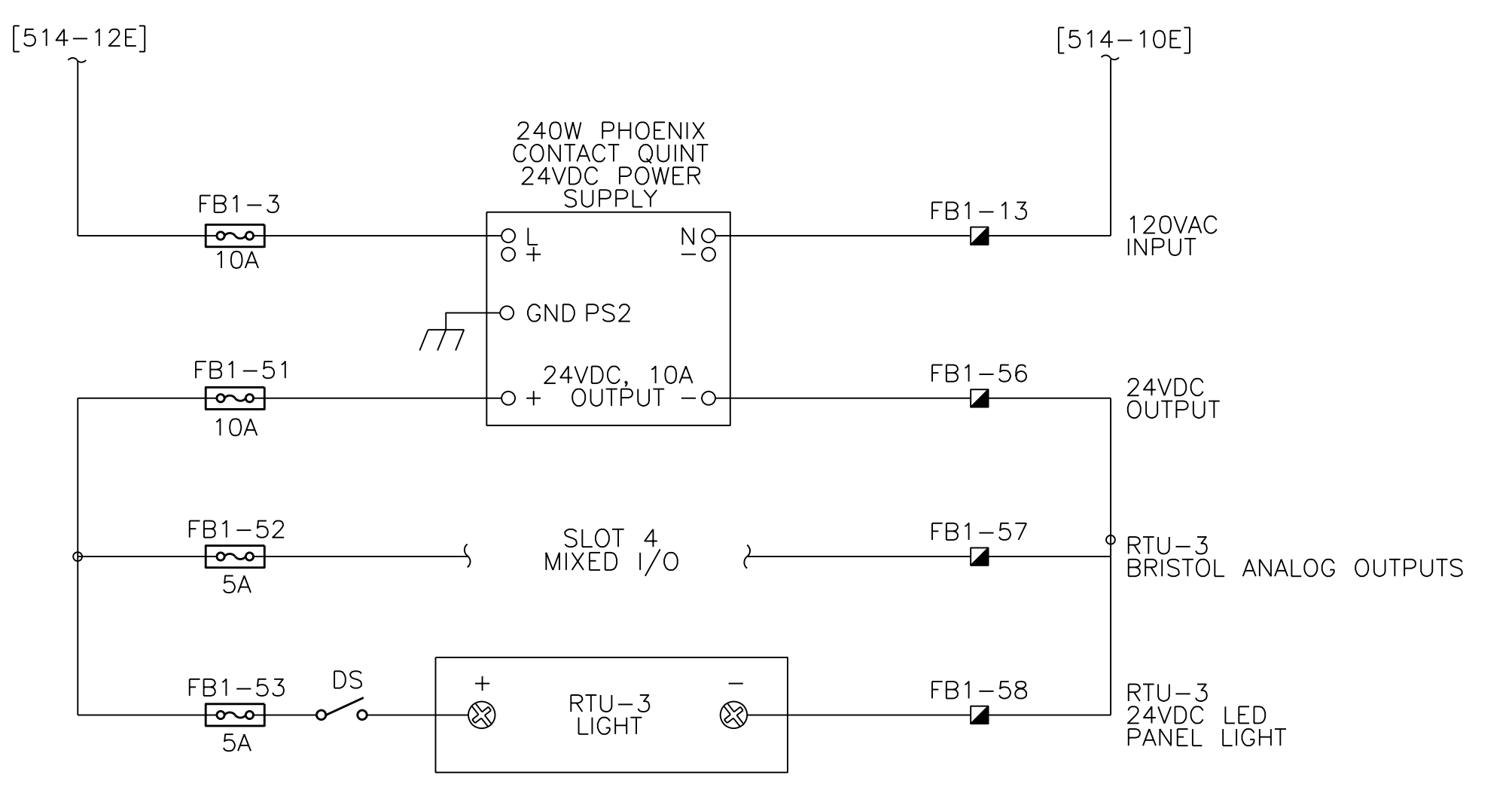
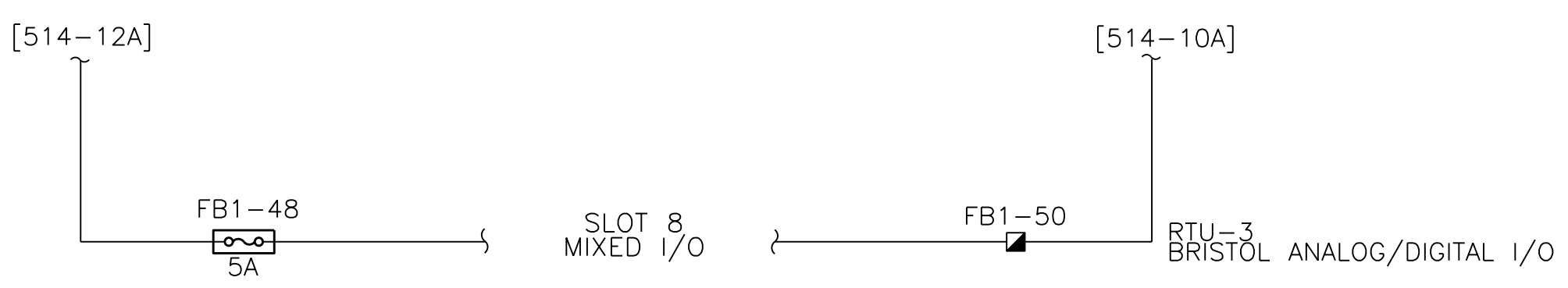
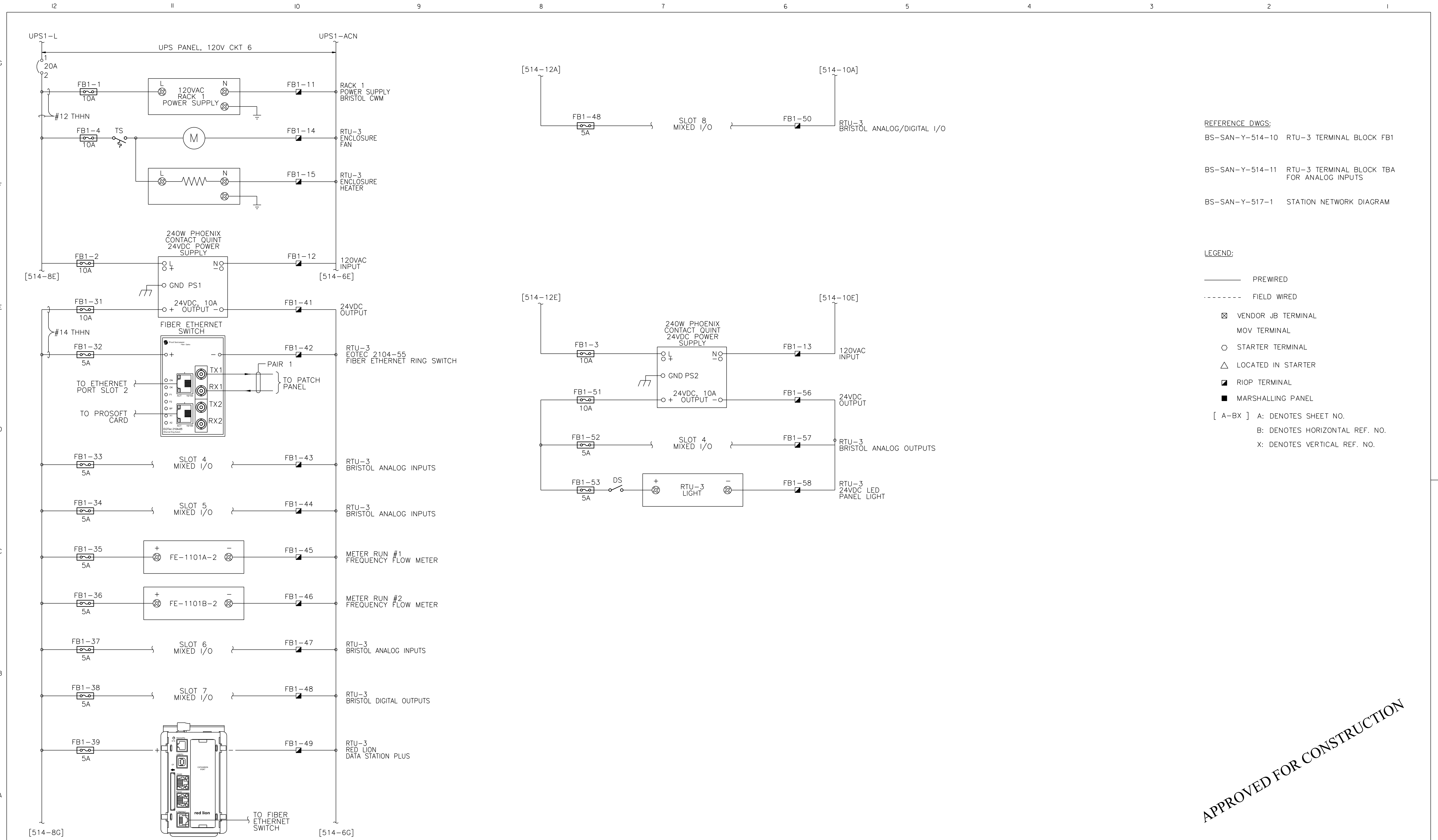
APPROVED FOR CONSTRUCTION

REFERENCE DRAWINGS	NUMBER	DESIGN PRESSURE	PSIK	NO.	DATE	REVISION	DRWN BY	DRFT CHK	CORR CHK	ENG CHK	ENG APPR	NO.	DATE	REVISION	DRWN BY	DRFT CHK	CORR CHK	ENG CHK	ENG APPR	APPROVED FOR CONST.	APPROVED FOR BIDDING	CREDITS	DATE
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		MINIMUM TEST PRESSURE	PSIK	2	05/18/12	PHASE-1 ISSUED FOR BID	JMS		TR	ADP	VG											APPROVALS	DATE
		TEST DURATION	HRS	3	07/16/12	ISSUED FOR CONSTRUCTION	MRR		TR	ADP	VG											DRFT CHK:	
		TEST MEDIUM	AIR	<input type="checkbox"/>	N2	<input type="checkbox"/>																CORR CHK:	
			CO2	<input type="checkbox"/>	H2O	<input type="checkbox"/>																ENG CHK:	
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		TEST DATE																				DO NOT SCALE THIS DRAWING. USE DIMENSIONS ONLY	
		DESIGN SPEC #																				7/16/2012	

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DRAWING TITLE		BLUESTONE SANFORD M&R SITE RTU-3 TERMINAL BLOCK LAYOUT (TBA)	
DRAWING NUMBER	BS-SAN-Y-514	PROJECT /JOB NO	
SHEET 10 OF 10	SCALE NONE		



REFERENCE DWGS:  
 BS-SAN-Y-514-10 RTU-3 TERMINAL BLOCK FB1  
 BS-SAN-Y-514-11 RTU-3 TERMINAL BLOCK TBA FOR ANALOG INPUTS  
 BS-SAN-Y-517-1 STATION NETWORK DIAGRAM

LEGEND:  
 \_\_\_\_\_ PREWIRED  
 - - - - - FIELD WIRED  
 ⊗ VENDOR JOB TERMINAL  
 ○ MOV TERMINAL  
 ○ STARTER TERMINAL  
 △ LOCATED IN STARTER  
 ■ RIOP TERMINAL  
 ■ MARSHALLING PANEL  
 [ A-BX ] A: DENOTES SHEET NO.  
 B: DENOTES HORIZONTAL REF. NO.  
 X: DENOTES VERTICAL REF. NO.

APPROVED FOR CONSTRUCTION

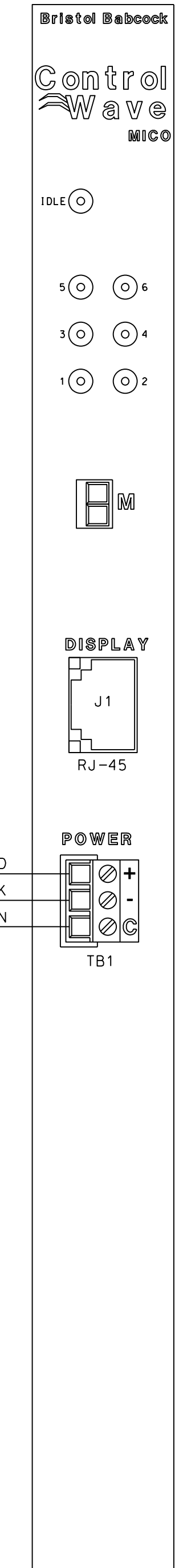
REFERENCE DRAWINGS	NUMBER	PRESSURE TEST SPECIFICATIONS	NO.	DATE	REVISION	DRWN BY	DRFT CHK	CORR CHK	ENG CHK	ENG APPR	APPROVED FOR CONST.	APPROVED FOR BIDDING	CREDITS	DATE
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		MINIMUM TEST PRESSURE	PSIG	2	05/18/12	JMS	TR	ADP	VG				APPROVALS	DATE
		TEST DURATION	HRS	3	07/16/12	MRR	TR	ADP	VG				DRFT CHK:	
		TEST MEDIUM	APR	<input type="checkbox"/>	N2	<input type="checkbox"/>							CORR CHK:	
			CO2	<input type="checkbox"/>	H2O	<input type="checkbox"/>							ENG CHK:	
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		TEST DATE												
BS-SAN-Y-514-3.dgn	7/16/2012	DESIGN SPEC #											DO NOT SCALE THIS DRAWING. USE DIMENSIONS ONLY.	

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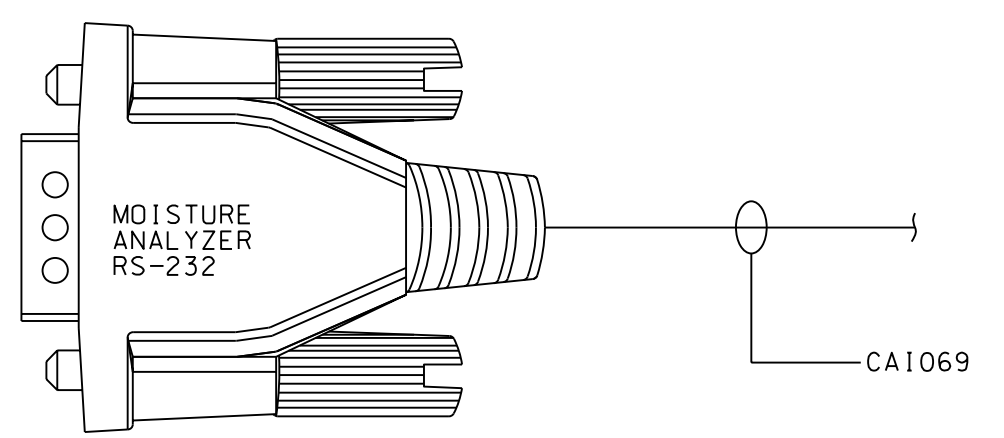
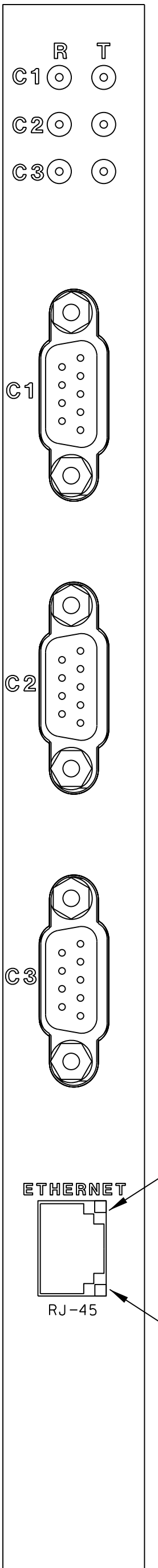
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DRAWING TITLE	
BLUESTONE SANFORD M&R SITE RTU-3 POWER DISTRIBUTION	
DRAWING NUMBER	PROJECT /JOB NO
BS-SAN-Y-514	
SHEET 3 OF 10	SCALE: NONE

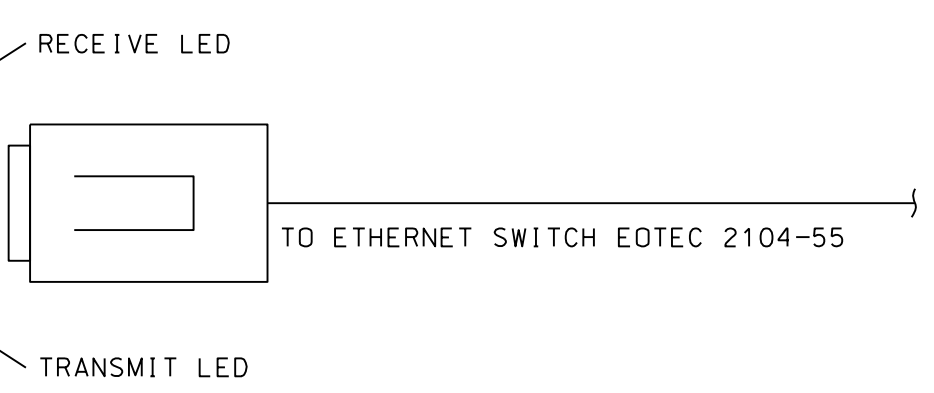
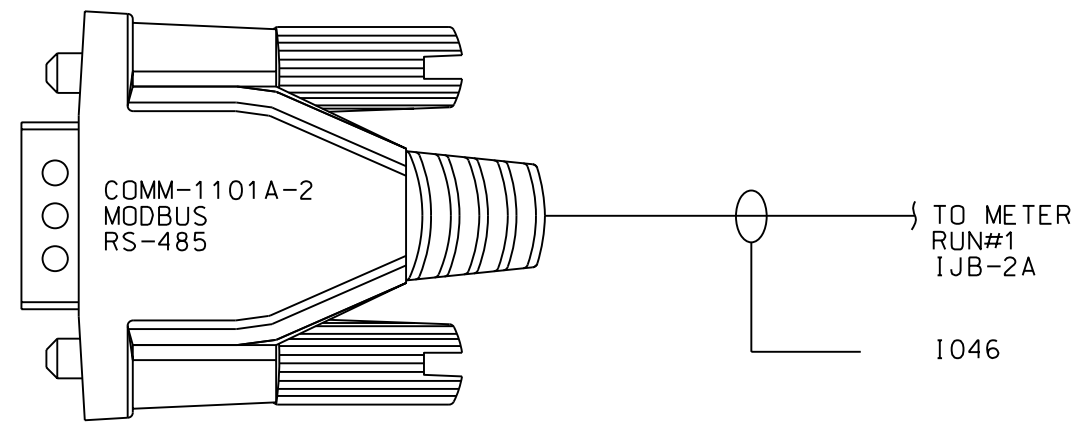
RTU-3  
PSSM  
W/MODE SWITCH  
MODULE  
PART# 396657-02-8  
SLOT 1



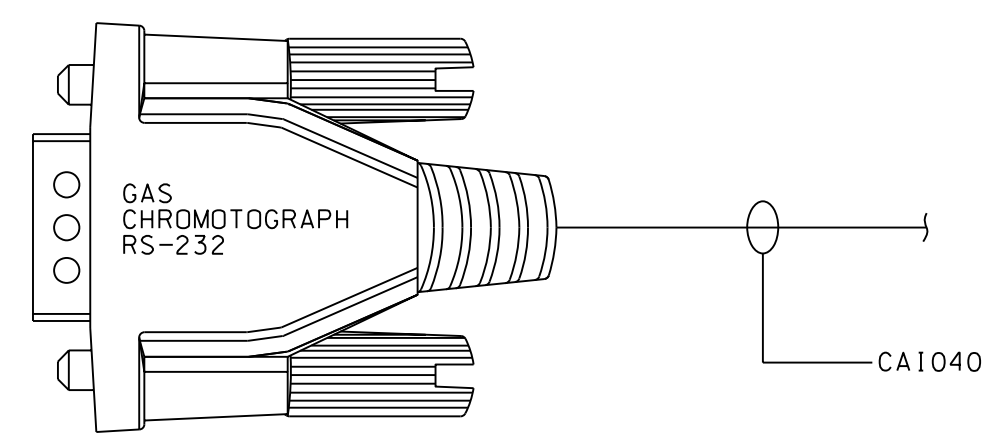
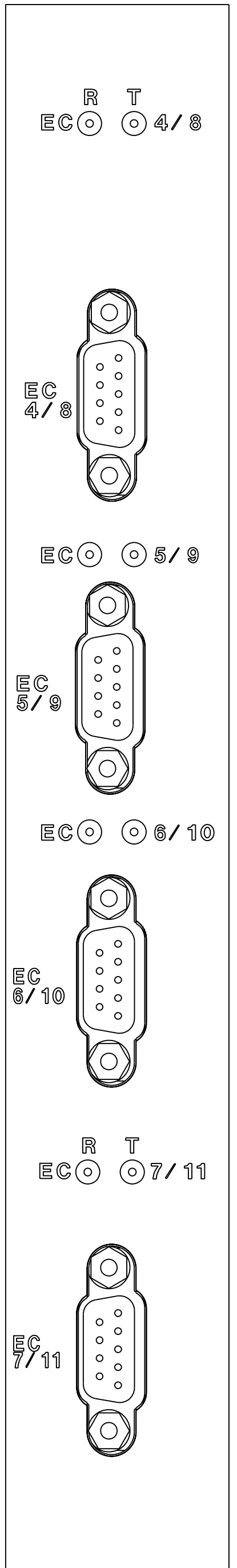
RTU-3  
CPU MODULE  
SLOT 2



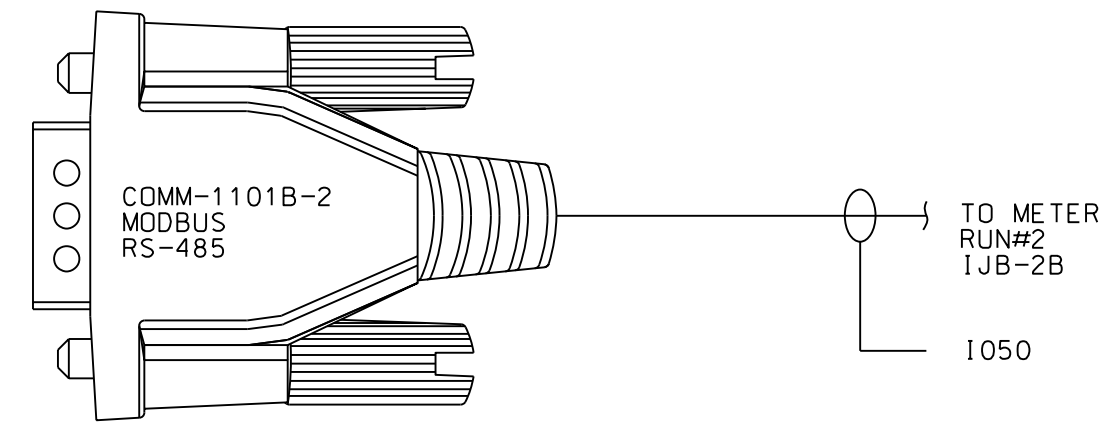
RS-232  
(SPARE)



RTU-3  
E COM MODULE  
TYPE 2  
SLOT 3



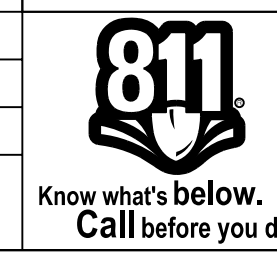
RS-232  
(SPARE)



RS-485  
(SPARE)

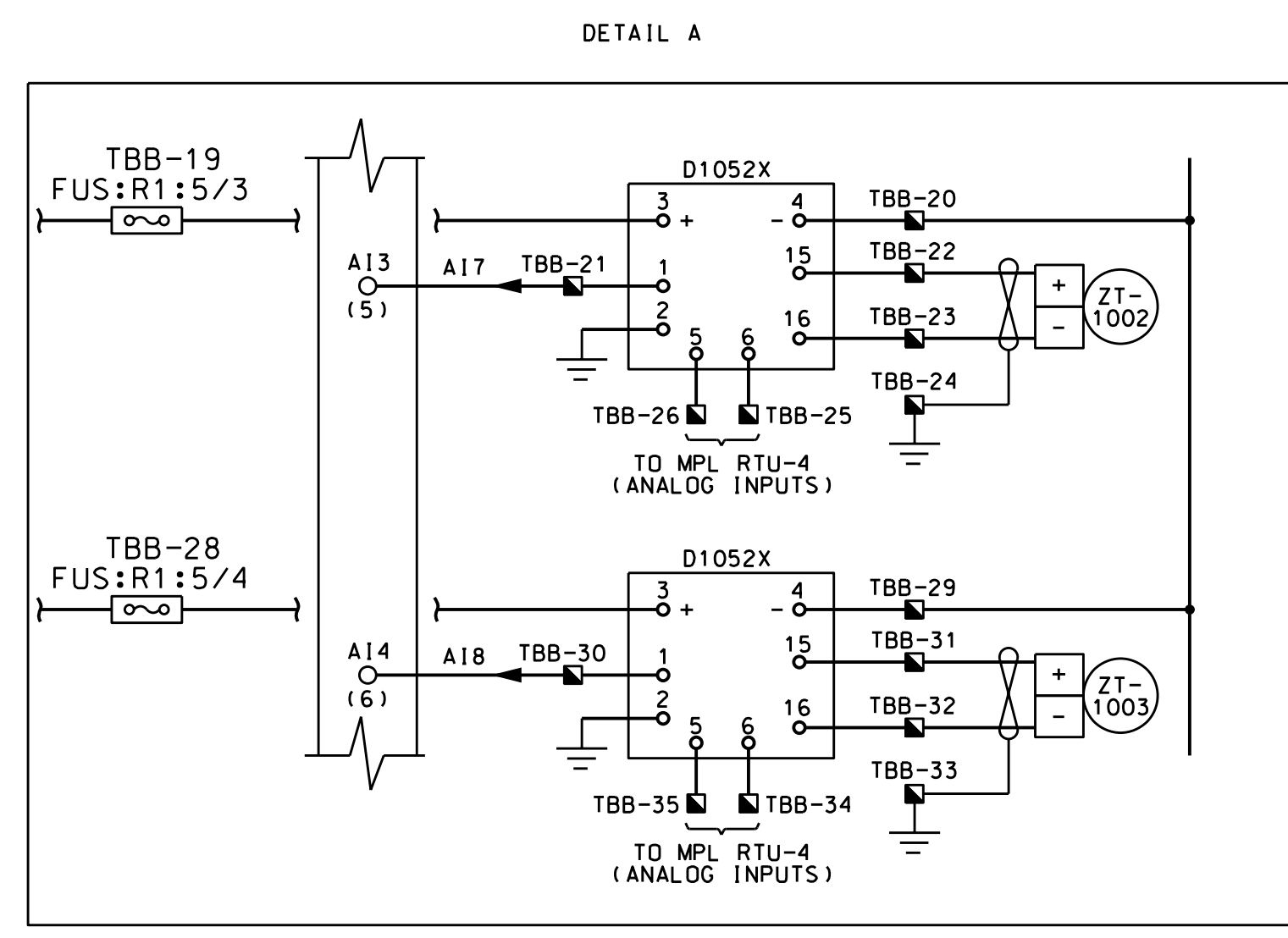
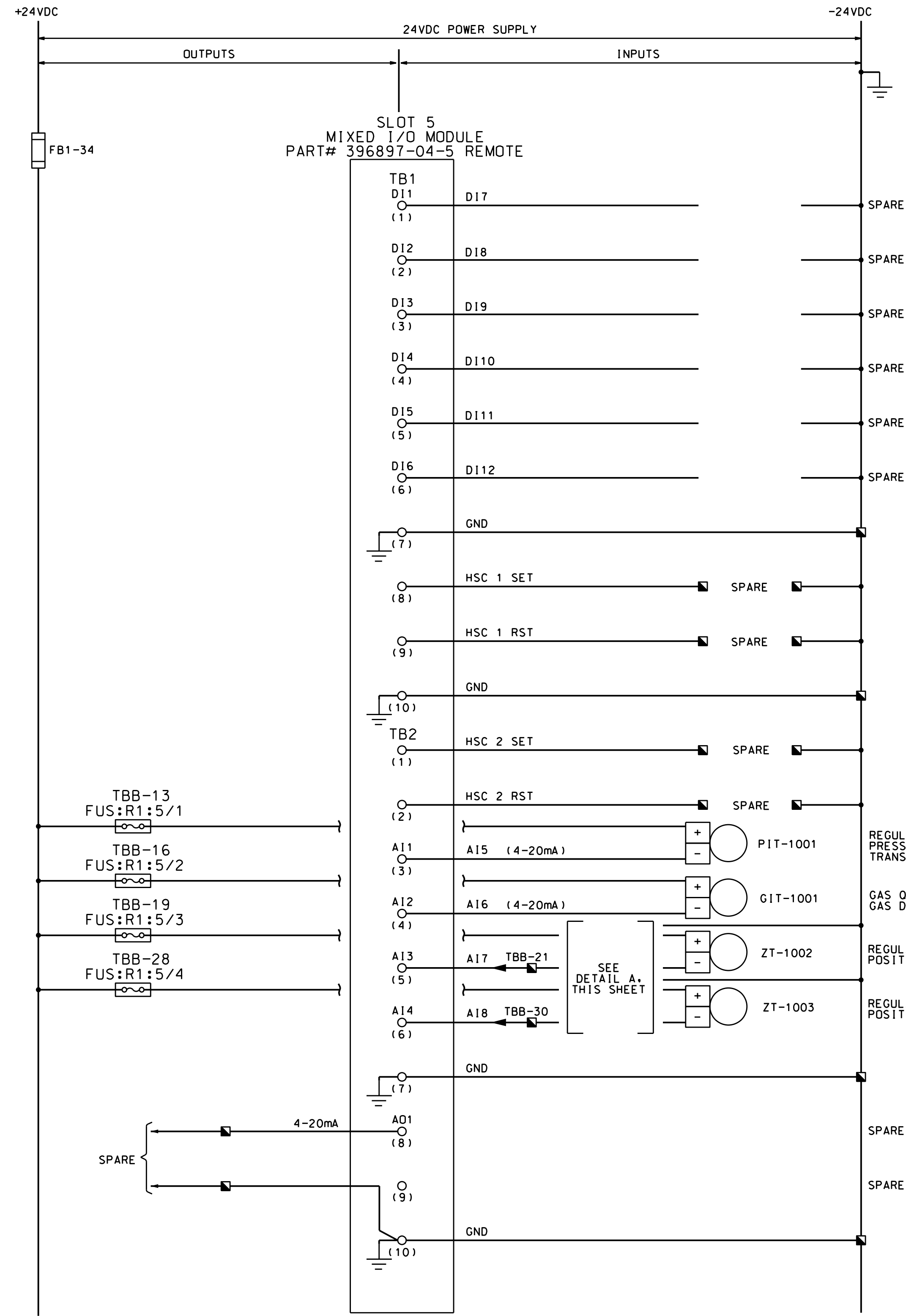
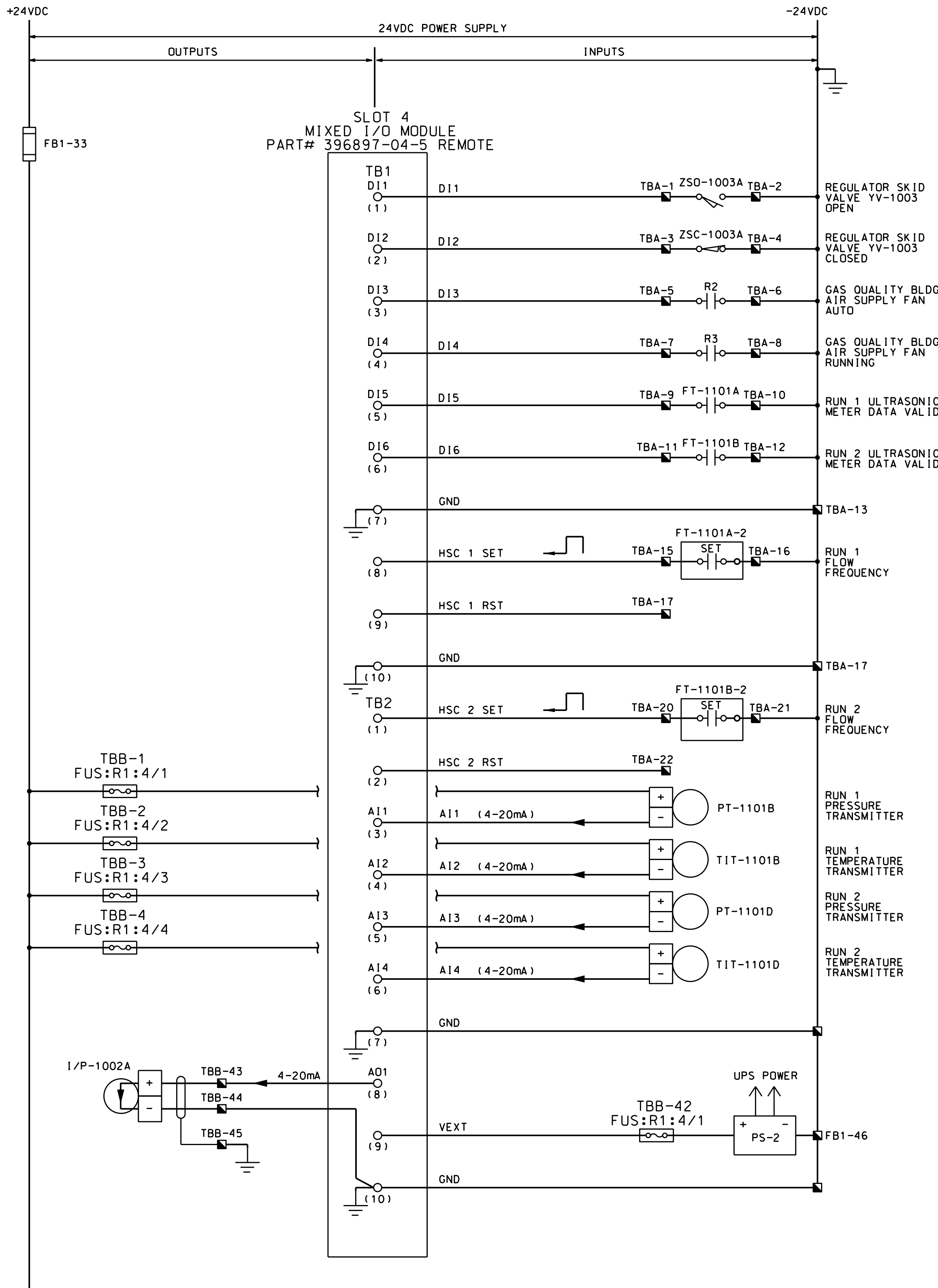
APPROVED FOR CONSTRUCTION

REFERENCE DRAWINGS	NUMBER	DESIGN PRESSURE	PSIG	NO.	DATE	REVISION	DRWN BY	DFT CHK	CORR CHK	ENG CHK	ENG APPR	NO.	DATE	REVISION	DRWN BY	DFT CHK	CORR CHK	ENG CHK	ENG APPR	APPROVED FOR CONST.	APPROVED FOR BEDDING	CREDITS	DATE
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		TEST MEDIUM	AIR	<input type="checkbox"/>	N2	<input type="checkbox"/>																CORR CHK:	
		CERTIFICATION CHART REQUIRED	CO2	<input type="checkbox"/>	H2O	<input type="checkbox"/>																ENG CHK:	
		TEST DATE	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>																ENG APPR:	
BS-SAN-Y-514.dgn	7/16/2012	DESIGN SPEC #	DATE																			DO NOT SCALE THIS DRAWING. USE DIMENSIONS ONLY	



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DRAWING TITLE		BLUESTONE SANFORD M&R SITE RTU-3 I/O SCHEMATIC	
DRAWING NUMBER	PROJECT /JOB NO		
BS-SAN-Y-514			
SHEET 4 OF 10	SCALE: NONE		



NOTES:  
1. DEVICE D1052X ANALOG SIGNAL SPLITTER IS LOCATED INSIDE PANEL.

REFERENCE DRAWING  
BS-SAN-Y-514-3 RTU-3 PANEL  
BS-SAN-Y-514 POWER DISTRIBUTION  
RTU-3 TERMINAL  
BLOCK LAYOUTS  
SHEETS 8 - 10

APPROVED FOR CONSTRUCTION

REFERENCE DRAWINGS	NUMBER	PRESSURE TEST SPECIFICATIONS	NO.	DATE	REVISION	DRWN BY	DFT CHK	CORR CHK	ENG CHK	ENG APPR	NO.	DATE	REVISION	DRWN BY	DFT CHK	CORR CHK	ENG CHK	ENG APPR	APPROVED FOR CONST.	APPROVED FOR BIDDING	CREDITS	DATE
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			CO2	<input type="checkbox"/>	H2O	<input type="checkbox"/>																
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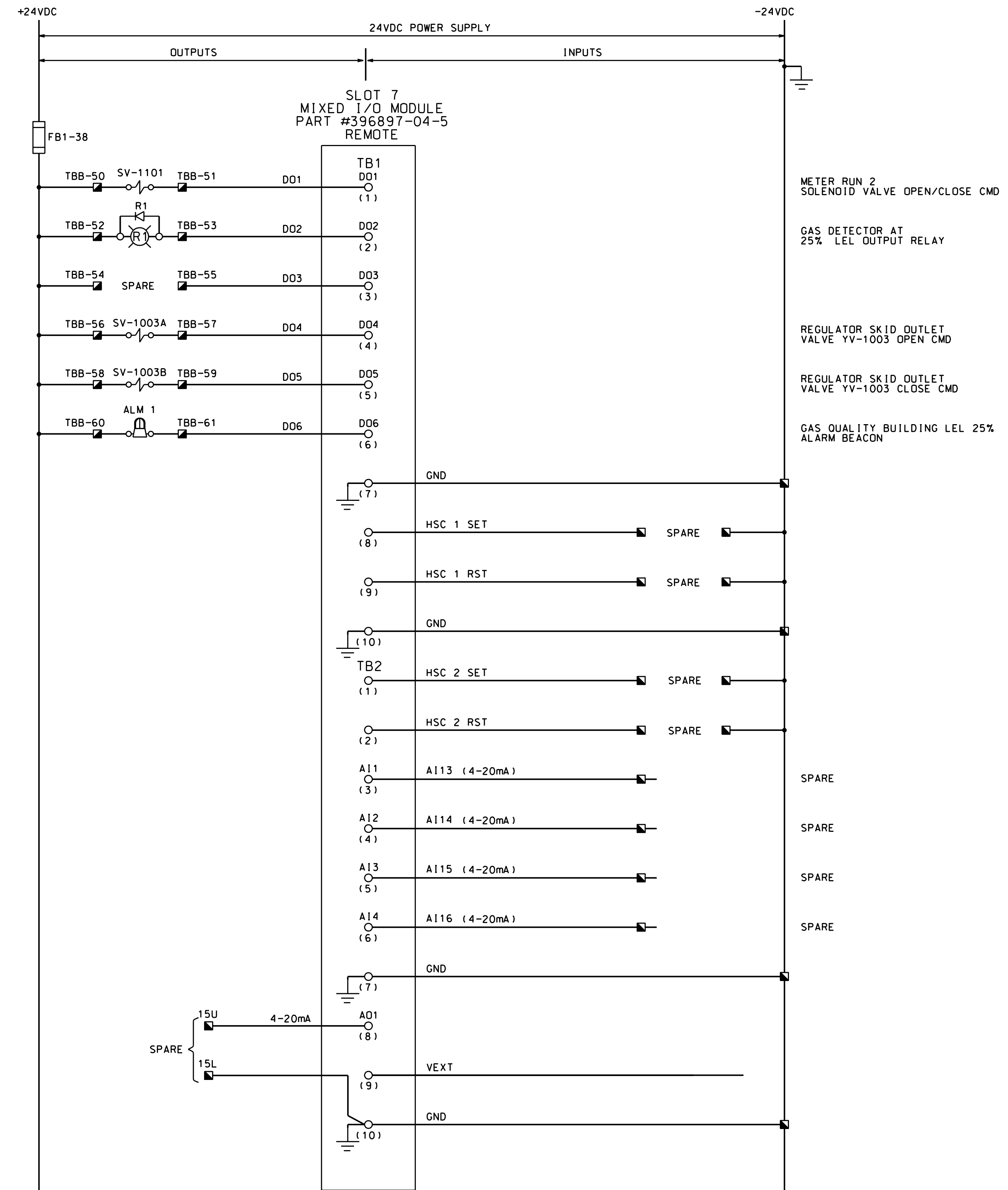
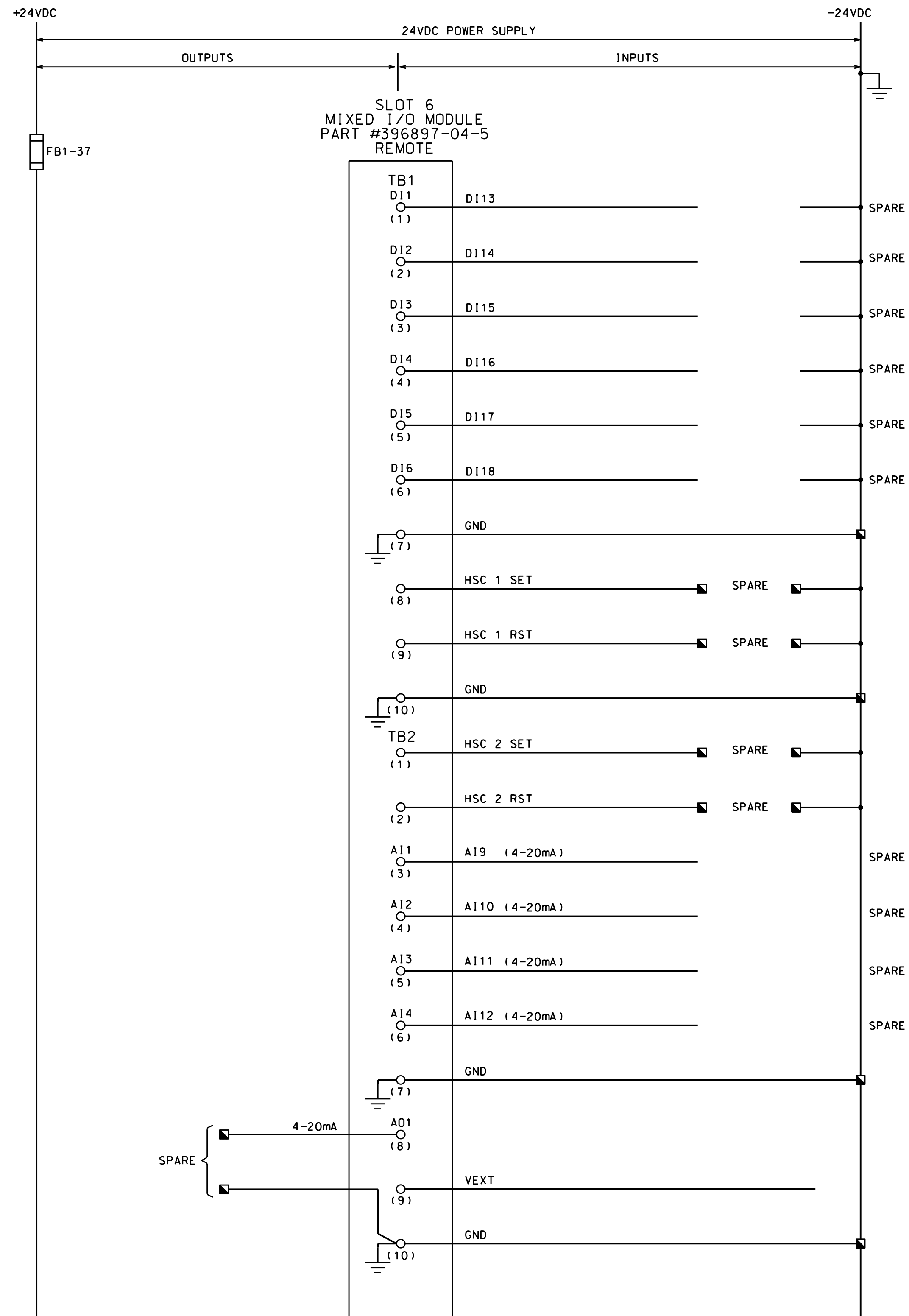
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DRAWING TITLE  
**BLUESTONE SANFORD M&R SITE  
RTU-3  
IO SCHEMATIC**

DRAWING NUMBER  
**BS-SAN-Y-514**

PROJECT /JOB NO.  
SHEET 5 OF 10 SCALE: NONE



APPROVED FOR CONSTRUCTION

REFERENCE DRAWINGS	NUMBER	PRESSURE TEST SPECIFICATIONS	NO.	DATE	REVISION	DRWN BY	DRFT CHK	CORR CHK	ENG CHK	ENG APPR	NO.	DATE	REVISION	DRWN BY	DRFT CHK	CORR CHK	ENG CHK	ENG APPR	APPROVED FOR CONST.	APPROVED FOR BEDDING	CREDITS	DATE
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		TEST DURATION	HRS	3	07/16/12	ISSUED FOR CONSTRUCTION	MRR	TR	ADP	VG												
		TEST MEDIUM	AIR <input type="checkbox"/> N2 <input type="checkbox"/>																			
			CO2 <input type="checkbox"/> H2O <input type="checkbox"/>																			
		CERTIFICATION CHART REQUIRED	YES <input type="checkbox"/> NO <input type="checkbox"/>																			
		TEST DATE																				
		DESIGN SPEC #																				
		DATE																				

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Bluestone Gathering

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DRAWING TITLE

**BLUESTONE SANFORD M&R SITE  
RTU-3  
I/O SCHEMATIC**

DRAWING NUMBER

**BS-SAN-Y-514**

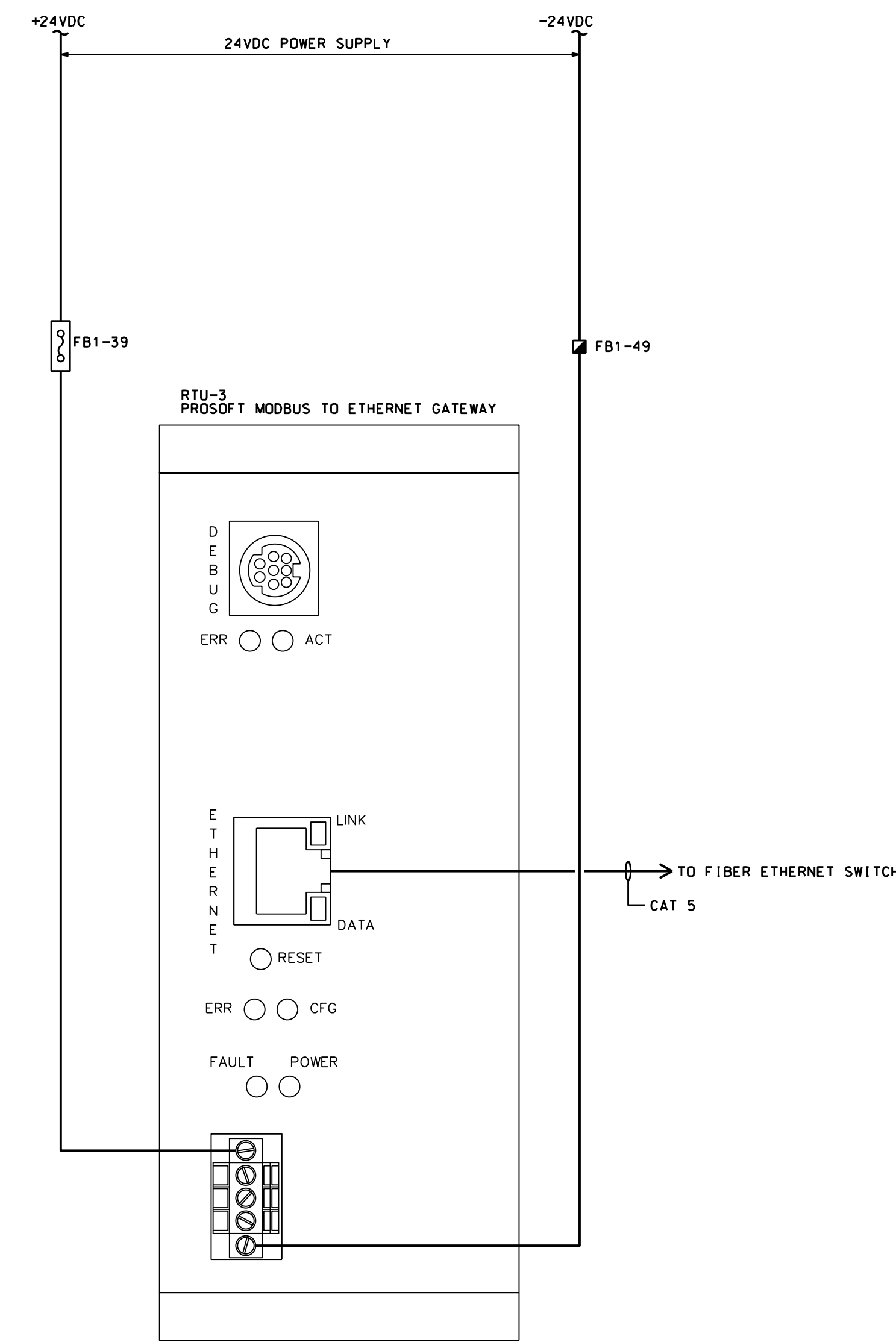
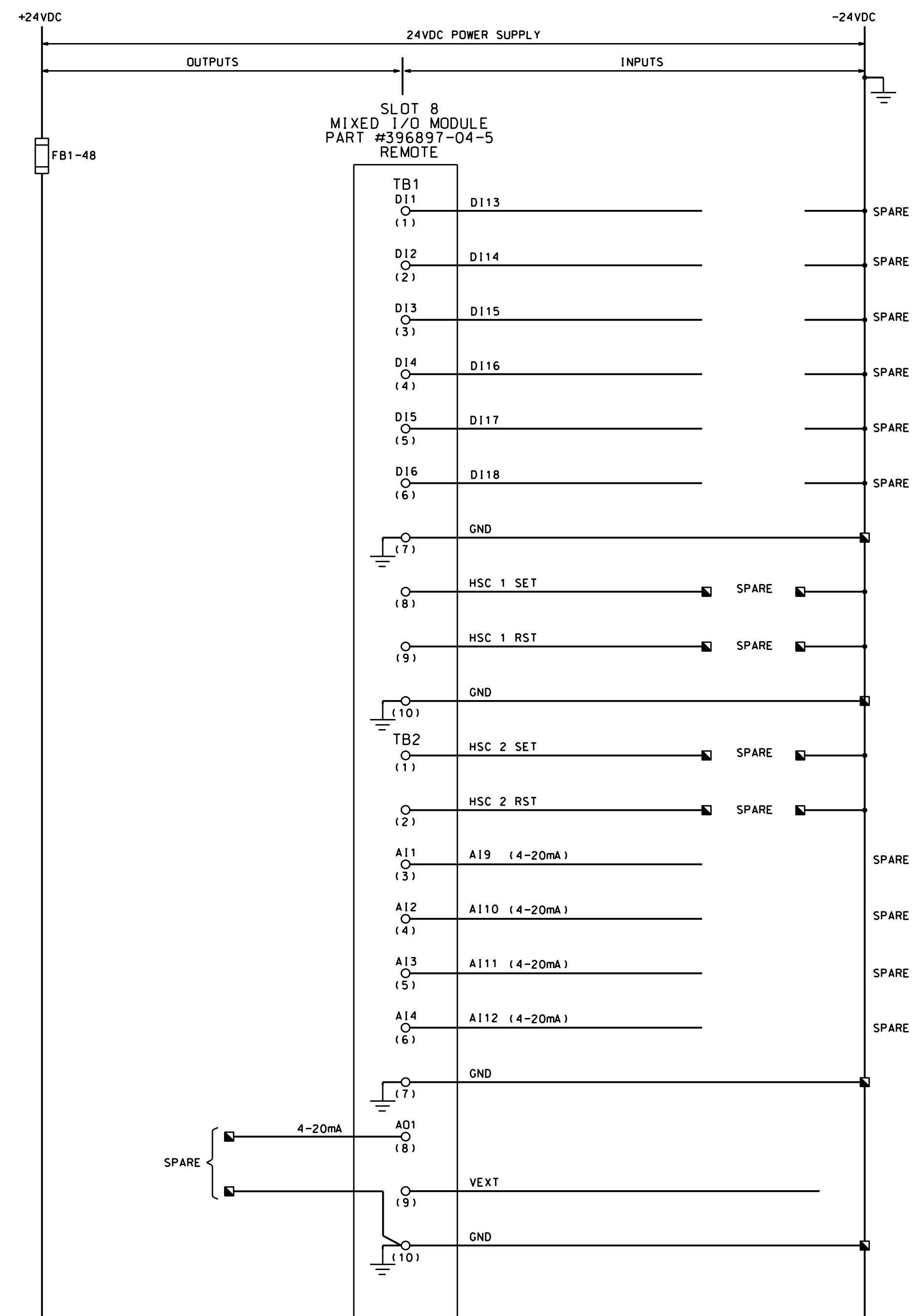
PROJECT /JOB NO

\_\_\_\_\_

SHEET 6 OF 10

SCALE: NONE





APPROVED FOR CONSTRUCTION

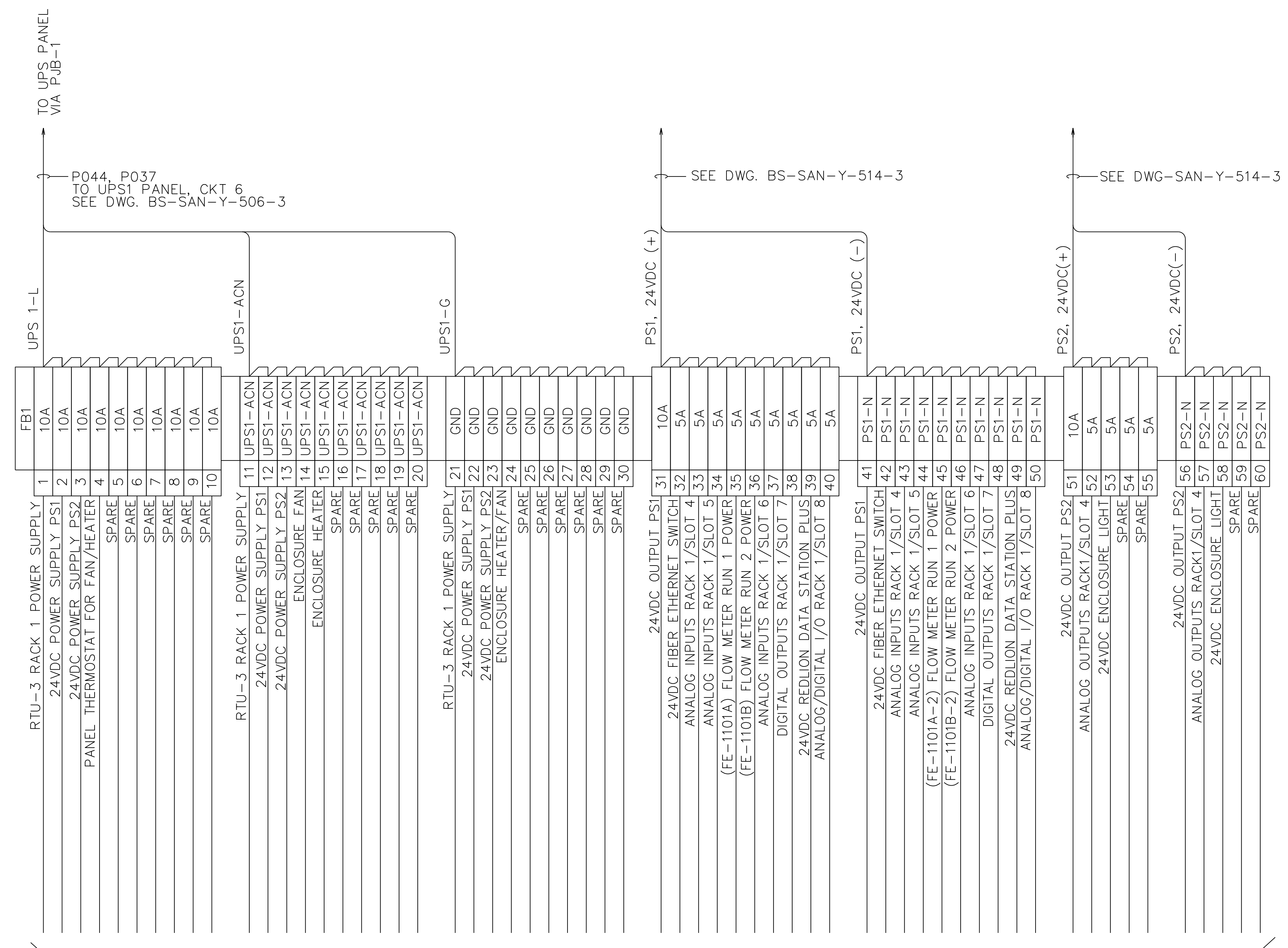
REFERENCE DRAWINGS	NUMBER	DESIGN PRESSURE	PSIG	NO.	DATE	REVISION	DRWN BY	DRFT CHK	CORR CHK	ENG CHK	ENG APPR	NO.	DATE	REVISION	DRWN BY	DRFT CHK	CORR CHK	ENG CHK	ENG APPR	APPROVED FOR CONST.	APPROVED FOR BIDDING	CREDITS	DATE
		DESIGN PRESSURE	PSIG		0	03/16/12	JML	TR	ADP	VC			ISSUED FOR BID									INVEST BY:	
		MAXIMUM TEST PRESSURE	PSIG		1	05/18/12	JMS	TR	ADP	VC			PHASE-1 ISSUED FOR BID									DRAWN BY: MRR	11/15/11
		MINIMUM TEST PRESSURE	PSIG		2	07/16/12	MRR	TR	ADP	VC			ISSUED FOR CONSTRUCTION									APPROVALS	DATE
		TEST DURATION	HRS																			DRIFT CHK:	
		TEST MEDIUM	AIR <input type="checkbox"/> N2 <input type="checkbox"/>																			CORR CHK:	
			CO2 <input type="checkbox"/> H2O <input type="checkbox"/>																			ENG CHK:	
		CERTIFICATION CHART REQUIRED	YES <input type="checkbox"/> NO <input type="checkbox"/>																			ENG APPR:	
		TEST DATE																				DO NOT SCALE THIS DRAWING. USE DIMENSIONS ONLY	
		DESIGN SPEC #																				DTE Energy Bluestone Gathering	
																						811 Know what's below. Call before you dig.	
																						ENEngineering 7135 JANES AVENUE WOODRIDGE, IL 60517 TEL 630-353-4000 FAX 630-353-7777 WWW.ENENGINEERING.COM	
																						DRAWING TITLE BLUESTONE SANFORD M&R SITE RTU-3 I/O SCHEMATICS	
																						DRAWING NUMBER BS-SAN-Y-514	
																						PROJECT / JOB NO	
																						SHEET 7 OF 10 SCALE: NONE	

**CONSTRUCTION NOTES:**  
 1. FIELD TO VERIFY INTERCONNECTION WIRING AND TERMINATION POINTS BASED ON FINACERTIFIED VENDOR DRAWINGS.

**NOTES:**  
 1.) UNLESS OTHERWISE NOTED, WIRING LABEL NUMBER IS TO BE THE SAME AS THE TERMINAL BLOCK NUMBER.

**REFERENCE DRAWING**  
 BS-SAN-Y-506-3 UTILITY BUILDING UPS DISTRIBUTION PANEL AND LIGHTING DISTRIBUTION PANEL  
 BS-SAN-Y-514 RTU-3-REGULATOR & METERING AREA DIGITAL INPUT & OUTPUT SCHEMATIC DIAGRAMS, SHEETS 5 & 6.  
 BS-SAN-Y-514-3 RTU-3 PANEL POWER DISTRIBUTION  
 BS-SAN-Y-520-1 PJB-1 GAS QUALITY BUILDING WIRING DIAGRAM

**LEGEND**  
 ■ RIOP TERMINAL BLOCK  
 ⊗ 480V MCC TERMINAL BLOCK  
 ▲ VFD TERMINAL BLOCK  
 — WIRING BY PANEL FABRICATOR  
 - - - WIRING BY CONTRACTOR  
 ∞ TWISTED PAIR, SHLD CABLE



BS-SAN-Y-514-3

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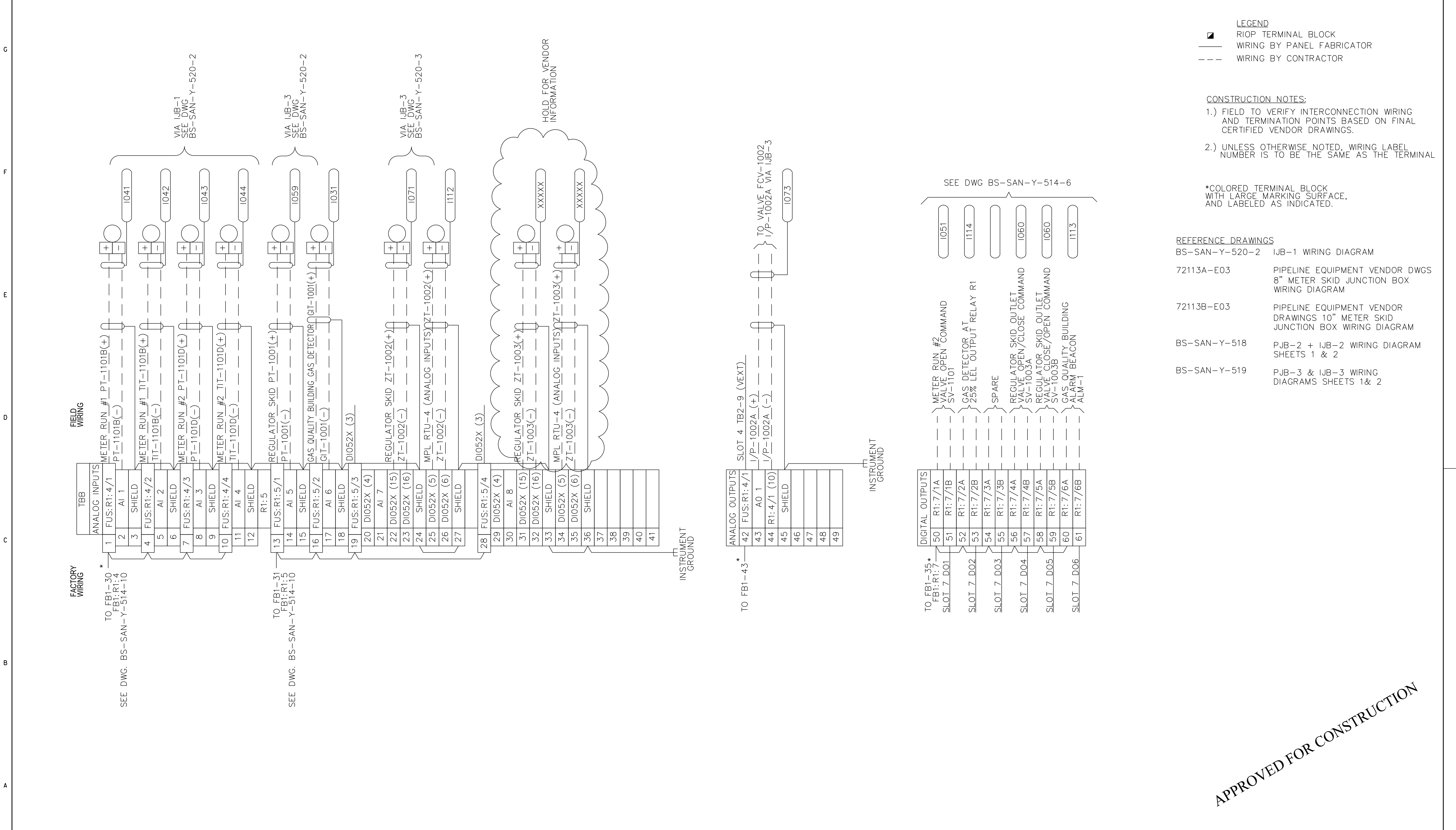
REFERENCE DRAWINGS	NUMBER	DESIGN PRESSURE	PSKG	NO.	DATE	REVISION	DRWN BY	DRFT CHK	CORR CHK	ENG CHK	ENG APPR	NO.	DATE	REVISION	DRWN BY	DRFT CHK	CORR CHK	ENG CHK	ENG APPR	APPROVED FOR CONST.	APPROVED FOR BIDDING	CREDITS	DATE
		DESIGN PRESSURE	PSKG	0	03/16/12	ISSUED FOR REVIEW	JML	TR	ADP	VG										REV. NO.	BY	DATE	INVEST BY:
		MAXIMUM TEST PRESSURE	PSKG	1	04/11/12	ISSUED FOR BID	JML	TR	ADP	VG													01/31/12
		MINIMUM TEST PRESSURE	PSKG	2	05/18/12	PHASE-1 ISSUED FOR BID	JMS	TR	ADP	VG													
		TEST DURATION	HRB	3	07/16/12	ISSUED FOR CONSTRUCTION	MRR	TR	ADP	VG													
		TEST MEDIUM	APR																				
		CERTIFICATION CHART REQUIRED	YES																				
		TEST DATE																					
		DESIGN SPEC #																					

**DTE Energy**  
Bluestone Gathering

**EN Engineering**  
7135 JAMES AVENUE  
WOODRIDGE, IL 60517  
TEL 630-353-4000  
FAX 630-353-7777  
WWW.ENENGINEERING.COM

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DRAWING TITLE	
BLUESTONE SANFORD M&R SITE RTU-3 TERMINAL BLOCK LAYOUT (FB1)	
DRAWING NUMBER	PROJECT /JOB NO
BS-SAN-Y-514	
SHEET 8 OF 10	SCALE: NONE



APPROVED FOR CONSTRUCTION

REFERENCE DRAWINGS	NUMBER	DATE	REVISION	DESIGN	CHECK	APPR	DATE	REVISION	DESIGN	CHECK	APPR	DATE	APPROVED FOR CONST.	APPROVED FOR BIDDING	CREDITS	DATE
DESIGN PRESSURE	PSBK	03/16/12	ISSUED FOR REVIEW	JMS	TR	ADP	VC								INVEST BY:	
MAXIMUM TEST PRESSURE	PSBK	04/13/12	ISSUED FOR BID	JMS	TR	ADP	VC								DRAWN BY: JML	01/31/12
MINIMUM TEST PRESSURE	PSBK	05/18/12	PHASE-1 ISSUED FOR BID	JMS	TR	ADP	VC								APPROVALS	DATE
TEST DURATION	HRS	07/16/12	ISSUED FOR CONSTRUCTION	MRR	TR	ADP	VC								DRIFT CHK:	
TEST MEDIUM	AIR <input type="checkbox"/> NE <input type="checkbox"/>														CORR CHK:	
	CO2 <input type="checkbox"/> H2O <input type="checkbox"/>														ENG CHK:	
CERTIFICATION CHART REQUIRED	YES <input type="checkbox"/> NO <input type="checkbox"/>														ENG APPR:	
TEST DATE															DO NOT SCALE THIS DRAWING.	
DESIGN SPEC #	DATE														USE DIMENSIONS ONLY.	

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WOODRIDGE, IL 60517  
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FAX 630-353-7777  
WWW.ENENGINEERING.COM

DRAWING TITLE	
BLUESTONE SANFORD M&R SITE RTU-3 TERMINAL BLOCK LAYOUT (TBB)	
DRAWING NUMBER	PROJECT /JOB NO
BS-SAN-Y-514	
SHEET 9 OF 10	SCALE: NONE