

March 20, 2017

Invitation to Bid 17056 Control Enclosure for Robert Douglas Substation Addendum 1

The Bid due date is changed to 2:00 p.m. March 30, 2017.

Addendum 1 is issued to modify Appendix B, Scope and Drawings/Specifications, provide clarification, as well as provide answers to questions received.

- 1. Appendix A, Terms and Conditions, Section 20, Warranty: At a minimum, the Contractor shall include a warranty for all labor, parts and equipment supplied by this Contract for one (1) year.
- 2. Appendix B, Section 1.5, Assembly; The following is added in the first paragraph, after the 3rd sentence:

The Contractor shall be responsible for lifting the relay enclosure from the trailer or trailers and placing it on the prepared foundation. This includes but is not limited to providing the crane, all rigging, cribbing and labor to lift and place the relay enclosure in its final location on the prepared foundation.

3. Appendix B-1, Scope and Drawings/Specifications are changed as specified in the attached drawings. Changes are marked by revision clouds.

Question / Answers:

Clarifications:

Under this solicitation, the contractor is only responsible for crane, rigging and labor for placing the Control Enclosure on the prepared foundation. The successful bidder will negotiate separately with Matanuska Electric Association for the services and cost for the reassembly of the control enclosure after it is placed on the foundation. Services may include joining and weather proofing any shipping splits, installation of ridge caps, eves, and fascia, which may have been removed for shipping.

Q1.) For lead time calculations, what is the anticipated award date for this project?

A1.) Anticipated award date is estimated to be April 26, 2017. This is an estimate and the Authority makes no guarantees as to the actual award date.

Q2.) Bid documents state that we are to provide warranty in accordance with the specifications. After multiple reviews of the specification documents, there is no specific

reference to warranty requirements. Can you please confer with the customer and advise what is required with regard to the Warranty?

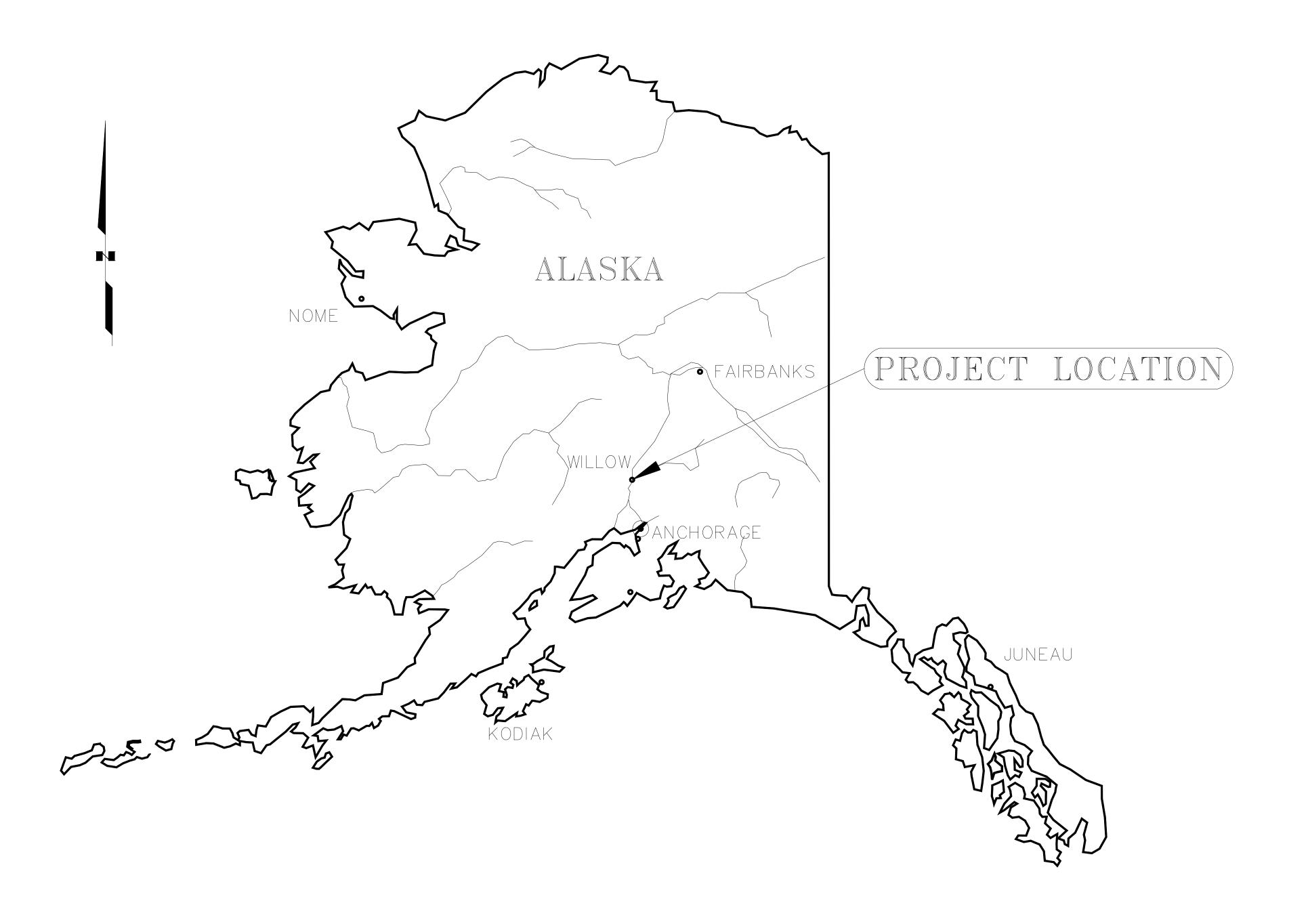
A2.) See Item #1 above.

As a reminder, all addendum must be acknowledged on the bid schedule.

Thank you,

O. P.l.

Andrew Morton Contracting Officer amorton@aidea.org



PROJ	ECT: DOUGLAS CONTROL ENCLOSURE REPLACEMENT		
DESIC	GNER/PROJECT ENGINEER: <u>TIM CONRAD/EPS</u>	JOB #: <u>MEA</u>	W.O. EN16-
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/D
А	ISSUED FOR BID REVIEW	KER/09-19-2016	TCC/09-19-201
В	ISSUED FOR BID	KER/03-15-2017	TCC/03-15-201

MATANUSKA ELECTRIC ASSOCIATION, INC. ROBERT DOUGLAS SUBSTATION 24060 WEST WILLOW FISHHOOK ROAD, WILLOW, ALASKA WORK ORDER NO. EN16-3.2

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	DRAWING INDE	ΞX		
TITLE	DRAWING NUMBER	SHEET	REVISION	NOTES
CONTROL ENCLOSURE AND RELAY PANELS TITLE & DRAWING INDEX	DGSS-PR-0000 DGSS-PR-0000	1 2		
CONTROL ENCLOSURE PLAN	DGSS-SS-2009	1		
CONTROL ENCLOSURE NORTH AND SOUTH EXTERIOR ELEVATIONS	DGSS-SS-2009	2	B	
CONTROL ENCLOSURE EAST AND WEST EXTERIOR ELEVATIONS	DGSS-SS-2009	3		
CONTROL ENCLOSURE NORTH AND SOUTH INTERIOR ELEVATIONS CONTROL ENCLOSURE EAST AND WEST INTERIOR ELEVATIONS CONTROL ENCLOSURE CABLE TRAY PLAN	DGSS-SS-2009 DGSS-SS-2009 DGSS-SS-2009	4 5 6		
CONTROL ENCLOSURE LIGHTING PLAN	DGSS-SS-2009	7		
CONTROL ENCLOSURE NAMEPLATES CONTROL ENCLOSURE BILL OF MATERIAL	DGSS-SS-2009 DGSS-SS-2009	8		
ELECTRICAL GENERAL INFORMATION ELECTRICAL CABLE & WIRE STANDARD	DGSS-EL-0000 DGSS-EL-0000	1	A A	
138 kV ONE-LINE DIAGRAM	DGSS-EL-0010	1	A	
24.9 kV ONE-LINE DIAGRAM STATION SERVICE ONE-LINE DIAGRAM	DGSS-EL-0011 DGSS-EL-0012	1	A B B	
125 VDC ONE LINE DIAGRAM	DGSS-EL-0012 DGSS-EL-0013	1		
SCADA NETWORK TOPOLOGY	DGSS-EL-0014	1	B	
SCADA NETWORK TOPOLOGY	DGSS-EL-0014	2		
SCADA NETWORK TOPOLOGY	DGSS-EL-0014	3		
SCADA NETWORK TOPOLOGY SCADA NETWORK TOPOLOGY	DGSS-EL-0014 DGSS-EL-0014	4 5		
SCADA NETWORK TOPOLOGY SCADA NETWORK TOPOLOGY	DGSS-EL-0014 DGSS-EL-0014	6		
SCADA NETWORK TOPOLOGY	DGSS-EL-0014	7		
TIME SYNCHRONIZATION NETWORK TOPOLOGY	DGSS-EL-0015	1		
138 kV BREAKER B1 THREE-LINE DIAGRAM	DGSS-EL-0100	1	A	PROVIDED AFTER BID AWARD
138 kv sync cvt three-line diagram 138 kv bus pt three-line diagram	DGSS-EL-0101	1	Α	PROVIDED AFTER BID AWARD
138 kV BUS PT THREE-LINE DIAGRAM 138/24.9 kV TRANSFORMER T1 THREE-LINE DIAGRAM	DGSS-EL-0102 DGSS-EL-0103	1	A	PROVIDED AFTER BID AWARD
24.9 kV MAIN PT THREE-LINE DIAGRAM	DGSS-EL-0104	1	A	PROVIDED AFTER BID AWARD
STATION SERVICE THREE-LINE DIAGRAM	DGSS-EL-0105	1	A	PROVIDED AFTER BID AWARD
24.9 kV RECLOSER TD415 THREE-LINE DIAGRAM	DGSS-EL-0106	1	A	PROVIDED AFTER BID AWARD
24.9 kV RECLOSER TD425 THREE-LINE DIAGRAM 24.9 kV RECLOSER TD435 THREE-LINE DIAGRAM	DGSS-EL-0107 DGSS-EL-0108	1	Α	PROVIDED AFTER BID AWARD
ZT.J KV NEGEOJEN IDTJJ HINEETLINE DIAGRAM	UGSS-EL-UIUX	I	A	I NOVIDLD AFIEK BID AWAKD
125 VDC DC PANEL #1 SCHEMATIC & SCHEDULE	DGSS-EL-2000	1	A	PROVIDED AFTER BID AWARD
125 VDC DC PANEL #2 SCHEMATIC & SCHEDULE	DGSS-EL-2000	2	A	PROVIDED AFTER BID AWARD
240 VAC AC PANEL #1 SCHEMATIC & SCHEDULE	DGSS-EL-2001	1	A	PROVIDED AFTER BID AWARD
240 VAC AC PANEL #2 SCHEMATIC & SCHEDULE 2488A, 2620A, 2730MA & 2730MB DC SCHEMATIC	DGSS-EL-2001 DGSS-EL-2002	2	A	PROVIDED AFTER BID AWARD
735-HLY1 DC SCHEMATIC	DGSS-EL-2002 DGSS-EL-2003	1	A	PROVIDED AFTER BID AWARD
735-HLY2 DC SCHEMATIC	DGSS-EL-2004	1	A	PROVIDED AFTER BID AWARD
3530A DC SCHEMATIC	DGSS-EL-2005	1	A	PROVIDED AFTER BID AWARD
2240A DC SCHEMATIC	DGSS-EL-2006	1	A	PROVIDED AFTER BID AWARD
2411A DC SCHEMATIC 421–HLY DC SCHEMATIC	DGSS-EL-2007 DGSS-EL-2008	1	A A	PROVIDED AFTER BID AWARD
311L-HLY DC SCHEMATIC	DGSS-EL-2008	1	A .	PROVIDED AFTER BID AWARD
DFR1 DC SCHEMATIC	DGSS-EL-2010	1	A	PROVIDED AFTER BID AWARD
421-TLND DC SCHEMATIC	DGSS-EL-2011	1	A	PROVIDED AFTER BID AWARD
311L-TLND DC SCHEMATIC	DGSS-EL-2012	1	A	PROVIDED AFTER BID AWARD
487E-T1 DC SCHEMATIC 86T1 DC SCHEMATIC	DGSS-EL-2013 DGSS-EL-2014	1	A	PROVIDED AFTER BID AWARD
735-T1-1 DC SCHEMATIC	DGSS-EL-2014 DGSS-EL-2015	1	A	PROVIDED AFTER BID AWARD
735-T1-2 DC SCHEMATIC	DGSS-EL-2016	1	A	PROVIDED AFTER BID AWARD
451-TD325 DC SCHEMATIC	DGSS-EL-2017	1	A	PROVIDED AFTER BID AWARD
451-TD415 DC SCHEMATIC	DGSS-EL-2018	1	A	PROVIDED AFTER BID AWARD
451-TD425 DC SCHEMATIC 451-TD435 DC SCHEMATIC	DGSS-EL-2019 DGSS-EL-2020	1	A	PROVIDED AFTER BID AWARD
2730MC & 2725A DC SCHEMATIC	DGSS-EL-2020	1	A	PROVIDED AFTER BID AWARD
3530B DC SCHEMATIC	DGSS-EL-2022	1	A	PROVIDED AFTER BID AWARD
2240B DC SCHEMATIC	DGSS-EL-2023	1	A	PROVIDED AFTER BID AWARD
2523A DC SCHEMATIC	DGSS-EL-2024	1	A	PROVIDED AFTER BID AWARD
125 VDC BATTERY CHARGER AC & DC SCHEMATIC MS2000A AC & DC SCHEMATIC	DGSS-EL-2025 DGSS-EL-2026	1	A	PROVIDED AFTER BID AWARD
HYDROGEN DETECTION AC SYSTEM SCHEMATIC	DGSS-EL-2027	1	A	PROVIDED AFTER BID AWARD
FIRE DETECTION SYSTEM AC SCHEMATIC	DGSS-EL-2028	1	A	PROVIDED AFTER BID AWARD
HVAC SYSTEM SCHEMATIC	DGSS-EL-2029	1	A	PROVIDED AFTER BID AWARD
HVAC SYSTEM SCHEMATIC NTERIOR LIGHT & RECEPTACLE AC SCHEMATIC	DGSS-EL-2029 DGSS-EL-2030	2	A	PROVIDED AFTER BID AWARD
EXTERIOR LIGHT & RECEPTACLE AC SCHEMATIC	DGSS-EL-2030 DGSS-EL-2031	1	A A	PROVIDED AFTER BID AWARD
RELAY PANELS LIGHT & RECEPTACLE AC SCHEMATIC	DGSS-EL-2032	1	A	PROVIDED AFTER BID AWARD
MAINTENANCE LIGHTING AC SCHEMATIC	DGSS-EL-2500	1	A	PROVIDED AFTER BID AWARD
138 kV BREAKER B1 AC & DC SCHEMATIC	DGSS-EL-2501	1	A	PROVIDED AFTER BID AWARD
138 kV MOTOR OPERATED SWITCH DG-138-2S3 AC & DC SCHEMATIC	DGSS-EL-2502	1	A	PROVIDED AFTER BID AWARD
138 kV CIRCUIT SWITCHER TD200 AC & DC SCHEMATIC	DGSS-EL-2503	1	A	PROVIDED AFTER BID AWARD
138 kv transformer t1 ac & DC schematic	DGSS-EL-2504		А	PROVIDED AFTER BID AWARD

-3.2	
DATE	
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ENG. STAMP

Matanuska Electric Association



163 East Industrial Way Palmer, AK 99645 (907) 761-9300 WWW.MEA.COOP

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBST CONTROL ENCLOSURE AND TITLE & DRAWING
			REF DWG(S):	
			DRAWING NO.:	DGSS-PR-0000

CUEET	1	6

dgss-pr-0000_1.

TATION RELAY PANELS INDEX

MATANUSKA ELECTRIC ASSOCIATION, INC. ROBERT DOUGLAS SUBSTATION 24060 WEST WILLOW FISHHOOK ROAD, WILLOW, ALASKA WORK ORDER NO. EN16-3.2

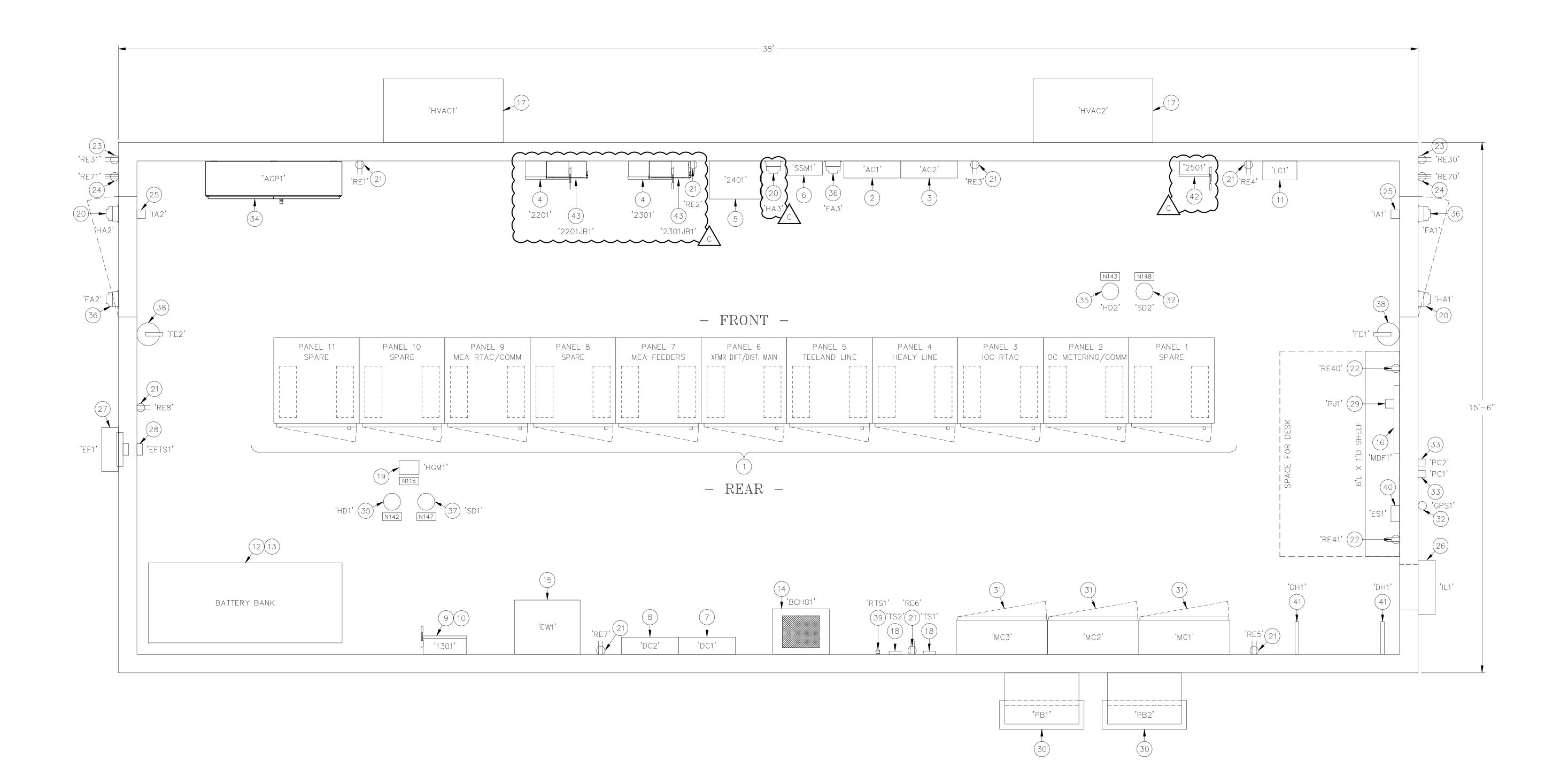
	DRAWING INDE	ΣX		
TITLE	DRAWING NUMBER	SHEET	REVISION	NOTES
PANEL 1 WIRING DIAGRAM	DGSS-EL-3000	1	A	PROVIDED AFTER BID AWARD
PANEL 2 WIRING DIAGRAM	DGSS-EL-3001	1	A	PROVIDED AFTER BID AWARD
PANEL 3 WIRING DIAGRAM PANEL 4 WIRING DIAGRAM	DGSS-EL-3002 DGSS-EL-3003	1	A	PROVIDED AFTER BID AWARD
PANEL 5 WIRING DIAGRAM	DGSS-EL-3003	1	A	PROVIDED AFTER BID AWARD
PANEL 6 WIRING DIAGRAM	DGSS-EL-3005	1	A	PROVIDED AFTER BID AWARD
PANEL 7 WIRING DIAGRAM	DGSS-EL-3006	1	A	PROVIDED AFTER BID AWARD
PANEL 8 WIRING DIAGRAM	DGSS-EL-3007	1	A	PROVIDED AFTER BID AWARD
PANEL 9 WIRING DIAGRAM PANEL 10 WIRING DIAGRAM	DGSS-EL-3008 DGSS-EL-3009	1	A	PROVIDED AFTER BID AWARD
PANEL 11 WIRING DIAGRAM	DGSS-EL-3010	1	A	PROVIDED AFTER BID AWARD
/ARSHALLING CABINET 1 WIRING DIAGRAM	DGSS-EL-3011	1	A	PROVIDED AFTER BID AWARD
ARSHALLING CABINET 2 WIRING DIAGRAM	DGSS-EL-3012	1	A	PROVIDED AFTER BID AWARD
ARSHALLING CABINET 3 WIRING DIAGRAM	DGSS-EL-3013	1	A	PROVIDED AFTER BID AWARD
AUXILIARY CONTROL PANEL 1 WIRING DIAGRAM	DGSS-EL-3014 DGSS-EL-3015	1	A	PROVIDED AFTER BID AWARD
DC PLANT WIRING DIAGRAM	DGSS-EL-3016	1	A	PROVIDED AFTER BID AWARD
AC CABLE & WIRE SCHEDULE	DGSS-EL-4000	1		
AC CABLE & WIRE SCHEDULE	DGSS-EL-4000	2		
C CABLE & WIRE SCHEDULE	DGSS-EL-4001 DGSS-EL-4002	1	B B	
PANEL ELEVATIONS PANELS 1-11	DGSS-EL-4500	1	A	
PANEL 1 ELEVATION	DGSS-EL-4501	1	A	
PANEL 1 NAMEPLATES PANEL 1 BILL OF MATERIAL	DGSS-EL-4501 DGSS-EL-4501	2 3	A	
PANEL I BILL OF MATERIAL	DGSS-EL-4501 DGSS-EL-4502	1	A A	
PANEL 2 NAMEPLATES	DGSS-EL-4502	2	B	
PANEL 2 BILL OF MATERIAL	DGSS-EL-4502	3	A	
PANEL 3 ELEVATION	DGSS-EL-4503	1	A	
PANEL 3 NAMEPLATES	DGSS-EL-4503	2		
PANEL 3 BILL OF MATERIAL PANEL 4 ELEVATION	DGSS-EL-4503 DGSS-EL-4504	3		
PANEL 4 NAMEPLATES	DGSS-EL-4504	2		
PANEL 4 BILL OF MATERIAL	DGSS-EL-4504	3	В	
PANEL 5 ELEVATION	DGSS-EL-4505	1		
PANEL 5 NAMEPLATES PANEL 5 BILL OF MATERIAL	DGSS-EL-4505 DGSS-EL-4505	2 3		
PANEL 6 ELEVATION	DGSS-EL-4506	1		
PANEL 6 NAMEPLATES	DGSS-EL-4506	2	B B	
PANEL 6 BILL OF MATERIAL	DGSS-EL-4506	3	С в	
PANEL 7 ELEVATION	DGSS-EL-4507	1		
PANEL 7 NAMEPLATES PANEL 7 BILL OF MATERIAL	DGSS-EL-4507 DGSS-EL-4507	2 3		
PANEL 8 ELEVATION	DGSS-EL-4508	1		
PANEL 8 NAMEPLATES	DGSS-EL-4508	2	В	
PANEL 8 BILL OF MATERIAL	DGSS-EL-4508	3		
PANEL 9 ELEVATION PANEL 9 NAMEPLATES	DGSS-EL-4509 DGSS-EL-4509	2		
PANEL 9 BILL OF MATERIAL	DGSS-EL-4509	3		
PANEL 10 ELEVATION	DGSS-EL-4510	1	A	
PANEL 10 NAMEPLATES	DGSS-EL-4510	2	A	
PANEL 10 BILL OF MATERIAL	DGSS-EL-4510	3	A	
PANEL 11 ELEVATION PANEL 11 NAMEPLATES	DGSS-EL-4511 DGSS-EL-4511	2	A A	
PANEL 11 BILL OF MATERIAL	DGSS-EL-4511	3	A	
ARSHALLING CABINET 1 ELEVATION	DGSS-EL-4512	1	A	
ARSHALLING CABINET 1 NAMEPLATES	DGSS-EL-4512	2	A	
ARSHALLING CABINET 2 ELEVATION ARSHALLING CABINET 2 NAMEPLATES	DGSS-EL-4513 DGSS-EL-4513	1 2	Α	
ARSHALLING CABINET 2 NAMEPLATES	DGSS-EL-4513 DGSS-EL-4514	<u> </u>	A A	
ARSHALLING CABINET 3 NAMEPLATES	DGSS-EL-4514	2	A	
AUXILIARY CONTROL PANEL 1 ELEVATION	DGSS-EL-4515	1	A	
AUXILIARY CONTROL PANEL 1 NAMEPLATES	DGSS-EL-4515	2	A	
		1		

PRO DES	ject: <u>Douglas control enclosure replacement</u> gner/project engineer: <u>TIM conrad/eps</u>	Job #: <u>N</u>	MEA W.O. EN16-3.2	ENG. STAMP	Matanuska Electric Association	NO. DRAWING NO./SHEET
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION ISSUED FOR BID REVIEW	DWN BY/DATE ker/09-19-2016	REVIEWED BY/DATE TCC/09-19-2016			
B	ISSUED FOR BID	KER/03-15-2017	TCC/03-15-2017		163 East Industrial Way	
					Palmer, AK 99645 (907) 761-9300	
					MATANUSKA ELECTRIC ASSOCIATION WWW.MEA.COOP	

DRAWING INDEX						
TITLE	DRAWING NUMBER	SHEET	REVISION	NOTES		

REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBST CONTROL ENCLOSURE AND TITLE & DRAWING
	REF DWG(S):	
	DRAWING NO.:	DGSS-PR-0000



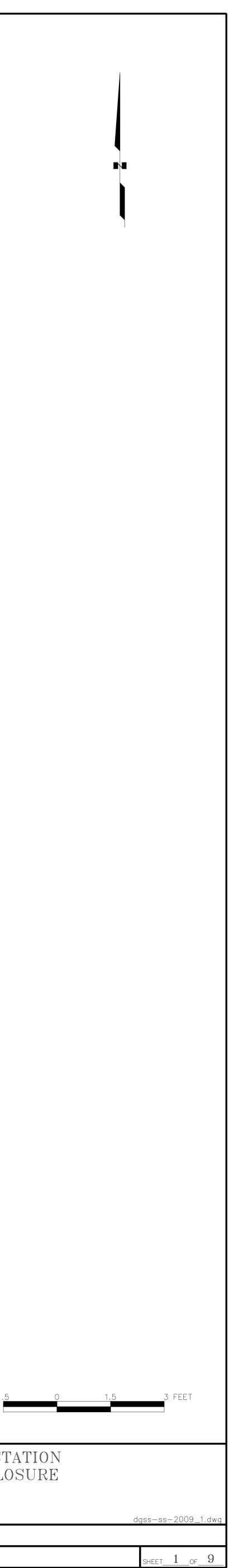


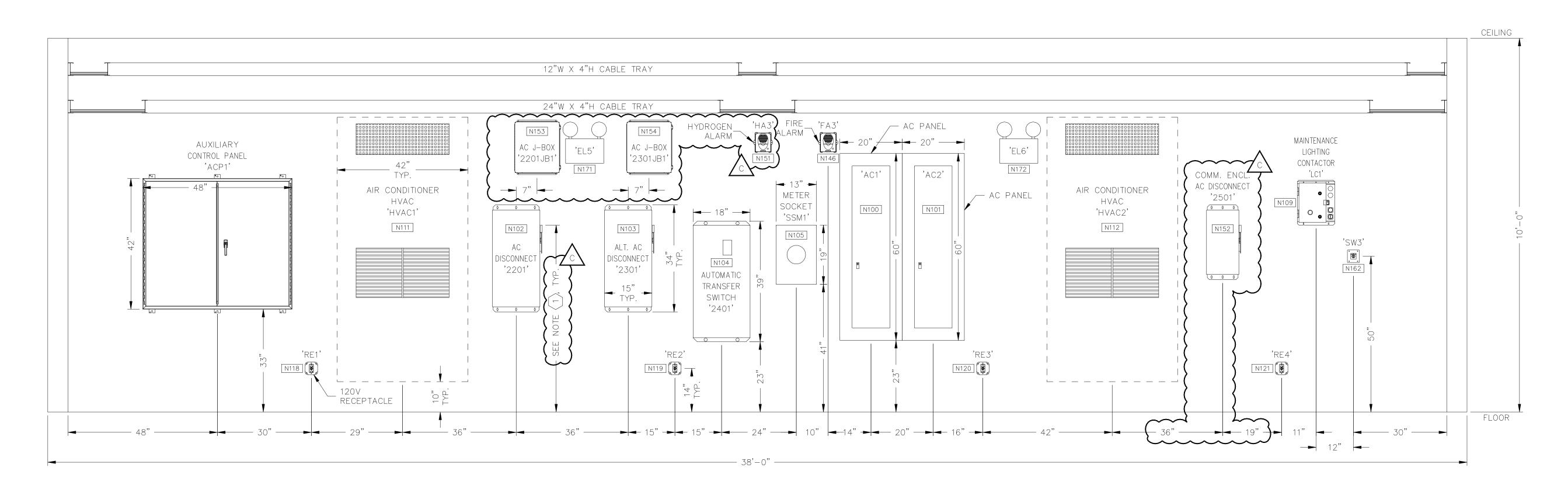
 $\frac{\text{NOTES:}}{1}$ see drawing reference 1 for bill of material.

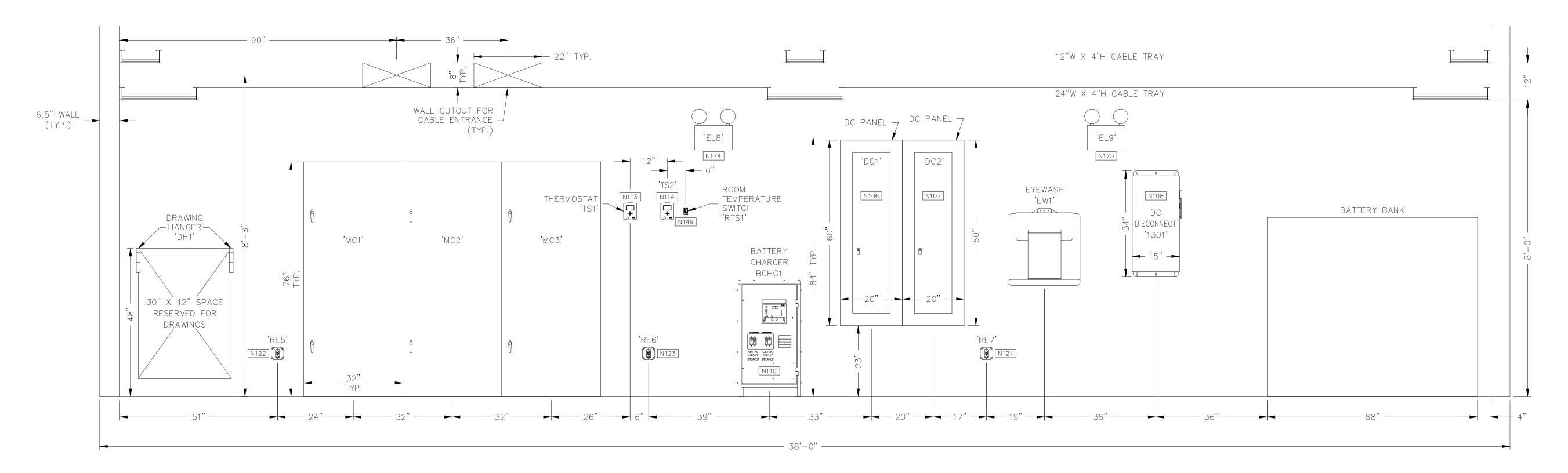
 $\langle 2 \rangle$ see drawing reference 2 for nameplates (|NXXX|).

PROJ	FCT: DOUGLAS CONTROL ENCLOSURE REPLACEMENT		
DESIC	GNER/PROJECT ENGINEER: <u>TIM CONRAD/EPS</u>	JOB #: <u>M</u>	EA W.O. EN16
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/[
А	ISSUED FOR DESIGN CONCEPT REVIEW	KER/07-01-2016	TCC/07-01-20
В	ISSUED FOR BID REVIEW	KER/09-19-2016	TCC/09-19-20
С	ISSUED FOR BID	KER/03-15-2017	TCC/03-15-20

	ENG. STAMP	Matanuska Electric Association	NO. DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBST
-3.2			1 DGSS-SS-2009/9	CONTROL ENCLOSURE BILL OF MATERIAL		
-3.2 Date			2 DGSS-SS-2009/8	CONTROL ENCLOSURE NAMEPLATES		CONTROL ENCLO
16						PLAN
16		163 East Industrial Way				
1/		Palmer, AK 99645			REF DWG(S):	
		(907) 761-9300				
		MATANUSKA ELECTRIC ASSOCIATION WWW.MEA.COOP			DRAWING NO.:	DGSS-SS-2009







<u>NOTES:</u>

(1) MAXIMUM HEIGHT OF 6' FROM FLOOR TO THE TOP OF OPERATING HANDLE WHEN IN THE UP POSITION.

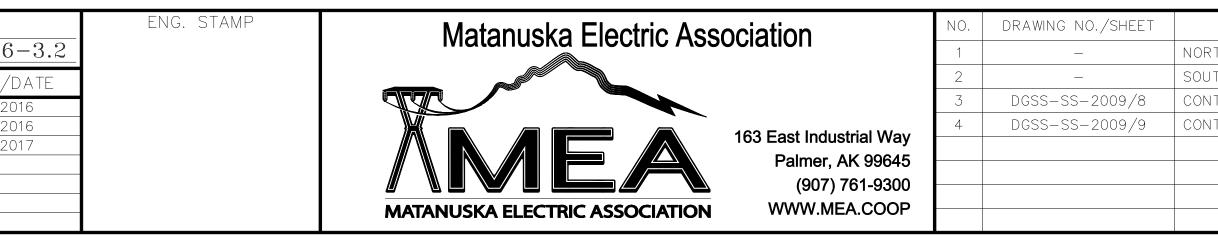
 $\langle 2 \rangle$ see drawing reference 3 for nameplates ([NXXX]).

 $\langle 3 \rangle$ see drawing reference 4 for bill of material.

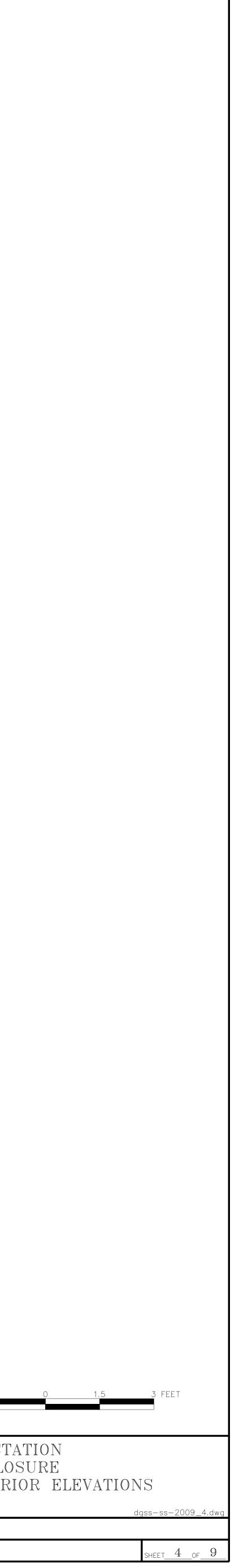
PROJ DESIC	ect: <u>Douglas control enclosure replacement</u> Gner/project engineer: <u>TIM conrad/eps</u>	Job #: <u>M</u>	EA W.O. EN16-
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/D
А	ISSUED FOR DESIGN CONCEPT REVIEW	KER/07-01-2016	TCC/07-01-20
В	ISSUED FOR BID REVIEW	KER/09-19-2016	TCC/09-19-20
С	ISSUED FOR BID	KER/03-15-2017	TCC/03-15-20

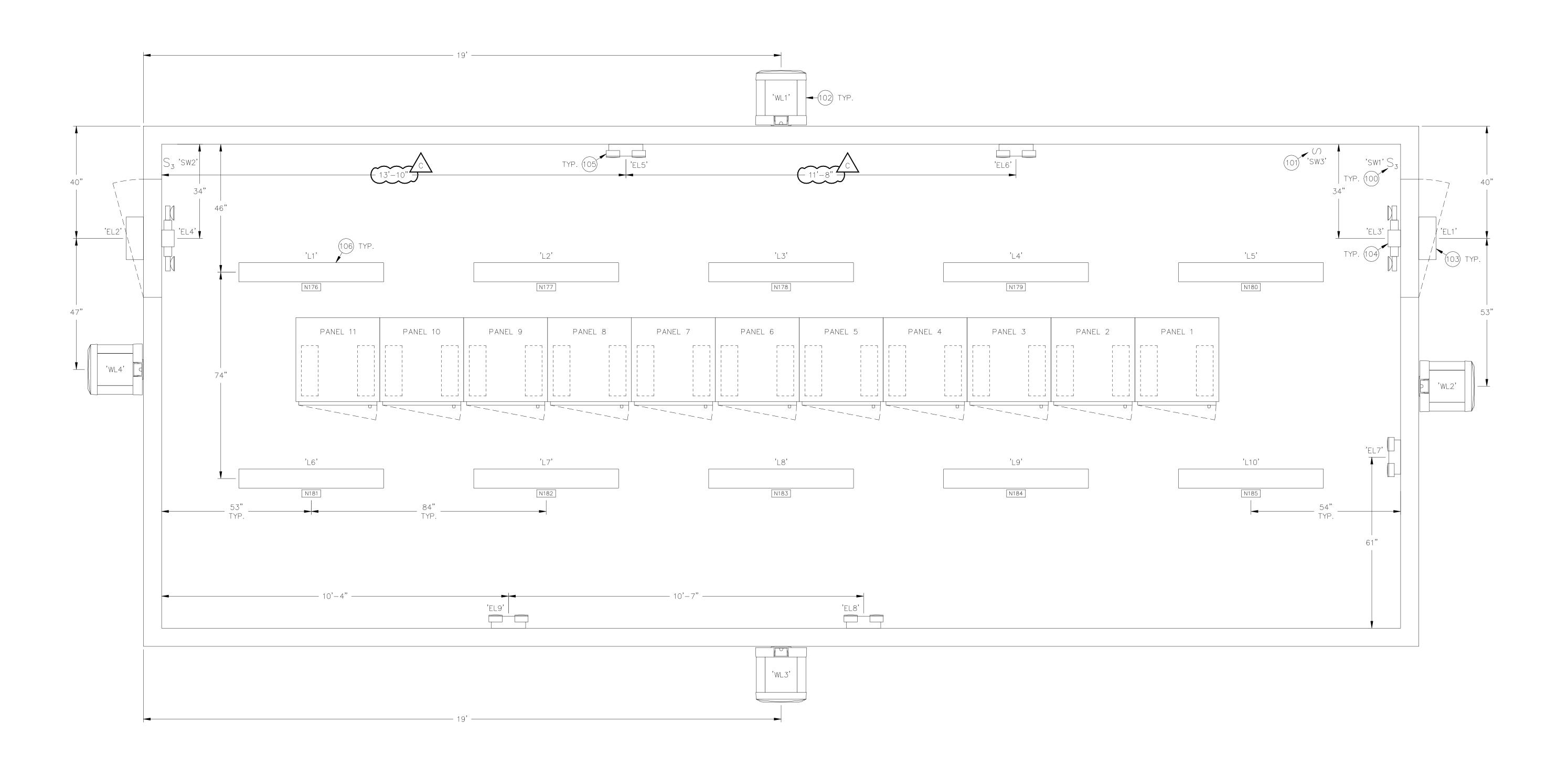
1 NORTH ELEVATION

2 SOUTH ELEVATION



REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBSTA
RTH ELEVATION		
UTH ELEVATION		CONTROL ENCLO
NTROL ENCLOSURE NAMEPLATES		NORTH AND SOUTH INTERI
NTROL ENCLOSURE BILL OF MATERIAL		
	REF DWG(S):	
	DRAWING NO.:	
		DGSS-SS-2009



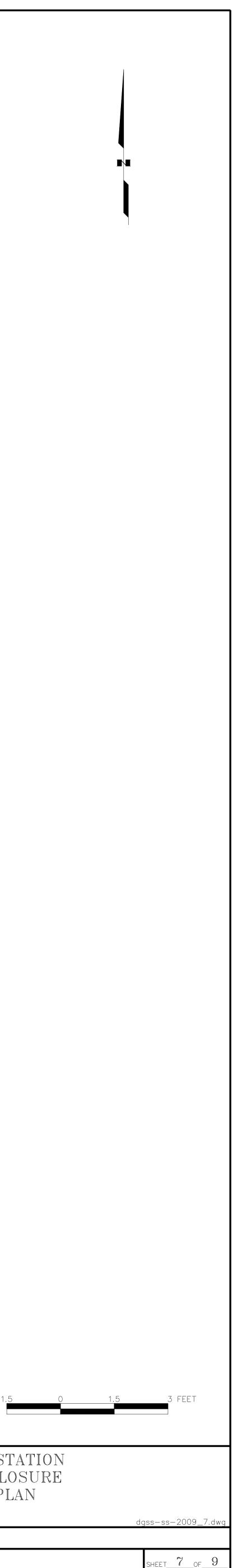


 $\frac{\text{NOTES:}}{1}$ see drawing reference 1 for bill of material.

 $\langle 2 \rangle$ see drawing reference 2 for nameplates ([NXXX]).

PROJ	ECT: DOUGLAS CONTROL ENCLOSURE REPLACEMENT		
DESIG	GNER/PROJECT ENGINEER: <u>TIM CONRAD/EPS</u>	Job #: <u>M</u>	IEA W.O. EN16
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/D
А	ISSUED FOR DESIGN CONCEPT REVIEW	KER/07-01-2016	TCC/07-01-20
В	ISSUED FOR BID REVIEW	KER/09-19-2016	TCC/09-19-20
С	ISSUED FOR BID	KER/03-15-2017	TCC/03-15-20

<u>–3.2</u> DATE	Matanuska Electric Association	,	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION CONTROL ENCLOSURE BILL OF MATERIAL CONTROL ENCLOSURE NAMEPLATES	DRAWING NAME:	DOUGLAS SUBST CONTROL ENCLO LIGHTING PL
16 17	Image: Non-SectionImage: Non-SectionImage			REF DWG(S):	DGSS-SS-2009



NAMEPLATE NUMBER	QTY	LINE 1 TEXT	LINE 2 TEXT	LINE 3 TEXT	NAMEPLATE SIZE HEIGHT x WIDTH (IN)	TEXT HEIGHT (IN)
N100	1	AC PANEL	AC1		1 x 3	1/4
N101	1	AC PANEL	AC2		1 x 3	1/4
N102	1	AC DISCONNECT	2201		1 x 4	1/4
N103	1	AC DISCONNECT	2301		1 x 4	1/4
N104	1	AUTO TRANSFER	SWITCH 2401		1 x 4	1/4
N105	1	STATION SERVICE	METER 1		1 x 4	1/4
N106	1	DC PANEL	DC1		1 x 3	1/4
N107	1	DC PANEL	DC2		1 x 3	1/4
N108	1	DC FUSED DISCONNECT	1301		1 x 5	1/4
N109	1	MAINTENANCE LIGHTING	CONTACTOR	LC1	1-1/2 x 5	1/4
N110	1	BATTERY CHARGER	BCHG1		1 x 4	1/4
N111	1	HVAC UNIT	HVAC1		1 x 3	1/4
N112	1	HVAC UNIT	HVAC2		1 x 3	1/4
N113	1	HVAC1 THERMOSTAT	TS1		1 x 4	1/4
N114	1	HVAC2 THERMOSTAT	TS2		1 x 4	1/4
N115	1	H2 GAS MON.	HGM1		1 x 3	1/4
N116	1	HYDROGEN ALARM	HA1		1 × 4	1/4
N117	1	HYDROGEN ALARM	HA2		1 x 4	1/4
N118	1	120 VAC	RECEPTACLE	RE1	1-1/2 × 3	1/4
N119	1	120 VAC	RECEPTACLE	RE2	1-1/2 × 3	1/4
N120	1	120 VAC	RECEPTACLE	RE3	$1-1/2 \times 3$	1/4
N121	1	120 VAC	RECEPTACLE	RE4	$1 - 1/2 \times 3$	1/4
N122	1	120 VAC	RECEPTACLE	RE5	1-1/2 x 3	1/4
N123	1	120 VAC	RECEPTACLE	RE6	$1-1/2 \times 3$	1/4
N124	1	120 VAC	RECEPTACLE	RE7	$1-1/2 \times 3$	1/4
N125	1	120 VAC	RECEPTACLE	RE8	1-1/2 x 3	1/4
N126	1	120 VAC	RECEPTACLE	RE40	1-1/2 x 3	1/4
N127	1	120 VAC	RECEPTACLE	RE41	1-1/2 x 3	1/4
N128	1	120 VAC	RECEPTACLE	RE30	$1-1/2 \times 3$	1/4
N129	1	120 VAC	RECEPTACLE	RE31	$1-1/2 \times 3$	1/4
N130	1	240 VAC	RECEPTACLE	RE70	1-1/2 × 3	1/4
N131	1	240 VAC	RECEPTACLE	RE71	1-1/2 x 3	1/4
N132	1	INTRUSION ALM	IA1		1 × 4	1/4
N133	1	INTRUSION ALM	IA2		1 x 4	1/4
N134	1	INTAKE LOUVER	IL1		1 x 4	1/4
N135	1	EXHAUST FAN	EF1		1 x 4	1/4
N136	1	EXHAUST SYSTEM	THERMOSTAT	EFTS1	$1-1/2 \times 4$	1/4
N137	1	TELEPHONE JACK	PJ1		1 × 4	1/4
N138	1	PULL BOX 1	PB1		1 x 4	1/4
N139	1	PULL BOX 2	PB2		1 x 4	1/4
N140	1	PHOTO CONTROL	PC1		1 × 4	1/4
N141	1	PHOTO CONTROL	PC2		1 × 4	1/4
N142	1	HEAT DETECTOR	HD1		1 × 4	1/4
N143	1	HEAT DETECTOR	HD2		1 x 4	1/4

 $\frac{\text{NOTES:}}{1}$ All nameplates shall be 1/16" thick minimum plastic.

 $\left< 4 \right>$ all text shall be "arial bold" font.

 $\langle 2 \rangle$ all nameplates shall have exterior rated high-tack adhesive.

 $\left< 6 \right>$ all text shall be upper case.

$\langle 3 \rangle$ ALL	NAMEPLATES	SHALL BE	E BLACK	SURFACE	WTH	WHITE	TEXT.

PROJ	ECT: DOUGLAS CONTROL ENCLOSURE REPLACEMENT		
DESIG	GNER/PROJECT ENGINEER: <u>TIM CONRAD/EPS</u>	Job #: <u>M</u>	EA W.O. EN16-
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/D
А	ISSUED FOR DESIGN CONCEPT REVIEW	KER/07-01-2016	TCC/07-01-201
В	ISSUED FOR BID REVIEW	KER/09-19-2016	TCC/09-19-201
С	ISSUED FOR BID	KER/03-15-2017	TCC/03-15-201

NAMEPLATE NUMBER	QTY	LINE 1 TEXT	LINE 2 TEXT	LINE 3 TEXT	NAMEPLATE SIZE HEIGHT x WIDTH (IN)	TEXT HEIGHT (IN)
N144	1	FIRE ALARM	FA1		1 x 3	1/4
N145	1	FIRE ALARM	FA2		1 x 3	1/4
N146	1	FIRE ALARM	FA3		1 x 3	1/4
N147	1	SMOKE DETECTOR	SD1		1 x 4	1/4
N148	1	SMOKE DETECTOR	SD2		1 x 4	1/4
N149	1	ROOM TEMPERATURE	SWITCH	RTS1	1-1/2 x 5	1/4
N150	1	ES1	ETHERNET SWITCH	SEL-2725	1 x 3	1/8
N151		HYDROGEN ALARM	НАЗ	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	1 × 4	1/4
N152) 1	COMM ENCLOSURE	AC DISCONNECT	2501	1-1/2 x 4	1/4
N153) 1	AC JUNCTION BOX	2201JB1		1-1/2 x 5	1/4
N154) 1	AC JUNCTION BOX	2301JB1		$1-1/2 \times 5$	1/4
N155						~~~~~
N156						
N157						
N158						
N159						
N160	1	INTERIOR LIGHT SW	SW1		1 × 4	1/4
N161	1	INTERIOR LIGHT SW	SW2		1 × 4	1/4
N162	1	EXTERIOR LIGHT SW	SW3		1 x 4	1/4
N163	1	WALLPACK LIGHT	WL1		1 x 4	1/4
N164	1	WALLPACK LIGHT	WL2		1 x 4	1/4
N165	1	WALLPACK LIGHT	WL3		1 x 4	1/4
N166	1	WALLPACK LIGHT	WL4		1 x 4	1/4
N167	1	EMERGENCY LIGHT	EL1		1 x 4	1/4
N168	1	EMERGENCY LIGHT	EL2		1 x 4	1/4
N169	1	EMERGENCY EXIT LIGHT	EL3		1 x 5	1/4
N170	1	EMERGENCY EXIT LIGHT	EL4		1 x 5	1/4
N171	1	EMERGENCY LIGHT	EL5		1 x 4	1/4
N172	1	EMERGENCY LIGHT	EL6		1 x 4	1/4
N173	1	EMERGENCY LIGHT	EL7		1 x 4	1/4
N174	1	EMERGENCY LIGHT	EL8		1 x 4	1/4
N175	1	EMERGENCY LIGHT	EL9		1 x 4	1/4
N176	1	CEILING LIGHT	LL9 L1		1 x 3	1/4
N177	1	CEILING LIGHT	L2		1 x 3	1/4
N178	1	CEILING LIGHT	LZ L3		1 x 3	1/4
N179	1	CEILING LIGHT	LS L4		1 x 3	
N180	1	CEILING LIGHT	L4 L5		1 x 3	1/4
N180	1	CEILING LIGHT	LO L6			1/4
					1 x 3	
N182	1	CEILING LIGHT	L7		1 x 3	1/4
N183	1	CEILING LIGHT	L8		1 x 3	1/4
N184	1	CEILING LIGHT	L9		1 x 3	1/4
N185	1	CEILING LIGHT	L10		1 x 3	1/4
N186						
N187						

 $\left< 7 \right>$ all dimensions shown in inches.

 $\langle 5 \rangle$ each line of text shall be centered on the nameplate.

6-3.2 /DATE 2016 2016 2017	ENG. STAMP	Matanuska Electric Association	NO. DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBST CONTROL ENCLO NAMEPLATE
		Palmer, AK 99645MATANUSKA ELECTRIC ASSOCIATIONPalmer, AK 99645WWW.MEA.COOP			REF DWG(S):	DGSS-SS-2009

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dgss-ss-2009_8.dwg

			BILL OF MATERIAL						BILL OF MATERIAL		
REF. NO.	UNIT	ESTIMATED QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	FURNISHED BY	REF. NO.	UNIT	ESTIMATED QUANTITY		MANUFACTURER/CATALOG NUMBER	FURNISHED BY
1	LOT	1	RELAY PANELS (PANEL 1 – PANEL 11)	SEE DRAWING REFERENCE 1	С	(21)	LOT	1 8	120V INTERIOR RECEPTACLE (RE1-RE8) RECEPTACLE	HUBBELL: KELLEMS/GFR5362SGI	С
2	EA	1	AC PANEL (AC1)	EATON/PRL2A (OAE) WITH: COPPER LUGS (MOD 8)	С			8	BOX COVER	RACO/239 (OAE) RACO/808C (OAE)	
				COPPER MAIN BUS (MOD 9) COPPER GROUND BAR (MOD 13) SERVICE ENTRANCE RATED (MOD 28) THROUGH-FEED LUGS (MOD 36)		22	LOT	1 2 2 2	120V INTERIOR RECEPTACLE (RE40 & RE41) RECEPTACLE BOX COVER	HUBBELL: KELLEMS/GFR5362SGR RACO/239 (OAE) RACO/808C (OAE)	С
				MAIN BREAKER SHALL BE TYPE FD BRANCH BREAKER SHALL BE TYPE GHB 42 CIRCUITS 65K AIC FULLY RATED		23	LOT	1 2 2	120V EXTERIOR RECEPTACLE (RE30 & RE31) RECEPTACLE W/P BOX	HUBBELL: KELLEMS/GFR5362SGI RACO/5386-0 (OAE)	С
				1-PHASE, 3-WIRE, 120/240 VAC, 225 AMP EZ BOX, EZB2060R EZ TRIM, EZT2060S		24)	LOT	2 1 2 2	COVER 240V EXTERIOR RECEPTACLE (RE70 & RE71) RECEPTACLE W/P BOX	KELLEMS/WP26V (OAE) HUBBELL: KELLEMS/HBL9430A RACO/5386-0 (OAE)	С
(3)	EA	1	AC PANEL (AC2)	EATON/PRL2A (OAE) WITH: COPPER LUGS (MOD 8) COPPER MAIN BUS (MOD 9)	С		EA	2	ÓVER INTRUSION ALARM	KELLÉMS/HBL9420 (OAE) ABB/LS35P41B11	
				COPPER GROUND BAR (MOD 13) SERVICE ENTRANCE RATED (MOD 28) SUB-FEED BREAKER (MOD 33)		(25) (26)	LOT	1	(IA1 & IA2) MOTORIZED DAMPER INTAKE LOUVER (IL1)	(OAE) Dayton (OAE):	С С
				MAIN BREAKER SHALL BE TYPE FD SUB-FEED BREAKER SHALL BE TYPE FD				1	INTAKE LOUVER EXTERIOR ARCTIC HOOD VENT	DAYTON/4C560 CUSTOM BUILT (SFA)	
				BRANCH BREAKER SHALL BE TYPE GHB 42 CIRCUITS 65K AIC FULLY RATED		27	LOT	1 1 1	EXHAUST FAN (EF1) EXHAUST FAN EXTERIOR ARCTIC HOOD VENT	DAYTON (OAE): DAYTON/1HLA2 CUSTOM BUILT (SFA)	С
				1-PHASE, 3-WIRE, 120/240 VAC, 225 AMP EZ BOX, EZB2060R EZ TRIM, EZT2060S		28	EA	1	EXHAUST FAN COOLING THERMOSTAT (EFTS1)	DAYTON/2E869 (OAE)	С
4	LOT	1 2	AC DISCONNECT (2201 & 2301) DISCONNECT	EATON (OAE): EATON/DH264UDKWCLGN	С	29	LOT	1 1 1	WALL TELEPHONE JACK (PJ1) JACK BOX	HUBBELL: KELLEMS/NS726SS RACO/660 (OAE)	С
5	EA	2	POWER TERMINAL BLOCK, GROUND	EATON/CH16204-1 EATON/AT-C-3-C3-X-2-0200-W-J-U (0AE) WITH:	С	30	EA	2	NEMA 3R WEATHER-PROOF CABLE ENTRY BOX (PB1 & PB2)	TBD BY CONTROL ENCLOSURE MFGR (SFA)	С
6	LOT	1	(2401) METER SOCKET (SSM1)	AUTO/MANUAL SELECTOR SWITCH (MOD 29G) EATON (OAE):	С	31)	EA	3	MARSHALLING CABINET (MC1 – MC3)	SEE DRAWING REFERENCE 2	С
		1 1 1	METER SOCKET POWER TERMINAL BLOCK, NEUTRAL POWER TERMINAL BLOCK, GROUND	EATON/UTH4213CCH EATON/CH16303-1 EATON/CH16204-1		32	LOT	1	GPS ANTENNA, COMPLETE KIT (GPS1) GPS/GLONASS ANTENNA	SCHWEITZER ENGINEEERING LABORATORIES: SCHWEITZER/SEL-9524B	С
7	EA	1	DC PANEL (DC1)	EATON/PRL2A (OAE) WITH: COPPER LUGS (MOD 8) COPPER MAIN BUS (MOD 9)	С			1 1 1 1	50FT LMR-400 CABLE GAS TUBE COAXIAL SURGE PROTECTOR AND MOUNTING KIT 25FT LMR-400 CABLE ANTENNA PIPE-MOUNTING KIT	SCHWEITZER/SEL-C961-050 SCHWEITZER/915900139 SCHWEITZER/SEL-C961-025 SCHWEITZER/915900043	
				COPPER GROUND BAR (MOD 13) THROUGH-FEED LUGS (MOD 36) MAIN BREAKER SHALL BE TYPE HFD BRANCH BREAKER SHALL BE TYPE GHB 42 CIRCUITS		(33)	LOT	1 2 2 2	PHOTO CONTROL (PC1 & PC2) PHOTOCELL, NEMA, LOCKING-TYPE, THERMAL-TYPE MOUNTING BRACKET SINGLE GANG W/P BOX	INTERMATIC: INTERMATIC/LC4536C INTERMATIC/K122 HUBBELL-RACO/5386-0 (OAE)	С
				14K AIC FULLY RATED 2-WIRE, 125 VDC, 225 AMP EZ BOX, EZB2060R		(34)	EA	2	SINGLE GANG W/P BLANK WALLPLATE	HUBBELL-RACO/5173-0 (OAE) SEE DRAWING REFERENCE 3	C
8	EA	1	DC PANEL	EZ TRIM, EZT2060S EATON/PRL2A (OAE) WITH:	С	(35)	LOT	1 2	(ACP1) HEAT DETECTOR (HD1 & HD2) HEAT DETECTOR	POTTER: POTTER/CR-200W	С
			(DC2)	COPPER LUGS (MOD 8) COPPER MAIN BUS (MOD 9) COPPER GROUND BAR (MOD 13)		(36)	LOT	2	OCTAGON BOX FIRE ALARM (FA1 - FA3)	HUBBELL-RACO/167 (OAE) POTTER: POTTER/SH-120R	С
				THROUGH—FEED LUGS (MOD 36) MAIN BREAKER SHALL BE TYPE HFD BRANCH BREAKER SHALL BE TYPE GHB 42 CIRCUITS		(37)	LOT	3	HORN/STROBE BACK BOX PHOTOELECTRIC SMOKE DETECTOR (SD1 & SD2)	POTTER/BBX-5 GENTEX:	С
				14K AIC FULLY RATED 2-WIRE, 125 VDC, 225 AMP EZ BOX, EZB2060R EZ TRIM, EZT2060S		(38)	LOT	2 2 1 2	SMOKE DETECTOR OCTAGON BOX FIRE EXTINGUISHER, CLEANGAURD, 25 LB. (FE1 & FE2) FIRE EXTINGUISHER	GENTEX/8100PY/908-1240-002 HUBBELL-RACO/167 (OAE) ANSUL: ANSUL/FE13/429022	С
9	EA	1	DC FUSED DISCONNECT (1301)	EATON/DH224NDKW5CLG (OAE)	С		LOT	2	MOUNTING BRACKET	ANSUL/30937 HOFFMAN:	
(10)	EA	2	DUAL-ELEMENT TIME-DELAY FUSE	BUSSMANN/FRN-R-150 (OAE)	С	39	LUT	1	ROOM TEMPERATURE SWITCH (RTS1) TEMPERATURE CONTROL SWITCH, NORMALLY OPEN BOX	HOFFMAN/ATEMNO RACO/239 (OAE)	C
11	EA	1	LIGHTING CONTACTOR (LC1)	EATON/ECC04C8ABA-S3P23A29 (OAE)	С	(40)	EA	1	COVER, BLANK ETHERNET SWITCH (ES1)	RACO/752 (OAE) SCHWEITZER/2725S22X0	С
12	EA	2	LOW VOLTAGE BLANKET	SALISBURY/1212YLV (OAE)	С	(41)	LOT	1	DRAWING HANGER (DH1) DROP/LIFT WALL RACK	SAFCO: SAFCO/5030	С
13	LOT	1 30 1	BATTERY BANK ASSEMBLY 2DDm85–13 (TWO CELLS IN STEEL CAN) ACCESSORIES – SMART PART NUMBER	ENERSYS (OAE) ENERSYS/868403-CW ENERSYS/S0608613361006TT	С	(42)	LOT		AC DISCONNECT (2501) DISCONNECT	SAFCO/50036 EATON (OAE): EATON/DH263UDKWCLGN	C
14	EA	1	SPILL CONTAINMENT, HAWK FM SYSTEM, 28" WIDE X 68" LONG BATTERY CHARGER (BCHG1)	ENERSYS/HAWK 28-68 FM ENERSYS/TYPE AT10.1, 1-PHASE (OAE) AT10 GROUP 2 ORDER NO.	С	(43)	> Lot	1	POWER TERMINAL BLOCK, GROUNDAC JUNCTION BOX (2201JB1 & 2301JB1)	EATON/CH16204-1 HOFFMAN:	С
15	LOT	1	EYEWASH (EW1)	ATTO GROOT 2 ORDER NO. ATTO-130-75-E-240-H-X-H-X-A-G-X-X-X BRADLEY (OAE):	С	43	> >	2 2 2	WALL MOUNT ENCLOSURE, TYPE 12 Enclosure sub-panel, conductive steel power terminal block, 3-pole	HOFFMAN/A1614CHQR HOFFMAN/A16P14G MARATHON/1443557	
		1	EYEWASH REFILL KIT	BRADLEY/S19-921 BRADLEY/S19-899			> >	2 2 2	COVER, 3-POLE Power terminal block, 1-pole cover, 1-pole	MARATHON/CH1443 MARATHON/1441557 MARATHON/CH1441	
16	LOT	1	MAIN DISTRIBUTION FRAME (MDF1) HVAC (HVAC1 & HVAC2)	READYSPEC/RB-A2424W (OAE) BARD (OAE):	С	(44)	\frown	~~~~~		,	~~~~
17)		2	HVÁC UNIT, WALL MÓUNT – 4 TON CAPACITY – 230 VAC, 60 HZ, 1–PHASE (DUAL CIRCUIT) – 15 KW HEATER – BLANK–OFF PLATE – 2" PLEATED FILTER – BUCKEYE GRAY	BARD/W48AA-A15BP4XXJ (SEE NOTE 2)) C		(45) (46) (47)					
		2	– MODULES: HPC, LPC, CCM, LAC, ALR RETURN GRILLE SUPPLY GRILLE	BARD/RG-5 BARD/SG-5		(48)					
18	EA	2	PROGRAMMABLE THERMOSTAT (TS1 & TS2)	BARD (OAE): BARD/CS9B-THO	С	(49)					
19	LOT	1	HYDROGEN GAS MONITOR (HGM1) HYDROGEN GAS DETECTOR	ENERSYS: ENERSYS/801550-DR, WITH 120 VAC POWER SUPPLY, DUAL RELAY, FORM C CONTACT & BUZZER	С	50					
20	LOT	$ \begin{array}{c c} 1 \\ 1 \\ 3 \\ 3 \\ 3 \\ 1 \end{array} $	JUNCTION BOX HYDROGEN ALARM (HA1 - HA3) HORN/STROBE BACK BOX	ENERSYS/801550-BOX POTTER (OAE): POTTER/SH-120W POTTER/BBX-5	С						

<u>NOTES:</u>

BILL OF MATERIAL QUANTITIES ARE ESTIMATED. ACTUAL QUANTITIES SHALL BE VERIFIED BY THE CONTRACTOR.
 SWITCHGEAR MANUFACTURER TO CERTIFY HEATING & C COOLING CAPACITY.

PROJ DESI(ect: <u>Douglas control enclosure replacement</u> gner/project engineer: <u>TIM conrad/eps</u>	Job #: <u>N</u>	IEA W.O. EN16-3.2
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/DATE
А	ISSUED FOR DESIGN CONCEPT REVIEW	KER/07-01-2016	TCC/07-01-2016
В	ISSUED FOR BID REVIEW	KER/09-19-2016	TCC/09-19-2016
С	ISSUED FOR BID	KER/03-15-2017	TCC/03-15-2017

ENG. STAMP

Matanuska Electric Association



163 East Industrial Way Palmer, AK 99645 (907) 761-9300 WWW.MEA.COOP

NO.	DRAWING NO./SHEET	
1	DGSS-EL-4500	PAN
2	DGSS-EL-4512 THRU 4514	MAR
3	DGSS-EL-4515	PAN

	BILL OF MATERIAL				
REF. NO.	UNIT	ESTIMATED QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	FURNISHED BY
100	LOT	1 2 2 2	LIGHT SWITCH, THREE WAY (SW1-SW2) SWITCH BOX COVER	HUBBELL: KELLEMS/HBL1223I RACO/239 (OAE) RACO/800C (OAE)	С
(101)	LOT	1 1 1 1	LIGHT SWITCH, HOA, 2-POLE (SW3) HOA SWITCH, 2 NO CONTACTS LEGEND PLATE, ON-OFF-AUTO HOA SWITCH ENCLOSURE	EATON: EATON/E34VHBK1-Y1 EATON/E34SP51 EATON/E34N11	С
(102)	EA	4	EXTERIOR LED WALL PACK LIGHT (WL1-WL4)	CREE/SEC-EDG-4M-WM-06-E-UL-SV-350	С
(103)	EA	2	EXTERIOR EMERGENCY LIGHT (EL1-EL2)	COOPER SURE-LITE/UEL1SD	С
(104)	LOT	1 2 2	INTERIOR EMERGENCY EXIT LIGHT (EL3-EL4) EMERGENCY EXIT LIGHT, DUAL HEAD WIRE GUARD	COOPER SURE-LITE: COOPER SURE-LITE/LPXH7DH COOPER SURE-LITE/WG12	С
(105)	EA	5	INTERIOR EMERGENCY LIGHT (EL5-EL9)	COOPER SURE-LITE/HR121173BRWH	С
(106)	EA	10	INTERIOR CEILING LIGHT (L1-L10)	CREE/WS4-50L-50K-10V-FD	С

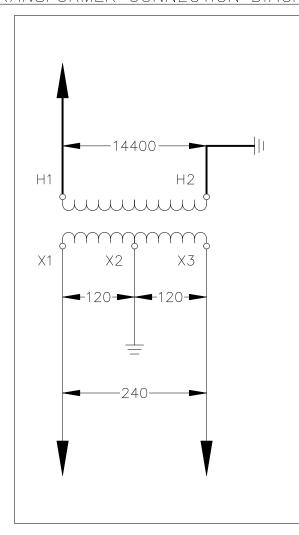
BILL OF MATERIAL					
REF. NO.	UNIT	ESTIMATED QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	FURNISHED BY
(120)	EA	7	CABLE TRAY, STRAIGHT, 24" WIDTH, 12' LENGTH	COOPER B-LINE/24A09-24-144 (OAE)	С
(121)	EA	10	CABLE TRAY, STRAIGHT, 12" WIDTH, 12' LENGTH	COOPER B-LINE/24A09-12-144 (OAE)	С
(122)	EA	4	HORIZONTAL TEE, 24" WIDTH	COOPER B-LINE/4A-24-HT12 (OAE)	С
(123)	EA	4	HORIZONTAL TEE, 12" WIDTH	COOPER B-LINE/4A-12-HT12 (OAE)	С
(124)	EA	4	HORIZONTAL BEND, 90°, 24" WIDTH	COOPER B-LINE/4A-24-90HB12 (OAE)	С
(125)	EA	4	HORIZONTAL BEND, 90°, 12" WIDTH	COOPER B-LINE/4A-12-90HB12 (OAE)	С
(126)	EA	1	HORIZONTAL CROSS, 24" WIDTH	COOPER B-LINE/4A-24-HX12 (OAE)	С
(127)	EA	1	HORIZONTAL CROSS, 12" WIDTH	COOPER B-LINE/4A-12-HX12 (OAE)	С
(128)	LOT	1	TRAPEZE SUPPORT KIT, 24" TRAY	COOPER B-LINE/9P-5524-22SH (OAE)	С
(129)	LOT	1	TRAPEZE SUPPORT KIT, 12" TRAY	COOPER B-LINE/9P-5512-22SH	С
(130)	LOT	1	HANGER ROD CLAMP	COOPER B-LINE/9ZN-5324 (OAE)	С
(131)	LOT	1	HEX NUT, 1/2"-13	COOPER B-LINE/ 1/2" HN (OAE)	С
(132)	LOT	1	ALL THREADED ROD, 1/2"-13	COOPER B-LINE/ATR 1/2" X REQ'D LENGTH (OAE)	С
(133)	LOT	1	WEDGE LOCK SPLICE PLATE	COOPER B-LINE/9A-1004 (OAE)	С
(134)	LOT	1	EXPANSION SPLICE PLATE	COOPER B-LINE/9A-1014 (OAE)	С
(135)	LOT	1	BONDING JUMPER, 4/0	COOPER B-LINE/99-40 (OAE)	С
136	LOT	1	GROUNDING CLAMP	COOPER B-LINE/9A-2130 (OAE)	С
(137)	LOT	1	TWO HOLE CORNER ANGLE	COOPER B-LINE/B230-AL (OAE)	С
(138)	LF	AS REQ'D	4/0 STRANDED BARE COPPER	HOUSTON WIRE & CABLE/ HW000 40101 (OAE)	С

REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBSTA
NEL ELEVATIONS PANELS 1-11		
RSHALLING CABINET ELEVATIONS CABINETS 1 THRU 3		CONTROL ENCLOS
NEL ELEVATIONS AUXILIARY CONTROL PANEL 1		BILL OF MATER
	REF DWG(S):	
	DRAWING NO.:	
		DGSS-SS-2009

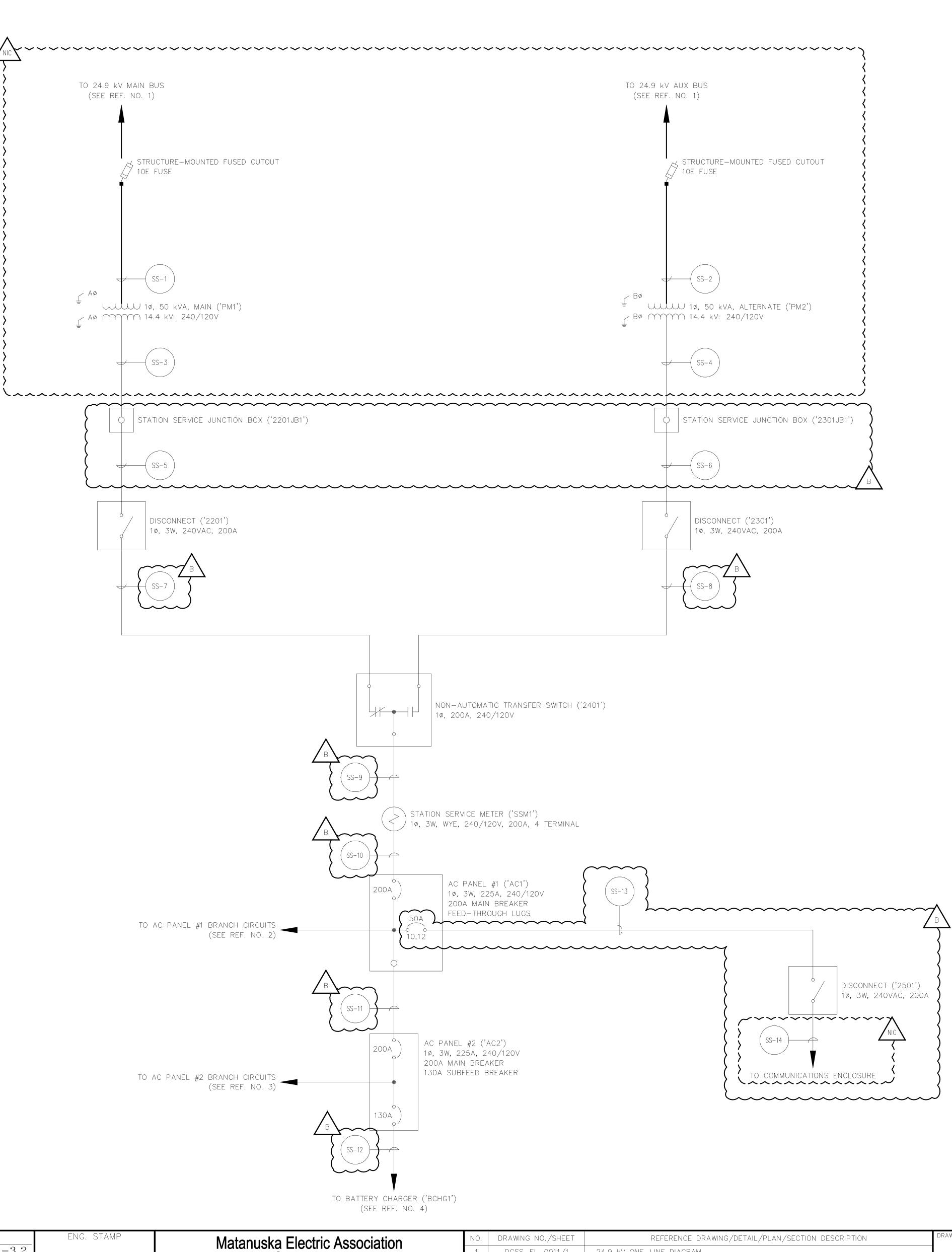
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PROJ	ect: <u>Douglas control enclosure replacement</u> Gner/project engineer: <u>TIM conrad/eps</u>	100 <i>II</i> . N	IEA W.O. EN16-3.2
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION		REVIEWED BY/DATE
A	ISSUED FOR BID REVIEW	MSG/09-19-2016	TCC/09-19-2016
В	ISSUED FOR BID	MSG/03-15-2017	TCC/03-15-2017
			<u> </u>



TRANSFORMER CONNECTION DIAGRAM



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MATANUSKA ELECTRIC ASSOCIATION

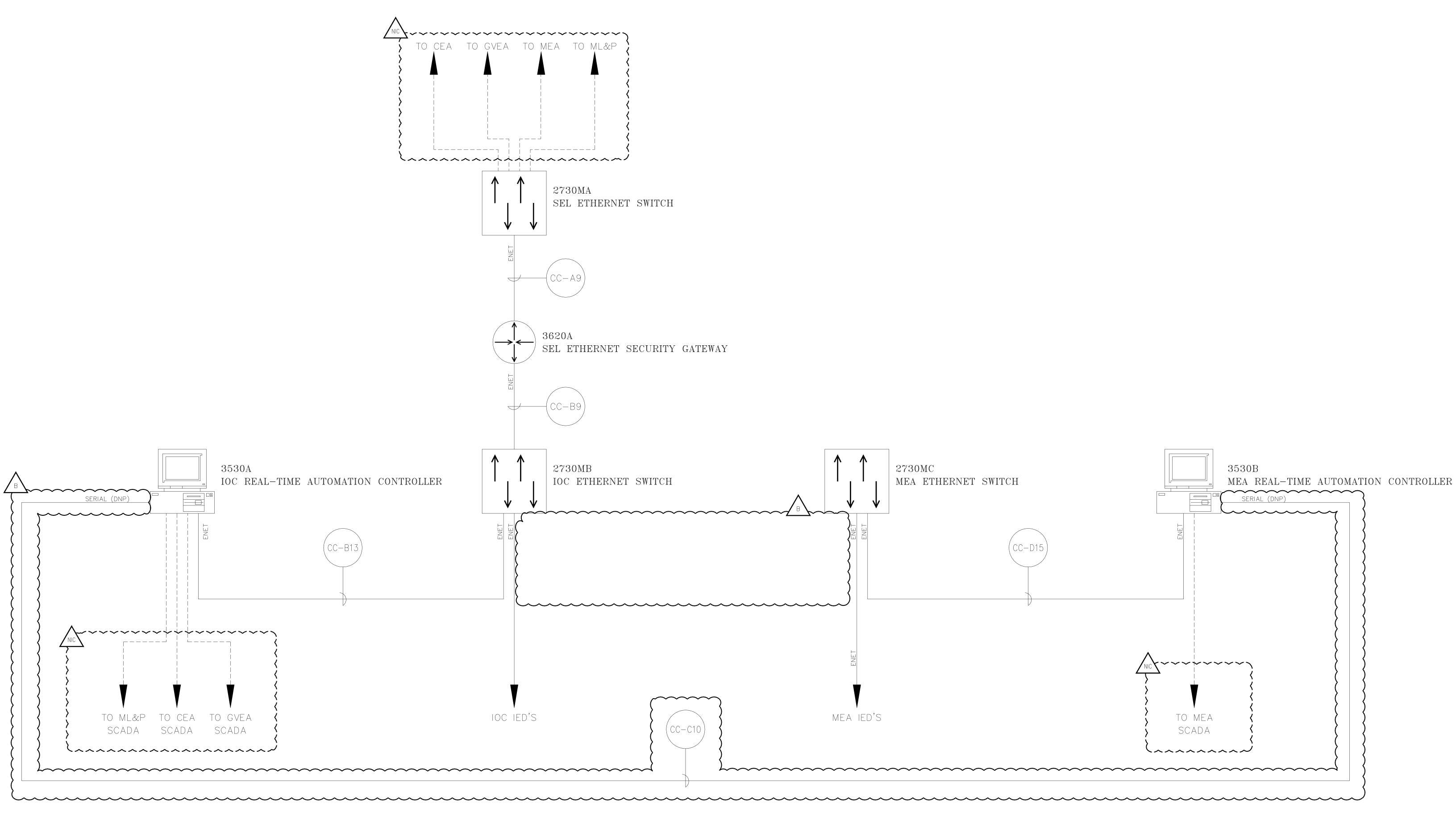
163 East Industrial Way Palmer, AK 99645 (907) 761-9300 WWW.MEA.COOP

NO. 1 2 3 4	DRAWING NO./SHEET DGSS-EL-0011/1 DGSS-EL-2001/1 DGSS-EL-2001/2 DGSS-EL-0013/1	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION 24.9 kV ONE-LINE DIAGRAM 240 VAC AC PANEL #1 SCHEMATIC & SCHEDULE 240 VAC AC PANEL #2 SCHEMATIC & SCHEDULE 125 VDC ONE-LINE DIAGRAM	DRAWING NAME:	DOUGLAS SUBSTA Station Servi One-Line Diag
			REF DWG(S):	
			DRAWING NO.:	DGSS-EL-0012



dgss-el-0012_1.dwg

GHEET <u>1</u> OF <u>1</u>



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<u>LEGEND:</u>		~~~~~
ADDR	COMMUNICATION ADDRESS	
ASCII	AMERICAN STANDARD CODE FOR INFORMATION INTERCHANGE	
BNC	BAYONET NEILL-CONCELMAN CONNECTOR	
DEMOD	DEMODULATED IRIG-B (SAME AS UNMOD)	
DNP3	DISTRIBUTED NETWORK PROTOCOL	
EIA	ELECTRONICS INDUSTRY ASSOCIATION	
ENET	10BASE-T/100BASE-TX ETHERNET (802.3/802.3u)	
FB	SEL FAST BINARY PROTOCOL	
FNET	10BASE-FX/100BASE-FX ETHERNET (802.3z)	
GPS	GLOBAL POSITIONING SYSTEM	
IDLC	ISDN DATA LINK CONTROL PROTOCOL	
ION	POWERLOGIC ION PROTOCOL	
	INTERNET PROTOCOL	
IRIG-B	INTER-RANGE INSTRUMENTATION GROUP MOD B	
ISDN	INTEGRATED SERVICE DIGITAL NETWORK	
MB	SEL MIRRORED BITS PROTOCOL	
MOD	MODULATED IRIG-B	
NTP	NETWORK TIME PROTOCOL	
P#	PORT NUMBER	
PPS	PULSE PER SECOND	
RG	RADIO GUIDE	
RXID	RECEIVE IDENTIFIER	
SEL	SCHWEITZER ENGINEERING LABORATORIES	
TCP	TRANSMISSION CONTROL PROTOCOL	
TXID	TRANSMIT IDENTIFIER	
UNMOD	UNMODULATED IRIG-B (SAME AS DEMOD)	
	FIBER-TO-COPPER CONVERTER	
	ETHERNET-TO-SERIAL CONVERTER	
	DOUGLAS CONTROL ENCLOSURE REPLACEMENT	
	DO LECT ENCINEED. TIM CONRAD/EPS	
(/ (∧י/וי א ועו ∎	DEDITION DE LA CONTRACTORIA DE LA C	

	DESIGNER/PROJECT ENGINEER: <u>TIM CONRAD/EPS</u> JOB #: <u>MEA W.O.</u>		
N/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/D	
	MSG/09-19-2016	TCC/09-19-20	
	MSG/03-15-2017	TCC/03-15-20	
)	DN/ASBUILT REVISION	DN/ASBUILT REVISION DWN BY/DATE MSG/09-19-2016	

-3.2	ENG. STAMP	Matanuska Electric Asso	ociation	NO. DRAWING	NO./SHEET	
DATE						
016 017			163 East Industrial Way			
			Palmer, AK 99645 (907) 761-9300			
		MATANUSKA ELECTRIC ASSOCIATION	WWW.MEA.COOP			

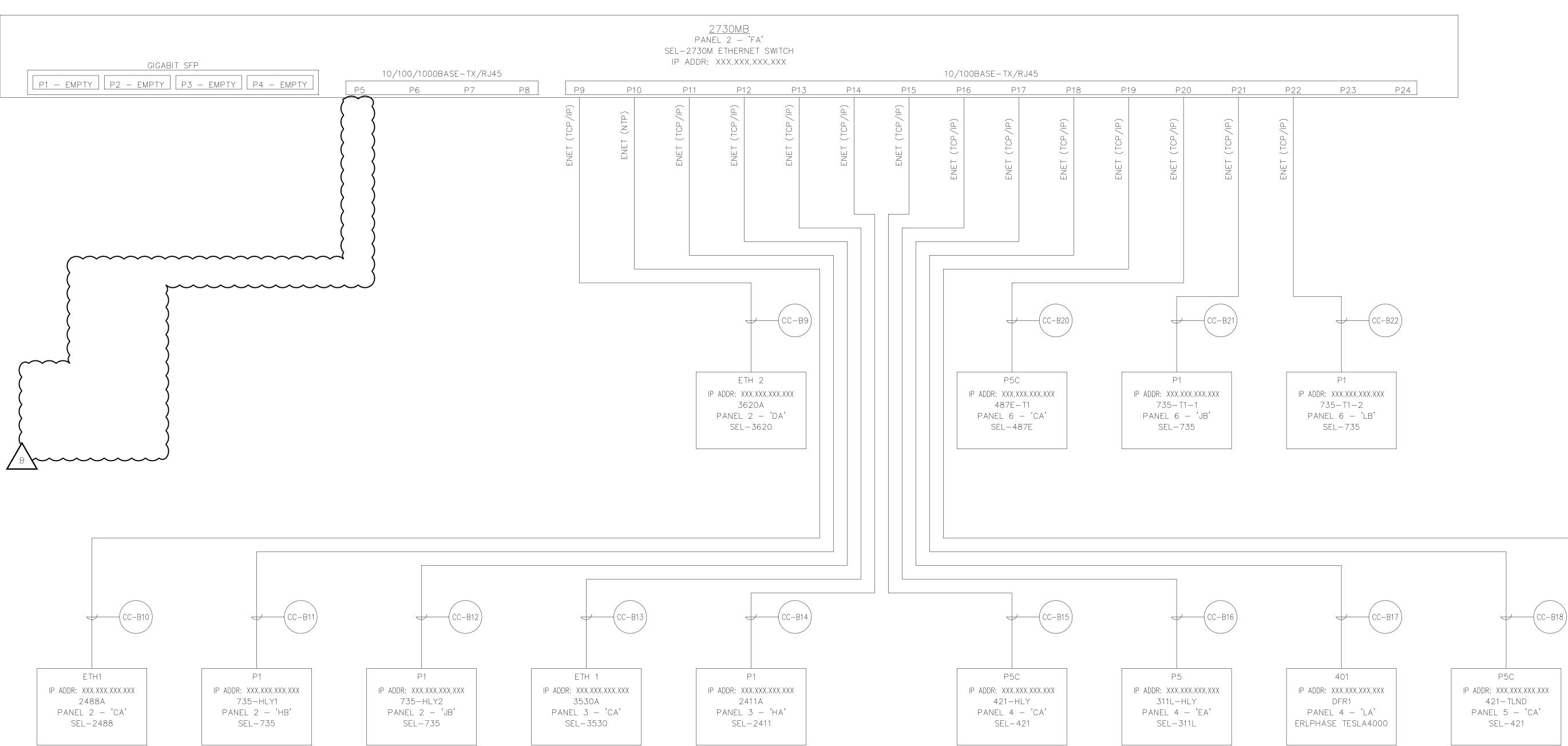
REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBSTA Scada Network topoi
	REF DWG(S):	
	DRAWING NO.:	DGSS-EL-0014

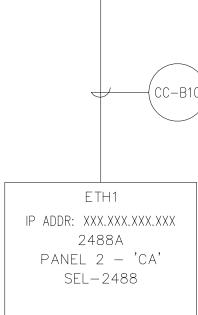
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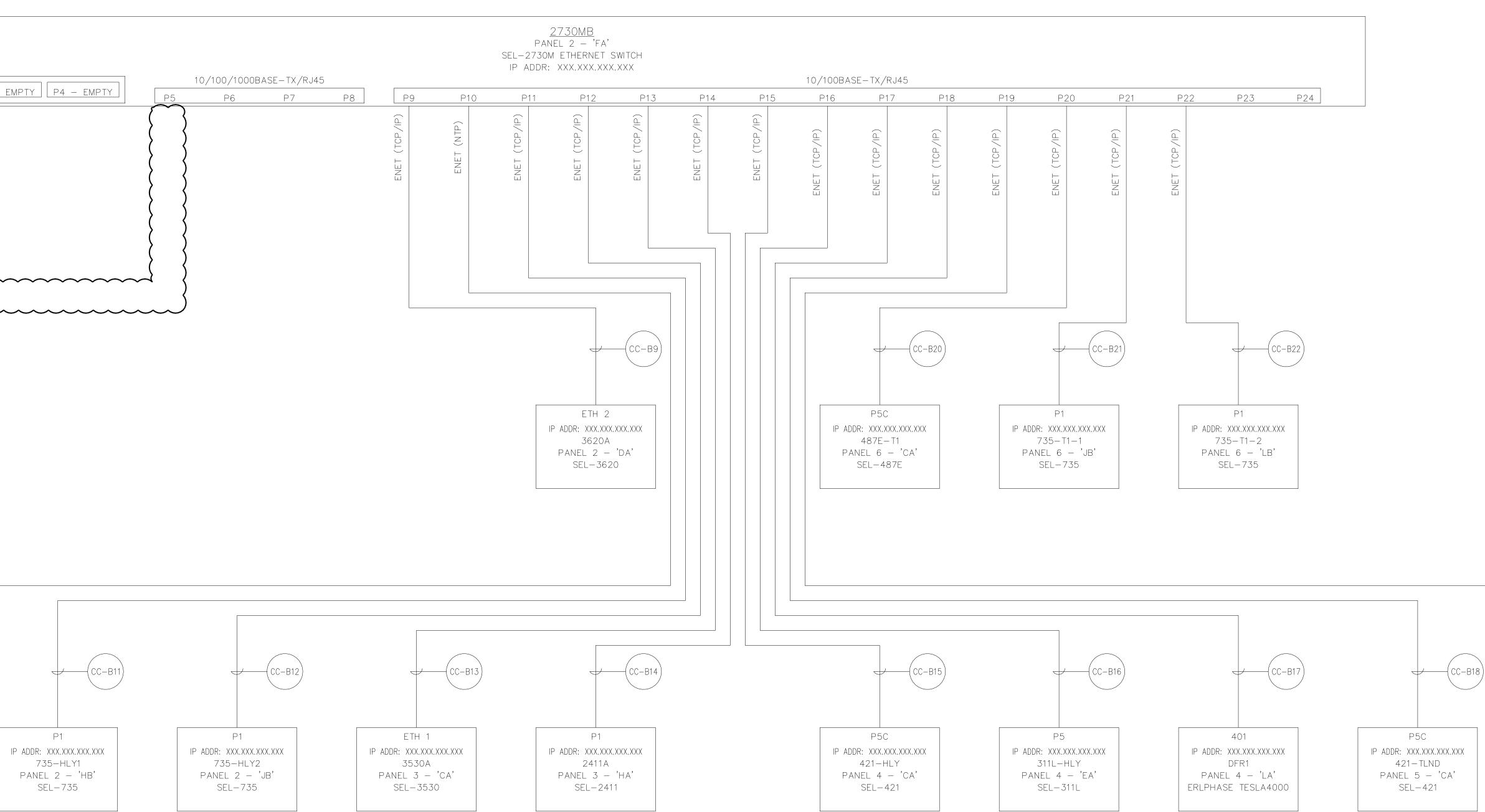
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EET 1 OF 7







<u>LEGEND:</u>

ADDR ASCII BNC DEMOD DNP3 EIA ENET FB FNET GPS IDLC ION	AMERICAN STANDARD CODE FOR INFORMATION INTERCHANGE BAYONET NEILL-CONCELMAN CONNECTOR DEMODULATED IRIG-B (SAME AS UNMOD) DISTRIBUTED NETWORK PROTOCOL ELECTRONICS INDUSTRY ASSOCIATION 10BASE-T/100BASE-TX ETHERNET (802.3/802.3u) SEL FAST BINARY PROTOCOL 10BASE-FX/100BASE-FX ETHERNET (802.3z) GLOBAL POSITIONING SYSTEM ISDN DATA LINK CONTROL PROTOCOL
IRIG-B	
ISDN	INTEGRATED SERVICE DIGITAL NETWORK
MB	SEL MIRRORED BITS PROTOCOL
MOD	MODULATED IRIG-B
NTP	NETWORK TIME PROTOCOL
	PORT NUMBER
	PULSE PER SECOND
RG	RADIO GUIDE
RXID	RECEIVE IDENTIFIER
SEL	SCHWEITZER ENGINEERING LABORATORIES
TCP	TRANSMISSION CONTROL PROTOCOL
TXID	TRANSMIT IDENTIFIER
UNMOD	UNMODULATED IRIG-B (SAME AS DEMOD)
	FIBER-TO-COPPER CONVERTER
$\mathbf{x}_{\mathbf{x}}$	ETHERNET-TO-SERIAL CONVERTER

PROJ	ECT: DOUGLAS CONTROL ENCLOSURE REPLACEMENT		
DESI	GNER/PROJECT ENGINEER: TIM CONRAD/EPS	JOB #: <u>N</u>	IEA W.O. EN16-
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/D
А	ISSUED FOR BID REVIEW	MSG/09-19-2016	TCC/09-19-201
В	ISSUED FOR BID	MSG/03-15-2017	TCC/03-15-201
-			

-3.2	ENG. STAMP	Matanuska Electric Association	NO. DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBST
ATE 16						SCADA NETWORK TOPO
7		163 East Industrial Way Palmer, AK 99645				
		MATANUSKA ELECTRIC ASSOCIATION WWW.MEA.COOP			DRAWING NO.:	DGSS-EL-0014

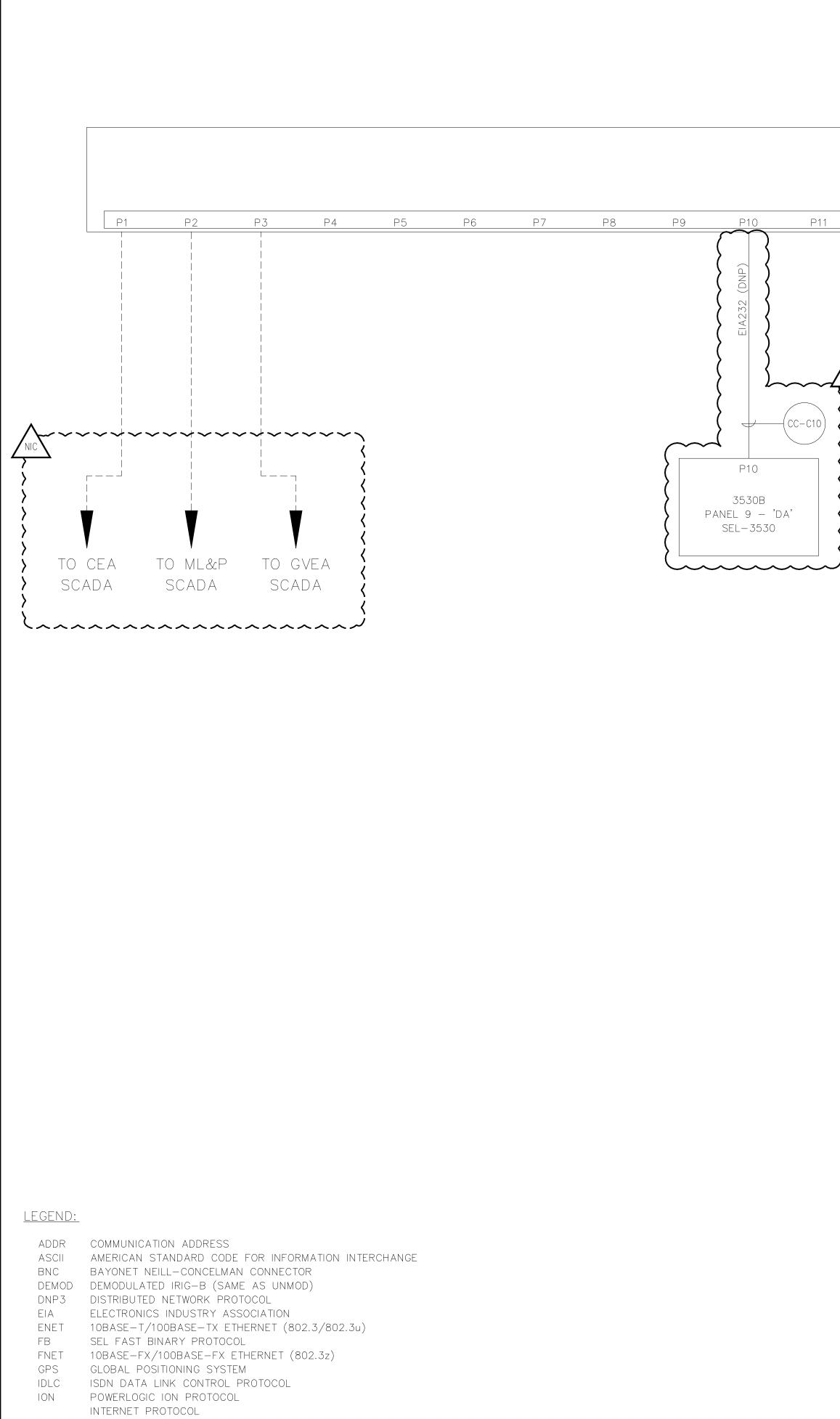
____(СС-В19) P5 IP ADDR: XXX.XXX.XXX.XXX 311L-TLND panel 5 – 'ea' SEL-311L

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HEET 4 of 7



ASCII BNC DEMOD DNP3 EIA ENET FB FNET GPS IDLC	COMMUNICATION ADDRESS AMERICAN STANDARD CODE FOR INFORMATION INTERCHANGE BAYONET NEILL-CONCELMAN CONNECTOR DEMODULATED IRIG-B (SAME AS UNMOD) DISTRIBUTED NETWORK PROTOCOL ELECTRONICS INDUSTRY ASSOCIATION 10BASE-T/100BASE-TX ETHERNET (802.3/802.3u) SEL FAST BINARY PROTOCOL 10BASE-FX/100BASE-FX ETHERNET (802.3z) GLOBAL POSITIONING SYSTEM ISDN DATA LINK CONTROL PROTOCOL POWERLOGIC ION PROTOCOL INTERNET PROTOCOL
	INTER-RANGE INSTRUMENTATION GROUP MOD B
ISDN	INTEGRATED SERVICE DIGITAL NETWORK
	SEL MIRRORED BITS PROTOCOL
MOD	MODULATED IRIG-B
NTP	NETWORK TIME PROTOCOL
P#	PORT NUMBER
PPS	PULSE PER SECOND
RG	RADIO GUIDE
RXID	RECEIVE IDENTIFIER
SEL	SCHWEITZER ENGINEERING LABORATORIES
	TRANSMISSION CONTROL PROTOCOL
TXID	TRANSMIT IDENTIFIER
UNMOD	unmodulated irig-b (same as demod)
	FIBER-TO-COPPER CONVERTER
$\sum_{\lambda} =$	ETHERNET-TO-SERIAL CONVERTER

PROJ DESIC	iect: <u>Douglas control enclosure replacement</u> gner/project engineer: <u>TIM conrad/eps</u>	Job #: <u>M</u>	EA W.O. EN16-3.2
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/DATE
A B	ISSUED FOR BID REVIEW ISSUED FOR BID	MSG/09-19-2016 MSG/03-15-2017	TCC/09-19-2016 TCC/03-15-2017

		EIA-232/	′485–DB9		REAL—TIN	<u>3530</u> Panel 3 - Me automati Addr: xxx.x	ION CONTROLI	LER											EIA-232/485-TB	IP ADDR: XXX.XXX.XXX.XXX 1 <u>0/100BASET/RJ4</u> 5	: 1 <u>0/1</u>
<u>3</u> P14	P15	P16	P18	P19	P20	P21	P22	P23	P24	P25	P26	P27	P28	P29	P30	P31	P32	P33	P17	ETH1 ETH1 EIL (DNP TCP/IP)	
																					PAN SLOT "A S
																				P13 IP ADDR: XXX.XXX.XXX.XXX 2730MB PANEL 2 – 'FA' SEL–2730M	



	ENG.	STAMP
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E		

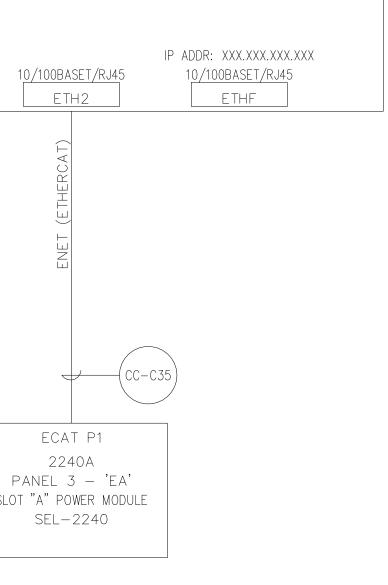
Matanuska Electric Association



163 East Industrial Way Palmer, AK 99645 (907) 761-9300 WWW.MEA.COOP

NO.	DRAWING NO./SHEET	

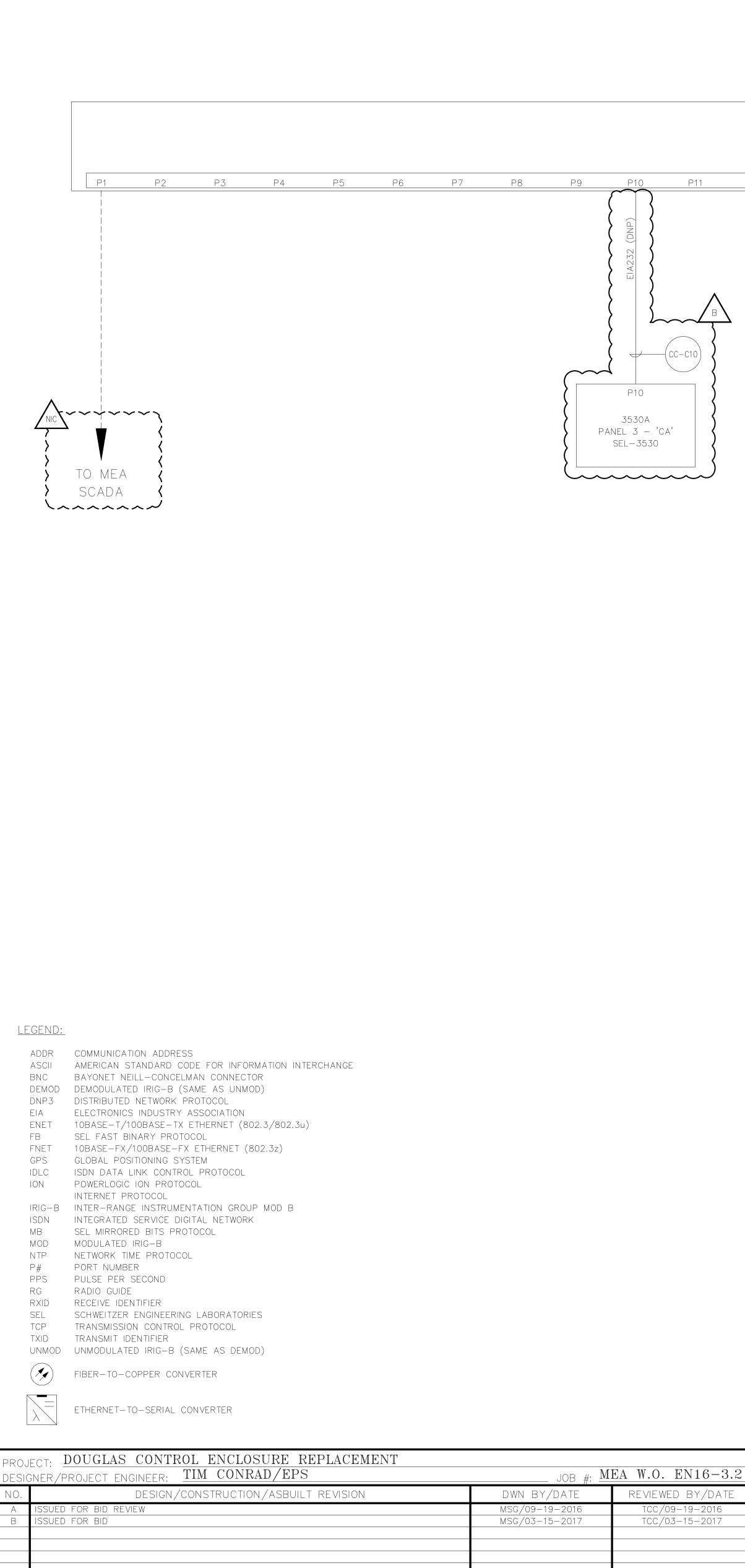
REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME: DOUGLAS SUBST SCADA NETWORK TOPO
	REF DWG(S):
	DRAWING NO.: DGSS-EL-0014



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<u>3530B</u> Panel 9 – 'da' Real-Time Automation cont ip addr: xxx.xxx.xx Eia-232/485-db9																				EIA-232/485-TB	IP ADDR: XXX.XXX.XXX.XXX 10/100BASET/RJ45	10/1
11 P12	P13	P14	P15 P16		P19	P20	P21	P22	P23	P24	P25	P26	P27	P28	P29	P30	P31	P32	P33	P17	ETH1	
																					ENET (DNP TCP/IP)	PAN SLOT "A S

ENG. STAMP

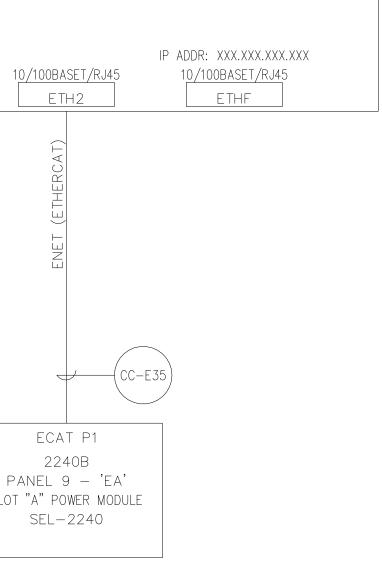
Matanuska Electric Association



163 East Industrial Way Palmer, AK 99645 (907) 761-9300 WWW.MEA.COOP

NO.	DRAWING NO./SHEET	

REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBST SCADA NETWORK TOPO
	REF DWG(S):	
	DRAWING NO.:	DGSS-EL-0014



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SHEET 7_OF 7

CABLE OR WIRE NO.	CATALOG NUMBER	ESTIMATED LENGTH (FT)	FROM	ТО	FUNCTION	VIA	DRAWING NUMBER	FURNISHE BY
SS-1	TBD	TBD	24.9 kV MAIN BUS, FUSED CUTOUT	STATION SERVICE XFMR, 'PM1'	24.9 kV STATION SVC CIRCUIT	CONDUIT TBD	DGSS-EL-0012	NIC
SS-2	TBD	TBD	24.9 kV AUX BUS, FUSED CUTOUT	STATION SERVICE XFMR, 'PM2'	24.9 kV STATION SVC CIRCUIT	CONDUIT TBD	DGSS-EL-0012	NIC
SS-3	B HW174 4004G	TBD	STATION SERVICE XFMR, 'PM1'	JUNCTION BOX, '2201JB1'	NORMAL STATION SVC CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY CONDUIT TBD	DGSS-EL-0012	NIC
SS-4	HW174 4004G	TBD	STATION SERVICE XFMR, 'PM2'	JUNCTION BOX, '2301JB1'	ALTERNATE STATION SVC CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY CONDUIT TBD	DGSS-EL-0012	NIC
B SS-5	3 X HW010 40101 & 1 X HW010 10101 GREEN	10	JUNCTION BOX, '2201JB1'	DISCONNECT, '2201'	STATION SVC CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0012	C
SS-6	3 X HW010 40101 & 1 X HW010 10101 GREEN	10	JUNCTION BOX, '2301JB1'	DISCONNECT, '2301'	STATION SVC CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0012	С
SS-7	3 X HW010 40101 & 1 X HW010 10101 GREEN	30	DISCONNECT, '2201'	TRANSFER SWITCH, '2401'	STATION SVC CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0012	C
SS-8	3 X HW010 40101 & 1 X HW010 10101 GREEN	30	DISCONNECT, '2301'	TRANSFER SWITCH, '2401'	STATION SVC CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0012	С
SS-9	3 X HW010 40101 & 1 X HW010 10101 GREEN	30	TRANSFER SWITCH, '2401'	STATION SERVICE METER, 'SSM1'	STATION SVC CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0012	С
SS-10	3 X HW010 40101 & 1 X HW010 10101 GREEN	30	STATION SERVICE METER, 'SSM1'	AC PANEL 1, 'AC1'	STATION SVC CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0012	С
SS-11	3 X HW010 40101 & 1 X HW010 10101 GREEN	20	AC PANEL 1, 'AC1'	AC PANEL 2, 'AC2'	STATION SVC CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0012	С
SS-12	HW172 0203G	40	AC PANEL 2, 'AC2'	BATTERY CHARGER, 'BCHG1'	BATTERY CHARGER CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0012	С
SS-13	HW172 0203G	30	AC PANEL 1, 'AC1'	DISCONNECT, '2501'	STATION SVC CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0012	С
			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~	
B SS-14	HW174 00204	TBD	DISCONNECT, '2501'	COMMUNICATIONS ENCLOSURE	STATION SVC CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY CONDUIT TBD	DGSS-EL-0012	NIC
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~	
AC1-HT1A	HW172 0603G	40	AC PANEL 1, 'AC1'	HVAC UNIT 1, 'HVAC1'	AC PANEL 1 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC1-HT1B	HW173 01004	40	AC PANEL 1, 'AC1'	hvac unit 1, 'hvac1'	AC PANEL 1 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC1-HT2A	HW172 0603G	30	AC PANEL 1, 'AC1'	hvac unit 2, 'hvac2'	AC PANEL 1 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC1-HT2B	HW173 01004	30	AC PANEL 1, 'AC1'	hvac unit 2, 'hvac2'	AC PANEL 1 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC1-HT3	HW173 01204	40	AC PANEL 1, 'AC1'	AUXILIARY CONTROL PANEL 1, 'ACP1'	AC PANEL 1 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC1-RE1	HW173 01004	100	AC PANEL 1, 'AC1'	EXTERIOR RECEPTACLES	AC PANEL 1 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC1-RE2	HW173 01204	100	AC PANEL 1, 'AC1'	EXTERIOR RECEPTACLES	AC PANEL 1 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC1-RE3	HW173 01204	270	AC PANEL 1, 'AC1'	INTERIOR RECEPTACLES	AC PANEL 1 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC1-RE4	HW173 01204	50	AC PANEL 1, 'AC1'	RELAY PANEL 1	AC PANEL 1 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC1-LT1	HW173 01204	160	AC PANEL 1, 'AC1'	EXTERIOR LIGHTING	AC PANEL 1 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC1-LT2	HW173 01204	200	AC PANEL 1, 'AC1'	INTERIOR EMERGENCY LIGHTING	AC PANEL 1 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC1-LT3	HW173 01204	160	AC PANEL 1, 'AC1'	INTERIOR LIGHTING	AC PANEL 1 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC1-LT4	HW173 01204	40	AC PANEL 1, 'AC1'	LIGHTING CONTACTOR, 'LC1'	AC PANEL 1 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC1-LT5	HW172 0803G	40	AC PANEL 1, 'AC1'	LIGHTING CONTACTOR, 'LC1'	AC PANEL 1 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC1-LT6	HW172 0803G	40	AC PANEL 1, 'AC1'	LIGHTING CONTACTOR, 'LC1'	AC PANEL 1 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC1-HD1	HW173 01204	40	AC PANEL 1, 'AC1'	AUXILIARY CONTROL PANEL 1, 'ACP1'	AC PANEL 1 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC1-FD1	HW173 01204	40	AC PANEL 1, 'AC1'	AUXILIARY CONTROL PANEL 1, 'ACP1'	AC PANEL 1 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC1-MS2000A	HW173 01004	40	AC PANEL 1, 'AC1'	RELAY PANEL 7 INVERTER	AC PANEL 1 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC-RE40	HW173 01204	60	PANEL 7	RECEPTACLES RE40 & RE41	UPS RECEPTACLE CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2026	С
AC2-B1-1	HW172 0803G	60	AC PANEL 2, 'AC2'	MARSHALLING CABINET 1, 'MC1'	AC PANEL 2 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC2-B1-2	HW172 0803G	60	AC PANEL 2, 'AC2'	MARSHALLING CABINET 1, 'MC1'	AC PANEL 2 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC2-TD200-1	HW173 01004	60	AC PANEL 2, 'AC2'	MARSHALLING CABINET 1, 'MC1'	AC PANEL 2 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC2-2S3-1	HW173 01004	60	AC PANEL 2, 'AC2'	MARSHALLING CABINET 1, 'MC1'	AC PANEL 2 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	С
AC2-T1-1	HW172 0603G	60	AC PANEL 2, 'AC2'	MARSHALLING CABINET 2, 'MC2'	AC PANEL 2 BRANCH CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2001	C

NOTES:

 $\langle 1
angle$ all cable and wire shall be by houston wire & cable unless noted otherwise.

(2) CABLES LENGTHS ARE ESTIMATED.

PROJ DESIC	iect: <u>Douglas control enclosure replacement</u> gner/project engineer: <u>TIM conrad/eps</u>	Job #: <u>N</u>	IEA W.O. EN16-3.2
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/DATE
A B	ISSUED FOR BID REVIEW ISSUED FOR BID	MSG/09-19-2016 MSG/03-15-2017	TCC/09-19-2016 TCC/03-15-2017

CABLE OR WIRE NO.	CATALOG NUMBER	ESTIMATED LENGTH (FT)	FROM	ТО	FUNCTION	VIA	DRAWING NUMBER	FURNISHED BY
CT-B1-1A	HW173 01004	50	MARSHALLING CABINET 1, 'MC1'	RELAY PANEL 2	CT CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0101	С
CT-B1-2A	HW173 01004	50	MARSHALLING CABINET 1, 'MC1'	RELAY PANEL 5	CT CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0101	С
CT-B1-3A	HW173 01004	50	MARSHALLING CABINET 1, 'MC1'	RELAY PANEL 4	CT CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0101	С
CT-B1-4A	HW173 01004	50	MARSHALLING CABINET 1, 'MC1'	RELAY PANEL 4	CT CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0101	С
CT-T1-1A	HW173 01004	40	MARSHALLING CABINET 3, 'MC3'	RELAY PANEL 6	CT CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0100	С
CT-T1-3A	HW173 01004	40	MARSHALLING CABINET 3, 'MC3'	RELAY PANEL 6	CT CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0100	С
CT-T1-4A	HW173 01004	40	MARSHALLING CABINET 3, 'MC3'	RELAY PANEL 6	CT CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0100	С
CT-T1-4B	HW173 01004	30	RELAY PANEL 6	RELAY PANEL 7	CT CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0100	С
CT-T1-5A	HW173 01004	30	MARSHALLING CABINET 3, 'MC3'	RELAY PANEL 6	CT CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0100	С
PT-1-3	HW173 01204	50	MARSHALLING CABINET 3, 'MC3'	RELAY PANEL 4	138 kV BUS PT CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0101	С
PT-1-4	HW173 01204	50	MARSHALLING CABINET 3, 'MC3'	RELAY PANEL 4	138 kV BUS PT CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0101	С
PT-2-2	HW173 01204	50	MARSHALLING CABINET 3, 'MC3'	RELAY PANEL 4	138 kV SYNC CVT CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0101	С
PT-3-2	HW173 01204	50	MARSHALLING CABINET 3, 'MC3'	RELAY PANEL 7	24.9 kV MAIN PT CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0101	С
AC2-B1-3	HW174 00804	TBD	MARSHALLING CABINET 1, 'MC1'	GCB B1 INTERFACE CABINET	AC POWER (B1 - 240 VAC)	LOWER TIER OF OVERHEAD CABLE TRAY TRENCH, CONDUIT TBD	TBD	NIC
AC2-B1-4	HW174 00804	TBD	MARSHALLING CABINET 1, 'MC1'	GCB B1 CONTROL CABINET	AC POWER (B1 - 120 VAC)	LOWER TIER OF OVERHEAD CABLE TRAY	TBD	NIC
AC2-TD200-2	HW173 01004	TBD	MARSHALLING CABINET 1, 'MC1'	CIRCUIT SWITCHER TD-200	AC POWER TD-200 120V	TRENCH, CONDUIT TBD LOWER TIER OF OVERHEAD CABLE TRAY	TBD	NIC
AC2-2S3-2	HW173 01004	TBD	MARSHALLING CABINET 1, 'MC1'	MOAS 2S3	AC POWER 2S3 - 120VAC	TRENCH, CONDUIT TBD LOWER TIER OF OVERHEAD CABLE TRAY	TBD	NIC
AC2-T1-2	HW174 00604	TBD	MARSHALLING CABINET 2, 'MC2'	POWER TRANSFORMER 'T1'	AC POWER (T1 – 240 VAC)	TRENCH, CONDUIT TBD LOWER TIER OF OVERHEAD CABLE TRAY TRENCH, CONDUIT TBD	TBD	NIC
						LOWER TIER OF OVERHEAD CABLE TRAY		
CT-B1-1	HW173 01004	TBD	MARSHALLING CABINET 1, 'MC1'	GCB B1 INTERFACE CABINET	B1 CURRENT	LOWER TIER OF OVERHEAD CABLE TRAY	TBD	NIC
CT-B1-2	HW173 01004	TBD	MARSHALLING CABINET 1, 'MC1'	GCB B1 INTERFACE CABINET	B1 CURRENT	LOWER TIER OF OVERHEAD CABLE TRAT	TBD	NIC
CT-B1-3	HW173 01004	TBD	MARSHALLING CABINET 1, 'MC1'	GCB B1 INTERFACE CABINET	B1 CURRENT	TRENCH, CONDUIT TBD	TBD	NIC
CT-B1-4	HW173 01004	TBD	MARSHALLING CABINET 1, 'MC1'	GCB B1 INTERFACE CABINET	B1 CURRENT	LOWER TIER OF OVERHEAD CABLE TRAY TRENCH, CONDUIT TBD	TBD	NIC
CT-T1-1	HW173 01004	TBD	MARSHALLING CABINET 3, 'MC3'	POWER TRANSFORMER 'T1'	T1 CURRENT	LOWER TIER OF OVERHEAD CABLE TRAY TRENCH, CONDUIT TBD	TBD	NIC
CT-T1-2	HW173 01004	TBD	MARSHALLING CABINET 3, 'MC3'	POWER TRANSFORMER 'T1'	T1 CURRENT	LOWER TIER OF OVERHEAD CABLE TRAY TRENCH, CONDUIT TBD	TBD	NIC
CT-T1-3	HW173 01004	TBD	MARSHALLING CABINET 3, 'MC3'	POWER TRANSFORMER 'T1'	T1 CURRENT	LOWER TIER OF OVERHEAD CABLE TRAY TRENCH, CONDUIT TBD	TBD	NIC
CT-T1-4	HW173 01004	TBD	MARSHALLING CABINET 3, 'MC3'	POWER TRANSFORMER 'T1'	T1 CURRENT	LOWER TIER OF OVERHEAD CABLE TRAY TRENCH, CONDUIT TBD	TBD	NIC
CT-T1-5	HW173 01004	TBD	MARSHALLING CABINET 3, 'MC3'	POWER TRANSFORMER 'T1'	T1 CURRENT	LOWER TIER OF OVERHEAD CABLE TRAY TRENCH, CONDUIT TBD	TBD	NIC
CT-25KV-1	HW173 01004	TBD	MARSHALLING CABINET 2, 'MC2'	24.9KV CT / PT J-BOX	25KV BUS CURRENT	LOWER TIER OF OVERHEAD CABLE TRAY TRENCH, CONDUIT TBD	TBD	NIC
CT-415-1	HW173 01004	TBD	MARSHALLING CABINET 2, 'MC2'	RECLOSER TD-415	METERING CURRENTS	LOWER TIER OF OVERHEAD CABLE TRAY TRENCH, CONDUIT TBD	TBD	NIC
CT-425-1	HW173 01004	TBD	MARSHALLING CABINET 2, 'MC2'	RECLOSER TD-425	METERING CURRENTS	LOWER TIER OF OVERHEAD CABLE TRAY TRENCH, CONDUIT TBD	TBD	NIC
CT-435-1	HW173 01004	TBD	MARSHALLING CABINET 2, 'MC2'	RECLOSER TD-435	METERING CURRENTS	LOWER TIER OF OVERHEAD CABLE TRAY TRENCH, CONDUIT TBD	TBD	NIC
PT-1-1	HW173 01212	TBD	MARSHALLING CABINET 3, 'MC3'	138 KV POTENTIAL J-BOX	138KV POTENTIALS	LOWER TIER OF OVERHEAD CABLE TRAY TRENCH, CONDUIT TBD	TBD	NIC
PT-2-1	HW173 01204	TBD	MARSHALLING CABINET 3, 'MC3'	138 KV B PHASE CVT J-BOX	138KV SYNC POTENTIAL	LOWER TIER OF OVERHEAD CABLE TRAY TRENCH, CONDUIT TBD	TBD	NIC
PT-3-1	HW173 01204	TBD	MARSHALLING CABINET 3, 'MC3'	24.9KV CT / PT J-BOX	25KV POTENTIALS	LOWER TIER OF OVERHEAD CABLE TRAY TRENCH, CONDUIT TBD	TBD	NIC
PT-3-3	HW173 01204	TBD	MARSHALLING CABINET 3, 'MC3'	POWER TRANSFORMER 'T1'	25KV POTENTIALS	LOWER TIER OF OVERHEAD CABLE TRAY TRENCH, CONDUIT TBD	TBD	NIC

	ENG.	STAMP	
<u>,</u>			

Matanuska Electric Association



163 East Industrial Way Palmer, AK 99645 (907) 761-9300 WWW.MEA.COOP

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBST AC CABLE & WIRE SC
			REF DWG(S):	
			DRAWING NO.:	DGSS-EL-4000

FATION

CHEDULE

dgss-el-4000_1.dwg

CABLE OR WIRE NO.	CATALOG NUMB	ER ESTIMATED	FROM	ТО	FUNCTION	VIA	DRAWING NUMBER	FURNISH BY		CABLE OR WIRE NO.	CATALOG NUMBER	ESTIMATED LENGTH (FT)	FROM	ТО	FUNCTION	VIA	DRAWING FURNISHED NUMBER BY
C-HGM1-1	HW173 01207	50	AUXILIARY CONTROL PANEL 1, 'ACP1'	HYDROGEN GAS MONITOR, 'HGM1'	HYDROGEN DETECTOR CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2027	С									
C-EFTS1-1	HW173 01204	40	AUXILIARY CONTROL PANEL 1, 'ACP1'	EXHAUST FAN THERMOSTAT, 'EFTS1'	EXHAUST FAN T-STAT CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2027	С									
C-EF1-1	HW173 01204	50	AUXILIARY CONTROL PANEL 1, 'ACP1'	EXHAUST FAN, 'EF1'	EXHAUST FAN CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2027	С									
C-IL1-1	HW173 01204	80	AUXILIARY CONTROL PANEL 1, 'ACP1'	INTAKE LOUVRE, 'IL1'	INTAKE LOUVRE CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2027	С									
C-HA1-1	HW173 01204	60	AUXILIARY CONTROL PANEL 1, 'ACP1'	HYDROGEN ALARM/STROBE, 'HA1'	HYDROGEN ALARM CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2027	С									
С-НА2-1	HW173 01204	30	AUXILIARY CONTROL PANEL 1, 'ACP1'	HYDROGEN ALARM/STROBE, 'HA2'	HYDROGEN ALARM CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2027	С									
С-НАЗ-1	HW173 01204	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			LOWER TIER OF OVERHEAD CABLE TRAY			3								
C-SD1-1	HW173 01207	50	AUXILIARY CONTROL PANEL 1, 'ACP1'	SMOKE DETECTOR. 'SD1'	SMOKE DETECTOR CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-FI - 2028	С									
C-SD2-1	HW173 01207		AUXILIARY CONTROL PANEL 1, 'ACP1'		SMOKE DETECTOR CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY											
C-HD1-1	HW173 01204		AUXILIARY CONTROL PANEL 1, 'ACP1'		HEAT DETECTOR CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY											
C-HD2-1	HW173 01204		AUXILIARY CONTROL PANEL 1, 'ACP1'		HEAT DETECTOR CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY											
C-FA1-1	HW173 01204		AUXILIARY CONTROL PANEL 1, 'ACP1'		FIRE ALARM CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY											
C-FA2-1	HW173 01204		AUXILIARY CONTROL PANEL 1, 'ACP1'		FIRE ALARM CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY		_									
C-FA3-1	HW173 01204	40	AUXILIARY CONTROL PANEL 1, 'ACP1'	FIRE ALARM/SIROBE, FA3	FIRE ALARM CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2028	C									
C-HVAC1-1	HW120 01604		AUXILIARY CONTROL PANEL 1, 'ACP1'		HVAC CONTROL CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY		_									
C-HVAC1-2			AUXILIARY CONTROL PANEL 1, 'ACP1'		HVAC CONTROL CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY		_									
C-HVAC2-1	HW120 01604	50	AUXILIARY CONTROL PANEL 1, 'ACP1'	HVAC UNIT 2, 'HVAC2'	HVAC CONTROL CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2029	С									
C-HVAC2-2	HW120 01604	60	AUXILIARY CONTROL PANEL 1, 'ACP1'	THERMOSTAT, 'TS2'	HVAC CONTROL CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2029	С									
C-LT1	HW173 01204	40	LIGHTING CONTACTOR, 'LC1'	PHOTOCELL, 'PC1'	MAINT. LIGHTING CONTROL CIRCUIT	LOWER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-2033	С									
C = CONTRACTOR. C	D = OWNER. NIC = NOT IN CONTR	RACT.				•			I			I					i J
NOTES:																	

NOTES: $\langle 1 \rangle$ all cable and wire shall be by houston wire & cable unless noted otherwise.

(2) CABLES LENGTHS ARE ESTIMATED.

PROJ DESIC	ect: Douglas control enclosure replacement Gner/project engineer: TIM CONRAD/EPS	Job #: <u>N</u>	1EA W.O. EN16-
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/D
А	ISSUED FOR BID REVIEW	MSG/09-19-2016	TCC/09-19-201
В	ISSUED FOR BID	MSG/03-15-2017	TCC/03-15-20 ²
			_

	ENG. STAMP	Matanuska Electric Association	n . drawing no./sheet	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBST
-3.2 Date						AC
016						CABLE & WIRE SC
)17			Industrial Way			
			mer, AK 99645 (907) 761-9300		REF DWG(S):	
			W.MEA.COOP		DRAWING NO.:	DGSS-EL-4000

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dgss-el-4000_2.dwg

[[1		Ţ]	· · · · · · · · · · · · · · · · · · ·		1 1				
CABLE OR WIRE NO.	CATALOG NUMBE	CR ESTIMATED FROM	ТО	FUNCTION	VIA	DRAWING NUMBER	FURNISHED BY	CABLE OR WIRE NO.	CATALOG NUMBER	ESTIMATED LENGTH (FT) FROM	ТО	FUNCTION VIA	DRAWING NUMBER	FURNISHED BY
CC-A9	SEL C627	6 RELAY PANEL 2, DEVICE 'EA'	RELAY PANEL 2, DEVICE 'DA'	SCADA DATA CIRCUIT	INTRA-PANEL	DGSS-EL-0014	С	TS-10	SEL C953	6 PANEL 2, DEVICE 'CA'	PANEL 2, DEVICE 'DA'	TIME SYNCHRONIZATION CIRCUIT INTRA-PANEL	DGSS-EL-0015	С
A		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				TS-11	SEL C962	10 PANEL 2, DEVICE 'DA'	PANEL 2, DEVICE 'HB'	TIME SYNCHRONIZATION CIRCUIT INTRA-PANEL	DGSS-EL-0015	С
В	CABLE REMOVED			h				TS-12	SEL C963	6 PANEL 2, DEVICE 'HB'	PANEL 2, DEVICE 'JB'	TIME SYNCHRONIZATION CIRCUIT INTRA-PANEL	DGSS-EL-0015	С
СС-В9	SEL C627	6 RELAY PANEL 2, DEVICE 'FA'	RELAY PANEL 2, DEVICE 'DA'	SCADA DATA CIRCUIT	INTRA-PANEL	DGSS-EL-0014	С	TS-13	SEL C962	30 PANEL 2, DEVICE 'JB'	PANEL 3, DEVICE 'CA'	TIME SYNCHRONIZATION CIRCUIT UPPER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0015	С
CC-B10	SEL C627	6 RELAY PANEL 2, DEVICE 'FA'	RELAY PANEL 2, DEVICE 'CA'	SCADA DATA CIRCUIT	INTRA-PANEL	DGSS-EL-0014	С	TS-14	SEL C962	10 PANEL 3, DEVICE 'CA'	PANEL 3, DEVICE 'HA'	TIME SYNCHRONIZATION CIRCUIT INTRA-PANEL	DGSS-EL-0015	С
CC-B11	SEL C627	10 RELAY PANEL 2, DEVICE 'FA'	RELAY PANEL 2, DEVICE 'HB'	SCADA DATA CIRCUIT	INTRA-PANEL	DGSS-EL-0014	С							L
CC-B12	SEL C627	10 RELAY PANEL 2, DEVICE 'FA'	RELAY PANEL 2, DEVICE 'JB'	SCADA DATA CIRCUIT	INTRA-PANEL	DGSS-EL-0014	С	TS-20	SEL C953	30 PANEL 2, DEVICE 'CA'	PANEL 4, DEVICE 'CA'	TIME SYNCHRONIZATION CIRCUIT UPPER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0015	С
CC-B13	SEL C627	30 RELAY PANEL 2, DEVICE 'FA'	RELAY PANEL 3, DEVICE 'CA'	SCADA DATA CIRCUIT	UPPER TIER OF OVERHEAD CABLE TRA	Y DGSS-EL-0014	С	TS-21	SEL C953	30 PANEL 4, DEVICE 'CA'	PANEL 5, DEVICE 'CA'	TIME SYNCHRONIZATION CIRCUIT UPPER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0015	С
CC-B14	SEL C627	30 RELAY PANEL 2, DEVICE 'FA'	RELAY PANEL 3, DEVICE 'HA'	SCADA DATA CIRCUIT	UPPER TIER OF OVERHEAD CABLE TRA	Y DGSS-EL-0014	С	TS-22	SEL C953	30 PANEL 5, DEVICE 'CA'	PANEL 6, DEVICE 'CA'	TIME SYNCHRONIZATION CIRCUIT UPPER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0015	С
CC-B15	SEL C627	30 RELAY PANEL 2, DEVICE 'FA'	RELAY PANEL 4, DEVICE 'CA'	SCADA DATA CIRCUIT	UPPER TIER OF OVERHEAD CABLE TRA	DGSS-EL-0014	С	TS-23	SEL C962	10 PANEL 6, DEVICE 'CA'	PANEL 6, DEVICE 'JB'	TIME SYNCHRONIZATION CIRCUIT INTRA-PANEL	DGSS-EL-0015	С
CC-B16	SEL C627	30 RELAY PANEL 2, DEVICE 'FA'	RELAY PANEL 4, DEVICE 'EA'	SCADA DATA CIRCUIT	UPPER TIER OF OVERHEAD CABLE TRA	DGSS-EL-0014	С	TS-24	SEL C963	6 PANEL 6, DEVICE 'JB'	PANEL 6, DEVICE 'LB'	TIME SYNCHRONIZATION CIRCUIT INTRA-PANEL	DGSS-EL-0015	С
CC-B17	SEL C627	30 RELAY PANEL 2, DEVICE 'FA'	RELAY PANEL 4, DEVICE 'LA'	SCADA DATA CIRCUIT	UPPER TIER OF OVERHEAD CABLE TRA	DGSS-EL-0014	С							
CC-B18	SEL C627	40 RELAY PANEL 2, DEVICE 'FA'	RELAY PANEL 5, DEVICE 'CA'	SCADA DATA CIRCUIT	UPPER TIER OF OVERHEAD CABLE TRA	Y DGSS-EL-0014	С	TS-30	SEL C962	30 PANEL 2, DEVICE 'CA'	PANEL 4, DEVICE 'EA'	TIME SYNCHRONIZATION CIRCUIT UPPER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0015	С
CC-B19	SEL C627	40 RELAY PANEL 2, DEVICE 'FA'	RELAY PANEL 5, DEVICE 'EA'	SCADA DATA CIRCUIT	UPPER TIER OF OVERHEAD CABLE TRA	Y DGSS-EL-0014	С	TS-31	SEL C962	10 PANEL 4, DEVICE 'EA'	PANEL 4, DEVICE 'LA'	TIME SYNCHRONIZATION CIRCUIT INTRA-PANEL	DGSS-EL-0015	С
CC-B20	SEL C627	40 RELAY PANEL 2, DEVICE 'FA'	RELAY PANEL 6, DEVICE 'CA'	SCADA DATA CIRCUIT	UPPER TIER OF OVERHEAD CABLE TRA	Y DGSS-EL-0014	С	TS-32	SEL C962	30 PANEL 4, DEVICE 'LA'	PANEL 5, DEVICE 'EA'	TIME SYNCHRONIZATION CIRCUIT UPPER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0015	С
CC-B21	SEL C627	40 RELAY PANEL 2, DEVICE 'FA'	RELAY PANEL 6, DEVICE 'JB'	SCADA DATA CIRCUIT	UPPER TIER OF OVERHEAD CABLE TRA	Y DGSS-EL-0014	С							
CC-B22	SEL C627	40 RELAY PANEL 2, DEVICE 'FA'	RELAY PANEL 6, DEVICE 'LB'	SCADA DATA CIRCUIT	UPPER TIER OF OVERHEAD CABLE TRA	DGSS-EL-0014	С	TS-40	SEL C953	40 PANEL 2, DEVICE 'CA'	PANEL 7, DEVICE 'CA'	TIME SYNCHRONIZATION CIRCUIT UPPER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0015	С
								TS-41	SEL C953	10 PANEL 7, DEVICE 'CA'	PANEL 7, DEVICE 'FA'	TIME SYNCHRONIZATION CIRCUIT INTRA-PANEL	DGSS-EL-0015	С
R CC-C10	SEL 272A	40 RELAY PANEL 3, DEVICE 'CA'	RELAY PANEL 9, DEVICE 'DA'	SCADA DATA CIRCUIT	UPPER TIER OF OVERHEAD CABLE TRA	Y DGSS-EL-0014	c)	TS-42	SEL C953	30 PANEL 7, DEVICE 'FA'	PANEL 8, DEVICE 'CA'	TIME SYNCHRONIZATION CIRCUIT UPPER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0015	С
CC-C35	SEL 627F	6 RELAY PANEL 3, DEVICE 'CA'	RELAY PANEL 3, DEVICE 'EA'	SCADA DATA CIRCUIT	INTRA-PANEL	DGSS-EL-0014	С	TS-43	SEL C953	10 PANEL 8, DEVICE 'CA'	PANEL 8, DEVICE 'FA'	TIME SYNCHRONIZATION CIRCUIT INTRA-PANEL	DGSS-EL-0015	С
								TS-44	SEL C953	30 PANEL 8, DEVICE 'FA'	PANEL 9, DEVICE 'DA'	TIME SYNCHRONIZATION CIRCUIT UPPER TIER OF OVERHEAD CABLE TRAY	DGSS-EL-0015	С
CC-D9	SEL C627	50 RELAY PANEL 9, DEVICE 'CA'	RELAY PANEL 2, DEVICE 'CA'	SCADA DATA CIRCUIT	UPPER TIER OF OVERHEAD CABLE TRA	Y DGSS-EL-0014	С	TS-45	SEL C962	10 PANEL 9, DEVICE 'DA'	PANEL 9, DEVICE 'GA'	TIME SYNCHRONIZATION CIRCUIT INTRA-PANEL	DGSS-EL-0015	С
CC-D10	SEL C627	30 RELAY PANEL 9, DEVICE 'CA'	RELAY PANEL 7, DEVICE 'CA'	SCADA DATA CIRCUIT	UPPER TIER OF OVERHEAD CABLE TRA	Y DGSS-EL-0014	С							
CC-D11	SEL C627	30 RELAY PANEL 9, DEVICE 'CA'	RELAY PANEL 7, DEVICE 'FA'	SCADA DATA CIRCUIT	UPPER TIER OF OVERHEAD CABLE TRA	Y DGSS-EL-0014	С							
CC-D12	SEL C627	30 RELAY PANEL 9, DEVICE 'CA'	RELAY PANEL 8, DEVICE 'CA'	SCADA DATA CIRCUIT	UPPER TIER OF OVERHEAD CABLE TRA	Y DGSS-EL-0014	С							
CC-D13	SEL C627	30 RELAY PANEL 9, DEVICE 'CA'	RELAY PANEL 8, DEVICE 'FA'	SCADA DATA CIRCUIT	UPPER TIER OF OVERHEAD CABLE TRA	Y DGSS-EL-0014	С							
CC-D14	SEL C627	30 RELAY PANEL 9, DEVICE 'CA'	RELAY PANEL 7, DEVICE 'NA'	SCADA DATA CIRCUIT	UPPER TIER OF OVERHEAD CABLE TRA	Y DGSS-EL-0014	С							
CC-D15	SEL C627	6 RELAY PANEL 9, DEVICE 'CA'	RELAY PANEL 9, DEVICE 'DA'	SCADA DATA CIRCUIT	INTRA-PANEL	DGSS-EL-0014	С							
CC-D16	SEL C627	10 RELAY PANEL 9, DEVICE 'CA'	RELAY PANEL 9, DEVICE 'GA'	SCADA DATA CIRCUIT	INTRA-PANEL	DGSS-EL-0014	С							
CC-D24	SEL C627	70 RELAY PANEL 9, DEVICE 'CA'	ETHERNET SWITCH, 'ES1'	SCADA DATA CIRCUIT	UPPER TIER OF OVERHEAD CABLE TRA	DGSS-EL-0014	С							
CC-E35	SEL 627F	6 RELAY PANEL 9, DEVICE 'DA'	RELAY PANEL 9, DEVICE 'EA'	SCADA DATA CIRCUIT	INTRA-PANEL	DGSS-EL-0014	С							
C = CONTRACTOR. O =	 = OWNER. NIC = NOT IN CONTRAC	СТ.	I	I	1		·	L		1 1	1			

NOTES:

 $\frac{|NU||_{LS}}{1}$ All cable and wire shall be by schweitzer engineering laboratories unless noted otherwise. \sim

 $\langle 2 \rangle$ CABLES LENGTHS ARE ESTIMATED.

PROJ	IECT: DOUGLAS CONTROL ENCLOSURE REPLACEMENT		
DESI	GNER/PROJECT ENGINEER: <u>TIM CONRAD/EPS</u>	Job #: <u>M</u>	EA W.O. EN16-
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	reviewed by/da
А	ISSUED FOR BID REVIEW	MSG/09-19-2016	TCC/09-19-2016
В	ISSUED FOR BID	MSG/03-15-2017	TCC/03-15-2017

-3.2	ENG. STAMP	Matanuska Electric Association	NO.	. DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBST
-3.2 DATE 16							COMMUNICATI Cable & Wire Sc
17		163 East Industria	-				
		Palmer, AK (907) 761				REF DWG(S):	
		MATANUSKA ELECTRIC ASSOCIATION WWW.MEA.				DRAWING NO.:	DGSS-EL-4002

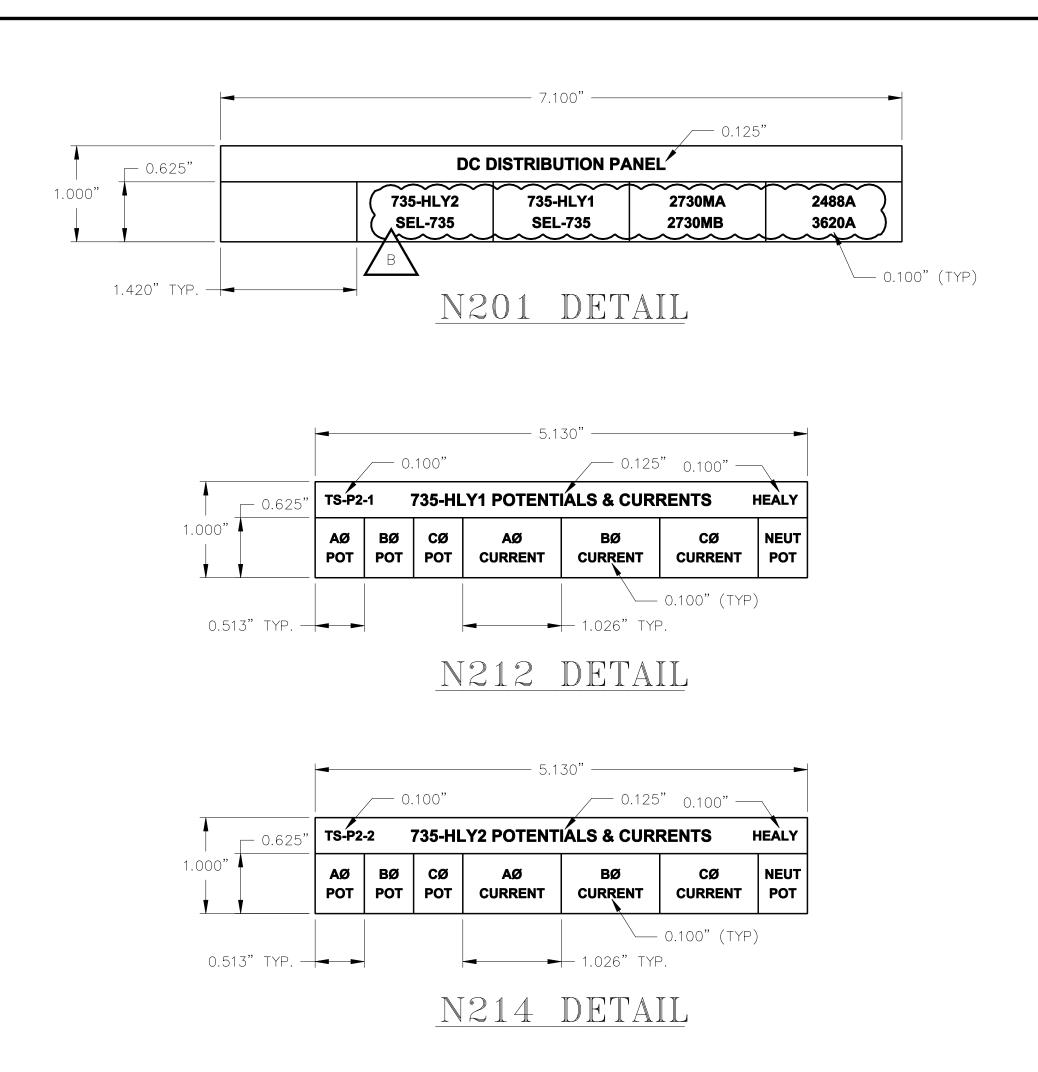
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SHEET <u>1</u> OF 1

NAMEPLATE		T T T T T T T T T T T T T T T T T T T		¥ ¥ ¥ ¥ ¥ ¥ ¥ ¥ ¥ ¥ ¥ ¥ ¥ ¥ ¥ ¥ ¥ ¥ ¥	NAMEPLATE SIZE	TEXT	
NUMBER	QTY	LINE 1 TEXT	LINE 2 TEXT	LINE 3 TEXT	HEIGHT x WIDTH (IN)	HEIGHT (IN)	
N200	2	PANEL 2	IOC METERING/COMM		1-1/2 x 5	1/4	
N201	1	SEE NAMEPLATE DETAIL ON THIS SHEET					
N202	2	AA			1/2 x 3/4	1/4	
N203	2	AB			1/2 × 3/4	1/4	
N204	2	AC			1/2 x 3/4	1/4	
N205	2	AD			1/2 × 3/4	1/4	
N206	2	AE			1/2 × 3/4	1/4	
N207	1	2488A	SATELLITE CLOCK	SEL-2488	1 x 3	1/8	
N208	1	3620A	ETHERNET GATEWAY	SEL-3620	1 × 3	1/8	
N209	1	2730MA	ETHERNET SWITCH	SEL-2730M	1 x 3	1/8	
N210	1	2730MB	ETHERNET SWITCH	SEL-2730M	1 x 3	1/8	
N211	1	735-HLY1	INTERTIE METER	SEL-735	1 x 3	1/8	
N212	1	SEE NAMEPLATE DETAIL ON THIS SHEET					
N213	1	735-HLY2	INTERTIE METER (BACKUP)	SEL-735	1 x 3	1/8	
N214	1	SEE NAMEPLATE DETAIL ON THIS SHEET					
N215	1	A			1/2 x 3/4	1/4	
N216	1	В			1/2 × 3/4	1/4	
N217	1	СА	2488A	SEL-2488	1 x 1-1/2	1/8	
N218	1	DA	3620A	SEL-3620	1 x 1-1/2	1/8	
N219	1	EA	2730MA	SEL-2730M	1 × 1-1/2	1/8	
N220	1	FA	2730MB	SEL-2730M	1 x 1-1/2	1/8	
N221	1	НА	TS-P2-1	735 TEST SW	1 x 1-1/2	1/8	
N222	1	HB	735-HLY1	SEL-735	1 x 1-1/2	1/8	
N223	1	JA	TS-P2-2	735 TEST SW	1 x 1-1/2	1/8	
N224	1	JB	735-HLY2	SEL-735	1 x 1-1/2	1/8	
N225	1	GB	GROUND BUS		1 x 1-1/2	1/8	
N226	1	WORK LIGHT			1 x 1-1/2	1/8	
	. 1				ł]	
LAS CONTI CT ENGINFFR'	$\frac{\text{OL EN}}{\text{TIM C}}$	CLOSURE REPLACEMENT ONRAD/EPS	JOB #: <u>MEA W.O. EN1</u>	ENG. STAMP	Matanusk	a Electric Ass	ociation
DESIGN		JCTION/ASBUILT REVISION	DWN BY/DATE REVIEWED BY	/DATE			
BID REVIEW BID			MSG/09-19-2016 TCC/09-19- MSG/03-15-2017 TCC/03-15-				163 East Industrial Way
						EA	Palmer, AK 99645 (907) 761-9300
					MATANUSKA ELECT		WWW.MEA.COOP

PROJECT: FSIGNE



NOTES:

 $\langle 1
angle$ all nameplates shall be 1/16" thick minimum plastic.

 $\langle 2
angle$ all nameplates shall have exterior rated high-tack adhesive.

 $\left< 3 \right>$ all nameplates shall be black surface wth white text.

 $\langle 4 \rangle$ all text shall be "arial bold" font.

 $\langle 5 \rangle$ each line of text shall be centered on the nameplate.

 $\langle 6 \rangle$ all text shall be upper case.

 $\left< 7 \right>$ all dimensions shown in inches.

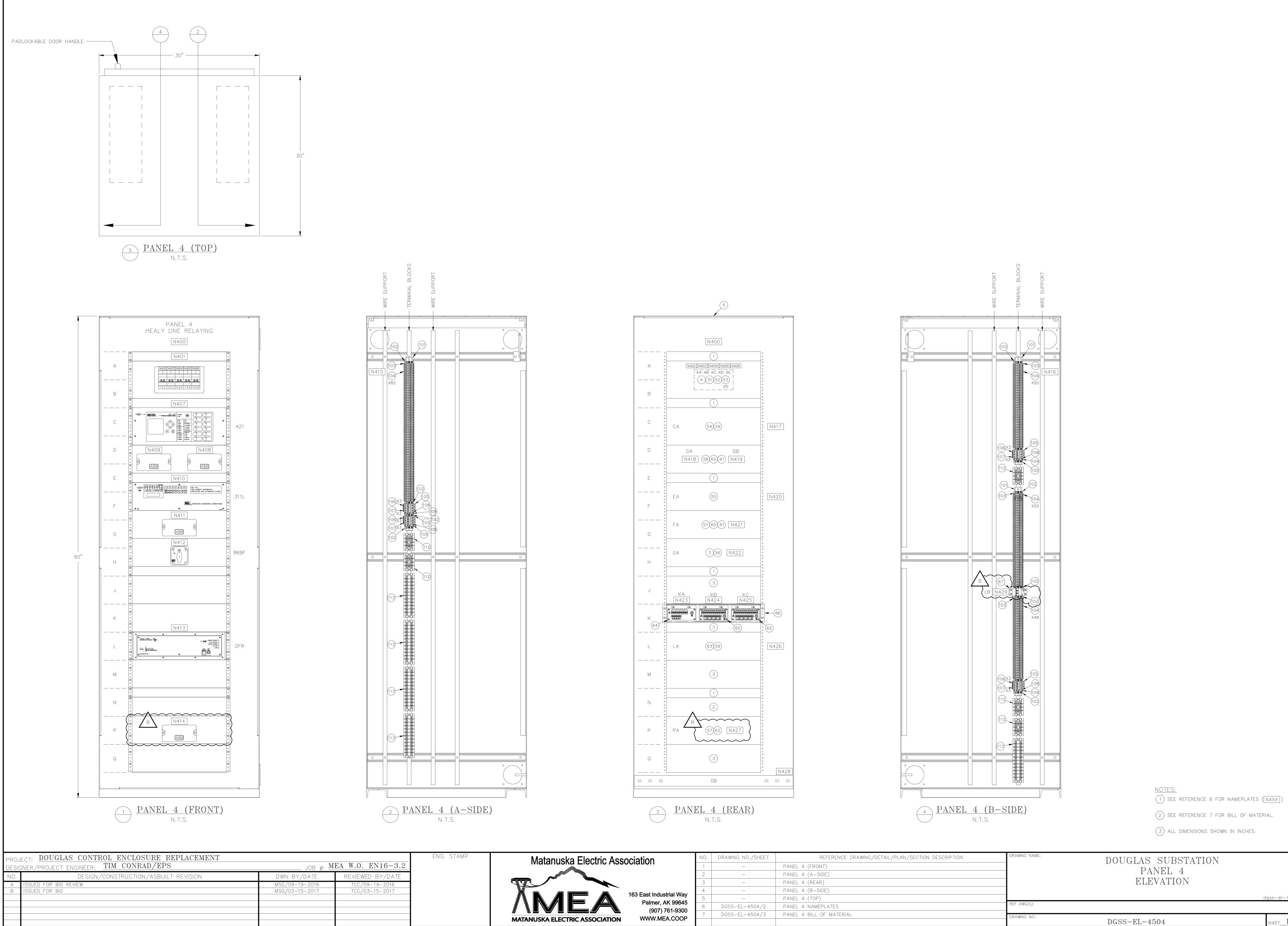
REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBSTA PANEL 2 NAMEPLATES
	REF DWG(S):	
	DRAWING NO.:	DGSS-EL-4502

SHEET 2_OF 3

dgss-el-4502_2.dwg

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	ENG. STAMP	Matanuska Electric Asso	nciation	NO.	DRAWING NO./SHEET	
-3.2				1	-	ŀ
DATE				2	_	[
016				3	_	F
017			163 East Industrial Way	4	-	F
			Palmer, AK 99645	5	_	
			(907) 761-9300	6	DGSS-EL-4504/2	F
			WWW.MEA.COOP	7	DGSS-EL-4504/3	
		MATANUSKA ELECTRIC ASSOCIATION	WWWW.IVIEA.COOP			

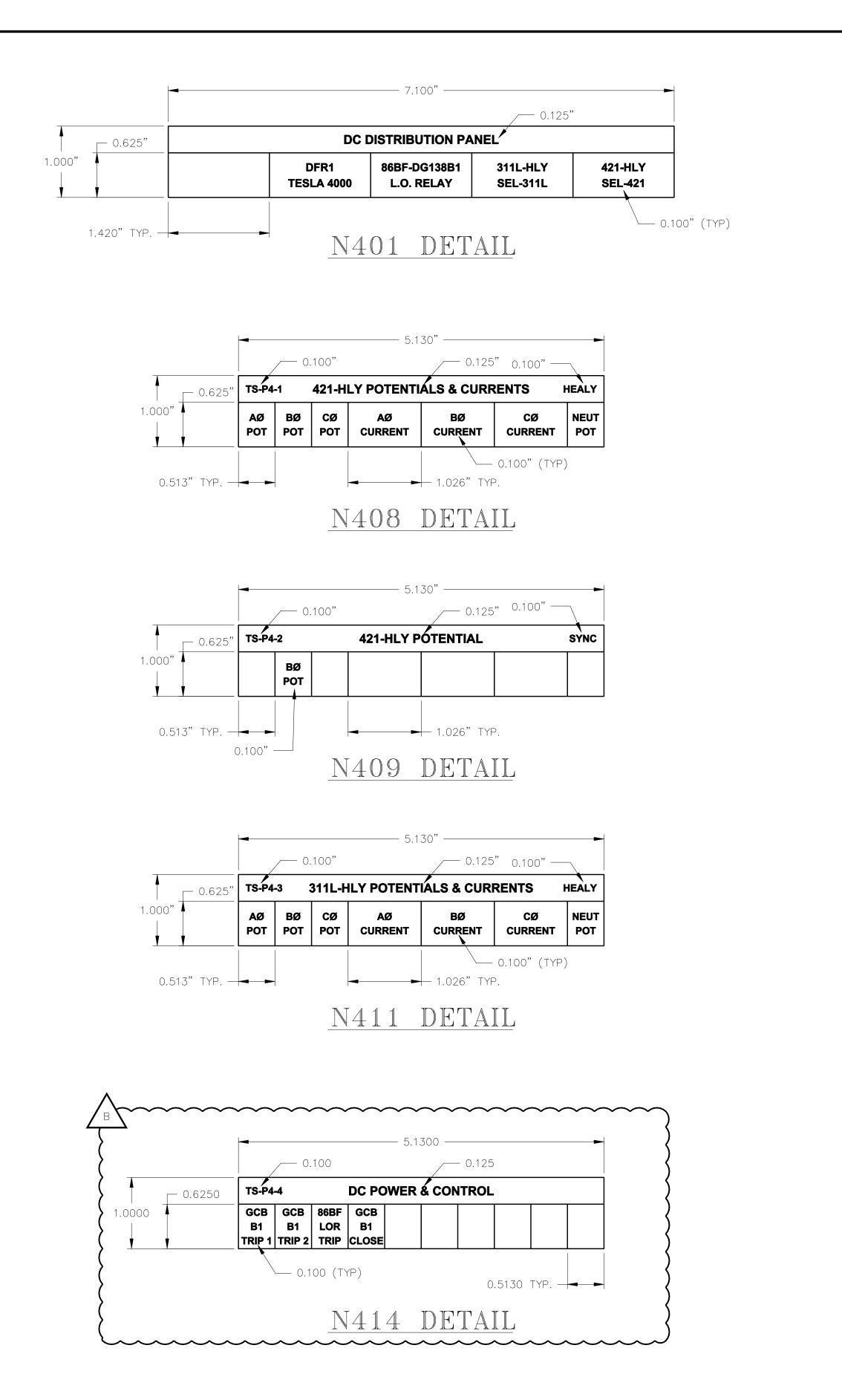
SHEET <u>1</u> of <u>3</u>

dgss-el-4504_1.dw

 $\langle 2 \rangle$ see reference 7 for bill of material. $\left< 3 \right>$ all dimensions shown in inches.

23 24 994-4 14 - 15 - 16 - 16 76 - 16 76 - 16 121 4 14 - - - - 121 4 5. - - - - 121 4 5. - - - - 121 4 5. - - - - 121 4 5. - - - - 121 4 5. - - - - 121 4 5. - - - - 121 4 5. - - - - 121 4 5. - - - - 121 4 5. - - - - 121 5. 5. - - - - 121 5. 5. 5. - - - 121 5. 5. - - - - 121 5. 5. - - - - 121 5. 5. - - - - 121 5. 5. </th <th>NAMEPLATE NUMBER</th> <th>QTY</th> <th>LINE 1 TEXT</th> <th>LINE 2 TEXT</th> <th>LINE 3 TEXT</th> <th>NAMEPLATE SIZE HEIGHT x WIDTH (IN)</th> <th>TEXT HEIGHT (IN)</th>	NAMEPLATE NUMBER	QTY	LINE 1 TEXT	LINE 2 TEXT	LINE 3 TEXT	NAMEPLATE SIZE HEIGHT x WIDTH (IN)	TEXT HEIGHT (IN)
1 1		+					
		1	SEE NAMEPLATE DETAIL ON THIS SHEET				
111 4 No No <t< td=""><td>N402</td><td>2</td><td></td><td></td><td></td><td>1/2 × 3/4</td><td>1/4</td></t<>	N402	2				1/2 × 3/4	1/4
No. No. No. No. No. 1200 1 No. 1000 1000 1000 1000 1210 1 No. 1000 1000 1000 1000 1211 1 1 1000 1000 1000 1000 1211 1 1 1000 1000 1000 1000 1211 <		2	AB				1/4
State A <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
480 4 2* 2* 1** 1** 1** 1** 1** 200 1 1** 1** 1** 1** 1** 1** 1** 201 1 1** 1** 1** 1** 1** 1** 201 1 1** 1** 1** 1** 1** 1** 201 1 1** 1** 1** 1** 1** 1** 201 1 1** 1** 1** 1** 1** 1** 201 1 1** 1** 1** 1** 1** 1** 201 1 1** 1** 1** 1** 1** 1** 201 1 1** 1** 1** 1** 1** 1** 201 1 1** 1** 1** 1** 1** 1** 201 1 1** 1** 1** 1** 1** 1** 201 1 1** 1** 1** 1** 1** 1** 201 1 1** 1** 1** 1** 1** 1** 201 1 1** 1**							
1 1 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Table A APP - VALUE NO. IN PARTY A A Table 1 Restant State No. In party Table A Table A <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
REF 1 Ref with your of a part of the set of t				HEALY LINE RELAY	SEL-421	1 x 3	1/8
LTM LTM LTM TTM TTM LTM SSC 4 Normation of the Normalization		1	SEE NAMEPLATE DETAIL ON THIS SHEET				
Line I Control of the formation of the formatio of the formation of the formation of the formation of		1	SEE NAMEPLATE DETAIL ON THIS SHEET				
L I APP - ACCAPT APP + ACCAPT (FILAR) TATA ACA (S) 1 22 AP L AP POP + ACCAPT (FILAR) TATA ACA (S) 1 22 AP L AP POP + ACCAPT (FILAR) TATA ACA (S) 1 22 AP L AP POP + ACCAPT (FILAR) TATA ACA (S) TATA ACA (S) 1 22 AP L AP	N410	1	311L-HLY	HEALY LINE RELAY	SEL-311L	1 x 3	1/8
ET Image: State of the stat	N411	1	SEE NAMEPLATE DETAIL ON THIS SHEET				
	N412	1	86BF-DG138B1	BKR FAIL LOCK-OUT RELAY	GCB DG-138-B1	1 x 3	1/8
NT C <thc< th=""> C <thc< th=""> <thc< th=""></thc<></thc<></thc<>	N413	1			TESLA 4000	1 x 3	1/8
Here 1 4 723-34 14 IIII 1 4 10 24.20 10 IIII 1 4 11 11 11 11 IIII 1 4 11 41 11 11 IIII 1 4 11 41 11 11 11 IIIII 1 4 11 11 11 11 11 IIIIII 1 4 11 11 11 11 11 IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	N414	(1	SEE NAMEPLATE DETAIL ON THIS SHEET				
TT I 6 1/2-30 1/2 THE I 4 41-15 Trant -1.65 0 HE I 6 -1.65 0 0 THE I 6 -1.65 0 THE I 0 1.65 0 1.65 THE I 0 1.65 0 1.65 THE I 0 1.65 0 1.65 0 THE I 0 1.65 0 1.65 0 THE 1.65 0	N415					1/2 × 3/4	1/4
Image: Second set of the secon	N416	1	В			1/2 × 3/4	1/4
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HR A CONTROL TEN + 1 1 + − 2 1 + − 2 HR 1 - 95, 37 20, 59, 90, 00 - - - HR 1 10 - 94, 37 20, 59, 90, 00 - - - HR 1 10 - 94, 37 20, 59, 90, 00 - - 10 HR 1 10 - - 10 - 10, 17 10, 17 HR 1 10 - - - 10, 17 10, 17 10, 17 HR 1 - - - - 10, 17 10, 17 10, 17 HR - - - - - - 10, 17 10, 17 HR - - - - - - 10, 17 10, 17 HR - - - - - - 10, 17 10, 17 HR - - - - - - - 10, 17 HR - - - - - - - - HR - - - - - - - </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
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Image Low Property Low Prop	N423						
NUMBER 1 <th< td=""><td>N424</td><td></td><td>КВ</td><td>DFR1-CT1</td><td>138 kV BKR CT</td><td>$1 \times 1 - 1/2$</td><td>1/8 B</td></th<>	N424		КВ	DFR1-CT1	138 kV BKR CT	$1 \times 1 - 1/2$	1/8 B
NEXT 1 MS 1 1 MS 1 1 MA 1283 3 3 3 3 3 1	N425	1	KC	DFR1-CT2	138 kV XFMR CT	1 x 1-1/2	1/8
1 3* 28.05 N.* 1.11/4 1/5 20.01 1 ANALON 1.11/4 1/5 20.01 1 1.11/4 1/5 1/6 20.01 1 1.11/4 1/5 1/6 20.01 1 1.11/4 1/5 1/6 20.01 1 1.11/4 1/5 1/6 20.01 1 1.11/4 1/6 1/6 20.01 1 1.11/4 1/6 1/6 20.01 1 1.11/4 1/6 1/6 20.01 1 1.11/4 1/6 1/6 20.01 1 1.11/4 1/6 1/6 20.01 1 1.11/4 1/6 1/6 20.01 1 1.11/4 1/6 1/6 20.01 1 1.11/4 1/6 1/6 20.01 1 1.11/4 <	N426	1	LA	DFR1	TESLA 4000	1 x 1-1/2	1/8
Image: Secont rol in the second se	N427	1	PA	TS-P4-4	TEST SW	1 x 1-1/2	1/8
NAME Control NAME	N428	1	GB	GROUND BUS		1 x 1-1/2	1/8
1 AOR (12) 1 AOR (12) 1	N429		LB			$1/2 \times 3/4$	/ /
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NGINEER: TIM CONRAD/EPS JOB #: MEA W.O. EN16-3.2 DESIGN/CONSTRUCTION/ASBUILT REVISION DWN BY/DATE REVIEWED BY/DATE EVIEW MSG/09-19-2016 TCC/09-19-2016 MSG/03-15-2017 TCC/03-15-2017 MSG/03-15-2017 TCC/03-15-2017	S CONTI	ROL EN	CLOSURE REPLACEMENT			Matanue	ka Flortric Ac
MSG/09-19-2016 TCC/09-19-2016 MSG/03-15-2017 TCC/03-15-2017	IGINEER:	TIM CO	ONRAD/EPS			iviatăi ius	
	DESIGN, review	/ CUNSTRU	CHUN/ASBUILT REVISION	MSG/09-19-2016 TCC/09-	9-2016		
				MSG/03-15-201/ TCC/03-			

PROJECT:



NOTES:

 $\langle 1
angle$ all nameplates shall be 1/16" thick minimum plastic.

 $\langle 2 \rangle$ all nameplates shall have exterior rated high-tack adhesive.

 $\left< 3 \right>$ all nameplates shall be black surface wth white text.

 $\langle 4 \rangle$ all text shall be "arial bold" font.

 $\langle 5 \rangle$ each line of text shall be centered on the nameplate.

 $\langle 6 \rangle$ all text shall be upper case.

 $\left< 7 \right>$ All dimensions shown in inches.

REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME: DOUGLAS SUBSTA PANEL 4 NAMEPLATES
	REF DWG(S):
	DRAWING NO.: DGSS-EL-4504

SHEET <u>2</u> of <u>3</u>

dgss-el-4504_2.dwg

FATION

REF. NO.	UNIT	ESTIMATED QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	FURNISHEE BY
(1)	EA	5	BLANK FILLER PANEL, METALLIC GREY, 1U	BUD/PA-1101-MG (OAE)	C
2	EA	1	BLANK FILLER PANEL, METALLIC GREY, 2U	BUD/PA-1102-MG (OAE)	С
3	EA	B_{5}	BLANK FILLER PANEL, METALLIC GREY, 3U	BUD/PA-1103-MG (OAE)	С
4	EA	1	BLANK FILLER PANEL, METALLIC GREY, 4U	BUD/PA-1104-MG (OAE)	С
5	EA	1	RELAY CABINET WITH DOOR AND COPPER GROUND BUS	TBD	С
6	LOT	1 1 1 1	LED ENCLOSURE LIGHT LIGHT CABLE ASSEMBLY, 120 VAC	HOFFMAN: HOFFMAN/LEDA1S35 HOFFMAN/LEDA20C	С
7	LOT	1 1 1 1	LIGHT SWITCH, SINGLE POLE SWITCH BOX COVER	HUBBELL: KELLEMS/HBL12211 (OAE) RACO/239 (OAE) RACO/800C (OAE)	С
8			NOT USED		
9			NOT USED		
(10)			NOT USED		
(11)			NOT USED		
(12)			NOT USED		
(13)			NOT USED		
(14)			NOT USED		
(15)			NOT USED		
(16)			NOT USED		
(17)			NOT USED		
(18)			NOT USED		
(19)			NOT USED		
20			NOT USED		
(21)			NOT USED		
(22)			NOT USED		
23			NOT USED		
(24)			NOT USED		
25			NOT USED		
26			NOT USED		
27)			NOT USED		

<u>NOTES:</u>

 $\left< 1 \right>$ BILL OF MATERIAL QUANTITIES ARE ESTIMATED. ACTUAL QUANTITIES SHALL BE VERIFIED BY THE CONTRACTOR.

PROJ DESIG	PROJECT: DOUGLAS CONTROL ENCLOSURE REPLACEMENT DESIGNER/PROJECT ENGINEER: <u>TIM CONRAD/EPS</u> JOB #: <u>MEA W.O. EN16-3.2</u>					
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/DATE			
А	ISSUED FOR BID REVIEW	MSG/09-19-2016	TCC/09-19-2016			
В	ISSUED FOR BID	MSG/03-15-2017	TCC/03-15-2017			

REF. NO.	UNIT	ESTIMATED QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	FURNISHED
(51)	EA	5	CIRCUIT BREAKER, 15 AMP	SCHNEIDER ELECTRIC/MG17436	С
(52)	EA	1	MULTI-POLE BREAKER FRONT MOUNTING KIT	SCHNEIDER ELECTRIC/14210	С
(53)	EA 1 DIN RAIL WITH SUPPORT		DIN RAIL WITH SUPPORT	SCHNEIDER ELECTRIC/14211	С
(54)	EA	1	PROTECTIVE RELAY (421-HLY) SCHWEITZER/04214415XC0X4H384XXXX		С
(55)	EA	1	PROTECTIVE RELAY (311L-HLY)	SCHWEITZER/0311L7HCC3254X4XX	С
(56)	EA	1	LOCKOUT RELAY (86BF-DG138B1)	SCHWEITZER/RS86=DKB9	С
(57)	EA	B^2	19" RACK BEZEL, FT-1 STYLE, SINGLE CUTOUT	SCHWEITZER/915900178	С
(58)	EA	1	19" RACK BEZEL, FT-1 STYLE, DUAL CUTOUT	SCHWEITZER/915900179	С
(59)	EA	2	BNC TEE, F/M/F	SCHWEITZER/240-1799	С
60	EA	3	TEST SWITCH, FT-1 STYLE, (6-C, 4-P) (TS-P4-1, TS-P4-2, TS-P4-3)	ABB/C714B325G32	С
61	EA	9	SWITCH HANDLE INTERLOCKING BAR, 2-POSITION	ABB/1270547	С
62	BEA	1	TEST SWITCH, FT-1 STYLE, (10-P) (TS-P4-4)	ABB/9676A93G01	C
63	EA	EA 1 POWER SYSTEM RECORDER (DFR1) ERLPHASE/109312-TESLA4000-18-16P-0-2-60		C	
64	EA	EA 1 AC VOLTAGE INPUT MODULE, TESLA 4000 (DFR1-PT1) ERLPHASE/114258		ERLPHASE/114258	С
65	EA	2	AC CURRENT INPUT MODULE, TESLA 4000 (DFR1-CT1, DFR-CT2)		
66	EA	1	MODULE RACK MOUNT PLATE, TESLA 4000	ERLPHASE/114248	С
67	BEA	1	CIRCUIT BREAKER, 5 AMP	SCHNEIDER ELECTRIC/MG17434	С
68			NOT USED		
69			NOT USED		
(70)			NOT USED		
(71)			NOT USED		
(72)			NOT USED		
(73)			NOT USED		
(74)			NOT USED		
(75)			NOT USED		
(76)			NOT USED		
(77)			NOT USED		
(78)			NOT USED		
(79)			NOT USED		
(80)			NOT USED		

C = CONTRACTOR. O = OWNER. NIC = NOT IN CONTRACT.

ENG.	STAMP

Matanuska Electric Association



163 East Industrial Way Palmer, AK 99645 (907) 761-9300 WWW.MEA.COOP

NO.	DRAWING NO./SHEET	

REF. NO.	UNIT	ESTIMATED QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	FURNISHEI
(101)	EA	2	MOUNTING RAIL, PR30	ABB/1SNA 173 220 R0500	С
(102)	EA	$\sqrt{\frac{12}{12}}$	END STOP, BAM2	ABB/1SNA 206 351 R1600	С
(103)	EA	4	END SECTION, FEM8	ABB/1SNA 113 373 R2600	С
(104)	EA	235	TERMINAL, SWITCH BLOCK, TYPE M6/8.SNB	ABB/1SNA 115 688 R2500	С
(105)	EA	4	END SECTION, FEM12S	ABB/1SNA 117 628 R2200	С
(106)	EA	12	TERMINAL, FUSE BLOCK, TYPE MB10/12.SF	ABB/1SNA 111 033 R0300	С
(107)	EA	12	FUSE, FU520, 3.15A	ABB/1SNA 008 289 R1600	С
(108)	EA	4	END SECTION, FEM6	ABB/1SNA 118 368 R1600	С
(109)	EA	4	TERMINAL BLOCK, FEED THRU, TYPE M6/8	ABB/1SNA 115 118 R1100	С
(110)	EA	2	TERMINAL MARKERS, VERTICAL, RC810, 1–100	ABB/1SNA 234 060 R0500	С
(111)	EA	1	TERMINAL MARKERS, VERTICAL, RC810, 101–200	ABB/1SNA 234 061 R2200	С
(112)	EA	5	TERMINAL BLOCK, 4 POLE, 30 AMP, SHORTING	MARATHON/1504 SC 01C WITH CC 1504	С
(113)	EA	5	TERMINAL BLOCK, 12 POLE, 30 AMP, STANDARD	MARATHON/1512 STD 01C	С
(114)			NOT USED		
(115)			NOT USED		
(116)			NOT USED		
(117)			NOT USED		
(118)			NOT USED		
(119)			NOT USED		
(120)			NOT USED		
(121)			NOT USED		
(122)			NOT USED		
(123)			NOT USED		
(124)			NOT USED		
(125)			NOT USED		
(126)			NOT USED		
(127)			NOT USED		
(128)			NOT USED		
(129)			NOT USED		
(130)			NOT USED		

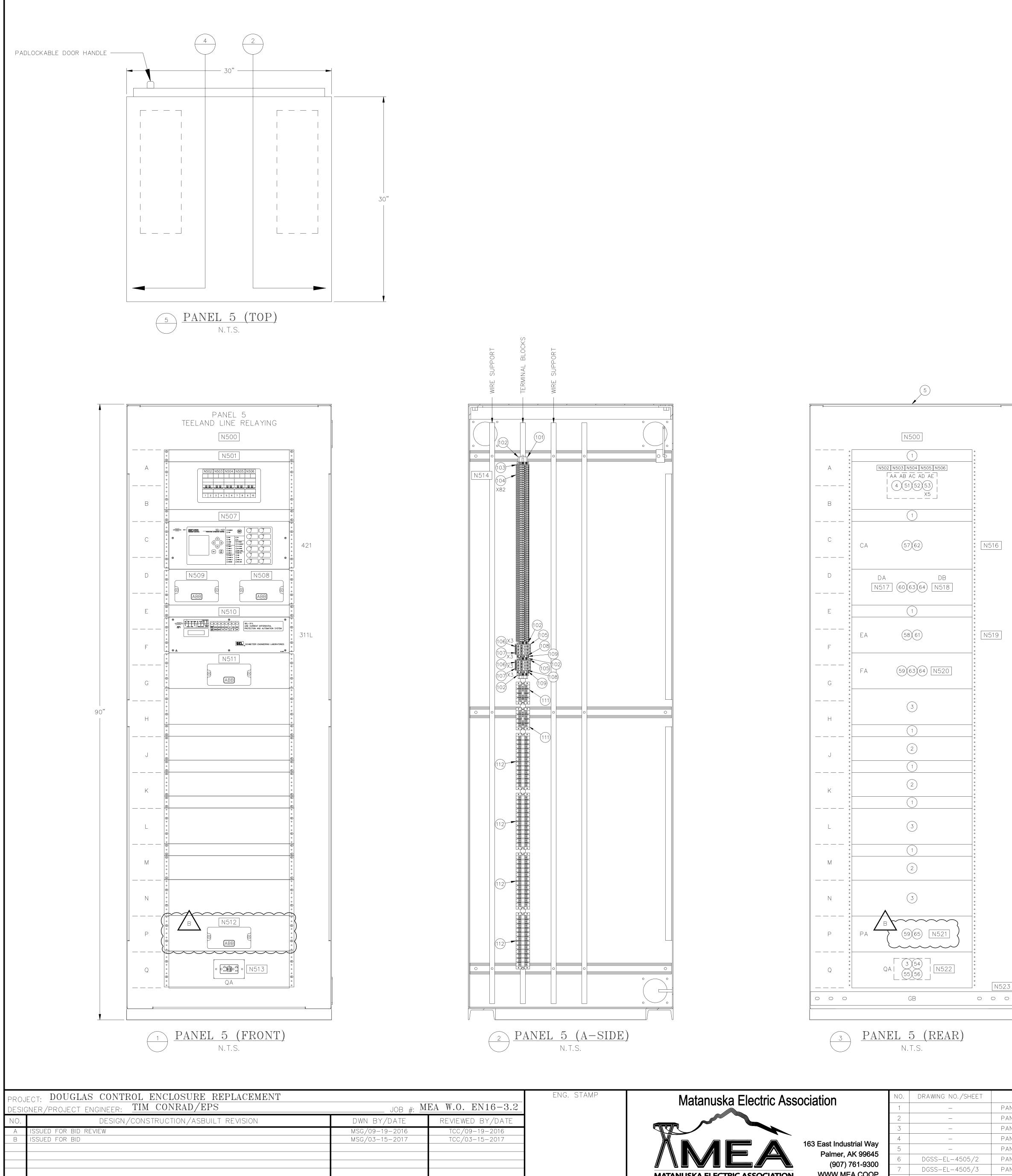
C = CONTRACTOR. O = OWNER. NIC = NOT IN CONTRACT.

REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBSTA PANEL 4 BILL OF MATEF
	REF DWG(S):	
	DRAWING NO.:	DGSS-EL-4504

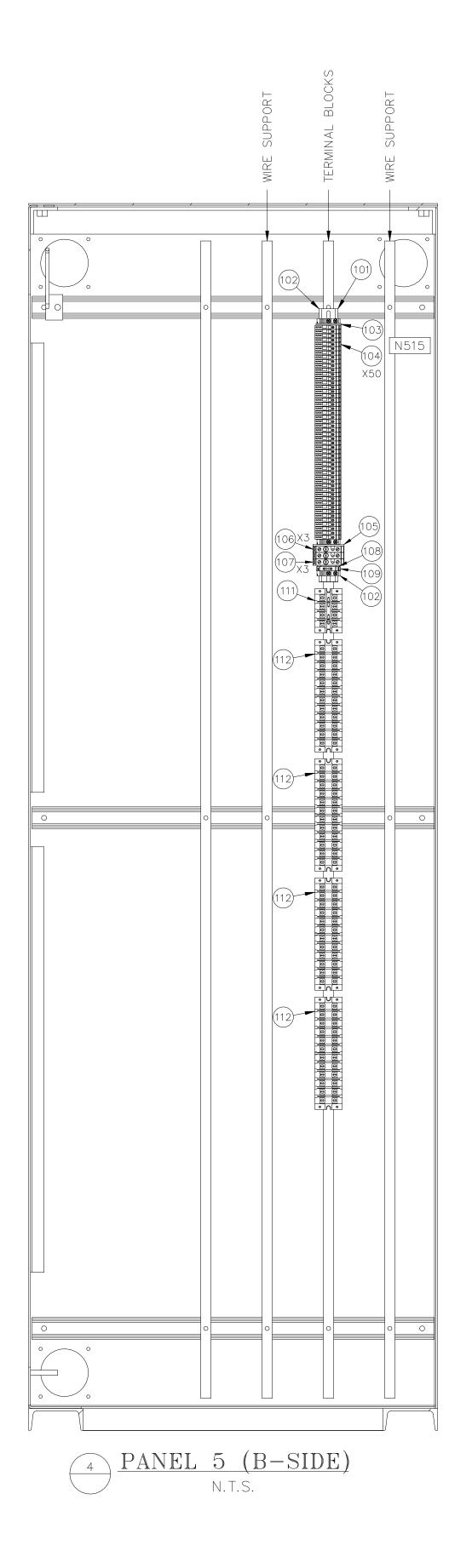
FATION

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dgss-el-4504_3.dwg



	ENG. STAMP	Matanuska Electric Asso	ociation	NO.	DRAWING NO./SHEET	
-3.2				1	_	Ρ
DATE				2	—	Ρ
)16				3	_	Ρ
)17			163 East Industrial Way	4	_	Ρ
			Palmer, AK 99645	5	_	Ρ
			(907) 761-9300	6	DGSS-EL-4505/2	Ρ
			WWW.MEA.COOP	7	DGSS-EL-4505/3	P
		MATANUSKA ELECTRIC ASSOCIATION	WWWW.IVIEA.COOP			





REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBS
PANEL 5 (FRONT)		
PANEL 5 (A-SIDE)		PANEL 5
PANEL 5 (REAR)		ELEVATION
PANEL 5 (B-SIDE)		
PANEL 5 (TOP)		
PANEL 5 NAMEPLATES	REF DWG(S):	
PANEL 5 BILL OF MATERIAL	DRAWING NO.:	
		DGSS-EL-4505

SHEET <u>1</u> of <u>3</u>

dgss-el-4505_1.dw

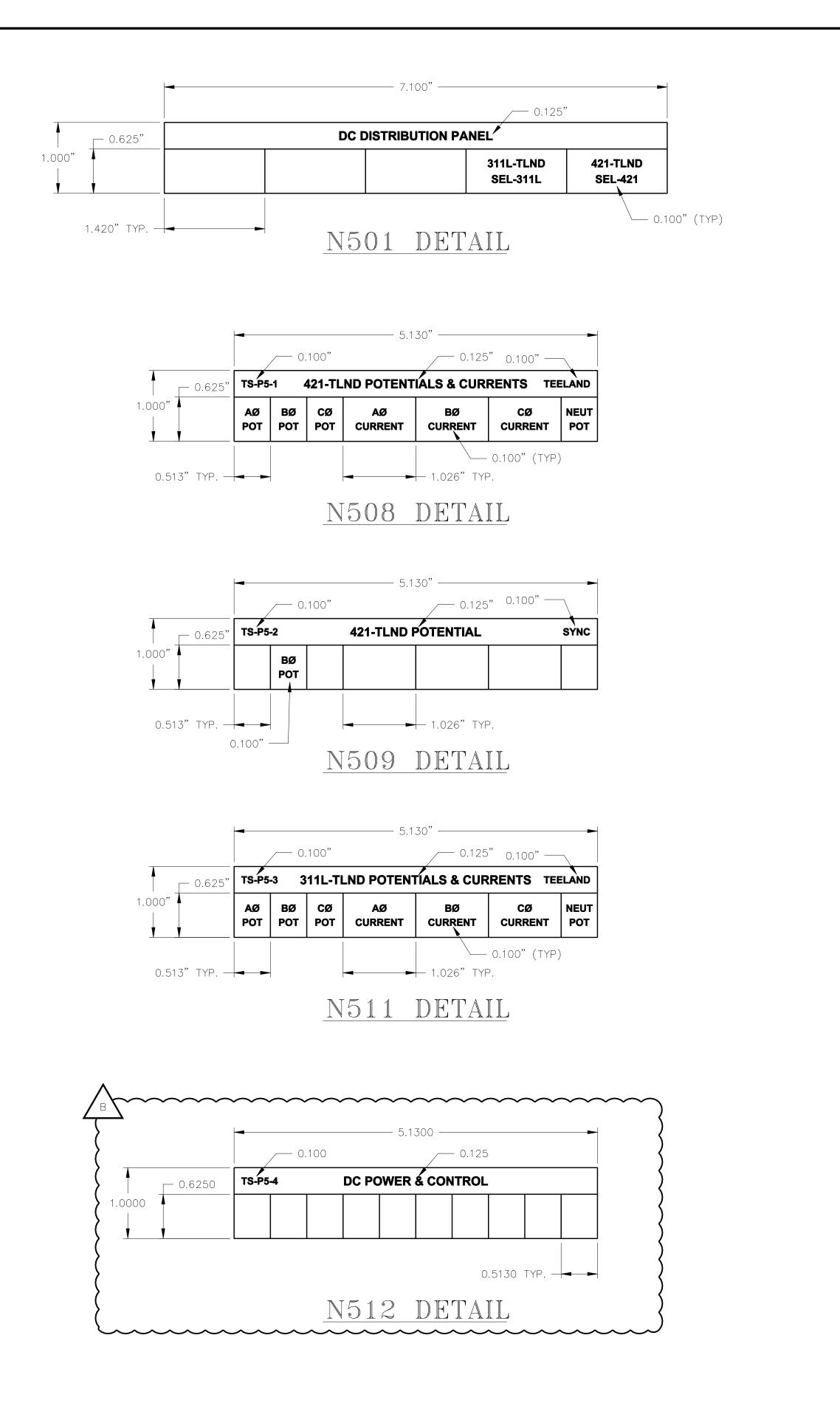
STATION

 $\langle 2 \rangle$ see reference 7 for bill of material. $\langle 3 \rangle$ all dimensions shown in inches.

 $\frac{\text{NOTES:}}{1}$ see reference 6 for nameplates ([NXXX])

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Second	NAMEPLATE NUMBER	QTY	LINE 1 TEXT	LINE 2 TEXT		LINE 3 TEXT	NAMEPLATE SIZE HEIGHT x WIDTH (IN)	TEXT HEIGHT (IN)
Note Note Note Note Note Note Note 3 <	N500	2	PANEL 5	TEELAND LINE RELAYING			1-1/2 x 5	1/4
NY 1 4 1 </td <td>N501</td> <td>1</td> <td>SEE NAMEPLATE DETAIL ON THIS SHEET</td> <td></td> <td></td> <td></td> <td></td> <td></td>	N501	1	SEE NAMEPLATE DETAIL ON THIS SHEET					
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Act Description Description<	N504	2	AC				1/2 x 3/4	1/4
	N505	2	AD				1/2 × 3/4	1/4
NO. 1 The definite the large first and large first	N506	2	AE				1/2 × 3/4	1/4
NOM Nome Nom Nome Nome	N507	1	421-TLND	TEELAND LINE RELAY		SEL-421	1 x 3	1/8
MC Abords Bachs / Brack Abords Abords Image: Control of the	N508	1	SEE NAMEPLATE DETAIL ON THIS SHEET					
Lat. Torustant Process (1993) Torustant	N509	1	SEE NAMEPLATE DETAIL ON THIS SHEET					
	N510	1	311L-TLND	TEELAND LINE RELAY		SEL-311L	1 x 3	1/8
NYPE L Allower	N511	1		•				
1 1 2 1 0 1 </td <td>N512</td> <td>1</td> <td>SEE NAMEPLATE DETAIL ON THIS SHEET</td> <td></td> <td></td> <td></td> <td></td> <td></td>	N512	1	SEE NAMEPLATE DETAIL ON THIS SHEET					
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	N515	1	B				1/2 x 3/4	1/4
IF 3 I IP IP 1000 IP 1000 <thip 1000<="" th=""> IP 10000 <thip 1000<="" td=""><td>N516</td><td>1</td><td>СА</td><td>421-TLND</td><td></td><td>SEL-421</td><td>1 x 1-1/2</td><td>1/8</td></thip></thip>	N516	1	СА	421-TLND		SEL-421	1 x 1-1/2	1/8
1983 - 1.4 40.0132 1.0.091 1.0.12 1.0.12 1933 1 5 7.5.3 38115 1.1.1.0 4 1931 0.4 993 8971-01 1.1.1.0 4 1931 0.4 993 8971-01 1.1.1.0 4 1931 0.4 993 8971-01 1.1.1.0 4 1931 2100-101 1.1.1.0 4 4 1931 2100-101 1.1.1.0 4 4 1931 2100-101 1.1.1.0 4 4 1931 2100-101 1.1.1.0 4 1931 2100-101 1.1.1.0 4 1931 2100-101 1.1.1.0 4 1931 2100-101 1.1.1.0 4 1931 2100-101 1.1.1.0 4 1931 2100-101 1.1.1.0 1.1.1.0 1931 2100-101 1.1.1.0 1.1.1.0 1931 2100-101 1.1.1.0 1.1.1.0 1931 2100-101 1.1.1.0 1.1.1.0 1931 2100-101 1.1.1.0 1.1.1.0 1931 2100-101 1.1.1.0 1.1.1.0 1931 <	N517	1	DA	TS-P5-1		421 TEST SW	1 x 1-1/2	1/8
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Last 1 N 10-107 10		1	EA	311L-TLND		SEL-311L	1 x 1-1/2	1/8
		1	FA	TS-P5-3		311L TEST SW	1 x 1-1/2	1/8
Image: Section of the section of t		1	PA	TS-P5-4		TEST SW	$1 \times 1 - 1/2$	1/8 _B
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$\begin{array}{ c c c c c c } \hline 1 & $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $$		1	GB	GROUND BUS			1 x 1-1/2	
		1	WORK LIGHT				1 x 1-1/2	
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MSG/03-15-2017 MSG/03-15-2017	DESIGN			DWN BY/DATE REVIEW	ED BY/DATE			
	BID REVIEW BID			MSG/09-19-2016 TCC/ MSG/03-15-2017 TCC/				
MATANUSKA ELECTRIC ASSOCIATIO								
							MATANUSKA ELECT	RIC ASSOCIATION

PROJECT:



NOTES:

 $\langle 1
angle$ all nameplates shall be 1/16" thick minimum plastic.

 $\langle 2 \rangle$ all nameplates shall have exterior rated high-tack adhesive.

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 $\langle 6 \rangle$ all text shall be upper case.

 $\left< 7 \right>$ all dimensions shown in inches.

REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME: DOUGLAS SUBST PANEL 5 NAMEPLATES
	REF DWG(S):
	DRAWING NO.: DGSS-EL-4505

SHEET <u>2</u> of <u>3</u>

dgss-el-4505_2.dwg

FATION

REF. NO.	UNIT	ESTIMATED QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	FURNISHEI BY
(1)	EA	7 7	BLANK FILLER PANEL, METALLIC GREY, 1U	BUD/PA-1101-MG	С
(2)	EA	3	BLANK FILLER PANEL, METALLIC GREY, 2U	(OAE) BUD/PA-1102-MG (OAE)	С
3	EA	A	BLANK FILLER PANEL, METALLIC GREY, 3U	BUD/PA-1103-MG (OAE)	С
4	EA	1	BLANK FILLER PANEL, METALLIC GREY, 4U	BUD/PA-1104-MG (OAE)	С
5	EA	1	RELAY CABINET WITH DOOR AND COPPER GROUND BUS	TBD	С
6	LOT	1 1 1	LED ENCLOSURE LIGHT LIGHT CABLE ASSEMBLY, 120 VAC	HOFFMAN: HOFFMAN/LEDA1S35 HOFFMAN/LEDA20C	С
7	LOT	1 1 1 1	LIGHT SWITCH, SINGLE POLE SWITCH BOX COVER	HUBBELL: KELLEMS/HBL12211 (OAE) RACO/239 (OAE) RACO/800C (OAE)	С
8			NOT USED		
9			NOT USED		
(10)			NOT USED		
(11)			NOT USED		
(12)			NOT USED		
(13)			NOT USED		
(14)			NOT USED		
(15)			NOT USED		
(16)			NOT USED		
(17)			NOT USED		
(18)			NOT USED		
(19)			NOT USED		
20			NOT USED		
(21)			NOT USED		
(22)			NOT USED		
23			NOT USED		
(24)			NOT USED		
(25)			NOT USED		
26)			NOT USED		
27)			NOT USED		

<u>NOTES:</u>

 $\left< 1 \right>$ BILL OF MATERIAL QUANTITIES ARE ESTIMATED. ACTUAL QUANTITIES SHALL BE VERIFIED BY THE CONTRACTOR.

PROJ DESIC	iect: <u>Douglas control enclosure replacement</u> gner/project engineer: <u>TIM conrad/eps</u>	Job #: <u>M</u>	EA W.O. EN16-3.2
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/DATE
	ISSUED FOR BID REVIEW ISSUED FOR BID	MSG/09-19-2016 MSG/03-15-2017	TCC/09-19-2016 TCC/03-15-2017

			BILL OF MATER	IAL	
REF. NO.	UNIT	ESTIMATED QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	FURNISHED BY
(51)	EA	5	CIRCUIT BREAKER, 15 AMP	SCHNEIDER ELECTRIC/MG17436	С
(52)	EA	1	MULTI-POLE BREAKER FRONT MOUNTING KIT	SCHNEIDER ELECTRIC/14210	С
(53)	EA	1	DIN RAIL WITH SUPPORT	SCHNEIDER ELECTRIC/14211	С
(54)	EA	1	RECEPTACLE, 125V, 20A, DUPLEX, GFI (RE23)	HUBBELL-KELLEMS/GFR5362SGI	С
(55)	EA	1	COVER PLATE, 1-GANG, STAINLESS STEEL	HUBBELL-KELLEMS/SS26 (OAE)	С
(56)	EA	1	SINGLE GANG BOX, ALUMINUM	HUBBELL-RACO/5386-0 (OAE)	С
(57)	EA	1	PROTECTIVE RELAY (421-TLND)	SCHWEITZER/04214415XC0X4H384XXXX	С
58	EA	1	PROTECTIVE RELAY (311L-TLND)	SCHWEITZER/0311L7HCC3254X4XX	С
(59)	EA	B^2	19" RACK BEZEL, FT—1 STYLE, SINGLE CUTOUT	SCHWEITZER/915900178	С
60	EA	1	19" RACK BEZEL, FT—1 STYLE, DUAL CUTOUT	SCHWEITZER/915900179	С
61)	EA	1	WIRE LEAD TERMINATOR, 50 OHM	SCHWEITZER/915900036	С
62	EA	1	BNC TEE, F/M/F	SCHWEITZER/240-1799	С
63	EA	3	TEST SWITCH, FT-1 STYLE, (6-C, 4-P) (TS-P5-1, TS-P5-2, TS-P5-3)	ABB/C714B325G32	С
64)	EA	9	SWITCH HANDLE INTERLOCKING BAR, 2-POSITION	ABB/1270547	С
65	BEA		TEST SWITCH, FT-1 STYLE, (10-P) (TS-P5-4)	ABB/9676A93G01	с
66			NOT USED		
67			NOT USED		
68			NOT USED		
69			NOT USED		
(70)			NOT USED		
(71)			NOT USED		
(72)			NOT USED		
(73)			NOT USED		
(74)			NOT USED		
(75)			NOT USED		
(76)			NOT USED		
(77)			NOT USED		
(78)			NOT USED		
(79)			NOT USED		
(80)			NOT USED		

C = CONTRACTOR. O = OWNER. NIC = NOT IN CONTRACT.

ENG.	STAMP

Matanuska Electric Association



163 East Industrial Way Palmer, AK 99645 (907) 761-9300 WWW.MEA.COOP

NO.	DRAWING NO./SHEET	

	UNIT	ESTIMATED	BILL OF MATER		FURNISHED
REF. NO.		QUANTITY		MANUFACTURER/CATALOG NUMBER	BY
(101)	EA	2	MOUNTING RAIL, PR30	ABB/1SNA 173 220 R0500	С
(102)	EA	7	END STOP, BAM2	ABB/1SNA 206 351 R1600	С
103	EA	2	END SECTION, FEM8	ABB/1SNA 113 373 R2600	С
(104)	EA	132	TERMINAL, SWITCH BLOCK, TYPE M6/8.SNB	ABB/1SNA 115 688 R2500	С
(105)	EA	3	END SECTION, FEM12S	ABB/1SNA 117 628 R2200	С
106	EA	9	TERMINAL, FUSE BLOCK, TYPE MB10/12.SF	ABB/1SNA 111 033 R0300	С
(107)	EA	9	FUSE, FU520, 3.15A	ABB/1SNA 008 289 R1600	С
108	EA	3	END SECTION, FEM6	ABB/1SNA 118 368 R1600	С
(109)	EA	3	TERMINAL BLOCK, FEED THRU, TYPE M6/8	ABB/1SNA 115 118 R1100	С
(110)	EA	2	TERMINAL MARKERS, VERTICAL, RC810, 1–100	ABB/1SNA 234 060 R0500	С
(111)	EA	3	TERMINAL BLOCK, 4 POLE, 30 AMP, SHORTING	MARATHON/1504 SC 01C WITH CC 1504	С
(112)	EA	8	TERMINAL BLOCK, 12 POLE, 30 AMP, STANDARD	MARATHON/1512 STD 01C	С
(113)			NOT USED		
(114)			NOT USED		
(115)			NOT USED		
(116)			NOT USED		
(117)			NOT USED		
(118)			NOT USED		
(119)			NOT USED		
(120)			NOT USED		
(121)			NOT USED		
(122)			NOT USED		
(123)			NOT USED		
(124)			NOT USED		
(125)			NOT USED		
(126)			NOT USED		
(127)			NOT USED		
(128)			NOT USED		
(129)			NOT USED		
(130)			NOT USED		

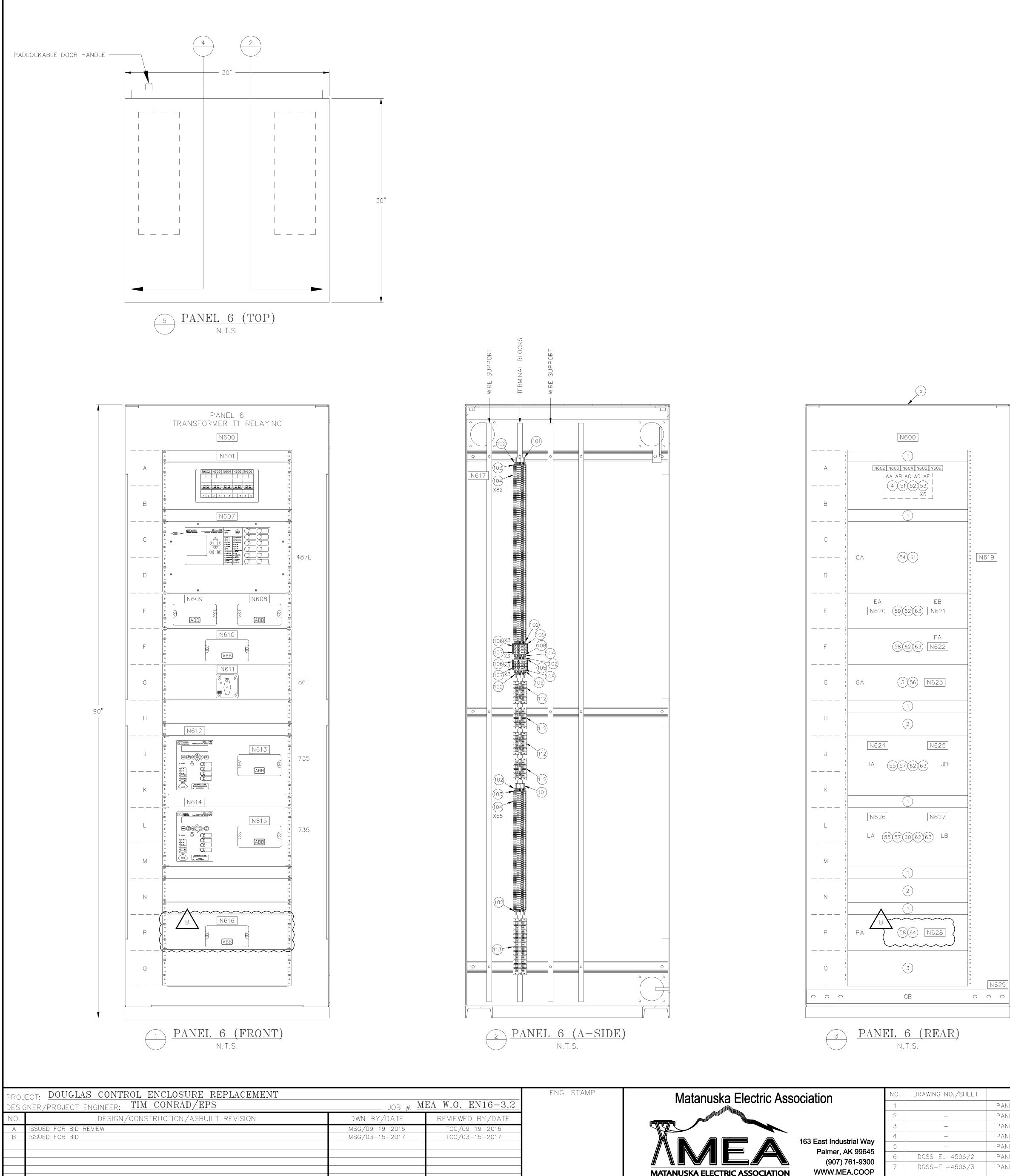
C = CONTRACTOR. O = OWNER. NIC = NOT IN CONTRACT.

REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBSTA PANEL 5 BILL OF MATER
	REF DWG(S):	
	DRAWING NO.:	DGSS-EL-4505

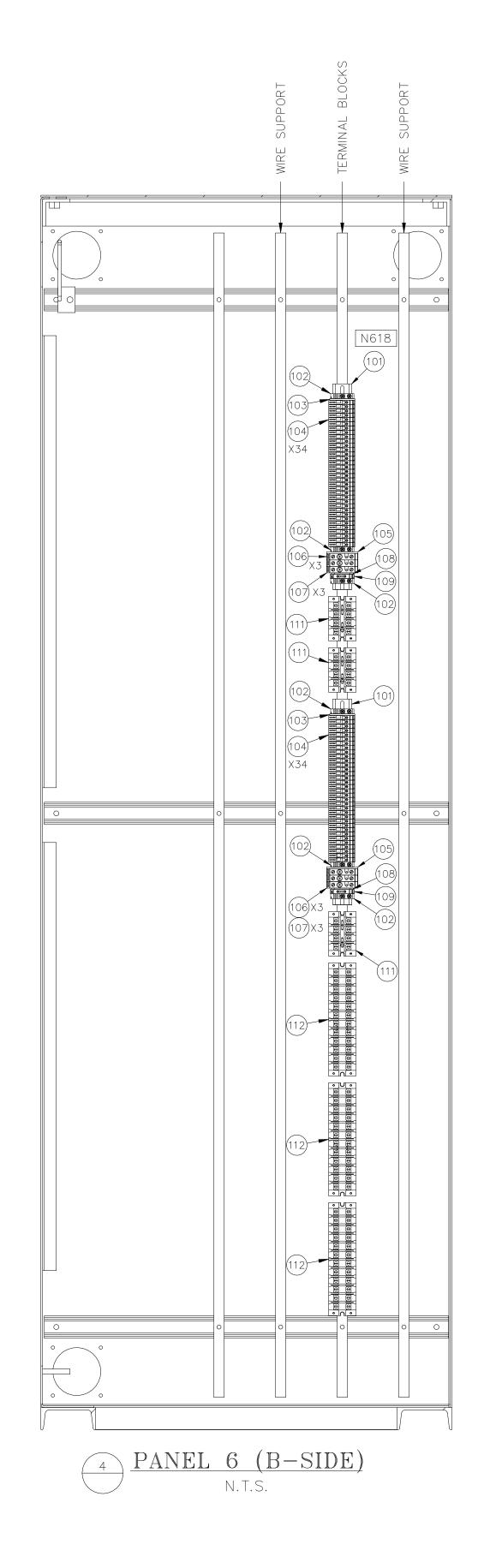
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ERIAL

dgss-el-4505_3.dwg



	ENG. STAMP	Matanuska Electric Association	NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBST
16 - 3.2			1	_	PANEL 6 (FRONT)		
Y/DATE			2	—	PANEL 6 (A-SIDE)		PANEL 6
-2016			3	—	PANEL 6 (REAR)		ELEVATION
-2017		163 East Industrial Way	4	_	PANEL 6 (B-SIDE)		
		Palmer, AK 99645	5	_	PANEL 6 (TOP)		
		(907) 761-9300	6	DGSS-EL-4506/2	PANEL 6 NAMEPLATES	REF DWG(S):	
			7	DGSS-EL-4506/3	PANEL 6 BILL OF MATERIAL	_ DRAWING NO.:	
		MATANUSKA ELECTRIC ASSOCIATION WWW.MEA.COOP					DGSS-EL-4506





NOTES:

SHEET <u>1</u> of <u>3</u>

dgss-el-4506_1.dw

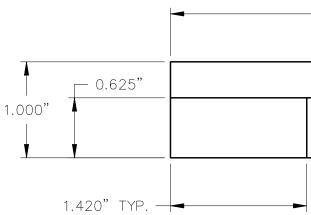
BSTATION

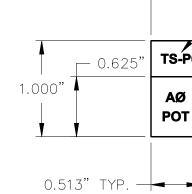
 $\langle 2 \rangle$ see reference 7 for bill of material. $\langle 3 \rangle$ all dimensions shown in inches.

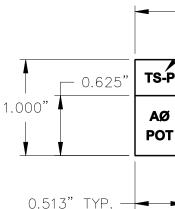
 $\langle 1 \rangle$ see reference 6 for nameplates (NXXX)

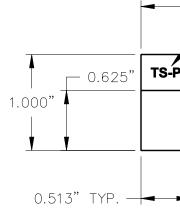
NAMEPLATE NUMBER	QTY	LINE 1 TEXT	LINE 2 TEXT	LINE 3 TEXT	NAMEPLATE SIZE HEIGHT x WIDTH (IN)	TEXT HEIGHT (IN)	7.100" 0.125"
N600	2	PANEL 6 B	TRANSFORMER T1 RELAYING	TRANSFORMER T1 METERING	$1-1/2 \times 5$	1/4	0.625" DC DISTRIBUTION PANEL
N601	1	SEE NAMEPLATE DETAIL ON THIS SHEET					1.000 735-T1-2 735-T1-1 86T1 487E- SEL-735 SEL-735 L.O. RELAY SEL-44
N602	2	AA			1/2 × 3/4	1/4	1.420" TYP.
N603	2	AB			1/2 × 3/4	1/4	N601 DETAIL
N604	2	AC			1/2 x 3/4	1/4	
N605	2	AD			1/2 × 3/4	1/4	
N606	2	AE			1/2 × 3/4	1/4	5.130"
N607	1	487E-T1	TRANSFORMER T1 RELAY	SEL-487E	1 x 3	1/8	0.625" TS-P6-1 487E-T1 POTENTIALS & CURRENTS T1 138 KV
N608	1	SEE NAMEPLATE DETAIL ON THIS SHEET				., _	1.000" AØ BØ CØ AØ BØ CØ NEUT POT POT POT CURRENT CURRENT CURRENT POT
N609	1						Y I I I I 0.100" (TYP)
		SEE NAMEPLATE DETAIL ON THIS SHEET					0.513" TYP
N610	1	SEE NAMEPLATE DETAIL ON THIS SHEET					N608 DETAIL
N611	1	86T1	XFMR LOCK-OUT RELAY	TRANSFORMER T1	1 x 3	1/8	
N612	1	735-T1-1	XFMR T1 METER	SEL-735	1 x 3	1/8	► 5.130" — ►
N613	1	SEE NAMEPLATE DETAIL ON THIS SHEET					
N614	1	735-T1-2	XFMR T1 METER (BACKUP)	SEL-735	1 x 3	1/8	1.000" TS-P6-2 487E-T1 POTENTIÁLS & CURRENTS T1 24.9 kV 1.000" AØ BØ CØ NEUT
N615	1	SEE NAMEPLATE DETAIL ON THIS SHEET					POT POT POT CURRENT CURRENT POT
N616		SEE NAMEPLATE DETAIL ON THIS SHEET	B				0.513" TYP.
N617		A			1/2 x 3/4	1/4	
N618	1	В			1/2 × 3/4	1/4	N609 DETAIL
N619	1	CA	487E-T1	SEL-487E	1 x 1-1/2	1/8	
620	1	EA	TS-P6-1	487E TEST SW	1 x 1-1/2	1/8	5.130"
N621		EB	TS-P6-2	487E TEST SW	1 x 1-1/2	1/8	0.625" TS-P6-3 487E-T1 CURRENT T1 NEUTRAL
1622							1.000" NEUTRAL CURRENT
		FA	TS-P6-3	487E TEST SW	1 x 1-1/2	1/8	
23	1	GA	86T1	XFMR LO RELAY	1 x 1-1/2	1/8	0.513" TYP.
624	1	JA	TS-P6-4	735 TEST SW	1 x 1-1/2	1/8	N610 DETAIL
1625	1	JB	735-T1-1	SEL-735	1 x 1-1/2	1/8	
626	1	LA	TS-P6-5	735 TEST SW	1 x 1-1/2	1/8	► 5.130" — ►
627	1	LB	735-T1-2	SEL-735	1 x 1-1/2	1/8	
628			TS-P6-6	TEST SW			1.000" TS-P6-4 735-T1-1 POTENTIÁLS & CURRENTS T1 138 kV 1.000" AØ BØ CØ NEUT
N628	1	GB	GROUND BUS		1 x 1-1/2	1/8	POT POT POT CURRENT CURRENT POT
1629	1	WORK LIGHT			1 x 1-1/2	1/8	0.513" TYP.
							N613 DETAIL
							◄ 5.130" —
							0.100"
							1.000" TS-P6-5 735-T1-2 POTENTIALS & CURRENTS T1 138 kV
							AØ BØ CØ AØ BØ CØ NEUT POT POT POT CURRENT CURRENT CURRENT POT
							0.517" JVD 0.100" (TYP)
	_						N615 DETAIL
							5.1300 0.100
							TS-P6-6 DC POWER & CONTROL
							1.0000 C.S. 86T1 C.S. TD200 LOR TD200 TRIP 1 TRIP CLOSE
							0.100 (TYP)
							N616 DETAIL
AS CONT		LOSURE REPLACEMENT		ENG. STAMP	Matanuska	a Electric Ass	ciation NO. DRAWING NO./SHEET REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIP
ENGINEER: DESIGI		NRAD/EPS TION/ASBUILT REVISION	JOB #: MEA W.O. EN16 Dwn by/date				
REVIEW	,	,	MSG/09-19-2016 TCC/09-19-2 MSG/03-15-2017 TCC/03-15-2	016			
							163 East Industrial Way Palmer, AK 99645
					MATANUSKA ELECTR		(907) 761-9300 WWW.MEA.COOP

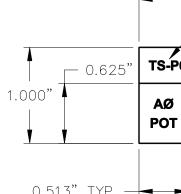
PROJECT: ESIGNE

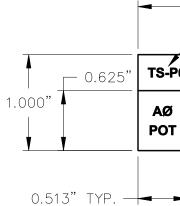


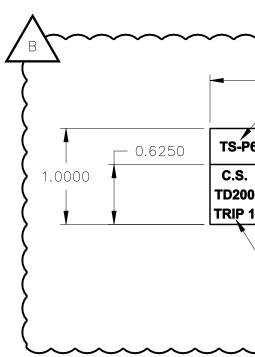












	7.100"			-
		0.125'	,	
DCI			1	-
735-T1-2 SEL-735	735-T1-1 SEL-735	86T1 L.O. RELAY	487E-T1 SEL-487E	
			0.1	100" (TYF
N6	01 DET	AIL		

~	\sim	\sim	\sim	\sim	\sim	\sim	\sim	\sim	\sim
				5.1	300 —				-
/	<u> </u>	.100				- 0.125			
6.	·6		DC PC	WER		ITROL			
0	86T1 LOR	C.S. TD200							
		CLOSE							
		× ×	,			0	.5130	TYP. —	
	~ ~	N	61	6	DE	TA			~ ~ ^

NOTES: $\langle 1 \rangle$ all nameplates shall be 1/16" thick minimum plastic. $\langle 2 \rangle$ all nameplates shall have exterior rated high-tack adhesive. $\left< \overline{3} \right>$ all nameplates shall be black surface wth white text. $\left< 4 \right>$ all text shall be "arial bold" font. $\left< 5 \right>$ each line of text shall be centered on the nameplate. $\langle 6 \rangle$ all text shall be upper case. $\langle 7 \rangle$ all dimensions shown in inches.

REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME: DOUGLAS SUBSTATI PANEL 6 NAMEPLATES
	REF DWG(S):
	DGSS-EL-4506

SHEET 2 OF 3

dgss-el-4506_2.dwg

TATION

REF. NO.	UNIT	ESTIMATED QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	FURNISHEI BY
(1)	EA	6 0	BLANK FILLER PANEL, METALLIC GREY, 1U	BUD/PA-1101-MG	С
(2)	EA	2	BLANK FILLER PANEL, METALLIC GREY, 2U	(OAE) BUD/PA-1102-MG (OAE)	С
3	EA	\mathbb{A}	BLANK FILLER PANEL, METALLIC GREY, 3U	BUD/PA-1103-MG (OAE)	С
4	EA	1	BLANK FILLER PANEL, METALLIC GREY, 4U	BUD/PA-1104-MG (OAE)	С
5	EA	1	RELAY CABINET WITH DOOR AND COPPER GROUND BUS	TBD	С
6	LOT	1 1 1	LED ENCLOSURE LIGHT LIGHT CABLE ASSEMBLY, 120 VAC	HOFFMAN: HOFFMAN/LEDA1S35 HOFFMAN/LEDA20C	С
7	LOT	1 1 1 1	LIGHT SWITCH, SINGLE POLE SWITCH BOX COVER	HUBBELL: KELLEMS/HBL12211 (OAE) RACO/239 (OAE) RACO/800C (OAE)	С
8			NOT USED		
9			NOT USED		
(10)			NOT USED		
(11)			NOT USED		
(12)			NOT USED		
(13)			NOT USED		
(14)			NOT USED		
(15)			NOT USED		
(16)			NOT USED		
(17)			NOT USED		
(18)			NOT USED		
(19)			NOT USED		
20			NOT USED		
(21)			NOT USED		
(22)			NOT USED		
23			NOT USED		
(24)			NOT USED		
(25)			NOT USED		
26)			NOT USED		
27)			NOT USED		

<u>NOTES:</u>

 $\left< 1 \right>$ BILL OF MATERIAL QUANTITIES ARE ESTIMATED. ACTUAL QUANTITIES SHALL BE VERIFIED BY THE CONTRACTOR.

PROJ DESIG	ect: <u>Douglas control enclosure replacement</u> Gner/project engineer: <u>TIM conrad/eps</u>	JOB #: <u>M</u>	EA W.O. EN16-3.2
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/DATE
А	ISSUED FOR BID REVIEW	MSG/09-19-2016	TCC/09-19-2016
В	ISSUED FOR BID	MSG/03-15-2017	TCC/03-15-2017

			BILL OF MATER	IAL	
REF. NO.	UNIT	ESTIMATED QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	FURNISHED BY
(51)	EA	5	CIRCUIT BREAKER, 15 AMP	SCHNEIDER ELECTRIC/MG17436	С
(52)	EA	1	MULTI-POLE BREAKER FRONT MOUNTING KIT	SCHNEIDER ELECTRIC/14210	С
(53)	EA	1	DIN RAIL WITH SUPPORT	SCHNEIDER ELECTRIC/14211	С
(54)	EA	1	PROTECTIVE RELAY (487E–T1)	SCHWEITZER/0487E3X411XXC0X4H684XXX	С
(55)	EA	2	REVENUE METER (735-T1-1, 735-T1-2)	SCHWEITZER/0735VX20944CXXA4XX16101XX	С
(56)	EA	1	LOCKOUT RELAY (86T1)	SCHWEITZER/RS86=DKB9	С
(57)	EA	2	RACK BEZEL, VERTICAL 735 & FT-1 TEST SWITCH	SCHWEITZER/915900216	С
(58)	EA	B^2	19" RACK BEZEL, FT-1 STYLE, SINGLE CUTOUT	SCHWEITZER/915900178	С
(59)	EA	1	19" RACK BEZEL, FT-1 STYLE, DUAL CUTOUT	SCHWEITZER/915900179	С
60	EA	1	WIRE LEAD TERMINATOR, 50 OHM	SCHWEITZER/915900036	С
61	EA	1	BNC TEE, F/M/F	SCHWEITZER/240-1799	С
62	EA	5	TEST SWITCH, FT-1 STYLE, (6-C, 4-P) (TS-P6-1, TS-P6-2, TS-P6-3, TS-P6-4, TS-P6-5)	ABB/C714B325G32	С
63	EA	15	SWITCH HANDLE INTERLOCKING BAR, 2-POSITION	ABB/1270547	С
64	B	1	TEST SWITCH, FT-1 STYLE, (10-P) (TS-P6-6)	ABB/9676A93G01	C
65			NOT USED		
66			NOT USED		
67			NOT USED		
68			NOT USED		
69			NOT USED		
(70)			NOT USED		
(71)			NOT USED		
(72)			NOT USED		
(73)			NOT USED		
(74)			NOT USED		
(75)			NOT USED		
(76)			NOT USED		
(77)			NOT USED		
(78)			NOT USED		
(79)			NOT USED		
(80)			NOT USED		

C = CONTRACTOR. O = OWNER. NIC = NOT IN CONTRACT.

ENG.	STAMP

Matanuska Electric Association



163 East Industrial Way Palmer, AK 99645 (907) 761-9300 WWW.MEA.COOP

NO.	DRAWING NO./SHEET	

		_	BILL OF MATER		
REF. NO.	UNIT	ESTIMATED QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	FURNISHED BY
(101)	EA	2	MOUNTING RAIL, PR30	ABB/1SNA 173 220 R0500	С
102	EA	12	END STOP, BAM2	ABB/1SNA 206 351 R1600	С
103	EA	4	END SECTION, FEM8	ABB/1SNA 113 373 R2600	С
(104)	EA	205	TERMINAL, SWITCH BLOCK, TYPE M6/8.SNB	ABB/1SNA 115 688 R2500	С
(105)	EA	4	END SECTION, FEM12S	ABB/1SNA 117 628 R2200	С
106	EA	12	TERMINAL, FUSE BLOCK, TYPE MB10/12.SF	ABB/1SNA 111 033 R0300	С
(107)	EA	12	FUSE, FU520, 3.15A	ABB/1SNA 008 289 R1600	С
108	EA	4	END SECTION, FEM6	ABB/1SNA 118 368 R1600	С
(109)	EA	4	TERMINAL BLOCK, FEED THRU, TYPE M6/8	ABB/1SNA 115 118 R1100	С
(110)	EA	2	TERMINAL MARKERS, VERTICAL, RC810, 1–100	ABB/1SNA 234 060 R0500	С
(111)	EA	2	TERMINAL MARKERS, VERTICAL, RC810, 101–200	ABB/1SNA 234 061 R2200	С
(112)	EA	7	TERMINAL BLOCK, 4 POLE, 30 AMP, SHORTING	MARATHON/1504 SC 01C WITH CC 1504	С
(113)	EA	4	TERMINAL BLOCK, 12 POLE, 30 AMP, STANDARD	MARATHON/1512 STD 01C	С
(114)			NOT USED		
(115)			NOT USED		
(116)			NOT USED		
(117)			NOT USED		
(118)			NOT USED		
(119)			NOT USED		
(120)			NOT USED		
(121)			NOT USED		
(122)			NOT USED		
(123)			NOT USED		
(124)			NOT USED		
(125)			NOT USED		
(126)			NOT USED		
(127)			NOT USED		
(128)			NOT USED		
(129)			NOT USED		
(130)			NOT USED		

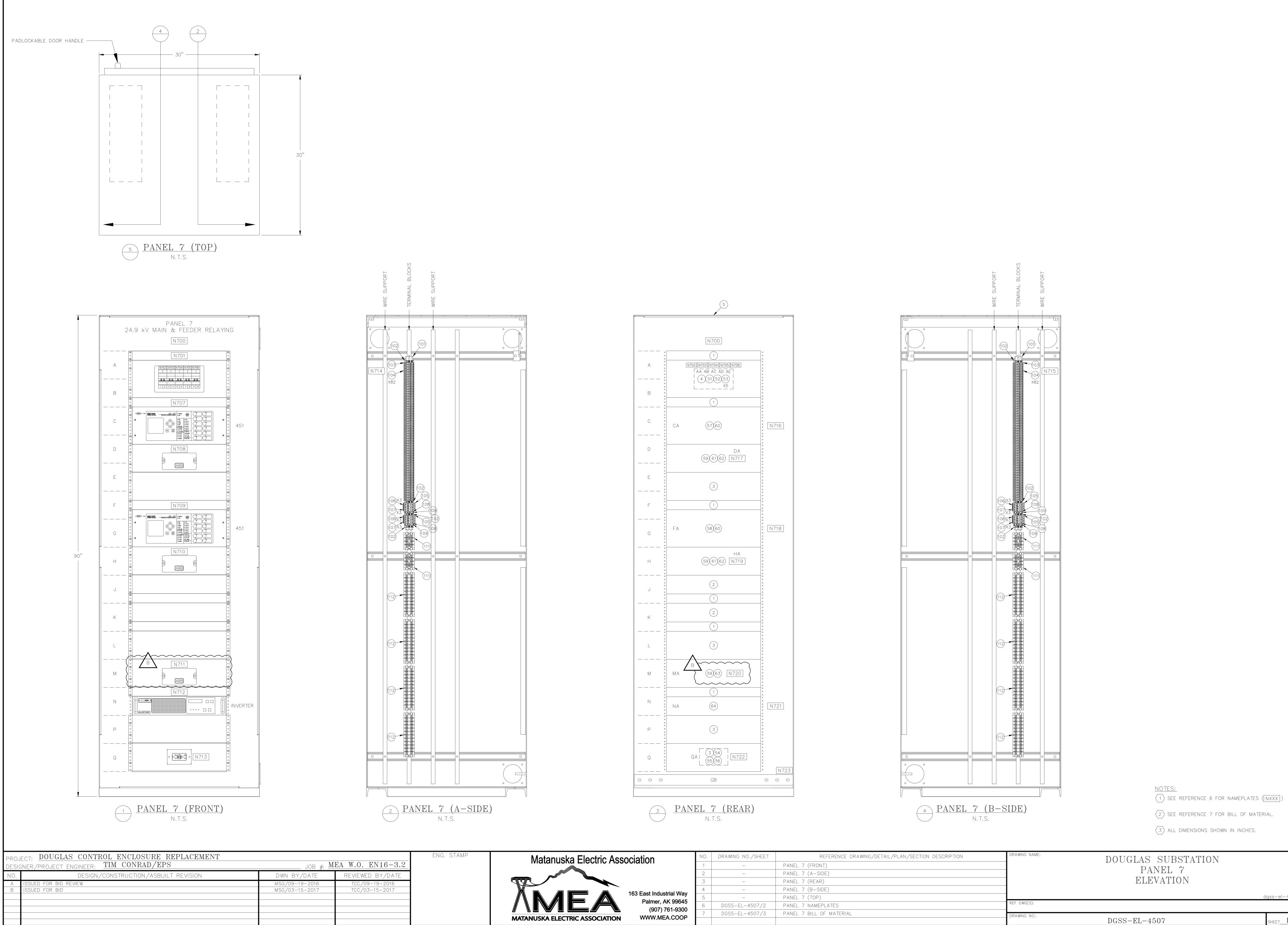
C = CONTRACTOR. O = OWNER. NIC = NOT IN CONTRACT.

REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBSTA PANEL 6 BILL OF MATER
	REF DWG(S):	
	DRAWING NO.:	DGSS-EL-4506

FATION

ERIAL

dgss-el-4506_3.dwg



	ENG. STAMP	Matanuska Electric Asso	ociation	NO.	DRAWING NO./SHEET	
6-3.2				1	_	PA
/date				2	_	PA
2016				3	_	PA
2017			163 East Industrial Way	4	_	PA
			Palmer, AK 99645	5	_	PA
			(907) 761-9300	6	DGSS-EL-4507/2	PA
			WWW.MEA.COOP	7	DGSS-EL-4507/3	PA
		MATANUSKA ELECTRIC ASSOCIATION	WWWW.WEA.COOP			

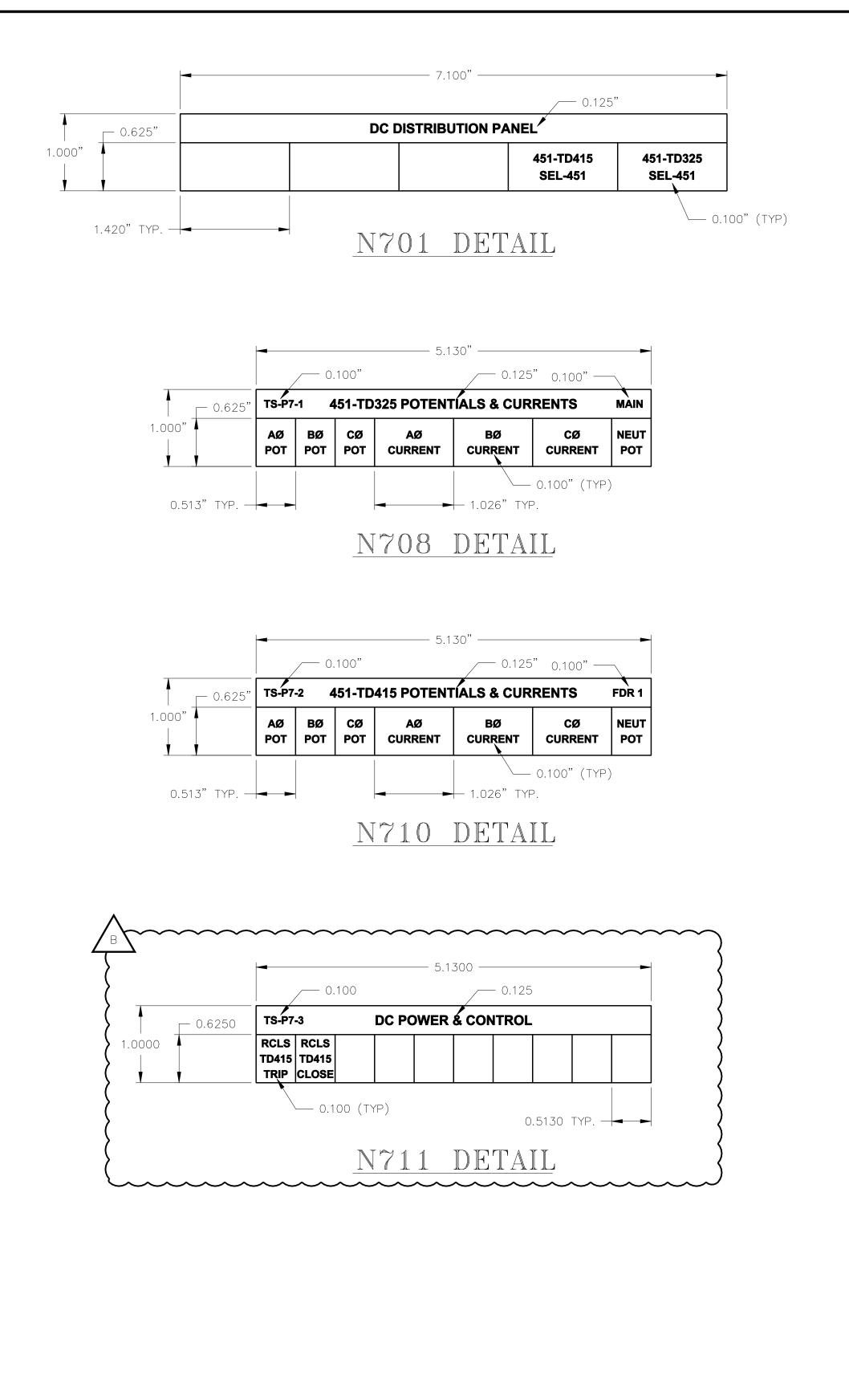
SHEET <u>1</u> OF <u>3</u>

dgss-el-4507_1.dwg

 $\langle 2 \rangle$ see reference 7 for bill of material. $\left< 3 \right>$ all dimensions shown in inches.

NAMEPLATE NUMBER	QTY	LINE 1 TEXT	LINE 2 TH	EXT	LINE 3 TEXT	NAMEPLATE SIZE HEIGHT x WIDTH (IN)	TEXT HEIGHT (IN)	
N700	2	PANEL 7	24.9 kV MAIN BUS RI	ELAYING 2	4.9 kV FEEDER 3 RELAYING	1-1/2 x 5	1/4	
N701	1	SEE NAMEPLATE DETAIL ON THIS SHEET						
N702	2	AA				1/2 x 3/4	1/4	
N703	2	AB				1/2 x 3/4	1/4	
N704	2	AC				1/2 × 3/4	1/4	
N705	2	AD				1/2 x 3/4	1/4	
N706	2	AE				1/2 x 3/4	1/4	
N707	1	451-TD325	24.9 kv main bus	RELAY	SEL-451	1 x 3	1/8	
N708	1	SEE NAMEPLATE DETAIL ON THIS SHEET						
N709	1	451-TD415	FEEDER NO. 1 RE	LAY	SEL-451	1 x 3	1/8	
N710	1	SEE NAMEPLATE DETAIL ON THIS SHEET					·	
N711		SEE NAMEPLATE DETAIL ON THIS SHEET	$\gamma_{\rm B}$					
N712		MS2000A	125 VDC/120 VAC IN	VERTER	MAJORPOWER MS2000	1 x 3	1/8	
N713		RE24	120 VB0/120 VAC		RECEPTACLE	1 x 3	1/8	
			120 VAC					
N714		A 				$1/2 \times 3/4$	1/4	
N715		В				1/2 × 3/4	1/4	
N716	1	CA	451-TD325		SEL-451	1 x 1-1/2	1/8	
N717	1	DA	TS-P7-1		451 TEST SW	1 x 1-1/2	1/8	
N718	1	FA	451-TD415		SEL-451	1 x 1-1/2	1/8	
N719		НА	TS-P7-2	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	451 TEST SW	1 x 1-1/2	1/8	
N720		MA	TS-P7-3		TEST SW	1 x 1-1/2	1/8 B	4
N721	1	NA	MS2000A		INVERTER	1 x 1-1/2	1/8	
N722	1	QA	RE24		RECEPTACLE	1 X 1-1/2	1/8	
N723	1	GB	GROUND BUS			1 x 1-1/2	1/8	
N724	1	WORK LIGHT				1 x 1-1/2	1/8	
	1 1			I		I		
					ENG. STAMP			
T ENGINEER:	TIM CO	CLOSURE REPLACEMENT ONRAD/EPS		EA W.O. EN16-3.2	LING. STANIM	Matanus	ka Electric As	SC
DESIGN BID REVIEW		ICTION/ASBUILT REVISION	DWN BY/DATE msg/09-19-2016	REVIEWED BY/DATE TCC/09-19-2016				
BID			MSG/03-15-2017	TCC/03-15-2017			FA	16
						MATANUSKA ELECT	TRIC ASSOCIATION	

PROJECT:



NOTES:	

 $\langle 1
angle$ all nameplates shall be 1/16" thick minimum plastic.

 $\langle 2
angle$ all nameplates shall have exterior rated high-tack adhesive.

 $\left< 3 \right>$ all nameplates shall be black surface wth white text.

 $\left< 4 \right>$ all text shall be "arial bold" font.

 $\left< 5 \right>$ each line of text shall be centered on the nameplate.

 $\langle 6 \rangle$ all text shall be upper case.

 $\left< 7 \right>$ all dimensions shown in inches.

REF DWG(S): DRAWING NO.: DGSS-EL-4507	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME: DOUGLAS SUBSTA PANEL 7 NAMEPLATES
		DRAWING NO.:

SHEET <u>2</u> of <u>3</u>

dgss-el-4507_2.dwg

TATION

REF. NO.	UNIT	ESTIMATED QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	FURNISHEI
(1)	EA	\bigwedge_{5}	BLANK FILLER PANEL, METALLIC GREY, 1U	BUD/PA-1101-MG (OAE)	С
(2)	EA	$\begin{array}{c c} & B \\ \hline \\ & C \\$	BLANK FILLER PANEL, METALLIC GREY, 2U	BUD/PA-1102-MG (OAE)	С
(3)	EA	5	BLANK FILLER PANEL, METALLIC GREY, 3U	BUD/PA-1103-MG (OAE)	C
4	EA	1	BLANK FILLER PANEL, METALLIC GREY, 4U	BUD/PA-1104-MG (OAE)	С
5	EA	1	RELAY CABINET WITH DOOR AND COPPER GROUND BUS	TBD	С
6	LOT	1 1 1	LED ENCLOSURE LIGHT LIGHT CABLE ASSEMBLY, 120 VAC	HOFFMAN: HOFFMAN/LEDA1S35 HOFFMAN/LEDA20C	С
7	LOT	1 1 1 1	LIGHT SWITCH, SINGLE POLE SWITCH BOX COVER	HUBBELL: KELLEMS/HBL12211 (OAE) RACO/239 (OAE) RACO/800C (OAE)	С
8			NOT USED		
9			NOT USED		
(10)			NOT USED		
(11)			NOT USED		
(12)			NOT USED		
(13)			NOT USED		
(14)			NOT USED		
(15)			NOT USED		
(16)			NOT USED		
(17)			NOT USED		
(18)			NOT USED		
(19)			NOT USED		
20			NOT USED		
(21)			NOT USED		
(22)			NOT USED		
(23)			NOT USED		
(24)			NOT USED		
25			NOT USED		
26			NOT USED		
27)			NOT USED		

<u>NOTES:</u>

 $\left< 1 \right>$ BILL OF MATERIAL QUANTITIES ARE ESTIMATED. ACTUAL QUANTITIES SHALL BE VERIFIED BY THE CONTRACTOR.

PROJ DESIG	ect: <u>Douglas control enclosure replacement</u> Gner/project engineer: <u>TIM conrad/eps</u>	JOB #: <u>M</u>	EA W.O. EN16-3.2
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/DATE
А	ISSUED FOR BID REVIEW	MSG/09-19-2016	TCC/09-19-2016
В	ISSUED FOR BID	MSG/03-15-2017	TCC/03-15-2017

REF. NO.	UNIT	ESTIMATED QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	FURNISHED
(51)	EA	5	CIRCUIT BREAKER, 15 AMP	SCHNEIDER ELECTRIC/MG17436	С
(52)	EA	1	MULTI-POLE BREAKER FRONT MOUNTING KIT	SCHNEIDER ELECTRIC/14210	С
(53)	EA	1	DIN RAIL WITH SUPPORT	SCHNEIDER ELECTRIC/14211	С
(54)	EA	1	RECEPTACLE, 125V, 20A, DUPLEX, GFI (RE23)	HUBBELL-KELLEMS/GFR5362SGI	С
(55)	EA	1	COVER PLATE, 1-GANG, STAINLESS STEEL	HUBBELL-KELLEMS/SS26 (OAE)	С
(56)	EA	1	SINGLE GANG BOX, ALUMINUM	HUBBELL-RACO/5386-0 (OAE)	С
(57)	EA	1	PROTECTIVE RELAY (451–TD325)	SCHWEITZER/0451541EXC0X4H384XXXX	С
(58)	EA	1	PROTECTIVE RELAY (451-TD415)	SCHWEITZER/0451541DXC0X4H384XXXX	С
(59)	EA	B 3	19" RACK BEZEL, FT-1 STYLE, SINGLE CUTOUT	SCHWEITZER/915900178	С
60	EA	2	BNC TEE, F/M/F	SCHWEITZER/240-1799	С
61	EA	2	TEST SWITCH, FT-1 STYLE, (6-C, 4-P) (TS-P7-1, TS-P7-2)	ABB/C714B325G32	С
62	EA	6	SWITCH HANDLE INTERLOCKING BAR, 2-POSITION	ABB/1270547	С
63	BEA	1	TEST SWITCH, FT-1 STYLE, (10-P) (TS-P7-3)	ABB/9676A93G01	С
64	EA		POWER INVERTER, 125 VDC/120 VAC/2 KVA (MS2000A)	MAJORPOWER/MAJORSINE2000-125-2U WITH SNMP	c
65			NOT USED		
66			NOT USED		
67			NOT USED		
68			NOT USED		
69			NOT USED		
(70)			NOT USED		
(71)			NOT USED		
(72)			NOT USED		
(73)			NOT USED		
(74)			NOT USED		
(75)			NOT USED		
(76)			NOT USED		
(77)			NOT USED		
(78)			NOT USED		
(79)			NOT USED		
(80)			NOT USED		

C = CONTRACTOR. O = OWNER. NIC = NOT IN CONTRACT.

E	NG.	STAMP	

Matanuska Electric Association



163 East Industrial Way Palmer, AK 99645 (907) 761-9300 WWW.MEA.COOP

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBSTA PANEL 7 BILL OF MATER
			REF DWG(S):	
			DRAWING NO.:	DGSS-EL-4507

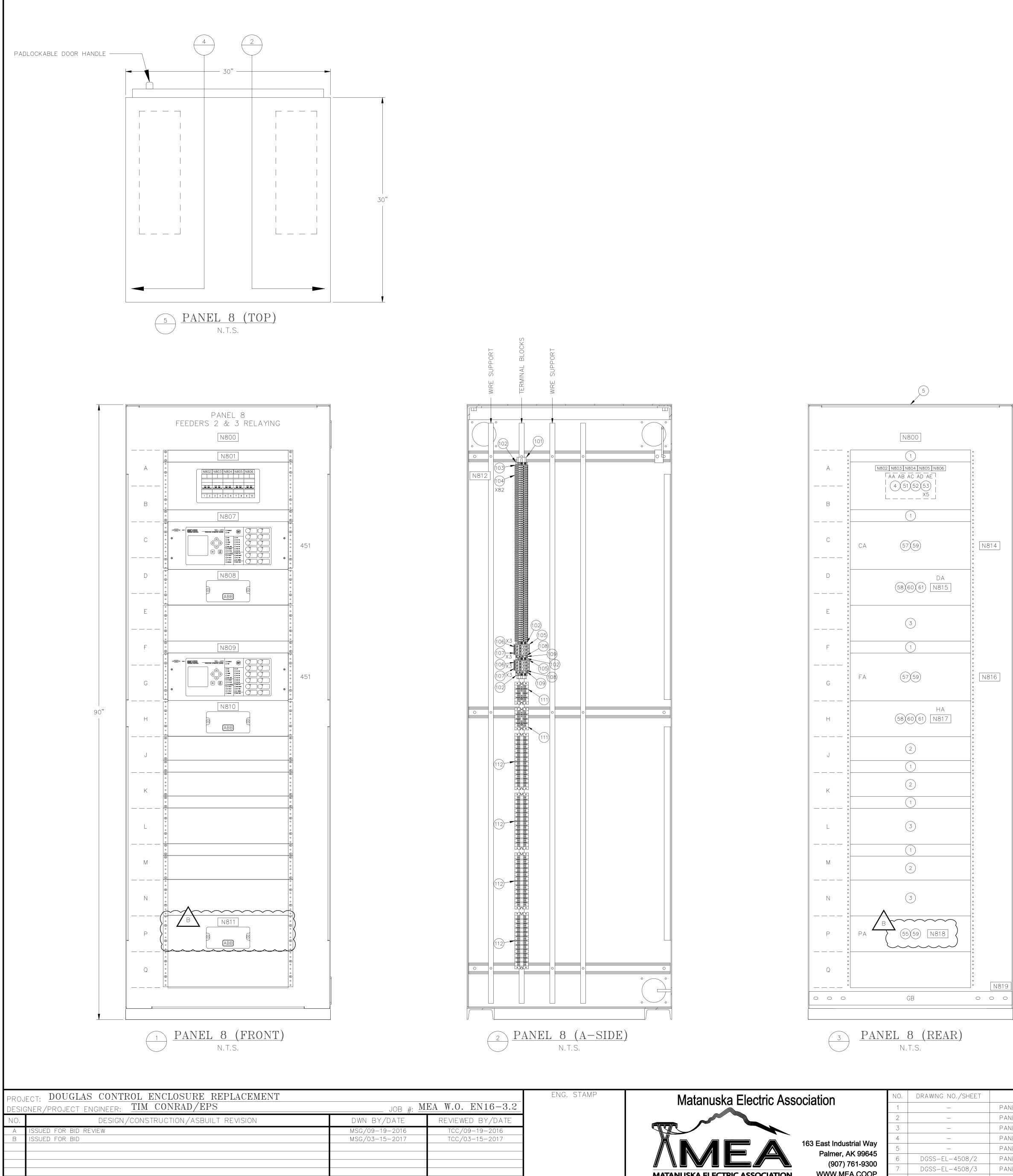
		ESTIMATED	BILL OF MATER		FURNISHED
REF. NO.	UNIT	QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	BY
(101)	EA	2	MOUNTING RAIL, PR30	ABB/1SNA 173 220 R0500	С
102	EA	8	END STOP, BAM2	ABB/1SNA 206 351 R1600	С
(103)	EA	2	END SECTION, FEM8	ABB/1SNA 113 373 R2600	С
(104)	EA	164	TERMINAL, SWITCH BLOCK, TYPE M6/8.SNB	ABB/1SNA 115 688 R2500	С
105	EA	4	END SECTION, FEM12S	ABB/1SNA 117 628 R2200	С
106	EA	12	TERMINAL, FUSE BLOCK, TYPE MB10/12.SF	ABB/1SNA 111 033 R0300	С
(107)	EA	12	FUSE, FU520, 3.15A	ABB/1SNA 008 289 R1600	С
108	EA	4	END SECTION, FEM6	ABB/1SNA 118 368 R1600	С
(109)	EA	4	TERMINAL BLOCK, FEED THRU, TYPE M6/8	ABB/1SNA 115 118 R1100	С
(110)	EA	2	TERMINAL MARKERS, VERTICAL, RC810, 1–100	ABB/1SNA 234 060 R0500	С
(111)	EA	4	TERMINAL BLOCK, 4 POLE, 30 AMP, SHORTING	MARATHON/1504 SC 01C WITH CC 1504	С
(112)	EA	8	TERMINAL BLOCK, 12 POLE, 30 AMP, STANDARD	MARATHON/1512 STD 01C	С
(113)			NOT USED		
(114)			NOT USED		
(115)			NOT USED		
(116)			NOT USED		
(117)			NOT USED		
(118)			NOT USED		
(119)			NOT USED		
(120)			NOT USED		
(121)			NOT USED		
(122)			NOT USED		
(123)			NOT USED		
(124)			NOT USED		
(125)			NOT USED		
(126)			NOT USED		
(127)			NOT USED		
(128)			NOT USED		
(129)			NOT USED		
(130)			NOT USED		

C = CONTRACTOR. O = OWNER. NIC = NOT IN CONTRACT.

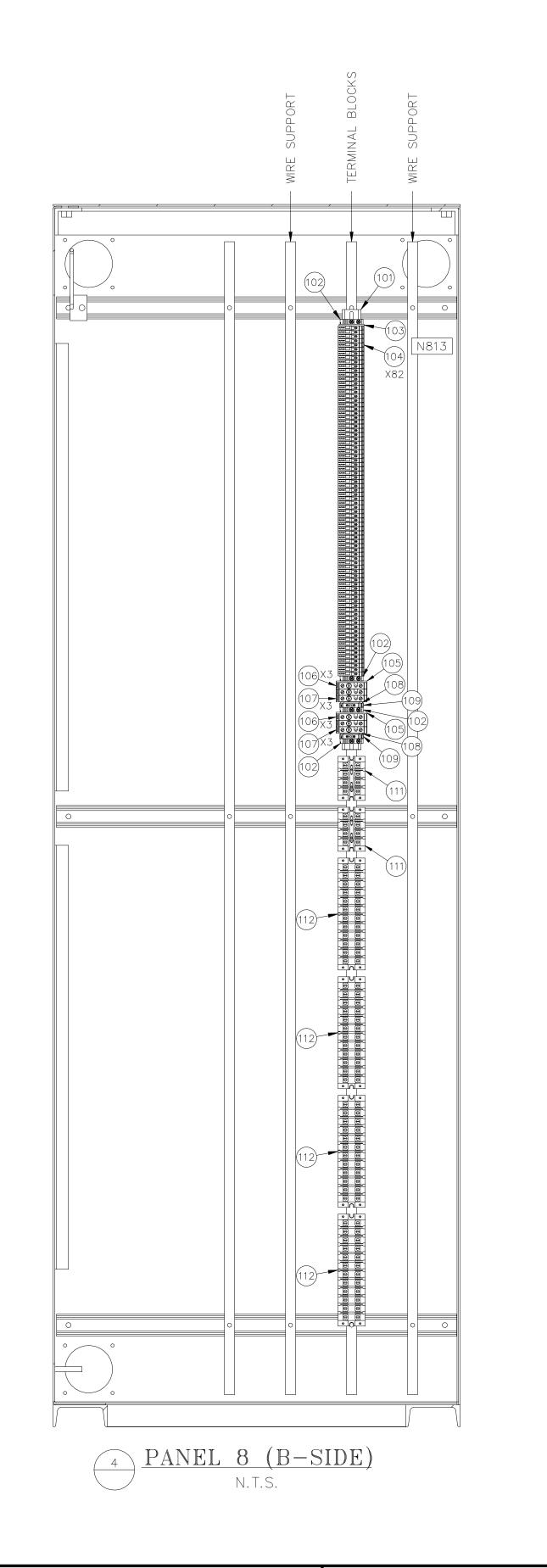
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ERIAL

dgss-el-4507_3.dwg



	ENG. STAMP	Matanuska Electric Asso	nciation	NO.	DRAWING NO./SHEET	
5 - 3.2			Joiation	1	_	
/date				2	_	
2016				3	_	
2017			163 East Industrial Way	4	_	Ļ
			Palmer, AK 99645	5	_	ļ
			(907) 761-9300	6	DGSS-EL-4508/2	L
			WWW.MEA.COOP	7	DGSS-EL-4508/3	
		MATANUSKA ELECTRIC ASSOCIATION	VVVVV.IVIEA.COOP			





REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBST
PANEL 8 (FRONT)		
PANEL 8 (A-SIDE)		PANEL 8
PANEL 8 (REAR)		ELEVATION
PANEL 8 (B-SIDE)		
PANEL 8 (TOP)		
PANEL 8 NAMEPLATES	REF DWG(S):	
PANEL 8 BILL OF MATERIAL	DRAWING NO.:	
		DGSS-EL-4508

SHEET <u>1</u> of <u>3</u>

dgss-el-4508_1.dw

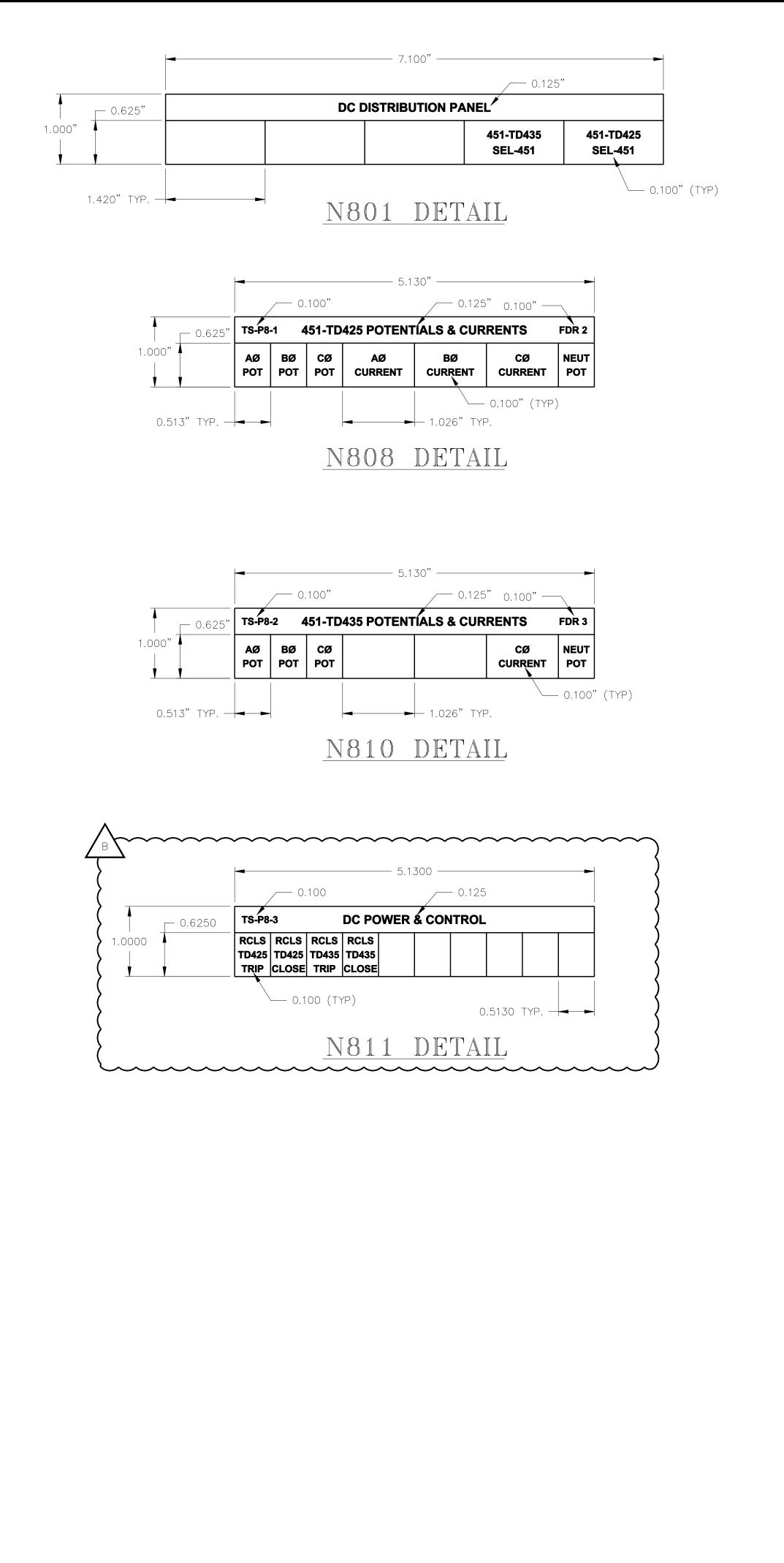
 $\langle 2 \rangle$ see reference 7 for bill of material. $\left< 3 \right>$ all dimensions shown in inches.

 $\frac{\text{NOTES:}}{1}$ see reference 6 for nameplates ([NXXX])

STATION

NAMEPLATE NUMBER	QTY	LINE 1 TEXT	LINE 2 TEXT	LINE 3 TEXT	NAMEPLATE SIZE HEIGHT x WIDTH (IN)	TEXT HEIGHT (IN)
	2	PANEL 8	24.9 kV FEEDERS 2 & 3 RELAYING		1-1/2 × 5	1/4
01	1	SEE NAMEPLATE DETAIL ON THIS SHEET				
)2	2	AA			1/2 x 3/4	1/4
03	2	AB			1/2 × 3/4	1/4
04	2	AC			1/2 × 3/4	1/4
805	2	AD			1/2 × 3/4	1/4
N806	2	AE			1/2 × 3/4	1/4
N807	1	451-TD425	FEEDER NO. 2 RELAY	SEL-451	1 x 3	1/8
N808	1	SEE NAMEPLATE DETAIL ON THIS SHEET				
N809	1	451-TD435	FEEDER NO. 3 RELAY	SEL-451	1 x 3	1/8
N810	1	SEE NAMEPLATE DETAIL ON THIS SHEET	- ^			
N811		SEE NAMEPLATE DETAIL ON THIS SHEET	$\mathbb{Z}_{\mathbb{B}}$			
N812	1	A			1/2 x 3/4	1/4
N813	1	В			1/2 x 3/4	1/4
V814	1	СА	451-TD425	SEL-451	1 x 1-1/2	1/8
N815	1	DA	TS-P8-1	451 TEST SW	1 x 1-1/2	1/8
N816	1	FA	451-TD435	SEL-451	1 x 1-1/2	1/8
N817			TS-P8-2			/ /
N818		PA	TS-P8-3	TEST SW	$-1 \times 1 - 1/2$	1/8 B
N819	1	GB	GROUND BUS		1 x 1-1/2	1/8
1820	1	WORK LIGHT			1 x 1-1/2	1/8
	_					
	_					
<u>.s c</u> on'	<u>TROL</u> ENC	CLOSURE REPLACEMENT		ENG. STAMP	Matanuek	a Electric As
ENGINEER	TIM CO	CLOSURE REPLACEMENT ONRAD/EPS	JOB #: MEA W.O. EN16-			
REVIEW	N/ CUNSIKU	ICTION/ASBUILT REVISION	DWN BY/DATE REVIEWED BY/D MSG/09-19-2016 TCC/09-19-201 MSC (07, 15, 2017 TCC (07, 15, 2017	6		
			MSG/03-15-2017 TCC/03-15-201	/		EA

PROJECT:



NOTES:

 $\langle 1
angle$ all nameplates shall be 1/16" thick minimum plastic.

 $\langle 2
angle$ all nameplates shall have exterior rated high-tack adhesive.

 $\left< 3 \right>$ all nameplates shall be black surface wth white text.

 $\left< 4 \right>$ all text shall be "arial bold" font.

 $\left< 5 \right>$ each line of text shall be centered on the nameplate.

 $\langle 6 \rangle$ all text shall be upper case.

 $\left< 7 \right>$ all dimensions shown in inches.

REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME: DOUGLAS SUBSTA PANEL 8 NAMEPLATES
	REF DWG(S):
	DRAWING NO.: DGSS-EL-4508

SHEET <u>2</u> of <u>3</u>

dgss-el-4508_2.dwg

FATION

REF. NO.	UNIT	ESTIMATED QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	FURNISHE
1	EA	6	BLANK FILLER PANEL, METALLIC GREY, 1U	BUD/PA-1101-MG (OAE)	С
2	EA	3	BLANK FILLER PANEL, METALLIC GREY, 2U	BUD/PA-1102-MG (OAE)	С
3	EA	\mathbb{A}	BLANK FILLER PANEL, METALLIC GREY, 3U	BUD/PA-1103-MG (OAE)	С
4	EA	1	BLANK FILLER PANEL, METALLIC GREY, 4U	BUD/PA-1104-MG (OAE)	С
5	EA	1	RELAY CABINET WITH DOOR AND COPPER GROUND BUS	TBD	С
6	LOT	1 1 1 1	LED ENCLOSURE LIGHT LIGHT CABLE ASSEMBLY, 120 VAC	HOFFMAN: HOFFMAN/LEDA1S35 HOFFMAN/LEDA20C	С
7	LOT	1 1 1 1	LIGHT SWITCH, SINGLE POLE SWITCH BOX COVER	HUBBELL: KELLEMS/HBL12211 (OAE) RACO/239 (OAE) RACO/800C (OAE)	С
8			NOT USED		
9			NOT USED		
(10)			NOT USED		
(11)			NOT USED		
(12)			NOT USED		
(13)			NOT USED		
(14)			NOT USED		
(15)			NOT USED		
(16)			NOT USED		
(17)			NOT USED		
(18)			NOT USED		
(19)			NOT USED		
20			NOT USED		
(21)			NOT USED		
(22)			NOT USED		
23			NOT USED		
(24)			NOT USED		
(25)			NOT USED		
26)			NOT USED		
(27)			NOT USED		

<u>NOTES:</u>

 $\left< 1 \right>$ BILL OF MATERIAL QUANTITIES ARE ESTIMATED. ACTUAL QUANTITIES SHALL BE VERIFIED BY THE CONTRACTOR.

PROJ DESIC	roject: <mark>DOUGLAS CONTROL ENCLOSURE REPLACEMENT</mark> esigner/project engineer: <u>TIM CONRAD/EPS</u> job #: <u>MEA W.O. EN16-3.2</u>				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/DATE		
	ISSUED FOR BID REVIEW ISSUED FOR BID	MSG/09-19-2016 MSG/03-15-2017	TCC/09-19-2016 TCC/03-15-2017		

			BILL OF MATER	IAL	
REF. NO.	UNIT	ESTIMATED QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	FURNISHED BY
(51)	EA	5	CIRCUIT BREAKER, 15 AMP	SCHNEIDER ELECTRIC/MG17436	С
(52)	EA	1	MULTI-POLE BREAKER FRONT MOUNTING KIT	SCHNEIDER ELECTRIC/14210	С
(53)	(53) EA 1		DIN RAIL WITH SUPPORT	SCHNEIDER ELECTRIC/14211	С
(54)	EA	2	PROTECTIVE RELAY (451-TD425, 451-TD435)	SCHWEITZER/0451541DXC0X4H384XXXX	С
(55)	EA	$B \overline{3}$	19" RACK BEZEL, FT-1 STYLE, SINGLE CUTOUT	SCHWEITZER/915900178	С
(56)	EA	2	BNC TEE, F/M/F	SCHWEITZER/240-1799	С
(57)	EA	2	TEST SWITCH, FT-1 STYLE, (6-C, 4-P) (TS-P8-1, TS-P8-2)	ABB/C714B325G32	С
(58)	EA	6	SWITCH HANDLE INTERLOCKING BAR, 2-POSITION	ABB/1270547	С
(59)	B	1	TEST SWITCH, FT-1 STYLE, (10-P) (TS-P8-3)	ABB/9676A93G01	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
60			NOT USED		
61			NOT USED		
62			NOT USED		
63			NOT USED		
64			NOT USED		
65			NOT USED		
66			NOT USED		
67			NOT USED		
68			NOT USED		
69			NOT USED		
(70)			NOT USED		
(71)			NOT USED		
(72)			NOT USED		
(73)			NOT USED		
(74)			NOT USED		
(75)			NOT USED		
(76)			NOT USED		
(77)			NOT USED		
(78)			NOT USED		
(79)			NOT USED		
(80)			NOT USED		

C = CONTRACTOR. O = OWNER. NIC = NOT IN CONTRACT.

ENG.	STAMP	

Matanuska Electric Association



163 East Industrial Way Palmer, AK 99645 (907) 761-9300 WWW.MEA.COOP

NO.	DRAWING NO./SHEET	

			BILL OF MATER	IAL	
REF. NO.	UNIT	ESTIMATED QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	FURNISHEE BY
(101)	EA	2	MOUNTING RAIL, PR30	ABB/1SNA 173 220 R0500	С
(102)	EA	8	END STOP, BAM2	ABB/1SNA 206 351 R1600	С
(103)	EA	2	END SECTION, FEM8	ABB/1SNA 113 373 R2600	С
(104)	EA	164	TERMINAL, SWITCH BLOCK, TYPE M6/8.SNB	ABB/1SNA 115 688 R2500	С
(105)	EA	4	END SECTION, FEM12S	ABB/1SNA 117 628 R2200	С
(106)	EA	12	TERMINAL, FUSE BLOCK, TYPE MB10/12.SF	ABB/1SNA 111 033 R0300	С
(107)	EA	12	FUSE, FU520, 3.15A	ABB/1SNA 008 289 R1600	С
(108)	EA	4	END SECTION, FEM6	ABB/1SNA 118 368 R1600	С
(109)	EA	4	TERMINAL BLOCK, FEED THRU, TYPE M6/8	ABB/1SNA 115 118 R1100	С
(110)	EA	2	TERMINAL MARKERS, VERTICAL, RC810, 1–100	ABB/1SNA 234 060 R0500	С
(111)	EA	4	TERMINAL BLOCK, 4 POLE, 30 AMP, SHORTING	MARATHON/1504 SC 01C WITH CC 1504	С
(112)	EA	8	TERMINAL BLOCK, 12 POLE, 30 AMP, STANDARD	MARATHON/1512 STD 01C	С
(113)			NOT USED		
(114)			NOT USED		
(115)			NOT USED		
(116)			NOT USED		
(117)			NOT USED		
(118)			NOT USED		
(119)			NOT USED		
(120)			NOT USED		
(121)			NOT USED		
(122)			NOT USED		
(123)			NOT USED		
(124)			NOT USED		
(125)			NOT USED		
(126)			NOT USED		
(127)			NOT USED		
(128)			NOT USED		
(129)			NOT USED		
(130)			NOT USED		

C = CONTRACTOR. O = OWNER. NIC = NOT IN CONTRACT.

REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBSTA PANEL 8 BILL OF MATEH
	REF DWG(S):	
	DRAWING NO.:	DGSS-EL-4508

ΓΑΤΙΟΝ

ERIAL

dgss-el-4508_3.dwg

REF. NO.	UNIT	ESTIMATED QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	FURNISHEI BY
1	EA	8	BLANK FILLER PANEL, METALLIC GREY, 1U	BUD/PA-1101-MG (OAE)	С
2	EA	2	BLANK FILLER PANEL, METALLIC GREY, 2U	BUD/PA-1102-MG (OAE)	С
3	EA	5	BLANK FILLER PANEL, METALLIC GREY, 3U	BUD/PA-1103-MG (OAE)	С
4	EA	1	BLANK FILLER PANEL, METALLIC GREY, 4U	BUD/PA-1104-MG (OAE)	С
5	EA	1	RELAY CABINET WITH DOOR AND COPPER GROUND BUS	TBD	С
6	LOT	1 1 1	LED ENCLOSURE LIGHT LIGHT CABLE ASSEMBLY, 120 VAC	HOFFMAN: HOFFMAN/LEDA1S35 HOFFMAN/LEDA20C	С
7	LOT	1 1 1 1	LIGHT SWITCH, SINGLE POLE SWITCH BOX COVER	HUBBELL: KELLEMS/HBL12211 (OAE) RACO/239 (OAE) RACO/800C (OAE)	C
8			NOT USED		
9			NOT USED		
(10)			NOT USED		
(11)			NOT USED		
(12)			NOT USED		
(13)			NOT USED		
(14)			NOT USED		
(15)			NOT USED		
(16)			NOT USED		
(17)			NOT USED		
(18)			NOT USED		
(19)			NOT USED		
20			NOT USED		
(21)			NOT USED		
(22)			NOT USED		
23			NOT USED		
(24)			NOT USED		
25			NOT USED		
26			NOT USED		
27)			NOT USED		

<u>NOTES:</u>

 $\left< 1 \right>$ BILL OF MATERIAL QUANTITIES ARE ESTIMATED. ACTUAL QUANTITIES SHALL BE VERIFIED BY THE CONTRACTOR.

PROJ DESIG	project: <mark>DOUGLAS CONTROL ENCLOSURE REPLACEMENT</mark> designer/project engineer: <u>TIM CONRAD/EPS</u>				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/DATE		
А	ISSUED FOR BID REVIEW	MSG/09-19-2016	TCC/09-19-2016		
В	ISSUED FOR BID	MSG/03-15-2017	TCC/03-15-2017		

REF. NO.	UNIT	ESTIMATED QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	FURNISHEE
(51)	EA	5	CIRCUIT BREAKER, 15 AMP	SCHNEIDER ELECTRIC/MG17436	С
(52)	EA	1	MULTI-POLE BREAKER FRONT MOUNTING KIT	SCHNEIDER ELECTRIC/14210	С
(53)	EA	1	DIN RAIL WITH SUPPORT	SCHNEIDER ELECTRIC/14211	С
(54)	EA	1	CIRCUIT BREAKER, 5 AMP	SCHNEIDER ELECTRIC/MG17434	С
(55)	EA	1	RECEPTACLE, 125V, 20A, DUPLEX, GFI (RE25)	HUBBELL-KELLEMS/GFR5362SGI	С
(56)	EA	1	COVER PLATE, 1-GANG, STAINLESS STEEL	HUBBELL-KELLEMS/SS26 (OAE)	С
(57)	EA	1	SINGLE GANG BOX, ALUMINUM	HUBBELL-RACO/5386-0 (OAE)	С
(58)	EA	1	ETHERNET SWITCH (2730MC)	SCHWEITZER/2730MOARAA1111AAAAX0	С
(59)	EA	1	REAL TIME AUTOMATION CONTROLLER (3530A)	SCHWEITZER/3530HB0DX211A0XXXXXX	С
60	LOT	1 1 2 2 2 4 1	AXION PLATFORM, SEL-2240 (2240B) AXION CHASSIS, SEL-2242 POWER COUPLER, SEL-2243 (SLOTS: A, B) I/O MODULE, 10 OUTPUTS, SEL-2244 (SLOTS: C, D) I/O MODULE, 16 OUTPUTS, SEL-2244 (SLOTS: E, F) I/O MODULE, 24 INPUTS, SEL-2244 (SLOTS: G, H, I, J) WETTING VOLTAGE JUMPER KIT, 24 JUMPERS, 4-PRONG	SCHWEITZER: SCHWEITZER/2242R1X0 SCHWEITZER/224311X0 SCHWEITZER/22443131X0 SCHWEITZER/22445151X0 SCHWEITZER/22442424X0 SCHWEITZER/915900240	C
61	EA	1	ANNUNCIATOR (2523A)	SCHWEITZER/252301H13A0A0XX	С
62	EA	1	WIRE LEAD TERMINATOR, 50 OHM	SCHWEITZER/915900036	С
63	EA	1	ETHERNET TRANSCEIVER	SCHWEITZER/2890M1X	С
64			NOT USED		
65			NOT USED		
66			NOT USED		
67			NOT USED		
68			NOT USED		
69			NOT USED		
(70)			NOT USED		
(71)			NOT USED		
(72)			NOT USED		
(73)			NOT USED		
(74)			NOT USED		
(75)			NOT USED		
(76)			NOT USED		
(77)			NOT USED		
(78)			NOT USED		

C = CONTRACTOR. O = OWNER. NIC = NOT IN CONTRACT.

ENG.	STAMP	

Matanuska Electric Association



163 East Industrial Way Palmer, AK 99645 (907) 761-9300 WWW.MEA.COOP

NO.	DRAWING NO./SHEET	

			BILL OF MATER	IAL	
REF. NO.	UNIT	ESTIMATED QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	FURNISHED BY
(101)	EA	2	MOUNTING RAIL, PR30	ABB/1SNA 173 220 R0500	С
(102)	EA	16	END STOP, BAM2	ABB/1SNA 206 351 R1600	С
(103)	EA	13	END SECTION, FEM8	ABB/1SNA 113 373 R2600	С
(104)	EA	494	TERMINAL, SWITCH BLOCK, TYPE M6/8.SNB	ABB/1SNA 115 688 R2500	С
(105)	EA	2	TERMINAL MARKERS, VERTICAL, RC810, 1–100	ABB/1SNA 234 060 R0500	С
(106)	EA	2	TERMINAL MARKERS, VERTICAL, RC810, 101–200	ABB/1SNA 234 061 R2200	С
(107)	EA	8	TERMINAL BLOCK, 12 POLE, 30 AMP, STANDARD	MARATHON/1512 STD 01C	С
(108)	EA		TERMINAL MARKERS, VERTICAL, RC810, 201–300	ABB/1SNA 234 062 R2300	С
(109)			NOT USED		
(110)			NOT USED		
(111)			NOT USED		
(112)			NOT USED		
(113)			NOT USED		
(114)			NOT USED		
(115)			NOT USED		
(116)			NOT USED		
(117)			NOT USED		
(118)			NOT USED		
(119)			NOT USED		
(120)			NOT USED		
(121)			NOT USED		
(122)			NOT USED		
(123)			NOT USED		
(124)			NOT USED		
(125)			NOT USED		
(126)			NOT USED		
(127)			NOT USED		
(128)			NOT USED		
(129)			NOT USED		
(130)			NOT USED		

C = CONTRACTOR. O = OWNER. NIC = NOT IN CONTRACT.

REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION	DRAWING NAME:	DOUGLAS SUBST PANEL 9 BILL OF MATEI	
	REF DWG(S):		
	DRAWING NO.:	DGSS-EL-4509	

FATION

ERIAL

dgss-el-4509_3.dwg