

**APPENDIX A: CONTRACT DRAWINGS FOR:
INTERNATIONAL SUBSTATION 138KV FACILITIES RETIREMENT**

DRAWING INDEX			
PHYSICAL CONSTRUCTION			
SHEET NUMBER	SHEET NAME	DESCRIPTION	GROUP
1	ITSS-SS-0101-0001/2	SITE PLAN	PLANVIEW
2	ITSS-SS-0001-0001/3	SITE OVERVIEW OVERHEAD FACILITIES POLE LOCATIONS	PLANVIEW
3	ITSS-PP-0100-0002/2	PLAN AND PROFILE INSS TRANSFORMER #2	PLANVIEW
4	ITSS-PP-0100-0004/2	PLAN AND PROFILE INSS TRANSFORMER #1	PLANVIEW
5	ITSS-PP-0100-0008/2	PLAN AND PROFILE CONSTRUCTION STAKING TABLE	PLANVIEW
6	ITSS-SS-0103-0001/1	ITSS BUSWORK LAYOUT PLAN VIEW	PLANVIEW
7	INSS-SS-0078-0001/0	138KV STRUCTURAL STEEL MANUFACTURERS DRAWINGS TITLE PAGE	SUPPORTS
8	INSS-SS-0078-0002/0	138KV STRUCTURAL STEEL MANUFACTURERS DRAWINGS ISO VIEWS	SUPPORTS
9	INSS-SS-0078-0003/0	138KV STRUCTURAL STEEL MANUFACTURERS DRAWINGS ELEVATION VIEWS	SUPPORTS
10	INSS-SS-0078-0004/0	138KV STRUCTURAL STEEL MANUFACTURERS DRAWINGS ELEVATIONS AND DETAILS	SUPPORTS
11	INSS-SS-0078-0005/0	138KV STRUCTURAL STEEL MANUFACTURERS DRAWINGS ELEVATIONS AND DETAILS	SUPPORTS
12	INSS-SS-0078-0006/0	138KV STRUCTURAL STEEL MANUFACTURERS DRAWINGS PART DETAILS	SUPPORTS
13	INSS-SS-0079-0001/0	34.5KV STRUCTURAL STEEL MANUFACTURERS DRAWINGS TITLE PAGE	SUPPORTS
14	INSS-SS-0079-0002/0	34.5KV STRUCTURAL STEEL MANUFACTURERS DRAWINGS ISO VIEWS	SUPPORTS
15	INSS-SS-0079-0003/0	34.5KV STRUCTURAL STEEL MANUFACTURERS DRAWINGS ELEVATION VIEWS	SUPPORTS
16	INSS-SS-0079-0004/0	34.5KV STRUCTURAL STEEL MANUFACTURERS DRAWINGS ELEVATIONS AND DETAILS	SUPPORTS
17	INSS-SS-0079-0005/0	34.5KV STRUCTURAL STEEL MANUFACTURERS DRAWINGS ELEVATIONS AND DETAILS	SUPPORTS
18	INSS-SS-0079-0006/0	34.5KV STRUCTURAL STEEL MANUFACTURERS DRAWINGS PART DETAILS	SUPPORTS
19	INSS-SS-0043-0001/5	138/34.5KV SUPPORT STRUCTURES ELEVATIONS	SUPPORTS
20	INSS-SS-0011-0001/SHFLY	GENERAL, ARRANGEMENT PLAN (TEMPORARY SHOO-FLY DRAWING)	SUPPORTS
21	ITSS-SS-0201-0005/0	TRANSMISSION LINE STRUCTURE VERTICAL DOUBLE DEADEND (TEMPORARY SHOO-FLY POLE ITIN1)	SUPPORTS
22	ITSS-SS-0103-0003/1	ITSS 138 KV BUSWORK LAYOUT ELEVATION VIEW 2 - BAY 2	SUPPORTS
23	ITSS-SS-0103-0004/1	ITSS 138 KV BUSWORK LAYOUT ELEVATION VIEW 2 - BAY 3	SUPPORTS
24	ITSS-SS-0119-0001/1	ITSS BILL OF MATERIALS	SUPPORTS
25	INSS-EQ-4500-0001/3	34.5KV SWITCHGEAR PLAN VIEW	SWITCHGEAR

**APPENDIX A: CONTRACT DRAWINGS FOR:
INTERNATIONAL SUBSTATION 138KV FACILITIES RETIREMENT**

DRAWING INDEX

PHYSICAL CONSTRUCTION (CONTINUED)

SHEET NUMBER	SHEET NAME	DESCRIPTION	GROUP
26	INSS-EQ-4503-0001/4	34.5KV SWITCHGEAR EAST ELEVATION	SWITCHGEAR
27	INSS-EQ-4503-0002/3	34.5KV SWITCHGEAR, EAST INTERIOR WALL	SWITCHGEAR
28	INSS-SS-0007-0001/13	CONDUIT PLAN, SECTIONS, & ELEVATIONS	CONDUIT
29	INSS-SS-0007-0002/4	CONDUIT PLAN, SECTIONS, & ELEVATIONS	CONDUIT
30	INSS-EQ-0023-0001/7	CONDUIT SCHEDULE	CONDUIT
31	INSS-SS-0007-0005/0	CONDUIT BILL OF MATERIALS	CONDUIT
32	INSS-SS-0007-0001/13-T3R	CONDUIT PLAN WITH T3 FEEDER REPLACEMENT MARKUPS	CONDUIT
33	INSS-SS-0005-0001/8	FOUNDATION PLAN	FOUNDATION
34	INSS-SS-0050-0001/2	PARTIAL FOUNDATION PLAN & DETAILS	FOUNDATION
35	INSS-SS-0050-0002/2	PARTIAL FOUNDATION PLAN & DETAILS	FOUNDATION
36	INSS-SS-0074-0001/0	FOUNDATION DETAILS MISCELLANEOUS SPREAD FOOTINGS	FOUNDATION
37	INSS-SS-0074-0002/0	FOUNDATION DETAILS MISCELLANEOUS SPREAD FOOTINGS	FOUNDATION
38	INSS-SS-0075-0001/0	FOUNDATION DETAILS FOUNDATION/OIL CONTAINMENT TRANSFORMER #1	FOUNDATION
39	INSS-SS-0075-0002/0	FOUNDATION DETAILS FOUNDATION/OIL CONTAINMENT TRANSFORMER #1	FOUNDATION
40	INSS-SS-0076-0001/0	FOUNDATION DETAILS FOUNDATION/OIL CONTAINMENT TRANSFORMER #2	FOUNDATION
41	INSS-SS-0076-0002/0	FOUNDATION DETAILS FOUNDATION/OIL CONTAINMENT TRANSFORMER #2	FOUNDATION
42	INSS-SS-0009-0001/13	GROUNDING PLAN	GROUNDING
43	INSS-SS-0009-0002/0	GROUNDING DETAILS	GROUNDING
44	INSS-SS-0009-0003/0	GROUNDING DETAILS	GROUNDING
45	INSS-SS-0009-0004/0	GROUNDING BILL OF MATERIALS	GROUNDING
46	INSS-SS-0077-0001/0	EXTERIOR LIGHTING AND RECEPTACLES PLAN	LIGHTING
47	INSS-SS-0077-0002/0	EXTERIOR LIGHTING AND RECEPTACLES PLAN	LIGHTING
48	ITSS-SS-0077-0003/0	EXTERIOR LIGHTING AND RECEPTACLES BILL OF MATERIALS	LIGHTING

PHYSICAL REMOVAL

SHEET NUMBER	SHEET NAME	DESCRIPTION	GROUP
1	ITSS-SS-0101-0001/1-R	SITE PLAN REMOVAL DRAWING	PLANVIEW
2	INSS-SS-0011-0001/8-R	GENERAL ARRANGEMENT PLAN REMOVAL DRAWING	PLANVIEW

**APPENDIX A: CONTRACT DRAWINGS FOR:
INTERNATIONAL SUBSTATION 138KV FACILITIES RETIREMENT**

DRAWING INDEX

PHYSICAL REMOVAL (CONTINUED)

SHEET NUMBER	SHEET NAME	DESCRIPTION	GROUP
3	ITSS-PP-0100-0004/1-R	PLAN AND PROFILE INSS TRANSFORMER #1 REMOVAL DRAWING	PLANVIEW
4	ITSS-PP-0100-0002/1-R	PLAN AND PROFILE INSS TRANSFORMER #2 REMOVAL DRAWING	PLANVIEW
5	INSS-SS-0043-0001/4-R	34.5KV BUS AND SWITCHGEAR PARTIAL PLAN & ELEVATIONS REMOVAL DRAWING	SUPPORTS
6	INSS-SS-0005-0001/7-R	FOUNDATION PLAN REMOVAL DRAWING	FOUNDATION
7	INSS-SS-0006-0001/3-R	FOUNDATION DETAILS REMOVAL DRAWING	FOUNDATION
8	INSS-SS-0050-0002/1-R	PARTIAL FOUNDATION PLAN & DETAILS REMOVAL DRAWING	FOUNDATION
9	B10-R	115, 138, & 34.5KV SUBSTATION FOUNDATION DETAILS REMOVAL DRAWING	FOUNDATION
10	C3512D-R	115KV & 34.5KV TRANSFORMER FOUNDATIONS CARRIER CURRENT EQUIPMENT FOUNDATION	FOUNDATION
11	CH3245-R	138KV & 34.5KV FOUNDATION DETAILS REMOVAL DETAIL	FOUNDATION
12	INSS-SS-0009-0001/12-R	GROUNDING PLAN REMOVAL DRAWING	GROUNDING
13	C3512H-R	OUTDOOR LIGHTING DETAILS REMOVAL DRAWING	LIGHTING

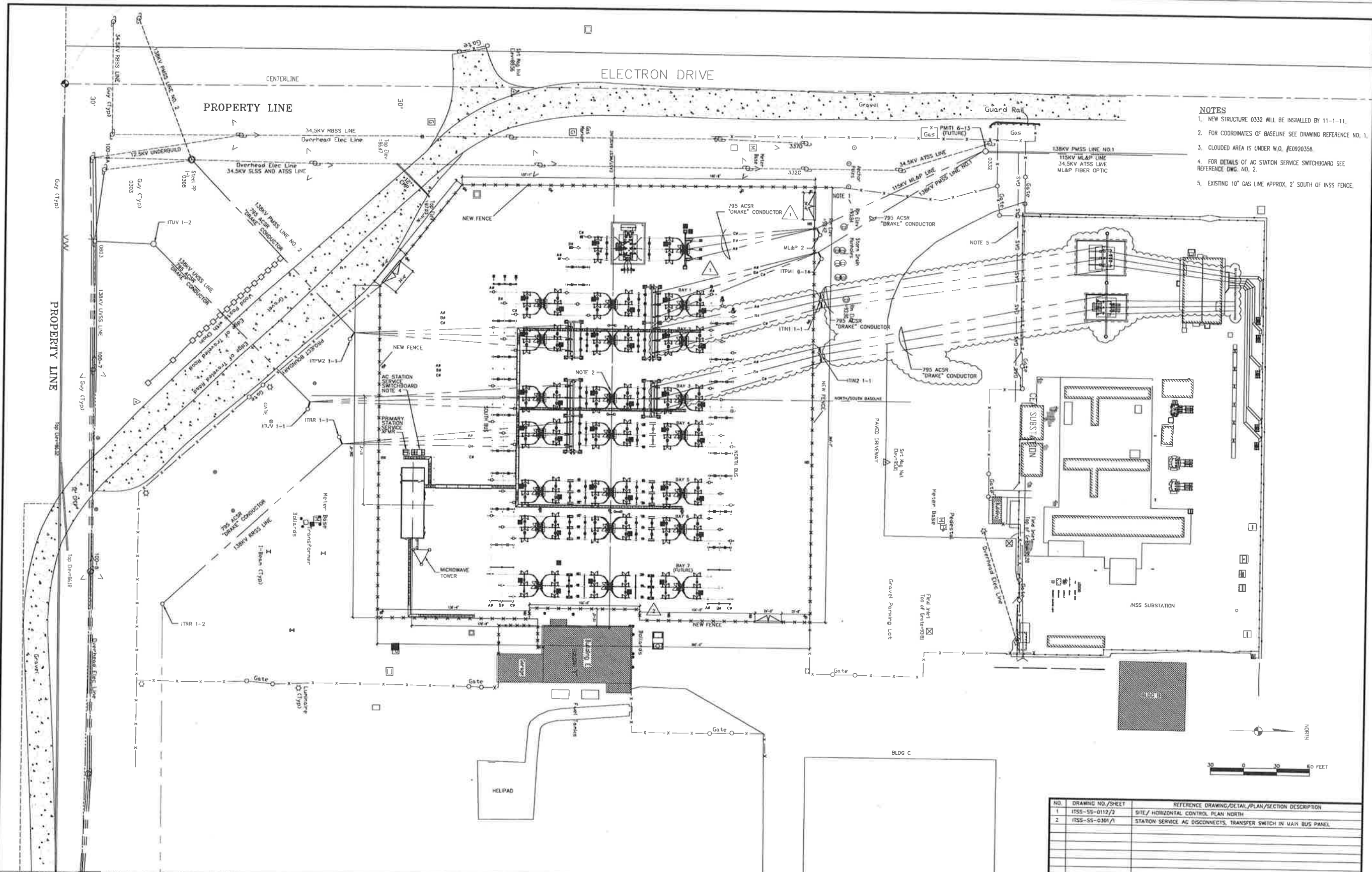
PROTECTION CONSTRUCTION

SHEET NUMBER	SHEET NAME	DESCRIPTION	GROUP
1	INSS-EL-0028-0001/4	34.5KV SWITCHGEAR BUILDING CABLE SCHEDULE	SCHEMATIC
2	INSS-EL-0028-0002/4	34.5KV SWITCHGEAR BUILDING #1 CABLE SCHEDULE	SCHEMATIC
3	INSS-EL-2021-0001/2	34.5KV 387-T2-932 DC SCHEMATIC	SCHEMATIC
4	INSS-EL-2041-0001/2	34.5KV 387-T1-1732 DC SCHEMATIC	SCHEMATIC
5	INSS-EL-2049-0002/3	PLC INPUTS DC SCHEMATICS	SCHEMATIC
6	INSS-EL-2049-0003/2	PLC INPUTS DC SCHEMATICS	SCHEMATIC
7	INSS-EL-2050-0001/6	RTU NORTH BUS DC SCHEMATIC	SCHEMATIC
8	INSS-EL-2050-0002/4	RTU NORTH BUS DC SCHEMATIC	SCHEMATIC
9	INSS-EL-2051-0001/4	RTU SOUTH BUS DC SCHEMATIC	SCHEMATIC
10	INSS-EL-2051-0002/3	RTU SOUTH BUS DC SCHEMATIC	SCHEMATIC
11	INSS-EL-3007-0001/4	34.5KV SECTION #9 DOOR AND SIDE WALLS WIRING DIAGRAM	SCHEMATIC
12	INSS-EL-3015-0001/1	34.5KV SECTION #17 DOOR AND SIDE WALLS WIRING DIAGRAM	SCHEMATIC
13	INSS-EL-3506-0001/9	CONTROL WIRING DIAGRAM TRANSFORMER NO. 2 EQUIPMENT ID # TRF 140 & TRF 144	SCHEMATIC
14	INSS-EL-3509-0001/4	CONTROL CABINET DIAGRAM STEP-DOWN POWER TRANSFORMER #1 EQUIPMENT ID TRF 144	SCHEMATIC
15	INSS-EL-4000-0001/3	34.5KV SWITCHGEAR AC PANEL SCHEMATIC	SCHEMATIC

**APPENDIX A: CONTRACT DRAWINGS FOR:
INTERNATIONAL SUBSTATION 138KV FACILITIES RETIREMENT**

**DRAWING INDEX
PROTECTION REMOVAL**

SHEET NUMBER	SHEET NAME	DESCRIPTION	GROUP
1	INSS-EL-0016-0001/7R	THREE LINE DIAGRAM TRANSFORMER #1 REMOVAL DRAWING	SCHEMATIC
2	INSS-EL-0017-0001/16R	THREE LINE DIAGRAM TRANSFORMER #2 REMOVAL DRAWING	SCHEMATIC
3	INSS-EL-0028-0001/4R	34.5KV SWITCHGEAR BUILDING CABLE SCHEDULE REMOVAL DRAWING	SCHEMATIC
4	INSS-EL-2049-0002/3R	PLC INPUTS DC SCHEMATIC REMOVAL DRAWING	SCHEMATIC
5	INSS-EL-2049-0003/2R	PLC INPUTS DC SCHEMATIC REMOVAL DRAWING	SCHEMATIC
6	INSS-EL-2050-0001/6R	RTU NORTH BUS DC SCHEMATIC REMOVAL DRAWING	SCHEMATIC
7	INSS-EL-2050-0002/4R	RTU NORTH BUS DC SCHEMATIC REMOVAL DRAWING	SCHEMATIC
8	INSS-EL-2051-0001/4R	RTU SOUTH BUS DC SCHEMATIC REMOVAL DRAWING	SCHEMATIC
9	INSS-EL-2051-0002/3R	RTU SOUTH BUS DC SCHEMATIC REMOVAL DRAWING	SCHEMATIC
10	INSS-EL-3007-0001/4R	34.5KV SECTION #9 DOOR AND SIDE WALLS WIRING DIAGRAM REMOVAL DRAWING	SCHEMATIC
11	INSS-EL-3015-0001/1R	34.5KV SECTION #17 DOOR AND SIDE WALLS WIRING DIAGRAM REMOVAL DRAWING	SCHEMATIC
12	INSS-EL-3506-0001/9R	CONTROL WIRING DIAGRAM XFMR NO. 2 EQUIPMENT ID # TRF 140 & TRF 144 REMOVAL DRAWING CONTROL CABINET DIAGRAM STEP-DOWN POWER XFMR #1 EQUIPMENT ID TRF 144 REMOVAL DRAWING	SCHEMATIC
13	INSS-EL-3509-0001/4R	DRAWING	SCHEMATIC
14	INSS-EL-4000-0001/3R	34.5KV SWITCHGEAR AC PANEL SCHEMATIC REMOVAL DRAWING	SCHEMATIC



- NOTES**
1. NEW STRUCTURE 0332 WILL BE INSTALLED BY 11-1-11.
 2. FOR COORDINATES OF BASELINE SEE DRAWING REFERENCE NO. 1.
 3. CLOUDED AREA IS UNDER W.O. #E0920358.
 4. FOR DETAILS OF AC STATION SERVICE SWITCHBOARD SEE REFERENCE DWG. NO. 2.
 5. EXISTING 10" GAS LINE APPROX. 2' SOUTH OF INSS FENCE.

Certified for Construction of W.O. E1720055 by Billy C. Bennett Jr., No. CE131526, Block & Veitch Consultants, on 03/22/2021

PROJECT: INSS 138 kV FACILITY RETIREMENT
 ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V) W.O.# E1720055

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN. BY/DATE	REVIEWED MGR./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGB/03-22-21		

NO.	RECORD REVISION	TECH/ DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	CHUGACH AS-BUILT		10726	E0120202	AL	11/13/12

CHUGACH
POWERING ALASKA'S FUTURE

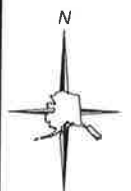
Chugach Electric Association, Inc.
 5601 Minnesota Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	ITSS-SS-0112/2	SITE / HORIZONTAL CONTROL PLAN NORTH
2	ITSS-SS-0301/A	STATION SERVICE AC DISCONNECTS, TRANSFER SWITCH IN MAIN BUS PANEL

DRAWING NAME: INTERNATIONAL TRANSMISSION SUBSTATION SITE PLAN

CONFIDENTIAL

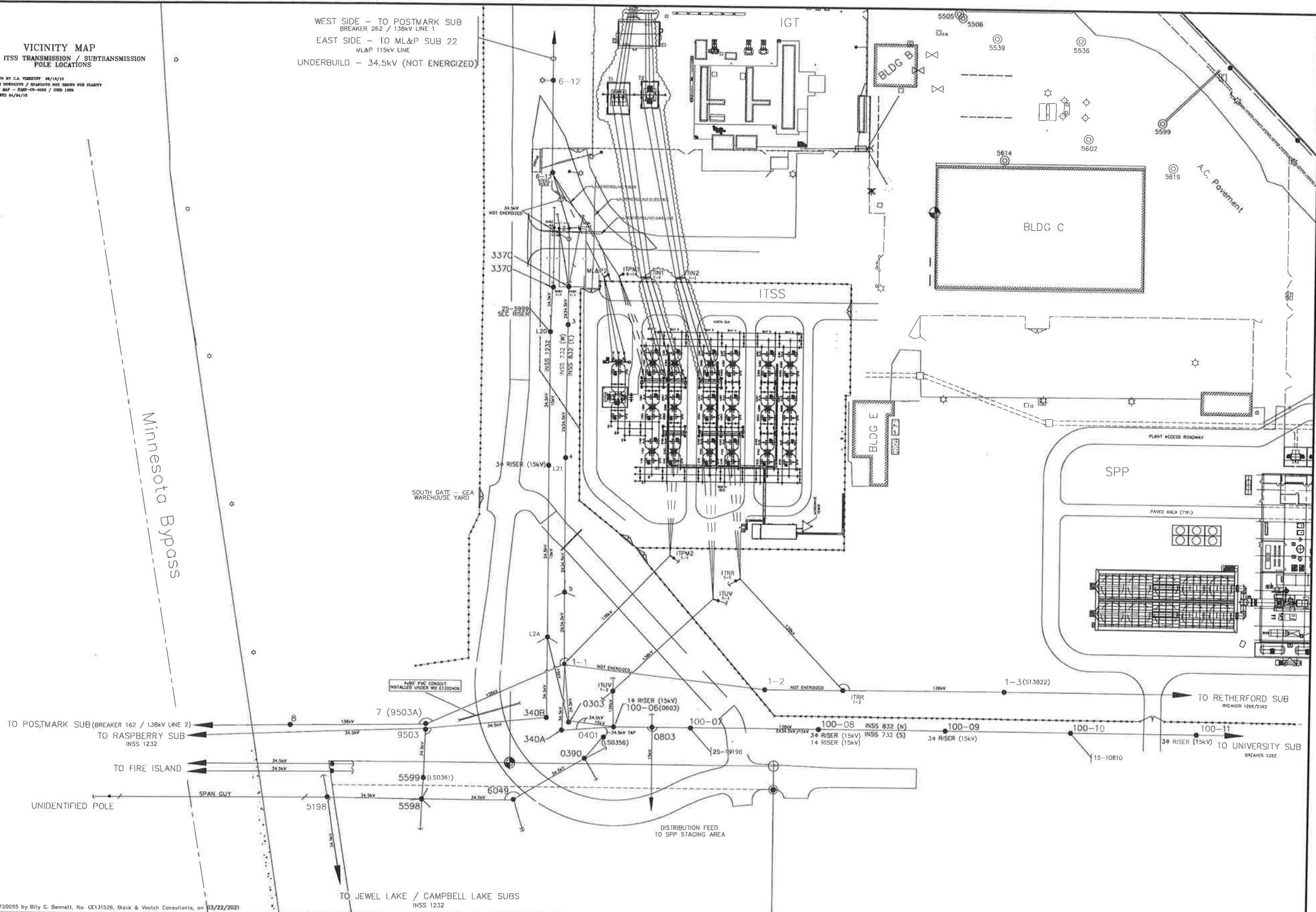
DRAWING NO. - PREVIOUS/REFERENCE: ITSS-SS-0101_0001_2.dwg
 DRAWING NO.: ITSS-SS-0101 SHEET 0001 of 0001 PAGE 1



VICINITY MAP
 IGT - ITSS TRANSMISSION / SUBTRANSMISSION
 POLE LOCATIONS

DATA BY C.A. YERGENY 04/12/10
 WORK DIMENSIONS / SPACINGS NOT SHOWN FOR CLARITY
 DATE 04/12/10 - 04/12/10 / 04/12/10
 REVISED 04/14/10

WEST SIDE - TO POSTMARK SUB
 BREAKER 262 / 138kV LINE 1
 EAST SIDE - TO ML&P SUB 22
 ML&P 115kV LINE
 UNDERBUILD - 34.5kV (NOT ENERGIZED)



Certified for Construction of W.D. E1720055 by Billy G. Bennett, No. CE131526, Block & Veitch Consultants, on 03/22/2021

PROJECT: INSS 138 kV FACILITY RETIREMENT				
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V)				
W.O. # E1720055				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BCB/03-22-21	

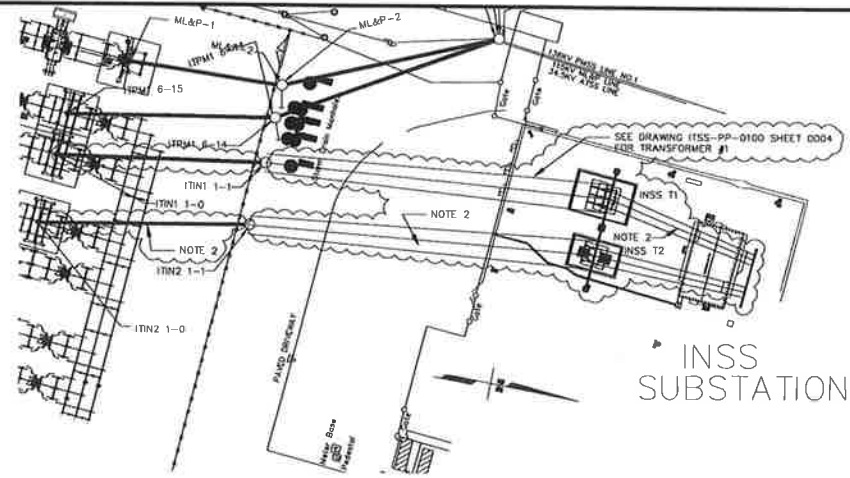
NO.	RECORD REVISION	TECH./DWN. BY	WP.#	W.O. APPROVED	RECORD APPROVED	DATE
1	ADD TBL. CLEAN & IMPORT INTO MERIDIAN. OVERVIEW OF ITSS OH FACILITIES.	GC			CV	3/29/12
2	AS-BUILT ELECTRON DRIVE GUY RELOCATION & ROAD ALIGNMENT	GC		P1630202	PMR	11/8/17



Chugach Electric Association, Inc.
 5601 Electron Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

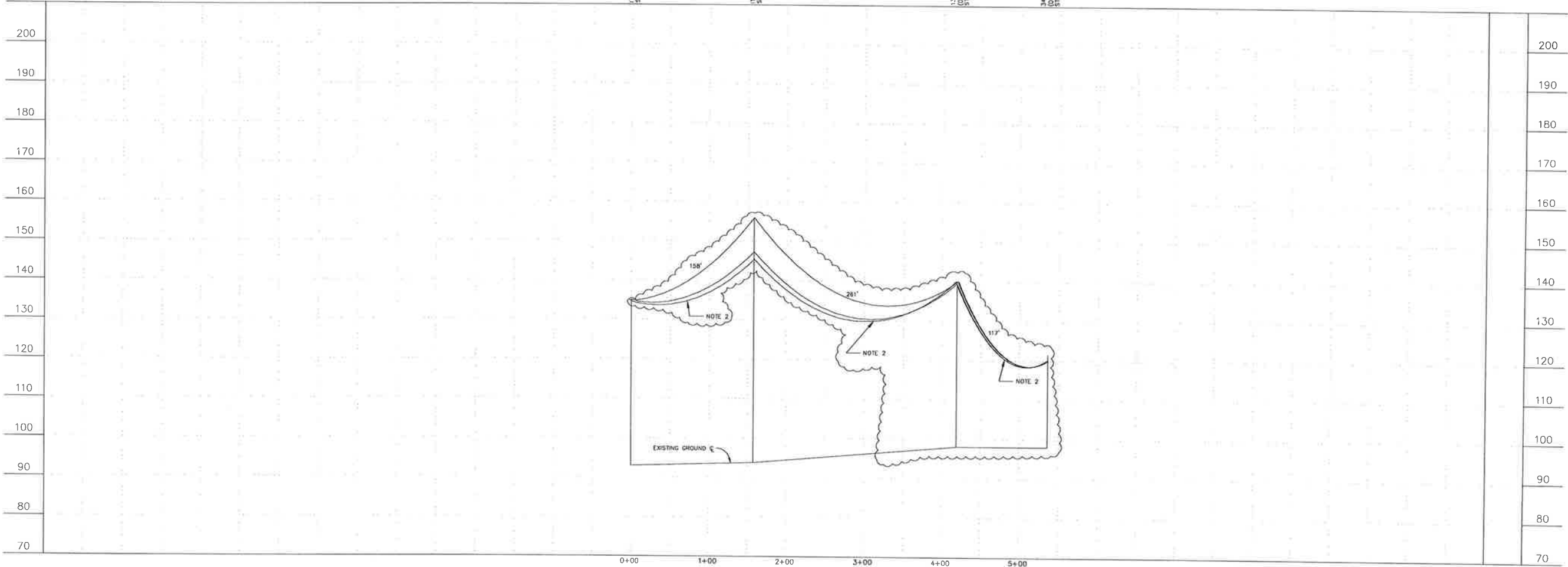
**INTERNATIONAL TRANSMISSION SUBSTATION
 SITE OVERVIEW
 OVERHEAD FACILITIES
 POLE LOCATIONS**

CONFIDENTIAL
 DRAWING NO. - PREVIOUS/REFERENCE: ITSS-SS-0001_0001_3.dwg
 SHEET 0001 OF 0001
 PAGE OF



NOTES:
 1. FOR STRUCTURE LOCATIONS SEE DRAWING REFERENCE NO. 2.
 2. SAG LINES PER SAG TABLES BELOW.

ITN2 1-0 STA=0+00.00
 ITN2 1-0 STA=1+37.75
 138KV H-FRAME (DOUBLE-BAY) STA=4+48.75
 34.5KV H-FRAME (DOUBLE-BAY) STA=5+37.64



138KV SAGGING TABLE
 USE BETWEEN STRUCTURES ITN2 1-0 TO 138KV H-FRAME (DOUBLE-BAY)
 NESC HEAVY LOADING ZONE, INITIAL CONDITION
 7.95 MM² ACSR "50AK"

CONDUCTOR	7.95 MM ² ACSR "50AK"
RULING SPAN	227.8 FT
CONDUCTOR TEMP, °F	-20' -10' 0' 10' 20' 30' 40' 50' 60' 70' 80'
CONDUCTOR TENSION, LBS.	10.92 10.19 10.00 9.82 9.66 9.51 9.34 9.19 9.02 8.92 8.80
SPAN LENGTH, FT	157.3
	3.27 3.34 3.40 3.46 3.52 3.58 3.64 3.70 3.75 3.81 3.86
	9.04 9.22 9.39 9.56 9.73 9.89 10.06 10.22 10.38 10.53 10.68
	281.8

34.5KV SAGGING TABLE
 USE BETWEEN STRUCTURES 138KV H-FRAME (DOUBLE-BAY) TO 34.5KV H-FRAME (DOUBLE-BAY)
 NESC HEAVY LOADING ZONE, INITIAL CONDITION
 (2) 1250 MM² AAC "CONQUEST"

CONDUCTOR	(2) 1250 MM ² AAC "CONQUEST"
RULING SPAN	114.9 FT
CONDUCTOR TEMP, °F	-20' -10' 0' 10' 20' 30' 40' 50' 60' 70' 80'
CONDUCTOR TENSION, LBS.	-306 306 304 302 301 299 297 295 293 291
SPAN LENGTH, FT	118.6
	8.46 8.47 8.52 8.57 8.62 8.67 8.73 8.79 8.78 8.85

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	ITSS-SS-0201/SHEET 1	TANGENT AND ANGLE ASSEMBLIES
2	ITSS-SS-0101_0001	SITE PLAN
3	ITSS-SS-0201/SHEET 2	VERTICAL DOUBLE DEADEND
4	ITSS-SS-0201/SHEET 3	GUY AND ANCHOR DETAIL
5	ITSS-SS-0201/SHEET 4	STRUCTURE NUMBER ASSEMBLY
6	ITSS-SS-0201_0000	VERTICAL DOUBLE DEADEND (SHOO-FLY)

Certified for Construction of W.O. E1720055 by Billy G. Bennett Jr., No. CE131526, Black & Veatch Consultants, on 03/22/2021

PROJECT: **INSS 138 kV FACILITY RETIREMENT**
 ENG./DESIGN: **JESSE MOE (CEA) / B. BENNETT (B&V)** W.O. # **E1720055**

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGR/03-22-21		

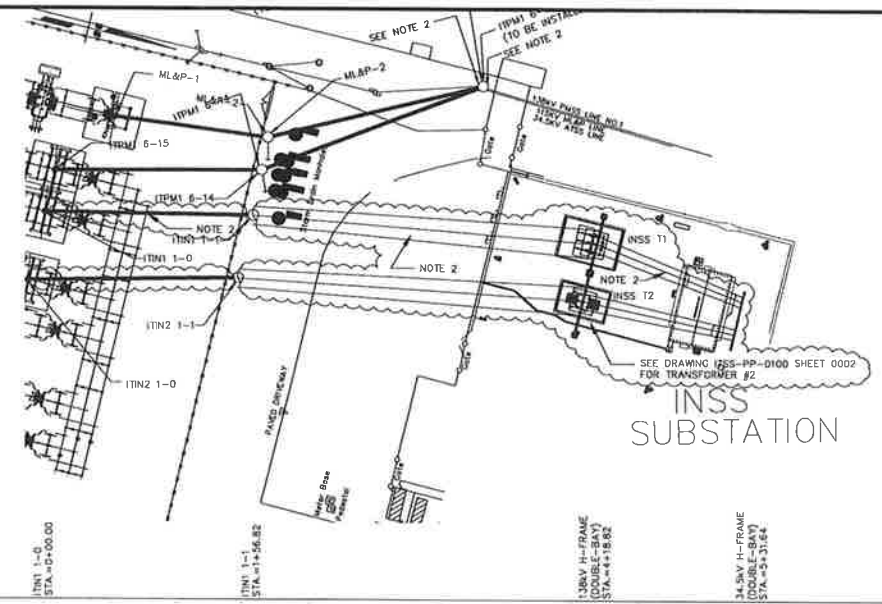
NO.	RECORD REVISION	TECH./OWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	CHUGACH AS-BUILT		10726	E0120202	AL	11/13/12



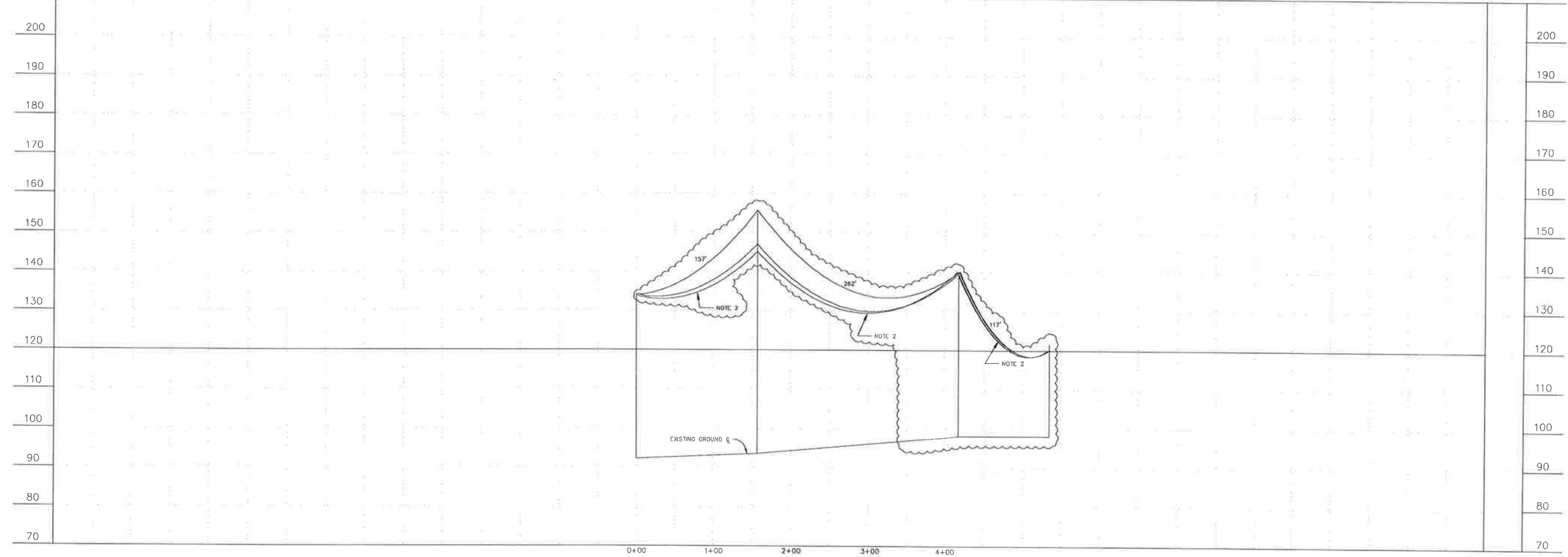
DRAWING NAME:
**INTERNATIONAL TRANSMISSION SUBSTATION
 PLAN AND PROFILE
 INSS TRANSFORMER #2**

CONFIDENTIAL

DRAWING NO. - PREVIOUS/REFERENCE: ITSS-PP-0100_0002_2.dwg
 DRAWING NO.: **ITSS-PP-0100** SHEET **0002** of **0008**
 PAGE /



NOTES:
 1. FOR STRUCTURE LOCATIONS SEE DRAWING REFERENCE NO. 3.
 2. SAG LINES PER SAG TABLES BELOW.



138kV SAGGING TABLE
 USE BETWEEN STRUCTURES ITN1 1-0 TO 138kV H-FRAME (DOUBLE-BAY)
 NESC HEAVY LOADING ZONE, INITIAL CONDITION

1755 kcmil ACSF USAGE	
CONDUCTOR	1755
BUILING SPAN	226.8 FT
CONDUCTOR TEMP, °F	-20° -10° 0° 10° 20° 30° 40° 50° 60° 70° 80°
CONDUCTOR TENSION, LBS.	10391 10191 10000 9827 9665 9513 9371 9239 9119 9009 8911 8829
SPAN LENGTH, FT	INITIAL SAG IN DECIMAL FEET
156.3	3.23 3.30 3.36 3.42 3.48 3.54 3.60 3.66 3.71 3.77 3.82
260.7	8.97 9.15 9.32 9.49 9.66 9.82 9.99 10.14 10.30 10.47 10.61

34.5kV SAGGING TABLE
 USE BETWEEN STRUCTURES 138kV H-FRAME (DOUBLE-BAY) TO 34.5kV H-FRAME (DOUBLE-BAY)
 NESC HEAVY LOADING ZONE, INITIAL CONDITION

127 1580 kcmil AAC "CORROSION"	
CONDUCTOR	127 1580
BUILING SPAN	115.9 FT
CONDUCTOR TEMP, °F	-20° -10° 0° 10° 20° 30° 40° 50° 60° 70° 80°
CONDUCTOR TENSION, LBS.	306 309 314 320 326 333 341 349 357 365 373 382
SPAN LENGTH, FT	INITIAL SAG IN DECIMAL FEET
117.6	8.61 8.61 8.66 8.71 8.77 8.80 8.82 8.88 8.94 8.94 9.00

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	ITSS-SS-0201/SHEET 1	TANGENT AND ANGLE ASSEMBLIES
2	ITSS-SS-0201/SHEET 3	GUY AND ANCHOR DETAIL
3	ITSS-SS-0101_0001	SITE PLAN
4	ITSS-SS-0201/SHEET 4	STRUCTURE NUMBER ASSEMBLY
5	ITSS-SS-0201_0005	VERTICAL DOUBLE DEADEND (SHO-FLY)

Certified for Construction of W.D. E1720055 by Billy G. Bennett Jr., No. CE131526, Black & Veatch Consultants, on 03/22/2021

PROJECT: **INSS 138 kV FACILITY RETIREMENT**
 ENG./DESIGN: **JESSE MOE (CEA) / B. BENNETT (B&V)** W.O. # **E1720055**

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGB/03-22-21		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.D. APPROVED	RECORD APPROVED	DATE
1	CHUGACH AS-BUILT		10726	ED120202	AL	11/13/12



DRAWING NAME:
**INTERNATIONAL TRANSMISSION SUBSTATION
 PLAN AND PROFILE
 INSS TRANSFORMER #1**

CONFIDENTIAL

DRAWING NO. - PREVIOUS/REFERENCE: ITSS-PP-0100_0004_2.dwg
 SHEET 0004 of 0008
 PAGE

CONSTRUCTION STAKING TABLE									
STRUCT. NUMBER	LINE ANGLE (DEG)	STAKE DESCRIPTION	X EASTING (FT)	Y NORTHING (FT)	Z ELEVATION (FT)	STRUCTURE DESCRIPTION	ASSEMBLIES	EMBEDDED DEPTH (FT)	POLE TYPE
ITPM2 1-1	-45.75	POLE	3222.118	3952.611	89.95	HPA-2	(2)1A-3H (2)1G-11A-FG SM52-NP	10	DF-1-80
		GUY 1	5259.749	3936.793	89.95				
		GUY 2	5249.191	3944.419	89.95				
ITUV 1-1	-46.28	POLE	5282.151	3915.201	90.032	HPA-2	(2)1A-3H (2)1G-11A-FG SM52-NP	10.5	DF-1-90
		GUY 1	5321.718	3889.470	90.032				
		GUY 2	5310.059	3903.736	90.032				
ITRR 1-2	47.15	POLE	5452.789	3788.187	90.520	TS-5A	(6)1A-3H (6)1G-11A-FG SM52-NP	11	DF-H2-90
		GUY 1	5486.616	3753.401	90.520				
		GUY 2	5482.489	3768.403	90.520				
		GUY 3	5476.328	3763.403	90.520				
		GUY 4	5382.06	3786.369	90.520				
		GUY 5	5393.307	3786.435	90.520				
ITRR 1-1	38.93	POLE	5318.688	3943.016	90.368	HPA-2	(2)1A-3H (2)1G-11A-FG SM52-NP	10	DF-1-80
		GUY 1	5281.809	3927.679	90.368				
		GUY 2	5281.210	3931.621	90.368				
MLAP-2	-20.39	POLE	5128.405	4357.059	93.385	HPA-3	(2)1A-3H (2)1G-11A-FG SM52-NP	10.5	DF-1-90
		GUY 1	5169.234	4369.639	93.385				
		GUY 2	5158.477	4366.125	93.385				
ITPM1 6-13	0	POLE	5051.833	4505.303	93.191	-	-	-	-
ITPM1 6-14	-20.32	POLE	5153.517	4358.467	93.833	HPA-2	(2)1A-3H (2)1G-11A-FG SM52-NP	9	DF-1-80
		GUY 1	5188.889	4375.075	93.833				
		GUY 2	5179.361	4370.275	93.833				
ITN1 1-1	4.83	POLE	5189.338	4356.687	93.555	HP1-1	SM52-NP	8.5	DF-1-65
ITN2 1-1	5.02	POLE	5238.589	4354.066	93.755	HP1-1	SM52-NP	8.5	DF-1-65



- NOTES:
1. THE BASIS FOR HORIZONTAL CONTROL IS THE NORTHWEST CORNER OF TRACT 2, HAVING ASSUMED COORDINATE VALUES OF N5000.00, E2000.00, AND THE SOUTHWEST CORNER OF TRACT 2, HAVING ASSUMED COORDINATE VALUES OF N3877.01, E4998.78.
 2. THE ELEVATION DATUM IS THE GREATER ANCHORAGE AREA BOROUGH (G.A.A.B.) DATUM, POST QUAKE U.S. GEODETIC SURVEY, MEAN SEA LEVEL OF 1972.
 3. ELEVATIONS FOR THIS SURVEY ARE BASED ON BENCHMARK "GAAB 1", A BRASS CAP MONUMENT WITH SCREW SET VERTICALLY IN THE WEST FACE OF A 8' X 15' CONCRETE BUILDING, #421 (CHUGACH ELECTRIC BUILDING "C"). THE BRASS CAP MONUMENT IS 2.1 FEET SOUTH OF THE NORTHWEST BUILDING CORNER AND 2.9 FEET ABOVE GRADE. SEE G.A.A.B. BOOK M-46, P-27.
- LINEAR UNITS: US SURVEY FEET
4. SEE DRAWING REFERENCE #5 FOR SURVEY NOTES

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	ITSS-SS-0201/SHEET 4	STRUCTURE NUMBER AND GROUNDING ASSEMBLIES
2	ITSS-SS-0200/SHEET 1	TANGENT AND ANGLE ASSEMBLIES
3	ITSS-SS-0201/SHEET 2	VERTICAL DOUBLE DEADEND
4	ITSS-SS-0201/SHEET 3	GUY AND ANCHOR DETAIL
5	ITSS-SS-0112/SHEET 1	SITE/HORIZONTAL CONTROL PLAN

DRAWING NAME:
**INTERNATIONAL TRANSMISSION SUBSTATION
 PLAN AND PROFILE
 CONSTRUCTION STAKING TABLE**

CONFIDENTIAL

DRAWING NO. - PREVIOUS/REFERENCE: ITSS-PP-0100_0008_2.dwg

DRAWING NO.: **ITSS-PP-0100** SHEET **0008** OF **0008**
 PAGE /

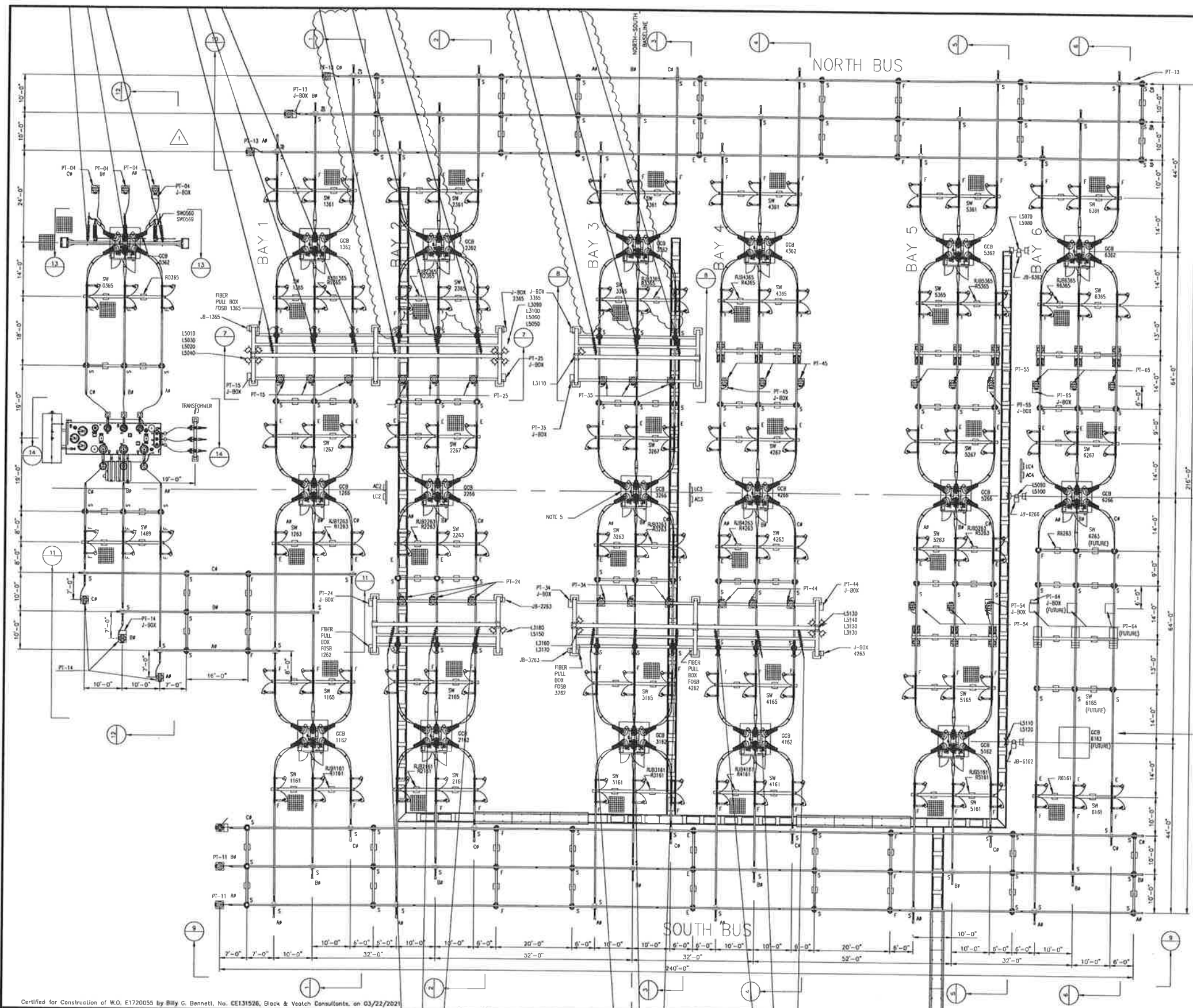
Certified for Construction of W.D. E1720055 by Billy G. Bennett Jr., No. CE131526, Black & Veatch Consultants, on 05/15/2020

PROJECT: INSS 138 kV FACILITY RETIREMENT			
ENG./DESIGN.: S. WENDLING (CEA) / B. BENNETT (B&V) W.O. # E1720055			
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	APPROVED DIRECTOR/DATE
0	ISSUED FOR CONSTRUCTION	MJC/05-15-20	BGB/05-15-20

NO.	RECORD REVISION	TECH. / DWN. BY	W.P. #	W.O. APPROVED	RECORD APPROVED	DATE
1	CHUGACH AS-BUILT		10726	E0120202	AL	11/13/12

CHUGACH
 POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
 5601 Minnesota Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300



- LEGEND**
- F-FIXED OR WELDED FITTING
 - S-SLIP FITTING
 - E-EXPANSION FITTING
 - L-LIGHT
 - R-RECEPTACLE
 - LC-LIGHTING CONTACTOR PANEL
 - AC-AC STATION & SERVICE SUBPANEL

- NOTES**
1. INSTALL VIBRATION DAMPENING CONDUCTOR 795 ACSR INSIDE 4" BUS FOR BUS SECTIONS EXCEEDING 10' IN LENGTH.
 2. SEE REFERENCE NO. 15 FOR BOLT SCHEDULE.
 3. SEE REFERENCE NO. 16 FOR BILL OF MATERIAL.
 4. CLOUDED AREA IS UNDER W.O.#E0920358.
 5. FOR COORDINATES OF BASELINE INTERSECTION SEE REFERENCE DWG NO. 17.

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	ITSS-SS-0103/2	ELEVATION VIEW 1 - BAY 1
2	ITSS-SS-0103/3	ELEVATION VIEW 2 - BAY 2
3	ITSS-SS-0103/4	ELEVATION VIEW 3 - BAY 3
4	ITSS-SS-0103/5	ELEVATION VIEW 4 - BAY 4
5	ITSS-SS-0103/6	ELEVATION VIEW 5 - BAY 5
6	ITSS-SS-0103/7	ELEVATION VIEW 6 - BAY 6
7 & 8	ITSS-SS-0103/8	ELEVATION DETAILS
9	ITSS-SS-0103/9	ELEVATION VIEW 9 - SOUTH BUS
10	ITSS-SS-0103/10	ELEVATION VIEW 10 - NORTH BUS
11	ITSS-SS-0103/11	ELEVATION VIEW 11
12	ITSS-SS-0103/12	ELEVATION VIEW 12
13	ITSS-SS-0103/13	ELEVATION VIEW 13
14	ITSS-SS-0103/14	ELEVATION VIEW 14
15	ITSS-SS-0103/15	BOLT SCHEDULE
16	ITSS-SS-0119	BILL OF MATERIALS
17	ITSS-SS-0112/2	SITE/HORIZONTAL CONTROL PLAN NORTH

DRAWING NAME: INTERNATIONAL TRANSMISSION SUBSTATION BUSWORK LAYOUT PLAN VIEW

DRAWING NO. - PREVIOUS/REFERENCE: ITSS-SS-0103_0001_1-1

DRAWING NO.: ITSS-SS-0103

SHEET: 0001 OF 0016

PAGE:

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Black & Veatch Consultants, on 03/22/2021

PROJECT: INSS 138 kV FACILITY RETIREMENT		W.O. # E1720055	
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V)		NO. 1	
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGB/03-22-21

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.D. APPROVED	RECORD APPROVED	DATE
1	CHUGACH AS-BUILT		10726	E0120202	AL	11/13/12





STRUCTURAL DETAILS

FOR A:
43' TALL, 2-BAY H-FRAME (5002)

LOCATED AT:
**INTERNATIONAL SUBSTATION
 ADJACENT TO: 5601 ELECTRON DRIVE
 ANCHORAGE, AK 99519**

GENERAL DESIGN NOTES

- DESIGN NOTES AND MATERIAL REQUIREMENTS:
 1 THE DESIGN CRITERIA FOR THIS STRUCTURE IS AS FOLLOWS:
- A STANDARDS AND DESIGN CODES:
 INDUSTRY STANDARD: NESC E2 (2017)
 STEEL MANUAL: ASCE/BEI 48-19 & AISC 'STEEL CONSTRUCTION
 MANUAL' 15TH EDITION
 WELDING CODE: ANS/AWS D1 1-15
 REF. DRAWING: INSS-EQ-5002, REV. 0, DATED OCT. 3, 2019
- 2 GENERAL STRUCTURAL NOTES:
 A ALL MATERIALS SHALL CONFORM TO THE FOLLOWING STANDARDS:
 POLE SHAFTS: ASTM A572 GR 65
 BASE PLATES: ASTM A572 GR 50
 MISC PLATES: ASTM A36 / ASTM A572 GR 50/65
 PRIMARY STR. PLATES: ASTM A572 GR 50/65
 ANCHOR BOLTS: ASTM A615 GR 75
 STRUCTURAL BOLTS: ASTM A325
 NON-STR. BOLTS: ASTM A307
 B ALL WELDING TO BE PERFORMED BY WELDERS CERTIFIED IN
 ACCORDANCE WITH AWS D1.1 FIELD WELDING IS PROHIBITED
 C ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH
 ASTM A123
 D ALL STRUCTURAL BOLTS SHALL BE TIGHTENED TO SNUG-TIGHT AS
 DEFINED BY AISC 15TH EDITION, PG.16 2-51
- 3 BASE REACTIONS: OUTER LEGS: CENTER LEG
 OVERTURNING MOMENT: 328 FT-KIPS 387 FT-KIPS
 BASE SHEAR: 7.30 KIPS 11.05 KIPS
 VERTICAL DOWNLOAD: 5.22 KIPS 13.8 KIPS
 TORSION: 30.2 FT-KIPS 0.02 FT-KIPS

GENERAL NOTES

- CONTRACTOR SHALL FIELD VERIFY SITE OR LAYOUT RESTRICTIONS, SITE CONDITIONS, DIMENSIONS, AND ELEVATIONS BEFORE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF WESTERN UTILITY TELECOM, INC. PRIOR TO BEGINNING PROJECT. ALL WORK SHALL BE PERFORMED USING ACCEPTED CONSTRUCTION PRACTICES.
- NO FIELD MODIFICATIONS MAY BE MADE TO THE STRUCTURE WITHOUT THE EXPRESS WRITTEN CONSENT FROM THE ENGINEER OF RECORD. WESTERN UTILITY TELECOM, INC. AND ENGINEER OF RECORD ASSUME NO RESPONSIBILITY FOR THE STRUCTURE IF ALTERATIONS AND/OR ADDITIONS ARE MADE TO THE DESIGN AS SHOWN IN THESE DRAWINGS.
- THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL COMPLY WITH ALL LOCAL CODES, REGULATIONS, AND ORDINANCES AS WELL AS STATE DEPARTMENT OF INDUSTRIAL REGULATIONS AND DIVISION OF INDUSTRIAL SAFETY (DISHA) REQUIREMENTS.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT ALL WORK TO THE BEST OF HIS/HER ABILITY AND SKILL. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, PROCEDURES, AND SEQUENCES, AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- THE CONTRACTOR SHALL VERIFY, COORDINATE, AND PROVIDE ALL NECESSARY BLOCKING, BACKING, FRAMING, HANGERS, OR OTHER SUPPORTS FOR ALL ITEMS REQUIRING SAME, WHETHER SHOWN OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY BRACING, SHORING, FORMWORK, ETC. AND SHALL CONFORM TO ALL NATIONAL, STATE, AND LOCAL ORDINANCES AND CODES IN ORDER TO SAFELY EXECUTE ALL STAGES OF WORK TO COMPLETE THIS PROJECT.
- IT IS THE INTENT OF THESE DRAWINGS TO SHOW THE COMPLETED INSTALLATION OF THE STRUCTURE SHOWN.
- CONTRACTOR ASSUMES RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES. THIS REQUIREMENT APPLIES CONTINUOUSLY, AND IS NOT LIMITED TO NORMAL WORKING HOURS.
- CONTRACTOR TO HOLD ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN. THE CONTRACTOR IS FINANCIALLY RESPONSIBLE FOR REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED IN CONJUNCTION WITH THE EXECUTION OF WORK ON THIS PROJECT.

TABLE OF CONTENTS	
T-1	TITLE PAGE
ID-1	ISO VIEWS
ID-2	ELEVATION VIEW
ID-3	LEG ELEVATIONS & DETAILS
ID-4	BOOM ELEVATIONS & DETAILS
ID-5	PART DETAILS

REVISIONS			
REV	DESCRIPTION	DATE	DRW/CHK
-	INITIAL SUBMITTAL	21MAY20	JG SS
A	RELEASED FOR FABRICATION	26MAY20	JG SS

MANUFACTURER
WESTERN
 UTILITY / TELECOM, INC.

5032 SALEM DALLAS HWY
 SALEM, OR 97304
 Ph: 503-587-0101 Fx: 503-316-1864
 WesternUtilityTelecom.com

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF WESTERN UTILITY TELECOM, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF WESTERN UTILITY TELECOM, INC IS PROHIBITED.

TITLE
43' TALL, 2-BAY H-FRAME (5002)

INTERNATIONAL SUBSTATION
 ADJACENT TO: 5601 ELECTRON DRIVE
 ANCHORAGE, AK 99519
 CHUGACH ELECTRIC

PROJECT NUMBER: 20-0163 SHEET: T-1 DRAWING NUMBER: 20163-INST (5002)

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION

DRAWING NAME:
**INTERNATIONAL SUBSTATION
 STRUCTURAL STEEL MANUFACTURER DRAWING
 43' TALL, 2-BAY 138/34.5KV H-FRAME (5002)
 T-1 - TITLE PAGE**

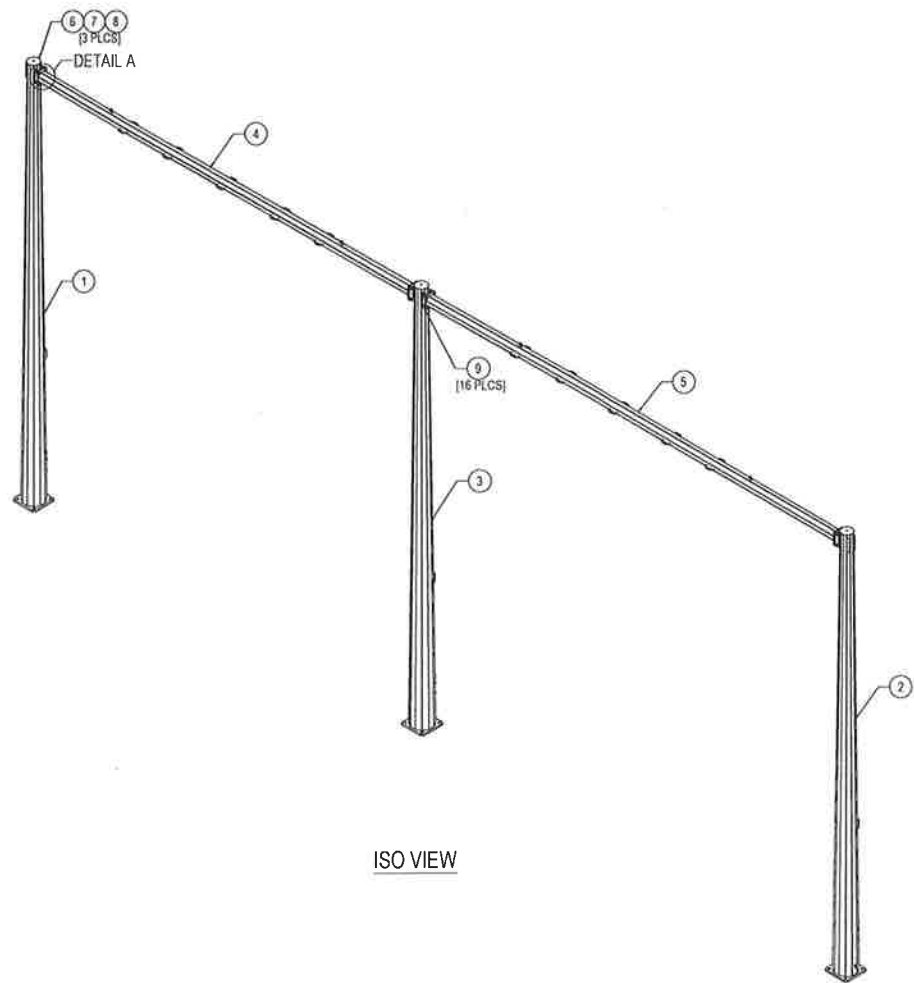
DRAWING NO. - PREVIOUS/REFERENCE: INSS-SS-0078_0001.dwg
 DRAWING NO.: INSS-SS-0078 SHEET: 0001 OF 0006
 PAGE: /

PROJECT: INSS 138 kV FACILITY RETIREMENT					W.O. # E1720055	
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V)						
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP	
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BCB/03-22-21			

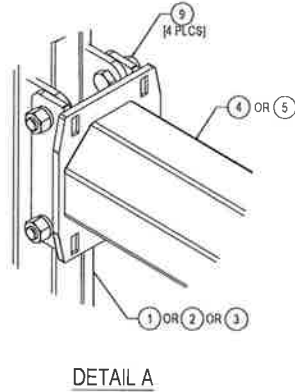
NO.	RECORD REVISION	TECH./DWN. BY	WP #	W.O. APPROVED	RECORD APPROVED	DATE

CHUGACH
 POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
 5601 Minnesota Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300



ITEM #	PART #	DESCRIPTION	QTY.	UNIT WT. (lbs)
1	20163-3L	PL 3/16" x 13.00 TD x 25.00 BD x 43'-0" A572 GR 65, 12-SIDED POLE WELDMNT - LEFT	1	2142.9
2	20163-3R	PL 3/16" x 13.00 TD x 25.00 BD x 43'-0" A572 GR 65, 12-SIDED POLE WELDMNT - RIGHT	1	2142.9
3	20163-4	PL 1/4" x 13.00 TD x 25.00 BD x 43'-0" A572 GR 65, 12-SIDED POLE WELDMNT - CENTER	1	2702.4
4	20163-5	WA 1/4" x 12.00 ED x 42'-10 1/2" A572 GR 65, 8-SIDED BOOM ARM WELDMNT	1	1714.7
5	20163-6	WA 1/4" x 12.00 ED x 46'-10 1/2" A572 GR 65, 8-SIDED BOOM ARM WELDMNT	1	1846.0
6	20163-PL20	PL 3/16" x 1'-2" F-F A36, TOP CAP	3	8.4
HARDWARE				
7	HAF1648	HW 5/8"-11 x 2" A307, GALV. FULLY THD'D HEX BOLT/NUT/LW	3	0.4
8	HAJ0049	HW 5/8"-11 A563-A, GALV. HEX NUT	3	0.083
9	HAE1137	HW 1 1/4"-7 x 3 1/2" F3125 A325, GALV. HEAVY HEX BOLT/NUT/LW	16	2.9
* INDICATES FACTORY INSTALLED PARTS / HARDWARE			TOTAL WT.	10622.1



STRUCTURE
DESIGNED &
MANUFACTURED BY

WESTERN
UTILITY & TELECOM, INC.
Engineered Steel Structures
13031 MIDWAY
www.western.com

Project No.
20-0163

Structure or Site No.
5002

Structure Ht.
43'-0"

Date Manufactured
2020

WUT TAG

REV	DESCRIPTION	DATE	DRW	CHK
J	INITIAL SUBMITTAL	21MAY20	JG	SS
A	RELEASED FOR FABRICATION	29MAY20	JG	SS

MANUFACTURER

WESTERN
UTILITY & TELECOM, INC.

5032 SALEM DALLAS HWY
SALEM, OR 97304
Ph: 503-587-0101 Fx: 503-316-1864
WesternUtilityTelecom.com

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF WESTERN UTILITY TELECOM, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF WESTERN UTILITY TELECOM, INC. IS PROHIBITED.

TITLE
43' TALL, 2-BAY H-FRAME (5002)

INTERNATIONAL SUBSTATION
ADJACENT TO: 5601 ELECTRON DRIVE
ANCHORAGE, AK 99519
CHUGACH ELECTRIC

PROJECT NUMBER: 20-0163 SHEET: ID-1 DRAWING NUMBER: 20163-INST (5002)

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION

PROJECT: INSS 138 kV FACILITY RETIREMENT				W.O. # E1720055	
ENG./DESIGN.: JESSE MOE (CEA) / B. BENNETT (B&V)					
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGB/03-22-21		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE

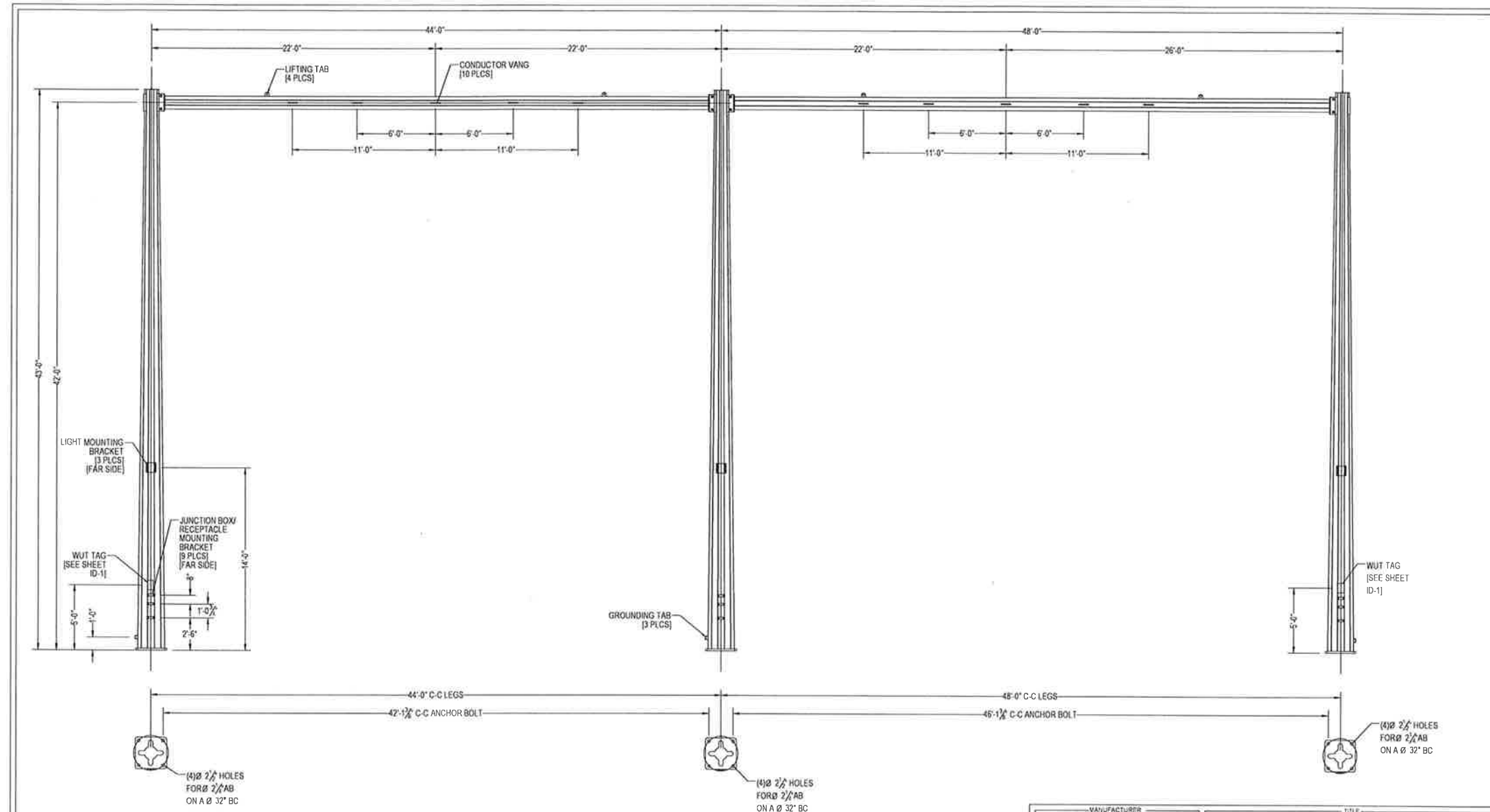
CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:
**INTERNATIONAL SUBSTATION
STRUCTURAL STEEL MANUFACTURER DRAWING
43' TALL, 2-BAY 138/34.5KV H-FRAME (5002)
ID-1 - ISO VIEWS**

DRAWING NO. - PREVIOUS/REFERENCE: **INSS-SS-0078_0002_0.dwg**

DRAWING NO.: **INSS-SS-0078** SHEET: **0002** OF **0006** PAGE



REV	DESCRIPTION	DATE	DRW	CHK
1	INITIAL SUBMITTAL	21MAY20	JG	SS
2	RELEASED FOR FABRICATION	20MAY20	JG	SS

WESTERN
UTILITY / TELECOM, INC.

5032 SALEM DALLAS HWY
SALEM, OR 97304
Ph: 503-587-0101 Fx: 503-318-1864
WesternUtilityTelecom.com

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF WESTERN UTILITY TELECOM, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF WESTERN UTILITY TELECOM INC IS PROHIBITED.

43' TALL, 2-BAY H-FRAME (5002)

INTERNATIONAL SUBSTATION
ADJACENT TO: 5601 ELECTRON DRIVE
ANCHORAGE, AK 99519
CHUGACH ELECTRIC

PROJECT NUMBER: 20-0163 SHEET: ID-2 DRAWING NUMBER: 20163-INST (5002)

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION

PROJECT: INSS 138 kV FACILITY RETIREMENT				W.O. # E1720055	
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V)					
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BCB/03-22-21		

NO.	RECORD REVISION	TECH./DWN. BY	WP.#	W.O. APPROVED	RECORD APPROVED	DATE

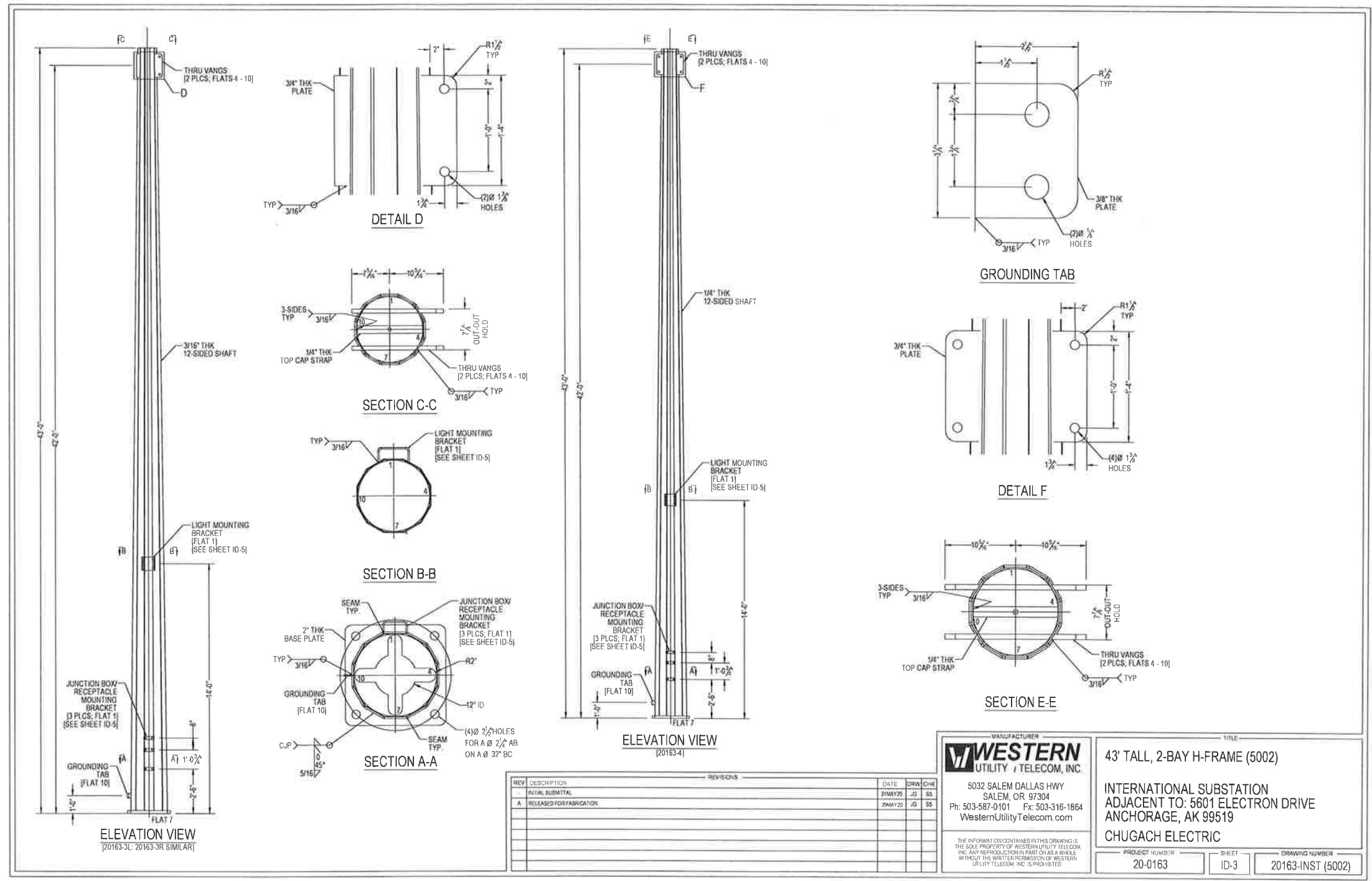
CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:
**INTERNATIONAL SUBSTATION
STRUCTURAL STEEL MANUFACTURER DRAWING
43' TALL, 2-BAY 138/34.5KV H-FRAME (5002)
ID-2 - ELEVATION VIEW**

DRAWING NO. - PREVIOUS/REFERENCE: INSS-SS-0078_0003_0.049
NEW

DRAWING NO.: INSS-SS-0078 SHEET: 0003 OF 0006
PAGE: 3 / 3



REV	DESCRIPTION	DATE	DRW	CHK
	INITIAL SUBMITTAL	21MAY20	JG	SS
A	RELEASED FOR FABRICATION	29MAY20	JG	SS

MANUFACTURER
WESTERN
 UTILITY TELECOM, INC.
 5032 SALEM DALLAS HWY
 SALEM, OR 97304
 Ph: 503-587-0101 Fx: 503-316-1864
 WesternUtilityTelecom.com

TITLE
43' TALL, 2-BAY H-FRAME (5002)
 INTERNATIONAL SUBSTATION
 ADJACENT TO: 5601 ELECTRON DRIVE
 ANCHORAGE, AK 99519
 CHUGACH ELECTRIC

PROJECT NUMBER: 20-0163
 SHEET: ID-3
 DRAWING NUMBER: 20163-INST (5002)

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION

PROJECT: **INSS 138 kV FACILITY RETIREMENT**
 ENG./DESIGN: **JESSE MOE (CEA) / B. BENNETT (B&V)** W.O. # **E1720055**

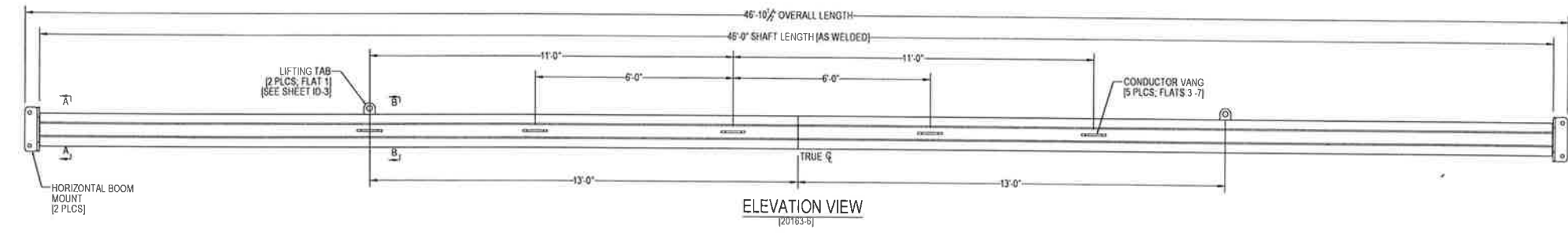
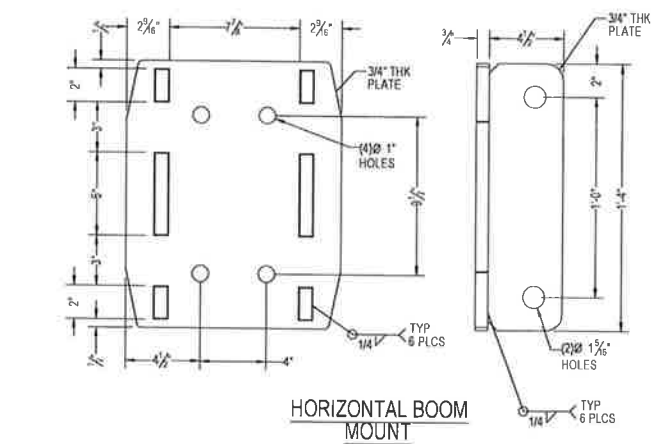
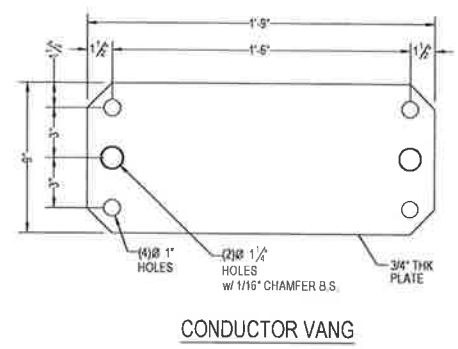
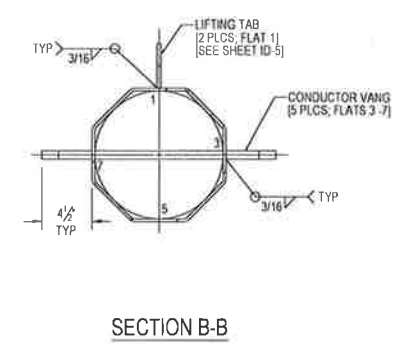
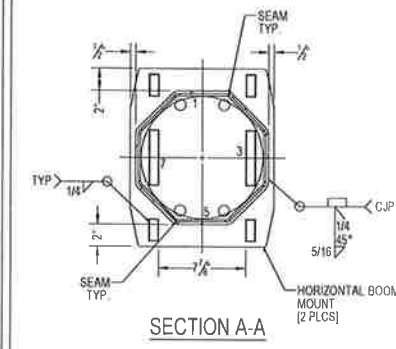
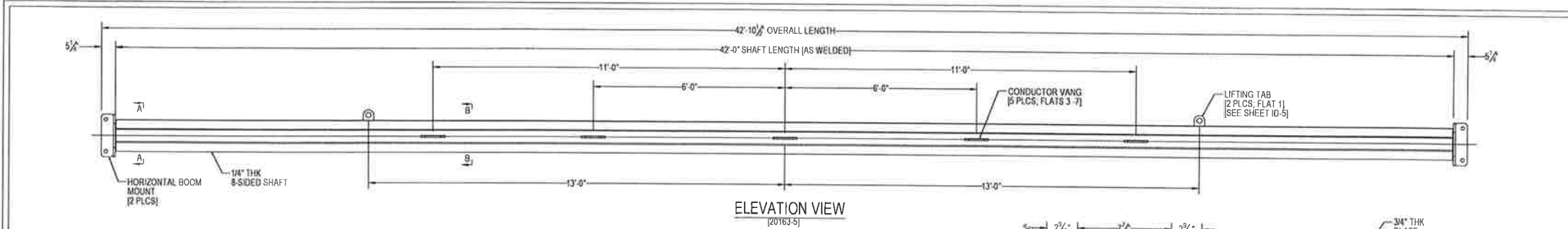
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGR/03-22-21		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.G. APPROVED	RECORD APPROVED	DATE

CHUGACH
 POWERING ALASKA'S FUTURE
 Chugach Electric Association, Inc.
 5601 Minnesota Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

DRAWING NAME:
**INTERNATIONAL SUBSTATION
 STRUCTURAL STEEL MANUFACTURER DRAWING
 43' TALL, 2-BAY 138/34.5KV H-FRAME (5002)
 ID-3 - LEG ELEVATIONS AND DETAILS**

DRAWING NO. - PREVIOUS/REFERENCE: INSS-SS-0078_0004_0.dwg
 SHEET: **0004** OF **0006**
 DRAWING NO.: **INSS-SS-0078** PAGE: /



REV	DESCRIPTION	DATE	DRW	CHK
-	INITIAL SUBMITTAL	21MAY20	JG	SS
A	RELEASED FOR FABRICATION	29MAY20	JG	SS

WESTERN
UTILITY / TELECOM, INC.

5032 SALEM DALLAS HWY
SALEM, OR 97304
Ph: 503-587-0101 Fx: 503-316-1864
WesternUtilityTelecom.com

43' TALL, 2-BAY H-FRAME (5002)

INTERNATIONAL SUBSTATION
ADJACENT TO: 5601 ELECTRON DRIVE
ANCHORAGE, AK 99519

CHUGACH ELECTRIC

PROJECT NUMBER: 20-0163 SHEET: ID-4 DRAWING NUMBER: 20163-INST (5002)

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION

PROJECT: INSS 138 kV FACILITY RETIREMENT
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V) W.O. # E1720055

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BCR/03-22-21		

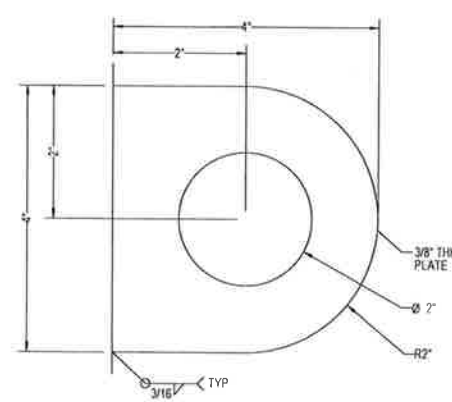
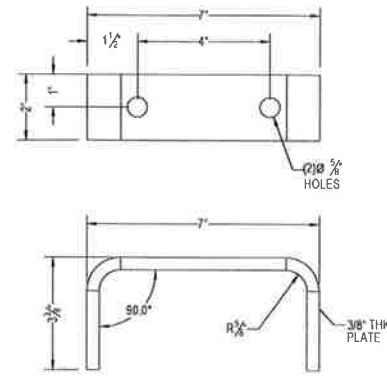
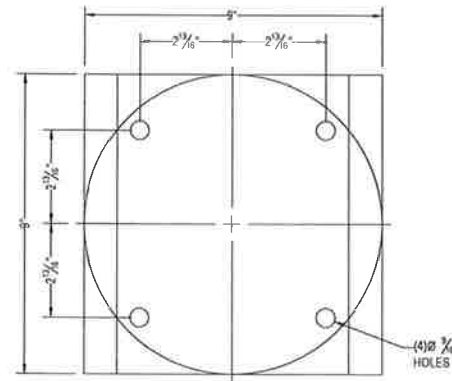
NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

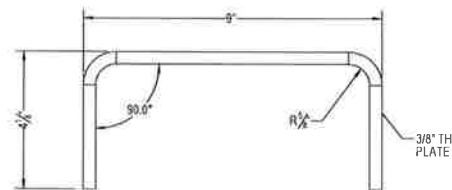
DRAWING NAME: INTERNATIONAL SUBSTATION
STRUCTURAL STEEL MANUFACTURER DRAWING
43' TALL, 2-BAY 138/34.5KV H-FRAME (5002)
ID-4 - BOOM ELEVATIONS AND DETAILS

DRAWING NO. - PREVIOUS/REFERENCE: INSS-SS-0078_0005_0.dwg
DRAWING NO.: INSS-SS-0078 SHEET: 0005 OF 0006
PAGE: /



JUNCTION BOX/
RECEPTACLE
MOUNTING BRACKET

LIFTING TAB



LIGHT MOUNTING
BRACKET

REV	DESCRIPTION	DATE	DRW	CHK
-	INITIAL SUBMITTAL	21MAY20	JG	SS
A	RELEASED FOR FABRICATION	26MAY20	JG	SS

MANUFACTURER
WESTERN
UTILITY / TELECOM, INC.

5032 SALEM DALLAS HWY
SALEM, OR 97304
Ph: 503-587-0101 Fx: 503-316-1864
WesternUtilityTelecom.com

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF WESTERN UTILITY TELECOM, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF WESTERN UTILITY TELECOM, INC. IS PROHIBITED.

43' TALL, 2-BAY H-FRAME (5002)
INTERNATIONAL SUBSTATION
ADJACENT TO: 5601 ELECTRON DRIVE
ANCHORAGE, AK 99519
CHUGACH ELECTRIC

PROJECT NUMBER: 20-0163 SHEET: ID-5 DRAWING NUMBER: 20163-INST (5002)

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION

PROJECT: INSS 138 kV FACILITY RETIREMENT
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V) W.O. # E1720055

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BCB/03-22-21		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:
INTERNATIONAL SUBSTATION
STRUCTURAL STEEL MANUFACTURER DRAWING
43' TALL, 2-BAY 138/34.5KV H-FRAME (5002)
ID-5 - PART DETAILS

DRAWING NO. - PREVIOUS/REFERENCE: INSS-SS-0078_0006_0.dwg
DRAWING NO.: INSS-SS-0078 SHEET 0006 OF 0006 PAGE

TABLE OF CONTENTS	
1-1	TITLE PAGE
ID-1	ISO VIEWS
ID-2	ELEVATION VIEW
ID-3	LEG ELEVATIONS & DETAILS
ID-4	BOOM ELEVATIONS & DETAILS
ID-5	PART DETAILS



STRUCTURAL DETAILS

FOR A:
23' TALL A572 GR.65, 2-BAY H-FRAME

LOCATED AT:
**INTERNATIONAL SUBSTATION
 ADJACENT TO: 5601 ELECTRON DRIVE
 ANCHORAGE, AK 99519**

GENERAL DESIGN NOTES

DESIGN NOTES AND MATERIAL REQUIREMENTS
 1. THE DESIGN CRITERIA FOR THIS STRUCTURE IS AS FOLLOWS:

- A. STANDARDS AND DESIGN CODES:
 INDUSTRY STANDARD: NESC C2 (2017)
 STEEL MANUAL: ASCE/SEI 148-19 & AISC "STEEL CONSTRUCTION MANUAL" 15TH EDITION
 WELDING CODE: ANSIAWS D1.1-15
 REF. DRAWING: INSS-EQ-5003, REV. 1, NOT DATED

2. GENERAL STRUCTURAL NOTES:

- A. ALL MATERIALS SHALL CONFORM TO THE FOLLOWING STANDARDS:
 POLE SHAFTS: ASTM A572 GR 65
 BASE PLATES: ASTM A572 GR 50
 MISC PLATES: ASTM A36 / ASTM A572 GR 50/65
 TUBE: ASTM A500 GR B
 PRIMARY STR. PLATES: ASTM A572 GR 50/65
 ANCHOR BOLTS: ASTM F1554 GR 105
 STRUCTURAL BOLTS: ASTM F3125 GR. A325
 NON-STR. BOLTS: ASTM A307
- B. ALL WELDING TO BE PERFORMED BY WELDERS CERTIFIED IN ACCORDANCE WITH AWS D1.1 FIELD WELDING IS PROHIBITED
- C. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123
- D. ALL STRUCTURAL BOLTS SHALL BE TIGHTENED TO SNUG-TIGHT AS DEFINED BY AISC 15TH EDITION, PG. 16.2.51.

3. BASE REACTIONS:
- | | OUTER LEGS | CENTER LEG |
|---------------------|--------------|--------------|
| OVERTURNING MOMENT: | 101 FT-KIPS | 154 FT-KIPS |
| BASE SHEAR: | 4.60 KIPS | 7.30 KIPS |
| VERTICAL DOWNLOAD: | 3.53 KIPS | 6.82 KIPS |
| TORSION: | 10.3 FT-KIPS | 0.19 FT-KIPS |

GENERAL NOTES

- CONTRACTOR SHALL FIELD VERIFY SITE OR LAYOUT RESTRICTIONS, SITE CONDITIONS, DIMENSIONS, AND ELEVATIONS BEFORE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF WESTERN UTILITY TELECOM, INC. PRIOR TO BEGINNING PROJECT. ALL WORK SHALL BE PERFORMED USING ACCEPTED CONSTRUCTION PRACTICES.
- NO FIELD MODIFICATIONS MAY BE MADE TO THE STRUCTURE WITHOUT THE EXPRESS WRITTEN CONSENT FROM THE ENGINEER OF RECORD. WESTERN UTILITY TELECOM, INC. AND ENGINEER OF RECORD ASSUME NO RESPONSIBILITY FOR THE STRUCTURE IF ALTERATIONS AND/OR ADDITIONS ARE MADE TO THE DESIGN AS SHOWN IN THESE DRAWINGS.
- THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL COMPLY WITH ALL LOCAL CODES, REGULATIONS, AND ORDINANCES AS WELL AS STATE DEPARTMENT OF INDUSTRIAL REGULATIONS AND DIVISION OF INDUSTRIAL SAFETY (OSHA) REQUIREMENTS.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT ALL WORK TO THE BEST OF HIS/HER ABILITY AND SKILL. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, PROCEDURES, AND SEQUENCES, AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- THE CONTRACTOR SHALL VERIFY, COORDINATE, AND PROVIDE ALL NECESSARY BLOCKING, BACKING, FRAMING, HANGERS, OR OTHER SUPPORTS FOR ALL ITEMS REQUIRING SAME, WHETHER SHOWN OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY BRACING, SHORING, FORMWORK, ETC., AND SHALL CONFORM TO ALL NATIONAL, STATE, AND LOCAL ORDINANCES AND CODES IN ORDER TO SAFELY EXECUTE ALL STAGES OF WORK TO COMPLETE THIS PROJECT.
- IT IS THE INTENT OF THESE DRAWINGS TO SHOW THE COMPLETED INSTALLATION OF THE STRUCTURE SHOWN.
- CONTRACTOR ASSUMES RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES. THIS REQUIREMENT APPLIES CONTINUOUSLY, AND IS NOT LIMITED TO NORMAL WORKING HOURS.
- CONTRACTOR TO HOLD ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN. THE CONTRACTOR IS FINANCIALLY RESPONSIBLE FOR REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED IN CONJUNCTION WITH THE EXECUTION OF WORK ON THIS PROJECT.

REV	REVISION RECORD	DATE	CHG	CHK
A	INITIAL SUBMITTAL	03/08/21	JHB	SCS
B	RELEASE FOR FABRICATON	03/12/21	JHB	SCS

MANUFACTURER
WESTERN UTILITY TELECOM, INC.
 5032 SALEM DALLAS HWY
 SALEM, OR 97304
 Ph: 503-587-0101 Fax: 503-316-1864
 WesternUtilityTelecom.com

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF WESTERN UTILITY TELECOM, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF WESTERN UTILITY TELECOM, INC. IS PROHIBITED.

TITLE
23' TALL A572 GR 65, 2-BAY H-FRAME

PROJECT INFORMATION
INTERNATIONAL SUBSTATION
 ADJACENT TO 5601 ELECTRON DRIVE
 ANCHORAGE, AK 99519

PROJECT NO: 21-0097 SHEET: T-1 DRAWING NO: 21097-ID-1

Friday, March 12, 2021 3:42:27 PM

C:\NWUT_Vault\Project\2021\21-0097\21097-ID-1

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION

PROJECT: INSS 138 kV FACILITY RETIREMENT
 ENG./DESIGN: **JESSE MOE (CEA) / B. BENNETT (B&V)** W.O. # **E1720055**

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGB/03-22-21		

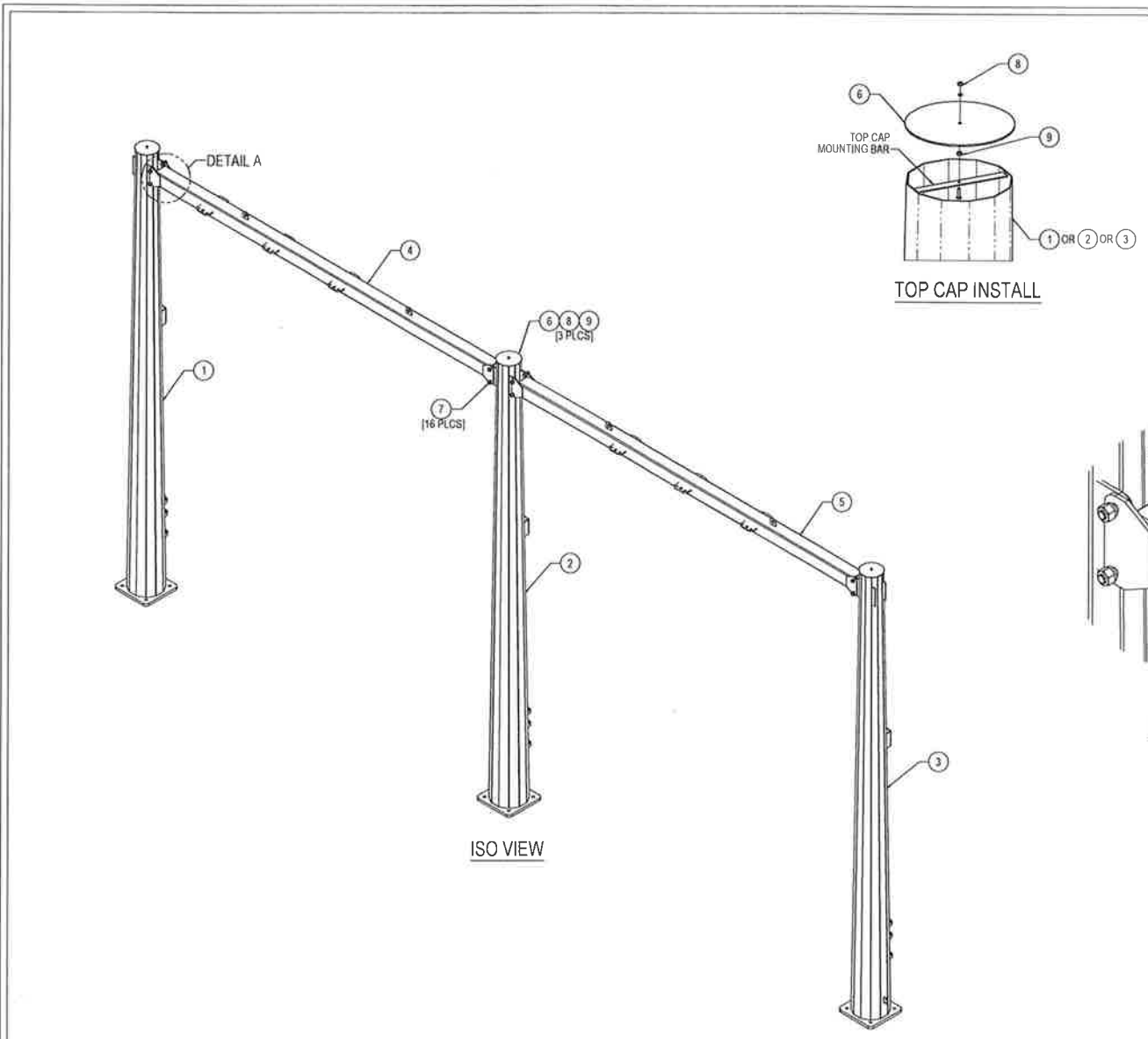
NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE

CHUGACH
 POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
 5601 Minnesota Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

DRAWING NAME:
**INTERNATIONAL SUBSTATION
 STRUCTURAL STEEL MANUFACTURER DRAWING
 23' TALL, 2-BAY 34.5KV H-FRAME
 T-1 - TITLE PAGE**

DRAWING NO. - PREVIOUS/REFERENCE: INSS-SS-0079-0001-0.dwg
 DRAWING NO.: **INSS-SS-0079** SHEET 0001 of 0006
 PAGE 1 / 6



ITEM #	PART #	DESCRIPTION	QTY.	UNIT WT. (lbs)
1	21097-WA-11	PL 3/16" x 12.00 TD x 20.00 BD x 23'-0" A572 GR.65, 12-SIDED POLE WELDMNT - LEFT	1	995.3
2	21097-WA-12	PL 1/4" x 12.00 TD x 20.00 BD x 23'-0" A572 GR.65, 12-SIDED POLE WELDMNT - CENTER	1	1245.7
3	21097-WA-13	PL 3/16" x 12.00 TD x 20.00 BD x 23'-0" A572 GR.65, 12-SIDED POLE WELDMNT - RIGHT	1	995.3
4	21097-WA-15	HSS 8"x8"x1/4" x 20'-11" A500 GR.B, SQUARE CONDUCTOR BOOM - LEFT	1	717.5
5	21097-WA-16	HSS 8"x8"x1/4" x 20'-11" A500 GR.B, SQUARE CONDUCTOR BOOM - RIGHT	1	717.5
6	21097-PL-11	PL 3/16" x 1'-1" F-F A36, TOP CAP	3	7.2
HARDWARE				
7	HAE0829	HW 1"-8 x 3" F3125 A325, GALV. HEAVY HEX BOLT/NUTLW	16	1.6
8	HAF1648	HW 5/8"-11 x 2" A307, GALV. FULLY THD'D HEX BOLT/NUTLW	3	0.4
9	HAJ0049	HW 5/8"-11 AS63-A, GALV. HEX NUT	3	0.083
			TOTAL WT.	4,793

STRUCTURE DESIGNED & MANUFACTURED BY

WESTERN
UTILITY TELECOM, INC.
Engineered Steel Structures

(503) 587-0101
western@sttelecom.com

Project No.
21-0097

Structure or Site No.
5003

Structure Ht.
23'-0"

Date Manufactured
2021

WESTERN U.T. TAG

REV	REVISION RECORD	DATE	CHG	CHK
A	INITIAL SUBMITTAL	03/08/21	JHB	SCS
B	RELEASE FOR FABRICATOIN	03/12/21	JHB	SCS

MANUFACTURER

WESTERN
UTILITY TELECOM, INC.

5032 SALEM DALLAS HWY
SALEM, OR 97304
Ph: 503-587-0101 Fx: 503-316-1864
WesternUtilityTelecom.com

TITLE
23' TALL A572 GR.65, 2-BAY H-FRAME

PROJECT INFORMATION
INTERNATIONAL SUBSTATION
ADJACENT TO 5601 ELECTRON DRIVE
ANCHORAGE, AK 99519

PROJECT NO. 21-0097 SHEET ID-1 DRAWING NO. 21097-ID-1

Friday, March 12, 2021 3:42:27 PM

C:\WUT_Vault\Project\2021\21-0097\21097-ID-1

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION

PROJECT: INSS 138 kV FACILITY RETIREMENT					W.O. # E1720055	
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V)						
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPPLY DATE	APPROVED DIRECTOR/DATE	ENG. STAMP	
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGB/03-22-21			

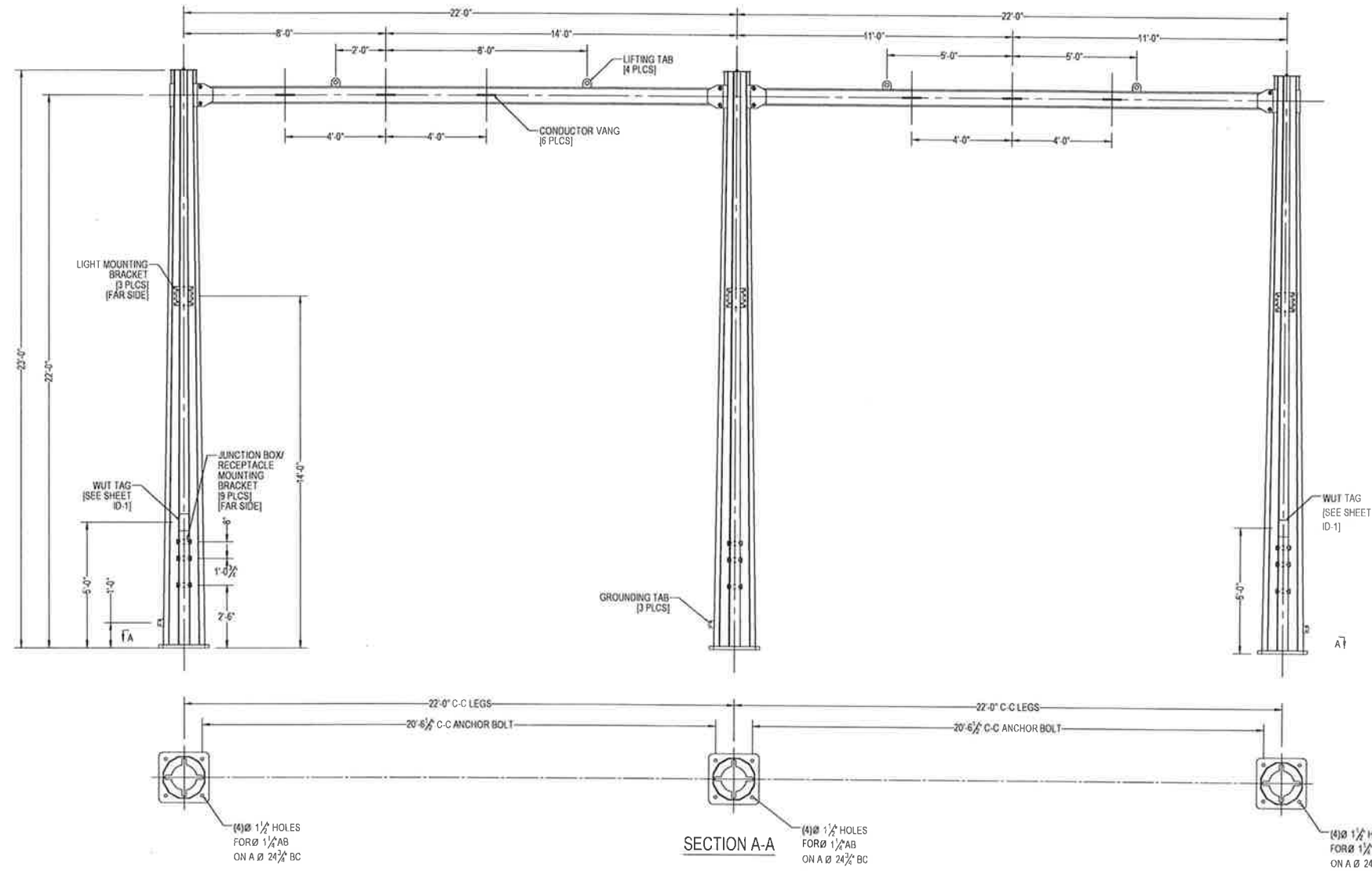
NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:
**INTERNATIONAL SUBSTATION
STRUCTURAL STEEL MANUFACTURER DRAWING
23' TALL, 2-BAY 34.5KV H-FRAME
ID-1 - ISO VIEWS**

DRAWING NO. - PREVIOUS/REFERENCE: INSS-SS-0079_0002_0.dwg
NEW
DRAWING NO.: INSS-SS-0079 SHEET 0002 OF 0006
PAGE /



REV	REVISION RECORD	DATE	CHG	CHK
A	INITIAL SUBMITTAL	03/08/21	JHB	SCS
B	RELEASE FOR FABRICATION	03/12/21	JHB	SCS

MANUFACTURER
WESTERN
 UTILITY & TELECOM, INC.
 5032 SALEM DALLAS HWY
 SALEM, OR 97304
 Ph: 503-587-0101 Fx: 503-316-1864
 WesternUtilityTelecom.com

TITLE
23' TALL A572 GR 65, 2-BAY H-FRAME

PROJECT INFORMATION
INTERNATIONAL SUBSTATION
 ADJACENT TO 5501 ELECTRON DRIVE
 ANCHORAGE, AK 99519

PROJECT NO: 21-0097 SHEET: ID-2 DRAWING NO: 21097-ID-1

Friday, March 12, 2021 3:42:27 PM

C:\WUT_Vault\Project\2021\21-0097\21097-ID-1

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION

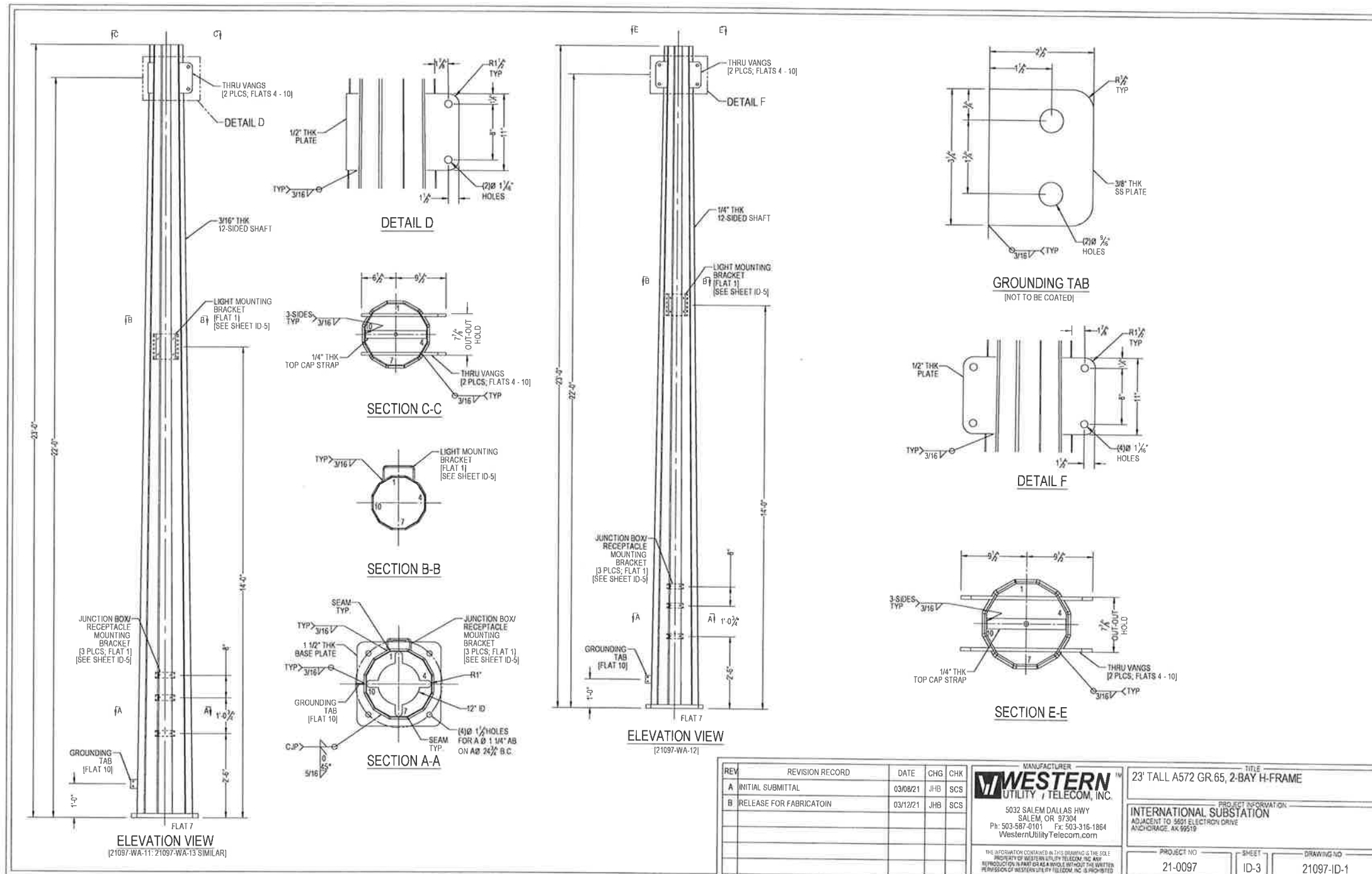
PROJECT: INSS 138 kV FACILITY RETIREMENT				W.O. # E1720055	
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V)					
NO.	DESIGN/CONSTRUCTION/ASBULTY REVISION	DWN. BY/DATE	REVIEWED MGR./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGB/03-22-21		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE

CHUGACH
 POWERING ALASKA'S FUTURE
 Chugach Electric Association, Inc.
 5601 Minnesota Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

DRAWING NAME:
**INTERNATIONAL SUBSTATION
 STRUCTURAL STEEL MANUFACTURER DRAWING
 23' TALL, 2-BAY 34.5KV H-FRAME
 ID-2 - ELEVATION VIEW**

DRAWING NO. - PREVIOUS/REFERENCE: INSS-SS-0079_0003.dwg
 NEW: INSS-SS-0079
 SHEET 0003 of 0006
 PAGE /



Friday, March 12, 2021 3:42:27 PM

C:\WUT_Vault\Project\2021\21-0097\21097-ID-1

REV	REVISION RECORD	DATE	CHG	CHK	MANUFACTURER	TITLE	
A	INITIAL SUBMITTAL	03/08/21	JHB	SCS	WESTERN UTILITY & TELECOM, INC. 5032 SALEM DALLAS HWY SALEM, OR 97304 Ph: 503-587-0101 Fx: 503-316-1864 WesternUtilityTelecom.com	23' TALL A572 GR.65, 2-BAY H-FRAME	
B	RELEASE FOR FABRICATOIN	03/12/21	JHB	SCS		PROJECT INFORMATION: INTERNATIONAL SUBSTATION ADJACENT TO 5601 ELECTRON DRIVE ANCHORAGE, AK 99519	
					PROJECT NO	SHEET	DRAWING NO
					21-0097	ID-3	21097-ID-1

PROJECT: INSS 138 kV FACILITY RETIREMENT				W.O. # E1720055	
ENC./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V)				ENC. STAMP	
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BCB/03-22-21		

NO.	RECORD REVISION	TECH. DWN. BY	W.P.#	W.D. APPROVED	RECORD APPROVED	DATE

CHUGACH
POWERING ALASKA'S FUTURE

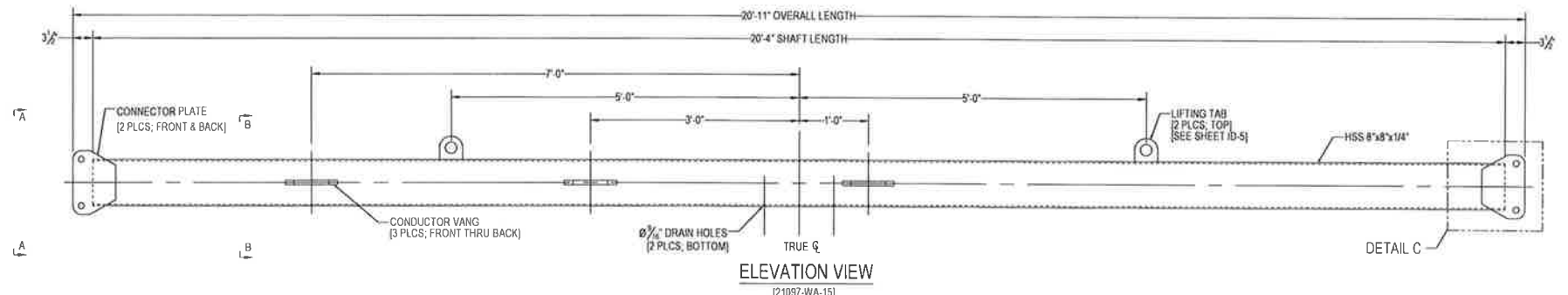
Chugach Electric Association, Inc.
5601 Minnesota Drive P.O. Box 196300
Anchorage, Alaska 99519-6300

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION	DESCRIPTION

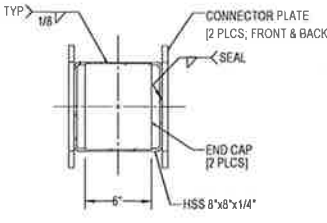
DRAWING NAME: **INTERNATIONAL SUBSTATION STRUCTURAL STEEL MANUFACTURER DRAWING 23' TALL, 2-BAY 34.5KV H-FRAME ID-3 - LEG ELEVATIONS AND DETAILS**

DRAWING NO. - PREVIOUS/REFERENCE: **INSS-SS-0079_0004_0.dwg**

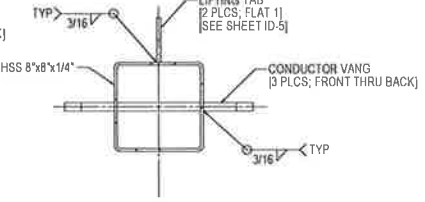
DRAWING NO.: **INSS-SS-0079** SHEET **0004** OF **0006**



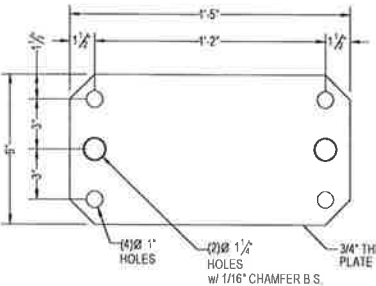
ELEVATION VIEW
[21097-WA-15]



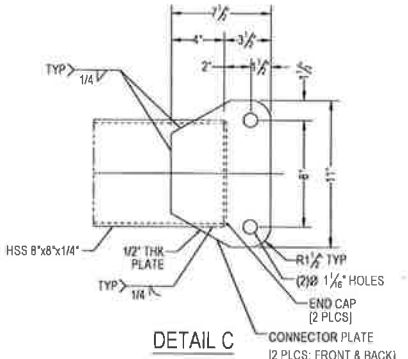
SECTION A-A



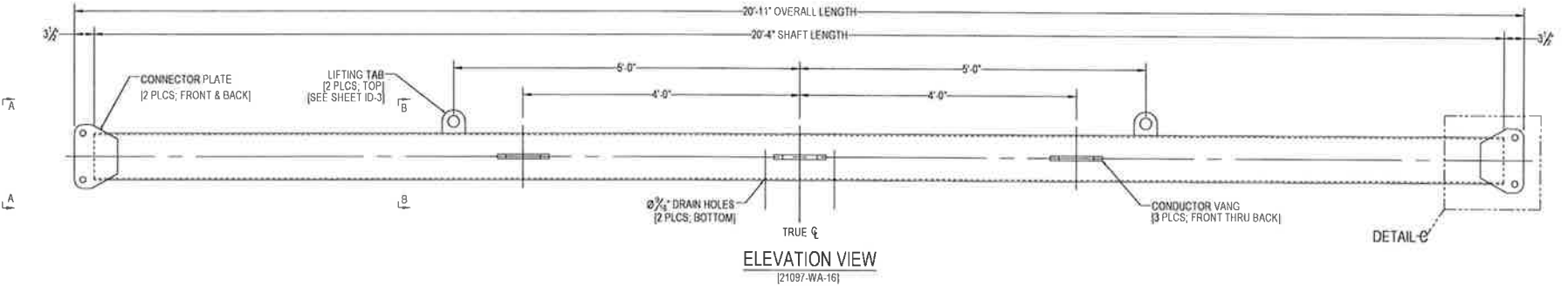
SECTION B-B



CONDUCTOR VANG



DETAIL C



ELEVATION VIEW
[21097-WA-16]

REV	REVISION RECORD	DATE	CHG	CHK
A	INITIAL SUBMITTAL	03/08/21	JHB	SCS
B	RELEASE FOR FABRICATOIN	03/12/21	JHB	SCS

MANUFACTURER
WESTERN
UTILITY / TELECOM, INC.
5032 SALEM DALLAS HWY
SALEM, OR 97304
Ph: 503-587-0101 Fx: 503-316-1864
WesternUtilityTelecom.com

TITLE 23' TALL A572 GR.65, 2-BAY H-FRAME	
PROJECT INFORMATION INTERNATIONAL SUBSTATION ADJACENT TO 5801 ELECTRON DRIVE ANCHORAGE, AK 99519	
PROJECT NO. 21-0097	SHEET ID-4
DRAWING NO. 21097-ID-1	

Friday, March 12, 2021 3:42:27 PM

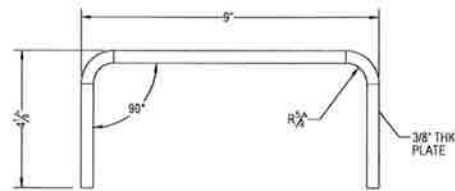
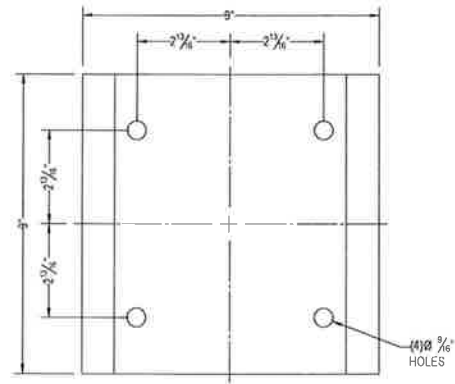
C:\WUT_Vault\Project\2021\21-0097\21097-ID-1

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION

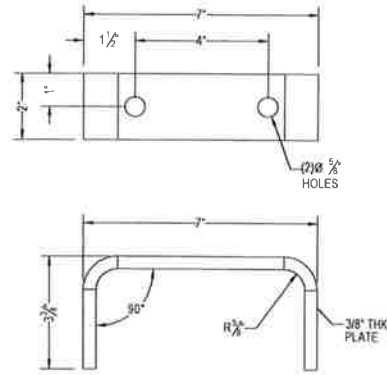
PROJECT: INSS 138 kV FACILITY RETIREMENT					W.O. # E1720055							
ENG./DESIGN.: JESSE MOE (CEA) / B. BENNETT (B&V)												
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPPLY DATE	APPROVED DIRECTOR/DATE	ENG. STAMP	NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BOB/03-22-21									

CHUGACH
POWERING ALASKA'S FUTURE
Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

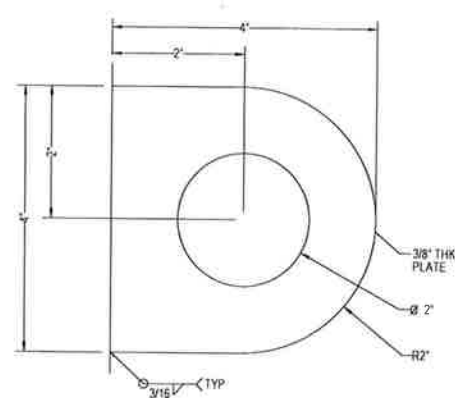
DRAWING NAME: INTERNATIONAL SUBSTATION STRUCTURAL STEEL MANUFACTURER DRAWING 23' TALL, 2-BAY 34.5KV H-FRAME ID-4 - BOOM ELEVATIONS AND DETAILS	
DRAWING NO. - PREVIOUS/REFERENCE NEW DRAWING NO.: INSS-SS-0079	INSS-SS-0079_0005_0.dwg SHEET 0005 of 0006 PAGE



LIGHT MOUNTING BRACKET



JUNCTION BOX/
RECEPTACLE
MOUNTING BRACKET



LIFTING TAB

Friday, March 12, 2021 3:42:27 PM

REV	REVISION RECORD	DATE	CHG	CHK
A	INITIAL SUBMITTAL	03/08/21	JHB	SCS
B	RELEASE FOR FABRICATOIN	03/12/21	JHB	SCS

MANUFACTURER
WESTERN
UTILITY & TELECOM, INC.
5032 SALEM DALLAS HWY
SALEM, OR 97304
Ph: 503-587-0101 Fax: 503-316-1864
WesternUtilityTelecom.com

TITLE
23' TALL A572 GR.65, 2-BAY H-FRAME

PROJECT INFORMATION
INTERNATIONAL SUBSTATION
ADJACENT TO 5601 ELECTRON DRIVE
ANCHORAGE, AK 99519

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF WESTERN UTILITY TELECOM, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF WESTERN UTILITY TELECOM, INC. IS PROHIBITED.

PROJECT NO. 21-0097 SHEET ID-5 DRAWING NO. 21097-ID-1

C:\WUT_Vault\Project\2021\01-0097\21097-ID-1

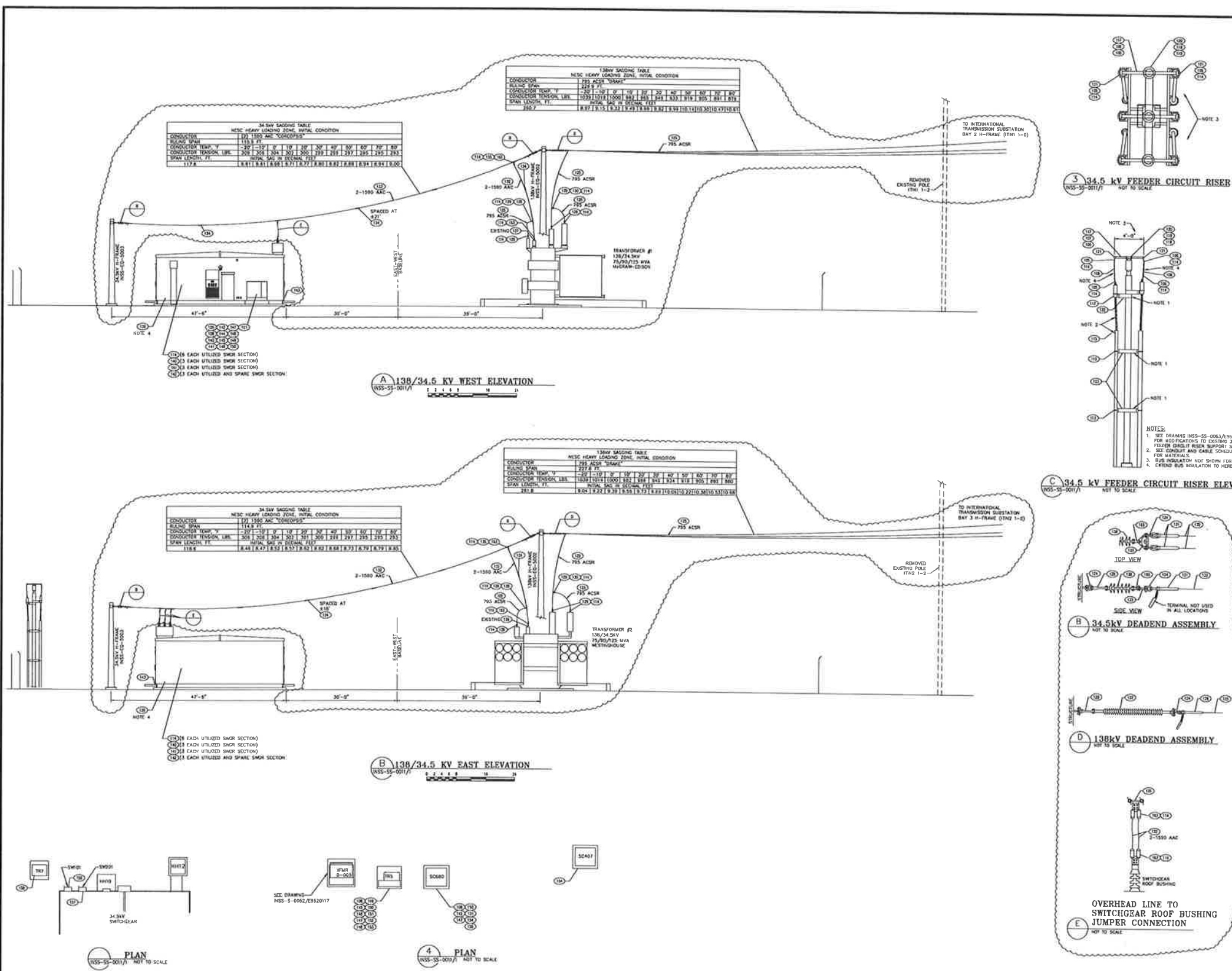
NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION

DRAWING NAME:
INTERNATIONAL SUBSTATION
STRUCTURAL STEEL MANUFACTURER DRAWING
23' TALL, 2-BAY 34.5KV H-FRAME
ID-5 - PART DETAILS

DRAWING NO. - PREVIOUS/REFERENCE INSS-SS-0079_0006_0.dwg
DRAWING NO. INSS-SS-0079 SHEET 0006 OF 0006
PAGE /

PROJECT: INSS 138 kV FACILITY RETIREMENT					W.O. # E1720055							
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V)												
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP	NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGB/03-22-21									

CHUGACH
POWERING ALASKA'S FUTURE
Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300



MATERIAL LIST					
ITEM NO.	DESCRIPTION	UNIT	EXIST. QTY.	QTY THIS W.O.	OWNER PUBLISHED QUANTITY
100	3" IPS ALL SCHEDULE 40, 6063-T6 ALLOY BUS TUBE - 20' LENGTH	FT.	140		X
101	ALL WELD BUS SUPPORT - 2" IPS TO 3" BOLT CIRCLE	EA.	18		X
102	ALL WELD TERMINAL - 2" IPS TO 2 HOLE PAD - 90 DEGREE, EXTERNAL FIT	EA.	8		X
103	ALL WELD TERMINAL - 2" IPS TO 2 HOLE PAD - 45 DEGREE, EXTERNAL FIT	EA.	8		X
104	STATION POST INSULATOR - 34.5 KV 200 KV BL - 18 210	EA.	18		X
105	COMPRESSION CONNECTOR - 4/8 TO 2 HOLE PAD	EA.	143		X
106	SPACER PARALLEL CONNECTOR	EA.	18		X
107	1/2" ACOR	LF.	140		X
108	1/2" E.S. BARE COPPER - 18 STRAND	FT.	AS REQ		X
109	SALVAGED STEEL BUS INSULATOR SUPPORT	EA.	8		X
110	SALVAGED STEEL CABLE TERMINATION SUPPORT	EA.	3		X
111	SALVAGED STEEL CONDUIT SUPPORT	EA.	8		X
112	1/2" E.S. BARE COPPER - 18 STRAND	EA.	27		X
113	1/2" X 3" SALVAGED U BOLT	EA.	18		X
114	1/2" STAINLESS STEEL BOLT WITH NUT, FLAT WASHERS & BELLEMEILLE WASHERS	EA.	202	204	X
115	CONDUIT ENDING BUSHING	EA.	30		X
116	BUS BAR COVER - FOR 3 1/2" BOLT CIRCLE INSULATOR AND BUS FITTING	EA.	33		X
117	BUS INSULATOR TIE	EA.	15		X
118	ATCHER TYPE 18M1 OR APPROVED EQUAL	EA.	15		X
119	ALL WELD BUS SUPPORT - 2" IPS TO 3" BOLT CIRCLE	EA.	15		X
120	PRODUCT DESIGN 18-118-90-E OR APPROVED EQUAL	EA.	15		X
121	STATION POST INSULATOR - 34.5 KV 200 KV BL - 18 210	EA.	15		X
122	MEWELL PORCELAIN 41200 OR APPROVED EQUAL	EA.	15		X
123	BUSHING COVER FOR 3" INSULATOR & BUS FITTING	EA.	15		X
124	ATCHER TYPE 18M1 OR APPROVED EQUAL	EA.	15		X
125	ALL WELD TERMINAL - 2" IPS TO 4 HOLE PAD - 90 DEGREE, EXTERNAL FIT	EA.	30		X
126	PRODUCT DESIGN 18-117-90-E OR APPROVED EQUAL	EA.	30		X
127	34.5 kV FEEDER CIRCUIT RISER CABLE TERMINATION SUPPORT	EA.	5		X
128	SEE DRAWING WSS-5-003/1/20117	EA.	10		X
129	1/2" ANCHOR SHACKLE	EA.	42		X
130	CONDUCTOR, 795 ACOR "SQUARE"	FT.	2700		X
131	CONDUCTOR, 795 ACOR "SQUARE"	EA.	42		X
132	COMPRESSION DEAD-END WITH TERMINAL, 795 ACOR CONDUCTOR, VERTICAL EYE	EA.	6		X
133	MURCELL ADAPTER OR APPROVED EQUAL	EA.	30		X
134	12KV SUSPENSION INSULATOR	EA.	0		X
135	2" BRASS BRACKET OR APPROVED EQUAL	EA.	18		X
136	F-CLEVIS BALL	EA.	18		X
137	MURCELL TYPE-30 OR APPROVED EQUAL	EA.	30		X
138	4-HOLE SWAGED TERMINAL, 795 ACOR CONDUCTOR	EA.	30		X
139	1-HOLE SWAGED TERMINAL, 795 ACOR CONDUCTOR	EA.	8		X
140	2-HOLE SWAGED TERMINAL, 795 ACOR CONDUCTOR	EA.	24		X
141	CONDUCTOR, 1900 AAC "COROLIPS"	FT.	1700		X
142	WORK PLATE, 8" SPACING	EA.	18		X
143	MURCELL INSULATOR OR APPROVED EQUAL	EA.	12		X
144	CABLE SPACER, 1900 AAC CONDUCTOR 8" SPACING	EA.	27		X
145	CABLE SPACER, 1900 AAC CONDUCTOR WITH TRANSDUCER 4-HOLE PAD 8" SPACING	EA.	18		X
146	CONDUCTOR, 1900 AAC CONDUCTOR	EA.	3		X
147	ANDERSON ASSY 20-1-2-3/4-12	EA.	3		X
148	ANDERSON ASSY 20-1-2-3/4-12	EA.	3		X
149	ANDERSON ASSY 20-1-2-3/4-12	EA.	12		X
150	34.5 kV SWITCHGEAR	EA.	1		X
151	2000 MVA TRANSFORMER - THREE PHASE 200 MVA F/2.4KV TO 288/130V	EA.	1		X
152	34.5 kV INSULATING BOOT	EA.	30		X
153	ANDERSON SWL - 025 - C OR APPROVED EQUAL	EA.	2		X
154	PAD MOUNT TRANSFORMER - THREE PHASE 225 MVA 34.5 KV TO 138/20KV	EA.	1		X
155	GROUND ROD CLAMP FOR 3/4" GROUND ROD	EA.	3		X
156	47 AWG BARE STRANDED COPPER	EA.	8		X
157	EQUIPMENT GROUNDING LUG	EA.	8		X
158	PROTECTIVE SLEEVE FOR SECONDARY TERMINALS	EA.	8		X
159	CABLE TIE	EA.	AS REQ		X
160	ANCHORS - 3/8" DIA. H.S. HXK BOLT WITH 3/4" EMBEDMENT WAL.	EA.	20		X
161	PADLOCKS	EA.	12		X
162	PADMOUNT TRANSFORMER - THREE PHASE 100 MVA F/2.4KV TO 288/130V	EA.	1		X
163	TERMINATION - ELBOW, LEADBREAK FOR 4/8 CONDUIT	EA.	1		X
164	TERMINATION - OUTDOOR 12KV FEM 4/8 CONDUIT	EA.	0		X
165	12 KV THREE PHASE FEM/FEM ENCLOSURE - 8" DIA. 12"	EA.	1		X
166	ROOF HOOD, 2 MRE HEAVY DUTY SAFETY SWITCH WITH HEVA 36 ENCLOSURE, FACTORY INSTALLED ELEC. WITHIN HOOD WITH WIND AND NEUTRAL LUGS	EA.	1		X
167	3" DIA. HOOD, 2 MRE HEAVY DUTY SAFETY SWITCH WITH HEVA 36 ENCLOSURE, FACTORY INSTALLED ELEC. WITHIN HOOD WITH WIND AND NEUTRAL LUGS	EA.	1		X
168	200 MVA TRANSFORMER - THREE PHASE 200 MVA F/2.4KV TO 288/130V	EA.	1		X
169	DRENNA ALUMINUM CABLE RISER, WITH-10", DEPTH-10", LENGTH-14'-0"	EA.	1		X
170	CATALOG NO. 081810-186, WITH COVER	EA.	1		X
171	8" DIA. CABLE RISER, CONCRETE FULL BOX, INSIDE WITH-4'-0", INSIDE LENGTH-4'-0", HEIGHT-5'-0", WITH GALVANIZED STEEL LUG	EA.	1		X
172	CONTRACTOR TO FIELD FABRICATE	EA.	1		X
173	WEATHER PROOF CABLE, WITH-10", DEPTH-10", HEIGHT-10"	EA.	1		X
174	HEVA 36, WITH LOCKABLE HANDLE	EA.	1		X
175	4-HOLE SWAGED TERMINAL, (2) 1900 AAC CONDUCTORS, ONE 795 ACOR CONDUCTOR, OR APPROVED EQUAL	EA.	24		X
176	NOT USED				
177	SOCKET CLEW	EA.	12		X
178	MURCELL DEAD OR APPROVED EQUAL				

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Black & Veatch Consultants, on 03/22/2021

PROJECT: **INSS 138 kV FACILITY RETIREMENT**
 ENC./DESIGN: **JESSE MOE (CEA) / B. BENNETT (B&V)** W.O. # **E1720055**

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BCB/03-22-21		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	IGT AUXILIARY SYSTEM UPGRADE			10.06.79EN	E9620117	2/25/10
2	COPIED MATERIAL BUBBLES, DETAILS AND MATERIAL LIST FROM IN543	MGS	-	-	DDS	4/21/10
3	DRAWING UPDATED PER FIELD MARK-UP	MGS	-	-	0. GRDPP	10/06/10
4	SHEET CHANGED TO 1 OF 1/TITLE DESCRIPTION UPDATED	MS	10726	E0120202	AL	11/13/12

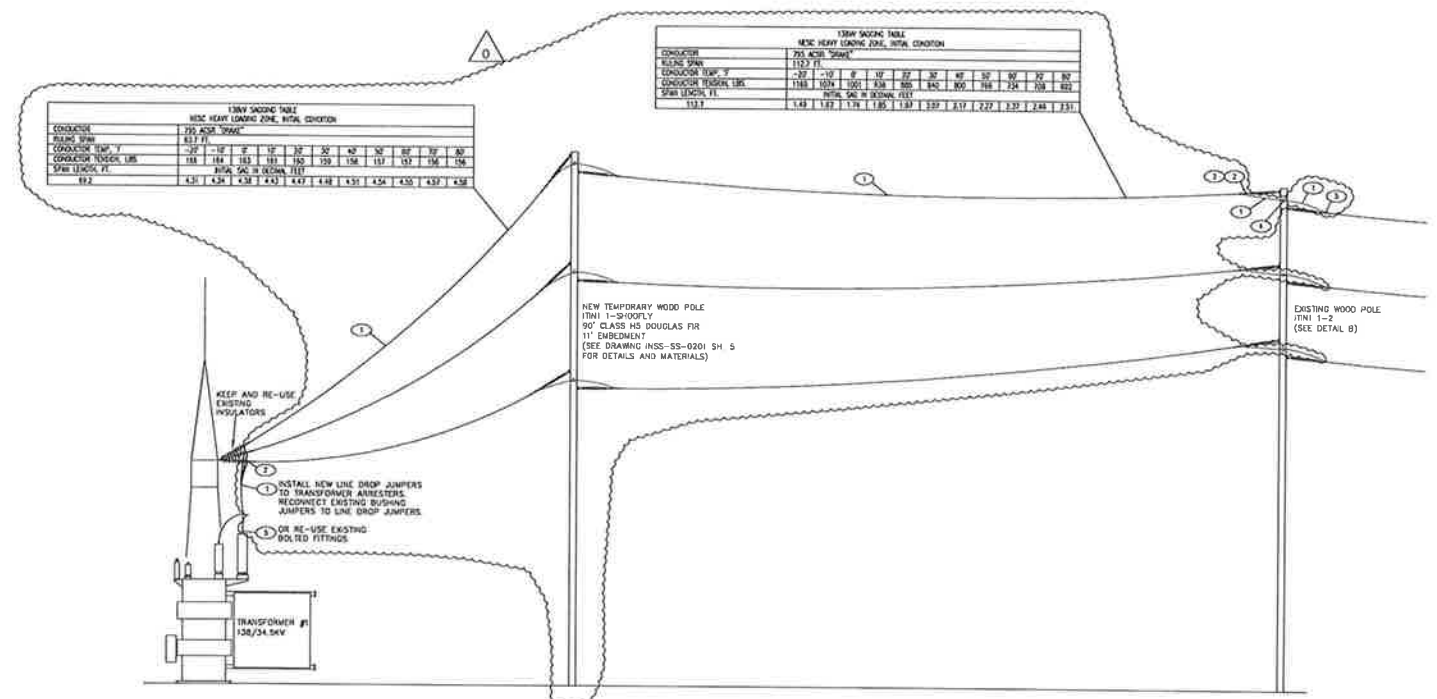
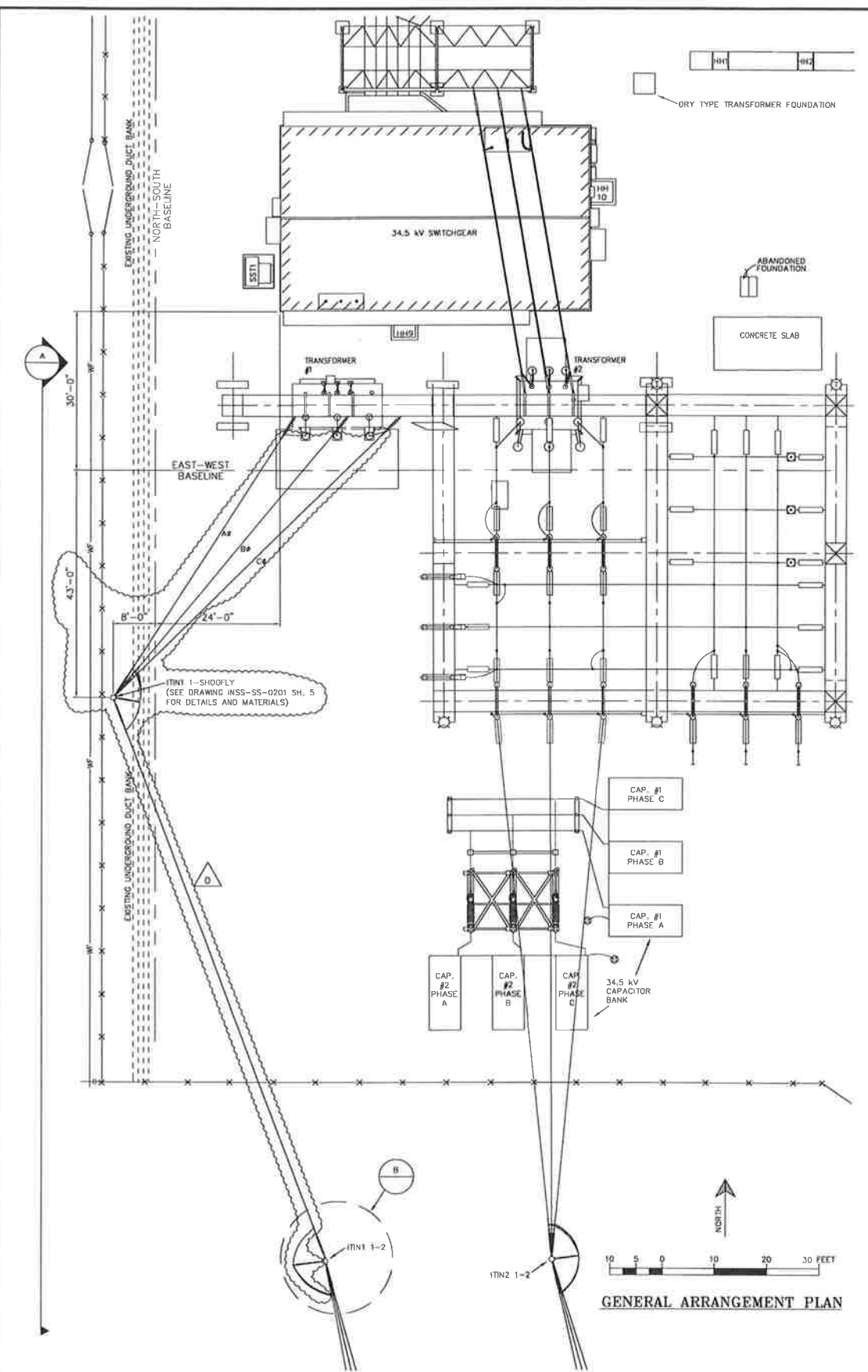
CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME: **INTERNATIONAL SUBSTATION 138/34.5KV ELEVATIONS**

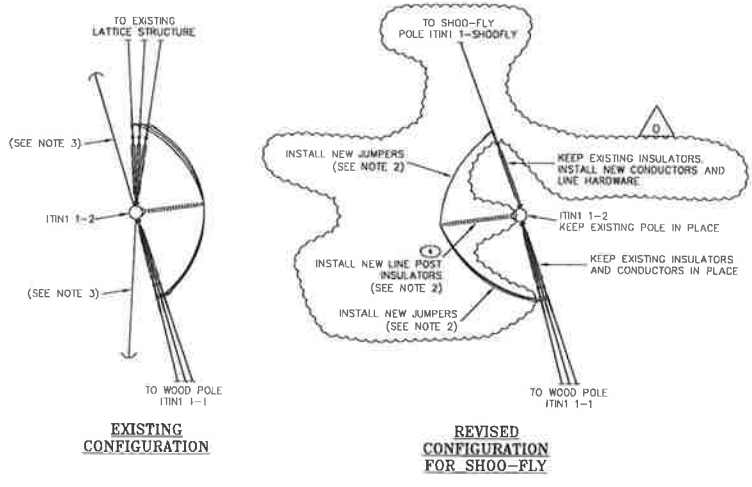
CONFIDENTIAL
DRAWING NO. - PREVIOUS REFERENCE: INSS-SS-0043, 0001 5.dwg
DRAWING NO.: **INSS-SS-0043** SHEET 0001 OF 0001
PAGE 1

MATERIAL LIST (FOR TEMPORARY SHOO-FLY CONSTRUCTION ONLY)				UNITS FURNISHED BY CONTRACTOR	BY SUPPLIER
ITEM NO.	DESCRIPTION	UNIT	QTY.		
1	CONDUCTOR, 795 ACER "ORANGE"	FT.	1000		
2	COMPRESSION HEAD- END, 795 ACER "ORANGE", TUBBELL ABH1481	EA.	8		
3	ELEVA. TOWER, HOT-LINE, DOUBLE WIRE, GALVANIZED, RUSSELL W80003	EA.	3		
4	INSULATOR, LINE POST, 138KV, GAIN BASE, WITH CLASS 4500 BRASS 5220R1102	EA.	3		
5	W-HOLE SHAGGED TERMINAL, 795 ACER, DMC POWER CPK844200900	EA.	8		



A TEMPORARY SHOO-FLY ELEVATION
NOT TO SCALE

- NOTES:
1. THIS TEMPORARY DRAWING HAS BEEN CREATED TO ASSIST IN THE CONSTRUCTION OF THE TEMPORARY SHOO-FLY, AS SHOWN INSTALLED ON STAGING DRAWING SKETCH-STAGE 1A, AND REMAINS IN PLACE UNTIL ITS REMOVAL ON STAGING DRAWING SKETCH-STAGE 5.
 2. NEW LINE POST INSULATORS TO BE INSTALLED ON OPPOSITE SIDE OF POLE USING EXISTING HOLES FROM REMOVED LINE POST INSULATORS. NEW JUMPERS SHALL BE TRAINED TO MAINTAIN MINIMUM PHASE TO GROUND CLEARANCE OF 54" FROM JUMPER TO THE WOOD POLE.
 3. AHEAD AND BACK IN-LINE CUY WIRES IN EXISTING CONFIGURATION TO BE REMOVED IN REVERSE CONFIGURATION FOR SHOO-FLY. REVERSE CONFIGURATION FOR SHOO-FLY TO BE SELF-SUPPORTING POLE WITHOUT CUY WIRES.



B EXISTING WOOD POLE ITN1 1-2 DETAILS
NOT TO SCALE

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131528, Black & Veatch Consultants, on 05/15/2020

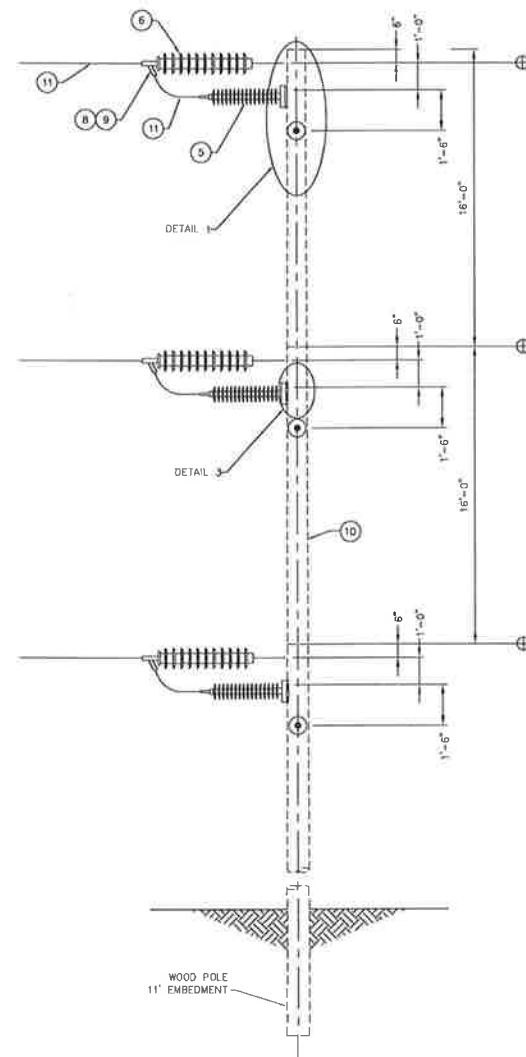
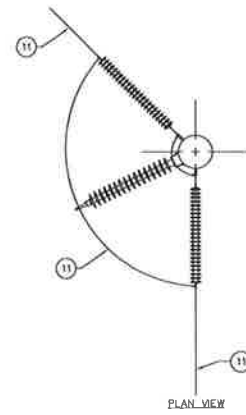
PROJECT: INSS 138 kV FACILITY RETIREMENT		W.O. # E1720055	
ENG./DESIGN: S. WENDLING (CEA) / B. BENNETT (B&V)		APPROVED DIRECTOR/DATE:	
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE
0	ISSUED FOR CONSTRUCTION	MJC/05-15-20	BCB/05-15-20

NO.	RECORD REVISION	TECH./DWN. BY	W.P. #	W.O. APPROVED	RECORD APPROVED	DATE

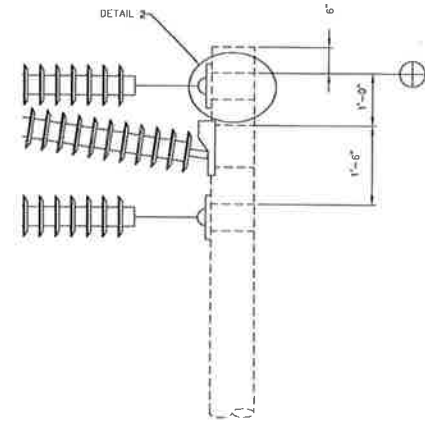


Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

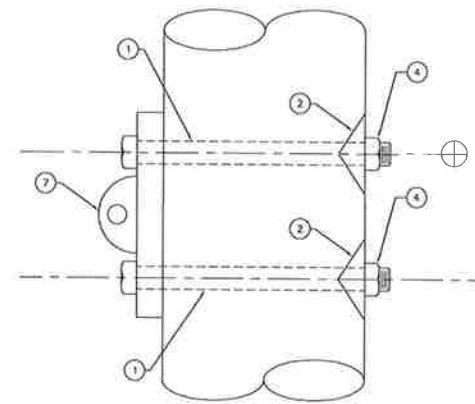
DRAWING NAME: INTERNATIONAL SUBSTATION GENERAL ARRANGEMENT PLAN TEMPORARY SHOO-FLY DRAWING	
CONFIDENTIAL	INSS-SS-0011_0001_SHOO-FLY.dwg
DRAWING NO.: INSS-SS-0011-SHOO-FLY	SHEET 0001 OF 0001 PAGE



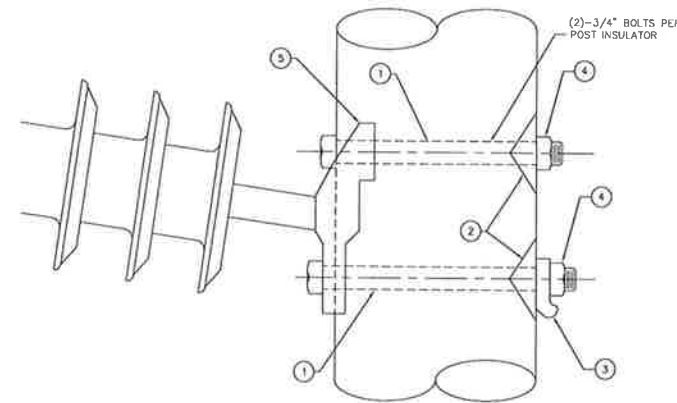
ITIN1 1-SHOOFLY
138KV WOOD DEADEND ASSEMBLY
SELF SUPPORTING



DETAIL 1



DETAIL 2



DETAIL 3

QTY/ASSEMBLY		BILL OF MATERIALS	
ITEM	SHOOFLY	DESCRIPTION	MANUFACTURER/CATALOG NO.
1	18	MACHINE BOLT, 3/4" X REQ'D LENGTH	HB (SQUARE HEAD BOLTS) PAGES E-3 TO E-5
2	18	SD WASHER, CURVED, 4"x4" FOR 3/4" BOLT, GALVANIZED	HB #W4-70
3	3	WASHER SPRING, 1 1/2" DIA	HB #2702-7
4	18	LOCKWASHER FOR 3/4" BOLT, MF TYPE	HB #W4-70
5	3	INSULATOR HORIZONTAL POST 138KV, CAN BASE WITH CLAMP	O.B. #5220081102
6	6	INSULATOR SUSPENSION 138KV, Y-CLEVIS BALL, 25K	O.B. #5110081201
7	6	DEADEND	HB #887-15
8	6	DEADEND COMPRESSION SINGLE TONGUE VERTICAL EYE 785 ACSR W/TERMINAL	ANDERSON #88112451
9	6	CLEVIS SOCKET HDI-TYPE DUCTILE IRON GALVANIZED	ANDERSON #85C083
10	1	WOOD POLE, 90' HEIGHT DOUGLAS FIR, CLASS 40	CLA STOCK - ITEM 10 18138
11	-	CONDUCTOR 785 ACSR 26/7 STRAND DRAKE	SOUTHWEST

Certified for Construction of W.O. E1720055 by Billy G. Bennett Jr., No. CE131526, Black & Veatch Consultants, on 05/15/2020

PROJECT: INSS 138 kV FACILITY RETIREMENT		W.O. # E1720055	
ENG./DESIGN: S. WENDLING (CEA) / B. BENNETT (B&V)			
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN. BY/DATE	APPROVED MGR./DATE
0	ISSUED FOR CONSTRUCTION	MJC/05-15-20	958/05-15-20
NO.	REVISION	DATE	BY

NO.	REVISION	DATE	BY

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

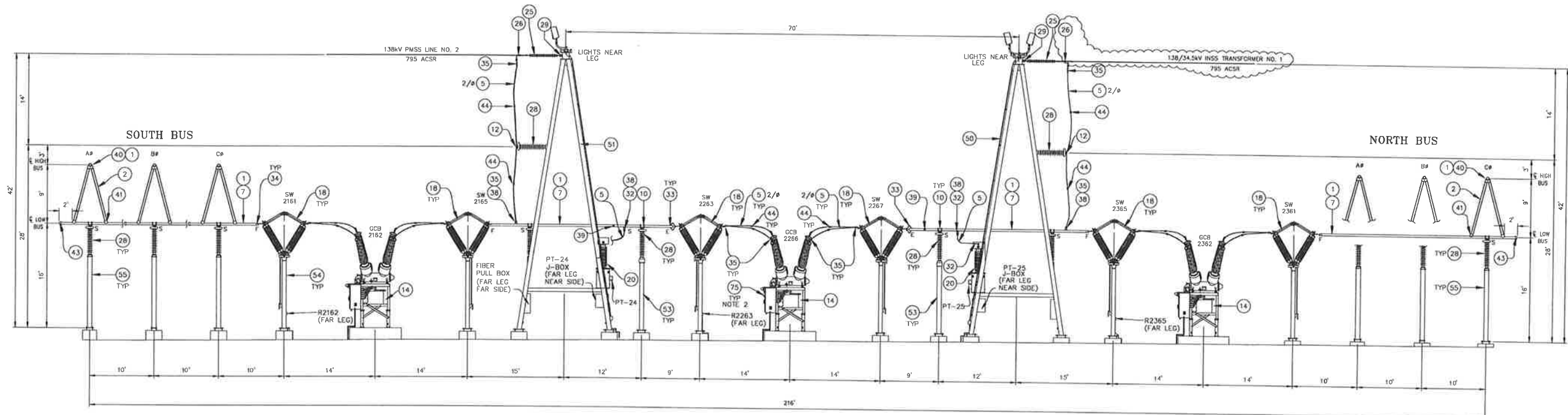
NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	ITSS-PP-0100/SHEET #	CONSTRUCTION STAKING TABLE

DRAWING NAME:
**INTERNATIONAL TRANSMISSION SUBSTATION
TRANSMISSION LINE STRUCTURE
VERTICAL DOUBLE DEADEND
TEMPORARY SHOO-FLY POLE ITIN1 1-SHOOFLY**

CONFIDENTIAL

DRAWING NO. - PREVIOUS/REFERENCE
NEW
DRAWING NO.: ITSS-SS-0201

SHEET 0005 OF 0005
PAGE /



2
**BAY 2
ELEVATION 2**

LEGEND
 F - FIXED OR WELDED FITTING
 S - SLIP FITTING
 E - EXPANSION FITTING
 R - RECEPTACLE

NOTES
 1. SEE REFERENCE NO. 3 FOR BILL OF MATERIAL
 2. EQUIPMENT IDENTIFICATION LABELS TYPICAL ALL EQUIPMENT AND JUNCTION BOXES. SEE REFERENCE NO. 4 FOR EQUIPMENT NAMEPLATE SCHEDULE.



NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
2	ITSS-SS-0103/001	BUSWORK LAYOUT PLAN VIEW
3	ITSS-SS-0119	BILL OF MATERIAL
4	ITSS-SS-0400/1-3	EQUIPMENT NAMEPLATE SCHEDULE

DRAWING NAME:
**INTERNATIONAL TRANSMISSION SUBSTATION
 138 KV BUSWORK LAYOUT
 ELEVATION VIEW 2 - BAY 2**

DRAWING NO. - PREVIOUS/REFERENCE: ITSS-SS-0103_0003_1-1
 DRAWING NO.: ITSS-SS-0103
 SHEET 0003 OF 0016
 PAGE 7

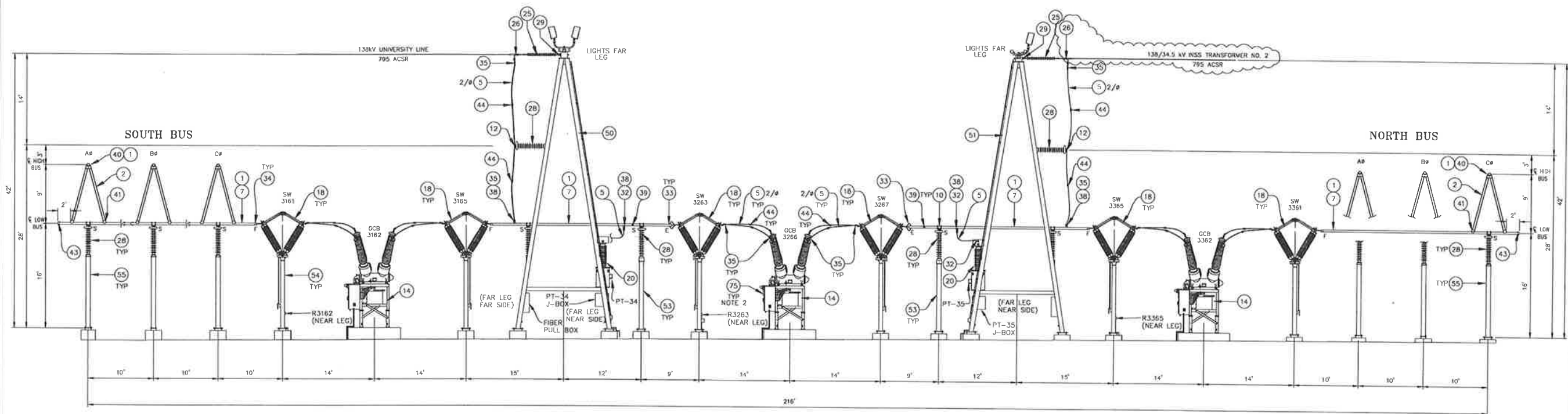
Certified for Construction of W.D. E1720055 by Billy G. Bennett, No. CE131526, Black & Veatch Consultants, on 03/22/2021

PROJECT: INSS 138 kV FACILITY RETIREMENT				W.O. # E1720055	
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V)					
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGB/03-22-21		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	CHUGACH AS-BUILT		10726	ED120202	AL	11/13/12

CHUGACH
 POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
 5601 Minnesota Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300



3 BAY 3
ELEVATION 3

LEGEND
 F - FIXED OR WELDED FITTING
 S - SLIP FITTING
 E - EXPANSION FITTING
 R - RECEPTACLE

NOTES
 1. SEE REFERENCE NO. 4 FOR BILL OF MATERIAL.
 2. EQUIPMENT IDENTIFICATION LABELS TYPICAL ALL EQUIPMENT AND JUNCTION BOXES. SEE REFERENCE NO. 5 FOR EQUIPMENT NAMEPLATE SCHEDULE.



NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
3	ITSS-SS-0103/001	BUSWORK LAYOUT PLAN VIEW
4	ITSS-SS-0119	BILL OF MATERIAL
5	ITSS-SS-0400/1-3	EQUIPMENT NAMEPLATE SCHEDULE

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Black & Veitch Consultants, on 03/22/2021

PROJECT: INSS 138 kV FACILITY RETIREMENT				W.O. # E1720055	
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V)					
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BCB/03-22-21		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	CHUGACH AS-BUILT		10726	E0120202	AL	11/13/12

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:
INTERNATIONAL TRANSMISSION SUBSTATION
138 KV BUSWORK LAYOUT
ELEVATION VIEW 3 - BAY 3

DRAWING NO. - PREVIOUS/REFERENCE: ITSS-SS-0103_0004_1-1
NEW: ITSS-SS-0103
DRAWING NO.: ITSS-SS-0103
SHEET 0004 OF 0016
PAGE /

REFERENCE NO.	QUANTITY	SPECIFICATIONS	MANUFACTURER/CATALOG NO.
1	AS REQ'D	BUSWORK, 4" IPS AL, SCHEDULE 40 ALLOY, 6063-T6	ALCOA
2	AS REQ'D	BUSWORK, 2-1/2" IPS AL, SCHEDULE 40 ALLOY, 6063-T6	ALCOA
3	-	NOT USED	
4	-	NOT USED	
5	AS REQ'D	CONDUCTOR, 795 AAC, 37 STRAND, ARBITUS	SOUTHWIRE
6	-	NOT USED	
7	AS REQ'D	CONDUCTOR, LINEAR FEET, 795 ACSR, DRAKE, 26/7 STRAND, FOR VIBRATION DAMPENING	SOUTHWIRE
8	-	NOT USED	
9	-	NOT USED	
10	AS REQ'D	BUS SUPPORT, WELD OR SLIP, AL, 4" IPS AL TUBE TO INSULATOR, 5" B.C.	DMC / PLK320064E2
11	-	NOT USED	
12	AS REQ'D	BUS SUPPORT, AL, TWO 795 AAC CABLES TO INSULATOR, 5" B.C.	DMC / CL452D07950
13	AS REQ'D	BUS SUPPORT, AL, WELD, EXPANSION, 4" IPS AL TUBE TO INSULATOR, 5" B.C.	DMC / PLK270064E12
14	18	CIRCUIT BREAKER, 115/138KV, 2000A	HICO/HCSF-145/40
15	-	NOT USED	
16	1	AUTO TRANSFORMER, 138/115KV, 75/100/125MVA	HICO
17	1	DISCONNECT SWITCH, 115KV, 2000A, VERTICAL BREAK, VERTICAL MOUNTED, WITH GROUND BLADES	ROYAL SWITCHGEAR/AVTSPA
18	36	DISCONNECT SWITCH, 115/138KV, 2000A, CENTER BREAK VEE, HORIZONTAL MOUNTED	ROYAL SWITCHGEAR/AV13820
19	-	NOT USED	
20	39	POTENTIAL TRANSFORMER, 1-PHASE, 138KV	ITECH/VA106500700T00
21	3	POTENTIAL TRANSFORMER, 1-PHASE, 115KV	ITECH/VA105500600T000
22	12	SURGE ARRESTOR, 138KV, POLYMER, WITH SURGE COUNTER	SIEMENS/ 3EL2108-2PM31-4NH1/3EX5-050
23	-	CABLE TERMINATOR, 138KV	
24	-	UNDERGROUND CABLE, 138KV	
25	AS REQ'D	SUSPENSION INSULATOR, 138KV, 25000 LBS, Y-CLEVIS LINE, WITH CORONARING ANSI SOCKET GROUND	OHIO BRASS / 511007-R302
26	AS REQ'D	COMPRESSION DEADEND, EYE TYPE, SINGLE TONGUE, FOR 795 ACSR	HUBBELL / A011245
27	-	NOT USED	
28	AS REQ'D	INSULATOR, POLYMER 138KV, 5" B.C. TOP AND BOTTOM, 650KVBI, WITH CORONA RING	NG-LOCKE / 52-5N311-21
29	AS REQ'D	Y-CLEVIS, BALL, 30000 LBS	HUBBELL/HYBC30
30	-	NOT USED	
31	-	NOT USED	
32	AS REQ'D	TERMINAL, COMPRESSION, AL, 795 AAC TO 4-HOLE NEMA PAD	DMC / CPLK9432D097505
33	AS REQ'D	TERMINAL, WELD, EXPANSION, AL, 4" IPS AL TUBE TO 4-HOLE NEMA PAD	DMC / PLK260064E1
34	AS REQ'D	TERMINAL, WELD, STRAIGHT, CENTER FORMED, AL, 4-HOLE NEMA PAD TO 4" IPS AL TUBE	DMC / PLK1850D648
35	AS REQ'D	TERMINAL, WELD, AL, TWO 795 AAC TO 4-HOLE NEMA PAD	DMC / CPLK9432D097505
36	-	NOT USED	
37	AS REQ'D	TERMINAL, COMPRESSION, TEE, 795 AAC TO 4-HOLE NEMA PAD	DMC / CPLK950D079505
38	AS REQ'D	CONNECTOR, TEE, WELD, AL, 4" IPS AL TUBE TO 4-HOLE NEMA PAD	DMC / PLK1100D64E5
39	AS REQ'D	CONNECTOR, GROUNDING STUD, WELD, AL, FOR 3" - 6" IPS AL TUBE	DMC / PLK1160D64
40	AS REQ'D	CONNECTOR, VEE, WELD, AL, 4" IPS AL TUBE TO TWO 2-1/2" IPS AL BRANCHES, 30 DEGREE INCLUDED ANGLE	DMC / PLK1600D4064

REFERENCE NO.	QUANTITY	SPECIFICATIONS	MANUFACTURER/CATALOG NO.
41	AS REQ'D	CONNECTOR, TEE, WELD, AL, 4" IPS AL TUBE TO ONE 2-1/2" IPS AL BRANCH, 15 DEGREE INCLUDED ANGLE	DMC / PLK1500D4064E2
42	AS REQ'D	COUPLER, WELD, AL, 4" IPS AL TUBE TO 4" IPS AL TUBE	DMC / PLK1000D64
43	AS REQ'D	END PLUG, WELD, INTERNAL, AL, FOR 4" IPS AL TUBE	DMC / PLK1350064
44	AS REQ'D	CABLE SPACER, AL, FOR TWO 795 AAC CABLES, 8" SPACING	DMC / CL702D07950-85
45	AS REQ'D	CABLE SPACER TERMINAL, AL, TWO 795 AAC CABLES TO 4-HOLE NEMA PAD, 8" SPACING	DMC / CL714D07950-85
46	-	NOT USED	
47	-	NOT USED	
48	-	NOT USED	
49	5	138KV THREE PHASE CABLE TERMINATION SUPPORT, TYPE "ICTS"	DIS-TRAN
50	2	138KV DOUBLE BAY A-FRAME TERMINATION STRUCTURE, TYPE "2B-AFTS"	DIS-TRAN
51	2	138KV SINGLE BAY A-FRAME TERMINATION STRUCTURE, TYPE "1B-AFTS"	DIS-TRAN
52	19	138KV 3-PHASE HIGH BUS SUPPORT, TYPE "THBS"	DIS-TRAN
53	13	138KV 3-PHASE LOW BUS SUPPORT, TYPE "TLBS"	DIS-TRAN
54	38	138KV 3-PHASE SWITCH SUPPORT, TYPE "TPSS"	DIS-TRAN
55	42	138KV 1-PHASE BUS SUPPORT, TYPE "SPBS"	DIS-TRAN
56	21	138KV 1-PHASE PT SUPPORT, TYPE "SPPT"	DIS-TRAN
57	1	115KV SINGLE BAY H-FRAME TERMINATION STRUCTURE, TYPE "1B-HFTS"	DIS-TRAN
58	6	TEMPORARY INSULATOR RISER ADAPTER	DIS-TRAN
59	-	NOT USED	
60	3	115KV 1-PHASE PT SUPPORT, TYPE "1PPT"	DIS-TRAN
61	1	15KV TRANSFORMER TERTIARY STRUCTURE, TYPE "TERT1"	DIS-TRAN
62	3	FUSED DISCONNECT SWITCH WITH 100E FUSE, SM-4, 15KV, CYPOXY INSULATORS	S&C / FUSED DISCONNECT-190502R1-E/ HOLDER-86052 / 100E REWILL-122150R4
63	3	VOLTAGE TRANSFORMER, 14.4KV	ABB / E-7882A07G06
64	3	CURRENT TRANSFORMER, 15KV, 20:5 RATIO, G1FU15-01	RITZ / 111553001-45803
65	AS REQ'D	UNDERGROUND PRIMARY CABLE, 15KV, 220MIL, EPR, 1/0 AL, FULL CONCENTRIC NEUTRAL, WITH JACKET	EMPOWER
66	AS REQ'D	INSULATOR, 15KV, 110KV BIL, TR-205	PPC 100 SLL
67	AS REQ'D	CONDUCTOR, 336 ACSR, 26/7 STRAND, LINNET	ALCOA
68	3	CABLE TERMINATOR, 15KV, OUTDOOR, FOR USE ON 1/0 AL URD CABLE	TYCO / HVT-151-SJ
69	AS REQ'D	TERMINAL, COMPRESSION, AL, 336 ACSR TO 4-HOLE NEMA PAD	DMC / CPLK9432D097505
70	AS REQ'D	TEE TAP, COMPRESSION, AL, 336 ACSR TO 2-HOLE NEMA PAD	DMC / CPLK951D0939755
71	AS REQ'D	BUS SUPPORT, AL, 336 ACSR CABLE TO INSULATOR, 3" B.C.	DMC / CL451D093975E15
72	AS REQ'D	TERMINAL, COMPRESSION, AL, 336 ACSR TO 2-HOLE NEMA PAD	DMC / CPLK920D0939755
73	AS REQ'D	BLANK PLUG, 6"	TYCO / JM-BLA-60D637U
74	AS REQ'D	BLANK PLUG, 4"	TYCO / JM-BLA-40D402U
75	AS REQ'D	EQUIPMENT NAMEPLATE	
76	AS REQ'D	DUCT SEALING PLUG W/ BUSHING SLEEVE	TYCO/JM-SIM-40S136S/136IM8118
77	3	30° OFFSET COUPLING	DMC / PLK 1400 D64E1

AC STATION SERVICE		
SQUARE D CUSTOM SWITCHBOARD EQUIPMENT		
DESCRIPTION AND RATINGS		
SECTION #	QTY	CATALOG AND DETAILS
1-3	1 LOT	<p>DESIGNATION: PRIMARY BOARD SQUARE D CUSTOM QED SWITCHBOARD QED SWITCHBOARD</p> <p>SQUARE D POWER STYLE CUSTOM SWITCHBOARD DESIGNED AND TESTED IN ACCORDANCE WITH: UL 891/NATIONAL ELECTRIC CODE/NEMA PB-2 SYSTEM VOLTAGE - 120/240V 1 PH 3W 60HZ SOURCE DESCRIPTION - SINGLE MAIN SYSTEM AMPACITY - 1200A BUSSING - ALUMINUM PLATED W/TIN AND COPPER PLATED W/ SILVER NEUTRAL BUS - 100% MAX AVAILABLE FAULT CURRENT (RMS) - 50kA ENCLOSURE - TYPE 3R NON-WALK-IN ACCESSIBILITY: FRONT ONLY RODENT BARRIER EXTERIOR PAINT COLOR - ANSI 49 GROUND LUG PROVIDED FOR EACH DEVICE STANDARD ALUMINUM GROUND BUS LINEUP 1 BIT: 14477 SEISMIC QUALIFIED</p> <p>DIMENSIONS 1 - 36" WIDE SECTION(S) 1 - 48" WIDE SECTION(S) 1 - 30" WIDE SECTION(S) 3 - 59.5" DEEP ENCLOSURE(S) 1 - DIMENSIONS: 114.00"Wx59.5"Dx91.5"H APPROXIMATE WEIGHT 2902.00</p> <p>INCOMING REQUIREMENTS SUITABLE OR USE AS SERVICE ENTRANCE ENTRY POINT RIGHT OF LINEUP, THROUGH THE BOTTOM CONNECTION TYPE: CABLE SPECIALS: ASCO H00300D2120H100 IN 2 SPECIAL: ASCO H00300D2120H100 IN 2# 5168510</p> <p>MAINS 1 - 1200AT 240V BOX RATED 65 KA 2 POLE UL FIXED MOUNTED ELECTRONIC TRIP CIRCUIT BREAKER: TYPE PG</p> <p>FEEDERS 2 - 300AT 240V BOX RATED 65 KA 2 POLE UL GROUP MOUNTED THERMAL MAGNETIC CIRCUIT BREAKER: TYPE LH 1 - 400AT 240V BOX RATED 65 KA 2 POLE UL GROUP MOUNTED THERMAL MAGNETIC CIRCUIT BREAKER: TYPE LH 1 - 350AT 240V BOX RATED 65 KA 2 POLE UL GROUP MOUNTED THERMAL MAGNETIC CIRCUIT BREAKER: TYPE LQ</p>
4	1 LOT	<p>QED SWITCHBOARD</p> <p>SQUARE D POWER STYLE CUSTOM SWITCHBOARD DESIGNED AND TESTED IN ACCORDANCE WITH: UL 891/NATIONAL ELECTRIC CODE/NEMA PB-2 SYSTEM VOLTAGE - 120/240V 1 PH 3W 60HZ SOURCE DESCRIPTION - SINGLE MAIN SYSTEM AMPACITY - 1200A BUSSING - ALUMINUM PLATED W/TIN AND COPPER PLATED W/ SILVER NEUTRAL BUS - 100% MAX AVAILABLE FAULT CURRENT (RMS) - 50kA ENCLOSURE - TYPE 3R NON-WALK-IN ACCESSIBILITY: FRONT ONLY RODENT BARRIER EXTERIOR PAINT COLOR - ANSI 49 GROUND LUG PROVIDED FOR EACH DEVICE STANDARD ALUMINUM GROUND BUS LINEUP 1 BIT: 6107</p> <p>DIMENSIONS 1 - 30" WIDE SECTION(S) 3 - 59.5" DEEP ENCLOSURE(S) 1 - DIMENSIONS: 30.00"Wx59.5"Dx91.5"H APPROXIMATE WEIGHT 952.00</p> <p>INCOMING REQUIREMENTS SUITABLE OR USE AS SERVICE ENTRANCE ENTRY POINT RIGHT OF LINEUP, THROUGH THE BOTTOM CONNECTION TYPE: CABLE</p> <p>MAINS 1 - 1200AT 240V BOX RATED 65 KA 2 POLE UL FIXED MOUNTED ELECTRONIC TRIP CIRCUIT BREAKER: TYPE PG</p>

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION

DRAWING NAME:
INTERNATIONAL TRANSMISSION SUBSTATION
BILL OF MATERIALS

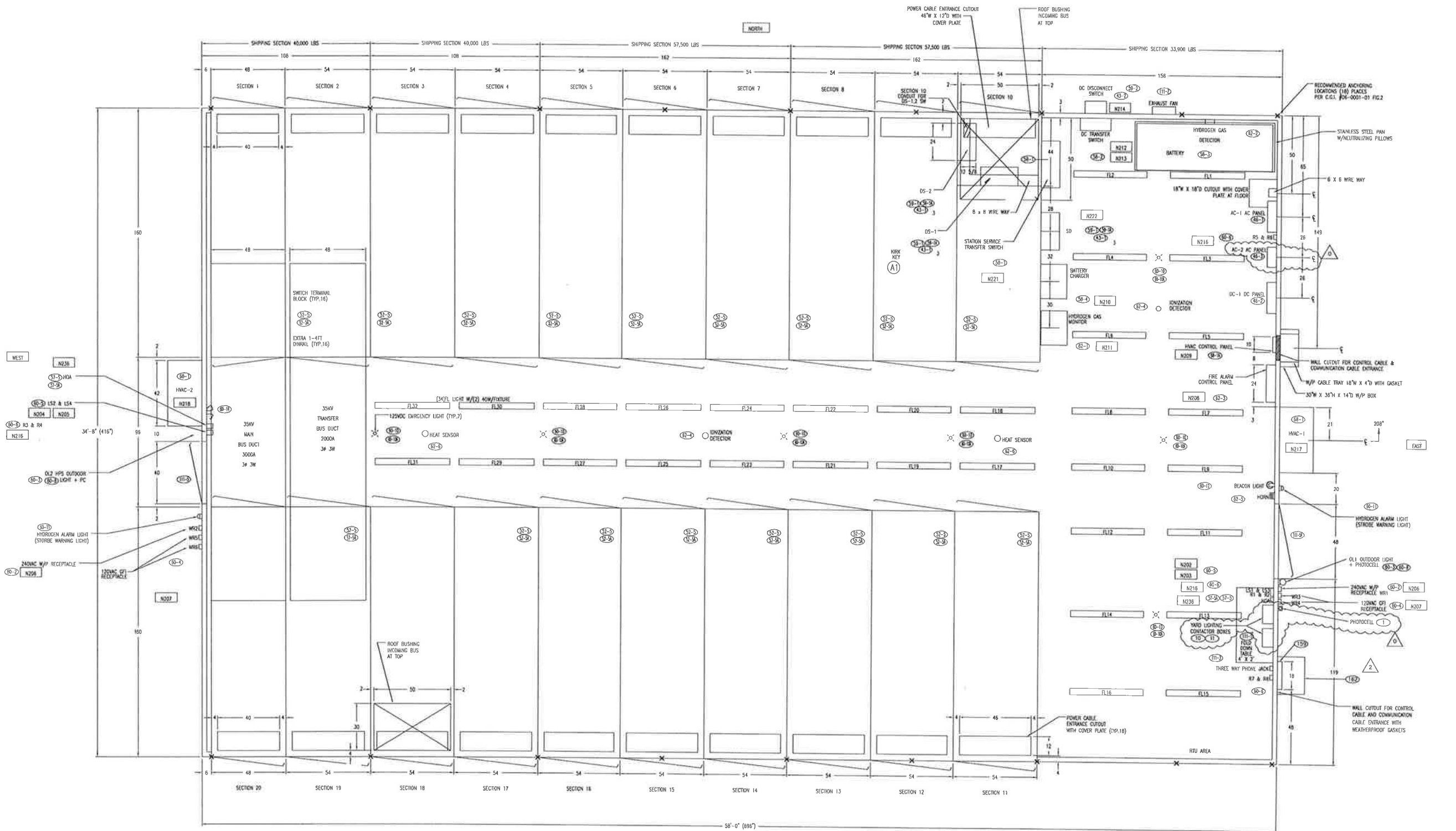
DRAWING NO. - PREVIOUS/REFERENCE ITSS-SS-0119_0001_1-1
DRAWING NO.: ITSS-SS-0119 SHEET 0001 of 0001
PAGE 1

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Black & Veitch Consultants, on 03/22/2021

PROJECT: INSS 138 kV FACILITY RETIREMENT		NO.		RECORD REVISION		TECH. / W.P.#		W.O. APPROVED		RECORD APPROVED		DATE	
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V)		W.O. #		1		CHUGACH AS-BUILT		10726		E0120202		AL 11/13/21	
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP								
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGB/03-22-21										

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300



56'-0" (6967)

PLAN VIEW

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Black & Veatch Consultants, on 05/15/2020

PROJECT: INSS 138 kV FACILITY RETIREMENT				W.O. # E1720055	
ENG./DESIGN: S. WENDLING (CEA) / B. BENNETT (B&V)					
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJS/05-15-20	BGB/05-15-20		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.D. APPROVED	RECORD APPROVED	DATE
1	34.5KV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	RW	10.0679EN	E9820117	AL	10/31/00
2	ITSS TRANSMISSION SUBSTATION - CHUGACH AS-BUILT	MS	10726	E0120202	AL	3/14/13

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

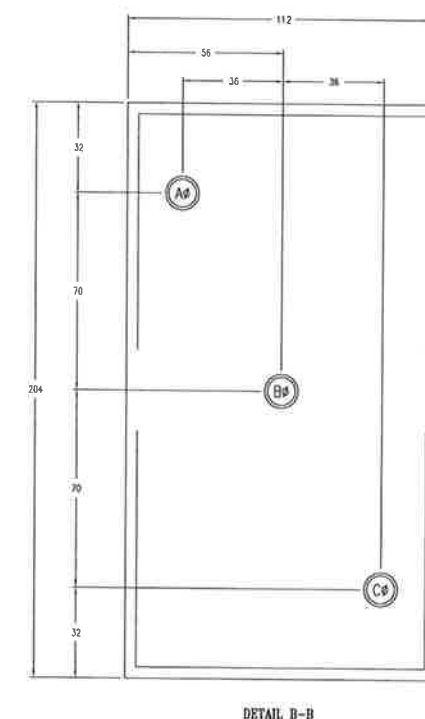
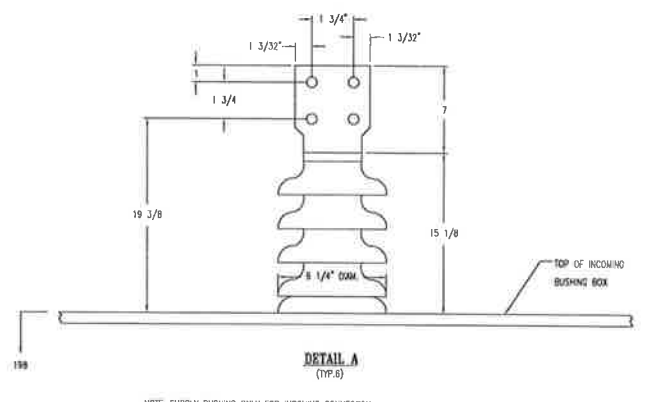
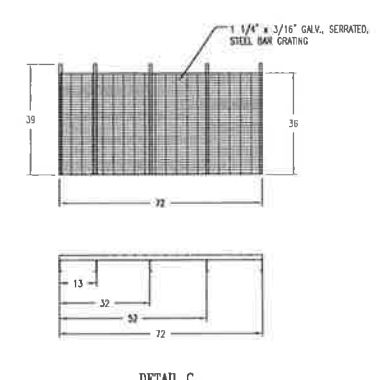
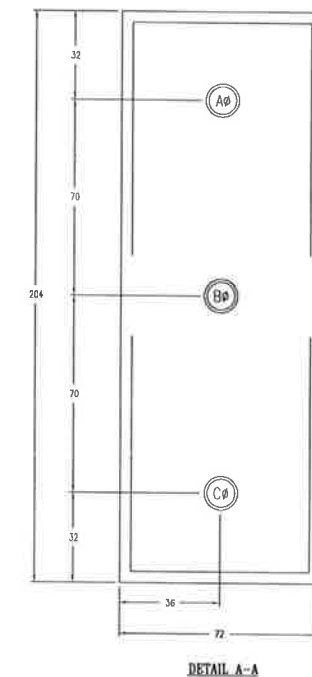
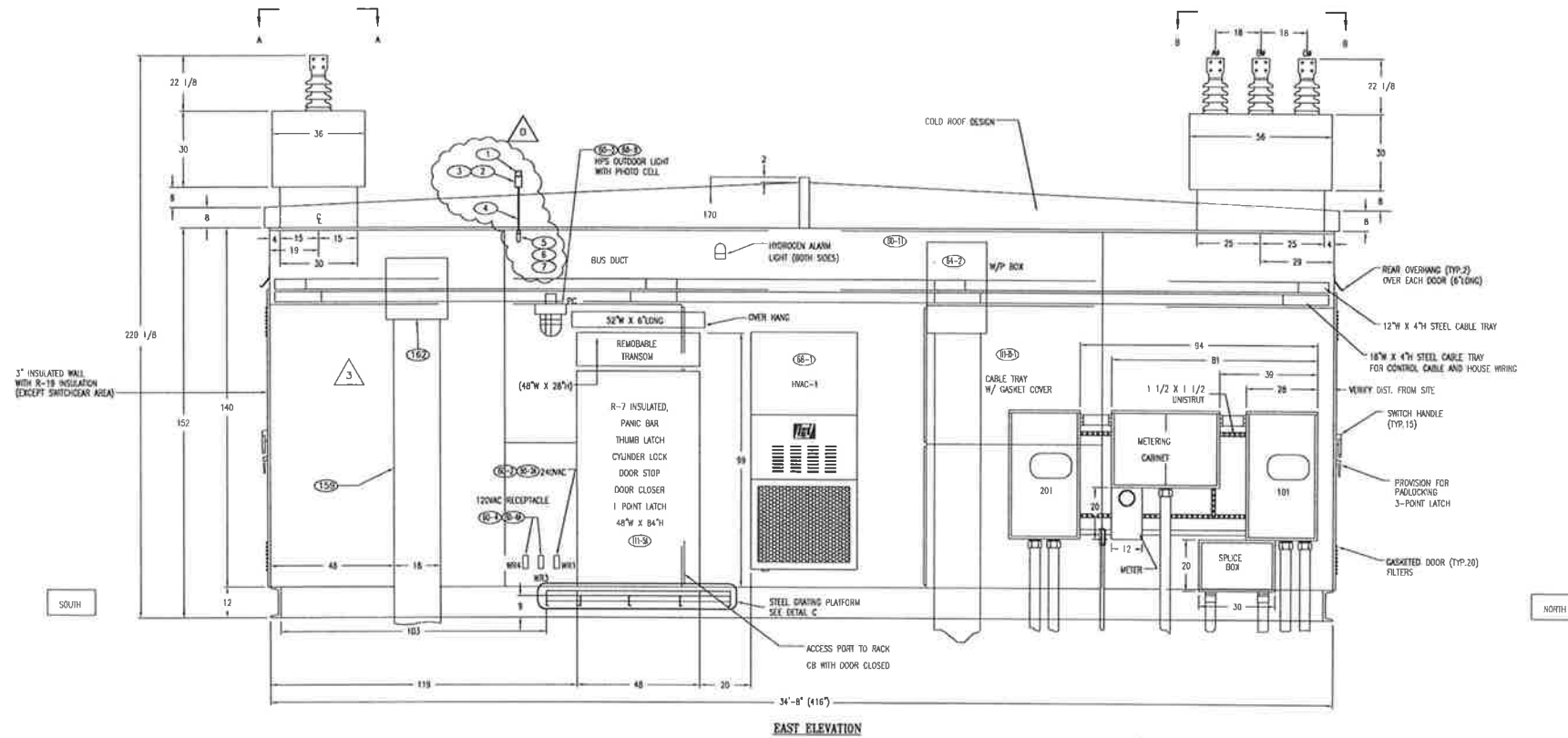
NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION

DRAWING NAME: INTERNATIONAL SUBSTATION
34.5 KV SWITCHGEAR PLAN VIEW
PLAN VIEW

CONFIDENTIAL

DRAWING NO. - PREVIOUS/REFERENCE: INSS-EQ-0013
DRAWING NO.: INSS-EQ-4500

SHEET 0001 OF 0001
PAGE /



BILL OF MATERIALS						
ITEM #	DESCRIPTION	UNIT	EXISTING QUANTITY	QUANTITY THIS W.D.	MANUFACTURER/CATALOG NUMBER	OWNER FURNISHED / CONTRACTOR FURNISHED
1	PHOTOCELL, NEMA, LOCKING-TYPE, THERMAL-TYPE	EA	-	1	INTERMATIC/LC4536C	X
2	SINGLE GANG BOX, WITH (3) 1/2" THREADED OUTLETS	EA	-	1	HUBBELL-RACO/5385-0	X
3	SINGLE GANG BLANK WALLPLATE	EA	-	1	HUBBELL-RACO/5173-0	X
4	THREADED CONDUIT NIPPLE, GALVANIZED, 1/2" x 18"	EA	-	1	COMMODITY	X
5	LB. GALVANIZED, 1/2"	EA	-	1	COMMODITY	X
6	THREADED CONDUIT NIPPLE, GALVANIZED, 1/2" x 6"	EA	-	1	COMMODITY	X
7	ELBOW, GALVANIZED, 90 DEGREE	EA	-	1	COMMODITY	X

NOTE: BILL OF MATERIAL QUANTITIES ARE ESTIMATED. ACTUAL QUANTITIES SHALL BE VERIFIED BY THE CONTRACTOR.

Certified for Construction of W.O. E1720055 by Billy C. Bennett, No. CE131526, Block & Veitch Consultants, on 05/15/2020

PROJECT: INSS 138 KV FACILITY RETIREMENT				W.O. # E1720055			
ENG./DESIGN: S. WENDLING (CEA) / B. BENNETT (B&V)							
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP		
0	ISSUED FOR CONSTRUCTION	MJC/05-15-20	BGR/05-15-20				

NO.	RECORD REVISION	TECH./OWN. BY	W.P.#	W.D. APPROVED	RECORD APPROVED	DATE
1	34.5KV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	RW	10.0879E	E9620117		10/31/00
2	CEA AS-BUILT - ADDED STEEL GRATING PLATFORMS	MGS			DDS	04/23/10
3	ITSS TRANSMISSION SUBSTATION - CHUGACH AS-BUILT	MS	10/26	E0120202	AL	3/14/13

CHUGACH
POWERING ALASKA'S FUTURE

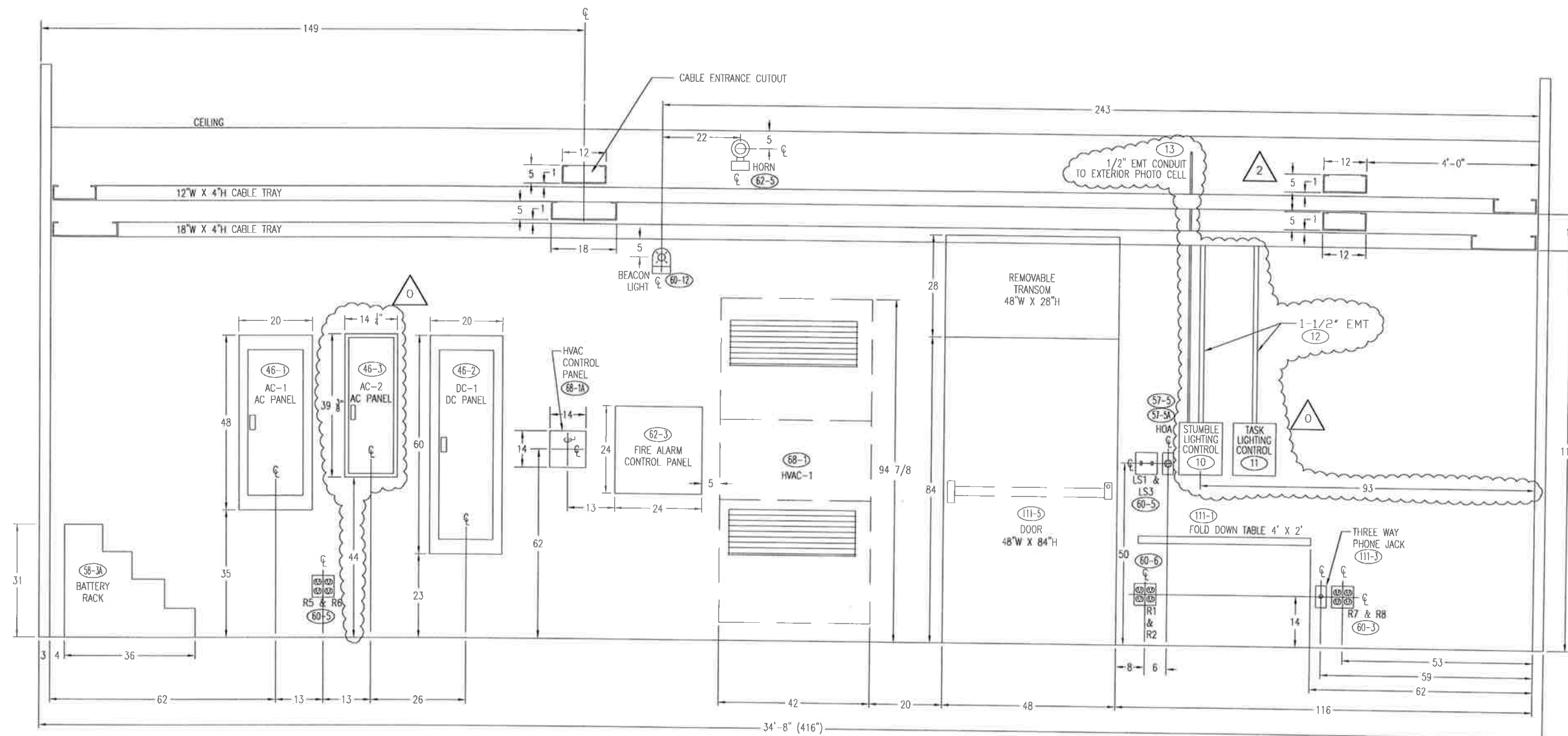
Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION

DRAWING NAME: INTERNATIONAL SUBSTATION 34.5KV SWITCHGEAR EAST ELEVATION

DRAWING NO. - PREVIOUS/REFERENCE: INSS-EQ-4503_0001_4.dwg

DRAWING NO.: INSS-EQ-4503 SHEET 0001 OF 0004 PAGE 1



EAST INTERIOR WALL

BILL OF MATERIALS							
ITEM #	DESCRIPTION	UNIT	EXISTING QUANTITY	QUANTITY THIS W.O.	MANUFACTURER/CATALOG NUMBER	OWNER FURNISHED	CONTRACTOR FURNISHED
10	LIGHTING CONTACTOR, FOR STUMBLE LIGHTING	EA	-	1	EATON/ECC04C8ABA-53P23A		X
11	LIGHTING CONTACTOR, FOR TASK LIGHTING	EA	-	1	EATON/ECC04C8ABA-S12P23A		X
12	1-1/2" EMT CONDUIT WITH MISCELLANEOUS FITTINGS	LOT	-	AS REQ'D	COMMODITY		X
13	1/2" EMT CONDUIT WITH MISCELLANEOUS FITTINGS	LOT	-	AS REQ'D	COMMODITY		X
46-3	AC PANEL, 200A, 3PH, 42 CIRCUITS, 240VAC, 60Hz, WITH COVER	EA	-	1	AC PANEL - SQUARE D/Q0342M200 COVER - SQUARE D/Q0C342M05		X

NOTE: BILL OF MATERIAL QUANTITIES ARE ESTIMATED. ACTUAL QUANTITIES SHALL BE VERIFIED BY THE CONTRACTOR.

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION

DRAWING NAME: INTERNATIONAL SUBSTATION
34.5KV SWITCHGEAR
EAST INTERIOR WALL

DRAWING NO. - PREVIOUS/REFERENCE: INSS-EQ-4503_0002_3.dwg
DRAWING NO.: INSS-EQ-4503
PAGE: 0002 of 0004

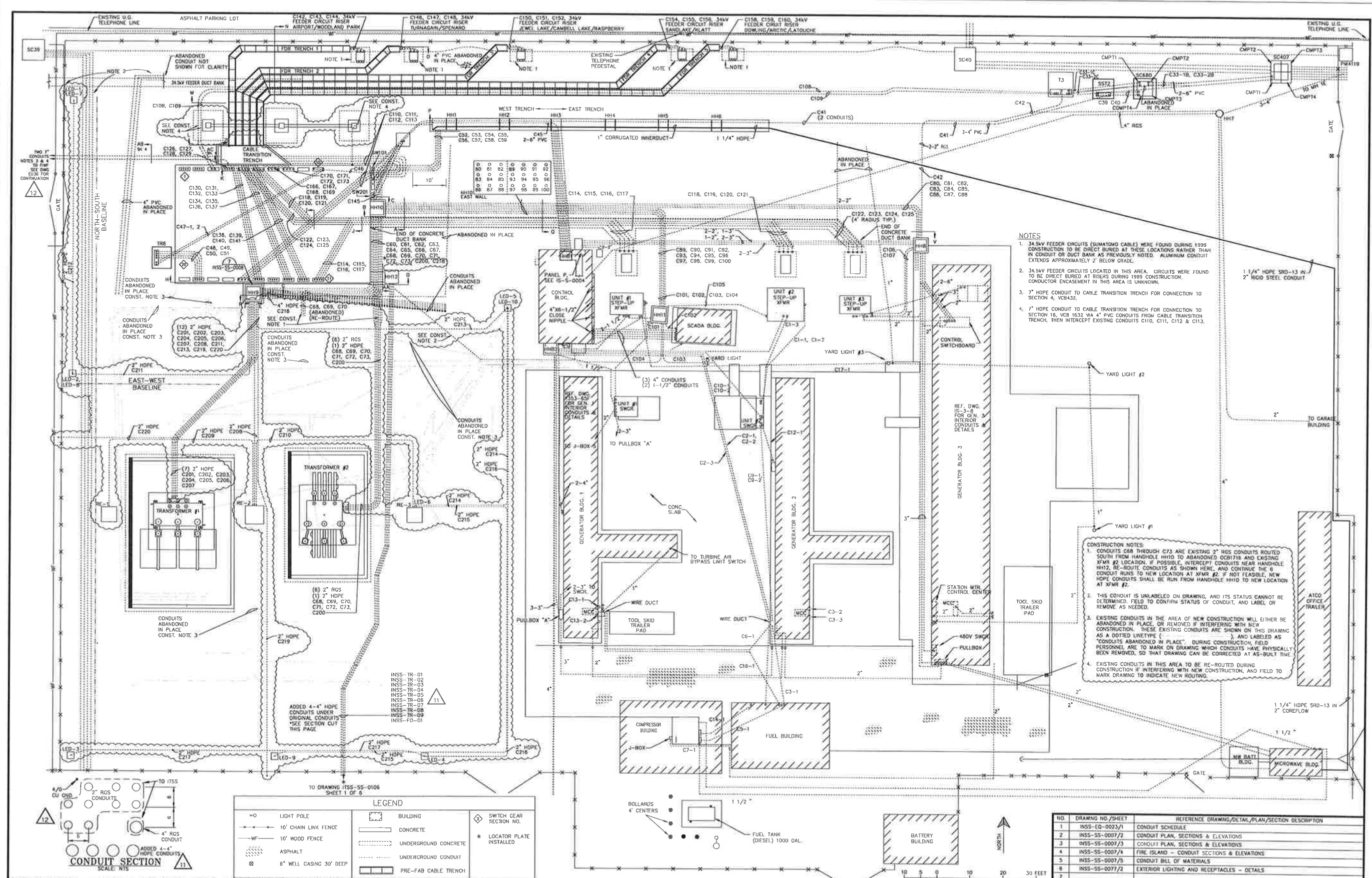
Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Black & Veatch Consultants, on 05/15/2020

PROJECT: INSS 138 KV FACILITY RETIREMENT					W.O. # E1720055							
ENG./DESIGN: S. WENDLING (CEA) / B. BENNETT (R&V)												
NO.	DESIGN/CONSTRUCTION/AS-BUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP	NO.	RECORD REVISION	TECH / DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	MJC/05-15-20	BCB/05-15-20			1	34 SKV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	RW	10.0879EN	E9620117	AL	10/31/00
						2	ITSS TRANSMISSION SUBSTATION - CHUGACH AS-BUILT	MS	10726	E0120202	AL	3/14/13

NO.	RECORD REVISION	TECH / DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	34 SKV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	RW	10.0879EN	E9620117	AL	10/31/00
2	ITSS TRANSMISSION SUBSTATION - CHUGACH AS-BUILT	MS	10726	E0120202	AL	3/14/13

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300



Certified for Construction of W.O. E1720055 by Billy C. Bennett, No. CE131526, Block & Veitch Consultants, on 03/22/2021

PROJECT: **INSS 138 kV FACILITY RETIREMENT**
 ENG./DESIGN: **JESSE MOE (CEA) / B. BENNETT (H&V)** W.O. # **E1720055**

NO.	DESIGN/CONSTRUCTION/AS-BUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGR/03-22-21	

NO.	RECORD REVISION	TECH./OWN. BY	WP.#	W.O. APPROVED	RECORD APPROVED	DATE
5	AS BUILT - NOT DEDICATED BACK-UP	MECC/PFD	0400.360EN	E9410831		1/22/97
6	AS BUILT - AUXILIARY SYSTEM UPGRADE	WFL/BC	10.0679EN	E9420117		5/9/03
7	INSTALLED ALTERNATE FIBER PATH TO 34.5KV BLDG	SRK/JG	10.0679EN	H0520284		7/15/05
8	ADD MW BATTERY BLDG PER STEVEN KALETTA	GE				5/3/07
9	ADDITIONAL AS-BUILT	MGS	10.0679EN	E9820117	WFL/DDS	8/18/09
10	AS BUILT PER CURRENT FIELD COND. - UPDATED LOCATION OF FENCE	MGS	DDS	04/28/10		
11	CHUGACH AS-BUILT	MS	10726	E0120202	AL	11/13/12
12	FIRE ISLAND CONDUITS INSTALL - CEA AS-BUILT	MS	E1120378	RF		01/31/13



Chugach Electric Association, Inc.
 5601 Electron Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

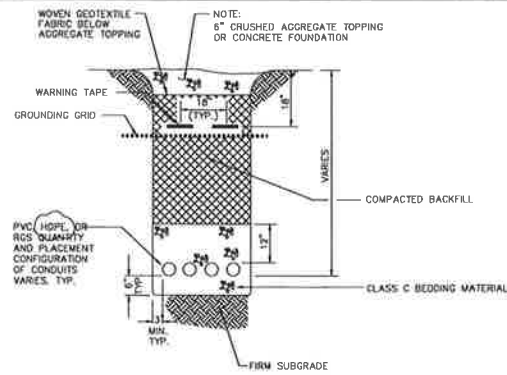
NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION	DESCRIPTION
1	INSS-EQ-0023/1		CONDUIT SCHEDULE
2	INSS-SS-0007/2		CONDUIT PLAN, SECTIONS & ELEVATIONS
3	INSS-SS-0007/3		CONDUIT PLAN, SECTIONS & ELEVATIONS
4	INSS-SS-0007/4		FIRE ISLAND - CONDUIT SECTIONS & ELEVATIONS
5	INSS-SS-0007/5		CONDUIT BILL OF MATERIALS
6	INSS-SS-0007/2		EXTERIOR LIGHTING AND RECEPTACLES - DETAILS

DRAWING NAME: **INTERNATIONAL SUBSTATION CONDUIT PLAN, SECTIONS, & ELEVATIONS**

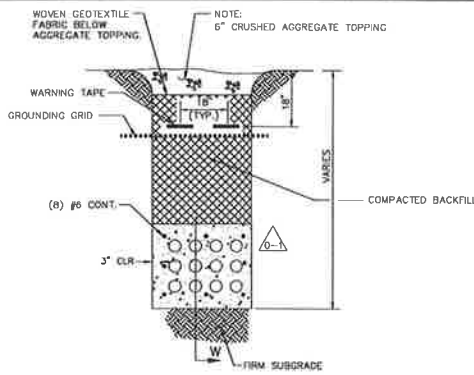
CONFIDENTIAL

DRAWING NO. - PREVIOUS REFERENCE: INSS-SS-0007.0001.13.dwg

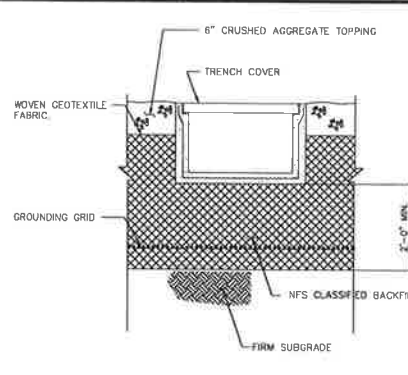
DRAWING NO.: **INSS-SS-0007** SHEET **0001** OF **0005**



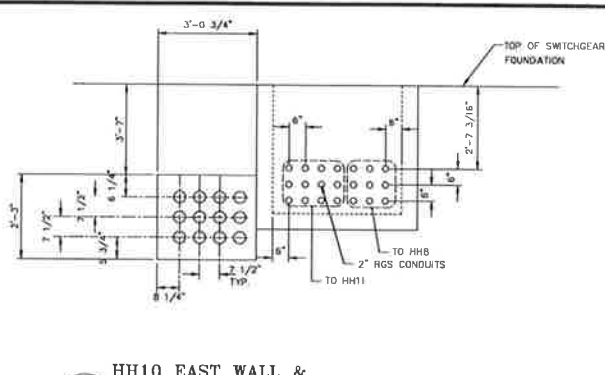
TYP. TRENCH FILL DETAIL
NOT TO SCALE



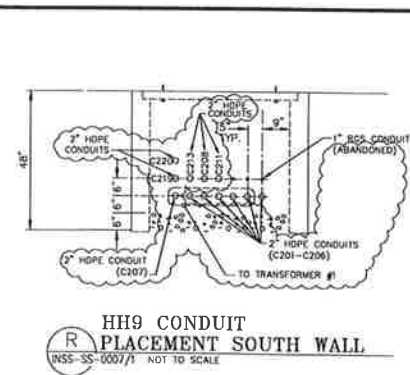
TYP. DUCT BANK FILL DETAIL
NOT TO SCALE



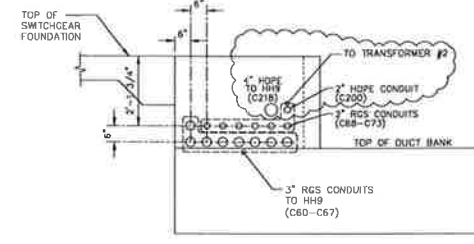
TYP. CABLE TRENCH FILL DETAIL
NOT TO SCALE



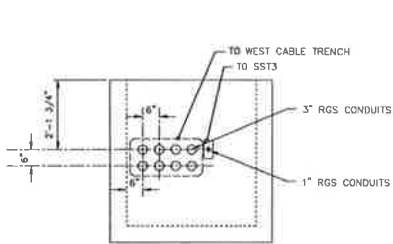
HH10 EAST WALL &
DUCT BANK CONDUIT PLACEMENT
NOT TO SCALE



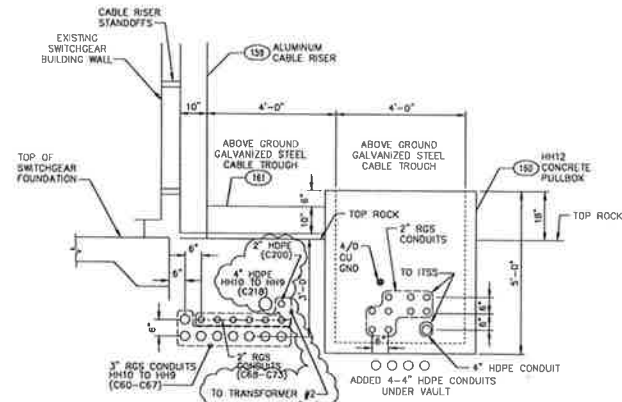
HH9 CONDUIT
PLACEMENT SOUTH WALL
NOT TO SCALE



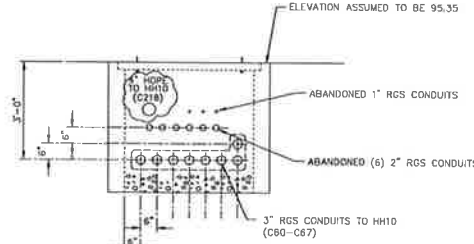
HH10 CONDUIT PLACEMENT
SOUTH WALL
NOT TO SCALE



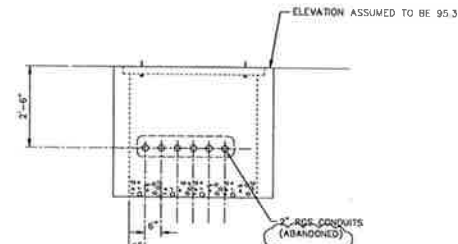
HH10 CONDUIT PLACEMENT
NORTH WALL
NOT TO SCALE



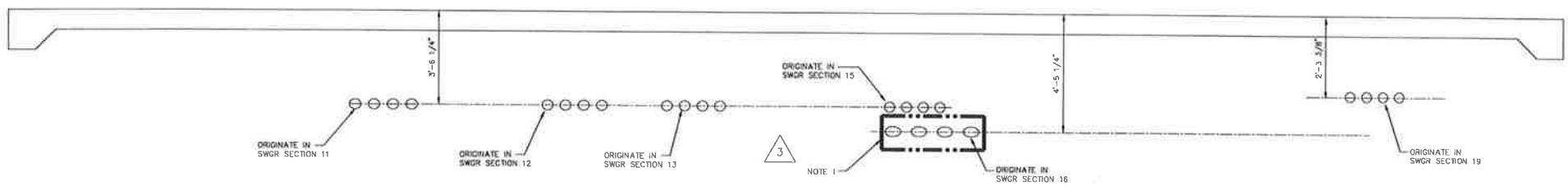
CONDUIT PLACEMENT AT
SE CORNER OF SWITCHGEAR BUILDING
NOT TO SCALE



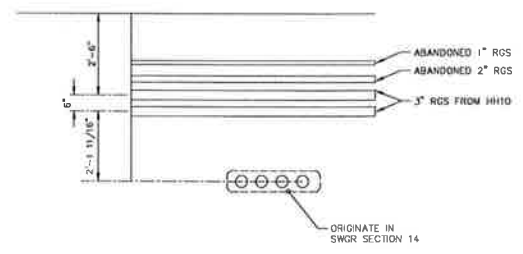
HH9 CONDUIT
PLACEMENT EAST WALL
NOT TO SCALE



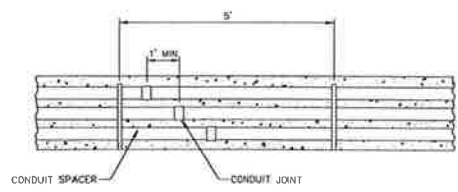
HH9 CONDUIT
PLACEMENT WEST WALL
NOT TO SCALE



CONDUIT PLACEMENT SOUTH BREAKER BAY FEEDERS
NOT TO SCALE



CONDUIT PLACEMENT
CAPACITOR FEEDER
NOT TO SCALE



CONCRETE DUCT BANK SIDE VIEW
NOT TO SCALE

FIRE ISLAND NOTES
1. 3-750 KCMIL CU CABLES TO SECTION 16, VCB 1632

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CF131526, Black & Veatch Consultants, on 03/22/2021

PROJECT: INSS 138 kV FACILITY RETIREMENT				W.O. # E1720055	
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V)					
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGB/03-22-21		

NO.	RECORD REVISION	TECH./ENR. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	ASBUILT - AUXILIARY SYSTEM UPGRADE	WFN/BG	10.0679	EB620117	WFN	5/8/03
2	CHUGACH AS-BUILT - INTL TRANSMISSION SUBSTATION	MS	10726	E0120202	AL	11/13/12
3	CEA AS-BUILT - ADDED 3-750 KCMIL CU CABLES FOR FIRE ISLAND	MS		E1120376	RF	01/11/13

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	INSS-EQ-0023/1	CONDUIT SCHEDULE
2	INSS-SS-0007/1	CONDUIT PLAN, SECTIONS & ELEVATIONS
3	INSS-SS-0007/3	CONDUIT PLAN, SECTIONS & ELEVATIONS
4	INSS-SS-0007/4	FIRE ISLAND - CONDUIT SECTIONS & ELEVATIONS

DRAWING NAME:
**INTERNATIONAL SUBSTATION
CONDUIT PLAN, SECTIONS, & ELEVATIONS**

CONFIDENTIAL

DRAWING NO. - PREVIOUS REFERENCE: INSS-SS-0007_0002_4.dwg
DRAWING NO.: INSS-SS-0007
SHEET 0002 of 0005
PAGE 2

CONDUIT			DESCRIPTION			
NUMBER	SIZE (IN.)	LENGTH	SERVICE	FROM	TO	REMARKS
C1-1	4		GEN. #2 MAIN LEADS	GEN. #2 SWGR CUBICLE NO. 3	GEN. #2 STEP-UP TRANSFORMER	
C1-2	4		GEN. #2 MAIN LEADS	GEN. #2 SWGR CUBICLE NO. 3	GEN. #2 STEP-UP TRANSFORMER	
C1-3	1 1/2		GEN. #2 STEP-UP W/WHI CONTROL	GEN. #2 SWGR CUBICLE NO. 3	GEN. #2 STEP-UP TRANSFORMER	
C2-1	4		480VAC TO GEN. #2 MCC TELEPHONE CONTROLS, METERING & RELAYING	WIRE DUCT ON TURBINE #2 & FUEL & B. HSE. #4	H.H. NO. 1 AT CONTROL HOUSE	
C2-2	4		480VAC TO GEN. #2 MCC TELEPHONE CONTROLS, METERING & RELAYING	WIRE DUCT ON TURBINE #2 & FUEL & B. HSE. #4	H.H. NO. 1 AT CONTROL HOUSE	
C2-3	1		480VAC TO GEN. #2 MCC TELEPHONE CONTROLS, METERING & RELAYING	WIRE DUCT ON TURBINE #2 & FUEL & B. HSE. #4	H.H. NO. 1 AT CONTROL HOUSE	
C3-1	3		480VAC TO PUMP B & BAT. CHGR. MAT. CHGR. OUTPUT, OVER LTD. 125VDC TO F.F. PUMP B.	WIRE DUCT ON TURBINE #2	P.B. NO. 3 IN FUEL & B. HOUSE	
C3-2	1 1/2		480VAC POWER TO FUEL OIL HEATER.	WIRE DUCT ON TURBINE #2	P.B. NO. 3 IN FUEL & B. HOUSE	
C3-3	3/4		FUEL OIL TEMP. CONTROL AND OVER TEMP. PROTECTION.	WIRE DUCT ON TURBINE #2	P.B. NO. 3 IN FUEL & B. HOUSE	
C4-1	1 1/2		FAN POWER	H.H. NO. 1 AT CONTROL HOUSE	GEN. #2 STEP-UP TRANSFORMER	
C5-1	1		LIGHTING, RECEPT., INCHMODE & ELEC. HT.	FUEL FORWARDING HOUSE PANEL	FUEL & BATTERY HOUSE	
C6-1	3		INTERLOCKS AND CONTROLS BETWEEN UNITS.	WIRE DUCT ON TURBINE #2	WIRE DUCT ON TURBINE #1	
C7-1	1 1/2		POWER FOR UNIT 1 AC F.F. PUMP POWER FOR NO. 2 DC F.F. PUMP. STOP FOR F.O. SOL. VAL. TO UNIT.	FUEL FORWARDING HOUSE J-BOX	P.B. NO. 1 IN FUEL & B. HOUSE	
C8-1	1		OCB 716 HTR & COMPRESSOR PWR	OCB 716	CABLE TRENCH	
C8-2	2 1/2		OCB 716 CONTROLS	OCB 716	CABLE TRENCH	
C8-3	1 1/2		OCB 716 DC CONTROL POWER, CT CABLES	OCB 716	CABLE TRENCH	
C8-4	1 1/2			OCB 716	CABLE TRENCH	
C9-1	4		CONTROLS, CT & PT LEADS	WIRE DUCT ON TURBINE #2	GEN. #2 SWGR	
C9-2	2		CONTROLS, CT & PT LEADS	WIRE DUCT ON TURBINE #2	GEN. #2 SWGR	
C10-1	4		CT LEADS	H.H. NO. 1 AT CONTROL HOUSE	GEN. #2 SWGR	
C10-2	4		CT LEADS	H.H. NO. 1 AT CONTROL HOUSE	GEN. #2 SWGR	
C11-1	3		UNIT 1 BAT. CHGR. 480VAC PWR., CHGR. OUTPUT & BATT. OUTPUT.			
C11-2	1 1/2		F.F. PUMP B 480VAC POWER UNIT 2 F.O. SOL. VALVE CONTROL			
C11-3	3/4		F.F. PUMP B 480VAC POWER			
C11-4	3/4		UNIT 2 FUEL OIL SOLENOID VALVE CONTROL			
C11-5	3/4		FUEL FORWARDING PUMP B 125VDC POWER			
C11-6	3		UNIT 2 BAT. CHGR. 480VAC PWR., CHGR. OUTPUT & BATT. OUTPUT			
C11-7	3/4		INCHMODE 240VAC POWER			
C11-8	3/4		RECEPT. & EXHAUST FAN 120VAC POWER			
C11-9	3/4		UNIT 1 FUEL OIL SOLENOID VALVE CONTROL			
C11-10	3/4		FUEL FORWARDING PUMP C 480VAC POWER			
C11-11	3/4		FUEL FORWARDING PUMP A 125VDC POWER			
C12-1	2			GEN. #2 SWGR	GEN. #2	
C13-1	1 1/2					
C13-2	3/4					
C14-1	1		LIGHTING, RECEPT., INCHMODE & ELEC. HT.	FUEL FORWARDING HOUSE PANEL	FUEL & BATTERY HOUSE	
C15-1	1		TELEPHONE	CABLE TRENCH	DIST. POLE	
C16-1	3		UNIT NO.1 BAT. CHGR. AC PWR UNIT NO.1 DC POWER	TURBINE NO. 2 CONTROL CAB	P.B. NO. 3 IN FUEL & BATTERY HOUSE	
C17-1	1		FUTURE YARD LIGHT	YARD LIGHT	N.E. CORNER TURBINE APRON	
C18-1	2	50'	CONTROL/RELAY	OCB 116	AUX CONTROL BLDG	RGS CONDUIT
C18-2	2	50'	CONTROL/RELAY	OCB 116	AUX CONTROL BLDG	RGS CONDUIT

CONDUIT			DESCRIPTION			
NUMBER	SIZE (IN.)	LENGTH	SERVICE	FROM	TO	REMARKS
C32-1	6	40'	IGT DED. BACKUP TRANSFORMER	RISER STRUCT.	TRANSFORMER 24.5KV/12.5KV, 2MVA	PVC
C32-2	6	40'	SPARE	RISER STRUCT.	TRANSFORMER 24.5KV/12.5KV, 2MVA	PVC
C33-1	6	80'	SWITCH CABINET #407 COMP. #1	IGT DED. BACK-UP TRANSFORMER	SWITCH CABINET #407 COMP. #1	PVC
C33-2	6	80'	SPARE	IGT DED. BACK-UP TRANSFORMER	SWITCH CABINET #407 COMP. #1	PVC
C37-1	2	80'	IGT TRMR C.T. OCB B3000 CONTROL	WEST END CABLE TRENCH	AUX CONT. BUILDING	RGS
C37-2	2	80'	OCB B3000 A.C. POWER	WEST END CABLE TRENCH	AUX CONT. BUILDING	RGS
C37-3	2	80'	SPARE	WEST END CABLE TRENCH	AUX CONT. BUILDING	RGS
C37-4	2	80'	SPARE	WEST END CABLE TRENCH	AUX CONT. BUILDING	RGS
C60	3	58'	HANDHOLE INTERCONNECTION	HH10	HH9	RGS
C61	3	58'	HANDHOLE INTERCONNECTION	HH10	HH9	RGS
C62	3	58'	HANDHOLE INTERCONNECTION	HH10	HH9	RGS
C63	3	58'	HANDHOLE INTERCONNECTION	HH10	HH9	RGS
C64	3	58'	HANDHOLE INTERCONNECTION	HH10	HH9	RGS
C65	3	58'	HANDHOLE INTERCONNECTION	HH10	HH9	RGS
C66	3	58'	HANDHOLE INTERCONNECTION	HH10	HH9	RGS
C67	3	58'	HANDHOLE INTERCONNECTION	HH10	HH9	RGS
C68	2	95'	CT CABLES - 4C#10 CT44, CT45, CT46	HH10	TRANSFORMER #2	RGS (NOTE 1)
C69	2	95'	CONROLS/INDICATION - 2C#16 12-51, 12-52	HH10	TRANSFORMER #2	RGS (NOTE 1)
C70	2	95'	AC/DC POWER - 4C#10 P26, P33	HH10	TRANSFORMER #2	RGS (NOTE 1)
C71	2	95'	TRIPS - 12C#12 12-63, 127	HH10	TRANSFORMER #2	RGS (NOTE 1)
C72	2	95'	SPARE	HH10	TRANSFORMER #2	RGS (NOTE 1)
C73	2	95'	SPARE	HH10	TRANSFORMER #2	RGS (NOTE 1)
C200	2	95'	FUTURE FIBER OPTIC	HH10	TRANSFORMER #2	HOPE WITH (1) 1 1/4" INNERDUCT
C201	2	70'	CT CABLES - 4C#10 CT40, CT41, CT42	HH9	TRANSFORMER #1	HOPE
C202	2	70'	CONROLS/INDICATION - 2C#16 11-51, 11-52	HH9	TRANSFORMER #1	HOPE
C203	2	70'	AC/DC POWER - 4C#10 P27, P32	HH9	TRANSFORMER #1	HOPE
C204	2	70'	TRIPS - 12C#12 11-63, 117	HH9	TRANSFORMER #1	HOPE
C205	2	70'	SPARE	HH9	TRANSFORMER #1	HOPE
C206	2	70'	SPARE	HH9	TRANSFORMER #1	HOPE
C207	2	70'	FUTURE FIBER OPTIC	HH9	TRANSFORMER #1	HOPE WITH (1) 1 1/4" INNERDUCT
C208	2	62'	OUTDOOR RECEPTACLE	HH9	RECEPTACLE RE-2 JB CENTER 138KV 2-BAY U-FRAME LEG	HOPE
C209	2	85'	OUTDOOR RECEPTACLE	HH9	RECEPTACLE RE-1 JB CENTER 138KV 2-BAY U-FRAME LEG	HOPE
C210	2	90'	OUTDOOR RECEPTACLE	HH9	RECEPTACLE RE-3 JB EAST 138KV 2-BAY U-FRAME LEG	HOPE
C211	2	75'	STUMBLE/TASK LIGHTING	HH9	STUMBLE LIGHT LED-2 TASK LIGHT LED-8	HOPE
C212	2	88'	STUMBLE/TASK LIGHTING	HH9	STUMBLE LIGHT LED-1 TASK LIGHT LED-7	HOPE
C213	2	90'	STUMBLE/TASK LIGHTING	HH9	STUMBLE LIGHT LED-5 TASK LIGHT LED-10	HOPE
C214	2	88'	TASK LIGHTING	HH9	TASK LIGHT LED-6 TASK LIGHT LED-9	HOPE
C215	2	170'	TASK LIGHTING	HH9	TASK LIGHT LED-8 TASK LIGHT LED-9	HOPE
C216	2	180'	STUMBLE LIGHTING	HH9	STUMBLE LIGHT LED-5 TASK LIGHT LED-10	HOPE
C217	2	110'	STUMBLE LIGHTING	HH9	STUMBLE LIGHT LED-4 STUMBLE LIGHT LED-3	HOPE

CONDUIT			DESCRIPTION			
NUMBER	SIZE (IN.)	LENGTH	SERVICE	FROM	TO	REMARKS
C218	4	60'	FUTURE	HH10	HH9	HOPE WITH (3) 1 1/4" INNERDUCTS
C219	2	145'	FUTURE	HH10	SOUTH FENCE LINE	HOPE CAPPED BELOW GRADE
C220	2	90'	FUTURE	HH10	WEST FENCE LINE	HOPE CAPPED BELOW GRADE
INSS-TR-01	2	475'	CONTROL	HH12	ITSS TRENCH	RGS
INSS-TR-02	2	475'	CONTROL	HH12	ITSS TRENCH	RGS
INSS-TR-03	2	475'	CONTROL	HH12	ITSS TRENCH	RGS
INSS-TR-04	2	475'	CONTROL	HH12	ITSS TRENCH	RGS
INSS-TR-05	2	475'	CONTROL	HH12	ITSS TRENCH	RGS
INSS-TR-06	2	475'	CONTROL	HH12	ITSS TRENCH	RGS
INSS-TR-07	2	475'	SPARE	HH12	ITSS TRENCH	RGS
INSS-TR-08	2	475'	SPARE	HH12	ITSS TRENCH	RGS
INSS-TR-09	2	475'	SPARE	HH12	ITSS TRENCH	RGS
INSS-FO-01	4	475'	(3) 1 1/4" FO INNERDUCTS	HH12	ITSS TRENCH	HOPE

NOTES:
 1. CONDUITS C68 THROUGH C73 ARE EXISTING 2" RGS CONDUITS ROUTED SOUTH FROM HANDHOLE HH10 TO ABANDONED OCB#116 AND EXISTING TRANSFORMER #2 LOCATION - SEE DETAIL "D" ON DRAWING INSS-55-0007 SHEET 2. IF POSSIBLE, INTERCEPT CONDUITS NEAR SOUTHEAST CORNER OF SWITCHGEAR BUILDING AS SHOWN ON CONDUIT PLAN (INSS-55-0007 SHEET 3), CUT OFF AT A SUITABLE LOCATION, AND CONTINUE THE 2" CONDUIT RUNS TO NEW LOCATION AT TRANSFORMER #2. IF CONSTRUCTION DETERMINES THIS IS NOT FEASIBLE, NEW CONDUITS MAY BE RUN.

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Black & Veatch Consultants, on 03/22/2021

PROJECT: INSS 138 kV FACILITY RETIREMENT				W.O. # E1720055	
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V)				ENG. STAMP	
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BOB/03-22-21		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	CEI RECORD UPDATE	JHC	XXX.XXX	XX	XX	5/7/99
2	W.O. B410631 CONDUIT INSTALLATION	PFJ/TH		PFJ		12/15/95
3	25MWV CAPACITOR BANK - AS BUILT	/SO	N/A	E9011034		1/24/98
4	AS BUILT: IGT DEDICATED BACK-UP	NECO/PTD	0400.360EN	E9410831		1/22/97
5	REMOVED C34-1, C35-1; REVISED LENGTHS, DESCRIPTION TO & REMARKS (9 PLACES)			E9420117	WFN/DDS	4/7/10
6	ITSS TRANSMISSION SUBSTATION - CHUGACH AS-BUILT	MS	10726	E0120202	AL	11/13/12



Chugach Electric Association, Inc.
 5601 Minnesota Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

DRAWING NAME: INTERNATIONAL SUBSTATION CONDUIT SCHEDULE

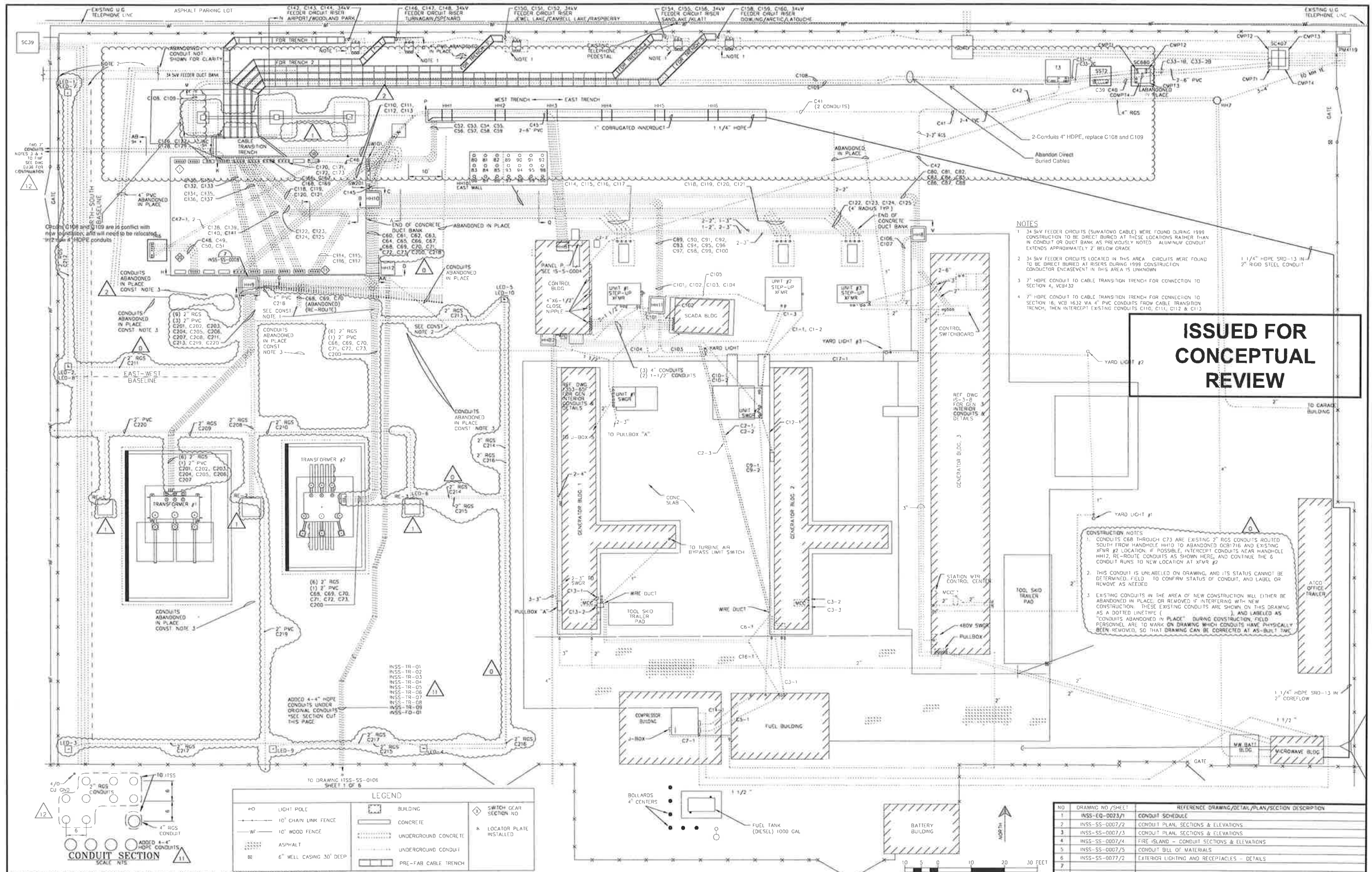
CONFIDENTIAL

DRAWING NO. - PREVIOUS REFERENCE # - EQ-0023

DRAWING NO.: INSS-EQ-0023

INSS-EQ-0023.0001.T.dwg

SHEET 0001 OF 0001

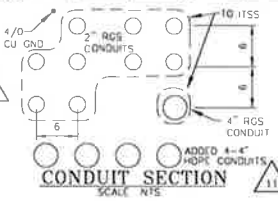


- NOTES**
- 34 kV FEEDER CIRCUITS (SUMATOWA CABLE) WERE FOUND DURING 1999 CONSTRUCTION TO BE DIRECT BURIED AT THESE LOCATIONS RATHER THAN IN CONDUIT OR DUCT BANK AS PREVIOUSLY NOTED. ALUMINUM CONDUIT EXTENDS APPROXIMATELY 2' BELOW GRADE.
 - 34 kV FEEDER CIRCUITS LOCATED IN THIS AREA CIRCUITS WERE FOUND TO BE DIRECT BURIED AT RISERS DURING 1999 CONSTRUCTION. CONDUCTOR ENCASEMENT IN THIS AREA IS UNKNOWN.
 - 7" HDPE CONDUIT TO CABLE TRANSITION TRENCH FOR CONNECTION TO SECTION 4, VCB432.
 - 7" HDPE CONDUIT TO CABLE TRANSITION TRENCH FOR CONNECTION TO SECTION 16, VCB 1632 VIA 4" PVC CONDUITS FROM CABLE TRANSITION TRENCH, THEN INTERCEPT EXISTING CONDUITS C110, C111, C112 & C113.

ISSUED FOR CONCEPTUAL REVIEW

CONSTRUCTION NOTES

- CONDUITS C68 THROUGH C73 ARE EXISTING 2" RGS CONDUITS ROUTED SOUTH FROM HANDHOLE HH10 TO ABANDONED DCR1716 AND EXISTING XFMR #2 LOCATION. IF POSSIBLE, INTERCEPT CONDUITS NEAR HANDHOLE HH12, RE-ROUTE CONDUITS AS SHOWN HERE, AND CONTINUE THE 6" CONDUIT RUNS TO NEW LOCATION AT XFMR #2.
- THIS CONDUIT IS UNLABELED ON DRAWING, AND ITS STATUS CANNOT BE DETERMINED. FIELD TO CONFIRM STATUS OF CONDUIT, AND LABEL OR REMOVE AS NEEDED.
- EXISTING CONDUITS IN THE AREA OF NEW CONSTRUCTION WILL EITHER BE ABANDONED IN PLACE OR REMOVED IF INTERFERING WITH NEW CONSTRUCTION. THESE EXISTING CONDUITS ARE SHOWN ON THIS DRAWING AS A DOTTED LINETYPE (---) AND LABELED AS "CONDUITS ABANDONED IN PLACE". DURING CONSTRUCTION, FIELD PERSONNEL ARE TO MARK ON DRAWING WHICH CONDUITS HAVE PHYSICALLY BEEN REMOVED, SO THAT DRAWING CAN BE CORRECTED AT AS-BUILT TIME.



LEGEND

○	LIGHT POLE	▭	BUILDING	◊	SWITCH GEAR SECTION NO.
—	10" CHAIN LINK FENCE	▭	CONCRETE	*	LOCATOR PLATE INSTALLED
—	10" WOOD FENCE	▭	UNDERGROUND CONCRETE		
---	ASPHALT	▭	UNDERGROUND CONDUIT		
○	6" WELL CASING 30" DEEP	▭	PRE-FAB CABLE TRENCH		

Certified for Construction of W.O. E1720055 by Guy G. Bennett, No. CE131526, Black & Veatch Consultants, on 08/22/2020

PROJECT: INSS 138 kV FACILITY RETIREMENT
ENG./DESIGN: S. WENDLING (CEA) / R. BENNETT (B&V) **W.O. # E1720055**

NO	DESIGN/CONSTRUCTION/AS-BUILT REVISION	DWN. BY/DATE	REVIEWED MGR. SUPERV. DATE	APPROVED DIRECTOR DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/05-15-20	BCB/05-15-20		
1	REVISED FOR CONST - MOVED NORTH 34 kV H-FRAME, CHANGED SIZE OF FOUNDATIONS 1, 3 & 4	MJC/06-01-20	BCB/06-01-20		
0	REVISED FOR CONST - REVISED 34 kV H-FRAMES	MJC/XX-XX-20	BCB/XX-XX-20		

NO	RECORD REVISION	TECH / DWN. BY	W.P. #	W.O. APPROVED	RECORD APPROVED	DATE
5	AS-BUILT: NOT DEDICATED BACK-UP	WCCO/PHD	0500.360EN	E9X10B31		1/22/97
6	AS-BUILT - AUXILIARY SYSTEM UPGRADE	WFR/BC	10.0679EN	E9620112		5/9/03
7	INSTALLED ALTERNATE FIBER PATH TO 34 kV BLDG.	SRK/JCS		H0520264		7/15/05
8	ADD MW BATTERY BLDG PER STEVEN KALETIA	DC				5/3/07
9	ADDITIONAL AS-BUILT	MGS	10.0829EN	E9820117	WFR/DOS	8/18/09
10	AS-BUILT PER CURRENT FIELD COND - UPDATED LOCATION OF FENCE	WCS			DDS	04/28/10
11	CHUGACH AS-BUILT	MS	10726	E0120202	AL	11/3/12
12	FIRE ISLAND CONDUITS INSTALL - CEA AS-BUILT	MS		E1120378	RF	01/11/13

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

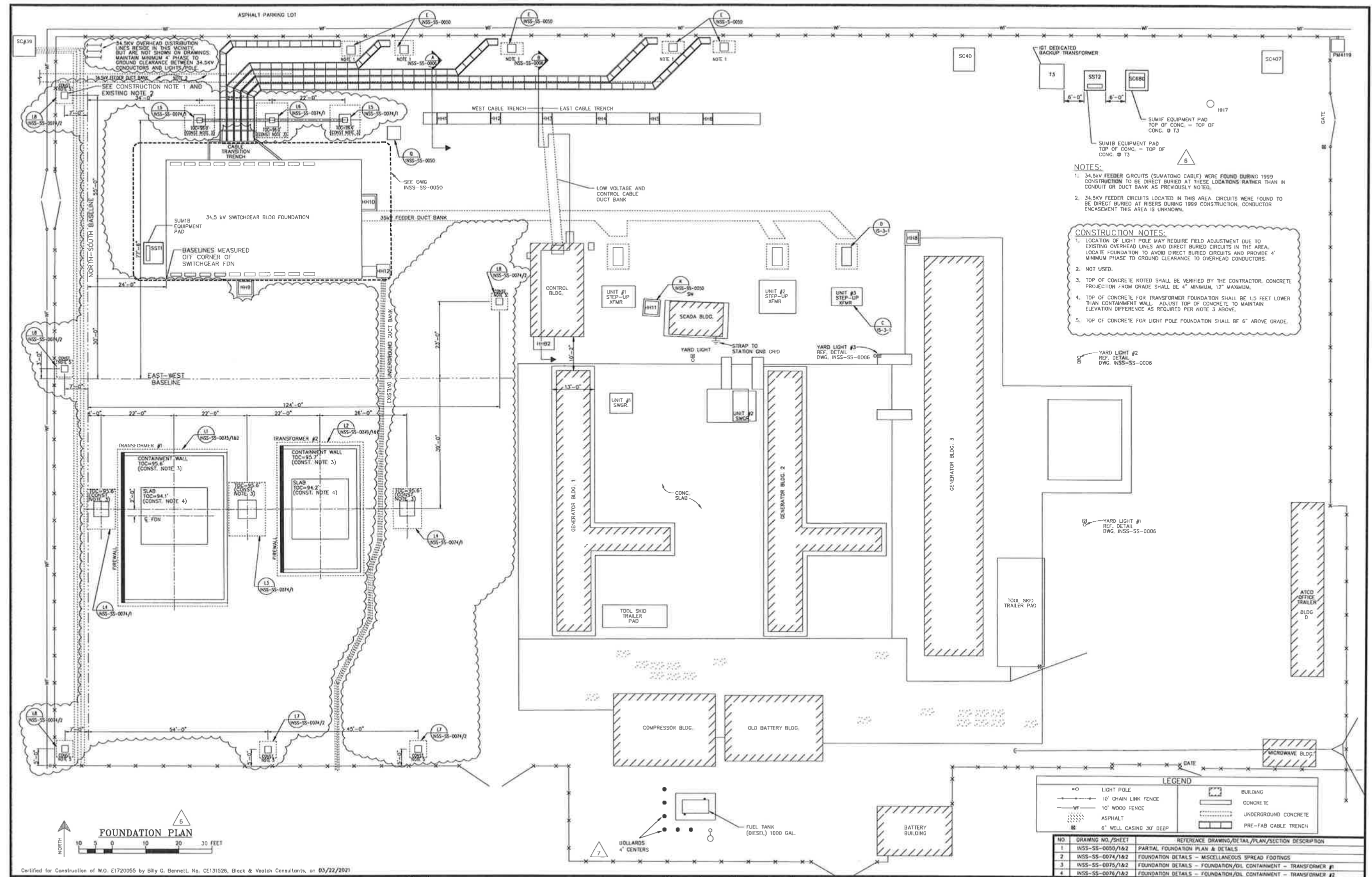
NO	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	INSS-EQ-0023/1	CONDUIT SCHEDULE
2	INSS-SS-0007/2	CONDUIT PLAN, SECTIONS & ELEVATIONS
3	INSS-SS-0007/3	CONDUIT PLAN, SECTIONS & ELEVATIONS
4	INSS-SS-0007/4	FIRE ISLAND - CONDUIT SECTIONS & ELEVATIONS
5	INSS-SS-0007/5	CONDUIT BILL OF MATERIALS
6	INSS-SS-0007/2	EXTERIOR LIGHTING AND RECEPTACLES - DETAILS

DRAWING NAME: **INTERNATIONAL SUBSTATION CONDUIT PLAN, SECTIONS, & ELEVATIONS**

CONFIDENTIAL

DRAWING NO. - PREVIOUS REFERENCE: INSS-SS-0007.0001.13-000

DRAWING NO. **INSS-SS-0007** SHEET: 0001 OF 0005



- NOTES:**
- 34.5KV FEEDER CIRCUITS (SUMITOMO CABLE) WERE FOUND DURING 1999 CONSTRUCTION TO BE DIRECT BURIED AT THESE LOCATIONS RATHER THAN IN CONDUIT OR DUCT BANK AS PREVIOUSLY NOTED.
 - 34.5KV FEEDER CIRCUITS LOCATED IN THIS AREA. CIRCUITS WERE FOUND TO BE DIRECT BURIED AT RISERS DURING 1999 CONSTRUCTION. CONDUCTOR ENCASUREMENT THIS AREA IS UNKNOWN.

- CONSTRUCTION NOTES:**
- LOCATION OF LIGHT POLE MAY REQUIRE FIELD ADJUSTMENT DUE TO EXISTING OVERHEAD LINES AND DIRECT BURIED CIRCUITS IN THE AREA. LOCATE FOUNDATION TO AVOID DIRECT BURIED CIRCUITS AND PROVIDE 4' MINIMUM PHASE TO GROUND CLEARANCE TO OVERHEAD CONDUCTORS.
 - NOT USED.
 - TOP OF CONCRETE NOTED SHALL BE VERIFIED BY THE CONTRACTOR. CONCRETE PROJECTION FROM GRADE SHALL BE 4" MINIMUM, 12" MAXIMUM.
 - TOP OF CONCRETE FOR TRANSFORMER FOUNDATION SHALL BE 1.5 FEET LOWER THAN CONTAINMENT WALL. ADJUST TOP OF CONCRETE TO MAINTAIN ELEVATION DIFFERENCE AS REQUIRED PER NOTE 3 ABOVE.
 - TOP OF CONCRETE FOR LIGHT POLE FOUNDATION SHALL BE 6" ABOVE GRADE.

FOUNDATION PLAN

LEGEND

○	LIGHT POLE	▭	BUILDING
—	10' CHAIN LINK FENCE	▭	CONCRETE
—	10' WOOD FENCE	▭	UNDERGROUND CONCRETE
▨	ASPHALT	▭	PRE-FAB CABLE TRENCH
⊗	6" WELL CASING 30' DEEP		

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION	DESCRIPTION
1	INSS-SS-0050/1&2	PARTIAL FOUNDATION PLAN & DETAILS	
2	INSS-SS-0074/1&2	FOUNDATION DETAILS - MISCELLANEOUS SPREAD FOOTINGS	
3	INSS-SS-0075/1&2	FOUNDATION DETAILS - FOUNDATION/OL CONTAINMENT - TRANSFORMER #1	
4	INSS-SS-0076/1&2	FOUNDATION DETAILS - FOUNDATION/OL CONTAINMENT - TRANSFORMER #2	

PROJECT: **INSS 138 kV FACILITY RETIREMENT**
 ENG./DESIGN: **JESSE MOE (CEA) / B. BENNETT (B&Y)** W.O. # **E1720055**

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGB/03-22-21		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
2	ADDED CONTROL BUILDING, REMOVED CAPACITOR BANK				DWB	10/1/89
3	ADDED SCADA BUILDING				DWB	4/13/92
4	AS BUILT					
5	AS BUILT: 1GT DEDICATED BACK-UP	VECO/PFO	0400.360EN	E9410B31		1/22/97
6	ASBUILT PER W0 E9620117, UPDATED ADDITIONAL INFORMATION AS FOUND	WFM/BG	10.0679EN	E9620117	WFM	7/7/03
7	ASBUILT PER CURRENT FIELD CONDITIONS - ADDED NOTE ON LOCATION OF OH TRANSMISSION POLES AND FENCE LAYOUT	MCS			ODS	04/28/10



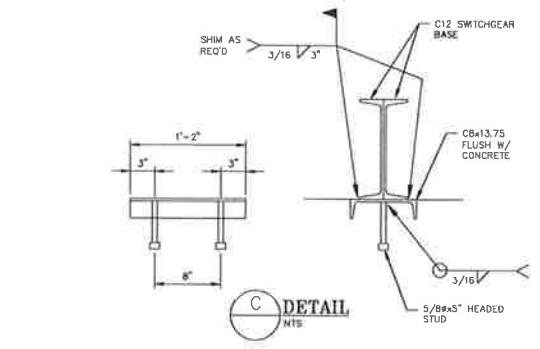
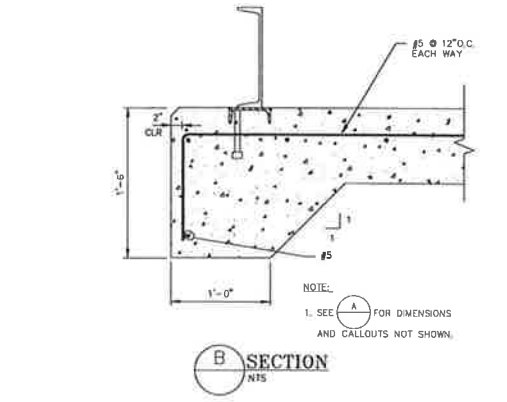
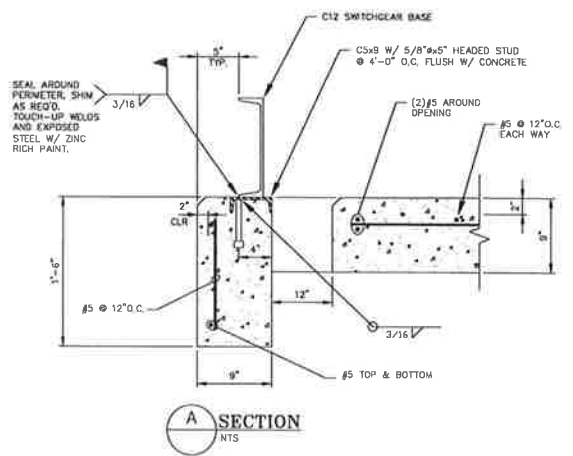
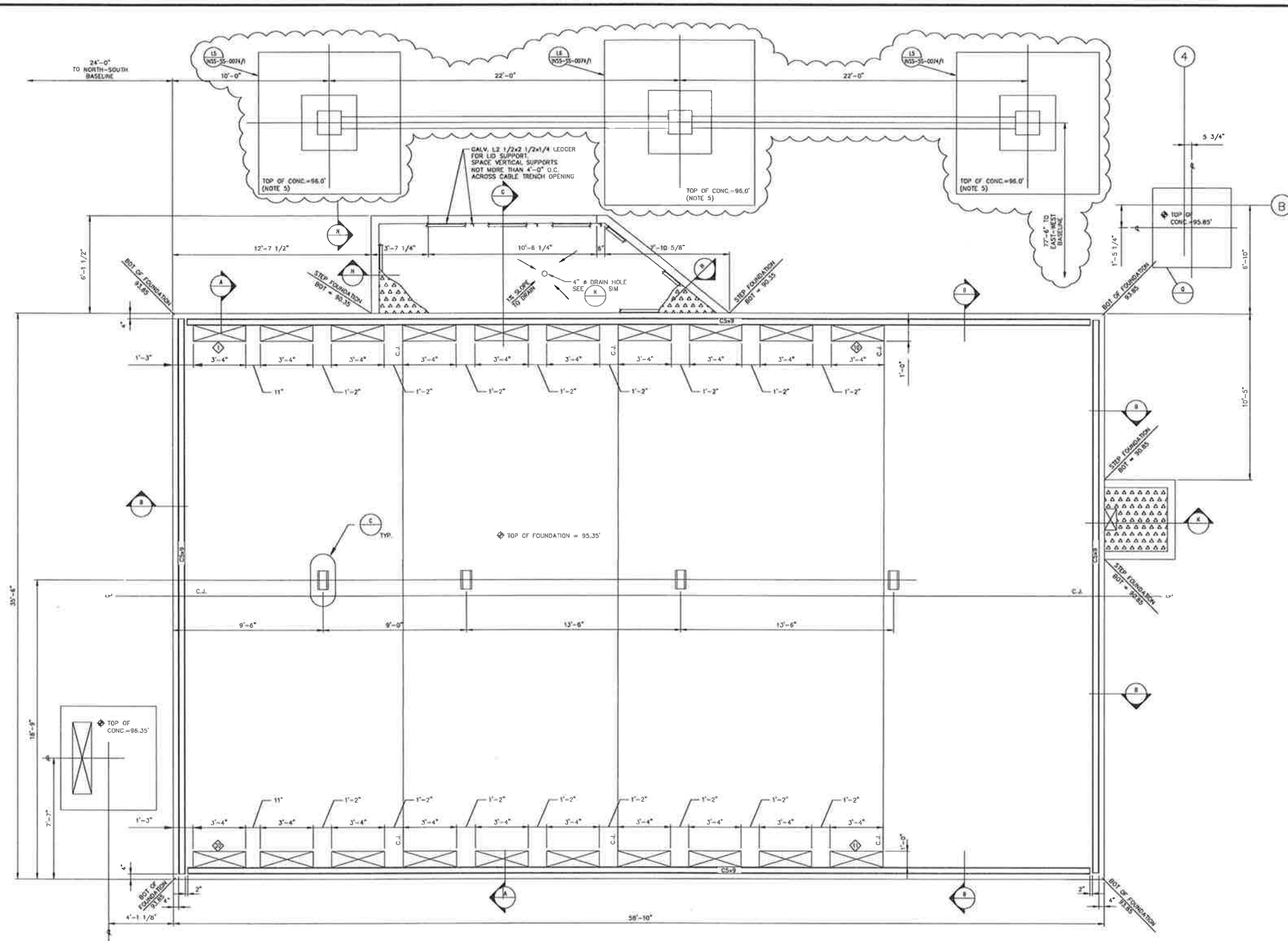
Chugach Electric Association, Inc.
 5601 Electron Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

DRAWING NAME: **INTERNATIONAL SUBSTATION FOUNDATION PLAN**

CONFIDENTIAL

DRAWING NO. - PREVIOUS/REFERENCE: **INSS-SS-0005_0001_6.dwg**

DRAWING NO.: **INSS-SS-0005** SHEET: **0001** OF **0001** PAGE: **1**



- GENERAL NOTES**
- FOUNDATION SHALL BEAR ON COMPACTED NON-FROST SUSCEPTIBLE SOIL IN ACCORDANCE WITH THE SPECIFICATIONS. COMPACT ALL SUBGRADE MATERIAL TO 95% MAX DENSITY BENEATH FOUNDATION.
 - CONCRETE: COMPRESSIVE STRENGTH AT 28 DAYS - 3000 PSI, MIN. 1" NORMAL WEIGHT AGGREGATE, MAX. 4 TO 6% AIR ENTRAINMENT. WATER/CEMENT RATIO NOT TO EXCEED 0.45. 2 TO 4" SLUMP. 3/4" CHAMFER ALL EXPOSED EDGES. STEEL TROWEL FINISH.
 - CONCRETE REINFORCEMENT: DEFORMED STEEL, ASTM A615, GRADE 60. LAP ALL REINFORCING 40 DIAMETERS, 2'-0" MIN. 3" CLEAR COVER, U.N.O. PROVIDE (2) HORIZONTAL BARS ABOVE AND BELOW CONDUIT GROUP PENETRATIONS THROUGH CONCRETE WALLS. SUBMIT SHOP DRAWINGS.
 - STEEL: PLATES AND SHAPES, ASTM A36. STUDS, ASTM A307.
3. TOP OF CONCRETE NOTED SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONCRETE PROJECTION FROM GRADE SHALL BE 4" MINIMUM, 12" MAXIMUM.

LEGEND	
—	NEW
- - -	EXISTING
◇	SWITCHGEAR SECTION NO.

ABBREVIATIONS	
BOT	BOTTOM
C.J.	CONTROL JOINT
FOUND	FOUNDATION
O.C.	ON CENTER
U.N.O.	UNLESS NOTED OTHERWISE

PARTIAL FOUNDATION PLAN

Certified for Construction of W.D. E1720055 by Billy G. Bennett, No. CE131526, Black & Veatch Consultants, on 03/22/2021

PROJECT: INSS 138 kV FACILITY RETIREMENT				
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (R&V)				
W.O. # E1720055				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./DATE	APPROVED DIRECTOR/DATE
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGB/03-22-21	

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.D. APPROVED	RECORD APPROVED	DATE
1	IGT AUXILIARY SYSTEM UPGRADE		10.0679EN	E9620117	WFN/DD5	2/25/10



Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

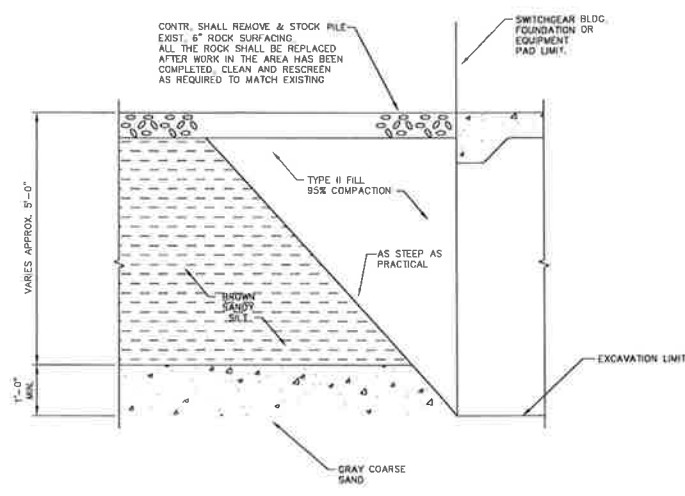
NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	INSS-SS-0074/1	FOUNDATION DETAILS - MISCELLANEOUS SPREAD FOOTINGS
2		

DRAWING NAME: **INTERNATIONAL SUBSTATION PARTIAL FOUNDATION PLAN & DETAILS**

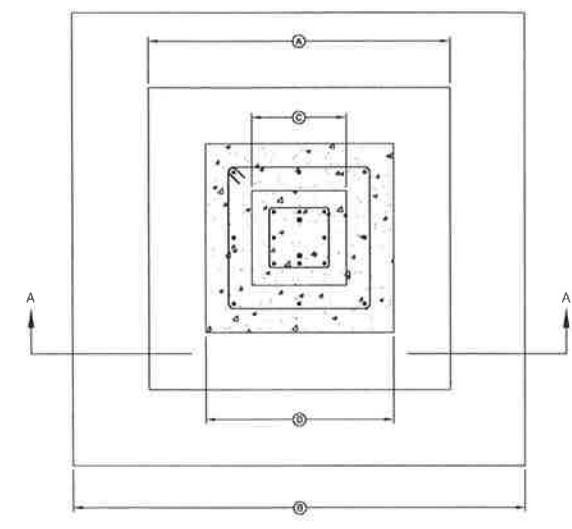
CONFIDENTIAL

DRAWING NO.: — PREVIOUS/REFERENCE
NEW BY: —
DRAWING NO.: **INSS-SS-0050**

SHEET **0001** OF **0002**
PAGE



D TYP. SECTION-SITE EXCAVATION
NTS

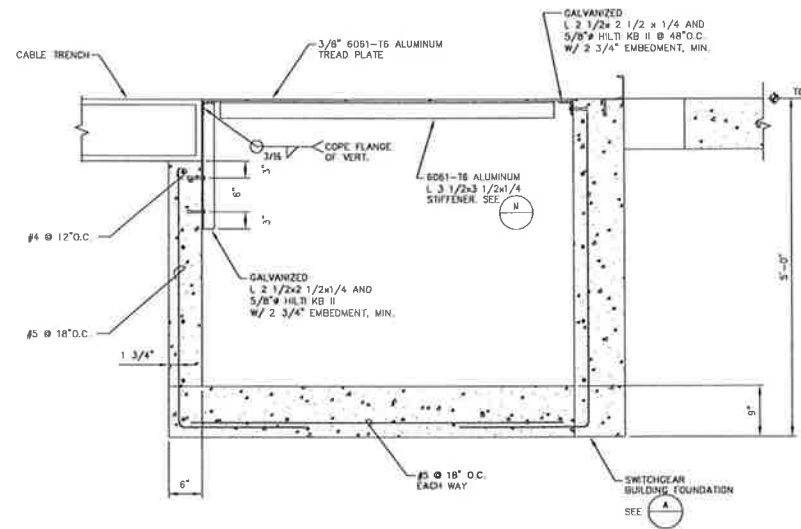
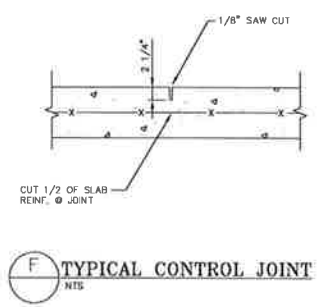
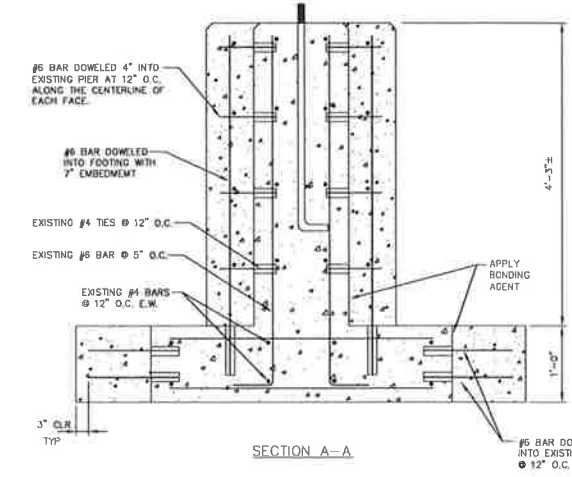


FOUNDATION DIMENSION SCHEDULE

FOUNDATION	EXISTING FOOTING (A)	NEW FOOTING (B)	EXISTING PIER (C)	NEW PIER (D)
34.5 KV RISER SUPPORT STRUCTURE	3'-6"	5'-6"	1'-6"	2'-6"

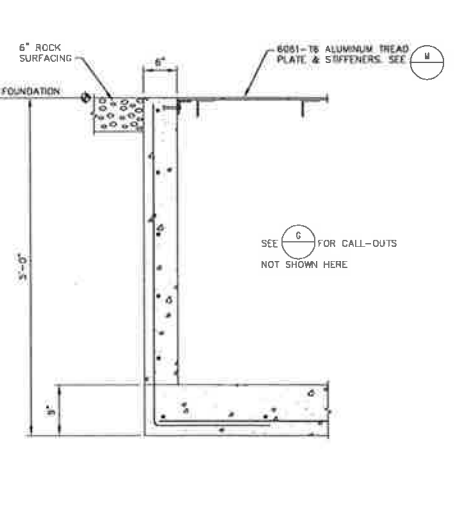
* ALL FOOTINGS AND PIERS ARE SQUARE U.N.O.

- NOTES:**
1. DOWELED BARS SHALL BE INSTALLED WITH HLTI BY 150 ADHESIVE, OR APPROVED EQUAL.
 2. SEE FOUNDATION DIMENSION SCHEDULE.

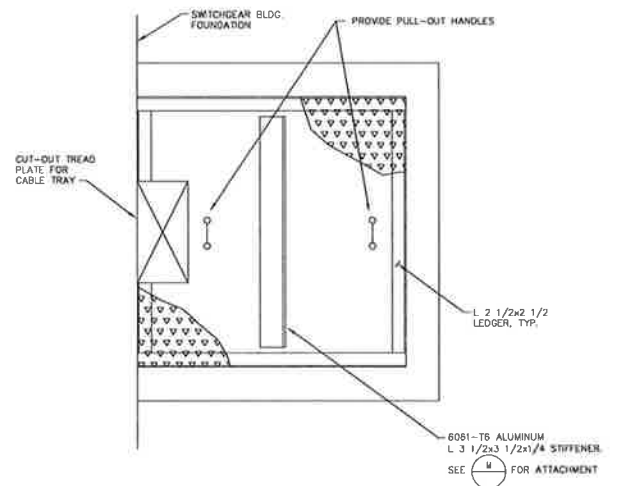


G CABLE TRANSITION TRENCH SECTION
NTS

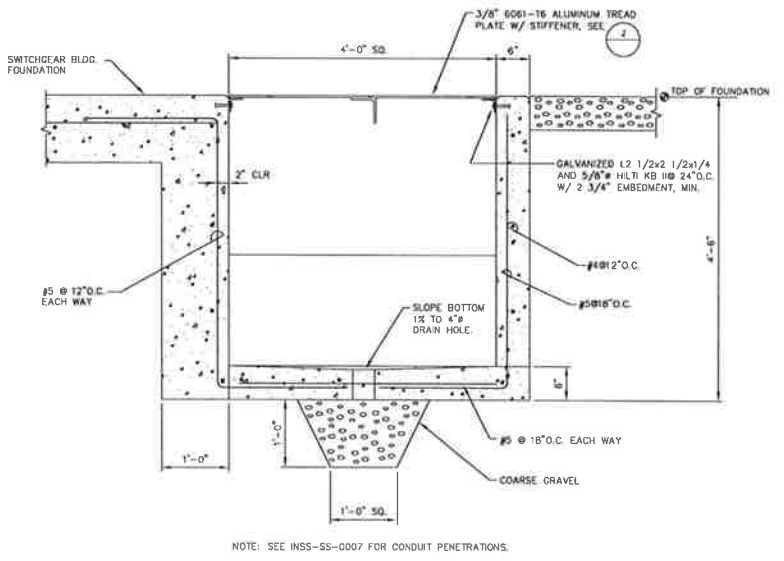
NOTES: SEE INSS-SS-0007 FOR CONDUIT PENETRATION.



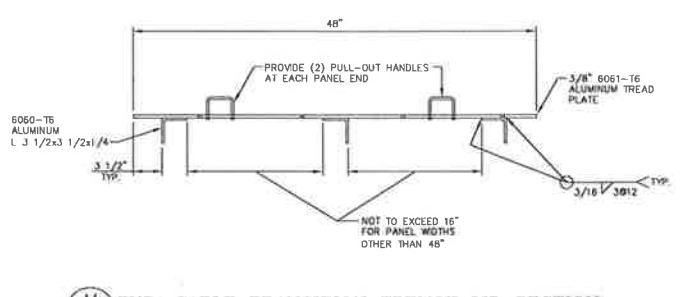
H CABLE TRANSITION TRENCH SECTION
NTS



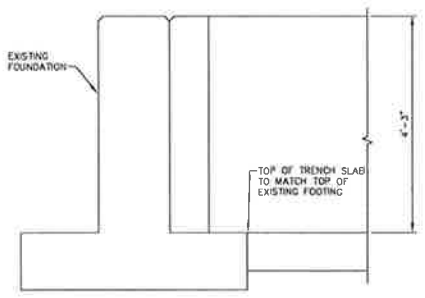
J PULL-BOX LID PLAN
NTS



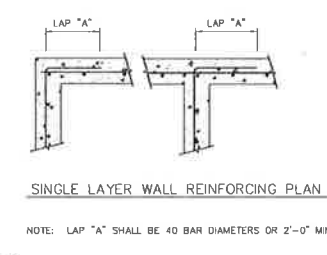
K PULL BOX SECTION
NTS



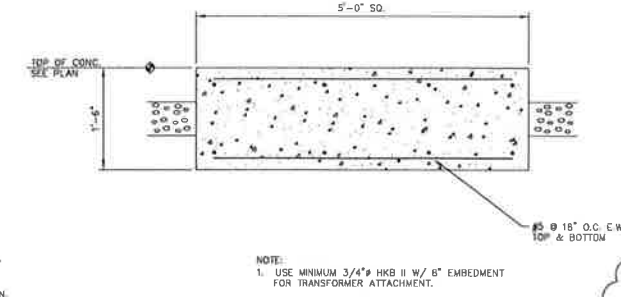
M TYP. CABLE TRANSITION TRENCH LID SECTION
NTS



N CABLE TRANSITION TRENCH AT EXISTING FOUNDATION
NTS



P TYPICAL WALL REINFORCING DETAIL
NTS



Q 500 KVA DRY XFMR FOUNDATION
NTS

FOR REFERENCE ONLY

TO VIEW EXISTING ITEMS REMOVED FROM CLOUD, SEE DRAWING INSS-SS-0050-R SH. 2

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Black & Veatch Consultants, on 05/15/2020

PROJECT: **INSS 138 KV FACILITY RETIREMENT**
ENG./DESIGN: **S. WENDLING (CEA) / B. BENNETT (B&V)** W.O. # **E1720055**

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/05-15-20	BGB/05-15-20		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.G. APPROVED	RECORD APPROVED	DATE
1	IGT AUXILIARY SYSTEM UPGRADE			10.0879CH	E8820117	WFH/DDS 2/25/10

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	INSS-SS-0005/1	FOUNDATION PLAN
2	INSS-SS-0050/1	PARTIAL FOUNDATION PLAN & DETAILS

DRAWING NAME: **INTERNATIONAL SUBSTATION PARTIAL FOUNDATION PLAN & DETAILS**

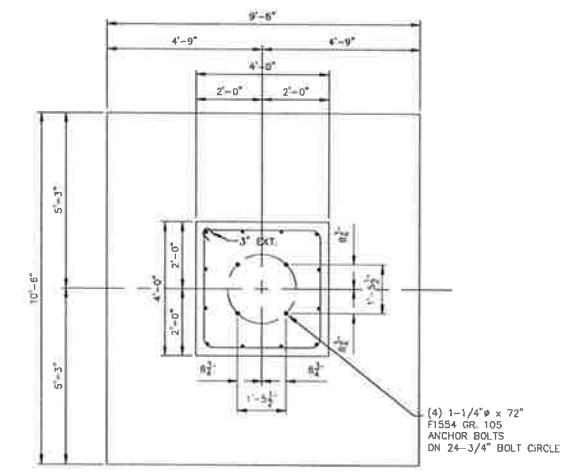
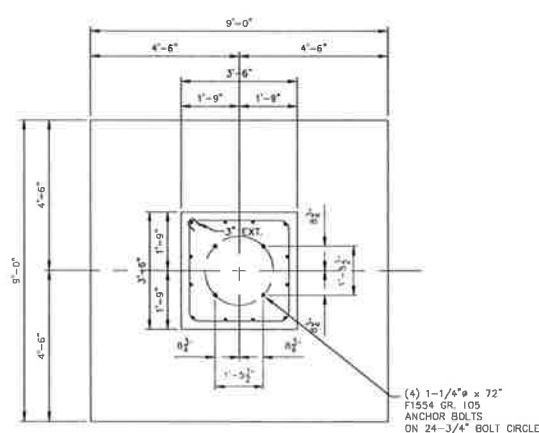
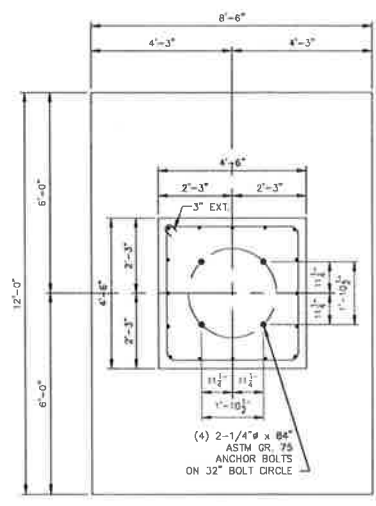
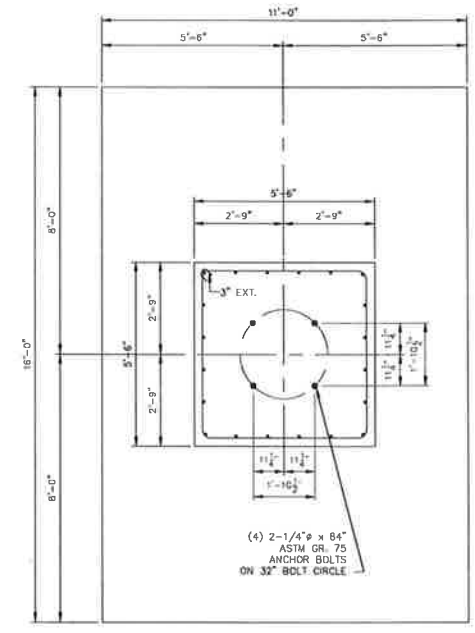
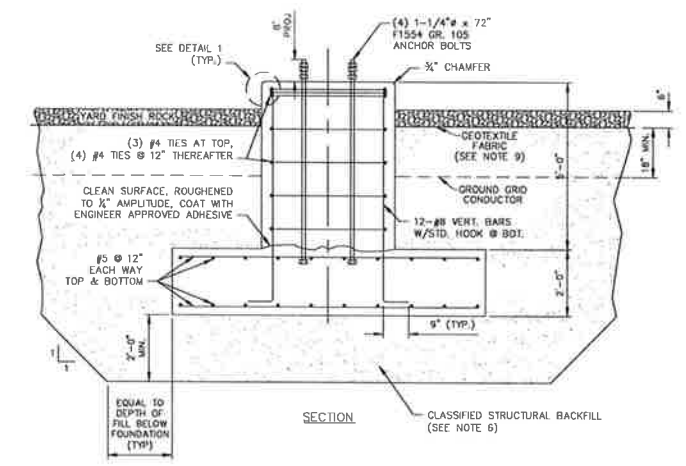
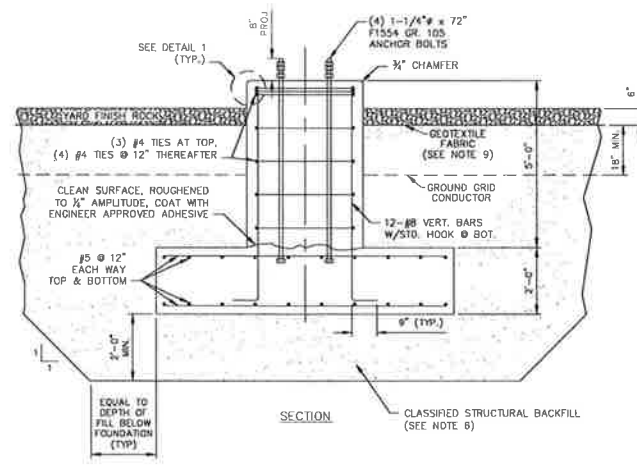
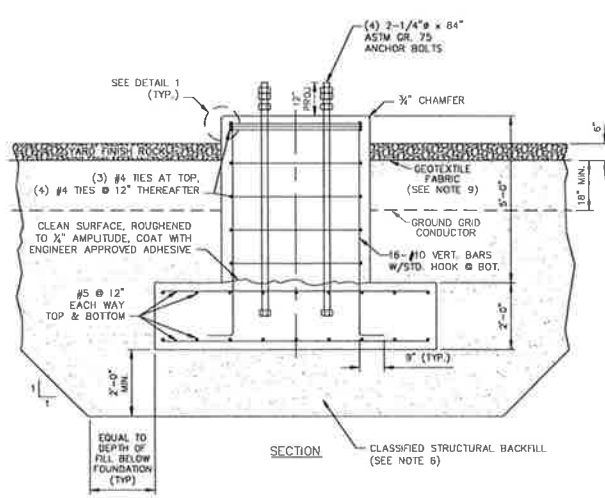
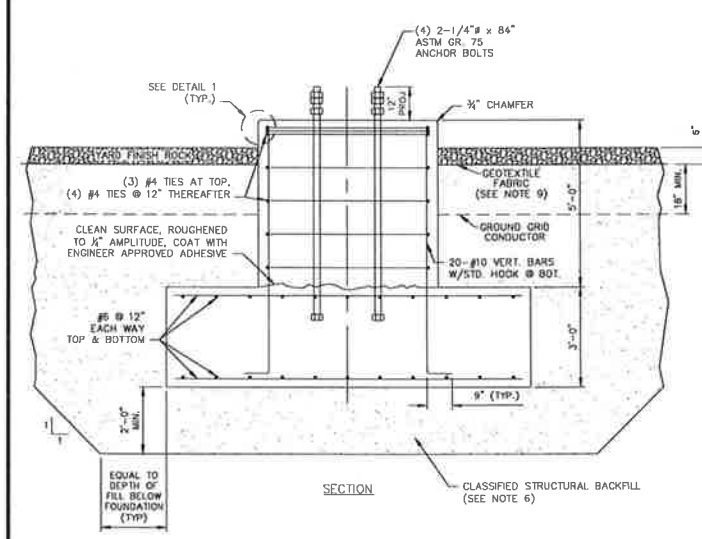
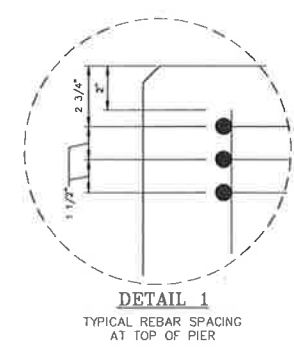
CONFIDENTIAL

DRAWING NO. - PREVIOUS/REFERENCE: **INSS-SS-0050-0002-2.dwg**

DRAWING NO.: **INSS-SS-0050** SHEET **0002** OF **0002** PAGE

- GENERAL NOTES:**
- SEE CONSTRUCTION SPECIFICATIONS FOR FOUNDATION CONSTRUCTION REQUIREMENTS.
 - MINIMUM REINFORCING COVER SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:
 CONCRETE CAST AGAINST EARTH.....3"
 ALL OTHER SURFACES.....2"
 - ALLOWABLE SOIL STRENGTH PARAMETERS:
 VERTICAL BEARING = 2500 PSF
 - ALL LINEAR REINFORCING DIMENSIONS ARE TO INSIDE OF REBAR.
 - ALL RADI OF REINFORCING ARE TO INSIDE OF REBAR.
 - CLASSIFIED STRUCTURAL FILL SHALL CONSIST OF CLEAN, NON-PLASTIC GRANULAR SOIL FREE FROM LUMPS, FROZEN MATERIAL, BALLS OF CLAY, ORGANIC MATTER OR OTHER OBJECTIONABLE MATTER AND SHALL MEET THE FOLLOWING WASHED SIEVE GRADATION:

SIEVE SIZE, INCH	% PASSING BY WEIGHT
3/8	100
3/4	85-100
#4	50-90
#10	25-60
#40	4-30
#200	2-5
 - CONTRACTOR TO COMPACT CLASSIFIED STRUCTURAL FILL TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED PROCTOR MAXIMUM DENSITY (ASTM D-1557). CLASSIFIED STRUCTURAL FILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 10'-12".
 - IN-PLACE SOIL DENSITY AND WATER CONTENT TESTING SHALL BE PERFORMED IN ACCORDANCE WITH ASTM D9938.
 - CONTRACTOR TO REMOVE EXISTING GEOTEXTILE AS NEEDED FOR FOUNDATION CONSTRUCTION. AFTER FOUNDATION INSTALLATION AND BACKFILL, CONTRACTOR SHALL REPLACE ANY REMOVED GEOTEXTILE FABRIC BETWEEN FINISH ROCK AND TOP OF SUBGRADE UP TO FOUNDATION EDGE.



L3
INSS-SS-0005
138KV DOUBLE-BAY H-FRAME
CENTER LEG
SCALE: 1/2" = 1'-0"

L4
INSS-SS-0005
138KV DOUBLE-BAY H-FRAME
OUTSIDE LEG
SCALE: 1/2" = 1'-0"

L5
INSS-SS-0005
34.5KV DOUBLE-BAY H-FRAME
OUTSIDE LEGS
SCALE: 1/2" = 1'-0"

L6
INSS-SS-0005
34.5KV DOUBLE-BAY H-FRAME
MIDDLE LEG
SCALE: 1/2" = 1'-0"

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Blosk & Veatch Consultants, on 03/22/2021

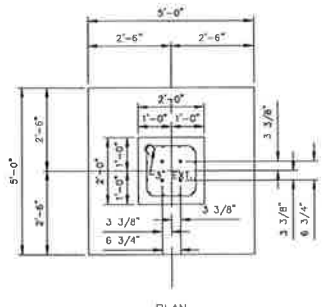
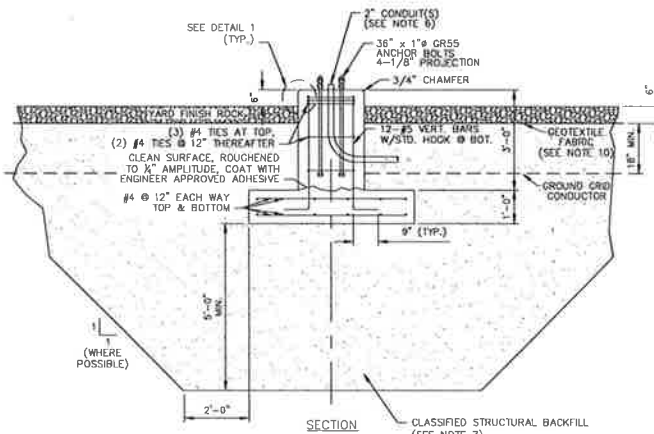
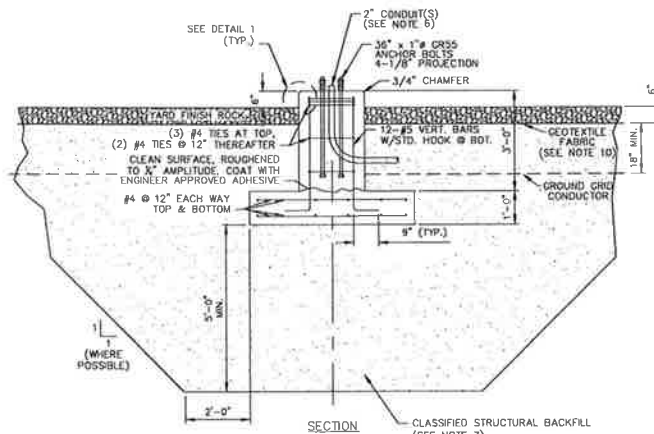
PROJECT: INSS 138 kV FACILITY RETIREMENT				W.O. # E1720055	
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (R&V)					
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGB/03-22-21		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE

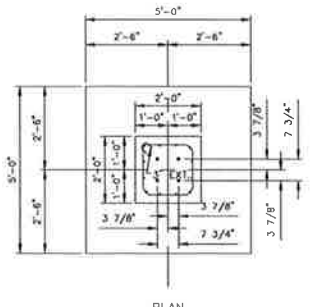


Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

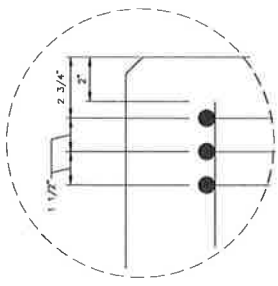
NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	INSS-SS-0005/1	FOUNDATION PLAN
DRAWING NAME: INTERNATIONAL SUBSTATION FOUNDATION DETAILS MISCELLANEOUS SPREAD FOOTINGS		
CONFIDENTIAL		
DRAWING NO.: INSS-SS-0074		SHEET 0001 OF 0002



L7
INSS-SS-0005
20' LIGHT POLE
SCALE: 1/2" = 1'-0"



L8
INSS-SS-0005
30' LIGHT POLE
SCALE: 1/2" = 1'-0"



DETAIL 1
TYPICAL REBAR SPACING
AT TOP OF PIER

- GENERAL NOTES:**
- SEE CONSTRUCTION SPECIFICATIONS FOR FOUNDATION CONSTRUCTION REQUIREMENTS.
 - MINIMUM REINFORCING COVER SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:
CONCRETE CAST AGAINST EARTH.....3"
ALL OTHER SURFACES.....2"
 - ALLOWABLE SOIL STRENGTH PARAMETERS:
VERTICAL BEARING = 2500 PSF
 - ALL LINEAR REINFORCING DIMENSIONS ARE TO OUTSIDE OF REBAR.
 - PLACE ALL REBAR TO MISS ANCHOR BOLTS AND CONDUITS.
 - 2" RGS CONDUIT(S) EMBEDDED IN FOOTING. SEE CONDUIT PLAN DRAWING INSS-SS-0007 SH. 1 FOR REQUIRED QUANTITY AT EACH LIGHT POLE FOUNDATION LOCATION.
 - CLASSIFIED STRUCTURAL FILL SHALL CONSIST OF CLEAN, NON-PLASTIC GRANULAR SOIL FREE FROM LUMPS, FROZEN MATERIAL, BALLS OF CLAY, ORGANIC MATTER OR OTHER OBJECTIONABLE MATTER AND SHALL MEET THE FOLLOWING WASHED SIEVE GRADATION:
- | CLASSIFIED STRUCTURAL FILL | |
|--------------------------------|--------|
| SIEVE SIZE & PASSING BY WEIGHT | |
| 3 INCH | 100 |
| 3/4 INCH | 85-100 |
| #4 | 50-90 |
| #10 | 25-60 |
| #40 | 10-30 |
| #100 | 2-5 |
- CONTRACTOR TO COMPACT CLASSIFIED STRUCTURAL FILL TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED PROCTOR MAXIMUM DENSITY (ASTM D-1557). CLASSIFIED STRUCTURAL FILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 10"-12".
 - IN-PLACE SOIL DENSITY AND WATER CONTENT TESTING SHALL BE PERFORMED IN ACCORDANCE WITH ASTM D6936.
 - CONTRACTOR TO REMOVE EXISTING GEOTEXTILE AS NEEDED FOR FOUNDATION CONSTRUCTION. AFTER FOUNDATION INSTALLATION AND BACKFILL, CONTRACTOR SHALL REPLACE ANY REMOVED GEOTEXTILE FABRIC BETWEEN FINISH ROCK AND TOP OF SUBGRADE UP TO FOUNDATION EDGE.

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Black & Veatch Consultants, on 03/22/2021.

PROJECT: INSS 138 kV FACILITY RETIREMENT			
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V) W.O. # E1720055			
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPERV./DATE
1	ISSUED FOR CONSTRUCTION	WJC/03-22-21	BGB/03-22-21
		APPROVED DIRECTOR/DATE	ENG. STAMP

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	X	X	XXX.XXX	XX	XX	XX/XX/XX



Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

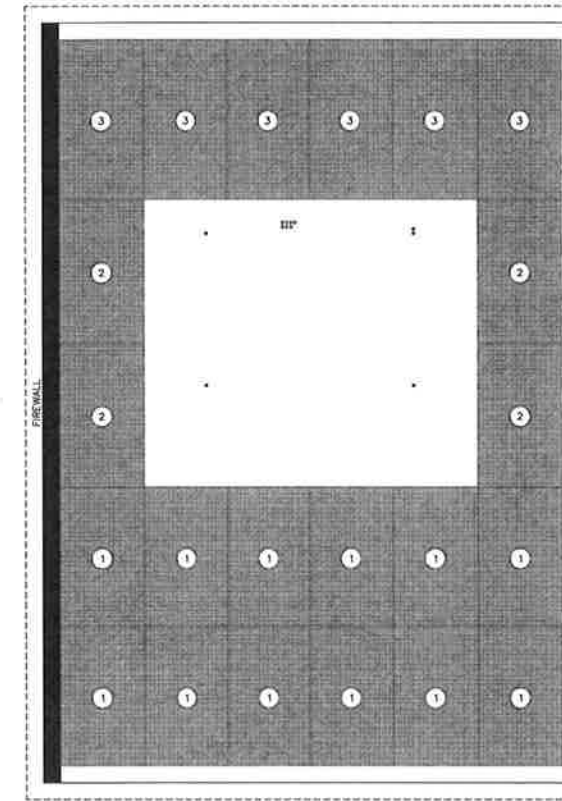
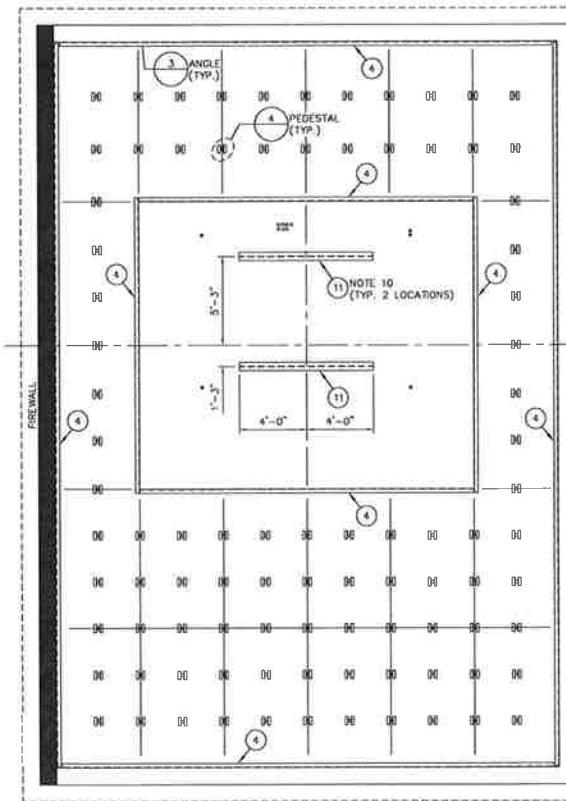
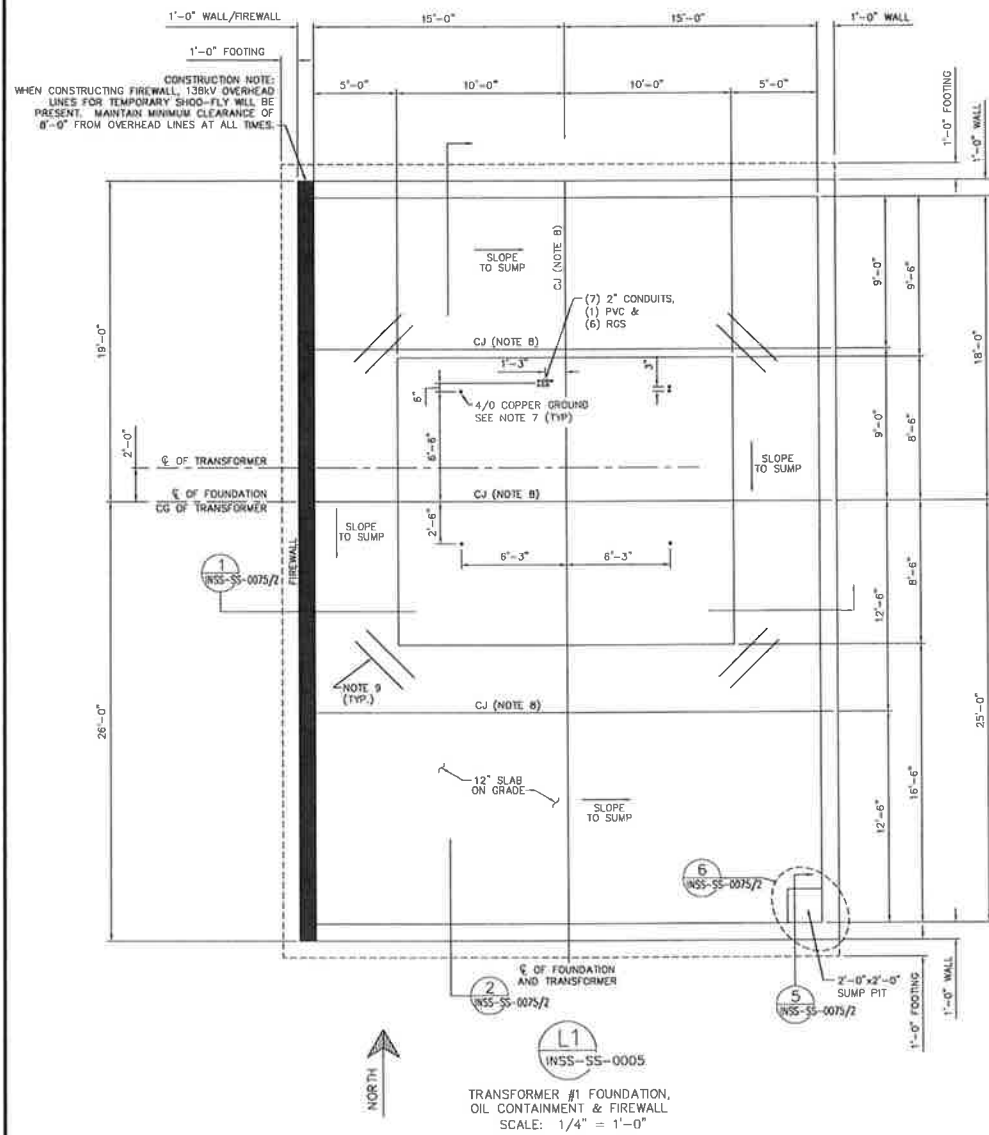
NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	INSS-SS-0005/1	FOUNDATION PLAN

DRAWING NAME: INTERNATIONAL SUBSTATION FOUNDATION DETAILS MISCELLANEOUS SPREAD FOOTINGS

CONFIDENTIAL

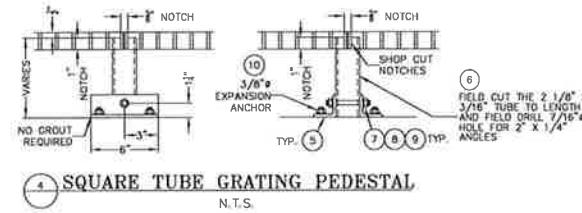
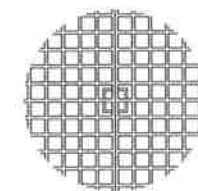
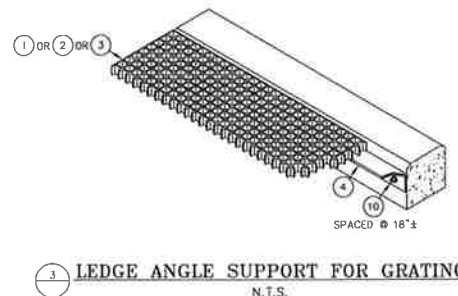
DRAWING NO. - PREVIOUS/REFERENCE: INSS-SS-0074_0002_0.dwg

DRAWING NO.: INSS-SS-0074 SHEET 0002 of 0002 PAGE 1 of 1



GRATING MATERIAL LIST FOR L1 TRANSFORMER FOUNDATION & OIL CONTAINMENT

REF. NO.	DESCRIPTION	UNIT	QUANTITY	MANUFACTURER/CATALOG NO.	OWNER FURNISHED	CONTRACTOR FURNISHED
1	FIBERGRATE 1-1/2" DEEP, 1-1/2" SQUARE MESH MOLDED GRATE, CORVEX RESIN, GRITTED SURFACE, DARK GRAY, 5'-0" x 8'-3" GRATE, CUT FROM 5'-0" x 10'-0" PANEL SEE NOTE 6	EA	12	FIBERGRATE		X
2	FIBERGRATE 1-1/2" DEEP, 1-1/2" SQUARE MESH MOLDED GRATE, CORVEX RESIN, GRITTED SURFACE, DARK GRAY, 5'-0" x 8'-6" GRATE, CUT FROM 5'-0" x 10'-0" PANEL SEE NOTE 6	EA	4	FIBERGRATE		X
3	FIBERGRATE 1-1/2" DEEP, 1-1/2" SQUARE MESH MOLDED GRATE, CORVEX RESIN, GRITTED SURFACE, DARK GRAY, 5'-0" x 9'-6" GRATE, CUT FROM 5'-0" x 10'-0" PANEL SEE NOTE 6	EA	6	FIBERGRATE		X
4	DYNAFORM ANGLE, 3" x 3/8" x 20'-0" LONG, ISOFR RESIN, DARK GRAY, CUT TO LENGTH AS NEEDED	EA	12	FIBERGRATE/DYNAFORM		X
5	DYNAFORM ANGLE, 2" x 1/4" x 20'-0" LONG, ISOFR RESIN, DARK GRAY, CUT TO 6" LENGTHS FOR PEDESTAL SUPPORTS	EA	6	FIBERGRATE/DYNAFORM		X
6	DYNAFORM SQUARE TUBE, 2-1/8" x 3/8" x 20'-0" LONG, ISOFR RESIN, DARK GRAY, CUT TO LENGTH AS NEEDED FOR PEDESTALS	EA	5	FIBERGRATE/DYNAFORM		X
7	DYNAFORM THREADED ROD, 3/8-16 UNC x 4'-0" LONG, VINYL ESTER, CUT TO LENGTH FOR PEDESTAL SUPPORTS	EA	9	FIBERGRATE/DYNAFORM		X
8	DYNAFORM NUT, 3/8-16 UNC, VINYL ESTER	EA	200	FIBERGRATE/DYNAFORM		X
9	DYNAFORM WASHER, 3/8, VINYL ESTER	EA	200	FIBERGRATE/DYNAFORM		X
10	CONCRETE EXPANSION ANCHOR, 3/8" DIA. x 3" LONG, EMBED 2"	EA	550	HILTI KWK BOLT - 3437370		X
11	WIDE FLANGE, W6x25, 8'-0" LONG	EA	2	COMMODITY		X



- GENERAL NOTES:
- SEE CONSTRUCTION SPECIFICATIONS FOR FOUNDATION CONSTRUCTION REQUIREMENTS.
 - MINIMUM REINFORCING COVER SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:
CONCRETE CAST AGAINST EARTH.....3"
ALL OTHER SURFACES.....2"
 - ALLOWABLE SOIL STRENGTH PARAMETERS:
VERTICAL BEARING = 2500 psf
 - ALL LINEAR REINFORCING DIMENSIONS ARE TO OUTSIDE OF REBAR.
 - SEE DRAWINGS INSS-SS-0009/3 AND INSS-SS-0007/1 FOR GROUNDING AND CONDUIT INFORMATION.
 - GRATING SHALL BE FIBERGRATE MOLDED GRATING 1-1/2" DEEP WITH 1-1/2" SQUARE MESH. GRATING CAPACITY SHALL BE ABLE TO SUPPORT A MINIMUM UNIFORM LOAD OF 100 PSF.
 - EXTEND 10' COIL OF COPPER GROUND CONDUCTOR ABOVE FOUNDATION PAD TO BE CONNECTED TO TRANSFORMER
 - SAW-CUT CONTROL JOINT, 3/16" BY 1 1/2" DEEP. FILL WITH SONNEBORN SL-1 OR EQUAL CONTROL JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ACI AND SHALL GENERALLY BE MADE WITHIN 4 TO 12 HOURS AFTER THE SLAB HAS BEEN FINISHED. LESSER TIME SHOULD BE USED IN HOT WEATHER CONDITIONS, AND GREATER TIME IN COLD WEATHER CONDITIONS. THESE CUTS WILL ALSO CONTINUE ONTO THE INSIDE FACE, OUTSIDE FACE AND TOPS OF ALL CONTAINMENT WALLS AND FIREWALL.
 - (2) #8 REBAR, 4' LONG, IN OIL CONTAINMENT SLAB, AT EACH CORNER OF TRANSFORMER SLAB.
 - EMBED WIDE FLANGES INTO CONCRETE WITH FLAT FACE UP, FLUSH WITH TOP OF CONCRETE, FOR TRANSFORMER ANCHORAGE. WELD BASE OF TRANSFORMER TO EMBEDDED WIDE FLANGES WITH 1/4" FILLET WELDS FULL LENGTH OF WIDE FLANGES. DUE TO VAGUE TRANSFORMER SHOP DRAWING INFORMATION, FIELD TO CONSTRUCT, PRIOR TO CONSTRUCTION, THAT 6'-8" WIDE FLANGE CENTERLINE SPACING AS SHOWN AGREES WITH ACTUAL TRANSFORMER BASE WIDTH FOR WELDING TRANSFORMER BASE TO CENTER OF EMBEDDED WIDE FLANGES.

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Black & Veatch Consultants, on 05/15/2020

PROJECT: INSS 138 kV FACILITY RETIREMENT
ENG./DESIGN: S. WENDLING (CEA) / B. BENNETT (B&V) W.O. # E1720055

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/05-15-20	BGB/05-15-20		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE

CHUGACH
POWERING ALASKA'S FUTURE

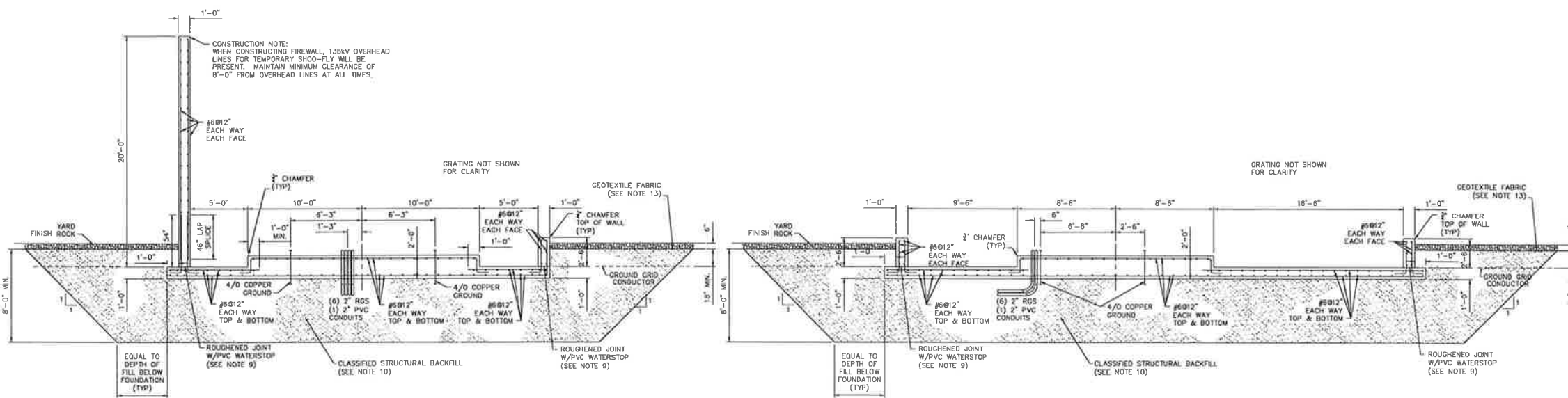
Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	INSS-SS-0005/1	FOUNDATION PLAN
2	INSS-SS-0075/2	FOUNDATION DETAILS - FOUNDATION / OIL CONTAINMENT - TRANSFORMER #1

DRAWING NAME: INTERNATIONAL SUBSTATION FOUNDATION/OIL CONTAINMENT TRANSFORMER #1

CONFIDENTIAL

DRAWING NO. INSS-SS-0075 SHEET 0001 OF 0002
PAGE 1



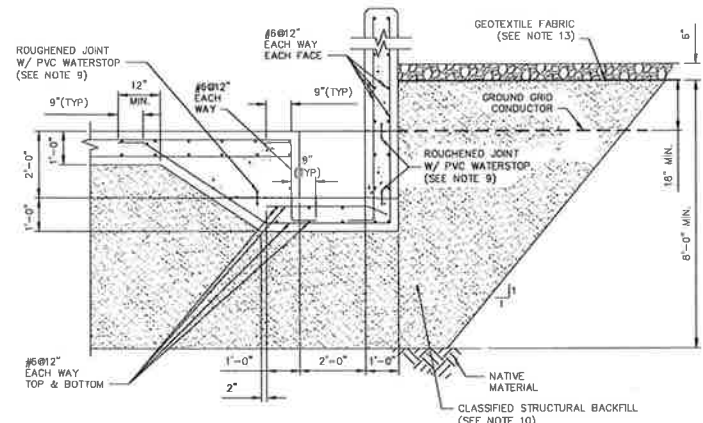
1 SECTION
INSS-SS-0075/1

TRANSFORMER #1 FOUNDATION,
OIL CONTAINMENT & FIREWALL
SCALE: 1/4" = 1'-0"

2 SECTION
INSS-SS-0075/1

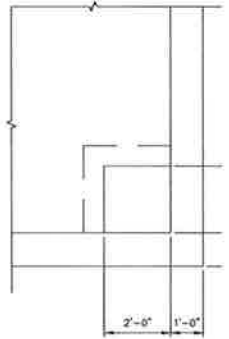
TRANSFORMER #1 FOUNDATION,
OIL CONTAINMENT & FIREWALL
SCALE: 1/4" = 1'-0"

- GENERAL NOTES:**
- SEE CONSTRUCTION SPECIFICATIONS FOR FOUNDATION CONSTRUCTION REQUIREMENTS.
 - MINIMUM REINFORCING COVER SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:
CONCRETE CAST AGAINST EARTH.....3"
ALL OTHER SURFACES.....2"
 - ALLOWABLE SOIL STRENGTH PARAMETERS:
VERTICAL BEARING = 2500 PSF
 - ALL LINEAR REINFORCING DIMENSIONS ARE TO OUTSIDE OF REBAR.
 - EXTEND EMBEDDED 4/0 GROUNDING THROUGH TRANSFORMER PAD BOTTOM AND CONNECT TO GROUND GRID IN ACCORDANCE WITH GROUNDING PLAN.
 - GRATING SHALL BE FIBERGLASS MOLDED GRATING 1-1/2" DEEP WITH 1-1/2" SQUARE MESH. GRATING CAPACITY SHALL BE ABLE TO SUPPORT A MINIMUM UNIFORM LOAD OF 100 PSF.
 - SAW-CUT CONTROL JOINT, 3/16" BY 1-1/2" DEEP. FILL WITH SONNEBORN SI-1 OR EQUAL. CONTROL JOINTS TO BE CONSTRUCTED IN ACCORDANCE WITH ACI AND SHALL GENERALLY BE MADE WITHIN 4 TO 12 HOURS AFTER THE SLAB HAS BEEN FINISHED. LESSER TIME SHOULD BE USED IN HOT WEATHER CONDITIONS, AND GREATER TIME IN COLD WEATHER CONDITIONS. THESE CUTS WILL ALSO CONTINUE ONTO THE INSIDE FACE, OUTSIDE FACE AND TOPS OF ALL CONTAINMENT WALLS AND FIREWALL.
 - APPLY MASTERFILL 400CT BY BASF (OR EQUAL) JOINT SEALANT IN A 1/4" x 1" DEEP TOOLED JOINT ALL AROUND AT OIL CONTAINMENT CONDUIT AND PIPE PENETRATIONS THROUGH CONCRETE.
 - PVC WATERSTOP SHALL BE 3/8" x 6" FLAT PROFILE WITH MECHANICAL RIBBED ENDS, GREENSTREAK STYLE 579 (OR EQUAL). HOLD SECURELY IN PROPER POSITION TO AVOID MOVEMENT DURING CONCRETE PLACEMENT. INSTALL AND JOIN ENDS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - CLASSIFIED STRUCTURAL FILL SHALL CONSIST OF CLEAN, NON-PLASTIC GRANULAR SOIL FREE FROM LUMPS, FROZEN MATERIAL, BALLS OF CLAY, ORGANIC MATTER OR OTHER OBJECTIONABLE MATTER AND SHALL MEET THE FOLLOWING WASHED SIEVE GRADATION:
- | CLASSIFIED STRUCTURAL FILL | |
|----------------------------|---------------------|
| SIEVE SIZE | % PASSING BY WEIGHT |
| 3/8 INCH | 100 |
| 3/4 INCH | 85-100 |
| #4 | 50-90 |
| #10 | 25-80 |
| #40 | 4-30 |
| #200 | 2-5 |
- CONTRACTOR TO COMPACT CLASSIFIED STRUCTURAL FILL TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED PROCTOR MAXIMUM DENSITY (ASTM D-1557). CLASSIFIED STRUCTURAL FILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 10"-12".
 - IN-PLACE SOIL DENSITY AND WATER CONTENT TESTING SHALL BE PERFORMED IN ACCORDANCE WITH ASTM D6938.
 - CONTRACTOR TO REMOVE EXISTING GEOTEXTILE AS NEEDED FOR FOUNDATION CONSTRUCTION. AFTER FOUNDATION INSTALLATION AND BACKFILL, CONTRACTOR SHALL REPLACE ANY REMOVED GEOTEXTILE FABRIC BETWEEN FINISH ROCK AND TOP OF SUBGRADE UP TO FOUNDATION EDGE.



5 SECTION
INSS-SS-0075/1

SUMP PUMP PIT
SCALE: 1/2" = 1'-0"



6 DETAIL
INSS-SS-0075/1

SUMP PUMP PIT
SCALE: 1/2" = 1'-0"

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Black & Veatch Consultants, on 03/22/2021

PROJECT: INSS 138 kV FACILITY RETIREMENT				W.O. # E1720055	
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V)					
NO.	DESIGN/CONSTRUCTION/ASBUILTY REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGB/03-22-21		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE



Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

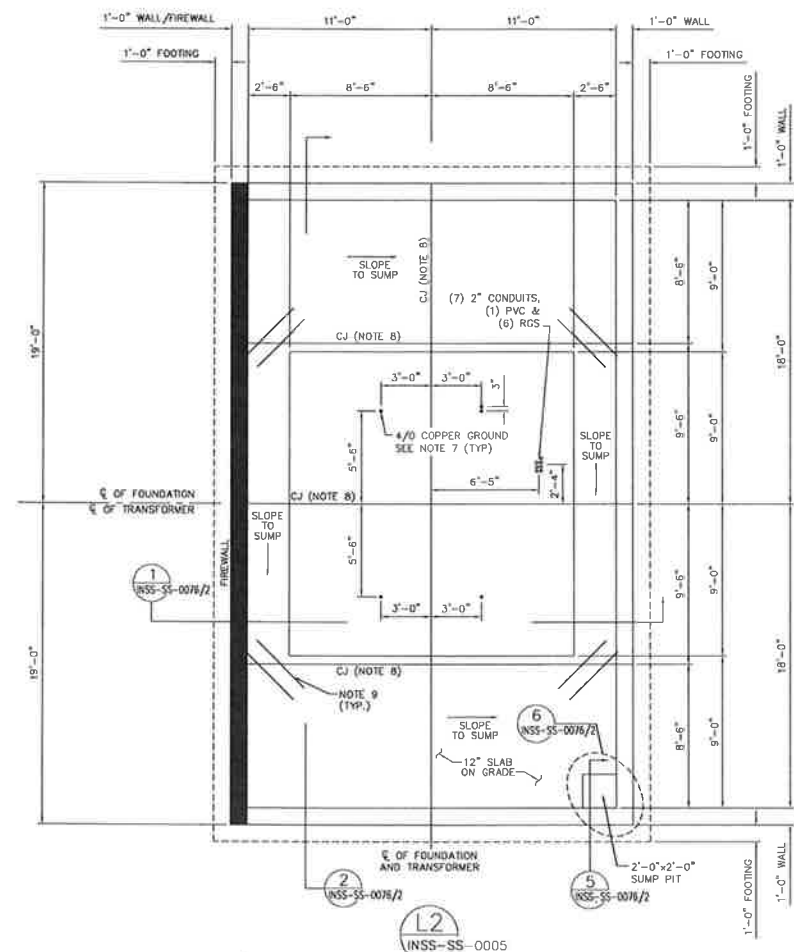
NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	INSS-SS-0075/1	FOUNDATION DETAILS - FOUNDATION / OIL CONTAINMENT - TRANSFORMER #1
2		

DRAWING NAME: INTERNATIONAL SUBSTATION FOUNDATION DETAILS FOUNDATION/OIL CONTAINMENT TRANSFORMER #1

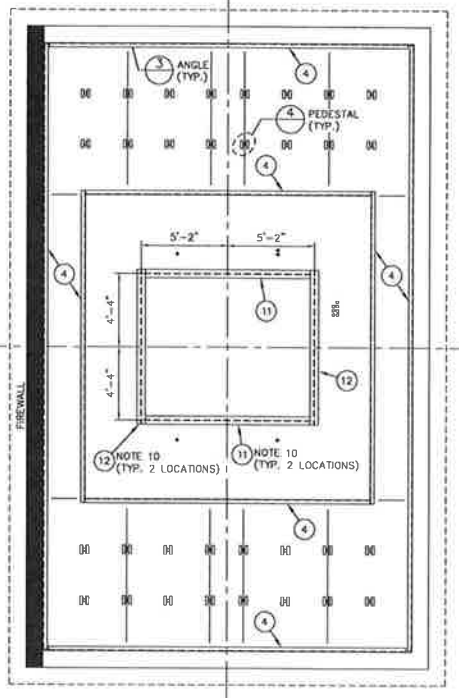
CONFIDENTIAL

DRAWING NO. - PREVIOUS/REFERENCE: INSS-SS-0075_0002_0.dwg

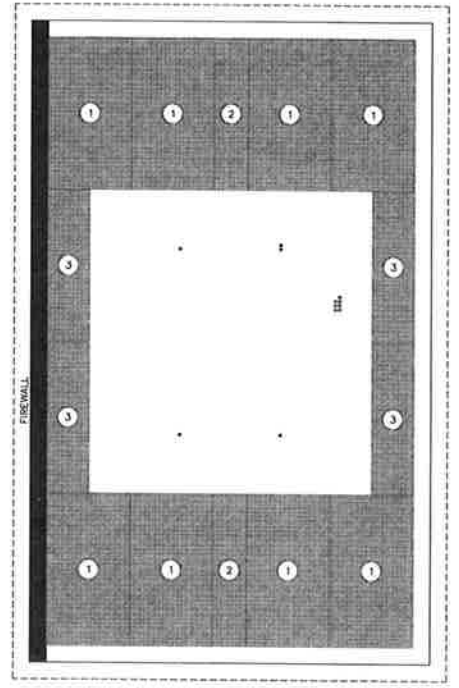
DRAWING NO. INSS-SS-0075 SHEET 0002 OF 0002 PAGE 2 / 2



TRANSFORMER #2 FOUNDATION, OIL CONTAINMENT & FIREWALL
SCALE: 1/4" = 1'-0"



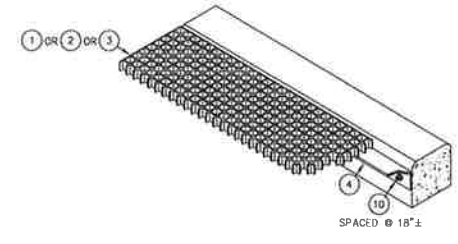
TRANSFORMER #2 GRATING SUPPORTS & EMBEDDED ANCHORAGE CHANNELS
SCALE: 1/4" = 1'-0"



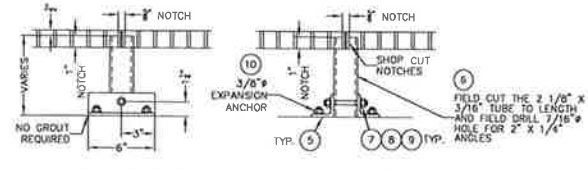
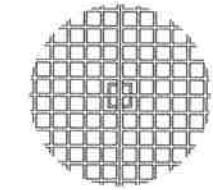
TRANSFORMER #2 GRATING LAYOUT
SCALE: 1/4" = 1'-0"

GRATING MATERIAL LIST FOR L2 TRANSFORMER FOUNDATION & OIL CONTAINMENT

REF. NO.	DESCRIPTION	UNL	QUANTITY	MANUFACTURER/CATALOG NO.	OWNER FURNISHED	CONTRACTOR FURNISHED
1	FIBERGRATE 1-1/2" DEEP, 1-1/2" SQUARE MESH MOLDED GRATE, CORVEX RESIN, GRITTED SURFACE, DARK GRAY, 5'-0" x 9'-0" GRATE, CUT FROM 5'-0" X 10'-0" PANEL SEE NOTE 6	EA	8	FIBERGRATE		X
2	FIBERGRATE 1-1/2" DEEP, 1-1/2" SQUARE MESH MOLDED GRATE, CORVEX RESIN, GRITTED SURFACE, DARK GRAY, 2'-0" x 9'-0" GRATE, CUT FROM 5'-0" X 10'-0" PANEL SEE NOTE 6	EA	2	FIBERGRATE		X
3	FIBERGRATE 1-1/2" DEEP, 1-1/2" SQUARE MESH MOLDED GRATE, CORVEX RESIN, GRITTED SURFACE, DARK GRAY, 2'-0" x 9'-0" GRATE, CUT FROM 3'-0" X 10'-0" PANEL SEE NOTE 6	EA	4	FIBERGRATE		X
4	DYNAFORM ANGLE, 3" X 3/8" X 20'-0" LONG, ISOFR RESIN, DARK GRAY, CUT TO LENGTH AS NEEDED	EA	10	FIBERGRATE/DYNAFORM		X
5	DYNAFORM ANGLE, 2" X 1/4" X 20'-0" LONG, ISOFR RESIN, DARK GRAY, CUT TO 5" LENGTHS FOR PEDESTAL SUPPORTS	EA	2	FIBERGRATE/DYNAFORM		X
6	DYNAFORM SQUARE TUB, 2'-7/8" X 3/16" X 20'-0" LONG, ISOFR RESIN, DARK GRAY, CUT TO LENGTH AS NEEDED FOR PEDESTALS	EA	3	FIBERGRATE/DYNAFORM		X
7	DYNAFORM THREADED ROD, 3/8-16 UNC X 4'-0" LONG, VINYL ESTER, CUT TO LENGTH FOR PEDESTAL SUPPORTS	EA	4	FIBERGRATE/DYNAFORM		X
8	DYNAFORM NUT, 3/8-16 UNC, VINYL ESTER	EA	75	FIBERGRATE/DYNAFORM		X
9	DYNAFORM WASHER, 3/8, VINYL ESTER	EA	75	FIBERGRATE/DYNAFORM		X
10	CONCRETE EXPANSION ANCHOR, 3/8" DIA X 3" LONG, EMBED 2"	EA	275	HILTI KWIK BOLT - 3437370		X
11	WDF FLANGE, W6x25, 9'-10" LONG	EA	2	COMMODITY		X
12	WIDE FLANGE, W6x25, 9'-2" LONG	EA	2	COMMODITY		X



LEDGE ANGLE SUPPORT FOR GRATING
N.T.S.



SQUARE TUBE GRATING PEDESTAL
N.T.S.

GENERAL NOTES:

- SEE CONSTRUCTION SPECIFICATIONS FOR FOUNDATION CONSTRUCTION REQUIREMENTS.
- MINIMUM REINFORCING COVER SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:
CONCRETE CAST AGAINST EARTH: 3"
ALL OTHER SURFACES: 2"
- ALLOWABLE SOIL STRENGTH PARAMETERS:
VERTICAL BEARING = 2500 psf
- ALL LINEAR REINFORCING DIMENSIONS ARE TO OUTSIDE OF REBAR.
- SEE DRAWINGS INSS-SS-0009/3 AND INSS-SS-0007/1 FOR GROUNDING AND CONDUIT INFORMATION.
- GRATING SHALL BE FIBERGRATE MOLDED GRATING 1-1/2" DEEP WITH 1-1/2" SQUARE MESH. GRATING CAPACITY SHALL BE ABLE TO SUPPORT A MINIMUM UNIFORM LOAD OF 100 PSF.
- EXTEND 10' COIL OF COPPER GROUND CONDUCTOR ABOVE FOUNDATION PAD TO BE CONNECTED TO TRANSFORMER.
- SAW-CUT CONTROL JOINT, 3/16" BY 1 1/2" DEEP. FILL WITH SONNEBORN SL-1 OR EQUAL. CONTROL JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ACI AND SHALL GENERALLY BE MADE WITHIN 4 TO 12 HOURS AFTER THE SLAB HAS BEEN FINISHED. LESSER TIME SHOULD BE USED IN HOT WEATHER CONDITIONS, AND GREATER TIME IN COLD WEATHER CONDITIONS. THESE CUTS WILL ALSO CONTINUE ONTO THE INSIDE FACE, OUTSIDE FACE AND TOPS OF ALL CONTAINMENT WALLS AND FIREWALL.
- (2) #8 REBAR, 4' LONG, IN OIL CONTAINMENT SLAB, AT EACH CORNER OF TRANSFORMER SLAB.
- EMBED WIDE FLANGES INTO CONCRETE WITH FLAT FACE UP, FLUSH WITH TOP OF CONCRETE, FOR TRANSFORMER ANCHORAGE. WELD BASE OF TRANSFORMER TO EMBEDDED WIDE FLANGES WITH 1/4" FILLET WELDS FULL LENGTH OF WIDE FLANGES.

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Block & Vealch Consultants, on 05/15/2020

PROJECT: INSS 138 kV FACILITY RETIREMENT		W.O. # E1720055	
ENG./DESIGN: S. WENDLING (CEA) / B. BENNETT (R&V)			
NO.	DESIGN/CONSTRUCTION/ASBULT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE
0	ISSUED FOR CONSTRUCTION	MJC/05-15-20	BGB/05-15-20
		APPROVED DIRECTOR/DATE	
		ENG. STAMP	

NO.	RECORD REVISION	TECH. / DWN. BY	W.P. #	W.O. APPROVED	RECORD APPROVED	DATE



Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	INSS-SS-0005/1	FOUNDATION PLAN
2	INSS-SS-0076/2	FOUNDATION DETAILS - FOUNDATION / OIL CONTAINMENT - TRANSFORMER #2

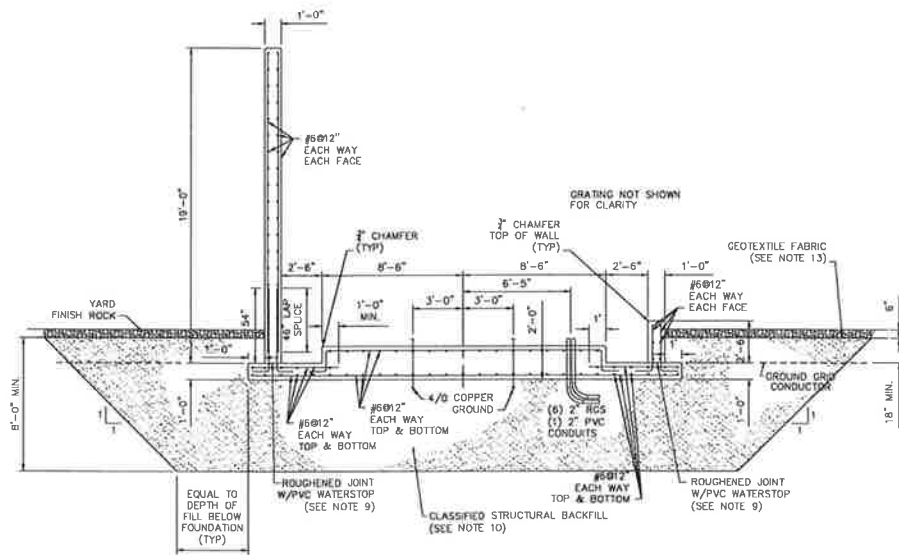
DRAWING NAME: INTERNATIONAL SUBSTATION FOUNDATION/OIL CONTAINMENT TRANSFORMER #2

CONFIDENTIAL

DRAWING NO. - PREVIOUS/REFERENCE: INSS-SS-0076_0001_0.dwg

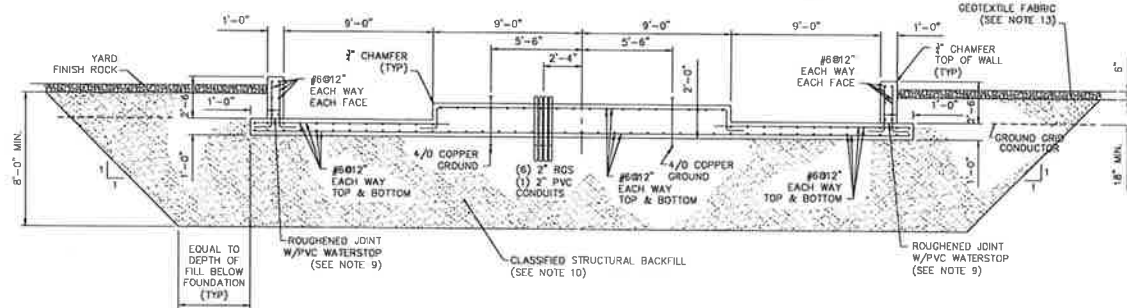
DRAWING NO.: INSS-SS-0076

SHEET 0001 OF 0002



1 SECTION
INSS-SS-0076/1

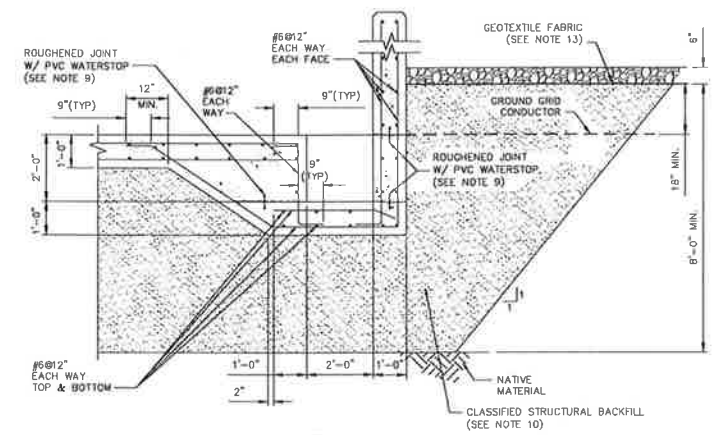
TRANSFORMER #2 FOUNDATION,
OIL CONTAINMENT & FIREWALL
SCALE: 1/4" = 1'-0"



2 SECTION
INSS-SS-0076/1

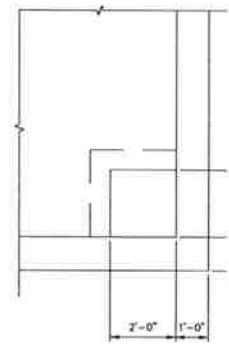
TRANSFORMER #2 FOUNDATION,
OIL CONTAINMENT & FIREWALL
SCALE: 1/4" = 1'-0"

- GENERAL NOTES:**
- SEE CONSTRUCTION SPECIFICATIONS FOR FOUNDATION CONSTRUCTION REQUIREMENTS.
 - MINIMUM REINFORCING COVER SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:
CONCRETE CAST AGAINST EARTH.....3"
ALL OTHER SURFACES.....2"
 - ALLOWABLE SOIL STRENGTH PARAMETERS:
VERTICAL BEARING = 2500 PSF
 - ALL LINEAR REINFORCING DIMENSIONS ARE TO OUTSIDE OF REBAR.
 - EXTEND EMBEDDED 4/D GROUNDING THROUGH TRANSFORMER PAD BOTTOM AND CONNECT TO GROUND GRID IN ACCORDANCE WITH GROUNDING PLAN.
 - GRATING SHALL BE FIBERGLASS MOLDED GRATING 1-1/2" DEEP WITH 1-1/2" SQUARE MESH. GRATING CAPACITY SHALL BE ABLE TO SUPPORT A MINIMUM UNIFORM LOAD OF 100 PSF.
 - SAW-CUT CONTROL JOINT, 3/16" BY 1-1/2" DEEP. FILL WITH SONNEBORN SL-1 OR EQUAL. CONTROL JOINTS TO BE CONSTRUCTED IN ACCORDANCE WITH AID AND SHALL GENERALLY BE MADE WITHIN 4 TO 12 HOURS AFTER THE SLAB HAS BEEN FINISHED. LESSER TIME SHOULD BE USED IN HOT WEATHER CONDITIONS, AND GREATER TIME IN COLD WEATHER CONDITIONS. THESE CUTS WILL ALSO CONTINUE ONTO THE INSIDE FACE, OUTSIDE FACE AND TOPS OF ALL CONTAINMENT WALLS AND FIREWALL.
 - APPLY MASTERFILL 400CT BY BASF (OR EQUAL) JOINT SEALANT IN A 1/4" x 1" DEEP TOOLED JOINT ALL AROUND AT OIL CONTAINMENT CONDUIT AND PIPE PENETRATIONS THROUGH CONCRETE.
 - PVC WATERSTOP SHALL BE 3/8" x 6" FLAT PROFILE WITH MECHANICAL RIBBED ENDS, GREENSTREAK STYLE 679 (OR EQUAL). HOLD SECURELY IN PROPER POSITION TO AVOID MOVEMENT DURING CONCRETE PLACEMENT. INSTALL AND JOIN ENDS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - CLASSIFIED STRUCTURAL FILL SHALL CONSIST OF CLEAN, NON-PLASTIC GRANULAR SOIL FREE FROM LUMPS, FROZEN MATERIAL, BALLS OF CLAY, ORGANIC MATTER OR OTHER OBJECTIONABLE MATTER AND SHALL MEET THE FOLLOWING WASHED SIEVE GRADATION.
- | CLASSIFIED STRUCTURAL FILL | |
|----------------------------|---------------------|
| SIEVE SIZE | % PASSING BY WEIGHT |
| 3 INCH | 100 |
| 3/4 INCH | 85-100 |
| #4 | 50-90 |
| #10 | 25-50 |
| #40 | 4-30 |
| #200 | 2-5 |
- CONTRACTOR TO COMPACT CLASSIFIED STRUCTURAL FILL TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED PROCTOR MAXIMUM DENSITY (ASTM D-1557). CLASSIFIED STRUCTURAL FILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 10"-12".
 - IN-PLACE SOIL DENSITY AND WATER CONTENT TESTING SHALL BE PERFORMED IN ACCORDANCE WITH ASTM D6938.
 - CONTRACTOR TO REMOVE EXISTING GEOTEXTILE AS NEEDED FOR FOUNDATION CONSTRUCTION. AFTER FOUNDATION INSTALLATION AND BACKFILL, CONTRACTOR SHALL REPLACE ANY REMOVED GEOTEXTILE FABRIC BETWEEN FINISH ROCK AND TOP OF SUBGRADE UP TO FOUNDATION EDGE.



5 SECTION
INSS-SS-0076/1

SUMP PUMP PIT
SCALE: 1/2" = 1'-0"



6 DETAIL
INSS-SS-0076/1

SUMP PUMP PIT
SCALE: 1/2" = 1'-0"

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Black & Veatch Consultants, on 03/22/2021

PROJECT: INSS 138 kV FACILITY RETIREMENT				W.O. # E1720055	
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V)					
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BOB/03-22-21		

NO.	RECORD REVISION	TECH / DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE



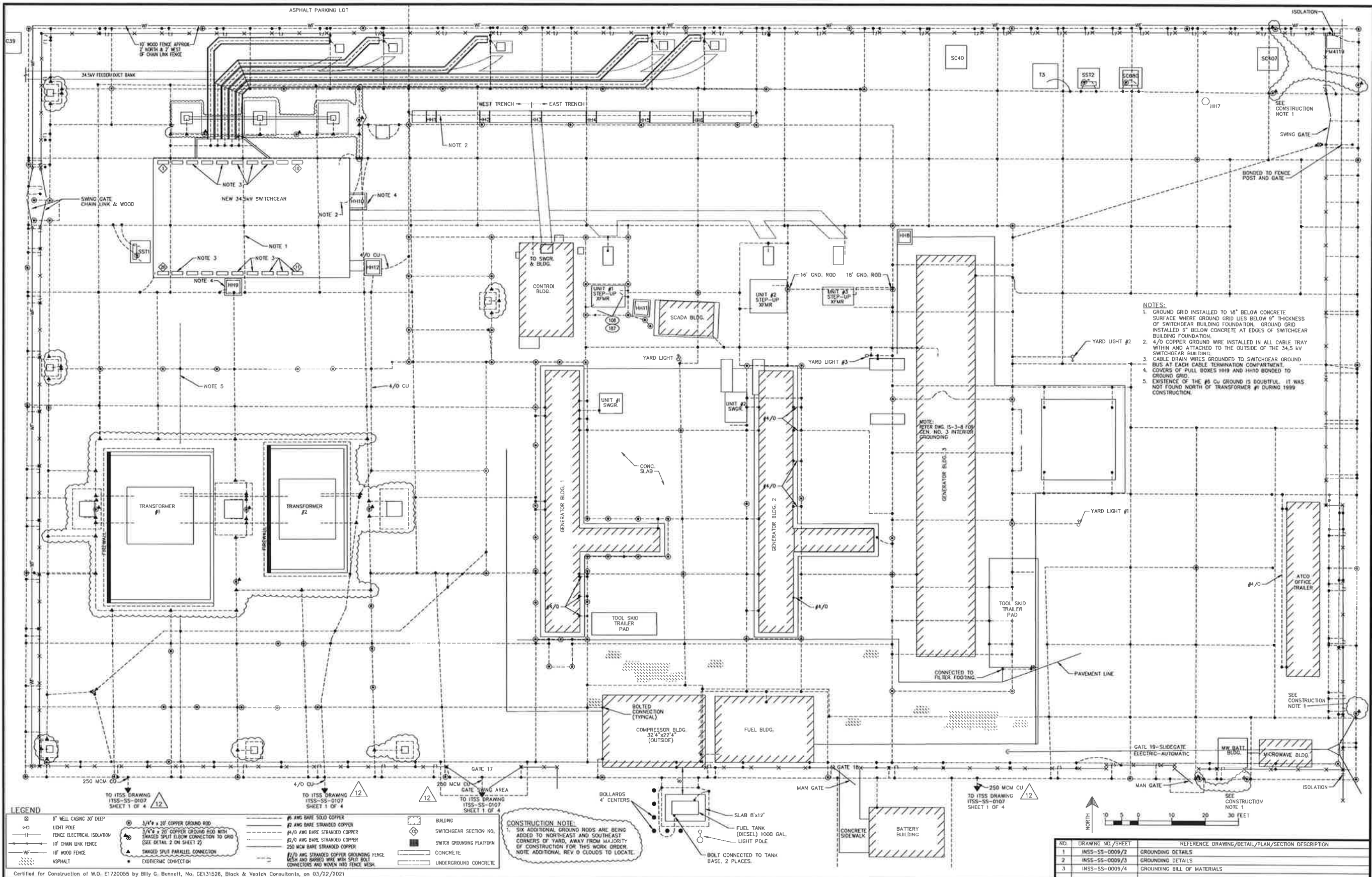
Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	INSS-SS-0076/1	FOUNDATION DETAILS - FOUNDATION / OIL CONTAINMENT - TRANSFORMER #2
2		

DRAWING NAME:
**INTERNATIONAL SUBSTATION
FOUNDATION DETAILS
FOUNDATION/OIL CONTAINMENT
TRANSFORMER #2**

CONFIDENTIAL

DRAWING NO. - PREVIOUS/REFERENCE
NEW
DRAWING NO.: INSS-SS-0076 SHEET 0002 of 0002
PAGE /



NOTES:
 1. GROUND GRID INSTALLED TO 18" BELOW CONCRETE SURFACE WHERE GROUND GRID LIES BELOW 9" THICKNESS OF SWITCHGEAR BUILDING FOUNDATION. GROUND GRID INSTALLED 6" BELOW CONCRETE AT EDGES OF SWITCHGEAR BUILDING FOUNDATION.
 2. 4/0 COPPER GROUND WIRE INSTALLED IN ALL CABLE TRAY WITHIN AND ATTACHED TO THE OUTSIDE OF THE 34.5 KV SWITCHGEAR BUILDING.
 3. CABLE DRAIN WIRES GROUNDED TO SWITCHGEAR GROUND BUS AT EACH CABLE TERMINATION COMPARTMENT.
 4. COVERS OF PULL BOXES HH19 AND HH18 BONDED TO GROUND GRID.
 5. EXISTENCE OF THE #6 CU GROUND IS DOUBTFUL. IT WAS NOT FOUND NORTH OF TRANSFORMER #1 DURING 1999 CONSTRUCTION.

LEGEND

○	6" WELL CASING 30" DEEP	○	#1 AWG BARE STRANDED COPPER
—	LIGHT POLE	—	#2 AWG BARE STRANDED COPPER
—	FENCE ELECTRICAL ISOLATION	—	#4 AWG BARE STRANDED COPPER
—	10' CHAIN LINK FENCE	—	#1 AWG BARE STRANDED COPPER
—	10' WOOD FENCE	—	250 MCM BARE STRANDED COPPER
—	ASPHALT	—	#1/2 AWG STRANDED COPPER GROUNDING FENCE WESH AND BARED WIRE WITH SPLIT BOLT CONNECTORS AND WOVEN INTO FENCE WESH.
—	TO ITSS DRAWING ITSS-SS-0107 SHEET 1 OF 4	—	CONCRETE
—	TO ITSS DRAWING ITSS-SS-0107 SHEET 1 OF 4	—	UNDERGROUND CONCRETE

CONSTRUCTION NOTE:
 SIX ADDITIONAL GROUND RODS ARE BEING ADDED TO NORTHEAST AND SOUTHWEST CORNERS OF YARD, AWAY FROM MAJORITY OF CONSTRUCTION FOR THIS WORK ORDER. NOTE ADDITIONAL REV. 0 CLOUDS TO LOCATE.

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	INSS-SS-0009/2	GROUNDING DETAILS
2	INSS-SS-0009/3	GROUNDING DETAILS
3	INSS-SS-0009/4	GROUNDING BILL OF MATERIALS

PROJECT: **INSS 138 KV FACILITY RETIREMENT**
 ENG./DESIGN: **JESSE MOE (CEA) / B. BENNETT (R&V)** W.O. # **E1720055**

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DATE	BY	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGB/03-22-21		

NO.	RECORD REVISION	TECH./DWL BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
5	ADDED SCADA BLDG	DWB				4/13/92
6	ADDED FUEL STORAGE TANK, GATE 19 (AUTO-ELECT)	BG				10/17/95
7	25MVAR CAPACITOR BANK - AS BUILT	/SG	N/A	E9511034		1/24/96
8	AS BUILT: IGT DEDICATED BACK-UP	VECO/PFD	0400.360EN	E9410831		1/22/97
9	AUXILIARY SYSTEM UPGRADE	BN	10.0579EN	E9620117	WFN	11/1/01
10	ASBUILT - 34.5KV GROUNDING TRANSFORMER	WFN/BG	10.0752E	E0020159	WFN	5/6/03
11	ADD MW BATTERY BLDG PER STEVEN KALETTA	GC				5/3/07
12	ITSS TRANSMISSION SUBSTATION - CHUGACH AS-BUILT	MS	10726	E0120203	AL	11/13/12



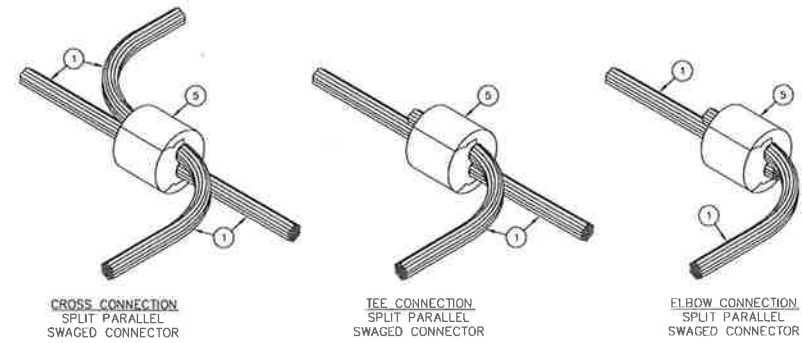
Chugach Electric Association, Inc.
 5601 Electron Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

DRAWING NAME: **INTERNATIONAL SUBSTATION GROUNDING PLAN**

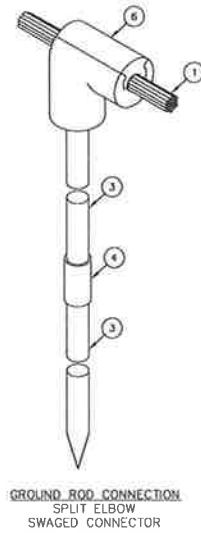
CONFIDENTIAL

DRAWING NO. - PREVIOUS REFERENCE: INSS-SS-0009.0001.13.dwg

DRAWING NO.: **INSS-SS-0009** SHEET **0001** OF **0004**

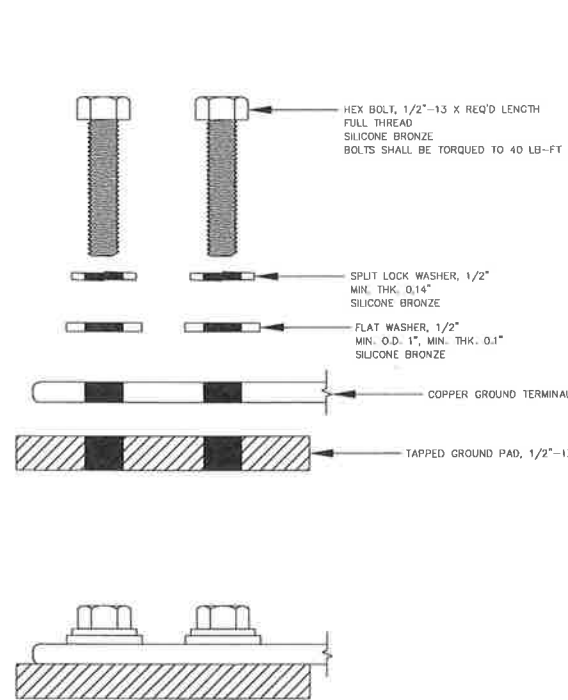


① **GROUND GRID INTERSECTION CONNECTOR**
N.T.S.

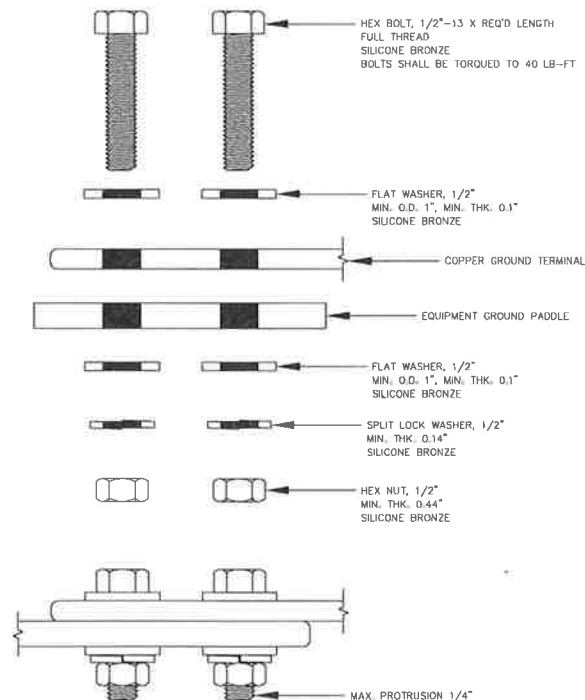


② **GROUND GRID CONNECTOR TO GROUND ROD (WITH SPLICE)**
N.T.S.

NOTES:
① FOR BILL OF MATERIAL SEE DRAWING REFERENCE 3.



③ **TYPICAL BOLTED GROUND PAD CONNECTION DETAIL**
N.T.S.
FASTENER HARDWARE IS INCLUDED IN GROUNDING BILL OF MATERIAL ITEM (10)



④ **TYPICAL BOLTED GROUND PADDLE CONNECTION DETAIL**
N.T.S.
FASTENER HARDWARE IS INCLUDED IN GROUNDING BILL OF MATERIAL ITEM (10)

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	INSS-SS-0009/1	GROUNDING PLAN
2	INSS-SS-0009/3	GROUNDING DETAILS
3	INSS-SS-0009/4	GROUNDING BILL OF MATERIALS

DRAWING NAME: **INTERNATIONAL SUBSTATION GROUNDING DETAILS**

CONFIDENTIAL

DRAWING NO. - PREVIOUS/REFERENCE: **INSS-SS-0009**

SHEET 0002 OF 0004

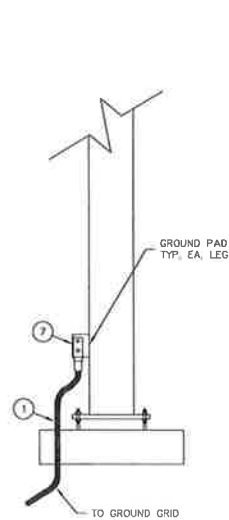
Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Black & Veatch Consultants, on 05/15/2020

PROJECT: INSS 138 kV FACILITY RETIREMENT				W.O. # E1720055	
ENG./DESIGN: S. WENDLING (CEA) / B. BENNETT (B&V)					
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPPLY/DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/05-15-20	BGB/05-15-20		

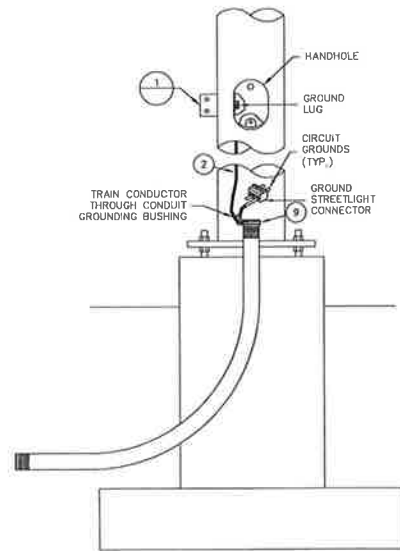
NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE

CHUGACH
POWERING ALASKA'S FUTURE

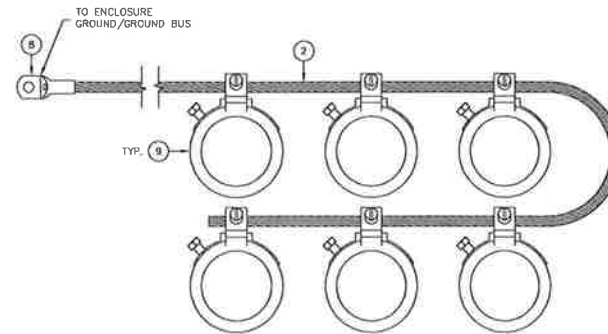
Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300



1 **STRUCTURE GROUNDING (TYPICAL)**
N.T.S.



2 **LIGHTING JUNCTION BOX TYPICAL GROUNDING**
(SOME EQUIPMENT NOT SHOWN FOR CLARITY)
N.T.S.

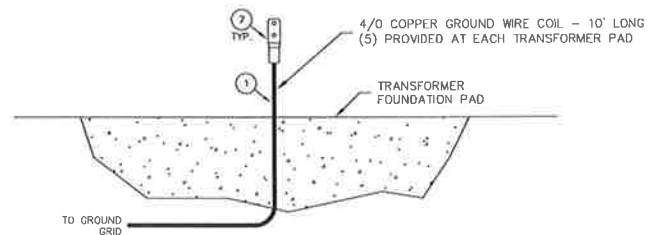


3 **GROUNDING BUSHING (TYPICAL)**
N.T.S.

NOTES:

1 FOR BILL OF MATERIAL SEE DRAWING REFERENCE 3.

NOTE:
MINIMAL GROUND CONNECTION INFORMATION IS SHOWN ON OLD TRANSFORMER MANUFACTURER DRAWINGS. PRIOR TO RELOCATING EXISTING TRANSFORMERS, FIELD TO MAKE NOTE OF EXISTING GROUNDING CONNECTIONS ON TRANSFORMERS, AND RE-CONNECT IN A SIMILAR MANNER AFTER RELOCATION. FIVE 4/0 COPPER GROUND WIRE COILS, 10' LONG, HAVE BEEN PROVIDED AT EACH TRANSFORMER PAD.



4 **POWER TRANSFORMER T1 & T2 GROUNDING DETAIL**
(SOME EQUIPMENT NOT SHOWN)
N.T.S.

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	INSS-SS-0009/1	GROUNDING PLAN
2	INSS-SS-0009/2	GROUNDING DETAILS
3	INSS-SS-0009/4	GROUNDING BILL OF MATERIALS

DRAWING NAME:		INTERNATIONAL SUBSTATION GROUNDING DETAILS
DRAWING NO. - PREVIOUS REFERENCE:		
DRAWING NO.:		INSS-SS-0009
SHEET 0003 OF 0004		PAGE /

Certified for Construction of W.D. E1720055 by Billy G. Bennett, No. CE131526, Black & Veatch Consultants, on 05/15/2020

PROJECT: INSS 138 kV FACILITY RETIREMENT		W.O. # E1720055	
ENG./DESIGN: S. WENDLING (CEA) / B. BENNETT (B&V)			
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MCR./SUBP./DATE
0	ISSUED FOR CONSTRUCTION	MJC/05-15-20	BGB/05-15-20

NO.	RECORD REVISION	TECH / DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE



Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300



CONFIDENTIAL

INSS-SS-0009_0001_0.dwg

GROUNDING BILL OF MATERIALS

ITEM #	DESCRIPTION	UNIT	EXISTING QUANTITY	QUANTITY THIS W.O.	MANUFACTURER/CATALOG NUMBER	OWNER FURNISHED	CONTRACTOR FURNISHED
①	4/0 STRANDED BARE COPPER	LF	-	1000	HOUSTON WIRE & CABLE/HW000 40101 (OAE)		X
②	#2 STRANDED TINNED BARE COPPER	LF	-	100	HOUSTON WIRE & CABLE/HW000 00201 TN (OAE)		X
③	3/4" X 10' COPPER CLAD SECTIONAL GROUND ROD	EA	-	24	ERICO/633403 (OAE)		X
④	THREADED COUPLER 3/4" COPPER CLAD - 3/4" COPPER CLAD	EA	-	12	ERICO/CR34		X
⑤	SWAGED SPLIT PARALLEL 4/0 - 4/0	EA	0	80	DMC POWER/GC721B004-004		X
⑥	SWAGED SPLIT ELBOW 4/0 - 3/4" COPPER CLAD ROD	EA	0	12	DMC POWER/GC738B004-682		X
⑦	SWAGED TERMINAL 4/0 - 2 HOLE PAD	EA	0	30	DMC POWER/GC920B004		X
⑧	RING TONGUE TERMINAL, 1/4" STUD, #2 AWG	EA	-	12	BURNDY/YAV2C-L1 (OAE)		X
⑨	GROUNDING BUSHING, BLACKJACK, TYPE BG, 2"	EA	-	40	THOMAS & BETTIS/BG200-14-20 (OAE)		X
⑩	HEX BOLT/HEX NUT/SPLIT LOCK WASHER/FLAT WASHER, SILICONE BRONZE, FOR COPPER TO COPPER OR COPPER TO GALVANIZED STEEL CONNECTIONS. SIZE AS REQ'D.	LOT	-	1	COMMODITY		X

NOTE:
BILL OF MATERIAL QUANTITIES ARE ESTIMATED. ACTUAL QUANTITIES SHALL BE VERIFIED BY THE CONTRACTOR.

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	INSS-SS-0009/1	GROUNDING PLAN
2	INSS-SS-0009/2	GROUNDING DETAILS
3	INSS-SS-0009/3	GROUNDING DETAILS

Certified for Construction of W.O. E1720055 by Billy C. Bennett, No. CE131526, Black & Veatch Consultants, on 05/15/2020

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE
0	ISSUED FOR CONSTRUCTION	MJC/05-15-20	BGB/05-15-20	

NO.	RECORD REVISION	TECH./DWN. BY	W.P. #	W.O. APPROVED	RECORD APPROVED	DATE



Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

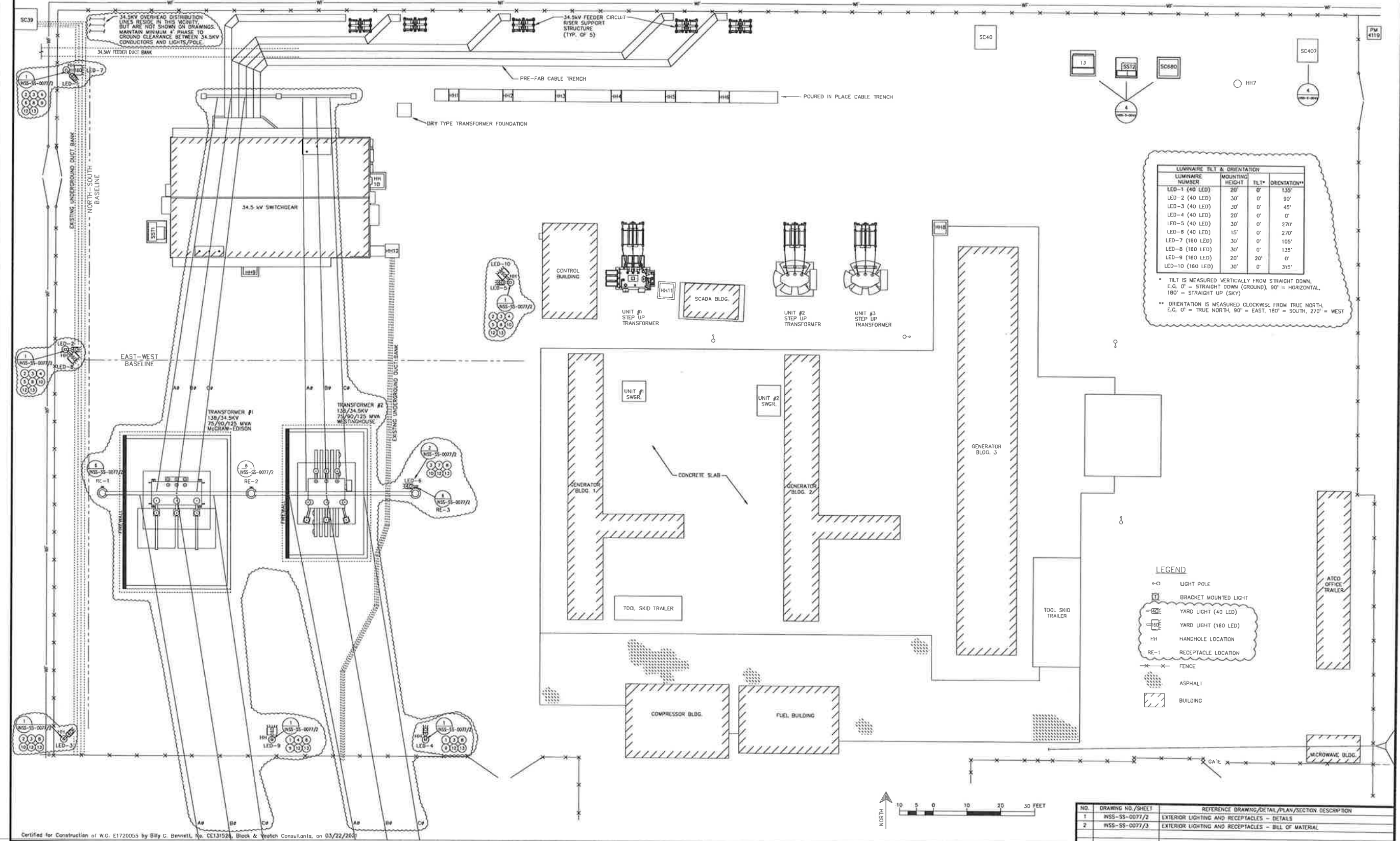
DRAWING NAME: INTERNATIONAL SUBSTATION GROUNDING BILL OF MATERIALS

CONFIDENTIAL

DRAWING NO. - PREVIOUS/REFERENCE: INSS-SS-0009_0004_0.dwg

DRAWING NO.: INSS-SS-0009

SHEET 0004 OF 0004
PAGE /



LUMINAIRE NUMBER	MOUNTING HEIGHT	TLT*	ORIENTATION**
LED-1 (40 LED)	20'	0°	135°
LED-2 (40 LED)	30'	0°	90°
LED-3 (40 LED)	30'	0°	45°
LED-4 (40 LED)	20'	0°	0°
LED-5 (40 LED)	30'	0°	270°
LED-6 (40 LED)	15'	0°	270°
LED-7 (160 LED)	30'	0°	105°
LED-8 (160 LED)	30'	0°	135°
LED-9 (160 LED)	20'	20°	0°
LED-10 (160 LED)	30'	0°	315°

* TLT IS MEASURED VERTICALLY FROM STRAIGHT DOWN, E.G. 0° = STRAIGHT DOWN (GROUND), 90° = HORIZONTAL, 180° = STRAIGHT UP (SKY)

** ORIENTATION IS MEASURED CLOCKWISE FROM TRUE NORTH, E.G. 0° = TRUE NORTH, 90° = EAST, 180° = SOUTH, 270° = WEST

LEGEND

- LIGHT POLE
- BRACKET MOUNTED LIGHT
- ⊖ YARD LIGHT (40 LED)
- ⊖ YARD LIGHT (160 LED)
- HH HANDHOLE LOCATION
- RE-1 RECEPTACLE LOCATION
- ⊗ FENCE
- ▨ ASPHALT
- ▩ BUILDING

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	INSS-SS-0077/2	EXTERIOR LIGHTING AND RECEPTABLES - DETAILS
2	INSS-SS-0077/3	EXTERIOR LIGHTING AND RECEPTABLES - BILL OF MATERIAL

PROJECT: **INSS 138 kV FACILITY RETIREMENT**
 ENG./DESIGN: **JESSE MOE (CEA) / B. BENNETT (B&Y)** W.O. # **E1720055**

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGR/03-22-21		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.G. APPROVED	RECORD APPROVED	DATE



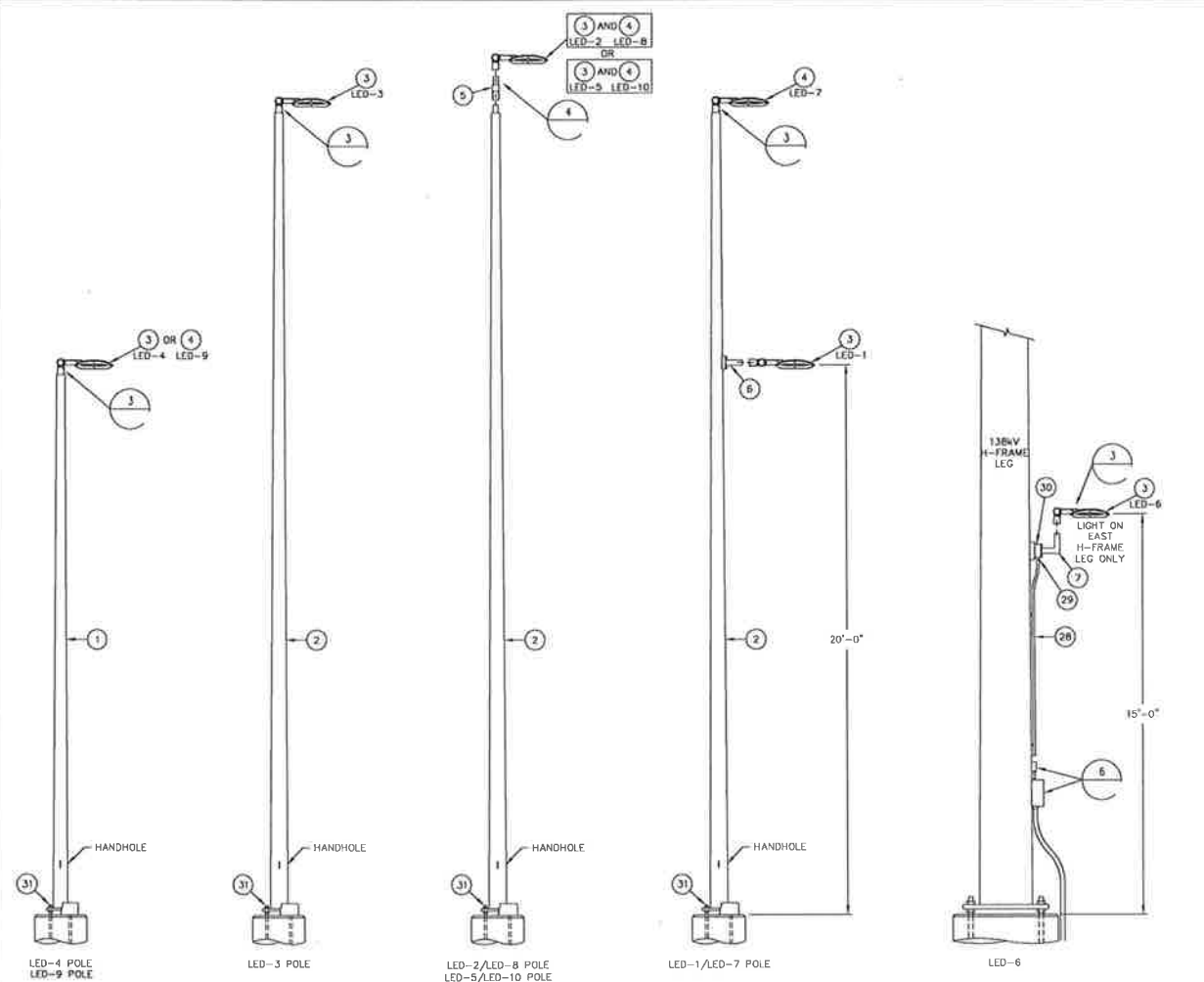
Chugach Electric Association, Inc.
 5601 Minnesota Drive - P.O. Box 194300
 Anchorage, Alaska 99519-6300

DRAWING NAME: **INTERNATIONAL SUBSTATION EXTERIOR LIGHTING AND RECEPTABLES PLAN**

CONFIDENTIAL

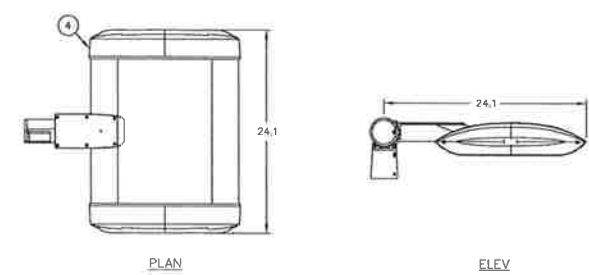
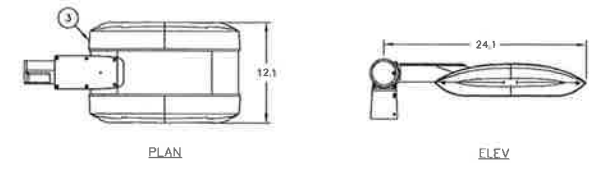
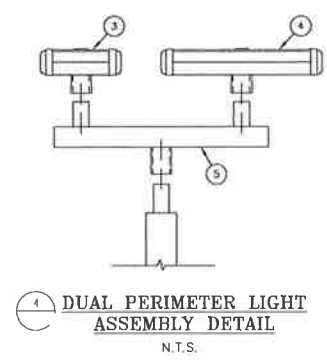
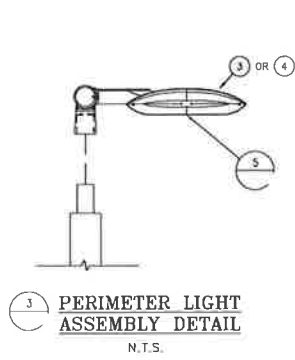
DRAWING NO.: **INSS-SS-0077** SHEET **0001** OF **0003**

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Black & Veatch Consultants, on 03/22/2021

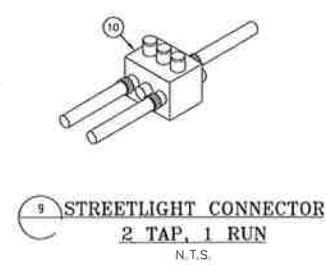
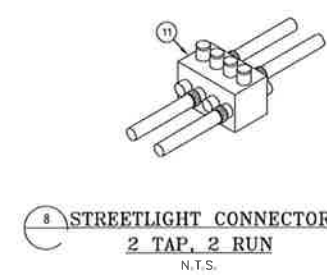


1 LIGHT POLES, 20' & 30'
N.S.S.-SS-0077/1
N.T.S.

2 LIGHT & RECEPT MOUNTING
AT 138kV H-FRAME LEGS
N.T.S.



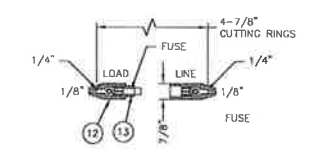
5 PERIMETER LIGHTS
N.T.S.



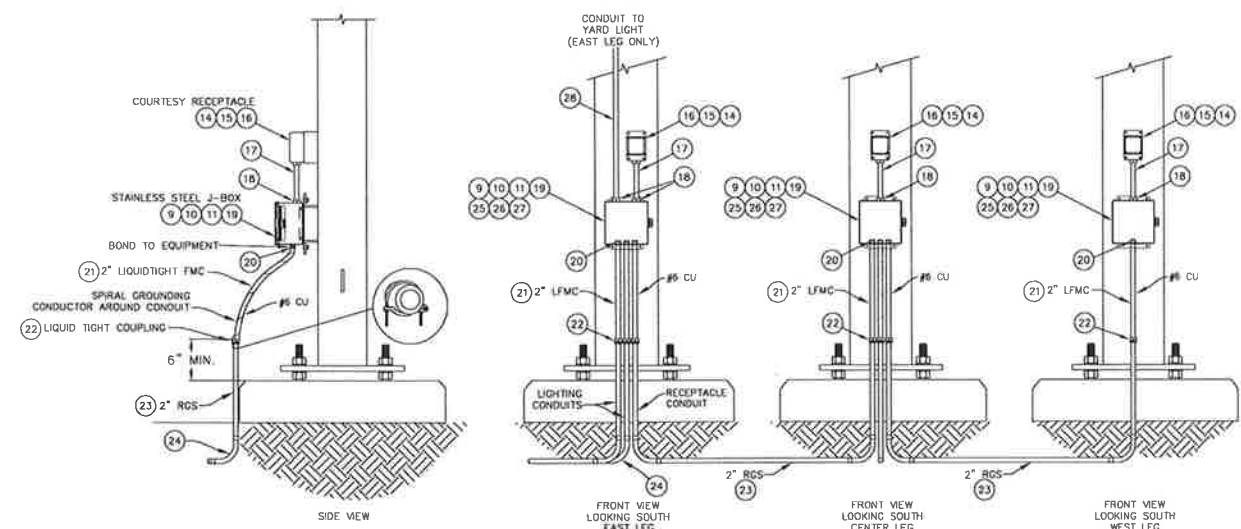
8 STREETLIGHT CONNECTOR
2 TAP, 2 RUN
N.T.S.

9 STREETLIGHT CONNECTOR
2 TAP, 1 RUN
N.T.S.

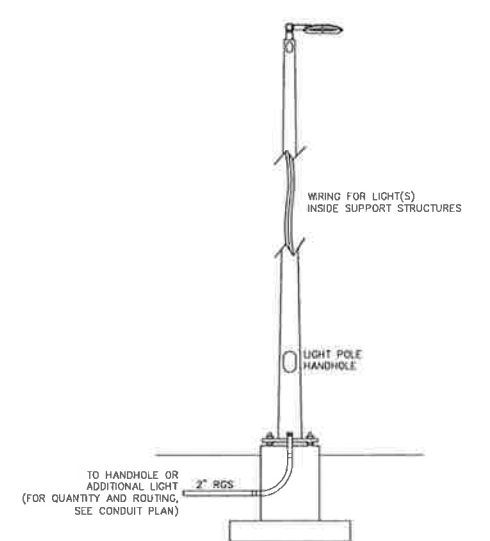
10 STREETLIGHT CONNECTOR
1 TAP, 1 RUN
N.T.S.



11 SINGLE FUSED CONNECTOR KIT
N.T.S.



6 TYPICAL YARD RECEPTACLE/J-BOX
AT 138kV H-FRAME LEGS
N.T.S.



7 LIGHT POLE CONDUIT DETAIL (TYPICAL)
SCALE: NTS

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	INSS-SS-0077/1	EXTERIOR LIGHTING AND RECEPTACLES - PLAN
2	INSS-SS-0077/3	EXTERIOR LIGHTING AND RECEPTACLES - BILL OF MATERIAL

DRAWING NAME: INTERNATIONAL SUBSTATION EXTERIOR LIGHTING AND RECEPTACLES DETAILS	
CONFIDENTIAL	
DRAWING NO. - PREVIOUS/REFERENCE	INSS-SS-0077_0002_0.6-1
DRAWING NO.:	INSS-SS-0077
SHEET 0002 OF 0003	PAGE 2 / 3

Certified for Construction of W.O. E1720055 by Billy C. Bennett, No. CE131526, Block & Veitch Consultants, on 05/15/2020

PROJECT: INSS 138 kV FACILITY RETIREMENT				NO.			
ENG./DESIGN: S. WENDLING (CEA) / B. BENNETT (R&V)				W.O. # E1720055			
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./DATE	APPROVED DIRECTOR/DATE	TECH./DWN. BY	W.P.#	W.O. APPROVED
0	ISSUED FOR CONSTRUCTION	MJC/05-15-20	BGB/05-15-20				

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE



Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

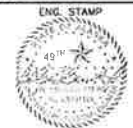
**EXTERIOR LIGHTING & RECEPTACLES
BILL OF MATERIALS**

ITEM #	DESCRIPTION	UNIT	EXISTING QUANTITY	QUANTITY THIS W.O.	MANUFACTURER/CATALOG NUMBER	OWNER FURNISHED	CONTRACTOR FURNISHED
1	ROUND TAPERED STEEL LIGHT POLE, 20' TALL	EA	-	2	VALMONT/DS210-CUSTOM	X	
2	ROUND TAPERED STEEL LIGHT POLE, 30' TALL	EA	-	4	VALMONT/DS210-CUSTOM	X	
3	YARD LIGHT, 40 LED	EA	-	6	CREE - EDGE AREA LIGHT CAT# ARE-EDG-4MB-AA-04-E-UL-SV-525	X	
4	YARD LIGHT, 160 LED	EA	-	4	CREE - EDGE AREA LIGHT CAT# ARE-EDG-4MB-AA-16-E-UL-SV-350	X	
5	EXTERNAL MOUNT VERTICAL TENON, 180° TWN, ROUND BASE, 2.375" POLE SIZE, SILVER	EA	0	2	CREE - PB-2R2.375-SV	X	
6	POLE ADAPTER BRACKET FOR 3"-6" POLE, SILVER	EA	0	1	CREE - XA-TMDAB-SV	X	
7	L-SHAPED FLOODLIGHT BRACKET, FLAT SURFACE, GRAY	EA	0	1	GENERAL ELECTRIC - FBSFA21TGR		X
8	FLEXIBLE CABLE, 3 CONDUCTOR, TYPE SOOW, BLACK CPE RUBBER JACKET	EA	-	AS REQ'D	HOUSTON WIRE & CABLE/HW250 01403		X
9	STREETLIGHT CONNECTOR, 1 TAP, 1 RUN, 2 PORT (OPPOSITE ENTRY), #4 - #14 AWG	EA	-	AS REQ'D	POLARS ELECTRICAL CONNECTORS/3L004A-11P		X
10	STREETLIGHT CONNECTOR, 2 TAP, 1 RUN, 3 PORT (OPPOSITE ENTRY), #4 - #14 AWG	EA	-	AS REQ'D	POLARS ELECTRICAL CONNECTORS/3L004A-21P		X
11	STREETLIGHT CONNECTOR, 2 TAP, 2 RUN, 4 PORT (OPPOSITE ENTRY), #4 - #14 AWG	EA	-	AS REQ'D	POLARS ELECTRICAL CONNECTORS/3L004A-22P		X
12	SINGLE FUSED CONNECTOR KIT	EA	-	AS REQ'D	SEC/1791-SF		X
13	MIDGET FUSE, FAST-ACTING, TYPE KTK	EA	-	AS REQ'D	BUSSMAN/KTK-5		X
14	OUTDOOR CONNECTION BOX, 1 GANG, ALUMINUM, (3) 1" THREADED HUBS	EA	-	3	BELL/5387-0		X
15	RECEPTACLE, DUPLEX, GFCI, 20A	EA	-	3	HUBBELL-KELLEMS/CFR53621TR		X
16	METALLIC COVER, W/HE-IN-USE, SINGLE GANG, EXTRA-DUTY, WEATHERPROOF	EA	-	3	HUBBELL-RACD/W058B1-0		X
17	THREADED NIPPLE, GALVANIZED, 1" X 6"	EA	-	3	COMMODITY		X
18	HUB, THREADED, 1"	EA	-	4	THOMAS & BETTS/H100-TB		X
19	JUNCTION BOX, STAINLESS STEEL, 12" X 10" X 6"	EA	-	3	HOFFMAN/A12108CHNFSS		X
20	LIQUIDTIGHT STRAIGHT CONNECTOR, 2"	EA	-	7	CROUSE-HINDS/L12000		X
21	LIQUIDTIGHT FLEXIBLE METAL CONDUIT, 2"	LF	-	AS REQ'D	COMMODITY		X
22	COMBINATION COUPLING, FOR COUPLING 2" LFMC TO 2" RGS, GROUNDING TYPE	EA	-	7	CROUSE-HINDS/L1R2000		X
23	RGS CONDUIT, 2"	LF	-	AS REQ'D	COMMODITY		X
24	RGS ELBOW, 2", 90 DEGREE	EA	-	7	CROUSE-HINDS/RLB20090		X
25	BUILDING WIRE, 12 AWG, BLACK	LF	-	AS REQ'D	HOUSTON WIRE & CABLE/ HW010 01201 BLACK		X
26	BUILDING WIRE, 12 AWG, WHITE	LF	-	AS REQ'D	HOUSTON WIRE & CABLE/ HW010 01201 WHITE		X
27	BUILDING WIRE, 12 AWG, GREEN	LF	-	AS REQ'D	HOUSTON WIRE & CABLE/ HW010 01201 GREEN		X
28	RGS CONDUIT, 1"	LF	-	AS REQ'D	HOUSTON WIRE & CABLE/ HW010 01201 GREEN		X
29	ADAPTER, RGS CONDUIT, 1" FEMALE TO 3/4" MALE	EA	-	1	COMMODITY		X
30	FLOODLIGHT WIRING BOX, FOR USE WITH FLOODLIGHT BRACKET (ITEM 7), TWO 3/4" TAPPED CONDUIT ENTRANCES	EA	-	1	GENERAL ELECTRIC/FWBSBFPP		X
31	LIGHT POLE ANCHOR BOLT, 1" DIA X 36" LONG, GR55, ASTM F1554, THREADED 6", GALVANIZED TOP 10" MINIMUM	EA	-	24	COMMODITY		X

NOTE:
BILL OF MATERIAL QUANTITIES ARE ESTIMATED. ACTUAL QUANTITIES
SHALL BE VERIFIED BY THE CONTRACTOR.

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	INSS-SS-0077/1	EXTERIOR LIGHTING AND RECEPTACLES - PLAN
2	INSS-SS-0077/2	EXTERIOR LIGHTING AND RECEPTACLES - DETAILS

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Block & Veitch Consultants, on 05/15/2020

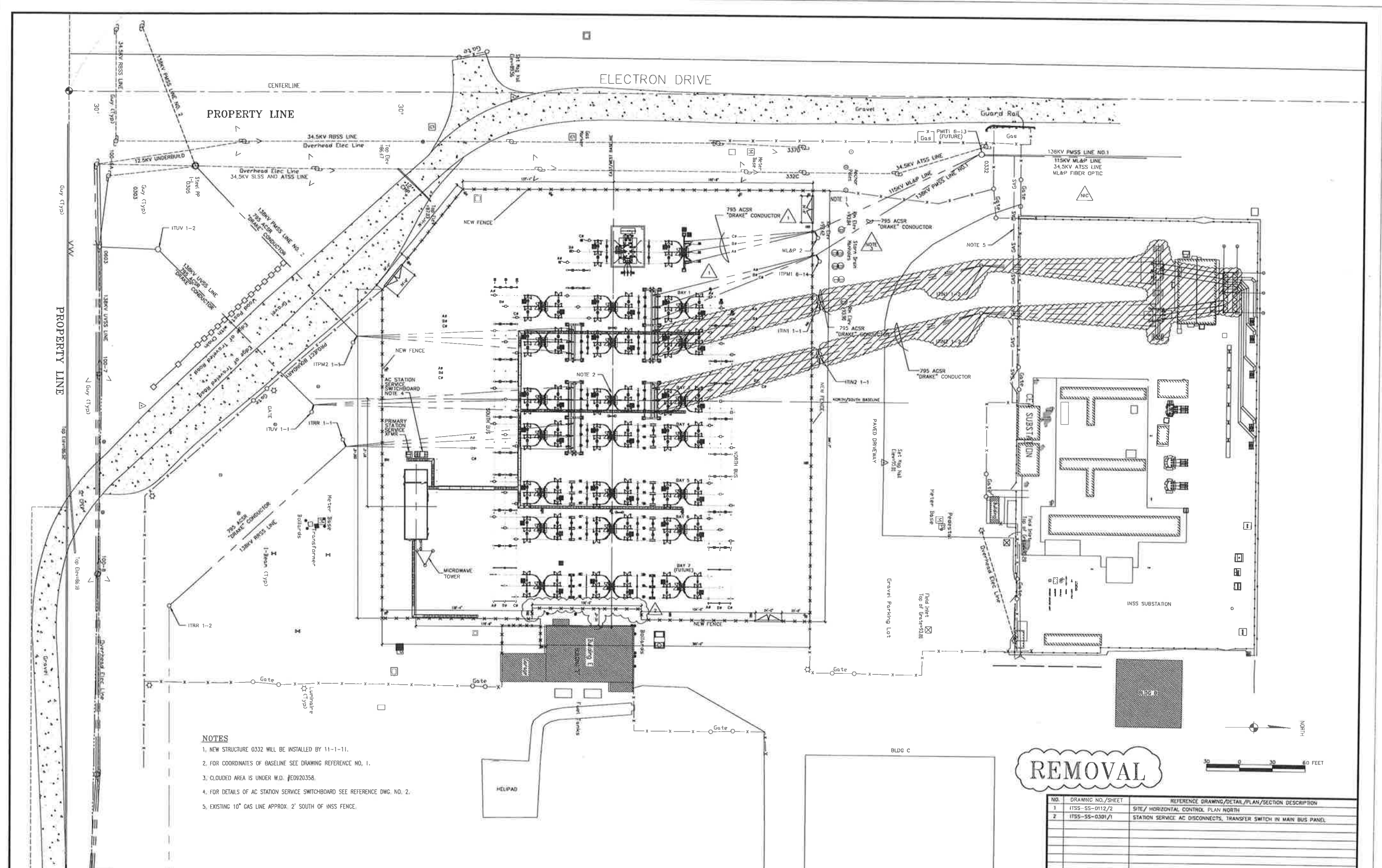
PROJECT: INSS 138 KV FACILITY RETIREMENT				W.O. # E1720055	
ENG. DESIGN: S. WENDLING (CEA) / B. BENNETT (B&V)					
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/05-15-20	BGB/05-15-20		

NO.	RECORD REVISION	TECH./ DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE



Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME: INTERNATIONAL SUBSTATION EXTERIOR LIGHTING AND RECEPTACLES BILL OF MATERIALS	
CONFIDENTIAL	
DRAWING NO. - PREVIOUS/REFERENCE	INSS-SS-0077_0003_0.dwg
DRAWING NO.:	INSS-SS-0077
SHEET 0003 OF 0003	PAGE 3 OF 3



- NOTES**
1. NEW STRUCTURE 0332 WILL BE INSTALLED BY 11-1-11.
 2. FOR COORDINATES OF BASELINE SEE DRAWING REFERENCE NO. 1.
 3. CLOUDED AREA IS UNDER W.O. #E0920358.
 4. FOR DETAILS OF AC STATION SERVICE SWITCHBOARD SEE REFERENCE DWG. NO. 2.
 5. EXISTING 10" GAS LINE APPROX. 2' SOUTH OF INSS FENCE.

REMOVAL



PROJECT: INSS 138 kV FACILITY RETIREMENT
 ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (H&V) W.O. # E1720055

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BCB/03-22-21	

NO.	RECORD REVISION	TECH./DWN. BY	WP.#	W.O. APPROVED	RECORD APPROVED	DATE
1	CHUGACH AS-BUILT		10726	E0120202	AL	11/13/12



NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	ITSS-SS-0112/2	SITE/HORIZONTAL CONTROL PLAN NORTH
2	ITSS-SS-0301/1	STATION SERVICE AC DISCONNECTS, TRANSFER SWITCH IN MAIN BUS PANEL

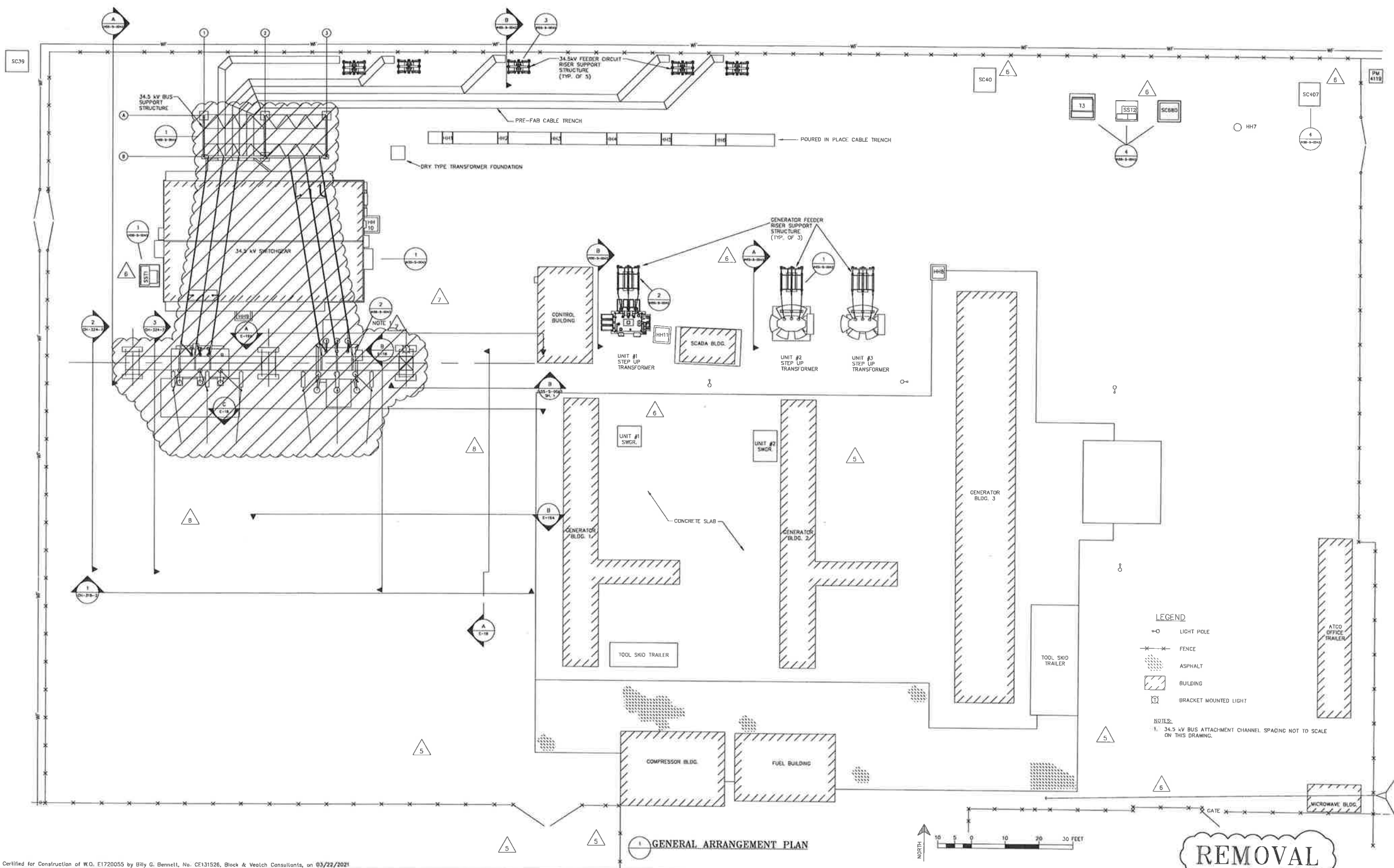
DRAWING NAME: INTERNATIONAL TRANSMISSION SUBSTATION SITE PLAN REMOVAL DRAWING

DRAWING NO. - PREVIOUS/REFERENCE: ITSS-SS-0101_0001_1-R.dwg

DRAWING NO.: ITSS-SS-0101-R

SHEET 0001 OF 0001

Certified for Construction by W.O. E1720055 by Billy G. Bennett Jr., No. CE131526, Black & Veatch Consultants, on 03/22/2021



LEGEND

- LIGHT POLE
- ⊗ FENCE
- ▨ ASPHALT
- ▩ BUILDING
- BRACKET MOUNTED LIGHT

NOTES:

1. 34.5 kV BUS ATTACHMENT CHANNEL SPACING NOT TO SCALE ON THIS DRAWING.

GENERAL ARRANGEMENT PLAN

REMOVAL

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Block & Veitch Consultants, on 03/22/2021

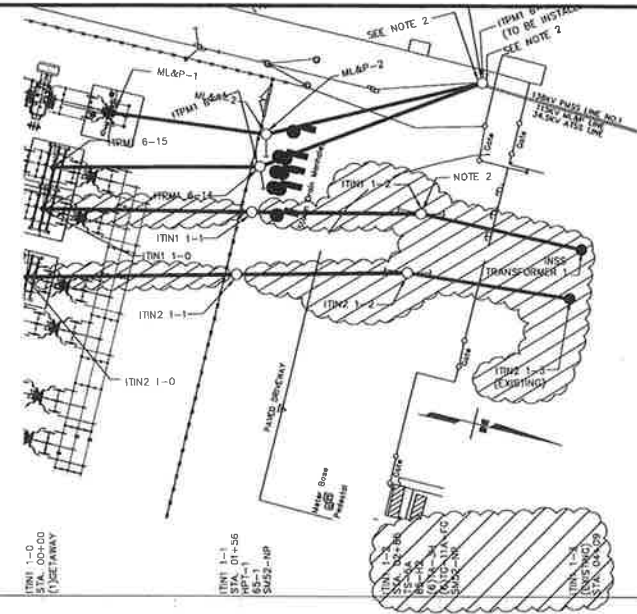
PROJECT: INSS 138 kV FACILITY RETIREMENT			
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (R&V)			
NO.		W.O. # E1720055	
DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./DATE	APPROVED DIRECTOR/DATE
ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGB/03-22-21	

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
2	REMOVED CAPACITOR BANK	DWJ				10/1/89
3	25MVAR CAPACITOR BANK - AS BUILT	/SC	N/A	E9511034		1/24/96
4	AS BUILT: IGT DEDICATED BACK-UP	VECO/PFD	0400.360EN	E9410831		1/22/97
5	AUX. SYS. UPGRADE, REMOVED AUX. CONT. BLDG., ADJ. T-L POLE LOC.S	WN/XK	10.0678EN	E9620117	WN.	10/18/01
6	ASBUILT - 34.5KV CHDUNING TRANSFORMER, CORRECTED XFMR NUMBERS	WN/BC	10.0732E	E0020159	WN	3/6/03
7	ADDED ABANDONED FOUNDATION	WN/BC			WN	6/20/03
8	REPLACED PT EQUIP. NOS. 157,158,159,285,266 & 267 WITH PTS 336,337, 338,339,340 & 341 IN 2005	WN/JC		E0320237	WN	11/19/06

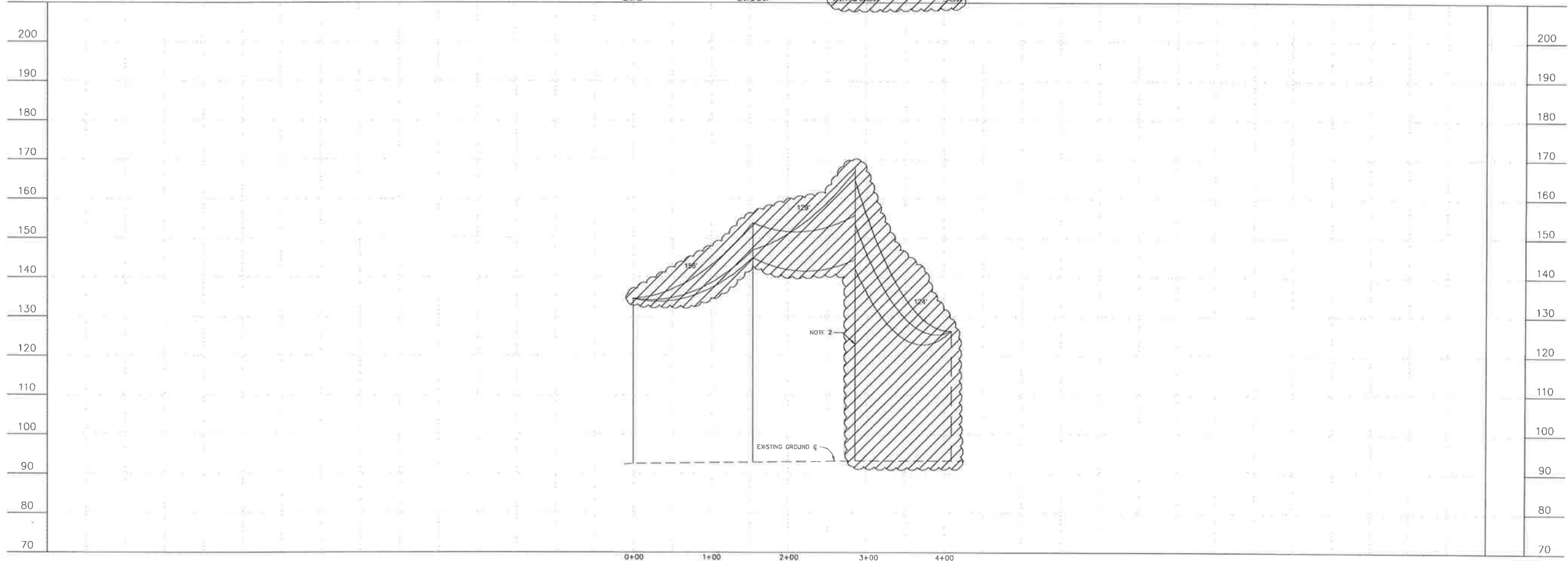


Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:	INTERNATIONAL SUBSTATION GENERAL ARRANGEMENT PLAN REMOVAL DRAWING
CONFIDENTIAL	
DRAWING NO. - PREVIOUS/REFERENCE	INSS-SS-0011-0001_8-R.dwg
DRAWING NO.	INSS-SS-0011-R
SHEET 0001 OF 0001	PAGE /



NOTES:
 1. FOR STRUCTURE LOCATIONS SEE DRAWING REFERENCE NO. 3.
 2. EXISTING POLE ITN1 1-2 TO BE REMOVED.



138KV SAGGING TABLE
 USE BETWEEN STRUCTURES ITN1 1-0 TO ITN1 1-2
 NESC HEAVY LOADING ZONE, INITIAL CONDITION

CONDUCTOR	795 kcmil ACSR "DRAKE"					
HULLING SPAN	144 FT					
CONDUCTOR TEMP, °F	-20	-10	0	10	20	30
CONDUCTOR TENSION, LBS	1900	1714	1564	1438	1336	1250
SPAN LENGTH, FT	SPAN SAG IN DECIMAL FEET					
156	1.77	1.96	2.15	2.34	2.52	2.69
128	1.20	1.33	1.46	1.58	1.71	1.82

138KV SAGGING TABLE
 USE BETWEEN STRUCTURES ITN1 1-2 TO ITN1 1-3
 NESC HEAVY LOADING ZONE, INITIAL CONDITION

CONDUCTOR	795 kcmil ACSR "DRAKE"					
HULLING SPAN	125 FT					
CONDUCTOR TEMP, °F	-20	-10	0	10	20	30
CONDUCTOR TENSION, LBS	232	231	231	229	228	228
SPAN LENGTH, FT	SPAN SAG IN DECIMAL FEET					
124	9.32	9.37	9.40	9.45	9.48	9.51

REMOVAL

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	ITSS-SS-0201/SHEET 1	TANGENT AND ANGLE ASSEMBLIES
2	ITSS-SS-0201/SHEET 3	GUY AND ANCHOR DETAIL
3	ITSS-SS-0101.0001	SITE PLAN
4	ITSS-SS-0201/SHEET 4	STRUCTURE NUMBER ASSEMBLY

Certified for Construction of W.O. E1720055 by Billy G. Bennett Jr., No. CE131526, Black & Veatch Consultants, on 03/22/2021

PROJECT: **INSS 138 kV FACILITY RETIREMENT**
 ENG./DESIGN.: **JESSE MOE (CEA) / B. BENNETT (B&V)** W.O. # **E1720055**

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGB/03-22-21		

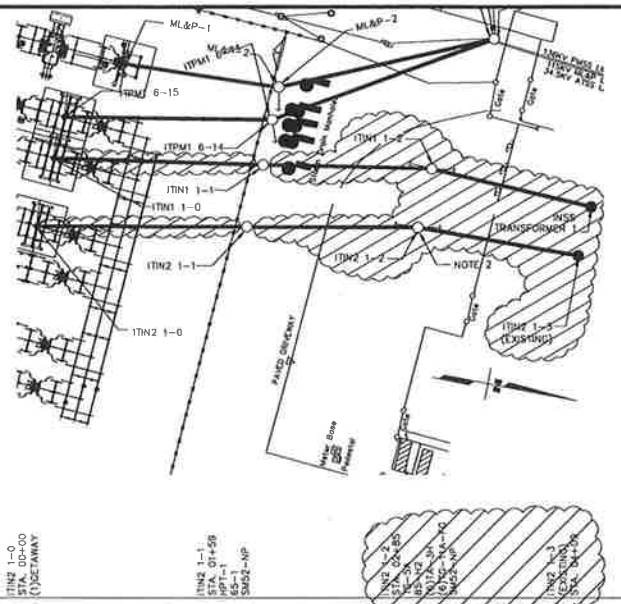
NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	CHUGACH AS-BUILT		10726	E0120202	AL	11/13/12

CHUGACH
 POWERING ALASKA'S FUTURE
 Chugach Electric Association, Inc.
 5601 Minnesota Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

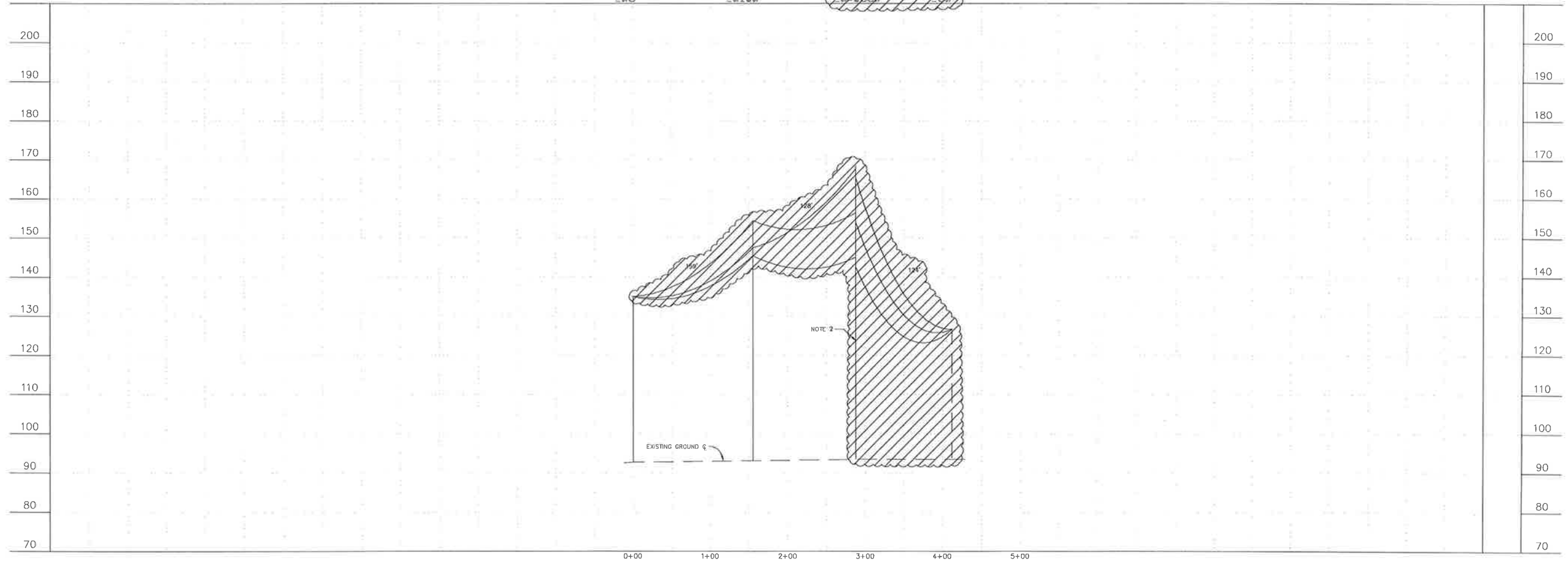
DRAWING NAME:
**INTERNATIONAL TRANSMISSION SUBSTATION
 PLAN AND PROFILE
 INSS TRANSFORMER #1
 REMOVAL DRAWING**

CONFIDENTIAL

DRAWING NO. - PREVIOUS/REFERENCE: ITSS-PP-0100.0004.1-R.dwg
 DRAWING NO.: **ITSS-PP-0100-R** SHEET **0004** OF **0008**
 PAGE



NOTES:
 1. FOR STRUCTURE LOCATIONS SEE DRAWING REFERENCE NO. 2.
 2. EXISTING POLE ITN2 1-2 TO BE REMOVED.



138KV SAGGING TABLE
 USE BETWEEN STRUCTURES ITN2 1-0 TO ITN2 1-2
 NESC HEAVY LOADING ZONE, INITIAL CONDITION

795 kcmil ACSR "ORANGE"	
BILLING SPAN	146 FT
CONDUCTOR TEMP, °F	-20 -10 0 10 20 30
CONDUCTOR TENSION, LBS	1840 1670 1529 1413 1317 1235
SPAN LENGTH, FT	INITIAL SAG IN DECIMAL FEET
159	1.90 2.09 2.28 2.47 2.65 2.83
128	1.22 1.35 1.47 1.59 1.71 1.82

138KV SAGGING TABLE
 USE BETWEEN STRUCTURES ITN2 1-2 TO ITN2 1-3
 NESC HEAVY LOADING ZONE, INITIAL CONDITION

795 kcmil ACSR "ORANGE"	
BILLING SPAN	121 FT
CONDUCTOR TEMP, °F	-20 -10 0 10 20 30
CONDUCTOR TENSION, LBS	232 231 231 229 229 228
SPAN LENGTH, FT	INITIAL SAG IN DECIMAL FEET
124	9.32 9.37 9.40 9.45 9.46 9.51

REMOVAL

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	ITSS-SS-0201/SHEET 1	TANGENT AND ANGLE ASSEMBLIES
2	ITSS-SS-0101.0001	SITE PLAN
3	ITSS-SS-0201/SHEET 2	VERTICAL DOUBLE DEADEND
4	ITSS-SS-0201/SHEET 3	GUY AND ANCHOR DETAIL
5	ITSS-SS-0201/SHEET 4	STRUCTURE NUMBER ASSEMBLY

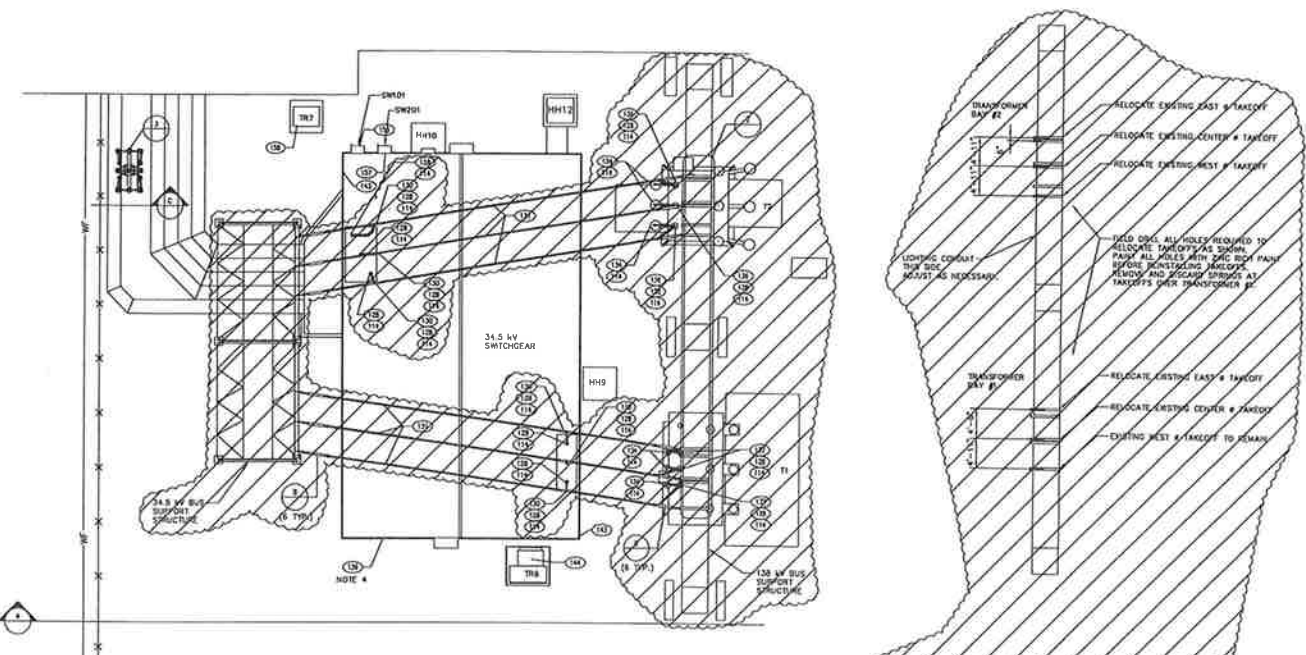
Certified for Construction of W.D. E1720055 by Billy G. Bennett Jr., No. CE131526, Block & Veatch Consultants, on 03/22/2012

PROJECT: INSS 138 kV FACILITY RETIREMENT				
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V)				
W.O. # E1720055				
NO.	DESIGN/CONSTRUCTION/AS-BUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGB/03-22-21	

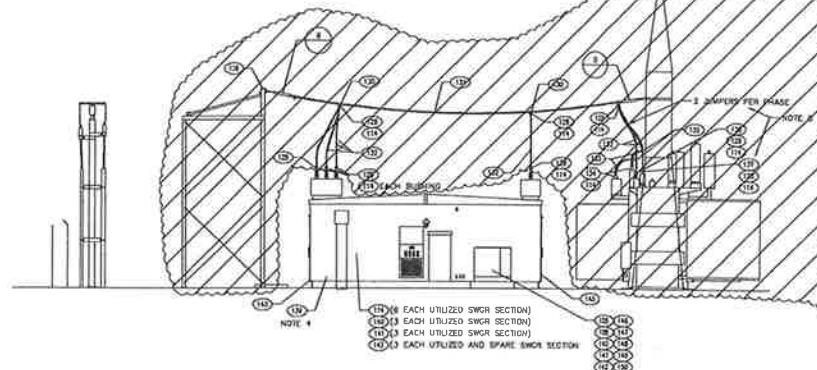
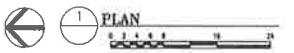
NO.	RECORD REVISION	TECH. DWN. BY	W.P.#	W.D. APPROVED	RECORD APPROVED	DATE
1	CHUGACH AS-BUILT		10726	ED120202	AL	11/13/12

CHUGACH
 POWERING ALASKA'S FUTURE
 Chugach Electric Association, Inc.
 5601 Minnesota Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

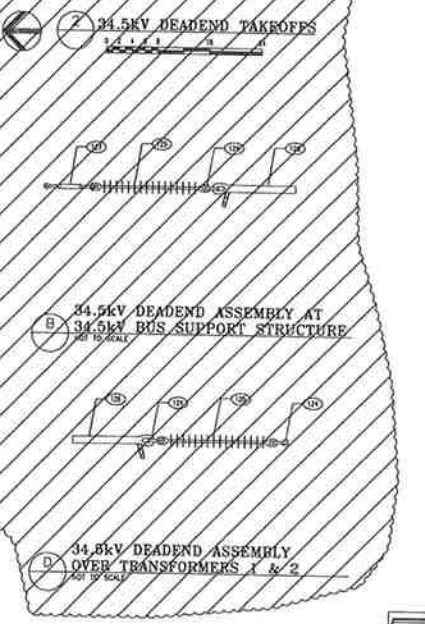
DRAWING NAME:	
INTERNATIONAL TRANSMISSION SUBSTATION PLAN AND PROFILE INSS TRANSFORMER #2 REMOVAL DRAWING	
CONFIDENTIAL	ITSS-PP-0100_0002_1-R.dwg
DRAWING NO. - PREVIOUS/REFERENCE	ITSS-PP-0100-R
DRAWING NO.:	SHEET 0002 OF 0008 PAGE



NOTES
 1. SEE REFERENCE DRAWINGS INSS-02-0012/18020117 THROUGH INSS-10-0017/19020117, INSS-02-0019/18020117 AND INSS-02-0020/18020117.
 2. EXISTING 34.5 kV BUS, 138 kV BUS, AND LIGHT NOT SHOWN FOR CLARITY.

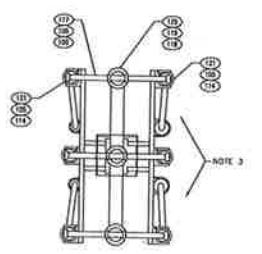


A 34.5 kV SWITCHGEAR WEST ELEVATION
 NOT TO SCALE

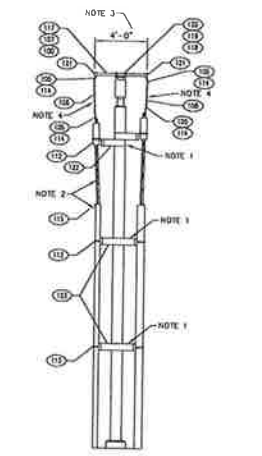


B 34.5 kV DEADEND ASSEMBLY AT 34.5 kV BUS SUPPORT STRUCTURE
 NOT TO SCALE

D 34.5 kV DEADEND ASSEMBLY OVER TRANSFORMERS 1 & 2
 NOT TO SCALE



B 34.5 kV FEEDER CIRCUIT RISER
 NOT TO SCALE



C 34.5 kV FEEDER CIRCUIT RISER ELEVATION
 NOT TO SCALE



4 PLAN
 NOT TO SCALE

MATERIAL LIST			
ITEM NO.	DESCRIPTION	UNIT	QTY.
100	2" IPS ALL SCHEDULE 40 EGG-16 ALLEY BUS RISE - 20' LENGTH	PF	140
101	ALL WELD BUS SUPPORT - 2" IPS TO 3" BOLT CIRCLE	EA	18
102	PRODUCT DESIGN 18-1231 ON APPROVED EQUAL	EA	9
103	ALL WELD TERMINAL - 2" IPS TO 2" HOLE PAD - 45 DEGREE, EXTERNAL FIT	EA	5
104	STATION POST INSULATOR - 34.5 kV, 200 kV RL - 18 231	EA	147
105	NEWELL PORCELAIN 231004 OR APPROVED EQUAL	EA	18
106	COMPRESSION CONNECTOR - 4/8 TO 2 HOLE PAD	EA	147
107	ANDERSON M4-4-0-1008 OR APPROVED EQUAL	EA	18
108	BRONZE PARALLEL CONNECTOR	EA	18
109	1/2" K28	EA	18
110	4/8 S.D. BARE COPPER - 18 STRAND	LF	140
111	SALVANIZED STEEL BUS INSULATOR SUPPORT	PF	25 REQ.
112	SEE DRAWING INSS-5-0012/18020117	EA	3
113	SALVANIZED STEEL CONDUIT SUPPORT	EA	6
114	SEE DRAWING INSS-5-0012/18020117	EA	27
115	5A W ELECTRIC CO. PAIN 1875 PORCELAIN CABLE TERMINATION FOR 34.5 kV 1000 MCM COPPER CABLE CONSISTING OF THE FOLLOWING ITEMS: PAIR 1875 TERMINATOR, COMPRESSION CONNECTOR (AS087-0019-000), AND CASKET K3 ADAPTER W/ 85071-258A MOUNTING BRACKET	EA	48
116	1/2" X 2" X 2" GALVANIZED U BOLT	EA	250
117	2" STAINLESS STEEL BOLT WITH W/1" FLAT WASHER & 1/2" HILL HARDENED LENGTH AS SHOWN	EA	20
118	BUS BAR COVER - FOR 3 1/2" BOLT CIRCLE INSULATOR AND BUS FITTING	EA	33
119	MATCHER TYPE BOC OR APPROVED EQUAL	EA	33
120	BUS INSULATION TAPE	ROLL	AS REQ.
121	MATCHER TYPE W/RT OR APPROVED EQUAL	EA	15
122	ALL WELD SUPPORTS - 2" IPS TO 2" BOLT CIRCLE	EA	15
123	PRODUCT DESIGN 18-1232 OR APPROVED EQUAL OR APPROVED EQUAL	EA	15
124	STATION POST INSULATOR - 34.5 kV, 200 kV RL - 18 231	EA	15
125	NEWELL PORCELAIN 1875 OR APPROVED EQUAL	EA	15
126	RUBBER COVER FOR 3" BC INSULATOR & BUS FITTING	EA	15
127	MATCHER BOC OR APPROVED EQUAL	EA	15
128	ALL WELD TERMINAL - 2" IPS TO 4 HOLE PAD - 60 DEGREE, EXTERNAL FIT	EA	30
129	34.5 kV FEEDER CIRCUIT RISER CABLE TERMINATION SUPPORT	EA	5
130	SEE DRAWING INSS-5-0013/18020117	EA	10
131	34.5 kV FEEDER CIRCUIT RISER CONDUIT SUPPORT	EA	10
132	SEE DRAWING INSS-5-0013/18020117	EA	10
133	1/4" ANCHOR SCREWS	EA	70
134	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
135	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
136	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
137	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
138	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
139	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
140	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
141	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
142	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
143	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
144	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
145	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
146	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
147	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
148	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
149	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
150	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
151	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
152	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
153	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
154	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
155	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
156	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
157	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
158	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
159	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
160	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
161	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15
162	1/4" X 2" X 2" GALVANIZED U BOLT	EA	15

LEGEND	
(---)	NEW WORK
(---)	EXISTING
(---)	MATERIAL LIST ITEM NO.

NOTES
 1. SEE DRAWING INSS-5-0013/18020117 FOR MODIFICATIONS TO EXISTING 34.5 kV FEEDER CIRCUIT RISER SUPPORT STRUCTURE.
 2. SEE CONDUIT AND CABLE SCHEDULE FOR MATERIALS.
 3. BUS INSULATION NOT SHOWN FOR CLARITY.
 4. EXTEND BUS INSULATION TO HERE.

REMOVAL

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Block & Veitch Consultants, on 05/15/2020

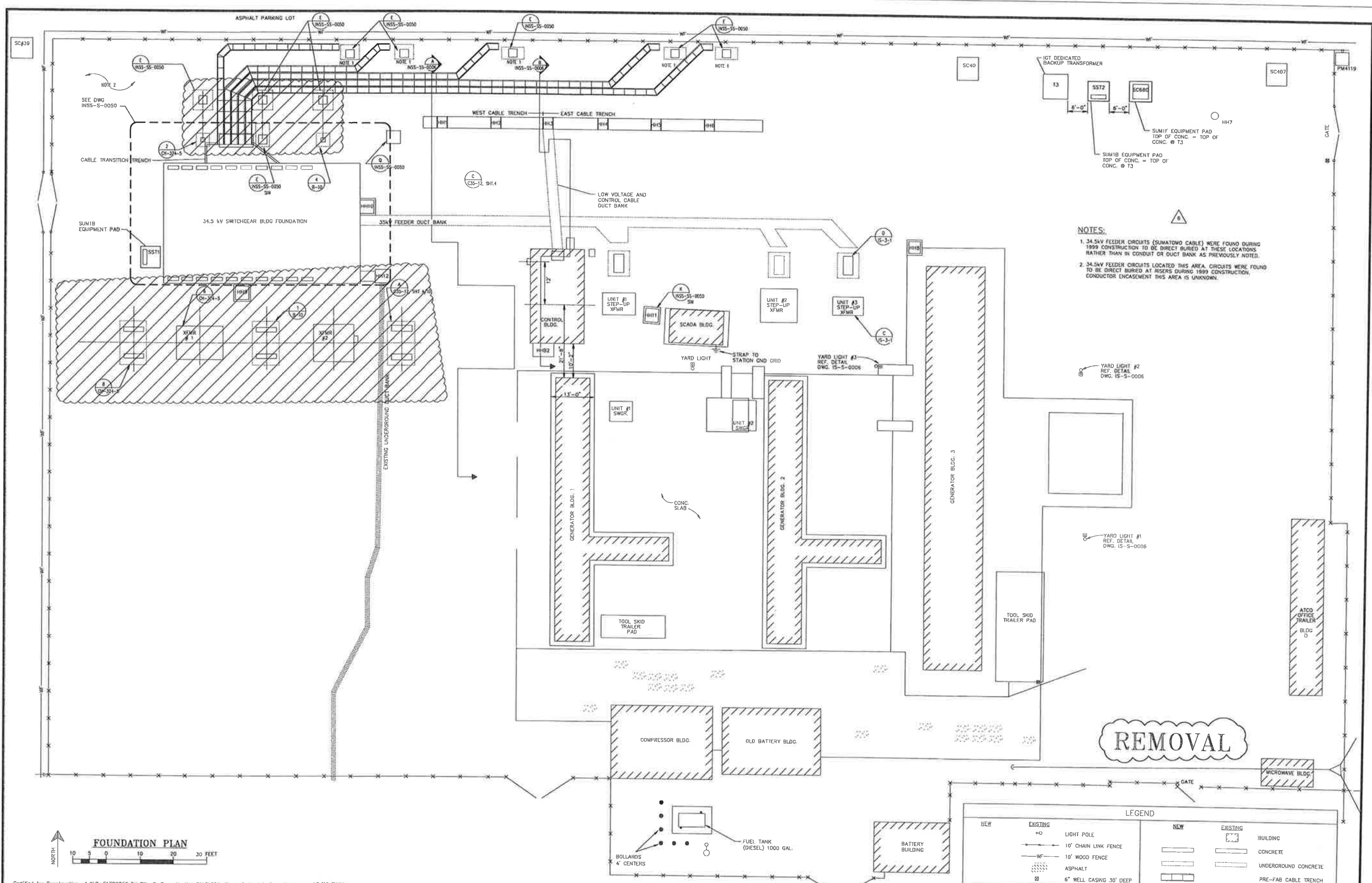
PROJECT: INSS 138 kV FACILITY RETIREMENT					
ENG./DESIGN: S. WENDLING (CEA) / B. BENNETT (B&V)					
W.O. # E1720055					
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/05-15-20	BGB/05-15-20		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	IGT AUXILIARY SYSTEM UPGRADE		10.0675EN	E9820117	WFN/AJDS	2/25/10
2	COPIED MATERIAL BUBBLES, DETAILS AND MATERIAL LIST FROM IN343		MCS		DDS	4/21/10
3	DRAWING UPDATED PER FIELD MARK-UP		MCS		D. CHOPP	10/08/10
4	SHEET CHANGED TO 1 OF 1/TITLE DESCRIPTION UPDATED		MS	10726	AL	11/13/12
	INTL TRANSMISSION SUBSTATION - CHUGACH AS-BUILT					



Chugach Electric Association, Inc.
 5601 Electron Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

DRAWING NAME:	INTERNATIONAL SUBSTATION 34.5KV BUS AND SWITCHGEAR PARTIAL PLAN & ELEVATIONS
CONFIDENTIAL	REMOVAL DRAWING
DRAWING NO. - PREVIOUS/REFERENCE	INSS-SS-0043_0001_4-R.dwg
DRAWING NO.:	INSS-SS-0043-R
SHEET	0001 OF 0001



NOTES:

- 34.5kV FEEDER CIRCUITS (SUMATOMO CABLE) WERE FOUND DURING 1999 CONSTRUCTION TO BE DIRECT BURIED AT THESE LOCATIONS RATHER THAN IN CONDUIT OR DUCT BANK AS PREVIOUSLY NOTED.
- 34.5kV FEEDER CIRCUITS LOCATED THIS AREA. CIRCUITS WERE FOUND TO BE DIRECT BURIED AT RISERS DURING 1999 CONSTRUCTION. CONDUCTOR ENCASMENT THIS AREA IS UNKNOWN.

REMOVAL

LEGEND			
NEW	EXISTING	NEW	EXISTING
○	○	□	□
—	—	▨	▨
—	—	▨	▨
—	—	▨	▨
—	—	▨	▨

PROJECT: **INSS 138 kV FACILITY RETIREMENT**
 ENG./DESIGN: **JESSE MOE (CEA) / B. BENNETT (R&V)** W.O. # **E1720055**

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./DATE	APPROVED DIRECTOR/DATE
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BGB/03-22-21	

NO.	RECORD REVISION	TECH. / DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
2	ADDED CONTROL BUILDING, REMOVED CAPACITOR BANK				DWB	10/1/99
3	ADDED SCADA BUILDING				DWB	4/13/92
4	AS BUILT					
5	AS BUILT: IGT DEDICATED BACK-UP	VECO/PFD	0400.360EN	E9410831		1/22/97
6	ASBUILT PER W0 E9820117, UPDATED ADDITIONAL INFORMATION AS FOUND	WPN/BG	10.0679EN	E9820117	WPN	7/7/03
7	ASBUILT PER CURRENT FIELD CONDITIONS - ADDED NOTE ON LOCATION OF OH TRANSMISSION POLES AND FENCE LAYOUT	MCS			ODS	04/28/16

CHUGACH
POWERING ALASKA'S FUTURE

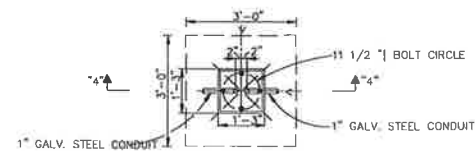
Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME: **INTERNATIONAL SUBSTATION FOUNDATION PLAN**
REMOVAL DRAWING

CONFIDENTIAL

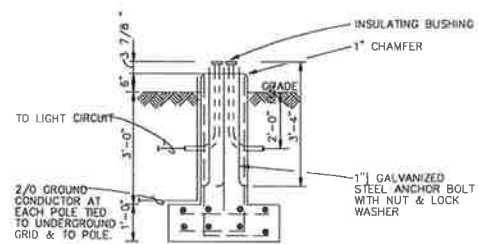
DRAWING NO. - PREVIOUS REFERENCE: INSS-SS-0005-0001-7-R.dwg
 SHEET: **0001** OF **0001**
 PACK: **7**

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Black & Veatch Consultants, on 03/22/2021



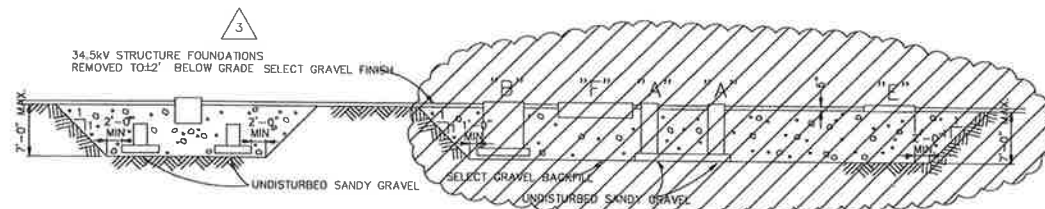
YARD LIGHTING POLE FOUNDATION

1/2" = 1'-0"



SECTION "4-4"

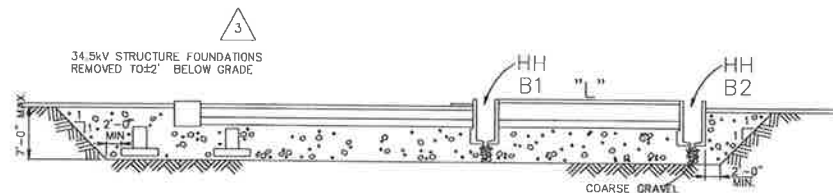
SCALE 1/2" = 1'-0"



NOTE: DO NOT EXCAVATE BELOW WATER LEVEL EXCEPT AS DIRECTED.

A EXCAVATION LIMITS

INSS-SS-0005 SCALE 1" = 10'-0"



B EXCAVATION LIMITS

INSS-SS-0005 SCALE 1" = 10'-0"

REMOVAL

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Black & Veatch Consultants, on 05/15/2020

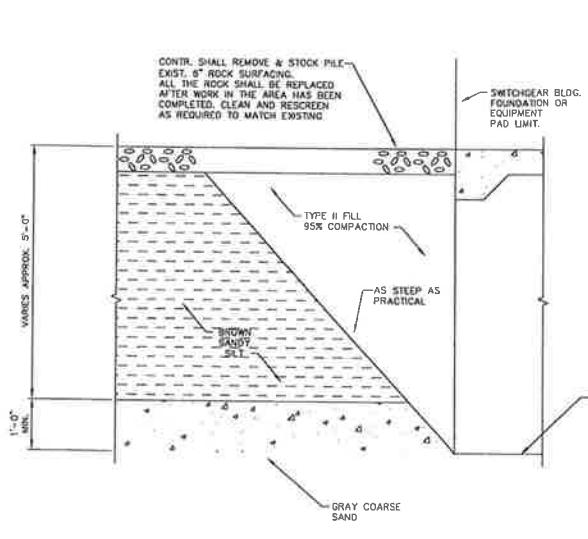
PROJECT: INSS 138 kV FACILITY RETIREMENT				
ENG./DESIGN: S. WENDLING (CEA) / B. BENNETT (B&V)				
W.O. # E1720055				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE
1	ISSUED FOR CONSTRUCTION	MJC/05-15-20	BGB/05-15-20	

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	CEI RECORD UPDATE	SW				8/01/88
2	ADDED SHEET NO.	WFN				6/12/99
3	ASBUILT PER WD E962017	WFN/BG	100679EN	E962017	WFN	6/17/03

CHUGACH
POWERING ALASKA'S FUTURE

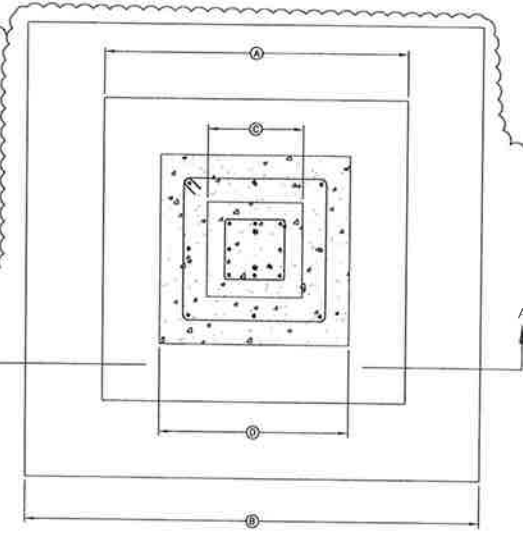
Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:	INTERNATIONAL SUBSTATION FOUNDATION DETAILS REMOVAL DRAWING
DRAWING NO. - PREVIOUS/REFERENCE:	/substation/mas/struct/mas.dwg, 6/24/03
DRAWING NO.:	IS-S-0006-R
SHEET	1 OF 1
PAGE	1



D TYP. SECTION-SITE EXCAVATION
NTS

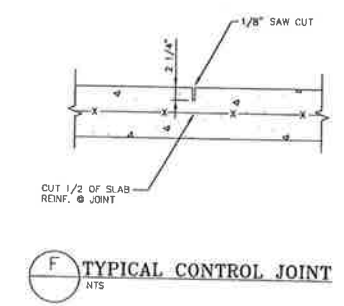
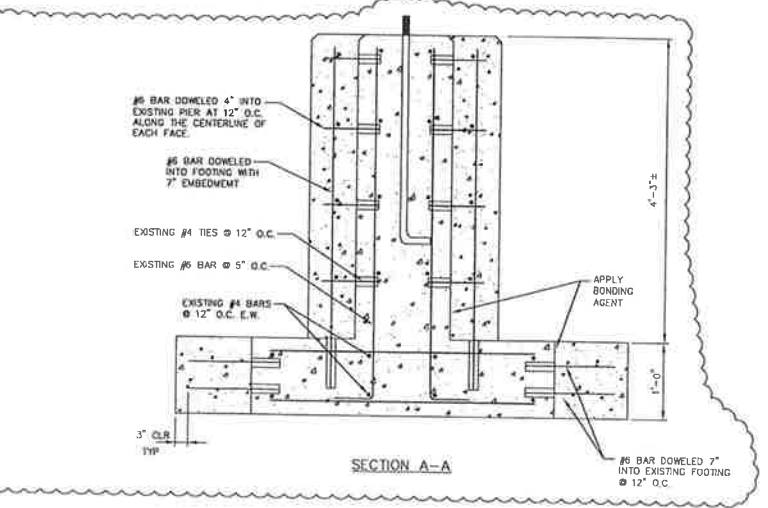
CONSTRUCTION NOTE:
1. DETAIL 'E' REPRESENTS TWO DIFFERENT FOUNDATIONS, AS SHOWN IN THE SCHEDULE TO THE RIGHT. ONLY THE 34.5KV BUS SUPPORT FOUNDATIONS (QUANTITY OF 4), ARE BEING REMOVED AT THIS TIME. SEE FOUNDATION PLAN REMOVAL DRAWING INSS-SS-005-R FOR LOCATIONS.



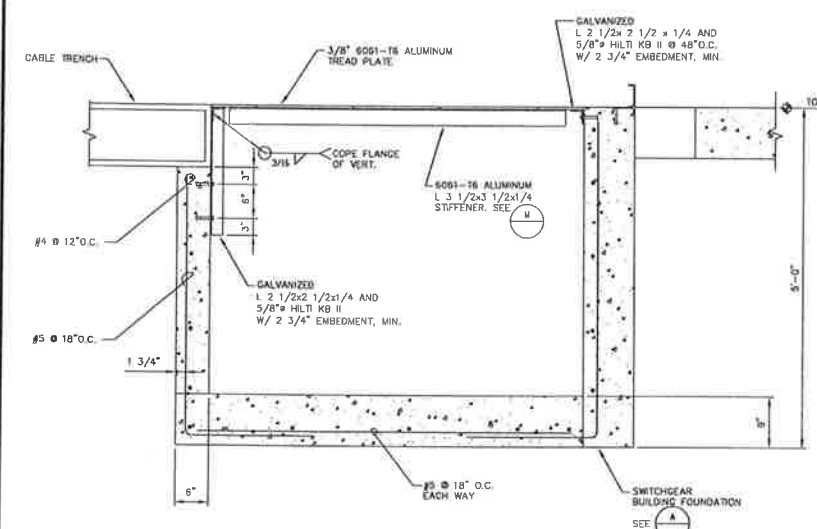
E SUPPORT STRUCTURE FOUNDATION MODIFICATIONS
NTS

FOUNDATION	EXISTING FOOTING	NEW FOOTING	EXISTING PIER	NEW PIER
34.5 KV BUS SUPPORT STRUCTURE	3'-6"	5'-6"	1'-6"	2'-6"

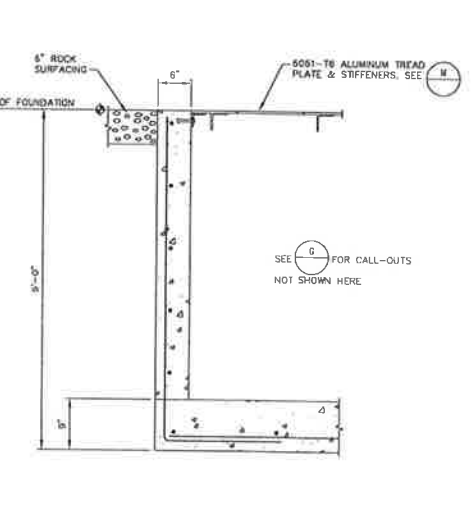
* ALL FOOTINGS AND PIERS ARE SQUARE U.N.O.



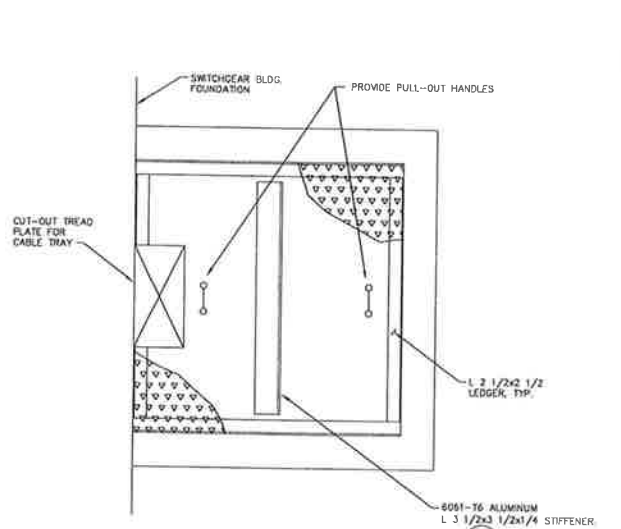
F TYPICAL CONTROL JOINT
NTS



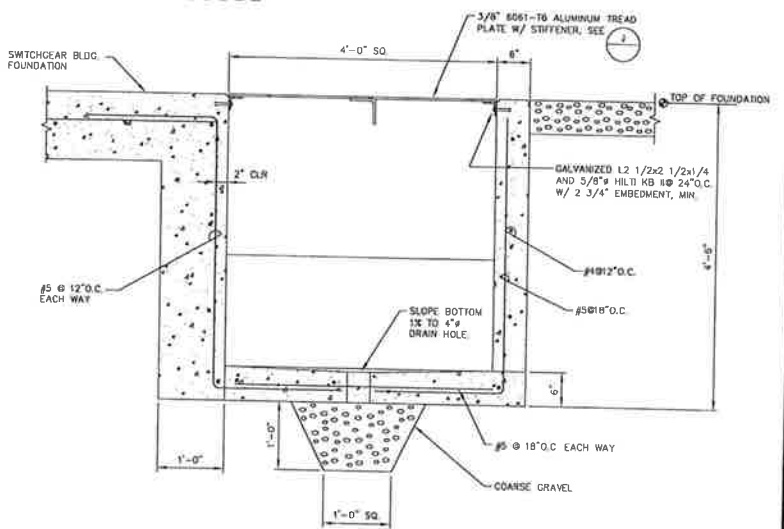
G CABLE TRANSITION TRENCH SECTION
NTS
NOTES: SEE IS-S-0007 FOR CONDUIT PENETRATION.



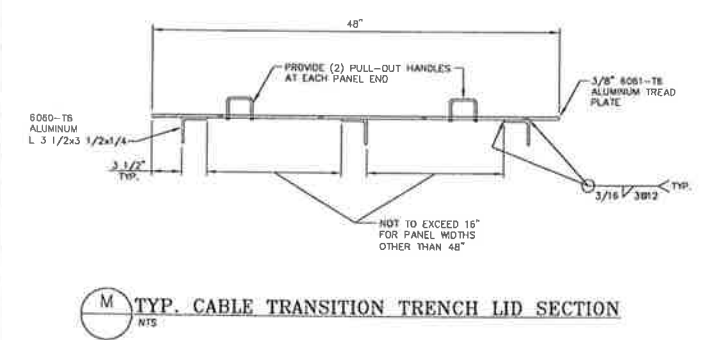
H CABLE TRANSITION TRENCH SECTION
NTS



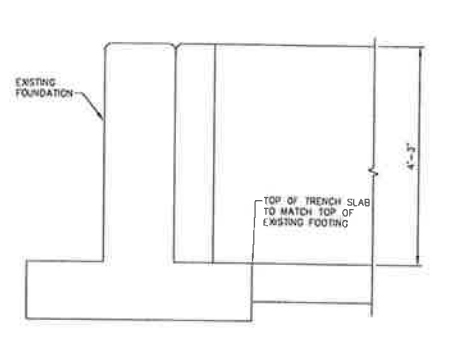
J PULL-BOX LID PLAN
NTS



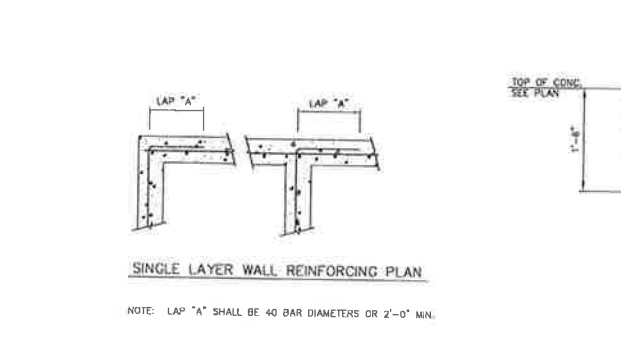
K PULL BOX SECTION
NTS
NOTE: SEE IS-S-0007 FOR CONDUIT PENETRATIONS.



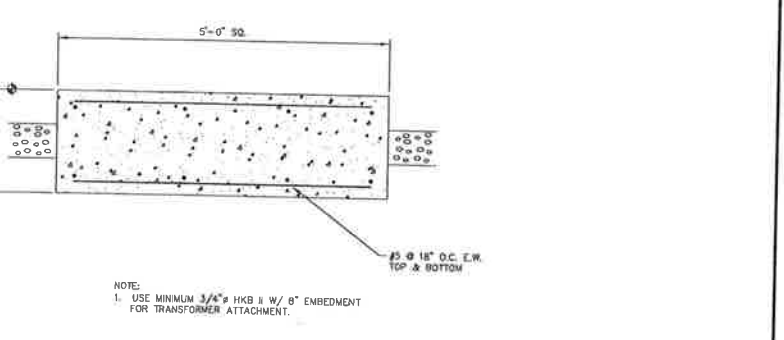
M TYP. CABLE TRANSITION TRENCH LID SECTION
NTS



N CABLE TRANSITION TRENCH AT EXISTING FOUNDATION
NTS



P TYPICAL WALL REINFORCING DETAIL
NTS



Q 500 KVA DRY XFMR FOUNDATION
NTS

REMOVAL

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CE131526, Black & Veatch Consultants, on 05/15/2020

PROJECT: INS 138KV FACILITY RETIREMENT				
ENG. DESIGN: S. WENDLING (CEA) / B. BENNETT (B&V)				
W.O. # E1720055				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE
0	ISSUED FOR CONSTRUCTION	MJC/05-15-20	BGB/05-15-20	

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	IGT AUXILIARY SYSTEM UPGRADE	MS/RW	10.06792N	E8820117	WFN/DDS	10/20/10

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

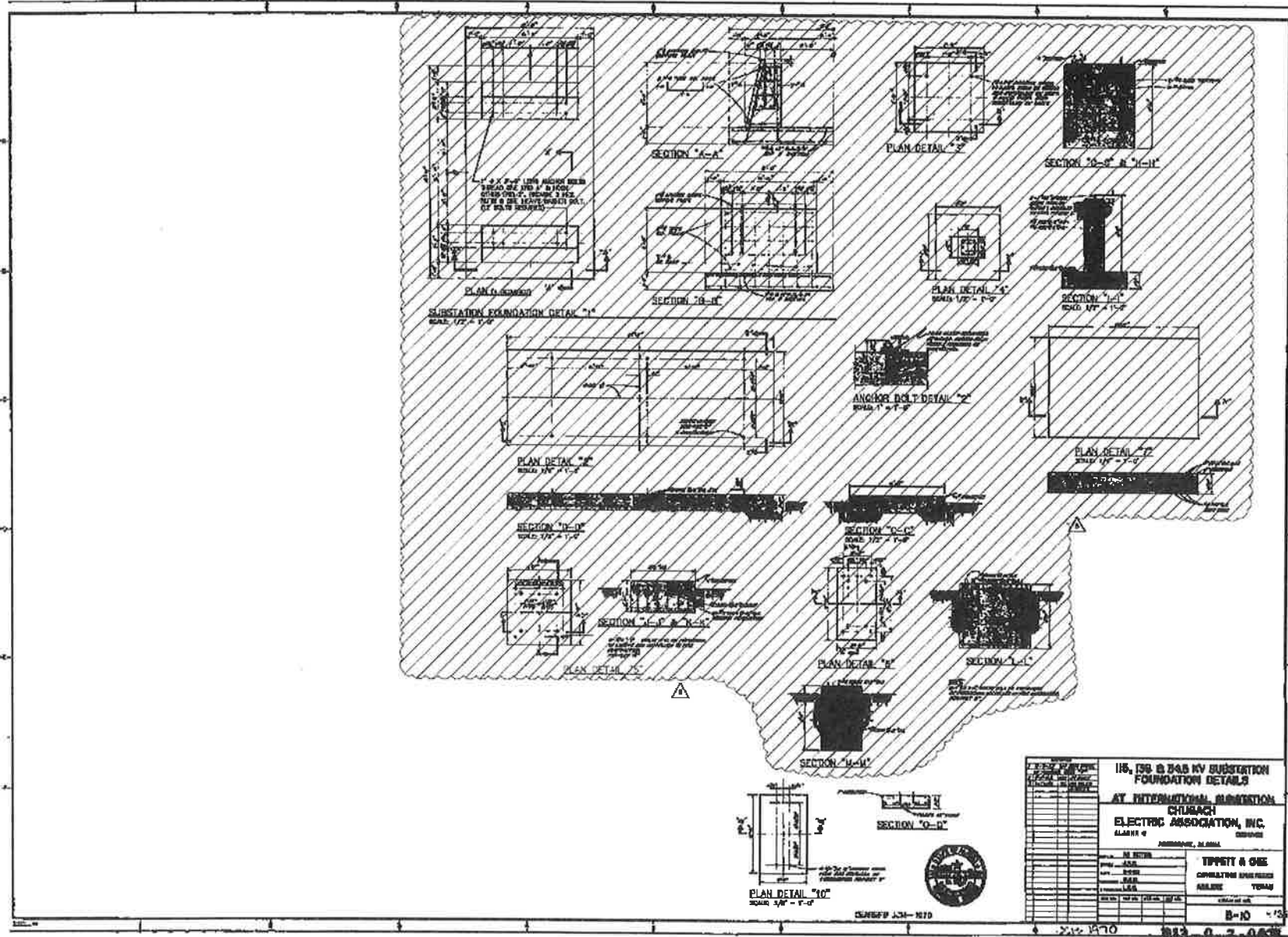
DRAWING NAME: **INTERNATIONAL SUBSTATION PARTIAL FOUNDATION PLAN & DETAILS REMOVAL DRAWING**

CONFIDENTIAL

DRAWING NO. - PREVIOUS/REFERENCE: **INSS08_0002_4-1**

DRAWING NO.: **INSS-SS-0050-R**

SHEET **0002** OF **0002**



PROJECT		W.O. #	
NO.	DESCRIPTION	DATE	BY

NO.	REVISION	DATE	BY	APP'D.



5601 Minnesota Drive
P.O. Box 198300
Anchorage, Alaska
99519-8300

115, 138 & 34.5 KV SUBSTATION FOUNDATION DETAILS

BY INTERNATIONAL SUBSTATION

CHUGACH ELECTRIC ASSOCIATION, INC.

ALASKA

ANCHORAGE, ALASKA

DATE: 3/12/97

BY: [Signature]

APP'D: [Signature]

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

B-10

INTERNATIONAL SUBSTATION
115, 138 & 34.5KV SUBSTATION
FOUNDATION DETAILS

ISSUE NO. - PREVIOUS/REFERENCE

ISSUE NO. B-10

PROJECT: INSS 138 KV FACILITY RETIREMENT
 ENG./DESIGN: S. WENDLING (CRAL) / D. BENNETT (R&V) W.O. # 81720055

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN BY/DATE	REVISED FOR/DATE	APPROVED (DATE)	ENG. STAMP
1	ISSUED FOR CONSTRUCTION	M.C./05-15-20	DCJ/05-15-20		

NO.	REVISION	TECH / DATE	W.P.	NO. APPROVED	DATE
4	ISSUED CLEAN-UP FROM SCANNING DRAWING	US		ED483723	3/12/97
5	FOUNDATIONS REMOVED PER WG E2820117	WPA/90	10.06.70EN	E2820117	8/13/93



Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 198300
Anchorage, Alaska 99519-8300

INTERNATIONAL SUBSTATION
115, 138 & 34.5KV SUBSTATION
FOUNDATION DETAILS
REMOVAL DRAWING

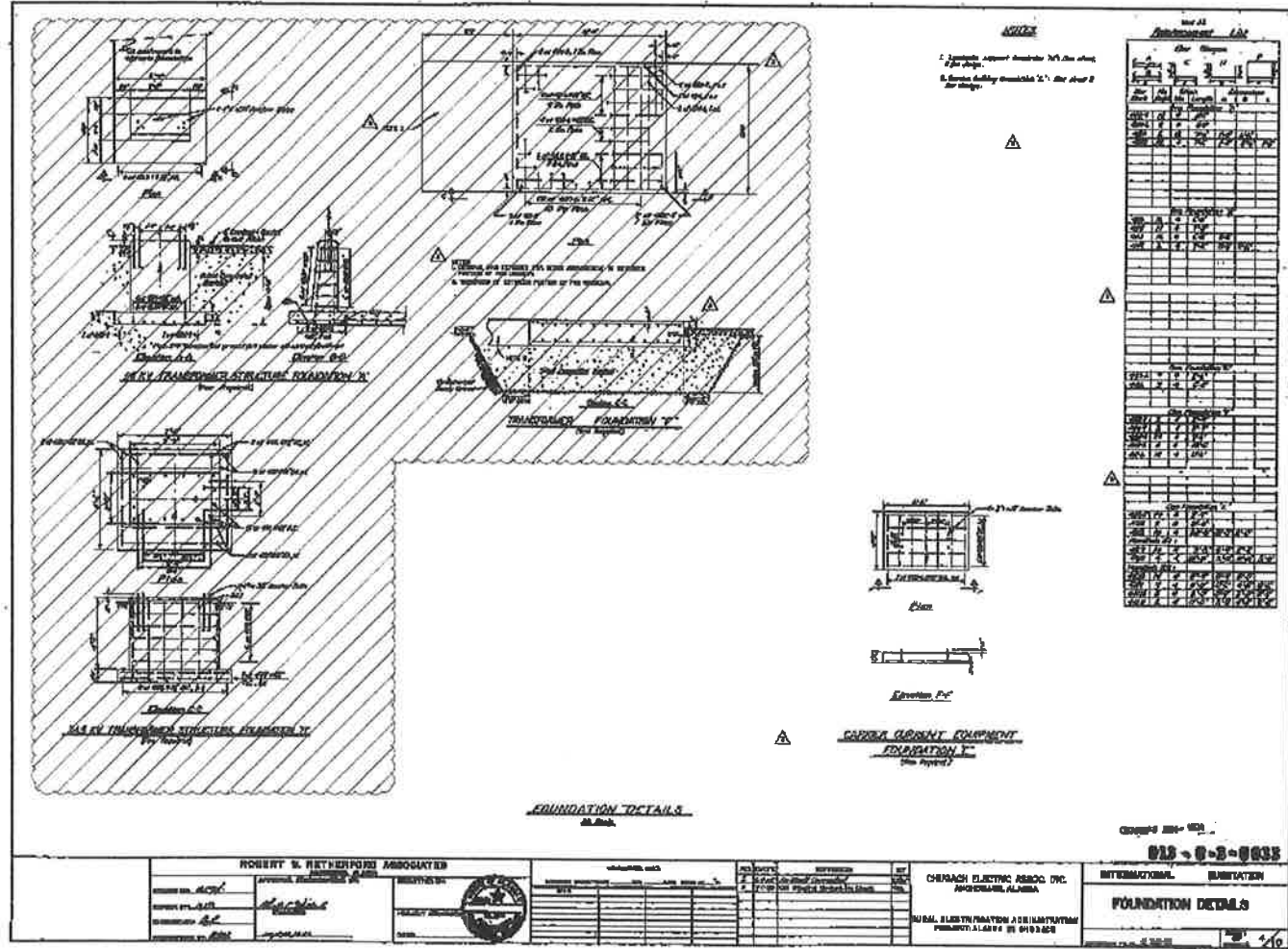
CONFIDENTIAL

ISSUE NO. - PREVIOUS/REFERENCE

ISSUE NO. B-10-R

DATE: 0001-05001

REMOVAL



NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DATE	BY	CHK

NO.	RECORD REVISION	DATE	BY	CHK

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196200
Anchorage, AK 99519-6200

PROJECT:	INTERNATIONAL SUBSTATION
FOUNDATION DETAILS	FOUNDATION DETAILS
115KV & 34.5KV TRANSFORMER FOUNDATIONS	FOUNDATION DETAILS
CARRIER CURRENT EQUIPMENT FOUNDATION	FOUNDATION DETAILS
DATE:	6/15/20
SCALE:	AS SHOWN

PROJECT:	INSS 138 KV FACILITY RESTOREMENT			
ENG./DESIGN:	S. WENDLING (CRA) / D. BENNETT (D&V)			
W.O. #:	E1720055			
NO.	DESCRIPTION	DATE	BY	CHK
1	ISSUED FOR CONSTRUCTION	6/15/20		

NO.	RECORD REVISION	DATE	BY	CHK
1	ASBUILT FOR NO. E1720055 CORRECTED FOUNDATION F TO AS FOUND IN FIELD	6/15/20		

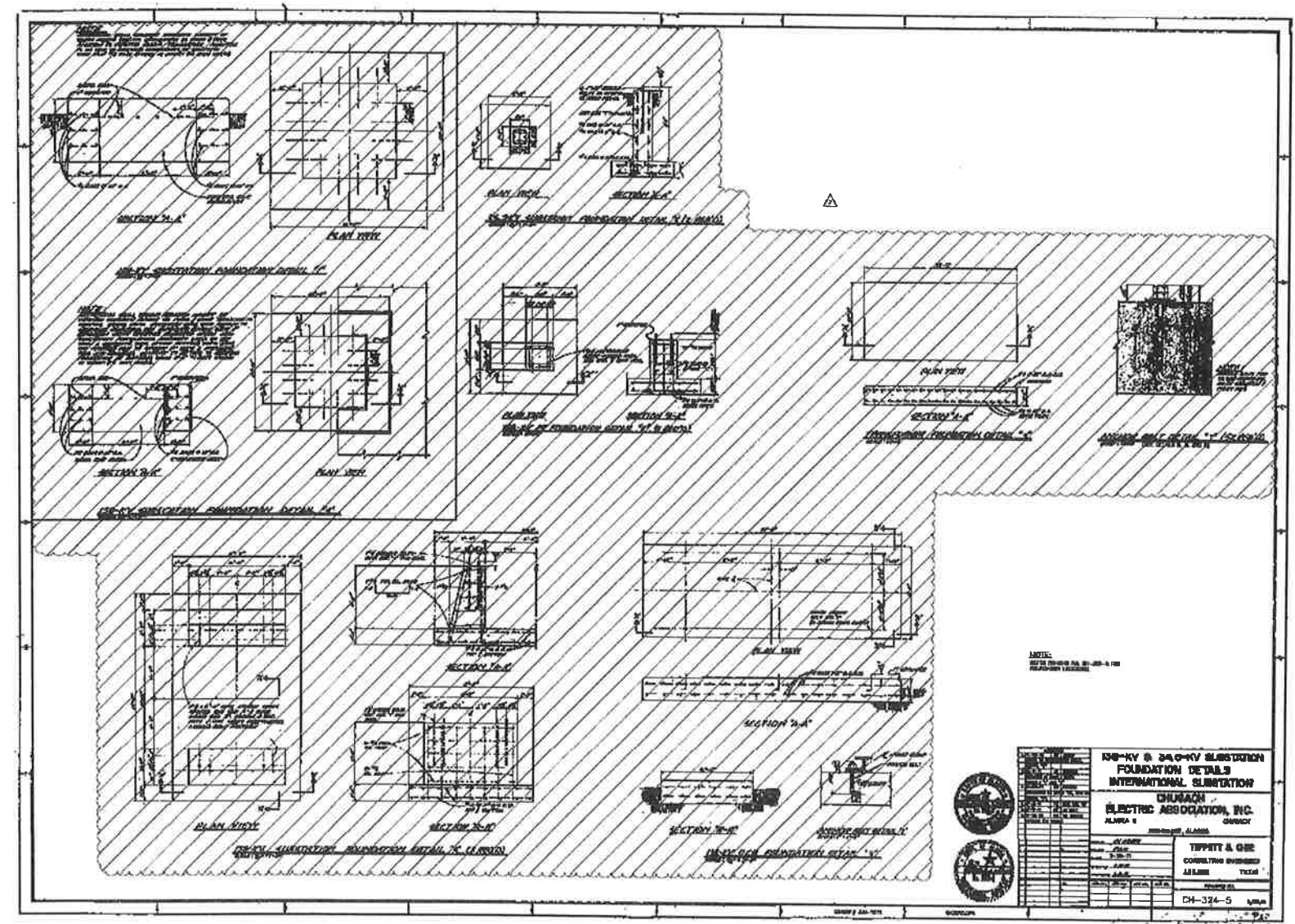
CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196200
Anchorage, Alaska 99519-6200

PROJECT:	INTERNATIONAL SUBSTATION
FOUNDATION DETAILS	FOUNDATION DETAILS
115KV & 34.5KV TRANSFORMER FOUNDATIONS	FOUNDATION DETAILS
CARRIER CURRENT EQUIPMENT FOUNDATION	FOUNDATION DETAILS
DATE:	6/15/20
SCALE:	AS SHOWN

REMOVAL

PROJECT:	INTERNATIONAL SUBSTATION
FOUNDATION DETAILS	FOUNDATION DETAILS
115KV & 34.5KV TRANSFORMER FOUNDATIONS	FOUNDATION DETAILS
CARRIER CURRENT EQUIPMENT FOUNDATION	FOUNDATION DETAILS
DATE:	6/15/20
SCALE:	AS SHOWN



NO.	REVISION	DATE	BY	CHECKED BY	APPROVED BY	DATE	NO.	REVISION	DATE	BY	CHECKED BY	APPROVED BY	DATE

NO.	REVISION	DATE	BY	CHECKED BY	APPROVED BY	DATE	NO.	REVISION	DATE	BY	CHECKED BY	APPROVED BY	DATE

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5001 Minnesota Drive - P.O. Box 196300
Anchorage, AK 99519-6300

INTERNATIONAL SUBSTATION
138KV & 34.5KV
FOUNDATION DETAILS

CHUGACH ELECTRIC ASSOCIATION, INC.
ALASKA I CLASS
ANCHORAGE, ALASKA

TIPPETT & GORZ
CONSULTING ENGINEERS
ANCHORAGE, ALASKA

CH-324-S

REMOVAL

NO.	REVISION	DATE	BY	CHECKED BY	APPROVED BY	DATE	NO.	REVISION	DATE	BY	CHECKED BY	APPROVED BY	DATE

NO.	REVISION	DATE	BY	CHECKED BY	APPROVED BY	DATE	NO.	REVISION	DATE	BY	CHECKED BY	APPROVED BY	DATE

CHUGACH
POWERING ALASKA'S FUTURE

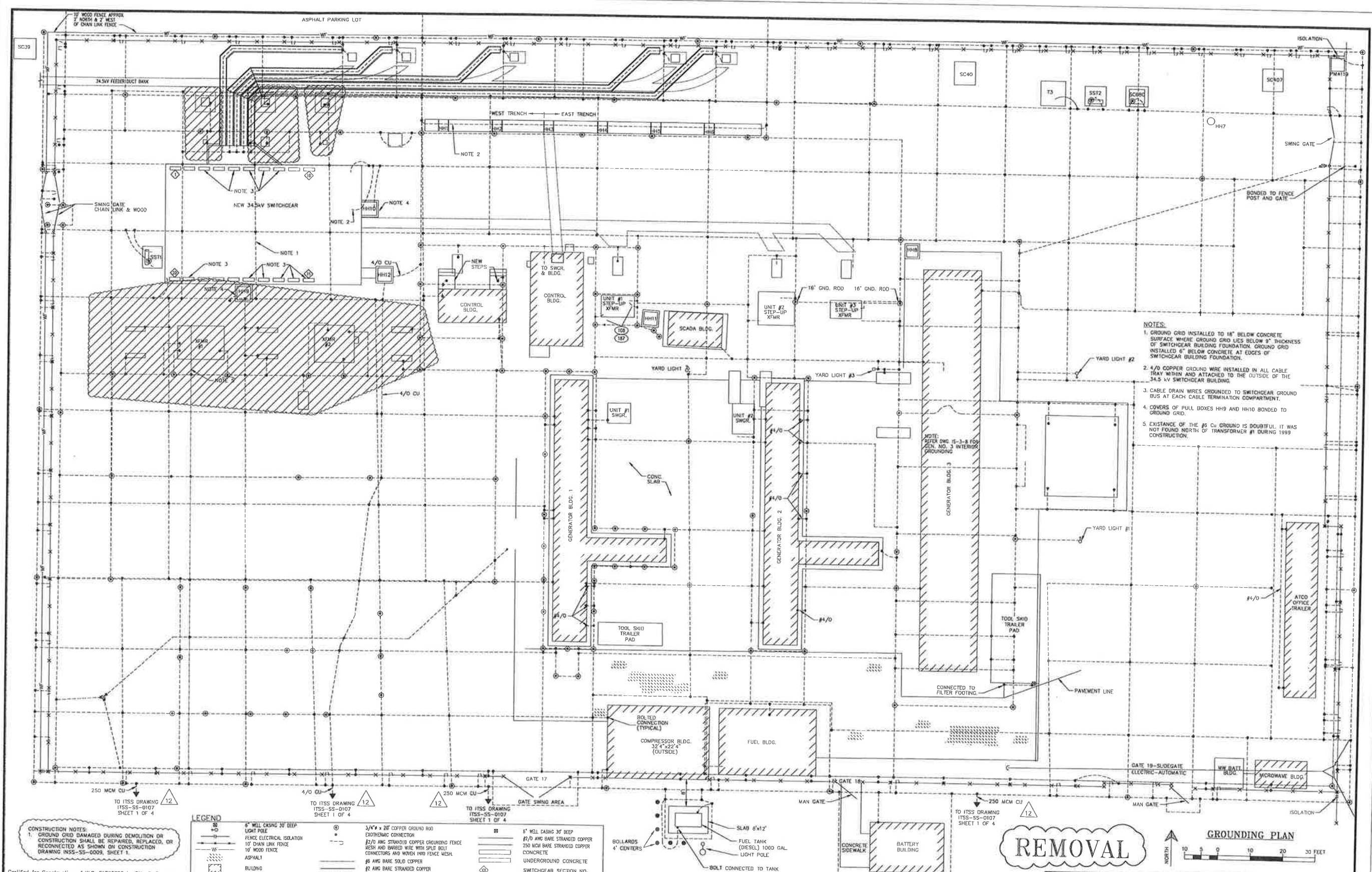
Chugach Electric Association, Inc.
5001 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

INTERNATIONAL SUBSTATION
138 AND 34.5KV SUBSTATION FOUNDATION DETAILS
REMOVAL DRAWING

CONFIDENTIAL

CHUGACH ELECTRIC ASSOCIATION, INC.
5001 MINNESOTA DRIVE - P.O. BOX 196300
ANCHORAGE, ALASKA 99519-6300

CH-324-5-R



- NOTES:**
- GROUND GRID INSTALLED TO 18" BELOW CONCRETE SURFACE WHERE GROUND GRID LIES BELOW 9" THICKNESS OF SWITCHGEAR BUILDING FOUNDATION. GROUND GRID INSTALLED 6" BELOW CONCRETE AT EDGES OF SWITCHGEAR BUILDING FOUNDATION.
 - 4/0 COPPER GROUND WIRE INSTALLED IN ALL CABLE TRAY WITHIN AND ATTACHED TO THE OUTSIDE OF THE 34.5 kV SWITCHGEAR BUILDING.
 - CABLE DRAIN WIRES GROUNDED TO SWITCHGEAR GROUND BUS AT EACH CABLE TERMINATION COMPARTMENT.
 - COVERS OF PULL BOXES HH9 AND HH10 BONDED TO GROUND GRID.
 - EXISTENCE OF THE #6 CU GROUND IS DOUBTFUL. IT WAS NOT FOUND NORTH OF TRANSFORMER #1 DURING 1999 CONSTRUCTION.

LEGEND

6" WALL CASING 10' DEEP LIGHT POLE	3/4" x 30' COPPER GROUND ROD	6" WALL CASING 36" DEEP
FENCE ELECTRICAL ISOLATION	ELECTRICAL CONNECTION	#2/0 AWG BARE STRANDED COPPER
10' CHAIN LINK FENCE	#2/0 AWG STRANDED COPPER GROUNDING FENCE	250 MCM BARE STRANDED COPPER
10' WOOD FENCE	WIRE AND BARBED WIRE WITH SPLIT BOLT CONNECTORS AND WOOD AND FENCE MESH	CONCRETE
ASPHALT	#6 AWG BARE SOLID COPPER	UNDERGROUND CONCRETE
BUILDING	#2 AWG BARE STRANDED COPPER	SWITCHGEAR SECTION NO.
SWITCH GROUNDING PLATFORM	#1/0 AWG BARE STRANDED COPPER	

CONSTRUCTION NOTES:
 1. GROUND GRID DAMAGED DURING DEMOLITION OR CONSTRUCTION SHALL BE REPAIRED, REPLACED, OR RECONNECTED AS SHOWN ON CONSTRUCTION DRAWING INSS-SS-0009, SHEET 1.

REMOVAL

Certified for Construction of W.O. E1720055 by Billy C. Bennett, No. CE131526, Blesk & Vesich Consultants, on 03/22/2021

PROJECT: INSS 138 kV FACILITY RETIREMENT
ENG./DESIGN: JESSE MOE (CEA) / B. BENNETT (B&V) W.O. # E1720055

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN. BY/DATE	REVIEWED MGR./SUBP./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/03-22-21	BOB/03-22-21		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
5	ADDED SCADA BLDG.	DWB				4/13/92
6	ADDED FUEL STORAGE TANK, GATE 19 (AUTO-ELECT)	RG				10/17/95
7	25MVAR CAPACITOR BANK - AS BUILT	/SG	N/A	E9511034		1/24/96
8	AS BUILT: IGT DEDICATED BACK-UP	VECO/PTD	0400.360EN	E8410B31		1/22/97
9	AUXILIARY SYSTEM UPGRADE	BN	10 0579EN	E9620117	WLN	10/9/00
10	ASBUILT - 34.5KV GROUNDING TRANSFORMER	WLN/BG	10 0752CE	E0020159	WLN	5/6/03
11	ADD MW BATTERY BLDG PER STEVEN KALETTA	GC				5/3/07
12	ITSS TRANSMISSION SUBSTATION - CHUGACH AS-BUILT	MS	10726	E0120202	AL	11/13/12



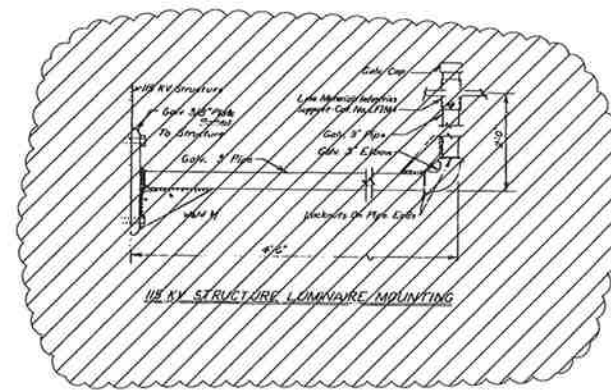
Chugach Electric Association, Inc.
 5601 Electron Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
1	INSS-SS-0009/2	GROUNDING DETAILS
2	INSS-SS-0009/3	GROUNDING DETAILS

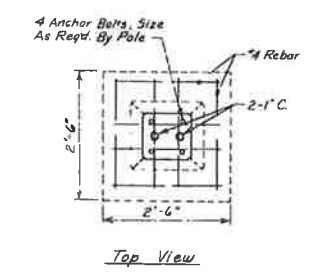
DRAWING NAME: **INTERNATIONAL SUBSTATION GROUNDING PLAN**
REMOVAL DRAWING

CONFIDENTIAL

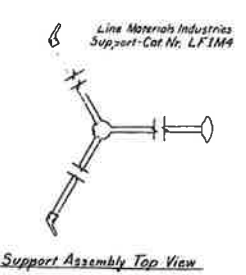
DRAWING NO. - PREVIOUS/REFERENCE: INSS-SS-0009-0001-12-R.dwg
 DRAWING NO.: **INSS-SS-0009-R** SHEET 0001 OF 0002
 PAGE



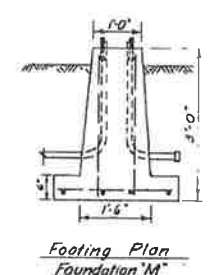
138 KV STRUCTURE LUMINAIRE MOUNTING



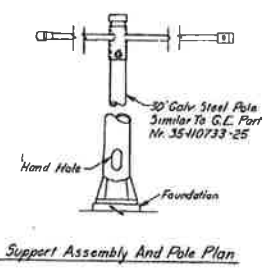
Top View



Support Assembly Top View

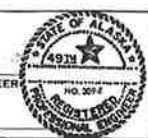


Footing Plan Foundation M




Support Assembly And Pole Plan

DETAIL -
POLE STRUCTURE LUMINAIRE MOUNTING
No. Scale

ROBERT W. RETHERFORD ASSOCIATES ANCHORAGE, ALASKA			CEAREF # JCM-1925																									
DESIGN BY: <i>W.B.</i>	APPROVAL RECOMMENDED BY: <i>[Signature]</i>	SUBMITTED BY: <i>[Signature]</i>																										
DRAWN BY: <i>W.B.</i>	PROJECT ENGINEER: <i>[Signature]</i>	DATE: _____	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>REVISION</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>6-7-63</td> <td>As-Built Corrected</td> <td>CEW</td> </tr> <tr> <td>2</td> <td>7-8-63</td> <td>CEI record update (major changes)</td> <td>SW</td> </tr> <tr> <td>3</td> <td>6-1-79</td> <td>CEI RECORD UPDATE</td> <td>EVV</td> </tr> <tr> <td colspan="4"> <small>April 25th Changed as per REA review.</small> </td> </tr> </tbody> </table>	NO.	DATE	REVISION	BY	1	6-7-63	As-Built Corrected	CEW	2	7-8-63	CEI record update (major changes)	SW	3	6-1-79	CEI RECORD UPDATE	EVV	<small>April 25th Changed as per REA review.</small>				<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">CHUGACH ELECTRIC ASSOC. INC. ANCHORAGE, ALASKA 013-0-2-0016 RURAL ELECTRIFICATION ADMINISTRATION PROJECT: ALASKA 85 CHUGACH</td> <td style="text-align: center;">INTERNATIONAL SUBSTATION OUTDOOR LIGHTING DETAILS</td> </tr> <tr> <td>DRAWING FILE: C 35-12</td> <td>SHEET OF SHEETS: 8 / 10</td> </tr> </table>	CHUGACH ELECTRIC ASSOC. INC. ANCHORAGE, ALASKA 013-0-2-0016 RURAL ELECTRIFICATION ADMINISTRATION PROJECT: ALASKA 85 CHUGACH	INTERNATIONAL SUBSTATION OUTDOOR LIGHTING DETAILS	DRAWING FILE: C 35-12	SHEET OF SHEETS: 8 / 10
NO.	DATE	REVISION	BY																									
1	6-7-63	As-Built Corrected	CEW																									
2	7-8-63	CEI record update (major changes)	SW																									
3	6-1-79	CEI RECORD UPDATE	EVV																									
<small>April 25th Changed as per REA review.</small>																												
CHUGACH ELECTRIC ASSOC. INC. ANCHORAGE, ALASKA 013-0-2-0016 RURAL ELECTRIFICATION ADMINISTRATION PROJECT: ALASKA 85 CHUGACH	INTERNATIONAL SUBSTATION OUTDOOR LIGHTING DETAILS																											
DRAWING FILE: C 35-12	SHEET OF SHEETS: 8 / 10																											

REMOVAL

Certified for Construction of W.O. E1720055 by Billy G. Bennett, No. CEI31526, Black & Veatch Consultants, on 05/15/2020

PROJECT: INSS 138 KV FACILITY RETIREMENT				W.O. # E1720055	
ENG./DESIGN: S. WENDLING (CEA) / B. BENNETT (B&V)					
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC/05-15-20	BOB/05-15-20		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
5	ASBUILT PER WO E9820117	WPN/BC	10.0679EN	E9820117	WPN	6/17/03

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME: INTERNATIONAL SUBSTATION OUTDOOR LIGHTING DETAILS REMOVAL DRAWING	
CONFIDENTIAL	<small>INSS-SS-0072_0008_6.dwg & .sp4</small>
<small>DRAWING NO. - PREVIOUS/REFERENCE</small> 223595AG	<small>INSS-EL-5072</small>
DRAWING NO.: C35-12-R	SHEET 0008 OF 0010 PAGE _____

CABLE					DESCRIPTION					CABLE					DESCRIPTION					
NO.	COND.	SIZE	FUNCTION	FROM	TO	REMARKS	NO.	COND.	SIZE	FUNCTION	FROM	TO	REMARKS	NO.	COND.	SIZE	FUNCTION	FROM	TO	REMARKS
DCA	2C	#10	PANEL #23 DC POWER	PANEL #23	PANEL #24		8612-A	12C	#12	TRIP/BLOCK CLOSE BKR 1716	PLC/SECTION #8	OLD CONTROL BLDG-3F PANEL	TRIP/BLOCK CLOSE BKR 1716	86-12	3C	#10	TRIP 236	387-232 SECTION #8	336 SECTION #2	TRIP 236
DCB	2C	#10	PANEL #22 DC POWER	PANEL #22	PANEL #24		86-12	3C	#10	TRIP 236	TRANSFORMER #2	35 KV SWGR. BLDG. SECTION #8	TRIP TO PLC # 387	T2-TRP	12C	#12	T2 63X TRIPS	TRIP TO PLC # 387		
DC C	2C	#10	PANEL #21 DC POWER	PANEL #21	PANEL #24		T1-CT4	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #17	TRANSFORMER #1	SPARE	CT49	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #2	TRANSFORMER #2	SPARE
PLC DC	2C	#10	PANEL #24 DC POWER	PANEL #24	DC PANEL #1		CT49	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #2	TRANSFORMER #2	SPARE	CT49	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #2	TRANSFORMER #2	SPARE
CB0	12C	#12	GENERATOR #3	34.5 SWGR. SECTION #5	GENERATOR #3		CT49	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #2	TRANSFORMER #2	SPARE	CT49	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #2	TRANSFORMER #2	SPARE
CB1	12C	#12	GENERATOR #3	34.5 SWGR. SECTION #5	GENERATOR #3		CT49	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #2	TRANSFORMER #2	SPARE	CT49	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #2	TRANSFORMER #2	SPARE
CB2	12C	#12	GENERATOR #2	34.5 SWGR. SECTION #6	GENERATOR #2		CT49	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #2	TRANSFORMER #2	SPARE	CT49	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #2	TRANSFORMER #2	SPARE
CB3	12C	#12	GENERATOR #2	34.5 SWGR. SECTION #6	GENERATOR #2		CT49	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #2	TRANSFORMER #2	SPARE	CT49	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #2	TRANSFORMER #2	SPARE
CB4	12C	#12	GENERATOR #1	34.5 SWGR. SECTION #11	GENERATOR #1		CT49	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #2	TRANSFORMER #2	SPARE	CT49	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #2	TRANSFORMER #2	SPARE
CB5	12C	#12	GENERATOR #1	34.5 SWGR. SECTION #11	GENERATOR #1		CT49	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #2	TRANSFORMER #2	SPARE	CT49	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #2	TRANSFORMER #2	SPARE
CD0	12C	#12	CONTROL	34.5 SWGR. BLDG. SECTION #11	UNIT 1 TRANSFORMER	BST TRIP	IN1	40C	#10	PLC CONTROL	PANEL #24	PANEL #24	SC/#18 & 32C/#20 CABLE	D-EAST	2C	#10	DOOR ALARM	34.5 SWGR. SECTION #10	EAST DOOR	
GPS 2	2C	#10	GPS CLOCK	PANEL #21	34.5 SWGR. SECTION #10		IN2	40C	#10	PLC CONTROL	PANEL #24	PANEL #24	SC/#18 & 32C/#20 CABLE	D-WEST	2C	#10	DOOR ALARM	34.5 SWGR. SECTION #10	WEST DOOR	
GPS 1	2C	#10	GPS CLOCK	PANEL #22	34.5 SWGR. SECTION #10		IN3	40C	#10	PLC CONTROL	PANEL #24	PANEL #24	SC/#18 & 32C/#20 CABLE	B1	2C	#12	BATTERY BANK	BATTERY BANK	34.5 SWGR. BLDG. SECTION #10	
NBS 1	20C	#10	STATUS PTS.	PANEL 21 RTUNB	34.5 SWGR. SECTION #2		IN4	40C	#10	PLC CONTROL	PANEL #24	PANEL #24	SC/#18 & 32C/#20 CABLE	BT1	2C	#12	BATTERY BANK	BATTERY BANK	34.5 SWGR. BLDG. SECTION #10	
NBS 2	20C	#10	STATUS PTS.	PANEL 21 RTUNB	34.5 SWGR. SECTION #3		OUT1	40C	#10	PLC CONTROL	PANEL #24	PANEL #24	SC/#18 & 32C/#20 CABLE	CS101XA	2C	#14	SWITCH POSITION	SWITCH 101 STATION SERVICE	34.5 SWGR. BLDG. SECTION #10	
NBS 3	20C	#10	STATUS PTS.	PANEL 21 RTUNB	34.5 SWGR. SECTION #4		OUT2	40C	#10	PLC CONTROL	PANEL #24	PANEL #24	SC/#18 & 32C/#20 CABLE	CS201XA	2C	#14	SWITCH POSITION	SWITCH 201 STATION SERVICE	34.5 SWGR. BLDG. SECTION #10	(SPARE)
NBS 4	20C	#10	STATUS PTS.	PANEL 21 RTUNB	34.5 SWGR. SECTION #5		OUT3	40C	#10	PLC CONTROL	PANEL #24	PANEL #24	SC/#18 & 32C/#20 CABLE	P25A	2C	#10	DC POWER	34.5KV SWGR. BLDG. SECTION #14	DC PANEL #2	
NBS 5	20C	#10	STATUS PTS.	PANEL 21 RTUNB	34.5 SWGR. SECTION #6		OUT4	40C	#10	PLC CONTROL	PANEL #24	PANEL #24	SC/#18 & 32C/#20 CABLE	P26A	2C	#10	DC POWER	34.5KV SWGR. BLDG. SECTION #14	DC PANEL #2	
NBS 6	20C	#10	STATUS PTS.	PANEL 21 RTUNB	34.5 SWGR. SECTION #7		OUT6	40C	#10	PLC CONTROL	PANEL #24	PANEL #24	SC/#18 & 32C/#20 CABLE	WR1	4C	#10	RECEPTACLES AC	34.5 SWGR AC PANEL #2	YARD RECEPTACLE - RE2	
NBS 7	20C	#10	STATUS PTS.	PANEL 21 RTUNB	34.5 SWGR. SECTION #8		WR2	4C	#10	RECEPTACLES AC	34.5 SWGR AC PANEL #2	YARD RECEPTACLE - RE2	YARD RECEPTACLE - RE1	WR3	4C	#10	RECEPTACLES AC	34.5 SWGR AC PANEL #2	YARD RECEPTACLE - RE3	
NBS 8	20C	#10	STATUS PTS.	PANEL 21 RTUNB	34.5 SWGR. SECTION #9		WR3	4C	#10	RECEPTACLES AC	34.5 SWGR AC PANEL #2	YARD RECEPTACLE - RE3	YARD RECEPTACLE - RE1	ACSS	2C	#10	AC TO SS 27 INLY	601 SWITCH	SECTION #10	
NBS 9	20C	#10	STATUS PTS.	PANEL 21 RTUNB	34.5 SWGR. SECTION #9		G-LT1	4C	#10	STUMBLE LIGHTING PHOTOCCELL	STUMBLE LIGHTING CONTROL	PHOTOCCELL		TI-CT1	4C	#10	CURRENT DKT	UNIT 1 TRANSFORMER	34.5KV SWGR. BLDG. SECTION #11	(SPARE) ROLLED ON TOP OF UNIT 11 & PULL HOLE EAST OF XTMR
NBS 10	20C	#10	STATUS PTS.	PANEL 21 RTUNB	34.5 SWGR. SECTION #10		TI-CT1	4C	#10	CURRENT DKT	UNIT 1 TRANSFORMER	34.5KV SWGR. BLDG. SECTION #11	(SPARE) ROLLED ON TOP OF UNIT 11 & PULL HOLE EAST OF XTMR	CT02	4C	#10	UNIT 1 TRANSFORMER	UNIT 1 TRANSFORMER	34.5KV SWGR. BLDG. SECTION #11	(SPARE) ROLLED ON TOP OF UNIT 11 & PULL HOLE EAST OF XTMR
SBS 1	20C	#10	STATUS PTS.	PANEL 22 RTUSB	34.5 SWGR. SECTION #11		CT03	4C	#10	UNIT 1 TRANSFORMER	UNIT 1 TRANSFORMER	34.5KV SWGR. BLDG. SECTION #11		CT03	4C	#10	UNIT 1 TRANSFORMER	UNIT 1 TRANSFORMER	34.5KV SWGR. BLDG. SECTION #11	
SBS 2	20C	#10	STATUS PTS.	PANEL 22 RTUSB	34.5 SWGR. SECTION #12		TI-P23	4C	#10	DC POWER FOR 63 RELAY	DC POWER FOR 63 RELAY	34.5KV SWGR. BLDG. SECTION #17		TI-P23	4C	#10	DC POWER FOR 63 RELAY	DC POWER FOR 63 RELAY	34.5KV SWGR. BLDG. SECTION #17	
SBS 3	20C	#10	STATUS PTS.	PANEL 22 RTUSB	34.5 SWGR. SECTION #13		P27A	4C	#10	DC POWER FOR 63 RELAY	DC POWER FOR 63 RELAY	34.5KV SWGR. BLDG. SECTION #17		UTS1	20C	#16	UNIT 1 TRANSFORMER STATUS	UNIT 1 TRANSFORMER	34.5KV SWGR. BLDG. SECTION #11	(SPARE) ROLLED UP ON TOP OF UNIT 11
SBS 4	20C	#10	STATUS PTS.	PANEL 22 RTUSB	34.5 SWGR. SECTION #14		UTS2	20C	#16	UNIT 1 TRANSFORMER STATUS	UNIT 1 TRANSFORMER	34.5KV SWGR. BLDG. SECTION #11		VL01	4C	#10	LIGHTING CONTACTOR AC - STUMBLE	34.5 SWGR AC PANEL #2	LIGHTING CONTACTOR JB - LC1	
SBS 5	20C	#10	STATUS PTS.	PANEL 22 RTUSB	34.5 SWGR. SECTION #15		VL02	4C	#10	LIGHTING CONTACTOR AC - TASK	34.5 SWGR AC PANEL #2	LIGHTING CONTACTOR JB - LC2		VL02	4C	#10	LIGHTING CONTACTOR AC - TASK	34.5 SWGR AC PANEL #2	LIGHTING CONTACTOR JB - LC2	
SBS 6	20C	#10	STATUS PTS.	PANEL 22 RTUSB	34.5 SWGR. SECTION #16		VL1	4C	#10	LIGHTING CONTACTOR AC - STUMBLE	34.5 SWGR AC PANEL #2	LIGHTING CONTACTOR JB - LC2		VL1	4C	#10	LIGHTING CONTACTOR AC - STUMBLE	34.5 SWGR AC PANEL #2	LIGHTING CONTACTOR JB - LC2	
SBS 7	20C	#10	STATUS PTS.	PANEL 22 RTUSB	34.5 SWGR. SECTION #17		VL2	4C	#10	STUMBLE LIGHTING AC - CIRCUIT #1	34.5 SWGR AC PANEL #2	LIGHTING CONTACTOR JB - LC1	STUMBLE LIGHT #2	VL2	4C	#10	STUMBLE LIGHTING AC - CIRCUIT #1	LIGHTING CONTACTOR JB - LC1	STUMBLE LIGHT #2	
SBS 8	20C	#10	STATUS PTS.	PANEL 22 RTUSB	34.5 SWGR. SECTION #17		VL3	4C	#10	STUMBLE LIGHTING AC - CIRCUIT #2	34.5 SWGR AC PANEL #2	LIGHTING CONTACTOR JB - LC1	STUMBLE LIGHT #1	VL3	4C	#10	STUMBLE LIGHTING AC - CIRCUIT #2	LIGHTING CONTACTOR JB - LC1	STUMBLE LIGHT #1	
SBS 9	20C	#10	STATUS PTS.	PANEL 22 RTUSB	34.5 SWGR. SECTION #19		VL4	4C	#10	STUMBLE LIGHTING AC - CIRCUIT #2	34.5 SWGR AC PANEL #2	LIGHTING CONTACTOR JB - LC1	STUMBLE LIGHT #5	VL4	4C	#10	STUMBLE LIGHTING AC - CIRCUIT #2	LIGHTING CONTACTOR JB - LC1	STUMBLE LIGHT #5	
SBS 10	BPR	#10	STATUS PTS.	PANEL 22 RTUSB	34.5 SWGR. SECTION #10		VL5	4C	#10	STUMBLE LIGHTING AC - CIRCUIT #2	34.5 SWGR AC PANEL #2	LIGHTING CONTACTOR JB - LC2	STUMBLE LIGHT #4	VL5	4C	#10	STUMBLE LIGHTING AC - CIRCUIT #2	LIGHTING CONTACTOR JB - LC2	STUMBLE LIGHT #4	
SBS 11	BPR	#10	STATUS PTS.	PANEL 22 RTUSB	34.5 SWGR. SECTION #11		VL6	4C	#10	STUMBLE LIGHTING AC - CIRCUIT #2	34.5 SWGR AC PANEL #2	LIGHTING CONTACTOR JB - LC1	STUMBLE LIGHT #3	VL6	4C	#10	STUMBLE LIGHTING AC - CIRCUIT #2	LIGHTING CONTACTOR JB - LC1	STUMBLE LIGHT #3	
SBS 12	BPR	#10	STATUS PTS.	PANEL 22 RTUSB	34.5 SWGR. SECTION #11		VL7	4C	#10	TASK LIGHTING AC - CIRCUIT #1	34.5 SWGR AC PANEL #2	LIGHTING CONTACTOR JB - LC2	TASK LIGHT #10	VL7	4C	#10	TASK LIGHTING AC - CIRCUIT #1	LIGHTING CONTACTOR JB - LC2	TASK LIGHT #10	
SBS 13	IPR	#10	STATUS PTS.	PANEL 22 RTUSB	34.5 SWGR. SECTION #12		VL8	4C	#10	TASK LIGHTING AC - CIRCUIT #1	34.5 SWGR AC PANEL #2	LIGHTING CONTACTOR JB - LC2	TASK LIGHT #9	VL8	4C	#10	TASK LIGHTING AC - CIRCUIT #1	LIGHTING CONTACTOR JB - LC2	TASK LIGHT #9	
SBS 14	BPR	#10	STATUS PTS.	PANEL 22 RTUSB	34.5 SWGR. SECTION #10		VL9	4C	#10	TASK LIGHTING AC - CIRCUIT #1	34.5 SWGR AC PANEL #2	LIGHTING CONTACTOR JB - LC2	TASK LIGHT #8	VL9	4C	#10	TASK LIGHTING AC - CIRCUIT #1	LIGHTING CONTACTOR JB - LC2	TASK LIGHT #8	
SBS 15	IPR	#10	STATUS PTS.	PANEL 22 RTUSB	34.5 SWGR. SECTION #12		VL10	4C	#10	TASK LIGHTING AC - CIRCUIT #2	34.5 SWGR AC PANEL #2	LIGHTING CONTACTOR JB - LC2	TASK LIGHT #7	VL10	4C	#10	TASK LIGHTING AC - CIRCUIT #2	LIGHTING CONTACTOR JB - LC2	TASK LIGHT #7	
SBS 16	2C	#10	STATUS PTS.	PANEL 22 RTUSB	34.5 SWGR. SECTION #10		VL11	4C	#10	TASK LIGHTING AC - CIRCUIT #2	34.5 SWGR AC PANEL #2	LIGHTING CONTACTOR JB - LC2	TASK LIGHT #6	VL11	4C	#10	TASK LIGHTING AC - CIRCUIT #2	LIGHTING CONTACTOR JB - LC2	TASK LIGHT #6	
PLC 1	BPR	#10	PLC CONTROL	PANEL #24	34.5 SWGR. SECTION #3		P32	4C	#4	AC POWER T1	AC-1 PANEL	TRANSFORMER "1"		P32	4C	#4	AC POWER T1	AC-1 PANEL	TRANSFORMER "1"	
PLC 2	BPR	#10	PLC CONTROL	PANEL #24	34.5 SWGR. SECTION #4		P33	4C	#4	AC POWER T2	AC-1 PANEL	TRANSFORMER "2"		P33	4C	#4	AC POWER T2	AC-1 PANEL	TRANSFORMER "2"	
PLC 3	BPR	#10	PLC CONTROL	PANEL #24	34.5 SWGR. SECTION #5		T2-CT2	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #8	TRANSFORMER "2"	SPARE	T2-CT2	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #8	TRANSFORMER "2"	SPARE
PLC 4	BPR	#10	PLC CONTROL	PANEL #24	34.5 SWGR. SECTION #6		T2-CT3	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #8	TRANSFORMER "2"	SPARE	T2-CT3	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #8	TRANSFORMER "2"	SPARE
PLC 5	BPR	#10	PLC CONTROL	PANEL #24	34.5 SWGR. SECTION #7		T2-S2	20C	#10	SPARE	34.5 SWGR. BLDG. SECTION #8	TRANSFORMER "2"	SPARE	T2-S2	20C	#10	SPARE	34.5 SWGR. BLDG. SECTION #8	TRANSFORMER "2"	SPARE
PLC 6	BPR	#10	PLC CONTROL	PANEL #24	34.5 SWGR. SECTION #8		T2T	12C	#12	SPARE	34.5 SWGR. BLDG. SECTION #8	TRANSFORMER "2"	SPARE	T2T	12C	#12	SPARE	34.5 SWGR. BLDG. SECTION #8	TRANSFORMER "2"	SPARE
PLC 7	BPR	#10	PLC CONTROL	PANEL #24	34.5 SWGR. SECTION #9		TI-CT2	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #17	TRANSFORMER "1"	SPARE	TI-CT2	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #17	TRANSFORMER "1"	SPARE
PLC 8	BPR	#10	PLC CONTROL	PANEL #24	34.5 SWGR. SECTION #11		TI-CT3	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #17	TRANSFORMER "1"	SPARE	TI-CT3	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #17	TRANSFORMER "1"	SPARE
PLC 9	BPR	#10	PLC CONTROL	PANEL #24	34.5 SWGR. SECTION #12		TI-CT4	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #17	TRANSFORMER "1"	SPARE	TI-CT4	4C	#10	SPARE CT CABLE	34.5 SWGR. BLDG. SECTION #17	TRANSFORMER "1"	SPARE
PLC 10	BPR	#10	PLC CONTROL	PANEL #24	34.5 SWGR. SECTION #13		TI-S2	20C	#10	SPARE	34.5 SWGR. BLDG. SECTION #17	TRANSFORMER "1"	SPARE	TI-S2	20C	#10	SPARE	34.5 SWGR. BLDG. SECTION #17	TRANSFORMER "1"	SPARE
PLC 11	BPR	#10	PLC CONTROL	PANEL #24	34.5 SWGR. SECTION #14		TI-T	12C	#12	SPARE	34.5 SWGR. BLDG. SECTION #17	TRANSFORMER "1"	SPARE	TI-T	12C	#12	SPARE	34.5 SWGR. BLDG. SECTION #17	TRANSFORMER "1"	SPARE
PLC 12	BPR	#10	PLC CONTROL	PANEL #24	34.5 SWGR. SECTION #15		TI-S2	20C	#10	SPARE	34.5 SWGR. BLDG. SECTION #17	TRANSFORMER "1"	SPARE	TI-S2	20C	#10	SPARE	34.5 SWGR. BLDG. SECTION #17	TRANSFORMER "1"	SPARE
PLC 13	BPR	#10	PLC CONTROL	PANEL #24	34.5 SWGR. SECTION #16		TI-S2	20C	#10	SPARE	34.5 SWGR. BLDG. SECTION #17	TRANSFORMER "1"	SPARE	TI-S2	20C	#10	SPARE	34.5 SWGR. BLDG. SECTION #17	TRANSFORMER "1"	SPARE
PLC 14	BPR	#10	PLC CONTROL	PANEL #24	34.5 SWGR. SECTION #17		TI-S2	20C	#10	SPARE	34.5 SWGR. BLDG. SECTION #17	TRANSFORMER "1"	SPARE	TI-S2	20C	#10	SPARE	34.5 SWGR. BLDG. SECTION #17	TRANSFORMER "1"	SPARE
PLC 15	BPR	#10	PLC CONTROL	PANEL #24	34.5 SWGR. SECTION #19		TI-S2	20C	#10	SPARE	34.5 SWGR. BLDG. SECTION #17	TRANSFORMER "1"	SPARE	TI-S2	20C	#10	SPARE	34.5 SWGR. BLDG. SECTION #17	TRANSFORMER "1"	SPARE
PLC 16																				

CABLE			DESCRIPTION			
NO.	COND.	SIZE	FUNCTION	FROM	TO	REMARKS
CC-1	2P	#22	REVENUE METER COMMUNICATIONS	34.5 SWGR. SECTION #2	34.5 SWGR. SECTION #7	BELDEN 3107A, RS-485
CC-2	2P	#22	REVENUE METER COMMUNICATIONS	34.5 SWGR. SECTION #7	34.5 SWGR. SECTION #8	BELDEN 3107A, RS-485
CC-3	2P	#22	REVENUE METER COMMUNICATIONS	34.5 SWGR. SECTION #8	CEA COMMUNICATIONS	BELDEN 3107A, RS-485
CC-4	2P	#22	REVENUE METER COMMUNICATIONS	34.5 SWGR. SECTION #15	34.5 SWGR. SECTION #13	BELDEN 3107A, RS-485
CC-5	2P	#22	REVENUE METER COMMUNICATIONS	34.5 SWGR. SECTION #13	34.5 SWGR. SECTION #12	BELDEN 3107A, RS-485
CC-6	2P	#22	REVENUE METER COMMUNICATIONS	34.5 SWGR. SECTION #12	CEA COMMUNICATIONS	BELDEN 3107A, RS-485

CABLE NO.	CABLE SIZE	RATING	CONSTRUCTION	EST. CABLE LENGTH	FROM	TO	FUNCTION	VIA	DRAWING NUMBER
2-CT-7	2x 4C#10	600V	XHHW	600'	GCB 2266	INSS	CT CIRCUIT	C-2266-1 / TRENCH / INSS-TR-01	ITSS-SS-0106/001
2-CT-18	2x 4C#10	600V	XHHW	530'	GCB 2362	INSS	CT CIRCUIT	C-2266-2 / TRENCH / INSS-TR-01	ITSS-SS-0106/001
2-CT-19	2x 4C#10	600V	XHHW	950'	INSS	PANEL 8	CT CIRCUIT	TRENCH / INSS-TR-02	ITSS-SS-0106/001
2-CT-20	2x 4C#10	600V	XHHW	950'	INSS	PANEL 8	CT CIRCUIT	TRENCH / INSS-TR-02	ITSS-SS-0106/001
2-CT-21	2x 4C#10	600V	XHHW	950'	INSS	PANEL 8	CT CIRCUIT	TRENCH / INSS-TR-02	ITSS-SS-0106/001
3-CT-7	2x 4C#10	600V	XHHW	820'	GCB 3266	INSS	CT CIRCUIT	C-3266-1 / TRENCH / INSS-TR-03	ITSS-SS-0106/001
3-CT-18	2x 4C#10	600V	XHHW	880'	GCB 3362	INSS	CT CIRCUIT	C-3266-2 / TRENCH / INSS-TR-03	ITSS-SS-0106/001
3-CT-19	2x 4C#10	600V	XHHW	950'	INSS	PANEL 11	CT CIRCUIT	TRENCH / INSS-TR-04	ITSS-SS-0106/001
3-CT-20	2x 4C#10	600V	XHHW	950'	INSS	PANEL 11	CT CIRCUIT	TRENCH / INSS-TR-04	ITSS-SS-0106/001
INSS-C-1	2x 12C#12	600V	XHHW	950'	INSS	PANEL 8	CONTROL/INDICATION CIRCUIT	TRENCH / INSS-TR-05	ITSS-SS-0106/001
INSS-C-2	2x 12C#12	600V	XHHW	950'	INSS	PANEL 11	CONTROL/INDICATION CIRCUIT	TRENCH / INSS-TR-06	ITSS-SS-0106/001
CC-70	24 SM 8.3/125, 24MM 62.5/125	N/A	GEL-FREE/ALL DIELECTRIC	1500'	ITSS PANEL 33 (+30 FT)	HH12 (+350 FT)	FIBER OPTIC COMMUNICATIONS	TRENCH / INSS-F0-01	ITSS-SS-0106/001 / IS-S-0007/1
T1-ALM	20C#16	600V	XHHW	170'	INSS 34.5 SWGR SECT #17	TRANSFORMER #1	CONTROL	C201	INSS-EL-3015/INSS-EL-3509
T1-TRP	12C#12	600V	XHHW	170'	INSS 34.5 SWGR SECT #17	TRANSFORMER #1	CONTROL	C201	INSS-EL-3015/INSS-EL-3509
T1-P27	4C#10	600V	XHHW	170'	INSS 34.5 SWGR SECT #17	TRANSFORMER #1	DC POWER	C203	INSS-EL-3015/INSS-EL-3509
T1-CT1	4C#10	600V	XHHW	170'	INSS 34.5 SWGR SECT #17	TRANSFORMER #1	CT CIRCUIT	C203	INSS-EL-3015/INSS-EL-3509
T1-CT2	4C#10	600V	XHHW	170'	INSS 34.5 SWGR SECT #17	TRANSFORMER #1	SPARE	C203	INSS-EL-3015/INSS-EL-3509
T1-CT3	4C#10	600V	XHHW	170'	INSS 34.5 SWGR SECT #17	TRANSFORMER #1	SPARE	C203	INSS-EL-3015/INSS-EL-3509
T1-CT4	4C#10	600V	XHHW	170'	INSS 34.5 SWGR SECT #17	TRANSFORMER #1	SPARE	C203	INSS-EL-3015/INSS-EL-3509
T1-S2	20C#16	600V	XHHW	170'	INSS 34.5 SWGR SECT #17	TRANSFORMER #1	SPARE	C202	INSS-EL-3015/INSS-EL-3509
T1T	12C#12	600V	XHHW	170'	INSS 34.5 SWGR SECT #17	TRANSFORMER #1	SPARE	C202	INSS-EL-3015/INSS-EL-3509
P32	3x 1C#4	600V	XHHW	170'	INSS 34.5 SWGR SECT #17	TRANSFORMER #1	AC POWER	C204	INSS-EL-3015/INSS-EL-3509
T2-ALM	20C#16	600V	XHHW	150'	INSS 34.5 SWGR SECT #9	TRANSFORMER #2	CONTROL	C68	INSS-EL-3007/INSS-EL-3506
T2-TRP	12C#12	600V	XHHW	150'	INSS 34.5 SWGR SECT #9	TRANSFORMER #2	CONTROL	C68	INSS-EL-3007/INSS-EL-3506
T2-P28	4C#10	600V	XHHW	150'	INSS 34.5 SWGR SECT #9	TRANSFORMER #2	DC POWER	C70	INSS-EL-3007/INSS-EL-3506
T2-CT1	4C#10	600V	XHHW	150'	INSS 34.5 SWGR SECT #9	TRANSFORMER #2	CT CIRCUIT	C70	INSS-EL-3007/INSS-EL-3506
T2-CT2	4C#10	600V	XHHW	150'	INSS 34.5 SWGR SECT #9	TRANSFORMER #2	SPARE	C70	INSS-EL-3007/INSS-EL-3506
T2-CT3	4C#10	600V	XHHW	150'	INSS 34.5 SWGR SECT #9	TRANSFORMER #2	SPARE	C70	INSS-EL-3007/INSS-EL-3506
T2-CT4	4C#10	600V	XHHW	150'	INSS 34.5 SWGR SECT #9	TRANSFORMER #2	SPARE	C70	INSS-EL-3007/INSS-EL-3506
T2-S2	20C#16	600V	XHHW	150'	INSS 34.5 SWGR SECT #9	TRANSFORMER #2	SPARE	C69	INSS-EL-3007/INSS-EL-3506
T2T	12C#12	600V	XHHW	150'	INSS 34.5 SWGR SECT #9	TRANSFORMER #2	SPARE	C69	INSS-EL-3007/INSS-EL-3506
P33	3x 1C#4	600V	XHHW	150'	INSS 34.5 SWGR SECT #9	TRANSFORMER #2	AC POWER	C71	INSS-EL-3007/INSS-EL-3506
YLC1	4C#10	600V	XHHW	50'	AC PANEL #2	STUMBLE CONTACTOR	LIGHTING	CABLE TRAY	INSS-EL-4000 SH 2/INSS-EL-2080
YLC2	4C#10	600V	XHHW	50'	AC PANEL #2	TASK CONTACTOR	LIGHTING	CABLE TRAY	INSS-EL-4000 SH 2/INSS-EL-2080
YSL1	4C#10	600V	XHHW	50'	AC PANEL #2	STUMBLE CONTACTOR	LIGHTING	CABLE TRAY	INSS-EL-4000 SH 2/INSS-EL-2080

CABLE NO.	CABLE SIZE	RATING	CONSTRUCTION	EST. CABLE LENGTH	FROM	TO	FUNCTION	VIA	DRAWING NUMBER
YTL1	4C#10	600V	XHHW	50'	AC PANEL #2	TASK CONTACTOR	LIGHTING	CABLE TRAY	INSS-EL-4000 SH 2/INSS-EL-2080
YSL3	4C#10	600V	XHHW	50'	AC PANEL #2	STUMBLE CONTACTOR	LIGHTING	CABLE TRAY	INSS-EL-4000 SH 2/INSS-EL-2080
YTL4	4C#10	600V	XHHW	50'	AC PANEL #2	TASK CONTACTOR	LIGHTING	CABLE TRAY	INSS-EL-4000 SH 2/INSS-EL-2080
JB-SL1	4C#10	600V	XHHW	150'	STUMBLE CONTACTOR	LED-2	LIGHTING	C211	INSS-EL-2080
YSL2	4C#10	600V	XHHW	140'	LED-2	LED-1	LIGHTING	C212	INSS-EL-2080
JB-SL4	4C#10	600V	XHHW	170'	STUMBLE CONTACTOR	LED-5	LIGHTING	C213	INSS-EL-2080
YSL5	4C#10	600V	XHHW	200'	LED-5	LED-4	LIGHTING	C216	INSS-EL-2080
YSL6	4C#10	600V	XHHW	175'	LED-4	LED-3	LIGHTING	C217	INSS-EL-2080
JB-TL1	4C#10	600V	XHHW	170'	TASK CONTACTOR	LED-10	LIGHTING	C213	INSS-EL-2080
YTL2	4C#10	600V	XHHW	140'	LED-10	LED-6	LIGHTING	C214	INSS-EL-2080
YTL3	4C#10	600V	XHHW	220'	LED-6	LED-9	LIGHTING	C215	INSS-EL-2080
JB-TL5	4C#10	600V	XHHW	150'	TASK CONTACTOR	LED-8	LIGHTING	C211	INSS-EL-2080
YTL6	4C#10	600V	XHHW	140'	LED-8	LED-7	LIGHTING	C212	INSS-EL-2080
WPR1	4C#10	600V	XHHW	140'	AC PANEL #2	RE2	RECEPTACLE	C208	INSS-EL-2080
WPR2	4C#10	600V	XHHW	140'	RE2	RE1	RECEPTACLE	C209	INSS-EL-2080
WPR3	4C#10	600V	XHHW	140'	RE2	RE3	RECEPTACLE	C210	INSS-EL-2080

CONSTRUCTION NOTE:
CEA WILL LAND ALL CONTROL CABLES. CONTRACTOR WILL LAND ALL AC & DC POWER CABLES AND IS RESPONSIBLE FOR PULLING CABLES TO LOCATIONS NOTED. COIL ALL UNLANDED CABLES WITH 20' TAILS.

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION

DRAWING NAME:
**INTERNATIONAL TRANSMISSION SUBSTATION
34.5KV SWITCHGEAR BUILDING #1
CABLE SCHEDULE**

DRAWING NO. - PREVIOUS/REFERENCE: INSS-EL-0028_0002_4.dwg
DRAWING NO.: **INSS-EL-0028**
SHEET 0002 OF 0002
PAGE 2 / 2

Certified for Construction of W.O. E1720055 by Joseph Frank Gornik, No. EE147055, Black & Veitch Consultants, on 05/20/2020

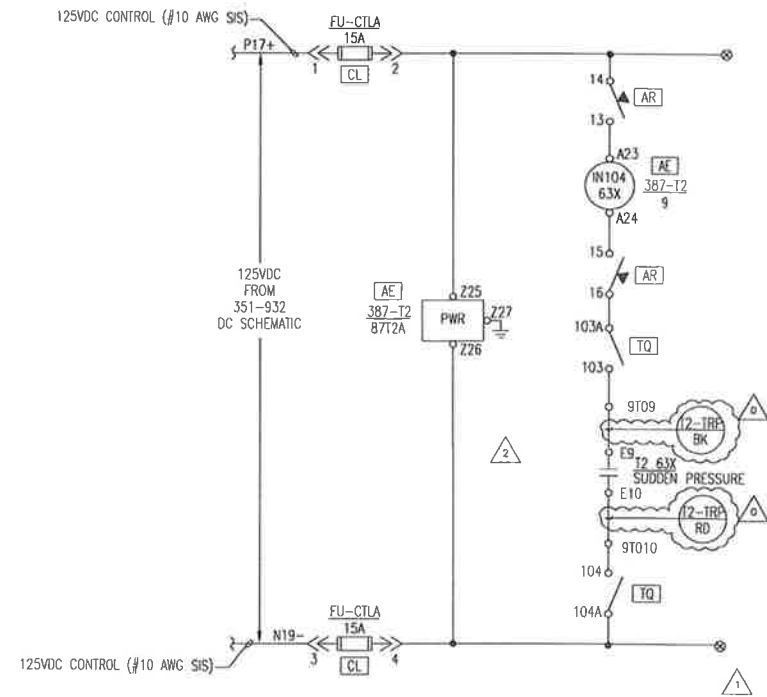
PROJECT: **INSS 138KV FACILITY RETIREMENT**
ENG./DESIGN: **S. WENDLING (CEA) / J. GORNIK (B&V)** W.O. # **E1720055**

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC 05/20/20	JFG 05/20/20		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	CREATED DRAWING SHEET	RT				2004
2	LINE LOSS METERING PROJECT-ASBUILT BY CONTRACTOR	RM/EP/S	10.0955	H0320243	DWB/EP/S	3/1/05
3	ITSS TRANSMISSION SUBSTATION - CHUGACH AS-BUILT	MS		E0120202	AL	3/14/13

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300



AE	387-T2/87T2A	FUNCTION	REF DWG.
TS19	OUT 101	932 BREAKER FAIL INIT. TO PLC	5
TS19	OUT 102	TRIP ITSS BRKR'S 3266 & 3362	9 & 10
TS19	OUT 103	932 TRIP	1
TS19	OUT 104	VBC 236 TRIP	8
TS19	OUT 105		1
TS19	OUT 106		
TS19	OUT 107		
TS16	ALARM	387-T2-932 MALF, ALARM	4
	OUT 201	TRIP ITSS BRKR 3266	9
	OUT 202	TRIP ITSS BRKR 3362	10
	OUT 203		
	OUT 204		
	OUT 205		
	OUT 206		
	OUT 207		
	OUT 208		
	OUT 209		
	OUT 210		
	OUT 211		
	OUT 212		
	OUT 213		
	OUT 214		
	OUT 215		
	OUT 216		
	OUT 217		
	OUT 218		
	OUT 219		
	OUT 220		
	OUT 221		
	OUT 222		
	OUT 223		
	OUT 224		

AE	387-T2/87T2A	FUNCTION	REF DWG.
	A17 (IN101)	387-T2 SET, CH. 1	6
	A19 (IN102)	387-T2 SET, CH. 1	6
	A21 (IN103)		1
	A23 (IN104)	T2 63X SUDDEN PRESSURE TRIP	3
	A25 (IN105)		1
	A27 (IN106)		
	B25 (IN201)		
	B27 (IN202)		
	B29 (IN203)		
	B31 (IN204)		
	B33 (IN205)		
	B35 (IN206)		
	B37 (IN207)		
	B39 (IN208)		

NOTE:
 1. 51 51A TYP [TO] : [TO] 2[STB5] DISCONNECT TERMINAL BLOCK

- REFERENCE DRAWINGS
- 1 BREAKER 932 DC SCHEMATIC
 - 2 JSI-932 DC SCHEMATIC
 - 3 387-T2-932 DC SCHEMATIC
 - 4 RTU DC SCHEMATIC
 - 5 PLC INPUT DC SCHEMATIC
 - 6 PLC OUTPUT DC SCHEMATIC
 - 7 UNUSED
 - 8 BREAKER 236 DC SCHEMATIC
 - 9 ITSS BREAKER 3266 DC SCHEMATIC
 - 10 ITSS BREAKER 3362 DC SCHEMATIC

CONSTRUCTION NOTE:
 CEA WILL LAND ALL CONTROL CABLES. CONTRACTOR WILL LAND ALL AC & DC POWER CABLES AND IS RESPONSIBLE FOR PULLING CABLES TO LOCATIONS NOTED. CCL ALL UNLANDED CABLES WITH 20' TAILS.

Certified for Construction of W.O. E1720055 by Joseph Frank Gornik, No. EE147055, Block & Welch Consultants, on 05/20/2020

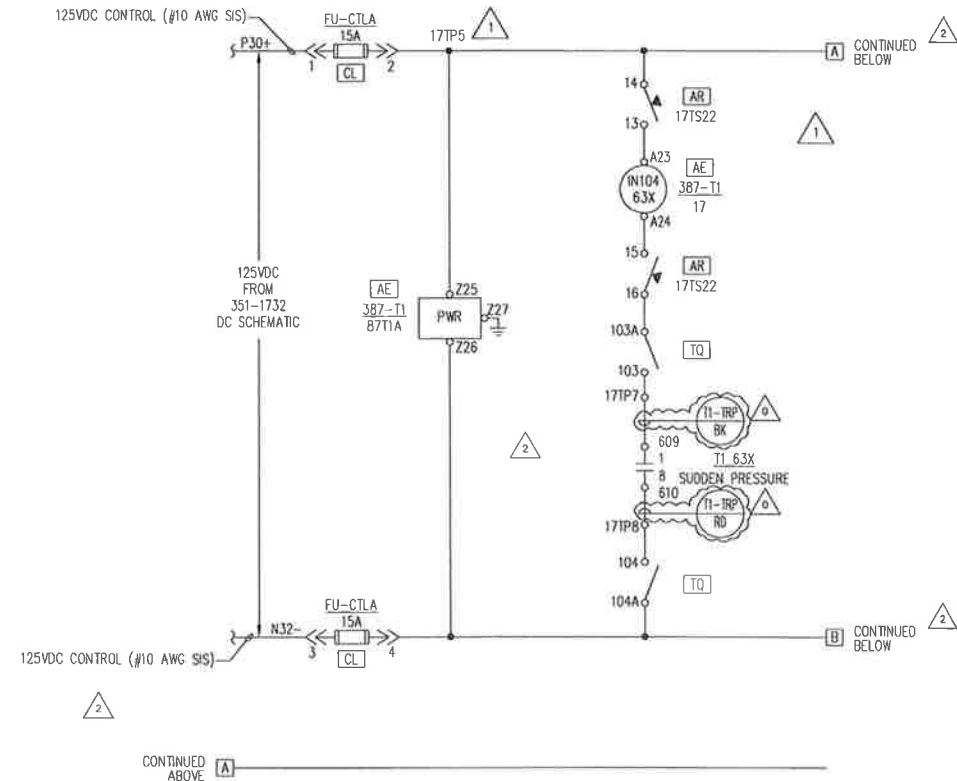
PROJECT: INSS 138 kV FACILITY RETIREMENT				W.O. # E1720055	
ENG./DESIGN: S. WENDLING (CEA) / J. GORNIK (B&Y)					
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN. BY/DATE	REVIEWED MGR./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC 05/20/20	JFG 05/20/20		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	34.5KV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	RW	10.0679EN	E9620117		10/31/00
2	FIRE ISLAND IGT UPGRADE	MW/MS				04/13

CHUGACH
 POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
 5601 Minnesota Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

DRAWING NAME:		INTERNATIONAL SUBSTATION 34.5KV 387-T2-932 DC SCHEMATIC
DRAWING NO. - PREVIOUS/REFERENCE:	INSS-EL-2021_0001_2.DWG.	
DRAWING NO.:	INSS-EL-0067	
	INSS-EL-2021	SHEET 0001 OF 0001 PAGE



AE 387-T1/87T1A	FUNCTION	REF DWG.
TS22 OUT 101	1732 BREAKER FAIL INITIATE TO PLC	5
TS22 OUT 102	TRIP ITSS BRKR'S 2266 & 2362	9 & 10
TS22 OUT 103	1732 TRIP	1
TS22 OUT 104	VCB 236 TRIP	8
TS19 OUT 201	387-T1-1732 MALFUNCTION ALARM	4
OUT 202	TRIP ITSS BRKR 2266	9
OUT 203	TRIP ITSS BRKR 2362	10
OUT 204		
OUT 205		
OUT 206		
OUT 207		
OUT 208		
OUT 209		
OUT 210		
OUT 211		
OUT 212		

AE 387-T1/87T1A	FUNCTION	REF DWG.
A17 A18	387-T1 SET CHG. 1	6
A19 A20	387-T1 SET CHG. 2	6
A21 A22		
A23 A24	T1 63X SUDDEN PRESSURE TRIP	3
A25 A26		
A27 A28		
A29 A30		
A31 A32		
A33 A34		
A35 A36		
A37 A38		
A39 A40		

- REFERENCE DRAWINGS**
- 1 BREAKER 1732 DC SCHEMATIC
 - 2 351-1732 DC SCHEMATIC
 - 3 387-T1-1732 DC SCHEMATIC
 - 4 RTU DC SCHEMATIC
 - 5 PLC INPUT DC SCHEMATIC
 - 6 PLC OUTPUT DC SCHEMATIC
 - 7 UNUSED
 - 8 BREAKER 236 DC SCHEMATIC
 - 9 ITSS BREAKER 2266 DC SCHEMATIC
 - 10 ITSS BREAKER 2362 DC SCHEMATIC

NOTE:
 1. 51 51A TYP [TQ] : [TQ] 2S1B51 DISCONNECT TERMINAL BLOCK

CONSTRUCTION NOTE:
 CEA WILL LAND ALL CONTROL CABLES. CONTRACTOR WILL LAND ALL AC & DC POWER CABLES AND IS RESPONSIBLE FOR PULLING CABLES TO LOCATIONS NOTED. COIL ALL UNLANDED CABLES WITH 20' TAILS.

Certified for Construction of W.O. E1720055 by Joseph Frank Gornik, No. EE147055, Black & Veatch Consultants, on 05/20/2020

PROJECT: INSS 138 kV FACILITY RETIREMENT		W.O. # E1720055	
ENG./DESIGN: S. WENDLING (CEA) / J. GORNIK (B&V)			
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN. BY/DATE	REVIEWED MGR./SUPPLY/DATE
0	ISSUED FOR CONSTRUCTION	M.C 05/20/20	J.F.G 09/20/20

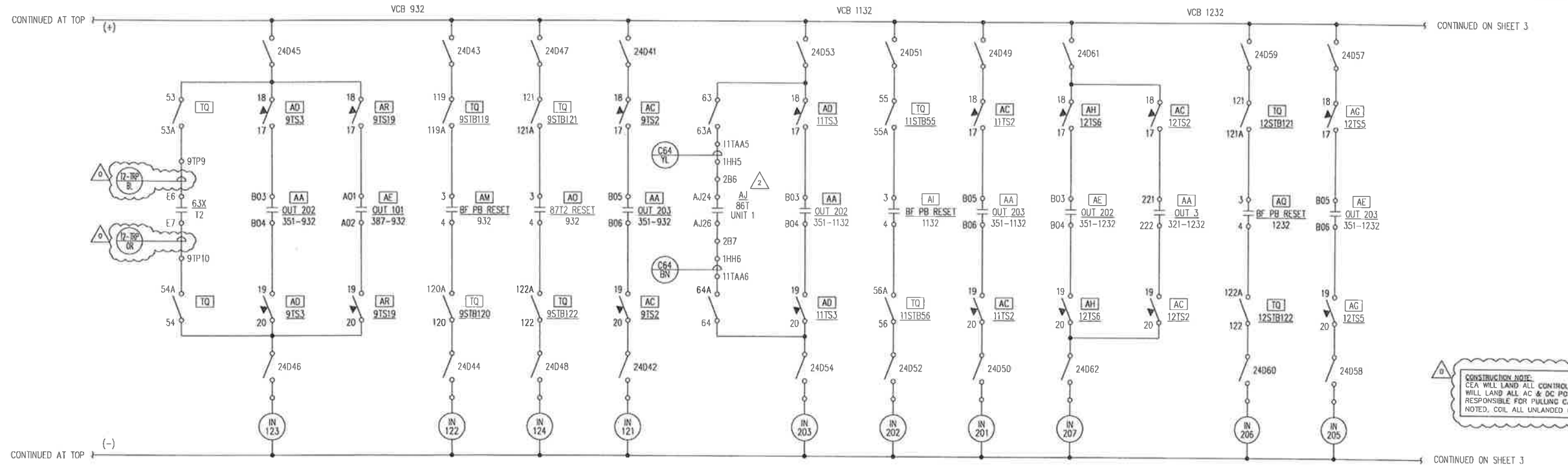
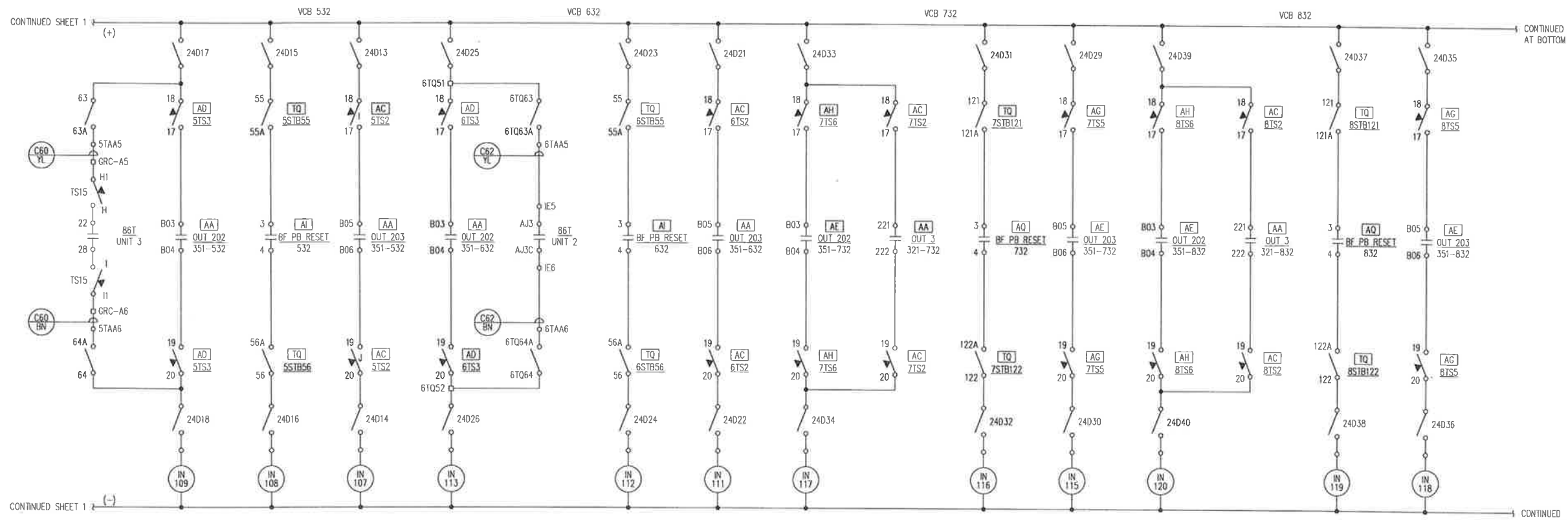


NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	34.5KV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	RW	10.0679EN	E9620117		10/31/00
2	FIRE ISLAND IGT UPGRADE	WW/MS				04/13

CHUGACH
 POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
 5601 Minnesota Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

DRAWING NAME: INTERNATIONAL SUBSTATION 34.5KV 387-T1-1732 DC SCHEMATIC	
DRAWING NO. - PREVIOUS/REFERENCE	INSS-EL-2041_0001_2.DWG
DRAWING NO.:	INSS-EL-2041
SHEET	0001 of 0001
PAGE	1 of 1



CONSTRUCTION NOTE:
 CEA WILL LAND ALL CONTROL CABLES. CONTRACTOR WILL LAND ALL AC & DC POWER CABLES AND IS RESPONSIBLE FOR PULLING CABLES TO LOCATIONS NOTED. COIL ALL UNLANDED CABLES WITH 20' TAILS.

Certified for Construction of W.O. E1720055 by Joseph Frank Gornik, No. EE147055, Black & Veatch Consultants, on 05/20/20

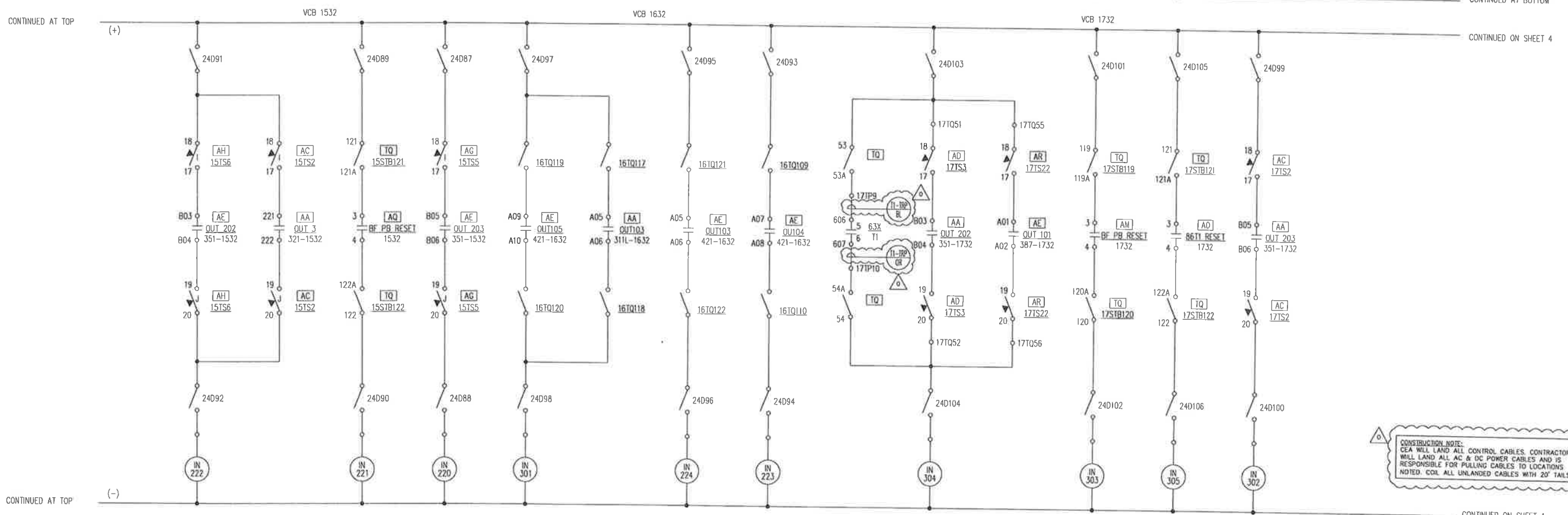
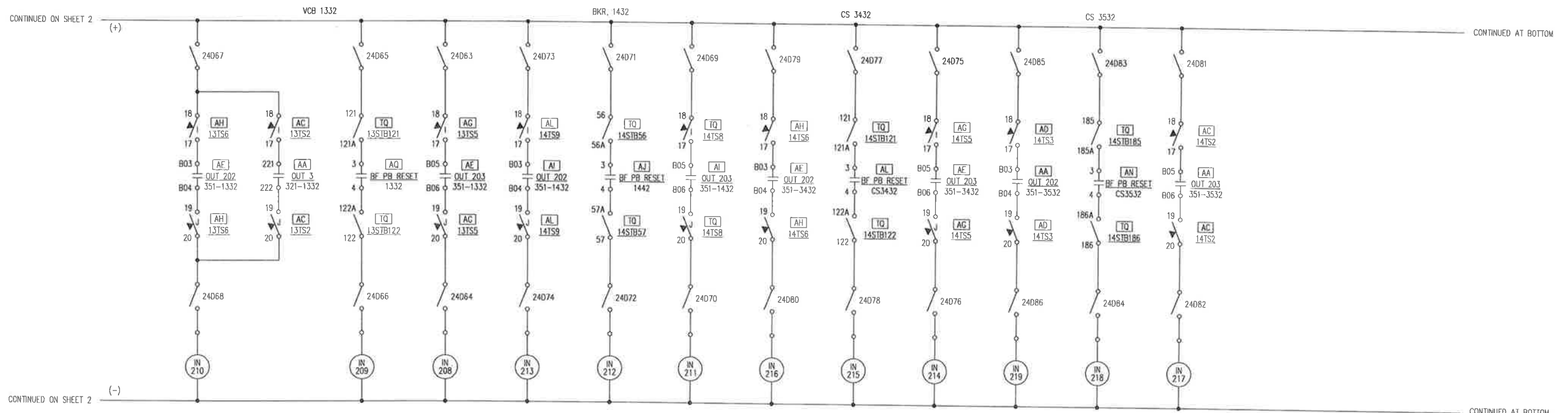
PROJECT: INSS 138 kV FACILITY RETIREMENT			
ENG./DESIGN: S. WENDLING (CEA) / J. GORNIK (B&V)			
W.O. # E1720055			
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPPLY/DATE
0	ISSUED FOR CONSTRUCTION	MJC 06/20/20	JFG 09/20/20
		APPROVED DIRECTOR/DATE	ENG. STAMP

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	34.5KV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	RW	10.0679EN	E9820117		10/31/00
2	REPLACED FAILED BBT	DBC	10.0752	H9958709		1/23/02

CHUGACH
 POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
 5601 Minnesota Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

DRAWING NAME:		INTERNATIONAL SUBSTATION PLC INPUTS DC SCHEMATIC	
DRAWING NO. - PREVIOUS/REFERENCE:		INSS-EL-2049_0002_3.0WC	
DRAWING NO.:		INSS-EL-2049	
		SHEET 2 OF 5 PAGE /	



CONSTRUCTION NOTE:
 CEA WILL LAND ALL CONTROL CABLES. CONTRACTOR
 WILL LAND ALL AC & DC POWER CABLES AND IS
 RESPONSIBLE FOR PULLING CABLES TO LOCATIONS
 NOTED. COIL ALL UNLANDED CABLES WITH 20' TAILS.

Certified for Construction of W.O. E1720055 by Joseph Frank Gornik, No. EE147055, Black & Veatch Consultants, on 05/20/2020

PROJECT: INSS 138 kV FACILITY RETIREMENT			
ENG./DESIGN: S. WENDLING (CEA) / J. GORNIK (R&V) W.O. # E1720055			
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE
0	ISSUED FOR CONSTRUCTION	MJC 05/20/20	JFC 05/20/20

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	34SKV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	RW	10.0679EN	E9620117		10/31/20
2	FIRE ISLAND ICI UPGRADE	BW		E112037B		05/01/21

CHUGACH
 POWERING ALASKA'S FUTURE

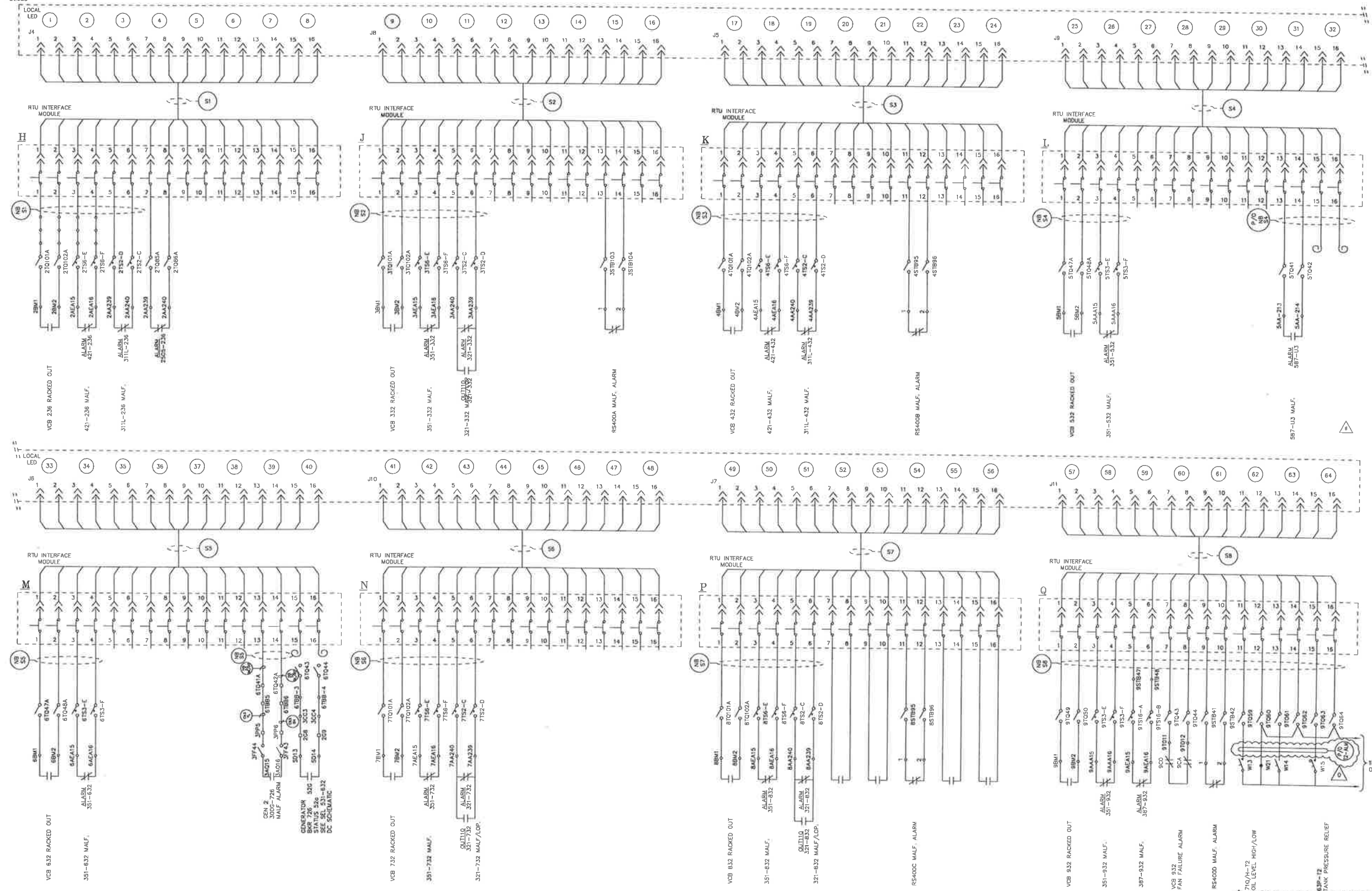
Chugach Electric Association, Inc.
 5601 Minnesota Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

DRAWING NAME:
**INTERNATIONAL SUBSTATION
 PLC INPUTS
 DC SCHEMATIC**

DRAWING NO. - PREVIOUS/REFERENCE: INSS-EL-2049_0003_2.DWG

DRAWING NO.: **INSS-EL-2049** SHEET 3 OF 5
PAGE 7

RTU
02050



CONSTRUCTION NOTE:
CEA WILL LAND ALL CONTROL CABLES. CONTRACTOR WILL LAND ALL AC & DC POWER CABLES AND IS RESPONSIBLE FOR PULLING CABLES TO LOCATIONS NOTED. COIL ALL UNLANDED CABLES WITH 20' TAILS.

Certified for Construction of W.O. E1720055 by Joseph Frank Gornik, No. EE147055, Black & Veatch Consultants, on 05/20/2020

PROJECT: INSS 138 kV FACILITY RETIREMENT			
ENG./DESIGN: S. WENDLING (CEA) / J. GORNIK (B&V)			
W.O. # E1720055			
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	APPROVED DIRECTOR/DATE
0	ISSUED FOR CONSTRUCTION	MJC 05/20/20	JFG 05/20/20

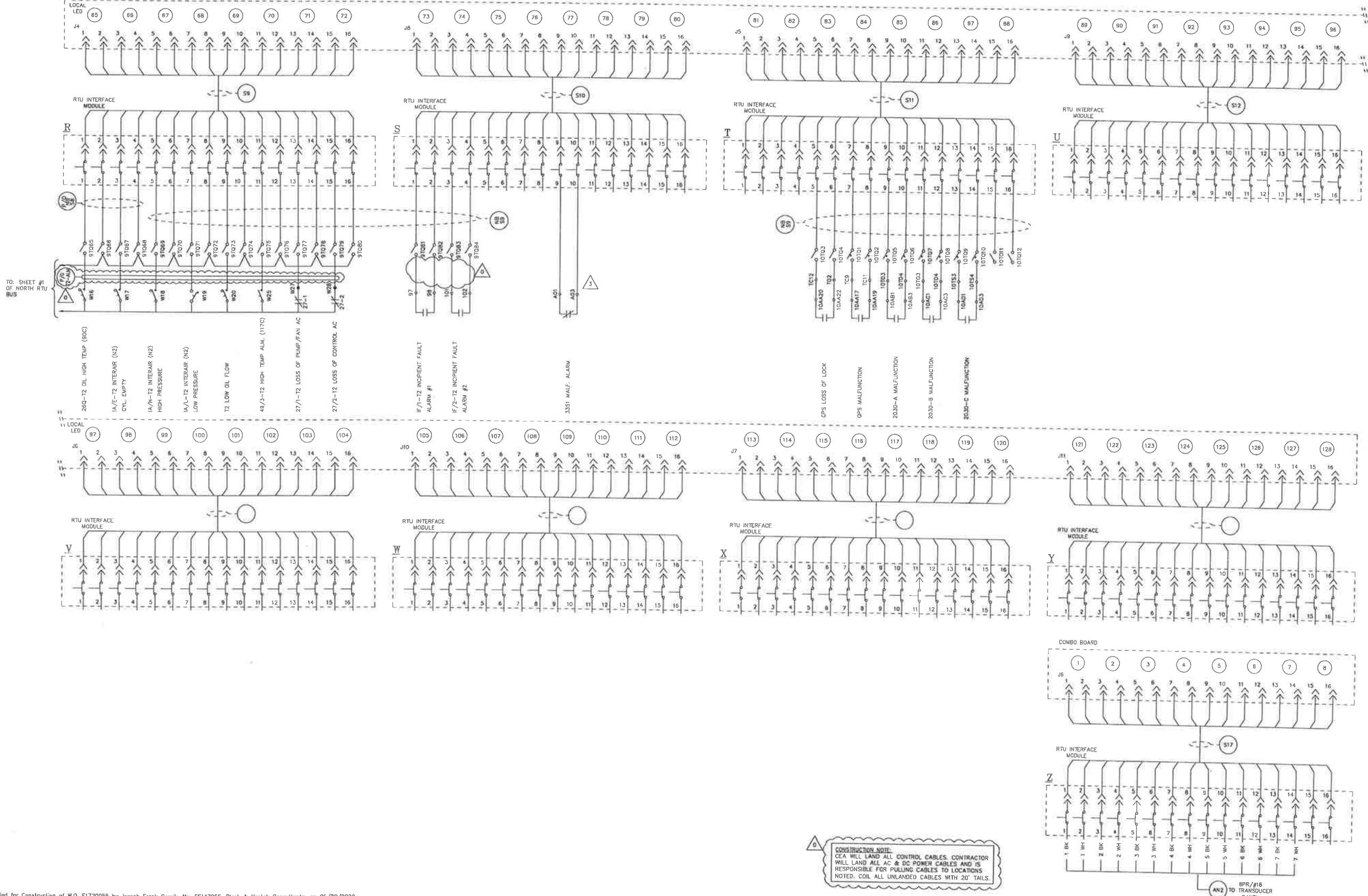
NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	34.5KV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	RW	10.0879EN	E9620117		10/31/00
2	485/2030 CONTROL MOD. PROJECT	RWT		H0712375		1/29/07
3	300G INSTALL	ESS/JJC		H0658827		1/16/08
4	PROTECTION UPGRADE	MW/LMP		H0658828		8/24/09
5	MISC. CHANGES	PTD				
6	MS-ESS FLYWHEEL PROJECT	JTM		P1300650		9/20/17

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:	INTERNATIONAL SUBSTATION RTU NORTH BUS DC SCHEMATIC
DRAWING NO. - PREVIOUS/REFERENCE:	INSS-EL-2050_0001_6.0WG
DRAWING NO.:	INSS-EL-2050
SHEET:	0001 OF 2
PAGE:	1

RTU
02050



CONSTRUCTION NOTE:
CEA WILL LAND ALL CONTROL CABLES. CONTRACTOR WILL LAND ALL AC & DC POWER CABLES AND IS RESPONSIBLE FOR PULLING CABLES TO LOCATIONS NOTED. COIL ALL UNLANDED CABLES WITH 20' TAILS.

Certified for Construction of W.O. E1720055 by Joseph Frank Gornik, No. EE147055, Black & Veitch Consultants, on 05/20/2020

PROJECT: INSS 138 kV FACILITY RETIREMENT				W.O. # E1720055	
ENG./DESIGN: S. WENDLING (CEA) / J. GORNIK (B&V)					
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC 05/20/20	JFG 05/20/20		

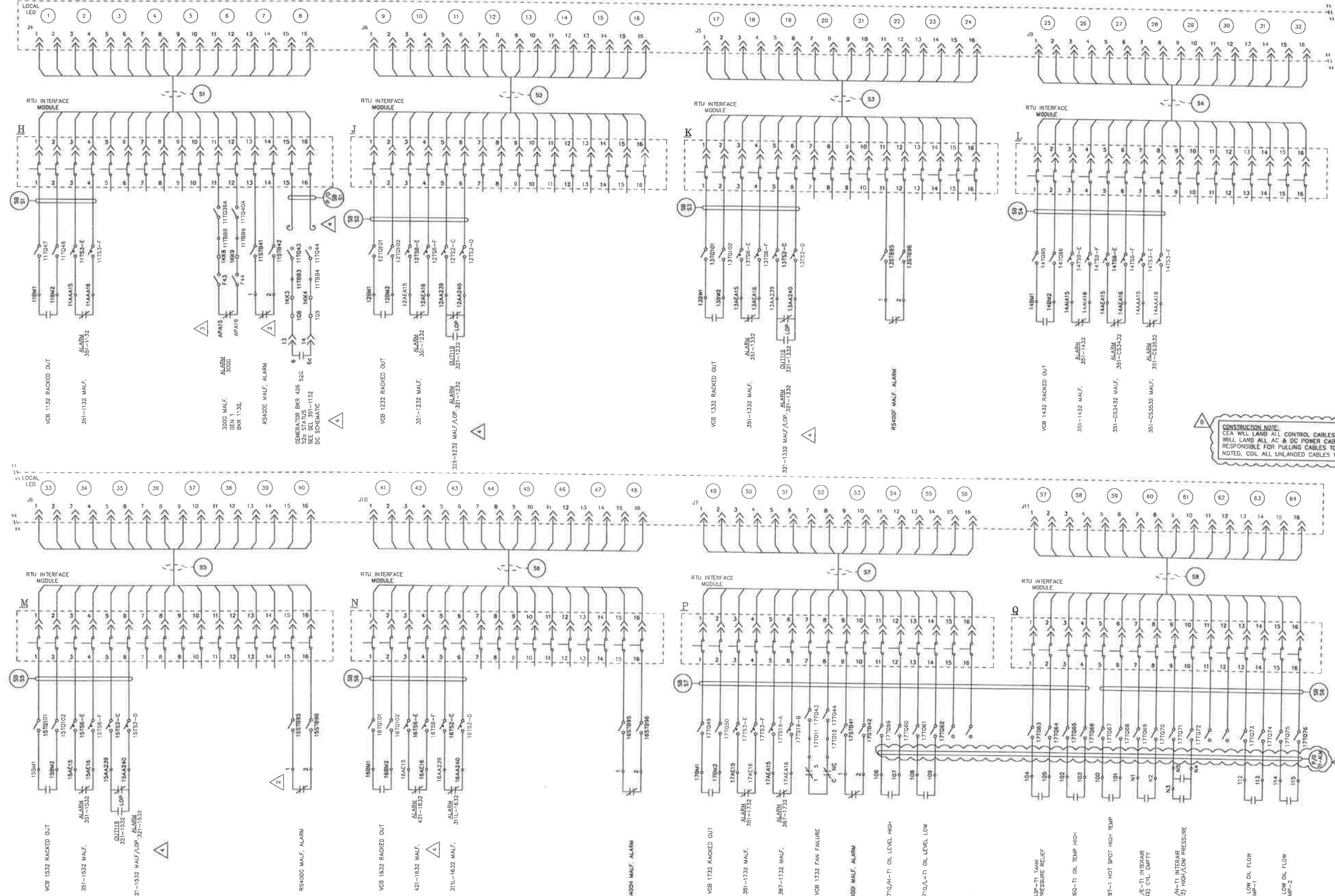
NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	34.5KV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	RW	10.0879EN	E9820117		10/31/00
2	TRANSDUCER INSTALL	KC/BWB		H9958708		3/04
3	485/2030 CONTROL MOD PROJECT	RWT		H0712375		1/29/07

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME: INTERNATIONAL SUBSTATION RTU NORTH BUS DC SCHEMATIC	
DRAWING NO. - PREVIOUS/REFERENCE	INSS-EL-2050_0002_4.dwg
DRAWING NO.:	INSS-EL-2050
SHEET 2 OF 2 PAGE 1 / 1	

RTU
02030



CONSTRUCTION NOTE:
CEA WILL LAND ALL CONTROL CABLES. CONTRACTOR WILL LAND ALL AC & DC POWER CABLES AND IS RESPONSIBLE FOR PULLING CABLES TO LOCATIONS NOTED. COIL ALL UNLANDED CABLES WITH 20' TAILS.

Certified for Construction of W.O. E1720055 by Joseph Frank Gornik, No. EE147055, Black & Veatch Consultants, on 05/20/2020

PROJECT: JNSS 138 kV FACILITY RETIREMENT				W.O. # E1720055	
ENG./DESIGN: S. WENDLING (CEA) / J. GORNIK (B&V)					
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./DATE	APPROVED DIRECTOR/DATE	END STAMP
0	ISSUED FOR CONSTRUCTION	MJC 05/20/20	JFG 05/20/20		

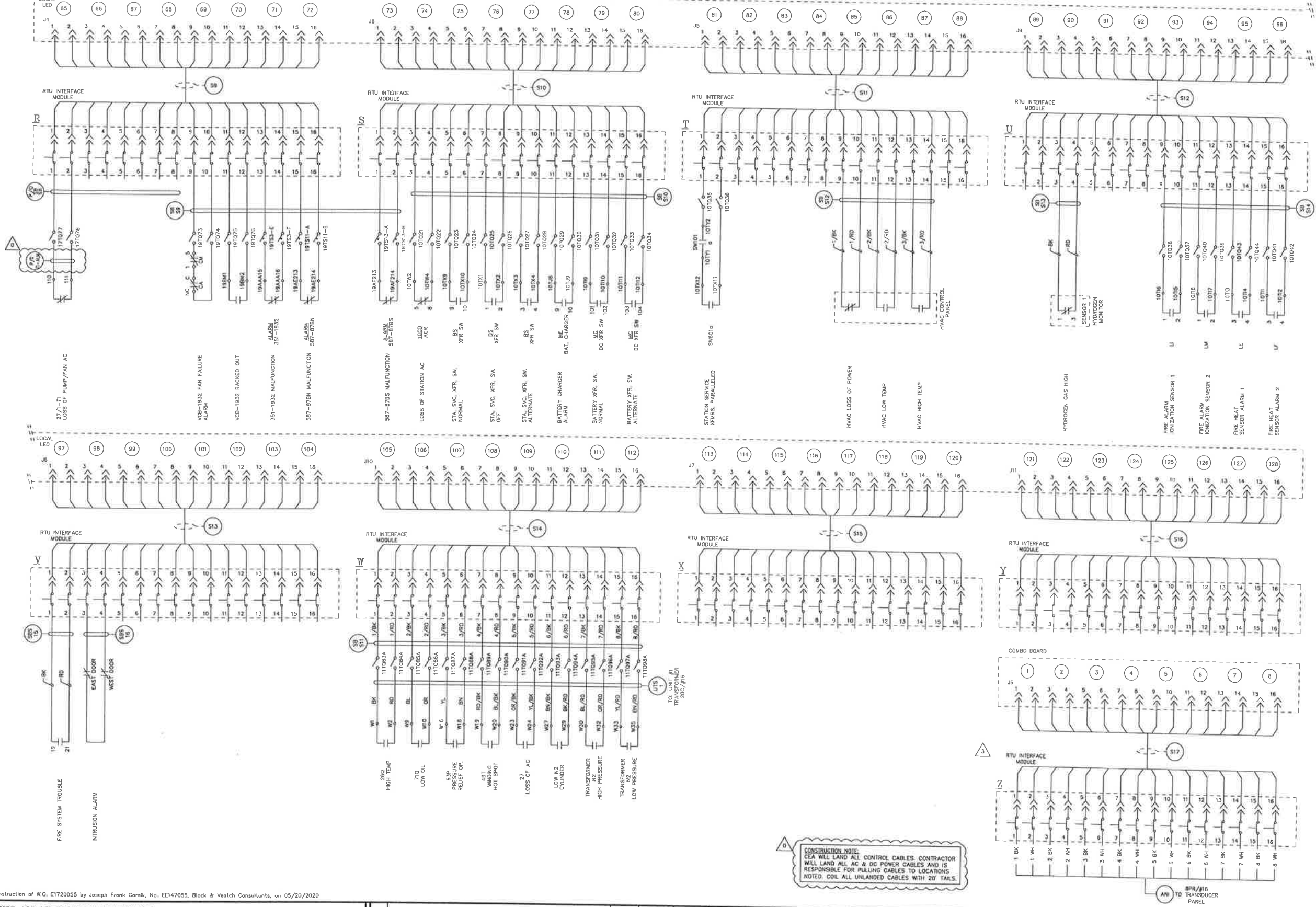
NO.	RECORD REVISION	TECH/DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	34.5KV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	RW	10.0679EN	E9620117		10/31/00
2	485/2030 CONTROL MOD PROJECT	RWT		H0712375		1/29/07
3	UNIT #1 300G INSTALL	ESS/JG		H0588827		8/27/07
4	MISC. CHANGES	PPD				9/24/15

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:		INTERNATIONAL SUBSTATION RTU SOUTH BUS DC SCHEMATIC	
DRAWING NO. - PREVIOUS/REFERENCE:		INSS-EL-2051_0001_4.DWG	
DRAWING NO.:		INSS-EL-2051	
		SHEET 1 OF 2 PAGE /	

RTU
D2050



CONSTRUCTION NOTE:
CEA WILL LAND ALL CONTROL CABLES. CONTRACTOR WILL LAND ALL AC & DC POWER CABLES AND IS RESPONSIBLE FOR PULLING CABLES TO LOCATIONS NOTED. COIL ALL UNLANDED CABLES WITH 20' TAILS.

Certified for Construction of W.O. E1720055 by Joseph Frank Gornik, No. EE147055, Block & Vealch Consultants, on 05/20/2020

PROJECT: JNSS 138 kV FACILITY RETIREMENT		W.O. # E1720055	
ENG./DESIGN: S. WENDLING (CEA) / J. GORNIK (B&V)			
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./DATE
0	ISSUED FOR CONSTRUCTION	M.C. 05/20/20	J.F.G. 05/20/20
		APPROVED DIRECTOR/DATE	ENG. STAMP

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	34.5KV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	RW	10.0679CH	E9620117		10/31/00
2	INSTALL NEW STEP UP TRANSFORMER (ABB) FOR GENERATOR #1	DBC	10.0752	E0020159		1/23/02
3	TRANSDUCER INSTALL	KC/UMB		H9958708		3/04

CHUGACH
POWERING ALASKA'S FUTURE
Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:
**INTERNATIONAL SUBSTATION
RTU SOUTH BUS
DC SCHEMATIC**

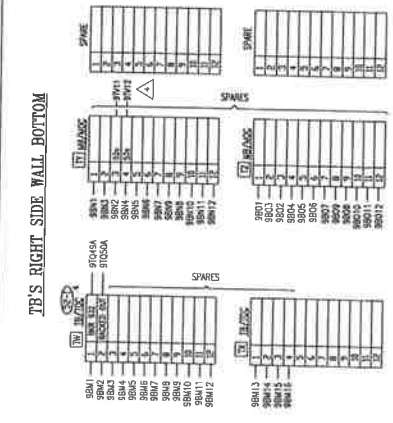
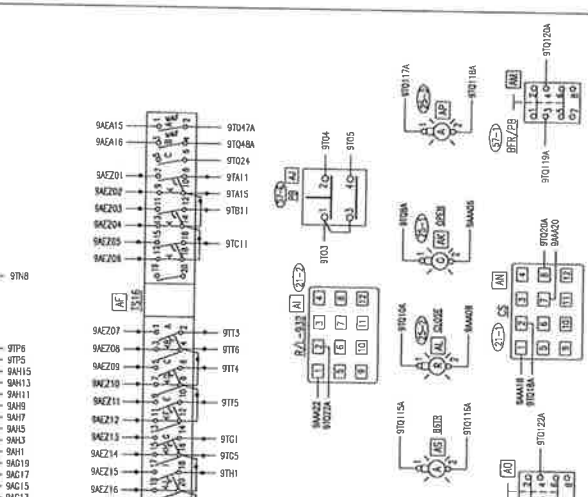
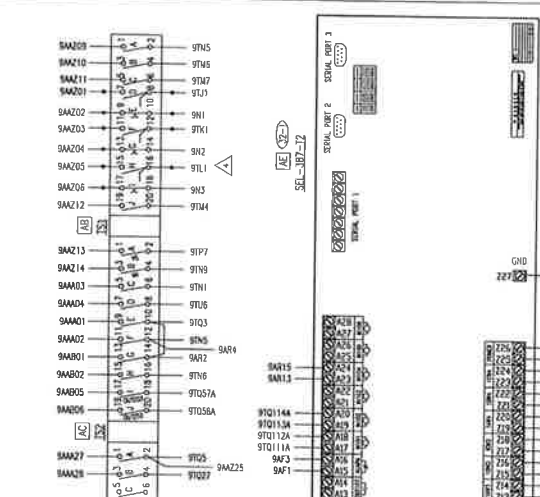
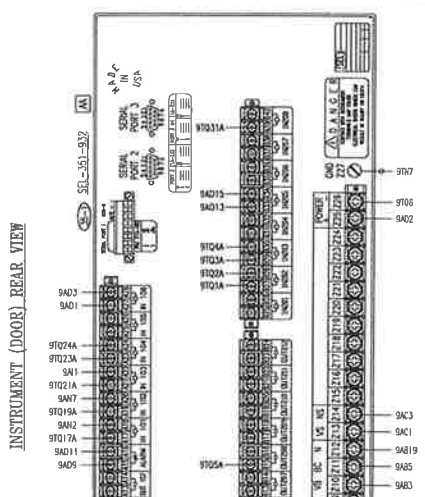
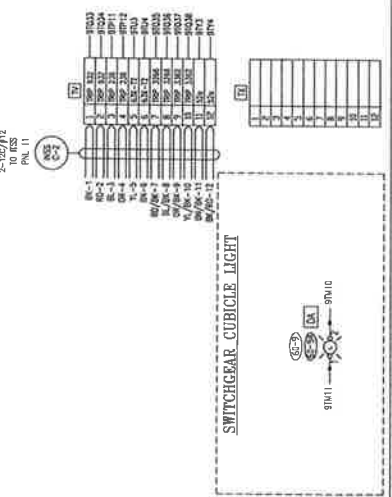
DRAWING NO. - PREVIOUS/REFERENCE: INSS-EL-2051_0002_3.DWG

DRAWING NO.: **INSS-EL-2051**

SHEET 2 of 2
PAGE /

RIGHT SIDE WALL TOP

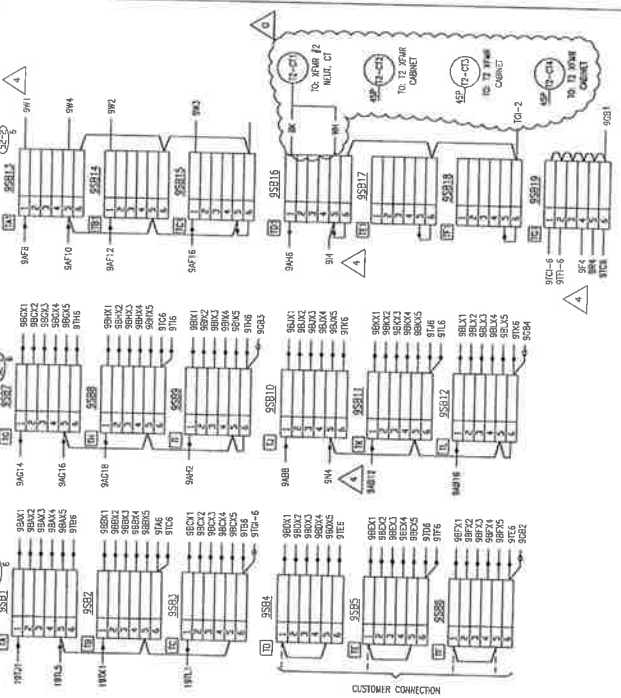
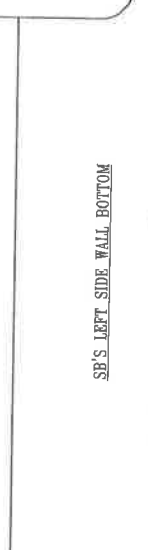
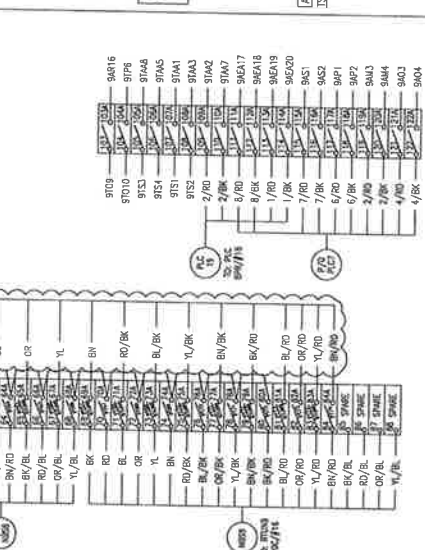
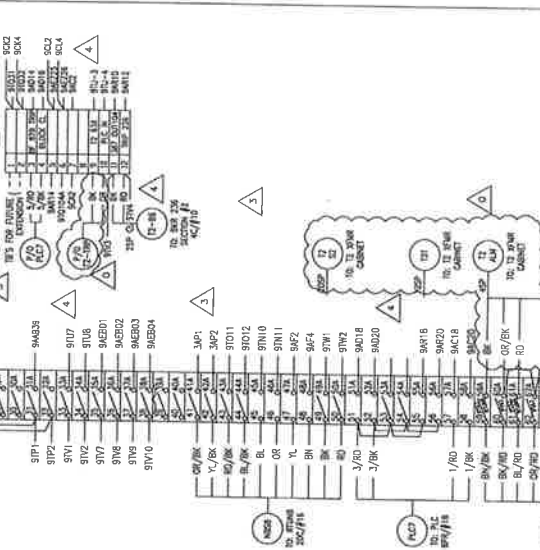
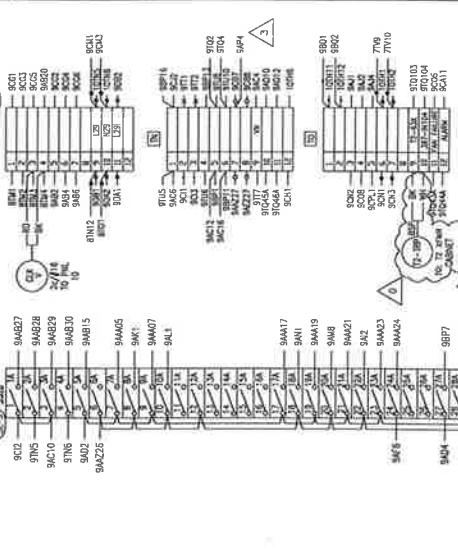
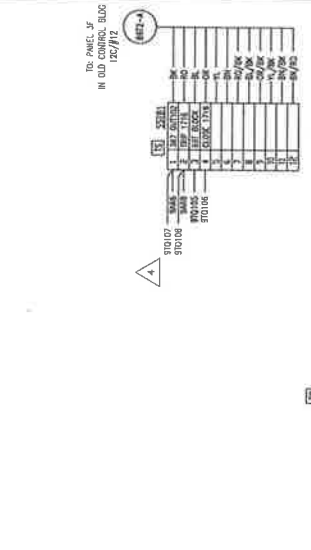
RIGHT SIDE WALL BOTTOM



LEGEND:
 - - - - - 12 AWG
 - - - - - 14 AWG
 - - - - - 16 AWG
 - - - - - 18 AWG
 - - - - - 20 AWG
 - - - - - 22 AWG
 - - - - - 24 AWG
 - - - - - 26 AWG
 - - - - - 28 AWG
 - - - - - 30 AWG
 - - - - - 32 AWG
 - - - - - 34 AWG
 - - - - - 36 AWG
 - - - - - 38 AWG
 - - - - - 40 AWG
 - - - - - 42 AWG
 - - - - - 44 AWG
 - - - - - 46 AWG
 - - - - - 48 AWG
 - - - - - 50 AWG
 - - - - - 52 AWG
 - - - - - 54 AWG
 - - - - - 56 AWG
 - - - - - 58 AWG
 - - - - - 60 AWG
 - - - - - 62 AWG
 - - - - - 64 AWG
 - - - - - 66 AWG
 - - - - - 68 AWG
 - - - - - 70 AWG
 - - - - - 72 AWG
 - - - - - 74 AWG
 - - - - - 76 AWG
 - - - - - 78 AWG
 - - - - - 80 AWG
 - - - - - 82 AWG
 - - - - - 84 AWG
 - - - - - 86 AWG
 - - - - - 88 AWG
 - - - - - 90 AWG
 - - - - - 92 AWG
 - - - - - 94 AWG
 - - - - - 96 AWG
 - - - - - 98 AWG
 - - - - - 100 AWG

LEFT SIDE WALL TOP

LEFT SIDE WALL BOTTOM



CONSTRUCTION NOTE:
 CEA WILL LAND ALL CONTROL CABLES. CONTRACTOR
 WILL LAND ALL AC & DC POWER CABLES AND IS
 RESPONSIBLE FOR FULFILLING CABLES TO LOCATIONS
 NOTED. COIL ALL UNLANDED CABLES WITH 20' TAILS.

Certified for Construction of W.O. E1720055 by Joseph Frank Cornik, No. EE147055, Black & Veatch Consultants, on 05/20/2020

PROJECT: INSS 138KV FACILITY RETIREMENT		W.O. # E1720055	
ENG./DESIGN: S. WENDLING (CEA) / J. GORNIK (B&V)		REVISED: 09/20/20	
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN. BY/DATE	APPROVED MGR./DATE
0	ISSUED FOR CONSTRUCTION	MJC 09/20/20	JFG 09/20/20

NO.	RECORD REVISION	TECH./DWN. BY	W.P. #	W.O. APPROVED	RECORD APPROVED	DATE
1	34.5KV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	AJC/RW	10.0679EN	E9E20117		10/31/00
2	GPS CLOCK CHANGE OUT	AV/RG		H0658825		3/6/06
3	485/2030 CONTROL MOD PROJECT	RWT		H0712375		2/8/07
4	FIRE ISLAND IGT UPGRADE	MW/MS				04/13

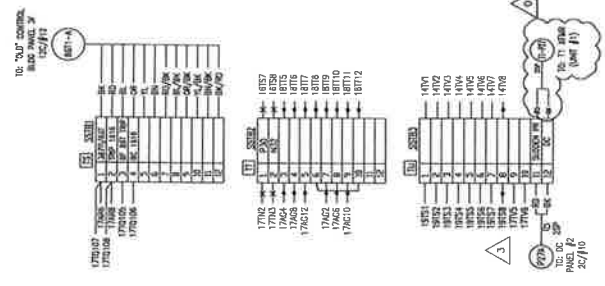


Chugach Electric Association, Inc.
 5601 Minnesota Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

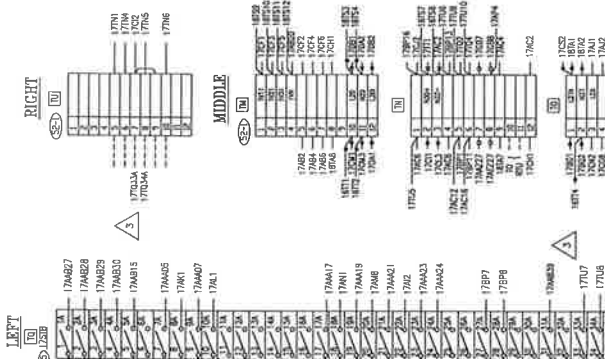
DRAWING NAME:
**INTERNATIONAL SUBSTATION
 34.5KV SECTION #9 DOOR AND SIDE WALLS
 WIRING DIAGRAM**

CONFIDENTIAL
 DRAWING NO. - PREVIOUS/REFERENCE: 32338840
 SHEET: 0001 of 0002
 INSS-EL-3007_0001_4.DWG
 INSS-EC-0104
 PAGE: /

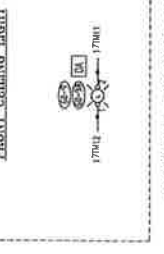
RIGHT SIDE WALL TOP



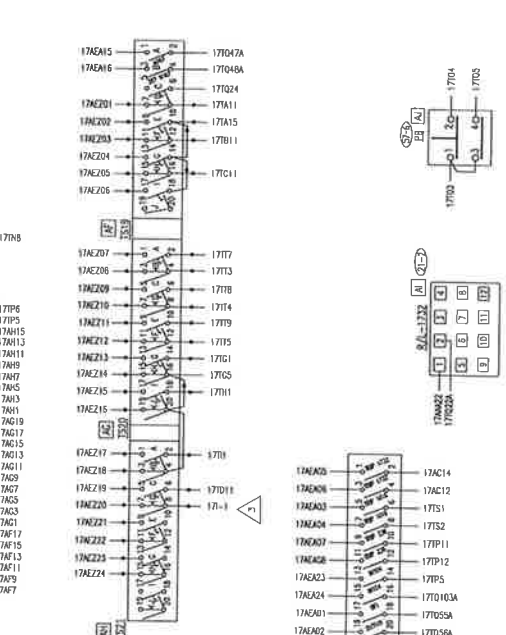
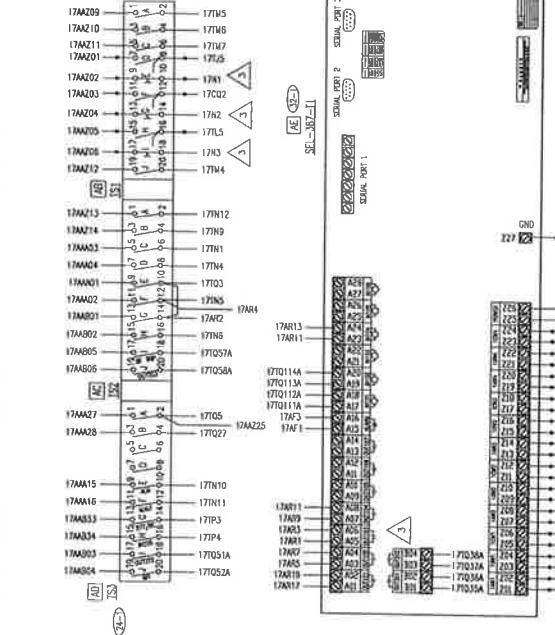
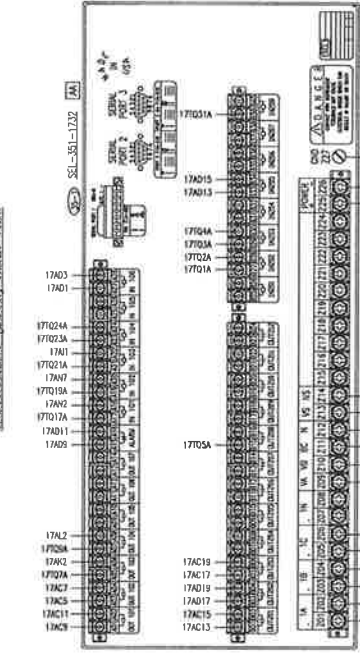
LEFT SIDE WALL TOP



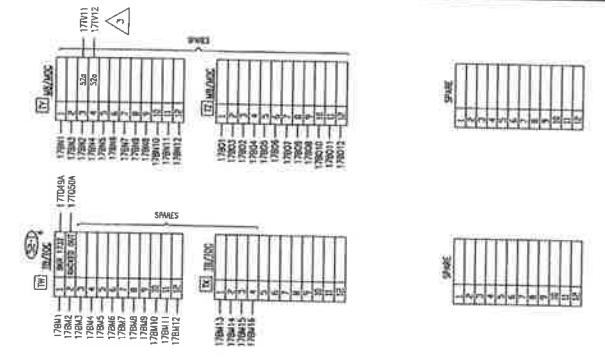
FRONT CEILING LIGHT



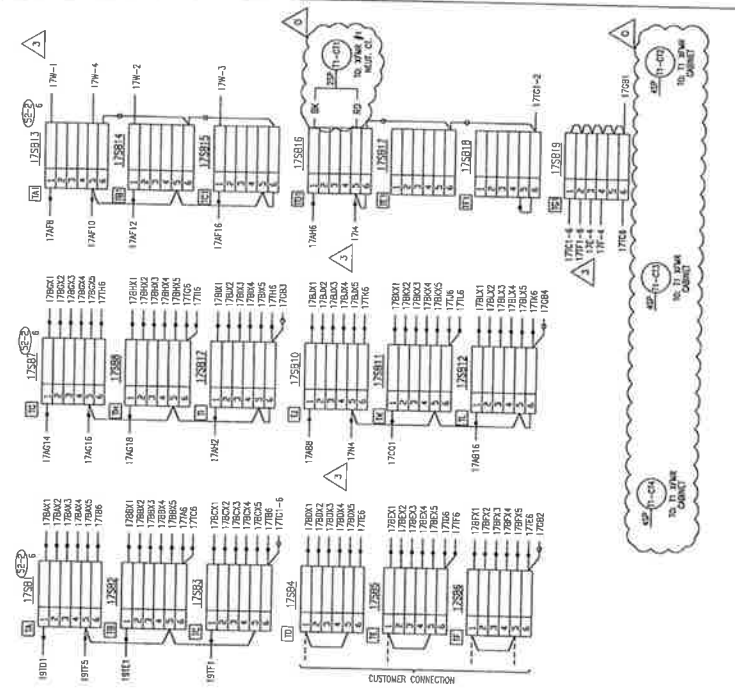
INSTRUMENT DOOR REAR VIEW



TOP'S RIGHT SIDE WALL BOTTOM



SEP'S LEFT SIDE WALL BOTTOM



CONSTRUCTION NOTE: CEA WILL LAND ALL CONTROL CABLES. CONTRACTOR WILL LAND ALL AC & DC POWER CABLES AND IS RESPONSIBLE FOR PULLING CABLES TO LOCATIONS NOTED. COIL ALL UNLANDED CABLES WITH 20' TAILS.

PROJECT: INSS 138KV FACILITY RETIREMENT

ENG./DESIGN: S. WENDLING (CEA) / J. GORNIK (B&V) W.O. # E1720055

Table with columns for NO., DESIGN/CONSTRUCTION/ASBUILT REVISION, DWN. BY/DATE, REVIEWED MGR./SUPV./DATE, APPROVED DIRECTOR/DATE, and END STAMP.

Table with columns for NO., RECORD REVISION, TECH./DWN. BY, W.P. #, W.O. APPROVED, RECORD APPROVED, and DATE.



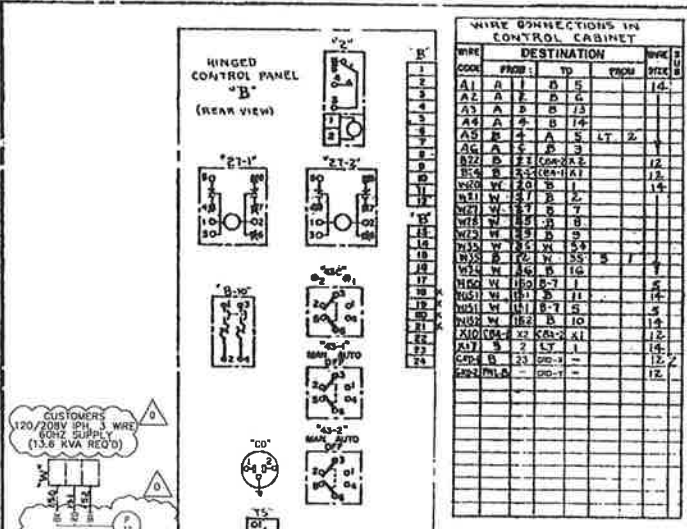
Chugach Electric Association, Inc. 5601 Minnesota Drive - P.O. Box 196300 Anchorage, Alaska 99519-6300

DRAWING NAME: INTERNATIONAL SUBSTATION 34.5KV SECTION #17 DOOR AND SIDE WALLS WIRING DIAGRAM

CONFIDENTIAL DRAWING NO. - PREVIOUS REFERENCE SHEET 0001 OF 0002

Certified for Construction of W.O. E1720055 by Joseph Frank Gornik, No. EE147055, Block & Veitch Consultants, on 05/20/2020

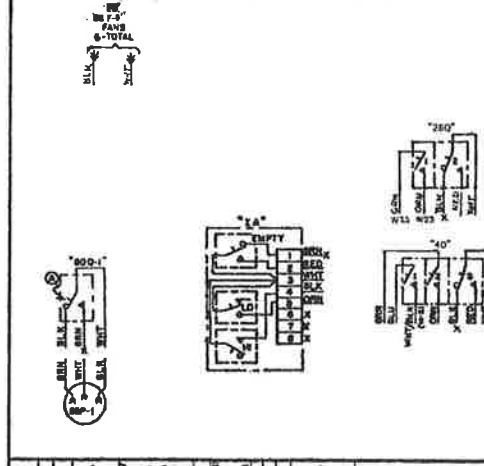
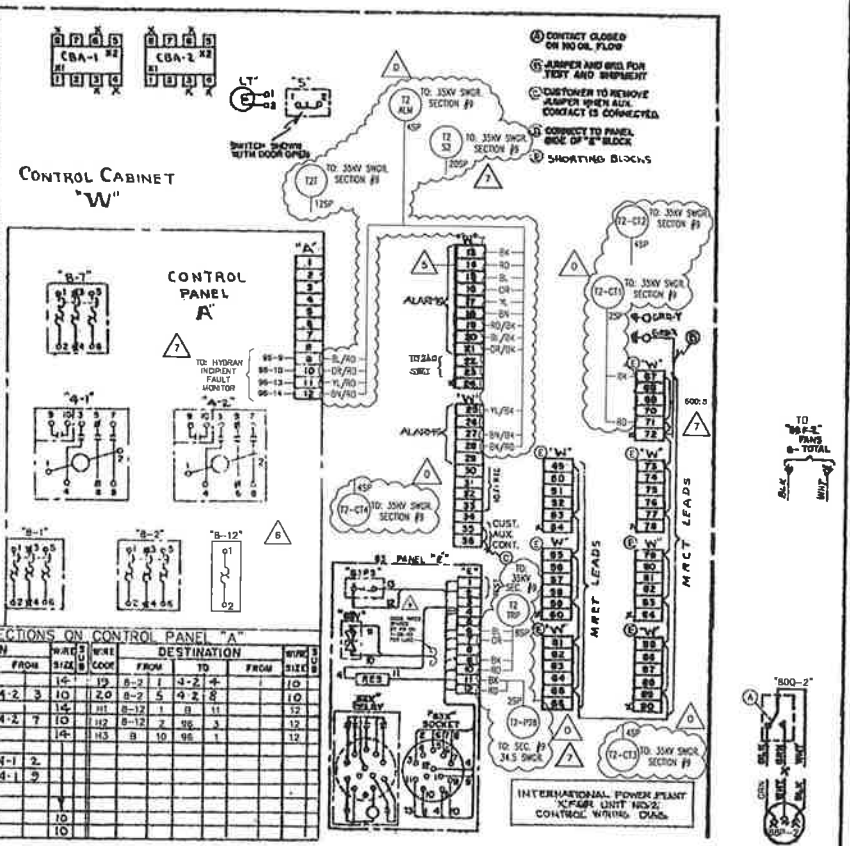
WIRE CODE	DESTINATION	FROM	TO	WIRE CODE	DESTINATION	FROM	TO
A7	A 7	300-BLK	14	N64	W 68	J 11	12
A8	A 8	300-BLK	14	N65	W 69	J 10	12
A9	A 9	300-BLK	14	N70	W 70	J 10	12
A10	A 10	300-BLK	14	N71	W 71	J 10	12
A11	A 11	300-BLK	14	N72	W 72	J 10	12
A12	A 12	300-BLK	14	N73	W 73	J 10	12
A13	A 13	300-BLK	14	N74	W 74	J 10	12
A14	A 14	300-BLK	14	N75	W 75	J 10	12
A15	A 15	300-BLK	14	N76	W 76	J 10	12
A16	A 16	300-BLK	14	N77	W 77	J 10	12
A17	A 17	300-BLK	14	N78	W 78	J 10	12
A18	A 18	300-BLK	14	N79	W 79	J 10	12
A19	A 19	300-BLK	14	N80	W 80	J 10	12
A20	A 20	300-BLK	14	N81	W 81	J 10	12
A21	A 21	300-BLK	14	N82	W 82	J 10	12
A22	A 22	300-BLK	14	N83	W 83	J 10	12
A23	A 23	300-BLK	14	N84	W 84	J 10	12
A24	A 24	300-BLK	14	N85	W 85	J 10	12
A25	A 25	300-BLK	14	N86	W 86	J 10	12
A26	A 26	300-BLK	14	N87	W 87	J 10	12
A27	A 27	300-BLK	14	N88	W 88	J 10	12
A28	A 28	300-BLK	14	N89	W 89	J 10	12
A29	A 29	300-BLK	14	N90	W 90	J 10	12
A30	A 30	300-BLK	14	N91	W 91	J 10	12
A31	A 31	300-BLK	14	N92	W 92	J 10	12
A32	A 32	300-BLK	14	N93	W 93	J 10	12
A33	A 33	300-BLK	14	N94	W 94	J 10	12
A34	A 34	300-BLK	14	N95	W 95	J 10	12
A35	A 35	300-BLK	14	N96	W 96	J 10	12
A36	A 36	300-BLK	14	N97	W 97	J 10	12
A37	A 37	300-BLK	14	N98	W 98	J 10	12
A38	A 38	300-BLK	14	N99	W 99	J 10	12
A39	A 39	300-BLK	14	N100	W 100	J 10	12



WIRE CODE	DESTINATION	FROM	TO
A1	A 1	B 5	14
A2	A 2	B 6	13
A3	A 3	B 7	12
A4	A 4	B 8	11
A5	A 5	B 9	10
A6	A 6	B 10	9
A7	A 7	B 11	8
A8	A 8	B 12	7
A9	A 9	B 13	6
A10	A 10	B 14	5
A11	A 11	B 15	4
A12	A 12	B 16	3
A13	A 13	B 17	2
A14	A 14	B 18	1
A15	A 15	B 19	0
A16	A 16	B 20	0
A17	A 17	B 21	0
A18	A 18	B 22	0
A19	A 19	B 23	0
A20	A 20	B 24	0
A21	A 21	B 25	0
A22	A 22	B 26	0
A23	A 23	B 27	0
A24	A 24	B 28	0
A25	A 25	B 29	0
A26	A 26	B 30	0
A27	A 27	B 31	0
A28	A 28	B 32	0
A29	A 29	B 33	0
A30	A 30	B 34	0
A31	A 31	B 35	0
A32	A 32	B 36	0
A33	A 33	B 37	0
A34	A 34	B 38	0
A35	A 35	B 39	0
A36	A 36	B 40	0
A37	A 37	B 41	0
A38	A 38	B 42	0
A39	A 39	B 43	0
A40	A 40	B 44	0

WIRE CODE	DESTINATION	FROM	TO
1	B 1	2	4
2	B 2	2	3
3	B 3	2	7
4	B 4	2	7
5	B 5	2	7
6	B 6	2	7
7	B 7	2	7
8	B 8	2	7
9	B 9	2	7
10	B 10	2	7
11	B 11	2	7
12	B 12	2	7
13	B 13	2	7
14	B 14	2	7
15	B 15	2	7
16	B 16	2	7

WIRE CODE	DESTINATION	FROM	TO
1	A 1	4	2
2	A 2	4	2
3	A 3	4	2
4	A 4	4	2
5	A 5	4	2
6	A 6	4	2
7	A 7	4	2
8	A 8	4	2
9	A 9	4	2
10	A 10	4	2
11	A 11	4	2
12	A 12	4	2
13	A 13	4	2
14	A 14	4	2
15	A 15	4	2
16	A 16	4	2



1	CHUGACH ELECTRIC ASSOCIATION
2	WESTINGHOUSE ELECTRIC CORPORATION
3	APPARATUS DATA/EDA TRANSFORMER CONTROL CONNECTION WIRING DIAGRAM
4	DATE: 2/12/02
5	DRAWN BY: JFC
6	CHECKED BY: JFC
7	APPROVED BY: JFC
8	DATE: 2/12/02
9	PROJECT: JNS 138KV FACILITY RETIREMENT
10	W.O. # E1720055

1	CHUGACH ELECTRIC ASSOCIATION
2	WESTINGHOUSE ELECTRIC CORPORATION
3	APPARATUS DATA/EDA TRANSFORMER CONTROL CONNECTION WIRING DIAGRAM
4	DATE: 2/12/02
5	DRAWN BY: JFC
6	CHECKED BY: JFC
7	APPROVED BY: JFC
8	DATE: 2/12/02
9	PROJECT: JNS 138KV FACILITY RETIREMENT
10	W.O. # E1720055

Certified for Construction of W.O. E1720055 by Joseph Frank Gornik, No. EE147055, Black & Veatch Consultants, on 05/20/2020

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVISED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE
0	ISSUED FOR CONSTRUCTION	MJC 05/20/20	JFC 05/20/20	

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
5	INSTALLED NEW OIL LEVEL GAUGE & DRAWN TO CAD	AU/LMP				11/30/94
6	INSTALLED NEW HYDRAM INCIPIENT FAULT MONITOR	JR/LMP				10/2/96
7	34.5KV ENCLOSED SWITCHGEAR INSTALL	RW	10.0879EN	E9620117		10/2/96
8	NEW NUMBER ISSUED/ARCHIVED PREVIOUS NUMBER INSS-EQ-0001	DHC/BC		E9620117		2/12/02
9	IGT MODIFICATIONS	PO/MCS		H0620274	P.000TROKOH	4/7/09

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME: INTERNATIONAL SUBSTATION CONTROL WIRING DIAGRAM TRANSFORMER NO. 2 EQUIPMENT ID # TRF 140 & TRF 144

CONFIDENTIAL

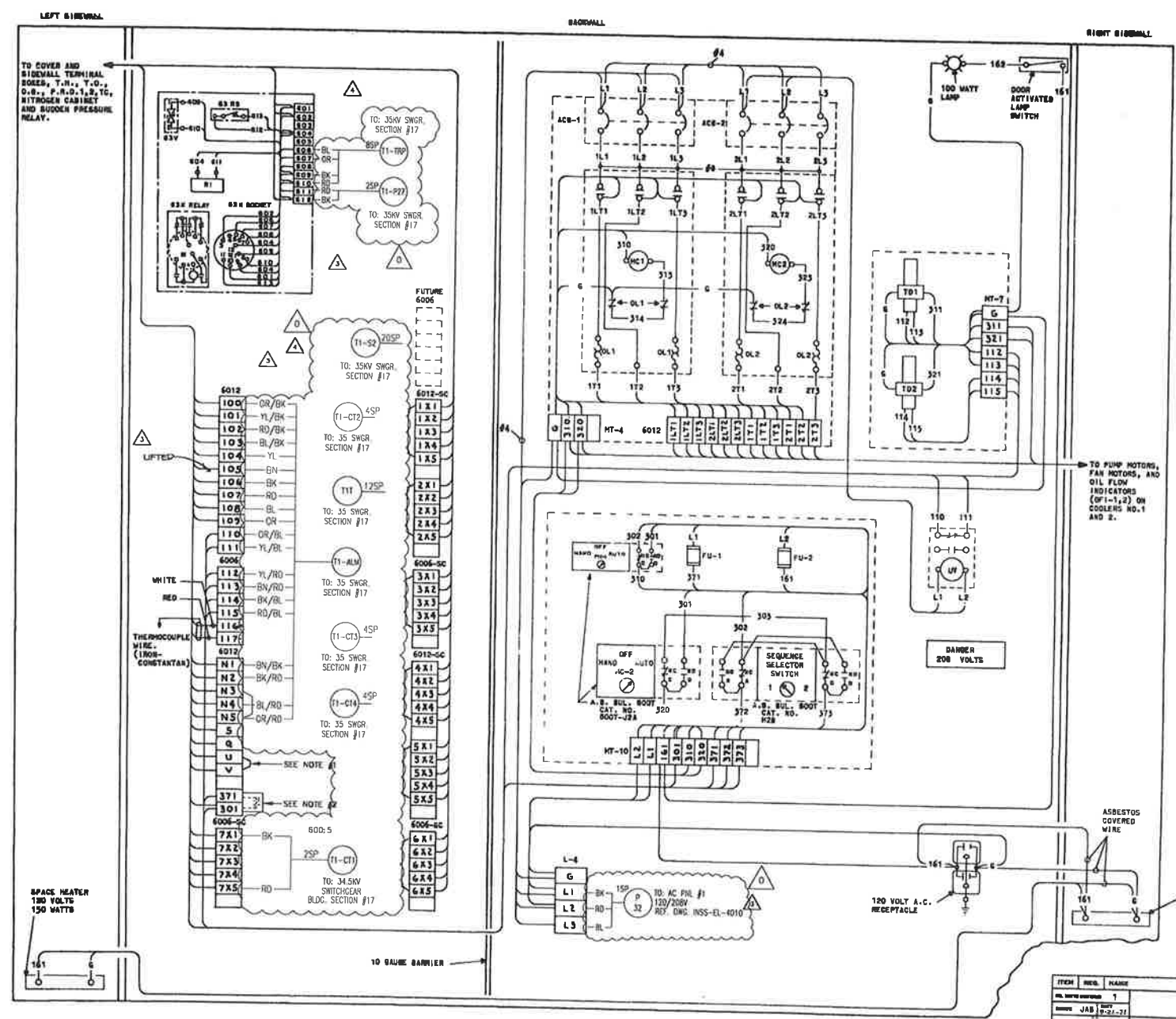
DRAWING NO. - PREVIOUS/REFERENCE: INSS-EL-3508-0001-0.DWG

DRAWING NO.: INSS-EL-3508

SHEET: 0001 of 0001

PAGE: /

CONSTRUCTION NOTE:
CEA WILL LAND ALL CONTROL CABLES. CONTRACTOR WILL LAND ALL AC & DC POWER CABLES AND IS RESPONSIBLE FOR PULLING CABLES TO LOCATIONS NOTED. COIL ALL UNLANDED CABLES WITH 20' TAILS.



NOTE #1
 JUMPER MAY BE REMOVED FOR TESTING PURPOSES WHEN THE TRANSFORMER IS DE-ENERGIZED.

NOTE #2
 PROVISION FOR CUSTOMER'S CONTACT TO SHUT DOWN COOLING.

ADD WIRE #12 EXCEPT AS NOTED.

013-0-2-0004

NO.	DATE	BY	DESCRIPTION	REVISION
3	08-17-09	SSW	CEI RECORD UPDATE	
2	1-27-07	M.G.	CEI RECORD UPDATE	

CEAREF# JCM-233
 42/100/EO

ITEM	REV.	NAME	BRANCH NUMBER OR DESCRIPTION	PRINTED TO
1		JAB	MCGRAW-EDISON POWER SYSTEMS DIVISION	REV. 13550
2		ROB	CONTROL CABINET DIAGRAM STEP-DOWN POWER TRANSFORMER #1 INTERNATIONAL STATION	REV. C-04780-5
CHUGACH ELECTRIC ASSOCIATION, INC. CONTRACT NO. 1104 DATED 11-30-70				REV. 05/01/08
CONFIDENTIAL NOT BE LOANED OR REPRODUCED WITHOUT THE WRITTEN PERMISSION OF MCGRAW-EDISON				CC-354568

NO.	DESCRIPTION
1	ASBESTOS COVERED WIRE
2	SPACE HEATER 120 VOLTS 150 WATTS
3	120 VOLT A.C. RECEPTACLE
4	DOOR ACTIVATED LAMP SWITCH
5	100 WATT LAMP
6	SEQUENCE SELECTOR SWITCH
7	33K RELAY
8	33K BODY
9	33K RELAY
10	100 WATT LAMP
11	DOOR ACTIVATED LAMP SWITCH
12	120 VOLT A.C. RECEPTACLE
13	ASBESTOS COVERED WIRE
14	SPACE HEATER 120 VOLTS 150 WATTS
15	120 VOLT A.C. RECEPTACLE
16	100 WATT LAMP
17	DOOR ACTIVATED LAMP SWITCH
18	120 VOLT A.C. RECEPTACLE
19	ASBESTOS COVERED WIRE
20	SPACE HEATER 120 VOLTS 150 WATTS
21	120 VOLT A.C. RECEPTACLE
22	100 WATT LAMP
23	DOOR ACTIVATED LAMP SWITCH
24	120 VOLT A.C. RECEPTACLE
25	ASBESTOS COVERED WIRE
26	SPACE HEATER 120 VOLTS 150 WATTS
27	120 VOLT A.C. RECEPTACLE
28	100 WATT LAMP
29	DOOR ACTIVATED LAMP SWITCH
30	120 VOLT A.C. RECEPTACLE
31	ASBESTOS COVERED WIRE
32	SPACE HEATER 120 VOLTS 150 WATTS
33	120 VOLT A.C. RECEPTACLE
34	100 WATT LAMP
35	DOOR ACTIVATED LAMP SWITCH
36	120 VOLT A.C. RECEPTACLE
37	ASBESTOS COVERED WIRE
38	SPACE HEATER 120 VOLTS 150 WATTS
39	120 VOLT A.C. RECEPTACLE
40	100 WATT LAMP
41	DOOR ACTIVATED LAMP SWITCH
42	120 VOLT A.C. RECEPTACLE
43	ASBESTOS COVERED WIRE
44	SPACE HEATER 120 VOLTS 150 WATTS
45	120 VOLT A.C. RECEPTACLE
46	100 WATT LAMP
47	DOOR ACTIVATED LAMP SWITCH
48	120 VOLT A.C. RECEPTACLE
49	ASBESTOS COVERED WIRE
50	SPACE HEATER 120 VOLTS 150 WATTS

Certified for Construction of W.O. E1720055 by Joseph Frank Gornik, No. EE147055, Block & Veatch Consultants, on 05/20/2020

PROJECT: INSS 138KV FACILITY RETIREMENT		W.O. # E1720055	
ENG./DESIGN: S. WENDLING (CEA) / J. GORNIK (B&V)			
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE
0	ISSUED FOR CONSTRUCTION	MJC 05/20/20	JFG 05/20/20
		APPROVED DIRECTOR/DATE	ENG. STAMP

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
2	CEI RECORD UPDATE	MG				1/27/07
3	CEI RECORD UPDATE	SW				1/27/07
4	34.5KV ENCLOSED SWITCHGEAR INSTALL	RW	10.0679EN	E9620117		1/27/07

CHUGACH
 POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
 5601 Electron Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

DRAWING NAME: **INTERNATIONAL SUBSTATION CONTROL CABINET DIGARM STEP-DOWN POWER TRANSFORMER #1 EQUIPMENT ID TRF 144**

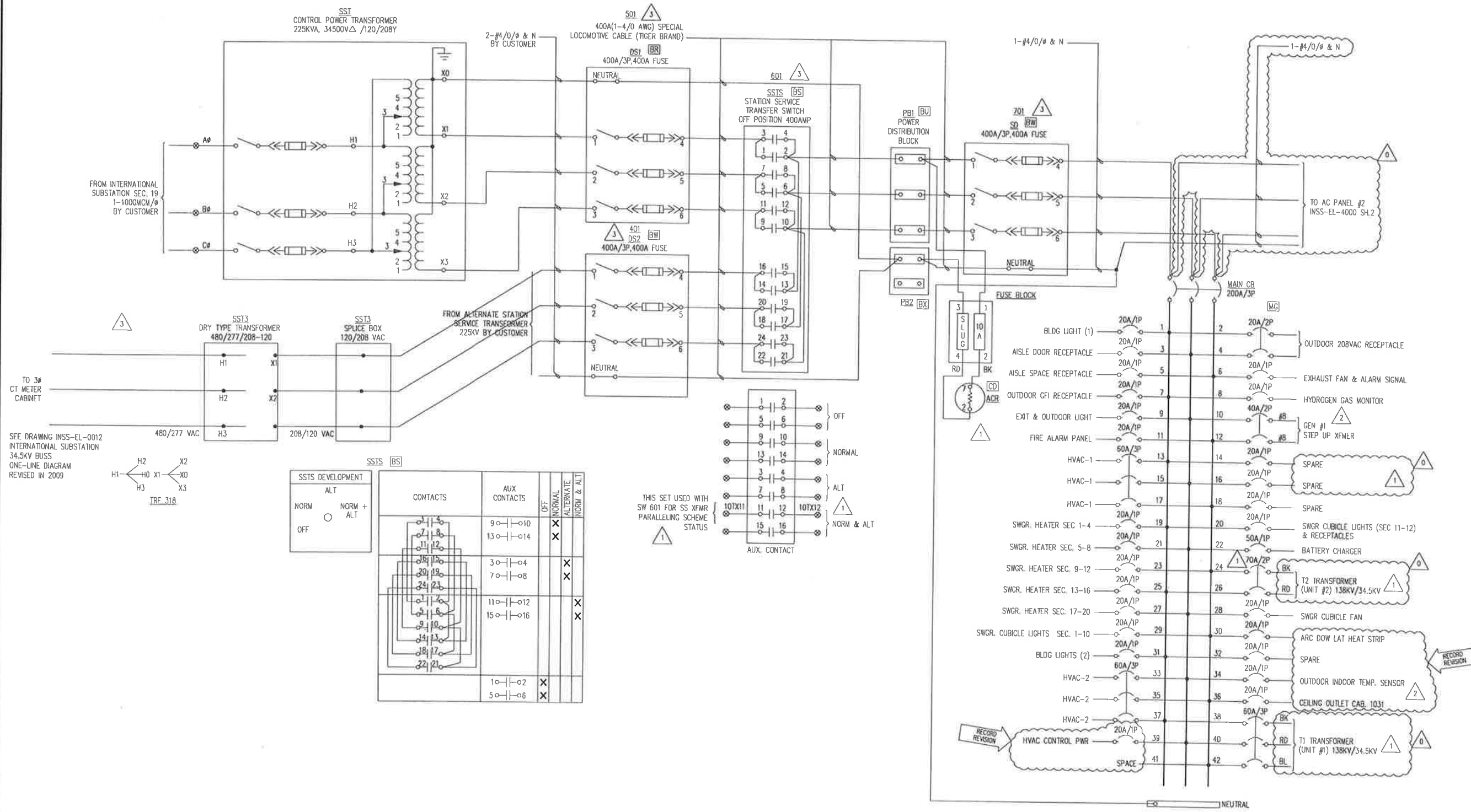
CONFIDENTIAL

DRAWING NO. - PREVIOUS/REFERENCE: INSS-EL-3509.001.4.DWG
 CC-334568

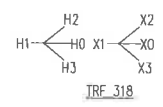
DRAWING NO.: **INSS-EL-3509**

SHEET 0001 OF 0001
 PAGE 1

CONSTRUCTION NOTE:
 CEA WILL LAND ALL CONTROL CABLES. CONTRACTOR WILL LAND ALL AC & DC POWER CABLES AND IS RESPONSIBLE FOR PULLING CABLES TO LOCATIONS NOTED. COIL ALL UNLANDED CABLES WITH 20' TAILS.



SEE DRAWING INSS-EL-0012 INTERNATIONAL SUBSTATION 34.5KV BUSS ONE-LINE DIAGRAM REVISED IN 2009

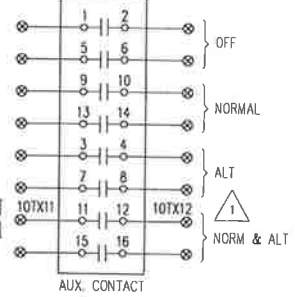


SSTS DEVELOPMENT

NORM	ALT	NORM + ALT
○	○	○
OFF		

CONTACTS	AUX CONTACTS	OFF	NORMAL	ALTERNATE	NORM & ALT
9-0-10	13-0-14		X		
3-0-4	7-0-8			X	
11-0-12	15-0-16				X
1-0-2	5-0-6	X			

THIS SET USED WITH SW 601 FOR SS XFMR PARALLELING SCHEME STATUS



CONSTRUCTION NOTE:
CEA WILL LAND ALL CONTROL CABLES. CONTRACTOR WILL LAND ALL AC & DC POWER CABLES AND IS RESPONSIBLE FOR PULLING CABLES TO LOCATIONS NOTED. COIL ALL UNLANDED CABLES WITH 20' TAILS.

Certified for Construction of W.O. E1720055 by Joseph Frank Garrick, No. EE147055, Black & Veatch Consultants, on 05/20/2020

PROJECT: INSS 138 kV FACILITY RETIREMENT
 ENG./DESIGN: S. WENDLING (CEA) / J. GORNIK (B&V) W.O. # E1720055

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTION/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC 05/20/20	JFG 05/20/20		

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	34.5KV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	RW	10.0679EN	E9620117		10/31/00
2	INSTALL NEW STEP UP TRANSFORMER (ABB) FOR GENERATOR #1	DBC	10.0752	E0020159		1/23/02
3	EDITS PER J. ROBINSON	JR/AMP		H0658828		9/9/09

CHUGACH
POWERING ALASKA'S FUTURE

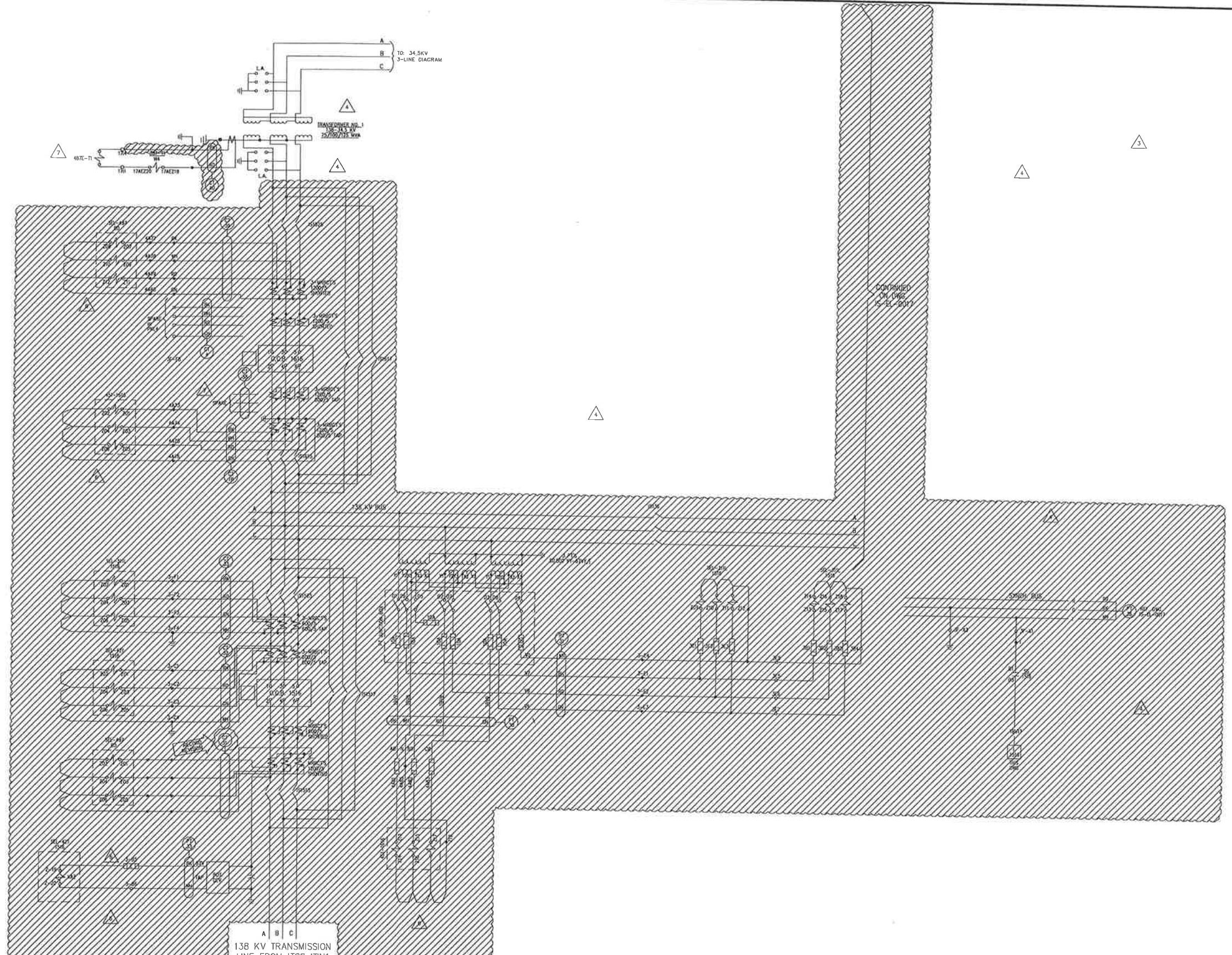
Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME: INTERNATIONAL SUBSTATION 34.5KV SWITCHGEAR AC PANEL SCHEMATIC

DRAWING NO. - PREVIOUS/REFERENCE: INSS-EL-4000_0001_3.DWG

DRAWING NO.: INSS-EL-4000

SHEET 1 OF 2



Certified for Construction of W.O. E1720055 by Joseph Frank Gornik, No. EE147055, Black & Veatch Consultants, on 05/20/2020

PROJECT: INSS 138KV FACILITY RETIREMENT				
ENG./DESIGN: S. WENDLING (CEA) / J. GORNIK (B&V)				
NO.		DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE
D		ISSUED FOR CONSTRUCTION	MJC 05/20/20	JFC 05/20/20



NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	CEI RECORD UPDATE				HVC	9/1/89
2	INSTALLED AUTO-SYNC.				HP	8/11/92
3	REROUTE CABLE FROM OCB 1418 TO CONTROL HOUSE FOR SWITCHGEAR	ACT/JMD		E9820117	ACT	9/21/99 7/25/99
4	34.5KV ENCLOSED SWITCHGEAR INSTALLED	RW	10.0879EN	E9820117		10/31/00
5	138KV PT REPLACEMENT	APV		E0320237		5/05
6	IGT MODIFICATIONS	PD/MGS		H0820274	P.CONTRIVION	04/14/08
7	FIRE ISLAND IGT UPGRADE	MW/MS				04/15/13



Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

THIS DWG. SUPERSEDES DWG. CH-324-2A REV. 10

REMOVAL NOTE:
CONTROL CABLE TERMINATIONS WILL BE LIFTED BY CEA PERSONNEL. CONTRACTOR TO LIFT POWER CABLE TERMINATIONS. CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL OF CABLE FROM CONDUIT.

REMOVAL

DRAWING NAME: **INTERNATIONAL SUBSTATION THREE LINE DIAGRAM OCB'S 1416, 1416 AND TRANSFORMER #1 REMOVAL DRAWING**

CONFIDENTIAL

DRAWING NO. - PREVIOUS/REFERENCE: **INSS-EL-0016_0001_7-R.dwg**

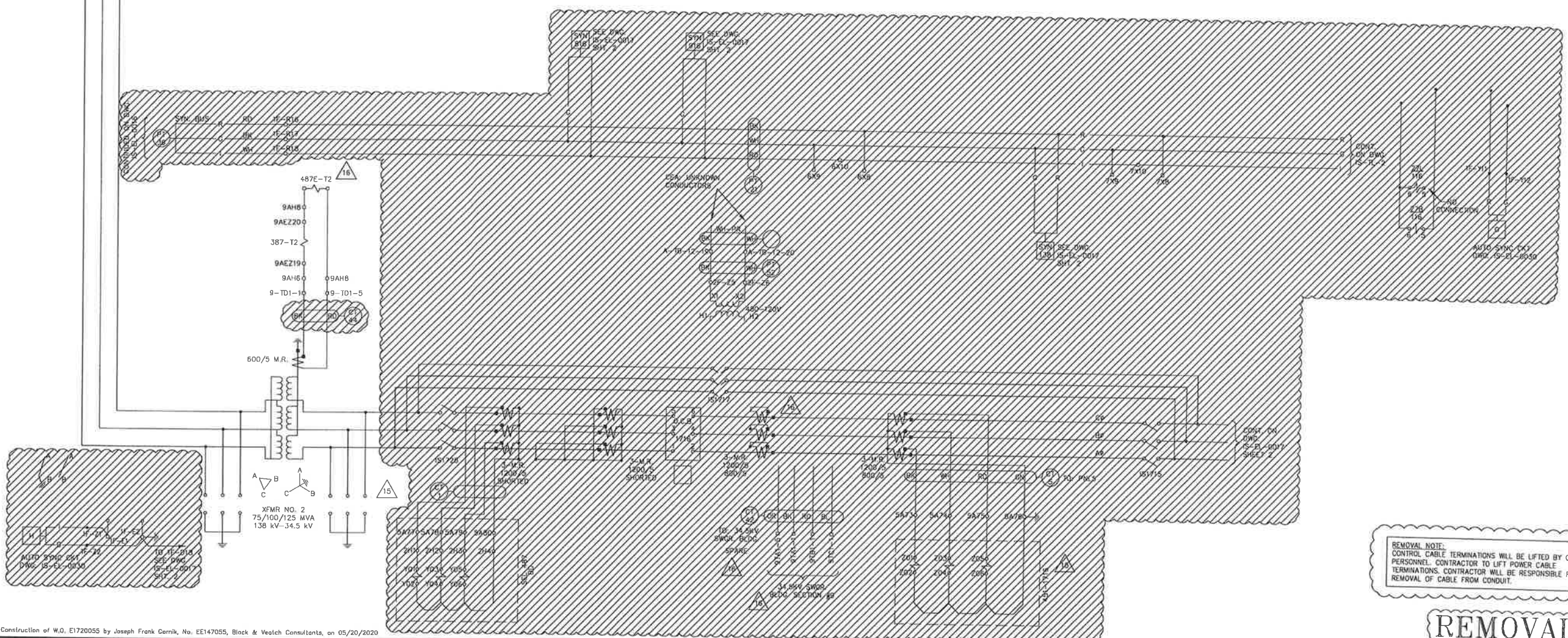
DRAWING NO.: **INSS-EL-0016-R**

SHEET 0001 OF 0001

JCM-2577

TO: 34.5KV
3-LINE DIAGRAM

14



Certified for Construction of W.O. E1720055 by Joseph Frank Garnik, No. EE147055, Black & Veitch Consultants, on 05/20/2020

PROJECT: INSS 138KV FACILITY RETIREMENT		W.O. # E1720055	
ENG./DESIGN: S. WENDLING (CEA) / J. GORNIK (B&V)			
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN. BY/DATE	APPROVED DIRECTOR/DATE
0	ISSUED FOR CONSTRUCTION	MJC 05/20/20	JFC 05/20/20



NO.	RECORD REVISION	TECH / DWN. BY	W.P. #	W.O. APPROVED	RECORD APPROVED	DATE
9	RELOCATE BREAKER 116 TO SHEET 3 OF 3	MS/TH	0500.087EN	E9511034	SK/SG	5/20/95
10	SHEET NUMBER CHANGE	MS/TH	0500.087EN	E9511034	SK/SG	5/20/95
11	PRINT CLARIFICATION	MS/TH	0500.087EN	E9511034	SK/SG	5/20/95
12	MISC. REVS - BREAKER 1016 PT SLUGS	MS/AD			MS	10/98
13	34.5KV ENCLOSED SWITCHGEAR INSTALLED	RW	10.087EN	E9R20117		10/31/09
14	RESOLVED CONFLICTS ON DRAWINGS	RW/SG				5/02
15	IDT 138KV CONTROLS UPGRADE	ESS/MGS		E0820343		3/20/09
16	FIRE ISLAND IDT UPGRADE	WW/MGS				04/13

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

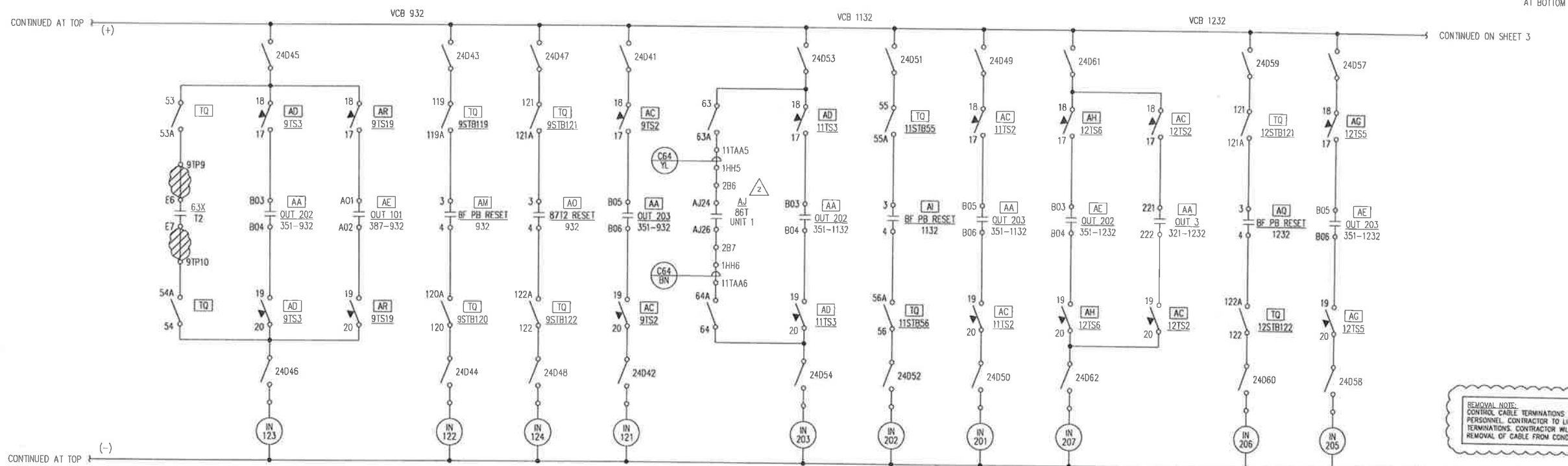
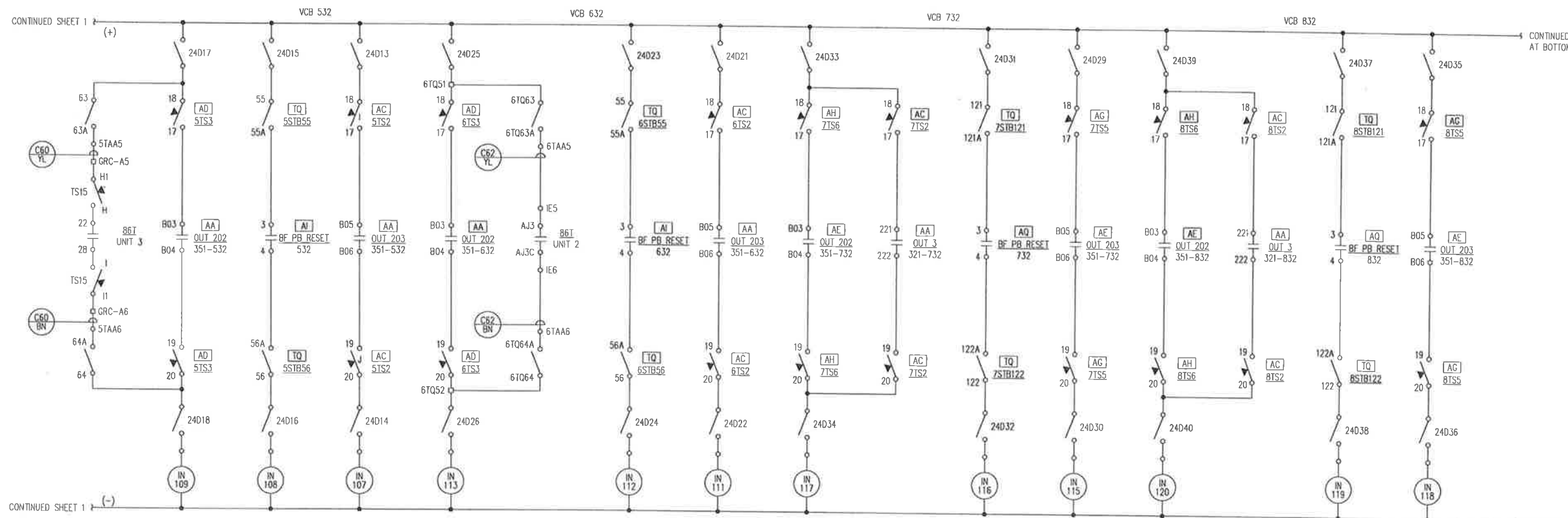
DRAWING NAME: **INTERNATIONAL SUBSTATION
THREE LINE DIAGRAM
OCB 11716 AND TRANSFORMER #2
REMOVAL DRAWING**

CONFIDENTIAL

DRAWING NO. - PREVIOUS/REFERENCE: INSS-EL-0017_0001_16-R.dwg

DRAWING NO.: **INSS-EL-0017-R**

SHEET 0001 OF 0001
PAGE 1 / 1



REMOVAL NOTE:
CONTROL CABLE TERMINATIONS WILL BE LIFTED BY CEA PERSONNEL. CONTRACTOR TO LIFT POWER CABLE TERMINATIONS. CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL OF CABLE FROM CONDUIT.

REMOVAL

Certified for Construction of W.O. E1720055 by Joseph Frank Gornik, No. EE147055, Black & Veatch Consultants, on 05/20/2020

PROJECT: INSS 138KV FACILITY RETIREMENT			
ENG./DESIGN.: S. WENDLING (CEA) / J. GORNIK (B&V)			
NO.		W.O. # E1720055	
DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPPLY/DATE	APPROVED DIRECTOR/DATE
0 ISSUED FOR CONSTRUCTION	MJC 05/20/20	JFG 05/20/20	

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	34 SKV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	RW	10.0879EN	E9820117		10/31/00
2	REPLACED FAILED B6T	DBC	10.0752	H9958709		1/23/02

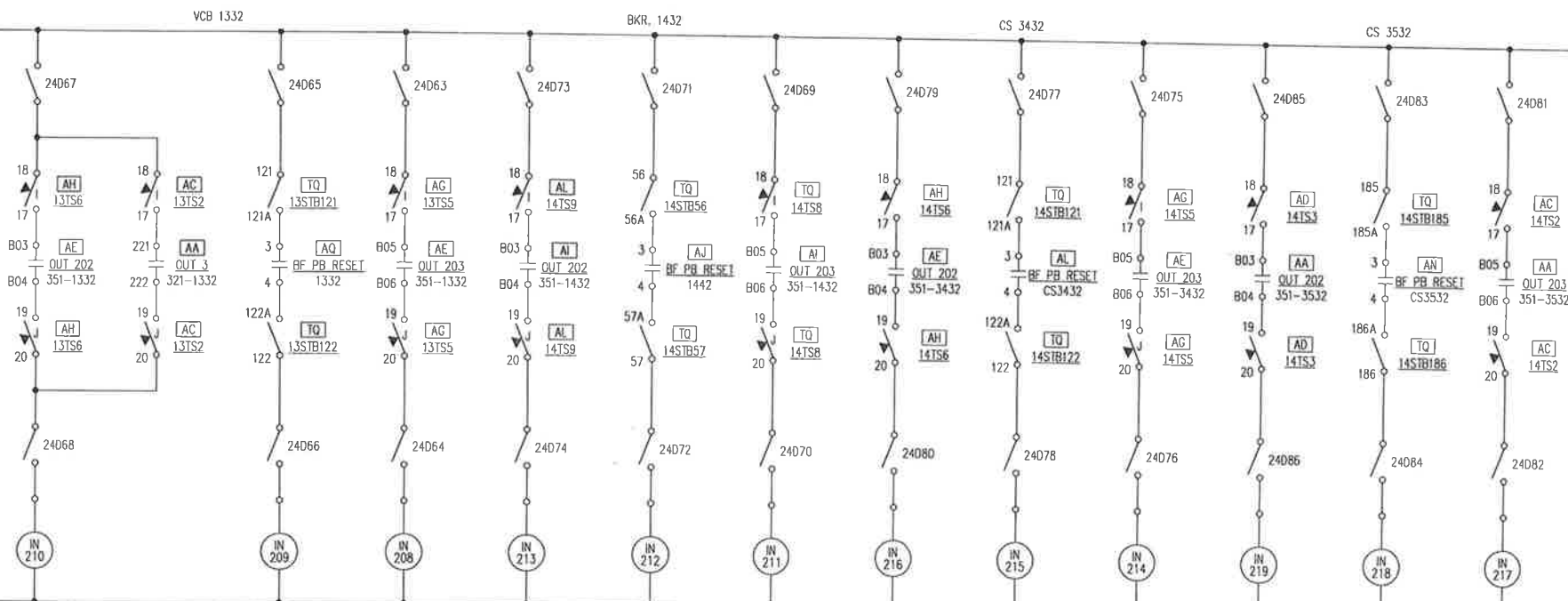


Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:		INTERNATIONAL SUBSTATION PLC INPUTS DC SCHEMATIC REMOVAL DRAWING	
DRAWING NO. - PREVIOUS/REFERENCE		INSS-EL-2049-0002_3-1	
DRAWING NO.:		INSS-EL-2049-R	
		SHEET 2 OF 5 PAGE /	

CONTINUED ON SHEET 2 (+)

CONTINUED AT BOTTOM

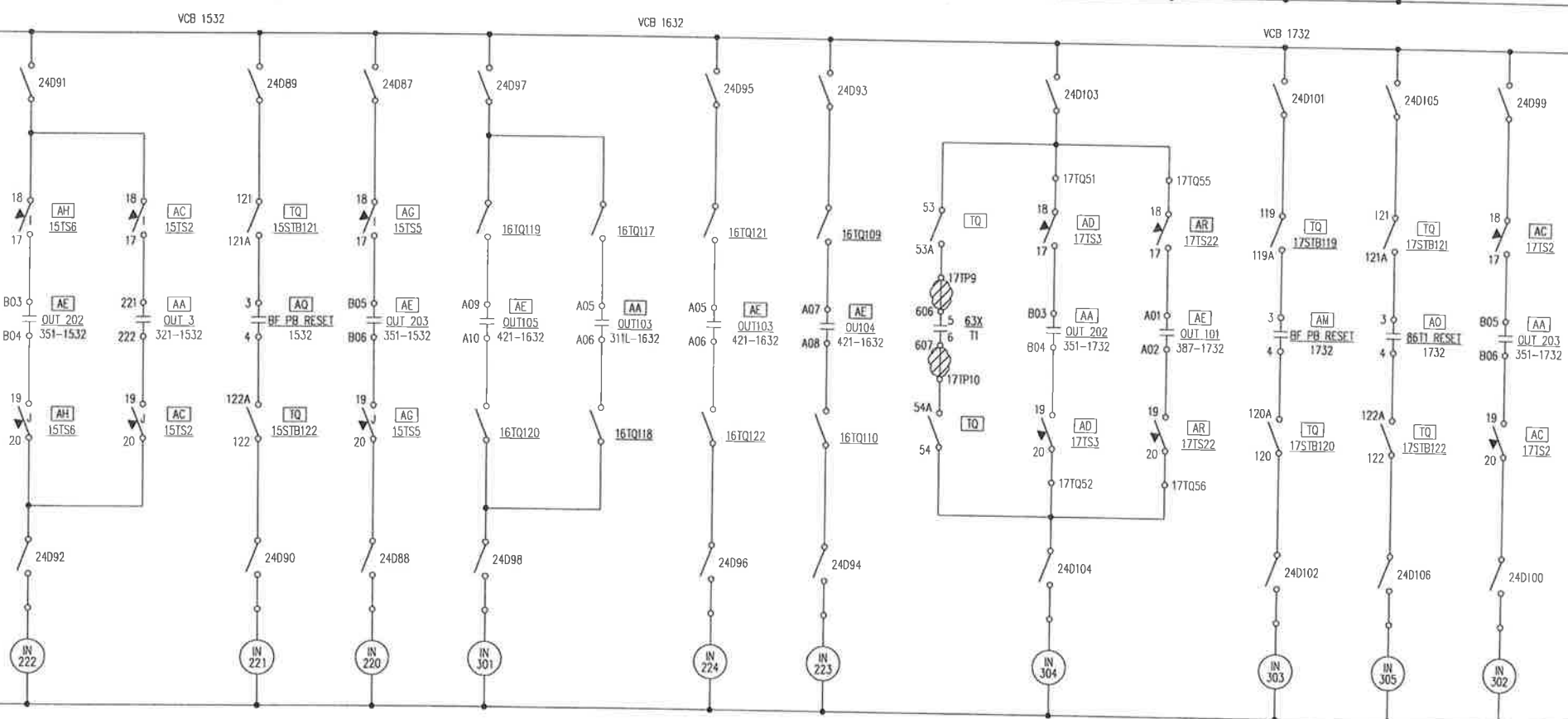


CONTINUED ON SHEET 2 (-)

CONTINUED AT BOTTOM

CONTINUED AT TOP

CONTINUED ON SHEET 4



CONTINUED AT TOP (-)

CONTINUED ON SHEET 4

REMOVAL NOTE:
 CONTROL CABLE TERMINATIONS WILL BE LIFTED BY CEA PERSONNEL. CONTRACTOR TO LIFT POWER CABLE TERMINATIONS. CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL OF CABLE FROM CONDUIT.

REMOVAL

Certified for Construction of W.O. E1720055 by Joseph Frank Gornik, No. EE147055, Black & Veatch Consultants, on 05/20/2020

PROJECT: INSS 138KV FACILITY RETIREMENT					W.O. # E1720055	
ENG./DESIGN: S. WENDLING (CEA) / J. GORNIK (B&V)						
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP	
0	ISSUED FOR CONSTRUCTION	MJC 05/20/20	JFG 05/20/20			

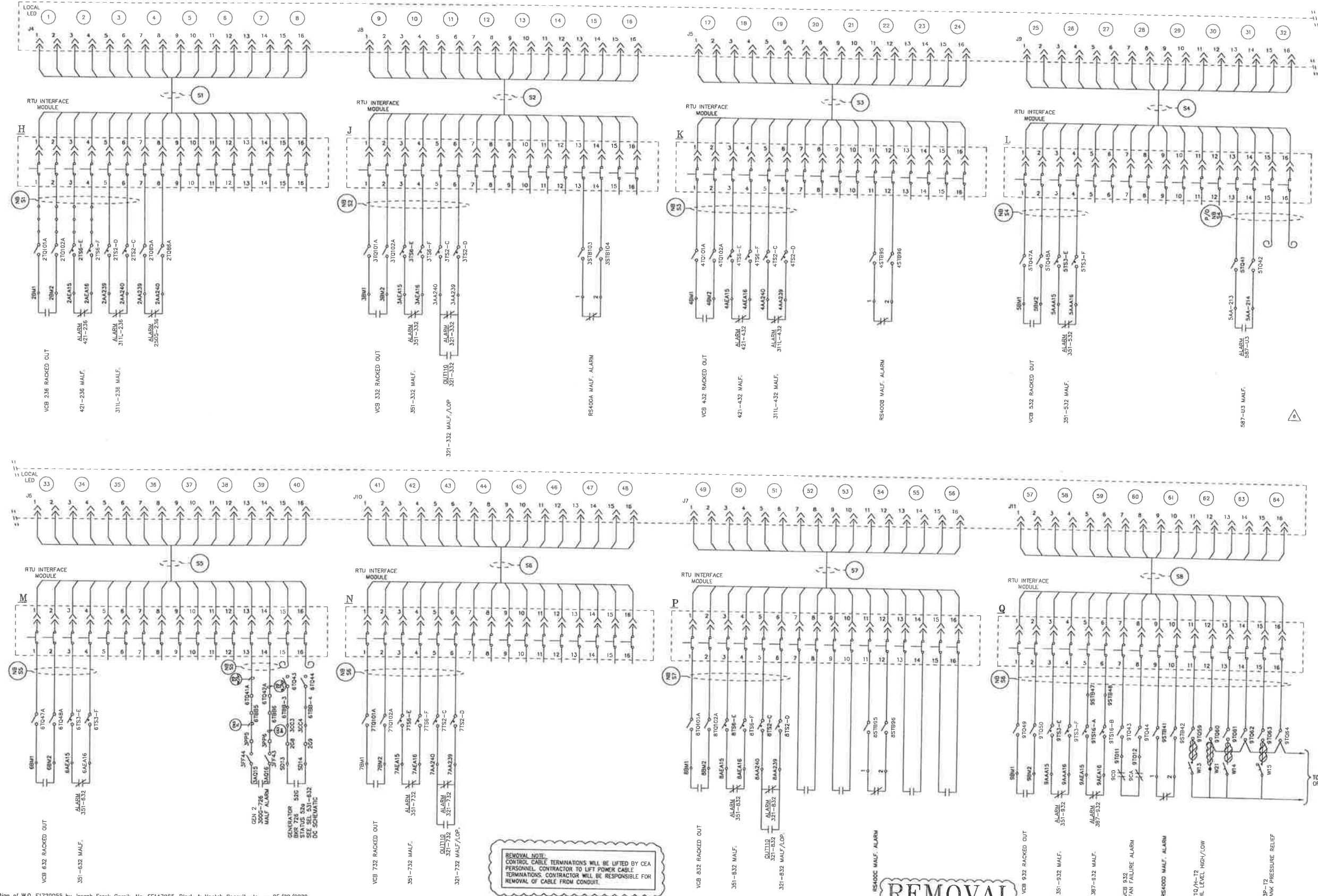
NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	34.5KV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	RW	10.0679EM	E9520117		10/31/05
2	FIRE ISLAND NOT UPGRADE	BW		E1120378		06/01/12

CHUGACH
 POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
 5601 Minnesota Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

DRAWING NAME:		INTERNATIONAL SUBSTATION PLC INPUTS DC SCHEMATIC REMOVAL DRAWING	
DRAWING NO. - PREVIOUS/REFERENCE:		/substa/inss/elect/inss-el-2049_3.dwg 4/30/01	
DRAWING NO.:		INSS-EL-2049-R	
SHEET 8 OF 5		PAGE 1	

RTU
D28SD



REMOVAL NOTE:
CONTROL CABLE TERMINATIONS WILL BE LIFTED BY CEA PERSONNEL. CONTRACTOR TO LIFT POWER CABLE TERMINATIONS. CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL OF CABLE FROM CONDUIT.

REMOVAL

Certified for Construction of W.O. E1720055 by Joseph Frank Cornik, No. EE147055, Black & Veatch Consultants, on 05/20/2020

PROJECT: INSS 138KV FACILITY RETIREMENT				W.O. # E1720055	
ENG./DESIGN: S. WENDLING (CEA) / J.GORNIK (B&V)					
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC 05/20/20	JFG 05/20/20		

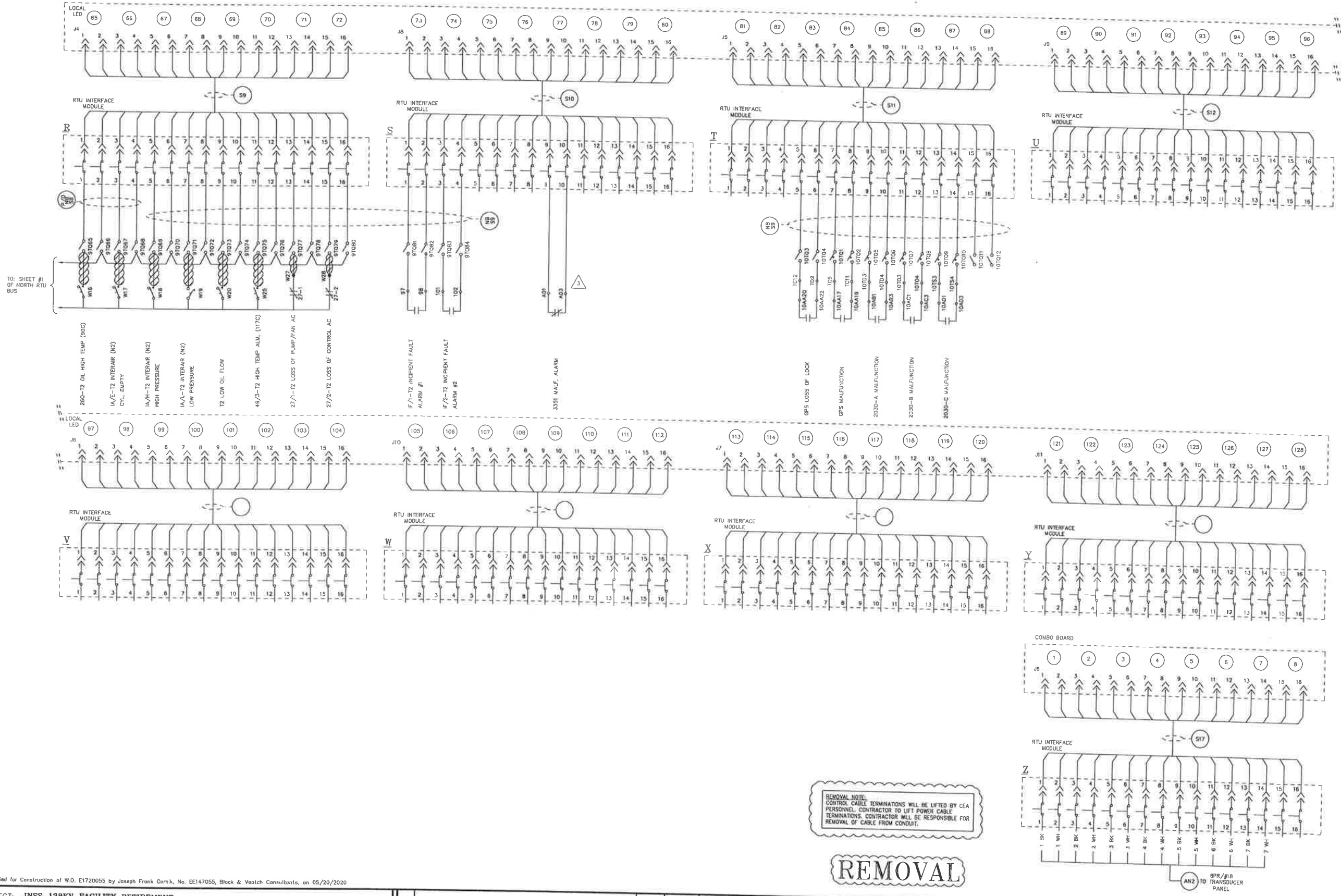
NO.	RECORD REVISION	TECH./DWN. BY	W.P. #	W.O. APPROVED	RECORD APPROVED	DATE
1	34.5KV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	RW	10.0678EN	E9820117		10/31/00
2	485/2030 CONTROL MOD PROJECT	RWT		H0712375		1/29/07
3	3000 INSTALL.	ESS/JG		H0858827		1/16/08
4	PROTECTION UPGRADE	MW/LMP		H0658828		8/24/09
5	MISC. CHANGES	PFJ				
6	MS-ESS FLYWHEEL PROJECT	JTM		P1300650		9/20/17

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:	INTERNATIONAL RTU NORTH BUS DC SCHEMATIC REMOVAL DRAWING
DRAWING NO. - PREVIOUS/REFERENCE:	INSS-EL-2050_0001_E-2
DRAWING NO.:	INSS-EL-2050-R
SHEET 0001 OF 2	PAGE /

RTU
D2050



TO: SHEET #1
OF NORTH RTU
BUS

REMOVAL NOTE:
CONTROL CABLE TERMINATIONS WILL BE LIFTED BY CEA PERSONNEL. CONTRACTOR TO LIFT POWER CABLE TERMINATIONS. CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL OF CABLE FROM CONDUIT.

REMOVAL



Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:
**INTERNATIONAL SUBSTATION
RTU NORTH BUS
DC SCHEMATIC
REMOVAL DRAWING**

DRAWING NO. - PREVIOUS/REFERENCE: INSS-EL-2050-0002-3.dwg 12/17/07

DRAWING NO.: **INSS-EL-2050-R**

SHEET 2 OF 2
PAGE 1

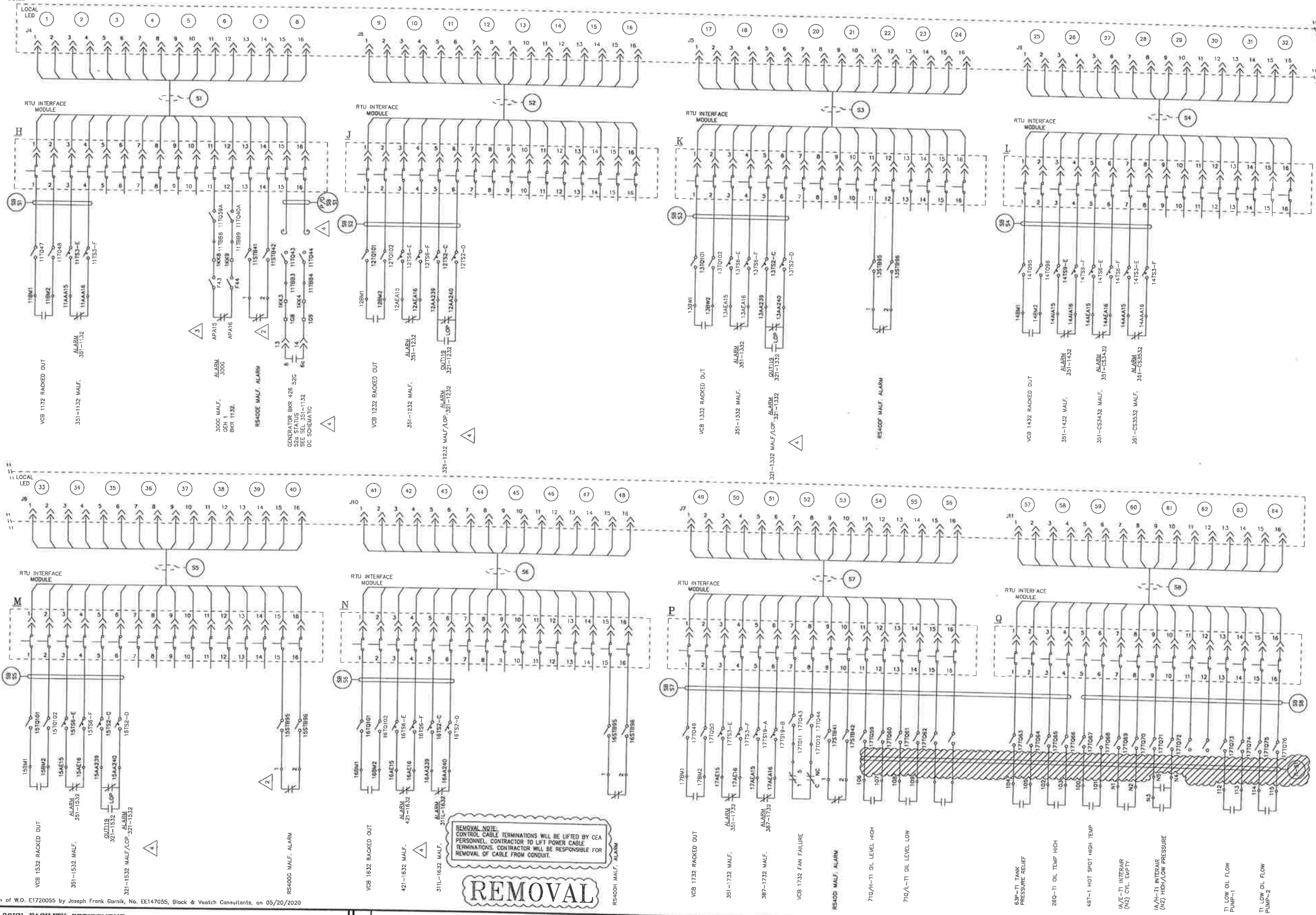
Certified for Construction of W.O. E1720055 by Joseph Frank Gornik, No. EE147055, Black & Veatch Consultants, on 05/20/2020

PROJECT: INSS 138KV FACILITY RETIREMENT			
ENG./DESIGN.: S. WENDLING (CEA) / J. GORNIK (B&V)			
NO.		W.O. # E1720055	
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN. BY/DATE	REVIEWED MGR./DATE
0	ISSUED FOR CONSTRUCTION	MJC 05/20/20	JFG 05/20/20

NO.	RECORD REVISION	TECH./DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	34.5KV ENCLOSED SWITCHGEAR INSTALLED. NEW NUMBER ISSUED	RW	10.0679EN	E9620117		10/31/00
2	TRANSDUCER INSTALL	HC/BMB		H9958708		3/04
3	485/2030 CONTROL MOD PROJECT	RWT		H0712375		1/29/07



RTU
0205D



REMOVAL NOTE:
CONTROL CABLE TERMINATIONS WILL BE LIFTED BY CEA
PERSONNEL. CONTRACTOR TO LIFT POWER CABLE
TERMINATIONS. CONTRACTOR WILL BE RESPONSIBLE FOR
REMOVAL OF CABLE FROM CONDUIT.

REMOVAL

Certified for Construction of W.O. E1720055 by Joseph Frank Gornik, No. EE147055, Black & Veatch Consultants, on 05/20/2020

PROJECT: INSS 138KV FACILITY RETIREMENT				
ENG./DESIGN: S. WENDLING (CEA) / J. GORNIK (B&V)				
W.O. # E1720055				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE
0	ISSUED FOR CONSTRUCTION	MJC 09/20/20	JFC 09/20/20	



NO.	RECORD REVISION	TECH/DWN. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	34.5KV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	RW	10.0679EN	E9620117		10/31/00
2	485/2030 CONTROL MOD PROJECT	RWT		H0712375		1/29/07
3	UNIT #1 300C INSTALL	ESS/JG		H0658827		8/21/07
4	MISC. CHANGES	PPD				9/24/15

CHUGACH
POWERING ALASKA'S FUTURE

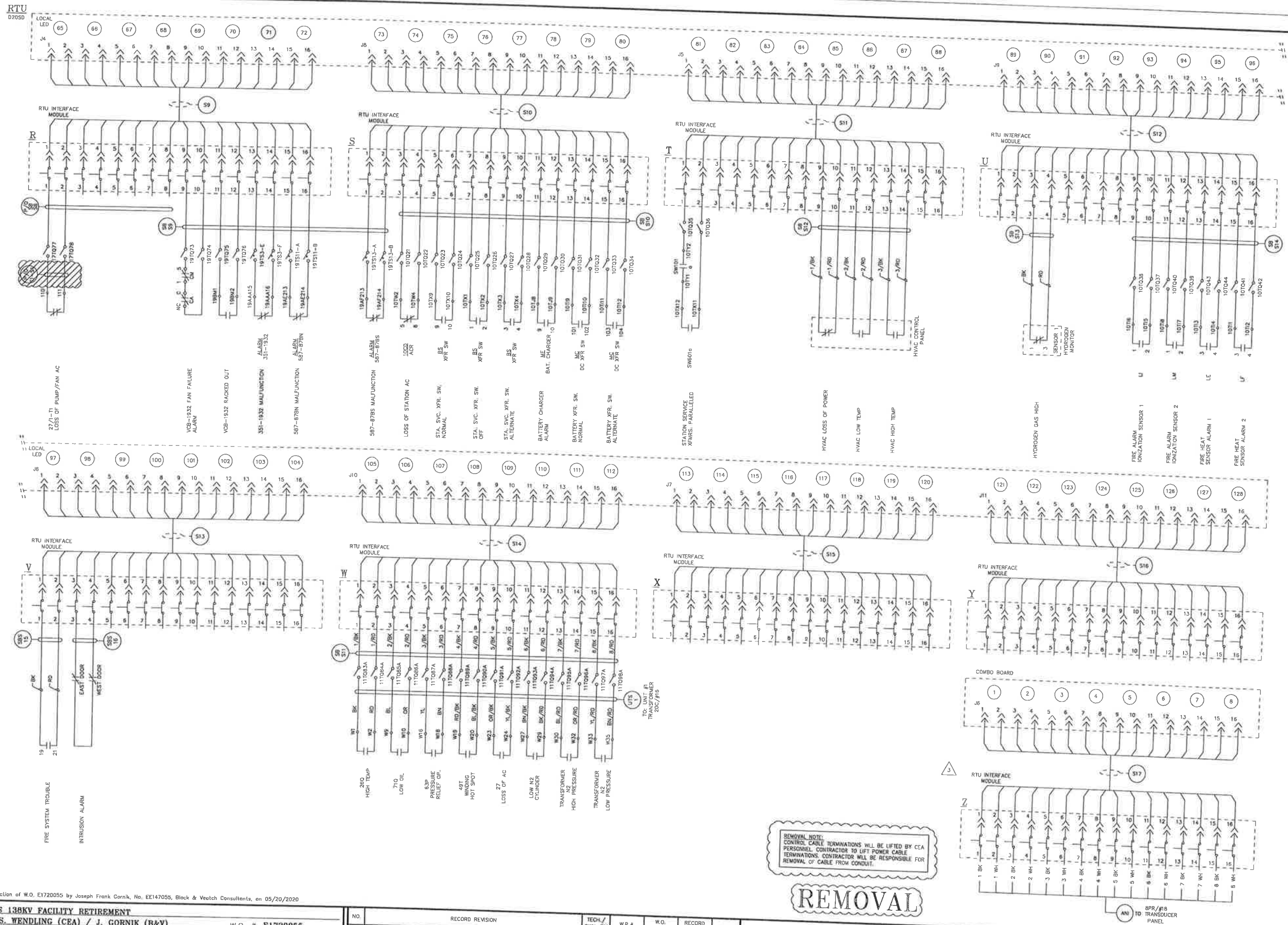
Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:
**INTERNATIONAL SUBSTATION
RTU SOUTH BUS
DC SCHEMATIC
REMOVAL DRAWING**

DRAWING NO. - PREVIOUS/REFERENCE: **INSS-EL-2051_0001_4-1**

DRAWING NO.: **INSS-EL-2051-R**

SHEET **1** OF **2**
PAGE **1**



REMOVAL NOTE:
 CONTROL CABLE TERMINATIONS WILL BE LIFTED BY CEA
 PERSONNEL. CONTRACTOR TO LIFT POWER CABLE
 TERMINATIONS. CONTRACTOR WILL BE RESPONSIBLE FOR
 REMOVAL OF CABLE FROM CONDUIT.

REMOVAL



Chugach Electric Association, Inc.
 5601 Minnesota Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

DRAWING NAME:

INTERNATIONAL SUBSTATION
 RTU SOUTH BUS
 DC SCHEMATIC
 REMOVAL DRAWING

DRAWING NO. - PREVIOUS/REFERENCE

INSS-EL-2051_0002_3.dwg 12/17/07

DRAWING NO.:

INSS-EL-2051-R

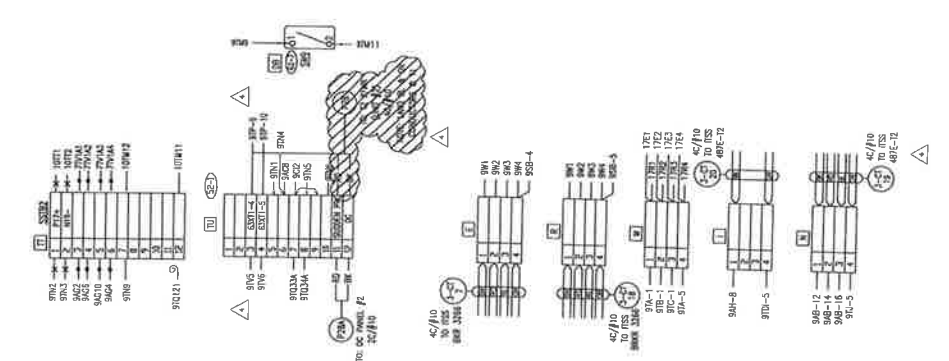
SHEET 2 OF 2
 PAGE 1

Certified for Construction of W.O. E1720055 by Joseph Frank Gornik, No. EE147055, Black & Veatch Consultants, on 05/20/2020

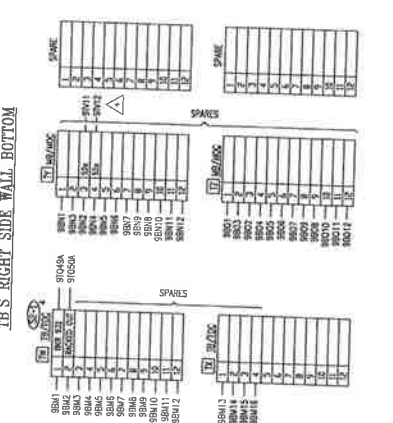
PROJECT: INSS 138KV FACILITY RETIREMENT		W.O. # E1720055	
ENG./DESIGN: S. WENDLING (CEA) / J. GORNIK (B&V)			
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPV./DATE
0	ISSUED FOR CONSTRUCTION	MJC 05/20/20	JFG 05/20/20

NO.	RECORD REVISION	TECH. BY	W.P.#	W.O. APPROVED	RECORD APPROVED	DATE
1	34.5KV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	RW	10.0679EN	E9620117		10/31/00
2	INSTALL NEW STEP UP TRANSFORMER (A88) FOR GENERATOR #1	QBC	10.0752	E0020159		1/23/02
3	TRANSDUCER INSTALL	KC/BWB		H9958708		3/04

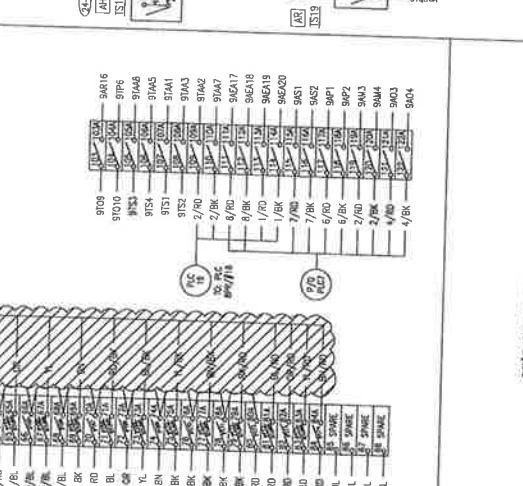
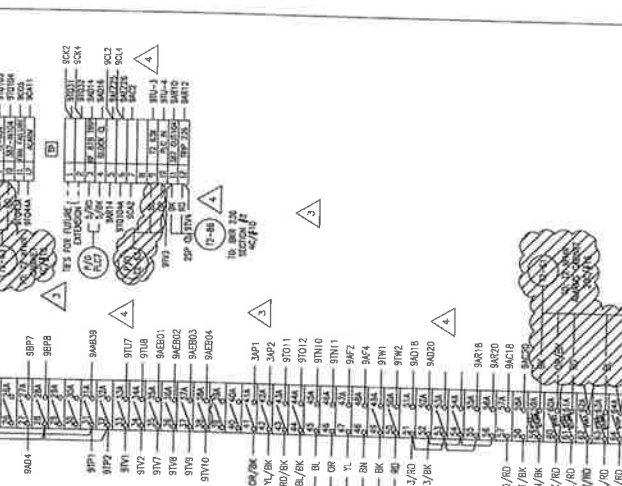
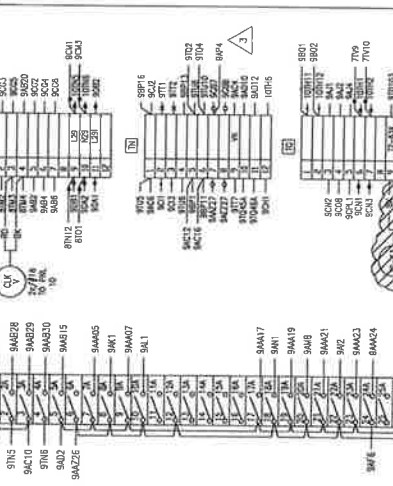
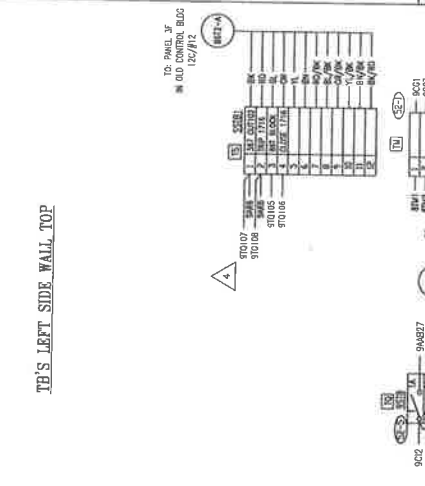
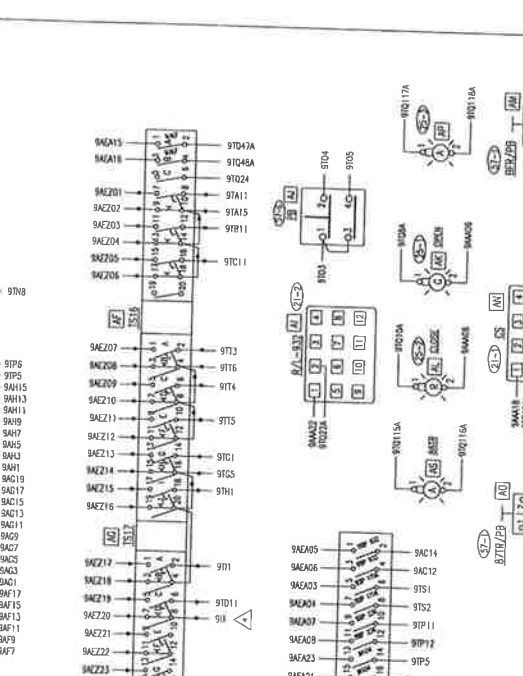
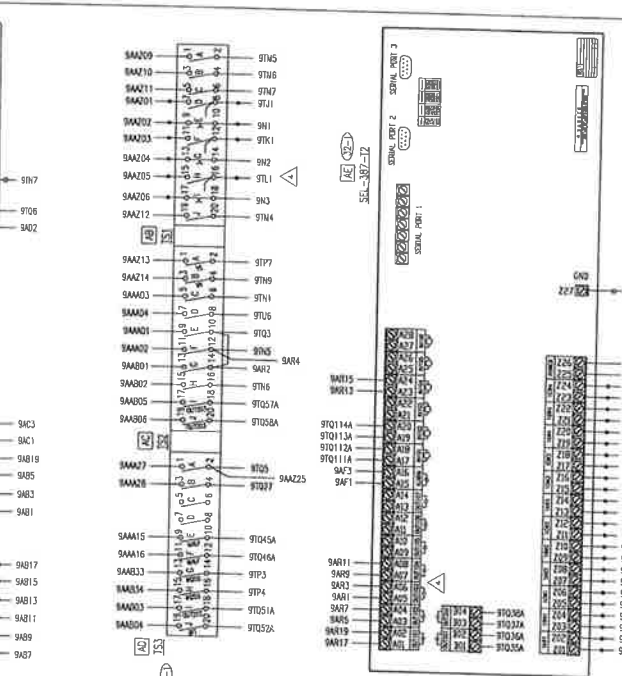
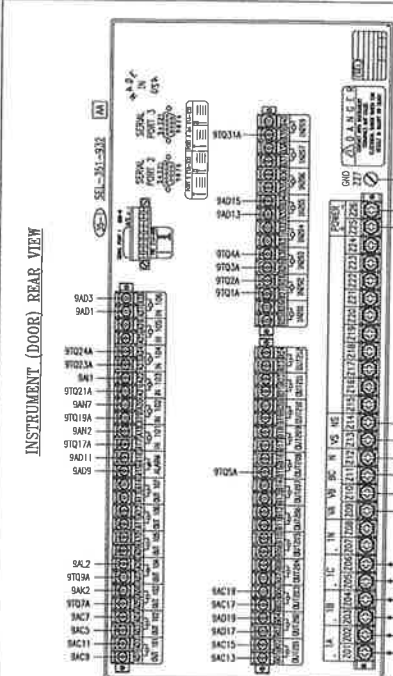
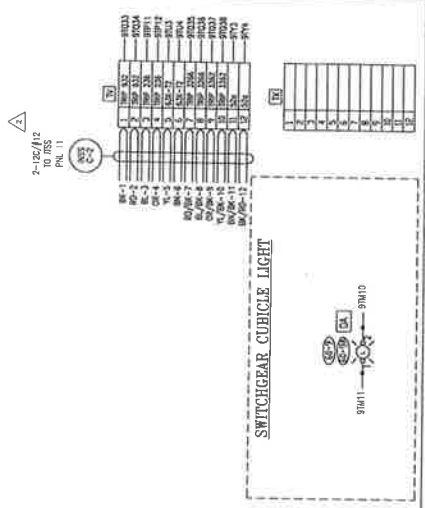
RIGHT SIDE WALL TOP



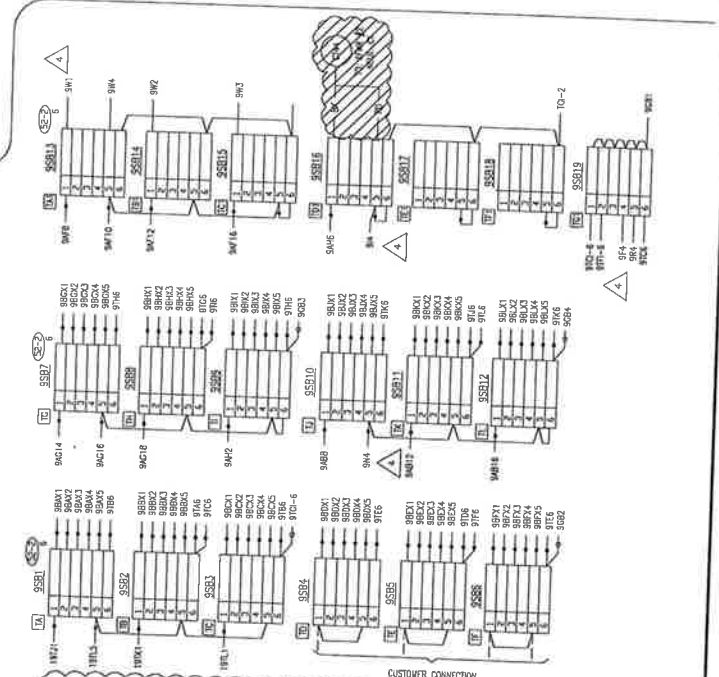
TE'S RIGHT SIDE WALL BOTTOM



NOTES:
 1. ALL WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND THE ALASKA ELECTRICAL CODE (AEC).
 2. ALL WIRING SHALL BE IDENTIFIED BY THE WIRING IDENTIFICATION SYSTEM (WIS) AS REQUIRED BY THE NEC AND AEC.
 3. ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
 4. ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.



SE'S LEFT SIDE WALL BOTTOM



REMOVAL NOTE:
 CONTROL CABLE TERMINATIONS WILL BE LIFTED BY CEA PERSONNEL. CONTRACTOR TO LIFT POWER CABLE TERMINATIONS. CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL OF CABLE FROM CONDUIT.

REMOVAL

PROJECT: INSS 138KV FACILITY RETIREMENT
 ENG./DESIGN: S. WENDLING (CEA) / J. GORNIK (R&V)
 W.O. # E1720055

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED BY/DATE	APPROVED BY/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC 05/20/20	JFG 05/20/20		

NO.	RECORD REVISION	TECH./DWN. BY	W.P. #	W.O. APPROVED	RECORD APPROVED	DATE
1	34.5KV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	AJC/RW	10.0679EN	E8620117		10/21/20
2	GPS CLOCK CHANGE OUT	AV/BG		H0658825		3/8/20
3	485/2030 CONTROL MOD PROJECT	RWT		H0712375		2/8/07
4	FIRE ISLAND IGT UPGRADE	MW/MS				04/13



Chugach Electric Association, Inc.
 5601 Minnesota Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

DRAWING NAME:
**INTERNATIONAL SUBSTATION
 34.5KV SECTION #9 DOOR AND SIDE WALLS
 WIRING DIAGRAM
 REMOVAL DRAWING**

CONFIDENTIAL

DRAWING NO. - PREVIOUS/REFERENCE: INSS-EL-3007-0001-4-R-Rev
 223388D
 INSS-EC-0104

DRAWING NO.: **INSS-EL-3007-R**

SHEET 0001 OF 0002
 PAGE

Certified for Construction of WD E1720055 by Joseph Frank Gornik, NE E147055, Block & Veitch Consultants, on 05/20/2020

PROJECT: INSS 138KV FACILITY RETIREMENT				W.O. # E1720055	
ENG./DESIGN: S. WENDLING (CEA) / J. GORNIK (B&V)					
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN. BY/DATE	REVIEWED MGR./SUPERV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	KAC 05/20/20	JFC 05/20/20		

NO	RECORD REVISION	TECH / DWN BY	W.P. #	W.O. APPROVED	RECORD APPROVED	DATE
1	34.5KV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	AJC/RW	10.0979EM	E9620117		10/23/00
2	485/2030 CONTRL MOD PROJECT	RWT		H0712375		2/15/07
3	FIRE ISLAND IGT UPGRADE	MW/MS				04/13



Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

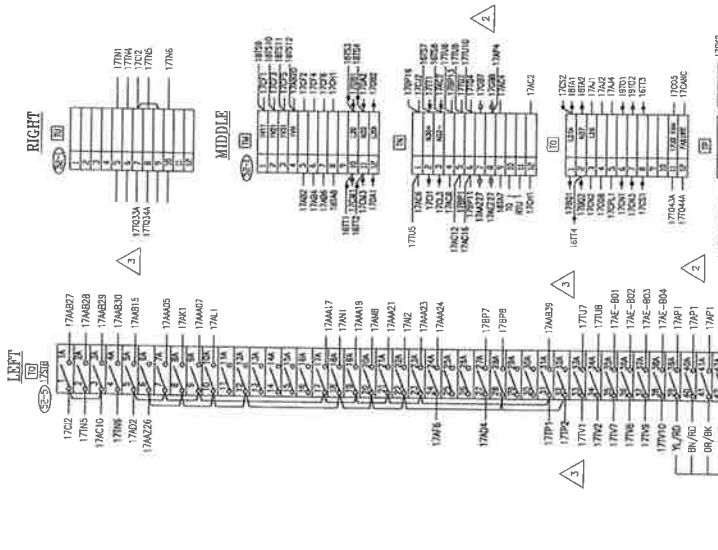
REMOVAL NOTE:
CONTROL CABLE TERMINATIONS WILL BE LIFTED BY CEA PERSONNEL. CONTRACTOR TO LIFT POWER CABLE TERMINATIONS. CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL OF CABLE FROM CONDUIT.

REMOVAL

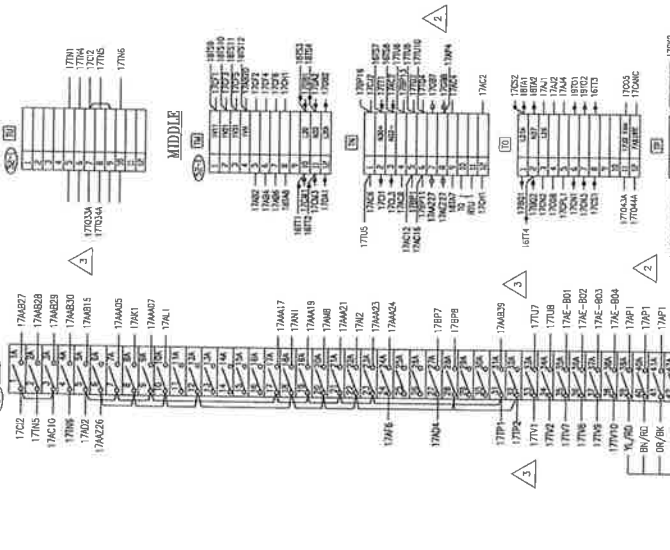
DRAWING NAME:
**INTERNATIONAL SUBSTATION
34.5KV SECTION #17 DOOR AND SIDE WALLS
WIRING DIAGRAM
REMOVAL DRAWING**

CONFIDENTIAL
DRAWING NO. - PREVIOUS/REFERENCE: INSS-EL-3015-0001 3-R.dwg
DRAWING NO. INSS-EL-3015-R SHEET 0001 OF 0002
PAGE /

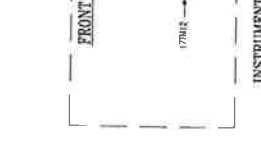
LEFT SIDE WALL TOP



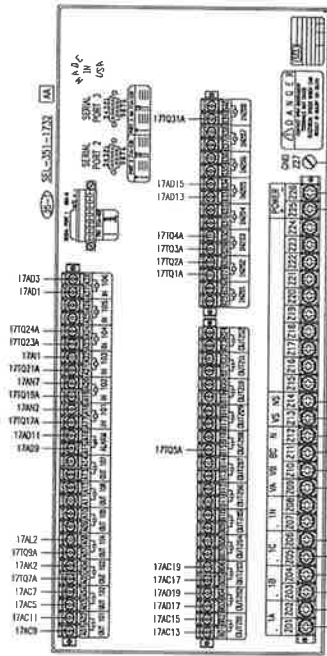
RIGHT SIDE WALL TOP



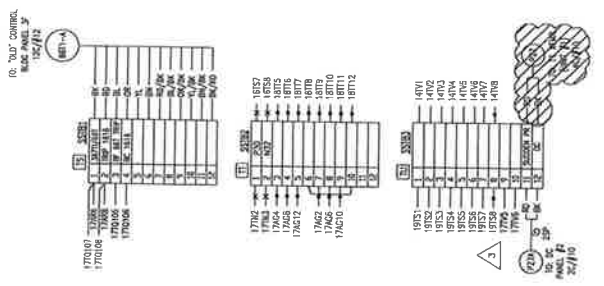
FRONT CEILING LIGHT



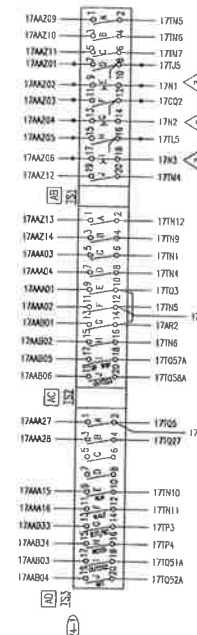
INSTRUMENT (DOOR) REAR VIEW



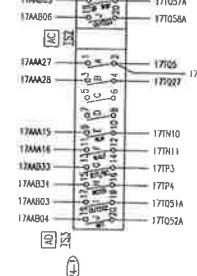
RIGHT SIDE WALL TOP



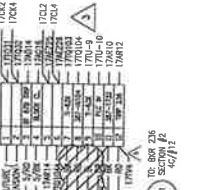
17A01 - 17A08



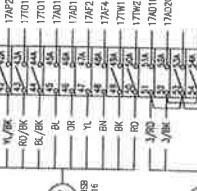
17A09 - 17A16



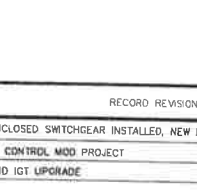
17A17 - 17A24



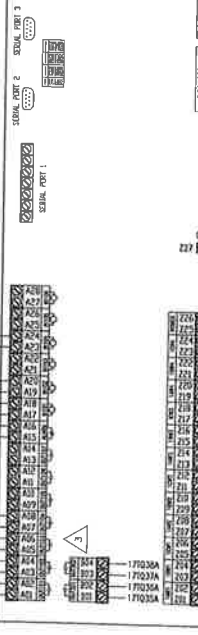
17A25 - 17A32



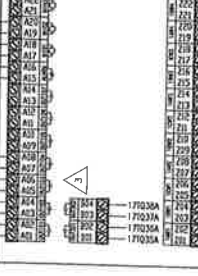
17A33 - 17A40



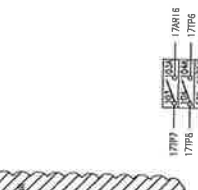
17A41 - 17A48



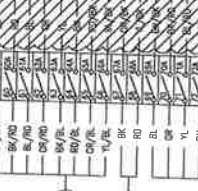
17A49 - 17A56



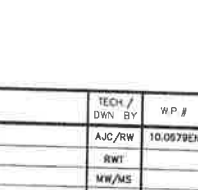
17A57 - 17A64



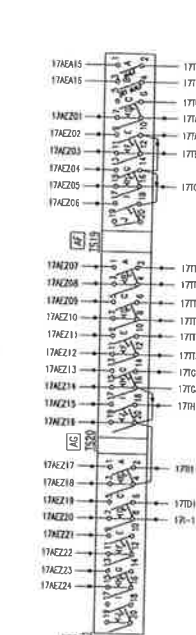
17A65 - 17A72



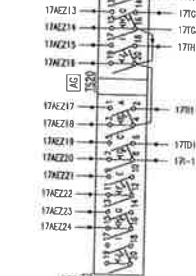
17A73 - 17A80



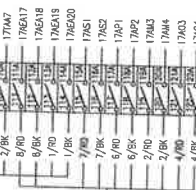
17A81 - 17A88



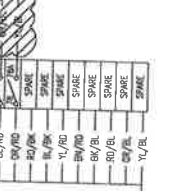
17A89 - 17A96



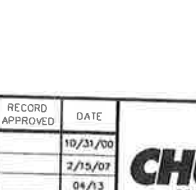
17A97 - 17A104



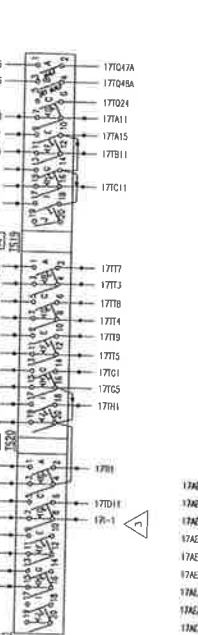
17A105 - 17A112



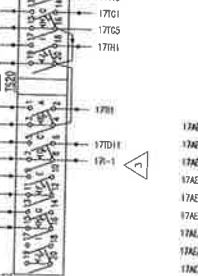
17A113 - 17A120



17A121 - 17A128



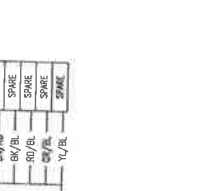
17A129 - 17A136



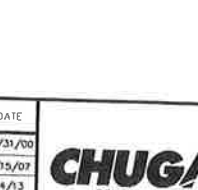
17A137 - 17A144



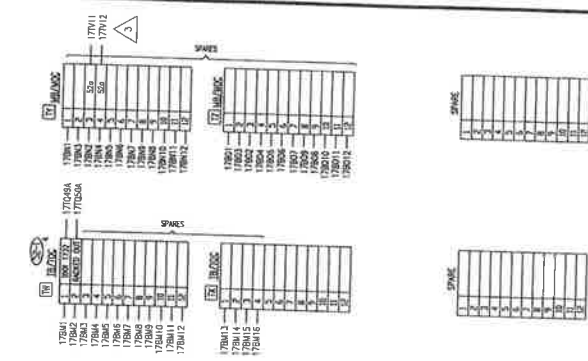
17A145 - 17A152



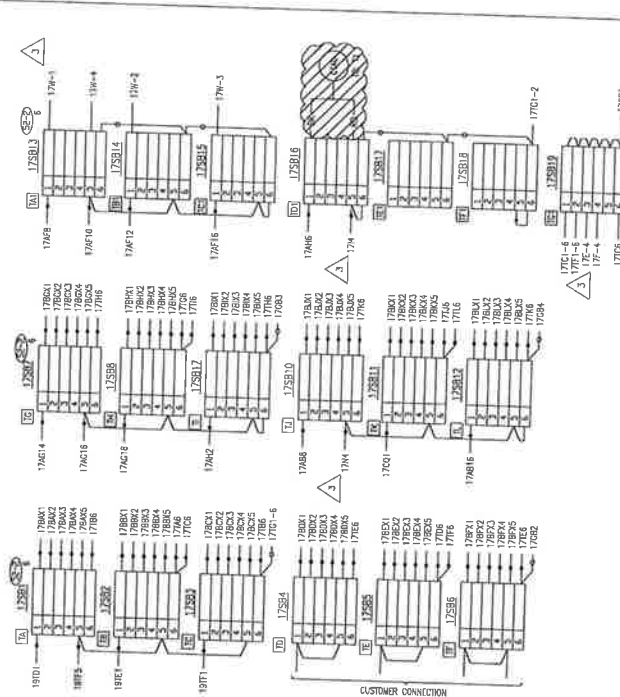
17A153 - 17A160



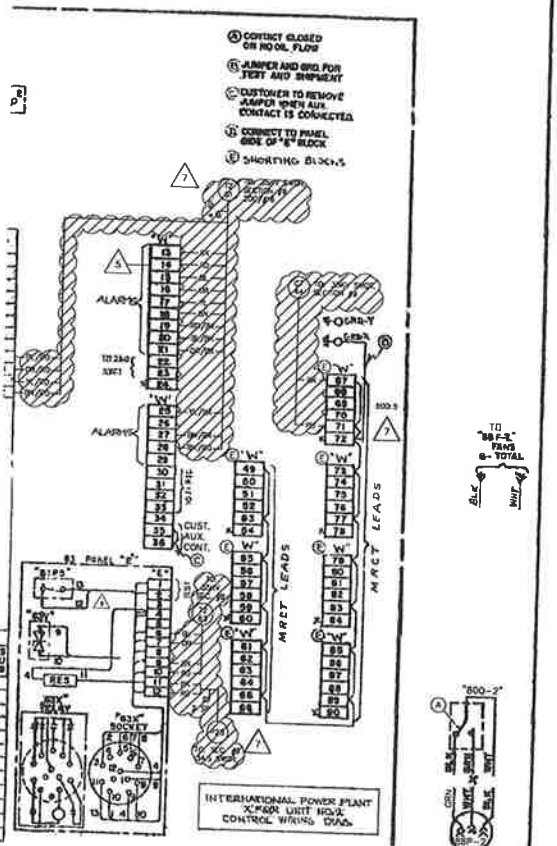
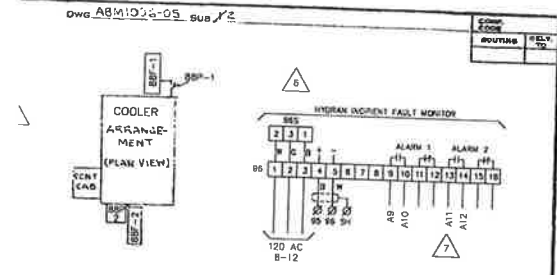
TOP'S RIGHT SIDE WALL BOTTOM



SE'S LEFT SIDE WALL BOTTOM



NOTES:
1. ALL WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND THE ALASKA ELECTRICAL CODE (AEC).
2. ALL WIRING SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
3. ALL WIRING SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.



CHUGACH ELECTRIC ASSOCIATION GO-TSB 42650
 REF: SCHEMATIC WIRING DIAG. ABM1096-05

WESTINGHOUSE ELECTRIC CORPORATION
 APPARATUS 0A/100/000 TRANSFORMER CONTROL
 CONNECTION WIRING DIAGRAM

NO. OF SHEETS: 2
 SHEET NO.: 2

DATE: 11/30/94
 DRAWN BY: JR/LMP
 CHECKED BY: DBC/BG
 APPROVED BY: PD/MCS

ABM1096-05
 TRANSFORMER DIVISION - WINGE PLANT



PROJECT: INSS 138KV FACILITY RETIREMENT					W.O. # E1720055	
ENG./DESIGN.: S. WENDLING (CEA) / J. GORNIK (H&V)						
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP	

NO.	RECORD REVISION	TECH. / DWN. BY	W.P. #	W.O. APPROVED	RECORD APPROVED	DATE
5	INSTALLED NEW OIL LEVEL GAUGE & DRAWN TO CAD	AU/LMP				11/30/94
6	INSTALLED NEW HYDRAN INCIPENT FAULT MONITOR	JR/LMP				10/2/96
7	34.5KV ENCLOSED SWITCHGEAR INSTALL	RW	10.0579EH	E9620117		10/2/96
8	NEW NUMBER ISSUED/ARCHIVED PREVIOUS NUMBER INSS-EQ-0001	DBC/BG		E9620117		2/12/02
9	IGT MODIFICATIONS	PD/MCS		H0620274	P.DON/TROWCH	4/7/08

CHUGACH
 POWERING ALASKA'S FUTURE

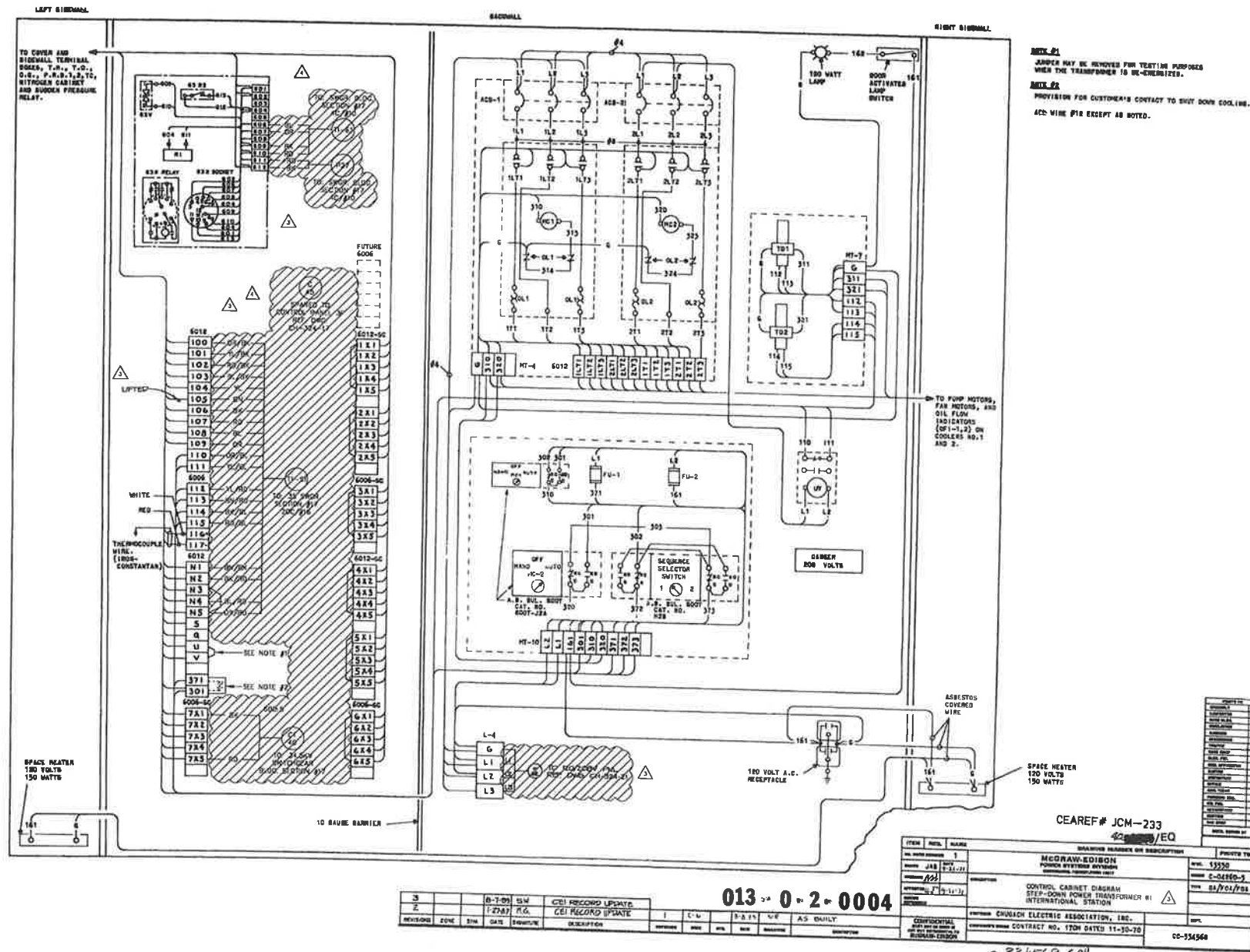
Chugach Electric Association, Inc.
 5601 Electron Drive - P.O. Box 196300
 Anchorage, Alaska 99519-6300

DRAWING NAME:
**INTERNATIONAL SUBSTATION
 CONTROL WIRING DIAGRAM
 TRANSFORMER NO. 2**
 EQUIPMENT ID # TRF 140 & TRF 144
REMOVAL DRAWING

CONFIDENTIAL

DRAWING NO. - PREVIOUS/REFERENCE: INSS-EL-0001_0-R.dwg & .cel
 DRAWING NO.: INSS-EL-3506-R

SHEET 0001 of 0001
 PAGE 1 of 1



REVISION	ZONE	DATE	BY	DESCRIPTION
3		8-7-08	ELM	CEI RECORD UPDATE
2		7-27-07	P.G.	CEI RECORD UPDATE

ITEM	NO.	NAME	ISSUING NUMBER OR DESCRIPTION	PROJECT TO
1			McGraw-Hill	5550
2			Control Cabinet Diagram	2-0480-1
3			Step-Down Power Transformer #1	82/01/03

REMOVAL NOTE:
CONTROL CABLE TERMINATIONS WILL BE LIFTED BY CEA PERSONNEL. CONTRACTOR TO LIFT POWER CABLE TERMINATIONS. CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL OF CABLE FROM CONDUIT.

REMOVAL

Certified for Construction of W.O. E1720055 by Joseph Frank Gornik, No. EE147055, Black & Veatch Consultants, on 05/20/2020

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN. BY/DATE	REVIEWED MGR./SUPP./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC 05/20/20	JFG 05/20/20		

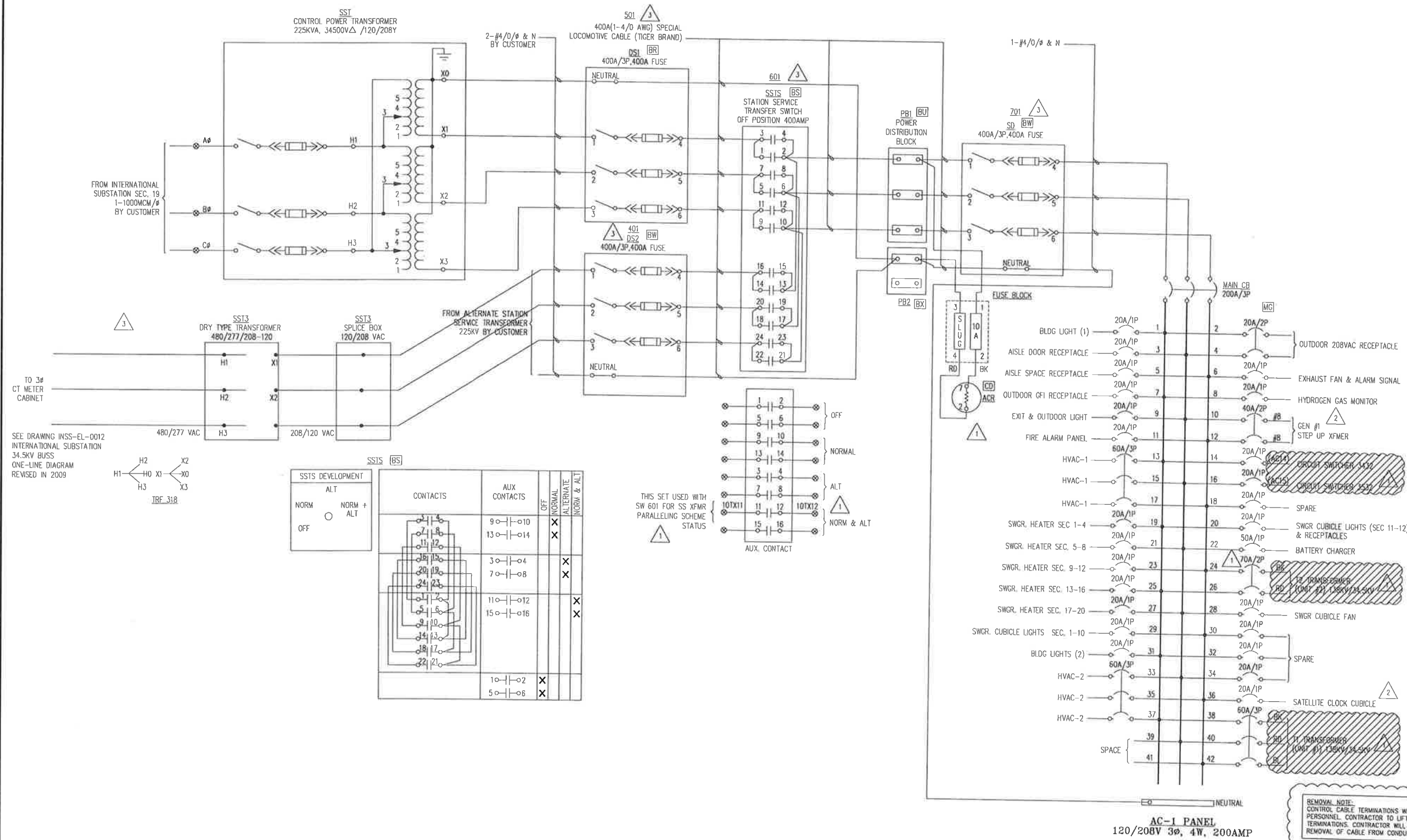
NO.	RECORD REVISION	TECH./DWN. BY	W.P. #	W.O. APPROVED	RECORD APPROVED	DATE
2	CD RECORD UPDATE	MG				1/27/87
3	CEI RECORD UPDATE	SW				1/27/87
4	34.5KV ENCLOSED SWITCHGEAR INSTALL	RW	10.0679EN	E9620117		1/27/87



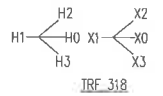
Chugach Electric Association, Inc.
5601 Electron Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:
INTERNATIONAL SUBSTATION
CONTROL CABINET DIGARM
STEP-DOWN POWER TRANSFORMER #1
EQUIPMENT ID TRF 144
REMOVAL DRAWING

CONFIDENTIAL
DRAWING NO. - PREVIOUS/REFERENCE
CC-334568
DRAWING NO.: INSS-EL-3509-R



SEE DRAWING INSS-EL-0012 INTERNATIONAL SUBSTATION 34.5KV BUSS ONE-LINE DIAGRAM REVISED IN 2009



SSTS DEVELOPMENT

ALT	
NORM	NORM + ALT
OFF	

CONTACTS	AUX CONTACTS	OFF	NORMAL	ALTERNATE	NORM & ALT
1-4	9-10		X		
5-8	13-14	X			
9-12	3-4		X		
13-16	7-8		X		
17-20	11-12		X		
21-24	15-16		X		
25-28					
29-30					
31-32					
33-34					
35-36					
37-38					
39-40					
41-42					

THIS SET USED WITH SW 601 FOR SS XFMR PARALLELING SCHEME STATUS

REMOVAL NOTE:
CONTROL CABLE TERMINATIONS WILL BE LIFTED BY CEA PERSONNEL CONTRACTOR TO LIFT POWER CABLE TERMINATIONS. CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL OF CABLE FROM CONDUIT.

REMOVAL

PROJECT: **INSS 138KV FACILITY RETIREMENT**
 ENG./DESIGN: **S. WENDLING (CEA) / J. GORNIK (R&Y)** W.O. # **E1720055**

NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN. BY/DATE	REVIEWED MGR./SUPV./DATE	APPROVED DIRECTOR/DATE	ENG. STAMP
0	ISSUED FOR CONSTRUCTION	MJC 05/20/20	JFG 05/20/20		

NO.	RECORD REVISION	TECH / DWR. BY	W.P. #	W.O. APPROVED	RECORD APPROVED	DATE
1	34.5KV ENCLOSED SWITCHGEAR INSTALLED, NEW NUMBER ISSUED	RW	10.0679EH	E9620117		10/31/00
2	INSTALL NEW STEP UP TRANSFORMER (ABB) FOR GENERATOR #1	DBC	10.0752	E0020159		1/23/02
3	EDITS PER J. ROBISON	JR/LMP		H0558826		9/9/09

CHUGACH
POWERING ALASKA'S FUTURE

Chugach Electric Association, Inc.
5601 Minnesota Drive - P.O. Box 196300
Anchorage, Alaska 99519-6300

DRAWING NAME:	INTERNATIONAL SUBSTATION 34.5KV SWITCHGEAR AC PANEL REMOVAL DRAWING
DRAWING NO. - PREVIOUS/REFERENCE	INSS-EL-4000_0001_3-R.dwg
DRAWING NO.:	INSS-EL-4000-R
SHEET	1 of 1
PAGE	

Certified for Construction of W.O. E1720055 by Joseph Frank Gornik, No. EE147055, Block & Veatch Consultants, on 05/20/2020