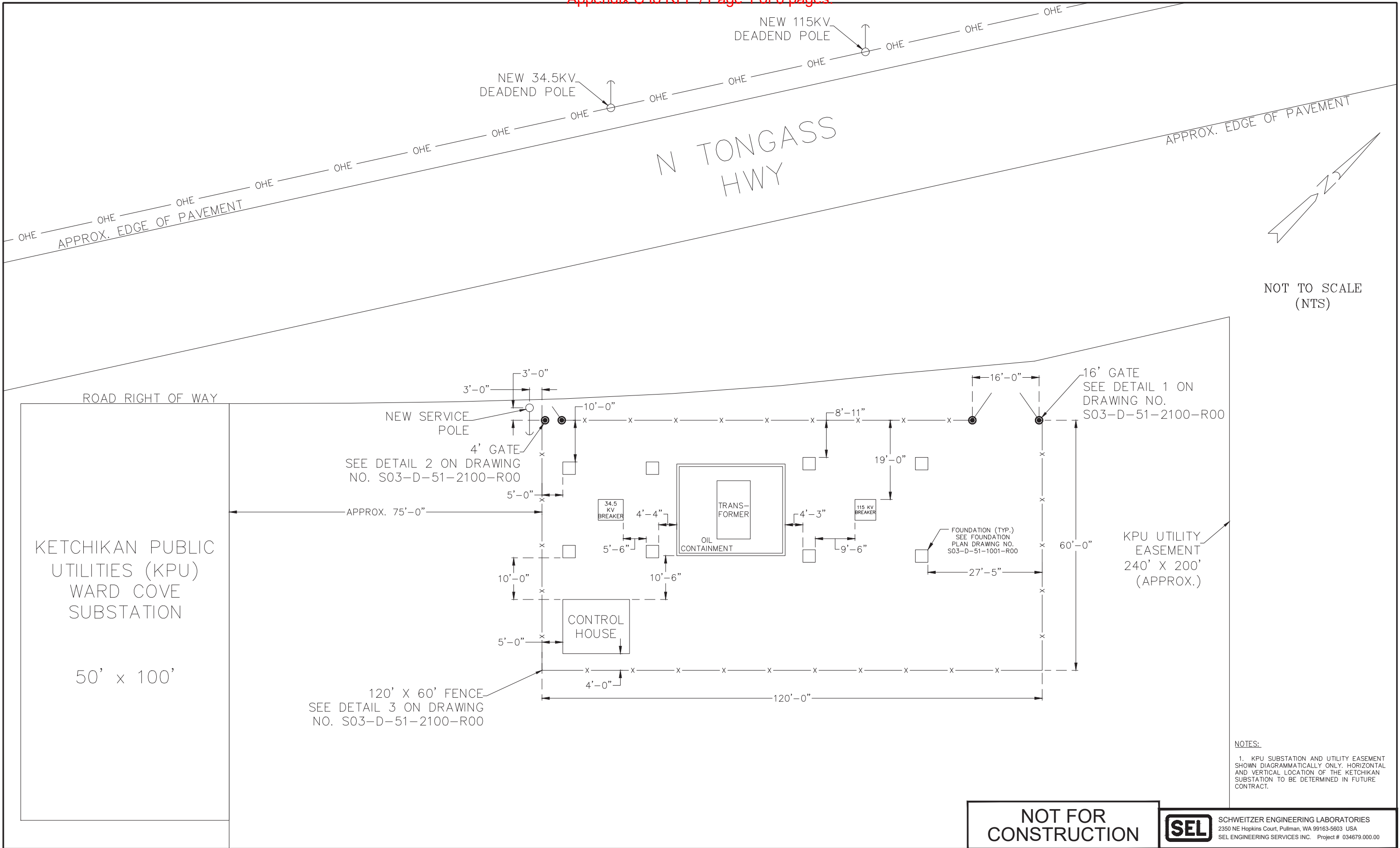




NOTES:
1. KPU SUBSTATION AND UTILITY EASEMENT SHOWN DIAGRAMMATICALLY ONLY. HORIZONTAL AND VERTICAL LOCATION OF THE KETCHIKAN SUBSTATION TO BE DETERMINED IN FUTURE CONTRACT.

NOT FOR
CONSTRUCTION



SCHWEITZER ENGINEERING LABORATORIES
2350 NE Hopkins Court, Pullman, WA 99163-5603 USA
SEL ENGINEERING SERVICES INC. Project # 034679.000.00

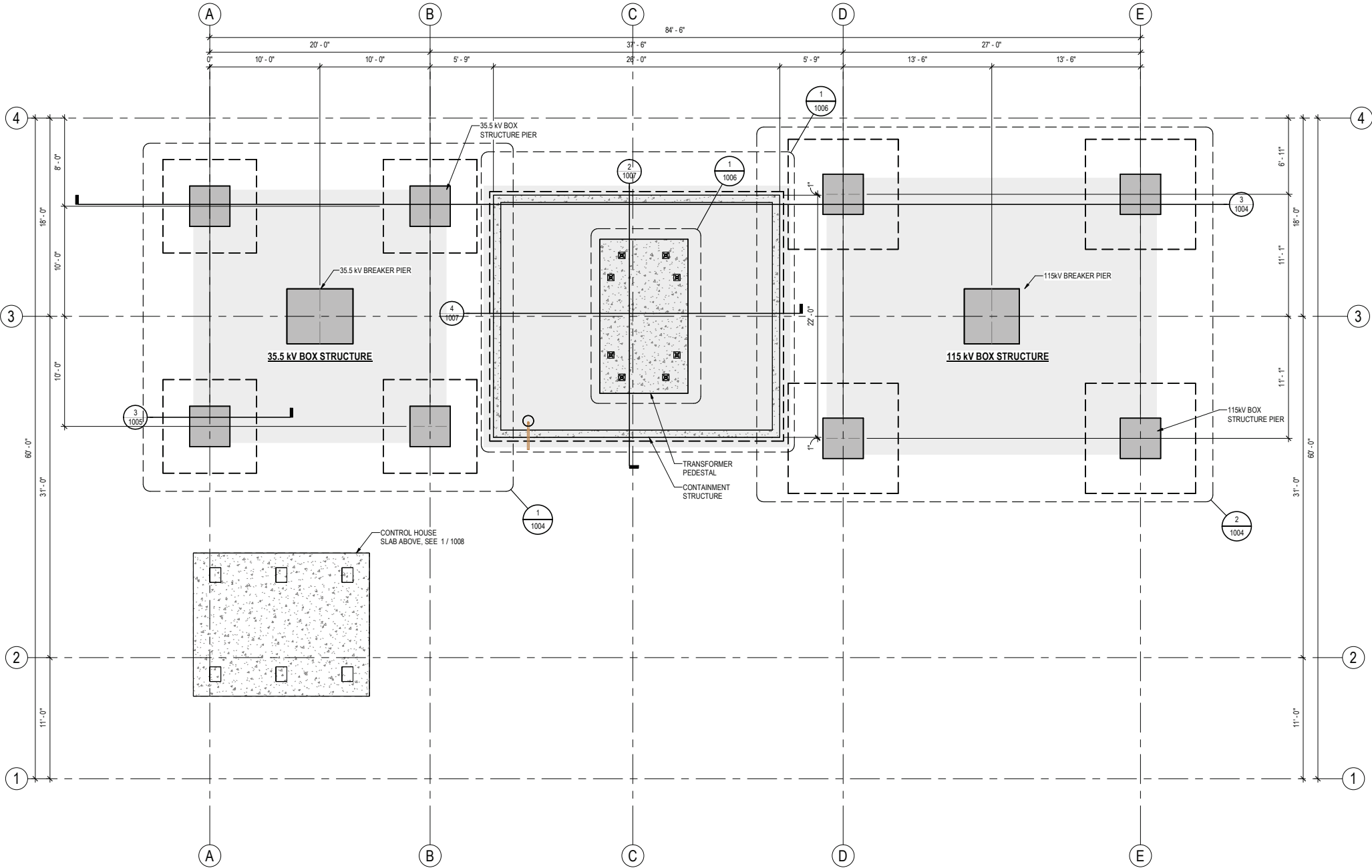
PROJECT: SOUTHEAST ALASKA POWER AGENCY - KETCHIKAN SUBSTATION			
DESIGNER/PROJECT ENGINEER: STEVE PERKINS/AUNG THUYA		JOB #: TASK ORDER NO. 24015	
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/DATE
5			
4			
3			
2	100% DESIGN	SP / 10/15/2024	CG / 10/15/2024
1	IFR - 65% DESIGN	SP / 08/29/2024	CG / 08/29/2024
A0	IFR - 35% DESIGN	SP / 07/15/2024	CG / 07/15/2024



Southeast Alaska Power Agency

NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
2	S03-D-51-2100-R00	FENCING DETAILS
1	S03-D-51-2002-R00	STRUCTURAL STEEL DETAILS
3	S03-D-51-2001-R00	34.5KV DEADEND STRUCTURE
2	S03-D-51-2000-R00	115KV DEADEND STRUCTURE
1	S03-D-51-1001-R00	OVERALL FOUNDATION PLAN

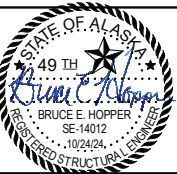
DRAWING NAME: KETCHIKAN SUBSTATION SITE LAYOUT PLAN	
REF DWG(S):	
DRAWING NO.: S03-D-51-0001-R01	SHEET 1 of 1



1 OVERALL FOUNDATION PLAN
1002 3/16" = 1'-0"

SEL SCHWEITZER ENGINEERING LABORATORIES
2350 NE Hopkins Court, Pullman, WA 99163-5603 USA
SEL ENGINEERING SERVICES INC. Project # 034679.000.00

PROJECT: SOUTHEAST ALASKA POWER AGENCY - KETCHIKAN SUBSTATION			
DESIGNER/PROJECT ENGINEER: BRUCE E. HOPPER		JOB #: TASK ORDER NO. 24015	
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/DATE
5			
4			
3			
2			
1	100% DESIGN	DJR / 10/24/2024	CG / 10/24/2024
A0	IFR - 65% DESIGN	DJR / 08/29/2024	CG / 08/29/2024

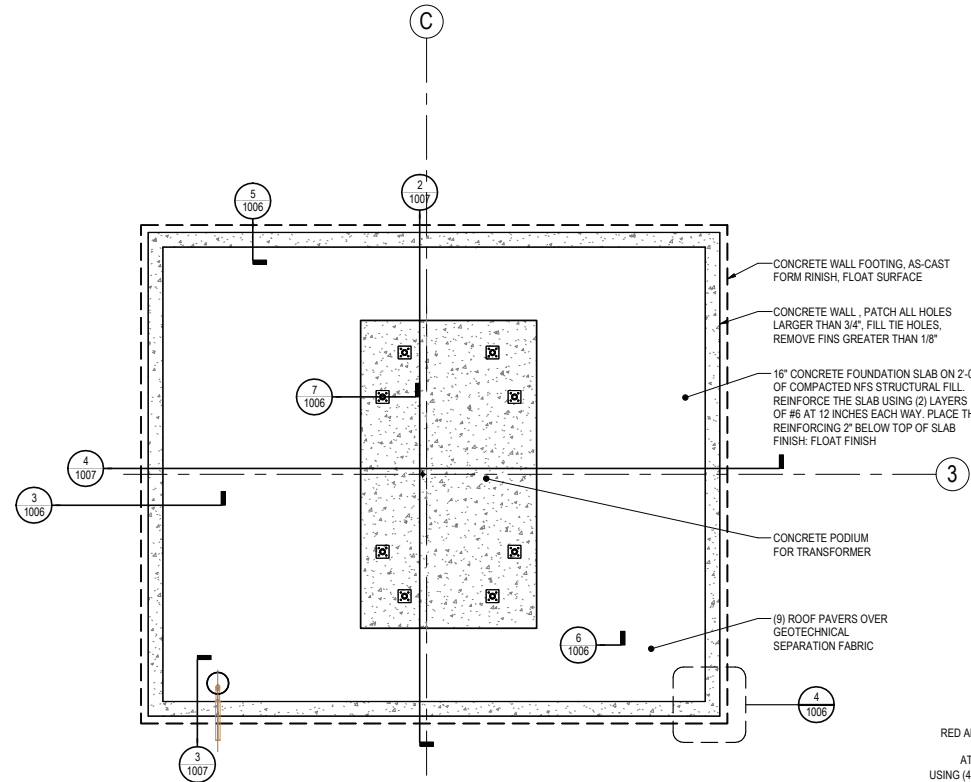


Stantec
Stantec Architecture Inc.
725 E Fireweed Ln, Suite 200, Anchorage, AK 99503
Tel: 888-706-8754 www.stantec.com
Authorization to Practice # AECC1207
Stantec Project No. 2045324700

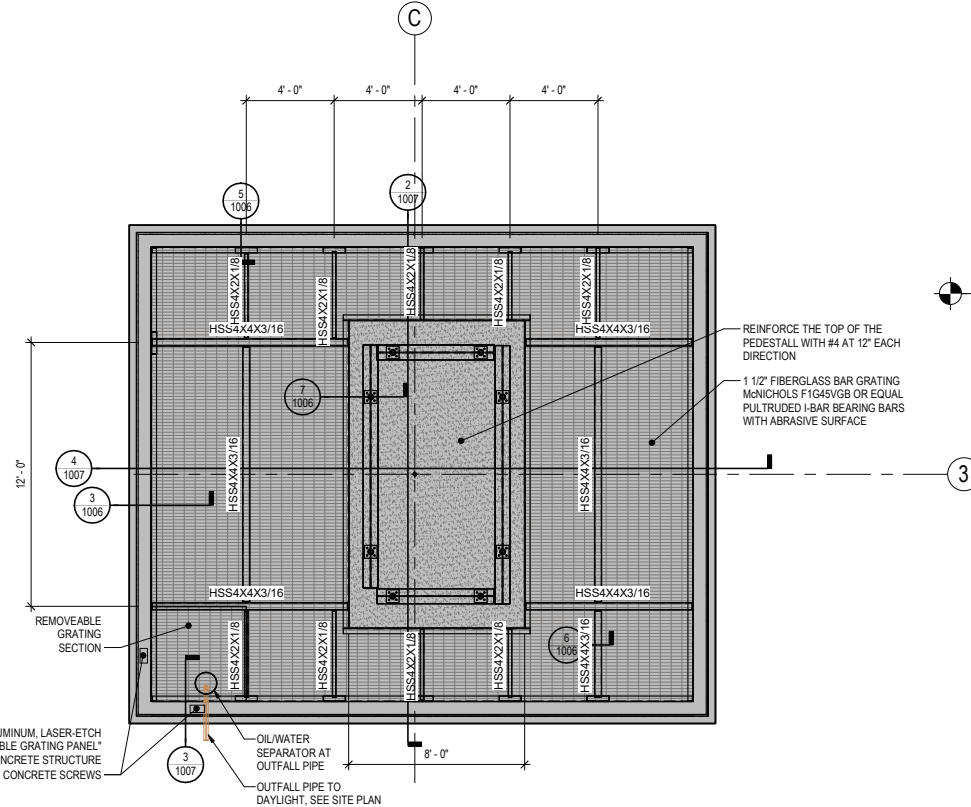
NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION

KETCHIKAN SUBSTATION
OVERALL FOUNDATION PLAN

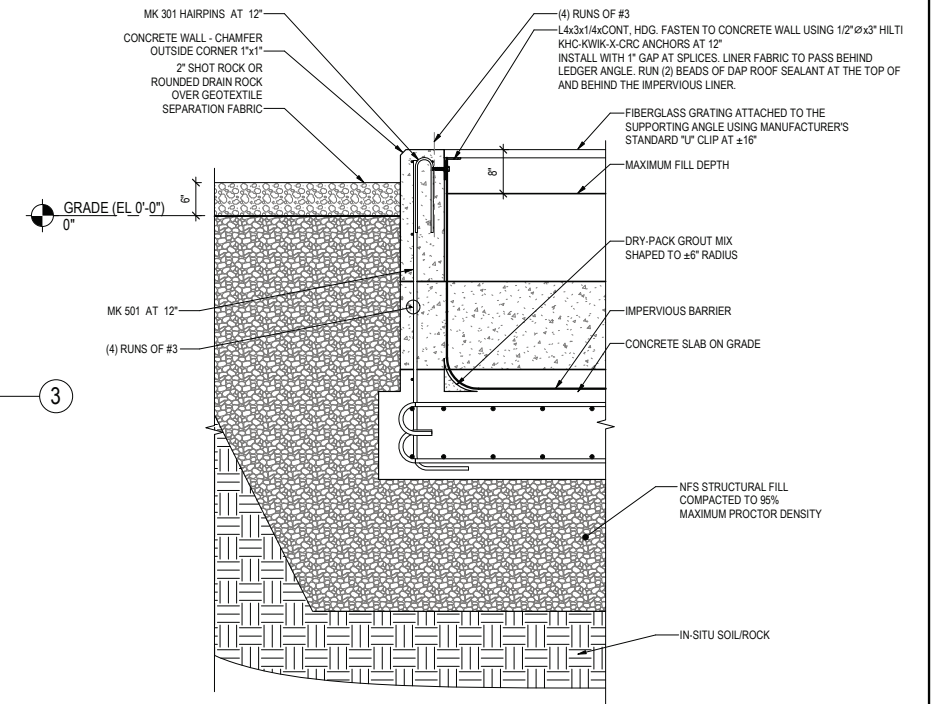
REF DWGS:
DRAWING NO.: S03-D-51-1002-R00
SHEET 1 OF 1



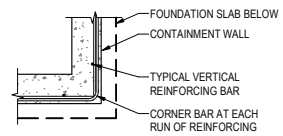
1 **TRANSFORMER FOUNDATION PLAN**
1006 1/4" = 1'-0"



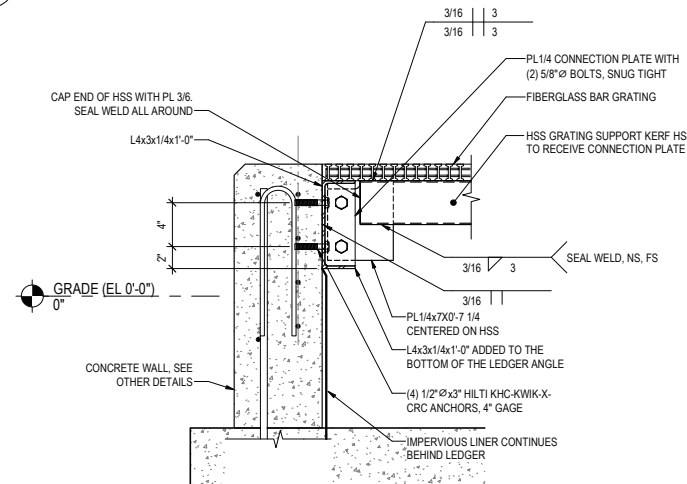
2 TRANSFORMER GRADE-LEVEL PLAN



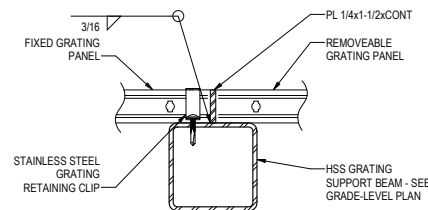
3 **TYPICAL CONTAINMENT WALL SECTION**
1006 $3/4" = 1'-0"$



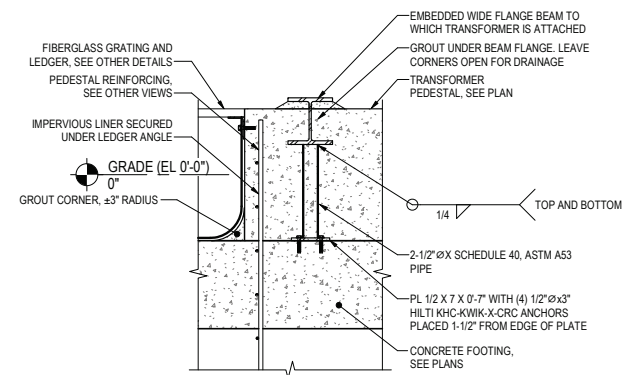
4 TYPICAL CORNER REINFORCING



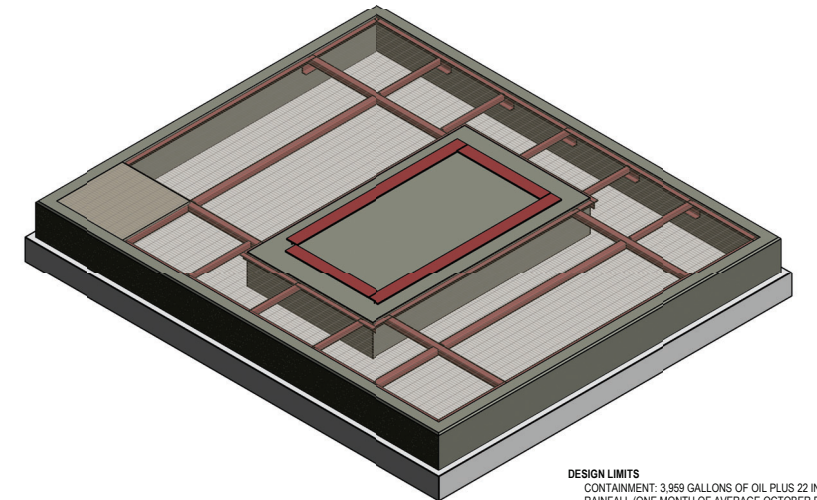
5 JOIST CONNECTION



6 **EDGE OF REMOVEABLE GRATING**
1006 3" = 1'-0"



7
1006



DESIGN LIMITS
CONTAINMENT: 3,959 GALLONS OF OIL PLUS 22 INCHES OF RAINFALL (ONE MONTH OF AVERAGE OCTOBER RAINFALL)
GRATING CAPACITY = 125 PSF
TRANSFORMER WEIGHT: 105,625 POUNDS
SEISMIC: $C_s = 0.31g$



8 AXONOMETRIC VIEW OF THE TRANSFORMER FOUNDATION
1006

PROJECT: <u>SOUTHEAST ALASKA POWER AGENCY - KETCHIKAN SUBSTATION</u>			
DESIGNER/PROJECT ENGINEER: <u>BRUCE E. HOPPER</u>		JOB #: <u>TASK ORDER NO. 24015</u>	
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/DATE
5			
4			
3			
2			
1	100% DESIGN	DJR / 10/24/2024	CG / 10/24/2024
A0	IFR - 65% DESIGN	DJR / 08/29/2024	CG / 08/29/2024



Stantec Architecture Inc.
725 E Fireweed Ln, Suite 200, Anchorage, AK 99503
Tel: 888-706-8754 www.stantec.com
Authorization to Practice # AECC1207
Stantec Project No. 2045324700

[illegible]

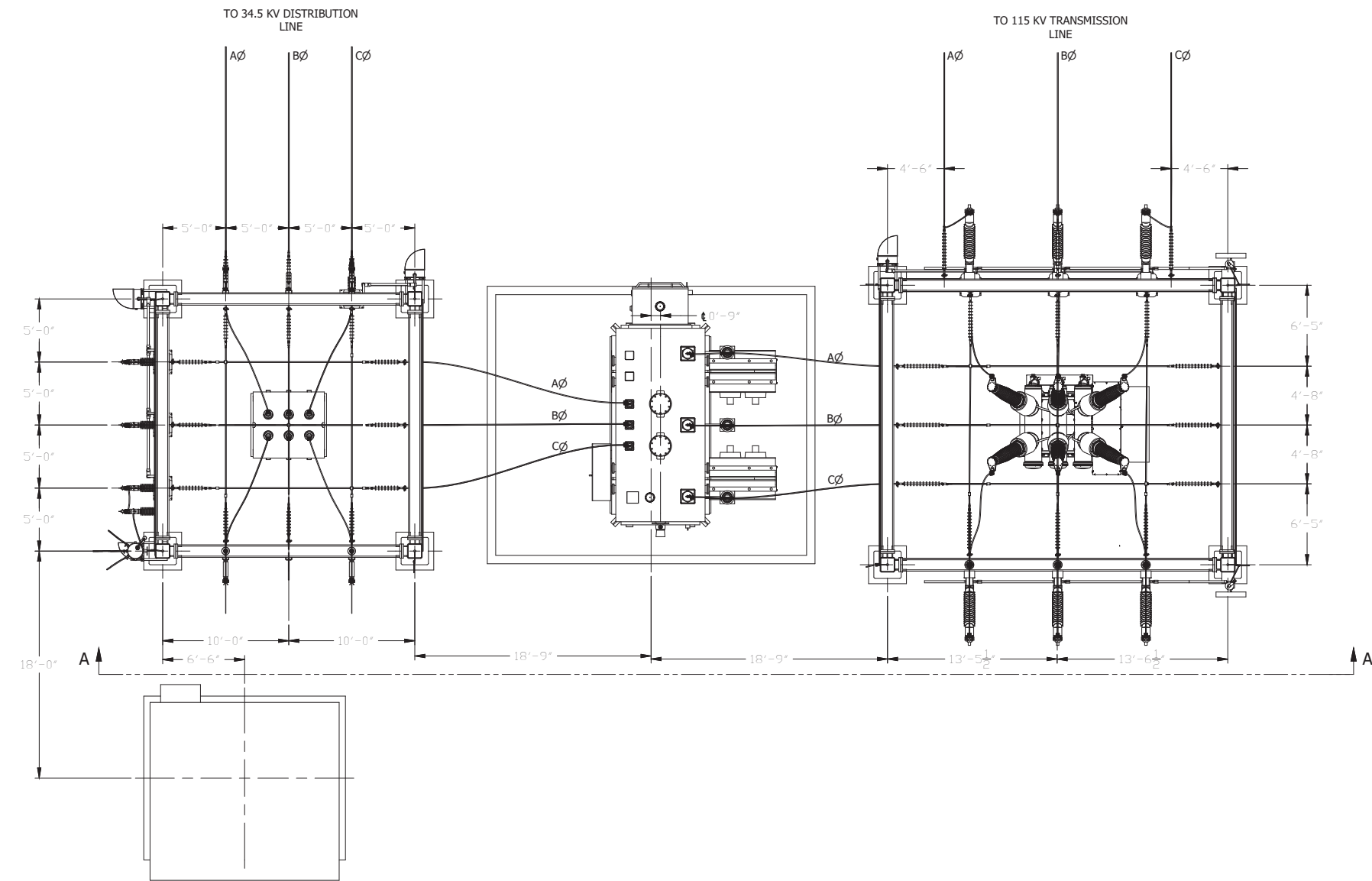

SCHWEITZER ENGINEERING LABORATORIES
 2350 NE Hopkins Court, Pullman, WA 99163-5603 USA
 SEL ENGINEERING SERVICES INC. Project # 034679.000.00

KETCHIKAN SUBSTATION
ENLARGED PLANS AND DETAILS FOR TRANSFORMER
FOUNDATION, GRADE LEVEL FRAMING

REF DWG(S):	
-------------	--

FIG NO.: S03-D-51-1006-R00

PAGE 1 OF 1



- CONSTRUCTION NOTES:**
- 1. PHASING TO BE CONFIRMED ON-SITE
- GENERAL NOTES:**
- 1. THE SUBSTATION 115 KV AND 34.5 KV BUS IS DESIGNED FOR A MAXIMUM OF 616A BASED ON THE RATING OF THE TRANSFORMER (25 MVA). THE INCOMING LINE IS THE LIMITING FACTOR AS IT IS 336 KCM WHICH SUPPORTS A MAXIMUM OF 519A.
 - 2. LEVELING NUTS TO BE USED ON STEEL STRUCTURES. EQUIPMENT SHALL BE MOUNTED DIRECTLY ON PADS.
- ELECTRICAL CLEARANCES:**
- 115 KV CLEARANCE (550 KV BIL)
MINIMUM PHASE-TO-PHASE = 45"
MINIMUM PHASE-TO-GND = 41"
MINIMUM PHASE-TO-GRADE = 12'
- 34.5 KV CLEARANCE (200 KV BIL)
MINIMUM PHASE-TO-PHASE = 16"
MINIMUM PHASE-TO-GND = 15"
MINIMUM PHASE-TO-GRADE = 10'

SCALE: 3/16" = 1'

NOT FOR
CONSTRUCTION

SEL SCHWEITZER ENGINEERING LABORATORIES
2350 NE Hopkins Court, Pullman, WA 99163-5603 USA
SEL ENGINEERING SERVICES INC. Project # 034679.000.00

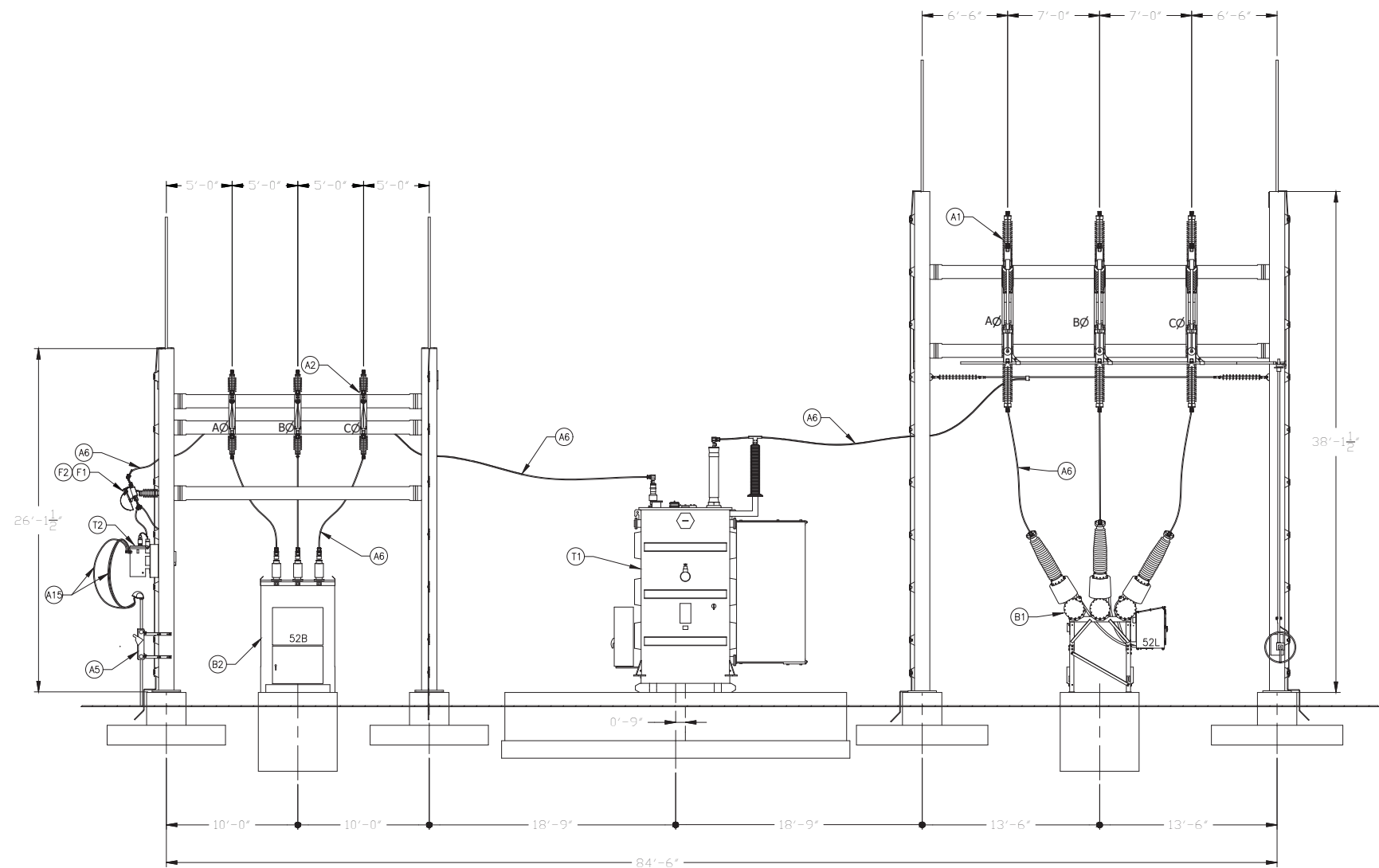
KETCHIKAN SUBSTATION
GENERAL ARRANGEMENT

PROJECT: SOUTHEAST ALASKA POWER AGENCY - KETCHIKAN SUBSTATION			
DESIGNER/PROJECT ENGINEER: QUENTIN CRAWFORD/AUNG THUYA		JOB #: TASK ORDER NO. 24015	
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/DATE
5			
4			
3			
2			
1			
0	NEW STATION	NHC / 10/16/2024	QAC / 10/16/2024



NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
8	S03-D-10-0002-R00	BILL OF MATERIAL
7	S03-D-51-0008-R00	EQUIPMENT CONNECTION DETAILS
6	S03-D-51-0006-R00	34.5KV BOX STRUCTURE ELEVATION
5	S03-D-51-0005-R00	115KV BOX STRUCTURE ELEVATION
4	S03-D-51-0004-R00	STATION ISOMETRIC VIEW
3	S03-D-51-0003-R00	STATION ELEVATION
2	S03-D-51-0002-R00	GENERAL ARRANGEMENT
1	S03-D-53-0001-R00	STATION ONE LINE

DRAWING NAME:	KETCHIKAN SUBSTATION GENERAL ARRANGEMENT	
REF DWG(S):		
DRAWING NO.:	S03-D-51-0002-R00	SHEET 1 OF 1



CONSTRUCTION NOTES:

1. PHASING TO BE CONFIRMED ON-SITE

GENERAL NOTES:

1. THE SUBSTATION 115 KV AND 34.5 KV BUS IS DESIGNED FOR A MAXIMUM OF 616A BASED ON THE RATING OF THE TRANSFORMER (25 MVA). THE INCOMING LINE IS THE LIMITING FACTOR AS IT IS 336 KCM WHICH SUPPORTS A MAXIMUM OF 519A.
2. LEVELING NUTS TO BE USED ON STEEL STRUCTURES. EQUIPMENT SHALL BE MOUNTED DIRECTLY ON PADS.

ELECTRICAL CLEARANCES:

115 KV CLEARANCE (550 KV BIL)
MINIMUM PHASE-TO-PHASE = 45"
MINIMUM PHASE-TO-GND = 41"
MINIMUM PHASE-TO-GRADE = 12"

34.5 KV CLEARANCE (200 KV BIL)
MINIMUM PHASE-TO-PHASE = 16"
MINIMUM PHASE-TO-GND = 15"
MINIMUM PHASE-TO-GRADE = 10"

SCALE: 3/16" = 1'

NOT FOR
CONSTRUCTION



SCHWEITZER ENGINEERING LABORATORIES
2350 NE Hopkins Court, Pullman, WA 99163-5603 USA
SEL ENGINEERING SERVICES INC. Project # 034679.000.00

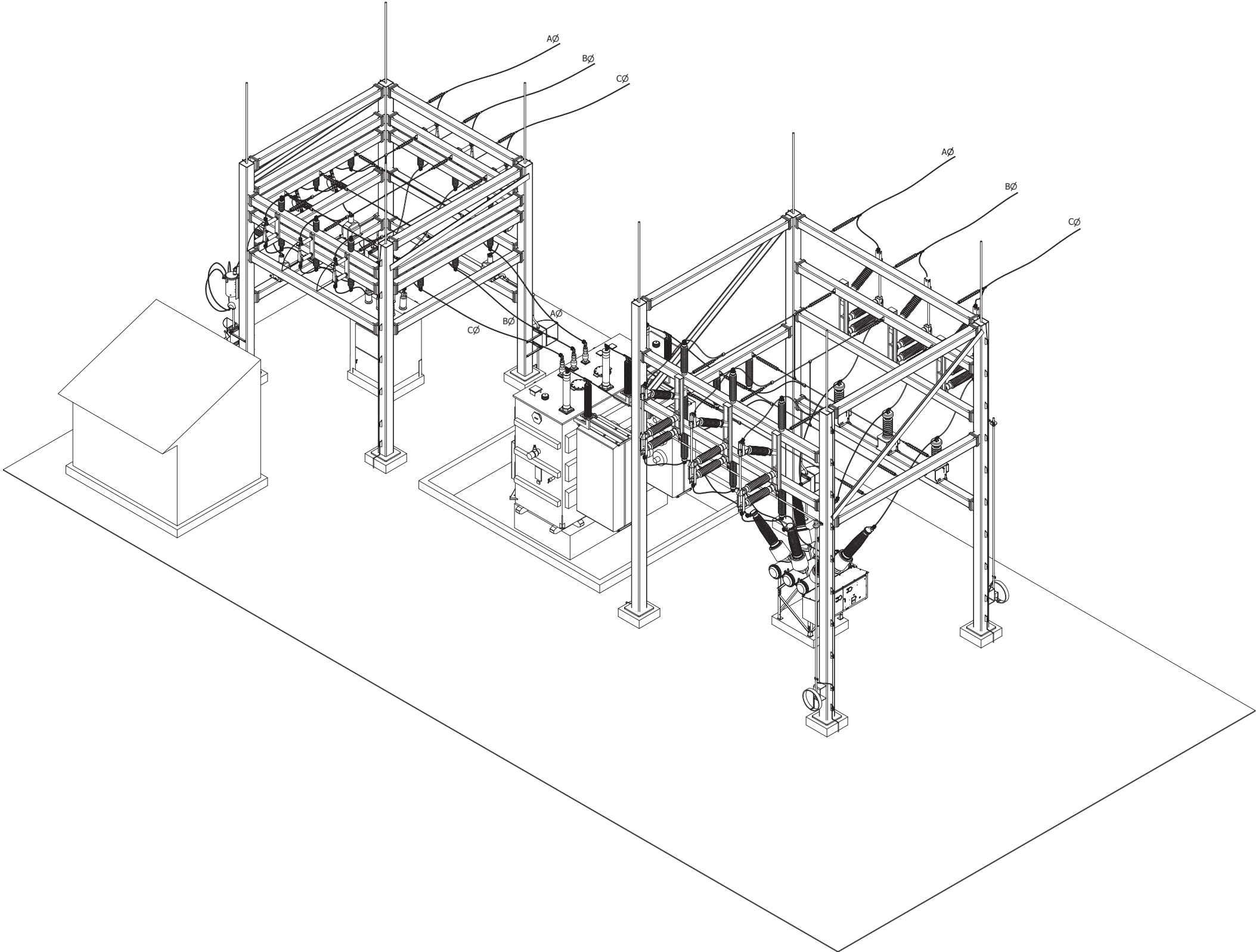
KETCHIKAN SUBSTATION
STATION ELEVATION A-A

PROJECT: SOUTHEAST ALASKA POWER AGENCY - KETCHIKAN SUBSTATION			
DESIGNER/PROJECT ENGINEER: QUENTIN CRAWFORD/AUNG THUYA			
JOB #: TASK ORDER NO. 24015			
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/DATE
5			
4			
3			
2			
1			
0	NEW STATION	NHC / 10/16/2024	QAC / 10/16/2024



NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
7	S03-D-10-0002-R00	BILL OF MATERIAL
6	S03-D-51-0008-R00	EQUIPMENT CONNECTION DETAILS
5	S03-D-51-0006-R00	34.5KV BOX STRUCTURE ELEVATION
4	S03-D-51-0005-R00	115KV BOX STRUCTURE ELEVATION
3	S03-D-51-0004-R00	STATION ISOMETRIC VIEW
2	S03-D-51-0002-R00	GENERAL ARRANGEMENT
1	S03-D-53-0001-R00	STATION ONE LINE

DRAWING NAME:		KETCHIKAN SUBSTATION STATION ELEVATION A-A	
REF DWG(S):			
DRAWING NO.:		S03-D-51-0003-R00	SHEET 1 OF 1



CONSTRUCTION NOTES:
1. PHASING TO BE CONFIRMED ON-SITE

GENERAL NOTES:
1. THE SUBSTATION 115 KV AND 34.5 KV BUS IS DESIGNED FOR A MAXIMUM OF 616A BASED ON THE RATING OF THE TRANSFORMER (25 MVA). THE INCOMING LINE IS THE LIMITING FACTOR AS IT IS 336 KCM WHICH SUPPORTS A MAXIMUM OF 519A.
2. LEVELING NUTS TO BE USED ON STEEL STRUCTURES. EQUIPMENT SHALL BE MOUNTED DIRECTLY ON PADS.

ELECTRICAL CLEARANCES:
115 KV CLEARANCE (550 KV BIL)
MINIMUM PHASE-TO-PHASE = 45"
MINIMUM PHASE-TO-GND = 41"
MINIMUM PHASE-TO-GRADE = 12'

34.5 KV CLEARNACE (200 KV BIL)
MINIMUM PHASE-TO-PHASE = 16"
MINIMUM PHASE-TO-GND = 15"
MINIMUM PHASE-TO-GRADE = 10'

SCALE: 3/16" = 1'

NOT FOR
CONSTRUCTION

SEL SCHWEITZER ENGINEERING LABORATORIES
2350 NE Hopkins Court, Pullman, WA 99163-5603 USA
SEL ENGINEERING SERVICES INC. Project # 034679.000.00

KETCHIKAN SUBSTATION
STATION ISOMETRIC VIEW

PROJECT: SOUTHEAST ALASKA POWER AGENCY - KETCHIKAN SUBSTATION			
DESIGNER/PROJECT ENGINEER: QUENTIN CRAWFORD/AUNG THUYA JOB #: TASK ORDER NO. 24015			
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED BY/DATE
5			
4			
3			
2			
1			
0	NEW STATION	NHC / 10/16/2024	QAC / 10/16/2024



NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION
7	S03-D-10-0002-R00	BILL OF MATERIAL
6	S03-D-51-0008-R00	EQUIPMENT CONNECTION DETAILS
5	S03-D-51-0006-R00	34.5KV BOX STRUCTURE ELEVATION
4	S03-D-51-0005-R00	115KV BOX STRUCTURE ELEVATION
3	S03-D-51-0003-R00	STATION ELEVATION A-A
2	S03-D-51-0002-R00	GENERAL ARRANGEMENT
1	S03-D-53-0001-R00	STATION ONE LINE

DRAWING NAME:		KETCHIKAN SUBSTATION STATION ISOMETRIC VIEW	
REF DWG(S):			
DRAWING NO.:		S03-D-51-0004-R00	SHEET 1 of 1