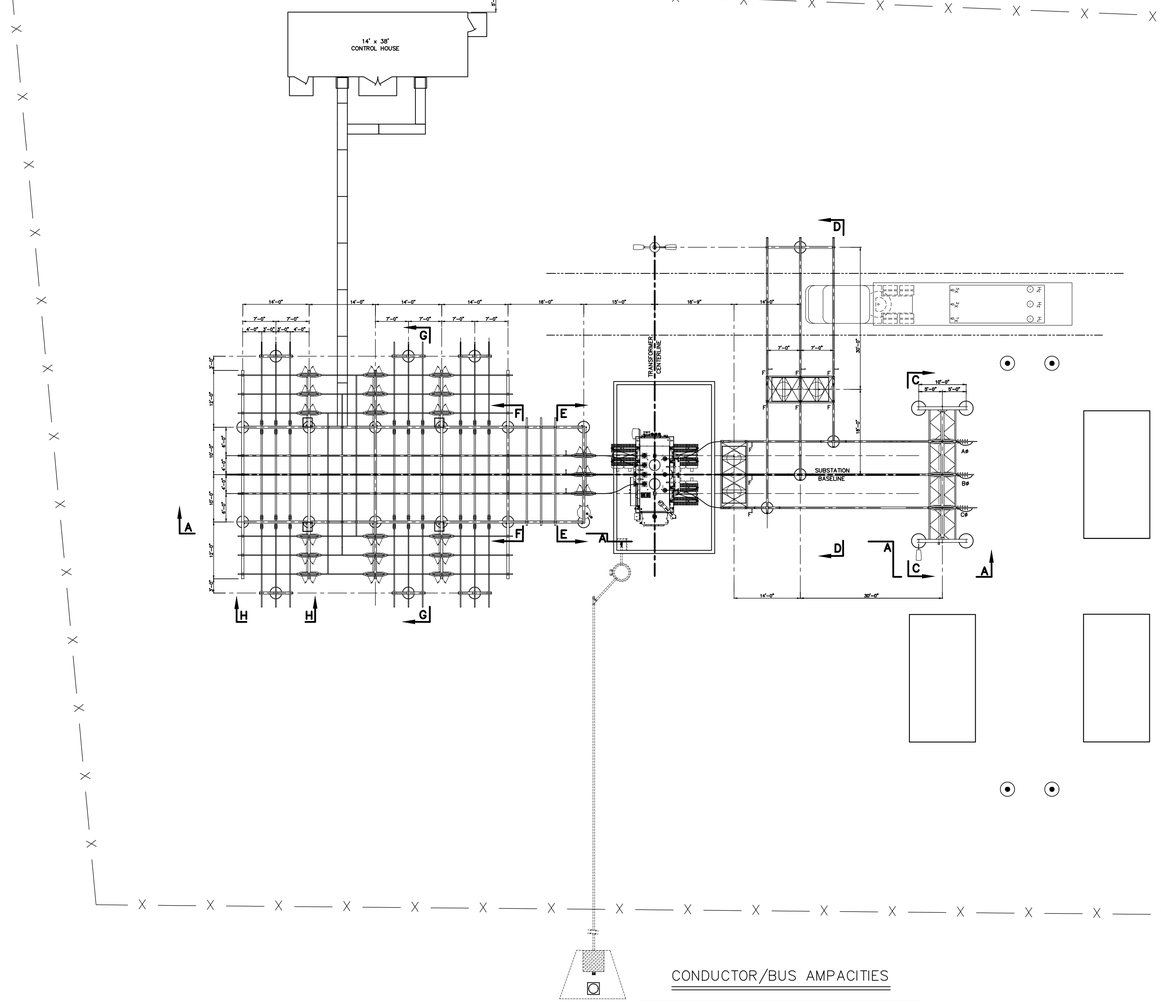

PLAN VIEW

SCALE: 3/32" = 1'-0"

STATION DESIGN DATA

STRUCTURE, APPARATUS AND LIGHTNING ARRESTERS ARE ALL GROUNDED TO THE SAME GROUNDING SYSTEM.
STATION DESIGNED FOR THE FOLLOWING ELECTRICAL CLEARANCES/SPACINGS:

RATED KV	BIL KV	RIGID BUS CONDUCTORS (IEEE, NEMA, NESC) CLEARANCE (1)				VERTICAL CLEARANCE OF UNGUARDED PARTS	GROUP-OPERATED SWITCHES (NEMA) ℄ TO ℄ SPACING (2)		
		PHASE TO PHASE ℄ TO ℄ (3)	METAL TO METAL (4)	PHASE TO GROUND (5)	CLEARANCE ABOVE GRADE (6)		HORN GAP VERT./HOR. BREAK	DISCONNECT VERTICAL BREAK	DISCONNECT HORIZONTAL BREAK
69	350	5'-0"	2'-7"	2'-6"	11'-0"	10'-5"	7'-0"	5'-0"	6'-0"
15	110	2'-0"	0'-12"	0'-10"	9'-0"	9'-0"	3'-0"	2'-0"	2'-6"

NOTES:
1. "CLEARANCE" IS DEFINED AS A SURFACE-TO-SURFACE MEASUREMENT.
2. "SPACING" IS DEFINED AS A ℄ TO ℄ MEASUREMENT.
3. INTENDED FOR PHASES ORIENTED IN PARALLEL RUNS.
4. INTENDED FOR NON-PARALLEL POINTS OF CROSSING.
5. EXCEEDS MIMIMUM CLEARANCES TO MATCH NEMA STANDARD POST INSULATOR DIMENSIONS.
6. ROUNDED UP TO THE NEAREST EVEN FOOT, PER NESC (2002). MEASURED FROM TOP OF EQUIPMENT FOUNDATIONS, IF SUITABLE FOR PEDESTRIAN ACCESS.

DEADEND STRUCTURE(S) SHALL WITHSTAND 0° TO 15° LINE TAKE-OFF IN ANY DIRECTION WITH A DESIGN LINE TENSION OF _____ POUNDS PER CONDUCTOR.
*A MINIMUM VERTICAL CLEARANCE OF 8'-6" SHALL BE MAINTAINED FOR ANY SURFACE OF INDETERMINATE POTENTIAL SUCH AS LIGHTNING ARRESTERS, UNGROUNDED SURFACES, BUSHINGS, AS PER NESC RULE 124.A.3.

CONDUCTOR/BUS AMPACITIES

CONDUCTOR	APPROX. CURRENT CARRYING CAPACITY*
TUBING, 4" NPS SCH. 80 AL.	3720 AMPS.
TUBING, 3" NPS SCH. 80 AL.	2760
TUBING, 2" NPS SCH. 80 AL.	1700
TUBING, 4" NPS SCH. 40 AL.	3165
TUBING, 3" NPS SCH. 40 AL.	2425
TUBING, 2" NPS SCH. 40 AL.	1465
ACSR, 1272 MCM, 26/7	1200
ACSR, 954 MCM, 26/7	1010
ACSR, 795 MCM, 26/7	900
ACSR, 336.4 MCM, 18/1	530
ACSR, 2/0 AWG, 6/1	340
ACSR, 1/0 AWG, 6/1	230
COPPER, 1000 MCM, 61 STD.	1285
COPPER, 750 MCM, 61 STD.	1075
COPPER, 500 MCM, 37 STD.	830
COPPER, 4/0 AWG, 7 STD.	480
COPPER, 2/0 AWG, 7 STD.	355
COPPER, #2 AWG, SOLID	231
UABC, 4" x 4" x 3/8"	3125
UABC, 4" x 4" x 1/4"	2625
AL, BAR 3" x 1/2"	1350
AL, BAR 3" x 1/4"	938
INSUL. 1/0 34.5KV J.C.N.	235

* AC. 60 HZ, 40° C AMBIENT, 50° C RISE HORIZONTAL ORIENTATION, OUTDOORS, WIND = 2 FPS

EQUIPMENT BOLT TORQUING TABLE

DIAMETER BOLT (INCHES)	RECOMMENDED TORQUE NON-LUBRICATED STEEL & SILICON BRONZE HARDWARE (FOOT*LBS)	RECOMMENDED TORQUE LUBRICATED HARDWARE & ALUMINUM HARDWARE (FOOT*LBS)
1/2"	40	25
5/8"	55	40
3/4"	70	60

INSTALLATION NOTES:

1. MATERIALMAN/FABRICATOR VERIFY THAT CONDUCTOR TERMINAL PADS MATCH AND FIT ONTO SWITCH TERMINAL PADS (SIZE, NEMA RATING AND SHOULDER).
2. EQUIPMENT VIEW IS PRELIMINARY. WAITING ON VENDOR DRAWINGS.
3. CONTRACTOR TO BRING GRADE AROUND NEW A-FRAME UP TO MATCH FOUNDATION REVEALS TO ALLOW ACCESS TO BREAKER AND SWITCH OPERATORS.
4. MINOR GRADING TO BE DISCUSSED AT PRE-BID MEETING

LEGEND:

- ⊙ STATIC POLE
- AREA LIGHTS
- F FIXED CONNECTION
- S SLIP FIT

REFERENCES

SITE PLAN _____ 12502S1
SECTION VIEWS _____ 12502GA2-GA4
DETAILS _____ 12502GA5
FOUNDATION PLAN _____ 12502FD1

PWC Fayetteville's HOMETOWN UTILITY

Booth & Associates, LLC
CONSULTING ENGINEERS
5811 Glenwood Avenue
Raleigh, NC 27612
NC F-0221

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

© 10/2020

NO.	REVISIONS	ENG.	DATE

PROJECT NAME: BLACK & DECKER 69 TO 15 X 25 kV SUBSTATION

DRAWING TITLE: PLAN VIEW

DRAWN BY:	JRT
CHECKED BY:	MFC
APPROVED BY:	JBS
DATE:	10/07/2020
SCALE:	1/16"=1'-0"
FILE NUMBER:	12502GA1-GA5
SHEET:	GA1