

## Addendum No. 2

**Project:** Lonsdale Substation Construction for the 2B Yard Improvements  
**Control No:** 00707  
**Issued:** To all listed plan holders  
**Date:** February 7, 2017

This addendum forms a part of the Agreement described above. The original Contract Documents and any prior addenda remain in full force and effect except as modified by the following, which shall take precedence over any contrary provisions in prior documents.

### **Questions and Answers**

Question 1 - Drawing D-16318 Foundation Plan - The Scheduled quantities for the following Items do not match those shown on the drawing. Can you please verify and confirm the needed numbers?

- Item 1 - shows Quantity of 1, there are 2
- Item 2 - shows Quantity of 2, there are 4
- Item 3 - shows Quantity of 1, there are 2
- Item 4 - shows Quantity of 2, there are 4
- Item 6 - shows Quantity of 1, there are 2

**Answer 1** - The drawing descriptions identify the structure quantities by type, not the number of foundations per structure which is unfortunately a bit confusing. Kindly find below table which should correct and clarify the needed foundation values:

ITEM	SCHEDULED QUANTITY	FOUNDATION QUANTITY
Item 1	1	2
Item 2	2	4
Item 3	1	2
Item 4	2	4
Item 5	1	1
Item 6	2	2
Item 7	2	2
Item 8	1	1
Item 9	3	3
Item 10	1	1
Item 11	1	1
Item 12	2	2
Item 99	1	1

**Question 2** - Drawing D-16318 refers to Structure Detail Drawing D-16313 Sheet 2. We do not have this reference drawing in our packet, nor do we have D-16340 or D-16314 which are also referenced elsewhere. May we have them?

**Answer 2** - Yes. Please find attached missing drawing, D-16313 Sheet 2. Kindly note that our vendor's steel structure fabrication and assembly drawings for all steel members will be included with our ISSUED FOR CONSTRUCTION package. To this end, drawings D-16340 and D-16314, power transformer and control building prints, were purposely left out of the Bid package to avoid possible confusion. As you have requested them, we will furnish the transformer outline drawing D-16340 Sheet 1 and the plan view of the control building D-16314 9 (used to purchase the Building). Factory drawings for these will be furnished to the successful bidder (3 attachments)

### **Clarifications**

**Clarification 1** - Division 1 Section 1.04.c, 1.03.F, et al Oil Containment Tanks - To be clear, the Contractor will be required to off-load the oil containment tanks and other ancillary components from the vendor's delivery trailers. A crane will likely be needed to pick, place and assemble the two (2) required tanks. For clarity, we are providing details (2 attachments) of these tanks from our last substation job, as well as, our factory contact for these materials:

Mikel Brodnak  
Power-Electric-Communication Sales  
Oldcastle Precast  
5900 East Division Street  
Lebanon, TN 37090  
P: 615-965-3074  
C: 615-642-9937

**Clarification 2** - Design work for the Project's HV circuit getaway circuits was recently completed/finalized. Fortunately, the required duct bank lengths have been reduced as the riser pole locations are no longer bordering the nearby Holston River Railroad and they have been brought closer to our new control building location. The new combined duct lengths are approximately 150 feet shorter than the originally forecasted duct lengths. Likewise, there will be no significant need to modify riser locations for personnel to operate jointly mounted overhead line switches. Kindly consider these reductions in your offering. Attached below are tabular details for the duct length reductions to be amended in our drawing D-16347 Sheet 2:

CIRCUIT	REVISED LENGTH	ORIGINAL LENGTH	DIFFERENCE
LN11	167	195	-28
LN12	178	165	13
LN13	167	155	12
LN14	206	205	1
LN15	200	215	-15
LN21	217	265	-48
LN22	222	245	-23
LN23	206	245	-39
LN24	189	215	-26
LN25	167	165	2
TOTALS =	1920	2070	-153

END

Each Bidder/Proposer shall acknowledge receipt of this addendum by affixing his signature below, by noting this addendum on his Bid/Proposal Form, and by attaching this addendum to his Bid/Proposal. **Failure to acknowledge this addendum could be cause for bid/proposal rejection.**

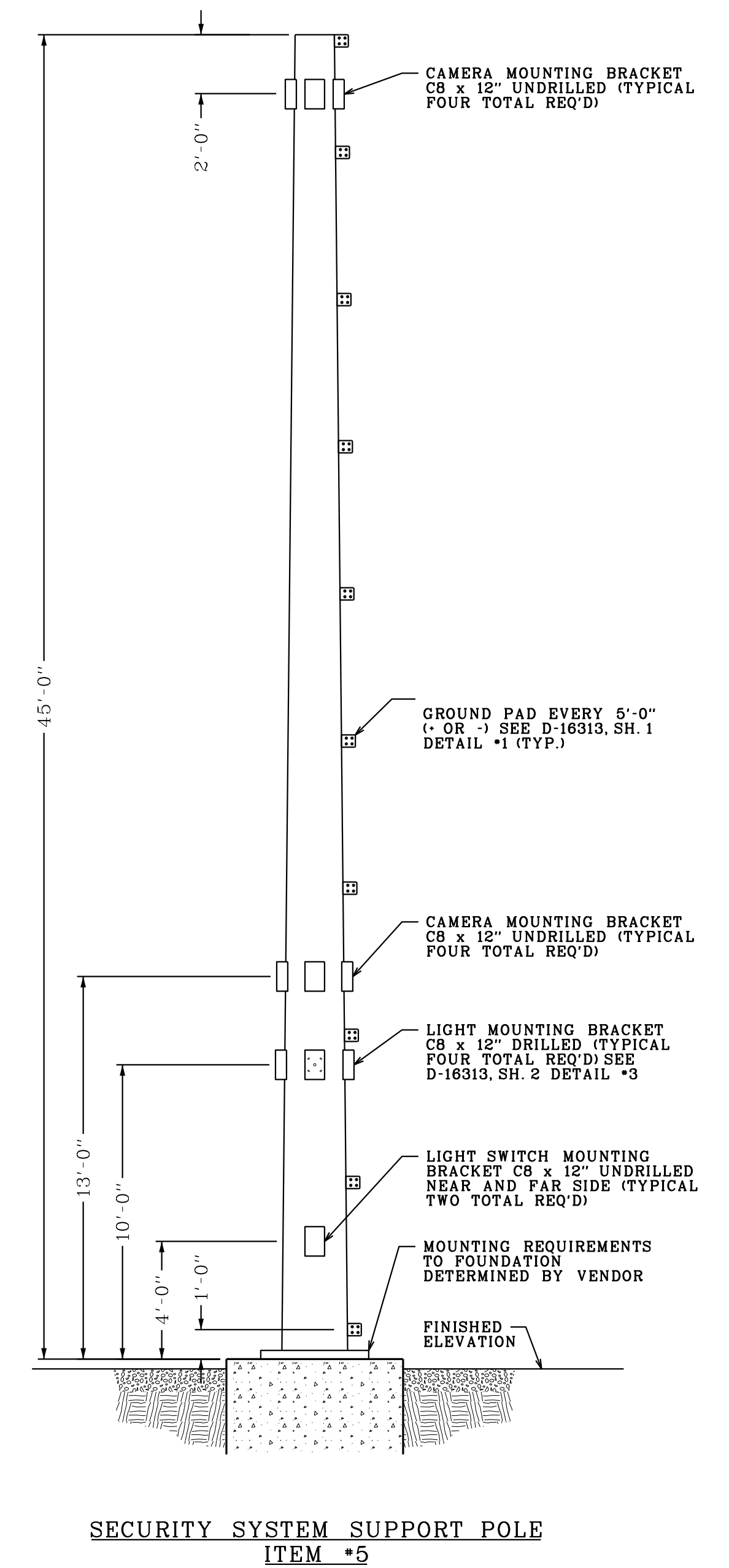
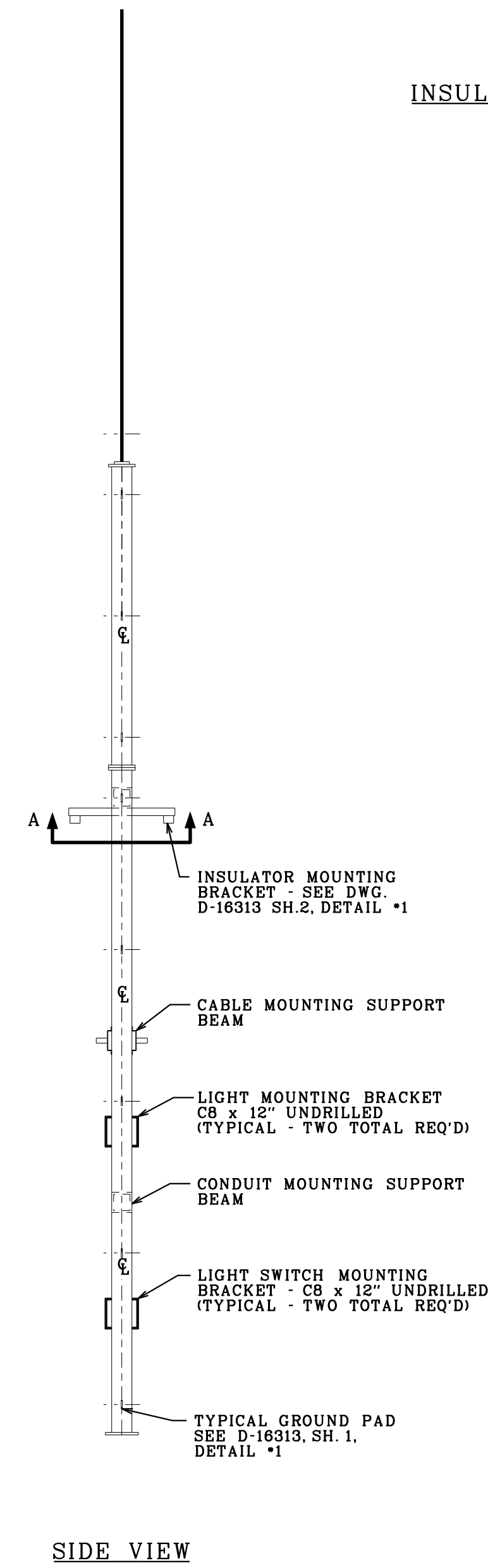
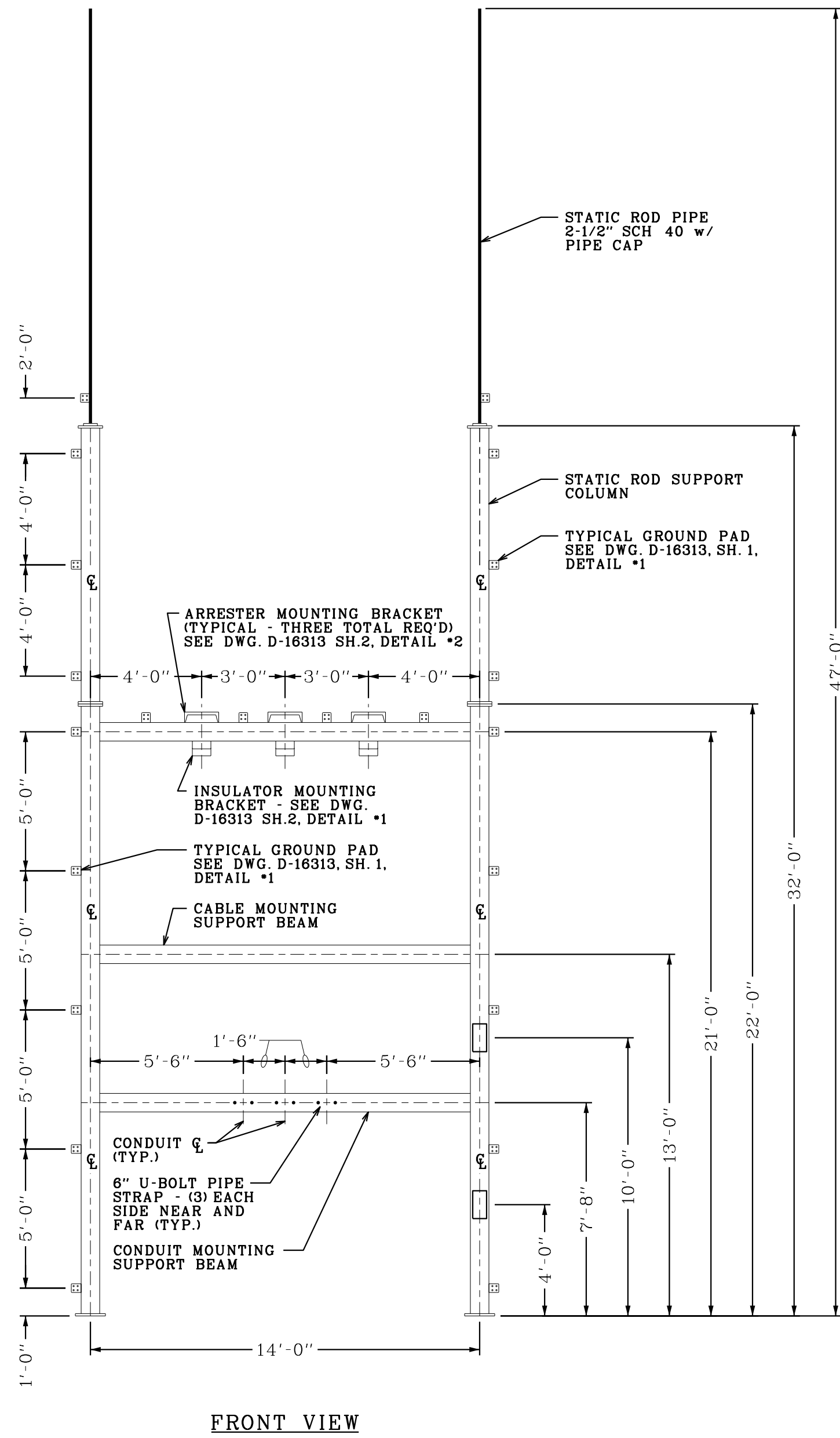
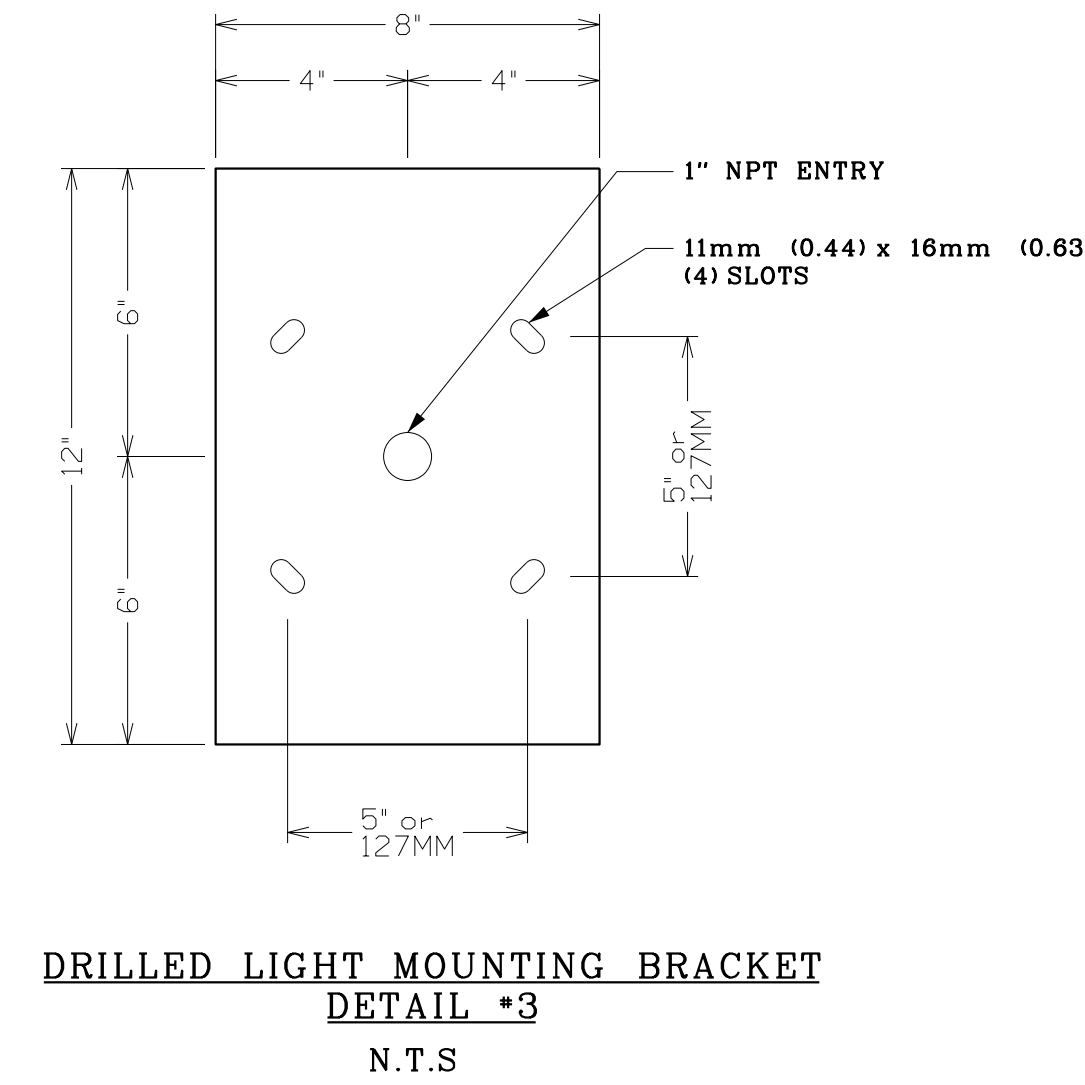
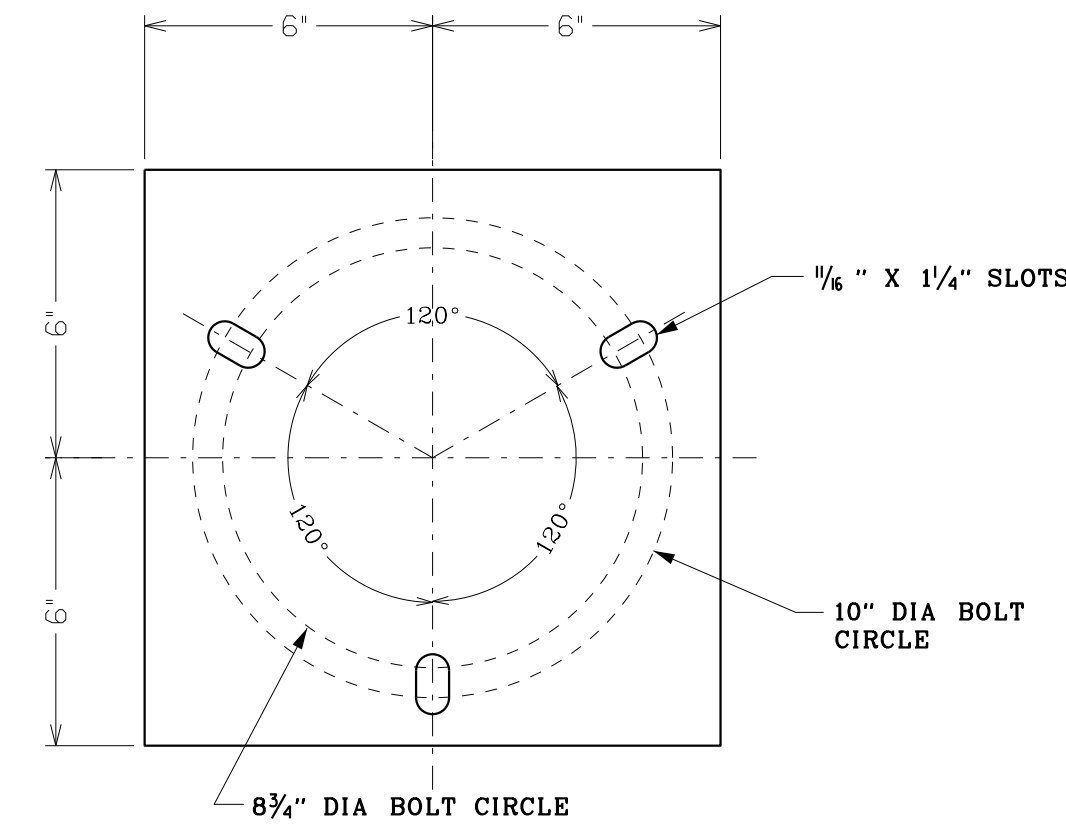
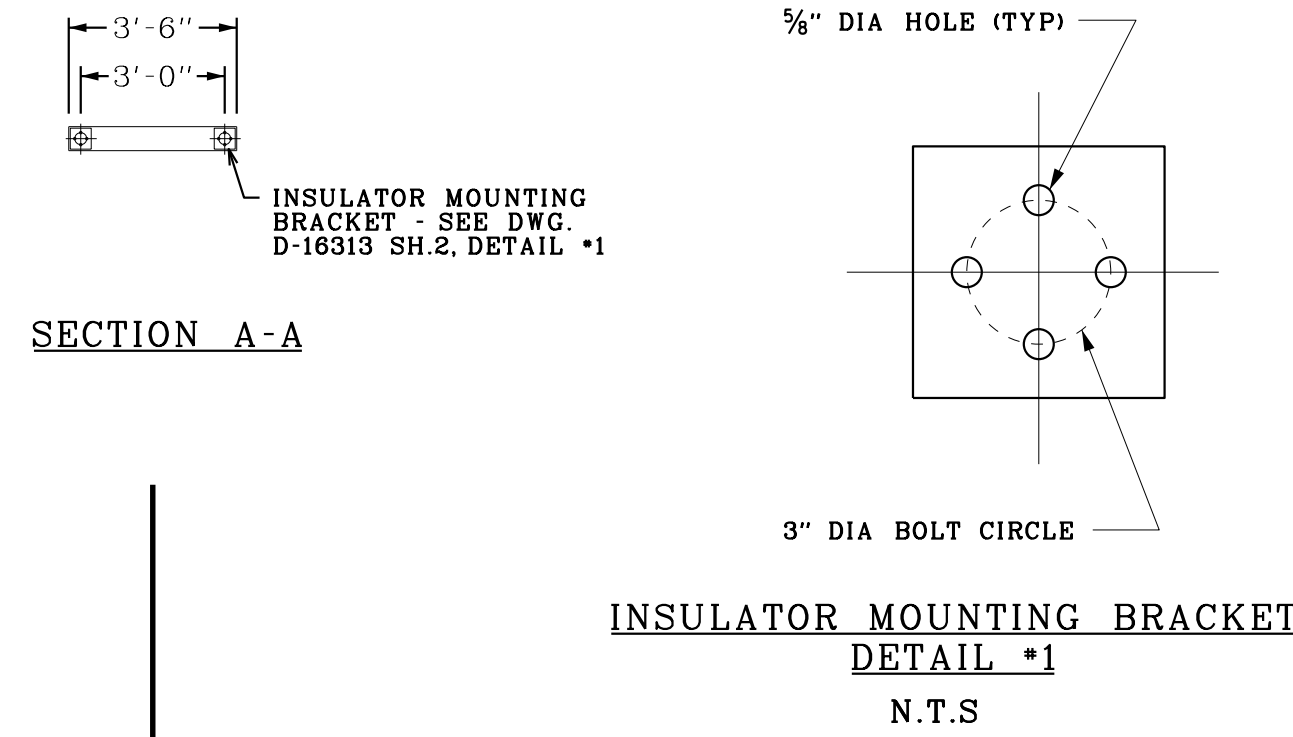
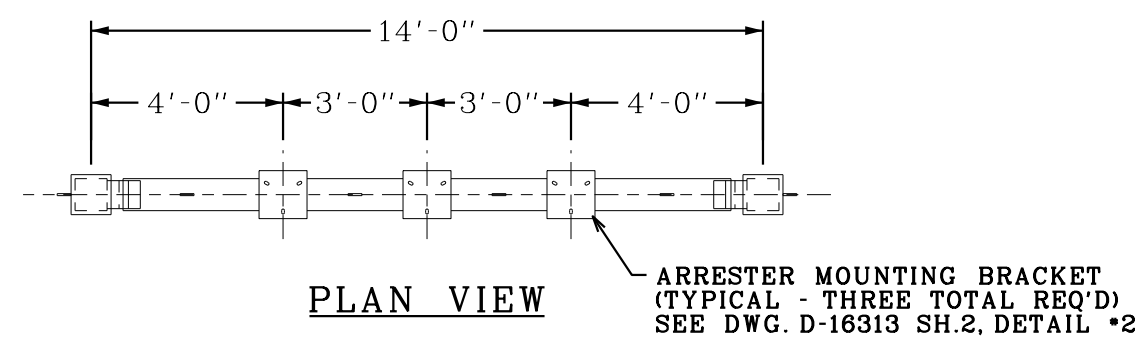
#### ACKNOWLEDGMENT

The undersigned acknowledges receipt of this addendum and the Bid submitted is in accordance with information, instructions and stipulations set forth herein.

BIDDER / PROPOSER \_\_\_\_\_

AUTHORIZED SIGNATURE \_\_\_\_\_

DATE \_\_\_\_\_



Print Date: 04/NOV/2016  
 Print Time: 12:09  
 File Name: Y:\Public\ENGINEERING\ElectricFacilities\Substations\LN\2015 2B Yard Improvements\D-16313 LN 2B Yard Steel Structure\D-16313 Sh2 R0 LN 2B Yard Low Profile Steel Structure Sections.dgn  
 Standard Code: TCS:PEN  
 User Name: E:\brow8883

REV.	DESCRIPTION	DWN.	CKD.	SUBM.	APPV.	WORK FLOW PROCESS ID#	DATE	REV.	DESCRIPTION	DWN.	CKD.	SUBM.	APPV.	WORK FLOW PROCESS ID#	DATE
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10								4							
9								3							
8								2							
7								1							
6								0	FIRST DRAWN	DWB	BWW	BWW			11-4-2016

WORK FLOW PROCESS ID#: D-16313 Sh2 R0 LN 2B Yard Low Profile Steel Structure Sections.dgn		
GRID: 3334	W.O.: J0006826	DATE: NOV. 4, 2016
DESCRIPTION:		
SCALE: NONE		

Knoxville Utilities Board  
 ENGINEERING  
**LONSDALE (LN) SUBSTATION**  
**LOW PROFILE STEEL STRUCTURE**  
**SECTIONS AND DETAILS**

SHEET 2 OF - SHEETS  
**D-16313**

ABB INC. SMALL POWER TRANSFORMERS SOUTH BOSTON, VIRGINIA U.S.A.

APPROXIMATE NET WEIGHTS

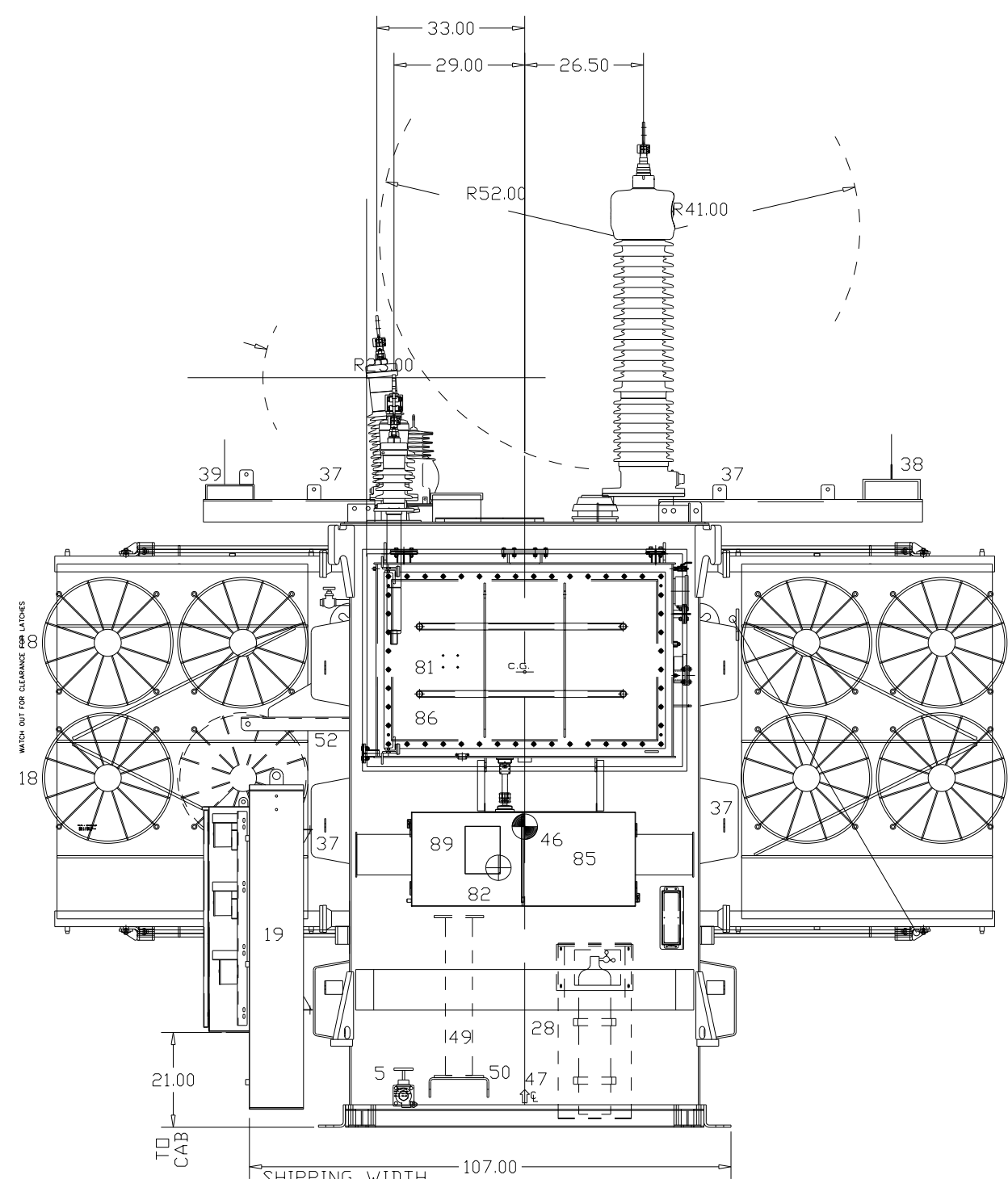
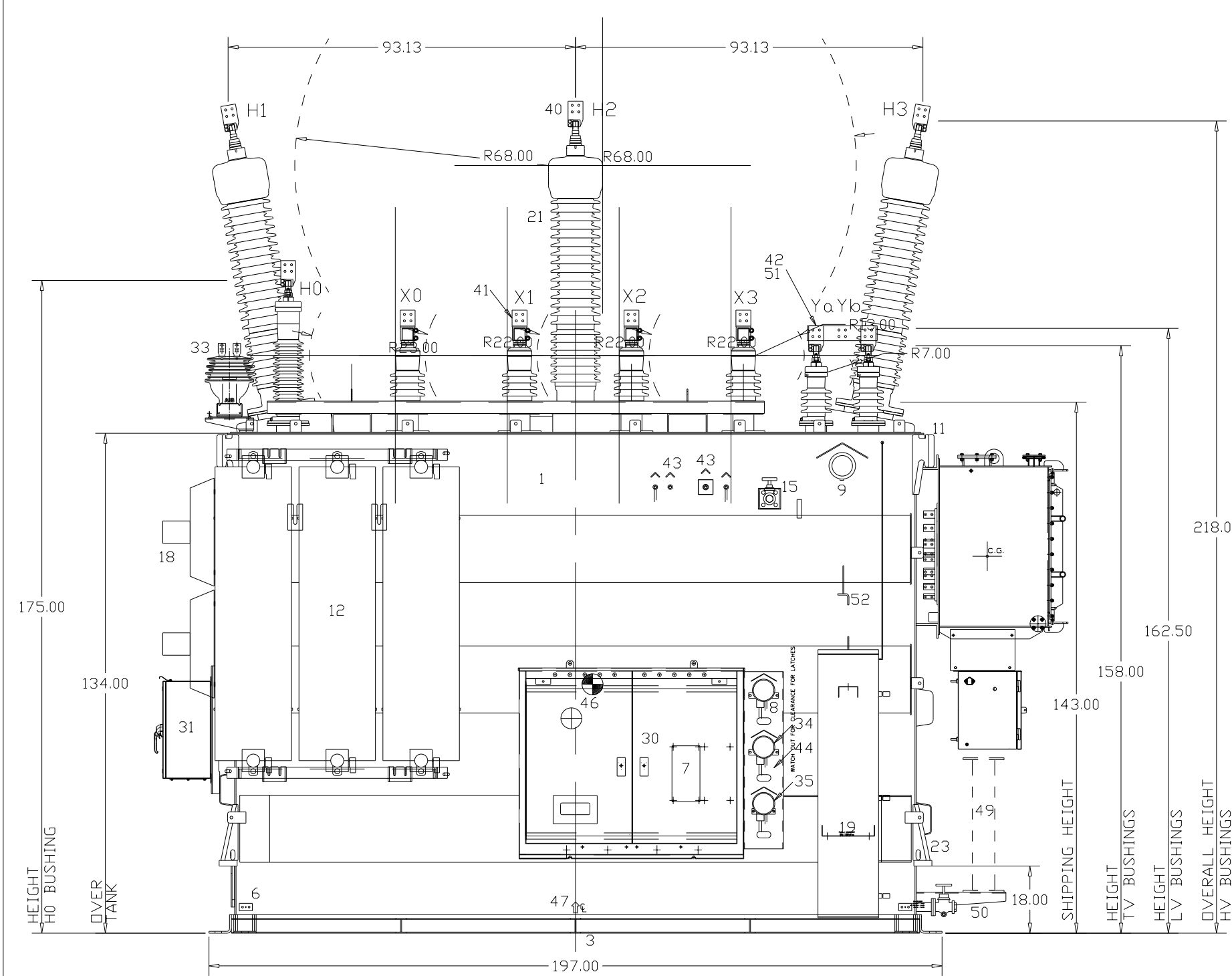
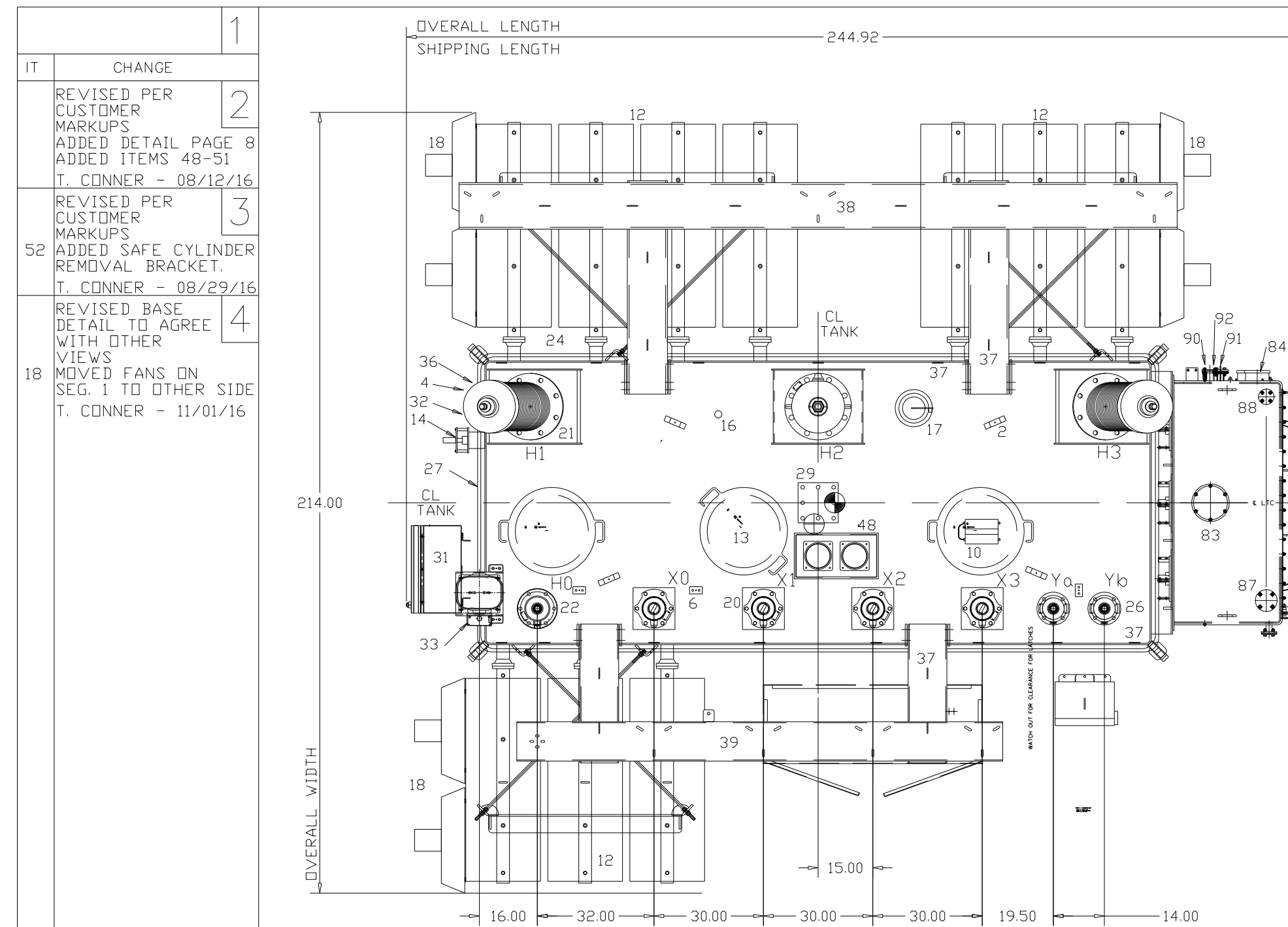
Table listing approximate net weights for various components: CORE AND COILS (60000 LBS), PREVENTIVE-AUTO CORE AND COILS (4000 LBS), TANK AND FITTINGS (47000 LBS), LIQUID - OIL (7194 GAL), TOTAL WEIGHT (165000 LBS), etc.

NOTES:

- A. GALVANIZED STEEL CONDUIT WITH 24" SHORT RUNS OF FLEX
B. ALL EXPOSED HARDWARE TO BE STAINLESS STEEL WITH SILICON BRONZE NUTS
C. SPARE GASKETS PROVIDED FOR INSTALLATION PURPOSES ONLY
D. COVER PAINTED WITH 'NON-SKID' SURFACE
E. INTERIOR OF TANK PAINTED WHITE
F. ALL CRATED OR PALLETIZED PARTS WILL WEIGH AT MAX. 11,000 LBS
G. SPARE QUART CANS OF PAINT - 2 TOTAL
H. UNDERCOATING TANK BASE AND 1" UP SIDE

THE TRANSFORMER IS MANUFACTURED TO SEISMIC ZONE HIGH IEEE 693 SPECIFICATIONS.

- ##REINHAUSEN RMV-II LOAD TAP CHANGER - 2500 AMP - 72.5 KV ##
81. OIL FILLED TAP CHANGER COMPARTMENT.
82. TAP POSITION INDICATOR
83. PRESSURE RELIEF DEVICE - MESSKO WITH SEMAPHORE
84. LIQUID LEVEL GAUGE WITH ALARM CONTACTS
85. MOTOR DRIVE UNIT
86. 10" SELECTOR DRAIN VALVE
87. 2" PIPE WITH CAP FOR VACUUM FILLING.
88. 10" PIPE WITH CAP FOR OIL FILLING.
89. LTC ELECTRIC MONITORING BOX.
90. 0.25" COUPLING FOR DEHYDRATING BREATHING ASSEMBLY
91. DEHYDRATING BREATHING ASSEMBLY
92. RAPID PRESSURE RISE RELAY - QUALITROL - 900-009-03 WITH SEAL IN RELAY 909-300-01.



RENEWAL PARTS FOR OUTLINE
A SPARE SET OF ALL GASKETS AND 1 OF EACH STYLE BUSHING IS RECOMMENDED FOR STOCK.
FOR PRICES CONTACT YOUR FIELD SALES OFFICE.
ORDER RENEWAL PARTS BY STYLE NUMBER AS FOLLOWS:
STYLE NUMBER = OUTLINE NUMBER - ITEM NUMBER - QUANTITY.
EXAMPLE: CB0003901-21-1.
FOR GASKETS ONLY PLACE A 'G' IN FRONT OF OUTLINE NUMBER
EXAMPLE: GCB0003901-21-1(ONE GASKET)
EXAMPLE: GCB0003901 (ALL GASKETS)

OUTLINE DETAIL

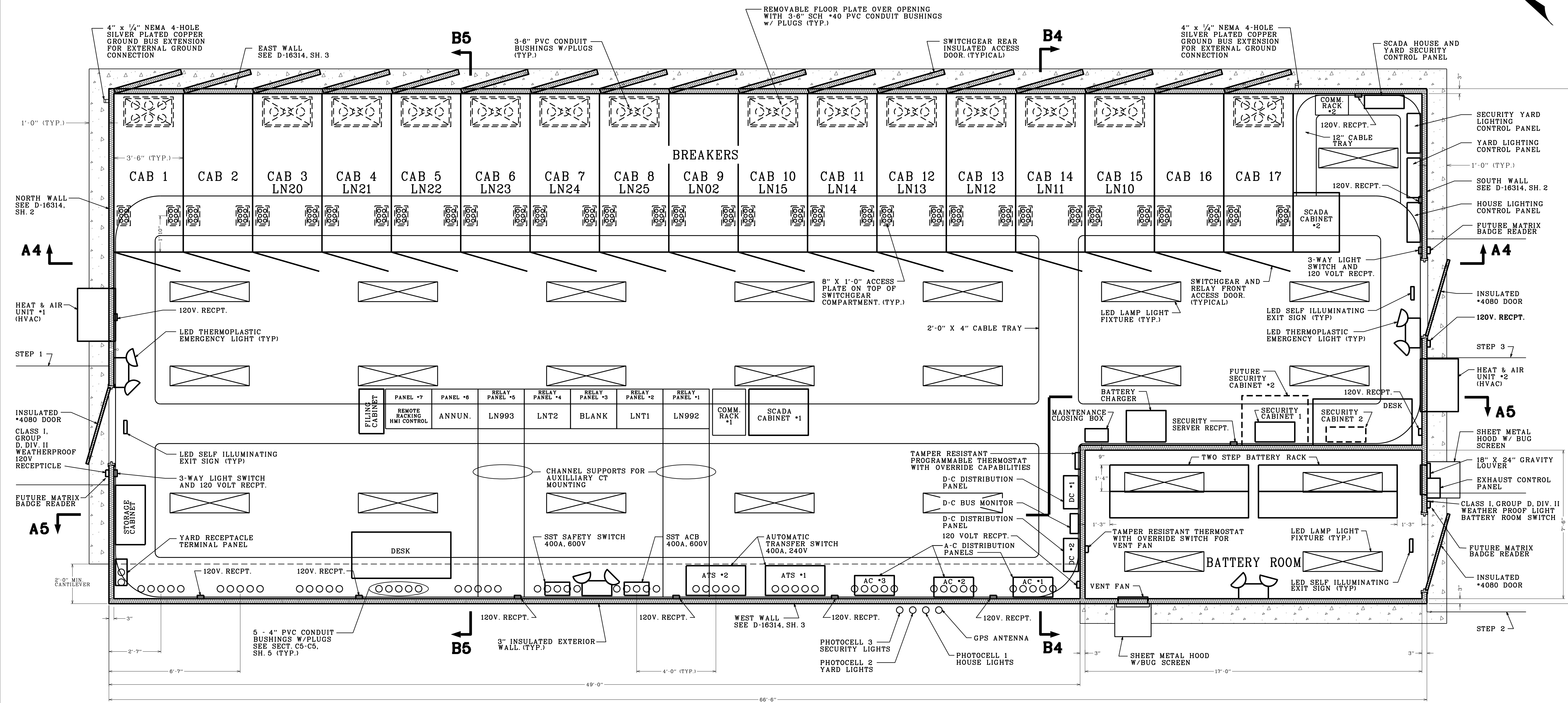
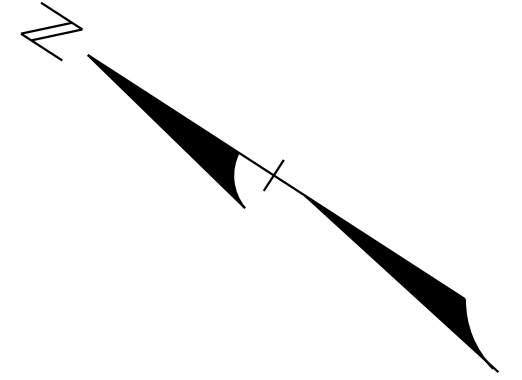
- ITEM 1 SEALED TANK - BRACED FOR 15 PSI - COLOR ANSI 70
2 WELDED COVER WITH GASKET AND LIFTING LOOPS FOR LIFTING COVER ONLY.
3 BASE - DESIGNED FOR ROLLING PARALLEL TO CENTERLINES AND TYPICAL ANCHORING IS WELDED.
4 REMOVABLE EXTERNAL CORE GROUNDS - CENTRAL MALONEY PART# 7013151 LOCATED UNDER GABLE TYPE COVER.
5 2.0 DRAIN VALVE/LOWER FILTER PRESS WITH .38 SAMPLER.
6 GROUND PADS - 2 HOLE NEMA DRILLING - 10 TOTAL.
7 NAMEPLATE AND WARNING DECAL.
8 LIQUID TEMPERATURE GAUGE WITH ALARM CONTACTS.
9 MAGNETIC LIQUID LEVEL GAUGE WITH ALARM CONTACTS.
10 DIGITAL IMPACT RECORDER ATTACHED TO TOP OF MAN HOLE COVER.
11 LIFTING HOOK FOR LIFTING COMPLETE TRANSFORMER.
THE TRANSFORMER IS DESIGNED FOR LIFTING WITH 4 VERTICAL SLINGS. THIS MAY REQUIRE THE USE OF A SPREADER OR LIFTING BEAM.
\*\* 12 REMOVABLE NON-PAINTED GALVANIZED RADIATORS WITH SHUT-OFF VALVES - 10 TOTAL
FIELD FILLING INSTRUCTIONS - SEE DRAWING 8D12328 - CASE 2
A = 594.000, B = 5.000, C = 275.000
13 20.00 DIA. MANHOLE WITH BOLTED ON COVER - 3 TOTAL.
14 DE-ENERGIZED TAP CHANGER - WITH .38 HOLE FOR PADLOCKING.
15 1.5 VALVE FOR UPPER FILTER PRESS CONNECTION.
16 VACUUM/UPPER FILTER PRESS CONNECTION ON COVER - 2" NPT WITH CAP
17 RELIEF DEVICE WITH ALARMS AND SEMAPHORE, OVER A 6.50 HANDHOLE.
\*\* 18 AIR BLAST FAN ENCLOSED IN SAFETY CAGE - 12 TOTAL.
19 INERTIA PRESERVATION SYSTEM WITH NITROGEN CYLINDER - NITROGEN CYLINDER SHIPPED DETAIL IN CABINET, DISCONNECTED & WITH VALVE CAP IN PLACE.
\*\* 20 LV BUSHING STYLE T025W3000BF - 4 TOTAL - 30.00 CL TO CL - SEE PAGE 3
\*\* 21 HV BUSHING STYLE T161W0800AA - 3 TOTAL - 93.13 CL TO CL - SEE PAGE 4
\*\* 22 HV BUSHING STYLE T069Z0412AN - SEE PAGE 5
23 JACKING PROVISIONS ON TANK FOR JACKING COMPLETE UNIT
24 AUXILIARY GAS SPACE IN BRACES-REMOVE DRAIN PLUG, DRAIN FRONT & REAR, THEN REPLACE DRAIN PLUG BEFORE ENERGIZING UNIT.
\*\* 26 TV BUSHING STYLE T025W0412AT - 2 TOTAL - 14.00 CL TO CL - SEE PAGE 6
27 12.00 DIA. HANDHOLE WITH BOLTED ON COVER.
28 DRY AIR CYLINDER - ASSEMBLY FOR MAINTAINING CONSTANT PRESSURE FOR SHIPMENT ONLY.
29 TETHER POLE MOUNTING BOSS - STAINLESS STEEL WITH 1-8 UNC-2A DRILL AND TAPPED HOLES.
30 NEMA 3R CONTROL CABINET WITH UNDRILLED ENTRANCE PLATE.
31 CONTROL CABINET FOR EXTERNAL CT CONNECTION.
32 STAINLESS STEEL CORE GROUND TAGS AND WARNING TAG.
33 EXTERNAL CT.
34 REMOTE HOT SPOT WINDING TEMPERATURE INDICATOR WITH ALARMS.
35 MULTI-BALLAST TRANSFORMER FOR HOT SPOT WINDING TEMPERATURE INDICATOR.
36 RAPID PRESSURE RISE RELAY MOUNTED UNDER OIL ON A GATE VALVE.
37 ARRESTER GROUND CABLE SUPPORTS - ACROSS THE COVER ON SEG 1 & 3 AND DOWN EACH END WALL BRACE.
\*\* 38 HV ARRESTER MOUNTING.
\*\* 39 LV ARRESTER MOUNTING & X0 POST INSULATOR MOUNTING.
\*\* 40 HV & H0 STUD TO SPADE ADAPTER - 4 TOTAL - KENALLOY FOUNDRY CAT. NO. 1082-2.
\*\* 41 LV & X0 STUD TO SPADE ADAPTER - 4 TOTAL - PENN UNION CAT. NO. SLB-3012-E-TN.
\*\* 42 TV STUD TO SPADE ADAPTER - 2 TOTAL - KENALLOY FOUNDRY CAT. NO. 1082-2.
43 RTD FOR OIL TEMP. AND WINDING HOT SPOT - 2 TOTAL.
44 AMBIENT RTD MOUNTED ON BACK OF GAUGE PLATE.
45 FAN JUNCTION BOX - 3 TOTAL.
46 STAINLESS STEEL CENTER OF GRAVITY TAGS ON SEG. 2 & SEG. 3.
47 STAINLESS STEEL CENTERLINE TAGS ON ALL ANSI SEGMENTS.
48 CT TERMINAL JUNCTION BOX.
\*\* 49 TETHER POLE - WISCONSIN LIFTING TETHER POLE TP-2P
50 TETHER POLE MOUNTING - FOR STORAGE PURPOSES ON SITE ONLY.
\*\* 51 TV GROUNDING CONNECTION
52 SAFE CYLINDER REMOVAL BRACKET.
\*\* ITEMS ARE REMOVED FOR SHIPMENT

KUB PO No. 102291
KUB Eng Equipment File No. TR-217
KUB Company No's.: 85741, 85742
ABB Shop Order No's.: CB00039001, CB00039002

Table with columns for C.G. COMPLETE, C.G. SHIPPED, TEMP RISE, ONAN/ONAF/ONAF MVA, DESIGN IMPEDANCE, MINIMUM EXTERNAL CLEARANCE, and APPARATUS SUBSTATION TRANSFORMER details.

Revision table with columns: REV, DESCRIPTION, DWN., CKD., APPV., EST.#, JOB#, W.F.P.I.#, DATE, REV, DESCRIPTION, DWN., CKD., APPV., EST.#, JOB#, W.F.P.I.#, DATE.

Knoxville Utilities Board
ENGINERING
LONSDALE (LN) SUBSTATION
LNTI 30/40/50 MVA
OUTLINE



PLAN VIEW

SCALE: 3/8" = 1'-0"

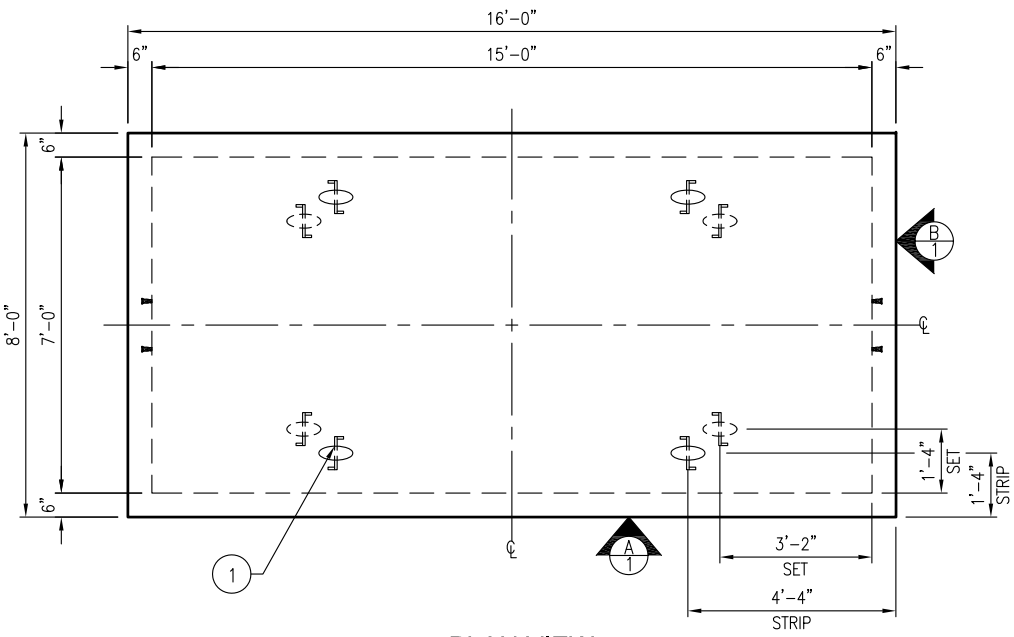
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10								4							
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7								1							
6								0	FIRST DRAWN	DWB	BWW	BWW			6-2-2016

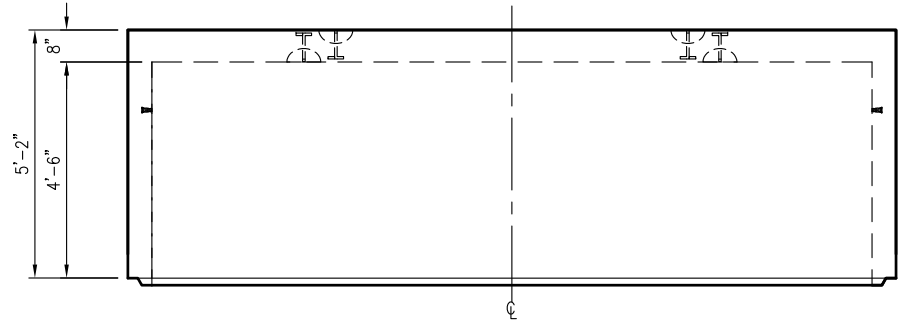
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GRID: 3334	W.O.: J0006826	DATE: MAY 13, 2016
DESCRIPTION:		
SCALE: 3/8" = 1'-0"		

Knoxville Utilities Board  
 ENGINEERING  
**LONSDALE (LN) SUBSTATION**  
**SWITCHGEAR /CONTROL HOUSE**  
 PLAN VIEW

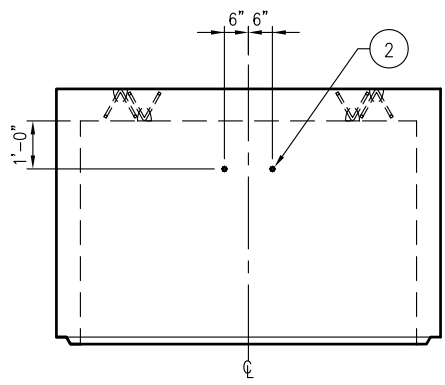
SHEET 1 OF 5 SHEETS  
**D-16314**



**PLAN VIEW**  
SCALE: 1/4" = 1'-0"



**VIEW A**  
SCALE: 1/4" = 1'-0"



**VIEW B**  
SCALE: 1/4" = 1'-0"

**\*\*EXTERIOR TO BE COATED  
W/ TNAME TAR 46-413\*\***  
**376 SQ. FT. EXT. SURFACE AREA**

**APPROVED FOR PRODUCTION**  
Date: \_\_\_\_\_  
Checked By: \_\_\_\_\_

**CUSTOMER: KUB  
JOB: CHEROKEE TRAIL SUBST**

**INV#: 1054780  
SO#: 82573-21  
PM: REH  
DUE: 5-1-14  
ID: 715 OCT**

**QTY: \_\_\_ OF 2**

**STRUCTURAL NOTES**

1. CONCRETE: 28 DAY COMPRESSIVE STRENGTH  $f_c = 5000$  psi
2. REBAR: ASTM A-615 GRADE 60
3. STRIPPING: 2,500 PSI

WEIGHTS			
BASE	28,600 LBS		
BILL OF MATERIALS			
#	QUANTITY	DESCRIPTION	ITEM #
1	8 EA	MB79U80 LIFT ANCHOR	MB79U80
2	4 EA	3/2" PLASTIC INSERT	7134420
	7.05 YDS	CONCRETE	8204010
	473.1 LBS	#4 BAR	8040400
	320.1 LBS	#5 BAR	8040500

**Oldcastle Precast**  
5800 EAST DIVISION STREET LEBANON, TN 37090  
PHONE: 615-453-6111 FAX: 615-453-6080

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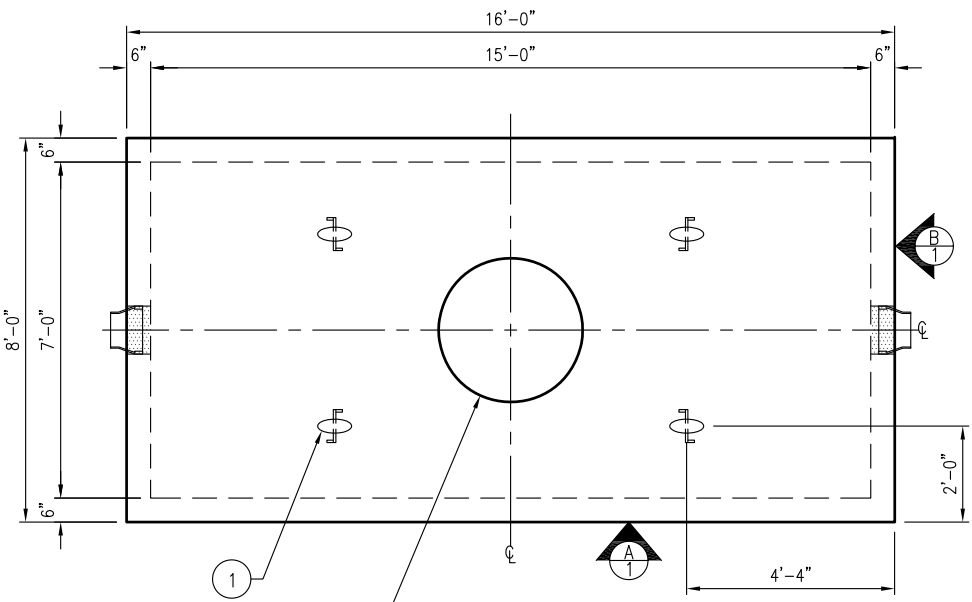
**7' X 15' X 9' OIL CONTAINMENT VAULT**

CHEROKEE TRAIL SUBSTATION  
KNOXVILLE, TN

CUSTOMER  
**KNOXVILLE UTILITY BOARD**

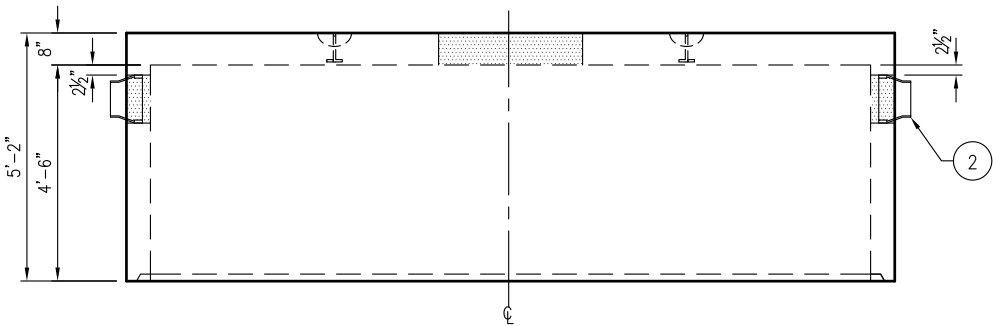
DATE 3/12/14	SALES MPB	DRAWN REH	ENGINEER NAK	CHECKED	SALES ORDER 82573
DRAWING NUMBER 384-82573 KUB-CHEROKEE				REVISION REV DATE	SHEET 1 OF

**\*\*PRINT IS INVERTED FOR PRODUCTION\*\***  
**\*\*POUR AS SHOWN\*\***



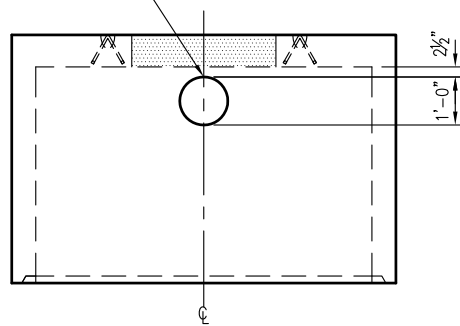
36"Ø ACCESS OPENING  
CENTERED IN TOP

**PLAN VIEW**  
SCALE: 1/4" = 1'-0"



**VIEW A**  
SCALE: 1/4" = 1'-0"

12"Ø BOOTABLE HOLE  
W/KNS NITRILE BOOT  
FOR 8" PVC



**VIEW B**  
SCALE: 1/4" = 1'-0"

**\*\*EXTERIOR TO BE COATED  
W/ TNAME TAR 46-413\*\***  
**368 SQ. FT. EXT. SURFACE AREA**



**APPROVED FOR PRODUCTION**

Date: \_\_\_\_\_

Checked By: \_\_\_\_\_

CUSTOMER: KUB  
JOB: CHEROKEE TRAIL SUBST

INV#: 1054890  
SO#: 82573-22  
PM: REH  
DUE: 5-1-14  
ID: 715 OCT

QTY: \_\_\_ OF 2

**STRUCTURAL NOTES**

1. CONCRETE: 28 DAY COMPRESSIVE STRENGTH  $f_c = 5000$  psi
2. REBAR: ASTM A-615 GRADE 60
3. STRIPPING: 2,500 PSI

**WEIGHTS**

TOP 27,500 LBS

**BILL OF MATERIALS**

#	QUANTITY	DESCRIPTION	ITEM #
1	4 EA	MB79U80 LIFT ANCHOR	MB79U80
2	2 EA	KNS NITRIL BOOT FOR 8" PVC	4000001
	6.77 YDS	CONCRETE	8204010
	480.5 LBS	#4 BAR	8040400
	421.3 LBS	#5 BAR	8040500



**Oldcastle Precast**<sup>®</sup>

5800 EAST DIVISION STREET LEBANON, TN 37090  
PHONE: 615-453-6111 FAX: 615-453-6080

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**7' X 15' X 9' OIL CONTAINMENT VAULT**

CHEROKEE TRAIL SUBSTATION  
KNOXVILLE, TN

CUSTOMER  
**KNOXVILLE UTILITY BOARD**

DATE	SALES	DRAWN	ENGINEER	CHECKED	SALES ORDER
3/12/14	MPB	REH	NAK		82573
DRAWING NUMBER				REVISION	SHEET
384-82573 KUB-CHEROKEE				REV DATE	1 OF