

# TWIN BRIDGES SUBSTATION TRANSFORMER ADDITION

BID #2248, ACCEPTING BIDS TUESDAY, JULY 9, 2019

CITY OF ALEXANDRIA  
ALEXANDRIA, LOUISIANA

## DRAWING LIST

TBTA-01	Site Plan
TBTA-01A	Partial Site Surfacing Plan
TBTA-02	Partial One-Line Diagram
TBTA-03	Partial Structure Plan
TBTA-03A	Structure Elevations
TBTA-03B	Structure Elevations
TBTA-03C	Miscellaneous Details
TBTA-04	Overall Grounding Plan
TBTA-04A	Partial Grounding Plan
TBTA-04B	Grounding Details
TBTA-05	Partial Foundation Plan
TBTA-05A	Transformer Foundation Plan & Details
TBTA-05B	Foundation Details
TBTA-05C	Foundation Details
TBTA-05D	Control Building Foundation Plan & Details
TBTA-05E	Oil Containment Pit Plan & Details
TBTA-06	Partial Conduit Plan
TBTA-06A	Conduit & Wiring Schedules
TBTA-06B	Conduit, Wiring & Pull Box Details
TBTA-06C	Pull Box Details
TBTA-06D	AC & DC Panels
TBTA-06E	230kV 3Ø Rapides Line PT Junction Box
TBTA-07	New Control Building Layout
TBTA-07A	New Control Building Interior Elevations
TBTA-07B	Existing Control Building Layout

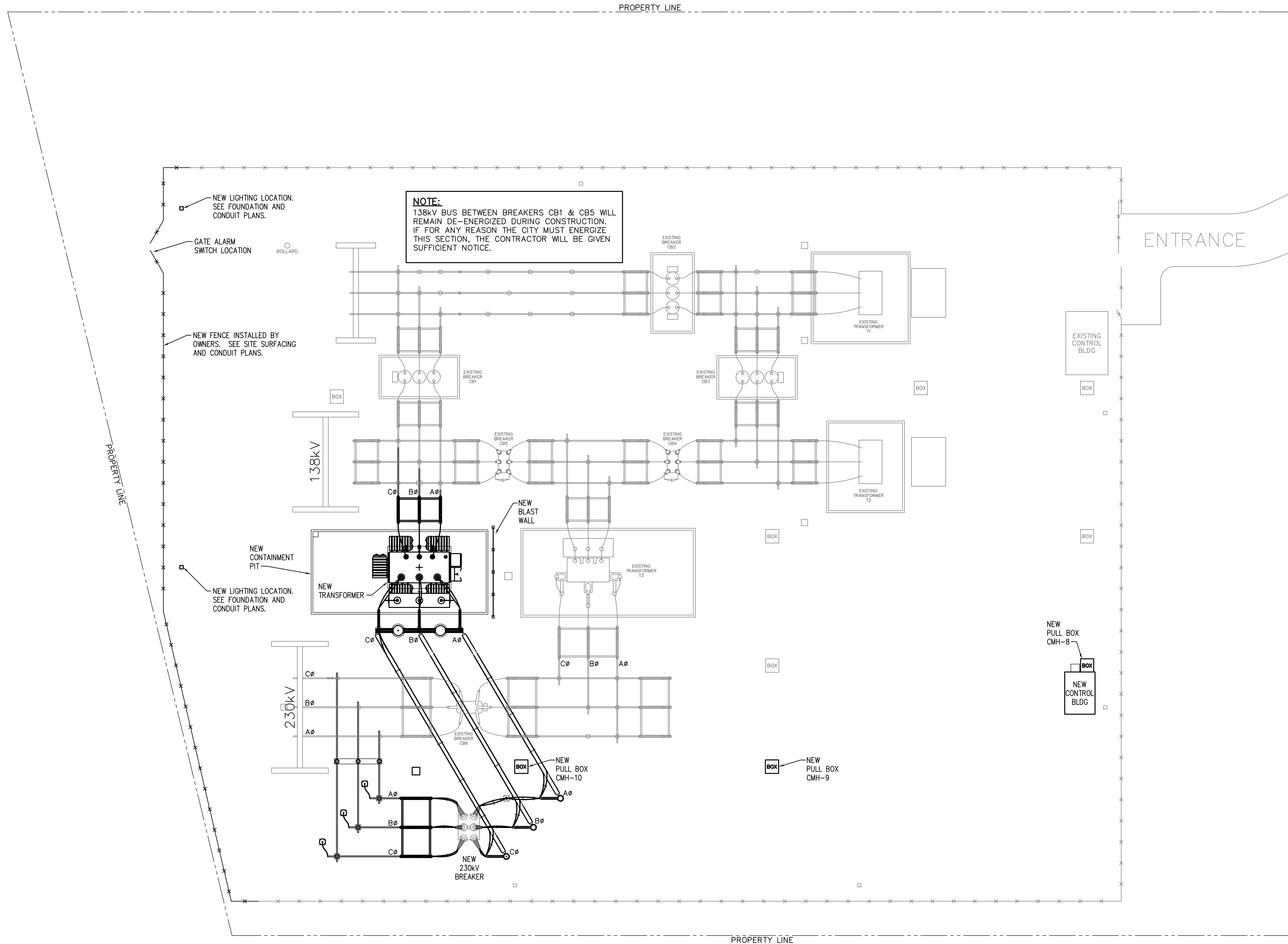
**BHA, INC.**

9342 LINDALE AVENUE  
BATON ROUGE, LOUISIANA

CONSTRUCTION

FOR BIDDING  
PURPOSES ONLY

BHA File No: 2019-E-16A  
May 2019 - Revision B



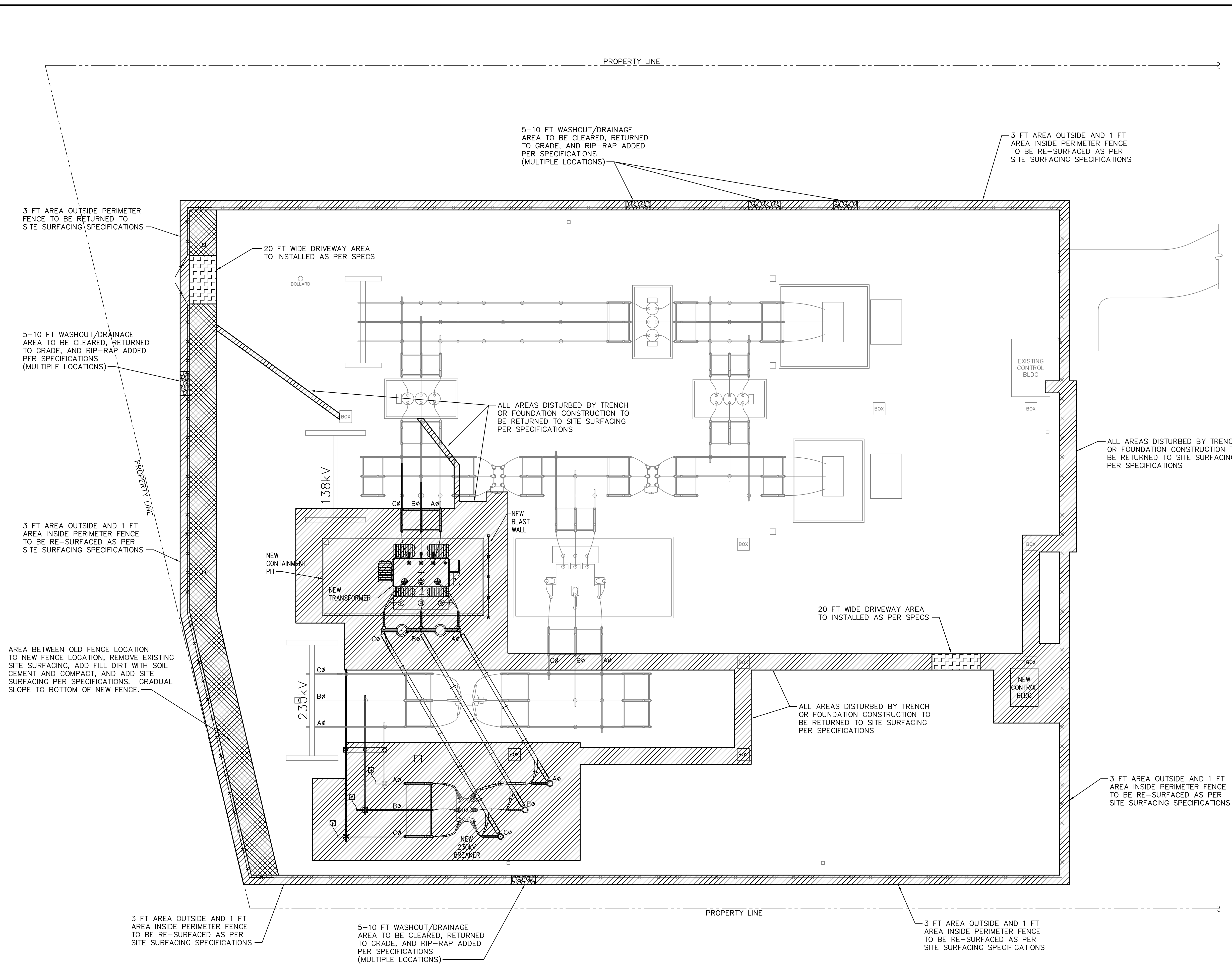
**LEGEND:**  
 — EXISTING  
 — PROPOSED

**SITE PLAN**  
 SCALE: 1"=20.0'

**FOR BIDDING PURPOSES ONLY**

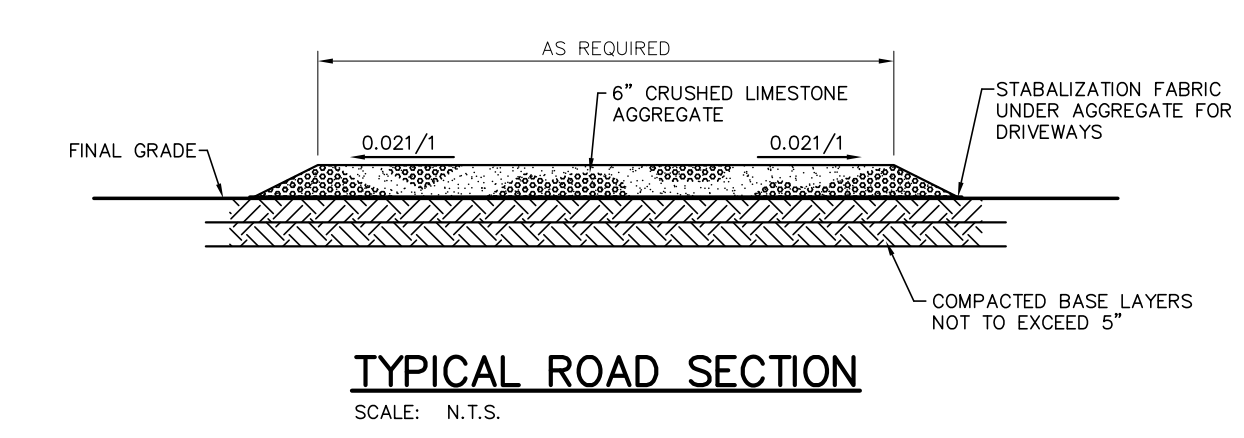
				<b>TWIN BRIDGES TRANSFORMER ADDITION SITE PLAN</b>			
				CITY OF ALEXANDRIA ALEXANDRIA, LOUISIANA			
SCALE: 1"=20.0'		DATE: 10/18/17		DRAWN BY: JHD		APPROVED BY: JJC	
PROJECT NO.: 2019-E-16A		REV.:		DRAWING NO.:		REV.:	
B 5/30/19 BHA FOR BIDDING PURPOSES ONLY - CONSTRUCTION		A 3/4/19 BHA FOR BIDDING PURPOSES ONLY - CONSTRUCTION		BHA, INC. BATON ROUGE, LOUISIANA		TBTA-01 B	
NO.	DATE	BY:	REVISIONS				

BHA-2424.DWG 04/01/2019



**LEGEND**

	<b>SITE SURFACING</b> AREA TO BE RETURNED TO SITE SURFACING PER SPECIFICATIONS 6" LIMESTONE AGGREGATE (GRADE 57)
	<b>SOIL CEMENT &amp; SITE SURFACING</b> AREA TO BE CLEARED OF SITE SURFACING. ADD SOIL CEMENT, GRADUAL SLOPE TO NEW FENCE BOTTOM, AND RETURNED TO SITE SURFACING PER SPECIFICATIONS. 6" LIMESTONE AGGREGATE (GRADE 57)
	<b>DRIVE-WAY</b> DRIVE-WAY AREA TO BE COMPACTED TO SPECIFICATIONS, COVERED WITH STABILIZATION FABRIC AND 6" LIMESTONE AGGREGATE (1/2 GRADE 610, 1/2 GRADE 57)
	<b>WASH OUT AREA/DRAINAGE</b> AT PERIMETER FENCE, ANY EXISTING WASHOUT AREAS TO BE COMPACTED PER SPECIFICATIONS. COVERED WITH STABILIZATION FABRIC AND 12" OF RIPRAP, (4"-5" ROCK)



**SITE PLAN**  
SCALE: 1"=20.0'

**LEGEND:**  
— EXISTING  
— PROPOSED

**FOR BIDDING PURPOSES ONLY**

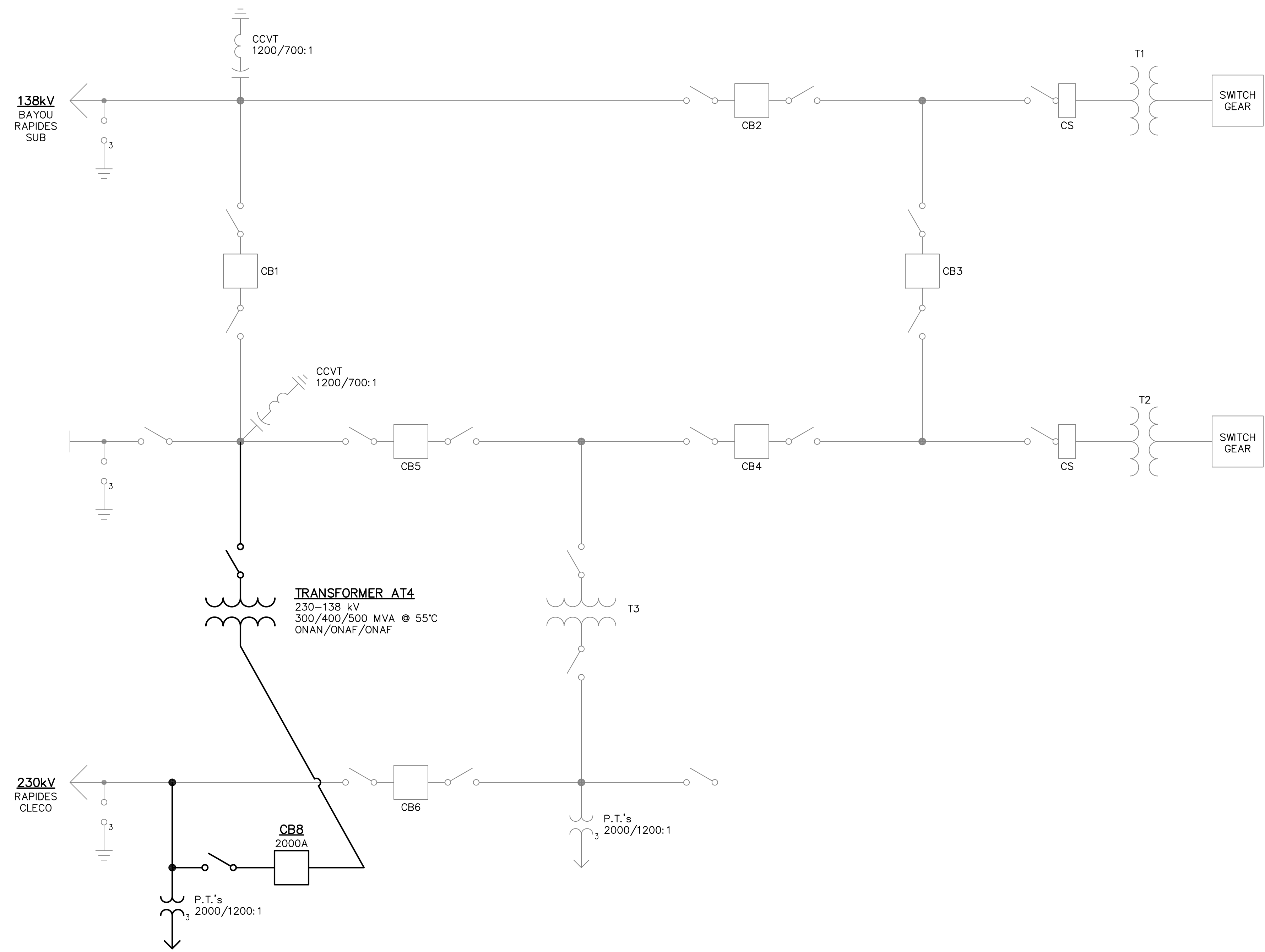
NO.	DATE	BY	REVISIONS
B	5/30/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION
A	3/4/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION

**TWIN BRIDGES TRANSFORMER ADDITION**  
**SITE SURFACING PLAN**  
CITY OF ALEXANDRIA  
ALEXANDRIA, LOUISIANA

SCALE: 1"=20.0'	DATE: 10/18/17	DRAWN BY: JHD	APPROVED BY: JJC	PROJECT NO.: 2019-E-16A
<b>BHA, INC.</b> BATON ROUGE, LOUISIANA			DRAWING NO.: TBTA-01A	REV.: B

BHA: COATBA02.dwg 05/20/19 11:33AM BY #27

**NOTE:**  
 138kV BUS BETWEEN BREAKERS CB1 & CB5 WILL REMAIN DE-ENERGIZED DURING CONSTRUCTION. IF FOR ANY REASON THE CITY MUST ENERGIZE THIS SECTION, THE CONTRACTOR WILL BE GIVEN SUFFICIENT NOTICE.



**PARTIAL ONE-LINE DIAGRAM**  
 N.T.S.

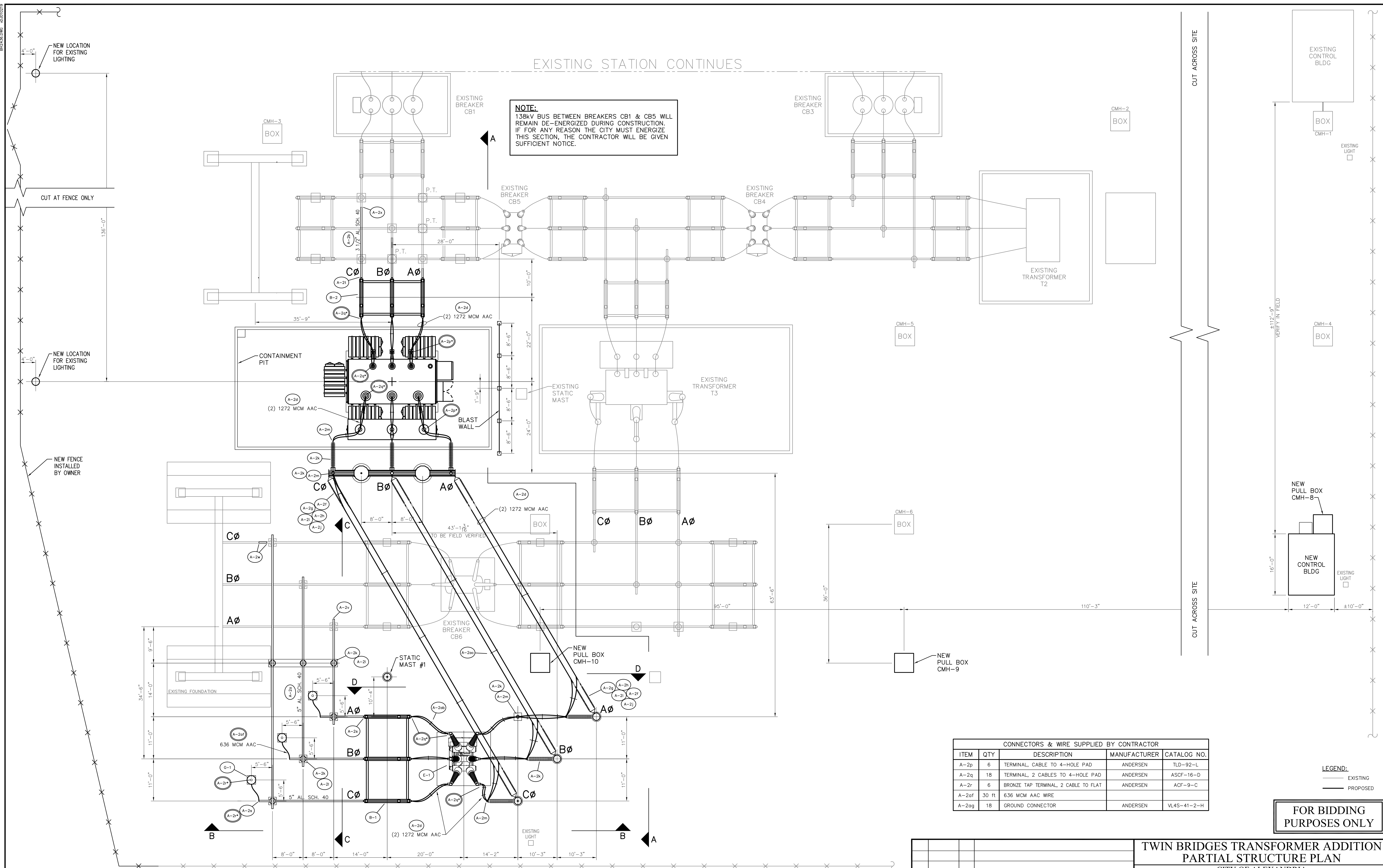
**LEGEND:**  
 — EXISTING  
 — PROPOSED

**FOR BIDDING PURPOSES ONLY**

				<b>TWIN BRIDGES TRANSFORMER ADDITION PARTIAL ONE-LINE DIAGRAM</b>			
				CITY OF ALEXANDRIA ALEXANDRIA, LOUISIANA			
SCALE		DATE		DRAWN BY		APPROVED BY	
N.T.S.		10/18/17		JHD		JJC	
				PROJECT NO.: <b>2019-E-16A</b>			
NO.		DATE		BY		REVISIONS	
B		5/30/19		BHA		FOR BIDDING PURPOSES ONLY - CONSTRUCTION	
A		3/4/19		BHA		FOR BIDDING PURPOSES ONLY - CONSTRUCTION	
				<b>BHA, INC.</b> BATON ROUGE, LOUISIANA			
				DRAWING NO.:		REV.:	
				<b>TBTA-02</b>		<b>B</b>	

EXISTING STATION CONTINUES

**NOTE:**  
138KV BUS BETWEEN BREAKERS CB1 & CB5 WILL REMAIN DE-ENERGIZED DURING CONSTRUCTION. IF FOR ANY REASON THE CITY MUST ENERGIZE THIS SECTION, THE CONTRACTOR WILL BE GIVEN SUFFICIENT NOTICE.



CONNECTORS & WIRE SUPPLIED BY CONTRACTOR				
ITEM	QTY	DESCRIPTION	MANUFACTURER	CATALOG NO.
A-2p	6	TERMINAL, CABLE TO 4-HOLE PAD	ANDERSEN	TLD-92-L
A-2q	18	TERMINAL, 2 CABLES TO 4-HOLE PAD	ANDERSEN	ASCF-16-D
A-2r	6	BRONZE TAP TERMINAL, 2 CABLE TO FLAT	ANDERSEN	ACF-9-C
A-2of	30 ft	636 MCM AAC WIRE		
A-2og	18	GROUND CONNECTOR	ANDERSEN	VL4S-41-2-H

**LEGEND:**  
— EXISTING  
— PROPOSED

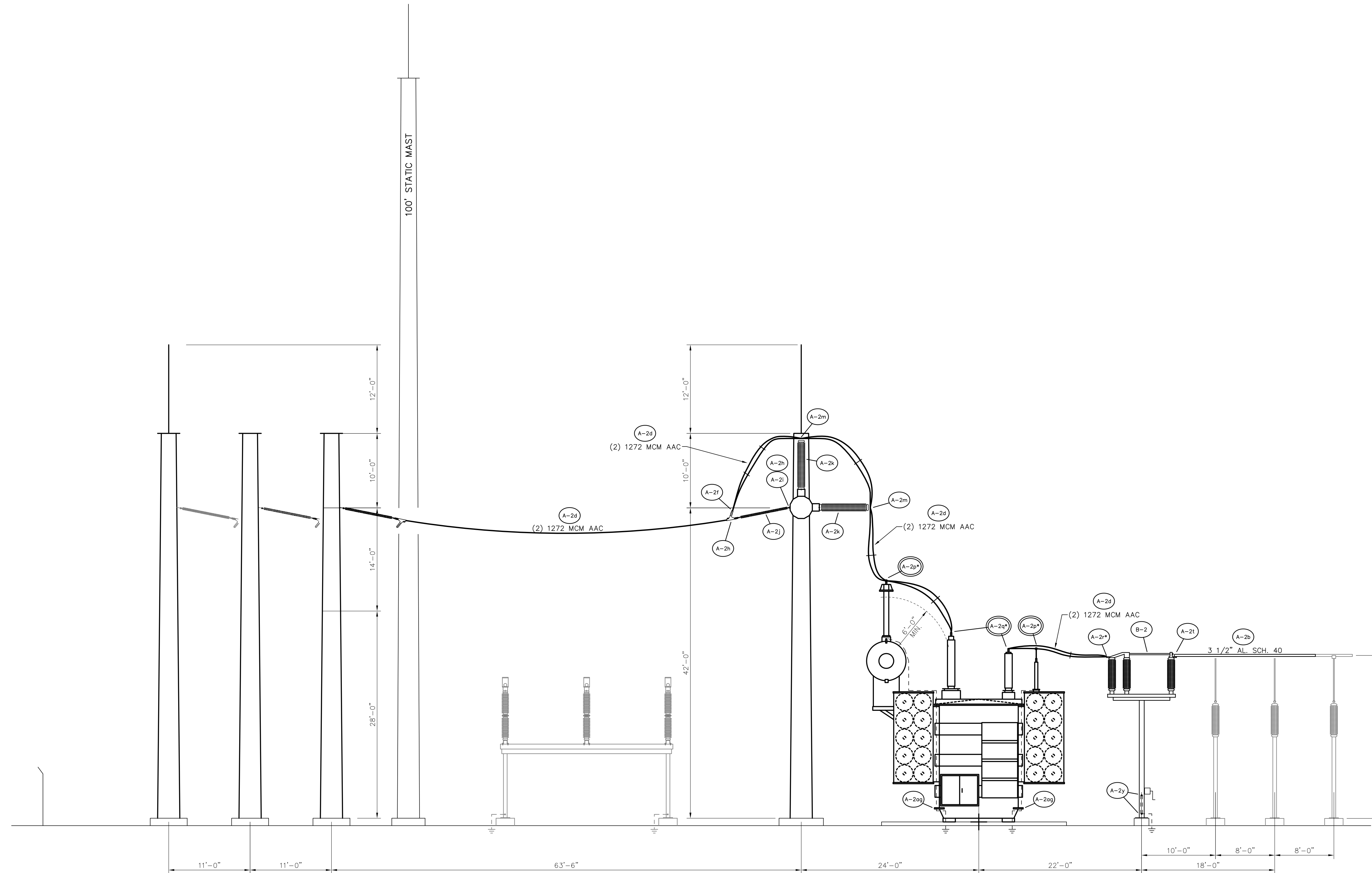
**FOR BIDDING PURPOSES ONLY**

<p><b>TWIN BRIDGES TRANSFORMER ADDITION PARTIAL STRUCTURE PLAN</b></p> <p>CITY OF ALEXANDRIA ALEXANDRIA, LOUISIANA</p>		<p>SCALE: 3/32"=1'-0"</p>	
<p>B 5/30/19 BHA FOR BIDDING PURPOSES ONLY - CONSTRUCTION</p> <p>A 3/4/19 BHA FOR BIDDING PURPOSES ONLY - CONSTRUCTION</p>	<p>DATE: 10/18/17</p> <p>BY: JHD</p>	<p>APPROVED BY: JJC</p>	<p>PROJECT NO.: 2019-E-16A</p> <p><b>BHA, INC.</b> BATON ROUGE, LOUISIANA</p>
<p>NO. DATE BY: REVISIONS</p>		<p>DRAWING NO.: TBTA-03 REV.: B</p>	

**STRUCTURE PLAN**  
SCALE: 3/32"=1'-0"  
\* - CONNECTOR AND/OR WIRE FURNISHED BY CONTRACTOR, SEE CHART THIS SHEET

BHA\245.DWG 10/01/2019

Prepared by BHA, Inc. BHA\2434.DWG 04/01/2019



**STRUCTURE ELEVATION A-A**

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

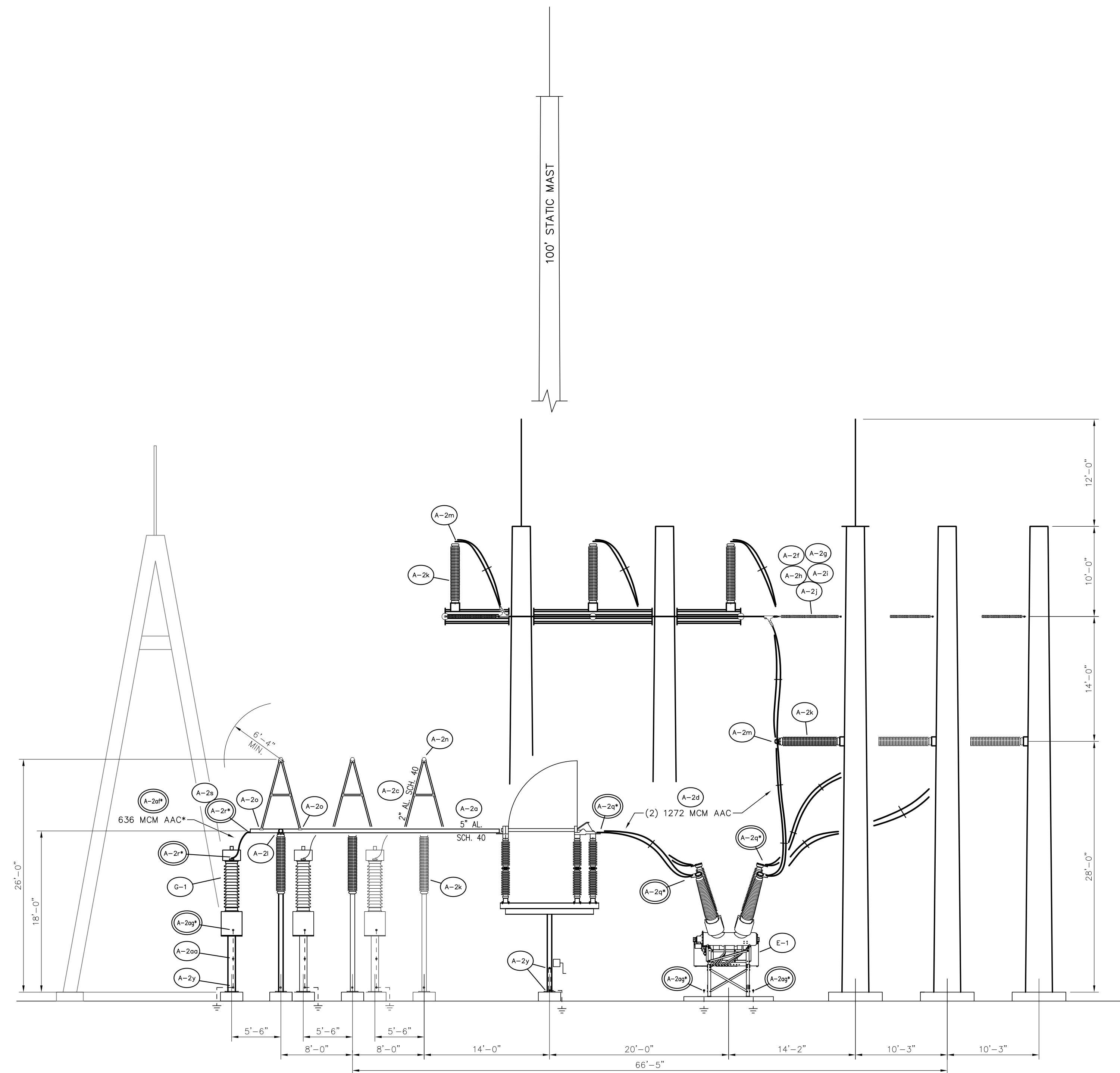
\* - CONNECTOR AND/OR WIRE FURNISHED BY CONTRACTOR, SEE CHART SHT. TBTA-03

**LEGEND:**  
 — EXISTING  
 — PROPOSED

**FOR BIDDING  
PURPOSES ONLY**

				<b>TWIN BRIDGES TRANSFORMER ADDITION STRUCTURE ELEVATIONS</b>			
				CITY OF ALEXANDRIA ALEXANDRIA, LOUISIANA			
SCALE	DATE	DRAWN BY	APPROVED BY	PROJECT NO.:			
1/8"=1'-0"	10/18/17	JHD	JJC	2019-E-16A			
				<b>BHA, INC.</b>		DRAWING NO.:	
				BATON ROUGE, LOUISIANA		REV.:	
NO.	DATE	BY	REVISIONS				
B	5/30/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION				
A	3/4/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION				

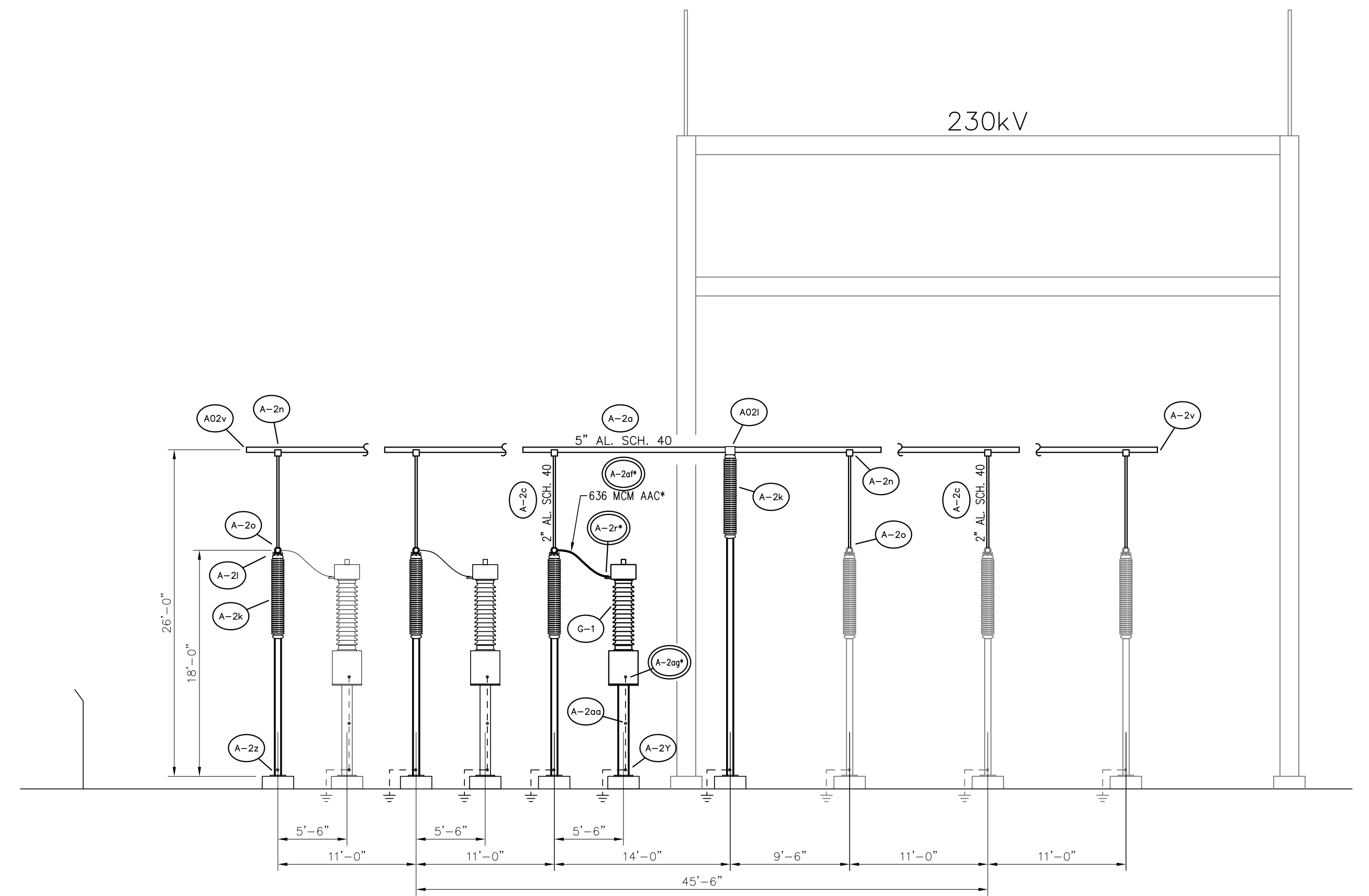




**STRUCTURE ELEVATION B-B**

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

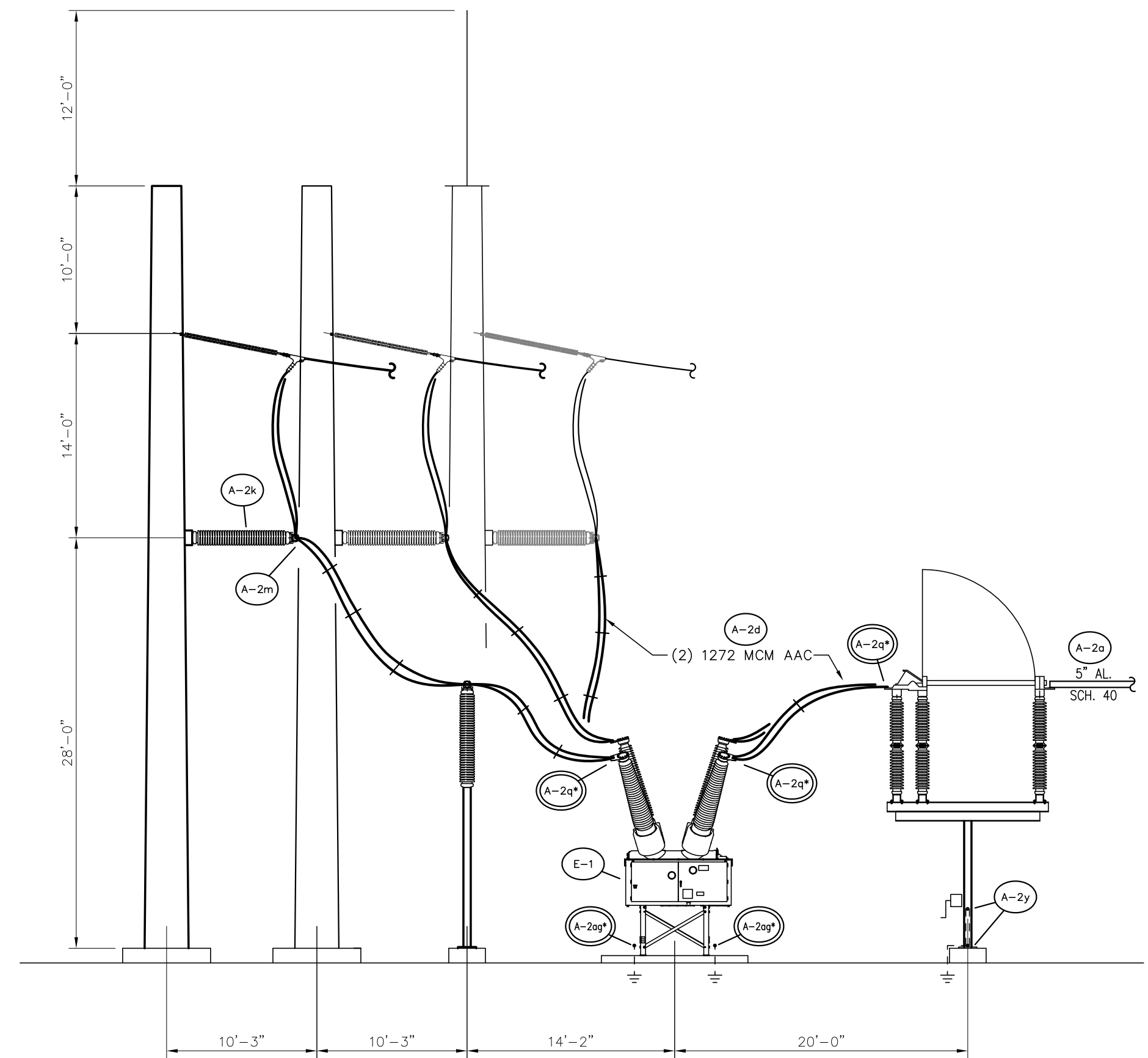
\* - CONNECTOR AND/OR WIRE FURNISHED BY CONTRACTOR, SEE CHART SHT. TBTA-03



**STRUCTURE ELEVATION C-C**

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

\* - CONNECTOR AND/OR WIRE FURNISHED BY CONTRACTOR, SEE CHART SHT. TBTA-03



**STRUCTURE ELEVATION D-D**

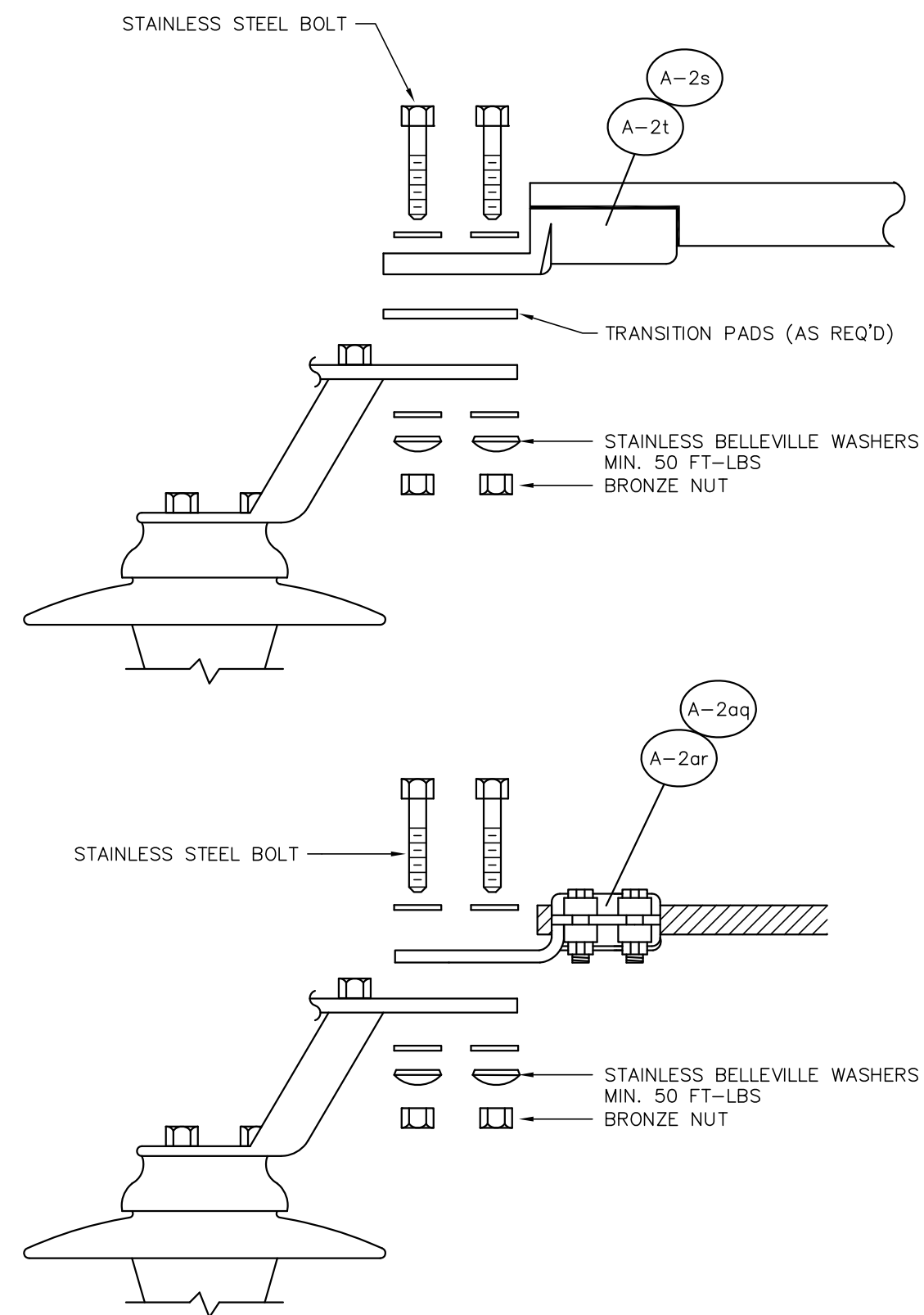
SCALE: 1/8"=1'-0"

\* - CONNECTOR AND/OR WIRE FURNISHED BY CONTRACTOR, SEE CHART SHT. TBTA-03

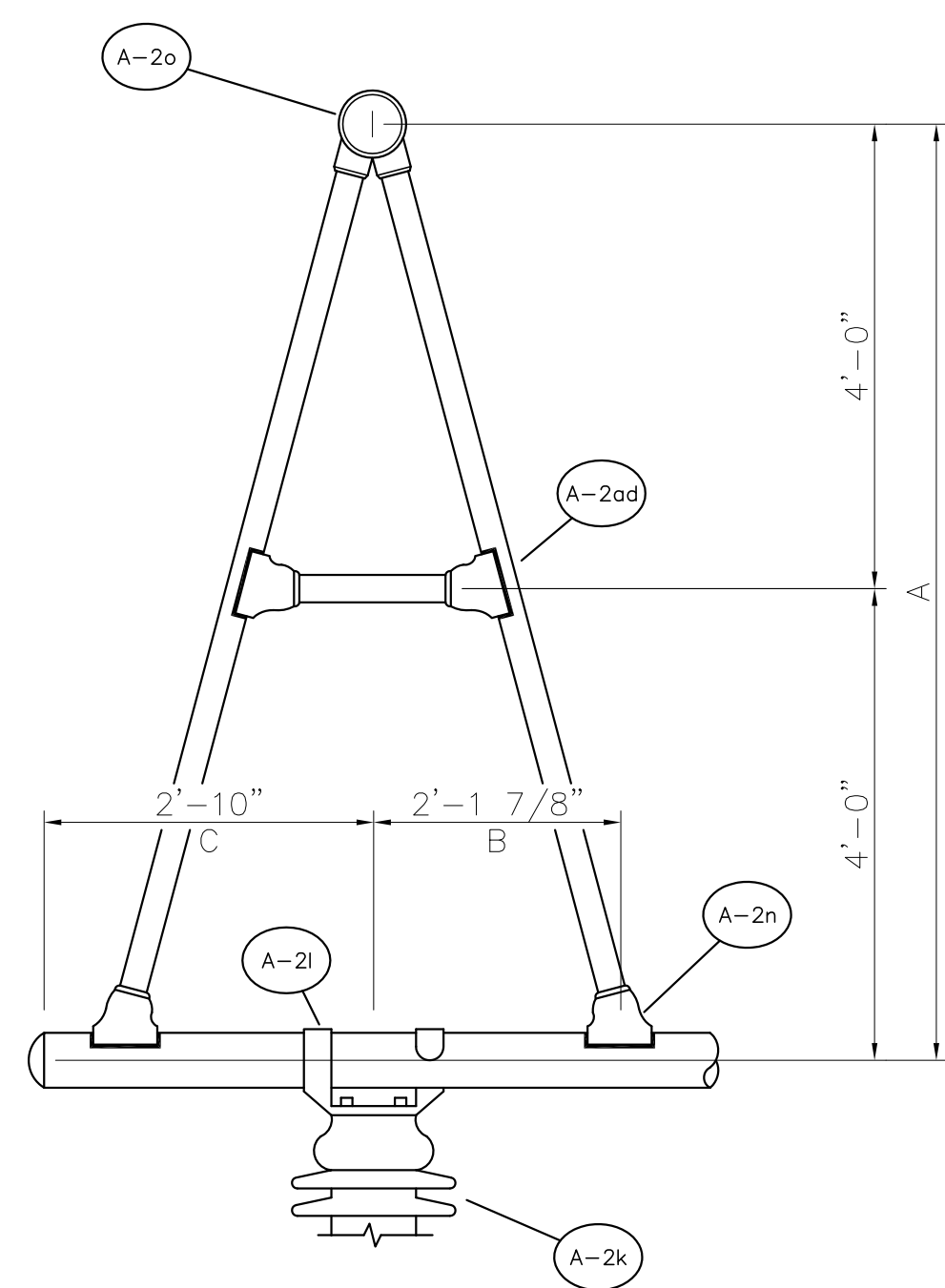
**LEGEND:**  
 — EXISTING  
 — PROPOSED

**FOR BIDDING PURPOSES ONLY**

REVISIONS				TWIN BRIDGES TRANSFORMER ADDITION STRUCTURE ELEVATIONS			
B	5/30/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION	CITY OF ALEXANDRIA ALEXANDRIA, LOUISIANA SCALE: 1/8"=1'-0"    DATE: 10/18/17    DRAWN BY: JHD    APPROVED BY: JJC    PROJECT NO.: 2019-E-16A			
A	3/4/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION				
NO.    DATE    BY:				<b>BHA, INC.</b> BATON ROUGE, LOUISIANA DRAWING NO.: TBTA-03B    REV.: B			

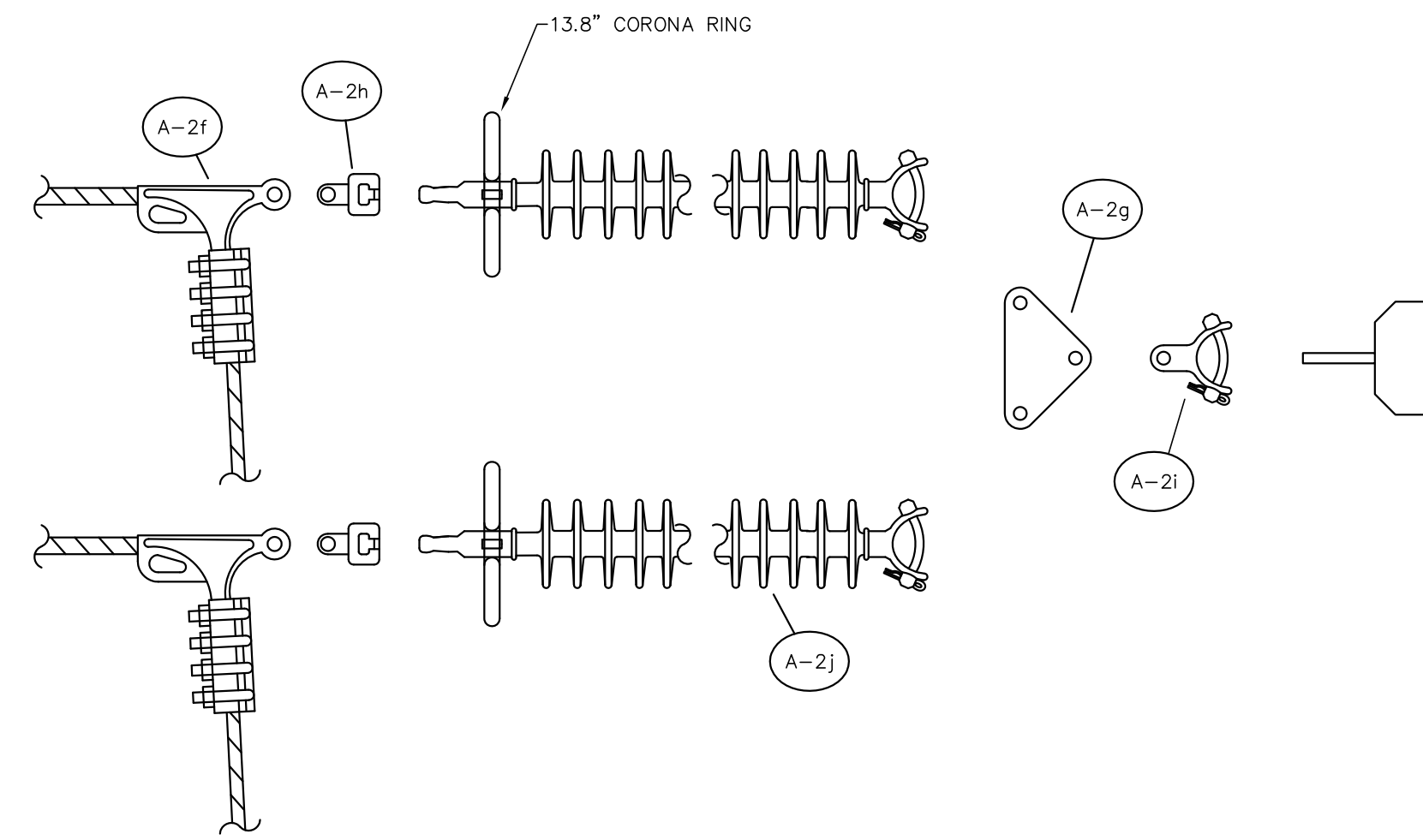


① SWITCH TERMINAL CONNECTION DETAIL



KV	A	B	C
230	8'-0"	2'-1 7/8"	2'-10"

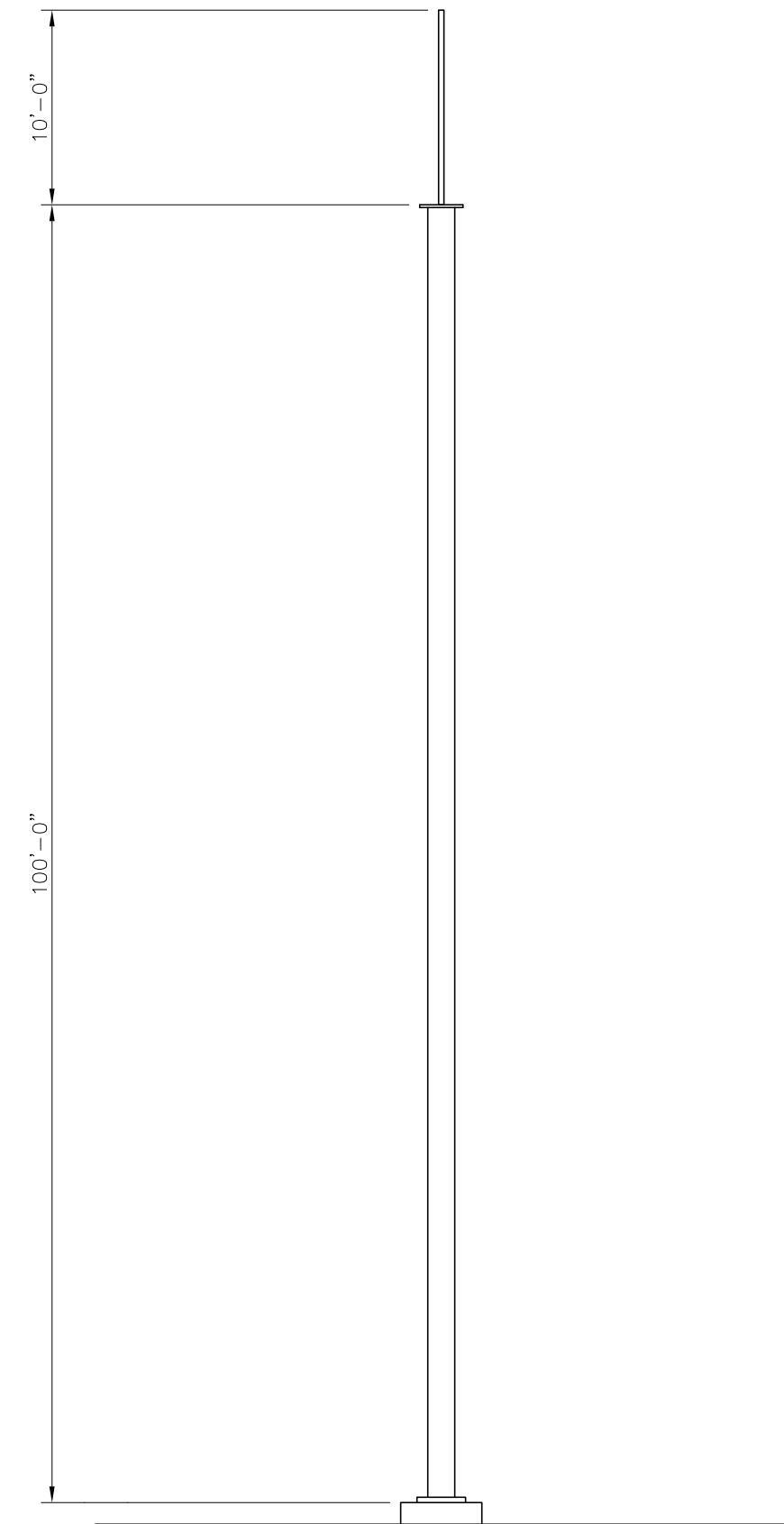
② BUS SUPPORT DETAIL



③ INSULATOR STRING DETAIL

**NOTES :**

- FABRICATOR SHALL FURNISH STAINLESS STEEL BOLTS, FOR ALL BOLTED ALUMINUM CONNECTORS. ALL BOLTS SHALL BE FURNISHED WITH TWO (2) STAINLESS STEEL FLAT WASHERS AND ONE (1) STAINLESS STEEL BELLEVILLE WASHER.
- THE CONTRACTOR SHALL FURNISH NO-OX-ID GRADE A FOR ALL ELECTRICAL CONNECTIONS.
- ALL 1/2" S.S. BOLTS SHALL BE TORQUED TO 40 FT-LBS.



④ STATIC MAST DETAIL

FOR BIDDING  
PURPOSES ONLY

NO.	DATE	BY	REVISIONS
B	5/30/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION
A	3/4/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION

TWIN BRIDGES TRANSFORMER ADDITION  
MISCELLANEOUS DETAILS  
CITY OF ALEXANDRIA  
ALEXANDRIA, LOUISIANA

SCALE N.T.S.	DATE 03/12/18	DRAWN BY JHD	APPROVED BY JJC	PROJECT NO. : 2019-E-16A
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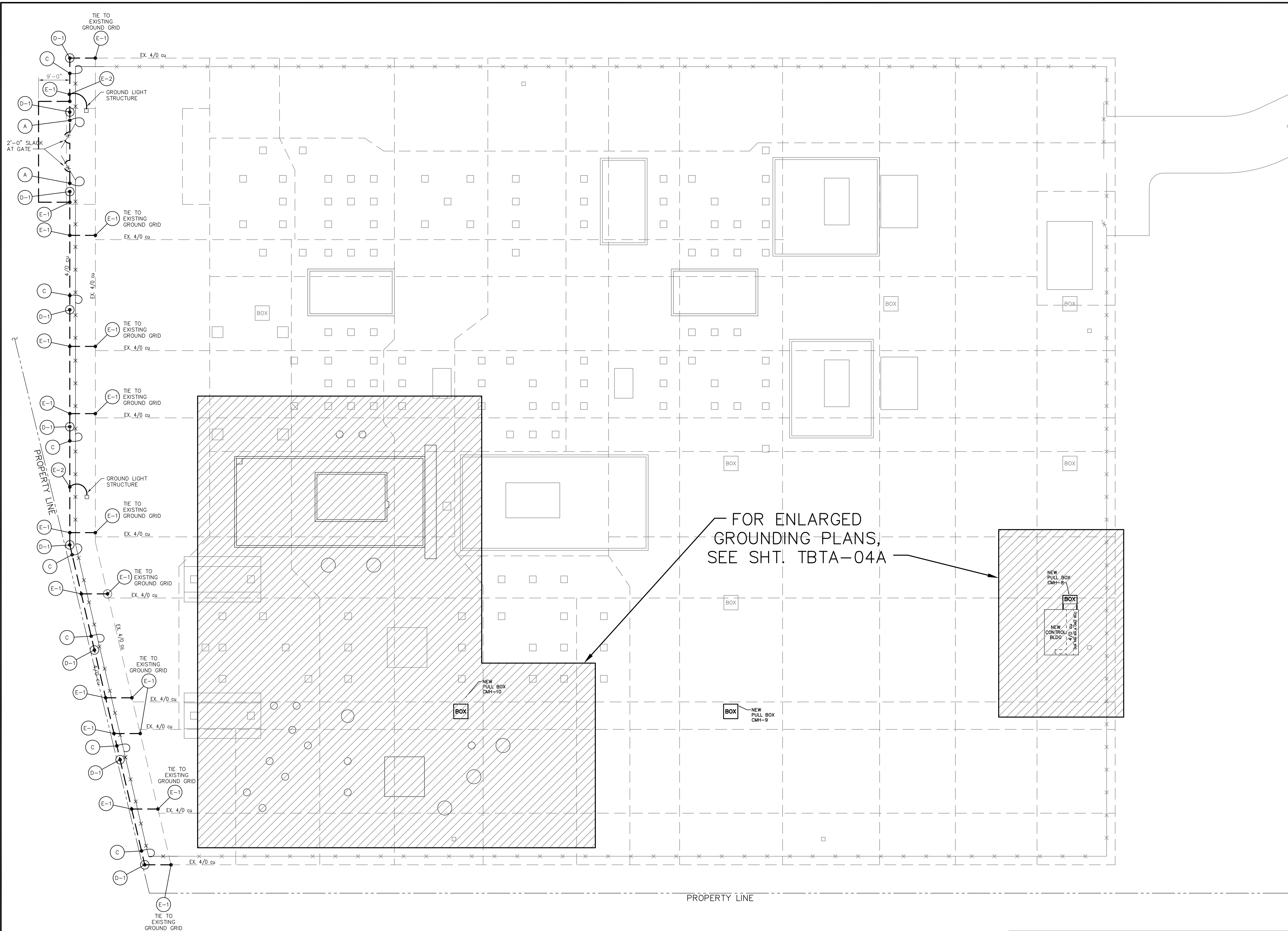
**BHA, INC.**  
BATON ROUGE, LOUISIANA

DRAWING NO. :  
TBTA-03C

REV. :  
B

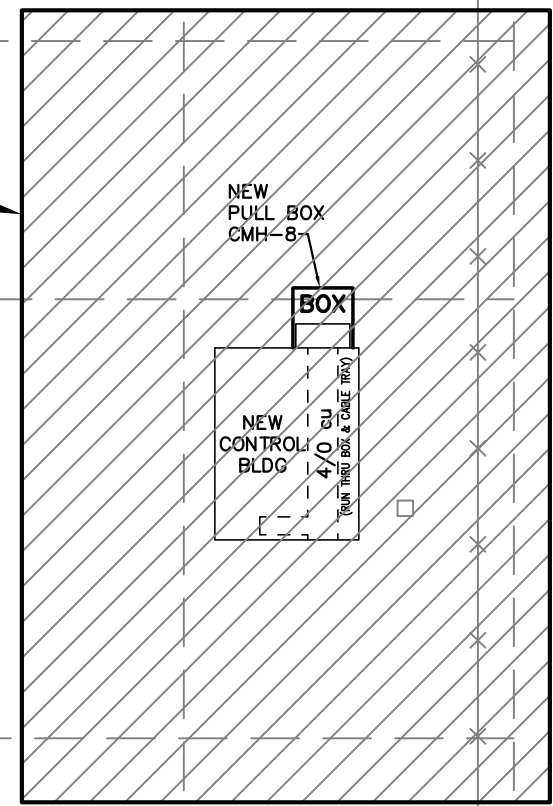


BHA\24\DWG\20190219



- NOTES:**
1. ALL GROUNDING CONDUCTORS, TAPS AND GROUND RODS TO BE A MINIMUM OF 1'-6" BELOW GRADE.
  2. BUBBLES REFERENCE DETAILS ON SHT. TBTA-04B.
  3. CONTRACTOR TO VERIFY ALL SWITCH HANDLE LOCATIONS PRIOR TO INSTALLING GROUND SYSTEM.
  4. WHEN NEW FOUNDATIONS AND PULLBOXES INTERFERE WITH EXISTING GROUND GRID, THE CONTRACTOR SHALL RELOCATE GROUND WIRE, IF POSSIBLE, OR MODIFY GROUND GRID TO EXCEPT NEW FOUNDATIONS AND PULLBOXES.
  5. ALL ABOVE AND BELOW GRADE GROUND WIRE SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.

FOR ENLARGED  
GROUNDING PLANS,  
SEE SHT. TBTA-04A



**LEGEND:**  
 - - - - - EXISTING  
 ——— PROPOSED

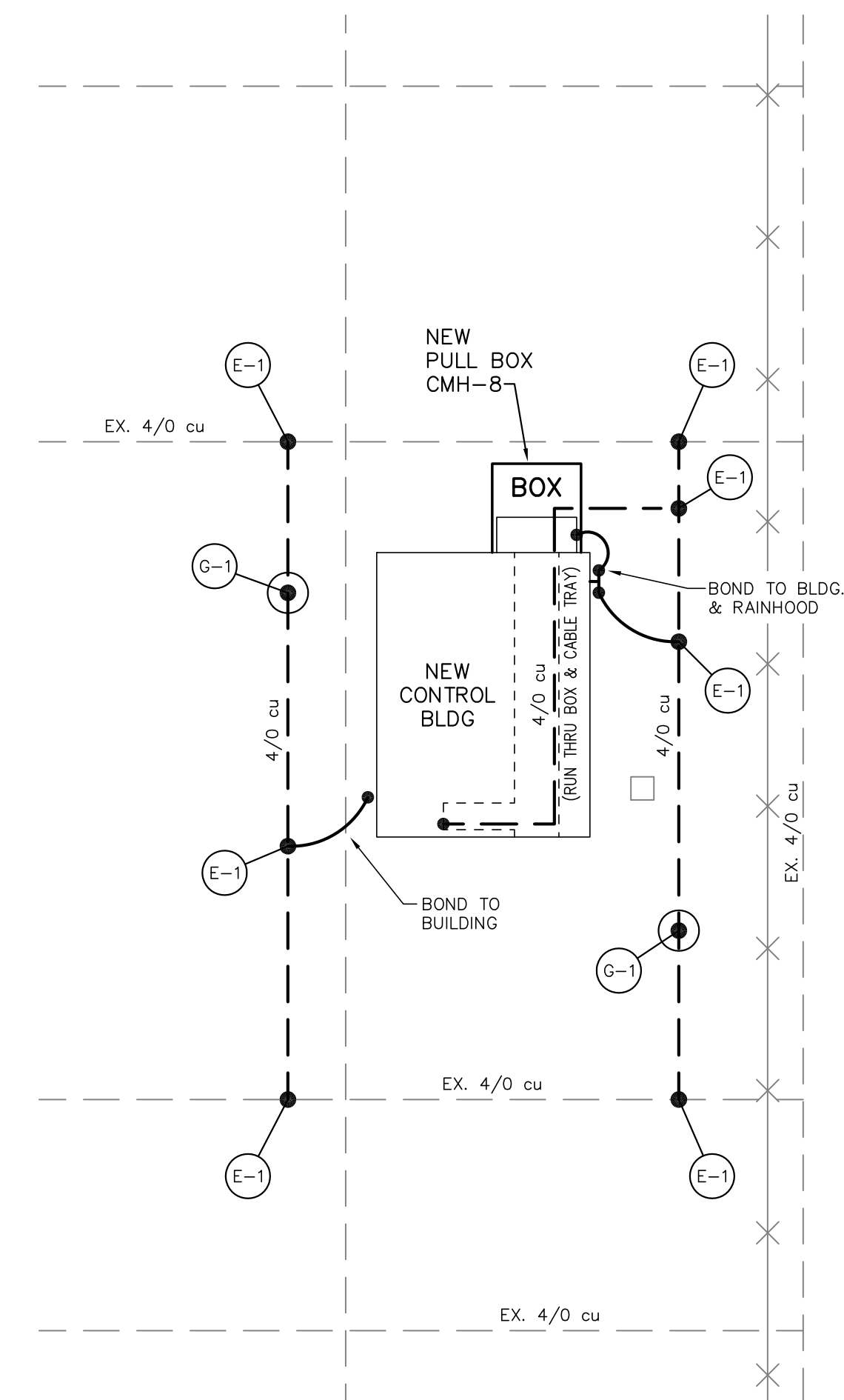
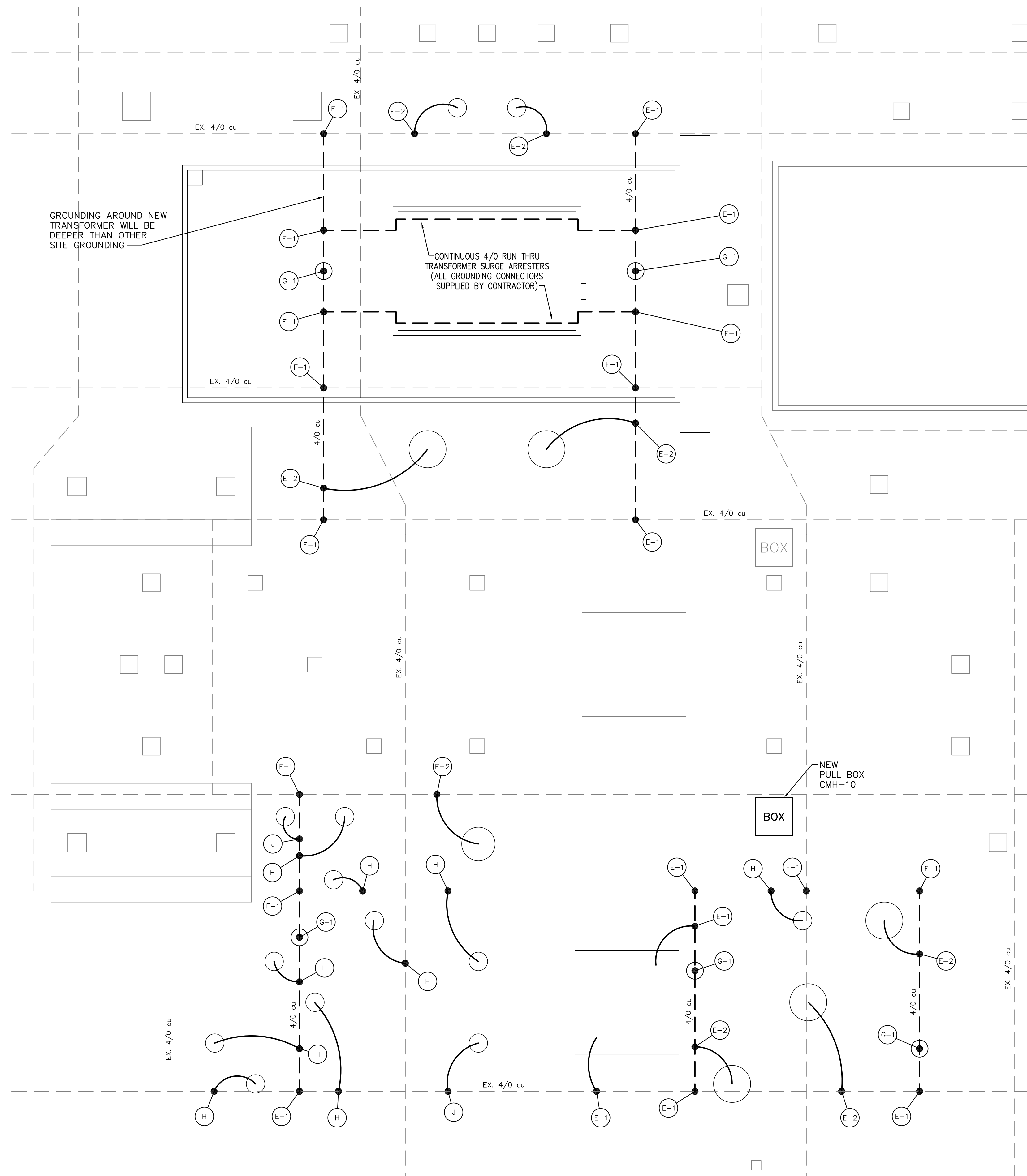
**FOR BIDDING  
PURPOSES ONLY**

**OVERALL GROUNDING PLAN**  
SCALE: 1/16"=1'-0"

NO.	DATE	BY	REVISIONS
B	5/30/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION
A	3/4/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION

**TWIN BRIDGES TRANSFORMER ADDITION  
OVERALL GROUNDING PLAN**  
CITY OF ALEXANDRIA  
ALEXANDRIA, LOUISIANA

SCALE: 1/16"=1'-0"	DATE: 2/28/19	DRAWN BY: JHD	APPROVED BY: JJC	PROJECT NO.: 2019-E-16A
<b>BHA, INC.</b> BATON ROUGE, LOUISIANA			DRAWING NO.: TBTA-04	REV.: B



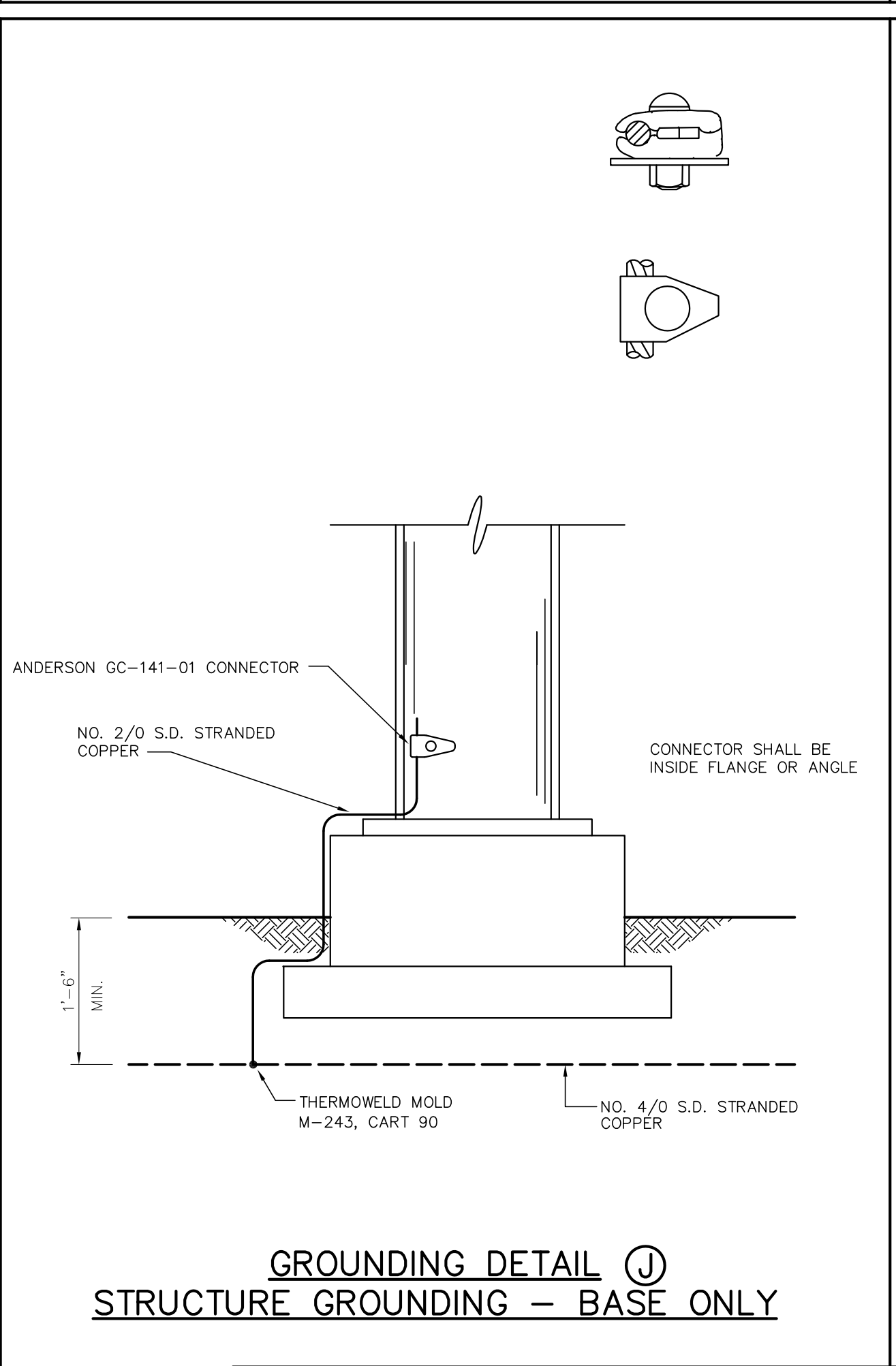
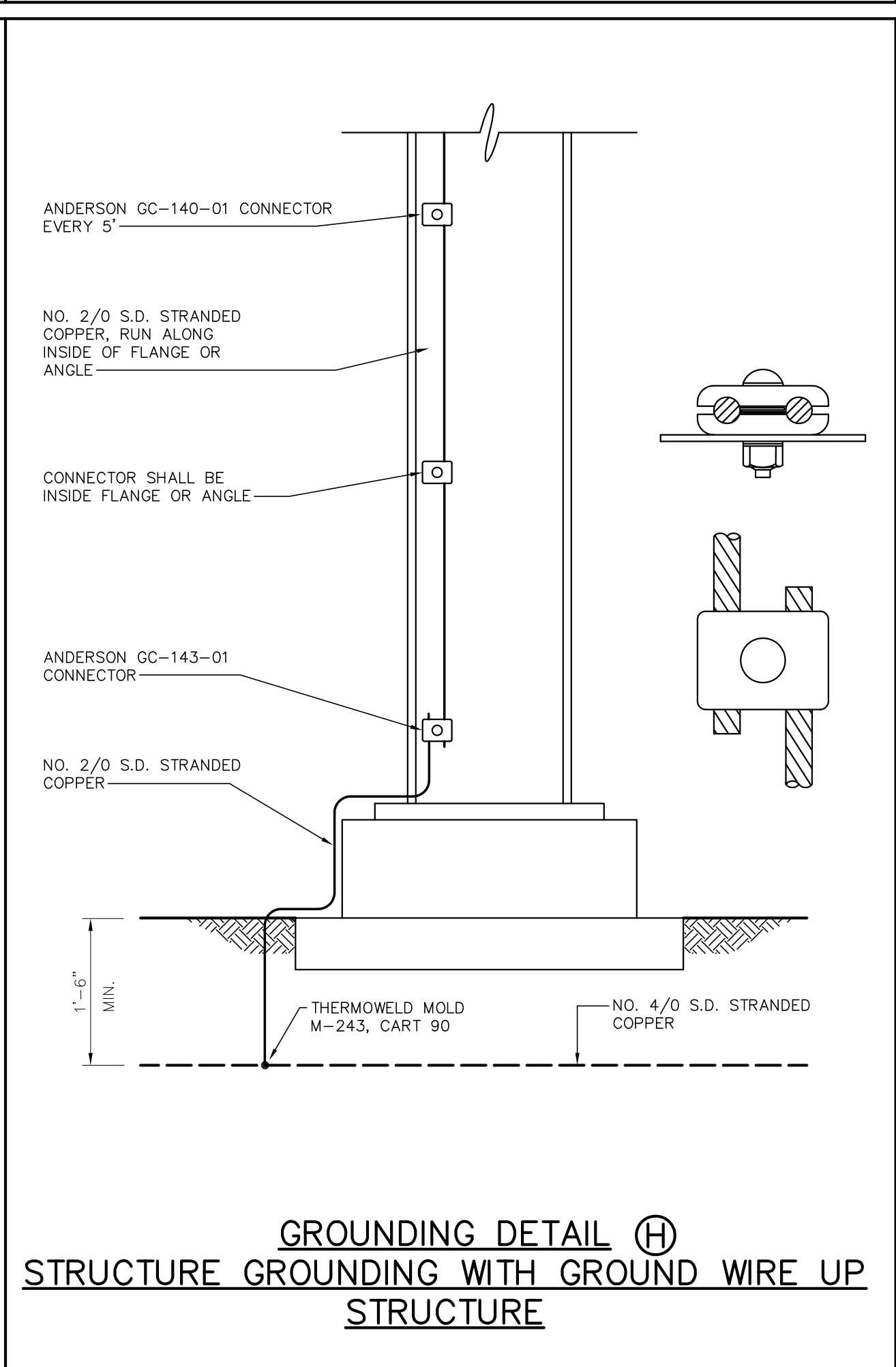
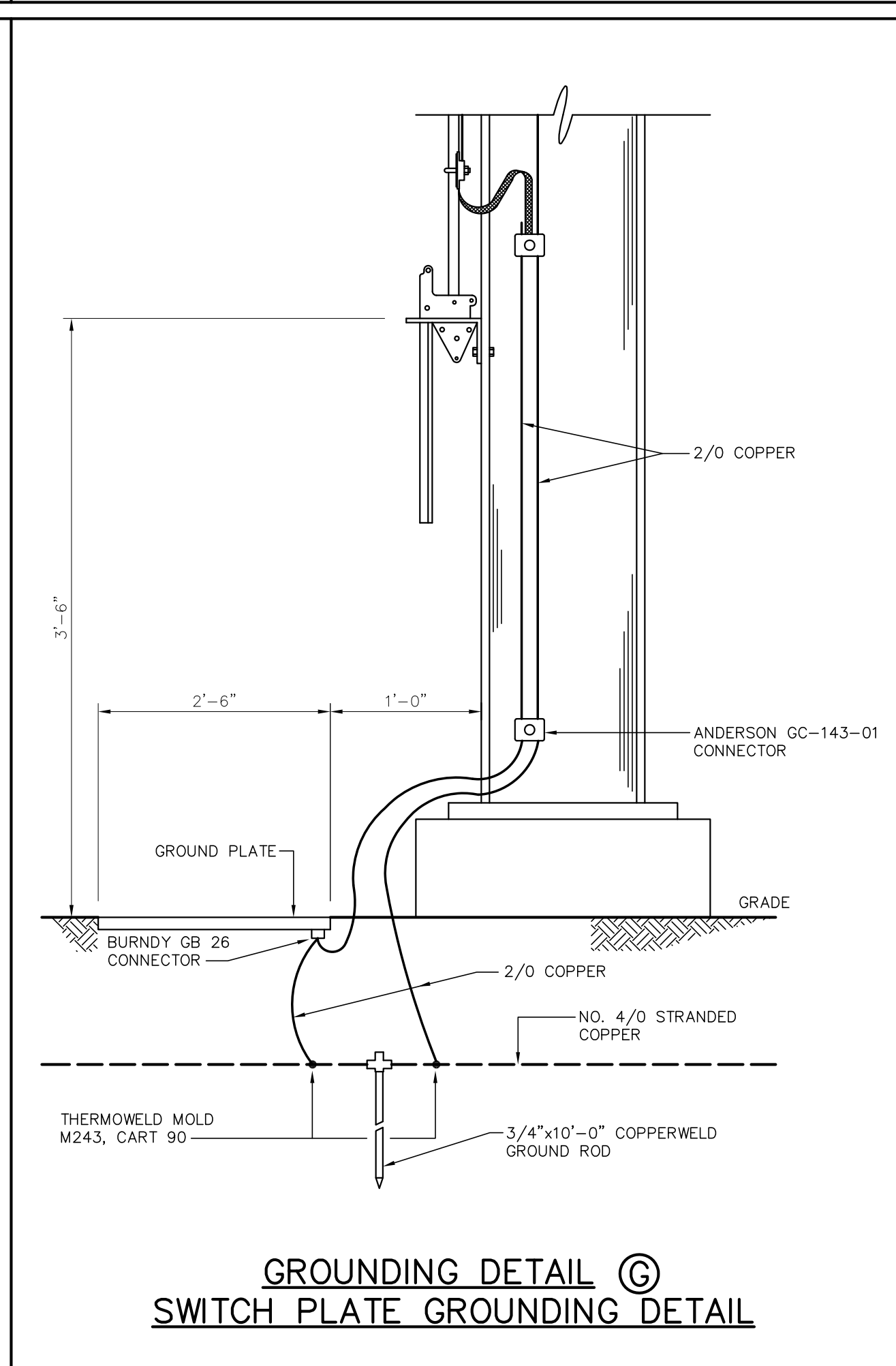
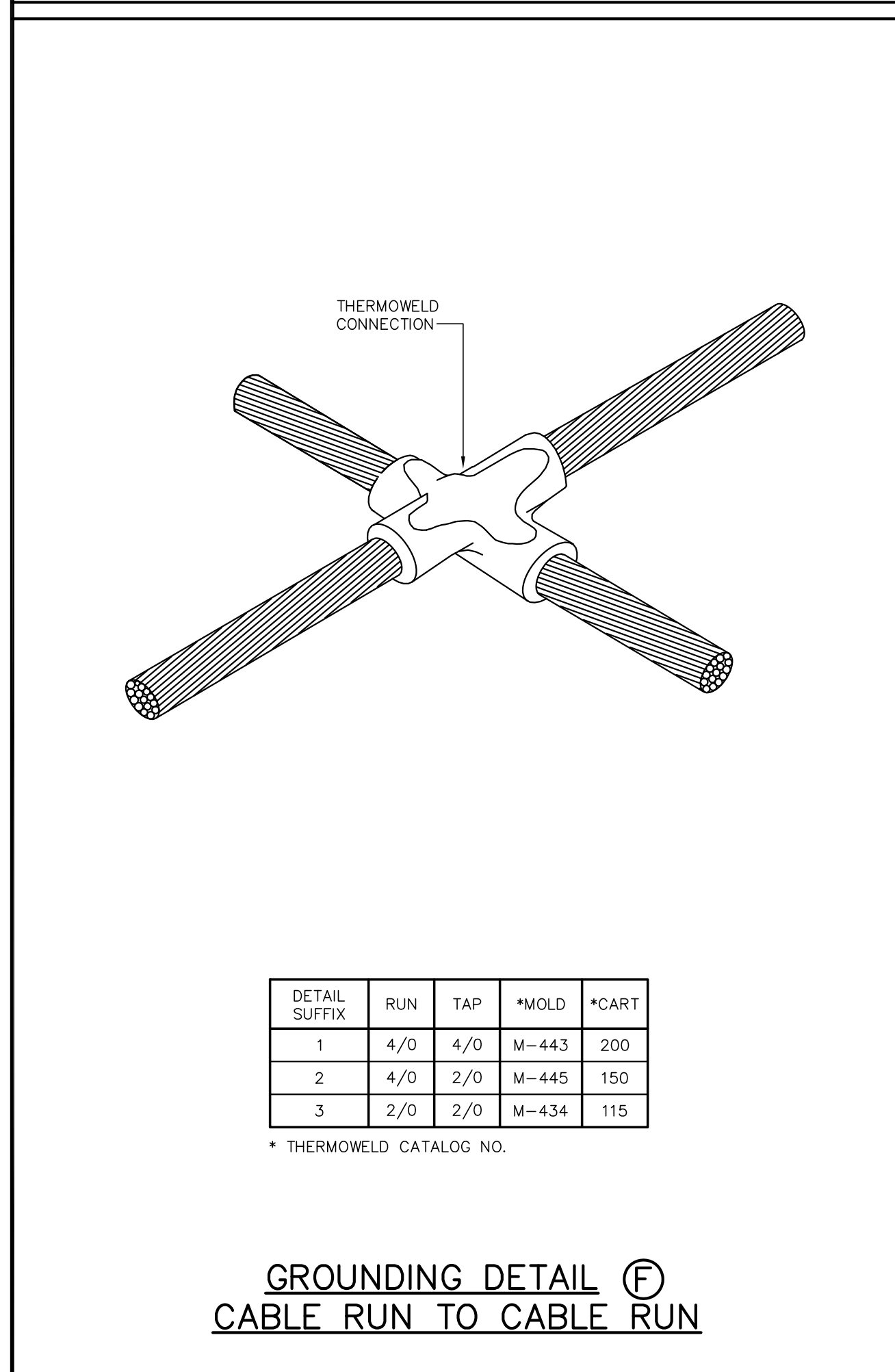
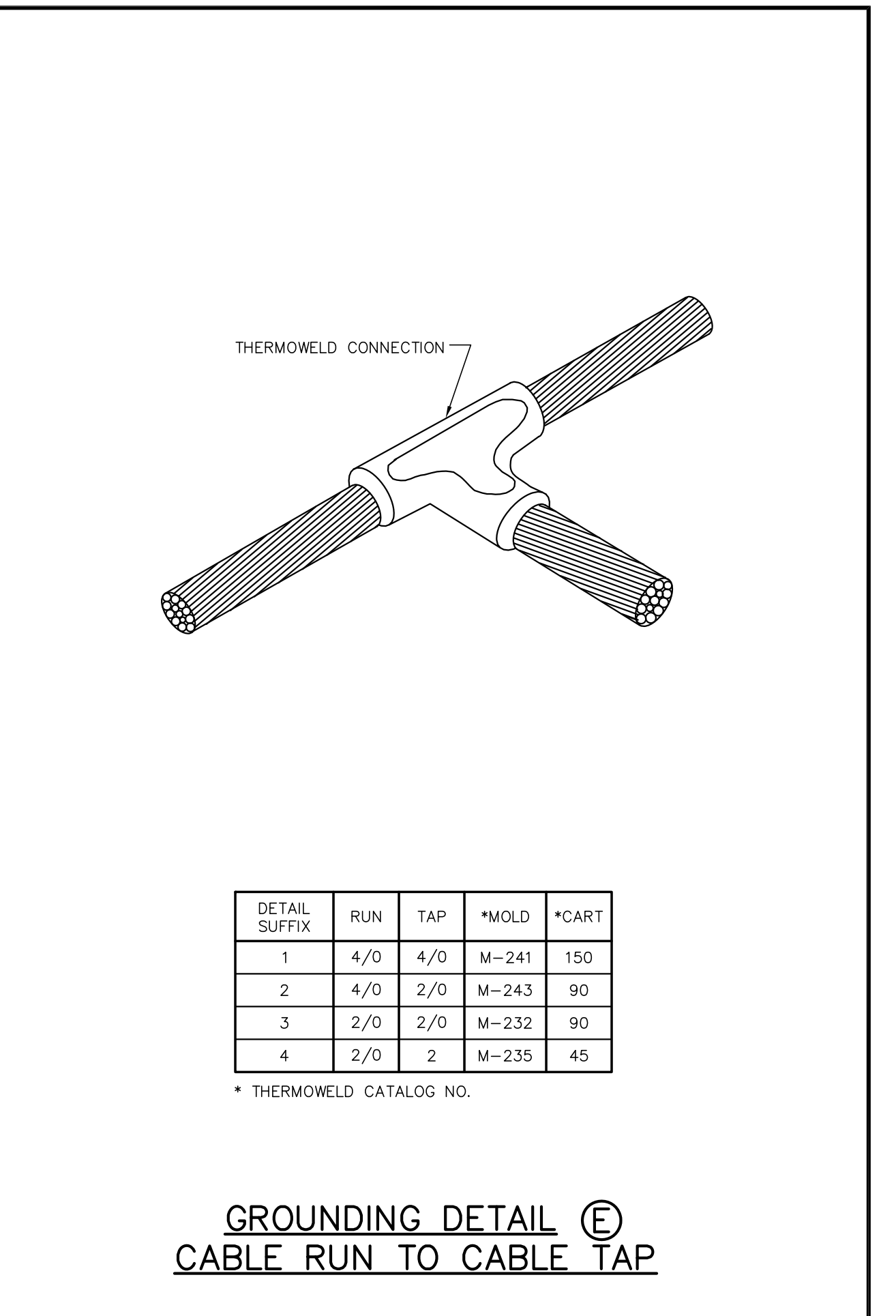
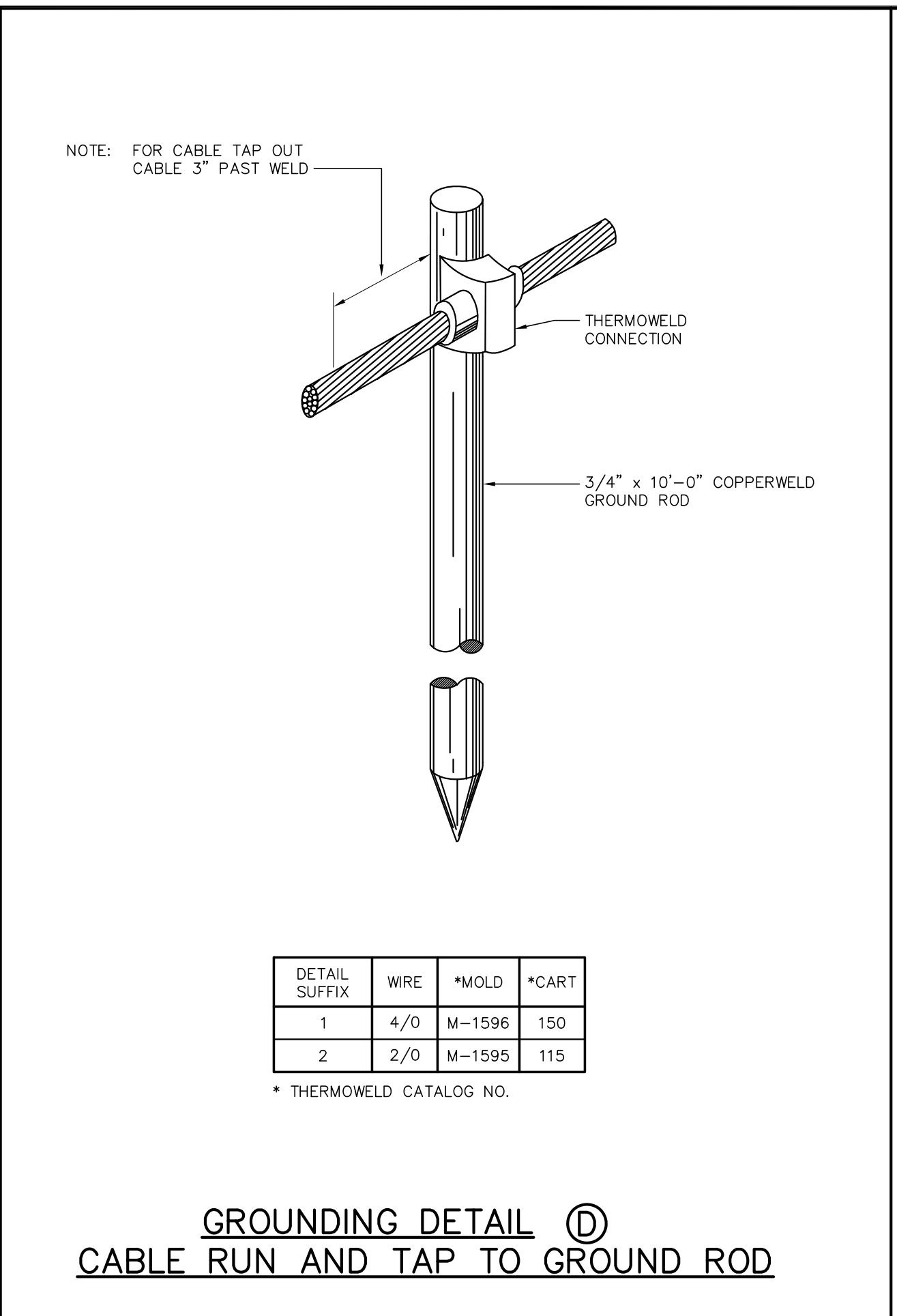
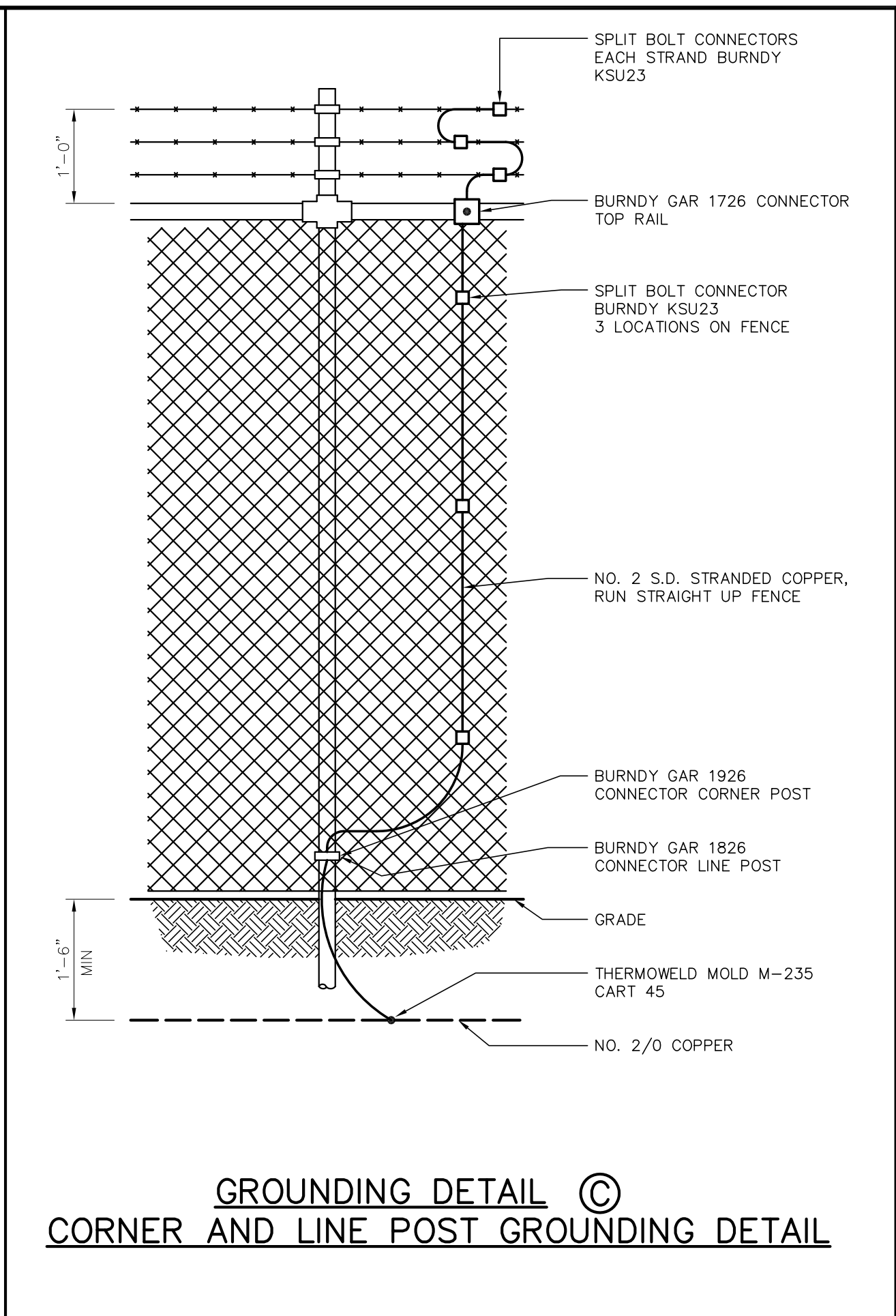
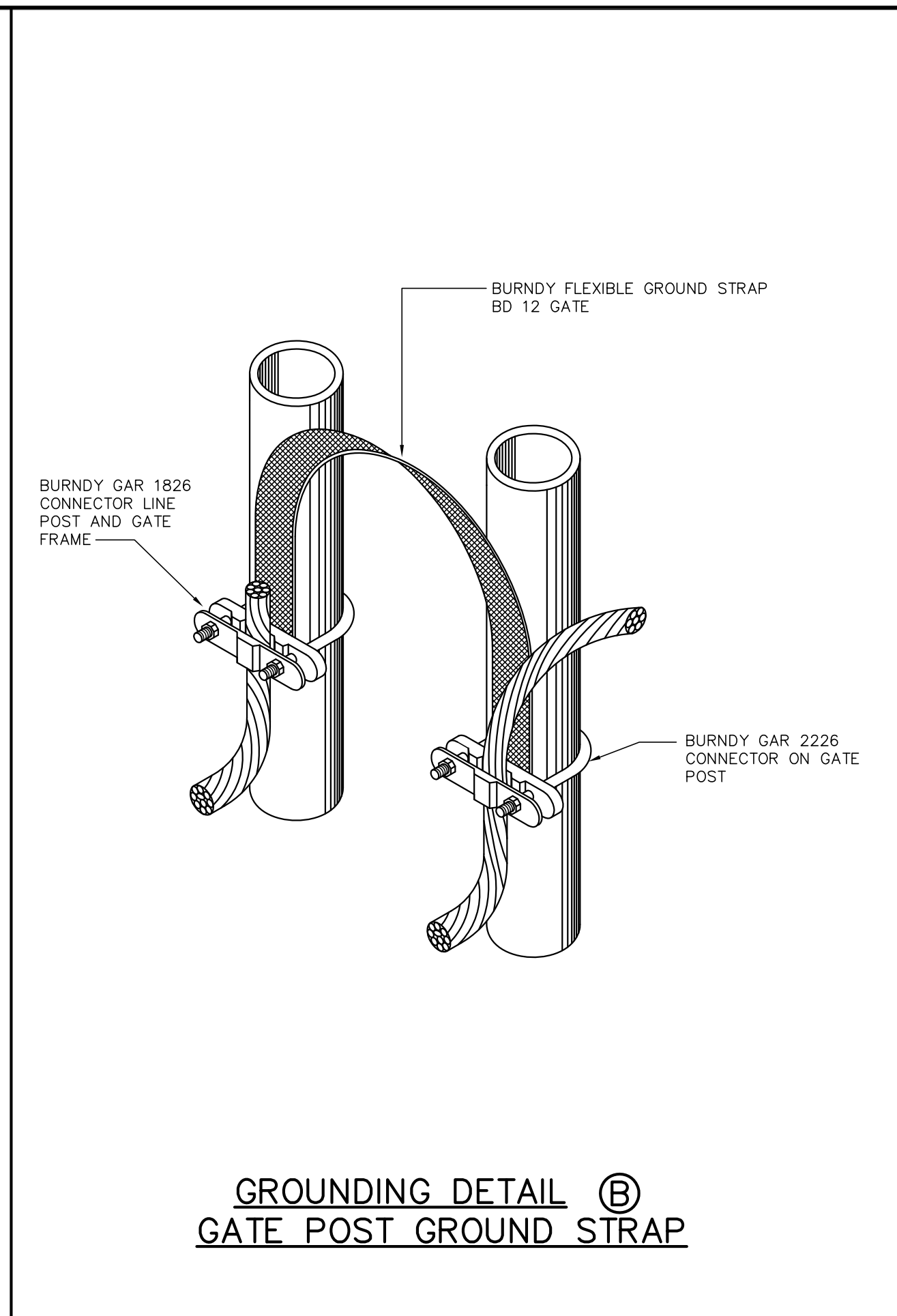
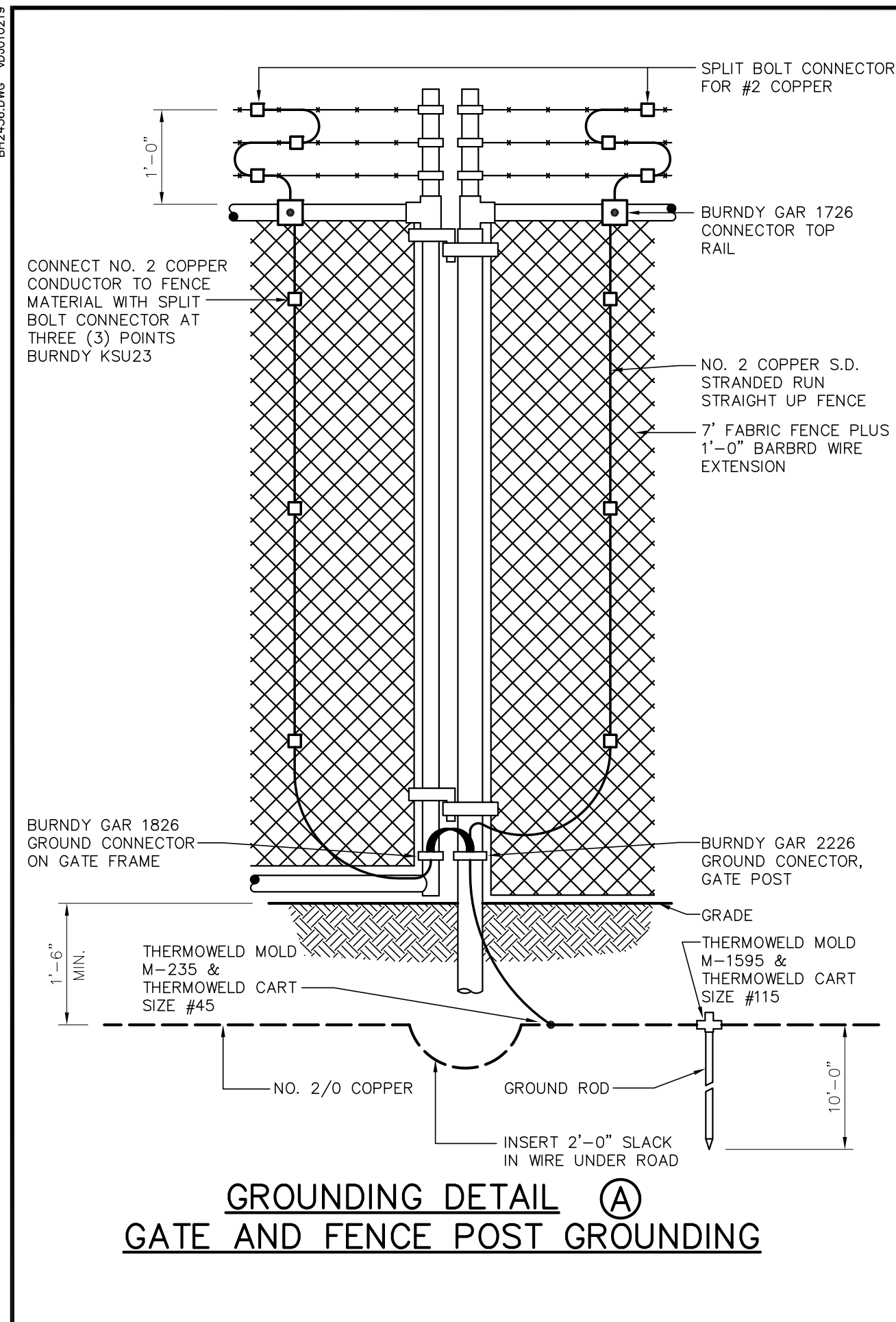
- NOTES:**
1. ALL GROUNDING CONDUCTORS, TAPS AND GROUND RODS TO BE A MINIMUM OF 1'-6" BELOW GRADE.
  2. BUBBLES REFERENCE DETAILS ON SHT. TBTA-04B.
  3. CONTRACTOR TO VERIFY ALL SWITCH HANDLE LOCATIONS PRIOR TO INSTALLING GROUND SYSTEM.
  4. WHEN NEW FOUNDATIONS AND PULLBOXES INTERFERE WITH EXISTING GROUND GRID, THE CONTRACTOR SHALL RELOCATE GROUND WIRE, IF POSSIBLE, OR MODIFY GROUND GRID TO EXCEPT NEW FOUNDATIONS AND PULLBOXES.
  5. ALL ABOVE AND BELOW GRADE GROUND WIRE SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.

**LEGEND:**  
 ——— EXISTING  
 ——— PROPOSED

**FOR BIDDING PURPOSES ONLY**

**ENLARGED GROUNDING PLANS**  
 SCALE: 1/8"=1'-0"

<b>TWIN BRIDGES TRANSFORMER ADDITION ENLARGED GROUNDING PLANS</b>			
CITY OF ALEXANDRIA ALEXANDRIA, LOUISIANA			
SCALE: 1/8"=1'-0"	DATE: 01/02/18	DRAWN BY: JHD	APPROVED BY: JJC
			PROJECT NO.: <b>2019-E-16A</b>
<b>BHA, INC.</b> BATON ROUGE, LOUISIANA		DRAWING NO.: <b>TBTA-04A</b> REV.: <b>B</b>	
NO.	DATE	BY	REVISIONS
B	5/30/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION
A	3/4/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION



**FOR BIDDING PURPOSES ONLY**

Prepared by BHA, Inc.

**NOTES:**  
 1. ALL GROUNDING CONDUCTORS, TAPS AND GROUND RODS TO BE A MINIMUM OF 1'-6" BELOW GRADE.  
 2. CONTRACTOR TO VERIFY ALL SWITCH HANDLE LOCATIONS PRIOR TO INSTALLING GROUND SYSTEM.  
 3. ALL ABOVE AND BELOW GRADE GROUND WIRE SHALL FURNISHED AND INSTALLED BY CONTRACTOR.

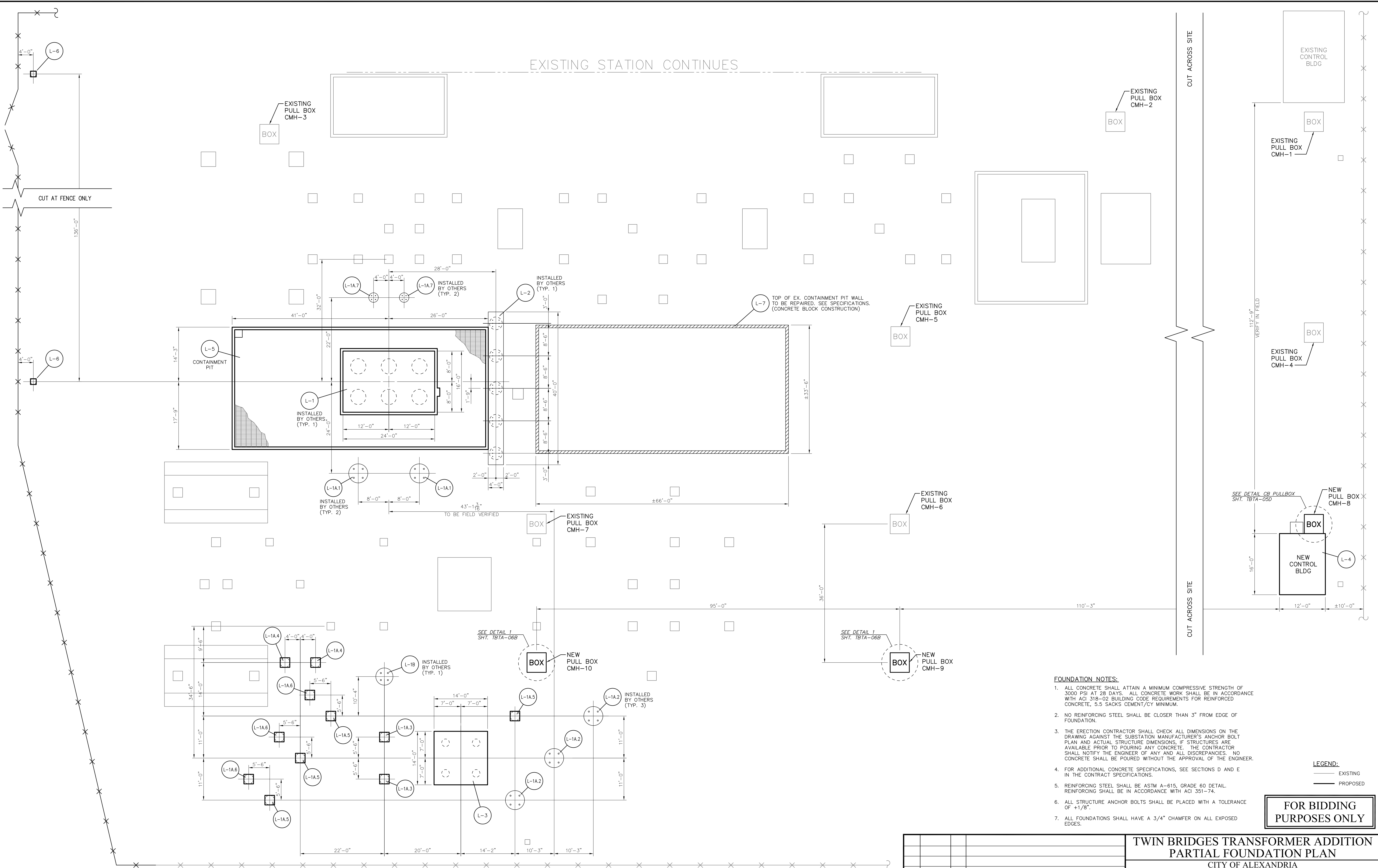
NO.	DATE	BY	REVISIONS
B	5/30/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION
A	3/4/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION

**TWIN BRIDGES TRANSFORMER ADDITION  
GROUNDING DETAILS**

CITY OF ALEXANDRIA  
ALEXANDRIA, LOUISIANA

SCALE: N.T.S.	DATE: 2/18/19	DRAWN BY: JHD	APPROVED BY: JJC	PROJECT NO.: 2019-E-16A
<b>BHA, INC.</b> BATON ROUGE, LOUISIANA			DRAWING NO.: TBTA-04A	REV.: B

BHA\2019\05\01\2019.dwg 05/01/2019



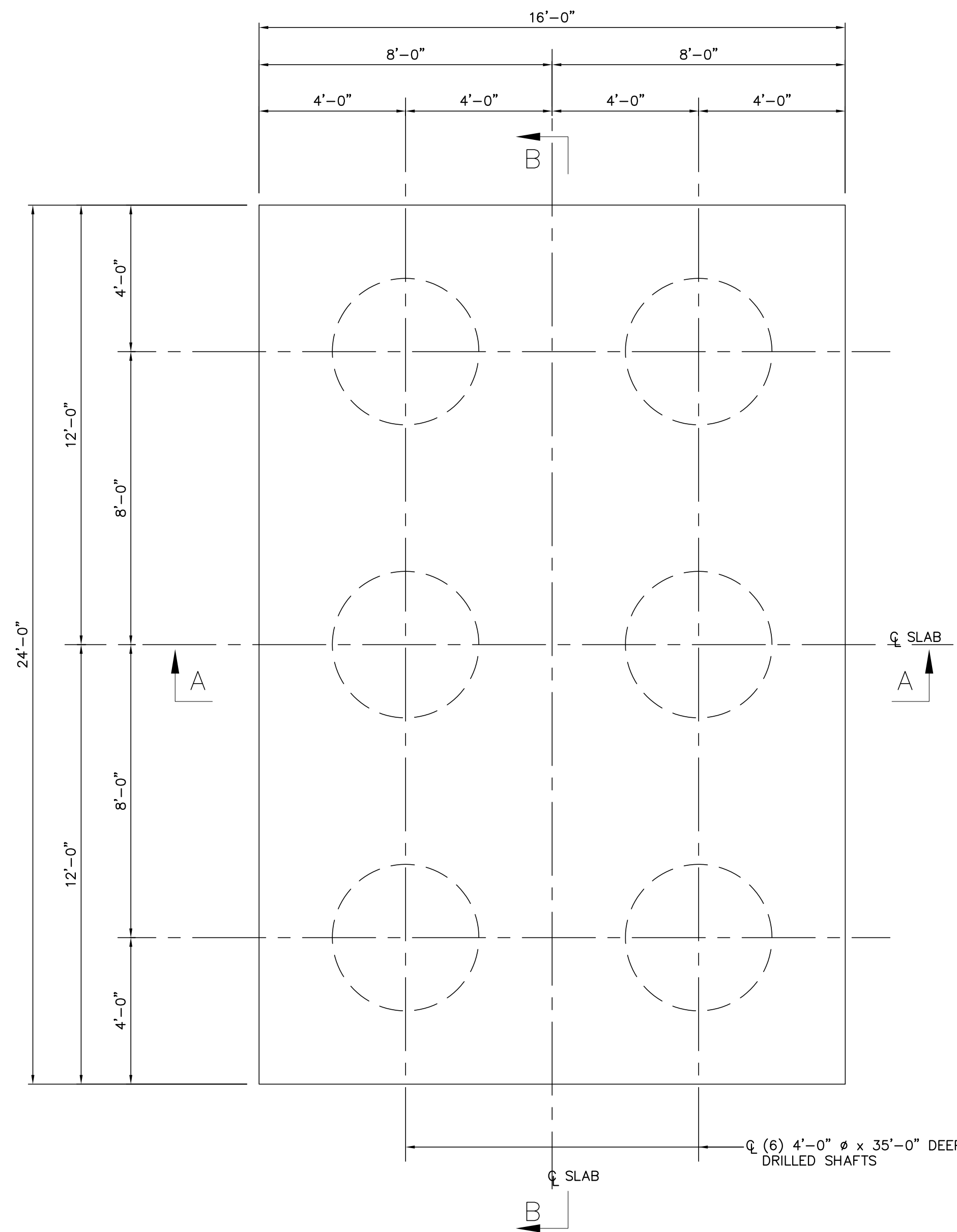
**PARTIAL FOUNDATION PLAN**

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

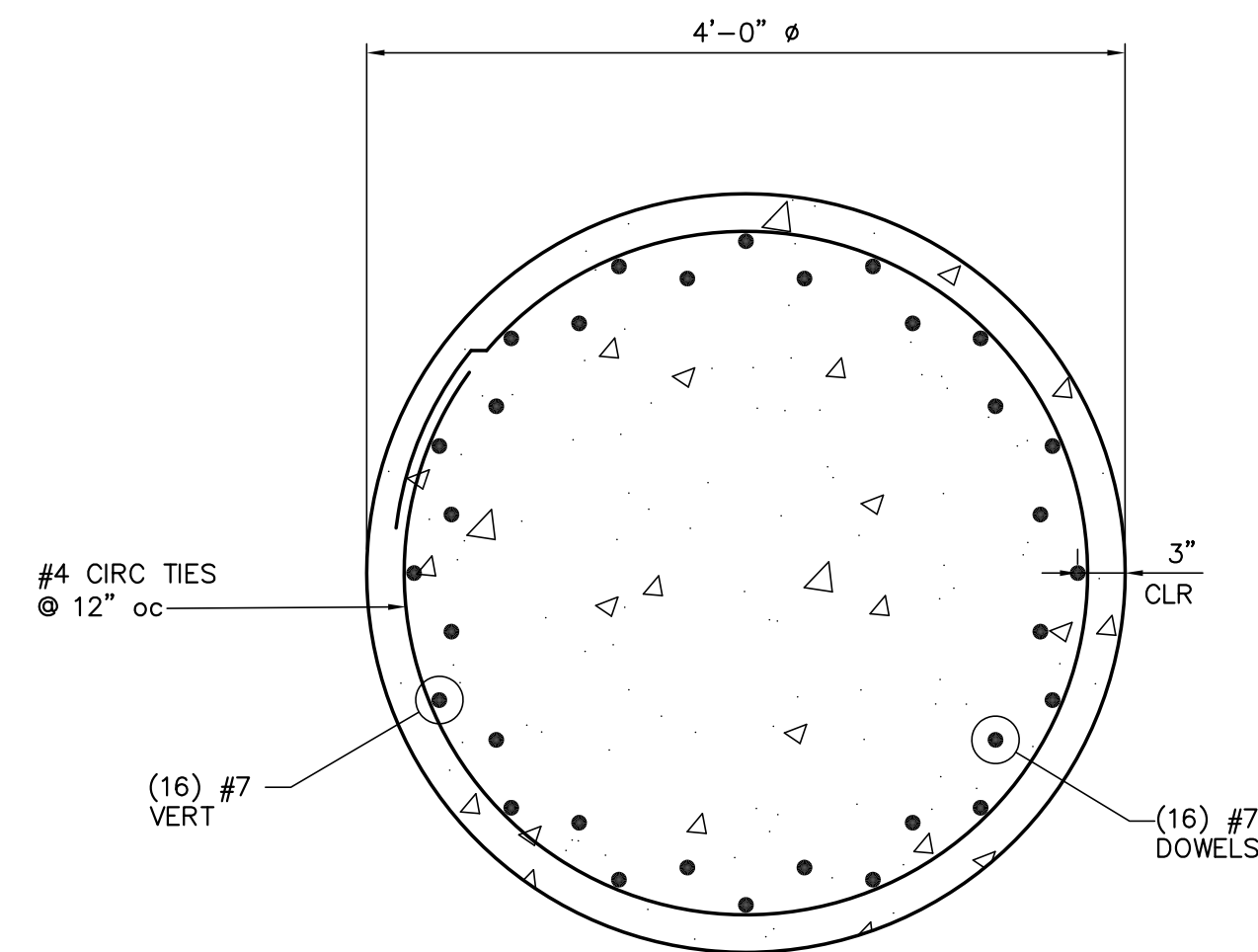
- FOUNDATION NOTES:**
1. ALL CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH ACI 318-02 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, 5.5 SACKS CEMENT/CY MINIMUM.
  2. NO REINFORCING STEEL SHALL BE CLOSER THAN 3" FROM EDGE OF FOUNDATION.
  3. THE ERECTION CONTRACTOR SHALL CHECK ALL DIMENSIONS ON THE DRAWING AGAINST THE SUBSTATION MANUFACTURER'S ANCHOR BOLT PLAN AND ACTUAL STRUCTURE DIMENSIONS, IF STRUCTURES ARE AVAILABLE PRIOR TO POURING ANY CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES. NO CONCRETE SHALL BE POURED WITHOUT THE APPROVAL OF THE ENGINEER.
  4. FOR ADDITIONAL CONCRETE SPECIFICATIONS, SEE SECTIONS D AND E IN THE CONTRACT SPECIFICATIONS.
  5. REINFORCING STEEL SHALL BE ASTM A-615, GRADE 60 DETAIL. REINFORCING SHALL BE IN ACCORDANCE WITH ACI 351-74.
  6. ALL STRUCTURE ANCHOR BOLTS SHALL BE PLACED WITH A TOLERANCE OF +1/8".
  7. ALL FOUNDATIONS SHALL HAVE A 3/4" CHAMFER ON ALL EXPOSED EDGES.
- LEGEND:**  
 — EXISTING  
 — PROPOSED

**FOR BIDDING PURPOSES ONLY**

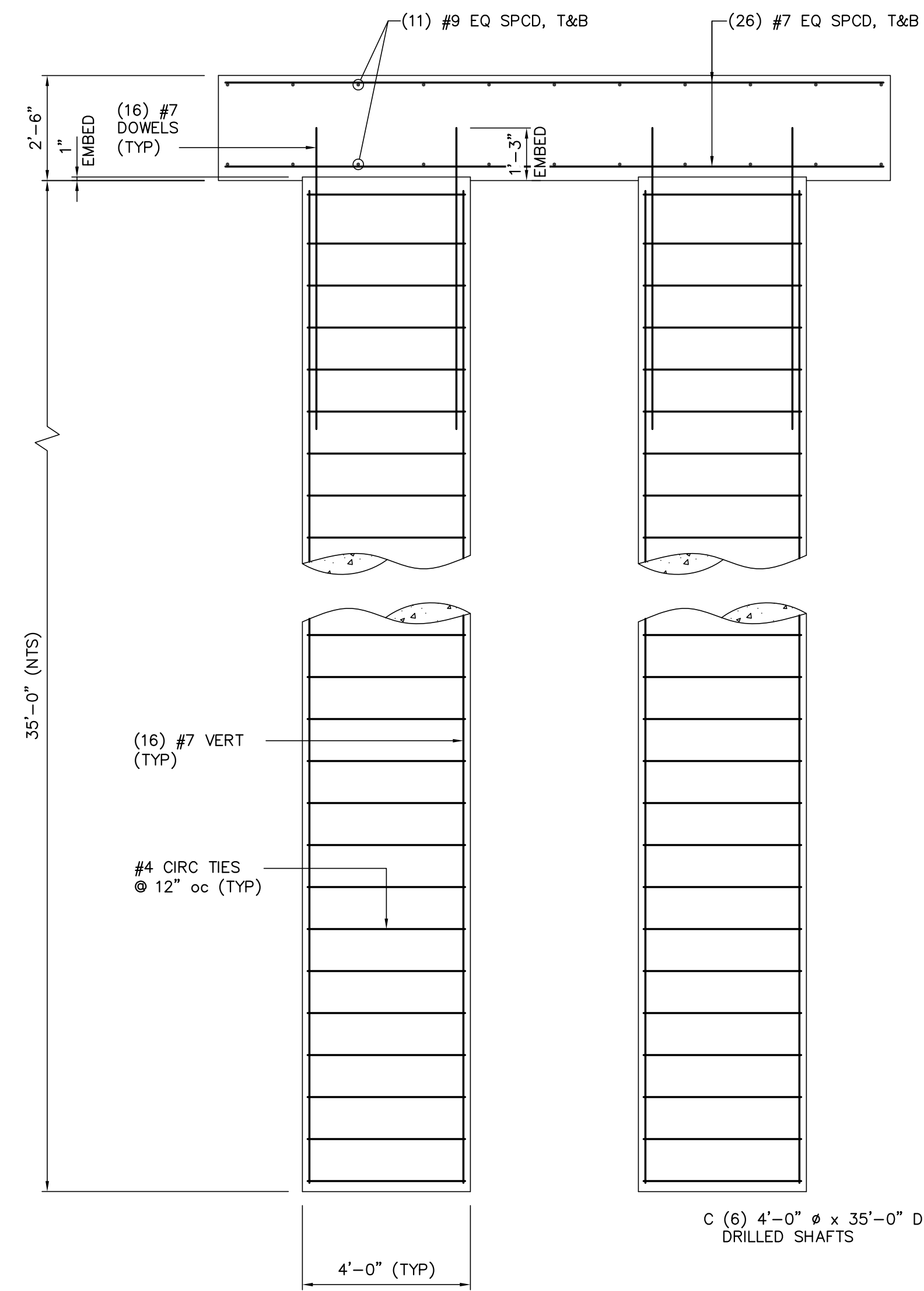
				<b>TWIN BRIDGES TRANSFORMER ADDITION          PARTIAL FOUNDATION PLAN</b> CITY OF ALEXANDRIA ALEXANDRIA, LOUISIANA			
B	5/30/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION	<b>BHA, INC.</b> BATON ROUGE, LOUISIANA			
A	3/4/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION				
NO.	DATE	BY:	REVISIONS	DRAWING NO.: <b>TBTA-05</b> REV.: <b>B</b>			



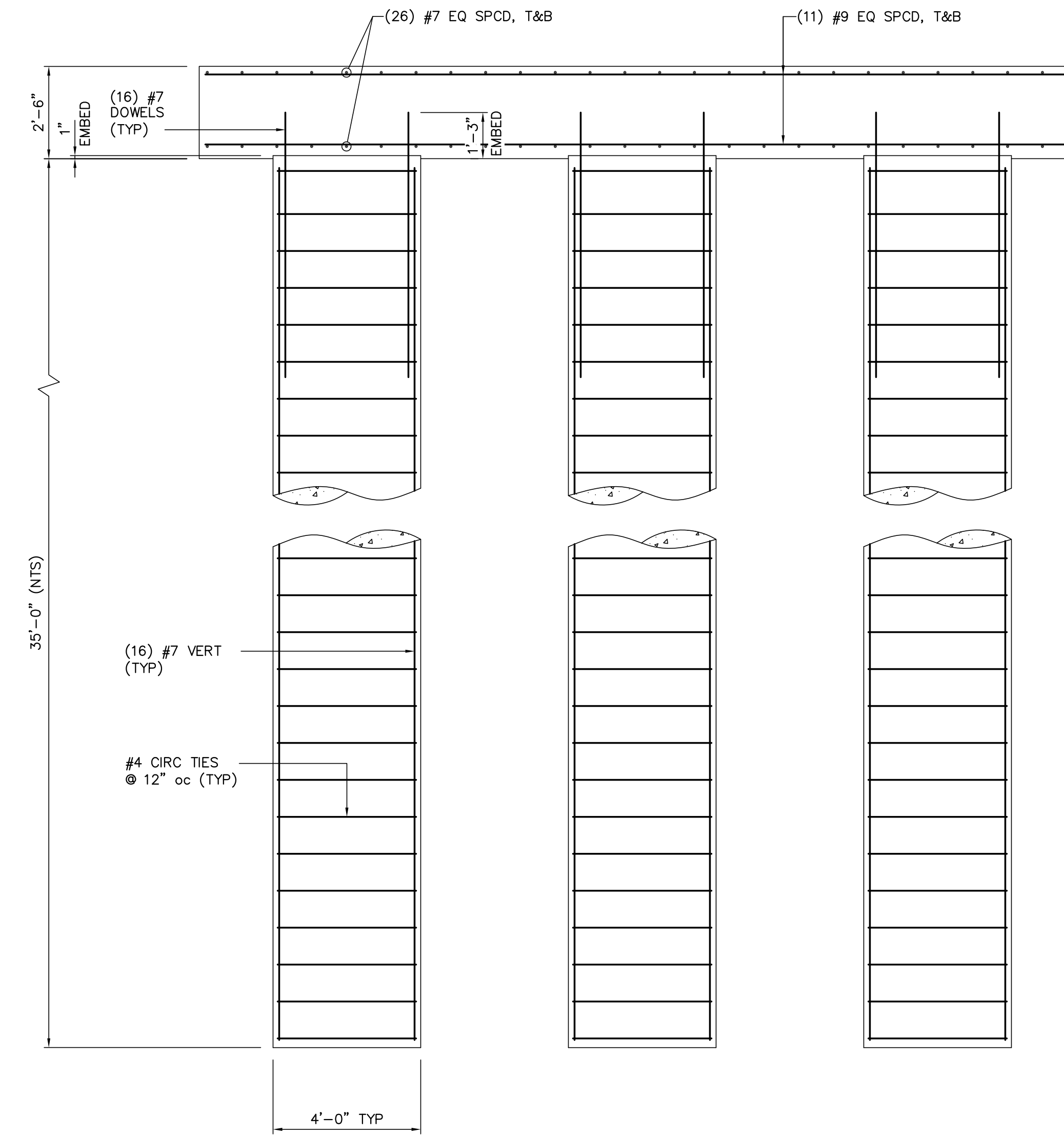
FOUNDATION PLAN L-1  
3/8"=1'-0"  
[INSTALLED BY OTHERS]



TYPICAL DRILLED SHAFT  
SECTION  
1"=1'-0"



SECTION A-A  
3/8"=1'-0"



SECTION B-B  
3/8"=1'-0"

GENERAL NOTES: SLAB ON GRADE

- THESE PLANS ARE TO BE ONLY FOR THE LOCATION BELOW:  
TWIN BRIDGE ROAD
- THE CONCRETE MIX SHOULD YIELD A MINIMUM COMPRESSIVE STRENGTH OF 3500 psi AT 28 DAYS. CONCRETE DESIGN MIX SHALL BE IN ACCORDANCE WITH ACI-318 (LATEST VERSION). NO CHLORIDES SHALL BE ALLOWED.
- ALL CONVENTIONAL REINFORCING STEEL SHALL MEET ASTM-A613 (GRADE 60). REINFORCING STEEL SHALL BE DETAILED, AND ACCESSORIES PROVIDED IN ACCORDANCE WITH THE LATEST "ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES".
- REINFORCEMENT SHALL HAVE 3" COVER IN THE GRADE BEAM BOTTOMS, 2" COVER IN THE BEAM SIDES AND TOP, 1 1/2" COVER IN THE SLAB TOP AND BOTTOMS, UNLESS NOTED OTHERWISE.
- 1 LAYER(S) POLYETHYLENE VAPOR BARRIER SHALL BE PLACED UNDER ALL CONCRETE.
- BARs SHALL BE SECURELY SUPPORTED TO PREVENT BOTH VERTICAL AND HORIZONTAL MOVEMENT DURING CONCRETE PLACING.
- CONCRETE SHALL BE WELL CONSOLIDATED.
- THE CONTRACTOR SHALL VERIFY ALL DROPS, OFF-SETS, BRICK LEDGES, AND BLOCK OUTS ON ARCHITECTURAL PLANS, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES THAT MAY EXIST.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF THE STRUCTURAL DRAWINGS WITH ALL OTHER DRAWINGS.
- GRADE BEAM SIZES MAY VARY BY -10%, +20%
- ALTERATION TO, OR DEVIATION FROM, THE INFORMATION SHOWN ON THIS SHEET WITHOUT THE WRITTEN ADVANCE APPROVAL FROM LANGLOIS ENGINEERING, INC., WILL VOID DESIGNER'S RESPONSIBILITY.
- THIS PLAN IS FOR GRADE BEAM LOCATION ONLY.
- ALL SUBGRADE FILL SHALL BE SELECT GRANULAR MATERIAL COMPACTED TO 90% STANDARD PROCTOR DENSITY IN A MAXIMUM OF 6" LIFTS.
- A MINIMUM OF 4" OF CONCRETE WILL BE MAINTAINED THROUGHOUT THE ENTIRE SLAB.
- ALL RUNOFF WATER MUST BE CARRIED AWAY FROM THE SLAB TO PREVENT MATURATION OF THE SUB-BASE.
- ALL TREES WITHIN CLOSE PROXIMITY SHALL BE REMOVED TO PREVENT THE ROOTS FROM EXTENDING UNDER THE SLAB.
- REMOVE A MINIMUM OF 12" OF EXISTING SOIL AND ALL UNSTABLE SILT PRIOR TO PLACING ANY FILL.
- MAXIMUM OF 1 FEET OF FILL MAY BE PLACED ON THE SITE. MAXIMUM DIFFERENTIAL FILL SHALL NOT EXCEED 20%.
- NO FIELD SUPERVISION PROVIDED UNDER THIS SEAL UNLESS OTHERWISE NOTED. 29. EXTERIOR FOOTINGS WILL HAVE A MINIMUM OF 12" WIDTH.

FOR REFERENCE  
ONLY

NO.	DATE	BY	REVISIONS
B	5/30/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION
A	3/4/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION

TWIN BRIDGES TRANSFORMER ADDITION  
TRANSFORMER FOUNDATION PLAN & DETAILS  
CITY OF ALEXANDRIA  
ALEXANDRIA, LOUISIANA

SCALE: NOTED	DATE: 7/11/18	DRAWN BY: JHD	APPROVED BY: JJC	PROJECT NO.:
BHA, INC. BATON ROUGE, LOUISIANA			2019-E-16A	REV.:
			TBTA-05A	B

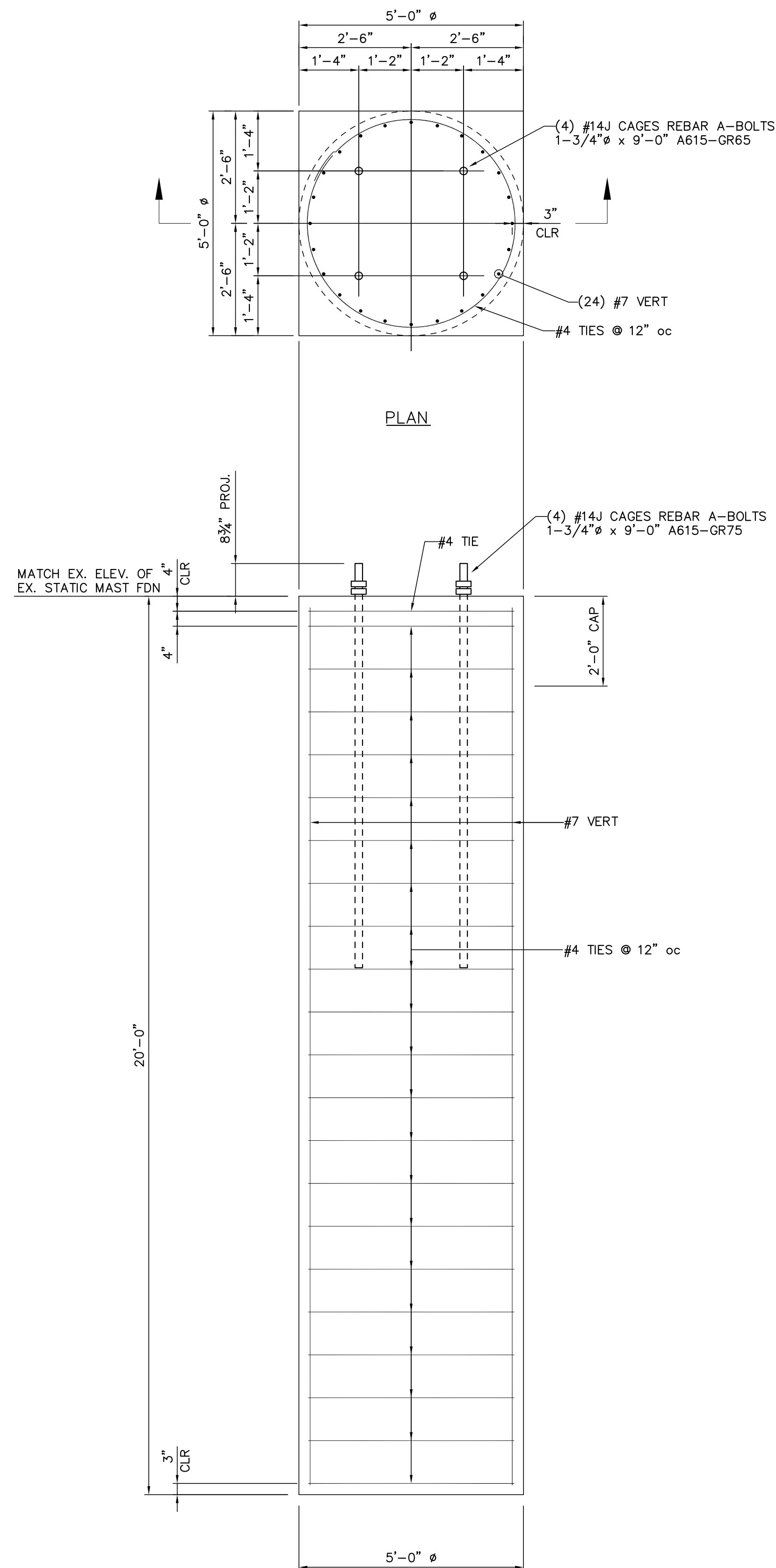
BHA: COATBT05A.dwg DSW-1 05/20/19 @ 11:58AM BY #

BUILDING PLANS FOR:  
BHA, INC. - BATON ROUGE, LA  
TWIN BRIDGES SUBSTATION

LANGLOIS ENGINEERING, INC.  
GERARD W. LANGLOIS, P.E.  
11328 PENNYWOOD AVENUE  
BATON ROUGE, LOUISIANA 70809  
PH 225-293-8730 FAX 225-293-8718  
WWW.LANGLOISENGINEERING.COM



DATE: JUN '18  
DRAWN BY: GWL, JR.  
CHECKED BY: GWL, SR.  
REVISIONS:  
SHEET NO.  
PROJECT NO.

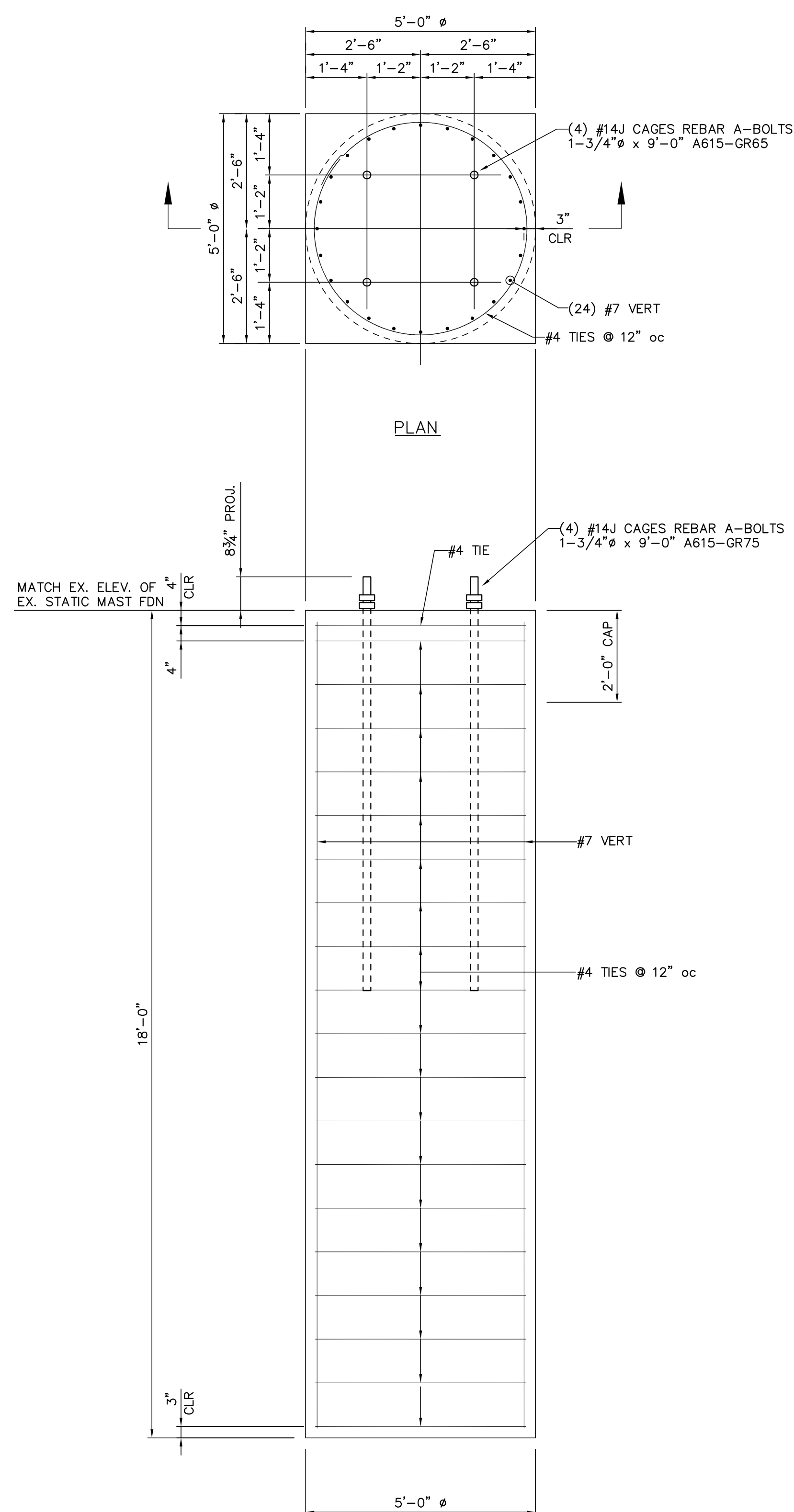


SECTION

DRILLED SHAFT L-1A.1  
1/2"=1'-0"

(QUANTITY: 2)

[INSTALLED BY OTHERS]

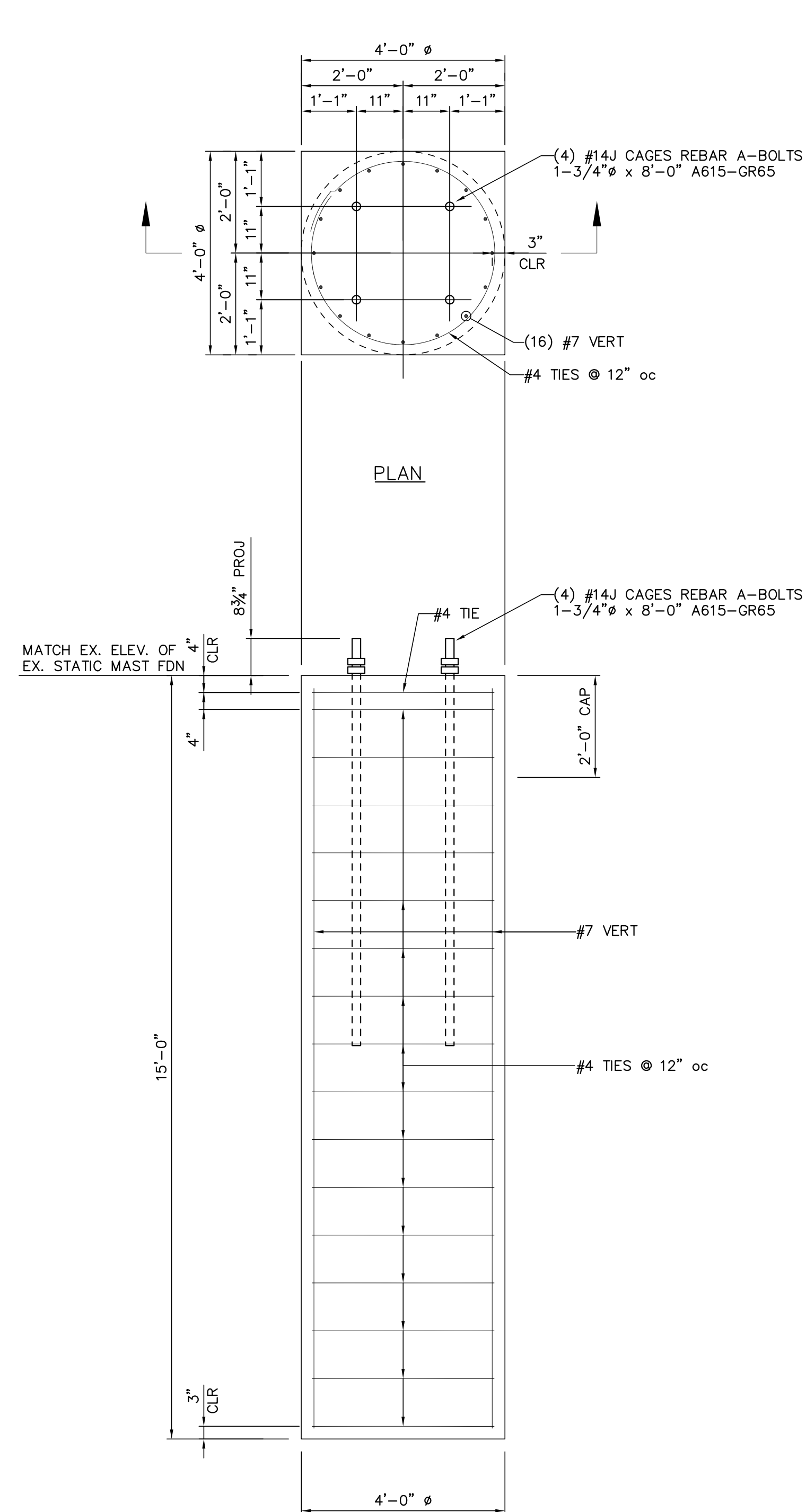


SECTION

DRILLED SHAFT L-1A.2  
1/2"=1'-0"

(QUANTITY: 3)

[INSTALLED BY OTHERS]



SECTION

DRILLED SHAFT L-1B  
1/2"=1'-0"

(QUANTITY: 1)

[INSTALLED BY OTHERS]

FOR REFERENCE ONLY

NO.	DATE	BY	REVISIONS
B	5/30/19	BHA	FOR BIDDING PURPOSES ONLY
A	3/4/19	BHA	FOR BIDDING PURPOSES ONLY
TWIN BRIDGES TRANSFORMER ADDITION FOUNDATION DETAILS			
CITY OF ALEXANDRIA ALEXANDRIA, LOUISIANA			
SCALE: NOTED	DATE: 12/19/18	DRAWN BY: JHD	APPROVED BY: JJC
PROJECT NO.: 2019-E-16A			REV.: B
DRAWING NO.: TBTA-05B			

BUILDING PLANS FOR:

**BHA, INC. — BATON ROUGE, LA**  
TWIN BRIDGES SUBSTATION

**LANGLOIS ENGINEERING, INC.**  
GERARD W. LANGLOIS, P.E.  
11328 PENNYWOOD AVENUE  
BATON ROUGE, LOUISIANA 70809  
PH: 225-293-8730 FAX: 225-293-8718  
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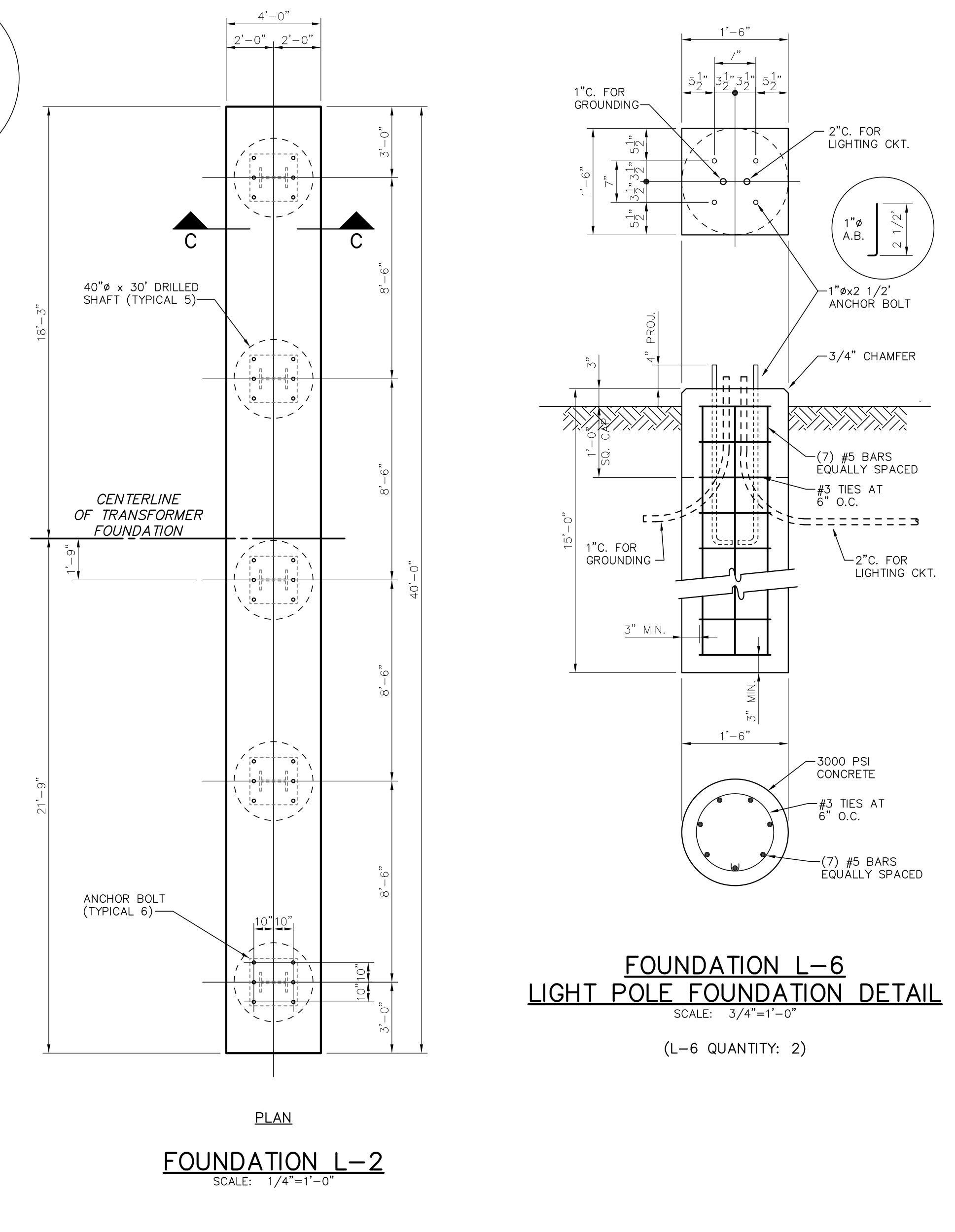
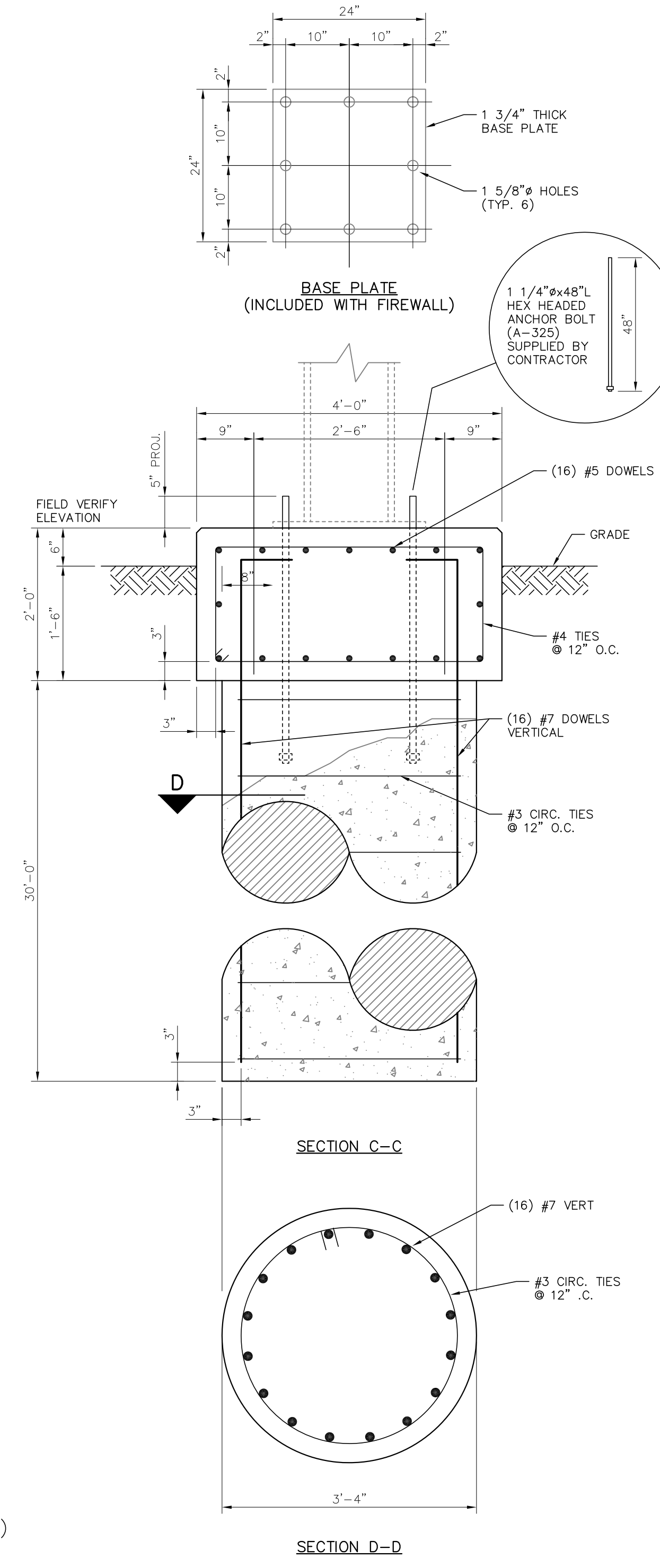
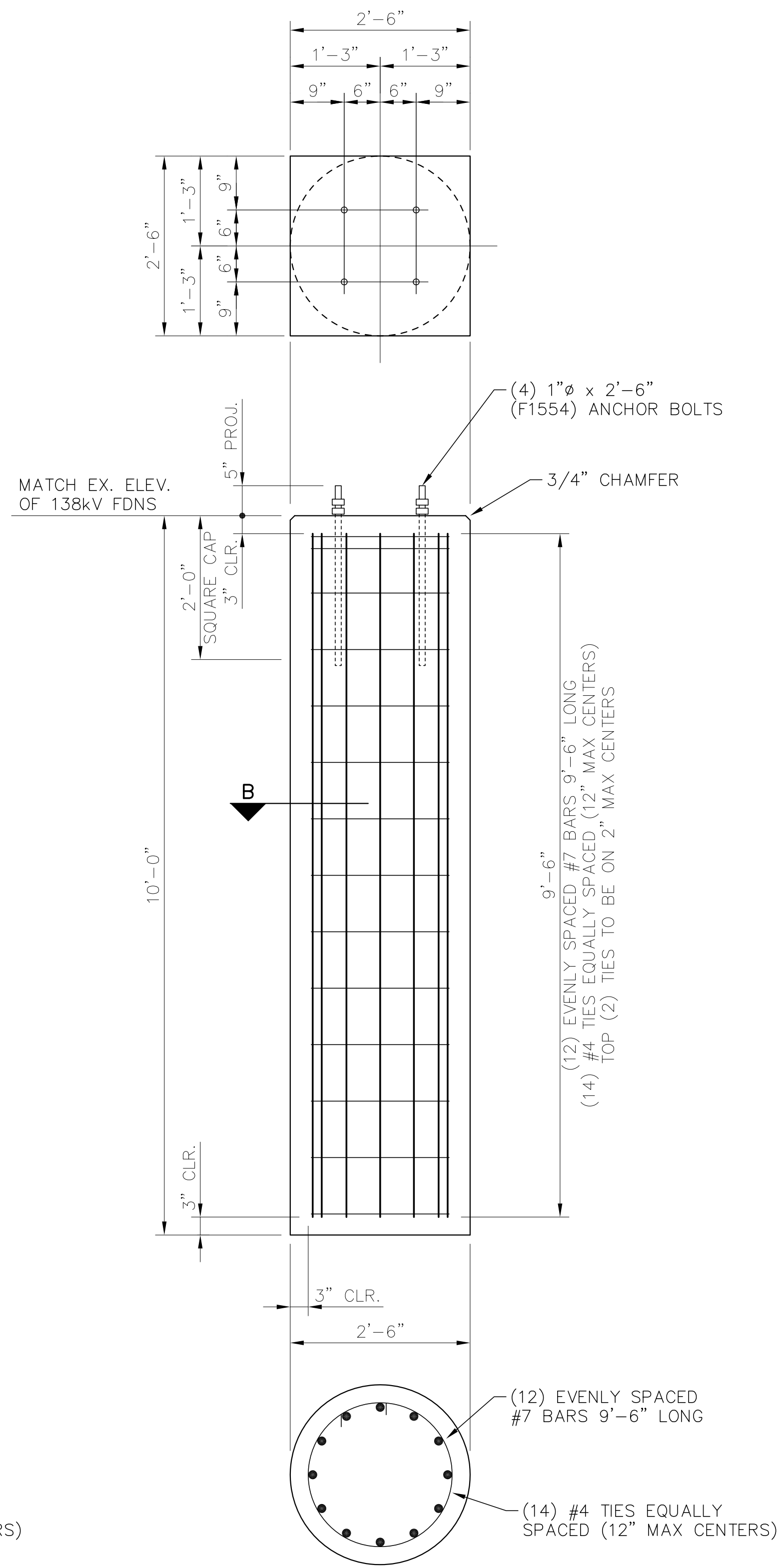
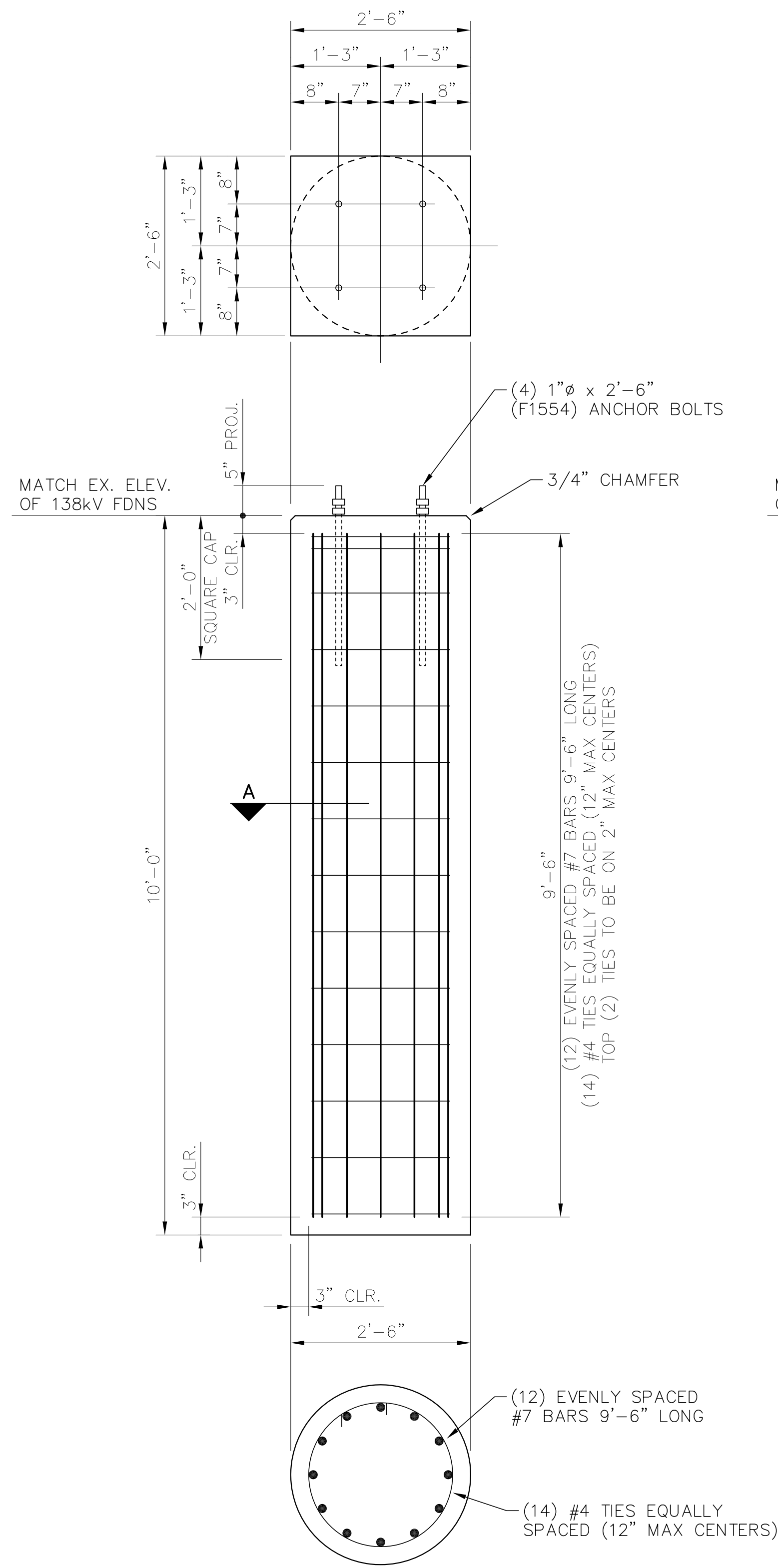
STATE OF LOUISIANA  
REGISTERED PROFESSIONAL ENGINEER  
EX. XXXX 2018  
CIVIL ENGINEERING

DATE: JUN '18  
DRAWN BY: GWL, JR.  
CHECKED BY: GWL, SR.  
REVISIONS:  
SHEET NO.  
PROJECT NO.

BHA: COATBTA05B.dwg DSF=1 05/20/19 @ 12:01AM BY #27



BHA245.DWG 04/01/2019

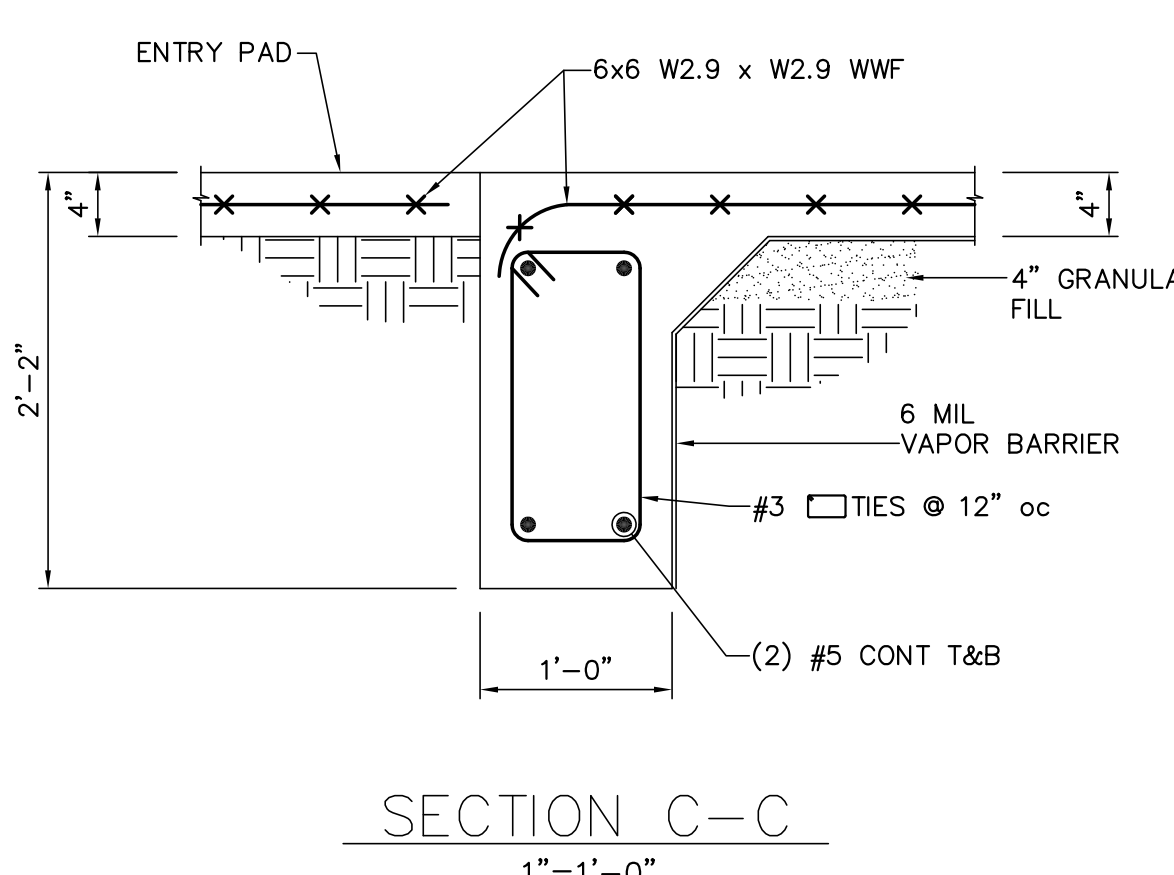
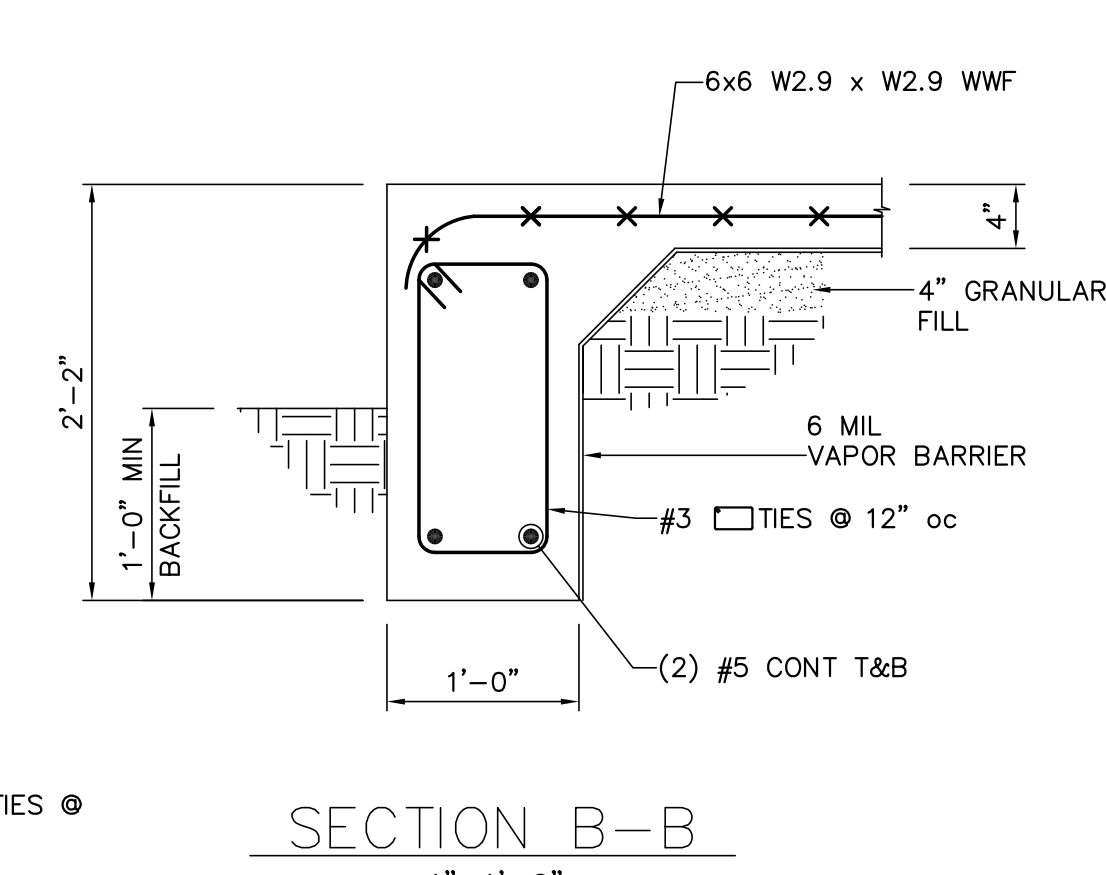
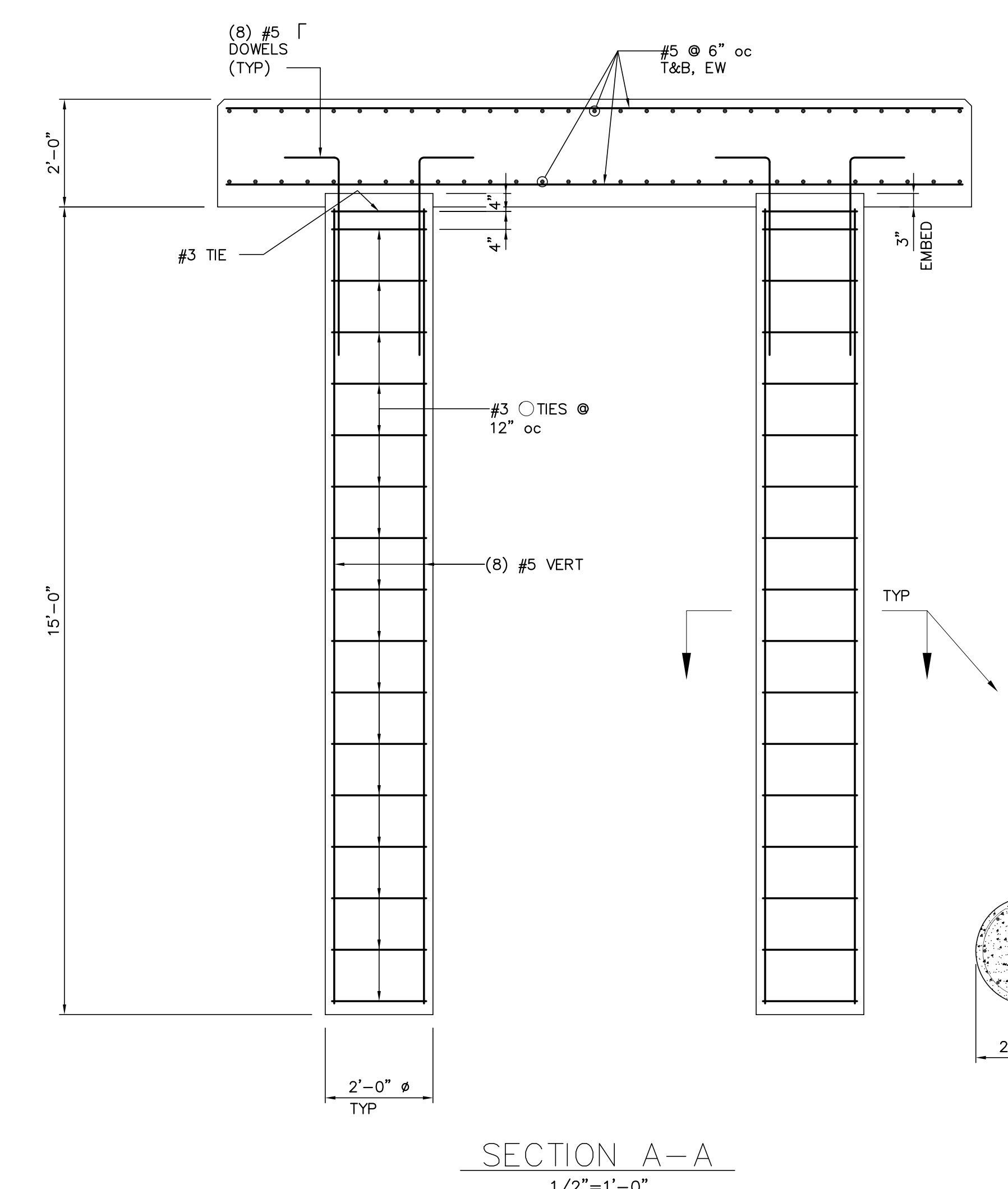
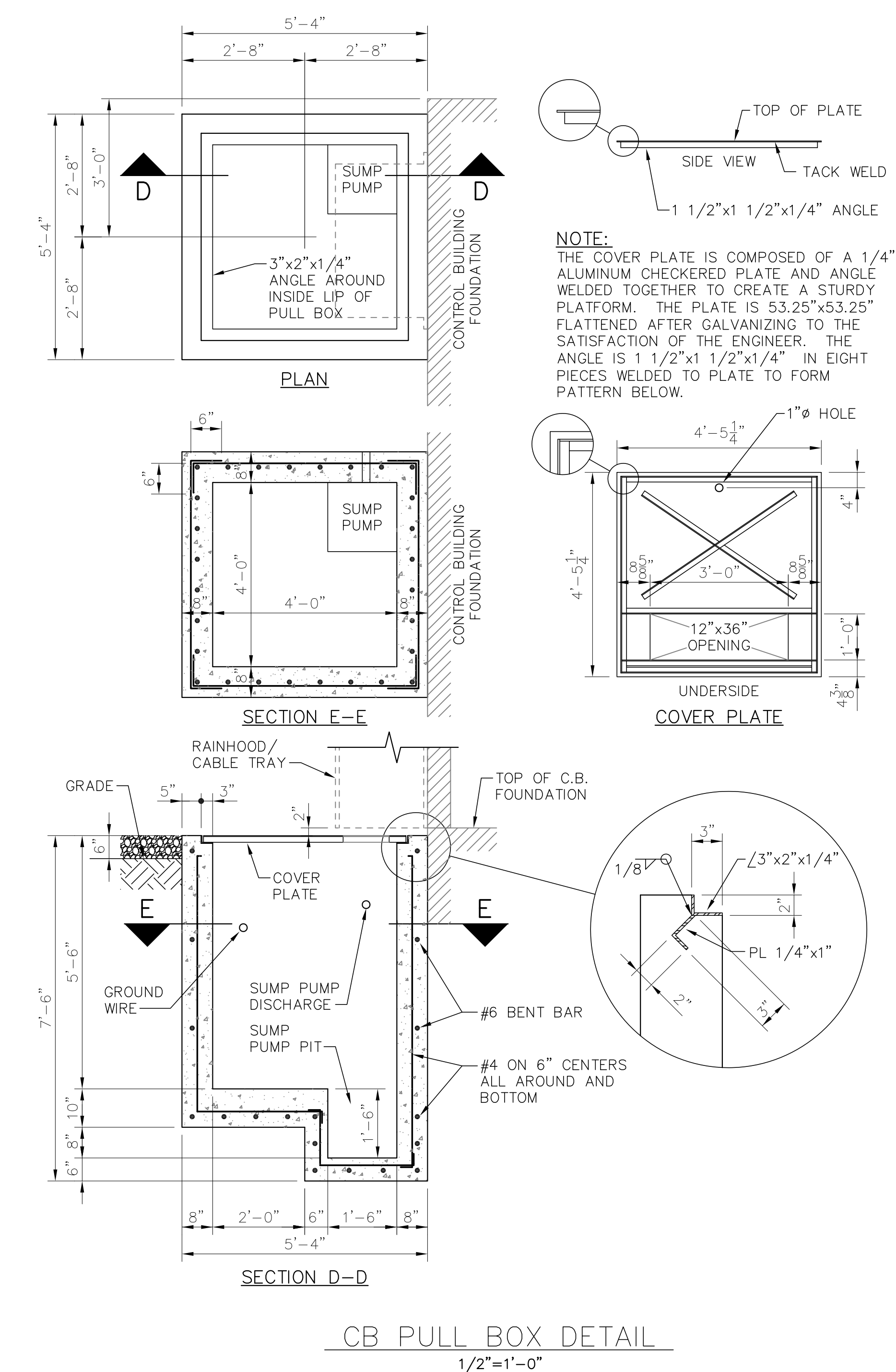
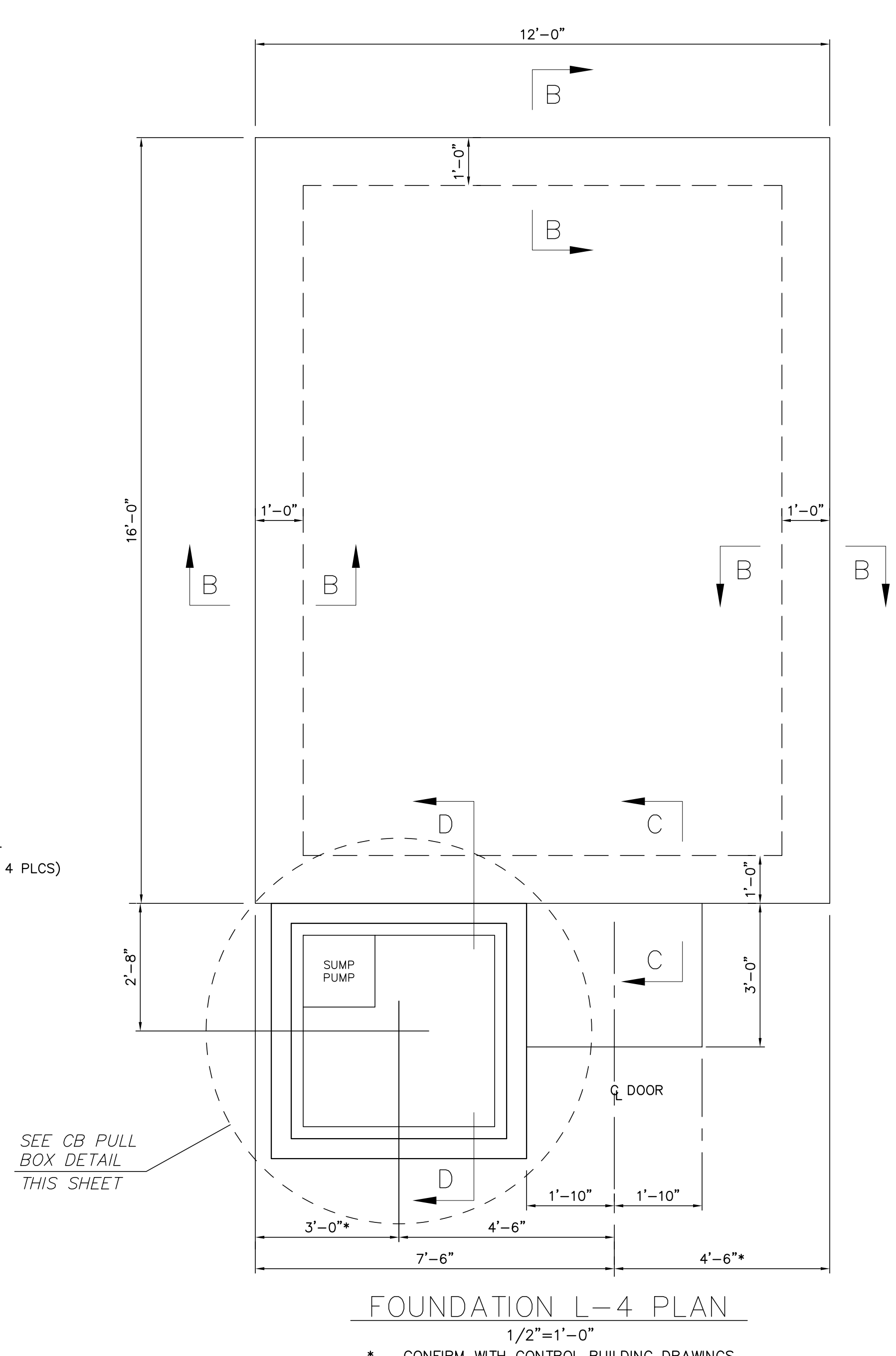
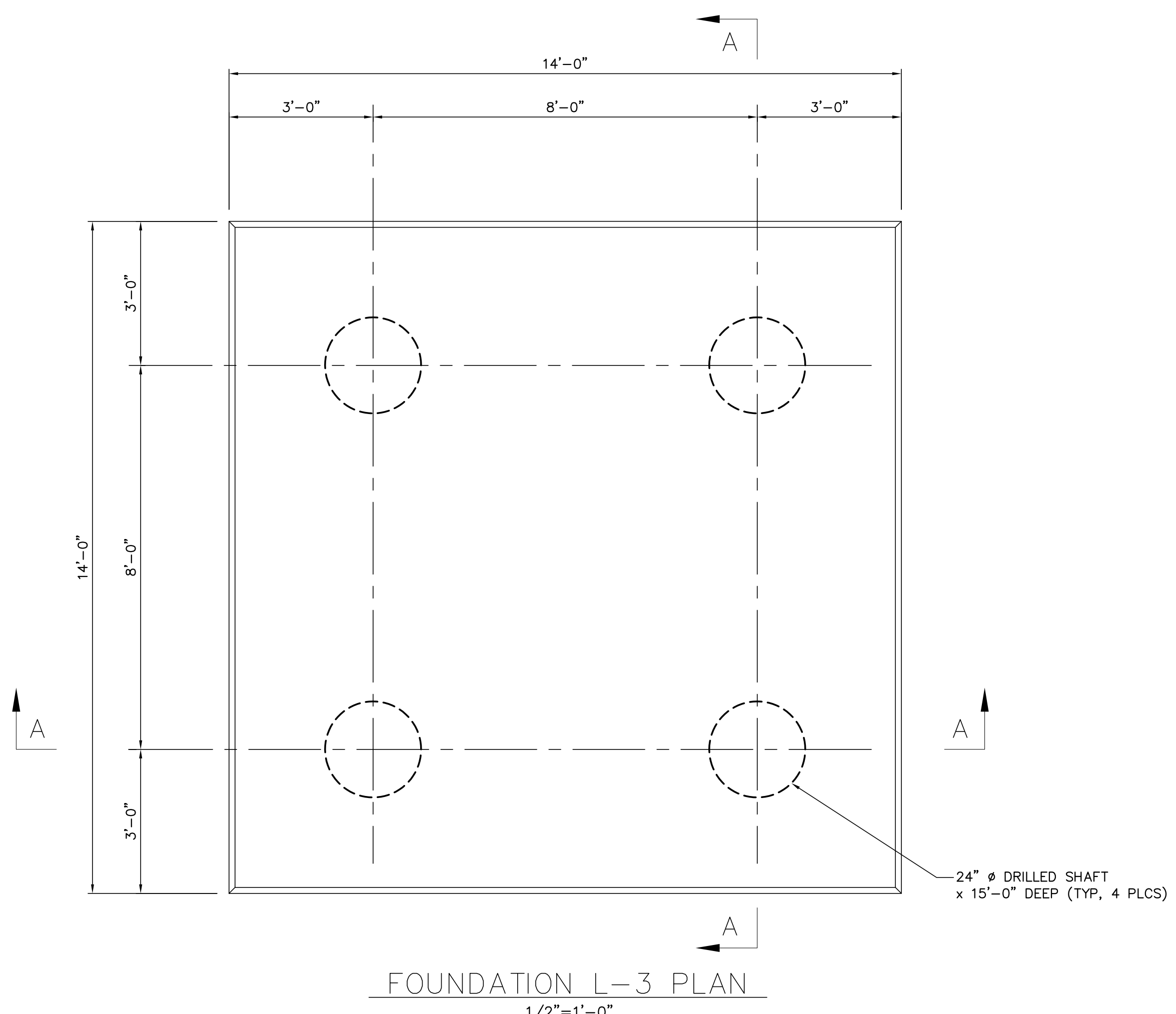


**FOR BIDDING  
 PURPOSES ONLY**

TWIN BRIDGES TRANSFORMER ADDITION FOUNDATION DETAILS			
CITY OF ALEXANDRIA ALEXANDRIA, LOUISIANA			
SCALE: NOTED	DATE: 8/15/18	DRAWN BY: JHD	APPROVED BY: JJC
PROJECT NO.: 2019-E-16A			REV.: B
<b>BHA, INC.</b> BATON ROUGE, LOUISIANA			
DRAWING NO.: TBTA-05C			

BHA: COATBTAD05C.dwg DSF=16 05/20/19 @ 02:30PM BY #27





FOR BIDDING PURPOSES ONLY			
NO.	DATE	BY	REVISIONS
B	5/30/19	BHA	FOR BIDDING PURPOSES ONLY
A	3/4/19	BHA	FOR BIDDING PURPOSES ONLY

TWIN BRIDGES TRANSFORMER ADDITION FOUNDATION DETAILS		PROJECT NO. : 2019-E-16A	
CITY OF ALEXANDRIA ALEXANDRIA, LOUISIANA		DRAWING NO. : TBTA-05D	
BHA, INC. BATON ROUGE, LOUISIANA		REV. : B	

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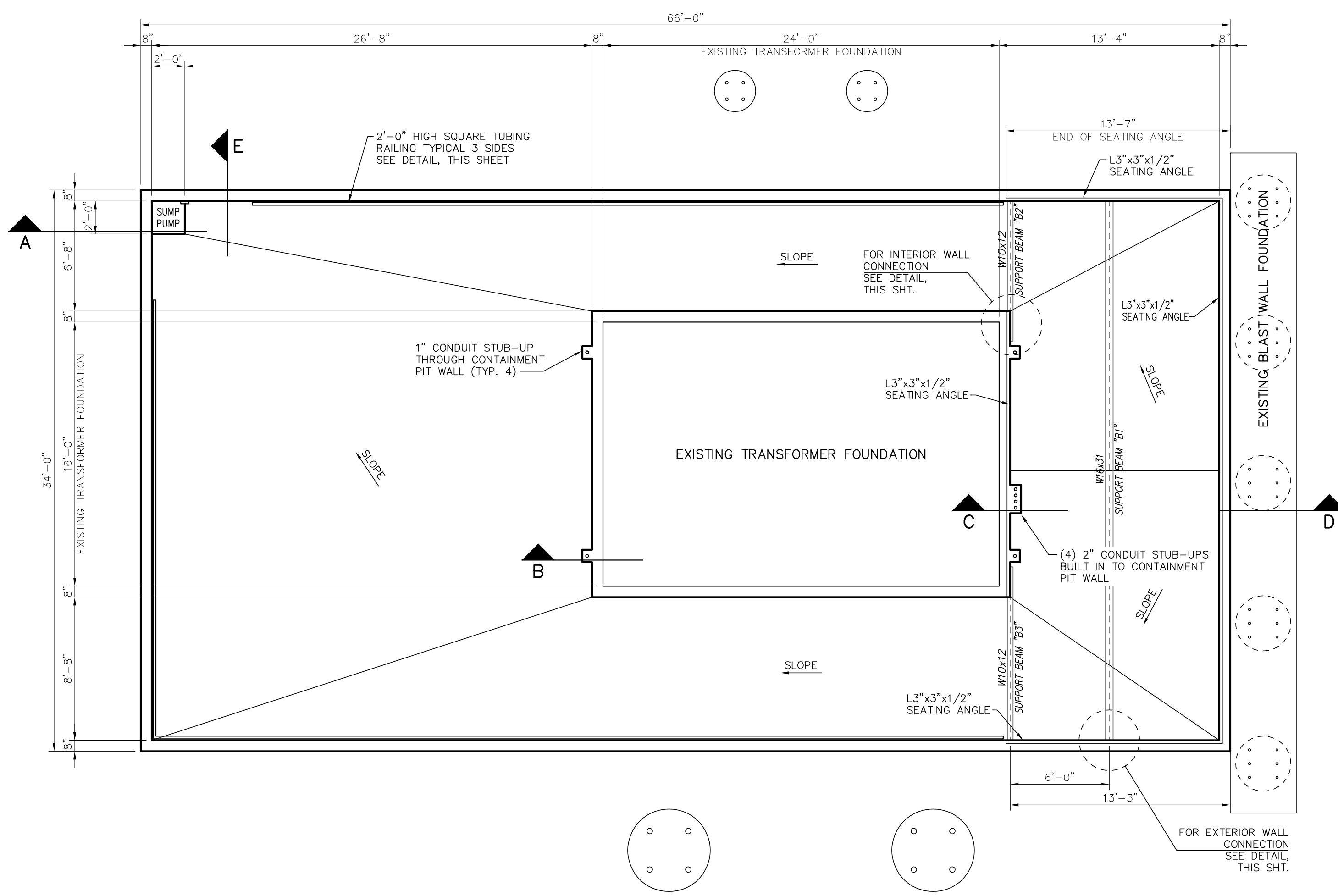
BUILDING PLANS FOR:  
**BHA, INC. — BATON ROUGE, LA**  
TWIN BRIDGES SUBSTATION

**LANGLOIS ENGINEERING, INC.**  
GERARD W. LANGLOIS, P.E.  
11328 PENNYWOOD AVENUE  
BATON ROUGE, LOUISIANA 70809  
PH 225-293-8730 FAX 225-293-8718  
WWW.LANGLOISENGINEERING.COM

STATE OF LOUISIANA  
REGISTERED PROFESSIONAL ENGINEER  
EX. XXXX, 2018

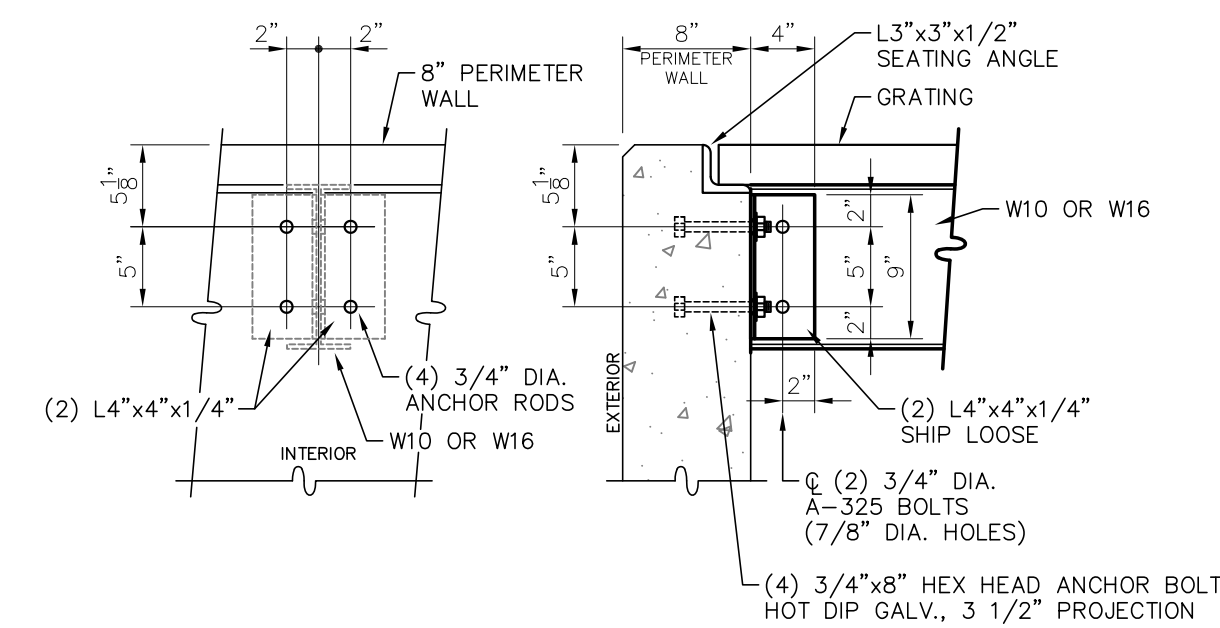
DATE: DEC '18  
DRAWN BY: GWL, JR.  
CHECKED BY: GWL, SR.  
REVISIONS:  
SHEET NO.  
PROJECT NO.

BHA\245.DWG 04/01/2019



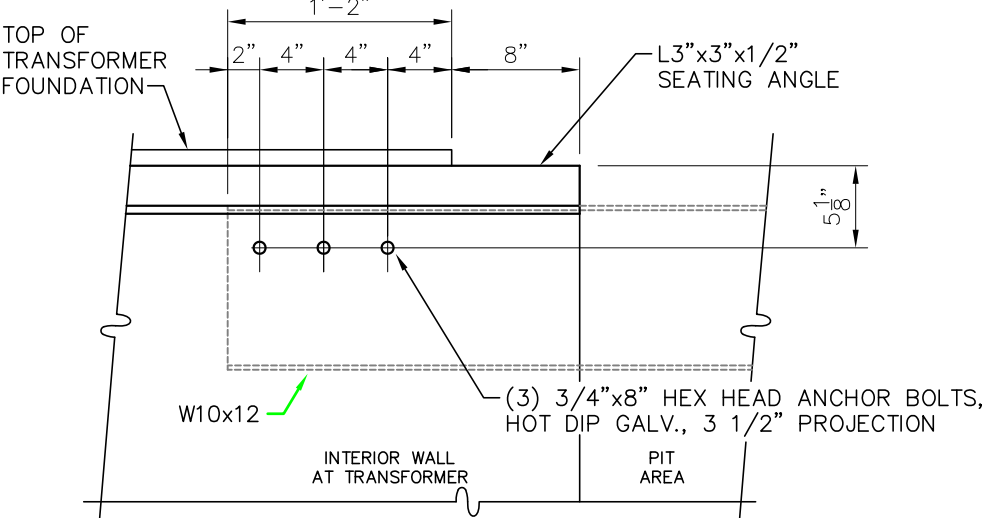
**L-5 - TRANSFORMER CONTAINMENT PIT**  
SCALE: 3/16"=1'-0"

**EXTERIOR WALL CONNECTION FOR GRATING DETAIL**  
SCALE: 1"=1'-0"



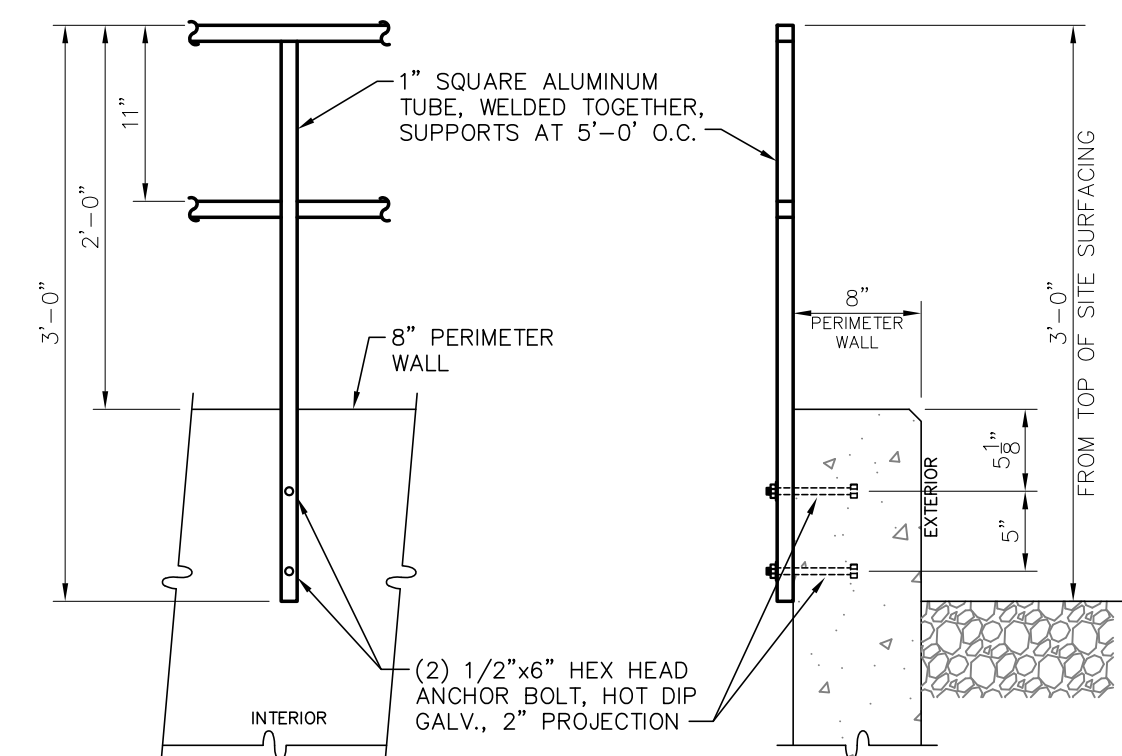
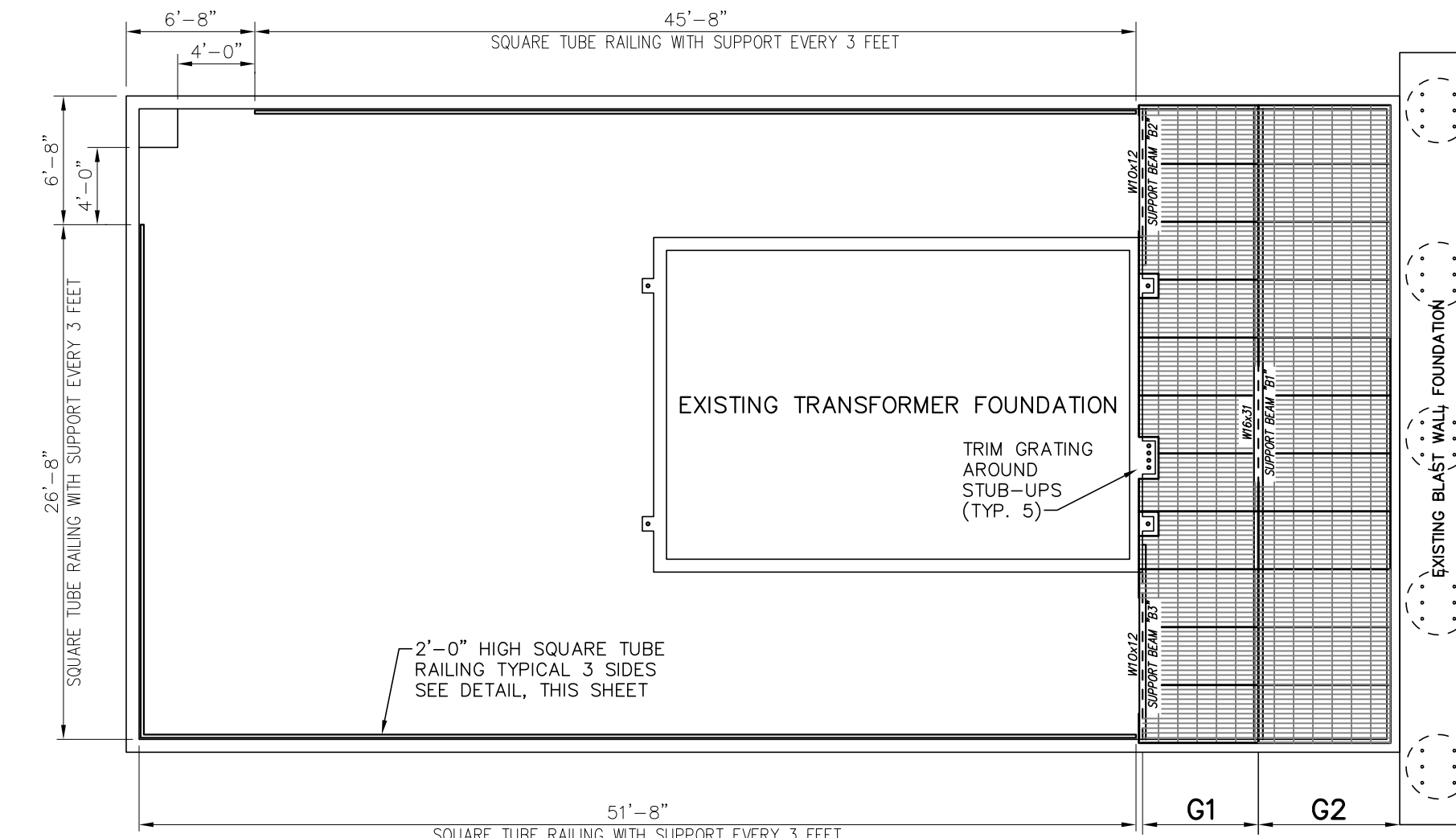
(2) LOCATIONS FOR W16x31  
(2) LOCATIONS FOR W10x12

**INTERIOR WALL CONNECTION FOR GRATING DETAIL**  
SCALE: 1"=1'-0"

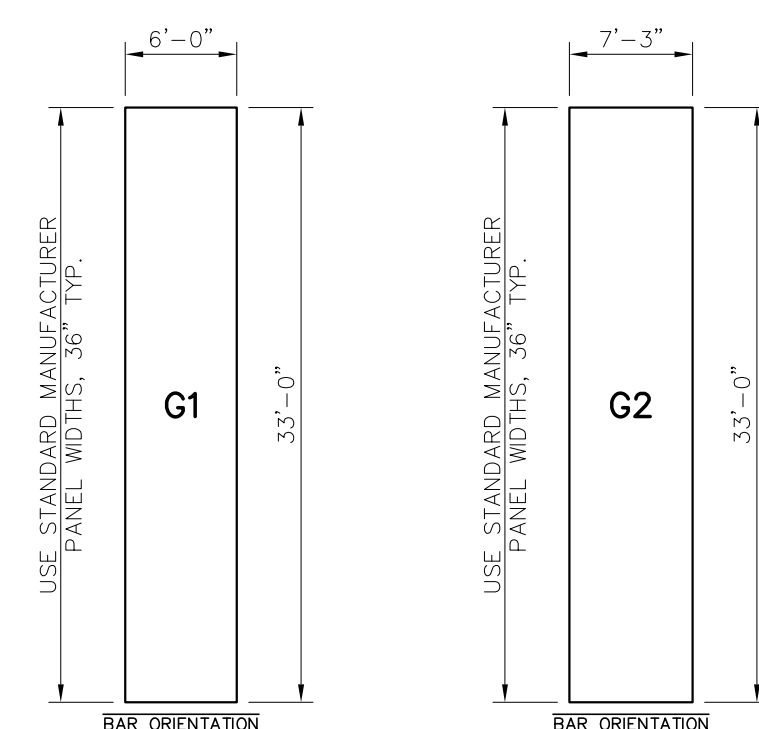


(2) LOCATIONS FOR W10x12

**GRATING ORIENTATION**  
SCALE: 3/16"=1'-0"

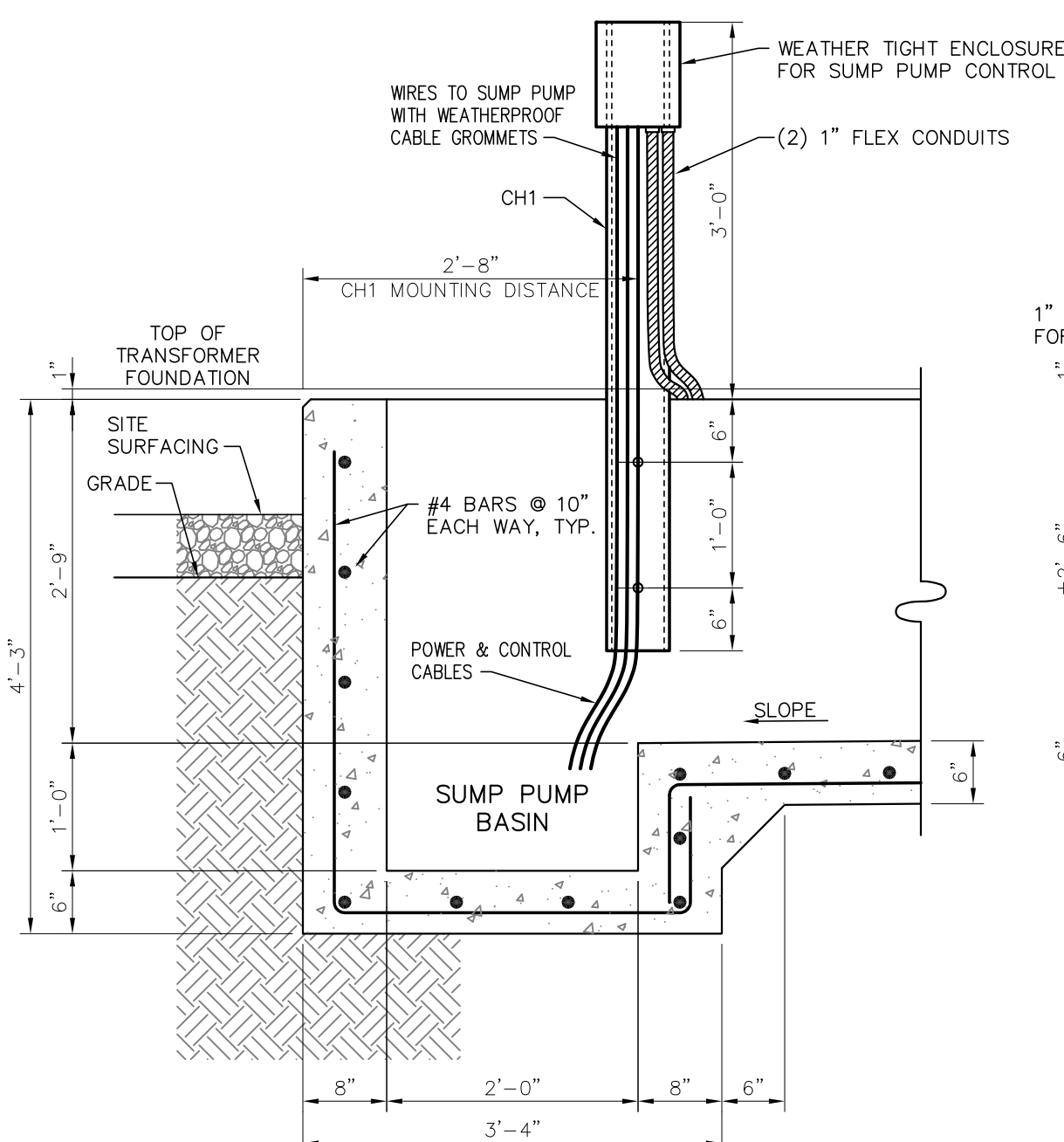


**RAILING DETAIL**  
SCALE: 1"=1'-0"

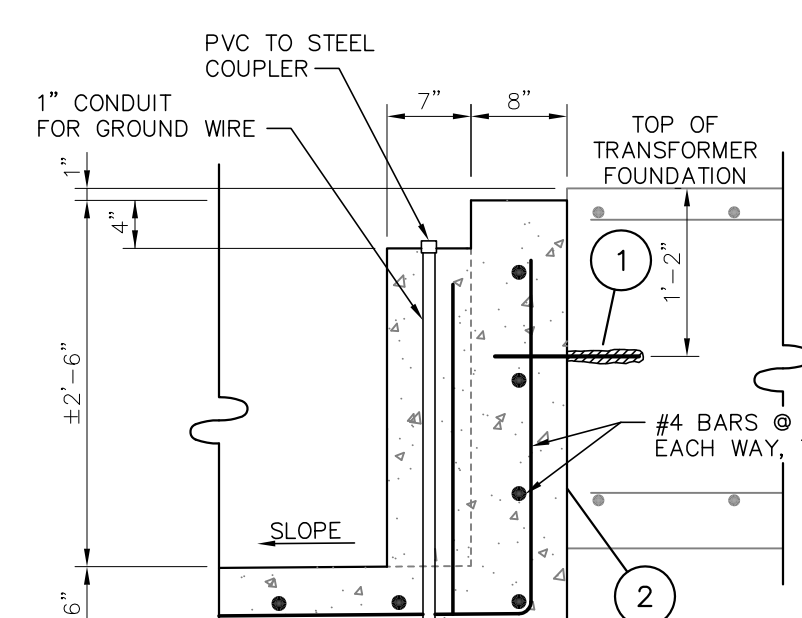


**GRATING LAYOUT "G1"**  
N.T.S.  
1 EA REQUIRED  
2 1/2" x 3/16, 19-W-4  
SERRATED SURFACE

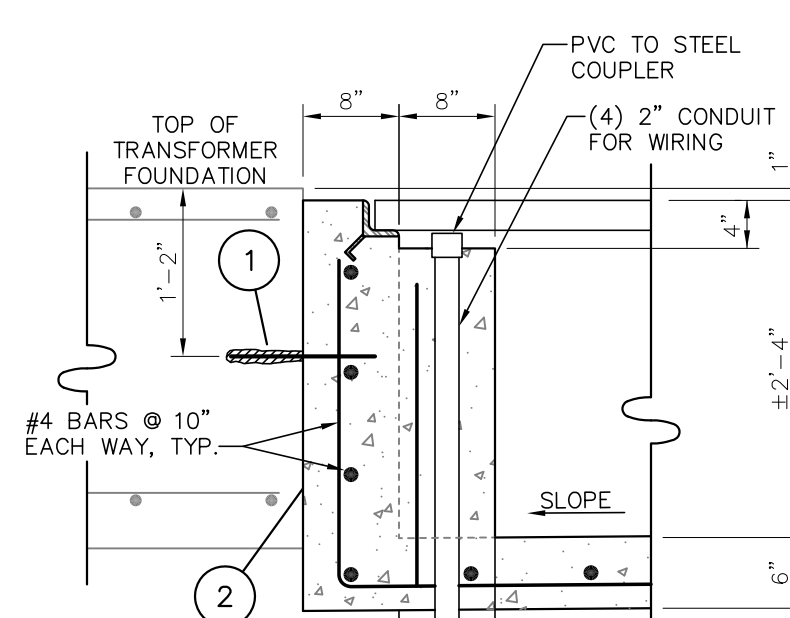
**GRATING LAYOUT "G2"**  
N.T.S.  
1 EA REQUIRED  
2 1/2" x 3/16, 19-W-4  
SERRATED SURFACE



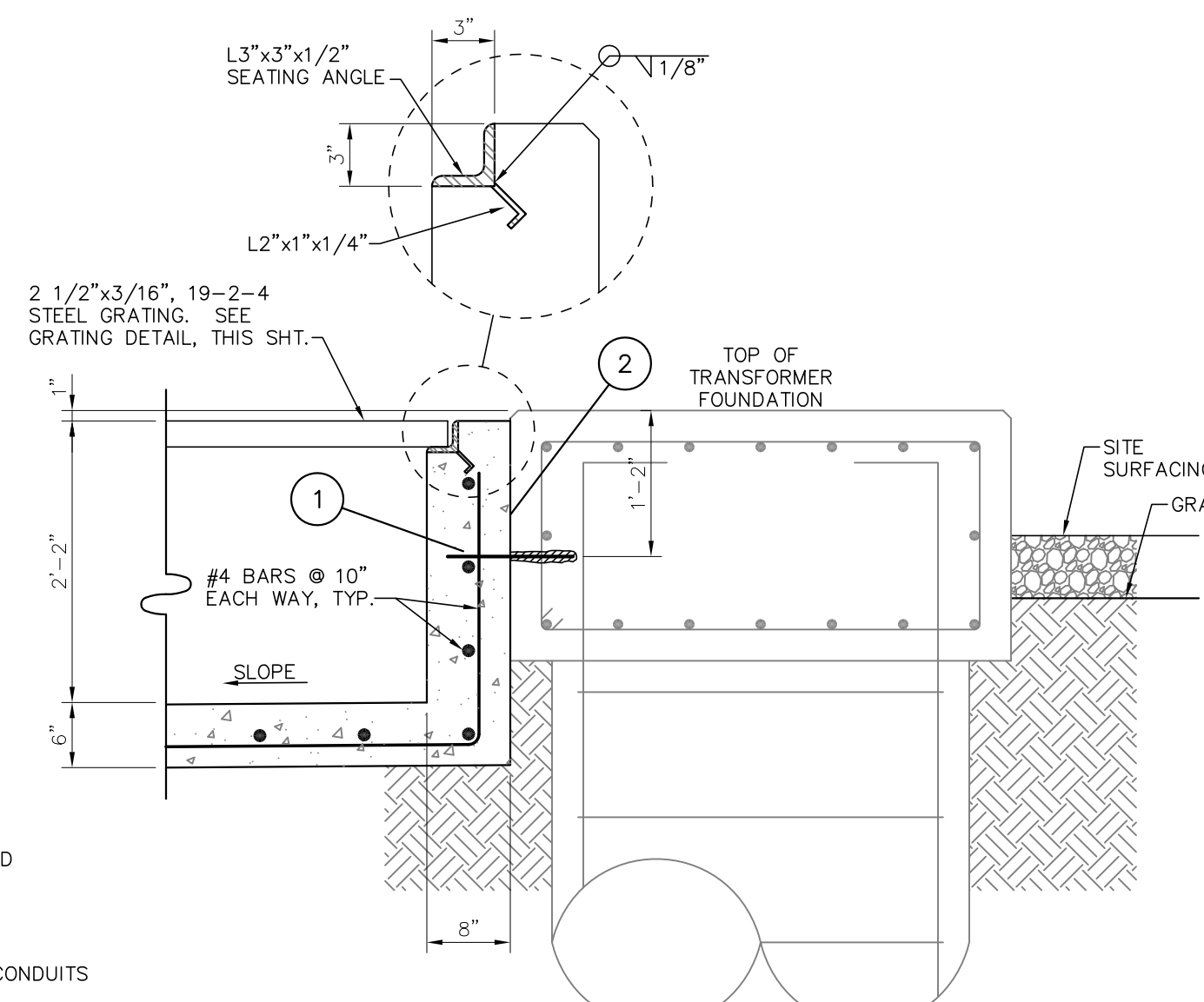
**CONTAINMENT PIT DETAIL SECTION A**  
SCALE: 3/4"=1'-0"



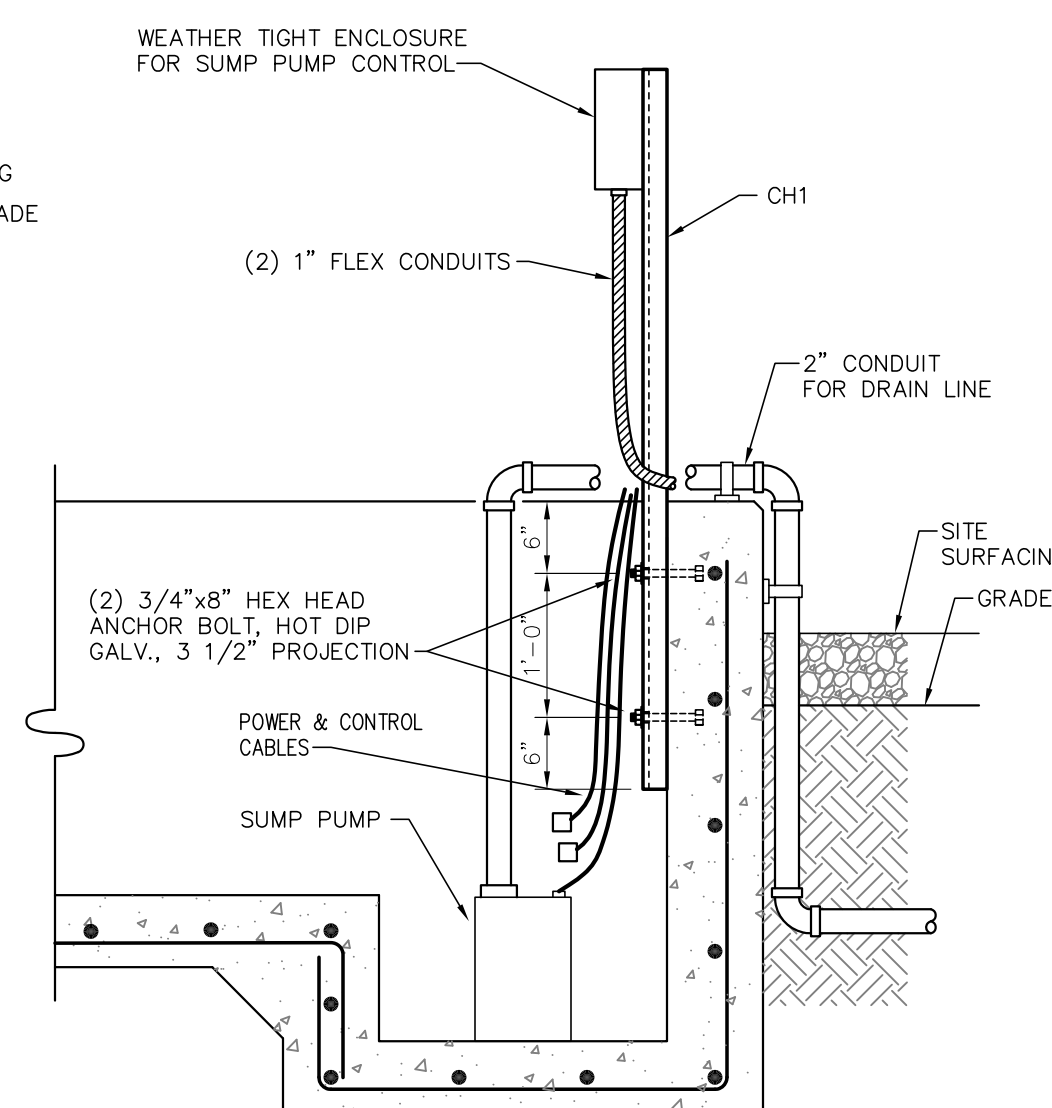
**CONTAINMENT PIT DETAIL SECTION B**  
SCALE: 3/4"=1'-0"



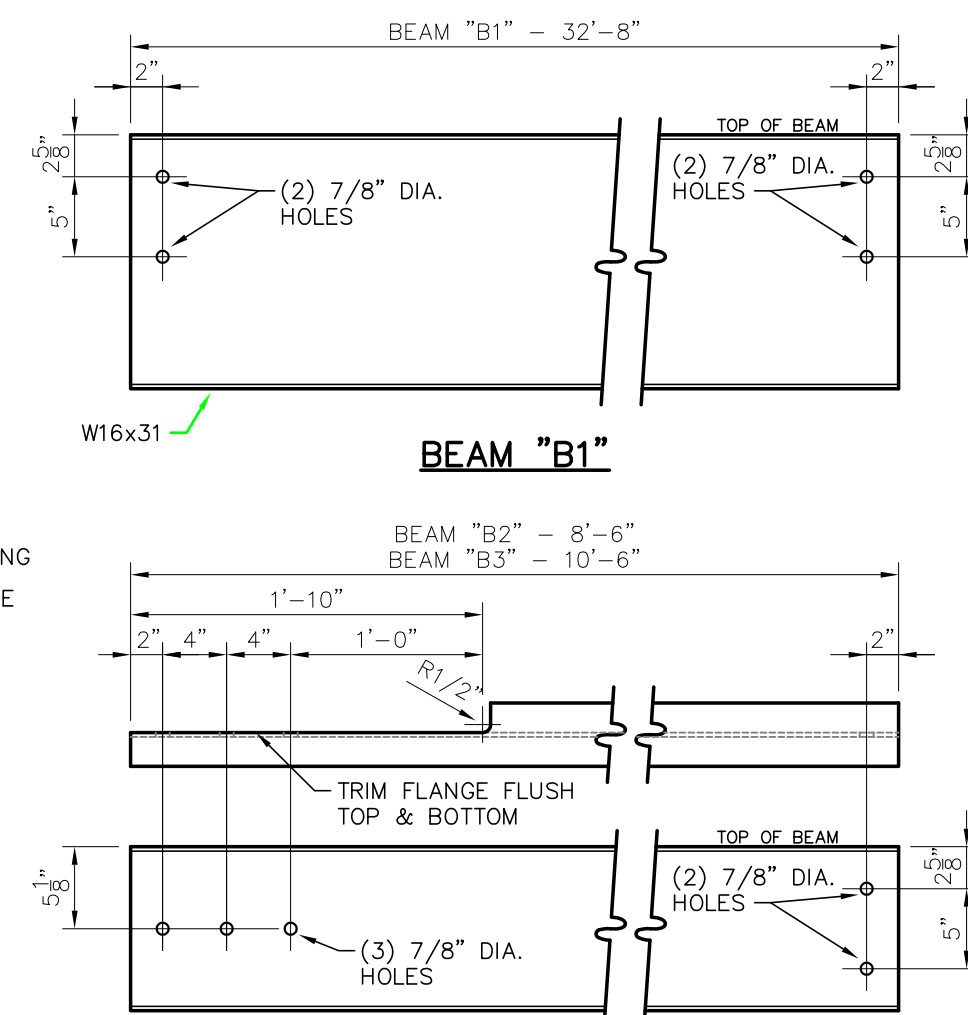
**CONTAINMENT PIT DETAIL SECTION C**  
SCALE: 3/4"=1'-0"



**CONTAINMENT PIT DETAIL SECTION D**  
SCALE: 3/4"=1'-0"

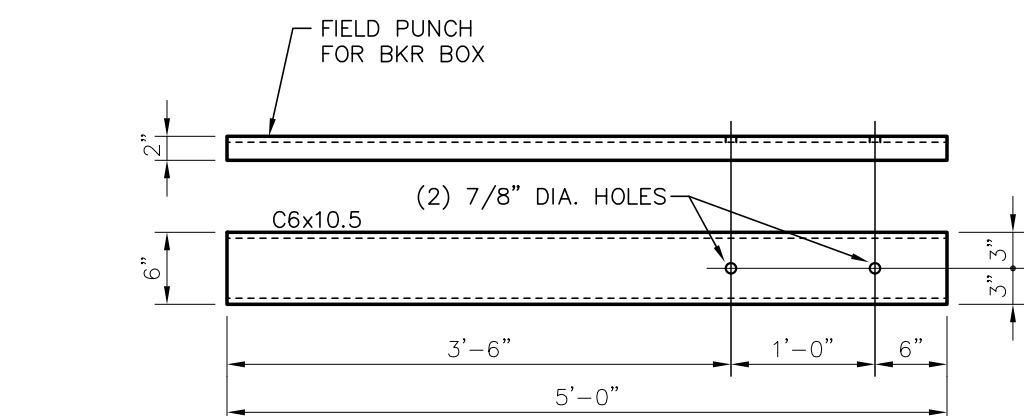


**CONTAINMENT PIT DETAIL SECTION E**  
SCALE: 3/4"=1'-0"



**SUPPORT BEAMS DETAIL**  
SCALE: 1"=1'-0"

(3) LOCATIONS FOR W16x31 (B1)  
(2) LOCATIONS FOR W10x12 (B2)  
(2) LOCATIONS FOR W10x12 (B3)



**CHANNEL CH1**  
SCALE: 3/4"=1'-0"

**FOR BIDDING PURPOSES ONLY**

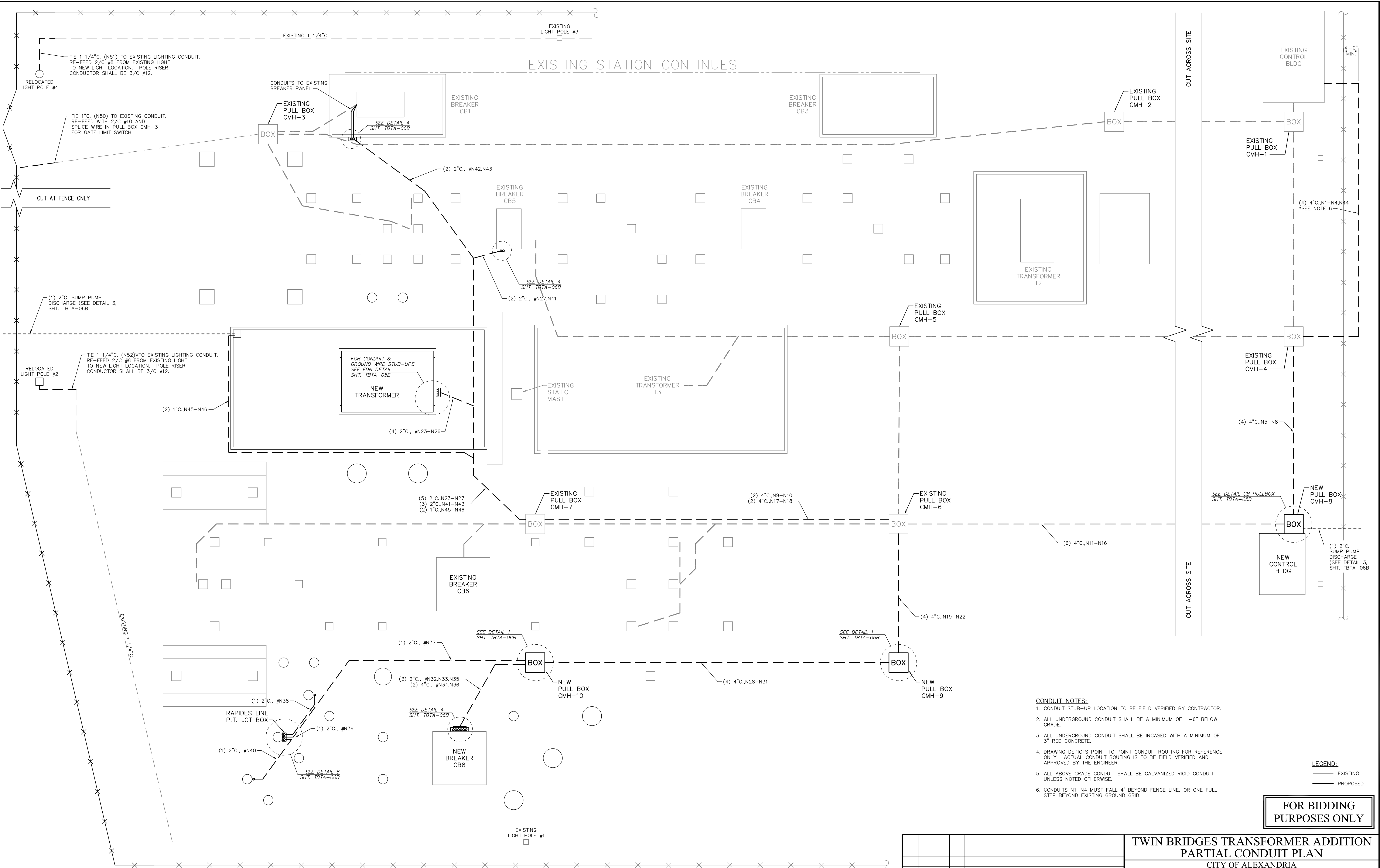
- FIELD DRILL 1-1/4" x 10" DEEP HOLE @ 12" O.C. INTO EXISTING FOUNDATION. SECURE A 12" LONG NO. 4 REBAR WITH SIKADUR 31, HI-MOD GEL EPOXY PASTE ADHESIVE.
- COAT SURFACE OF EXISTING CONCRETE WITH SIKADUR 31, HI-MOD GEL EPOXY PASTE ADHESIVE PRIOR TO POURING NEW CONCRETE.

NO.	DATE	BY	REVISIONS
B	5/30/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION
A	3/4/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION

**TWIN BRIDGES TRANSFORMER ADDITION OIL CONTAINMENT PIT PLAN & DETAILS**  
CITY OF ALEXANDRIA  
ALEXANDRIA, LOUISIANA

SCALE: NOTED	DATE: 2/20/19	DRAWN BY: JHD	APPROVED BY: JJC	PROJECT NO.: 2019-E-16A
<b>BHA, INC.</b> BATON ROUGE, LOUISIANA				DRAWING NO.: TBTA-05E REV.: B

BHA245.DWG 04/01/2019



- CONDUIT NOTES:**
- CONDUIT STUB-UP LOCATION TO BE FIELD VERIFIED BY CONTRACTOR.
  - ALL UNDERGROUND CONDUIT SHALL BE A MINIMUM OF 1'-6" BELOW GRADE.
  - ALL UNDERGROUND CONDUIT SHALL BE INCASED WITH A MINIMUM OF 3" RED CONCRETE.
  - DRAWING DEPICTS POINT TO POINT CONDUIT ROUTING FOR REFERENCE ONLY. ACTUAL CONDUIT ROUTING IS TO BE FIELD VERIFIED AND APPROVED BY THE ENGINEER.
  - ALL ABOVE GRADE CONDUIT SHALL BE GALVANIZED RIGID CONDUIT UNLESS NOTED OTHERWISE.
  - CONDUITS N1-N4 MUST FALL 4' BEYOND FENCE LINE, OR ONE FULL STEP BEYOND EXISTING GROUND GRID.

**LEGEND:**  
 — EXISTING  
 - - - PROPOSED

**FOR BIDDING PURPOSES ONLY**

<b>TWIN BRIDGES TRANSFORMER ADDITION PARTIAL CONDUIT PLAN</b>			
CITY OF ALEXANDRIA ALEXANDRIA, LOUISIANA			
SCALE: 3/32"=1'-0"	DATE: 8/15/18	DRAWN BY: JHD	APPROVED BY: JJC
PROJECT NO.: 2019-E-16A			REV.: B
BHA, INC. BATON ROUGE, LOUISIANA		DRAWING NO.: TBTA-06	

**PARTIAL CONDUIT PLAN**  
SCALE: 3/32"=1'-0"



### CONDUIT & WIRE SCHEDULE

CABLE NO.	CONDUCTOR SIZE	WIRE COLOR	FROM	TO	ROUTE	USE	NOTES
1101S	2 - 1/C # 4/0		125V DC PANEL B (OLD HOUSE)	125V DC PANEL (NEW HOUSE)	N1,CMH-4,N5,CMH-8	100A - DC SUBPANEL SOURCE #1	
1301S	2/C #8		125V DC PANEL (NEW HOUSE)	AT4 P1 & P2 PANEL (NEW HOUSE)	C-TRAY	30A - AT4 DC SOURCE #1	
1302S	2/C #8		125V DC PANEL B (OLD HOUSE)	AT4 P1 & P2 PANEL (NEW HOUSE)	N1,CMH-4,N5,CMH-8	30A - AT4 DC SOURCE #2	
1401S	2/C #8		125V DC PANEL (NEW HOUSE)	CB8 CTRL PANEL (NEW HOUSE)	C-TRAY	30A - CB8 DC SOURCE #1	
1402S	2/C #8		125V DC PANEL B (OLD HOUSE)	CB8 CTRL PANEL (NEW HOUSE)	N1,CMH-4,N5,CMH-8	30A - CB8 DC SOURCE #2	
1701S	2/C #8 SH		125V DC PANEL (NEW HOUSE)	AT4 YARD CABINET	CMH-8,N11,CMH-6,N9,CMH-7,N23	15A - AT4 DC SUPPLY	
2201S	3 - 1/C # 4/0		225V AC PANEL (OLD HOUSE)	225V AC PANEL (NEW HOUSE)	N44,CMH-4,N6,CMH-8	200A - AC SUBPANEL SOURCE	
2301S	3/C #10		120V AC PANEL (NEW HOUSE)	AT4 P1 & P2 PANEL (NEW HOUSE)	C-TRAY	1P/20A - AC SUPPLY	
2401S	3/C #10		120V AC PANEL (NEW HOUSE)	CB8 CTRL PANEL (NEW HOUSE)	C-TRAY	1P/20A - AC SUPPLY	
2601S	3/C #8 SH		230V AC PANEL (NEW HOUSE)	CB8 YARD CABINET	CMH-8,N12,CMH-6,N19,CMH-9,N28,CMH-10,N32	2P/35A - CB8 AC SUPPLY	
2701S	3 - 1/C # 4/0 SH		230V AC PANEL (NEW HOUSE)	AT4 YARD CABINET	CMH-8,N12,CMH-6,N10,CMH-7,N24	2P/150A - AT4 AC SUPPLY	
2901S	2/C #10 SH		120V AC PANEL (NEW HOUSE)	RAPIDES LINE PT J-BOX	CMH-8,N12,CMH-6,N19,CMH-9,N28,CMH-10,N37	1P/5A - J-BOX HEATERS	
2902S	3/C #10 SH		120V AC PANEL (NEW HOUSE)	PB8 SUMP PUMP	C-TRAY	PB8 SUMP PUMP POWER	
2903S	3/C #10 SH		120V AC PANEL (NEW HOUSE)	AT4 SUMP PUMP	N45,CMH-7,N17,CMH-6,N16,CMH-8	AT4 SUMP PUMP POWER	
3401R	12/C #10		AT4 P1 & P2 PANEL (NEW HOUSE)	CB8 CTRL PANEL (NEW HOUSE)	C-TRAY	AT4 & CB8 TRIP, CLOSE, BFI	
3402R	5/C #10		AT4 P1 & P2 PANEL (NEW HOUSE)	CB1 CTRL PANEL 2R (OLD HOUSE)	CMH-8,N7,CMH-4,N3	TRIP AT4 P1 & P2	
3403R	5/C #10		AT4 P1 & P2 PANEL (NEW HOUSE)	CB1 CTRL PANEL 2R/2F (OLD HOUSE)	CMH-8,N7,CMH-4,N3	TRIP, BLOCK CLOSE CB1	
3404R	5/C #10		AT4 P1 & P2 PANEL (NEW HOUSE)	CB1 CTRL PANEL 2R/2F (OLD HOUSE)	CMH-8,N7,CMH-4,N3	BFI CB1	
3405R	5/C #10		AT4 P1 & P2 PANEL (NEW HOUSE)	CB5 CTRL PANEL 4 (OLD HOUSE)	CMH-8,N6,CMH-4,N2	TRIP AT4 P1 & P2	
3406R	5/C #10		AT4 P1 & P2 PANEL (NEW HOUSE)	CB5 CTRL PANEL 4 (OLD HOUSE)	CMH-8,N6,CMH-4,N2	TRIP CB5	
3407R	5/C #10		AT4 P1 & P2 PANEL (NEW HOUSE)	CB5 CTRL PANEL 4 (OLD HOUSE)	CMH-8,N6,CMH-4,N2	BLOCK CLOSE, BFI CB5	
3408P	5/C #10		AT4 P1 & P2 PANEL (NEW HOUSE)	CB8 CTRL PANEL (NEW HOUSE)	C-TRAY	AT4 LOWSIDE POT	
3409M	SEL-C273A		AT4 P1 & P2 PANEL (NEW HOUSE)	CB8 CTRL PANEL (NEW HOUSE)	C-TRAY	SEL-487E COMM	
3410M	SEL-C273A		AT4 P1 & P2 PANEL (NEW HOUSE)	CB8 CTRL PANEL (NEW HOUSE)	C-TRAY	SEL-387 COMM	
3411A	12/C #18		AT4 P1 & P2 PANEL (NEW HOUSE)	CB8 CTRL PANEL (NEW HOUSE)	C-TRAY	ALARMS	
3601C	5/C #10 SH		CB8 YARD CABINET	AT4 P1 & P2 PANEL (NEW HOUSE)	N33,CMH-10,N29,CMH-9,N20,CMH-6,N13,CMH-8	AT4 P1 CTs	
3602C	5/C #10 SH		CB1 YARD CABINET	AT4 P1 & P2 PANEL (NEW HOUSE)	N42,CMH-7,N17,CMH-6,N13,CMH-8	AT4 P1 CTs	
3603C	5/C #10 SH		CB5 YARD CABINET	AT4 P1 & P2 PANEL (NEW HOUSE)	N41,CMH-7,N17,CMH-6,N13,CMH-8	AT4 P1 CTs	
3604R	2/C #10 SH		CB8 YARD CABINET	AT4 P1 & P2 PANEL (NEW HOUSE)	N34,CMH-10,N30,CMH-9,N21,CMH-6,N11,CMH-8	AT4 P1 BKR STATUS	
3605R	2/C #10 SH		CB1 YARD CABINET	AT4 P1 & P2 PANEL (NEW HOUSE)	N43,CMH-7,N9,CMH-6,N16,CMH-8	AT4 P1 BKR STATUS	
3606R	2/C #10 SH		CB5 YARD CABINET	AT4 P1 & P2 PANEL (NEW HOUSE)	N27,CMH-7,N9,CMH-6,N11,CMH-8	AT4 P1 BKR STATUS	
3607R	2/C #10 SH		CB8 YARD CABINET	AT4 P1 & P2 PANEL (NEW HOUSE)	N34,CMH-10,N30,CMH-9,N21,CMH-6,N11,CMH-8	AT4 P2 BKR STATUS	
3608R	2/C #10 SH		CB1 YARD CABINET	AT4 P1 & P2 PANEL (NEW HOUSE)	N43,CMH-7,N9,CMH-6,N16,CMH-8	AT4 P2 BKR STATUS	
3609R	2/C #10 SH		CB5 YARD CABINET	AT4 P1 & P2 PANEL (NEW HOUSE)	N27,CMH-7,N9,CMH-6,N11,CMH-8	AT4 P2 BKR STATUS	
3701S	2/C #10 SH		AT4 P1 & P2 PANEL (NEW HOUSE)	AT4 YARD CABINET	CMH-8,N14,CMH-6,N9,CMH-7,N23	AT4 NON-ELEC DC SUPPLY	
3702R	2/C #10 SH		AT4 P1 & P2 PANEL (NEW HOUSE)	AT4 YARD CABINET	CMH-8,N14,CMH-6,N9,CMH-7,N23	AT4 SUDDEN PRESSURE	
3703C	2/C #10 SH		AT4 P1 & P2 PANEL (NEW HOUSE)	AT4 YARD CABINET	CMH-8,N13,CMH-6,N17,CMH-7,N25	AT4 NEUTRAL CT	
3704C	5/C #10 SH		AT4 P1 & P2 PANEL (NEW HOUSE)	AT4 YARD CABINET	CMH-8,N13,CMH-6,N17,CMH-7,N25	AT4 HIGH-SIDE CT	
3705C	5/C #10 SH		AT4 P1 & P2 PANEL (NEW HOUSE)	AT4 YARD CABINET	CMH-8,N13,CMH-6,N17,CMH-7,N25	AT4 LOW-SIDE CT	
3706R	2/C #10 SH		AT4 YARD CABINET	AT4 P1 & P2 PANEL (NEW HOUSE)	N23,CMH-7,N9,CMH-6,N14,CMH-8	AT4 NON-ELEC RELAYING	
3901P	9/C #10 SH		RAPIDES LINE PT J-BOX	AT4 P1 & P2 PANEL (NEW HOUSE)	N37,CMH-10,N28,CMH-9,N19,CMH-6,N12,CMH-8	X-WINDING POT	
4401R	12/C #10		CB8 CTRL PANEL (NEW HOUSE)	CB6 CTRL PANEL (OLD HOUSE)	CMH-8,N6,CMH-4,N2	TRIP, BLOCK CLOSE, BFI CB8	
4402R	12/C #10		CB8 CTRL PANEL (NEW HOUSE)	CB6 CTRL PANEL (OLD HOUSE)	CMH-8,N6,CMH-4,N2	TRIP, BLOCK CLOSE, BFI CB6	
4403R	12/C #10		CB8 CTRL PANEL (NEW HOUSE)	CB5 CTRL PANEL 4 (OLD HOUSE)	CMH-8,N6,CMH-4,N2	TRIP, BFI CB8	
4404R	12/C #10		CB8 CTRL PANEL (NEW HOUSE)	CB5 CTRL PANEL 4 (OLD HOUSE)	CMH-8,N6,CMH-4,N2	BLOCK CLOSE CB8, TRIP, BFI CB5	
4405R	2/C #10		CB8 CTRL PANEL (NEW HOUSE)	CB5 CTRL PANEL 4 (OLD HOUSE)	CMH-8,N6,CMH-4,N2	BLOCK CLOSE CB5	

### CONDUIT & WIRE SCHEDULE

CABLE NO.	CONDUCTOR SIZE	WIRE COLOR	FROM	TO	ROUTE	USE	NOTES
4406R	12/C #10		CB8 CTRL PANEL (NEW HOUSE)	CB1 CTRL PANEL 2R/2F (OLD HOUSE)	CMH-8,N7,CMH-4,N3	TRIP, BLOCK CLOSE, BFI CB8	
4407R	12/C #10		CB8 CTRL PANEL (NEW HOUSE)	CB1 CTRL PANEL 2R (OLD HOUSE)	CMH-8,N7,CMH-4,N3	TRIP, BLOCK CLOSE, BFI CB1	
4408R	12/C #10		CB8 CTRL PANEL (NEW HOUSE)	RAPIDES LINE TRIP PANEL 5 (OLD HOUSE)	CMH-8,N7,CMH-4,N3	TRIP, BLOCK CLOSE CB8	
4409R	2/C #10		CB8 CTRL PANEL (NEW HOUSE)	BREAKER CB6 PANEL (OLD HOUSE)	CMH-8,N6,CMH-4,N2	BFI INITIATE CB8	
4410R	5/C #10		CB8 CTRL PANEL (NEW HOUSE)	BREAKER CB6 PANEL (OLD HOUSE)	CMH-8,N6,CMH-4,N2	TRIP TC1, TC2 CB8	
4411R	2/C #10		CB8 CTRL PANEL (NEW HOUSE)	RAPIDES LINE TRIP PANEL 5 (OLD HOUSE)	CMH-8,N6,CMH-4,N2	RAPIDES LINE TRANS TRIP SEND	
4412M	SEL-C273A		CB8 CTRL PANEL (NEW HOUSE)	CB8 CTRL PANEL (NEW HOUSE)	C-TRAY	COMMUNICATIONS	
4413M	COAXIAL		CB8 CTRL PANEL (NEW HOUSE)	CB8 CTRL PANEL (NEW HOUSE)	C-TRAY	SATELLITE CLOCK	
4414P	5/C #10		BREAKER CB5 CTRL 4 (OLD HOUSE)	AT4 P1 & P2 PANEL (NEW HOUSE)	N4,CMH-4,N8,CMH-8	AT4 LOWSIDE POT	
4601S	2/C #8 SH		CB8 CTRL PANEL (NEW HOUSE)	CB8 YARD CABINET	CMH-8,N14,CMH-6,N21,CMH-9,N30,CMH-10,N34	CB8 TC1 DC SUPPLY	
4602R	5/C #10 SH		CB8 CTRL PANEL (NEW HOUSE)	CB8 YARD CABINET	CMH-8,N14,CMH-6,N21,CMH-9,N30,CMH-10,N34	CB8 TC1	
4604S	2/C #4 SH		CB8 CTRL PANEL (NEW HOUSE)	CB8 YARD CABINET	CMH-8,N14,CMH-6,N21,CMH-9,N30,CMH-10,N34	CB8 MOTOR DC SUPPLY	
4605S	2/C #8 SH		CB8 CTRL PANEL (NEW HOUSE)	CB8 YARD CABINET	CMH-8,N14,CMH-6,N21,CMH-9,N30,CMH-10,N34	CB8 CLOSE DC SUPPLY	
4606R	5/C #10 SH		CB8 CTRL PANEL (NEW HOUSE)	CB8 YARD CABINET	CMH-8,N14,CMH-6,N21,CMH-9,N30,CMH-10,N34	CB8 CLOSE	
4607R	2/C #10 SH		CB8 CTRL PANEL (NEW HOUSE)	CB8 YARD CABINET	CMH-8,N14,CMH-6,N21,CMH-9,N30,CMH-10,N36	CB8 BKR STATUS	
4608S	2/C #8 SH		CB8 CTRL PANEL (NEW HOUSE)	CB8 YARD CABINET	CMH-8,N14,CMH-6,N21,CMH-9,N30,CMH-10,N36	CB8 TC2 DC SUPPLY	
4609R	5/C #10 SH		CB8 CTRL PANEL (NEW HOUSE)	CB8 YARD CABINET	CMH-8,N14,CMH-6,N21,CMH-9,N30,CMH-10,N36	CB8 TC2	
4610R	2/C #10 SH		CB8 CTRL PANEL (NEW HOUSE)	CB8 YARD CABINET	CMH-8,N14,CMH-6,N21,CMH-9,N30,CMH-10,N36	CB8 GREEN LIGHT IND	
4611C	5/C #10 SH		CB8 CTRL PANEL (NEW HOUSE)	CB8 YARD CABINET	CMH-8,N13,CMH-6,N20,CMH-9,N29,CMH-10,N33	CB8 CTRL CT	
4612C	5/C #10 SH		CB8 YARD CABINET	BREAKER CB6 PANEL (OLD HOUSE)	N33,CMH-10,N29,CMH-9,N20,CMH-6,N13,CMH-8,N8,CMH-4,N4	RAPIDES LINE PRIMARY RELAY CT	
4613C	5/C #10 SH		CB8 YARD CABINET	BREAKER CB6 PANEL (OLD HOUSE)	N33,CMH-10,N29,CMH-9,N20,CMH-6,N13,CMH-8,N8,CMH-4,N4	RAPIDES LINE BACKUP RELAY CT	
4614M	SEL-C273AF		CB8 YARD CABINET	CB8 CTRL PANEL (NEW HOUSE)	N35,CMH-10,N31,CMH-9,N22,CMH-6,N15,CMH-8	COMMUNICATIONS	
4615A	3/C #18 SH		CB8 YARD CABINET	CB8 CTRL PANEL (NEW HOUSE)	N36,CMH-10,N48,CMH-9,N29,CMH-6,N16,CMH-8	RELAY FAILURE ALARM	
4616R	2/C #10 SH		CB8 YARD CABINET	BREAKER CB6 PANEL (OLD HOUSE)	N36,CMH-10,N30,CMH-9,N21,CMH-6,N16,CMH-8,N7,CMH-4,N3	52b CONTACT	
4701M	SEL-C273AF		AT4 YARD CABINET	CB8 CTRL PANEL (NEW HOUSE)	N26,CMH-7,N18,CMH-6,N15,CMH-8	COMMUNICATIONS	
4702A	3/C #18 SH		AT4 YARD CABINET	CB8 CTRL PANEL (NEW HOUSE)	N23,CMH-7,N9,CMH-6,N16,CMH-8	RELAY FAILURE ALARM	
4801R	7/C #14		CB8 CTRL PANEL (NEW HOUSE)	SCADA RTU PANEL (OLD HOUSE)	CMH-8,N7,CMH-4,N3	CB8 SCADA CONTROLS	
4802R	7/C #14		CB8 CTRL PANEL (NEW HOUSE)	SCADA RTU PANEL (OLD HOUSE)	CMH-8,N7,CMH-4,N3	CB8 AUTO/NON-ELEC RECL	
4803A	7/C #18		CB8 CTRL PANEL (NEW HOUSE)	SCADA RTU PANEL (OLD HOUSE)	CMH-8,N7,CMH-4,N3	RTAC ALARM	
4901P	9/C #10 SH		RAPIDES LINE PT J-BOX	CB8 CTRL PANEL (NEW HOUSE)	N37,CMH-10,N28,CMH-9,N19,CMH-6,N12,CMH-8	Y-WINDING POT	
4902P	5/C #10 SH		RAPIDES LINE PT J-BOX	BREAKER CB6 PANEL (OLD HOUSE)	N37,CMH-10,N28,CMH-9,N19,CMH-6,N12,CMH-8,N8,CMH-4,N4	X-WINDING POT	
4903P	5/C #10 SH		RAPIDES LINE PT J-BOX	BREAKER CB6 PANEL (OLD HOUSE)	N37,CMH-10,N28,CMH-9,N19,CMH-6,N12,CMH-8,N8,CMH-4,N4	Y-WINDING POT	
7701C	5/C #10 SH		AT4 YARD CABINET	REVENUE MTR PANEL 7 (OLD HOUSE)	N23,CMH-7,N9,CMH-6,SPARE CONDUIT,CMH-5,SPARE CONDUIT,CMH-4,N4	METERING CTs	
7901C	2/C #10 SH		AT4 YARD CABINET	AT4 A# SUIPOVER METERING CT	N47A *FIELD VERIFY PHASING	A# METERING CTs	
7902C	2/C #10 SH		AT4 YARD CABINET	AT4 B# SUIPOVER METERING CT	N47B, N47A *FIELD VERIFY PHASING	B# METERING CTs	
7903C	2/C #10 SH		AT4 YARD CABINET	AT4 C# SUIPOVER METERING CT	N47C, N47B, N47A *FIELD VERIFY PHASING	C# METERING CTs	
9401A	3/C #18 SH		AT4 SUMP PUMP	CB8 CTRL PANEL (NEW HOUSE)	N46,CMH-7,N17,CMH-6,N16,CMH-8	AT4 SUMP PUMP ALARMS	
9901P	9/C #10 SH		RAPIDES LINE PT J-BOX	RAPIDES LINE NODE A# PT	N38	A# POTENTIAL	
9902S	2/C #10 SH		RAPIDES LINE PT J-BOX	RAPIDES LINE NODE A# PT	N38	A# HEATERS	
9903P	9/C #10 SH		RAPIDES LINE PT J-BOX	RAPIDES LINE NODE B# PT	N39	B# POTENTIAL	
9904S	2/C #10 SH		RAPIDES LINE PT J-BOX	RAPIDES LINE NODE B# PT	N39	B# HEATERS	
9905P	9/C #10 SH		RAPIDES LINE PT J-BOX	RAPIDES LINE NODE C# PT	N40	C# POTENTIAL	
9906S	2/C #10 SH		RAPIDES LINE PT J-BOX	RAPIDES LINE NODE C# PT	N40	C# HEATERS	
101A	2/C #10		CMH-3	GATE CONTACT	N50	GATE ALARM	
102P	2/C #8		EXISTING LIGHT POLE #1	RELOCATED LIGHT POLE #2	N51	AREA LIGHTING	
103P	2/C #8		EXISTING LIGHT POLE #3	RELOCATED LIGHT POLE #4	N52	AREA LIGHTING	

**NOTE:**  
CONTRACTOR TO VERIFY PHASING WITH  
OWNER PRIOR TO WIRE TERMINATIONS

B	DATE	BY	REVISIONS
B	5/30/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION
A	3/4/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION
NO.	DATE	BY	REVISIONS

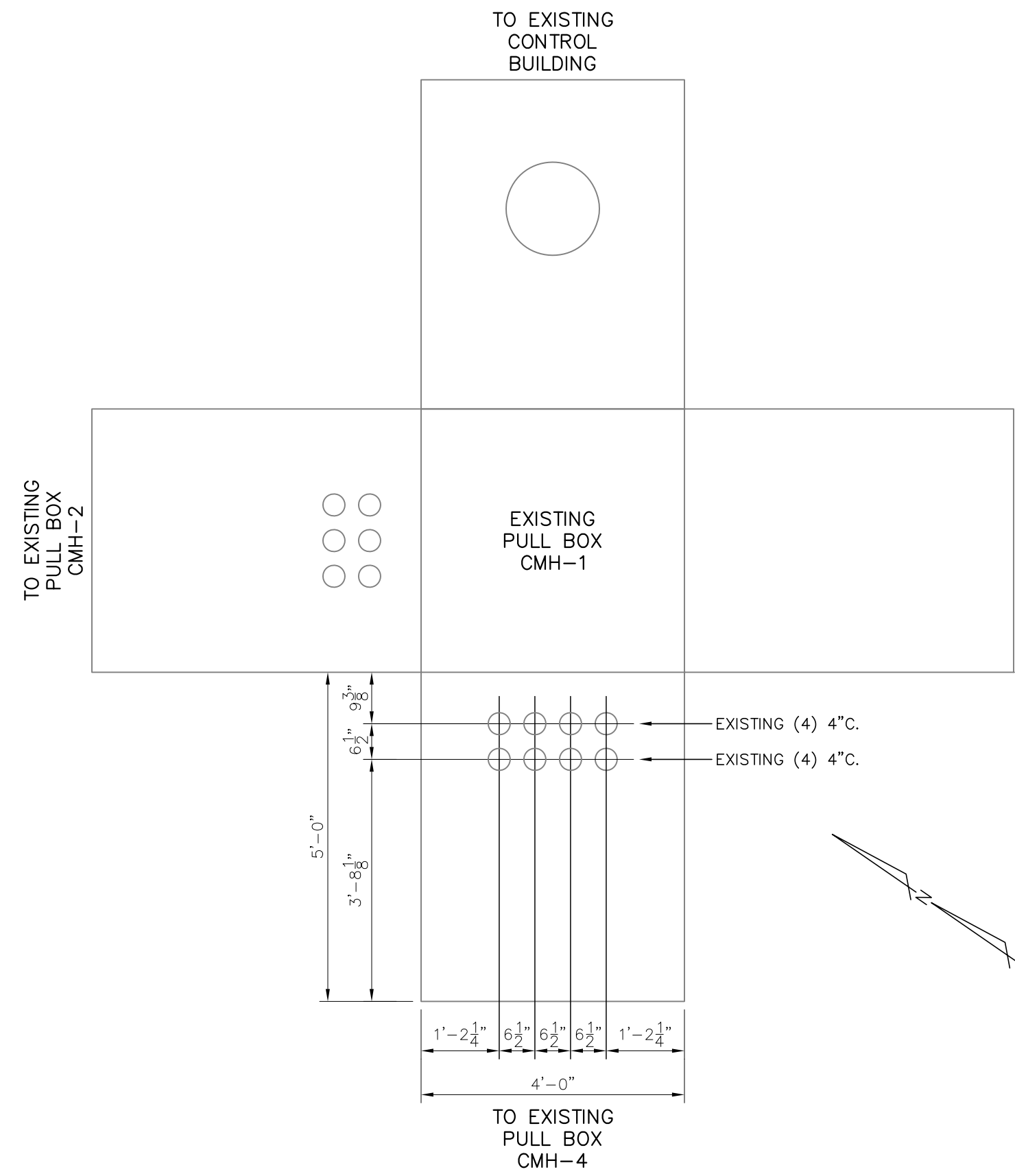
**FOR BIDDING  
PURPOSES ONLY**

**TWIN BRIDGES TRANSFORMER ADDITION  
CONDUIT & WIRE SCHEDULES**

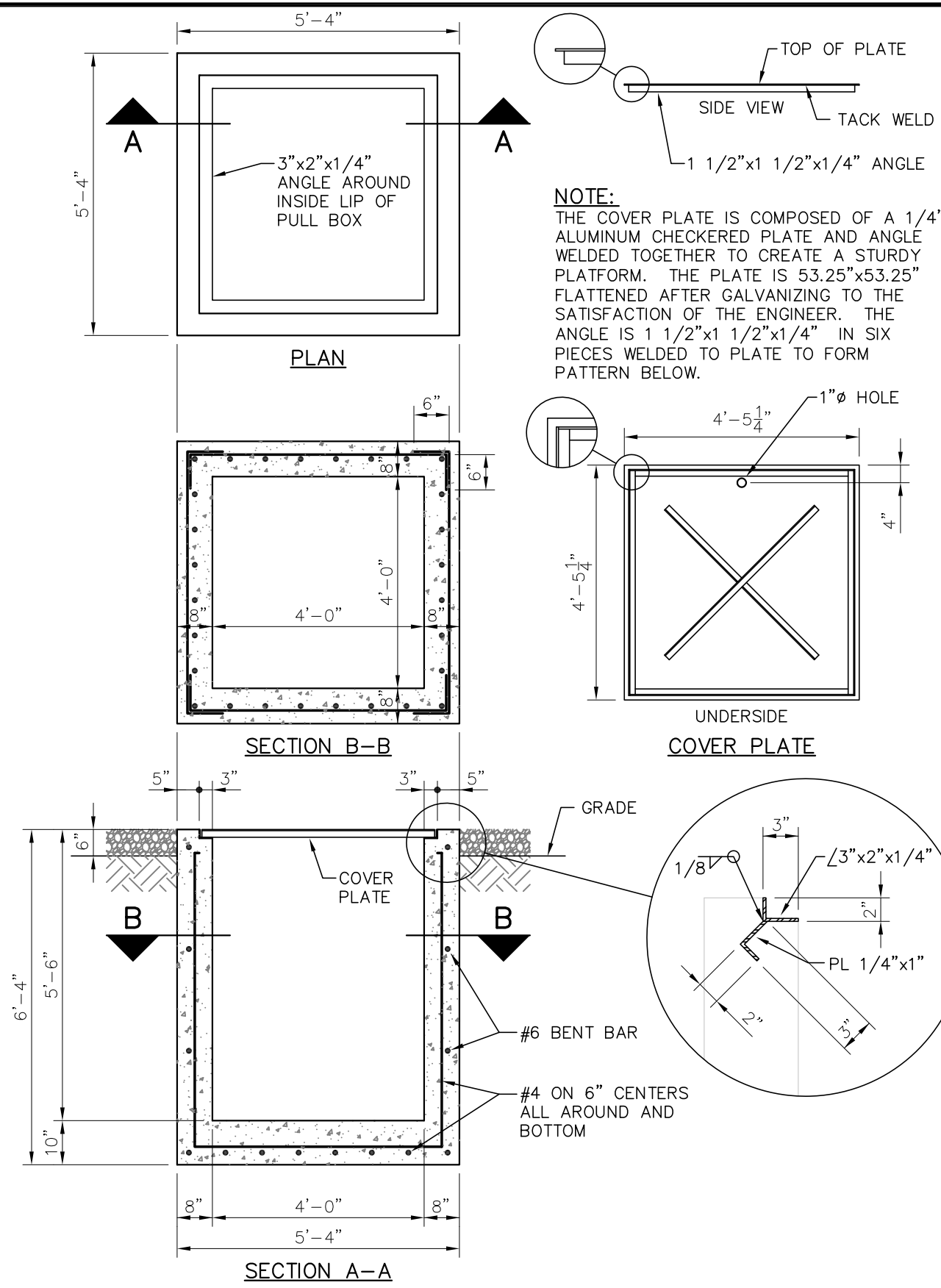
CITY OF ALEXANDRIA  
ALEXANDRIA, LOUISIANA

SCALE: NONE	DATE: 2/2019	DRAWN BY: TJW	APPROVED BY: JJC	PROJECT NO.: 2019-E-16A
<b>BHA, INC.</b> BATON ROUGE, LOUISIANA			DRAWING NO.: TBTA-06A REV.: B	

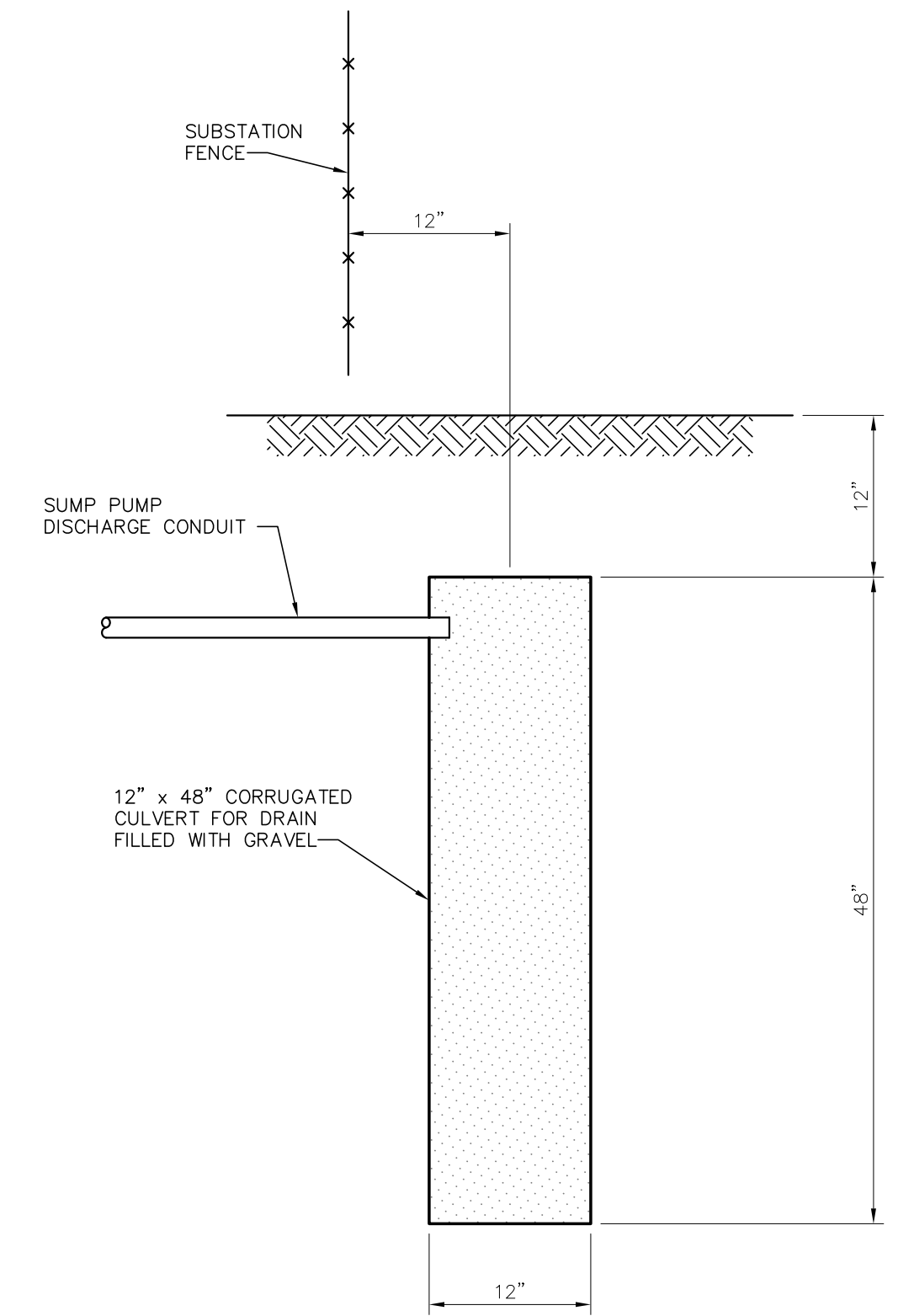
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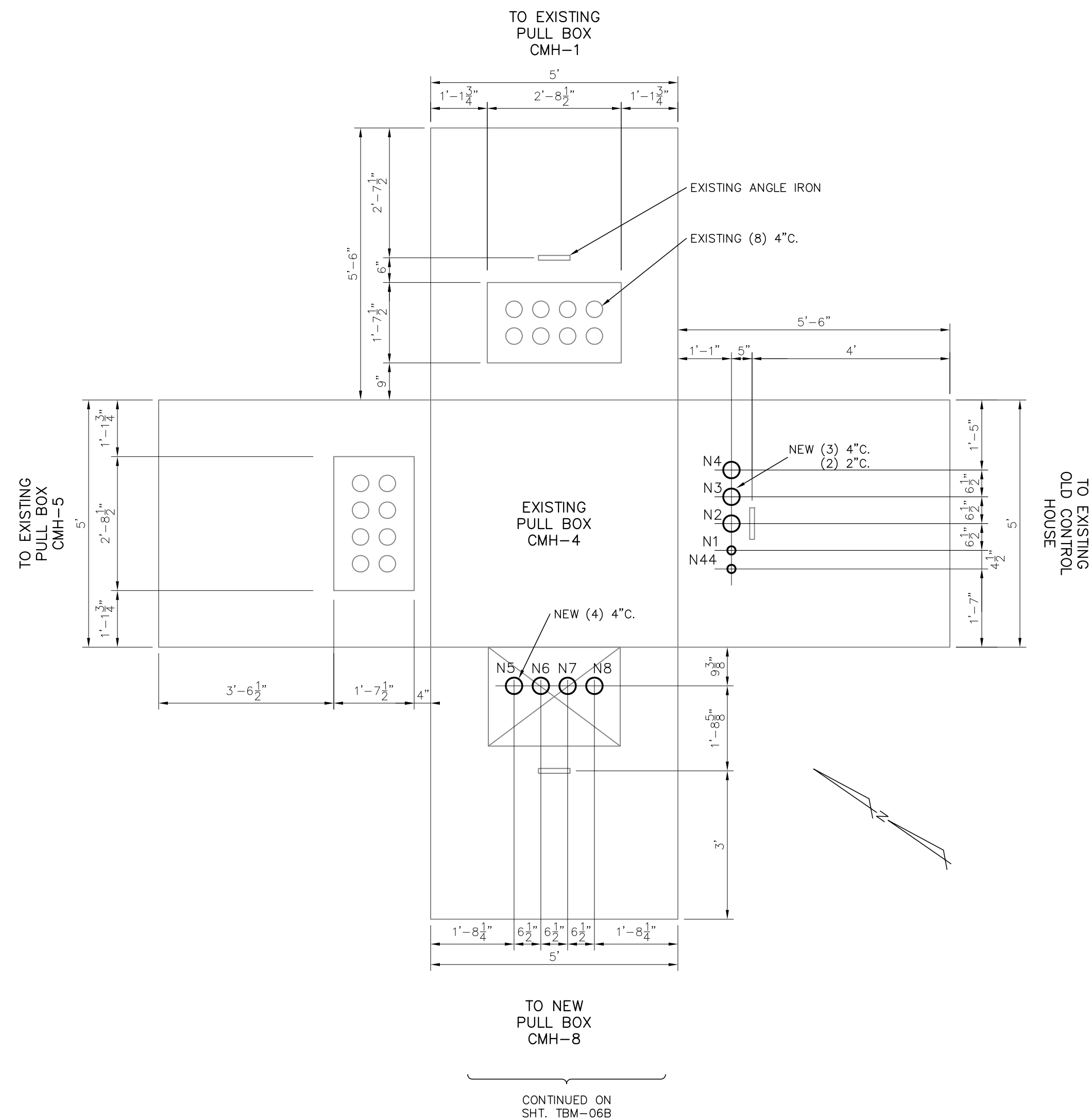
① PULL BOX DETAIL



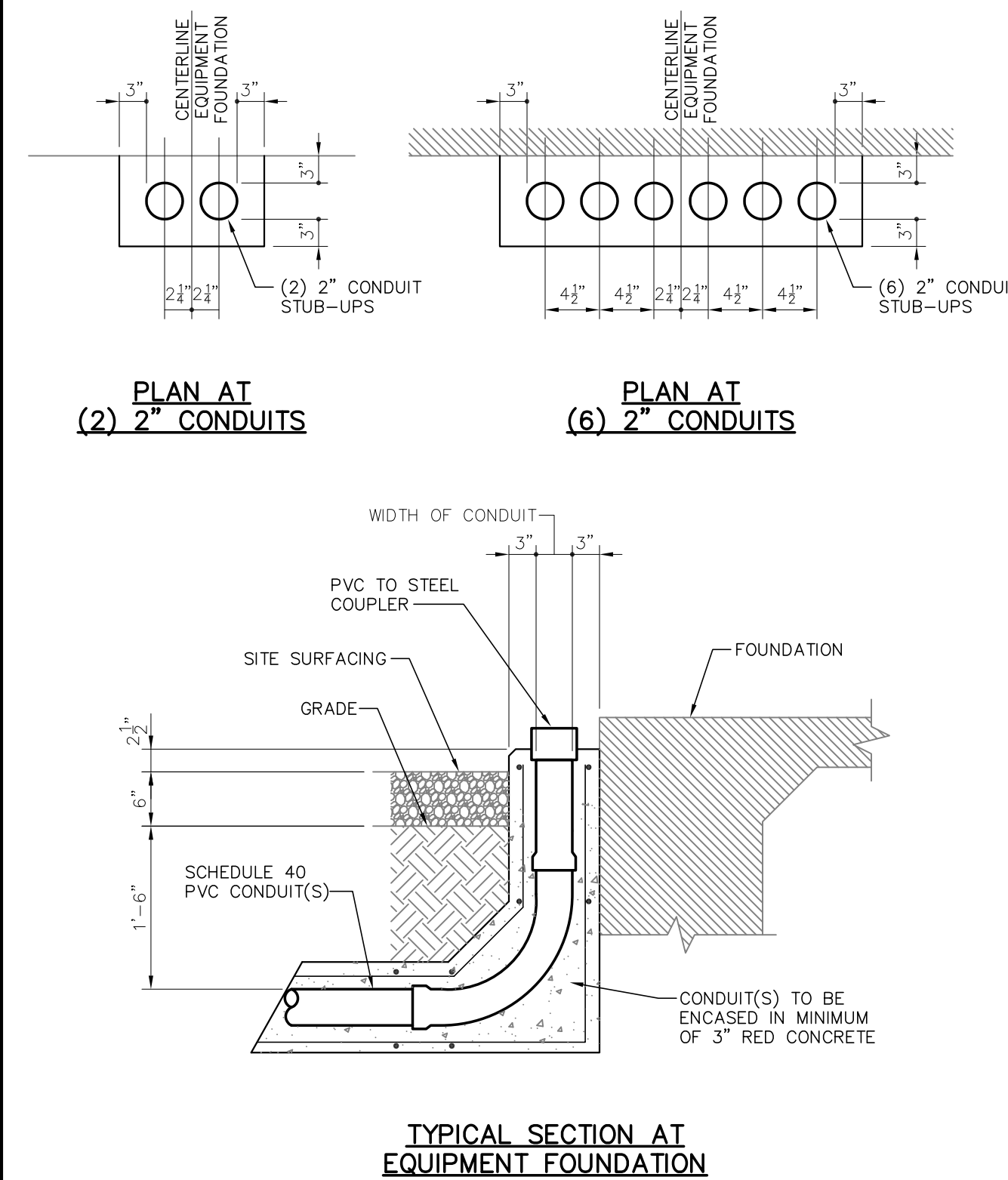
② CONDUIT DUCT BANK DETAIL  
HORIZONTAL #4 BAR @ 3'-0" INTERVALS



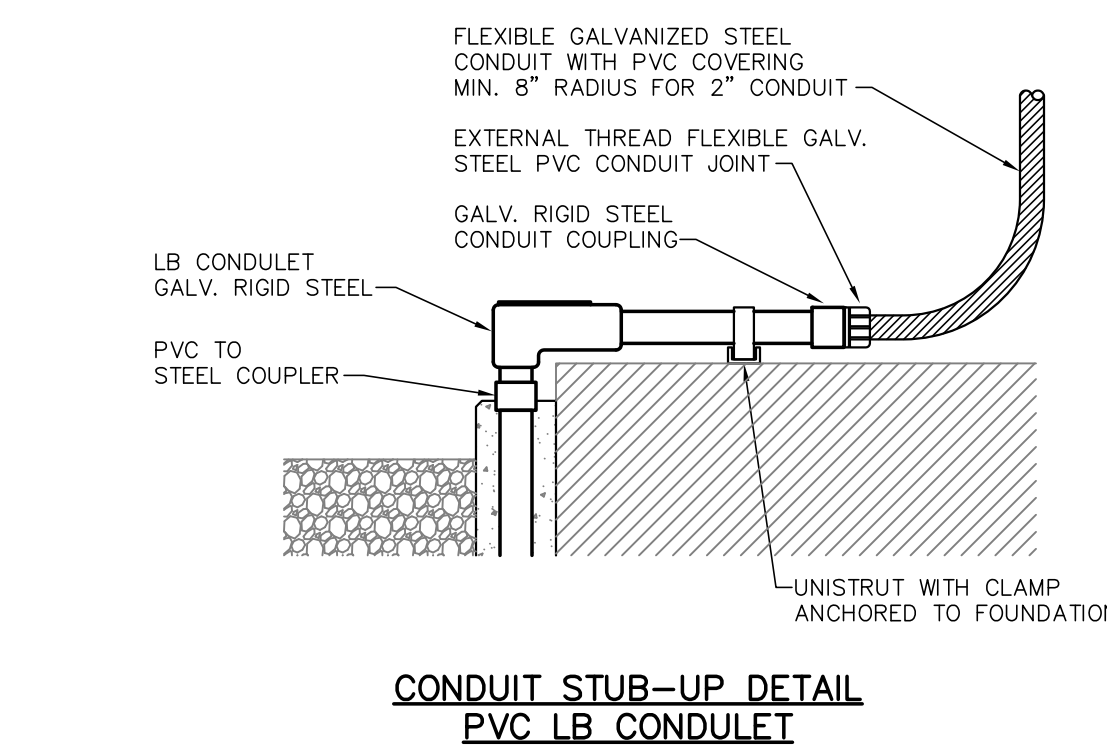
③ SUMP PUMP DRAIN  
AT FENCE DETAIL  
TYPICAL 2 LOCATIONS



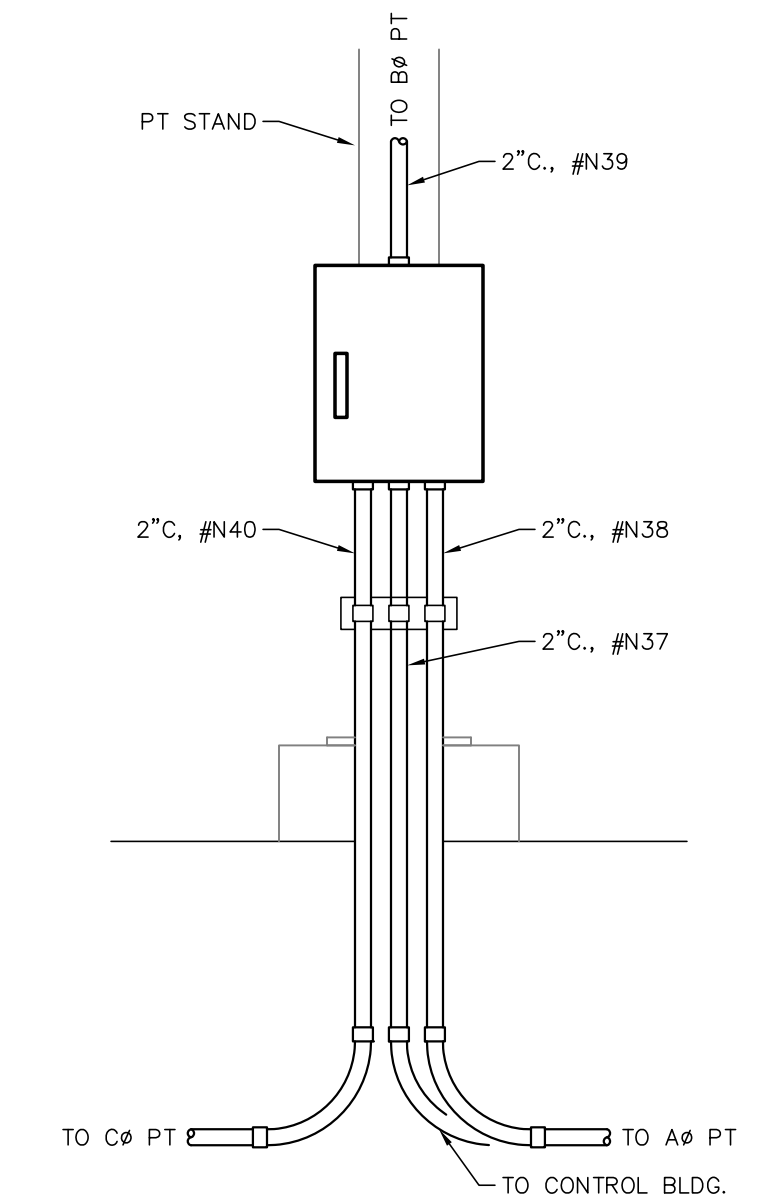
④ CONDUIT STUB-UP DETAIL  
STUB-UPS AT EQUIPMENT



⑤ CONDUIT STUB-UP TRANSITIONS DETAIL  
STUB-UPS AT EQUIPMENT



⑥ CONDUIT STUB-UP AT P.T. JUNCTION BOX



⑦ CONDUIT STUB-UP AT P.T. JUNCTION BOX

LEGEND:  
— EXISTING  
— PROPOSED

FOR BIDDING  
PURPOSES ONLY

TWIN BRIDGES TRANSFORMER ADDITION  
CONDUIT, WIRING, & PULL BOX DETAILS

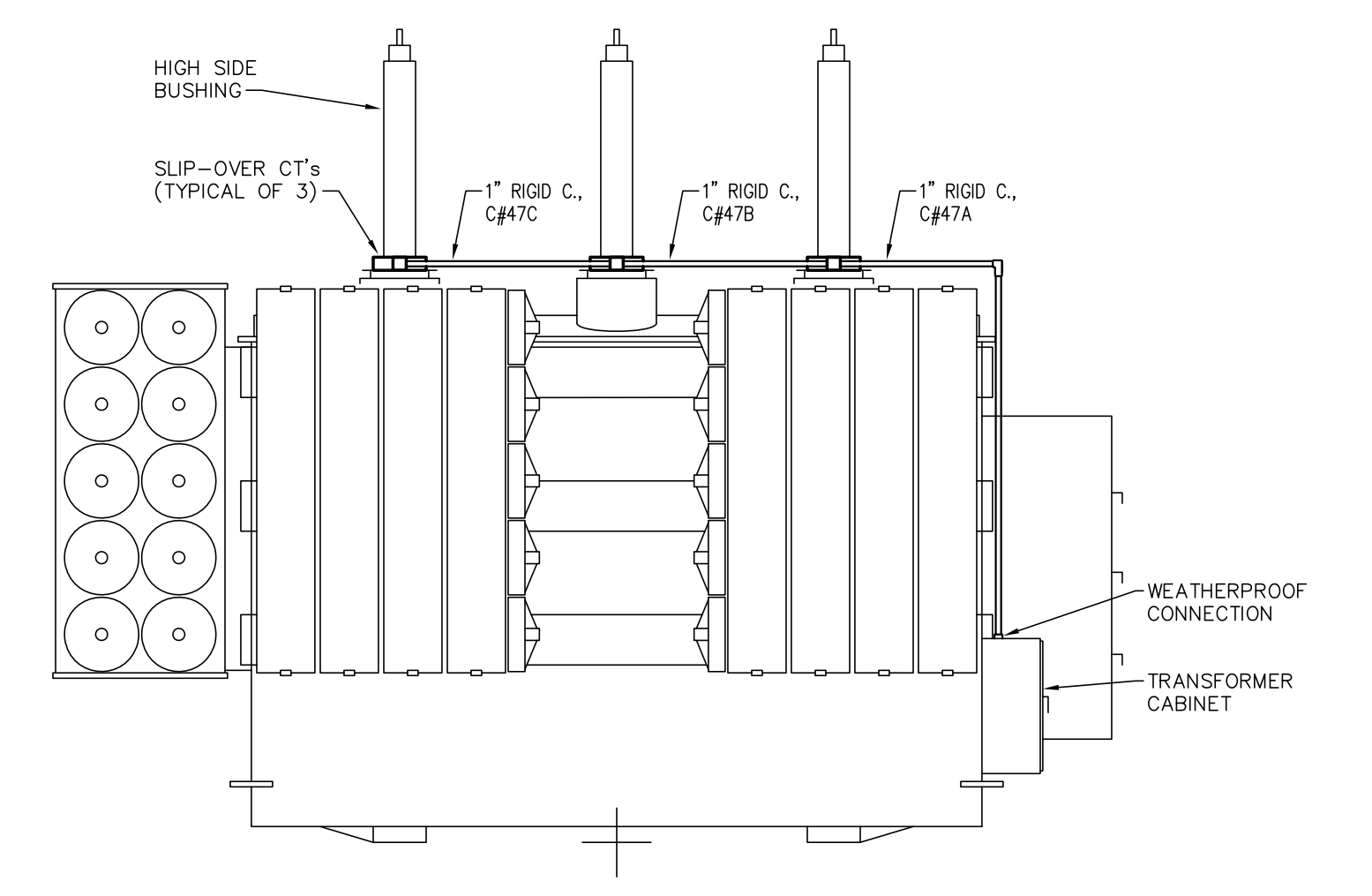
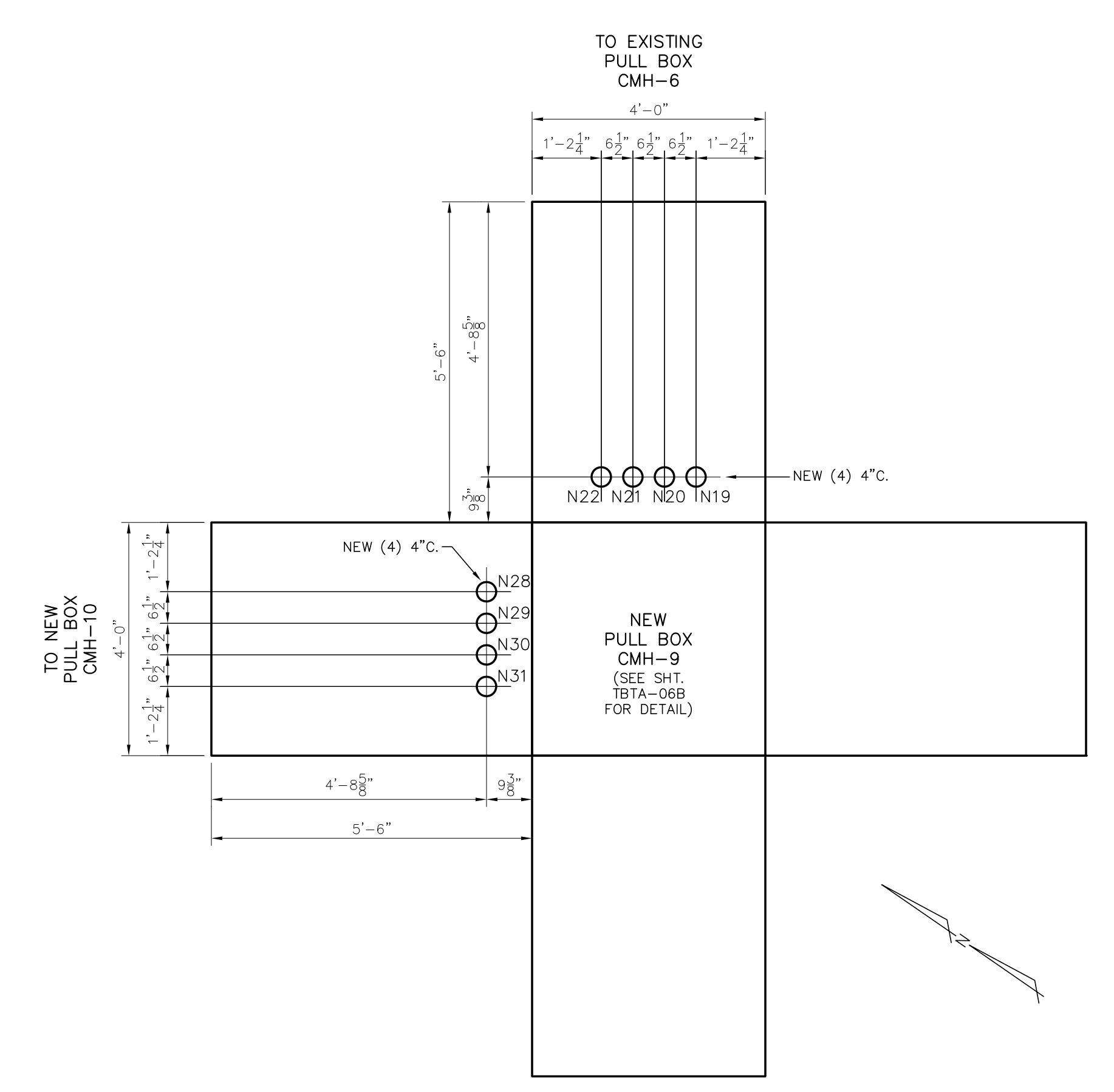
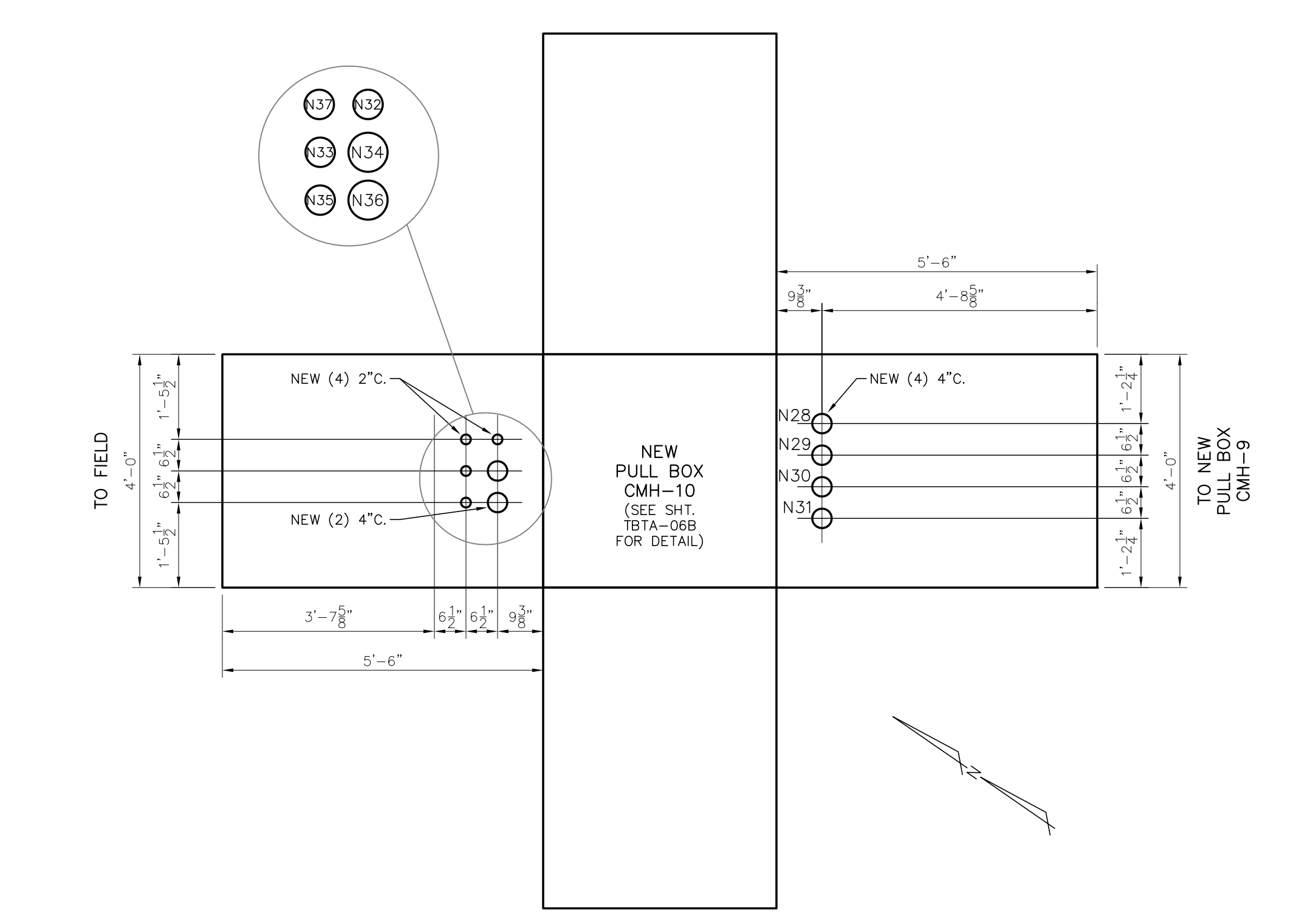
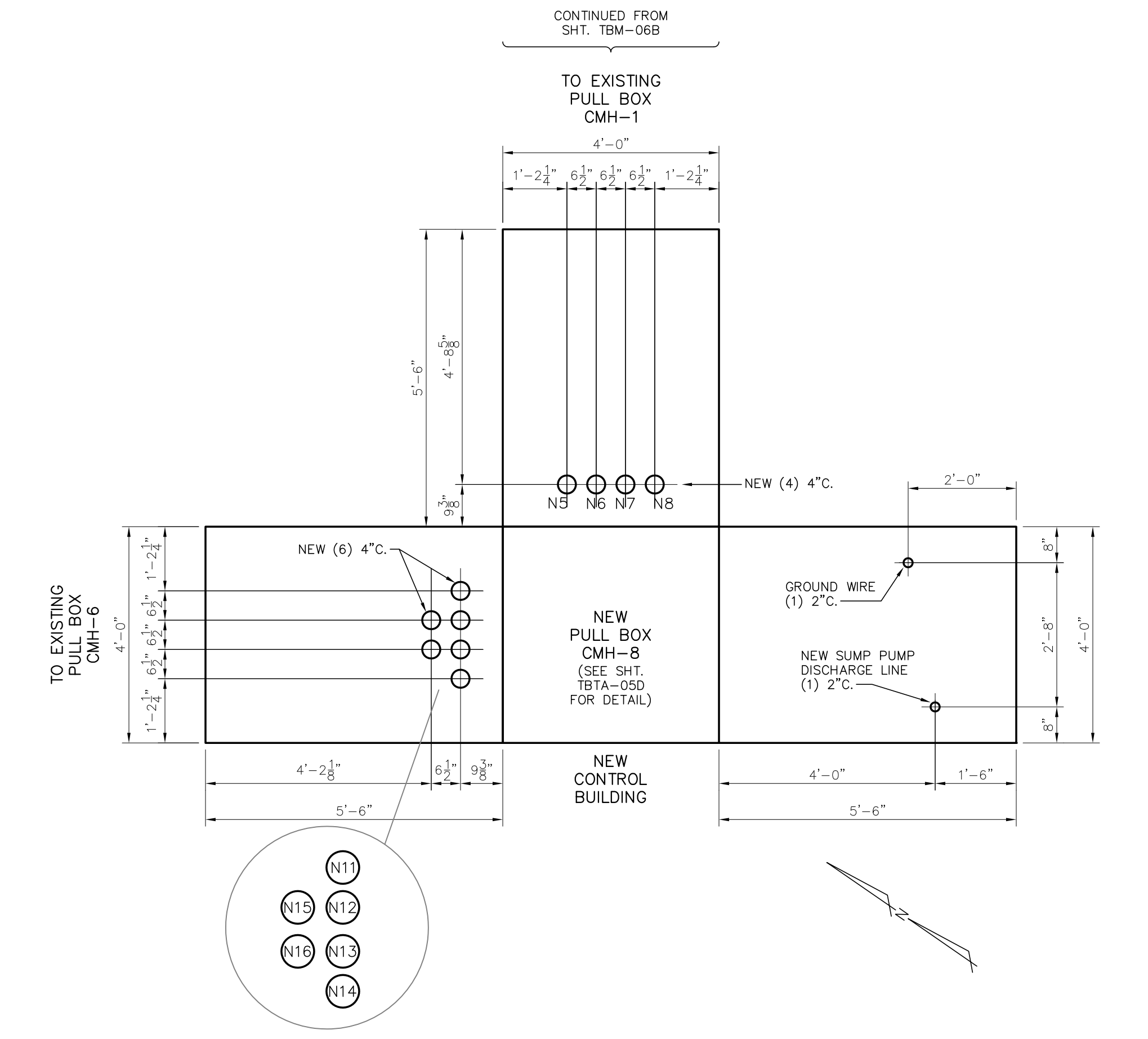
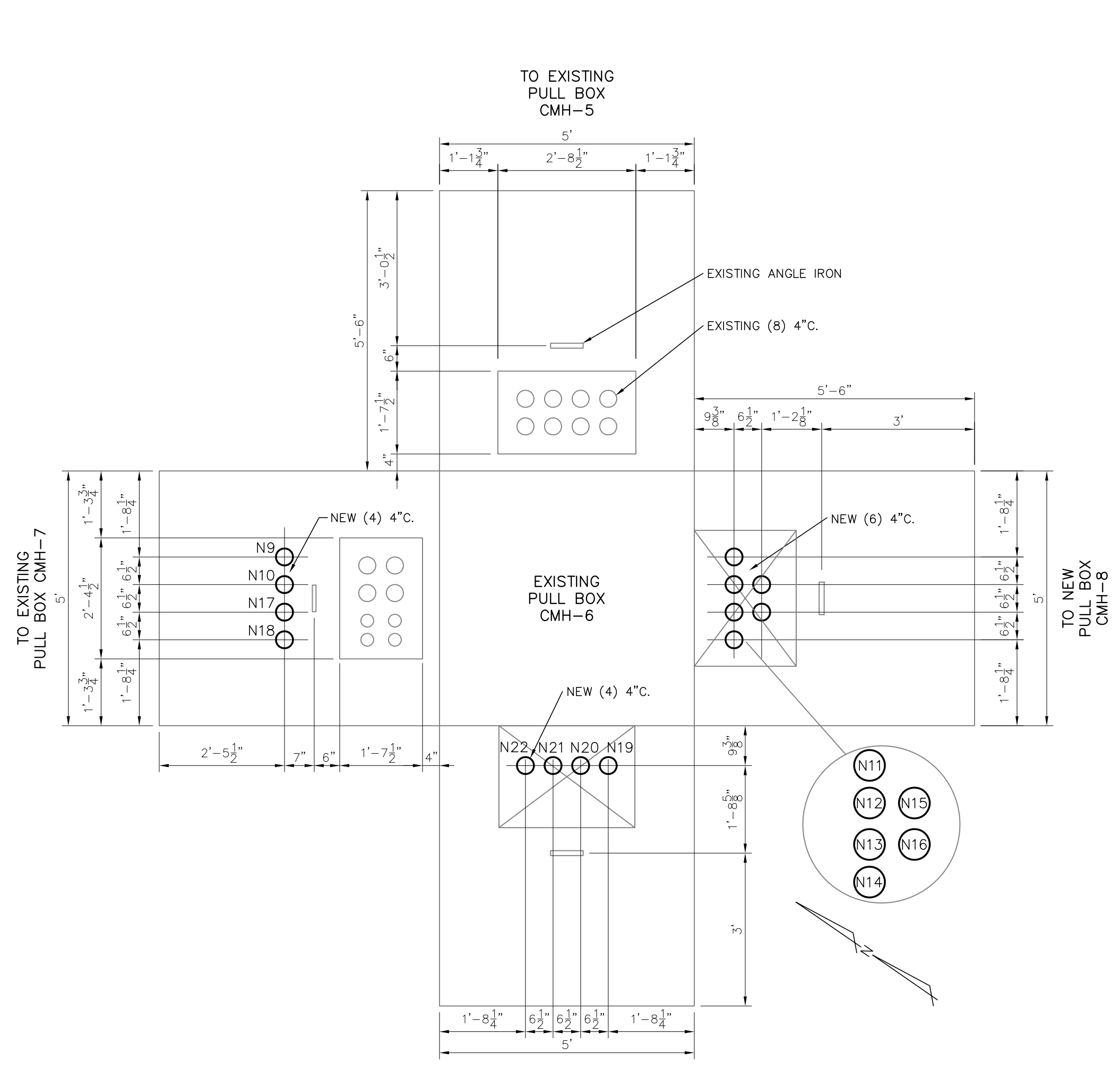
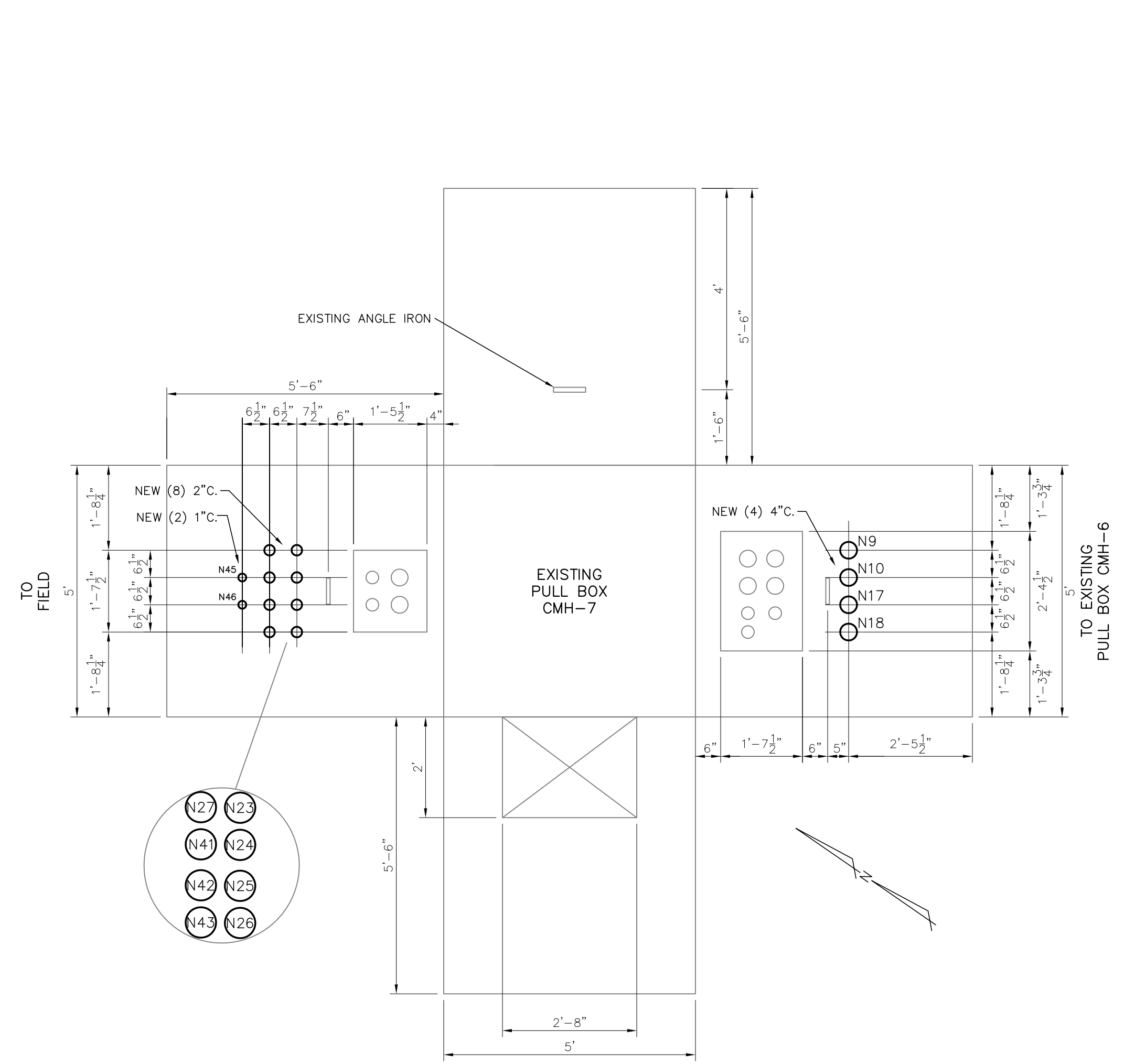
CITY OF ALEXANDRIA  
ALEXANDRIA, LOUISIANA

SCALE: N.T.S. DATE: 10/31/18 DRAWN BY: JHD APPROVED BY: JJC PROJECT NO.: 2019-E-16A

**BHA, INC.**  
BATON ROUGE, LOUISIANA

DRAWING NO.: TBTA-06B REV.: B

NO.	DATE	BY	REVISIONS
B	5/30/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION
A	3/4/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION



**SLIP-OVER CT'S INSTALLATION DETAIL**  
SCALE: 3/16"=1'-0"

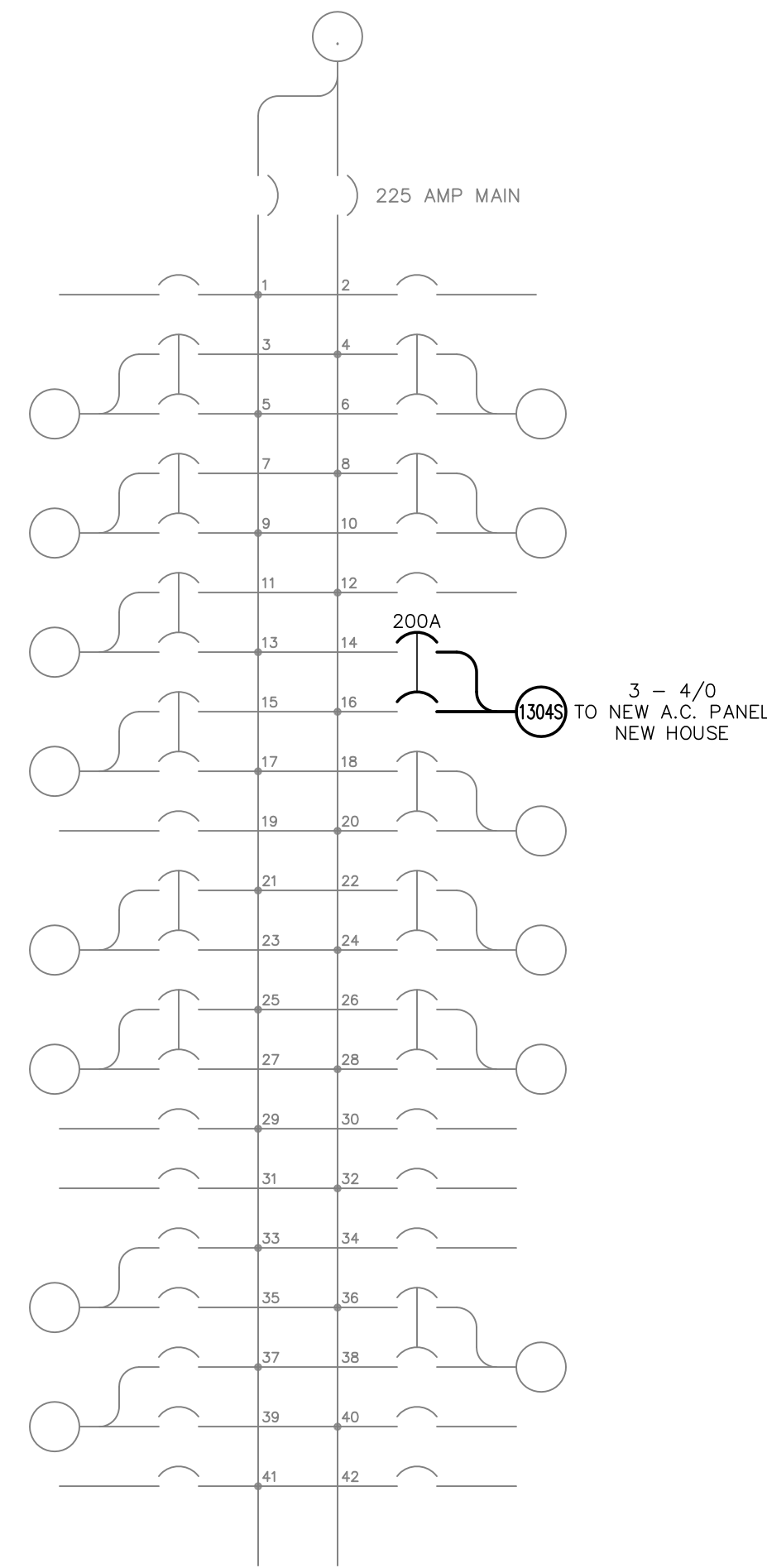
**LEGEND:**  
 — EXISTING  
 — PROPOSED

**FOR BIDDING PURPOSES ONLY**

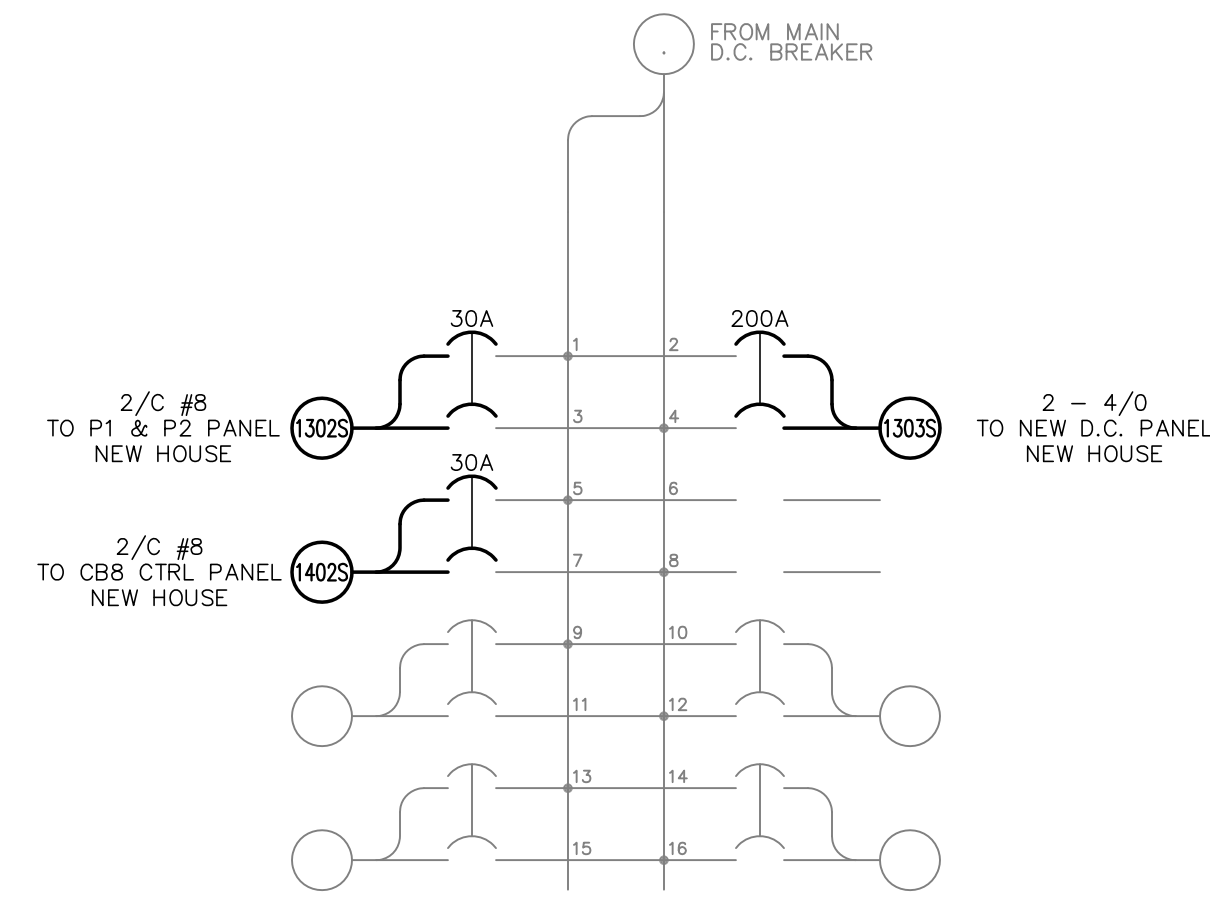
TWIN BRIDGES TRANSFORMER ADDITION PULL BOX DETAILS																							
CITY OF ALEXANDRIA ALEXANDRIA, LOUISIANA																							
SCALE	DATE	DRAWN BY	APPROVED BY																				
NONE	10/31/19	JHD	JJC																				
PROJECT NO. 2019-E-16A			REV. :																				
BHA, INC. BATON ROUGE, LOUISIANA			TBTA-06C																				
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### OLD HOUSE A.C. & D.C. PANELS

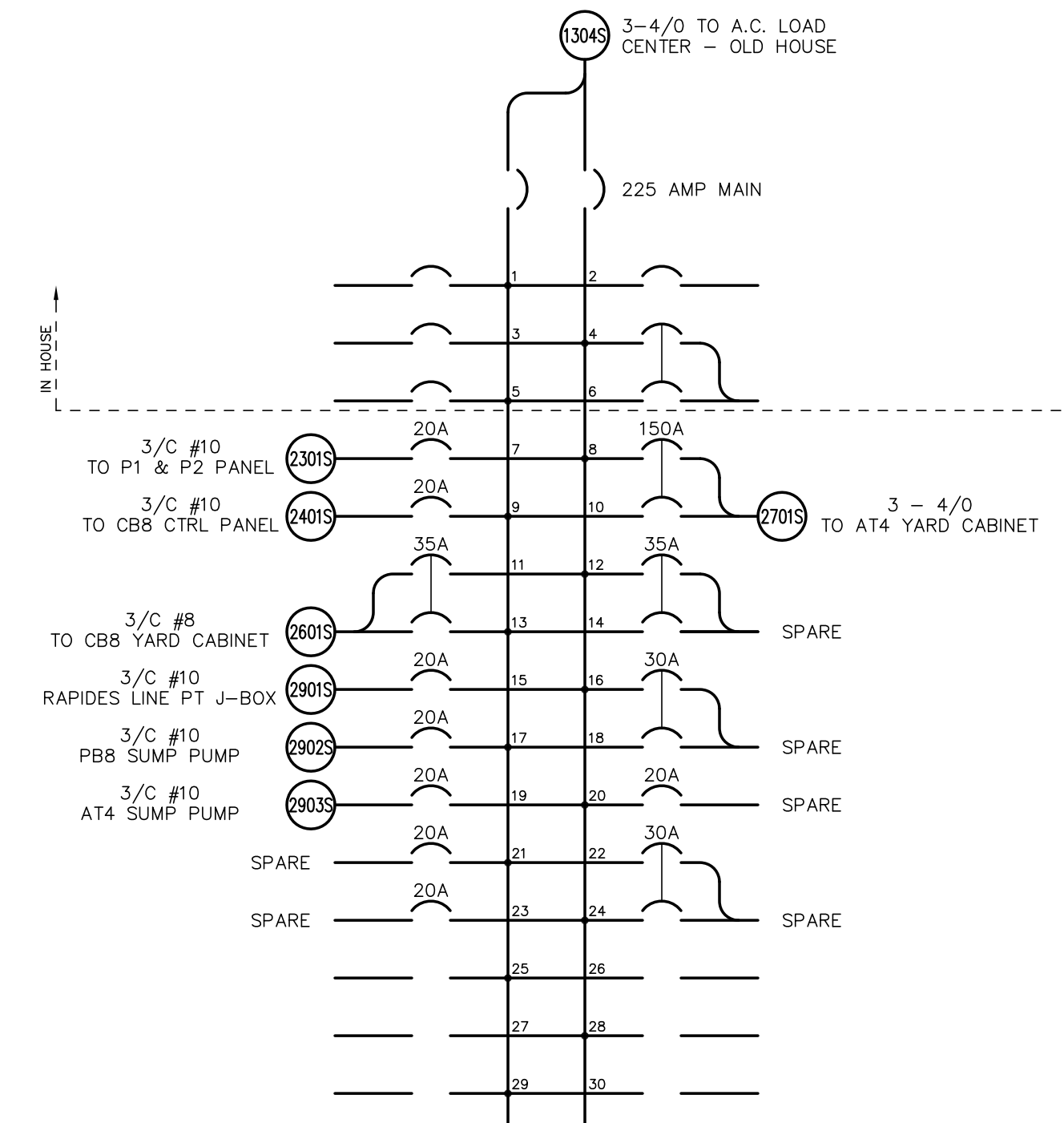
### NEW HOUSE A.C. & D.C. PANELS



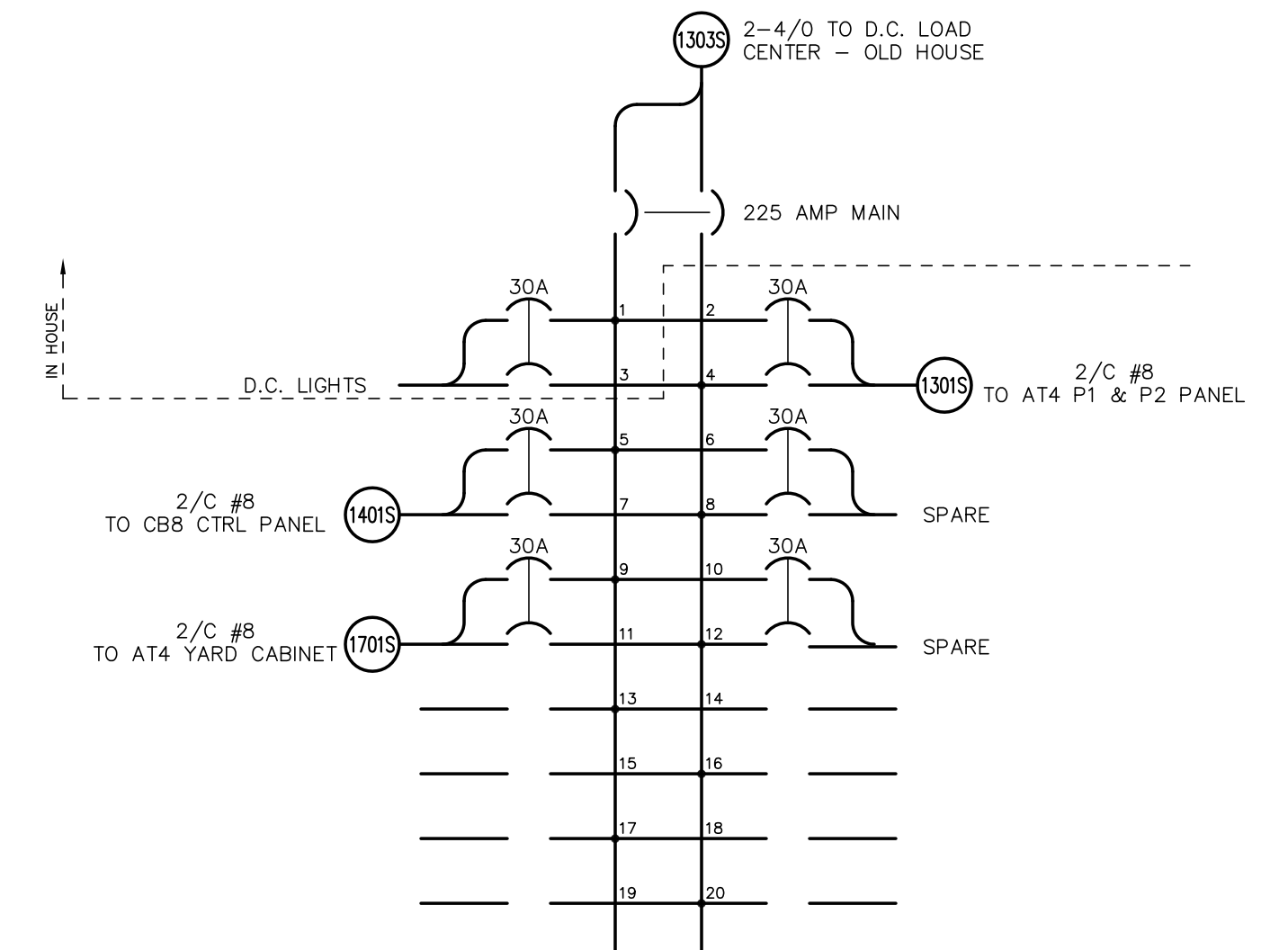
① A.C. LOAD CENTER  
OLD HOUSE



② D.C. SUB LOAD CENTER  
OLD HOUSE



③ A.C. LOAD CENTER  
NEW HOUSE



④ D.C. LOAD CENTER  
NEW HOUSE

FOR BIDDING  
PURPOSES ONLY

TWIN BRIDGES TRANSFORMER ADDITION AC & DC PANELS CITY OF ALEXANDRIA ALEXANDRIA, LOUISIANA			
SCALE N.T.S.	DATE 2/18/19	DRAWN BY JHD	APPROVED BY JJC
PROJECT NO. : 2019-E-16A			DRAWING NO. : TBTA-06D
REVISIONS			REV. : B



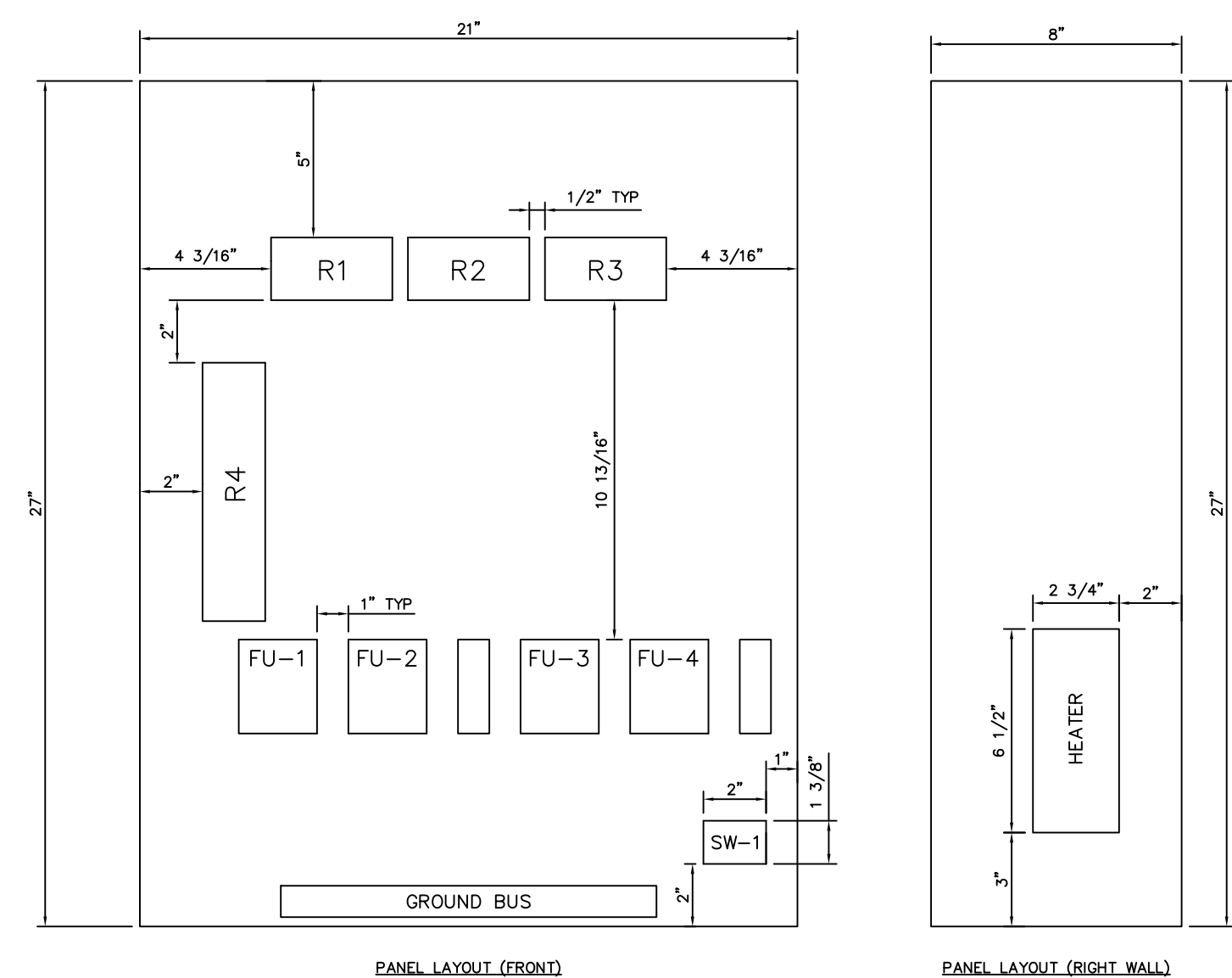
BILL OF MATERIALS				
LOCATION	QTY	ITEM	DESCRIPTION	
ENCLOSURE	1 EA	CABINET	HOFFMAN, ENCLOSURE, NEMA TYPE 4X, STAINLESS STEEL TYPE 316SS, 3-POINT LATCH, 30"(H)x24"(W)x6"(D), CAT.# A-30H2408SLP3PT	
PANEL	1 EA	CABINET	HOFFMAN, PANEL, STAINLESS STEEL TYPE 316L, 27"(H)x21"(W), W/ MOUNTING HARDWARE, CAT.# A-30P24556	
R4	1 EA	TERMINAL BLOCK	MARATHON, TERMINAL BLOCK, 12 POSITION, W/ MARKING STRIP, CAT.# 1512STD	
R1-R3	3 EA	TERMINAL BLOCK	MARATHON, TERMINAL BLOCK, 6 POSITION, W/ MARKING STRIP, CAT.# 1506STD	
SW-1	1 EA	SWITCH	STATES, KNIFE SWITCH, TYPE SMH SINGLE POLE POTENTIAL, CAT.# 401-A	
FU-1,2,3,4	16 EA	FUSE	BUSSMANN, FUSE, KTN-R(250V) LIMITRON FAST ACTING, GLASS RKT, 30A, CAT.# KTN-R-30	
ENCLOSURE	2 EA	FUSE	BUSSMANN, DUMMY FUSE, FUSE NEUTRALS, 250V, 30A, CAT.# NTN-R-30	
FU-1,2,3,4	4 EA	FUSE BLOCK	FERRAZ SHAWMUT, FUSE BLOCK, TRIPLE POLE, CAT.# 20318	
ENCLOSURE	2 EA	FUSE BLOCK	FERRAZ SHAWMUT, FUSE BLOCK, SINGLE POLE, CAT.# 20316	
ENCLOSURE	1 EA	HEATER	HOFFMAN, HEATER, 60 WATT, 120 VOLT, CAT.# DAH601	
GROUND BUS	1 EA	GND	PANEL VENDOR, GROUND BAR, MOUNTED, COPPER BUS, 1/4"x1"x12"	
ENCLOSURE	57 EA	RING TERMINAL	BURNDY, 8-10 STUD, 12-10 AWG RING TERMINAL, CAT.# YAEV10	
ENCLOSURE	1 EA	GROUND LUG	BURNDY, GROUND LUG 3/8" BRASS, 8-2 AWG STRANDED, 10-1 AWG SOLID	

NAMEPLATE ENGRAVING LIST						
NP#	QTY.	FIRST LINE	SECOND LINE	THIRD LINE	PLATE SIZE	LETTER SIZE
1	1 EA	230kV RAPIDES LINE NODE	3Ø POTENTIAL	JUNCTION BOX	4" x 12"	3/4"
N1	1 EA	R1-R3			3/4" x 2"	1/8"
N2	1 EA	R4			3/4" x 2"	1/8"
N3	1 EA	FU-1 (30A)	115VAC L-N	PRI 1 X-WINDING	3/4" x 2"	1/8"
N4	1 EA	FU-2 (30A)	67VAC L-N	PRI 1 X-WINDING	3/4" x 2"	1/8"
N5	1 EA	SLUG	NEUTRAL	PRI 1 RELAY X-WINDING	3/4" x 2"	1/8"
N6	1 EA	FU-3 (30A)	115VAC L-N	PRI 2 Y-WINDING	3/4" x 2"	1/8"
N7	1 EA	FU-4 (30A)	67VAC L-N	PRI 2 Y-WINDING	3/4" x 2"	1/8"
N8	1 EA	SLUG	NEUTRAL	PRI 2 RELAY Y-WINDING	3/4" x 2"	1/8"
N9	1 EA	SW-1			3/4" x 2"	1/8"
N10	1 EA	HEATER	120VAC	60W	3/4" x 2"	1/8"

\* ALL NAMEPLATES ARE 1/16" (0.62) BLACK MATERIAL AND INSTALLED WITH DOUBLE SIDED ADHESIVE TYPE REFER TO THE APPLICABLE SUBSTATION PANEL LAYOUT DETAILS FOR EACH JOB.  
 \*\* JUNCTION BOX TITLE NAMEPLATES TO BE CENTERED ON OUTSIDE OF DOOR. OTHER NAMEPLATES ARE MOUNTED INSIDE THE BOX ADJACENT TO THE APPROPRIATE DEVICES.

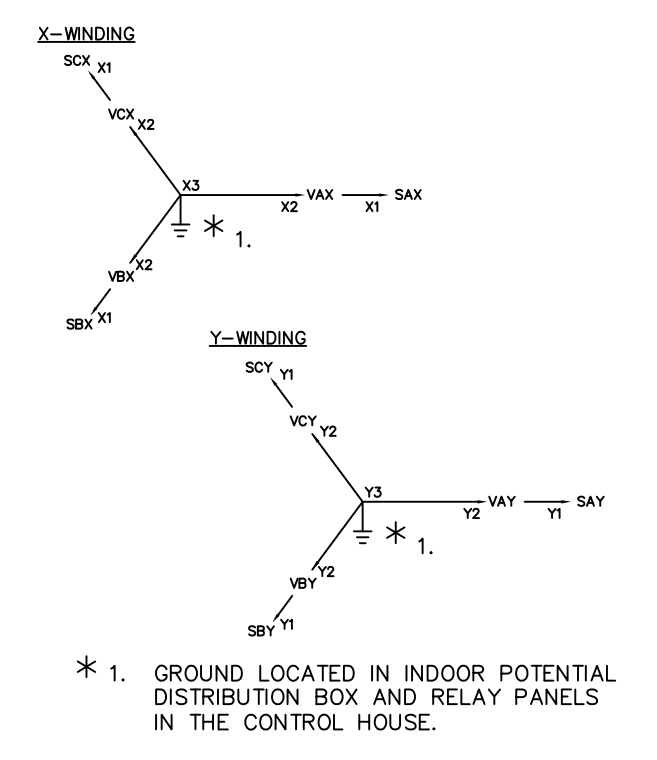
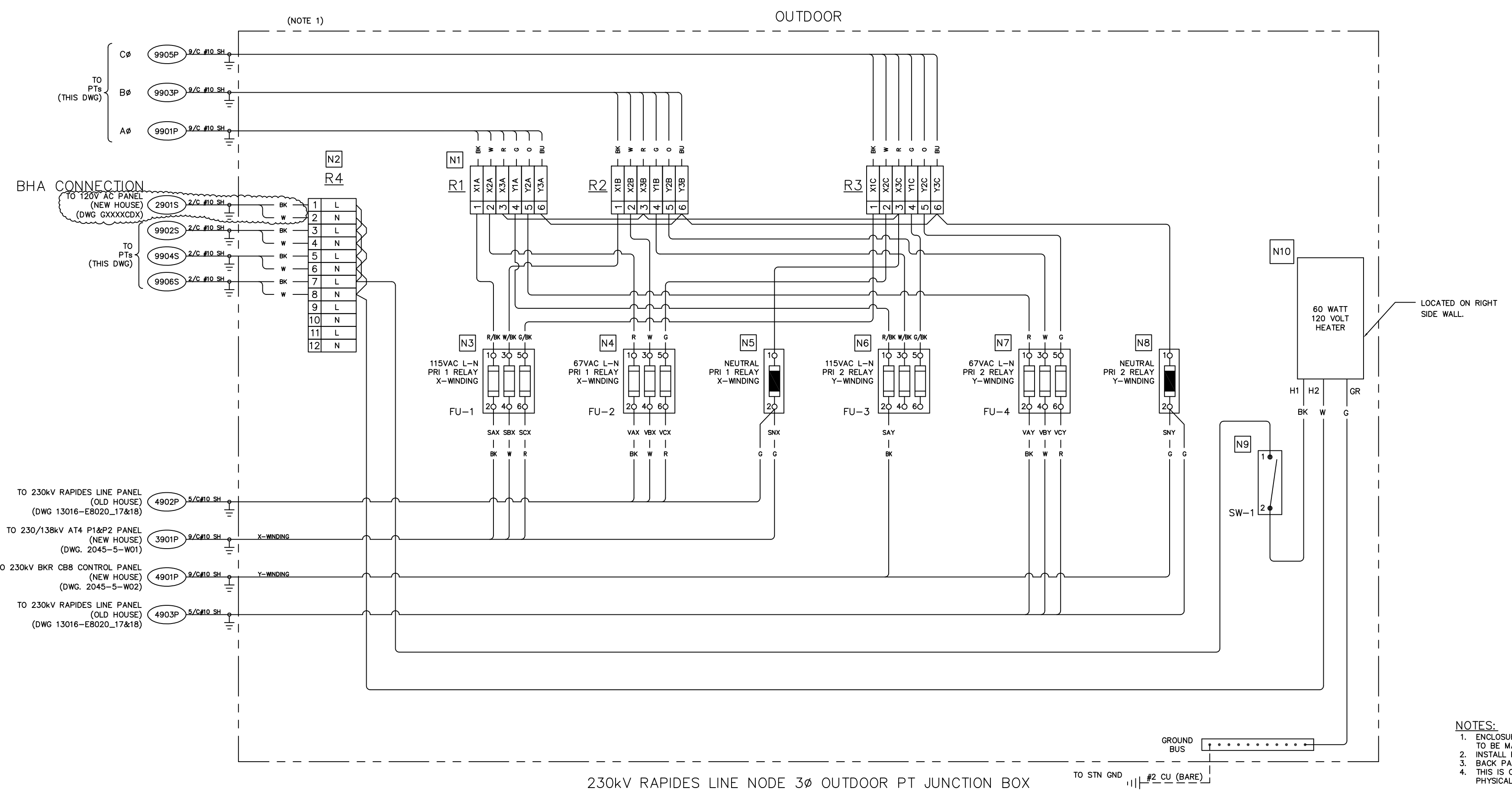
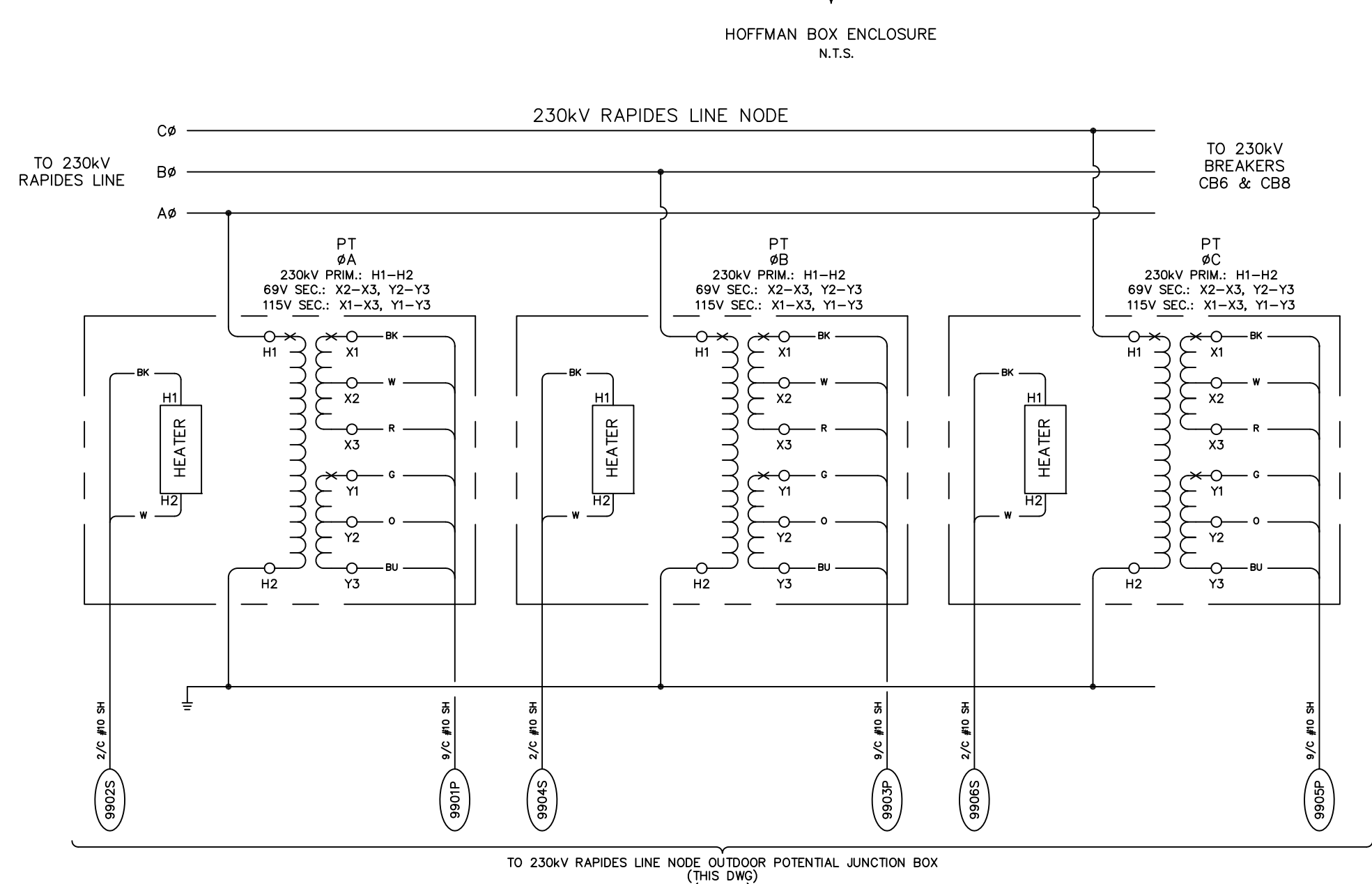
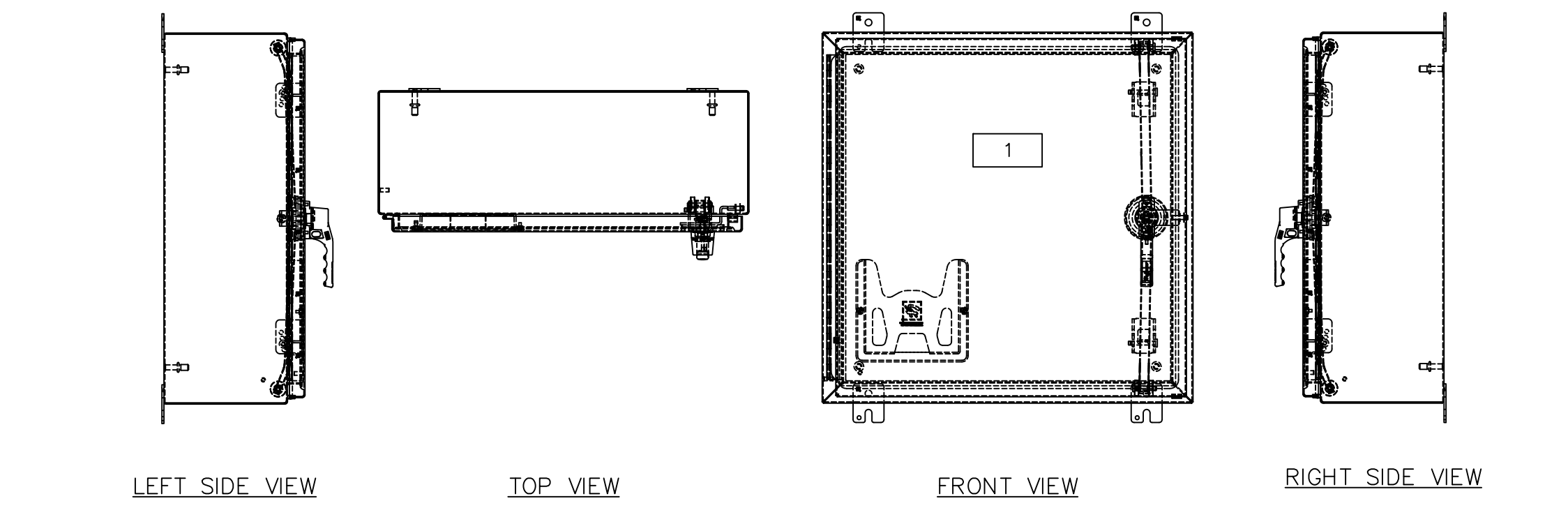
STANDARD CVT/PT RATIOS AND SECONDARY VOLTAGES ARE SHOWN FOR REFERENCE PURPOSES. ALWAYS REFER TO CVT/PT NAMEPLATE VENDOR DRAWING TO CONFIRM ACTUAL RATIOS AND CONNECTIONS.

NOMINAL SYSTEM VOLTAGE	PERFORMANCE REF. VOLTAGE	NAMEPLATE RATIO	NAMEPLATE SEC. VOLTAGE
69kV	40.25kV	350/600:1	115/67.1 VOLTS
115kV	69kV	600/1000:1	115/69 VOLTS
138kV	80.5kV	700/1200:1	115/67.1 VOLTS
161kV	92kV	800/1400:1	115/65.7 VOLTS
230kV	138kV	1200/2000:1	115/69 VOLTS
345kV	209kV	1800/3000:1	115/69 VOLTS
500kV	287.5kV	2500/4500:1	115/63.8 VOLTS



OUTDOOR 230kV RAPIDES LINE NODE 3Ø POTENTIAL JUNCTION BOX SCALE 3"=1'-0"

**NOTE:**  
 CONTRACTOR TO VERIFY PHASING WITH OWNER PRIOR TO WIRE TERMINATIONS



FOR REFERENCE ONLY

NO.	DATE	BY	REVISIONS
B	5/30/19	BHA	FOR BIDDING PURPOSES ONLY
A	3/4/19	BHA	FOR BIDDING PURPOSES ONLY

TWIN BRIDGES TRANSFORMER ADDITION  
 230kV 3Ø RAPIDES LINE PT JUNCTION BOX  
 CITY OF ALEXANDRIA  
 ALEXANDRIA, LOUISIANA

SCALE: NOTED DATE: 7/1/18 DRAWN BY: JHD APPROVED BY: JJC PROJECT NO.: 2019-E-16A

BHA, INC. BATON ROUGE, LOUISIANA DRAWING NO.: TBTA-06E REV: 1

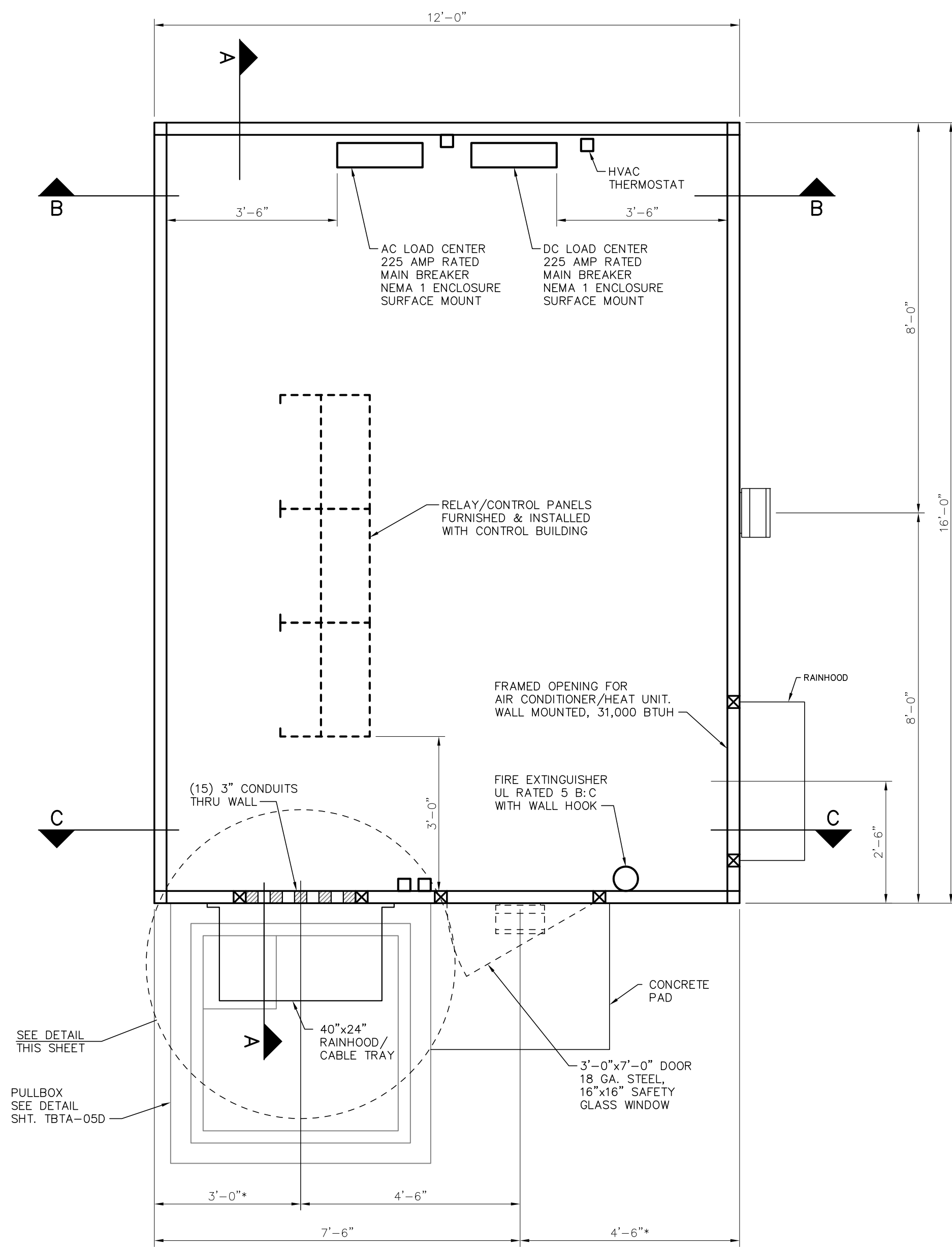
BHA: COATBTRAC-PCS-2045-5-05.dwg 09/11/2019 @ 02:48W BY: JZ

NOTES:  
 1. ENCLOSURE TO BE MADE OF NON-CORROSIVE MATERIAL.  
 2. INSTALL FUSE FOR ALL APPLICATIONS.  
 3. BACK PANEL SHALL BE CONNECTED TO STATION GROUND.  
 4. THIS IS ONLY THE ELECTRICAL LAYOUT AND NOT THE PHYSICAL LAYOUT.

REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE	REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE	REFERENCE DRAWINGS	CAD NOTES
0	INSTALL 230kV TRANSFORMER AT4 & BKR C88	MB	AK	DG	1-31-19								

CITY OF ALEXANDRIA, LA  
 TWIN BRIDGES SUBSTATION  
 230kV 3Ø RAPIDES LINE NODE  
 OUTDOOR POTENTIAL JUNCTION BOX

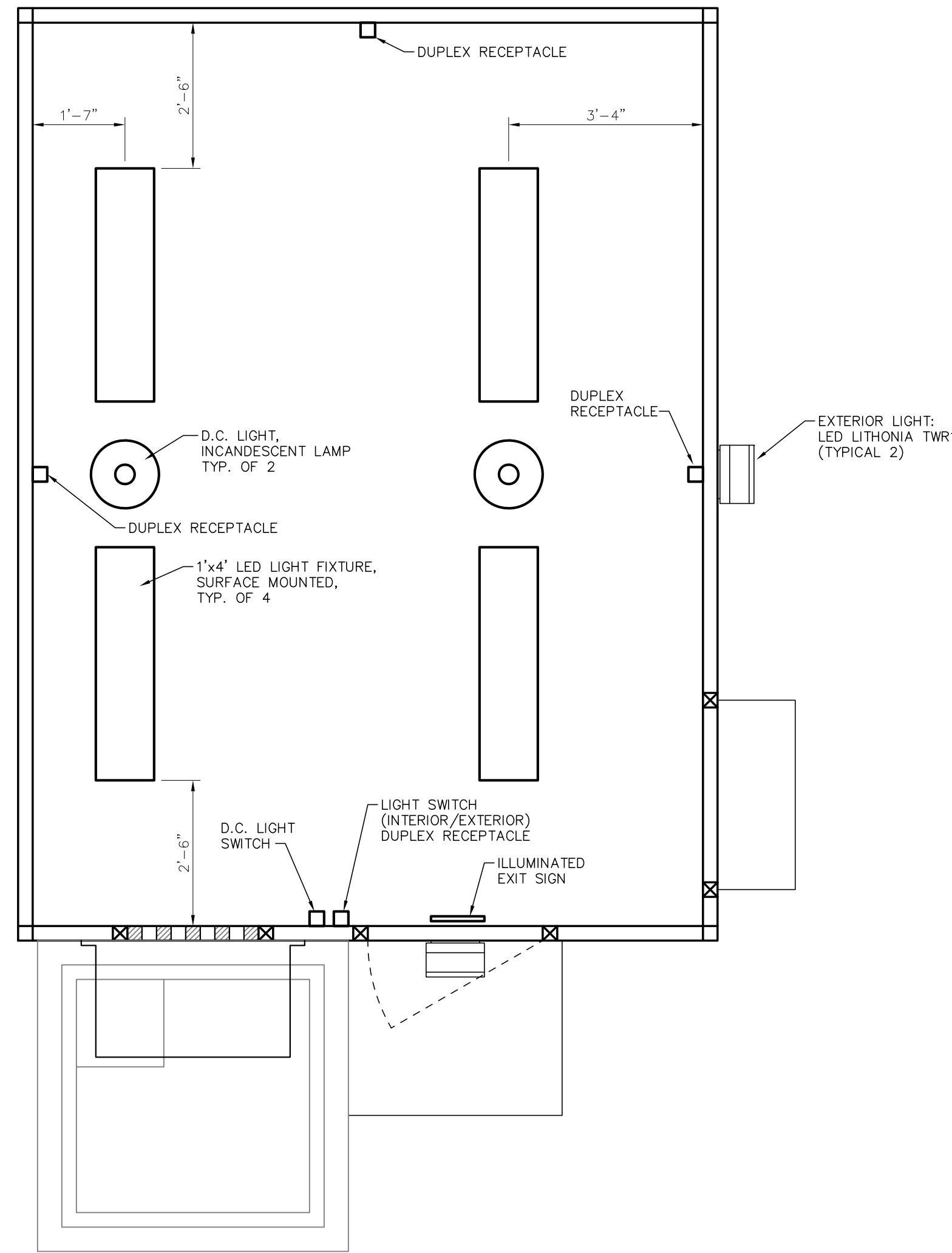
SCALE: NONE DATE: 11-7-18 DWG No: 2045-5-J01



**CONTROL BUILDING EQUIPMENT LAYOUT**

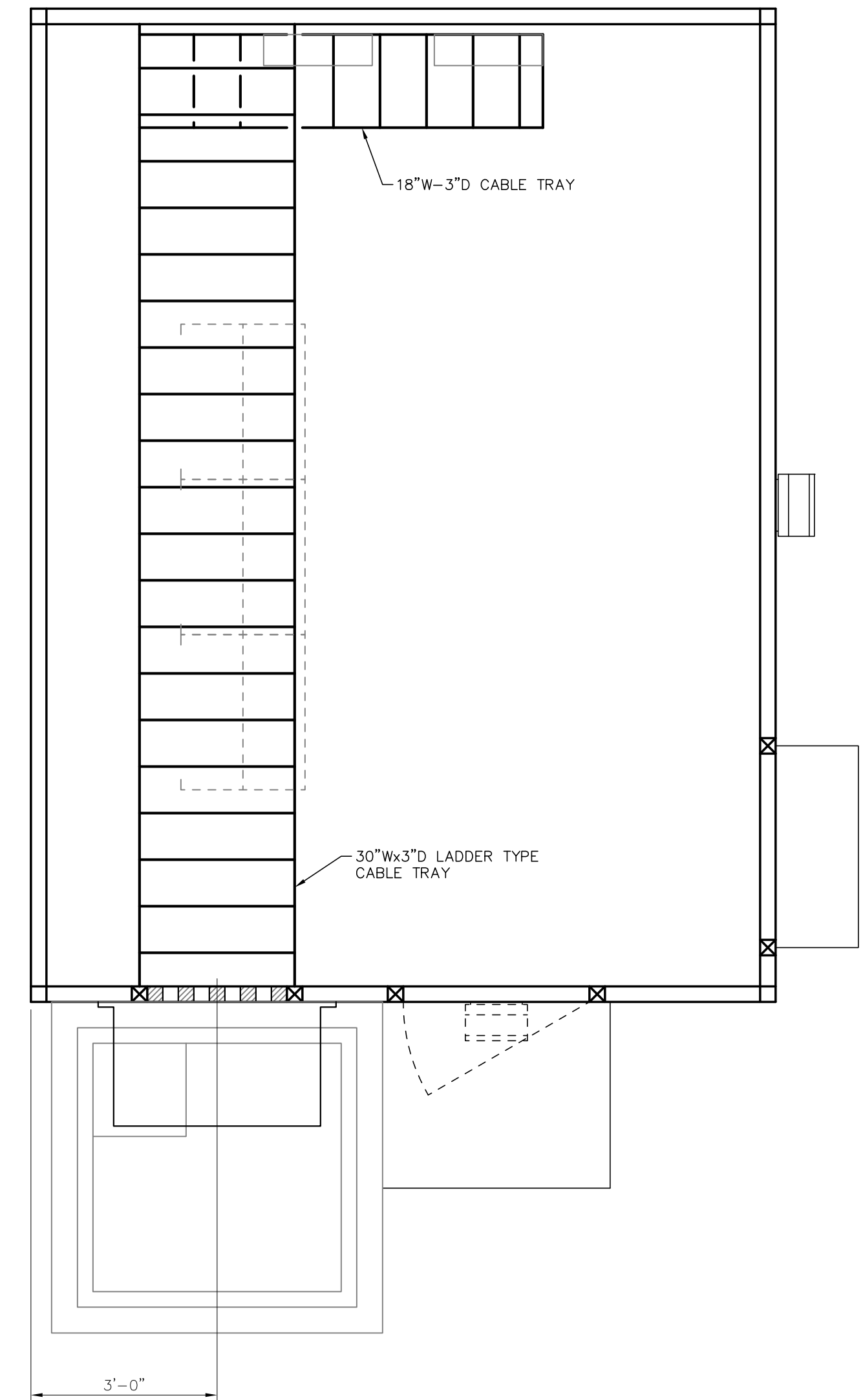
SCALE: 1/2"=1'-0"

\* - CONFIRM WITH CONTROL BUILDING DRAWING



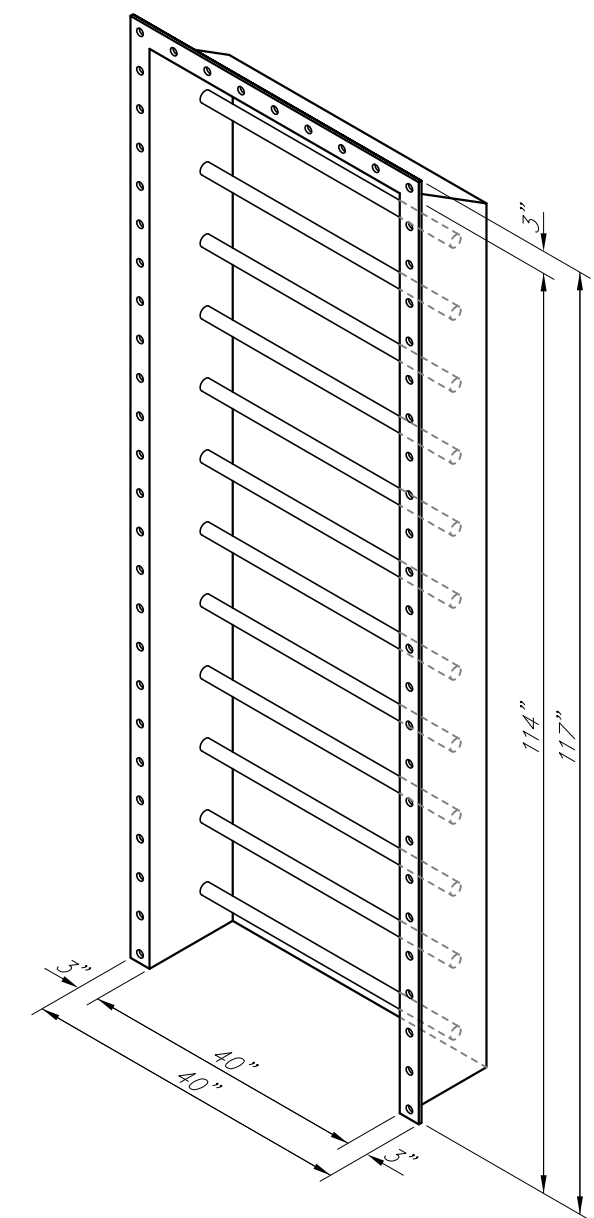
**CONTROL BUILDING LIGHTING & POWER LAYOUT**

SCALE: 1/2"=1'-0"



**CONTROL BUILDING CABLE TRAY LAYOUT**

SCALE: 1/2"=1'-0"



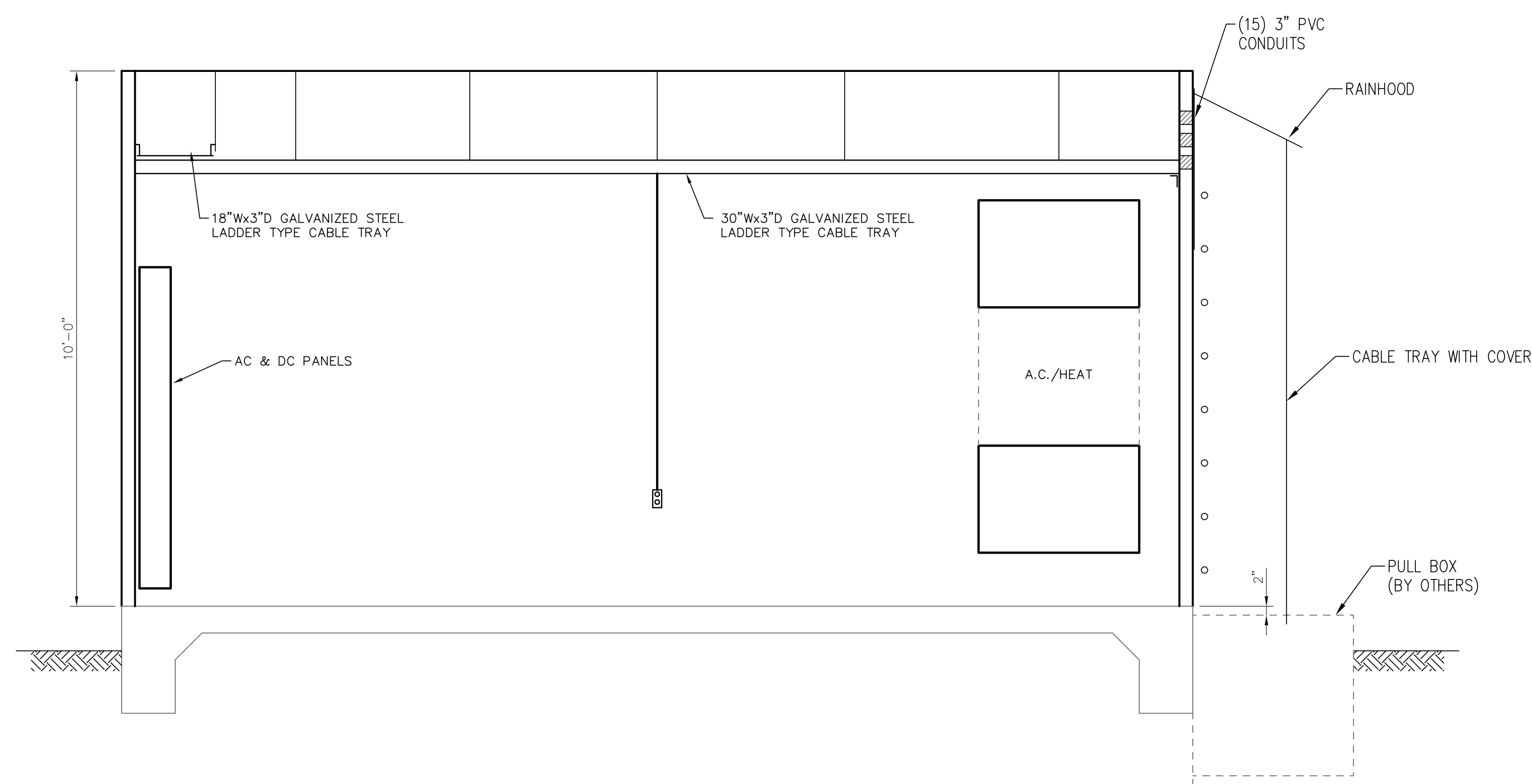
**CONTROL BUILDING RAINHOOD/CABLE TRAY**

SCALE: N.T.S.

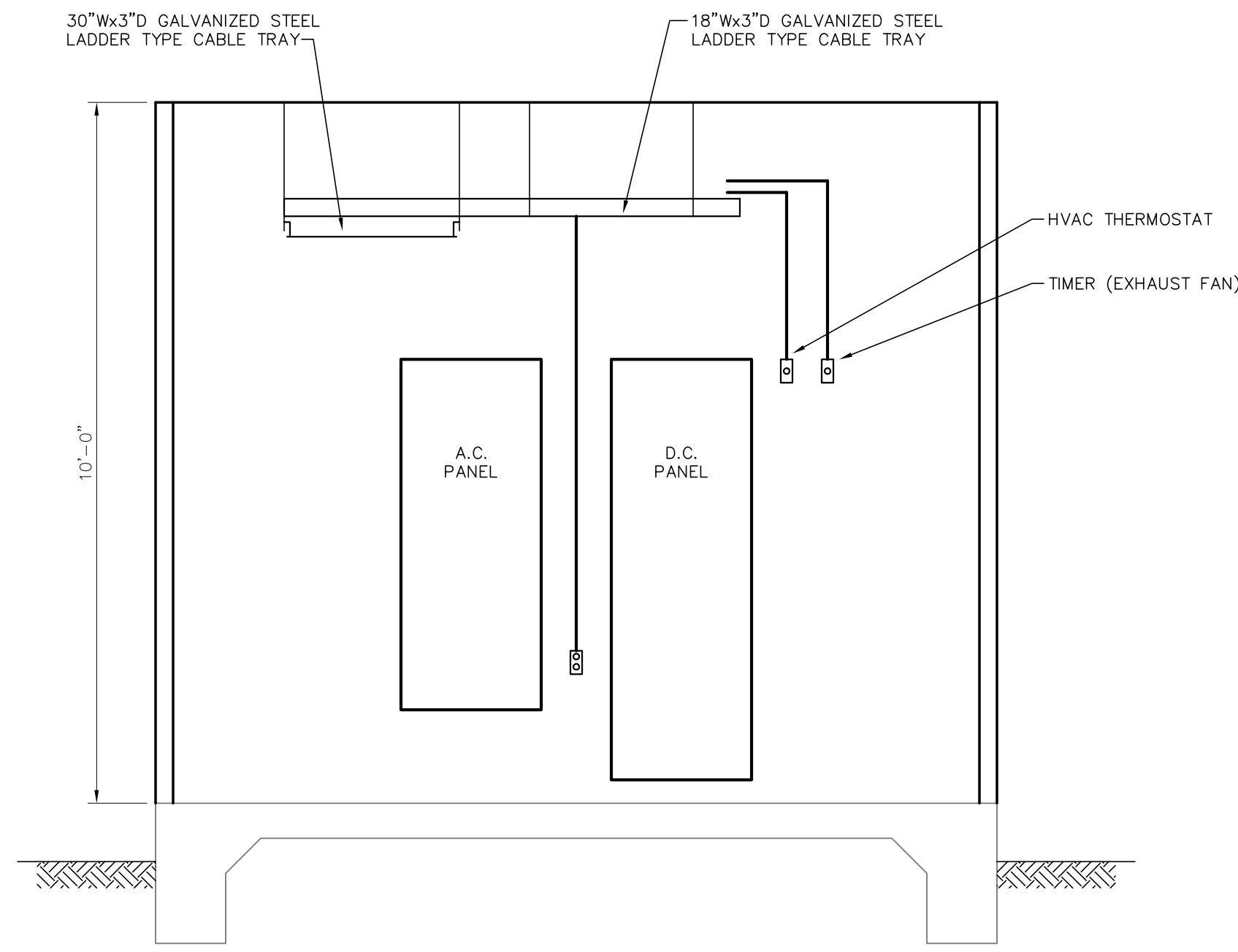
FOR REFERENCE ONLY

TWIN BRIDGES TRANSFORMER ADDITION CONTROL BUILDING LAYOUT			
CITY OF ALEXANDRIA ALEXANDRIA, LOUISIANA			
SCALE	DATE	DRAWN BY	APPROVED BY
1/2"=1'-0"	10/2/18	JHD	JJC
B	5/30/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION
A	3/4/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION
NO.	DATE	BY	REVISIONS
PROJECT NO. : 2019-E-16A			REV. : B
DRAWING NO. : TBTA-07			
<b>BHA, INC.</b> BATON ROUGE, LOUISIANA			

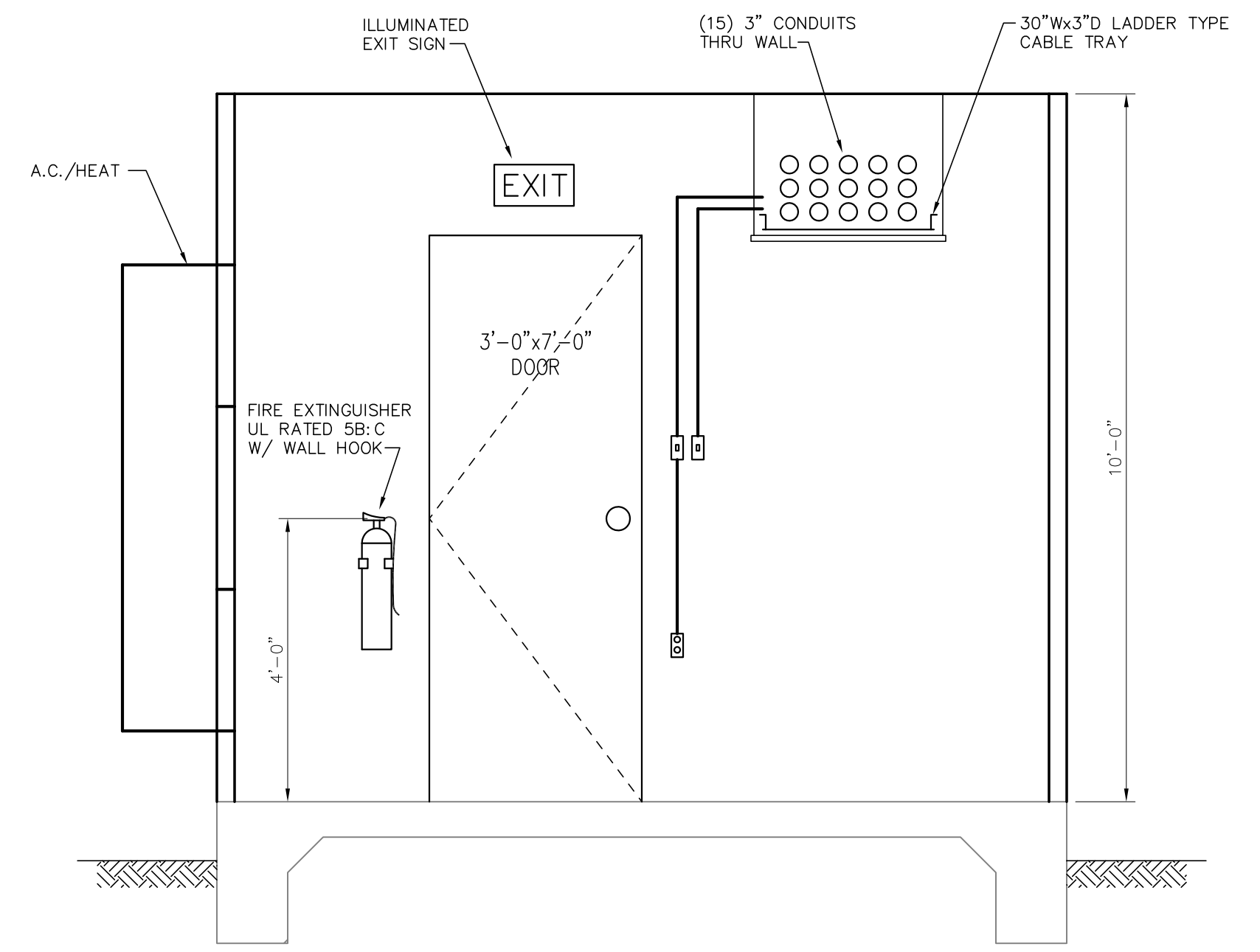
BHA-24-07A.dwg 10/01/2019



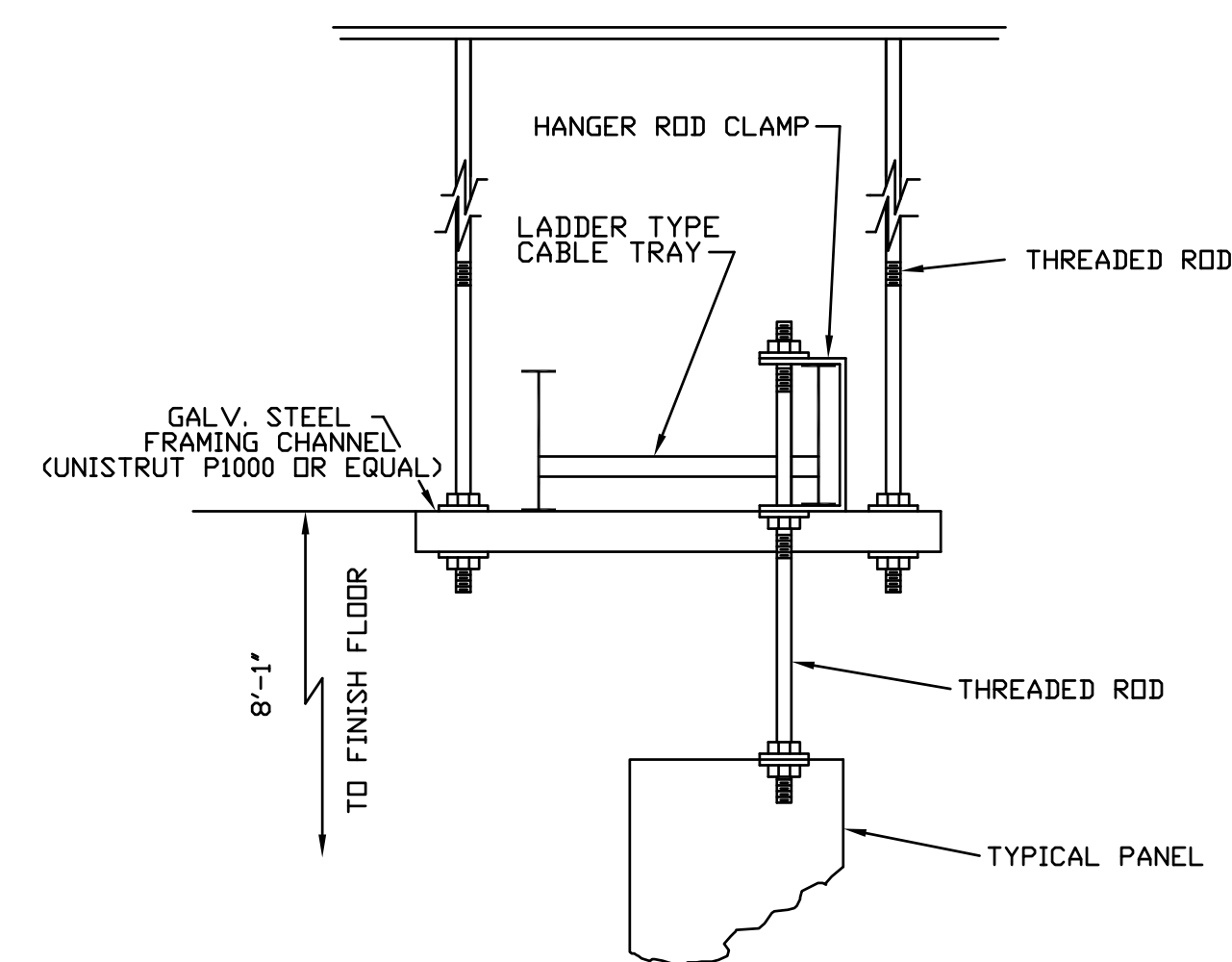
**ELEVATION A-A**  
SCALE: 1/2"=1'-0"



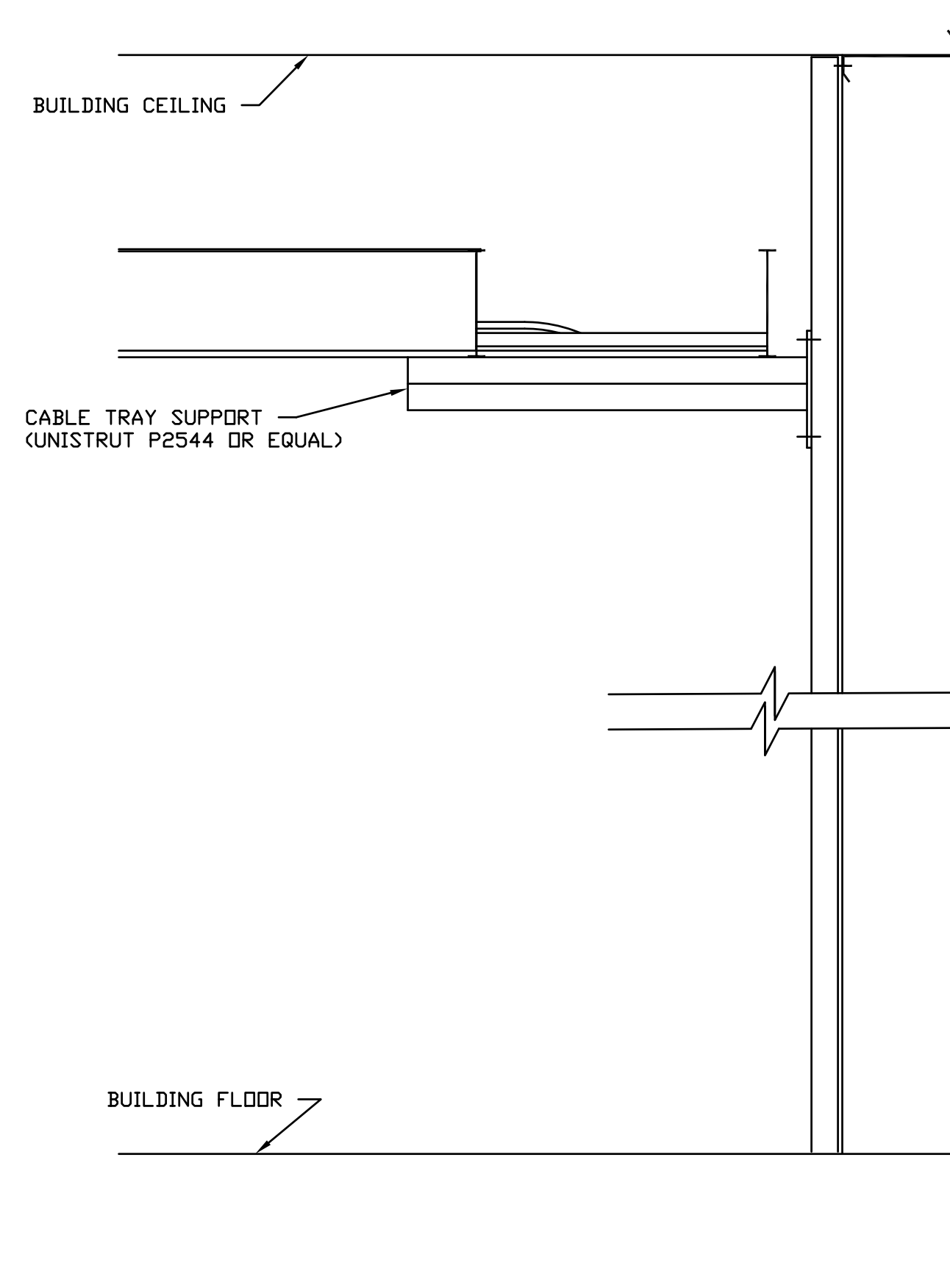
**ELEVATION B-B**  
SCALE: 1/2"=1'-0"



**ELEVATION C-C**  
SCALE: 1/2"=1'-0"



**CABLE TRAY SUPPORT DETAIL NO. 1**  
N.T.S.

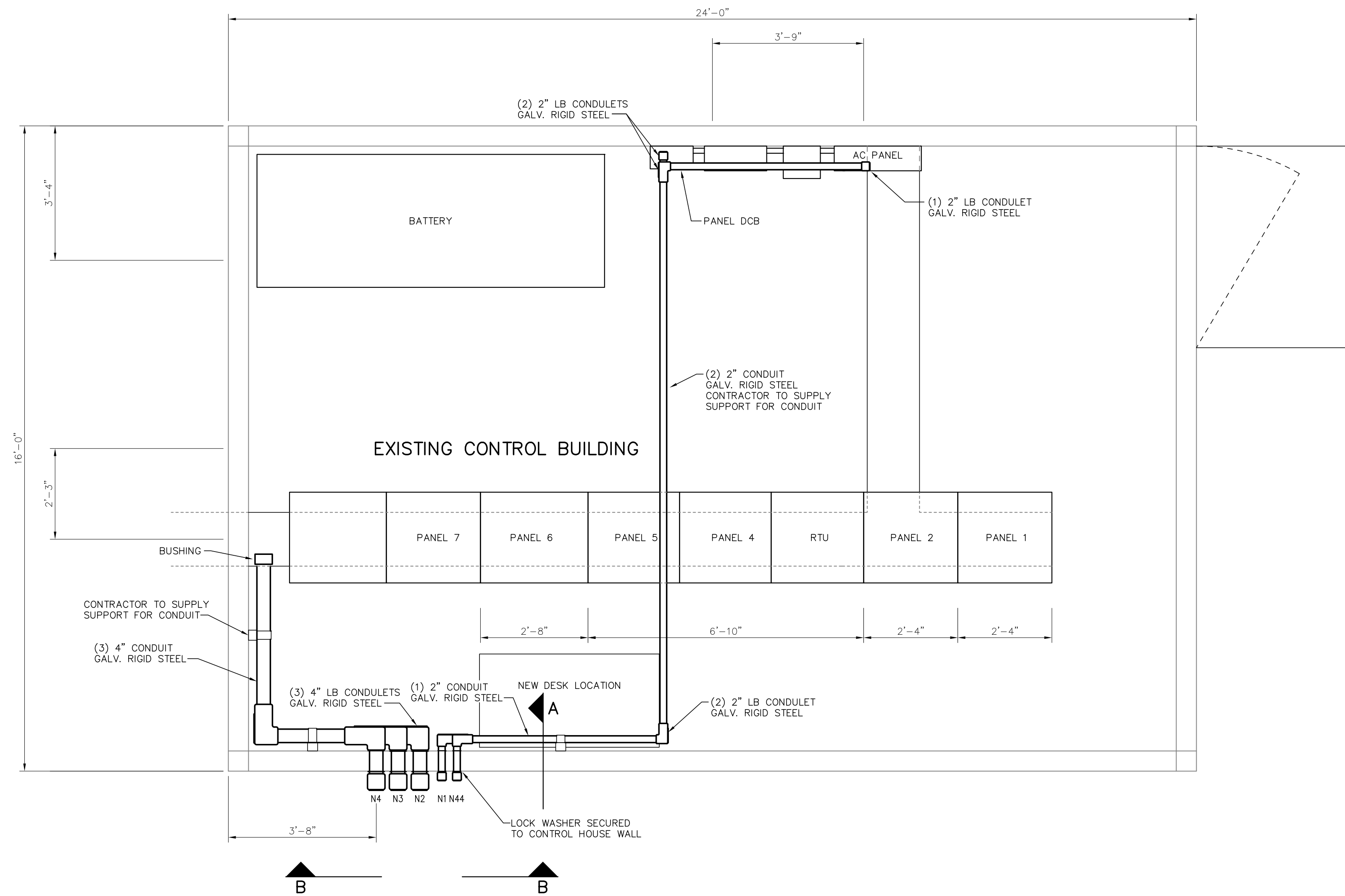


**CABLE TRAY SUPPORT DETAIL NO. 2**  
N.T.S.

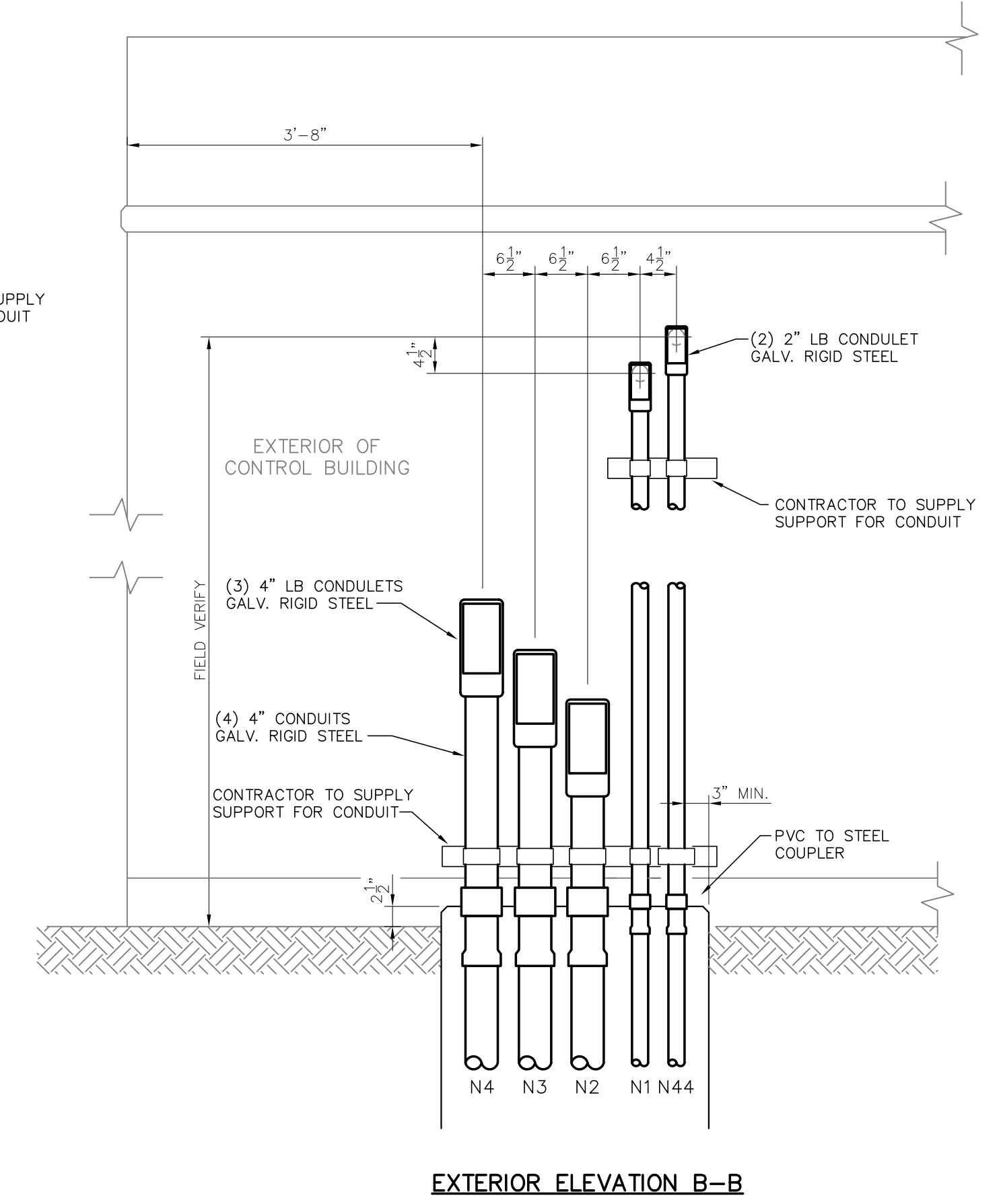
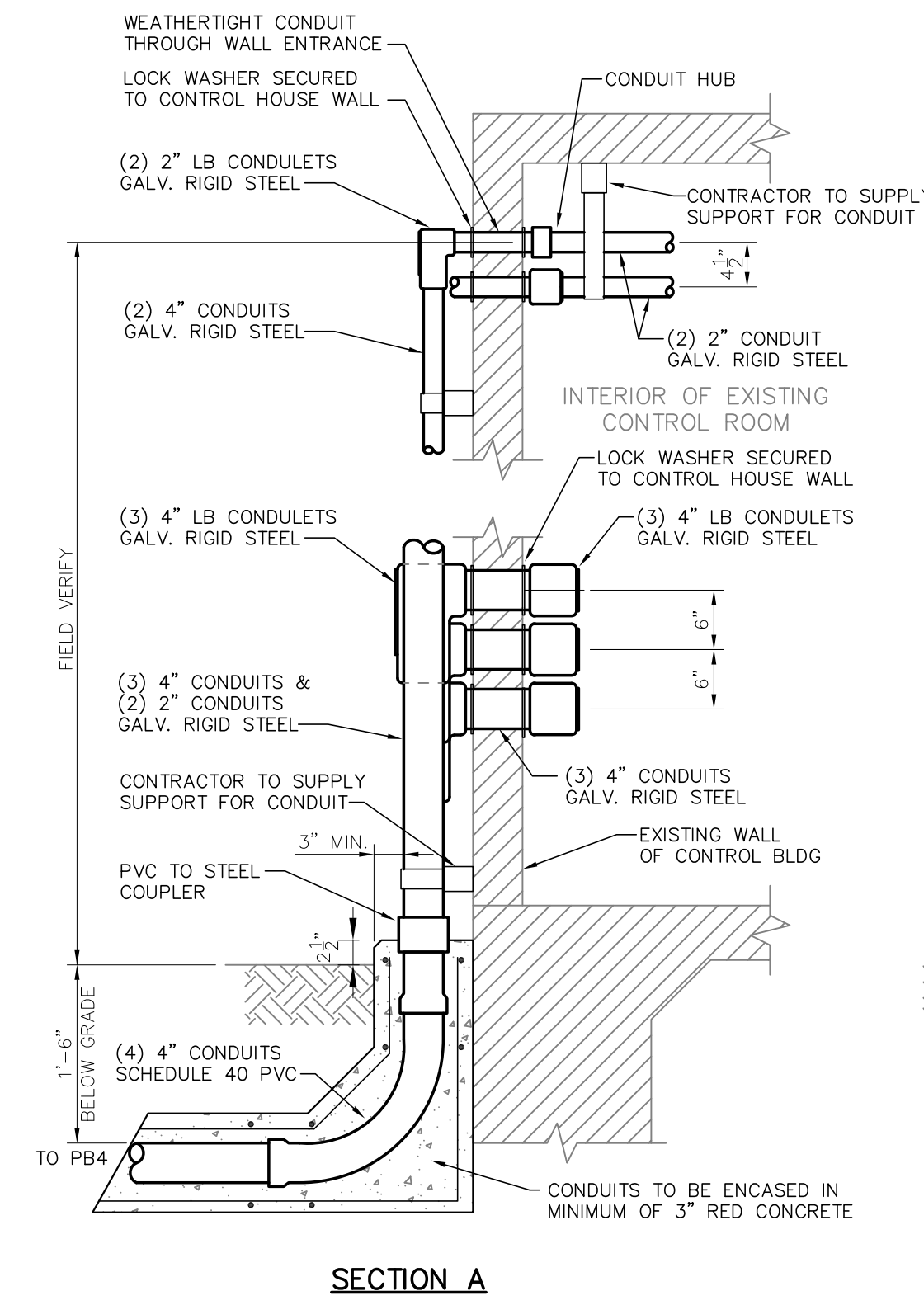
**FOR BIDDING PURPOSES ONLY**

				<b>TWIN BRIDGES TRANSFORMER ADDITION CONTROL BUILDING DETAILS</b>			
				CITY OF ALEXANDRIA ALEXANDRIA, LOUISIANA			
SCALE: NOTED		DATE: 10/2/18		DRAWN BY: JHD		APPROVED BY: JJC	
						PROJECT NO.: 2019-E-16A	
B 5/30/19		BHA		FOR BIDDING PURPOSES ONLY - CONSTRUCTION			
A 3/4/19		BHA		FOR BIDDING PURPOSES ONLY - CONSTRUCTION			
NO.		DATE		BY:		REVISIONS	
				<b>BHA, INC.</b> BATON ROUGE, LOUISIANA			
						DRAWING NO.: TBTA-07A	
						REV.: B	

Prepared by BHA, Inc. BHA245.DWG 03/01/2019



**EXISTING CONTROL BUILDING  
CONDUIT ROUTING LAYOUT**  
 SCALE: 1/2"=1'-0"



**EXISTING CONTROL BUILDING  
CONDUIT AT EXTERIOR WALL DETAIL**  
 SCALE: 3/4"=1'-0"

**FOR BIDDING  
PURPOSES ONLY**

				<b>TWIN BRIDGES TRANSFORMER ADDITION EXISTING CONTROL BUILDING LAYOUT</b>			
				CITY OF ALEXANDRIA ALEXANDRIA, LOUISIANA			
SCALE	DATE	DRAWN BY	APPROVED BY	PROJECT NO.			
NOTED	2/5/19	TJW	JJC	2019-E-16A			
				<b>BHA, INC.</b> BATON ROUGE, LOUISIANA		DRAWING NO.: <b>TBTA-07B</b>	REV.: <b>B</b>
B	5/30/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION				
A	3/4/19	BHA	FOR BIDDING PURPOSES ONLY - CONSTRUCTION				
NO.	DATE	BY	REVISIONS				