

BUILDING OVERVIEW:

THIS STRUCTURE IS A STEEL FRAMED BUILDING UNDER 50,000 CUFT AND INTENDED FOR EQUIPMENT STORAGE ONLY. THE MODULAR UNIT MUST BEAR ON A FOUNDATION DESIGNED BY OTHERS TO SUPPORT THE LOADS SHOWN ON PLAN. THIS UNIT SHALL BE INSTALLED 5' MINIMUM FROM PROPERTY LINES.

CODES & REFERENCES

As adopted by CDOH 2018 Administrative Rules
Colorado State Building Code based on the 2018 International Building Code
2017 National Electric Code (NEC)
2015 International Energy Conservation Code (IECC)
American Institute of Steel Construction (AISC 360) - ASD
AISI Cold Formed Steel Design Manuals (AISI S100-16 & AISI S240-15) - ASD

DESIGN INFORMATION:

- OCCUPANCY USE AND CLASSIFICATION: U
- OCCUPANCY DESIGN CATEGORY: III
- TYPE OF CONSTRUCTION: II-B
- NUMBER OF STORIES: 1

DESIGN LOADS

Roof 10 PSF (Dead Load)
Pr=30 PSF (Roof Snow Load), I=1.1
Ceiling 15 PSF (Dead Load), Equipment Loading
Floor 250 PSF (Live), 12 PSF (Dead Load), Equipment Loading
Wind V(ult)=130 mph Exposure C, I=1.0
Seismic Sds=.166g Sd1=.087g S1=.051g I=1.25, Site Class = D
Seismic Design Category = B

STRUCTURAL STEEL

1. All hot rolled steel and miscellaneous embedded items shall conform to ASTM A36 (unless otherwise noted).
2. Steel columns shall conform to ASTM A500, grade B. (Fy = 46ksi)
3. All W shapes shall conform to ASTM A992
4. All bolts shall conform to ASTM A325 unless otherwise noted.
5. All cold formed steel and miscellaneous embedded items shall conform to ASTM A653, SS grade 33, (or approved equal).
6. Products shall be installed in accordance with manufacturer's instructions.
7. Welded connections shall be in accordance with AWS D1.1, Structural Welding Code.
- FCAW (Flux Core Arc Weld)
8. All fabrication, shop painting, and surface preparation requirements shall be in accordance with the provisions of the "Code of Standard Practice", AISC.
9. No permanent bolt or welding shall be performed until as much of the structure as will be stiffened thereby has been properly aligned.
10. Shop drawings giving complete information necessary for the fabrication of the component parts of the structure, including the location, type & size of all welds & bolts shall be prepared in advance of the actual fabrication. Any deviations from the design herein shall be reported to the engineer prior to fabrication.
11. Special inspections are required per IBC 1704.2.5: Special inspection of fabricated items.

NOTES:

1. EXTERIOR COLOR TO BE ANSI 70 GREY.
INTERIOR COLOR TO BE WHITE.
HVAC COLOR TO BE ANSI 70 GREY.
FLOOR SHALL BE COVERED WITH A NON-SKID COATING.
2. BUILDING CONSTRUCTION MATERIALS DETAILS:
EXTERIOR WALL PANELS: 14GA GALVANIZED
INTERIOR WALL PANELS: 16GA GALVANIZED
CEILING PANELS: 12GA GALVANIZED
ROOF PANELS: 12GA GALVANIZED
3. INSULATION VALUES ARE AS FOLLOWS:
FLOOR: R-38 POLYURETHANE FOAM
WALLS: R-11 FIBERGLASS w/R-6 CONTINUOUS
CEILING: R-19 FIBERGLASS w/R-19 CONTINUOUS
4. POWER FEED TO SKID AND CONTROL PANEL NOT ESSMETRON
SCOPE OF SUPPLY (LABOR OR SUPPLIES).
5. SKID TO BE FIELD LEVELED AND ANCHORED, BY CUSTOMER, TO CONCRETE SPREAD FOOTERS USING CONCRETE ANCHOR BOLTS. (SUPPLIED BY OTHERS)
6. SPREADER BAR AND PROPER CRANE LIFTING EQUIPMENT WILL BE NEEDED TO UNLOAD SKID AND SET INTO PLACE. INSTALLATION AND CRANE RENTAL BY ESSMETRON. DAMAGE TO SKID DURING UNLOADING IS NOT ESSMETRONS RESPONSIBILITY LIFT SKID WITH EXTREME CAUTION AND CARE.
7. APPROXIMATE WEIGHT: 33,000 lbm w/HVACS
(DOES NOT INCLUDE FIELD INSTALLED CABLES)
SEE PG 22 TO LIFTING/TRANSPORTING WEIGHTS
8. **HVACS TO BE REMOVED FOR SHIPMENT.**
9. ALL DIMENSIONS ARE IN INCHES.
10. BUILDING AREA: 375 SQFT

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Subject to field inspection

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20	HVAC SUPPORT DETAILS
21	FOUNDATION LOADING PLAN
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INSTALLATION ADDRESS:

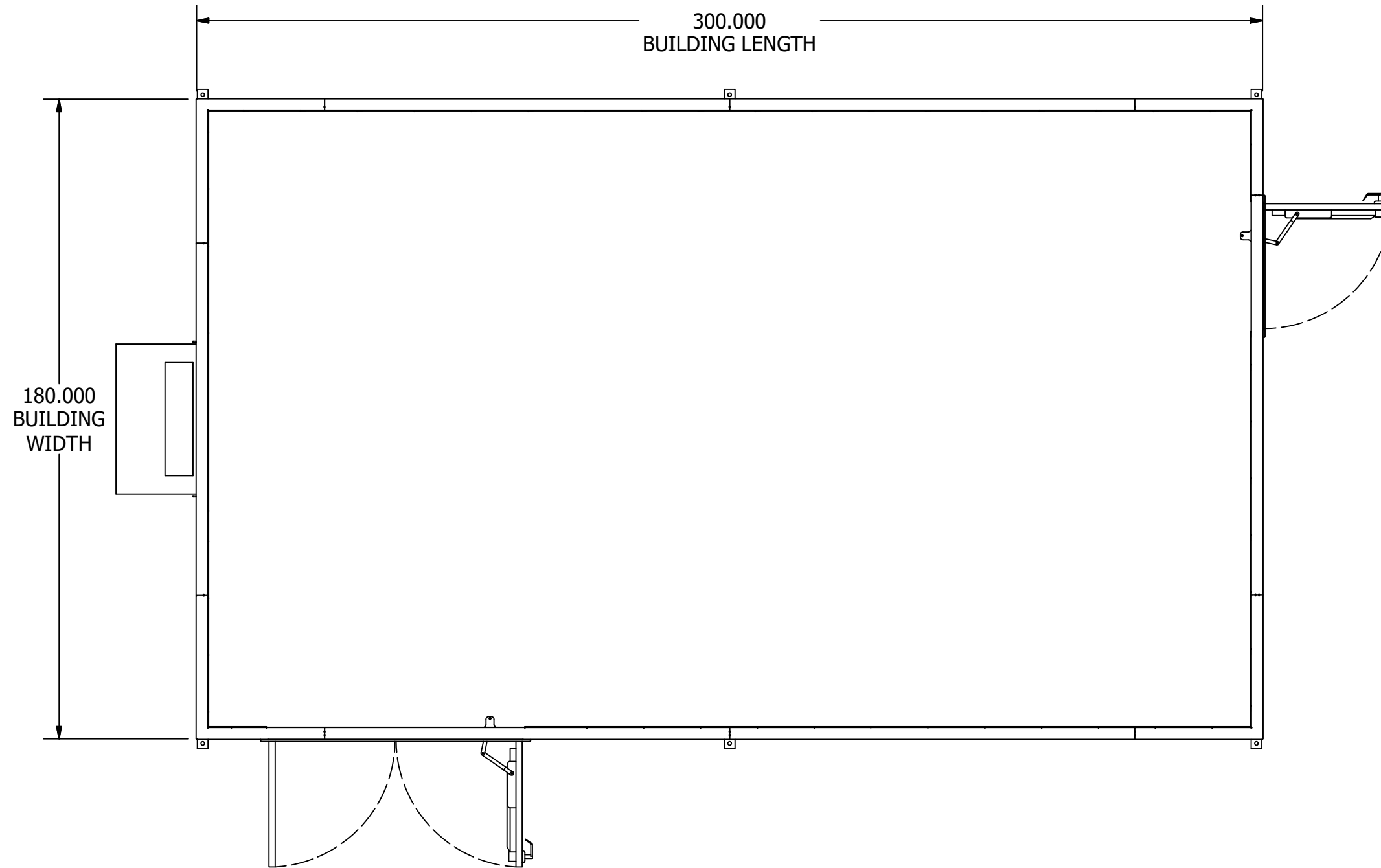
1515 N. YODER ROAD
YODER, CO 80864

REVISION HISTORY			
REV	DESCRIPTION	DATE	APPROVED
C	RELEASE TO FABRICATION	9/26/2019	EPG



STRUCTURE ONLY

 ESSMETRON 1505 W. THIRD AVE DENVER CO 80223		MVEA MVEA YODER SUB STATION POWER DISTRIBUTION CENTER MECHANICAL OUTLINE DRAWING CODES AND REFERENCES	
DRAWN: J.Jelavich	8/27/2019	SIZE B	DWG NO. Y191203-691880
CHECK: T.Anderson	8/28/2019	SCALE	REV C
APPD: J.Jelavich	8/28/2019	SHEET 1 OF 22	



PLAN VIEW
(SHOWN WITH ROOF AND INTERNAL
COMPONENTS REMOVED)

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		ESSMETRON 1505 W. THIRD AVE DENVER CO 80223		MVEA MVEA YODER SUBSTATION POWER DISTRIBUTION CENTER MECHANICAL OUTLINE DRAWING PLAN VIEW		
DRAWN: J.Jelavich		8/27/2019		SIZE	DWG NO.	REV
CHECK: T.Anderson		8/28/2019		B	Y191203-691880	C
APPD: J.Jelavich		8/28/2019		SCALE		SHEET 2 OF 22

Parts List			
ITEM	ITEM QTY	PART NUMBER	MASS
1	1	**ACP2	150.000 lbmass
2	1	**TRP2	500.000 lbmass
3	1	**TRP3	500.000 lbmass
4	1	**TRP4	500.000 lbmass
5	1	**TRP5	500.000 lbmass
6	4	3 WAY SWITCH	0.255 lbmass
7	1	ACP1	150.000 lbmass
8	1	ANTENNA	2.347 lbmass
9	1	ATS	120.000 lbmass
10	1	BATTERY BANK	1660.000 lbmass
11	1	BATTERY SPILL CONTAINMENT	75.000 lbmass
12	1	BC1	265.000 lbmass
13	1	DCP1	100.000 lbmass
14	2	EXIT-EMERGENCY COMBO	12.938 lbmass
15	2	EXTERIOR LED WALLPACK	3.190 lbmass
16	1	EYEWASH	50.000 lbmass
17	1	FAN CONTROL BOX	25.000 lbmass
18	2	FIRE EXTINGUISHER 10#	16.000 lbmass
19	7	GFCI RECEPTACLE	0.334 lbmass
20	1	HVAC #1	565.000 lbmass
21	1	HYDROGEN SENSOR JUNCTION BOX	10.000 lbmass
22	6	INTERIOR LED, 48IN	16.500 lbmass
23	1	LC1	25.000 lbmass
24	1	SMOKE DETECTOR	1.041 lbmass
25	1	TERMINATION CABINET	600.000 lbmass
26	1	THERMOSTAT	0.937 lbmass
27	1	TRP1	500.000 lbmass
28	2	WEATHERPROOF GFCI RECEPTACLE	0.379 lbmass
29	1	WORK DESK	50.000 lbmass
30	1	DRAWING HANGER	30.000 lbmass
31	1	EXHAUST FAN	13.000 lbmass
32	1	LOUVER	6.500 lbmass

**SUPPLIED BY CUSTOMER; INSTALLED BY OTHERS

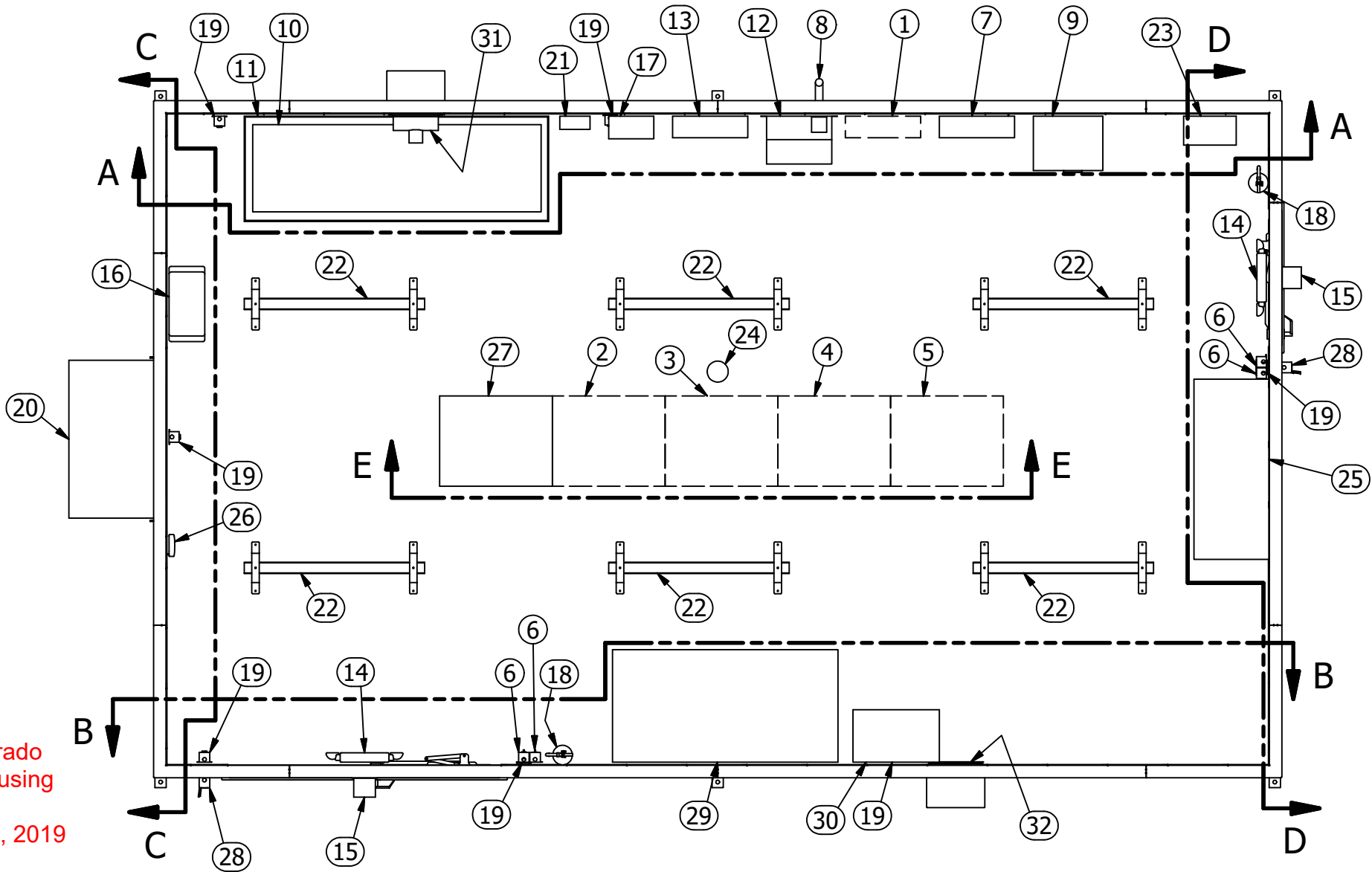
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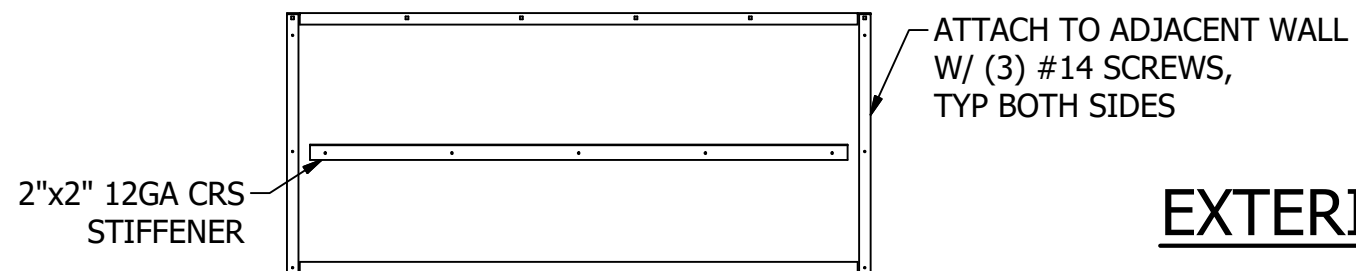
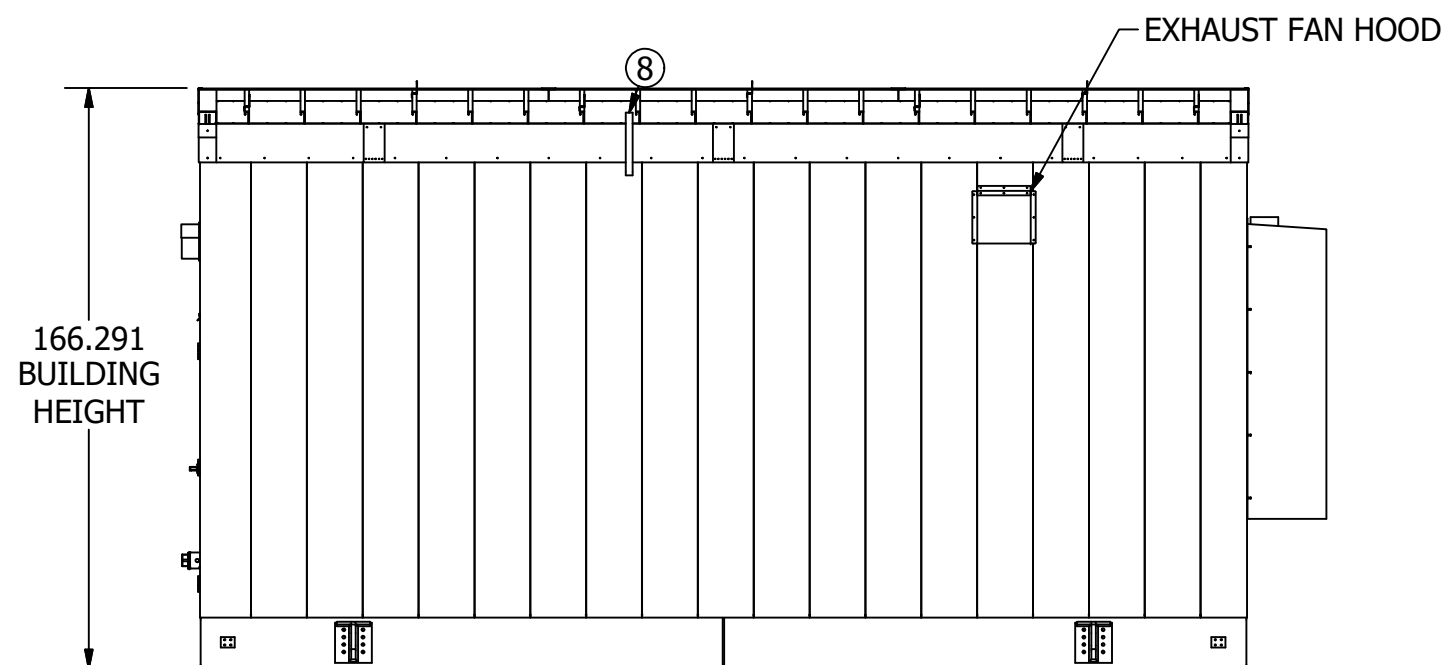
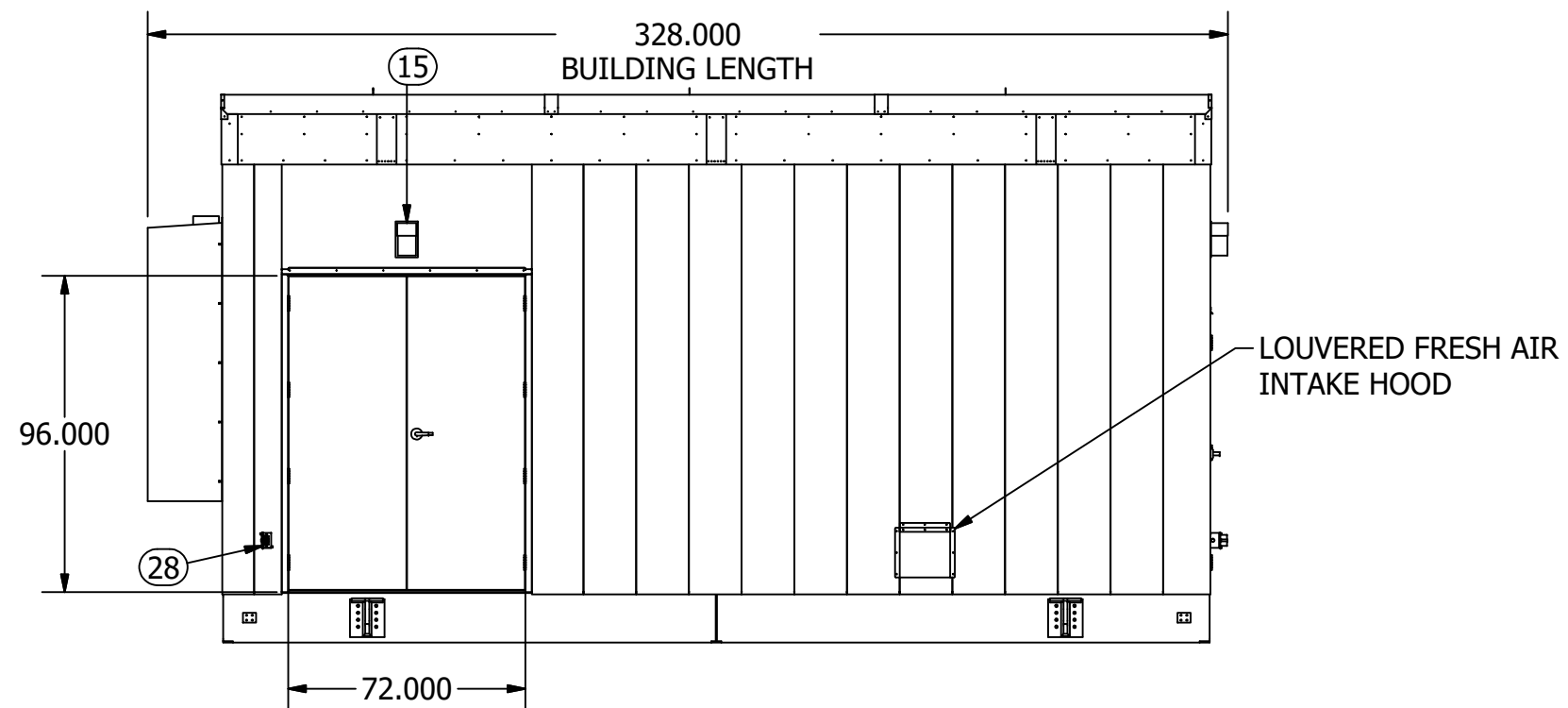


COMPONENT DETAIL
SOME DETAILS REMOVED FOR CLARITY



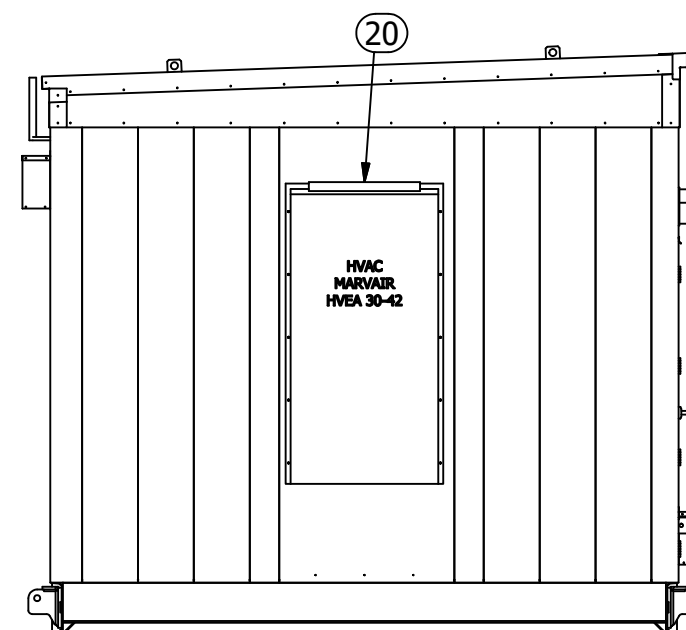
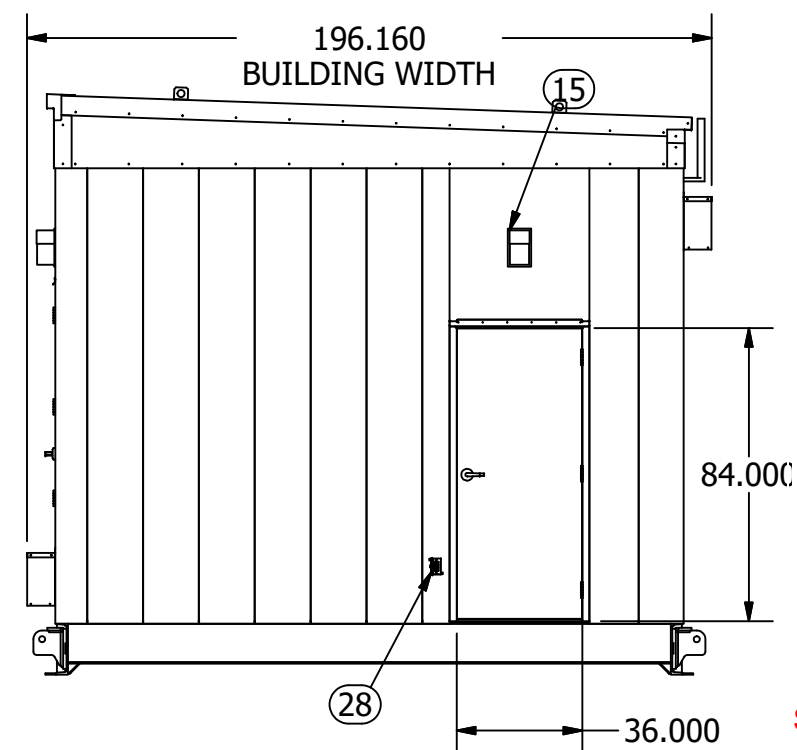
STRUCTURE ONLY

 ESSMETRON 1505 W. THIRD AVE DENVER CO 80223		MVEA MVEA YODER SUBSTATION POWER DISTRIBUTION CENTER MECHANICAL OUTLINE DRAWING COMPONENT PLAN VIEW		
DRAWN: J.Jelavich	8/27/2019	SIZE	DWG NO.	REV
CHECK: T.Anderson	8/28/2019	B	Y191203-691880	C
APPD: J.Jelavich	8/28/2019	SCALE		SHEET 3 OF 22



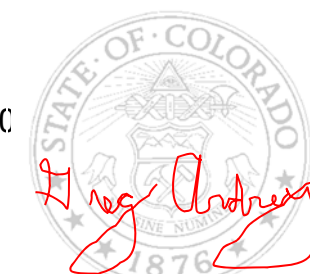
12GA MAN DOOR HEADER
TYPICAL BOTH MAN DOORS

EXTERIOR ELEVATIONS



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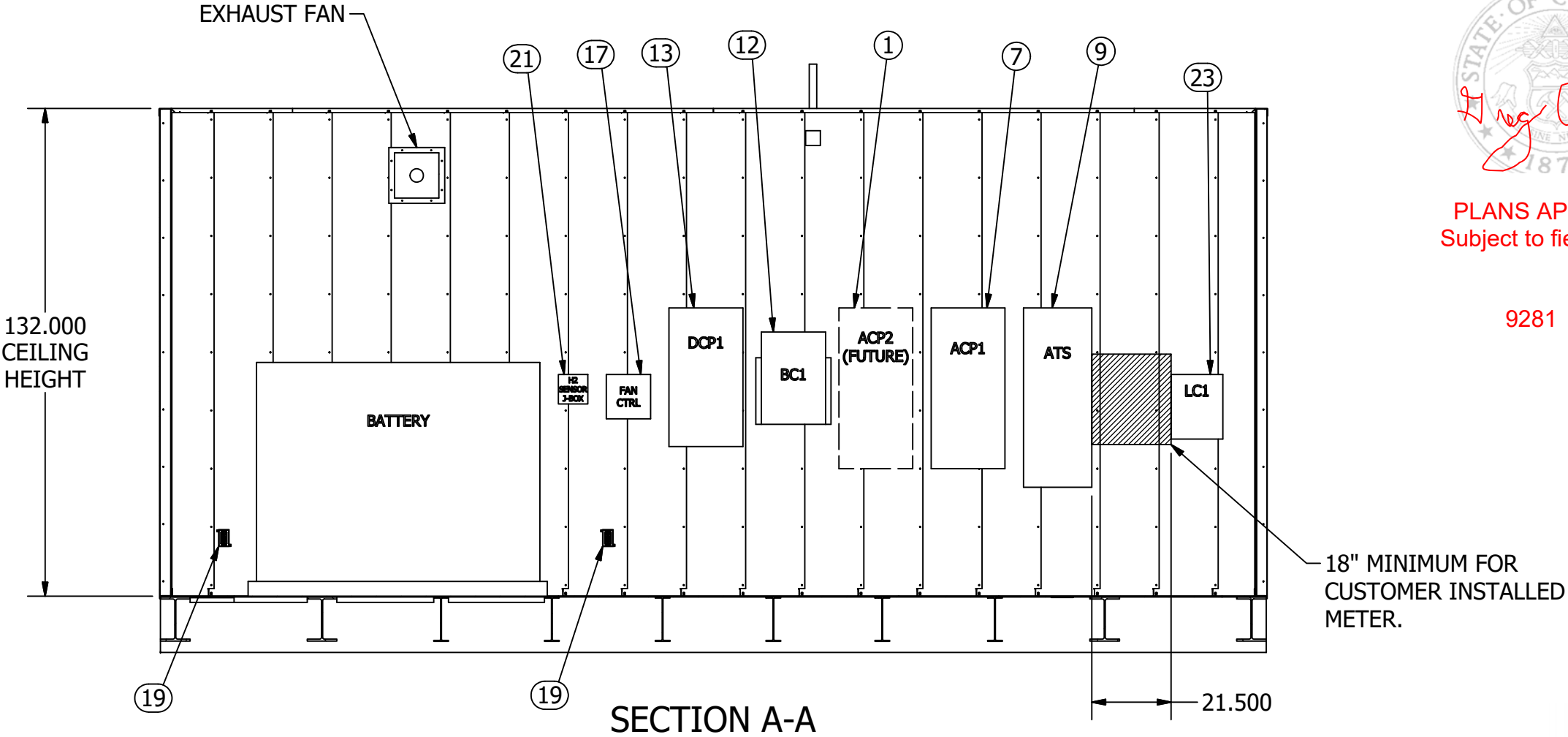
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CHECK: T.Anderson	8/28/2019	B	Y191203-691880	C
APPD: J.Jelavich	8/28/2019	SCALE		SHEET 4 OF 22



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COMPONENT ELEVATIONS



STRUCTURE ONLY

 <div>ESSMETRON 1505 W. THIRD AVE DENVER CO 80223</div>		MVEA MVEA YODER SUBSTATION POWER DISTRIBUTION CENTER MECHANICAL OUTLINE DRAWING COMPONENT ELEVATION		
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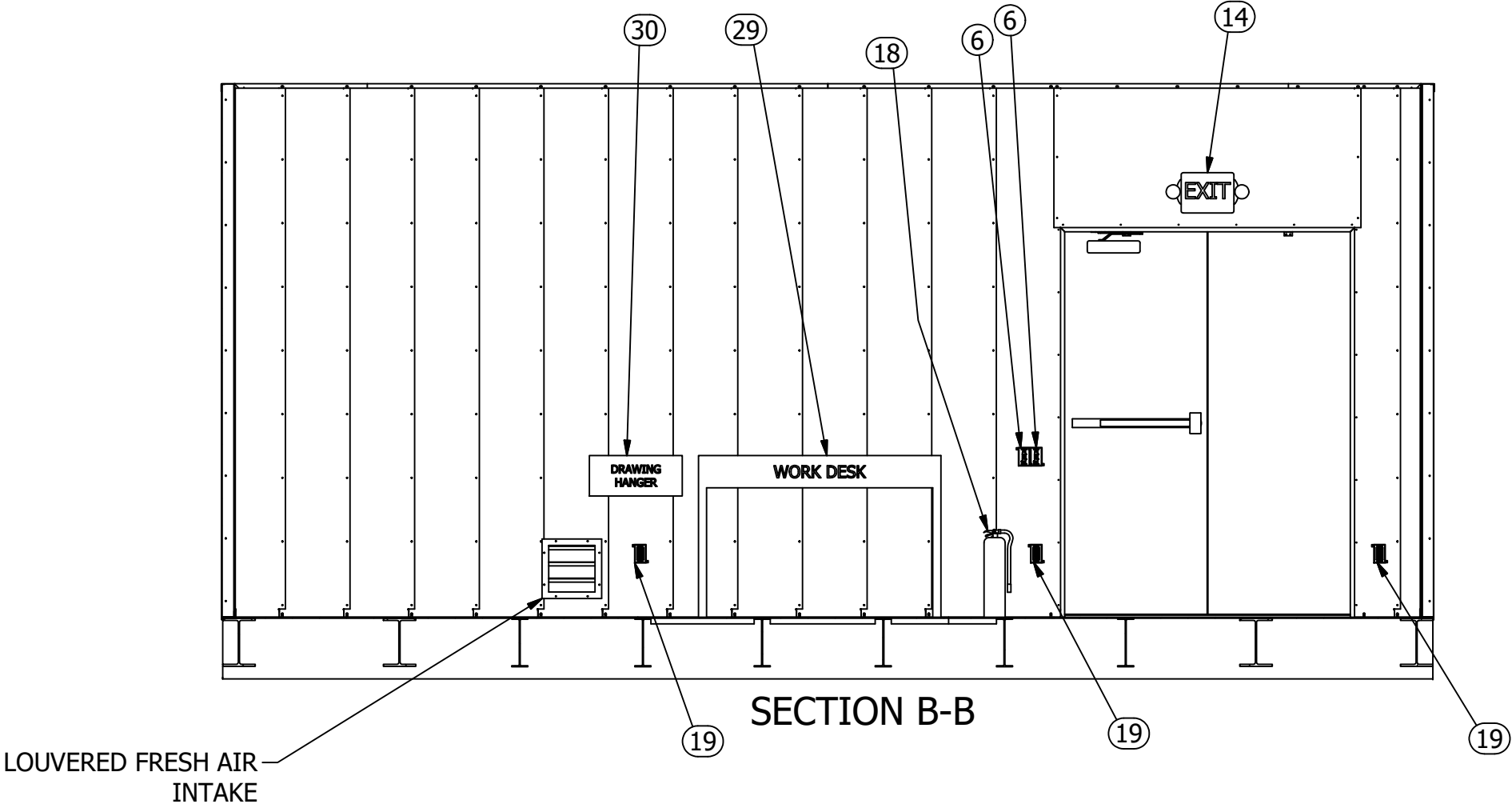
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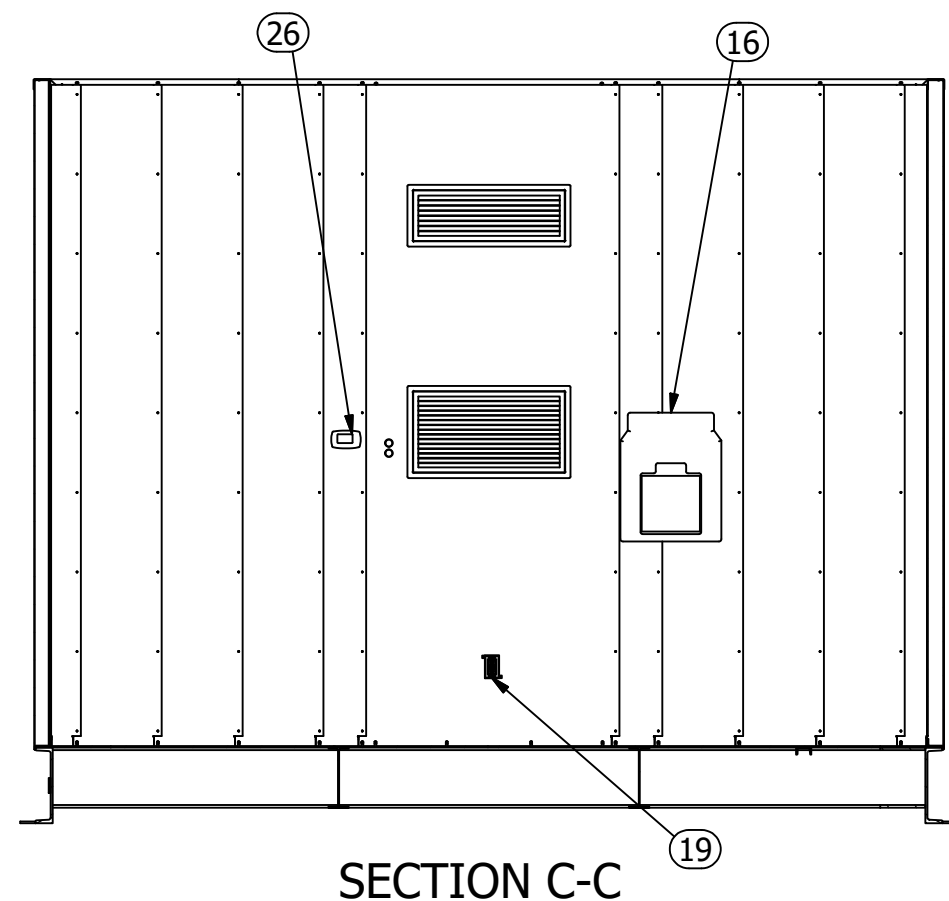
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STRUCTURE ONLY

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CHECK: T.Anderson	8/28/2019	B	Y191203-691880	C
APPD: J.Jelavich	8/28/2019	SCALE		SHEET 6 OF 22



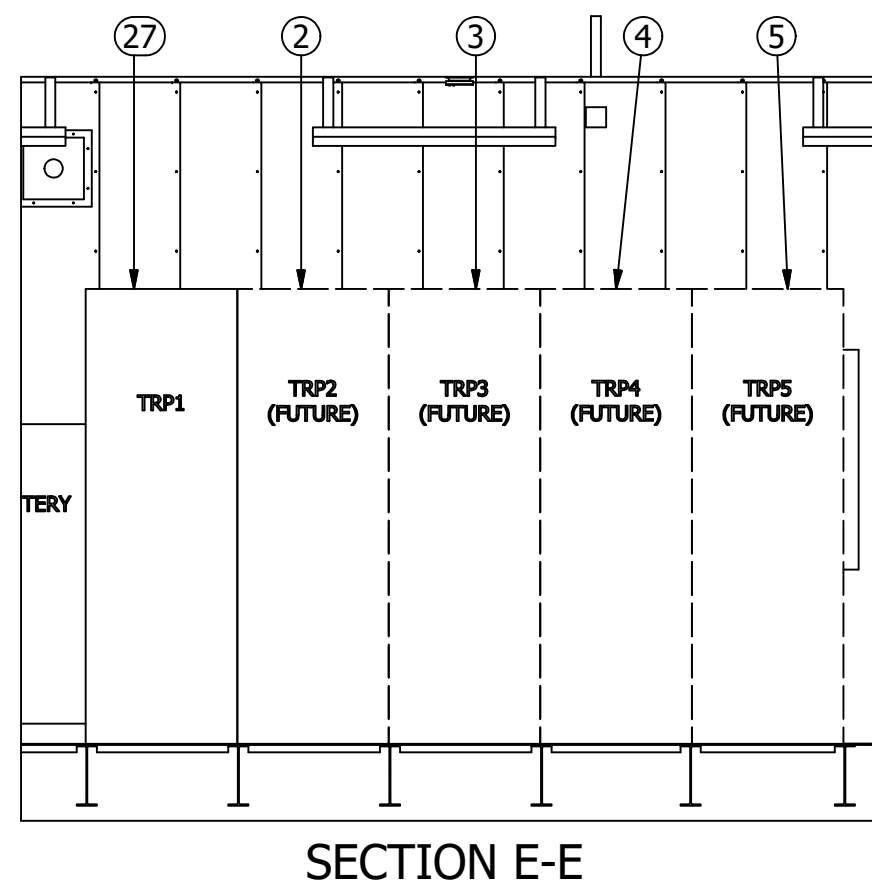
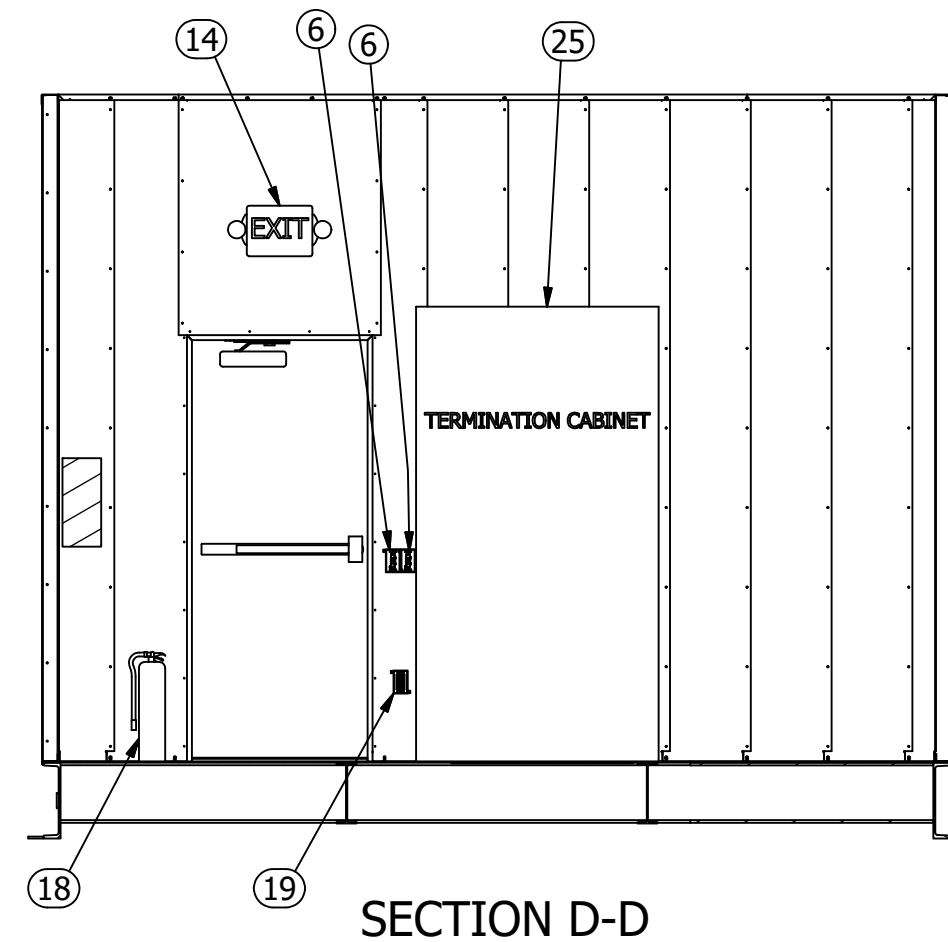
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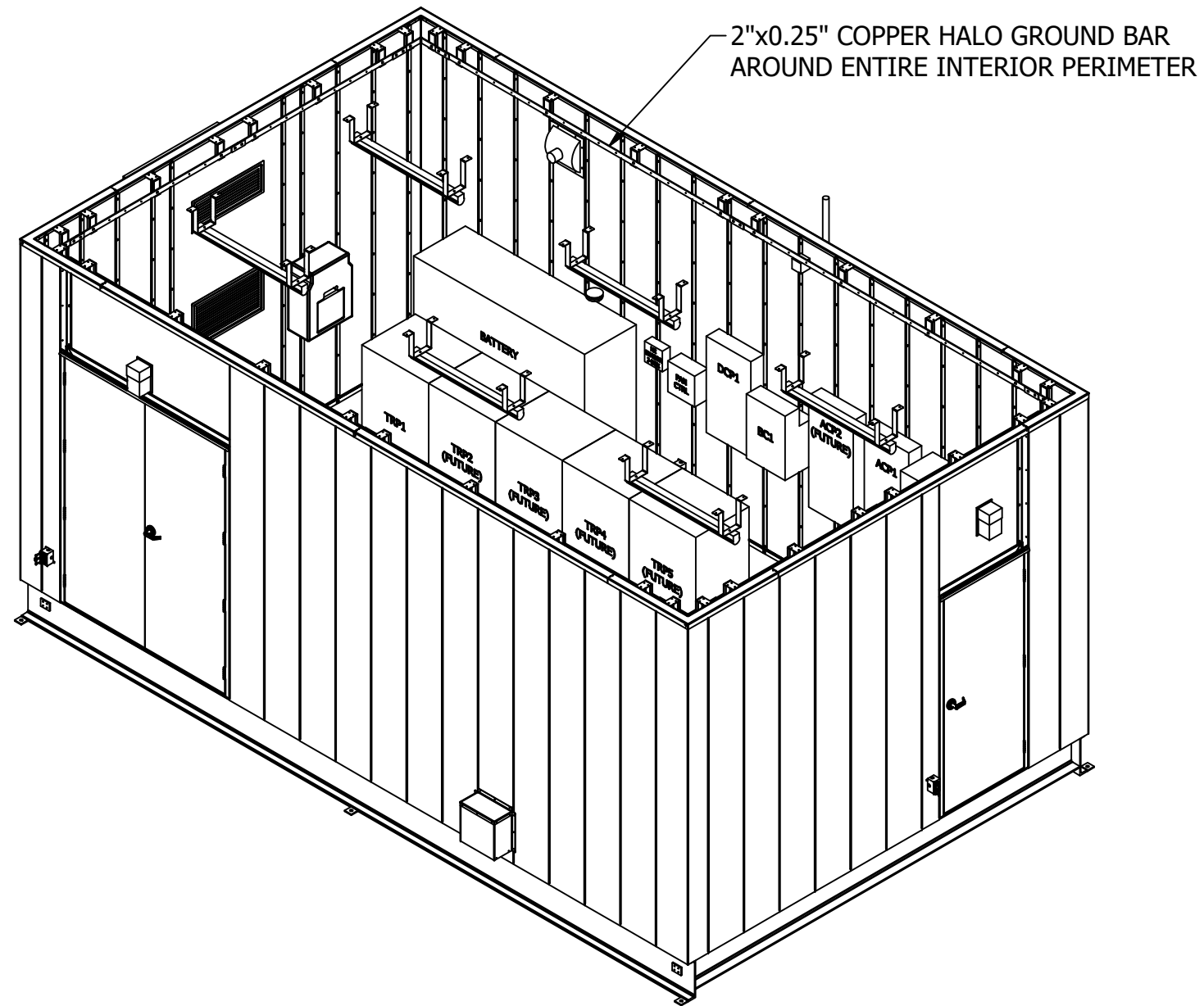


COMPONENT ELEVATIONS



STRUCTURE ONLY

 ESSMETRON 1505 W. THIRD AVE DENVER CO 80223		MVEA MVEA YODER SUBSTATION POWER DISTRIBUTION CENTER MECHANICAL OUTLINE DRAWING COMPONENT ELEVATIONS		
DRAWN: J.Jelavich	8/27/2019	SIZE	DWG NO.	REV
CHECK: T.Anderson	8/28/2019	B	Y191203-691880	C
APPD: J.Jelavich	8/28/2019	SCALE		SHEET 7 OF 22



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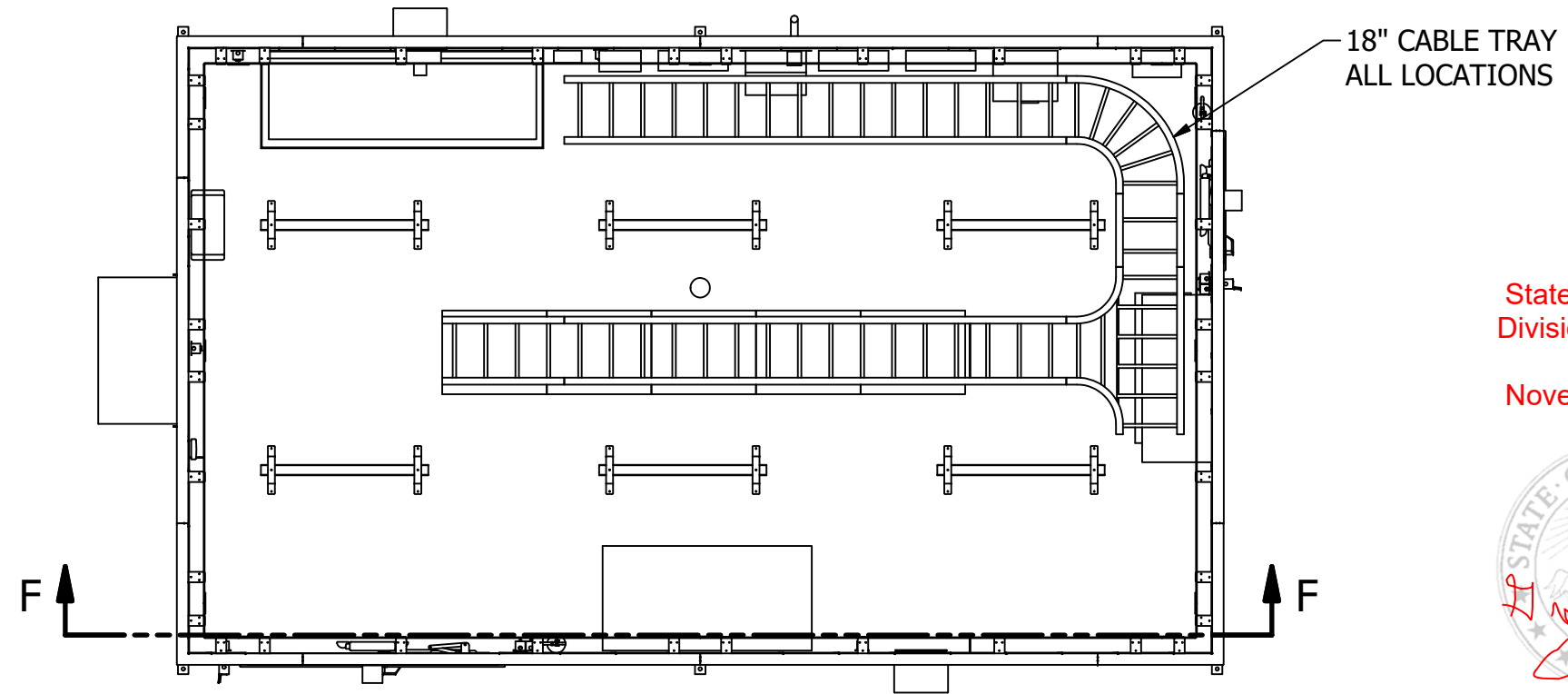
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HALO GROUND ISOMETRIC



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 ESSMETRON 1505 W. THIRD AVE DENVER CO 80223		MVEA MVEA YODER SUBSTATION POWER DISTRIBUTION CENTER MECHANICAL OUTLINE DRAWING HALO GROUND ISOMETRIC		
DRAWN: J.Jelavich	8/27/2019	SIZE	DWG NO.	REV
CHECK: T.Anderson	8/28/2019	B	Y191203-691880	C
APPD: J.Jelavich	8/28/2019	SCALE		SHEET 8 OF 22



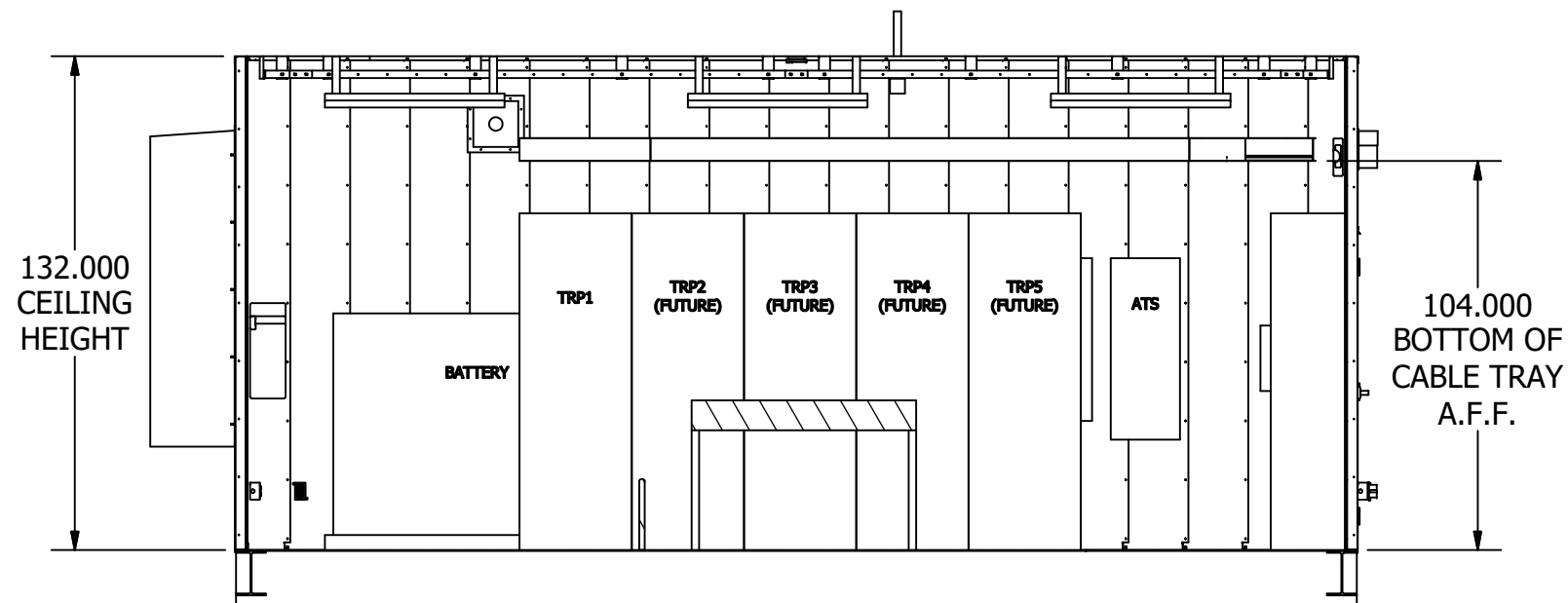
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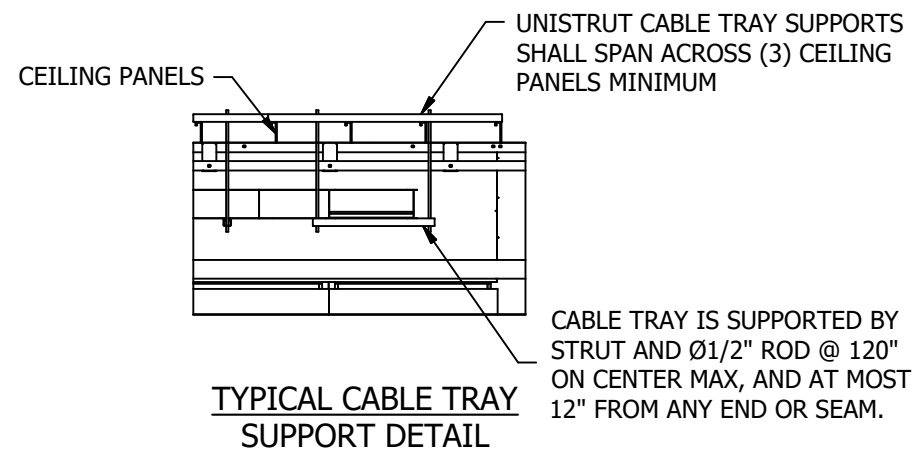


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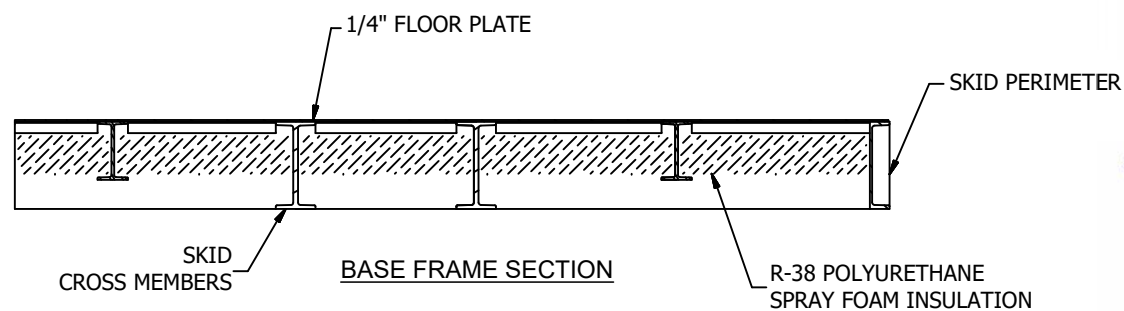
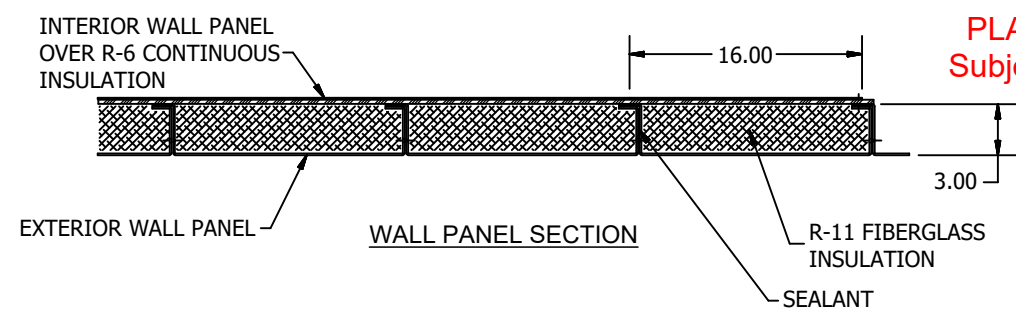
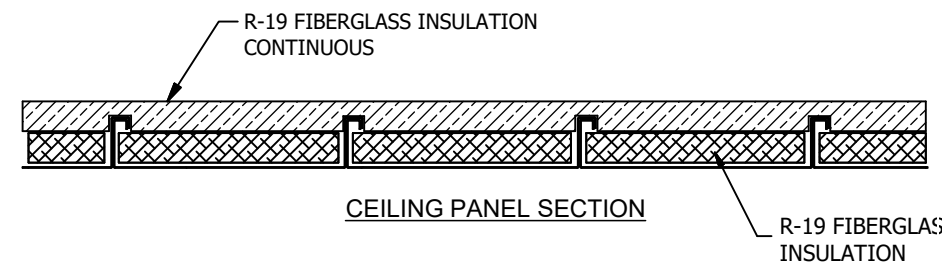
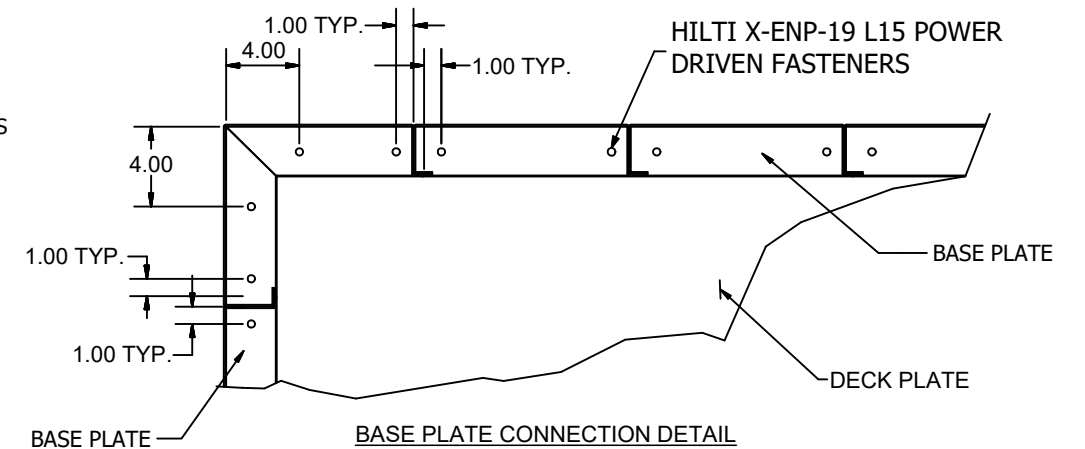
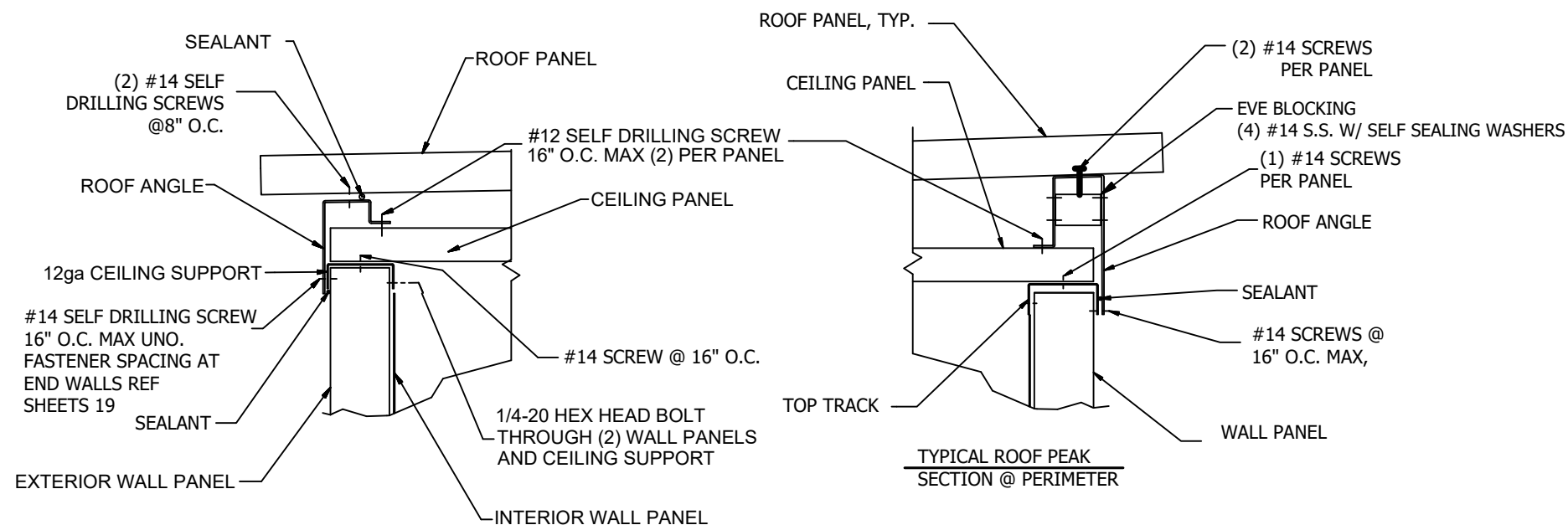


SECTION F-F



STRUCTURE ONLY

 ESSMETRON 1505 W. THIRD AVE DENVER CO 80223		MVEA MVEA YODER SUBSTATION POWER DISTRIBUTION CENTER MECHANICAL OUTLINE DRAWING CABLE TRAY LAYOUT		
DRAWN: J.Jelavich	8/27/2019	SIZE	DWG NO.	REV
CHECK: T.Anderson	8/28/2019	B	Y191203-691880	C
APPD: J.Jelavich	8/28/2019	SCALE		SHEET 9 OF 22



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STRUCTURE ONLY

ATTACH INTERIOR SHEATHING
TO WALL PANELS W/ 3/16" RIVETS
@ 16" O.C. MAX

ATTACH INTERLOCKING WALL
PANELS TO EACH OTHER
W/ 1/4" RIVETS @16" O.C. MAX

16.00 MAX

SKID PERIMETER BASE PLATE

SEALANT
BETWEEN FLOOR PLATE
AND BASE PLATE

SKID PERIMETER

ATTACH BASE PLATE TO SKID
ON EACH SIDE OF WALL FLANGE
W/ HILTI X-ENP-19 L15 POWER
DRIVEN FASTENERS

1/4-20 HEX BOLT
THROUGH (2) WALL PANELS
AND BASE PLATE
(16" O.C. MAX.)

1/4" FLOOR PLATE

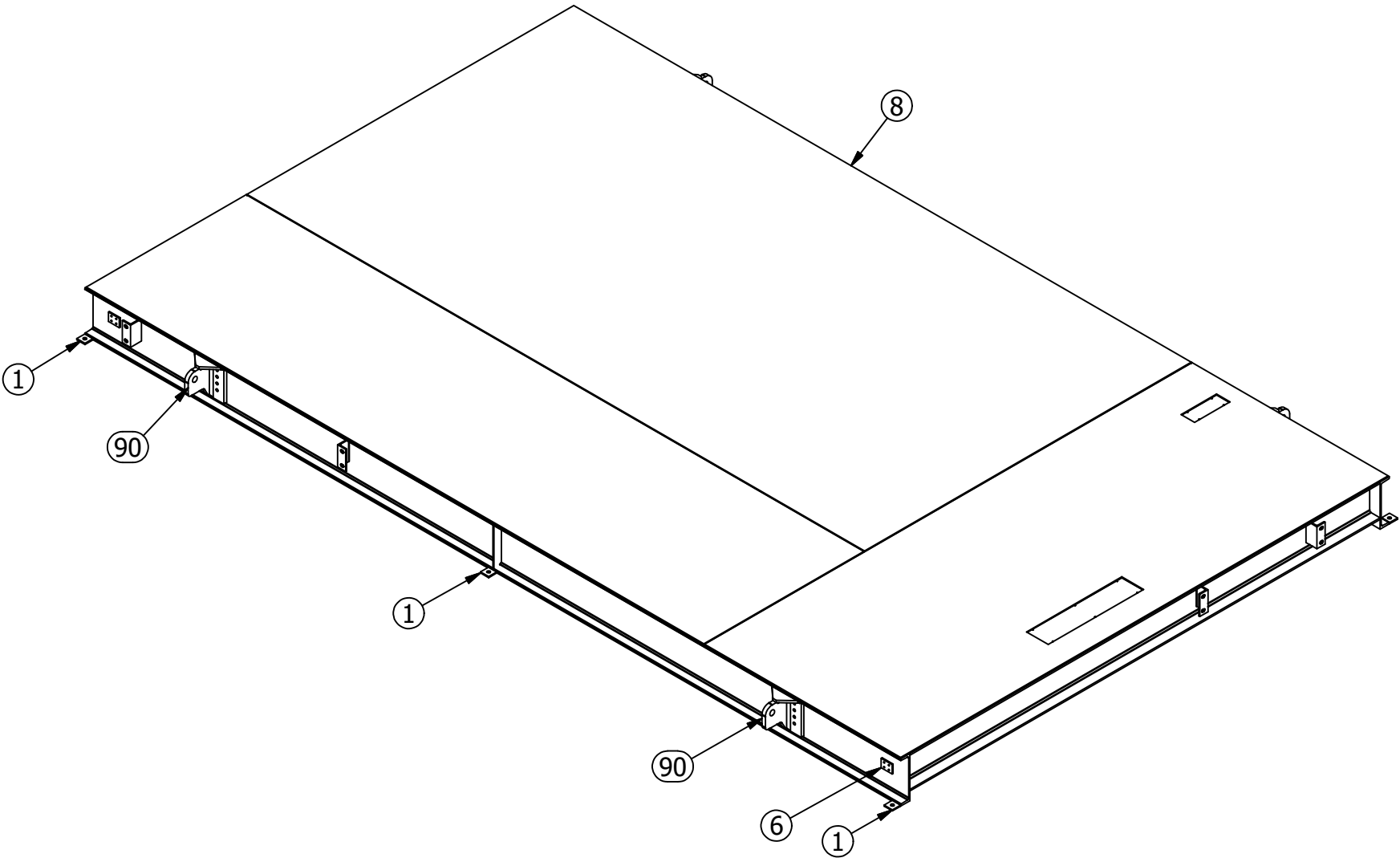
SKID CROSS MEMBER

INTERIOR SHEATHING
NOT SHOWN FOR CLARITY

NOTE:
THIS DRAWING INDICATES
TYPICAL ATTACHMENTS, SEE
SHEETS 19 FOR ADDITIONAL
ATTACHMENT SCHEDULES.

		ESSMETRON 1505 W. THIRD AVE DENVER CO 80223		MVEA MVEA YODER SUBSTATION POWER DISTRIBUTION CENTER MECHANICAL OUTLINE DRAWING TYPICAL BUILDING DETAILS	
DRAWN: J.Jelavich	8/27/2019	SIZE	DWG NO.	REV	
CHECK: T.Anderson	8/28/2019	B	Y191203-691880	C	
APPD: J.Jelavich	8/28/2019	SCALE		SHEET10 OF22	

SKID WEIGHT: 10,000 LBS



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Parts List		
ITEM	ITEM QTY	PART NUMBER
1	6	Anchor Plate 3x3x.375 HRS 13531
2	2	C 15 x 33.9 - 299.515
3	22	C 3 x 4.1 - VARIOUS LENGTHS
4	1	GI Fr - 01
5	1	GI Fr - 02
6	4	Ground Pad 4x3x.375 S.S. 13839
7	7	L 2 x 2 x 1/4 - VARIOUS LENGTHS
9	8	SKID GUSSET
10	2	SKID WEB STIFFENER
11	6	W 12x16 - 172.715
12	4	W 12x16 - 39.458
13	2	W 12x40 - 171.615
14	2	W 12x40 - 172.715
90	4	LIFTING LUG, ASSEMBLY, FULL - 03

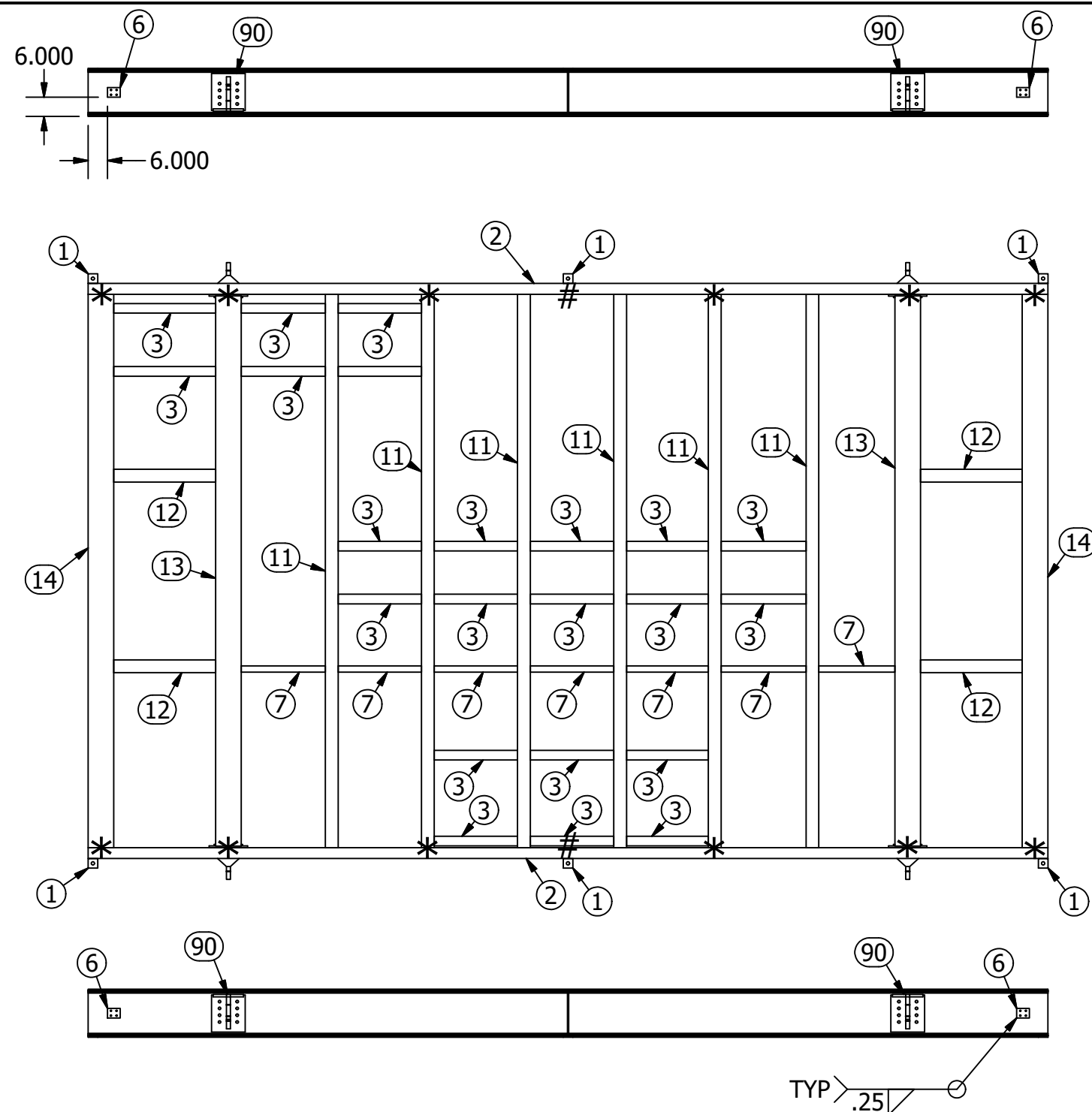
REF: LK12517-1 WELD PROCEDURE DOCUMENT



STRUCTURE ONLY

 <div>ESSMETRON 1505 W. THIRD AVE DENVER CO 80223</div>		MVEA MVEA YODER SUBSTATION POWER DISTRIBUTION CENTER MECHANICAL OUTLINE DRAWING SKID BOM		
DRAWN: J.Jelavich	8/27/2019	SIZE	DWG NO.	REV
CHECK: T.Anderson	8/28/2019	B	Y191203-691880	C
APPD: J.Jelavich	8/28/2019	SCALE		SHEET11 OF22

Technical drawing of a rectangular plate. The drawing includes three dimensions: a width of 2.750, a height of 13.875, and a thickness of .375. The plate has rounded corners on the left side. The drawing is oriented vertically, with the width dimension at the bottom, the height dimension on the right, and the thickness dimension at the top right.




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STRUCTURE ONLY

	ESSMETRON 1505 W. THIRD AVE DENVER CO 80223		MVEA MVEA YODER SUBSTATION POWER DISTRIBUTION CENTER MECHANICAL OUTLINE DRAWING SKID MEMBER CALLOUTS	
	DRAWN: J.Jelavich 8/27/2019	SIZE B	DWG NO. Y191203-691880	REV C
CHECK: T.Anderson 8/28/2019	APPD: J.Jelavich 8/28/2019		SCALE	SHEET12 OF22

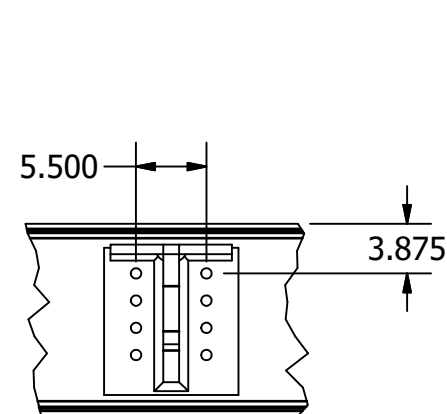
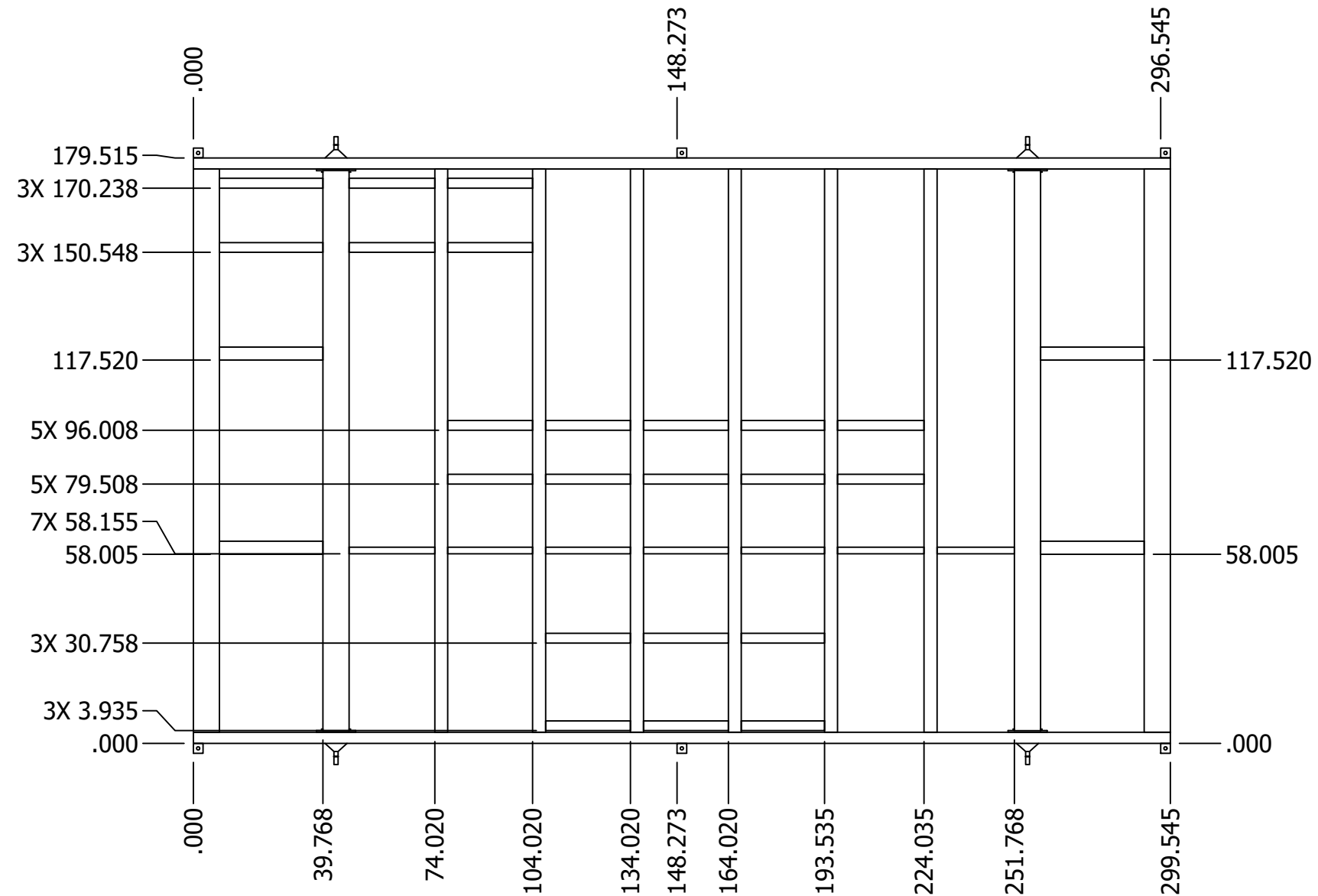
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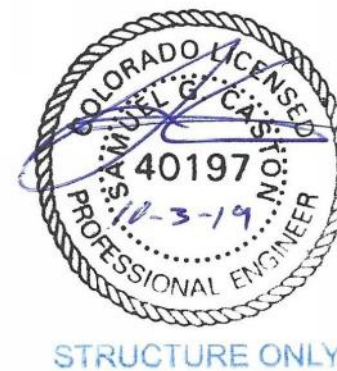
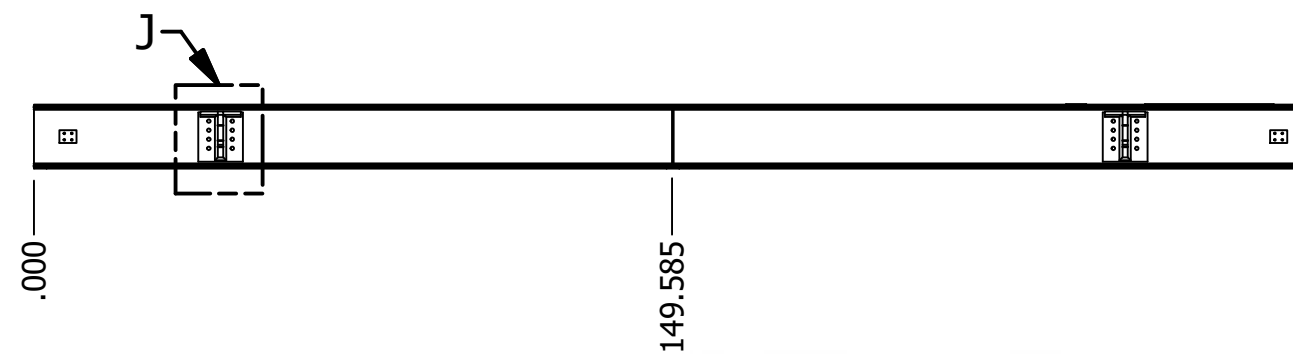



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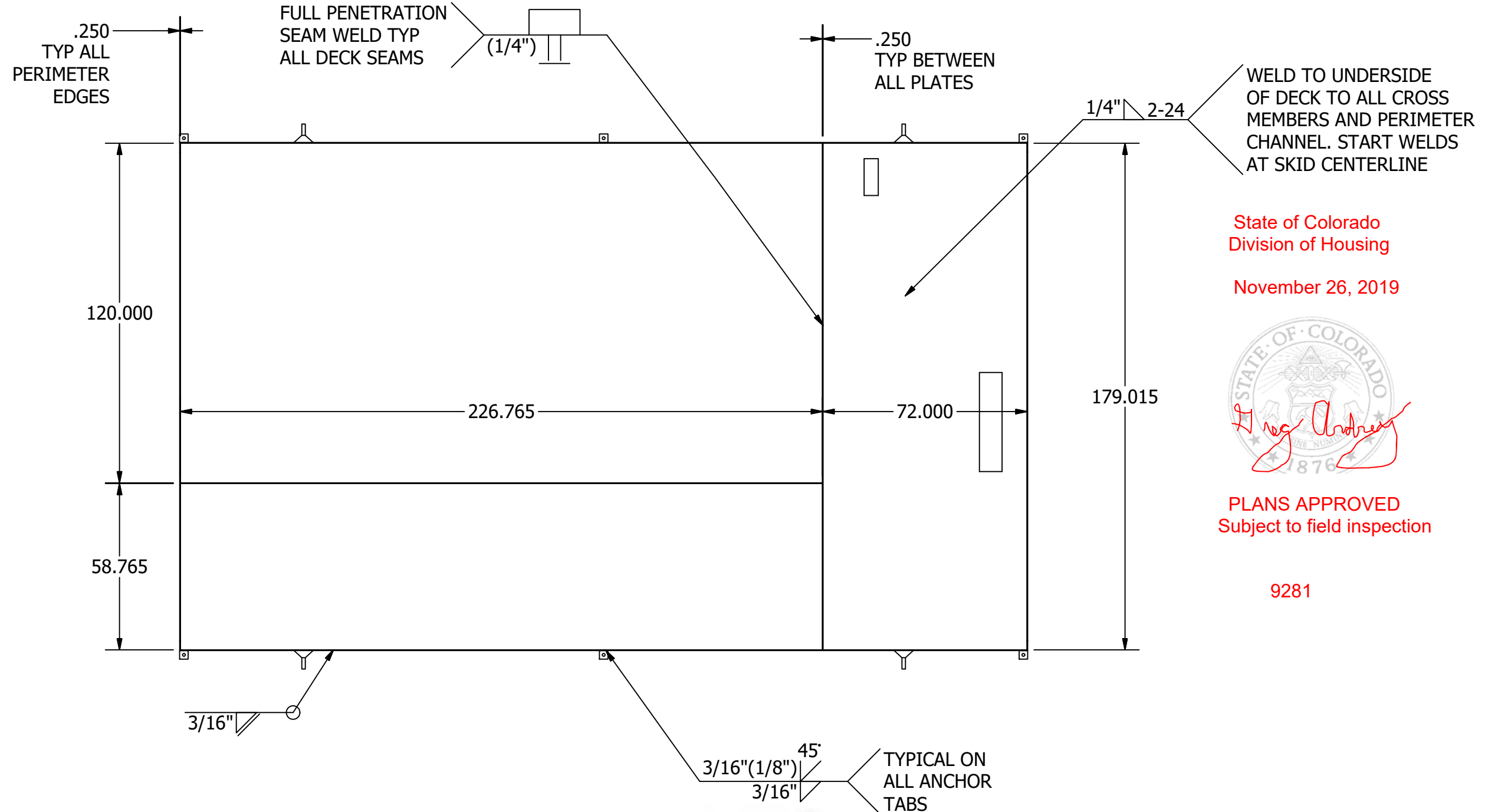
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DETAIL J



 ESSMETRON 1505 W. THIRD AVE DENVER CO 80223		MVEA MVEA YODER SUBSTATION POWER DISTRIBUTION CENTER MECHANICAL OUTLINE DRAWING SKID MEMBER LOCATIONS		
DRAWN: J.Jelavich	8/27/2019	SIZE	DWG NO.	REV
CHECK: T.Anderson	8/28/2019	B	Y191203-691880	C
APPD: J.Jelavich	8/28/2019	SCALE		SHEET13 OF22



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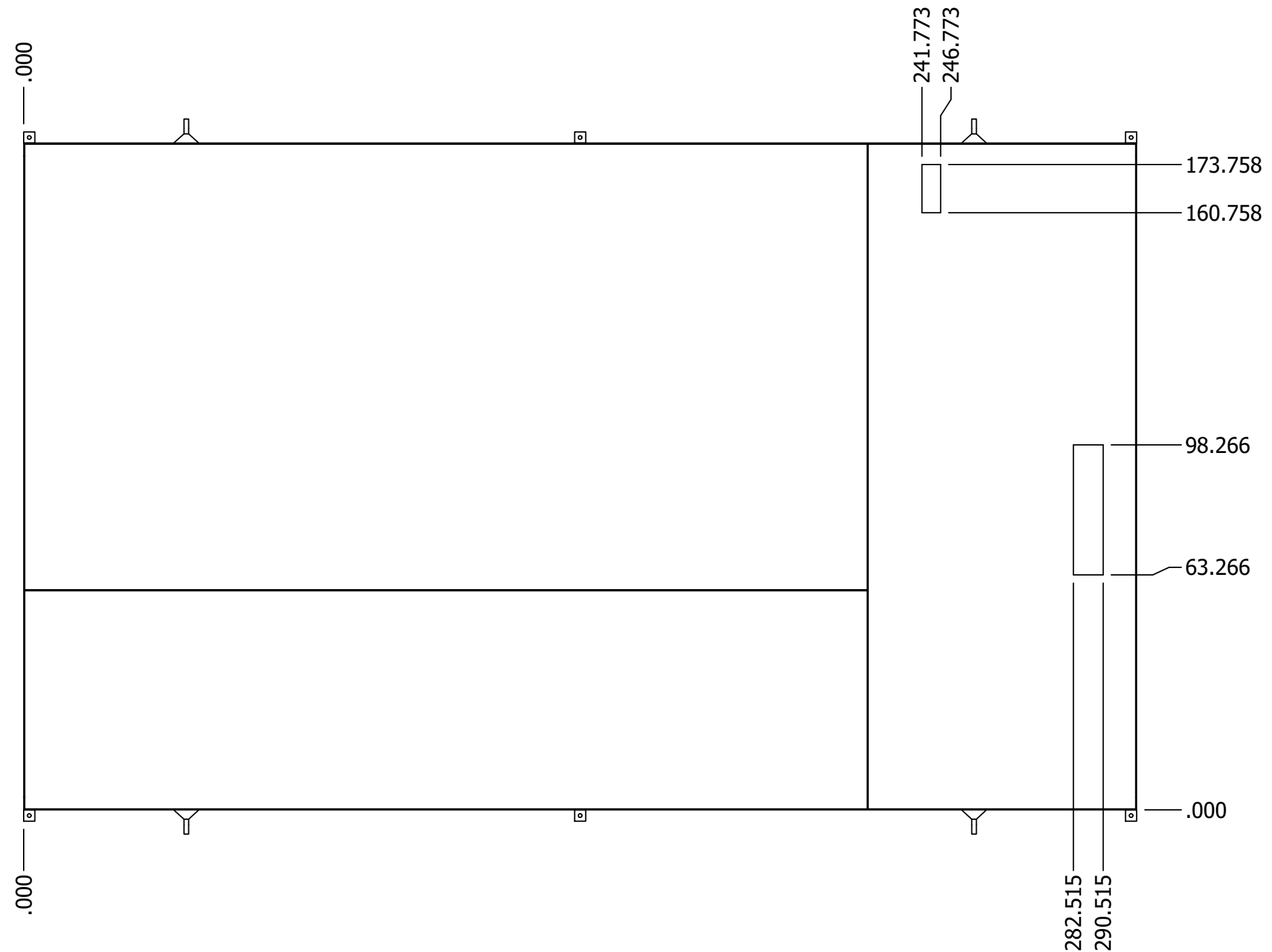
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STRUCTURE ONLY

		ESSMETRON 1505 W. THIRD AVE DENVER CO 80223		MVEA MVEA YODER SUBSTATION POWER DISTRIBUTION CENTER MECHANICAL OUTLINE DRAWING SKID DECK PLATE	
DRAWN: J.Jelavich	8/27/2019	SIZE	DWG NO.	Y191203-691880	REV C
CHECK: T.Anderson	8/28/2019	B			
APPD: J.Jelavich	8/28/2019	SCALE			SHEET14 OF22



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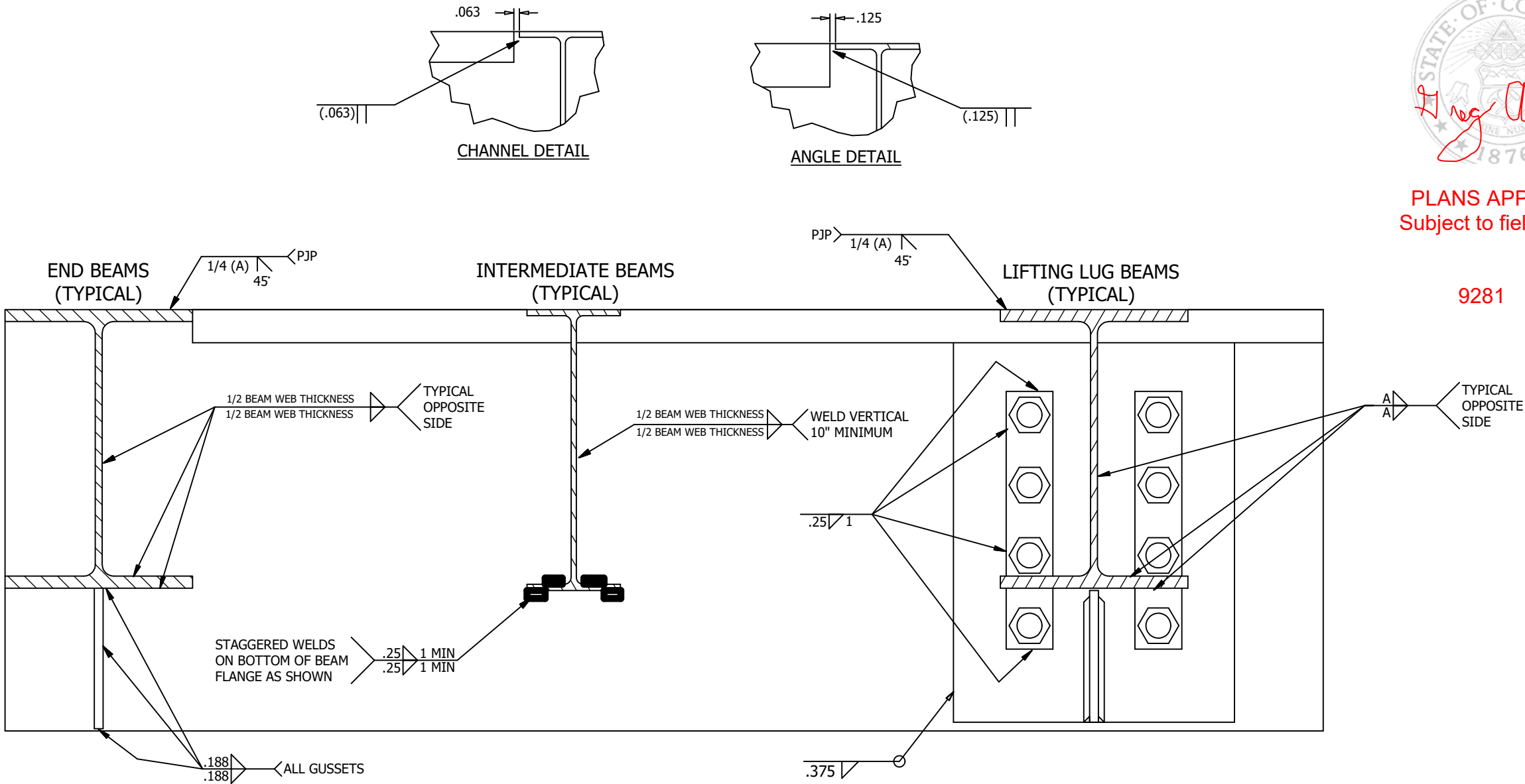
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DRAWN: J.Jelavich	8/27/2019	SIZE	DWG NO.	REV
CHECK: T.Anderson	8/28/2019	B	Y191203-691880	C
APPD: J.Jelavich	8/28/2019	SCALE		SHEET15 OF22

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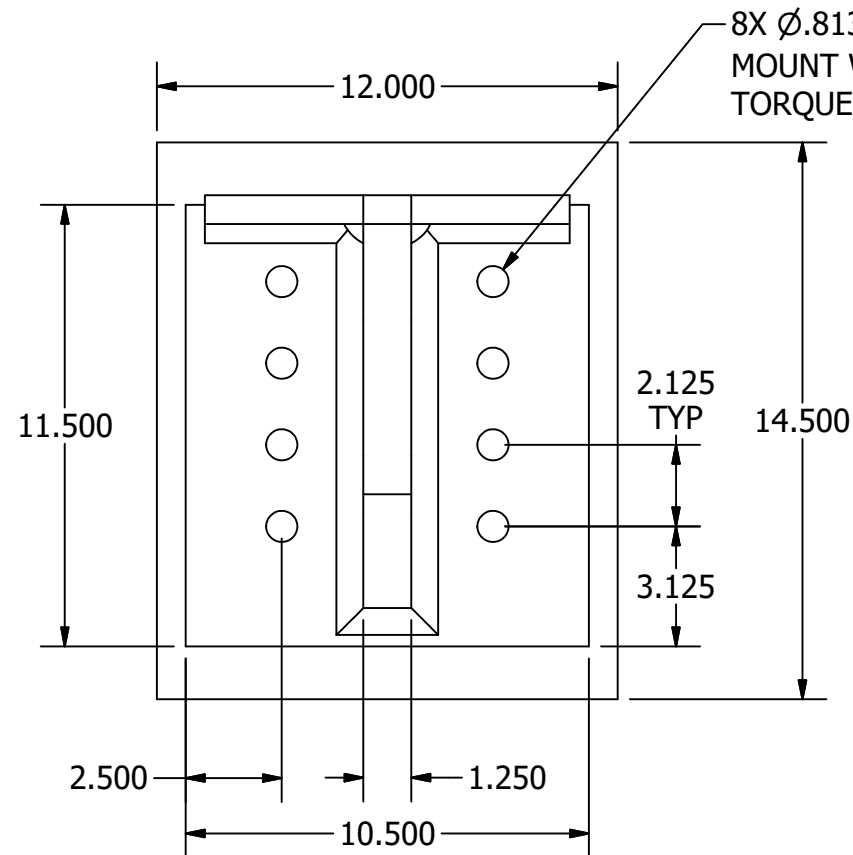
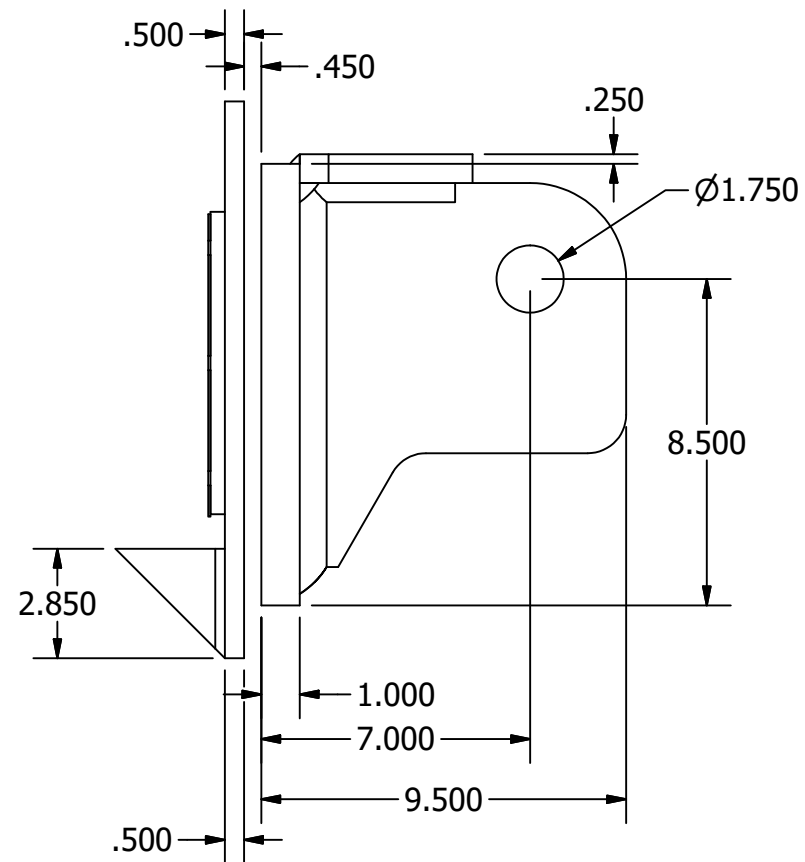
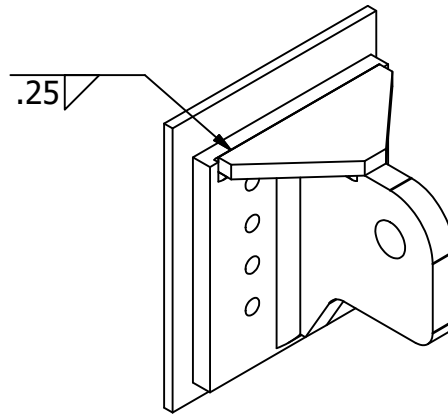
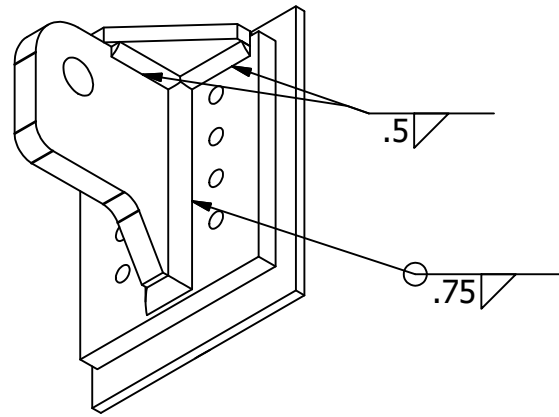


STANDARD SKID WELDMENT DETAILS



STRUCTURE ONLY

 ESSMETRON 1505 W. THIRD AVE DENVER CO 80223		MVEA MVEA YODER SUBSTATION POWER DISTRIBUTION CENTER MECHANICAL OUTLINE DRAWING STANDARD SKID WELDMENT DETAILS		
DRAWN: J.Jelavich	8/27/2019	SIZE	DWG NO.	REV
CHECK: T.Anderson	8/28/2019	B	Y191203-691880	C
APPD: J.Jelavich	8/28/2019	SCALE		SHEET16 OF22



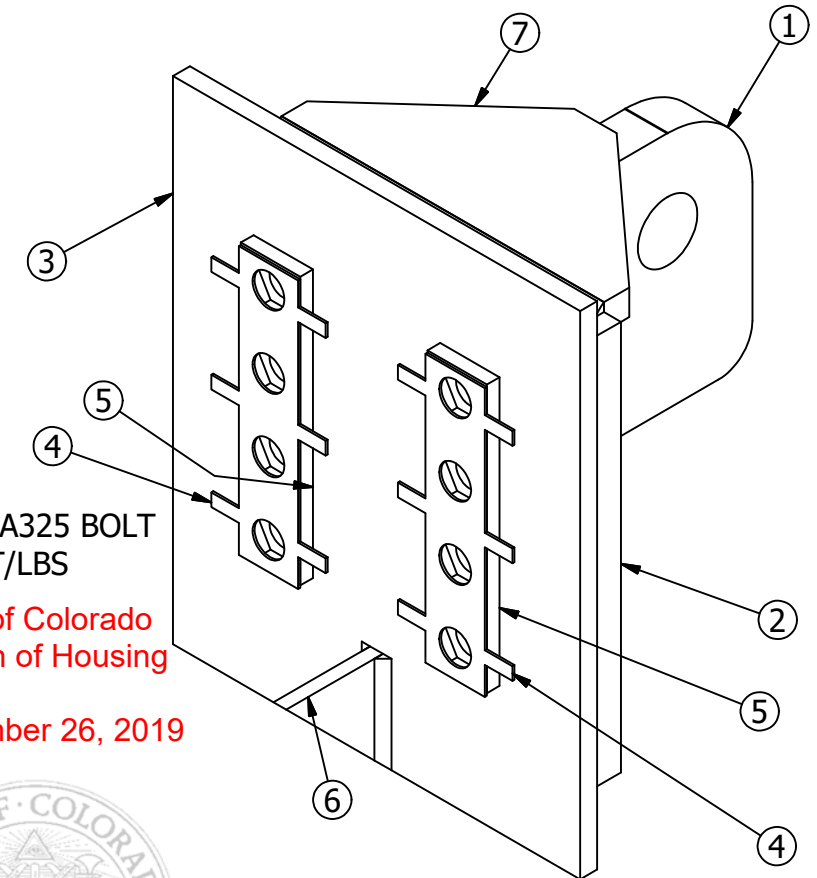
8X Ø.813
MOUNT WITH .75" A325 BOLT
TORQUE TO 350 FT/LBS

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November 26, 2019



PLANS APPROVED
Subject to field inspection




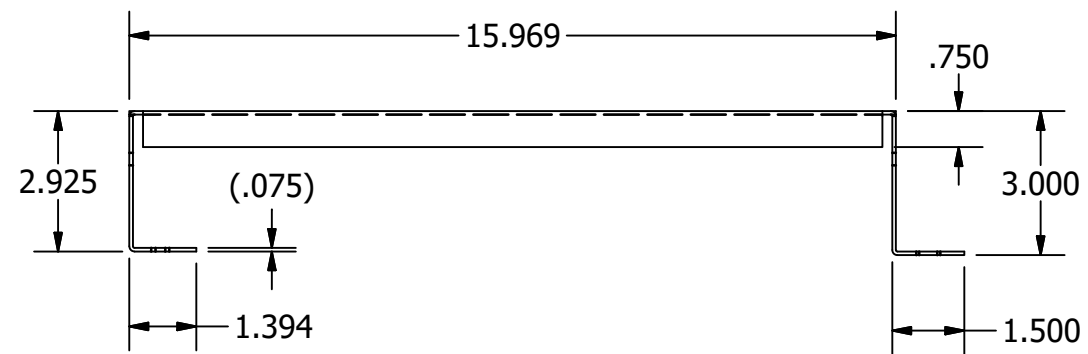
9281

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	20228	LIFTING LUG-03
2	1	20233	LUG PLATE-03
3	1	BACKING PLATE-03	BACKING PLATE-03
4	2	CM35194 - .75in Nut Retainer	.75in Nut Retainer
5	2	CM35212	.75in A325 Lug Nut Plate
6	1	GUSSET-01	.375in CRS
7	1	TOP PLATE-01	TOP PLATE-01



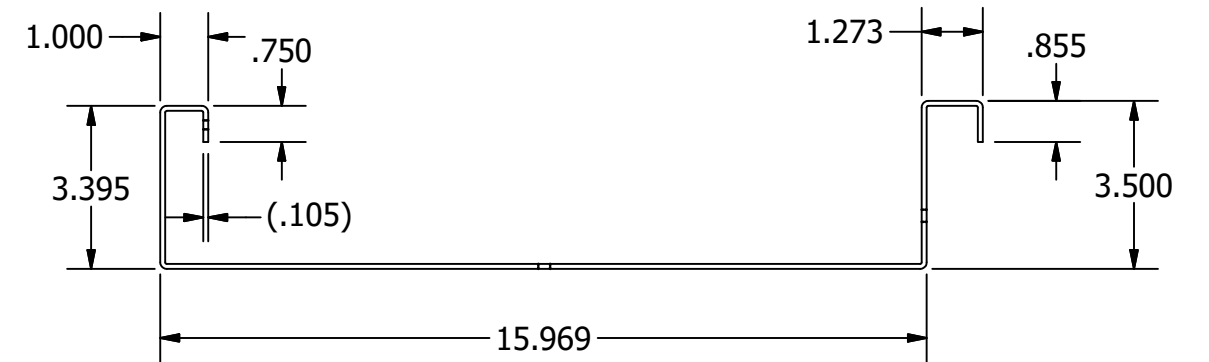
STRUCTURE ONLY

		ESSMETRON 1505 W. THIRD AVE DENVER CO 80223		MVEA MVEA YODER SUBSTATION POWER DISTRIBUTION CENTER MECHANICAL OUTLINE DRAWING LIFTING LUG	
DRAWN: J.Jelavich		8/27/2019		SIZE B	REV C
CHECK: T.Anderson		8/28/2019		DWG NO. Y191203-691880	
APPD: J.Jelavich		8/28/2019		SCALE	SHEET17 OF22



TYPICAL WALL PANEL

14GA GALVANIZED



TYPICAL CEILING PANEL

12GA GALVANIZED

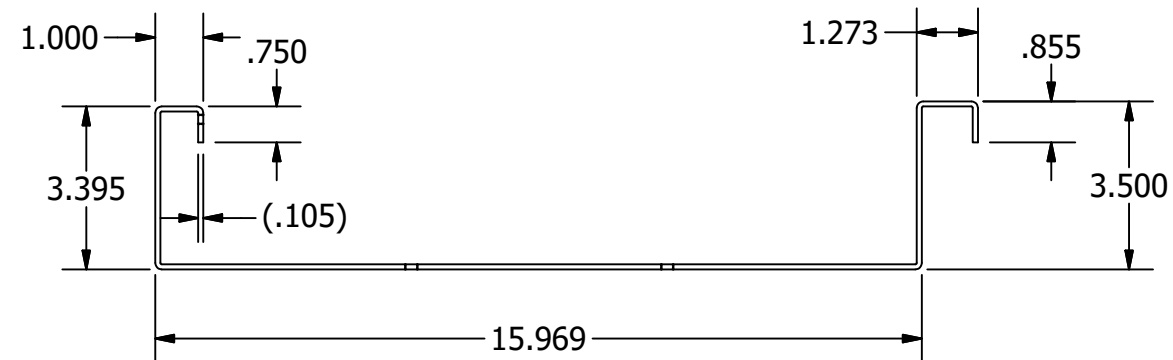
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Division of Housing

November 26, 2019



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9281




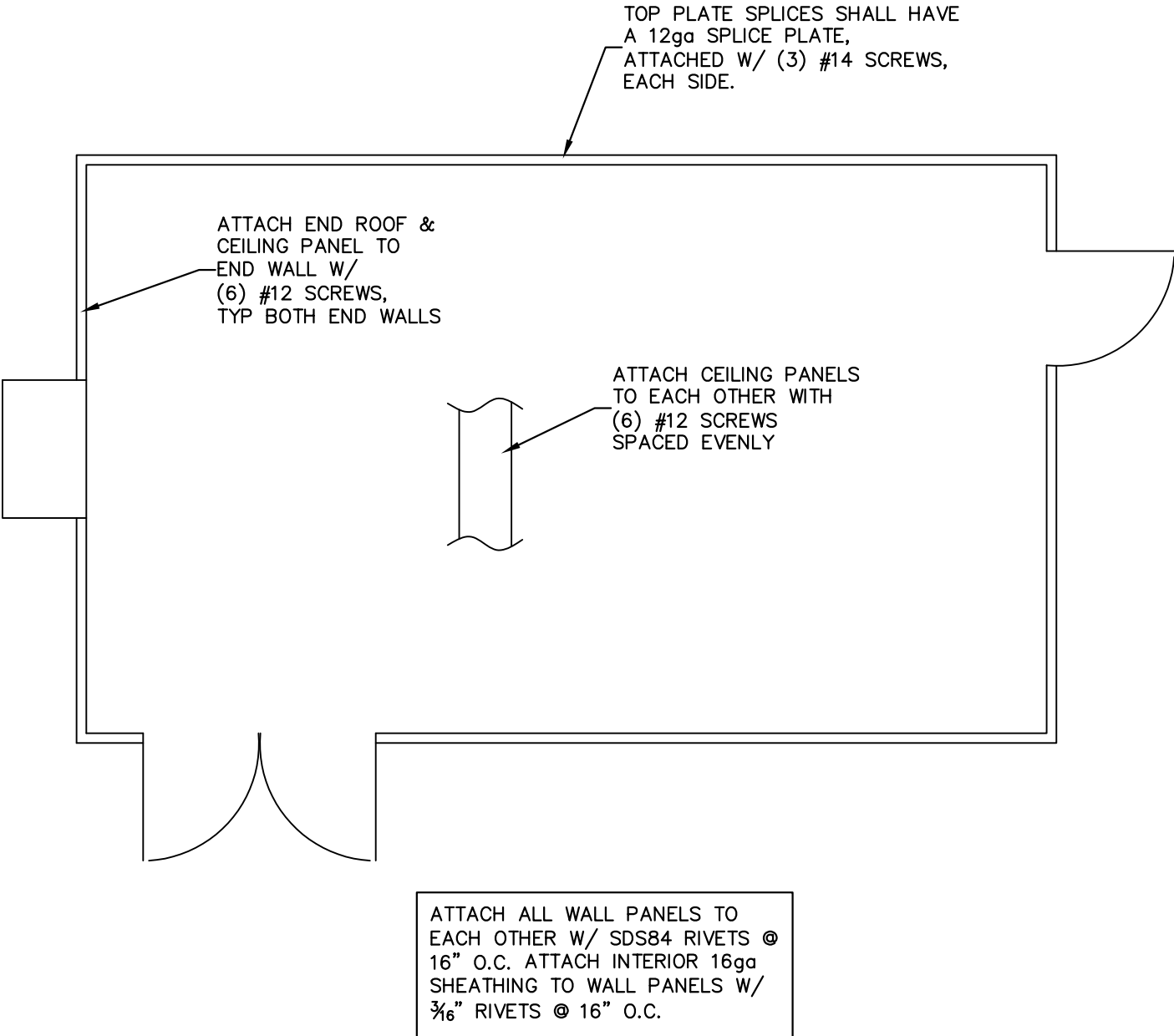
TYPICAL ROOF PANEL

12GA GALVANIZED



STRUCTURE ONLY

 ESSMETRON 1505 W. THIRD AVE DENVER CO 80223		MVEA MVEA YODER SUBSTATION POWER DISTRIBUTION CENTER MECHANICAL OUTLINE DRAWING TYPICAL PANEL PROFILES		
DRAWN: J.Jelavich	8/27/2019	SIZE	DWG NO.	REV
CHECK: T.Anderson	8/28/2019	B	Y191203-691880	C
APPD: J.Jelavich	8/28/2019	SCALE		SHEET18 OF22



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November 26, 2019



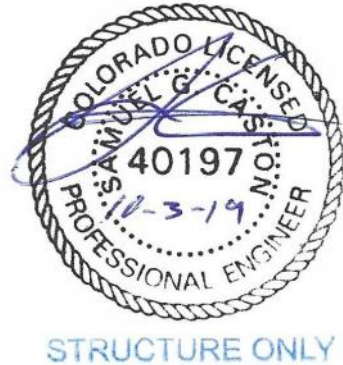
PLANS APPROVED
Subject to field inspection


9281

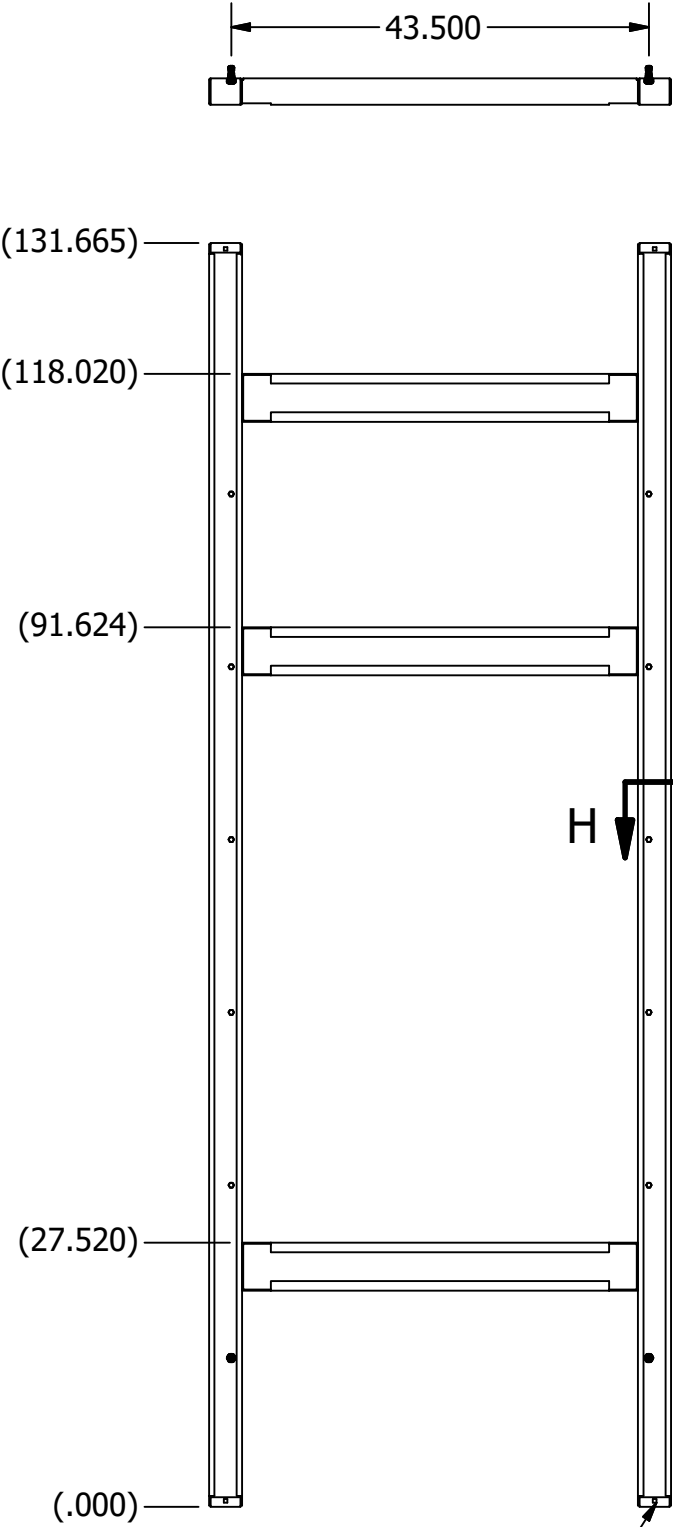
WALL/CEILING PANEL & ATTACHMENT SCHEDULE

JOB 691880

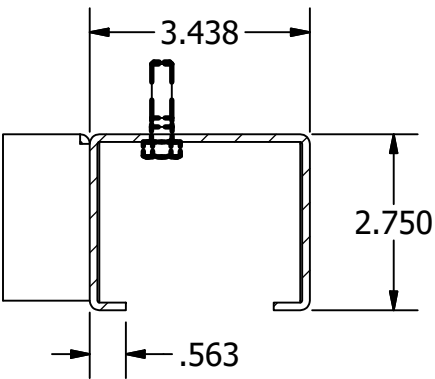
NO SCALE



 ESSMETRON 1505 W. THIRD AVE DENVER CO 80223		MVEA MVEA YODER SUBSTATION POWER DISTRIBUTION CENTER MECHANICAL OUTLINE DRAWING PANEL ATTACHMENT SCHEDULE		
DRAWN: J.Jelavich	8/27/2019	SIZE	DWG NO.	REV
CHECK: T.Anderson	8/28/2019	B	Y191203-691880	C
APPD: J.Jelavich	8/28/2019	SCALE		SHEET19 OF22



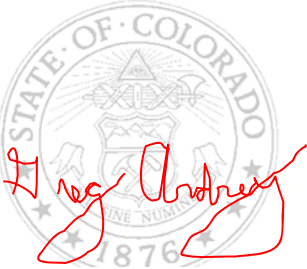
ATTACH TO BASEPLATE AND
CEILING SUPPORT W/ 1/4"-20
BOLT, 4 PLACES



SECTION H-H

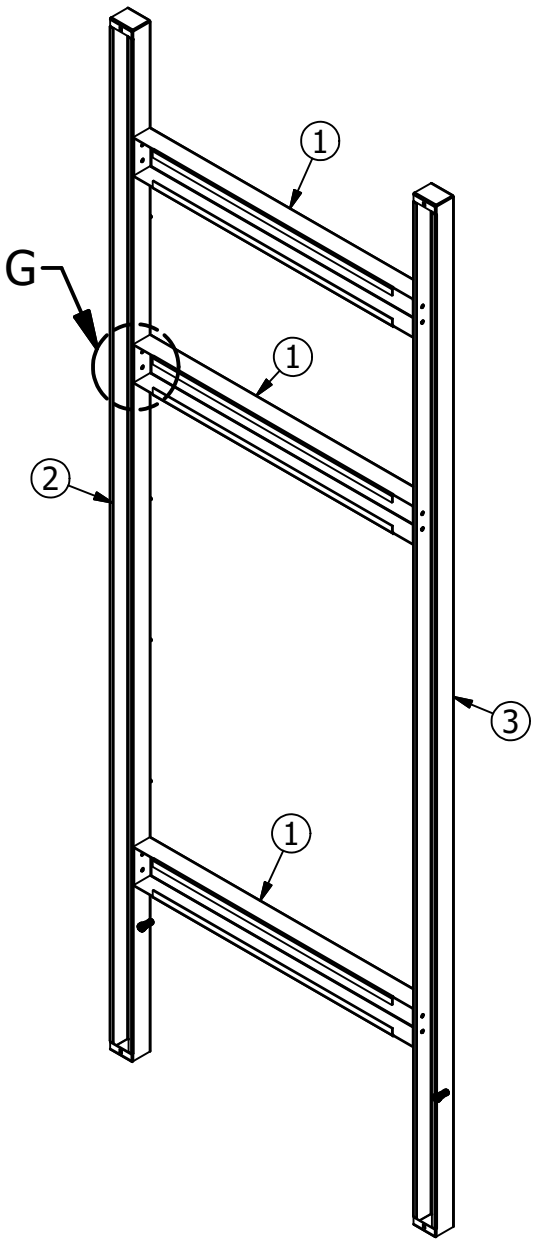
State of Colorado
Division of Housing

November 26, 2019

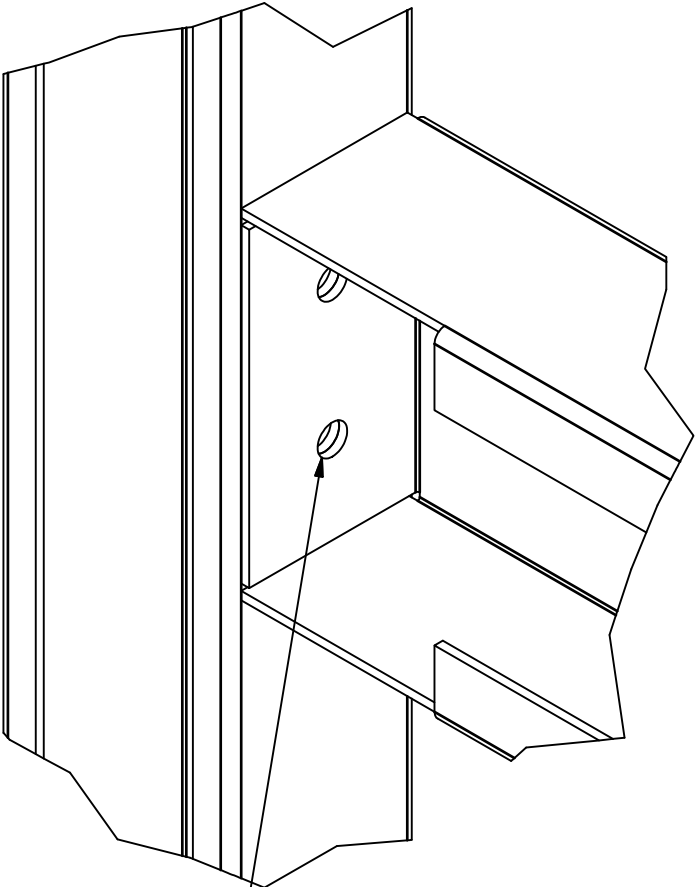


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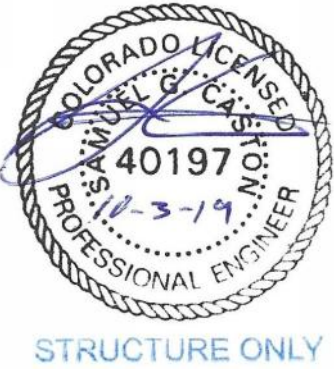



ATTACH USING 3/8" HARDWARE
TYPICAL (6) LOCATIONS



DETAIL G

Parts List		
ITEM	ITEM QTY	PART NUMBER
1	3	HVAC - FrHo - 01
2	1	HVAC - FrVe - 01_WC
3	1	HVAC - FrVe - 02_WC



 ESSMETRON 1505 W. THIRD AVE DENVER CO 80223		MVEA MVEA YODER SUBSTATION POWER DISTRIBUTION CENTER MECHANICAL OUTLINE DRAWING HVAC FRAME		
DRAWN: J.Jelavich	8/27/2019	SIZE B	DWG NO. Y191203-691880	REV C
CHECK: T.Anderson	8/28/2019			
APPD: J.Jelavich	8/28/2019	SCALE		SHEET20 OF22

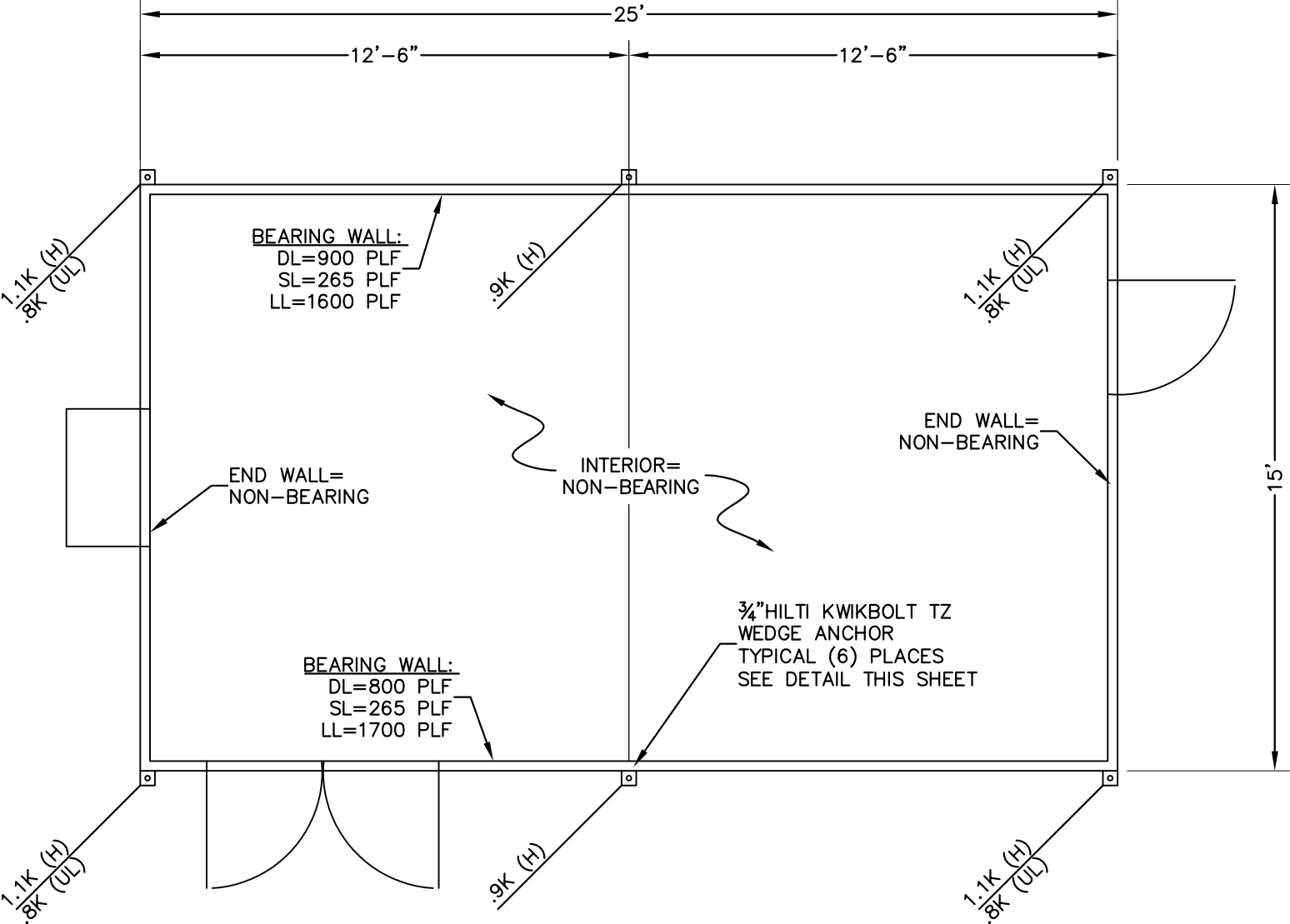
State of Colorado
Division of Housing

November 26, 2019

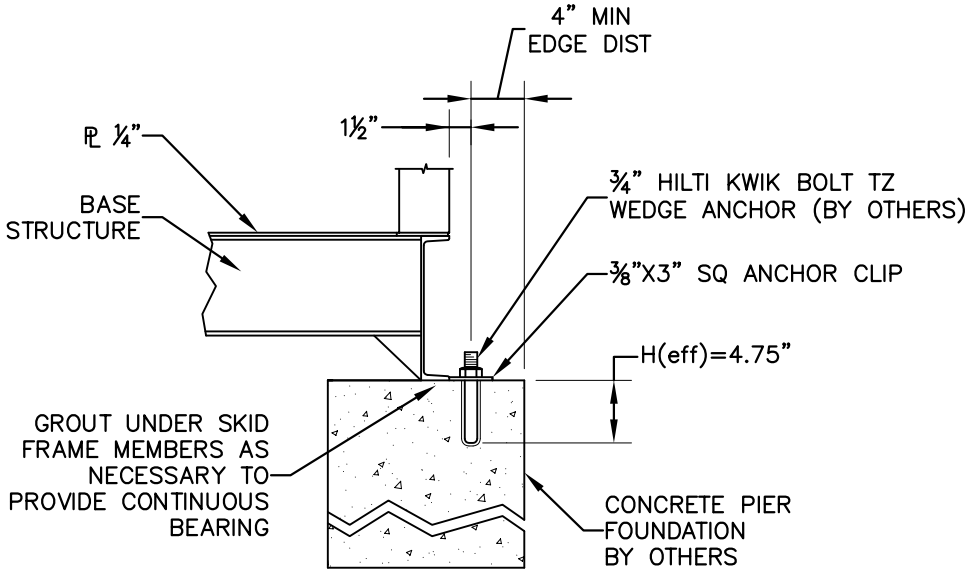
[Signature]

PLANS APPROVED
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DL = DEAD LOAD
SL = ROOF SNOW LOAD
LL = FLOOR LIVE LOAD
H = HORIZONTAL WIND LOAD (ASD)
UL = WIND UPLIFT (ASD)




TYPICAL ANCHOR DETAIL

NO SCALE

FOUNDATION LOADING PLAN

JOB 691880

- NOTES:
1. THIS PLAN IS FOR LOADING DATA ONLY, DIMENSIONS ARE ONLY APPROXIMATE AND SHALL BE VERIFIED WITH THE SKID GLAND OPENINGS/ANCHOR LOCATIONS PAGES.
 2. FOUNDATION DESIGN BY OTHERS.
 3. SHIMS MAY BE REQUIRED AROUND PERIMETER TO ENSURE PROPER LEVEL. IF SHIMS, LEVELING NUTS, OR OTHER METHODS ARE USED TO LEVEL THE SKID, THEN NON-SHRINK GROUT SHALL BE USED UNDER SKID FRAMING MEMBERS.
 4. WITHOUT PROPER LEVEL, ESS METRON CANNOT BE RESPONSIBLE FOR PROPER DOOR OPERATION.
 5. ANCHOR CLIPS FURNISHED BY ESS METRON
 6. ANCHOR BOLTS AND NUTS BY INSTALLER
 7. CONTINUOUS INSPECTION IS REQUIRED FOR ANCHORAGE INSTALLATION

 <div>ESSMETRON 1505 W. THIRD AVE DENVER CO 80223</div>		MVEA MVEA YODER SUBSTATION POWER DISTRIBUTION CENTER MECHANICAL OUTLINE DRAWING FOUNDATION LOADING PLAN		
REV. 10-10-19		SIZE	DWG NO.	REV
DRAWN: J.Jelavich	8/27/2019	B	Y191203-691880	C
CHECK: T.Anderson	8/28/2019	SCALE		
APPD: J.Jelavich	8/28/2019			SHEET21 OF22

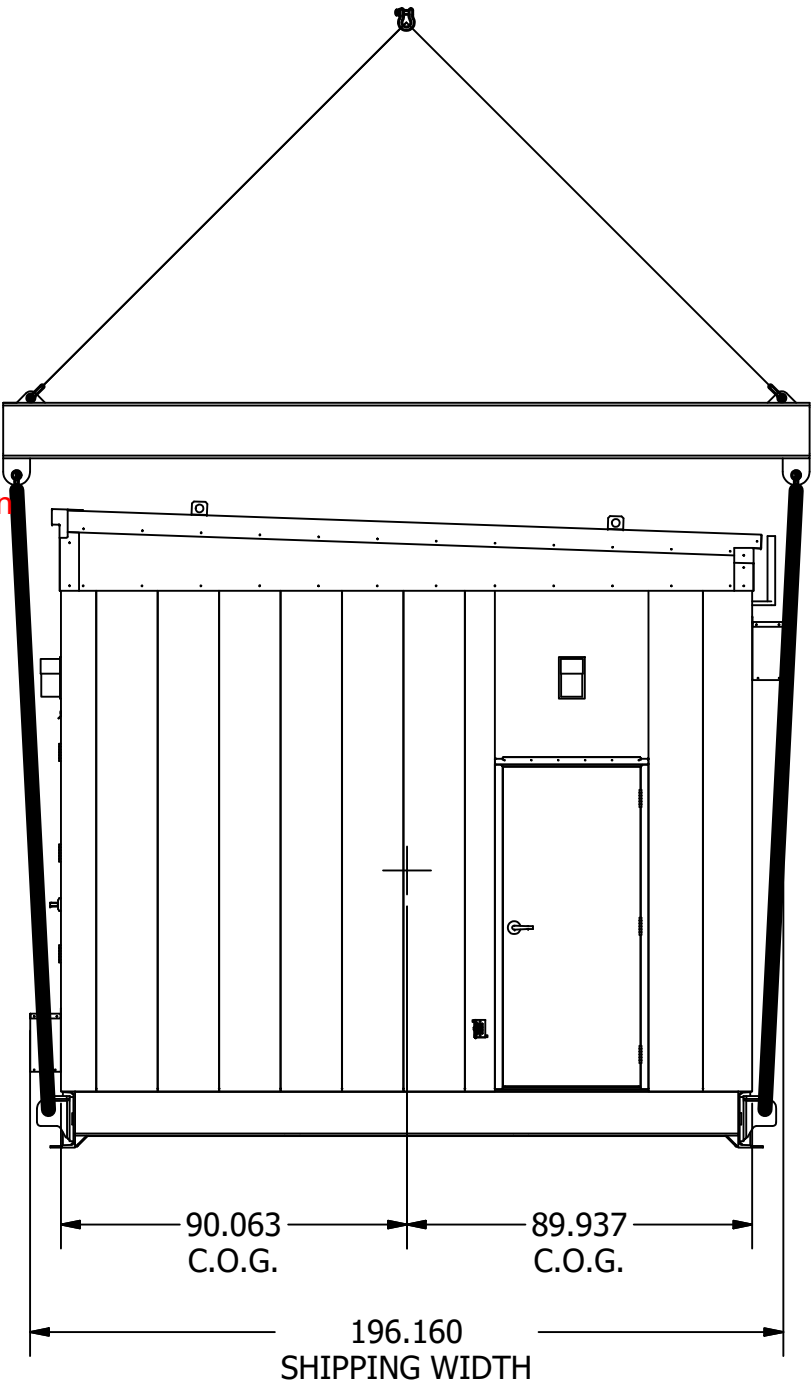
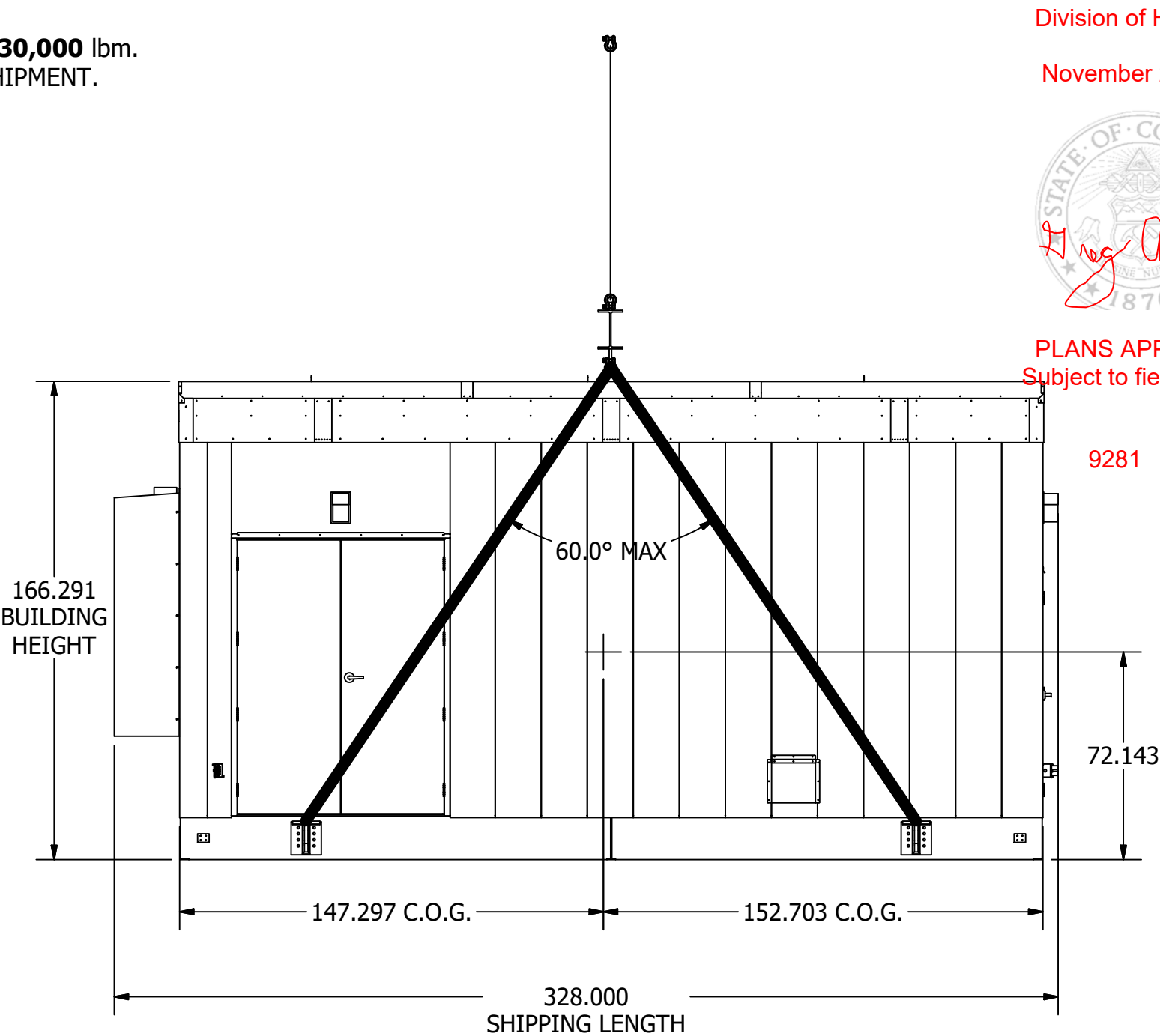
APPROXIMATE WEIGHT: **30,000** lbm.
HVACS REMOVED FOR SHIPMENT.

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NOTES:

1. THIS DRAWING IS FOR REFERENCE ONLY.
2. SIZING OF SPREADER BAR, CABLES, STRAPS AND OTHER LIFTING DEVICES ARE THE RESPONSIBILITY OF OTHERS.
3. SUPPLY OF SPREADER BAR, CABLES, STRAPS AND OTHER LIFTING DEVICES ARE THE RESPONSIBILITY OF OTHERS.
4. TEST LIFT UNIT 6 TO 8 INCHES TO CHECK LEVEL BEFORE ATTEMPTING TO SET IN PLACE. THE UNIT MUST BE MAINTAINED LEVEL WHILE BEING LIFTED.
5. SLING ARRANGEMENT SHOULD BE ADJUSTED TO ALLOW FOR A LEVEL LIFT.
6. THIS BUILDING MUST BE LIFTED UTILIZING ALL OF THE LIFTING POINTS. NO END TO END LIFTING IS ALLOWED.
7. DURING LIFTING, ANGLE OF LIFTING SLING SHALL BE AS SHOWN IN ABOVE VIEW (SLINGS CAN GET LONGER). IF FOR SOME REASON THIS IS NOT POSSIBLE, LIFTING CONTRACTOR SHALL CONTACT ENGINEER FOR APPROVAL OF REVISED LIFTING METHOD.
8. THE BUILDING SHALL BE SUPPORTED AND LIFTED UTILIZING ALL LIFTING POINT LOCATIONS. EACH LIFTING LOCATION SHALL REMAIN LEVEL, WITHIN AN L/240" TOLERANCE WITH RESPECT TO ADJACENT LIFTING LOCATION DURING ALL SHIPPING AND MOVING OPERATIONS. L= DISTANCE BETWEEN SUPPORT LOCATIONS IN INCHES. NO END TO END LIFTING ALLOWED.



STRUCTURE ONLY

 ESSMETRON 1505 W. THIRD AVE DENVER CO 80223		MVEA MVEA YODER SUBSTATION POWER DISTRIBUTION CENTER MECHANICAL OUTLINE DRAWING LIFTING DETAILS		
DRAWN: J.Jelavich	8/27/2019	SIZE	DWG NO.	REV
CHECK: T.Anderson	8/28/2019	B	Y191203-691880	C
APPD: J.Jelavich	8/28/2019	SCALE		SHEET22 OF22

SCHEMATIC SHEET INDEX		
SHEET NUMBER	LINE 1	LINE 2
1	REFERENCE PAGE	SCHEMATIC GENERAL NOTES & SHEET INDEX
2	DATA SHEET	
3	SYSTEM ONE-LINE	WIRING DETAIL
4	BATTERY CHARGER, HVAC & ATS	WIRING DETAIL
5	PANELBOARD ACP1	PANEL SCHEDULE
6	PANELBOARD DCP1	PANEL SCHEDULE
7	RECEPTACLES & LIGHTING	WIRING DETAIL
8	SENSORS (H2, SMOKE & DOOR)	WIRING DETAIL
9	EXHAUST FAN CONTROL PANEL	WIRING DETAIL, LAYOUT & BOM
10	LIGHTING CONTACTOR PANEL	WIRING DETAIL, LAYOUT & BOM
11	GROUNDING	WIRING DETAIL
12	INTERCONNECTS (RP1)	WIRING DETAIL
13	INTERCONNECTS (TC1)	WIRING DETAIL
14	CABLE TRAY	LAYOUT
15	CABLE TRAY	VEWS
16	TRAY CABLE SCHEDULE	CALCULATIONS
17	TRAY CABLE SCHEDULE	CALCULATIONS

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NOTES:	
(1)	TO REDUCE THE RISK OF FIRE, REPLACE ONLY WITH SAME TYPE & RATING OF FUSE
(2)	INSULATED FITTINGS REQUIRED WHEN USING #4AWG OR LARGER WIRE.
(3)	BONDING BUSHINGS REQUIRED AT SERVICE ENTRANCE, ANY CIRCUIT OVER 250V, AND AT ANY LOCATION WHERE A CONDUIT HAS AN IMPAIRED CONNECTION (NOT FLUSH).
(4)	HEAT-SHRINK TYPE LABELING
(5)	WIRE TYPE THHN STRANDED COPPER, UNLESS NOTED OTHERWISE.
(6)	INTERIOR CONDUIT RUNS SHALL BE EMT WITH SET SCREW TYPE FITTINGS, UNLESS NOTED OTHERWISE.
(7)	ALL CONDUCTORS AND CABLES ROUTED THROUGH CABLE TRAY SHALL BE 600V, TYPE TC RATED UNLESS OTHERWISE NOTED.
(8)	ALL MULTICONDUCTOR CABLES TRANSITIONING FROM THE CABLE TRAY TO THE EQUIPMENT MUST BE TYPE TC-ER AND BE SECURED AND SUPPORTED WITHIN 6 FEET OF EQUIPMENT WHERE THE CONDUCTORS ARE TERMINATED.
(9)	RIGID CONDUIT SHALL BE SUPPORTED WITHIN 3' OF EACH OUTLET AND WITHIN 10' INTERVALS.
(10)	FMC & LFMC CONDUIT SHALL BE SUPPORTED WITHIN 12" OF EACH OUTLET AND WITHIN 4-1/2' INTERVALS. EXCEPTION: IF LENGTH IS LESS THAN 3' BETWEEN SHIPPING SPLIT JUNCTION BOXES, SUPPORTS ARE NOT REQUIRED.
(11)	EMT CONDUIT SHALL BE SUPPORTED WITHIN 3' OF EACH OUTLET AND WITHIN 10' INTERVALS, UNLESS EXCEPTIONS APPLY.
(12)	EXTERIOR CONDUIT RUNS SHALL BE RMC WITH FM7/FM8 FITTINGS.
(13)	ALL CONDUITS WHICH TRANSITION FROM INTERIOR TO EXTERIOR OF PDC TO BE SEALED USING CLEAR SILICONE SEALANT - DOW CORNING #1199 (JOBSCOPE #14330)
(14)	CABLE TRAYS CONTAINING CONDUCTORS RATED OVER 600V SHALL BE LABELED "DANGER-HIGH VOLTAGE-KEEP AWAY". LABELS TO BE INSTALLED IN A READILY VISIBLE LOCATION ON ALL CABLE TRAYS, WITH SPACING NOT TO EXCEED 10FT BETWEEN LABELS.
(15)	GROUND FAULT CIRCUIT BREAKERS INSTALLED IN PANELBOARDS SHALL HAVE THE FACTORY SUPPLIED NEUTRAL "PIG TAILS" CONNECTED TO THE PANELBOARD NEUTRAL BAR.
(16)	ALL CONTROL CIRCUITS TO BE MINIMUM 16AWG, STRANDED COPPER UNLESS OTHERWISE NOTED
(17)	ALL LIGHTING AND RECEPTACLE CIRCUITS TO BE MINIMUM 12AWG, STRANDED COPPER UNLESS OTHERWISE NOTED.
(18)	ALL MULTICONDUCTOR TRAY CABLES SIZE 3C-4/0AWG W/GND AND SMALLER SHALL BE ROUTED INTO EQUIPMENT (MCC,SWGR) USING CORD GRIPS FOR SUPPORT, IF NOT INSTALLED IN CONDUIT.
(19)	ALL SINGLE CONDUCTOR CABLES ROUTED IN CABLE TRAY, AND ALL MULTI-CONDUCTOR TRAY CABLES SIZED LARGER THAN 3C-4/0AWG W/GND, SHALL BE ROUTED INTO EQUIPMENT USING CHASE NIPPLES.
(20)	ALL CABLES ENTERING CABINETS MUST BE SUPPORTED WITHIN THE CABINET TO REDUCE THE STRESS ON CONNECTION TERMINALS.
(21)	GROUND WIRES SHALL NOT BE ROUTED EXPOSED UNLESS #6AWG OR LARGER.
(22)	ALL FIRE ALARM WIRING IS TO BE ROUTED IN SEPARATE RACEWAYS FROM ALL OTHER CIRCUITS.
(23)	THE BRANCH CIRCUIT SUPPLYING THE FIRE ALARM CONTROL PANEL SHALL SUPPLY NO OTHER LOADS, SHALL BE MARKED WITH RED IDENTIFICATION, AND SHALL BE LABEL "FIRE ALARM CIRCUIT".
(24)	MINIMUM BEND RADIUS FOR THHN & XHHW-2: 4 TIMES THE O.D. #14-500KCMIL (8 TIMES O.D. IN CONDUIT), 5 TIMES THE O.D. 600-750KCMIL (10 TIMES O.D. IN CONDUIT).
(25)	MINIMUM BEND RADIUS OVER 1000V: 8 TIMES O.D. FOR NON-SHIELDED, 12 TIMES THE O.D. FOR SHIELDED, THE GREATER OF 7 TIMES THE O.D. OF THE CABLE OR 12 TIMES INDIVIDUAL WIRES IN INDIVIDUALLY SHIELDED MULTICONDUCTOR CABLE.

LEGEND				
83-1 RELAY COIL	DRAWOUT CIRCUIT BREAKER	FIXED MOUNT CIRCUIT BREAKER	FUSED SWITCH	FUSE AND TYPE ABC-15A
METRON WIRING FIELD WIRING	TERMINAL JUMPER	TWISTED SHIELDED PAIR CABLE	GROUND	SH?? ? BUSS PAGE INTER-CONNECT
NORMALLY CLOSED CONTACT	NORMALLY OPEN CONTACT	DRAW-OUT	SHIPPING SPLIT	
TERMINAL BLOCK	FIELD TERMINAL BLOCK	DISCONNECT TERMINAL BLOCK.	EXISTING TERMINAL BLOCK	
LIGHT FIXTURE, TYPE AS NOTED	RECEPTACLE, TYPE AS NOTED	SMOKE/HEAT DETECTOR	PHOTOCCELL	
CONTROL POWER TRANSFORMER	POWER TRANSFORMER	CURRENT TRANSFORMER	ZERO SEQUENCE CURRENT TRANSFORMER	SHORTING TERMINAL BLOCK
PILOT LIGHT	PUSH-TO TEST PILOT LIGHT			
1-WAY SWITCH	3-WAY SWITCH	4-WAY SWITCH		

DEVICE ABBREVIATION LIST				
AD	DEVICE, ANNUNCIATOR	I/O	INPUT OUTPUT MODULE	PR RELAY, POWER
BAT	BATTERY	ISW	ISOLATION SWITCH	PTB POWER TERMINAL BLOCK
BCS	SWITCH, BREAKER CONTROL SWITCH	JB	JUNCTION BOX	RCP REMOTE CONTROL PANEL
CAP	CAPACITOR	K	KEYED INTERLOCK	RCPT RECEPTACLE
CB	CIRCUIT BREAKER	KSW	SWITCH, KEYED	RES RESISTOR
CD	DEVICE, COMMUNICATION	LBS	LOAD BREAK SWITCH	RLY MULTIFUNCTION RELAY
CHG	BATTERY CHARGER	LIS	LOAD INTERRUPTER SWITCH	SD DEVICE, SURGE
CL	CURRENT LIMITING REACTOR	LOR	RELAY, LOCK-OUT	SKRU SOLENOID KEY RELEASE UNIT
CM	CIRCUIT MONITOR	LP	PANELBOARD	SR RELAY, CURRENT SENSING
CPT	CONTROL POWER TRANSFORMER	LR	RELAY, PARALLELING	STB SHORTING TERMINAL BLOCK
CPTD	DEVICE, CAPACITOR TRIP	LT	LIGHT	SW SWITCH
CR	RELAY, CONTROL	MC	CONTACTOR	TB TERMINAL BLOCK
CS	SWITCH, CONTROL	MOC	MECHANICALLY OPERATED CONTACTS	TOC TRUCK OPERATED CONTACTS
CT	CURRENT TRANSFORMER	MTR	METER (AMP,FREQ,PWR FCTR,VOLT,WATT)	TR RELAY, TIMING
DSP	DISPLAY	NCT	NEUTRAL CURRENT TRANSFORMER	TS SWITCH, TEST
EPB	EMERGENCY PUSH-BUTTON	NS	NEUTRAL SENSOR	TST THERMOSTAT
EXP	EXCITER PANEL	OLR	OVERLOAD RELAY	TVSS TRANSIENT VOLTAGE SURGE SUPPRESSOR
FR	RELAY, FREQUENCY SENSING	PB	PUSH BUTTON	VM MONITOR, VOLTAGE
FU	FUSE	PDB	POWER DISTRIBUTION BLOCK	VR RELAY, VOLTAGE SENSING
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	PFC	CAPACITOR, POWER FACTOR CORRECTION	VT VOLTAGE TRANSFORMER
HST	HUMIDISTAT	PL	INDICATING LIGHT	XR RELAY, AUXILIARY
HTR	HEATER	PM	POWER MONITOR	ZCT ZERO SEQUENCE CURRENT TRANSFORMER

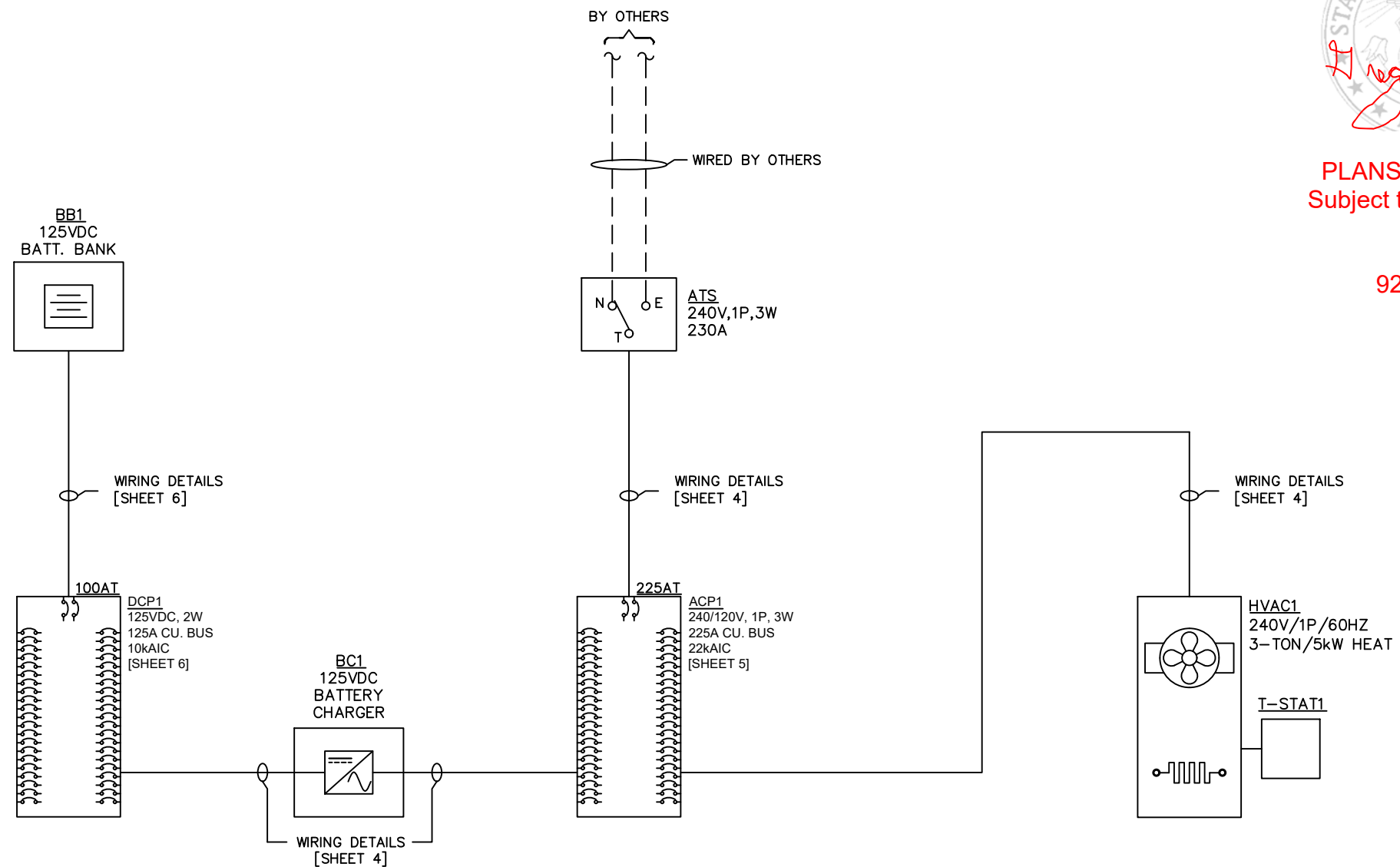
NOTES	

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0	RELEASED FOR PRODUCTION	10/23/19	B.N.

	1505 WEST THIRD AVENUE DENVER, COLORADO 80223
DRAWN	B.N. 8/22/19
CHECK	
APPD	

NEI/MOUNTAIN VIEW ELECTRIC YODER SUBSTATION CONTROL BUILDING PDC-240V/1/3W REFERENCE PAGE SCHEMATIC GENERAL NOTES & SHEET INDEX			SIZE B	DWG NO. Y191199-691880-01	REV 0
SCALE	N.T.S.		SHEET	1	OF 17

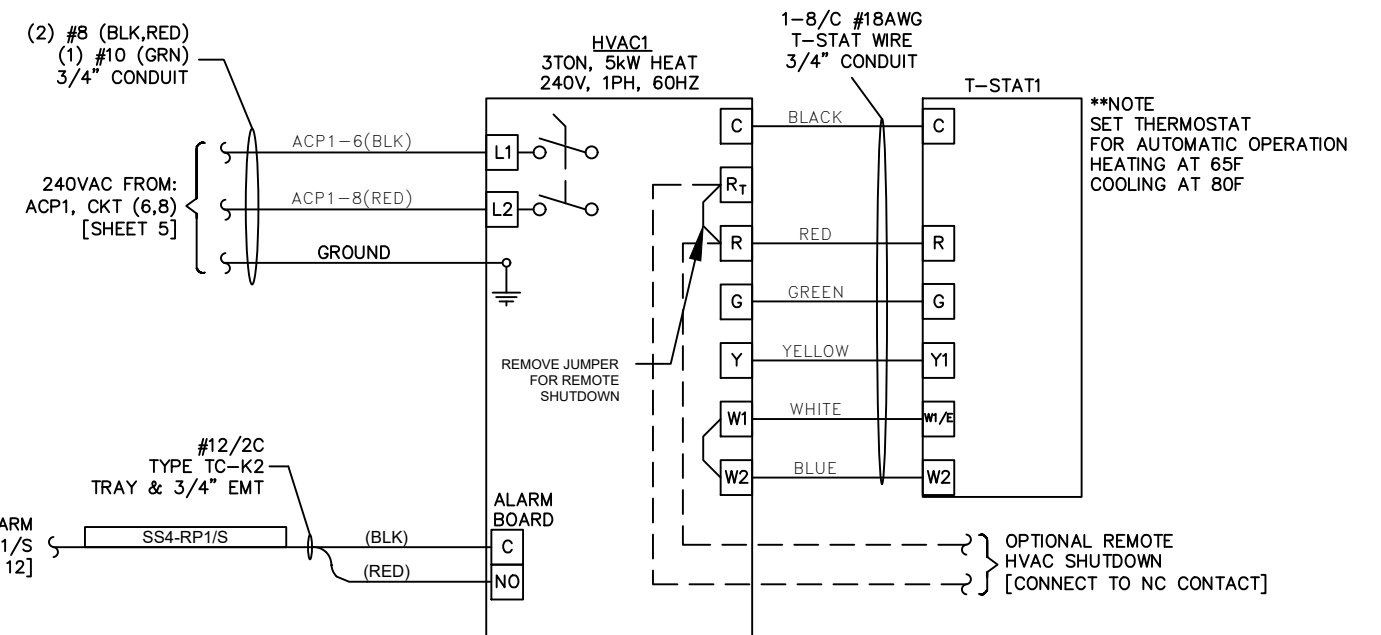
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REVISIONS

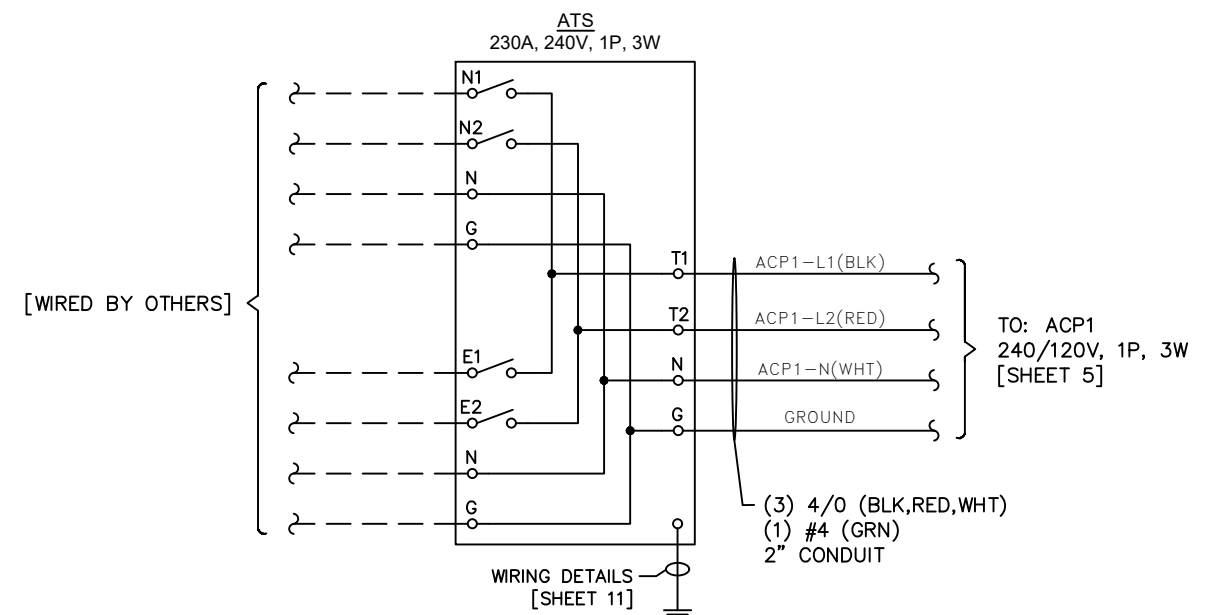
NEI/MOUNTAIN VIEW ELECTRIC
YODER SUBSTATION CONTROL BUILDING
PDC-240V/1/3W
SYSTEM ONE-LINE

SIZE B	DWG NO. Y191199-691880-01			REV 0
SCALE	N.T.S.		SHEET 3	OF 17

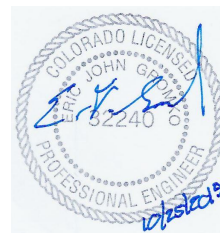


PLANS APPROVED
Subject to field inspection

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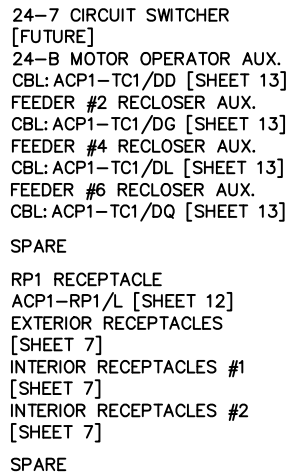


SIZE B	DWG. NO. Y191199-691880-01		REV 0
SCALE	N.T.S.	SHEET 4	OF 17




Reg Andrew

9281



GENERAL NOTES:	
A.	
B.	
C.	
D.	
E.	
SPECIFIC NOTES:	
(1)	
(2)	
(3)	
(4)	
(5)	
(6)	

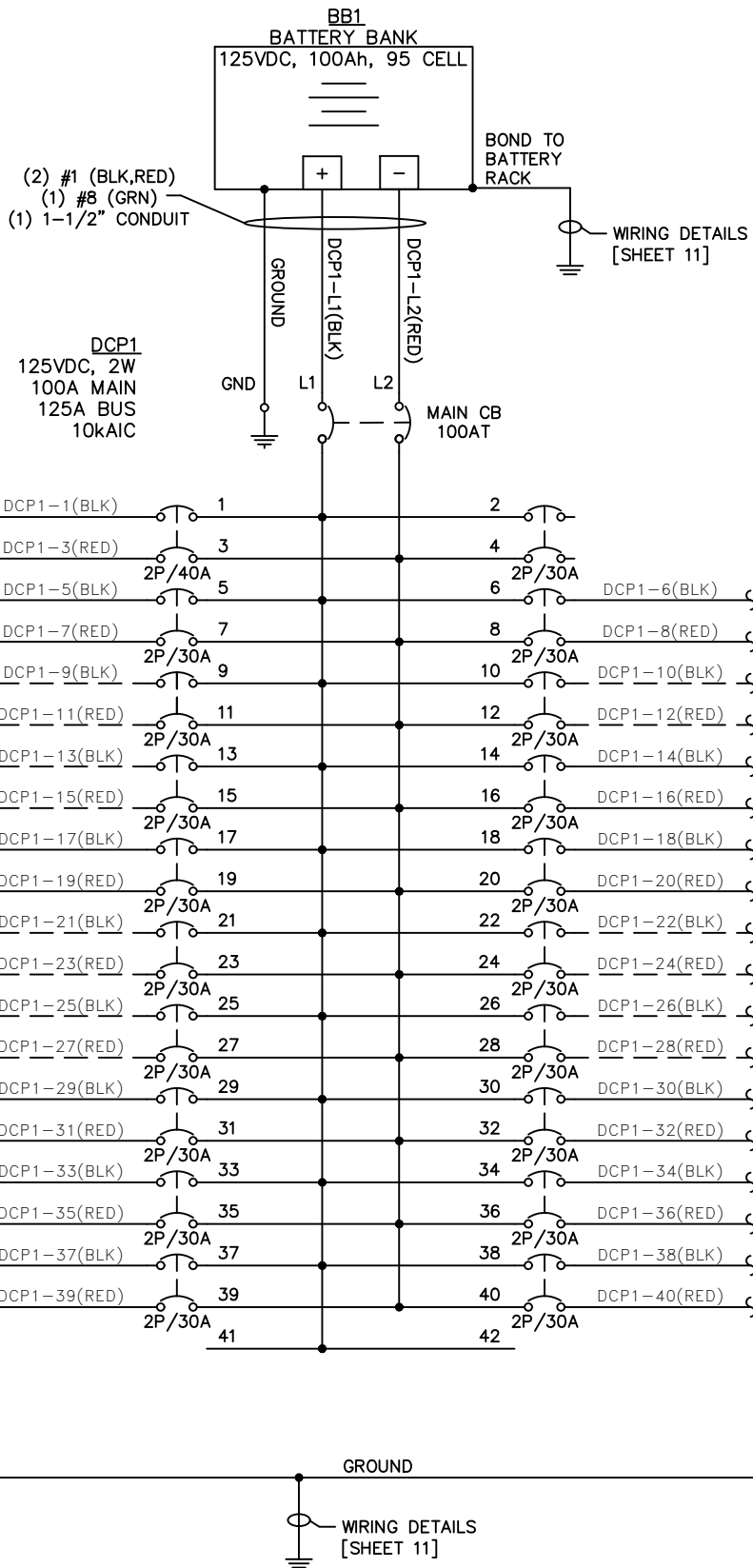
	1505 WEST THIRD AVENUE DENVER, COLORADO 80223
DRAWN B.N. 8/22/19	
CHECK	
APPD	

SIZE B	DWG. NO. Y191199-691880-01			REV 0
SCALE	N.T.S.		SHEET 5	OF 17

November 26, 2019



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Subject to field inspection



PANEL:		DCP1						VOLTAGE:				125VDC								
LOCATION:		PDC						MINIMUM BUS:				125								
MOUNTING:		SURFACE						MAIN CKT BKR				AMPS:		100						
								MINIMUM AIC:				10,000								
NO.	LOAD			TYPE	CONT	LOAD DESCRIPTION	BREAKER		BUS			BREAKER		TYPE	CONT	LOAD DESCRIPTION	LOAD			NO.
	A	B					POLE	TRIP	A	B		POLE	TRIP				A	B		
1						BATTERY CHARGER	2	40	●			2	30			SPARE				2
3										●										
5						T1 TRANSFORMER AUXILIARY	2	30	●			2	30			24-5 CIRCUIT SWITCHER MOTOR, TRIP, CLOSE				6
7										●										
9						T2 TRANSFORMER AUXILIARY	2	30	●			2	30			24-7 CIRCUIT SWITCHER MOTOR, TRIP, CLOSE				10
11										●										
13						T3 TRANSFORMER AUXILIARY	2	30	●			2	30			24-A MOTOR OPERATOR MOTOR, OPEN, CLOSE				14
15										●										
17						PANEL #1 TRANSFORMER T1 RELAYING	2	30	●			2	30			24-B MOTOR OPERATOR MOTOR, OPEN, CLOSE				18
19										●										
21						PANEL #2 TRANSFORMER T2 RELAYING	2	30	●			2	30			PANEL #3 TRANSFORMER T3 RELAYING				22
23										●										
25						PANEL #4 COMMUNICATIONS	2	30	●			2	30			PANEL #5 COMMUNICATIONS				26
27										●										
29						FEEDER #1 RECLOSER AUXILIARY	2	30	●			2	30			FEEDER #2 RECLOSER AUXILIARY				30
31										●										
33						FEEDER #3 RECLOSER AUXILIARY	2	30	●			2	30			FEEDER #4 RECLOSER AUXILIARY				34
35										●										
37						FEEDER #5 RECLOSER AUXILIARY	2	30	●			2	30			FEEDER #6 RECLOSER AUXILIARY				38
39										●										
41						SPACE	-	-	●			-	-			SPACE				42
LOAD TYPE		TOTAL					SUBTOTAL		DEMAND			TOTAL				GENERAL NOTES:				
(L) LIGHTING		0					0		125%			0				A.				
(R) RECEPTACLES		0					0		NEC 220			0				B.				
(LM) LARGEST MOTOR		0					0		125%			0				C.				
(M) MOTORS (ALL)		0					0		100%			0				D.				
(E) EQUIPMENT		0					0		100%			0				E.				
(A) APPLIANCES		0					0		0			0				SPECIFIC NOTES:				
CONNECTED LOAD		0										0								
LARGEST MOTOR (x125%)		0																		
MOTOR(S) (x100%)		0																		
CONTINUOUS LOADS (x125%)		0					TOTAL (KVA):			0.0		(1)								
NON-CONTINUOUS LOADS (x100%)		0					TOTAL (AMPS):			0		(2)								
												(3)								
												(4)								
												(5)								
												(6)								

NOTES

REVISIONS

REV	DESCRIPTION	DATE	APPROVED
0	RELEASED FOR PRODUCTION	10/23/19	B.N.

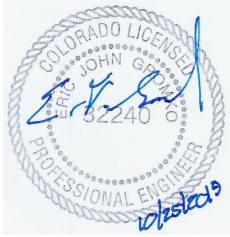


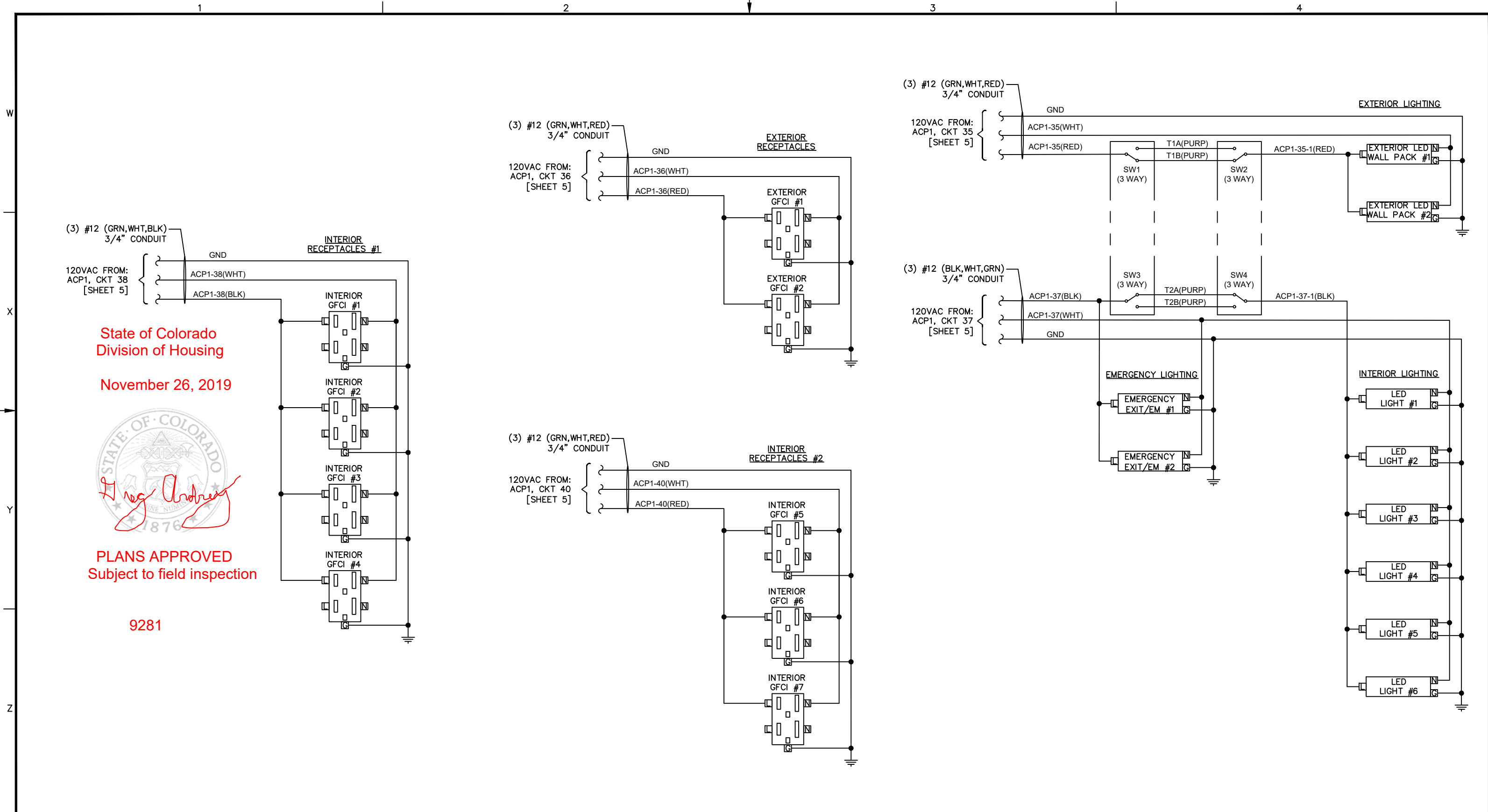
1505 WEST THIRD AVENUE
DENVER, COLORADO 80223

NEI/MOUNTAIN VIEW ELECTRIC
YODER SUBSTATION CONTROL BUILDING
PDC-240V/1/3W
PANELBOARD DCP1
PANEL SCHEDULE

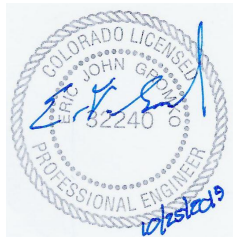
DRAWN B.N. 8/22/19
CHECK
APPD

SIZE B
DWG NO. Y191199-691880-01
SCALE N.T.S.
SHEET 6 OF 17





NOTES



REVISIONS

REV	DESCRIPTION	DATE	APPROVED
0	RELEASED FOR PRODUCTION	10/23/19	B.N.

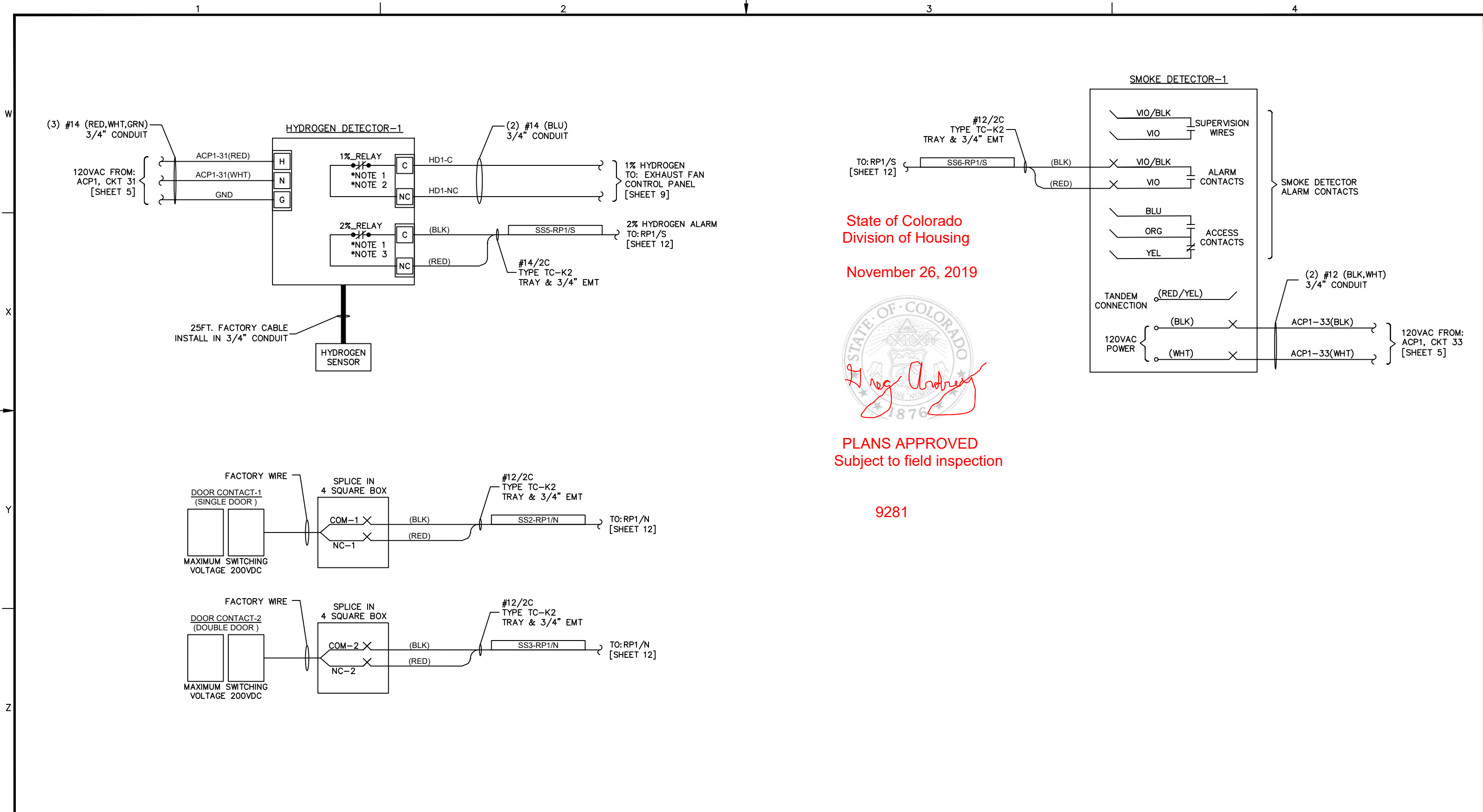


NEI/MOUNTAIN VIEW ELECTRIC
YODER SUBSTATION CONTROL BUILDING
PDC-240V/1/3W
RECEPTACLES & LIGHTING
WIRING DETAIL

DRAWN B.N. 8/22/19
CHECK
APPD

SIZE B
DWG NO. Y191199-691880-01
SCALE N.T.S.
SHEET 7 OF 17

REV 0



State of Colorado
Division of Housing

November 26, 2019

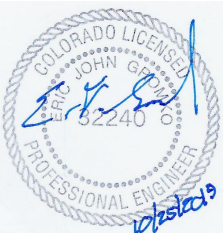


PLANS APPROVED
Subject to field inspection

9281


NOTES

- (1) UNDER NORMAL OPERATION RELAY IS ENERGIZED.
- (2) CONTACT RATED FOR 15A RESISTIVE @ 120VAC.
- (3) CONTACT RATED FOR 0.5A @ 28VDC.



REVISIONS

REV	DESCRIPTION	DATE	APPROVED
0	RELEASED FOR PRODUCTION	10/23/19	B.N.



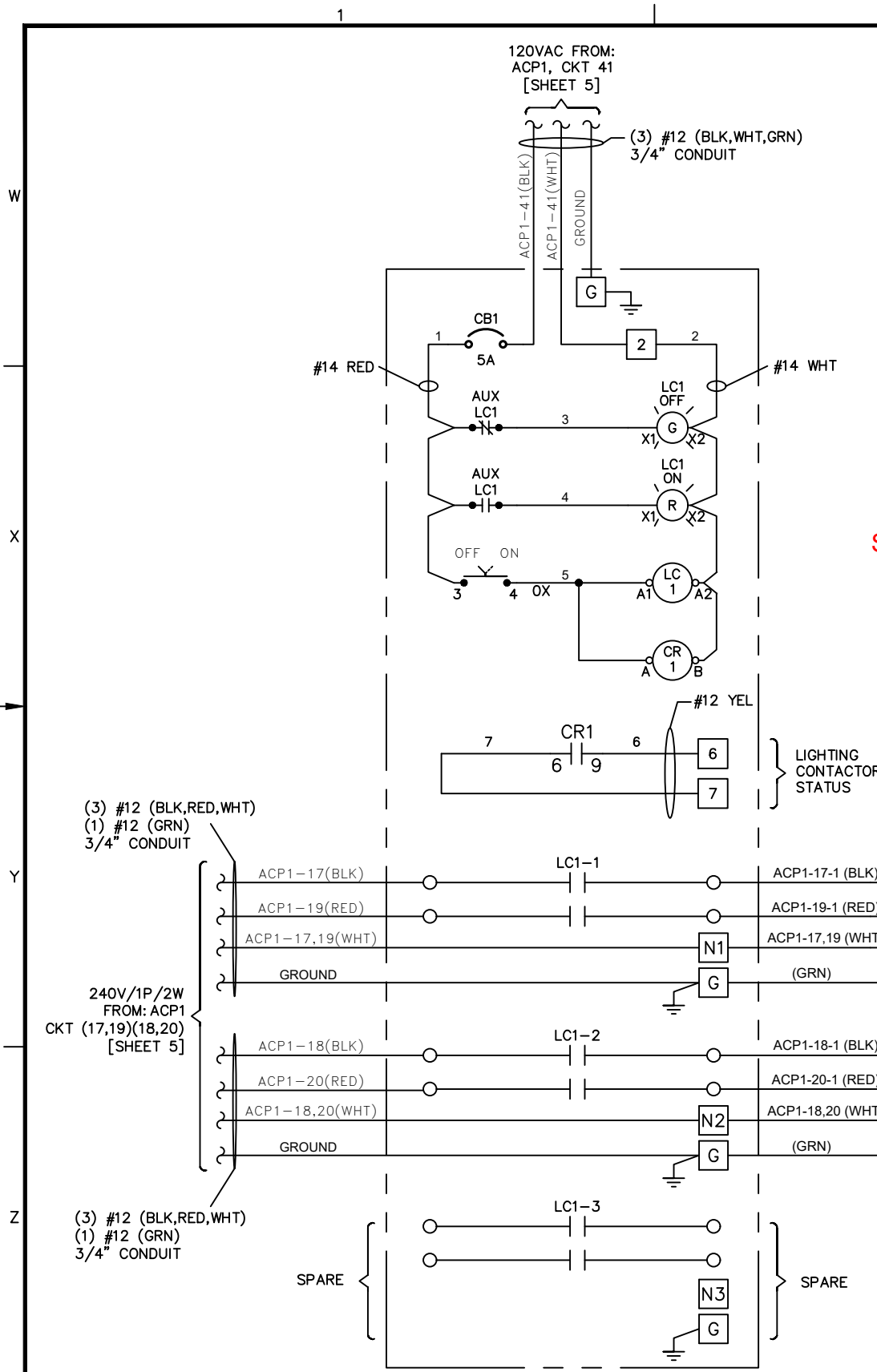
1505 WEST THIRD AVENUE
DENVER, COLORADO 80223

DRAWN	B.N.	8/22/19
CHECK		
APPD		

NEI/MOUNTAIN VIEW ELECTRIC
YODER SUBSTATION CONTROL BUILDING
PDC-240V/1/3W
SENSORS (HYDROGEN, SMOKE, & DOOR)
WIRING DETAIL

SIZE	DWG NO.	REV
B	Y191199-691880-01	0
SCALE	N.T.S.	

SHEET 8 OF 17

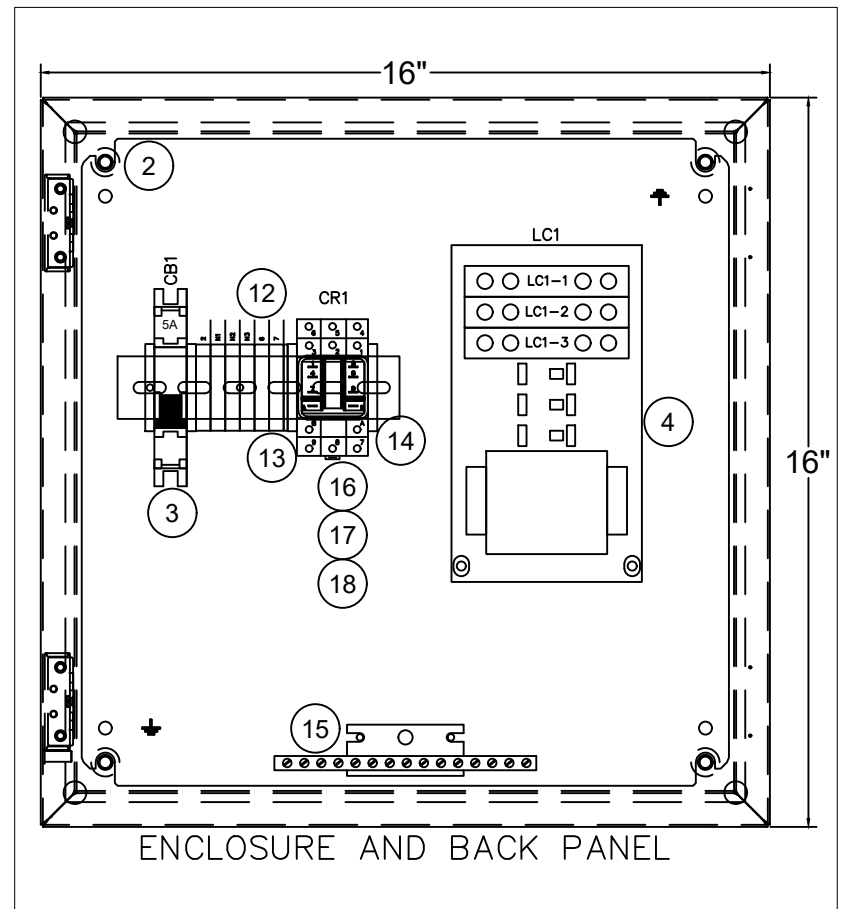
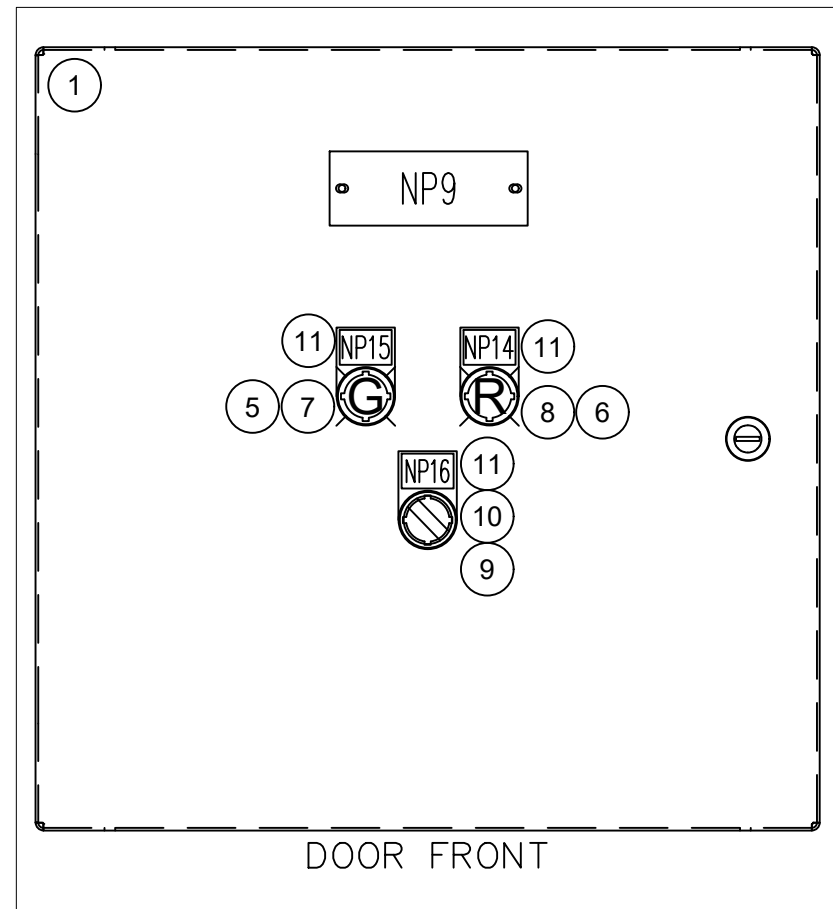


State of Colorado
Division of Housing
November 26, 2019



PLANS APPROVED
Subject to field inspection

9281



ITEM	QTY	DESCRIPTION	PART NO.	MANUF.	MANUF. PART NO.
①	1	16"X16"X10" ENCLOSURE	N/A	HOFFMANN	CSD161610
②	1	BACK PANEL	N/A	HOFFMANN	CP1616
③	1	5A/1P BREAKER	17405	SIEMENS	5SJ4111-7HG40
④	1	LIGHTING CONTACTOR 6P	N/A	GE	CR463L60AJD
⑤	1	GREEN PILOT LIGHT	15205	EATON	M22-L-G
⑥	1	RED PILOT LIGHT	15204	EATON	M22-L-R
⑦	1	GREEN LED MODULE	15202	EATON	M22-LED230-G
⑧	1	RED LED MODULE	15198	EATON	M22-LED230-R
⑨	1	2 POS. SELECTOR SW.	15217	EATON	M22S-WKV
⑩	1	N.O. CONTACT BLOCK	15221	EATON	M22-K-10
⑪	3	NAMEPLATE HOLDER	15223	EATON	M22S-ST-X
⑫	6	TERMINALS	15354	EATON	XBUT6
⑬	1	END COVER	15355	EATON	XBACUT10
⑭	4	END CLAMP	15341	EATON	XBAES35N
⑮	1	GROUND TERMINAL	3693	SIEMENS	ECLX073M
⑯	1	2-POLE RELAY	N/A	TYCO	KUEP11A15120
⑰	1	RELAY SOCKET	11376	TYCO	27E893
⑱	1	RELAY CLIP	11377	TYCO	20C318

NOTES

Colorado Licensed
Professional Engineer
John G. ...
102240

REVISIONS

REV	DESCRIPTION	DATE	APPROVED
0	RELEASED FOR PRODUCTION	10/23/19	B.N.

1505 WEST THIRD AVENUE
DENVER, COLORADO 80223

DRAWN B.N. 8/22/19

CHECK

APPD

NEI/MOUNTAIN VIEW ELECTRIC
YODER SUBSTATION CONTROL BUILDING
PDC-240V/1/3W
LIGHTING CONTACTOR PANEL (LC1)
WIRING DETAIL, LAYOUT & BOM

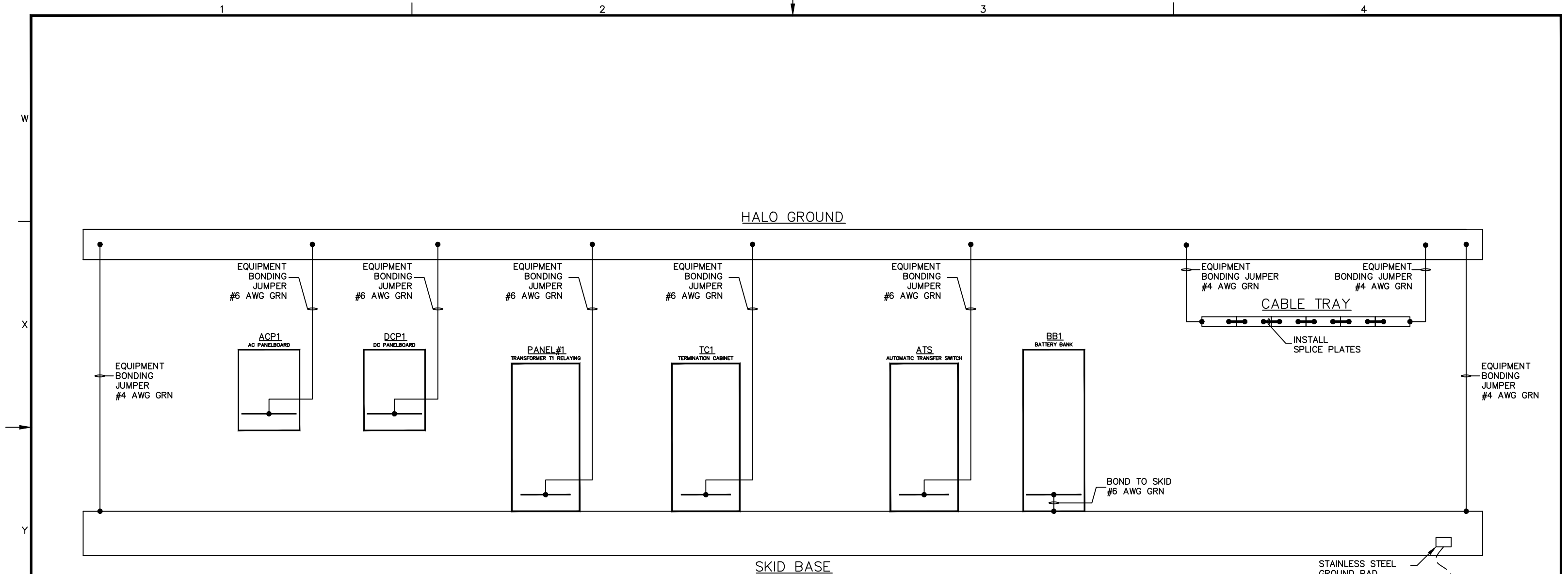
SIZE B

DWG NO. Y191199-691880-01

SCALE N.T.S.

REV 0

SHEET 10 OF 17



State of Colorado
Division of Housing

November 26, 2019



PLANS APPROVED
Subject to field inspection

NOTES

9281

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
0	RELEASED FOR PRODUCTION	10/23/19	B.N.

1505 WEST THIRD AVENUE
DENVER, COLORADO 80223

DRAWN B.N. 8/22/19

CHECK

APPD

NEI/MOUNTAIN VIEW ELECTRIC
YODER SUBSTATION CONTROL BUILDING
PDC-240V/1/3W
GROUNDING
WIRING DETAIL

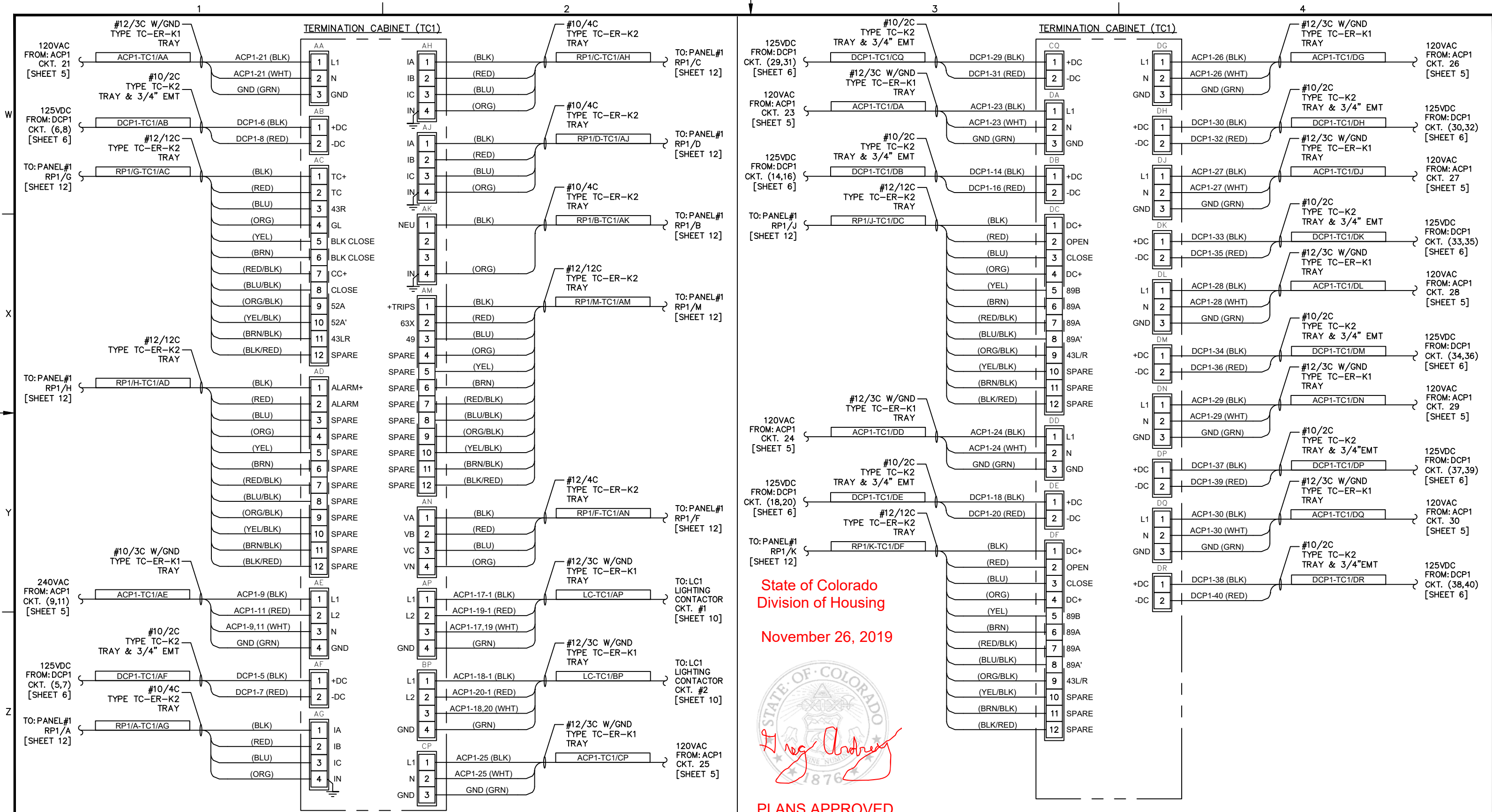
SIZE B

DWG NO. Y191199-691880-01

REV 0

SCALE N.T.S.

SHEET 11 OF 17



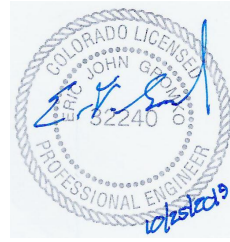
State of Colorado
Division of Housing

November 26, 2019



PLANS APPROVED

Subject to field inspection



REV	DESCRIPTION	DATE	APPROVED
0	RELEASED FOR PRODUCTION	10/23/19	B.N.

9281

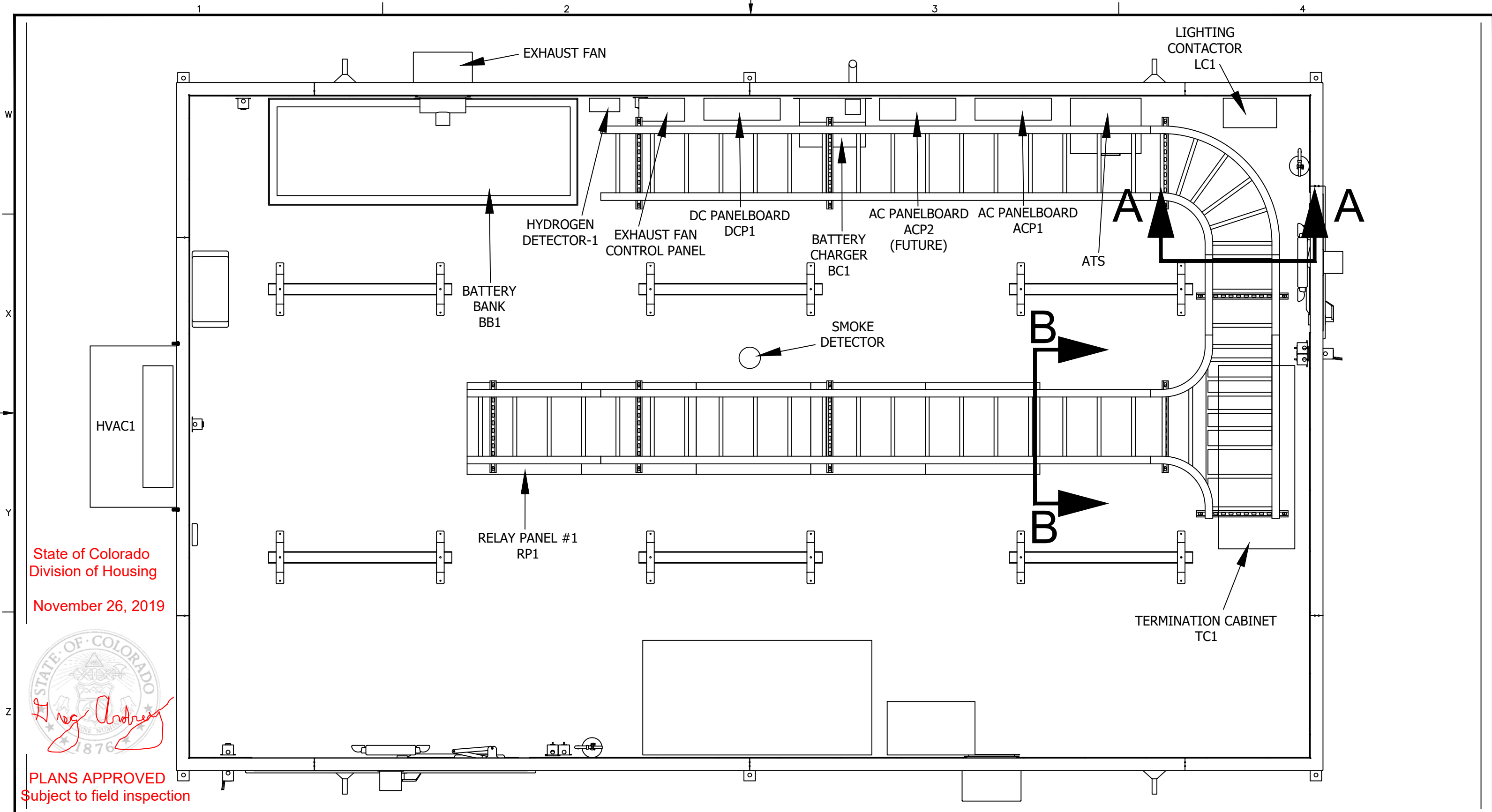
ESSMETRON
1505 WEST THIRD AVENUE
DENVER, COLORADO 80223

DRAWN B.N. 8/22/19
CHECK
APPD

NEI/MOUNTAIN VIEW ELECTRIC
YODER SUBSTATION CONTROL BUILDING
PDC-240V/1/3W
INTERCONNECTS (TC1)
WIRING DETAIL

SIZE B
DWG NO. Y191199-691880-01
SCALE N.T.S.

REV 0
SHEET 13 OF 17



State of Colorado
Division of Housing

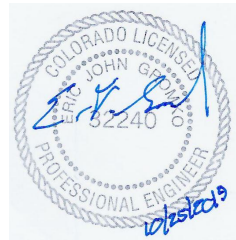
November 26, 2019



PLANS APPROVED
Subject to field inspection

NOTES

9281



REVISIONS

REV	DESCRIPTION	DATE	APPROVED
0	RELEASED FOR PRODUCTION	10/23/19	B.N.

ESSMETRON
1505 WEST THIRD AVENUE
DENVER, COLORADO 80223

DRAWN	B.N.	8/22/19
CHECK		
APPD		

NEI/MOUNTAIN VIEW ELECTRIC
YODER SUBSTATION CONTROL BUILDING
PDC-240V/1/3W
CABLE TRAY
LAYOUT

SIZE	B	DWG NO.	Y191199-691880-01	REV	0
SCALE	N.T.S.	SHEET	14	OF	17

7

DRAWN	B.N.	8/22/19	SIZE B	DWG NO. Y191199-691880-01	REV 0
CHECK					
APPD			SCALE	N.T.S.	SHEET 15 OF 17

W

State of Colorado
Division of Housing
November 26, 2019

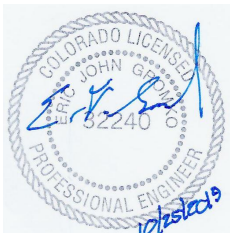
PLANS APPROVED
Subject to field inspection
928

Y

Z


1				2									3						4					
From	To	Cable ID	Cable will be purchased and supplied for factory or field installation	Cable will be installed prior to shipment	No. of runs for the circuit	Length from equipment to equipment in feet	Cable length/drop at origin in feet	Cable length/drop at destination in feet	Total length in feet of the run	Total length in feet - for the circuit	Cable Size- # of conductors	Wire type 1=THHN, 0=XHHW	Length from equipment to equipment in inches	Cable O.D. in Inches	Cable Area (sq in)	Total Cable/Wire Area per circuit (sq in)	Sum of OD's per circuit	Cable Weight/Ft	Total weight per foot for the circuit	Wire weight for the circuit at shipment	Cable part no.	Sec. View AA	Sec. View BB	
DCP1	TC1	DCP1-TC1/AB	Yes	Yes	1	18.333333	4	3	25.33333	25.33333	10-2	1	220	0.420	0.1385	0.1385	0.4200	0.131	0.1310	3.32	27643A	X		
RP1	TC1	RP1/G-TC1/AC	Yes	Yes	1	17.5	5	3	25.5	25.5	12-12	1	210	0.670	0.3526	0.3526	0.6700	0.378	0.3780	9.64	28119A		X	
RP1	TC1	RP1/H-TC1/AD	Yes	Yes	1	17.5	6	4	27.5	27.5	12-12	1	210	0.670	0.3526	0.3526	0.6700	0.378	0.3780	10.40	28119A		X	
DCP1	TC1	DCP1-TC1/AF	Yes	Yes	1	18.333333	4	4	26.33333	26.33333	10-2	1	220	0.420	0.1385	0.1385	0.4200	0.131	0.1310	3.45	27643A	X		
RP1	TC1	RP1/A-TC1/AG	Yes	Yes	1	17.5	3	5	25.5	25.5	10-4	1	210	0.490	0.1886	0.1886	0.4900	0.231	0.2310	5.89	28140A		X	
RP1	TC1	RP1/C-TC1/AH	Yes	Yes	1	17.5	4	5	26.5	26.5	10-4	1	210	0.490	0.1886	0.1886	0.4900	0.231	0.2310	6.12	28140A		X	
RP1	TC1	RP1/D-TC1/AJ	Yes	Yes	1	17.5	4	6	27.5	27.5	10-4	1	210	0.490	0.1886	0.1886	0.4900	0.231	0.2310	6.35	28140A		X	
RP1	TC1	RP1/B-TC1/AK	Yes	Yes	1	17.5	4	6	27.5	27.5	10-4	1	210	0.490	0.1886	0.1886	0.4900	0.231	0.2310	6.35	28140A		X	
RP1	TC1	RP1/M-TC1/AM	Yes	Yes	1	19.666667	3	7	29.66667	29.66667	12-12	1	236	0.670	0.3526	0.3526	0.6700	0.378	0.3780	11.21	28119A		X	
RP1	TC1	RP1/F-TC1/AN	Yes	Yes	1	17.5	6	8	31.5	31.5	12-4	1	210	0.410	0.1320	0.1320	0.4100	0.153	0.1530	4.82	28111A		X	
DCP1	TC1	DCP1-TC1/DB	Yes	Yes	1	21.583333	4	3	28.58333	28.58333	10-2	1	259	0.420	0.1385	0.1385	0.4200	0.131	0.1310	3.74	27643A	X		
RP1	TC1	RP1/J-TC1/DC	Yes	Yes	1	18.666667	8	3	29.66667	29.66667	12-12	1	224	0.670	0.3526	0.3526	0.6700	0.378	0.3780	11.21	28119A		X	
DCP1	TC1	DCP1-TC1/DE	Yes	Yes	1	21.583333	4	4	29.58333	29.58333	10-2	1	259	0.420	0.1385	0.1385	0.4200	0.131	0.1310	3.88	27643A	X		
RP1	TC1	RP1/K-TC1/DF	Yes	Yes	1	18.666667	9	5	32.66667	32.66667	12-12	1	224	0.670	0.3526	0.3526	0.6700	0.378	0.3780	12.35	28119A		X	
DCP1	TC1	DCP1-TC1/CQ	Yes	Yes	1	19.666667	4	8	31.66667	31.66667	10-2	1	236	0.420	0.1385	0.1385	0.4200	0.131	0.1310	4.15	27643A	X		
DCP1	TC1	DCP1-TC1/DH	Yes	Yes	1	21.583333	4	5	30.58333	30.58333	10-2	1	259	0.420	0.1385	0.1385	0.4200	0.131	0.1310	4.01	27643A	X		
DCP1	TC1	DCP1-TC1/DK	Yes	Yes	1	21.583333	4	6	31.58333	31.58333	10-2	1	259	0.420	0.1385	0.1385	0.4200	0.131	0.1310	4.14	27643A	X		
DCP1	TC1	DCP1-TC1/DM	Yes	Yes	1	21.583333	4	6	31.58333	31.58333	10-2	1	259	0.420	0.1385	0.1385	0.4200	0.131	0.1310	4.14	27643A	X		
DCP1	TC1	DCP1-TC1/DP	Yes	Yes	1	21.583333	4	7	32.58333	32.58333	10-2	1	259	0.420	0.1385	0.1385	0.4200	0.131	0.1310	4.27	27643A	X		
DCP1	TC1	DCP1-TC1/DR	Yes	Yes	1	21.583333	4	8	33.58333	33.58333	10-2	1	259	0.420	0.1385	0.1385	0.4200	0.131	0.1310	4.40	27643A	X		
DCP1	RP1	DCP1-RP1/L	Yes	Yes	1	34.583333	4	3	41.58333	41.58333	10-2	1	415	0.420	0.1385	0.1385	0.4200	0.131	0.1310	5.45	27643A	X	X	
RP1	BATT. CHARGER	SS1-RP1/N	Yes	Yes	1	32.166667	4	4	40.16667	40.16667	12-2	1	386	0.360	0.1018	0.1018	0.3600	0.086	0.0860	3.45	27641A	X	X	
RP1	DOOR CONTACT 1	SS2-RP1/N	Yes	Yes	1	22.333333	4	7	33.33333	33.33333	12-2	1	268	0.360	0.1018	0.1018	0.3600	0.086	0.0860	2.87	27641A	X	X	
RP1	DOOR CONTACT 2	SS3-RP1/N	Yes	Yes	1	10.833333	4	7	21.83333	21.83333	12-2	1	130	0.360	0.1018	0.1018	0.3600	0.086	0.0860	1.88	27641A			
RP1	HVAC ALARM	SS4-RP1/S	Yes	Yes	1	10.666667	7	6	23.66667	23.66667	12-2	1	128	0.360	0.1018	0.1018	0.3600	0.086	0.0860	2.04	27641A			
RP1	H2 SENSOR	SS5-RP1/S	Yes	Yes	1	36.666667	7	4	47.66667	47.66667	14-2	1	440	0.320	0.0804	0.0804	0.3200	0.062	0.0620	2.96	27636A	X	X	
RP1	SMOKE	SS6-RP1/S	Yes	Yes	1	7.0833333	7		14.08333	14.08333	12-2	1	85	0.360	0.1018	0.1018	0.3600	0.086	0.0860	1.21	27641A			

NOTES



REVISIONS

REV	DESCRIPTION	DATE	APPROVED
0	RELEASED FOR PRODUCTION	10/23/19	B.N.



1505 WEST THIRD AVENUE
DENVER, COLORADO 80223

DRAWN B.N. 8/22/19

CHECK

APPD

NEI/MOUNTAIN VIEW ELECTRIC
YODER SUBSTATION CONTROL BUILDING
PDC-240V/1/3W
TRAY CABLE SCHEDULE
CALCULATIONS

SIZE B

DWG NO. Y191199-691880-01

SCALE N.T.S.

SHEET 16 OF 17

