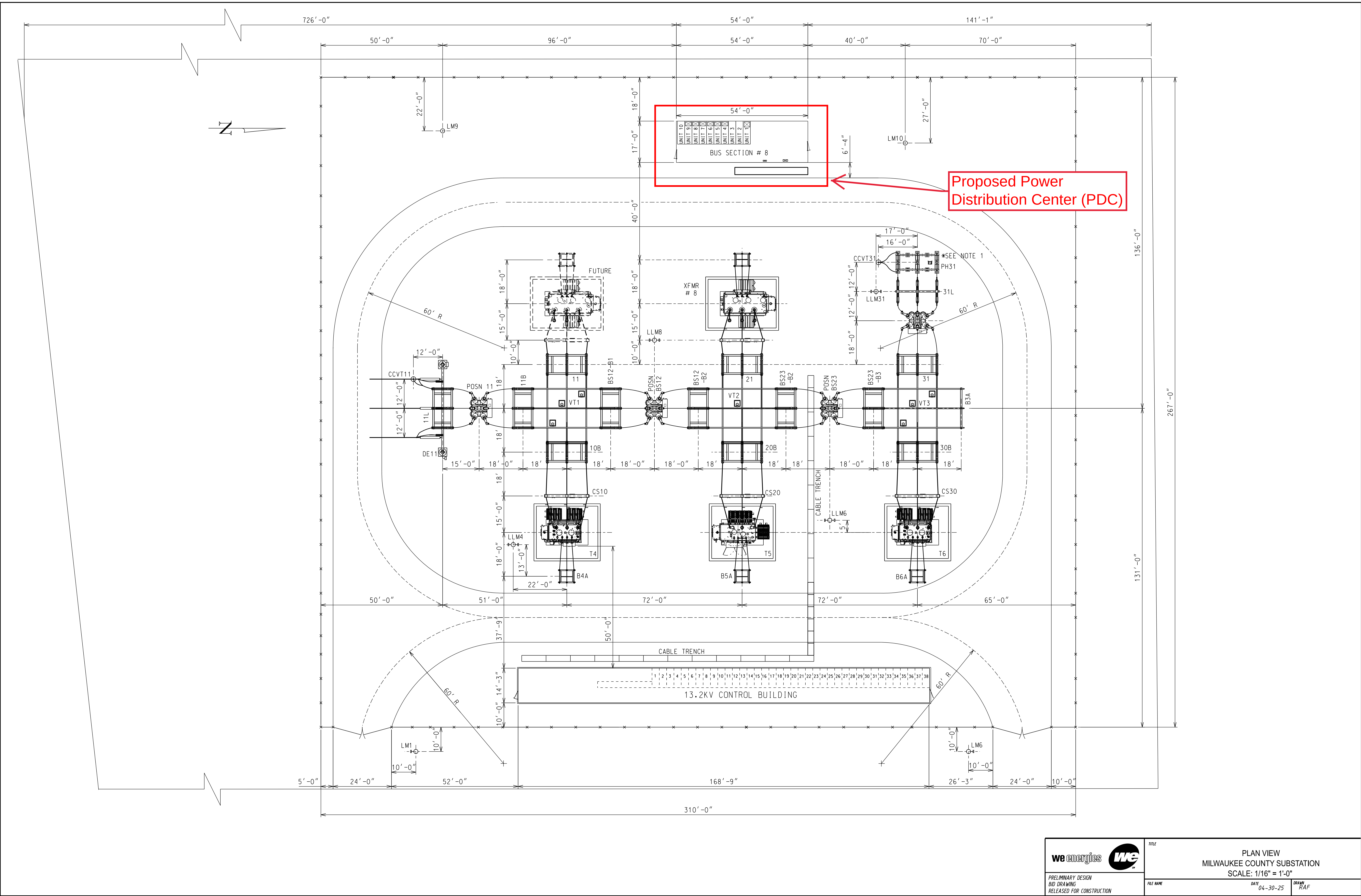
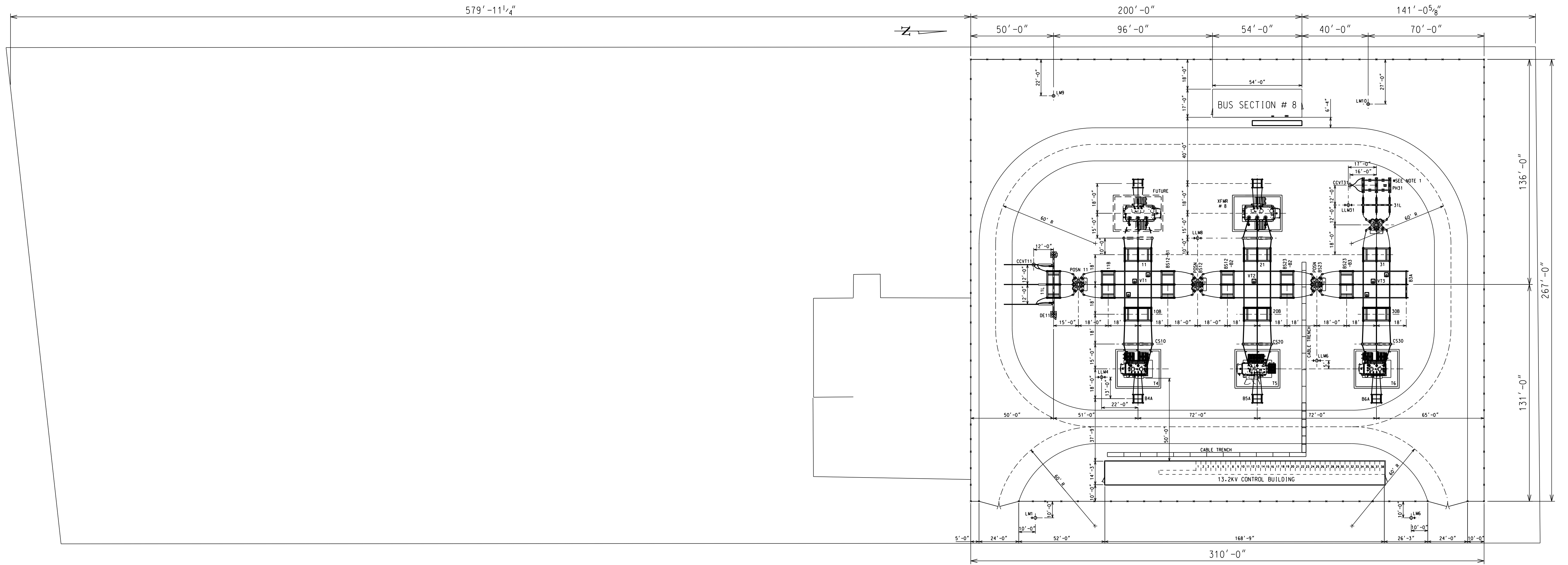




W WATERTOWN PLANK RD

CONC. WALK



	TITLE	
	PLAN VIEW	
	MILWAUKEE COUNTY SUBSTATION	
PRELIMINARY DESIGN BID DRAWING RELEASED FOR CONSTRUCTION	FILE NAME	DATE
		04-30-25
	DRAWN	RAF
SCALE: 1/16" = 1'-0"		

CERTIFIED SURVEY MAP NO. _____

That part of the Northwest 1/4 of the Northwest 1/4 of Section 28, the Northeast 1/4 of the Northeast 1/4 of Section 29, the Southeast 1/4 and the Northeast 1/4 of the Southeast 1/4 of Section 20, and the Southwest 1/4 and the Northwest 1/4 of the Southwest 1/4 of Section 21, in Township 7 North, Range 21 East, all in the City of Wauwatosa, Milwaukee County, Wisconsin.

REFERENCE BEARING

All bearings are referenced to the East line of the SE. 1/4 of Sect. 20, T.7N. R.21E. which bears N.00°50'51"W. and is referenced to Grid North of the Wisconsin State Plane Coordinate System, South Zone.



SE. 1/4, SECT. 20
T.7N., R.21E.

NE. 1/4, SECT. 29
T.7N., R.21E.

SW. 1/4, SECT. 21
T.7N., R.21E.

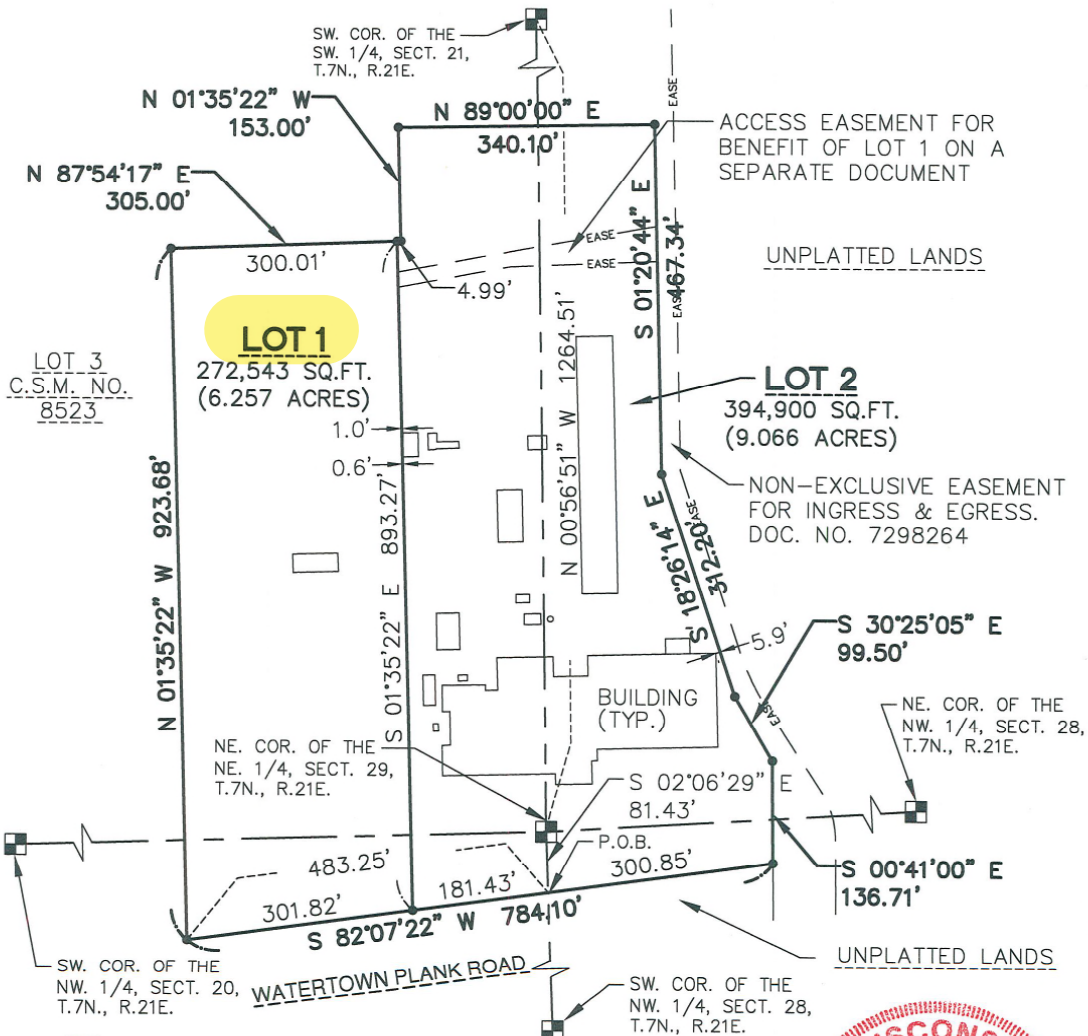
1" = 2000'

LOCATION MAP

NW. 1/4, SECT. 28
T.7N., R.21E.

UNPLATTED LANDS

SCALE: 1" = 200'



GRAEF

One Honey Creek Corporate Center
125 South 84th Street, Suite 401
Milwaukee, WI 53214-1469
414 / 259 1500
414 / 259 0037 fax
www.graef-usa.com

OWNER

Wisconsin Electric Power Company
9250 Watertown Plank Road
Wauwatosa, Wisconsin

LEGEND

○ FOUND 1" IRON PIPE

• 1" DIA.x24" LG. IRON PIPE SET, MINIMUM WEIGHT 1.13 LBS/FT.

■ FOUND CONC. MONUMENT W/BRASS CAP



THIS INSTRUMENT WAS DRAFTED BY: MICHAEL J. RATZBURG JOB. NO. 20150024 SHEET 1 OF 5

SITE LOCATION: MILWAUKEE COUNTY SUBSTATION
9260 W WATERTOWN PLANK RD.
WAUWATOSA, WI. 53226



WEB SITE <http://www.powerconcorp.com>

BUILDING OCCUPANCY: _____ U
RISK CATEGORY: _____ III
SEISMIC DESIGN CATEGORY: _____ B
CONSTRUCTION TYPE: _____ II B
FLOOR AISLE LOAD: _____ 250 PSF
FLOOR DEAD LOAD: _____ 20 PSF
ROOF DEAD LOAD: _____ 17 PSF
ROOF LIVE LOAD: _____ 40 PSF
GROUND SNOW LOAD: _____ 30 PSF
ROOF SNOW LOAD: _____ 30 PSF
WALL DEAD LOAD: _____ 20 PSF
WIND LOAD: _____ 120 MPH, EXPOSURE C

1551 FLORIDA AVENUE
SEVERN, MD 21144
PHONE: (410) 551-6500
FAX: (410) 551-8451
SERIAL NO.: 01-51672
MODEL NO.: D-17046

THE SCOPE OF WORK FOR THESE CALCULATIONS AND DRAWINGS IS LIMITED TO THE SHELL OF THE BUILDING WHICH INCLUDES THE ROOF, WALLS, AND FLOOR IN ITS FINAL LOCATION ONLY.

SEISMIC REQUIREMENTS: _____ PER 2015 INTERNATIONAL BUILDING CODE/ASCE 7-10
W/ Ss=0.087, S1=0.046, Sds=0.09, Sd1=0.07, R=2.0

STRUCTURE DESCRIPTION:

NEMA 3R STRUCTURE WITH EXTERIOR WALLS FABRICATED FROM SELF FRAMING PANELS, ROOF SYSTEM IS INTEGRAL STEEL TRUSS AND CEILING SYSTEM WITH FORMED STEEL ROOF PANELS. STRUCTURAL STEEL BASE GRID AND STEEL PLATE FLOOR TO SUPPORT AND HOUSE ELECTRIC POWER AND CONTROL EQUIPMENT. ENCLOSURE IS SHIPPED IN FOUR SECTIONS, WHICH WILL REQUIRE REASSEMBLY AT THE SITE.

BUILDING WEIGHT: _____ 118,700 LB
BUILDING DIMENSIONS: _____ 17'-0"W X 54'-0"L X 13'-6"H
BUILDING AREA: _____ 918 SQ. FT.
NUMBER OF STORIES: _____ 1
BUILDING SETBACKS: _____ GREATER THAN 10FT FROM COMMON
OR ASSUMED PROPERTY LINE.

INDEX OF PLANS

DRAWING NO.	REV.	DESCRIPTION
D-17046, SHEET#1 OF 10	5	COVER PAGE, INDEX OF PLANS & GENERAL NOTES
D-17046, SHEET#2 OF 10	5	OUTLINE, FLOOR PLAN AND ELEVATIONS
D-17046, SHEET#3 OF 10	5	FRONT ELEVATION AND SINGLE LINE DIAGRAM
D-17046, SHEET#4 OF 10	5	SWITCHGEAR SIDE SECTIONS
D-17046, SHEET#5 OF 10	5	REAR VIEW SECTION
D-17046, SHEET#6 OF 10	5	STRUCTURAL BASE AND FOUNDATION LOADING
D-17046, SHEET#7 OF 10	5	SECTIONS
D-17046, SHEET#8 OF 10	5	ROOF PLAN
D-17046, SHEET#9 OF 10	5	CONSTRUCTION DETAILS
D-17046, SHEET#10 OF 10	5	CONSTRUCTION DETAILS

GENERAL NOTES

1. DESIGN AND CONSTRUCTION OF FOUNDATION IS BY OTHERS.
2. DESIGNED IN ACCORDANCE WITH THE 2015 INTERNATIONAL BUILDING CODE
3. DESIGNED IN ACCORDANCE WITH THE 2015 INTERNATIONAL MECHANICAL CODE
4. DESIGNED IN ACCORDANCE WITH THE 2017 NEC
5. PER OBC 106.1.1(2) BUILDING SHALL NOT BE SET IN A FLOOD HAZARD ZONE
6. NOT INTENDED FOR HUMAN OCCUPANCY
7. ONLY INTENDED TO SHELTER ELECTRIC POWER CONTROL EQUIPMENT
8. SPRINKLER SYSTEM: N/A
9. PLUMBING FIXTURE: N/A Per NSPC Table 7.21.1
10. BARRIER FREE ACCESSIBILITY: N/A Per Exception 5.23-7.3(a)3
11. OCCUPANY LOAD = 2
12. NUMBER OF EXIT DOORS REQUIRED = 1 (2 DOORS SUPPLIED)
13. STRUCTURAL STEEL DESIGNED, IDENTIFIED AND FABRICATED ACCORDING TO AISC 360-2016, AISI S100-2016 AND AISI S200-2016

MATERIALS

STRUCTURAL STEEL----- ASTM A36	WALL INSULATION- THERMAX-R-21.3
STEELPLATE----- ASTM A36	ROOF INSULATION- THERMAX-R-21.3, R-19
STRUCTURAL PIPE----- ASTM A53	FLOOR INSULATION- R-21.3, R-19
EXTERIOR SHEET METAL--#11GA. GALVANNEALED STEEL ASTM A653	
INTERIOR SHEET METAL--#16GA. GALVANNEALED STEEL ASTM A653	

REVISIONS

N/A THIS SHEET 04/11/24 M.A.S.

REVISED PER CUSTOMER COMMENTS 05/06/24 J.C.

ADDED VERT. CABLE TRAY, RESIZED CABLE ENTRANCE, MOVED DESK AND OTHER EQUIP. & REVISED INSULATION 05/23/24 J.C.

RELOCATED AC SAFETY SWITCH & METER SOCKET PER 7/1 CUSTOMER REQUEST 07/15/24 J.C.

EXTEND REAR COMPT. IN UNIT #2 09/30/24 M.A.S. & MOVED BLDG. TEMP. ALRM (#3700) 10/15/24 J.C.

1

2

3

4

5

STRUCTURAL ONLY

WISCONSIN PROFESSIONAL ENGINEER

ANDREW R. LEICHTY E-44171-6 PORTLAND OREGON

01/10/2025

01/10/2025

MILLER CONSULTING ENGINEERS

9600 SW Oak St Suite 400 Portland, Oregon Phone: (503) 246-1250 Fax: (503)246-1395

Date Modified: 12/19/2024 Modified By: SJD

SHEET CONTENT: COVER PAGE, INDEX OF PLANS & GENERAL NOTES

MCE JOB No. 241678

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DESCRIPTIVE BULLETIN N/A

SUMMARY S-24726

FRONT VIEW D-17046

SCHEMATIC DW-16458

DESCRIPTION OF OPERATION W-5567

PANEL LAYOUT D-17047

NAMEPLATE, DWG. NP-17874

WIRING DIAGRAM DW-16459

CUST. WISCONSIN ELECTRIC POWER P.O. NO. 4510427457

ENGR. JOHN CARTER DATE 03/04/24

DRWN. JOHN CARTER DATE 03/04/24

CHKD. GERRY MARINAKIS DATE 03/18/24

APPD. GERRY MARINAKIS DATE 03/18/24

APPD. DATE

APPD. DATE

Powercon Corp SEVERN, MD

WEB SITE <http://www.powerconcorp.com>

TITLE INDOOR METAL-CLAD SWITCHGEAR RATED 25KV NOM., 27KV MAX. DESIGN, 2000A, 125KV BIL, 3-PHASE, 4-WIRE, 60HZ, 16KA IC CLASS

STATION MILWAUKEE COUNTY SUBSTATION

LOCATION WAUWATOSA, WI

SO#01-51672

D-17046

REV. 5

HOLDOWN SCHEDULE

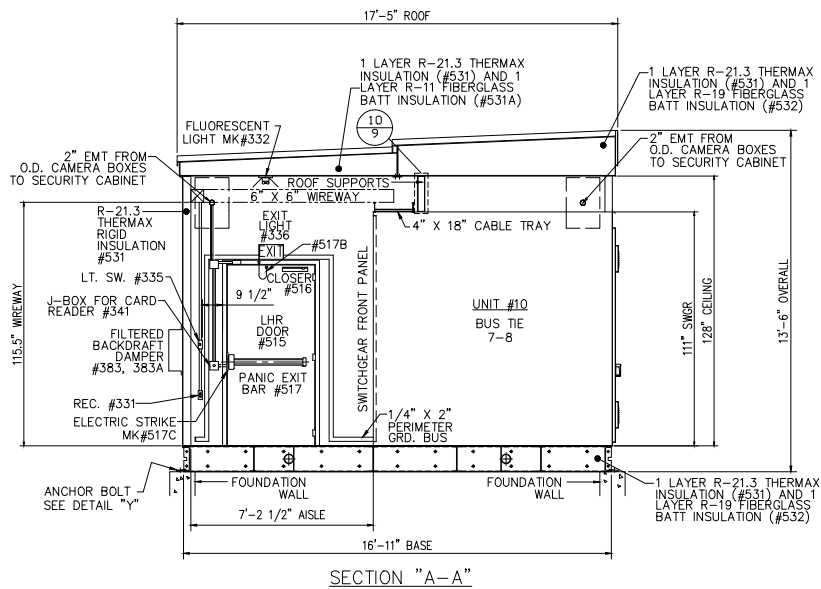


1200 LBS CAPACITY HOLDOWN. SIMPSON S/LT20 TENSION TIE OR EQUIVALENT WITH MIN. (8) #10 X 1 1/2" COARSE SHEET METAL SCREWS (ALLOWABLE STRESS DESIGN) TO CONNECT WALL PANEL END TO STEEL FOUNDATION FOR BOTH VERTICAL UPLIFT TENSION AND COMPRESSION FORCES

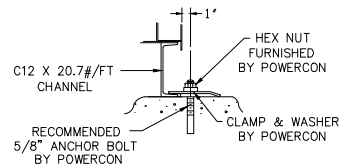
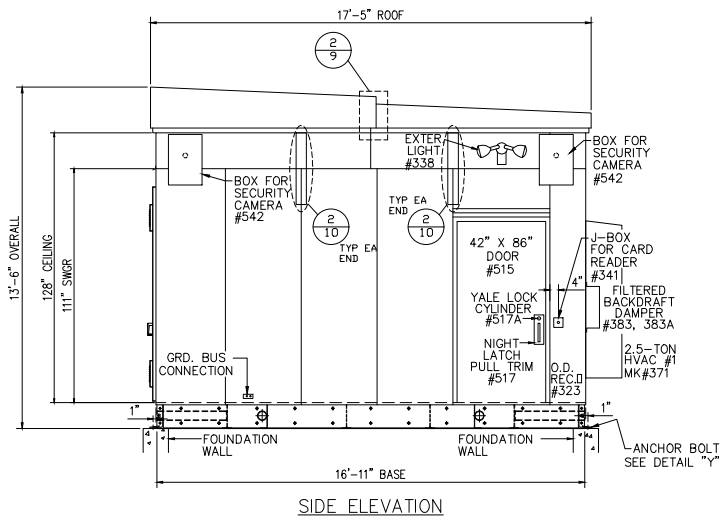
SEE DETAIL ON PG. 9

2775 LBS CAPACITY HOLDOWN. SIMPSON S/HTT14 TENSION TIE OR EQUIVALENT WITH MIN. (16) #10 X 1 1/2" COARSE SHEET METAL SCREWS (ALLOWABLE STRESS DESIGN) TO CONNECT WALL PANEL END TO STEEL FOUNDATION FOR BOTH VERTICAL UPLIFT TENSION AND COMPRESSION FORCES

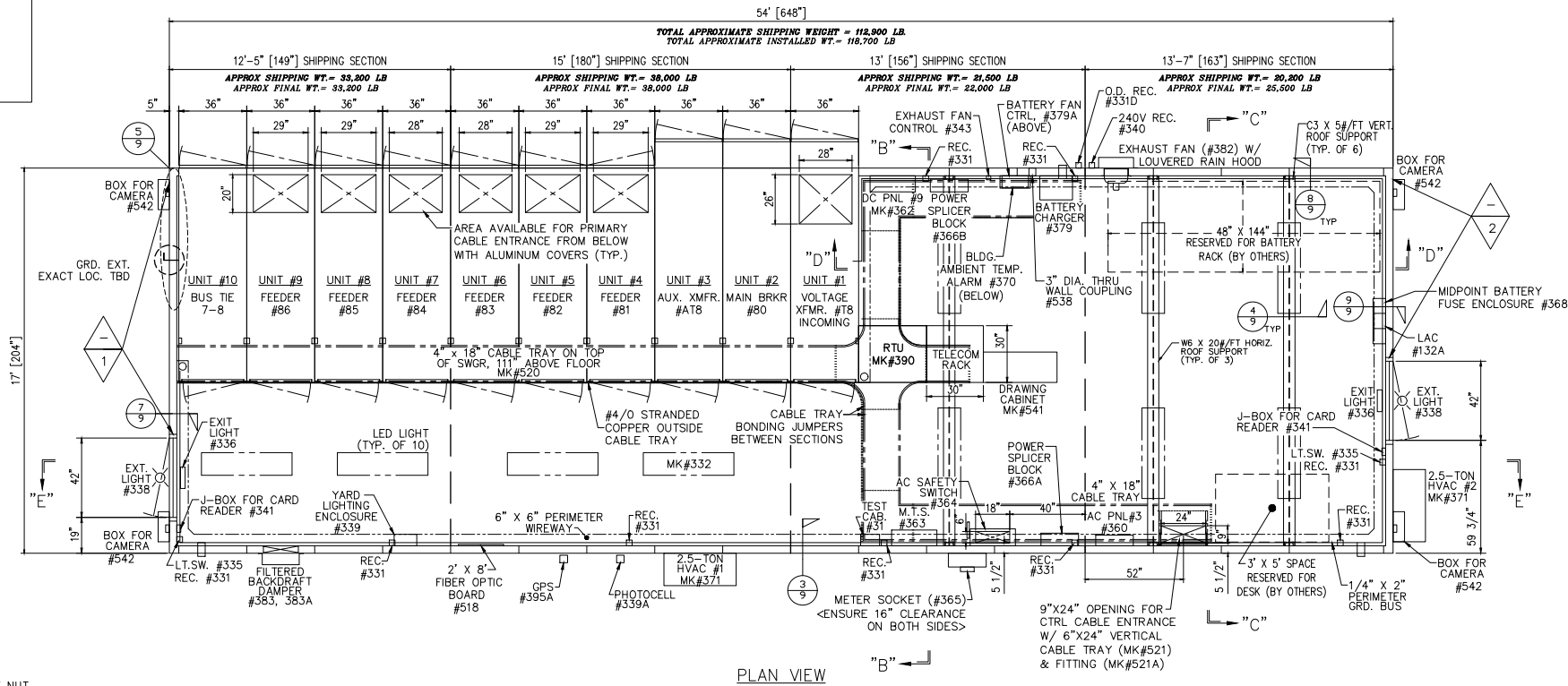
SEE DETAIL ON PG. 9



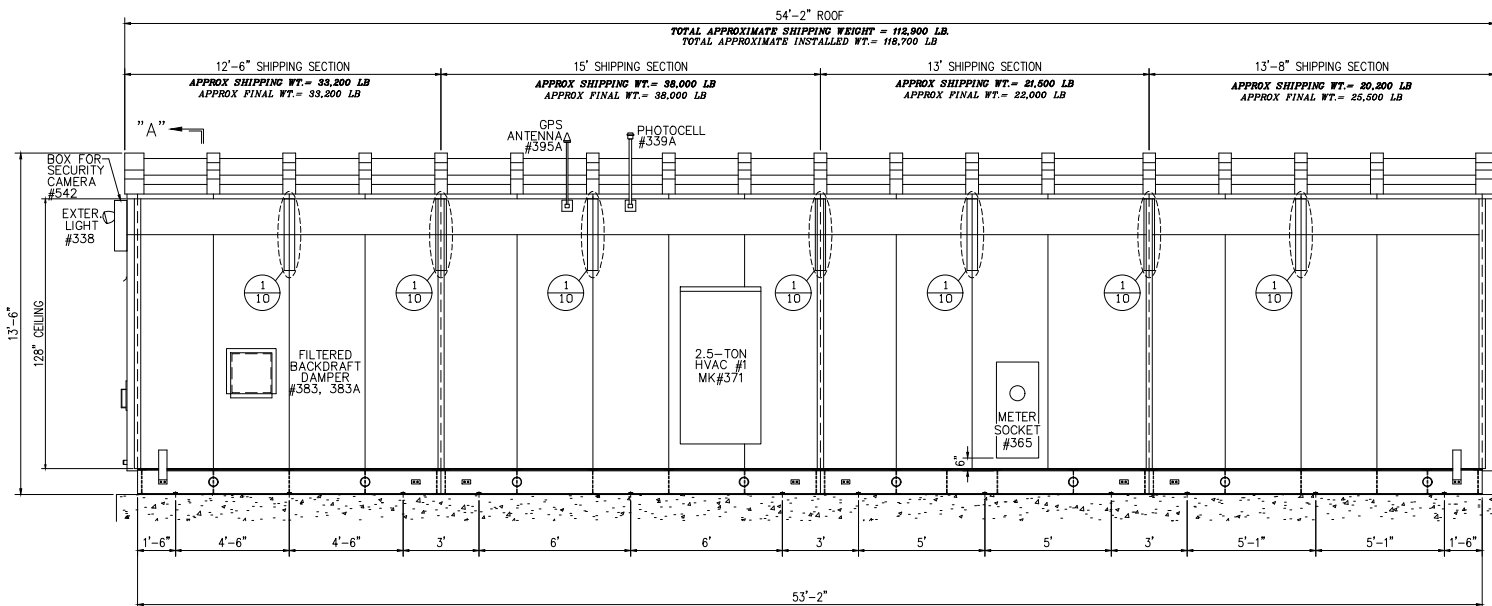
SECTION "A-A"

DETAIL "Y"
(NOT TO SCALE)

SIDE ELEVATION



PLAN VIEW



FRONT ELEVATION

01/10/2025



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CONSULTING
ENGINEERS

Miller Consulting Engineers, Inc.
9600 SW Oak St.
Suite 400
Portland, Oregon
Phone: (503) 246-1250
Fax: (503) 246-1395
Date Modified: 12/19/2024
Modified By: SJD

SHEET CONTENT:
OUTLINE, FLOOR PLAN AND
ELEVATIONS

MCE JOB No.
241678

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DESCRIPTIVE BULLETIN

N/A

SUMMARY

S-24726

FRONT VIEW

D-17046

SCHEMATIC

DW-16458

DESCRIPTION OF OPERATION

W-5567

PANEL LAYOUT

D-17047

NAMEPLATE

NP-17874

WIRING DIAGRAM

DW-16459

CUST. WISCONSIN ELECTRIC POWER

P.O. NO. 4510427457

ENGR. JOHN CARTER

DRWN. JOHN CARTER

CHKD. GERRY MARINAKIS

APPD. GERRY MARINAKIS

APPD.

APPD.

DATE 03/04/24

DATE 03/04/24

DATE 03/18/24

DATE 03/18/24

DATE

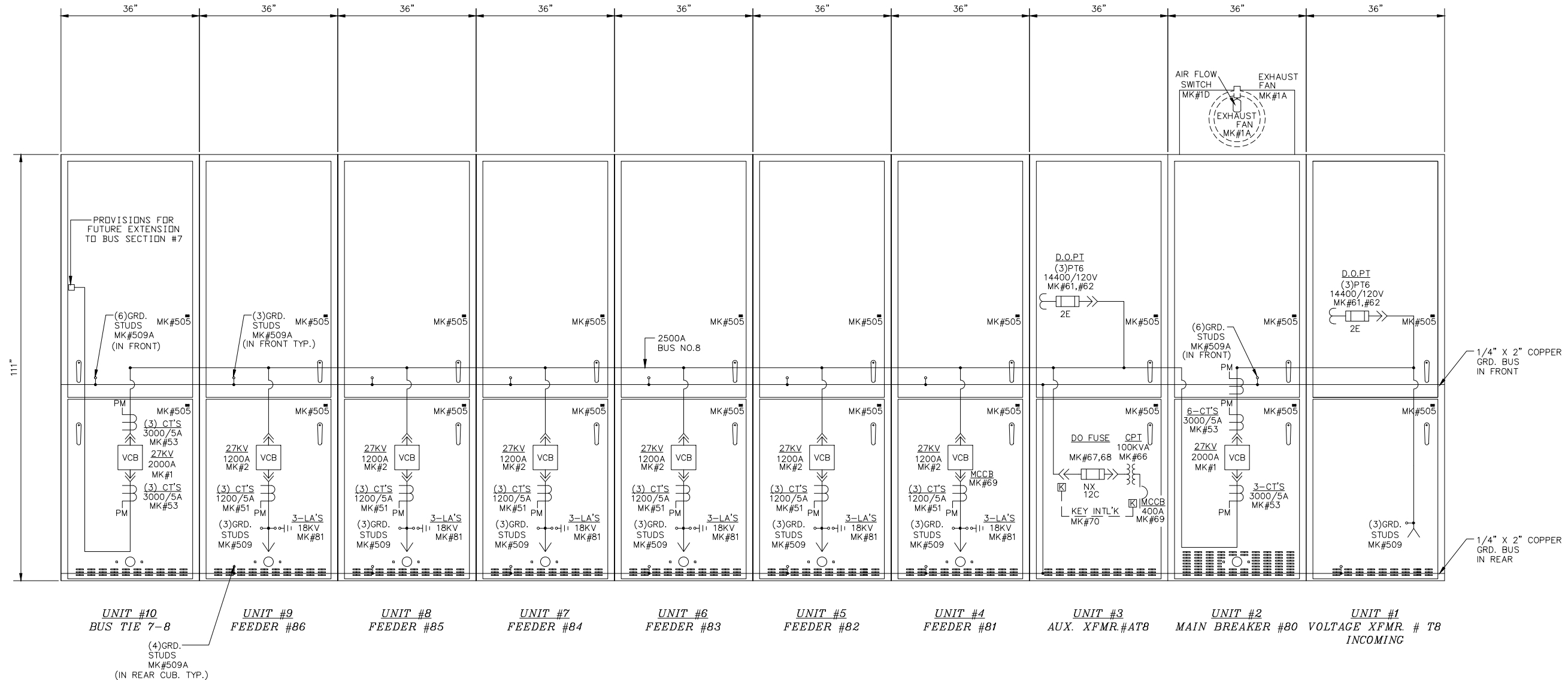
DATE

Powercon Corp.
WEB SITE <http://www.powerconcorp.com>

TITLE INDOOR METAL-CLAD SWITCHGEAR
RATED 25KV NOM., 27KV MAX. DESIGN, 2000A,
125KV BIL. 3-PHASE, 4-WIRE, 60HZ, 16KA IC CLASS
STATION MILWAUKEE COUNTY SUBSTATION
LOCATION WAUWATOSA, WI

SO#01-51672 D-17046

REV.
5



FRONT ELEVATION & SINGLE LINE DIAGRAM
BUS NO. 8

01/10/2025



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SHEET CONTENT:
FRONT ELEVATION AND
SINGLE LINE DIAGRAM

MCE JOB No.
241678

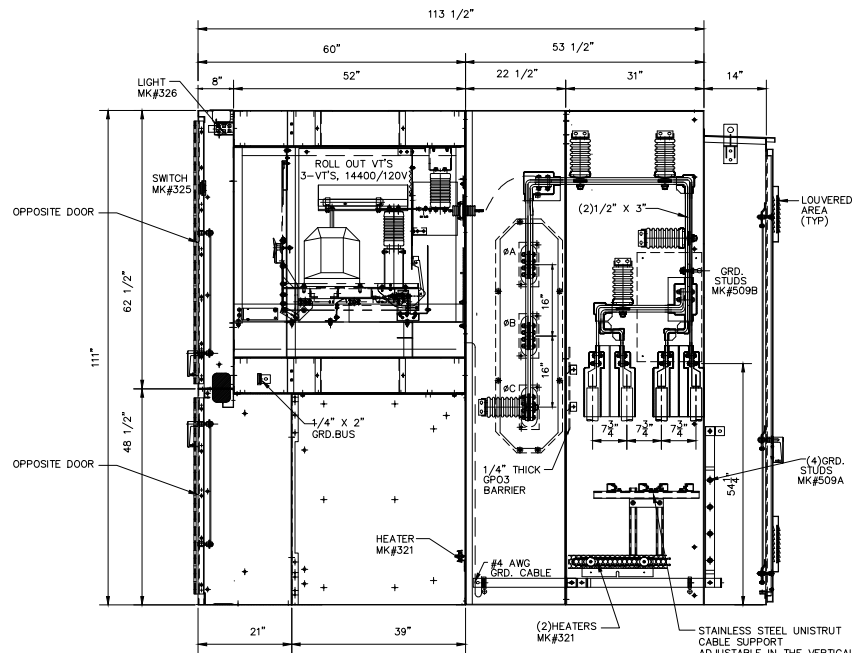
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N/A	
SUMMARY	PANEL LAYOUT
S-24726	D-17047
FRONT VIEW	NAMEPLATE DWG.
D-17046	NP-17874
SCHMATIC	WIRING DIAGRAM
DW-16458	DW-16459
DESCRIPTION OF OPERATION	
W-5567	

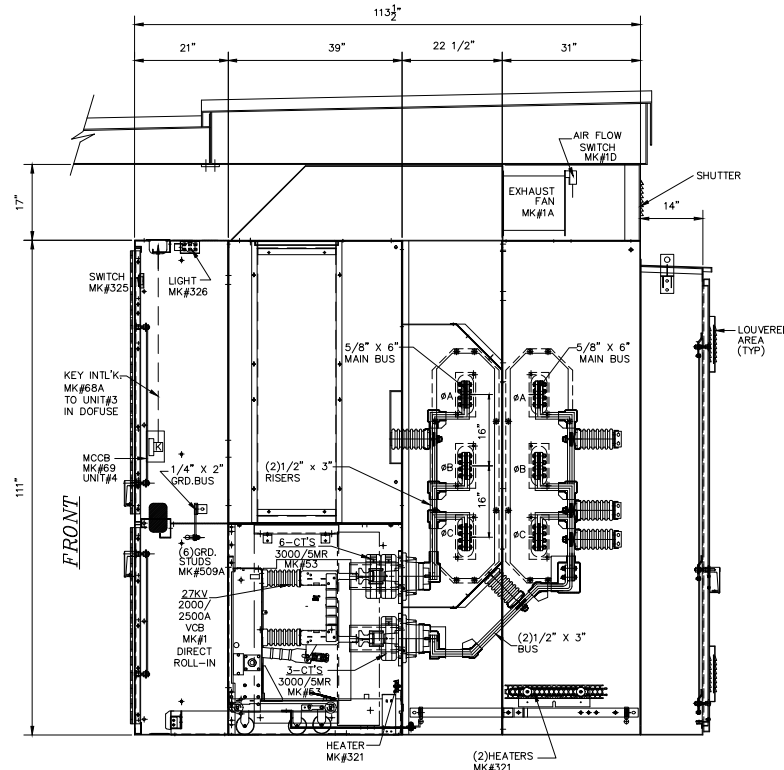
CUST. WISCONSIN ELECTRIC POWER	
P.O. NO. 4510427457	
ENGR. MIKHAIL SHIF	DATE 01/18/24
DRWN. MIKHAIL SHIF	DATE 01/18/24
CHKD. GERRY MARINAKIS	DATE 02/08/24
APPD. GERRY MARINAKIS	DATE 02/08/24
APPD.	DATE
APPD.	DATE

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STATION MILWAUKEE COUNTY SUBSTATION	
LOCATION WAUWATOSA, WI	
SO#01-51672	D-17046
REV. 5	

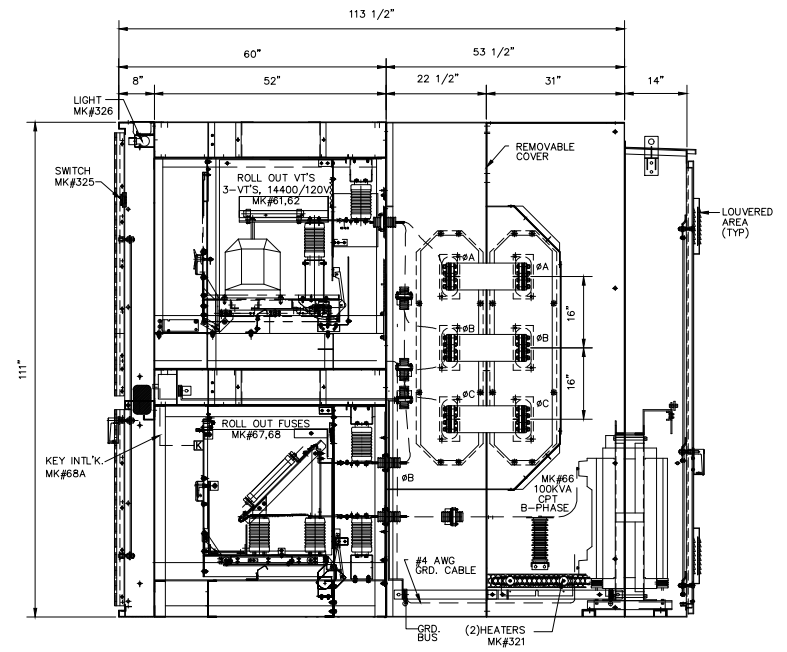
REVISIONS	
1	N/A THIS SHEET 04/11/24 M.A.S.
2	N/A THIS SHEET 04/26/24 J.C.
3	N/A THIS SHEET 05/23/24 J.C.
4	N/A THIS SHEET 07/15/24 J.C.
5	N/A THIS SHEET 09/30/24 M.A.S.



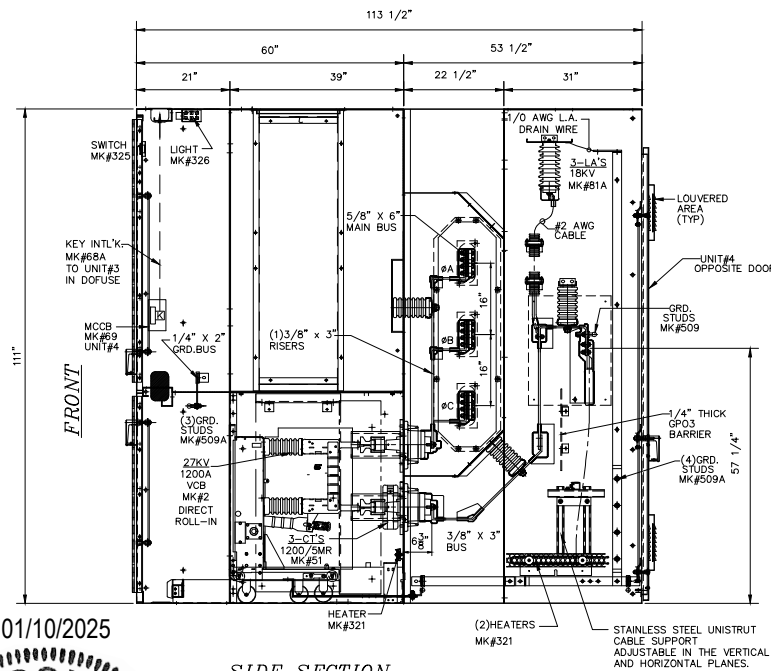
SIDE SECTION
UNIT NO. 1



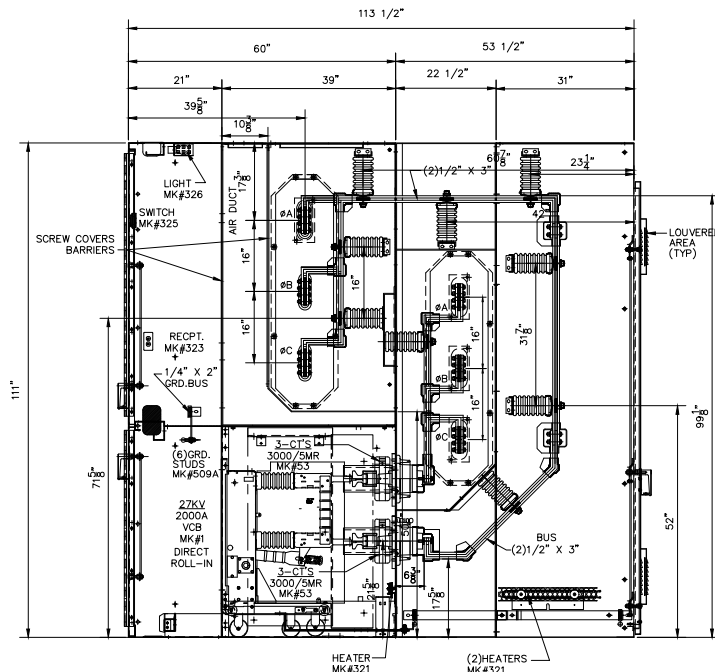
SIDE SECTION
UNIT NO. 2



SIDE SECTION
UNIT NO. 3
AUXILIARY COMPARTMENT



01/10/2025
SIDE SECTION
UNIT NO'S 4,5,6,7,8 & 9



SIDE SECTION
UNIT NO. 10



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SHEET CONTENT:
SWITCHGEAR SIDE SECTIONS

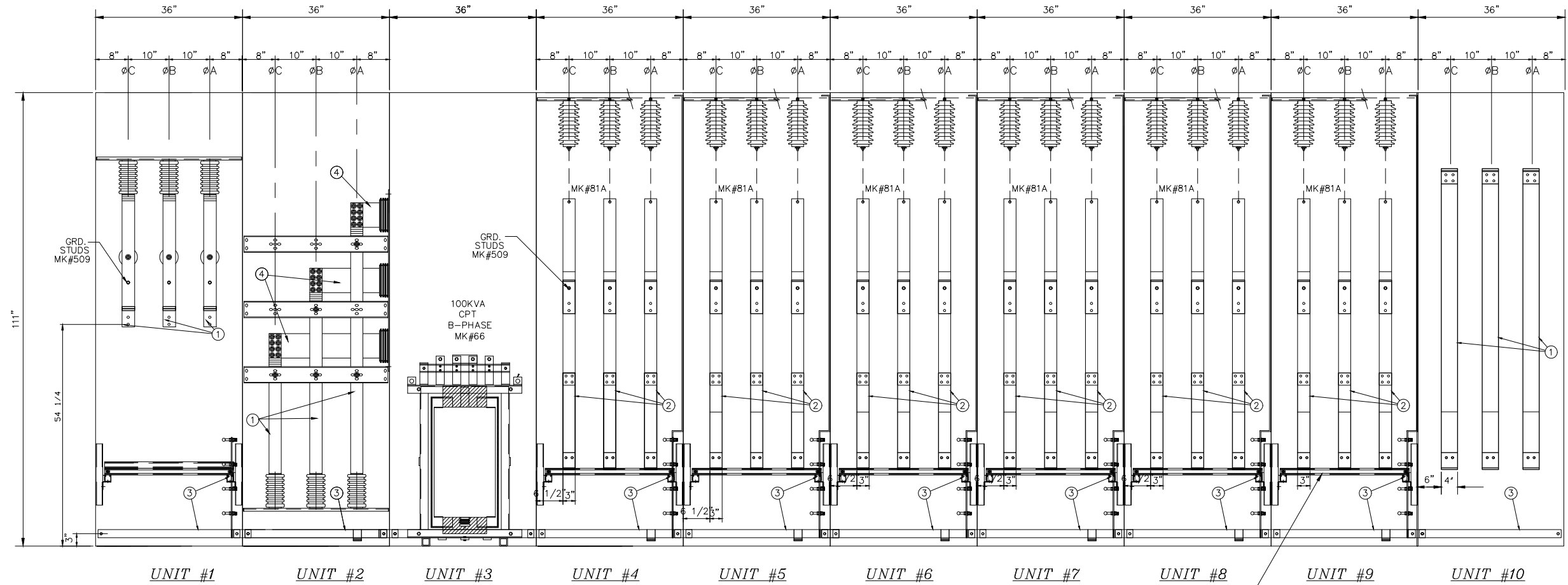
MCE JOB No.
241678

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DESCRIPTIVE BULLETIN	
N/A	
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S-24726	D-17047
FRONT VIEW	NAMEPLATE DWG.
D-17046	NP-17874
SCHEMATIC	WIRING DIAGRAM
DW-16458	DW-16459
DESCRIPTION OF OPERATION	
W-5567	

CUST. WISCONSIN ELECTRIC POWER	
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125KV BIL, 3-PHASE, 4-WIRE, 60HZ, 16KA IC CLASS	
STATION MILWAUKEE COUNTY SUBSTATION	
LOCATION WAUWATOSA, WI	
SO#01-51672	D-17046
REV.	5



REAR VIEW SECTION – BUS BAR ASSEMBLY

STAINLESS STEEL UNISTRUT
CABLE SUPPORT
ADJUSTABLE IN THE VERTICAL
AND HORIZONTAL PLANES.
(TYP.)

BUS SIZES

- ①-(2)1/2"x3" CU BUS
- ②-3/8"x3" CU BUS
- ③-1/4"x2" CU BUS
- ④-5/8"x 6" CU BUS

01/10/2025



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SHEET CONTENT:
REAR VIEW SECTION

MCE JOB No.
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LOCATION WAUWATOSA, WI	
SO#01-51672	D-17046
REV. 5	

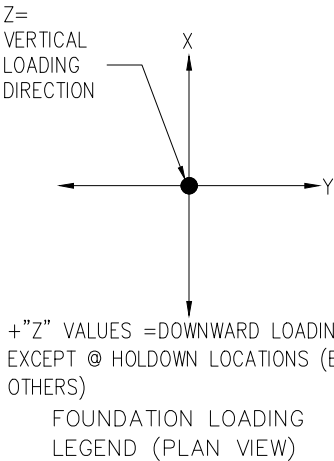
BASE MEMBER	DEAD LOAD	LIVE LOAD	SNOW LOAD	SEISMIC LOAD	TOT. HORIZ. SHEAR	D+L+S
	(LBS/LIN. FT.)			(VERTICAL)	(WIND & SEISMIC)	
①	600#/FT	700#/FT	300#/FT	100#/FT	9300 LBS	1600#/FT
②	500#/FT	900#/FT	0#/FT	N/A	N/A	1400#/FT
③	600#/FT	1100#/FT	200#/FT	N/A	N/A	1900#/FT
④	700#/FT	1200#/FT	200#/FT	N/A	N/A	2100#/FT
⑤	600#/FT	1000#/FT	0#/FT	N/A	N/A	1600#/FT
⑥	600#/FT	700#/FT	300#/FT	100#/FT	9300 LBS	1600#/FT

BASE MEMBER LOADING CHART

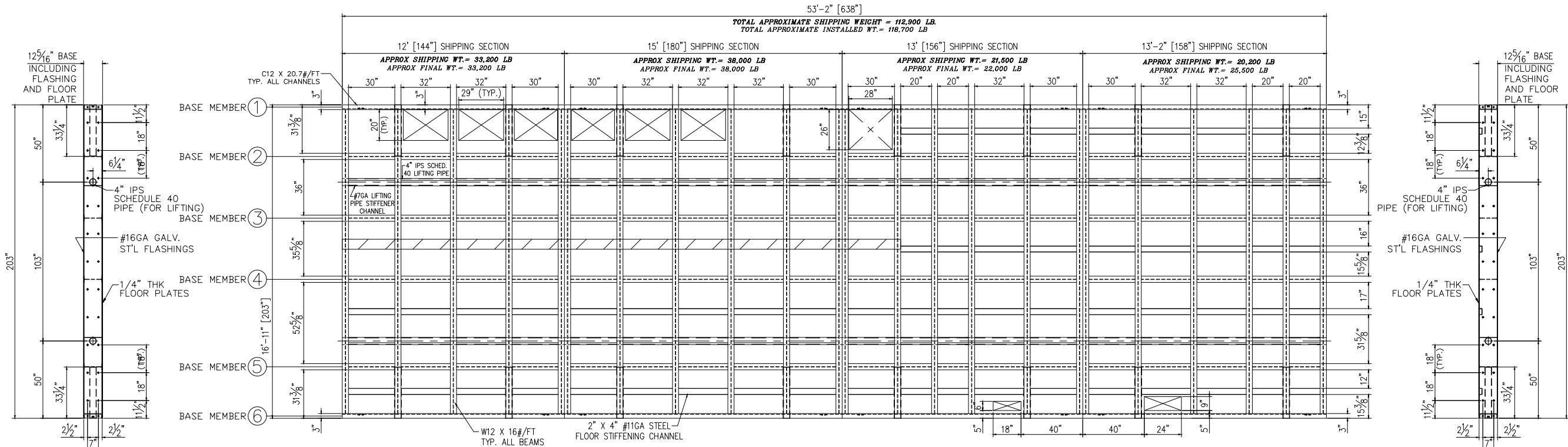
NOTES: 1. FOUNDATION LOADS ARE SHOWN ON THE CHART AT RIGHT CORRESPONDING TO BASE MEMBER NUMBERS INDICATED ON PLAN VIEW BELOW.

2. THE TOTAL HORIZONTAL FORCES INDICATED ON THE CHART AT LEFT WILL HAVE TO BE SUPPORTED BY THE ANCHOR BOLTS INDICATED ON SHEET#2 OF 9.

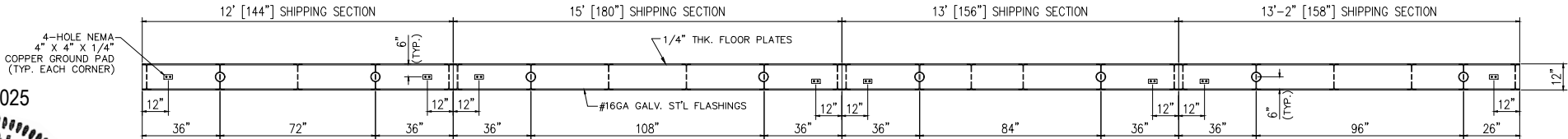
- CAULKING OF GASKETED WALL SEAMS SHALL NOT BE DONE BY POWERCON.
- LOADS SHOWN ARE UNIT ROOF AND FLOOR DEAD, ROOF SNOW AND FLOOR LIVE LOADS.
- THE FINAL FOUNDATION SHAPE AND/OR SIZE SHALL BE DETERMINED BY A CIVIL ENGINEER. MAKE SURE THAT CABLE ENTRANCE AREAS ARE NOT BLOCKED BY FOOTING BELOW.
- EQUIPMENT BRACING DESIGN BY MANUFACTURER.
- FOUNDATION DESIGN, BUILDING ATTACHMENT TO FOUNDATION AND INSTALLATION IS THE RESPONSIBILITY OF OTHERS.
- ALL ITEMS ARE FACTORY INSTALLED EXCEPT EXTERIOR LIGHTS AND HEAT PUMPS WHICH ARE INSTALLED ON SITE AND SUBJECT TO LOCAL INSPECTION AND APPROVAL IF REQUIRED BY GOVERNING LOCAL JURISDICTION.
- ALL SHOWN LOADS ARE ASD LOADS. (IE. 1.0DEAD, 1.0SNOW, 0.7EQ, 0.6WIND)
- OUT OF PLANE LOADS ARE CALCULATED TO USE ONLY THE CONNECTIONS ON ONE SIDE OF THE BUILDING AT A TIME TO RESIST MOVEMENT.



BEARING LINE:



PLAN VIEW



FRONT ELEVATION

01/10/2025



STRUCTURAL ONLY



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CONSULTING
ENGINEERS

Miller Consulting Engineers, Inc.
9600 SW Oak St.
Suite 400
Portland, Oregon
Phone: (503) 246-1250
Fax: (503) 246-1395
Date Modified: 12/19/2024
Modified By: SJD

SHEET CONTENT:
STRUCTURE BASE AND
FOUNDATION LOADING

MCE JOB No.
241678

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DESCRIPTIVE BULLETIN

N/A

SUMMARY
S-24726

PANEL LAYOUT
D-17047

FRONT VIEW
D-17046

SCHEMATIC
DW-16458

DESCRIPTION OF OPERATION
W-5567

CUST. WISCONSIN ELECTRIC POWER

P.O. NO. 4510427457

ENGR. JOHN CARTER

DATE 03/04/24

DRWN. JOHN CARTER

DATE 03/04/24

CHKD. GERRY MARINAKIS

DATE 03/18/24

APPD. GERRY MARINAKIS

DATE 03/18/24

APPD.

DATE

APPD.

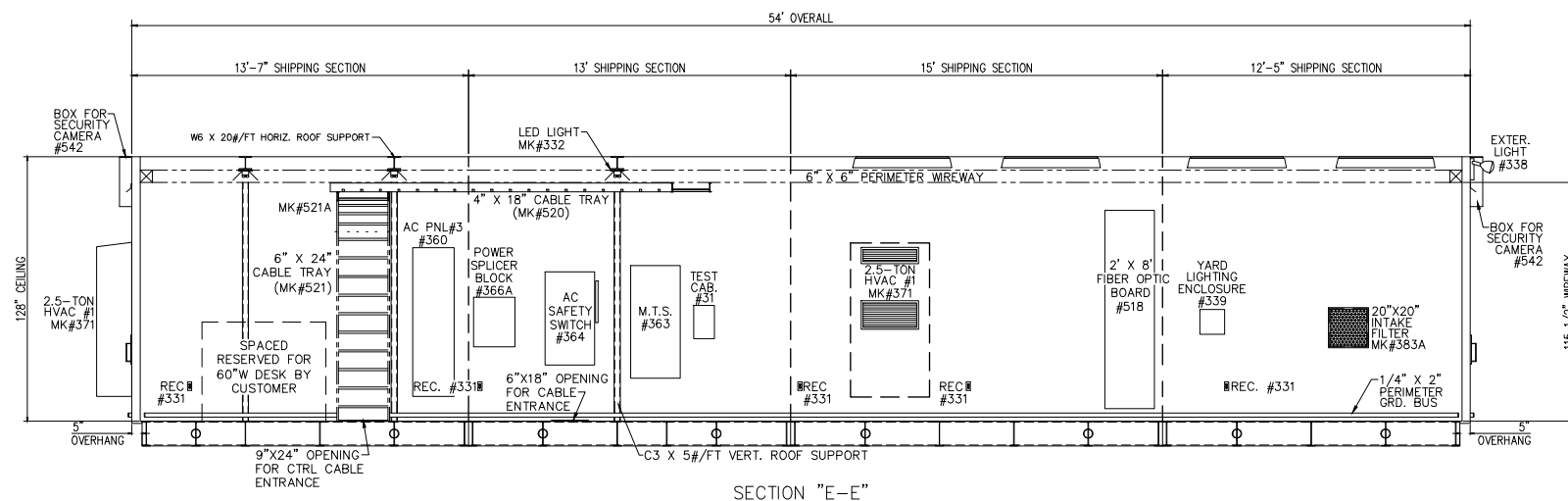
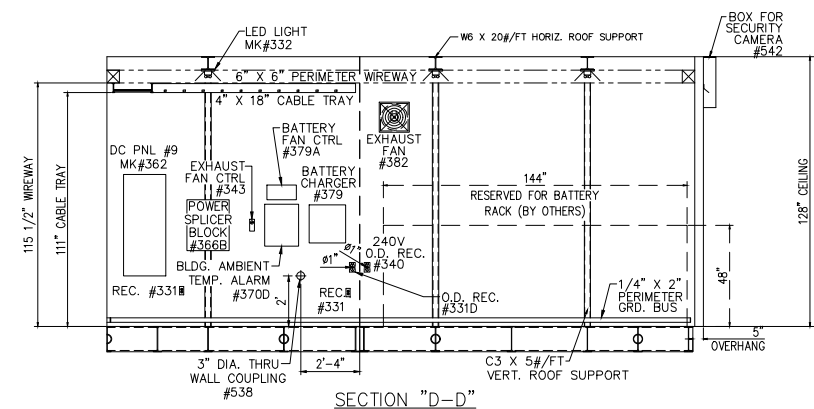
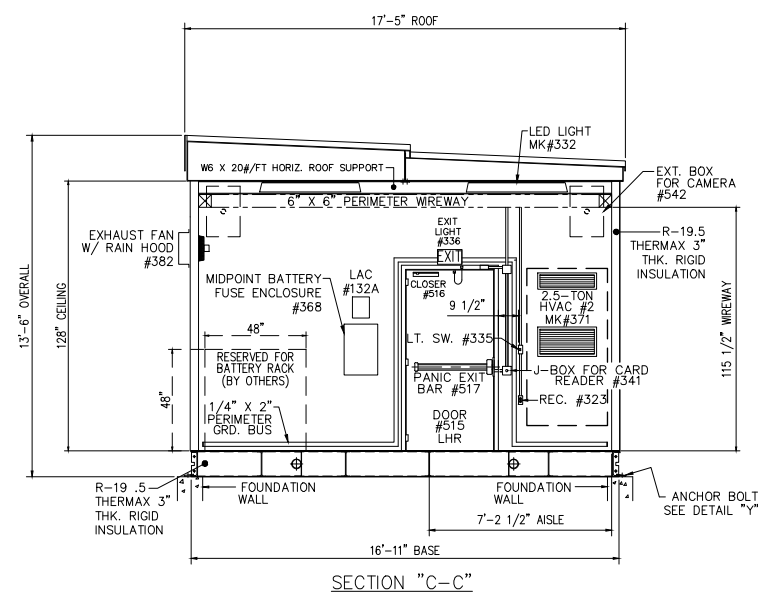
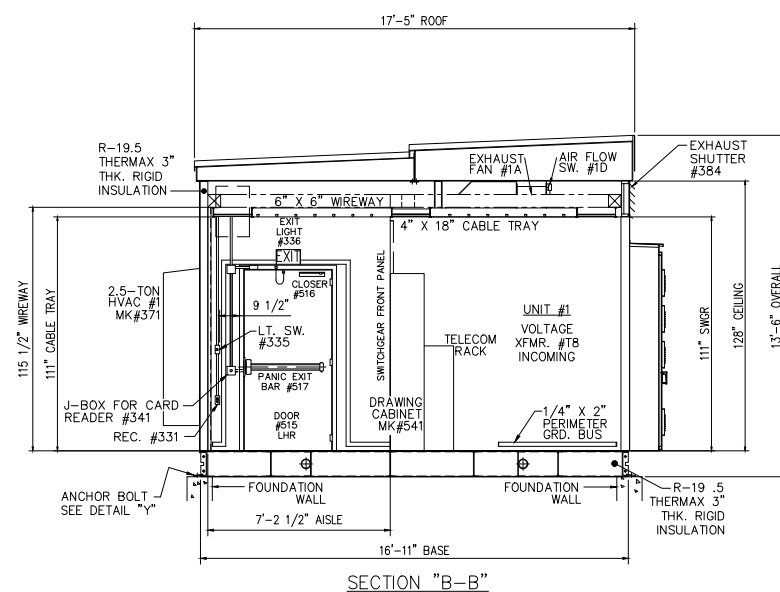
DATE

Powercon Corp
WEB SITE <http://www.powerconcorp.com>

TITLE INDOOR METAL-CLAD SWITCHGEAR
RATED 25KV NOM., 27KV MAX. DESIGN, 2000A
125KV BIL, 3-PHASE, 4-WIRE, 60HZ, 16KA IC CLASS
STATION MILWAUKEE SUBSTATION
LOCATION WAUWATOSA, WI

SO#01-51672 D-17046

REV.
5



01/10/2025



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Suite 400
Portland, Oregon
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Fax: (503) 246-1395
Date Modified: 12/19/2024
Modified By: SJD

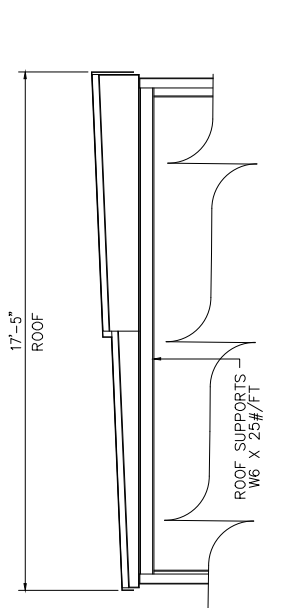
SHEET CONTENT:
SECTIONS

MCE JOB No.
241678

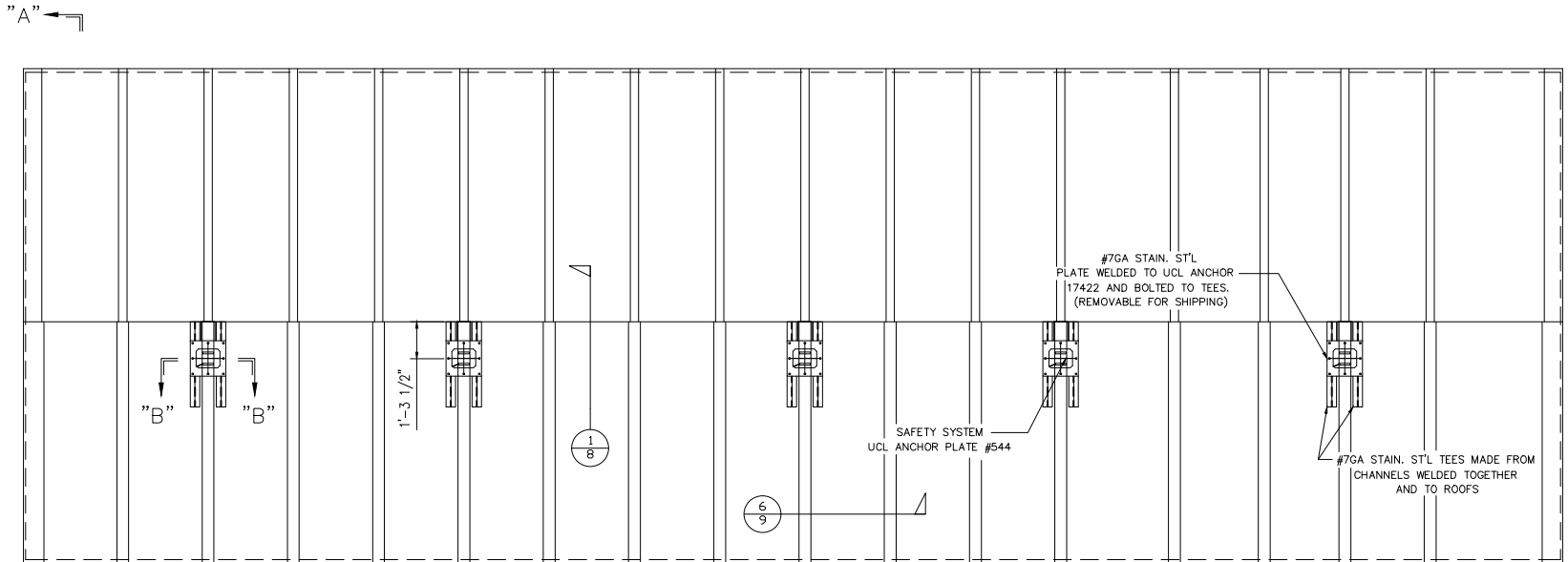
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DESCRIPTIVE BULLETIN N/A		CUST. WISCONSIN ELECTRIC POWER	
SUMMARY S-24726	PANEL LAYOUT D-17047	P.O. NO. 4510427457	
		ENGR. JOHN CARTER	DATE 03/04/24
FRONT VIEW D-17046	NAMEPLATE DWG. NP-17874 NP-17875	DRWN. JOHN CARTER	DATE 03/04/24
		CHKD. GERRY MARINAKIS	DATE 03/18/24
SCHEMATIC DW-16458	WIRING DIAGRAM DW-16459	APPD. GERRY MARINAKIS	DATE 03/18/24
		APPD.	DATE
DESCRIPTION OF OPERATION W-5567		APPD.	DATE

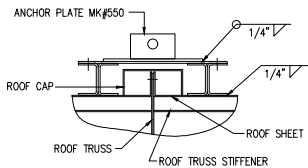
	
WEB SITE http://www.powerconcorp.com	
TITLE	INDOOR METAL-CLAD SWITCHGEAR
	RATED 25KV NOM., 27KV MAX. DESIGN, 2000A,
	125KV BIL, 3-PHASE, 4-WIRE, 60HZ, 16KA IC CLASS
STATION	MILWAUKEE COUNTY SUBSTATION
LOCATION	WAUWATOSA, WI
SO#01-51672	D-17046
	REV. 5



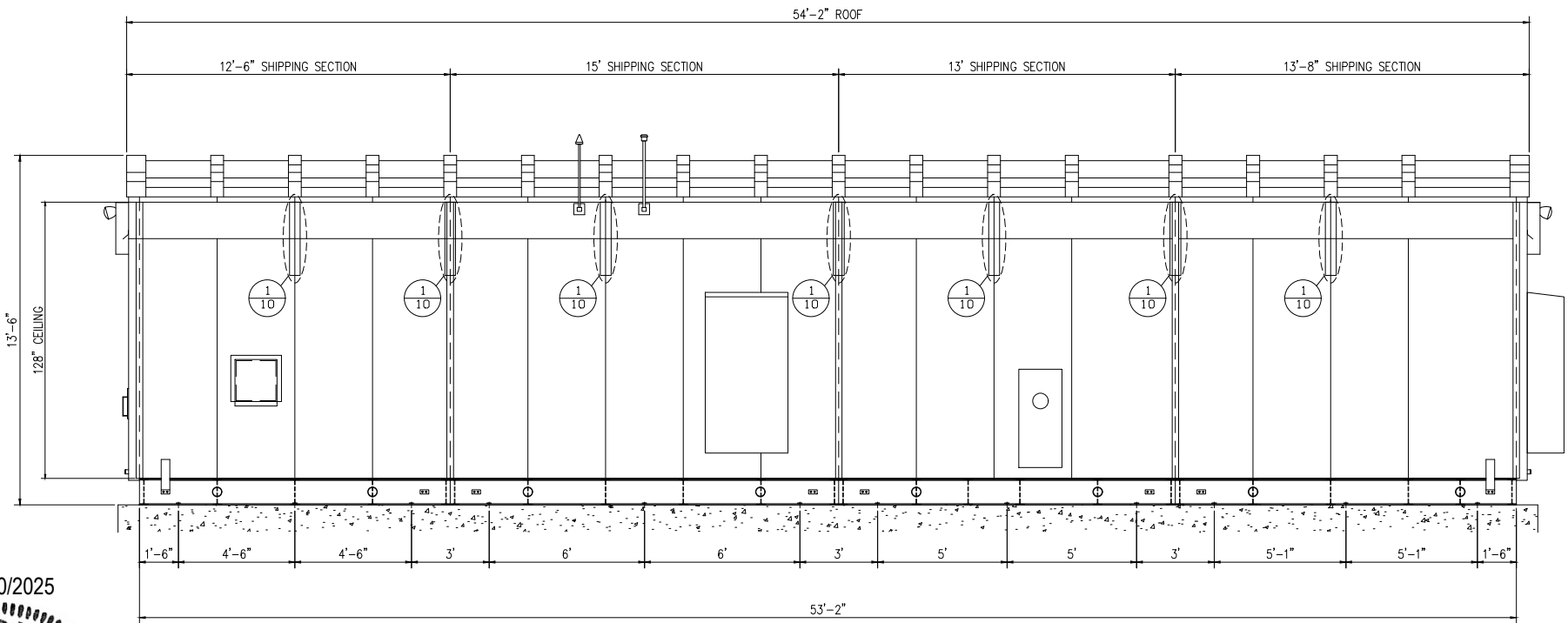
SECTION VIEW "A-A"



"A"



SECTION VIEW "B-B"
NOT TO SCALE



FRONT ELEVATION

01/10/2025



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9600 SW Oak St.
Suite 400
Portland, Oregon
Phone: (503) 246-1250
Fax: (503) 246-1395
Date Modified: 12/19/2024
Modified By: SJD

SHEET CONTENT:
ROOF PLAN

MCE JOB No.
241678

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DESCRIPTIVE BULLETIN

N/A

SUMMARY

S-24726

FRONT VIEW

D-17046

SCHEMATIC

DW-16458

DESCRIPTION OF OPERATION

W-5567

PANEL LAYOUT

D-17047

NAMEPLATE DWG.

NP-17874

WIRING DIAGRAM

DW-16459

CUST. WISCONSIN ELECTRIC POWER

P.O. NO. 4510427457

ENGR. JOHN CARTER

DATE 03/04/24

DRWN. JOHN CARTER

DATE 03/04/24

CHKD. G.D.MARINAKIS

DATE 03/18/24

APPD. G.D.MARINAKIS

DATE 03/18/24

APPD.

DATE

APPD.

DATE

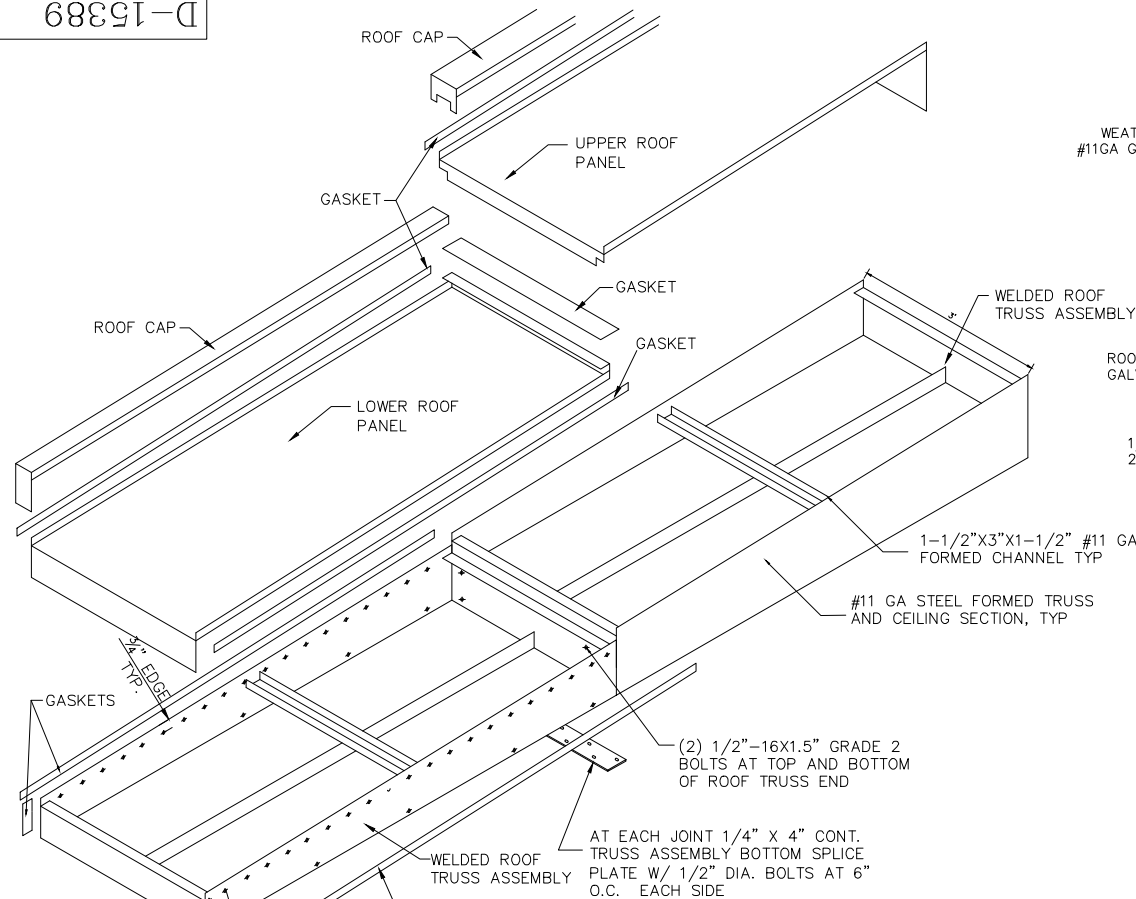


WEB SITE <http://www.powerconcorp.com>

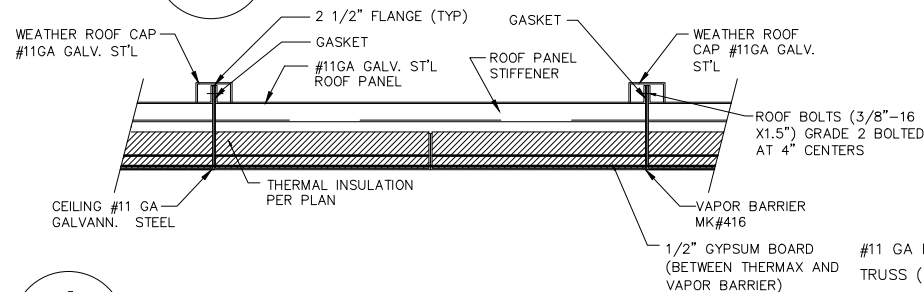
TITLE INDOOR METAL-CLAD SWITCHGEAR
RATED 25KV NOM., 27KV MAX. DESIGN, 2000A
125KV BIL, 3-PHASE, 4-WIRE, 60HZ, 16KA IC CLASS
STATION MILWAUKEE COUNTY SUBSTATION
LOCATION WAUWATOSA, WI

SO#01-51672 D-17046

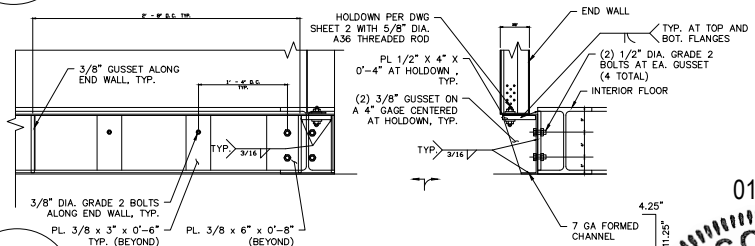
REV.
5



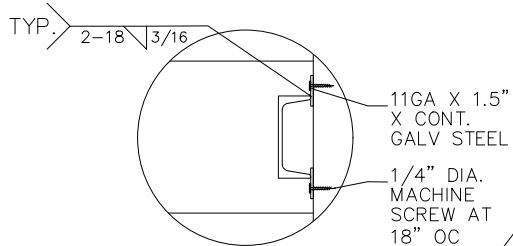
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9 TYPICAL ROOF & TRUSS ASSEMBLY
EXPLODED VIEW



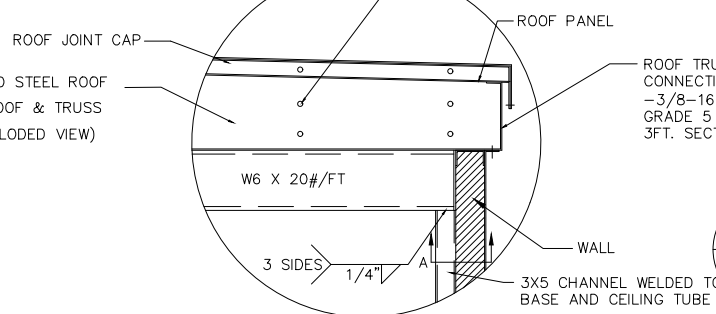
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9 TYPICAL ROOF & TRUSS ASSEMBLY
CROSS SECTION



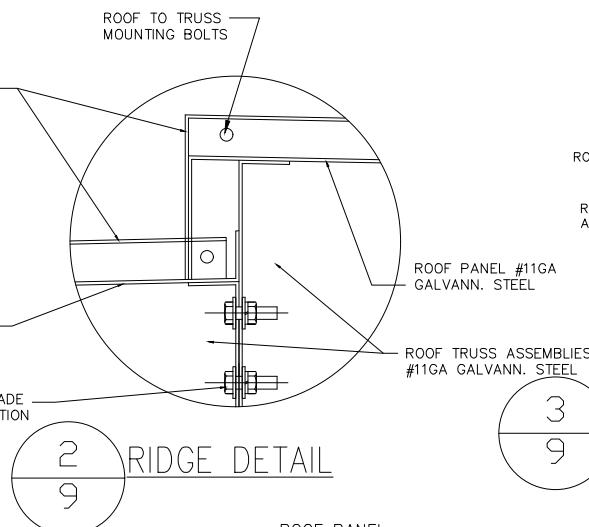
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9 TYPICAL WALL-TO-BASE HOLDOWN DETAIL
AT END WALLS



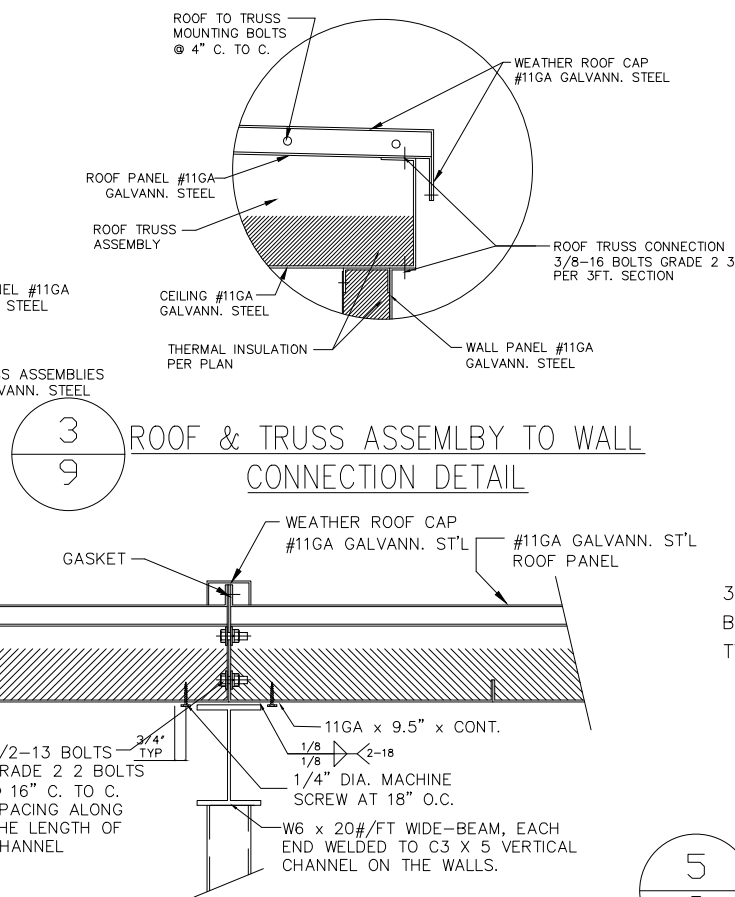
SECTION A



8
9 ROOF & TRUSS STRUCTURAL SUPPORTS
IN CONTROL AREA

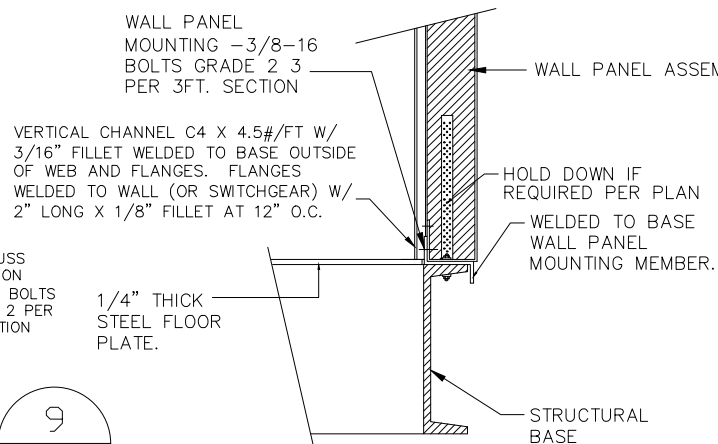


2
9 RIDGE DETAIL

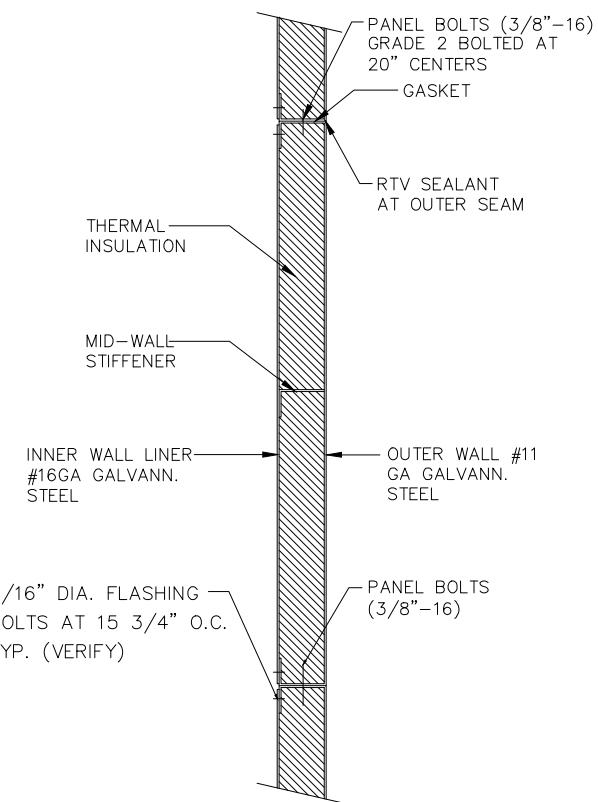


3
9 ROOF & TRUSS ASSEMBLY TO WALL
CONNECTION DETAIL

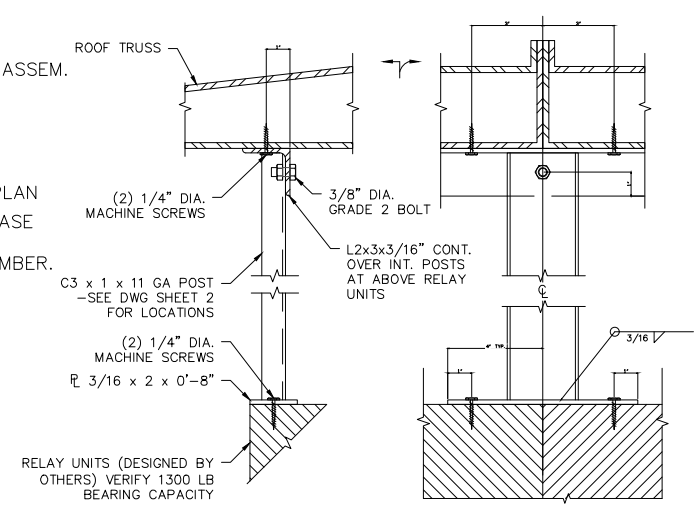
4
9 TYPICAL ROOF & TRUSS ASSEMBLY
CROSS SECTION OF CONTROL AREA



9
9 WALL TO BASE MOUNTING DETAIL



5
9 TYPICAL WALL PLAN SECTION



10
9 INTERIOR POST ABOVE RELAY UNITS
NOT TO SCALE

REVISIONS	DATE	BY	DESCRIPTION	REVISIONS	DATE	BY	DESCRIPTION
1	N/A THIS SHEET 04/11/24 M.A.S.			1	N/A THIS SHEET 04/11/24 M.A.S.		
2	N/A THIS SHEET 04/26/24 J.C.			2	N/A THIS SHEET 04/26/24 J.C.		
3	N/A THIS SHEET 05/23/24 J.C.			3	N/A THIS SHEET 05/23/24 J.C.		
4	RELOCATED METER SOCKET TO EXT. PER 7/1 CUST. REQUEST			4	RELOCATED METER SOCKET TO EXT. PER 7/1 CUST. REQUEST		
5	07/15/24 J.C.			5	07/15/24 J.C.		
	N/A THIS SHEET 09/30/24 M.A.S.				N/A THIS SHEET 09/30/24 M.A.S.		

2025

WISCONSIN

ANDREW R. LEICHTY E-44171-6 PORTLAND OREGON

PROFESSIONAL ENGINEER

01/10/2025

8
9

STRUCTURAL ONLY

MILLER CONSULTING ENGINEERS

Miller Consulting Engineers, Inc.

9600 SW Oak St Suite 400 Portland, Oregon Phone: (503) 246-1250 Fax: (503) 246-1395

Date Modified: 12/19/2024 Modified By: SJD

SHEET CONTENT: CONSTRUCTION DETAILS

MCE JOB No. 241678

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DESCRIPTIVE BULLETIN	
SUMMARY	PANEL LAYOUT
S-24726	D-17047
FRONT VIEW	NAMPLATE DWG.
D-17046	NP-17874
	NP-17875
SCHEMATIC	WIRING DIAGRAM
DW-16458	DW-16459
DESCRIPTION OF OPERATION	
W-5567	

CUST. WISCONSIN ELECTRIC POWER	
P.O. NO. 4510427457	
ENGR. JOHN CARTER	DATE 03/04/24
DRWN. JOHN CARTER	DATE 03/04/24
CHKD. G.D.MARINAKIS	DATE 03/18/24
APPD. G.D.MARINAKIS	DATE 03/18/24
APPD.	DATE
APPD.	DATE

WEB SITE <http://www.powerconcorp.com>

TITLE INDOOR METAL-CLAD SWITCHGEAR

RATED 25KV NOM., 27KV MAX. DESIGN, 2000A

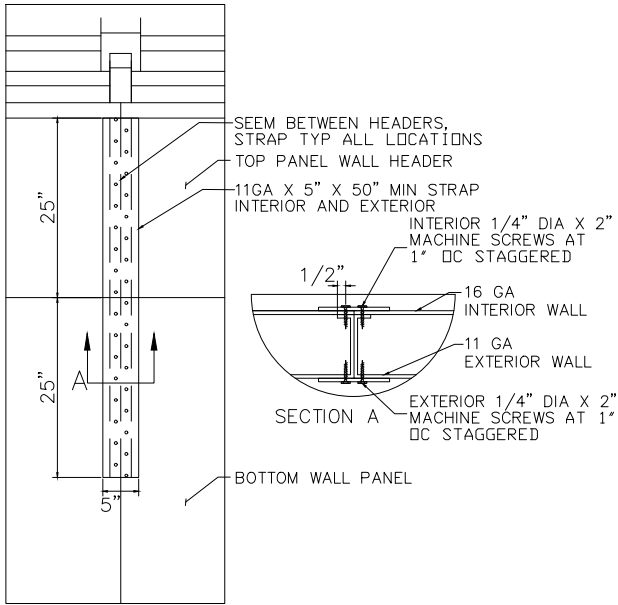
125KV BIL, 3-PHASE, 4-WIRE, 60HZ, 16KA IC CLASS

STATION MILWAUKEE COUNTY SUBSTATION

LOCATION WAUWATOSA, WI

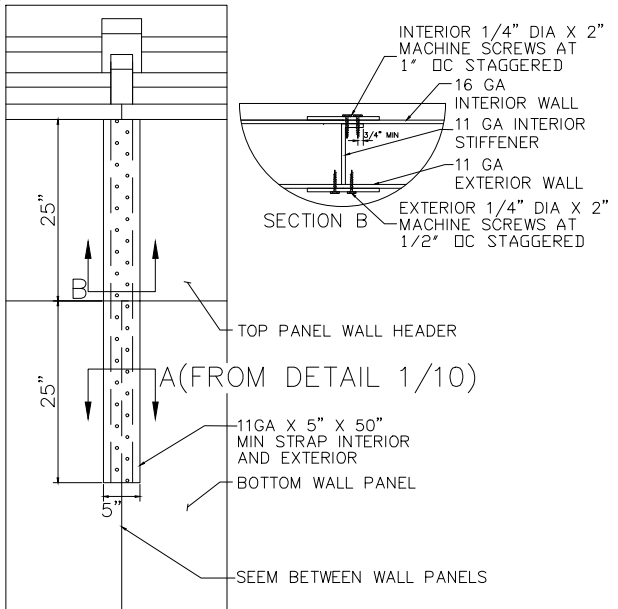
SO#01-51672 D-17046

REV. 5



1
10

PANEL HEADER STRAP



2
10

PANEL HEADER STRAP

01/10/2025



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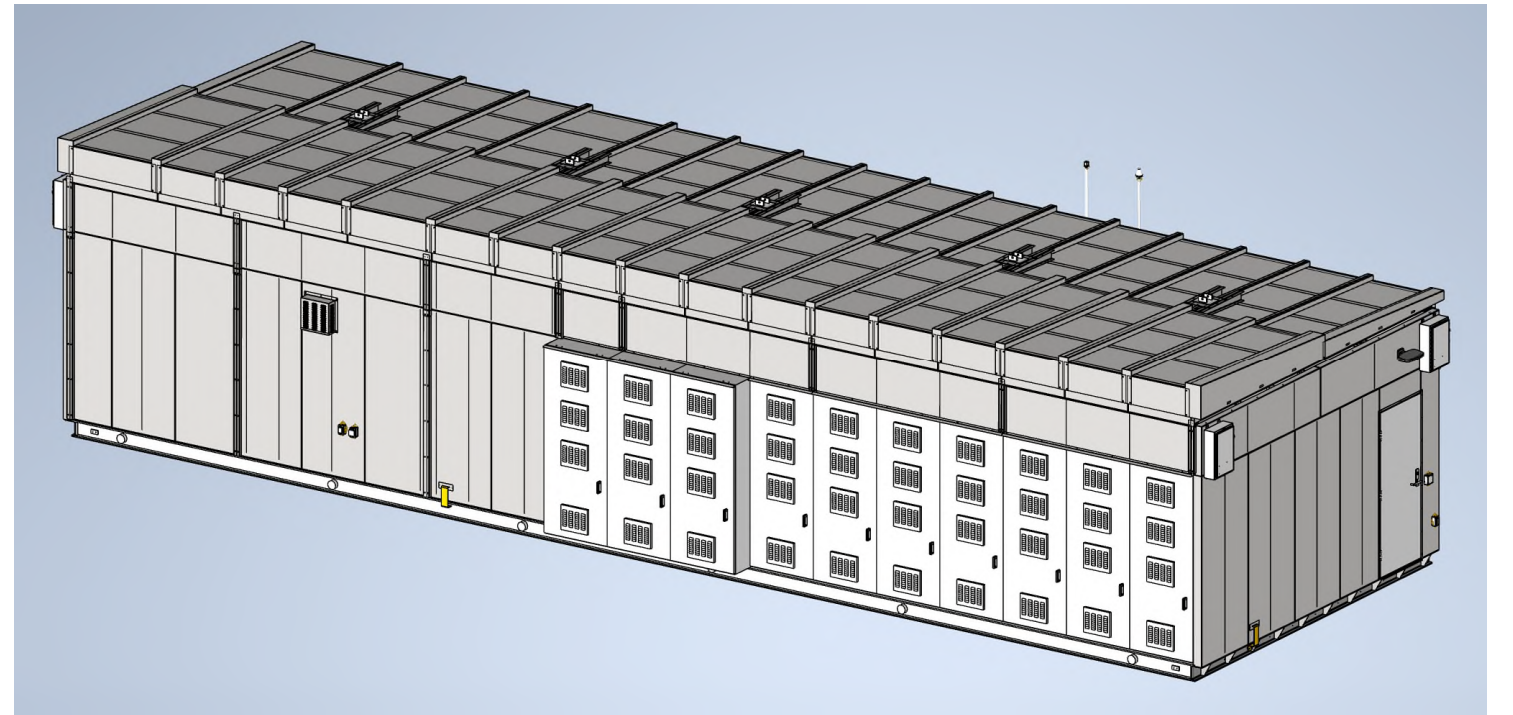
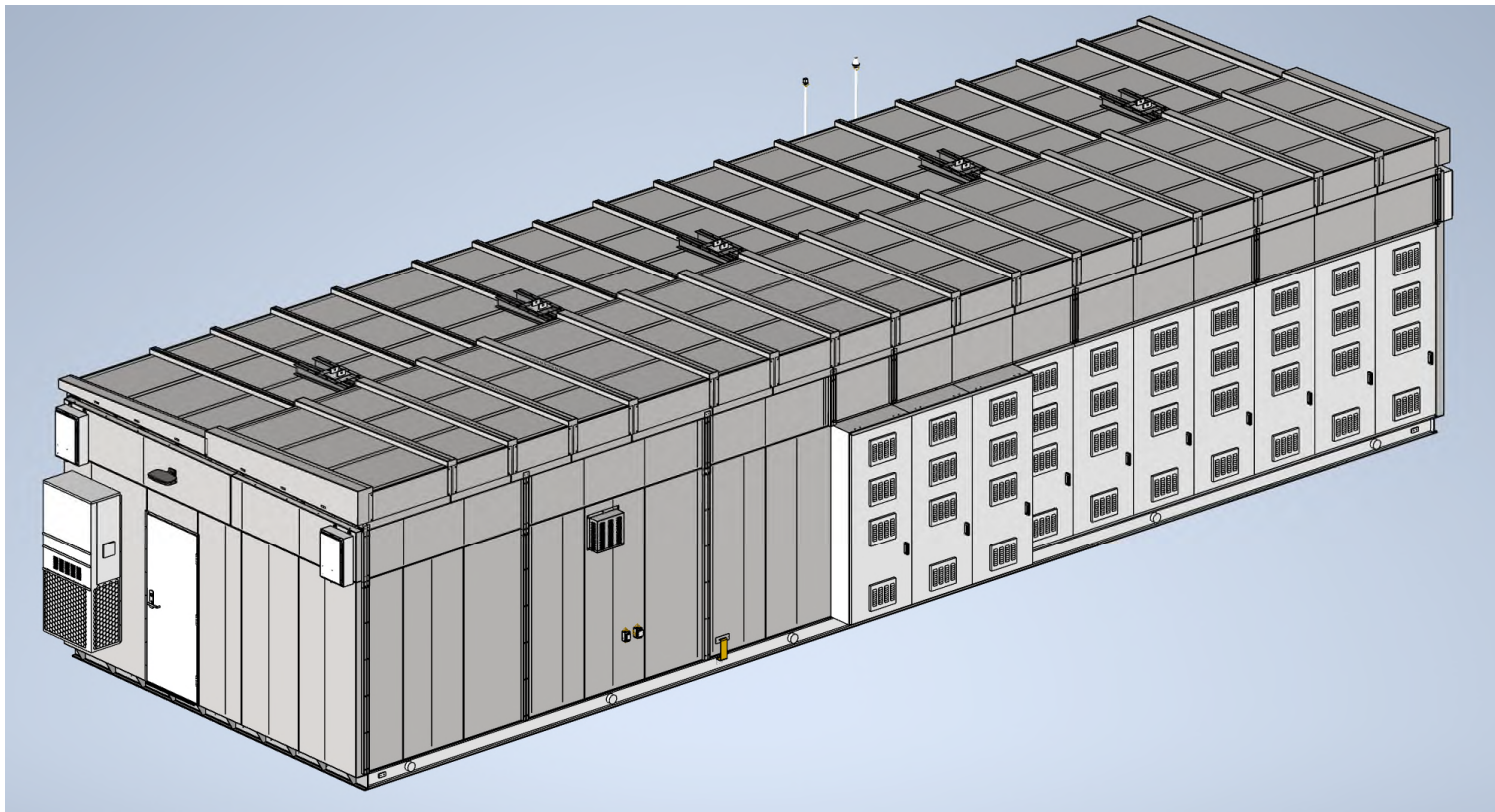
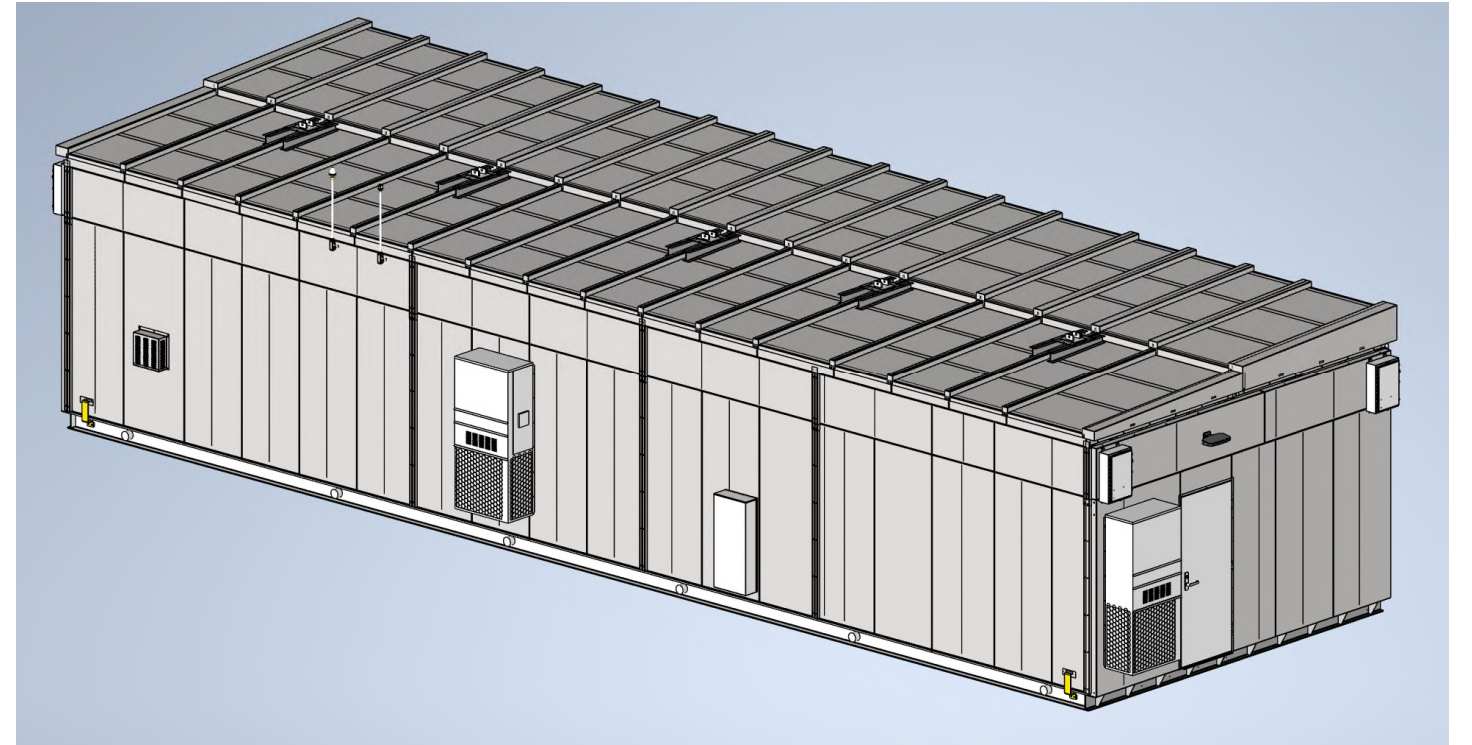
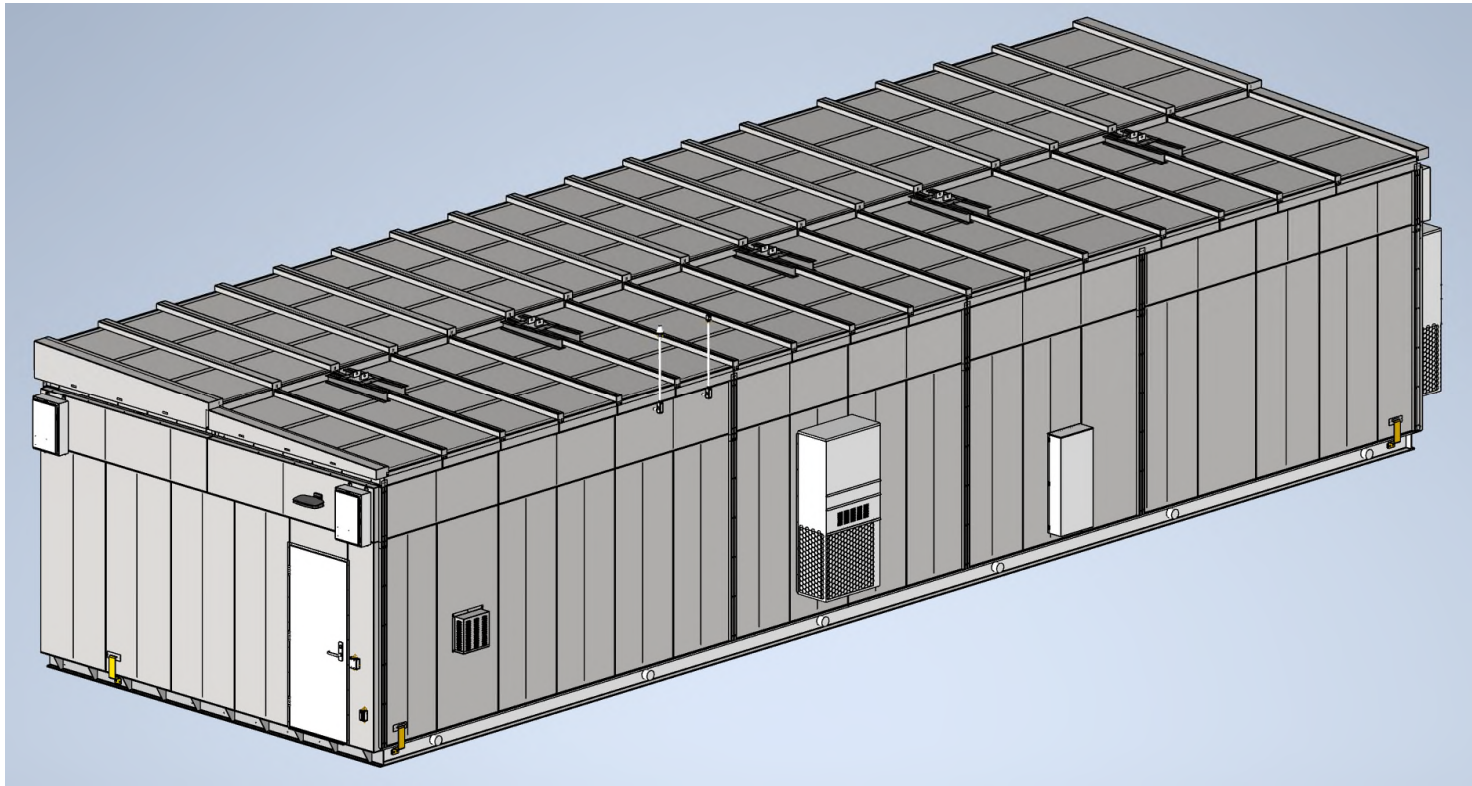
SHEET CONTENT:
CONSTRUCTION DETAILS
MCE JOB No.
241678

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DESCRIPTIVE BULLETIN	
N/A	
SUMMARY	PANEL LAYOUT
S-24726	D-17047
FRONT VIEW	NAMEPLATE DWG.
D-17046	NP-17874
	NP-17875
SCHEMATIC	WIRING DIAGRAM
DW-16458	DW-16459
DESCRIPTION OF OPERATION	
W-5567	

CUST: WISCONSIN ELECTRIC POWER	
P.O. NO. 4510427457	
ENGR. JOHN CARTER	DATE 03/04/24
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APPD. G.D.MARINAKIS	DATE 03/18/24
APPD.	DATE
APPD.	DATE

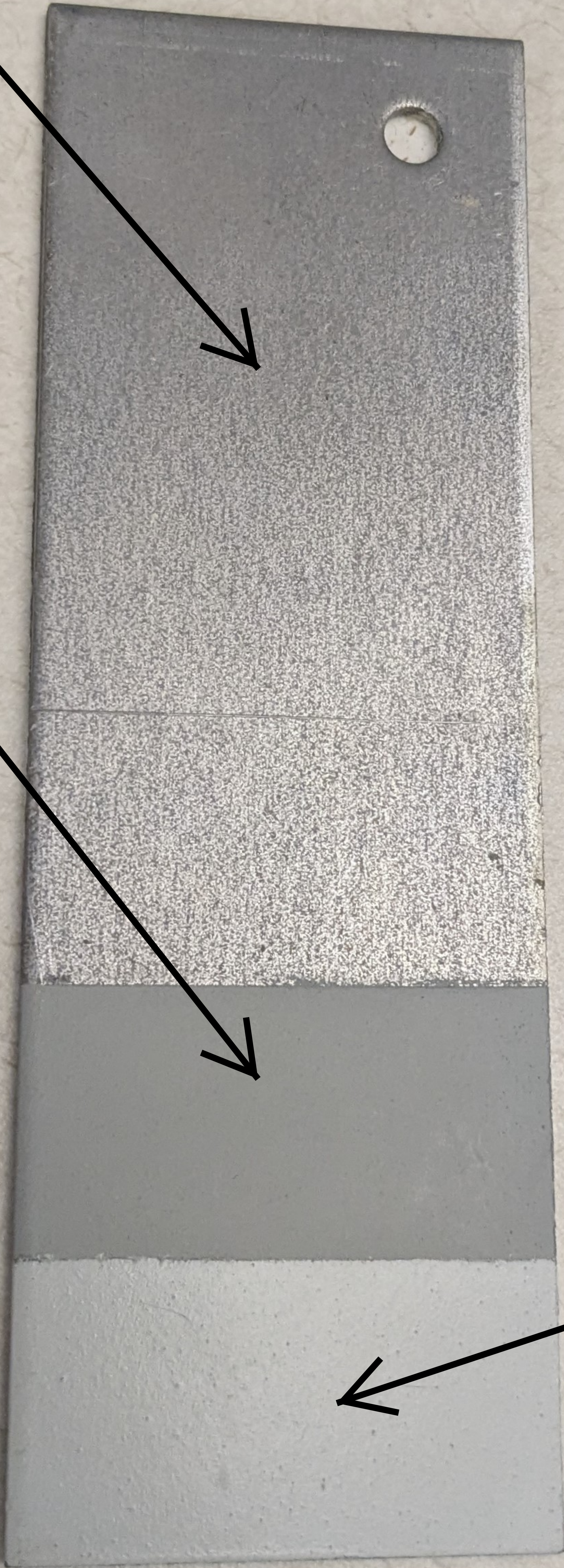
 WEB SITE http://www.powerconcorp.com	
TITLE INDOOR METAL-CLAD SWITCHGEAR	
RATED 25KV NOM., 27KV MAX. DESIGN, 2000A	
125KV BIL, 3-PHASE, 4-WIRE, 60HZ, 16KA IC CLASS	
STATION MILWAUKEE COUNTY SUBSTATION	
LOCATION WAUWATOSA, WI	
SO#01-51672	D-17046
REV.	5



Substrate Material:
11ga Galvannealed Steel
Used for all exterior
panels of the PDC

ANSI 60, darker gray,
interior, used on
switchgear cubicles

ANSI 70 light gray, used on
exterior of enclosure





HOLDOWN SCHEDULE

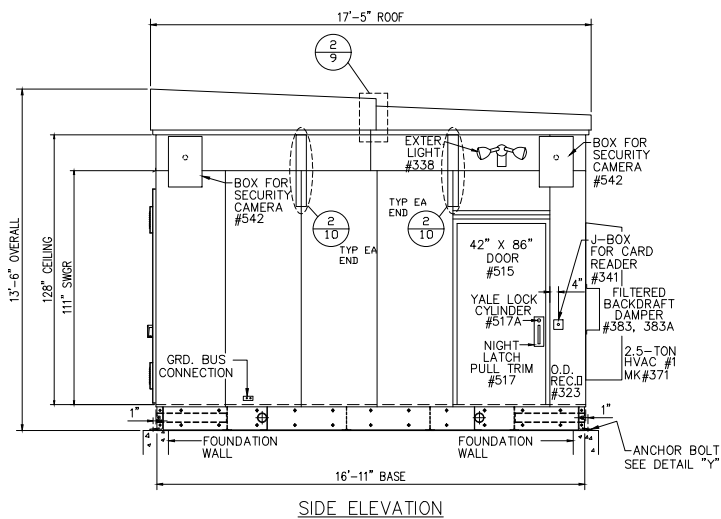
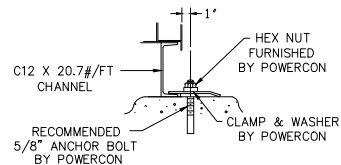
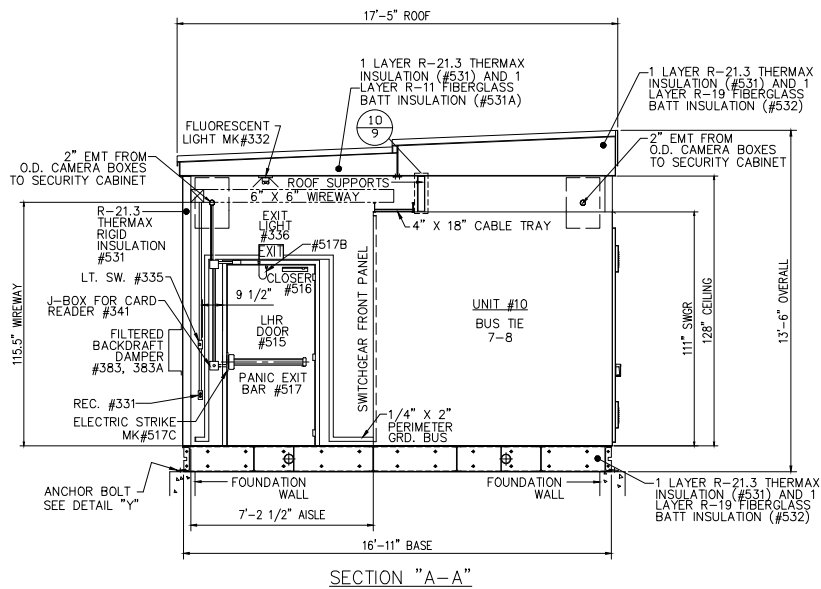


1200 LBS CAPACITY HOLDOWN. SIMPSON S/LT20 TENSION TIE OR EQUIVALENT WITH MIN. (8) #10 X 1 1/2" COARSE SHEET METAL SCREWS (ALLOWABLE STRESS DESIGN) TO CONNECT WALL PANEL END TO STEEL FOUNDATION FOR BOTH VERTICAL UPLIFT TENSION AND COMPRESSION FORCES

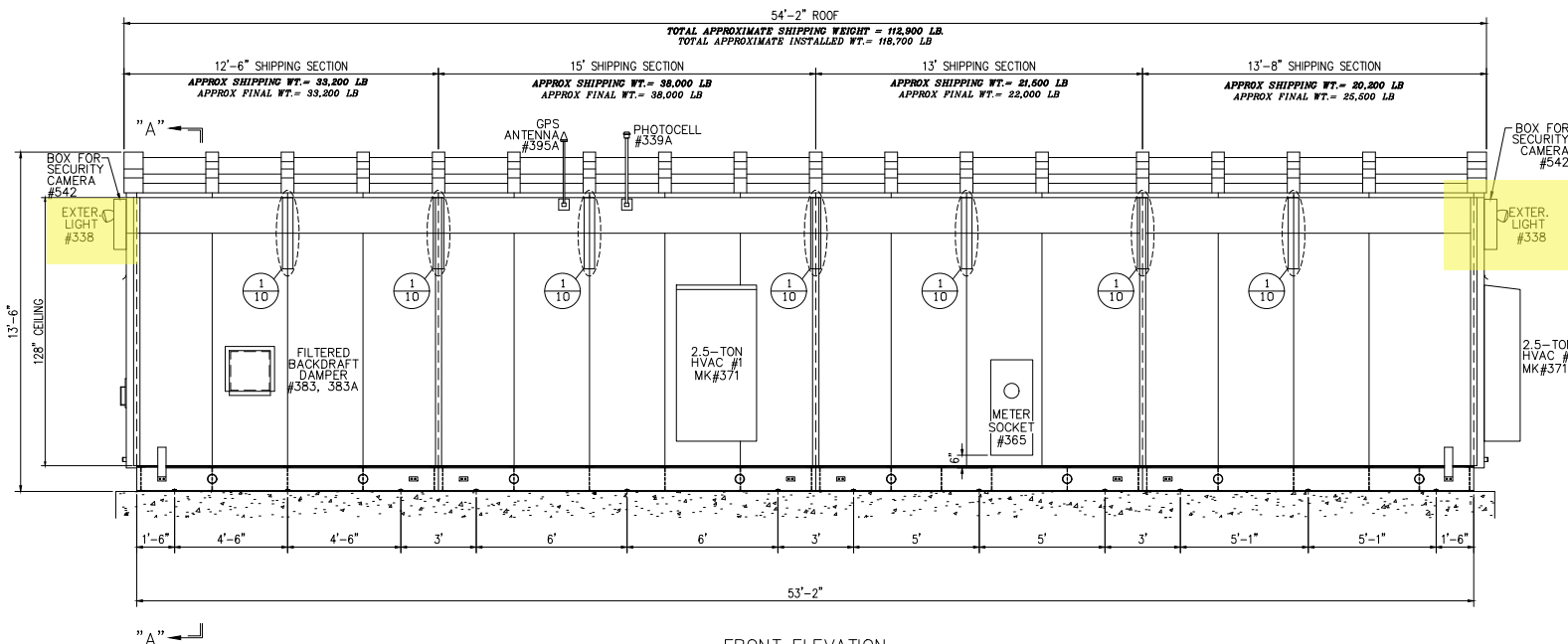
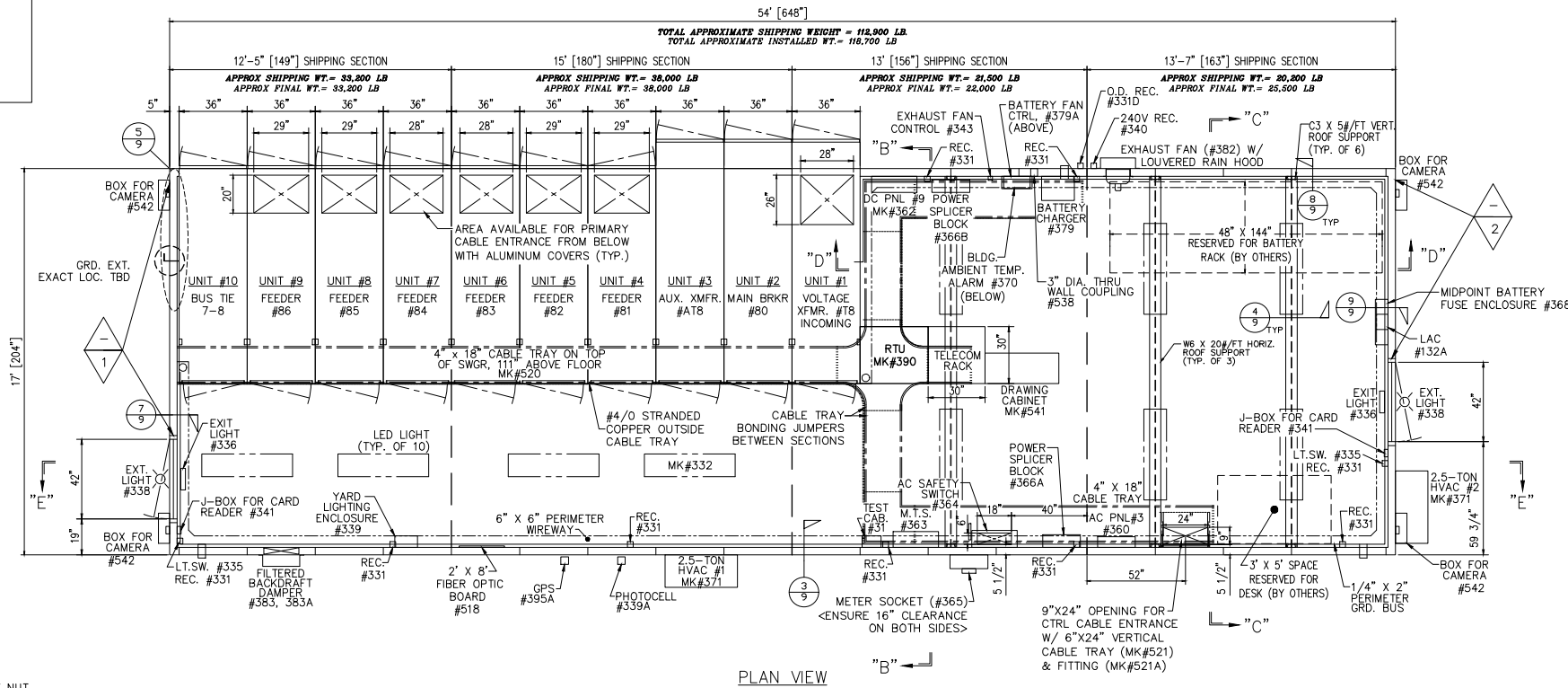
SEE DETAIL ON PG. 9

2775 LBS CAPACITY HOLDOWN. SIMPSON S/HTT14 TENSION TIE OR EQUIVALENT WITH MIN. (16) #10 X 1 1/2" COARSE SHEET METAL SCREWS (ALLOWABLE STRESS DESIGN) TO CONNECT WALL PANEL END TO STEEL FOUNDATION FOR BOTH VERTICAL UPLIFT TENSION AND COMPRESSION FORCES

SEE DETAIL ON PG. 9



DETAIL "Y"
(NOT TO SCALE)



01/10/2025



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CONSULTING
ENGINEERS

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9600 SW Oak St.
Suite 400
Portland, Oregon
Phone: (503) 246-1250
Fax: (503) 246-1395
Date Modified: 12/19/2024
Modified By: SJD

SHEET CONTENT:
OUTLINE, FLOOR PLAN AND
ELEVATIONS

MCE JOB No.
241678

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DESCRIPTIVE BULLETIN

N/A

SUMMARY

S-24726

FRONT VIEW

D-17046

SCHEMATIC

DW-16458

DESCRIPTION OF OPERATION

W-5567

PANEL LAYOUT

D-17047

NAMEPLATE

NP-17874

WIRING DIAGRAM

DW-16459

CUST. WISCONSIN ELECTRIC POWER

P.O. NO. 4510427457

ENGR. JOHN CARTER

DATE 03/04/24

DRWN. JOHN CARTER

DATE 03/04/24

CHKD. GERRY MARINAKIS

DATE 03/18/24

APPD. GERRY MARINAKIS

DATE

Powercon Corp.
WEB SITE <http://www.powerconcorp.com>

TITLE INDOOR METAL-CLAD SWITCHGEAR
RATED 25KV NOM., 27KV MAX. DESIGN, 2000A,
125KV BIL. 3-PHASE, 4-WIRE, 60HZ, 16KA IC CLASS
STATION MILWAUKEE COUNTY SUBSTATION
LOCATION WAUWATOSA, WI

SO#01-51672 D-17046

REV.
5



d^{series}

D-Series Size 1 LED Wall Luminaire



Catalog
Number

Notes

Type

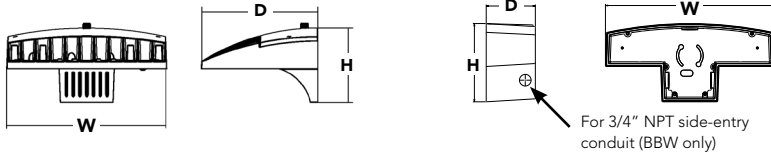
Hit the Tab key or mouse over the page to see all interactive elements.

Specifications Luminaire

Width:	13-3/4" (34.9 cm)	Weight:	12 lbs (5.4 kg)
Depth:	10" (25.4 cm)		
Height:	6-3/8" (16.2 cm)		

Back Box (BBW, E20WC)

Width:	13-3/4" (34.9 cm)	BBW Weight:	5 lbs (2.3 kg)
Depth:	4" (10.2 cm)	E20WC Weight:	10 lbs (4.5 kg)
Height:	6-3/8" (16.2 cm)		



Introduction

The D-Series Wall luminaire is a stylish, fully integrated LED solution for building-mount applications. It features a sleek, modern design and is carefully engineered to provide long-lasting, energy-efficient lighting with a variety of optical and control options for customized performance.

With an expected service life of over 20 years of nighttime use and significant energy savings, the D-Series Wall is a reliable, low-maintenance lighting solution that produces sites that are exceptionally illuminated.

Ordering Information

EXAMPLE: DSXW1 LED P2 40K 70CRI T3M MVOLT SRM DDBTXD

DSXW1 LED							
Series	Lumen Package	CCT	CRI	Distribution	Voltage	Mounting	Control Options
DSXW1 LED	P1 2000 Lumens	27K 2700K	70CRI 70CRI	T2S Type 2 Short	MVOLT	Shipped included	Shipped installed
	P2 2200 Lumens	30K 3000K	80CRI 80CRI ²	T2M Type 2 Medium	120 ⁵	SRM Surface mounting bracket	PE Photoelectric cell, button type ⁸
	P3 3200 Lumens	35K 3500K	AMCRI Amber CRI	T3LG Type 3 Low Glare ⁴	208 ⁵	BBW Surface-mounted back box (for conduit entry) ⁷	DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately)
	P4 4300 Lumens	40K 4000K		T3M Type 3 Medium	240 ⁵		PIR 180° motion/ambient light sensor, <15' mtg ht ⁹
	P5 5200 Lumens	50K 5000K		T4M Type 4 Medium	277 ⁵		PIRH 180° motion/ambient light sensor, 15-30' mtg ht ⁹
	P6 7200 Lumens	57K 5700K		TFTM Forward Throw Medium	347 ^{5,6}		PIR1FC3V Motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc ⁹
	P7 10000 Lumens	AMBP Amber PC ³ AMBLW Amber LW ^{1,3}		BLC3 Back Light Control Type 3 ⁴ BLC4 Back Light Control Type 4 ⁴	480 ^{5,6} HVOLT ⁶		PIR1FC3V Motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc ⁹
							E20WC 20 Watt Emergency battery backup (includes external component enclosure), CA Title 20 Compliant ¹⁰
							E10WH 10 Watt Emergency battery backup (includes external component enclosure), CA Title 20 compliant ¹⁰

Other Options

Finish (required)

Shipped installed

SF	Single fuse (120, 277 or 347V) ^{5,11}
DF	Double fuse (208, 240 or 480V) ^{5,11}
HS	House-side shield ¹²
SPD	Separate surge protection

Shipped separately¹²

BSW	Bird-deterrent spikes
VG	Vandal guard
DDL	Diffused drop lens

DDBXD	Dark bronze	DSSXD	Sandstone
DBLXD	Black	DBTDX	Textured dark bronze
DNAXD	Natural aluminum	DBLBD	Textured black
DWHXD	White	DNATXD	Textured natural aluminum

DWHGXD	Textured white
DSSTXD	Textured sandstone

Accessories

Ordered and shipped separately.

DSXWHS U	House-side shield (one per light engine)
DSXWBSW U	Bird-deterrent spikes
DSXW1VG U	Vandal guard accessory

NOTES

- 1 Only available with P1 and P6 Packages.
- 2 Not available with 57K.
- 3 Only Available with AMCRI.
- 4 Not available with HS Option.
- 5 Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
- 6 Not available with P1 package. Not available with motion/ambient light sensors (PIR or PIRH). Not Available with DMG.
- 7 Back box ships installed on fixture. Cannot be field installed. Cannot be ordered as an accessory. Not Available with E20WC or E10WH.

- 8 Photocontrol (PE) requires 120, 208, 240, 277 or 347 voltage option. Not available with motion/ambient light sensors (PIR or PIRH).
- 9 Reference Motion Sensor table on page 3. Not available with DMG.
- 10 Not compatible with conduit entry applications. Not available with BBW mounting option. Not available with SF and DF fusing. Not available with 347, 480, HVOLT voltage options. Emergency components located in back box housing. Not available with SPD.
- 11 Not available with E20WC and E10WH.
- 12 Also available as a separate accessory; see Accessories information.



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DSXW1-LED
Rev. 12/12/24

Performance Data

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.04
10°C	50°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.98

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **DSXW1 LED P7** platform in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.95	0.91	0.82

Electrical Load

Performance Package	LEDs	Drive Current (mA)	System Watts	Current (A)					
				120V	208V	240V	277V	347V	480V
DSXW1 P1	10	375	12	0.10	0.06	0.05	0.04	-	-
DSXW1 P2	10	450	15	0.12	0.07	0.06	0.05	0.04	0.03
DSXW1 P3	10	650	21	0.18	0.10	0.09	0.08	0.06	0.05
DSXW1 P4	10	875	29	0.24	0.14	0.12	0.10	0.08	0.06
DSXW1 P5	10	1125	37	0.30	0.18	0.16	0.14	0.11	0.08
DSXW1 P6	20	750	48	0.39	0.24	0.20	0.18	0.14	0.10
DSXW1 P7	20	1150	73	0.60	0.36	0.31	0.27	0.21	0.15

Motion Sensor Default Settings

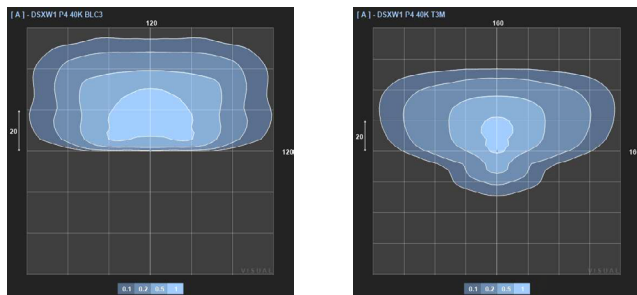
Option	Dimmed State	High Level (when triggered)	Photocell Operation	Dwell Time	Ramp-up Time	Ramp-down Time
PIR or PIRH	3V (37%) Output	10V (100%) Output	Enabled @ 5FC	5 min	3 sec	5 min
*PIR1FC3V or PIRH1FC3V	3V (37%) Output	10V (100%) Output	Enabled @ 1FC	5 min	3 sec	5 min

*For use when motion sensor is used as dusk to dawn control

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [D-Series Wall Size 1 homepage](#).

Isofootcandle plots for the DSXW1 LED P4 40K. Distances are in units of mounting height (20').



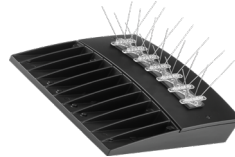
Options and Accessories



T3M (left)



HS - House-side shields



BSW - Bird-deterrent spikes



VG - Vandal guard



DDL - Diffused drop lens

FEATURES & SPECIFICATIONS

INTENDED USE

The energy savings, long life and easy-to-install design of the D-Series Wall Size 1 make it the smart choice for building-mounted doorway and pathway illumination for nearly any facility.

CONSTRUCTION

Two-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance. The LED driver is mounted to the door to thermally isolate it from the light engines for low operating temperature and long life. IP66 rated light engine.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in textured and non-textured finishes.

OPTICS

Precision-molded proprietary acrylic lenses provide multiple photometric distributions tailored specifically to building mounted applications. Light engines are available in multiple CCTs and CRIs including Amber for specialized applications.

ELECTRICAL

Light engine(s) consist of 10 high-efficacy LEDs mounted to a metal-core circuit board to maximize heat dissipation and promote long life (L80/100,000 hrs at 25°C). Class 1 electronic drivers have a power factor >90%, THD <20%, and a minimum 6KV surge rating. When ordering the SPD option, a separate surge protection device is installed within the luminaire which meets a minimum Category C Low (per ANSI/IEEE C62.41.2).

INSTALLATION

Included universal mounting bracket attaches securely to any 4" round or square outlet box for quick and easy installation. Luminaire has a slotted gasket wireway and attaches to the mounting bracket via corrosion-resistant screws.

LISTINGS

CSA certified to U.S. and Canadian standards. Rated for -40°C minimum ambient.

GOVERNMENT PROCUREMENT

BAA – Buy America(n) Act: Product qualifies as a domestic end product under the Buy American Act as implemented in the FAR and DFARS. Product also qualifies as manufactured in the United States under DOT Buy America regulations.

BABA – Build America Buy America: Product qualifies as produced in the United States under the definitions of the Build America, Buy America Act.

Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY

Five-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.



COMMERCIAL OUTDOOR

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