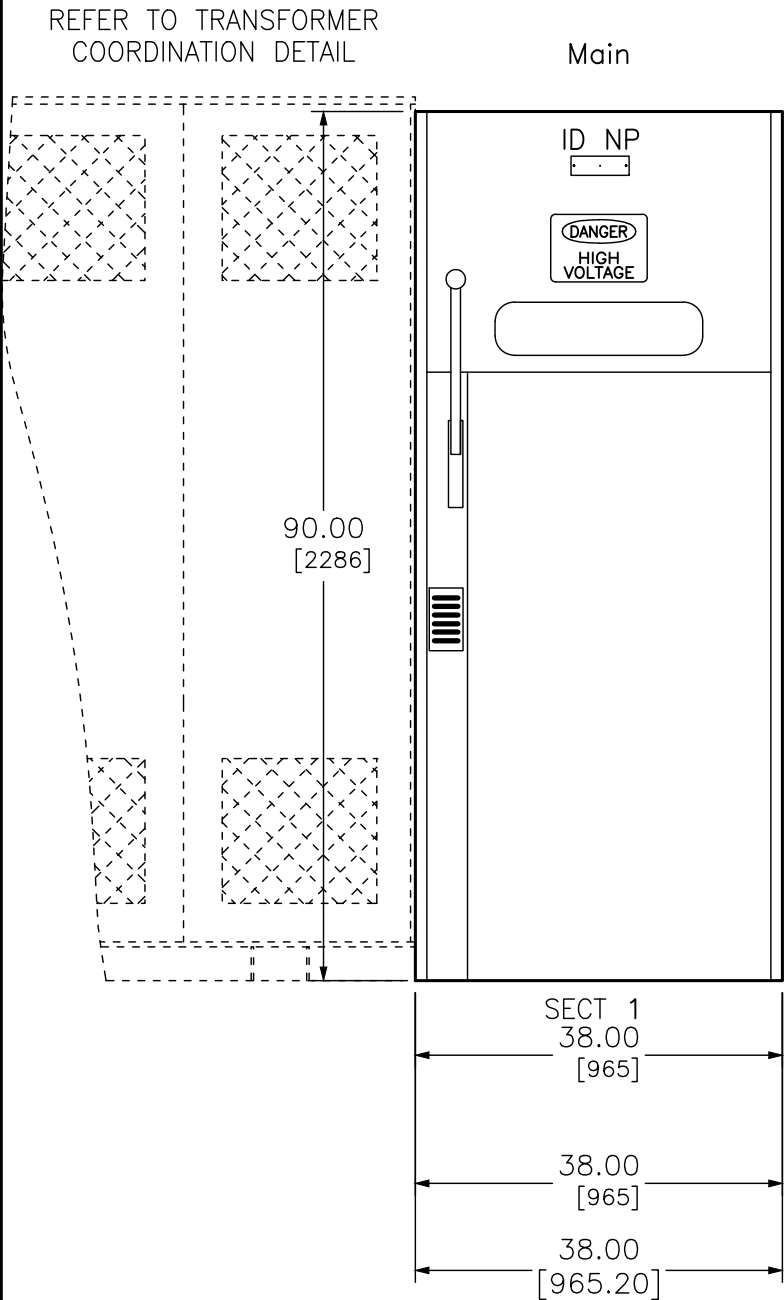


Item No.	Qty.	Catalog Number / Details
<u>METAL-ENCLOSED SWITCHGEAR</u>		
060-00	1	Designation: US-1 Metal Enclosed Switchgear METAL ENCLOSED SWITCHGEAR > 1000 VOLTS ----- GENERAL PRODUCT INFORMATION THIS METAL-ENCLOSED SWITCHGEAR SHALL BE DEPICTED IN THE ATTACHED DRAWINGS AND SHALL INCLUDE THE FOLLOWING: ----- PRODUCT TYPE: HVL 1 SECTION LINE-UP Enclosure Type: Type 1 1 - SET OF CERTIFIED TEST REPORTS INCLUDED WITH FINAL DRAWINGS. OVERALL DIMENSIONS: 38.00 IN 965.20 mm WIDE See Attached Drawings for Lineup Height 54.50 IN 1384mm DEEP APPROXIMATE WEIGHT: 1300.00 LBS. 589.68 kg. SWITCHGEAR RATINGS ----- NOMINAL SYSTEM VOLTAGE: 4160V SWITCHGEAR MAXIMUM VOLTAGE RATING: 5kV MAIN BUS: 600A SILVER-PLATED COPPER GROUND BUS: SILVER-PLATED COPPER BIL : 60 KV SWITCHGEAR MAXIMUM AVAIL FAULT CURRENT: 25ka INTEGRATED SHORT CIRCUIT CURRENT RATINGS FOR SWITCHES WITH FUSES: ----- THE INTEGRATED SHORT CIRCUIT CURRENT RATINGS FOR SWITCHES WITH FUSES CAN BE FOUND IN THE INTEGRATED RATINGS TABLES. REFER TO THE CATALOG SECTIONS FOR EACH PRODUCT LINE. NON-FUSED SWITCH RATINGS ----- MOMENTARY CURRENT: 40 kA Asym (25 kA Sym) (STD) FAULT CLOSE CURRENT: 40 kA Asym (25.0 kA Sym) (STD) 2 SEC SHORT TIME CURRENT: 25.0 kA Sym (40 kA Asym) (STD) SPECIFIC APPLICATION INFORMATION ----- SYSTEM GROUNDING: 3 Wire 3 Phase Wye Solidly Grounded FREQUENCY: 60Hz MAX AVAILABLE SHORT CKT CURRENT: 25ka (RMS) FRONT AND REAR ACCESS REAR ACCESS IS REQUIRED FOR THIS EQUIPMENT! AMBIENT AIR TEMP: > -30C, <40 DEG C

Item No.	Qty.	Catalog Number / Details
		STANDARD & OPTIONAL ITEMS COMMON TO LINEUP ----- EXTERIOR PAINT COLOR: ANSI 61 LIGHT GREY INSULATORS : GLASS POLYESTER Lineup Plastic Nameplate White Surface/Black Letters STANDARD ENCLOSURE HARDWARE APPLIES TO CATEGORY B APPLICATIONS WHERE THE GENERAL PUBLIC WILL NOT HAVE ACCESS TO THE SWITCHGEAR PADLOCK PROVISIONS FOR UP TO 3 LOCKS LABEL REQUIREMENTS : UL STANDARDS: ANSI Seismic Qualified ----- SPECIAL FEATURES OR TAG ITEMS (PER LINE-UP) ----- IF SPECIAL FEATURES ARE LISTED BELOW IN THIS BILL OF MATERIAL, THEY WILL NOT APPEAR ON THE FRONT ELEV OR ONE-LINE DRAWING AND MAY ALTER THE FINAL LAYOUT AND DIMENSIONS. ----- Section 1 Main 38W, Unit 1, - 1 - 3 PHASE SET OF AL/CU LINESIDE COMPRESSION LUGS BOTTOM CABLE ENTRY 1 - 5.0KV, 600A, 25KA HVL SWITCH Type 1 SINGLE 600A CONTINUOUS & INTERRUPTING CURRENT 1 - SWITCH POSTION AUXILIARY CONTACTS 2NO-2NC 1 - REAR CONNECTOR ASSEMBLY 3 - SQUARE D CURRENT LIMITING 5.5 KV 200E FUSES 1 - CABLE PRIMARY CONNECTION TO POWER-DRY TRANSFORMER ON THE Left PLEASE NOTE: ALL TRANSFORMER CONNECTION QUOTATIONS ARE BASED ON AIR COOLED KVA RATINGS. FORCED AIR RATINGS ARE NOT IN THE PRODUCT SELECTOR. FORCED AIR RATINGS MAY REQUIRE DIFFERENT FUSE/ENCLOSURE. CONTACT MVQG OR ORDER ENGINEERING FOR ADDITIONAL INFORMATION.

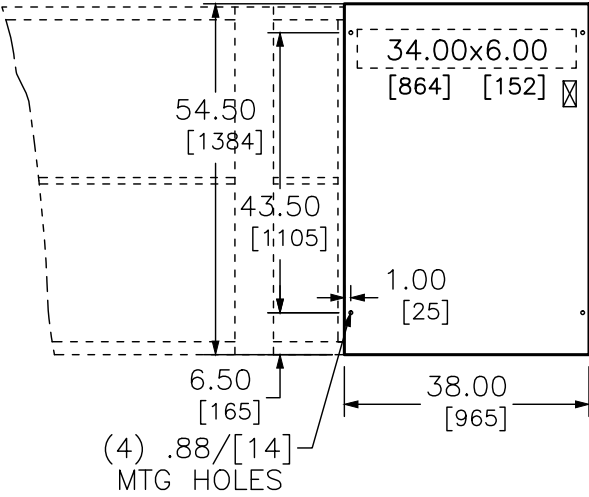
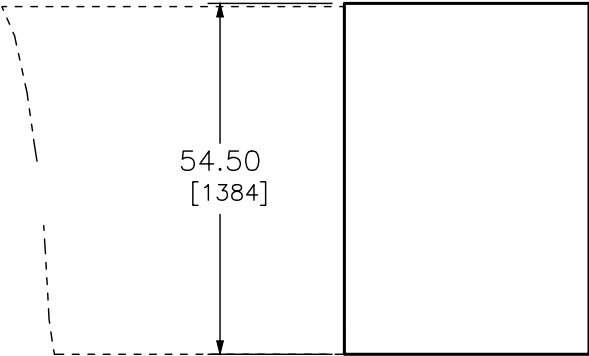
REV	DESCRIPTION	BY	DATE										
-	----	--	--/--/--	-	----	--	--/--/--	-	----	--	--/--/--	-	----



DUAL DIMENSIONS: INCHES
MILLIMETERS

JOB NAME:	WEBSTER UNIVERSITY ISB	EQUIPMENT DESIGNATION:	US-1
JOB LOCATION:	WEBSTER GROVES MO	EQUIPMENT TYPE:	METAL ENCLOSED SWITCHGEAR
DRAWN BY:	(Q2C)	DRAWING TYPE:	ELEVATION
ENGR:			
DATE:	June 13 2016		
DRAWING STATUS:	QUOTE		
DWG# F37999262-01		PG 1 OF 1	REV -

REV	DESCRIPTION	BY	DATE										
-	----	--	--/--/--	-	----	--	--/--/--	-	----	--	--/--/--	-	----



DUAL DIMENSIONS: INCHES
MILLIMETERS

JOB NAME:	WEBSTER UNIVERSITY ISB	EQUIPMENT DESIGNATION:	US-1
JOB LOCATION:	WEBSTER GROVES MO	EQUIPMENT TYPE:	METAL ENCLOSED SWITCHGEAR
DRAWN BY:	(Q2C)	DRAWING TYPE:	TOP VIEW/FLOOR PLAN
ENGR:			
DATE:	June 13 2016		
DRAWING STATUS:	QUOTE		
DWG# F37999262-02		PG 1	OF 1
		REV	-

REV	DESCRIPTION	BY	DATE	-	----	--	--/--/--	-	----	--	--/--/--
-	----	--	--/--/--	-	----	--	--/--/--	-	----	--	--/--/--

GENERAL NOTES:

PRODUCT DESCRIPTION AND RATINGS:

- POWER SYSTEM DATA:**
4160 VOLTS, 3 PHASE, 3 WIRE WYE SOLIDLY GROUNDED
5.0 kV MAXIMUM VOLTAGE RATING
60 kV BIL, 60 HERTZ FREQUENCY
CONTROL POWER NOT REQUIRED
- BUS SYSTEM DATA:**
600A COPPER, SILVER PLATED MAIN BUS
GLASS POLYESTER BUS SUPPORTS
SILVER PLATED COPPER GROUND BUS
40 kA Asym (25 kA Sym) MAIN BUS BRACING
- ENCLOSURE DATA:**
TYPE 1 INDOOR CONSTRUCTION
CATEGORY "B" ENCLOSURE
ANSI #61 FINISH
FRONT AND REAR ACCESS IS AVAILABLE
PADLOCK PROVISIONS
- HANDLING:**
SWITCHGEAR SECTIONS ARE FURNISHED WITH LIFTING ANGLES AND ARE SHIPPED ON SKIDS.
ROLLERS OR FORKLIFT SHALL ONLY BE USED WITH SKID IN PLACE.
LINEUP WEIGHT 1300.00 LBS/589.68 KG
Shipping Split – 1, 1300.00 LBS/589.68 KG
- CODE STANDARDS:**
THIS EQUIPMENT BEARS THE UL LISTING MARK FOR THE UNITED STATES.

PRODUCT INFORMATION:

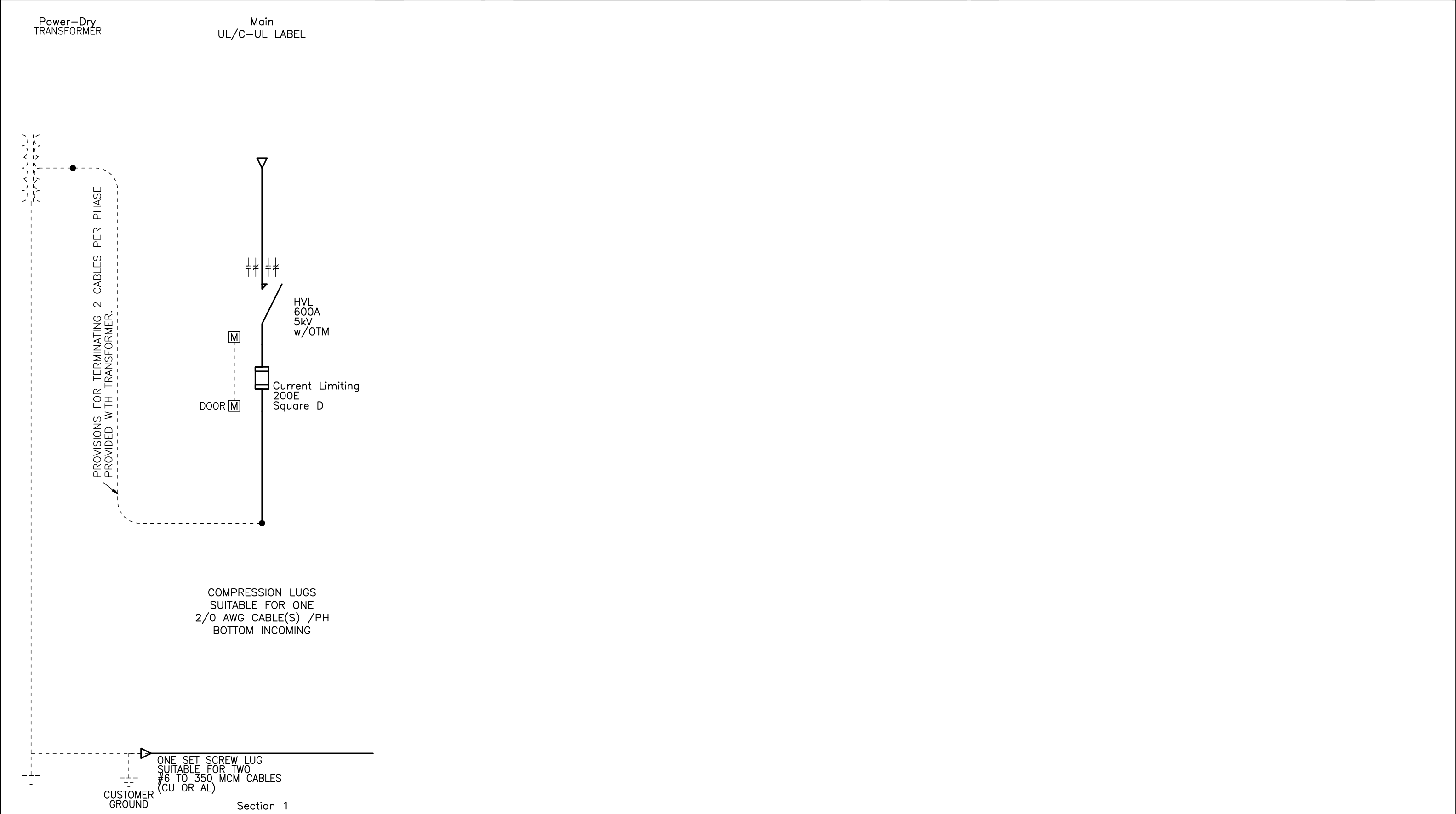
- #12 AWG, TYPE SIS CURRENT CIRCUIT WIRING
- AIR COOLED TRANSFORMER CLARIFICATION:**
PLEASE NOTE: ALL TRANSFORMER CONNECTION QUOTATIONS ARE BASED ON "AIR COOLED" KVA RATINGS. "FORCED AIR" RATINGS ARE NOT IN THE PRODUCT SELECTOR. "FORCED AIR" RATINGS MAY REQUIRE DIFFERENT FUSE/ENCLOSURE.
CONTACT MVQG OR ORDER ENGINEERING FOR ADDITIONAL INFORMATION.
- INSTRUCTION BULLETIN:**
MANUAL HVL INST. MANUAL

OPTIONS/ACCESSORIES:

- LIST OF MISC. ACCESSORIES:**
1 SET OF CERTIFIED TEST REPORTS
2a/2b AUXILIARY CONTACTS WIRED OUT TO CUSTOMER TERMINAL BLOCK IN Section 1
- LIST OF MISC. STRUCTURE OPTIONS:**
SEISMIC QUALIFIED.
- LIST OF MISC. GENERAL OPTIONS:**

JOB NAME:	WEBSTER UNIVERSITY ISB	EQUIPMENT DESIGNATION:	US-1
JOB LOCATION:	WEBSTER GROVES MO	EQUIPMENT TYPE:	METAL ENCLOSED SWITCHGEAR
DRAWN BY:	(Q2C)	DRAWING TYPE:	GENERAL NOTES
ENGR:	COMPANET		
DATE:	June 13 2016	Schneider Electric	
DRAWING STATUS:	QUOTE	DWG# F37999262-03	PG 1 OF 1 REV -

REV	DESCRIPTION	BY	DATE										
-	----	--	--/--/--	-	----	--	--/--/--	-	----	--	--/--/--	-	----



JOB NAME:	WEBSTER UNIVERSITY ISB	EQUIPMENT DESIGNATION:	US-1
JOB LOCATION:	WEBSTER GROVES MO	EQUIPMENT TYPE:	METAL ENCLOSED SWITCHGEAR
DRAWN BY:	(Q2C)	DRAWING TYPE:	ONE LINE DIAGRAM
ENGR:			
DATE:	June 13 2016		
DRAWING STATUS:	QUOTE		
DWG# 037999262-01		PG 1 OF 1	REV -

REV	DESCRIPTION	BY	DATE										
-	----	--	--/--/--	-	----	--	--/--/--	-	----	--	--/--/--	-	----

CONTROL CONDUIT
AREA, 2.00 x 4.00
[51] [102]

POWER CABLE
CONDUIT AREA

2.00
[51]

4.00
[102]

54.50
[1384]

**34.00x6.00
[864] [152]

*34.00x12.00
[864] [305]

* DENOTES BOTH ENTRANCE AND EXIT
IN SAME LOCATION.
** DENOTES SINGLE ENTRANCE OR EXIT.

CONTROL CONDUIT
AREA, 2.00 x 4.00
[51] [102]

POWER CABLE
CONDUIT AREA

2.00
[51]

4.00
[102]

54.50
[1384]

43.50
[1105]

1.00
[25]

6.50
[165]

38.00
[965]

(4) .88/[14]
MTG HOLES

SEE ANCHOR
ASSEMBLY

MOUNTING DETAILS

5/8 DIA STEEL BELLEVILLE WASHER
WASHER MUST BE FACED UP
FACTORY TESTED ASSEMBLY – TO
MAINTAIN SEISMIC QUALIFICATION
DO NOT SUBSTITUTE

5/8-11 UNC SAE GRADE 5
ANCHOR FASTENER
(SUPPLIED BY CUSTOMER)

EQUIPMENT
BASE

7/8 DIA HOLE

CROWN

ANCHOR ASSEMBLY

DUAL DIMENSIONS: INCHES
MILLIMETERS

JOB NAME:	WEBSTER UNIVERSITY ISB	EQUIPMENT DESIGNATION:	US-1
JOB LOCATION:	WEBSTER GROVES MO	EQUIPMENT TYPE:	METAL ENCLOSED SWITCHGEAR
DRAWN BY:	(Q2C)	DRAWING TYPE:	DETAIL VIEW
ENGR:			
DATE:	June 13 2016		
DRAWING STATUS:	QUOTE	DWG# F37999262-51	PG 1 OF 1 REV -

SITE PREPARATION – SWITCHGEAR INSTALLATION

GOOD SITE PREPARATION IS NECESSARY TO ELIMINATE COSTLY, TIME-CONSUMING INSTALLATION PROBLEMS AND ENSURE PROPER SWITCHGEAR OPERATION. COMPARE THE SITE PLANS AND SPECIFICATIONS WITH THE SWITCHGEAR DRAWINGS TO BE SURE THERE ARE NO DISCREPANCIES. CHECK THE SITE TO ENSURE THAT THE EQUIPMENT WILL FIT PROPERLY.

THE FLOOR SHOULD BE FLAT AND LEVEL WITHIN $\frac{1}{16}$ INCH PER FOOT, OR A MAXIMUM OF $\frac{1}{4}$ INCH WITHIN THE AREA OF THE SWITCHGEAR, TO PREVENT DISTORTION OF THE ENCLOSURES. ALLOW AISLE SPACE AT THE FRONT, BACK, AND ENDS OF THE SWITCHGEAR TO PERMIT ACCESS FOR EQUIPMENT MAINTENANCE; USUALLY A MINIMUM OF FIVE FEET IS NEEDED ON ALL SIDES.

PROVIDE AREA VENTILATION AT ALL TIMES TO MAINTAIN THE AMBIENT TEMPERATURE AROUND THE EQUIPMENT BETWEEN -30°C AND +40°C.

ADEQUATE LIGHTING AND CONVENIENCE OUTLETS SHOULD BE AVAILABLE NEAR THE SWITCHGEAR. ROUTE SEWER, WATER, AND STEAM LINES AWAY FROM THE EQUIPMENT. PROVIDE FLOOR DRAINS TO PREVENT WATER BUILDUP.

REVIEW THE ASSEMBLY DRAWINGS TO ENSURE THAT THE SWITCHGEAR SECTIONS WILL BE ASSEMBLED IN THE CORRECT ORDER. IF THE SWITCHGEAR WILL CONNECT TO AN EXISTING LINEUP, MOUNT THE CONNECTING SECTIONS FIRST.

MOUNT THE VARIOUS SHIPPING SECTIONS ON THE SAME PLANE AND LEVEL THEM TO ENSURE PROPER CONNECTION. AFTER LEVELING EACH SECTION, BOLT IT TO THE PREVIOUSLY INSTALLED SWITCHGEAR.

EACH SECTION INCLUDES THE NECESSARY MEANS FOR ANCHORING IT TO THE FLOOR. FASTEN INDOOR UNITS TO THE FLOOR USING THE HOLES LOCATED IN THE BOTTOM FLANGES OF THE ENCLOSURE. FASTEN OUTDOOR ENCLOSURES TO THE FOUNDATION USING THE HOLES LOCATED IN THE BOTTOM CROSS CHANNELS.

REMOVE THE LIFTING ANGLES FROM THE SIDE OF THE BASE AND STORE. TO BLOCK ENTRY OF WATER, EXTRANEIOUS OBJECTS, OR WILDLIFE, REPLACE HARDWARE IN THE HOLES WHERE THE LIFTING ANGLES WERE REMOVED. THE BUS CONNECTORS FOR THE SHIPPING SPLITS ARE INCLUDED WITH THE SWITCHGEAR.

11 of 260

Shop Drawing Submittal Review

Transmitted To: Cannon Design

Date: July 19, 2016

Attention: stl-cac@cannondesign.com

Contact Person / WTA Field Inspector:
Patrick Garner

Project Name: Webster University-**ISB**

Reviewed by: Bill Shaw

Project No. WT 14127.01

☐

UPS

☐

Courier

☒

Email

Copies	No.	Description
1 PDF	264000E01	(Submittal No. 264000-001) Electrical Distribution

Submittal Review Comments

Circuit breaker size and position shall match panel schedules on sheets E0503, 504, 505, & 506.

c: Kelvin Patel
Kpatel@cannondesign.com

☐ Furnish as Submitted

☐ Furnish as Noted

☐ Rejected

☒ ***Revise & Resubmit**

☐ Reviewed

☐

Corrections or comments made on shop drawings during this review do not relieve contractor from compliance with requirements of drawings and specifications. This check is only for review of general conformance with the design concept of project and general compliance with information given in contract documents. Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner.

WTASHOP - Webster ISB - 26 4000-001

From: STL-CAC <STL-CAC@CANNONDESIGN.COM>
To: 'Patrick Garner' <pgarner@wmtao.com>, WTASHOP <wtashop@wmtao.com>
Date: 7/5/2016 11:40 AM
Subject: Webster ISB - 26 4000-001
Cc: "Patel, Kelvin" <kpatel@CANNONDESIGN.COM>, "Grossman, Lynn" <lgrossman@C...>
Attachments: 264000-001 Electrical Distribution.pdf

Attached for review.

Melissa Pirtle

Construction Admin

CANNONDESIGN

1100 Clark Ave
St. Louis, Missouri 63102
T [314.425.8797](tel:314.425.8797) • M
cannondesign.com

SUBMITTAL IDENTIFICATION SHEET

To be completed by Contractor/CM

PROJECT NAME	
ADDRESS	
NUMBER	
OWNER	
ARCHITECT / ENGINEER	
SUBMITTED BY	
CONTRACTOR / CM SUBMITTAL NO.	CANNON DESIGN SUBMITTAL NO.
DRAWING / DETAIL REFERENCE	SPECIFICATION SECTION / PARAGRAPH
MANUFACTURER / SUPPLIER	ITEM / PRODUCT ID
REQUIRED DATE	PRIORITY
CRITICAL	☐

To be completed by Reviewer

CANNON DESIGN SUBMITTAL NUMBER
RECEIVED DATE

- ☐ **A. No Exceptions Taken**
No further review of submittal is required.
- ☐ **B. Make Corrections Noted**
Incorporate corrections in work;
resubmission is not required.
- ☐ **C. Revise and Resubmit**
Revise as noted, and resubmit for review.
- ☐ **D. Rejected**
Submittal is not in compliance with Contract Documents;
provide new submittal.
- ☐ **E. For Record / Information Only**
Submittal was reviewed for Record / Information
purposes only.
- ☐ **F. Not Required for Review**
Submittal is not required by Contract Documents
and has not been reviewed.

Review is for conformance with the design concept of this project and for general compliance with contract documents. Contractor is responsible for quantities, dimensions and compliance with contract documents and for information that pertains to fabrication processes, construction techniques and coordination of this work with all trades which will be affected thereby. This review is null and void if submittal deviates from contract documents and does not indicate or note deviations.

ITEM BEING SUBMITTED (check only one)

- ☐ Shop Drawings ☐ Certification / Qualifications ☐ Coordination Drawing
☐ Samples ☐ Record Documents ☐ Calculations
 (_____ copies) ☐ Product Data ☐ Schedules
☐ LEED Submittal ☐ O&M Manuals
☐ Other

ITEM BEING SUBMITTED FOR (check only one)

- ☐ Action ☐ Information Only ☐ Record

REMARKS OR DEVIATIONS

CONTRACTOR / CM CERTIFICATION
(SUBMITTALS NOT CERTIFIED WILL BE RETURNED WITHOUT REVIEW)



PARIC CORPORATION
SUBMITTAL STAMP

THIS SHOP DRAWING HAS BEEN REVIEWED BY PARIC CORPORATION

Subcontractor remains responsible for dimensions, quantities, coordination with other trades and compliance with contract documents.

Ry:

By:
Devin D. Gates

REVIEWED BY	DATE

A/E COMMENTS

- ☐
- See attached sheet(s) for additional comments

REVIEWED BY	DATE



77 Westport Plaza
Suite 250
St. Louis, MO 63146

TRANSMITTAL

No. 15051-0114

Paric Corporation

PROJECT: 15051-Webster University Interdisciplinary Science Building

DATE: 07/05/2016

TO: Cannon Design
1100 Clark Ave
St Louis MO 63102

RE: Electrical Distribution

ATTN: Kelvin Patel

JOB: 15051

WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
☐ Shop Drawings	☒ Approval	☐ Approved as Submitted
☐ Letter	☐ Your Use	☐ Approved as Noted
☐ Prints	☐ As Requested	☐ Returned After Loan
☐ Change Order	☐ Review and Comment	☐ Resubmit
☐ Plans		☐ Submit
☐ Samples	SENT VIA:	☐ Returned
☐ Specifications	☐ Attached	☐ Returned for Corrections
☒ Other: Product Data	☐ Separate Cover Via:	☐ Due Date:

Item	Package	Code	Rev.	Copies	Date	Description	Status
Submittal		264000-001	1		07/05/2016	Electrical Distribution	Submitted

NOTES:

CC: Paric Corporation, Kathy Bathe

Project Coordinator: Paric Corporation, Kathy Bathe

Signed: _____
Devin Gates

Transmittal

To Paric Corporation

Date 7/1/16

Job Number 11317

Job Name Webster Univ. ISB Building

Attention Devin Gates

Transmittal Number 11317-005

We are sending you:

☒ Attached

☐ Under separate cover, the following:

☐ Preliminary Drawings

☐ Samples

☐ Construction Drawings

☐ Copy of Letter

☐ Specifications

☐ Other _____

Quantity	Drawing #	Date/Revision	Description
1			Submittal for Distribution - Spec Section
			26 40 00

These are transmitted as checked:

☒ For Your Review & Comment

☐ Approved As Noted

☒ For Approval

☐ Returned For Corrections

☐ For Your File

☐ Approved As Submitted

☐ As Requested

☐

Copy:

Transmittal

Enclosure

Rick Branstetter

Signed: Rick Branstetter, Project Manager

Webster University ISB

Approval Drawing Package

Factory Order #: 37999262

06/13/2016

Distributor:
Graybar

Contractor/Installer:
Guarantee Electric / TD4

Consulting Engineer:
Wm Tao & Associates

Lou Feldhaus
Sales Representative

Jake Kaufman
Project Manager
North American Operating Division
(636) 329-2265
jacob.kaufman@schneider-electric.com

Life Is On

Schneider
Electric

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BILL OF MATERIALS AND DRAWINGS

UNIT SUBSTATION 1: US-1

METAL-ENCLOSED SWITCHGEAR: US-1

POWER-DRY II TRANSFORMER: US-1

SWITCHBOARD: US-1

UNIT SUBSTATION LITERATURE

Unit Substation Brochure

HVL 5...38 kV Load Interrupter Switchgear - Brochure

Power Dry II- Dry-Type, Small Power Transformer Brochure

Model 98A Digital Temperature Controller For Medium Voltage Transformers

Power-Style QED-2 Switchboard Brochure

Internal Modular SPD Brochure

PowerLogic PM8000 Series Intermediate Metering Technical Data Sheet

NW Breaker Brochure

Micrologic Trip Units for Masterpact Circuit Breakers Brochure

INTEGRATED POWER CENTERS

BILL OF MATERIALS AND DRAWINGS

SB1

SB2

1EH1 - 1EL1

1EL1

1SH1 - 1SL1

LITERATURE

Integrated Power Center 2 (IPC2)

PANELBOARDS

PANELBOARD SCHEDULE AND DRAWINGS

LITERATURE

I-Line Panelboard Handout

NF Panelboard Handout

NQ Panelboard Handout

I-Line SPD

Internal Modular SPD Brochure

SurgeLoc SPD for NQ Panelboards

CONTACTORS AND STARTERS

BILL OF MATERIALS AND DRAWINGS

8538SCG

8538SCA - EF-1

8538SCA - KEF-1

2510FG

LITERATURE

Manual Starters - Type F

Manual Starters - Type M and T

8538 Combination Starter Catalog

SAFETY SWITCHES

BILL OF MATERIALS AND DRAWINGS

D211N

H365

HU361

H361

HU362

POWER MONITORING AND CONTROL

BILL OF MATERIALS

LITERATURE

MCTAS-485 Terminator

FUSE

BILL OF MATERIALS

LITERATURE

LPJ Fuses 1 - 60 Amps

LPJ Fuses 70 - 600 Amps