

Electrical Standard Details

University of Saskatchewan

Prepared by: Campus Engineering and
Sustainability

Release Date: February 26, 2026

USask Electrical Standard Detail Directions: The standard details contained herein are intended to be incorporated into the Consultant's final, project specific drawing package. The project specific details are expected to include any and all details that are required to adequately inform contractors on required installation processes. Details not included in the in this document may still be required for a complete, well-designed project. **It is the consultant's responsibility to ensure all details match USask requirements. Any deviations or revisions to any detail included in this document requires written consent from the USask Engineering department. The consultant is liable for any omissions, errors, or incorrect equipment or components supplied to site, or rework required to suit USask's requirements.**

These details shall be used in conjunction with USask's Design Guidelines and Master Specifications. Any conflicts shall be brought to the attention of USask Engineering staff for clarification prior to design completion.

CAD versions of the details contained herein can be provided to consultants upon request. Please request required details from the USask Electrical Engineering staff assigned to your specific project.

<u>DETAIL #</u>	<u>REVISED DATE</u>	<u>DRAWING DESCRIPTION</u>
E/TOC	03-FEB-2026	U OF S ELECTRICAL DETAIL TABLE OF CONTENTS
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E/3	08-JAN-2026	OUTDOOR ELECTRICAL PANEL
E/4	03-FEB-2026	PARKING PEDESTAL, CURB DISTANCE & TRENCH SECTION
E/5	[ON HOLD]	LIGHTING POLE, GENERAL NOTES & SECTION DETAIL
E/6	08-JAN-2026	SWITCHING CUBICLE, PLAN VIEW, SECTION AND DETAILS
E/7	08-JAN-2026	BOLLARD AND BASE, ELEVATION VIEW
E/8	08-JAN-2026	ELECTRICAL MANHOLE, PLAN VIEW AND SECTION DETAILS
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E/27	08-JAN-2026	COMMUNICATIONS PULL PIT & DUCT BANK DETAILS
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E/30	[ON HOLD]	SAFETY WASH/SHOWER VALVE EXERCISER / ALARM (NON-CCMS)
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E/34	15-JAN-2026	T-BAR CEILING MOUNTED DEVICES
E/35	15-JAN-2026	AV MONITOR WALL MOUNTING LAYOUT
E/36	[ON HOLD]	TOUCHLESS FAUCET SEPARATE COMPONENT
E/37	16-JAN-2026	ION 7300 SERIES METER WIRING DIAGRAM
E/38	16-JAN-2026	GENERATOR INTERFACE SYSTEM - CONTROL PANEL SCHEMATIC AND BLOCK DIAGRAM

<u>DETAIL #</u>	<u>DATE</u>	<u>DRAWING DESCRIPTION</u>
E/39	16-JAN-2026	GENERATOR INTERFACE SYSTEM - FOXFAB PANEL SCHEMATIC AND BLOCK DIAGRAM
E/40	16-JAN-2026	GENERATOR START MODES
E/41	16-JAN-2026	OFFICE ELECTRICAL OUTLETS LAYOUT
E/42	DY-MON-YEAR	RESERVED FOR FUTURE
E/43	DY-MON-YEAR	RESERVED FOR FUTURE
E/44	DY-MON-YEAR	RESERVED FOR FUTURE
E/45	DY-MON-YEAR	RESERVED FOR FUTURE

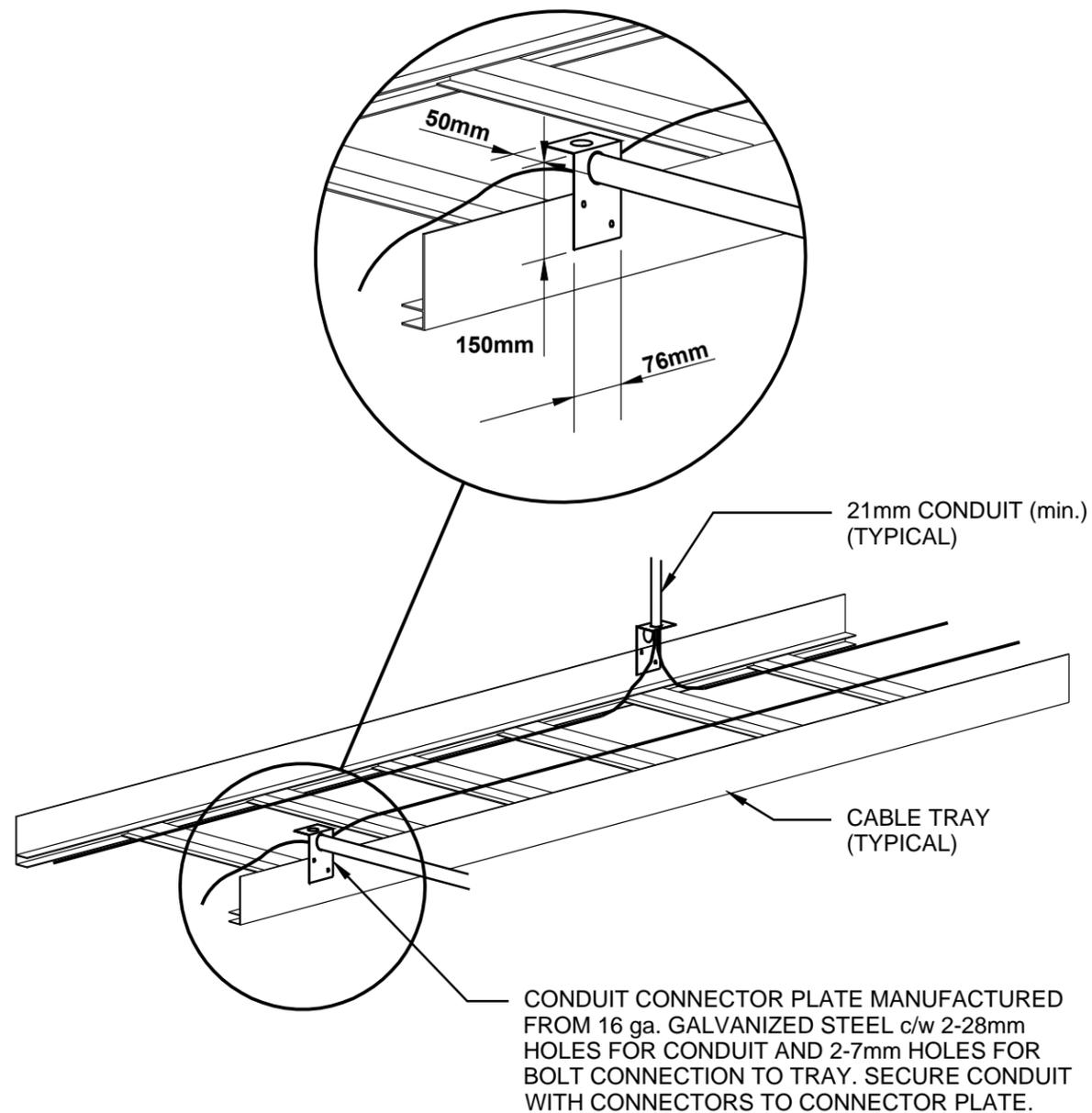
For Reference

REV.	DATE	DESCRIPTION	APP.
0	03-FEB-26	ISSUED FOR REFERENCE	LJD



PROJECT NAME
U OF S ELECTRICAL ENGINEERING
ELECTRICAL DETAILS
 DRAWING NAME
TABLE OF CONTENTS
DRAWING LIST

PROJ. FILE NO.	E/TOC
DRAWN BY D. DUBOWSKI	
APPROVED BY D. BALIAD	SCALE N/A
DATE 14-NOV-2025	SHEET 1 OF 1

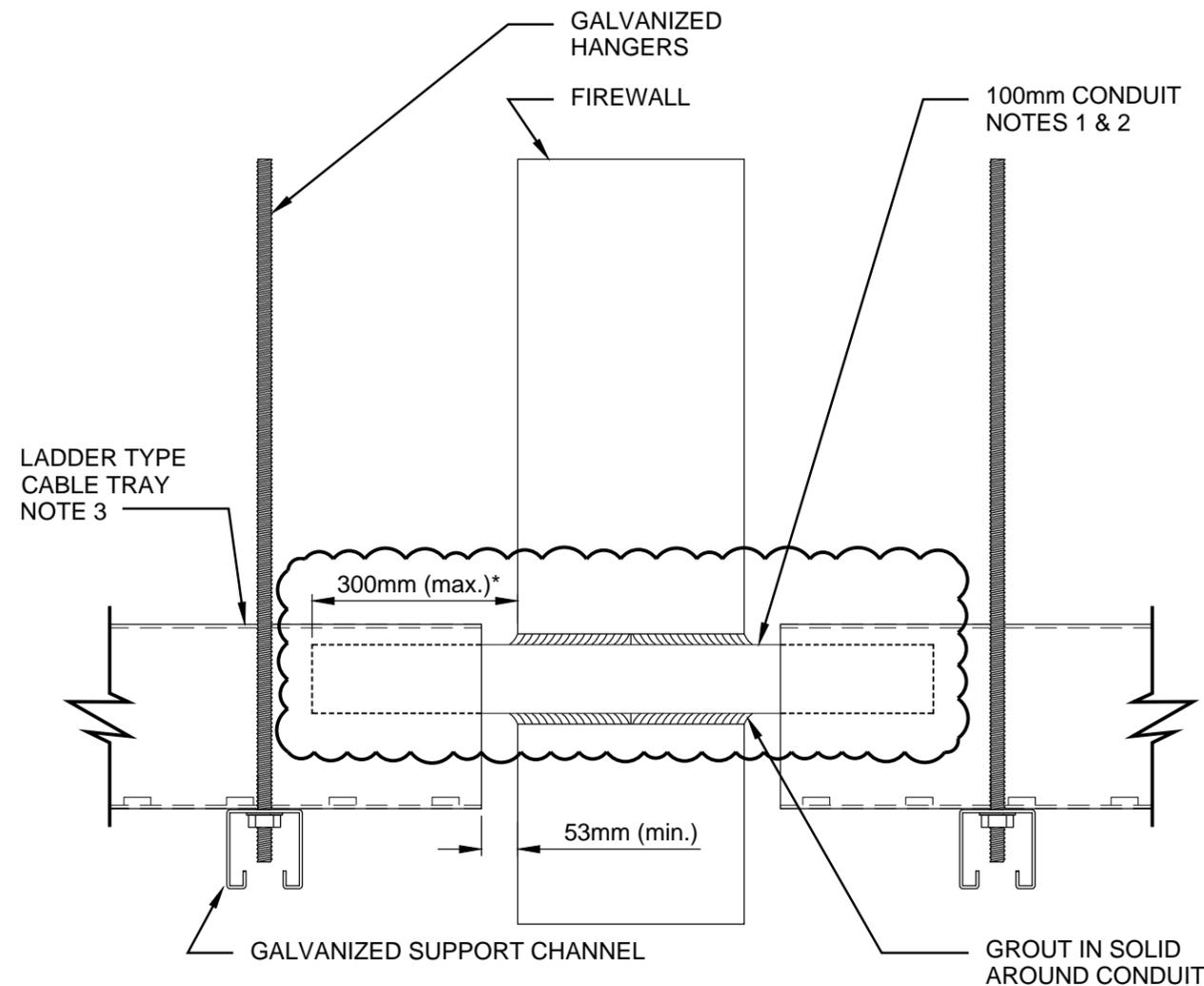


NOTE:

CONNECTOR PLATE IS TYPICAL FOR 3/4" [21] CONDUIT. PLATE SIZE AND MOUNTING HARDWARE AND ADJUSTED ACCORDINGLY FOR LARGER CONDUIT SIZES.

1 CONNECTION DETAIL
COMMUNICATION CONDUIT & CABLE TRAY

REV.	DATE	DESCRIPTION	APP.
0	08-JAN-26	ISSUED FOR REFERENCE	DMB



NOTES:

1. PROVIDE 2 CONDUITS FOR 150mm CABLE TRAY, 4 CONDUITS FOR 305mm CABLE TRAY. LOCATION OF CONDUIT IN WALL IS DEPENDANT UPON CABLE TRAY CONFIGURATION AND CLEARANCES.
2. METHOD AND TYPE OF FIRE STOPPING TO BE SPECIFIED BY MASTER FORMAT SECTION 07 84 00 - FIRESTOPPING. DIMENSION SHOWN IS A MAXIMUM DISTANCE AND SHALL BE ADJUSTED ACCORDING TO FIRESTOPPING METHOD BEING INSTALLED.
3. CABLE TRAY SIZE AND TYPE MAY VARY DEPENDING UPON APPLICATION. CONFIRM WITH U OF S BEFORE INSTALLATION OF CONDUITS IN FIREWALL.

2 WALL PENETRATION
COMMUNICATION CONDUIT & CABLE TRAY



PROJECT NAME
ELECTRICAL DETAILS
COMM. CONDUIT & CABLE TRAY
DRAWING NAME
CONDUIT CONNECTION AND
WALL PENETRATION

PROJ. FILE NO.	DRAWING NO.
DRAWN BY D. DUBOWSKI	E/1
APPROVED BY G. POOLE	SCALE N/A
DATE 15-OCT-2025	SHEET 1 OF 1

Legend

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Permits / Seals

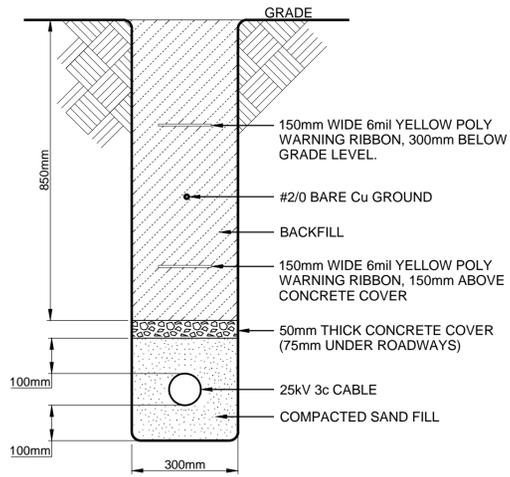
Project
ELECTRICAL DETAILS
25kV TRENCH ELEVATIONS

Title
DIRECT-BURIED CABLE AND DUCT BANK DETAILS

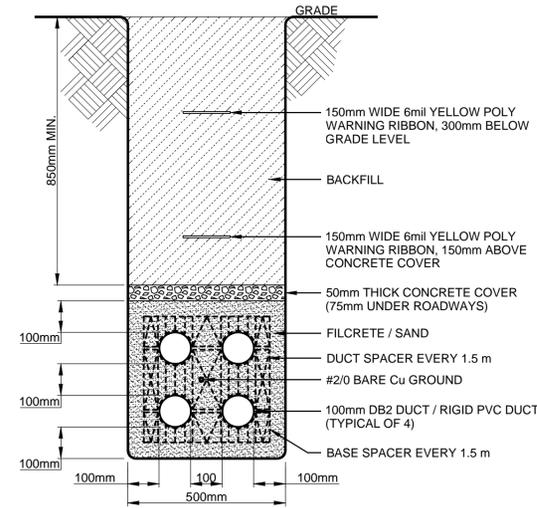
Dwn. D. DUBOWSKI	Chkd. D. BALIAD	Dsgn. D. DUBOWSKI
Project No.		Scale As Noted
UofS Drawing No.		Date 17-SEP-2025
Drawing No. E2	Sheet 1 OF 1	Revision 0

GENERAL NOTES:

- FOR ADDITIONAL INFORMATION REFERENCE THE FOLLOWING ELECTRICAL SPECIFICATION SECTIONS:
 - SECTION 260500: COMMON WORK RESULTS FOR ELECTRICAL
 - SECTION 260543: UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS
 - SECTION 260526: GROUNDING AND BONDING
 - SECTION 260553: ELECTRICAL IDENTIFICATION
 - SECTION 336573: CONCRETE ENCASED DUCT BANKS AND MANHOLES

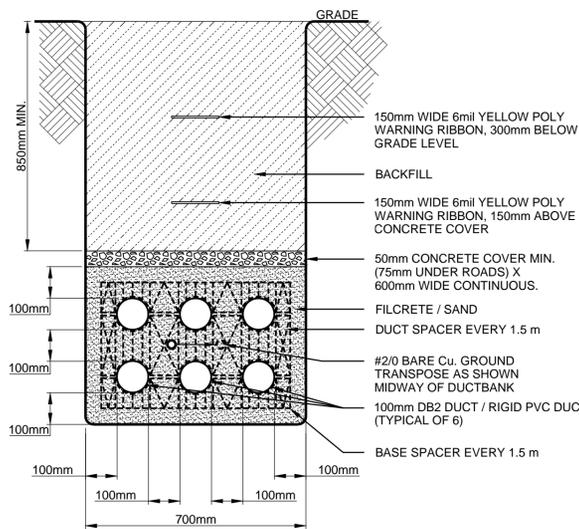


1 25kV DIRECT-BURIED CABLE
TRENCH SECTION DETAIL



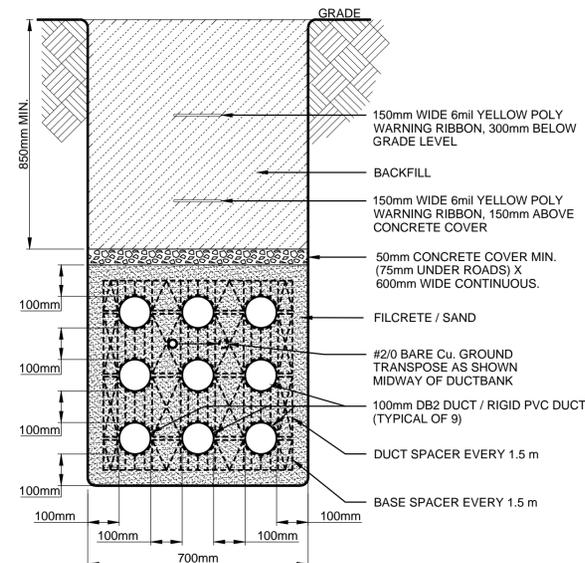
2 25kV 2x2 DUCT BANK
TRENCH SECTION DETAIL

NOTE:
 WHEN DB2 DUCT IS USED, THE FILL MATERIAL SHALL BE FILCRETE AND WHEN SCHEDULE 40 RIGID PVC DUCT IS USED, THE FILL MATERIAL SHALL BE SAND UNLESS STATED OTHERWISE.



3 25kV 2x3 DUCT BANK
TRENCH SECTION DETAIL

NOTE:
 WHEN DB2 DUCT IS USED, THE FILL MATERIAL SHALL BE FILCRETE AND WHEN SCHEDULE 40 RIGID PVC DUCT IS USED, THE FILL MATERIAL MAY BE SAND UNLESS STATED OTHERWISE.

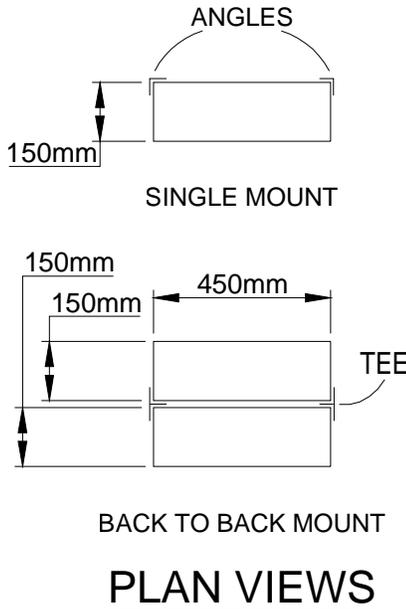


4 25kV 3x3 DUCT BANK
TRENCH SECTION DETAIL

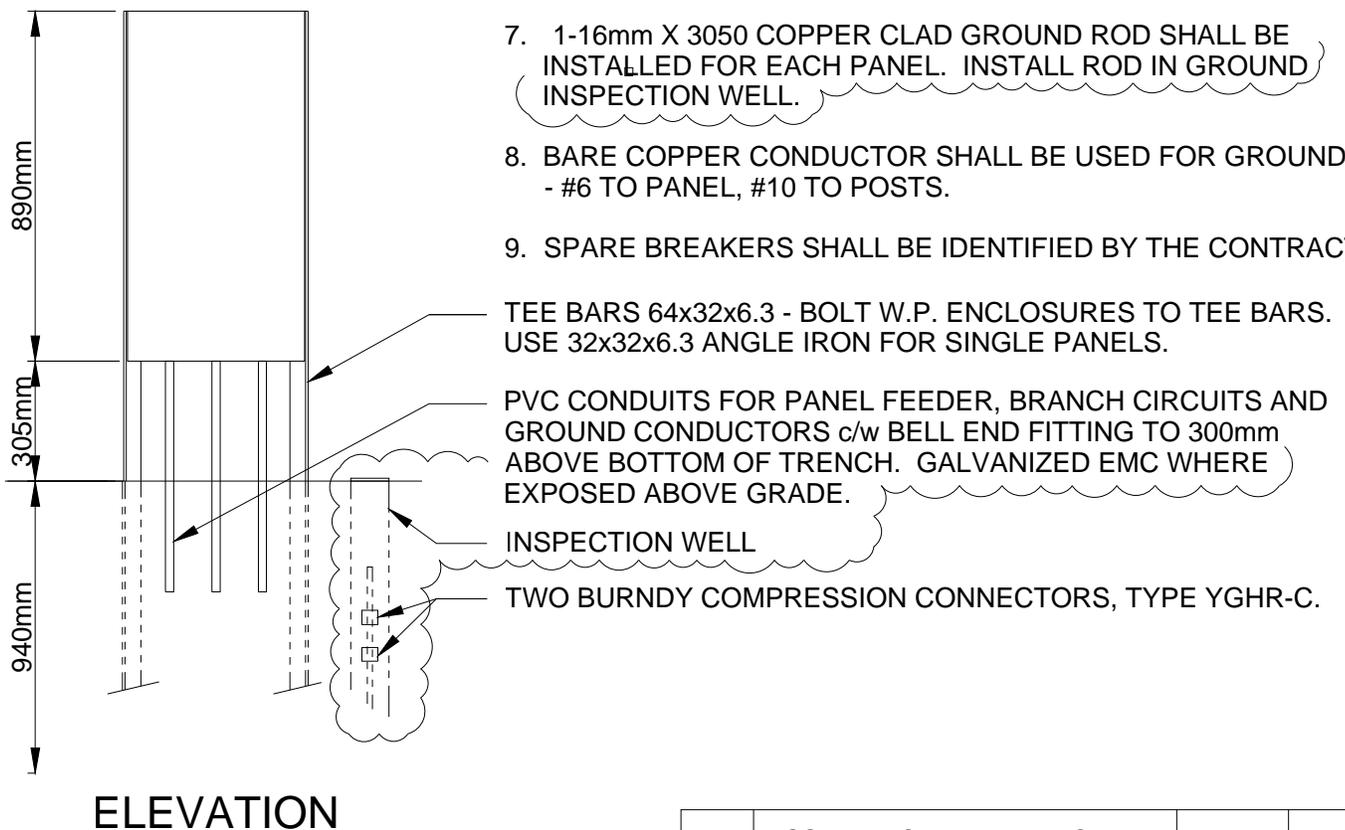
NOTE:
 WHEN DB2 DUCT IS USED, THE FILL MATERIAL SHALL BE FILCRETE AND WHEN SCHEDULE 40 RIGID PVC DUCT IS USED, THE FILL MATERIAL SHALL BE SAND UNLESS STATED OTHERWISE.

For Reference

PANEL SPECIFICATIONS



1. ONE OR TWO ELECTRICAL PANELS IN WEATHERPROOF ENCLOSURES MOUNTED AS INDICATED. PANELS TO HAVE 225A MAINS AND BE 42 CCT. CAPACITY c/w REQUIRED 15A-1P + 15A-2P BOLT-ON BREAKERS AND 450mm HUBS AT BOTTOM OF PANELS.
2. PANELS TO BE FREE OF EXTERIOR NAME PLATES.
3. PANELS, TEE BARS AND CONDUITS TO HAVE 2 COATS OF RUSTOLIUM #906 GRAY OR ASA PAINT. ANGLES AND TEE BARS TO BE PRIMED WITH PITTSBURGH INHIBITIVE RUST PRIMER PRIOR TO APPLICATION OF 2 COATS OF PAINT.
4. WEATHERPROOF ENCLOSURE: SIDE-HINGED DOORS, VAULT-TYPE HANDLE c/w PROVISIONS FOR PADLOCKING, ENTIRE ENCLOSURE SHALL BE CSA TYPE 3R CONSTRUCTION, ALL SEAMS NEOPRENE SEALED.
5. MAIN SERVICE ENTRY TO BE AT BOTTOM OF PANEL.
6. THE PANEL DIRECTORY (TYPED) SHALL IDENTIFY EACH BREAKER AND THE CORRESPONDING STALL NUMBER.
7. 1-16mm X 3050 COPPER CLAD GROUND ROD SHALL BE INSTALLED FOR EACH PANEL. INSTALL ROD IN GROUND INSPECTION WELL.
8. BARE COPPER CONDUCTOR SHALL BE USED FOR GROUNDING - #6 TO PANEL, #10 TO POSTS.
9. SPARE BREAKERS SHALL BE IDENTIFIED BY THE CONTRACTOR.



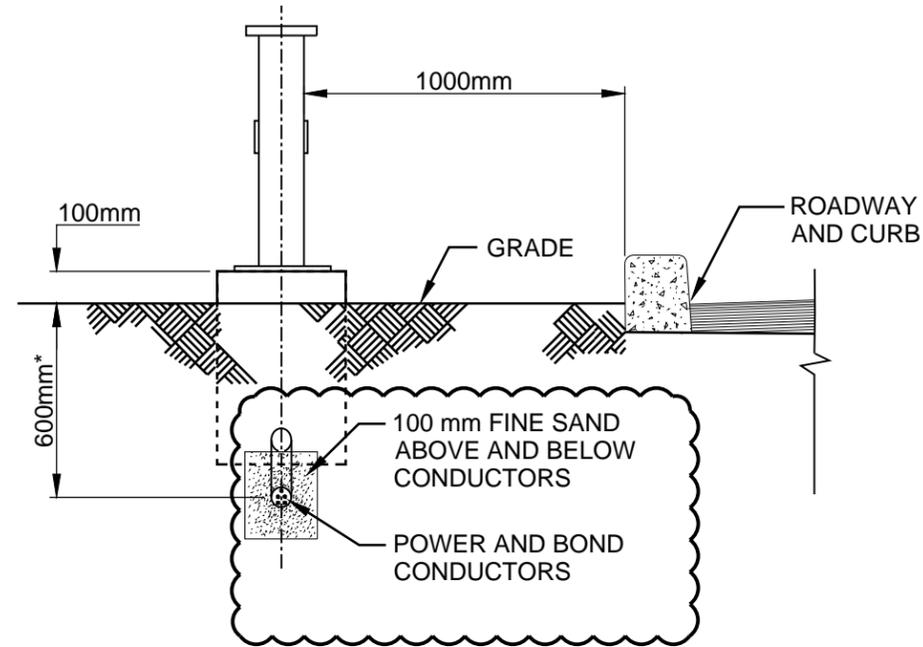
0	ISSUED FOR REFERENCE	DMB	08-JAN-2026
Rev.	Description	Appd.	Date

UNIVERSITY OF SASKATCHEWAN

ELECTRICAL DETAILS
PARKING LOT PANEL
DETAILS &
SPECIFICATIONS



DATE	14-NOV-25	SCALE	N.T.S.
DRAWN BY	D. DUBOWSKI	E	3
CHECKED BY	K. LEEDAHL		
APPROVED BY	D. BALIAD		
		DRAWING NO.	

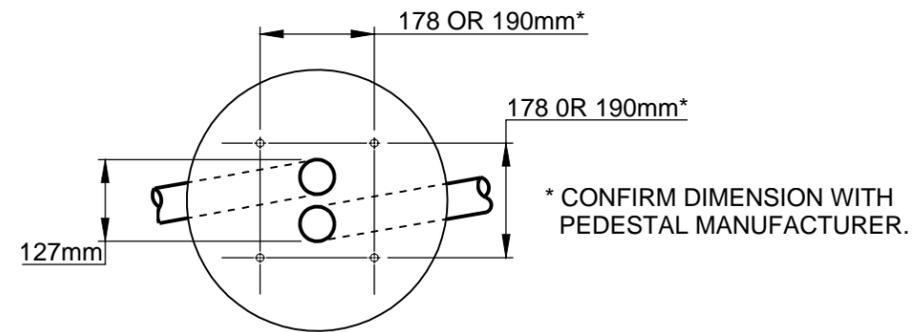
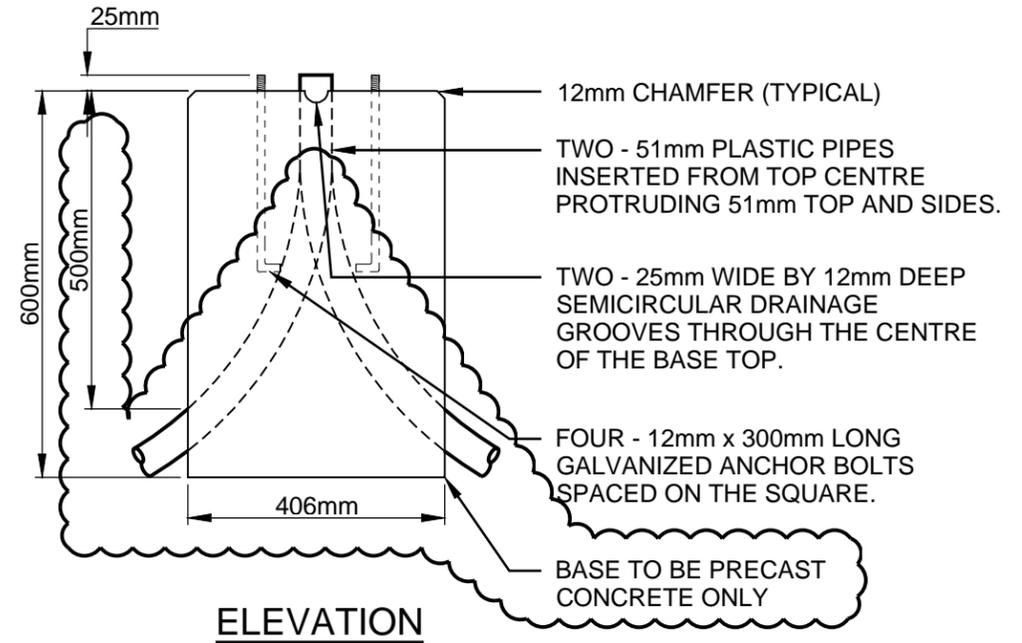


NOTES:

* CONDUCTORS TO BE 900mm BELOW GRADE IN VEHICULAR AREAS.

- POWER CIRCUIT TO BE THREE PHASE. SINGLE PEDESTAL SHALL BE WIRED EITHER A-B, B-C, OR C-A, WITH UNUSED PHASE PASSING UNDER PEDESTAL.

- THE UNDERGROUND CABLE INSTALLATION SHALL BE PROVIDED WITH A SUITABLE MARKING TAPE BURIED APPROXIMATELY HALFWAY BETWEEN THE INSTALLATION AND GRADE LEVEL.



1 **PARKING PEDESTAL**
CURB & TRENCH SECTION DETAIL

2 **PARKING PEDESTAL BASE**
PLAN & ELEVATION DETAIL

For Reference

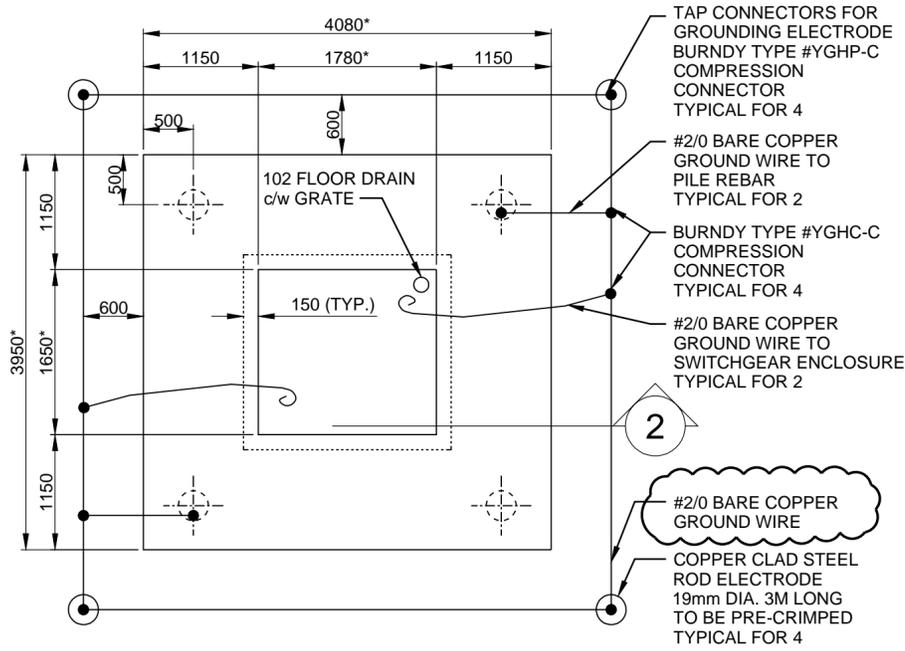
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PROJECT NAME
ELECTRICAL DETAILS
PARKING PEDESTAL & BASE
DRAWING NAME
CURB/TRENCH SECTION
PLAN AND ELEVATION

PROJ. FILE NO.	DRAWING NO.
DRAWN BY D. DUBOWSKI	E/4
APPROVED BY G. POOLE	SCALE N/A
DATE 17-SEP-2025	SHEET 1 OF 1

A2 (420x594 mm) W:\PMO\PMO_Public\Electrical Library\Details\Revised Details\E6 - Switching Cubicle Details(08JAN2026).dwg : Thursday, January 8, 2026 2:32:32 PM : DWG To PDF.pc3



NOTES:

- * REFER TO SWITCHING CUBICLE SHOP DRAWINGS FOR EXACT DIMENSIONS.
- 1. REFER TO ELECTRICAL TRENCH DRAWINGS FOR DETAILS OF DUCT BANKS ENTERING PIT.

1 SWITCHING CUBICLE BASE
PLAN VIEW

GENERAL NOTES

- Contractor to confirm all existing conditions and site measurements.
- Report any discrepancies to consultant before proceeding.
- Confirm size and location of openings with electrical contractors.
- Report any discrepancies to consultant before proceeding.

Cast-in-Place Concrete

- Perform cast-in-place concrete work in accordance with CAN/CSA-A23.1 - "Concrete Materials and Methods of Concrete Construction".
- Cement to CSA A5 - "Portland Cements" and aggregates to CAN/CSA- A23.1 -"Concrete Materials and Methods of Concrete Construction".
- For all concrete in contact with soil use Symbol 50 cement.
- Grout to be premixed non-shrink non-metallic grout with minimum strength at 3 days of 20 MPa and at 28 days of 40 MPa.
- Concrete to be in accordance with the following table:

Type Location	Strength f'c (MPa)	Cement Symbol	Class of Exposure	Aggreg. Max. (mm)	Slump (mm)	Total Air (%)
1. Piling	25	50	F-2	20	50 to 100	4 to 7
2. Reinforced Concrete	30	50	F-2	20	50 to 100	4 to 7

- Maximum free water/cement ratio to CAN/CSA-A23.1 tables 7, 8, and 9 for specified class of exposure.

Reinforcing Steel

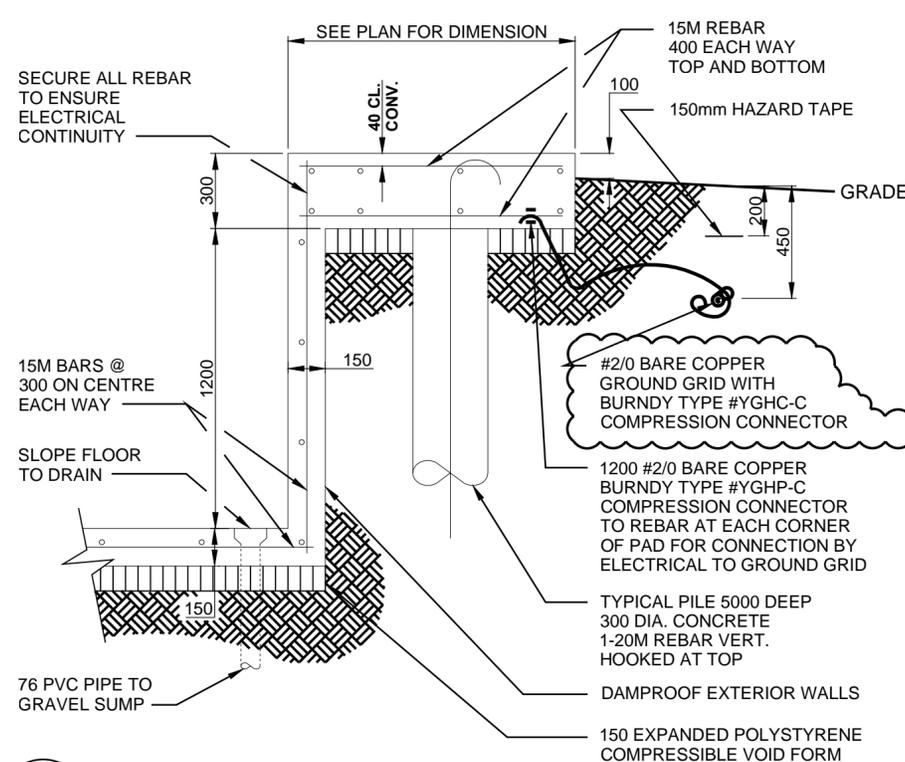
- To CSA Standard G.30.12. Grade 400, plain finish for all bars unless noted otherwise. Minimum splice for 10M bars to be 450mm. Minimum lap splice for all other bars to be 36 bar diameter or 700mm, whichever is greater.
- Detail concrete reinforcing steel in accordance with latest edition of ACI 315 "Standard Practice for Detailing Reinforced Concrete Structures".
- Perform concrete reinforcing work in accordance with CSA CAN3-A23.3-M77 - "Code for Design of Concrete Structures for Buildings".

Void Form

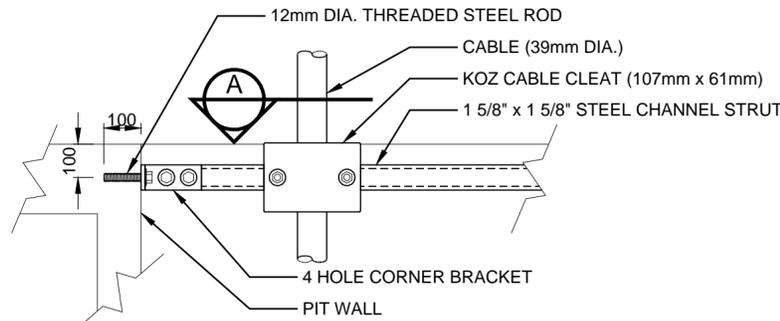
- 100mm thick decomposable cardboard honeycomb form on minimum 50mm sand screened.
- Place 6mm tempered hardboard over void form for full area formed.
- Protect sides of void form with 19 x 235 preservative treated sideboards.
- Cover with 0.15mm polyethylene.

Backfill

- Backfill to be well graded granular material compacted to 95% Standard Proctor.
- All other backfill to be insitu material compacted to 90% Standard Proctor.



2 SWITCHING CUBICLE BASE
SECTION VIEW



CABLE SUPPORT DETAIL - ELEVATION



NOTES:

- IN PMH-10 SWITCHES AND PMH-19 COMPARTMENTS 1 & 2, MOUNT FRONT OF STRUT 420mm BACK FROM EQUIPMENT FRONT.
- IN PMH-19, COMPARTMENTS 3 (FUSE) & 4, MOUNT FRONT OF STRUT 340mm BACK FROM EQUIPMENT FRONT.
- IN TRANSFORMERS, MOUNT SO CABLES ARE AS VERTICAL AS POSSIBLE.
- GROUND STRUT WITH #6 Cu TO SYSTEM GROUND.

Legend

For Reference

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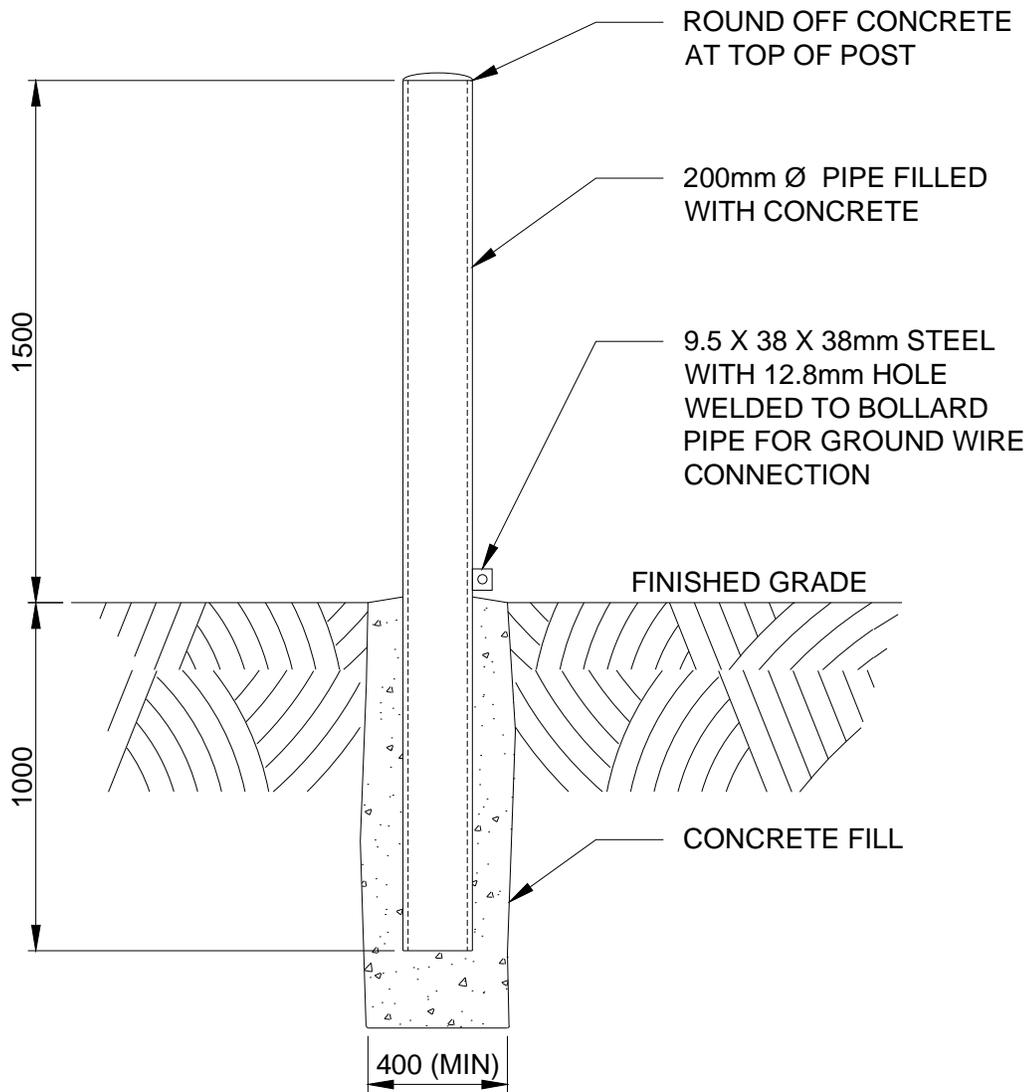
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Permits / Seals

Project
ELECTRICAL DETAILS
HIGH VOLTAGE SWITCHING CUBICLE

Title
BASE PLAN, SECTION AND NOTES

Dwn. D. DUBOWSKI	Chkd. G. POOLE	Dsgn. D. DUBOWSKI
Project No.		Scale As Noted
UofS Drawing No.		Date 17-SEP-2025
Drawing No. E6	Sheet 1 OF 1	Revision 0



1 BOLLARD AND BASE
ELEVATION VIEW

NOTES:

1. THIS BOLLARD INSTALLATION IS TO BE USED WHEREVER ELECTRICAL EQUIPMENT IS INSTALLED NEAR ANY POSSIBLE VEHICLE ACTIVITY.
2. REFER TO ELECTRICAL EQUIPMENT PLAN OR SITE PLAN FOR ACTUAL BOLLARD LOCATIONS.

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DATE 14-NOV-25

SCALE N.T.S.

ELECTRICAL DETAILS



DRAWN BY D. DUBOWSKI

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BOLLARD AND BASE
ELEVATION VIEW

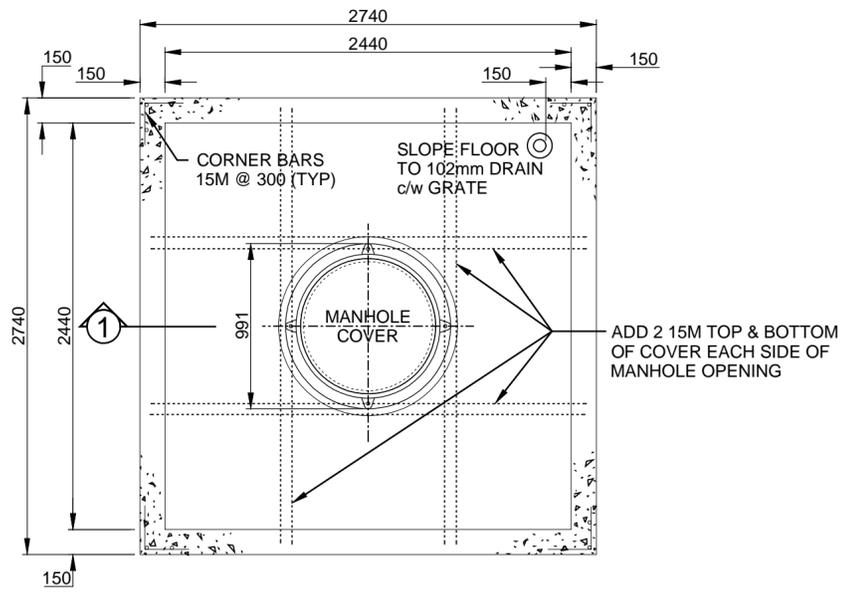
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7

APPROVED BY D. BALIAD

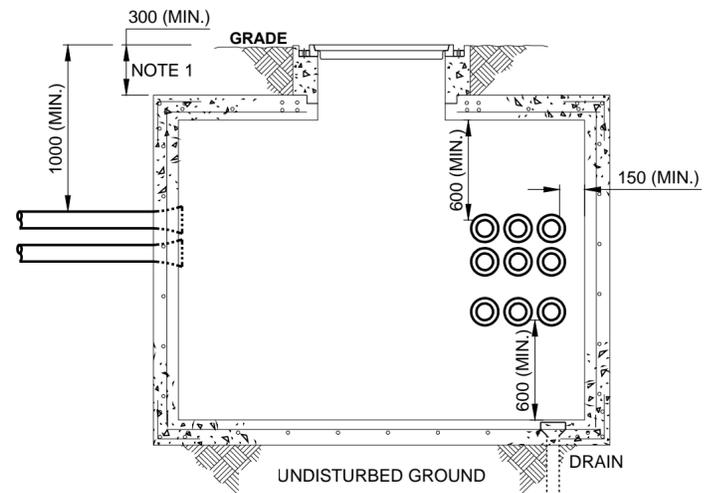
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NOTES:

1. REFER TO ELECTRICAL DRAWINGS FOR DUCT CONFIGURATION(S), LOCATION(S) AND MANHOLE COVER LOCATION.
2. COVER & FRAME BLANCHARD FOUNDRY No. 6006.

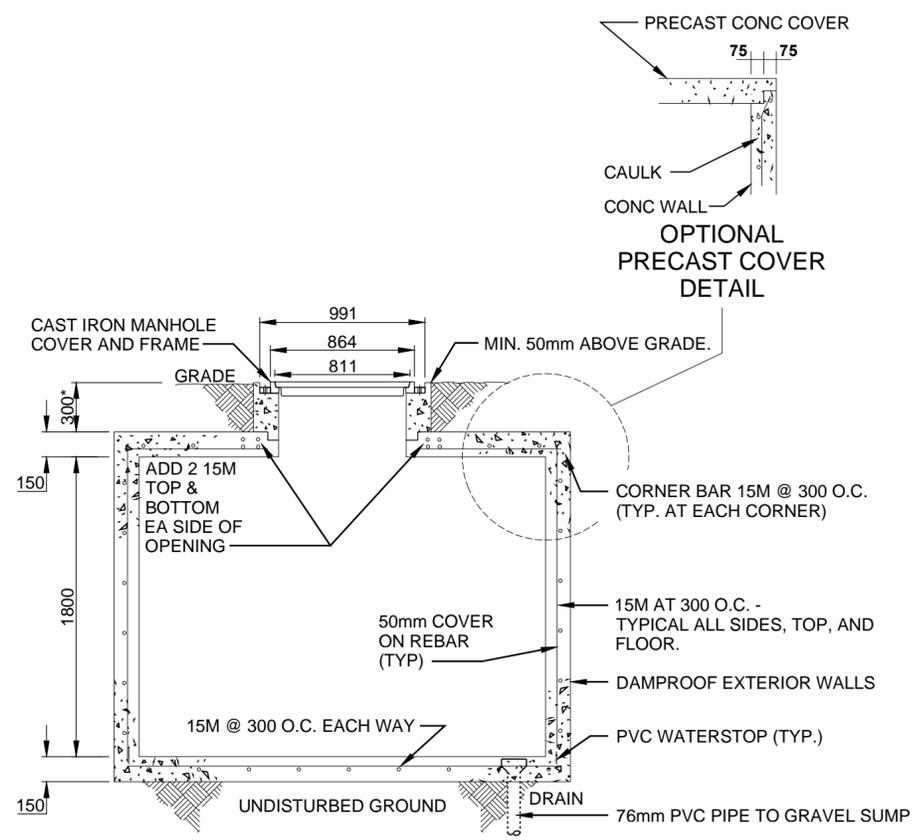
1 ELECTRICAL MANHOLE
PLAN VIEW



NOTES:

1. MINIMUM DIMENSION SHOWN, REFER TO ELECTRICAL DUCT PROFILE.
2. LOCATE MANHOLE COVER SO LADDER ACCESS IS UNOBSTRUCTED BY HIGH VOLTAGE CABLE.

2 ELECTRICAL MANHOLE DUCTS
SECTION VIEW



NOTES:

- * MINIMUM DIMENSION, REFER TO ELECTRICAL DRAWINGS.
1. REFER TO ELECTRICAL DRAWINGS FOR DUCT CONFIGURATION(S), LOCATION(S) AND MANHOLE COVER LOCATION.
 2. COVER & FRAME BLANCHARD FOUNDRY No. 6006.

1 ELECTRICAL MANHOLE
SECTION VIEW

For Reference

Legend

0	ISSUED FOR REFERENCE	DMB	08-JAN-2026
Rev.	Description	Appd.	Date

Permits / Seals

Project
ELECTRICAL DETAILS
ELECTRICAL MANHOLE

Title
PLAN VIEW, SECTION VIEW AND DUCT DETAILS

Dwn. D. DUBOWSKI	Chkd. G. POOLE	Dsgn. D. DUBOWSKI
Project No.		Scale As Noted
UofS Drawing No.		Date 17-SEP-2025
Drawing No. E8	Sheet 1 OF 1	Revision 0

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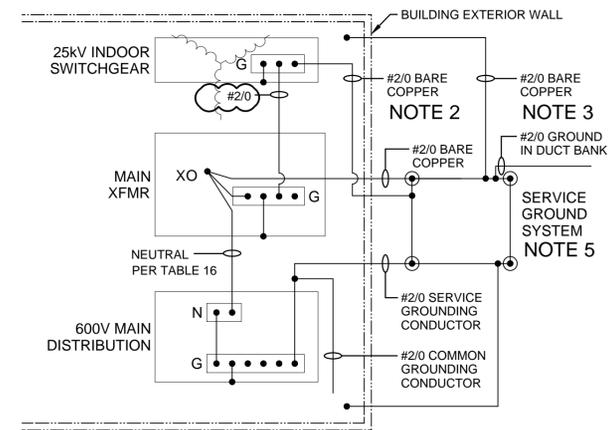
Permits / Seals

Project

ELECTRICAL DETAILS
BONDING/GROUNDING SYSTEMS

Title
**BUILDING DISTRIBUTION,
 OUTDOOR HV DISTRIBUTION, AND
 INDOOR HV DISTRIBUTION**

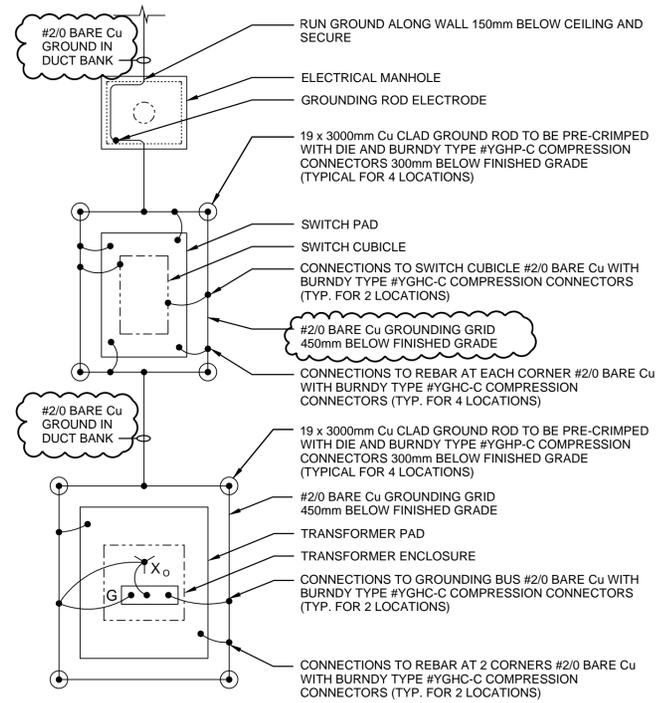
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Project No.		Scale N/A
UofS Drawing No.		Date 16-PCT-2025
Drawing No. E9	Sheet 1 OF 1	Revision 0



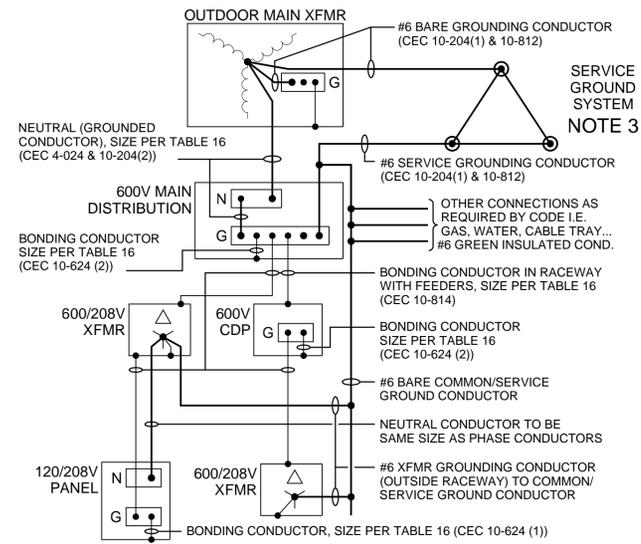
NOTES:

1. TABLES 16 & TABLE 17 ARE FOUND IN THE CANADIAN ELECTRICAL CODE.
2. RUN INDEPENDANT FROM XO. PROVIDE MECHANICAL PROTECTION TO EXTERIOR OF BUILDING. WHERE 25KV SWITCHGEAR EXCEEDS 2M IN LENGTH, PROVIDE A CONNECTION AT EACH END DIRECTLY TO GROUND GRID ELECTRODES.
3. TYPICALLY RUN 2 INDEPENDANTLY. CONNECT TO ELECTRICALLY CONTINUOUS REBAR/MESH IN CONCRETE.
4. ALL CONNECTIONS SHALL USE COMPRESSION CONNECTORS.
5. LOCATE GROUND SYSTEM OUTSIDE OF BUILDING AS NEAR AS POSSIBLE TO ELECTRICAL ROOM.

3 INDOOR HV DISTRIBUTION SYSTEM
 BONDING/GROUNDING DETAIL



2 OUTDOOR HV DISTRIBUTION SYSTEM
 BONDING/GROUNDING DETAIL



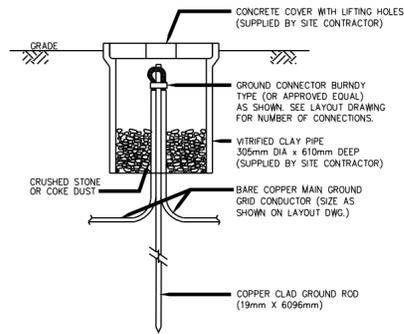
NOTES:

1. TABLE 16 & RULES REFERENCED ARE FOUND IN THE CANADIAN ELECTRICAL CODE. REFER ALSO TO CEC SASKATCHEWAN INTERPRETATIONS WHEN SIZING BONDING AND GROUNDING CONDUCTORS.
2. ALL CONNECTIONS SHALL USE COMPRESSION CONNECTORS.
3. LOCATE GROUND SYSTEM OUTSIDE BUILDING AS NEAR AS POSSIBLE TO MAIN DISTRIBUTION. WHERE THE TRANSFORMER IS IMMEDIATELY ADJACENT TO THE MAIN DISTRIBUTION, THE GROUND GRID AROUND THE EQUIPMENT PAD SHALL SUFFICE AS THE GROUND SYSTEM. WHERE THE TRANSFORMER IS NOT IMMEDIATELY ADJACENT, A SEPARATE SERVICE GROUND SYSTEM SHALL BE INSTALLED.

1 BUILDING DISTRIBUTION SYSTEM
 BONDING/GROUNDING DETAIL

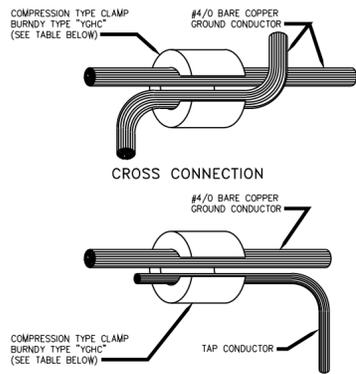
For Reference

A2 (420x594 mm) W:\P\MO\PMO_Public\Electrical Library\Details\Revised Details\E10-General Grounding Methods(08JAN2026).dwg : Friday, January 9, 2026 5:35:40 PM : DWG To PDF.pc3



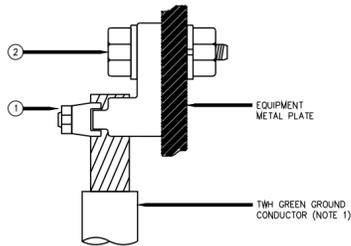
BURNDY CONNECTOR TO 19 mm ROD		
CONDUCTOR SIZE	FOR ONE CONDUCTOR	FOR 2 OR 3 CONDUCTORS
#4 TO #2/0 AWG	GAR 6426	GK 6426
#2/0 TO #250 MCM	GAR 6429	GK 6429

G1 GROUND WELL ASSEMBLY
N.T.S.



COMPRESSION TAP CONNECTOR		
MAIN GND GRID	TAP COND	CATALOGUE NUMBER
#4/0	#4/0	BURNDY CAT #YGH29C29 OR APPROVED EQUAL
#4/0	#2/0	BURNDY CAT #YGH29C26 OR APPROVED EQUAL
#4/0	#2	BURNDY CAT #YGH29C26 OR APPROVED EQUAL

G2 GROUND CONN. TO MAIN GROUND GRID
N.T.S.

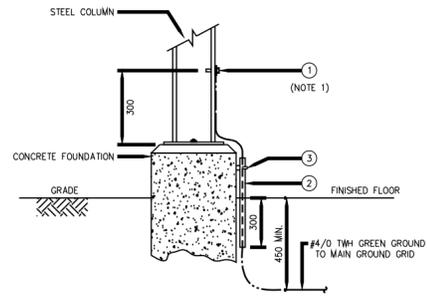


ITEM	QTY	DESCRIPTION
1	1 EA	GROUNDING CABLE CONNECTOR - SEE TABLE BELOW
2	1 EA	DURILUM BOLT, 9mm x 16, c/w DURILUM FLAT WASHER, DURILUM LOCK WASHER AND DURILUM HEXAGON NUT

TABLE	
CONDUCTOR SIZE	CATALOGUE NUMBER
#8 - #4 AWG	BURNDY CAT #QA4C-B OR APPROVED EQUAL
#4 - #1 AWG	BURNDY CAT #QA1C-B OR APPROVED EQUAL
#1/0 - #2/0 AWG	BURNDY CAT #QA2B-B OR APPROVED EQUAL

NOTES:
1) FOR CONDUCTOR SIZE REFER TO LAYOUT DRAWING.

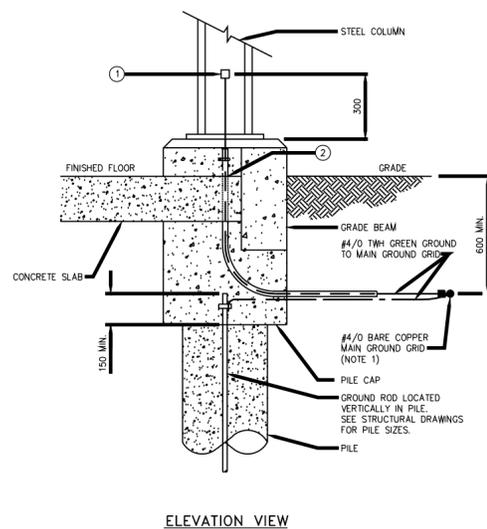
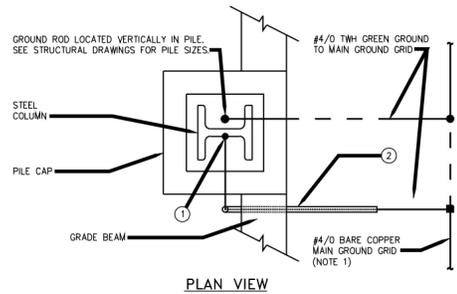
G3 GROUND CONN. TO ELECTRICAL EQUIPMENT
N.T.S.



ITEM	QTY	DESCRIPTION
1	1 EA	CONNECTOR, SERVIT POST, BURNDY CAT# KC26B1 OR APPROVED EQUAL
2	AS REQ'D	19mm PVC CONDUIT SLEEVE
3	AS REQ'D	19mm CONDUIT CLAMP, 1-HOLE

NOTES:
1) DRILL AND TAP WHERE APPROVED BY OWNER; OTHERWISE WELD BOLT TO COLUMN.

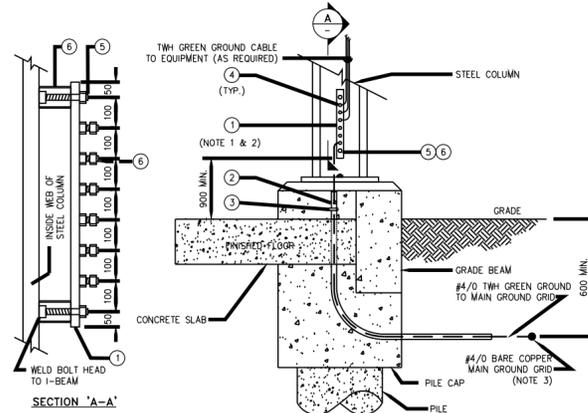
G4 STEEL COLUMN GROUNDING - INTERIOR GRID
N.T.S.



ITEM	QTY	DESCRIPTION
1	1 EA	CONNECTOR, SERVIT POST, BURNDY CAT #KC26B1 OR APPROVED EQUAL
2	AS REQ'D	19mm PVC CONDUIT SLEEVE
3	AS REQ'D	19mm CONDUIT CLAMP, 1-HOLE

NOTES:
1) FOR CONNECTIONS REFER TO LAYOUT DRAWINGS.

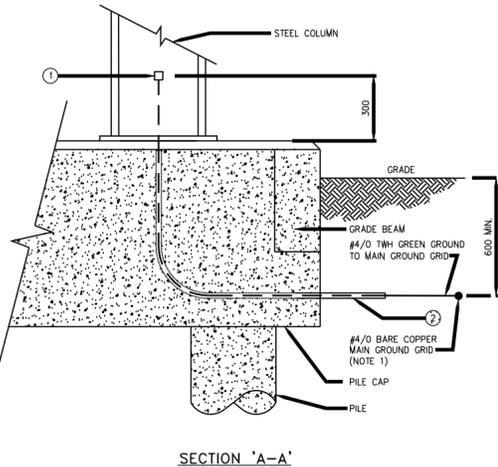
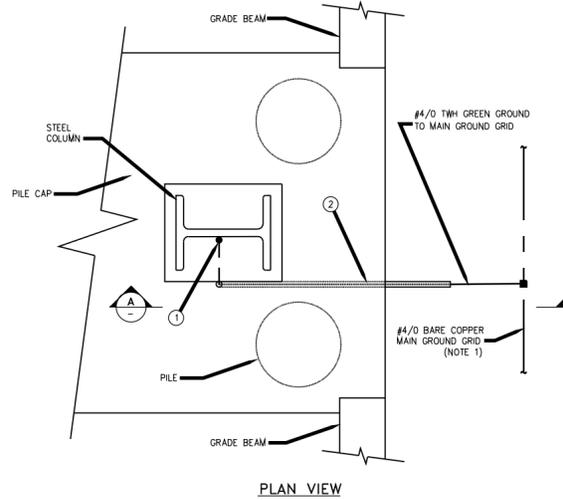
G5 EMBEDDED GROUND RODS IN PILES
N.T.S.



ITEM	QTY	DESCRIPTION
1	1 EA	FLAT TINNED COPPER BAR, 6mm THICK X 50mm WIDE X 800mm LONG
2	AS REQ'D	25mm PVC CONDUIT SLEEVE
3	AS REQ'D	25mm CONDUIT CLAMP, 1-HOLE
4	AS REQ'D	CONNECTOR, SERVIT POST, BURNDY TYPE KC OR K2C OR APPROVED EQUAL
5	2 EA	MACHINE BOLT, 12mm - 13 X 75mm LONG C/W NUT AND LOCK WASHER
6	2 EA	SPACER, R. S. CONDUIT, 25mm X 38mm LONG

NOTES:
1) USE SAME DETAIL WHEN TERMINATING MORE THAN ONE UG GROUNDING CONDUCTOR.
2) COPPER BAR TO BE DRILLED AND TAPPED TO SUIT SERVIT POST.
3) FOR CONNECTIONS REFER TO LAYOUT DRAWINGS.

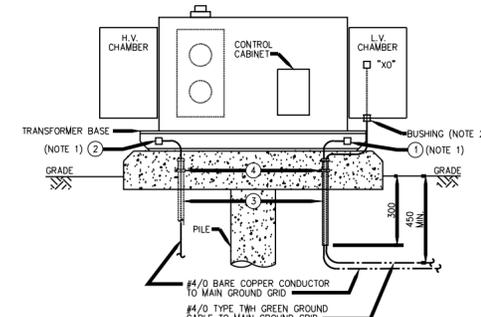
G6 STEEL COLUMN MOUNTED GROUND BAR
N.T.S.



ITEM	QTY	DESCRIPTION
1	1 EA	CONNECTOR, SERVIT POST, BURNDY CAT #KC26B1 OR APPROVED EQUAL
2	AS REQ'D	19mm PVC CONDUIT SLEEVE

NOTES:
1) FOR CONNECTIONS REFER TO LAYOUT DRAWINGS.

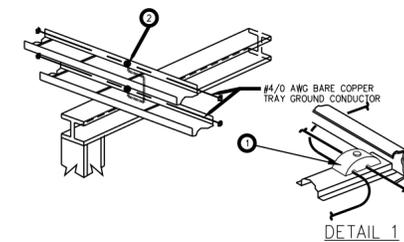
G7 STEEL COLUMN GROUNDING - EXTERIOR GRID
N.T.S.



ITEM	QTY	DESCRIPTION
1	1 EA	GROUND CONNECTOR, BURNDY CAT# GC2929 OR APPROVED EQUAL
2	1 EA	GROUND CONNECTOR, BURNDY CAT# GB29 OR APPROVED EQUAL
3	AS REQ'D	25mm PVC CONDUIT SLEEVE
4	AS REQ'D	25mm CONDUIT CLAMP, 1-HOLE

NOTES:
1) GROUND CONNECTORS TO BE MOUNTED DIAGONALLY OPPOSITE ON TRANSFORMER BASE (BY TRANSFORMER MANUFACTURER).
2) NEUTRAL GROUNDING CONDUCTOR SHALL BE TYPE TW GREEN AND ISOLATED FROM TRANSFORMER TANK & BASE AND CONNECTED DIRECTLY TO THE MAIN GROUND GRID.

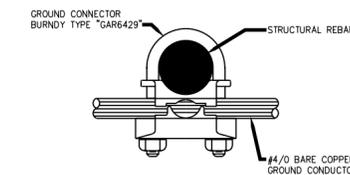
G8 XFMR BASE & NEUTRAL GROUNDING
N.T.S.



ITEM	QTY	DESCRIPTION
1	1	GROUND CONNECTOR, AS TAB #GCM29
2	1	GROUND CONNECTOR, AS TAB #GB29

NOTES:
CABLE TRAYS ARE TO BE GROUNDED AT 15C METER INTERVALS.

G9 CABLE TRAY GROUNDING
N.T.S.



G10 GROUND CONN. TO REBARS IN CONCRETE
N.T.S.

GENERAL NOTES:
1. STANDARD ELECTRICAL INSTALLATION DETAILS ARE PROVIDED TO INDICATE A CONCEPT ONLY AND ARE NOT INTENDED TO RESTRICT IMPROVED OR MORE COST EFFECTIVE ARRANGEMENTS FOR ANY PARTICULAR INSTALLATION.
2. ALL DIMENSIONS ARE IN MILLIMETERS.

For Reference

Legend

0	ISSUED FOR REFERENCE	DMB	08-JAN-2026
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Rev.	Description	Appd.	Date
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Permits / Seals

Project

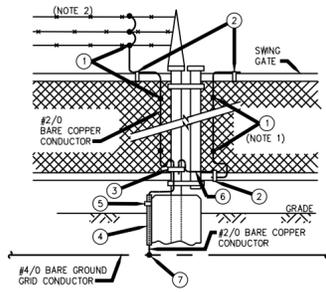
ELECTRICAL DETAILS
GENERAL GROUNDING METHODS

Title

VARIOUS TYPES OF BONDING/GROUNDING

Dwn. D. DUBOWSKI	Chkd. G. POOLE	Dsgn. D. DUBOWSKI
Project No.		Scale As Noted
UofS Drawing No.		Date 17-SEP-2025
Drawing No. E10	Sheet 1 OF 2	Revision 0

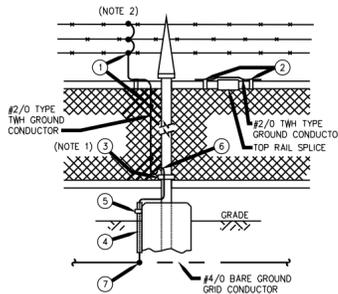
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MATERIAL LIST		
ITEM	QTY	DESCRIPTION
1	AS REQ'D	CONNECTOR, SERVIT POST, BURNDY CAT# KSU26 OR APPROVED EQUAL
2	AS REQ'D	CONNECTOR, 1 1/2" IPS PIPE TO CABLE, BURNDY CAT# GD1726 OR APPROVED EQUAL
3	AS REQ'D	CONNECTOR, 3" IPS PIPE TO CABLE, BURNDY CAT# GD2026 OR APPROVED EQUAL
4	AS REQ'D	19mm PVC CONDUIT SLEEVE
5	AS REQ'D	19mm CONDUIT CLAMP, 1-HOLE
6	AS REQ'D	WELDING CABLE (EXTRA FLEXIBLE)
7	AS REQ'D	COMPRESSION TAP CONNECTOR, #2/0 TO #4/0 CABLE, BURNDY CAT# YGHC29C26 OR APPROVED EQUAL

NOTES:
 1) STRIP BACK INSULATION WHERE CONNECTORS ARE REQUIRED.
 2) GROUND AS SHOWN WHEN BARBWIRE IS REQUIRED.

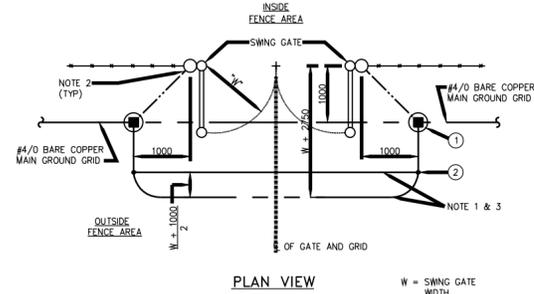
G1 XFMR YARD SWING GATE GROUNDING
 N.T.S.



MATERIAL LIST		
ITEM	QTY	DESCRIPTION
1	AS REQ'D	CONNECTOR, SERVIT POST, BURNDY CAT# KSU26 OR APPROVED EQUAL
2	AS REQ'D	CONNECTOR, 1 1/2" IPS PIPE TO CABLE, BURNDY CAT# GD1726 OR APPROVED EQUAL
3	AS REQ'D	CONNECTOR, 3" IPS PIPE TO CABLE, BURNDY CAT# GD2026 OR APPROVED EQUAL
4	AS REQ'D	19mm PVC CONDUIT SLEEVE
5	AS REQ'D	19mm CONDUIT CLAMP, 1-HOLE
6	AS REQ'D	WELDING CABLE (EXTRA FLEXIBLE)
7	AS REQ'D	COMPRESSION TAP CONNECTOR, #2/0 TO #4/0 CABLE, BURNDY CAT# YGHC29C26 OR APPROVED EQUAL

NOTES:
 1) STRIP BACK INSULATION WHERE CONNECTORS ARE REQUIRED.
 2) GROUND AS SHOWN WHEN BARBWIRE IS REQUIRED.

G2 XFMR YARD FENCE LINE POST GROUNDING
 N.T.S.



MATERIAL LIST		
ITEM	QTY	DESCRIPTION
1	2	GROUND ROD, COPPER CLAD, 19mm X 6096mm LONG
2	2	COMPRESSION TAP CONNECTOR, #4/0 TO #4/0, BURNDY CAT# YGHC29C29 OR APPROVED EQUAL

NOTES:
 1) ALL GROUND CONDUCTORS EMBEDDED IN SOIL SHALL BE #4/0 BARE.
 2) GROUND GRID SHALL BE BURIED MINIMUM OF 600mm BELOW GRADE LEVEL.

G3 XFMR YARD SWING GATE GROUNDING LAYOUT
 N.T.S.

For Reference



UNIVERSITY OF SASKATCHEWAN
 Planning, Design and Construction
 University Services Building
 110 Maintenance Road
 Saskatoon SK
 Canada S7N 5C5

Legend

0	ISSUED FOR REFERENCE	DMB	08-JAN-2026
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Rev.	Description	Appd.	Date

Permits / Seals

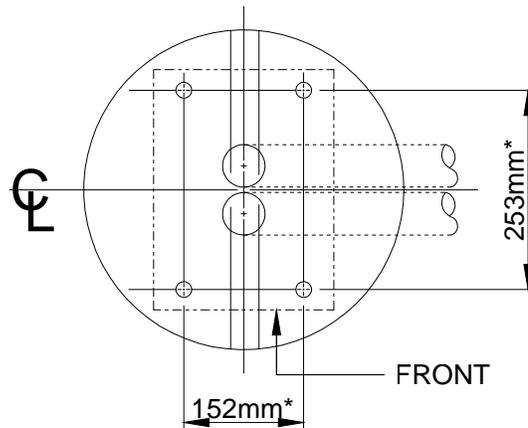
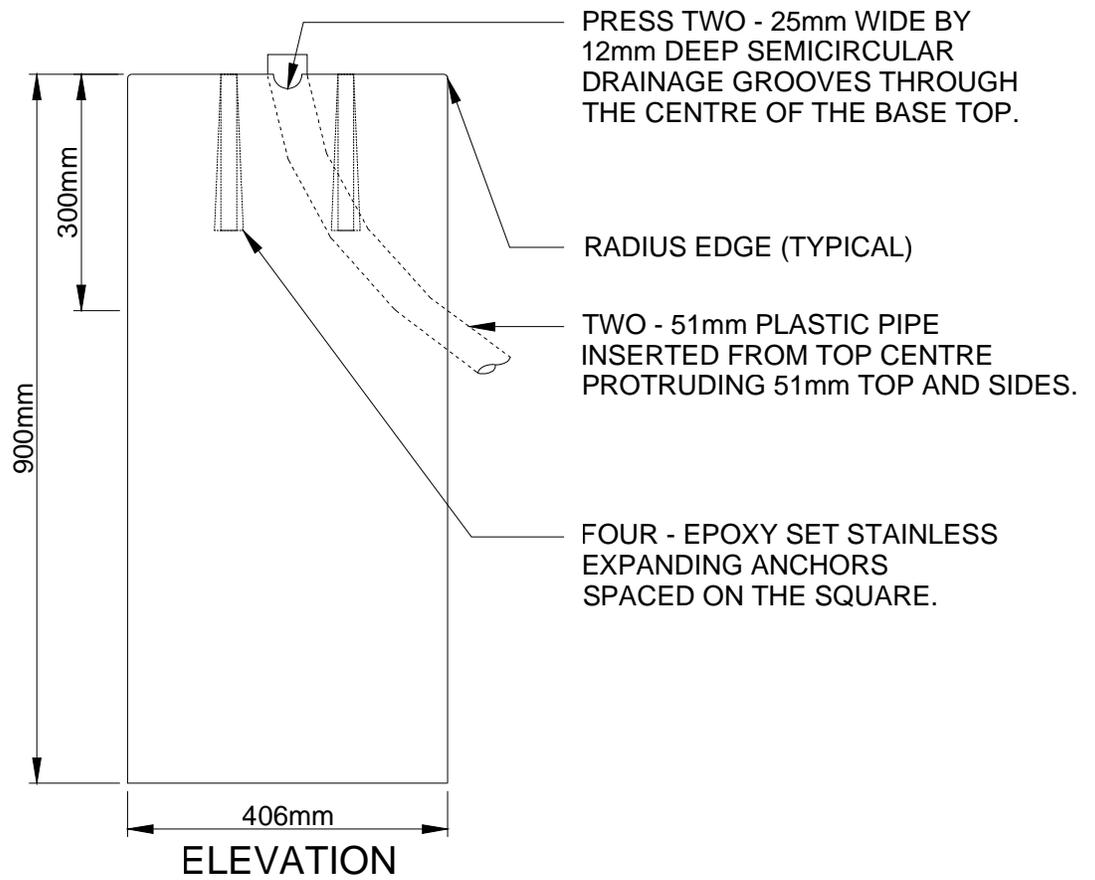
Project

ELECTRICAL DETAILS
GENERAL GROUNDING METHODS

Title

FENCED AREA BONDING/GROUNDING

Dwn. D. DUBOWSKI	Chkd. G. POOLE	Dsgn. D. DUBOWSKI
Project No.		Scale As Noted
UofS Drawing No.		Date 17-SEP-2025
Drawing No. E11	Sheet 2 OF 2	Revision 0



* CONFIRM DIMENSION WITH PEDESTAL MANUFACTURER BEFORE INSTALLATION

0	ISSUED FOR REFERENCE	DMB	12-JAN-2026
Rev.	Description	Appd.	Date

UNIVERSITY OF SASKATCHEWAN

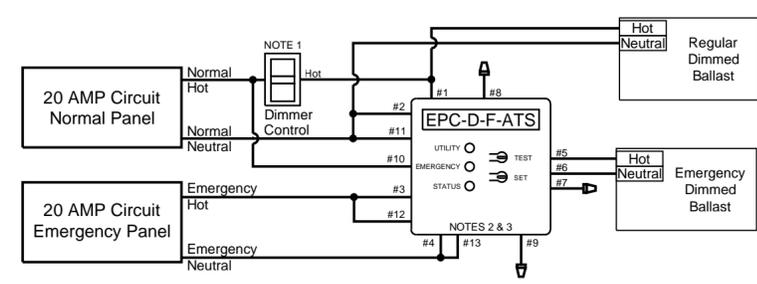
ELECTRICAL DETAILS

PHONE PEDESTAL BASE
PLAN VIEW & ELEVATION

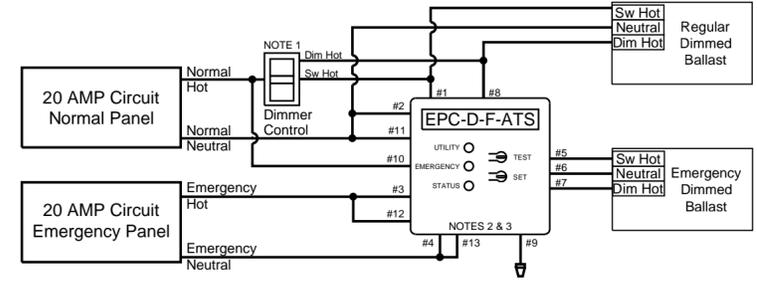


DATE	14-OCT-2025	SCALE	N.T.S.
DRAWN BY	D. DUBOWSKI	E	12
CHECKED BY	K. LEEDAHL		
APPROVED BY	.		
		DRAWING NO.	

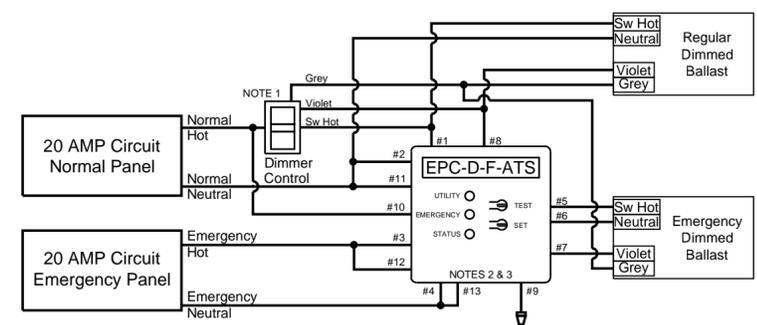
A2 (420x594 mm) W:\OM_Electrical_Public\Electrical_Library\Details\Revised Details\E13-Emergency Lighting Control(30JAN2026).dwg ; Friday, January 30, 2026 4:57:26 PM ; DWG To PDF.pc3



1 **2-WIRE DIMMABLE LOADS (LINE VOLTAGE)**
 WIRING DIAGRAM



2 **3-WIRE DIMMABLE LOADS**
 WIRING DIAGRAM



3 **4-WIRE DIMMABLE LOADS (0-10V)**
 WIRING DIAGRAM

NOTES:

- REFER TO DIMMER MANUFACTURER LITERATURE AND DATA SHEETS FOR RELATED WIRING CONNECTIONS AND ADDITIONAL INFORMATION.
- WIRING DIAGRAMS ARE FOR REFERENCE PURPOSES ONLY. SEE MANUFACTURER'S LATEST DATA SHEETS FOR ADDITION INFORMATION ON THE LVS MODEL #EPC-D-F-ATS. AN APPROVED EQUAL IS LEGRAND MODEL #AD-EPC-D-F-ATS.
- ATS DEVICE SHOWN IS FOR 120-277V OPERATION. USE OF ANY OTHER DEVICE IS NOT ALLOWED WITHOUT VERIFICATION AND APPROVAL BY U OF S ELECTRICAL ENGINEERING BEFORE IMPLEMENTATION. WHERE 347V LIGHTING IS EXISTING OR REQUIRED, THE OWNER SHALL BE NOTIFIED AND CONSULTED BEFORE DESIGN.

For Reference

Legend

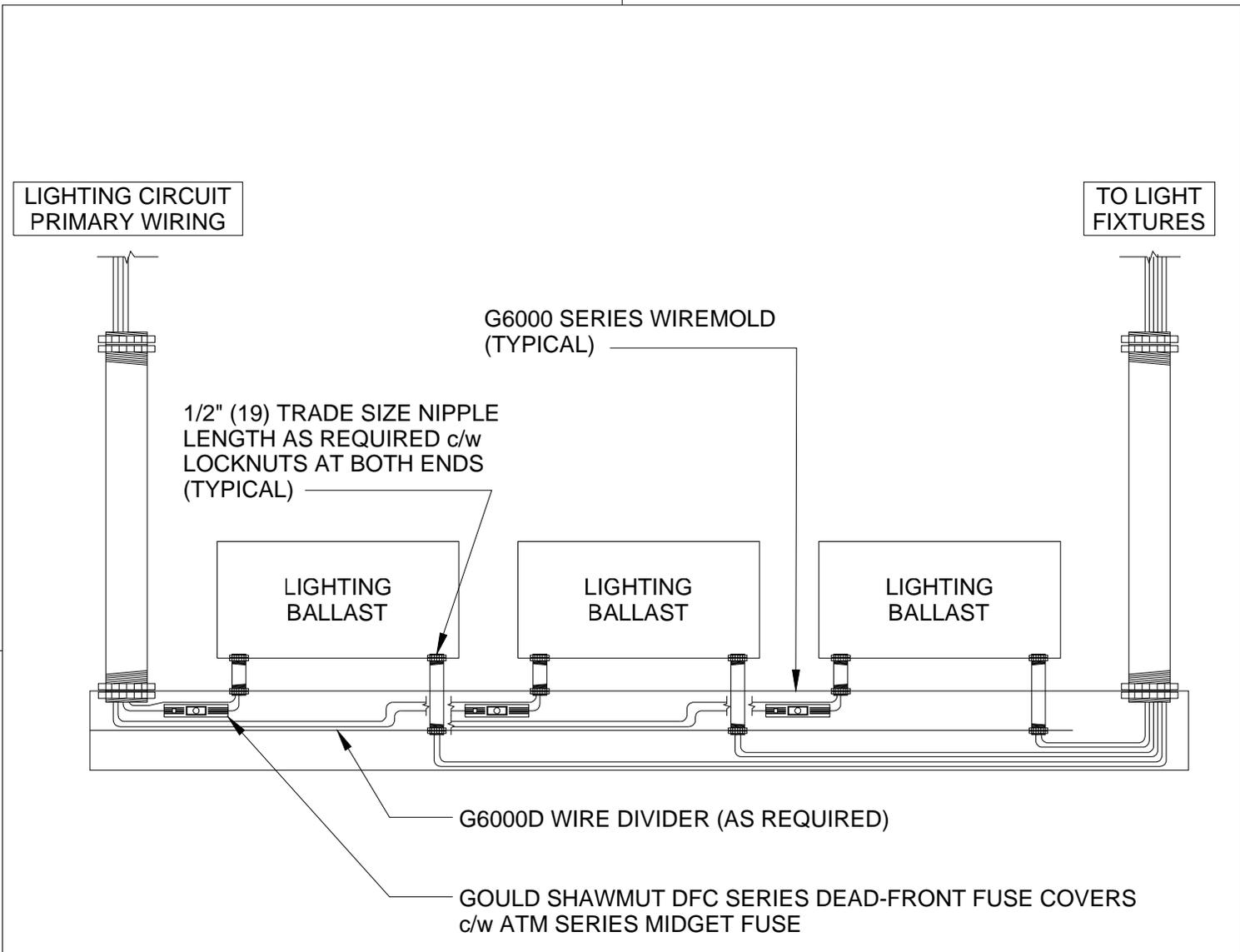
0	ISSUED FOR REFERENCE	LJD	30-JAN-2026
Rev.	Description	Appd.	Date

Permits / Seals

Project
EMERGENCY LIGHTING CONTROL

Title
2-WIRE DIMMABLE LOADS (LINE VOLTAGE), 3-WIRE DIMMABLE LOADS, AND 4-WIRE DIMMABLE LOADS (0-10V)

Dwn. D. DUBOWSKI	Chkd. L. DOBSON	Dsgn. D. DUBOWSKI
Project No.		Scale As Noted
UofS Drawing No.		Date 16-OCT-2025
Drawing No. E13	Sheet 1 OF 1	Revision 0

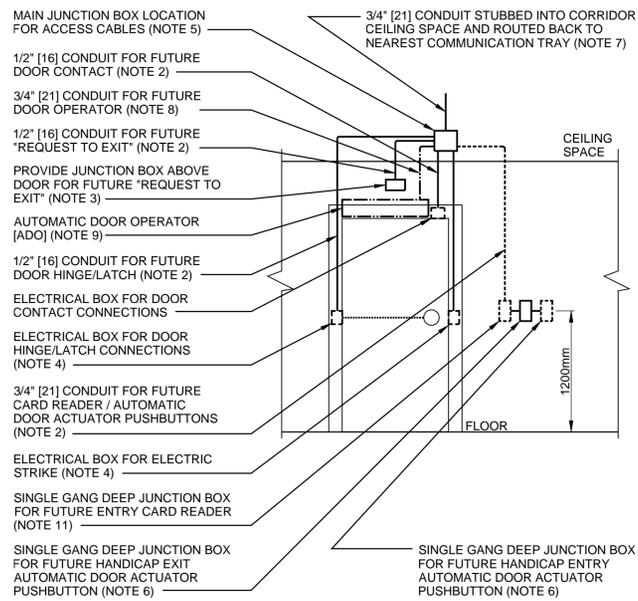


NOTES:

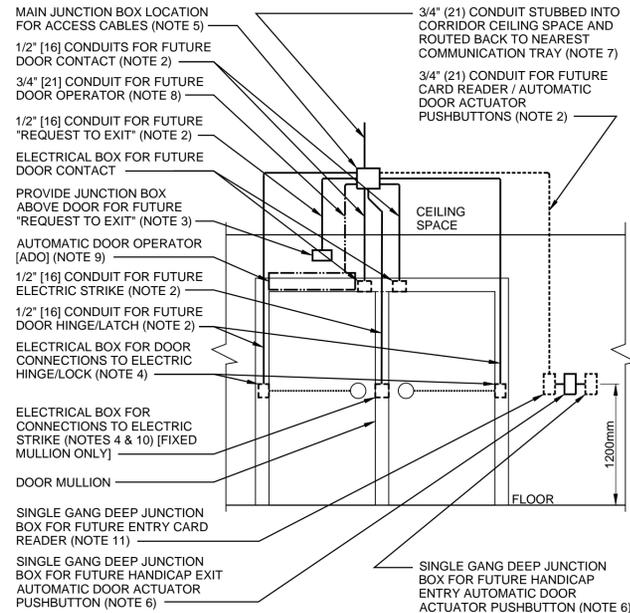
1. REFER TO MANUFACTURERS RECOMMENDED BALLAST CLEARANCE AND CONFIRM APPROVAL WITH U OF S ELECTRICAL BEFORE INSTALLATION.
2. THIS DRAWING IS INTENDED TO BE FOLLOWED IN PRINCIPAL. DETAILS SUCH AS ORIENTATION WILL VARY WITH MANUFACTURER.

0	ISSUED FOR REFERENCE	DMB	12-JAN-2026
Rev.	Description	Appd.	Date

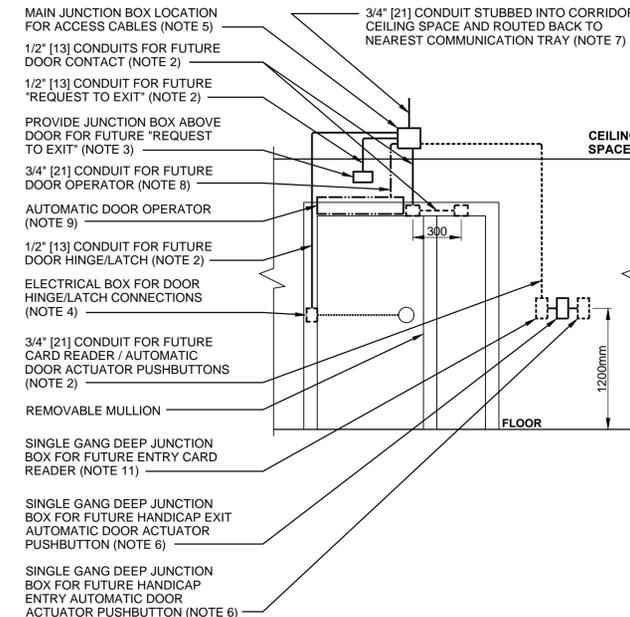
UNIVERSITY OF SASKATCHEWAN ELECTRICAL DETAILS REMOTE BALLAST MOUNTING LAYOUT		DATE 13-DEC-2001	SCALE N.T.S.
		DRAWN BY D. DUBOWSKI	E
		CHECKED BY K. LEEDAHL	/ 14
		APPROVED BY K. LEEDAHL	DRAWING NO.



NOTE:
 THIS ROUGH IN DETAIL DOES NOT INCLUDE CONDUIT FOR 120V POWER TO FUTURE DOOR OPERATOR.



NOTE:
 THIS ROUGH IN DETAIL DOES NOT INCLUDE CONDUIT FOR 120V POWER TO FUTURE DOOR OPERATOR.



NOTE:
 THIS ROUGH IN DETAIL DOES NOT INCLUDE CONDUIT FOR 120V POWER TO FUTURE DOOR OPERATOR.

1 SINGLE DOOR LAYOUT
 ROUGH IN DETAIL

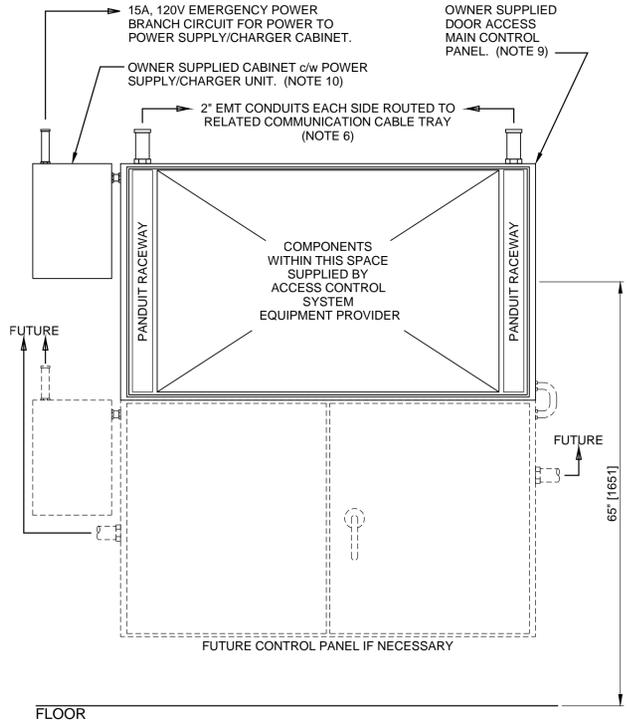
2 DOUBLE DOOR WITH MULLION LAYOUT
 ROUGH IN DETAIL

3 SINGLE DOOR WITH MULLION (ELECTRIC LOCK)
 ROUGH IN DETAIL

DOOR ACCESS NOTES:

- ROUGH IN DETAILS ARE VIEWED FROM SECURED SIDE OF ROOM WALL. CONDUITS SHOWN ARE WITHIN WALL CAVITY AND ARE NOT SURFACE MOUNTED UNLESS STATED OTHERWISE.
- ALL CONDUITS TO BE PROVIDED WITH A FISH CORD FOR FUTURE INSTALLATION OF WIRING.
- REQUEST TO EXIT (RTE) DEVICE, SINGLE GANG BOX AND CONDUIT TO BE PROVIDED WHERE APPLICABLE. RTE MOUNTS TO COVER PLATE OF SINGLE GANG JUNCTION BOX MOUNTED HORIZONTALLY ABOVE DOOR. REFER TO MANUFACTURER INFORMATION FOR ACTUAL JUNCTION BOX LOCATION. SOME CIRCUMSTANCES MAY REQUIRE THE RTE TO BE INSTALLED ON THE COVER PLATE OF THE AUTOMATED DOOR OPERATOR (ADO). IF SO, THE COMMUNICATION CONDUIT TO THE ADO SHALL BE INCREASED TO THE NEXT TRADE SIZE.
- ELECTRIC STRIKE OR HINGE/LATCH TO BE PROVIDED WHERE APPLICABLE. REFER TO ACTUAL DOOR HARDWARE SCHEDULE FOR ACTUAL DOOR CONFIGURATION.
- PROVIDE MAIN JUNCTION BOX (5" SQUARE BOX) IN SECURE SIDE OF ROOM ABOVE DOOR CONTACT LOCATION. INSTALL IN CEILING SPACE WHERE APPLICABLE AND EASILY ACCESSIBLE. MANUFACTURER: ABB STEEL CITY OR APPROVED EQUAL.
- AUTOMATIC DOOR ACTUATOR PUSHBUTTON, SINGLE GANG DEEP BOX AND CONDUIT TO BE PROVIDED WHERE APPLICABLE. REFER TO DOOR HARDWARE SCHEDULE FOR ACTUAL DOOR CONFIGURATION.
- WHEN AUTOMATIC DOOR ACTUATOR PUSHBUTTON OPTION IS USED, CONDUIT IS TO BE UPSIZED TO 1" [27] TRADE SIZE.
- IF AUTOMATIC DOOR OPERATOR IS USED, DUE TO VARIATIONS IN OPERATOR DESIGN AND MANUFACTURER, REFER TO MANUFACTURER'S INSTALLATION MANUAL FOR PROPER LOCATION OF DOOR CONTROL CONNECTIONS. PROVIDE 3/4" [21] CONDUIT IN WALL FOR DOOR OPERATOR CONTROLS FROM MAIN JUNCTION BOX TO DOOR OPERATOR. WIRE ENTRY LOCATION WILL BE DICTATED BY THE LOCK HARDWARE.
- WHEN AUTOMATIC DOOR OPERATOR IS USED, REFER TO MANUFACTURER'S INSTALLATION MANUAL FOR PROPER LOCATION OF 120V POWER CONNECTIONS. PROVIDE 1/2" [16] CONDUIT IN WALL FROM DOOR OPERATOR POWER TO NEAREST 120V EMERGENCY POWER BRANCH CIRCUIT.
- WHERE DOOR INSTALLATION IS A DOUBLE DOOR WITH MULLION, CONDUIT AND ELECTRICAL BOX FOR ELECTRIC STRIKE IS ONLY PROVIDED WHEN A FIXED MULLION IS REQUIRED.
- WALL LOCATION AND MINIMUM SPACING BETWEEN CARD READER AND AUTOMATIC DOOR ACTUATOR PUSHBUTTONS ARE DETERMINED ON A CASE BY CASE BASIS DUE TO AMOUNT OF AVAILABLE WALL SURFACE ADJACENT TO DOORWAY AND DOOR APPLICATION (INTERIOR OR EXTERIOR DOOR).
- ALL DOOR ACCESS ROUGH IN DETAILS ARE FOR REFERENCE PURPOSES ONLY. FOR UNIQUE SITUATIONS, CONFIRM ACTUAL DEVICE LOCATIONS WITH OWNER BEFORE FINAL INSTALLATION.

4 DOOR ACCESS
 NOTES



5 CARD ACCESS CONTROL PANEL LAYOUT
 ROUGH IN DETAIL

CARD ACCESS CONTROL PANEL NOTES:

- UNIVERSITY TO PROVIDE SPARE RECEIVER TO SYSTEM PROVIDER FOR APPROXIMATELY 1 MONTH FOR SYSTEM TESTING PURPOSES.
- UNIVERSITY TO PROVIDE AND PROGRAM BACNET DEVICE FOR TESTING.
- CONDUIT AND WIRING TO ACCESS CONTROL PANEL TO BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR, AS WELL AS ANY 120V RELATED SERVICES FOR POWER TO PANEL. ACTUAL LOCATION IF FIELD WIRING CONDUITS IS DEPENDANT UPON PHYSICAL LAYOUT OF EQUIPMENT WITHIN CONTROL PANEL.
- CONFIRM ACTUAL SIZE OF POWER SUPPLY PANEL AND LOCATION WITH OWNER BEFORE FINAL INSTALLATION.
- MOUNTING HEIGHT FOR CARD ACCESS PANEL TO BE 65" [1651 MM] FROM CENTER OF PANEL TO TOP OF FINISHED FLOOR. SPACE BELOW PANEL IS DESIGNATED FOR ANY FUTURE EXPANSION.
- CONDUITS TO ACCOMMODATE WIRING FROM SECURITY COMPONENTS (KEYPAD, RTE, DPS, ... ETC.), MOUNTED AT DOOR LOCATIONS. CENTRAL STATION RECEIVER, UNIVERSITY SUPPLIED ACCESS CONTROL DEVICES AND NETWORK CONNECTION FOR CONTROL PANEL TO THE SWITCH. TOTAL NUMBER OF 2" CONDUITS TO BE INSTALLED VARIES ON EACH INSTALLATION. CONFIRM REQUIREMENTS WITH UNIVERSITY PRIOR TO FINAL INSTALLATION.
- ALL WIRING MUST BE RUN UNSPLICED FROM CONTROL PANEL LOCATION TO EACH ASSOCIATED DEVICE LOCATION AS PER UNIVERSITY STANDARDS.
- ANY ALTERNATE INSTALLATION METHODS OR REVISIONS MUST BE APPROVED BY OWNER.
- MAIN CONTROL PANEL IS TO BE 48" WIDE AND 30" HIGH AND IS OWNER SUPPLIED. APPROVED MANUFACTURER: HAMMOND #EN4TD30488GY.
- POWER SUPPLY CABINET AND ASSOCIATED EQUIPMENT WITHIN CABINET ARE TO BE SUPPLY BY OWNER. REFER TO U OF S SECURITY SERVICES FOR ACTUAL SIZE OF CABINET. PROVIDE 1" CONDUIT FROM CABINET TO SIDE OF CARD ACCESS CONTROL PANEL.

6 CARD ACCESS CONTROL PANEL
 NOTES

Legend

0	ISSUED FOR REFERENCE	DMB	12-JAN-2026
Rev.	Description	Appd.	Date

Permits / Seals

Project
ELECTRICAL DETAILS
CARD ACCESS SYSTEM

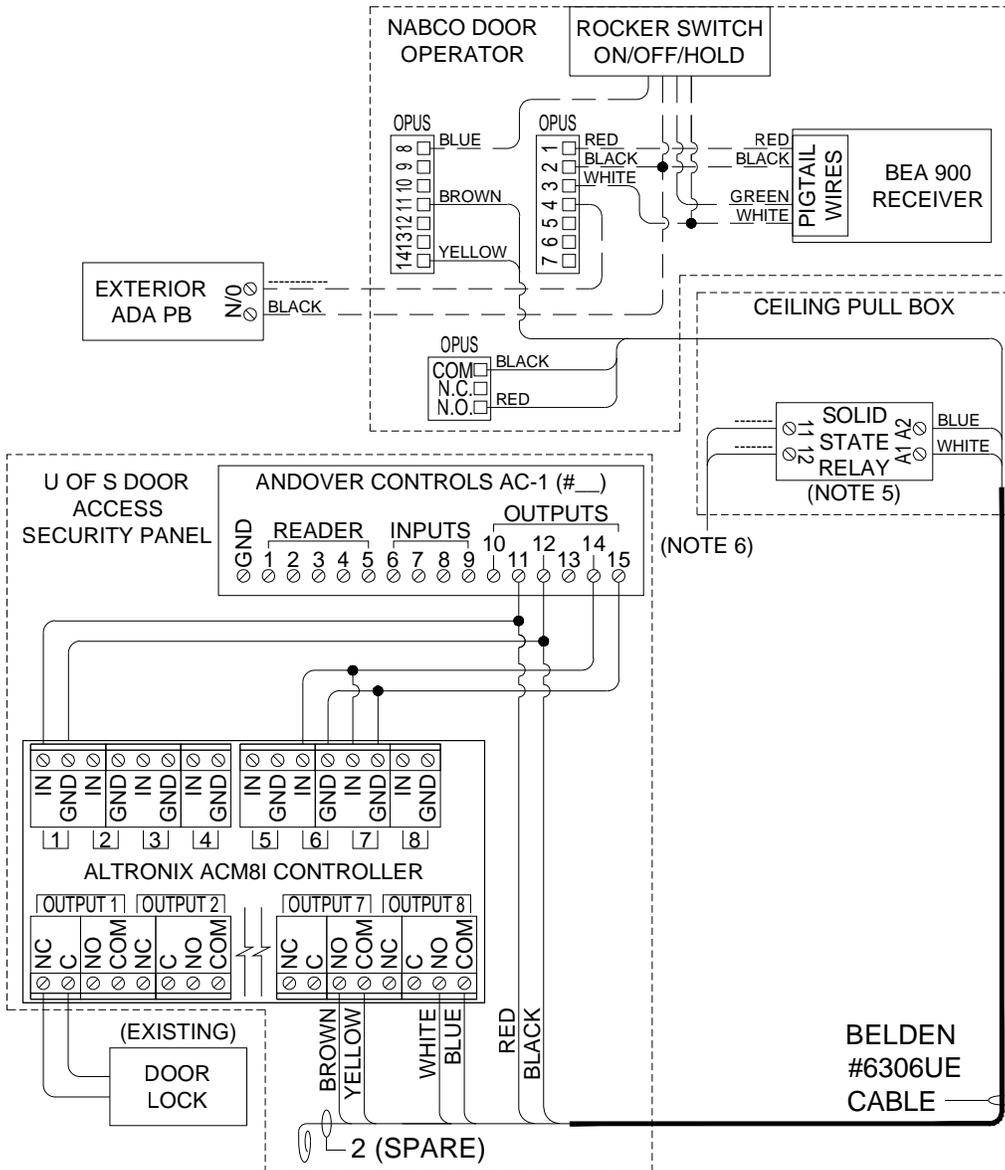
Title
DOOR ROUGH IN LAYOUTS, CARD ACCESS CONTROL PANEL LAYOUT, AND ALL RELATED NOTES

Dwn. D. DUBOWSKI	Chkd. D. BALIAD	Dsgn. K. LEEDAHL
Project No.		Scale N/A
UofS Drawing No.		Date 16-PCT-2025
Drawing No. E15	Sheet 1 OF 1	Revision 0

For Reference

NOTES:

1. N/C DENOTES NO CONNECTION TO BELDEN #6306UE CABLE.
2. ALL DOOR OPERATOR AND 900 RECEIVER CONNECTIONS TO BE COMPLETED BY DOOR INSTALLER.
3. TERMINATIONS FOR SECURITY PANEL CONNECTIONS TO BE COMPLETED BY OWNER.
4. ALL WIRING SHOWN AS DASHED IS SUPPLIED AND INSTALLED BY DOOR INSTALLER.
5. DOOR RELEASE SECURITY RELAY IS PHOENIX CONTACT #REL-MR-24AC/21 HC-2961406 C/W #PRI-BSC2/2X21-2833518 RELAY BASE.
6. WIRING IS CONNECTED TO EXISTING 120V MAGNETIC HOLD OPEN CIRCUIT FOR CLOSING UPON A FIRE ALARM CONDITION.

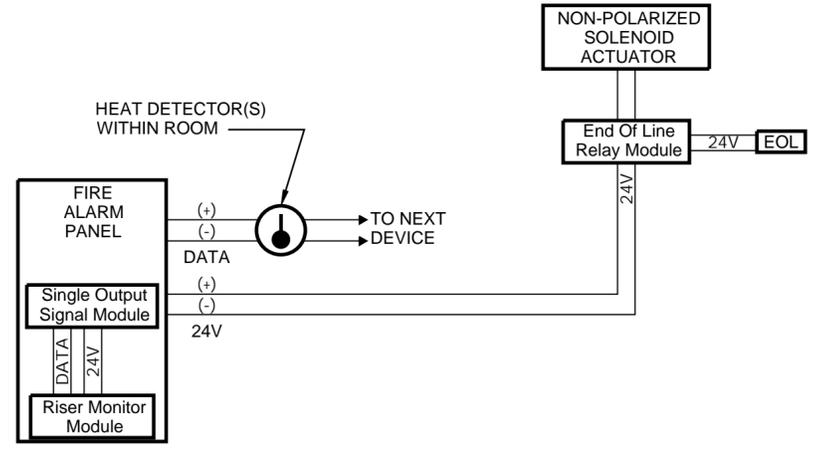


	BEA 900 RECEIVER	OPUS CONTROL	PUSH BUTTON	ANDOVER AC-1	ALTRONIX ACM81
BELDON #6304UE	BLACK	N/C	COM	12	N/C
	RED	N/C	N.O.	11	N/C
	WHITE	N/C	N/C	N/C	X
	GREEN	N/C	N/C	N/C	N/C
	BROWN	N/C	11	14	N/C
	BLUE	N/C	N/C	N/C	X
	ORANGE	N/C	N/C	N/C	N/C
	YELLOW	N/C	14	N/C	15

REFER TO COLOR CHART AT LEFT FOR U OF S DOOR ACCESS SECURITY PANEL INTERFACE CONNECTIONS

0	ISSUED FOR REFERENCE	DMB	12-JAN-2026
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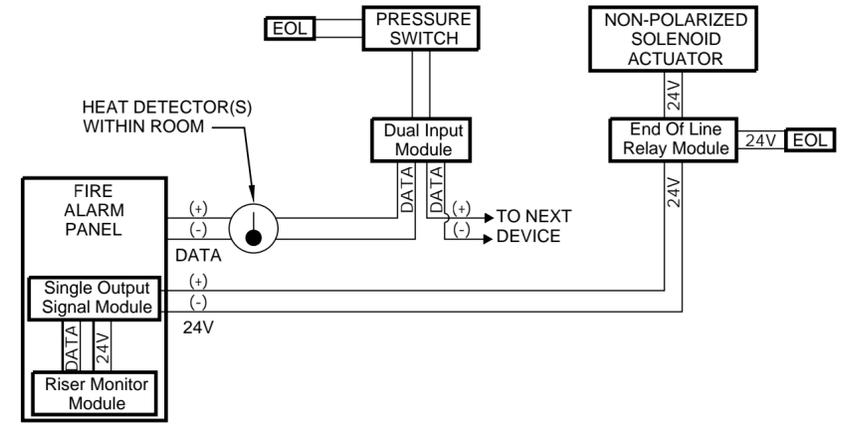
UNIVERSITY OF SASKATCHEWAN ELECTRICAL DETAILS DOOR ACCESS INTERFACE WIRING DIAGRAM		DATE 20-FEB-2020	SCALE N.T.S.
		DRAWN BY D. DUBOWSKI	E
		CHECKED BY G. POOLE	
		APPROVED BY D. BALIAD	DRAWING NO. 16



SINGLE INTERLOCK PREACTION SYSTEM WIRING DIAGRAM

NOTES:

1. THIS DIAGRAM IS FOR REFERENCE ONLY. COMPONENTS MAY VARY FROM MANUFACTURER TO MANUFACTURER.



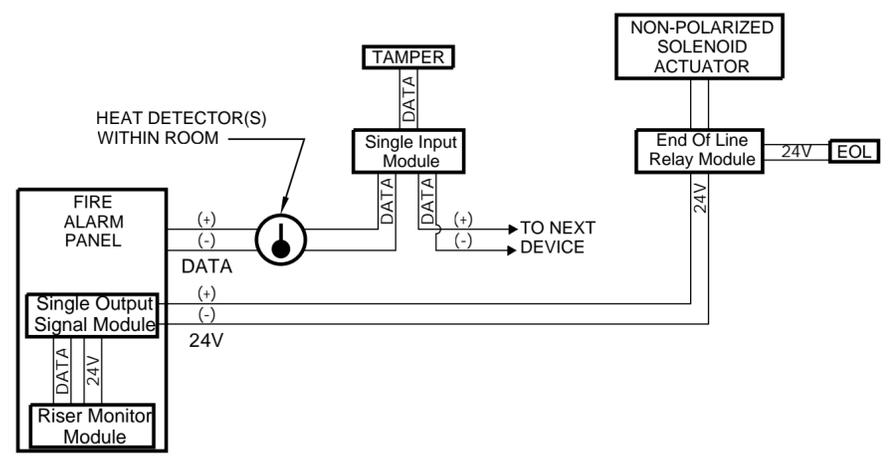
DOUBLE INTERLOCK PREACTION SYSTEM WIRING DIAGRAM

NOTES:

1. THIS DIAGRAM IS FOR REFERENCE ONLY. COMPONENTS MAY VARY FROM MANUFACTURER TO MANUFACTURER.

1 SINGLE INTERLOCK PREACTION SYSTEM WIRING DIAGRAM

2 DOUBLE INTERLOCK PREACTION SYSTEM WIRING DIAGRAM



PREACTION NON-PRESSURIZED SOLENOID WIRING DIAGRAM

NOTES:

1. THIS DIAGRAM IS FOR REFERENCE ONLY. COMPONENTS MAY VARY FROM MANUFACTURER TO MANUFACTURER AND DEPENDING UPON THE LATEST INFORMATION SUPPLIED FROM THE MANUFACTURER.

3 PREACTION NON-PRESSURIZED SOLENOID WIRING DIAGRAM

For Reference

Legend

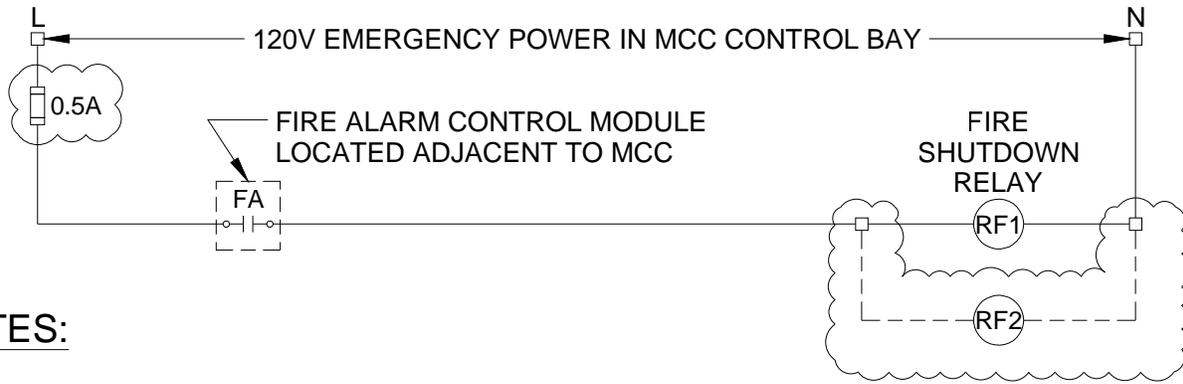
0	ISSUED FOR REFERENCE	DMB	12-JAN-2026
Rev.	Description	Appd.	Date

Permits / Seals

Project
ELECTRICAL DETAILS
FIRE SUPPRESSION PREACTION SYSTEMS

Title
SINGLE & DOUBLE INTERLOCK AND PREACTION NON-PRESSURIZED SOLENOID

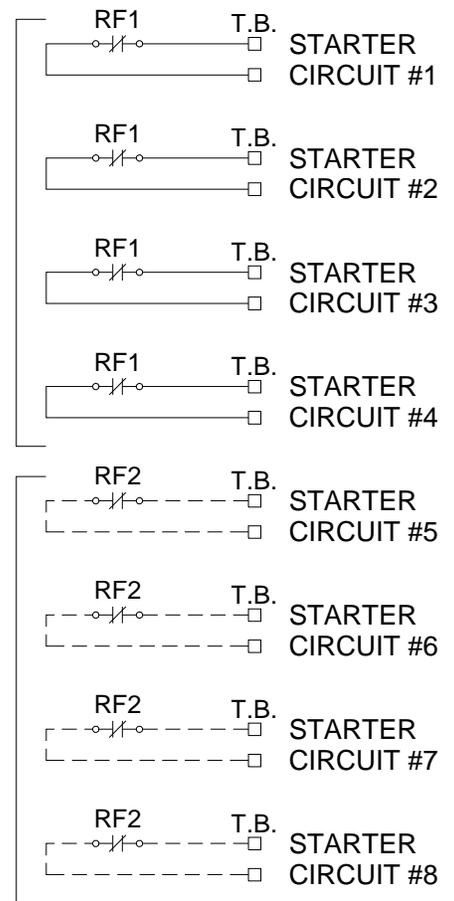
Dwn. D. DUBOWSKI	Chkd. G. POOLE	Dsgn. D. DUBOWSKI
Project No.		Scale As Noted
UofS Drawing No.		Date 17-SEP-2025
Drawing No. E18	Sheet 1 OF 1	Revision 0



NOTES:

1. ACTUAL NUMBER AND DESIGNATIONS OF MOTOR STARTERS WILL BE DEPENDANT UPON OVERALL BUILDING DESIGN.
2. CONFIRM ALL MOTOR STARTER DESIGNATIONS, WIRING AND MCC LOCATIONS WITH CONTROLS DIVISION.
3. FIRE ALARM SHUTDOWN RELAYS TO BE 120V COIL, NEMA RATED 4-POLE MASTER RELAY c/w N.C. CONTACTS, 600V, 20A, RATED. SECOND RELAY IS INSTALLED IF MORE THAN 4 FANS ARE REQUIRED TO BE SHUT-DOWN. MANUFACTURER: SQUARE D #SQD 8501XMO40V02.
4. SCHEMATIC DIAGRAM IS FOR REFERENCE ONLY AND SHALL BE CONFIRMED WITH SCHEMATICS BY CONTROLS DIVISION BEFORE COMPLETION OF WIRING TERMINATIONS.
5. FIRE ALARM CONTROL MODULE IS PROGRAMMED FOR 5 SECOND DELAY, UPON NOTIFICATION OF FIRE ALARM, BEFORE INITIATING FAN SHUT DOWN.
6. A SEPARATE FIRE ALARM CONTROL MODULE IS LOCATED ADJACENT TO CCMS CONTROL PANEL FOR IMMEDIATE FIRE ALARM INPUT.

7. FUSE HOLDER, TERMINAL BLOCKS, AND RELATED COMPONENTS TO BE PHOENIX CONTACT WITH CHARACTERISTICS AS FOLLOWS:
 - FUSE HOLDER MODULAR TERMINAL BLOCK, 250V, 28A, #12 - #26 AWG., BLACK, PART NUMBER UT 4-L/HESI (5X20).
 - FEED-THROUGH TERMINAL BLOCK, 1000V, 32A, #12 - #26 AWG., GRAY, PART NUMBER UT 4.
 - END BARRIER, GREY, PART NUMBER D-UT 2,5/10.
 - MARKER CARRIER, (40mm X 17mm), DIN MOUNT, PART NUMBER UBE/D.
 - END CLAMP/ANCHOR, GRAY, PART NUMBER CLIPFIX 35-5.

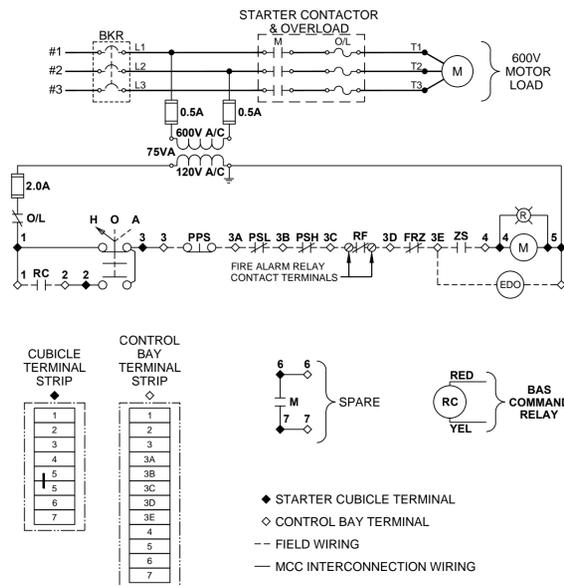


FIRE ALARM FAN SHUTDOWN SCHEMATIC DIAGRAM

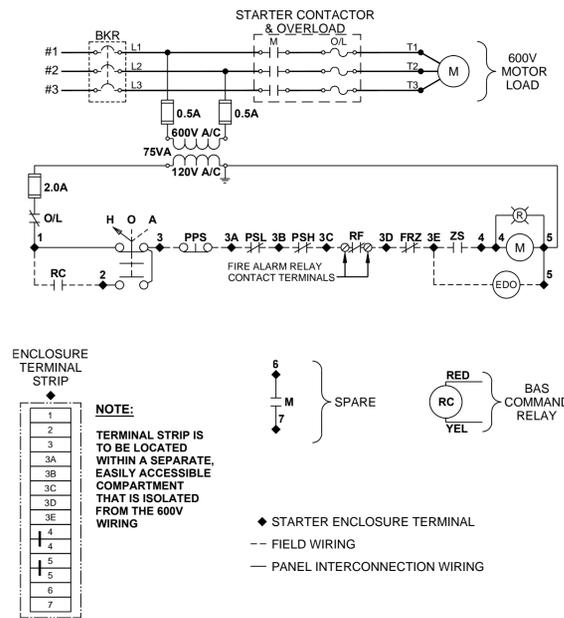
0	ISSUED FOR REFERENCE	DMB	12-JAN-2026
Rev.	Description	Appd.	Date

UNIVERSITY OF SASKATCHEWAN ELECTRICAL DETAILS FIRE ALARM SYSTEMS FAN SHUTDOWN CIRCUIT SCHEMATIC DIAGRAM		DATE	22-SEP-2025	SCALE	N.T.S.
		DRAWN BY	D. DUBOWSKI		19 DRAWING NO.
		CHECKED BY	G. POOLE		
		APPROVED BY	D. DUBOWSKI		

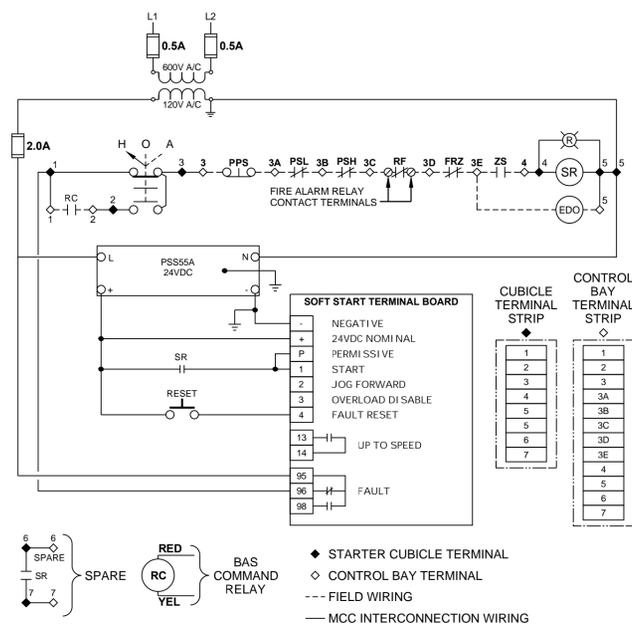
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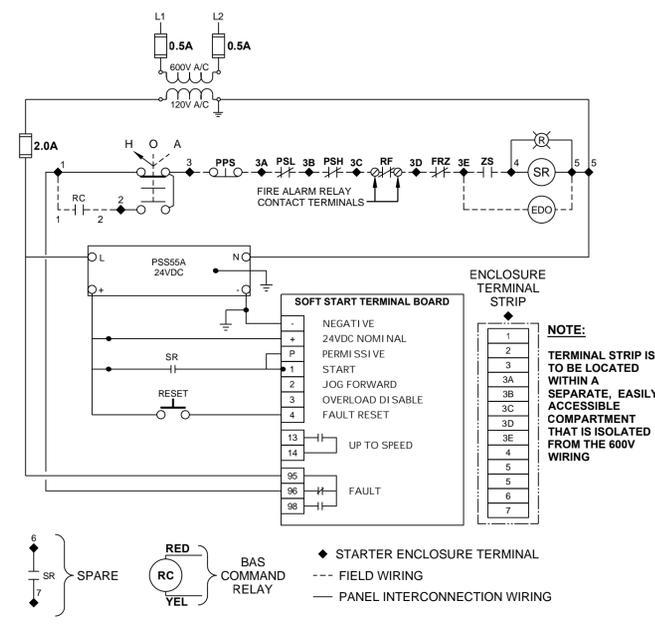
1 FVNR STARTER IN MCC (c/w CONTROL BAY)
WIRING SCHEMATIC



2 FVNR STARTER IN ENCLOSURE (NON-MCC)
WIRING SCHEMATIC



4 SOFT STARTER IN MCC (c/w CONTROL BAY)
WIRING SCHEMATIC



5 SOFT STARTER IN ENCLOSURE (NON-MCC)
WIRING SCHEMATIC

FVNR STARTER NOTES:

- FIELD DEVICES MAY NOT BE EXACTLY AS SHOWN AND SHALL BE CO-ORDINATED WITH CONTROLS AND MECHANICAL DRAWINGS BEFORE TERMINATIONS AND FINAL INSTALLATION BY DIVISION 16.
- FIELD DEVICES ARE IDENTIFIED AS FOLLOWS: PPS = A PUSH-PULL STOP BUTTON, PSL = PRESSURE SWITCH LOW, PSH = PRESSURE SWITCH HIGH, RF = RELAY FOR FIRE ALARM, FRZ = FREEZE STAT, EDO = ELECTRIC DAMPER OPERATOR, AND ZS = DAMPER LIMIT SWITCH.
- STARTERS THAT REQUIRE CCMS CONTROL SHALL USE AN HOA SWITCH WITH MOMENTARY CONTACT, SPRING RETURN FROM THE "HAND" TO "OFF" POSITION AND MAINTAINED CONTACT WHEN IN THE "AUTO" POSITION. AIR COMPRESSORS AND NON-CCMS EQUIPMENT ARE TO USE A MAINTAINED CONTACT HOA SWITCH, UNLESS SPECIFIED OTHERWISE.
- THE RC RELAY [REMOTE COMMAND] WILL BE SUPPLIED BY OWNER, INSTALLED BY CONTROLS TENDER AND MOUNTED IN THE DRIVE ENCLOSURE FOR STAND-ALONE DRIVES OR PROVIDED IN AN MCC CONTROL BAY IF THE VFD DRIVE OR STARTER IS LOCATED WITHIN AN MCC. RELAY WILL RESIDE WITHIN TERMINAL STRIP LAYOUT.
- OPEN DIAMOND TERMINALS ARE MOUNTED WITHIN AN ADJACENT CONTROL BAY. CLOSED DIAMOND TERMINALS ARE MOUNTED WITHIN THE DRIVE ENCLOSURE. FOR STAND-ALONE DRIVES WITHOUT A CONTROL BAY THE OPEN TERMINALS ARE OMITTED. ALL TERMINALS NECESSARY TO COMPLETE WIRING CONNECTIONS WITHIN VFD DRIVE ENCLOSURE, ARE TO BE SUPPLIED BY MANUFACTURER.
- THE TRANSFORMER, FUSES, HOA, RUN INDICATOR, AND SR RELAY SHALL BE MOUNTED WITHIN THE DRIVE OR STARTER ENCLOSURE. SR RELAY SHALL BE A 120VAC, 8 PIN, 2 POLE RELAY WITH SOCKET.
- FOR ADDITIONAL INFORMATION ON FIRE ALARM SHUTDOWN CONTACT, REFERENCE U OF S ELECTRICAL DETAIL E/38.

3 FVNR STARTER
GENERAL NOTES

SOFT STARTER NOTES:

- FIELD DEVICES MAY NOT BE EXACTLY AS SHOWN AND SHALL BE CO-ORDINATED WITH CONTROLS AND MECHANICAL DRAWINGS BEFORE TERMINATIONS AND FINAL INSTALLATION BY DIVISION 16.
- FIELD DEVICES ARE IDENTIFIED AS FOLLOWS: PPS = A PUSH-PULL STOP BUTTON, PSL = PRESSURE SWITCH LOW, PSH = PRESSURE SWITCH HIGH, RF = RELAY FOR FIRE ALARM, FRZ = FREEZE STAT, EDO = ELECTRIC DAMPER OPERATOR, AND ZS = DAMPER LIMIT SWITCH.
- STARTERS THAT REQUIRE CCMS CONTROL SHALL USE AN HOA SWITCH WITH MOMENTARY CONTACT, SPRING RETURN FROM THE "HAND" TO "OFF" POSITION AND MAINTAINED CONTACT WHEN IN THE "AUTO" POSITION. AIR COMPRESSORS AND NON-CCMS EQUIPMENT ARE TO USE A MAINTAINED CONTACT HOA SWITCH, UNLESS SPECIFIED OTHERWISE.
- THE RC RELAY [REMOTE COMMAND] WILL BE SUPPLIED BY THE OWNER AND MOUNTED IN THE SOFT START ENCLOSURE FOR STAND-ALONE DRIVES OR IN A MCC CONTROL BAY IF THE SOFT START IS LOCATED WITHIN AN MCC.
- OPEN DIAMOND TERMINALS ARE MOUNTED WITHIN AN ADJACENT CONTROL BAY. CLOSED DIAMOND TERMINALS ARE MOUNTED WITHIN THE SOFT START ENCLOSURE. FOR STAND-ALONE SOFT START WITHOUT A CONTROL BAY THE OPEN TERMINALS ARE OMITTED. ALL TERMINALS NECESSARY TO COMPLETE WIRING CONNECTIONS WITHIN SOFT START ENCLOSURE, ARE TO BE SUPPLIED BY MANUFACTURER.
- THE TRANSFORMER, FUSE, HOA, RUN INDICATOR AND SR RELAY SHALL BE MOUNTED WITHIN THE DRIVE OR STARTER ENCLOSURE. SR RELAY SHALL BE A 120VAC, 8 PIN, 2 POLE RELAY WITH SOCKET.
- SCHEMATIC DEPICTED IN DRAWINGS E/30A & E/30B ARE FOR REFERENCE PURPOSES ONLY. REFER TO MANUFACTURER'S INFORMATION FOR ACTUAL VFD DRIVE TERMINATIONS AND DESIGNATIONS. MANUFACTURER TO REVISE SHOP DRAWINGS AS REQUIRED TO SUIT U OF S REQUIREMENTS. SHOP DRAWINGS ARE TO BE REVIEWED AND ACCEPTED BY U OF S BEFORE FINAL IMPLEMENTATION.
- SR CONTACT OPEN SHALL STOP DRIVE AND PREVENT DIRECT ACCESS TO DRIVE CONTROLS VIA FRONT PANEL. SR CONTACT CLOSED SHALL START DRIVE FORWARD.
- WHEN HOA SWITCH IS IN "AUTO", REFERENCE SPEED CONTROL SIGNAL FROM BAS IS SELECTED. WHEN HOA IS IN "OFF" POSITION, NO EXTERNAL REFERENCE IS SELECTED. WHEN HOA IS IN "HAND" POSITION, KEYPAD OPERATION IS SELECTED.
- FAULT AND STATUS CONTACTS SHALL BE DRY. FAULT CONTACT SHALL BE RATED AT 1 AMP RMS, 120V OR GREATER.
- CONTROL TRANSFORMER SHALL BE RATED 75 VA MINIMUM.
- WHERE STAND ALONE SOFT START ENCLOSURES REQUIRE FIRE ALARM SHUT DOWN, A 1/2" (16) EMT CONDUIT SHALL BE INSTALLED BACK TO THE NEAREST CCMS CONTROLLED MCC CONTROL BAY, UNLESS STATED OTHERWISE.
- SOFT START FOR MOTORS 15 H.P. AND BELOW, MAY BE INSTALLED WITHIN AN MCC UPON APPROVAL BY OWNER. FOR MOTORS ABOVE 15 H.P., SOFT START SHALL BE INSTALLED AS STAND-ALONE UNITS. STARTERS FOR MOTORS SHALL BE INSTALLED WITHIN AN MCC, UNLESS STATED OTHERWISE.

6 SOFT STARTER
GENERAL NOTES

0	ISSUED FOR REFERENCE	DMB	12-JAN-2026
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Rev.	Description	Appd.	Date
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Permits / Seals

Project

ELECTRICAL DETAILS

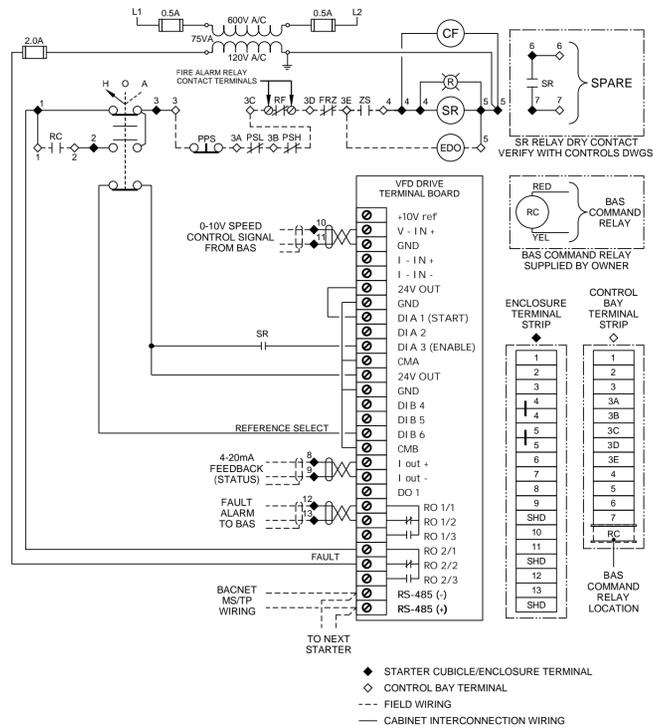
THREE PHASE MOTOR STARTERS

Title
FVNR AND SOFT STARTERS, IN MCC & NON-MCC, AND GENERAL NOTES

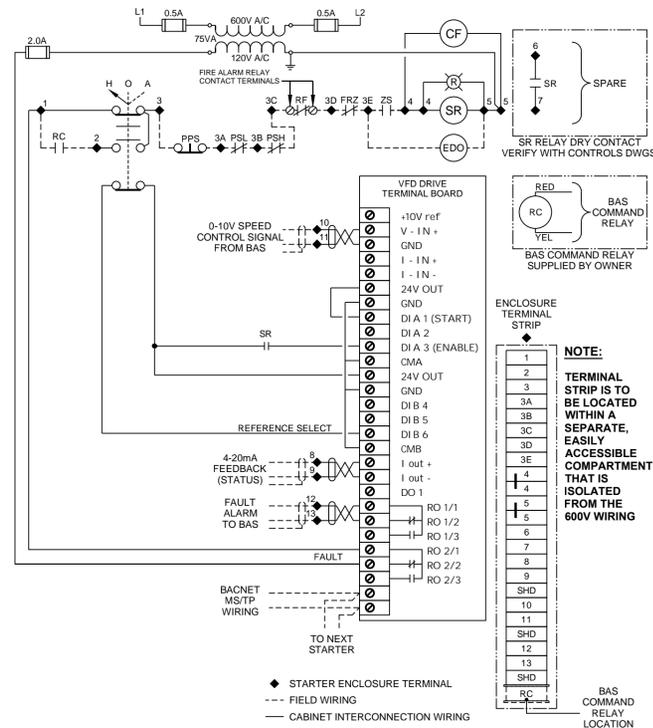
Dwn. D. DUBOWSKI	Chkd. D. BALIAD	Dsgn. K. LEEDAHL
Project No.	Scale N/A	
UofS Drawing No.	Date 16-PCT-2025	
Drawing No. E20	Sheet 1 OF 1	Revision 0

For Reference

Legend



1 VFD STARTER IN MCC (c/w CONTROL BAY)
WIRING SCHEMATIC



2 VFD STARTER IN ENCLOSURE (NON-MCC)
WIRING SCHEMATIC

GENERAL NOTES:

- FIELD DEVICES MAY NOT BE EXACTLY AS SHOWN AND SHALL BE CO-ORDINATED WITH CONTROLS AND MECHANICAL DRAWINGS BEFORE TERMINATIONS AND FINAL INSTALLATION BY DIVISION 16.
- FIELD DEVICES ARE IDENTIFIED AS FOLLOWS: **PPS** = A PUSH-PULL STOP BUTTON, **PSL** = PRESSURE SWITCH LOW, **PSH** = PRESSURE SWITCH HIGH, **RF** = RELAY FOR FIRE ALARM, **FRZ** = FREEZE STAT, **EDO** = ELECTRIC DAMPER OPERATOR, AND **ZS** = DAMPER LIMIT SWITCH.
- STARTERS THAT REQUIRE CCMS CONTROL SHALL USE AN HOA SWITCH WITH MOMENTARY CONTACT, SPRING RETURN FROM THE "HAND" TO "OFF" POSITION AND MAINTAINED CONTACT WHEN IN THE "AUTO" POSITION. AIR COMPRESSORS AND NON-CCMS EQUIPMENT ARE TO USE A MAINTAINED CONTACT HOA SWITCH, UNLESS SPECIFIED OTHERWISE.
- THE **RC** RELAY (**REMOTE COMMAND**) WILL BE SUPPLIED BY OWNER, INSTALLED BY CONTROLS TENDER AND MOUNTED IN THE DRIVE ENCLOSURE FOR STAND-ALONE DRIVES OR PROVIDED IN AN MCC CONTROL BAY IF THE VFD DRIVE OR STARTER IS LOCATED WITHIN AN MCC. RELAY WILL RESIDE WITHIN TERMINAL STRIP LAYOUT.
- OPEN DIAMOND TERMINALS ARE MOUNTED WITHIN AN ADJACENT CONTROL BAY. CLOSED DIAMOND TERMINALS ARE MOUNTED WITHIN THE DRIVE ENCLOSURE. FOR STAND-ALONE DRIVES WITHOUT A CONTROL BAY THE OPEN TERMINALS ARE OMITTED. ALL TERMINALS NECESSARY TO COMPLETE WIRING CONNECTIONS WITHIN VFD DRIVE ENCLOSURE, ARE TO BE SUPPLIED BY MANUFACTURER.
- THE TRANSFORMER, FUSES, HOA, RUN INDICATOR, AND SR RELAY SHALL BE MOUNTED WITHIN THE DRIVE OR STARTER ENCLOSURE. SR RELAY SHALL BE A 120VAC, 8 PIN, 2 POLE RELAY WITH SOCKET.
- FOR ADDITIONAL INFORMATION ON FIRE ALARM SHUTDOWN CONTACT, REFERENCE U OF S ELECTRICAL DETAIL E/38.

3 GENERAL NOTES
SCHEMATIC NOTES

VARIABLE FREQUENCY DRIVE NOTES:

- SCHEMATIC DEPICTED IN ASSOCIATED DRAWINGS ARE FOR REFERENCE PURPOSES ONLY. REFER TO MANUFACTURER'S INFORMATION FOR ACTUAL VFD DRIVE TERMINATIONS AND DESIGNATIONS. MANUFACTURER TO REVISE SHOP DRAWINGS AS REQUIRED TO SUIT U OF S REQUIREMENTS. SHOP DRAWINGS ARE TO BE REVIEWED AND ACCEPTED BY U OF S BEFORE FINAL IMPLEMENTATION.
- SR** CONTACT OPEN SHALL STOP DRIVE AND PREVENT DIRECT ACCESS TO DRIVE CONTROLS VIA FRONT PANEL. **SR** CONTACT CLOSED SHALL START DRIVE FORWARD.
- WHEN HOA SWITCH IS IN "AUTO", REFERENCE SPEED CONTROL SIGNAL FROM BAS IS SELECTED. WHEN HOA IS IN "OFF" POSITION, NO EXTERNAL REFERENCE IS SELECTED. WHEN HOA IS IN "HAND" POSITION, KEYPAD OPERATION IS SELECTED.
- FAULT AND STATUS CONTACTS SHALL BE DRY. FAULT CONTACT SHALL BE RATED AT 1 AMP RMS, 120V OR GREATER.
- WHERE STAND ALONE VFD DRIVE ENCLOSURES REQUIRE FIRE ALARM SHUT DOWN, A 1/2" (16) EMT CONDUIT SHALL BE INSTALLED BACK TO THE NEAREST CCMS CONTROLLED MCC CONTROL BAY, UNLESS STATED OTHERWISE.
- VFD DRIVES FOR MOTORS 15 H.P. AND BELOW, MAY BE INSTALLED WITHIN AN MCC UPON APPROVAL BY OWNER. FOR MOTORS ABOVE 15 H.P., VFD DRIVES SHALL BE INSTALLED AS STAND-ALONE UNITS. STARTERS FOR MOTORS SHALL BE INSTALLED WITHIN AN MCC, UNLESS STATED OTHERWISE.
- CF** DENOTES COOLING FAN WHICH IS TO BE MOUNTED IN THE MCC OR ENCLOSURE AND SHALL BE SUPPLIED BY MANUFACTURER.

4 VFD NOTES
SCHEMATIC NOTES

0	ISSUED FOR REFERENCE	DMB	12-JAN-2026
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Rev.	Description	Appd.	Date
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Permits / Seals

Project

ELECTRICAL DETAILS
VFD STARTER

Title
VFD STARTERS, IN MCC & NON-MCC, AND GENERAL NOTES

Dwn. D. DUBOWSKI	Chkd. D. BALIAD	Dsgn. K. LEEDAHL
Project No.		Scale N/A
UofS Drawing No.		Date 16-PCT-2025
Drawing No. E21	Sheet 1 OF 1	Revision 0

For Reference

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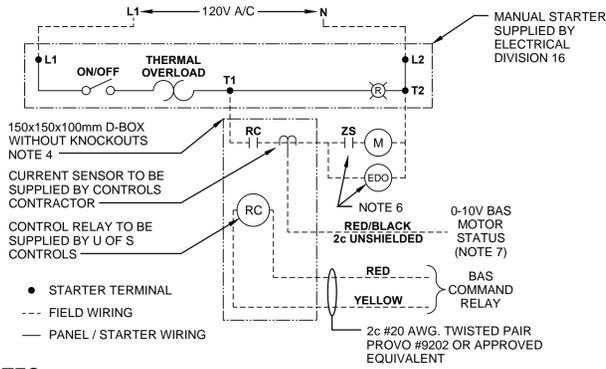
0	ISSUED FOR REFERENCE	DMB	12-JAN-2026
Rev.	Description	Appd.	Date

Permits / Seals

Project
ELECTRICAL DETAILS
SINGLE PHASE STARTER

Title
MULTIPLE USE, STEAM FORCE FLOW SCHEMATICS, AND CONTROL PANEL LAYOUT

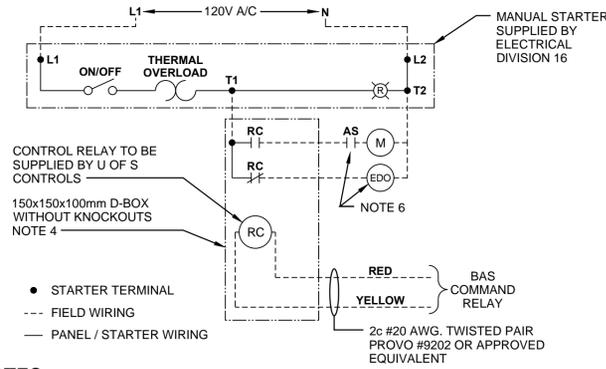
Dwn. D. DUBOWSKI	Chkd. D. BALIAD	Dsgn. K. LEEDAHL
Project No.		Scale N/A
UofS Drawing No.		Date 16-PCT-2025
Drawing No. E22	Sheet 1 OF 1	Revision 0



NOTES:

- MANUAL MOTOR STARTER SCHEMATIC IS TO BE USED AS REFERENCE FOR 120V SINGLE PHASE, FRACTIONAL HORSEPOWER MOTORS ONLY (1/2 H.P. MAXIMUM). TYPICAL APPLICATIONS ARE, BUT NOT LIMITED TO, HOT WATER GLYCOL FORCE FLOW HEATERS, UNIT HEATERS, SMALL DEDICATED VENTILATION SYSTEMS, PUMPS, ETC. ACCEPTABLE MANUFACTURER: SCHNEIDER SQUARE D MODEL No. #Z510FG5P.
- THERMAL OVERLOAD TO BE SIZED AS REQUIRED FOR MOTOR LOAD. STARTER SHALL BE NEMA RATED AND LOCKABLE IN THE OFF POSITION.
- RELAY CONTACT (RC) IS A HORSEPOWER RATED RELAY WHICH IS SUPPLIED BY U OF S CONTROLS. RELAY IS TO BE INSTALLED BY CONTROLS CONTRACTOR AND LOCATED ADJACENT TO MOTOR LOCATION UNLESS SPECIFIED OTHERWISE.
- INSTALLATION OF D-BOX AND WIRING FROM RELAY (RC) DRY CONTACTS TO STARTER AND MOTOR ARE TO BE COMPLETED BY ELECTRICAL DIVISION 16. LOCATION OF D-BOX TO BE COORDINATED WITH CONTROLS CONTRACTOR. CONTROLS WIRING TO RELAY COIL TO BE COMPLETED BY CONTROLS DIVISION. REFER TO ELECTRICAL DETAIL E/39B FOR LAYOUT INFORMATION.
- BAS** DENOTES BUILDING AUTOMATION SYSTEM, WHICH IS MONITORED AND CONTROLLED BY OWNER.
- EDO** DENOTES ELECTRIC DAMPER OR VALVE OPERATOR. **ZS** DENOTES END SWITCH (THIS OPTION MAY BE REQUIRED IN FAN APPLICATIONS). CONFIRM WITH CONTROLS DIVISION BEFORE INSTALLATION.
- USE OF CURRENT SENSOR IS NOT REQUIRED FOR FORCE FLOW AND UNIT HEATER APPLICATIONS.

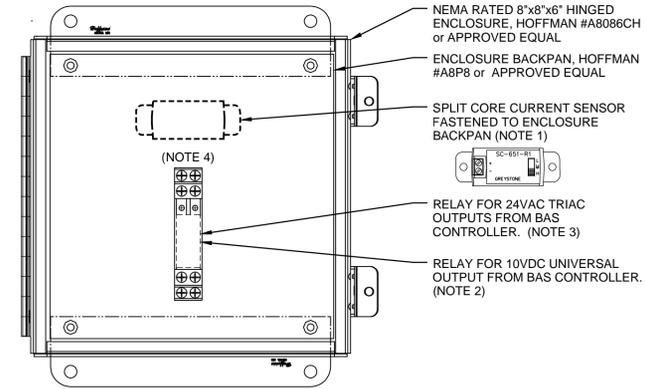
1 1 PHASE MANUAL STARTER
 MULTIPLE USE SCHEMATIC



NOTES:

- MANUAL MOTOR STARTER SCHEMATIC IS TO BE USED AS REFERENCE FOR 120V SINGLE PHASE, FRACTIONAL HORSEPOWER MOTORS ONLY (1/2 H.P. MAXIMUM). TYPICAL APPLICATIONS ARE STEAM TYPE FORCE FLOW HEATERS. ACCEPTABLE MANUFACTURER: SCHNEIDER SQUARE D MODEL No. #Z510FG5P.
- THERMAL OVERLOAD TO BE SIZED AS REQUIRED FOR MOTOR LOAD. STARTER SHALL BE NEMA RATED AND LOCKABLE IN THE OFF POSITION.
- RELAY CONTACT (RC) IS A HORSEPOWER RATED RELAY WHICH IS SUPPLIED BY U OF S CONTROLS. RELAY IS TO BE INSTALLED BY CONTROLS CONTRACTOR AND LOCATED ADJACENT TO MOTOR LOCATION UNLESS SPECIFIED OTHERWISE.
- INSTALLATION OF D-BOX AND WIRING FROM RELAY (RC) DRY CONTACTS TO STARTER AND MOTOR ARE TO BE COMPLETED BY ELECTRICAL DIVISION 16. LOCATION OF D-BOX TO BE COORDINATED WITH CONTROLS CONTRACTOR. CONTROLS WIRING TO RELAY COIL TO BE COMPLETED BY CONTROLS DIVISION. REFER TO ELECTRICAL DETAIL E/39B FOR LAYOUT INFORMATION.
- BAS** DENOTES BUILDING AUTOMATION SYSTEM, WHICH IS MONITORED AND CONTROLLED BY OWNER.
- EDO** DENOTES NORMALLY OPEN ELECTRIC VALVE OPERATOR AND **AS** DENOTES STEAM FORCE FLOW AQUASTAT. THIS OPTION IS REQUIRED FOR STEAM TYPE FORCE FLOW APPLICATIONS. CONFIRM WITH CONTROLS DIVISION BEFORE INSTALLATION.

2 1 PHASE MANUAL STARTER
 STEAM FORCE FLOW SCHEMATIC

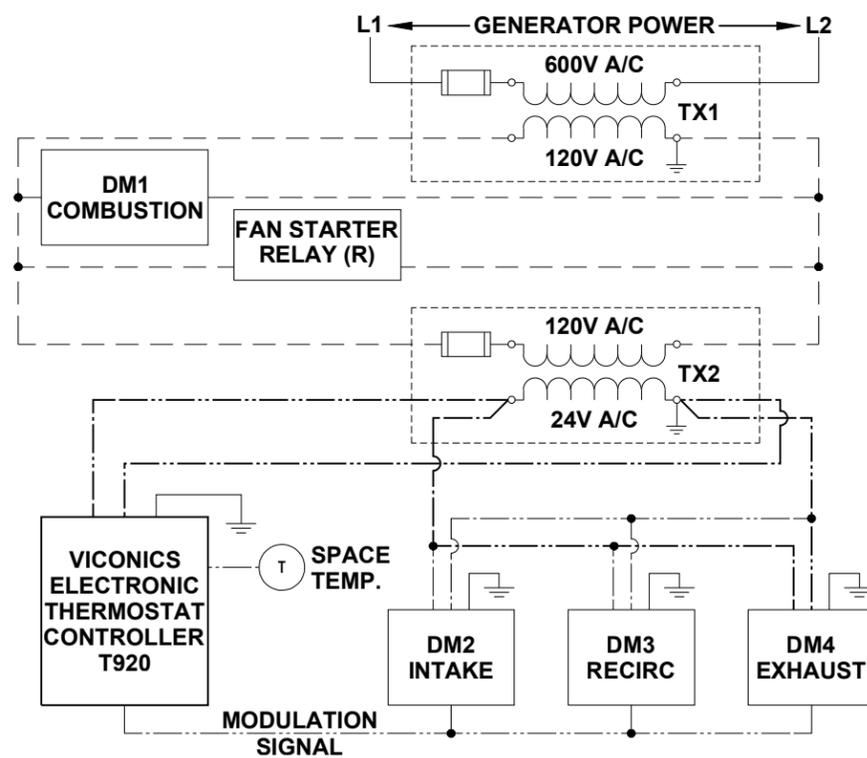
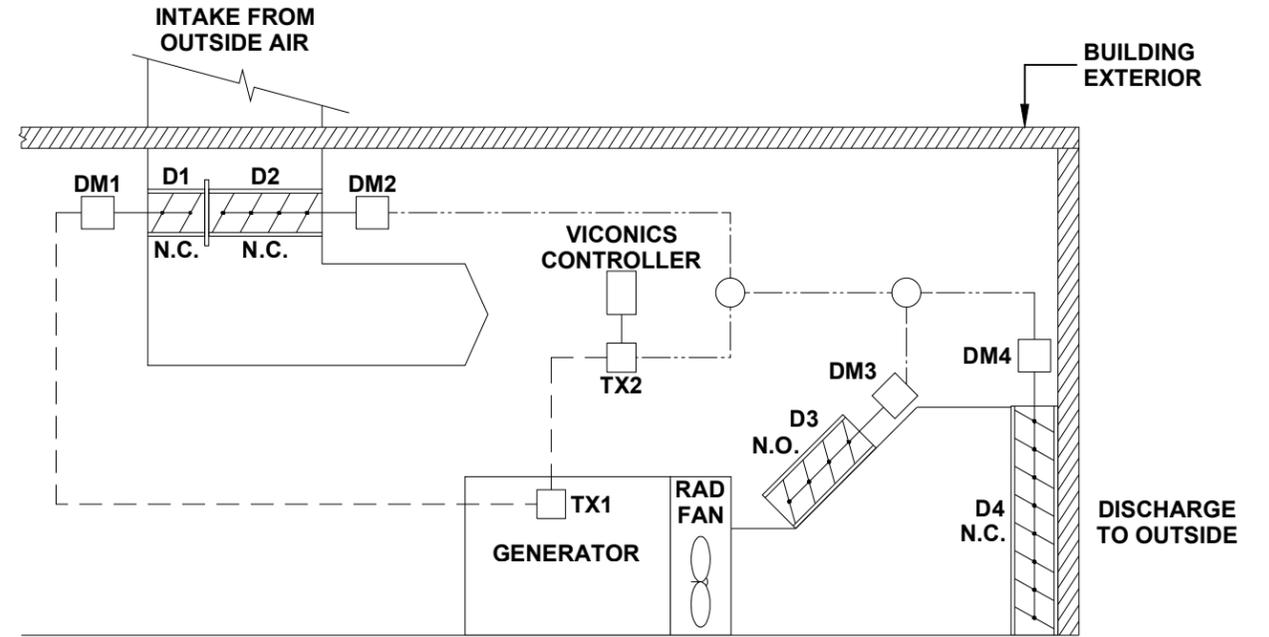
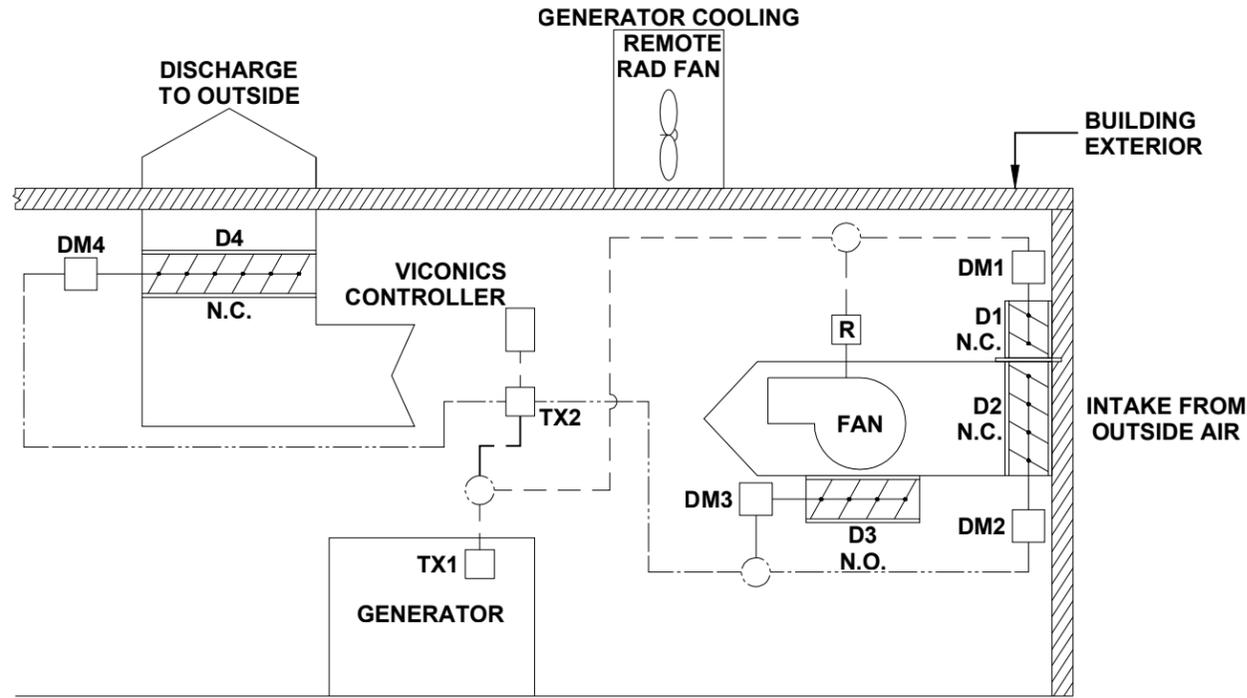


NOTES:

- SPLIT CORE CURRENT SENSOR SHALL BE SELECTABLE FOR 0-20/40/60 AMPS. SIGNAL OUTPUT 0-10VDC. 100A/60C MAXIMUM INPUT. SCREW OR DIN RAIL MOUNTING. APPROVED MANUFACTURER: GREYSTONE #SC-651-R1. (NOT REQUIRED FOR FORCE FLOW AND UNIT HEATER APPLICATIONS)
- CONTROL RELAY FOR 10V DC UNIVERSAL OUTPUTS SHALL BE RATED FOR 1/2 H.P. @ 120V AC (N/O CONTACT) AND 1/3 H.P. @ 120V AC (N/C CONTACT). 12V DC CONTROL VOLTAGE. APPROVED MANUFACTURER: PHOENIX CONTACT #REL-MR-12DC/21 HC-2961309 c/w #PRI-BSC2/2X21-2833518 RELAY BASE.
- CONTROL RELAY FOR 24V AC TRIAC OUTPUTS SHALL BE RATED FOR 1/2 H.P. @ 120V AC (N/O CONTACT) AND 1/3 H.P. @ 120V AC (N/C CONTACT). 24 V AC CONTROL VOLTAGE. APPROVED MANUFACTURER: PHOENIX CONTACT #REL-MR-24AC/21 HC-2961406 C/W #PRI-BSC2/2X21-2833518 RELAY BASE.

3 BAS COMMAND SYSTEM
 CONTROL PANEL LAYOUT

For Reference



NOTES:

- BOTH 600/120VAC & 120/24VAC TRANSFORMERS TO BE SUPPLIED BY OWNER. XFMR INSTALLATIONS, 600V AND ALL ASSOCIATED 120V WIRING TO BE COMPLETED BY ELECTRICAL CONTRACTOR.
- DAMPER ACTUATORS, RELAY AND CONTROLLER TO BE SUPPLIED BY OWNER. ASSOCIATED 24VAC WIRING AND ACTUATOR INSTALLATION TO BE COMPLETED BY MECHANICAL CONTRACTOR.
- COMPONENT DESIGNATIONS ARE FOR REFERENCE ONLY.

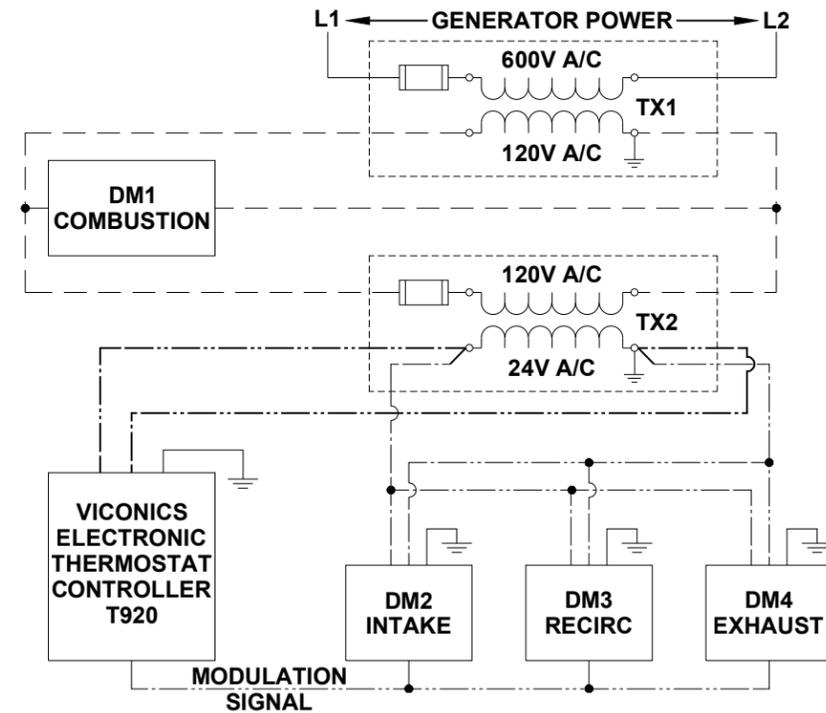
LEGEND

- 120VAC POWER WIRING - BY ELECTRICAL CONTRACTOR
- 24VAC CONTROL WIRING - BY MECHANICAL CONTRACTOR

1 REMOTE RADIATOR
GENERATOR TEMPERATURE CONTROL

REV.	DATE	DESCRIPTION	APP.
0	12-JAN-26	ISSUED FOR REFERENCE	DMB

2 GENERATOR DRIVEN
GENERATOR TEMPERATURE CONTROL



NOTES:

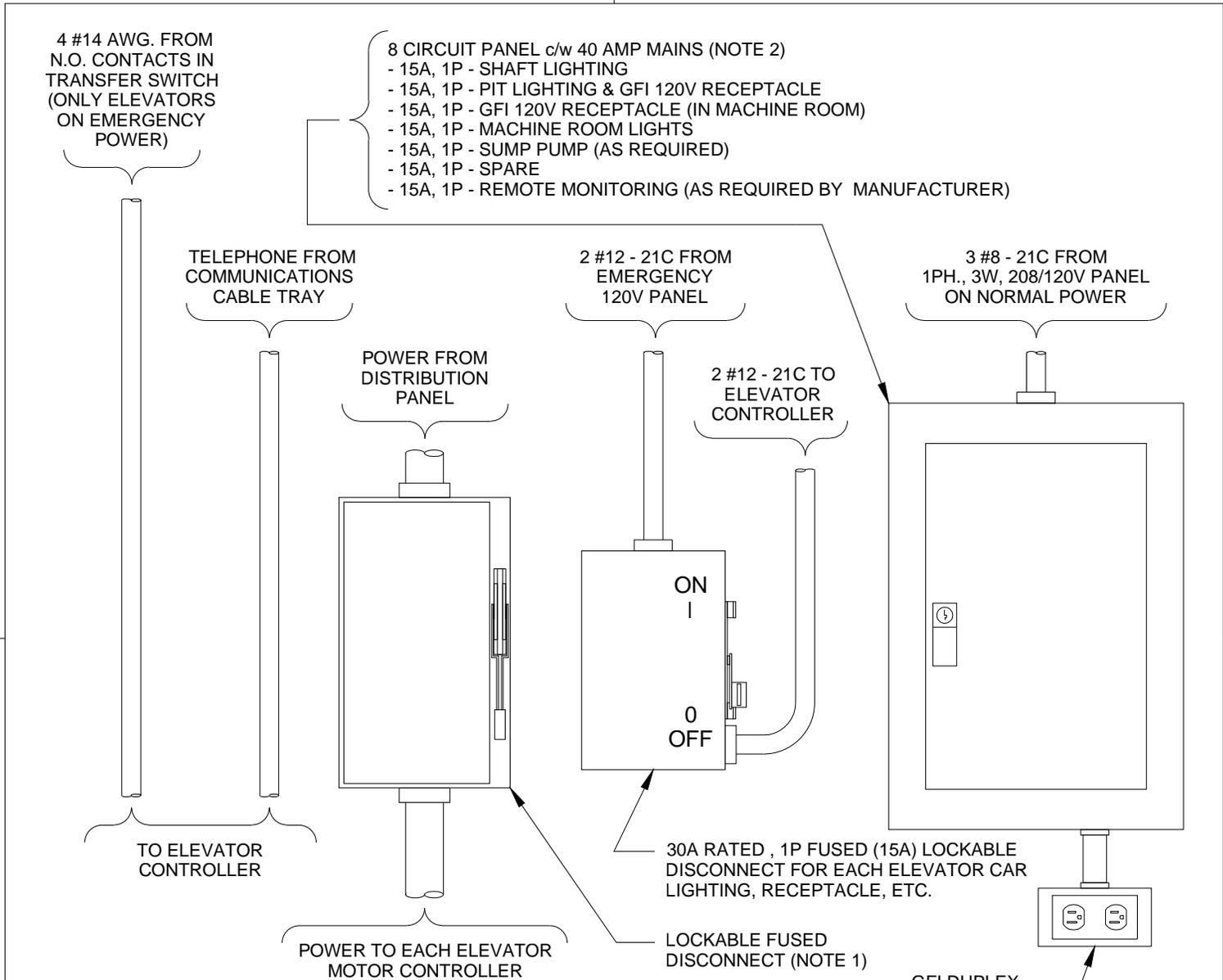
- BOTH 600/120VAC & 120/24VAC TRANSFORMERS TO BE SUPPLIED BY OWNER. XFMR INSTALLATIONS, 600V AND ALL ASSOCIATED 120V WIRING TO BE COMPLETED BY ELECTRICAL CONTRACTOR.
- DAMPER ACTUATORS AND CONTROLLER TO BE SUPPLIED BY OWNER. ASSOCIATED 24VAC WIRING AND ACTUATOR INSTALLATIONS TO BE COMPLETED BY MECHANICAL CONTRACTOR.
- COMPONENT DESIGNATIONS ARE FOR REFERENCE ONLY.

LEGEND

- 120VAC POWER WIRING - BY ELECTRICAL CONTRACTOR
- 24VAC CONTROL WIRING - BY MECHANICAL CONTRACTOR



PROJECT NAME ELECTRICAL DETAILS GENERATOR TEMPERATURE DRAWING NAME GENERATOR DRIVEN AND REMOTE RADIATOR TYPES	PROJ. FILE NO.	DRAWING NO. E/24
	DRAWN BY D. DUBOWSKI	SCALE N/A
	APPROVED BY G. POOLE	SHEET 1 OF 1
	DATE 15-OCT-2025	

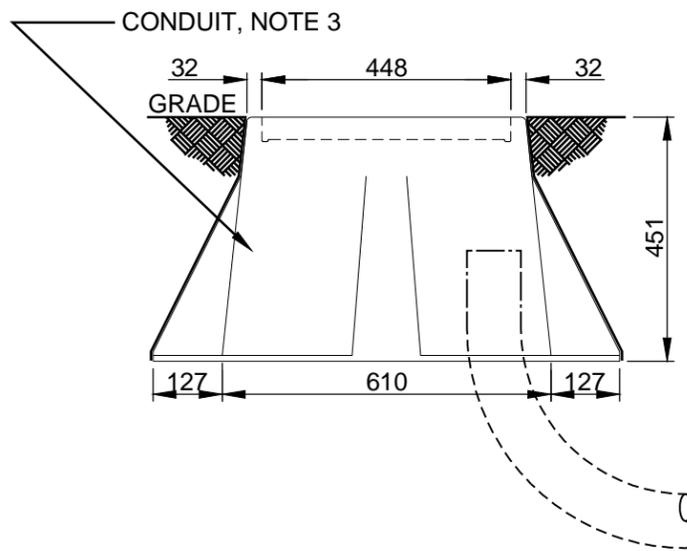
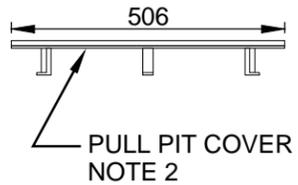
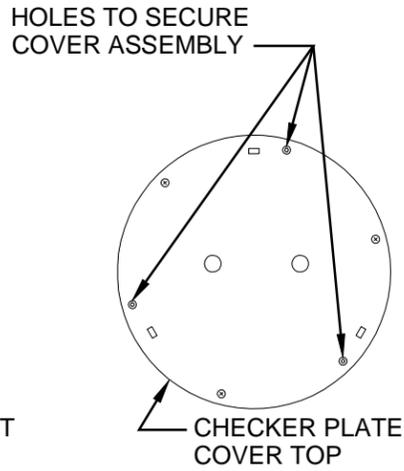
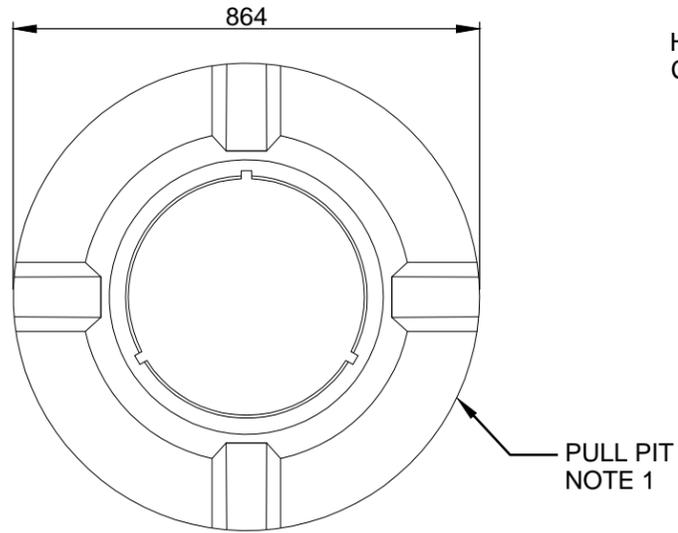


NOTES:

1. NORMAL OR EMERGENCY POWER SUPPLY FOR ELEVATOR SYSTEM TO BE CONFIRMED BEFORE INSTALLATION. DISCONNECT SWITCHES FOR ELEVATORS WITH ADDITIONAL POWER SOURCES ON THE LOAD SIDE OF THE DISCONNECT SHALL BE EQUIPPED WITH MECHANICALLY INTERLOCKED AUXILIARY CONTACTS TO THE REQUIREMENTS OF CEC SECTION 38. PROVIDE BOTH NORMALLY OPEN (NO) AND NORMALLY CLOSED (NC) CONTACTS.
2. FOR ELEVATORS WITH NO MACHINE ROOM, DELETE 8 CIRCUIT PANEL. FEED SHAFT LIGHTING, CONTROL CLOSET/ROOM LIGHTING AND LOCAL RECEPTACLE FROM SAME CIRCUIT FROM NEAREST BUILDING NORMAL POWER PANEL. FEED PIT LIGHTING AND GFI RECEPTACLE FROM SAME CIRCUIT FROM NEAREST BUILDING NORMAL POWER PANEL. FEED SUMP PUMP FROM NEAREST BUILDING NORMAL POWER PANEL AS REQUIRED.

0	ISSUED FOR REFERENCE	LJD	03-FEB-2026
Rev.	Description	Appd.	Date

UNIVERSITY OF SASKATCHEWAN		DATE	30-OCT-2012	SCALE	N.T.S.
ELECTRICAL DETAILS ELEVATOR DISTRIBUTION ELECTRICAL ELEVATION		DRAWN BY	D. DUBOWSKI	E	26
		CHECKED BY	K. LEEDAHL		
		APPROVED BY	K. LEEDAHL		
				DRAWING NO.	



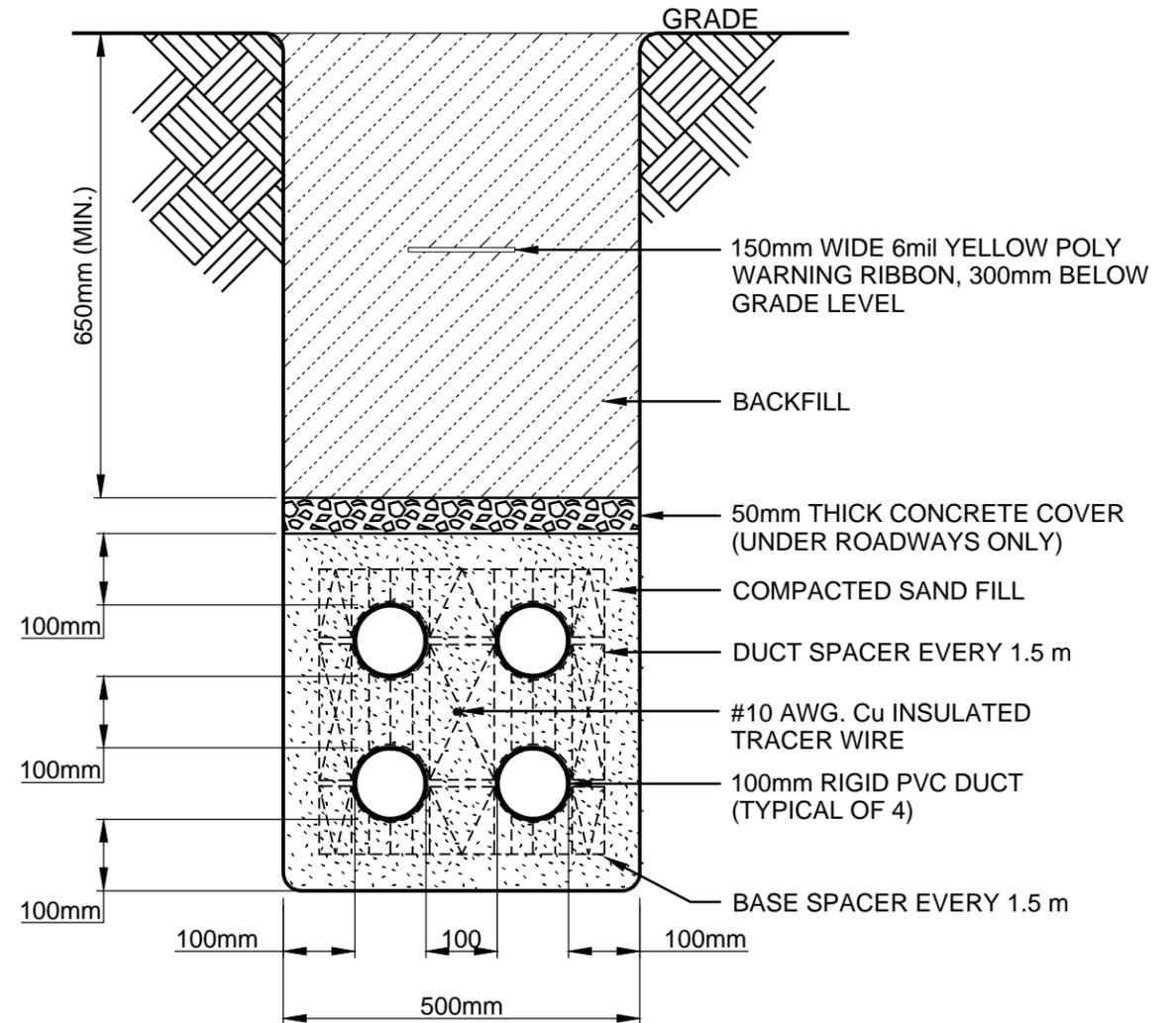
NOTES:

1. PULL PIT TO BE CENTURY PLASTICS LTD. CPL-400 OR APPROVED EQUIVALENT.
2. PULL PIT COVER TO BE GALVANIZED METAL WITH ALUMINUM CHECKER TOP PLATE. PROVIDE THREE TAMPER PROOF TAPER HEAD SCREWS TO SECURE COVER ASSEMBLY TO PULL PIT.
3. CONDUIT TO BE 100mm SCHEDULE 40 PVC MINIMUM. CAP EMPTY CONDUIT ENDS AFTER INSTALLATION. SEAL CONDUITS WITH DUCT SEAL AFTER WIRE(S)/CABLE(S) ARE INSTALLED.

1 COMMUNICATION PULL PIT
LAYOUT DETAIL

GENERAL NOTES:

1. FOR ADDITIONAL INFORMATION REFERENCE THE FOLLOWING ELECTRICAL SPECIFICATION SECTIONS:
 - SECTION 260500: COMMON WORK RESULTS FOR ELECTRICAL
 - SECTION 260543: UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS
 - SECTION 260526: GROUNDING AND BONDING
 - SECTION 260553: ELECTRICAL IDENTIFICATION
 - SECTION 336573: CONCRETE ENCASED DUCT BANKS AND MANHOLES



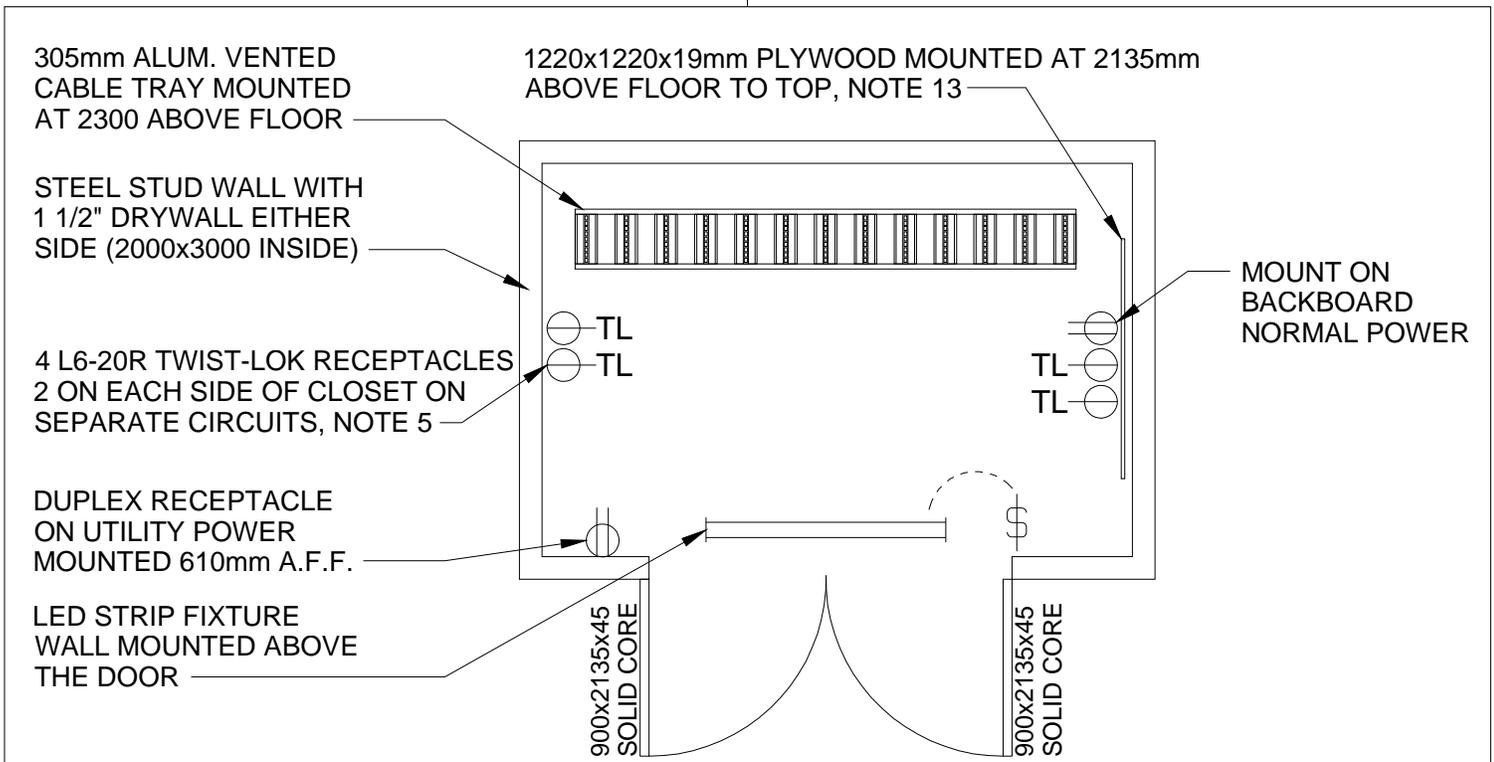
2 COMMUNICATION DUCT
TRENCH SECTION

REV.	DATE	DESCRIPTION	APP.
0	08-JAN-26	ISSUED FOR REFERENCE	DMB



PROJECT NAME
ELECTRICAL DETAILS
COMMUNICATION SYSTEM
 DRAWING NAME
PULL PIT LAYOUT AND
DUCT TRENCH SECTION

PROJ. FILE NO.	DRAWING NO.
DRAWN BY D. DUBOWSKI	E/27
APPROVED BY G. POOLE	SCALE N/A
DATE 15-OCT-2025	SHEET 1 OF 1



COMMUNICATIONS NETWORK CLOSET (2 RACK LAYOUT)

NOTES:

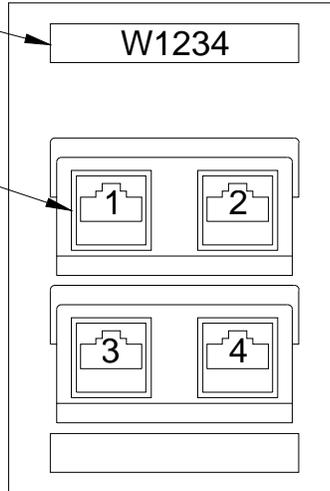
1. ROOM SIZE (3M x 2M) IS FOR 2 EQUIPMENT RACKS WITH 192 CONNECTIONS TOTAL. IF CLOSET IS TO SERVICE MORE CONNECTIONS, SIZE SHOULD BE INCREASED ACCORDINGLY.
2. ADDITIONAL ROOM SPACE MAY BE REQUIRED IN BUILDINGS WHERE THE CAMPUS BUILDING CARD ACCESS SHALL BE IMPLEMENTED.
3. KEYING SHALL BE MECHANICAL MASTER.
4. KEYED DOOR TO BE ON THE SAME SIDE OF CLOSET AS THE LIGHT SWITCH.
5. INSTALL TWIST-LOK RECEPTACLES AT 610mm ABOVE FLOOR AND APPROXIMATELY 1220mm AWAY FROM BACK WALL. POWER FOR 2 TWIST-LOK RECEPTACLES TO BE PROVIDED FROM NEAREST 120/208V NORMAL POWER PANEL AND POWER FOR 2 RECEPTACLES TO BE PROVIDED FROM NEAREST 120/208V EMERGENCY POWER PANEL, ONE ON EACH SIDE. EACH RECEPTACLE TO BE INSTALLED IN A SINGLE GANG DEVICE BOX.
6. DOOR GRILLS AS REQUIRED.
7. MINIMUM HEADROOM HEIGHT OF 2700mm.
8. FLOOR FINISH TO BE VINYL TILE, NON-SLIP PAINT OR TO MATCH ADJACENT CORRIDOR OR ROOM, NO CARPET.
9. WALL FINISH TO BE PAINTED TO MATCH ADJACENT WALL.
10. ROOM NUMBER ON THE DOOR OR OTHER APPROPRIATE LOCATION IS THE ONLY SIGNAGE REQUIRED.
11. NO FINISHED CEILING IN CLOSET.
12. CLOSET SHOULD BE LOCATED OFF A CORRIDOR AND IN SUCH A LOCATION THAT IT IS NO FURTHER THAN 70M HORIZONTAL DISTANCE FROM THE MOST DISTANT OUTLET IT SERVES.
13. PLYWOOD BACKBOARD TO BE PROVIDED ONLY IN BUILDINGS WHERE ANALOG TELEPHONE IS UTILIZED.

0	ISSUED FOR REFERENCE	LJD	03-FEB-2026
Rev.	Description	Appd.	Date

UNIVERSITY OF SASKATCHEWAN	DATE 20-JAN-2014	SCALE N.T.S.
ELECTRICAL DETAILS	DRAWN BY D. DUBOWSKI	E
DATA NETWORK SERVER CLOSET	CHECKED BY K. LEEDAHL	/ 28
	APPROVED BY .	DRAWING NO.

DATA OUTLET
IDENTIFICATION
LABEL

DATA CONNECTOR(S)
(TYPICAL)



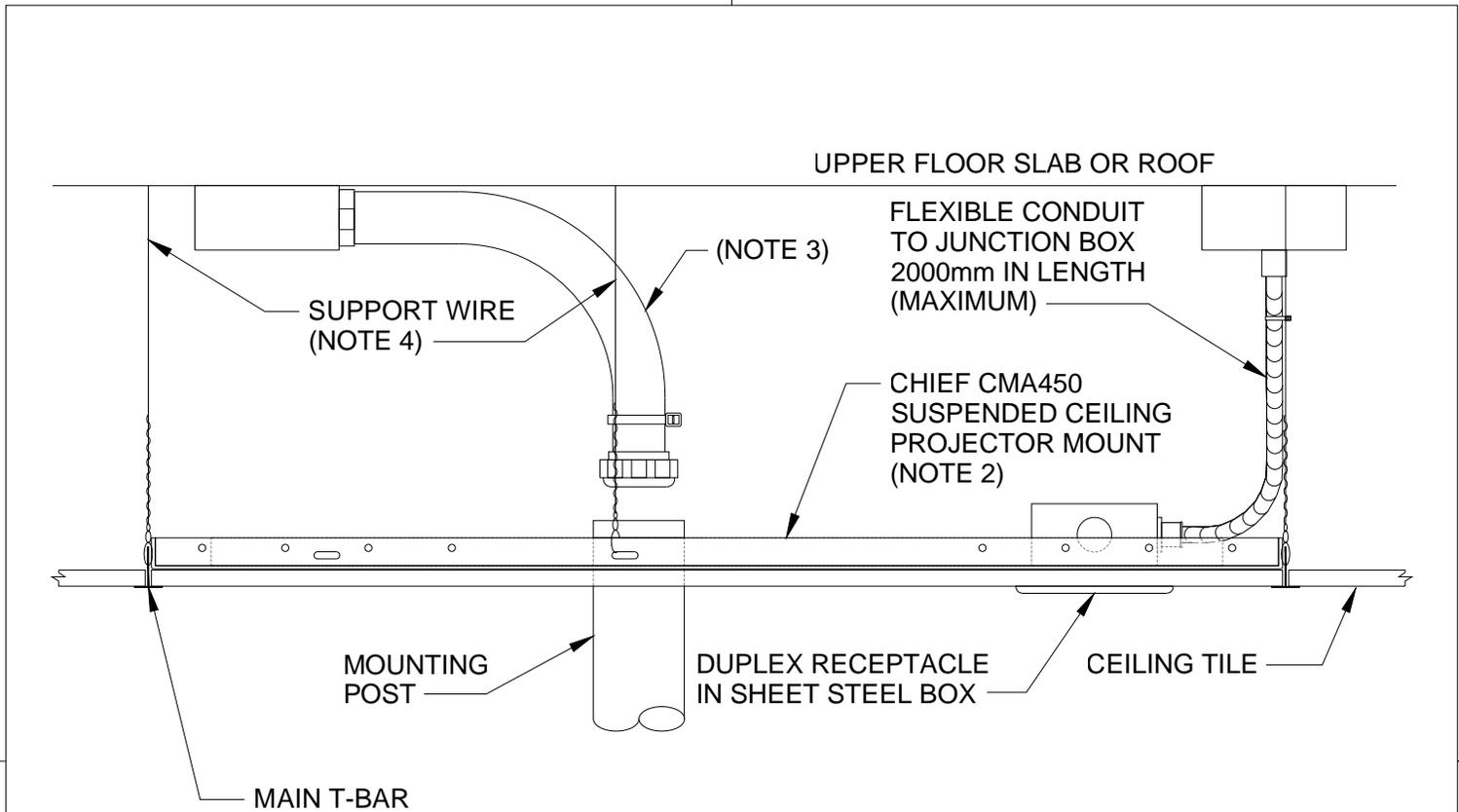
WALL PLATE LAYOUT

NOTES:

1. CONNECTORS SHALL BE INSTALLED IN ORDER 1, 2, 3, 4.
2. OUTLET IDENTIFICATION AS PROVIDED BY U OF S ICT.
3. LABEL CABLES AT OUTLET WITH OUTLET IDENTIFICATION AND CONNECTOR POSITION 1, 2, 3, 4. EX. W1234-3.
4. LABEL CABLE AT CLOSET WITH OUTLET IDENTIFICATION, CONNECTOR POSITION AND ROOM NUMBER. EX. W1234-3 (109.1)

0	ISSUED FOR REFERENCE	DMB	12-JAN-2026
Rev.	Description	Appd.	Date

UNIVERSITY OF SASKATCHEWAN	DATE	02-OCT-2019	SCALE	N.T.S.
<u>ELECTRICAL DETAILS</u>	DRAWN BY	D. DUBOWSKI	E	
DATA NETWORK WALL PLATE LAYOUT	CHECKED BY	K. LEEDAHL	/ 29	
	APPROVED BY	.	DRAWING NO.	

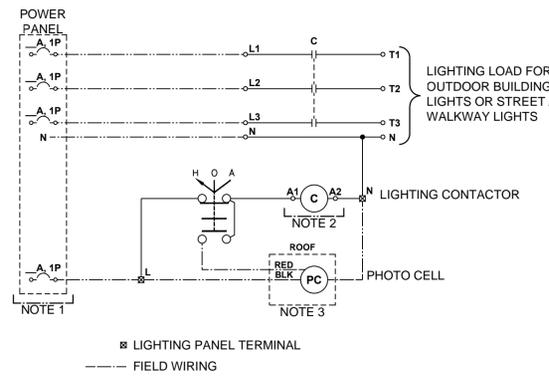


NOTES:

1. ELECTRICAL DETAIL IS FOR CEILING MOUNTED RECEPTACLE, PROJECTOR, AND AV CABLE LOCATION IN T-BAR CEILINGS, USED FOR MAJORITY OF CEILING SPACE APPLICATIONS (RETURN PLENUM OR NON RETURN PLENUM).
2. 2' x 2' MOUNTING PLATE FOR VIDEO PROJECTOR TO BE PROVIDED BY U OF S EMAP DIVISION. THE ACTUAL WEIGHT OF THE VIDEO PROJECTOR MAY VARY AND IS TO BE CONFIRMED WITH U OF S EMAP BEFORE FINAL INSTALLATION.
3. LIQUID-TIGHT FLEX TO BE INSTALLED FROM CEILING SPACE MOUNTED JUNCTION BOX TO LOCATION ABOVE PROJECTOR MOUNTING POST. CONDUIT NIPPLE AND BUSHING TO BE INSTALLED AT END OF FLEX. SIZE OF CONDUIT, LIQUID-TIGHT FLEX AND LOCATIONS TO BE COORDINATED WITH U OF S EMAP DIVISION.
4. ADD SUPPORT WIRES TO T-BAR RAILS AND METAL MOUNTING PANEL AS DEEMED NECESSARY TO ACCOMMODATE VIDEO PROJECTOR AND CEILING WEIGHT.

0	ISSUED FOR REFERENCE	DMB	12-JAN-2026
Rev.	Description	Appd.	Date

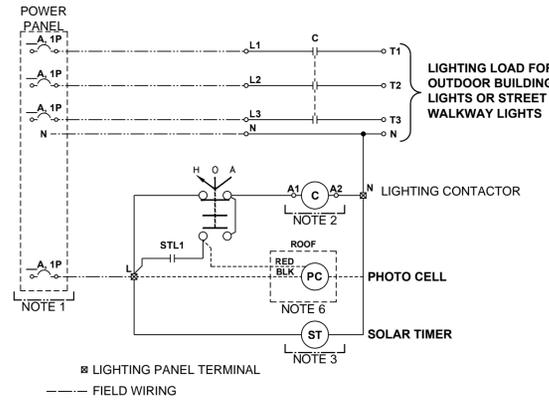
UNIVERSITY OF SASKATCHEWAN		DATE	31-OCT-2025	SCALE	N.T.S.
ELECTRICAL DETAILS SUSPENDED CEILING AV PROJECTOR MOUNTING DETAIL		DRAWN BY	D. DUBOWSKI	E	31
		CHECKED BY	K. BEREZOWSKI		
		APPROVED BY	L. DOBSON		
				DRAWING NO.	



NOTES:

1. SIZE OF BREAKERS IS DEPENDANT UPON MAXIMUM NUMBER OF PROPOSED AND FUTURE LIGHTING FIXTURES. 40A OR 60A SIZES ARE COMMON U OF S SIZES.
2. LIGHTING CONTACTOR (C) TO BE 3 POLE WITH 120V COIL. MANUFACTURER: SQUARE D #LE1D403A62OG70 OR APPROVED EQUAL.
3. PHOTOCELL TO BE 120V/15A/1800W/60Hz RATED. MANUFACTURER: INTERMATIC #K4121C.
4. HAND-OFF-AUTO SWITCH TO BE MAINTAINED CONTACT IN ALL THREE POSITIONS. MANUFACTURER: SQUARE D #LA9CA06ET.
5. COMPONENTS FOR LIGHTING CONTROL TO BE LOCATED IN A NEMA TYPE 1 RATED ENCLOSURE. MOUNTING HEIGHT OF PANEL TO BE 1800mm FROM CENTERLINE OF PANEL TO TOP OF FINISHED FLOOR.

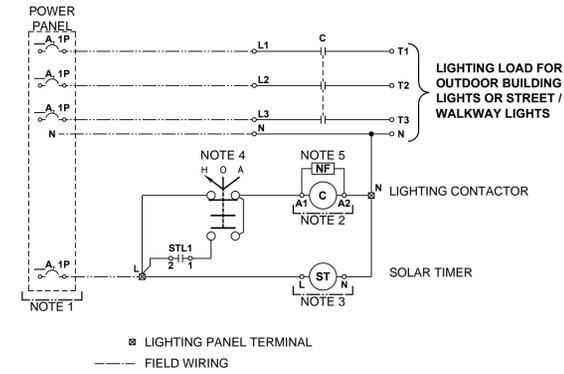
1 PHOTOCELL CONTROL
 WIRING SCHEMATIC



NOTES:

1. SIZE OF BREAKERS IS DEPENDANT UPON MAXIMUM NUMBER OF PROPOSED AND FUTURE LIGHTING FIXTURES. 40A OR 60A SIZES ARE COMMON U OF S SIZES.
2. LIGHTING CONTACTOR (C) TO BE 3 POLE WITH 120V COIL. MANUFACTURER: SQUARE D #LE1D403A62OG70 OR APPROVED EQUAL.
3. SOLAR TIMER TO BE 365 DAY ASTRONOMIC DIGITAL 2 CIRCUIT TIMER, 120V, 50/60 Hz. MANUFACTURER: AUBE #Ti044. RELAY TO BE PROGRAMMED BY OWNER.
4. HAND-OFF-AUTO SWITCH TO BE MAINTAINED CONTACT IN ALL THREE POSITIONS. MANUFACTURER: SQUARE D #LA9CA06ET.
5. COMPONENTS FOR LIGHTING CONTROL TO BE LOCATED IN A NEMA TYPE 1 RATED ENCLOSURE. MOUNTING HEIGHT OF PANEL TO BE 1800mm FROM CENTERLINE OF PANEL TO TOP OF FINISHED FLOOR.
6. EXISTING PHOTOCELL CONTROL TO BE DELETED. REMOVE WIRING AND CONDUIT FROM CURRENT LOCATION BACK TO CONTROL PANEL.

2 PHOTOCELL TO SOLAR TIMER CONVERSION
 WIRING SCHEMATIC



NOTES:

1. SIZE OF BREAKERS IS DEPENDANT UPON MAXIMUM NUMBER OF PROPOSED AND FUTURE LIGHTING FIXTURES. 40A OR 60A SIZES ARE COMMON U OF S SIZES.
2. LIGHTING CONTACTOR (C) TO BE 3 POLE WITH 120V COIL. MANUFACTURER: SQUARE D #LE1D403A62OG70 OR APPROVED EQUAL.
3. SOLAR TIMER TO BE 365 DAY ASTRONOMIC DIGITAL 2 CIRCUIT TIMER, 120V, 50/60 Hz. MANUFACTURER: AUBE #Ti044. RELAY TO BE PROGRAMMED BY OWNER.
4. HAND-OFF-AUTO SWITCH TO BE MAINTAINED CONTACT IN ALL THREE POSITIONS. MANUFACTURER: SQUARE D #LA9CA06ET.
5. NOISE FILTER TO BE SPIKE PROTECTOR, RC SNUBBER WITH 24-277VAC, 50/60Hz. MANUFACTURER: INTERMATIC MODEL #ET-NF.
6. COMPONENTS FOR LIGHTING CONTROL TO BE LOCATED IN A NEMA TYPE 1 RATED ENCLOSURE. MOUNTING HEIGHT OF PANEL TO BE 1800mm FROM CENTERLINE OF PANEL TO TOP OF FINISHED FLOOR.

3 SOLAR TIMER CONTROL
 WIRING SCHEMATIC

Legend

0	ISSUED FOR REFERENCE	DMB	12-JAN-2026
Rev.	Description	Appd.	Date

Permits / Seals

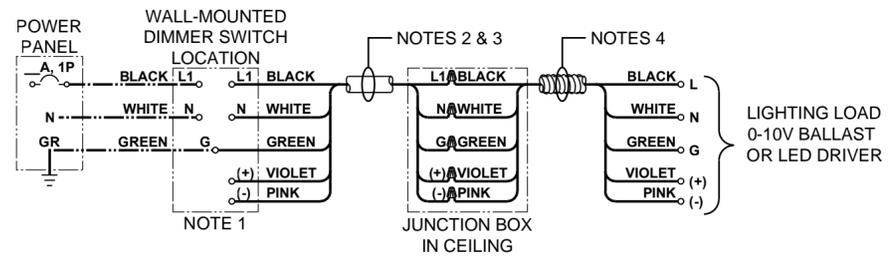
Project
ELECTRICAL DETAILS
OUTDOOR LIGHTING CONTROL

Title
PHOTOCELL, SOLAR TIMER, AND PC/ST CONVERSION LIGHTING CONTROLS

Dwn. D. DUBOWSKI	Chkd. D. BALIAD	Dsgn. K. LEEDAHL
Project No.		Scale N/A
UofS Drawing No.		Date 16-PCT-2025
Drawing No. E32	Sheet 1 OF 1	Revision 0

For Reference

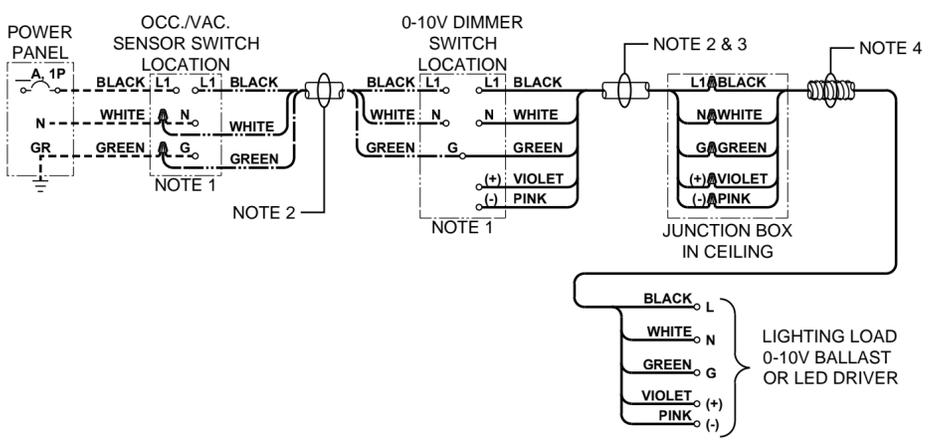
A2 (420x594 mm) W:\OM_Electrical\OM_Electrical_Public\Electrical Library\Details\Revised Details\E33 - Office Lighting Controls(03FEB2026).dwg - Wednesday, February 4, 2026 10:39:35 AM : DWG To PDF.pc3



NOTES:

- ACTUAL WIRING CONNECTIONS AT 0-10V DIMMER/SWITCH LOCATION ARE DEPENDANT UPON MANUFACTURER MAKE AND MODEL TYPE. REFER TO MANUFACTURER'S INFORMATION FOR PROPER CONNECTIONS. CONNECTIONS TO GROUND IN ABSENCE OF NEUTRAL CONDUCTOR WILL NOT BE ACCEPTABLE.
- 120V POWER WIRING TO BE SINGLE CONDUCTOR #12 AWG. WIRE ROUTED IN EMT CONDUIT UNLESS SPECIFIED OTHERWISE. CONDUCTOR INSULATION TO BE RATED FOR 300V, 90°C (MINIMUM).
- 0-10V SIGNAL WIRING TO BE SINGLE CONDUCTOR #14 AWG. WIRE ROUTED IN EMT CONDUIT UNLESS SPECIFIED OTHERWISE. CONDUCTOR INSULATION TO BE RATED FOR 300V, 90°C (MINIMUM).
- BX CABLE BETWEEN JUNCTION BOX LOCATION AND FIXTURE TO BE ELECTRO CABLES ELECTRO-SMART SPC90 600V POWER & CONTROL SIGNAL CABLE WITH 2/C 14 AWG SBC POWER WIRES AND 2/C 16 AWG CONTROL SIGNAL WIRES. WIRES ARE JACKETED WITH XLPE INSULATION, ALUMINUM INTERLOCK ARMOUR, TEMPERATURE RATING 90°C WET / 90°C DRY, DESIGNED FOR PLENUM APPLICATIONS. MANUFACTURER No. 6XAAUS14-2C-16-2C.

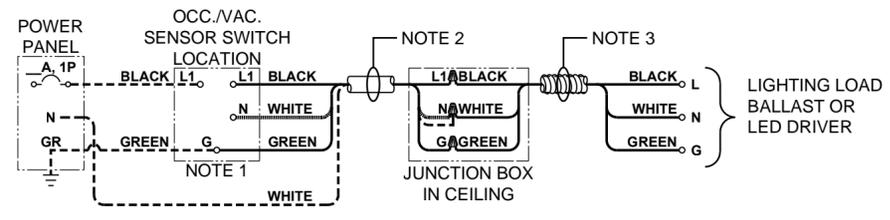
1 0-10V DIMMING
WIRING DIAGRAM



NOTES:

- ACTUAL WIRING CONNECTIONS AT OCC./VAC. SENSOR SWITCH AND 0-10V DIMMER SWITCH MAY VARY AND ARE DEPENDANT UPON MANUFACTURER MAKE AND MODEL TYPE. REFER TO MANUFACTURER'S INFORMATION FOR PROPER CONNECTIONS. CONNECTIONS TO GROUND IN ABSENCE OF NEUTRAL CONDUCTOR WILL NOT BE ACCEPTABLE.
- 120V POWER WIRING TO BE SINGLE CONDUCTOR #12 AWG. WIRE ROUTED IN EMT CONDUIT UNLESS SPECIFIED OTHERWISE. CONDUCTOR INSULATION TO BE RATED FOR 300V, 90°C (MINIMUM). PROVIDE A NEUTRAL CONDUCTOR BACK TO SWITCH IN LOCATIONS WHERE NO NEUTRAL CURRENTLY EXISTS. CONNECTIONS TO GROUND IN ABSENCE OF NEUTRAL CONDUCTOR WILL NOT BE ACCEPTABLE.
- 0-10V SIGNAL WIRING TO BE SINGLE CONDUCTOR #14 AWG. WIRE ROUTED IN EMT CONDUIT UNLESS SPECIFIED OTHERWISE. CONDUCTOR INSULATION TO BE RATED FOR 300V, 90°C (MINIMUM).
- BX CABLE BETWEEN JUNCTION BOX LOCATION AND FIXTURE TO BE ELECTRO CABLES ELECTRO-SMART SPC90 600V POWER & CONTROL SIGNAL CABLE WITH 2/C 14 AWG SBC POWER WIRES AND 2/C 16 AWG CONTROL SIGNAL WIRES. WIRES ARE JACKETED WITH XLPE INSULATION, ALUMINUM INTERLOCK ARMOUR, TEMPERATURE RATING 90°C WET / 90°C DRY, DESIGNED FOR PLENUM APPLICATIONS. MANUFACTURER No. 6XAAUS14-2C-16-2C.

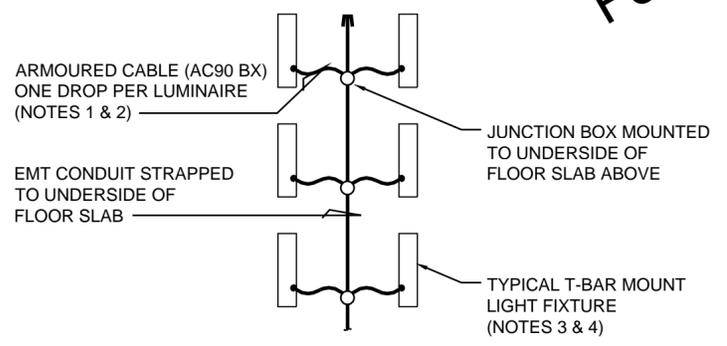
3 0-10V DIMMING & OCC./VAC.SENSOR SWITCH
WIRING DIAGRAM



NOTES:

- ACTUAL WIRING CONNECTIONS AT OCC./VAC. SENSOR SWITCH MAY VARY AND ARE DEPENDANT UPON MANUFACTURER MAKE AND MODEL TYPE. REFER TO THE MANUFACTURER'S INFORMATION FOR PROPER CONNECTIONS.
- 120V POWER WIRING TO BE SINGLE CONDUCTOR #12 AWG. WIRE ROUTED IN EMT CONDUIT UNLESS SPECIFIED OTHERWISE. CONDUCTOR INSULATION TO BE RATED FOR 300V, 90°C (MINIMUM). PROVIDE A NEUTRAL CONDUCTOR BACK TO SWITCH IN LOCATIONS WHERE NO NEUTRAL CURRENTLY EXISTS. CONNECTIONS TO GROUND IN ABSENCE OF NEUTRAL CONDUCTOR WILL NOT BE ACCEPTABLE.
- AC90 BX CABLE TO BE JACKETED WITH XLPE INSULATION, ALUMINUM INTERLOCK ARMOUR, TEMPERATURE RATING 90°C WET / 90°C DRY, DESIGNED FOR PLENUM APPLICATIONS WHERE APPLICABLE.

2 LINE VOLTAGE OCC./VAC. SENSOR SWITCH
WIRING DIAGRAM



NOTES:

- EACH LUMINAIRE SHALL BE CONNECTED VIA A DEDICATED FLEXIBLE WHIP. DAISY-CHAINING OF LUMINAIRES IS NOT PERMITTED.
- USE OF AC90 BX CABLE IS TYPICAL FOR T-BAR CEILING INSTALLATIONS. LENGTH BETWEEN JUNCTION BOX LOCATION AND FIXTURE TO BE 3 METRES (NO MORE, NO LESS) TO ALLOW FOR ANY FUTURE RELOCATION OF FIXTURE FROM IT'S INDICATED LOCATION. COIL EXCESS CABLE FOR A NEAT AND TIDY INSTALLATION.
- REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR FINAL CONNECTIONS TO LIGHT FIXTURE. SOME CIRCUMSTANCES MAY REQUIRE AN ADDED JUNCTION BOX AT FIXTURE TO ALLOW FOR SEPARATION OF 120V POWER AND 0-10V SIGNAL WIRING. CONFIRM WITH OWNER BEFORE FINAL INSTALLATION.
- LIGHT FIXTURE SHOWN IS INDICATED AS A 1' x 4' SIZE FOR REFERENCE PURPOSES ONLY. REFER TO PROJECT RELATED LIGHT FIXTURE SCHEDULES FOR ACTUAL PHYSICAL DIMENSIONS, FIXTURE MAKE AND MODELS.

4 TYPICAL LUMINAIRE WIRING DETAIL
LAYOUT DIAGRAM

For Reference

Legend			
0	ISSUED FOR REFERENCE	LJD	03-FEB-2026
Rev.	Description	Appd.	Date

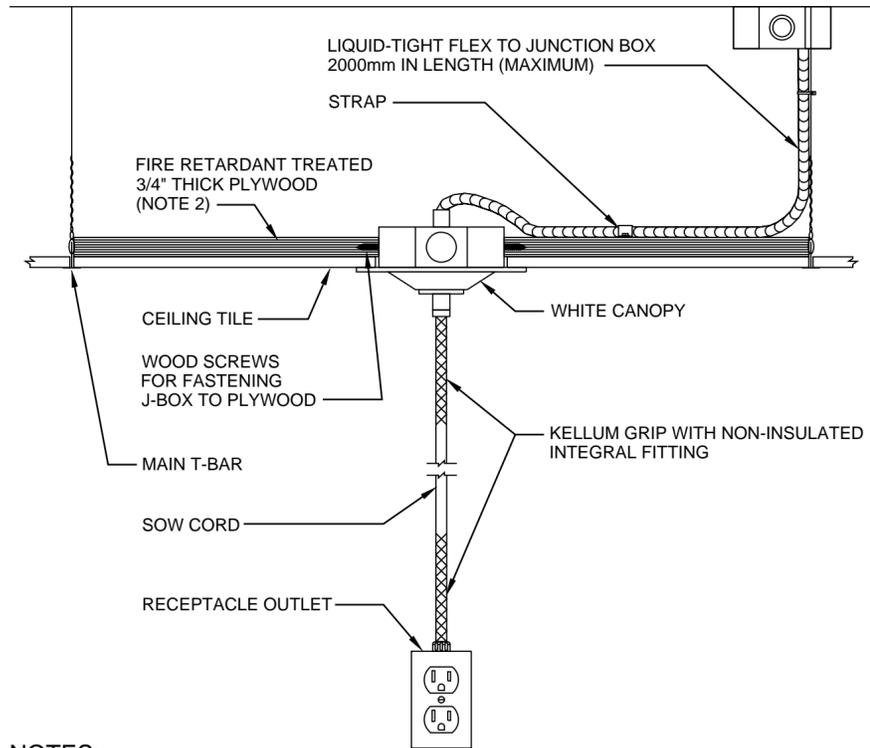
Permits / Seals

Project
ELECTRICAL DETAILS
OFFICE LIGHTING CONTROL

Title
0-10V DIMMING, OCCUPANCY SWITCH, AND OCCUPANCY SENSOR WIRING DIAGRAMS

Dwn. D. DUBOWSKI	Chkd. G. POOLE	Dsgn. D. DUBOWSKI
Project No.		Scale As Noted
UofS Drawing No.		Date 17-SEP-2025
Drawing No. E33	Sheet 1 OF 1	Revision 0

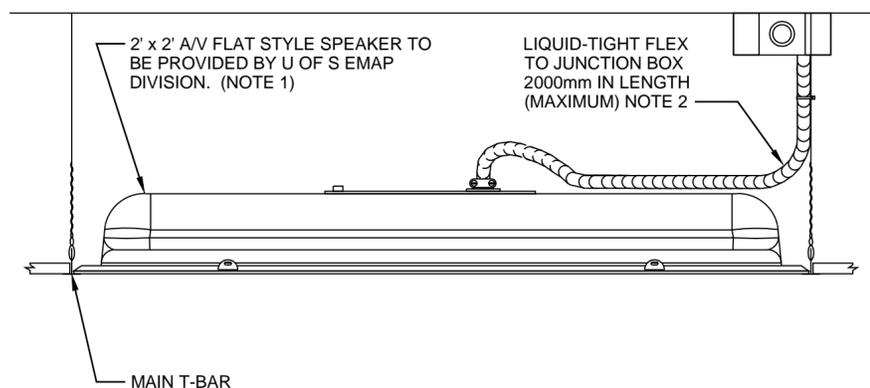
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NOTES:

1. MOUNTING DETAIL IS COMMON FOR CEILING MOUNTED DROP CORD RECEPTACLES, OR OTHER DEVICES REQUIRING ADDITIONAL CEILING SUPPORT WHEN MOUNTED IN T-BAR CEILING.
2. SUPPORT PLYWOOD TO BE 23 3/4" x 23 3/4" IN SIZE (MINIMUM). ANY REDUCTIONS TO THIS SIZE ARE NOT ACCEPTABLE UNLESS APPROVED BY U OF S ELECTRICAL ENGINEERING.

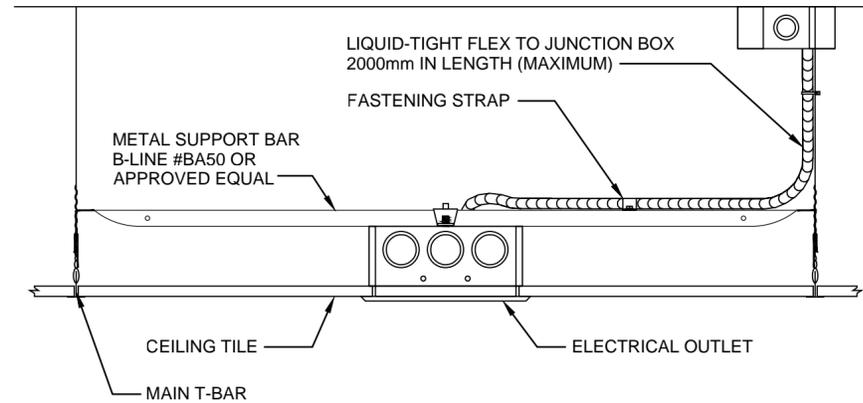
1 DROP CORD RECEPTACLE
T-BAR INSTALLATION DETAIL



NOTES:

1. FULL-RANGE FLAT FIELD SPEAKER c/w LOW PROFILE ENCLOSURE AND 70/100V TRANSFORMER. MANUFACTURER: EXTRON #FF 220T
1. REFER TO A/V DIVISION EQUIPMENT LAYOUT DRAWINGS FOR ACTUAL CEILING LOCATIONS AND ANY ADDITIONAL INFORMATION.

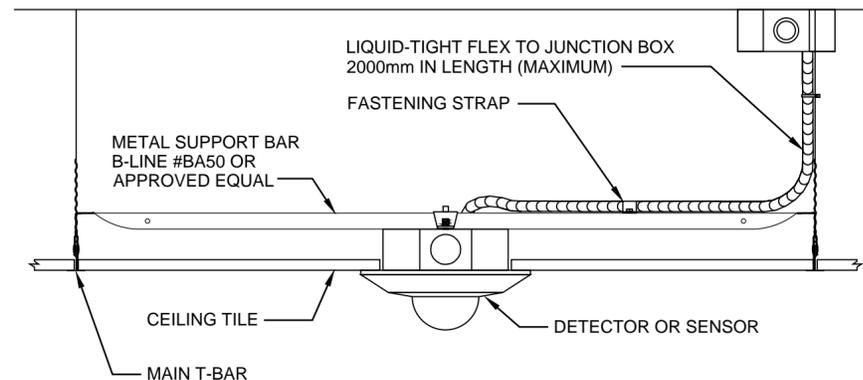
3 AUDIO/VIDEO SPEAKER
T-BAR INSTALLATION DETAIL



NOTES:

1. MOUNTING DETAIL IS COMMON FOR CEILING MOUNTED ELECTRICAL OUTLETS OR COMPUTER NETWORK CONNECTIONS REQUIRING A CEILING MOUNTED JUNCTION BOX IN T-BAR CEILING.
2. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR MAXIMUM SUPPORT WEIGHT AND FASTENING METHODS.
3. ENSURE THE T-BAR CEILING IS DESIGNED TO SUPPORT LOADS ASSOCIATED WITH THIS TYPE OF INSTALLATION.

2 DUPLEX RECEPTACLE
T-BAR INSTALLATION DETAIL



NOTES:

1. MOUNTING DETAIL IS COMMON FOR CEILING MOUNTED OCCUPANCY, MOTION, HEAT OR SMOKE DETECTORS AND EXIT LIGHT FIXTURES OR OTHER DEVICES REQUIRING A CEILING MOUNTED JUNCTION BOX IN T-BAR CEILING.
2. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR MAXIMUM SUPPORT WEIGHT AND FASTENING METHODS.
3. ENSURE THE T-BAR CEILING IS DESIGNED TO SUPPORT LOADS ASSOCIATED WITH THIS TYPE OF INSTALLATION.

4 MISCELLANEOUS DEVICES
T-BAR INSTALLATION DETAIL

Legend

For Reference

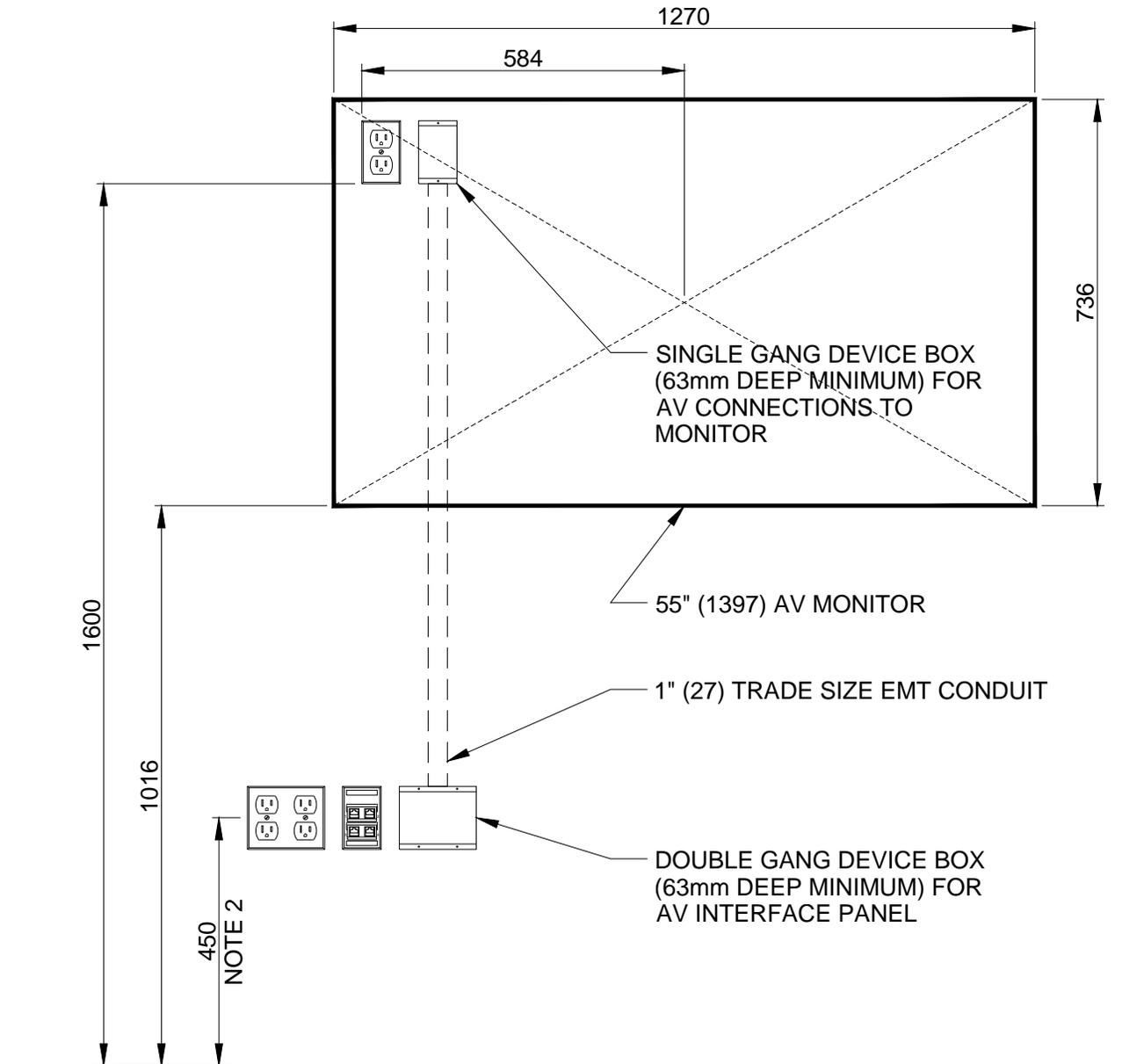
0	ISSUED FOR REFERENCE	DMB	15-JAN-2026
Rev.	Description	Appd.	Date

Permits / Seals

Project
ELECTRICAL DETAILS
T-BAR CEILING MOUNTED DEVICES

Title
DROP CORD, DUPLEX RECEPTACLE, A/V SPEAKER AND MISCELLANEOUS DEVICES

Dwn. D. DUBOWSKI	Chkd. G. POOLE	Dsgn. D. DUBOWSKI
Project No.		Scale As Noted
UofS Drawing No.		Date 17-SEP-2025
Drawing No. E34	Sheet 1 OF 1	Revision 0



FLOOR

NOTES:

- 1. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS UNLESS SPECIFIED OTHERWISE.
- 2. DIMENSION SHOWN IS FOR USE ON A GENERAL WALL SPACE. WHERE THE USE WILL BE ASSIGNED TO A TABLE OR MILLWORK THE HEIGHT SHALL BE 1000mm ABOVE FINISHED FLOOR.
- 3. OVERALL DESIGN LAYOUT TO BE CONFIRMED WITH U OF S ICT DIVISION BEFORE PRECEEDING WITH FINAL INSTALLATION.

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Rev.	Description	Appd.	Date

UNIVERSITY OF SASKATCHEWAN

DATE **22-JAN-2015** SCALE **N.T.S.**

**ELECTRICAL DETAILS
VIDEO MONITOR POWER
AND AV INTERFACE
WALL MOUNTING LAYOUT**

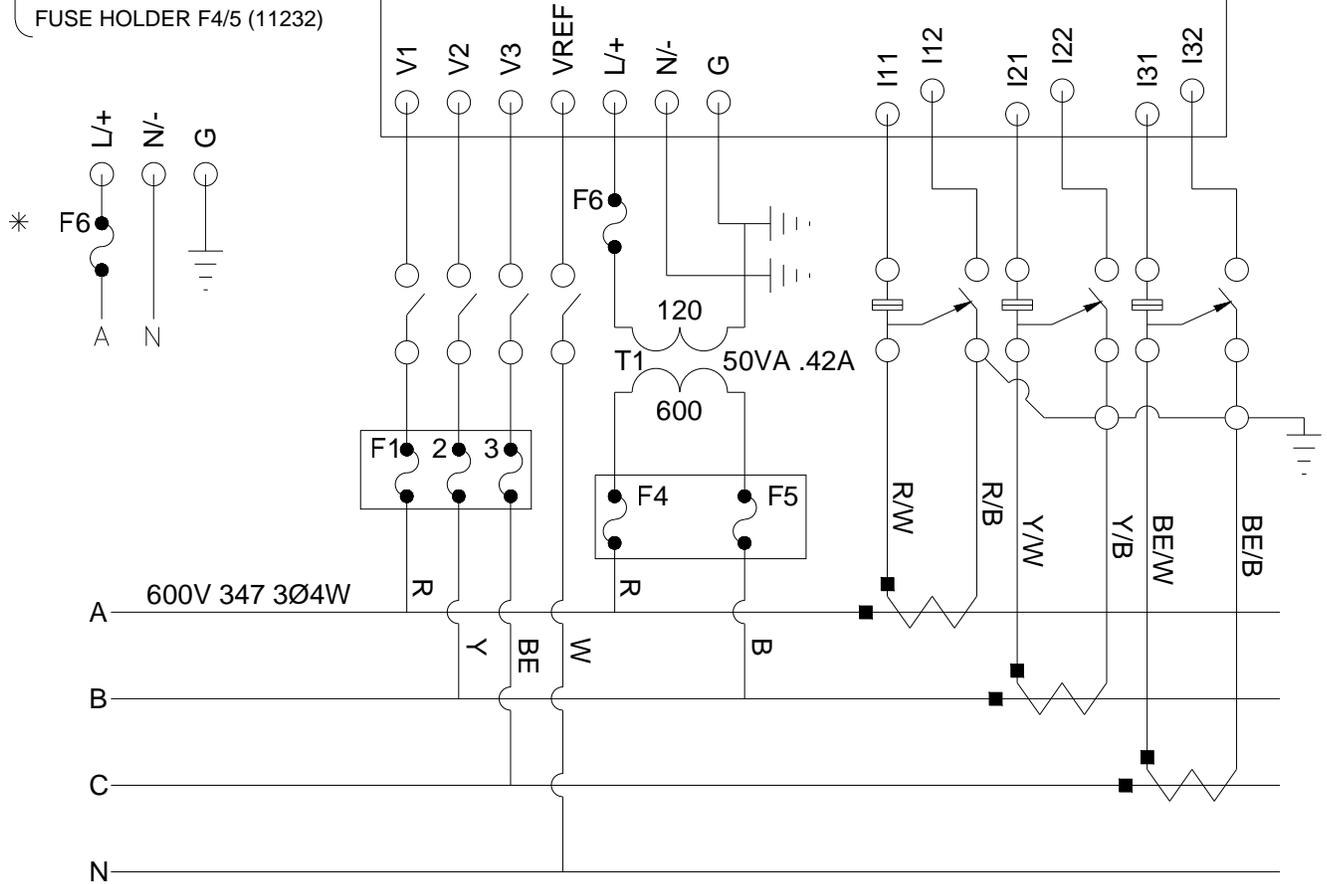


DRAWN BY	D. DUBOWSKI	E / 35 DRAWING NO.
CHECKED BY	K. LEEDAHL	
APPROVED BY	K. LEEDAHL	

- 10 POLE TEST SWITCH (12621)
- F1 ATMR2 2A 600V
- F2 ATMR2 (11604)
- F3 ATMR2
- F4 ATMR1-1/4 SLOW (11853)
- F5 ATMR1-1/4 SLOW
- F6 ATMR3 3A 600V
- T1 SP50ACP HPS
SPARTAN OR PH50AJ

- * OMIT IF 208V 120 3Ø4W
- T1 50VA TRANSFORMER
- F4 ATDR1-1/4 (11853)
- F5 ATDR1-1/4
- FUSE HOLDER F4/5 (11232)

ION 7300 SERIES ENERGY METER 3-ELEMENT DIRECT CONNECTION DIAGRAM



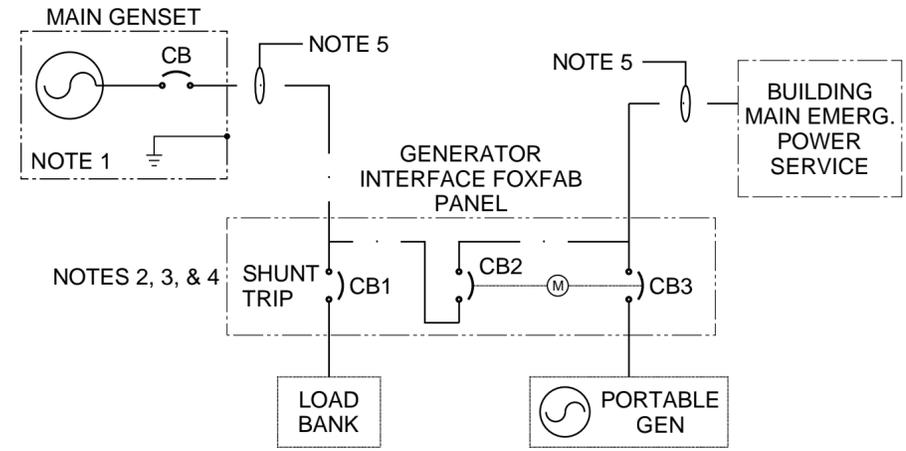
G POOLE 2012

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UNIVERSITY OF SASKATCHEWAN		DATE	16-MAR-2013	SCALE	N.T.S.
		DRAWN BY	M. CHAHARYN	E	37
ELECTRICAL DETAILS		CHECKED BY	G. POOLE		
ION 7300 SERIES METER WIRING DIAGRAM		APPROVED BY	G. POOLE		



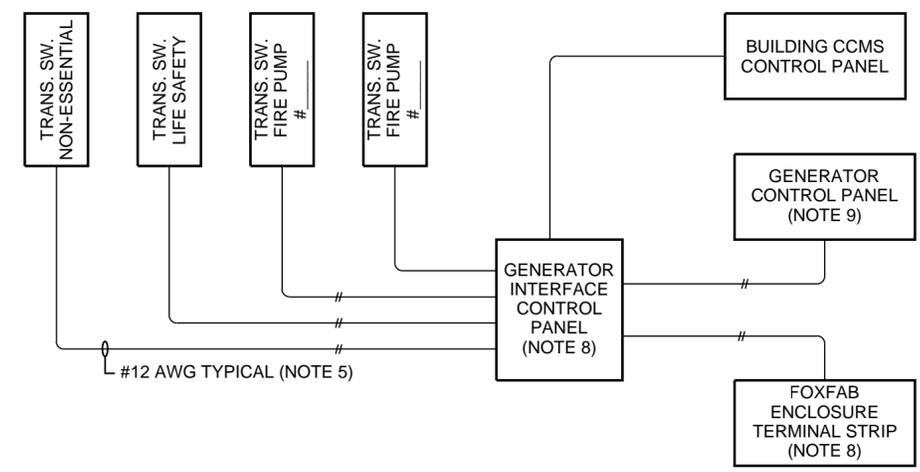
A2 (420x594 mm) W:\PMO\PMO_Public\Electrical Library\Details\Revised Details\E39 -Generator Interface Foxfab Panel(16JAN2026).dwg : Friday, January 16, 2026 4:32:17 PM : DWG To PDF.pc3



NOTES:

1. CONFIRM LOCATION OF THE GENSET WITH OWNER. DO NOT BOND GENSET NEUTRAL TO THE GROUND.
2. CIRCUIT BREAKER CB1 IS SUPPLIED WITH SHUNT TRIP OPTION. SIGNAL IS PROVIDED FROM GENERATOR AUXILIARY CONTROL AND TRANSFER SWITCH PANEL. REFER TO SCHEMATIC DIAGRAM FOR ADDITIONAL INFORMATION.
3. CIRCUIT BREAKERS CB2 AND CB3 ARE SUPPLIED WITH MECHANICAL INTERLOCKING BETWEEN BOTH BREAKERS.
4. ALL BREAKER SIZES ARE TO BE CONFIRMED DURING DESIGN DEVELOPMENT.
5. CONFIRM CODE REQUIREMENTS FOR CABLE SIZE AND TYPE. WHERE CABLE ROUTING IS WITHIN THE BUILDING, VITALINK (2 HR RATED) SHALL BE USED.
6. GENSET INTERFACE FOXFAB PANEL TO BE SUPPLIED WITH 10 COLOR CODED CAMLOC CONNECTORS. (PRODUCT NUMBER - FFCC-S2-C4-B-250LS180-SH1-250-LS180-250LS180-316-LA-AA-AD-AF) c/w SCHNEIDER BREAKERS WITH 2-N.O. AND 2-N.C. CONTACTS. DEAD FRONT COVER, LUGS, ANGLED CANLOC PLATE, CABLE HOLDER, DOOR WITH INTEGRAL LOCKABLE 3 POINT HANDLE AND STAINLESS STEEL HINGES WITH REMOVABLE PINS, WP RECEPT. FORM PANEL LP-15.1. CAMLOC CONNECTORS TO BE MALE FOR GENERATOR CONNECTION AND FEMALE FOR LOAD BANK CONNECTION. PROVIDE TERMINAL STRIP FOR ALTERNATE TEMPORARY GENSET CONNECTION AND LOCATE IT ON PLATE BESIDE GROUND CONNECTION. PROVIDE 1/2" KNOCKOUT WITH PLASTIC BUSHING FOR CONTROL CONDUCTOR ACCESS.

1 GENERATOR INTERFACE FOXFAB PANEL
BLOCK DIAGRAM



NOTES:

1. PHOENIX CONTACT UPS CAPACITY AND VOLTAGE IS DEPENDANT UPON GENERATOR INTERFACE CONTROL PANEL AND RELATED EQUIPMENT PLACEMENT.
2. NUMBER OF TRANSFER SWITCHES AND RELAYS VARY FROM BUILDING TO BUILDING AND ARE DETERMINED ACCORDING TO EMERGENCY POWER OVERALL SYSTEM DESIGN.
3. CIRCUIT BREAKER CB1 CONTACT IS ONLY CLOSED WHEN LOAD CELL TEST IS IN OPERATION. ANY DEMAND FOR NORMAL GENERATOR OR TEMPORARY GENERATOR USE WILL ACTIVATE SHUNT TRIP.
4. ONCE BREAKER CB1 IS TRIPPED BY SHUNT ACTIVATION, IT IS MANUALLY RESET AT THE BREAKER.
5. ALL WIRING SIZES ON BLOCK DIAGRAM ARE AWG. #12 SINGLE CONDUCTOR UNLESS STATED OTHERWISE DUE TO DISTANCE LIMITATIONS.
6. CONFIRM CONNECTIONS WITH OWNER FOR DIFFERENT GENERATOR MANUFACTURERS.
7. LOCATION OF ALL RELATED ENCLOSURES AND EQUIPMENT ARE TO BE CONFIRMED WITH OWNER BEFORE FINAL INSTALLATION.
8. THESE DRAWINGS ARE TO BE USED FOR REFERENCE PURPOSES ONLY. THE INTENT OF THESE DRAWINGS IS FOR EASE OF OPERATION AND MAINTENANCE. THE CONSULTANT IS RESPONSIBLE FOR VERIFYING THE INTEGRITY AND CORRECTNESS OF THE DESIGN.
9. THE ADDITIONAL INFORMATION ON GENERATOR INTERFACE PANEL (FOXFAB), REFERENCE U OF S DETAIL E/55C - GENERATOR INTERFACE PANEL DIAGRAM.

2 GENERATOR INTERFACE CONTROL
BLOCK DIAGRAM

For Reference



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 University of Saskatchewan
 University Services Building
 110 Maintenance Road
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 Phone: 966-4700
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Legend

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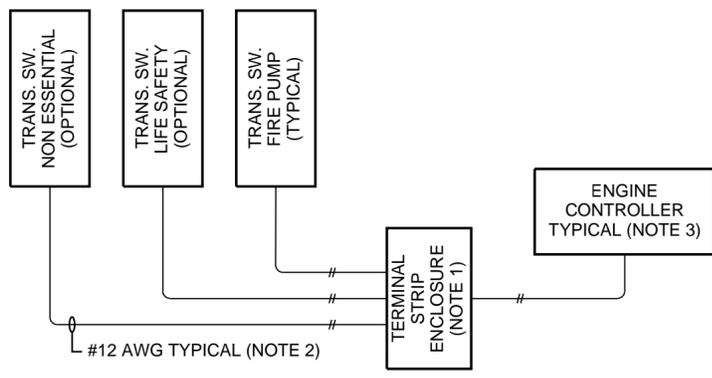
Permits / Seals

Project
ELECTRICAL DETAILS
GENERATOR INTERFACE SYSTEM

Title
GENERATOR INTERFACE CONTROL BLOCK DIAGRAM AND FOXFAB PANEL BLOCK DIAGRAM

Drawn D. DUBOWSKI	Design G. POOLE	Checked D. BALIAD
Project No.		Scale As Noted
UofS Drawing No.		Date 02-MAR-2025
Drawing No. E/39	Sheet 2 OF 2	Revision 0

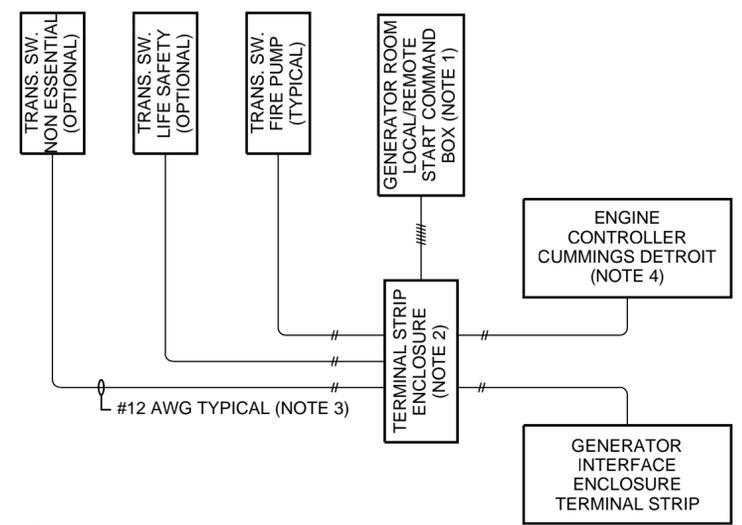
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NOTES:

1. SIZE OF TERMINAL STRIP ENCLOSURE IS 12" x 12" x 6" c/w HINGED COVER. NEMA TYPE 1 RATED. MANUFACTURER: _____
2. ALL WIRING SIZES ON ABOVE DIAGRAM ARE AWG. #12 SINGLE CONDUCTOR UNLESS STATED OTHERWISE DUE TO DISTANCE LIMITATIONS.
3. CONFIRM CONNECTIONS WITH OWNER BEFORE FINAL INSTALLATION. CHECK WITH ENGINE CONTROLLER MANUFACTURER FOR ACTUAL CONNECTIONS.
4. LOCATION OF ALL RELATED ENCLOSURES AND EQUIPMENT ARE TO BE CONFIRMED WITH OWNER BEFORE FINAL INSTALLATION.
5. FAILURE OF ANY AC POWER AT ANY TRANSFER SWITCH WILL START GENERATOR.

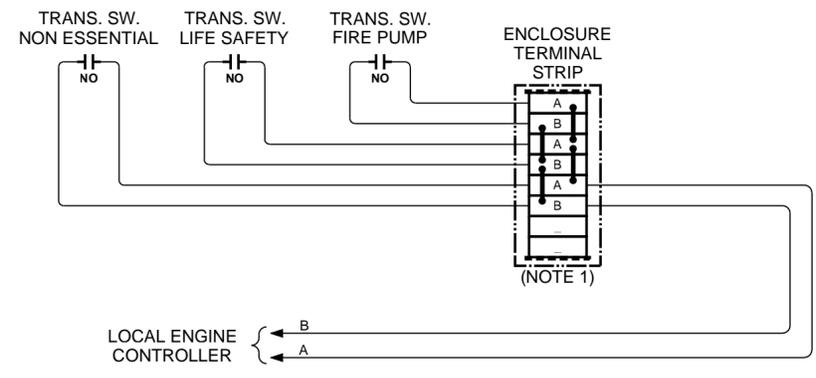
1 NON-LRC/FOXFAB CONTROL
BLOCK DIAGRAM



NOTES:

1. SIZE OF START COMMAND ENCLOSURE IS 10" x 10" x 6" c/w HINGED COVER. NEMA TYPE 1 RATED. MANUFACTURER: _____
2. SIZE OF TERMINAL STRIP ENCLOSURE IS 12" x 12" x 6" c/w HINGED COVER. NEMA TYPE 3R OR 4 RATED. MANUFACTURER: _____
3. ALL WIRING SIZES ON ABOVE DIAGRAM ARE AWG. #12 SINGLE CONDUCTOR UNLESS STATED OTHERWISE DUE TO DISTANCE LIMITATIONS.
4. CONFIRM CONNECTIONS WITH OWNER FOR DIFFERENT GENERATOR MANUFACTURERS.
5. LOCATION OF ALL RELATED ENCLOSURES AND EQUIPMENT ARE TO BE CONFIRMED WITH OWNER BEFORE FINAL INSTALLATION.

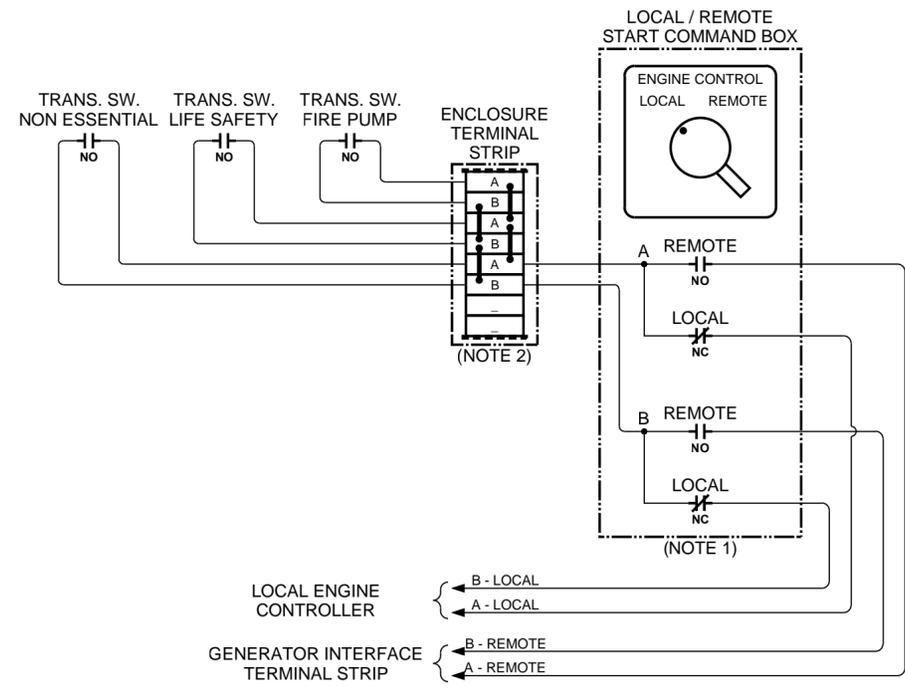
3 LOCAL/REMOTE CONTROL
BLOCK DIAGRAM



NOTES:

1. COMPONENTS FOR ENCLOSURE TERMINAL STRIP ARE AS FOLLOWS:
 - 600V RATED TERMINAL BLOCK: PHOENIX CONTACT _____
 - TERMINAL JUMPER BRIDGE: PHOENIX CONTACT _____

2 NON-LRC/FOXFAB CONTROL
WIRING DIAGRAM



NOTES:

1. ENGINE CONTROL LOCAL / REMOTE SWITCH AND RELATED COMPONENTS ARE AS FOLLOWS:
 - (1) LOCAL / REMOTE SWITCH IS TWO-POSITION, PAD LOCKABLE: SQUARE D #ZB4BJ294.
 - (1) PTE CUSTOM LEGEND PLATE: GENERATOR LOCAL / REMOTE.
 - (1) PUSHBUTTON MOUNTING BEZEL: SQUARE D #ZB4BZ009.
 - (2) NORMALLY OPEN CONTACT BLOCKS: SQUARE D #ZBE101.
 - (2) NORMALLY CLOSED CONTACT BLOCKS: SQUARE D #ZBE102.
2. COMPONENTS FOR ENCLOSURE TERMINAL STRIP ARE AS FOLLOWS:
 - 600V RATED TERMINAL BLOCK:
 - TERMINAL JUMPER BRIDGE:

4 LOCAL/REMOTE CONTROL
WIRING DIAGRAM

For Reference

Legend

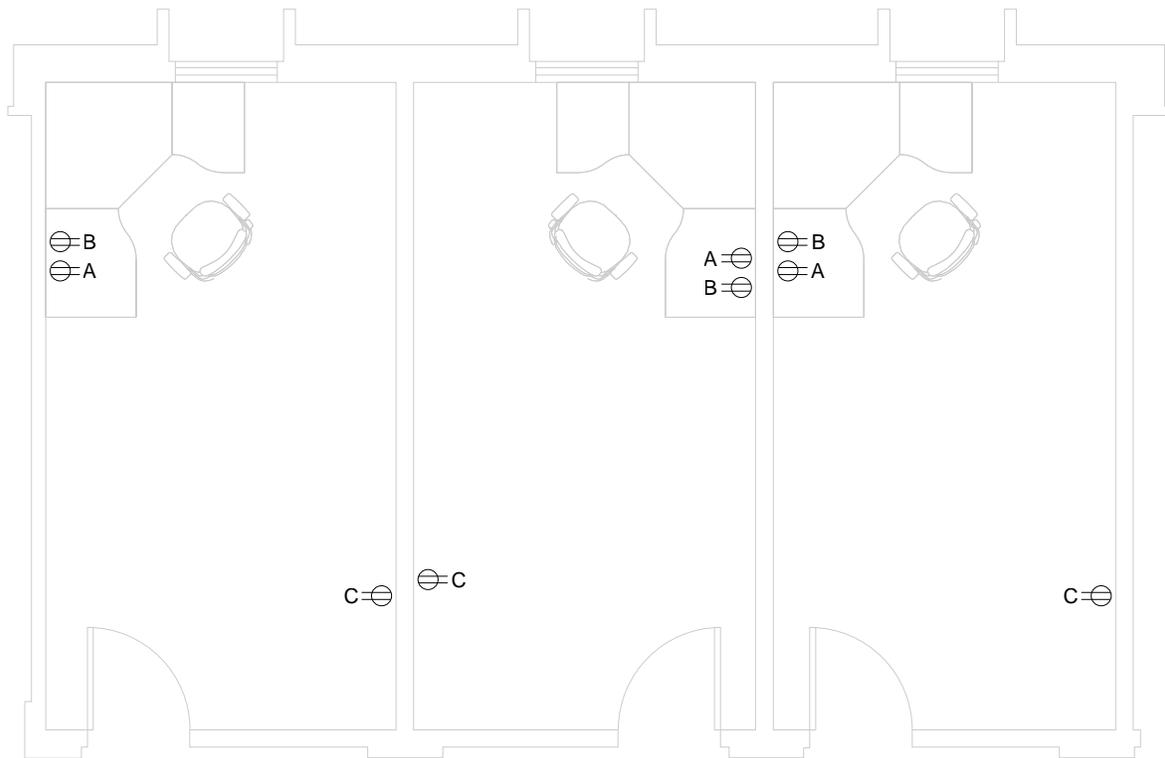
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Rev.	Description	Appd.	Date

Permits / Seals

Project
ELECTRICAL DETAILS
GENERATOR START CONTROL

Title
NON-LRC AND LOCAL/REMOTE BLOCK DIAGRAMS AND WIRING DIAGRAMS

Dwn. D. DUBOWSKI	Chkd. G. POOLE	Dsgn. D. DUBOWSKI
Project No.		Scale As Noted
UofS Drawing No.		Date 17-SEP-2025
Drawing No. E/40	Sheet 1 OF 1	Revision 0



OFFICE ELECTRICAL OUTLET LAYOUT

NOTES:

1. OFFICE ELECTRICAL ARRANGEMENT SHOWN UTILIZES THREE SEPARATE BRANCH CIRCUITS WHICH ARE INDICATED AS (A), (B), AND (C).
2. THIS CONFIGURATION IS USED FOR GENERAL ARRANGEMENT PURPOSES ONLY AND DOES NOT ACCOUNT FOR SPECIFIC ELECTRICAL OUTLETS THAT MAY BE NEEDED FOR SPECIALITY EQUIPMENT WITHIN THE OFFICE SPACE.
3. BRANCH CIRCUITS SHALL BE ON CONSECUTIVE BREAKERS IN THE ELECTRICAL PANEL (i.e. 1-3-5 OR 12-14-16) WHEREVER POSSIBLE TO ALLOW SHARING A NEUTRAL CONDUCTOR.

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UNIVERSITY OF SASKATCHEWAN

DATE 26-NOV-2025

SCALE N.T.S.

ELECTRICAL DETAILS

DRAWN BY D. Dubowski

E

**OFFICE ELECTRICAL
OUTLETS - LAYOUT**



CHECKED BY L. Dobson

/ 41

APPROVED BY L. Dobson

DRAWING NO.