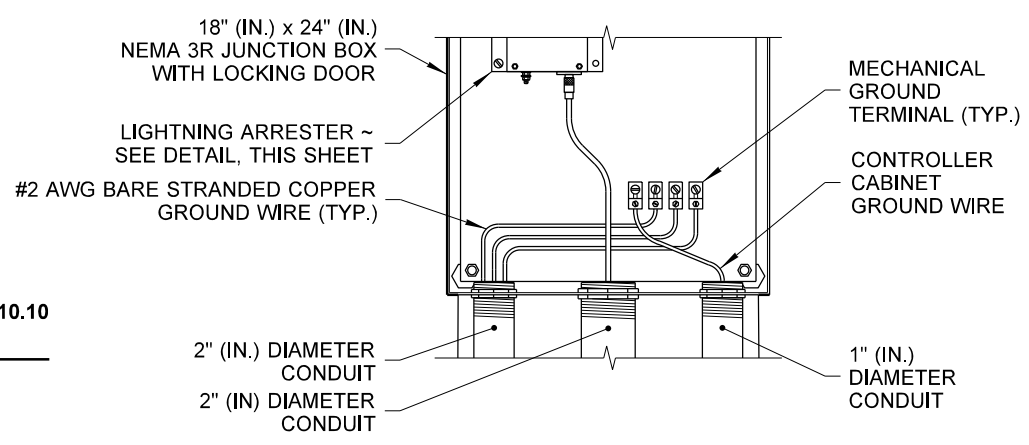


LIGHTNING ARRESTER CONNECTION DETAIL



TERMINAL CABINET GROUNDING DETAIL

ELEVATION VIEW
HIGHWAY ADVISORY RADIO TRANSMITTER DETAILS

NOTES

1. Under **FCC Rules & Regulations 90.242**, the antenna is limited to a maximum height of 15 meters (49.2 feet). Mount the antenna to the pole with a bracket and high-strength insulated antenna mounts with stainless steel hardware.
2. The antenna shall be center or base loaded vertical featuring a low-loss, embedded weatherproof loading coil.
3. The amplitude modulated transmitter must be FCC type approved. See Contract for the transmitter frequency.
4. The voice storage unit shall be as specified in the Contract.
5. See **Standard Plan J-60.14** for details on mounting a NEMA junction box to a timber pole.
6. All HAR conduits shall be secured to the pole with two-hole conduit straps spaced at 5' (ft.) maximum centers. See **Standard Plans J-60.13 and J-60.14** for steel channel support and mounting details.
7. The shield shall be tightly wrapped around the center conductor when attaching the PL 259 connector to the UG 175/U adapter. The shield wrapping on the center conductor may **ONLY** come in contact with the center pin at the solder point. The shield **MUST NOT** come in contact with the PL 259 shell.
8. The shield shall be soldered through all of the holes on the PL 259 connector, and the center conductor shall be soldered at the tip of the connector. The shield and center conductor **MUST NOT** be shorted together.
9. The shield shall be tightly wrapped around the center conductor. Crimp and solder the center conductor and shield to the terminal lug and attach securely to the antenna. Seal the entire connection assembly, including the antenna connection point, with butyl tape or heat shrink.

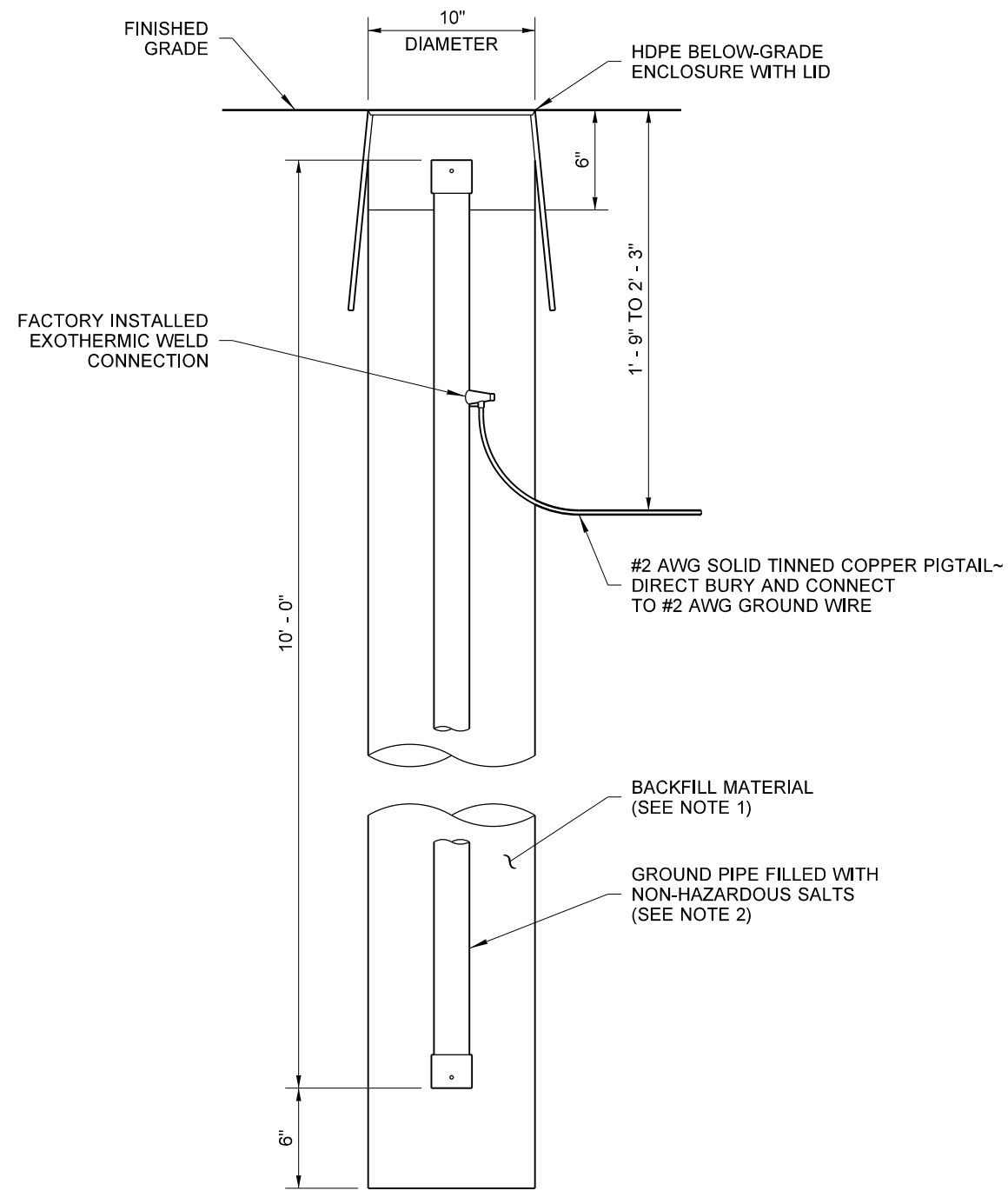


**HIGHWAY ADVISORY
RADIO (HAR) TRANSMITTER
STANDARD PLAN J-86.10-00**

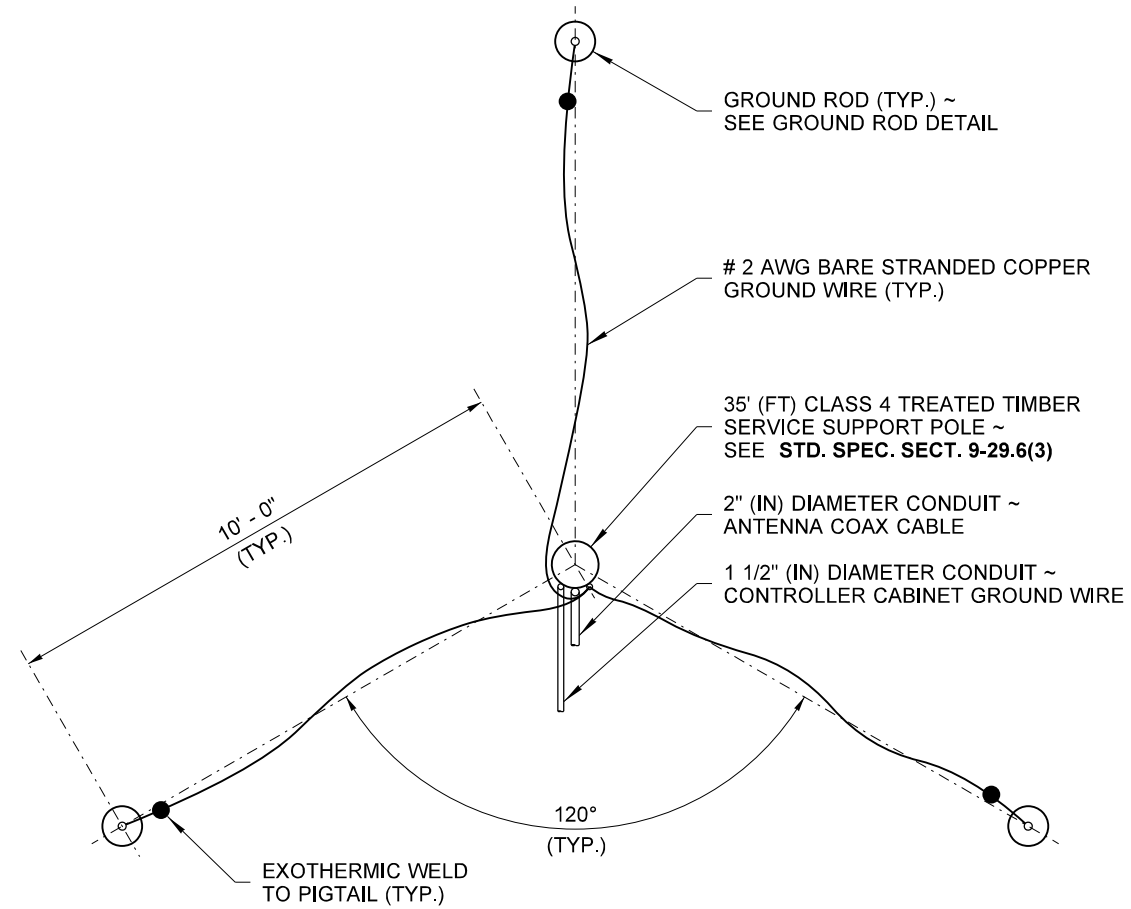
SHEET 1 OF 3 SHEETS

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ELEVATION VIEW
GROUND ROD DETAIL



PLAN VIEW
GROUND ROD LAYOUT

CONSTRUCTION NOTES

1. Backfill material shall meet **ANSI/NSF Environmental Standard 60**. Follow manufacturer's mixing recommendations.
2. Ground Pipe and types of non-hazardous salts will vary per manufacturer. See the WSDOT Qualified Products List (QPL) for approved manufacturers and follow guidance provided.



**HIGHWAY ADVISORY
RADIO (HAR) TRANSMITTER
STANDARD PLAN J-86.10-00**

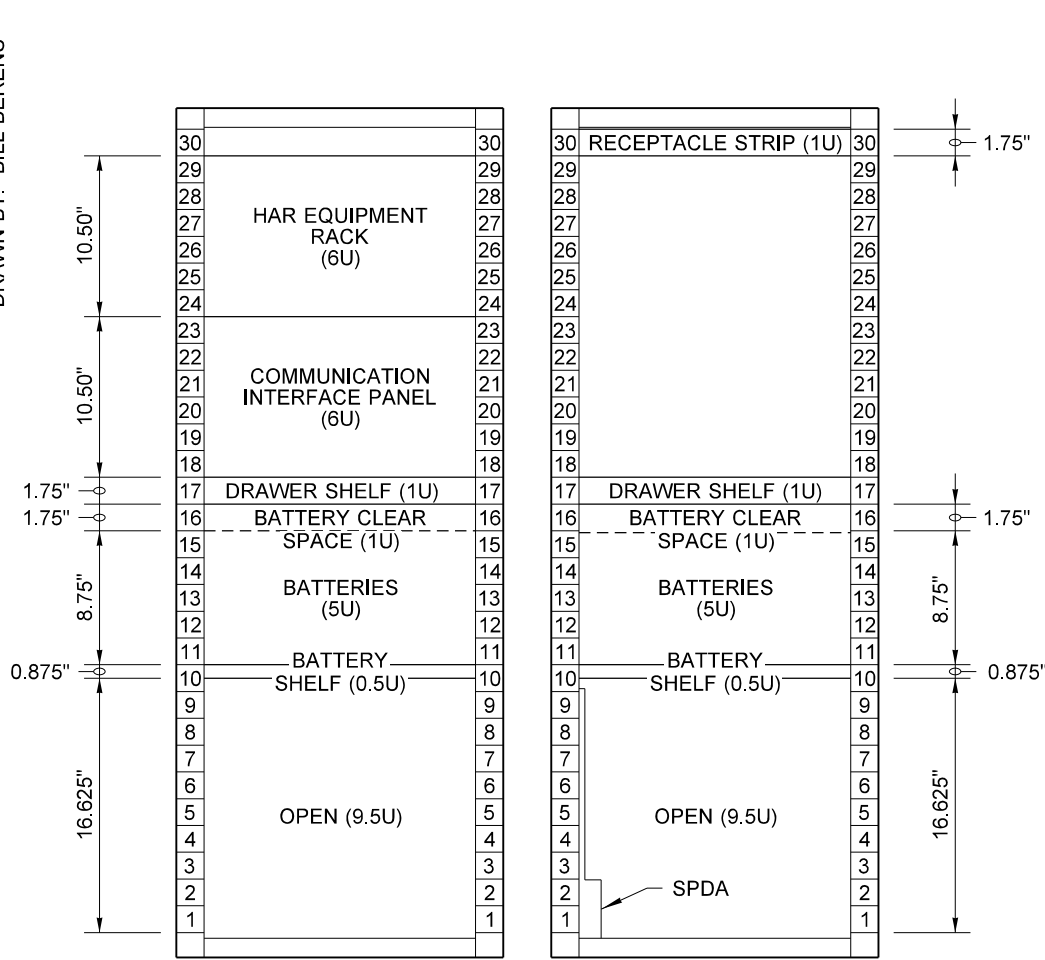
SHEET 2 OF 3 SHEETS

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STATE DESIGN ENGINEER
 Washington State Department of Transportation

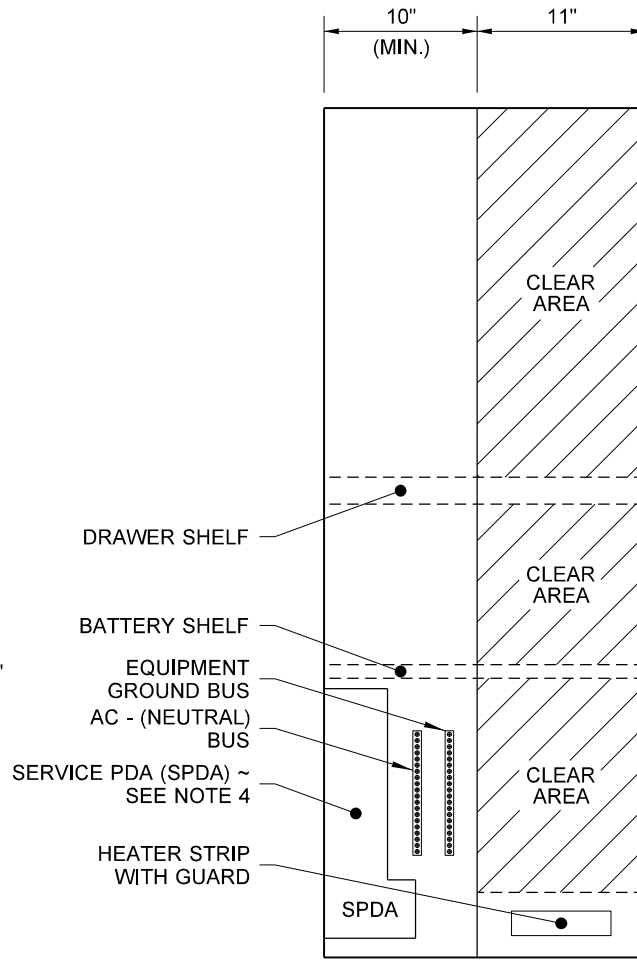
TRIAD GROUNDING SYSTEM DETAILS

DRAWN BY: BILL BERENS

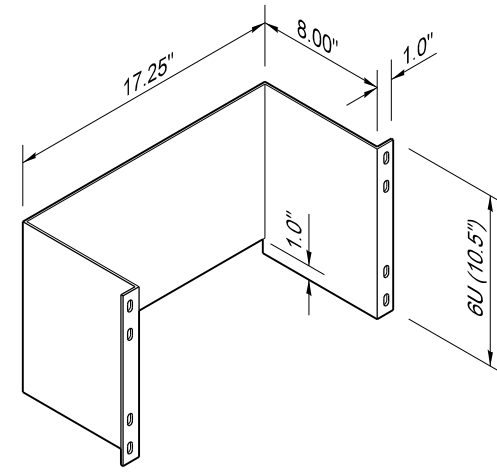


FRONT VIEW

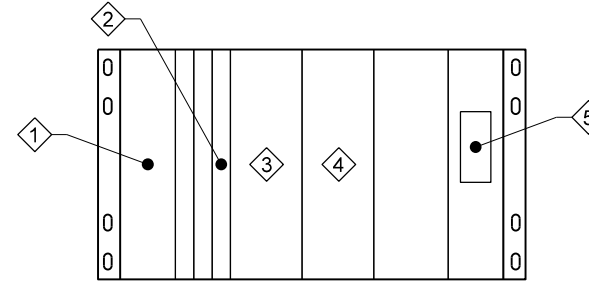
REAR VIEW



SERVICE PANEL ITS LAYOUT



COMMUNICATION INTERFACE PANEL ISOMETRIC VIEW



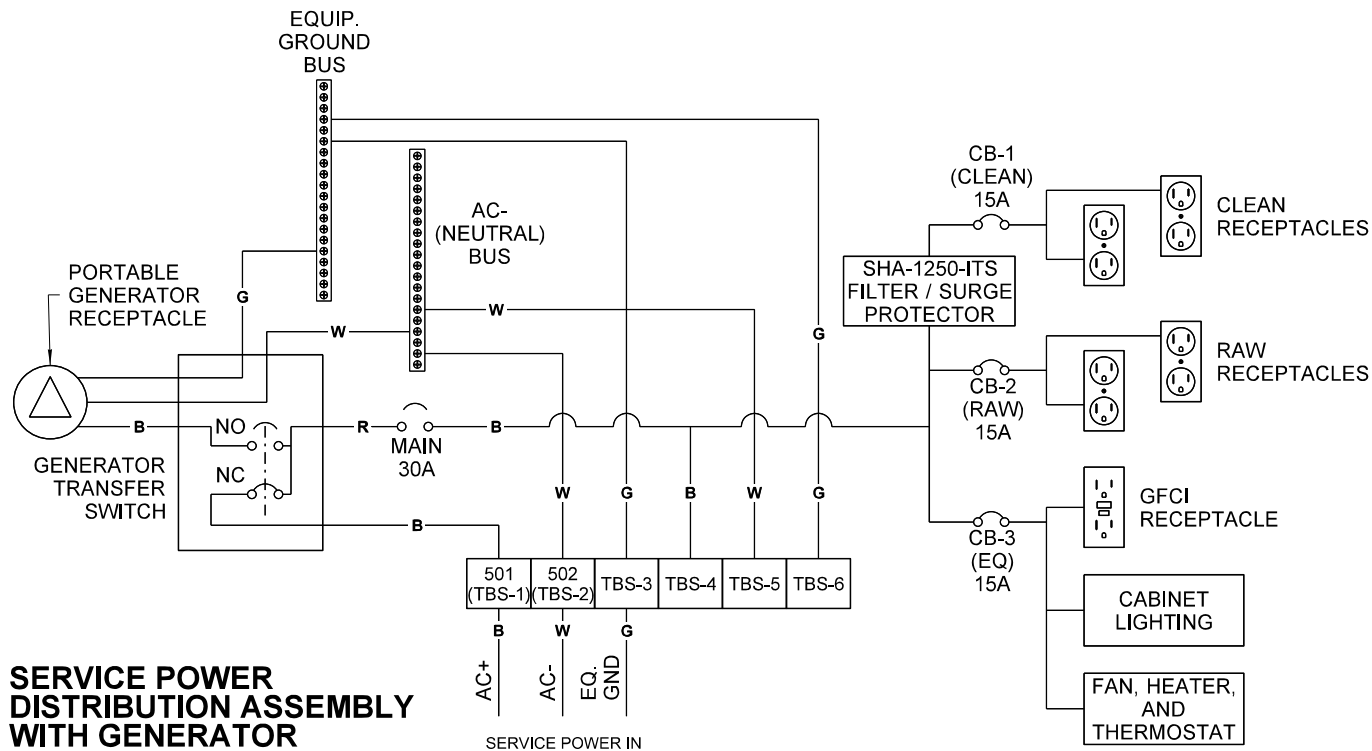
HAR EQUIPMENT RACK LAYOUT FRONT VIEW

CABINET NOTES

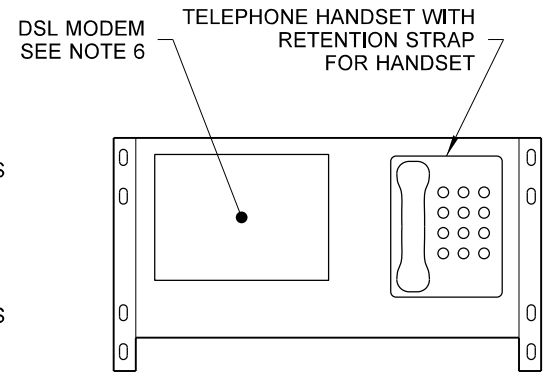
1. The cabinet is a Type 331, with housing and rack as shown in **Standard Plan J-12.15**.
2. The service panel shall be installed on the left side of the cabinet as viewed from the rear.
3. Service PDA (SPDA) shall be as shown in the **TEES**, with the modifications shown here.
4. The battery shelf shall not obstruct any outlets on the SPDA.
5. The Receptacle Strip shall be plugged into a clean receptacle on the SPDA.
6. DSL Modem may be set on the drawer shelf if it is not designed for wall mounting.
7. Bus bars shall be capable of being used without lugs on wiring.

KEY NOTES

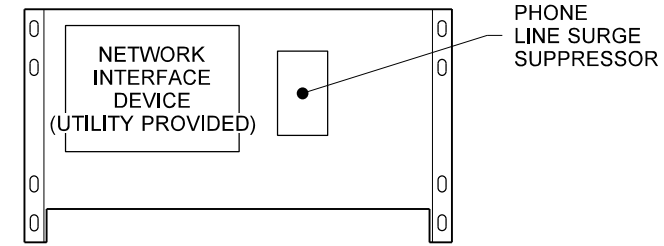
- 1 POWER MODULE
- 2 INTERFACE MODULE
- 3 DIGITAL COMMUNICATION CONTROLLER MODULE
- 4 AM TRANSMITTER MODULE
- 5 MODULATION PICK-OFF



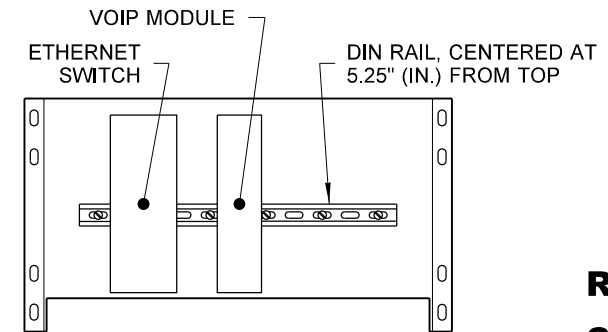
SERVICE POWER DISTRIBUTION ASSEMBLY WITH GENERATOR SWITCH WIRING DIAGRAM
SEE NOTE 3



COMMUNICATION INTERFACE PANEL FRONT VIEW



COMMUNICATION INTERFACE PANEL REAR VIEW ~ PHONE/DSL



COMMUNICATION INTERFACE PANEL REAR VIEW ~ FIBER



HIGHWAY ADVISORY RADIO (HAR) TRANSMITTER STANDARD PLAN J-86.10-00

SHEET 3 OF 3 SHEETS

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