

ELECTRICAL BONDING

1. ALL STEEL DOORS AND FRAMES SHALL BE ELECTRICALLY BONDED TO THE MAGAZINE REBAR CAGE.
2. ALL STRUCTURAL AND MISCELLANEOUS ITEMS EMBEDDED IN CONCRETE SHALL BE ELECTRICALLY BONDED TO THE REBAR CAGE BY METALLIC WIRE TIES, BRAZING OR WELDING.
3. THE REBAR CAGE SHALL BE MADE ELECTRICALLY CONTINUOUS BY BONDING INDIVIDUAL REINFORCING BARS USING METALLIC WIRE TIES, BRAZING OR WELDING AT A MAXIMUM OF 5'-0" IN ANY DIRECTION.
4. ALL WALL AND CONSTRUCTION JOINTS SHALL BE ELECTRICALLY BONDED. SEE THE ELECTRICAL DRAWINGS FOR DETAILS.

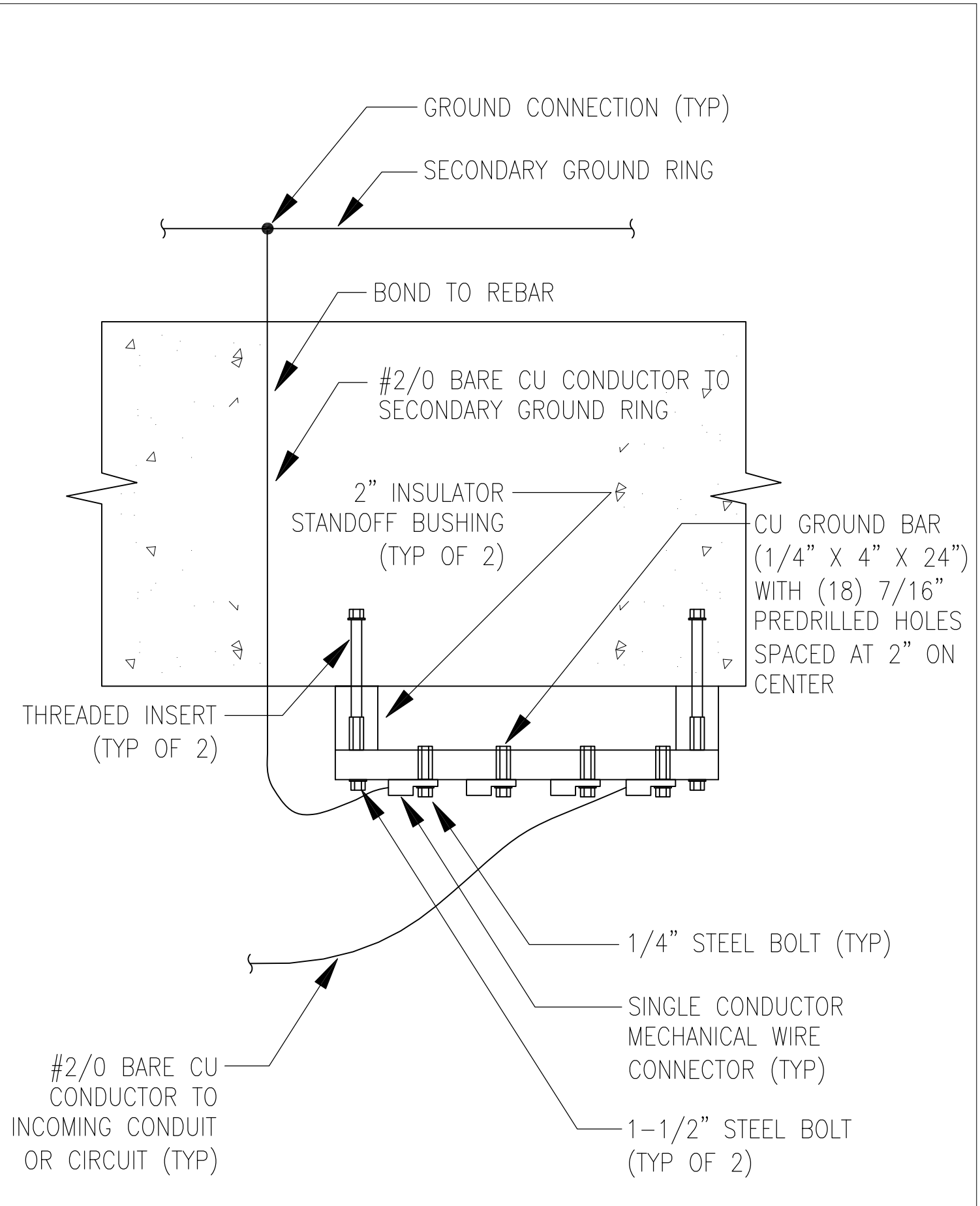
BONDING DETAILS

REVISED:

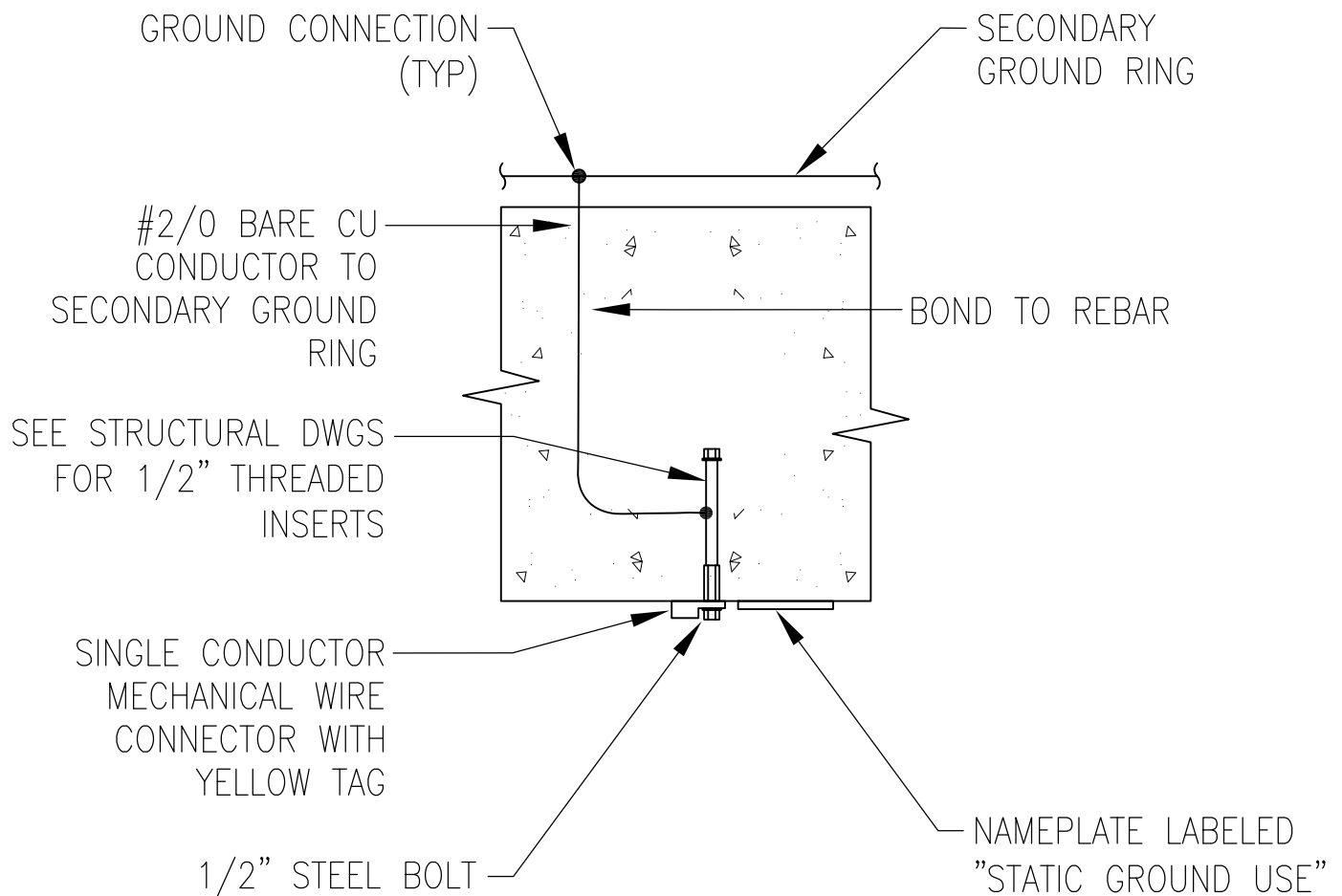
SEPTEMBER 2014

MAGAZINE DETAIL:

S-1



SINGLE POINT GROUND BAR DETAIL



STATIC GROUND INSERT DETAIL NOTES:

1. PROVIDE A REMOVABLE YELLOW MELAMINE PLASTIC TAG THAT ATTACHES TO THE STATIC GROUND INSERT. THE TAG SHALL INCLUDE THE FOLLOWING INFORMATION:

"NOT IN SERVICE. NO MAINTENANCE REQUIRED.

INSTALLATION MEETS STATIC/FACILITY GROUND REQUIREMENT PER NAVSEA OP-5. ACTIVITY SHALL PERFORM TESTING PER NAVSEA OP-5 AND ENACT MAINTENANCE SCHEDULE WHEN THE STATIC/FACILITY GROUND INSERT IS PLACED IN SERVICE.

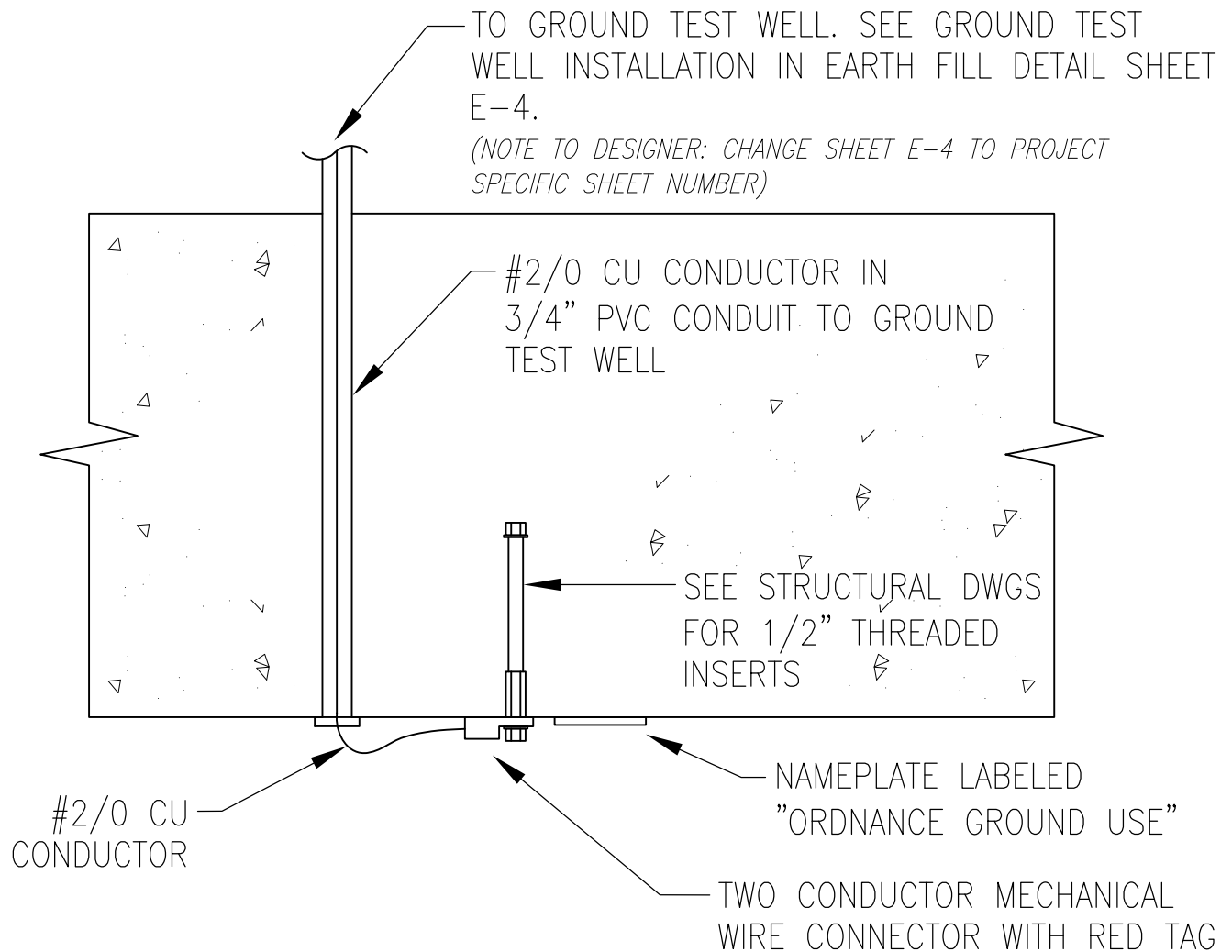
RETAIN THIS TAG TO REATTACH WHEN REMOVED FROM SERVICE."

STATIC GROUND INSERT DETAIL

REVISED:

DECEMBER 2009

MAGAZINE DETAIL:



ORDNANCE GROUND INSERT DETAIL NOTES:

1. PROVIDE A REMOVABLE RED MELAMINE PLASTIC TAG THAT ATTACHES TO THE ORDNANCE GROUND INSERT. THE TAG SHALL INCLUDE THE FOLLOWING INFORMATION:

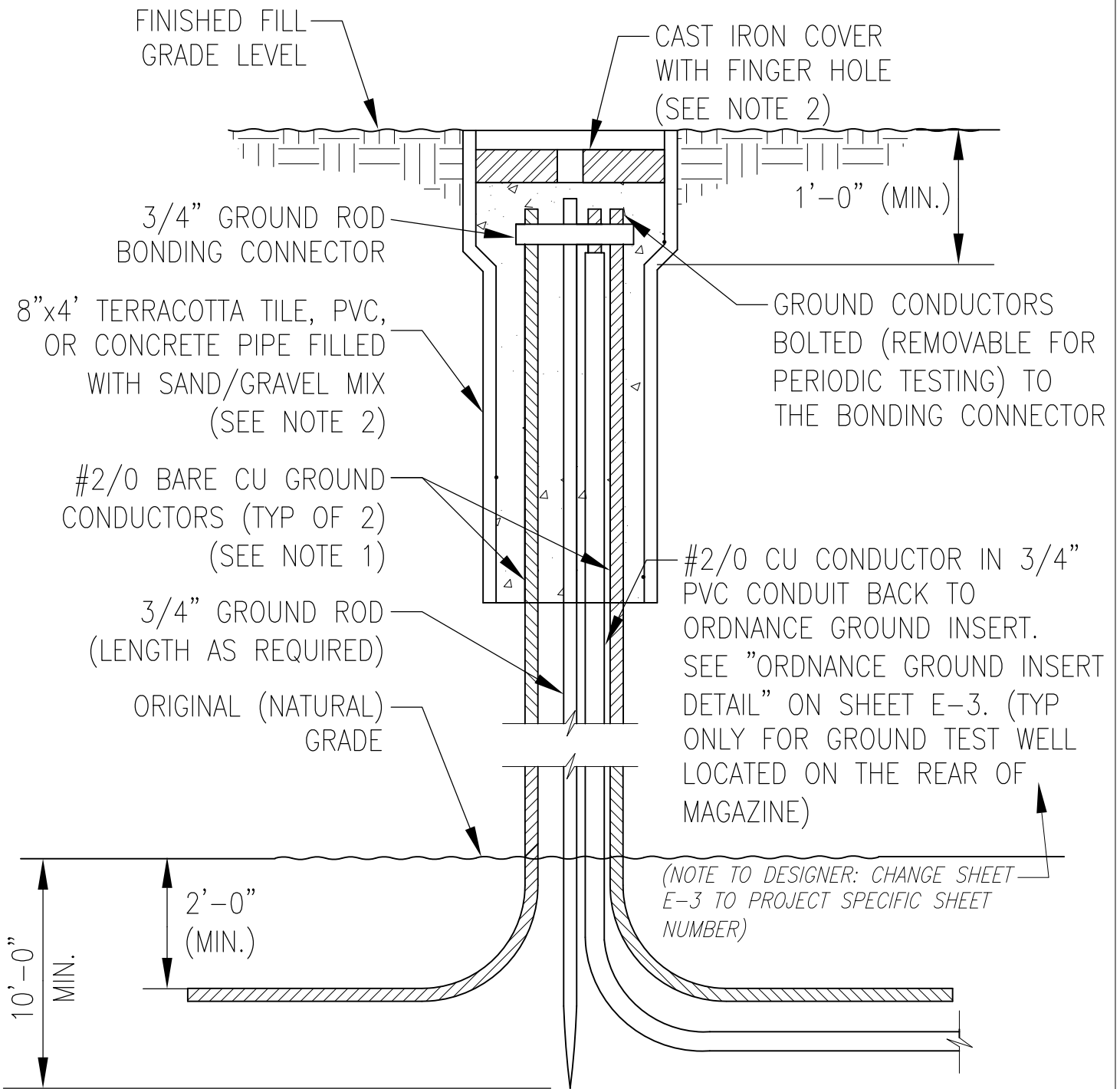
"NOT IN SERVICE. NO MAINTENANCE REQUIRED.

INSTALLATION MEETS ORDNANCE GROUND REQUIREMENT PER NAVSEA OP-5. ACTIVITY SHALL PERFORM TESTING PER NAVSEA OP-5 AND ENACT MAINTENANCE SCHEDULE WHEN THE ORDNANCE GROUND INSERT IS PLACED IN SERVICE.

RETAIN THIS TAG TO REATTACH WHEN REMOVED FROM SERVICE."

2. MAINTAIN THREADED INSERT ISOLATION. DO NOT ALLOW THE THREADED INSERT TO TOUCH REBAR OR OTHER METALLIC OBJECTS IN THE WALL.

ORDNANCE GROUND INSERT DETAIL

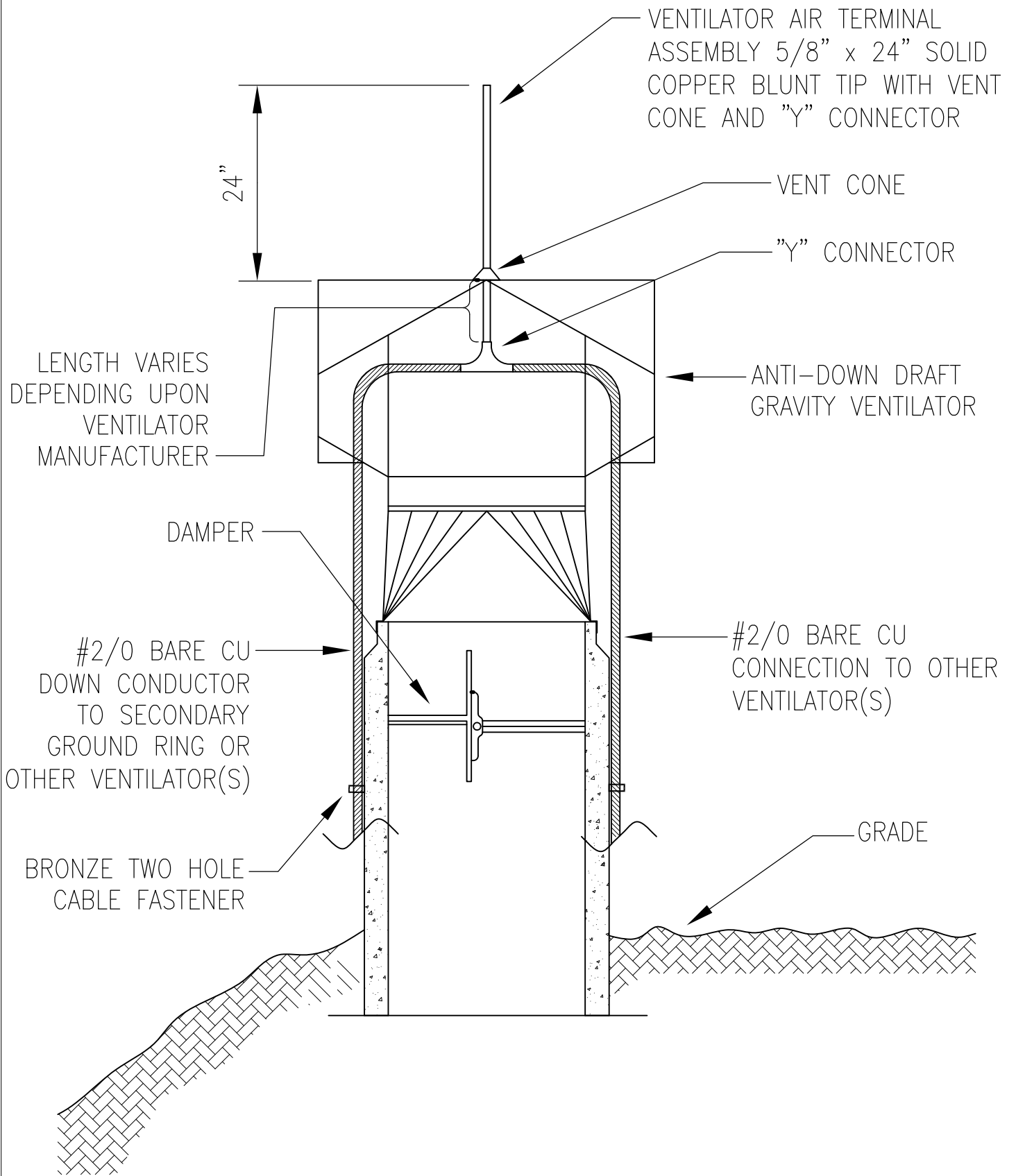


THE DEPTH OF GROUND ROD BELOW NATURAL GRADE SHALL BE SITE ADAPTED TO SUIT LOCAL SOIL CONDITION. AT NO TIME SHALL THE MINIMUM DEPTH BE LESS THAN 10'-0".

NOTE 1: MAINTAIN THE GROUND CONDUCTORS ISOLATED FROM THE GROUND ROD UNTIL THE BOND CONNECTION AT THE TOP.

NOTE 2: PROVIDE "TRAFFIC RATED" TEST WELL AND COVER FOR PAVED AREAS.

GROUND TEST WELL INSTALLATION IN EARTH FILL

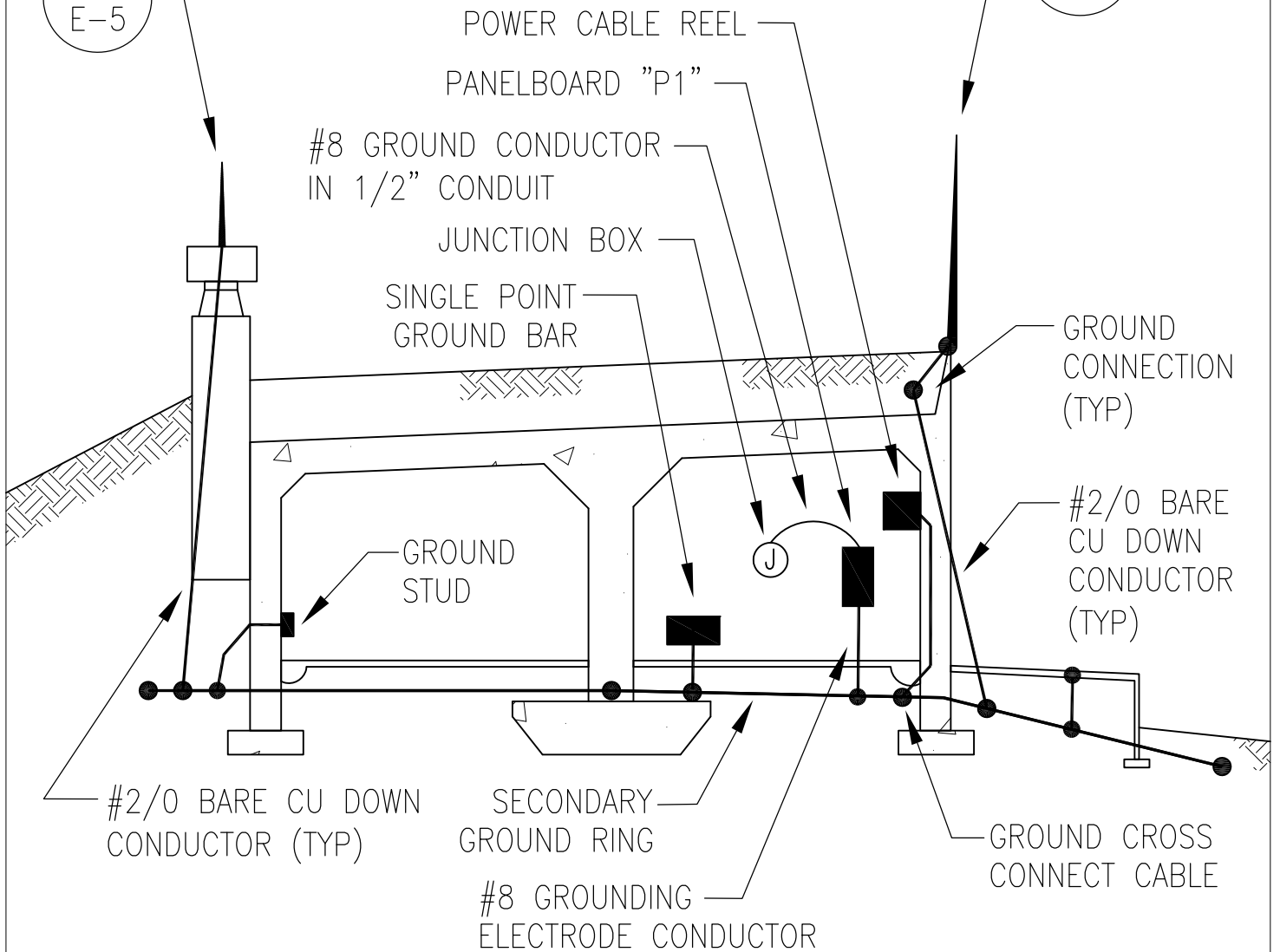


TYPICAL VENTILATOR DETAIL

(NOTE TO DESIGNER: CHANGE SHEETS E-5 AND E-7 TO PROJECT SPECIFIC SHEET NUMBERS)

XX
E-5

XX
E-7



(NOTE TO DESIGNER: IF USING MAGAZINE WITHOUT A PLATFORM, REMOVE THE PLATFORM FROM THE DETAIL.)

GROUNDING SECTION DETAIL

REVISED:

SEPTEMBER 2014

MAGAZINE DETAIL:

E-6

XX
E-7

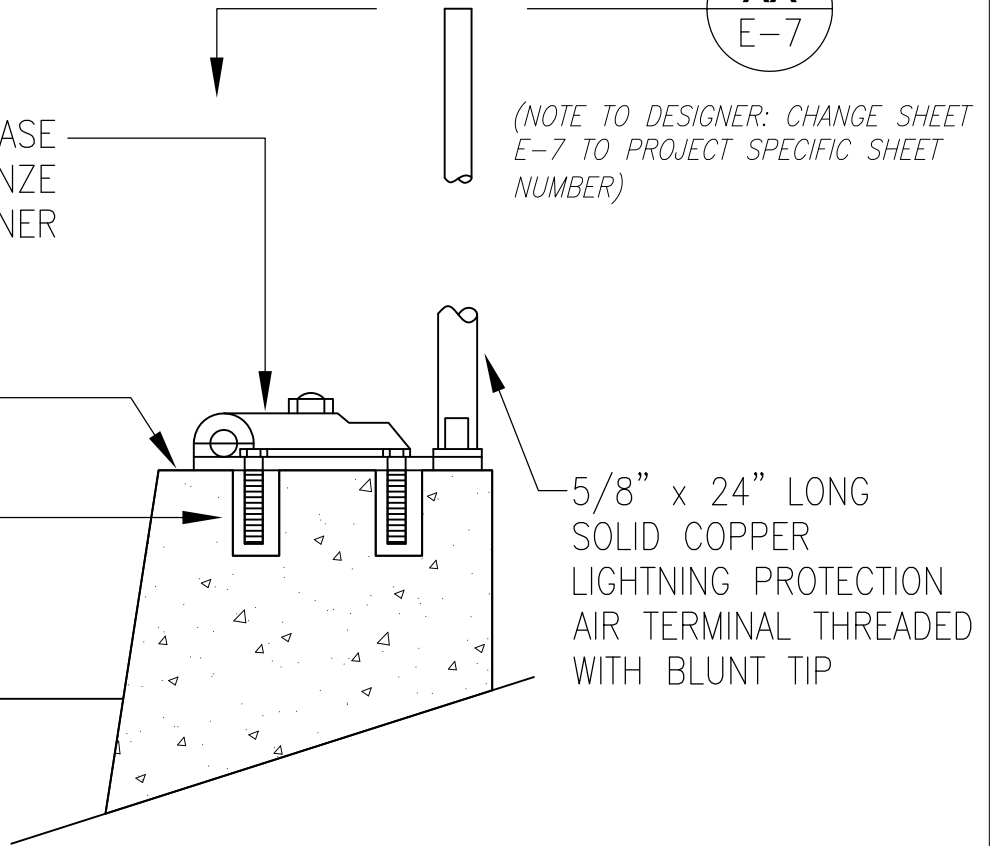
FLAT SURFACE POINT BASE
MADE OF COPPER BRONZE
WITH CLAMP TYPE FASTENER

(NOTE TO DESIGNER: CHANGE SHEET
E-7 TO PROJECT SPECIFIC SHEET
NUMBER)

TOP OF PARAPET

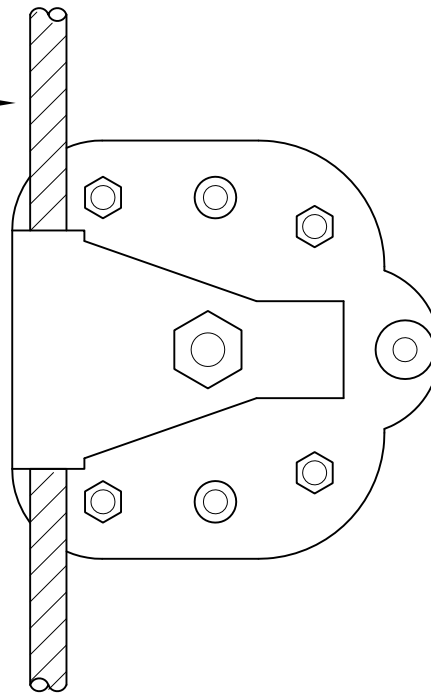
EXPANSION ANCHOR
WITH FLAT HEAD
BOLT $3/8'' \times 1-1/2''$
LONG

$5/8'' \times 24''$ LONG
SOLID COPPER
LIGHTNING PROTECTION
AIR TERMINAL THREADED
WITH BLUNT TIP



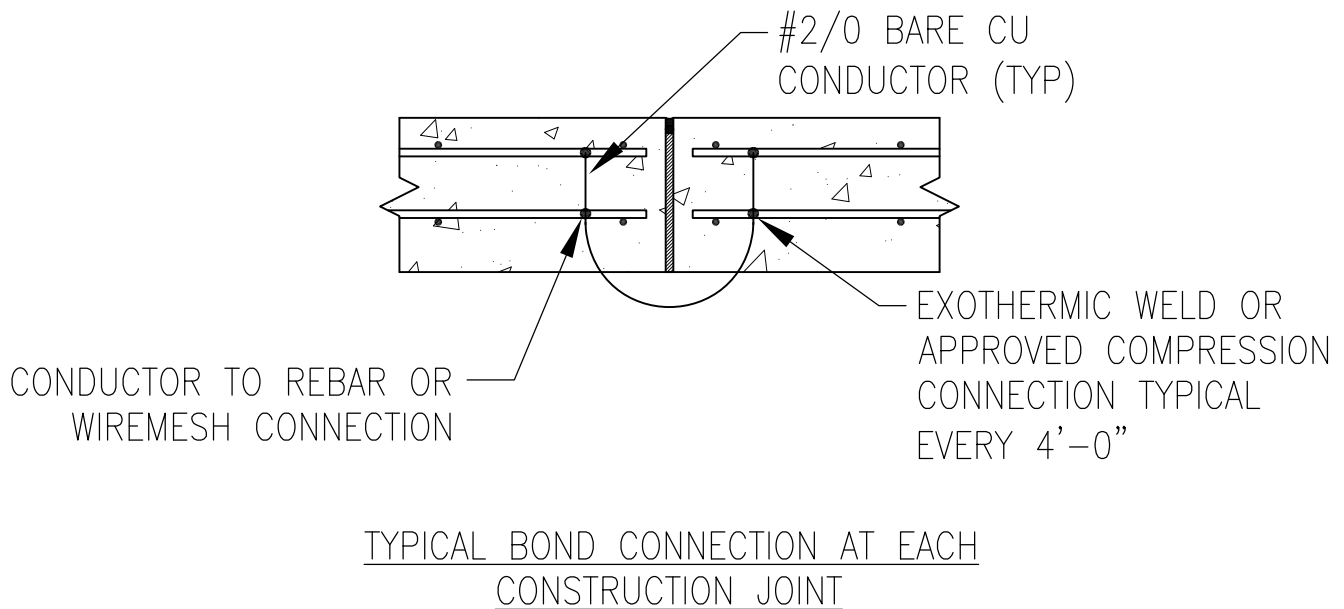
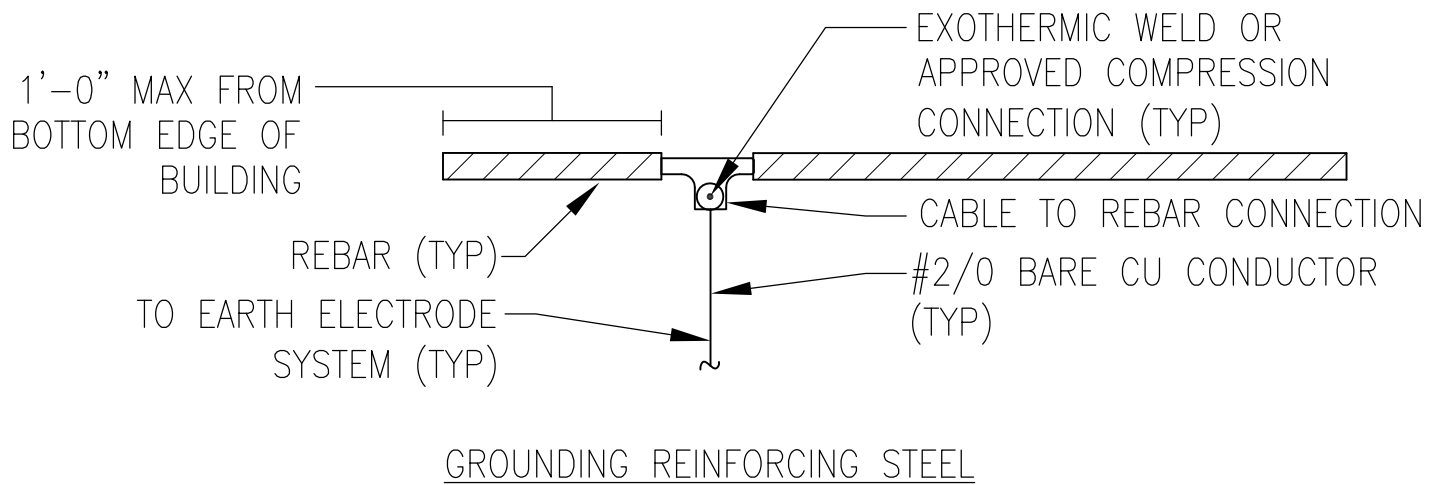
MOUNTING DETAIL

#2/0 BARE CU
CONDUCTOR



CABLE CONNECTION DETAIL XX

LIGHTNING PROTECTION AIR TERMINALS



NOTE 1: ALL REINFORCING STEEL IN BUILDING AND PLATFORM IN FRONT OF MAGAZINE SHALL BE BONDED WITH #2/0 BARE COPPER CONDUCTORS TO EARTH ELECTRODE SYSTEM (SECONDARY GROUND RING).

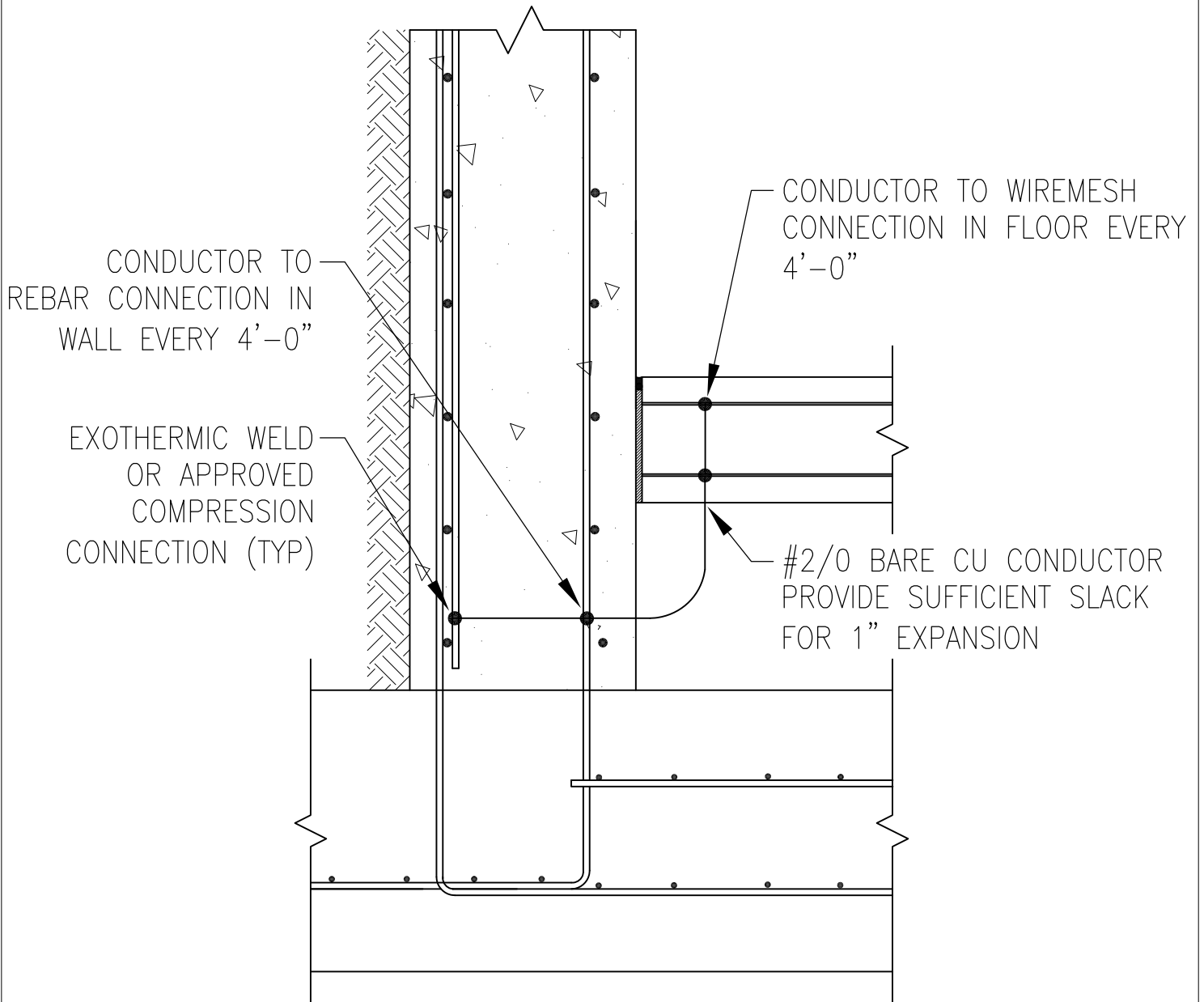
STRUCTURAL GROUNDING DETAILS

REVISED:

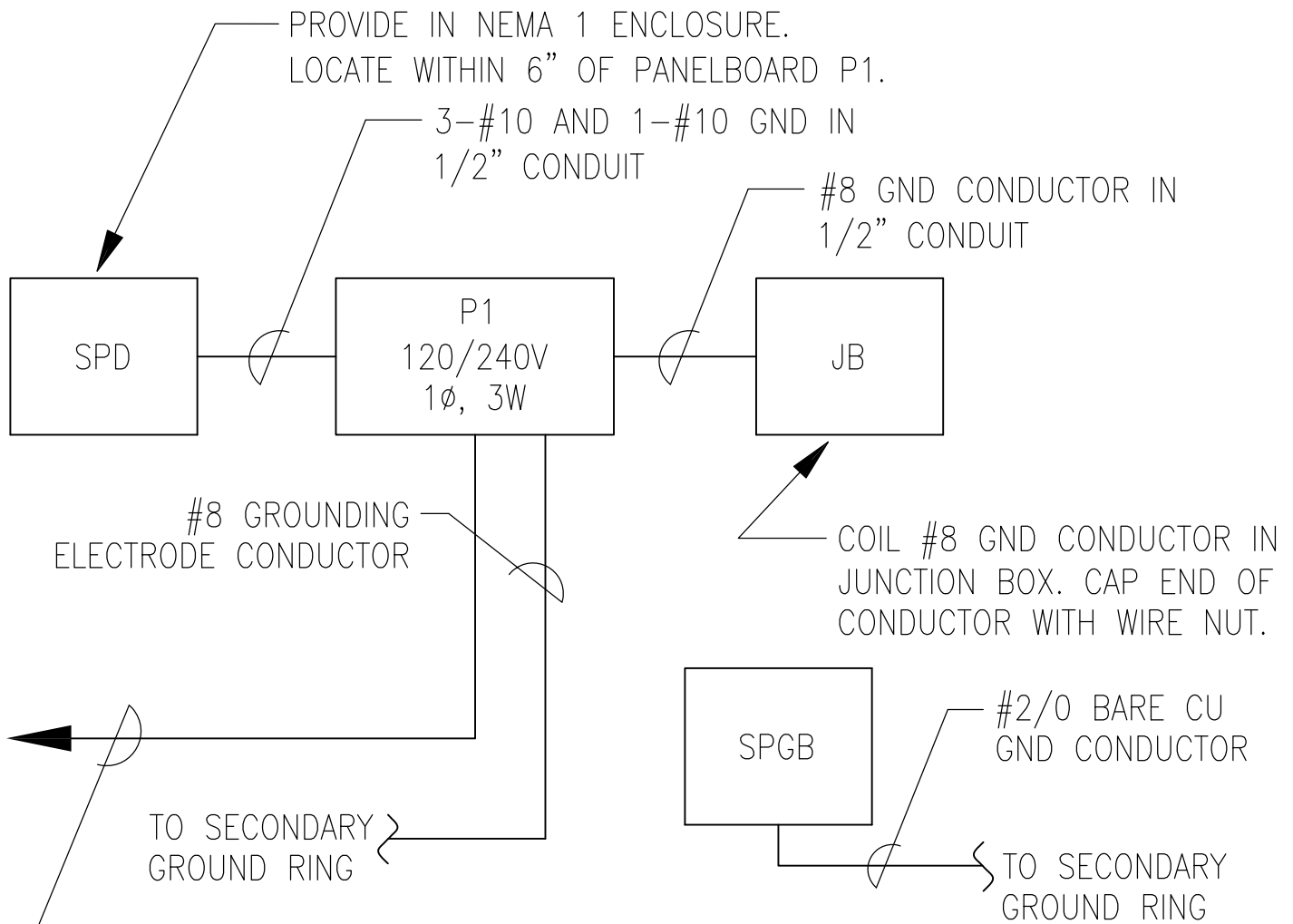
SEPTEMBER 2014

MAGAZINE DETAIL:

E-8



FLOOR TO WALL CONNECTION DETAIL

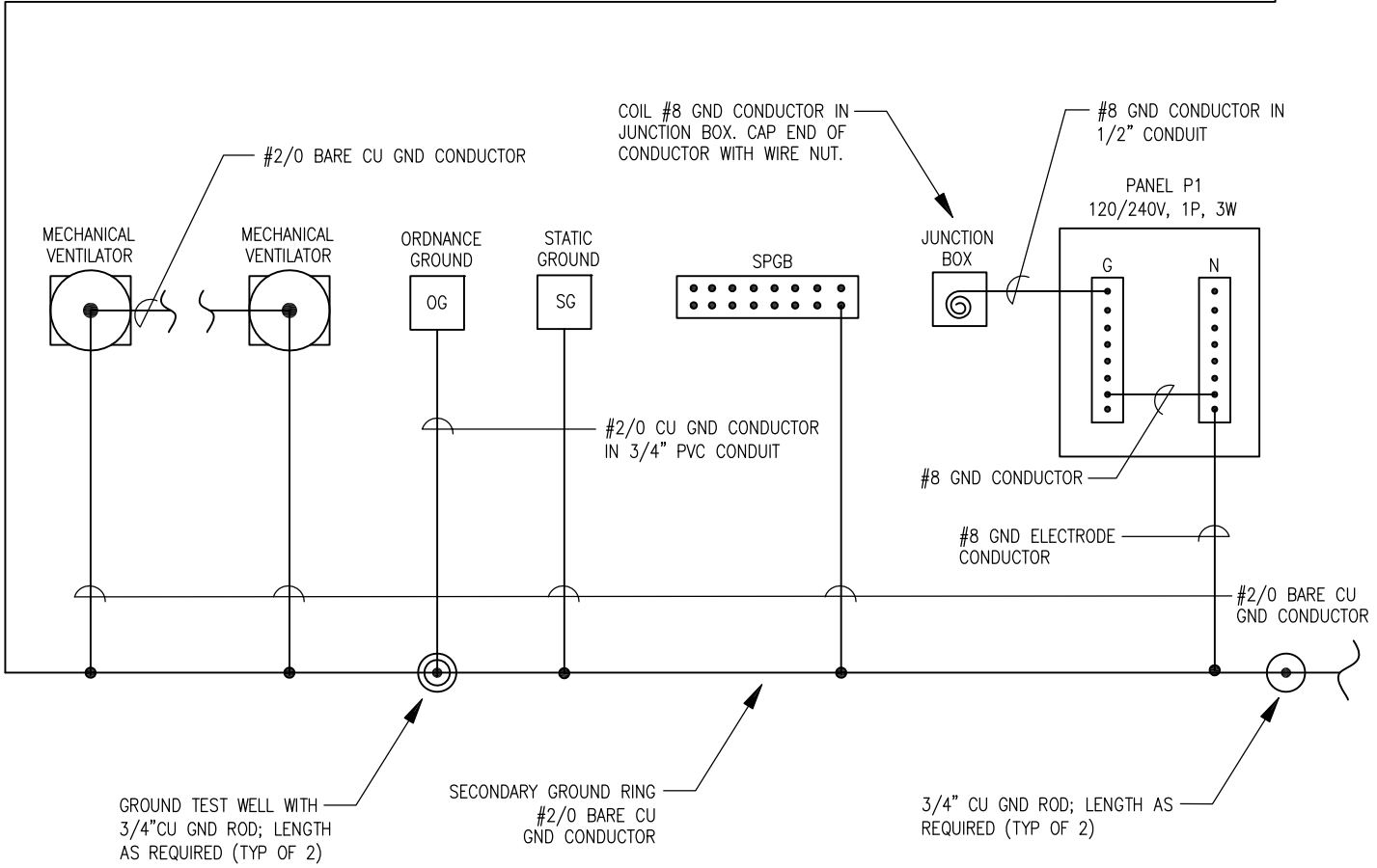
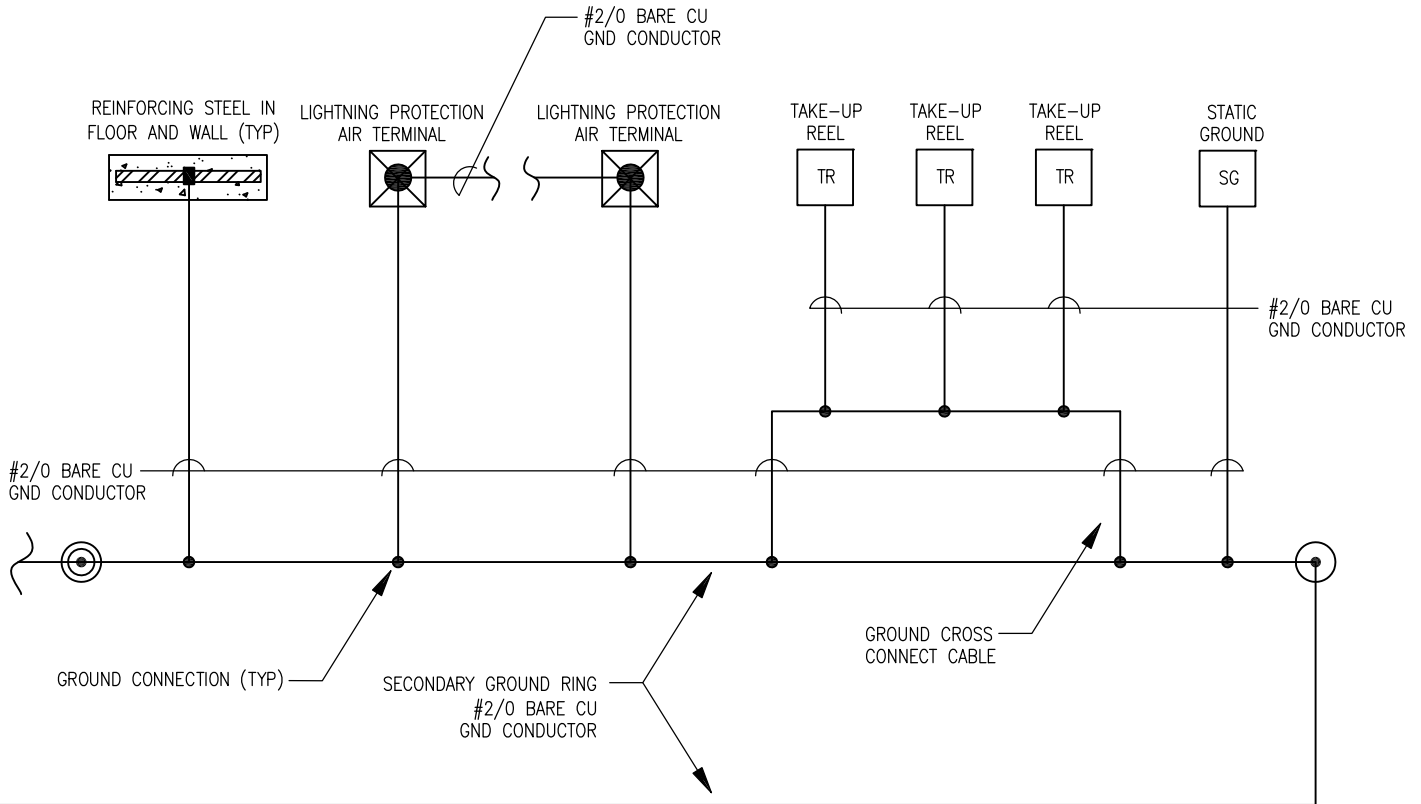


4" CONDUIT FOR 1 ϕ , 3W, 240V, POWER SUPPLY. THE MINIMUM SIZE WIRE SHALL BE #2 IF THE DISTANCE FROM PANELBOARD P1 TO THE SITE SOURCE OF POWER IS NO MORE THAN 150 FT. WIRE SIZES FOR DISTANCES OF MORE THAN 150 FT SHALL BE SITE ADAPTED.

NOTE 1: THREE FEET WORKING CLEARANCE MUST BE MAINTAINED FOR THE PANELBOARD PER NFPA 70. WHERE MAXIMUM STORAGE SPACE IN THE MAGAZINE IS CRITICAL, PANELBOARD AND SURGE PROTECTIVE DEVICES (SPD) MAY BE LOCATED ON EXTERIOR OF MAGAZINE. COORDINATE WITH ACTIVITY, AND MODIFY DRAWINGS AND PANELBOARD ENCLOSURE ACCORDINGLY.

NOTE 2: SINGLE PHASE SYSTEMS IDENTIFIED WILL BE APPROPRIATE FOR MOST MAGAZINES. IF LARGER MOTOR MOTORS ARE USED, DESIGNER SHOULD DETERMINE IF MORE EXPENSIVE, THREE PHASE SYSTEM WOULD BE MORE APPROPRIATE AND MODIFY RISER AND DRAWINGS ACCORDINGLY.

POWER RISER DIAGRAM (WITH SPD AND SPGB)



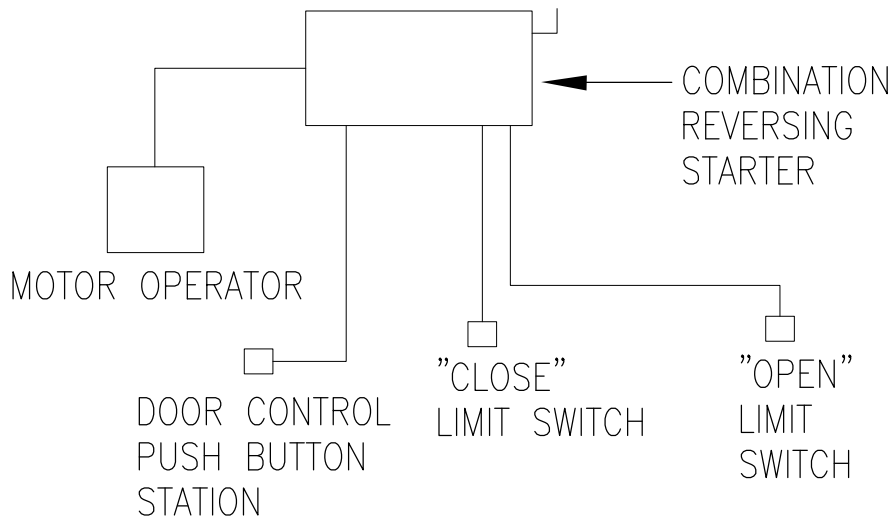
GROUNDING RISER DIAGRAM

REVISED:

SEPTEMBER 2014

MAGAZINE DETAIL:

E-11

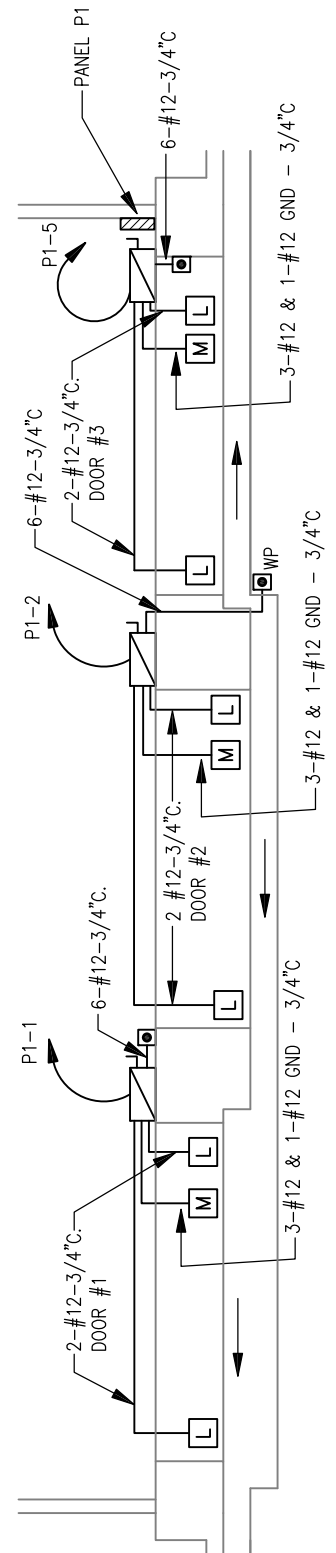


TYPICAL FOR DOOR #1, DOOR #2, AND DOOR #3

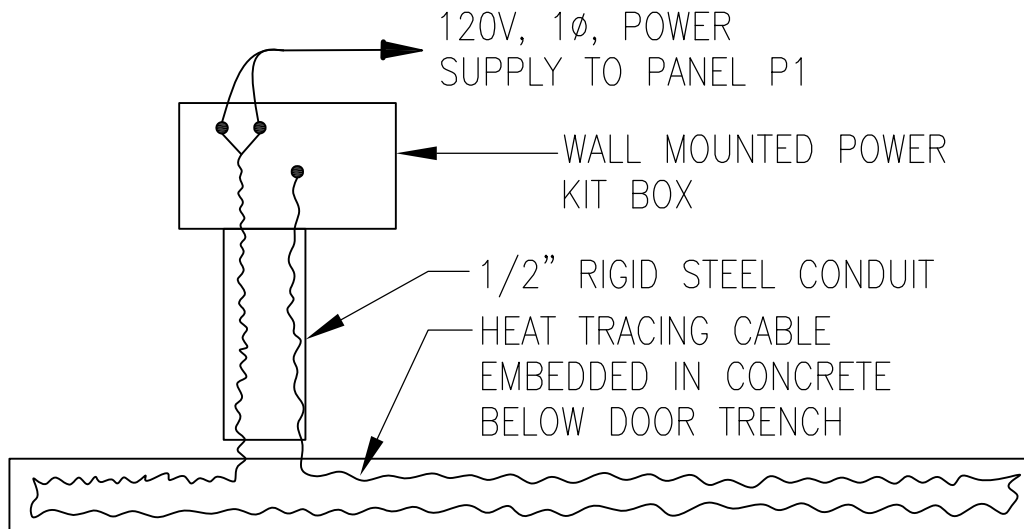
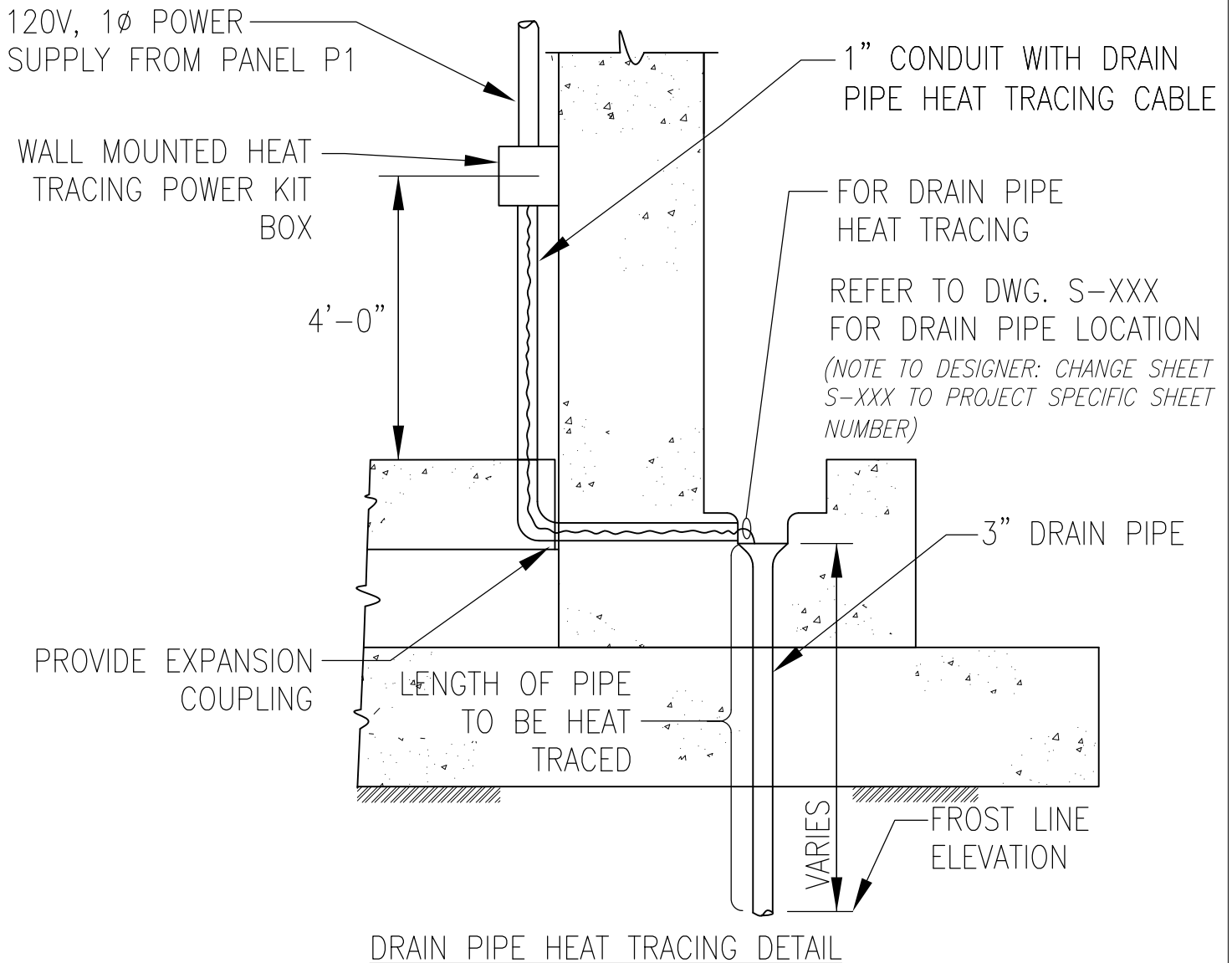
SLIDING DOOR WIRING
INSTALLATION DIAGRAM NOTES

1. DESIGN USES 240V SINGLE PHASE POWER FOR THE MOTOR.
2. INCLUDE OPEN AND CLOSE LIMIT SWITCHES TO TURN OFF MOTOR IN THE MOTOR CONTROL CIRCUIT.
3. DOOR CONTROL PUSHBUTTON STATION SHALL BE MOUNTED 48" ABOVE PLATFORM. ROUTE CIRCUIT CONCEALED OUTSIDE OF THE MAGAZINE BACK TO THE COMBINATION REVERSING STARTER VIA THE SERVICE ENTRANCE PENETRATIONS.
4. THE EXACT LOCATION OF DOOR OPERATOR AND LIMIT SWITCHES SHALL BE IN ACCORDANCE WITH DOOR MANUFACTURER'S REQUIREMENTS.

(NOTE TO DESIGNER: MODIFY DIAGRAMS TO REFLECT ACTUAL PROJECT REQUIREMENTS.)



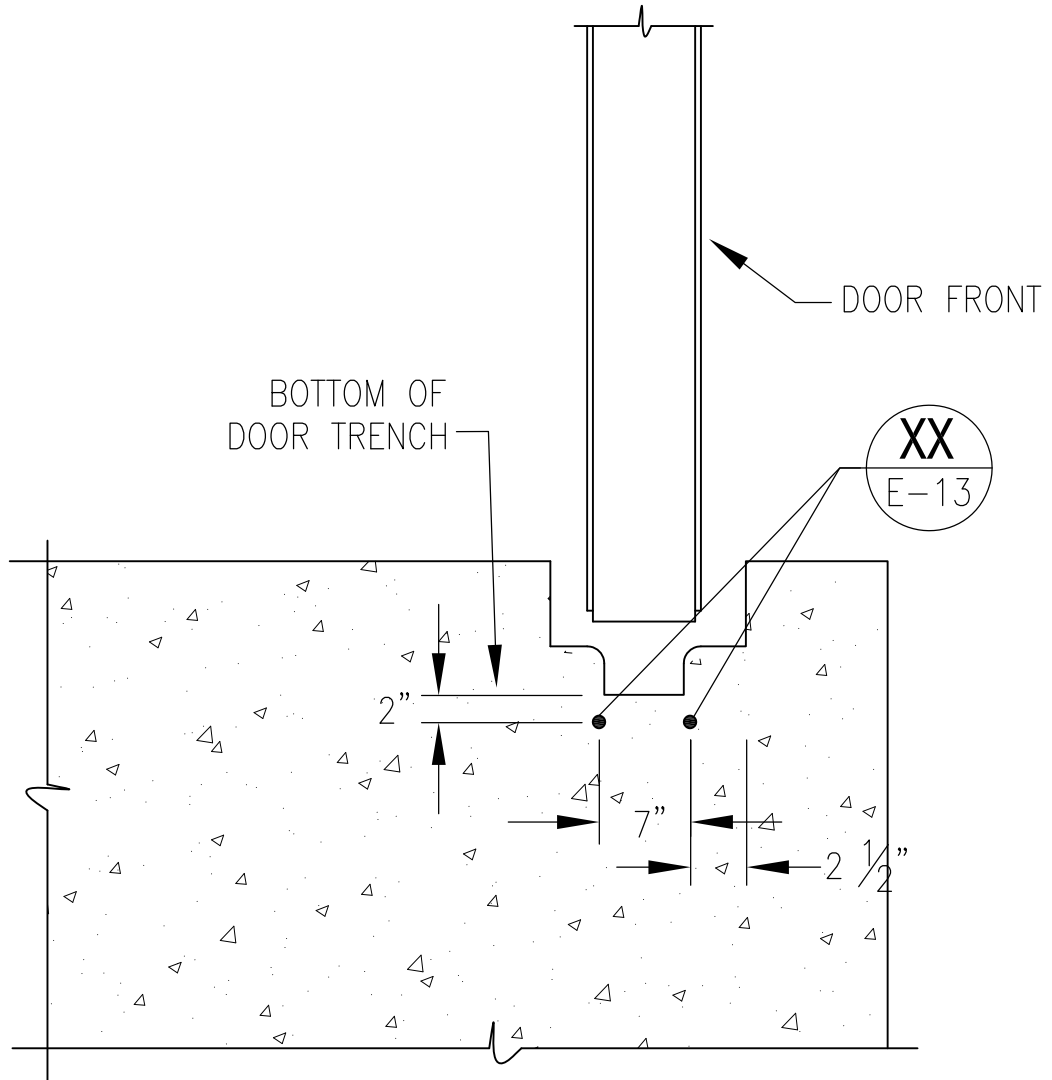
SLIDING DOOR WIRING INSTALLATION DIAGRAM (SINGLE PHASE TYPES)



TYPICAL DOOR TRENCH HEAT TRACING WIRING DIAGRAM

HEAT TRACING DETAILS (AT 120 VOLTS)

(NOTE TO DESIGNER: CHANGE SHEET E-13 TO PROJECT SPECIFIC SHEET NUMBER)



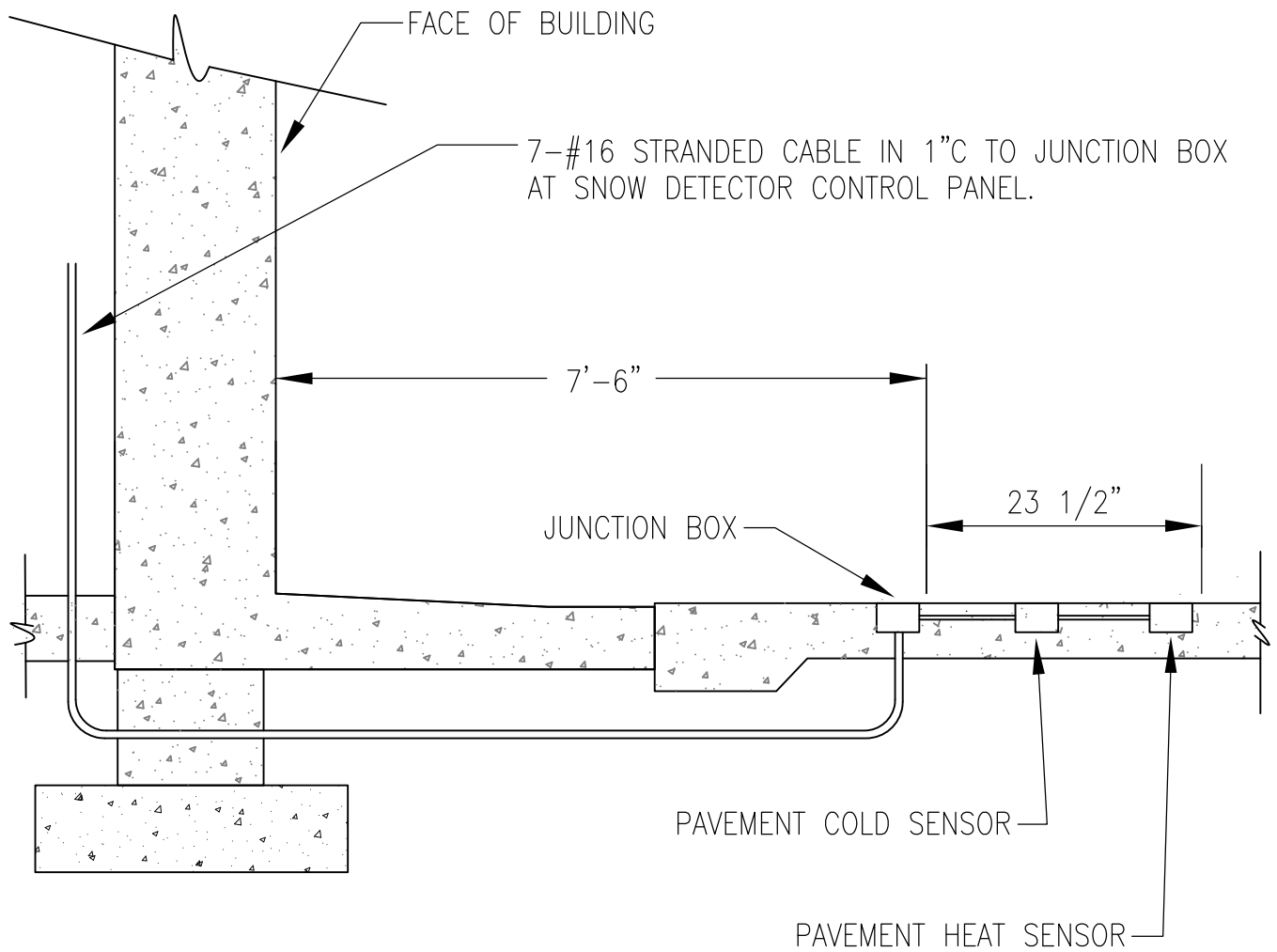
HEAT TRACING CABLE DETAIL

REVISED:

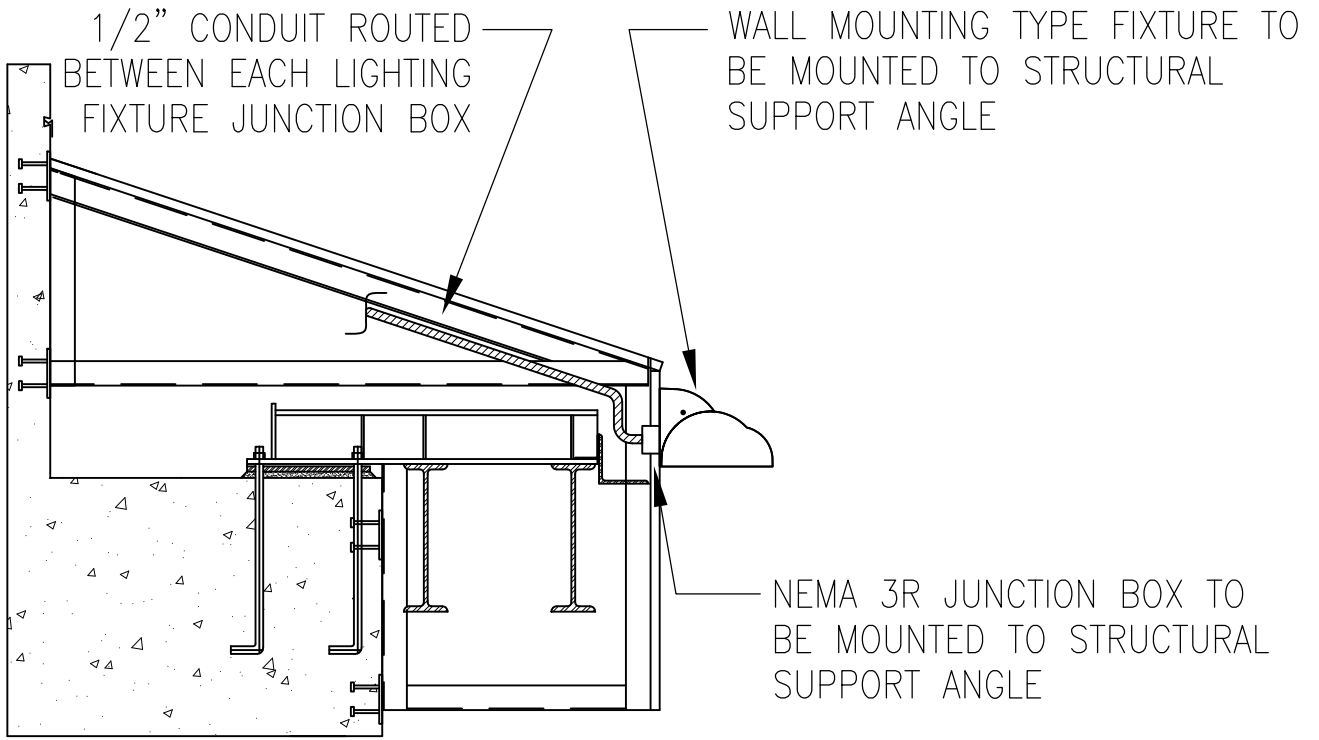
SEPTEMBER 2014

MAGAZINE DETAIL:

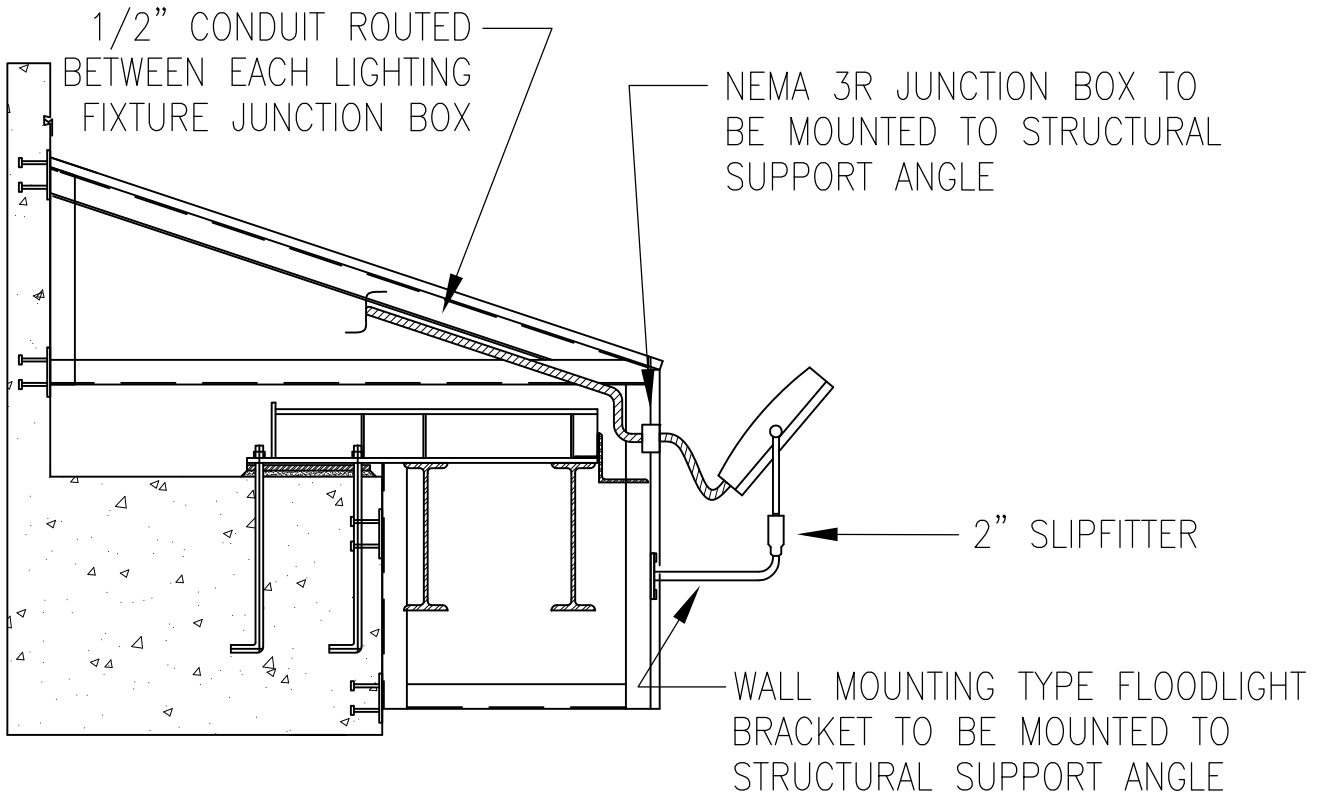
E-14



SNOW DETECTION LOCATION DETAIL

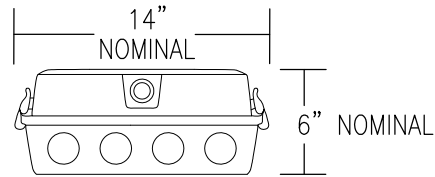
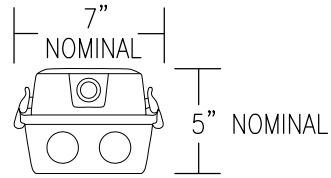
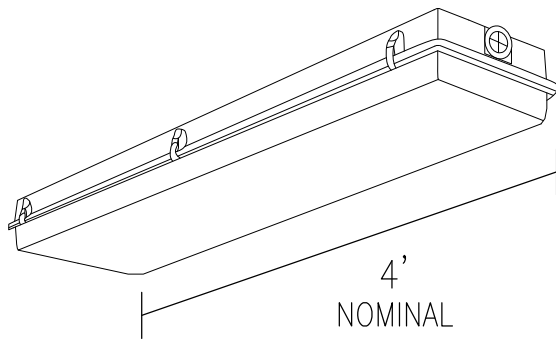


SECURITY LIGHTING MOUNTING DETAIL



FLOOD LIGHTING MOUNTING DETAIL

LIGHTING MOUNTING DETAILS



LUMINAIRE REQUIREMENTS:

1. HOUSING – ONE-PIECE, IMPACT-RESISTANT, FIBERGLASS REINFORCED POLYESTER WITH ENCLOSED COLD-ROLLED STEEL WIREWAY.
2. FINISH – STEEL REFLECTOR WITH MULTI-STAGE PHOSPHATE BONDING TREATMENT FINISHED WITH HIGH REFLECTANCE (MINIMUM 85%), BAKED WHITE ENAMEL FINISH.
3. LENS – 100% CLEAR ACRYLIC/DR OPTICAL DIFFUSER. STIPPLED INTERIOR SURFACES AND SMOOTH EXTERIOR. CLOSED CELL NEOPRENE GASKET WITH STAINLESS STEEL CAM ACTION LATCHES TO SECURE LENS TO HOUSING.
4. LAMPS – LINEAR FLUORESCENT T8, TYPICALLY WITH WATTAGES AS INDICATED. SEE LIGHTING FIXTURE SCHEDULE.
5. BALLAST – CLASS P, THERMALLY-PROTECTED, HIGH POWER FACTOR ($\geq .95$), ELECTRONIC TYPE WITH SOUND RATING A. SEE SPECIFICATION OR LIGHTING FIXTURE SCHEDULE FOR BALLAST OPTIONS AND SPECIFICS.
6. CERTIFICATION – UL LISTED AND LABELED. SUITABLE FOR DAMP OR WET LOCATION AS DESIGNATED IN LIGHTING FIXTURE SCHEDULE.
7. PHOTOMETRICS – MINIMUM VALUE OF COEFFICIENT OF UTILIZATION (CU) AND EFFICIENCY, GIVEN INTERIOR CAVITY REFLECTANCES OF 80-50-20:

2 LAMP (F32/T8)

RCR	CU
1	78
2	67
3	58
4	51

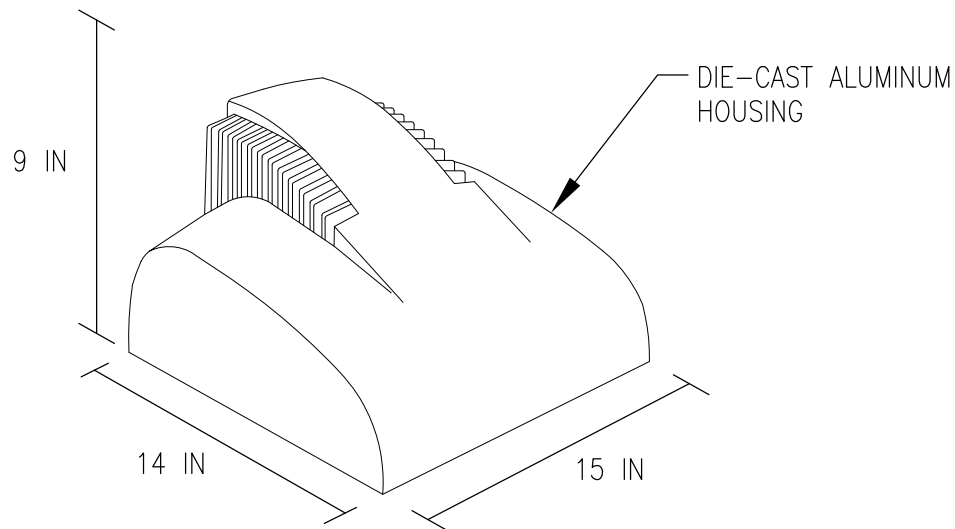
EFFICIENCY – 76%

4 LAMP (F32/T8)

RCR	CU
1	88
2	76
3	67
4	59

EFFICIENCY – 85%

LIGHTING DETAIL A, FIBERGLASS HOUSING
DAMP/WET LOCATION FLUORESCENT



LUMINAIRE REQUIREMENTS:

1. HOUSING – ONE-PIECE, DIE-CAST ALUMINUM. ALL EXPOSED HARDWARE SHALL BE STAINLESS STEEL.
2. FINISH – MULTI-STAGE PRE-TREATMENT, FINISHED WITH BAKED-ON POLYESTER POWDER COAT. FINISH SHALL PASS 2500 HOUR SALT SPRAY TEST PER ASTM B117. FINISH COLORS INCLUDE DARK BRONZE, GREY OR BLACK WITH CUSTOM COLORS AVAILABLE.
3. REFLECTOR – ONE-PIECE, HYDROFORMED OR SEGMENTED, ANODIZED, SPECULAR OR SEMI-SPECULAR ALUMINUM. PROVIDE WITH NEMA DISTRIBUTION PATTERN AS INDICATED. BUG UPLIGHT RATING SHALL BE U0, WITH BACKLIGHT AND GLARE RATINGS AS DETERMINED BY LIGHTING ZONE INSTALLED.
4. LENS AND FRAME – DIE-CAST ALUMINUM FRAME WITH ONE-PIECE, MOLDED SILICON GASKET. LENS SHALL BE TEMPERED GLASS WITH POLYCARBONATE, VANDAL-RESISTANT OPTION.
5. BALLAST/GENERATOR – TYPE A – ENCAPSULATED, CWA, HIGH POWER FACTOR, CORE AND COIL OR ELECTRONIC FOR METAL HALIDE LIGHT SOURCE; (PROVIDE PULSE START WHEN AVAILABLE).
TYPE B – SOLID STATE, HIGH POWER FACTOR (≥ 0.9), HIGH FREQUENCY GENERATOR FOR INDUCTION LIGHT SOURCE.
6. LIGHT SOURCE – TYPE A – METAL HALIDE
TYPE B – INDUCTION VESSEL
7. CERTIFICATION – UL AND/OR ETL LISTED FOR WET LOCATIONS AND RoHS COMPLIANT.
8. OPTIONS – FINISH COLOR, PHOTOCELL, POLYCARBONATE LENS.
9. OTHER – THE ABOVE SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS AND IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER'S PREFERENCE. ALL DIMENSIONS ARE NOMINAL AND VARY PER MANUFACTURER.

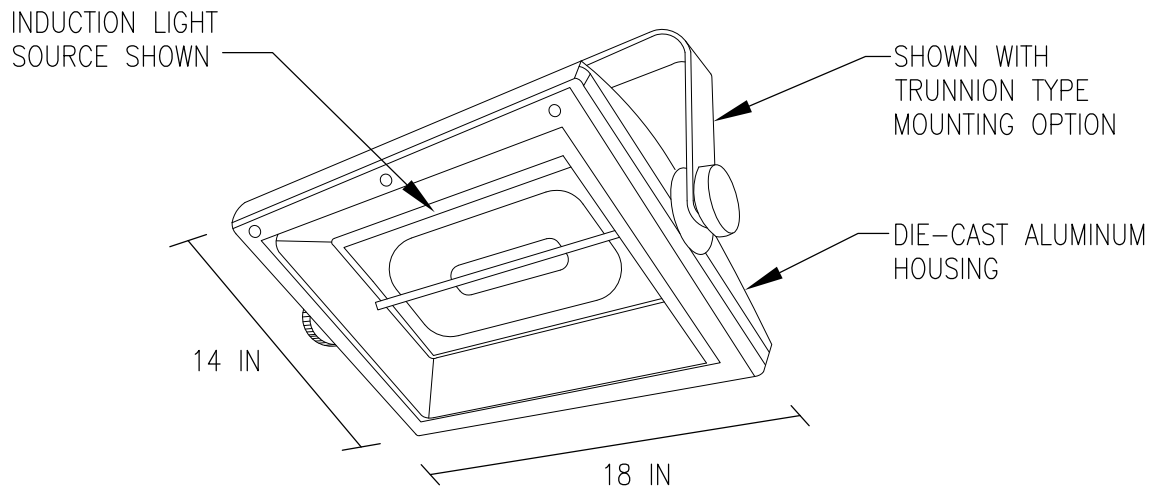
HID/INDUCTION WALL PACK

REVISED:

MARCH 2013

LUMINAIRE PLATE:

XL-18



LUMINAIRE REQUIREMENTS:

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HID/INDUCTION FLOOD LUMINAIRE

REVISED:

MARCH 2013

LUMINAIRE PLATE:

XL-22