



UTILITIES DEPARTMENT

Current Revision: January 20, 2016

Street Lighting Standards

STREET LIGHTING

- ES-1 GENERAL NOTES FOR WIRING
- ES-2 STREET LIGHT POLE WIRING DETAILS (4 SHEETS)
- ES-3 WOOD POLE- TYPE SL-D-30-12-0.1 / 0.40 (2 SHEETS)
- ES-4 CONCRETE POLE- TYPE SL-D-30-6-0.10 (2 SHEETS)
- ES-5 FIBERGLASS POLE- TYPE SL-D-35-12-0.25
- ES-6 FIBERGLASS POLE- TYPE SL-D-40-12-0.40
- ES-7 STEEL POLE- TYPE SL-BT-40-8-0.25 (3 SHEETS)
- ES-8 VINTAGE STYLE POLE WITH TWIN FIXTURES-
TYPE SL-BC-15-2.5-0.10 (2 SHEETS)
- ES-9 PARKING LOT ISLAND
- ES-10 STREETLIGHT CONDUIT INSTALLATION (2 SHEETS)

GENERAL NOTES:

1. ALL CONNECTIONS IN PULL BOXES WILL BE MADE USING SUBMERSIBLE SECONDARY CONNECTORS MEETING ANSI C119.1.
2. ALL CONNECTIONS IN POLE BASES AND TRANSFORMER BASES WILL BE MADE USING APPROVED CONNECTORS WITH PREFORMED INSULATING COVERS. CONNECTIONS MUST BE RATED FOR SIZE AND CONDUCTOR MATERIAL BEING USED. ANTIOXIDANT COMPOUND SHALL BE USED AND PROPER PROCEDURES FOLLOWED. COMPRESSION TAPS AND TAPING WILL NOT BE ALLOWED.
3. AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE BONDED :
 - (A) TO ALL POLES
 - (B) AT ALL CONTROL CENTER SERVICE LOCATIONS
 - (C) TO ALL METALLIC NONCURRENT CARRYING COMPONENTS
 - (D) TO ALL GROUND RODS
4. PULL BOXES OR POLE BASES WITH MORE THAN TWO CONDUITS, THE DIRECTION OF EACH CABLE RUN SHALL BE INDICATED WITH PERMANENT TAGS OF RIGID PLASTIC OR NON-FERROUS METAL. TAGS SHALL BE EMBOSSED OR ENGRAVED WITH LETTERS 1/2" IN HEIGHT AND SECURED BY NYLON OR PLASTIC TIES.
5. CONDUIT AND WIRE SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE LATEST EDITION.
6. ALL METALLIC AND NONMETALLIC CONDUIT SHALL BEAR THE U.L. LABEL.
7. UNLESS OTHERWISE NOTED ON THE PLANS:
 - (A) ALL CONDUIT SHALL BE AS NOTED ON THE PLANS.
 - (B) CONDUIT PLACED IN THE TRENCH OR UNDER THE ROADWAY SHALL BE NONMETALLIC AND OF THE FOLLOWING TYPES AS DEFINED IN THE SPECIFICATIONS: PVC, GRC, OR HDPE.
 - (C) NONMETALLIC CONDUIT USED ON STRUCTURES OR AS RISERS SHALL BE TYPE PVC SCHEDULE 80.
 - (D) METALLIC CONDUIT WHEN USED SHALL BE TYPE GRS OR IMC.
8. CONDUIT UNDER ROADWAY SHALL BE MEASURED FOR PAYMENT AS EXTENDING 1 FT. BEYOND THE EDGE OF THE ROADWAY SURFACE (INCLUDING SURFACE SHOULDERS).
9. TRENCHING SHALL BE KEPT A MINIMUM OF 5 FT. FROM THE TRUNK OF EXISTING TREES. JACKING MAY BE REQUIRED UNDER THE CENTER OF LARGE TREES IN LIMITED SPACE.
10. ROUTING OF CONDUIT AND CABLE MAY BE ALTERED BY THE G.I.U.D. IF NECESSARY TO SUIT FIELD CONDITIONS.
11. LUMINAIRES SHALL BE LEVELED AFTER POLE HAS BEEN INSTALLED. LUMINAIRE MOUNTING BOLTS SHALL BE TORQUED TO MANUFACTURERS SPECIFICATIONS.
12. ALL MATERIALS SHALL BE AS LISTED, OR AN APPR. EQUAL. THE USE OF A BRAND NAME IS FOR THE PURPOSE OF DESCRIBING A STANDARD QUALITY, PERFORMANCE, AND CHARACTERISTIC DESIRED, AND NOT INTENDED TO LIMIT OR RESTRICT COMPETITION.
13. ALL BOXES AND CABINETS WITH ACCESS TO ELEC. COMPONENTS MUST BE PADLOCKED IMMEDIATELY AFTER INSTALLATION. CONTRACTOR SHALL PROVIDE PADLOCK DURING CONSTRUCTION PERIOD. AFTER FINAL ACCEPTANCE OF PROJECT, THE UTILITY DEPARTMENT WILL PROVIDE PADLOCKS.

REVISED: 2/20/2012

SCHEDULE OF WIRING MATERIALS

WIRE & CABLE

THE ELECTRICAL, MECHANICAL AND PHYSICAL PROPERTIES OF THE CONDUCTORS LISTED IN THE FOLLOWING SCHEDULE ESTABLISH THE MINIMUM ACCEPTABLE REQUIREMENTS FOR EACH OF THE LISTED APPLICATIONS. CONDUCTORS WHICH HAVE PROPERTIES THAT EXCEED THESE MINIMUM REQUIREMENTS MAY BE FURNISHED, AT THE CONTRACTORS OPTION, WITH THE G.I.U.D.'S APPROVAL. NO ADJUSTMENT IN THE CONTRACT PRICE WILL BE ALLOWED.

ALL CONDUCTORS SHALL BE SINGLE CONDUCTOR, STRANDED COPPER U.L. LISTED, 600V. WITH SIZE OF CONDUCTOR AND TYPE AND COLOR OF INSULATION AS LISTED BELOW.

ONE PHASE CONDUCTOR MUST, AT THE TIME OF INSTALLATION, BE PERMANENTLY IDENTIFIED AS THE LINE 2 (RED) CONDUCTOR AT EACH END AND AT EVERY POINT WHERE THE CONDUCTOR IS ACCESSIBLE. IDENTIFICATION WILL BE ACCOMPLISHED BY (A) COLORING THE EXPOSED INSULATION RED (B) MARKING THE EXPOSED INSULATION WITH RED TAPE.

CABLE-IN-DUCT:

MFG: INTERGRAL #B070-H03-403 OR APP. EQUAL
3/4" POLETHYLENE PIPE WITH:
2 - #8 STRAND THHN-THWN (BLACK)
1 - #10 STRAND THHN-THWN (GREEN)

SERVICE ENTRANCE:

TYPE USE OR XHHW, NO. 6 AWG

EQUIP. GROUND:

BARE OR INSULATED, NO. 6 AWG

POLE :

NO. 12 AWG, COPPER THW OR THWN.

BRANCH CIRCUITS INCLUDING NEUTRALS :

TYPE USE OR XHHW (IN CONDUIT)
NO. 6 COPPER AWG.

COLOR CODES :

RECEPTICAL CIRCUIT "HOT" - BLACK W/ WHITE
RECEPTICAL CIRCUIT "NEUTRAL" - WHITE
"INSULATED EQUIPMENT GROUND"-GREEN
"LINE 1"-BLACK
"LINE 2"-RED

FUSES / FUSE HOLDER:

IN-LINE BREAK-AWAY FUSEHOLDER TO BE HEB-LW-RYC OR HEB-LW-RLC OR EQUAL WITH RESPECT TO THE TYPE OF WIRE USED (COPPER OR ALLUMINIUM).

ALL FUSING WILL BE LOCATED IN THE BASE OF POLE UNLESS OTHERWISE SPECIFIED.

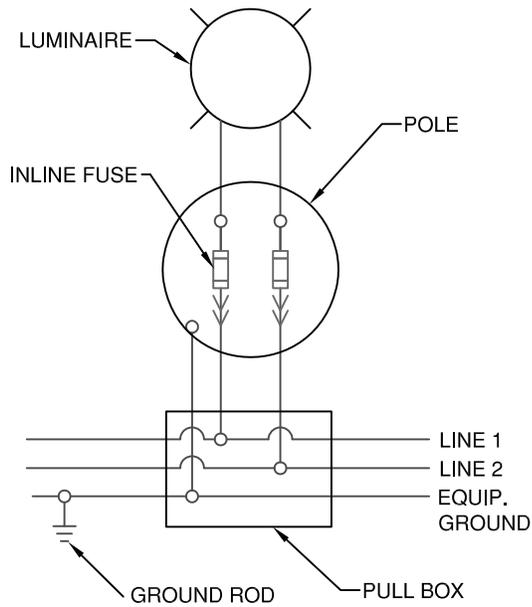
FUSES TYPE TO BE FNM.



DATE: 2/16/1998
DRAWN BY: T.D.Z.
CHECKED BY: T.W.B.

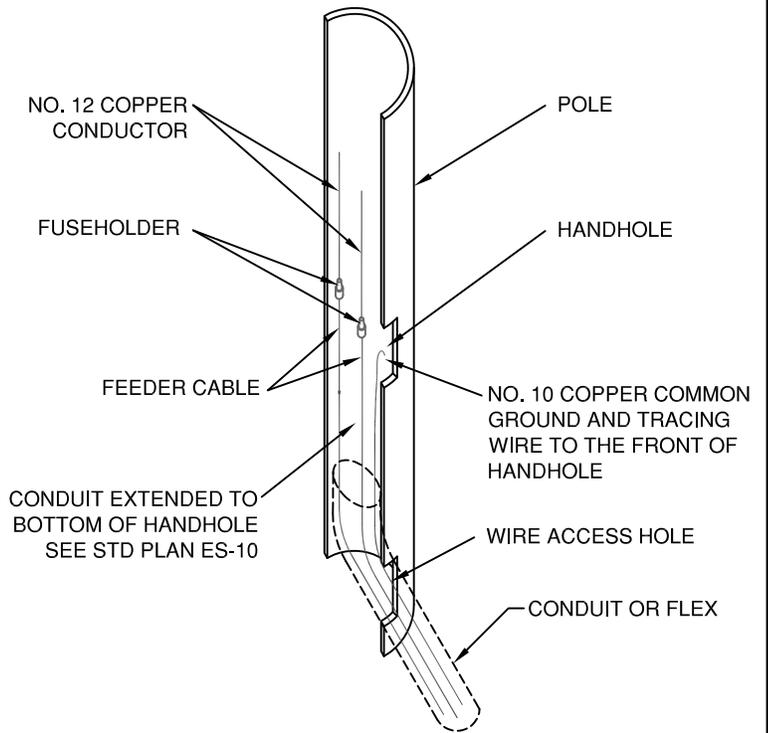
STREET LIGHTING
GENERAL NOTES

PLAN
ES - 1

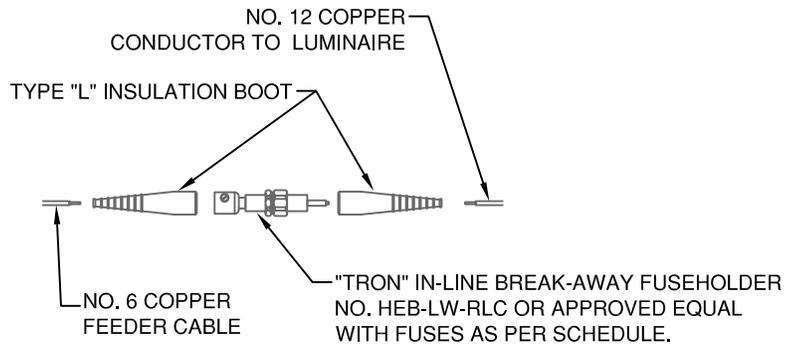


WIRING SCHEMATIC

(240 VOLT 2-WIRE)



WIRING DETAIL

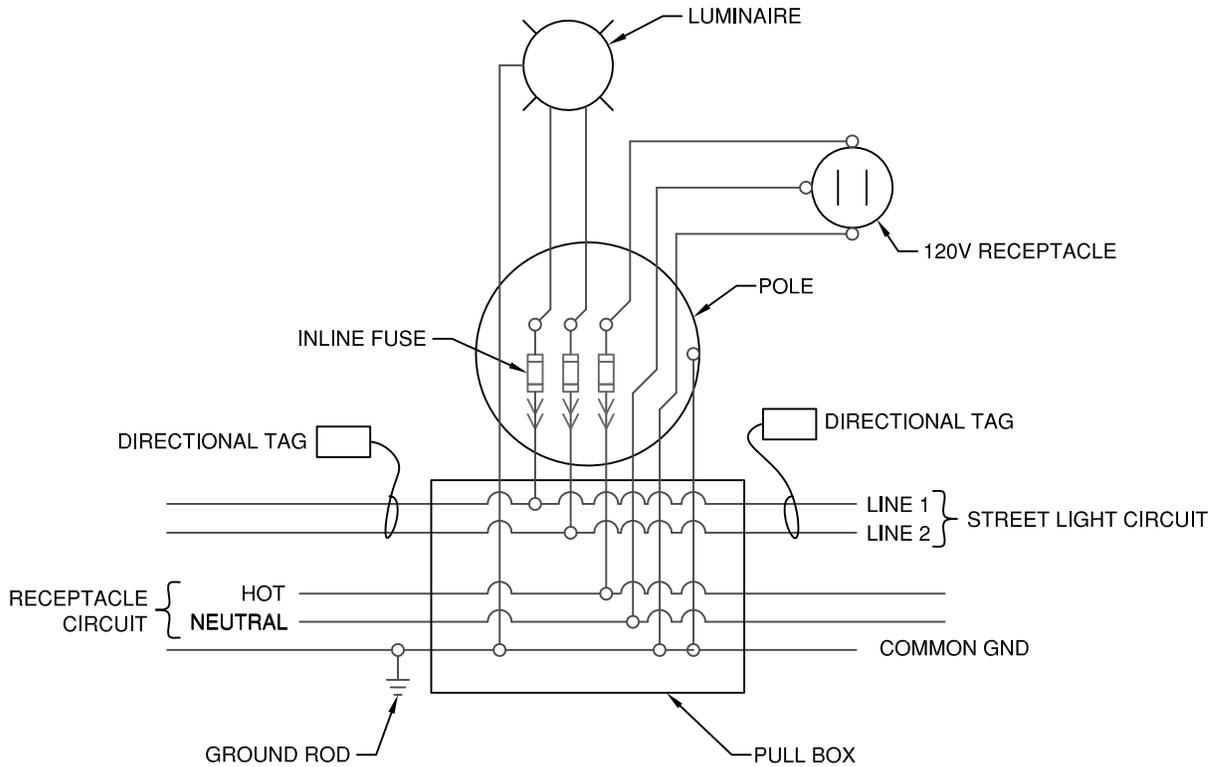


FUSEHOLDER TYPE "1" DETAILS

FOR USE WITH TYPE ES-4, ES-5, ES-6, AND ES-7 LIGHTING UNITS.

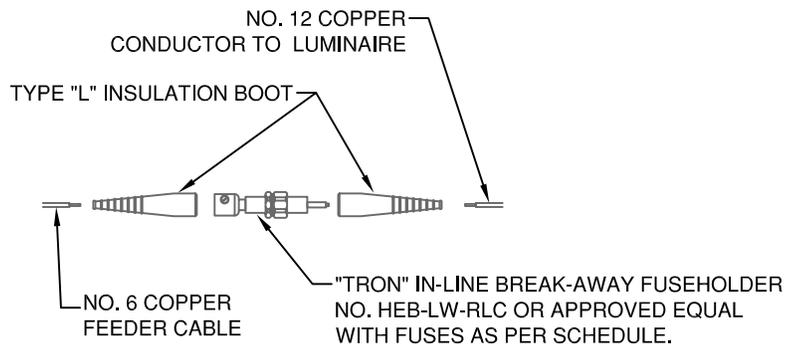
FUSE SCHEDULE:
FRN - 5 AMP FOR SINGLE LIGHT FIXTURE

NOTE:
ALL MATERIALS SHALL BE AS LISTED, OR AN APPROVED EQUAL. THE USE OF A BRAND NAME IS FOR THE PURPOSE OF DESCRIBING A STANDARD QUALITY, PERFORMANCE, AND CHARACTERISTIC DESIRED, AND IS NOT INTENDED TO LIMIT OR RESTRICT COMPETITION.



WIRING SCHEMATIC

240V WITH 120V RECEPTACLE CIRCUIT



FUSEHOLDER TYPE "1" DETAILS

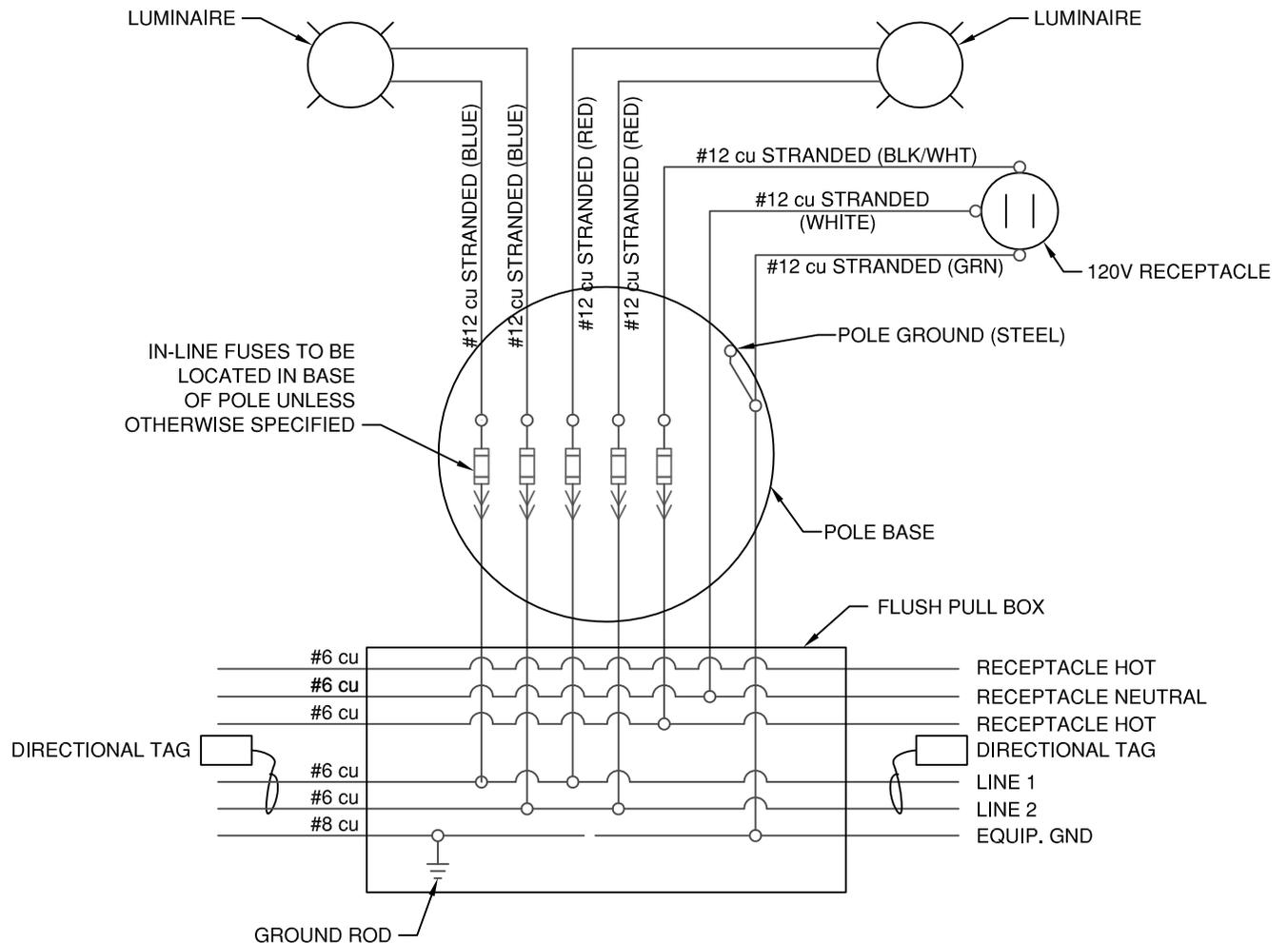
TYPE ES-4, ES-5, ES-6, AND ES-7 LIGHTING UNITS.

FUSE SCHEDULE:

FRN - 5 AMP FOR SINGLE LIGHT FIXTURES
FRN - 20 AMP FOR RECEPTACLES AT POLES

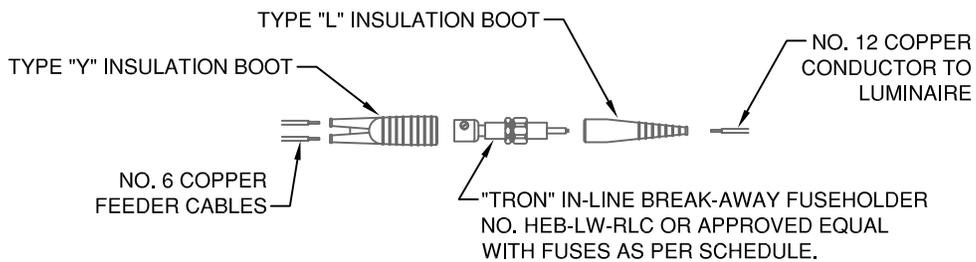
NOTE:

ALL MATERIALS SHALL BE AS LISTED, OR AN APPROVED EQUAL. THE USE OF A BRAND NAME IS FOR THE PURPOSE OF DESCRIBING A STANDARD QUALITY, PERFORMANCE, AND CHARACTERISTIC DESIRED, AND IS NOT INTENDED TO LIMIT OR RESTRICT COMPETITION.



WIRING SCHEMATIC

DUAL FIXTURE
208V 2-WIRE WITH 120V RECEPTACLE CIRCUIT



FUSEHOLDER TYPE "2" DETAILS

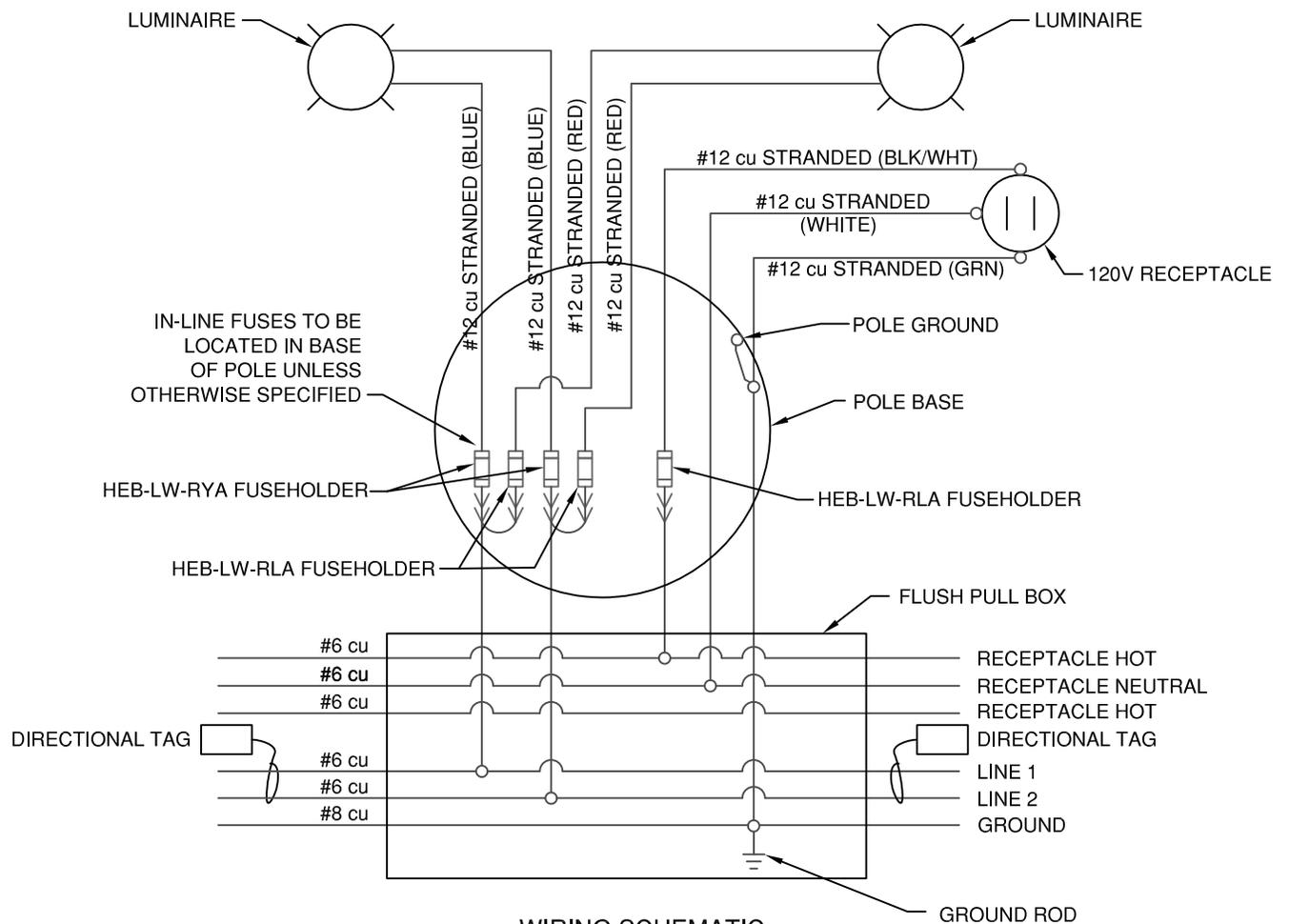
TYPE ES-8 LIGHTING UNIT.

FUSE SCHEDULE:

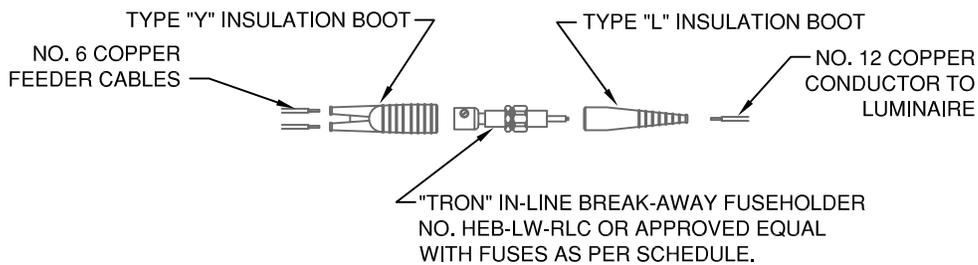
FRN - 5 AMP FOR LIGHT FIXTURES
FRN - 20 AMP FOR RECEPTACLES AT POLES

NOTE:

ALL MATERIALS SHALL BE AS LISTED, OR AN APPROVED EQUAL. THE USE OF A BRAND NAME IS FOR THE PURPOSE OF DESCRIBING A STANDARD QUALITY, PERFORMANCE, AND CHARACTERISTIC DESIRED, AND IS NOT INTENDED TO LIMIT OR RESTRICT COMPETITION.



WIRING SCHEMATIC
 DUAL VINTAGE STYLE FIXTURE
 208V 2-WIRE WITH 120V RECEPTACLE CIRCUIT

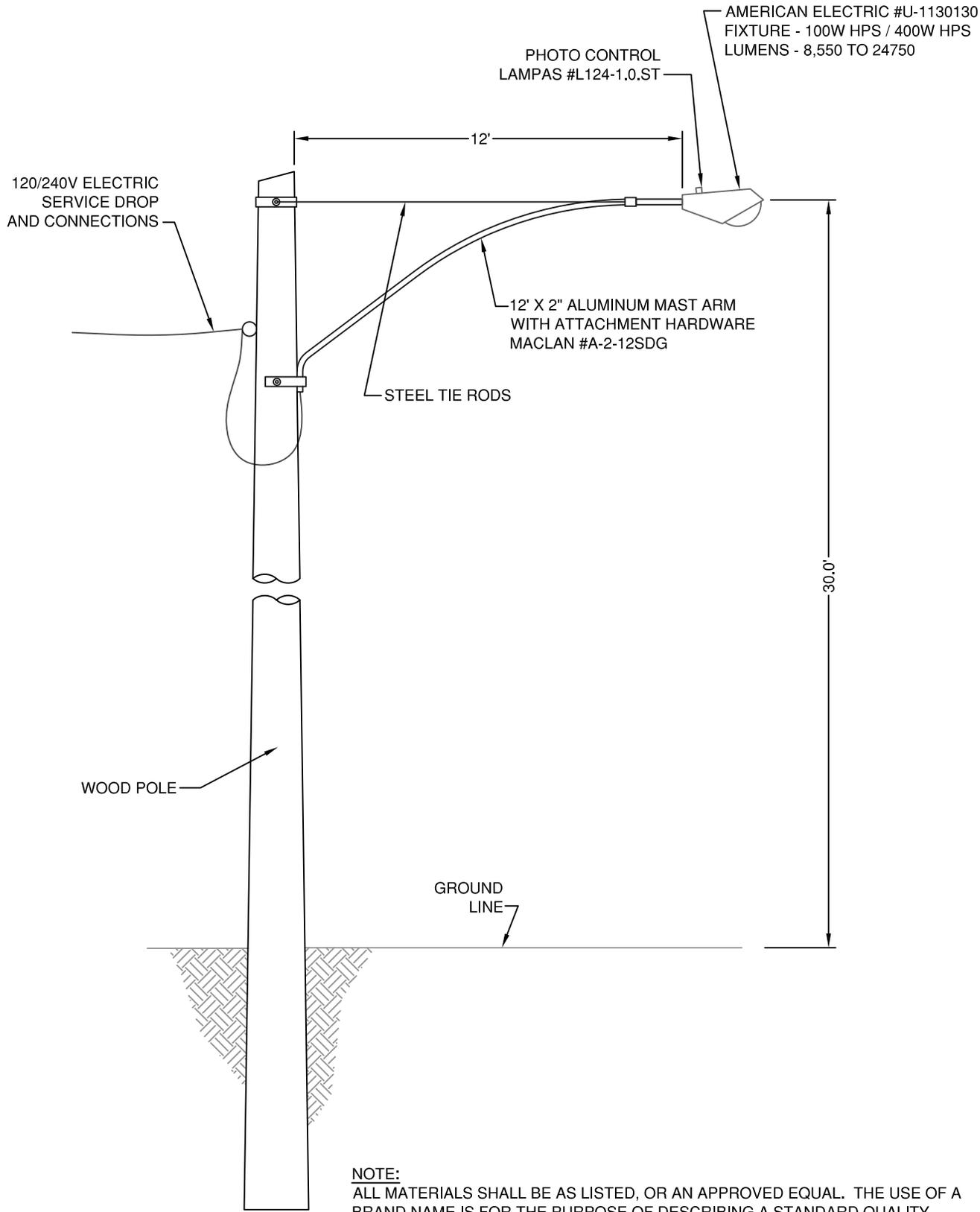


FUSEHOLDER TYPE "2" DETAILS

TYPE ES-8 LIGHTING UNIT.

FUSE SCHEDULE:
 FRN - 5 AMP FOR LIGHT FIXTURES
 FRN - 20 AMP FOR RECEPTACLES AT POLES

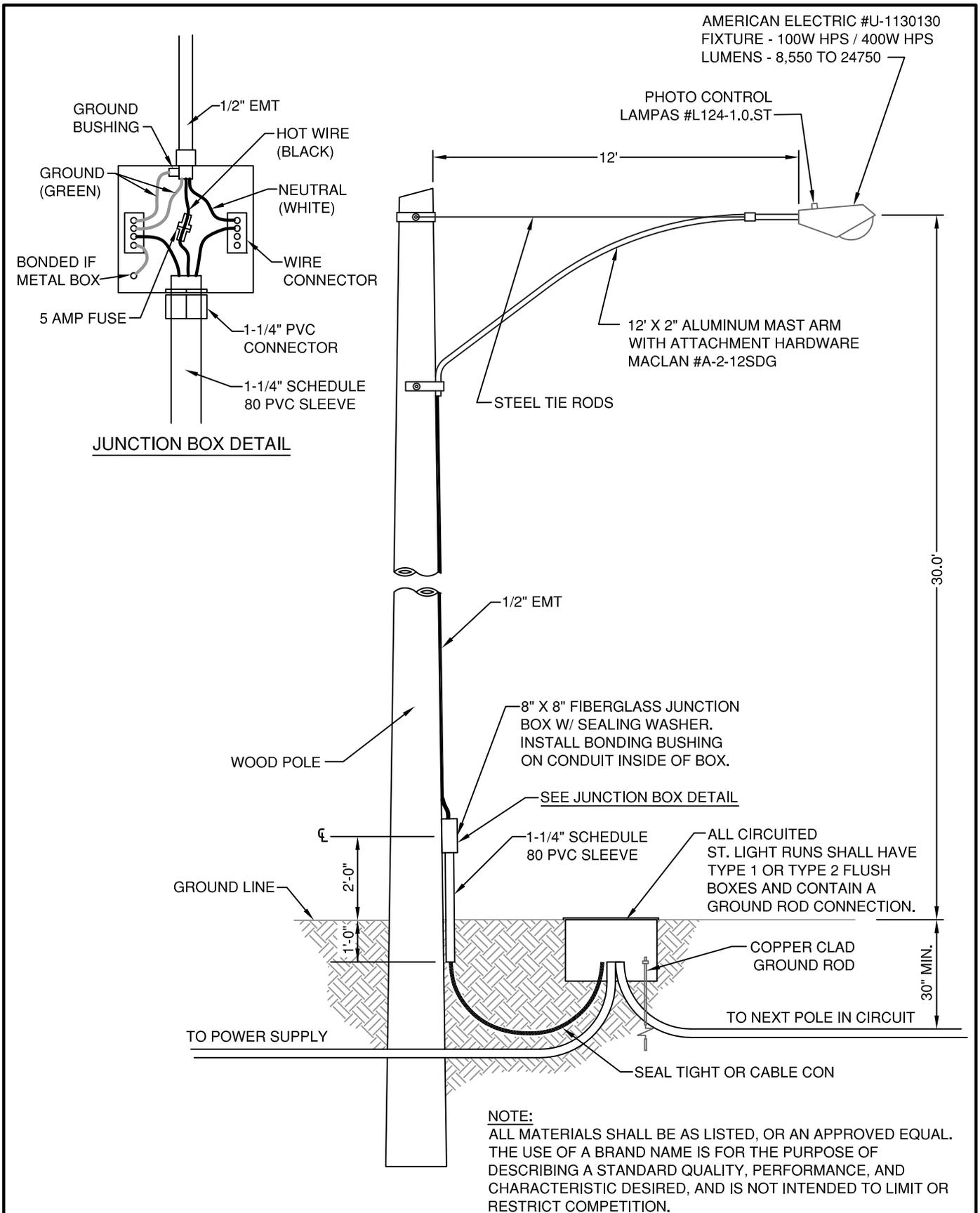
NOTE:
 ALL MATERIALS SHALL BE AS LISTED, OR AN APPROVED EQUAL. THE USE OF A BRAND NAME IS FOR THE PURPOSE OF DESCRIBING A STANDARD QUALITY, PERFORMANCE, AND CHARACTERISTIC DESIRED, AND IS NOT INTENDED TO LIMIT OR RESTRICT COMPETITION.



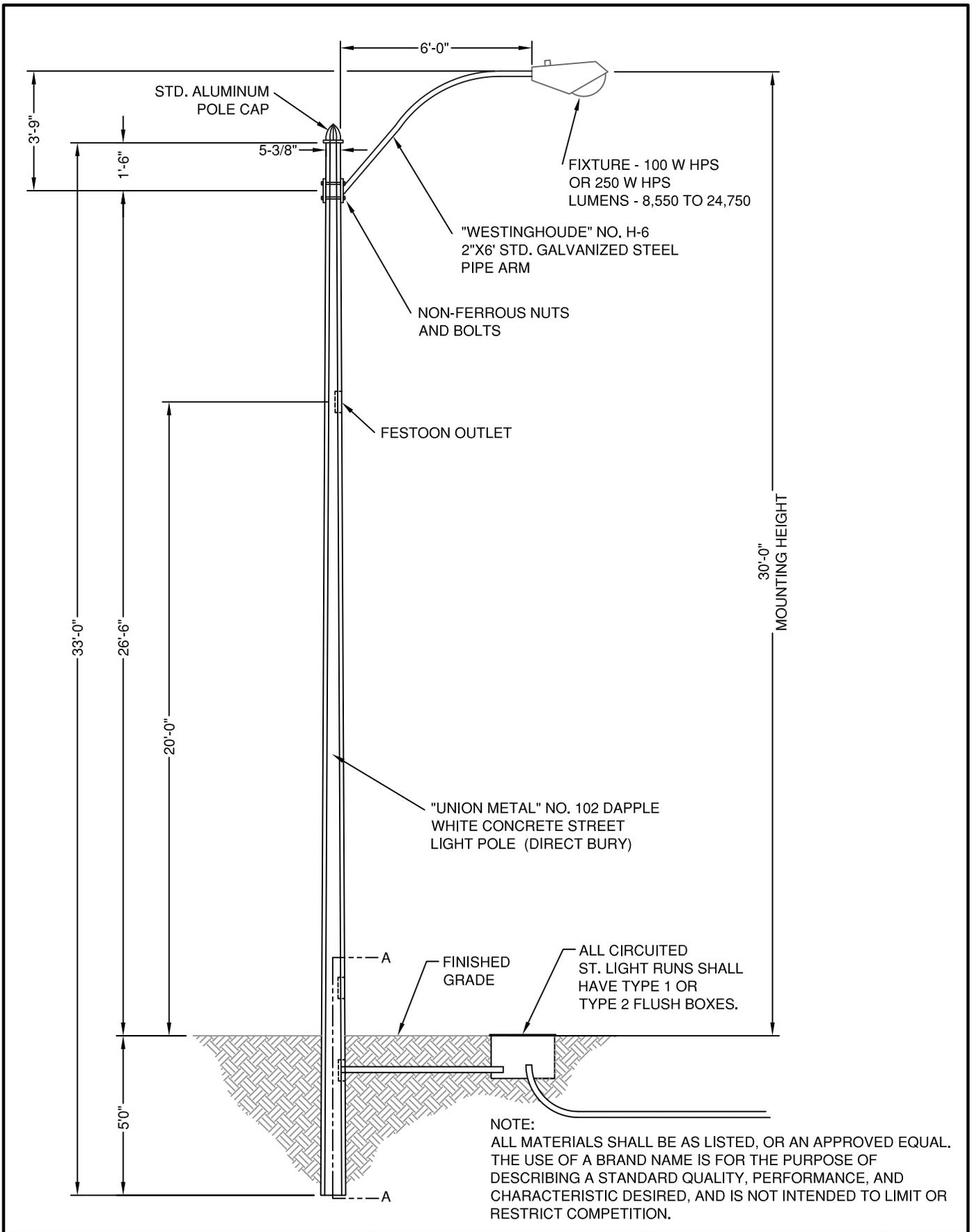
NOTE:
 ALL MATERIALS SHALL BE AS LISTED, OR AN APPROVED EQUAL. THE USE OF A BRAND NAME IS FOR THE PURPOSE OF DESCRIBING A STANDARD QUALITY, PERFORMANCE, AND CHARACTERISTIC DESIRED, AND IS NOT INTENDED TO LIMIT OR RESTRICT COMPETITION.

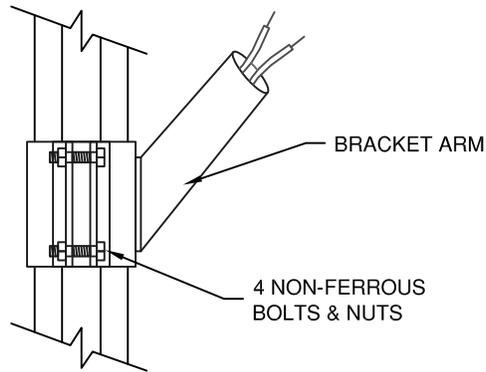
REVISED: 2/20/2012

<p>CITY OF GRAND ISLAND UTILITIES DEPARTMENT</p>	<p>DATE: 4/12/1996 DRAWN BY: P.S.L. CHECKED BY: T.W.B.</p>	<p>STREET LIGHT WOOD POLE / OH FEED TYPE: SL-D-30-12-0.10</p>	<p>PLAN ES - 3 1 OF 2</p>
---	--	---	---

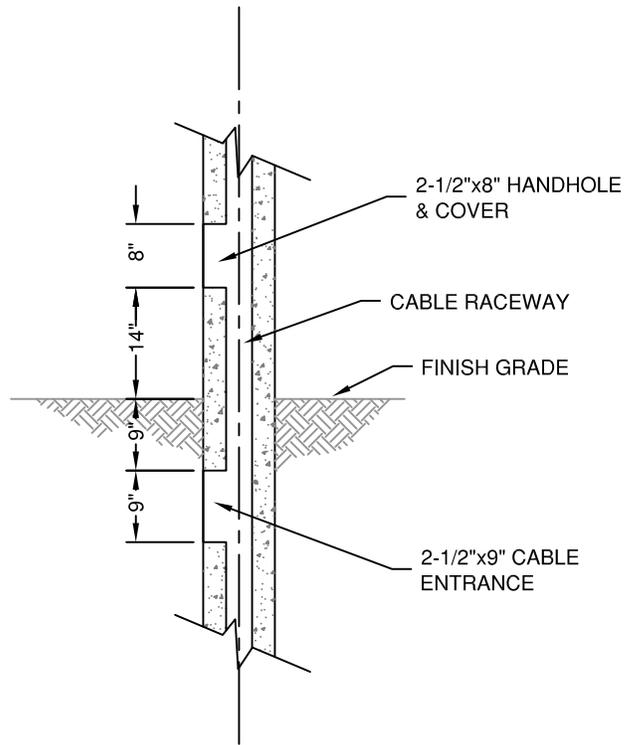


REVISED: 12/9/2015

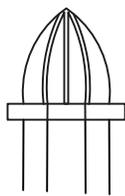




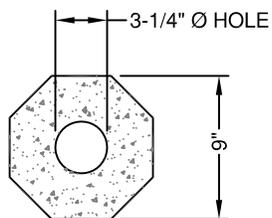
BRACKET ARM MOUNTING



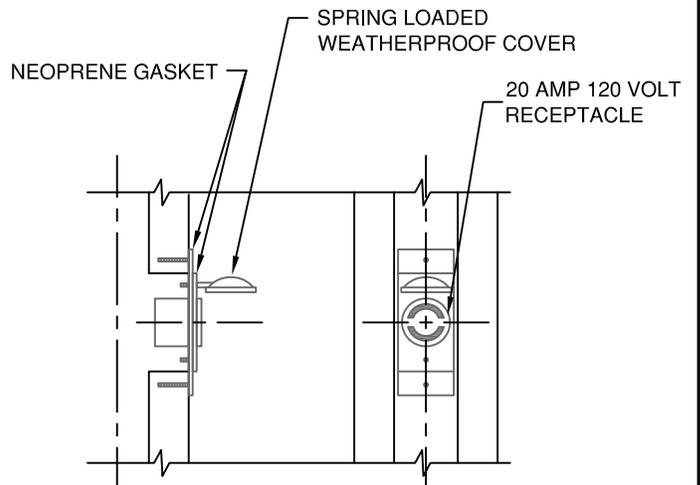
SECTION A-A



STANDARD POLE CAP

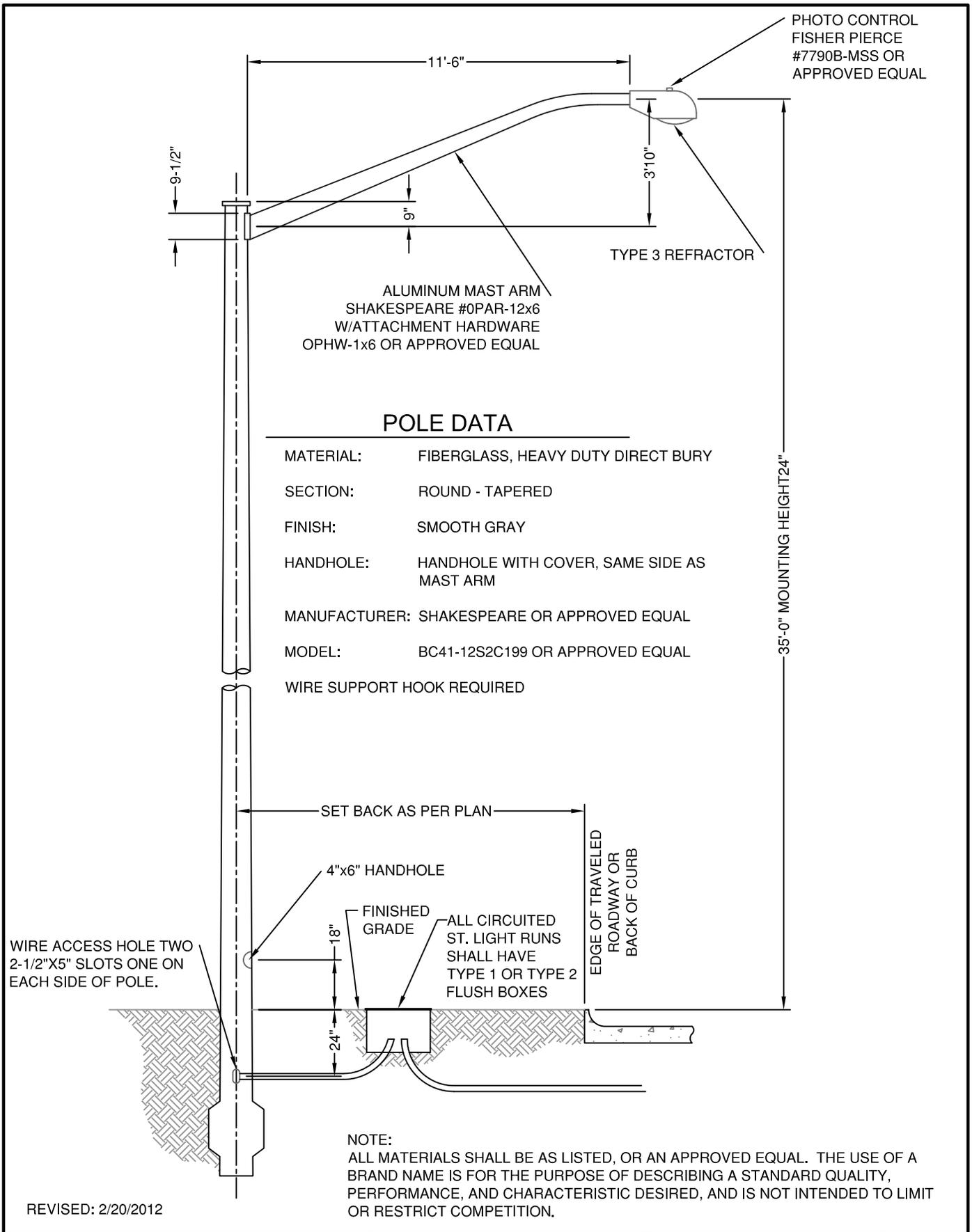


PLAN OF BASE

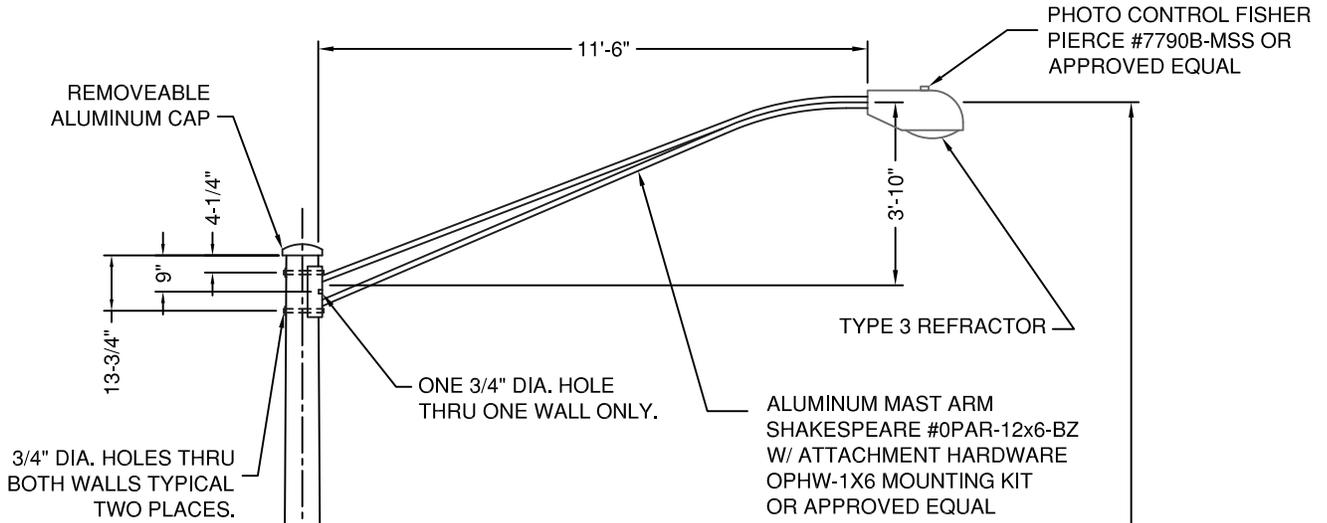


FESTOON SINGLE OUTLET

REVISED: 4/02/2007



REVISED: 2/20/2012

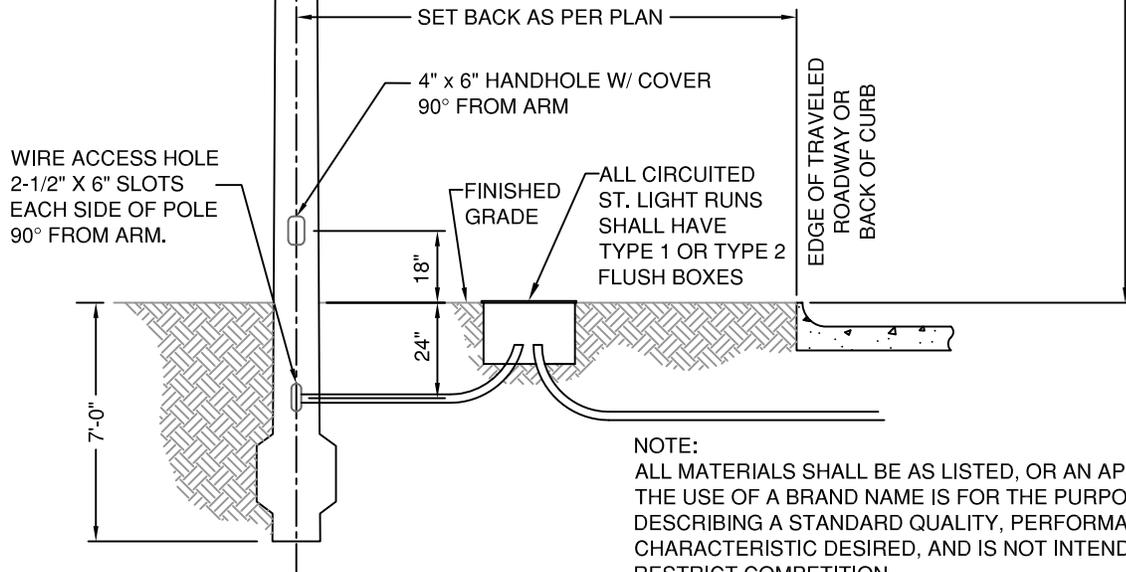


POLE DATA

MATERIAL: FIBERGLASS, HEAVY DUTY (255 LB) DIRECT BURY
 SECTION: ROUND - TAPERED 0.125" / FT
 FINISH: SMOOTH BRONZ
 HANDHOLE: HANDHOLE WITH COVER
 MANUFACTURER: SHAKESPEARE OR APPROVED EQUAL
 MODEL: BB47-12S5CK49G3 OR APPROVED EQUAL
 RECEPTACLE: WEATHERPROOF, 125V, 15A GFCI ON MAST SIDE @ 27'-0" ABOVE GRADE.

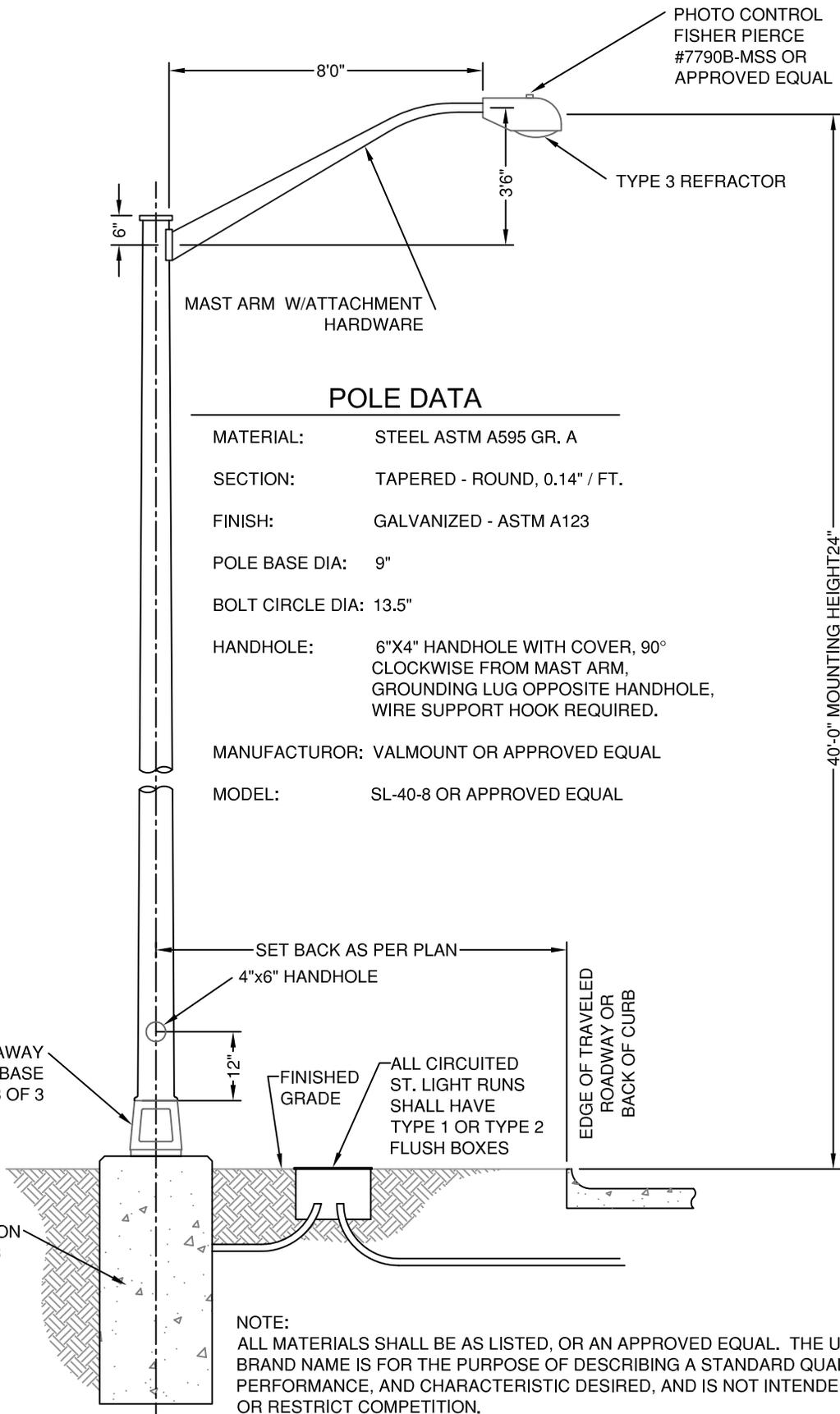
WIRE SUPPORT HOOK REQUIRED

MOUNTING HEIGHT
40'-0"

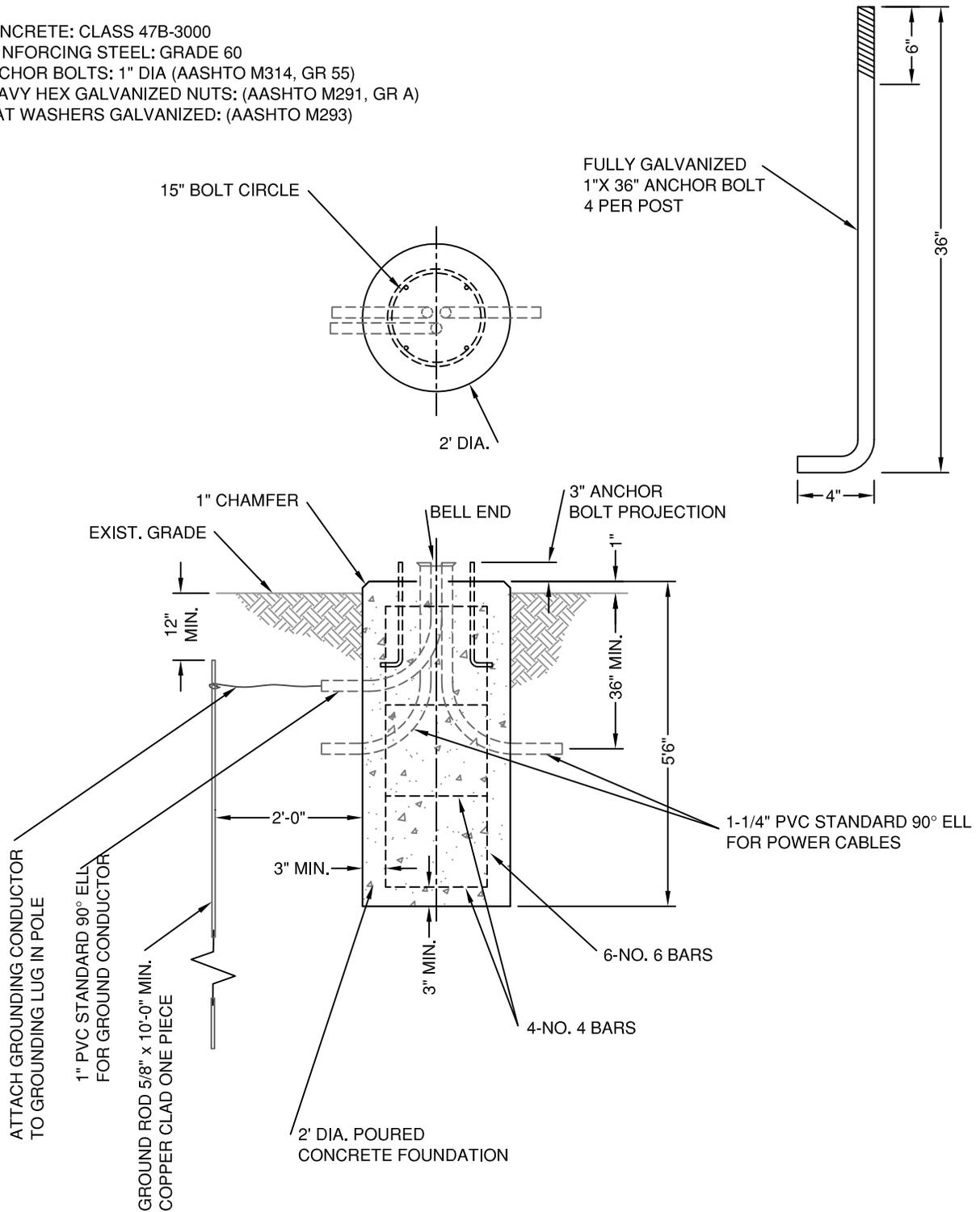


NOTE:
 ALL MATERIALS SHALL BE AS LISTED, OR AN APPROVED EQUAL. THE USE OF A BRAND NAME IS FOR THE PURPOSE OF DESCRIBING A STANDARD QUALITY, PERFORMANCE, AND CHARACTERISTIC DESIRED, AND IS NOT INTENDED TO LIMIT OR RESTRICT COMPETITION.

REVISED: 2/20/2012

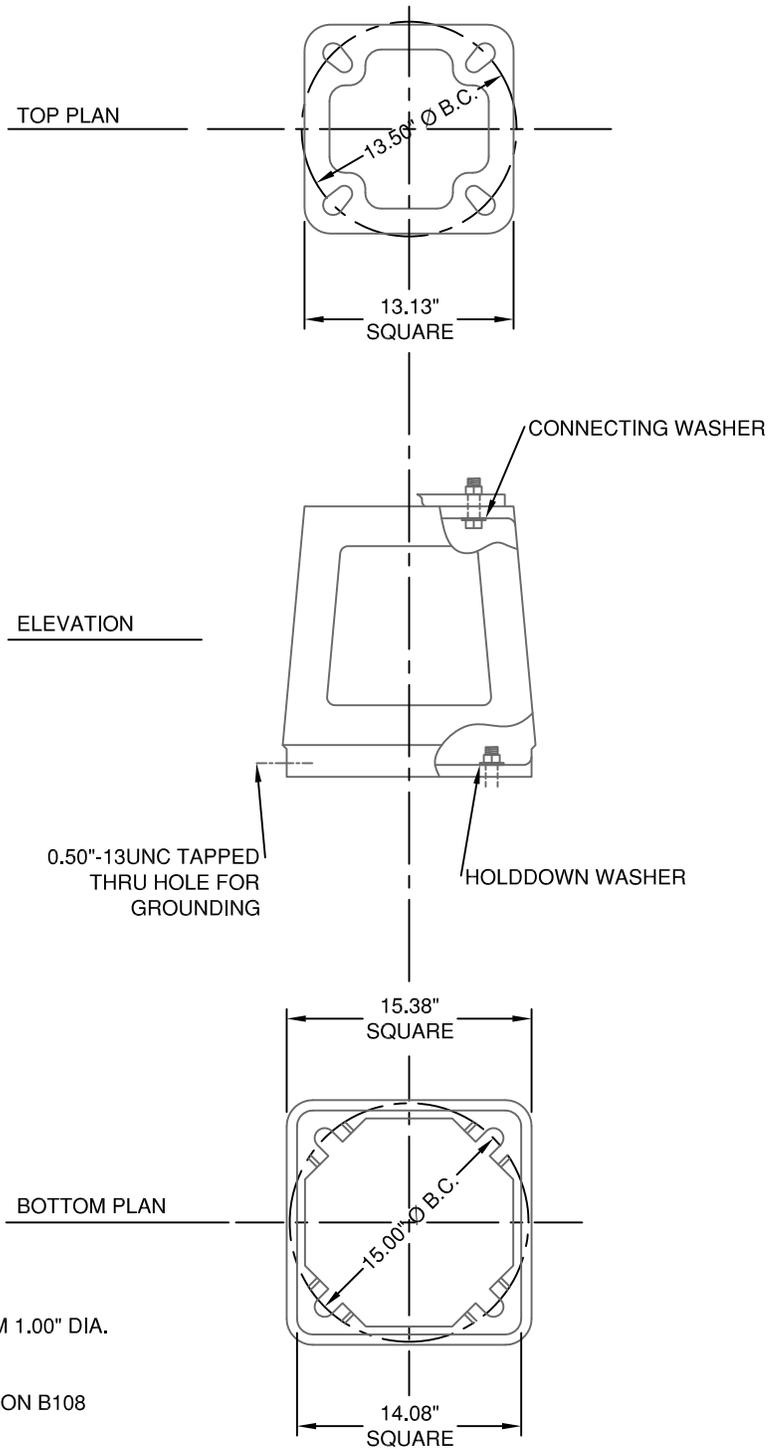


CONCRETE: CLASS 47B-3000
 REINFORCING STEEL: GRADE 60
 ANCHOR BOLTS: 1" DIA (AASHTO M314, GR 55)
 HEAVY HEX GALVANIZED NUTS: (AASHTO M291, GR A)
 FLAT WASHERS GALVANIZED: (AASHTO M293)



NOTE:
 ALL MATERIALS NECESSARY FOR THE CONSTRUCTION OF THE AREA LIGHT FOUNDATIONS, INCLUDING BUT NOT LIMITED TO: CONCRETE, CONDUIT, ELLS, RODS, WIRE, ETC, SHALL BE INCLUDED COMPLETE.

REVISED: 6/9/2003



TRANSFORMER BASE NOTES

TOP BOLT HOLES WILL ACCOMMODATE MAXIMUM 1.00" DIA. BOLTS.

MATERIAL SHALL CONFORM TO ASTM DESIGNATION B108 ALLOY 356.0 T6.

BASE CONFORMS TO BREAKAWAY CRITERIA OF AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS (1985).

VALMONT M093 T-BASE OR APPROVED EQUAL

REVISED: 6/9/2003

NOTE:
ALL HARDWARE SHALL BE TAMPER
RESISTANT STAINLESS STEEL

HOLOPHANE GRANVILLE SERIES
ACORN SHAPED GLASS GLOBE
WITH 100W METAL HALIDE LAMP
AND TYPE 5 REFRACTOR

LUMINAIRE/BALLAST HOUSING: RAISED LEAF
PATTERN WITH PHOTOCONTROL

HOLOPHANE ALBANY SERIES TENON
MOUNTED VINTAGE STYLE CAST
ALUMINUM WITH SCROLL WORK FILIGREE
CROSSARM

DUPLEX OUTLET WITH WEATHERPROOF COVER

12" BANNER ARMS

HOLOPHANE FORT WASHINGTON SERIES
ROUND, TAPERED, FLUTED STEEL SHAFT

DECORATIVE CAST IRON BASE RECTANGULAR
DESIGN WITH HAND HOLE AND MATCHING
COVER

ALUMINUM SKIRT - POLE-SAFE[®]
#SPMKDN-4, SUPPLIED BY CITY.

ALL CIRCUITED ST. LIGHT RUNS SHALL
HAVE TYPE 1 OR TYPE 2 FLUSH BOXES

EXIST. GRADE

6"
6"

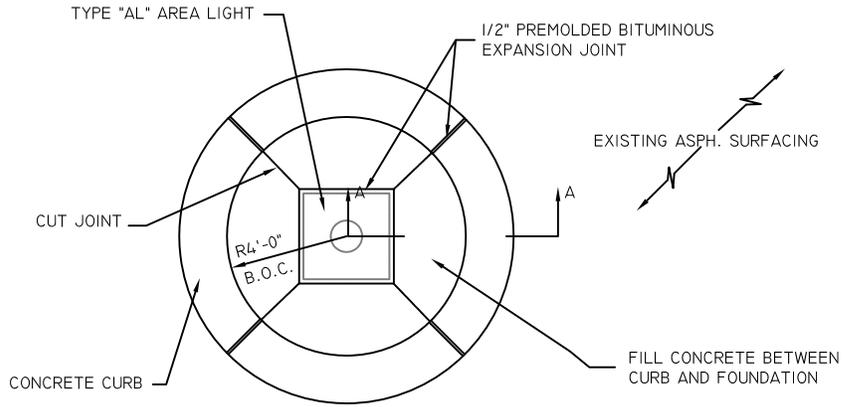
8'-0" DIA. CONC. ISLAND

15" DIA. BOLT CIRCLE - SEE ANCHORAGE GUIDE
4 SETS ANCHOR BOLTS, NUTS, AND WASHERS
FURNISHED PER POLE. SEE SHEET 2 OF 2.

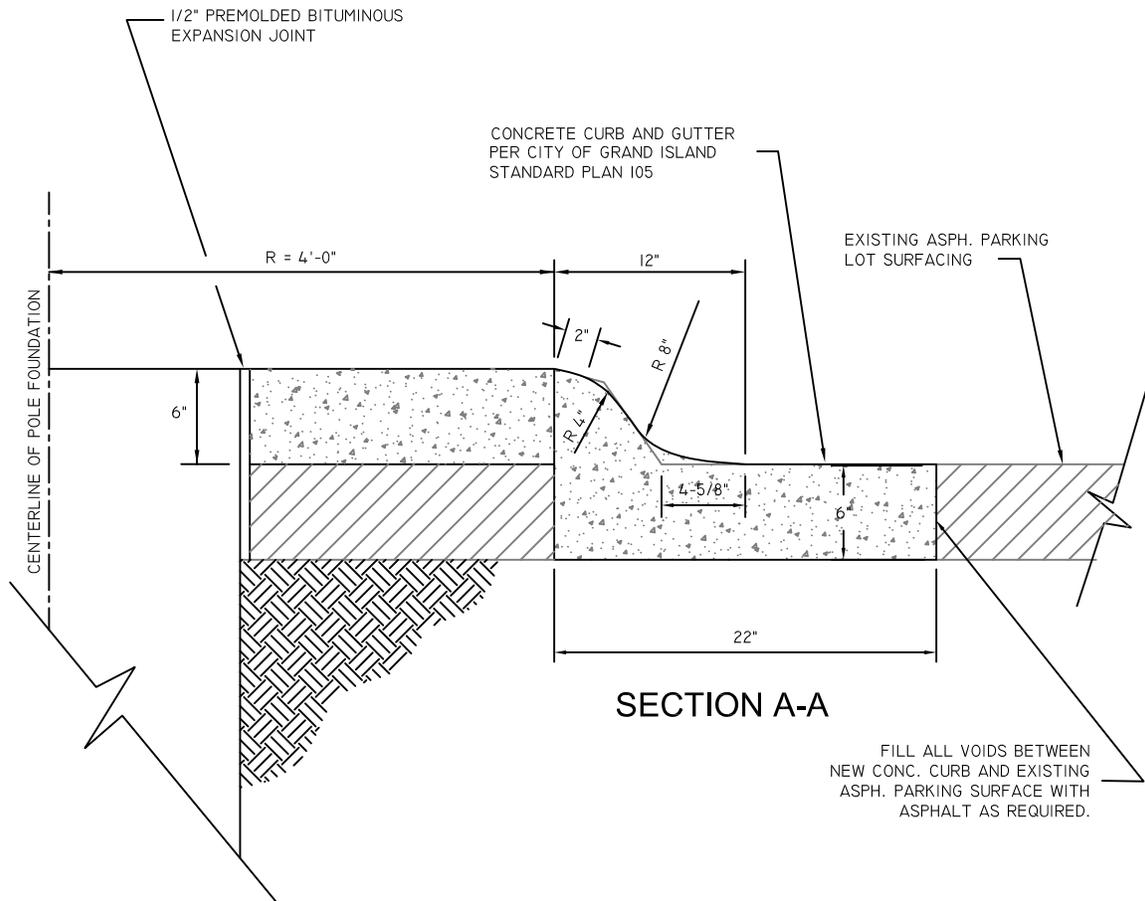
SEE FOUNDATION DETAIL
SHEET 2 OF 2

NOTE:
ALL MATERIALS SHALL BE AS LISTED, OR AN APPROVED
EQUAL. THE USE OF A BRAND NAME IS FOR THE
PURPOSE OF DESCRIBING A STANDARD QUALITY,
PERFORMANCE, AND CHARACTERISTIC DESIRED, AND IS
NOT INTENDED TO LIMIT OR RESTRICT COMPETITION.

8' DIA CONCRETE CURB ISLANDS TO BE INSTALLED:

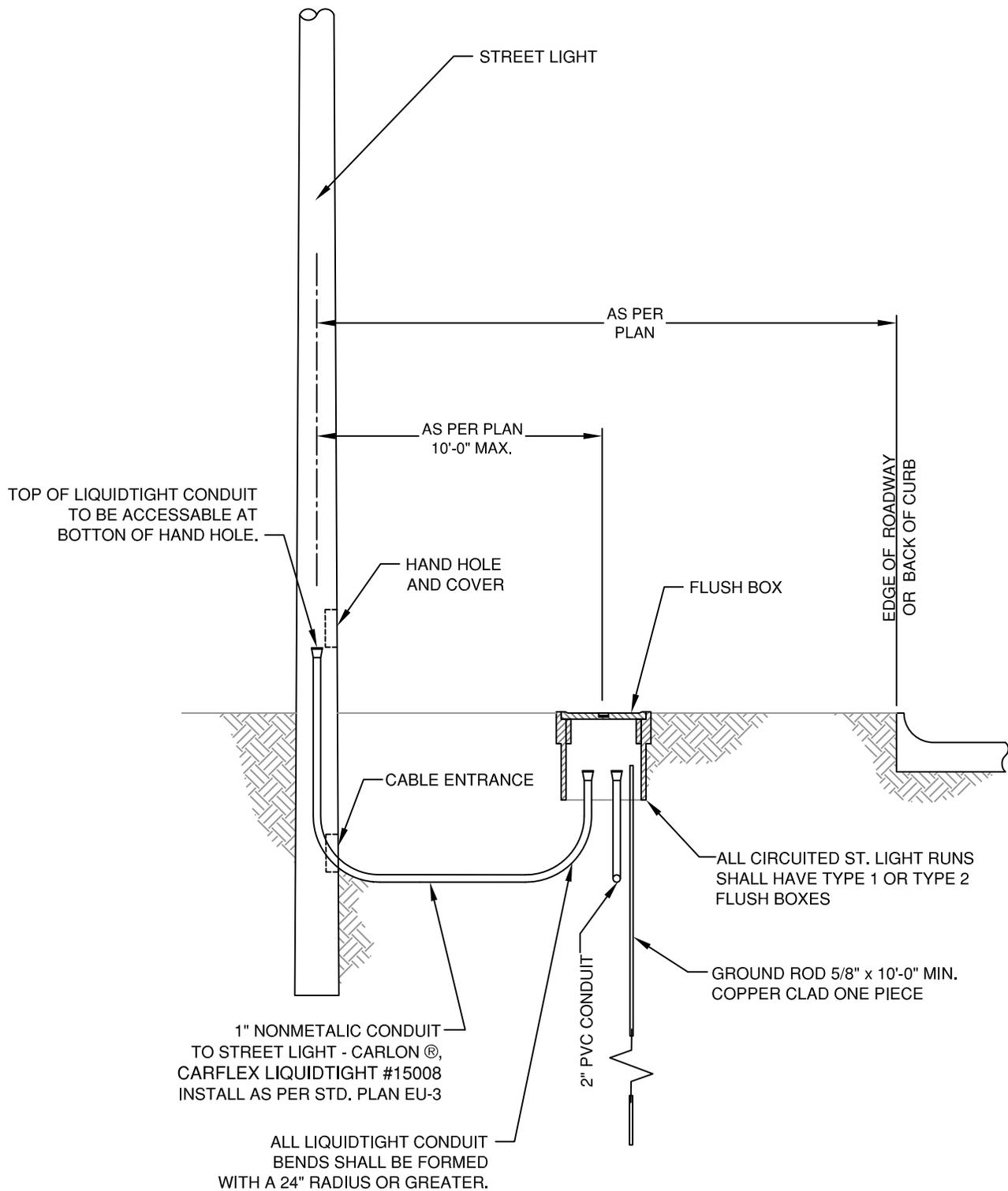


PLAN VIEW



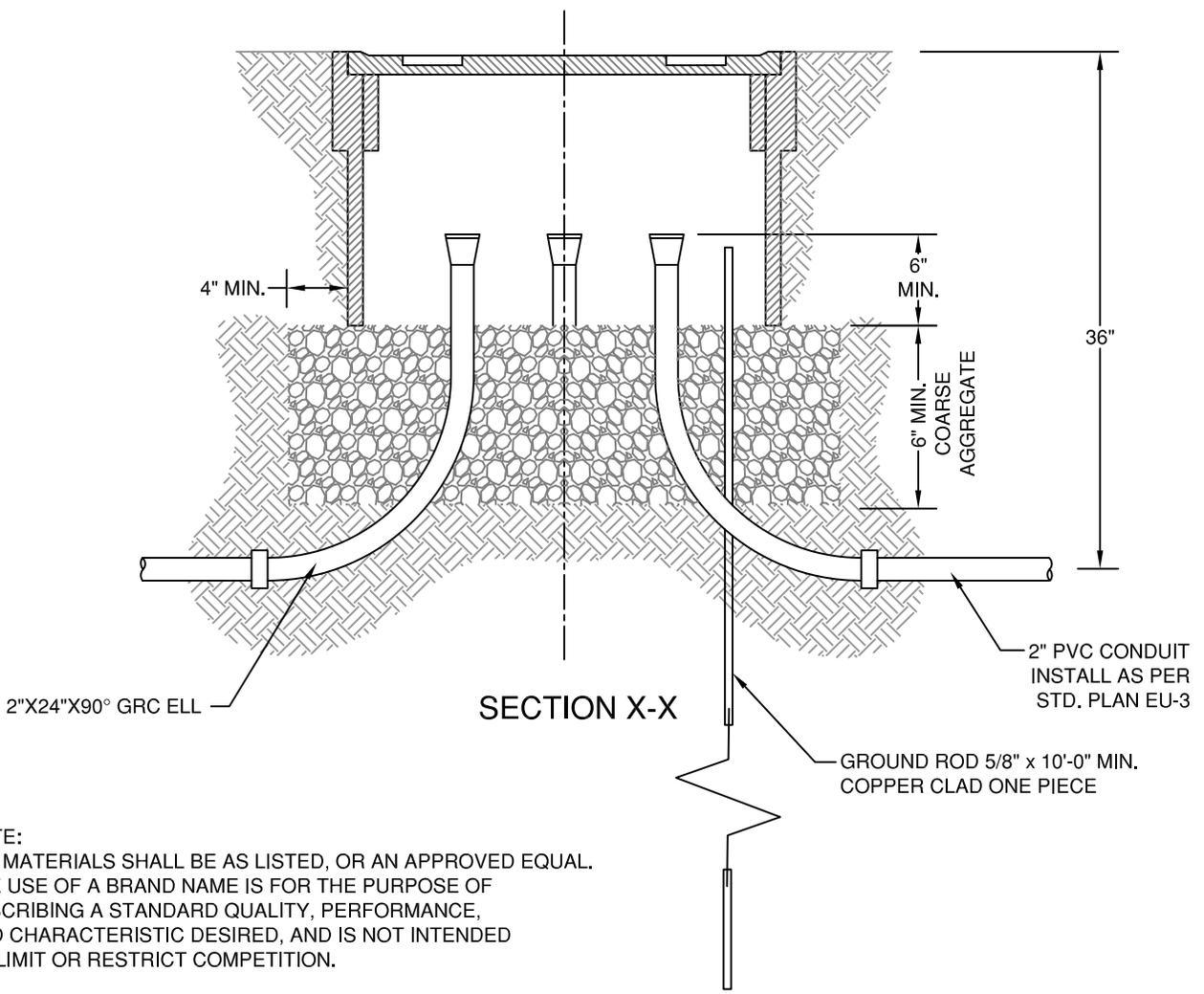
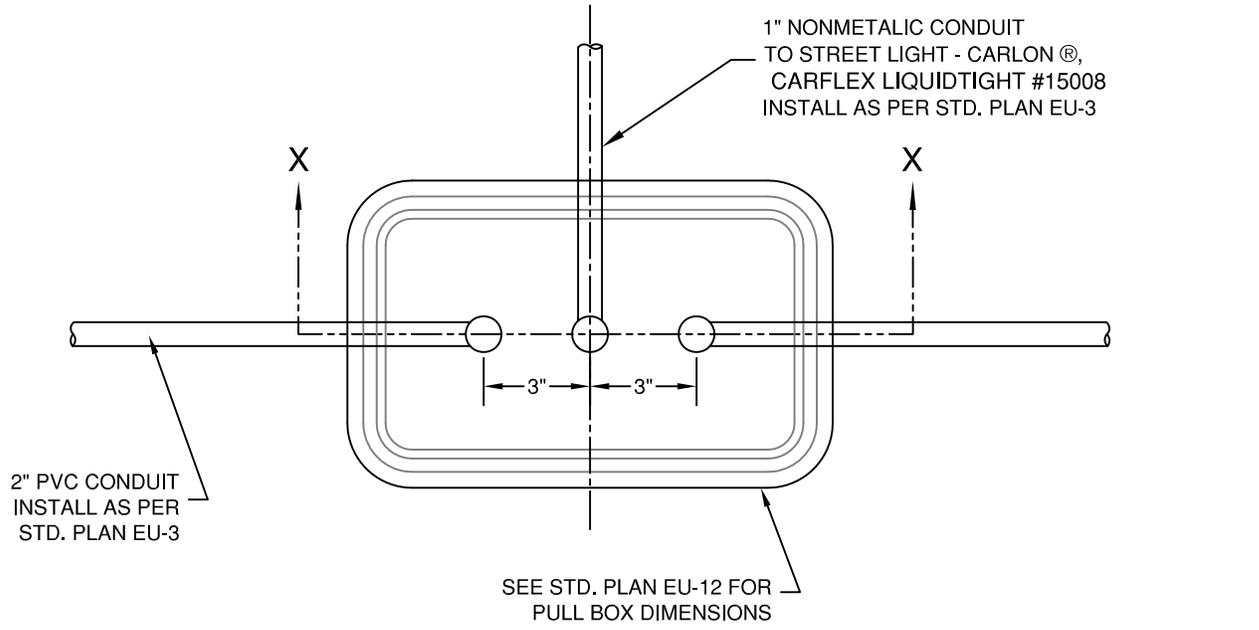
SECTION A-A

FILL ALL VOIDS BETWEEN NEW CONC. CURB AND EXISTING ASPH. PARKING SURFACE WITH ASPHALT AS REQUIRED.



NOTE:

ALL MATERIALS SHALL BE AS LISTED, OR AN APPROVED EQUAL. THE USE OF A BRAND NAME IS FOR THE PURPOSE OF DESCRIBING A STANDARD QUALITY, PERFORMANCE, AND CHARACTERISTIC DESIRED, AND IS NOT INTENDED TO LIMIT OR RESTRICT COMPETITION.



NOTE:
 ALL MATERIALS SHALL BE AS LISTED, OR AN APPROVED EQUAL.
 THE USE OF A BRAND NAME IS FOR THE PURPOSE OF DESCRIBING A STANDARD QUALITY, PERFORMANCE, AND CHARACTERISTIC DESIRED, AND IS NOT INTENDED TO LIMIT OR RESTRICT COMPETITION.

<p>CITY OF GRAND ISLAND UTILITIES DEPARTMENT</p>	<p>DATE: 3/20/2007 DRAWN BY: T.D.Z. CHECKED BY: T.W.B.</p>	<p>ST. LIGHTING CONDUIT INSTALLATION</p>	<p>PLAN ES-10 2 OF 2</p>
---	--	--	--