

Streetlight Technical Manual

Supplement to Mesa Standard Details



TRANSPORTATION

2024

**STREETLIGHT TECHNICAL
MANUAL**

AVAILABLE ON-LINE

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1. ALL WORKMANSHIP, MATERIAL AND INSTALLATION SHALL COMPLY WITH THE MAG UNIFORM STANDARD DETAILS AND SPECIFICATIONS AS AMENDED BY THE CITY OF MESA, THE CITY OF MESA ENGINEERING DESIGN STANDARDS AND THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRIC CODE.
2. THE CITY OF MESA REQUIRES AT LEAST ONE IMSA LEVEL I ROADWAY LIGHTING OR TRAFFIC SIGNAL TECHNICIAN ON SITE DURING ALL PHASES OF ANY STREETLIGHT WORK. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE VERIFICATION OF CURRENT CERTIFICATION. IF A JOB SITE IS INSPECTED AND A CERTIFIED TECHNICIAN IS NOT ON SITE, THE JOB WILL BE SHUT DOWN.
3. CONTRACTOR SHALL SUBMIT A LIST CONTAINING NAMES AND QUALIFIED STATUS OF PERSONNEL THAT WILL BE ON THE IMMEDIATE JOB SITE TO THE INSPECTOR PRIOR TO STARTING ANY TYPE OF CONSTRUCTION. ANY CHANGE IN THIS LIST WILL REQUIRE IMMEDIATE NOTIFICATION TO THE INSPECTOR.
4. DURING THE CONSTRUCTION OR WARRANTY PERIOD, IF THE CONTRACTOR FAILS TO OR IS UNABLE TO COMPLY WITHIN TWO (2) WORKING DAYS OF A REQUEST OF THE INSPECTOR OR IF A STREETLIGHT OUTAGE MAKES IT NECESSARY FOR CITY FORCES TO DO WORK THAT IS NORMALLY THE CONTRACTOR'S RESPONSIBILITY, THE CITY WILL BE JUSTIFIED IN BILLING THE CONTRACTOR. A SEPARATE BILLING SHALL COVER EACH INCIDENT REQUIRING WORK BY CITY FORCES. THE AMOUNT OF EACH BILLING SHALL BE EITHER \$350.00 OR THE ACTUAL ACCUMULATED CHARGES FOR EMPLOYEES' TIME, MATERIALS, AND EQUIPMENT, WHICHEVER IS GREATER. EMPLOYEES' TIME WILL BE BILLED AT EACH INDIVIDUAL'S HOURLY RATE PLUS THE APPLICABLE CITY OVERHEAD RATE.
5. INSPECTIONS SHALL BE REQUESTED BY THE ELECTRICAL CONTRACTOR IN ACCORDANCE WITH THE FOLLOWING LIST:
 - * BEFORE STARTING PROJECT (PRE-JOB INSPECTION).
 - * BEFORE FILLING PULL BOX HOLES WITH AGGREGATE.
 - * BEFORE BACKFILLING TRENCH AND COVERING CONDUIT.
 - * WHEN THE POLE FOUNDATIONS ARE DUG, ANCHOR BOLTS, GROUND WIRE AND GROUND PLATE ARE READY AND IN PLACE, PRIOR TO POURING CONCRETE.
 - * BEFORE PULLING WIRE-(SEE NOTE 16 THIS PAGE).
 - * BEFORE INSTALLATION OF FIXTURES, AND PHOTOCCELL.
 - * BEFORE MAKING SPLICES.
 - * WHEN PROJECT IS COMPLETED. IF NECESSARY, A LIST OF DISCREPANCIES WILL BE SUBMITTED TO THE CONTRACTOR FOR CORRECTIVE ACTION.

FAILURE TO HAVE THESE ITEMS INSPECTED AND APPROVED BEFORE PROCEEDING WILL RESULT IN REJECTION OF THE WORK DONE, AND REMOVAL OF ALL SUCH WORK WILL BE REQUIRED.

6. ALL STREETLIGHTS SHALL BE CONNECTED TO THE PERMANENT POWER SUPPLY BY THE AGENCY SUPPLYING POWER. STREETLIGHT SYSTEMS WILL NOT BE ACCEPTED UNTIL THE SYSTEM HAS BEEN ENERGIZED AND FULLY OPERATIONAL FOR A MINIMUM ONE-HOUR TEST PERIOD AT RATED VOLTAGE.
7. WHERE A LIGHTING CONTROL CABINET IS UTILIZED, STREETLIGHT CIRCUITS SHALL BE 240 VOLT. WHERE A CABINET IS NOT USED, STREETLIGHT CIRCUITS SHALL BE 120 VOLT. ALL SERVICES SHALL BE 120/240 VOLT. ALL CONTROL CIRCUITS SHALL BE 120 VOLT.
8. BEFORE DISCONNECTING ANY EXISTING STREETLIGHTS, THE NEW LIGHT SYSTEM SHALL BE WORKING OR TEMPORARY LIGHTING INSTALLED. EXISTING STREETLIGHTS TO BE REMOVED AND NEW STREETLIGHTS SHALL NOT OPERATE AT THE SAME TIME.
9. POLES HAVING MULTIPLE LUMINAIRES SHALL HAVE TWO (2) CONDUCTORS AND ONE (1) BOND WIRE PER LUMINAIRE. THE CONDUCTORS SHALL BE MARKED AS PAIRS AT THE HANDHOLE.
10. ALL UNDERGROUND CIRCUIT CONDUCTORS SHALL BE BLACK XHHW, NOT LESS THAN #8 UNLESS OTHERWISE NOTED.
11. WHERE STREETLIGHTS OR CIRCUITS ARE 120 VOLT, ONE CONDUCTOR SHALL BE UN-FUSED AND BE EITHER WHITE OR MARKED WHITE, AS REQUIRED.
12. ALL CIRCUIT CONDUCTORS IN UNDERGROUND CONDUIT SHALL BE XHHW/XHHW-2 INSULATION, MIN. #8-7 STRAND EXCEPT PHOTOCCELL CIRCUIT SHALL BE TRAY CABLE (SEE NOTE 13 THIS PAGE).

13. THE TRAY CABLE [PRIORITY PWC02LII XHHW-2 CONDUCTORS, CPE JACKET, 600VOLTS] FRPC 14/3 (COLORS : BLACK-RED-WHITE) OR EQUIVALENT. RUN UNDERGROUND FROM THE LIGHTING CONTROL CABINET TO THE HANDHOLE OF THE PHOTO CELL LIGHT POLE, SHALL BE CONTINUOUS & WITHOUT SPLICES. FROM THE HANDHOLE UP, 3 CONDUCTORS OF #14AWG THHN OR EQUIVALENT WILL BE SPLICED WITH BUTT SPLICES (NO WIRE NUTS) TO THE TERMINAL BLOCK OF THE PHOTOCCELL CONTROLLED LUMINAIRE. BUTT SPLICES SHALL BE INSULATED AND THE CRIMP TYPE.
14. MINIMUM DEPTH FROM TOP OF CURB OR ROADWAY TO TOP OF CONDUIT SHALL BE TWENTY-FOUR (24) INCHES. MAXIMUM DEPTH SHALL BE FORTY-EIGHT (48) INCHES, UNLESS OTHERWISE APPROVED.
15. UNDERGROUND WIRING SHALL BE INSTALLED IN SCHEDULE 40 RIGID PVC CONDUIT, UL APPROVED FOR ABOVE GROUND AND UNDERGROUND USE WITH 90 DEGREE C WIRE. WHERE TWENTY-FOUR (24) INCHES COVER IS NOT POSSIBLE, GALVANIZED RIGID STEEL CONDUIT (G.R.S.), SHALL BE USED. G.R.S. CONDUIT SHALL BE DOUBLE WRAPPED WITH 20-MIL TAPE TO SIX (6) INCHES PAST THE THREADED METAL COUPLING. COMPRESSION COUPLINGS ARE NOT ALLOWED. PRIOR APPROVAL IS NEEDED FOR ANY DESIGN USING G.R.S. CONDUIT.
16. ALL CONDUITS SHALL BE BLOWN OUT USING 90-PSI AIR PRESSURE AND TO BE MANDRELLED BEFORE PULLING WIRE.
17. A TWO-PIECE EXPANSION JOINT COUPLING SHALL BE INSTALLED IN PVC CONDUIT RUNS AT INTERVALS NOT TO EXCEED 100 FEET.
18. ALL FORTY-FIVE (45) AND NINETY (90) DEGREE BENDS OF CONDUIT SHALL HAVE A RADIUS OF NOT LESS THAN EIGHTEEN (18) INCHES. FACTORY BENDS ONLY SHALL BE USED.
19. ALL JOINTS BETWEEN PVC CONDUIT, COUPLINGS & FITTING SHALL BE PREPARED WITH PURPLE PRIMER AND CEMENTED TOGETHER WITH GRAY PVC CEMENT.
20. THE CONDUIT LOCATIONS SHOWN ON PLAN ARE DIAGRAMMATIC REPRESENTATIONS ONLY. CONTRACTOR IS TO INSTALL CONDUIT TO AVOID CONFLICTS. THE CONTRACTOR MAY AT HIS OPTION BORE FOR THE PLACEMENT OF CONDUIT PER COM DETAIL M-18. ALL CONDUITS SHALL BE PLACED WITHIN EXISTING RIGHT-OF-WAY UNLESS OTHERWISE APPROVED.
21. STREETLIGHT CONDUITS SHOULD BE INSTALLED PRIOR TO RESIDENTIAL DRIVEWAY INSTALLATIONS. IF STREETLIGHT CONDUIT IS INSTALLED AFTER RESIDENTIAL DRIVEWAY INSTALLATION, CONTRACTOR SHALL BORE CONDUIT UNDER DRIVEWAY. MEANDERING THE CONDUIT BEHIND THE ENTRANCE WILL NOT BE PERMITTED.
22. BACKFILL REQUIREMENTS FOR ALL TRENCHES SHALL CONFORM TO ARTICLE 300 OF THE N.E.C., SECTION 601 OF THE UNIFORM STANDARD SPECIFICATIONS, AND M-19.04 OF THE MESA STANDARD DETAILS FOR STREET TRENCH BACKFILL AND PAVEMENT REPLACEMENT.
23. WITH THE EXCEPTION OF DETACHED SIDEWALKS, PULL BOXES SHALL BE INSTALLED (SEE COM DETAILS SL-75.02 AND SL-75.03) FIVE (3-6 FEET) (CENTER TO CENTER) BETWEEN STREETLIGHT POLES AND PULL BOXES.
24. PHOTOCCELL RECEPTACLE SHALL BE POSITIONED ON LUMINAIRE SO THAT WHEN INSTALLED THE PHOTOCCELL WILL FACE NORTH.
25. ALL SHORTING CAPS TO BE LOW PROFILE TYPE. NO HIGHER THAN 1 1/2" ABOVE SOCKET.
26. ALL PHOTO CELL CIRCUIT CONDUIT MUST BE 1-1/2" OR LARGER (TO INCLUDE CONDUIT STUBBING UP AT PHOTO CELL LIGHT POLE).
27. ALL RESIDENTIAL AND COLLECTOR CONDUIT SHALL BE 1 1/2" CONDUIT.
28. ALL ARTERIAL CONDUIT SHALL BE 2", 1 1/2" CONDUIT FROM PULL BOX TO POLE.
29. FUSING FOR HPS LUMINAIRE SHALL BE 5AMP FNM. LED LUMINAIRE TO BE FUSED ACCORDING TO WATTAGE USAGE.
30. ALL NON GALVANIZED POLES SHALL HAVE INTERIOR POLE COATED WITH AMERCOAT 78HB OR APPROVED EQUIVALENT FROM BASE TO TOP OF HAND HOLE. (5MILS)
31. ALL FUSE HOLDERS IN GROUND WILL BE WATERPROOF. (SEE APPROVED LIST).

HOUSING

1. LED FIXTURE SHALL HAVE A 10 YEAR WARRANTY ON LED MODULES, DRIVERS, AND FINISH.
2. HOUSING SHALL BE PRIMARILY CONSTRUCTED OF ALUMINUM WITH POWDER COAT GRAY FINISH. ALL MOUNTING HARDWARE SHALL BE NON-CORROSIVE OR SUITABLE PROTECTED METAL.
3. THE HOUSING SHALL BE ABLE TO WITHSTAND 1000 HOUR SALT SPRAY TEST ASTM I17.
4. LUMINAIRE SHALL MOUNT TO A HORIZONTAL 2.375" O.D. TENON WITH NO MORE THAN 4 BOLTS, WITH NO REARRANGEMENT OF PARTS OR SEPARATE PARTS NEEDED TO INSTALL AND HAVE STEP TYPE LEVELING.
5. WEIGHT SHALL NOT EXCEED 28 LBS. WITH AN EPA OF LESS THAN 1.2 SQ FT.
6. COOLING SHALL BE DONE WITH HEAT SINKS. NO FANS, PUMPS, OR LIQUIDS SHALL BE USED.

OPTICS

1. LUMINAIRE SHALL MEET THE IESNA FULL CUTOFF CLASSIFICATIONS (BUG RATING OF U0) AND HAVE IESNA TYPE II, TYPE III, OR TYPE IV DISTRIBUTION.
2. LUMINAIRE SHALL HAVE AN OPTION FOR A FILED INSTALLABLE HOUSE SIDE SHIELD FROM THE MANUFACTURER.
3. CORRELATED COLOR TEMPERATURE (CCT) SHALL BE $\pm 3000K \pm 300K$. COLOR RENDERING INDEX (CRI) OF 70 OR GREATER.
4. LUMEN MAINTENANCE AT 50,000 HRS AND 25°C BASED ON TM-21 TESTING SHALL BE 92% OR GREATER.
5. LUMINAIRE IES FILES MUST BE GENERATED IN ACCORDANCE WITH IESNA STANDARD LM-79-08 FOR ABSOLUTE PHOTOMETRY, BY NVLAP ACCREDITED LAB.

TERMINAL BOARD

1. THE TERMINAL SCREWS SHALL BE OF CAPTIVE TYPE AND EACH SCREW SHALL BE EQUIPPED WITH WIRE GRIPS WHICH WILL AUTOMATICALLY BE RAISED AND LOWERED AS THE TERMINAL SCREW IS OPERATED.
2. THE TERMINALS SHALL BE CAPABLE OF ACCEPTING #8 TO #14 AWG CONDUCTORS.
3. THE TERMINAL BOARD SHALL HAVE THREE TERMINALS; ONE OF THESE TERMINALS SHALL BE FOR THE SYSTEM GROUND AND SHALL BE CONNECTED TO THE LUMINAIRE HOUSING.
4. ALL LUMINAIRES SHALL HAVE PHOTOCELL RECEPTACLE. THREE ADDITIONAL TERMINALS SHALL BE PROVIDED FOR EXCLUSIVE PHOTOCELL OPERATION.
5. ALL UNITS ARE TO BE PREWIRED TO A SINGLE TERMINAL BOARD REQUIRING ONLY CUSTOMER CONNECTIONS TO CLEARLY IDENTIFIED TERMINALS.

DRIVER

1. DRIVER & LED MODULES SHALL BE REPLACEABLE AS SEPARATE UNITS, & HAVE PLUG CONNECTIONS.
2. LED DRIVER SHALL ACCEPT 120V THRU 277 60HZ INPUT, AND SHALL HAVE POWER FACTOR OF 0.90 MINIMUM.
3. LED DRIVER SHALL BE CAPABLE OF 0-10V DIMMING. DIMMING LEADS SHALL BE WIRED TO PINS 4 AND 5 OF PHOTOCELL RECEPTACLE.
4. POWER SUPPLIES SHALL MEET APPLICABLE FCC GUIDELINES FOR INTERFERENCE, WITH TOTAL HARMONIC DISTORTION LESS THAN 20%.

5. LUMINAIRE SHALL HAVE SURGE PROTECTION DEVICE (SPD) TO WITHSTAND HIGH REPETITION NOISE TRANSIENTS AS RESULT OF UTILITY LINE SWITCHING, NEARBY LIGHTING STRIKES, AND OTHER INTERFERENCE. THE SPD SHALL PROTECT FROM DAMAGE AND FAILURE FOR COMMON AND DIFFERENTIAL MODE TRANSIENT PEAK CURRENT UP TO 10KA (MINIMUM). SPD CONFORMS TO UL 1449. SPD PERFORMANCE HAS BEEN TESTED PER PROCEDURES IN ANSI/IEEE C62.41:2002 CATEGORY C HIGH EXPOSURE AND ANSI C136.2 10KV BIL. THE SPD SHALL FAIL IN SUCH A WAY AS THE LUMINAIRE WILL NO LONGER OPERATE. THE SPD SHALL BE FIELD REPLACEABLE.

GENERAL

1. UNIT SHALL BE UL1598 TESTED AND HAVE APPROVED REPORT SHOWING FIXTURE CAPABLE OF OPERATING IN AMBIENT TEMPERATURES OF -7°C TO 50°C.
2. LUMINAIRE HOUSING SHALL BE OR ETL LISTED FOR WET LOCATIONS. OPTICS/OPTICAL ENCLOSURE SHALL IP65 RATED.
3. LUMINAIRE SHALL HAVE BEEN TESTED FOR L70 LUMEN DEPRECIATION, EFFICACY AND CCT PER IESNA STANDARD LM-80-08.
4. ELECTRONIC IES FILES MUST BE READILY AVAILABLE FOR DOWNLOAD ON MANUFACTURER WEBSITE.
5. LUMINAIRE SHALL HAVE A 7-PIN LOCKING PHOTOCELL RECEPTACLE MEETING ANSI C136.41-2013. PROVIDE A 30 AMP LOW PROFILE SHORTING CAP FOR LUMINAIRES THAT DO NOT REQUIRE PHOTOCELL, PER APPROVED PRODUCTS LIST.
6. LUMINAIRE SHALL HAVE A MINIMUM EFFICACY OF 102 LUMENS PER WATT AT 3000K.
7. LUMINAIRE SHALL HAVE LUMEN OUTPUTS AT CCT OF 3000 KELVIN AS SHOWN IN THE TABLE BELOW.

TYPE	NOMINAL LUMENS	TOLERANCE
3KL	3300	$\pm 15\%$
5KL	5300	$\pm 15\%$
9KL	9100	$\pm 10\%$
13KL	13000	$\pm 10\%$
16KL	16500	$\pm 10\%$
21KL	21000	$\pm 10\%$
27KL	27000	$\pm 10\%$

DATA TABLE

LED LUMENS	LAMP TYPE	FIXTURE WATTAGE	FIXTURE VOLTAGE	I.E.S. DIST. TYPE	P.C. RECPT.	COLOR
2,900	LED	25	120x27V.	1 1	7 PIN	GRAY
2,900	LED	25	120x27V.	1 1	7 PIN	BRONZE
4,800	LED	40	120x27V.	1 1	7 PIN	GRAY
4,800	LED	40	120x27V.	1 1	7 PIN	BRONZE
8,400	LED	90	120x27V.	1 1	7 PIN	GRAY
8,400	LED	90	120x27V.	1 1	7 PIN	BRONZE
13,000	LED	125	120x27V.	1 1	7 PIN	GRAY
13,000	LED	125	120x27V.	1 1	7 PIN	BRONZE
12,500	LED	125	120x27V.	1 1 1	7 PIN	GRAY
12,500	LED	125	120x27V.	1 1 1	7 PIN	BRONZE
15,400	LED	132	120x27V.	1 1 1	7 PIN	GRAY
15,400	LED	132	120x27V.	1 1 1	7 PIN	BRONZE
20,300	LED	193	120x27V.	1 1 1	7 PIN	GRAY
20,300	LED	193	120x27V.	1 1 1	7 PIN	BRONZE
26,900	LED	280	120x27V.	1 1 1	7 PIN	GRAY
26,900	LED	280	120x27V.	1 1 1	7 PIN	BRONZE
8,400	LED	90	120x27V.	1 1 1	7 PIN	CREOLE
15,400	LED	132	120x27V.	1 1 1	7 PIN	CREOLE

REQUIREMENTS

A. HOUSING

1. THE HOUSING SHALL BE DESIGNED FOR 90 DEGREE LIGHT CUTOFF.
2. TYPE ①, AND TYPE ② HOUSING SHALL BE OF TWO DOOR WITH ONE DOOR ACCESSING THE OPTICAL ASSEMBLY AND ONE DOOR ACCESSING THE BALLAST ASSEMBLY.
3. TYPE ③ HOUSING SHALL BE OF ONE DOOR WITH ACCESS TO BOTH THE BALLAST AND OPTICAL COMPARTMENTS.
4. THE HOUSING SHALL BE ABLE TO WITHSTAND 1000 HOUR SALT SPRAY TEST ASTM I17.
5. NO REARRANGEMENT OF PARTS OR SEPARATE PARTS SHALL BE REQUIRED WHEN MOUNTING THE UNIT.

B. LAMP SOCKET

1. THE LAMP SOCKET SHALL BE MOGUL MULTIPLE PORCELAIN ENCLOSED. THE RATING OF THE SOCKET SHALL EXCEED THE LAMP STARTING VOLTAGE.
2. THE SCREW SHELL OF THE SOCKET SHALL CONTAIN INTEGRAL LAMP GRIPS TO ASSURE ELECTRICAL CONTACT UNDER CONDITIONS OF NORMAL VIBRATION.
3. THE SOCKET SHALL BE ADJUSTABLE IN BOTH A HORIZONTAL AND VERTICAL DIRECTION.
4. THE SOCKET SHALL CONFORM WITH TDJ-I47 SPECIFICATION OF EEI STANDARDS.

C. DOOR GLASS

1. THE DOOR GLASS SHALL BE HEAT AND IMPACT RESISTANT FREE FROM IMPERFECTIONS AND STRIATIONS.

D. DOOR GLASS HOLDER-DOOR

1. THE DOOR GLASS HOLDER-DOOR SHALL BE SECURED AND HINGED TO THE UPPER HOUSING AT ONE END AND LATCHED TO THE UPPER HOUSING AT THE OPPOSITE END.

E. REFLECTOR

1. THE REFLECTOR SHALL BE OF DRAWN ALUMINUM AND HAVE A HIGHLY POLISHED ANODIC SURFACE.
2. THE REFLECTOR SHALL BE RIGIDLY MOUNTED WITHIN THE HOUSING TO ASSURE A FIRM SURFACE FOR PROPER SEALING WHEN THE UNIT IS CLOSED.
3. GASKETS BETWEEN THE REFLECTOR AND GLASSWARE SHALL EFFECTIVELY SEAL THE OPTICAL ASSEMBLY FROM CONTAMINANTS AND ALLOW FOR PROPER BREATHING OF THE ASSEMBLY THROUGH AN ACTIVATED CHARCOAL FILTER.
4. THE REFLECTOR DESIGN SHALL BE SUCH THAT BY PROPER POSITIONING OF THE LAMP SOCKET WILL PRODUCE AN IES TYPE II OR TYPE III LIGHTING DISTRIBUTION PATTERN.

F. TERMINAL BOARD

1. THE TERMINAL BOARD SHALL BE MOLDED OF FIBERGLASS REINFORCED POLYESTER WITH PROTECTIVE BARRIERS BETWEEN EACH TERMINAL.
2. THE TERMINAL SCREWS SHALL BE OF THE CAPTIVE TYPE AND EACH SCREW SHALL BE EQUIPPED WITH WIRE GRIPS WHICH WILL AUTOMATICALLY BE RAISED AND LOWERED AS THE TERMINAL SCREW IS OPERATED.
3. THE TERMINALS SHALL BE CAPABLE OF ACCEPTING UP TO #6 AWG CONDUCTOR.
4. THE TERMINAL BOARD SHALL HAVE THREE TERMINALS; ONE OF THESE TERMINALS SHALL BE FOR THE SYSTEM GROUND AND SHALL BE CONNECTED TO THE LUMINAIRE HOUSING.
5. WHEN A PHOTOCCELL RECEPTACLE IS REQUIRED THREE ADDITIONAL TERMINALS SHALL BE PROVIDED FOR EXCLUSIVE PHOTOCCELL OPERATIONS.
6. ALL UNITS ARE TO BE PREWIRED TO A SINGLE TERMINAL BOARD REQUIRING ONLY CUSTOMER CONNECTIONS TO CLEARLY IDENTIFIED TERMINALS.

G. HARDWARE

1. ALL HARDWARE SHALL BE OF NON-CORROSIVE OR SUITABLY PROTECTED METAL TO PREVENT ELECTROLYTIC ACTION BY CONTACT WITH ALUMINUM. COMPONENTS SHALL BE SECURED TO THE LUMINAIRE FRAME WITH STAINLESS STEEL HARDWARE OF THE AISI 300 SERIES CHROME-NICKLE GRADE.

H. BALLAST

1. THE BALLAST SHALL BE OF THE BUILT IN DESIGN, MOUNTED WITHIN THE LUMINAIRE IN SUCH A MANNER THAT IT CAN BE EASILY DISCONNECTED BY SIMPLE DISCONNECTING PLUGS.
 2. ON THE TYPE ①, AND TYPE ② LUMINAIRES THE BALLAST AND OTHER AUXILIARY EQUIPMENT SHALL BE MOUNTED ON A SEPARABLE DIE CAST DOOR OF THE LUMINAIRE, TO FACILITATE REPLACEMENT WITHOUT THE USE OF TOOLS.
 3. ON A TYPE ③ LUMINAIRE THE BALLAST AND OTHER AUXILIARY EQUIPMENT SHALL BE MOUNTED IN A REMOVABLE PANEL OR TRAY WITHIN THE LUMINAIRE, TO FACILITATE REPLACEMENT WITHOUT THE USE OF TOOLS.
 4. THE HIGH PRESSURE SODIUM BALLAST SHALL BE OF THE THREE COIL ISOLATED LAG TYPE REGULATOR DESIGN MULTIPLE VOLTAGE RATED (SEE DATA TABLE) FOR LINE VOLTAGE.
 5. THE BALLAST CORE LAMINATION SHALL BE OF HIGH QUALITY ELECTRICAL GRADE STEEL WELDED TOGETHER TO MINIMIZE NOISE AND ASSURE TROUBLE FREE OPERATION OVER THE LIFE OF THE LUMINAIRE.
 6. THE BALLAST COILS SHALL BE PRECISION WOUND ON FORMED INSULATING BOBBINS AND TERMINALS SHALL BE OF THE PUSH ON TYPE CONNECTIONS.
 7. THE COMPONENT TO PROVIDE THE HIGH STARTING VOLTAGE REQUIRED BY THE HIGH PRESSURE SODIUM LAMP SHALL BE MOUNTED ON A NON ENCAPSULATED PLUG-IN MODULE WHICH SHALL BE EASILY ACCESSIBLE WITHOUT DISTURBING OTHER COMPONENTS OF THE BALLAST ASSEMBLY.
 8. THE BALLAST SHALL BE CAPABLE OF STARTING AND OPERATING A (SEE DATA TABLE) WATT HIGH PRESSURE SODIUM LAMP FROM A NOMINAL (SEE DATA TABLE) VOLTAGE 60HZ POWER SOURCE WITHIN THE LIMITS SPECIFIED BY THE LAMP MANUFACTURER. THE BALLAST INCLUDING STARTING AID, MUST PROTECT ITSELF AGAINST NORMAL LAMP FAILURE MODES. THE BALLAST SHALL BE CAPABLE OF OPERATION WITH LAMP IN AN OPEN OR SHORT CIRCUIT CONDITION FOR SIX MONTHS WITHOUT SIGNIFICANT LOSS OF BALLAST LIFE.
- I. INSPECTION
ALL INSTALLATIONS SHALL BE INSPECTED AND APPROVED BY AN IMSA CERTIFIED INSPECTOR.

DATA TABLE

LUMIN. #	LAMP WATTAGE	LAMP TYPE	LAMP VOLTAGE	LINE VOLTAGE	I.E.S. DIST. TYPE	P.C. RECPT.	HOUSING TYPE	COLOR
L-097	70	H.P.S.	55	120x240V.		YES	2	GRAY
L-098	70	H.P.S.	55	120x240V.		NO	2	GRAY
L-099	70	H.P.S.	55	120x240V.		YES	3	BRONZE
L-100	70	H.P.S.	55	120x240V.		NO	3	BRONZE
L-101	100	H.P.S.	55	120x240V.		YES	2	GRAY
L-102	100	H.P.S.	55	120x240V.		NO	2	GRAY
L-103	100	H.P.S.	55	120x240V.		YES	3	BRONZE
L-104	100	H.P.S.	55	120x240V.		NO	3	BRONZE
L-105	150	H.P.S.	55	120x240V.		YES	2	GRAY
L-106	150	H.P.S.	55	120x240V.		NO	2	GRAY
L-109	150	H.P.S.	55	120x240V.		YES	1	GRAY
L-110	150	H.P.S.	55	120x240V.		NO	1	GRAY
L-111	150	H.P.S.	55	120x240V.		YES	3	BRONZE
L-112	150	H.P.S.	55	120x240V.		NO	3	BRONZE
L-113.1	150	H.P.S.	55	208V.		NO	3	CREOLE
L-113.2	150	H.P.S.	55	277V.		NO	3	CREOLE
L-114	200	H.P.S.	100	120x240V.		YES	1	GRAY
L-115	200	H.P.S.	100	120x240V.		NO	1	GRAY
L-116	200	H.P.S.	100	120x240V.		YES	3	BRONZE
L-117	200	H.P.S.	100	120x240V.		NO	3	BRONZE
L-118	250	H.P.S.	100	120x240V.		YES	1	GRAY
L-119	250	H.P.S.	100	120x240V.		NO	1	GRAY
L-120	250	H.P.S.	100	120x240V.		YES	3	BRONZE
L-121	250	H.P.S.	100	120x240V.		NO	3	BRONZE
L-124	250	H.P.S.	100	120x240V.		NO	3	CREOLE
L-125	250	H.P.S.	100	120x240V.		YES	1	GREEN
L-126	250	H.P.S.	100	120x240V.		NO	1	GREEN
L-127	250	H.P.S.	100	120x208x240x277V.		YES	1	GRAY
L-122	310	H.P.S.	100	120x240V.		YES	1	GREEN
L-123	310	H.P.S.	100	120x240V.		NO	1	GREEN
L-128	310	H.P.S.	100	120x240V.		YES	1	GRAY
L-129	310	H.P.S.	100	120x240V.		NO	1	GRAY
L-130	310	H.P.S.	100	120x240V.		YES	3	BRONZE
L-131	310	H.P.S.	100	120x240V.		NO	3	BRONZE
L-132	400	H.P.S.	100	120x240V.		YES	1	GRAY
L-133	400	H.P.S.	100	120x240V.		NO	1	GRAY
L-134	400	H.P.S.	100	120x240V.		YES	3	BRONZE
L-135	400	H.P.S.	100	120x240V.		NO	3	BRONZE

*COLORS

GRAY - SHALL BE AN ACRYLIC BASE ELECTROCOAT ASA 70 GRAY.

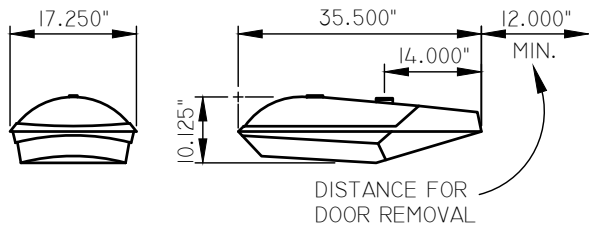
BRONZE - SHALL BE A POWDER COATED GE DARK BRONZE.

GREEN - SHALL BE (SERIES 73 ENDURASHIELD III BY TNEMEC) ECHO GREEN FOR MAIN STREET ONLY.

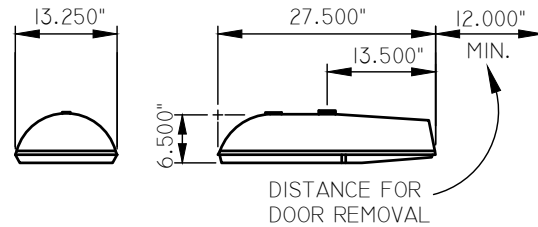
CREOLE - SHALL BE (SERIES 73 ENDURASHIELD III BY TNEMEC) CREOLE FOR MESA TOWN CENTER ONLY.

*OR APPROVED EQUAL

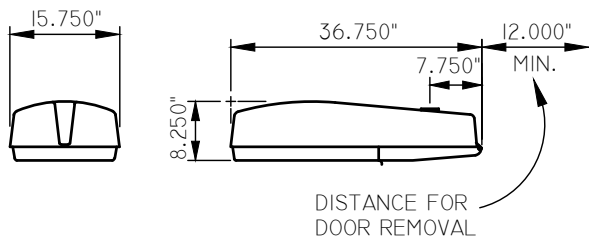
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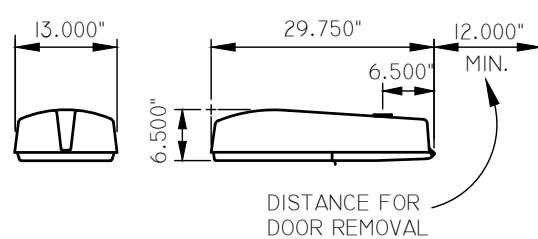
DISTANCE FOR
DOOR REMOVAL



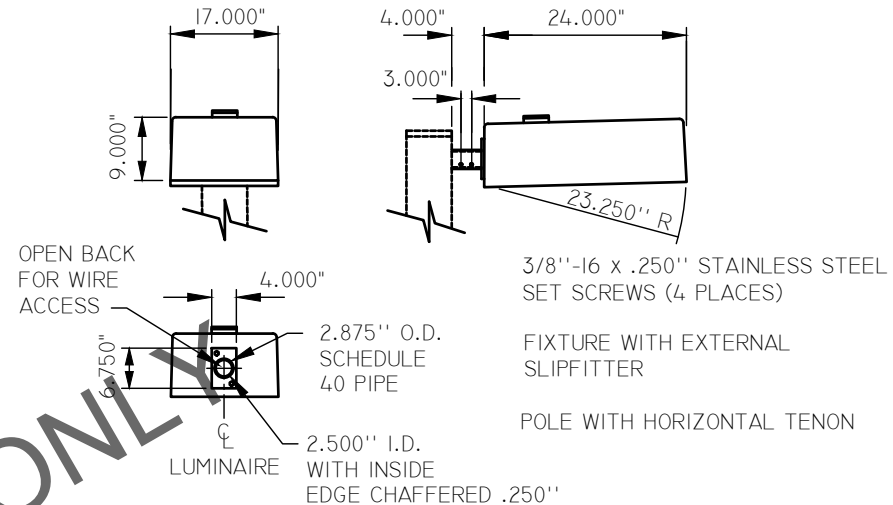
DISTANCE FOR
DOOR REMOVAL



DISTANCE FOR
DOOR REMOVAL



DISTANCE FOR
DOOR REMOVAL



TYPE ①
LARGE COBRA HEAD LUMINAIRE

TYPE ②
SMALL COBRA HEAD LUMINAIRE

TYPE ③
SHOE BOX LUMINAIRE

TYPE ①, AND TYPE ② GENERAL DESCRIPTION

TO FURNISH A STREETLIGHT LUMINAIRE IN ACCORDANCE WITH THE REQUIREMENTS OF THIS SPECIFICATION AND DESIGNED FOR ROADWAY LIGHTING. THE BALLAST FOR TYPE ① SHALL BE A BUILT IN MULTIPLE BALLAST FOR USE WITH A 150 WATT 55 VOLT, 200 WATT 100 VOLT, 250 WATT 100 VOLT, 310 WATT 100 VOLT, 400 WATT 100 VOLT HIGH PRESSURE SODIUM LAMP WITH GENERAL SHAPE AS SHOWN. THE BALLAST FOR TYPE ② SHALL BE A BUILT IN MULTIPLE BALLAST FOR USE WITH A 100 WATT 55 VOLT, 150 WATT 55 VOLT HIGH PRESSURE SODIUM LAMP WITH THE GENERAL SHAPE AS SHOWN.

THE HOUSING FOR TYPE ①, AND TYPE ② SHALL BE PRECISION ALUMINUM DIE CAST WITH AN ACRYLIC BASE ELECTROCOAT FINISH (SEE DATA TABLE FOR COLOR). THE HOUSING SHALL HAVE AN INTEGRAL SLIPFITTER FOR 1 1/4" TO 2" PIPE AND SHALL CONTAIN A PIPE STOP. CLAMPING AND LEVELING OF THE UNIT SHALL BE ACCESSIBLE FROM WITHIN AND WITHOUT THE UNIT. EACH HOUSING SHALL HAVE THE LAMP WATTAGE NUMBERS ADHERED TO THE BOTTOM OF THE LUMINAIRE SO THAT IT MAY BE SEEN PLAINLY FROM THE ROADWAY.

TYPE ③ GENERAL DESCRIPTION

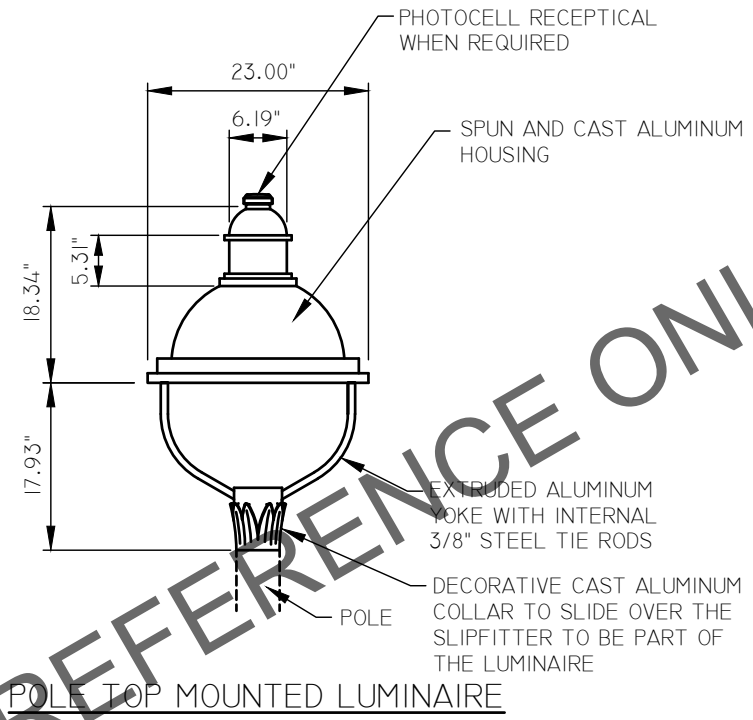
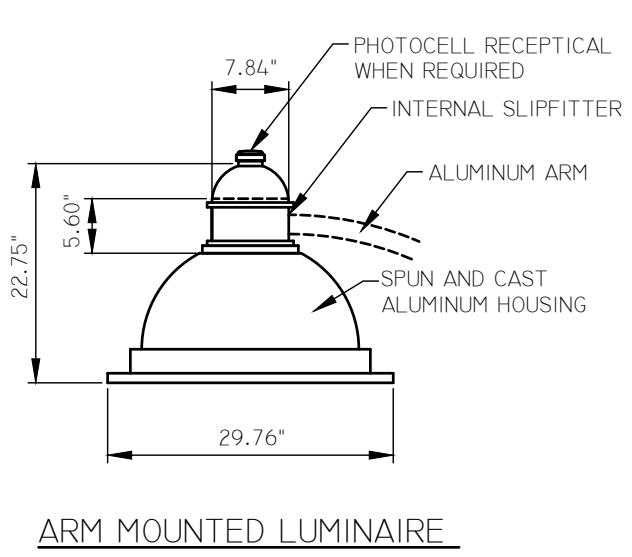
TO FURNISH A STREETLIGHT LUMINAIRE IN ACCORDANCE WITH THE REQUIREMENTS OF THIS SPECIFICATION AND DESIGNED FOR ROADWAY LIGHTING. THE BALLAST FOR TYPE ③ SHALL BE A BUILT IN MULTIPLE BALLAST FOR USE WITH A 100 WATT 55 VOLT, 150 WATT 55 VOLT, 200 WATT 100 VOLT, 250 WATT 100 VOLT, 310 WATT 100 VOLT, 400 WATT 100 VOLT HIGH PRESSURE SODIUM LAMP WITH GENERAL SHAPE AS SHOWN.

THE HOUSING FOR TYPE ③ SHALL BE PRECISION ALUMINUM DIE CAST WITH A POWDER COAT FINISH (SEE DATA TABLE FOR COLOR). ATTACHMENT AND LEVELING OF THE UNIT SHALL BE ACCOMPLISHED BY FOUR SET SCREWS WHICH SHALL BE ACCESSIBLE OUTSIDE OF THE UNIT, ON THE EXTERNAL SLIPFITTER. EACH HOUSING SHALL HAVE THE LAMP WATTAGE NUMBERS ADHERED TO THE BOTTOM OF THE LUMINAIRE SO THAT IT MAY BE SEEN PLAINLY FROM THE ROADWAY.

REFERENCE ONLY

REQUIREMENTS

- A. HOUSING
1. THE HOUSING SHALL BE ONE PIECE EXTRUDED ALUMINUM WITH THE CANOPY BEING SPUN ALUMINUM.
 2. THE HOUSING SHALL BE DESIGNED FOR 90 DEGREE LIGHT CUTOFF.
 3. THE HOUSING SHALL BE OF ONE DOOR WITH ACCESS TO BOTH THE OPTICAL AND ELECTRIC SYSTEMS. THE SYSTEMS SHALL BE HINGED AND REMOVABLE FOR EASE OF SERVICING.
 4. THE HOUSING SHALL BE ABLE TO WITHSTAND 1000 HOUR SALT SPRAY TEST ASTM I17.
 5. NO REARRANGEMENT OF PARTS OR SEPARATE PARTS SHALL BE REQUIRED WHEN MOUNTING THE UNIT.
 6. ATTACHMENT AND LEVELING OF THE UNIT SHALL BE ACCOMPLISHED BY THE SLIPFITTER.
- B. ARM MOUNTED LUMINAIRE
1. THE HOUSING SHALL HAVE AN INTEGRAL SLIPFITTER FOR 2" PIPE AND SHALL CONTAIN A PIPE STOP. CLAMPING AND LEVELING OF THE UNIT SHALL BE ACCESSIBLE FROM WITHIN THE UNIT.
- C. FINISH
1. A PRIMER COAT OF TNEMEC SERIES 66 HI BUILD EPOXOLINE OR APPROVED EQUAL SHALL BE APPLIED TO A THICKNESS OF 3 DRY MILS.
 2. THE FINISH COATING SHALL BE TNEMEC SERIES 73 ENDURA SHIELD III OR APPROVED EQUAL, APPLIED TO A MINIMUM THICKNESS OF 3 DRY MILLS.
 3. THE FINISH COLOR SHALL BE HUNTER GREEN, TNEMEC COLOR NUMBER PL20.
 4. THE FINAL COATING SHALL BE TNEMEC SERIES 76 ENDURA CLEAR OR APPROVED EQUAL, APPLIED TO A MINIMUM THICKNESS OF 1.5 DRY MILLS.
- D. LAMP SOCKET
1. THE 400 MH LAMP SOCKET SHALL BE MOGUL MULTIPLE PORCELAIN ENCLOSED. THE RATING OF THE SOCKET SHALL EXCEED THE LAMP STARTING VOLTAGE.
 2. THE 70 WATT MH LAMP SOCKET SHALL BE MEDIUM MULTIPLE PORCELAIN ENCLOSED. THE RATING OF THE SOCKET SHALL EXCEED THE LAMP STARTING VOLTAGE.
 3. THE SCREW SHELL OF THE SOCKET SHALL CONTAIN INTEGRAL LAMP GRIPS TO ASSURE ELECTRICAL CONTACT UNDER CONDITIONS OF NORMAL VIBRATION.
 4. THE SOCKET SHALL CONFORM WITH TDJ-147 SPECIFICATION OF EEI STANDARDS.
 5. THE SOCKET SHALL BE IN A HORIZONTAL POSITION.
- E. DOOR GLASS
1. THE DOOR GLASS SHALL BE HEAT AND IMPACT RESISTANT AND FREE FROM IMPERFECTIONS AND STRIATIONS.
- F. DOOR GLASS HOLDER-DOOR
1. THE DOOR GLASS HOLDER-DOOR SHALL BE SECURED TO THE HOUSING AT ONE END, AND HINGED TO THE HOUSING AT THE OPPOSITE END.
- G. REFLECTOR
1. THE REFLECTOR SHALL BE HYDROFORMED ALUMINUM AND HAVE A HIGHLY POLISHED ANODIC SURFACE.
 2. THE REFLECTOR SHALL BE RIGIDLY MOUNTED WITHIN THE HOUSING TO ASSURE A FIRM SURFACE FOR PROPER SEALING WHEN THE UNIT IS CLOSED.
 3. GASKETS BETWEEN THE REFLECTOR AND GLASSWARE SHALL EFFECTIVELY SEAL THE OPTICAL ASSEMBLY FROM CONTAMINANTS AND ALLOW FOR PROPER BREATHING OF THE ASSEMBLY THROUGH AN ACTIVATED CHARCOAL FILTER.
 4. THE REFLECTOR DESIGN SHALL BE SUCH THAT PROPER POSITIONING OF THE LAMP SOCKET WILL PRODUCE AN IES TYPE III DISTRIBUTION FOR THE ARM MOUNTED LUMINAIRE.
- H. TERMINAL BOARD
1. THE TERMINAL BOARD SHALL BE MOLDED OF FIBERGLASS REINFORCED POLYESTER WITH PROTECTIVE BARRIERS BETWEEN EACH TERMINAL.
 2. THE TERMINAL SCREWS SHALL BE OF THE CAPTIVE TYPE AND EACH SCREW SHALL BE EQUIPPED WITH WIRE GRIPS WHICH WILL AUTOMATICALLY BE RAISED AND LOWERED AS THE TERMINAL SCREW IS OPERATED.
 3. THE TERMINALS SHALL BE CAPABLE OF ACCEPTING UP TO #6 AWG CONDUCTOR.
 4. THE TERMINAL BOARD SHALL HAVE THREE TERMINALS, ONE OF THESE TERMINALS SHALL BE FOR THE SYSTEMS GROUND AND SHALL BE CONNECTED TO THE FIXTURE HOUSING.
 5. WHEN A PHOTOCCELL RECEPTACLE IS REQUIRED THREE ADDITIONAL TERMINALS SHALL BE PROVIDED FOR EXCLUSIVE PHOTOCCELL OPERATIONS.
 6. ALL UNITS ARE TO BE PREWIRED TO A SINGLE TERMINAL BOARD REQUIRING ONLY CUSTOMER CONNECTIONS TO CLEARLY IDENTIFIED TERMINALS.
- I. HARDWARE
1. ALL HARDWARE SHALL BE OF NON-CORROSIVE OR SUITABLY PROTECTED METAL. WHEN NECESSARY TO PREVENT ELECTROLYTIC ACTION BY CONTACT WITH ALUMINUM COMPONENTS SHALL BE SECURED TO THE LUMINAIRE FRAME WITH STAINLESS STEEL HARDWARE OF THE AISI 300 SERIES CHROME-NICKEL GRADE.
- J. BALLAST
1. THE BALLAST SHALL BE OF THE BUILT IN DESIGN MOUNTED WITHIN THE LUMINAIRE IN SUCH A MANNER THAT IT CAN EASILY BE DISCONNECTED BY SIMPLE DISCONNECTING PLUGS.
 2. THE BALLAST AND OTHER AUXILIARY EQUIPMENT SHALL BE MOUNTED IN A REMOVABLE PANEL.
 3. THE METAL HALIDE BALLAST SHALL BE OF THE TWO COIL, HIGH REACTANCE, HIGH POWER FACTOR TYPE DESIGN WITH AN IGNITOR FOR A 70 WATT PULSE START METAL HALIDE LAMP (ANSI CODE M-98). THE BALLAST SHALL BE EQUAL TO ADVANCE #71A5292 RATED 120/208/240/277 INPUT VOLTAGE.
 4. THE METAL HALIDE BALLAST SHALL BE OF THE CONSTANT WATTAGE AUTOTRANSFORMER TYPE DESIGN FOR A 400 WATT METAL HALIDE LAMP (ANSI CODE M-59 OR H-33). THE BALLAST SHALL BE EQUAL TO ADVANCE #71A6091 RATED FOR 120/240/ INPUT VOLTAGE.
 5. THE BALLAST CORE LAMINATION SHALL BE OF HIGH QUALITY ELECTRICAL GRADE STEEL WELDED TOGETHER TO MINIMIZE NOISE AND ASSURE TROUBLE FREE OPERATION OVER THE LIFE OF THE LUMINAIRE.
 6. THE BALLAST COILS SHALL BE PRECISION WOUND ON FORMED INSULATING BOBBINS AND TERMINALS SHALL BE OF THE PUSH ON TYPE CONNECTIONS.
 7. THE BALLAST SHALL BE CAPABLE OF STARTING AND OPERATING A 400 WATT METAL HALIDE LAMP FROM A NOMINAL 240 VOLT 60HZ POWER SOURCE WITHIN THE LIMITS SPECIFIED BY THE LAMP MANUFACTURER. THE BALLAST MUST PROTECT ITSELF AGAINST NORMAL LAMP FAILURE MODES. THE BALLAST SHALL BE CAPABLE OF OPERATION WITH LAMP IN AN OPEN OR SHORT CIRCUIT CONDITION FOR SIX MONTHS WITHOUT SIGNIFICANT LOSS OF BALLAST LIFE.
- K. LAMP
1. THE 400 WATT METAL HALIDE LAMP SHALL BE EQUAL TO VENTURE #18520, MH400/U, 400 WATT, CLEAR, MOGUL BASE, ED-37, 4000°K, RATED FOR UNIVERSAL OPERATION, 36,000 INITIAL LUMENS, 28,800 MEAN LUMENS.
 2. THE PULSE START METAL HALIDE LAMP SHALL BE EQUAL TO VENTURE #12180 MH70/C/U, 70 WATT, COATED, MEDIUM BASE, ED-17, 3700K, RATED FOR HORIZONTAL OPERATION.

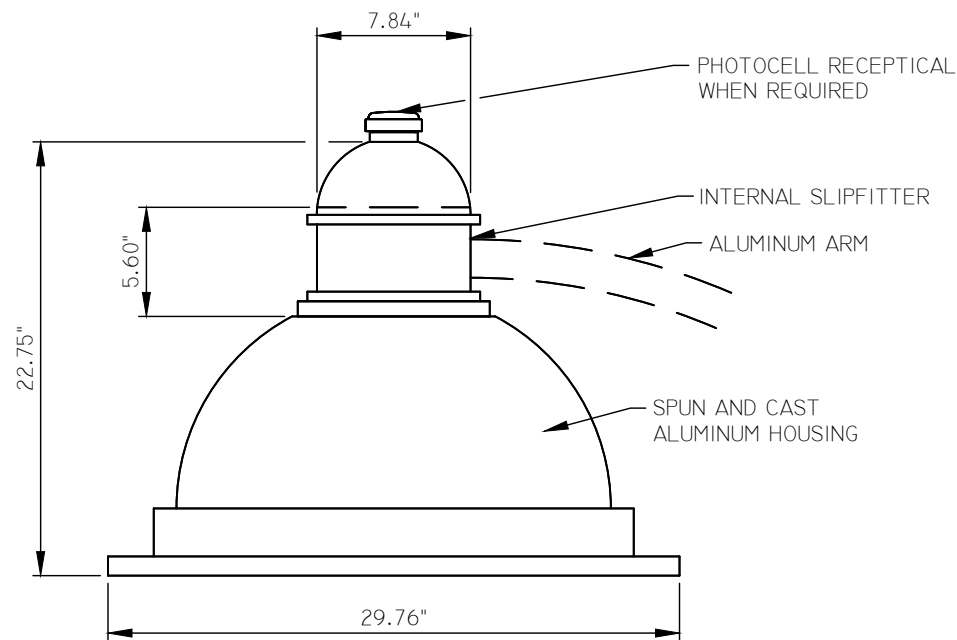


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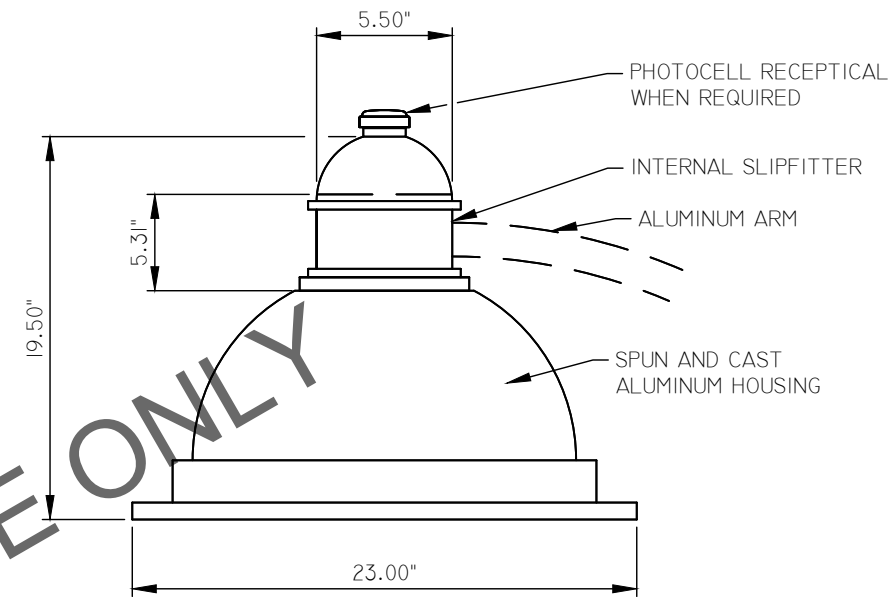
DATA TABLE						
LUMIN. #	LAMP WATTAGE	LAMP TYPE	LAMP VOLTAGE	LINE VOLTAGE	I.E.S. DIST. TYPE	P.C. RECPT.
ARM MOUNTED LUMINAIRE						
L-201	100	H.P.S.	55	120x240V.	1 1 1	YES
L-202	100	H.P.S.	55	120x240V.	1 1 1	NO
L-203	150	H.P.S.	55	120x240V.	1 1 1	YES
L-204	150	H.P.S.	55	120x240V.	1 1 1	NO
L-205	200	H.P.S.	100	120x240V.	1 1 1	YES
L-206	200	H.P.S.	100	120x240V.	1 1 1	NO
L-207	250	H.P.S.	100	120x240V.	1 1 1	YES
L-208	250	H.P.S.	100	120x240V.	1 1 1	NO
L-209	310	H.P.S.	100	120x240V.	1 1 1	YES
L-210	310	H.P.S.	100	120x240V.	1 1 1	NO
L-211	400	H.P.S.	100	120x240V.	1 1 1	YES
L-212	400	H.P.S.	100	120x240V.	1 1 1	NO
POLE TOP LUMINAIRE						
L-213	100	H.P.S.	100	120x240V.	V	YES
L-214	100	H.P.S.	100	120x240V.	V	NO

GENERAL DESCRIPTION

TO FURNISH A STREETLIGHT LUMINAIRE IN ACCORDANCE WITH THE REQUIREMENTS OF THIS SPECIFICATION AND DESIGNED FOR ROADWAY LIGHTING WITH GENERAL SHAPE AS SHOWN.



L-215 & L-216 ARM MOUNTED LUMINAIRE



L-217 & L-218 ARM MOUNTED LUMINAIRE

NOTE

TO FURNISH A STREETLIGHT LUMINAIRE IN ACCORDANCE WITH THE REQUIREMENTS OF THIS SPECIFICATION AND DESIGNED FOR ROADWAY LIGHTING WITH GENERAL SHAPE AS SHOWN.

NOTE

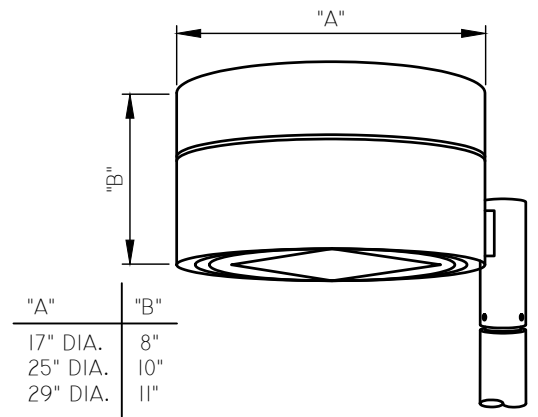
TO FURNISH A PEDESTRIAN LUMINAIRE IN ACCORDANCE WITH THE REQUIREMENTS OF THIS SPECIFICATION AND DESIGNED FOR WALKWAY LIGHTING WITH GENERAL SHAPE AS SHOWN.

DATA TABLE						
LUMIN. #	LAMP WATTAGE	LAMP TYPE	LAMP VOLTAGE	LINE VOLTAGE	I.E.S. DIST. TYPE	P.C. RECPT.
ARM MOUNTED LUMINAIRE						
L-215	400	MH	.	120x240V.	III	YES
L-216	400	MH	.	120x240V.	III	NO

DATA TABLE						
LUMIN. #	LAMP WATTAGE	LAMP TYPE	LAMP VOLTAGE	LINE VOLTAGE	I.E.S. DIST. TYPE	P.C. RECPT.
ARM MOUNTED LUMINAIRE						
L-217	70	MH	.	120, 240 240, 277	V	YES
L-218	70	MH	.	120, 208 240, 277	V	NO

NOT TO SCALE

REFERENCE ONLY

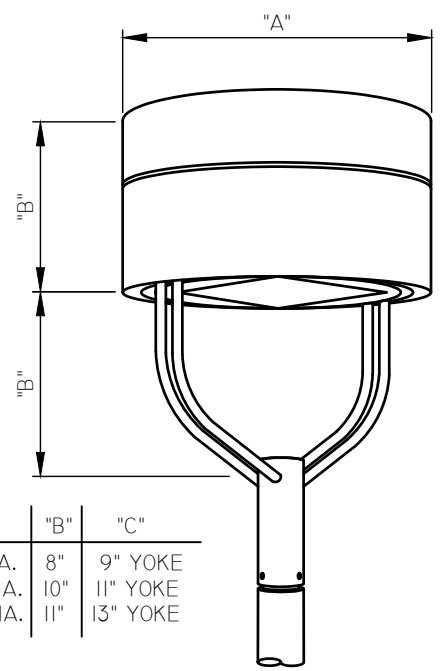


"A"	"B"
17" DIA.	8"
25" DIA.	10"
29" DIA.	11"

ARM MOUNTED LUMINAIRE

GENERAL DESCRIPTION

TO FURNISH A PARK LUMINAIRE IN ACCORDANCE WITH THE REQUIREMENTS OF THIS SPECIFICATION AND DESIGNED FOR PARK LIGHTING WITH GENERAL SHAPE AS SHOWN.



"A"	"B"	"C"
17" DIA.	8"	9" YOKE
25" DIA.	10"	11" YOKE
29" DIA.	11"	13" YOKE

YOKE MOUNTED LUMINAIRE

DATA TABLE					
LUMINAIRE NUMBER CODE					
LA = ARM MOUNTED LUMINAIRE	17 = 17" DIA.	07 = 70 WATT	.2 = TYPE II DIST	S = HIGH PRESSURE SODIUM	
LY = YOKE MOUNTED LUMINAIRE	25 = 25" DIA.	10 = 100 WATT	.3 = TYPE III DIST	M = METAL HALIDE	
	29 = 29" DIA.	15 = 150 WATT	.4 = TYPE VI DIST		
		25 = 250 WATT	.5 = TYPE V DIST		
		40 = 400 WATT			
		100 = 1000 WATT			
LUMINAIRE NUMBER EXAMPLE					
LA	-	17		07	.2 S
AVAILABLE LUMINAIRES					
LA-1707.2S	LY-1707.2S	LA-2515.2S	LY-2515.2S	LA-29100.3S	LY-29100.3S
LA-1707.2M	LY-1707.2M	LA-2515.2M	LY-2515.2M	LA-29100.3M	LY-29100.3M
LA-1707.3S	LY-1707.3S	LA-2515.3S	LY-2515.3S	LA-29100.5S	LY-29100.5S
LA-1707.3M	LY-1707.3M	LA-2515.3M	LY-2515.3M	LA-29100.5M	LY-29100.5M
LA-1707.4S	LY-1707.4S	LA-2515.4S	LY-2515.4S		
LA-1707.4M	LY-1707.4M	LA-2515.4M	LY-2515.4M		
LA-1707.5S	LY-1707.5S	LA-2515.5S	LY-2515.5S		
LA-1707.5M	LY-1707.5M	LA-2515.5M	LY-2515.5M		
LA-1710.2S	LY-1710.2S	LA-2525.2S	LY-2525.2S		
LA-1710.2M	LY-1710.2M	LA-2525.2M	LY-2525.2M		
LA-1710.3S	LY-1710.3S	LA-2525.3S	LY-2525.3S		
LA-1710.3M	LY-1710.3M	LA-2525.3M	LY-2525.3M		
LA-1710.4S	LY-1710.4S	LA-2525.4S	LY-2525.4S		
LA-1710.4M	LY-1710.4M	LA-2525.4M	LY-2525.4M		
LA-1710.5S	LY-1710.5S	LA-2525.5S	LY-2525.5S		
LA-1710.5M	LY-1710.5M	LA-2525.5M	LY-2525.5M		
LA-1715.2S	LY-1715.2S	LA-2540.2S	LY-2540.2S		
LA-1715.2M	LY-1715.2M	LA-2540.2M	LY-2540.2M		
LA-1715.3S	LY-1715.3S	LA-2540.3S	LY-2540.3S		
LA-1715.3M	LY-1715.3M	LA-2540.3M	LY-2540.3M		
LA-1715.4S	LY-1715.4S	LA-2540.4S	LY-2540.4S		
LA-1715.4M	LY-1715.4M	LA-2540.4M	LY-2540.4M		
LA-1715.5S	LY-1715.5S	LA-2540.5S	LY-2540.5S		
LA-1715.5M	LY-1715.5M	LA-2540.5M	LY-2540.5M		

REFERENCE ONLY

COLOR TABLE	
COLOR	COLOR NUMBER
MONTE CARLO	= PLI6
ECHO GREEN	= GI280
BLACK	= IN06
VAPOR GRAY	= GR02
NATURAL ALUM	= NONE

APPROVED MANUFACTURERS: KIM CC SERIES, GARDCO HARDTOP CW, STERNER ELEMENTS HUMBOLDT.

A. HOUSING

1. THE HOUSING SHALL BE ONE PIECE SPUN AND/OR FORMED EXTRUDED ALUMINUM WITH A ROLLED-FORMED FLANGE.
2. DECORATIVE RIBS OR REVEAL MAY BE ROLLED AND/OR FORMED INTO THE SIDEWALLS.
3. SIDEWALLS SHALL BE FREE WELDS OR FASTENERS.
4. INTERNAL ALUMINUM CASTING PROVIDES REINFORCEMENT AND MOUNTING SUPPORT FOR COMPONENTS AND SIDE ARM.
5. THE HOUSING SHALL BE DESIGNED FOR 90-DEGREE CUTOFF.
6. THE HOUSING SHALL BE OF ONE DOOR WITH ACCESS TO BOTH THE OPTICAL AND ELECTRIC SYSTEMS. THE SYSTEMS SHALL BE HINGED AND REMOVABLE FOR EASE OF SERVICING.
7. THE HOUSING SHALL BE ABLE TO WITHSTAND 1000-HOUR SALT SPRAY TEST PER ASTM II7.
8. THE HOUSING SHALL BE ABLE TO BE LEVELED EASILY WITH LITTLE EFFORT.

B. ARM MOUNTED LUMINAIRE

1. EXTRUDED ALUMINUM ARM (RECTANGULAR) WITH INTERNAL CHANNELS/BOLT GUIDES.
2. TWO INTERNAL BOLTS AND OR THREADED GALVANIZED STEEL TIE RODS COMPLETE WITH LOCK NUTS.
3. REINFORCING PLATE WITH WIRE STRAIN RELIEF.
4. ARM TO BE CIRCULAR CUT TO MATE WITH ROUND SLIPFITTER AND LUMINAIRE.
5. CAST ALUMINUM SLIPFITTER (ROUND) SHALL FIT A POLE WITH A TOP TENON 2-3/8" O.D. x 4-1/2".
6. ATTACHMENT OF THE SLIPFITTER SHALL BE ACCOMPLISHED BY FOUR 3/8" STAINLESS STEEL ALLEN SCREWS.

C. YOKE MOUNTED LUMINAIRE

1. A CAST ALUMINUM SLIPFITTER (ROUND) SHALL SUPPORT THE HOUSING WITH TUBULAR PARALLEL YOKES AT FOUR POINTS.
2. CAST ALUMINUM SLIPFITTER (ROUND) SHALL FIT A POLE WITH A TOP TENON 2-3/8" O.D. x 4-1/2".
3. ATTACHMENT AND LEVELING OF THE SLIPFITTER SHALL BE ACCOMPLISHED BY FOUR 3/8" STAINLESS STEEL ALLEN SCREWS.
4. CAST ALUMINUM SLIPFITTER SHALL PROVIDE A SPLICE COMPARTMENT.

D. FINISH

1. A PRIMER COAT OF TNEMEC SERIES 66 HI BUILD EPOXOLINE OR APPROVED EQUAL SHALL BE APPLIED TO A DRY THICKNESS OF 3 MILS.
2. THE FINISH COATING SHALL BE TNEMEC SERIES 73 ENDURA SHIELD III OR APPROVED EQUAL, APPLIED TO A DRY THICKNESS OF 3 MILS.
3. THE FINISH COLOR CALLED OUT IN THE PLANS AND/OR SPECIFICATIONS SHALL BE TNEMEC COLOR NUMBER (SEE COLOR TABLE).
4. THE FINAL COATING SHALL BE TNEMEC SERIES 76 ENDURA CLEAR OR APPROVED EQUAL, APPLIED TO A MINIMUM DRY THICKNESS OF 1.5 MILS.

E. LAMP SOCKET

1. THE LAMP SOCKET SHALL BE MOGUL MULTIPLE PORCELAIN ENCLOSED. THE RATING OF THE SOCKET SHALL EXCEED THE LAMP STARTING VOLTAGE.
2. THE SCREW SHELL OF THE SOCKET SHALL CONTAIN INTEGRAL LAMP GRIPS TO ASSURE ELECTRICAL CONTACT UNDER CONDITIONS OF NORMAL VIBRATION.
3. THE SOCKET SHALL CONFORM TO TDJ-147 SPECIFICATION SECTION OF EEL STANDARDS.

4. THE SOCKET SHALL BE IN A HORIZONTAL POSITION.

F. LENS FRAME

1. THE LENS FRAME SHALL BE ONE PIECE DIE CAST ALUMINUM AND/OR PRECISION MOLDED, HIGH IMPACT COMPOSITE THERMOPLASTIC LENS FRAME.
2. THE LENS FRAME SHALL BE SECURED TO THE HOUSING AT ONE END, AND HINGED TO THE HOUSING AT THE OPPOSITE END.
3. THE HINGE SHALL BE ZINC PLATED COLD ROLLED STEEL WITH STAINLESS STEEL PIN OR A CONCEALED STAINLESS STEEL HINGE.
4. CLOSURE OF LENS FRAME SEALS REFLECTOR, SEAL SHALL BE VULCANIZED SILICONE GASKET OR HOLLOW EXTRUDED SILICONE RUBBER GASKET OR E.P.D.M. GASKET MATERIAL.

G. LENS FRAME GLASS

1. THE LENS FRAME GLASS SHALL HAVE A MINIMUM THICKNESS OF 3/16" THICK CLEAR FLAT TEMPERED GLASS FREE FROM IMPERFECTIONS AND STRIATIONS.
2. THE LENS FRAME GLASS SHALL BE REMOVABLE FOR EASE OF REPLACEMENT.
3. THE LENS FRAME GLASS SHALL BE FULLY GASKETED BY A VULCANIZED SILICONE GASKET.

H. REFLECTOR

1. THE REFLECTOR SHALL BE MADE FROM A ONE PIECE OF SHEET ALUMINUM TO FORM A HOMOGENEOUS HYDRO-FORMED SHELL.
2. THE REFLECTOR SHALL BE CHEMICALLY BRIGHTENED AND ANODIZED TO A SEMI-SPECULAR FINISH AND/OR SPECULAR SEGMENTS MOUNTED TO CREATE A REFLECTIVE SURFACE.
3. THE REFLECTOR DESIGN SHALL PRODUCE A TYPE I, II, III AND V DISTRIBUTION PATTERN (ADJUSTABLE) WITH PROPER POSITIONING OF THE LAMP SOCKET.
4. THE REFLECTOR SHALL BE FIELD ROTATABLE IN 90-DEGREE INCREMENTS.
5. THE REFLECTOR SYSTEM SHALL BE SEALED TO PREVENT CONTAMINATION. THE OPTICAL SYSTEM SHALL BE SEALED WITH NO VENTING OF THE OPTIC SYSTEM.
6. THE REFLECTOR SHALL BE RIGIDLY MOUNTED WITHIN THE HOUSING TO ASSURE A FIRM SURFACE FOR PROPER SEALING WHEN UNIT IS CLOSED.
7. THE REFLECTOR SHALL BE CAPABLE OF BEING REMOVED FOR CLEANING AND ACCESS TO BALLAST AND MOUNTING HARDWARE. REMOVAL SHALL BE DONE QUICKLY WITH QUICK RELEASE/ NON -TOOL FASTENERS. WIRE SHALL UTILIZE A QUICK-DISCONNECT PLUG.

I. TERMINAL BOARD

1. THE TERMINAL BOARD SHALL BE MOLDED OF FIBERGLASS REINFORCED POLYESTER WITH PROTECTIVE BARRIERS BETWEEN EACH TERMINAL.
2. THE TERMINAL SCREWS SHALL BE OF THE CAPTIVE TYPE AND EACH SCREW SHALL BE EQUIPPED WITH WIRE GRIPS WHICH WILL AUTOMATICALLY BE RAISED AND LOWERED AS THE TERMINAL SCREW IS OPERATED.
3. THE TERMINALS SHALL BE CAPABLE OF ACCEPTING UP TO #6 AWG CONDUCTOR.
4. THE TERMINAL BOARD SHALL HAVE THREE TERMINALS. ONE OF THESE TERMINALS SHALL BE FOR THE SYSTEMS GROUND AND SHALL BE CONNECTED TO THE FIXTURE HOUSING.

5. ALL UNITS ARE TO BE PRE-WIRED TO A SINGLE TERMINAL BOARD REQUIRING ONLY CUSTOMER CONNECTIONS TO CLEARLY IDENTIFIED TERMINALS.

J. HARDWARE

1. ALL HARDWARE SHALL BE OF NON-CORROSIVE OR SUITABLY PROTECTED METAL. WHEN NECESSARY TO PREVENT ELECTROLYTIC ACTION BY CONTACT WITH ALUMINUM, COMPONENTS SHALL BE SECURED TO THE LUMINAIRE FRAME WITH STAINLESS STEEL HARDWARE OF THE ANSI 300 SERIES CHROME-NICKLE GRADE.

K. BALLAST

1. THE BALLAST SHALL BE OF THE BUILT-IN DESIGN MOUNTED WITHIN THE LUMINAIRE IN SUCH A MANNER THAT SIMPLE DISCONNECTING PLUGS CAN EASILY DISCONNECT IT.
2. THE BALLAST AND OTHER AUXILIARY EQUIPMENT SHALL BE MOUNTED IN A REMOVABLE PANEL OR TRAY.
3. THE BALLAST CORE LAMINATION SHALL BE OF HIGHEST QUALITY ELECTRICAL GRADE STEEL WELDED TOGETHER TO MINIMIZE NOISE AND ASSURE TROUBLE FREE OPERATION OVER THE LIFE OF THE LUMINAIRE.
4. THE BALLAST COILS SHALL BE PRECISION WOUND ON FORMED INSULATING BOBBINS AND TERMINALS SHALL BE OF THE PUSH ON TYPE.
5. THE HIGH PRESSURE SODIUM BALLAST SHALL BE OF THE THREE COIL ISOLATED LAG TYPE REGULATOR RATED FOR 120/208/240/277 INPUT VOLTAGE.
6. THE HIGH PRESSURE SODIUM BALLAST SHALL BE CAPABLE OF STARTING AND OPERATING A HIGH PRESSURE SODIUM LAMP (WATTAGE AS SPECIFIED IN DATA TABLE) FROM THE MULT-VOLTAGE (120/208/240/277) BALLAST AT 60 HZ. POWER SOURCE WITHIN THE LIMITS SPECIFIED BY THE LAMP MANUFACTURER. THE BALLAST INCLUDING THE STARTING AID MUST PROTECT ITSELF AGAINST NORMAL LAMP FAILURE MODES. THE BALLAST SHALL BE CAPABLE OF OPERATION WITH LAMP IN AN OPEN OR SHORT CIRCUIT CONDITION FOR SIX MONTHS WITHOUT SIGNIFICANT LOSS OF BALLAST LIFE.
7. THE COMPONENT TO PROVIDE THE HIGH STARTING VOLTAGE REQUIRED BY THE HIGH PRESSURE SODIUM LAMP SHALL BE MOUNTED ON A NON ENCAPSULATED PLUG-IN MODULE WHICH SHALL BE EASILY ACCESSIBLE WITHOUT DISTURBING OTHER COMPONENTS OF THE BALLAST ASSEMBLY.
8. THE METAL HALIDE BALLAST SHALL BE OF THE CONSTANT WATTAGE AUTOTRANSFORMER TYPE DESIGNED FOR A (SEE DATA TABLE) WATT METAL HALIDE LAMP (PER ANSI CODE). THE BALLAST SHALL BE RATED FOR 120/208/240/277 IN PUT VOLTAGE.
9. THE METAL HALIDE BALLAST SHALL BE CAPABLE OF STARTING AND OPERATING A METAL HALIDE LAMP (WATTAGE AS SPECIFIED IN DATA TABLE) FROM THE MULTI-VOLTAGE (120/208/240/277) BALLAST AT 60HZ POWER SOURCE WITH IN THE LIMITS SPECIFIED BY THE LAMP MANUFACTURER. THE BALLAST MUST PROTECT ITSELF AGAINST NORMAL LAMP FAILURE MODES. THE BALLAST SHALL BE CAPABLE OF OPERATION WITH LAMP IN AN OPEN OR SHORT CIRCUIT CONDITION FOR SIX MONTHS WITHOUT SIGNIFICANT LOSS OF BALLAST LIFE.

LAMP SPECIFICATION

GENERAL

THE LAMP SHALL BE A HIGH PRESSURE SODIUM TYPE FOR OPERATION ON AN HPS BALLAST MEETING ANSI SPECIFICATIONS. THE POLYCRYSTALLINE CERAMIC ARC TUBE SHALL HAVE POLYCRYSTALLINE CERAMIC END PLUGS AT BOTH ENDS SUCH THAT END SEAL INTEGRITY CAN RECEIVE 100% INSPECTION UNDER MAGNIFICATION. THE ELECTRICAL CONNECTION AT EACH END OF THE ARC TUBE SHALL BE VIA A SINGLE WIRE THROUGH THE CERAMIC END PLUG.

LAMP SEASONING

EACH LAMP SUPPLIED SHALL BE PRETESTED AT ITS RATED WATTAGE BY THE MANUFACTURER BEFORE SHIPPING. AFTER TESTING THE OPERATING VOLTAGE OF THE LAMP SHALL BE AS SHOWN IN THE DATA TABLE. AFTER 100 HOURS OF SEASONING AT THE RATED WATTAGE THE AVERAGE INITIAL LUMENS OF THE LAMP SHALL BE AS SHOWN ON THE DATA TABLE, AND THE OPERATING VOLTAGE OF THE LAMP SHALL BE AS SHOWN ON THE DATA TABLE.

LAMP LIFE

AT 10 HOURS PER START THE LAMP LIFE SHALL BE SUCH THAT 85% OF INSTALLED LAMPS WILL CONTINUE TO OPERATE AFTER 16,000 HOURS OF USE AND 67% WILL CONTINUE TO OPERATE AFTER 24,000 HOURS OF USE.

WARRANTY

THE SUPPLIER AND MANUFACTURER OF THESE LAMPS SHALL PROVIDE SPECIFICATION SHEETS GIVING "PERFORMANCE DATA" AND "ELECTRICAL CHARACTERISTICS" AND SHALL WARRANT THAT THE LAMPS ARE FREE FROM DEFECTS IN MATERIAL, WORKMANSHIP AND TITLE AND COMPLY WITH THEIR WRITTEN SPECIFICATIONS AND THE PROVISIONS OF THIS SPECIFICATION.

THE SUPPLIER AND MANUFACTURER AGREE THAT IF ANY LAMP FAILS DURING THE FIRST 4,000 HOURS OF OPERATION IT WILL BE REPLACED AT NO CHARGE AND THAT ANY LAMPS THAT FAIL IN EXCESS OF THE CUMULATIVE PERCENTAGE FAILURE RATE SHOWN BELOW WILL BE REPLACED AT NO COST.

LAMP OPERATING HOURS	CUMULATIVE % FAILURES	REPLACEMENT PERCENTAGE
0 - 4,000	0%	100%
4,000 - 8,000	2%	100%

DATA TABLE

LAMP #	LAMP WATT	BALLAST ANSI SPEC.	BASE DESIGNATION	BULB SHAPE	BULB MATERIAL	BULB FINISH	MAX OVERALL LENGTH	LIGHT CENTER LENGTH	VOLTAGE AFTER TESTING & 100 HOURS SEASONING	AVG. INITIAL LUMENS AFTER 100 HOURS OF SEASONING
LP-100	70	S-62	MEDIUM BRASS	E-17 OR B-17	HEAT RESIS. GLASS	COATED	5 7/16"	3 7/16"	44 - 62	5,985
LP-101	100	S-54	MOGUL BRASS	E-23 1/2	HEAT RESIS. GLASS	CLEAR	7 3/4"	5"	45 - 62	9,500
LP-102	150	S-55	MOGUL BRASS	E-23 1/2	HEAT RESIS. GLASS	CLEAR	7 3/4"	5"	45 - 62	16,000
LP-103	200	S-66	MOGUL BRASS	E-18	HEAT RESIS. GLASS	CLEAR	9 3/4"	5 3/4"	90 - 115	22,000
LP-104	250	S-50	MOGUL BRASS	E-18	HEAT RESIS. GLASS	CLEAR	9 3/4"	5 3/4"	90 - 115	27,500
LP-105	310	S-67	MOGUL BRASS	E-18	HEAT RESIS. GLASS	CLEAR	9 3/4"	5 3/4"	90 - 115	37,000
LP-106	400	S-51	MOGUL BRASS	E-18	HEAT RESIS. GLASS	CLEAR	9 3/4"	5 3/4"	90 - 115	50,000
LP-107	750	S-III	MOGUL BRASS	BT-37	HEAT RESIS. GLASS	CLEAR	11 1/2"	7"	112 - 140	110,000
LP-108	1000	S-52	MOGUL BRASS	E-25	HEAT RESIS. GLASS	CLEAR	15 1/16"	8 3/4"	210 - 275	140,000
LP-109	150	S-55	MEDIUM BRASS	E-17 OR B-17	HEAT RESIS. GLASS	CLEAR	5 11/16"	3 11/16"	45 - 62	16,000

TIME DELAY PHOTO ELECTRIC CONTROL REQUIREMENTS

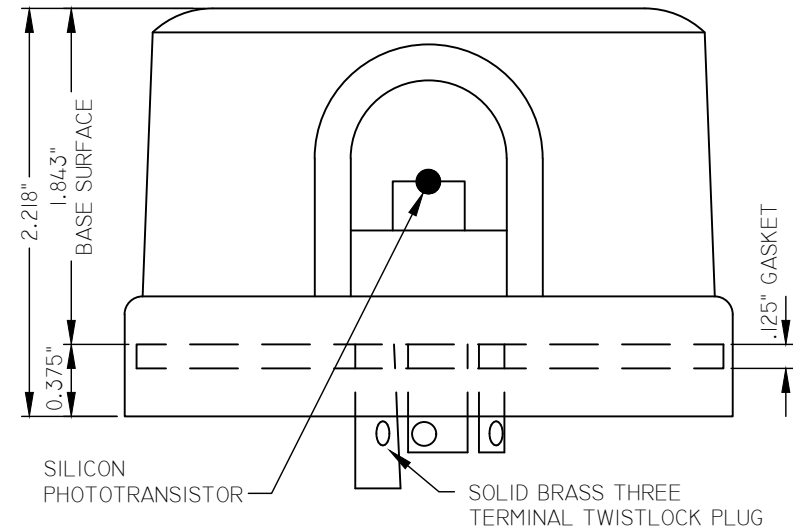
PC-101	PC-101 IS 105 - 135 VOLTS, 50/60HZ AC (120V NOMINAL)
PC-102	PC-102 IS 200 - 300 VOLTS, 50/60HZ AC

PHYSICAL

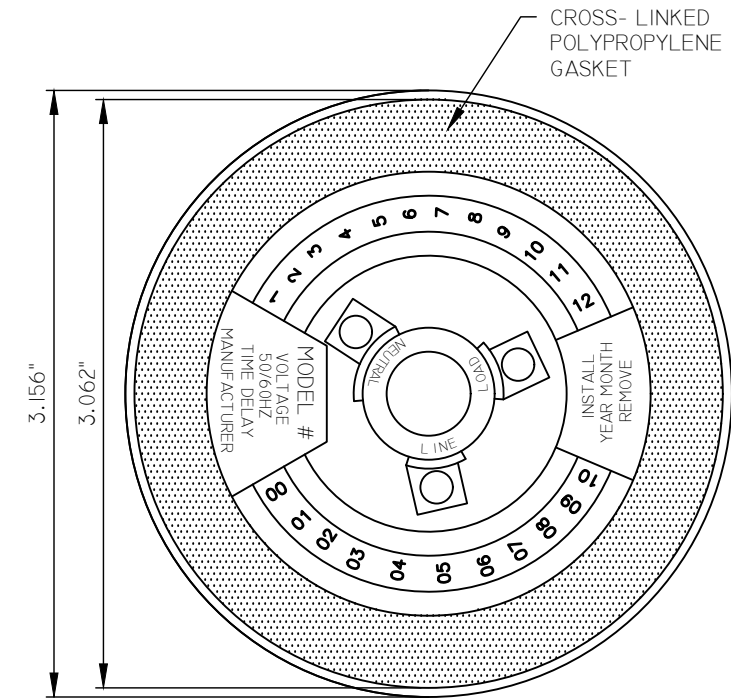
SIZE	SEE DRAWING
WEIGHT	APPROXIMATELY 7 OZ. GROSS
CHASSIS	MOLDED PHENOLIC WITH 3 POLE TWISTLOCK PLUG WITH CROSS LINKED POLYETHYLENE GASKET.
HOUSING	U.V. STABILIZED POLYPROPYLENE WITH ACRYLIC WINDOW WITH ULTRAVIOLET INHIBITOR.
COLOR CODE	PC-101 IS GRAY PC-102 IS MAROON

ELECTRICAL

SUPPLY VOLTAGE	PC-101 IS 105 - 135 VOLTS, 50/60HZ AC (120V NOMINAL) PC-102 IS 200 - 300 VOLTS, 50/60HZ AC
RATINGS LOAD	1000 WATTS / 1800VA MAX. SPST, N.C. (1000 WATTS TUNGSTEN) (1800VA MERCURY VAPOR, HIGH PRESSURE SODIUM)
INRUSH CURRENT	130 AMPERES AT 120 VOLTS 65 AMPERES AT 240 VOLTS
OPERATING LEVELS	TURN ON AVERAGE 1 FC \pm 0.25 FC TURN OFF BY 2.25 FC OFF TO ON RATIO: 1.5:1
CONTROL POWER	3.2 WATTS, MAXIMUM (2.75 AVERAGE) AT 240 VAC.
DIELECTRICAL STRENGTH	5 KV MINIMUM BETWEEN ANY CURRENT CARRYING PART AND METAL MOUNTING SURFACE.
SURGE SUPPRESSOR	380 JOULE MOV / 13000 AMPS
PHOTOCELL	SILICON PHOTOTRANSISTOR
TIME DELAY	OFF CYCLE ONLY, 3 TO 30 SECONDS
ENVIRONMENTAL	
AMBIENT TEMPERATURE RANGE	-65° FAHRENHEIT TO +158° FAHRENHEIT
MOISTURE RESISTANCE	100% RELATIVE HUMIDITY
WARRANTY	5 YEARS FROM DATE OF MANUFACTURING



NORTH SIDE VIEW



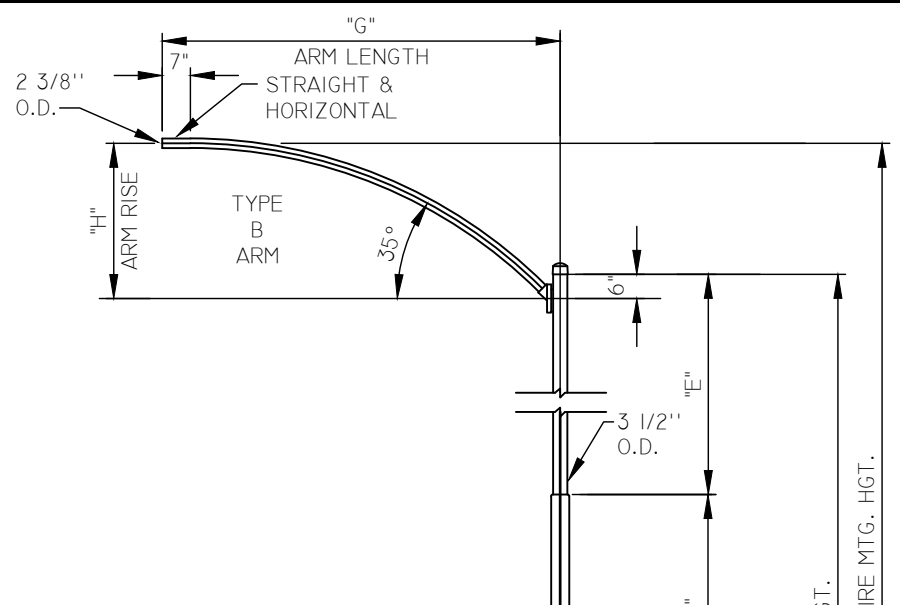
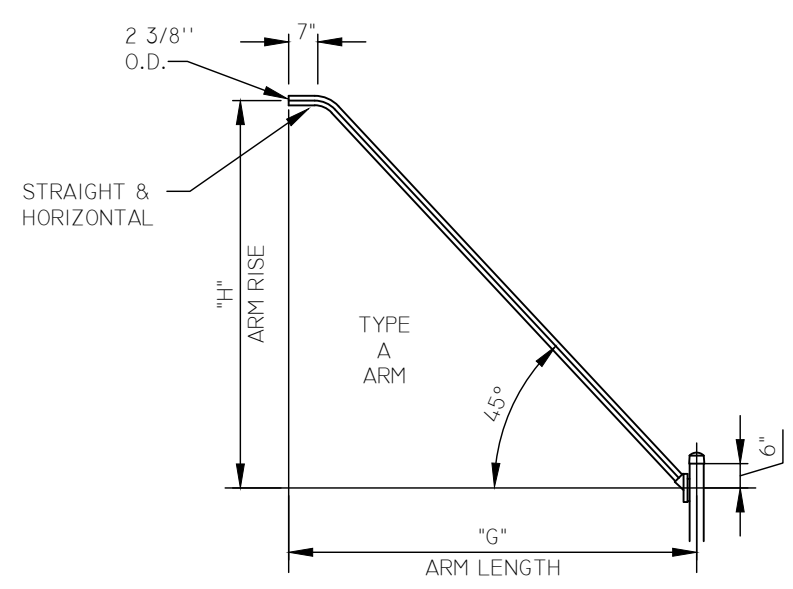
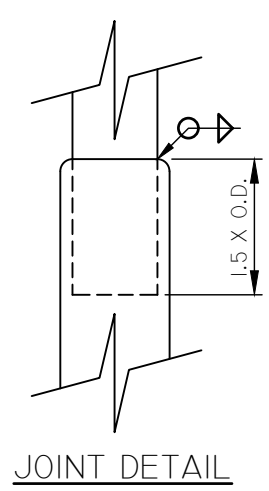
BOTTOM VIEW

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NOTES

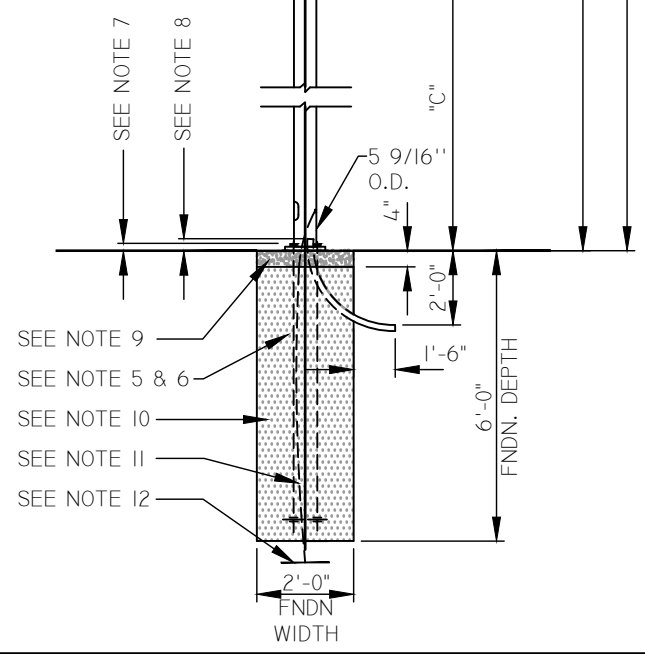
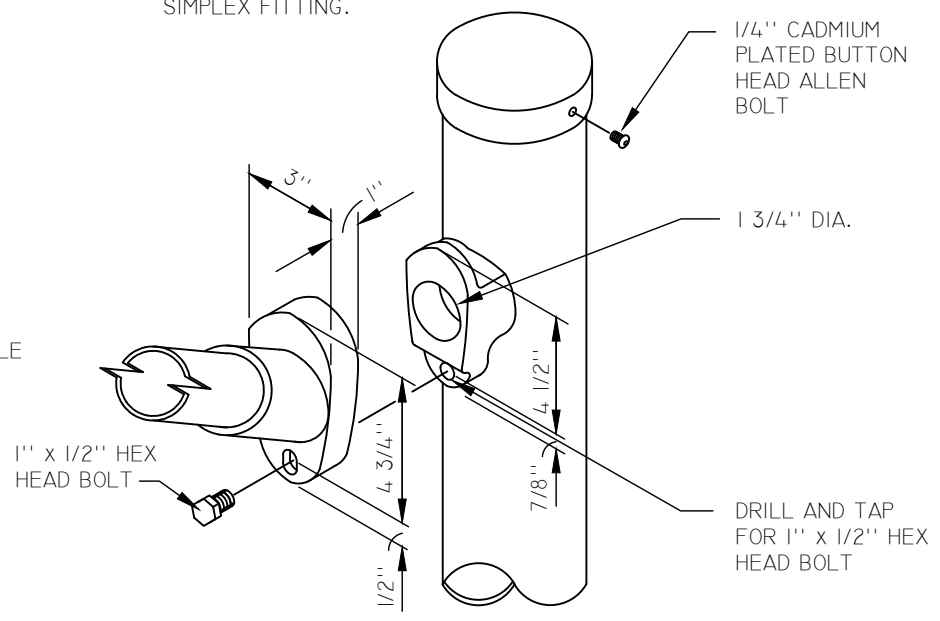
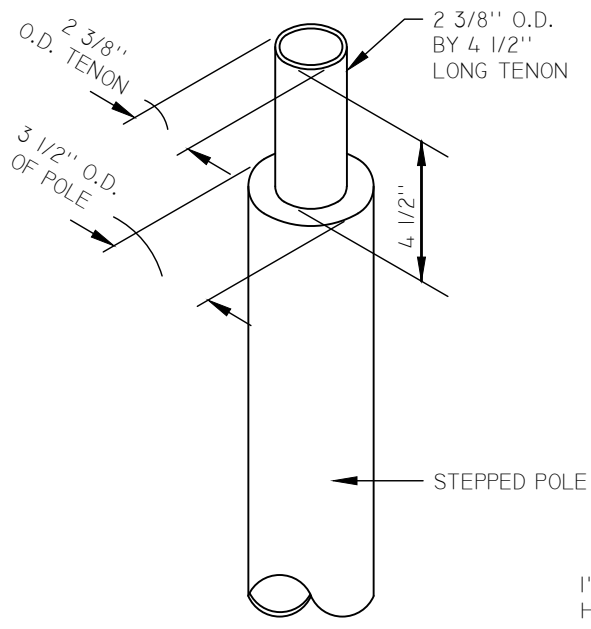
1. THE POLE DESIGN, MATERIALS, AND CONSTRUCTION SHALL CONFORM TO AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, BASED ON A WIND SPEED OF 80 MILES PER HOUR.
2. THE POLE AND ALL PARTS SHALL BE STEEL.
3. THE POLE AND ALL POLE PARTS SHALL BE HOT DIPPED GALVANIZED PER M.A.G. STANDARD 771.
4. UNSTABLE SOIL MAY REQUIRE DEEPER FOUNDATION, AS DETERMINED BY THE ENGINEER.
5. THE 1" ANCHOR BOLT SHALL HAVE A LENGTH DETERMINED BY THE DEPTH OF THE FOUNDATION, AND SHALL EXTEND TO 6"+OR- 1" ABOVE THE BOTTOM OF THE FOUNDATION SL-74.01.
6. ANCHOR BOLTS WITH (4) HEX NUTS, (2) FLAT WASHERS, AND (1) ANCHOR PLATE PER BOLT SHALL BE HOT DIPPED GALVANIZED PER SL-74.01.
7. ANCHOR BOLTS SHALL HAVE 1/4" TO 3/4" FULL THREAD ABOVE NUT SL-74.01.
8. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE FOUNDATION. MAXIMUM PROJECTION SHALL BE 4".
9. 2'-0" SQUARE, 4" THICK TROWELED FINISH SMOOTH CONCRETE CAP WITH 1/2" ROUND EDGE Poured SEPARATELY FROM FOUNDATION.
10. FOUNDATION SHALL BE CLASS A CONCRETE PER M.A.G. STANDARD 725.
11. FOUNDATION GROUND SHALL BE #6 XHHW GREEN INSULATED COPPER STRANDED GROUNDING WIRE.
12. FOUNDATION SHALL HAVE 14" COPPER GROUND PLATE PER COM DETAIL SL-74.02.
13. A STAINLESS STEEL TAG SHALL BE PERMANENTLY ATTACHED TO THE POLE ABOVE THE HAND HOLE STATING THE MANUFACTURER'S NAME, C.O.M. POLE #, AND DATE MANUFACTURED.

DATA TABLE								
POLE #	LUMINAIRE MTG. HGT.	POLE HGT.	5 9/16" O.D. PIPE	4 1/2" O.D. PIPE	3 1/2" O.D. PIPE	ARM TYPE	ARM LENGTH	ARM RISE
-	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"
P-101	33'-0"	25'-6"	10'-0"	7'-9"	7'-9"	A	8'-0"	8'-0"
P-102	35'-0"	27'-6"	10'-0"	8'-9"	8'-9"	A	8'-0"	8'-0"
P-103*	30'-0"	28'-6" DBL. ARMS	10'-0"	9'-3"	9'-3"	B	6'-0"	2'-0"
P-104*	30'-0"	28'-6"	10'-0"	9'-3"	9'-3"	B	6'-0"	2'-0"
P-105*	35'-0"	32'-6" DBL. ARMS	13'-4"	9'-7"	9'-7"	B	8'-0"	3'-0"
P-106*	35'-0"	32'-6"	13'-4"	9'-7"	9'-7"	B	8'-0"	3'-0"
P-III	40'-0"	32'-6"	13'-4"	9'-7"	9'-7"	A	8'-0"	8'-0"
POLE #	LUMINAIRE MTG. HGT.	POLE HGT.	5 9/16" O.D. PIPE	4 1/2" O.D. PIPE	3 1/2" O.D. PIPE	TENON		
-	"A"	"B"	"C"	"D"	"E"	-		
P-110*	35'-0"	35'-0"	13'-4"	12'-8"	9'-0"	2 3/8" x 4 1/2"		
*NOTE: P-110 IS A TENON POLE WHICH USES A POLE TOP LUMINAIRE. P-103 THRU P-106 SHALL BE USED FOR NEW DEVELOPMENT REQUIRING STEPPED POLES. FOUNDATION SL-74.03, F-104.								

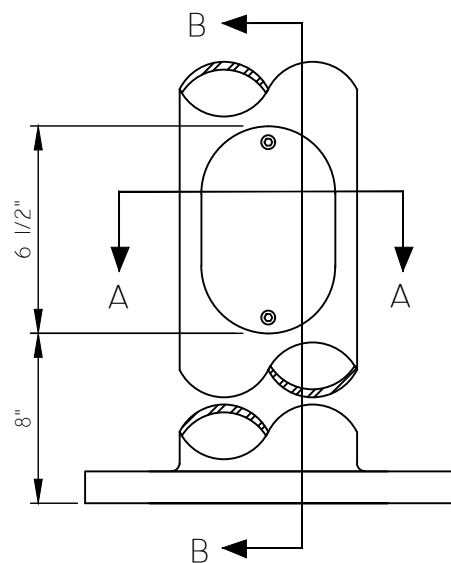


NOTE:
ALL ARMS SHALL HAVE A 5/8" HOLE (WITH RUBBER GROMMET) DRILLED IN THE BOTTOM SIDE OF THE ARM 3" FROM THE EDGE OF SIMPLEX FITTING.

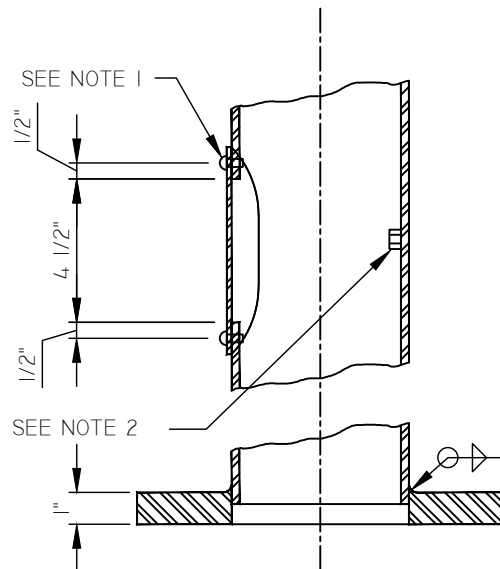
SEE SL-73.01.1 FOR REFERENCED NOTES



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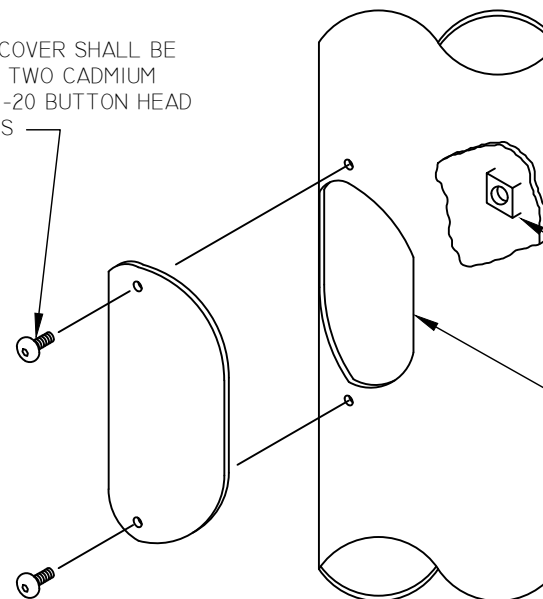


HAND HOLE DETAIL



SECTION B-B

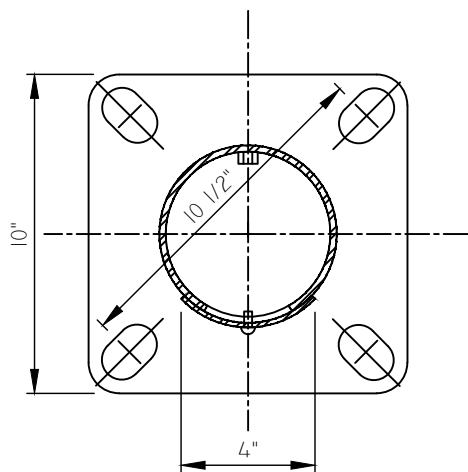
HAND HOLE COVER SHALL BE SECURED BY TWO CADMIUM PLATED 1/4"-20 BUTTON HEAD ALLEN BOLTS



POLE GROUND SHALL BE 1/2"-13 UHC NUT WELDED TO INSIDE OF POLE AS SHOWN

SEE BASE DETAIL FOR HAND HOLE SPECIFICATIONS

FLUSH HAND HOLE ASSEMBLY 4'' x 6 1/2''



SECTION A-A

BASE DETAIL

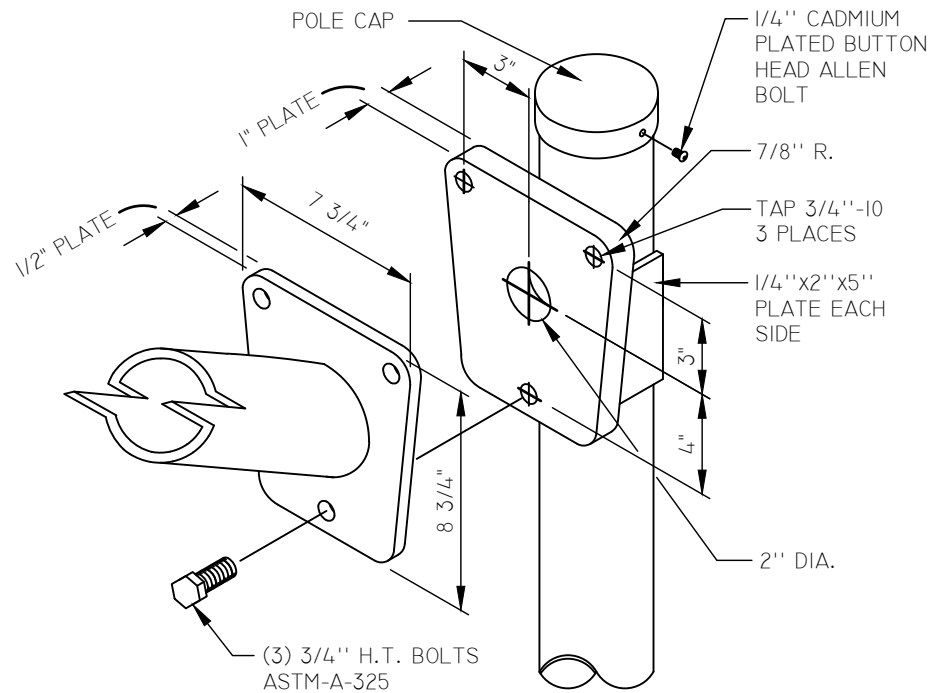
NOTES:

1. HAND HOLE COVER SHALL BE SECURED BY TWO CADMIUM PLATED 1/4"-20 BUTTON HEAD ALLEN BOLTS.
2. POLE GROUND SHALL BE 1/2"-13 UHC NUT WELDED TO INSIDE OF POLE AS SHOWN.
3. HAND HOLE SHALL BE ORIENTED SO THAT IT IS ALIGNED WITH THE MAST ARM.
4. HAND HOLE DIMENSIONS SHALL BE 2 3/4" BY 4 1/2".
5. HAND HOLE COVER DIMENSIONS SHALL BE 4" BY 6 1/2".
6. SLOT LENGTH OF BASE PLATE EQUALS ANCHOR BOLT DIA. PLUS 1/2" ON BOTH SIDES OF ANCHOR BOLT.

NOTES

1. THE POLE DESIGN, MATERIALS, AND CONSTRUCTION SHALL CONFORM TO AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES, AND TRAFFIC SIGNALS, BASED ON A WIND SPEED OF 80 MILES PER HOUR.
2. THE POLE AND ALL PARTS SHALL BE STEEL.
3. THE POLE AND ALL POLE PARTS SHALL BE HOT DIPPED GALVANIZED PER M.A.G. STANDARD 771.
4. UNSTABLE SOIL MAY REQUIRE DEEPER FOUNDATION, AS DETERMINED BY THE ENGINEER.
5. THE 1 1/4" ANCHOR BOLT SHALL HAVE A LENGTH DETERMINED BY THE DEPTH OF THE FOUNDATION, AND SHALL EXTEND TO 6" +OR- 1" FROM THE BOTTOM OF THE FOUNDATION. (P-207, P-208, P-209 AND P-210 REQUIRE 44" ANCHOR BOLTS) SL-74.01.
6. ANCHOR BOLTS WITH (4) HEX NUTS, (2) FLAT WASHERS, AND (1) ANCHOR PLATE PER BOLT SHALL BE HOT DIPPED GALVANIZED PER M.A.G. STANDARD 771 SL-74.01.
7. ANCHOR BOLTS SHALL HAVE 1/4" TO 3/4" FULL THREAD ABOVE NUT SL-74.01.
8. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE FOUNDATION. MAXIMUM PROJECTION SHALL BE 4".
9. 3'-0" SQUARE, 4" THICK TROWELED FINISH SMOOTH CONCRETE CAP WITH 1/2" ROUND EDGE. POURED SEPARATELY FROM FOUNDATION.
10. FOUNDATION SHALL BE CLASS A CONCRETE PER M.A.G. STANDARD 725.
11. FOUNDATION GROUND SHALL BE #6 XHHW GREEN INSULATED COPPER STRANDED GROUNDING WIRE.
12. FOUNDATION SHALL HAVE 14" COPPER GROUND PLATE PER COM DETAIL SL-74.02.
13. P-207, P-208, P-209 AND P-210 FOUNDATIONS SHALL REQUIRE 8 EA. (#7 x 7' - 4") VERTICAL BARS WITH 3/8" ROUND COLD DRAWN STEEL WIRE SPIRAL CAGE WITH A 3" PITCH.
14. THE PIPE ON EACH SIDE OF A CIRCUMFERENTIAL WELD SHALL HAVE THE SAME OUTSIDE DIAMETER AT THE WELD.
15. A STAINLESS STEEL TAG SHALL BE PERMANENTLY ATTACHED TO THE POLE ABOVE THE HAND HOLE STATING THE MANUFACTURER'S NAME, C.O.M. POLE #, AND DATE MANUFACTURED.

DATA TABLE											
POLE #	LUMINAIRE MTG. HT.	SHAFT LENGTH	ARM LENGTH	POLE O.D. AT BASE	ARM O.D. AT FLANGE	FNDN. DEPTH	FNDN. WIDTH	FNDN. TYP.	BOLT CIRCLE	SQUARE	PLATE
-	"A"	"B"	"C"	"D"	"E"	"F"	"G"		"H"	"J"	"K"
P-201	35'-0"	30'-0"	18'-0"	8"	5 3/16"	5'-0"	3'-0"	F-105	11 1/2"	11 1/2"	1"
P-202	35'-0"	30'-0"	20'-0"	8"	5 1/4"	5'-0"	3'-0"	F-105	11 1/2"	11 1/2"	1"
P-203	39'-0"	35'-0"	15'-0" DBL. ARMS	8 11/16"	4 3/4"	6'-0"	3'-0"	F-103	12 1/2"	13 1/2"	1 1/2"
P-204*	40'-0"	35'-0"	18'-0" DBL. ARMS	8 11/16"	5 3/16"	6'-0"	3'-0"	F-103	12 1/2"	13 1/2"	1 1/2"
P-205*	40'-0"	35'-0"	18'-0"	8 11/16"	5 3/16"	6'-0"	3'-0"	F-103	12 1/2"	13 1/2"	1 1/2"
P-206*	40'-0"	35'-0"	20'-0"	8 11/16"	5 1/4"	6'-0"	3'-0"	F-103	12 1/2"	13 1/2"	1 1/2"
P-209*	45'-0"	40'-0"	18'-0"	9 3/8"	5 1/4"	8'-0"	3'-0"	F-101	14 1/2"	16"	1 1/2"
P-210*	45'-0"	40'-0"	18'-0" DBL. ARMS	9 3/8"	5 1/4"	8'-0"	3'-0"	F-101	14 1/2"	16"	1 1/2"
P-207*	45'-0"	40'-0"	20'-0"	9 3/8"	5 1/4"	8'-0"	3'-0"	F-101	14 1/2"	16"	1 1/2"
P-208*	55'-0"	50'-0"	20'-0"	10 3/4"	5 1/4"	8'-0"	3'-0"	F-101	14 1/2"	16"	1 1/2"
<p>*NOTE: P-207 THRU P-210 REQUIRES STEEL CAGE PER GENERAL NOTE 13. P-204 THRU P-210 SHALL BE USED FOR NEW PROJECTS, AND DEVELOPMENTS REQUIRING TAPERED POLES. P-205, AND P-209 SHALL BE USED FOR ALIGNMENT OF FIXTURES, WHEN POLE LOCATION, OR SET BACK VARIES, AS DETERMINED BY THE ENGINEER. FOUNDATIONS SEE SL-74.03.</p>											



POLE CAP AND MAST ARM ATTACHMENT

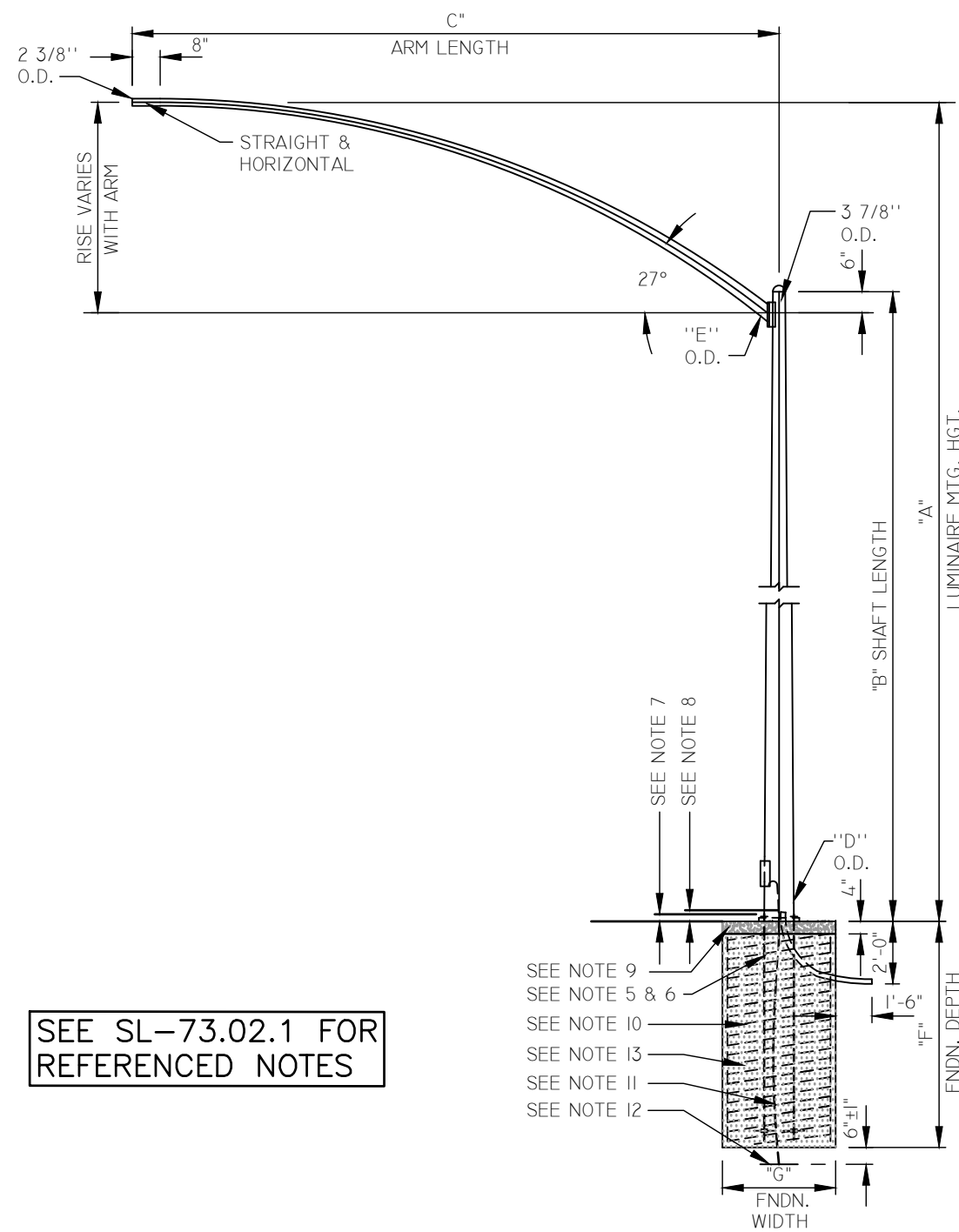
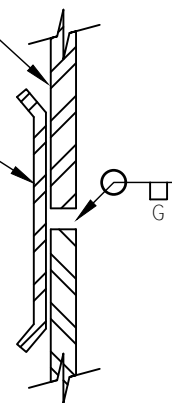
THICKNESS OF FILLER RING
(IF NEEDED) TO MATCH
DIFFERENCE IN TAPERED TUBE
THICKNESS x 1 1/2" WIDE

.135" THK. (10 GAUGE) x 3"
WIDE BACK-UP RING

NOTES

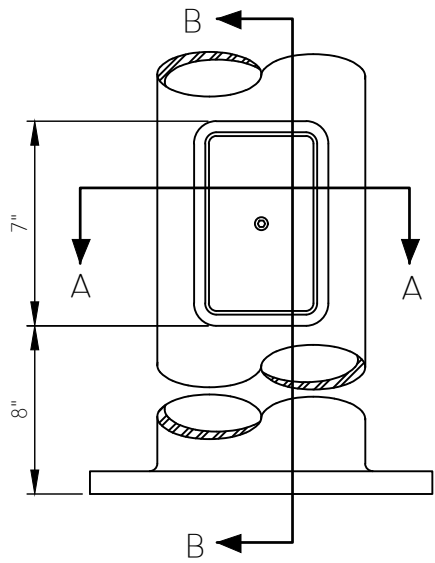
1. ALL BUTT WELDS TO BE GROUND FLUSH
2. LONGITUDINAL: BUTT WELD BY THE SUBMERGED ARC PROCESS
3. CIRCUMFERENTIAL: BUTT WELD WITH PERMANENT BACK-UP RING

SPLICE DETAIL

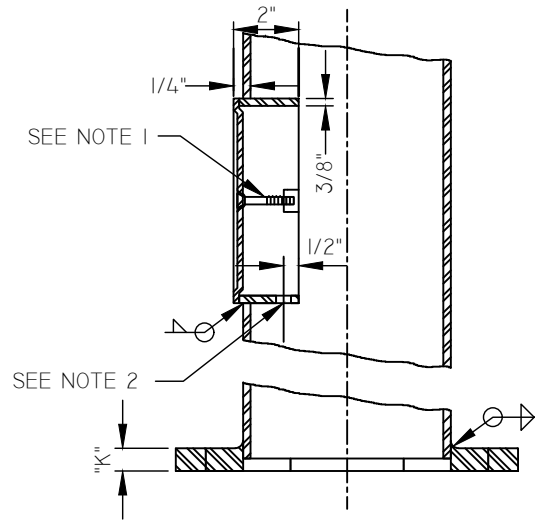


SEE SL-73.02.1 FOR REFERENCED NOTES

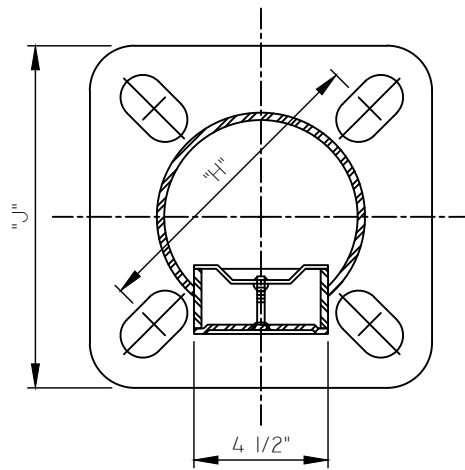
NOT TO SCALE



HAND HOLE ELEVATION



SECTION B-B

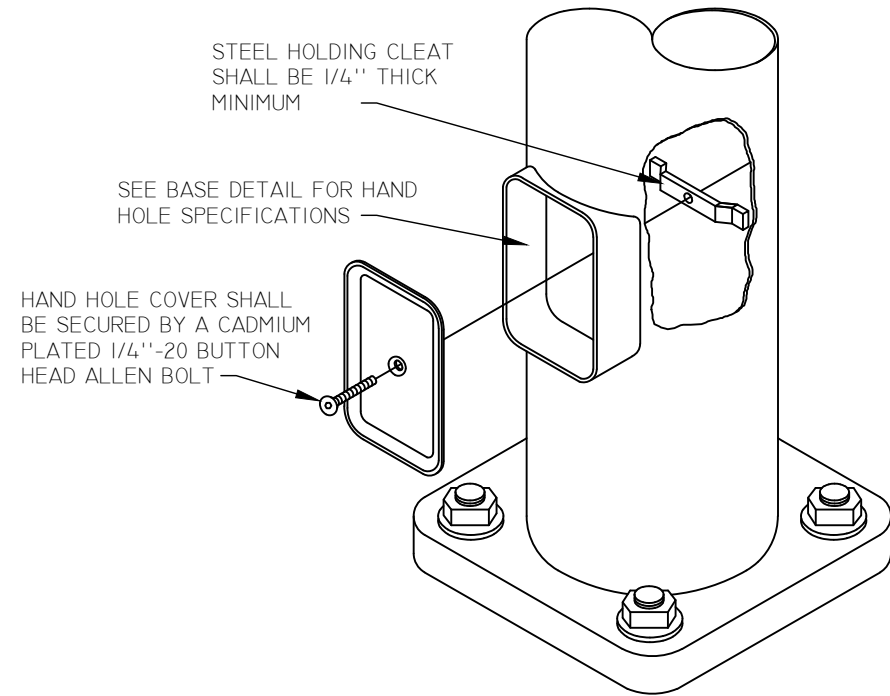


SECTION A-A

BASE DETAIL

NOTES

1. HAND HOLE COVER SHALL BE SECURED BY A CADMIUM PLATED 1/4"-20 BUTTON HEAD ALLEN BOLT AND HOLDING CLEAT.
2. POLE GROUND SHALL BE 1/2" DIA. N.C. TAPPED HOLE LOCATED AS SHOWN.
3. HAND HOLE SHALL BE ORIENTED SO THAT IT IS ALIGNED WITH THE MAST ARM.
4. HAND HOLE DIMENSIONS SHALL BE 4" X 6 1/2".
5. HAND HOLE COVER DIMENSIONS SHALL BE 4 1/2" X 7".
6. SLOT LENGTH OF BASE PLATE EQUALS ANCHOR BOLT DIA. PLUS 1/2" ON BOTH SIDES OF ANCHOR BOLT.



STANDARD HAND HOLE ASSEMBLY

NOTES

1. THE POLE DESIGN, MATERIALS, AND CONSTRUCTION SHALL CONFORM TO AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES, AND TRAFFIC SIGNALS, BASED ON A WIND SPEED OF 80 MILES PER HOUR.
2. THE POLE AND ALL POLE PARTS SHALL BE STEEL.
3. THE POLE AND ALL POLE PARTS SHALL BE HOT DIPPED GALVANIZED PER M.A.G. STANDARD 771.
4. UNSTABLE SOIL MAY REQUIRE DEEPER FOUNDATION, AS DETERMINED BY THE ENGINEER.
5. THE 1 1/4" ANCHOR BOLT SHALL HAVE A LENGTH DETERMINED BY THE DEPTH OF THE FOUNDATION, AND SHALL EXTEND TO 6" +OR- 1" FROM THE BOTTOM OF THE FOUNDATION. (P-305, P-306, P-310, AND P-311 REQUIRES 44" ANCHOR BOLTS) SL-74.01.
6. ANCHOR BOLTS WITH (4) HEX NUTS, (2) FLAT WASHERS, AND (1) ANCHOR PLATE PER BOLT SHALL BE HOT DIPPED GALVANIZED PER M.A.G. STANDARD 771 SL-74.01.
7. ANCHOR BOLTS SHALL HAVE 1/4" TO 3/4" FULL THREAD ABOVE NUT SL-74.01.
8. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE FOUNDATION. MAXIMUM PROJECTION SHALL BE 4".
9. 3'-0" SQUARE, 4" THICK TROWELED FINISH SMOOTH CONCRETE CAP WITH 1/2" ROUND EDGE (2'-0" SQUARE FOR P-301, P-302, P-307 AND P-313). POURED SEPARATELY FROM FOUNDATION.
10. FOUNDATION SHALL BE CLASS A CONCRETE PER M.A.G. STANDARD 725.
11. FOUNDATION GROUND SHALL BE #6 XHHW GREEN INSULATED COPPER STRANDED GROUNDING WIRE.
12. FOUNDATION SHALL HAVE 14" COPPER GROUND PLATE PER COM DETAIL SL-74.02.
13. P-305, P-306, P-310, AND P-311 FOUNDATIONS SHALL REQUIRE 8 EA. (#7 x 7'- 4") VERTICAL BARS, WITH 3/8" ROUND COLD DRAWN STEEL WIRE SPIRAL CAGE WITH A 3" PITCH.
14. THE PIPE ON EACH SIDE OF A CIRCUMFERENTIAL WELD SHALL HAVE THE SAME OUTSIDE DIAMETER AT THE WELD.
15. A STAINLESS STEEL TAG SHALL BE PERMANENTLY ATTACHED TO THE POLE ABOVE THE HAND HOLE STATING THE MANUFACTURER'S NAME, C.O.M. POLE #, AND DATE MANUFACTURED.
16. A METAL TAG SHALL BE PERMANENTLY ATTACHED ON THE BOTTOM OF THE MAST ARM NEAR THE BASE STATING THE MANUFACTURER'S NAME, C.O.M. POLE #, AND DATE MANUFACTURED.

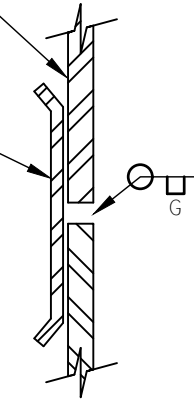
DATA TABLE

POLE #	VERT. DIM.	HOR. DIM.	DEGREE OF BEND	START OF BEND	RADIUS	HGT. AFTER BEND	O.D. AT BASE	FNDN. DEPTH	FNDN. WIDTH	FNDN. TYP.	BOLT CIRCLE	SQUARE	PLATE	ANCHOR BOLT DIAMETER
-	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"		"K"	"L"	"M"	"N"
P-301	25'-0"	8'-0"	45°	17'-4"	26 1/2"	18'-3"	6 3/4"	6'-0"	2'-0"	F-104	10 1/2"	11 1/2"	3/4"	1"
P-302	30'-0"	13'-3"	45°	17'-9"	26 1/2"	18'-10"	6 11/16"	6'-0"	2'-0"	F-104	10 1/2"	11 1/2"	3/4"	1"
P-303	40'-0"	18'-0"	45°	21'-6"	26 1/2"	23'-9"	8 7/16"	6'-0"	3'-0"	F-103	12 1/2"	13 1/2"	1 1/2"	1 1/4"
P-304	40'-0"	20'-0"	45°	19'-6"	26 1/2"	21'-8"	8 3/16"	6'-0"	3'-0"	F-103	12 1/2"	13 1/2"	1 1/2"	1 1/4"
P-305*	45'-0"	18'-0"	45°	26'-6"	26 1/2"	28'-9"	9 1/8"	8'-0"*	3'-0"	F-101	12 1/2"	13 1/2"	1 1/2"	1 1/4"
P-306*	45'-0"	20'-0"	45°	24'-6"	26 1/2"	26'-8"	8 7/8"	8'-0"*	3'-0"	F-101	12 1/2"	13 1/2"	1 1/2"	1 1/4"
P-307	30'-0"	13'-3"	55°	11'-7"	30"	13'-7"	6 11/16"	6'-0"	2'-0"	F-104	10 1/2"	11 1/2"	3/4"	1"
P-313	35'-0"	15'-0"	55°	14'-8"	30"	15'-9"	7 1/2"	6'-0"	2'-0"	F-104	10 1/2"	11 1/2"	1"	1"
P-308	40'-0"	18'-0"	55°	13'-6"	30"	16'-0"	8"	6'-0"	3'-0"	F-103	12 1/2"	13 1/2"	1 1/2"	1 1/4"
P-309	40'-0"	20'-0"	55°	11'-9"	30"	13'-2"	7 7/8"	6'-0"	3'-0"	F-103	12 1/2"	13 1/2"	1 1/2"	1 1/4"
P-310*	45'-0"	18'-0"	55°	19'-6"	30"	21'-0"	8 5/8"	8'-0"*	3'-0"	F-101	12 1/2"	13 1/2"	1 1/2"	1 1/4"
P-311*	45'-0"	20'-0"	55°	16'-9"	30"	18'-2"	8 1/4"	8'-0"*	3'-0"	F-101	12 1/2"	13 1/2"	1 1/2"	1 1/4"

*NOTES: 1. P-305, P-306, P-310, AND P-311 REQUIRES STEEL CAGE PER NOTE 13.
2. P-301 SHALL BE USED FOR REPLACEMENT AND ONLY TO MATCH EXISTING STREETLIGHT POLES. FOUNDATIONS SEE SL-74.03.

THICKNESS OF FILLER RING
(IF NEEDED) TO MATCH
DIFFERENCE IN TAPERED TUBE
THICKNESS x 1 1/2" WIDE

.135" THK. (10 GAUGE) x 3"
WIDE BACK-UP RING

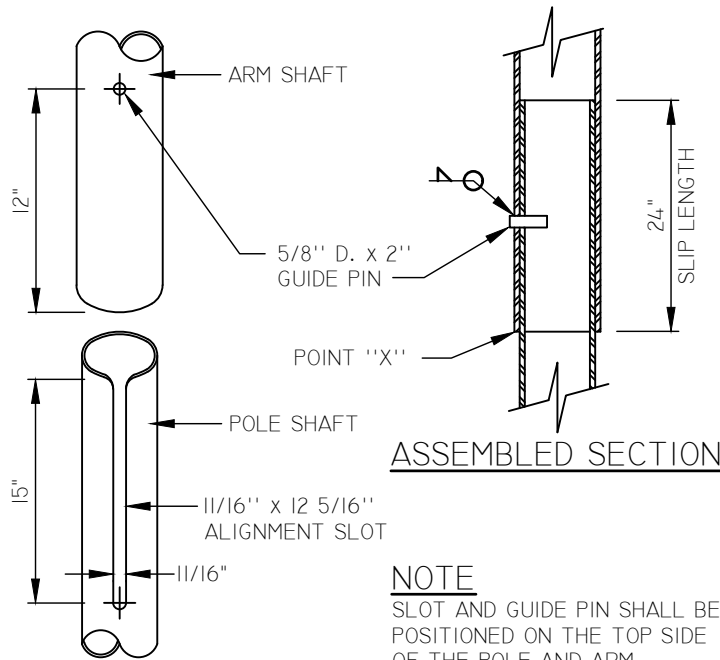


SECTION

SPLICE DETAIL

NOTES

1. ALL BUTT WELDS TO BE GROUND FLUSH.
2. LONGITUDINAL: BUTT WELD BY THE SUBMERGED ARC PROCESS
3. CIRCUMFERENTIAL: BUTT WELD WITH PERMANENT BACK-UP RING



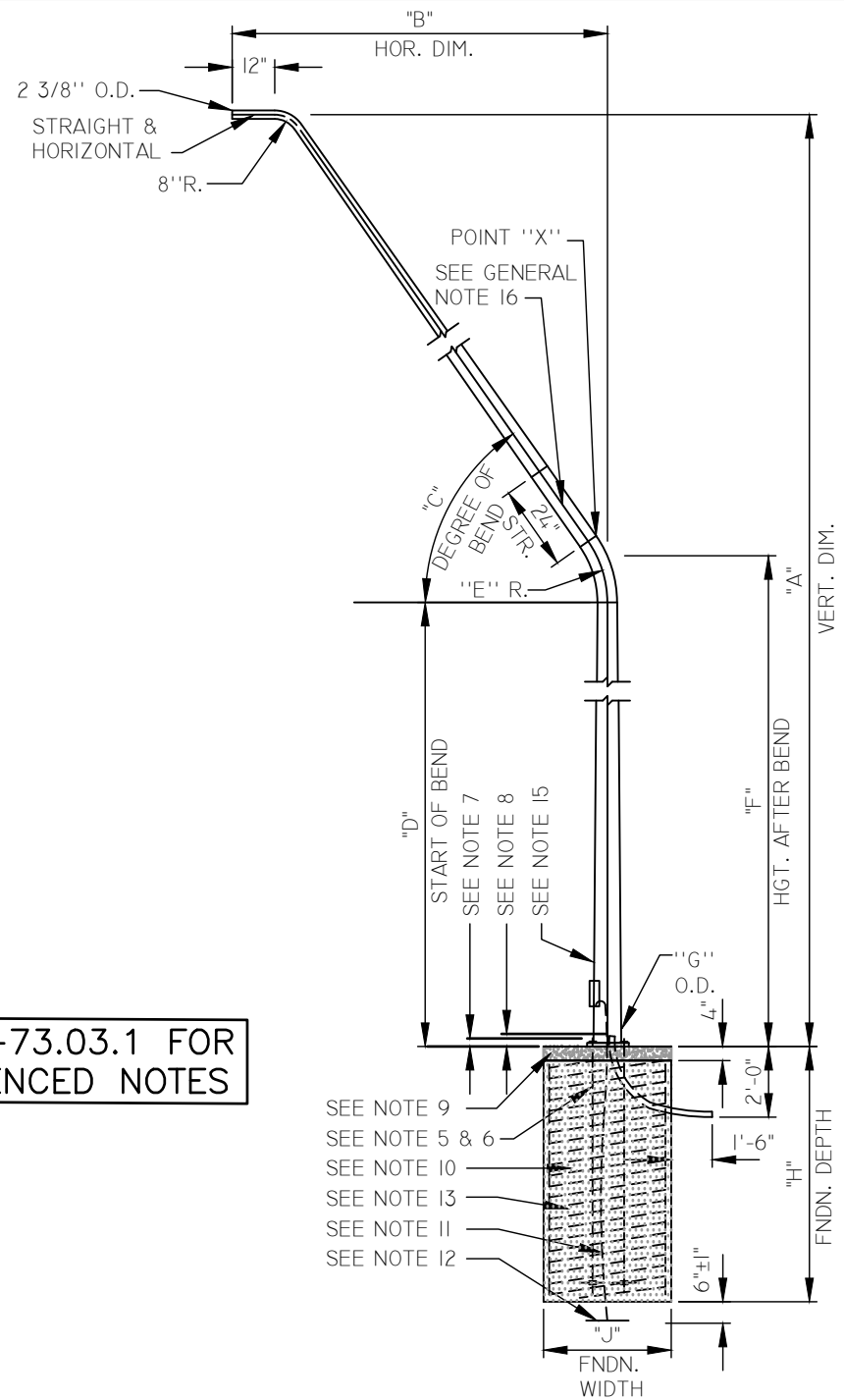
ASSEMBLED SECTION

NOTE

SLOT AND GUIDE PIN SHALL BE POSITIONED ON THE TOP SIDE OF THE POLE AND ARM.

SLIP JOINT MAST ARM ATTACHMENT

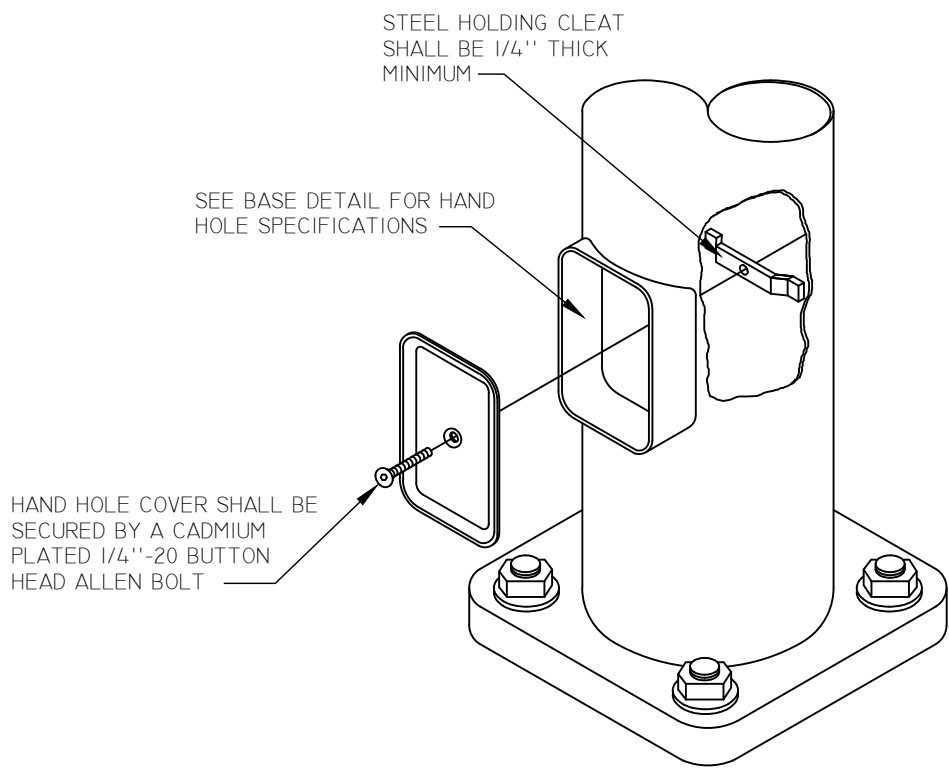
SEE SL-73.03.1 FOR REFERENCED NOTES



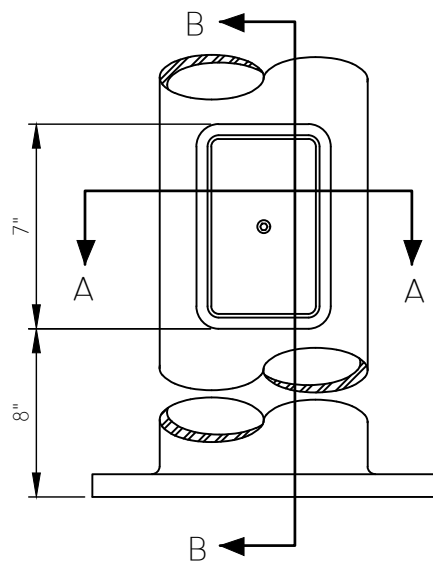
- SEE NOTE 9
- SEE NOTE 5 & 6
- SEE NOTE 10
- SEE NOTE 13
- SEE NOTE 11
- SEE NOTE 12

NOT TO SCALE

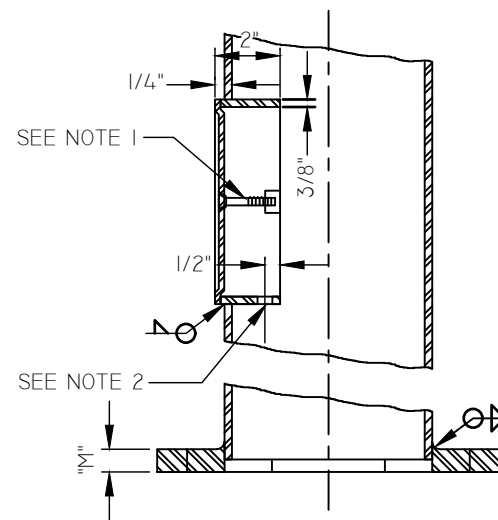




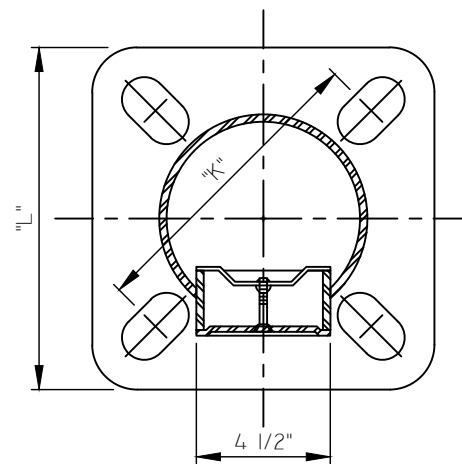
STANDARD HAND HOLE ASSEMBLY



HAND HOLE ELEVATION



SECTION B-B



SECTION A-A

NOTES

1. HAND HOLE COVER SHALL BE SECURED BY A CADMIUM PLATED 1/4"-20 BUTTON HEAD ALLEN BOLT AND HOLDING CLEAT.
2. POLE GROUND SHALL BE 1/2" DIA. N.C. TAPPED HOLE LOCATED AS SHOWN.
3. HAND HOLE SHALL BE ORIENTED SO THAT IT IS ALIGNED WITH THE MAST ARM.
4. HAND HOLE DIMENSIONS SHALL BE 4" X 6 1/2".
5. HAND HOLE COVER DIMENSIONS SHALL BE 4 1/2" X 7".
6. HAND HOLE DIMENSIONS FOR P-301, P-302, AND P-307 SHALL BE 3 5/8" X 5 1/2".
7. SLOT LENGTH OF BASE PLATE EQUALS ANCHOR BOLT DIA. PLUS 1/2" ON BOTH SIDES OF ANCHOR BOLT.

BASE DETAIL

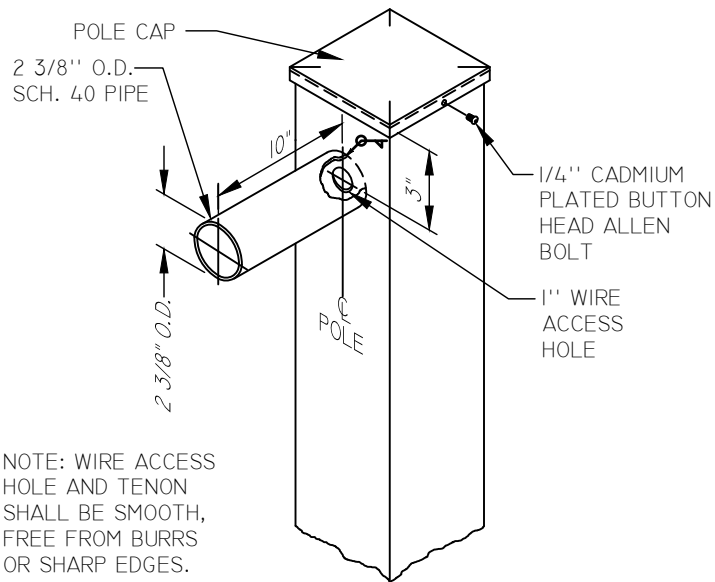
NOT TO SCALE

DATA TABLE

POLE #	POLE HGT.	FNDN. DEPTH	FNDN. WIDTH	FNDN. TYP.	BOLT CIRCLE	SQUARE	PLATE	ANCHOR BOLT DIAMETER
	"A"	"B"	"C"		"D"	"E"	"F"	"G"
4" SQ.								
P-401	16'-0" DBL. ARMS	5'-0"	2'-0"	F-106	8"	8"	3/4"	3/4"
P-402	16'-0"	5'-0"	2'-0"	F-106	8"	8"	3/4"	3/4"
P-403	20'-0" DBL. ARMS	5'-0"	2'-0"	F-106	8"	8"	3/4"	3/4"
P-404	20'-0"	5'-0"	2'-0"	F-106	8"	8"	3/4"	3/4"
P-405	24'-0" DBL. ARMS	5'-0"	2'-0"	F-106	8"	8"	3/4"	3/4"
P-406	24'-0"	5'-0"	2'-0"	F-106	8"	8"	3/4"	3/4"
P-407	30'-0" DBL. ARMS	6'-0"	2'-0"	F-104	8"	8"	1"	1"
P-408	30'-0"	6'-0"	2'-0"	F-104	8"	8"	1"	1"
5" SQ.								
P-409	20'-0" DBL. ARMS	5'-0"	2'-0"	F-106	10 1/2"	10"	3/4"	3/4"
P-410	20'-0"	5'-0"	2'-0"	F-106	10 1/2"	10"	3/4"	3/4"
P-411	25'-0" DBL. ARMS	6'-0"	2'-0"	F-104	10 1/2"	10"	3/4"	3/4"
P-412	25'-0"	6'-0"	2'-0"	F-104	10 1/2"	10"	3/4"	3/4"
NOTE: P-401 THRU P-412 SHALL BE USED ONLY FOR REPLACEMENT AND ONLY TO MATCH EXISTING STREETLIGHT POLES.								
P-413	30'-0" DBL. ARMS	6'-0"	2'-0"	F-104	10 1/2"	10"	1"	1"
P-414	30'-0"	6'-0"	2'-0"	F-104	10 1/2"	10"	1"	1"
P-415	35'-0" DBL. ARMS	6'-0"	2'-0"	F-104	10 1/2"	10"	1"	1"
P-416	35'-0"	6'-0"	2'-0"	F-104	10 1/2"	10"	1"	1"
6" SQ.								
P-417	40'-0" DBL. ARMS	6'-0"	3'-0"	F-103	12 1/2"	12"	1 1/2"	1 1/4"
P-418	40'-0"	6'-0"	3'-0"	F-103	12 1/2"	12"	1 1/2"	1 1/4"
P-419	45'-0" DBL. ARMS	8'-0"	3'-0"	F-101	12 1/2"	12"	1 1/2"	1 1/4"
P-420	45'-0"	8'-0"	3'-0"	F-101	12 1/2"	12"	1 1/2"	1 1/4"
P-421	45'-0"	8'-0"	3'-0"	F-101	12 1/2"	12"	1 1/2"	1 1/4"
P-422	40'-0"	6'-0"	3'-0"	F-101	12 1/2"	12"	1 1/2"	1 1/4"
NOTES: 1. P-419, P-420 SHALL REQUIRE A STEEL CAGE PER NOTE 13. 2. P-413 THRU P-420 SHALL BE USED FOR NEW DEVELOPMENT REQUIRING SQUARE POLES. 3. FOUNDATIONS SEE SL-74.03.								

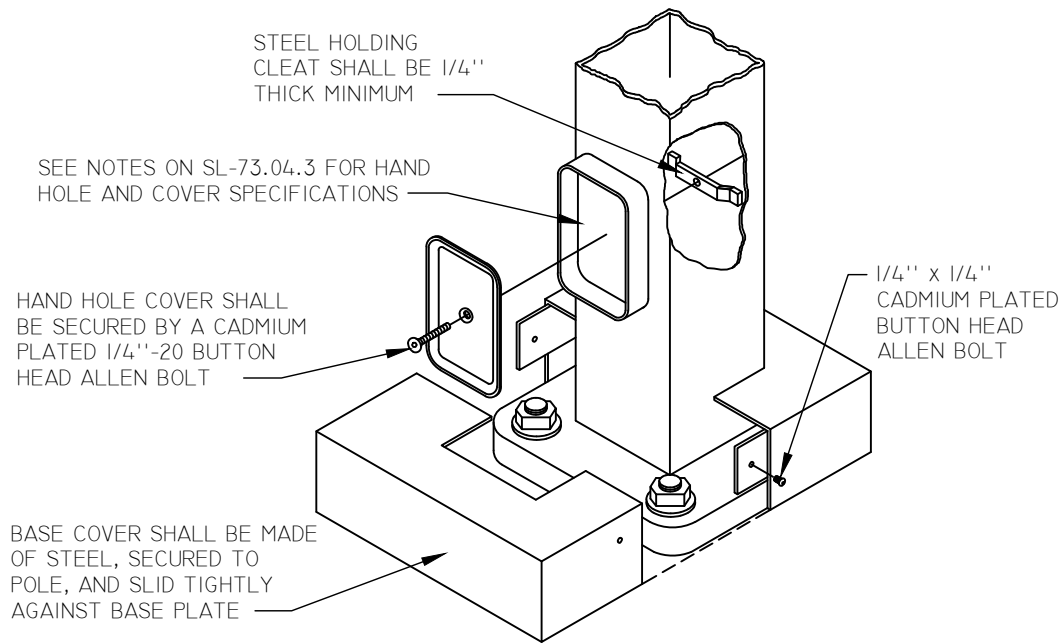
NOTES

- THE POLE DESIGN, MATERIALS, AND CONSTRUCTION SHALL CONFORM TO AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, BASED ON A WIND SPEED OF 80 MILES PER HOUR.
- THE POLE AND ALL PARTS SHALL BE STEEL. (P-419 & P-420 POLES TO HAVE .250 WALL THICKNESS).
- THE POLE AND ALL POLE PARTS SHALL BE SAND BLASTED TO SSPC SPECIFICATION SP-6-63. A PRIMER COAT OF TNEMEC SERIES 66 HI BUILD EPOXOLINE OR APPROVED EQUAL SHALL BE APPLIED TO A MINIMUM THICKNESS OF 3 DRY MILS. THE COLOR COATING SHALL BE TNEMEC SERIES 73 ENDURA SHIELD III OR APPROVED EQUAL, APPLIED TO A MINIMUM THICKNESS OF 3 DRY MILS. THE FINAL COATING SHALL BE TNEMEC SERIES 76 ENDURA CLEAR OR APPROVED EQUAL, APPLIED TO A MINIMUM THICKNESS OF 1.5 DRY MILLS. THE FINISH COLOR SHALL MATCH FIXTURE SPECIFIED. INTERIOR OF POLE SHALL HAVE AMERCOAT 78HB OR APPROVED EQUIVALENT FROM INSIDE BASE TO TOP OF HAND HOLE (5MILS).
- UNSTABLE SOIL MAY REQUIRE DEEPER FOUNDATION, AS DETERMINED BY THE ENGINEER.
- THE ANCHOR BOLTS SHALL HAVE A LENGTH DETERMINED BY THE DEPTH OF THE FOUNDATION, AND SHALL EXTEND TO 6"+ OR - 1" ABOVE THE BOTTOM OF THE FOUNDATION. SEE COLUMN "G" IN DATA TABLE FOR DIAMETER OF ANCHOR BOLT (P-419, AND P-420 REQUIRES 44" ANCHOR BOLTS).
- ANCHOR BOLTS WITH (4) HEX NUTS, (2) FLAT WASHERS, AND (1) ANCHOR PLATE PER BOLT SHALL BE HOT DIPPED GALVANIZED PER COM DETAIL SL-74.01.
- ANCHOR BOLTS SHALL HAVE 1/4" TO 3/4" FULL THREAD ABOVE NUT PER COM DETAIL SL-74.01.
- CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE FOUNDATION. MAXIMUM PROJECTION SHALL BE 4".
- 2'-0" SQUARE, 4" THICK TROWELED FINISH SMOOTH CONCRETE CAP WITH 1/2" ROUND EDGE. (3'-0" SQUARE FOR P-417, P-418, P-419, AND P-420). POURED SEPARATELY FROM FOUNDATION SL-74.03.
- FOUNDATION SHALL BE CLASS A CONCRETE PER M.A.G. STANDARD 725.
- FOUNDATION GROUND SHALL BE #6 XHHW GREEN INSULATED COPPER STRANDED GROUNDING WIRE.
- FOUNDATION SHALL HAVE 14" COPPER GROUND PLATE PER COM DETAIL SL-74.02.
- P-419 AND P-420 FOUNDATIONS SHALL REQUIRE 8 EA. (#7 x 7'-4") VERTICAL BARS WITH 3/8" ROUND COLD DRAWN STEEL WIRE SPIRAL CAGE WITH A 3" PITCH.
- A STAINLESS STEEL TAG SHALL BE PERMANENTLY ATTACHED TO THE POLE ABOVE THE HAND HOLE STATING THE MANUFACTURER'S NAME, COM POLE #, AND DATE MANUFACTURED.

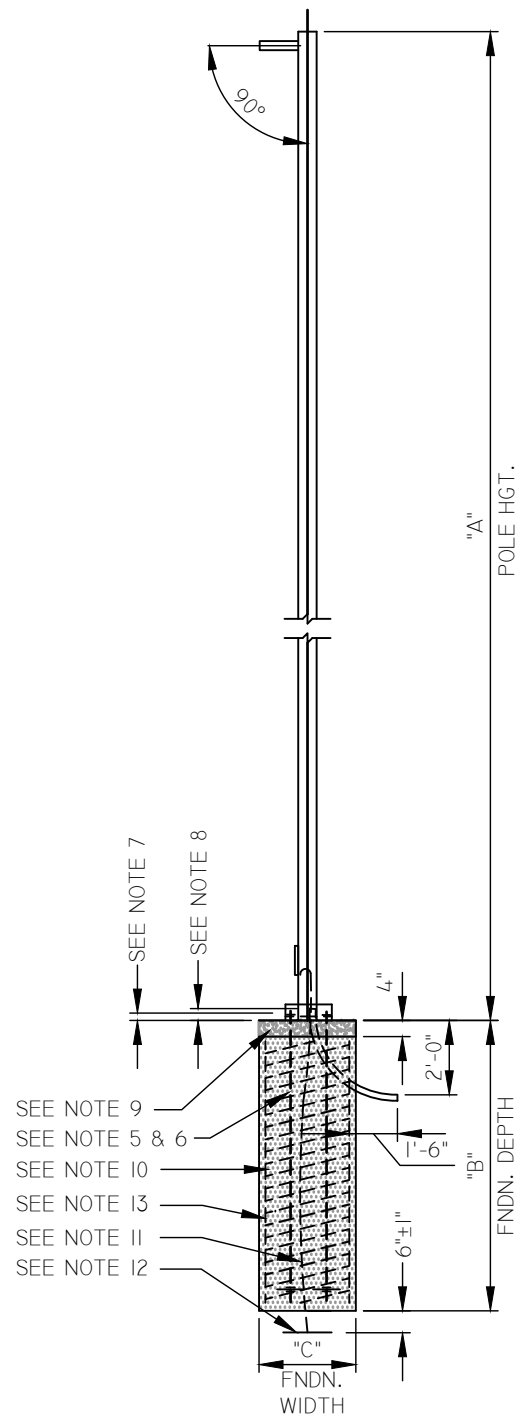


NOTE: WIRE ACCESS HOLE AND TENON SHALL BE SMOOTH, FREE FROM BURRS OR SHARP EDGES.

TENON FIXTURE ATTACHMENT AND POLE CAP

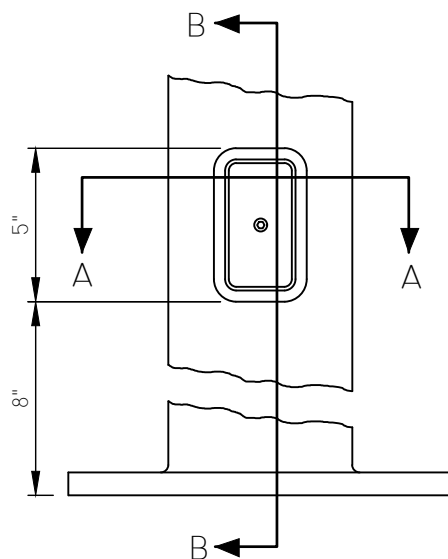


STANDARD HAND HOLE ASSEMBLY AND BASE COVER

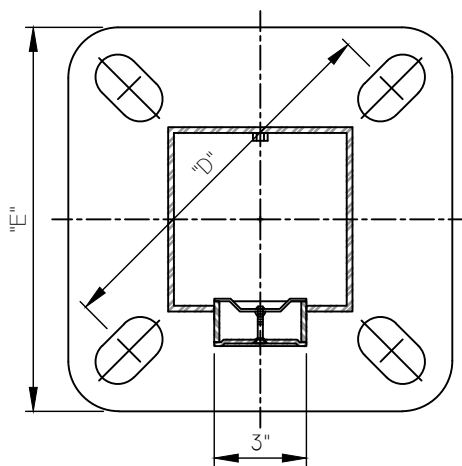


SEE SL-73.04.1 FOR REFERENCED NOTES AND DATA TABLE

NOT TO SCALE

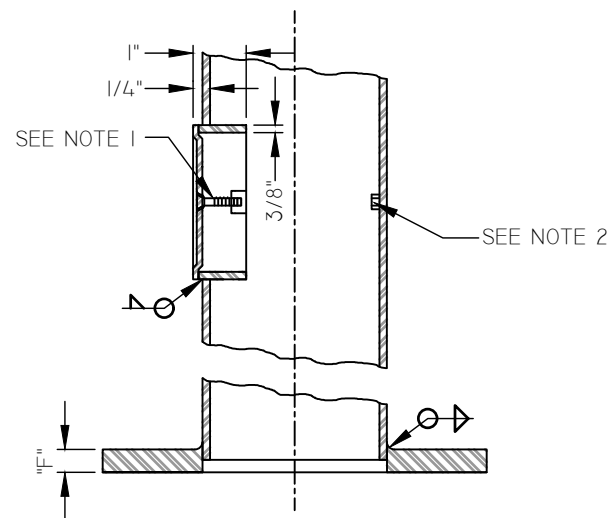


HAND HOLE DETAIL



SECTION A-A

BASE DETAIL



SECTION B-B

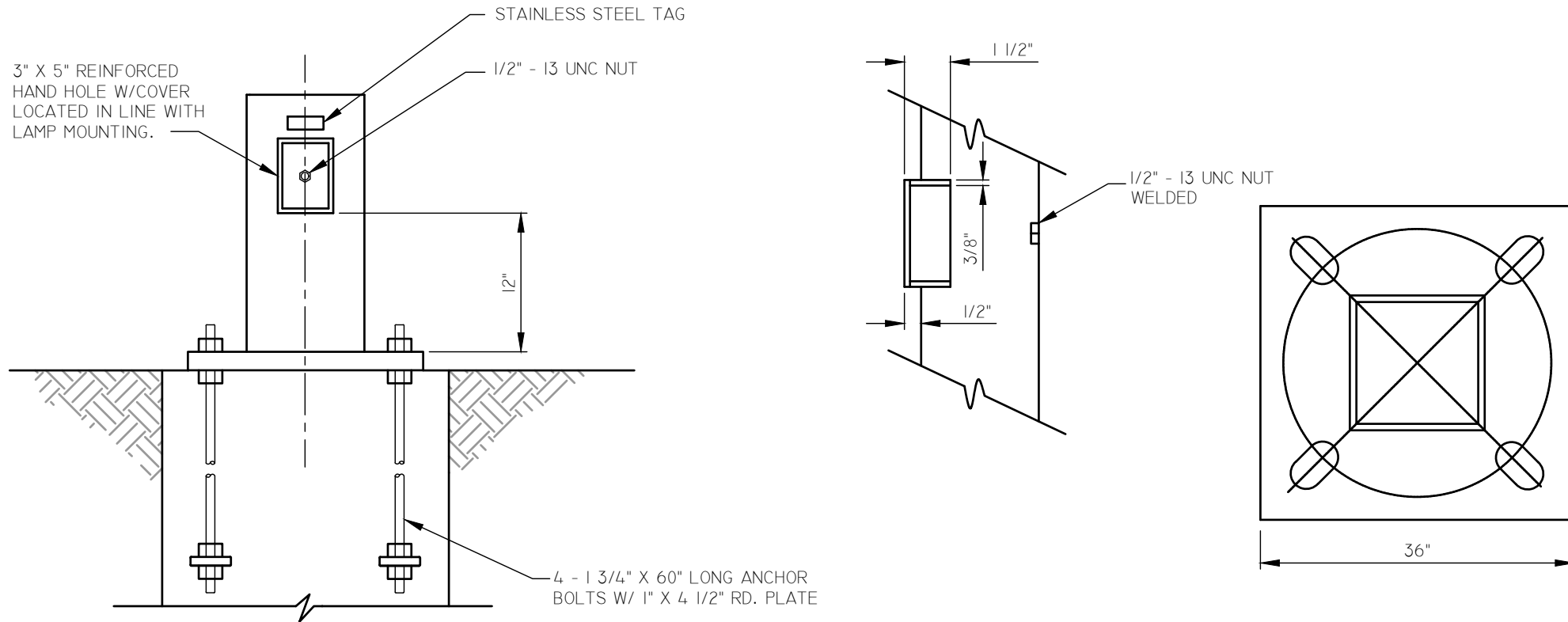
NOTES

1. HAND HOLE COVER SHALL BE SECURED BY A CADMIUM PLATED 1/4"-20 BUTTON HEAD ALLEN BOLT AND HOLDING CLEAT.
2. THE POLE'S GROUND SHALL BE 1/2"-13 UHC NUT WELDED TO INSIDE OF THE POLE AS SHOWN.
3. HAND HOLE SHALL BE ORIENTED SO THAT IT IS ALIGNED WITH THE MAST ARM.
4. HAND HOLE DIMENSIONS SHALL BE 3" X 5".
5. HAND HOLE COVER DIMENSIONS SHALL BE 3" X 5".
6. SLOT LENGTH OF BASE PLATE EQUALS ANCHOR BOLT DIA. PLUS 1/2" ON BOTH SIDES OF ANCHOR BOLT.

SEE SL-73.04.1 FOR DATA TABLE

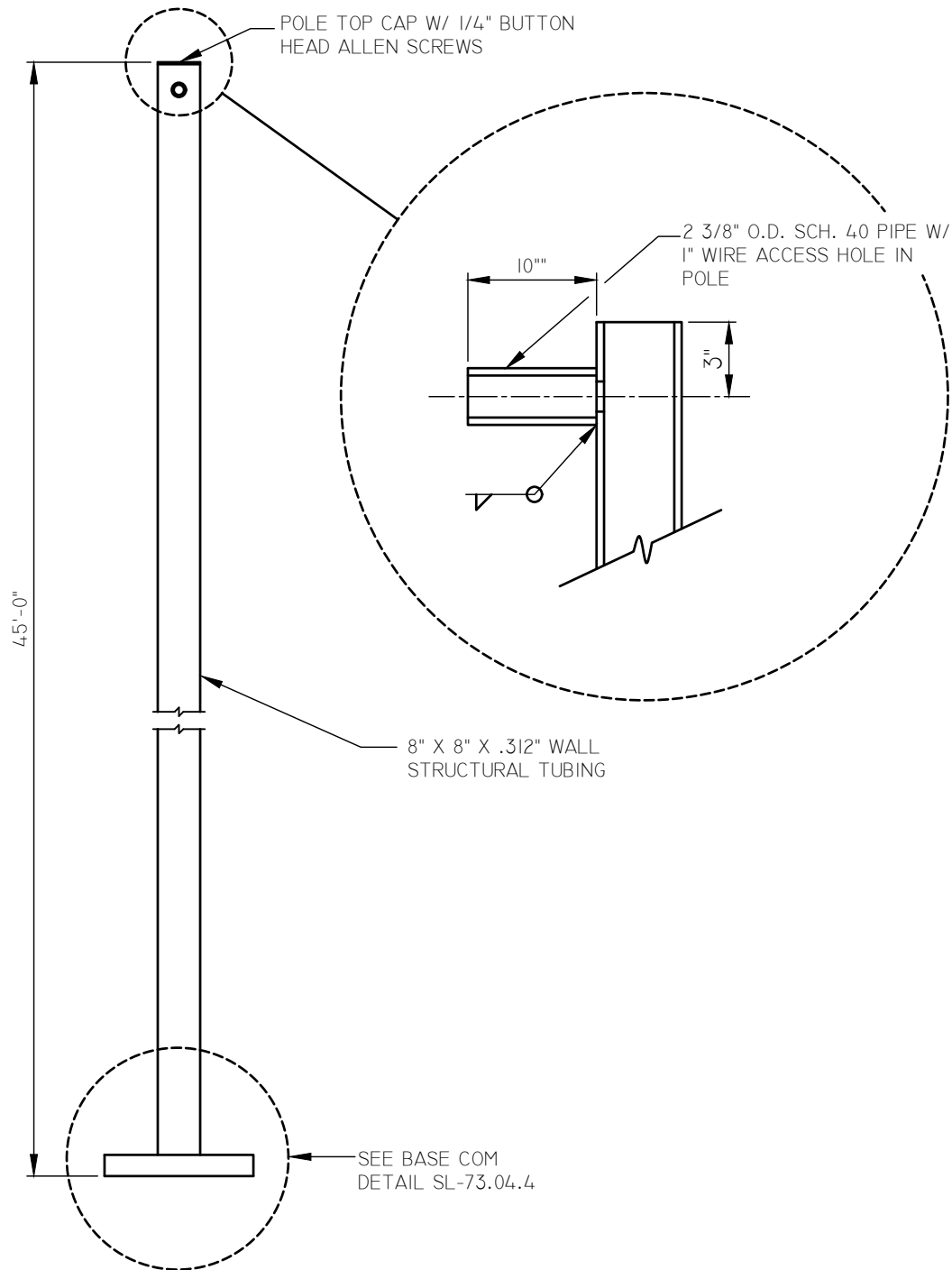
NOTES

1. HAND HOLE COVER SHALL BE SECURED BY A CADMIUM PLATED 1/4"-20 BUTTON HEAD ALLEN BOLT AND HOLDING CLEAT.
2. THE POLE'S GROUND SHALL BE 1/2"-13 UHC NUT WELDED TO INSIDE OF THE POLE AS SHOWN.
3. HAND HOLE SHALL BE ORIENTED SO THAT IT IS ALIGNED WITH THE MAST ARM.
4. HAND HOLE DIMENSIONS SHALL BE 3" X 5".
5. HAND HOLE COVER DIMENSIONS SHALL BE 3" X 5".
6. SQUARE PLATE 1 3/4" X 15" WITH 2" DIA. X 2 3/4" LONG SLOTTED HOLES ON 15 1/2" BOLT CIRCLE.



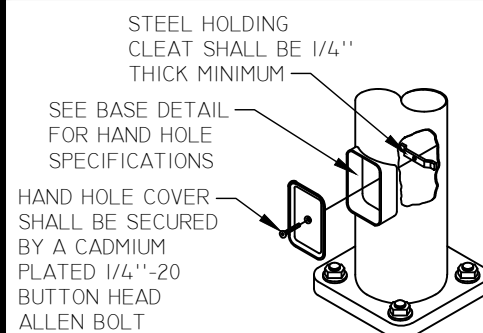
BASE DETAIL

NOT TO SCALE

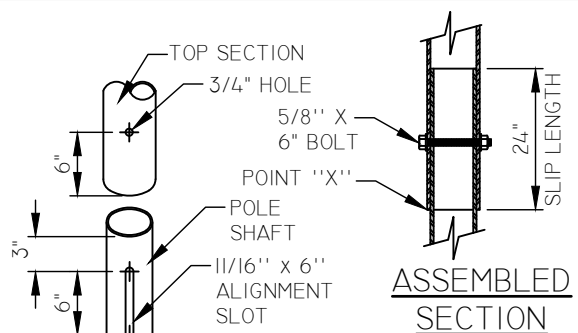


NOTES

1. THE POLE DESIGN, MATERIALS, AND CONSTRUCTION SHALL CONFORM TO AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, IT HAS A MINIMUM YIELD STRENGTH OF 50,000 PSI
2. THE POLE AND ALL PARTS SHALL BE STEEL. 8"X8"X .312 WALL THICKNESS.
3. THE POLE AND ALL POLE PARTS SHALL BE SAND BLASTED TO SSPC SPECIFICATION SP-6-63. A PRIMER COAT OF TNE MEC SERIES 66 HI BUILD EPOXOLINE OR APPROVED EQUAL SHALL BE APPLIED TO A MINIMUM THICKNESS OF 3 DRY MILS. THE COLOR COATING SHALL BE TNE MEC SERIES 73 ENDURA SHIELD III OR APPROVED EQUAL, APPLIED TO A MINIMUM THICKNESS OF 3 DRY MILS. THE FINAL COATING SHALL BE TNE MEC SERIES 76 ENDURA CLEAR OR APPROVED EQUAL, APPLIED TO A MINIMUM THICKNESS OF 1.5 DRY MILLS. THE FINISH COLOR SHALL MATCH FIXTURE SPECIFIED.
4. UNSTABLE SOIL MAY REQUIRE DEEPER FOUNDATION, AS DETERMINED BY THE ENGINEER.
5. FOR ANCHOR BOLTS SEE COM DETAIL SL-74.01, NOTE 5.
6. ANCHOR BOLTS WITH (4) HEX NUTS, (2) FLAT WASHERS, AND (1) ANCHOR PLATE PER BOLT SHALL BE HOT DIPPED GALVANIZED PER COM DETAIL SL-74.01.
7. ANCHOR BOLTS SHALL HAVE 1/4" TO 3/4" FULL THREAD ABOVE NUT. COM DETAIL SL-74.03.
8. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE FOUNDATION. MAXIMUM PROJECTION SHALL BE 4".
9. 3'-0" SQUARE, 4" THICK TROWELED FINISH SMOOTH CONCRETE CAP WITH 1/2" ROUND EDGE. Poured SEPARATELY FROM FOUNDATION. SL-74.04
10. CONCRETE SHALL BE CLASS A PER MAG STANDARD 725.
11. FOUNDATION GROUND SHALL BE #6 XHHW GREEN STRANDED.
12. FOUNDATION SHALL HAVE 14 COPPER GROUND PLATE PER COM DETAIL SL-74.02.
13. FOR FOUNDATION SEE COM DETAIL SL-74.04.
14. FOR HAND HOLE & BASE SEE COM DETAIL SL-73.04.4.
15. A STAINLESS STEEL TAG SHALL BE PERMANENTLY ATTACHED TO THE POLE ABOVE THE HAND HOLE STATING THE MANUFACTURER'S NAME, COM POLE #, AND DATE MANUFACTURED.



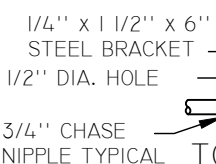
STANDARD HAND HOLE ASSEMBLY



NOTE:
SLOT AND BOLT SHALL BE POSITIONED SO THEY ARE ALIGNED PERPENDICULAR TO THE ARMS.

SLIP JOINT AND TOP SECTION ATTACHMENT

POLE SHALL BE CONSTRUCTED IN TWO SECTIONS SEE SLIP JOINT AND TOP SECTION ATTACHMENT FOR DETAILS



BRACKET DETAIL

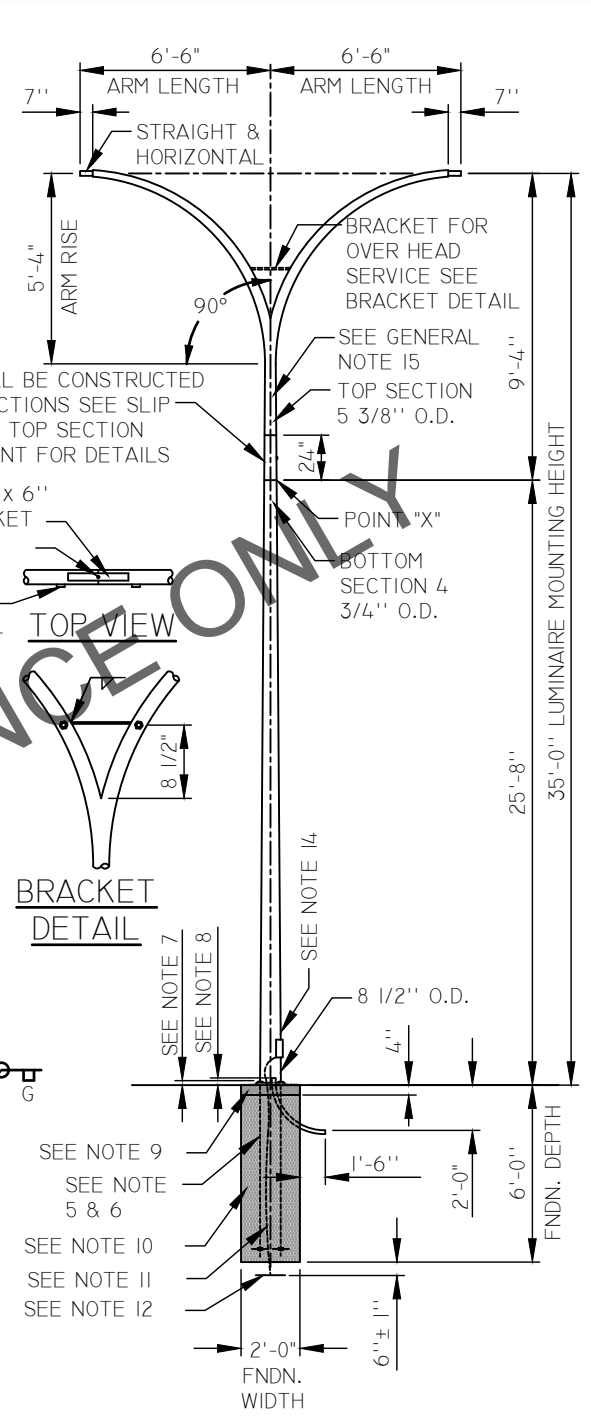
DATA TABLE	
POLE #	DESCRIPTION
P-501	TOP SECTION WITH BRACKET
P-502	BOTTOM SECTION

NOTE:
TWIN DAVIT STREETLIGHT POLES SHALL BE USED ONLY FOR REPLACEMENT AND ONLY TO MATCH EXISTING STREET LIGHT POLES.

THICKNESS OF FILLER RING (IF NEEDED) TO MATCH DIFFERENCE IN TAPERED TUBE THICKNESS x 1 1/2" WIDE

- NOTES:**
- ALL BUTT WELDS TO BE GROUND FLUSH
 - LONGITUDINAL: BUTT WELD BY THE SUBMERGED ARC PROCESS
 - CIRCUMFERENTIAL: BUTT WELD WITH PERMANENT BACK-UP RING

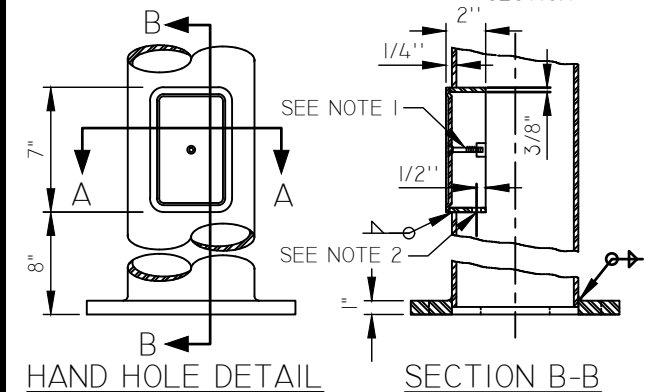
SPLICE DETAIL



NOTES:

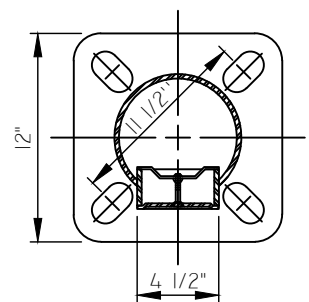
- THE POLE DESIGN, MATERIALS, AND CONSTRUCTION SHALL CONFORM TO AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, BASED ON A WIND SPEED OF 80 MILES PER HOUR.
- THE POLE AND ALL PARTS SHALL BE STEEL.
- THE POLE AND ALL POLE PARTS SHALL BE SAND BLASTED TO SSPC SPECIFICATIONS SP-6-63. A PRIMER COAT OF TNEMEC SERIES 66 HI BUILD EPOXOLINE OR APPROVED EQUAL SHALL BE APPLIED TO A THICKNESS OF 3 DRY MILS. THE COLOR COATING SHALL BE TNEMEC SERIES 73 ENDURA SHIELD III OR APPROVED EQUAL, APPLIED TO A MINIMUM THICKNESS OF 3 DRY MILS. THE FINAL COATING SHALL BE TNEMEC SERIES 76 ENDURA CLEAR OR APPROVED EQUAL, APPLIED TO A MINIMUM THICKNESS OF 1.5 MILS. THE FINISH COLOR SHALL BE ECHO GREEN, TNEMEC COLOR NUMBER G1280.
- UNSTABLE SOIL MAY REQUIRE DEEPER FOUNDATION, AS DETERMINED BY THE ENGINEER.
- THE 1-1/4" ANCHOR BOLT SHALL HAVE A LENGTH DETERMINED BY THE DEPTH OF THE FOUNDATION, AND SHALL EXTEND TO 6" +OR- 1" ABOVE THE BOTTOM OF THE FOUNDATION (SL74.01).
- ANCHOR BOLTS WITH (4) HEX NUTS, (2) FLAT WASHERS, AND (1) ANCHOR PLATE PER BOLT SHALL BE HOT DIPPED GALVANIZED PER M.A.G. STANDARD 771 (SL-74.01).
- ANCHOR BOLTS SHALL HAVE 1/4" TO 3/4" FULL THREAD ABOVE NUT (SL-74.01).
- CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE FOUNDATION. MAXIMUM PROJECTION SHALL BE 4".
- 2'-0" SQUARE, 4" THICK TROWELED FINISH SMOOTH CONCRETE CAP WITH 1/2" ROUND EDGE.
- FOUNDATION SHALL BE CLASS A CONCRETE PER M.A.G. STANDARD 725.
- FOUNDATION GROUND SHALL BE #6 XHHW GREEN INSULATED COPPER STRANDED GROUNDING WIRE.
- FOUNDATION SHALL HAVE 14" COPPER GROUND PLATE PER COM DETAIL SL-74.02.
- THE PIPE ON EACH SIDE OF A CIRCUMFERENTIAL WELD SHALL HAVE THE SAME OUTSIDE DIAMETER AT THE WELD.
- A METAL TAG SHALL BE PERMANENTLY ATTACHED TO THE POLE ABOVE THE HAND HOLE STATING THE MANUFACTUER'S NAME, C.O.M. POLE #, AND DATE MANUFACTURED.
- A METAL TAG SHALL BE PERMANENTLY ATTACHED ON THE SIDE OF THE MAST ARM NEAR THE BASE STATING THE MANUFACTURER'S NAME, C.O.M. POLE #, AND DATE MANUFACTURED.

NOT TO SCALE



HAND HOLE DETAIL

SECTION B-B

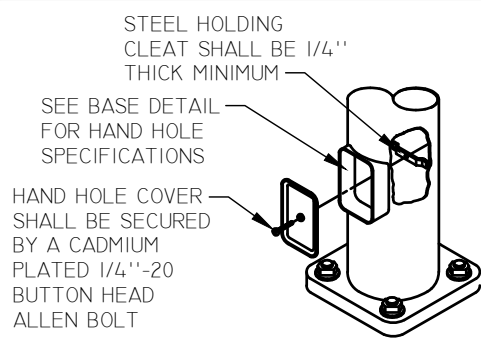


SECTION A-A

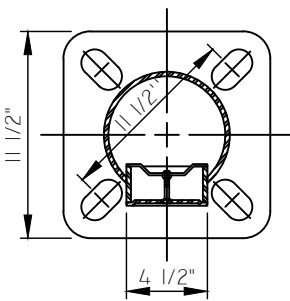
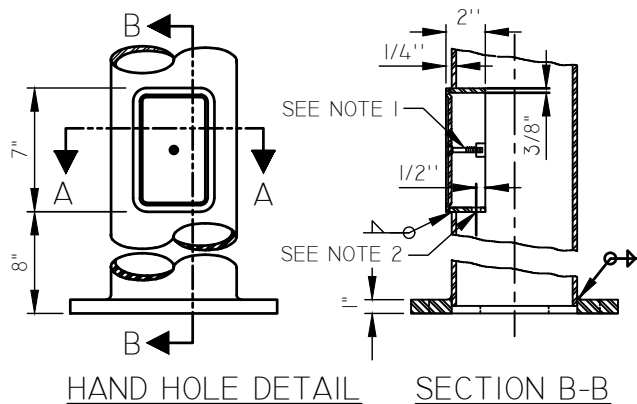
BASE DETAIL

NOTES:

- HAND HOLE COVER SHALL BE SECURED BY A CADMIUM PLATED 1/4"-20 BUTTON HEAD ALLEN BOLT AND HOLDING CLEAT.
- POLE GROUND SHALL BE 1/2" DIA. N.C. TAPPED HOLE LOCATED AS SHOWN.
- HAND HOLE SHALL BE ORIENTED SO THAT IT IS ALIGNED WITH THE MAST ARM.
- HAND HOLE DIMENSIONS SHALL BE 4" X 6 1/2".
- HAND HOLE COVER DIMENSIONS SHALL BE 4 1/2" X 7".
- SLOT LENGTH OF BASE PLATE EQUALS ANCHOR BOLT DIA. PLUS 1/2" ON BOTH SIDES OF ANCHOR BOLT.

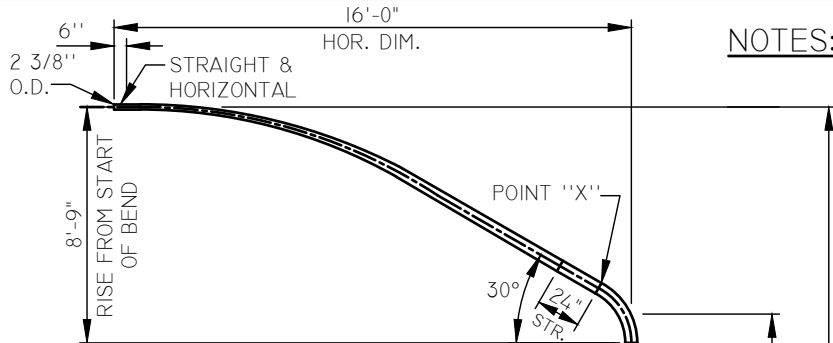


STANDARD HAND HOLE ASSEMBLY



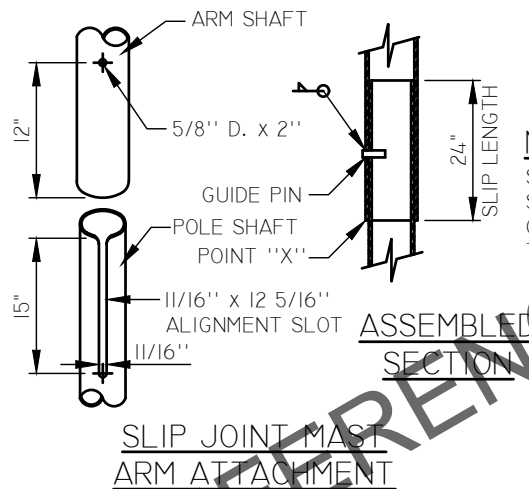
NOTES:

- HAND HOLE COVER SHALL BE SECURED BY A CADMIUM PLATED 1/4"-20 BUTTON HEAD ALLEN BOLT AND HOLDING CLEAT.
- POLE GROUND SHALL BE 1/2" DIA. N.C. TAPPED HOLE LOCATED AS SHOWN.
- HAND HOLE SHALL BE ORIENTED SO THAT IT IS ALIGNED WITH THE MAST ARM.
- HAND HOLE DIMENSIONS SHALL BE 4" BY 6 1/2".
- HAND HOLE COVER DIMENSIONS SHALL BE 4 1/2" BY 7".
- SLOT LENGTH OF BASE PLATE EQUALS ANCHOR BOLT DIA. PLUS 1/2" ON BOTH SIDES OF ANCHOR BOLT.



NOTES:

- THE POLE DESIGN, MATERIALS, AND CONSTRUCTION SHALL CONFORM TO AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, BASED ON A WIND SPEED OF 80 MILES PER HOUR.
- THE POLE AND ALL PARTS SHALL BE STEEL.
- THE POLE AND ALL POLE PARTS SHALL BE HOT DIPPED GALVANIZED PER M.A.G. STANDARD 771.
- UNSTABLE SOIL MAY REQUIRE DEEPER FOUNDATION, AS DETERMINED BY THE ENGINEER.
- THE 1 1/4" ANCHOR BOLT SHALL HAVE A LENGTH DETERMINED BY THE DEPTH OF THE FOUNDATION, AND SHALL EXTEND TO 6" +OR- 1" FROM THE BOTTOM OF THE FOUNDATION. (M-73.06)
- ANCHOR BOLTS WITH (4) HEX NUTS, (2) FLAT WASHERS, AND (1) ANCHOR PLATE PER BOLT SHALL BE HOT DIPPED GALVANIZED PER M.A.G. STANDARD 771 (SL-74.01).
- ANCHOR BOLTS SHALL HAVE 1/4" TO 3/4" FULL THREAD ABOVE NUT (SL-74.01).
- CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE FOUNDATION. MAXIMUM PROJECTION SHALL BE 4".
- 3'-0" SQUARE, 4" THICK TROWELED FINISH SMOOTH CONCRETE CAP WITH 1/2" ROUND EDGE.
- FOUNDATION SHALL BE CLASS A CONCRETE PER M.A.G. STANDARD 725.
- FOUNDATION GROUND SHALL BE #6 XHHW GREEN INSULATED COPPER STRANDED GROUNDING WIRE.
- FOUNDATION SHALL HAVE 14" COPPER GROUND PLATE PER COM DETAIL SL-74.02.
- THE PIPE ON EACH SIDE OF A CIRCUMFERENTIAL WELD SHALL HAVE THE SAME OUTSIDE DIAMETER AT THE WELD.



NOTE:

SLOT AND GUIDE PIN SHALL BE POSITIONED ON THE TOP SIDE OF THE POLE AND ARM.

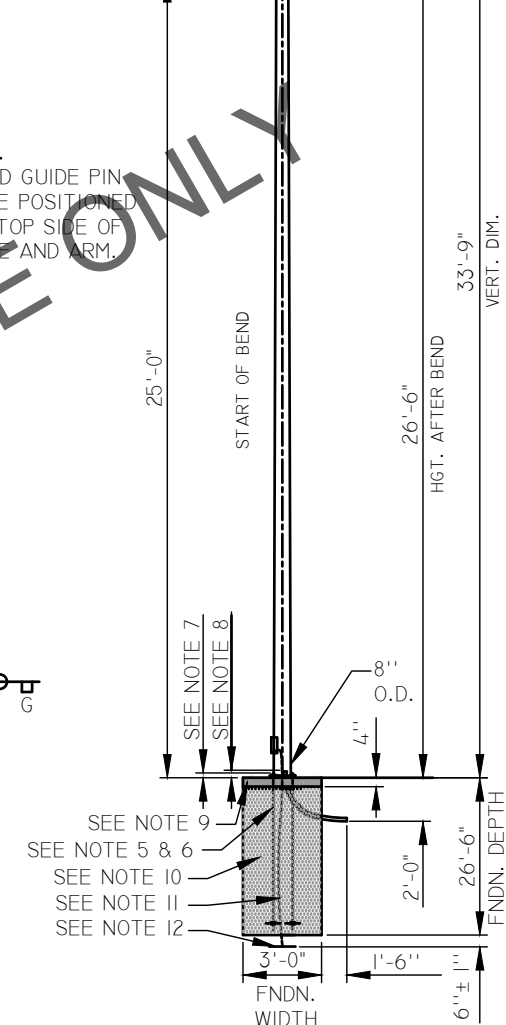
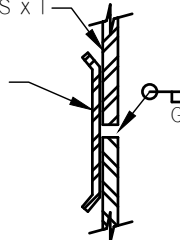
THICKNESS OF FILLER RING (IF NEEDED) TO MATCH DIFFERENCE IN TAPERED TUBE THICKNESS x 1 1/2" WIDE

.135" THK. (10 GAUGE) x 3" WIDE BACK-UP RING

NOTE:

- ALL BUTT WELDS TO BE GROUND FLUSH
- LONGITUDINAL: BUTT WELD BY THE SUBMERGED ARC PROCESS
- CIRCUMFERENTIAL: BUTT WELD WITH PERMANENT BACK-UP RING

SPLICE DETAIL



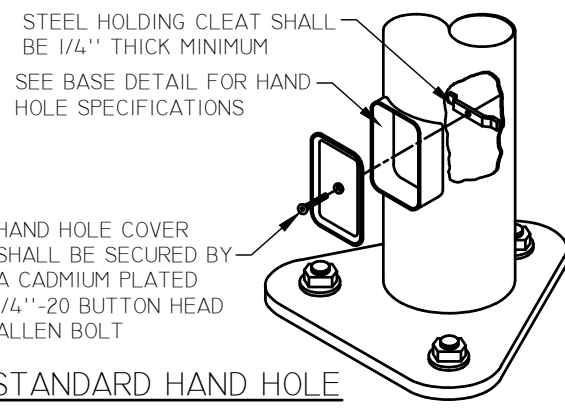
NOTE:

T SERIES STREETLIGHT POLE SHALL BE USED ONLY FOR REPLACEMENT AND ONLY TO MATCH EXISTING STREETLIGHT POLES.

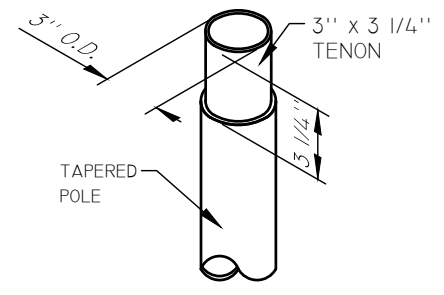
P-601 T SERIES STREETLIGHT POLE

NOT TO SCALE

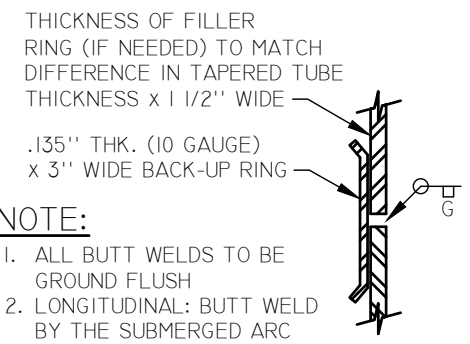
REFERENCE ONLY



STANDARD HAND HOLE ASSEMBLY



TENON DETAIL



SPlice DETAIL

DATA TABLE	
POLE #	POLE HGHT.
	"A"
P-701	9'-0"
P-702	10'-0"
P-703	11'-0"
P-704	12'-0"
P-705	13'-0"
P-706	14'-0"
P-707	15'-0"
P-708	16'-0"
P-709	18'-0"
P-710	20'-0"
P-711	22'-0"

NOTE:

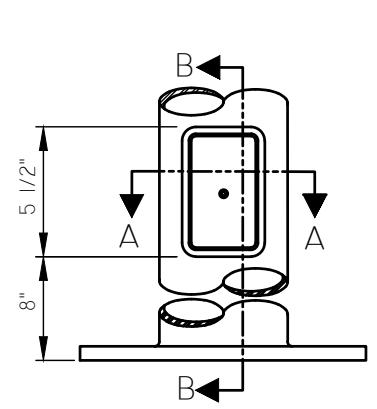
1. ALL BUTT WELDS TO BE GROUND FLUSH
2. LONGITUDINAL: BUTT WELD BY THE SUBMERGED ARC PROCESS
3. CIRCUMFERENTIAL: BUTT WELD WITH PERMANENT BACK-UP RING

NOTES:

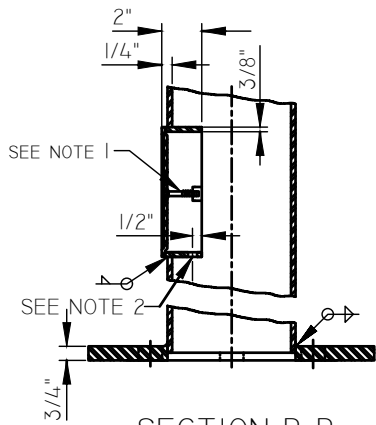
1. THE POLE DESIGN, MATERIALS, AND CONSTRUCTION SHALL CONFORM TO AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, BASED ON A WIND SPEED OF 80 MILES PER HOUR.
2. THE POLE AND ALL PARTS SHALL BE STEEL.
3. THE POLE AND ALL POLE PARTS SHALL BE HOT DIPPED GALVANIZED PER M.A.G. STANDARD 771.
4. UNSTABLE SOIL MAY REQUIRE DEEPER FOUNDATION, AS DETERMINED BY THE ENGINEER.
5. THE 3/4" ANCHOR BOLT SHALL HAVE A LENGTH DETERMINED BY THE DEPTH OF THE FOUNDATION, AND SHALL EXTEND TO 6" +OR- 1" FROM THE BOTTOM OF THE FOUNDATION. SL-74.01 (SEE DETAIL SL-74.03, FOUNDATION DETAIL F-106, SEE BASE DETAIL ON THIS SHEET FOR ANCHOR BOLT PATTERN).
6. ANCHOR BOLTS WITH (4) HEX NUTS, (2) FLAT WASHERS, AND (1) ANCHOR PLATE PER BOLT SHALL BE HOT DIPPED GALVANIZED PER M.A.G. STANDARD 771 SL-74.01.
7. ANCHOR BOLTS SHALL HAVE 1/4" TO 3/4" FULL THREAD ABOVE NUT SL-74.01.
8. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE FOUNDATION. MAXIMUM PROJECTION SHALL BE 4".
9. 2'-0" SQUARE, 4" THICK TROWELED FINISH SMOOTH CONCRETE CAP WITH 1/2" ROUND EDGE. POURED SEPARATELY FROM FOUNDATION.
10. CONCRETE SHALL BE CLASS A PER MAG STANDARD 725.
11. FOUNDATION GROUND SHALL BE #6 XHHW GREEN STRANDED.
12. FOUNDATION SHALL HAVE 14 COPPER GROUND PLATE PER COM DETAIL SL-74.02.
13. THE PIPE ON EACH SIDE OF A CIRCUMFERENTIAL WELD SHALL HAVE THE SAME OUTSIDE DIAMETER AT THE WELD.
14. A STAINLESS STEEL TAG SHALL BE PERMANENTLY ATTACHED TO THE POLE ABOVE THE HAND HOLE STATING THE MANUFACTURER'S NAME, C.O.M. POLE #, AND DATE MANUFACTURED.

NOTE:

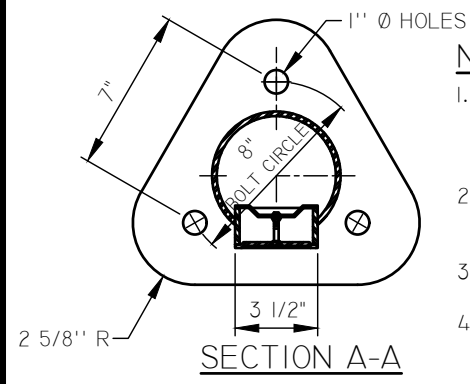
SMALL TAPERED STREETLIGHT POLE SHALL BE USED ONLY FOR REPLACEMENT AND ONLY TO MATCH EXISTING STREETLIGHT POLES.



HAND HOLE DETAIL



SECTION B-B

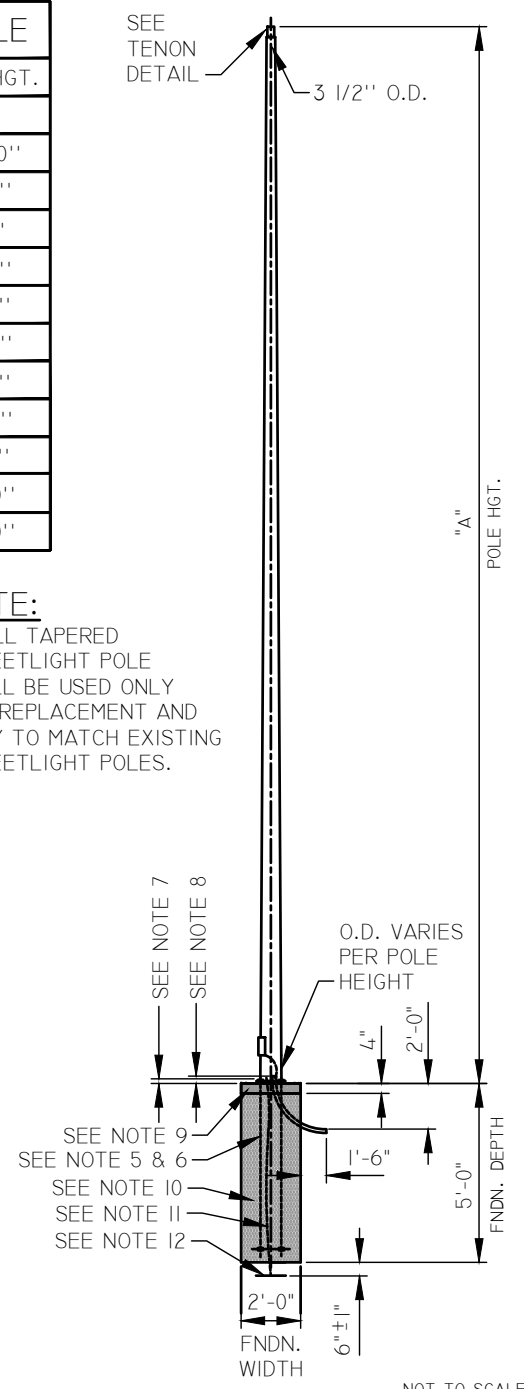


SECTION A-A

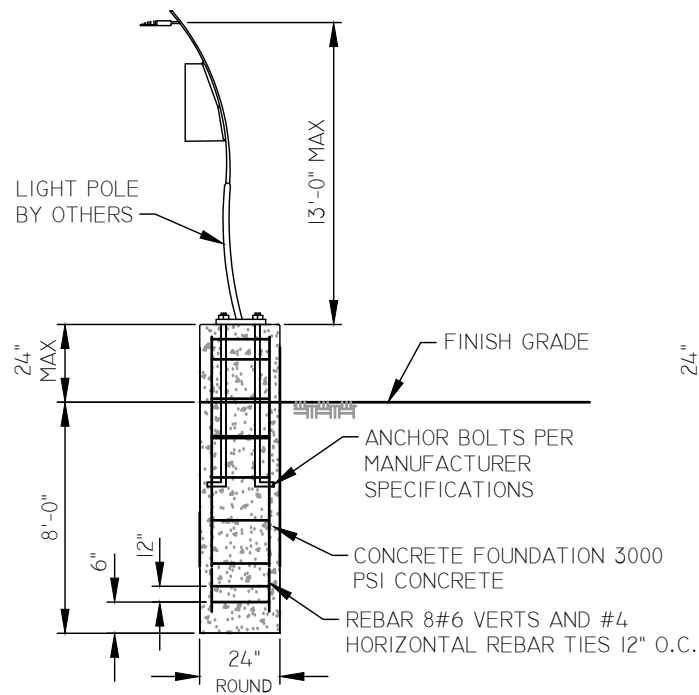
BASE DETAIL

NOTES:

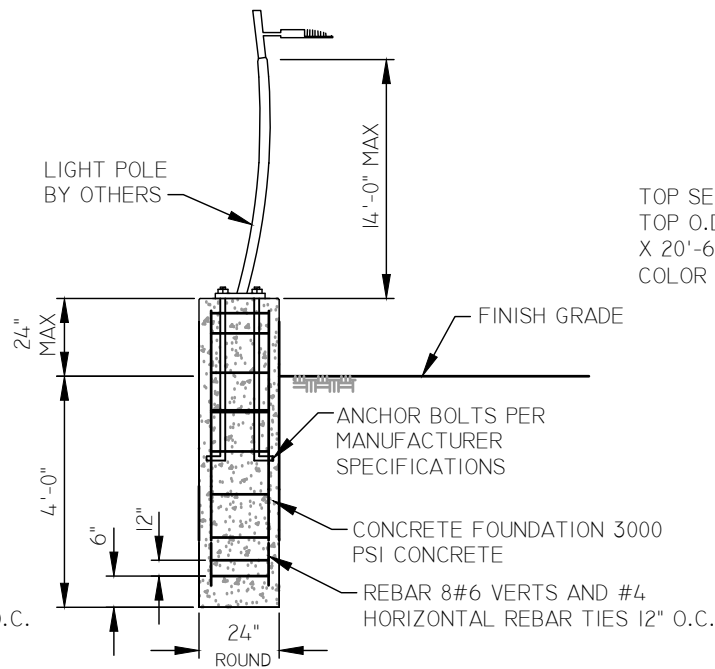
1. HAND HOLE COVER SHALL BE SECURED BY A CADMIUM PLATED 1/4"-20 BUTTON HEAD ALLEN BOLT AND HOLDING CLEAT.
2. POLE GROUND SHALL BE 1/2" DIA. N.C. TAPPED HOLE LOCATED AS SHOWN.
3. HAND HOLE SHALL BE ORIENTED SO THAT IT FACES THE STREET.
4. HAND HOLE DIMENSIONS SHALL BE 3 1/2" BY 5 1/2".



NOT TO SCALE



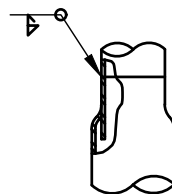
P-810 STREET LIGHT POLE FOUNDATION



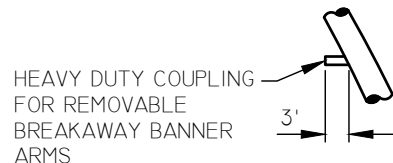
P-812 PEDESTIAN POLE FOUNDATION

GENERAL NOTES:

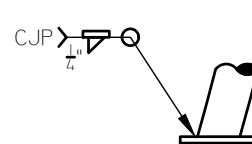
- POLE SHALL BE DESIGNED FOR 80 MPH WIND WITH 1.3 GUST FACTOR.
- THE POLE SHAFT IS FABRICATED FROM A WELDABLE GRADE HOT-ROLLED PIPE OR TUBING THAT MEETS OR EXCEEDS THE REQUIREMENTS OF ASTM A513. IT HAS A MINIMUM YIELD STRENGTH OF 42,000 PSI.
- THE BASE PLATE IS FABRICATED FROM A STRUCTURAL QUALITY HOT-ROLLED CARBON PLATE THAT MEETS OR EXCEEDS THE REQUIREMENTS OF ASTM-A36. IT HAS A MINIMUM YIELD STRENGTH OF 36,000 PSI.
- ANCHOR BOLTS PER MESA DETAIL SL-74.01 TYPE AB-107 FOR STREET LIGHT POLE TYPE AB-108 FOR PEDESTRIAN POLE.
- AFTER FABRICATION, THE POLE IS SAND BLASTED TO SSPC SPECIFICATION SP-6-63, PRIME AND PAINT USING ONE OF THE FOLLOWING CITY OF MESA APPROVED POLYURETHANE PAINT PRODUCTS:
 - TNEMEC SERIES UVX 740
 - CARBOLINE CARBOTHANE 134HG
 - PPG PITTHANE UG 95-812
 - SHERWIN WILLIAMS HI SOLIDS POLYURETHANE B65-350 SERIES B60V30
- COAT INSIDE OF POLE FROM BASE PLATE TO HAND HOLE WITH ANTI-RUST "AMERCOAT 78HB" OR EQUIVALENT.



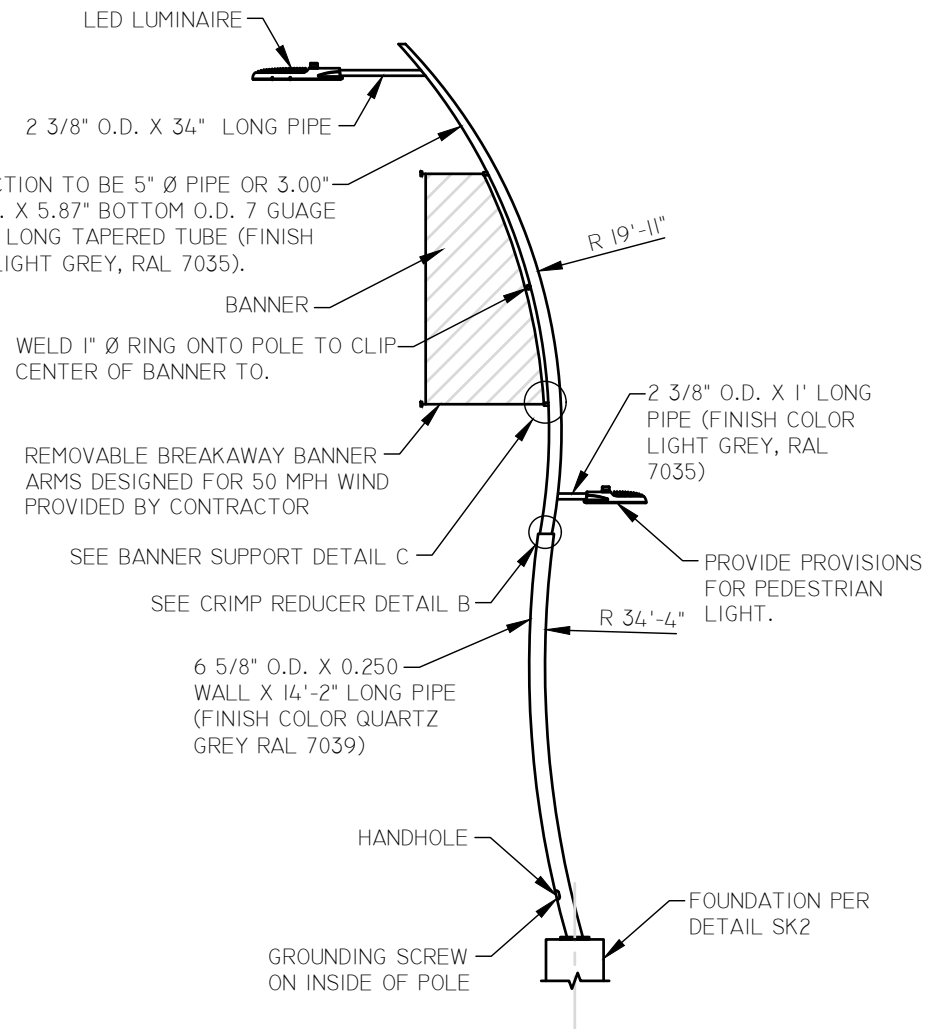
CRIMP REDUCER DETAIL



BANNER SUPPORT DETAIL

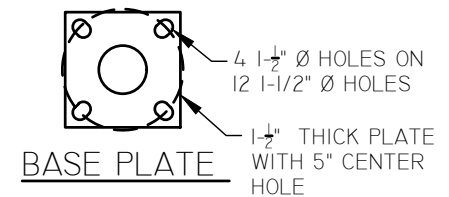


BASE PLATE DETAIL



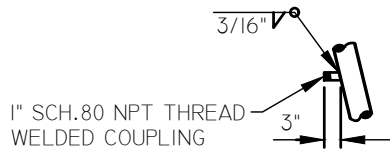
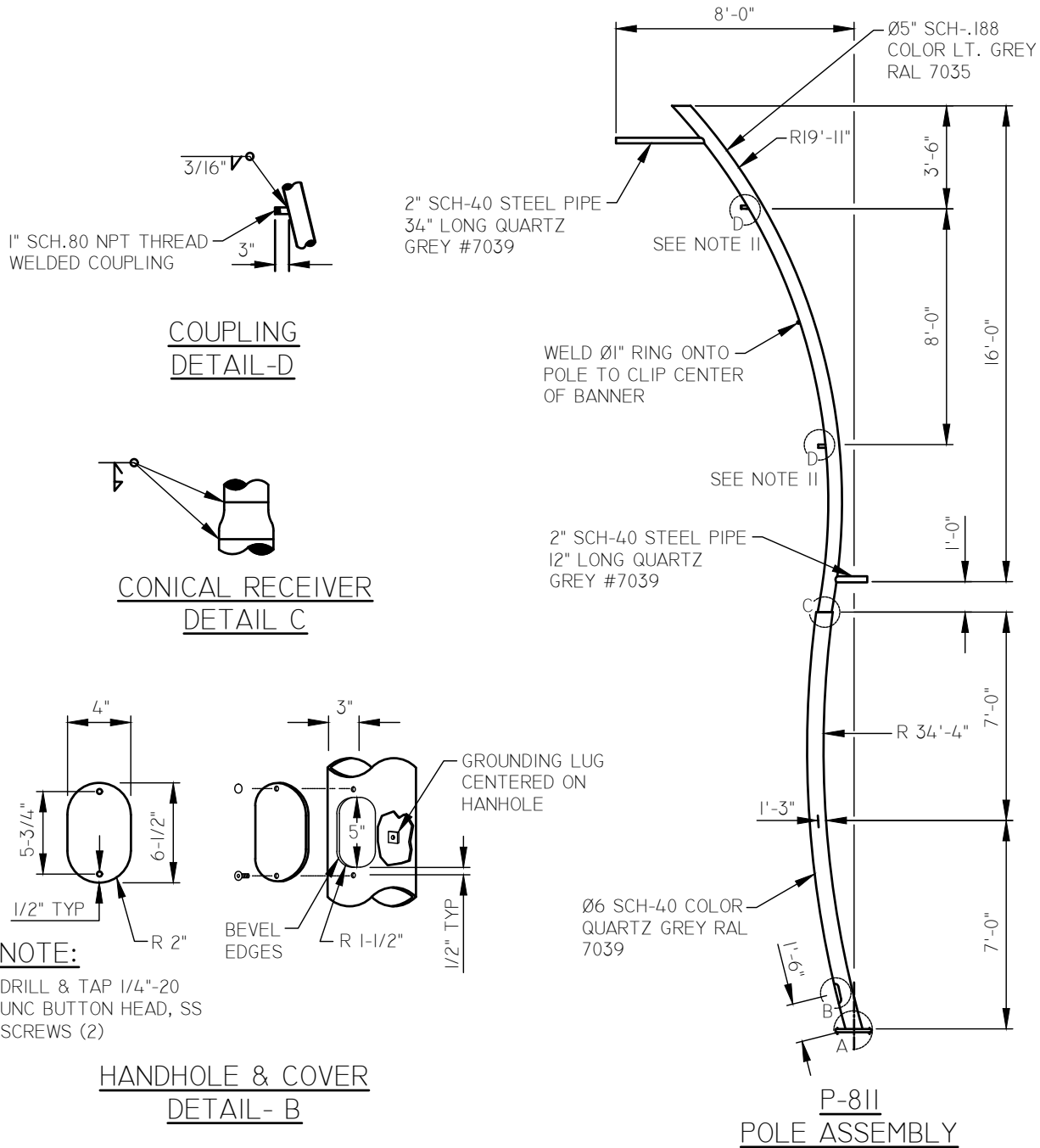
P-811 ROADWAY LIGHTING POLE

NO SCALE

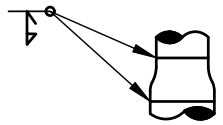


BASE PLATE

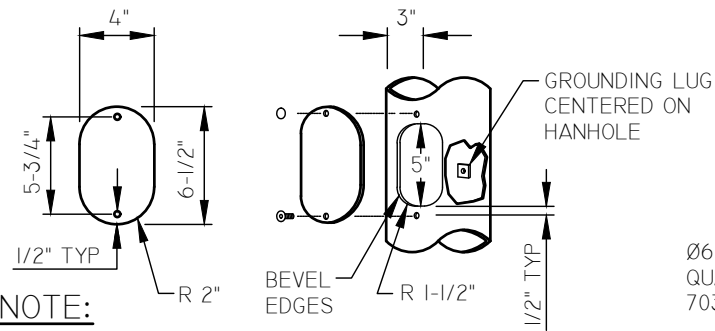
NOT TO SCALE



COUPLING
DETAIL-D



CONICAL RECEIVER
DETAIL C



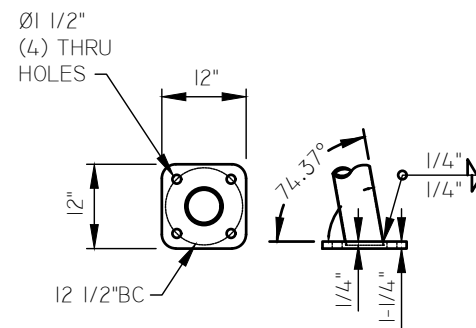
NOTE:

DRILL & TAP 1/4"-20
UNC BUTTON HEAD, SS
SCREWS (2)

HANDHOLE & COVER
DETAIL-B

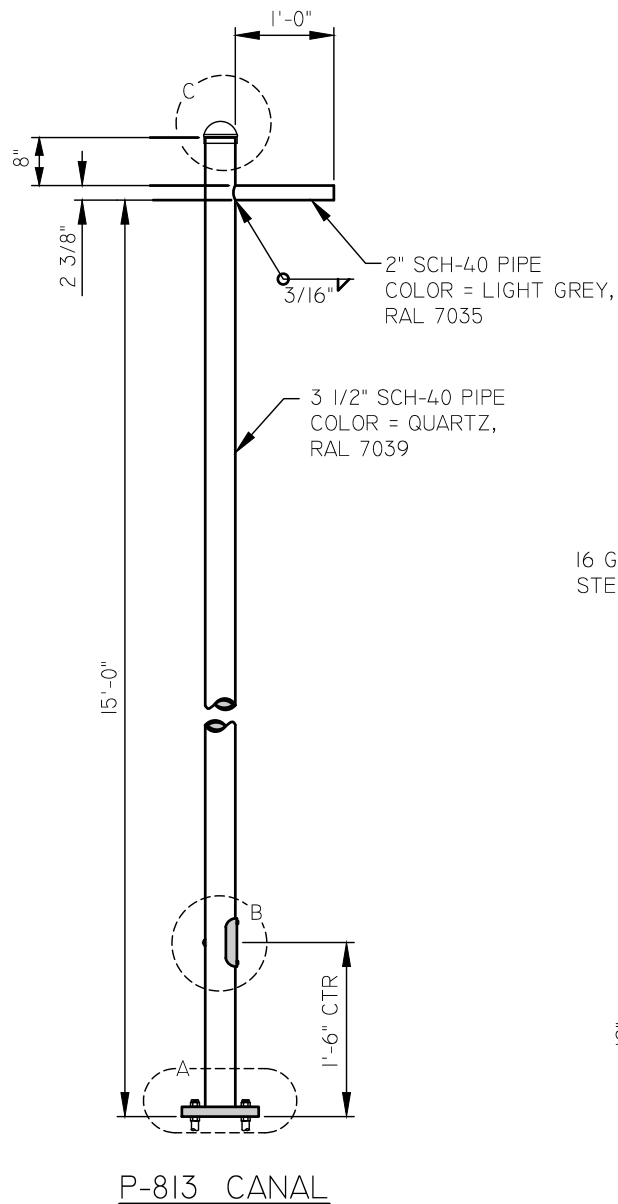
NOTES:

1. ALL WIRE ENTRANCE AND EXIT HOLES SHALL BE FREE OF ALL BURRS AND SHARP EDGES. SOME HIDDEN LINES NOT SHOWN FOR CLARITY.
2. DRAWING NOT TO SCALE.
3. STAMP OR TAG SHALL BE PERMANENTLY ATTACHED TO THE POLE ABOVE.
4. HANDHOLE STATING THE MANUFACTURER'S NAME AND DATE MANUFACTURED.
5. COLOR AS NOTED ON DRAWING.
6. THE POLE FABRICATED FROM A WELDABLE GRADE HOT-ROLLED PIPE OR TUBING THAT MEETS OR EXCEEDS THE REQUIREMENTS OF ASTM A500 GRADE.
7. B. SHALL HAVE A MINIMUM YIELD STRENGTH OF 42,000 PSI. THE BASE PLATE IS FABRICATED FROM A STRUCTURAL QUALITY HOT-ROLLED.
8. CARBON PLATE THAT MEETS OR EXCEEDS THE REQUIREMENTS OF ASTM-A36.
9. SHALL HAVE A MINIMUM YIELD STRENGTH OF 36,000 PSI. ANCHOR BOLTS PER MESA DETAIL SL-74.01 TYPE AB-107 FOR STREET LIGHT POLE. AFTER FABRICATION, THE POLE IS SANDBLASTED TO A NEAR WHITE FINISH, PRIME AND PAINT USING ONE OF THE FOLLOWING CITY OF MESA APPROVED POLYURETHANE PAINT PRODUCTS:
 - A. TNEMEC SERIES UVX 740
 - B. CARBOLINE CARBTHANE 134HG
 - C. PPG PITTHANE UG 95-812
 - D. SHERWIN WILLIAMS HI SOLIDS POLYURETHANE B65-350 SERIES B60V30.
10. COAT INSIDE OF POLE FROM BASE PLATE TO HANDHOLE WITH ANTI-RUST "AMERCOAT 78HB" OR EQUAL.
11. BANNER ARMS AND BREAK AWAY COUPLING TO BE PROVIDED BY OTHERS.

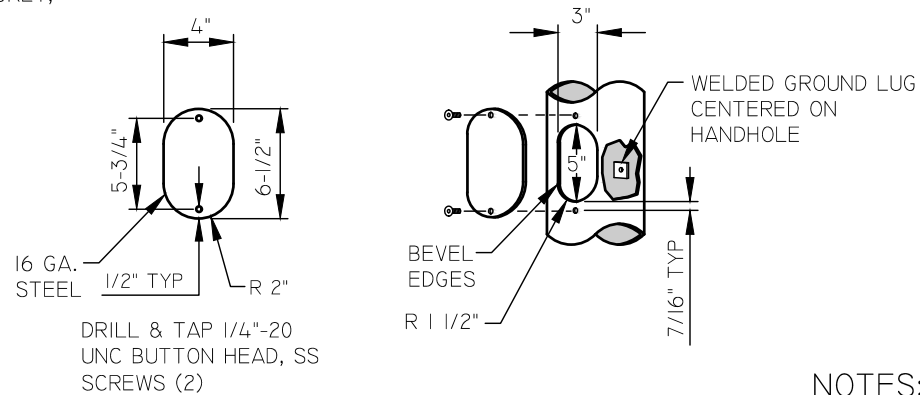


BASE
DETAIL-A

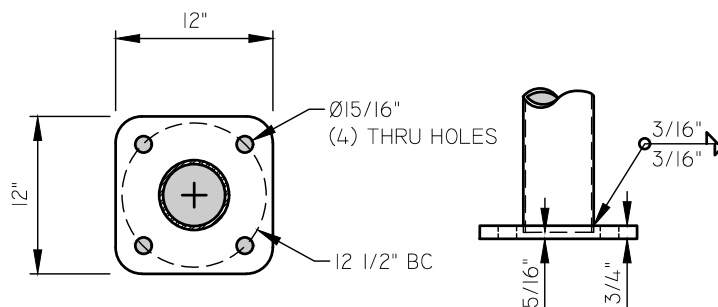
NOT TO SCALE



DETAIL C



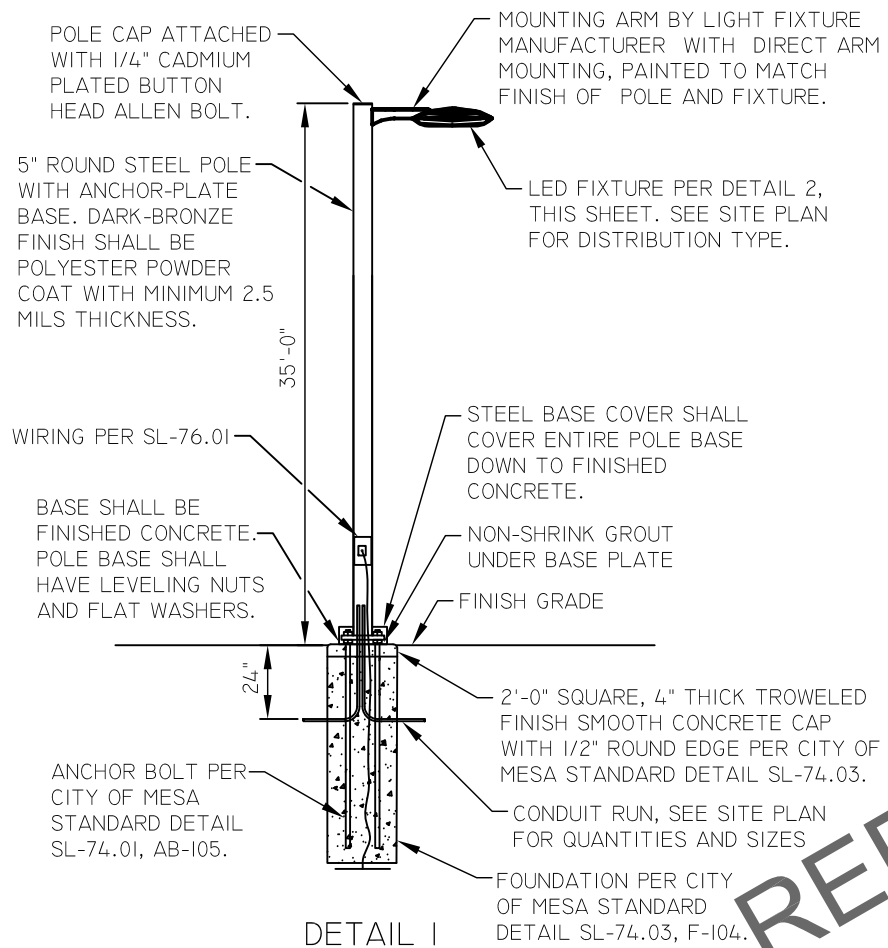
DETAIL B



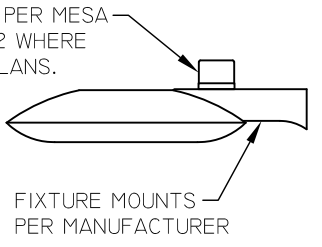
DETAIL A

NOTES:

1. ALL WIRE ENTRANCE AND EXIT HOLES SHALL BE FREE OF ALL BURRS AND SHARPS EDGES.
2. SOME HIDDEN LINES NOT SHOWN FOR CLARITY.
3. DRAWINGS NOT TO SCALE.
4. STAMP OR TAG SHALL BE PERMANENTLY ATTACHED TO THE POLE #, AND DATE MANUFACTURED.
5. COLOR AS NOTED ON DRAWING.
6. COAL TAR COATING INSIDE TO HANDHOLE.



DETAIL 1
P-820 STREET LIGHT DETAIL



DETAIL 2
LED LUMINAIRE

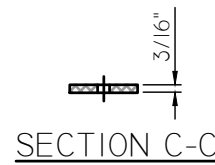
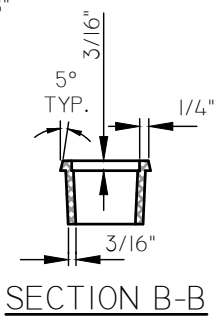
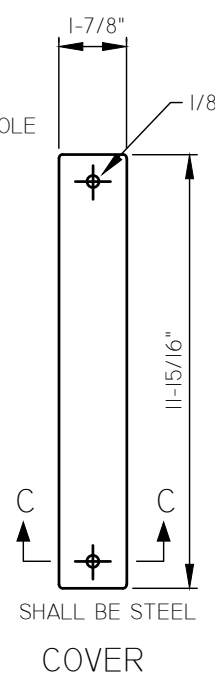
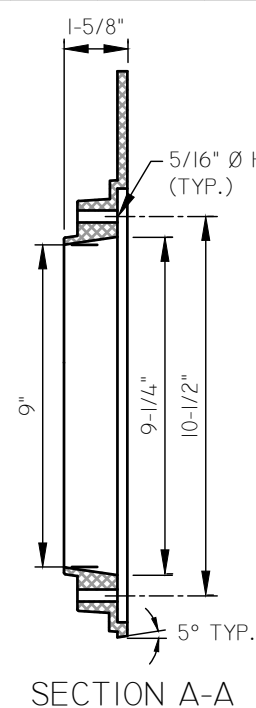
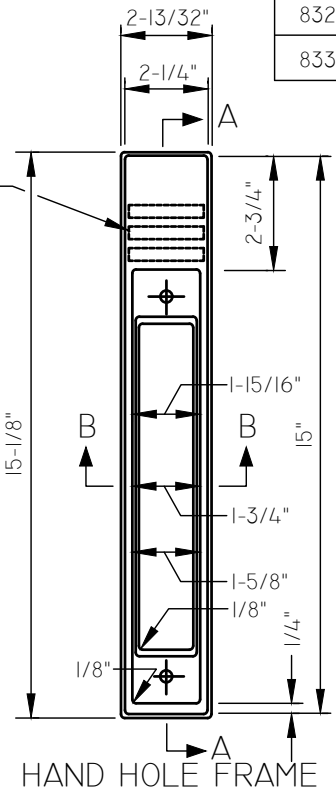
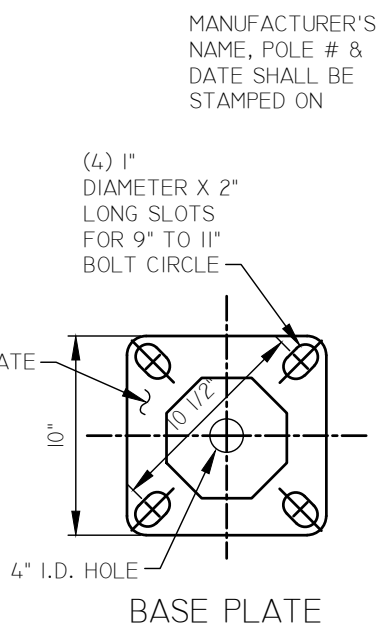
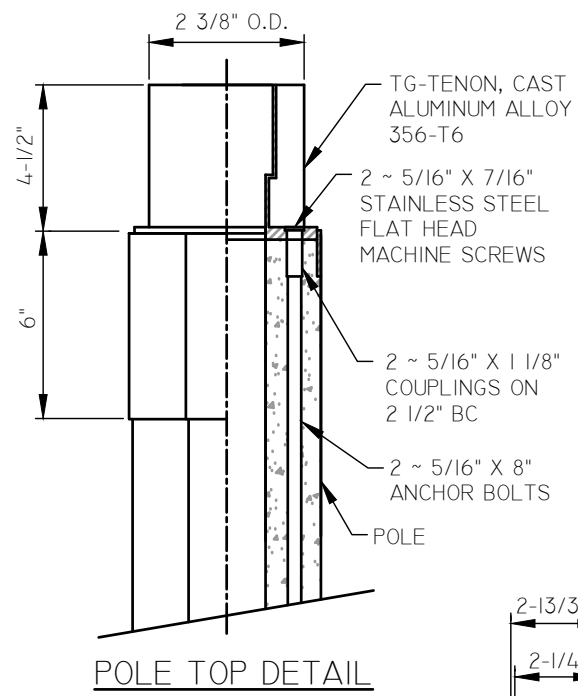
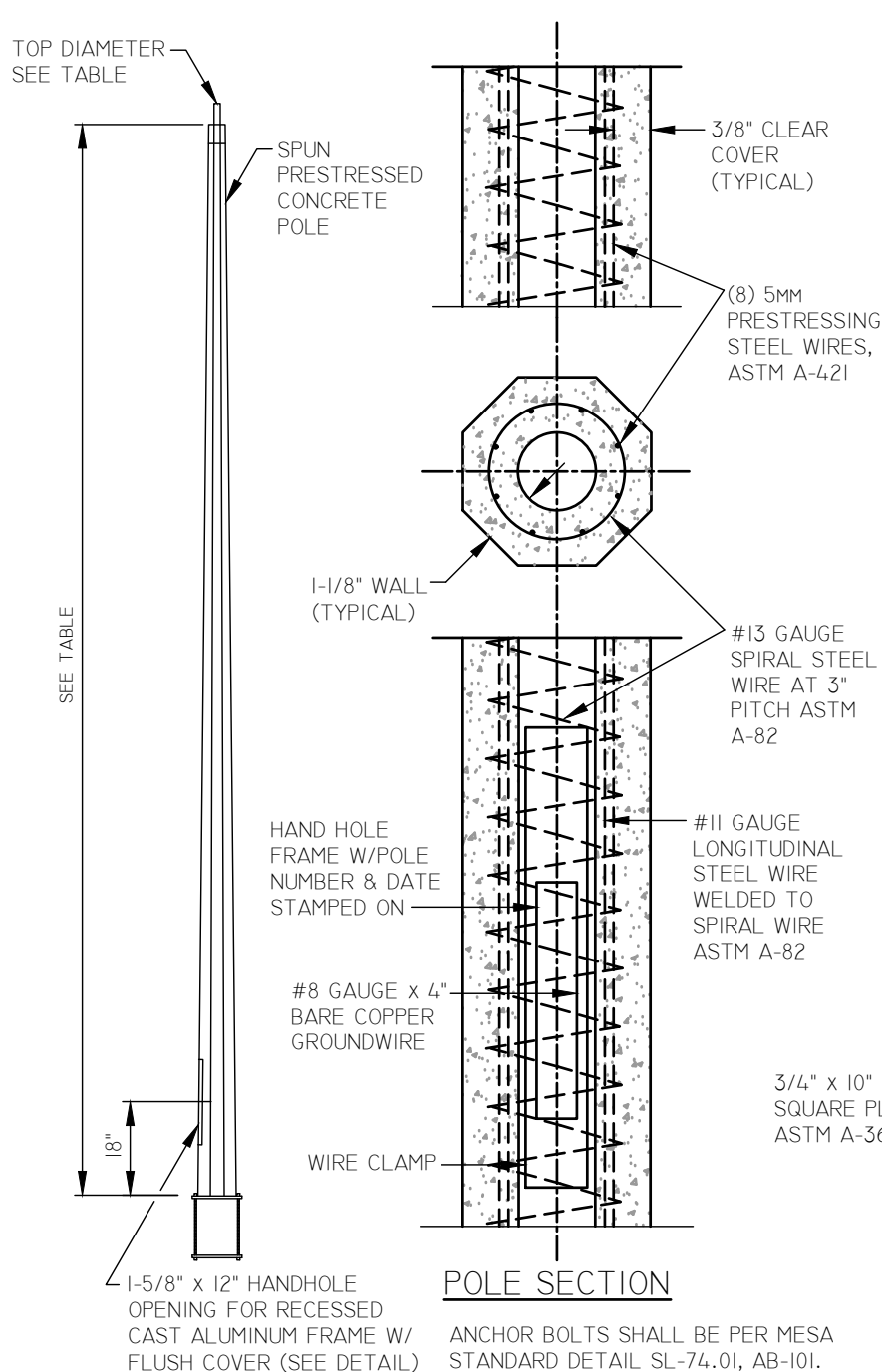
APPROVED MANUFACTURERS:
COOPER INVUE LED
OR CREE BETA LED

LED LUMINAIRE SPECIFICATION

1. LED FIXTURE SHALL HAVE A 5 YEAR FULL REPLACEMENT WARRANTY ON LED MODULES AND DRIVERS. 10 YEAR WARRANTY ON HOUSING AND FINISH.
2. HOUSING SHALL BE PRIMARILY CONSTRUCTED OF RUST RESISTANT METAL WITH POWDER COATED DARK BRONZE FINISH.
3. ALL MOUNTING HARDWARE SHALL BE NON-CORROSIVE OR SUITABLE PROTECTED METAL.
4. LUMINAIRE SHALL MOUNT ON STANDARD 8.5" MANUFACTURER PROVIDED MAST ARM, WITH NO MORE THAN 4 BOLTS, WITH NO REARRANGEMENT OF PARTS NEEDED TO INSTALL, AND IS ADJUSTABLE TO +/- 5° TO ALLOW FOR FIXTURE LEVELING.
5. WEIGHT SHALL NOT EXCEED 50 LBS. WITH AN EPA OF LESS THAN 1.2 SQ. FT.
6. LUMINAIRE SHALL MEET THE IESNA FULL CUTOFF CLASSIFICATION AND HAVE IESNA TYPE II OR TYPE III DISTRIBUTION.
7. DRIVER & LED MODULES SHALL BE REPLACEABLE AS SEPARATE UNITS, & HAVE PLUG CONNECTIONS.
8. COOLING SHALL BE DONE WITH HEAT SINKS. NO FANS, PUMPS, OR LIQUIDS SHALL BE USED.
9. UNIT SHALL BE TESTED & CAPABLE OF OPERATING IN AMBIENT TEMPERATURES OF -7°C TO 40°C.
10. LUMINAIRE SHALL HAVE A 7-PIN LOCKING PHOTOCELL RECEPTACLE MEETING ANSI C136.41-2013. PROVIDE LOW PROFILE SHORTING CAP FOR LUMINAIRES THAT DO NOT REQUIRE PHOTOCELL, PRECISION JP-275 OR EQUAL. INSTALL LOW PROFILE, 30 AMP RATED SHORTING CAPS ON ALL LUMINAIRES THAT DO NOT REQUIRE PHOTOCELL. SIMILAR TO PRECISION JP-275 (OR EQUAL).
11. TERMINAL BOARD SCREWS SHALL BE CAPTIVE TYPE WITH WIRE GRIPS THAT RAISE AND LOWER WITH THE TERMINAL SCREW. TERMINALS SHALL BE CAPABLE OF ACCEPTING #8 TO #14 AWG WIRE.
12. CORRELATED COLOR TEMPERATURE (CCT) OF 4000K TO 4500K WITH A TOLERANCE OF ±6%. COLOR RENDERING INDEX (CRI) OF 70 OR GREATER.
13. LUMEN DEPRECIATION TO L70 SHALL BE NOT LESS THAN 75,000 HOURS, IN-SITU.
14. MAXIMUM LED DRIVE CURRENT SHALL BE 1.0 A.
15. LED DRIVER SHALL ACCEPT 120V THRU 277V 60 HZ INPUT, AND SHALL HAVE POWER FACTOR OF 0.90 MINIMUM.
16. LED DRIVER SHALL BE CAPABLE OF 0-10V DIMMING.
17. POWER SUPPLIES SHALL MEET APPLICABLE FCC GUIDELINES FOR INTERFERENCE, WITH TOTAL HARMONIC DISTORTION LESS THAN 20%.
18. POWER SUPPLY SHALL COMPLY WITH IEEE C.62.41-1991, CLASS A OPERATION. THE LINE TRANSIENT SHALL CONSIST OF SEVEN STRIKES OF A 100 KHZ RING WAVE, 2.5 KV LEVEL, FOR BOTH COMMON MODE AND DIFFERENTIAL MODE.
19. LUMINAIRE IES FILES MUST BE GENERATED IN ACCORDANCE WITH IESNA STANDARD LM-79-08 FOR ABSOLUTE PHOTOMETRY, BY A NVLAP ACCREDITED LAB.
20. ELECTRONIC IES FILES MUST BE PROVIDED TO THE ENGINEER FOR VERIFICATION THAT THE LUMINAIRE MEETS THE PHOTOMETRIC CRITERIA.
21. ALL SUBMITTED LED DATA RELATED TO L70 LUMEN DEPRECIATION, EFFICACY AND CCT MUST BE GENERATED PER IESNA STANDARD LM-80-08.
22. LUMINAIRE SHALL BE UL OR ETL LISTED FOR WET LOCATIONS.

REFERENCE ONLY

LED LUMINAIRES						
IES DISTRIBUTION TYPE	# OF LED'S	SYSTEM WATTS	NOMINAL LUMENS	LENGTH (IN)	MANUFACTURER	CATALOG NUMBER
TYPE II	126	146	12,446	28	COOPER INVUE ICON LED	ICM/B06/LED/EI/T2/BZ/R-DIM
TYPE III	126	146	12,302	28	COOPER INVUE ICON LED	ICM/B06/LED/EI/T3/BZ/R-DIM



NOTES:

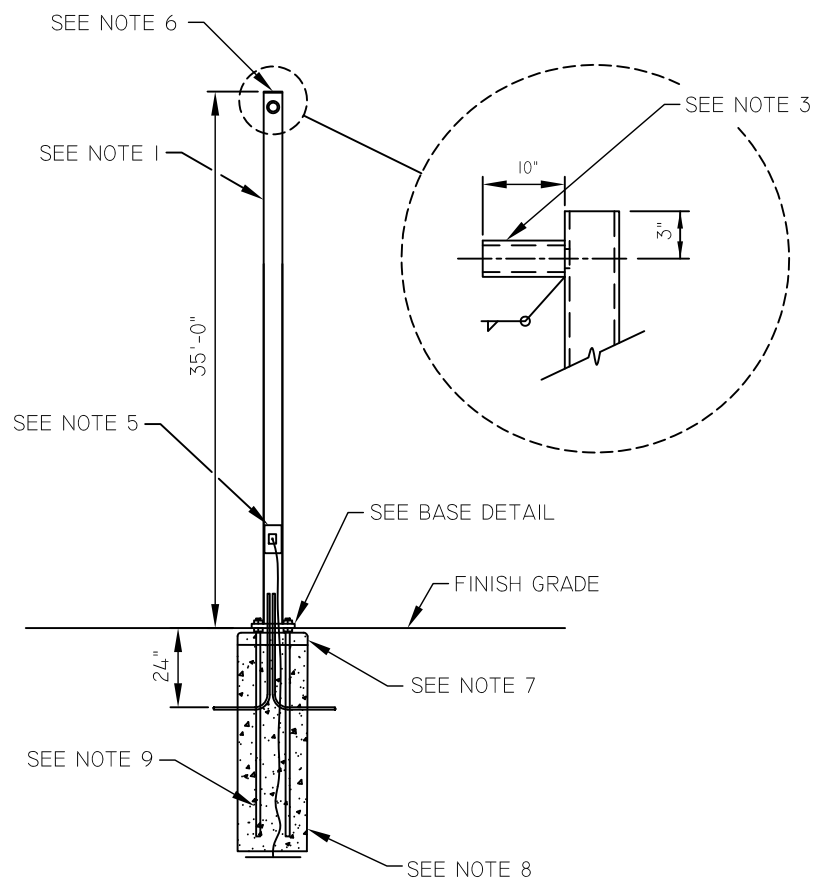
1. POLES SHALL BE GREEN NATURAL AGGREGATE, EXPOSED FINISH WITH CLEAR GRAFFITI COATING (AMERON COLOR #413).
2. ASTM C-150 TYPE III GRAY CEMENT, F'c @ 28 DAYS = 7,000 PSI.
3. POLES MANUFACTURED TO ASTM C-1089-88.
4. LOADING SHALL BE 80 MPH ASSHTO-LTS2 WIND LOADING WITH 1.3 GUST FACTOR.
5. PAINT BASE PLATE AND TENON AS DESCRIBED IN CITY OF MESA STANDARD DETAIL SL-70.03.1.
6. ALL POLES SHALL BE INSTALLED PLUMBED TO THE VERTICAL WITH ALL LUMINAIRES INSTALLED.
7. FOUNDATION SHALL BE INSTALLED PER MESA STANDARD DETAIL SL-74.03, F-106, AND SL-74.07. SEE 2' RAISED FOUNDATION DETAIL WHEN SPECIFIED.

POLE #	POLE HEIGHT ABOVE FNDN.	SLOTTED BOLT CIRCLE	ULTIMATE G.L. MOMENT (FT. LBS.)	WEIGHT LBS	POLE TOP DIAMETER (INCHES)	SPECIAL BASE PLATE SIZE
830	14'-4"	9" TO 11"	7,500	270	3-7/8"	SZ
831	23'-0"	9" TO 11"	7,500	480	3-1/2"	SM
832	27'-3"	9" TO 11"	7,500	620	3-1/2"	SN
833	27'-3"	9" TO 11"	7,500	620	3-1/2"	SN

NOT TO SCALE

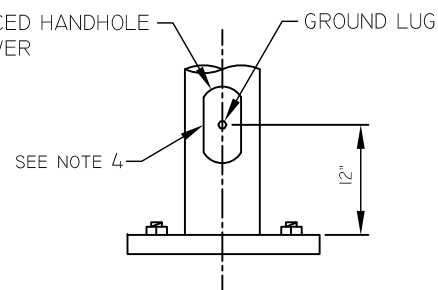
NOTES:

1. 5 9/16 O.D. X .188" POLE SHAFT IS FABRICATED FROM A WELDABLE GRADE HOT-ROLLED CARBON STEEL PIPE AND HAS A MINIMUM YIELD STRENGTH OF 42,000 PSI. BASE PLATE IS FABRICATED FROM A STRUCTURAL QUALITY HOT-ROLLED CARBON PLATE THAT MEETS OR EXCEEDS THE REQUIREMENTS OF ASTM-A36. ALL POLE PARTS SHALL BE HOT DIPPED GALVANIZED PER M.A.G. STANDARD 771 AND FINISHED WITH A DARK-BRONZE POLYESTER POWDER COAT WITH A MINIMUM 2.5 MILS THICKNESS.
2. THE POLE DESIGN, MATERIALS, AND CONSTRUCTION SHALL CONFORM TO AASHTO STANDARDS SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES, AND TRAFFIC SIGNALS, BASED ON A WIND SPEED OF 80 MILES PER HOUR.
3. 10" 2 3/8 O.D. SCH 40 PIPE WITH 1" WIRE ACCESS HOLE. WIRE ACCESS SHALL BE SMOOTH, FREE FROM BURRS OR SHARP EDGES.
4. HANDHOLE CONSISTS OF A 3" x 5" OVAL REINFORCED FRAME WITH 16 GAUGE COVER, STEEL ATTACHMENT BAR, AND 1/4" SCREW. A GROUNDING LUG IS INSTALLED INSIDE THE POLE SHAFT OPPOSITE THE HANDHOLE OPENING AND SHALL BE 1/2" - 13 UHC NUT WELDED INSIDE THE POLE. THE HANDHOLE IS WELDED IN THE POLE SHAFT AND LOCATED AT 12" ABOVE THE BASE.
5. A STAINLESS-STEEL TAG SHALL BE PERMANENTLY ATTACHED TO THE POLE ABOVE THE HAND HOLE STATING THE MANUFACTURER'S NAME, COM POLE #, AND DATE MANUFACTURED.
6. POLE CAP ATTACHED WITH 1/4" CADMIUM PLATED BUTTON HEAD ALLEN BOLT.
7. 2'-0" SQUARE, 4" THICK TROWELED FINISH SMOOTH CONCRETE CAP WITH 1/2" ROUND EDGE PER CITY OF MESA STANDARD DETAIL SL-74.03.
8. FOUNDATION PER CITY OF MESA STANDARD DETAIL SL-74.03, F-104.
9. ANCHOR BOLT PER CITY OF MESA STANDARD DETAIL SL-74.01, AB-105

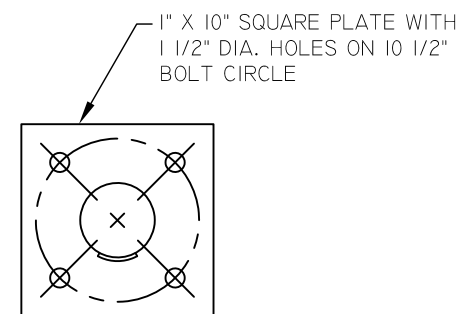


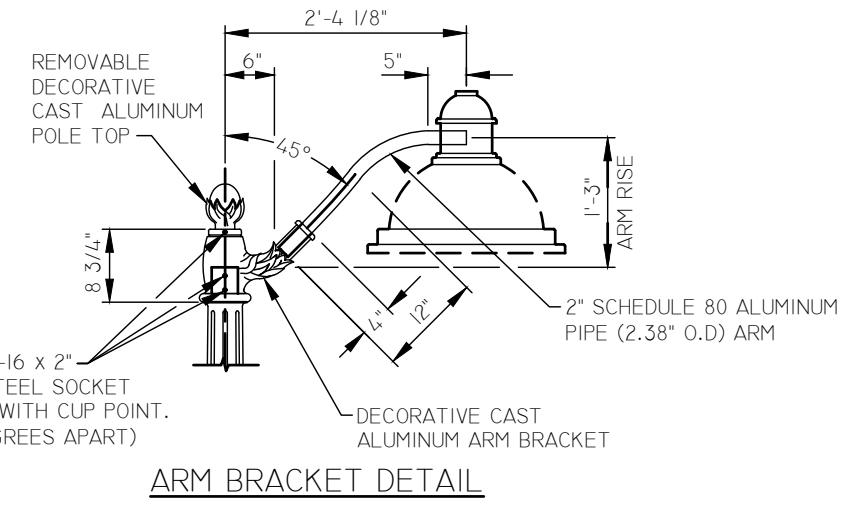
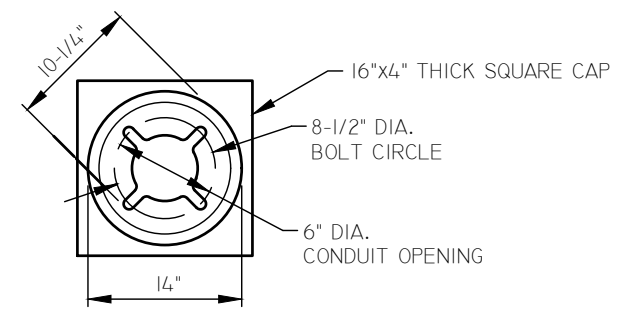
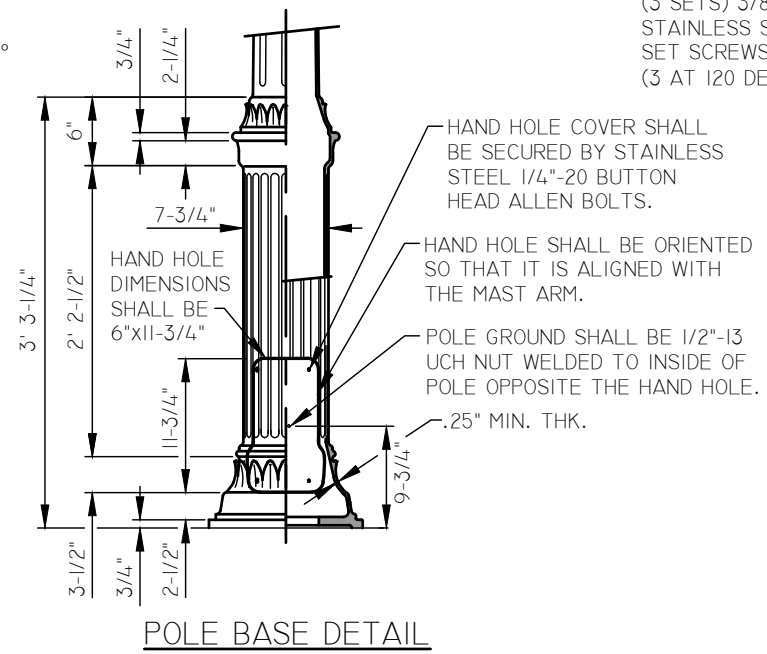
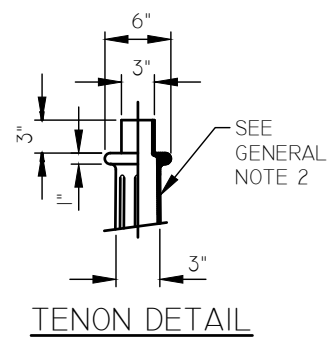
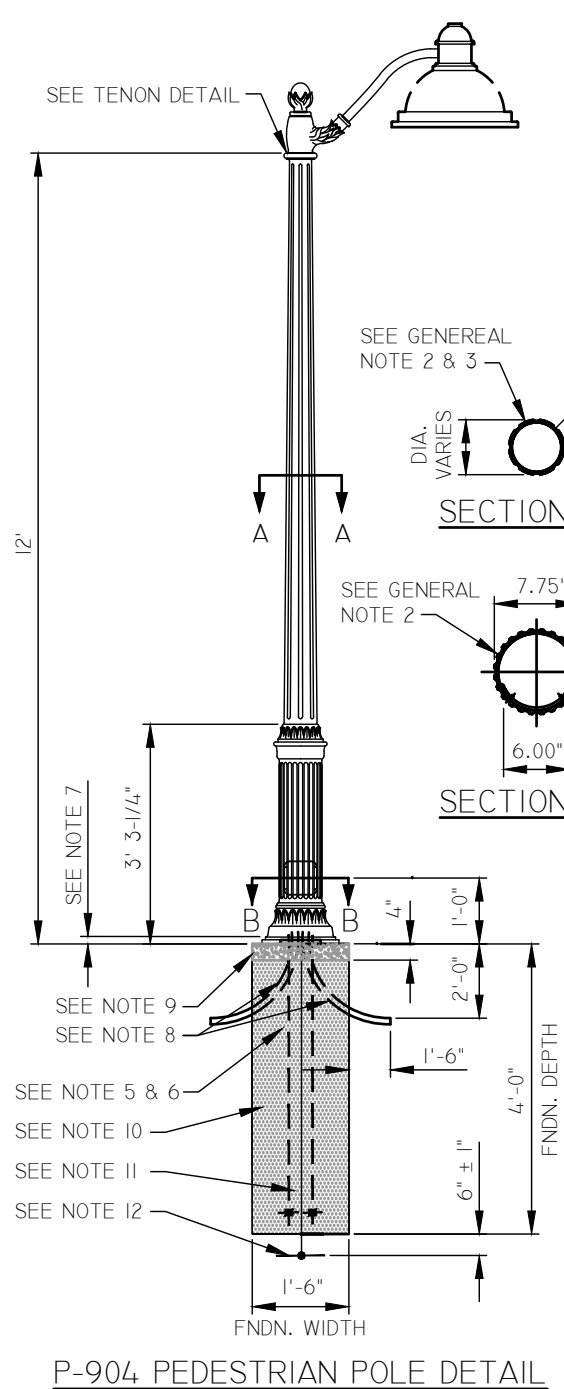
DETAIL 1
P-820 STREET LIGHT DETAIL

REINFORCED HANDHOLE WITH COVER



BASE DETAIL





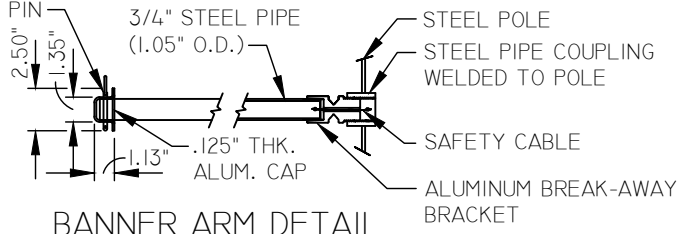
- NOTES:**
1. THE POLE DESIGN, MATERIALS, AND CONSTRUCTION SHALL CONFORM TO AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, BASED ON A WIND SPEED OF 80 MILES PER HOUR.
 2. THE POLE TO BE ONE PIECE CAST ALUMINUM.
 3. THE POLE AND OTHER MISCELLANEOUS ALUMINUM PARTS SHALL BE SOLVENT CLEANED TO SSPC-SPI SPECIFICATION TO REMOVE ALL SOLUBLE CONTAMINANTS. AFTER SURFACE PREPARATION A PRIMER COAT OF TNE MEC SERIES 66 HI BUILD EPOXOLINE OR APPROVED EQUAL SHALL BE APPLIED TO A THICKNESS OF 3 DRY MILS. THE COLOR COATING SHALL BE TNE MEC SERIES 73 ENDURA SHIELD III OR APPROVED EQUAL, APPLIED TO A MINIMUM THICKNESS OF 3 DRY MILS. THE FINAL COATING SHALL BE TNE MEC SERIES 76 ENDURA CLEAR OR APPROVED EQUAL, APPLIED TO A MINIMUM THICKNESS OF 1.5 DRY MILS. THE FINISH COLOR SHALL BE HUNTER GREEN, TNE MEC COLOR NUMBER PL20.
 4. UNSTABLE SOIL MAY REQUIRE DEEPER FOUNDATION, AS DETERMINED BY THE ENGINEER.
 5. THE 3/4" ANCHOR BOLT SHALL HAVE A LENGTH DETERMINED BY THE DEPTH OF THE FOUNDATION, AND SHALL EXTEND TO 6" +OR- 1" ABOVE THE BOTTOM OF THE FOUNDATION. SL-74.01
 6. ANCHOR BOLTS WITH 4 HEX NUTS, 2 FLAT WASHERS, AND 1 ANCHOR PLATE PER BOLT SHALL BE HOT DIPPED GALVANIZED PER SL-73.06.
 7. ANCHOR BOLTS SHALL HAVE FULL THREAD THROUGH NUT AND WASHER WITH A 2-1/2" PROJECTION ABOVE THE FINISHED CAP SL-74.01.
 8. TWO 1-1/2" SCHEDULE 40 PVC DEGREE BEND CONDUITS WITH A RADIUS OF NOT LESS THAN 18" (FACTORY BENDS ONLY SHALL BE USED). CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE FINISHED CAP, MAXIMUM PROJECTION SHALL BE 4".
 9. 16" SQUARE x 4" THICK SMOOTH FINISH CONCRETE CAP.
 10. CONCRETE SHALL BE CLASS A PER MAG STANDARD 725.
 11. FOUNDATION GROUND SHALL BE #6 XHHW GREEN STRANDED.
 12. FOUNDATION SHALL HAVE 14 COPPER GROUND PLATE PER COM DETAIL SL-74.02.

NOT TO SCALE

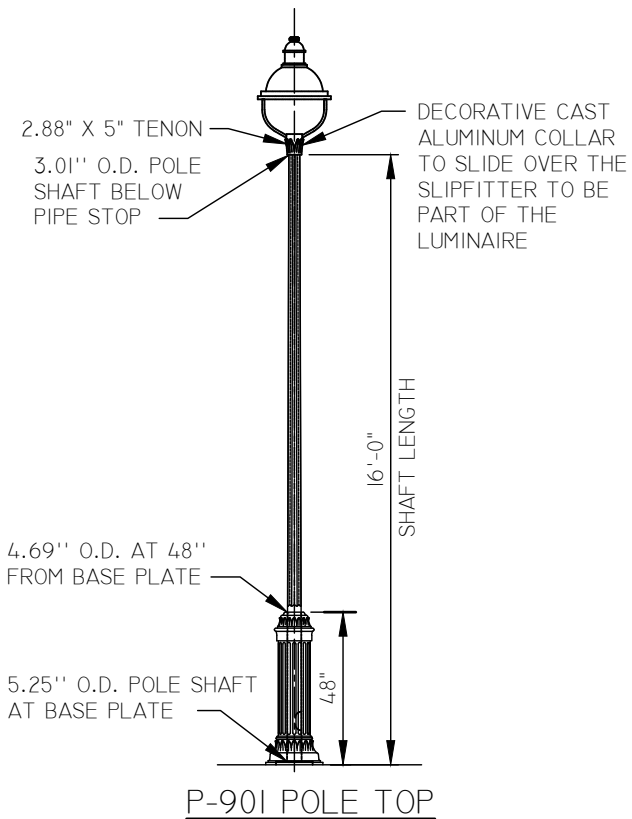
NOTE

BREAK-AWAY BANNER DESIGNED FOR 50 MPH WIND WITH 1.3 GUST FACTOR WITH BANNER INSTALLED.

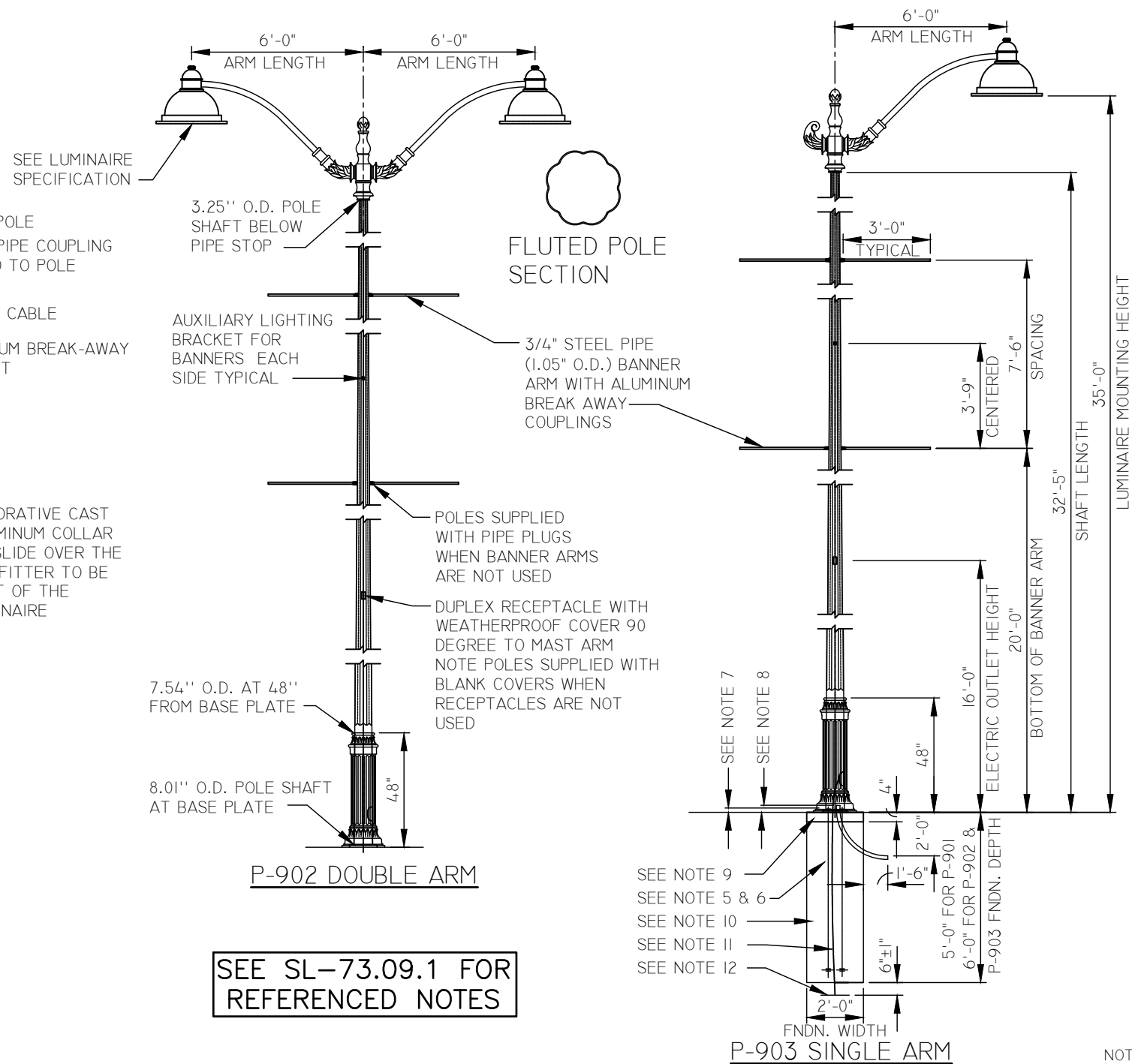
STAINLESS STEEL 1/4" DIA.
QUICK RELEASE PIN



BANNER ARM DETAIL



P-901 POLE TOP



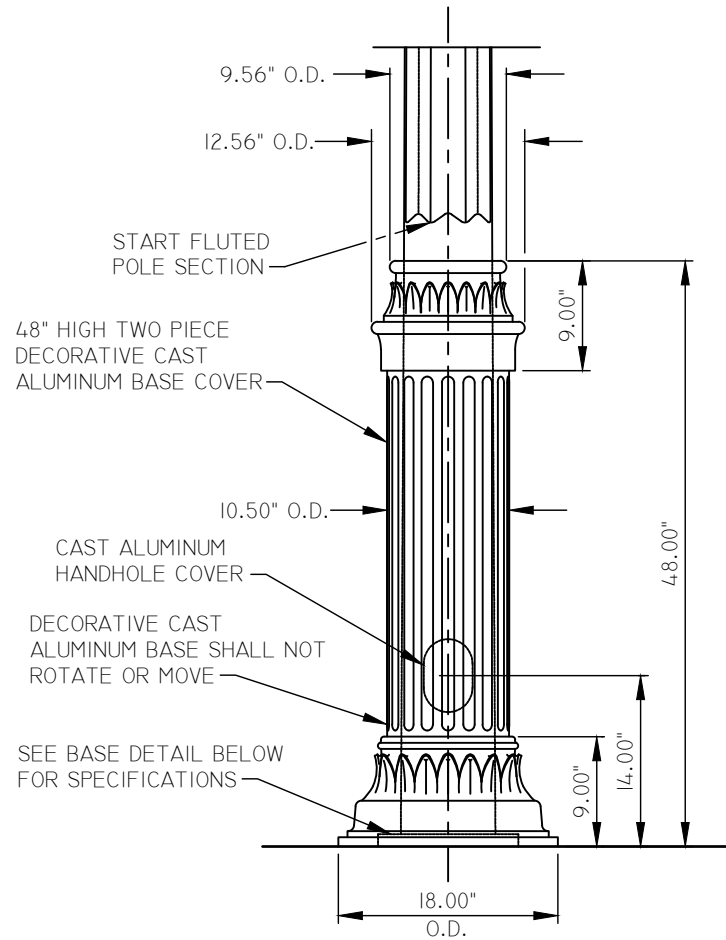
SEE SL-73.09.1 FOR REFERENCED NOTES

SEE NOTE 9
SEE NOTE 5 & 6
SEE NOTE 10
SEE NOTE 11
SEE NOTE 12

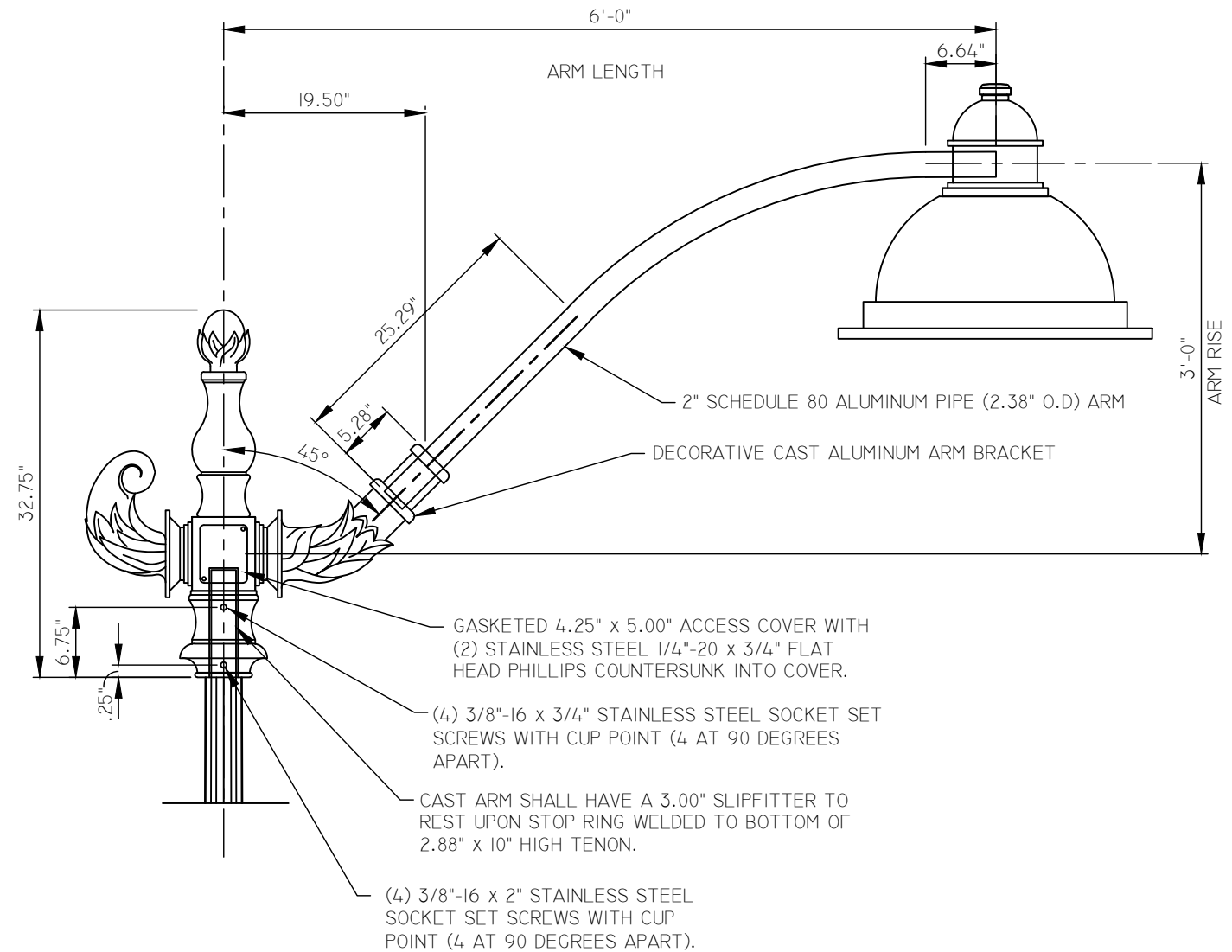
P-903 SINGLE ARM

NOT TO SCALE



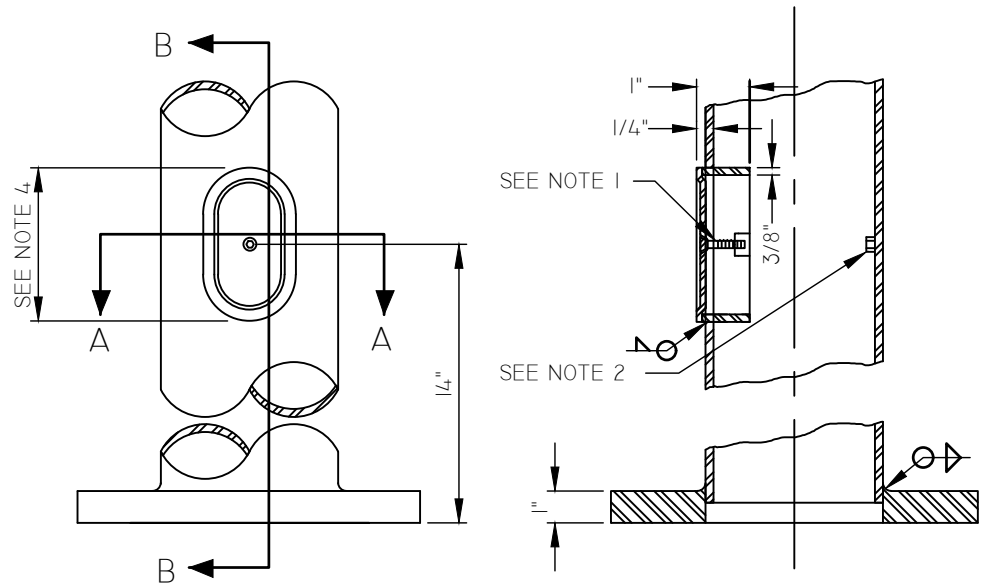


BASE COVER DETAIL



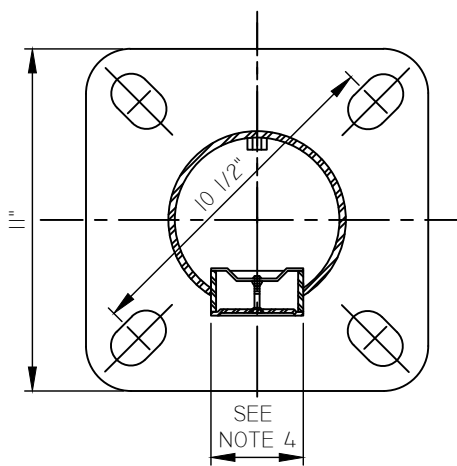
ARM BRACKET DETAIL

NOT TO SCALE



HAND HOLE DETAIL

SECTION B-B



SECTION A-A

BASE DETAIL

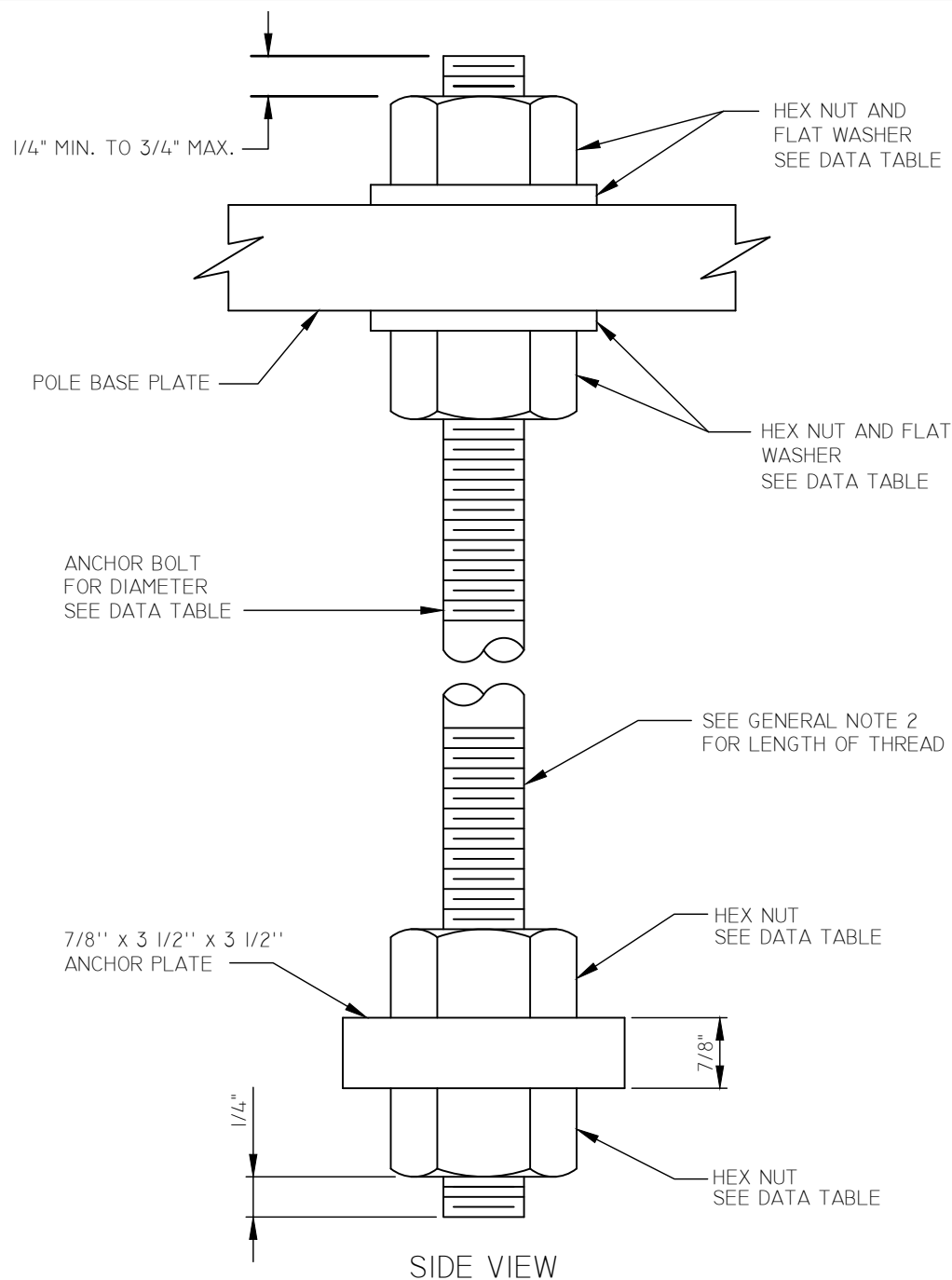
NOTES

1. HAND HOLE COVER SHALL BE SECURED BY A STAINLESS STEEL 1/4"-20 BUTTON HEAD ALLEN BOLT AND HOLDING CLEAT.
2. POLE GROUND SHALL BE 1/2"-13 UHC NUT WELDED TO INSIDE OF POLE AS SHOWN.
3. HAND HOLE SHALL BE ORIENTED SO THAT IT IS ALIGNED WITH THE MAST ARM.
4. HAND HOLE DIMENSIONS SHALL BE 3" x 5" (P-901) & 4" x 6" (P-902, P-903).
5. SLOT LENGTH OF BASE PLATE EQUALS ANCHOR BOLT DIA. PLUS 1/2" ON BOTH SIDES OF ANCHOR BOLT.

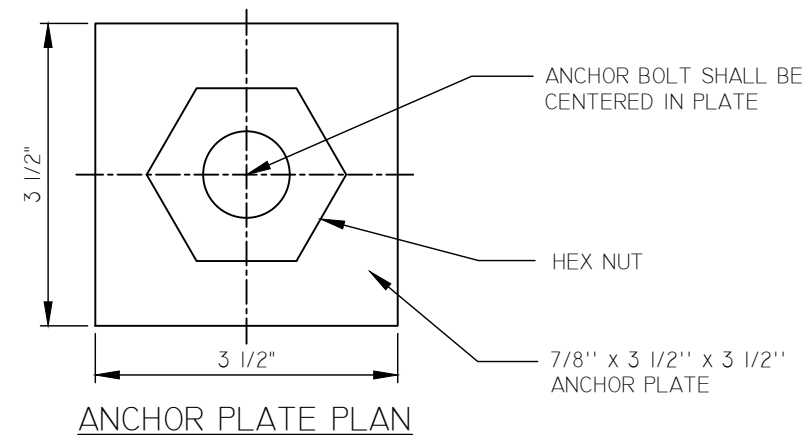
NOTES

1. THE POLE DESIGN, MATERIALS, AND CONSTRUCTION SHALL CONFORM TO AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, BASED ON A WIND SPEED OF 80 MILES PER HOUR.
2. THE POLE SHALL BE STEEL WITH THE DECORATIVE ARM, BASE COVER, AND RECEPTACLE COVER TO BE ALUMINUM.
3. THE STEEL POLE SHALL BE SAND BLASTED TO SSPC SPECIFICATIONS SP-6-63. THE CAST ALUMINUM DECORATIVE ARM, BASE COVER, RECEPTICAL COVER, AND OTHER MISCELLANEOUS ALUMINUM PARTS SHALL BE SOLVENT CLEANED TO SSPC-SPI SPECIFICATION TO REMOVE ALL SOLUBLE CONTAMINANTS. AFTER SURFACE PREPARATION A PRIMER COAT OF TNEMEC SERIES 66 HI BUILD EPOXOLINE OR APPROVED EQUAL SHALL BE APPLIED TO A THICKNESS OF 3 DRY MILS. THE COLOR COATING SHALL BE TNEMEC SERIES 73 ENDURA SHIELD III OR APPROVED EQUAL, APPLIED TO A MINIMUM THICKNESS OF 3 DRY MILS. THE FINAL COATING SHALL BE TNEMEC SERIES 76 ENDURA CLEAR OR APPROVED EQUAL, APPLIED TO A MINIMUM THICKNESS OF 1.5 DRY MILS. THE FINISH COLOR SHALL BE HUNTER GREEN, TNEMEC COLOR NUMBER PL20.
4. UNSTABLE SOIL MAY REQUIRE DEEPER FOUNDATION, AS DETERMINED BY THE ENGINEER.
5. THE 1" ANCHOR BOLT SHALL HAVE A LENGTH DETERMINED BY THE DEPTH OF THE FOUNDATION, AND SHALL EXTEND TO 6" +OR- 1" ABOVE THE BOTTOM OF THE FOUNDATION SL-74.01.
6. ANCHOR BOLTS WITH 4 HEX NUTS, 2 FLAT WASHERS, AND 1 ANCHOR PLATE PER BOLT SHALL BE HOT DIPPED GALVANIZED PER SL-74.01.
7. ANCHOR BOLTS SHALL HAVE 1/4" TO 3/4" FULL THREAD ABOVE NUT SL-74.01.
8. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE FOUNDATION. MAXIMUM PROJECTION SHALL BE 4".
9. 2'-0" SQUARE, 4" THICK TROWELED FINISH SMOOTH CONCRETE CAP WITH 1/2" ROUND EDGE. POURED SEPARATELY FROM FOUNDATION.
10. CONCRETE SHALL BE CLASS A PER MAG STANDARD 725.
11. FOUNDATION GROUND SHALL BE #6 XHHW GREEN STRANDED.
12. FOUNDATION SHALL HAVE 14 COPPER GROUND PLATE PER COM DETAIL SL-74.02.
13. THE PIPE ON EACH SIDE OF A CIRCUMFERENTIAL WELD SHALL HAVE THE SAME OUTSIDE DIAMETER AT THE WELD.

NOT TO SCALE



DATA TABLE				
ANCHOR BOLT DIMENSIONS				
A.B. #	A.B. DIA.	A.B. LENGTH	SIZE OF PLATE	SIZE OF HEX NUT
4'-0" FOUNDATION DEPTH				
AB-108	3/4"	44"	7/8" x 3 1/2" x 3 1/2"	3/4"
5'-0" FOUNDATION DEPTH				
AB-101	3/4"	56"	7/8" x 3 1/2" x 3 1/2"	3/4"
AB-102	1"	56"	7/8" x 3 1/2" x 3 1/2"	1"
AB-103	1 1/4"	56"	7/8" x 3 1/2" x 3 1/2"	1 1/4"
6'-0" FOUNDATION DEPTH				
AB-104	1"	69"	7/8" x 3 1/2" x 3 1/2"	1"
AB-105	1 1/4"	69"	7/8" x 3 1/2" x 3 1/2"	1 1/4"
8'-0" FOUNDATION DEPTH				
AB-107	1 1/4"	44"	7/8" x 3 1/2" x 3 1/2"	1 1/4"

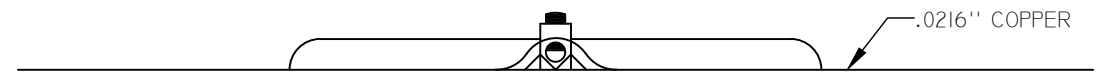
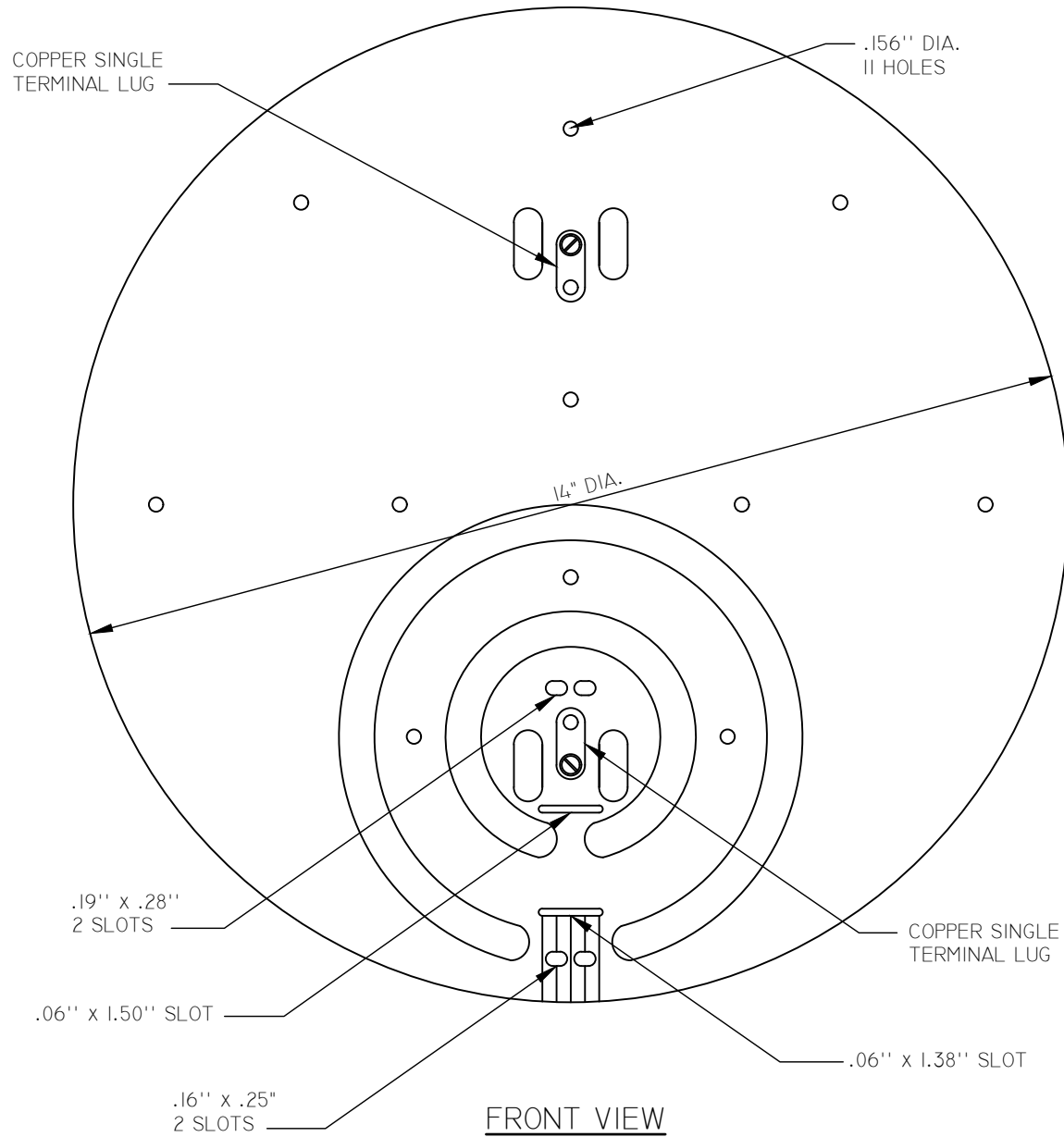


NOTES

1. THE ANCHOR BOLT AND PARTS SHALL BE IN ACCORDANCE WITH ASTM A-36, OR A-307.
2. ANCHOR BOLT SHALL HAVE A MINIMUM THREAD LENGTH OF 6" AT EACH END.
3. THE ANCHOR BOLT AND PARTS SHALL BE HOT DIPPED GALVANIZED PER MAG STD. 771 AFTER FABRICATION AND THREADING.
4. THE ANCHOR BOLT SHALL BE FURNISHED WITH (4) HEX NUTS, (2) FLAT WASHERS, AND (1) ANCHOR PLATE PER BOLT.

AB-101 - AB-108 ANCHOR BOLTS

NOT TO SCALE

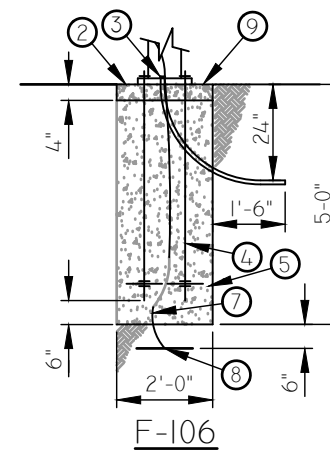
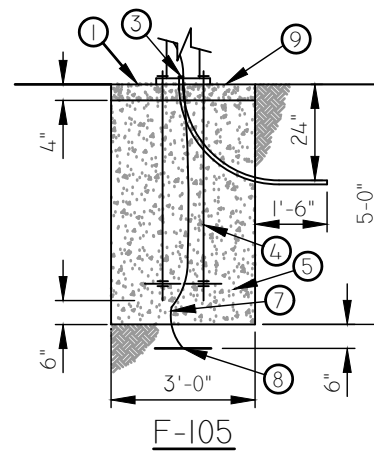
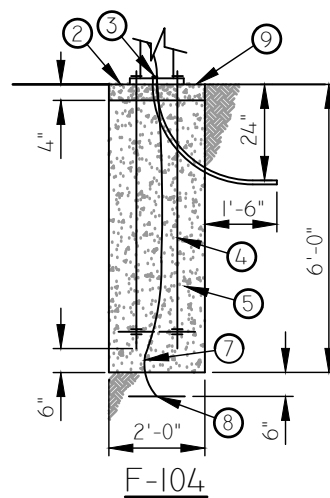
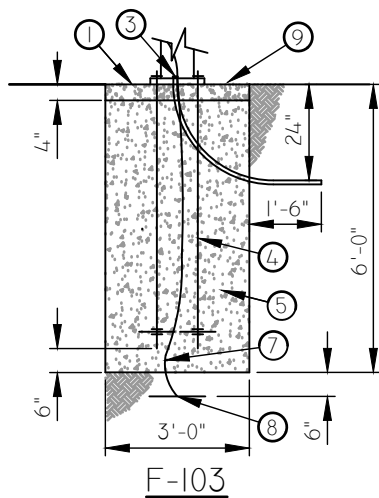
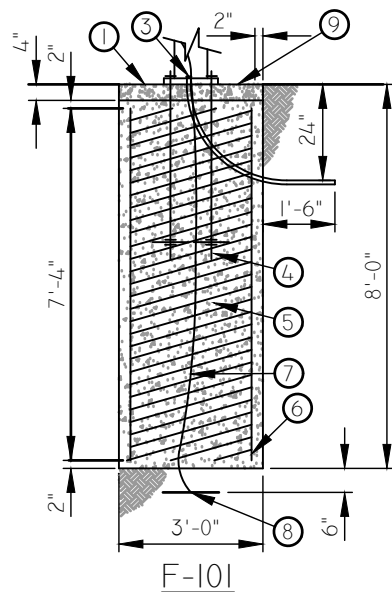
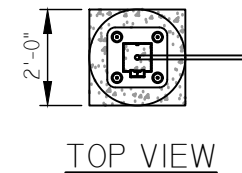
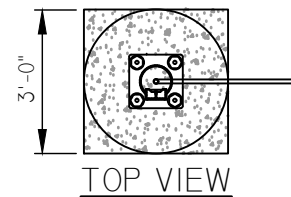
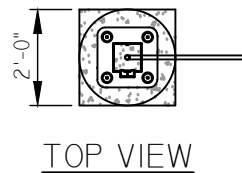
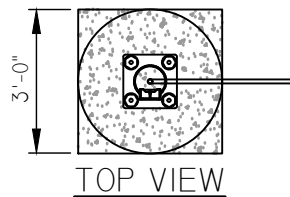
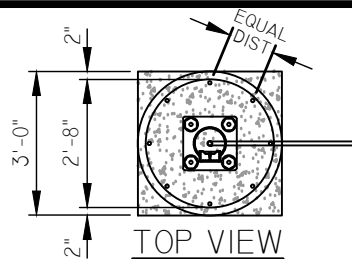


G-101 COPPER GROUNDING PLATE

NOTES:

1. ALL POLE FOUNDATIONS SHALL HAVE A 14" COPPER GROUNDING PLATE SL-74.03 6" BELOW BOTTOM OF POLE FOUNDATION.
2. THE GROUNDING WIRE IN THE CONCRETE FOUNDATION, SHALL BE A 6" STRANDED AND GREEN INSULATED WITH XHHW INSULATION.

NOT TO SCALE



NOTES:

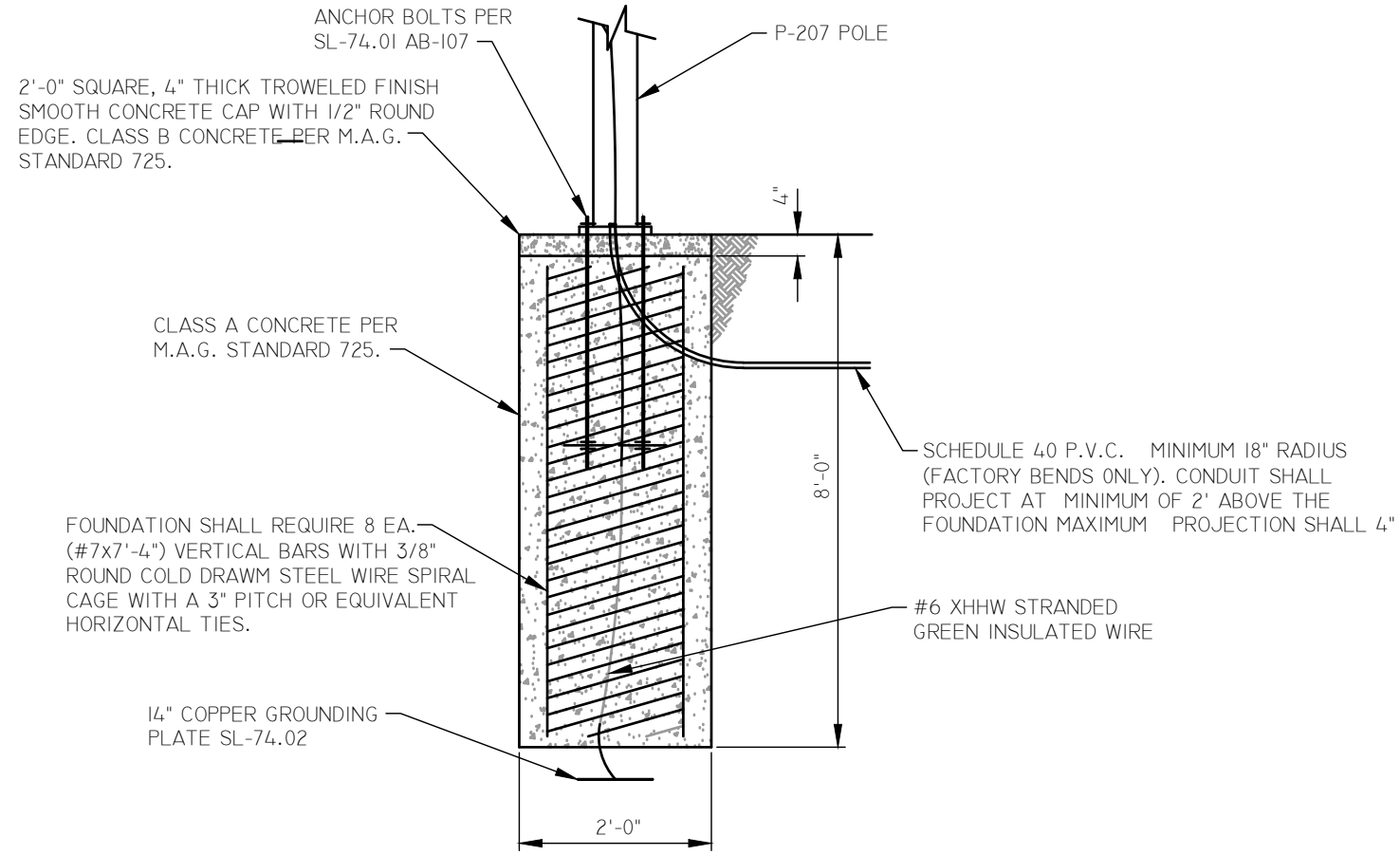
1. ALL POLE FOUNDATIONS SHALL HAVE A 14" COPPER GROUNDING PLATE SL-74.02 6" BELOW BOTTOM OF POLE FOUNDATION.
2. ALL FINISHED POLE FOUNDATIONS SHALL BE AT SIDEWALK GRADE, UNLESS OTHERWISE NOTED.
3. ALL 45 DEGREE AND 90 DEGREE BENDS FOR CONDUIT SHALL HAVE A RADIUS OF NOT LESS THAN 18" (FACTORY BENDS ONLY SHALL BE USED).
4. UNDERGROUND WIRING CIRCUITS SHALL BE INSTALLED IN SCHEDULE 40 RIGID P.V.C. CONDUIT. IT SHALL BE U.L. APPROVED FOR ABOVE GROUND AND UNDERGROUND USE WITH 90 DEGREE C WIRE. MINIMUM DEPTH FROM TOP OF CURB TO TOP OF CONDUIT SHALL NOT BE LESS THAN 24" UNLESS OTHERWISE SPECIFIED.
5. INSPECTION BY ENGINEERING INSPECTOR SHALL BE REQUESTED BY THE ELECTRICAL CONTRACTOR WHEN THE POLE FOUNDATIONS ARE DUG, ANCHOR BOLTS, GROUND WIRE, AND GROUNDING PLATE ARE READY AND IN PLACE, PRIOR TO POURING CONCRETE.

12. CONCRETE CAP POURED SEPARATE FROM FOUNDATION
6. WHILE CONCRETE FOUNDATIONS ARE POURED THEY SHALL BE VIBRATED WITH A MECHANICAL VIBRATOR.
7. POLE FOUNDATIONS SHALL CURE FOR 72-HOURS BEFORE INSTALLING LIGHT POLES.
8. IN IRRIGATED AREAS, POLES AND PULL BOXES SHALL BE INSTALLED IN SUCH A MANNER THAT THEY ARE KEPT OUT OF DIRECT CONTACT WITH IRRIGATION WATER.
9. IN AREAS THAT SLOPE AWAY FROM THE SIDEWALK, CURB, OR ROADWAY, THE GRADE AROUND THE POLES SHALL BE SUCH THAT SIDEWALK, CURB, OR ROADWAY CAN BE USED AS THE GRADE CONTROL POINT FOR THE POLE FOUNDATION ELEVATION.
10. UNSTABLE SOIL MAY REQUIRE DEEPER FOUNDATIONS AS DETERMINED BY THE ENGINEER.
- II. CONCRETE FOUNDATION SHALL BE A CONTINUOUS POUR.

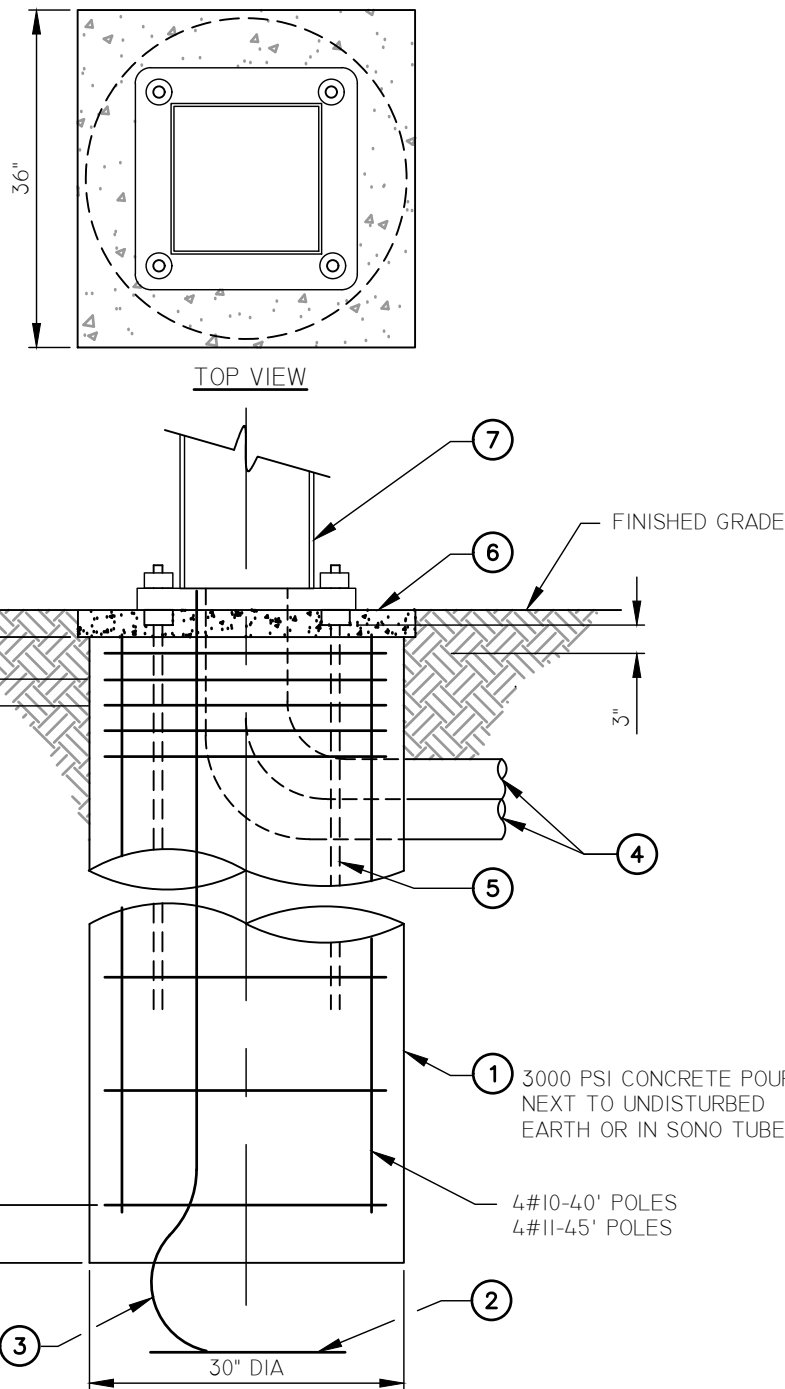
FOUNDATION NOTES

- * ① 3'-0" SQUARE, 4" THICK TROWELED FINISH SMOOTH CONCRETE CAP WITH 1/2" ROUND EDGE.
- * ② 2'-0" SQUARE, 4" THICK TROWELED FINISH SMOOTH CONCRETE CAP WITH 1/2" ROUND EDGE.
- ③ 1-1/2" SCHEDULE 40 P.V.C. 90 DEGREE BEND CONDUIT WITH A RADIUS OF NOT LESS THAN 18" (FACTORY BENDS ONLY SHALL BE USED). CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE FOUNDATION. MAXIMUM PROJECTION SHALL BE 4" (FOR PC POLE SEE NOTE 10).
- ④ ANCHOR BOLTS WITH 4 HEX NUTS, AND 2 FLAT WASHERS AND 1 ANCHOR PLATE BOLT SHALL BE HOT DIPPED GALVANIZED PER M.A.G. STANDARD 771. SEE DATA TABLE ON POLE SPECIFICATION FOR SIZE, PROJECTION ABOVE FOUNDATION, AND BOLT CIRCLE.
- ⑤ CLASS A CONCRETE PER M.A.G. STANDARD 725.
- ⑥ FOUNDATION SHALL REQUIRE 8 EA. (#7 x 7'-4") VERTICAL BARS, WITH 3/8" ROUND COLD DRAWN STEEL WIRE SPIRAL CAGE WITH A 3" PER FOOT PITCH.
- ⑦ THE GROUNDING WIRE IN THE CONCRETE FOUNDATION, SHALL BE A #6 STRANDED AND GREEN INSULATED WITH XHHW INSULATION.
- ⑧ 14" COPPER GROUNDING PLATE SL-74.02.
- ⑨ 4" CAP TO BE MINIMUM CLASS B CONCRETE PER M.A.G. STANDARD 725.
- ⑩ A MINIMUM OF 1-1/2" CONDUIT SHALL BE USED.

NOT TO SCALE



F-107 FOUNDATION



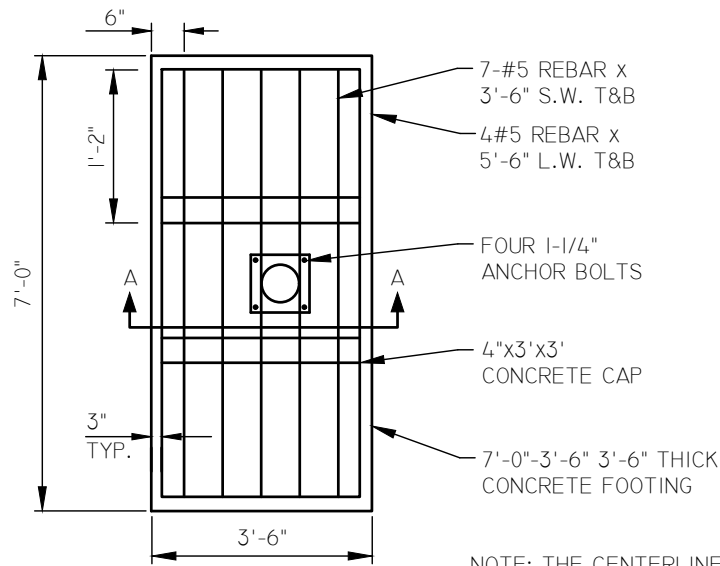
NOTES

1. ALL POLE FOUNDATIONS SHALL HAVE A 14" DIA. COPPER GROUNDING PLATE PER COM DETAIL SL-74.02 AND PLACED 6" BELOW BOTTOM OF POLE FOUNDATION.
2. FINISHED GRADE FOR ALL POLE FOUNDATIONS SHALL MATCH SIDEWALK GRADE, UNLESS OTHERWISE NOTED.
3. ALL CONDUIT BENDS SHALL BE FACTORY 45 AND 90 DEGREE BENDS WITH A MINIMUM RADIUS OF 18".
4. UNDERGROUND WIRING CIRCUITS SHALL BE INSTALLED IN SCHEDULE 40 RIGID P.V.C. CONDUIT. IT SHALL BE U.L. APPROVED FOR ABOVE GROUND AND UNDERGROUND USE WITH 90 DEGREE C WIRE. MINIMUM DEPTH FROM TOP OF CURB TO TOP OF CONDUIT SHALL NOT BE LESS THAN 24" UNLESS OTHERWISE SPECIFIED.
5. INSPECTION BY ENGINEERING INSPECTOR SHALL BE REQUESTED BY THE ELECTRICAL CONTRACTOR WHEN THE POLE FOUNDATIONS ARE DUG, ANCHOR BOLTS, GROUND WIRE, AND GROUNDING PLATE ARE READY AND IN PLACE AND PRIOR TO POURING CONCRETE.
6. WHILE CONCRETE FOUNDATIONS ARE BEING POURED THEY SHALL BE VIBRATED WITH A MECHANICAL VIBRATOR.
7. POLE FOUNDATIONS SHALL CURE FOR 72-HOURS BEFORE INSTALLING LIGHT POLES.
8. IN IRRIGATED AREAS, FOUNDATIONS & POLES AND PULL BOXES SHALL BE INSTALLED IN SUCH A MANNER THAT THEY ARE KEPT FREE OF CONTACT WITH IRRIGATION WATER. REFER TO SL-74.08 SL-75.03 FOR REQUIREMENTS PER APPLICABLE CONDITIONS.
9. IN AREAS THAT SLOPE AWAY FROM THE SIDEWALK, CURB, OR ROADWAY, THE GRADE AROUND THE POLES SHALL BE SUCH THAT SIDEWALK, CURB, OR ROADWAY CAN BE USED AS THE GRADE CONTROL POINT FOR THE POLE FOUNDATION ELEVATION. REFER TO SL-74.08 FOR REQUIREMENTS PER APPLICABLE CONDITIONS.
10. UNSTABLE SOIL MAY REQUIRE DEEPER FOUNDATIONS AS DETERMINED BY THE ENGINEER.

FOUNDATION NOTES

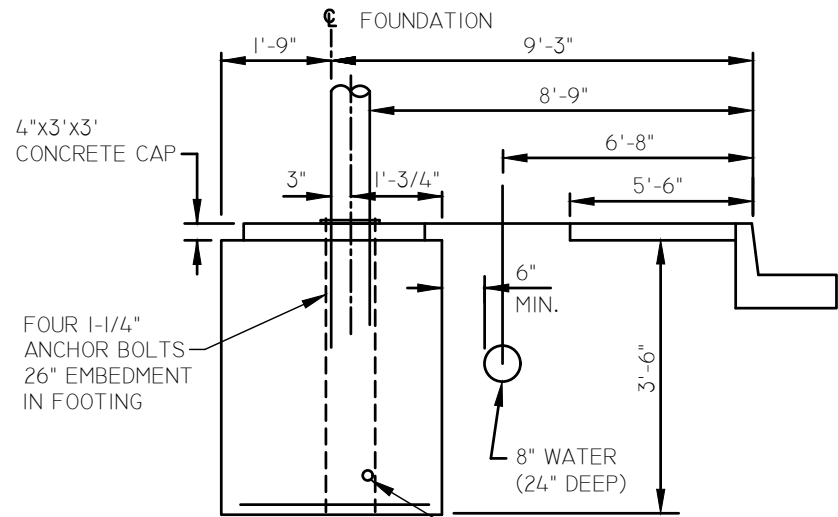
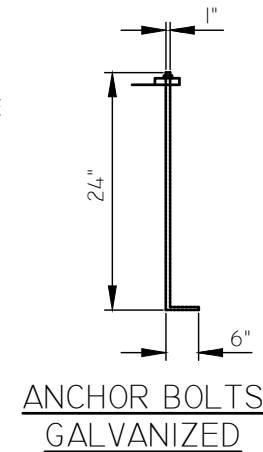
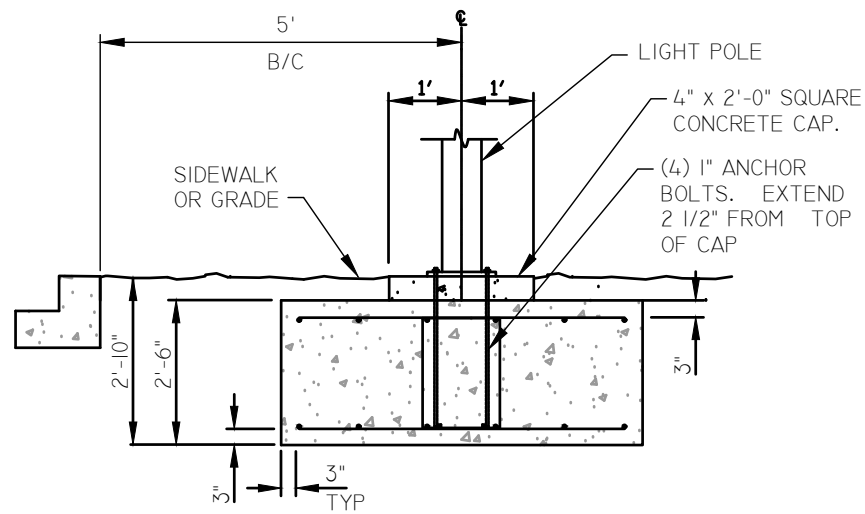
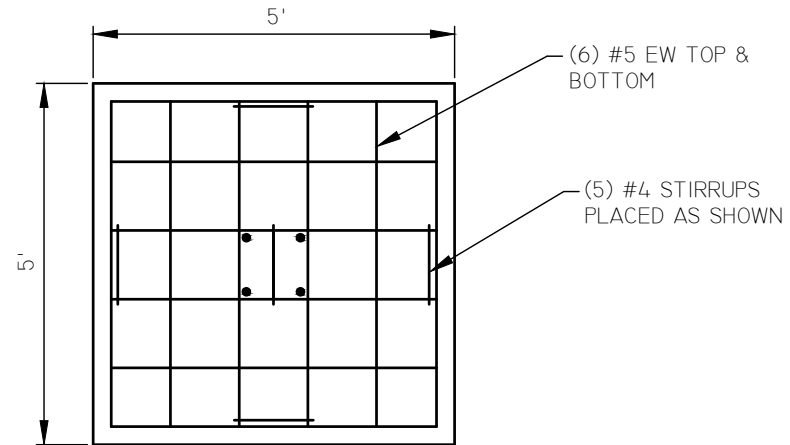
- ① FOUNDATION SHALL BE CLASS A CONCRETE PER MAG STANDARD 725.
- ② 14" DIA. COPPER GROUNDING PLATE PER COM DETAIL SL-74.02.
- ③ THE BOND CONDUCTOR IN THE CONCRETE FOUNDATION SHALL BE A #6 STRANDED AND GREEN WIRE WITH XHHW INSULATION.
- ④ 1-1/2" SCHEDULE 40 P.V.C. 90 DEGREE BEND CONDUITS WITH A RADIUS OF NOT LESS THAN 18" (FACTORY BENDS ONLY SHALL BE USED). CONDUITS SHALL PROJECT A MINIMUM OF 2" ABOVE THE FOUNDATION. MAXIMUM PROJECTION SHALL BE 4". WHERE PC POLE IS USED A 1-1/2" CONDUIT SHALL BE USED.
- ⑤ 4-1-3/4" DIA. X 60" ANCHOR BOLTS (55KSI) W/ LEVELING NUTS & WASHERS. OPTIONAL: TACK-WELD NUTS TO WASHERS & WASHERS TO BASE PLATE AFTER TIGHTENING OF BOLTS. TORQUE = 650 FT-LBS.
- ⑥ 3'-0" SQUARE, 4" THICK TROWELED FINISH SMOOTH CONCRETE CAP WITH 1/2" ROUND EDGE. CONCRETE SHALL BE CLASS B PER MAG STANDARD SPECIFICATION 725.
- ⑦ POLE PER COM DETAIL SL-73.04.5.

NOT TO SCALE



TOP VIEW

NOTE: THE CENTERLINE OF LIGHT POLE IS SET 3" OFF CENTERLINE OF FOUNDATION



SECTION A-A

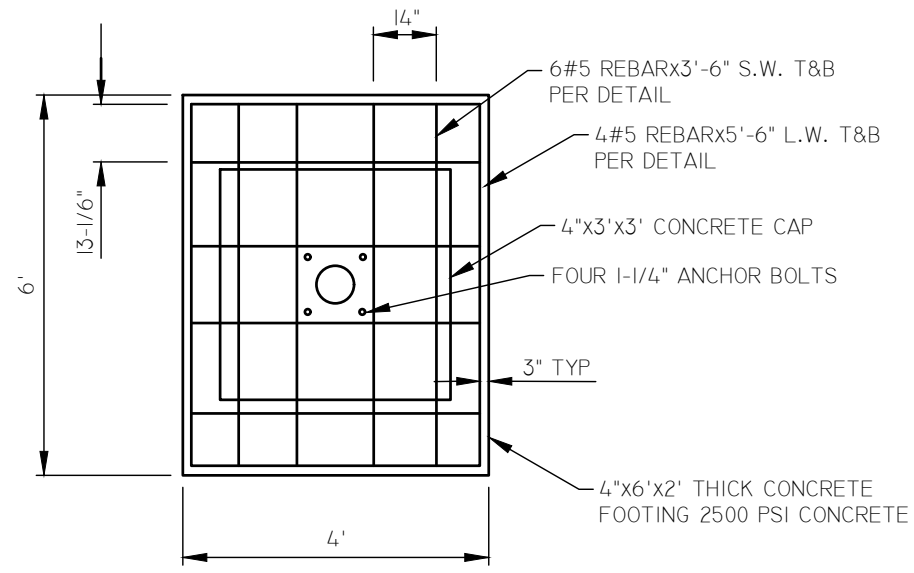
2-1/2" TELEPHONE CONDUIT (36" DEEP) IN 3" SCHEDULE 40 PVC CONDUIT SLEEVE

NOTE: FOUNDATION PER SL-74.03, F-101 AND ANCHOR BOLTS PER SL-74.01 WITH MODIFICATIONS SHOWN FOR THE FOUNDATION AND ANCHOR BOLTS. COPPER GROUND PLATE PER SL-74.02.

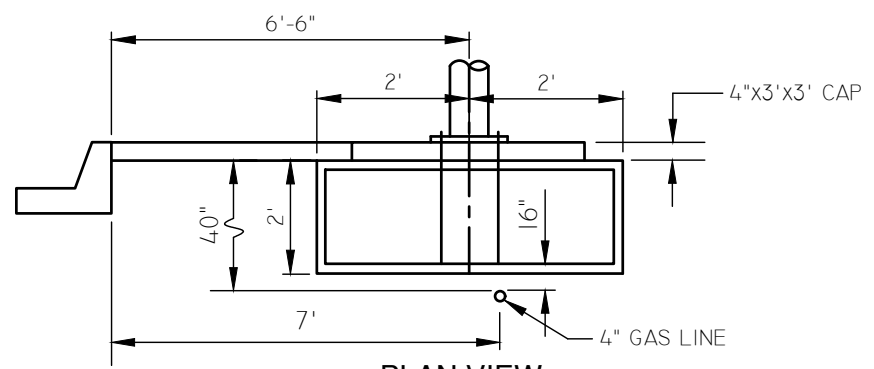
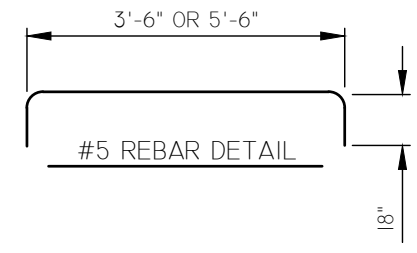
NOTES:

- FOUNDATION SHALL BE INSTALLED IN ACCORDANCE WITH MESA STANDARD DETAILS SL-74.03, F-101 AND SL-74.03 F-104 WITH MODIFICATIONS SHOWN.
- REMOVE SECTION OF SIDEWALK IF NEEDED TO NEAREST SCORE MARKS. INSTALL SPREAD FOUNDATION, REINSTALL SIDEWALK PER MAG STANDARD DETAIL 230. DISPOSE OF EXTRA MATERIAL PROPERLY.

NOT TO SCALE

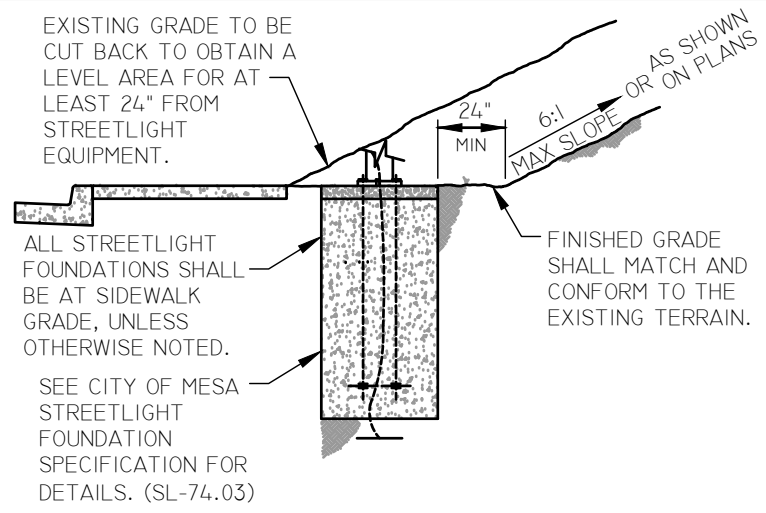


TOP VIEW

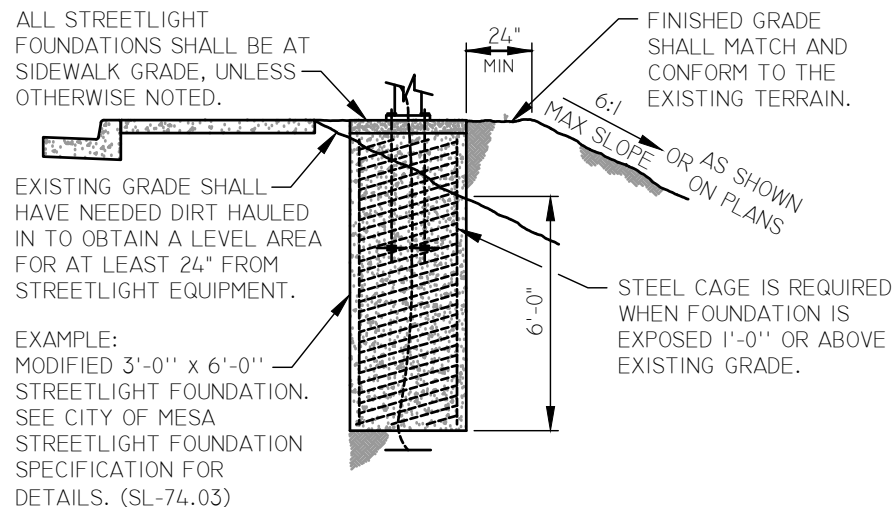


PLAN VIEW

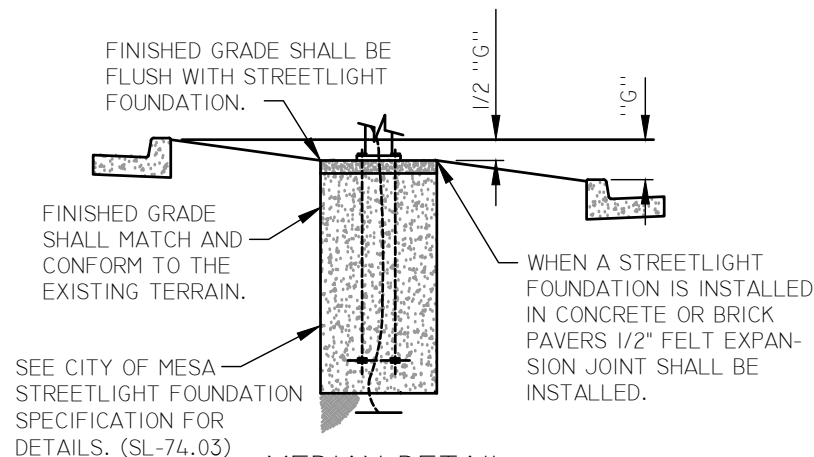
SPECIAL NOTE:
FOUNDATION PER SL-74.03, F-103 AND ANCHOR BOLTS PER SL-74.01 WITH MODIFICATIONS SHOWN FOR THE FOUNDATION AND ANCHOR BOLTS COPPER GROUNDING PLATE PER SL-74.02.



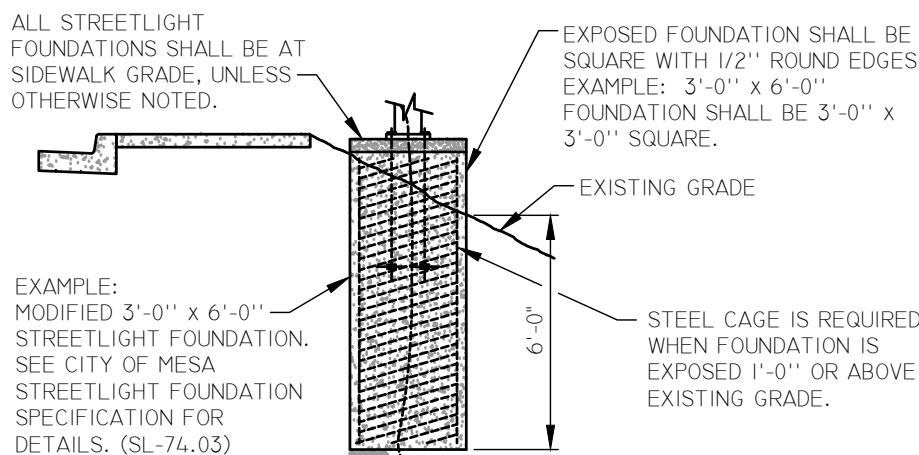
UPWARD SLOPE DETAIL



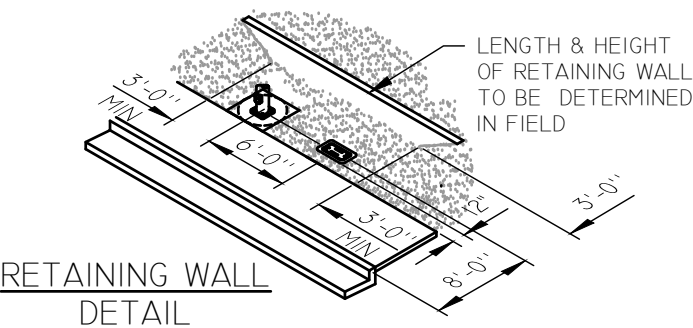
DOWNWARD SLOPE WITH FILL DETAIL



MEDIAN DETAIL



DOWNWARD SLOPE WITHOUT FILL DETAIL



RETAINING WALL DETAIL

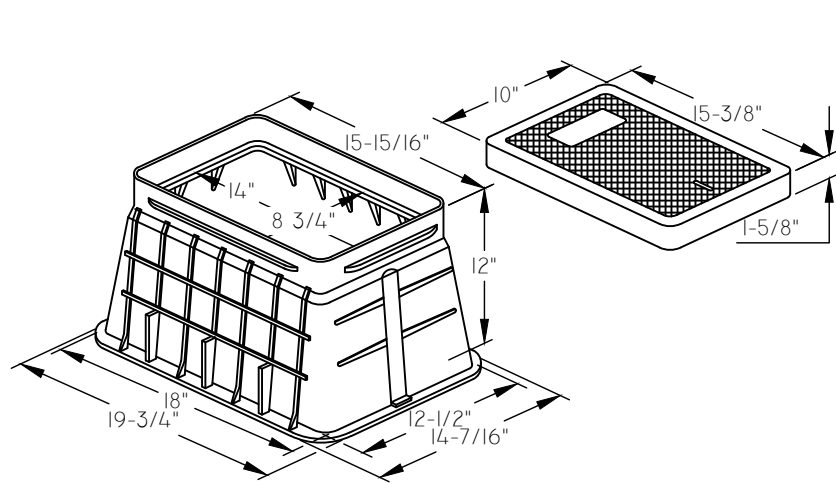
NOTES:

THE ANCHOR BOLTS, POLE BASE PLATE AND THE POLE ITSELF SHALL BE INSTALLED SUCH THAT THE CENTERLINE OF THE STREETLIGHT ARM IS PERPENDICULAR TO THE ADJACENT ROADWAY BACK OF CURB LINE AT THE POLE LOCATION WITH A TOLERANCE OF 1.0-DEGREE IN EITHER DIRECTION OF STRICTLY PERPENDICULAR. AN EXCEPTION WILL OCCUR WHERE THE CURB LINE IS CONSTRUCTED ON A TAPER (SUCH AS AT A CHANGE IN ROADWAY WIDTH), IN WHICH CASE, THE ARM SHALL BE INSTALLED PERPENDICULAR TO ROADWAY CENTERLINE.

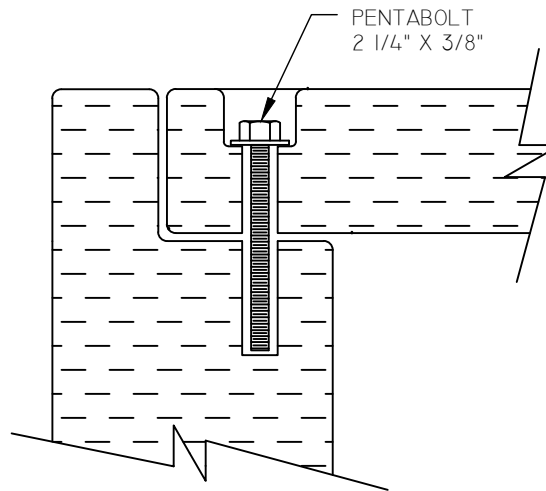
INSTALLATION NOTES:

1. SPECIAL FOUNDATION INSTALLATIONS SHALL BE CONSTRUCTED FOLLOWING THE CITY OF MESA STREETLIGHT FOUNDATION SPECIFICATION UNLESS NOTED OTHERWISE.
2. THE DEPTH OF FOUNDATION SHALL BE MEASURED FROM THE LOWEST PART OF THE EXISTING GRADE.
3. EXPOSED FOUNDATION SHALL BE SQUARE WITH 1/2" ROUND EDGES.
4. STEEL CAGE IS REQUIRED WHEN FOUNDATION IS EXPOSED 1'-0" OR ABOVE EXISTING GRADE.
5. ALL FINISHED STREETLIGHT POLE FOUNDATIONS & CONTROLLER PADS SHALL BE AT SIDEWALK GRADE AND ADJACENT TO SIDEWALK UNLESS NOTED. STREETLIGHT PULL BOXES SHALL BE AT SIDEWALK GRADE AND 12" FROM SIDEWALK UNLESS OTHERWISE NOTED. INSTALL #20LB FELT BETWEEN BACK OF SIDEWALK AND FOUNDATION.
6. WHEN STREETLIGHT EQUIPMENT (POLES, FOUNDATIONS, PULL BOXES, AND CONTROLLER CABINETS) IS INSTALLED IN AN UPWARD SLOPE SECTION A RETAINING WALL SHALL BE INSTALLED OR THE GRADE SHALL BE CUT BACK TO OBTAIN A LEVEL AREA FOR AT LEAST 24" FROM STREETLIGHT EQUIPMENT. THE SLOPE OF THE FINISHED GRADE SHALL NOT EXCEED A 6:1 SLOPE AND SHALL MATCH AND CONFORM TO THE EXISTING TERRAIN.
7. WHEN STREETLIGHT EQUIPMENT (POLES, FOUNDATIONS, PULL BOXES, AND CONTROLLER CABINETS) IS INSTALLED IN A DOWNWARD SLOPE SECTION, NEEDED DIRT SHALL BE HAULED IN TO OBTAIN A LEVEL AREA FOR AT LEAST 24" FROM THE STREETLIGHT EQUIPMENT. THE SLOPE OF THE FINISHED GRADE SHALL NOT EXCEED A 6:1 SLOPE AND SHALL MATCH AND CONFORM TO THE EXISTING TERRAIN.
8. RETAINING WALL SHALL BE INSTALLED IN ALL AREAS THAT CANNOT BE CUT BACK TO OBTAIN A LEVEL AREA FOR AT LEAST 24" FROM STREETLIGHT EQUIPMENT, IN AREAS THAT THE FINISHED GRADE WILL EXCEED A 1:6 SLOPE, AND IN AREAS THAT USE FLOOD IRRIGATION.
9. RETAINING WALL SHALL HAVE A FOUNDATION 10' BELOW SIDEWALK GRADE.
10. RETAINING WALL SHALL HAVE A TROWELED SMOOTH FINISH WITH 1/2" ROUND EDGES.
11. BACKFILL WITH EXCAVATED MATERIALS AND THOROUGHLY TAMP PER MARICOPA ASSOCIATION OF GOVERNMENTS STANDARD 601.

NOT TO SCALE



NUMBER 3 1/2 BOX

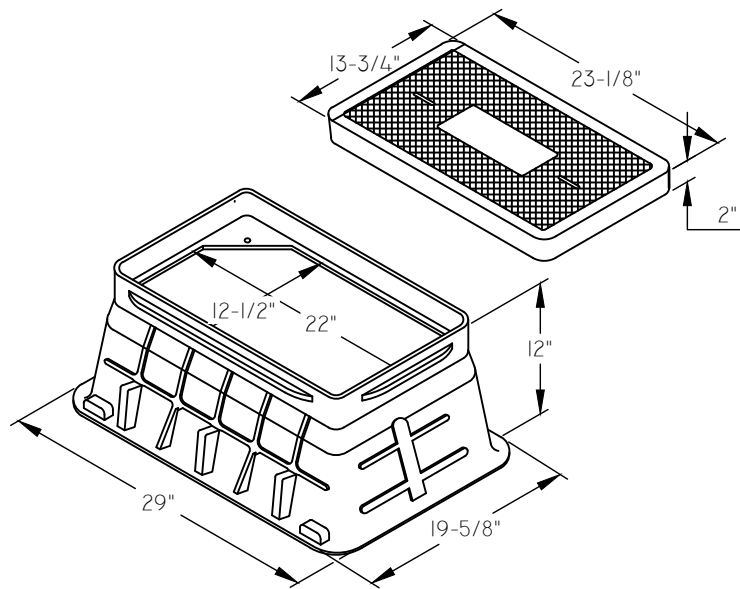


HOLD DOWN BOLT DETAIL

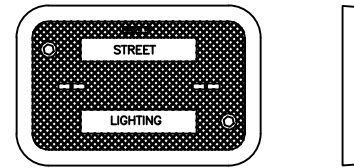
NOTES

1. THE BOX SHALL BE AN APPROVED BOX FOR #3 1/2 & FOR #5 1/2 AND NON-SETTLING SHOULDERS TO MAINTAIN GRADE. THE BOX SHALL BE MANUFACTURED WITH APPROXIMATE DIMENSIONS AS SHOWN.
2. COVER LETTERING SHALL BE 1" LETTERS CAST IN STANDARD MARKINGS: STREET LIGHTING.

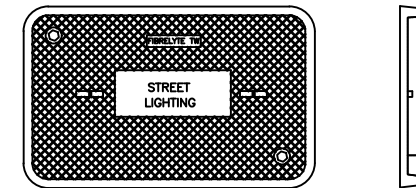
PULL BOX #	DATA TABLE
PB-101	#3 1/2 BOX WITH LID "A"
PB-102	#3 1/2 BOX WITH LID "B"
PB-103	#5 1/2 BOX WITH LID "B"
PB-104	#5 1/2 BOX WITH LID "A"



NUMBER 5 BOX



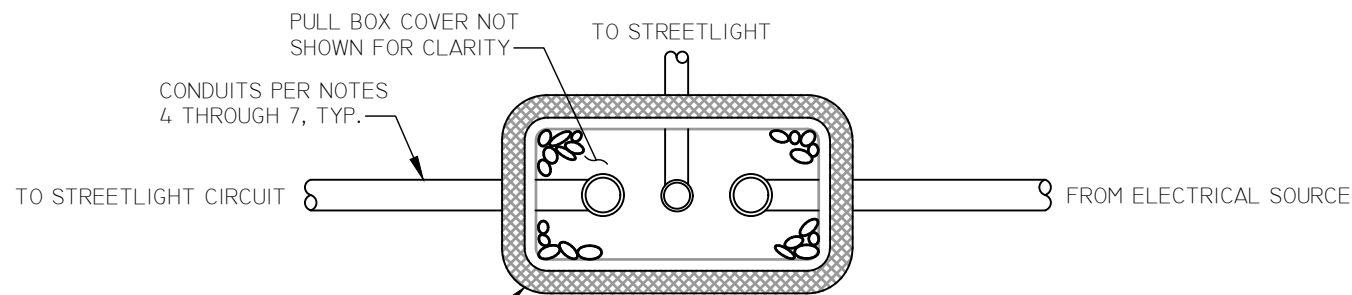
#3 1/2 LID



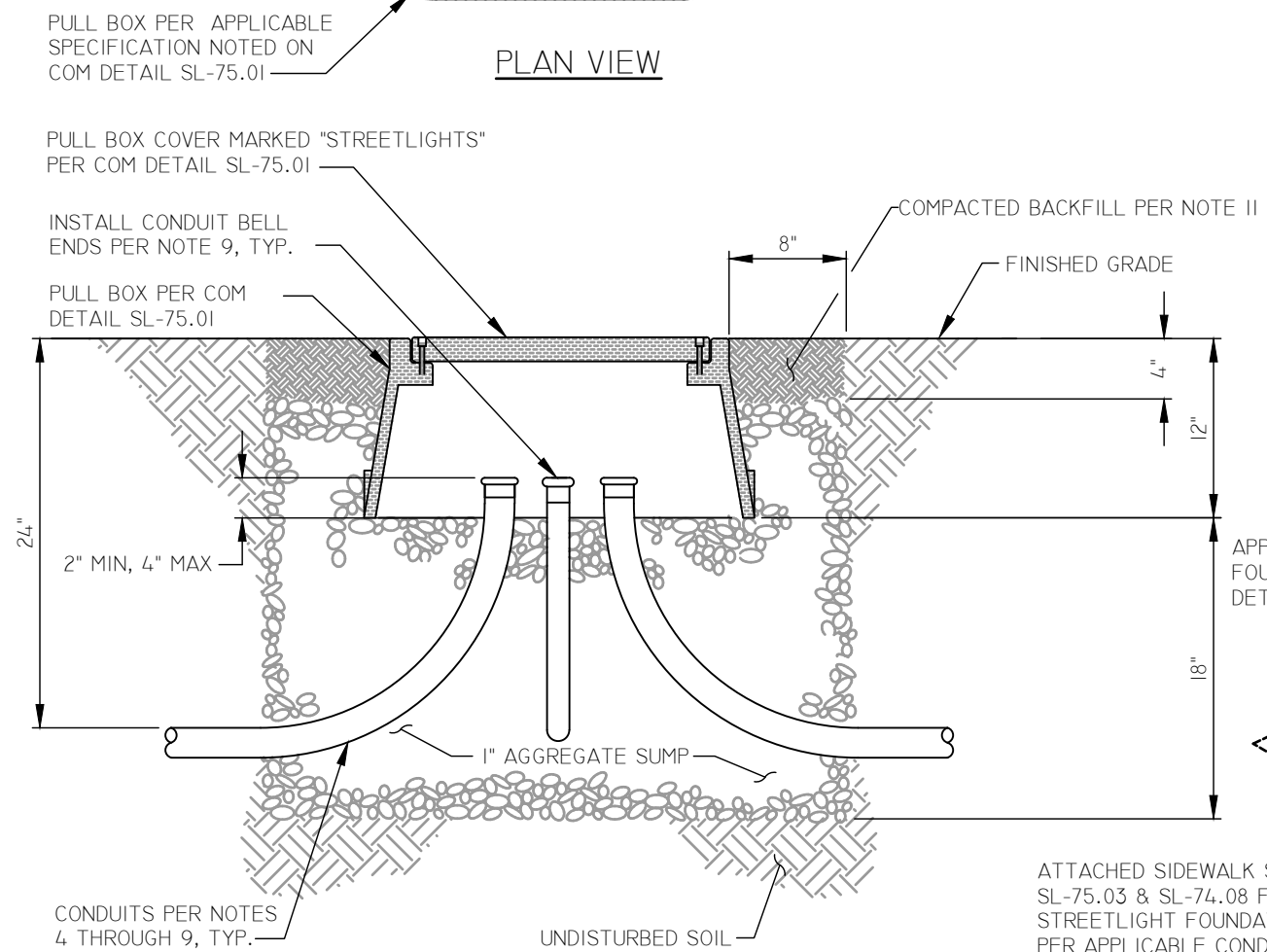
#5 LID

LID "A" NON-METALIC LID
LID "B" CAST IRON WITH HOLD DOWN BOLTS

OPTIONAL PULL BOX LIDS



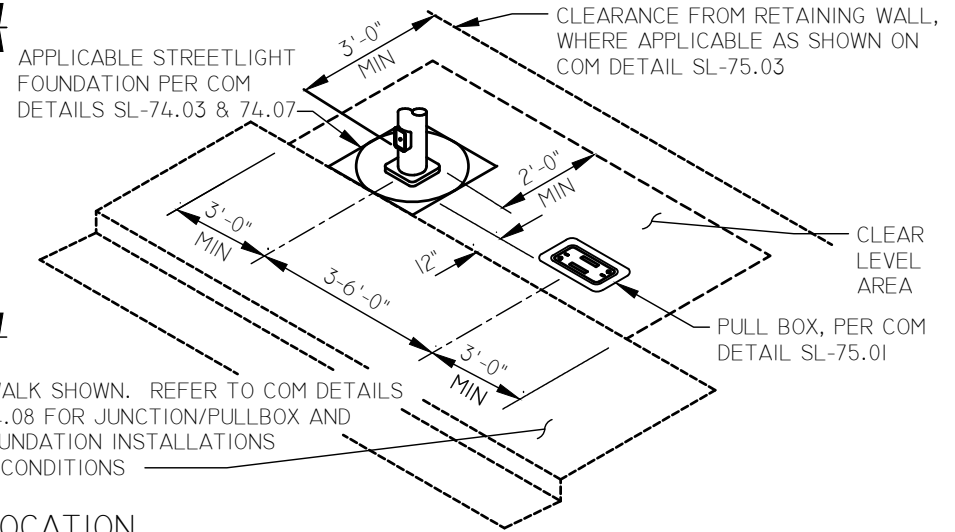
PLAN VIEW



SECTION

INSTALLATION NOTES

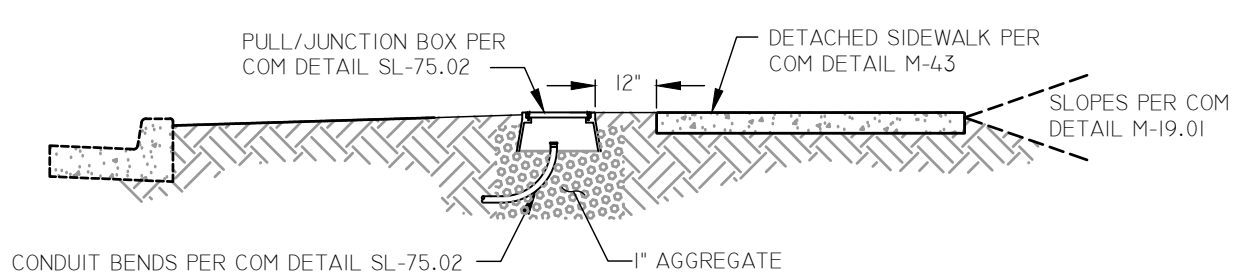
1. PULL/JUNCTION BOXES SHALL BE LOCATED CENTERED PER COM DETAIL DIMENSIONS FROM A STREETLIGHT POLE AS SHOWN BELOW, UNLESS OTHERWISE DETERMINED BY CITY FORCES.
2. PULL/JUNCTION BOXES INSTALLED ALONG A SIDEWALK SHALL BE 12" FROM SIDEWALK WITH MATCHING GRADE UNLESS OTHERWISE DETERMINED BY CITY FORCES.
3. PULL/JUNCTION BOXES SHALL BE INSTALLED IN COMPLIANCE FOR SIDEWALK OR MEDIAN CONDITIONS SHOWN ON COM DETAIL SL-75.02.
4. ALL CONDUIT SHALL BE SCHEDULE 40 P.V.C. MANUFACTURED WITH A FACTORY 90 DEGREE BEND AND A RADIUS OF NOT LESS THAN 18".
5. ARTERIAL CIRCUITS SHALL ONLY USE 2" CONDUIT.
6. NON-ARTERIAL/RESIDENTIAL CIRCUITS SHALL ONLY USE 1-1/2" CONDUIT.
7. THE CONNECTION TO A STREETLIGHT SHALL USE 1-1/2" CONDUIT.
8. CONDUITS SHALL BE INSTALLED TO APPROXIMATE CENTERS OF PULL AND JUNCTION BOXES.
9. CONDUIT BELL ENDS SHALL HAVE PRIMER, GLUED AND INSTALLED BEFORE PULLING WIRE.
10. 1" AGGREGATE SHALL BE INSTALLED IN DRAINAGE SUMP AS SHOWN.
11. BACKFILL SHALL CONSIST OF EXCAVATED MATERIALS AND SHALL BE COMPACTED PER MAG STANDARD SPECIFICATION 601.



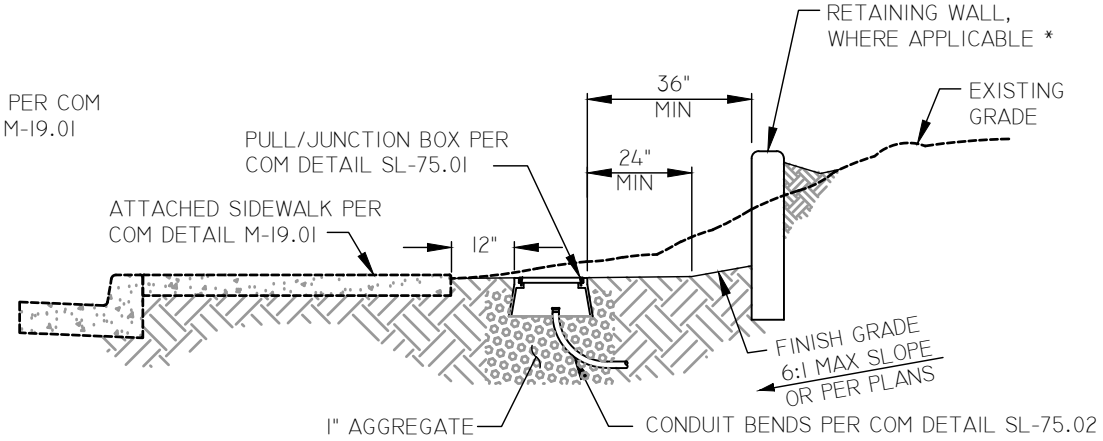
ATTACHED SIDEWALK SHOWN. REFER TO COM DETAILS SL-75.03 & SL-74.08 FOR JUNCTION/PULLBOX AND STREETLIGHT FOUNDATION INSTALLATIONS PER APPLICABLE CONDITIONS

PULL BOX LOCATION

NOT TO SCALE



INSTALLATION AT DETACHED SIDEWALK

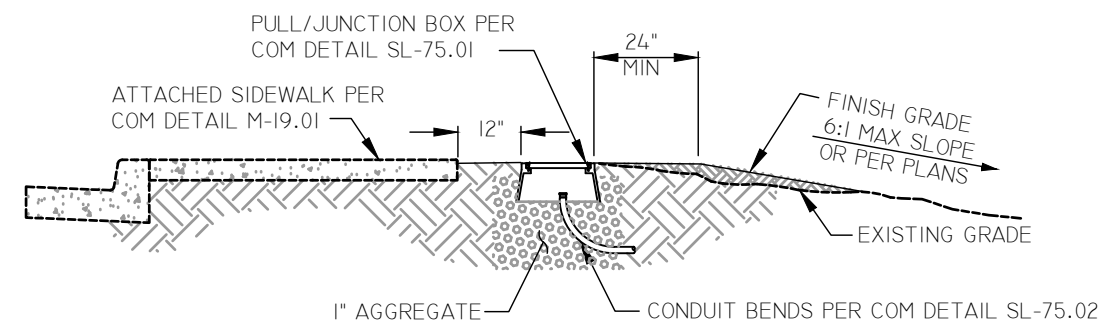


INSTALLATION AT SIDEWALK TO UPWARD SLOPE

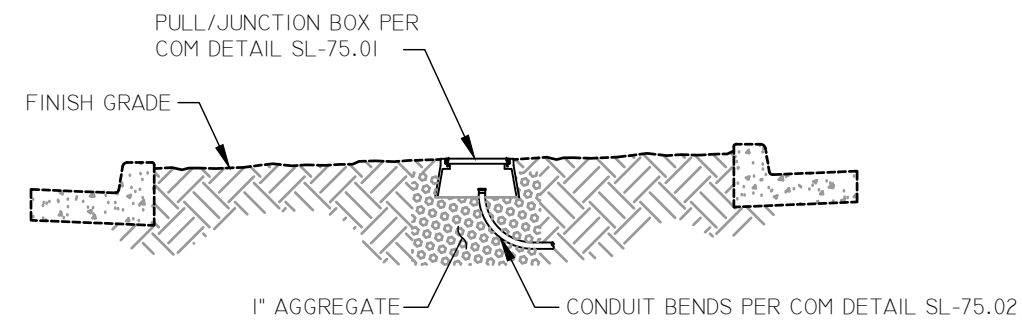
***NOTE**

A RETAINING WALL:

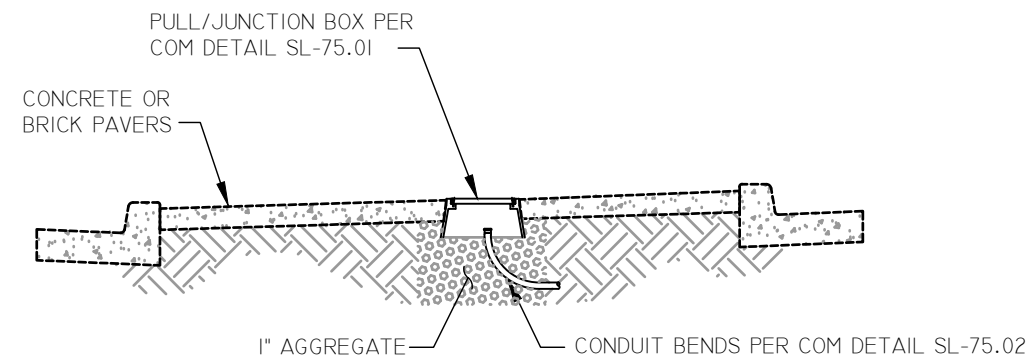
- IS REQUIRED IN AREAS OF FLOOD IRRIGATION.
- IS REQUIRED WHERE A NEW 6:1 UPWARD SLOPE WILL NOT MEET THE EXISTING GRADE.
- SHALL BE LOCATED FOR 36" MIN. CLEARANCE FROM LCC CABINET.
- SHALL HAVE A DEPTH OF 10" MIN. BELOW SIDEWALK GRADE.
- HAVE A SMOOTH TROWELED FINISH AND 1/2" RADIUS CHAMFERS ALONG TOP EDGES.
- BE BACKFILLED WITH EXCAVATED MATERIALS AND COMPACTED PER MAG STANDARD SPECIFICATION 601.
- SHALL EXTEND A MINIMUM OF 6-FEET EITHER SIDE OF THE PULL BOX.



INSTALLATION AT SIDEWALK TO DOWNWARD SLOPE



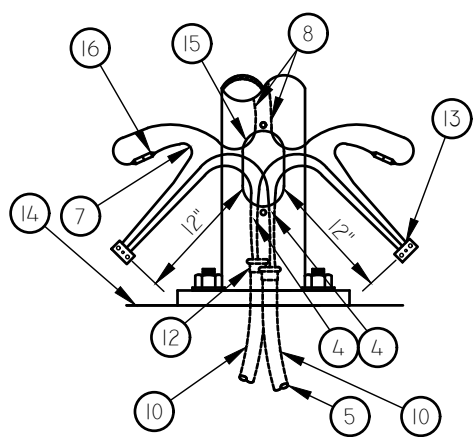
INSTALLATION IN UNPAVED MEDIAN



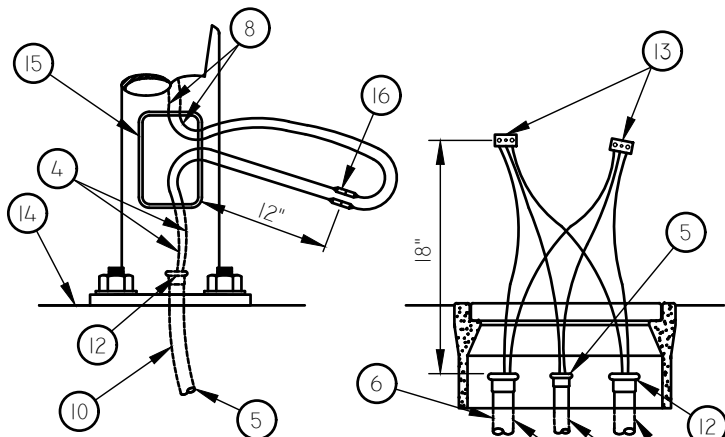
INSTALLATION IN PAVED MEDIAN

PULL/JUNCTION BOX AND INSTALLATION CONDITIONS

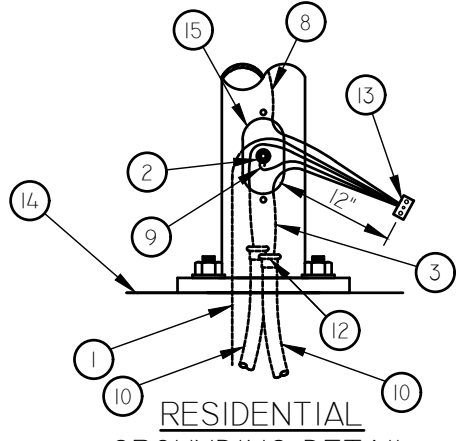
NOT TO SCALE



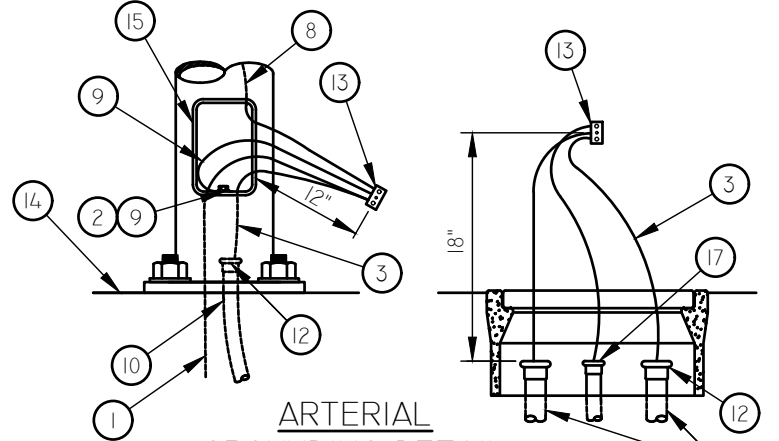
RESIDENTIAL
CURRENT CARRYING DETAIL



ARTERIAL
CURRENT CARRYING DETAIL



RESIDENTIAL
GROUNDING DETAIL



ARTERIAL
GROUNDING DETAIL

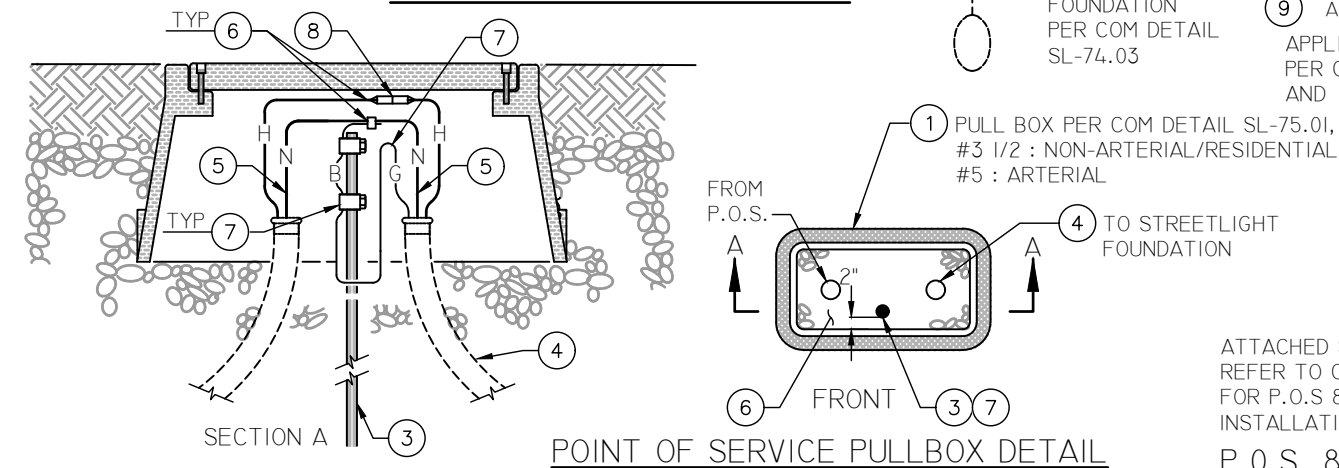
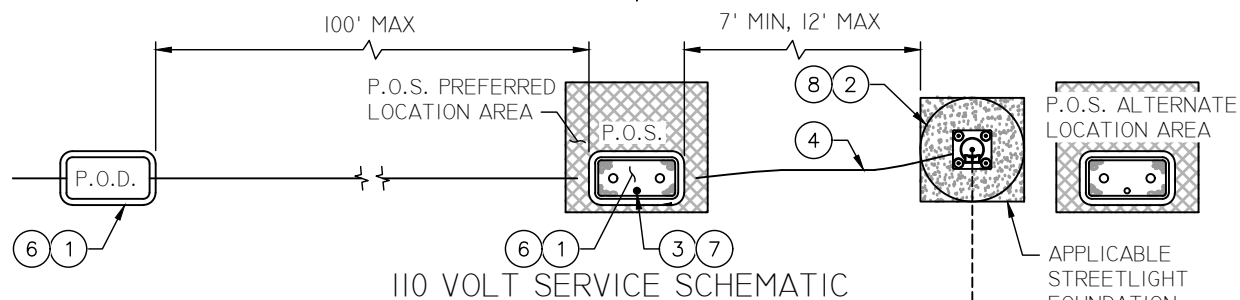
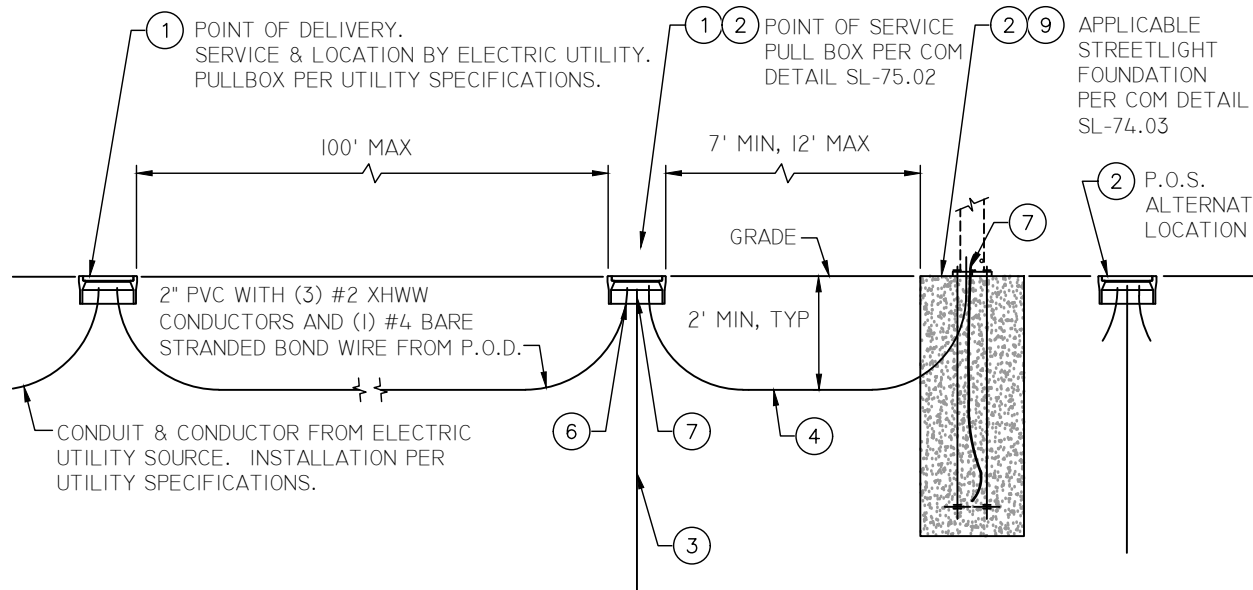
GENERAL NOTES:

1. ALL POLES SHALL BE WIRED USING TWO (2) #12 BLACK THHN/THWN 90 DEGREE C STRANDED COPPER CONDUCTORS, 600 VOLT NEC APPROVED (PER LUMINAIRE); AND ONE (1) GREEN #12 THHN/THWN 90 DEGREE C STRANDED COPPER GROUND WIRE, 600 VOLT NEC APPROVED (PER LUMINAIRE). WIRES SHALL RUN FROM THE LUMINAIRE TO A MINIMUM OF TWELVE (12) INCHES BELOW POLE HAND HOLE FOR TERMINATION.
2. ALL STREETLIGHT CONDUCTORS AND BOND WIRES SHALL BE COPPER. ALUMINUM SHALL NOT BE ALLOWED.
3. TWO (2) CONDUCTORS (PER LUMINAIRE) SHALL BE INSTALLED IN P.V.C. CONDUIT FROM HAND HOLE TO PULL BOX.
4. ALL CURRENT CARRYING CONDUCTORS IN CONDUIT SHALL BE INSULATED WITH XHHW INSULATION. MIN. #8.
5. ALL P.V.C. CONDUIT RUNS SHALL CONTAIN A MINIMUM #8-7 STRANDED BARE BOND.
6. ALL CONDUCTORS AND BOND WIRES SHALL BE STRANDED, EXCEPT FOR THE SOLID #8 BOND WIRE THAT RUNS FROM THE POLE'S BOLT/WASHER TO THE CRIMP CONNECTOR. THE BOND WIRE IN THE CONCRETE FOUNDATION SHALL BE A #6 XHHW GREEN INSULATED COPPER STRANDED WIRE.
7. ALL POLE FOUNDATIONS SHALL HAVE A FOURTEEN (14) INCH COPPER GROUNDING PLATE SL-74.02.
8. EACH LUMINAIRE SHALL BE FUSED BEHIND THE POLE'S HAND HOLE COVER USING A HEB, OR LEB TYPE FUSE HOLDER WITH RUBBER INSULATING BOOTS. ACCORDING TO SL-70 NOTE 29.
9. ALL SPLICES, INCLUDING GROUNDS AND BONDS, SHALL BE DONE WITH A GEL CAP STUB SPLICE KIT, # GELCAP -SL- 2/0-3 HOLE, OTHER GEL CAP PRODUCTS OF APPROPRIATE SIZE, OR APPROVED EQUAL.
10. WIRE PULLING COMPOUND SHALL BE USED WHEN PULLING WIRE IF NEEDED.
11. EACH CONDUIT RUN INTO A PULL BOX OR LIGHTING CONTROL CABINET SHALL HAVE AN END BELL, AND A MINIMUM OF THIRTY-SIX (36) INCHES OF SLACK IN THE WIRE FROM END BELL TO END BELL IN THE SAME PULL BOX.
12. CONDUIT END BELLS SHALL BE INSTALLED BEFORE PULLING WIRE.
13. ALL CONDUIT CONTAINING PC CIRCUIT SHALL HAVE 14-3 FRTC FROM CABINET TO P.C. POLE WITHOUT A SPLICE.

KEY NOTES:

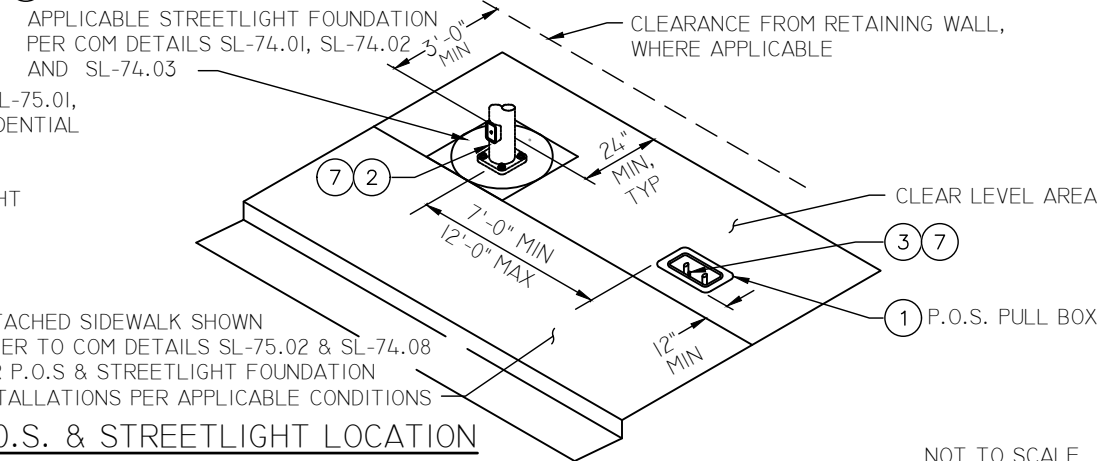
- | | | |
|---|--|---|
| <p>① #6 XHHW GREEN COPPER BOND THROUGH CONCRETE FOUNDATION TO A 14" COPPER GROUNDING PLATE 6" BELOW BOTTOM OF THE POLE'S FOUNDATION.</p> <p>② #8 COPPER SOLID BOND MOUNTED BETWEEN (2) 1/2" FLAT WASHERS TO MAKE A TIGHT AND SOLID BOND TO POLE.</p> <p>③ #8-7 STRAND BARE COPPER BOND IN EACH UNDERGROUND SCHEDULE 40 P.V.C. CONDUIT.</p> <p>④ (2) #8 XHHW COPPER CONDUCTORS.</p> <p>⑤ (2) #8 XHHW COPPER CONDUCTORS IN 1 1/2" SCHEDULE 40 P.V.C. CONDUIT TO POLE.</p> | <p>⑥ (2) #8 XHHW COPPER CONDUCTORS IN EACH 2" P.V.C. CONDUIT TO NEXT PULL BOX.</p> <p>⑦ #8 XHHW 18" JUMPER.</p> <p>⑧ (2) #12 THHN/THWN COPPER CONDUCTORS UP POLE TO LUMINAIRE.</p> <p>⑨ RUN A SOLID #8 COPPER BOND FROM THE POLE'S BOLT/WASHERS TO THE CRIMP CONNECTOR.</p> <p>⑩ 1 1/2" SCHEDULE 40 P.V.C. CONDUIT BENDS WITH A RADIUS OF NOT LESS THAN 18" (FACTORY BENDS ONLY SHALL BE USED). *FOR PC POLES SEE NOTE 13.</p> | <p>⑪ 2" SCHEDULE 40 P.V.C. 90 DEGREE BEND CONDUIT WITH A RADIUS OF NOT LESS THAN 18" (FACTORY BENDS ONLY SHALL BE USED) TYPICAL.</p> <p>⑫ CONDUIT END BELLS TYPICAL.</p> <p>⑬ APPROVED CONNECTOR AND COVER SEE GENERAL NOTE 9 FOR TYPE AND METHOD.</p> <p>⑭ FINISHED GRADE.</p> <p>⑮ HAND HOLE COVER OMITTED FOR CLARITY.</p> <p>⑯ HEB OR LEB TYPE FUSEHOLDER AND A FNM FUSE PER SL-70 NOTE 29.</p> <p>⑰ 1 1/2" SCHEDULE 40 P.V.C. CONDUIT TO POLE.</p> |
|---|--|---|

NOT TO SCALE



INSTALLATION NOTES

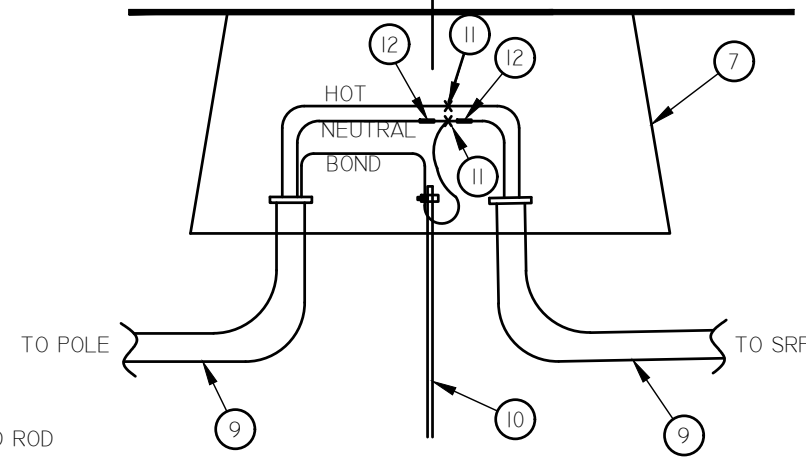
- 1 THE POINT OF DELIVERY (P.O.D.) AND POINT OF SERVICE (P.O.S.) PULL BOXES SHALL BE INSTALLED AT THE SAME TIME AND LOCATED PER SCHEMATICS AND DETAILS SHOWN. THE P.O.S. SHALL BE CONFIGURED PER POINT OF SERVICE PULLBOX DETAIL SHOWN IN LOWER LEFT.
- 2 THE STREETLIGHT POLE SHALL BE LOCATED BETWEEN 7' AND 12' FROM THE P.O.S. PULL BOX. WHEREVER POSSIBLE THE P.O.S. PULL BOX SHALL BE LOCATED IN AN AREA BETWEEN THE UTILITY'S P.O.D. PULL BOX AND THE STREETLIGHT. OTHERWISE THE P.O.S. PULL BOX MAY BE LOCATED WITHIN THE ALTERNATE AREA SHOWN. IN EITHER INSTANCE, THE P.O.S. PULL BOX SHALL BE LOCATED NO FURTHER THAN 100' FROM THE UTILITY'S P.O.D.
- 3 A 10' LONG, 5/8" COPPER CLAD GROUNDING ROD SHALL BE INSTALLED IN THE P.O.S. PULL BOX. THE GROUNDING ROD IN THE P.O.S. PULL BOX SHALL EXTEND 2" TO 4" ABOVE BASE OF PULL BOX.
- 4 THE P.O.S. AND THE STREETLIGHT FOUNDATION SHALL BE CONNECTED BY ONE (1) 1 1/2" PVC SCHEDULE 40 CONDUIT WITH TWO (2) #8 XHHW MINIMUM CONDUCTORS AND (1) #8 BARE STRANDED BOND (B) WIRE.
- 5 THE NEUTRAL CONDUCTOR (N) SHALL BE WHITE OR MARKED WITH WHITE TAPE FOR A MINIMUM OF 6" ALONG THE CONDUCTOR AND AWAY FROM A POINT OF CONNECTION.
- 6 2' TO 3'± ADDITIONAL WIRE SHALL BE LOOPED WITHIN P.O.D. & P.O.S. PULL BOXES. SEE APPROVED LIST.
- 7 24-INCH LONG GROUND (G) AND BOND (B) TAILS SHALL BE PROVIDED AT THE P.O.S. AND EACH STREETLIGHT FOR CONNECTIONS TO THE NEUTRAL CONDUCTORS AND GROUNDING, AS REQUIRED PER COM DETAILS SL-74.01, SL-74.02 & SL-76.01. ALL SPLICES, GROUNDS AND BONDS SHALL BE DONE WITH A GEL CAP STUB SPLICE KIT #GELCAP SL-2/0-03 HOLE OR APPROVED EQUAL. APPROVED GROUNDING ROD CLAMPS SHALL BE DEDICATED AND ACCESSIBLE AT THE P.O.S.
- 8 A WATER PROOF FUSE HOLDER WITH A 30 AMP FUSE SHALL BE INSTALLED ON THE HOT CONDUCTOR (H) FROM THE UTILITY SERVICE.
- 9 A MAXIMUM OF THREE STREETLIGHTS CONNECTED FROM THE P.O.S. ARE ALLOWABLE.



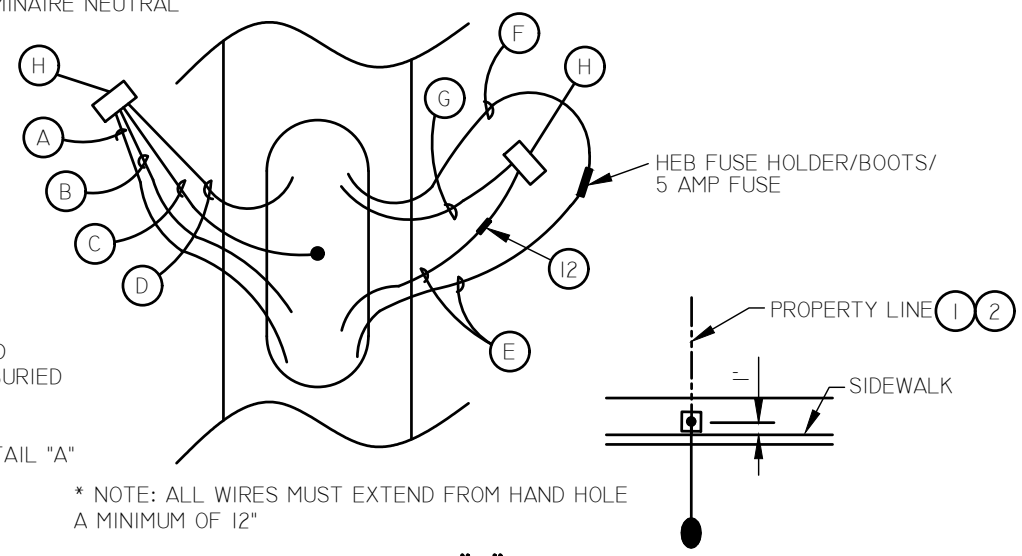
ATTACHED SIDEWALK SHOWN REFER TO COM DETAILS SL-75.02 & SL-74.08 FOR P.O.S. & STREETLIGHT FOUNDATION INSTALLATIONS PER APPLICABLE CONDITIONS

NOT TO SCALE

NOTE: 2'-3' ADDITIONAL WIRE SHALL BE LOOPED INSIDE PULL BOX (FOR ALL WIRES)

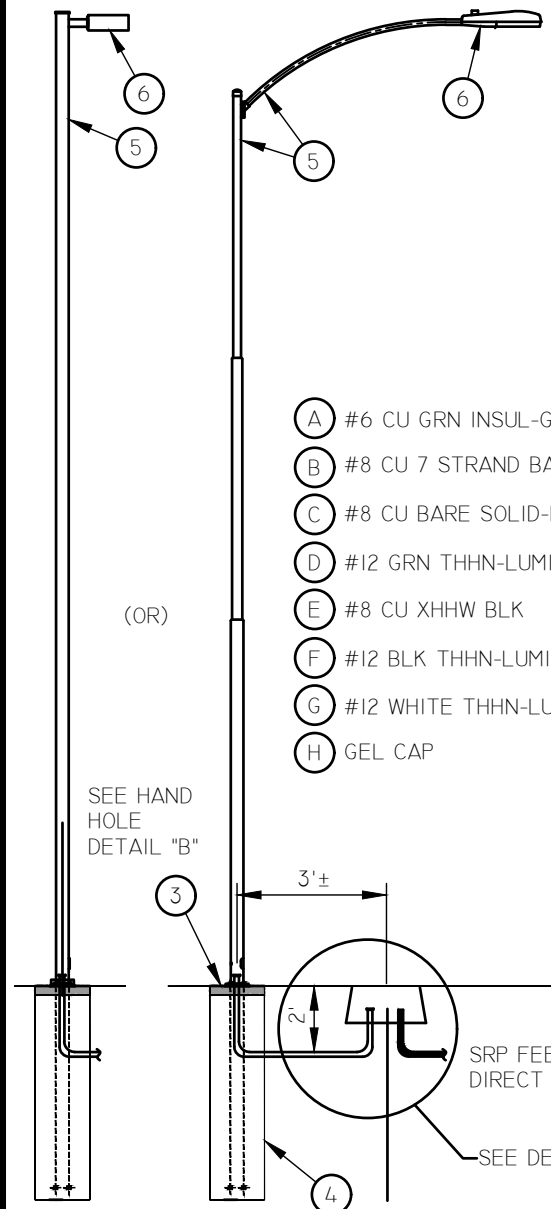


DETAIL "A"



* NOTE: ALL WIRES MUST EXTEND FROM HAND HOLE A MINIMUM OF 12"

HAND HOLE DETAIL "B"



P-416 P-106

- (A) #6 CU GRN INSUL-GRND PL
- (B) #8 CU 7 STRAND BARE-GRND ROD
- (C) #8 CU BARE SOLID-POLE GRND
- (D) #12 GRN THHN-LUMINAIRE GRND
- (E) #8 CU XHHW BLK
- (F) #12 BLK THHN-LUMINAIRE HOT
- (G) #12 WHITE THHN-LUMINAIRE NEUTRAL
- (H) GEL CAP

NOTES:

- 1 REMOVE EXISTING POLE/FOUNDATION. CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF REMOVED POLES AND ANY OTHER ASSOCIATED MATERIAL.
- 2 NEW POLE/FOUNDATION WILL BE LOCATED AS NEAR TO PROPERTY LINE AS POSSIBLE.
- 3 2'X2'X4" CONCRETE CAP. C.O.M. SPECS SL-74.03 NOTE 9).
- 4 F-104 FOUNDATION COM SPECS SL-74.03 WITH 4 EACH 1"X69" ANCHOR BOLTS COM SPECS SL-74.01 A SPREAD FOUNDATION WILL BE AUTHORIZED BY COM WHEN UNDERGROUND CONFLICTS WILL NOT ALLOW THE USE OF STANDARD F-104 FOUNDATION.
- 5 P-106 POLE/ARM COM SPECS SL-70, SL-73.01 OR P-416 SL-73.04.1, SL-73.04.2, SL-73.04.3.
- 6 CHANGE EXISTING LUMINAIRE. COM STREETLIGHT DEPT. WILL SUPPLY LUMINAIRES, PC'S (FACING NORTH) SHORTING CAPS AS NEEDED). COM STREETLIGHT DEPT. MAY ADVISE THE USE OF ALTERNATE LUMINAIRE.
- 7 NEW 3 1/2 PULL BOX COM SPECS SL-75.01, SL-76.02. NO FUSING OR BONDING BETWEEN NEUTRAL AND BOND WIRE. FROM POLE, POSITION PULL BOX AS NEEDED TO FIT IN THE APPROPRIATE AREA.
- 8 EXTEND SRP DIRECT BURY #8 AL XPLE WIRES (AS NEEDED) TO NEWLY INSTALLED 3 1/2 PULL BOX. SPLICE, THEN USE HEAVY WALL SHRINK TUBING W/ADHENSIVE LINING (CANUSA CFW0750(D) TO COVER SPLICE.
- 9 1 1/2 SCH 40 PVC CONDUIT SL-76.01 ALL BENDS TO BE FACTORY BENDS-COM SPECS SL-70, NOTE 18). 2 #8 XHHW FROM PULL BOX TO POLE-1 BLACK 1 MARKED WHITE 1 #6-7 STRAND BARE COPPER BOND.
- 10 INSTALL APPROVED GROUND ROD WITH CLAMP (SL-76.02). BOND TAIL SHALL BE PROVIDED FOR CONNECTION TO NEUTRAL.
- 11 C.O.M. APPROVED URD TERMINATION.
- 12 THE NEUTRAL CONDUCTOR SHALL BE WHITE OR MARKED WITH WHITE TAPE FOR A MINIMUM OF 6' ALONG THE CONDUCTOR & AWAY FROM THE CONNECTION.

(OR)

SEE HAND HOLE DETAIL "B"

3'±

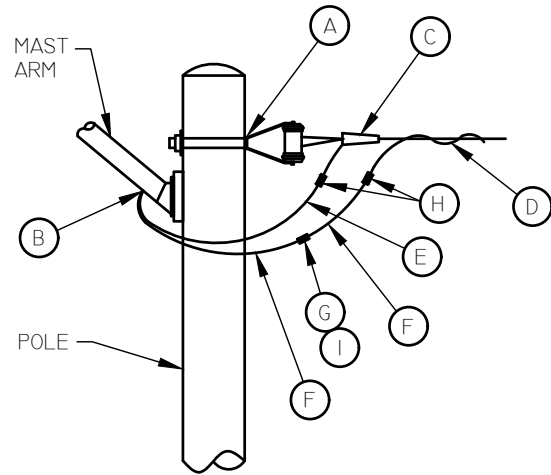
SRP FEED DIRECT BURIED

SEE DETAIL "A"

PROPERTY LINE 1 2

SIDEWALK

HEB FUSE HOLDER/BOOTS/ 5 AMP FUSE



ATTACHMENT DETAIL

ATTACHMENT NOTES:

- (A) THE POLE SHALL HAVE A 1/2" HOLE 3" FROM TOP OF POLE WITH 1/2" BOLT WASHER, NUT, CLEVIS AND INSULATOR. INSTALLED AS SHOWN.
- (B) THE MAST ARM SHALL HAVE A 5/8" HOLE 3" FROM EDGE OF SIMPLEX FITTING WITH A RUBBER GROMMET INSERTED IN THE 5/8" HOLE.
- (C) WEDGE CLAMP.
- (D) #6 ALUMINUM DUPLEX CABLE.
- (E) #12 WHITE THHN/THWN 90 DEGREES C STRANDED COPPER CONDUCTOR TO LUMINAIRE.
- (F) #12 BLACK THHN/THWN 90 DEGREES C STRANDED COPPER CONDUCTOR TO LUMINAIRE.
- (G) HEB OR HEX TYPE FUSE HOLDER WITH A 5 AMP MIDGET FUSE.
- (H) BLACKBURN WR-9 CRIMP TYPE CONNECTOR WITH APPROVED COVER.
- (I) LED FIXTURE-HEB OR HEX TYPE FUSE HOLDER WITH A 2 AMP MIDGET FUSE.

CABINET REQUIREMENTS

GENERAL

THE MANUFACTURER MUST BE ABLE UPON REQUEST TO PRODUCE PART NUMBERS ON ALL COMPONENTS FOR REPAIR PURPOSES. CERTIFICATES OF COMPLIANCE MAY BE REQUESTED ON EACH CABINET OR ON ANY COMPONENT OR PART THEREOF.

PERFORMANCE

THE ENCLOSURE WILL MEET OR EXCEED THE REQUIREMENTS OF A NEMA 3R RATING AND SHALL BE U.L. LISTED.

CABINET CONSTRUCTION

GENERAL

THE CABINET AND DOOR SHALL BE CONSTRUCTED FROM 5052-H32 SHEET ALUMINUM ALLOY WHICH HAS A THICKNESS OF .125". EXTERNAL AND INTERNAL WELDS SHALL BE MADE USING THE HELIARC WELDING METHOD. ALL WELDS SHALL BE NEATLY FORMED AND FREE OF CRACKS, BLOW HOLES AND OTHER IRREGULARITIES.

ALL INSIDE AND OUTSIDE EDGES OF THE CABINET SHALL BE FREE OF BURRS.

THE DOOR OPENING SHALL BE DOUBLE FLANGED ON ALL 4 SIDES WHICH INCREASES STRENGTH AROUND OPENINGS AND KEEPS DIRT AND LIQUIDS FROM ENTERING THE ENCLOSURE WHEN DOOR IS OPENED.

A DOOR RESTRAINT SHALL BE PROVIDED TO PREVENT DOOR MOVEMENT WHEN OPENED IN WINDY CONDITIONS.

DOOR/HARDWARE

THE DOOR SHALL BE FURNISHED WITH A GASKET THAT SATISFIES THE PHYSICAL PROPERTIES AS FOUND IN UL508 TABLE 21.1 AND SHALL FORM A WEATHER-TIGHT SEAL BETWEEN THE CABINET AND DOOR.

THE HINGE SHALL BE CONTINUOUS AND BOLTED TO THE CABINET AND DOOR UTILIZING 1/4"-20 300 SERIES STAINLESS STEEL CARRIAGE BOLTS AND 300 SERIES STAINLESS STEEL NY-LOCK NUTS.

THE HINGE WILL BE MADE OF .075"-14 GAUGE 300 SERIES STAINLESS STEEL AND SHALL HAVE A 3" OPEN WIDTH WITH A .250" DIAMETER 300 SERIES STAINLESS STEEL HINGE PIN.

THE HINGE PIN SHALL BE CAPPED TOP AND BOTTOM BY WELD TO RENDER IT TAMPER PROOF.

ALL BOLT HOLES SHALL BE GASKETED TO MEET OR EXCEED THE REQUIREMENTS OF A NEMA 4X RATING.

A POCKET, 6.00" HIGH X 15.00" LONG X .750" DEEP, WITH BOTH ENDS OPEN, SHALL BE WELDED TO THE INSIDE OF THE DOOR.

THE LATCHING MECHANISM SHALL BE A 3-POINT DRAW ROLLER TYPE.

THE CENTER CATCH SHALL BE 300 SERIES STAINLESS STEEL PLATE.

PUSHRODS WILL BE TURNED EDGEWISE AT THE OUTWARD SUPPORTS AND SHALL BE .250" X .750" ALUMINUM.

ROLLERS SHALL HAVE A MINIMUM DIAMETER OF .875" AND WILL BE MADE OF DELRIN. THE CENTER CATCH SHALL BE FABRICATED FROM .115" STAINLESS STEEL, MINIMUM.

AN OPERATING HANDLE SHALL BE FURNISHED.

THE HANDLE WILL BE 300 SERIES STAINLESS STEEL WITH A 3/4" DIAMETER SHANK.

THE LATCHING HANDLE SHALL HAVE A PROVISION FOR PADLOCKING IN THE CLOSED POSITION.

ALL PADLOCK HARDWARE SHALL BE MADE OF MINIMUM 11 GAUGE STAINLESS STEEL.

EQUIPMENT MOUNTING

MOUNTING CHANNELS

THE ENCLOSURE SHALL BE EQUIPPED WITH TWO REVERSED "C" MOUNTING CHANNELS WELDED TO THE BACK WALL OF THE ENCLOSURE, WITH (4) 1/4"-20 STAINLESS STEEL PRESS-IN CAPTIVE STUDS. (FHS0420-16)

THE REVERSED MOUNTING CHANNELS WILL BE EQUIPPED WITH ALL MOUNTING HARDWARE NEEDED TO MOUNT ALUMINUM BACK PANEL TO THE (4) 1/4"-20 STAINLESS STEEL PRESS-IN CAPTIVE STUDS (SEE MOUNTING CHANNEL DETAIL).

ALUMINUM BACK PANEL

THE ENCLOSURE SHALL BE EQUIPPED WITH A PREDRILLED AND TAPPED 5052 H32 ALUMINUM BACK PANEL HAVING A THICKNESS OF .125" (CITY WILL BE PROVIDE A DRILLING AND TAPPING DETAIL). THE PANEL SHALL BE NATURAL FINISHED, ALL MOUNTING HARDWARE WILL BE FURNISHED.

CABINET FINISH

THE OUTSIDE SURFACE OF THE CABINET SHALL HAVE A SMOOTH, UNIFORMED, NATURAL ALUMINUM FINISH.

CABINET MOUNTING

PAD MOUNT ENCLOSURE

ENCLOSURE SHALL BE CONSTRUCTED TO BE MOUNTED ON CONCRETE PAD (SEE MOUNTING PATTERN FOR DETAILS).

NOTE: FOR NEMA TYPE 4X RATINGS THE CABINET WILL BE BOLTED AND GASKETED WITH A CLOSED CELL NEOPRENE GASKET MATERIAL WITH THE PHYSICAL PROPERTIES AS FOUND IN UL508 TABLE 21.1 AND SHALL FORM A WEATHER-TIGHT SEAL BETWEEN THE CABINET AND CONCRETE PAD.

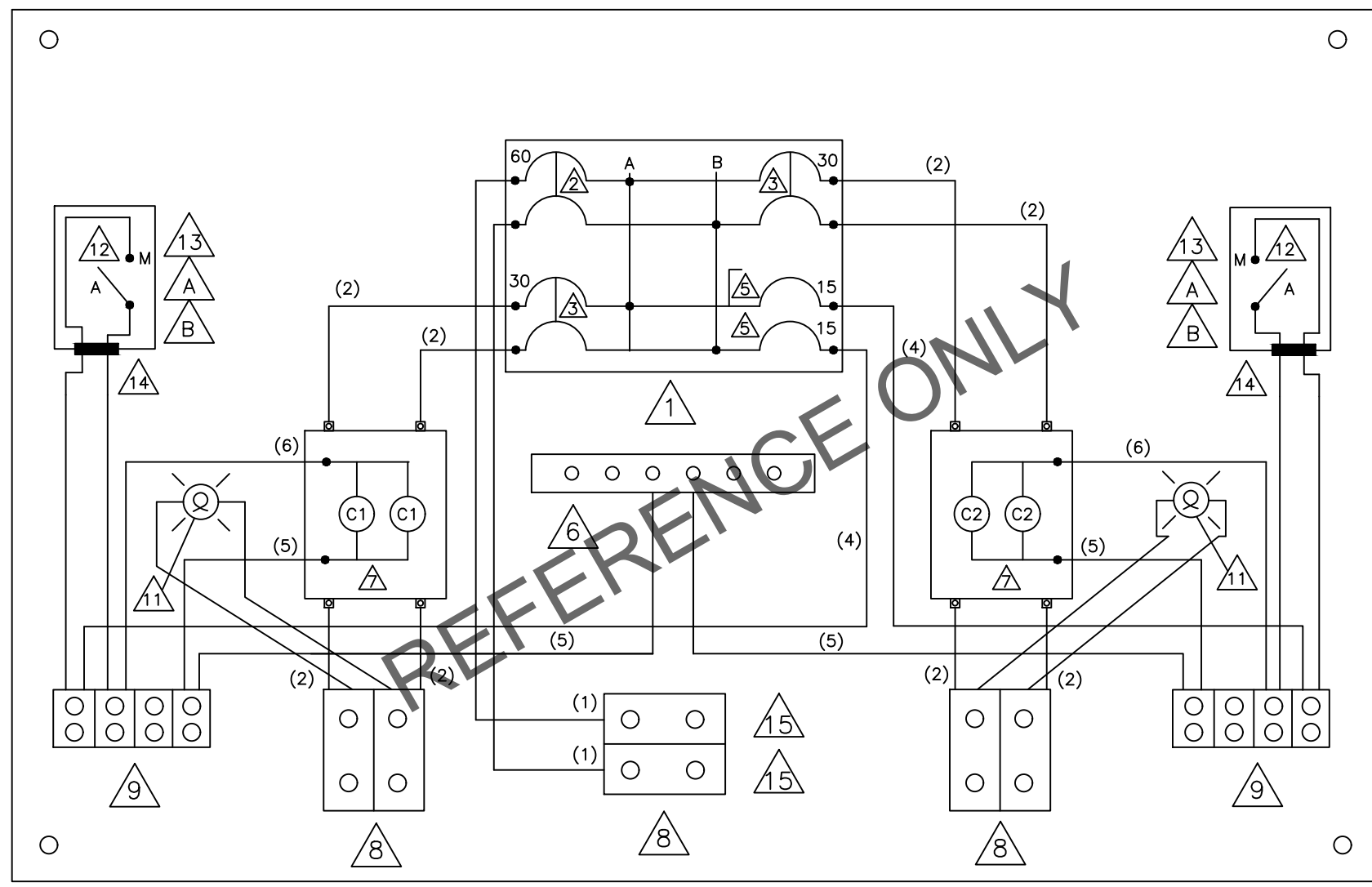
THE AREA OF THE CABINET WITH THE MOUNTING HOLES SHALL BE REINFORCED TO .375" THICKNESS ON THE INSIDE.

APPROVED MANUFACTURER

CABINET IS TO BE MANUFACTURED BY AN APPROVED U.L. LISTED MANUFACTURER.

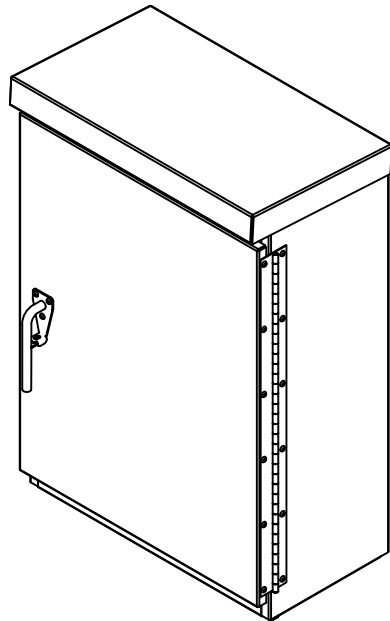
AWG THHN	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
#4 BLK	x								
#6 BLK		x							
#8 BLK			x						
#12 BLK				x					
WHT					x				
RED						x			
BLU							x		
GRN								x	
#14 RED									x

- 1 CIRCUIT BREAKER PANEL GE TLM 812 FCUD
- 2 GE BREAKER 2P60 THQL 2160
- 3 GE BREAKER 2P30 THQL 2130 HID
- 4 GE BREAKER 1/2 INCH IP 15 THQP I15
- 5 GE BREAKER IP 15 THQL I15
- 6 NEUTRAL BAR (FROM 1 ABOVE)
- 7 CONTACTOR 30A MECHANICAL EATON A202KIBA, 2
- 8 SPLICES/REDUCERS-AL/CU BURNDY BDB-II-2/0-2
- 9 TERMINAL BOARD 20A-150V GE CRI51B4
- 10 GFCI-15AMP-NEMA CONFIGURATION 5-15R LEVITON IVJX3 (OR EQUAL)
- 11 NEON MINATURE INDICATOR LIGHT-RED CHICAGO MINATURE #2151A1
- 12 15A 120/277 SINGLE POLE SWITCH PASS SEYMOUR CSI5ACI-W
- 13 HANDY BOX W/COVER
- A BOX: STEEL CITY 2-1/2" D #58371-1/2
- B COVER: STEEL CITY 58C30
- 14 KNOCK OUT BUSHING 1/2" TOPAZ SB87511
- 15 SPLICE/REDUCER COVER BURNDY BDBCOR2

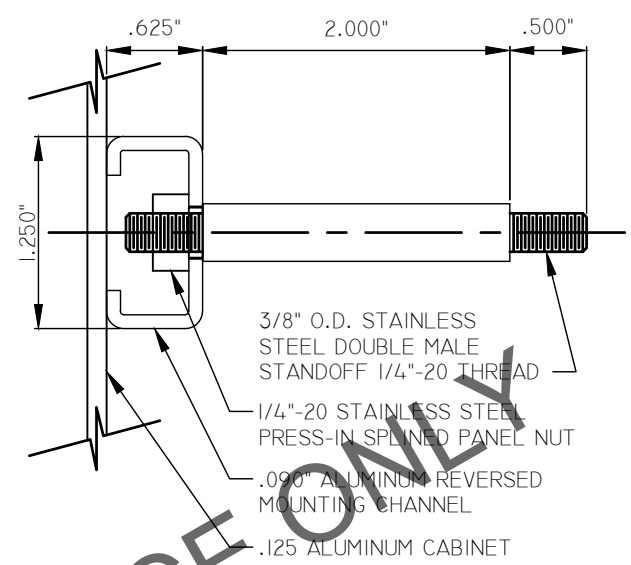


BACKER PLATE

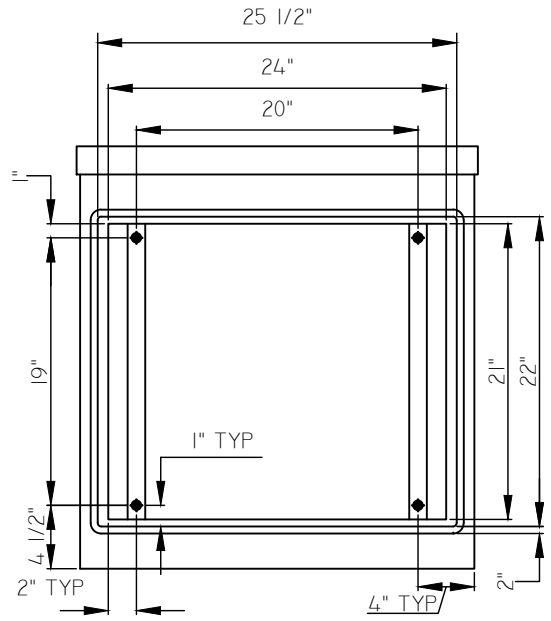
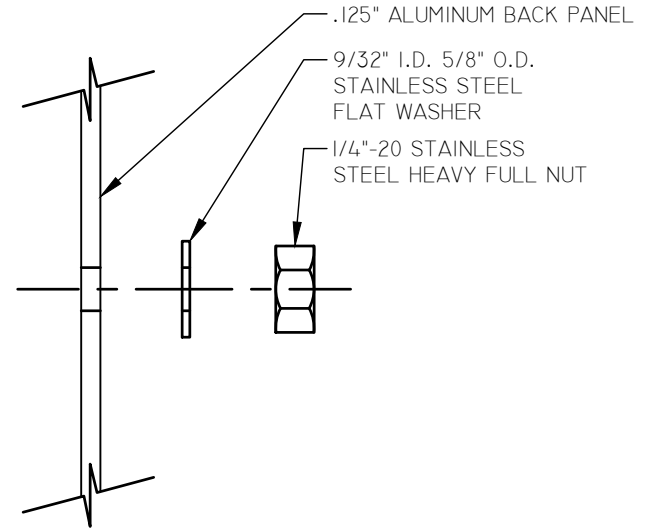
SEE M-75.01.1C FOR REFERENCED NOTES



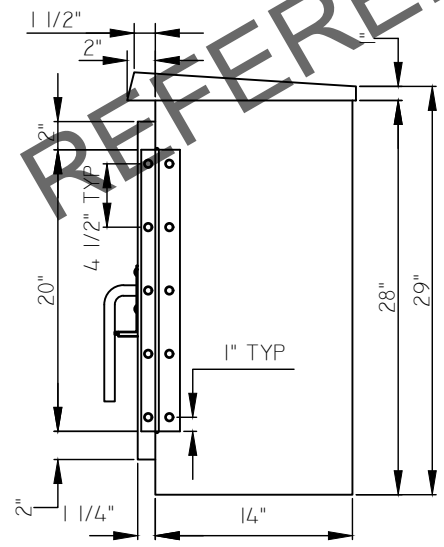
C-103 LIGHTING CONTROL CABINET



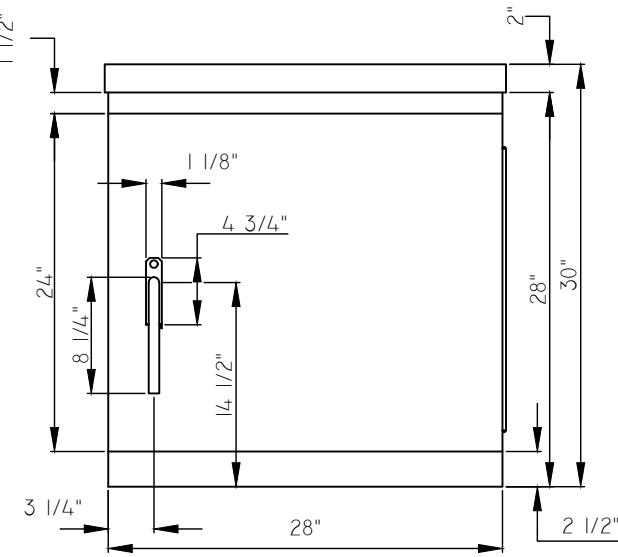
MOUNTING CHANNEL DETAIL



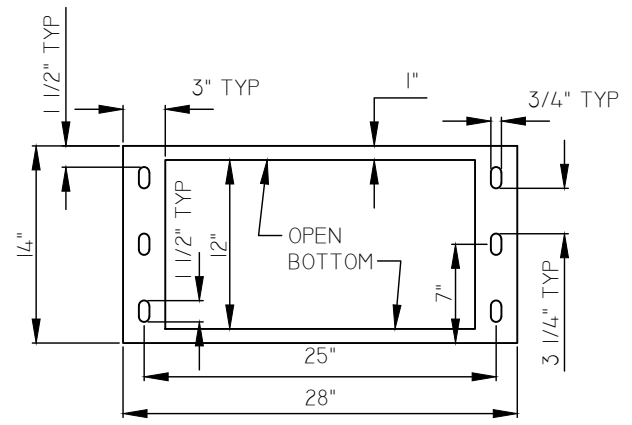
OPENING



SIDE VIEW



FRONT VIEW



MOUNTING PATTERN

SEE SL-77.04 FOR REFERENCED NOTES

NOT TO SCALE

GENERAL REQUIREMENTS

EACH CABINET AND ALL COMPONENTS SHALL BE PER CITY OF MESA APPROVED PRODUCTS LIST. THE CABINET SHALL BE PROVIDED COMPLETE WITH ALL COMPONENTS NOTED ON COM DETAILS SL-77.08 AND SL-77.09 AND SHALL INCLUDE ALL WIRING PER DIAGRAM SHOWN ON COM DETAIL SL-77.10. MANUFACTURERS SHALL BE REQUIRED TO PRODUCE PART NUMBERS FOR ALL COMPONENTS SO THAT PARTS CAN BE REQUESTED WHENEVER REPAIRS ARE NECESSARY. CERTIFICATES OF COMPLIANCE MAY BE REQUESTED ON EACH CABINET OR ON ANY COMPONENT OR PART THEREOF.

CABINET CONSTRUCTION

THE ENCLOSURE SHALL MEET OR EXCEED THE REQUIREMENTS OF A NEMA 3R RATING AND SHALL BE U.L. LISTED.

THE CABINET AND FRONT DOOR, AS SHOWN ON COM DETAIL SL-77.06, SL-77.07 SHALL BE CONSTRUCTED FROM 5052-H32 SHEET ALUMINUM ALLOY WHICH HAS A THICKNESS OF .125". EXTERNAL AND INTERNAL WELDS SHALL BE MADE USING THE HELIARC WELDING METHOD. ALL WELDS SHALL BE NEATLY FORMED AND FREE OF CRACKS, BLOW HOLES AND OTHER IRREGULARITIES.

ALL INSIDE AND OUTSIDE EDGES OF THE CABINET SHALL BE FREE OF BURRS.

THE FRONT DOOR OPENING SHALL BE DOUBLE FLANGED ON ALL 4 SIDES WHICH INCREASES STRENGTH AROUND OPENINGS AND KEEPS DIRT AND LIQUIDS FROM ENTERING THE ENCLOSURE WHEN DOOR IS OPENED.

A FRONT DOOR RESTRAINT SHALL BE PROVIDED TO PREVENT DOOR MOVEMENT WHEN OPENED IN WINDY CONDITIONS.

THE OUTSIDE SURFACE OF THE CABINET AND FRONT DOOR SHALL HAVE A SMOOTH AND UNIFORM NATURAL ALUMINUM FINISH.

MOUNTING CHANNELS ON REAR WALL FOR COMPONENT PANEL

THE ENCLOSURE SHALL BE EQUIPPED WITH TWO REVERSED "C" MOUNTING CHANNELS WELDED TO THE INSIDE REAR WALL OF THE ENCLOSURE, WITH (4) 1/4"-20 STAINLESS STEEL PRESS-IN CAPTIVE STUDS, FHS0420-16.

THE REVERSED MOUNTING CHANNELS SHALL BE EQUIPPED WITH ALL MOUNTING HARDWARE AS NEEDED TO MOUNT REAR COMPONENT PANEL TO (4) 1/4"-20 STAINLESS STEEL PRESS-IN CAPTIVE STUDS PER MOUNTING CHANNEL DETAIL ON COM DETAIL SL-77.08.

COMPONENT PANEL MOUNTED ON REAR WALL

THE ENCLOSURE SHALL BE EQUIPPED WITH A REMOVABLE COMPONENT PANEL MOUNTED ON THE CABINET REAR WALL AND FABRICATED FROM 5052 H32 ALUMINUM AND HAVING A THICKNESS OF .125". THE PANEL SHALL BE PREDRILLED AND TAPPED PER A DETAIL PROVIDED BY THE CITY OF MESA.

FRONT DOOR/HARDWARE

THE DOOR SHALL BE FURNISHED WITH A GASKET THAT SATISFIES THE PHYSICAL PROPERTIES AS FOUND IN UL508 TABLE 21.1 AND SHALL FORM A WEATHER-TIGHT SEAL BETWEEN THE CABINET AND DOOR.

THE HINGE SHALL BE CONTINUOUS AND BOLTED TO THE CABINET AND DOOR UTILIZING 1/4"-20 300 SERIES STAINLESS STEEL CARRIAGE BOLTS AND 300 SERIES STAINLESS STEEL NY-LOCK NUTS.

THE HINGE SHALL BE MADE OF .075-14 GAUGE 300 SERIES STAINLESS STEEL AND SHALL HAVE A 3" OPEN WIDTH WITH A .250" DIAMETER 300 SERIES STAINLESS STEEL HINGE PIN.

THE HINGE PIN SHALL BE CAPPED TOP AND BOTTOM BY WELD TO RENDER IT TAMPER PROOF.

ALL BOLT HOLES SHALL BE GASKETED TO MEET OR EXCEED THE REQUIREMENTS OF A NEMA 4X RATING.

A POCKET, 6.00" HIGH X 15.00" LONG X .750" DEEP, WITH BOTH ENDS OPEN, SHALL BE WELDED TO THE INSIDE OF THE DOOR.

THE LATCHING MECHANISM SHALL BE A 3-POINT DRAW ROLLER TYPE. ROLLERS SHALL HAVE A MINIMUM DIAMETER OF .875" AND WILL BE MADE OF DELRIN.

THE CENTER CATCH SHALL BE 300 SERIES STAINLESS STEEL PLATE AND SHALL BE FABRICATED FROM .115" STAINLESS STEEL, MINIMUM.

PUSHRODS WILL BE TURNED EDGEWISE AT THE OUTWARD SUPPORTS AND SHALL BE .250" X .750" ALUMINUM.

AN OPERATING HANDLE SHALL BE FURNISHED AND SHALL BE FABRICATED FROM 300 SERIES STAINLESS STEEL AND HAVE A 3/4" DIAMETER SHANK.

THE HANDLE LATCH SHALL HAVE A PROVISION FOR PADLOCKING IN THE CLOSED POSITION. ALL PADLOCK HARDWARE SHALL BE MADE OF MINIMUM 11 GAUGE STAINLESS STEEL.

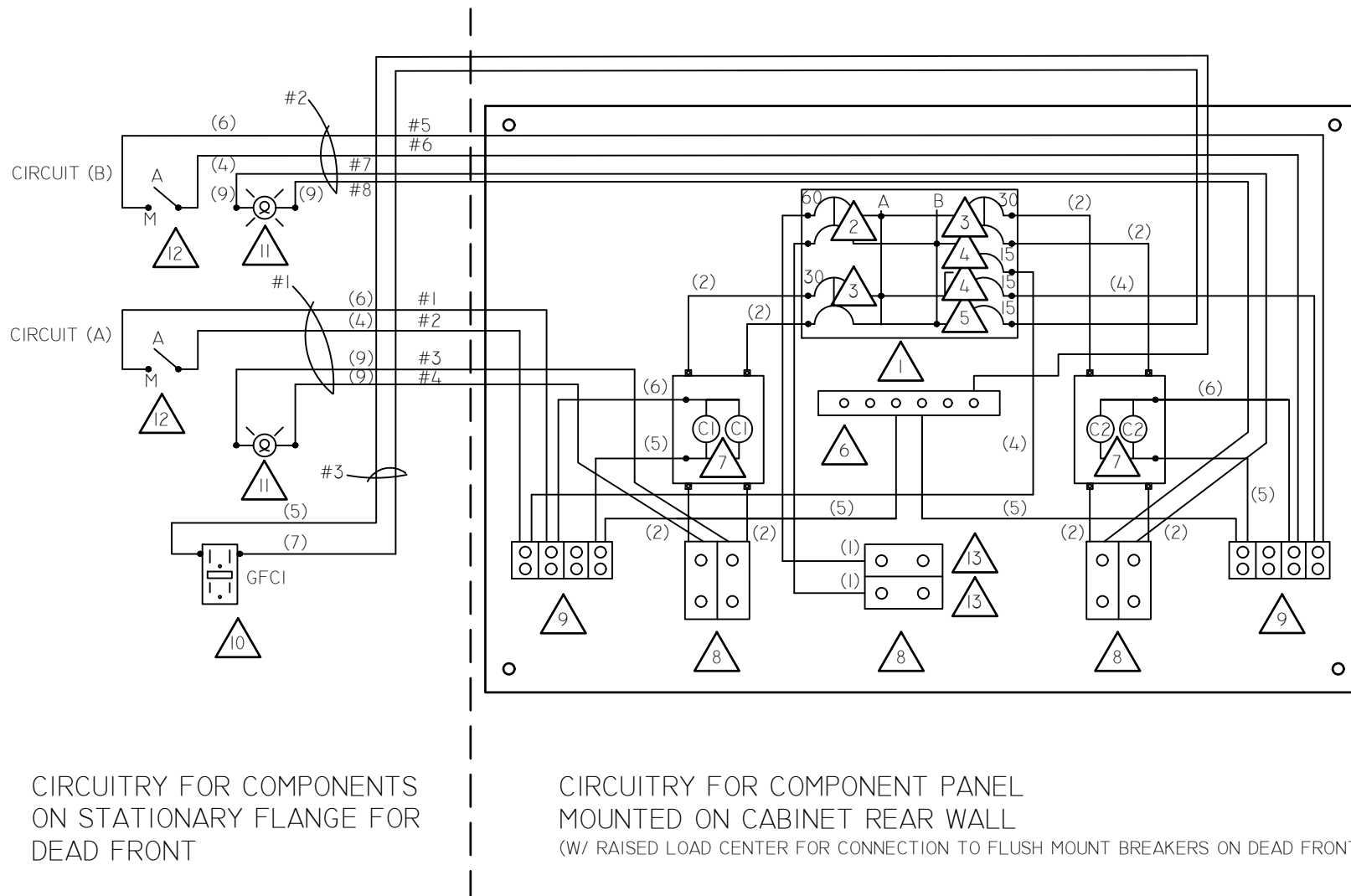
CABINET BASE MOUNTING

ENCLOSURE BASE SHALL BE MANUFACTURED PER BASE & MOUNTING DIMENSIONS ON COM DETAIL SL-77.07 FOR MOUNTING ON A CONCRETE PAD PER COM DETAILS SL-77.08, SL-77.09 AND SL-77.10.

THE AREA OF THE CABINET WITH THE MOUNTING HOLES SHALL BE REINFORCED TO .375" THICKNESS ON THE INSIDE.

NOTE: FOR NEMA TYPE 4X RATINGS THE CABINET WILL BE BOLTED AND GASKETED WITH A CLOSED CELL NEOPRENE GASKET MATERIAL WITH THE PHYSICAL PROPERTIES AS FOUND IN UL508 TABLE 21.1 AND SHALL FORM A WEATHER-TIGHT SEAL BETWEEN THE CABINET AND CONCRETE PAD.





AWG THHN	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
#4 BLK	X								
#6 BLK		X							
#8 BLK			X						
#12 BLK				X					
WHT					X				
RED						X			
BLU							X		
GRN								X	
#14 RED									X

- 1 CIRCUIT BREAKER PANEL GE TLM 812 FCUD
- 2 GE BREAKER 2P60 THQL 2160
- 3 GE BREAKER 2P30 THQL 2130 HID
- 4 GE BREAKER 1/2 INCH IP 15 THQP 115
- 5 GE BREAKER IP 15 THQL 1115
- 6 NEUTRAL BAR, FROM 1 ABOVE
- 7 CONTACTOR 60A MECHANICAL
- 8 SPLICES/REDUCERS-AL/CU BURNDY BDB-II-2/0-2
- 9 TERMINAL BOARD 20A-150V GE CRI51B4
- 10 GFCI-15AMP-NEMA CONFIGURATION 5-15R LEVITON IVJX3 (OR EQUAL)
- 11 NEON MINATURE INDICATOR LIGHT-RED CHICAGO MINATURE #2151A1
- 12 TOGGLE SWITCH-20AMP RATED-1/2" Ø MOUNT HOLE SPST-ON/OFF, HUBBELL #HBL11, OR EQUAL
- 13 SPLICER/REDUCER COVER BURNDY BDBCORVER2

CIRCUITRY FOR COMPONENTS ON STATIONARY FLANGE FOR DEAD FRONT

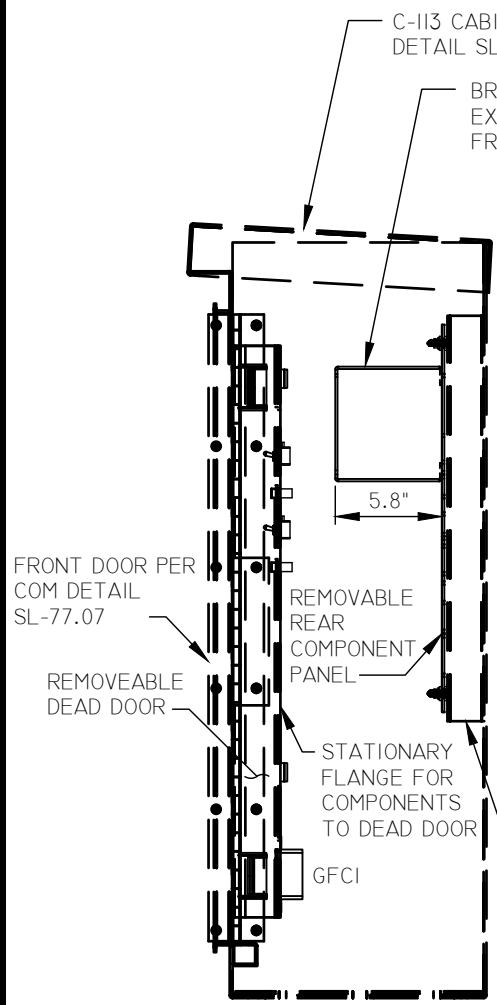
CIRCUITRY FOR COMPONENT PANEL MOUNTED ON CABINET REAR WALL (W/ RAISED LOAD CENTER FOR CONNECTION TO FLUSH MOUNT BREAKERS ON DEAD FRONT)

NOTE

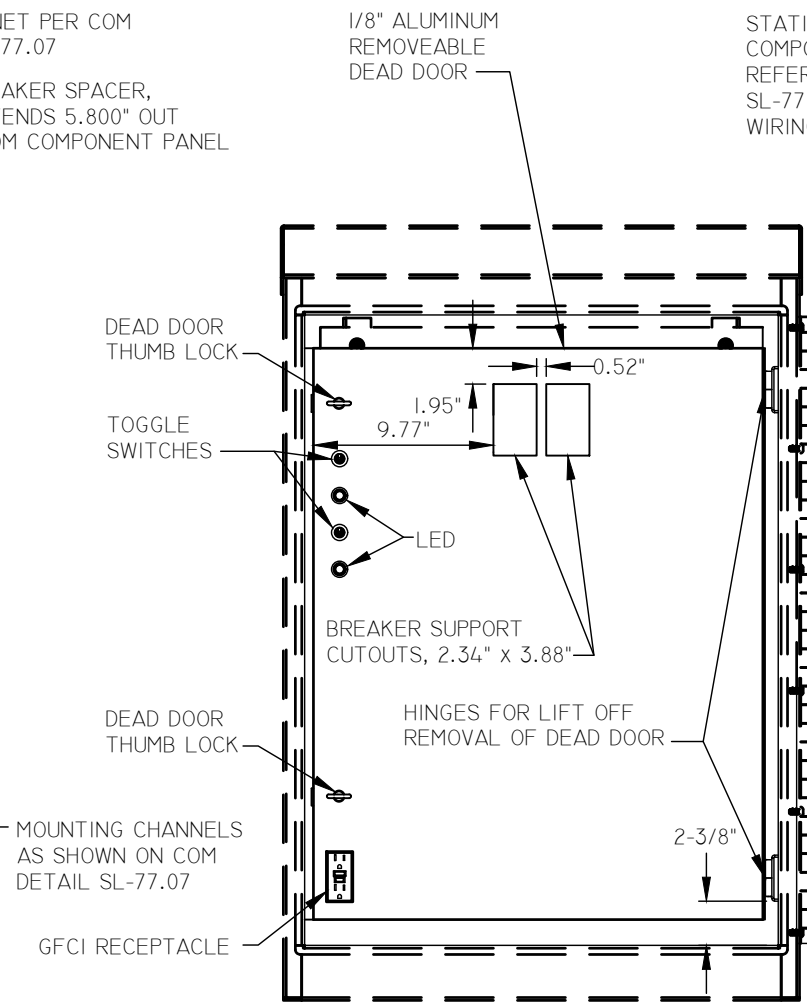
REFER TO COM DETAIL SL-77.11 FOR 240 VOLT SERVICE TO LCC SCHEMATIC AND COM DETAIL SL-77.11 FOR GROUND ROD AND CONDUIT PENETRATIONS THROUGH LCC PAD.

SEE SL-77.04 FOR REFERENCED NOTES

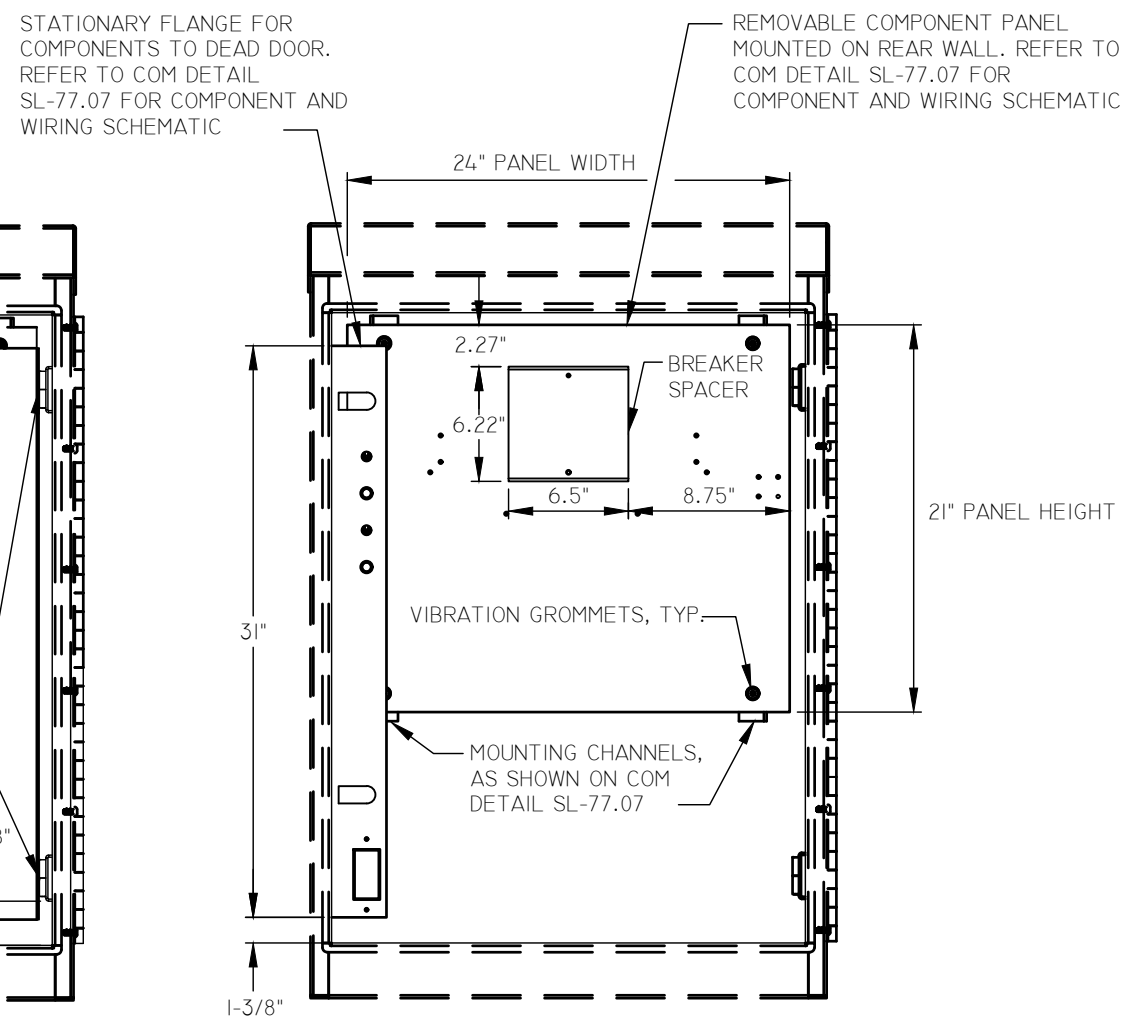
NOT TO SCALE



SIDE SECTION



COMPONENT PUNCHOUTS THROUGH DEAD DOOR PANEL

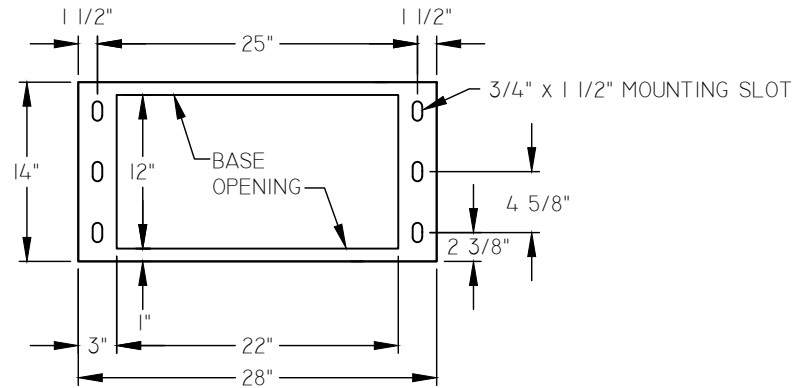
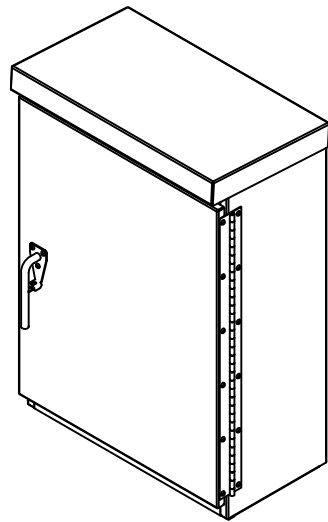


COMPONENT & CIRCUITRY MOUNTING SURFACES

- FLANGE TO DEAD DOOR
- PANEL ON REAR WALL

SEE SL-77.04 FOR REFERENCED NOTES

NOT TO SCALE



CABINET BASE AND MOUNTING DIMENSIONS
SEE COM DETAIL SL-77.08 FOR PAD DIMENSIONS

INSTALLATION

LOCATION

LOCATE WITH OTHER STREETLIGHT EQUIPPING APPURTENANCES PER SEPARATION DISTANCES NOTED IN COM DETAILS SL-77.11 AND SL-75.04.

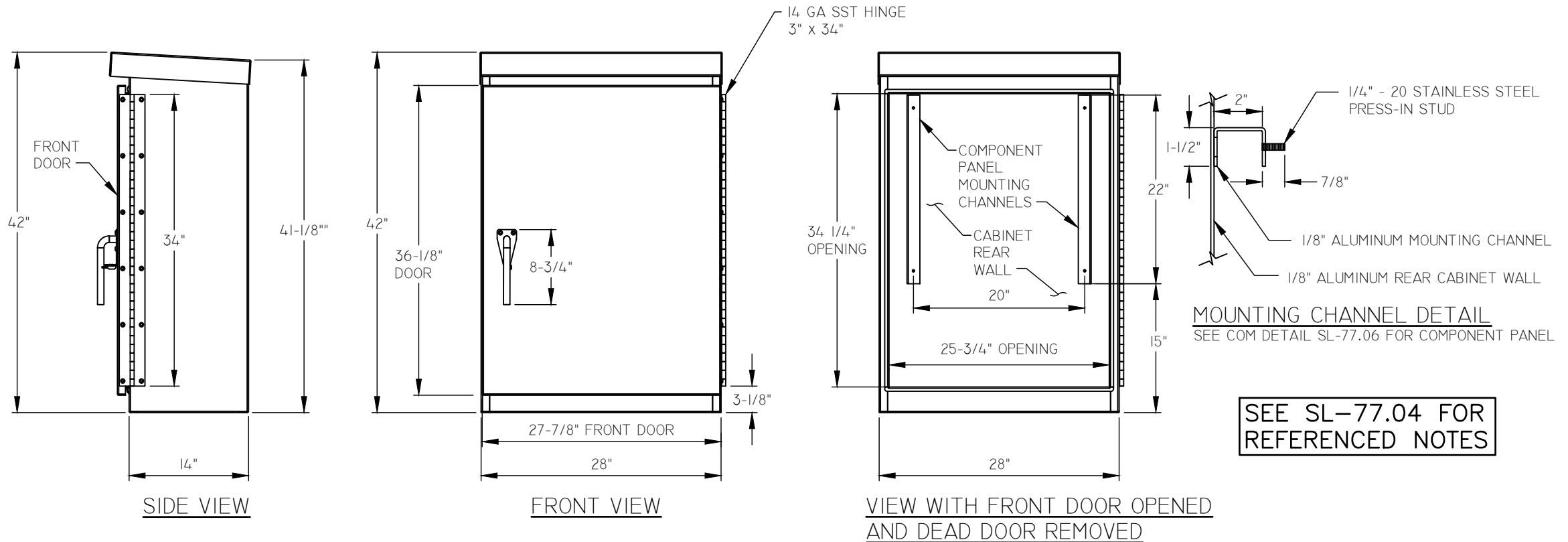
BASE PAD & CONDUIT

INSTALL WITH PAD & CONDUIT IN PLACE PER COM DETAILS SL-77.08 AND SL-77.10.

CONDITIONS

INSTALL IN MEDIAN OR ALONG STREET PER APPLICABLE CONDITION SHOWN ON COM DETAIL SL-77.09.

C-113 LIGHTING CONTROL CABINET



SEE SL-77.04 FOR REFERENCED NOTES

NOT TO SCALE

PAD MANUFACTURING REQUIREMENTS

THE CONCRETE PAD IS MANUFACTURED TO SUPPORT AND ACCOMMODATE CONNECTIONS TO A LIGHTING CONTROL CABINET (LCC). THE PAD SHALL INCLUDE ANCHOR BOLTS TO MOUNT THE LCC, PER COM DETAIL SL-77.07. AN 18" x 11" OPENING ALLOWS FOR CONDUITS AND A GROUNDING ROD PER COM DETAIL SL-77.10. PADS SHALL BE PRECAST BY AN APPROVED MANUFACTURER PER THE FOLLOWING CRITERIA:

CONCRETE

THE CONCRETE SHALL BE CLASS A, PER MAG STANDARD SPECIFICATION 725.

REINFORCEMENT

EACH PAD SHALL HAVE #4 STEEL REINFORCING, PER MAG STANDARD SPECIFICATION 725 AND AS SHOWN FOR APPLICABLE PAD TYPE.

ANCHOR BOLTS

EACH PAD SHALL BE EQUIPPED WITH (4) 1/2" x 8" STAINLESS STEEL ANCHOR BOLTS WITH HEX NUT AND WASHER, PER MAG STANDARD SPECIFICATION 771.

FINISH

THE CONCRETE SURFACE SHALL HAVE A UNIFORM SMOOTH TROWELED FINISH FREE OF ANY PITS AND BLEMISHES, PER PER MAG STANDARD SPECIFICATION 505. ALL INSIDE AND OUTSIDE EDGES SHALL HAVE A 3/4" ROUND CHAMFER.

INSTALLATION

LOCATION

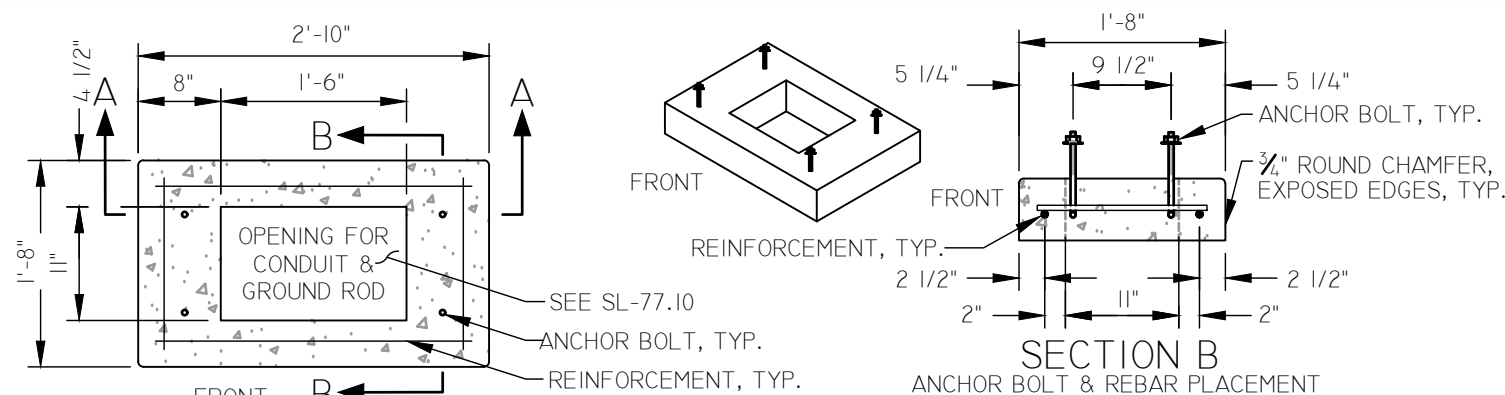
THE PAD SHALL BE INSTALLED ALONG WITH THE ELECTRIC UTILITY POINT OF DELIVERY (P.O.D.) AND POINT OF SERVICE (P.O.S.) AND LOCATED PER SEPARATION DISTANCES NOTED ON COM DETAIL SL-77.II.

PAD TYPE & CONDITIONS

INSTALL IN MEDIAN OR ALONG STREET WITH PAD TYPE AND FRONT ORIENTED PER APPLICABLE CONDITION SHOWN ON COM DETAILS SL-77.09 AND SL-77.II.

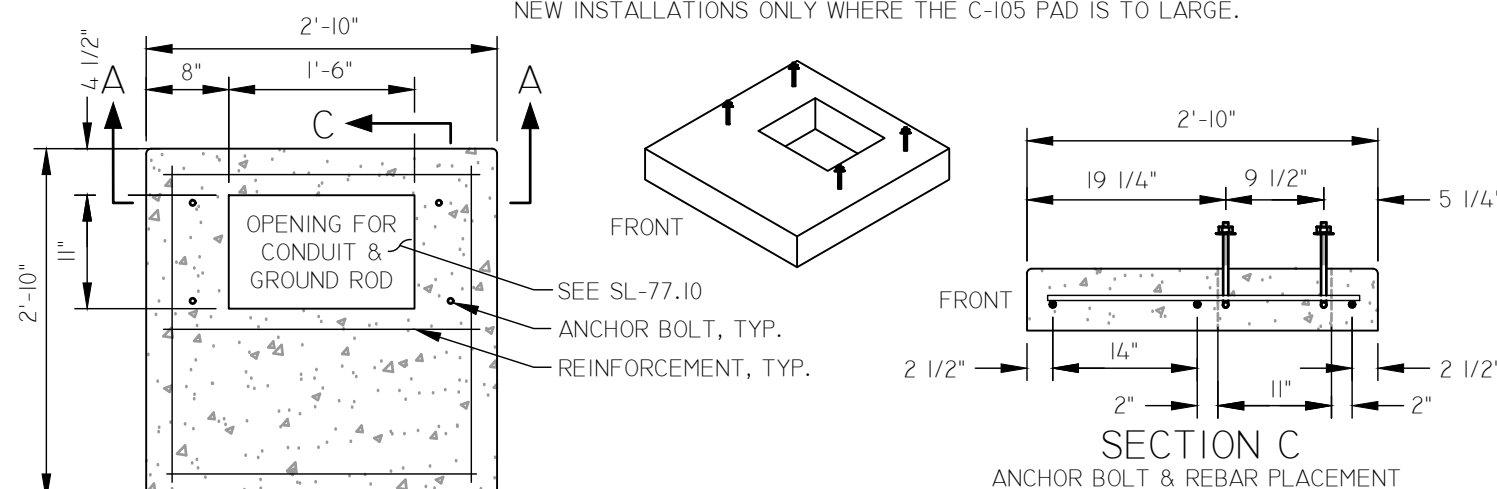
FINISH GRADE, CONDUIT & GROUNDING
INSTALL PER COM DETAIL SL-77.II

NOT TO SCALE



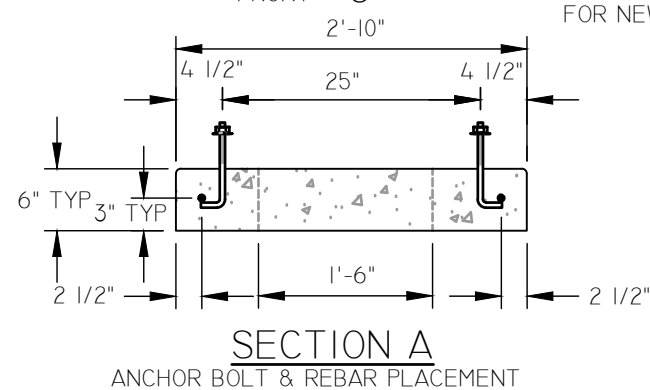
C-104 LIGHTING CONTROL CABINET PAD

RE-USE WHERE AN EXISTING CABINET IS REPLACED OR USE FOR NEW INSTALLATIONS ONLY WHERE THE C-105 PAD IS TOO LARGE.



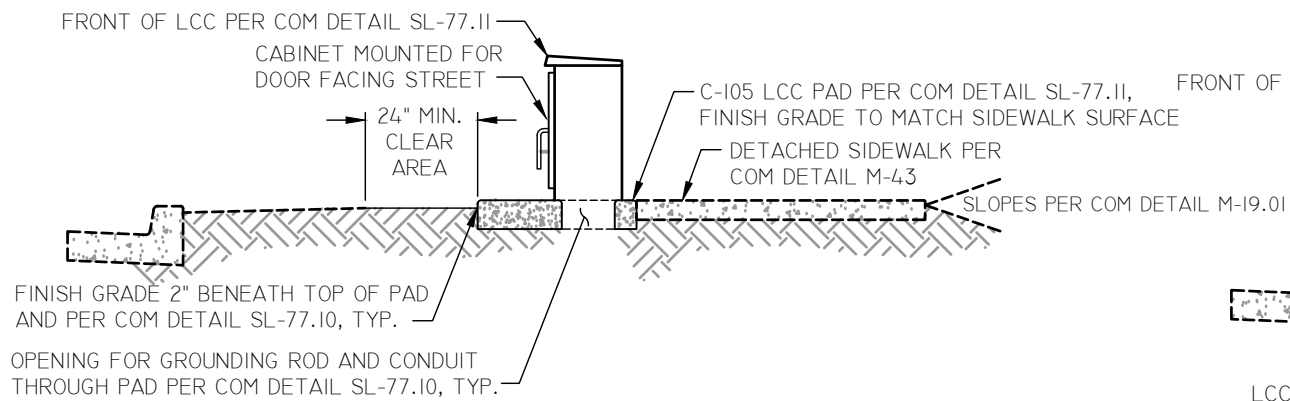
C-105 LIGHTING CONTROL CABINET PAD

FOR NEW INSTALLATIONS

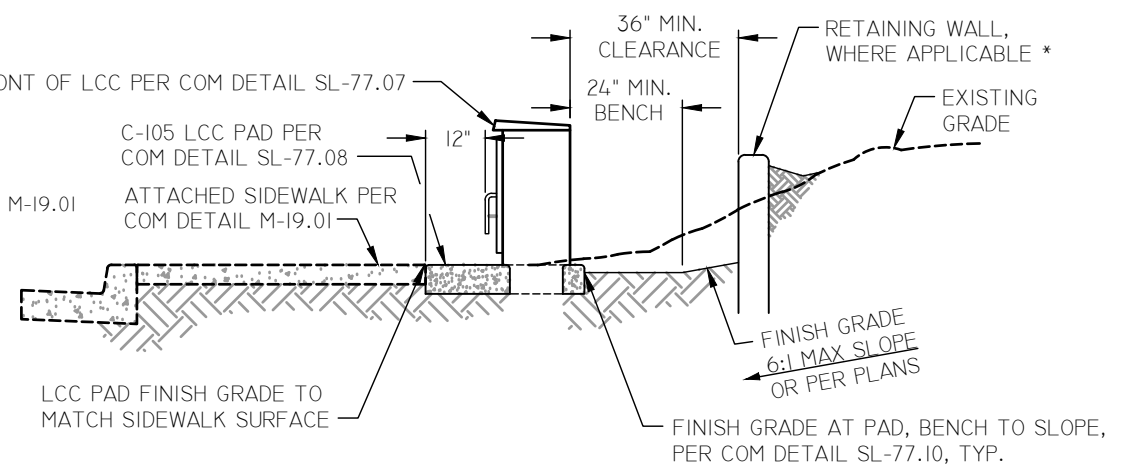


SECTION A

ANCHOR BOLT & REBAR PLACEMENT



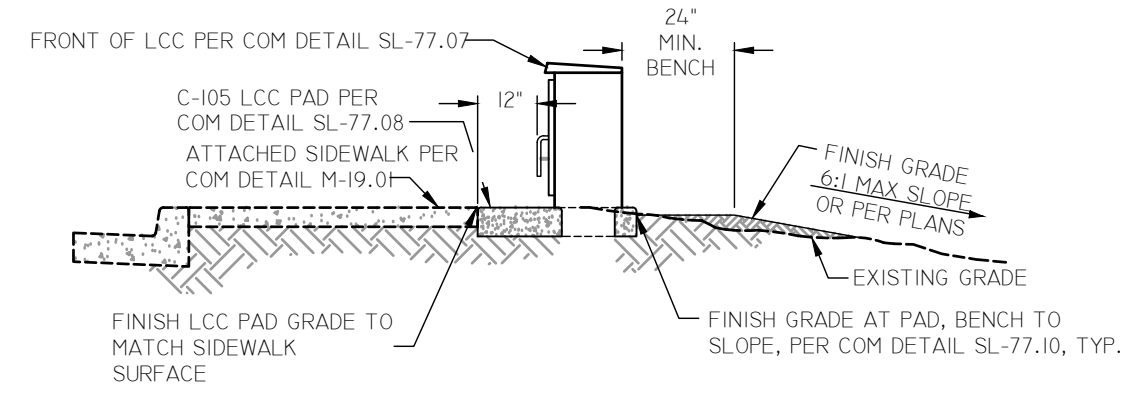
INSTALLATION AT DETACHED SIDEWALK



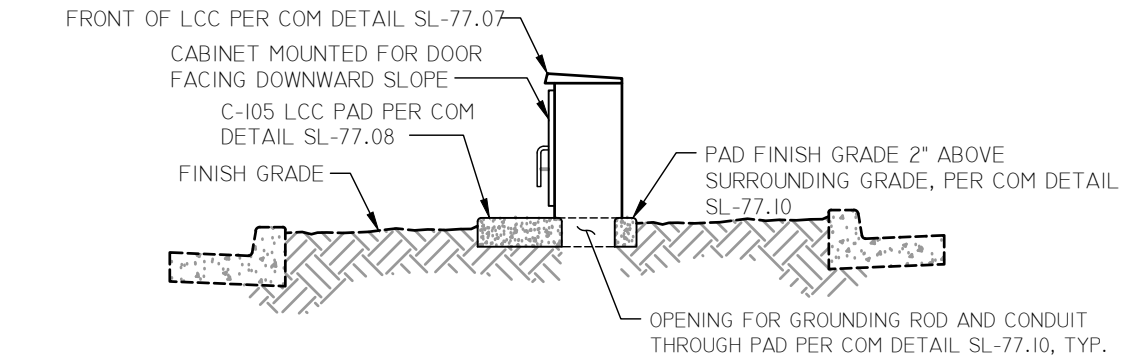
INSTALLATION AT SIDEWALK TO UPWARD SLOPE

*** NOTE** A RETAINING WALL:

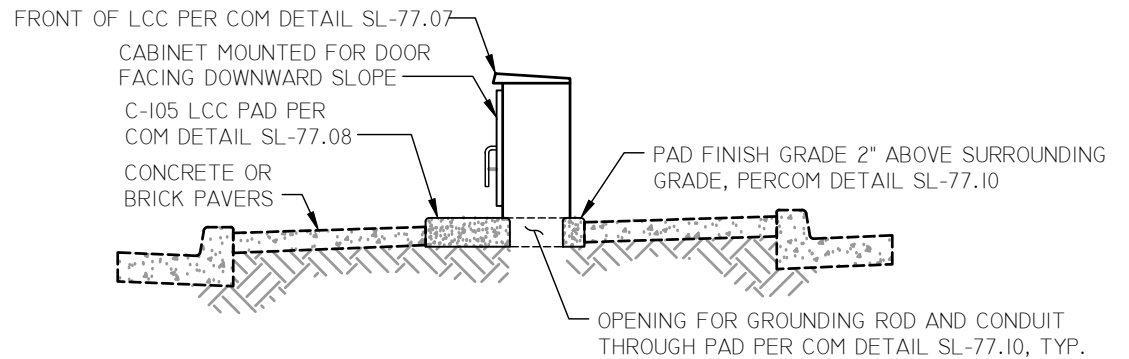
- IS REQUIRED IN AREAS OF FLOOD IRRIGATION.
- IS REQUIRED WHERE A NEW 6:1 UPWARD SLOPE WILL NOT MEET THE EXISTING GRADE.
- SHALL BE LOCATED FOR 36" MIN. CLEARANCE FROM LCC CABINET.
- SHALL HAVE A DEPTH OF 10" MIN. BELOW SIDEWALK GRADE.
- HAVE A SMOOTH TROWELED FINISH AND 1/2" RADIUS CHAMFERS ALONG TOP EDGES.
- BE BACKFILLED WITH EXCAVATED MATERIALS AND COMPACTED PER MAG STANDARD SPECIFICATION 601.
- SHALL EXTEND A MINIMUM OF 6-FEET EITHER SIDE OF THE CABINET.



INSTALLATION AT SIDEWALK TO DOWNWARD SLOPE



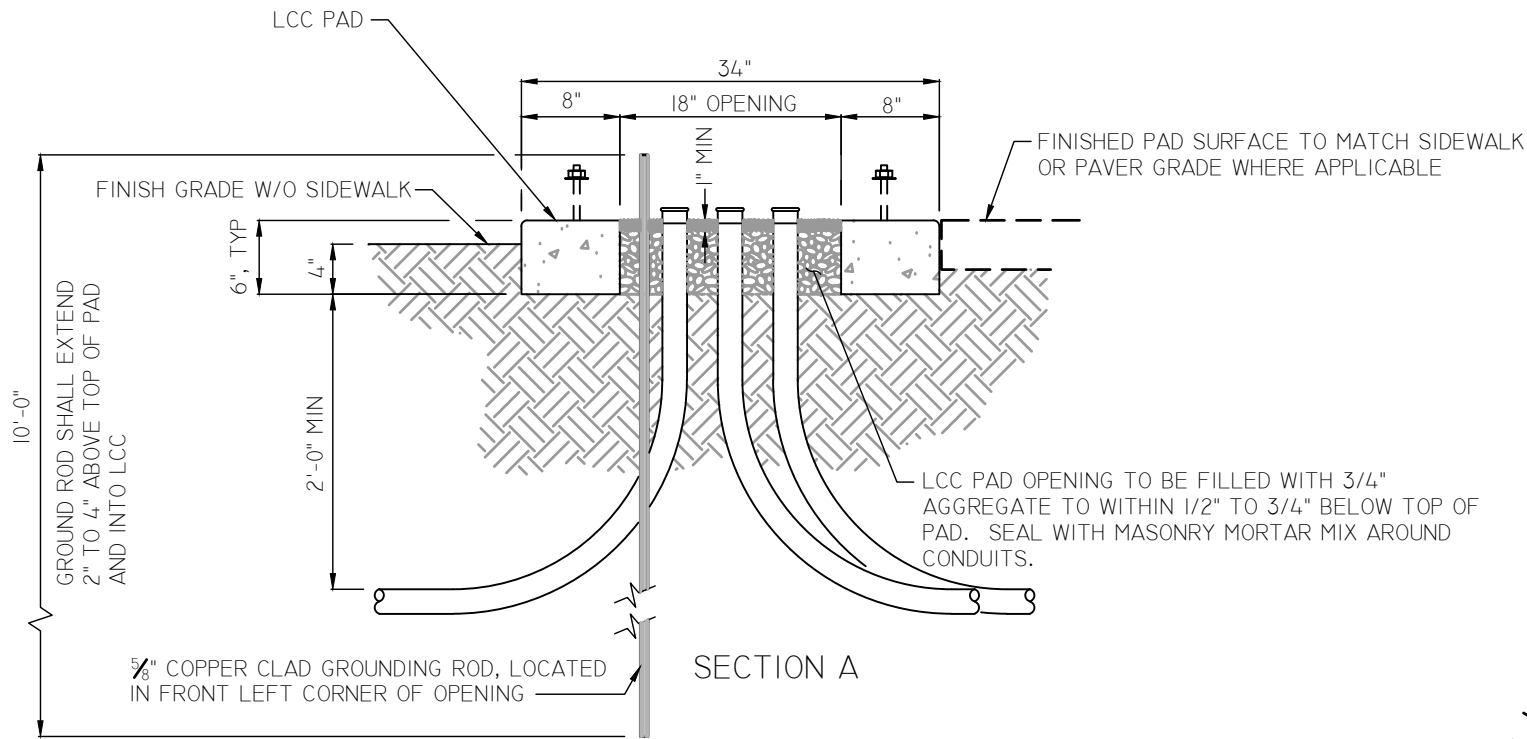
INSTALLATION IN UNPAVED MEDIAN



INSTALLATION IN PAVED MEDIAN

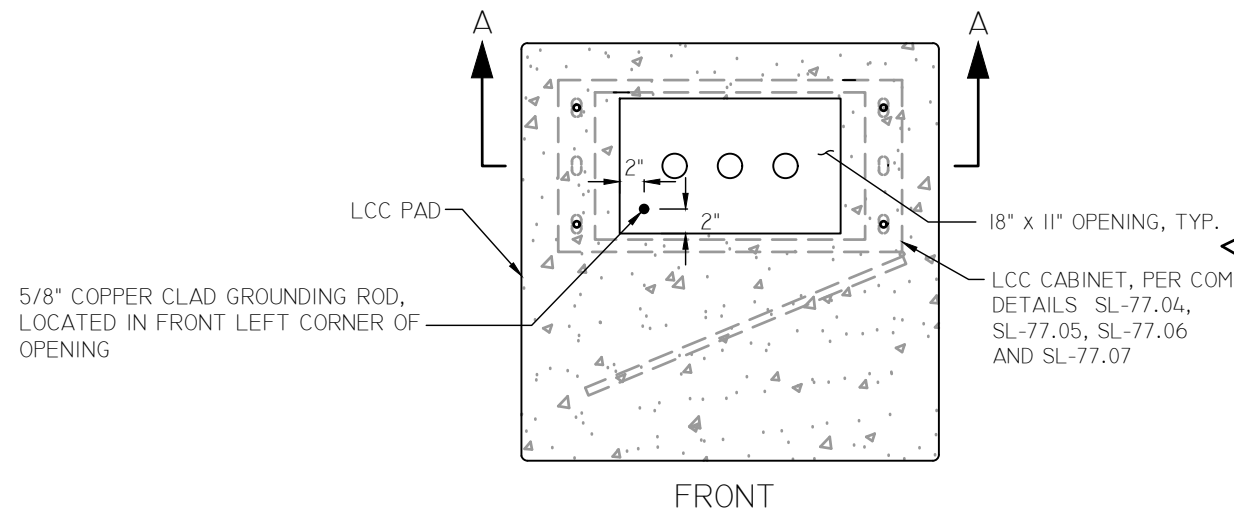
LIGHTING CONTROL PAD & CABINET INSTALLATION CONDITIONS

NOT TO SCALE

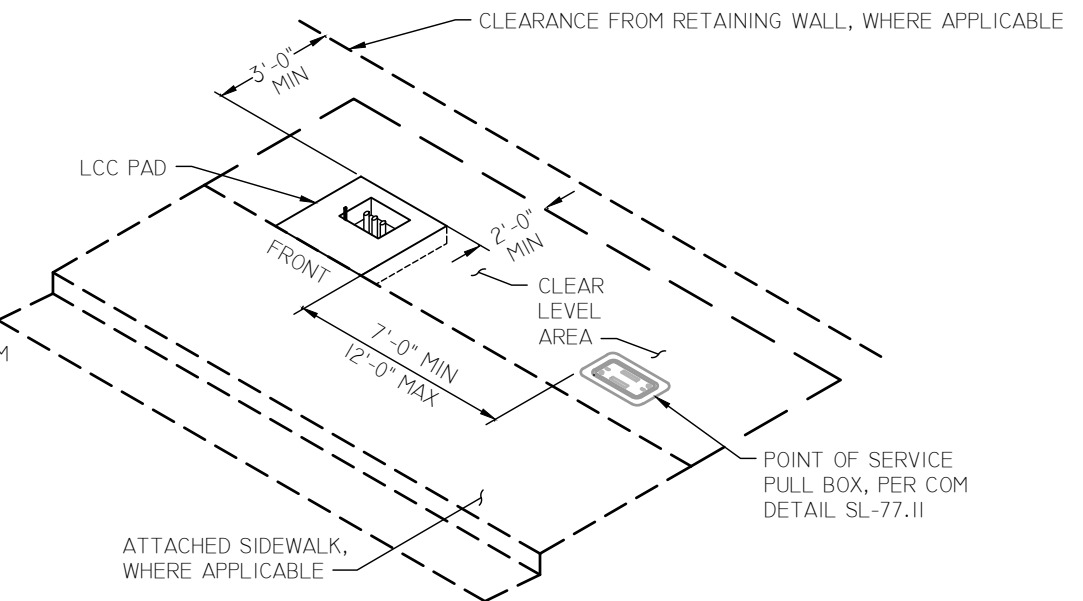


INSTALLATION NOTES

1. LOCATE LIGHTING CONTROL CABINET (LCC) PAD PER REQUIREMENTS OF 240 VOLT SERVICE SCHEMATIC ON COM DETAIL SL-77.II AND PER APPLICABLE CONDITION ON COM DETAIL SL-77.09.
2. 5/8" COPPER CLAD GROUNDING ROD SHALL BE INSTALLED AS SHOWN AND CONNECTED FROM GROUNDING ROD IN POINT OF SERVICE (P.O.S.) PULLBOX AS PER NOTES ON ON COM DETAIL SL-77.II.
3. ALL CONDUIT SHALL BE 2" SCHEDULE 40 P.V.C. AND INCLUDE A 90° BEND WITH RADIUS OF NOT LESS THAN 18" (ONLY FACTORY BENDS SHALL BE USED).
4. CONDUIT END BELLS SHALL BE INSTALLED BEFORE PULLING WIRE.
5. BACKFILL SHALL BE WITH EXCAVATED MATERIALS AND THOROUGHLY COMPACTED PER MAG STANDARD SPECIFICATION 601.
6. AGGREGATE/GROUT SHALL BE INSTALLED AS SHOWN.



LCC PAD, GROUNDING ROD & CONDUIT INSTALLATION



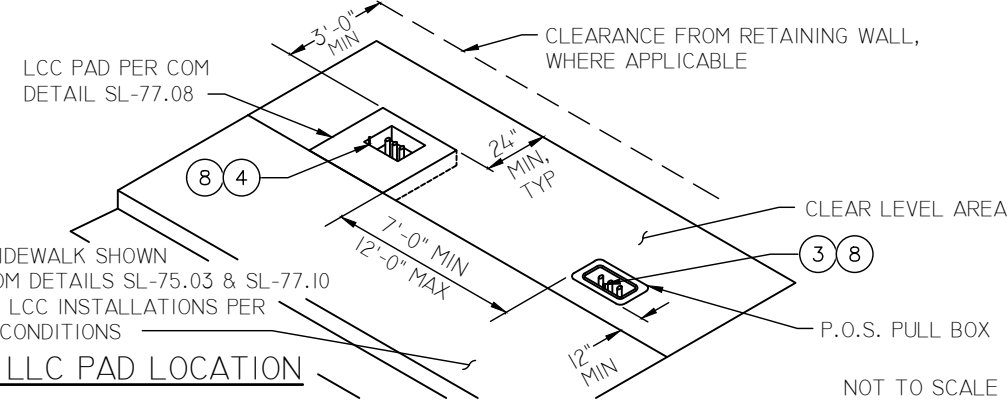
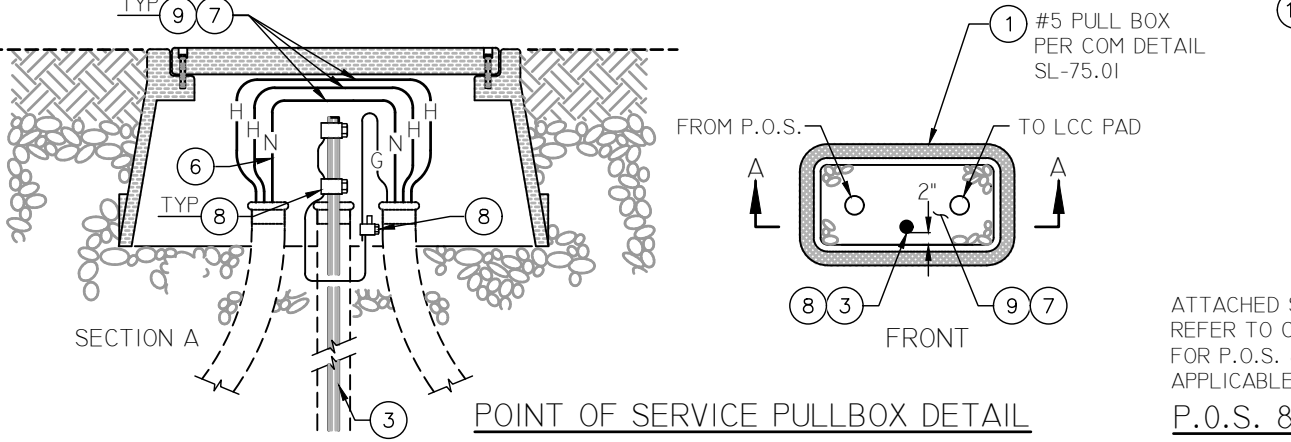
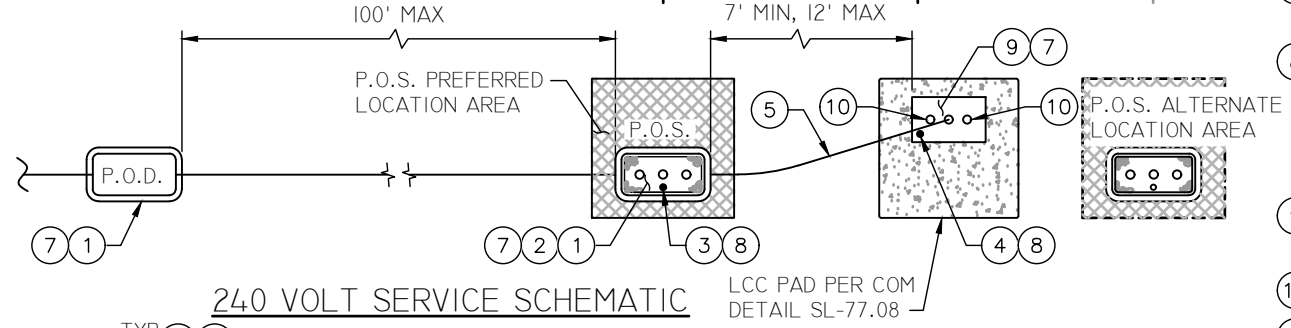
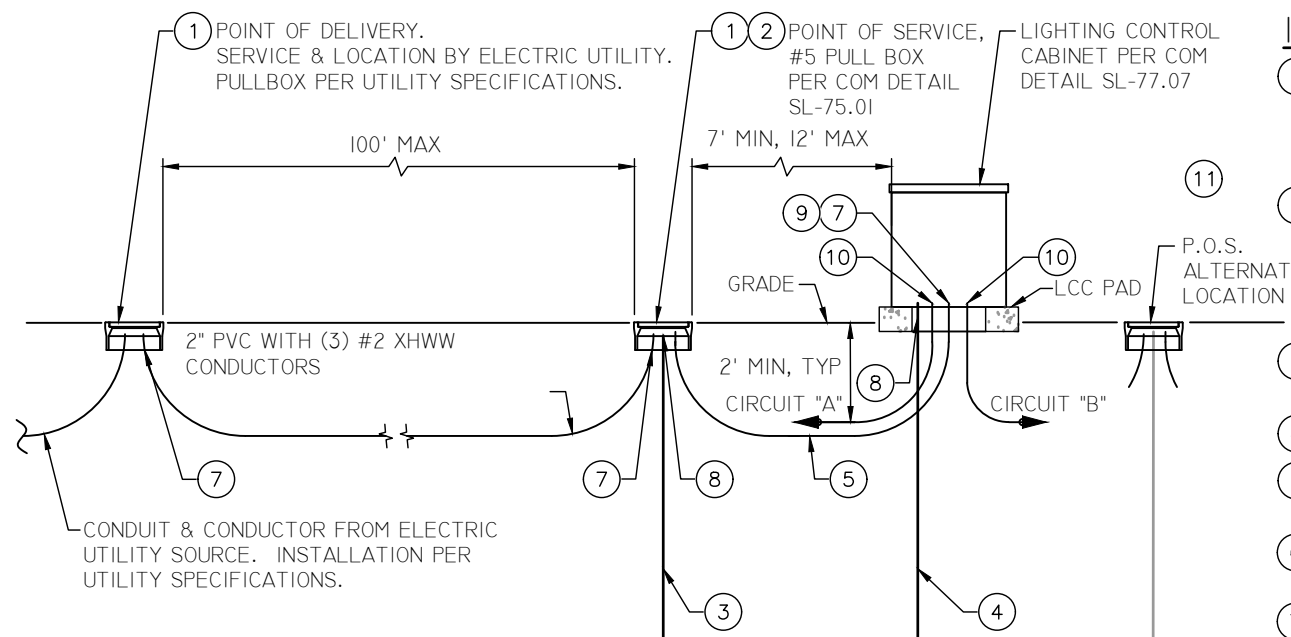
PAD & LCC PAD LOCATION

REFER TO COM DETAIL SL-77.II FOR INSTALLATIONS PER APPLICABLE CONDITIONS

NOT TO SCALE

INSTALLATION NOTES

- ① THE POINT OF DELIVERY (P.O.D.) PULL BOX, POINT OF SERVICE (P.O.S.) PULL BOX AND LIGHTING CONTROL CABINET (LCC) PAD SHALL BE INSTALLED AT THE SAME TIME AND LOCATED PER SCHEMATICS AND DETAILS SHOWN. THE P.O.S. SHALL BE CONFIGURED PER POINT OF SERVICE PULLBOX DETAIL SHOWN IN LOWER LEFT.
- ② THE LCC PAD SHALL BE LOCATED BETWEEN 7' AND 12' FROM THE P.O.S. PULL BOX. WHEREVER POSSIBLE THE P.O.S. PULL BOX SHALL BE LOCATED IN AN AREA BETWEEN THE UTILITY'S P.O.D. PULL BOX AND THE LCC PAD. OTHERWISE THE P.O.S. PULL BOX MAY BE LOCATED WITHIN THE ALTERNATE AREA SHOWN. IN EITHER INSTANCE, THE P.O.S. PULL BOX SHALL BE LOCATED NO FURTHER THAN 100' FROM THE UTILITY'S P.O.D.
- ③ A 10' LONG, 5/8" COPPER CLAD GROUNDING ROD SHALL BE INSTALLED IN THE P.O.S. PULL BOX. THE GROUNDING ROD IN THE P.O.S. PULL BOX SHALL EXTEND 2" TO 4" ABOVE BASE OF PULL BOX.
- ④ SEE COM DETAIL SL-77.10 FOR GROUNDING ROD AND EXTENSION THROUGH LCC PAD.
- ⑤ THE P.O.S. AND THE LCC PAD SHALL BE CONNECTED BY ONE (1) 2" PVC CONDUIT WITH THREE (3) #2 XHHW CONDUCTORS AND ONE (1) #4 AWG BARE STRANDED COPPER WIRE CONDUCTOR.
- ⑥ THE NEUTRAL CONDUCTOR (N) SHALL BE WHITE OR MARKED WITH WHITE TAPE FOR A MINIMUM OF 6" ALONG THE CONDUCTOR FROM POINT OF CONNECTION.
- ⑦ 2' TO 3'± ADDITIONAL FEET OF EACH CONDUCTOR SHALL BE LOOPED WITHIN P.O.D. & P.O.S. PULL BOXES AND THE LLC. LCC CIRCUITS SHALL BE TAGGED AND LABELED.
- ⑧ THE #4 AWG BARE STRANDED COPPER WIRE CONDUCTOR (G) IS USED TO INTERCONNECT THE P.O.S. AND LCC GROUNDING RODS AND SHALL BE INSTALLED WITHOUT SPLICES. 24-INCH LONG GROUND (G) TAILS SHALL BE PROVIDED AT THE P.O.S. AND LCC FOR INTERCONNECTING GROUNDS, NEUTRAL CONDUCTORS AND THE LCC PAD. APPROVED GROUNDING ROD CLAMPS SHALL BE DEDICATED AND ACCESSIBLE AT ALL P.O.S. AND LCC LOCATIONS.
- ⑨ ALL SPLICES FOR CONDUCTORS, GROUNDS AND BONDS SHALL BE DONE WITH A GEL CAP STUB SPLICE KIT #GELCAP SL-2/0-03 HOLE OR APPROVED EQUAL.
- ⑩ A MAXIMUM OF TWO STREETLIGHT CIRCUITS PER LCC IS ALLOWABLE.
- ⑪ WHENEVER A NEW LCC IS FED FROM THE P.O.S. OF AN EXISTING LCC A NEW P.O.S. PULLBOX SHALL ADDITIONALLY BE INSTALLED BETWEEN THE EXISTING AND NEW LCCS. (NOT SHOWN).

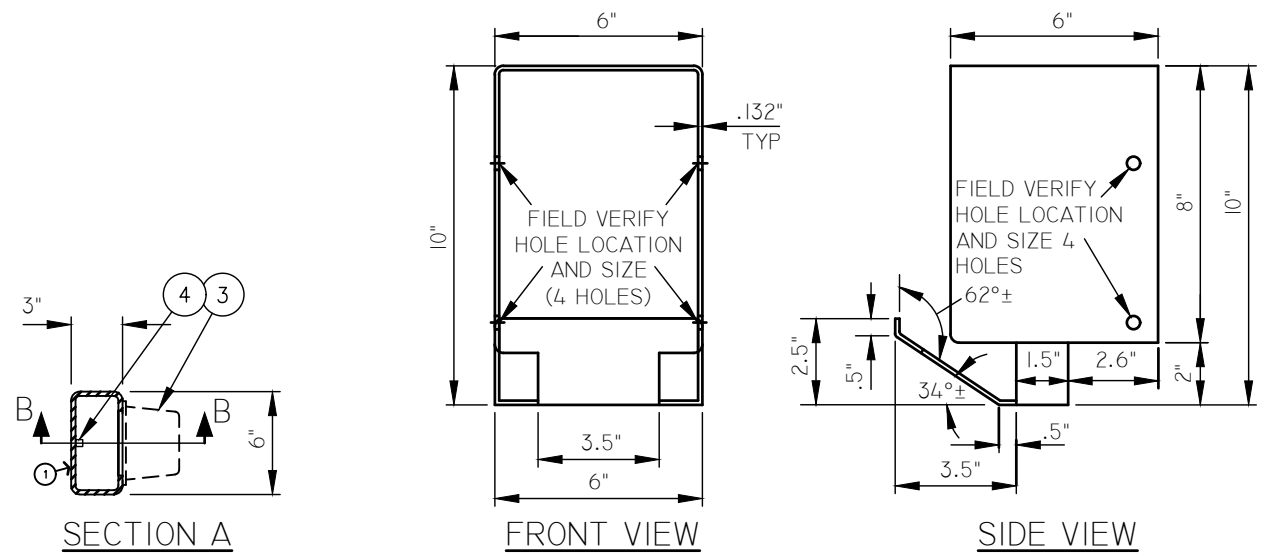


ATTACHED SIDEWALK SHOWN REFER TO COM DETAILS SL-75.03 & SL-77.10 FOR P.O.S. & LCC INSTALLATIONS PER APPLICABLE CONDITIONS

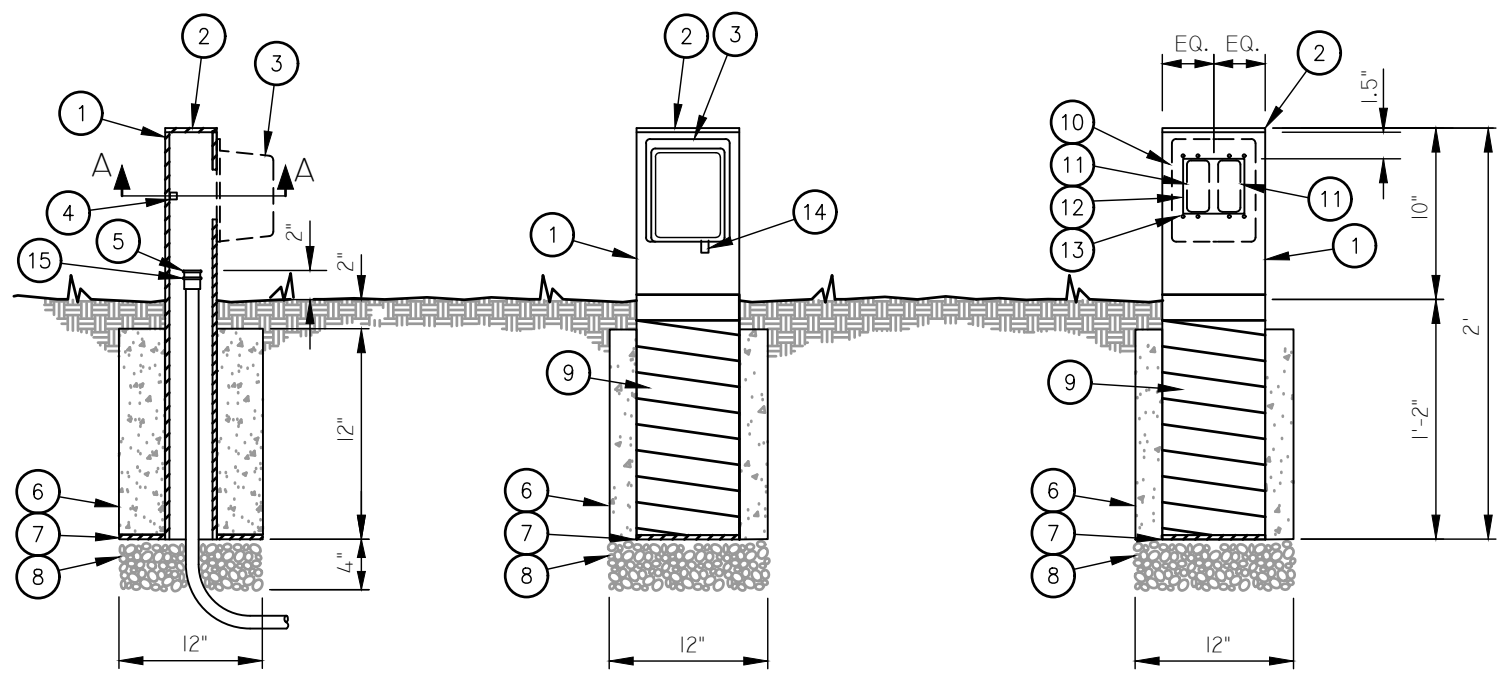
P.O.S. & LLC PAD LOCATION

KEYED NOTES:

- 1 RECTANGULAR STRAIGHT STEEL TUBE, 3"x6"x24" LONG, 3/16" THICK. PRIME WITH TNEMEC SERIES 66 HI BUILD EPOXOLINE OR APPROVED EQUAL TO A DRY THICKNESS OF 3 MILLS. FINISH COLOR SHALL BE A VAPOR GRAY FINISH, COLOR NUMBER GR02. THE FINAL COAT SHALL BE TNEMEC SERIES 76 INDURA CLEAR OR APPROVED EQUAL, APPLIED TO A MINIMUM OF 1.5 DRY MILS.
- 2 1/8" THICK STEEL TOP. PROVIDE CONTINUOUS WELD ALONG PERIMETER OF CAP. PRIME AND PAINT TO THE SAME SPECIFICATIONS AS THE LIGHT POLES SPECIFIED FOR THIS PROJECT.
- 3 DIE CAST METAL TWO-GANG WEATHERPROOF WHILE IN USE OUTLET COVER WITH DOUBLE GFCI BASE CONFIGURATION. COVER SHALL BE EQUAL TO INTERMATIC WPI000 SERIES. PAINT COVER VAPOR GRAY FINISH, TNEMEC COLOR NUMBER GR02.
- 4 WELD A 1/4" STEEL NUT ONTO THE INSIDE FACE OF THE STEEL TUBE OPPOSITE THE CONVENIENCE RECEPTACLES FOR ATTACHING SYSTEM GROUND WIRING.
- 5 STUB UNDERGROUND CONDUITS 2" ABOVE FINISHED GRADE INSIDE STEEL TUBE.
- 6 MAG CLASS B CONCRETE.
- 7 TWO 3"x6"x3/16" STEEL PLATES (ONE EACH SIDE) WELDED TO THE BASE OF THE STEEL TUBE.
- 8 1" ROCK.
- 9 PROVIDE 1/8" THICK BITUMINOUS COATING ON THE INSIDE AND OUTSIDE OF THE STEEL TUBE AS INDICATED. WRAP THE OUTSIDE OF THE TUBE WITH 10 MIL PLASTIC TAPE, HALF LAPPED.
- 10 OUTLINE OF WEATHERPROOF COVER.
- 11 OUTLINE DUPLEX RECEPTACLE.
- 12 OUTLINE OF RECTANGULAR HOLE IN STEEL TUBE FOR DUPLEX CONVENIENCE RECEPTACLES.
- 13 DRILL AND TAP HOLES IN STEEL TUBE FOR MOUNTING RECEPTACLES AND WEATHERPROOF COVER.
- 14 HASP FOR SMALL PAD LOCK.
- 15 ALL CONDUIT END BELLS SHALL BE INSTALLED BEFORE PULLING WIRE.



VANDAL PROOF RECEPTACLE COVER



SECTION B
FRONT ELEVATION (WEATHERPROOF COVER INSTALLED)
FRONT ELEVATION (WEATHERPROOF COVER OFF)

NOT TO SCALE