

See New Lighting Details

Revised: 07/01/01

RHH or RHW-2 or USE-2**FR-CROSS-LINKED POLYETHYLENE INSULATION, 600 VOLT
OPTIONAL JACKET OVERALL.****DESCRIPTION:**

This specification covers the basic requirements of copper conductors insulated with flame retardant cross-linked polyethylene (XLP), classified as Type RHH or RHW-2 and as Type USE-2. Type RHH or RHW-2 is manufactured in accordance with NEC Article 310 and Type USE-2 in accordance with Article 338. This wire complies in all respects with ICEA, NEMA and UL Standards and is UL Listed. RHH or RHW-2 or USE-2 also conforms to Federal Specification J-C-30B. Sizes 12AWG through 4AWG stranded are manufactured in accordance with FAA Specification L-824 Underground Electrical Cable for Airport Lighting Circuits, Type C.

APPLICATION:

RHH or RHW-2 or USE-2 is for use in circuits not exceeding 600 volts. RHH or RHW-2 is for use in applications between buildings, in conduits or ducts or in open air, where the maximum operating temperature does not exceed 90°C (RHH) in dry locations or (RHW-2) in wet or dry locations. Type USE-2 is primarily for use in direct burial applications in wet locations at maximum continuous conductor temperature of 90°C. When installed in accordance with NEC article 230 & 338.

CONSTRUCTION DATA AND SPECIFICATIONS:

Conductors - The conductors consist of uncoated soft, solid or stranded copper meeting the requirements of ASTM B3. Unless otherwise specified, Class B stranding will be supplied. The stranding meets the requirements of ASTM B8 for concentric compressed or B496 for concentric compacted copper conductors.

Insulation - The insulation is flame retardant cross-linked polyethylene (XLP), extruded concentrically over the conductor to the wall thickness, as specified by UL 44 for Type RHH or RHW-2 conductors, UL 854 for Type USE-2, ICEA S-66-524 and NEMA WC-7. VW-1 flame retardant cross-linked polyethylene (XLP) insulation is available upon request.

Jacket - When required, a protective sunlight and ozone resistant jacket of flame retardant polyvinyl chloride (PVC) is extruded over the insulation. The jacket meets the requirements of UL 44, ICEA S-66-524/NEMA WC-7, ICEA S-95-658/NEMA WC70. UL approved Aetna 3742 non-halogen, flame resistant, low smoke, low corrosivity, non toxic, high performance jacket is available upon request. Polyethylene (PE), chlorinated polyethylene (CPE) or (-40°C) PVC jackets are available upon request.

Tests - The finished wire will meet all test requirements as specified by ICEA S-66-524/NEMA WC-7, ICEA S-95-658/NEMA WC70, UL 854 for USE-2 and UL 44 for RHH or RHW-2. Cables with a PVC jacket sizes 1/0 AWG and larger pass UL 1581, IEEE - 383 & 1202 Ribbon Burner Flame Test and are UL listed for CT Use.

EXECUTIVE OFFICES: HARTSELLE, AL 35640
MANUFACTURING PLANT: VIRGINIA BEACH, VA.
TELEPHONE: (800) 423-6505 FAX: (256) 773-2574



RHH or RHW-2 or USE-2

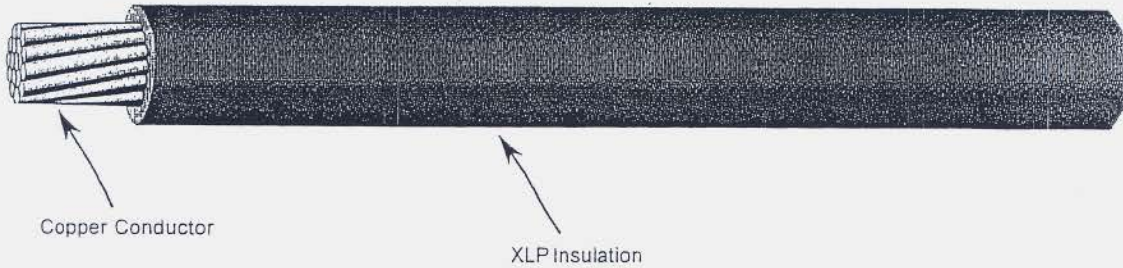
CROSS-LINKED POLYETHYLENE INSULATION, 600 VOLT

SPEC 100/1

5M-5-1

Revised: 07/01/01

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90°C CONDUCTOR TEMPERATURE WET OR DRY

Product Code	Conductor		Insulation in Mils	Approximate O.D. in Inches	Ampacity* 90°C	Approximate Net Weight LBS/MFT
	Size AWG or MCM	No. of Strands				

SINGLE CONDUCTOR 600 VOLT

	14	SOLID	45	0.155	25+	20
	12	SOLID	45	0.175	30+	31
	10	SOLID	45	0.195	40+	45
	8	SOLID	60	0.250	55	72
→	16 ¹	7	45	0.145	20	17
	14	7	45	0.165	25+	20
	12	7	45	0.185	30+	31
	10	7	45	0.210	40+	45
	8	7	60	0.270	55	72
	6	7	60	0.305	75	106
	4	7	60	0.355	95	160
	3	7	60	0.380	110	202
	2	7	60	0.415	130	244
	1	19	80	0.495	150	311
	1/0	19	80	0.535	170	384
	2/0	19	80	0.580	195	476
	3/0	19	80	0.630	225	591
	4/0	19	80	0.690	260	736
	250	37	95	0.765	290	875
	300	37	95	0.820	320	1038
	350	37	95	0.875	350	1203
	400	37	95	0.920	380	1376
	500	37	95	1.005	430	1690
	600	61	110	1.115	475	1990
	750	61	110	1.220	535	2517
	1000	61	110	1.375	615	3320

Note: *Based on not more than three conductors per NEC: As RHW-2, in raceway, 90°C conductor temperature and 30°C ambient in wet or dry locations. As RHH, in raceway, 90°C conductor temperature and 30°C ambient in locations. As USE-2, direct burial, 90°C conductor temperature and 30°C ambient in wet locations.

¹Not recognized by UL or NEC Standards.

+The over current protection will not exceed 15 amperes for size 14AWG, 20 amperes for size 12AWG and 30 amperes for size 10AWG.

Sizes 12-4AWG stranded approved per FAA L-824, Type C.

Product codes apply only to black colored conductors. Other colors are available depending upon size.

The above data is approximate and subject to normal manufacturing tolerances.

Standards:

1. Listed by UL as Type RHH or RHW-2 per Standard 44.
2. Listed by UL as Type USE-2 per Standard 854.
3. Conforms to ICEA S-66-524/NEMA WC-7 Crosslinked Thermosetting Polyethylene Insulated Wire and Cable.
4. Conforms to ICEA S-95-658/NEMA WC70 Nonshielded 0-2KV Cables.
6. Conforms to Federal Specification J-C-30B.

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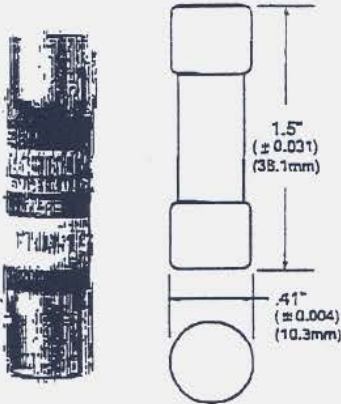
Time-Delay Ferrule Fuse

13/32" x 1-1/2"

PEDISTAL/POLE

FNM

See New Lighting Details



- Fibre tube.
- For circuits with high inrush currents.
- Formerly designated 5AB.
- Fuselron® Dual-Element fuse.

Fuseblock Catalog Numbers

Poles	Terminal Type		
	Screw With Quick Connect	Pressure Plate w/Quick Connect	Box Lug
1	BM6031SQ	BM6031PQ	BM6031B
2	BM6032SQ	BM6032PQ	BM6032B
3	BM6033SQ	BM6033PQ	BM6033B

CATALOG SYMBOL: FNM

TIME-DELAY

1/10 TO 30 AMPERES

INTERRUPTING RATING - SEE CHART BELOW

UL LISTED: STD. 248-14, 0-10/250V AC; 12-15/125V AC

FILE #E19180, GUIDE #JDYX

CSA CERTIFIED: 1-10/250V AC; CLASS 1422-01,

12-15/125V AC; FILE 53787

DC RATING: 1-15A rated 125V DC and 1.8 KAIC.

Electrical Ratings (Catalog Symbol and Amperes)

250 Volts AC	IR	250 Volts AC	IR	250 Volts AC	IR	125 Volts AC
FNM-1/10		FNM-1-1/8		FNM-4		FNM-12 10,000
FNM-1/8		FNM-1-1/4		FNM-4-1/2		FNM-15 @ 125V AC
FNM-15/100		FNM-1-4/10		FNM-5		-
FNM-2/10		FNM-1-1/2		FNM-5-6/10		-
FNM-1/4	35A @	FNM-1-6/10	100A @	FNM-8		32 Volts AC
FNM-3/10	250VAC	FNM-1-8/10	250VAC	FNM-6-1/4	200A @	FNM-20 *
FNM-4/10	10,000	FNM-2	10,000	FNM-7	250VAC	FNM-25
FNM-1/2	@	FNM-2-1/4	@	FNM-8	10,000 @	FNM-30
FNM-6/10	125VAC	FNM-2-1/2	125VAC	FNM-9	125VAC	-
FNM-3/4		FNM-2-8/10		FNM-10 *		-
FNM-B/10		FNM-3		-		-
FNM-1		FNM-3-2/10		-		-
-		FNM-3-1/2		-		-

If 250V AC is needed for 12-30 amps, use FNW series.

Carton Quantity and Weight

Ampere Ratings	Carton Qty	Weight Lbs.	Weight Kg.
0-30	10	.125	.057

CE logo denotes compliance with European Union Low Voltage Directive (50-1000V AC, 75-1500V DC). Refer to BIF document #18002 or contact Bussmann Application Engineering at 530-527-1270 for more information.

TRON® In-Line Fuseholders**Single-Pole for $1\frac{3}{32}$ " x $1\frac{1}{2}$ " Fuses****PEDISTAL/POLE****HEB Series**

See New Lighting Details

**Non-Break-A-Way Holders**

Catalog Symbol: HEB-AA*, HEB-AB*, HEB-AC*,
 HEB-AD*, HEB-AE*, HEB-AJ, HEB-AK, HEB-AL, HEB-AR*,
 HEB-AY, HEB-BA*, HEB-BB*, HEB-BC*, HEB-BD*, HEB-CC*,
 HEB-DD*, HEB-JJ, HEB-JK, HEB-JL, HEB-JY, HEB-LL,
 HEB-NN*, HEB-PP*, HEB-QQ*, HEB-RR*, HEB-SS, HEB-TT*,
 HEB-ZA.

In-Line Fuseholders**Single-Pole****Waterproof****Agency Information:**

*U.L. Recognized, Guide IZLT2, File E14853

*CSA Certified, Class 6225-01, File 47235

For break-a-way holders See Page 2

HEB — For any $1\frac{3}{32}$ " x $1\frac{1}{2}$ " fuse. Fuseholder rated 30A, 600V
 (CSA Listed 15A max.). Typical fuse types: BAF, FNM, FNQ, and
 KTK ($\frac{1}{10}$ -30A).

Example:

A single-pole, in-line holder for $1\frac{3}{32}$ " x $1\frac{1}{2}$ " fuses. A single #12
 solid wire is on the load side. A copper crimp is desired. Two #6
 solid wire is on the line side. A copper set-screw is desired.

1. Choose HEB- Series.
2. Choose "A" for load side.
3. Choose "K" for line side.

Complete Catalog Number: HEB-AK.

Recommended torque on coupling nut: 10-20 in.-lb.

Packaging & Ordering Information:

HEB	—	A	B
		Load Terminal	Line Terminal

For insulating boots See Page 2

Catalog and Specification Data - Non-Break-A-Way**Conductor Terminals**

Type Terminal	Conductor Data				Catalog Symbol Load & Line (2) & (3)
	Size	No. Per Terminal	Solid	Stranded	
Copper Crimp	#12 to #8	1	*	*	A
	#12	2	*	*	
	#10	2	*	*	
	#8	1	*	*	B
	#4	1	*	*	
	#6	2	*	*	C
Copper Set-Screw	#4	1	—	*	
	#6	2	*	*	D
	#2	1	—	*	
	#20 to #10	1	*	*	Z

Copper Set-Screw

Copper Crimp	#12 to #3	1	*	*	J
	#12 to #3	2	*	*	K

**Solid Copper Terminal for
Aluminum Wire Connector**

Copper Crimp	#8 to #12	1	*	—	S
	#10 to #4	1	—	*	
Aluminum Crimp	#8	1	—	*	N
	#6	1	*	—	
	#6	1	—	*	P
	#4	1	*	—	
	#3, #4	1	—	*	Q
	#2	1	*	—	
	#1, #2	1	—	*	R
Aluminum Set-Screw	#1/0	1	—	*	T

Aluminum Set-Screw

Copper Crimp	#12 to #2	1	*	*	L
	#12 to #2	2	*	*	Y

TRON® In-Line Fuseholders

Single-Pole for $1\frac{3}{32}$ " x $1\frac{1}{2}$ " Fuses

HEB Series

See New Lighting Details

Break-A-Way Holders

Break-A-Way Holders consist of two parts for a complete unit. One part is the Fuseholder, which contains the Load Terminal, and the other part is the Break-A-Way, which contains the Line Terminal. These can be ordered as a complete unit or as individual parts.

Catalog Symbols:

Break-A-Way Unit:

(Includes Fuseholder, Break-A-Way part and Insulating Boots)

HEB-AW-RLA, HEB-AW-RLC-A*, HEB-AW-RLC-B, HEB-AW-RLC-C, HEB-AW-RLC-J, HEB-AW-RYA, HEB-AW-RYC, HEB-BW-RLC-A, HEB-BW-RLC-B, HEB-BW-RYC, HEB-JW-RLC-J, HEB-JW-RYC, HEB-KW-RLC-J, HEB-KW-RYC, HEB-LW-RLA, HEB-LW-RLC-J, HEB-LW-RYA

Fuseholder Only: HEB-AW*, HEB-BW*, HEB-DW*, HEB-JW, HEB-LW

Break-A-Way Part: RLC-A, RLC-B, RLC-C, RLC-J, RYC, RLA, RYA

In-Line Fuseholders

Single-Pole

Agency Information:

*U.L. Recognized

*CSA Certified

Insulating Boots



Catalog Numbers	Type
1A0512	Single Conductor
1A0513	Two Conductor

Two Insulating boots come standard with the Break-A-Way units (ex. HEB-AW-RLC-A). The insulating boots are not included with the Non-Break-A-Way Holders (ex. HEB-AA) or the Individual pieces of the Break-A-Way parts (ex. HEB-AW, RLC-A). Two insulating boots must be ordered for each holder when ordering them separately. When insulated boots are utilized, extra heat retention requires that fuses are sized at a minimum of 200% of the RMS load current.

Catalog and Specification Data

Break-A-Way Receptacles

Type Terminal	Conductor Data				Catalog Symbol Line Side (3)
	Size	No. Per Terminal	Solid	Stranded	
	#12 to #8	1	*	*	-RLC-A
	#6	1	*	*	-RLC-B
	#4	1	*	*	-RLC-C

Copper Set-Screw

	#12 to #2	1	*	*	-RLC-J
	#12 to #2	2	*	*	-RYC

Aluminum Set-Screw

	#12 to #2	1	*	*	-RLA
	#12 to #2	2	*	*	-RYA

Solid Break-A-Way



(Required with Break-A-Way Receptacle)

W

Example:

A single-pole, break-a-way, in-line holder for $1\frac{3}{32}$ " x $1\frac{1}{2}$ " fuses. A single #12 solid wire is on the load side. A copper crimp is desired. Two #6 solid wire is on the line side. A copper set-screw is desired.

1. Choose HEB- Series.
2. Choose "AW" for load side.
3. Choose "RYC" for line side.

Complete Catalog Number: HEB-AW-RYC.

Recommended torque on coupling nut: 10-20 in-lb.

Packaging & Ordering Information:

HEB	—		W	—	
		Load Terminal			Line Terminal

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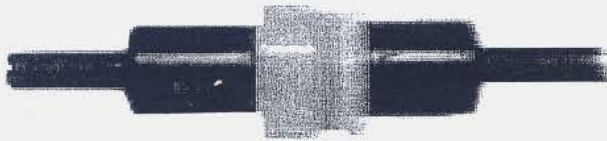
TRON® In-Line Fuseholders

Single-Pole for Solid Neutral

See New Lighting Details

HET

Series



Non-Breakaway Holders

Catalog Symbol: HET-AA, HET-AB, HET-BB, HET-JJ, and HET-JK

In-Line Fuseholders, Single-Pole

Water-Resistant

For breakaway holders, see page 2

HET — A HEB fuseholder with a permanently installed solid neutral. Easily identified by white plastic coupling nut.

Example:

A single-pole, in-line holder for a neutral is required. One solid copper #8 is on the load side, copper crimp for connection. A solid copper #6 is on the line side, and a copper crimp is required.

1. Choose HET- series.
2. Choose "A" for load side.
3. Choose "B" for line side.

Complete Catalog Number: HET-AB.

Ordering Information:

HET	—		
		Load Terminal	Line Terminal

Catalog and Specification Data - Non-Breakaway

Conductor Terminals

Terminal Type	Conductors Size	Conductors			Catalog Symbol Load & Line (2 & 3)
		No. Per Terminal	Solid	Stranded	
Copper Crimp 	#12 to #8	1	•	•	A
	#12	2	•	•	
	#10	2	•	•	B
	#6	1	•	•	
	#4	1	•	•	

Copper Set-Screw

	#12 to #3	1	•	•	J
	#12 to #2	2	•	•	K

Aluminum Set-Screw

	#12 to #2	1	•	•	L
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Catalog Data — Insulating Boots

	Catalog Numbers	Type
	2A0660	Single Conductor
	2A0661	Two Conductor

Insulating boots are **not** included with **non-breakaway** parts and must be ordered separately. They come standard with the breakaway series. The HET-AW & HET-JW do not have the boots. These catalog items do not have a breakaway receptacle.

When boots are utilized, extra heat retention requires that fuses are sized at a minimum of 200% of the RMS load current.

Recommended Torque on Coupling Nut: 10-20 in-lb.

TRON® In-Line Fuseholders

Single-Pole for Solid Neutral

HET Series

See New Lighting Details

Breakaway Holders

Catalog Symbol: HET-AW-RLC-A, HET-AW-RLC-B, HET-AW-RLC-C, HET-AW-RLC-J, HET-AW-RYC, HET-BW-RLC-B, HET-BW-RYC, HET-JW, HET-JW-RLC-J, HET-JW-RYC, and HET-AW

In-Line Fuseholders, Single-Pole

Example:

A single-pole, in-line, breakaway holder for a neutral is requested. A single #10 solid, copper crimp is on the load side. A single #10, solid wire and a copper crimp is needed on the line side.

1. Choose HET- series.
2. Choose "A" from 1st page for load side.
3. Choose "W" for breakaway requirement.
4. Choose "RLC-A" for breakaway receptacle on line side.

Complete Catalog Number: HET-AW-RLC-A

Catalog and Specification Data

Breakaway Receptacles

Terminal Type		Conductor Data			Catalog Symbol Line Terminal (3)
		Size	No. Per Terminal	Solid	
Copper Crimp		#12 to #8	1	•	-RLC-A
		#6	1	•	-RLC-B
		#4	1	•	-RLC-C

Copper Set-Screw

		#12 to #3	1	•	-RLC-J
		#12 to #3	2	•	-RYC

Solid Breakaway



(Required with breakaway Receptacle)

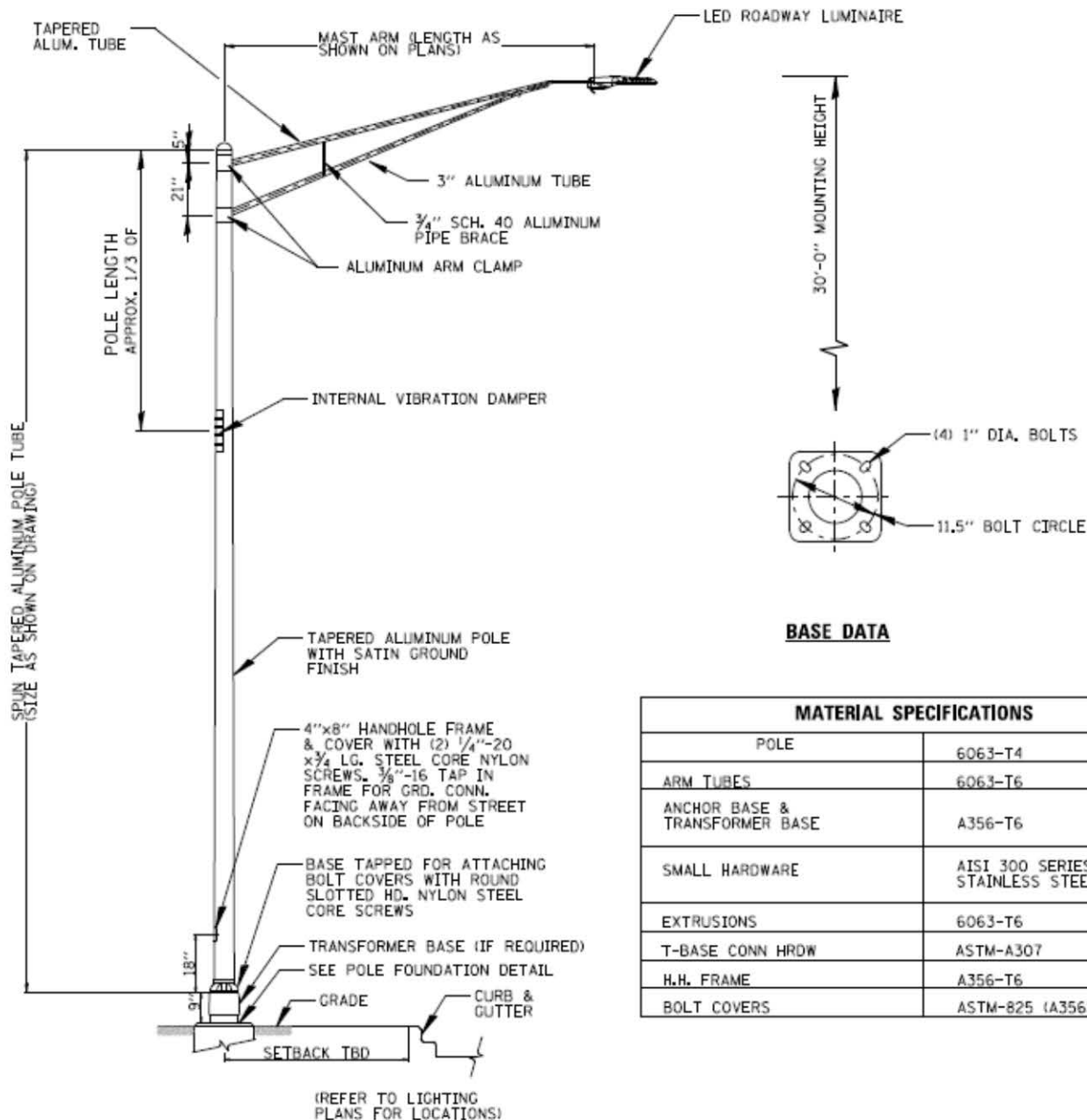
W

Ordering Information:



Recommended Torque on Coupling Nut: 10-20 in-lb.

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**NOTES:**

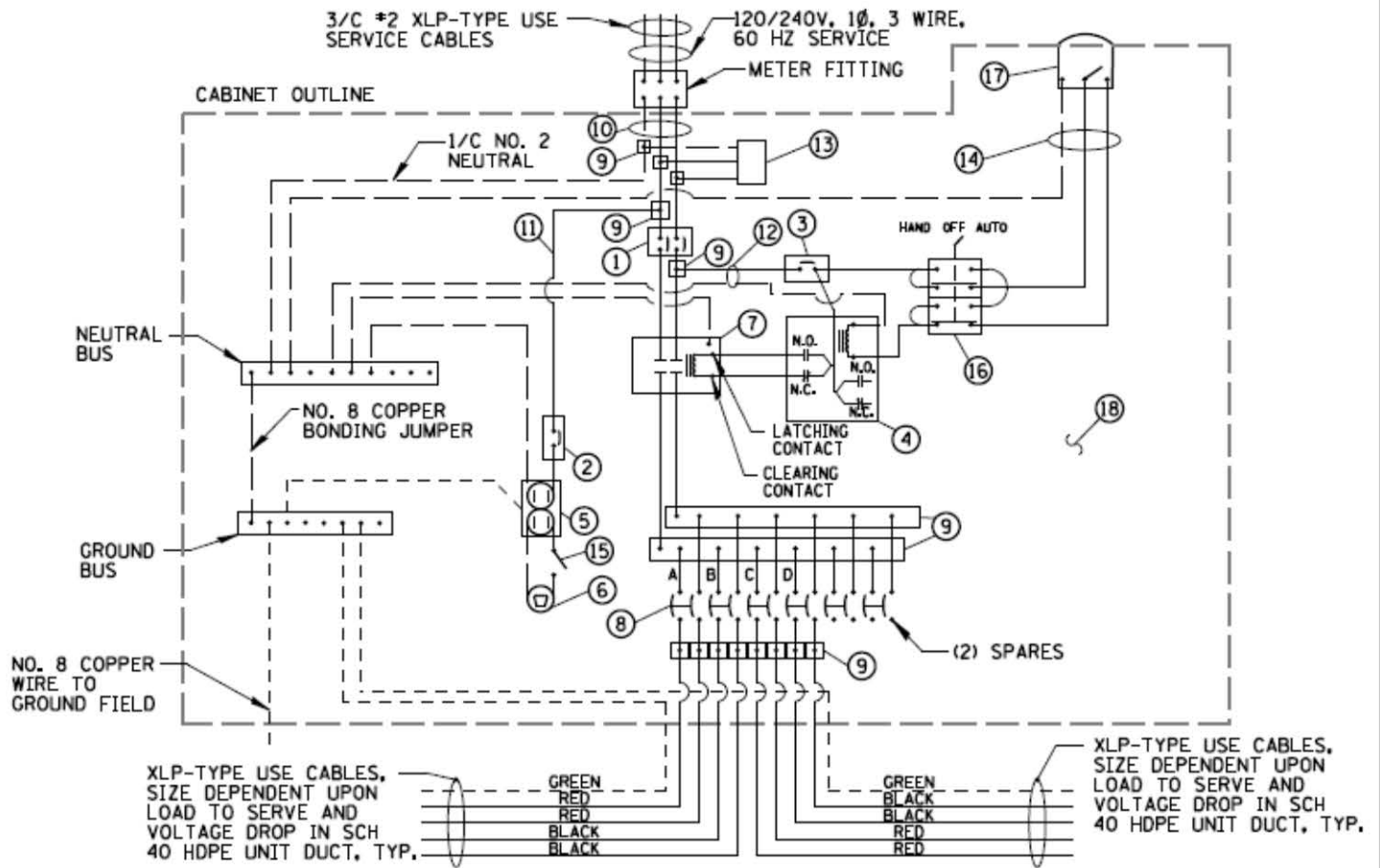
1. LIGHT POLES SHALL MEET WIND LOADING & VIBRATION REQUIREMENTS ACCORDING TO THE LATEST AASHTO STANDARDS AND ARTICLE 1069.01 IN STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. ALL STEEL SHALL BE FROM A DOMESTIC SOURCE.
2. THE LIGHT STANDARD SHALL MEET THE ILLUMINATION REQUIREMENTS AS SPECIFIED IN THE LUMINAIRE PERFORMANCE TABLES IN THE SPECIFICATIONS. ALL LUMINAIRES SHALL HAVE A MULTI-TAP BALLAST WIRED FOR 240 VOLTS OPERATION.
3. ALL LIGHT STANDARDS SHALL BE FROM THE SAME MANUFACTURER, OR APPROVED EQUAL.
4. LIGHT POLE SHALL BE U/L LISTED.
5. ANTI-SEIZE LUBRICANT SHALL BE APPLIED TO ALL BOLTED AREAS DURING INSTALLATION.

LIGHT STANDARD DETAIL

N.T.S.



_____ PHASE CONDUCTOR
 _____ NEUTRAL CONDUCTOR
 - - - - - GROUND CONDUCTOR



LIGHTING CONTROLLER WIRING DETAIL

N.T.S.



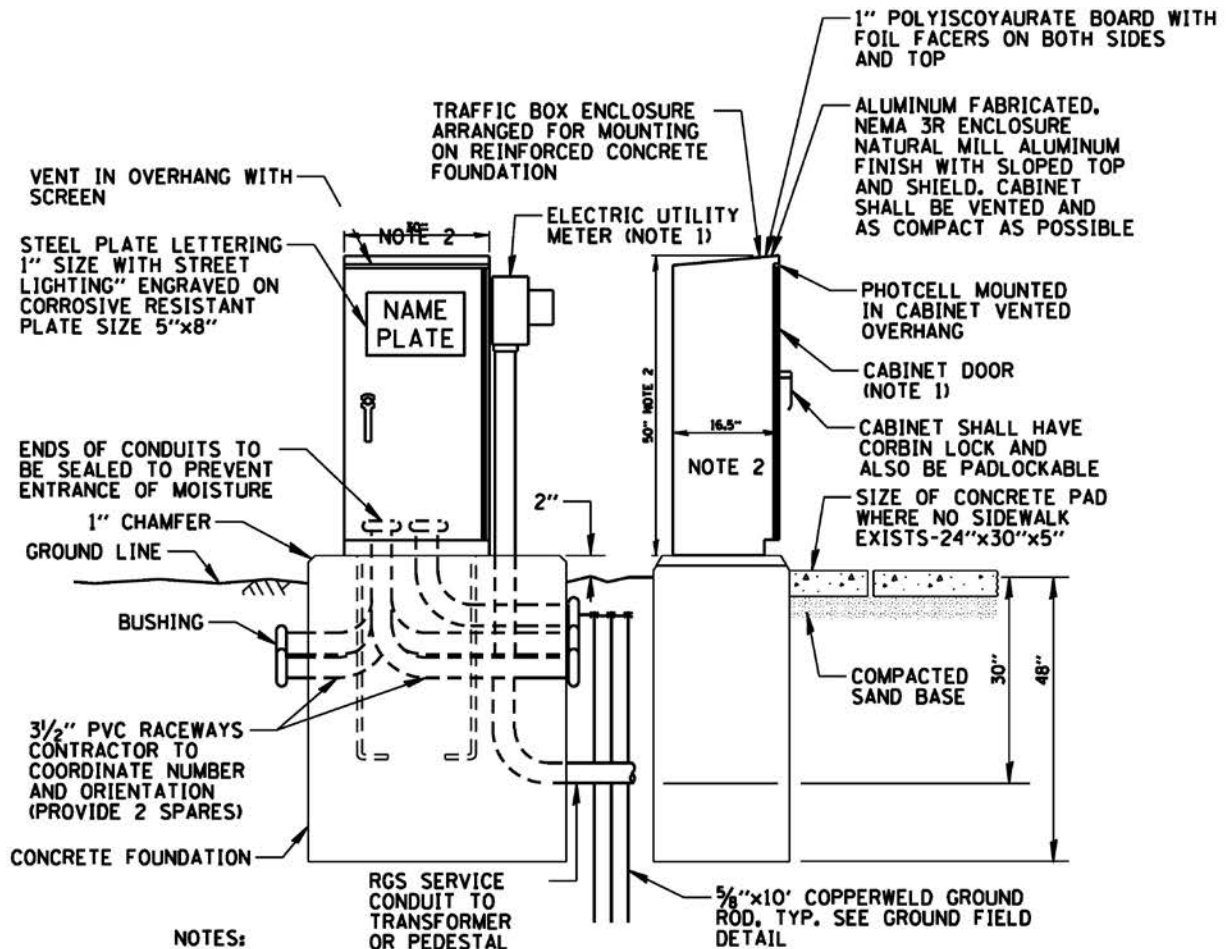
ITEM	SPECIFICATION	MFG./MODEL NO. OR APPROVED EQUAL
① MAIN CIRCUIT BREAKER	100 AMPERE, 2P, 240V SERVICE RATING, 10KAIC	SIEMENS NO. ED22B100
② LAMPHOLDER CIRCUIT BREAKER	20 AMPERE, 1P, 120V RATING, 10KAIC	SIEMENS NO. ED21B020
③ PHOTOELECTRIC CONTROL CIRCUIT BREAKER	15 AMPERE, 1P, 120V RATING, 10KAIC	SIEMENS NO. ED21B015
④ AUXILIARY RELAY	120 V OPERATED DPDT 60 HZ COIL 2 NO & 2 NC CONTACTS	MAGNECRAFT NO. 389 FXBXC1 - 120A
⑤ CABINET RECEPTACLE AND BOX	COMMERCIAL GRADE GFCI 20A/120V, MOUNTED IN A WEATHERPROOF CAST ALUMINUM SINGLE GANG BOX WITH WEATHERPROOF COVER	RECEPTACLE: LEVITON NO. 8899, BOX: APPLETON NO. WSM150 COVER: APPLETON NO. WHG1
⑥ CABINET LIGHT AND BOX	120V WEATHERPROOF LAMPHOLDER MOUNTED IN A CAST ALUMINUM BOX & EXT. GRADE 100W LAMP	LIGHT & BOX: RAB NO. VX100DG
⑦ CONTACTOR	100 AMPERE, 2 POLE, 120 V COIL, MECH HELD	SQUARE D NO. 8903 S00 10 V02
⑧ BRANCH LINE CIRCUIT BREAKERS	6 - 20 AMPERE, 2P, 240V RATING, 10KAIC	SIEMENS NO. ED22B020
⑨ POWER DISTRIBUTION BLOCK	600 VOLT, INSULATED, SIZE AS REQUIRED	MARATHON
⑩ SERVICE CABLES	3-600V (XLP-TYPE USED) NO. 2	N/A
⑪ LAMPHOLDER WIRE	2-600V XLP NO. 12	N/A
⑫ CONTROL WIRE	2-600V XLP NO. 12	N/A
⑬ SURGE ARRESTOR	10 K AMPERE RATING	SQUARE D NO. SDSA 1175
⑭ PHOTOELECTRIC CONTROL WIRE	3-600V XLP NO. 12	N/A
⑮ DOOR SWITCH	20A/120V, DOOR MOUNTED SNAP ACTION TYPE PLUNGER SWITCH	OMRON NO. A-20G0-K
⑯ HAND-AUTO-OFF CONTROL SWITCH	20A, 3 POS. MTD IN CAST ALUM. ENCLOSURE	SQUARE D NO. 9001 KYK 111
⑰ PHOTOCELL	120V, MTD. ON CABINET, DELAY TYPE, SPST-NC	FISHER PIERCE NO. FPFA-105M
⑱ BACK PANEL	1/2" THICK SOLID PHENOLIC LAMINATE	ARBORON

NOTES:

1. ALL ITEMS LISTED IN LIGHTING CONTROLLER COMPONENT SCHEDULE SHALL BE CONSIDERED INCIDENTAL TO THE PRICE BID FOR "LIGHTING CONTROLLER" INCLUDING CABINET AND FOUNDATION.
2. THE LIGHTING CONTROLLER TOGETHER WITH ALL OF ITS COMPONENTS SHALL BE UL LISTED AS AN "ENCLOSED INDUSTRIAL CONTROL PANEL" UNDER UL508A.
3. CONNECTION OF SURGE ARRESTOR TO LINE SIDE OF MAIN CIRCUIT BREAKER SHALL NOT BE "DOUBLE LUGGED."

LIGHTING CONTROLLER COMPONENT SCHEDULE



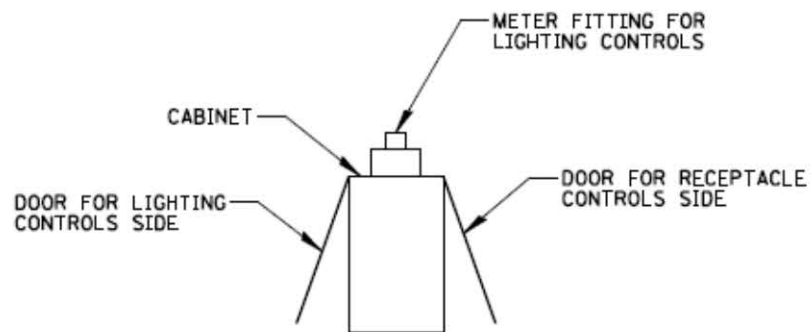


LIGHTING CONTROLLER

CABINET AND FOUNDATION

N.T.S.



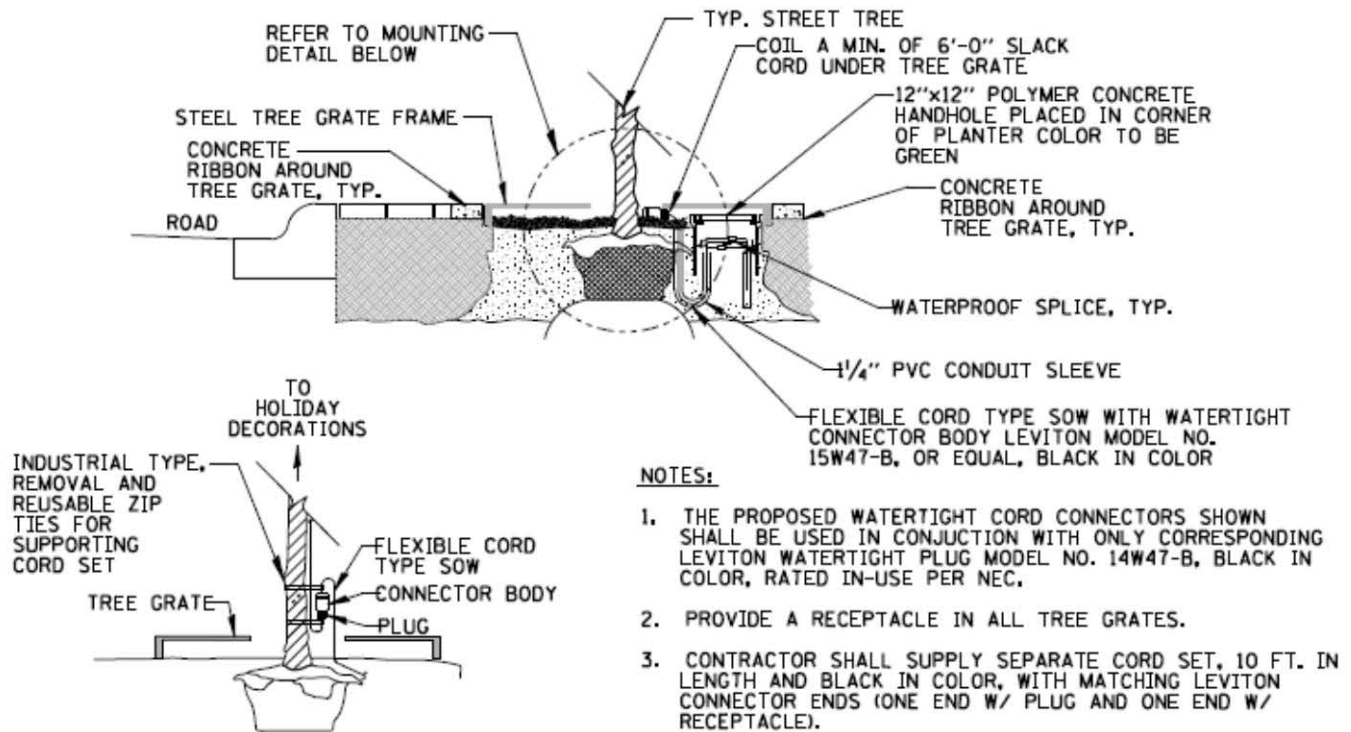


STREETSIDE

CABINET METER FITTING & DOOR ORIENTATION

N.T.S.



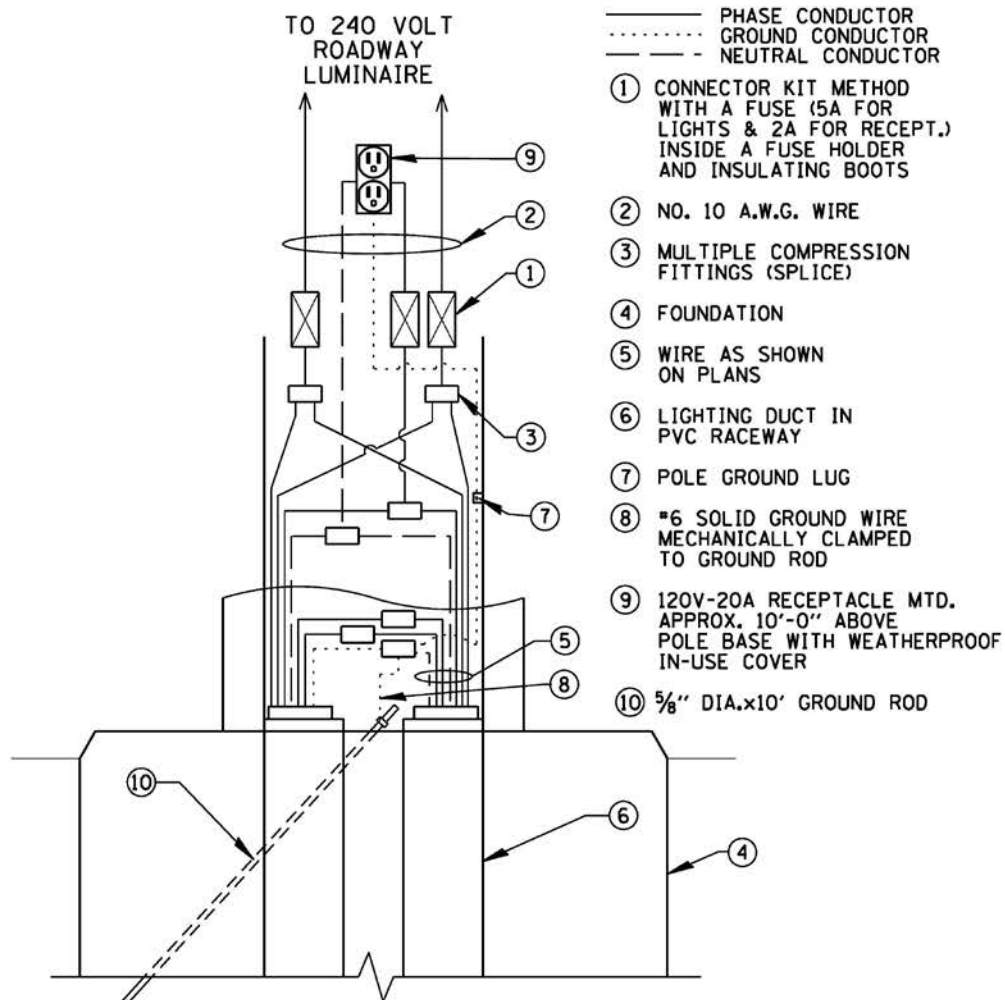
**NOTES:**

1. THE PROPOSED WATERTIGHT CORD CONNECTORS SHOWN SHALL BE USED IN CONJUNCTION WITH ONLY CORRESPONDING LEVITON WATERTIGHT PLUG MODEL NO. 14W47-B, BLACK IN COLOR, RATED IN-USE PER NEC.
2. PROVIDE A RECEPTACLE IN ALL TREE GRATES.
3. CONTRACTOR SHALL SUPPLY SEPARATE CORD SET, 10 FT. IN LENGTH AND BLACK IN COLOR, WITH MATCHING LEVITON CONNECTOR ENDS (ONE END W/ PLUG AND ONE END W/ RECEPTACLE).

MOUNTING DETAIL FOR IN USE SERVICE**RECEPTACLE CORD ASSEMBLY, IN TREE GRATES DETAIL**

N.T.S.

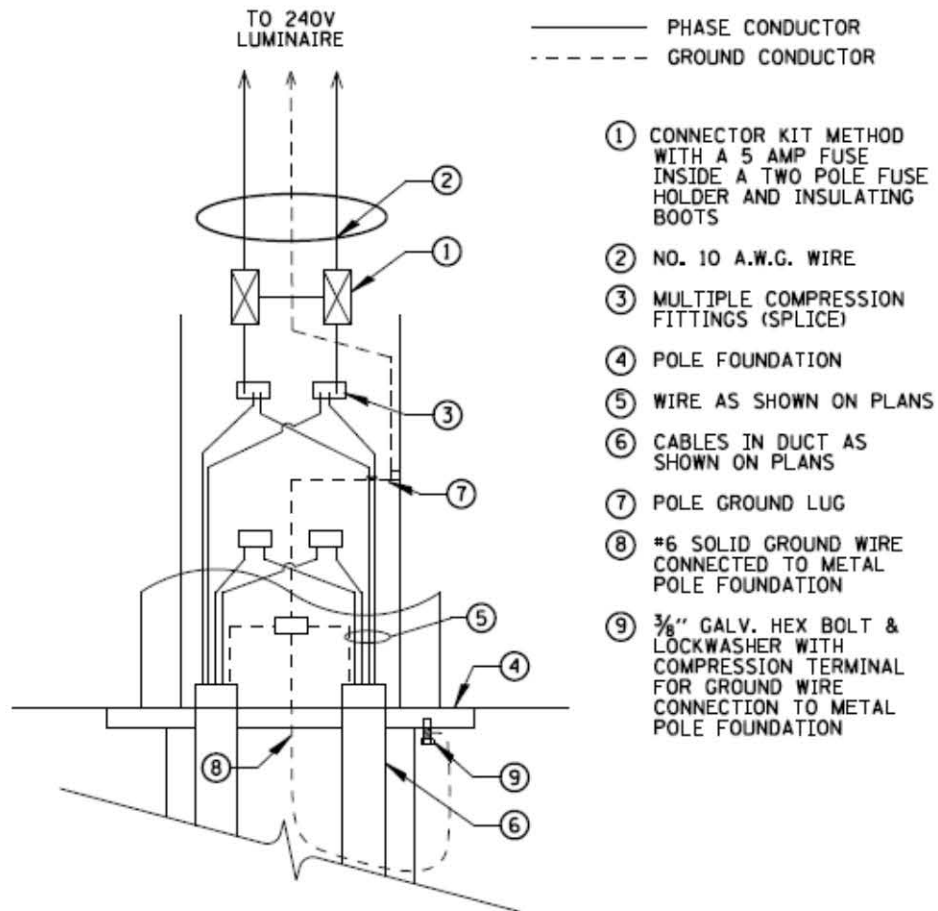




PROPOSED LIGHT POLE HANDHOLE WIRING DIAGRAM FOR RECEPTACLE POLES

N.T.S.

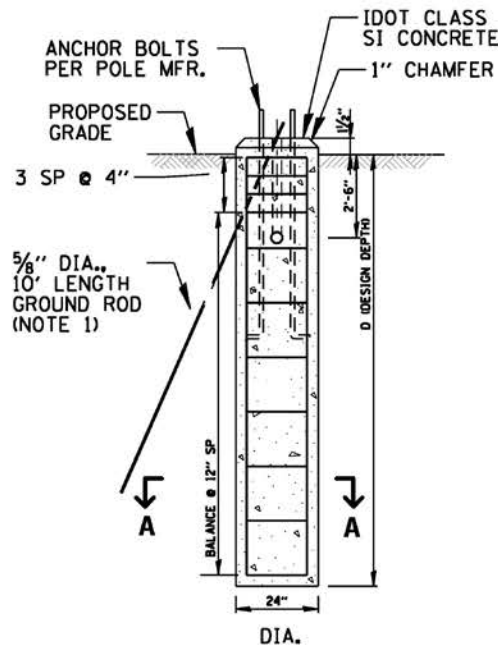
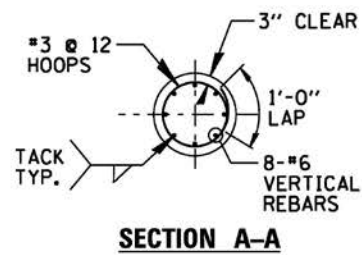
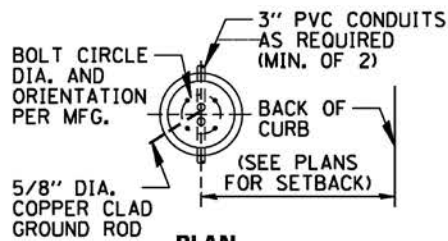




POLE HANDHOLE WIRING DIAGRAM

N.T.S.





SOIL CONDITIONS	DESIGN DEPTH "D" OF FOUNDATION
SOFT CLAY ($Q_u=0.375$ TON/SF)	13'-0"
MEDIUM CLAY ($Q_u=0.75$ TON/SF)	9'-6"
STIFF CLAY ($Q_u=1.50$ TON/SF)	7'-0"
LOOSE SAND ($\phi=34^\circ$)	9'-0"
MEDIUM SAND ($\phi=37.5^\circ$)	8'-3"
DENSE SAND ($\phi=40^\circ$)	7'-9"

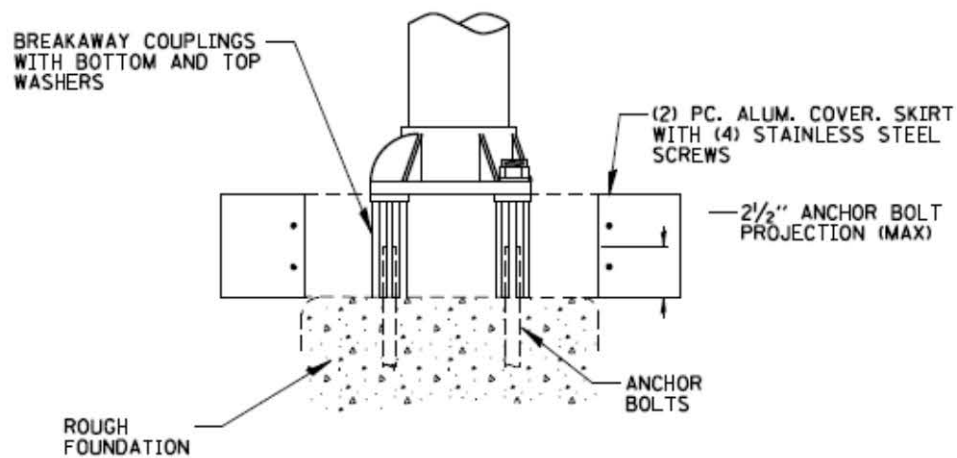
NOTES:

- GROUND ROD SHALL BE CAST INTO CONCRETE FOUNDATION WITH 8 FEET IN CONTACT WITH SOIL.
- FOUNDATIONS SHALL BE VIBRATED IN ACCORDANCE WITH IDOT STANDARD PRACTICES.



CONCRETE FOUNDATION DETAIL

N.T.S.



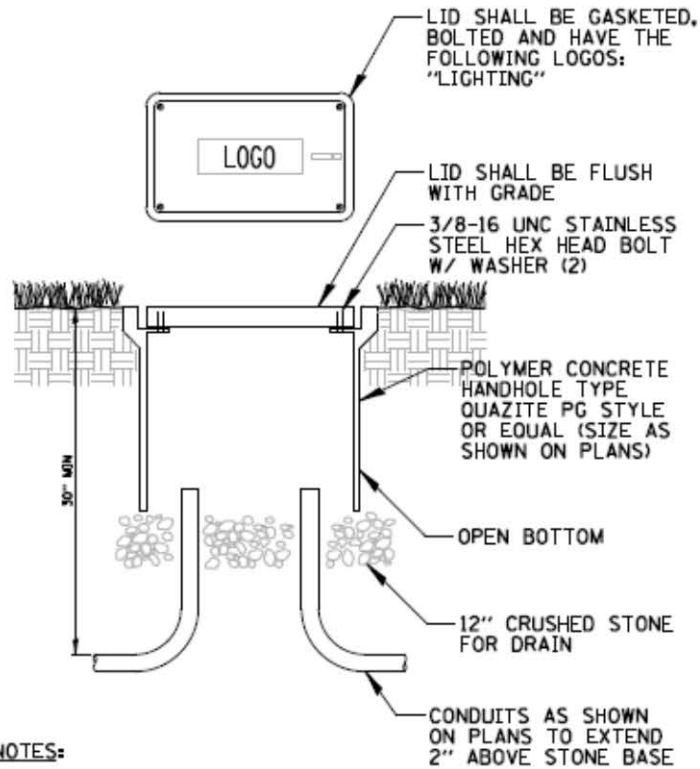
NOTES:

1. SHALL BE FACTORY PAINTED BLACK IF UTILIZED IN HISTORIC DISTRICT AND UNPAINTED IN COMMERCIAL AND COMMERCIAL COLLECTOR ROADWAYS.

BREAKAWAY COUPLING DETAIL

N.T.S.





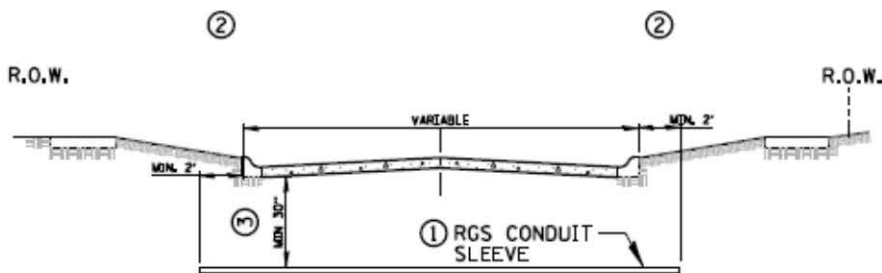
NOTES:

1. ALL SPLICES SHALL BE WATERPROOF. SEE SPLICING DETAIL.
2. POLYMER CONCRETE HANDHOLE AND LID SHALL BE GREY.
3. BOX & LID SHALL MEET/EXCEED ANSI TIER 15 LOADING REQUIREMENTS REQUIREMENTS AND BE TESTED IN ACCORDANCE WITH THE LATEST EDITION OF THE ANSI/SCTE 77 "SPECIFICATIONS FOR UNDERGROUND ENCLOSURE INTEGRITY", AND THE PROVISIONS OF PARAGRAPHS 5.2.3 AND 5.2.4 OF WESTER UNDERGROUND COMMITTEE GUIDE 3.6.

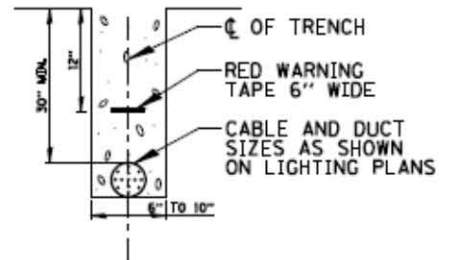
POLYMER CONCRETE HANDHOLE

N.T.S.



**ROADWAY CROSSING**

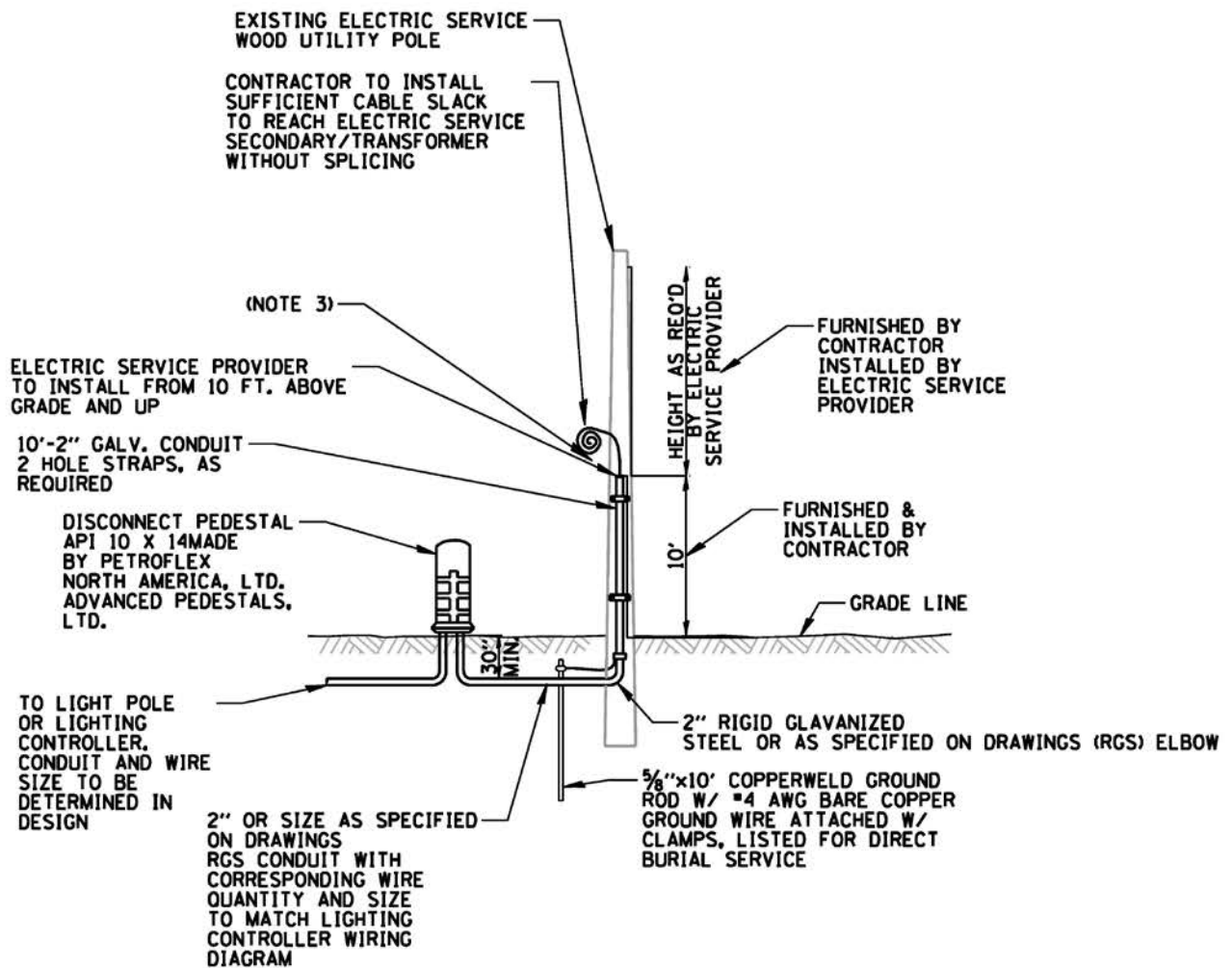
- ① SLEEVE SHALL BE HEAVY WALL RIGID GALVANIZED STEEL (RGS) CONDUIT.
- ② SLEEVE SHALL EXTEND A MINIMUM OF 2 FT. BEYOND BACK OF CURB.
- ③ SLEEVE SHALL BE A MINIMUM OF 30" BELOW ROADWAY OR CURB BOTTOM.

**TRENCH CROSS SECTION**

ELECTRIC CONDUIT INSTALLATION

N.T.S.





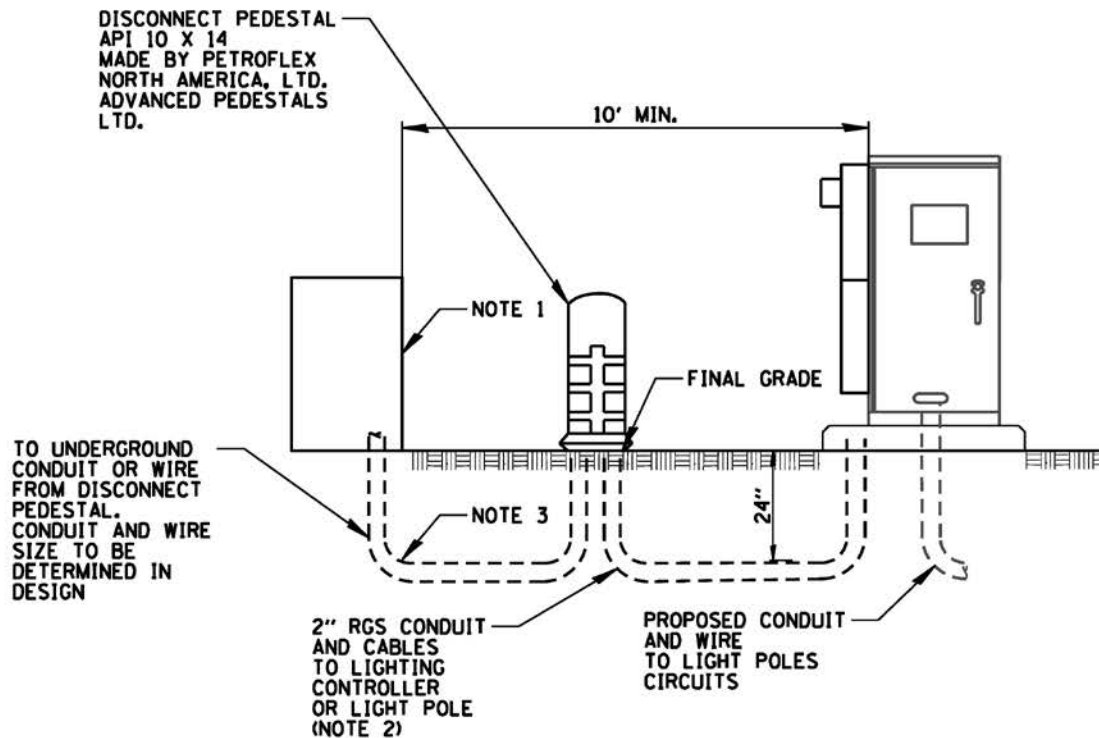
NOTES:

1. ALL WORK SHALL CONFORM TO ELECTRIC SERVICE PROVIDER'S BOOK OF "INFORMATION AND REQUIREMENTS FOR THE SUPPLY OF ELECTRIC SERVICE."
2. FURNISHING AND INSTALLING ALL MATERIAL SHOWN ABOVE (EXCEPT FOR POLE) SHALL BE INCLUDED IN THE PRICE BID FOR "ELECTRIC SERVICE INSTALLATION". THE HORIZONTAL SERVICE CONDUIT AND WIRING FROM POLE TO CONTROLLER SHALL BE PAID FOR SEPARATELY.
3. CONTRACTOR TO PROVIDE A CONDUIT BUSHING AND SEALING COMPOUND AT TOP OF RISER.
4. IF LIGHTING CONTROLLER IS REQUIRED, PEDESTAL MAY BE ELIMINATED.

ELECTRIC SERVICE OVERHEAD CONNECTION POLE

N.T.S.





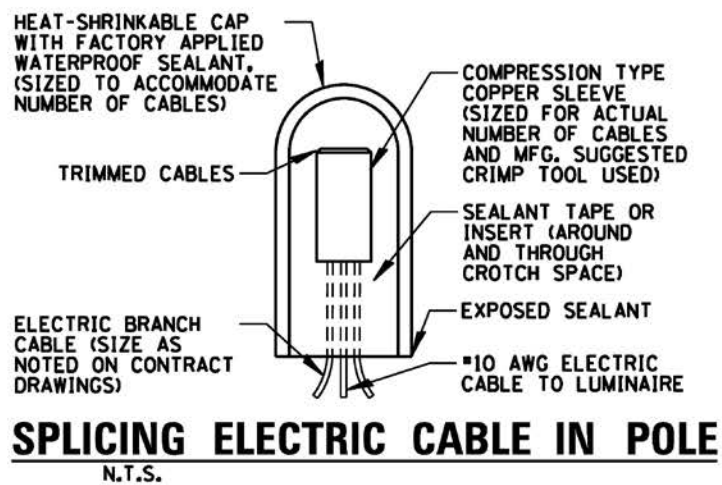
NOTES:

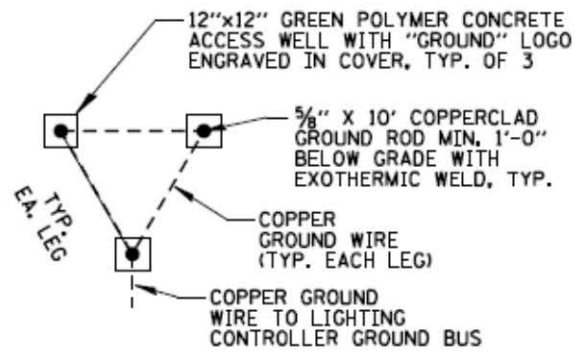
1. ELECTRIC SERVICE PEDESTAL OR TRANSFORMER LOCATED IN EASEMENT. COM ED WILL PROVIDE CONNECTORS FOR CABLES AND CONNECT CABLES WITHIN THE COM ED ENCLOSURE. COM ED WILL IDENTIFY CUSTOMER'S STREET LIGHT CABLE.
2. WIRE SIZE TO MATCH WIRE SIZE CALLED OUT IN LIGHTING CONTROLLER WIRING DIAGRAM.
3. IF LIGHTING CONTROLLER IS REQUIRED, DISCONNECT PEDESTAL CAN BE ELIMINATED.

ELECTRIC SERVICE UNDERGROUND CONNECTION TO PEDESTAL/TRANSFORMER

N.T.S.



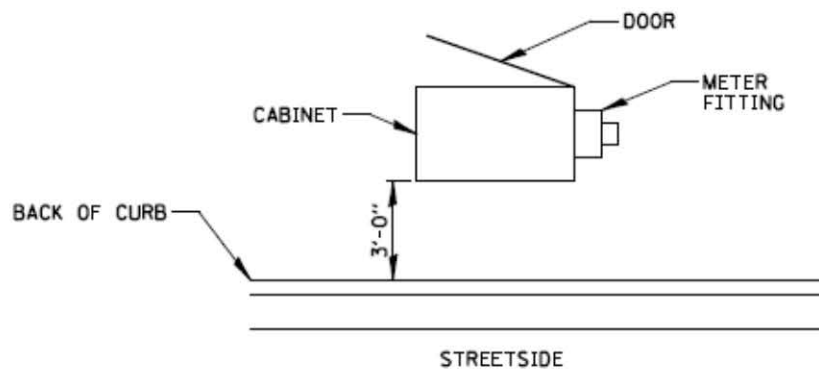




GROUND FIELD DETAIL (TYP.)

N.T.S.

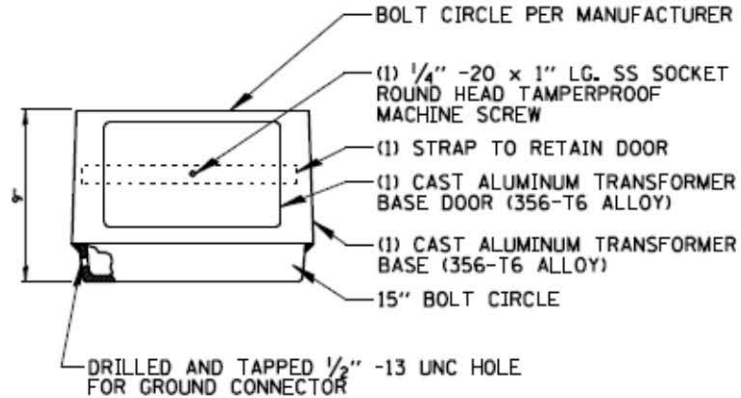




CABINET METER FITTING & DOOR ORIENTATION

N.T.S.





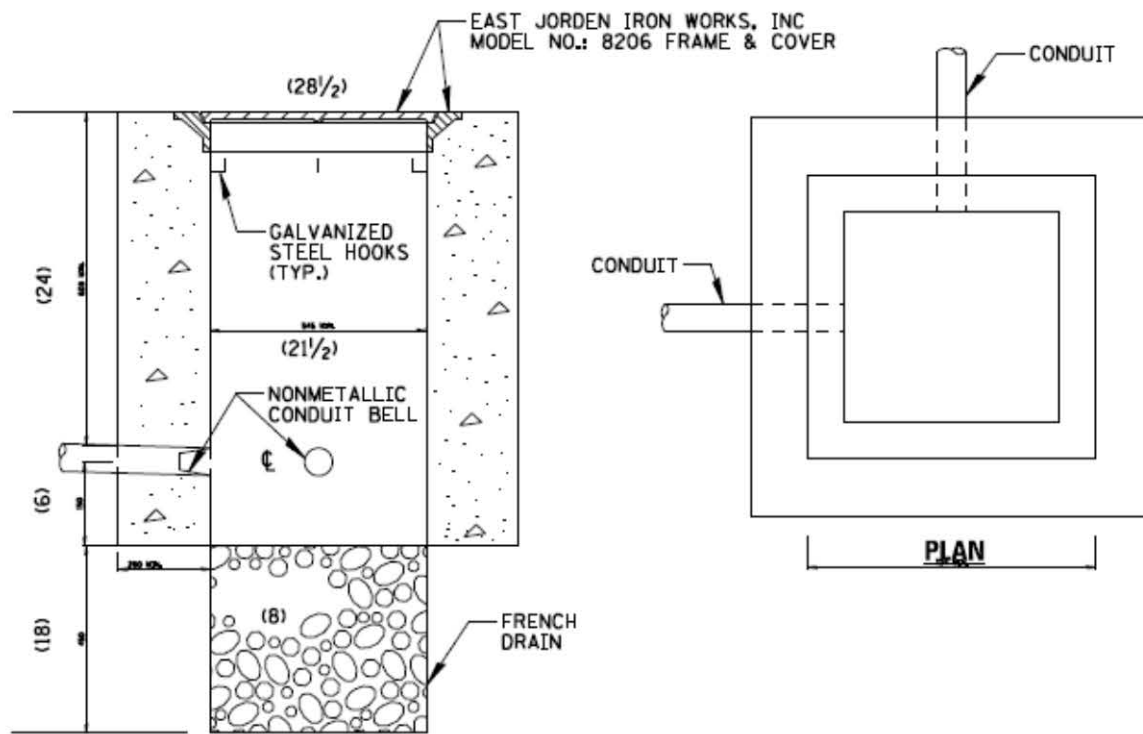
NOTES:

1. BEFORE INSTALLATION OF BREAKAWAY BASE, USER SHOULD CONSULT WITH AUTHORIZED DISTRIBUTOR REGARDING USERS PROPOSED APPLICATION, LOAD REQUIREMENTS AND INSTALLATION METHODS. FAILURES CAN RESULT FROM USERS MISAPPLICATION OR IMPROPER INSTALLATION. TO APPROACH OPTIMUM STATIC LOADS, USE THE LARGEST POSSIBLE BOLT CIRCLES. SHIMS SHALL NOT BE ALLOWED.
2. SHALL BE FACTORY PAINTED BLACK IF UTILIZED IN HISTORIC DISTRICT AND UNPAINTED IN COMMERCIAL AND COMMERCIAL COLLECTOR ROADWAYS.

BREAKAWAY TRANSFORMER BASE

N.T.S.





ELEVATION

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE SHOWN.
2. FRAME AND COVER CAN BARE 64 KG (140 LBS.) MIN. LOAD

CONCRETE HANDHOLE

N.T.S.



**NOTES:**

1. FINISH: HOT DIP GALVANIZED PER AASHTO M111 (LATEST REVISION).
2. BASEPLATE TO BE PERPENDICULAR TO SHAFT AXIS (± 1 DEG) AND HOLE CENTERLINE CONCENTRIC ($\pm .188$) TO SHAFT AXIS.
3. STENCIL MIN $1/2$ IN. LETTERS MANUFACTURER'S NUMBER AFTER GALVANIZING.
4. PILOT POINT AND SHAFT AXES TO BE CONCENTRIC (± 125 FIM) AND IN LINE (± 2 DEG).
5. FLAME CUT SLOT PERPENDICULAR TO THE BASEPLATE.
6. PREHEAT, TUMBLEBLAST, HANDGRIND, AND CLEAN BASEPLATE, HELIX, AND PILOT POINT ON ALL WELDED AREAS.
7. FLAMECUT IRREGULARITIES PERMISSIBLE: (1) VALLEYS NOT TO EXCEED $1/8$ IN. BELOW NOMINAL SURFACE LEVEL, (2) PEAKS OR POSITIVE IRREGULARITIES NOT TO EXCEED $1/32$ IN. ABOVE NOMINAL SURFACE LEVEL OR INTERSECTIONS OF NOMINAL SURFACES.
8. MANUFACTURER TO HAVE IN EFFECT INDUSTRY RECOGNIZED WRITTEN QUALITY CONTROL FOR ALL MATERIALS AND MANUFACTURING PROCESSES.
9. ALL MATERIAL IS TO BE NEW, UNUSED AND MILL TRACEABLE MEETING THE FOLLOWING SPECIFICATIONS:

BASEPLATE: ASTM A36-(LATEST REVISION) STRUCTURAL (CONFORM TO AASHTO TECH. BUL. #270)

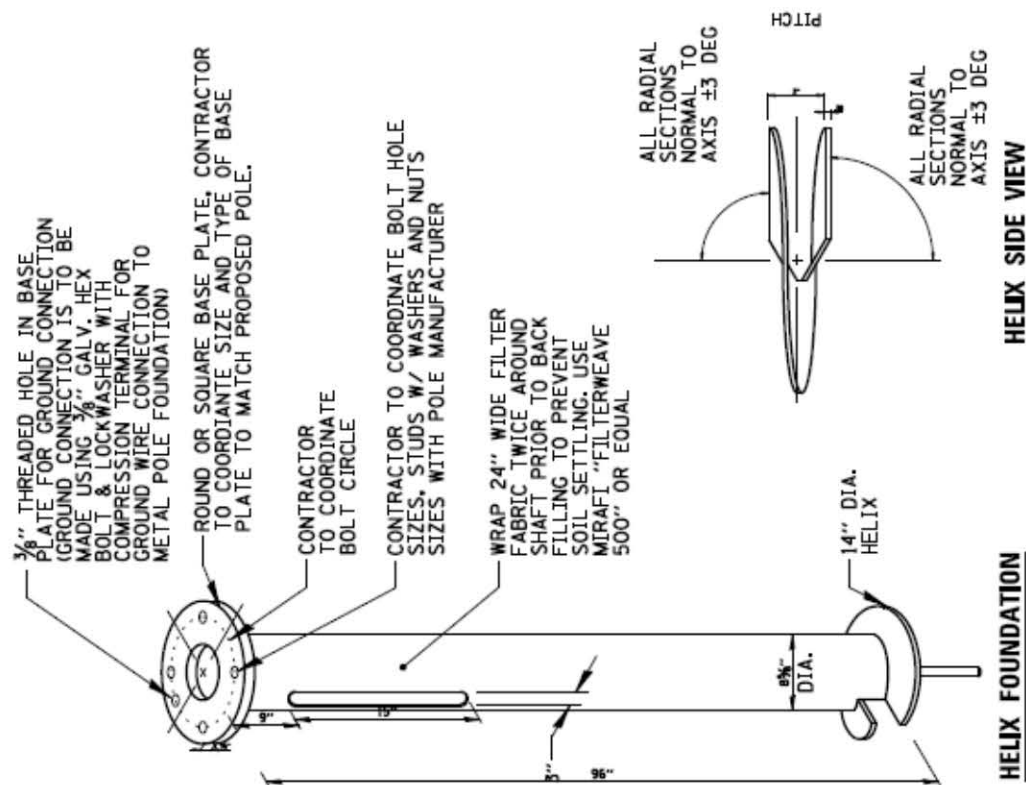
SHAFT: ASTM A252 (LATEST REVISION) GRADE 2, STEEL PIPE PILES, ALT. MATERIAL: ASTM A53 (LATEST REVISION) TYPE E OR S, GRADE B, STEEL PIPE OR ASTM A500 (LATEST REVISION) GRADE B, STRUCTURAL STEEL TUBING.

HELIX: ASTM A635 (LATEST REVISION) $3/8$ " THICK HOT ROLLED STEEL PLATE OR COIL.

PILOT POINT: ASTM A575 (LATEST REVISION) $1/4$ " DIA. HOT ROLLED STEEL BAR.

BOLTS: 1" DIA. HOT DIP GALVANIZED STUDS IN ACCORDANCE WITH AASHTO M314 OR ASTM F1554.

10. BASEPLATE IS PERMANENTLY STAMPED WITH MANUFACTURER'S IDENTIFICATION "ABC" IN $1/2$ " LETTERS AND DATE CODE IN $1/4$ " LETTERS.



LIGHT POLE METAL FOUNDATION DETAIL

N.T.S.