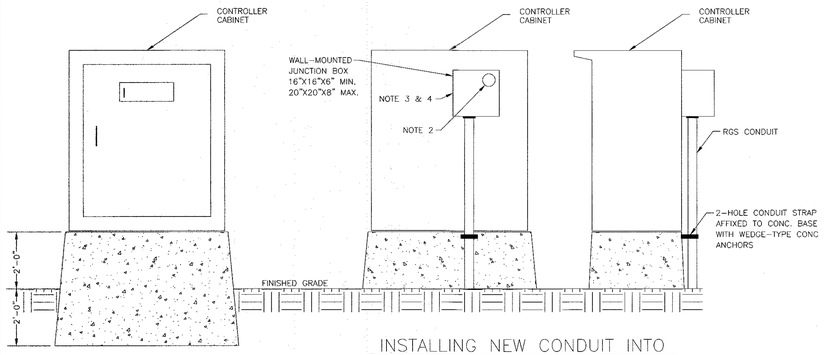
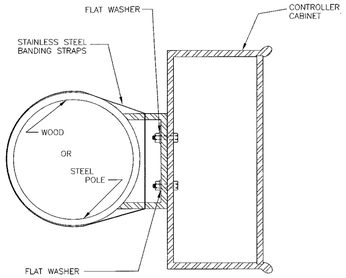


INSTALLING NEW CONDUIT INTO AN EX SOLID BASE MOUNTED CABINET

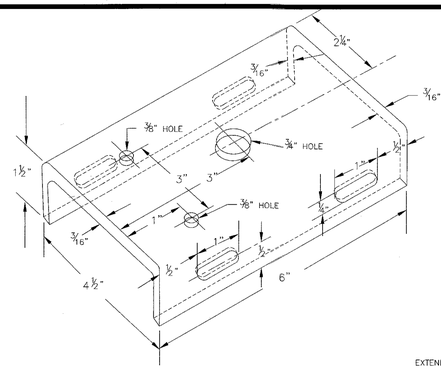
BASE MOUNT CABINET

NOTES:

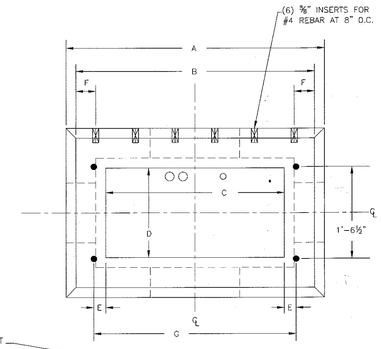
1. WALL-MOUNTED JUNCTION BOX SHALL BE A GALVANIZED STEEL NEMA 3R CONTINUOUS HINGED ENTRY BOX OR APPROVED EQUIVALENT. BOX SHALL HAVE A POWDER COAT FINISH WITH A GALVANIZED STEEL CONTINUOUS HINGE W/ A STAINLESS STEEL PIN ON THE LEFT SIDE AND CAPTIVE SCREWS ON THE RIGHT. THE BOX SHALL HAVE A HASP (OR APPROVED ALTERNATIVE) ON THE RIGHT SIDE FOR PADLOCKING DOOR.
2. DRILL HOLE INTO CABINET AND INSTALL THREADED NIPPLE. INSTALL RUBBER GASKET, FLAT METAL WASHER AND LOCKER RING ON BOTH SIDES.
3. JUNCTION BOX SHALL BE ATTACHED TO THE CABINET WITH FOUR METAL SCREWS. MOUNTING HOLES SHALL BE INSIDE THE BOX AROUND THE FOUR CORNERS.
4. THE CONTRACTOR SHALL APPLY SEALANT BETWEEN THE EDGE OF THE JUNCTION BOX AND THE CABINET. SEALANT SHALL BE RATED FOR OUTDOOR USE, WATER-PROOF BELOW WATER LINES, UV RESISTANT AND CLEAR OR GRAY IN COLOR.



STAINLESS STEEL MOUNTING BRACKET
(2 PER CABINET)

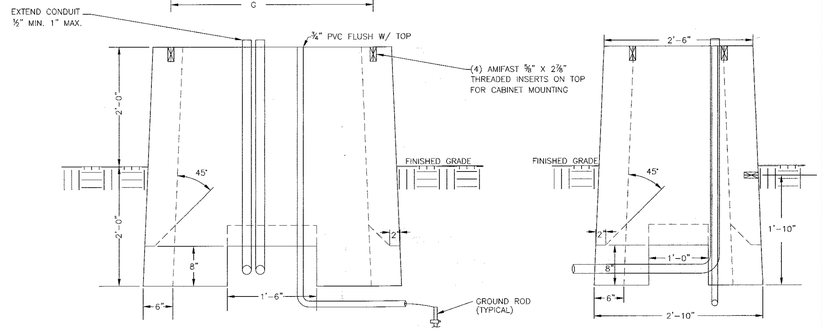


TYPICAL BRACKET



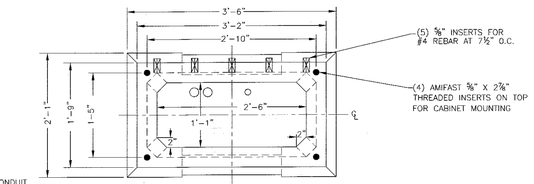
PRECAST CONCRETE BASE SPECIFICATIONS

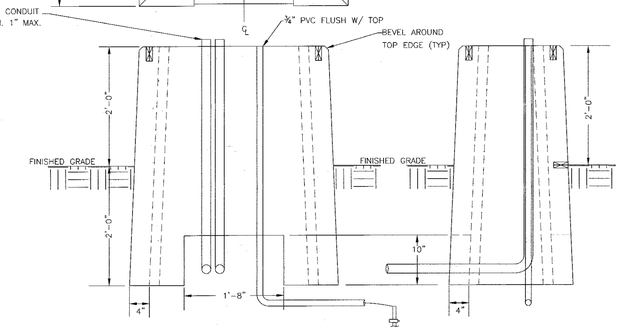
1. CONCRETE MINIMUM COMPRESSION STRENGTH: F'c=5,000 PSI @ 28 DAYS
2. REINFORCING STEEL: ASTM A615, Fy=60,000 PSI



SIZE	A	B	C	D	E	F	G
LARGE	4'-4"	4'-0"	3'-0"	1'-6"	2⅞"	4"	3'-4¾"
MODIFIED	5'-3"	4'-11"	3'-11"	1'-6"	3 1⁄16"	9½"	4'-6⅜"

LARGE & MODIFIED CABINET BASE
(PRECAST CONCRETE)





SMALL CABINET BASE
(PRECAST CONCRETE)

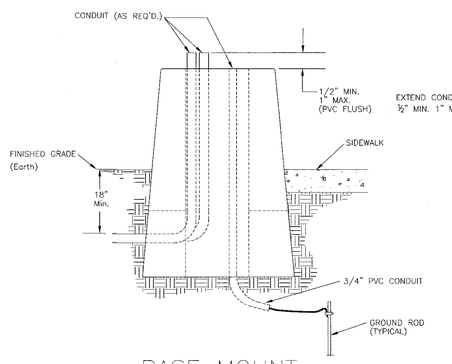
CONTROLLER CABINET ON WOOD POLE

CONTROLLER CABINET ON STEEL POLE (EMBEDDED)

WITHOUT PROVISION FOR INTERNAL WIRING

CONTROLLER CABINET ON STEEL POLE (ANCHOR BASE)

WOOD POLE RISER DETAIL



BASE MOUNT CABINET FOUNDATION

Sheet 1 of 18

REVISIONS				APPROVED	
NO.	DATE	BY	REMARKS	C.T.E.	C.E.

DIVISION OF ENGINEERING

DESIGN STANDARD

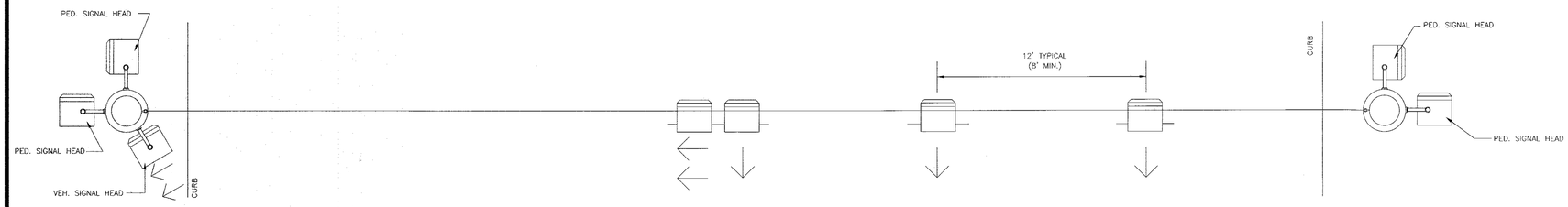
Controller Cabinet and Riser Installation Details

APPROVED BY: MEMPHIS, TENN.

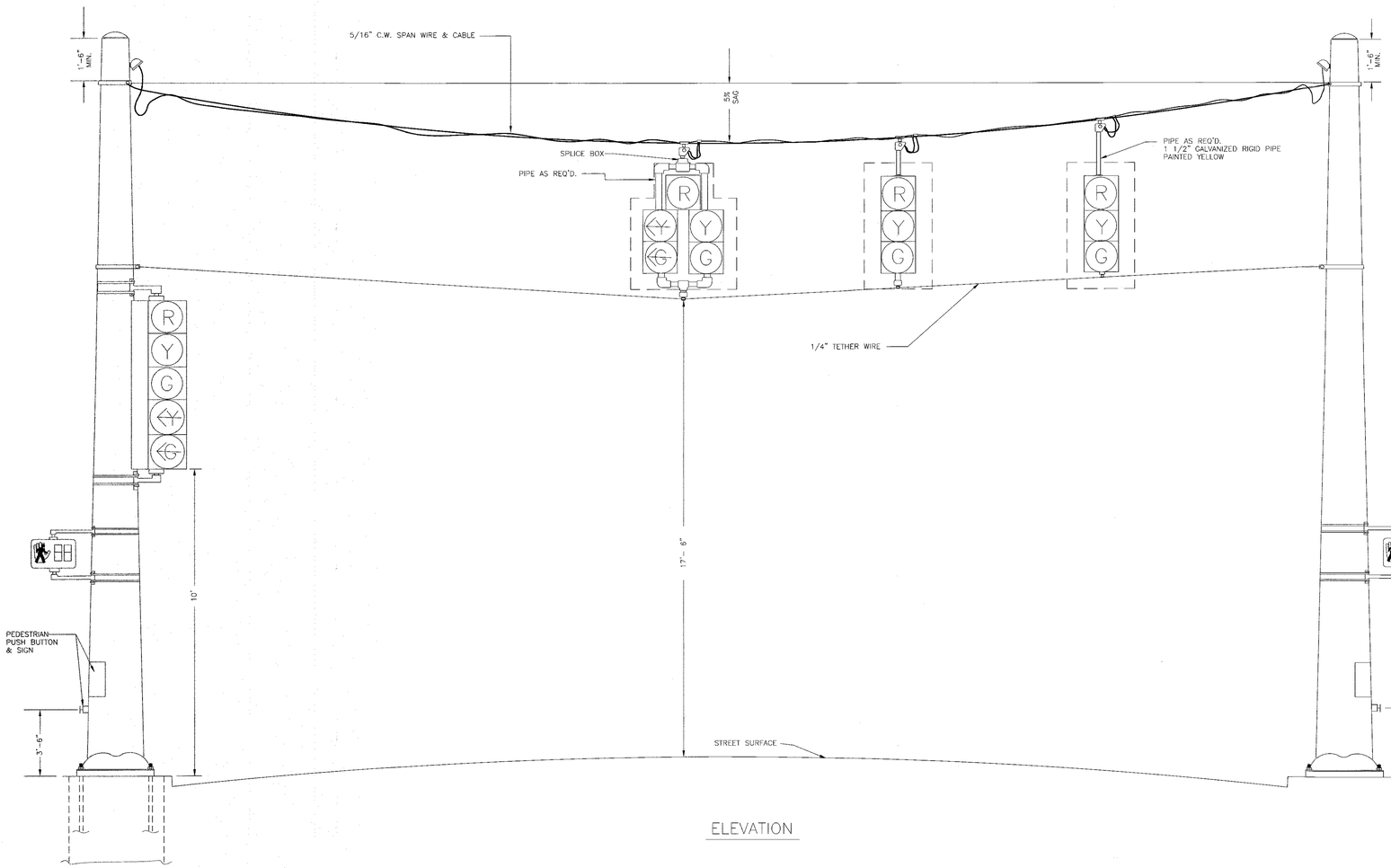
CITY TRAFFIC ENGINEER — DATE 11/29/22

CITY ENGINEER — DATE 11/30/22

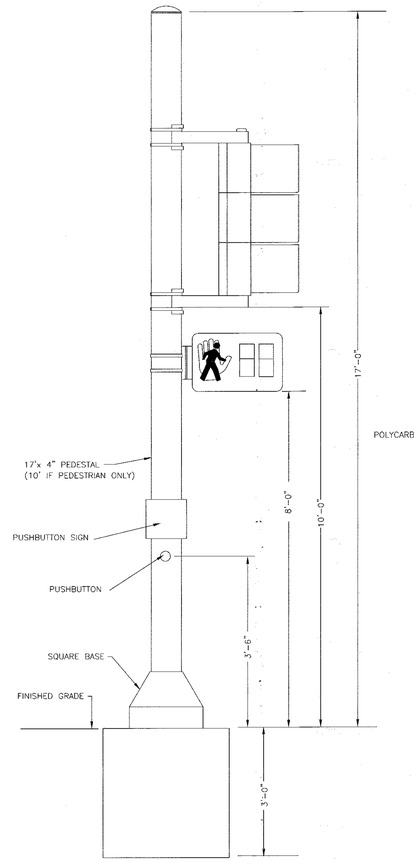
DATE: 11-17-2022
SCALE: N.T.S.
DRAWN BY: MP
CHECKED BY: RT



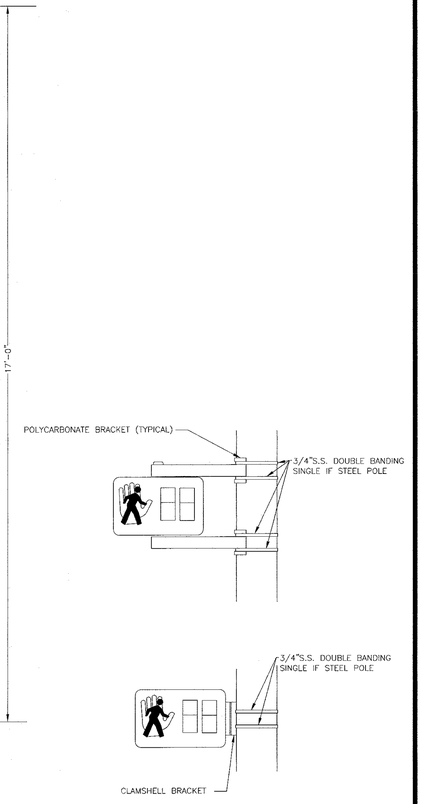
PLAN



ELEVATION



PEDESTAL MOUNTING



PEDESTRIAN SIGNAL HEAD
(Side of Pole/Pedestal Mount)

Sheet 2 of 18

REVISIONS				APPROVED		
NO.	DATE	BY	REMARKS	D.C.E.,T.	C.E.	

DIVISION OF ENGINEERING

DESIGN STANDARD

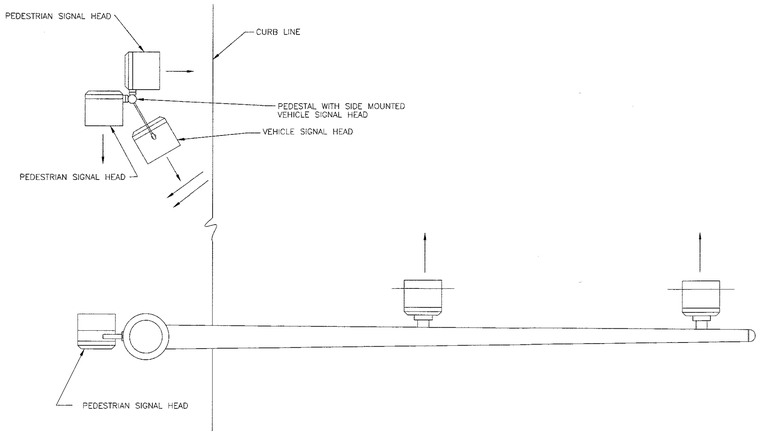
Signal Mounting Heights For Span Mounting

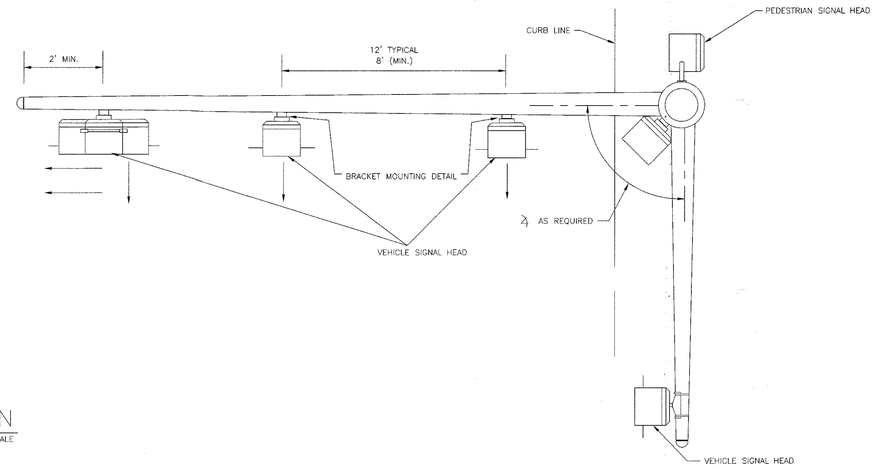
APPROVED BY: MEMPHIS, TENN.

CITY TRAFFIC ENGINEER — DATE 11/29/22

CITY ENGINEER — DATE 11/30/22

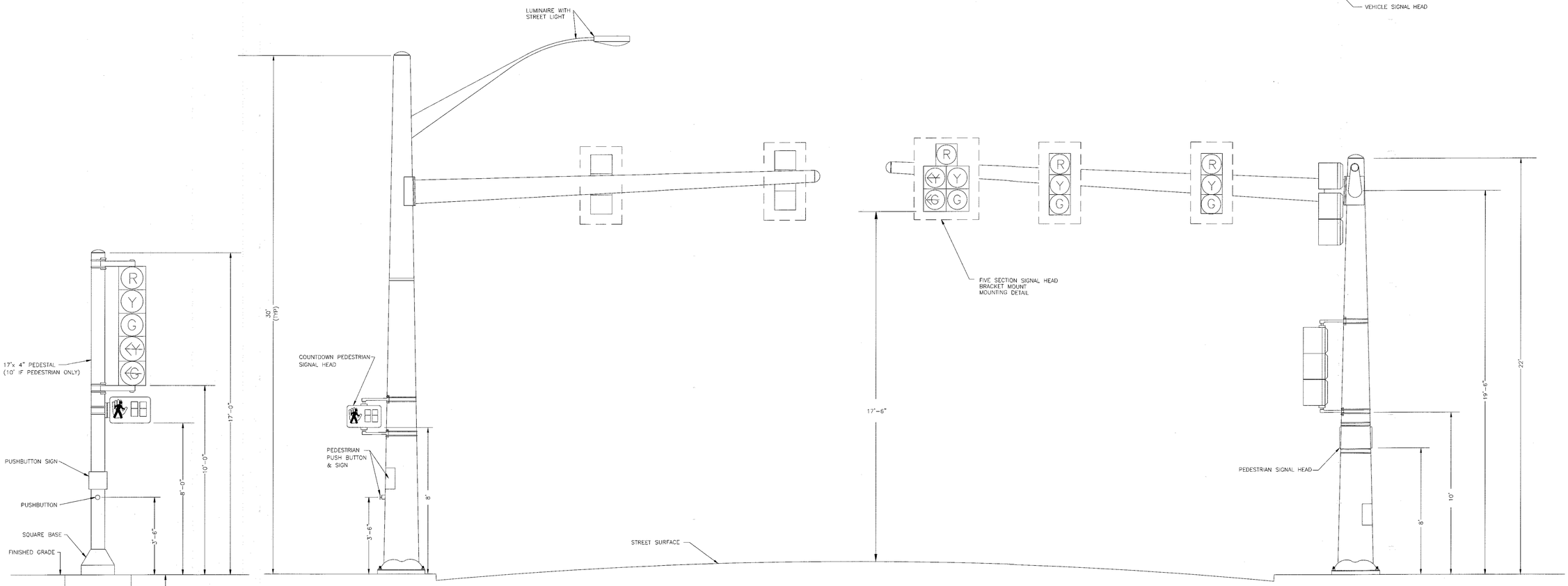
DATE: 11-17-2022
SCALE: N.T.S.
DRAWN BY: MP
CHECKED BY: RT





PLAN

NOT TO SCALE



ELEVATION

NOT TO SCALE

PEDESTAL MOUNTING

* MAST ARM SIGNAL HEAD MOUNTING HEIGHTS ABOVE PAVEMENT SURFACE:
TYPICAL: 17'-6"

REVISIONS				APPROVED	
NO.	DATE	BY	REMARKS	C.T.E.	C.E.

DIVISION OF ENGINEERING

DESIGN STANDARD

Signal Mounting Heights For Mast Arm

APPROVED BY: MEMPHIS, TENN.

CITY TRAFFIC ENGINEER — DATE 11/29/22

CITY ENGINEER — DATE 11/30/22

DATE: 11-17-2022
SCALE: N.T.S.
DRAWN BY: MP
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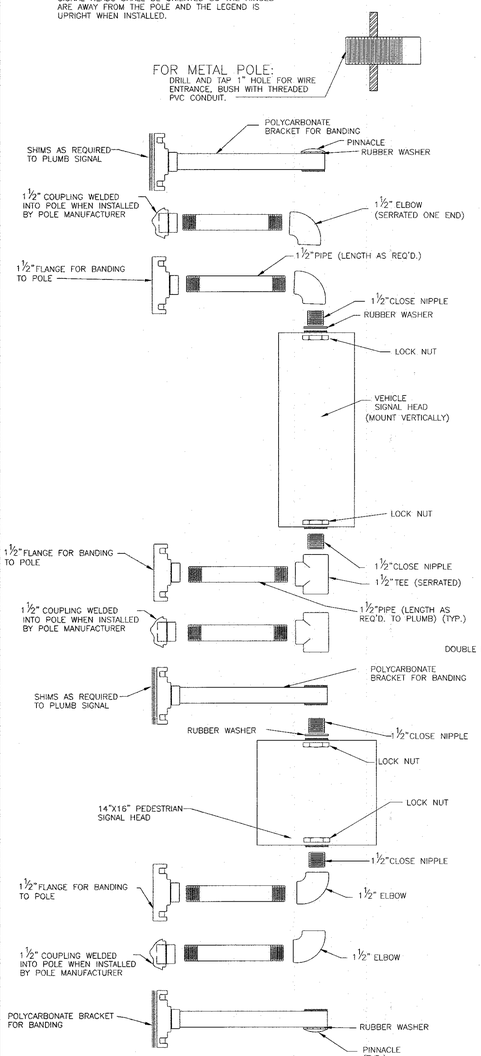
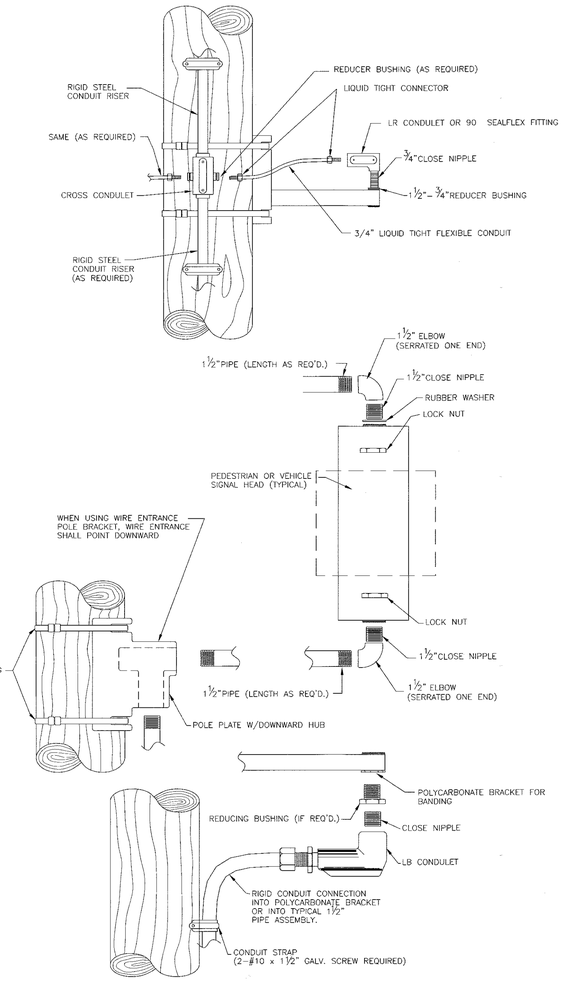
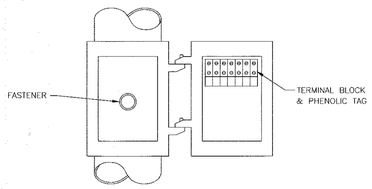
NOTE: THE DOORS ON ALL POLE MOUNTED PEDESTRAIN SIGNAL HEADS SHALL BE ORIENTED SO THE HINGES ARE AWAY FROM THE POLE AND THE LEGEND IS UPRIGHT WHEN INSTALLED.

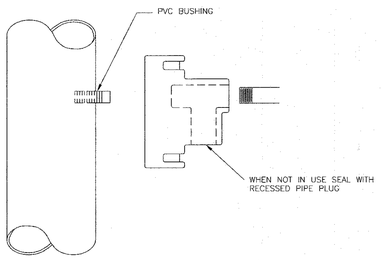


METAL POLE MOUNT

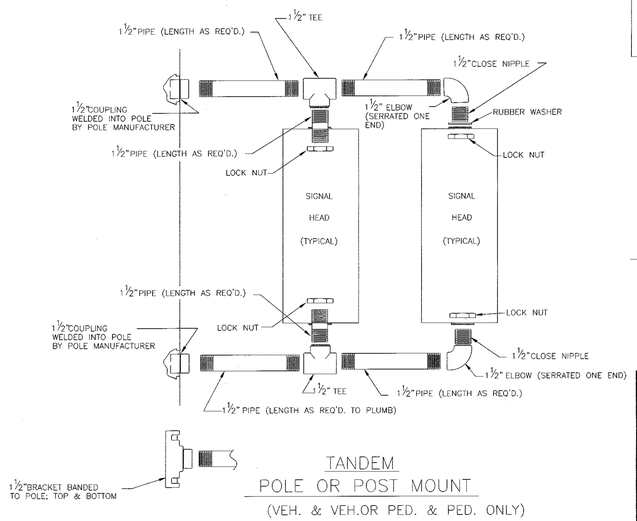


WOOD POLE MOUNT

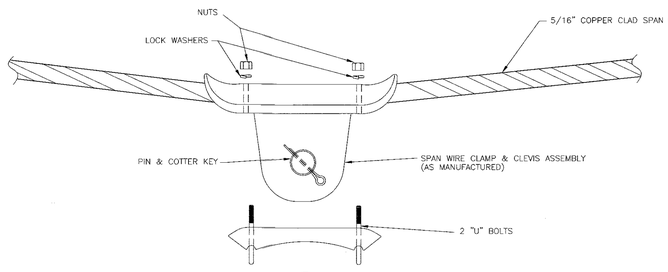


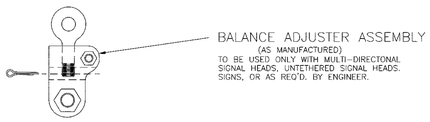


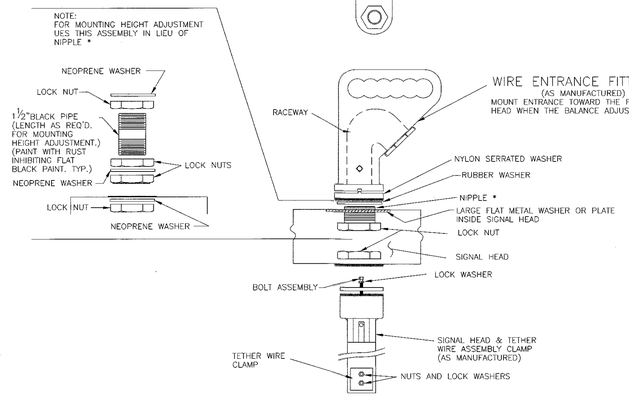
CLAMSHELL MOUNT



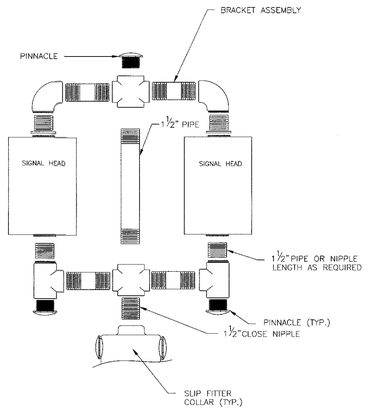
TANDEM
POLE OR POST MOUNT
(VEH. & VEH.OR PED. & PED. ONLY)



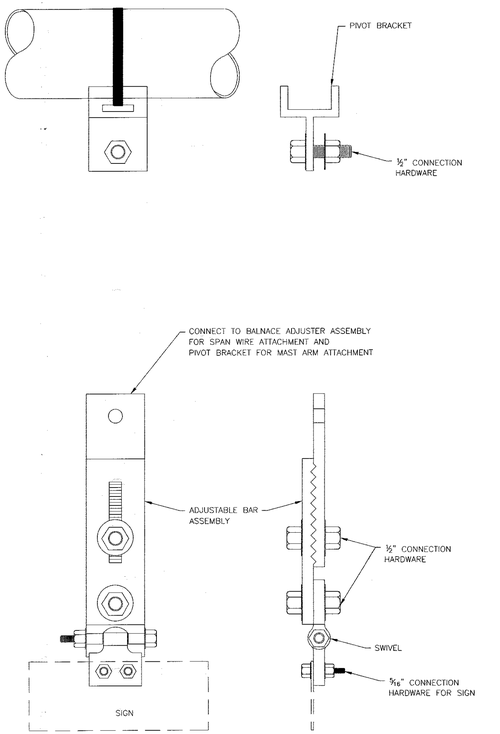


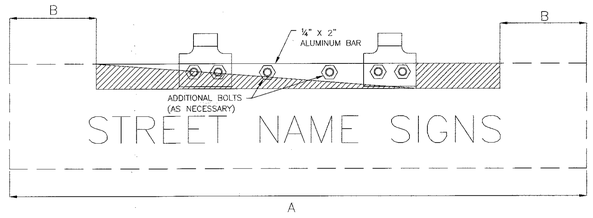


SPAN WIRE MOUNT



POST TOP MOUNTED–TWO WAY
UNDERGROUND FEED





BAR POSITIONING	
A	B
3'	6"
4'	8"
5'	12"
6'	18"
7'	20"
8'	22"
9'	24"

OVERHEAD SIGN MOUNTING

REVISIONS				APPROVED	
NO.	DATE	BY	REMARKS	C.T.E.	C.E.

DIVISION OF ENGINEERING

DESIGN STANDARD

Signal Head and Sign Mounting

APPROVED BY: MEMPHIS, TENN.

CITY TRAFFIC ENGINEER — DATE 11/29/22

CITY ENGINEER — DATE 11/30/22

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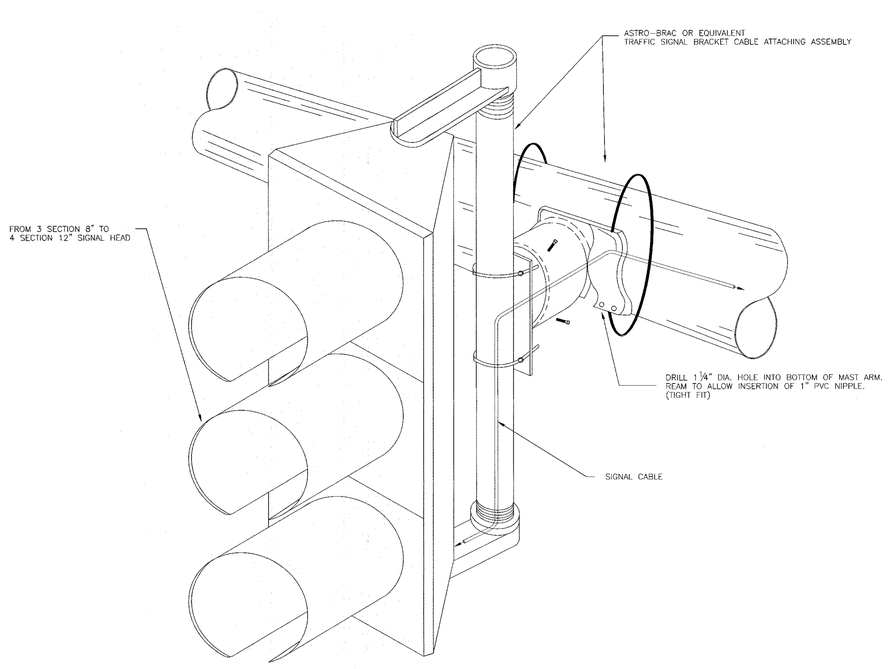
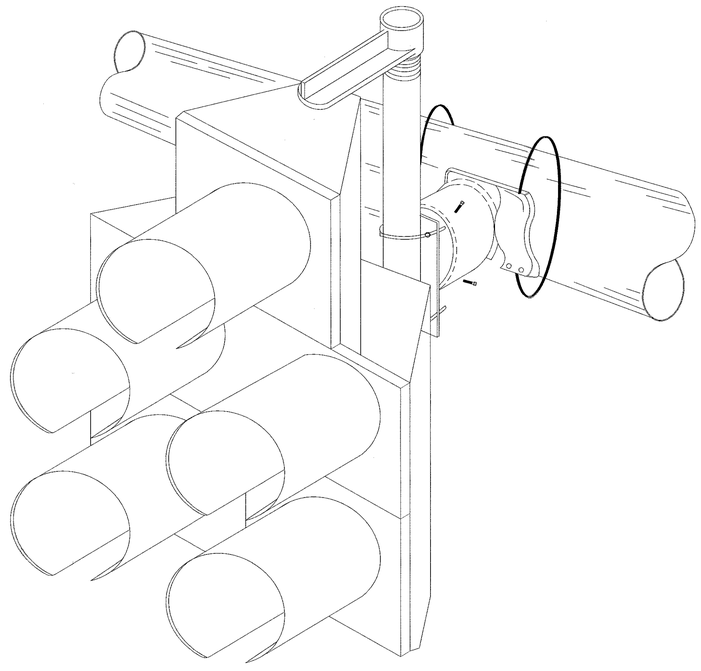
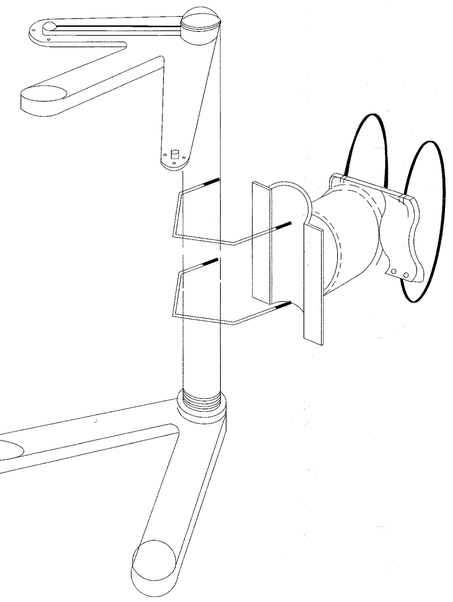
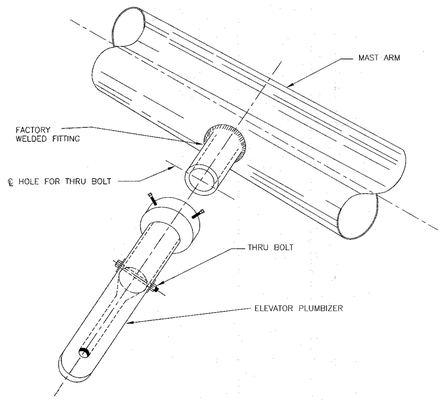


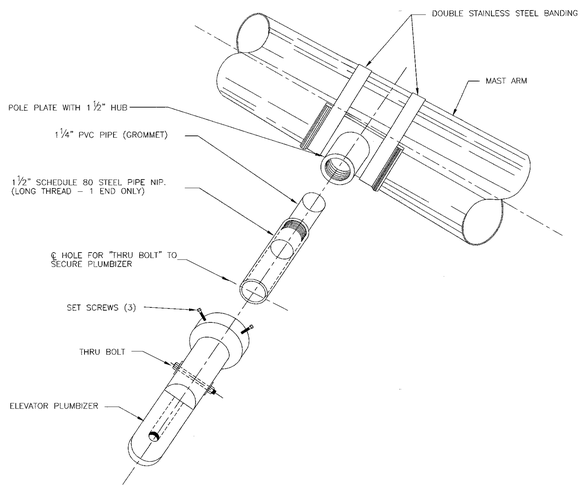
MOUNTING OPTION #1
MAST ARM MOUNT
TRAFFIC SIGNAL BRACKET
N.T.S.



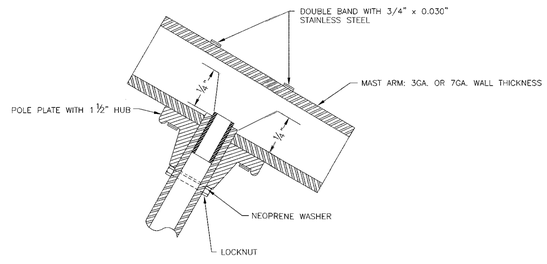




MOUNTING OPTION #3
N.T.S.



MOUNTING OPTION #2 (SEE DETAIL "A")
N.T.S.



DETAIL "A"
N.T.S.

OPTION #2 MOUNTING INSTRUCTIONS:

PLACE POLE PLATE ON MAST ARM AT SIGNAL LOCATION. DETERMINE NEUTRAL AXIS ON SIDE OF MAST ARM AND SAW 1 1/2" DIA. HOLE. ALIGN HUB ON POLE PLATE AND HOLE IN MAST ARM AND STRAP POLE PLATE ONTO MAST ARM USING DOUBLE 3/4" x 0.030" STAINLESS STEEL BANDING. TAP FOR 1 1/2" PIPE THRU POLE PLATE HUB, INSERT 1 1/4" PVC PIPE INTO 1 1/2" STEEL NIPPLE-SCHEDULE 80 PIPE – (LONG THREAD ONE END ONLY) ALLOWING PVC PIPE TO PROTRUDE 1/4" OUTSIDE THREADED END OF NIPPLE. SCREW LOCKNUT TO END OF THREADS. SLIP NEOPRENE WASHER OVER THREADED END OF NIPPLE. SCREW NIPPLE INTO HUB AND THRU WALL OF MAST ARM BY 1/4". TIGHTEN LOCKNUT AND ATTACH PLUMBIZER. SECURE PLUMBIZER.

REVISIONS				APPROVED	
NO.	DATE	BY	REMARKS	C.T.E.	C.E.

DIVISION OF ENGINEERING

DESIGN STANDARD

Signal Head Mounting (Mast Arm)

APPROVED BY: MEMPHIS, TENN.

CITY TRAFFIC ENGINEER — DATE 11/29/22

CITY ENGINEER — DATE 11/30/22

DATE: 11-17-2022
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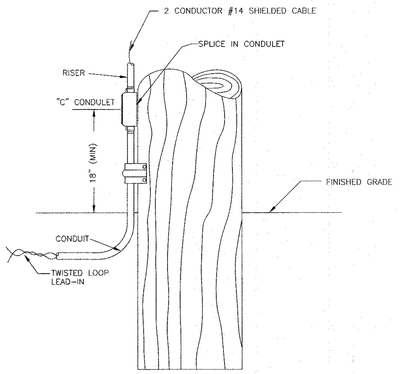
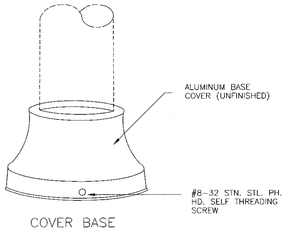
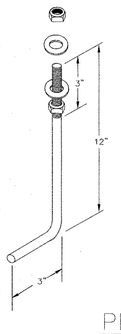
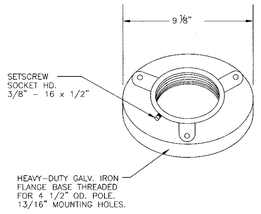


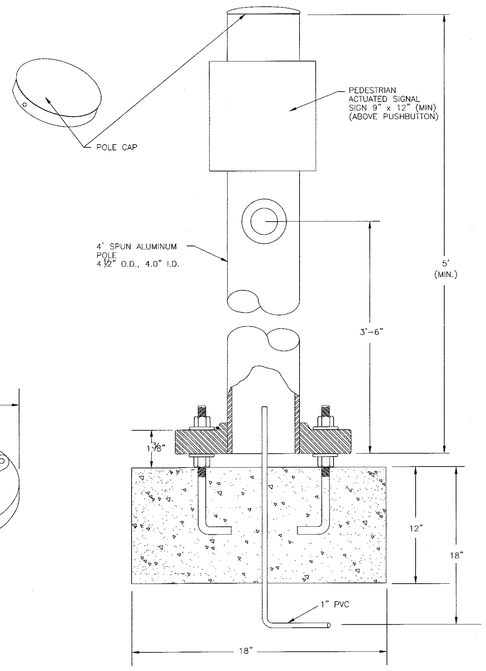
WOOD POLE



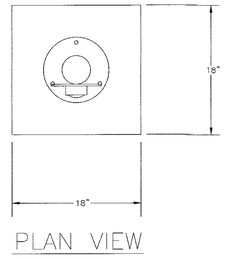
COVER BASE



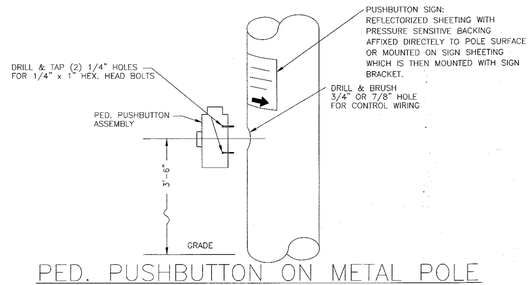




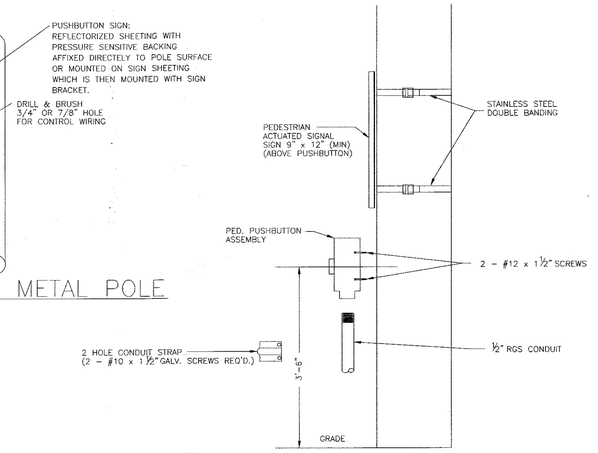
PEDESTRIAN PUSHBUTTON & POLE



PLAN VIEW



PED. PUSHBUTTON ON METAL POLE

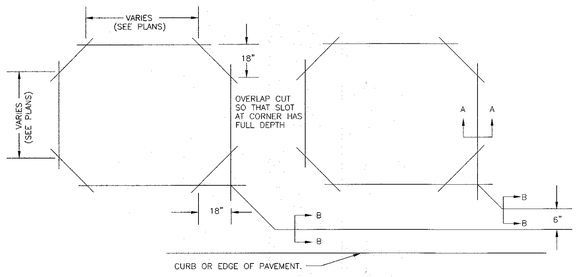


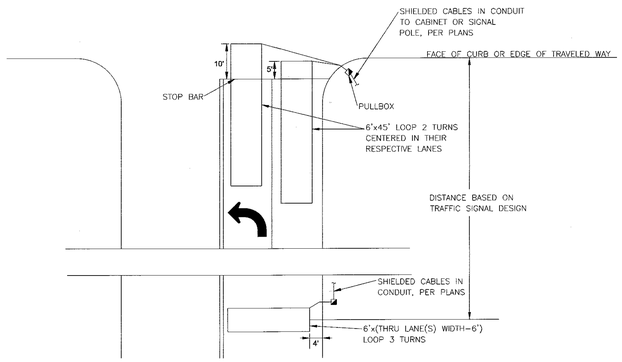
PED. PUSHBUTTON ON WOOD POLE

DETECTION LOOP NOTES

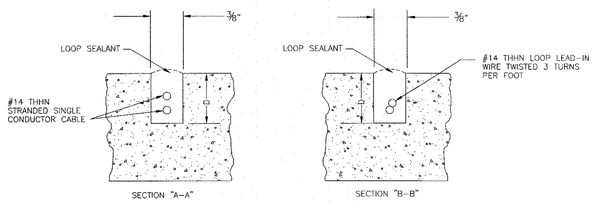
1. THE DETECTION LOOPS SHALL BE OF THE SIZE AND LOCATION DETAILED IN THE PLANS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
2. THE CONTRACTOR SHALL INSTALL LOOPS BY CUTTING A 3/8 INCH WIDE SLOT IN THE ROADWAY SURFACE WITH A DIAMOND OR ABBRASIVE SAW, INSTALLING THE WIRE AND BACKFILLING WITH SEALER. SAW SLOTS SHALL BE 2 INCHES IN DEPTH IN ASPHALT PAVEMENT, AND 1 1/2 INCHES IN DEPTH IN CONCRETE PAVEMENT. SLOTS FOR TWISTED LOOP LEAD-INS SHALL BE 3/8 INCHES WIDE.
3. THE CONTRACTOR SHALL EXERCISE CARE IN PLACING THE DETECTION LOOPS AND LEAD-INS IN THE PAVEMENT SLOTS. THE SLOTS SHALL BE CLEANED AND BLOWN WITH OIL-FREE AIR. THE WIRE SHALL BE PUSHED INTO THE SLOTS WITH A BLUNT WOODEN STICK TO PREVENT DAMAGE TO THE INSULATION. USE OF METAL TOOLS WILL NOT BE PERMITTED FOR THIS OPERATION.
4. BEFORE THE SLOTS ARE SEALED, THE RESISTANCE OF THE DETECTION LOOPS AND LEAD-INS (INCLUDING SPLICES) SHALL BE CHECKED AGAINST GROUND WITH A MEGGER. A RESISTANCE OF LESS THAN TEN MEGOHMS WILL INDICATE A FAULT REQUIRING CORRECTION BEFORE SLOTS ARE SEALED.
5. ALSO BEFORE THE SLOTS ARE SEALED, THE INDUCTANCE OF THE DETECTION LOOP AND LEAD-INS SHALL BE CHECKED AT THE LOCATION OF THE DETECTOR SENSOR UNIT. THE INDUCTANCE SHALL BE NO LESS THAN 100 MICROHENRIES AND NO MORE THAN 300 MICROHENRIES. IF IT MEASURES OUT OF THIS RANGE THE LOOP SHALL BE REPAIRED TO PROVIDE AN INDUCTANCE READING BETWEEN 100 AND 300 MICROHENRIES BEFORE THE SLOTS ARE SEALED.
6. AFTER THE LOOP WIRES ARE INSTALLED AND ALL CHECKS SATISFACTORILY COMPLETED, THE SLOT SHALL THEN BE BACKFILLED AND SEALED WITH A LOOP SEALANT CONFORMING TO STANDARD SPECIFICATIONS.
7. LOOPS AND TWISTED LEAD-INS SHALL BE CONSTRUCTED OF ONE UNBROKEN LENGTH OF #14 THNN WIRE. NO TWISTED LEAD-INS SHALL EXCEED 100 FEET IN LENGTH. THHN INSULATION SHALL BE COLOR-CODED AS SHOWN ON THE PLANS.
8. SPLICES OF TWISTED PAIRS TO SHIELDED CABLE SHALL BE PERMITTED ONLY IN PULL BOXES, CABINETS, CONDULETS, AND POLE BASES AS SHOWN ON PLANS.
9. ALL LEADS FROM THE SPLICE TO CONTROLLER SHALL CONSIST OF A TWO CONDUCTOR SHIELDED CABLE, #14 AWG STRANDED, CONFORMING TO STANDARD SPECIFICATIONS.
10. LOOP LEADS SHALL NOT BE COILED. TERMINAL BLOCKS SHALL BE USED FOR ALL CONNECTIONS IN EQUIPMENT CABINETS.
11. LOOP WIRES AND LEAD-INS ARE TO BE LABELED AS SHOWN ON THE PLANS. ALL LEADS ARE TO BE PERMANENTLY LABELED IN PULL-BOXES, CONDULETS, POLE BASES, AND CONTROLLER CABINETS.
12. THE SHIELD DRAIN WIRE ON TWO CONDUCTOR SHIELDED CABLE SHALL BE BONDED TO THE GROUND BUSS IN THE CONTROLLER CABINET.
13. SHIELD CONTINUITY SHALL BE MAINTAINED IN SPLICES OF TWO CONDUCTOR SHIELDED CABLE.

CAUTION:
GENTLY TAMP IN WIRE WITH BLUNT WOOD TOOL TO AVOID DAMAGE TO INSULATION. DO NOT USE SHARP OBJECT.



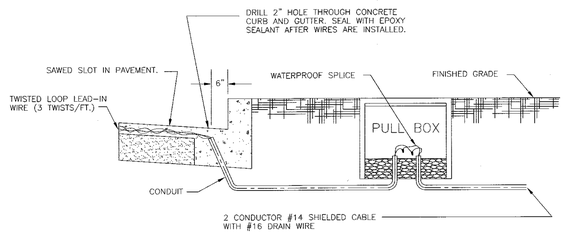


TYPICAL LOOP LAYOUT



LOOPS IN CONCRETE OR ASPHALT

D - SLOT DEPTH IN ASPHALT SHALL BE 2 - INCHES.
D - SLOT DEPTH IN CONCERTE SHALL BE 1 1/2 INCHES.



LOOP DETECTOR WIRING INSTALLATION INTO PULL BOX OR POLE FOUNDATION

Sheet 6 of 18

REVISIONS				APPROVED	
NO.	DATE	BY	REMARKS	C.T.E.	C.E.

DIVISION OF ENGINEERING

DESIGN STANDARD

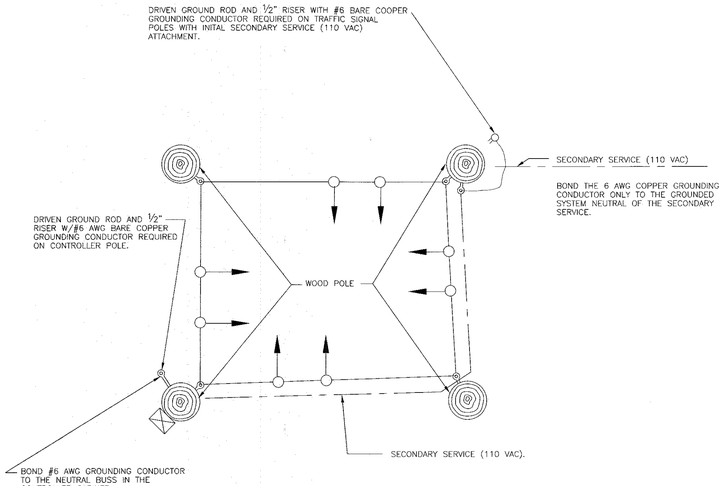
Pedestrian and Vehicle Detection Detail

APPROVED: MEMPHIS, TENN.

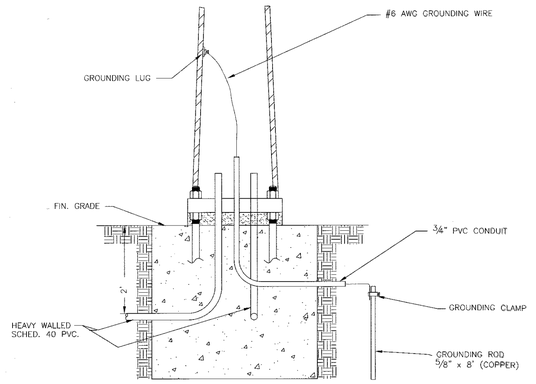
CITY TRAFFIC ENGINEER — DATE 11/29/22

CITY ENGINEER — DATE 11/30/22

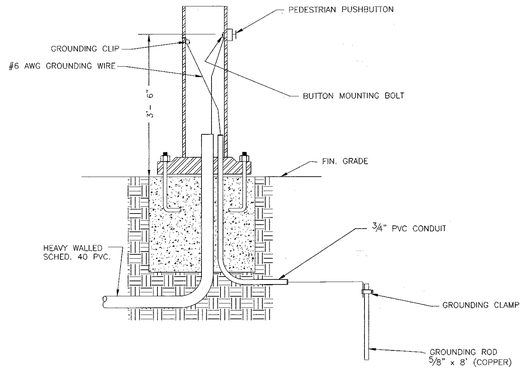
DATE: 11-17-2022
SCALE: N.T.S.
DRAWN BY: MP
CHECKED BY: RT



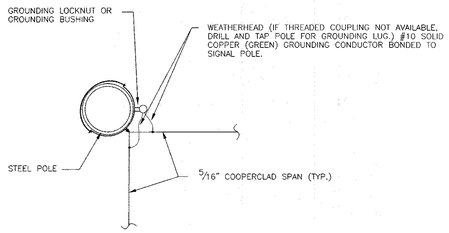
SERVICE

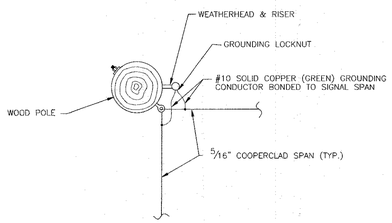


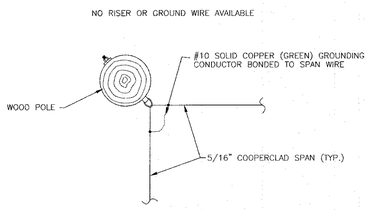
GROUNDING AT STEEL POLE FOUNDATION



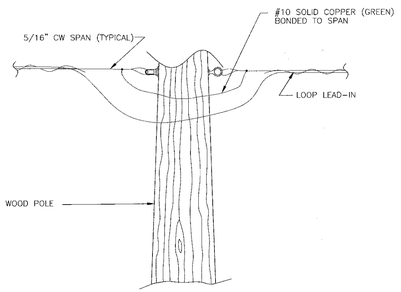
PEDESTRIAN PUSH BUTTON POST

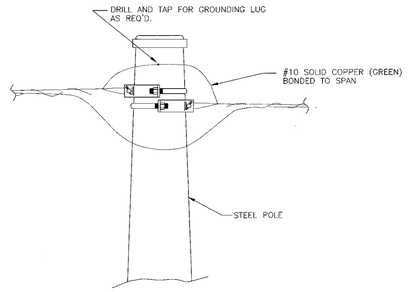


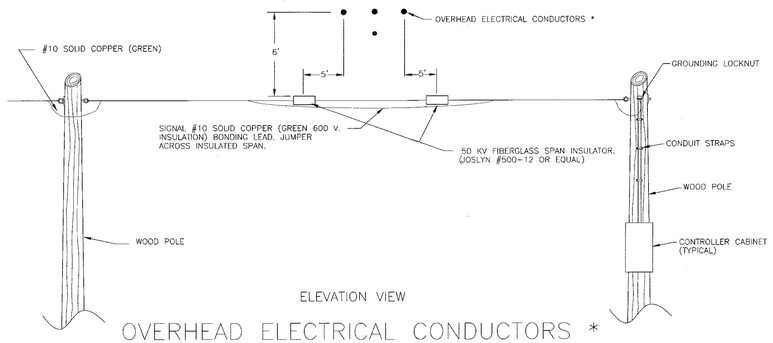




SIGNAL AND OTHER SPANS



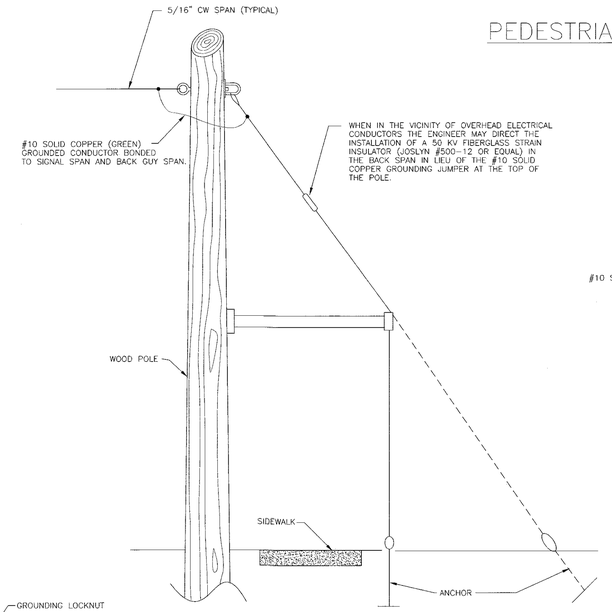




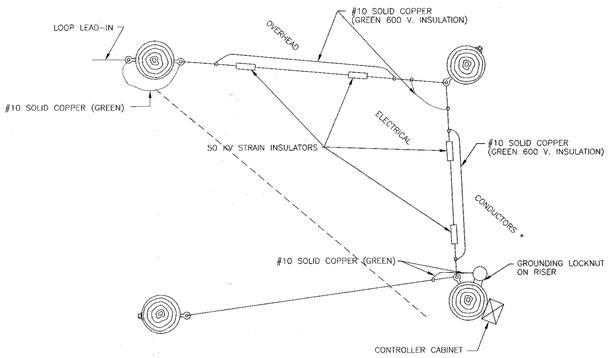
ELEVATION VIEW

OVERHEAD ELECTRICAL CONDUCTORS *

* NOTE: THIS DETAIL DOES NOT APPLY IF VOLTAGE LEVEL ABOVE GROUND POTENTIAL FOR EACH ELECTRICAL CONDUCTOR IS 240 VOLTS OR LESS.



GUY SPAN



PLAN VIEW

OVERHEAD ELECTRICAL CONDUCTORS *

Sheet 7 of 18

REVISIONS				APPROVED	
NO.	DATE	BY	REMARKS	C.T.E.	C.E.

DIVISION OF ENGINEERING

DESIGN STANDARD

For

Grounding and Bonding

APPROVED BY: MEMPHIS, TENN.

CITY TRAFFIC ENGINEER — DATE 11/29/22

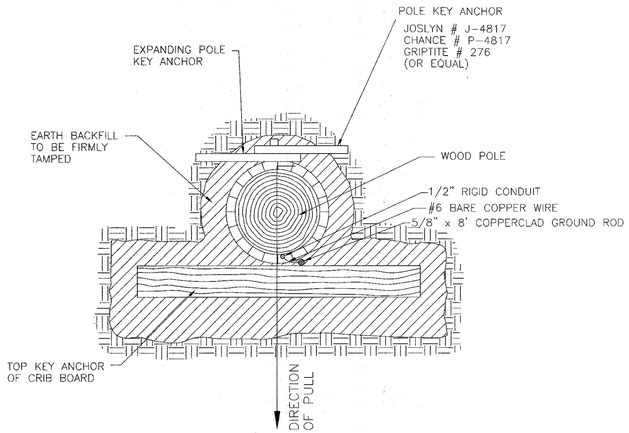
CITY ENGINEER — DATE 11/30/22

DATE: 11-17-2022

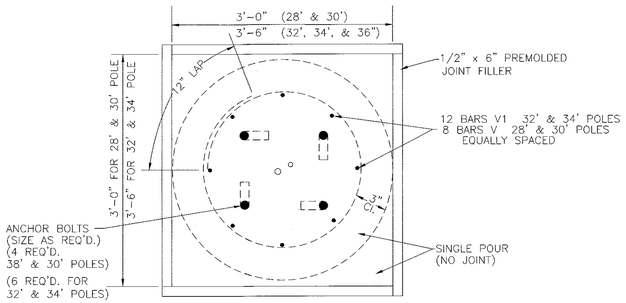
SCALE: N.T.S.

DRAWN BY: MP

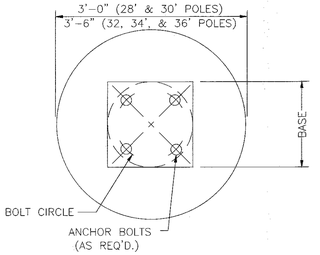
CHECKED BY: RT



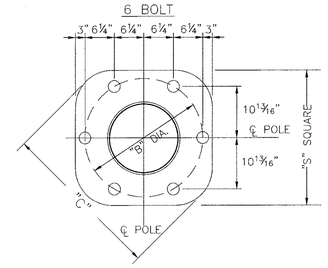
PLAN



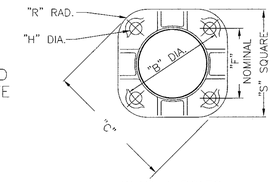
PLAN



PLAN



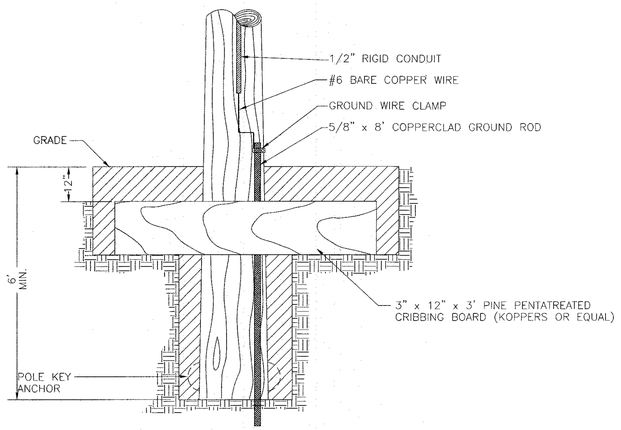
PLAN 6 BOLT



PLAN 4 BOLTS

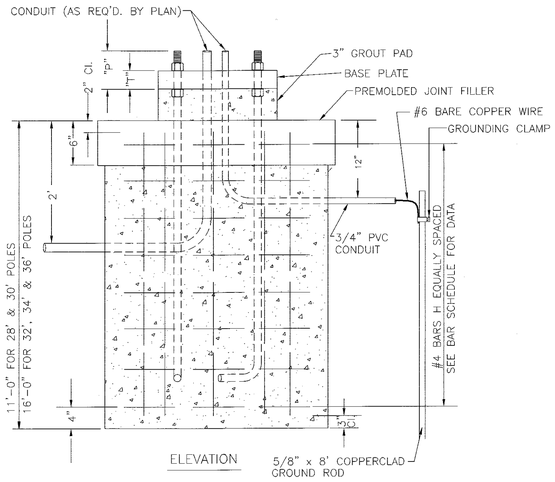
*NOTE: THE ANCHOR BOLTS AND EMBEDMENTS SHALL BE DESIGNED SO AS TO DEVELOP THE ULTIMATE STRENGTH OF THE POLE.

BASE: STEEL POLE



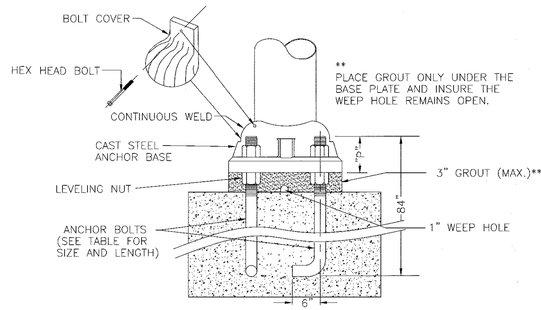
ELEVATION

WOOD POLE



ELEVATION

STEEL POLE FOUNDATION



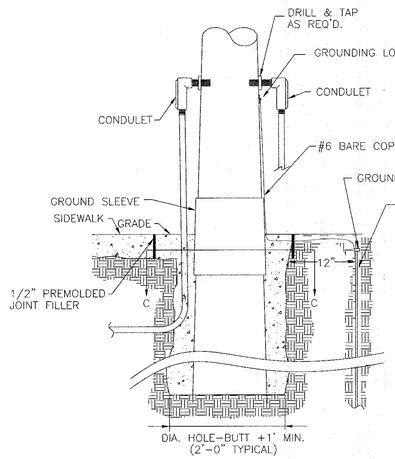
ANCHOR BASE INSTALLATION

ANCHOR BOLT DATA						
POLE HEIGHT	ITEM	NO. REQ'D.	SIZE	LENGTH	WT.(lbs.) EACH	TOTAL WT.(lbs.)
28' & 30'	ANCHOR BOLTS	4	1¾"	90"	61.35	245.4
32', 34', 36'	ANCHOR BOLTS	6	2¼"	90"	101.47	608.8
28' & 30'	NUTS	8	1½"	——	2.04	16.3
32', 34', 36'	NUTS	12	2¼"	——	4.19	50.3

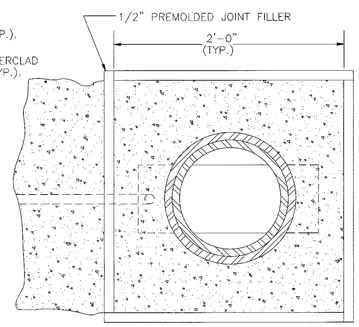
TABLE OF FOOTING DATA

BAR SCHEDULE							
POLE LENGHT	BARS	NO. REQ'D.	SIZE	LENGTH	WT.(lbs) EACH	TOTAL WT.(lbs)	SHAPE
28' & 30'	H	11	4	8'-9"	5.8	64	○
	V	8	8	10'-7"	28.3	226	——
32', 34', & 36'	H1	16	4	10'-4"	6.9	110	○
	V1	12	10	15'-7"	67.1	805	——

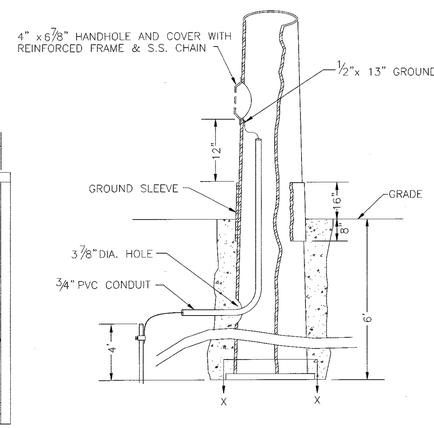
POLE DATA												
POLE LENGTH	GA. NO.	BASE SIZE	B	C	F	H	P	R	S	T	BOLT DIA.	BOLT LENGTH	BENDING MOMENT AT YIELD (FT-LBS)
28' & 30'	0	12"	16"	21"	11 5/16"	2 1/8"	4"	3¾"	17"	1¾"	1¾"	90"	130,000
32' & 34'	0.375"	19"	25"	40¾"	——	2½"	5"	3¾"	31"	2"	2¼"	90"	467,000
36'	0.375"	19"	25"	40¾"	——	2½"	5"	3¾"	31"	2"	2¼"	90"	467,000



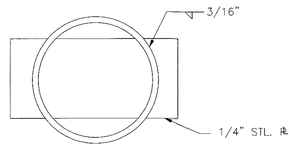
EXISTING EMBEDDED STEEL POLE
(TYPE 2)



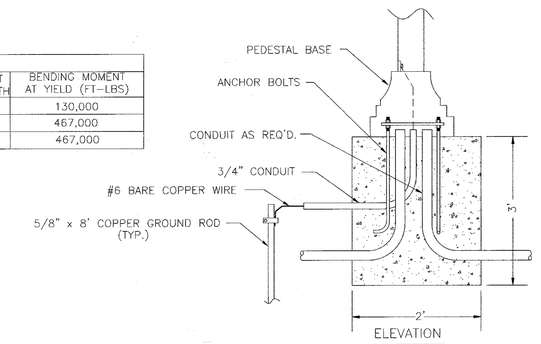
SECTION C-C



NEW EMBEDDED STEEL POLE
(TYPE 1)



SECTION X-X



ELEVATION

PEDESTAL FOUNDATION

MARK E. McGUIRE REGISTERED ENGINEER AGRICULTURE COMMERCE NO. 015201 STATE OF TENNESSEE
11-22-22

REVISIONS				APPROVED	
NO.	DATE	BY	REMARKS	C.T.E.	C.E.

DIVISION OF ENGINEERING

DESIGN STANDARD

Strain Pole

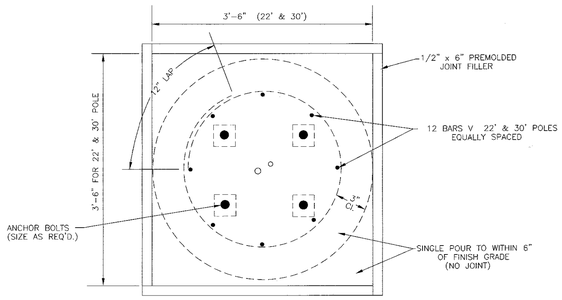
Foundation Details

APPROVED BY: MEMPHIS, TENN.

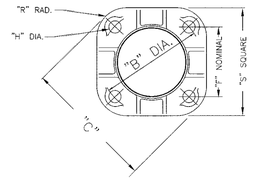
CITY TRAFFIC ENGINEER — DATE 11/29/22

CITY ENGINEER — DATE 11/30/22

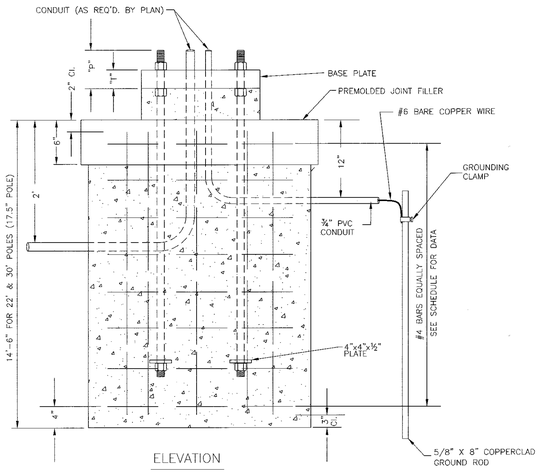
DATE: 11/17/2022
SCALE: N.T.S.
DRAWN BY: MP
CHECKED BY: MM/RT



PLAN



PLAN
BASE: STEEL POLE



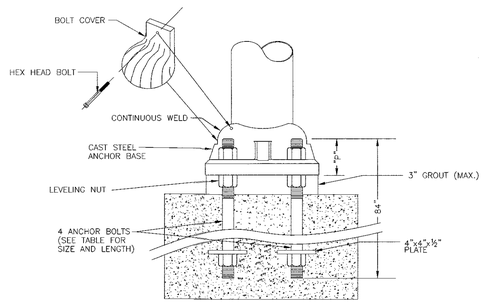
ELEVATION

STEEL POLE FOUNDATION

BAR SCHEDULE

POLE HEIGHT	BARS	NO. REQ'D.	SIZE	LENGTH	WT.(lbs.) EACH	TOTAL WT.(lbs.)	SHAPE	POLE BASE
22',30'	H	15	4	10'-6"	7.0#	105	○	17.5"
22',30'	V	12	10	14'-1"	60.6#	727	—	17.5"

NOTE: FOUNDATION DETAILS ARE APPLICABLE TO CITY STANDARD TRAFFIC SIGNAL POLES.
IF NON-STANDARD POLES ARE USED, FOUNDATION DESIGNS ARE REQUIRED.



ANCHOR BASE INSTALLATION

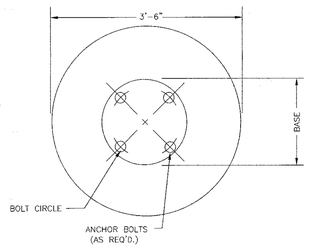
ANCHOR BOLT DATA

POLE HEIGHT	ITEM		NO. REQ'D.	SIZE	LENGTH	WT.(lbs.) EACH	TOTAL WT.(lbs.)
22',30'	ANCHOR BOLTS		4	2"	84"	80.19	320.7
22',30'	NUTS		8	2"	——	2.99	23.9

POLE DATA

POLE LENGTH	GA. NO. (THICK.)	BASE SIZE	B	C	F	H	P	R	S	T	BENDING MOMENT AT YIELD (FT. LBS.)
22',30'	0.250	17.5"	23"	30.5"	16 ¼"	2¼"	4½"	3 ¾"	24"	2"	260,000

*NOTE: THE ANCHOR BOLTS AND EMBEDMENTS SHALL BE DESIGNED SO AS TO DEVELOP THE ULTIMATE STRENGTH OF THE POLE.



Sheet 9 of 18

MARK E. McGUIRE REGISTERED ENGINEER AGRICULTURE COMMISSIONER No. 015201 STATE OF TENNESSEE
11-22-22

REVISIONS				APPROVED	
NO.	DATE	BY	REMARKS	C.T.E.	C.E.

DIVISION OF ENGINEERING

DESIGN STANDARD

Mast-Arm Pole

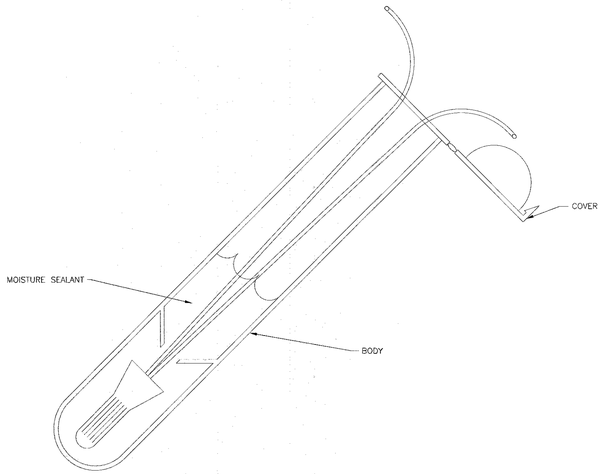
Foundation Details

APPROVED BY: MEMPHIS, TENN.

CITY TRAFFIC ENGINEER — DATE 11/29/22

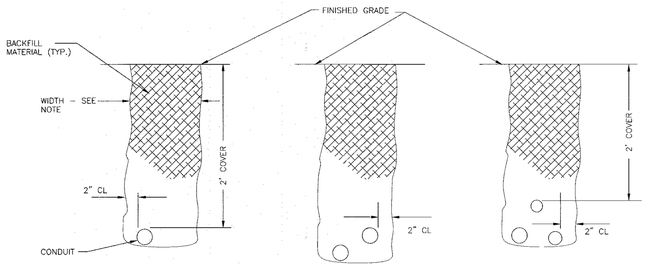
CITY ENGINEER — DATE 11/30/22

DATE: 11/17/2022
SCALE: N.T.S.
DRAWN BY: MP
CHECKED BY: MM/RT



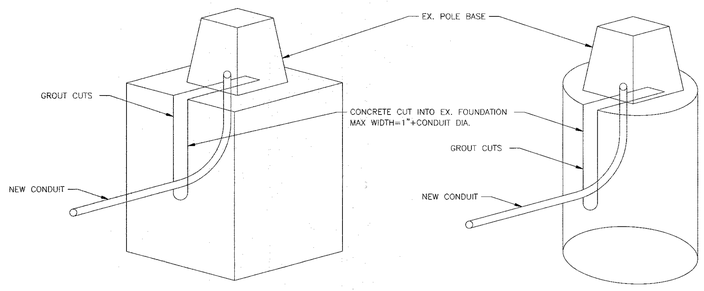
TYPICAL WIRE SPLICE METHOD

3M DBY-6 DIRECT BURIED SERVICE WIRE SPLICE KIT OR EQUIVALENT



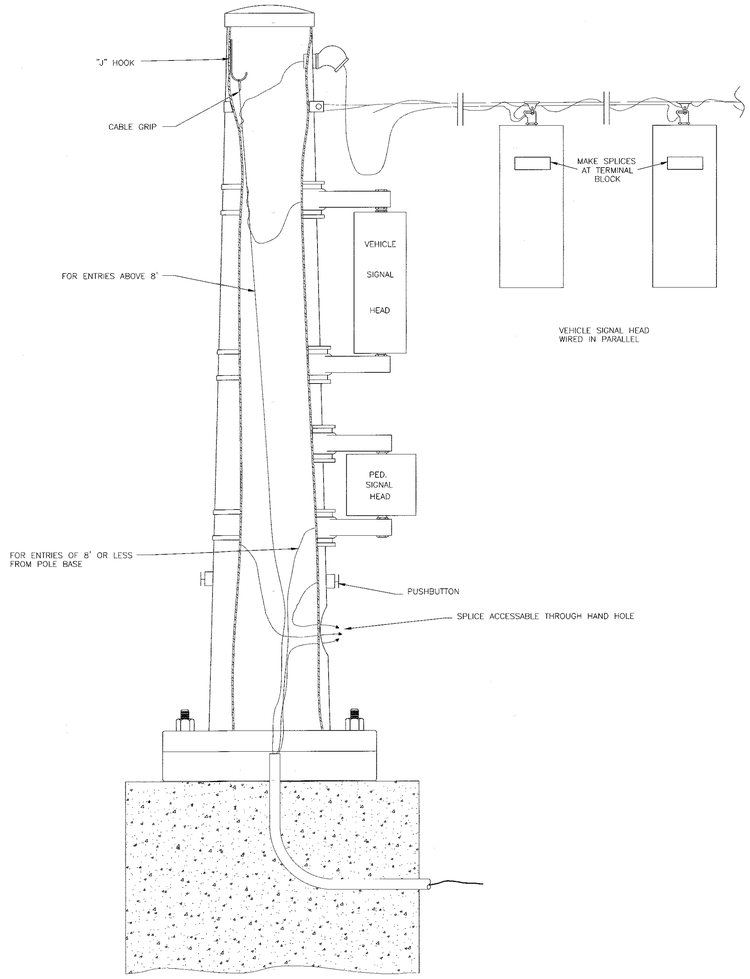
NOTE: MAINTAIN MIN. TRENCH WIDTH REQUIRED TO INSTALL CONDUIT.

CONDUIT PLACEMENT IN TRENCH

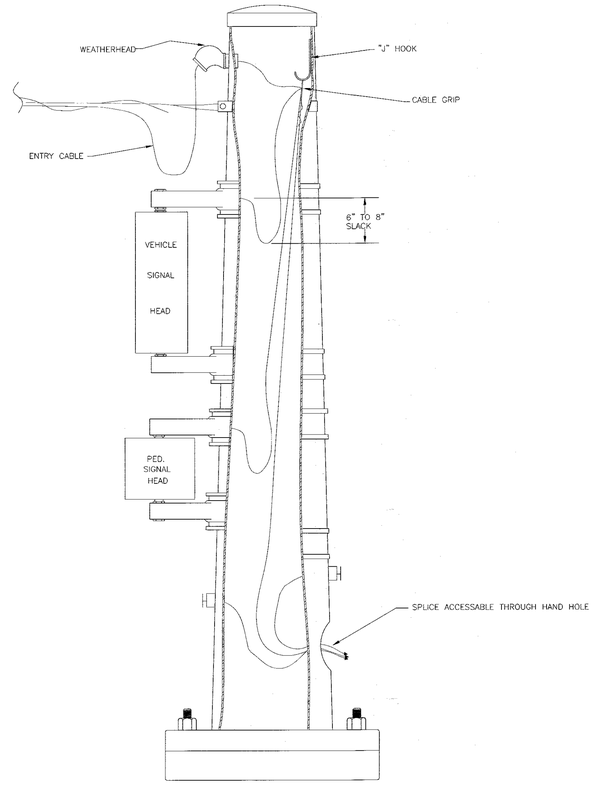


*NOTE: NEW CONDUIT INSTALLATION MUST BE PERFORMED WITHOUT INTERFERING WITH SIGNAL OPERATION

INSTALLATION OF NEW CONDUIT INTO EXISTING PEDESTAL/POLE FOUNDATION



UNDERGROUND ENTRY



WEATHERHEAD ENTRY

(TYPICAL)

REVISIONS				APPROVED	
NO.	DATE	BY	REMARKS	C.T.E.	C.E.

DIVISION OF ENGINEERING

DESIGN STANDARD

Splicing, Cable, and Conduit Details

APPROVED BY: MEMPHIS, TENN.

CITY TRAFFIC ENGINEER — DATE: 11/30/22

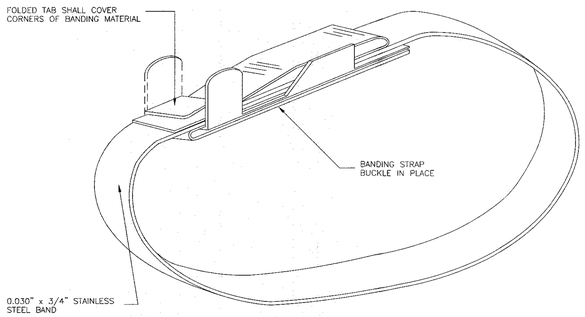
CITY ENGINEER — DATE: 11/30/22

DATE: 11-17-2022

SCALE: N.T.S.

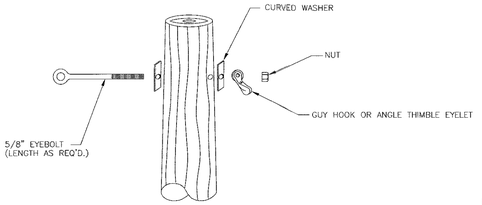
DRAWN BY: MP

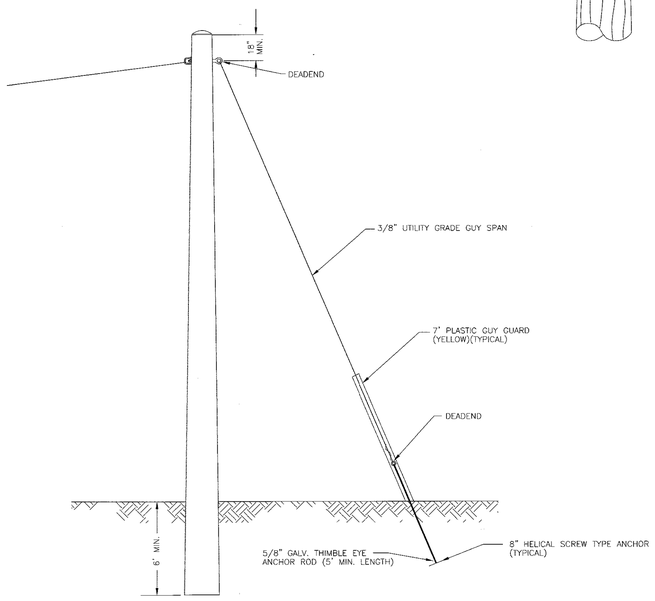
CHECKED BY: RT



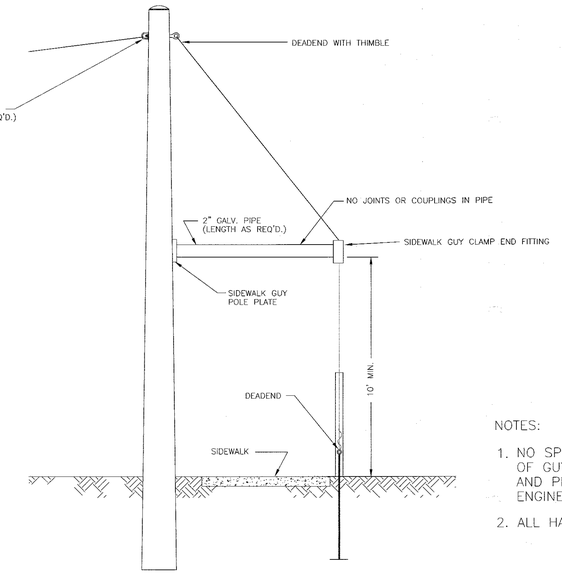
3/4" BANDING DETAIL

USE DOUBLE BANDING
ON ALL WOOD POLES





DOWN GUY

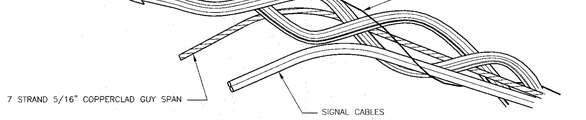


SIDEWALK GUY

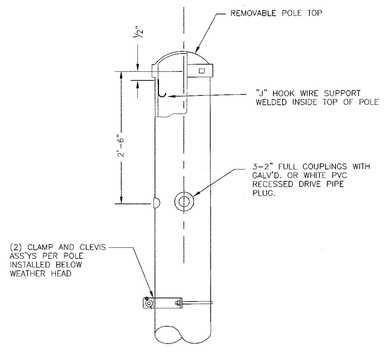
WOOD POLE BACK GUY INSTALLATION

NOTES:

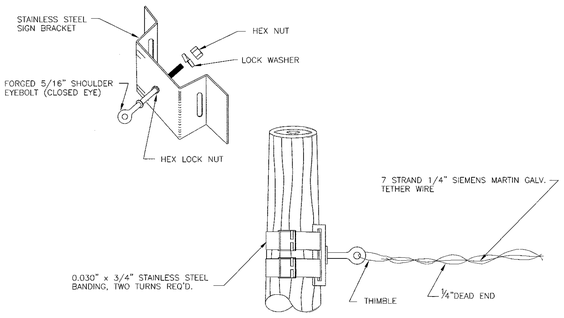
1. NO SPLICES SHALL BE PERMITTED IN ANY SECTION OF GUY SPAN UNLESS AUTHORIZED BY THE ENGINEER AND PERFORMED WITH MATERIALS APPROVED BY THE ENGINEER.
2. ALL HARDWARE IS HOT DIPPED GALV.



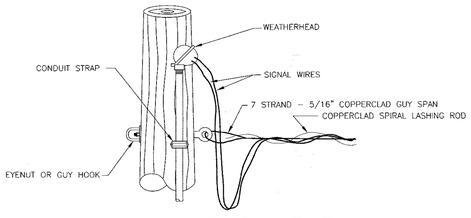
DEAD END
(TYPICAL)



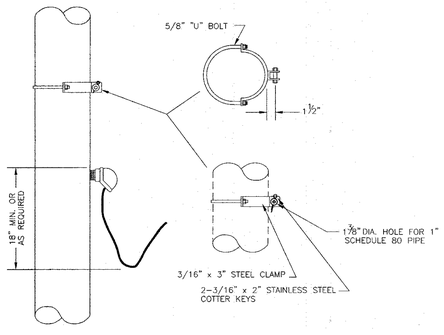
STEEL POLE TOP



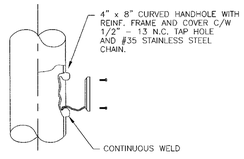
STAINLESS STEEL BANDING
FOR TETHER WIRE ATTACHMENT
WOOD POLE



GUY SPAN ATTACHMENT
WOOD POLE



STEEL CLAMP ATTACHMENT
STEEL POLE



HANDHOLE

Sheet 11 of 18

REVISIONS				APPROVED	
NO.	DATE	BY	REMARKS	C.T.E.	C.E.

DIVISION OF ENGINEERING

DESIGN STANDARD

Pole Appurtenances

APPROVED BY: MEMPHIS, TENN.

CITY TRAFFIC ENGINEER — DATE 11/29/22

CITY ENGINEER — DATE 11/30/22

DATE: 11-17-2022
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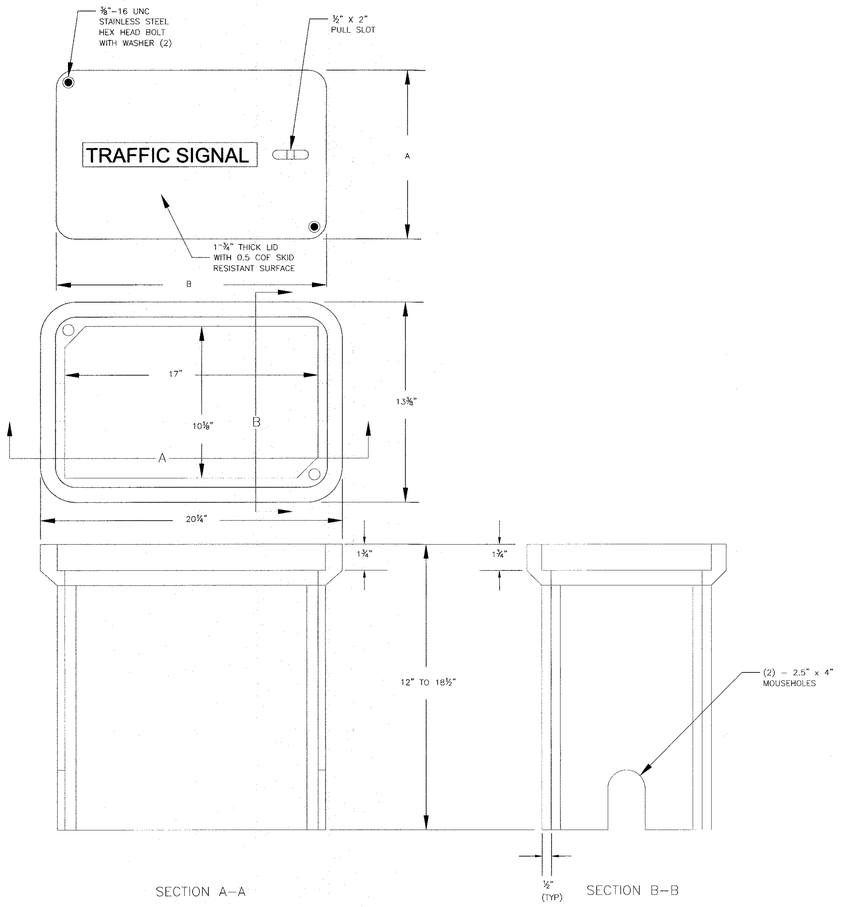
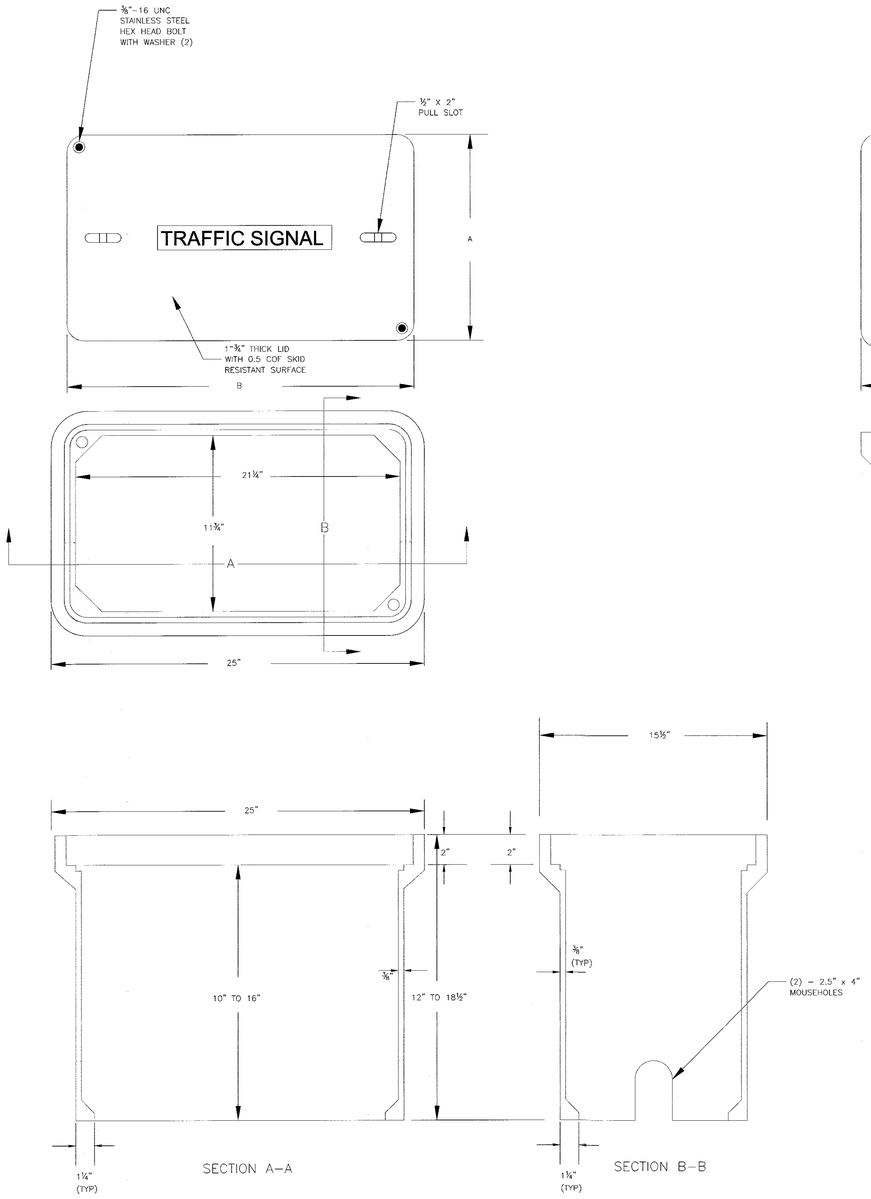
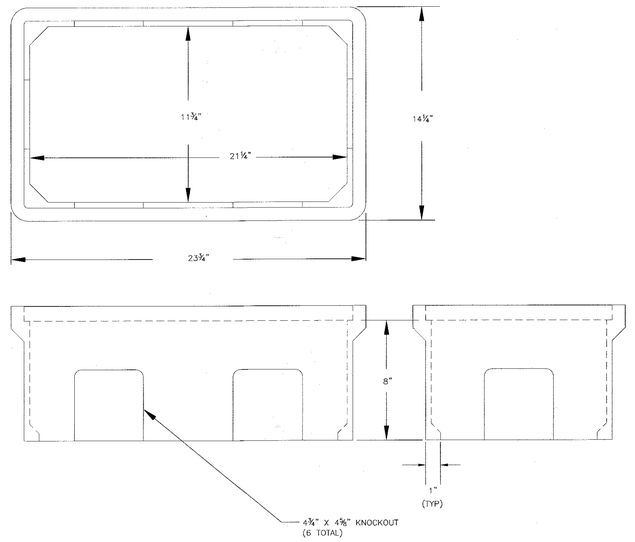


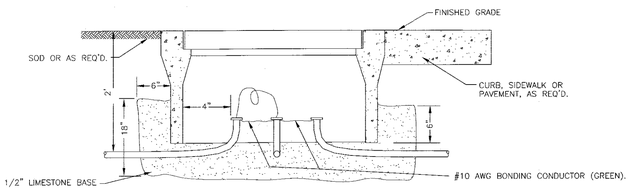
TYPE B PULLBOX



TYPE A PULLBOX



TYPE B BOTTOM EXTENSION



PULLBOX INSTALLATION

(TYPICAL)

11" x 18" & 13" x 24" STACKABLE PULLBOX ASSEMBLY

TYPE	A	B
TYPE A	13¾"	23¼"
TYPE B	11¼"	18⅛"

Sheet 12 of 18

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DIVISION OF ENGINEERING

DESIGN STANDARD

Traffic Signal Pull Boxes Details

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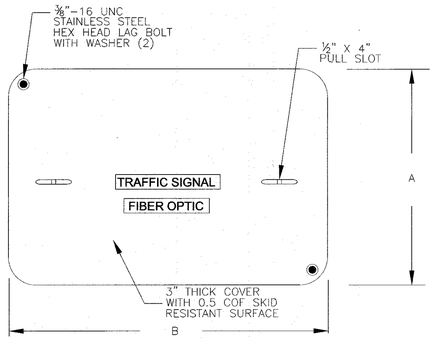
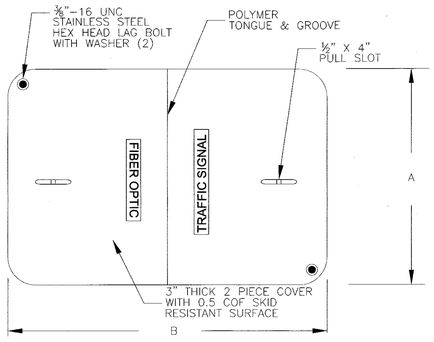
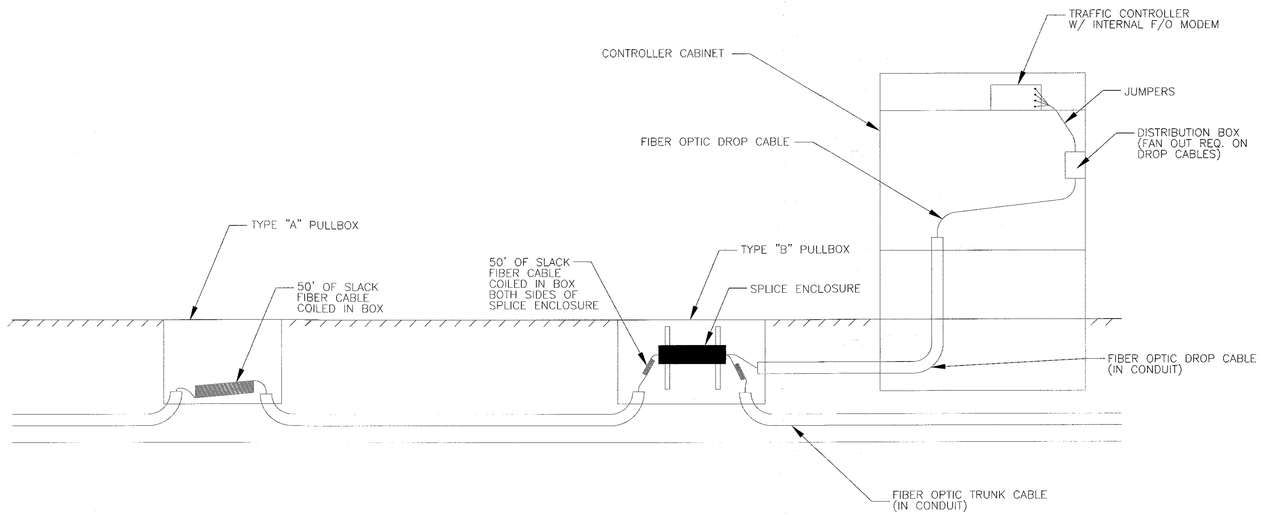
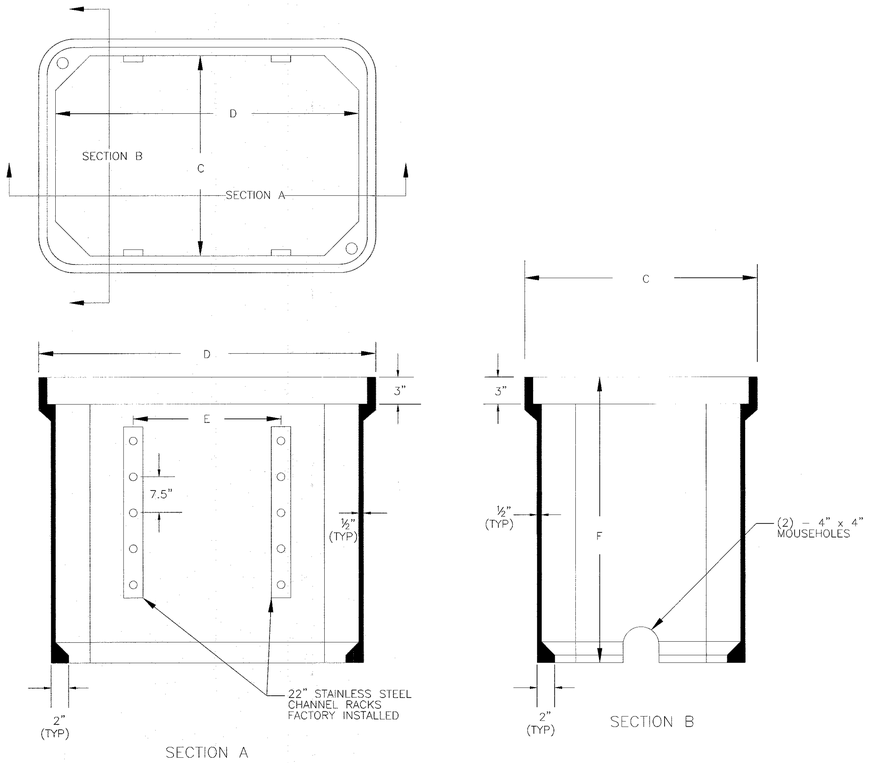


TYPE A
PULLBOX LID



TYPE B
PULLBOX LID





FIBER OPTIC PULLBOX
(STACKABLE) ASSEMBLY

NOTES:

1. NOTCHES SHALL BE PROVIDED FOR REMOVING THE COVER.
2. TYPE "A" BOXES ARE TO BE USED WHEN NO SPLICING IS REQUIRED.
3. TYPE "B" BOXES ARE TO BE USED WHEN SPLICING IS REQUIRED WITHIN THE PULLBOX OR FOR FUTURE USE AT A TRAFFIC SIGNAL.
4. IF NEEDED, STACKABLE BOTTOM EXTENDERS MAY BE USED. SIZE AND MATERIAL TO MATCH PROPOSED PULLBOX TYPE AND CITY SPECIFICATIONS.
5. REFER TO CONTROLLER CABINET AND RISER INSTALLATION DETAILS, SHEET 1, FOR POLE MOUNTED CABINET ENTRY. USE 90 DEGREE SWEEP PIPES FOR FIBER CABLE.

24" x 36" PG STYLE (STACKABLE) ASSEMBLY

TYPE	A	B	C	D	E	F
TYPE A	24"	36"	22"	34"	16"	24"
TYPE B	30"	48"	28"	46"	25"	36"

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DIVISION OF ENGINEERING

DESIGN STANDARD

Fiber Optic Pull Box Details

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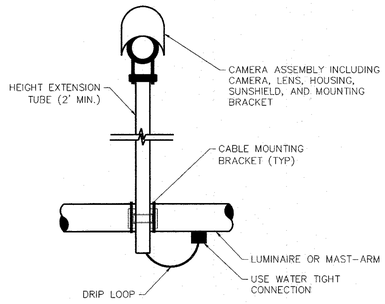
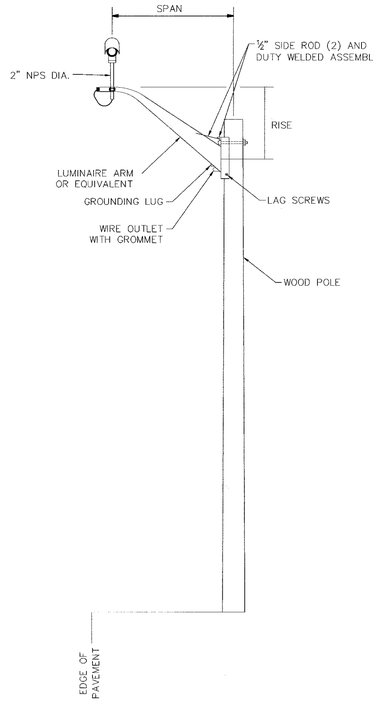
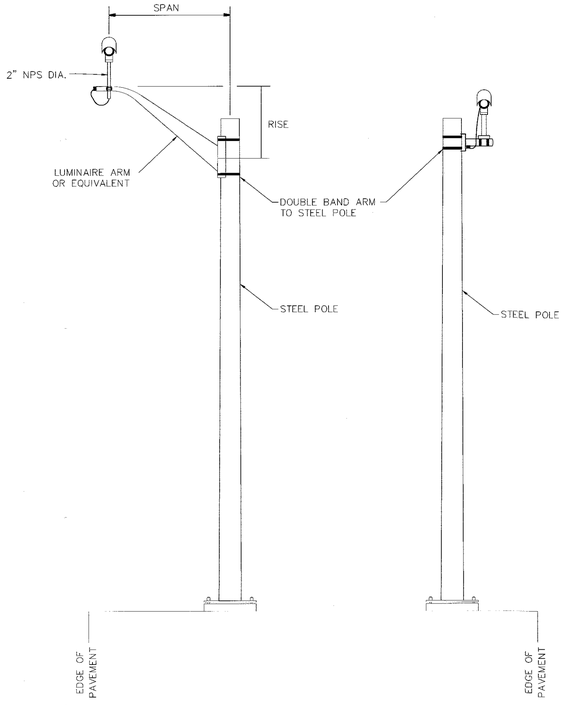
LUMINAIRE DIMENSIONS

SIZE	SPAN	RISE
12' STANDARD	138"	46"
12' HEAVY DUTY	138"	46"
14' HEAVY DUTY	162"	46"
16' HEAVY DUTY	192"	46"



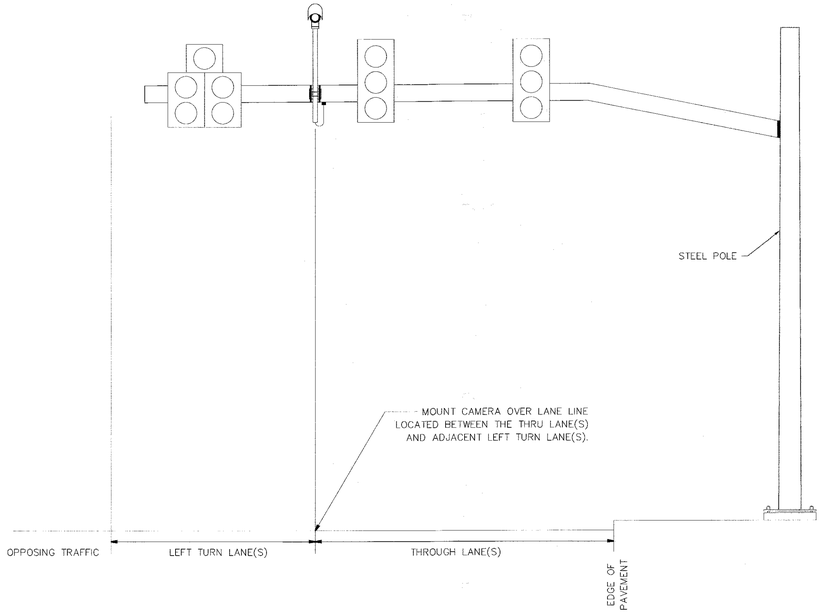


TYPE 1 MOUNT



TYPE 2 MOUNT

TYPE 3 MOUNT



TYPE 4 MOUNT

VIDEO DETECTION CAMERA MOUNTING NOTES:

1. WHEN AIMING CAMERA, HORIZON SHALL NOT BE VISIBLE IN THE FIELD OF VIEW.
2. CAMERA ENCLOSURE ASSEMBLY SHALL BE ROTATABLE AFTER INSTALLATION TO PROVIDE PROPER ALIGNMENT.
3. VIDEO CABLE SHALL BE APPROVED BY CITY OF MEMPHIS BEFORE INSTALLATION.
4. SUNSHIELD SHALL BE EXTENDED TO THE MAXIMUM EXTENT WITHOUT BEING IN THE CAMERA FIELD OF VIEW.
5. COMBINATION VIDEO/RADAR DETECTORS CAN ONLY BE INSTALLED ON MAST-ARMS AND SHALL BE MOUNTED PER MANUFACTURER'S RECOMMENDATIONS.

VIDEO DETECTION CAMERA MOUNTING DETAILS

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DIVISION OF ENGINEERING

DESIGN STANDARD

Camera Mounting Details

APPROVED BY: MEMPHIS, TENN.

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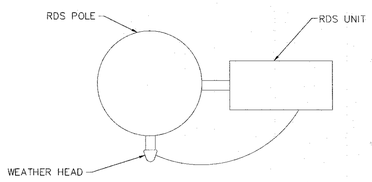
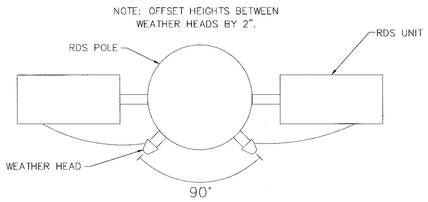
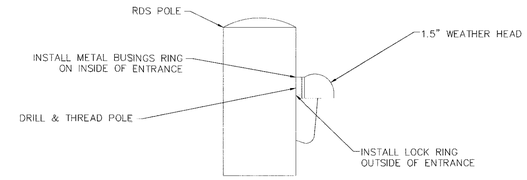


CASE 1: SINGLE RDS UNIT ON POLE



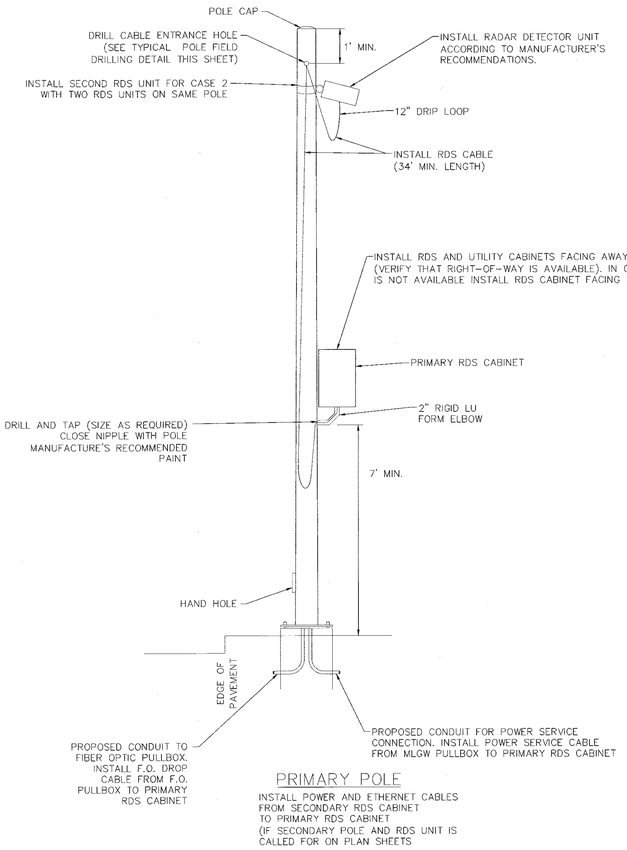
CASE 2: TWO RDS UNITS ON POLE

WEATHER HEAD LOCATION DETAIL (PLAN VIEW)



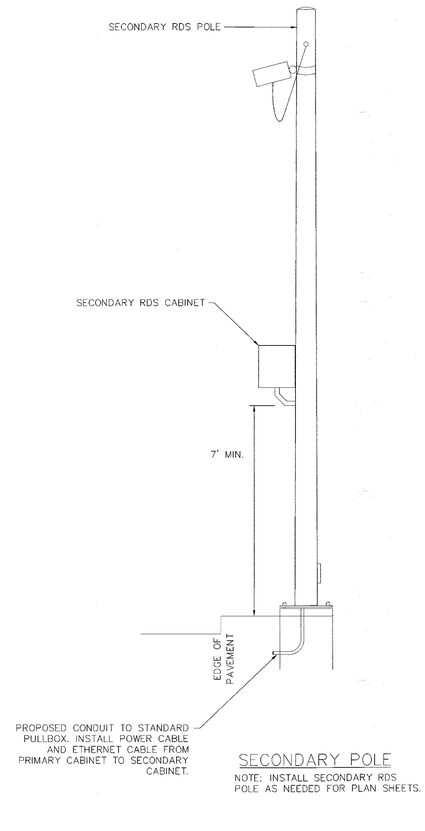
NOTE: SEE WEATHER HEAD LOCATION DETAIL FOR POSITIONING OF WEATHER HEAD(S) RELATIVE TO THE RDS UNITS.

TYPICAL POLE FIELD DRILLING DETAIL



PRIMARY POLE

INSTALL POWER AND ETHERNET CABLES FROM SECONDARY RDS CABINET TO PRIMARY RDS CABINET (IF SECONDARY POLE AND RDS UNIT IS CALLED FOR ON PLAN SHEETS



SECONDARY POLE

NOTE: INSTALL SECONDARY RDS POLE AS NEEDED FOR PLAN SHEETS.

TYPICAL RADAR DETECTION SYSTEM (RDS) ON NEW 20' ALUMINUM PEDESTAL POLE

NOTES

1. REFER TO MANUFACTURER SPECIFICATIONS FOR INSTALLATION AND OPERATION REQUIREMENTS.
2. REFER TO CITY STANDARDS FOR FOUNDATION AND CONDUIT INSTALLATION.
3. COORDINATE WITH MLGW FOR ELECTRIC SERVICE.

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DESIGN STANDARD

RDS Mounting Details

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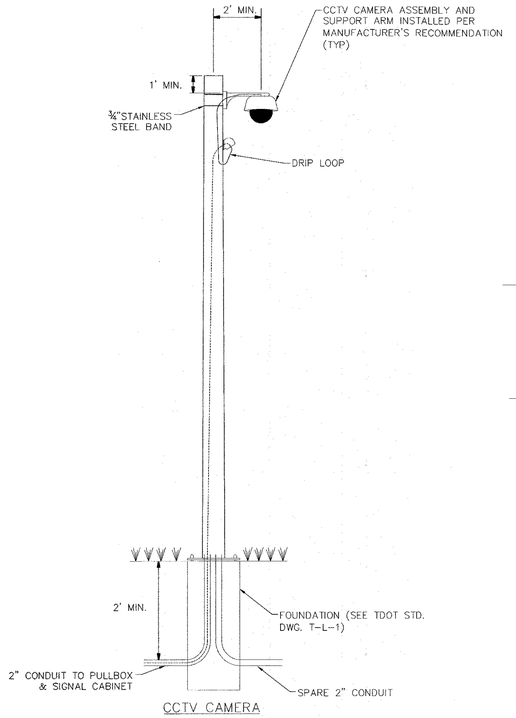
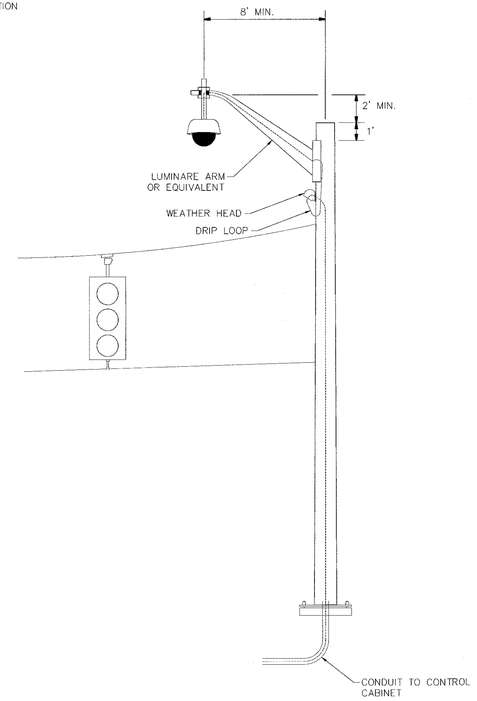
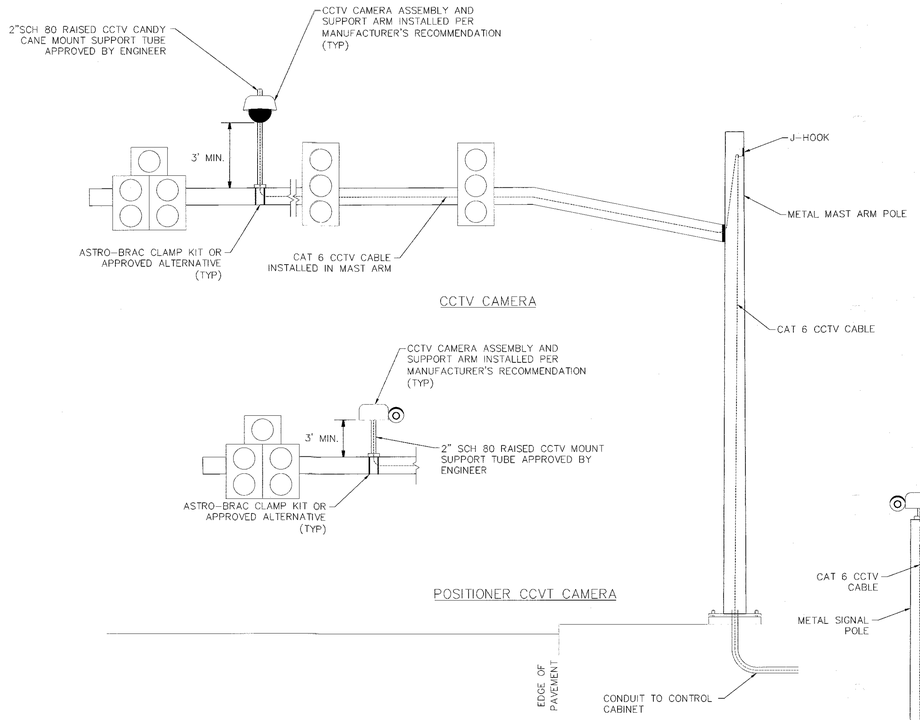


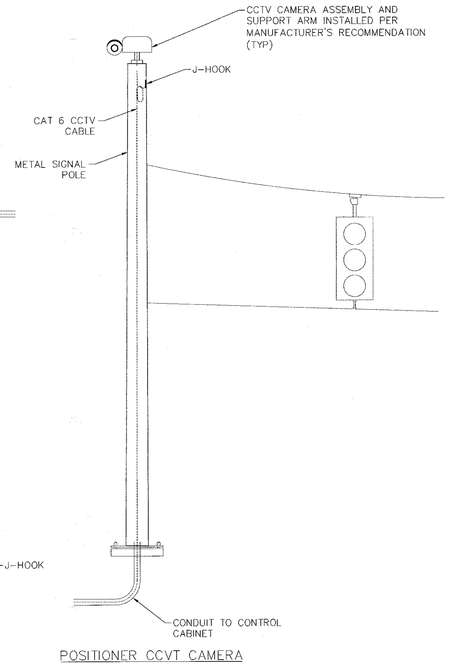
CCTV POLE DETAIL



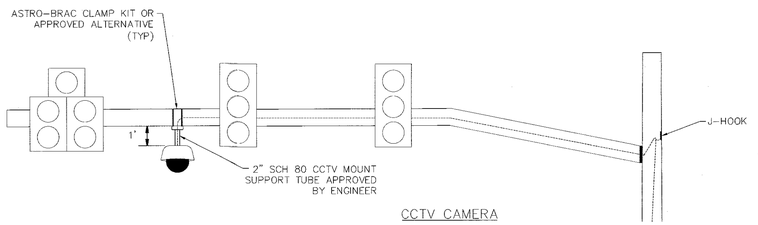
TYPE 1 MOUNT
EXTENSION ARM ON STEEL POLE



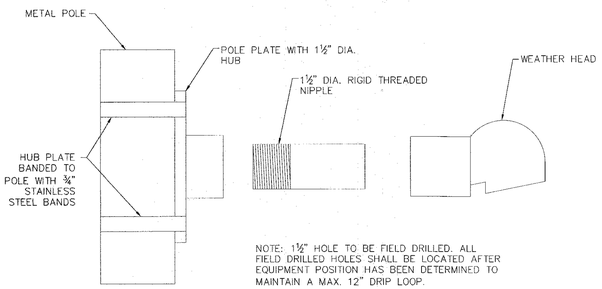
TYPE 3 MOUNT
RAISED MOUNT ON MAST ARM



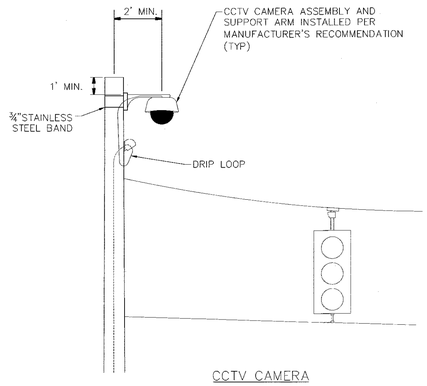
TYPE 5 MOUNT
TOP OF STEEL POLE



TYPE 4 MOUNT
DROP MOUNT ON MAST ARM



TYPICAL POLE FIELD DRILLING



TYPE 2 MOUNT
STANDARD ARM ON STEEL POLE

CCTV CAMERA MOUNTING NOTES:

1. ALL EXTENSION ARMS, MOUNTING BRACKETS, ADAPTERS, RISERS, AND MOUNTING HARDWARE SHALL BE SUPPLIED BY THE CAMERA MANUFACTURER AND SHALL BE APPROPRIATE FOR TRAFFIC SURVEILLANCE APPLICATIONS. ANY THIRD PARTY SUPPLIED MATERIAL OR MOUNTING OPTIONS SHALL BE APPROVED BY THE ENGINEER AND CITY OF MEMPHIS TRAFFIC SIGNAL MAINTENANCE DEPARTMENT.
2. THE POSITION OF THE MOUNTING ARM SHALL PROVIDE THE BEST VISIBILITY FOR ALL APPROACHES.

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DESIGN STANDARD

CCTV Camera Mounting Details

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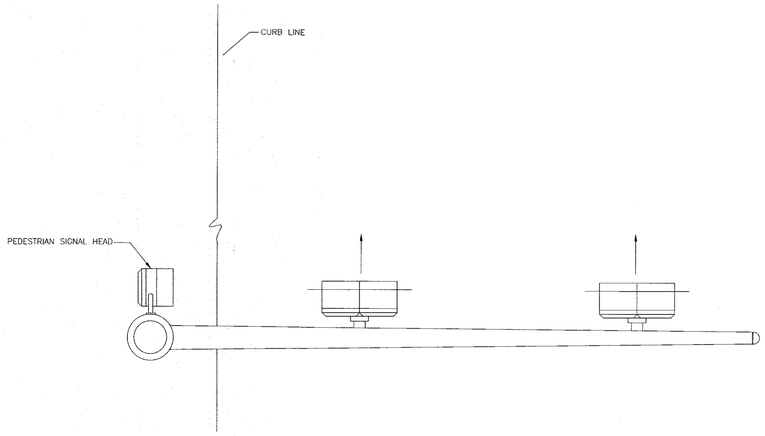
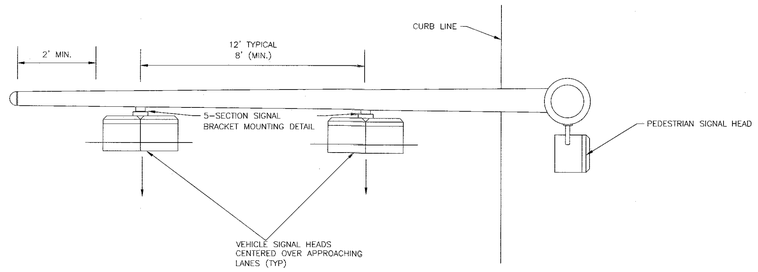
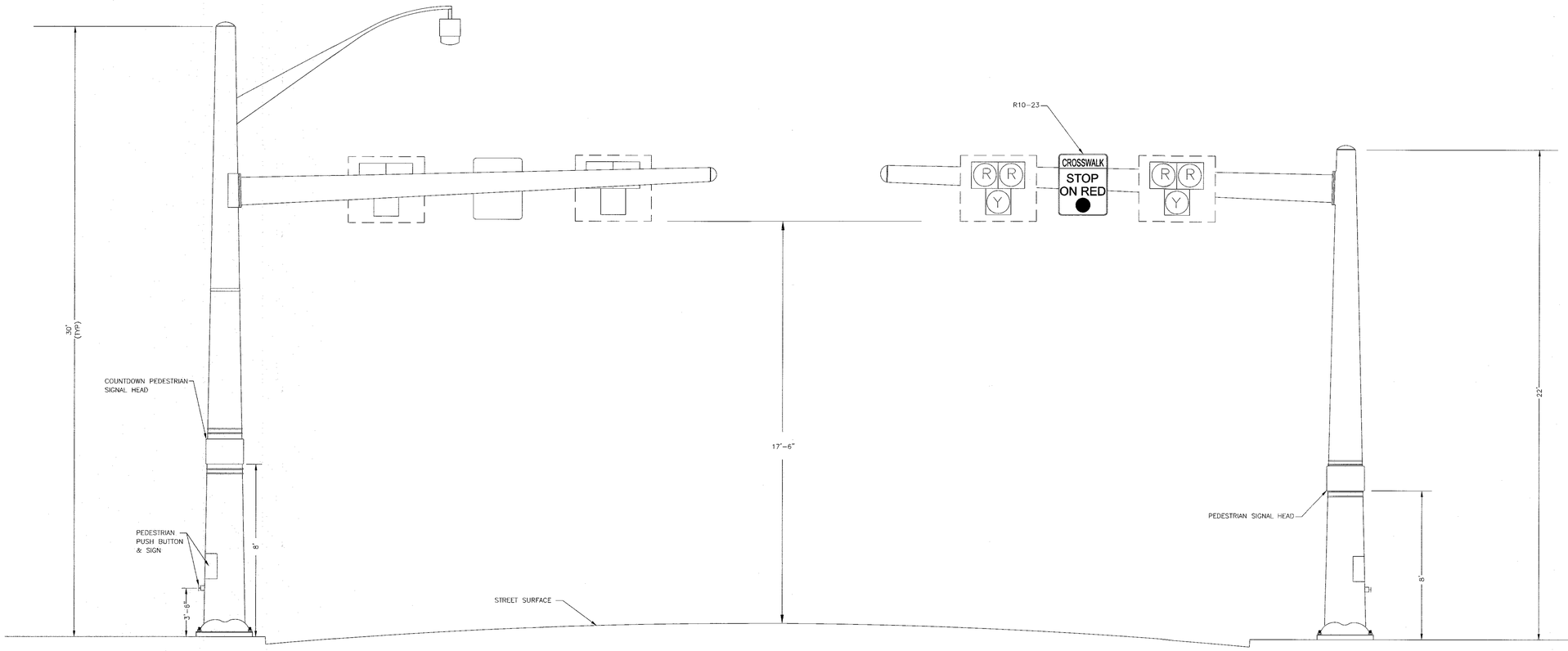
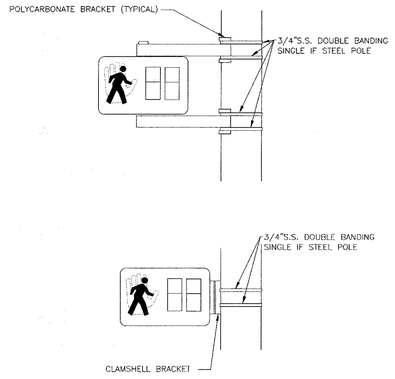




PLAN
NOT TO SCALE





PEDESTRIAN SIGNAL HEAD
(Side of Pole/Pedestal Mount)

ELEVATION
NOT TO SCALE

* MAST ARM SIGNAL HEAD MOUNTING HEIGHTS ABOVE PAVEMENT SURFACE:
TYPICAL: 17'-6"

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Pedestrian Hybrid Beacons (HAWK Signals)

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SCALE: N.T.S.
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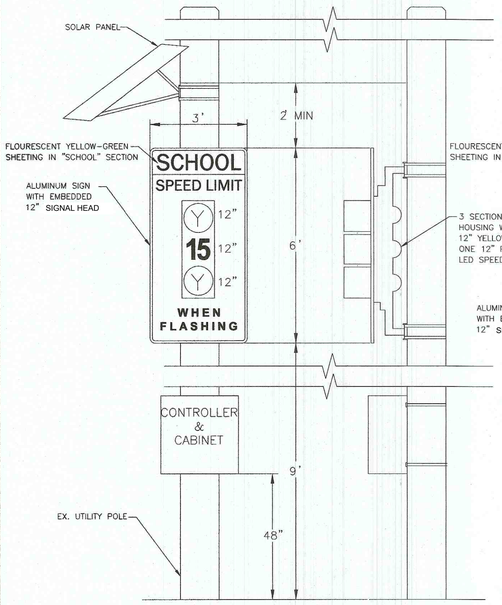
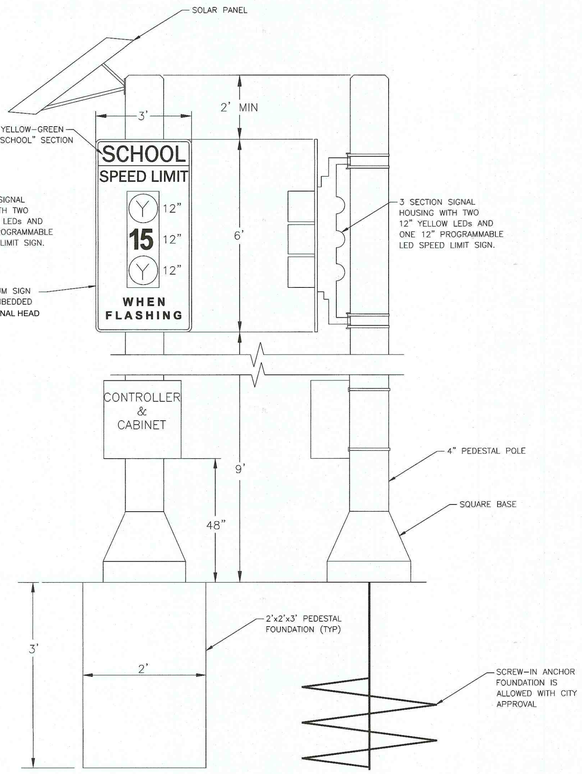
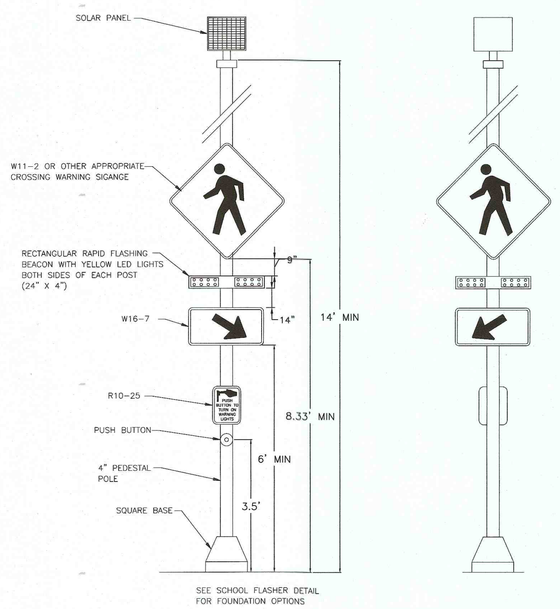


EX. UTILITY POLE MOUNTING

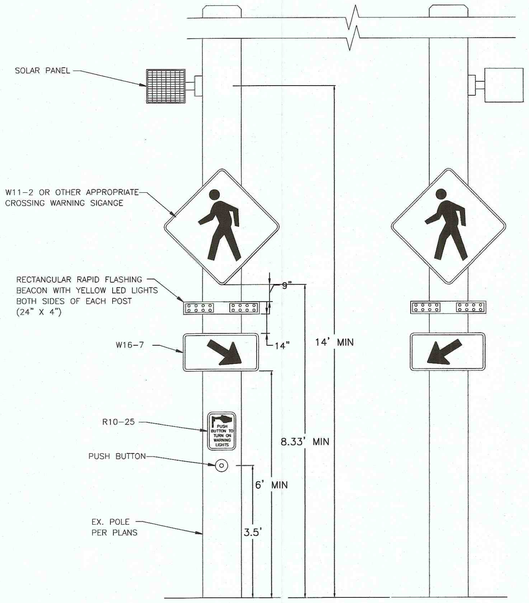


17' PEDESTAL MOUNTING

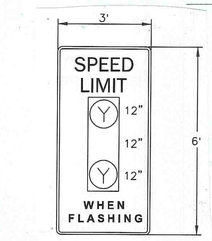


SEE SCHOOL FLASHER DETAIL FOR FOUNDATION OPTIONS

17' PEDESTAL MOUNTING

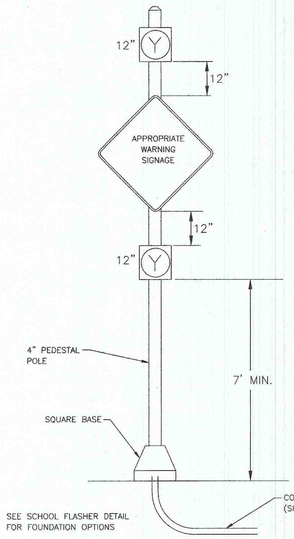


EX. UTILITY POLE MOUNTING

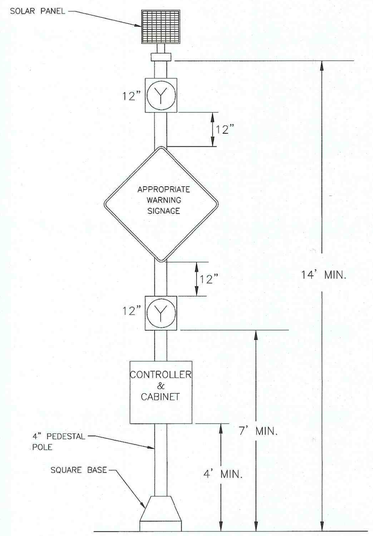


REDUCED SPEED ZONE SIGN

SCHOOL (REDUCED SPEED) FLASHER ASSEMBLY

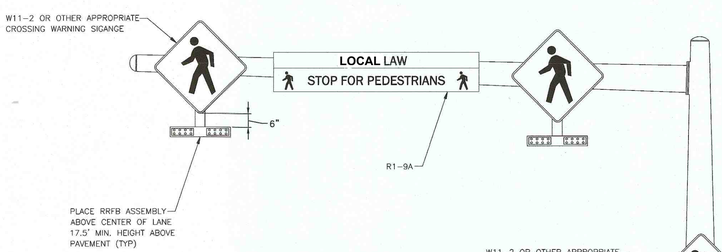


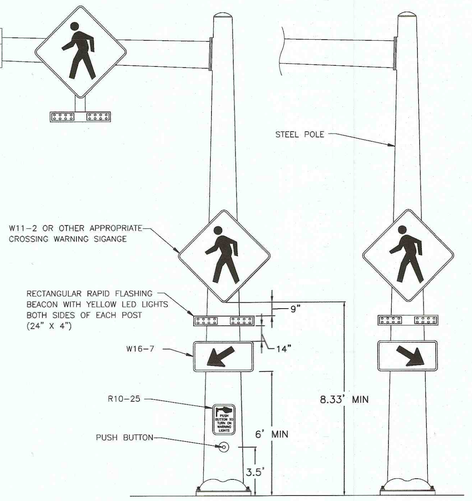
SEE SCHOOL FLASHER DETAIL FOR FOUNDATION OPTIONS



SEE SCHOOL FLASHER DETAIL FOR FOUNDATION OPTIONS

WARNING BEACON





MAST ARM MOUNTING

RRFB TYPE PEDESTRIAN BEACON

REVISIONS				APPROVED	
NO.	DATE	BY	REMARKS	C.T.E.	C.E.

DIVISION OF ENGINEERING

DESIGN STANDARD

RRFBs, Beacons and School Flashers

APPROVED BY: MEMPHIS, TENN.

CITY TRAFFIC ENGINEER — DATE 11/29/22

CITY ENGINEER — DATE 11/30/22

DATE: 11-17-2022
SCALE: N.T.S.
DRAWN BY: MP
CHECKED BY: RT