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TOTAL SHEETS =



PLAN OF PROPOSED IMPROVEMENT INTERSECTION

CTH CB - CTH BB

TRAFFIC SIGNAL PLAN

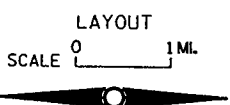
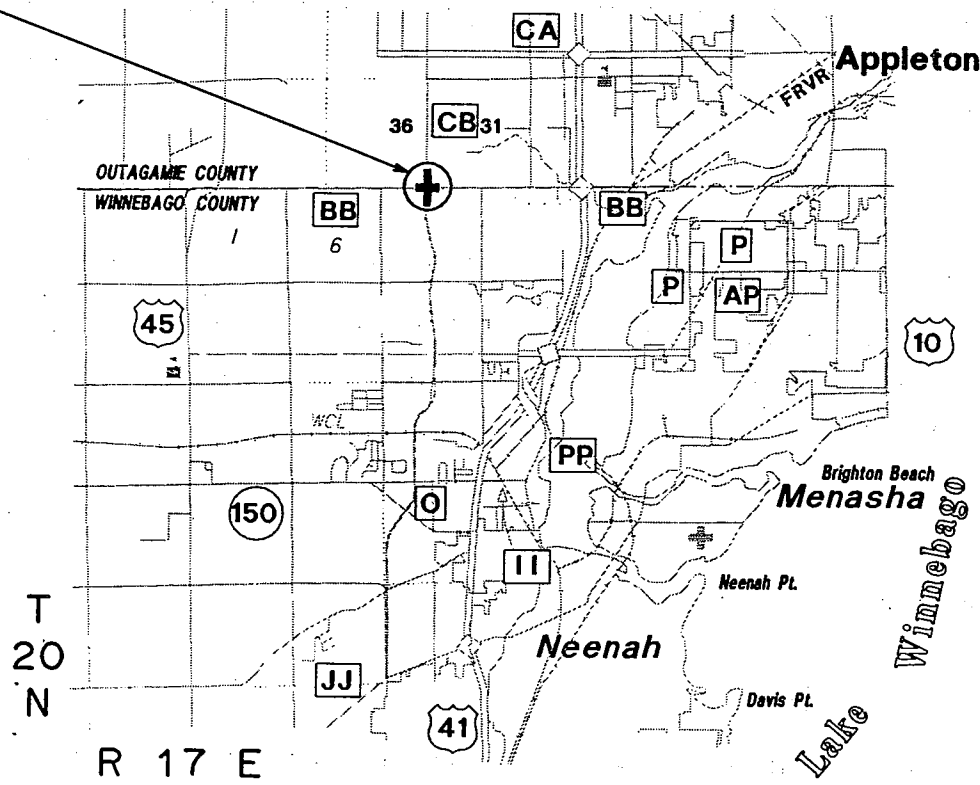
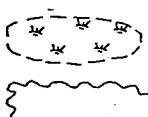
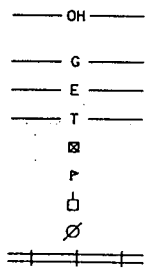
OUTAGAMIE COUNTY / WINNEBAGO COUNTY

PROJECT LOCATION
X = 2,394,075.65
Y = 153,408.24

CTH CB		CTH BB	
DESIGN DESIGNATION		DESIGN DESIGNATION	
A.D.T. (1995)	= 11150	A.D.T. (1995)	= 10100
A.D.T. (2015)	= 16,600	A.D.T. (2015)	= 15,000
D.H.V. (2015)	= 1,566	D.H.V. (2015)	= 2,250
D.	= 55-45%	D.	= 55-45%
T.	= 9.5%	T.	= 9.5%
DESIGN SPEED	= 45 MPH	DESIGN SPEED	= 45 MPH
ESALS	= N/A	ESALS	= N/A

CONVENTIONAL SIGNS

COUNTY LINE		COMBUSTIBLE FLUIDS	
CORPORATE LIMITS		OVERHEAD LINES	
PROPERTY LINE		UNDERGROUND UTILITIES	
LOT LINE		GAS	
LIMITED EASEMENT		ELECTRIC	
EXISTING RIGHT OF WAY		TELEPHONE OR TELEGRAPH	
PROPOSED OR NEW R/W LINE		SERVICE PEDESTAL	
SURVEY LINE		CABLE MARKER	
SLOPE INTERCEPT		POWER POLE	
ORIGINAL GROUND		TELEPHONE POLE	
MARSH OR ROCK PROFILE		RAILROAD	
EXISTING CULVERT		MARSH AREA	
PROPOSED CULVERT (Box or Pipe)		WOODED OR SHRUB AREA	
CULVERT (Profile View)			



TOTAL NET LENGTH OF CENTERLINE = 0.000 MI.

APPROVED FOR
WINNEBAGO COUNTY

3/17/99
DATE

John M. Nien
HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED
BY
MEAD
CONSULTING ENGINEERS
MADISON, WISCONSIN

RUSSELL A. CHESMORE
E-26272
Madison, WI

3/31/99
DATE

Russell A. Chesmore
CONSULTING ENGINEER

STANDARD DETAIL DRAWINGS

SHEET NO.	DESCRIPTION
3	CONDUIT
4	PULL BOX
5	CONCRETE BASES, TYPES 1, 2, AND 5
6	TRANSFORMER/PEDESTAL BASE
7	CONCRETE CONTROL CABINET BASES
8	CABINET SERVICE INSTALLATION
9	CONTROL CABINET
10	POLE MOUNTING FOR TRAFFIC SIGNALS, TYPE 2
11	POLE MOUNTINGS FOR TRAFFIC SIGNALS & LIGHT UNITS, TYPE 3
12	HARDWARE DETAILS FOR POLE MOUNTINGS
13	NON-FREEWAY LIGHTING UNIT POLE WIRING TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.
14	LOOP DETECTOR INSTALLED IN EXISTING ASPHALTIC PAVEMENT

UTILITIES

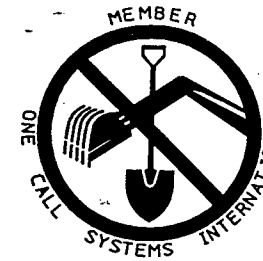
AMERITECH 1 (920) 735-3252	MR. TOM KOTESKI 221 W. WASHINGTON ST., 4th FLOOR APPLETON, WI 54911
WEPCO - ELECTRIC OPERATIONS 1 (920) 380-3554	MR. TOM BORCHART 800 S. LYNNDALE DRIVE P.O. BOX 1699 APPLETON, WI 54913
WEPCO - GAS OPERATIONS 1 (920) 380-3466	MR. DENNIS GIRARD 800 S. LYNNDALE DRIVE P.O. BOX 1699 APPLETON, WI 54913
TOWN OF GREENVILLE SANITARY DISTRICT 1 (920) 585-7608	MR. DON SCHINKE P.O. BOX 60 GREENVILLE, WI 54942
TIME WARNER CABLE 1 (920) 831-9207	MR. STEVE POEHLEIN 1001 KENNEDY AVENUE P.O. BOX 145 KIMBERLY, WI 54136

GENERAL NOTES

NO TREES AND OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

LOCATIONS ARE APPROXIMATE AND MAY BE ADJUSTED BY THE ENGINEER TO RESOLVE POSSIBLE CONFLICTS.



TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

CALL DIGGERS HOTLINE

1-800-242-8511

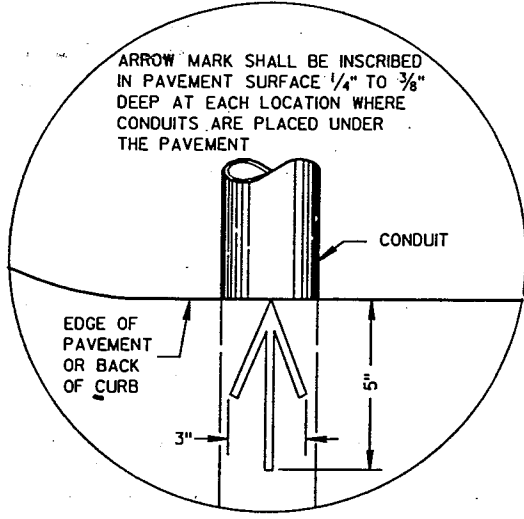
TOLL FREE

FAX A LOCATE 1-800-338-3860

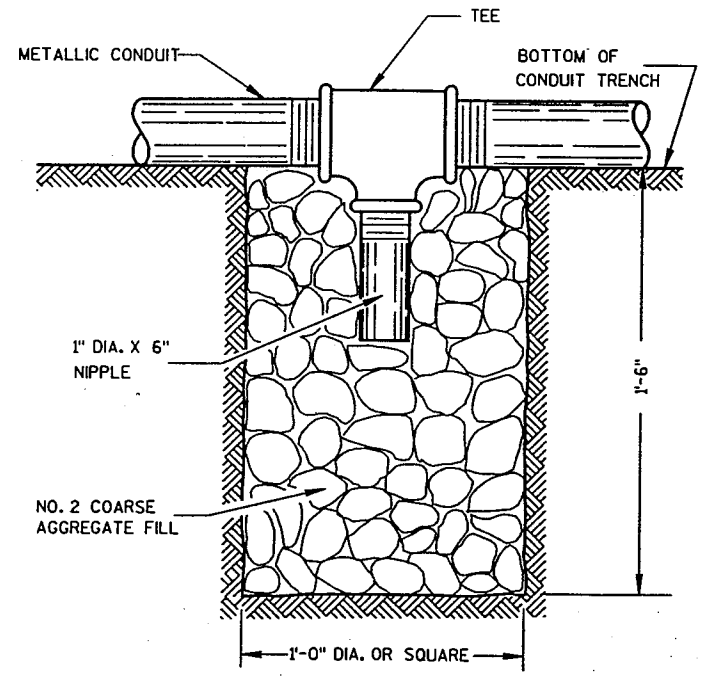
TDD (FOR HEARING IMPAIRED) 1-800-542-2289

WISCONSIN STATUTE 182.0175 (1974)
REQUIRES MINIMUM OF 3 WORK DAYS
NOTICE BEFORE YOU EXCAVATE.

ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
21301	FINISHING ROADWAY	L.S.	1.00	1.00
61910	MOBILIZATION	L.S.	1.00	1.00
64301	TRAFFIC CONTROL	L.S.	1.00	1.00
65219	NONMETALLIC CONDUIT, SCHEDULE 40 2-INCH	L.F.	1118.00	1118.00
65221	NONMETALLIC CONDUIT, SCHEDULE 40 3-INCH	L.F.	261.00	261.00
65235	CONDUIT, 2-INCH, SPECIAL	L.F.	60.00	60.00
65237	CONDUIT, 3-INCH, SPECIAL	L.F.	218.00	218.00
65250	LOOP DETECTOR CONDUIT, 1-INCH	L.F.	508.00	508.00
65255	LOOP DETECTOR SLOTS	L.F.	446.00	446.00
65303	PULL BOXES, STEEL, 18x24-INCH	EACH	4.00	4.00
65306	PULL BOXES, STEEL 24x36-INCH	EACH	8.00	8.00
65401	CONCRETE BASES, TYPE 1	EACH	4.00	4.00
65402	CONCRETE BASES, TYPE 2	EACH	4.00	4.00
65415	CONCRETE CONTROL CABINET BASE, TYPE 6	EACH	1.00	1.00
65425	PEDESTAL BASES	EACH	4.00	4.00
65430	TRANSFORMER BASES, STANDARD, 11-1/2 INCH BOLT CIRCLE	EACH	4.00	4.00
65525	TRAFFIC SIGNAL CABLE, 5 CONDUCTOR, NO. 14	L.F.	292.00	292.00
65529	TRAFFIC SIGNAL CABLE, 9 CONDUCTOR, NO. 14	L.F.	208.00	208.00
65531	TRAFFIC SIGNAL CABLE, 12 CONDUCTOR, NO. 14	L.F.	175.00	175.00
65533	TRAFFIC SIGNAL CABLE, 15 CONDUCTOR, NO. 14	L.F.	238.00	238.00
65545	TYPE UF CABLE, 2 CONDUCTOR, NO. 12, GROUNDED	L.F.	296.00	296.00
65557	ELECTRICAL WIRE, TRAFFIC SIGNALS, NO. 10	L.F.	1703.00	1703.00
65566	ELECTRICAL WIRE, LIGHTING, NO. 12	L.F.	180.00	180.00
65580	LOOP DETECTOR LEAD-IN-CABLE	L.F.	2072.00	2072.00
65585	LOOP DETECTOR WIRE	L.F.	1404.00	1404.00
65615	ELECTRICAL SERVICE, METER BREAKER PEDESTAL, CTH CB & CTH BB	L.S.	1.00	1.00
65702	POLES, TYPE 2	EACH	2.00	2.00
65703	POLES, TYPE 3	EACH	2.00	2.00
65732	TRAFFIC SIGNAL STANDARDS, ALUMINUM, 13-FOOT	EACH	4.00	4.00
65803	TROMBONE ARMS, 20-FEET	EACH	4.00	4.00
65826	TRAFFIC SIGNAL FACES, 3-12 INCH VERTICAL	EACH	8.00	8.00
65829	TRAFFIC SIGNAL FACES, 3-12 INCH HORIZONTAL	EACH	4.00	4.00
65836	BACKPLATES, 3 SECTION, 12-INCH SIGNAL FACES	EACH	8.00	8.00
65850	TRAFFIC SIGNAL MOUNTING HARDWARE, CTH CB & CTH BB	L.S.	1.00	1.00
65905	LUMINAIRES, UTILITY, 250 WATTS	EACH	2.00	2.00
65926	LUMINAIRE ARMS, SINGLE MEMBER, 4 1/2-INCH CLAMP, 6-FOOT	EACH	2.00	2.00
90858	TRAFFIC SIGNAL CONTROLLER, FULLY ACTUATED, 4 PHASE	EACH	1.00	1.00

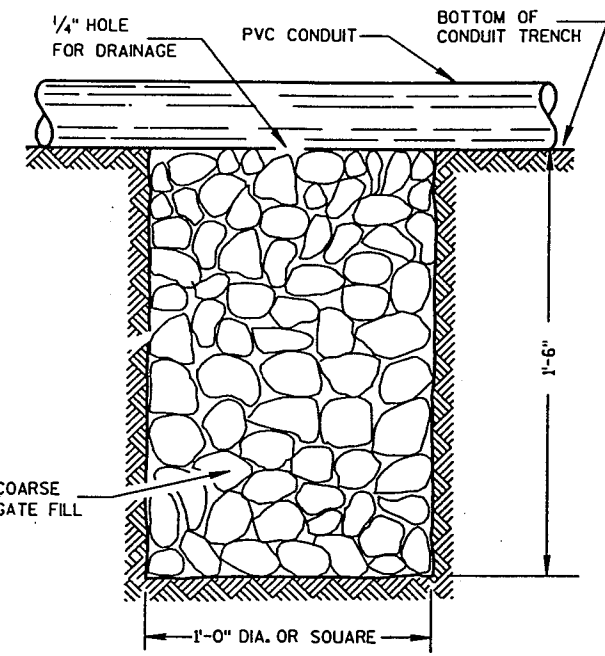


PLAN VIEW
ARROW MARK



NOTE: INSTALL AT LOCATIONS WHERE METALLIC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR METALLIC CONDUIT

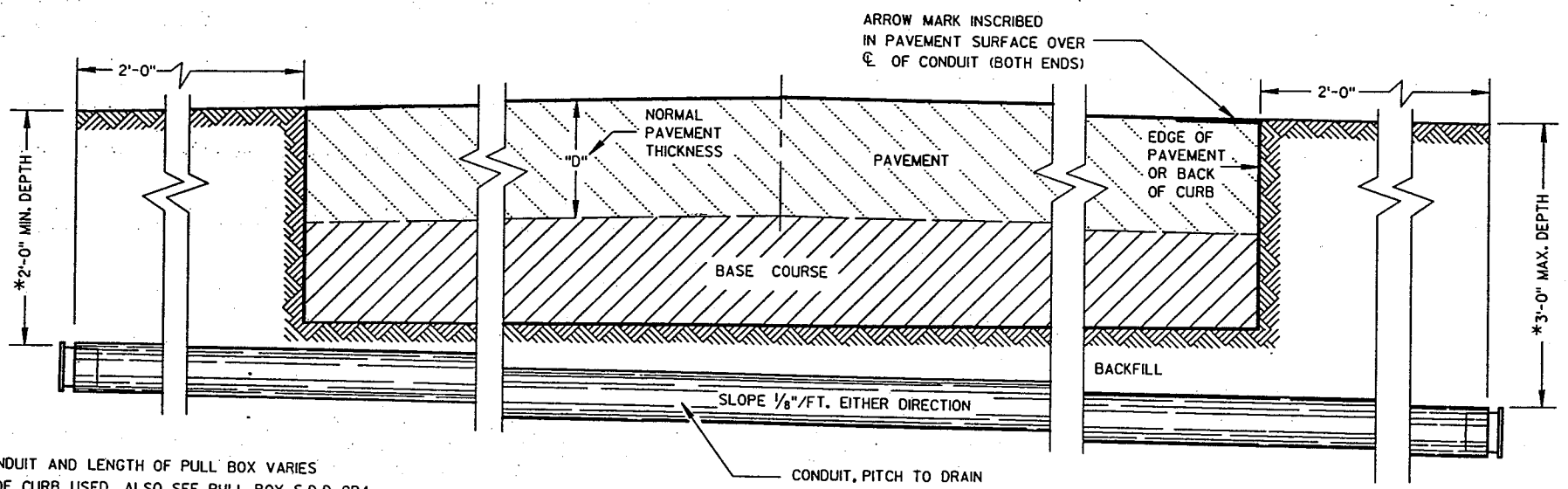


NOTE: INSTALL AT LOCATIONS WHERE PVC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- METALLIC (STANDARD SPECIFICATION 652.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 652.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.
- DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.
- DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.
- ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.
- THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.
- ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.
- ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.
- ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.
- ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SHALL REMAIN CAPPED OR PLUGGED UNTIL WIRE/CABLES ARE INSTALLED.
- NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.
- BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.
- ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)
- WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.
- PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.
- ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.
- CONDUIT RUNS SHALL BE THE SAME SIZE OF CONDUIT FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX-OR-BASE TO BASE, ETC.).
- POLY ROPE OR A PULL WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.
- ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS UNLESS OTHERWISE APPROVED BY THE PROJECT ENGINEER.



SIDE ELEVATION
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

*DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 984

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

DIMENSION IN INCHES	TYPE OF PIPE	CORRUGATED STEEL									POLYETHYLENE SDR 32.5
		A	12	12	12	18	18	18	24	24	24
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24	12
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48	24
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.4
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4	10 1/4
FRAME	E	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	26 1/2	26 1/2	26 1/2	14 1/2
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	8 1/2
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 1/2	23 1/2	23 1/2	11 1/2
WEIGHT IN POUNDS *											
FRAME AND COVER		60	60	60	110	110	110	155	155	155	60

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

POLYETHYLENE PULL BOXES SHALL NOT BE INSTALLED IN CONCRETE OR ASPHALTIC PAVEMENT. PULL BOXES LOCATED IN THE ROADWAY SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE. THE MECHANICAL CONNECTION (INSIDE AND OUTSIDE) TO THE PULL BOX, SHALL BE TOTALLY AND PERMANENTLY SEALED WITH A SILICONE OR RUBBERIZED CAULKING COMPOUND AS APPROVED BY THE ENGINEER.

GROUNDING LUGS ARE NOT REQUIRED IN PULL BOXES WHEN VOLTAGES OF LESS THAN 50 VOLTS AC ARE THE ONLY VOLTAGES ENCOUNTERED IN THE BOXES.

DRAIN DUCT SHALL BE MEASURED AND PAID FOR SEPARATELY.

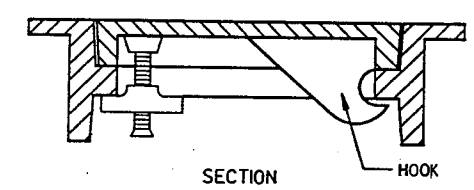
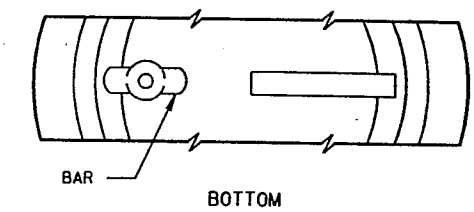
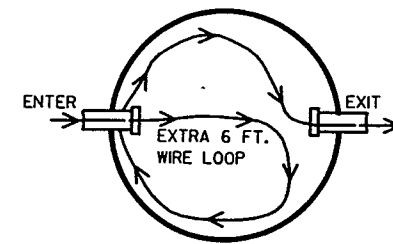
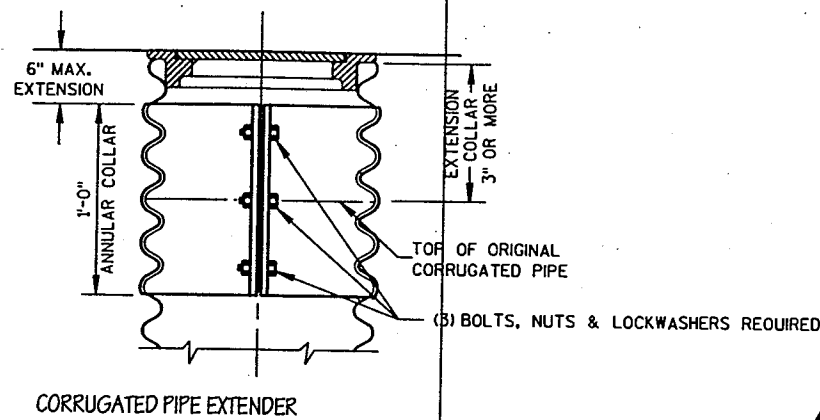
RODENT WIRE SCREEN SHALL BE 1/8" STAINLESS STEEL MESH AND BE INSTALLED WITH A STAINLESS STEEL HOSE CLAMP OF SUFFICIENT SIZE.

ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

S.D.D. 982, "CONDUIT", APPLIES TO THIS DRAWING.

WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

IF PULL BOX EQUIPMENT GROUNDING IS REQUIRED USING AN EQUIPMENT GROUNDING ELECTRODE IN EACH PULL BOX, THE EQUIPMENT GROUNDING ELECTRODE SHALL BE 3/4" X 8'-0", COPPERCLAD AND BE EXOTHERMICALLY WELDED TO A #4 AWG, COPPER, STRANDED WIRE (BARE OR GREEN INSULATED). THE #4 AWG WIRE SHALL BE 4 FEET IN LENGTH, NEATLY COILED, TAPED AND AVAILABLE FOR USE WHEN REQUIRED.



HEAVY DUTY FRAME AND COVER

HALF SECTION CORRUGATED STEEL PIPE

HALF SECTION POLYETHYLENE PIPE (NON PAVEMENT AREAS ONLY)

WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE

4 FOOT COIL, #4 AWG EQUIPMENT GROUNDING CONDUCTOR

ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED

CUT OPENINGS AS REQUIRED IN THE FIELD

ALL CONDUIT PITCHED TO DRAIN TO PULL BOXES

4 TO 8 BRICKS EQUALLY SPACED

2" DRAIN DUCT TO DITCH OR SEWER WHEN SPECIFIED

NO. 2 COARSE AGGREGATE (SEE SUBSECTION 501.3.6.4.5 OF THE STANDARD SPECIFICATIONS)

EQUIPMENT GROUNDING ELECTRODE WHEN REQUIRED

INSTALL END BELLS (U.L. LISTED FOR ELECTRICAL USE) ON ALL NONMETALLIC CONDUIT BEFORE INSTALLATION OF WIRE AND/OR CABLE.

PULL BOX

EQUIPMENT GROUNDING WIRE FROM NEAREST CAST BASE

COPPER SOLDERLESS LUG U.L. LISTED TO ACCEPT AWG. SIZE #10 TO #4 COPPER STRANDED WIRE

STAINLESS STEEL HARDWARE - BOLT, NUT AND LOCKWASHER (1/4" X 3/4" X 20 TPI)

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

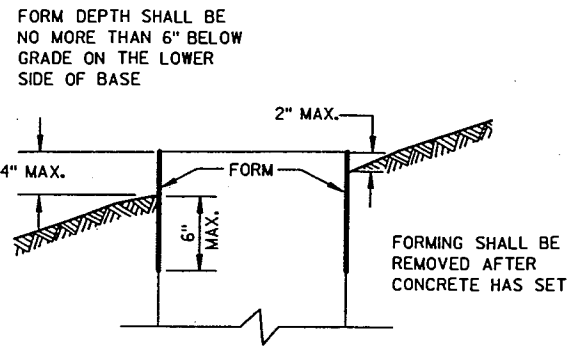
THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5
APPROX. CUBIC YARDS OF CONCRETE	0.40	0.57	0.40
LBS. OF HOOP BAR STEEL	NONE	23	16
LBS. OF VERTICAL BAR STEEL	NONE	60	18



GENERAL NOTES (CONTINUED)

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 2 AND TYPE 5 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE OF THE TYPE 2 AND TYPE 5 BASES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD, ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 AND 641.2.2 OF THE STANDARD SPECIFICATIONS, ASTM A-449, OR ASTM A-687 (GRADE 105).

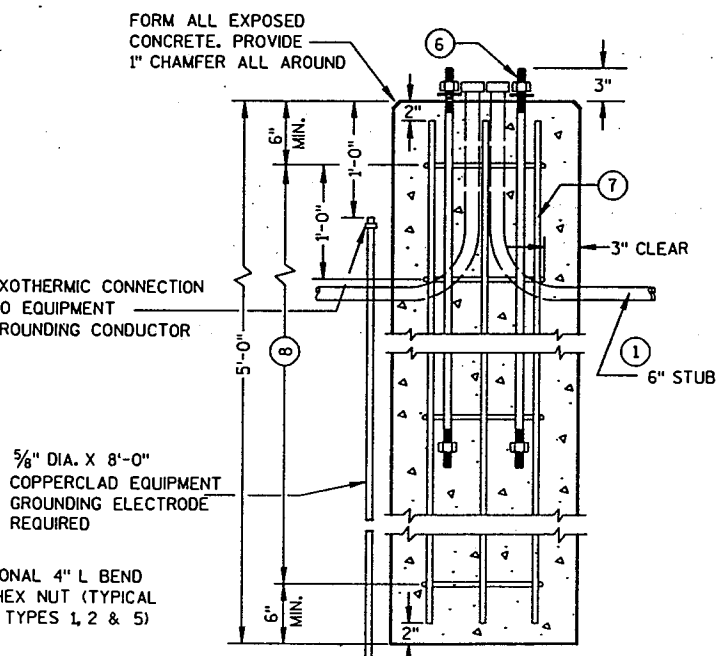
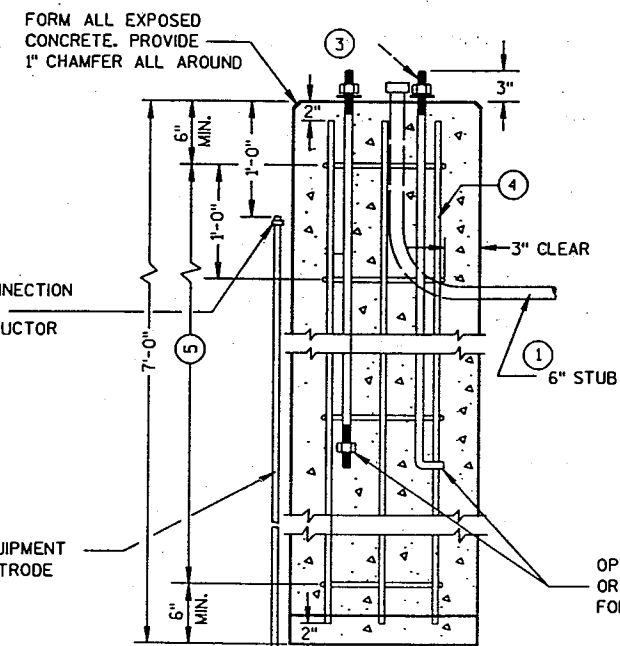
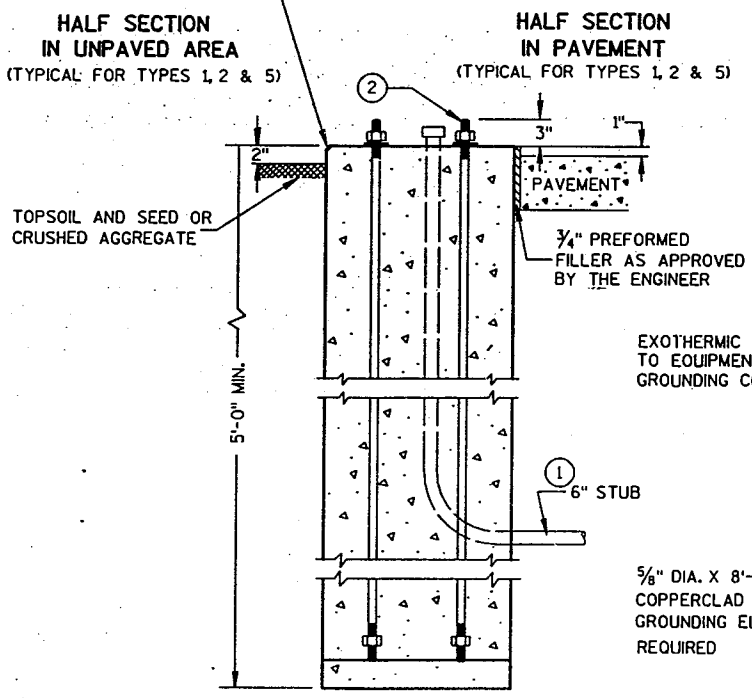
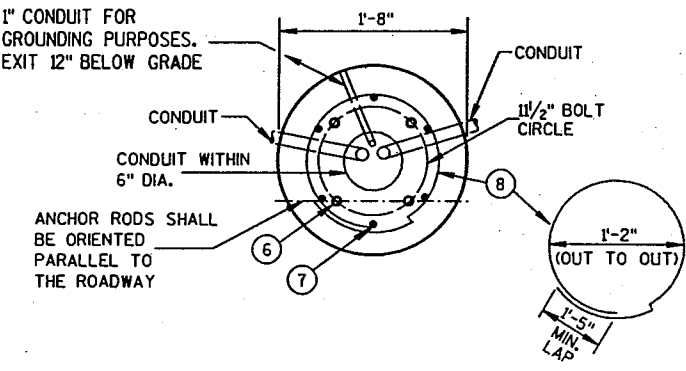
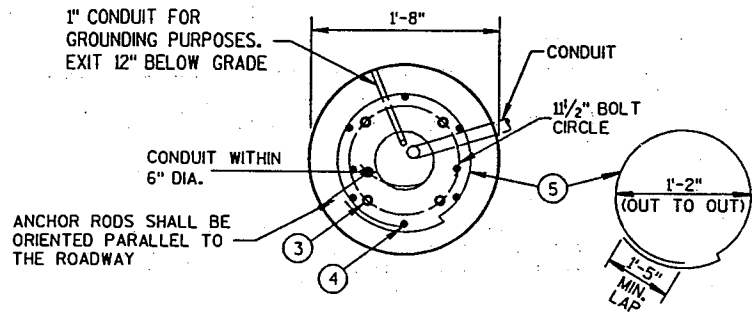
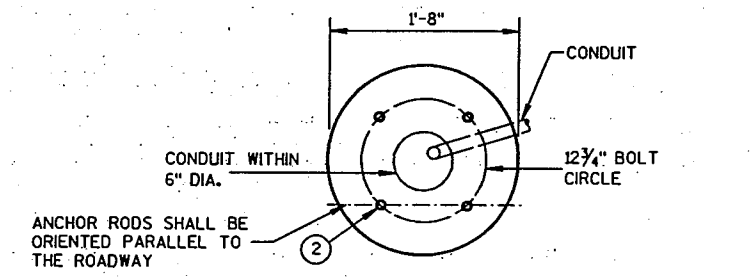
WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

- ① THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.
- ② (4) 1" DIA. X 3'-6" ANCHOR RODS.
- ③ (4) 1" DIA. X 5'-0" ANCHOR RODS.
- ④ (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.
- ⑤ (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.
- ⑥ (4) 1" DIA. X 3'-6" ANCHOR RODS.
- ⑦ (6) NO. 4 X 4'-8" BAR STEEL REINFORCEMENT
- ⑧ (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.



CONCRETE BASES

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 3" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 641.2.2 OF THE STANDARD SPECIFICATIONS, ASTM A-325, (92,000 YIELD) HEAVY HEX NUT AND BE GALVANIZED IN ACCORDANCE WITH ASTM A-153, CLASS C.

LEVELING SHIMS, IF NEEDED, SHALL BE DESIGNED FOR THE PURPOSE AND USED UNDER CAST BASES WHEN PLUMBING POLES OR STANDARDS DURING INSTALLATION. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE.

SHIM LENGTH SHALL BE LONG ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

A NEMA APPROVED AND U.L. LISTED MECHANICAL CONNECTOR (LUG) AL/CU RATED AND SIZED TO ACCEPT #10 AWG STRANDED WIRE, SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL BASES.

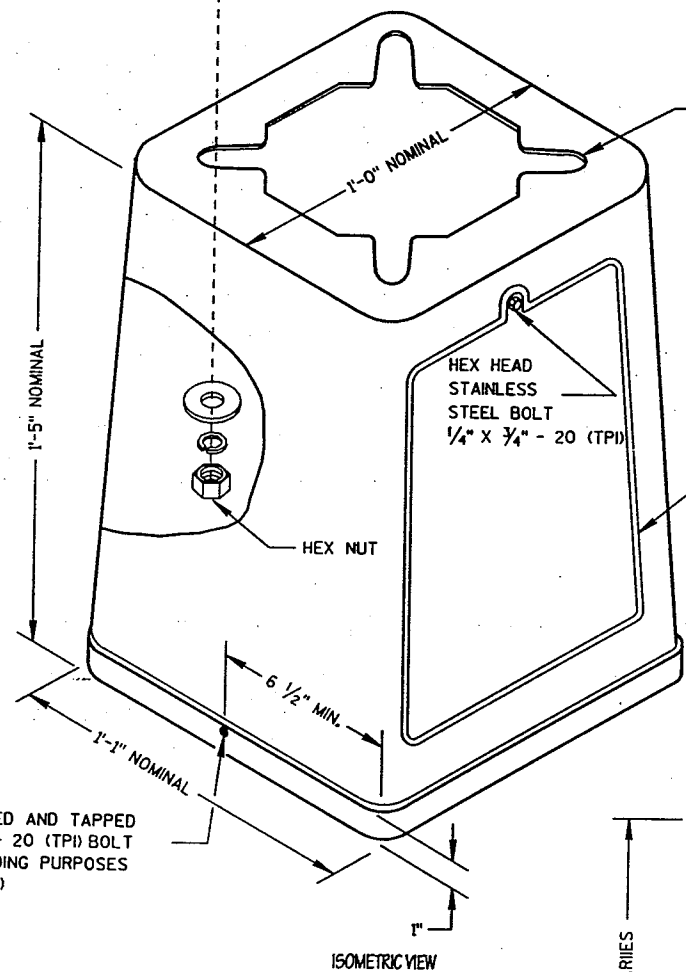
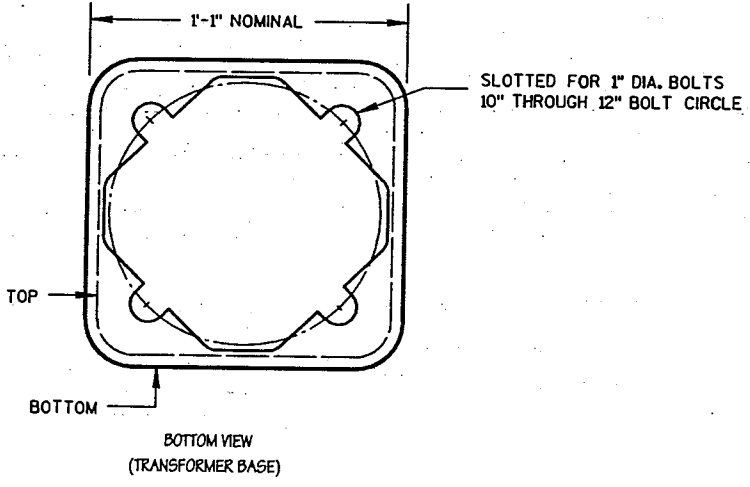
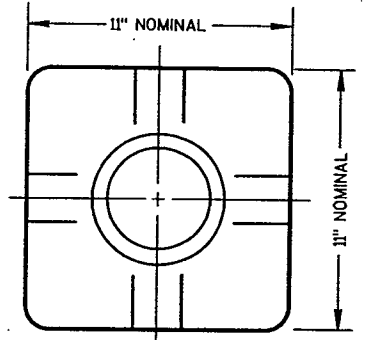
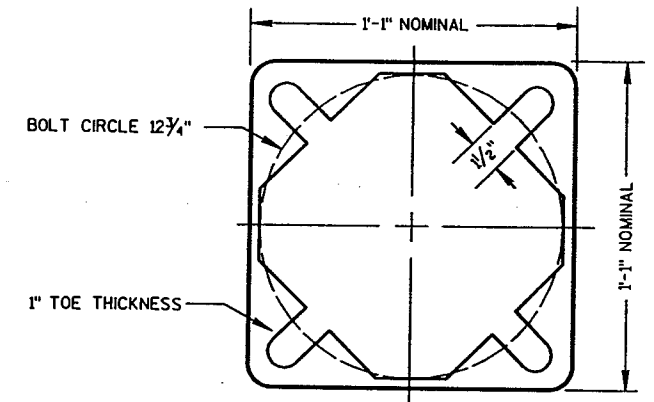
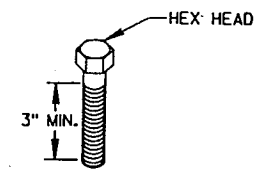
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

PEDESTAL BASE COLLAR THREADING SHALL BE TAPERED AND IN ACCORDANCE WITH NATIONAL PIPE THREADING DIMENSIONS.

BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

THE ACCESS DOOR SHALL BE OF THE SAME MATERIAL AS THE BASE.

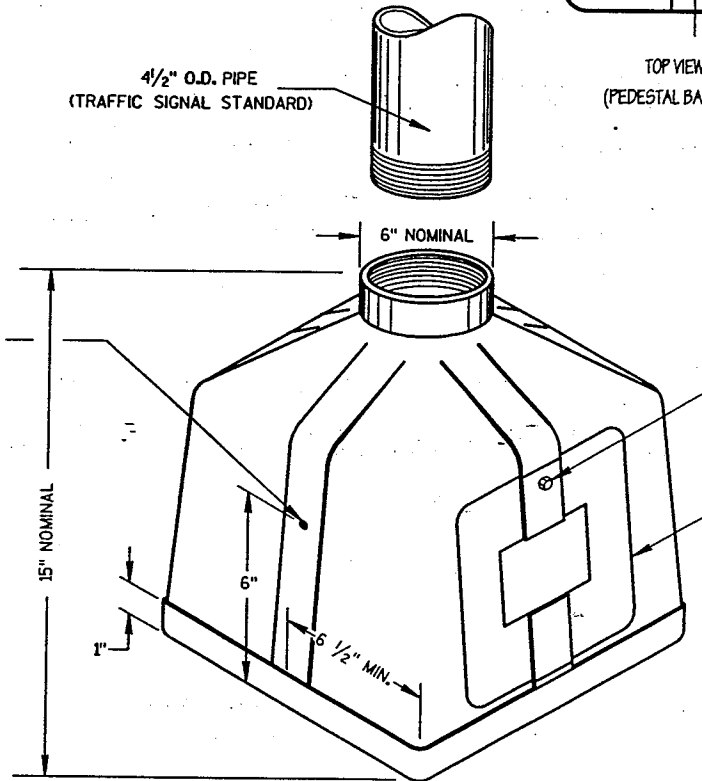


SLOTTED FOR 1" DIA. BOLTS ON 10" THROUGH 12" BOLT CIRCLE

HOLE DRILLED AND TAPPED FOR A 1/4" - 20 (TPI) BOLT FOR GROUNDING PURPOSES (SEE DETAIL)

ACCESS OPENING NOMINAL 13 1/2" X 8 3/4" X 9 1/2"

HOLE DRILLED AND TAPPED FOR A 1/4" - 20 (TPI) BOLT FOR GROUNDING PURPOSES (SEE DETAIL)



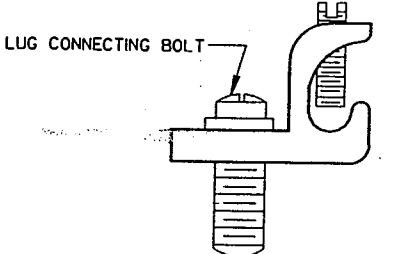
4 1/2" O.D. PIPE (TRAFFIC SIGNAL STANDARD)

6" NOMINAL

HEX HEAD STAINLESS STEEL BOLT 1/4" X 3/4" - 20 (TPI)

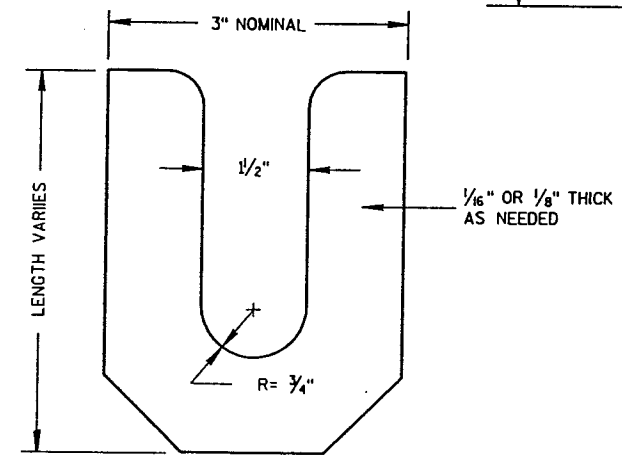
ACCESS OPENING NOMINAL 8" X 8"

ISOMETRIC VIEW PEDESTAL BASE



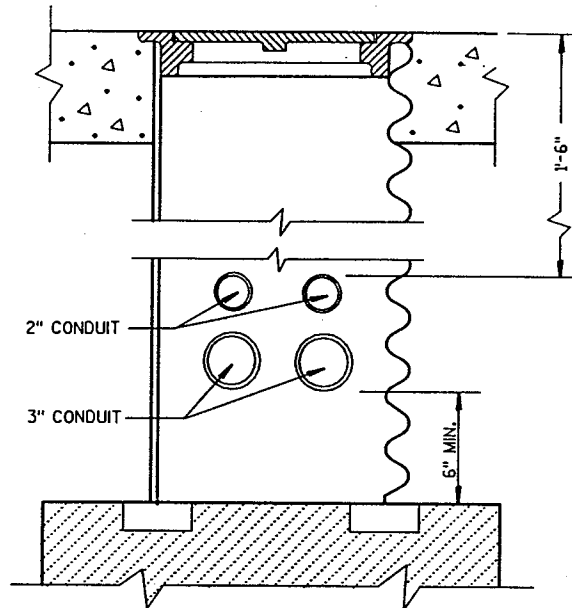
TYPICAL MECHANICAL CONNECTOR LUG TO BE FURNISHED WITH EACH BASE

TRANSFORMER BASE INTENDED FOR USE WITH TYPE 2, 3, 4, 5 & 6 POLES



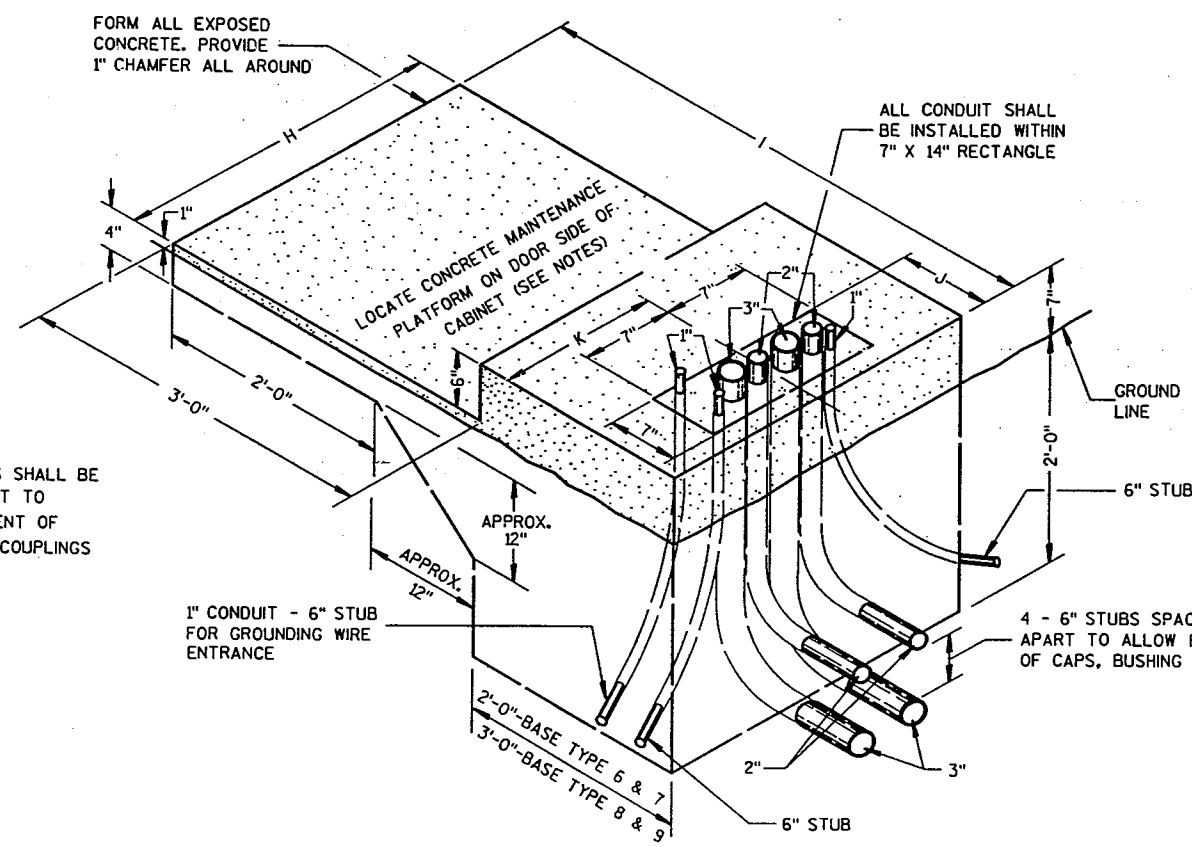
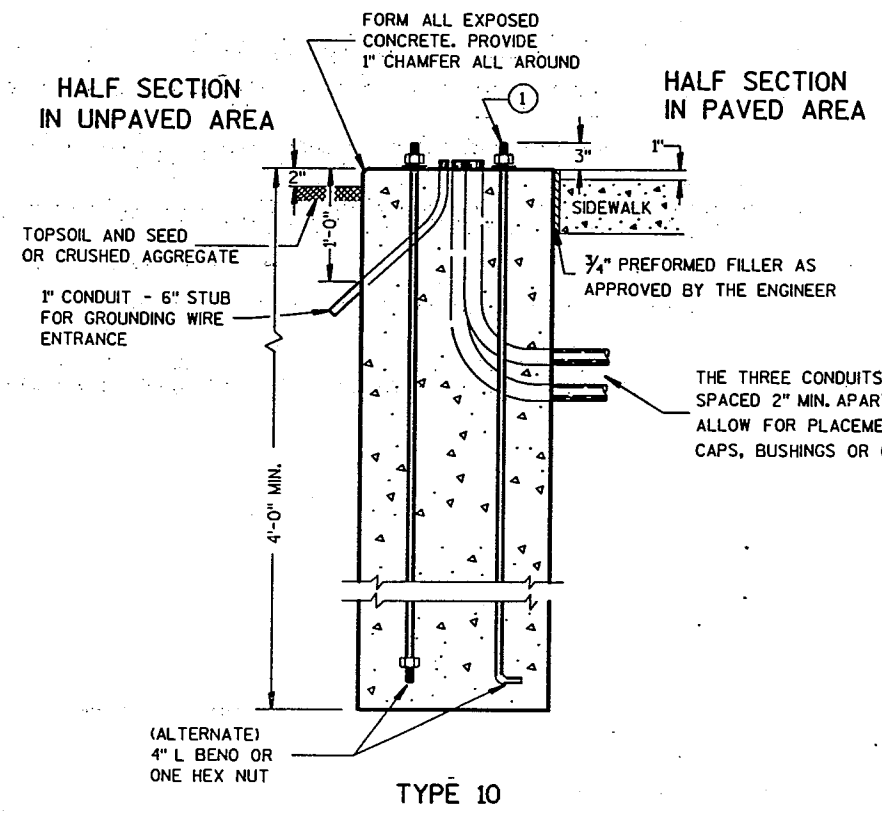
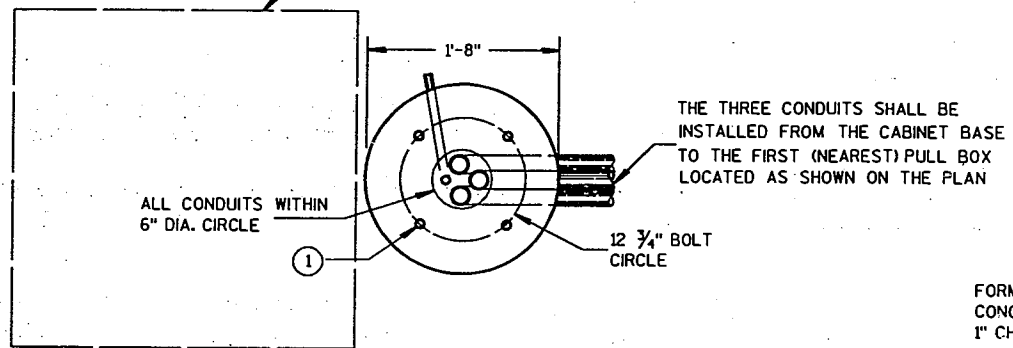
LEVELING SHIM

CONTROL CABINET BASE TYPE	DIMENSIONS				C.Y. CONCRETE (APPROX.)
	H	I	J	K	
TYPE 6 - 30" CABINET	34"	60"	10"	17"	.64
TYPE 7 - 38" CABINET	42"	60"	10"	21"	.93
TYPE 8 - 38" CABINET	42"	72"	12"	21"	1.29
TYPE 9 - VARIABLE	54"	72"	14"	27"	1.56
TYPE 10 - POST MOUNT	AS SHOWN				.32



**CONDUIT LOCATIONS IN 24" X 36" PULL BOX
(LEADING TO CONTROLLER CABINET BASE TYPE 6, 7, 8 AND 9)**

TYPICAL 3'-0" X 3'-0" MAINTENANCE PLATFORM. LOCATION TO BE DETERMINED IN THE FIELD.

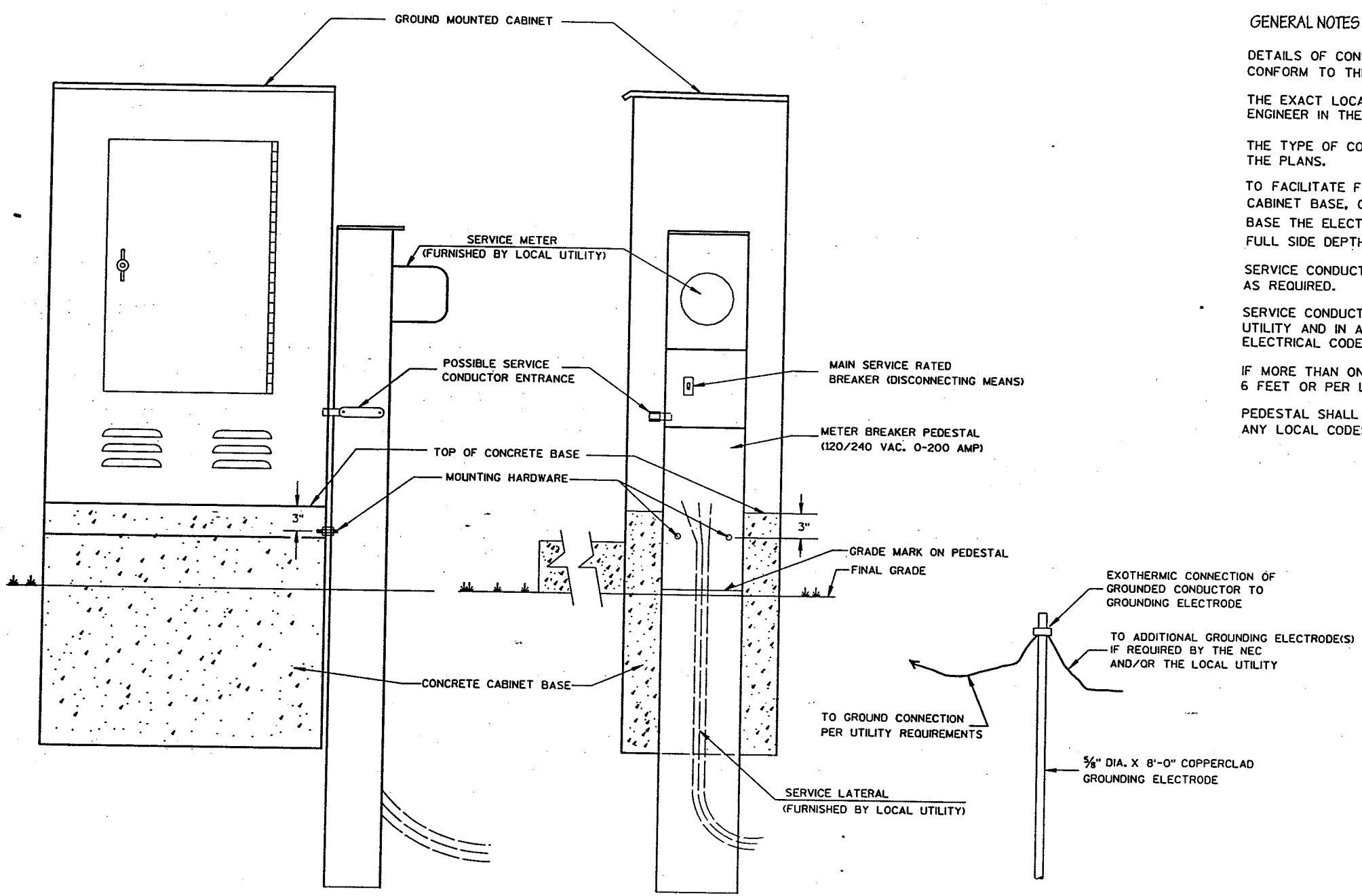


CONCRETE CONTROL CABINET BASES

TYPE 6,7,8 AND 9
(ISOMETRIC VIEW)

GENERAL NOTES

- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- INSTALL FOUR 1/2 INCH MINIMUM DIAMETER X 4 INCH MINIMUM LENGTH APPROVED CONCRETE MASONRY ANCHORS TO ANCHOR THE CABINET TO TYPE 6, 7, 8, AND 9 BASES. THE ANCHOR STUDS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE.
- WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.
- CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.
- DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.
- DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.
- ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.
- CONTROL CABINET BASE TOP SURFACES SHALL BE TROWEL FINISHED AND LEVEL.
- WHEN A TYPE 10 CONTROL CABINET BASE IS USED TO POST MOUNT A CONTROL CABINET, A 36" SQUARE 4" THICK CONCRETE MAINTENANCE PLATFORM SHALL BE REQUIRED ON THE DOOR SIDE OF THE CABINET. THE TOP 1 INCH SHALL BE ABOVE FINISHED GRADE AND BE BROOM FINISHED AND LEVEL.
- MAINTENANCE PLATFORMS ARE NOT REQUIRED WHEN THE SURROUNDING AREA IS PAVED.
- MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.
- ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.
- ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.
- ALL FOUR (TWO INCH AND THREE INCH) CONDUIT SHALL BE INSTALLED FROM THE CABINET BASE TO THE FIRST (NEAREST) PULL BOX LOCATED AS SHOWN ON THE PLANS.
- BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF THE CONCRETE BASE BEFORE INSTALLATION OF CABLE OR WIRE.
- CONCRETE FORM DEPTH BELOW FINISHED GRADE SHALL BE 6" MAXIMUM. CONCRETE FORMS SHALL BE REMOVED AFTER CONCRETE HAS SET.
- WHEN ANCHOR RODS USING THE ALTERNATE L BEND ARE FURNISHED FOR THE TYPE 10 BASE, THE 4" L BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH.
- THE "L" BEND SHALL NOT BE THREADED.
- STRAIGHT ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD.
- FOUR (4) ANCHOR RODS, 1" DIA. X 3'-6" ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 AND 64L2.2 OF THE STANDARD SPECIFICATIONS AND IN ACCORDANCE WITH A-449, OR ASTM, A-687 (GRADE 105).



TYPICAL CABINET SERVICE INSTALLATION

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

THE EXACT LOCATION OF THE METER BREAKER PEDESTAL SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE TYPE OF CONCRETE CABINET BASE TO BE INSTALLED SHALL BE AS CALLED FOR IN THE PLANS.

TO FACILITATE FLUSH MOUNTING OF THE METER BREAKER PEDESTAL AGAINST THE SIDE OF THE CABINET BASE, CONFER WITH THE LOCAL UTILITY TO DETERMINE WHICH SIDE OF THE CONCRETE BASE THE ELECTRIC SERVICE LATERAL WILL APPROACH. THEN FORM THAT INDICATED SIDE FOR FULL SIDE DEPTH.

SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID METALLIC CONDUIT, NIPPLES AND/OR CONDULETS AS REQUIRED.

SERVICE CONDUCTOR ENTRANCES SHALL BE SIZED AND LOCATED AS REQUIRED BY THE LOCAL UTILITY AND IN ACCORDANCE WITH APPROPRIATE ARTICLES OF THE LATEST ACCEPTED NATIONAL ELECTRICAL CODE.

IF MORE THAN ONE GROUNDING ELECTRODE IS REQUIRED, THE DISTANCE APART SHALL BE 6 FEET OR PER LOCAL UTILITY REGULATIONS.

PEDESTAL SHALL BE EQUIPED WITH A MAIN SERVICE RATED DISCONNECTING MEAN'S PER NEC AND ANY LOCAL CODES THAT MAY APPLY.

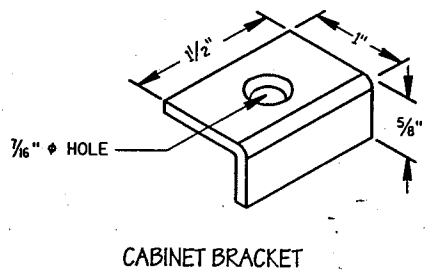
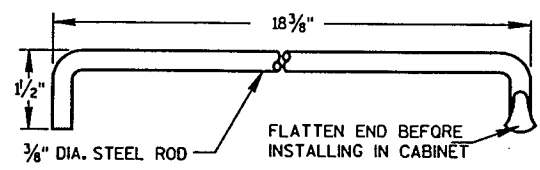
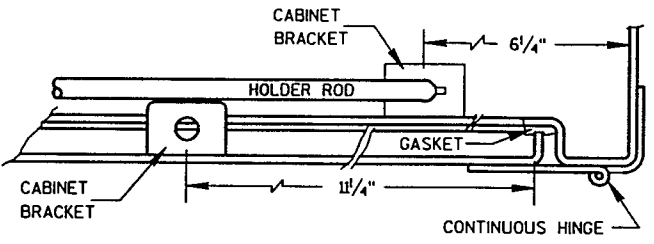
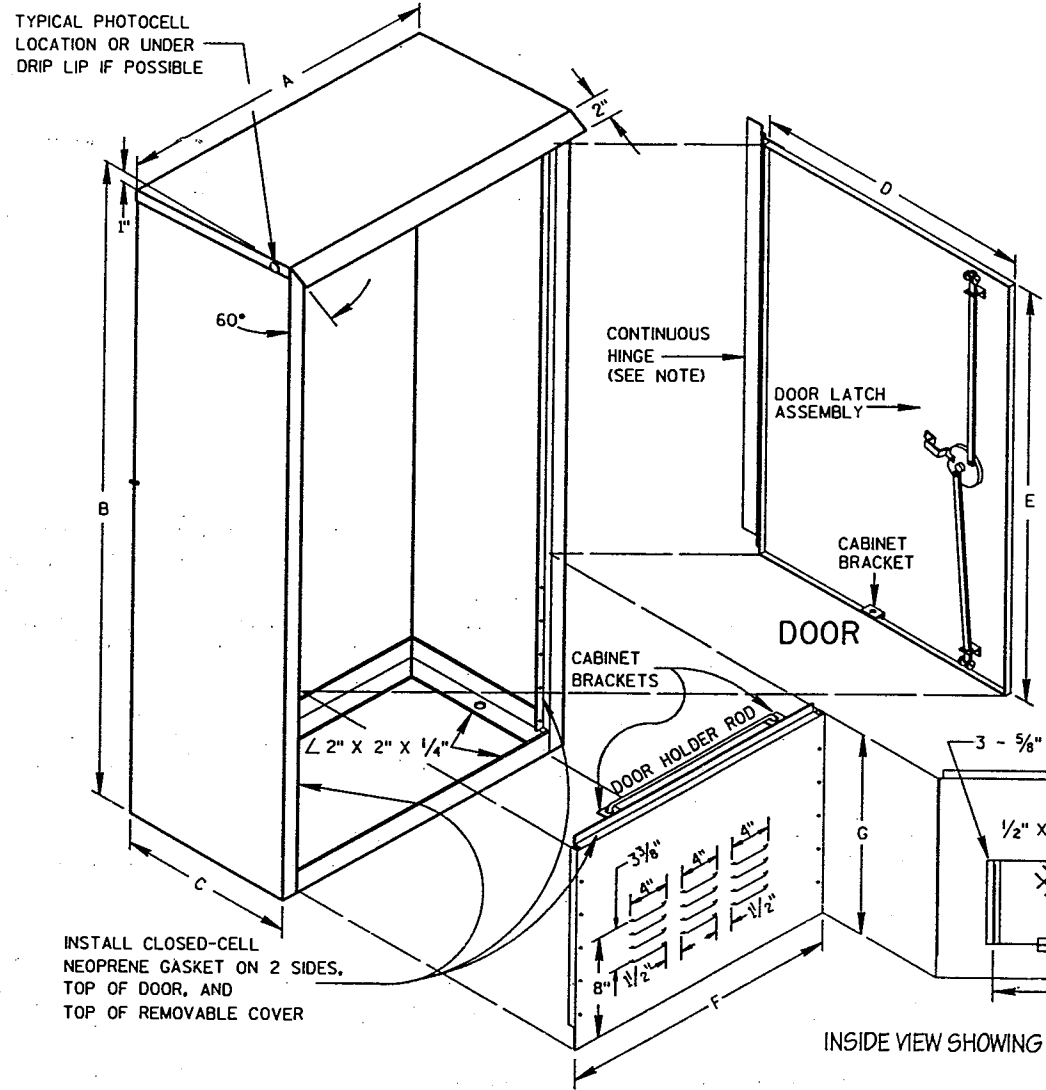


TABLE OF DIMENSIONS (INCHES)

MARK	CABINET TYPE		
	3060	3860	3866
A	30	38	38
B	60	60	66
C	16 1/2	16 1/2	24
D	26 1/2	34 3/4	33 3/4
E	38 3/4	38 3/4	38 3/4
F	26 1/2	34 3/4	33 3/4
G	19	19	25
H	16 1/2	16 1/2	24
H/2	8 1/4	8 1/4	12
J	30	38	38
J/2	15	19	19
K	13 3/4	13 3/4	21 1/4
L	27 1/2	35 1/2	35 1/2

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

PRIME WITH PHOSPHATE TREATMENT AND PRIMER.

FINISH EXTERIOR SURFACES WITH RUSTOLEUM #906 SILVER GRAY OR APPROVED EQUAL.

FINISH INTERIOR WITH RUSTOLEUM #2766 HIGH GLOSS WHITE ENAMEL OR APPROVED EQUAL.

ALL SHEET METAL PARTS SHALL BE .125 INCH THICK ALUMINUM.

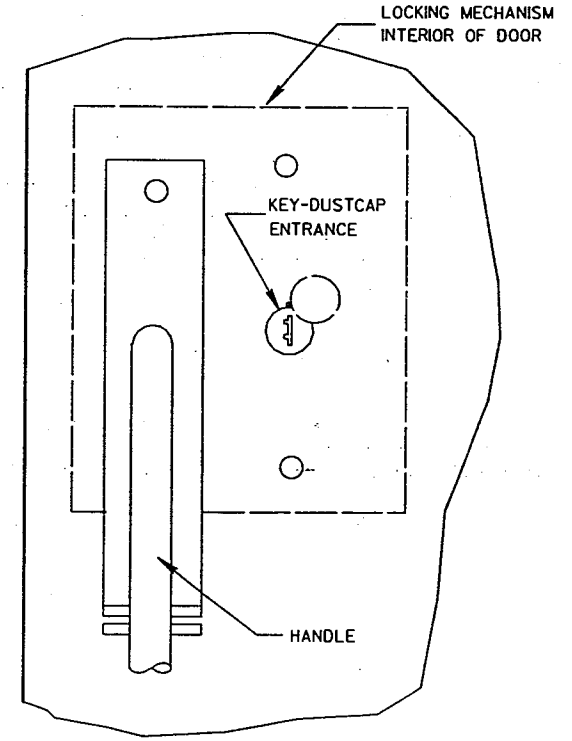
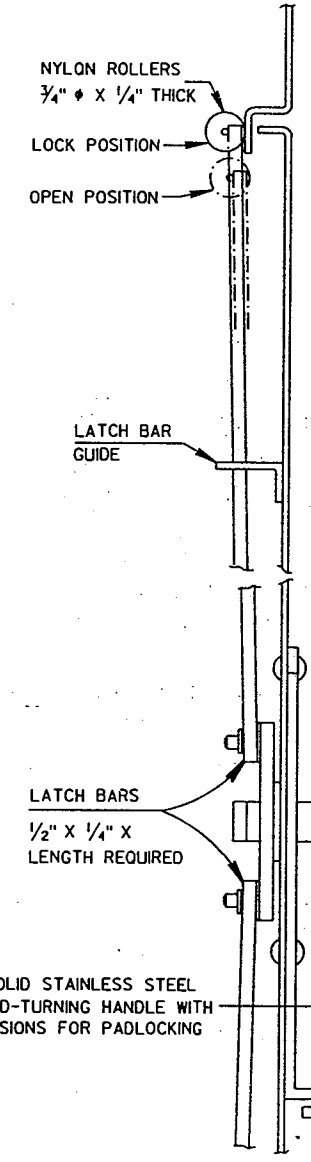
ALL SEAMS SHALL BE CONTINUOUSLY WELDED.

ALUMINUM SHALL BE TYPE 5052-H32.

CONTINUOUS HINGE SHALL BE HEAVY GAUGE ALUMINUM WITH 1/4\"/>

A SINGLE PHOTOCELL SHALL BE LOCATED ON THE NORTH-NORTHEAST SIDE OF THE CABINET UNLESS OTHERWISE CALLED FOR IN THE SPECIAL PROVISIONS. THE PHOTOCELL SHALL BE PLACED AS SHOWN AND SHALL BE AN APPROVED TYPE.

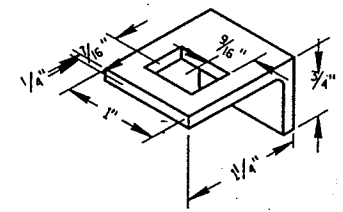
DOOR LATCH ASSEMBLY TO BE PROVIDED WITH THREE-POINT LOCKING MECHANISM.



SIDE VIEW

FRONT VIEW

LATCH ASSEMBLY

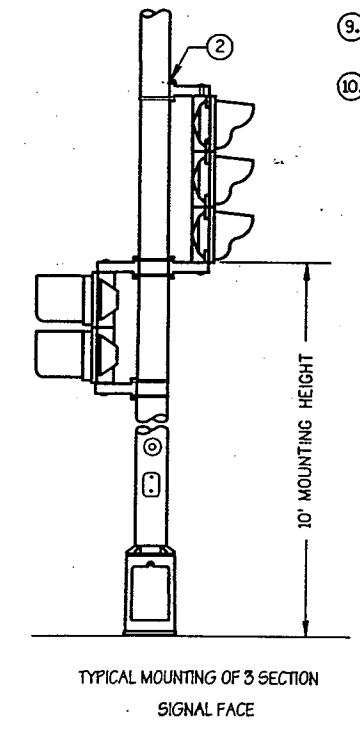
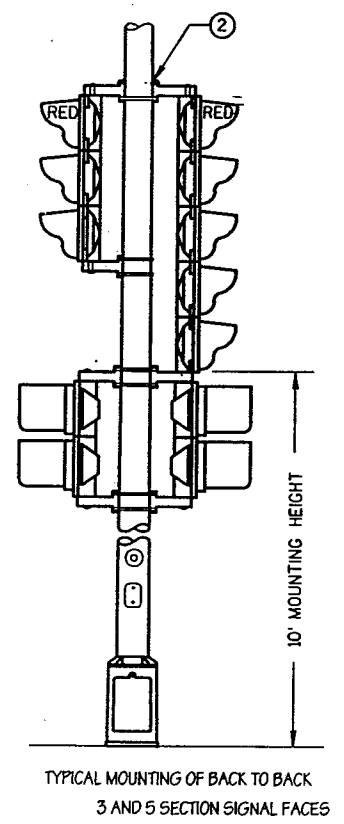
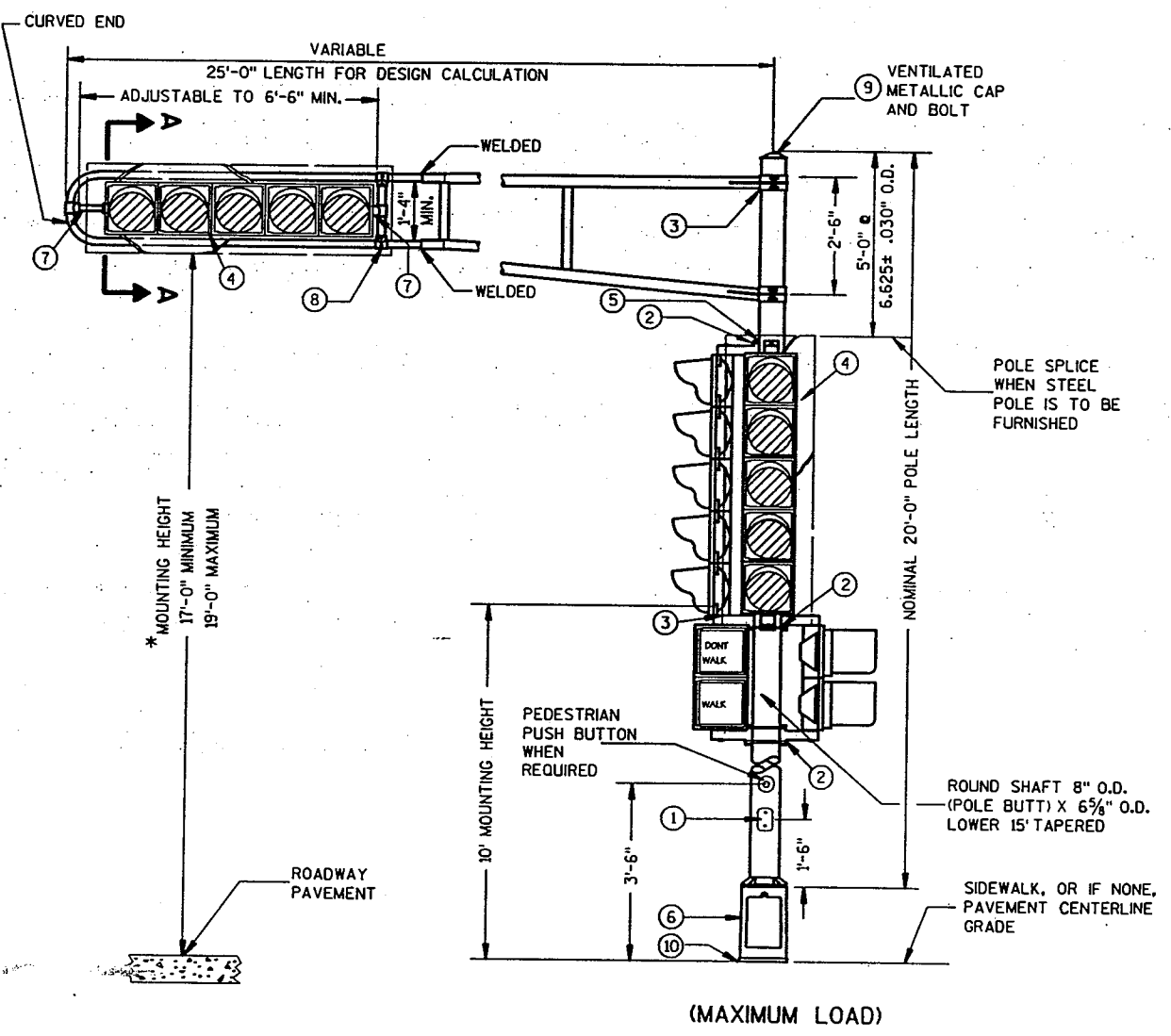
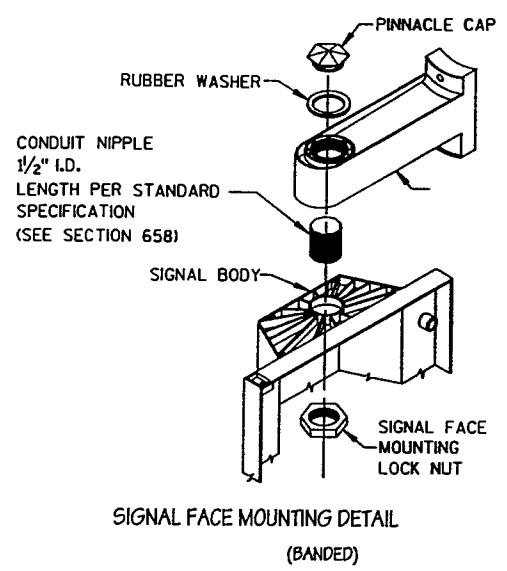
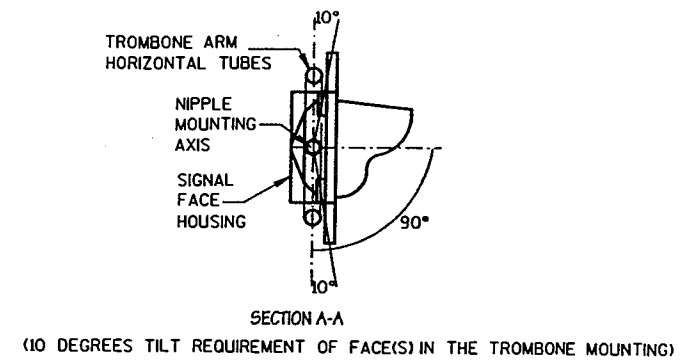


LATCH BAR GUIDE

LOCK NO. 2510 WITH 2 KEYS AND DUST CAP. KEY NO. IR6380

LATCH BARS 1/2\"/>

3/4\"/>



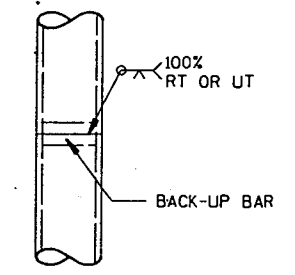
TYPE 2 POLE MOUNTING CONFIGURATION

GENERAL NOTES

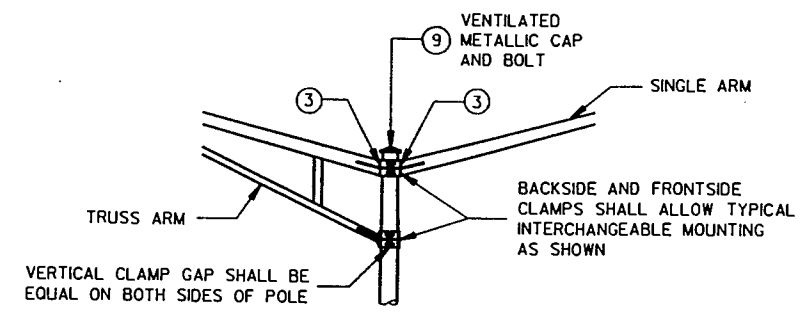
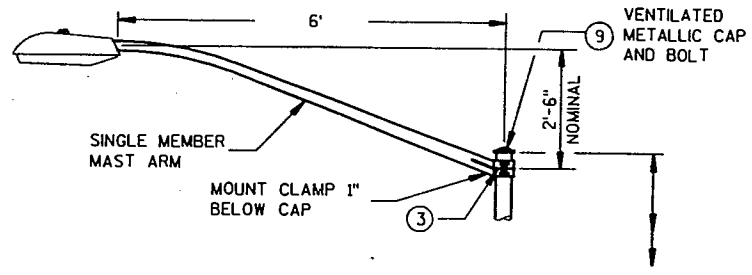
- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- POLES SHALL BE EITHER ALUMINUM OR GALVANIZED STEEL AS CALLED FOR IN THE CONTRACT.
- SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.
- A PULL WIRE/ROPE IN ACCORDANCE WITH STANDARD SPECIFICATION 652 SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.
- TYPE 2 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063-T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.
- 4" X 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) 1/4" X 3/4" - 20 TPI HEX HEAD STAINLESS STEELS.
 - SIGNAL FACE MOUNTING BRACKETS. MOUNT WITH CAP SCREWS AND BANDING. (SEE STANDARD SPECIFICATIONS - SEC. 658)
 - GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 1/2" HOLE IN POLE SHAFT FOR WIRING.
 - BACKBOARDS ARE REQUIRED AT ALL TIMES ON TROMBONE MAST ARM MOUNTED SIGNAL FACES. VERTICAL MOUNTED SIGNAL FACES WITH BACKBOARDS REQUIRED ARE LOCATED AS SHOWN ON THE PLANS. BACKBOARDS ARE REQUIRED TO SURROUND SIGNAL FACES. BACKBOARDS SHALL EXTEND 5" BEYOND EXTREMITIES OF THE SIGNAL FACE.
 - POLE MOUNTED SIGNAL FACES SHALL REQUIRE 1 OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACES.
 - CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
 - MOUNTING BRACKET NIPPLES FOR THE SIGNAL FACE(S) SHALL BE 2 INCHES IN LENGTH AND 1/2 INCHES IN DIAMETER. (SEE STANDARD SPECIFICATION - SECTION 658).
 - VERTICAL STRUT (ADJUSTABLE). ONE (1) SET SCREW (1/4" X 3/4" LONG-20 TPI, STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.
 - FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
 - SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.
- *MOUNTING HEIGHT LIMITATION DIMENSIONS OF THE TROMBONE MAST ARM WILL BE DEPENDENT UPON THE USE/NON-USE OF A TRANSFORMER BASE.

REQUIREMENTS OF AWS D 15-88. RECORDS OF

FOR MANUFACTURERS USE ONLY
WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE
COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED
TO THE OFFICE OF DESIGN/BRIDGE FOR VERIFICATION
AND APPROVAL.

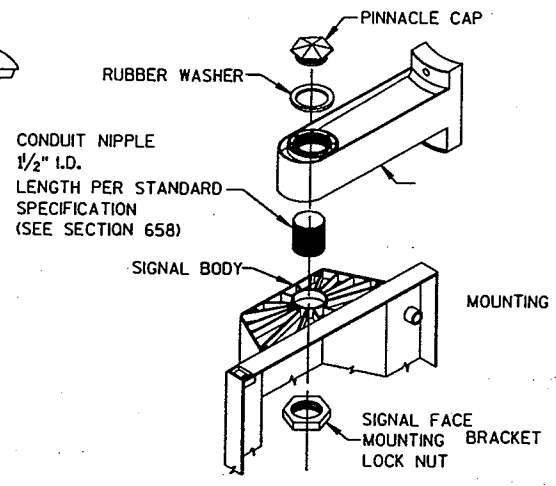
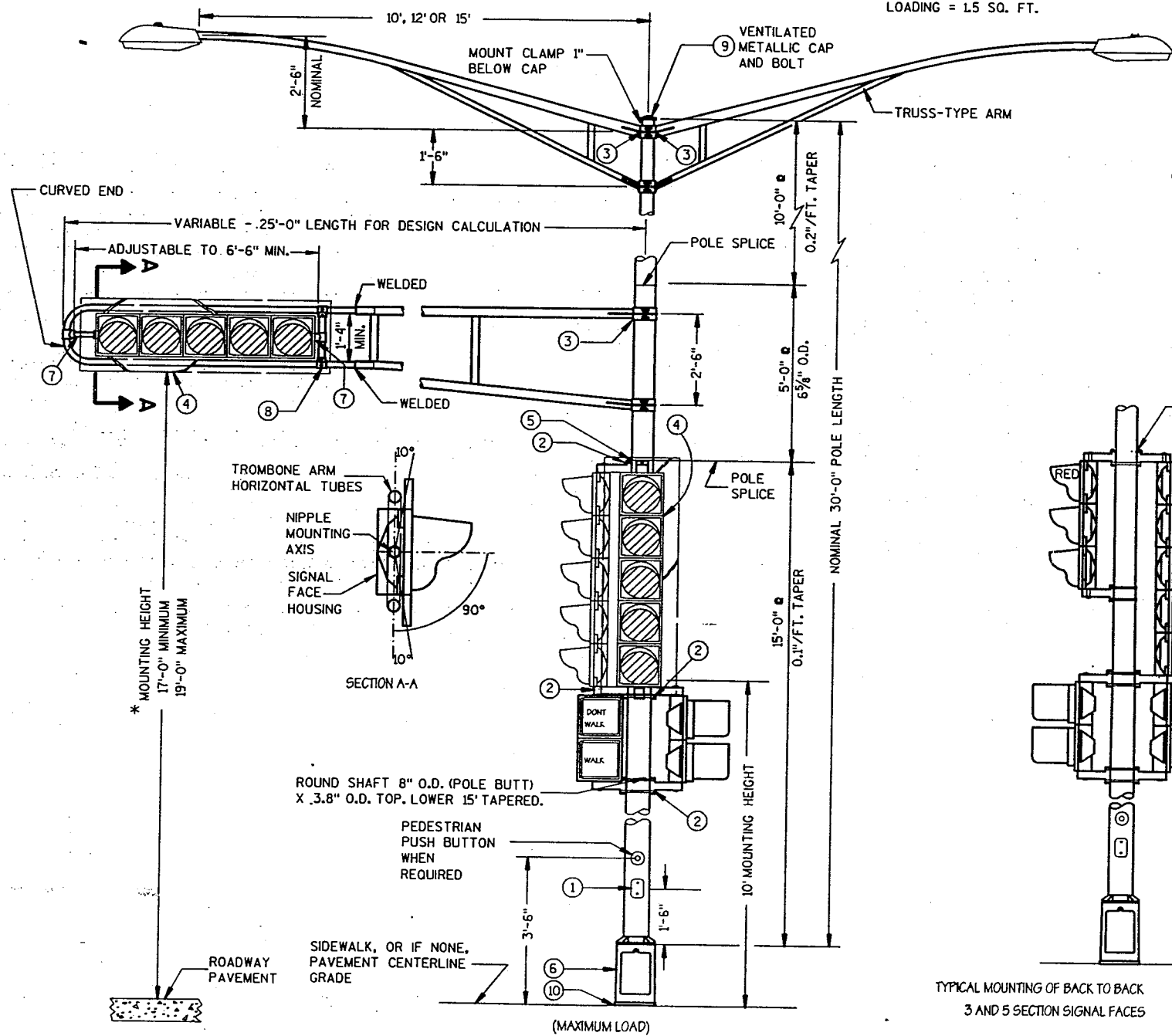


POLE SPLICE DETAIL

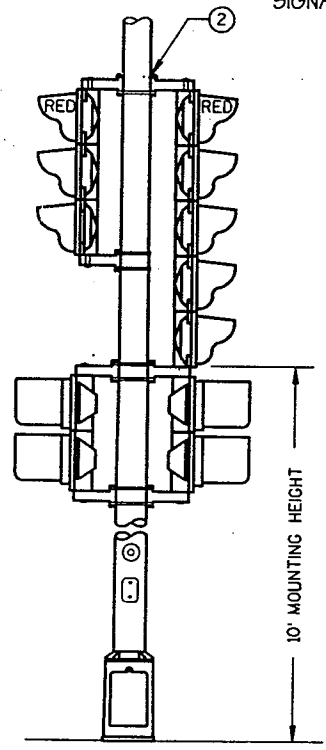


LUMINAIRE
WT. - 50 LBS.
EFFECTIVE PROJECTED
AREA FOR WIND
LOADING = 1.5 SQ. FT.

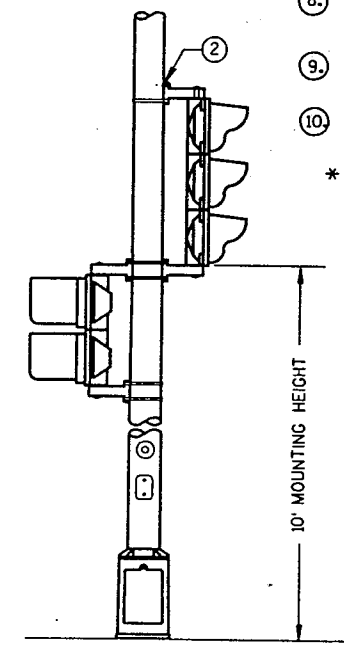
INTERCHANGEABLE MOUNTING DETAIL



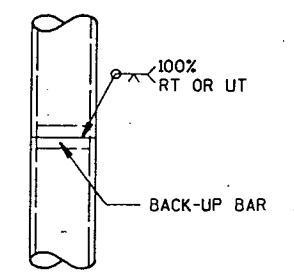
SIGNAL FACE MOUNTING DETAIL
(BANDED)



TYPICAL MOUNTING OF BACK TO BACK
3 AND 5 SECTION SIGNAL FACES



TYPICAL MOUNTING OF 3 SECTION
SIGNAL FACE

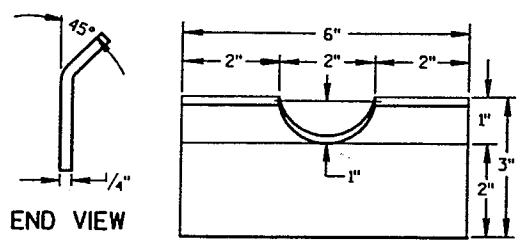


POLE SPLICE DETAIL

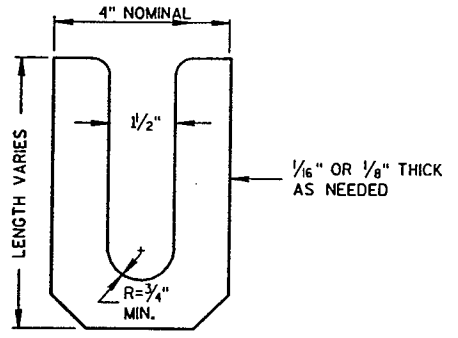
GENERAL NOTES

- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- ALL TYPE 3 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.
- POLES SHALL BE GALVANIZED STEEL.
- SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.
- A PULL WIRE/ROPE IN ACCORDANCE WITH STANDARD SPECIFICATION 652, SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.
- THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 3/8 INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.
1. 4" X 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) 1/4" X 3/4" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.
 2. SIGNAL FACE MOUNTING BRACKETS, MOUNT WITH CAP SCREWS AND BANDING. (SEE STANDARD SPECIFICATIONS - SEC. 658)
 3. GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
 4. BACKBOARDS ARE REQUIRED AT ALL TIMES ON TROMBONE MAST ARM MOUNTED SIGNAL FACES. VERTICAL MOUNTED SIGNAL FACES WITH BACKBOARDS REQUIRED ARE LOCATED AS SHOWN ON THE PLANS. BACKBOARDS ARE REQUIRED TO SURROUND SIGNAL FACES. BACKBOARDS SHALL EXTEND 5" BEYOND EXTREMITIES OF THE SIGNAL FACE.
 5. POLE MOUNTED SIGNAL FACES SHALL REQUIRE 1 OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACE.
 6. TYPE 3 POLE CONFIGURATIONS SHALL BE MOUNTED DIRECTLY TO THEIR CONCRETE BASES.
- IF AND/OR WHEN TRANSFORMER BASES ARE REQUIRED, THEY SHALL BE DESIGNED FOR THE MAXIMUM LOAD SHOWN WITH AN ACCEPTABLE FACTOR OF SAFETY IN ACCORDANCE WITH THE LATEST AASHTO CRITERIA FOR WIND LOADING.
7. MOUNTING BRACKET NIPPLES FOR THE SIGNAL FACE(S) SHALL BE 2 INCHES IN LENGTH AND 1/2 INCHES IN DIAMETER. (SEE STANDARD SPECIFICATION - SECTION 658)
 8. VERTICAL STRUT (ADJUSTABLE). ONE (1) SET SCREW (1/4" X 3/4" - 20 TPI, STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.
 9. FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
 10. SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE (WHEN REQUIRED)
- * MOUNTING HEIGHT LIMITATION DIMENSIONS OF THE TROMBONE MAST ARM WILL BE DEPENDENT UPON THE USE/NON-USE OF A TRANSFORMER BASE.

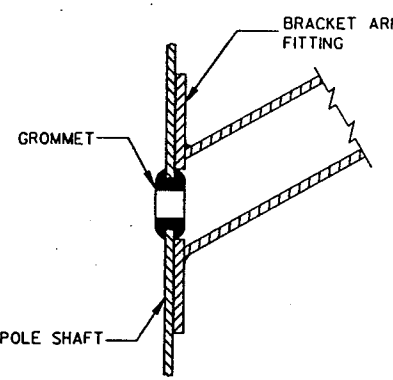
TYPE 3 POLE MOUNTING CONFIGURATION



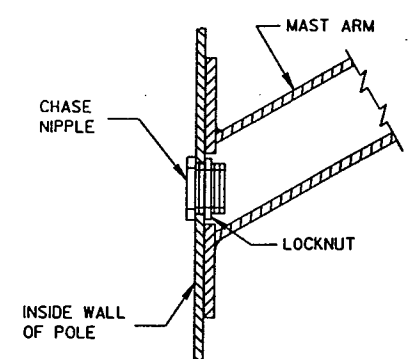
END VIEW
FRONT VIEW
RECTANGULAR CLAMP SHIM
(4 TO A SET)



LEVELING SHIM
SHALL BE ALUMINUM



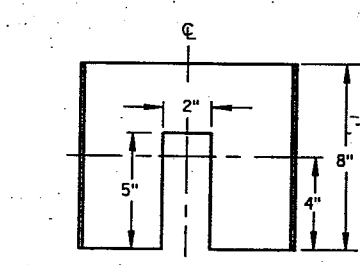
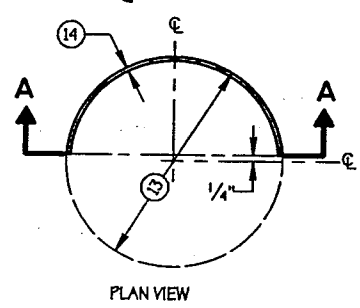
TYPICAL APPLICATION OF
GROMMET IN POLE SHAFT



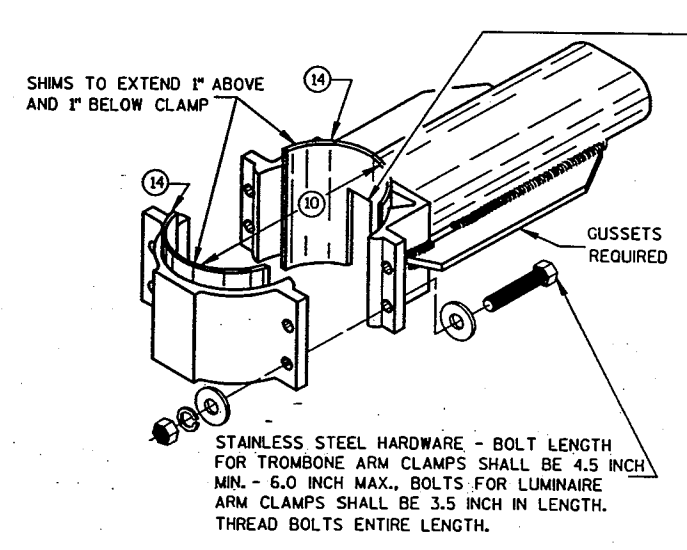
TYPICAL APPLICATION OF
CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES
CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

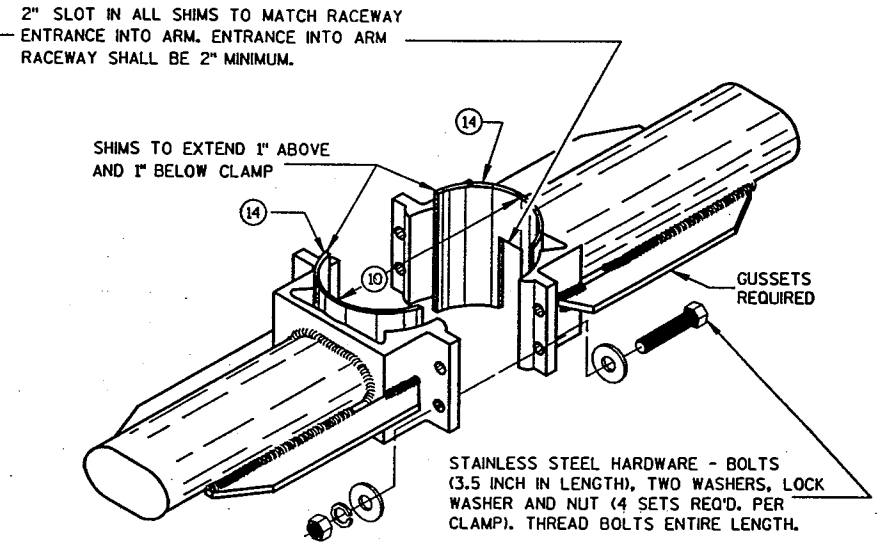
- ⑩ 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP.
6.625" I.D. FOR TROMBONE MAST ARM CLAMP.
- ⑪ INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)
- ⑫ BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.
- ⑬ OUTSIDE SHIM DIAMETER - (4.5" O.D. FOR LUMINAIRE MAST ARM)
(6.625" O.D. FOR TROMBONE MAST ARM)
- ⑭ VARIABLE SHIM THICKNESS - (0.10", 0.25", 0.35", 0.53" OR 0.70")
SHIM THICKNESS FOR TROMBONE MAST ARMS MAY BE TYPICALLY 0.25", 0.35", 0.53" OR 0.70".
SHIM THICKNESS FOR LUMINAIRE MAST ARMS MAY BE TYPICALLY 0.10", 0.25" OR 0.35".
SHIM MATERIAL SHALL BE ALUMINUM ALLOY.
SHIM THICKNESS SHALL BE IMPRESSED INTO EACH SHIM. NUMERALS SHALL BE 1/4" HIGH AND LEGIBLE.
THE CONTRACTOR SHALL SUBMIT TWO COPIES OF ALL SHIM SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL.
- ⑮ LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE CONCRETE BASE AND A METALLIC BASE PLATE.
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



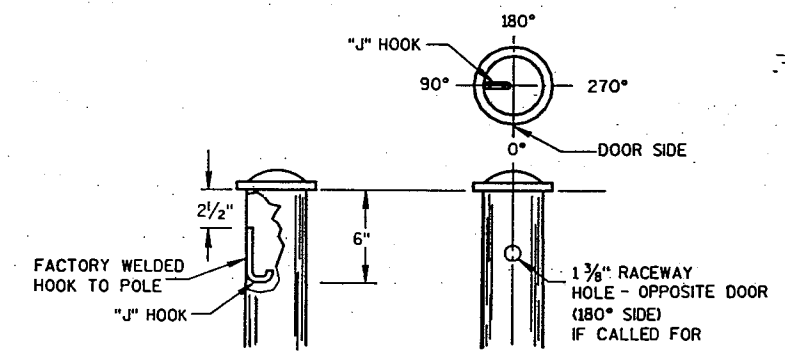
SECTION A-A
CIRCULAR CLAMP SHIM
(2 TO A SET)



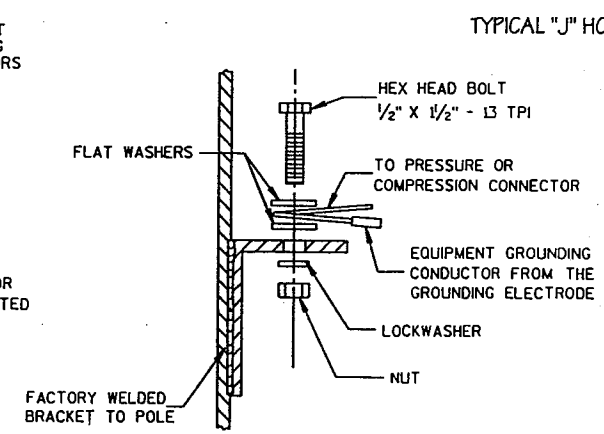
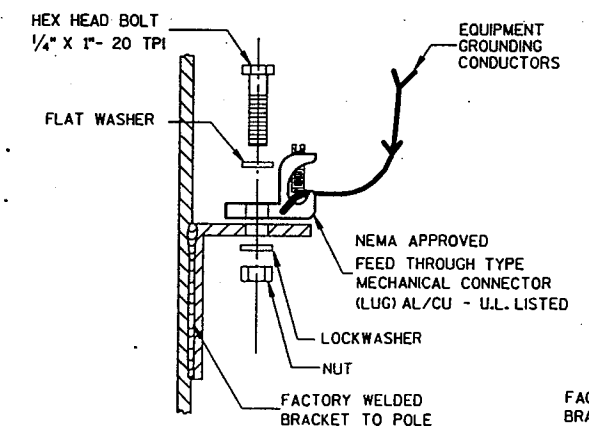
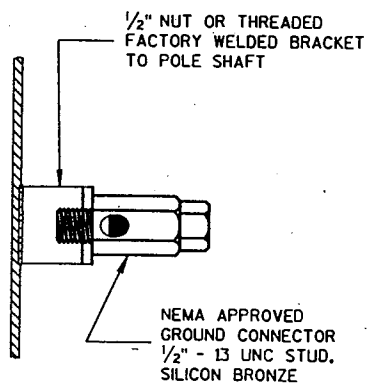
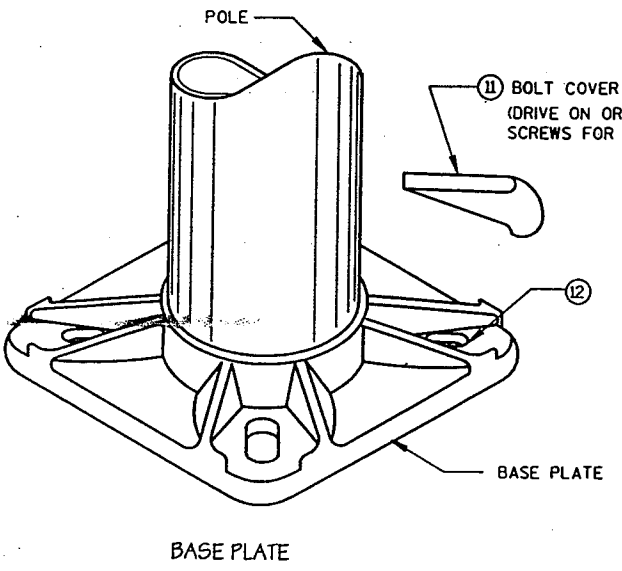
TYPICAL TROMBONE MAST ARM AND SINGLE
LUMINAIRE MAST ARM MOUNTING CLAMP



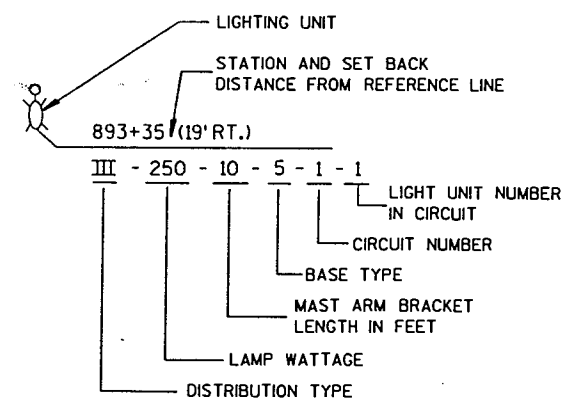
TYPICAL LUMINAIRE MAST ARM
(DOUBLE) MOUNTING BRACKETS



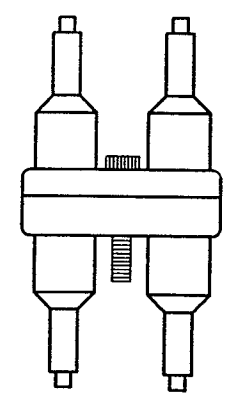
TYPICAL "J" HOOK LOCATION



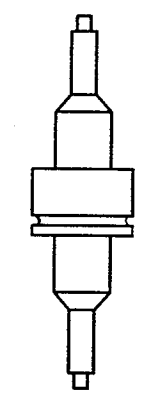
TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



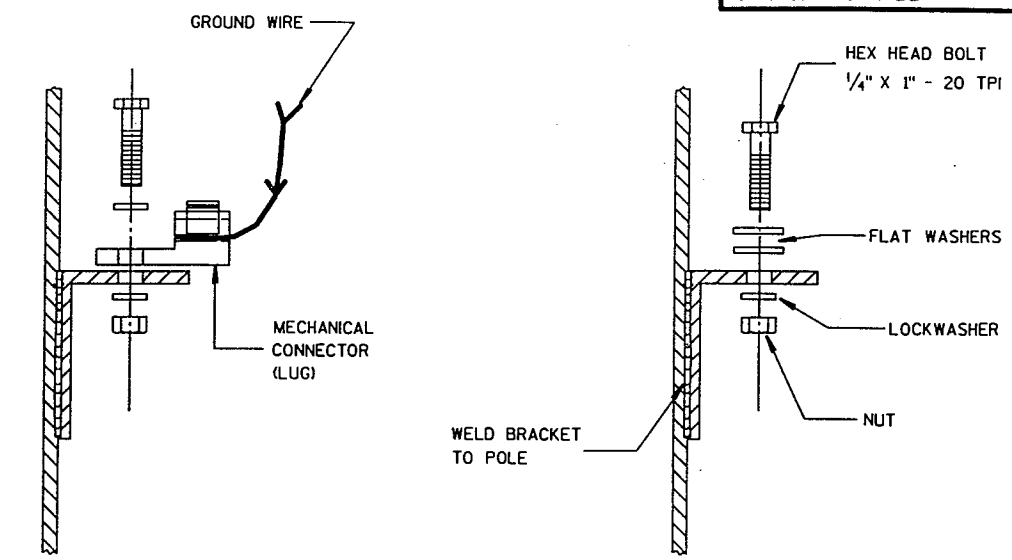
LIGHTING UNIT CODE



**DETAIL "A"
DOUBLE POLE**



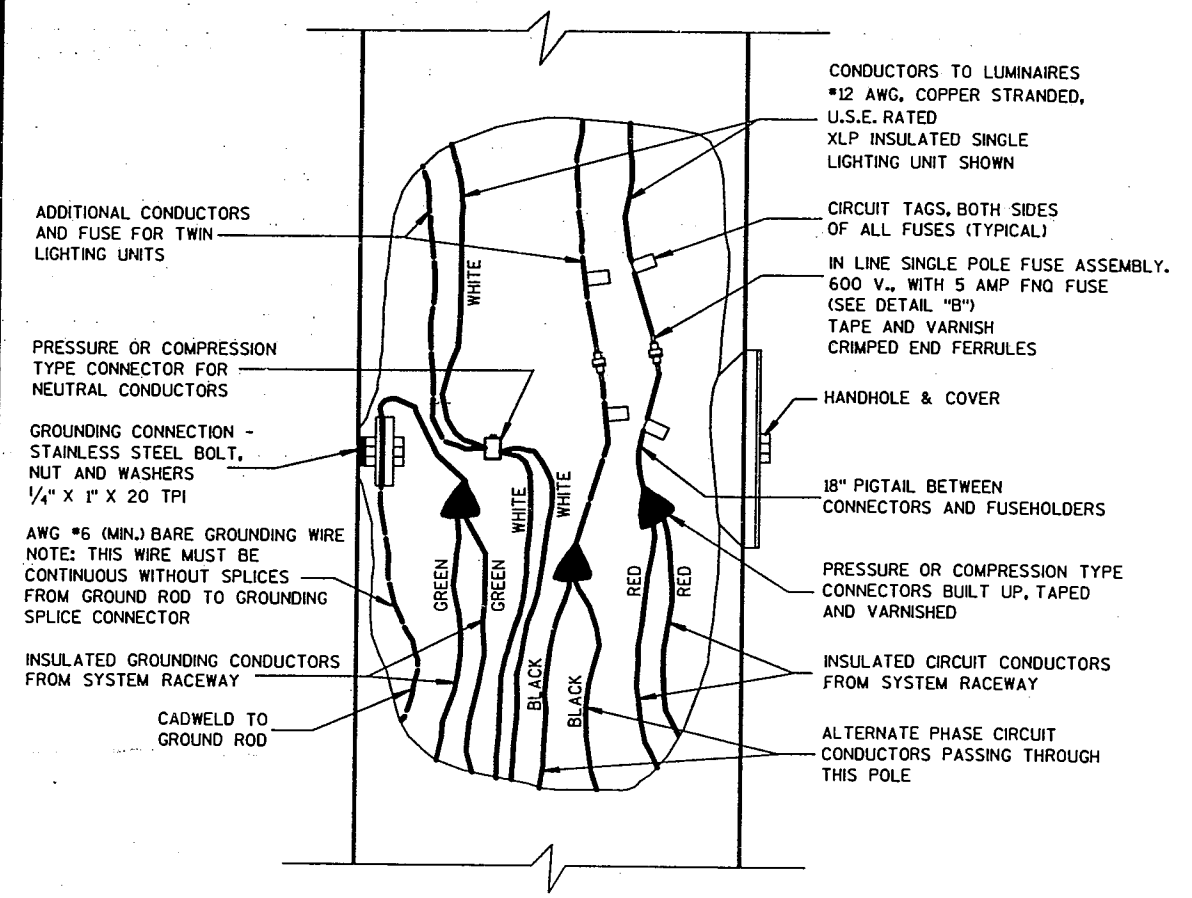
**DETAIL "B"
SINGLE POLE**



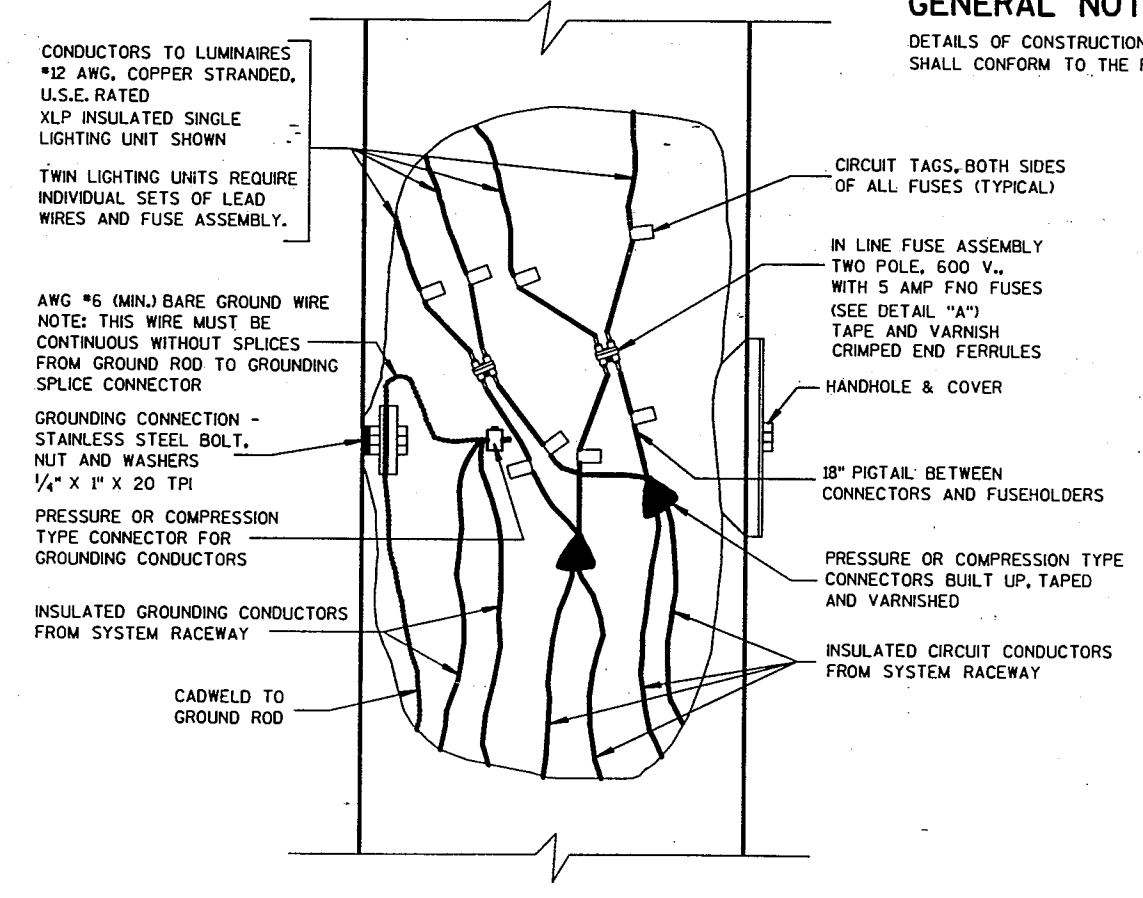
TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

GENERAL NOTES

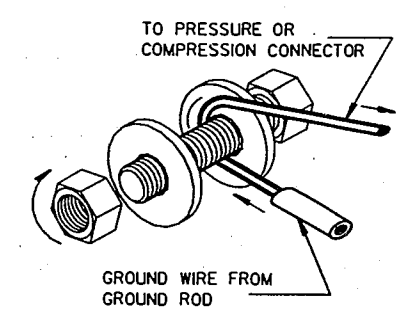
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.



**3 WIRE - 120, 240 OR 480 VOLTS TO GROUND
2 WIRE - 120 VOLTS TO GROUND**

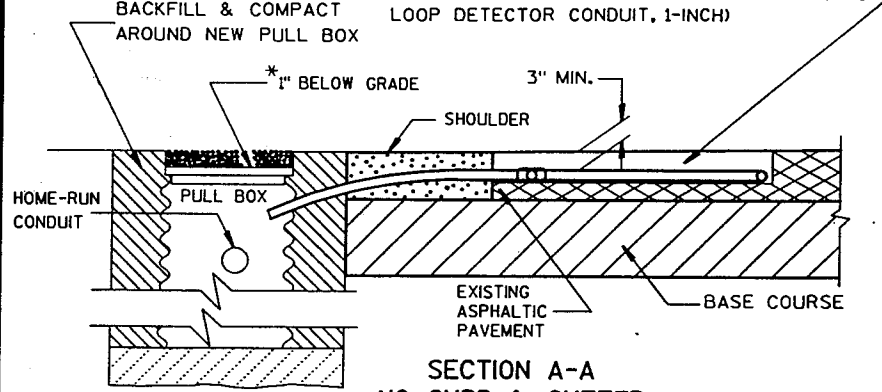


2 WIRE - 240 OR 480 VOLTS (UNGROUNDING)



**GROUND WIRE INSTALLATION
BETWEEN TWO WASHERS**

AFTER INSTALLATION OF LOOP IN EXISTING PAVEMENT, FILL WITH HOT ASPHALTIC MIX OR SYLVEX AND TAMP TO GRADE (INCIDENTAL TO LOOP DETECTOR CONDUIT, 1-INCH)



**SECTION A-A
NO CURB & GUTTER
LOOP DETECTOR INSTALLATION DETAIL**

*RECESS PULL BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

LOOP SIZE, LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS SUCH AS 3M TYPE 82A1 OR APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

THE GROUND RESISTANCE READING OF THE LOOP SHALL READ "INFINITY" TO GROUND ON AN OHMETER USING A MULTIPLIER SCALE OF 1 MEGOHM AND AN INPUT RESISTANCE OF 11 MEGOHMS MINIMUM BEFORE SPLICING THE LOOP TO THE LEAD-IN CABLE.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

IN THE EVENT EPOXY IS USED AS A LOOP SLOT FILLER, THE SLOT SHALL BE TOTALLY CLEAN AND DRY BEFORE ITS INSTALLATION.

ANTI-SIEZE LUBRICATING MATERIAL SHALL BE USED ON ALL THREADS OF THREADED ASSEMBLIES BEFORE INSTALLATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

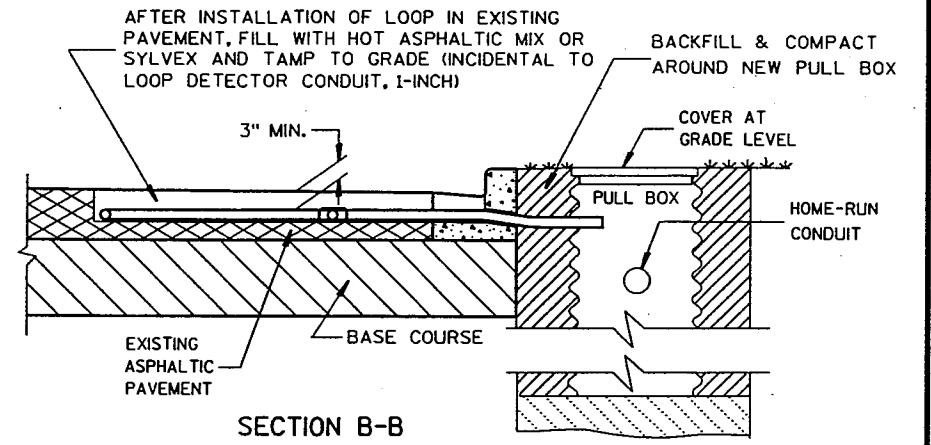
THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TURNS PER FOOT BEFORE INSTALLATION.

SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

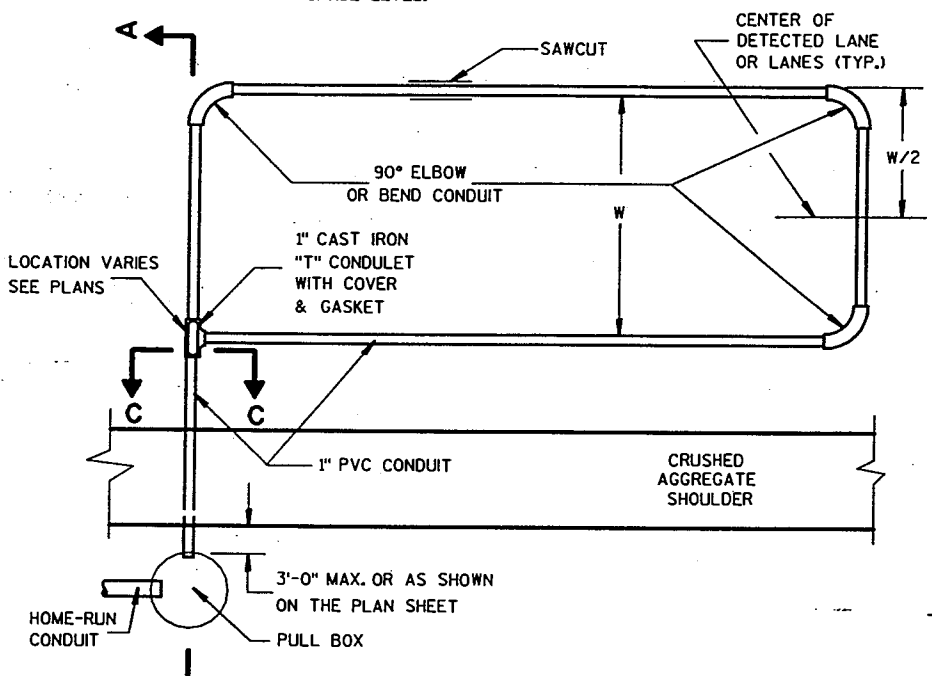
THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL BOX, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL BOX, AND BE INSTALLED IN ONE, NON-SPLICED, CONTINUOUS LENGTH.

IN THE EVENT THAT THE EXISTING PAVEMENT IS MORE THAN 5 INCHES THICK, AND THEREFORE, THE 1 INCH CONDUIT DOES NOT REQUIRE INSTALLATION BELOW THE PAVEMENT INTO THE BASE COURSE, PLACE SOME OF THE TAR OR EPOXY SEALANT IN THE SLOT TO A DEPTH OF APPROXIMATELY 1/2 INCH BEFORE INSTALLATION OF THE CONDUIT. IF THE CONDUIT MUST BE PLACED IN THE BASE COURSE, DO NOT PLACE THE TAR OR EPOXY SEALANT IN THE SLOT.

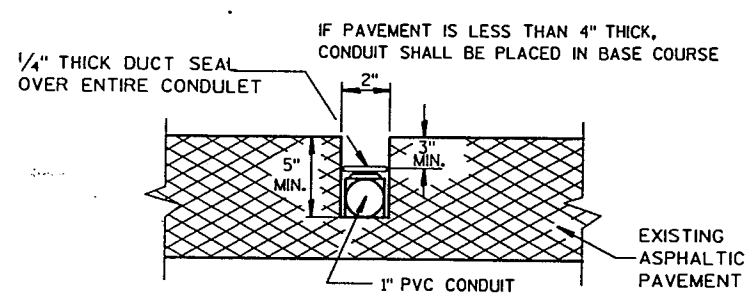
ONCE THE 2" LOOP SLOT HAS BEEN CHIPPED OUT, THE LOOP INSTALLATION SHALL BE COMPLETED PRIOR TO OPENING THE LANE(S) TO TRAFFIC.



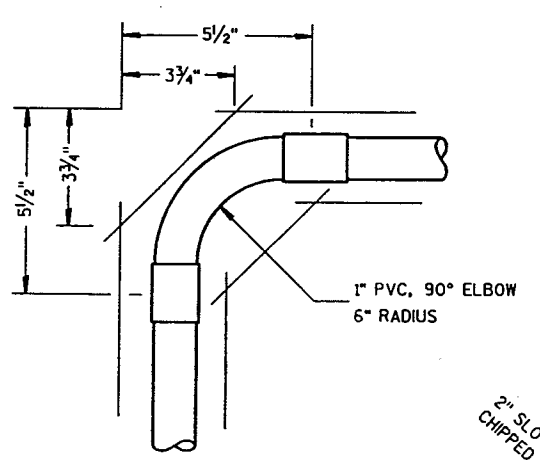
**SECTION B-B
CURB & GUTTER
LOOP DETECTOR INSTALLATION DETAIL**



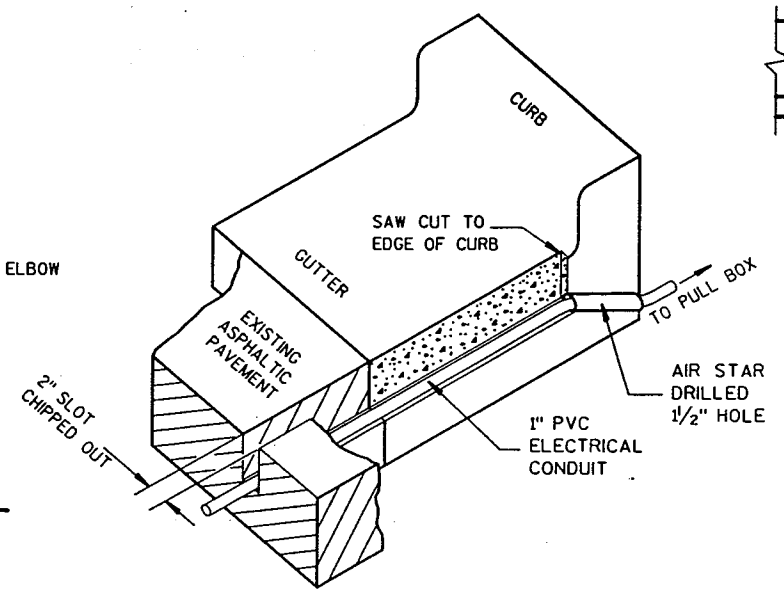
TYPICAL PLAN OF DETECTOR LOOP



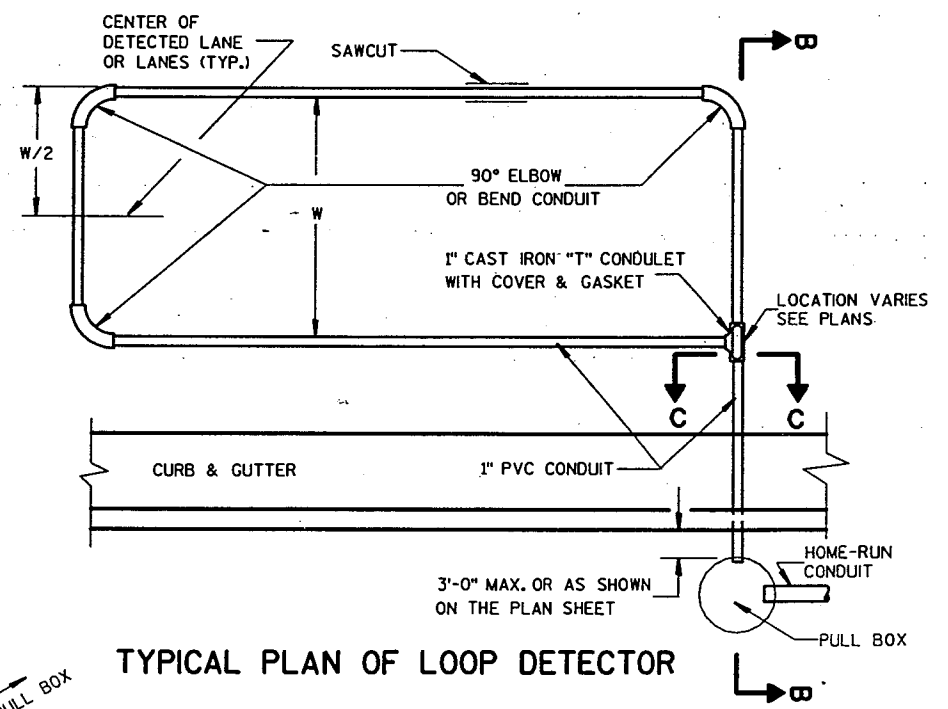
**SIDE VIEW
SECTION C-C
LOOP DETECTOR SLOT DETAIL**



**TOP VIEW
CORNER SAW SLOT DETAIL**

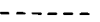
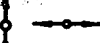




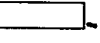




**ISOMETRIC VIEW
TYPICAL SAW CUT DETAIL FOR LEAD-IN CONDUIT**


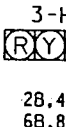


TYPICAL PLAN OF LOOP DETECTOR

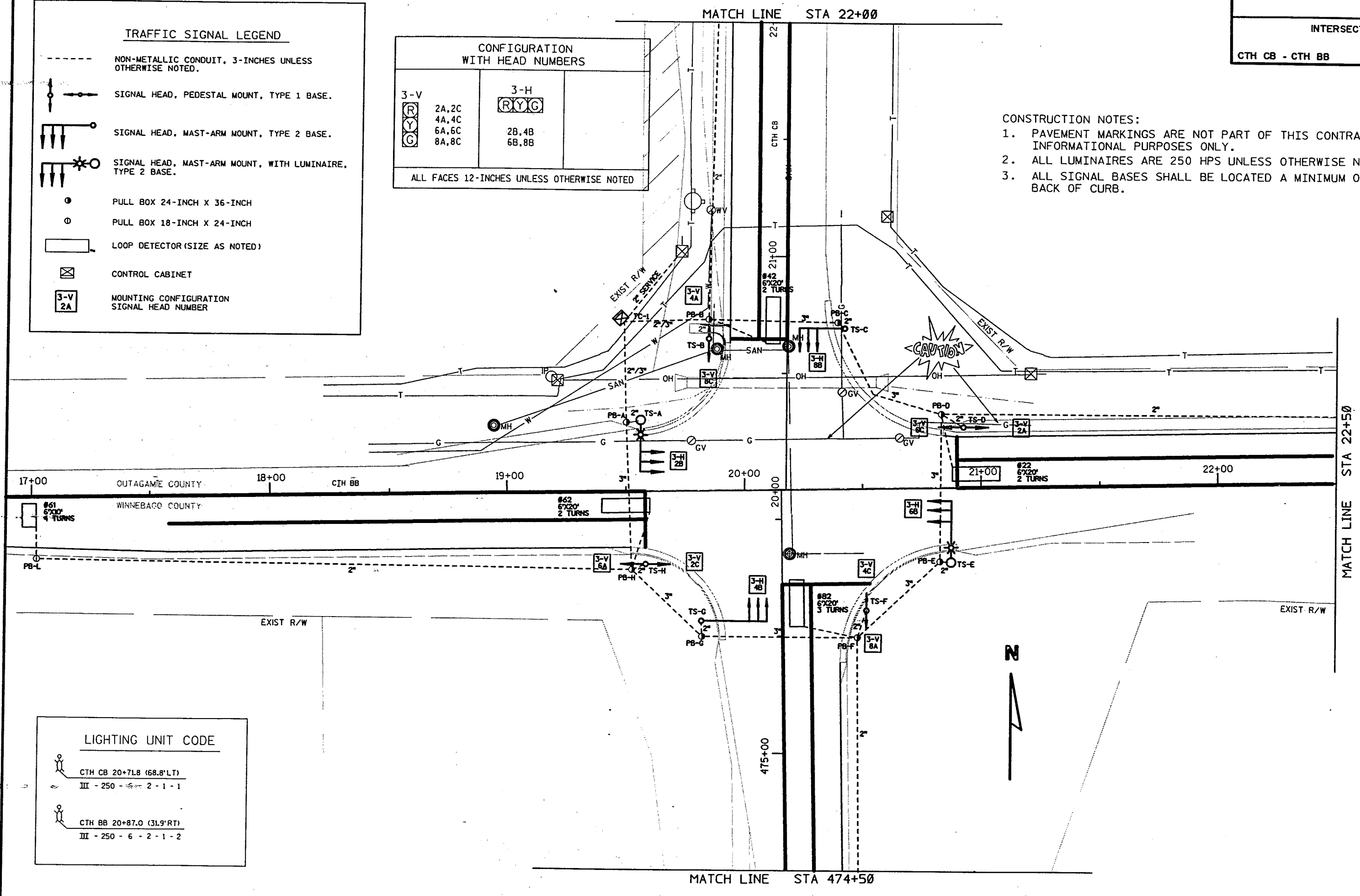
TRAFFIC SIGNAL LEGEND

-  NON-METALLIC CONDUIT, 3-INCHES UNLESS OTHERWISE NOTED.
-  SIGNAL HEAD, PEDESTAL MOUNT, TYPE 1 BASE.
-  SIGNAL HEAD, MAST-ARM MOUNT, TYPE 2 BASE.
-  SIGNAL HEAD, MAST-ARM MOUNT, WITH LUMINAIRE, TYPE 2 BASE.
-  PULL BOX 24-INCH X 36-INCH
-  PULL BOX 18-INCH X 24-INCH
-  LOOP DETECTOR (SIZE AS NOTED)
-  CONTROL CABINET
-  MOUNTING CONFIGURATION SIGNAL HEAD NUMBER



CONFIGURATION WITH HEAD NUMBERS

3-V	3-H	
 2A, 2C 4A, 4C 6A, 6C 8A, 8C	 2B, 4B 6B, 8B	
ALL FACES 12-INCHES UNLESS OTHERWISE NOTED		

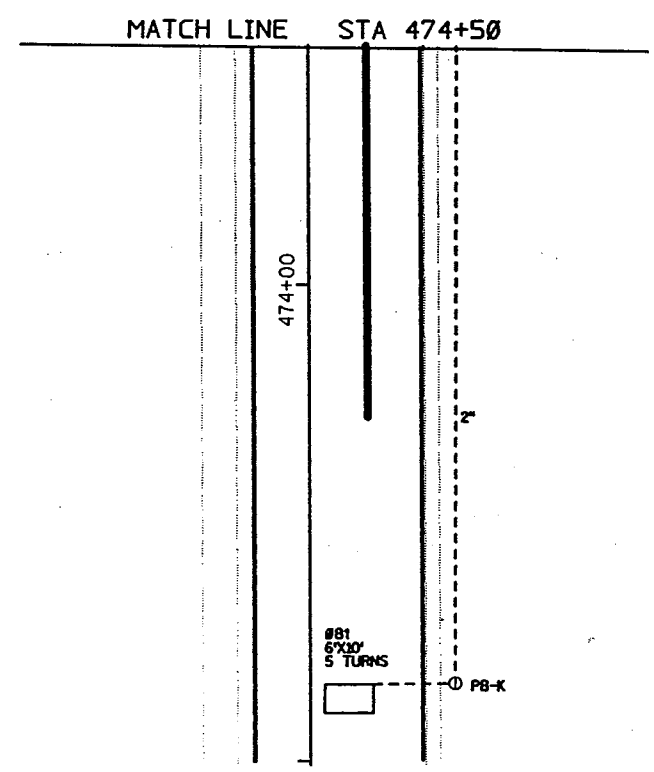
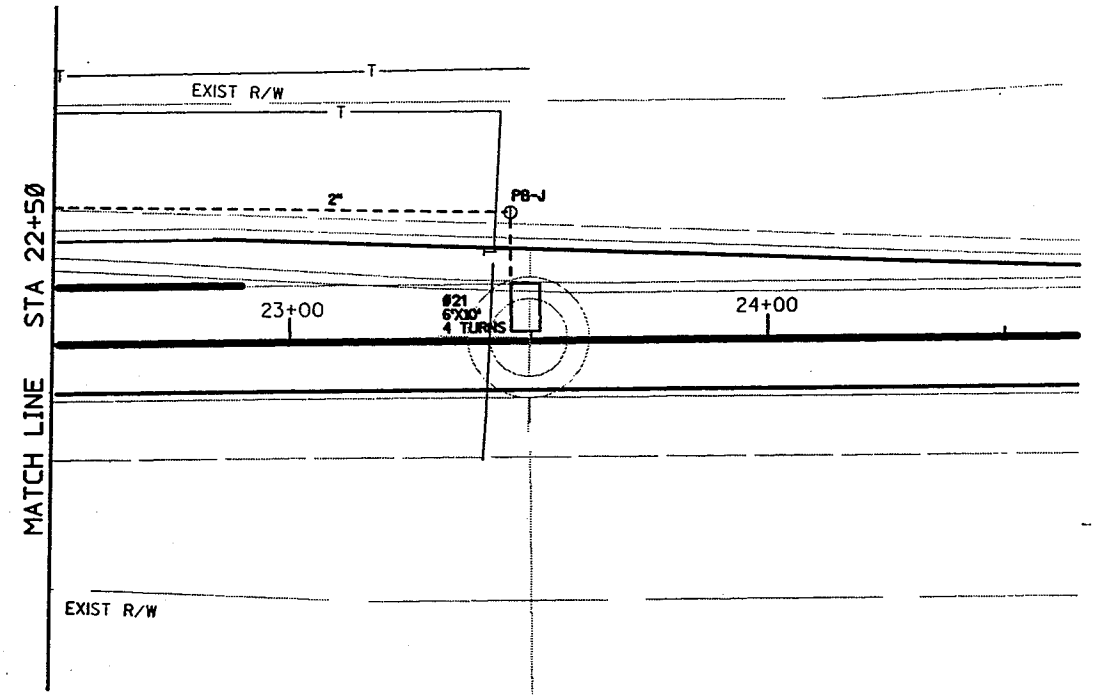
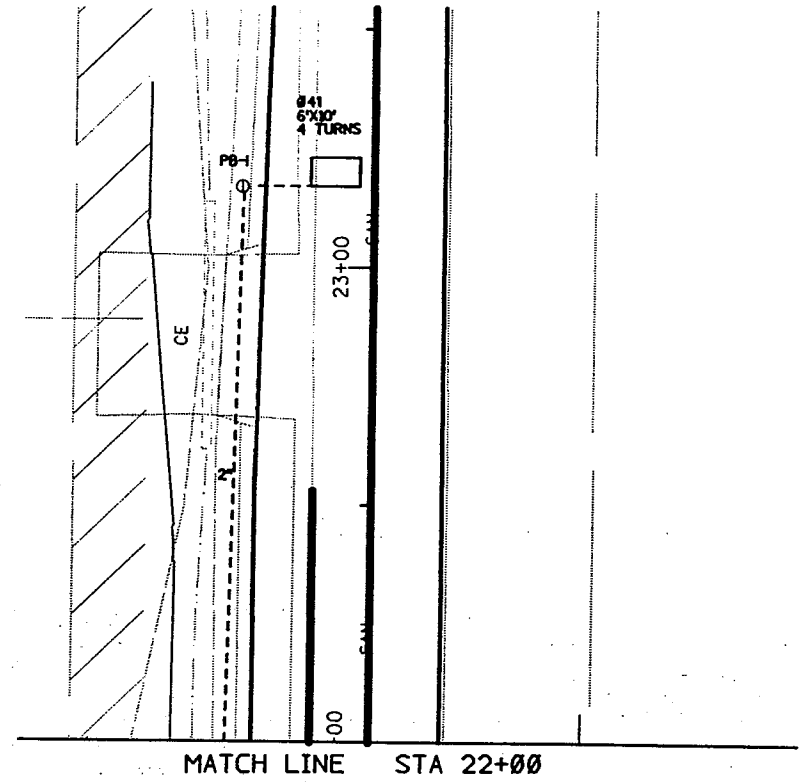
- ### CONSTRUCTION NOTES:
1. PAVEMENT MARKINGS ARE NOT PART OF THIS CONTRACT AND ARE FOR INFORMATIONAL PURPOSES ONLY.
 2. ALL LUMINAIRES ARE 250 HPS UNLESS OTHERWISE NOTED.
 3. ALL SIGNAL BASES SHALL BE LOCATED A MINIMUM OF 4 FEET OFF BACK OF CURB.



LIGHTING UNIT CODE

	CTH CB 20+71.8 (68.8'LT)
	III - 250 - 6 - 2 - 1 - 1
	CTH BB 20+87.0 (31.9'RT)
	III - 250 - 6 - 2 - 1 - 2





TRAFFIC SIGNAL LEGEND	
-----	NON-METALLIC CONDUIT, 3-INCHES UNLESS OTHERWISE NOTED.
	SIGNAL HEAD, PEDESTAL MOUNT, TYPE 1 BASE.
	SIGNAL HEAD, MAST-ARM MOUNT, TYPE 2 BASE.
	SIGNAL HEAD, MAST-ARM MOUNT, WITH LUMINAIRE, TYPE 2 BASE.
	PULL BOX 24-INCH X 36-INCH
	PULL BOX 18-INCH X 24-INCH
	LOOP DETECTOR (SIZE AS NOTED)
	CONTROL CABINET
	MOUNTING CONFIGURATION SIGNAL HEAD NUMBER

SEQUENCE OF OPERATION

	NOT USED ←		NOT USED ↓
HEAD NUMBERS	Ø1 CLEAR TO	Ø2 CLEAR TO	Ø3 CLEAR TO
Ø1	R/W	R/W	R/W
Ø2	2A,2B,2C	G Y R	R R R
Ø3			
Ø4	4A,4B,4C	R R R	G Y R
Ø5			
Ø6	6A,6B,6C	R R R	R R R
Ø7			
Ø8	8A,8B,8C	R R R	R R R
Ø2P			
Ø4P			
Ø6P			
Ø8P			

	NOT USED →		NOT USED ↑
HEAD NUMBERS	Ø5 CLEAR TO	Ø6 CLEAR TO	Ø7 CLEAR TO
Ø1	R/W	R/W	R/W
Ø2	2A,2B,2C	R R R	R R R
Ø3			
Ø4	4A,4B,4C	R R R	R R R
Ø5			
Ø6	6A,6B,6C	G Y R	R R R
Ø7			
Ø8	8A,8B,8C	R R R	G Y R
Ø2P			
Ø4P			
Ø6P			
Ø8P			

BARRIER

** CLEARANCE TO A PHASE IN CONFLICT WITH PHASE ON (SEE CHART 1 BELOW).

CHART 1

PHASE ON	NON-CONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
Ø 1		
Ø 2	6	4 AND 8
Ø 3		
Ø 4	8	2 AND 6
Ø 5		
Ø 6	2	4 AND 8
Ø 7		
Ø 8	4	2 AND 6

DETECTOR LOGIC

DETECTOR NUMBER	AMPLIFIER CHANNEL NUMBER	DETECTOR OPERATION			PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE (FT)	NUMBER OF TURNS
		CALLS AND EXTENDS	CALLS ONLY	EXTENDS ONLY							
Ø21	1	X			2	2			X	6.0 X 10.0	4
Ø22	2	X			2	2				6.0 X 20.0	2
Ø41	3	X			4	4			X	6.0 X 10.0	4
Ø42	4	X			4	4				6.0 X 20.0	2
Ø61	5	X			6	6			X	6.0 X 10.0	4
Ø62	6	X			6	6				6.0 X 20.0	2
Ø81	7	X			8	8			X	6.0 X 10.0	5
Ø82	8	X			8	8				6.0 X 20.0	3

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY #/Ø	PHASE RECALL
1			
2		6	MIN.
3			
4		8	
5			
6		2	MIN.
7			
8		4	

OVERLAPS

O.L. "A"	*N/A
O.L. "B"	*N/A
O.L. "C"	*N/A
O.L. "D"	*N/A

TYPE OF INTERCONNECT	
NONE	<input checked="" type="checkbox"/>
TBC	
CLOSED LOOP	
HARDWIRE	
TONE (FREQ.)	

TYPE OF PRE-EMPT	
NONE	<input checked="" type="checkbox"/>
RAILROAD	
EMERGENCY VEHICLE	

TYPE OF LIGHTING	
NONE	
IN TRAFFIC CONTROL CABINET	<input checked="" type="checkbox"/>
IN SEPERATE CONTROL CABINE	

GENERAL NOTES:

1. ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1 AT LEFT.)
3. IF ANY OPPOSING THRU PHASES ARE TIMING CONCURRENTLY, THEY SHALL TERMINATE TOGETHER DUE TO PERMISSIVE LEFT TURN CONFLICT.

CABLE RUN		CONDUCTORS JUMPERED		CABLE	HEAD	EQUIPMENT GROUND	NEUTRAL	PHASE	SIGNAL INDICATION COLOR							
ORIGIN	END	FROM	TO						GREEN	YELLOW	RED	GREEN	YELLOW	WALK	DON'T WALK	PEDEST. BUTTON
TC-1	TS-D	TC-1	TS-B	15/C	4A	*10 XLP GREEN	*10 XLP WHITE	4	GREEN/WHITE TR.	BLUE/WHITE TR.	RED/WHITE TR.					
				15/C	8C	*10 XLP GREEN	*10 XLP WHITE	8	GREEN/BLACK TR.	ORANGE/BLACK TR.	RED/BLACK TR.					
		TS-B	TS-C	12/C	8B	*10 XLP GREEN	*10 XLP WHITE	8	GREEN/BLACK TR.	ORANGE/BLACK TR.	RED/BLACK TR.					
		TS-C	TS-D	9/C	6C	*10 XLP GREEN	*10 XLP WHITE	6	GREEN	ORANGE	RED					
					2A	*10 XLP GREEN	*10 XLP WHITE	2	BLACK	WHITE/BLACK TR.	BLUE					
TC-1	TS-E	TC-1	TS-A	15/C	2B	*10 XLP GREEN	*10 XLP WHITE	2	GREEN/WHITE TR.	BLUE/WHITE TR.	RED/WHITE TR.					
		TS-A	TS-H	15/C	6A	*10 XLP GREEN	*10 XLP WHITE	6	GREEN	ORANGE	RED					
					2C	*10 XLP GREEN	*10 XLP WHITE	2	GREEN/WHITE TR.	BLUE/WHITE TR.	RED/WHITE TR.					
		TS-H	TS-G	12/C	4B	*10 XLP GREEN	*10 XLP WHITE	4	GREEN/BLACK TR.	ORANGE/BLACK TR.	RED/BLACK TR.					
		TS-G	TS-F	12/C	4C	*10 XLP GREEN	*10 XLP WHITE	4	GREEN/BLACK TR.	ORANGE/BLACK TR.	RED/BLACK TR.					
					8A	*10 XLP GREEN	*10 XLP WHITE	8	BLACK	WHITE/BLACK TR.	BLUE					
		TS-F	TS-E	7/C	6B	*10 XLP GREEN	*10 XLP WHITE	6	GREEN	ORANGE	RED					

PULL BOXES, STEEL, 24X36-INCH

NO.	STATION	LOCATION	EACH
PB-A	19+50.5	29.8' LT	1
PB-B	20+73.0	32.9' LT	1
PB-C	20+71.8	21.4' RT	1
PB-D	20+83.6	31.7' LT	1
PB-E	20+82.4	31.6' RT	1
PB-F	475+48.9	31.5' RT	1
PB-G	475+50.2	34.1' LT	1
PB-H	19+52.2	33.5' RT	1
			8

PULL BOXES, STEEL, 18X24-INCH

NO.	STATION	LOCATION	EACH
PB-I	23+17	27' LT	1
PB-J	23+46	28' LT	1
PB-K	473+16	30' RT	1
PB-L	17+02	26.5' RT	1
			4

NON-METALLIC CONDUIT, SCHEDULE 40

LOCATION FROM	TO	3-INCH SPECIAL LF	2-INCH SPECIAL LF	3-INCH LF	2-INCH LF
TC-1	SERVICE				40
TC-1	PB-A			43	43
TC-1	PB-B			36	36
PB-B	PB-C	48		6	
PB-C	PB-D			64	
PB-D	PB-E	56		8	
PB-E	PB-F			48	
PB-F	PB-G	58		8	
PB-G	PB-H			41	
PB-H	PB-A	56		7	
PB-D	PB-J				262
PB-F	PB-K				233
PB-H	PB-L				251
PB-B	PB-I		50		194
PB-A	TS-A				6
PB-B	TS-B		10		8
PB-C	TS-C				5
PB-D	TS-D				11
PB-E	TS-E				5
PB-F	TS-F				11
PB-G	TS-G				7
PB-H	TS-H				6
		218	60	261	1118

CONCRETE BASES CONTROL CABINET

NO.	ROAD	STATION	LOCATION	TYPE 1	TYPE 2	BASE, TYPE 6
TC-1	CTH CB	20+71.8	68.8' LT			1
TS-A	CTH BB	19+56.5	30.7' LT		1	
TS-B	CTH CB	20+53.9	31.8' LT	1		
TS-C	CTH CB	20+69.9	26.6' RT		1	
TS-D	CTH BB	20+92.8	26.0' LT	1		
TS-E	CTH BB	20+87.0	31.9' RT		1	
TS-F	CTH CB	475+60.4	35.5' RT	1		
TS-G	CTH CB	475+46.9	34.2' LT		1	
TS-H	CTH BB	19+58.0	31.2' RT	1		
				4	4	1

TRAFFIC SIGNAL WIRE, NO. 10 XLP

FROM	TO	NEUTRAL (WHITE) LF	EQUIPMENT GROUND (GREEN) LF
TC-1	TS-B	73	73
TS-B	PB-B		25
TS-B	TS-C	97	97
TS-C	PB-C		12
TS-C	TS-D	99	99
TS-D	PB-D		18
TS-D	TS-E	99	99
TS-E	PB-E		12
TS-E	TS-F	84	84
TS-F	PB-F		18
TS-F	TS-G	104	104
TS-G	PB-G		14
TS-G	TS-H	73	73
TS-H	PB-H		12
TS-H	TS-A	94	94
TS-A	PB-A		12
TS-A	TC-1	67	67
		790	913

TRAFFIC SIGNAL FACES

HEAD NO.	VERTICAL 3 12-INCH EACH	HORIZONTAL 3 12-INCH EACH	BACK PLATES 12-INCH EACH	
2A	1		1	
2B		1	1	
2C	1			
4A	1		1	
4B		1	1	
4C	1			
6A	1		1	
6B		1	1	
6C	1			
8A	1		1	
8B		1	1	
8C	1			
		8	4	8

LOOP DETECTORS

NO.	STATION	LOCATION	SIZE FT	TURNS	SLOTS LF	CONDUIT LF	WIRE LF	LEAD-IN CABLE LF
021	23+46	7' LT	6' X 10'	4	42	55	180	424
022	20+88	6' LT	6' X 20'	2	68	76	158	162
041	23+17	7' RT	6' X 10'	4	45	56	182	288
042	20+51	6' RT	6' X 20'	2	70	75	156	44
061	17+02	8' LT	6' X 10'	4	41	47	164	365
062	19+60	6' LT	6' X 20'	2	68	77	160	114
081	473+16	8' RT	6' X 10'	5	43	48	198	454
082	475+74	6' RT	6' X 20'	3	69	74	206	221
					446	508	1404	2072

* LOCATION IS FRONT CENTER OF LOOP

TRAFFIC SIGNALS

BASE NO.	PEDESTAL BASES EACH	TRANSFORMER BASES, 1 1/2-INCH EACH	TRAFFIC SIGNAL, 13' STANDARD ALUMINUM EACH	POLES, TYPE 2 EACH	TYPE 3 EACH	TROMBONE ARMS 20-FEET EACH	LUMINAIRE ARMS, SINGLE MEMBER 4 1/2-INCH CLAMP 6-FOOT EACH	LUMINAIRES, UTILITY 250 WATTS EACH
TS-A		1			1	1	1	1
TS-B	1		1					
TS-C		1		1				
TS-D	1		1					
TS-E		1			1		1	
TS-F	1		1					1
TS-G		1		1				
TS-H	1		1					
	4	4	4	2	2	4	2	2

TRAFFIC SIGNAL CABLE, NO. 14

LOCATION FROM	TO	15-COND. LF	12-COND. LF	9-COND. LF	5-COND. LF
TC-1	TS-B	73			
TS-B	TS-C		99		
TS-C	TS-D			102	
TC-1	TS-A	68			
TS-A	TS-H	97			
TS-H	TS-G		76		
TS-G	TS-F			106	
TS-F	TS-E				80
TS-A	TS-A				40
TS-B	TS-B				13
TS-C	TS-C				40
TS-D	TS-D				13
TS-E	TS-E				40
TS-F	TS-F				13
TS-G	TS-G				40
TS-H	TS-H				13
		238	175	208	292

ELECTRICAL WIRE, LIGHTING

FROM	TO	TYPE UF CABLE, 2 CONDUCTOR, NO. 12 W/GROUND LF	ELECTRICAL WIRE, LIGHTING, NO. 12 LF
TC-1	TS-A	86	
TC-1	TS-E	210	
	TS-A		90
	TS-E		90
		296	180

