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Sheet No.	Estimate of Quantities
Sheet No.	Miscellaneous Quantities
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Sheet No.	Plan and Profile
Sheet No.	Standard Detail Drawings
Sheet No.	Sign Plates
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Sheet No.	Computer Earthwork Data
Sheet No.	Cross Sections

TOTAL SHEETS =



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

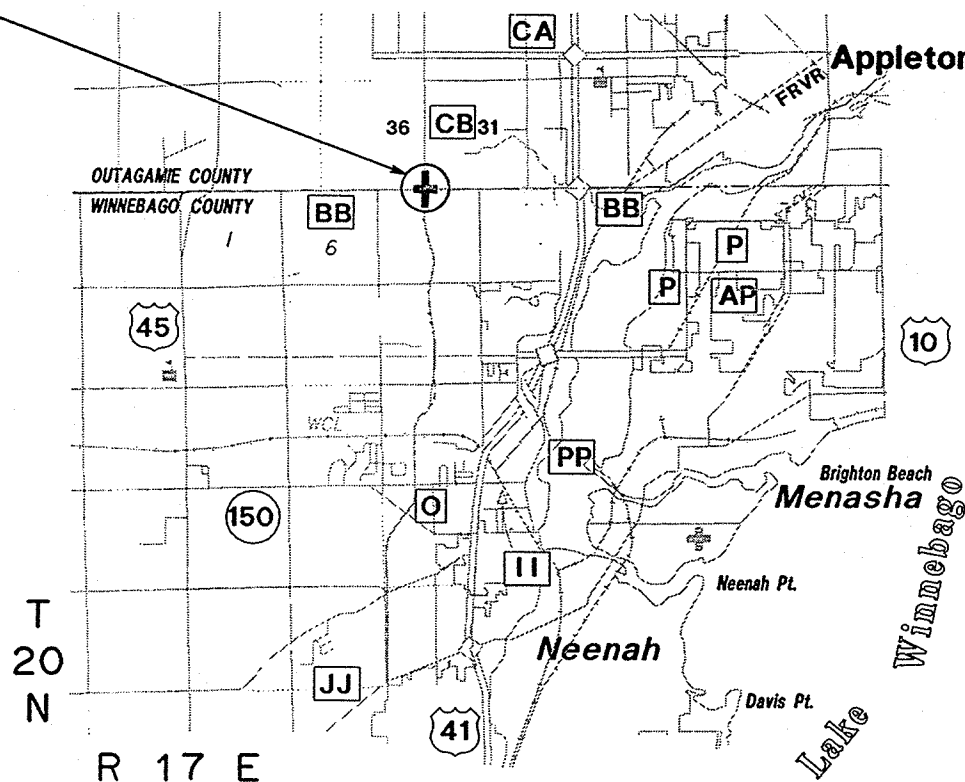
CONVENTIONAL SIGNS

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)	

PROJECT LOCATION

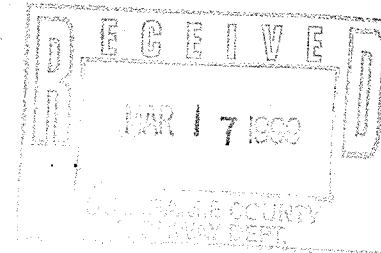
X = 2,394,075.65
Y = 153,408.24

N



LAYOUT
SCALE 0 1 MI.
TOTAL NET LENGTH OF CENTERLINE = 0.000 MI.

CB12



CB-12

APPROVED FOR
WINNEBAGO COUNTY

DATE HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED

BY
MEAD & HUNT
ENGINEERS
ARCHITECTS
SCIENTISTS
PLANNERS
MADISON, WISCONSIN

DATE CONSULTING ENGINEER

STANDARD DETAIL DRAWINGS

9B2-6	CONDUIT
9B4-3	PULL BOX
9C2-2	CONCRETE BASES, TYPES 1, 2, AND 5
9C3-2	TRANSFORMER/PEDESTAL BASE
9C5-2	CONCRETE CONTROL CABINET BASES
9D1-2	CABINET SERVICE INSTALLATION
9D2-2	CONTROL CABINET
9E1-2a	POLE MOUNTING FOR TRAFFIC SIGNALS, TYPE 2
9E1-2b	POLE MOUNTINGS FOR TRAFFIC SIGNALS & LIGHT UNITS, TYPE 3
9E1-2f	HARDWARE DETAILS FOR POLE MOUNTINGS
9E3-2	NON-FREEWAY LIGHTING UNIT POLE WIRING
9E6-1	TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.
9F13-2	LOOP DETECTOR INSTALLED IN EXISTING ASPHALTIC PAVEMENT

UTILITIES

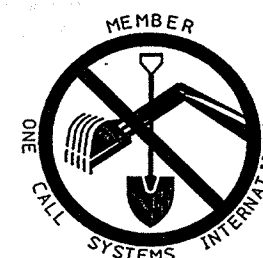
AMERITECH 1 (920) 735-3252	MR. TOM KOTESKI 221 W. WASHINGTON ST., 4th FLOOR APPLETON, WI 54911
WEPCO - ELECTRIC OPERATIONS 1 (920) 380-3554	MR. TOM BORCHART 800 S. LYNNDAL DRIVE P.O. BOX 1699 APPLETON, WI 54913
WEPCO - GAS OPERATIONS 1 (920) 380-3466	MR. DENNIS GERARD 800 S. LYNNDAL DRIVE P.O. BOX 1699 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

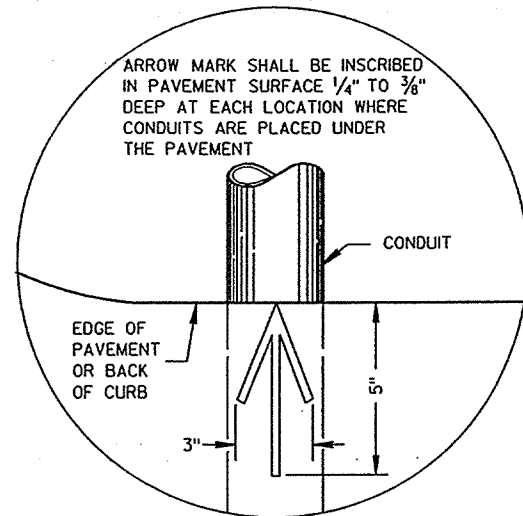
TOLL FREE

FAX A LOCATE 1-800-338-3860

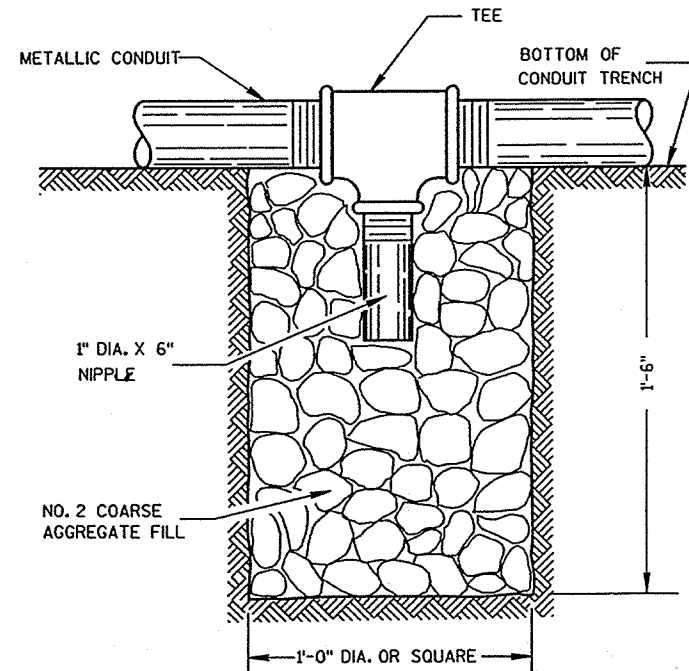
TDD (FOR HEARING IMPAIRED) 1-800-542-2289

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.	1268.00	1268.00
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	12.00	12.00
65850	TRAFFIC SIGNAL MOUNTING HARDWARE, CTH CB & CTH BB	L.S.	1.00	1.00
65903	LUMINAIRES, UTILITY, 150 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

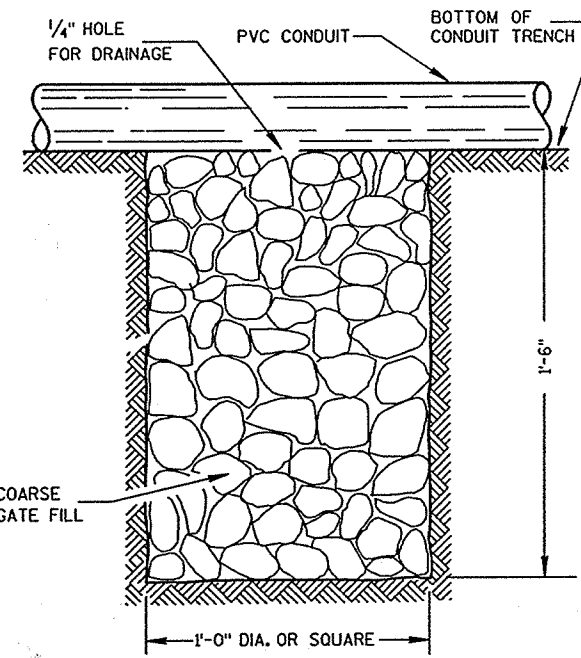


PLAN VIEW
ARROW MARK



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.

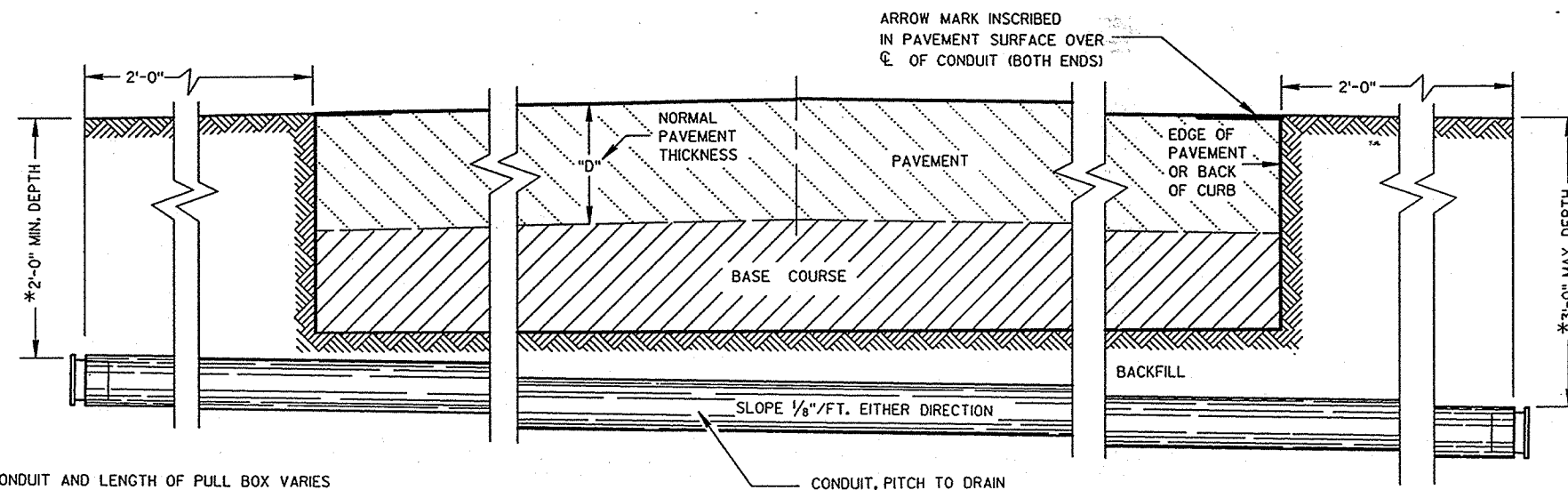
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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.



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

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

DIMENSION IN INCHES		TYPE OF PIPE									
		CORRUGATED STEEL									
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 3/8" 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.

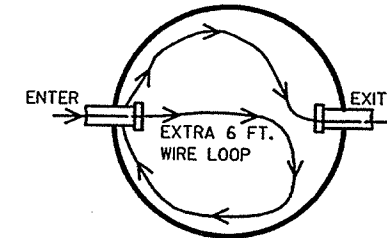
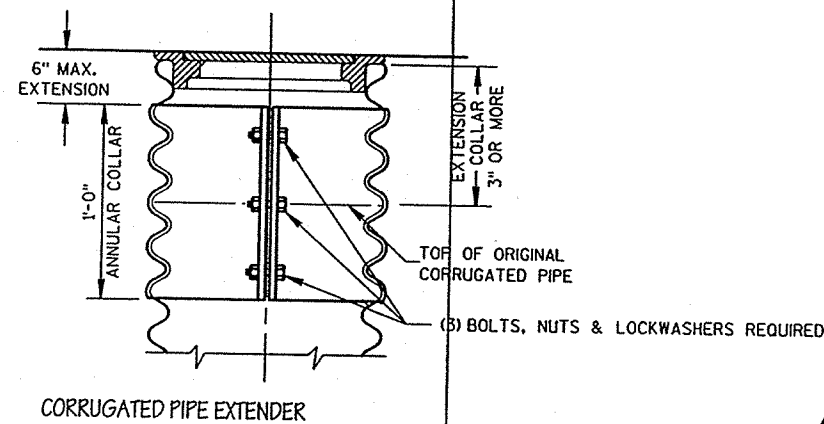


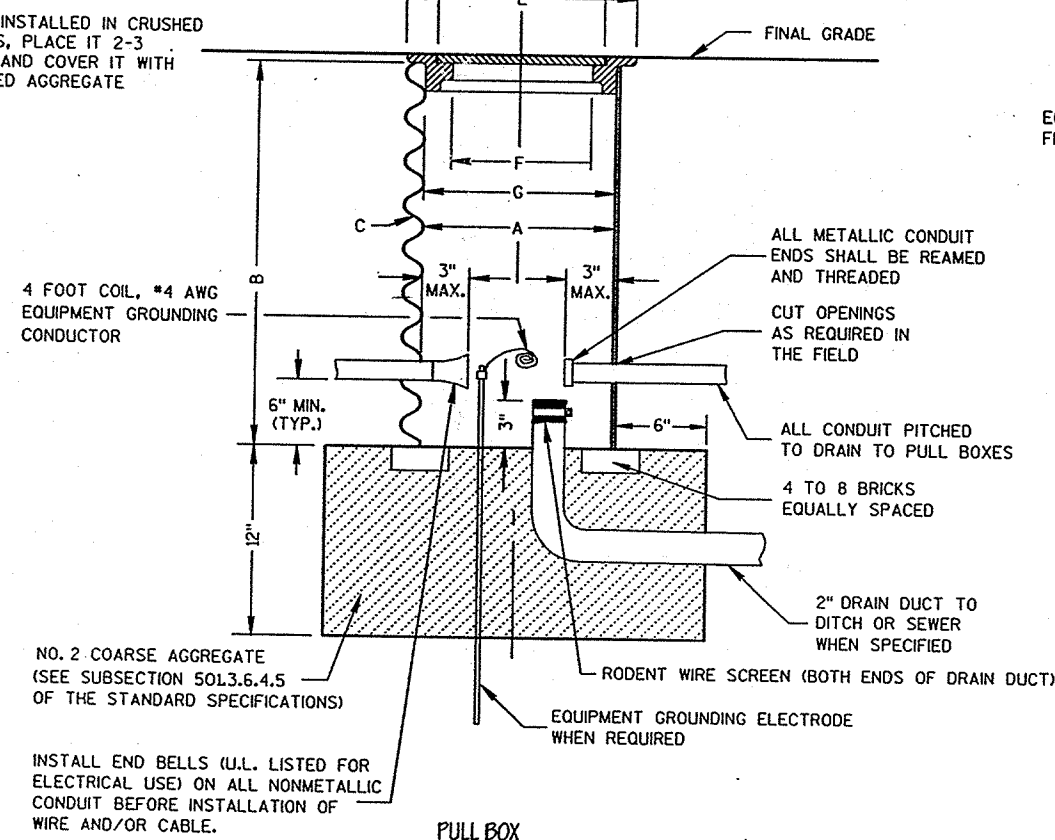
ILLUSTRATION OF WIRE/CABLE PLACEMENT IN PULLBOX

HEAVY DUTY FRAME AND COVER

HALF SECTION CORRUGATED STEEL PIPE

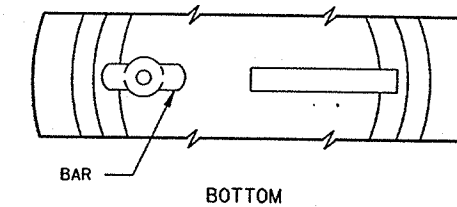
HALF SECTION POLYETHYLENE PIPE (NON PAVEMENT AREAS ONLY)

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

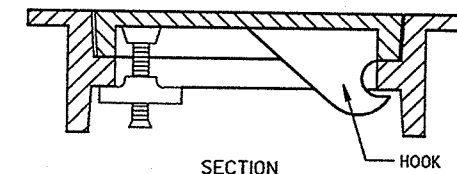


PULL BOX

COUNTY PROJECT	SHEET NO.
PULL BOX DETAIL	
CTH CB - CTH BB	OUTAGAMIE/WINNEBAGO

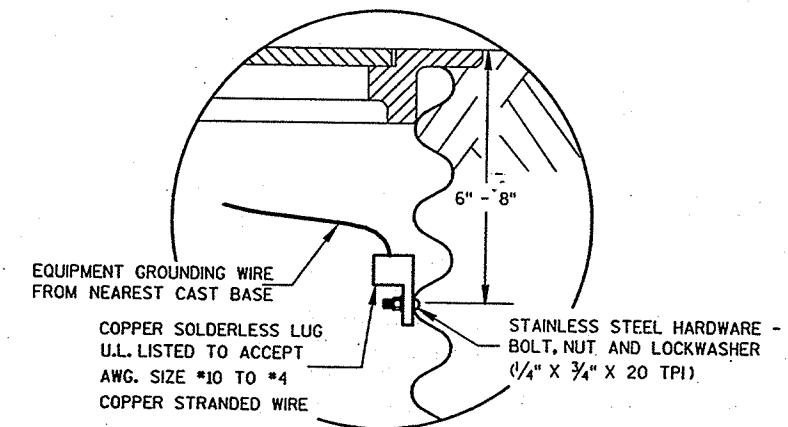


BOTTOM



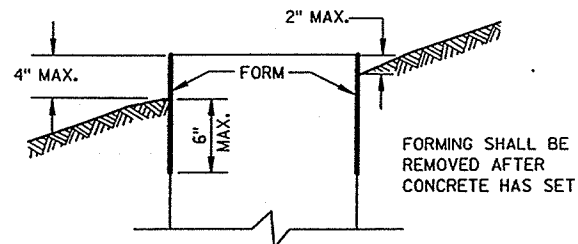
ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

FORM DEPTH SHALL BE NO MORE THAN 6" BELOW GRADE ON THE LOWER SIDE OF BASE



FORMING DETAIL

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

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.

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.

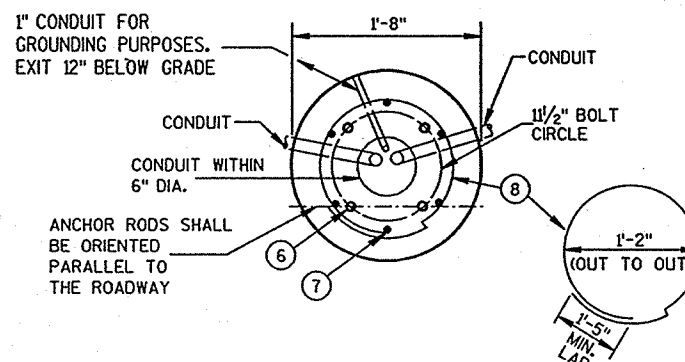
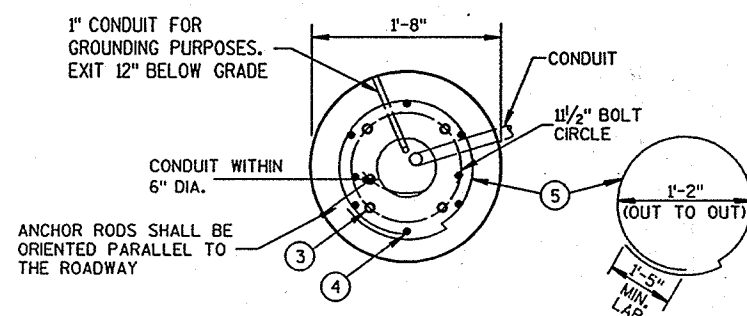
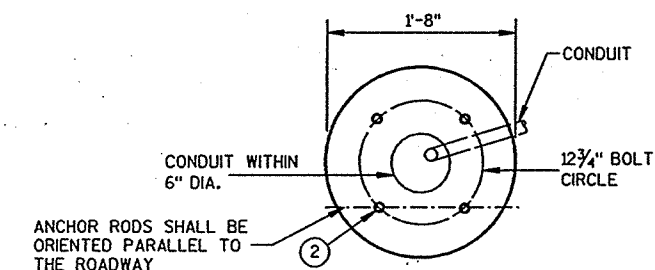
WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

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).

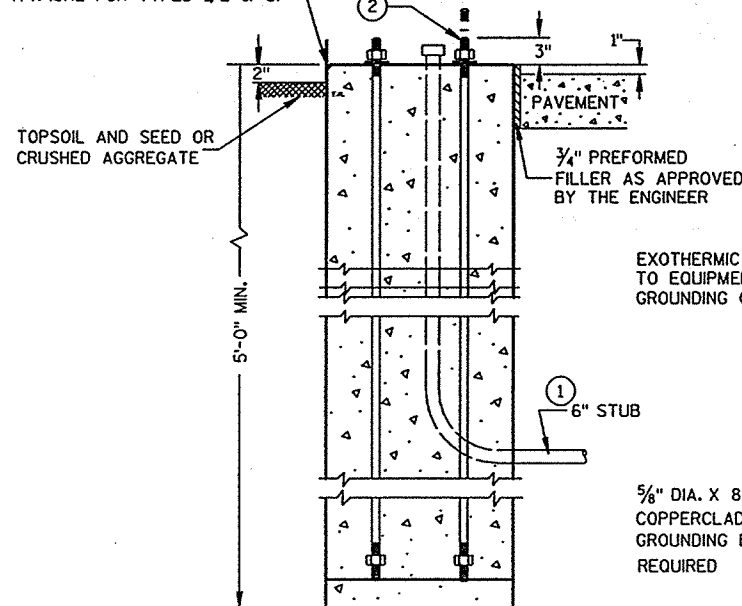
- THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

- (4) 1" DIA. X 3'-6" ANCHOR RODS.
- (4) 1" DIA. X 5'-0" ANCHOR RODS.
- (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.
- (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.
- (4) 1" DIA. X 3'-6" ANCHOR RODS.
- (6) NO. 4 X 4'-8" BAR STEEL REINFORCEMENT
- (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

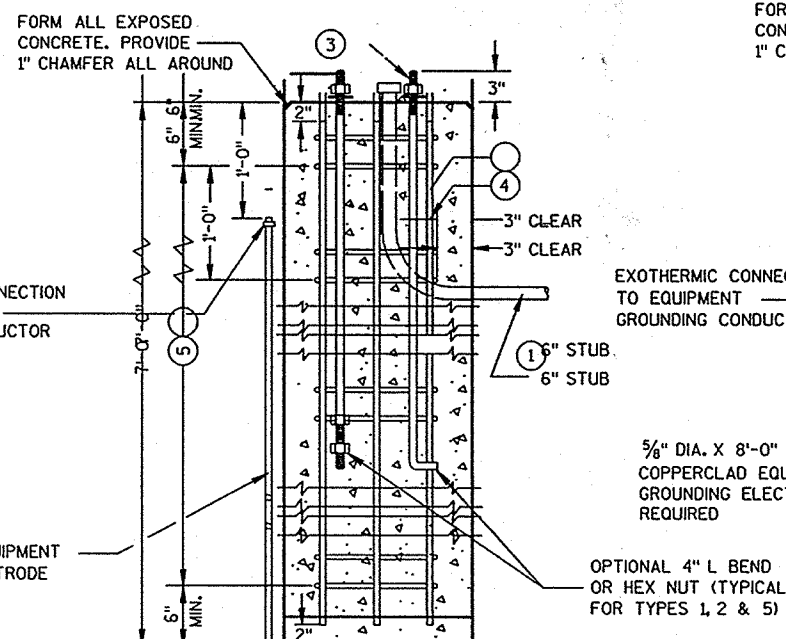


FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

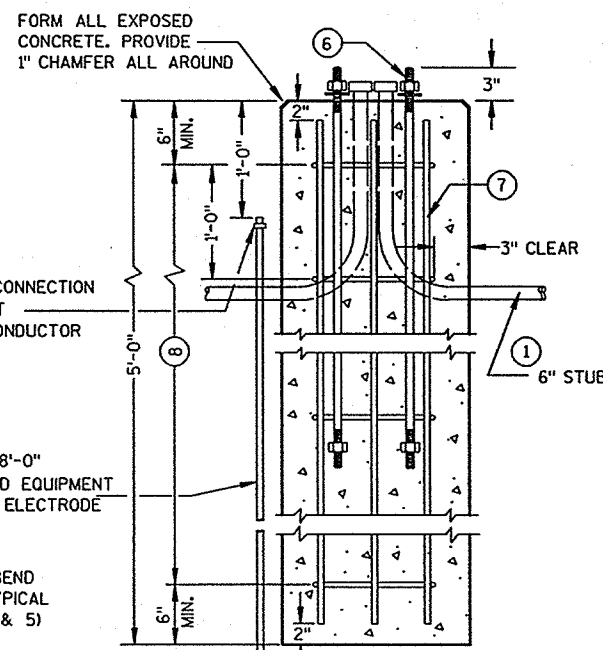
HALF SECTION IN UNPAVED AREA (TYPICAL FOR TYPES 1, 2 & 5)



TYPE 1



TYPE 2



TYPE 5

CONCRETE BASES

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

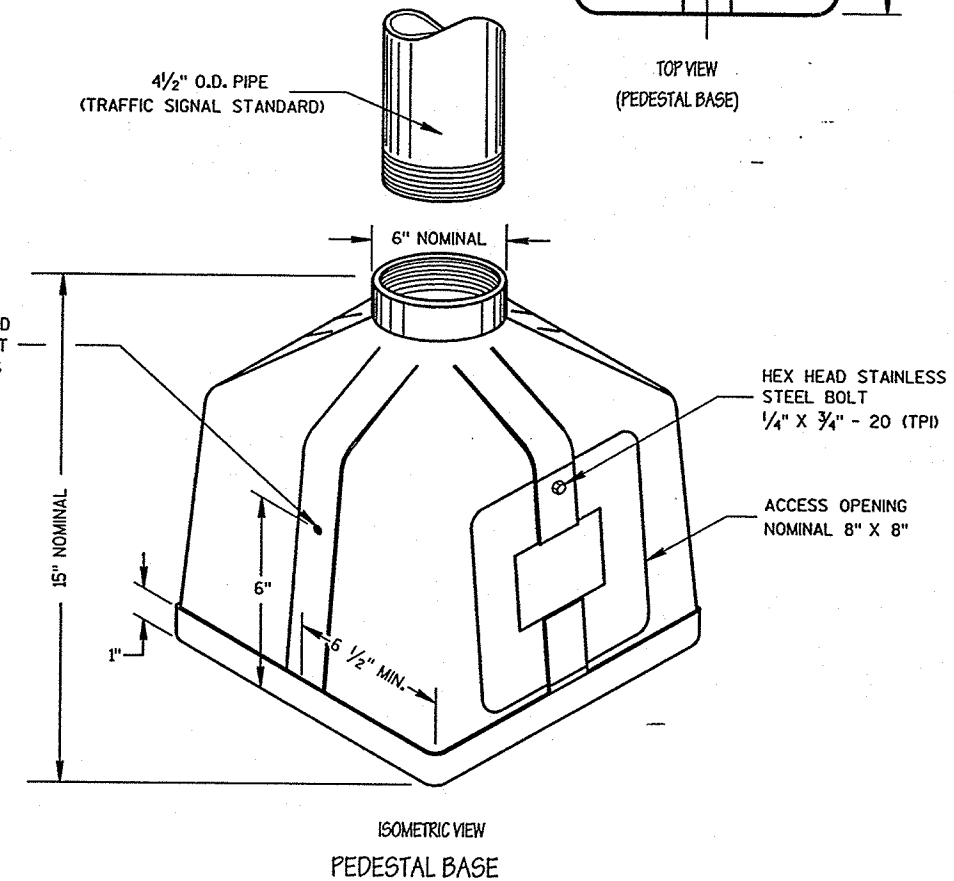
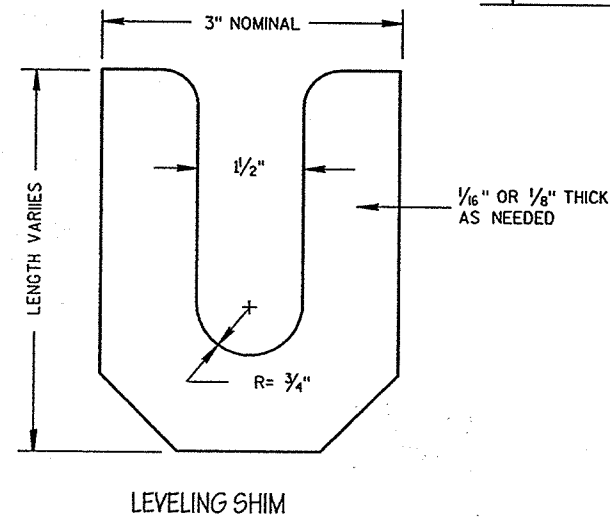
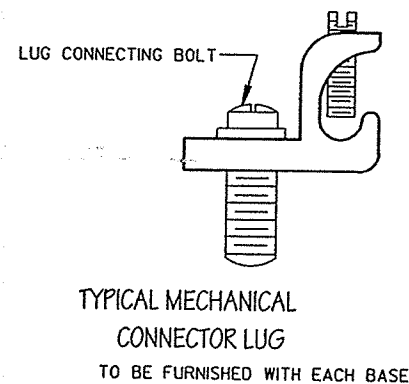
LEVELING SHIMS, IF NEEDED, SHALL BE DESIGNED FOR THE PURPOSE AND USED UNDER CAST BASES WHEN PLUMBING POLES OR STANDARDS DURING INSTALLATION. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE.

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

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.

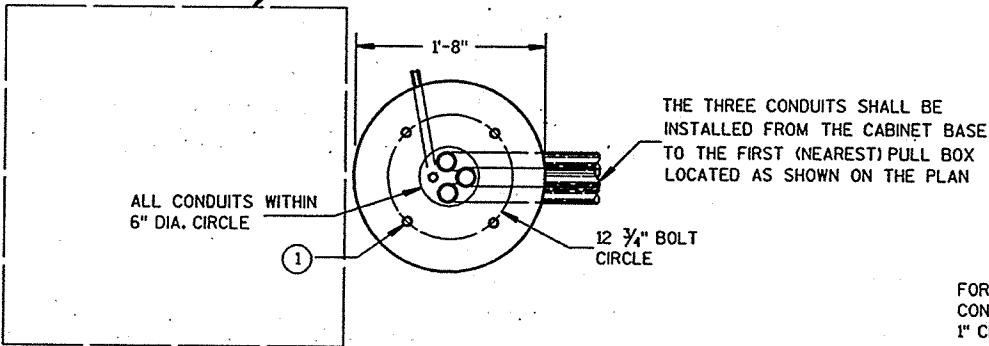
PEDESTAL BASE COLLAR THREADING SHALL BE TAPERED AND IN ACCORDANCE WITH NATIONAL PIPE THREADING DIMENSIONS.

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



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

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

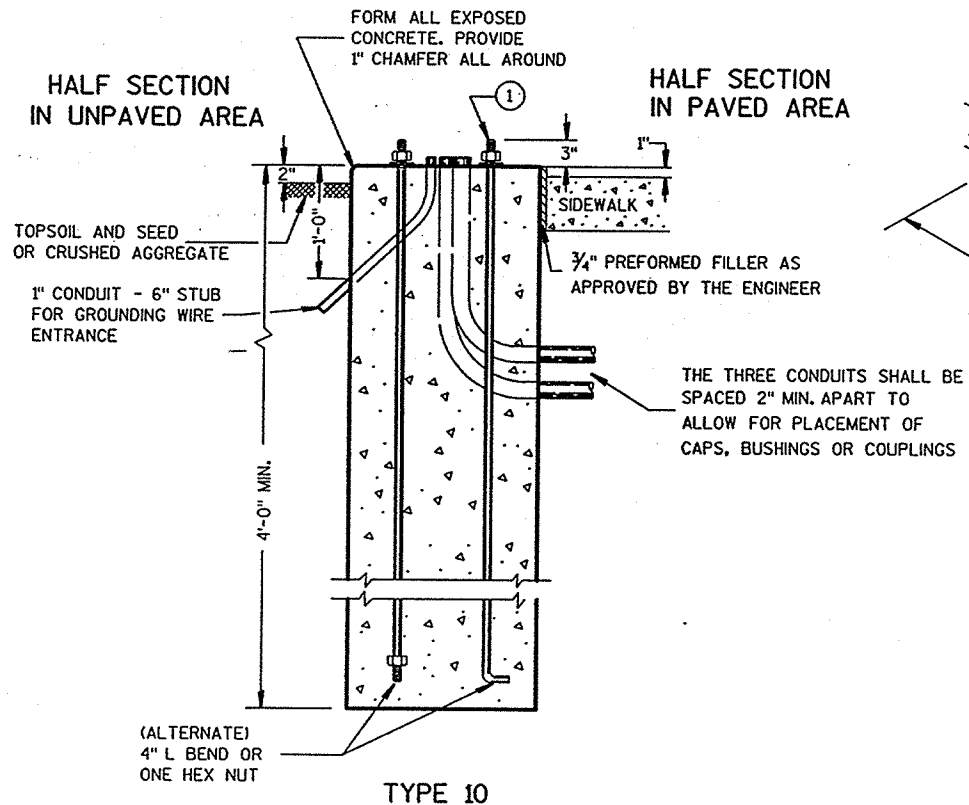


CONDUIT LOCATIONS IN 24" X 36" PULL BOX
(LEADING TO CONTROLLER CABINET BASE TYPE 6, 7, 8 AND 9)

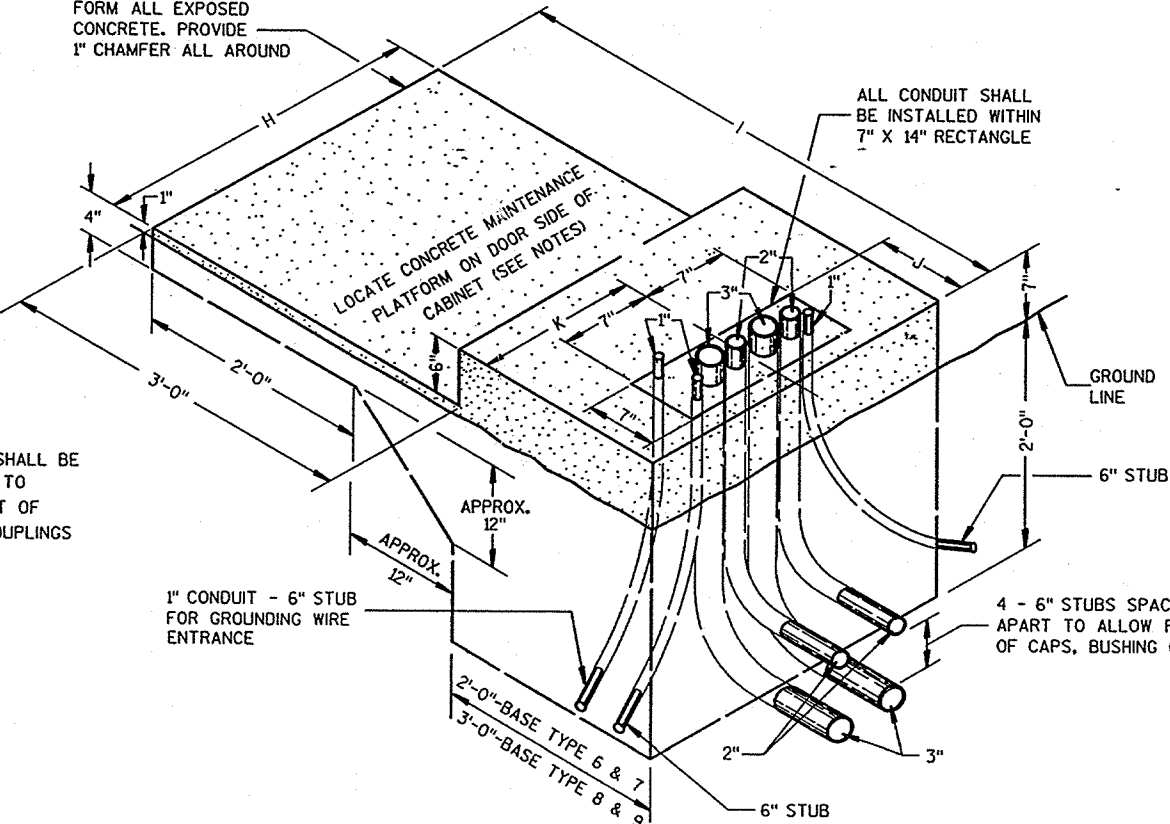
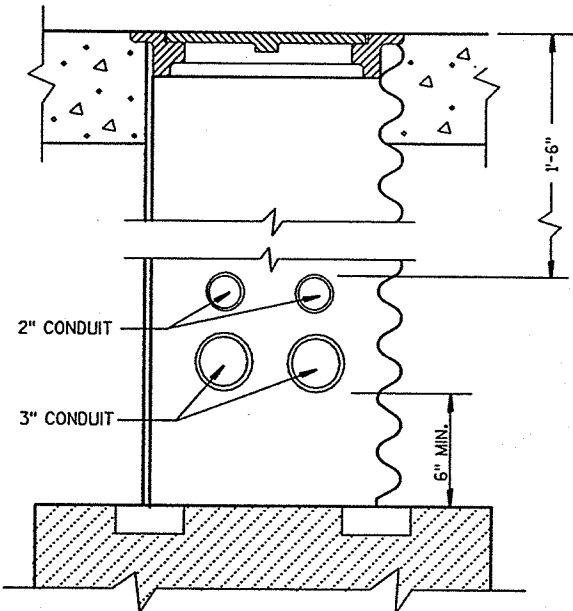
FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

HALF SECTION IN UNPAVED AREA

HALF SECTION IN PAVED AREA



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.

- ① FOUR (4) ANCHOR RODS, 1" DIA. X 3'-6" ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 AND 641.2.2 OF THE STANDARD SPECIFICATIONS AND IN ACCORDANCE WITH A-449, OR ASTM. A-687 (GRADE 105).

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.

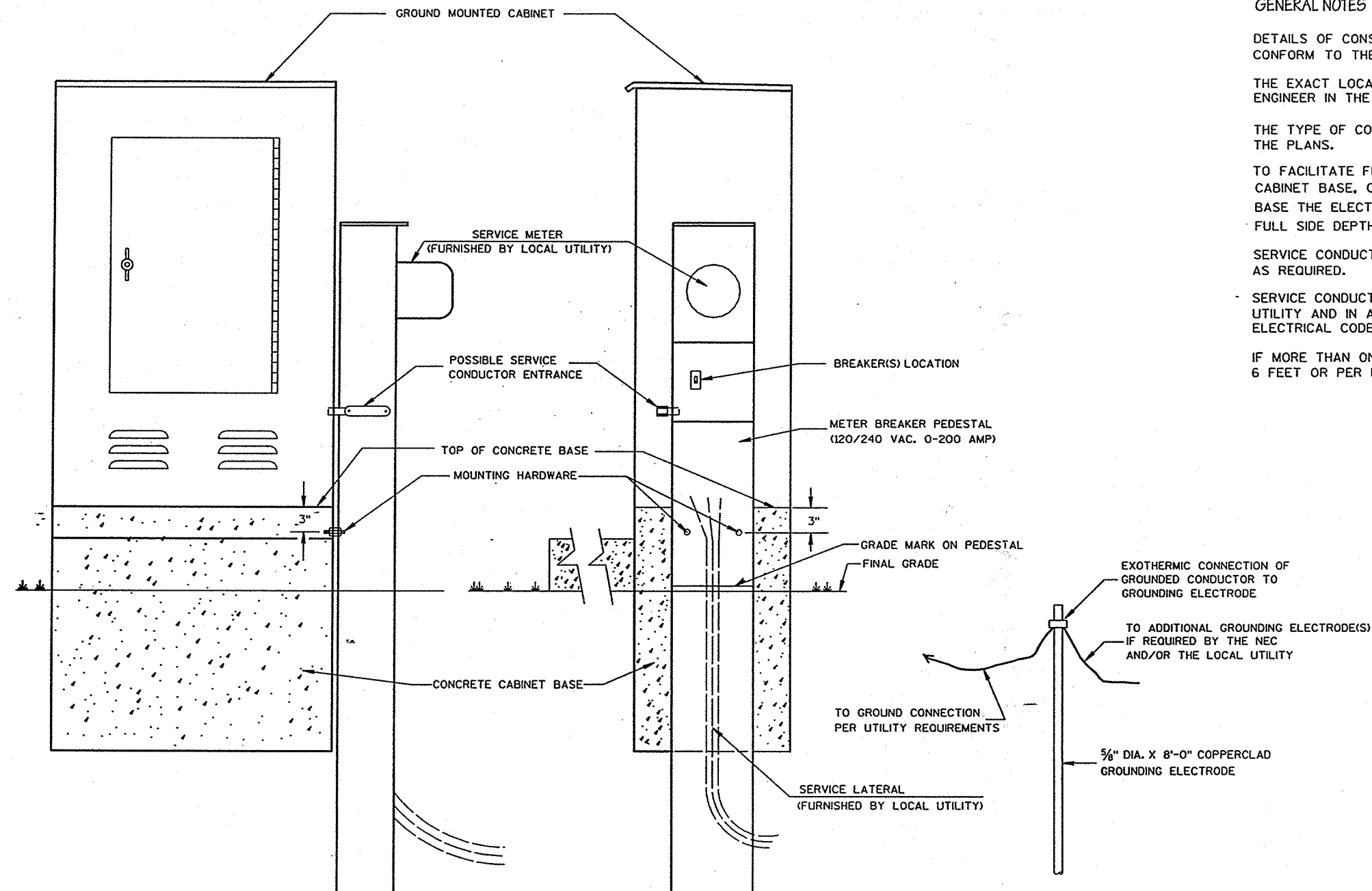
THE TYPE OF CONCRETE CABINET BASE TO BE INSTALLED SHALL BE AS CALLED FOR IN THE PLANS.

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.

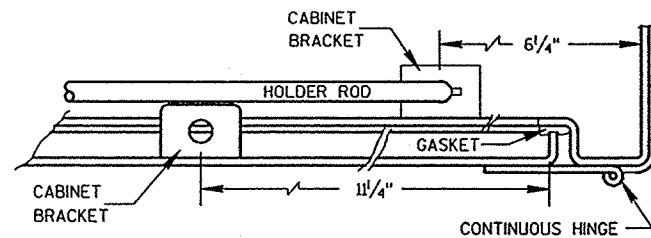
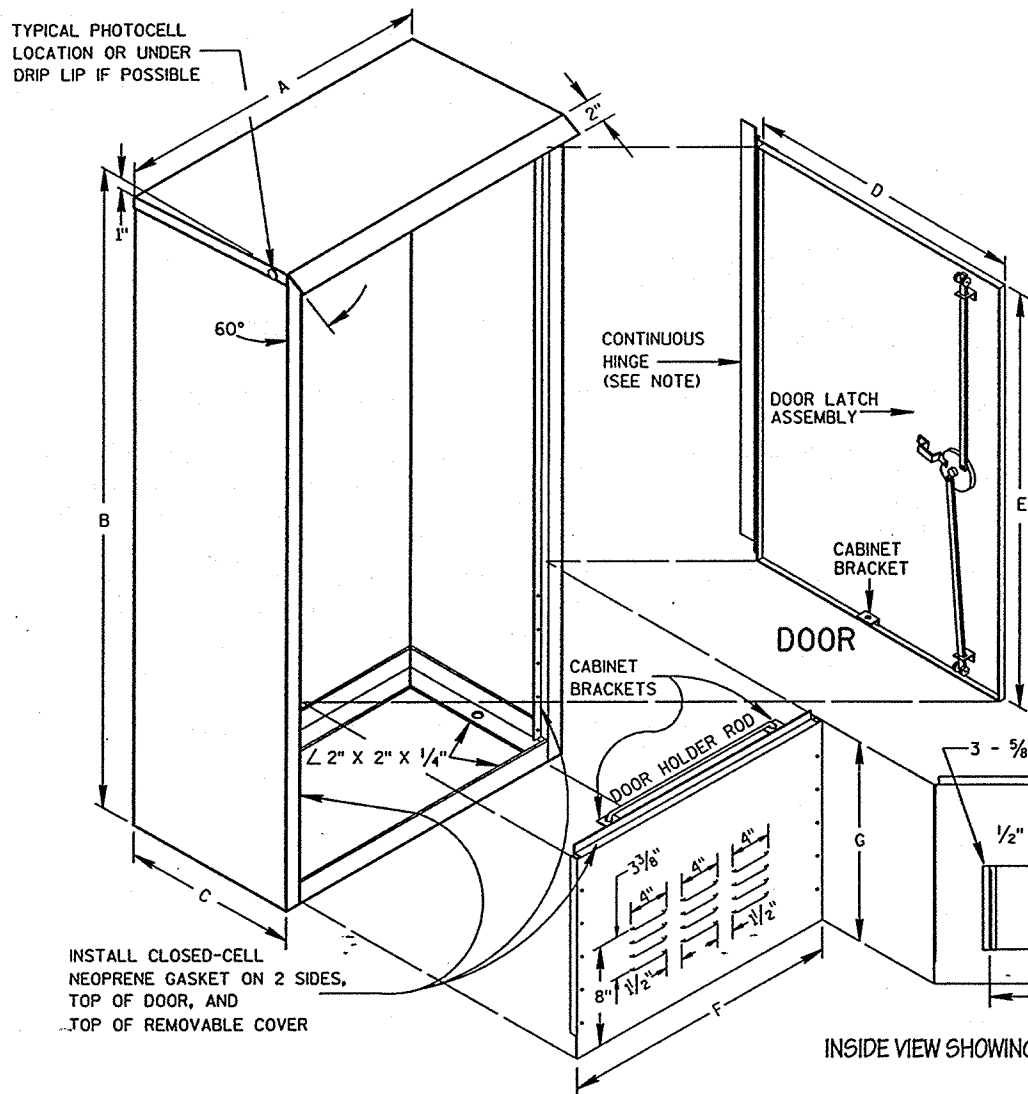
SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID METALLIC CONDUIT, NIPPLES AND/OR CONDULETS AS REQUIRED.

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.

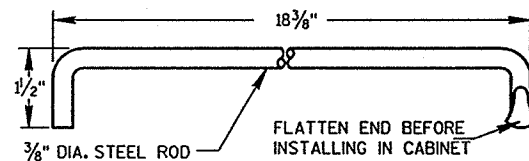
IF MORE THAN ONE GROUNDING ELECTRODE IS REQUIRED, THE DISTANCE APART SHALL BE 6 FEET OR PER LOCAL UTILITY REGULATIONS.



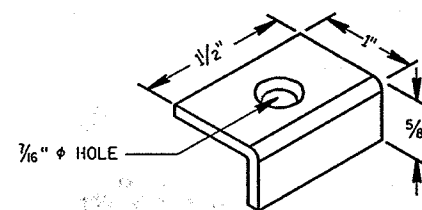
TYPICAL CABINET SERVICE INSTALLATION



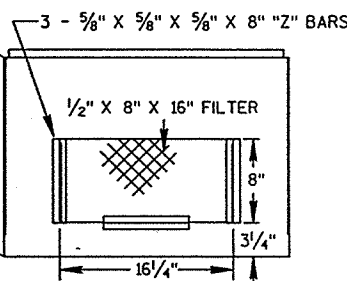
HINGE & DOOR HOLDER



HOLDER ROD

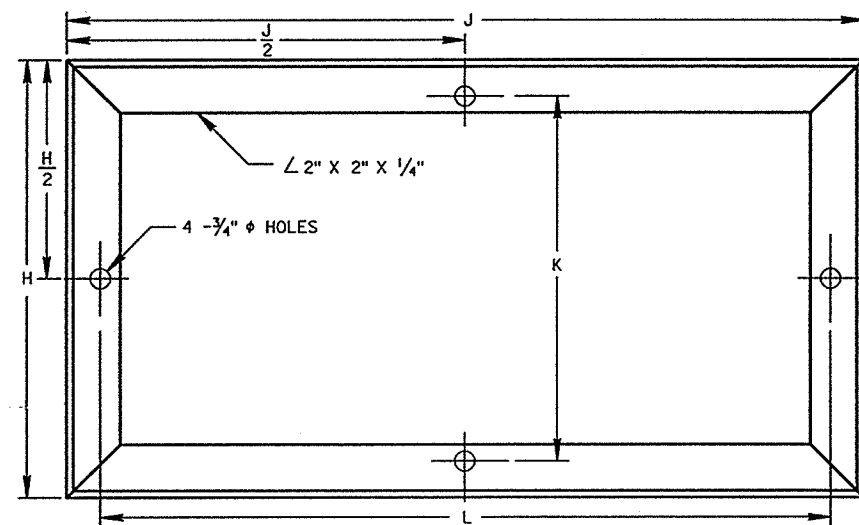


CABINET BRACKET



INSIDE VIEW SHOWING FILTER

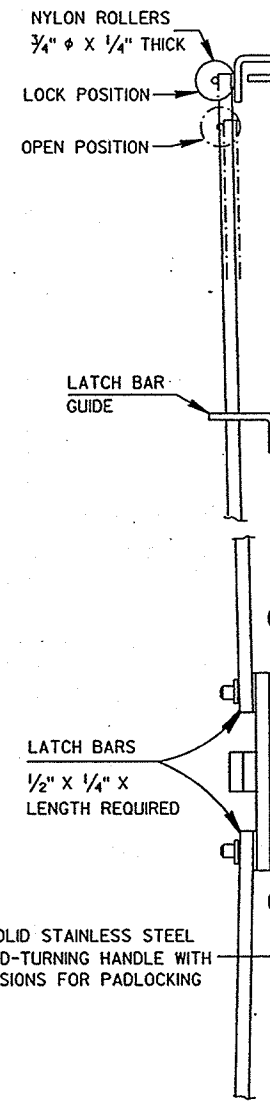
REMOVABLE COVER



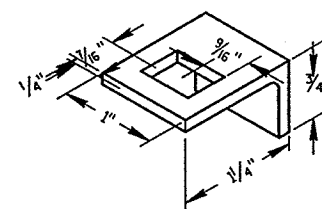
MOUNTING BASE

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



SIDE VIEW



LATCH BAR GUIDE

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.

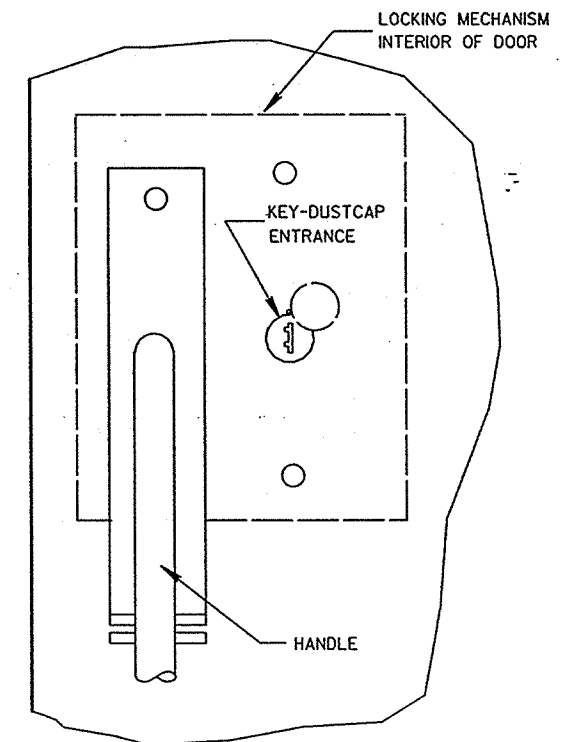
ALL SEAMS SHALL BE CONTINUOUSLY WELDED.

ALUMINUM SHALL BE TYPE 5052-H32.

CONTINUOUS HINGE SHALL BE HEAVY GAUGE ALUMINUM WITH 1/4" DIAMETER STAINLESS STEEL HINGE PIN. HINGE IS SECURED WITH 1/4" X 20 TPI STAINLESS STEEL CARRIAGE BOLTS AND STAINLESS STEEL NYLOCK NUTS.

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.

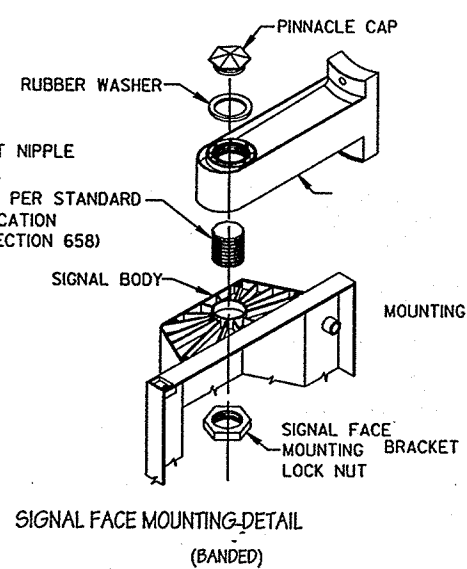
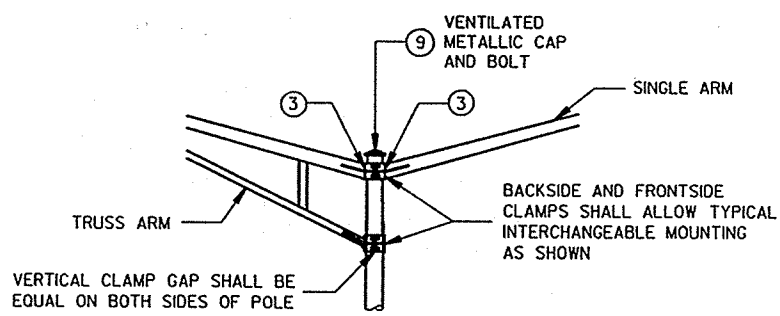
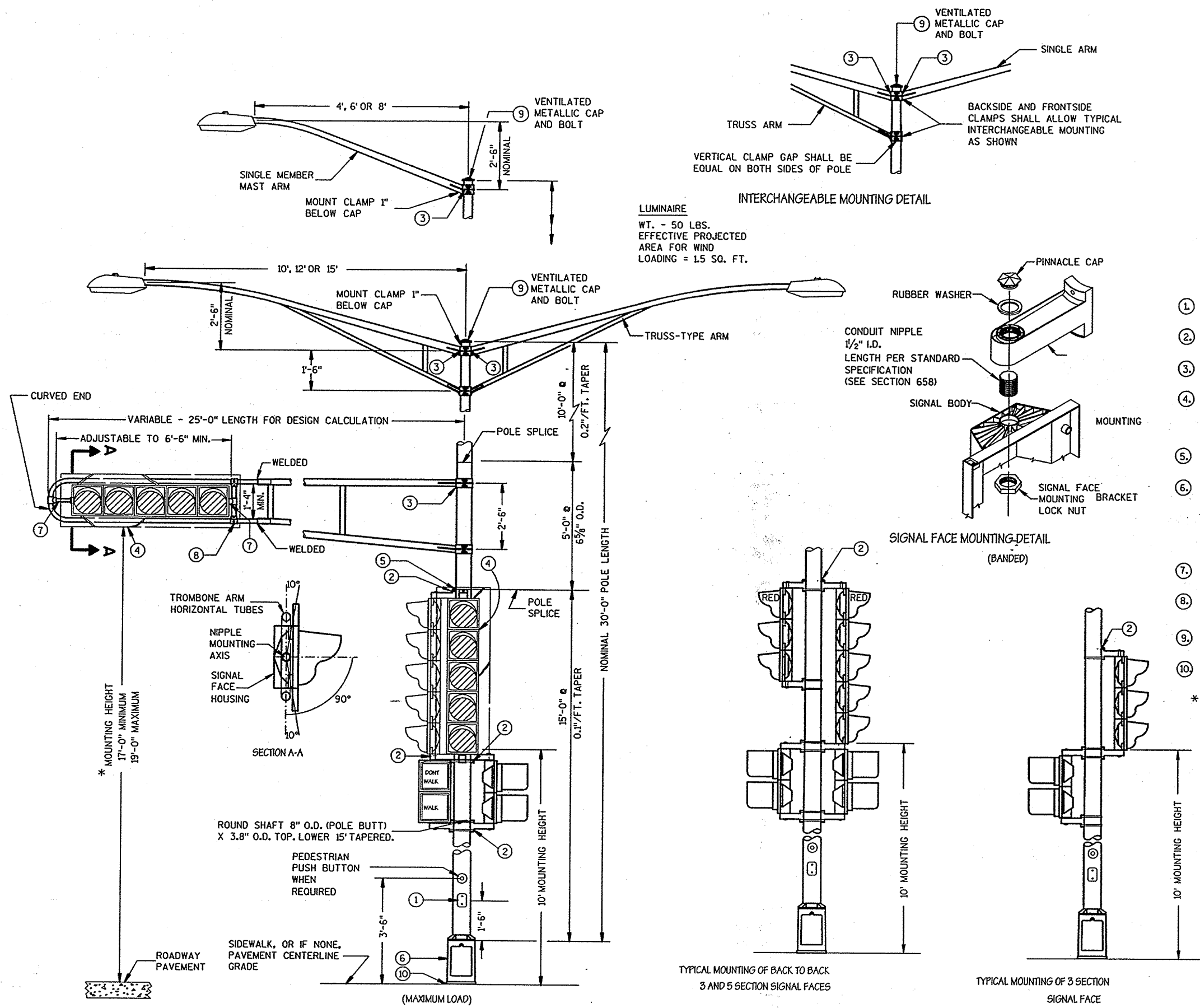
DOOR LATCH ASSEMBLY TO BE PROVIDED WITH THREE-POINT LOCKING MECHANISM.



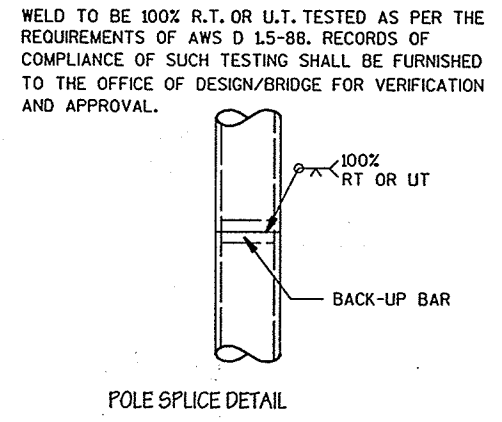
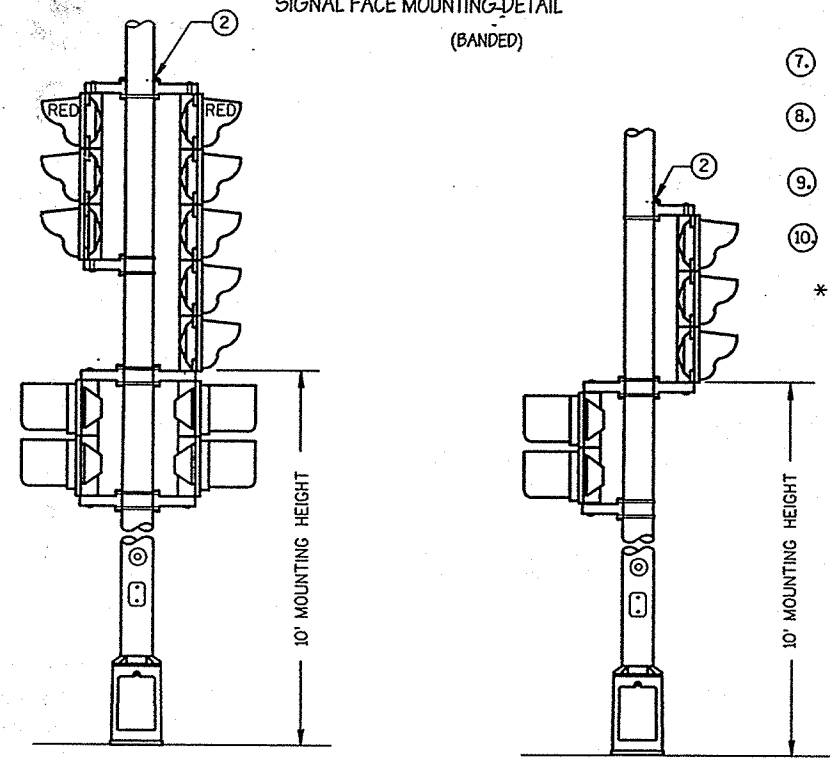
FRONT VIEW

LATCH ASSEMBLY

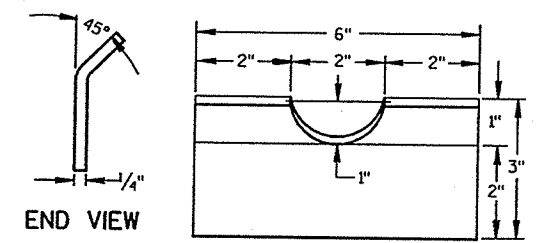
LOCK NO. 2510
WITH 2 KEYS AND
DUST CAP.
KEY NO. IR6380



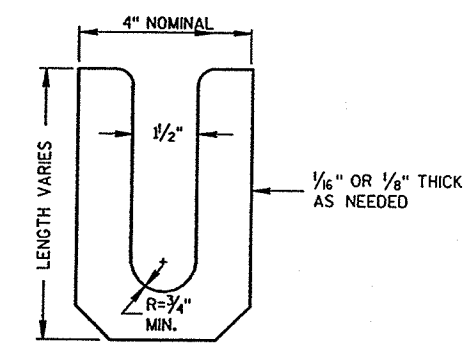
- GENERAL NOTES**
- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- ALL TYPE 3 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.
- POLES SHALL BE GALVANIZED STEEL.
- SECTION 657, POLES, 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.
- 4" X 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) 1/4" X 3/4" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.
 - 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 1/8" 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 FACE.
 - 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.
- 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" - 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 (WHEN REQUIRED)
- * MOUNTING HEIGHT LIMITATION DIMENSIONS OF THE TROMBONE MAST ARM WILL BE DEPENDENT UPON THE USE/NON-USE OF A TRANSFORMER BASE.



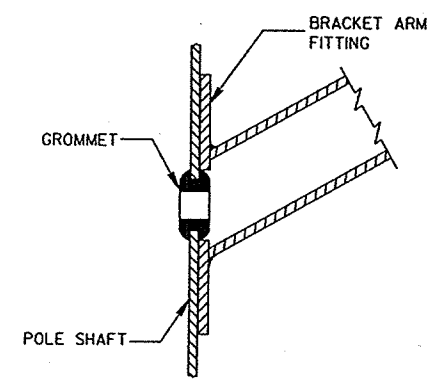
TYPE 3 POLE MOUNTING CONFIGURATION



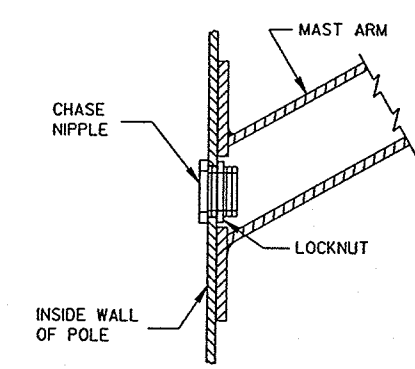
RECTANGULAR CLAMP SHIM
(4 TO A SET)



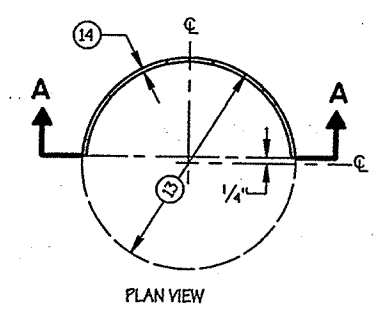
LEVELING SHIM
SHALL BE ALUMINUM



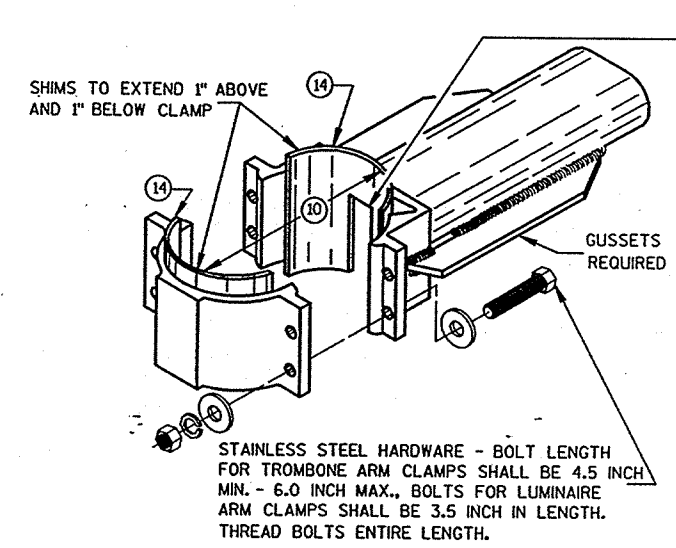
TYPICAL APPLICATION OF
GROMMET IN POLE SHAFT



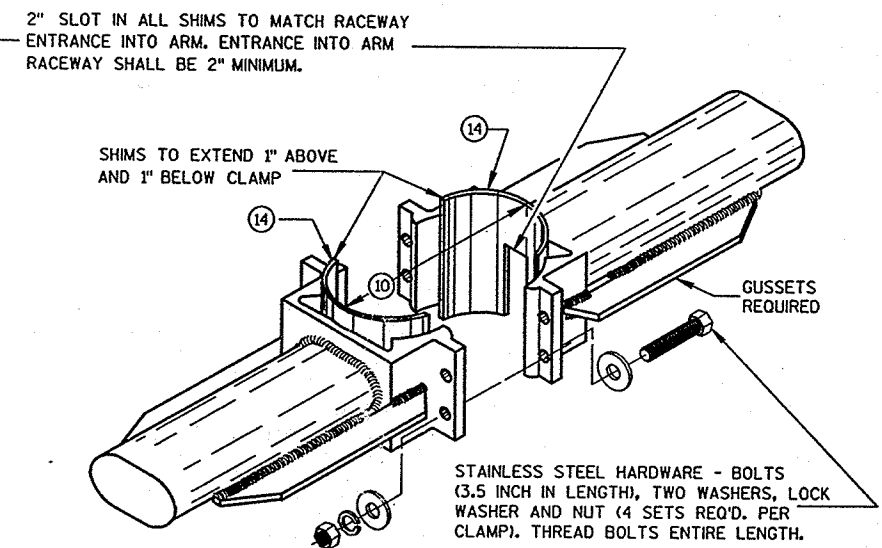
TYPICAL APPLICATION OF
CHASE NIPPLE IN POLE SHAFT



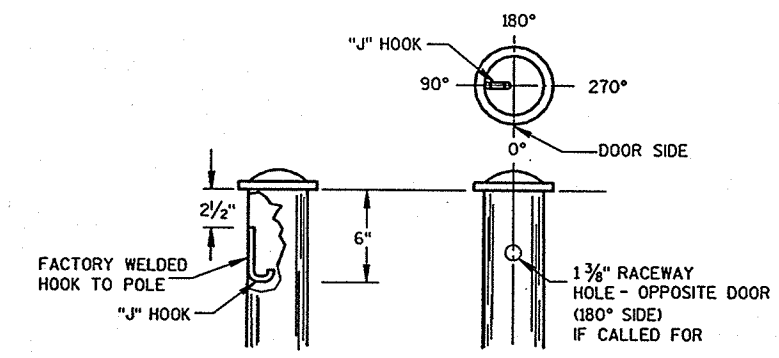
SECTION A-A
CIRCULAR CLAMP SHIM
(2 TO A SET)



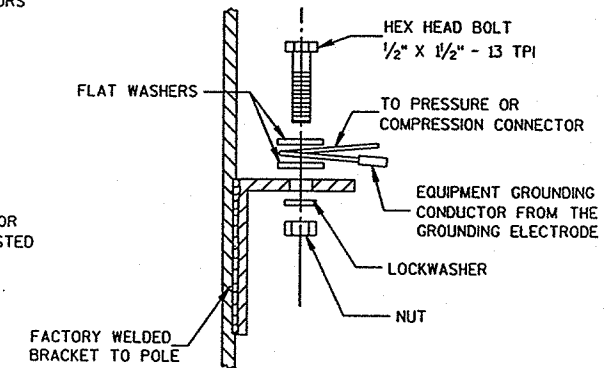
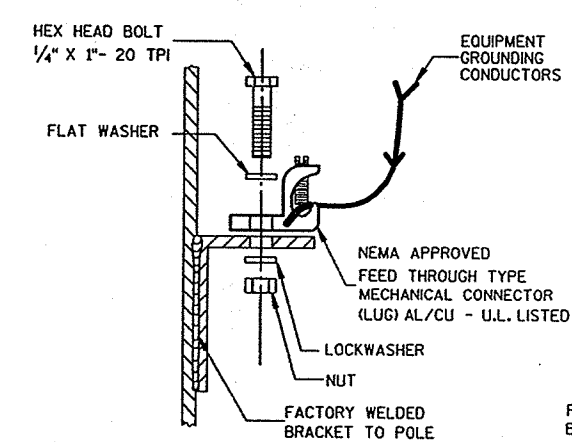
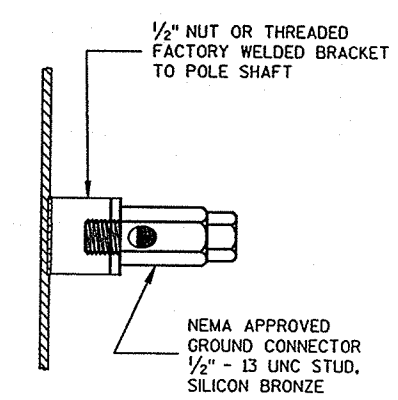
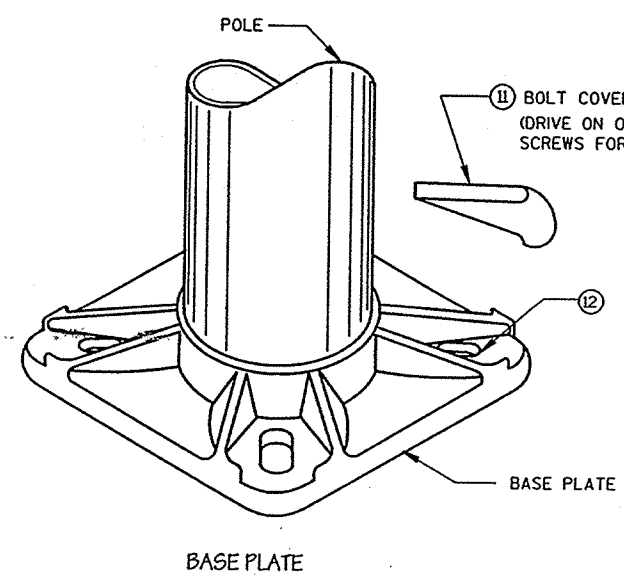
TYPICAL TROMBONE MAST ARM AND SINGLE
LUMINAIRE MAST ARM MOUNTING CLAMP



TYPICAL LUMINAIRE MAST ARM
(DOUBLE) MOUNTING BRACKETS

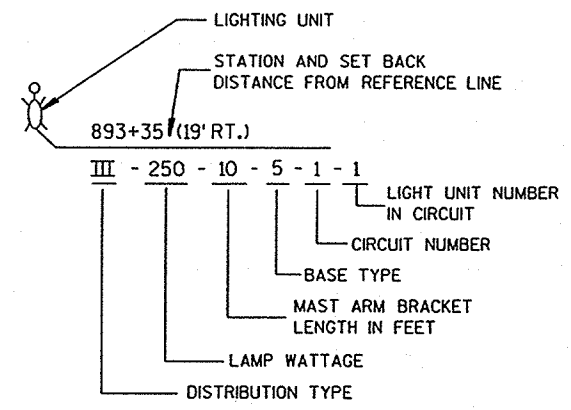


TYPICAL "J" HOOK LOCATION

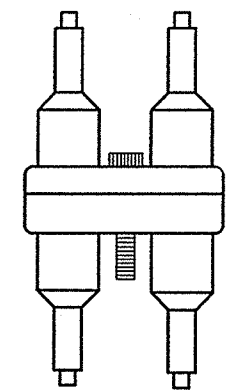


TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL
BE STAINLESS STEEL

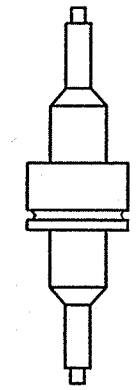
- GENERAL NOTES**
- CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.
- 10. 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP.
6.625" I.D. FOR TROMBONE MAST ARM CLAMP.
 - 11. INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)
 - 12. BASE PLATE SLOTTED TO ACCEPT 1" 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.



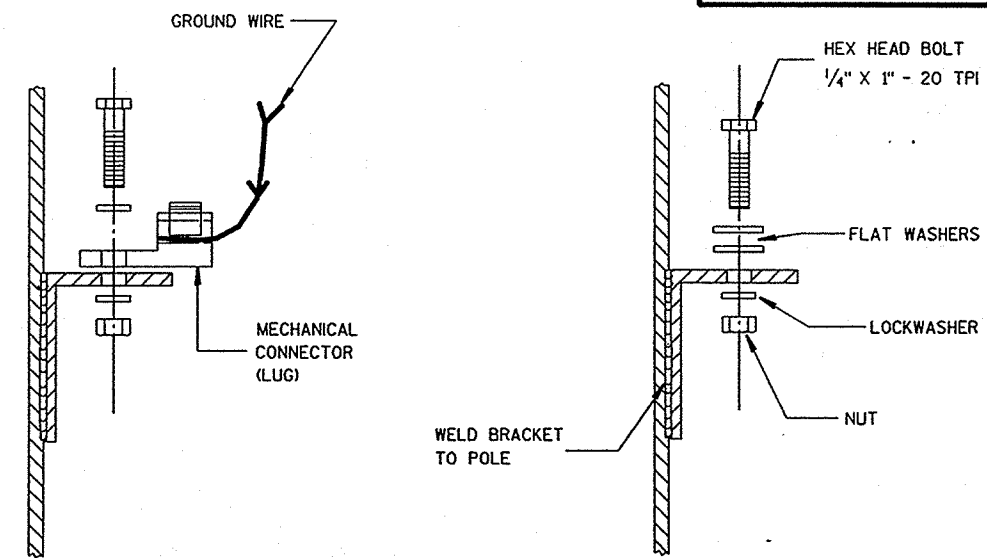
LIGHTING UNIT CODE



DETAIL "A"
DOUBLE POLE



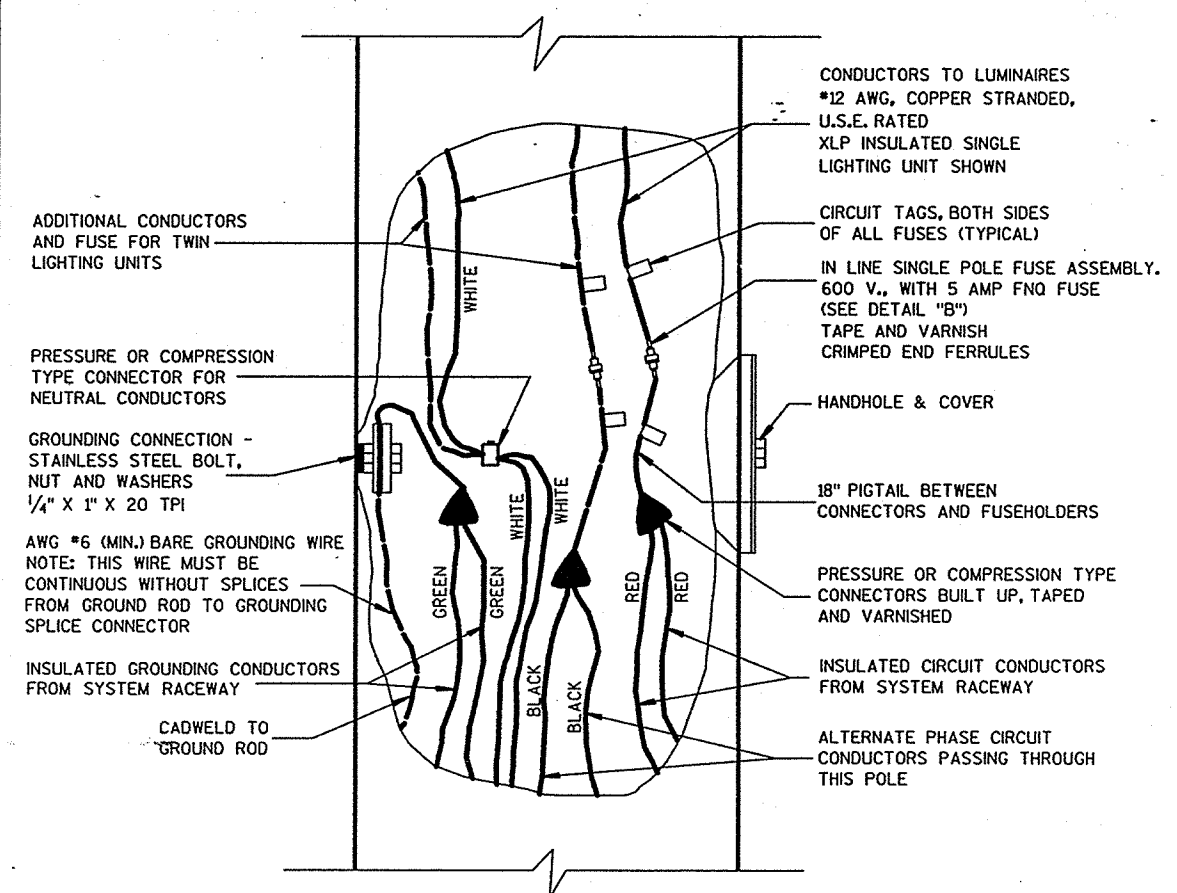
DETAIL "B"
SINGLE POLE



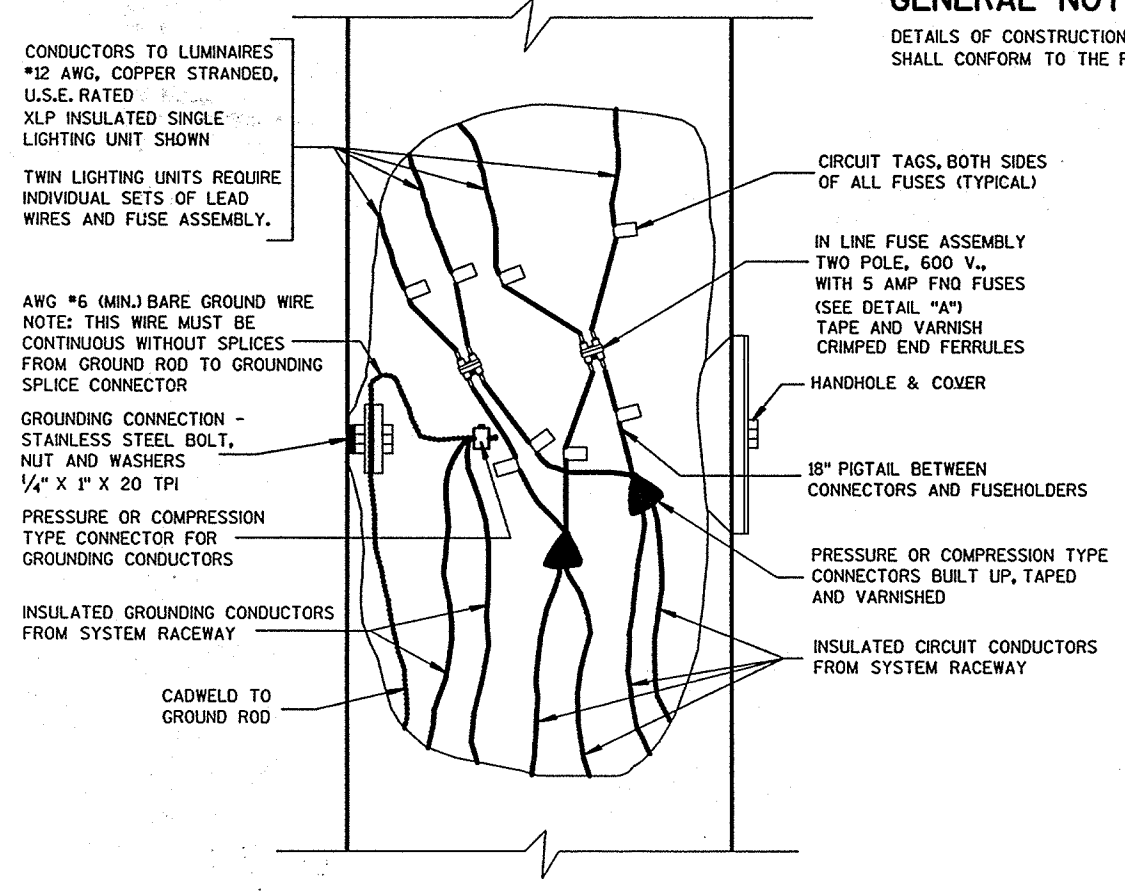
TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

GENERAL NOTES

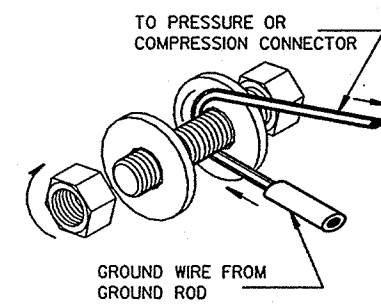
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.



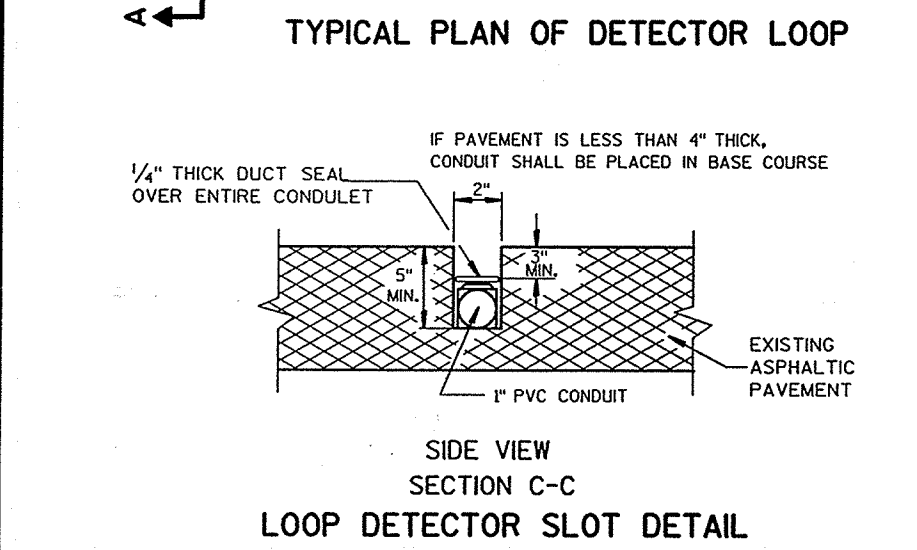
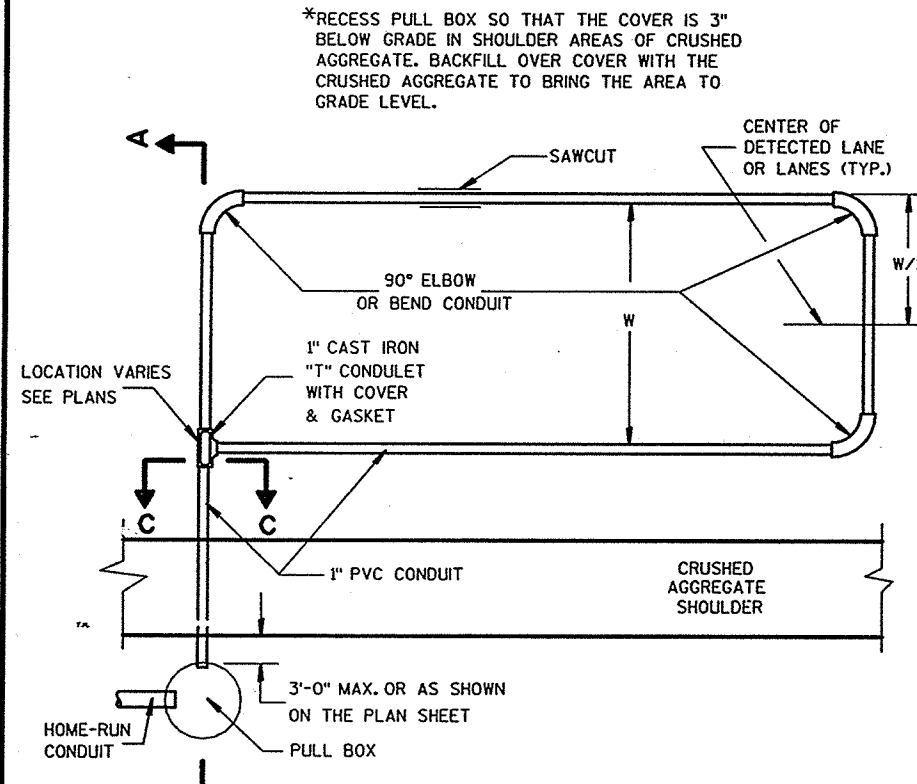
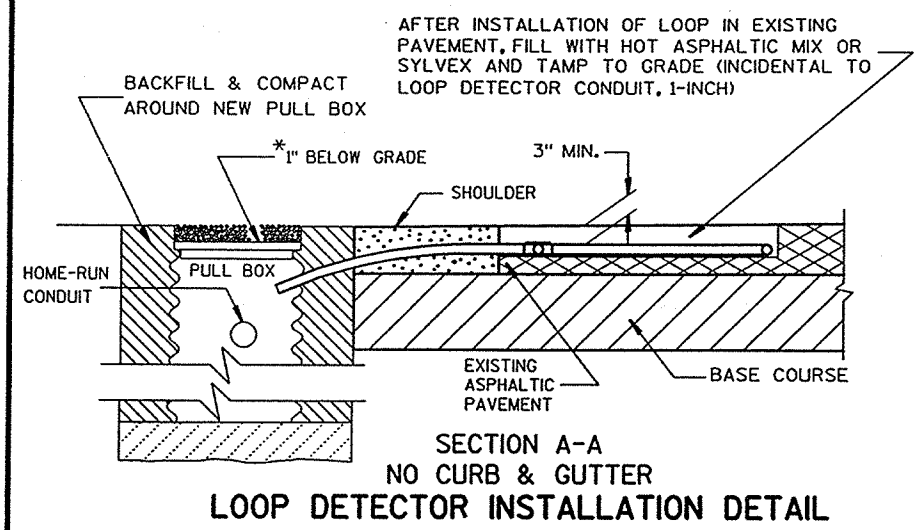
3 WIRE - 120, 240 OR 480 VOLTS TO GROUND
2 WIRE - 120 VOLTS TO GROUND



2 WIRE - 240 OR 480 VOLTS (UNGROUNDING)



GROUND WIRE INSTALLATION BETWEEN TWO WASHERS



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 OHMMETER USING A MULTIPLIER SCALE OF 1MEGOHM AND AN INPUT RESISTANCE OF 11MEGOHMS 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.

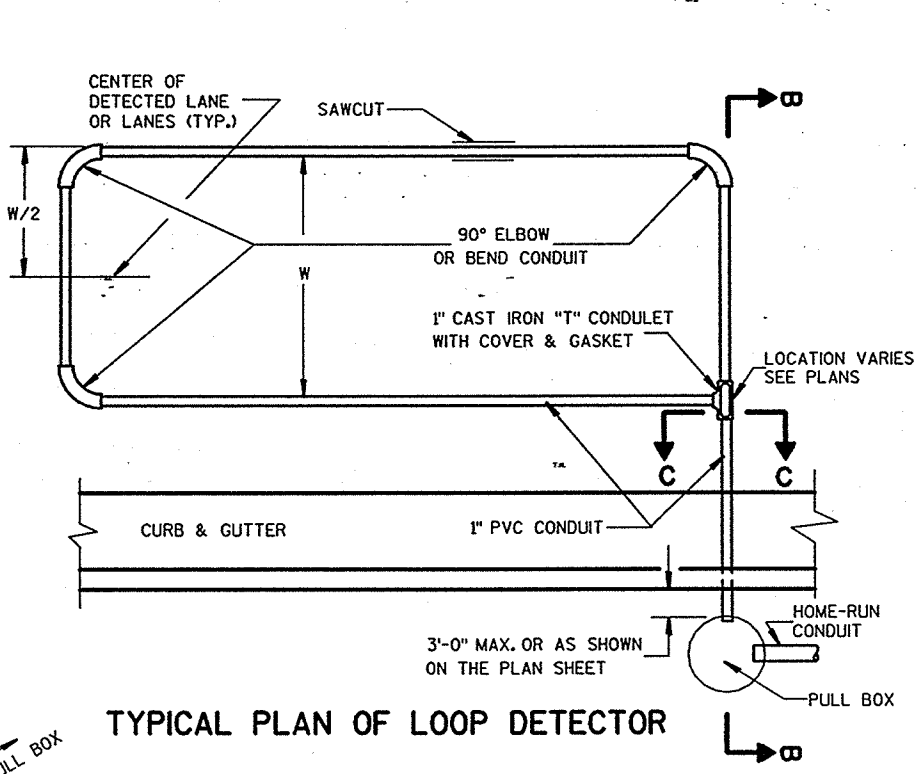
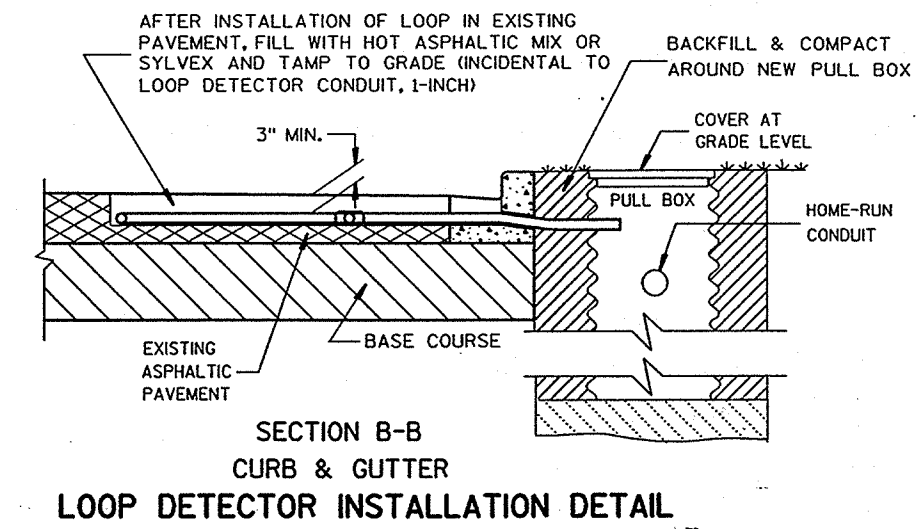
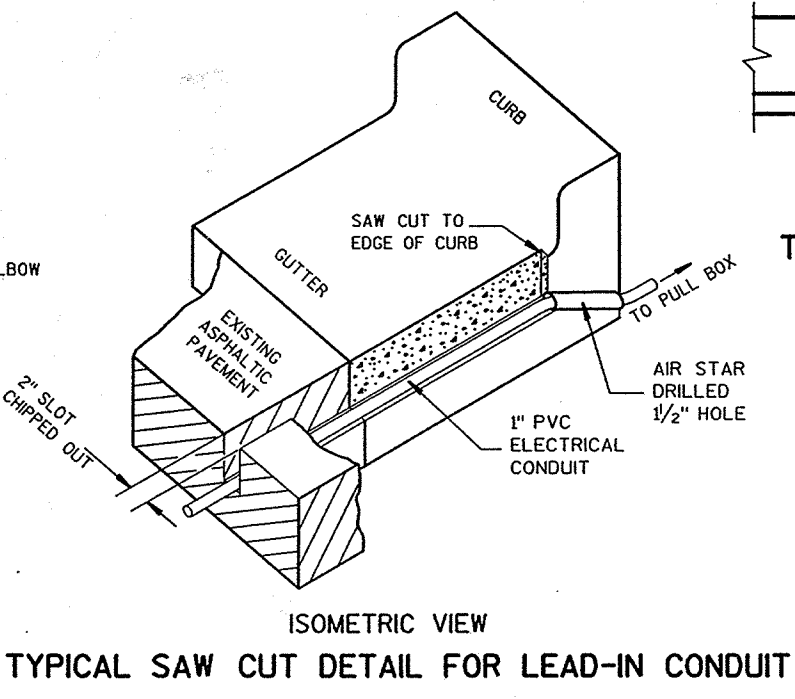
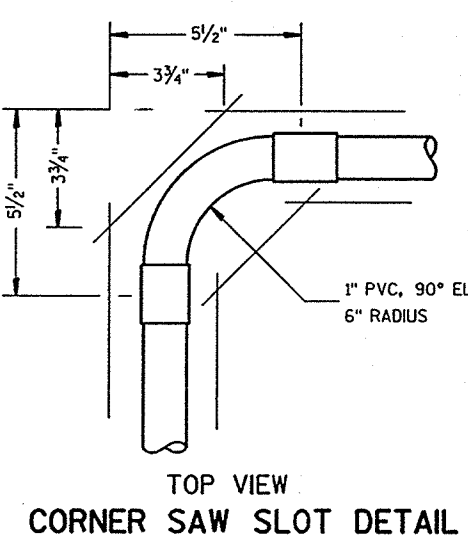
THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TURNS PER FOOT BEFORE INSTALLATION.

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.



INTERSECTION DETAIL

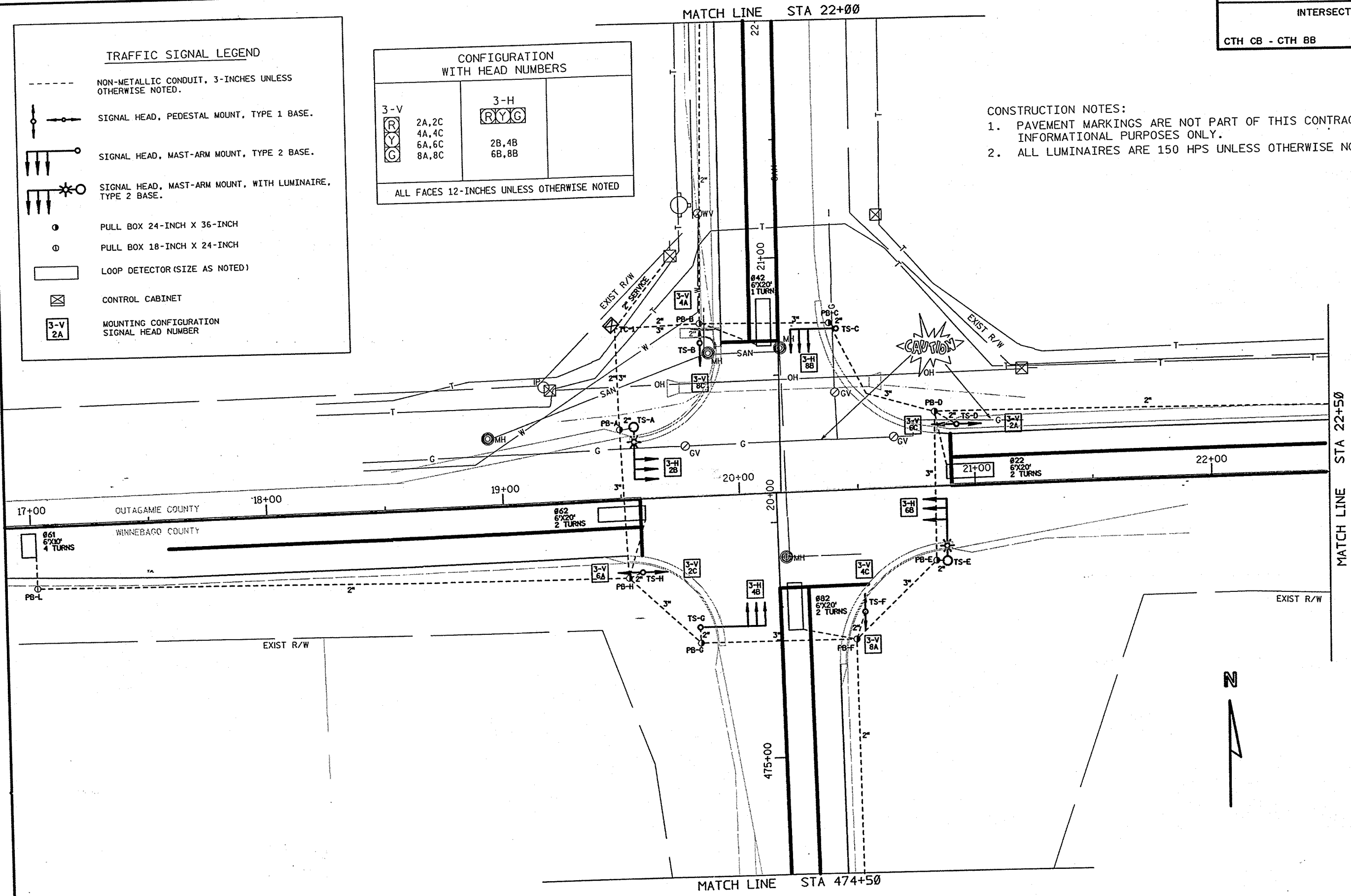
CTH CB - CTH BB OUTAGAMIE/WINNEBAGO

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

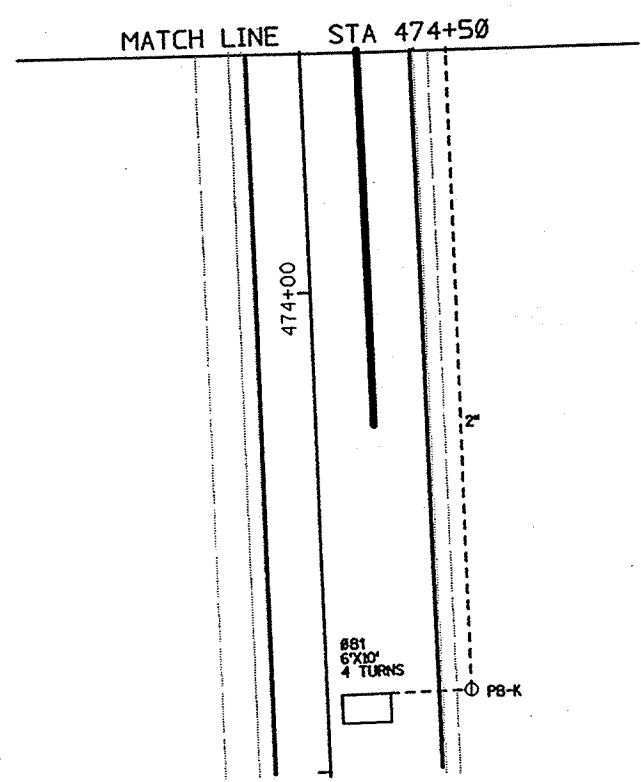
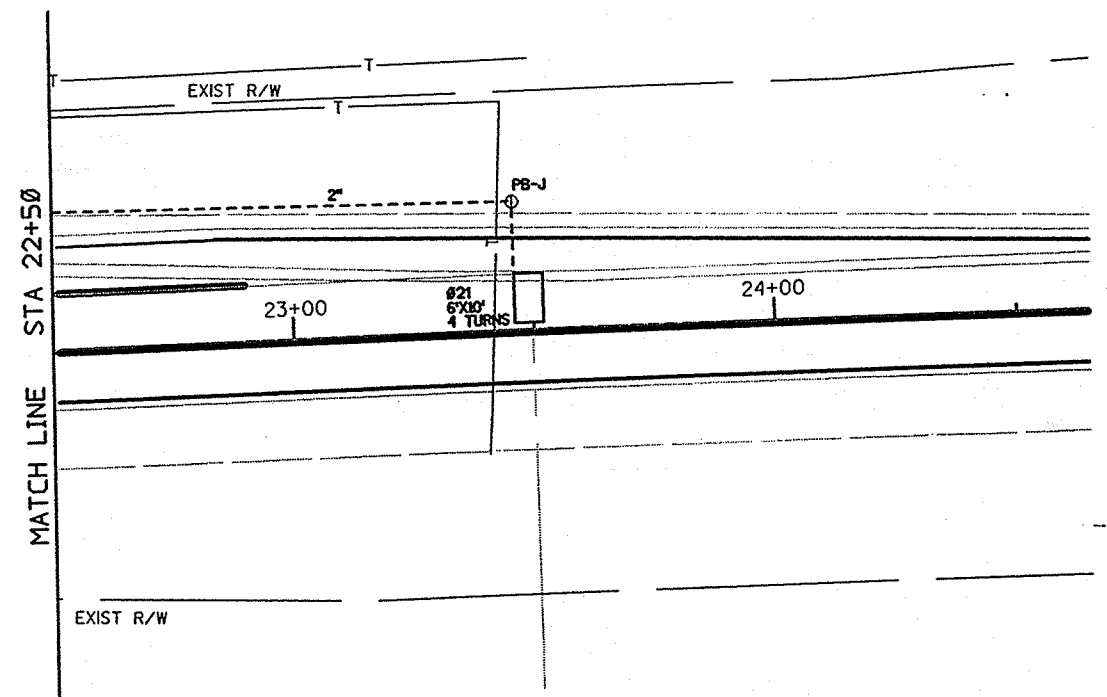
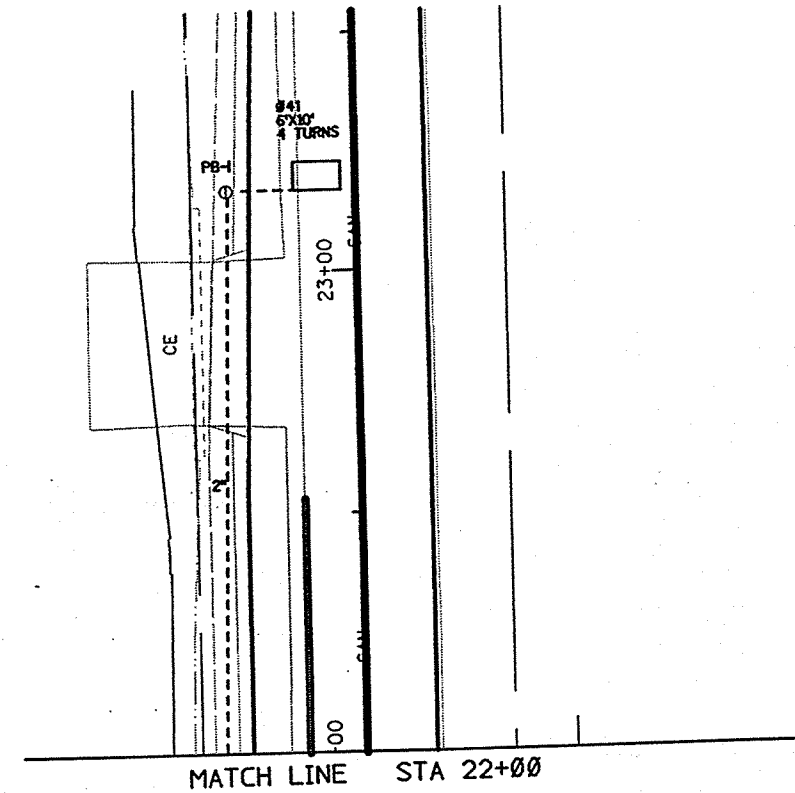
CONFIGURATION WITH HEAD NUMBERS		
3-V	3-H	
<div>RYG</div>	<div>RYG</div>	
2A,2C 4A,4C 6A,6C 8A,8C	2B,4B 6B,8B	
ALL FACES 12-INCHES UNLESS OTHERWISE NOTED		

- CONSTRUCTION NOTES:
- PAVEMENT MARKINGS ARE NOT PART OF THIS CONTRACT AND ARE FOR INFORMATIONAL PURPOSES ONLY.
 - ALL LUMINAIRES ARE 150 HPS UNLESS OTHERWISE NOTED.



MATCH LINE STA 22+50



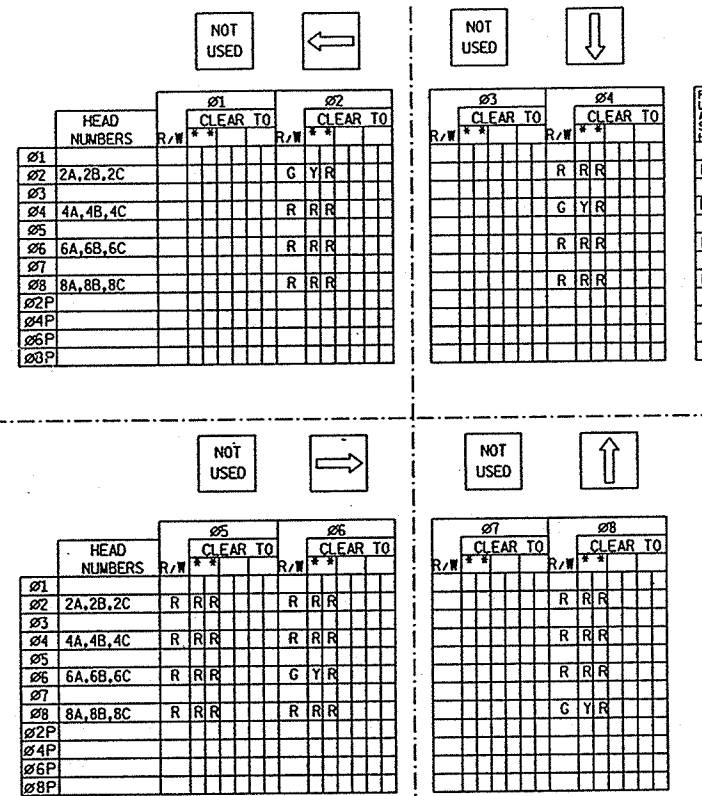


TRAFFIC SIGNAL LEGEND

- 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
- 3-V
2A MOUNTING CONFIGURATION
SIGNAL HEAD NUMBER

SEQUENCE OF OPERATION

SEQUENCE OF OPERATION



BARRIER

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

DETECTOR LOGIC

[illegible]

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W/10	PHASE RECAL
1			
2	X	6	MIN
3			
4	X	8	
5			
6	X	2	MIN
7			
8	X	4	

OVERLAPS

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

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

TYPE OF INTERCONNECT

NONE	
TBC	
CLOSED LOOP	
HARDWIRE	
TONE (FREQ.)	

TYPE OF PRE-EMPT

NONE	
RAILROAD	
EMERGENCY VEHICLE	

TYPE OF LIGHTING

NONE	
IN TRAFFIC CONTROL CABINET	
IN SEPERATE CONTROL CABINET	

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.)

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

CONCRETE BASES

CONTROL CABINET

NO.	STATION	LOCATION	TYPE 1	TYPE 2	BASE, TYPE 6
TC-1	20+71.8	68.8' LT			1
TS-A	19+56.5	30.7' LT		1	
TS-B	20+53.9	31.8' LT	1		
TS-C	20+69.9	26.6' RT		1	
TS-D	20+92.8	26.0' LT	1		
TS-E	20+87.0	31.9' RT		1	
TS-F	475+60.4	35.5' RT	1		
TS-G	475+46.9	34.2' LT		1	
TS-H	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		1
4A	1		1
4B		1	1
4C	1		1
6A	1		1
6B		1	1
6C	1		1
8A	1		1
8B		1	1
8C	1		1
		8	4
			12

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'	1	70	75	104	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'	4	43	48	166	454
082	475+74	6' RT	6' X 20'	2	69	74	154	221
					446	508	1268	2072

* LOCATION IS FRONT CENTER OF LOOP

TRAFFIC SIGNALS								
BASE NO.	PEDESTAL BASES EACH	TRANSFORMER BASES, 11 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 150 WATTS EACH
TS-A		1			1	1	1	1
TS-B	1		1			1		
TS-C		1		1				
TS-D	1		1		1	1	1	1
TS-E		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
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			
TS-A	TS-A			80
TS-B	TS-B			40
TS-C	TS-C			13
TS-D	TS-D			40
TS-E	TS-E			13
TS-F	TS-F			40
TS-G	TS-G			13
TS-H	TS-H			
		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