

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2906	2009-012 TS	COOK	11	1
D-91-325-09				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
FEDERAL AID HIGHWAY
DISTRICT 1
HIGHWAY SAFETY IMPROVEMENT PROJECT
TRAFFIC SIGNAL MODERNIZATION
PROJECT - HSIP-2906 (005)
INDIANA AVENUE AT 142ND STREET
F.A.U. ROUTE 2906
SECTION 2009-012 TS
COOK COUNTY
C-91-325-09

INDEX OF SHEETS

- TITLE SHEET
- SUMMARY OF QUANTITIES
- DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS - SHEET 1 OF 4
- DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS - SHEET 2 OF 4
- DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS - SHEET 3 OF 4
- DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS - SHEET 4 OF 4
- INDIANA AVENUE AT 142ND STREET - TEMPORARY TRAFFIC SIGNAL AND REMOVAL PLAN
- INDIANA AVENUE AT 142ND STREET - TEMPORARY CABLE PLAN
- INDIANA AVENUE AT 142ND STREET - PROPOSED TRAFFIC SIGNAL PLAN
- INDIANA AVENUE AT 142ND STREET - PROPOSED CABLE PLAN
- MAST ARM MOUNTED STREET NAME SIGNS



STANDARD DRAWINGS

424001-05	606001-03	805001-01	814001-02	814006-02
857001-01	857006	862001-01	873001-02	876001
877001-04	878001-07	880001-01	880006-01	886001-01
701501-05	701601-03	701606-05	701701-06	701801-04
720001-01	720016-02	780001-01		

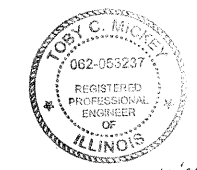
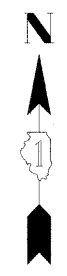
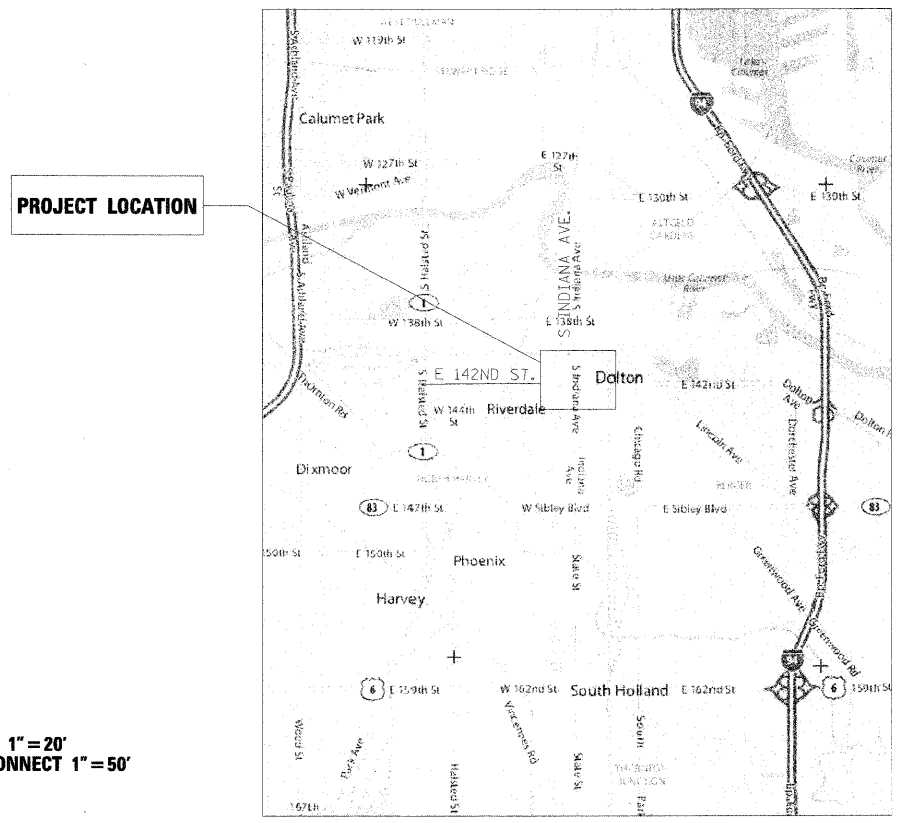
NOTE: STANDARD DRAWINGS REQUIRED (CIRCLED)

DISTRICT 1 BUREAU OF TRAFFIC: STEPHEN TRAVIA/DARYLE DREW (847) 705-4420

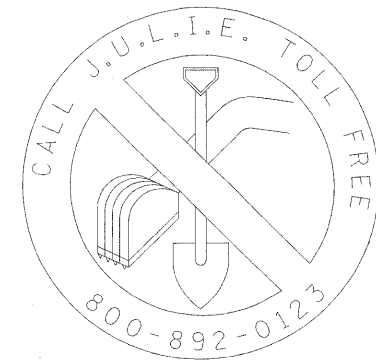
PREPARED BY Steve Tanni 1/30/09
 TRAFFIC ENGINEER DATE

SCALES { PLAN 1" = 20'
 INTERCONNECT 1" = 50'

THORNTON TOWNSHIP



Toby C. Mickey
 1/28/09



48 - HOURS BEFORE DIGGING

CONTRACT NO. 60G10

LOCATION MAP

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
 SUBMITTED Jan 30 2009
Devin M. O'Keefe
 DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
March 27, 2009
Charles J. Ingersoll
 ENGINEER OF DESIGN AND ENVIRONMENT
March 27, 2009
Christine M. Reed
 DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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PERCENTAGES			
LOCATION OF WORK			URBAN 90% FED 7.5% STATE 2.5% VILLAGE
SUMMARY OF QUANTITIES			CONSTRUCTION CODE Y031-1F
CODE NO.	ITEM	UNIT	TOTAL
42400200	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	SQ FT	75
42400800	DETECTABLE WARNINGS	SQ FT	32
70102620	TRAFFIC CONTROL AND PROTECTION, STANDARD 701501	L SUM	1
70102630	TRAFFIC CONTROL AND PROTECTION, STANDARD 701601	L SUM	1
70102635	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701	L SUM	1
70102640	TRAFFIC CONTROL AND PROTECTION, STANDARD 701801	L SUM	1
72000100	SIGN PANEL - TYPE 1	SQ FT	30
78000600	THERMOPLASTIC PAVEMENT MARKING - LINE 12"	FOOT	392
78000650	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	84
78300400	THERMOPLASTIC PAVEMENT MARKING REMOVAL	SQ FT	203
81000600	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL	FOOT	992
81001000	CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL	FOOT	10
81018500	CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL	FOOT	199
81018600	CONDUIT PUSHED, 2 1/2" DIA., GALVANIZED STEEL	FOOT	66
81018900	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL	FOOT	210
81400100	HANDHOLE	EACH	7
81400300	DOUBLE HANDHOLE	EACH	1
81900200	TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	1065
85700200	FULL-ACTUATED CONTROLLER AND TYPE IV CABINET	EACH	1
X8620020	UNINTERRUPTIBLE POWER SUPPLY	EACH	1
87301215	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C	FOOT	470
87301225	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	FOOT	1012
87301245	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	1750
87301305	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1-PAIR	FOOT	1414
87301805	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C	FOOT	188
X8730027	ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C	FOOT	469
87700150	STEEL MAST ARM ASSEMBLY AND POLE, 22 FT.	EACH	1
87700180	STEEL MAST ARM ASSEMBLY AND POLE, 28 FT.	EACH	1
87700200	STEEL MAST ARM ASSEMBLY AND POLE, 32 FT.	EACH	1
87700210	STEEL MAST ARM ASSEMBLY AND POLE, 34 FT.	EACH	1
87800150	CONCRETE FOUNDATION, TYPE C	FOOT	4
87800415	CONCRETE FOUNDATION, TYPE E 36" DIAMETER	FOOT	44
88030020	SIGNAL HEAD, L E D , 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	8
88030050	SIGNAL HEAD, L E D , 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	4
88102747	PEDESTRIAN SIGNAL HEAD, L E D , 2-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER	EACH	4
88200210	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM	EACH	8
88500100	INDUCTIVE LOOP DETECTOR	EACH	4
88600100	DETECTOR LOOP, TYPE I	FOOT	198
88800100	PEDESTRIAN PUSH-BUTTON	EACH	4
89000100	TEMPORARY TRAFFIC SIGNAL INSTALLATION	EACH	1
89502375	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	EACH	1
89502380	REMOVE EXISTING HANDHOLE	EACH	8
89502385	REMOVE EXISTING CONCRETE FOUNDATION	EACH	7
X0322256	TEMPORARY INFORMATION SIGNING	SQ FT	51.4
X0325737	TEMPORARY TRAFFIC SIGNAL TIMING	EACH	1
X8050015	SERVICE INSTALLATION - POLE MOUNTED	EACH	1
6710010	MOBILIZATION	L SUM	1
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	3
44000600	SIDEWALK REMOVAL	SQ FT	32

*Specialty Items

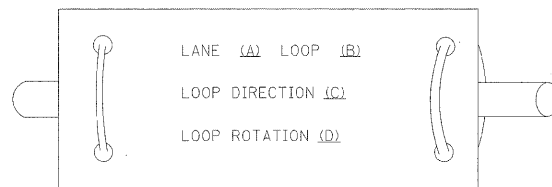
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P:\NP-08-1600-4\Design\3.Indiana at 142nd	Sht\SHT002.dgn	DRAWN - NB/TCM	REVISED -		SCALE: NTS	SHEET NO.	OF SHEETS	STA.	TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	CONTRACT NO. 60G10
	PLOT SCALE = 1:8000 1" = 80'	CHECKED - NB/TCM	REVISED -									
	PLOT DATE = 1/27/2009	DATE - 01/23/2009	REVISED -									

Rev.

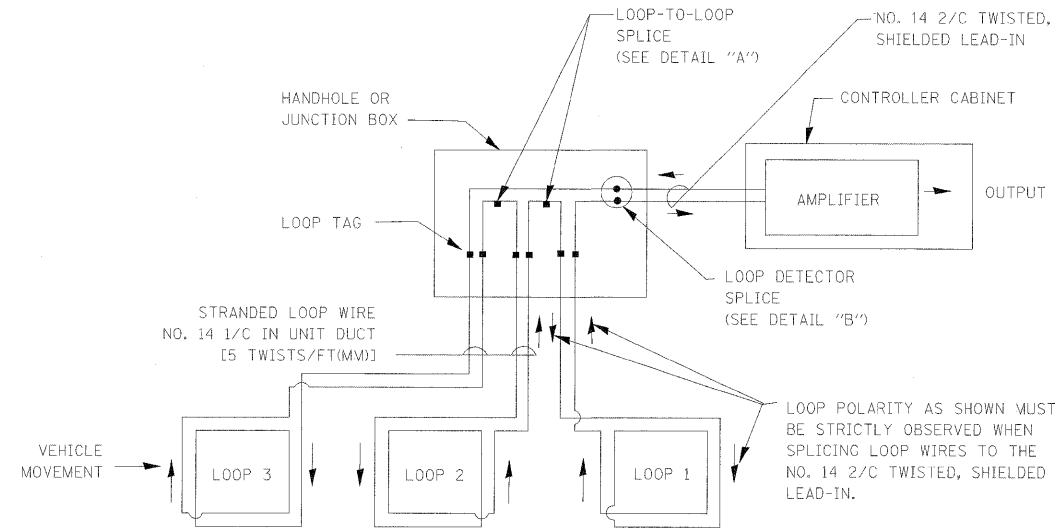
LOOP DETECTOR NOTES

1. EACH PAIR OF LOOP WIRES SHALL BE PLACED IN A SEPARATE UNIT DUCT FROM THE EDGE OF PAVEMENT TO THE HANDHOLE. SPACING BETWEEN THE HOLES DRILLED IN THE PAVEMENT SHALL NOT BE LESS THAN 6" (150 mm). UNIT DUCT SHALL BE INCLUDED IN THE COST OF THE LOOP WIRE.
2. THE NUMBER OF LOOP TURNS SHALL BE AS RECOMMENDED BY THE AMPLIFIER MANUFACTURER. ALL ADJACENT SIDES OF THE LOOPS SHALL BE INSTALLED IN SUCH A WAY THAT THE CURRENT FLOW IS IN THE SAME DIRECTION TO REINFORCE ITS MAGNETIC FIELDS FOR SMALL VEHICLE DETECTION.
3. EACH LOOP LEAD-IN SHALL BE IDENTIFIED AND PERMANENTLY TAGGED IN THE HANDHOLE. EACH LEAD-IN CABLE TAG SHALL INDICATE THE LOCATION OF THE LOOP, LOOP ROTATION (CLOCKWISE/COUNTERCLOCKWISE), LOOP LEAD-IN DIRECTION (IN OR OUT), LOOP CABLE NUMBER AND LOCATION IN CABINET, AND NUMBER OF TURNS IN THE DETECTOR LOOPS IN WATER PROOF INK AS INDICATED ON THE DISTRICT 1 STANDARD TRAFFIC SIGNAL DESIGN DETAIL. THE CONTRACTOR SHALL MARK LOOP LOCATIONS ON RECORD DRAWINGS AND PRESENT TO THE ENGINEER AFTER FINAL INSPECTION. LOOPS SHALL BE MARKED BY LANE AND LOOP NUMBER. SEE DETAIL BELOW.
4. ALL LOOP CABLE SHALL BE FASTENED WITH PLASTIC TIE WRAP TO THE HANDHOLE HOOKS.
5. IN ASPHALT PAVEMENT, LOOPS SHOULD BE PLACED IN THE BINDER AND DIVEHOLES MARKED AT THE CURB WITH A SAW-CUT. THE SAW-CUT SHALL BE CUT IN ACCORDANCE WITH LOCAL AND E.P.A. DUST CONTROL REQUIREMENTS. DETECTOR LOOP(S) SHALL NOT BE INSTALLED IN WET CONDITIONS AND THE SAW-CUTS MUST BE FREE OF DEBRIS AND RESIDUE SLCH AS DUST AND WATER WHICH IS TO BE ACHIEVED BY THE USE OF COMPRESSED AIR, WIRE BRUSHING AND HEAT DRYING ACCORDING TO SEALANT MANUFACTURER REQUIREMENTS. THE DETECTOR WIRE SHALL BE HELD IN PLACE BY THE USE OF FORM WEDGES. WEDGES SHALL BE SPACED NO MORE THAN 18" (450 mm) APART.
6. LOOP SPLICES SHALL BE SOLDERED USING A SOLDERING IRON. BLOW TORCHES OR OTHER DEVICES WHICH OXIDIZE COPPER CABLE SHALL NOT BE ALLOWED FOR SOLDERING OPERATIONS. SEE DETAIL BELOW RIGHT.
7. PREFORMED DETECTOR LOOPS SHALL BE USED, AS SHOWN ON THE PLANS, WHERE NEW CONCRETE PAVEMENT IS PROPOSED. THE INSTALLATION OF PREFORMED LOOPS SHALL BE IN ACCORDANCE WITH THE DISTRICT 1 SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.

LOOP LEAD-IN CABLE TAG

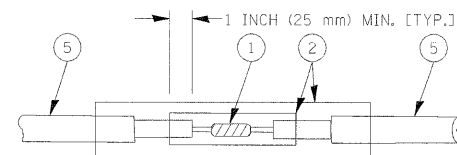


- A. LANE 1 IS THE LANE CLOSEST TO THE CENTERLINE OF THE ROADWAY
- B. LOOP #1 IS THE LOOP IN THE LANE CLOSEST TO THE INTERSECTION.
- C. LABEL LOOP CABLE "IN" OR LOOP CABLE "OUT".
- D. LABEL LOOP CABLE CLOCKWISE OR LOOP CABLE COUNTERCLOCKWISE.

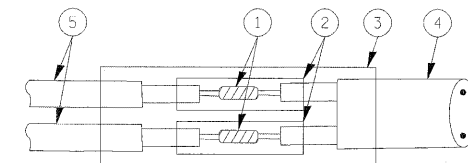


DETECTOR LOOP WIRING SCHEMATIC

- LOOPS SHALL BE SPLICED IN SERIES.
- SAW-CUTS SHALL BE A MINIMUM WIDTH OF 5/16" (8 mm).
- SAW-CUT DEPTHS SHALL BE 3" (75 mm). IF IN CONCRETE, THE SAW-CUT DEPTH SHALL BE TO THE TOP OF THE REINFORCEMENT.
- LOOP CORNERS SHALL BE DRILLED WITH A 2" (50 mm) DIAMETER CORE.



DETAIL "A"
LOOP-TO-LOOP SPLICE



DETAIL "B"
LOOP-TO-CONTROLLER SPLICE

LOOP DETECTOR SPLICE

- 1 WESTERN UNION SPLICE SOLDERED WITH ROSIN CORE FLUX. ALL EXPOSED SURFACES OF THE SOLDER SHALL BE SMOOTH.
- 2 WCSMW 30/100 HEAT SHRINK TUBE, MINIMUM LENGTH 3" (75 mm), UNDERWATER GRADE.
- 3 WCS 200/750 HEAT SHRINK TUBE, MINIMUM LENGHT 6" (150 mm), UNDERWATER GRADE.
- 4 NO. 14 2/C TWISTED, SHIELDED CABLE.
- 5 LOOP CONDUCTOR WITH FLEXIBLE PLASTIC TUBE.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
DISTRICT ONE
STANDARD TRAFFIC SIGNAL
DESIGN DETAILS

SCALE: VERT. NONE
HORIZ. DATE 091-11-2007
DRAWN BY: BL
CHECKED BY: ER/TC

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

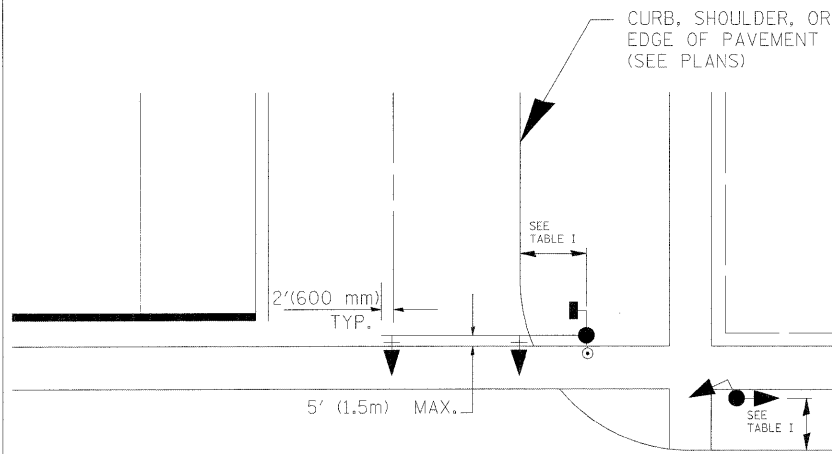
DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: NTS SHEET NO. 1 OF 4 SHEETS STA. TO STA.

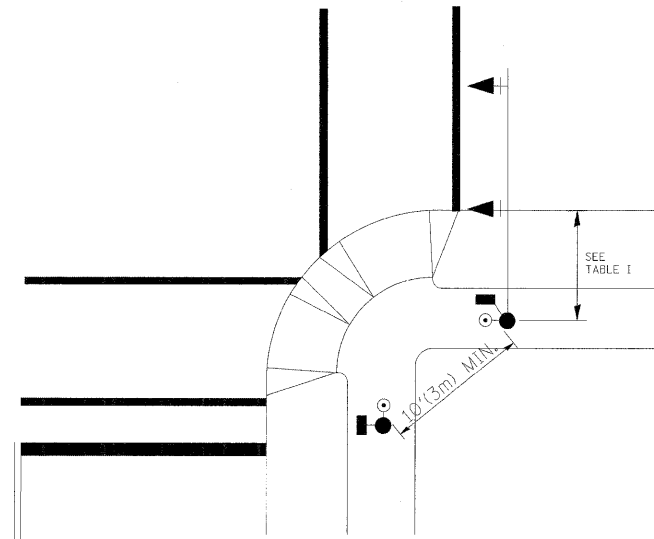
F.A.U. RTE. 2906	SECTION 2009-012 TS	COUNTY COOK	TOTAL SHEETS 11	SHEET NO. 3
FED. ROAD DIST. NO. ILLINOIS			FED. AID PROJECT	
CONTRACT NO. 60G10				

TRAFFIC SIGNAL MAST ARM AND POST

MAST ARM MOUNTED SIGNAL IN PROPOSED & FUTURE SIDEWALK AREA, INTERSECTION SHOWN WITH PEDESTRIAN SIGNAL AND PUSHBUTTON DETECTOR



PEDESTRIAN SIGNAL PUSHBUTTON



RECOMMENDED PUSHBUTTON LOCATIONS FOR ACCESSIBLE PEDESTRIAN SIGNALS SHALL BE IN ACCORDANCE WITH THE CURRENT MUTCD (SEE NOTE 1). TO MEET MUTCD REQUIREMENTS, PEDESTRIAN SIGNAL PUSHBUTTONS MAY HAVE TO BE MOUNTED ON A SEPARATE POST.

NOTES:

- AT ACCESSIBLE PEDESTRIAN SIGNAL LOCATIONS WITH PEDESTRIAN ACTUATION, EACH PUSHBUTTON SHALL ACTIVATE BOTH THE WALK INTERVAL AND THE ACCESSIBLE PEDESTRIAN SIGNALS.

AT ACCESSIBLE PEDESTRIAN SIGNAL LOCATIONS, PUSHBUTTONS SHOULD CLEARLY INDICATE WHICH CROSSWALK SIGNAL IS ACTUATED BY EACH PUSHBUTTON. PUSHBUTTONS AND TACTILE ARROWS SHOULD HAVE HIGH VISUAL CONTRAST (SEE THE DEPARTMENT OF JUSTICE'S AMERICANS WITH DISABILITIES ACT STANDARDS FOR ACCESSIBLE DESIGN, 1991). TACTILE ARROWS SHOULD POINT IN THE SAME DIRECTION AS THE ASSOCIATED CROSSWALK. AT CORNERS OF SIGNALIZED LOCATIONS WITH ACCESSIBLE PEDESTRIAN SIGNALS WHERE PEDESTRIAN PUSHBUTTONS ARE PROVIDED, THE PUSHBUTTONS SHOULD BE SEPARATED BY THE DISTANCE OF AT LEAST 10 FT (3m). THIS ENABLES PEDESTRIANS WHO HAVE VISUAL DISABILITIES TO DISTINGUISH AND LOCATE THE APPROPRIATE PUSHBUTTON.

PUSHBUTTONS FOR ACCESSIBLE PEDESTRIAN SIGNALS SHOULD BE LOCATED AS FOLLOWS:
 A: ADJACENT TO A LEVEL ALL-WEATHER SURFACE TO PROVIDE ACCESS FROM A WHEELCHAIR, AND WHERE THERE IS AN ALL-WEATHER SURFACE, WHEELCHAIR ACCESSIBLE ROUTE TO THE RAMP.
 B: WITHIN 5 FT (1.5m) OF THE CROSSWALK EXTENDED.
 C: WITHIN 10 FT (3m) OF THE EDGE OF CURB, SHOULDER, OR PAVEMENT.
 D: PARALLEL TO THE CROSSWALK TO BE USED (SEE MUTCD FIGURE 4E-2).
 E: NORMAL PEDESTRIAN PUSHBUTTON MOUNTING HEIGHT SHOULD BE 3.5 FT (1.05m) ABOVE ADJACENT SIDEWALK
- PEDESTRIAN SIGNAL FACES SHALL BE MOUNTED WITH THE BOTTOM OF THE HOUSING NOT LESS THAN 8 FT (2.4m) NOR MORE THAN 10 FT (3.0m) ABOVE THE SIDEWALK LEVEL AND SO THERE IS A PEDESTRIAN INDICATION IN THE LINE OF PEDESTRIANS' VISION WHICH PERTAINS TO THE CROSSWALK BEING USED.
- THE BOTTOM OF THE HOUSING OF A VEHICLE SIGNAL FACE, NOT MOUNTED OVER A ROADWAY, SHALL BE AT LEAST 10 FT (3.0m) BUT NOT MORE THAN 15 FT (4.5m) ABOVE THE SIDEWALK OR, ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE HIGHWAY IF NO SIDEWALKS EXIST.
- THE BOTTOM OF THE HOUSING OF A VEHICLE SIGNAL FACE, MOUNTED OVER A ROADWAY, SHALL BE ACCORDING TO CURRENT STATE STANDARDS 877001 AND 877006. (16 FT (5m) MIN., 18 FT (5.5m) MAX., FROM HIGHEST POINT OF PAVEMENT)

PEDESTRIAN SIGNAL POST

PEDESTRIAN SIGNAL HEAD AND PEDESTRIAN PUSHBUTTON DETECTOR LOCATION

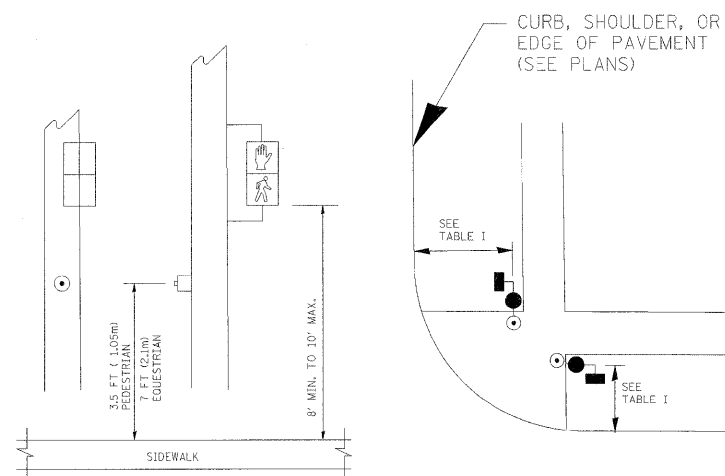


TABLE I

TRAFFIC SIGNAL EQUIPMENT	COMBINATION CONCRETE CURB AND GUTTER (MIN. DIST. FROM BACK OF CURB)	SHOULDER/NON-CURBED AREA (MIN. DIST. FROM EDGE OF PAVEMENT)
TRAFFIC SIGNAL MAST ARM POLE	6 FT (1.8m)	SHOULDER WIDTH + 2FT(0.6m), MINIMUM 10FT(3.0m)
TRAFFIC SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2FT(0.6m), MINIMUM 10FT(3.0m)
PEDESTRIAN SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2FT(0.6m), MINIMUM 10FT(3.0m)
PEDESTRIAN PUSHBUTTON	SEE NOTE 1	SEE NOTE 1

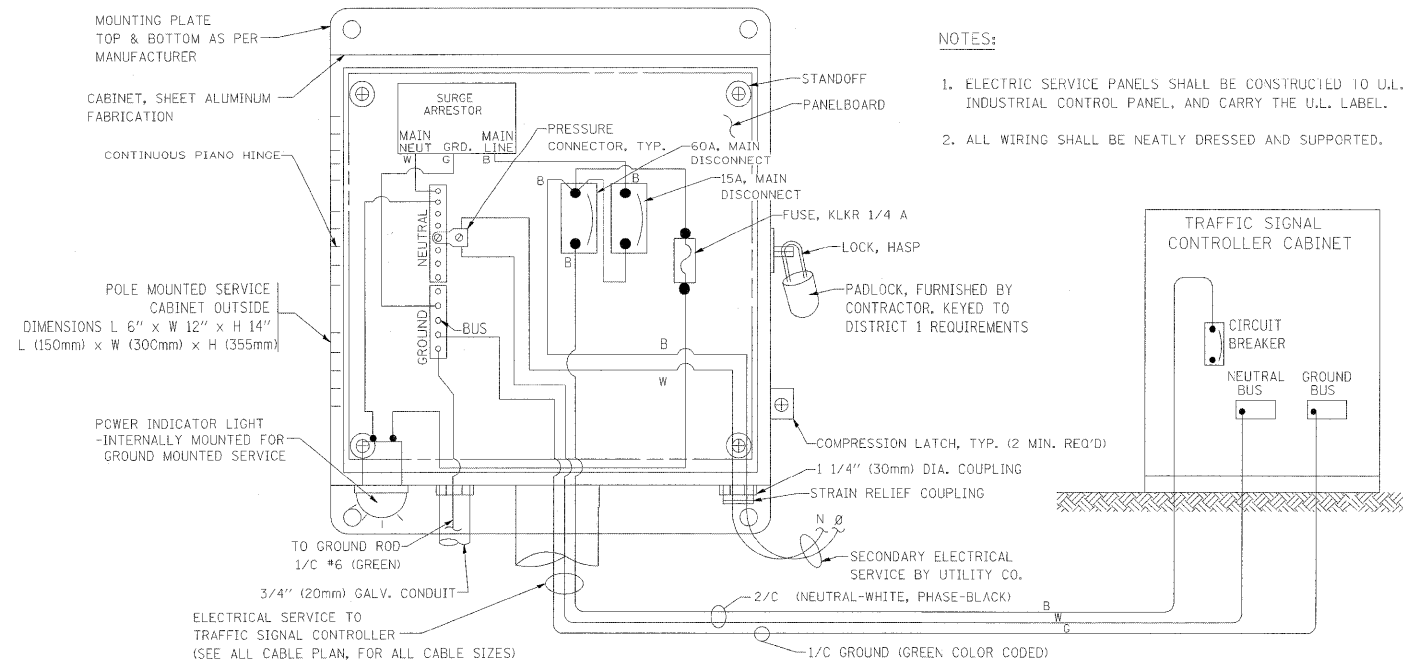
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

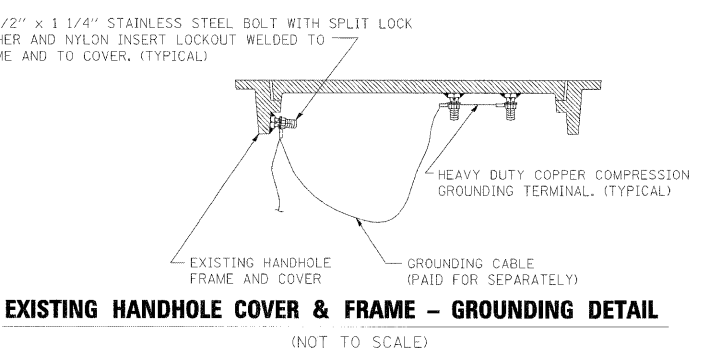
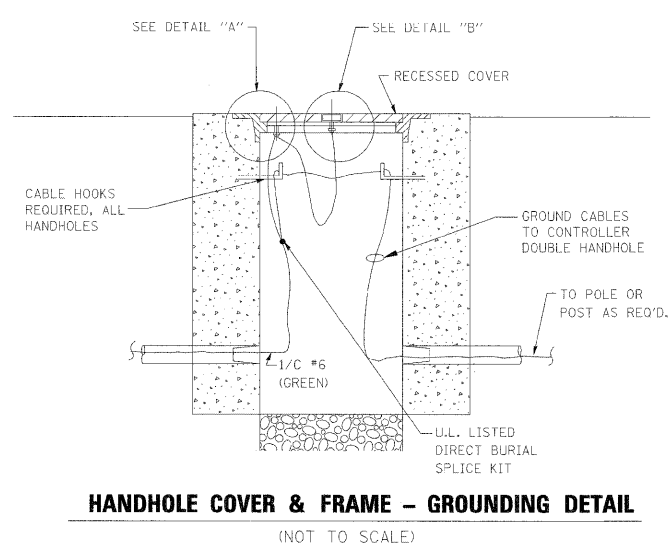
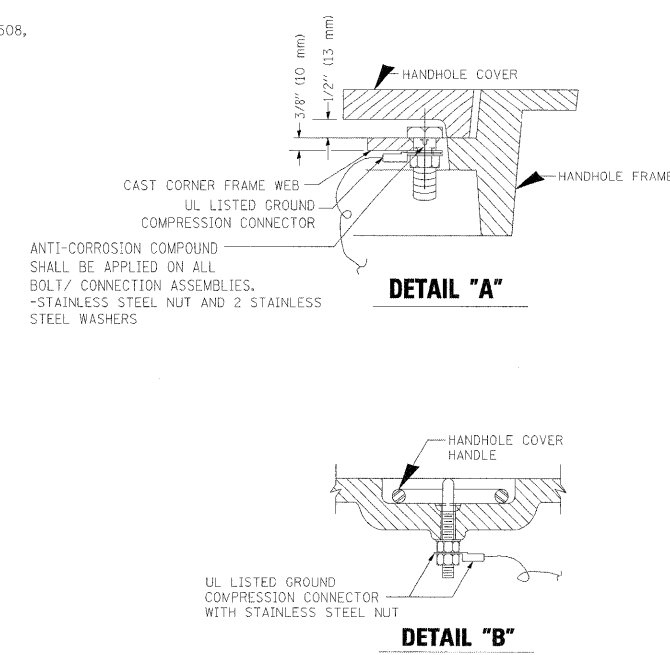
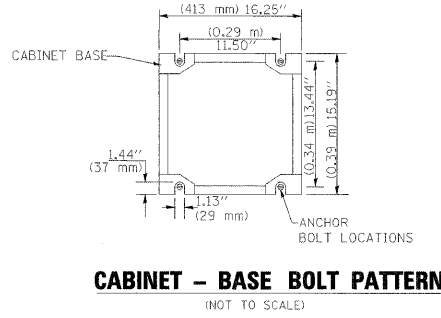
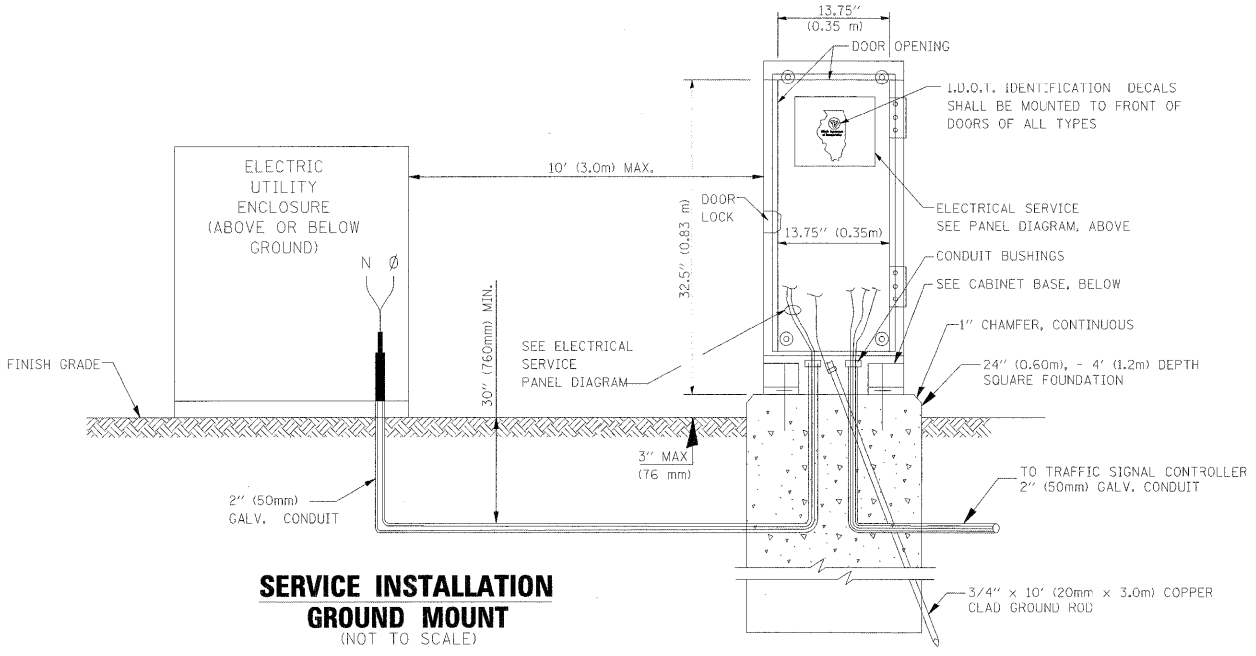
DISTRICT ONE
STANDARD TRAFFIC SIGNAL
DESIGN DETAILS

SCALE: VERT. NONE
HORIZ. DATE 09-11-2007

DRAWN BY: BL
CHECKED BY: ER/TC



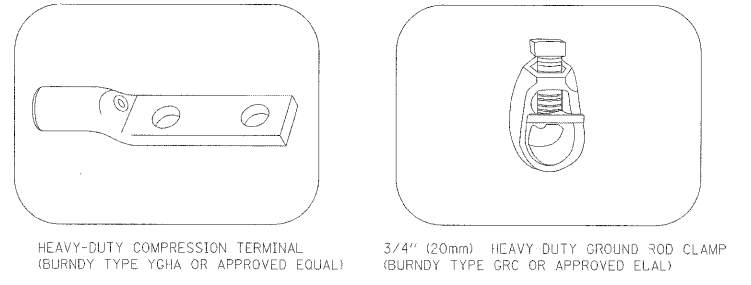
ELECTRICAL SERVICE – PANEL DIAGRAM (TYPICAL FOR POLE AND GROUND MOUNTED SERVICE)
SERVICE INSTALLATION POLE MOUNT (SHOWN)
 (NOT TO SCALE)



NOTES:

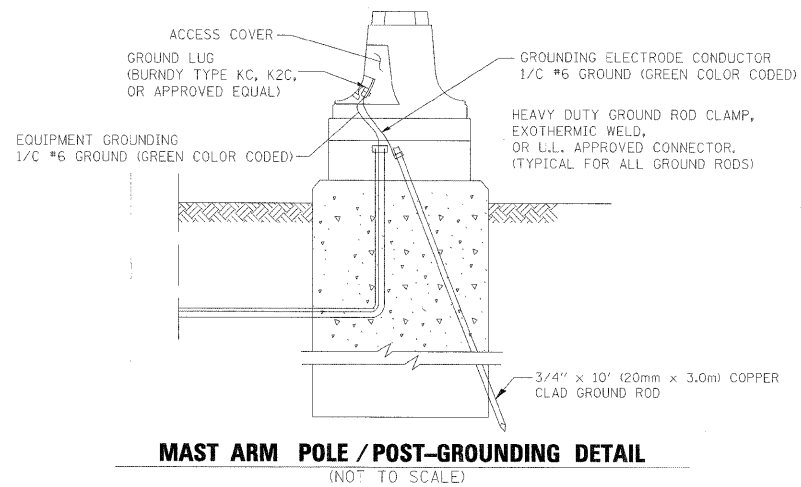
GROUNDING SYSTEM

1. THE GROUNDING SYSTEM SHALL CONSIST OF AN INSULATED CONDUCTOR TYPE XLP, NO. 6 A.W.G., STRANDED COPPER TO BE INSTALLED IN RACEWAYS. THE GROUNDING CABLE SHALL BE INSTALLED IN A CONTINUOUS MANNER AS SHOWN ON THE CABLE PLAN PROVIDED. ALL GROUNDING CONDUCTORS SHALL BE BONDED TO METAL ENCLOSURE (HANDHOLE, POST, MAST ARM, CONTROLLER, ETC.). GROUND ROD SHALL BE 3/4" DIA. x 10'-0" (20mm x 3.0m) LONG, COPPER CLAD. ONE GROUND ROD SHALL BE INSTALLED AT ALL POST FOUNDATIONS, POLE FOUNDATIONS, CONTROLLER CABINET FOUNDATION AND ELECTRICAL SERVICE INSTALLATION AS INDICATED ON THE CABLE PLAN. IF THERE ARE ANY SPECIAL CONDITIONS SUCH AS SUB-SURFACE CONDITIONS OR INSTALLATION PROBLEMS, THE RESIDENT ENGINEER SHALL BE NOTIFIED OR CONTACT THE BUREAU OF TRAFFIC, ILLINOIS DEPARTMENT OF TRANSPORTATION DISTRICT ONE AT (847) 705-4139.
2. THE NEUTRAL CONDUCTOR AND THE GROUND CONDUCTOR SHALL BE CONNECTED IN THE SERVICE INSTALLATION. AT NO OTHER POINT IN THE TRAFFIC SIGNAL SYSTEM SHALL THE NEUTRAL AND GROUND CONDUCTORS BE CONNECTED.
3. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL TERMINATE AT THE GROUND BUS IN THE CONTROLLER CABINET.
4. THE CONTRACTOR SHALL PROVIDE A GROUND CABLE WITH CONNECTORS BETWEEN THE HANDHOLE COVER AND HANDHOLE FRAME.



NOTES:

- ALL CLAMPS SHALL BE BRONZE OR COPPER, U.L. APPROVED.
- GROUND CABLE SHALL BE LOOPED OVER HOOKS IN THE HANDHOLES. 6.5' (2.0m) SLACK SHALL BE PROVIDED IN SINGLE HANDHOLES. 13' (4.0m) OF SLACK SHALL BE PROVIDED IN DOUBLE HANDHOLES. 5' (1.4m) OF SLACK SHALL BE PROVIDED BETWEEN FRAME AND COVER.



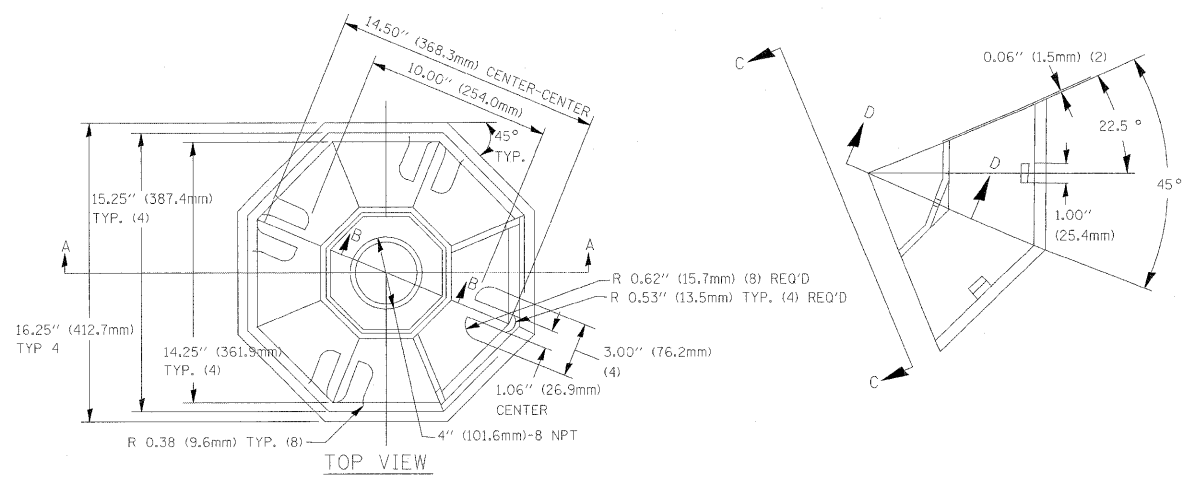
REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION			
NAME	DATE				
		DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS			
		SCALE: VERT. NONE HORIZ. DATE 09-11-2007	DRAWN BY: BL CHECKED BY: ER/TC		

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PLOT DATE = 1/27/2009			

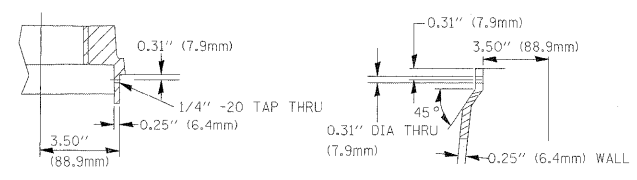
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

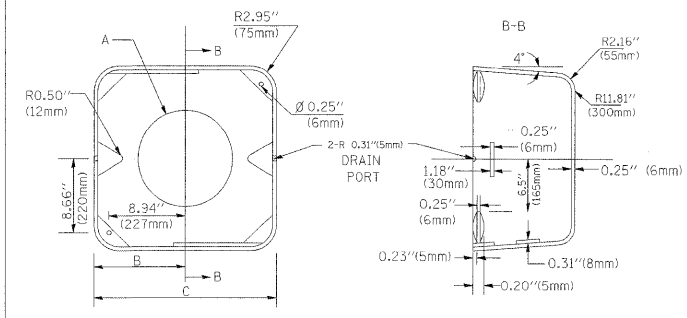
SCALE: NTS	SHEET NO. 3 OF 4 SHEETS	STA. TO STA.	F.A.U. R.T.C. 2906	SECTION 2009-012 TS	COUNTY COOK	TOTAL SHEETS 11	SHEET NO. 5
			FED. ROAD DIST. NO. ILLINOIS	FED. AID PROJECT			



SECTION B-B



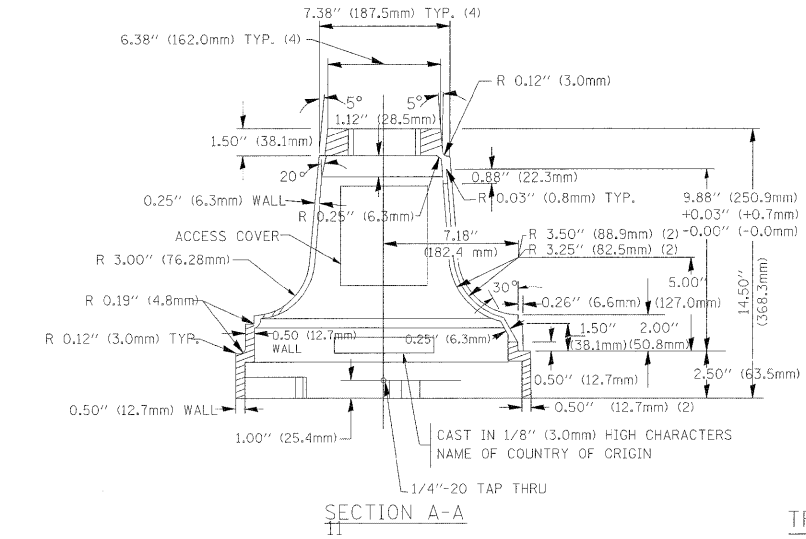
SECTION D-D



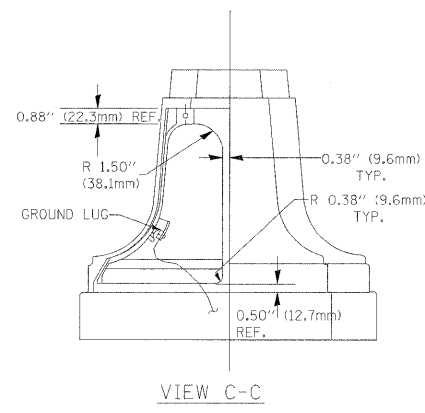
TYPE	A	B	C	HEIGHT	WEIGHT
I	Ø 10.125\"(257mm)	9.5\"(241mm)	19\"(483mm)	12\"(300mm)	24kg
II	Ø 11.125\"(283mm)	10.75\"(273mm)	21.5\"(546mm)	12\"(300mm)	26kg

SHROUD DETAIL

MATERIAL:
 - ASTM A48 CLASS 30 GREY IRON
 - ASTM A123 HOT DIPPED GALVANIZED

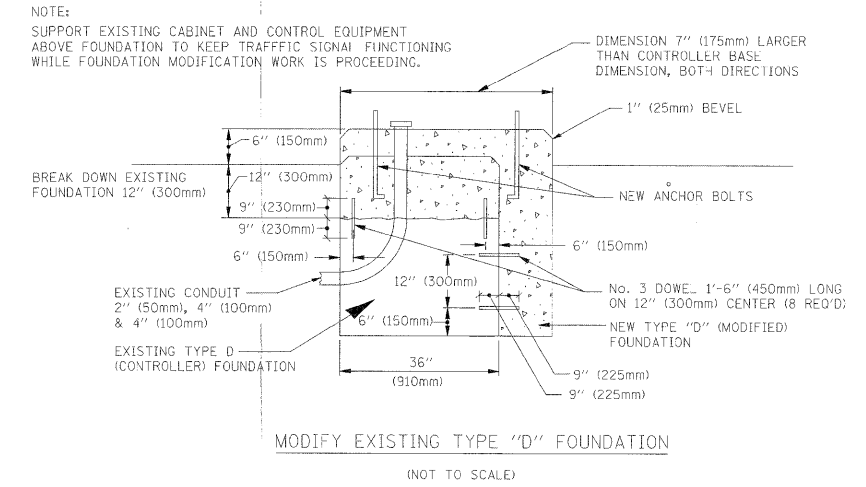
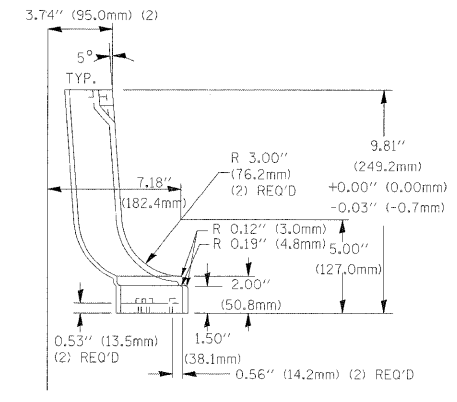


SECTION A-A



VIEW C-C

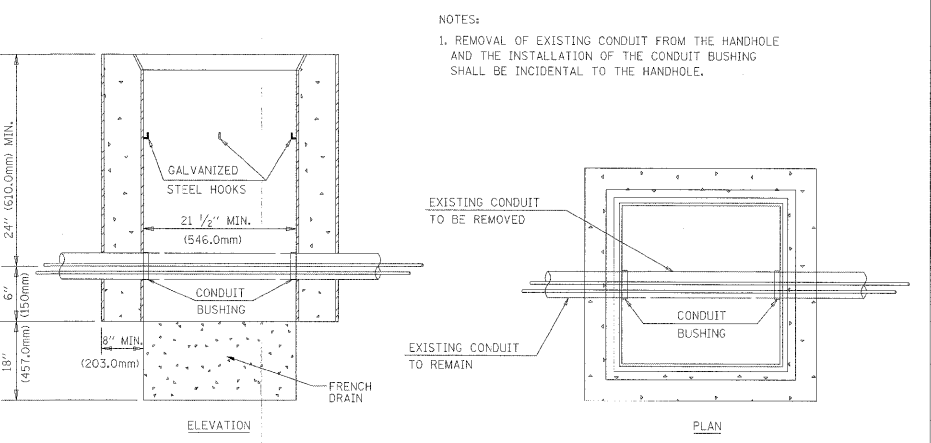
TRAFFIC SIGNAL POST - MOUNTING BASE - TYPE A



MODIFY EXISTING TYPE "D" FOUNDATION

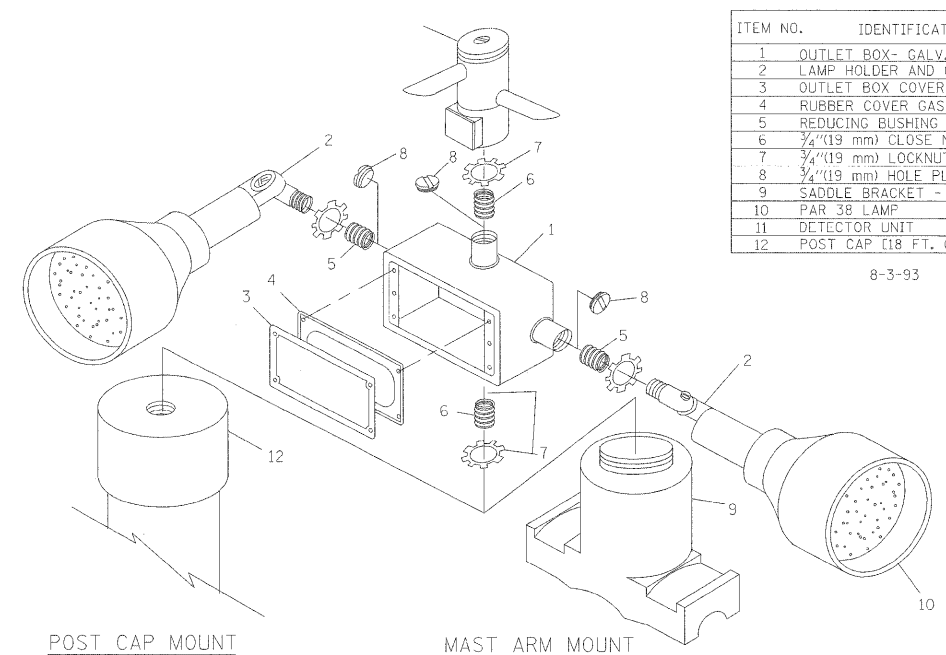
NOTE:
 SUPPORT EXISTING CABINET AND CONTROL EQUIPMENT ABOVE FOUNDATION TO KEEP TRAFFIC SIGNAL FUNCTIONING WHILE FOUNDATION MODIFICATION WORK IS PROCEEDING.

DIMENSION 7\"(175mm) LARGER THAN CONTROLLER BASE DIMENSION, BOTH DIRECTIONS
 1\"(25mm) BEVEL
 BREAK DOWN EXISTING FOUNDATION 12\"(300mm)
 NEW ANCHOR BOLTS
 EXISTING CONDUIT 2\"(50mm), 4\"(100mm) & 4\"(100mm)
 NEW TYPE "D" (MODIFIED) FOUNDATION
 No. 3 DOWEL 1'-6\"(450mm) LONG ON 12\"(300mm) CENTER (8 REQ'D)
 EXISTING TYPE "D" (CONTROLLER) FOUNDATION
 36\"(910mm)
 9\"(225mm)
 9\"(225mm)



DETAIL HANDHOLE TO INTERCEPT EXISTING CONDUIT N.T.S.

NOTES:
 1. REMOVAL OF EXISTING CONDUIT FROM THE HANDHOLE AND THE INSTALLATION OF THE CONDUIT BUSHING SHALL BE INCIDENTAL TO THE HANDHOLE.



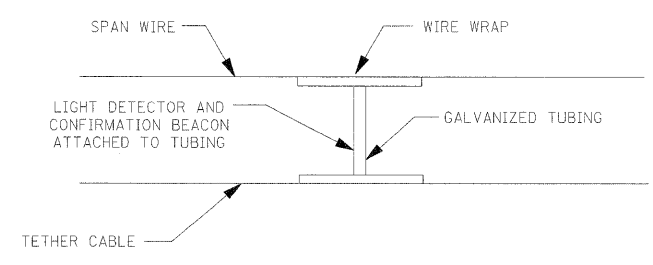
POST CAP MOUNT
 MAST ARM MOUNT
 EMERGENCY VEHICLE DETECTOR WITH CONFIRMATION BEACON MOUNTING DETAIL

ITEM NO.	IDENTIFICATION
1	OUTLET BOX- GALV. 21 CU.IN. (0.000344 CU-M)
2	LAMP HOLDER AND COVER
3	OUTLET BOX COVER
4	RUBBER COVER GASKET
5	REDUCING BUSHING
6	3/4\"(19 mm) CLOSE NIPPLE
7	3/4\"(19 mm) LOCKNUT
8	3/4\"(19 mm) HOLE PLUG
9	SADDLE BRACKET - GALV.
10	PAR 38 LAMP
11	DETECTOR UNIT
12	POST CAP [18 FT. (5.4 m) POST MIN.]

8-3-93















NOTES:

- ALL ELECTRICAL ITEMS, EXCEPT ITEMS #2 AND #11 SHALL BE ALUMINUM OR GALVANIZED
- ITEM #1- OZ/GEDNEY FSX-1-50 OR EQUIVALENT
 ITEM #2- MULBERRY CON-O-SHADE LAMP SHIELD OR EQUIVALENT
 ITEM #9- "BAND-IT" SADDLE BRACKET OR EQUIVALENT
- WHEN POST MOUNTING IS SPECIFIED, ITEM #9 SHALL NOT BE REQUIRED. THE DETECTION UNIT SHALL BE MOUNTED DIRECTLY ON TOP OF THE CAP BY DRILLING AND TAPPING A 3/4\"(19 mm) HOLE WITH PIPE THREADS. THE POST CAP SHALL EITHER BE SCREWED TO THE TOP OF THE POST OR A MINIMUM OF 3 TIGHTENING SCREWS SHALL BE REQUIRED ON EACH CAP.























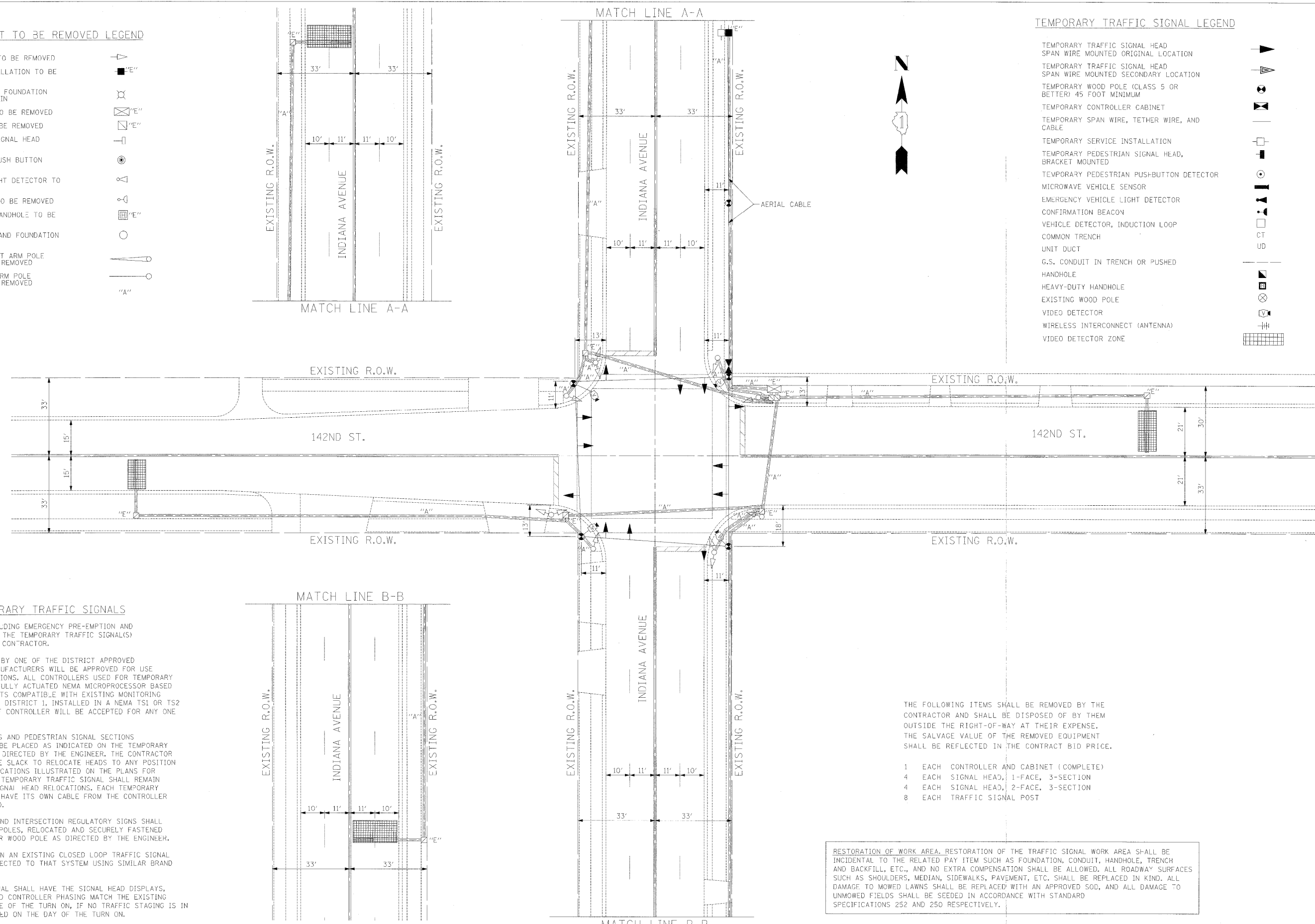
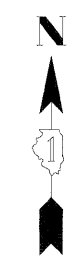
LIGHT DETECTOR AND CONFIRMATION BEACON MOUNTING FOR TEMPORARY TRAFFIC SIGNALS (NOT TO SCALE)

EXISTING EQUIPMENT TO BE REMOVED LEGEND

- EXISTING SIGNAL HEAD TO BE REMOVED 
- EXISTING SERVICE INSTALLATION TO BE REMOVED 
- EXISTING STREET LIGHT, FOUNDATION AND LUMINAIRE TO REMAIN 
- EXISTING CONTROLLER TO BE REMOVED 
- EXISTING HAND-HOLE TO BE REMOVED 
- EXISTING PEDESTRIAN SIGNAL HEAD TO BE REMOVED 
- EXISTING PEDESTRIAN PUSH BUTTON TO BE REMOVED 
- EMERGENCY VEHICLE LIGHT DETECTOR TO BE REMOVED 
- CONFIRMATION BEACON TO BE REMOVED 
- EXISTING HEAVY-DUTY HANDHOLE TO BE REMOVED 
- EXISTING SIGNAL POST AND FOUNDATION TO BE REMOVED 
- EXISTING ALUMINUM MAST ARM POLE AND FOUNDATION TO BE REMOVED 
- EXISTING STEEL MAST ARM POLE AND FOUNDATION TO BE REMOVED 
- ABANDON 

TEMPORARY TRAFFIC SIGNAL LEGEND

- TEMPORARY TRAFFIC SIGNAL HEAD 
- SPAN WIRE MOUNTED ORIGINAL LOCATION 
- TEMPORARY TRAFFIC SIGNAL HEAD SPAN WIRE MOUNTED SECONDARY LOCATION 
- TEMPORARY WOOD POLE (CLASS 5 OR BETTER) 45 FOOT MINIMUM 
- TEMPORARY CONTROLLER CABINET 
- TEMPORARY SPAN WIRE, TETHER WIRE, AND CABLE 
- TEMPORARY SERVICE INSTALLATION 
- TEMPORARY PEDESTRIAN SIGNAL HEAD, BRACKET MOUNTED 
- TEMPORARY PEDESTRIAN PUSH-BUTTON DETECTOR 
- MICROWAVE VEHICLE SENSOR 
- EMERGENCY VEHICLE LIGHT DETECTOR 
- CONFIRMATION BEACON 
- VEHICLE DETECTOR, INDUCTION LOOP 
- COMMON TRENCH 
- UNIT DUCT 
- G.S. CONDUIT IN TRENCH OR PUSHED 
- HANDHOLE 
- HEAVY-DUTY HANDHOLE 
- EXISTING WOOD POLE 
- VIDEO DETECTOR 
- WIRELESS INTERCONNECT (ANTENNA) 
- VIDEO DETECTOR ZONE 



NOTES FOR TEMPORARY TRAFFIC SIGNALS

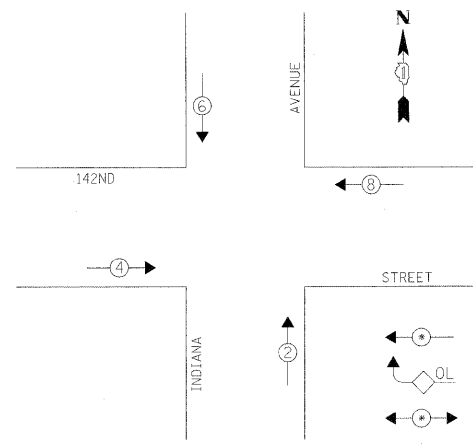
1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY CONTROLLERS SUPPLIED BY ONE OF THE DISTRICT APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY IDOT DISTRICT 1, INSTALLED IN A NEMA TS1 OR TS2 CABINET. ONLY ONE BRAND OF CONTROLLER WILL BE ACCEPTED FOR ANY ONE CONTRACT.
3. ALL TRAFFIC SIGNAL SECTIONS AND PEDESTRIAN SIGNAL SECTIONS SHALL BE 12". HEADS SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE OR AT LOCATIONS ILLUSTRATED ON THE PLANS FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
4. ALL EXISTING STREET NAME AND INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.
5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM USING SIMILAR BRAND CONTROL EQUIPMENT.
6. THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL, AT THE TIME OF THE TURN ON, IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN ON.

THE FOLLOWING ITEMS SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE DISPOSED OF BY THEM OUTSIDE THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.

- 1 EACH CONTROLLER AND CABINET (COMPLETE)
- 4 EACH SIGNAL HEAD, 1-FACE, 3-SECTION
- 4 EACH SIGNAL HEAD, 2-FACE, 3-SECTION
- 8 EACH TRAFFIC SIGNAL POST

RESTORATION OF WORK AREA, RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCIDENTAL TO THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL, ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIAN, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

TEMPORARY CONTROLLER SEQUENCE



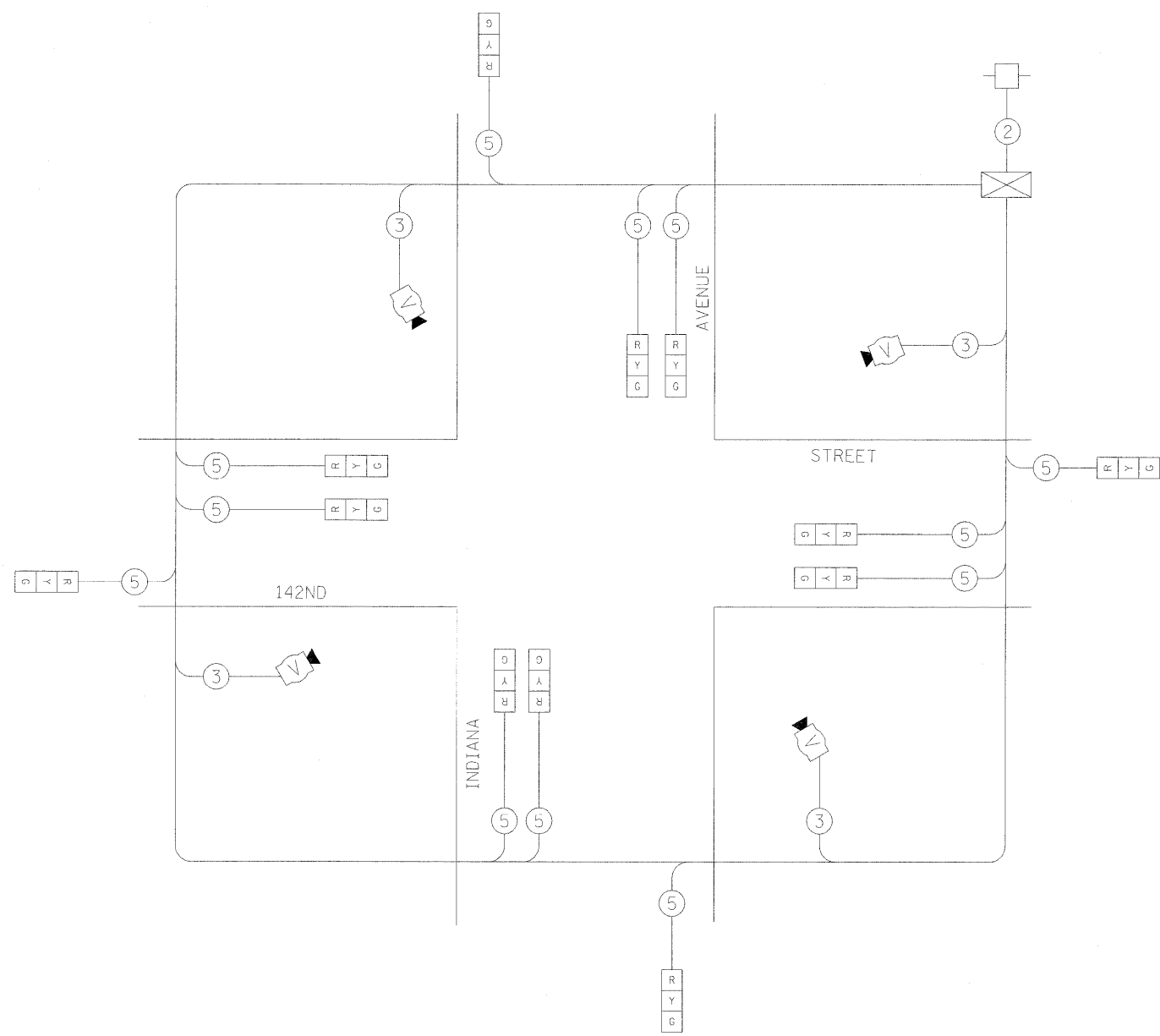
TEMPORARY PHASE DESIGNATION DIAGRAM

LEGEND

- → ○ DUAL ENTRY PHASE
- → ○ OL OVERLAP
- → ○ PEDESTRIAN PHASE
- * NUMBER REFERS TO ASSOCIATED PHASE

TEMPORARY CABLE DIAGRAM LEGEND

- [R] TEMPORARY TRAFFIC SIGNAL SECTION OR PEDESTRIAN SIGNAL SECTION, 12" (300 mm)
- [X] TEMPORARY CONTROLLER CABINET
- [] TEMPORARY SERVICE INSTALLATION
- (5) INDICATES NUMBER OF CONDUCTORS IN CABLE. ALL CONDUCTORS TO BE NUMBERED 14 AWG WIRE UNLESS OTHERWISE NOTED.
- ▶ EMERGENCY VEHICLE LIGHT DETECTOR
- CONFIRMATION BEACON
- PEDESTRIAN PUSHBUTTON DETECTOR
- [] VEHICLE DETECTOR, INDUCTION LOOP
- [] 12" (300 mm) PEDESTRIAN SIGNAL SECTION
- [] MICROWAVE VEHICLE SENSOR
- [V] VIDEO DETECTOR



TEMPORARY CABLE PLAN

I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO. LAMPS	WATTAGE INCAND.	WATTAGE LED	% OPERATION	
SIGNAL (RED)	12		17	0.50	102.00
(YELLOW)	12		25	0.25	75.00
(GREEN)	12		15	0.25	45.00
ARROW	-		12	0.10	0.00
PED. SIGNAL	-		25	1.00	0.00
CONTROLLER	1		100	1.00	100.00
ILLUM. SIGN				0.05	-
FLASHER				0.05	-
ENERGY COSTS TO:					TOTAL= 322.00
VILLAGE OF DOLTON 14014 PARK AVENUE DOLTON, IL 60419					
ENERGY SUPPLY CONTACT: TONY ESCALANTE					
PHONE: (708) 235-2328					
COMPANY: COMMONWEALTH EDISON					
FILE NAME =	USER NAME = #USER#	DESIGNED - NB/TCM	REVISED -		
P:\P-08-1600-4\Design\3.Indiana at 142nd\Sh1\SH1000.dgn		DRAWN - NB/TCM	REVISED -		
	PLOT SCALE = 1.0000" / IN.	CHECKED - NB/TCM	REVISED -		
	PLOT DATE = 1/27/2009	DATE - 01/23/2009	REVISED -		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CABLE PLAN
INDIANA AVENUE AND 142ND STREET

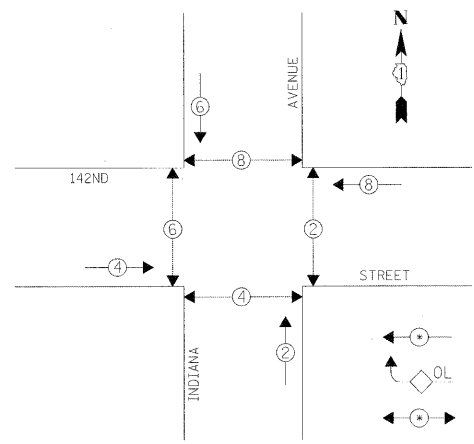
SCALE: NTS SHEET NO. OF SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2906	2009-012 TS	COOK	11	8
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60C10	

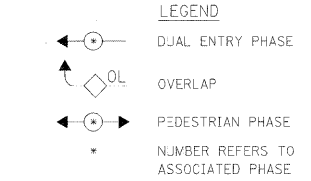
CABLE PLAN LEGEND

PROPOSED	EXISTING	
		8" (200mm) TRAFFIC SIGNAL SECTION
		12" (300mm) TRAFFIC SIGNAL SECTION
		12" (300mm) PEDESTRIAN SIGNAL SECTION
		12" (300mm) PEDESTRIAN SIGNAL SECTION
		CONTROLLER CABINET
		SERVICE INSTALLATION
		TELEPHONE CONNECTION
		MAGNETIC DETECTOR
		PUSHBUTTON DETECTOR
		VEHICLE DETECTOR, INDUCTION LOOP
		DENOTES NUMBER OF CONDUCTORS. ALL CABLE NO. 14 EXCEPT AS INDICATED. ALL LOOP DETECTOR CABLE TO BE SHIELDED.
		SIGNAL FACE WITH BACKPLATE. "P" INDICATES PROGRAMMED HEAD
		RAILROAD CONTROL CABINET
		ILLUMINATED SIGN, FIBER OPTIC "NO LEFT TURN"
		ILLUMINATED SIGN, FIBER OPTIC "NO RIGHT TURN"
		GROUND ROD AT HANDHOLE, DOUBLE HANDHOLE, OR CONTROLLER
		GROUND ROD AT POST OR MAST ARM POLE
		GROUND ROD AT ELECTRIC SERVICE INSTALLATION
		GROUND CABLE IN CONDUIT NO. 6 SOLID COPPER (GREEN)
		FIBER OPTIC CABLE IN CONDUIT NO.62.5/125 2-MM12F & SM12F
		MICROWAVE VEHICLE SENSOR
		VIDEO DETECTOR
		CLOSED CIRCUIT TV
		EMERGENCY VEHICLE LIGHT DETECTOR
		CONFIRMATION BEACON
		UNINTERRUPTIBLE POWER SUPPLY
		PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN TIMER

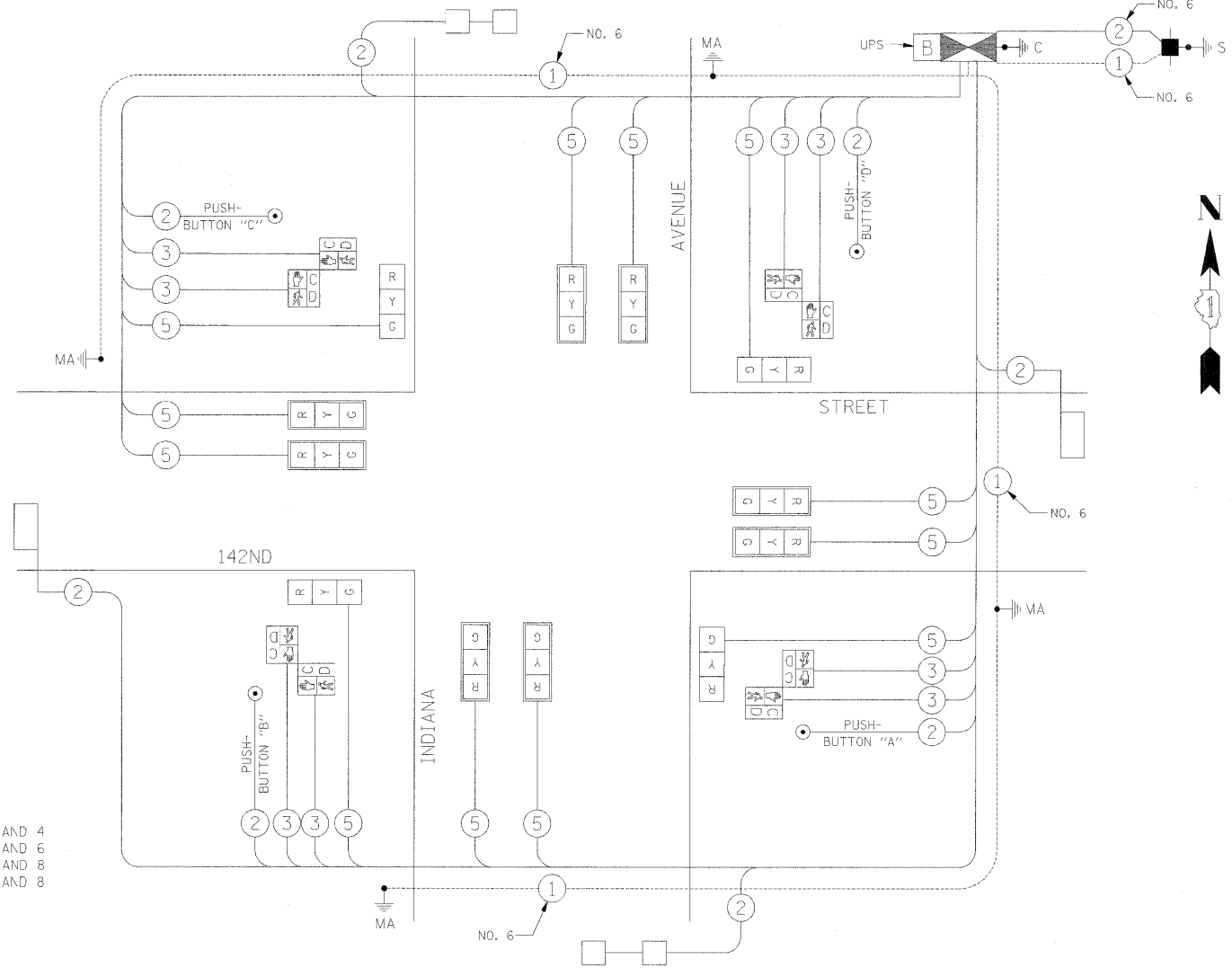
CONTROLLER SEQUENCE



PHASE DESIGNATION DIAGRAM



NOTE:
 PUSHBUTTON "A" SHALL PLACE A CALL IN PHASES 2 AND 4
 PUSHBUTTON "B" SHALL PLACE A CALL IN PHASES 4 AND 6
 PUSHBUTTON "C" SHALL PLACE A CALL IN PHASES 6 AND 8
 PUSHBUTTON "D" SHALL PLACE A CALL IN PHASES 2 AND 8



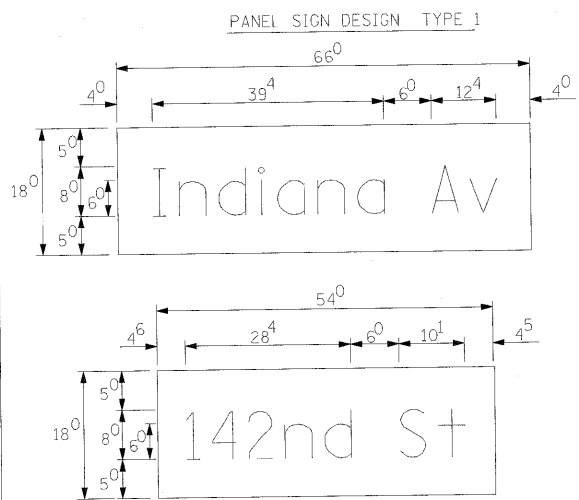
CABLE PLAN

SUMMARY OF QUANTITIES

QUANTITY	UNIT	ITEM	QUANTITY	UNIT	ITEM
75	SQ FT	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	1	EACH	FULL-ACTUATED CONTROLLER AND TYPE IV CABINET
32	SQ FT	DETECTABLE WARNINGS	1	EACH	UNINTERRUPTIBLE POWER SUPPLY
1	L SUM	TRAFFIC CONTROL AND PROTECTION, STANDARD 701501	470	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C
1	L SUM	TRAFFIC CONTROL AND PROTECTION, STANDARD 701601	1012	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
1	L SUM	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701	1750	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C
1	L SUM	TRAFFIC CONTROL AND PROTECTION, STANDARD 701801	1414	FOOT	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1-PAIR
30	SQ FT	SIGN PANEL - TYPE 1	188	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C
392	FOOT	THERMOPLASTIC PAVEMENT MARKING - LINE 12"	469	FOOT	ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C
84	FOOT	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 22 FT.
203	SQ FT	THERMOPLASTIC PAVEMENT MARKING REMOVAL	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 28 FT.
992	FOOT	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 32 FT.
10	FOOT	CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 34 FT.
199	FOOT	CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL	4	FOOT	CONCRETE FOUNDATION, TYPE C
66	FOOT	CONDUIT PUSHED, 2 1/2" DIA., GALVANIZED STEEL	44	FOOT	CONCRETE FOUNDATION, TYPE E 36" DIAMETER
210	FOOT	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL	8	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, MAST ARM MOUNTED
7	EACH	HANDHOLE	4	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, BRACKET MOUNTED
1	EACH	DOUBLE HANDHOLE	4	EACH	PEDESTRIAN SIGNAL HEAD, L.E.D., 2-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
1065	FOOT	TRENCH AND BACKFILL FOR ELECTRICAL WORK	8	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM
			4	EACH	INDUCTIVE LOOP DETECTOR
			198	FOOT	DETECTOR LOOP, TYPE 1
			4	EACH	PEDESTRIAN PUSH-BUTTON
			1	EACH	TEMPORARY TRAFFIC SIGNAL INSTALLATION
			1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
			8	EACH	REMOVE EXISTING HANDHOLE
			7	EACH	REMOVE EXISTING CONCRETE FOUNDATION
			51.4	SQ FT	TEMPORARY INFORMATION SIGNING
			1	EACH	TEMPORARY TRAFFIC SIGNAL TIMINGS
			1	EACH	SERVICE INSTALLATION, POLE MOUNT

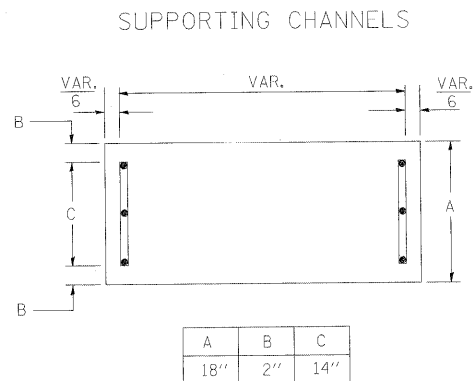
I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO. LAMPS	WATTAGE INCAND.	WATTAGE LED	% OPERATION	
SIGNAL (RED)	12	17	0.25	0.50	102.00
(YE. LOW)	12	25	0.25	0.25	75.00
(GREEN)	12	15	0.25	0.25	45.00
ARROW	-	12	0.10	0.10	0.00
PED. SIGNAL	8	25	1.00	1.00	200.00
CONTROLLER	1	100	1.00	1.00	100.00
ILLUM. SIGN				0.05	-
FLASHER				0.05	-
ENERGY COSTS TO:					TOTAL= 522.00
VILLAGE OF DOLTON 14014 PARK AVENUE DOLTON, IL 60419					
ENERGY SUPPLY CONTACT: TONY ESCALANTE PHONE: (708) 235-2328 COMPANY: COMMONWEALTH EDISON					

FOUNDATION (DEPTH)	FT. (m)	CABLE SLACK	FT. (m)	VERTICAL	FT. (m)
TYPE A - POST	4 (1.2)	HANDHOLE	6.5 (2.0)	ALL FOUNDATIONS	3.5 (1.0)
D - CONTROLLER	4 (1.2)	DOUBLE HANDHOLE	13 (4.0)	MAST ARM (L) POLE	20'4L-2"
E - M. ARM POLE	24" (600mm)	SIGNAL POST	2 (0.6)	BRACKET MOUNTED	(6m+L-0.6m)=
	30" (750mm)	CONTROLLER CAB.	1 (0.3)	BRACKET MOUNTED	13 (4.0)
		FIBER OPTIC	13 (4.0)	PED. PUSHBUTTON	4 (1.2)
		ELECTRIC SERVICE	1 (0.3)	ELECTRIC SERVICE	13.5 (4.1)
		GROUND CABLE	1 (0.3)	SERVICE TO GROUND	13.5 (4.1)
				POST MOUNTED	6 (1.8)



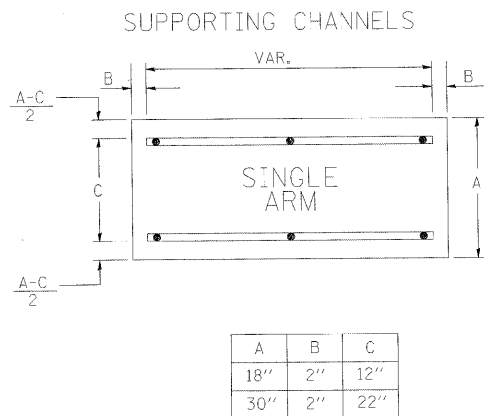
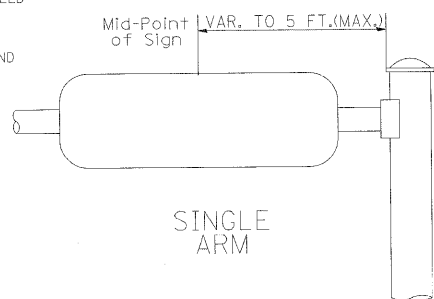
— Sq. M. each
8.25 Sq. Ft. each
— 2 Required
Design Series D

— Sq. M. each
6.75 Sq. Ft. each
— 2 Required
Design Series D



GENERAL NOTES

- WHERE MAST ARM MOUNTED STREET NAME SIGNS ARE SPECIFIED, THE MAST ARM ASSEMBLY AND POLES SHALL BE DESIGNED TO SUPPORT THE LOADINGS CALLED FOR ON STANDARDS 834001, 834006 AND 834011, AS APPLICABLE, PLUS TWO (2) SIGN PANELS 2'-6" x 6'-0" MOUNTED AS SHOWN. THE DESIGN SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS FOR 80 M.P.H. WIND VELOCITY.
 - ALL SIGNS SHALL HAVE A WHITE REFLECTORIZED LEGEND AND BORDER ON A GREEN REFLECTORIZED BACKGROUND, TYPE A SHEETING.
 - THE SIGN LENGTH SHOULD BE INCREASED IN 6-INCH INCREMENTS, BUT THE OVERALL LENGTH SHOULD NOT EXCEED 6'-0".
 - ALL BORDERS SHALL BE 3/4" WIDE AND CORNER RADIUS SHALL BE 2-1/4".
 - SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM SHALL BE USED FOR ALL SIGNS ATTACHED TO SIGNAL POLES AND POSTS. LOCAL SUPPLIERS OF THE SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM ARE:
 - * A.K.T. CORPORATION SCHAUMBURG, IL
 - * TUCKER COMPANY, INC. WAUWATOSA, WI
 - * AMERICAN FABRICATION CO. CHICAGO HEIGHTS, IL
 - * WESTERN TRAFFIC CONTROL INC. CICERO, IL
- PARTS LISTING:
SIGN CHANNEL PART #HPN053 (MED. CHANNEL)
SIGN SCREWS 1/4" x 14 x 1" H.W.H. #3
BRACKETS SELF TAPPING WITH NEOPRENE WASHER
PART #HPN034 (UNIVERSAL)
CHANNEL CLAMPS WITH STAINLESS STEEL STRAPPING
- OTHER BRANDS OF MOUNTING HARDWARE ARE ACCEPTABLE, BASED UPON THE DEPARTMENT'S APPROVAL AND COMPATIBILITY WITH THE CHANNEL/BACKET OF THE ABOVE PRODUCT.



DUAL ARM
SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM
Shall be used. See Note #5.

Upper Case To Lower Case
Spacing Chart 8-6 Inch Series "C & D"

EXAMPLE, 2 DENOTES 3/8"

SERIES	SECOND LETTER															
	a c d e		b h i k l		f w		j		s t		v y		x		z	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
A W X	12	14	14	15	12	14	06	10	11	14	06	10	11	12	12	14
B	14	15	20	21	14	15	11	12	14	15	12	14	12	14	16	17
C E G	14	15	20	21	12	14	06	10	12	14	12	14	14	15	14	15
D O Q R	14	15	20	21	14	15	06	10	12	14	12	14	14	15	14	15
F	05	06	14	15	06	10	05	06	06	10	06	10	06	10	11	12
H I M N	20	21	22	24	20	21	14	15	16	17	16	17	20	21	20	21
J U	20	21	20	21	16	17	14	15	16	17	16	17	16	17	20	21
K L	11	12	16	17	11	12	05	06	11	12	11	12	11	12	12	14
P	12	14	14	15	12	14	05	06	11	12	11	12	12	14	12	14
S	12	14	16	17	12	14	06	10	12	14	12	14	12	14	12	14
T	11	12	16	17	06	10	06	10	11	12	11	12	11	12	12	14
V	06	10	14	15	11	12	06	10	12	14	12	14	12	14	12	14
Y	05	06	14	15	06	10	05	06	05	07	05	06	06	10	11	12
Z	16	17	22	24	16	17	12	14	16	17	16	17	16	17	20	21

Lower Case To Lower Case
Spacing Chart 6 Inch Series "C & D"

SERIES	SECOND LETTER															
	a c d e		b h i k l		f w		j		s t		v y		x		z	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
adngij	16	17	22	24	16	17	12	14	14	15	14	15	16	17	16	17
lmnqu																
bfkops	12	14	16	17	11	12	05	06	11	12	11	12	12	14	12	14
c e	12	14	16	17	12	14	06	10	12	14	12	14	12	14	12	14
r	06	10	12	14	06	10	03	03	05	06	05	06	06	10	06	10
t z	12	14	16	17	12	14	06	10	11	12	11	12	12	14	12	14
v y	11	12	14	15	11	12	05	06	06	10	06	10	11	12	11	12
w	11	12	14	15	11	12	05	06	11	12	11	12	11	12	12	14
x	12	14	16	17	11	12	05	06	11	12	11	12	11	12	12	14

Number To Number
Spacing Chart 8 Inch Series "C & D"

SERIES	SECOND NUMBER																			
	0		1		2		3		4		5		6		7		8		9	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
0 9	16	17	16	17	14	15	12	14	14	15	14	15	16	17	12	14	16	17	16	17
1	20	21	20	21	20	21	16	17	14	15	20	21	20	21	14	15	20	21	20	21
2 3 4	14	15	14	15	14	15	12	14	12	14	14	15	14	15	11	12	16	17	14	15
5	14	15	14	15	14	15	11	12	11	12	14	15	14	15	11	12	14	15	14	15
6	16	17	14	15	14	15	12	15	12	14	14	15	14	15	11	12	14	15	14	15
7	12	14	12	14	14	15	12	15	05	06	12	14	14	15	11	12	14	15	12	14
8	16	17	16	17	14	15	12	15	12	14	14	15	16	17	12	14	16	17	14	15

UPPER AND LOWER CASE
LETTER WIDTHS

LETTERS	6 INCH UPPER CASE LETTERS		8 INCH UPPER CASE LETTERS		LETTERS	6 INCH LOWER CASE LETTERS	
	SERIES		SERIES			SERIES	
	C	D	C	D		C	D
A	3 ⁶	5 ⁰	5 ⁰	6 ⁵	a	3 ⁵	4 ²
B	3 ²	4 ⁰	4 ³	5 ³	b	3 ⁵	4 ²
C	3 ²	4 ⁰	4 ³	5 ³	c	3 ⁵	4 ¹
D	3 ²	4 ⁰	4 ³	5 ³	d	3 ⁵	4 ²
E	3 ⁰	3 ⁵	4 ⁰	4 ⁷	e	3 ⁵	4 ²
F	3 ⁰	3 ⁵	4 ⁰	4 ⁷	f	2 ³	2 ⁶
G	3 ²	4 ⁰	4 ³	5 ³	g	3 ⁵	4 ²
H	3 ²	4 ⁰	4 ³	5 ³	h	3 ⁵	4 ²
I	0 ⁷	0 ⁷	1 ¹	1 ²	i	1 ¹	1 ¹
J	3 ⁰	3 ⁶	4 ⁰	5 ⁰	j	2 ⁰	2 ²
K	3 ²	4 ¹	4 ³	5 ⁴	k	3 ⁵	4 ²
L	3 ⁰	3 ⁵	4 ⁰	4 ⁷	l	1 ¹	1 ¹
M	3 ⁷	4 ⁵	5 ¹	6 ¹	m	6 ⁰	7 ⁰
N	3 ²	4 ⁰	4 ³	5 ³	n	3 ⁵	4 ²
O	3 ⁴	4 ²	4 ⁵	5 ⁵	o	3 ⁶	4 ³
P	3 ²	4 ⁰	4 ³	5 ³	p	3 ⁵	4 ²
Q	3 ⁴	4 ²	4 ⁵	5 ⁵	q	3 ⁵	4 ²
R	3 ²	4 ⁰	4 ³	5 ³	r	2 ⁶	3 ²
S	3 ²	4 ⁰	4 ³	5 ³	s	3 ⁶	4 ²
T	3 ⁰	3 ⁵	4 ⁰	4 ⁷	t	2 ⁷	3 ²
U	3 ²	4 ⁰	4 ³	5 ³	u	3 ⁵	4 ²
V	3 ⁵	4 ⁴	4 ⁷	6 ⁰	v	4 ²	4 ⁷
W	4 ⁴	5 ²	6 ⁰	7 ⁰	w	5 ⁵	6 ⁴
X	3 ⁴	4 ⁰	4 ⁵	5 ³	x	4 ⁴	5 ¹
Y	3 ⁶	5 ⁰	5 ⁰	6 ⁶	y	4 ⁶	5 ³
Z	3 ²	4 ⁰	4 ³	5 ³	z	3 ⁶	4 ³

NUMBER	6 INCH SERIES		8 INCH SERIES	
	C	D	C	D
1	1 ²	1 ⁴	1 ⁵	2 ⁰
2	3 ²	4 ⁰	4 ³	5 ³
3	3 ²	4 ⁰	4 ³	5 ³
4	3 ⁵	4 ³	4 ⁷	5 ⁷
5	3 ²	4 ⁰	4 ³	5 ³
6	3 ²	4 ⁰	4 ³	5 ³
7	3 ²	4 ⁰	4 ³	5 ³
8	3 ²	4 ⁰	4 ³	5 ³
9	3 ²	4 ⁰	4 ³	5 ³
0	3 ⁴	4 ²	4 ⁵	5 ⁵