

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	2009-004 TS	LAKE	15	1
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO.	60G00	

D-91-314-09

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
**PLANS FOR PROPOSED
FEDERAL AID HIGHWAY**
DISTRICT 1
HIGHWAY SAFETY IMPROVEMENT PROJECT
TRAFFIC SIGNAL MODERNIZATION
FAP 346 /US. 41 (SKOKIE HWY.)
AT STEARNS SCHOOL ROAD AND AT ILL RTE. 21 (RIVERSIDE DR.)
GURNEE, ILLINOIS

F.A.P. ROUTE 346/US 41
SECTION 2009-004 TS
PROJECT NO: HSIP-0343 (015)
LAKE COUNTY
C-91-314-09



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Jan 30 2009
Debra M. O'Keefe
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

March 27 2009
Charles G. Ingersoll
ENGINEER OF DESIGN AND ENVIRONMENT

March 27 2009
Christine M. Reed
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

REGINA WEBSTER
AND ASSOC. INC.
CIVIL ENGINEERING CONSULTANTS
6160 North Cicero Avenue, Suite 500
Chicago, Illinois 60631-1369



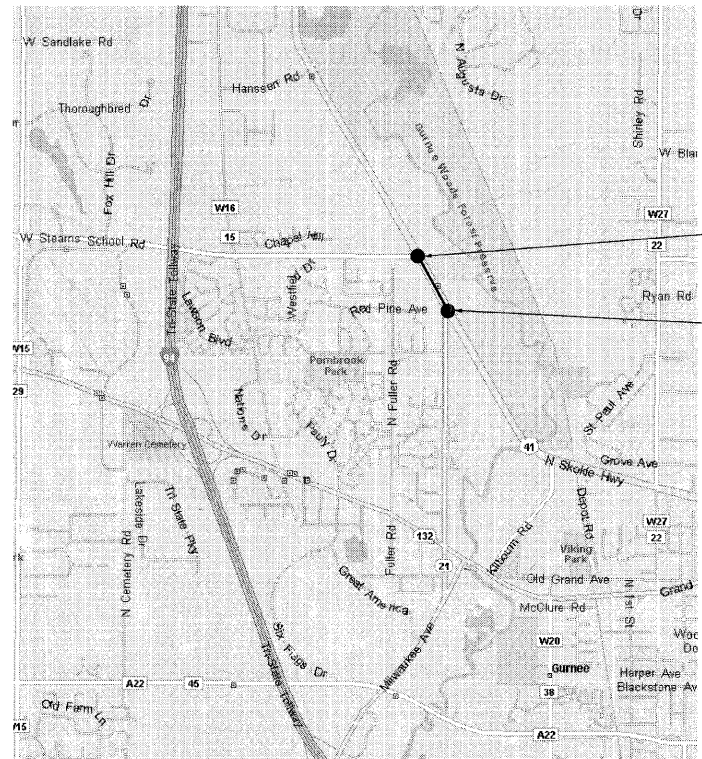
DISTRICT 1 - BUREAU OF TRAFFIC: STEPHEN TRAVIA / DARYLE DREW (847)-705-4420

STANDARDS

- STANDARD 701001-02
- STANDARD 701006-03
- STANDARD 701011-02
- STANDARD 701101-02
- STANDARD 701106-02
- STANDARD 701301-03
- STANDARD 701501-05
- STANDARD 701606-06
- STANDARD 701601-06
- STANDARD 701701-06
- STANDARD 701801-04
- STANDARD 701901-01
- STANDARD 720001-01
- STANDARD 814001-02
- STANDARD 857001-01
- STANDARD 877001-04
- STANDARD 878001-07
- STANDARD 880006-01

PREPARED BY: Shawn Travin 1/30/09
TRAFFIC ENGINEER DATE

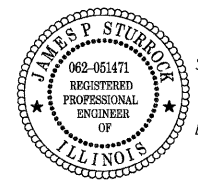
J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811



US 41 (SKOKIE HWY.) & STEARNS SCHOOL RD.

US 41 (SKOKIE HWY.) & ILL RTE. 21 (MILWAUKEE AVE.)

CONTRACT NO. 60G00



Signed James P. Sturock
JAMES P. STUROCK, P.E. IL Lic. No. 062-051471
Expires 11-30-2009
Date 01/29/09

PROFESSIONAL DESIGN FIRM No. 184-002342
Expires 4-30-2009

**PRINTED BY THE AUTHORITY
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SUMMARY OF QUANTITIES

URBAN

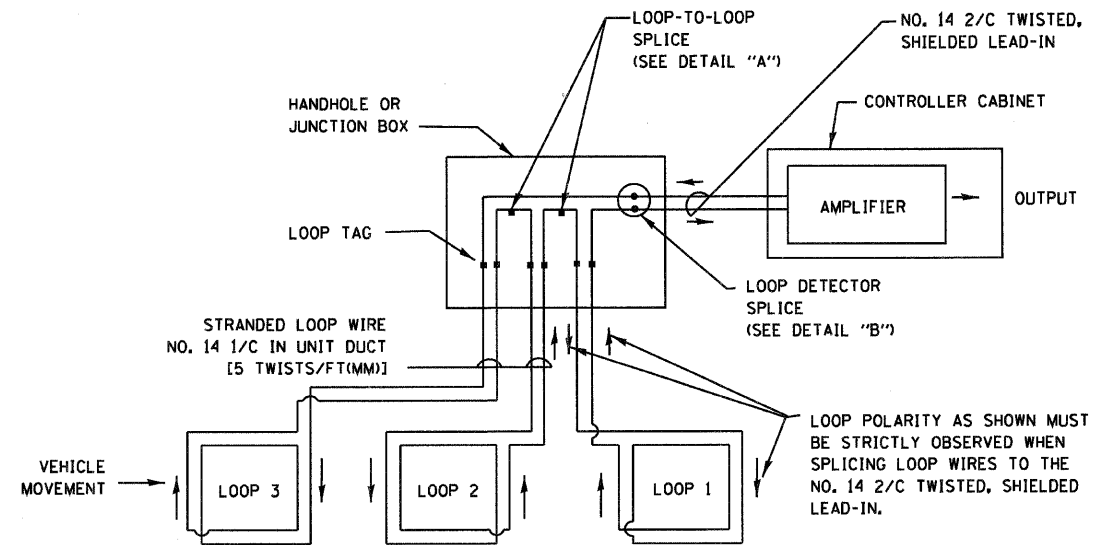
				90% FED. 6.1% STATE 3.9% LAKE CO.			100% GURNEE	100% GURNEE
LOCATION OF WORK						U.S. RT. 41 (SKOKIE HWY.) @	*	*
				CONSTRUCTION CODE	Y031-1F	Y031-1F	Y031 3D	Y031 3D
SUMMARY OF QUANTITIES				GRAND TOTAL	STEARNS SCHOOL RD.	IL. RT. 21	STEARNS SCHOOL RD.	IL. RT. 21
CODE NO.	ITEM	UNIT						
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	6		3	3.00		
67100100	MOBILIZATION	L SUM	1		0.5	0.5		
70102620	TRAFFIC CONTROL AND PROTECTION, STANDARD 701501	L SUM	1		0.5	0.5		
70102625	TRAFFIC CONTROL AND PROTECTION, STANDARD 701606	L SUM	1		0.5	0.5		
70102630	TRAFFIC CONTROL AND PROTECTION, STANDARD 701601	L SUM	1		0.5	0.5		
70102635	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701	L SUM	1		0.5	0.5		
70102640	TRAFFIC CONTROL AND PROTECTION, STANDARD 701801	L SUM	1		0.5	0.5		
** 72000200	SIGN PANEL - TYPE 2	SQ FT	60.0		15.0	45.0		
** 78000650	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	181.0		101.0	80.0		
** 78300400	THERMOPLASTIC PAVEMENT MARKING REMOVAL	SQ FT	362.0		202.0	160.0		
81000700	CONDUIT IN TRENCH, 2 1/2" DIA., GALVANIZED STEEL	FOOT	85.0		12.0	73.0		
81001000	CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL	FOOT	173.0			173.0		
81018900	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL	FOOT	298.0		95.0	203.0		
81400200	HEAVY-DUTY HANDHOLE	EACH	2			2		
81900200	TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	258.0		12.0	246.0		
85000200	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	2		1	1		
87301225	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	FOOT	1281				349	932
87301245	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	3297.0		1074.0	2223.0		
87301255	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT	337.0		337.0			
87900200	DRILL EXISTING HANDHOLE	EACH	9		3	6		
87700170	STEEL MAST ARM ASSEMBLY AND POLE, 26 FT.	EACH	1			1		
87700180	STEEL MAST ARM ASSEMBLY AND POLE, 28 FT.	EACH	1			1		
87702900	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 34 FT.	EACH	1		1			
87702985	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 52 FT.	EACH	1			1		
87800400	CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER	FOOT	20.0			20.0		
87800415	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	FOOT	26.0		11.0	15.0		
88030050	SIGNAL HEAD, L E D, 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	10		6	4		
88030020	SIGNAL HEAD, L E D, 1-FACE, 3-SECTION, MAST-ARM MOUNTED	EACH	9		5	4		
88030100	SIGNAL HEAD, L E D, 1-FACE, 5-SECTION, BRACKET MOUNTED	EACH	3		3			
88030110	SIGNAL HEAD, L E D, 1-FACE, 5-SECTION, MAST-ARM MOUNTED	EACH	1		1			
88200210	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM	EACH	13		6	7		
89501400	RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, DETECTOR UNIT	EACH	4				1	3
89502375	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	EACH	2		1	1		
89502385	REMOVE EXISTING CONCRETE FOUNDATION	EACH	4		2	2		
X0322256	TEMPORARY INFORMATION SIGNING	SQ FT	154.2		77.1	77.1		
X8620020	UNINTERRUPTABLE POWER SUPPLY	EACH	2		1	1		
X8730250	ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED	FOOT	1281.0				349	932
X8808118	OPTICALLY PROGRAMMED SIGNAL HEAD, L E D, 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	1			1		
X8808120	OPTICALLY PROGRAMMED SIGNAL HEAD, L E D, 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	2			2		
X8808122	OPTICALLY PROGRAMMED SIGNAL HEAD, L E D, 2-FACE, 3-SECTION, BRACKET MOUNTED	EACH	1			1		
72400500	RELOCATE SIGN PANEL ASSEMBLY - TYPE A	EACH	1		1			

** Specialty Items
* VILLAGE OF GURNEE 100% RESPONSIBLE FOR COST

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 Regina Webster & Associates, Inc.
 REGINA WEBSTER
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 CIVIL ENGINEERING CONSULTANTS
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LOOP DETECTOR NOTES

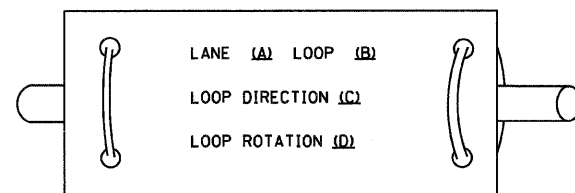
1. EACH PAIR OF LOOP WIRES SHALL BE PLACED IN A SEPARATE UNIT DUCT FROM THE EDGE OF PAVEMENT TO THE HANDHOLE. SPACING BETWEEN THE HOLES DRILLED IN THE PAVEMENT SHALL NOT BE LESS THAN 6" (150 mm). UNIT DUCT SHALL BE INCLUDED IN THE COST OF THE LOOP WIRE.
2. THE NUMBER OF LOOP TURNS SHALL BE AS RECOMMENDED 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 SUCH 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.



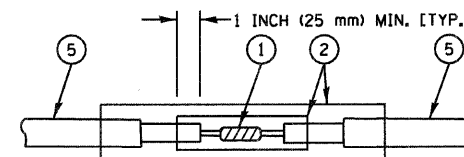
DETECTOR LOOP WIRING SCHEMATIC

- 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.

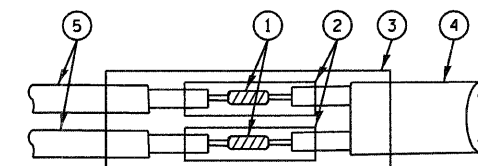
LOOP LEAD-IN CABLE TAG



- 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.



**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 LENGTH 6" (150 mm), UNDERWATER GRADE.
- 4 NO. 14 2/C TWISTED, SHIELDED CABLE.
- 5 LOOP CONDUCTOR WITH FLEXIBLE PLASTIC TUBE.

NOTE:
THE COMMONWEALTH EDISON MARKETING REPRESENTATIVE FOR THIS PROJECT IS:
NAME: AL AHERIES
TELEPHONE: (630) 691-4379

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 CIVIL ENGINEERING CONSULTANTS
 540 North Clearview Ave., Suite 500
 Chicago, Illinois 60623-1869
 Regina Webster & Associates, Inc.

FILE NAME =	USER NAME = #USER#	DESIGNED - JS	REVISED -
FILEL		DRAWN - DW	REVISED -
	PLOT SCALE = #SCALE#	CHECKED - JD	REVISED -
	PLOT DATE = #DATE#	DATE - 01/29/09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

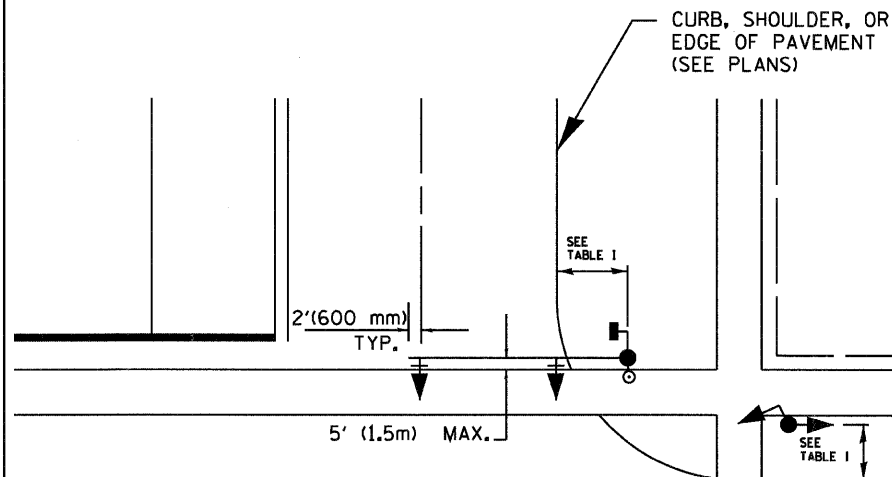
STANDARD TRAFFIC SIGNAL
DESIGN DETAILS - SHEET 1 OF 4

SCALE: NONE SHEET NO. 3 OF 15 SHEETS STA. TO STA.

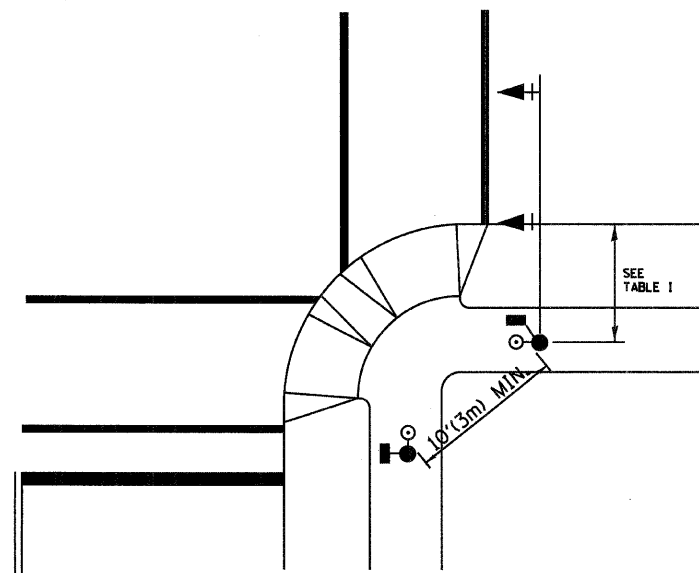
REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION			
NAME	DATE	DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS			
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
346	2009-004-TS	LAKE	15	3	
SCALE: VERT. NONE HORIZ. DATE 1-01-02		DRAWN BY: RWP DESIGNED BY: DAD CHECKED BY: DAZ SHEET 1 OF 4		CONTRACT NO. 60600	
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

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

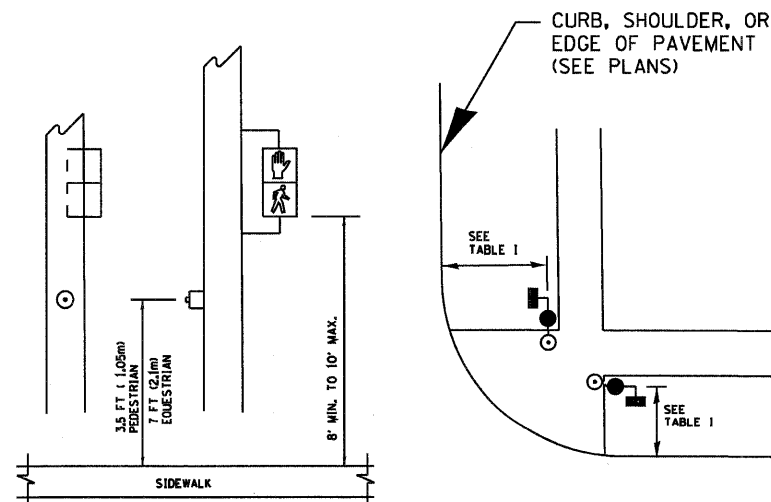


TABLE 1

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

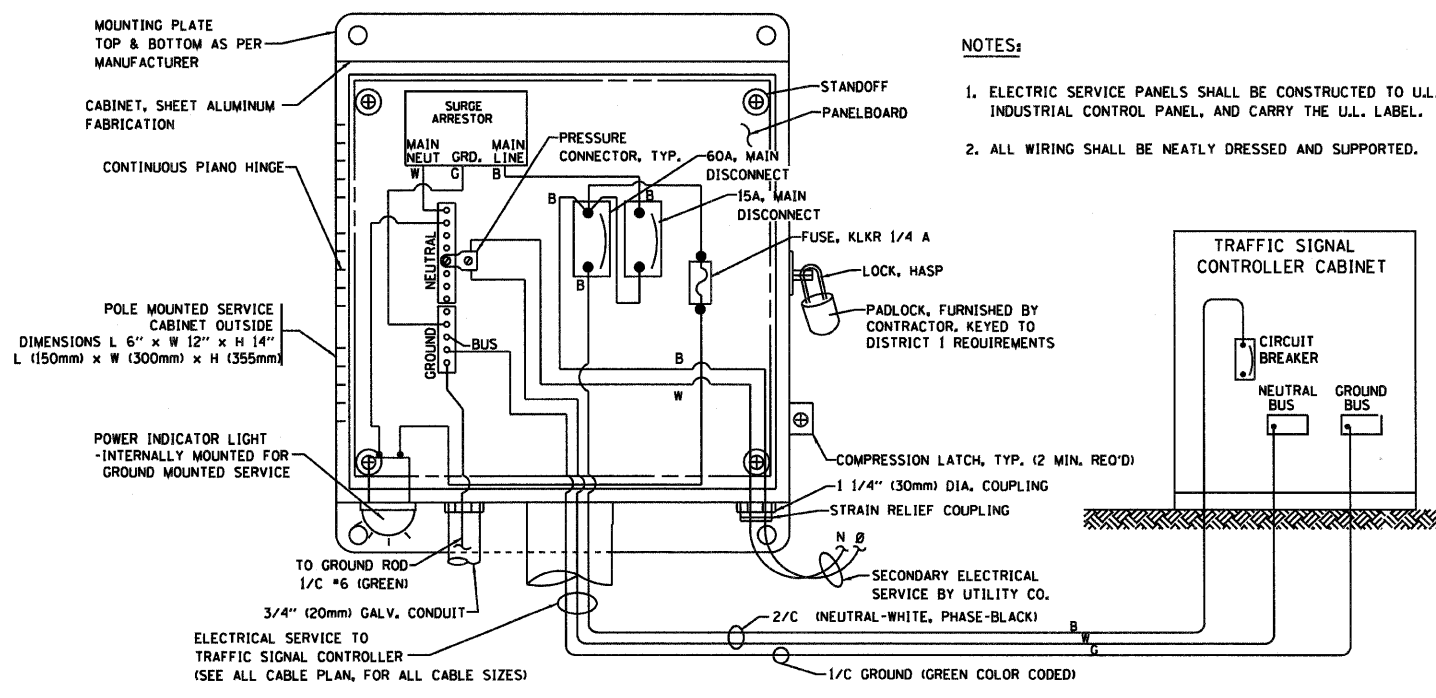
ILLINOIS DEPARTMENT OF TRANSPORTATION
DISTRICT 1
STANDARD TRAFFIC SIGNAL
DESIGN DETAILS

SCALE: VERT. NONE
HORIZ. NONE
DATE 1-01-02

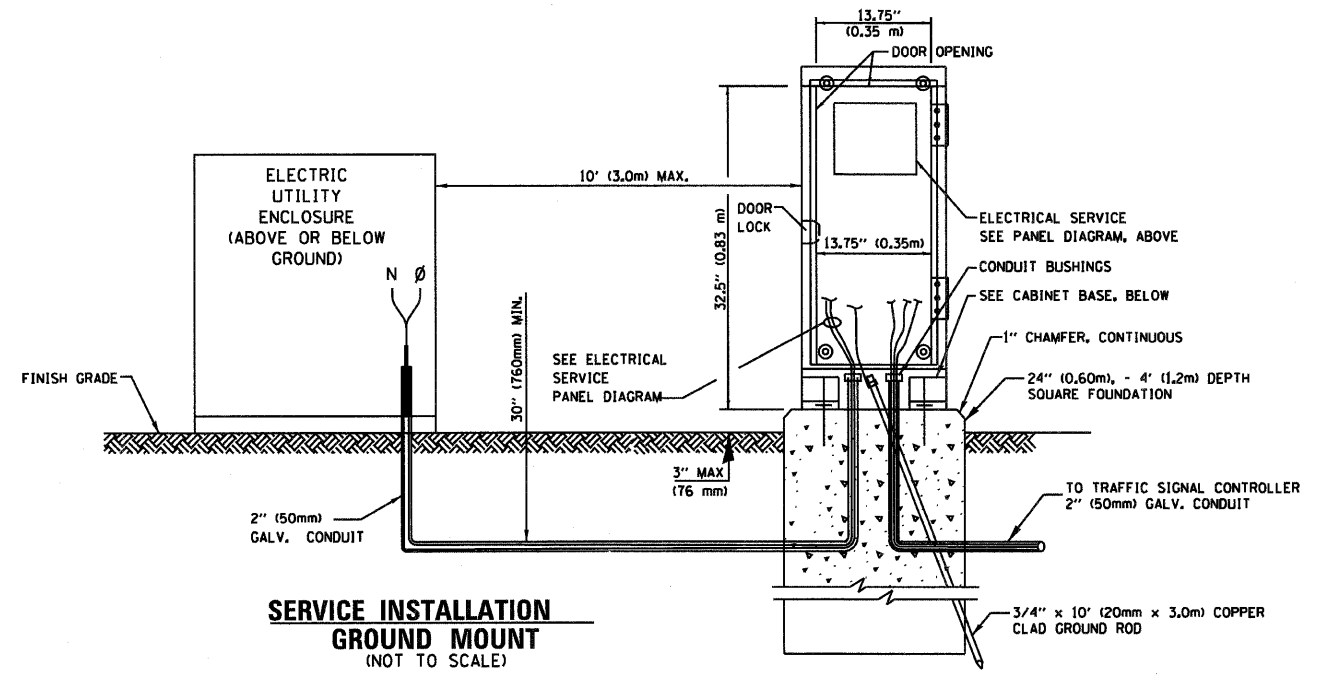
DRAWN BY: RWP
DESIGNED BY: DAD
CHECKED BY: DAZ
SHEET 2 OF 4

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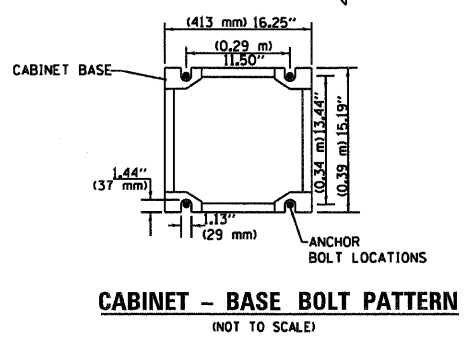
REGINA WEBSTER AND ASSOC. INC.
 CIVIL ENGINEERING CONSULTANTS
 660 North Cicero Avenue, Suite 500
 Chicago, Illinois 60631-5869
RWA
 Regina Webster & Associates, Inc.



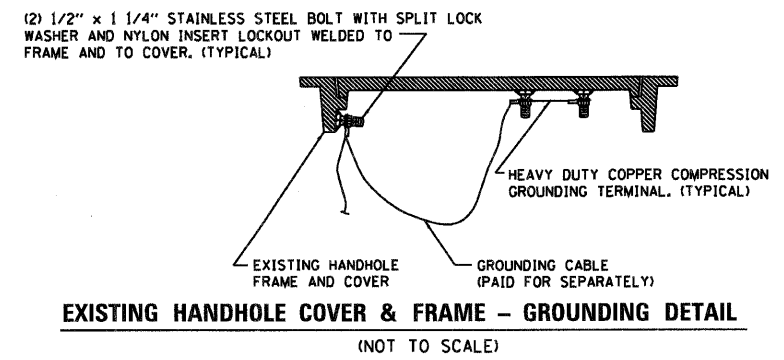
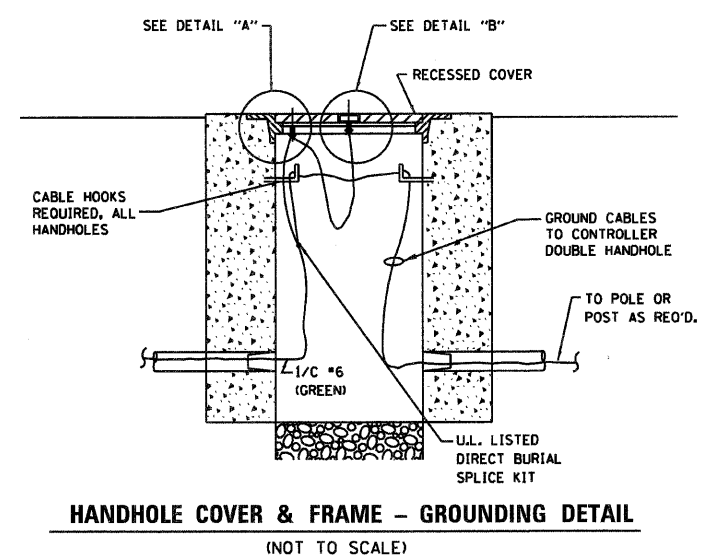
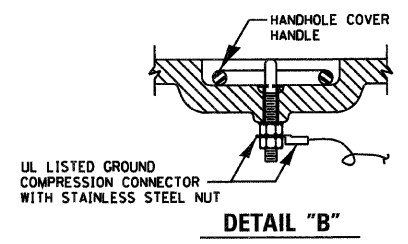
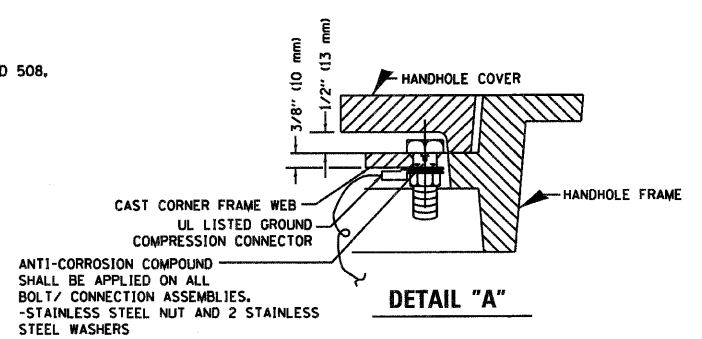
ELECTRICAL SERVICE - PANEL DIAGRAM (TYPICAL FOR POLE AND GROUND MOUNTED SERVICE)
SERVICE INSTALLATION POLE MOUNT (SHOWN)
 (NOT TO SCALE)



SERVICE INSTALLATION GROUND MOUNT
 (NOT TO SCALE)



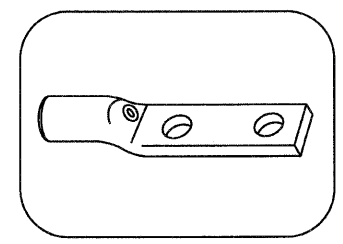
CABINET - BASE BOLT PATTERN
 (NOT TO SCALE)



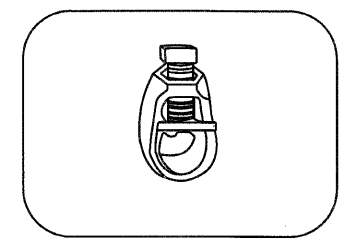
NOTES:

GROUNDING SYSTEM

- 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.
- 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.
- ALL EQUIPMENT GROUNDING CONDUCTORS SHALL TERMINATE AT THE GROUND BUS IN THE CONTROLLER CABINET.
- THE CONTRACTOR SHALL PROVIDE A GROUND CABLE WITH CONNECTORS BETWEEN THE HANDHOLE COVER AND HANDHOLE FRAME.



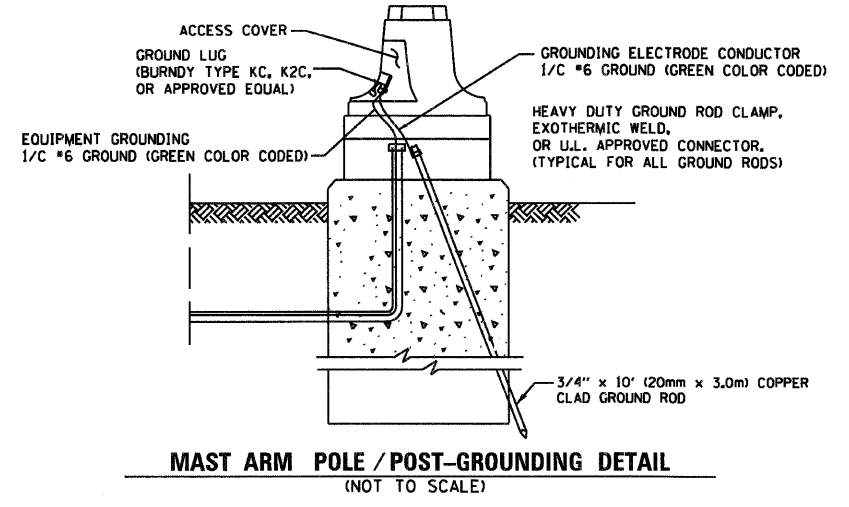
HEAVY-DUTY COMPRESSION TERMINAL (BURNDY TYPE YGHA OR APPROVED EQUAL)



3/4" (20mm) HEAVY-DUTY GROUND ROD CLAMP (BURNDY TYPE GRC OR APPROVED EQUAL)

NOTES:

- ALL CLAMPS SHALL BE BRONZE OR COPPER, UL 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	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
DISTRICT 1
STANDARD TRAFFIC SIGNAL
DESIGN DETAILS

SCALE: VERT. NONE
 HORIZ. 1-01-02

DRAWN BY: RWP
 DESIGNED BY: DAD
 CHECKED BY: DAZ
 SHEET 3 OF 4

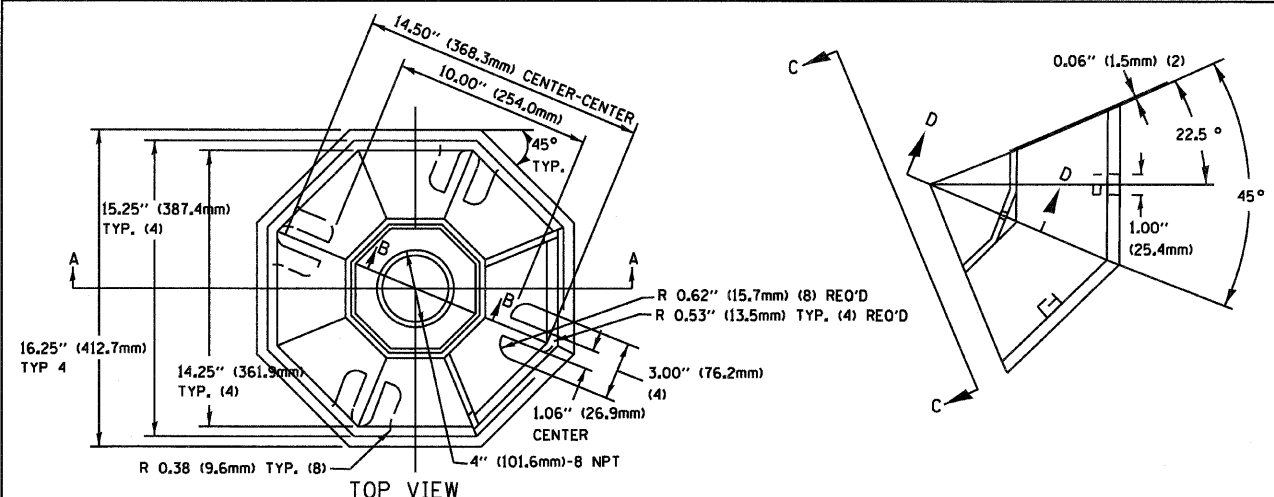
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	2009-004-TS	LAKE	15	5
CONTRACT NO. 60G00				
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT				

FILE NAME =	USER NAME = #USER#	DESIGNED - JS	REVISED -
#FILE#	PLOT SCALE = #SCALE#	DRAWN - DW	REVISED -
	PLOT DATE = #DATE#	CHECKED - JD	REVISED -
		DATE - 01/29/09	REVISED -

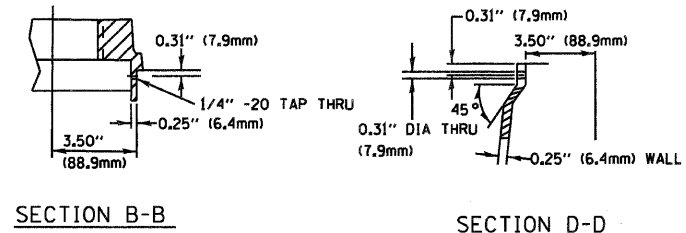
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

STANDARD TRAFFIC SIGNAL DESIGN DETAILS - SHEET 3 OF 4			
SCALE: NONE	SHEET NO. 5 OF 15 SHEETS	STA.	TO STA.

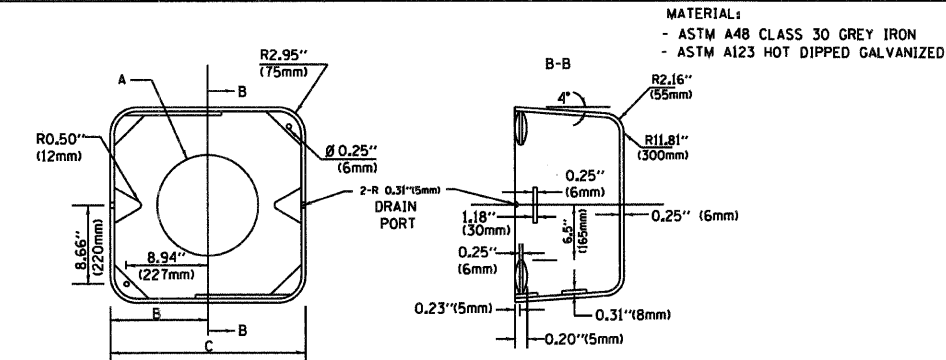
REGINA WEBSTER
AND ASSOC. INC.
CIVIL ENGINEERING CONSULTANTS
650 North Dearborn Avenue, Suite 500
Chicago, Illinois 60623-1869



SECTION B-B

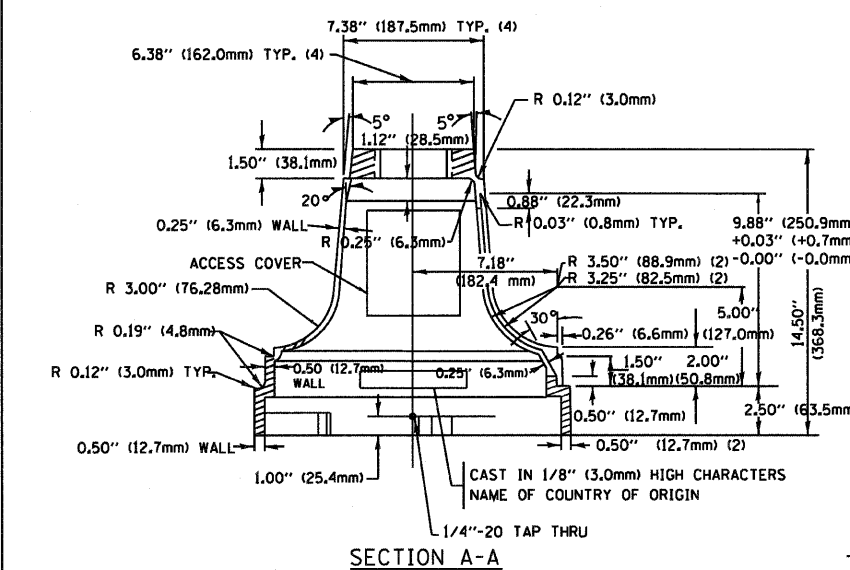


SECTION D-D

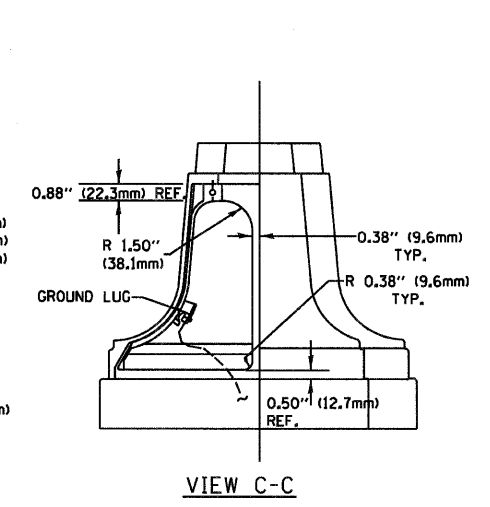


TYPE	A	B	C	HEIGHT	WEIGHT
I	Ø 10.125\"(257mm)	9.5\"(241mm)	19\"(483mm)	12\"(300mm)	24kg
II	Ø 11.125\"(283mm)	10.75\"(273mm)	21.5\"(546mm)	12\"(300mm)	26kg

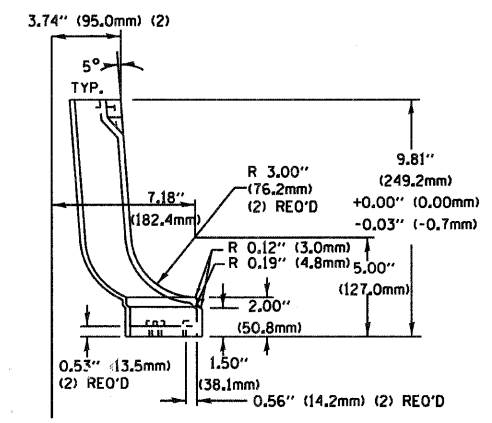
SHROUD DETAIL



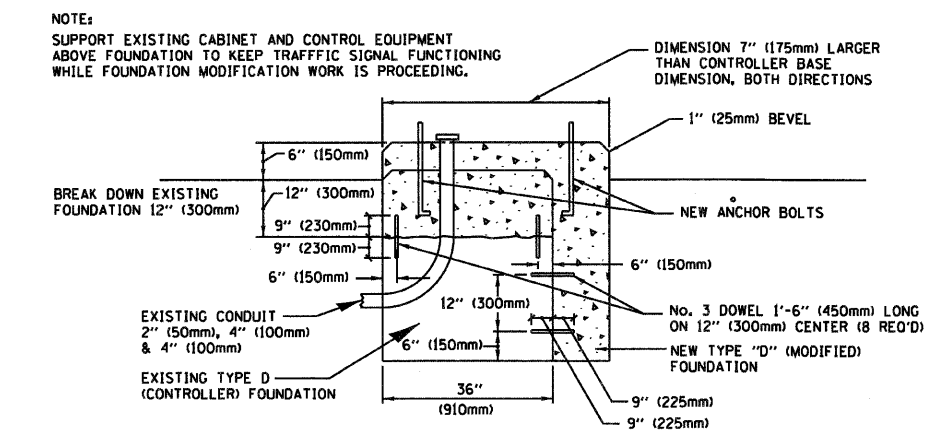
SECTION A-A



VIEW C-C

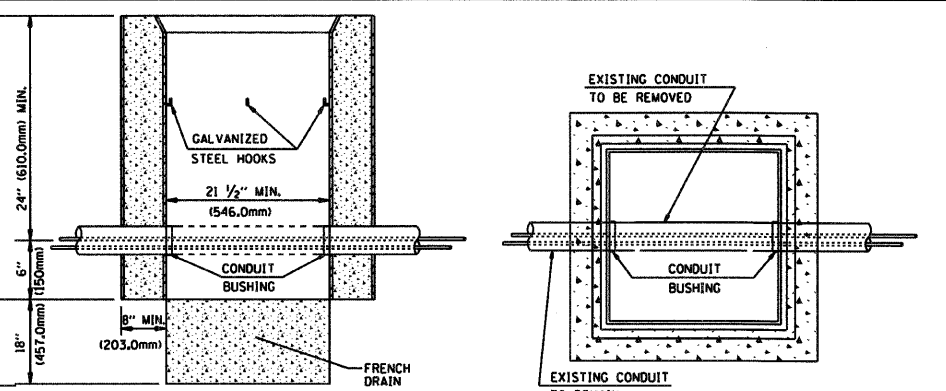


TRAFFIC SIGNAL POST - MOUNTING BASE - TYPE A



MODIFY EXISTING TYPE "D" FOUNDATION

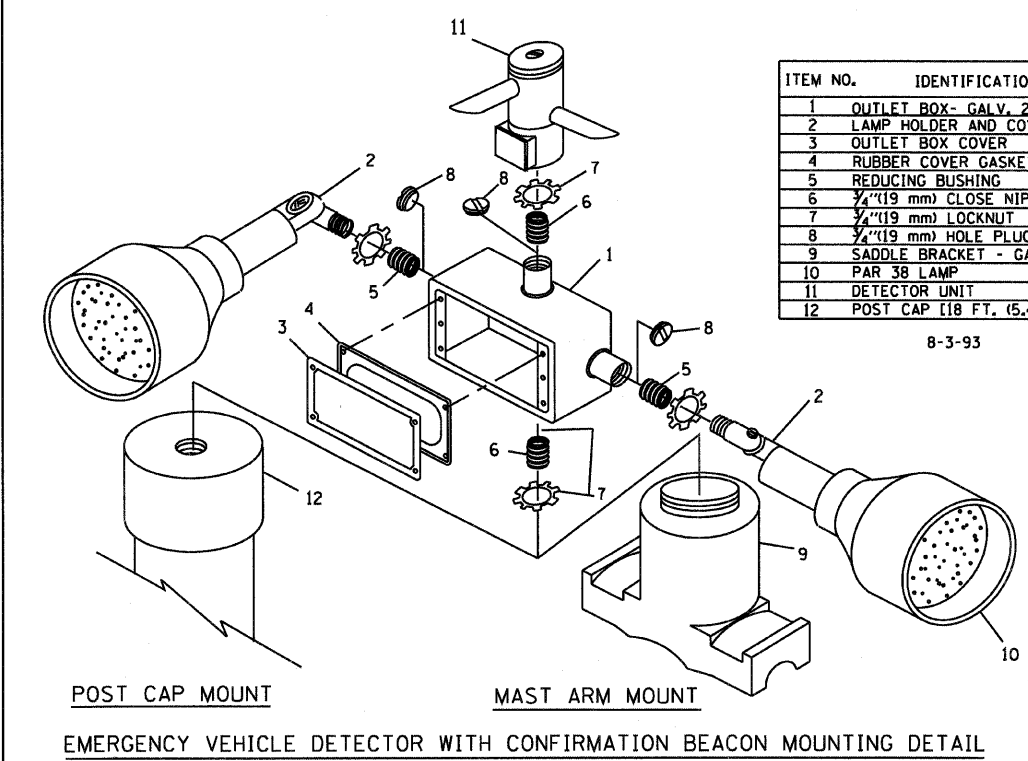
(NOT TO SCALE)



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

REVISIONS	
NAME	DATE

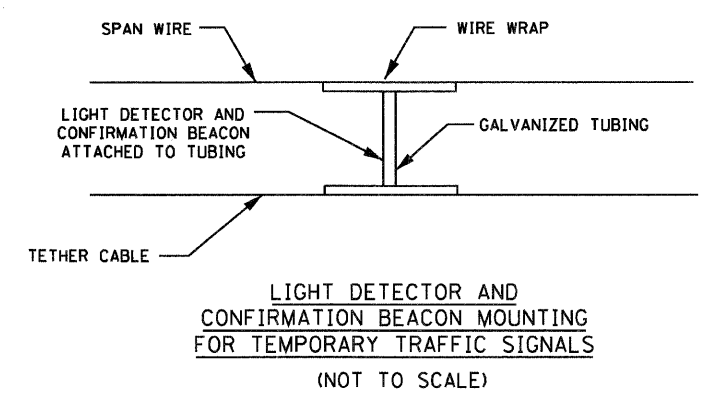
ILLINOIS DEPARTMENT OF TRANSPORTATION
DISTRICT 1
STANDARD TRAFFIC SIGNAL
DESIGN DETAILS
SCALE: VERT. NONE
HORIZ. NONE
DATE 1-01-02
DRAWN BY: RWP
DESIGNED BY: DAD
CHECKED BY: DAZ
SHEET 4 OF 4



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	1/4\"(19 mm) CLOSE NIPPLE
7	3/4\"(19 mm) LOCKNUT
8	1/4\"(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.]

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)

FILE NAME =	USER NAME = #USER#	DESIGNED - JS	REVISED -
#FILE#	PLOT SCALE = #SCALE#	DRAWN - DW	REVISED -
	PLOT DATE = #DATE#	CHECKED - JD	REVISED -
		DATE - 01/29/09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STANDARD TRAFFIC SIGNAL
DESIGN DETAILS - SHEET 4 OF 4

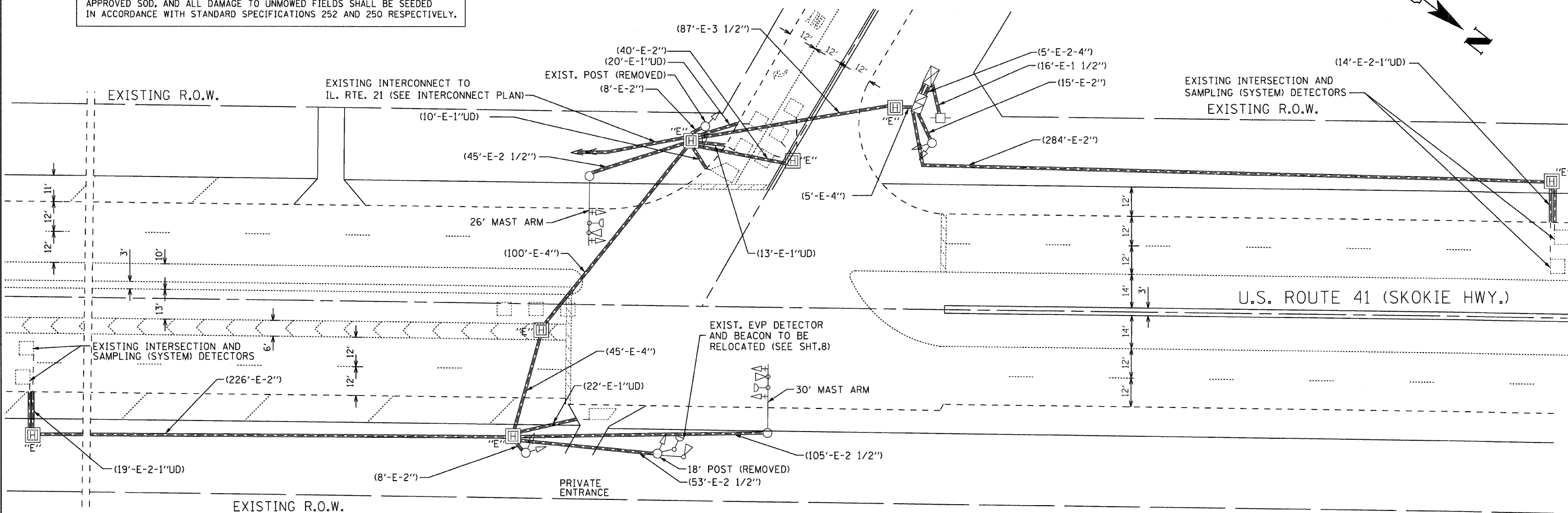
SCALE: NONE SHEET NO. 6 OF 15 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	2C09-004-TS	LAKE	15	6

CONTRACT NO. 60G00
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

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.

STEARNS SCHOOL ROAD



REGINA WEBSTER AND ASSOC. INC. CIVIL ENGINEERING CONSULTANTS 610 North Cicero Ave., Suite 500 Chicago, Illinois 60623-1969

RWA
Regina Webster & Associates, Inc.

EXISTING EQUIPMENT TO BE REMOVED LEGEND

- ◁ EXISTING SIGNAL HEAD TO BE REMOVED
- "E" □ EXISTING SERVICE INSTALLATION TO BE REMOVED
- EXISTING SIGNAL POST AND FOUNDATION TO BE REMOVED
- ◁ EXISTING MAST ARM POLE AND FOUNDATION TO BE REMOVED
- "E" ⊠ EXISTING CONTROLLER AND FOUNDATION TO BE REMOVED
- "E" □ EXISTING HANDHOLE TO BE REMOVED
- "X" EXISTING SIGNAL HEAD, POST AND FOUNDATION TO BE REMOVED BEFORE STAGE 1

REMOVAL OF EXISTING TRAFFIC SIGNAL EQUIPMENT

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.

- 4 EACH SIGNAL HEAD, 1 - FACE, 3 - SECTION
- 1 EACH SIGNAL HEAD, 1 - FACE, 5 - SECTION
- 3 EACH SIGNAL HEAD, 2 - FACE, 1-3 SECTION, 1-5 SECTION
- 4 EACH TRAFFIC SIGNAL BACKPLATE
- 2 EACH SIGNAL POST

NOTE:
EXISTING SIGNAL POSTS TO BE REMOVED, WITH RELATED SIGNAL HEADS, MUST REMAIN IN OPERATION UNTIL THE PROPOSED MAST ARM IS INSTALLED AND THE PROPOSED SIGNAL HEADS ARE TURN-ON. THE PROPOSED WORK MUST BE ACCEPTED AND APPROVED BY THE IDOT AREA FIELD ENGINEER BEFORE THE EXISTING SIGNAL POST AND RELATED SIGNAL HEADS ARE REMOVED.

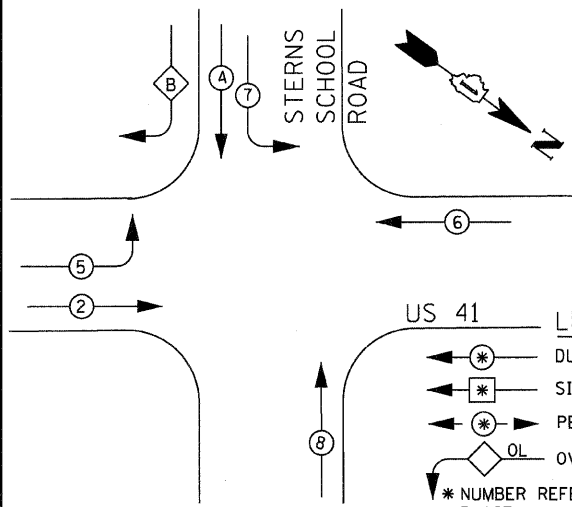
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#FILE#		DRAWN - DW	REVISED -			346	2009-004-TS	LAKE	15	7	
		CHECKED - JD	REVISED -			CONTRACT NO. 60G00					
		DATE - 01/29/09	REVISED -			SCALE: 1"=20'	SHEET NO. 7 OF 15 SHEETS	STA.	TO STA.	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

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AND ASSOC. INC.
CIVIL ENGINEERING CONSULTANTS
610 North Dearborn Street, Suite 500
Chicago, Illinois 60623-1563

RWA
Regina Webster & Associates, Inc.

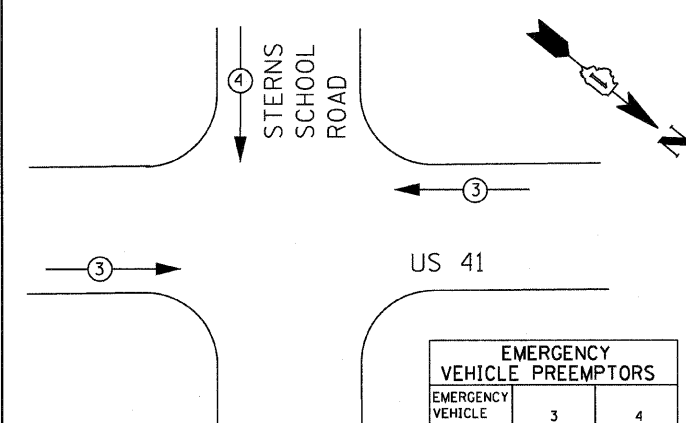
CONTROLLER SEQUENCE

OVERLAP LETTER PERMISSIVE PHASE PROTECTED PHASE
B = 4 + 5

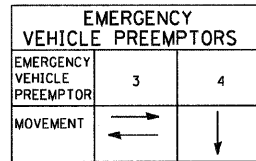


PHASE DESIGNATION DIAGRAM

NOT TO SCALE



EMERGENCY VEHICLE PREEMPTION SEQUENCE



I. D. O. T.

TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO. LAMPS	WATTAGE		% OPERATIONS	TOTAL WATTAGE
		INCAND.	LED		
SIGNAL (RED)	12	135	17	0.50	102
(YELLOW)	12	135	25	0.25	75
(GREEN)	12	135	15	0.25	45
ARROW	4	135	12	0.10	4.8
PED. SIGNAL	-	90	25	1.00	-
CONTROLLER	1	100	100	1.00	100
ILLUM. SIGN	-	252	25	0.05	-
VIDEO SYSTEM	-	150	-	1.00	-
TOTAL =					326.8

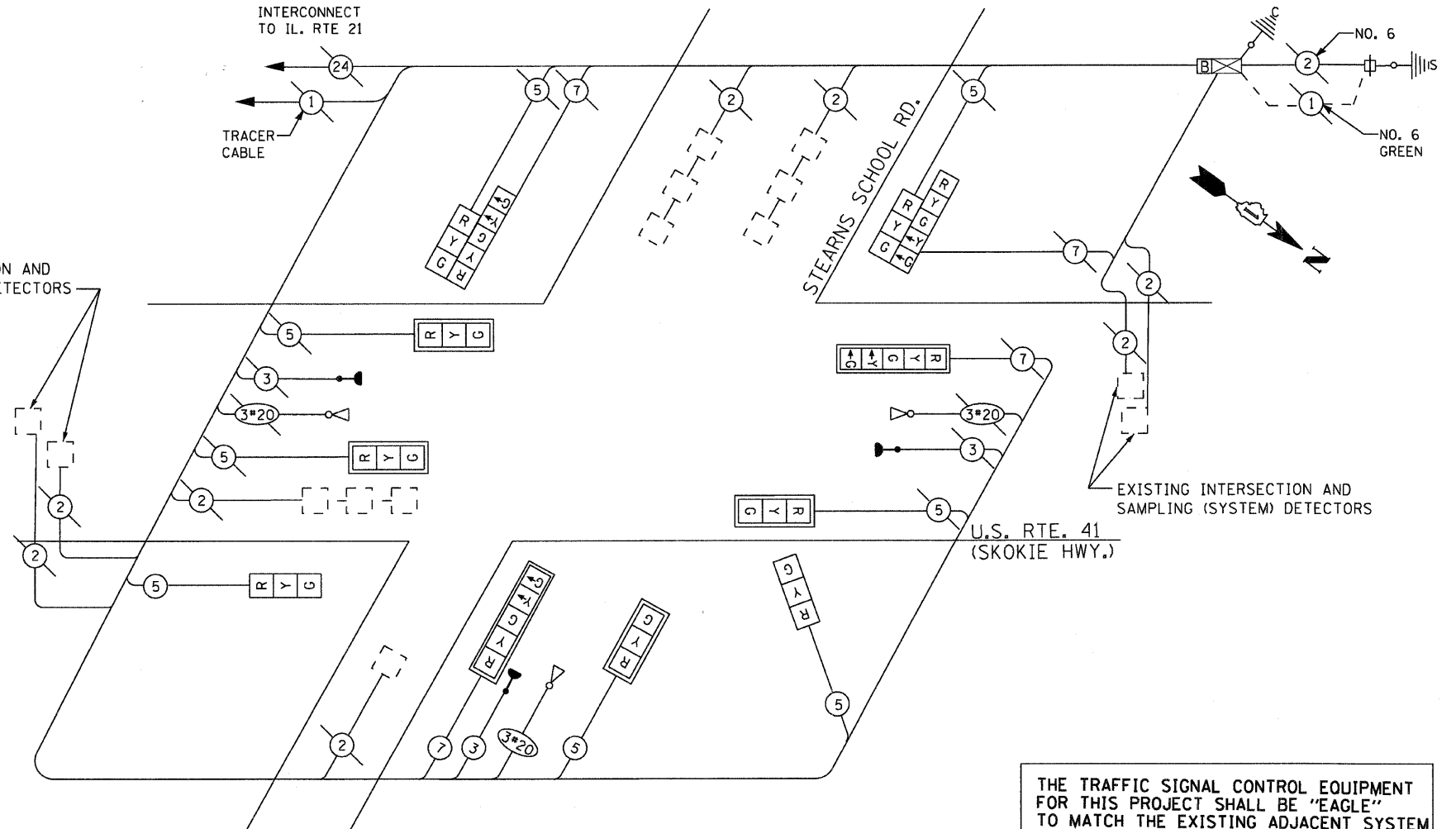
ENERGY COSTS- BILLED TO: IDOT DISTRICT 1
201 WEST CENTER COURT
SCHAMBURG, IL 60196-1096

ENERGY SUPPLY - CONTACT ALICE TAYLOR
PHONE (847) 816-5458
COMPANY COMED

LEGEND

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

EXISTING INTERSECTION AND SAMPLING (SYSTEM) DETECTORS



THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "EAGLE" TO MATCH THE EXISTING ADJACENT SYSTEM

SCHEDULE OF QUANTITIES

ITEM	UNIT	QUANTITY
SIGN PANEL - TYPE II	SQ FT	15
THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	101
THERMOPLASTIC PAVEMENT MARKING REMOVAL	SQ FT	202
CONDUIT IN TRENCH, 2 1/2" DIA., GALVANIZED STEEL	FOOT	12
TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	12
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
* ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	FOOT	349
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	1074
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT	337
* ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED	FOOT	349
DRILL EXISTING HANDHOLE	EACH	3
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE, 34 FT.	EACH	1
CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	FOOT	15
SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	2
SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	4
SIGNAL HEAD, L.E.D., 1-FACE, 5-SECTION, MAST ARM MOUNTED	EACH	2
SIGNAL HEAD, L.E.D., 2-FACE, 1-3 SECTION, 1-5 SECTION, BRACKET MOUNTED	EACH	2
TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM	EACH	6
* RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, DETECTOR UNIT	EACH	1
REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	EACH	1
REMOVE EXISTING CONCRETE FOUNDATION	EACH	2
TEMPORARY INFORMATION SIGNING	SQ FT	77.1
UNINTERRUPTABLE POWER SUPPLY (UPS)	EACH	1
RELOCATE EXISTING SIGN PANEL ASSEMBLY	SQ FT	9
CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL	FOOT	95
* 100% COST TO VILLAGE OF GURNEE		

FOUNDATION DEPTH	DEPTH (FT.)	CABLE SLACK (FT.)	VERTICAL (FT.)
TYPE A - POST	4	HANDHOLE	6.5
D - CONTROLLER	4	DOUBLE HANDHOLE	13
E - MAST ARM POLE		SIGNAL POST	2
30"	15	CONTROLLER CAB.	1
36"	15	FIBER OPTIC	13
42"	25	ELECTRICAL SERVICE	1
		GROUND CABLE	1

CABLE PLAN

CABLE PLAN LEGEND

EXISTING	PROPOSED	EXISTING	PROPOSED

REGINA WEBSTER AND ASSOC. INC. CIVIL ENGINEERING CONSULTANTS 610 North Clearing Avenue, Suite 500 Chicago, Illinois 60235-1569

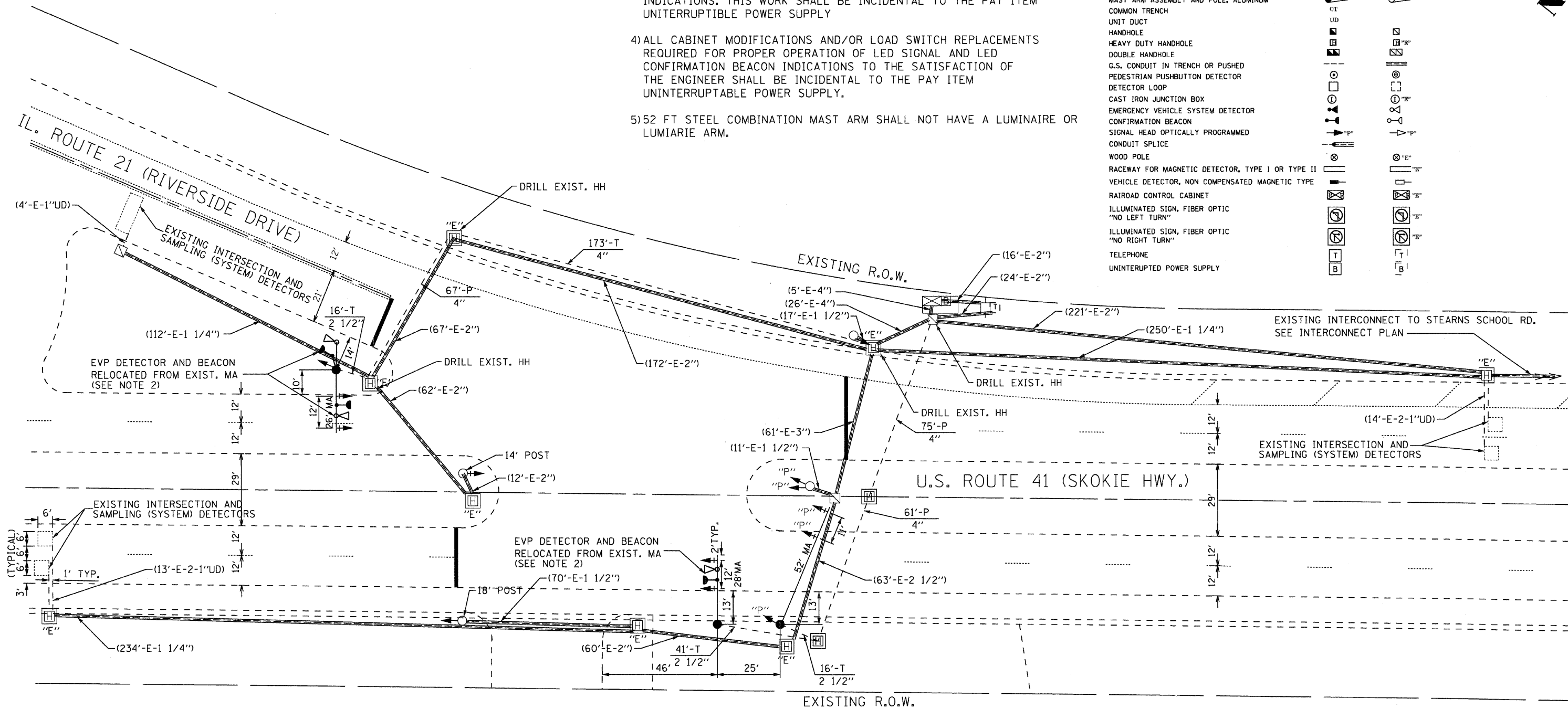
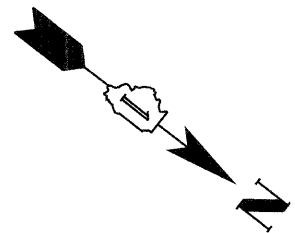
RWA Regina Webster & Associates, Inc.

CONSTRUCTION NOTES:

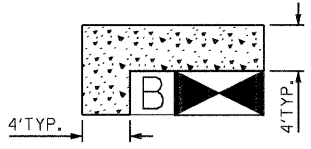
- 1) EXISTING STOP BARS SHALL BE REPLACED WHERE CONFIRMED FOR LOCATIONS BY THE ENGINEER.
- 2) RELOCATE EXISTING EVP DETECTORS AND BEACONS FROM EXISTING MAST ARMS TO NEW MAST ARMS.
- 3) ALL EXISTING CONFIRMATION BEACONS SHALL BE RETROFITTED WITH LED INDICATIONS. THIS WORK SHALL BE INCIDENTAL TO THE PAY ITEM UNINTERRUPTIBLE POWER SUPPLY
- 4) ALL CABINET MODIFICATIONS AND/OR LOAD SWITCH REPLACEMENTS REQUIRED FOR PROPER OPERATION OF LED SIGNAL AND LED CONFIRMATION BEACON INDICATIONS TO THE SATISFACTION OF THE ENGINEER SHALL BE INCIDENTAL TO THE PAY ITEM UNINTERRUPTIBLE POWER SUPPLY.
- 5) 52 FT STEEL COMBINATION MAST ARM SHALL NOT HAVE A LUMINAIRE OR LUMIARIE ARM.

TRAFFIC SIGNAL LEGEND

PROPOSED	EXISTING
CONTROLLER	CONTROLLER
SERVICE INSTALLATION	SERVICE INSTALLATION
SIGNAL HEAD	SIGNAL HEAD
SIGNAL HEAD WITH BACKPLATE	SIGNAL HEAD WITH BACKPLATE
SIGNAL HEAD, PEDESTRIAN	SIGNAL HEAD, PEDESTRIAN
SIGNAL POST	SIGNAL POST
MAST ARM ASSEMBLY AND POLE, STEEL	MAST ARM ASSEMBLY AND POLE, STEEL
MAST ARM ASSEMBLY AND POLE, ALUMINUM	MAST ARM ASSEMBLY AND POLE, ALUMINUM
COMMON TRENCH	COMMON TRENCH
UNIT DUCT	UNIT DUCT
HANDHOLE	HANDHOLE
HEAVY DUTY HANDHOLE	HEAVY DUTY HANDHOLE
DOUBLE HANDHOLE	DOUBLE HANDHOLE
G.S. CONDUIT IN TRENCH OR PUSHED	G.S. CONDUIT IN TRENCH OR PUSHED
PEDESTRIAN PUSHBUTTON DETECTOR	PEDESTRIAN PUSHBUTTON DETECTOR
DETECTOR LOOP	DETECTOR LOOP
CAST IRON JUNCTION BOX	CAST IRON JUNCTION BOX
EMERGENCY VEHICLE SYSTEM DETECTOR	EMERGENCY VEHICLE SYSTEM DETECTOR
CONFIRMATION BEACON	CONFIRMATION BEACON
SIGNAL HEAD OPTICALLY PROGRAMMED	SIGNAL HEAD OPTICALLY PROGRAMMED
CONDUIT SPLICE	CONDUIT SPLICE
WOOD POLE	WOOD POLE
RACEWAY FOR MAGNETIC DETECTOR, TYPE I OR TYPE II	RACEWAY FOR MAGNETIC DETECTOR, TYPE I OR TYPE II
VEHICLE DETECTOR, NON COMPENSATED MAGNETIC TYPE	VEHICLE DETECTOR, NON COMPENSATED MAGNETIC TYPE
RAILROAD CONTROL CABINET	RAILROAD CONTROL CABINET
ILLUMINATED SIGN, FIBER OPTIC "NO LEFT TURN"	ILLUMINATED SIGN, FIBER OPTIC "NO LEFT TURN"
ILLUMINATED SIGN, FIBER OPTIC "NO RIGHT TURN"	ILLUMINATED SIGN, FIBER OPTIC "NO RIGHT TURN"
TELEPHONE	TELEPHONE
UNINTERRUPTED POWER SUPPLY	UNINTERRUPTED POWER SUPPLY



THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "EAGLE" TO MATCH THE EXISTING ADJACENT SYSTEM



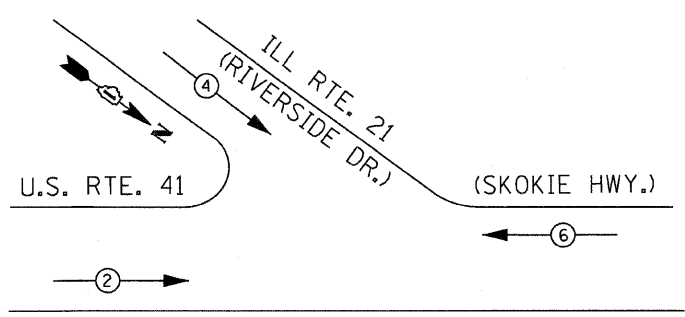
CONCRETE MAINTENANCE PAD DETAIL (TYPICAL)

- 1) 5" THICK CONCRETE PAD SHALL BE POURED NEXT TO NEW CONTROLLER AND/OR UPS TO PROVIDE EASY MAINTENANCE ACCESS.
- 2) MAINTENANCE PAD SHALL EXTEND TO THE EDGE OF EXISTING CONTROLLER FOUNDATION.
- 3) COST OF PAD SHALL BE INCLUDED IN THE PRICE OF UPS CABINET.

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.

FILE NAME =	USER NAME = #USER#	DESIGNED - JS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	US ROUTE 41 (SKOKIE HWY.) AND IL ROUTE 21 (RIVERSIDE DR.) TRAFFIC SIGNAL MODERNIZATION PLAN		F.A.P. RTE. 346	SECTION 2009-004-TS	COUNTY LAKE	TOTAL SHEETS 15	SHEET NO. 11
#FILE#	PLOT SCALE = #SCALE#	DRAWN - DW	REVISED -		SCALE: 1"=20'	SHEET NO. 11 OF 15 SHEETS	STA. TO STA.	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		CONTRACT NO. 60G00	
	PLOT DATE = #DATE#	CHECKED - JD	REVISED -								
		DATE - 01/29/09	REVISED -								

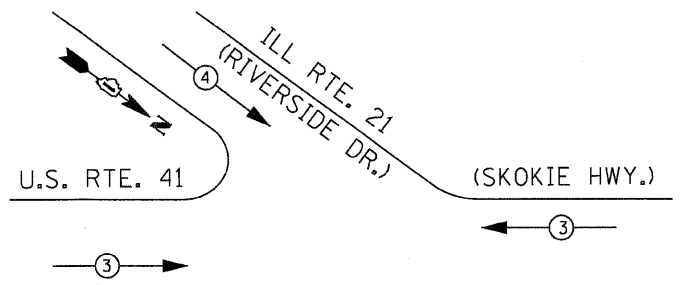
CONTROLLER SEQUENCE



LEGEND

- ← ⊕ → DUAL ENTRY PHASE
- ← ⊙ → SINGLE ENTRY PHASE
- ← ⊕ → PEDESTRIAN PHASE
- OL OVERLAP
- * NUMBER REFERS TO ASSOCIATED PHASE

PHASE DESIGNATION DIAGRAM



EMERGENCY VEHICLE PREEMPTION SEQUENCE

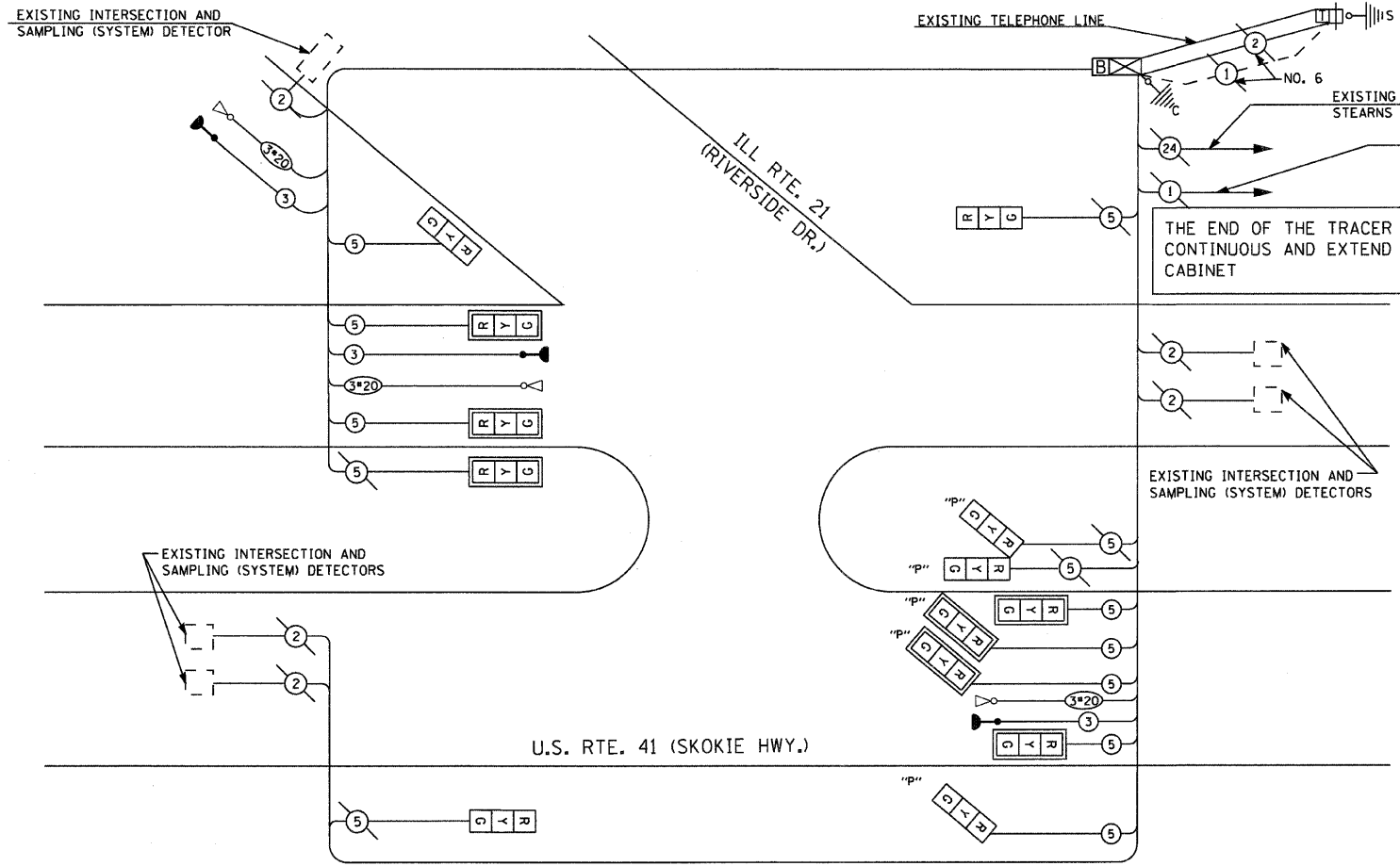
PROPOSED EMERGENCY VEHICLE PREEMPTORS			
EMERGENCY VEHICLE PREEMPTOR	3	4	
MOVEMENT	← →	↘	

I. D. O. T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO. LAMPS	WATTAGE		% OPERATIONS	TOTAL WATTAGE
		INCAND.	LED		
SIGNAL (RED)	13	135	17	0.50	110.5
(YELLOW)	13	135	25	0.25	81.25
(GREEN)	13	135	15	0.25	48.75
ARROW	-	135	12	0.10	-
PED. SIGNAL	-	90	25	1.00	-
CONTROLLER	1	100	100	1.00	100
ILLUM. SIGN	-	252	25	0.05	-
VIDEO SYSTEM	-	150	-	1.00	-
FLASHER LED					
TOTAL =					340.5

ENERGY COSTS - BILLED TO: IDOT DISTRICT 1
 201 WEST CENTER COURT
 SCHAMBURG, IL 60196-1096

ENERGY SUPPLY - CONTACT ALICE TAYLOR
 PHONE (847) 816-5458
 COMPANY COMED



CABLE PLAN

SCHEDULE OF QUANTITIES

ITEM	UNIT	QUANTITY
SIGN PANEL - TYPE II	SO FT	45
THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	80
THERMOPLASTIC PAVEMENT MARKING REMOVAL	SO FT	160
CONDUIT IN TRENCH, 2 1/2" DIA., GALVANIZED STEEL	FOOT	73
CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL	FOOT	173
CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL	FOOT	203
HEAVY-DUTY HANDHOLE	EACH	2
TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	246
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1
* ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	FOOT	932
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	2223
DRILL EXISTING HANDHOLE	EACH	6
STEEL MAST ARM ASSEMBLY AND POLE, 26 FT.	EACH	1
STEEL MAST ARM ASSEMBLY AND POLE, 28 FT.	EACH	1
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE, 52 FT.	EACH	1
CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER	FOOT	20
CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	FOOT	15
SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	4
SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	4
TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM	EACH	7
* RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, DETECTOR UNIT	EACH	3
REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	EACH	1
REMOVE EXISTING CONCRETE FOUNDATION	EACH	2
TEMPORARY INFORMATION SIGNING	SO FT	77.1
UNINTERRUPTABLE POWER SUPPLY (UPS)	EACH	1
* ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED	FOOT	932
OPTICALLY PROGRAMMED SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	1
OPTICALLY PROGRAMMED SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	2
OPTICALLY PROGRAMMED SIGNAL HEAD, L.E.D., 2-FACE, 3-SECTION, BRACKET MOUNTED	EACH	1
* 100% COST TO VILLAGE OF GURNEE		

FOUNDATION	DEPTH (FT.)	CABLE SLACK (FT.)	VERTICAL (FT.)
TYPE A - POST	4	HANDHOLE	6.5
D - CONTROLLER	4	DOUBLE HANDHOLE	13
E - MAST ARM POLE		SIGNAL POST	2
30"	15	CONTROLLER CAB.	1
36"	15	FIBER OPTIC	13
42"	25	ELECTRICAL SERVICE	1
		GROUND CABLE	1

THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "EAGLE" TO MATCH THE EXISTING ADJACENT SYSTEM

CABLE PLAN LEGEND

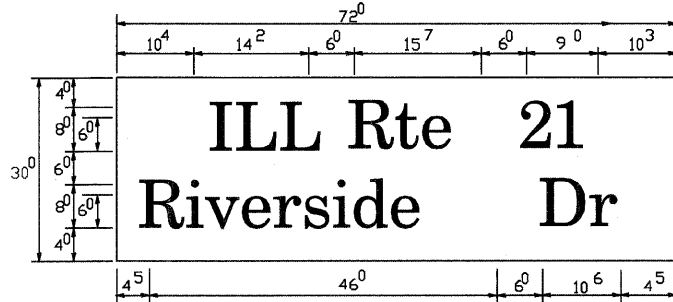
- | EXISTING | PROPOSED | DESCRIPTION |
|----------|----------|---|
| ⊕ | G | 8" (200mm) TRAFFIC SIGNAL SECTION |
| ⊙ | R | 12" (300mm) TRAFFIC SIGNAL SECTION |
| ⊕ | W | 12" (300mm) PEDESTRIAN SIGNAL SECTION |
| ⊕ | ⊕ | 12" (300mm) PEDESTRIAN SIGNAL SECTION |
| ⊕ | C | 12" (300mm) PEDESTRIAN SIGNAL SECTION W/ COUNTDOWN TIMER |
| ⊕ | D | CONTROLLER CABINET |
| ⊕ | ⊕ | SERVICE INSTALLATION |
| ⊕ | ⊕ | TELEPHONE CONNECTION |
| ⊕ | ⊕ | MAGNETIC DETECTOR |
| ⊕ | ⊕ | EMERGENCY VEHICLE LIGHT DETECTOR |
| ⊕ | ⊕ | CONFIRMATION BEACON |
| ⊕ | ⊕ | PUSHBUTTON DETECTOR |
| ⊕ | ⊕ | VEHICLE DETECTOR, INDUCTION LOOP |
| ⊕ | ⊕ | ⊕ DENOTES NUMBER OF CONDUCTORS, ALL CABLE NO. 14 EXCEPT AS INDICATED. ALL LOOP DETECTOR CABLE TO BE SHIELDED. |
| ⊕ | R | 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" |
| H/C | H/C | GROUND ROD AT HANDHOLE, DOUBLE HANDHOLE, OR CONTROLLER |
| P | P | GROUND ROD AT POST OR MAST ARM POLE |
| S | S | 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 |
| ⊕ | ⊕ | UNINTERRUPTED POWER SUPPLY |

PANEL SIGN DESIGN TYPE 2



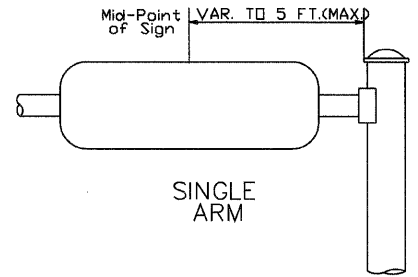
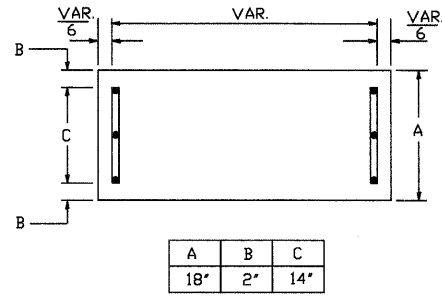
— Sq. M. each
 13.75 Sq. Ft. each
 2 Required
 Design Series D

PANEL SIGN DESIGN TYPE 2

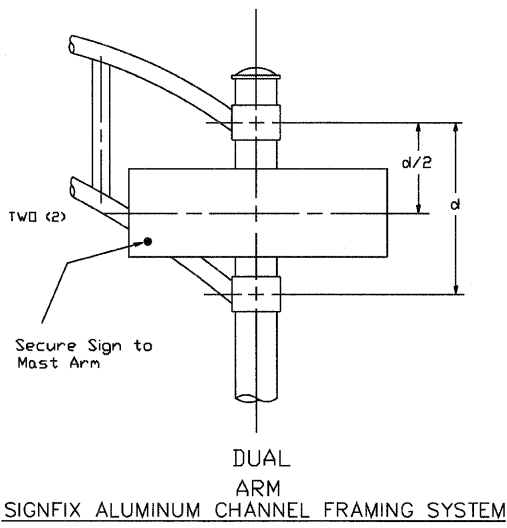
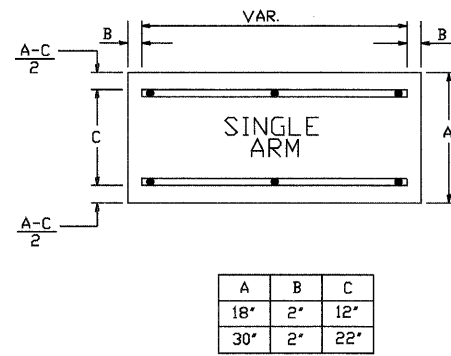


— Sq. M. each
 15 Sq. Ft. each
 2 Required
 Design Series D

SUPPORTING CHANNELS



SUPPORTING CHANNELS



Upper Case To Lower Case Spacing Chart 8-6 Inch Series "C & D" EXAMPLE, 2 DENOTES 3/8"

SERIES	SECOND LETTER															
	acde		bhikl		f w		j		s t		v y		x		z	
	g	o	q	m	n	p	r	u								
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 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															
	acde		bhikl		f w		j		s t		v y		x		z	
	g	o	q	m	n	p	r	u								
ad h g i j	16	17	22	24	16	17	12	14	14	15	14	15	16	17	16	17
l m n q u																
bf k o p s	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		
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	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	14	14	15	14	15	11	12	14	15	14	15			
7	12	14	12	14	14	15	12	14	15	05	06	12	14	14	15	11	12	14	15	12	14
8	16	17	16	17	14	15	12	14	14	15	16	17	12	14	16	17	14	15			

UPPER AND LOWER CASE LETTER WIDTHS

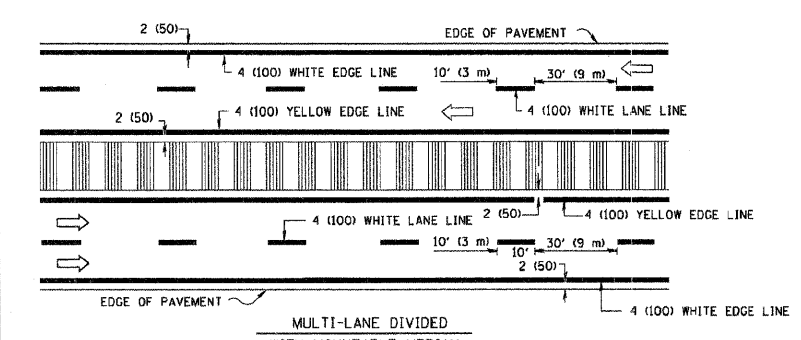
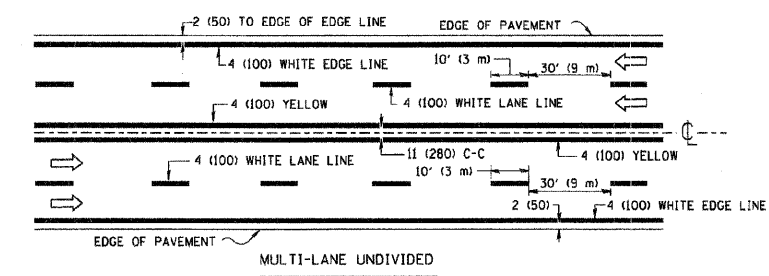
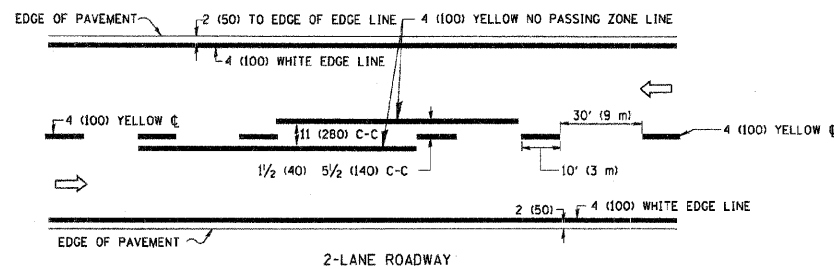
LETTERS	6 INCH UPPER CASE LETTERS		8 INCH UPPER CASE LETTERS		LETTERS	6 INCH LOWER CASE LETTERS	
	SERIES		SERIES			SERIES	
	C	D	C	D		C	D
A	36	50	50	65	a	35	42
B	32	40	43	53	b	35	42
C	32	40	43	53	c	35	41
D	32	40	43	53	d	35	42
E	30	35	40	47	e	35	42
F	30	35	40	47	f	23	26
G	32	40	43	53	g	35	42
H	32	40	43	53	h	35	42
I	07	07	11	12	i	11	11
J	30	36	40	50	j	20	22
K	32	41	43	54	k	35	42
L	30	35	40	47	l	11	11
M	37	45	51	61	m	60	70
N	32	40	43	53	n	35	42
O	34	42	45	55	o	36	43
P	32	40	43	53	p	35	42
Q	34	42	45	55	q	35	42
R	32	40	43	53	r	26	32
S	32	40	43	53	s	36	42
T	30	35	40	47	t	27	32
U	32	40	43	53	u	35	42
V	35	44	47	60	v	42	47
W	44	52	60	70	w	55	64
X	34	40	45	53	x	44	51
Y	36	50	50	66	y	46	53
Z	32	40	43	53	z	36	43

NUMBER	6 INCH SERIES		8 INCH SERIES	
	C	D	C	D
1	12	14	15	20
2	32	40	43	53
3	32	40	43	53
4	35	43	47	57
5	32	40	43	53
6	32	40	43	53
7	32	40	43	53
8	32	40	43	53
9	32	40	43	53
0	34	42	45	55

GENERAL NOTES

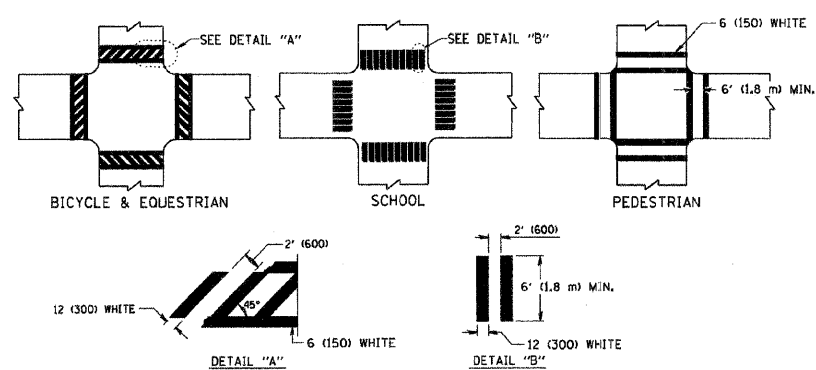
- WHERE MAST ARM MOUNTED STREET NAME SIGNS ARE SPECIFIED, THE MAST ARM ASSEMBLY AND POLES SHALL BE DESIGNED TO SUPPORT THE LOADINGS CALLED FOR ON STANDARDS 834001, 834006 AND 834011, AS APPLICABLE, PLUS TWO (2) SIGN PANELS 2'-6" x 6'-0" MOUNTED AS SHOWN. THE DESIGN SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS 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:
 - * AKT. CORPORATION
 - * AMERICAN FABRICATION CO.
 - * SCHAUMBURG, IL
 - * CHICAGO HEIGHTS, IL
 - * TUCKER COMPANY, INC.
 - * WESTERN TRAFFIC CONTROL INC.
 - * WAUWATOSA, WI
 - * CICERO, IL
- PARTS LISTING:
 SIGN CHANNEL PART #HPND53 (MED. CHANNEL)
 SIGN SCREWS 1/4" x 14 x 1" H.V.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.

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION	
NAME	DATE		
D.A.Z./D.A.G.	11/90		
CADD	6/98		
	10/00		
		MAST ARM MOUNTED STREET NAME SIGNS	
		SCALE: VERT. NONE	DRAWN BY: ROB
		DATE 1-01-02	DESIGNED BY: JHE
			CHECKED BY: DAD

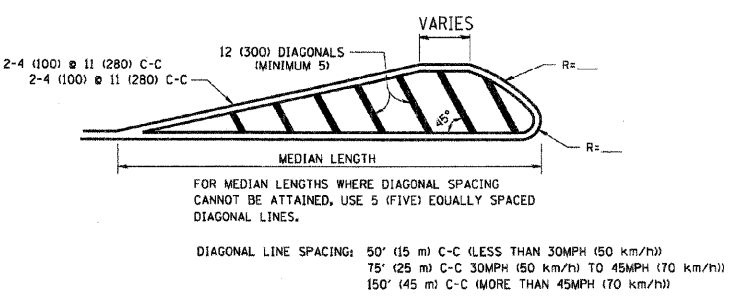
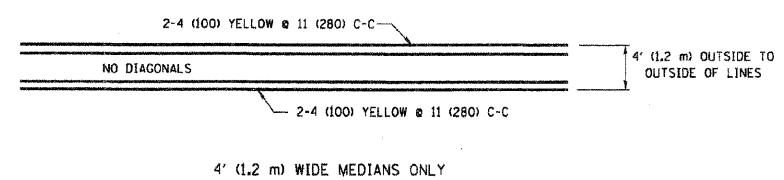


NOTE: MEDIANS WITH BARRIER CURB DO NOT REQUIRE AN EDGE LINE

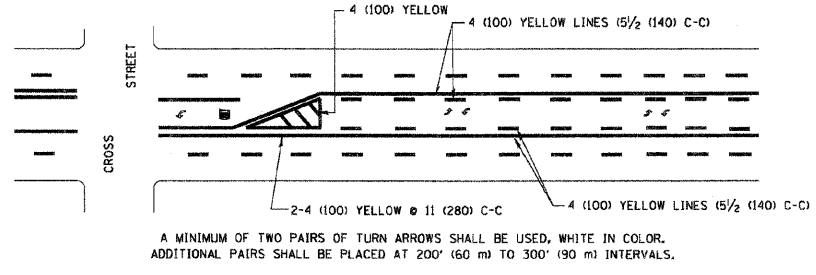
TYPICAL LANE AND EDGE LINE MARKING



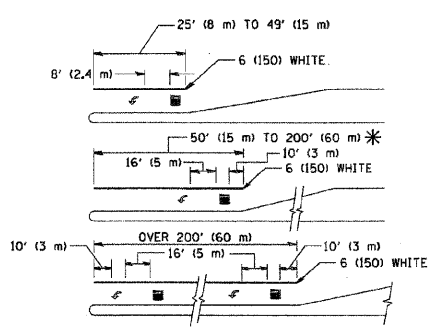
TYPICAL CROSSWALK MARKING



MEDIANS OVER 4' (1.2 m) WIDE



TYPICAL PAINTED MEDIAN MARKING

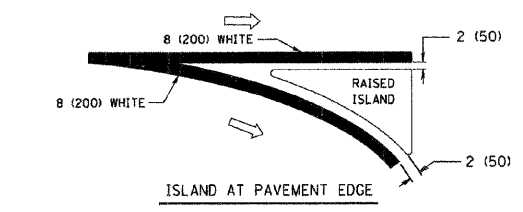
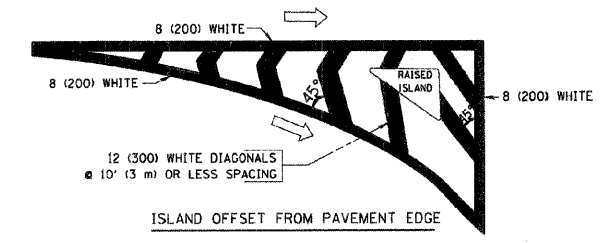


FULL SIZE LETTERS 8' (2.4 m) AND ARROWS SHALL BE USED.
AREA = 15.6 SQ. FT. (1.5 m²) ONLY AREA = 20.8 SQ. FT. (1.9 m²)

* TURN LANES IN EXCESS OF 400' (120 m) IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW - "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW - "ONLY".

TYPICAL LEFT (OR RIGHT) TURN LANE

TYPICAL TURN LANE MARKING



TYPICAL ISLAND MARKING

TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE ON 2 LANE PAVEMENT	4 (100)	SKIP-DASH	YELLOW	10' (3 m) LINE WITH 30' (9 m) SPACE
CENTERLINE ON MULTI-LANE UNDIVIDED PAVEMENT	2 @ 4 (100)	SOLID	YELLOW	11 (280) C-C
NO PASSING ZONE LINES FOR ONE DIRECTION FOR BOTH DIRECTIONS	4 (100) 2 @ 4 (100)	SOLID SOLID	YELLOW YELLOW	5/2 (140) C-C FROM SKIP-DASH CENTERLINE 11 (280) C-C OMIT SKIP-DASH CENTERLINE BETWEEN
LANE LINES	4 (100) 5 (125) ON FREEWAYS	SKIP-DASH SKIP-DASH	WHITE WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE
DOTTED LINES (EXTENSIONS OF CENTER, LANE OR TURN LANE MARKINGS)	SAME AS LINE BEING EXTENDED	SKIP-DASH	SAME AS LINE BEING EXTENDED	2' (600) LINE WITH 6' (1.8 m) SPACE
EDGE LINES	4 (100)	SOLID	YELLOW-LEFT WHITE-RIGHT	OUTLINE MOUNTABLE MEDIANS IN YELLOW; EDGE LINES ARE NOT USED NEXT TO BARRIER CURB
TURN LANE MARKINGS	6 (150) LINE; FULL SIZE LETTERS & SYMBOLS (8' (2.4m))	SOLID	WHITE	SEE TYPICAL TURN LANE MARKING DETAIL
TWO WAY LEFT TURN MARKING	2 @ 4 (100) EACH DIRECTION 8' (2.4m) LEFT ARROW	SKIP-DASH AND SOLID IN PAIRS	YELLOW WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE FOR SKIP-DASH; 5/2 (140) C-C BETWEEN SOLID LINE AND SKIP-DASH LINE SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL
CROSSWALK LINES (PEDESTRIAN) A. DIAGONALS (BIKE & EQUESTRIAN) B. LONGITUDINAL BARS (SCHOOL)	2 @ 6 (150) 12 (300) @ 45° 12 (300) @ 90°	SOLID SOLID SOLID	WHITE WHITE WHITE	NOT LESS THAN 6' (1.8 m) APART 2' (600) APART 2' (600) APART SEE TYPICAL CROSSWALK MARKING DETAILS.
STOP LINES	24 (600)	SOLID	WHITE	PLACE 4' (1.2 m) IN ADVANCE OF AND PARALLEL TO CROSSWALK, IF PRESENT. OTHERWISE, PLACE AT DESIRED STOPPING POINT, PARALLEL TO CROSSROAD CENTERLINE, WHERE POSSIBLE
PAINTED MEDIANS	2 @ 4 (100) WITH 12 (300) DIAGONALS @ 45° NO DIAGONALS USED FOR 4' (1.2 m) WIDE MEDIANS	SOLID	YELLOW; TWO WAY TRAFFIC WHITE; ONE WAY TRAFFIC	11 (280) C-C FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING.
CORE MARKING AND CHANNELIZING LINES	8 (200) WITH 12 (300) DIAGONALS @ 45°	SOLID	WHITE	DIAGONALS: 15' (4.5 m) C-C (LESS THAN 30MPH (50 km/h)) 20' (6 m) C-C 30MPH (50 km/h) TO 45MPH (70 km/h) 30' (9 m) C-C (OVER 45MPH (70 km/h))
RAILROAD CROSSING	24 (600) TRANSVERSE LINES; "RR" IS 6' (1.8 m) LETTERS; 16 (400) LINE FOR "X"	SOLID	WHITE	SEE STATE STANDARD 780001 AREA OF: "R"=3.6 SQ. FT. (0.33 m ²) EACH "X"=54.0 SQ. FT. (5.0 m ²)
SHOULDER DIAGONALS	12 (300) @ 45°	SOLID	WHITE - RIGHT YELLOW - LEFT	50' (15 m) C-C (LESS THAN 30MPH (50 km/h)) 75' (25 m) C-C (30 MPH (50 km/h) TO 45MPH (70 km/h)) 150' (45 m) C-C (OVER 45MPH (70 km/h))

FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STATE STANDARD 780001.

All dimensions are in inches (millimeters) unless otherwise shown.

REVISIONS	
NAME	DATE
EVERS	03-19-90
T. RAMMACHER	10-27-94
ALEX HOUSEH	10-09-96
ALEX HOUSEH	10-17-96
T. RAMMACHER	01-06-00

ILLINOIS DEPARTMENT OF TRANSPORTATION

**DISTRICT ONE
TYPICAL PAVEMENT
MARKINGS**

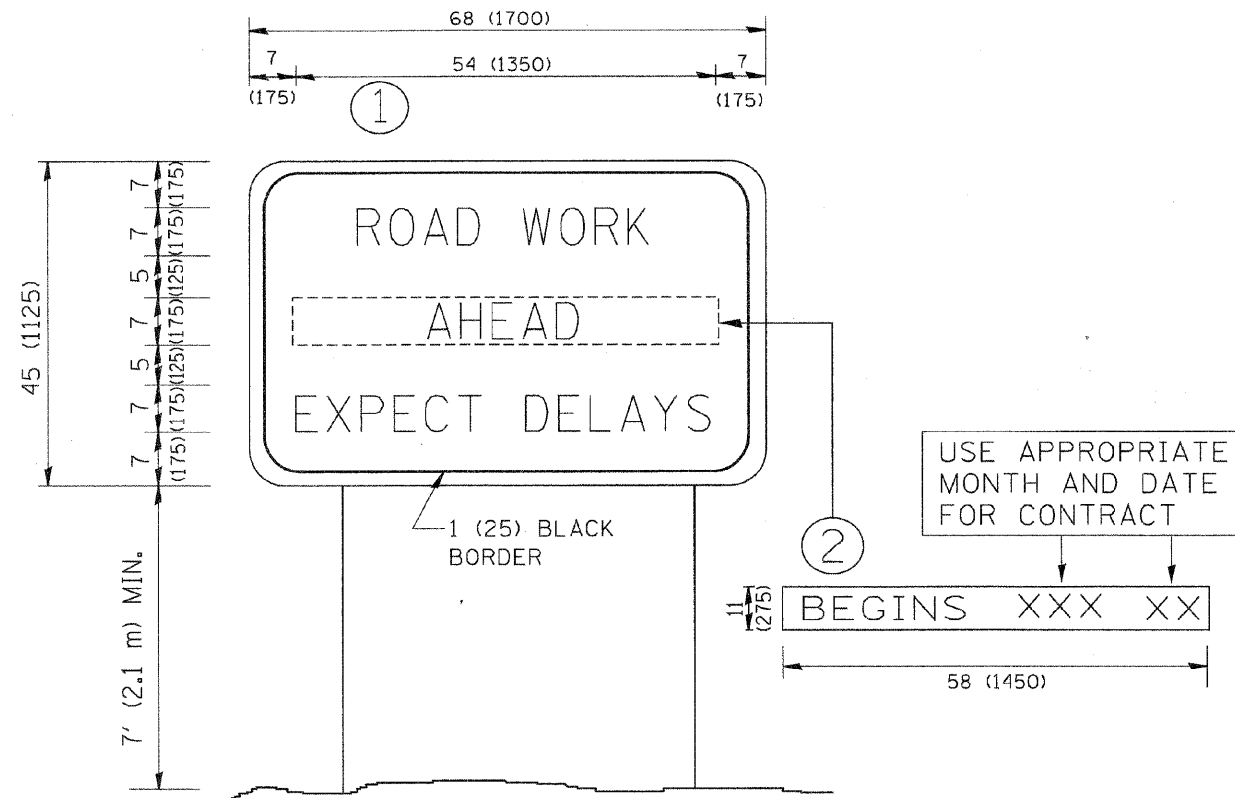
SCALE: NONE

DRAWN BY CADD
CHECKED BY
TC-13

REGINA WEBSTER
AND ASSOC. INC.
CIVIL ENGINEERING CONSULTANTS
6160 North Clearview Avenue, Suite 500
Chicago, Illinois 60631-1369



PLOT DATE = 2/2/2007
FILE NAME = K:\11111\11111.dgn
PLOT SCALE = 0.000000 / IN.
USER NAME = bward



NOTES:

1. USE BLACK LETTERING ON ORANGE BACKGROUND.
2. ERECT SIGNS IN ADVANCE OF THE LOCATION FOR THE "ROAD CONSTRUCTION AHEAD" SIGN AT LOCATIONS AS DIRECTED BY THE ENGINEER.
3. ERECT SIGN ① WITH INSTALLED PANEL ② ONE WEEK PRIOR TO THE START OF CONSTRUCTION.
4. REMOVE PANEL ② SOON AFTER THE START OF CONSTRUCTION.
5. SEE SPECIAL PROVISION FOR "TEMPORARY INFORMATION SIGNING" FOR ADDITIONAL INFORMATION.
6. ONE SIGN ASSEMBLY EQUALS 25.70 SQ. FT. (2.3 SQ. M.)
7. SHALL BE PAID FOR AS TEMPORARY INFORMATION SIGNING.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS)
UNLESS OTHERWISE SHOWN.

REVISIONS	
NAME	DATE
R. MIRS	9-15-97
R. MIRS	12-11-97
T. RAMMACHER	2-2-99
C. JUCIUS	1-31-07

ILLINOIS DEPARTMENT OF TRANSPORTATION

ARTERIAL ROAD
INFORMATION SIGN

SCALE: NONE

DRAWN BY DESIGN

CHECKED BY

TC22

FILE NAME =	USER NAME = #USER#	DESIGNED - JS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ARTERIAL ROAD INFORMATION SIGN	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
*FILEL#		DRAWN - DW	REVISED -			346	2009-004-TS	LAKE	15	15	
	PLOT SCALE = #SCALE#	CHECKED - JD	REVISED -			CONTRACT NO. 60G00					
	PLOT DATE = #DATE#	DATE - 01/29/09	REVISED -			SCALE: NONE	SHEET NO. 15 OF 15 SHEETS	STA.	TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT