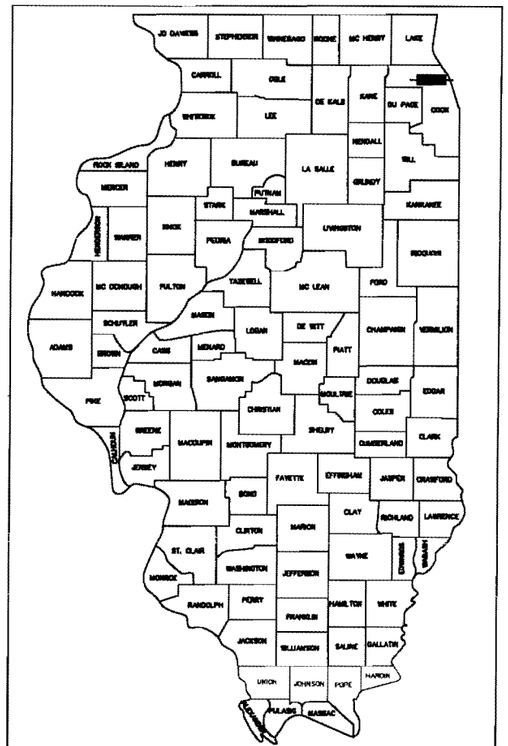
F.A.U.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
350	2010	1	13

PROJECT NO. TS 10.2

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED FEDERAL AID HIGHWAY

FAP ROUTE 350 (US RTE. 41/SKOKIE BLVD.)
AT SEARLE PARKWAY INTERSECTION
INTERSECTION IMPROVEMENT
PROJECT NO. TS 10.2
VILLAGE OF SKOKIE
COOK COUNTY



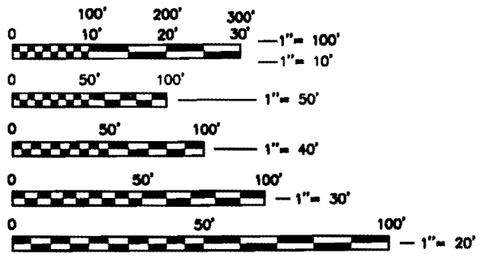
LOCATION OF SECTION INDICATED THUS: —■—

INDEX OF SHEETS

PLANS PREPARED BY:

McDONOUGH ASSOCIATES INC.
ENGINEERS ARCHITECTS
16634 S. 107TH COURT
ORLAND PARK, ILLINOIS 60467-8898
(708) 226-9261

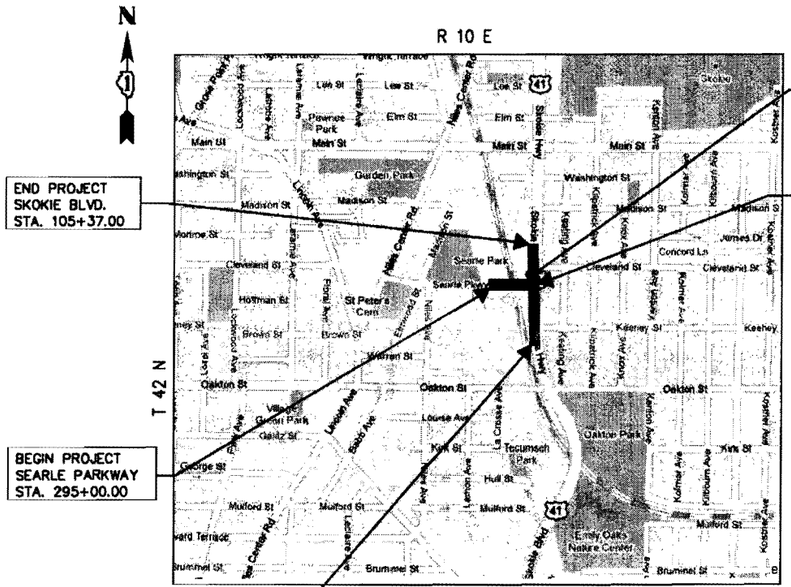
PROJECT LOCATED IN VILLAGE OF SKOKIE



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

CONTRACT NO.



LOCATION MAP
SCALE: NTS

SKOKIE BLVD.
GROSS LENGTH = 939.00 FEET (0.1778) MILES

SEARLE PARKWAY
GROSS LENGTH = 550.00 FEET (0.1042) MILES

TOTAL NET LENGTH = 1539.00 FEET (0.2915) MILES

TRAFFIC DATA:

SKOKIE BLVD. { 2006 ADT = 51,700
2030 ADT = 55,000
SPEED LIMIT = 35 MPH

SEARLE PARKWAY { 2006 ADT = 6,400
2030 ADT = 12,000
SPEED LIMIT = 30 MPH

Exhibit C

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

APPROVED _____ 2010
VILLAGE ENGINEER

PASSED _____ 2010
DISTRICT 1 ENGINEER LOCAL ROADS & STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW _____ 2010
DEPUTY DIRECTOR OF HIGHWAYS, REGION 1 ENGINEER

_____ 2010
TIMOTHY O. WERNER, McDONOUGH ASSOCIATES INC.

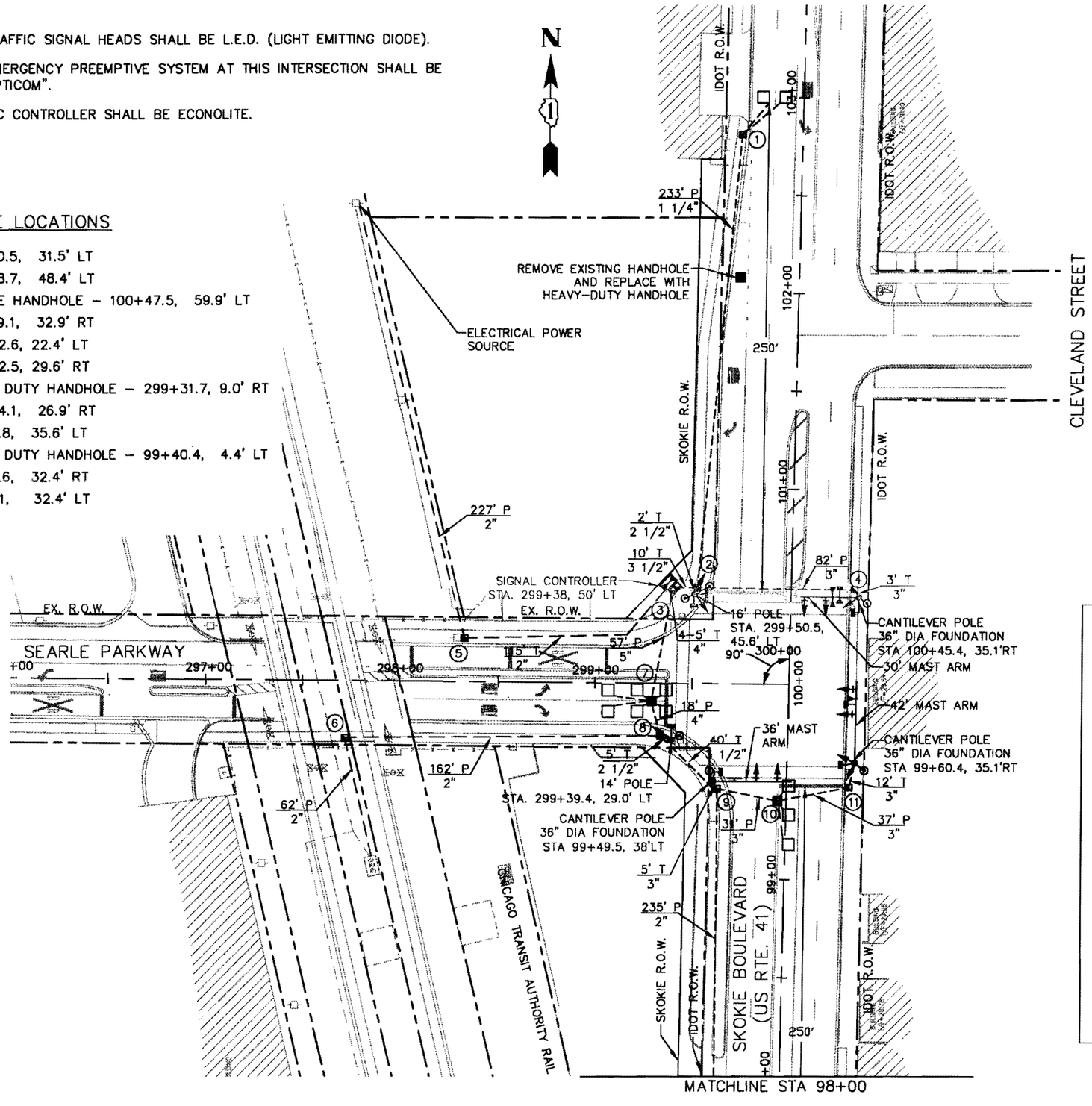
PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

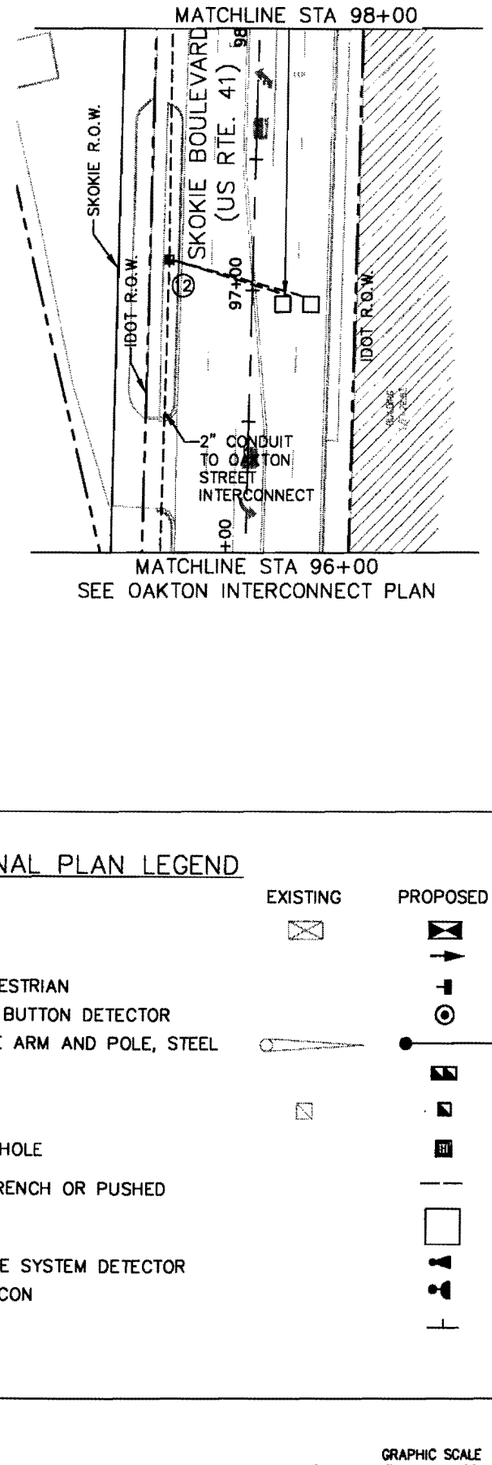
NOTES:

1. ALL TRAFFIC SIGNAL HEADS SHALL BE L.E.D. (LIGHT EMITTING DIODE).
2. THE EMERGENCY PREEMPTIVE SYSTEM AT THIS INTERSECTION SHALL BE "3M OPTICOM".
3. TRAFFIC CONTROLLER SHALL BE ECONOLITE.

HANDHOLE LOCATIONS

① 102+80.5, 31.5' LT
② 100+48.7, 48.4' LT
③ DOUBLE HANDHOLE – 100+47.5, 59.9' LT
④ 100+49.1, 32.9' RT
⑤ 298+32.6, 22.4' LT
⑥ 297+72.5, 29.6' RT
⑦ HEAVY DUTY HANDHOLE – 299+31.7, 9.0' RT
⑧ 299+34.1, 26.9' RT
⑨ 99+45.8, 35.6' LT
⑩ HEAVY DUTY HANDHOLE – 99+40.4, 4.4' LT
⑪ 99+47.6, 32.4' RT
⑫ 97+11.1, 32.4' LT





TRAFFIC SIGNAL PLAN LEGEND

	EXISTING	PROPOSED
CONTROLLER	⊠	⧓
SIGNAL HEAD		→
SIGNAL HEAD, PEDESTRIAN		▮
PEDESTRIAN PUSH BUTTON DETECTOR		⊙
CANTILEVER SINGLE ARM AND POLE, STEEL	○——	●——
DOUBLE HANDHOLE		◥◤
HANDHOLE	▨	◥◤
HEAVY DUTY HANDHOLE		▩
G.S. CONDUIT IN TRENCH OR PUSHED		——
DETECTOR LOOP		□
EMERGENCY VEHICLE SYSTEM DETECTOR		◥◤
CONFIRMATION BEACON		◥◤
SIGNAGE		⊢

GRAPHIC SCALE
0 30 60 90
1" = 30'

McDONOUGH ASSOCIATES INC.
ENGINEER/ARCHITECTS
16834 S. 107TH COURT
ORLAND PARK, ILLINOIS 60467-8568
(708) 226-8282

USER NAME = MDB	DESIGNED - MDB	REVISED -
	DRAWN - MDB	REVISED -
PLOT SCALE = 1:1	CHECKED - TDW	REVISED -
PLOT DATE = 04/30/10	DATE - 04/30/10	REVISED -

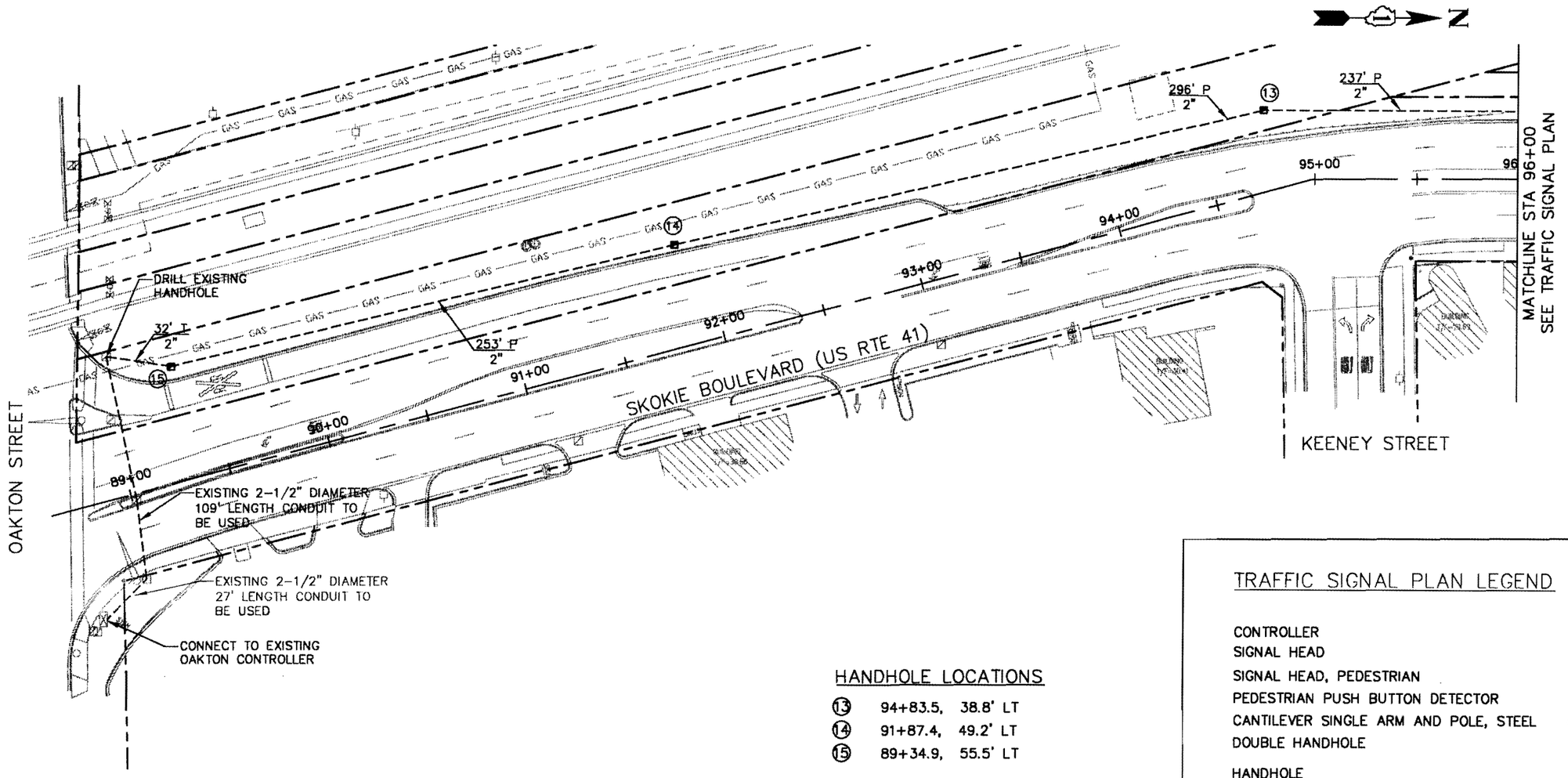
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

US RTE 41 & SEARLE PKWY IMPROVEMENTS
TRAFFIC SIGNAL PLAN

SCALE: 1"=30' | SHEET NO. 2 OF 13 SHEETS | STA. 96+00 TO STA. 103+50

F.A.P. RTE.	PROJECT	COUNTY	TOTAL SHEETS	SHEET NO.
350	TS 10.2	COOK	13	2

FED. ROAD DIST. NO. 1 | ILLINOIS | LOCAL PROJECT



HANDHOLE LOCATIONS

(13)	94+83.5,	38.8' LT
(14)	91+87.4,	49.2' LT
(15)	89+34.9,	55.5' LT

TRAFFIC SIGNAL PLAN LEGEND

	EXISTING	PROPOSED
CONTROLLER	☒	■
SIGNAL HEAD		→
SIGNAL HEAD, PEDESTRIAN		⊣
PEDESTRIAN PUSH BUTTON DETECTOR		⊙
CANTILEVER SINGLE ARM AND POLE, STEEL	○—	●—
DOUBLE HANDHOLE		■
HANDHOLE	▨	■
DETECTOR HOUSING		▣
G.S. CONDUIT IN TRENCH OR PUSHED		— —
DETECTOR LOOP		□
EMERGENCY VEHICLE SYSTEM DETECTOR		◀
CONFIRMATION BEACON		◀
SIGNAGE		⊥

NOTES:

1. PROPOSED INTERCONNECT WITH OAKTON SHALL UTILIZE EXISTING 2-1/2" CONDUIT TO CROSS UNDER SKOKIE BLVD (US RTE 41) AND CONNECT TO EXISTING CONTROLLER.
2. CONTRACTOR SHALL VISIBLY LOCATE EXISTING GAS MAIN PRIOR TO RUNNING CONDUIT FROM PROPOSED HANDHOLE NUMBER 15 TO THE EXISTING HANDHOLE TO BE DRILLED TO ENSURE PROPOSED WORK WILL NOT IMPACT GAS MAIN.

GRAPHIC SCALE
0 30 60 90
1" = 30'

McDONOUGH ASSOCIATES INC.
ENGINEER/ARCHITECTS
16834 S. 107TH COURT
ORLAND PARK, ILLINOIS 60467-8558
(708) 226-9281

USER NAME = MDB	DESIGNED - MDB	REVISED -	
	DRAWN - MDB	REVISED -	
PLOT SCALE = 1:1	CHECKED - TDW	REVISED -	
PLOT DATE = 04/30/10	DATE - 04/30/10	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

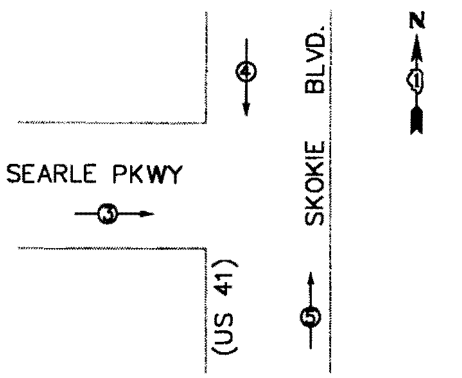
US RTE 41 & SEARLE PKWY IMPROVEMENTS
OAKTON INTERCONNECT PLAN

SCALE: 1"=30' | SHEET NO. 3 OF 13 SHEETS | STA. 89+00 TO STA. 96+00

F.A.P. RTE.	PROJECT	COUNTY	TOTAL SHEETS	SHEET NO.
350	TS 10.2	COOK	13	3

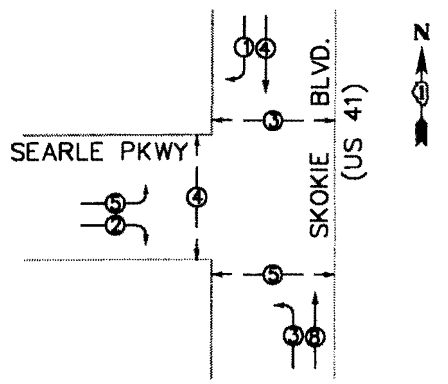
FED. ROAD DIST. NO. 1 | ILLINOIS | LOCAL PROJECT

EMERGENCY VEHICLE PREEMPTION SEQUENCE

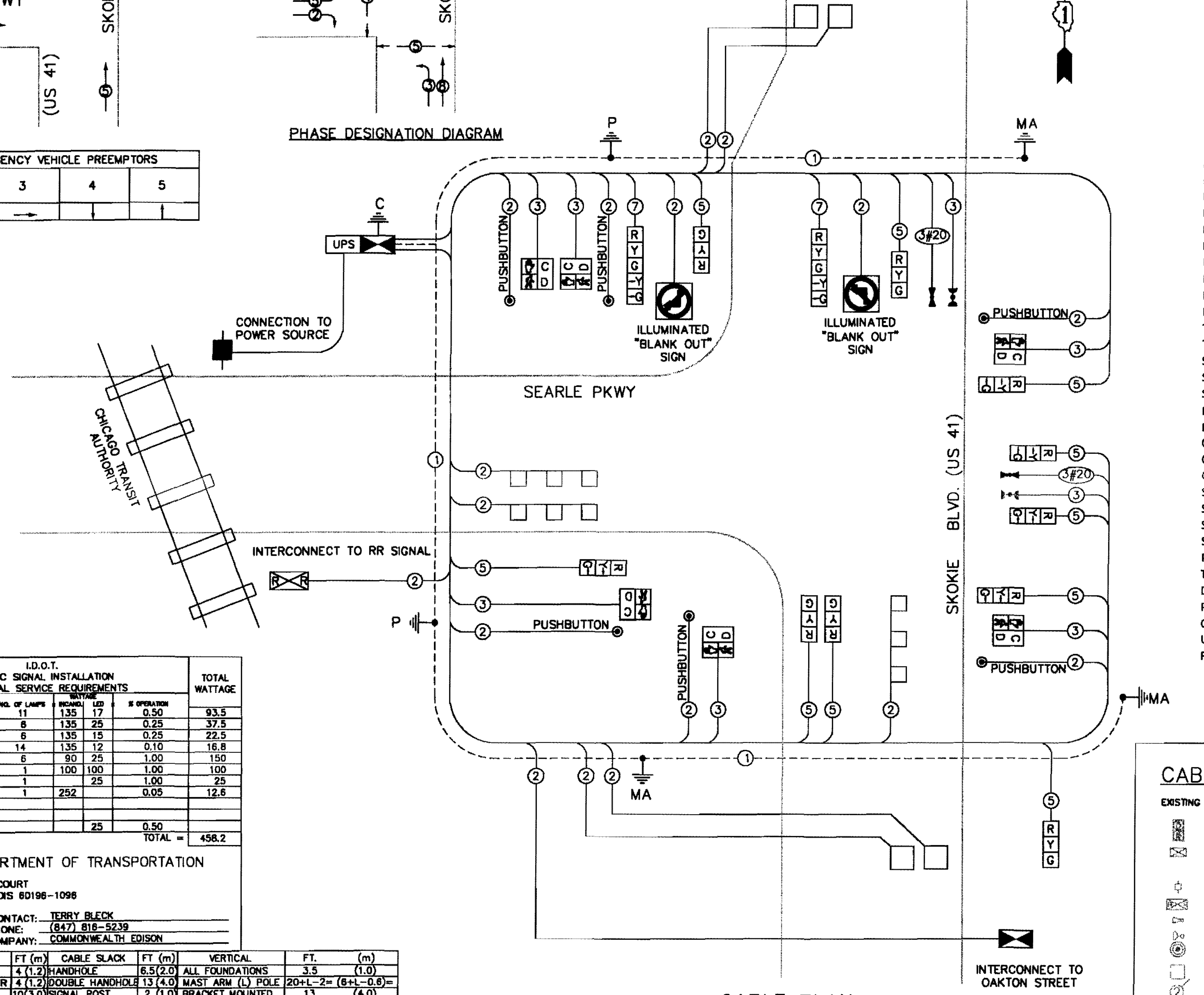


EMERGENCY VEHICLE PREEMPTORS			
EMERGENCY VEHICLE PREEMPTORS	3	4	5
MOVEMENT	→	↓	↑

CONTROLLER SEQUENCE



PHASE DESIGNATION DIAGRAM

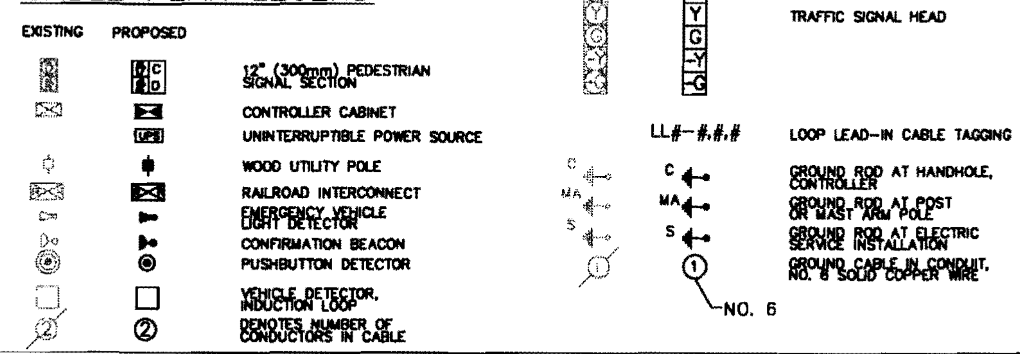


CABLE PLAN

SCHEDULE OF SIGNAL QUANTITIES

DESCRIPTION	UNIT	QUANTITY
SERVICE INSTALLATION, TYPE B	EACH	1
ELECTRIC UTILITY SERVICE CONNECTION	L SUM	1
CONDUIT TRENCH, 2" DIA. GALVANIZED STEEL	FOOT	147
CONDUIT TRENCH, 2-1/2" DIA. GALVANIZED STEEL	FOOT	7
CONDUIT TRENCH, 3" DIA. GALVANIZED STEEL	FOOT	20
CONDUIT TRENCH, 3-1/2" DIA. GALVANIZED STEEL	FOOT	50
CONDUIT TRENCH, 4" DIA. GALVANIZED STEEL	FOOT	20
CONDUIT PUSHED, 1-1/4" DIA. GALVANIZED STEEL	FOOT	233
CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL	FOOT	1,440
CONDUIT PUSHED, 3" DIA., GALVANIZED STEEL	FOOT	150
CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL	FOOT	18
CONDUIT PUSHED, 5" DIA., GALVANIZED STEEL	FOOT	57
HANDHOLE	EACH	12
HEAVY-DUTY HANDHOLE	EACH	3
DOUBLE HANDHOLE	EACH	1
DRILL EXISTING HANDHOLE	EACH	1
REMOVE EXISTING HANDHOLE	EACH	1
ELECTRIC CABLE IN CONDUIT, 600V (EPR-TYP USE) 3-1/C NO.3/0	FOOT	367
RAILROAD, FULL-ACTUATED CONTROLLER AND TYPE V CABINET	EACH	1
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C	FOOT	2,813
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	FOOT	1,298
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	2,062
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT	243
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	383
EMERGENCY VEHICLE PRIORITY SYSTEM LINE SENSOR CABLE, NO. 20 3/C	FOOT	477
FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM12F	FOOT	1,783
ELECTRICAL CABLE IN CONDUIT, TRACER, NO. 14 1 C	FOOT	1,783
TRAFFIC SIGNAL POST, 14 FT.	EACH	1
TRAFFIC SIGNAL POST, 16 FT.	EACH	1
STEEL MAST ARM ASSEMBLY AND POLE, 30 FT.	EACH	1
STEEL MAST ARM ASSEMBLY AND POLE, 36 FT.	EACH	1
STEEL MAST ARM ASSEMBLY AND POLE, 42 FT.	EACH	1
PAINT NEW MAST ARM AND POLE, UNDER 40 FEET	EACH	2
PAINT NEW MAST ARM AND POLE, 40 FEET AND OVER	EACH	1
CONCRETE FOUNDATION, TYPE A	FOOT	8
CONCRETE FOUNDATION, TYPE C	FOOT	4
CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	FOOT	35
SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	5
SIGNAL HEAD, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	5
SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED	EACH	1
SIGNAL HEAD, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED	EACH	1
PEDESTRIAN SIGNAL HEAD, LED, 2-FACE, BRACKET MOUNTED WITH COUNTDC	EACH	6
TRAFFIC SIGNAL BACKPLATE	EACH	6
DETECTOR LOOP, TYPE 1	FOOT	694
PEDESTRIAN PUSH-BUTTON	EACH	6
OPTICON EMERGENCY VEHICLE DETECTOR PREEMPTION SYSTEM	L SUM	1
UNINTERRUPTABLE POWER SOURCE	EACH	1
RAILROAD PROTECTIVE LIABILITY INSURANCE	L SUM	1

CABLE PLAN LEGEND



I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO. OF LAMPS	WATTAGE INCAND.	WATTAGE LED	% OPERATION	
SIGNAL (RED)	11	135	17	0.50	93.5
(YELLOW)	6	135	25	0.25	37.5
(GREEN)	6	135	15	0.25	22.5
ARROW	14	135	12	0.10	16.8
PED. SIGNAL	6	90	25	1.00	150
CONTROLLER	1	100	100	1.00	100
BATTERY BACKUP	1		25	1.00	25
ILLUM. SIGN	1	252		0.05	12.6
FLASHER			25	0.50	
ENERGY COST TO:				TOTAL =	458.2

ILLINOIS DEPARTMENT OF TRANSPORTATION

201 WEST CENTER COURT
SCHAUMBURG, ILLINOIS 60196-1096

ENERGY SUPPLY: CONTACT: TERRY BLECK
PHONE: (847) 816-5239
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)
TYPE C – CONTROLLER	4 (1.2)	DOUBLE HANDHOLE	13 (4.0)	MAST ARM (L) POLE	20+L–2=	(6+L–0.6)=
30", TYPE E	10 (3.0)	SIGNAL POST	2 (1.0)	BRACKET MOUNTED	13	(4.0)
36", TYPE E	11 (3.3)	CONTROLLER CAB.	1 (0.5)	PED. PUSHBUTTON	4	(1.2)
36", TYPE E	13 (3.9)	FIBER OPTIC	13 (4.0)	ELECTRIC SERVICE	13.5	(4.1)
		ELECTRIC SERVICE	1 (0.5)	SERVICE TO GROUND	13.5	(4.1)
		GROUND CABLE	1 (0.5)	POST MOUNTED	6	(1.8)

McDONOUGH ASSOCIATES INC.
ENGINEER/ARCHITECTS
18634 S. 107TH COURT
ORLAND PARK, ILLINOIS 60467-8898
(708) 226-8281

USER NAME = MDB	DESIGNED - MDB	REVISED -
	DRAWN - MDB	REVISED -
PLOT SCALE = 1:1	CHECKED - TDW	REVISED -
PLOT DATE = 04/30/10	DATE - 04/30/10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

US RTE 41 & SEARLE PKWY IMPROVEMENTS
CABLE, PHASE DESIGNATION DIAGRAM SCHEDULE OF QUANTITIES, & EMERGENCY VEHICLE PREEMPTION SEQUENCE PLAN

SCALE: N.T.S. | SHEET NO. 4 OF 13 SHEETS | STA. TO STA.

F.A.P. RTE.	PROJECT	COUNTY	TOTAL SHEETS	SHEET NO.
350	TS 10.2	COOK	13	4

FED. ROAD DIST. NO. 1 | ILLINOIS | LOCAL PROJECT

PROPOSED SEQUENCE OF OPERATION

MOVEMENT												
PHASE	2 + 5				3 + 8			2 + 5				
INTERVAL	1	2	3	4	5	6	7	8	9	10	11	
CHANGE TO				3+8			2+5			2+5 3+8		
SEARLE PARKWAY E/B FAR LEFT & FAR LEFT MAST ARM SIGNALS	←G	←G	←Y	R	R	R	R	R	R	R	R	R
SEARLE PARKWAY E/B RIGHT MAST ARM SIGNAL	G←	G←	Y←	R	G←	Y←	R	R	R	R	R	R
SEARLE PARKWAY E/B NEAR RIGHT & FAR RIGHT SIGNALS	G←	G←	Y←	R	G←	Y←	R	R	R	R	R	R
SKOKIE BOULEVARD (U.S. RTE. 41) S/B MAST ARM SIGNALS	R	R	R	R	R	R	R	G	G	Y	R	R
SKOKIE BOULEVARD (U.S. RTE. 41) S/B NEAR RIGHT SIGNAL	R	R	R	R	R	R	R	G	G	Y	R	R
SKOKIE BOULEVARD (U.S. RTE. 41) N/B LEFT MAST ARM & FAR LEFT SIGNALS	R	R	R	R	G ←G	G ←Y	G	G	G	Y	R	R
SKOKIE BOULEVARD (U.S. RTE. 41) N/B RIGHT MAST ARM SIGNALS	R	R	R	R	G	G	G	G	G	Y	R	R
PEDESTRIAN SIGNALS CROSSING SKOKIE BLVD. ON NORTHSIDE OF SEARLE PKWY	•P	••FH	H	H	H	H	H	H	H	H	H	D
PEDESTRIAN SIGNALS CROSSING SKOKIE BLVD. ON SOUTHSIDE OF SEARLE PKWY	•P	••FH	H	H	H	H	H	H	H	H	H	A
PEDESTRIAN SIGNALS CROSSING SEARLE PKWY ON WESTSIDE OF SKOKIE BLVD.	H	H	H	H	H	H	H	•P	••FH	H	H	R K

FLASH

PROPOSED EMERGENCY VEHICLE PREEMPTION SEQUENCE OF OPERATION

																		PREEMPTOR NUMBER 3	PREEMPTOR NUMBER 4	PREEMPTOR NUMBER 5	CLEAR TO NORMAL SEQUENCE
CHANGE FROM NORMAL SEQUENCE OF OPERATION INTERVAL NUMBER	1	1			5		5		5		8			8		8					
EMERGENCY VEHICLE PREEMPTION SEQUENCE OF OPERATION INTERVAL NUMBER	1A	1B	1C	1D	1E	1F	1G	1H	1J	1K	1L	1M	1N	1P	1Q	1R	1S	2	3	4	
CHANGE TO EMERGENCY VEHICLE PREEMPTION SEQUENCE OF OPERATION INTERVAL NUMBER	2	1C	1D	3 OR 4	1F	2	1F	3	1K	4	1J	1K	2	1Q	3	1S	4				◇
SEARLE PARKWAY E/B FAR LEFT & FAR LEFT MAST ARM SIGNALS	←G	←G	←Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	←G	R	R	◇
SEARLE PARKWAY E/B RIGHT MAST ARM SIGNAL	G←	G←	Y←	R	G←	G←	Y←	R	Y←	R	R	R	R	R	R	R	R	G←	R	R	◇
SEARLE PARKWAY E/B NEAR RIGHT & FAR RIGHT SIGNALS	G←	G←	Y←	R	G←	G←	Y←	R	Y←	R	R	R	R	R	R	R	R	G←	R	R	◇
SKOKIE BOULEVARD (U.S. RTE. 41) S/B MAST ARM SIGNALS	R	R	R	R	R	R	R	R	R	R	G	Y	R	G	G	G	Y	R	G	R	◇
SKOKIE BOULEVARD (U.S. RTE. 41) S/B NEAR RIGHT SIGNAL	R	R	R	R	R	R	R	R	R	R	G	Y	R	G	G	G	Y	R	G	R	◇
SKOKIE BOULEVARD (U.S. RTE. 41) N/B LEFT MAST ARM & FAR LEFT SIGNALS	R	R	R	R	Y ←Y	R	G ←Y	R	Y ←Y	R	G	Y	R	G	Y	G	G	R	R	G	◇
SKOKIE BOULEVARD (U.S. RTE. 41) N/B RIGHT MAST ARM SIGNALS	R	R	R	R	Y	R	G	R	Y	R	G	Y	R	G	Y	G	G	R	R	G	◇
PEDESTRIAN SIGNALS CROSSING SKOKIE BLVD. ON NORTHSIDE OF SEARLE PKWY	FH	FH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	◇
PEDESTRIAN SIGNALS CROSSING SKOKIE BLVD. ON SOUTHSIDE OF SEARLE PKWY	FH	FH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	◇
PEDESTRIAN SIGNALS CROSSING SEARLE PKWY ON WESTSIDE OF SKOKIE BLVD.	H	H	H	H	H	H	H	H	H	H	FH	FH	H	FH	H	FH	H	H	H	H	◇

PROPOSED RAILROAD PREEMPTION SEQUENCE OF OPERATION

CHANGE FROM NORMAL SEQUENCE OF OPERATION INTERVAL NUMBER	1		5		8							
CHANGE FROM EMERGENCY VEHICLE PREEMPTION SEQUENCE OF OPERATION INTERVAL NUMBER							3		4	5		
RAILROAD PREEMPTION SEQUENCE OF OPERATION INTERVAL NUMBER	1A	1B	1C	1D	1E	1F	1G	1H	1J	1K	2	CLEAR TO NORMAL SEQUENCE
CHANGE TO RAILROAD PREEMPTION SEQUENCE OF OPERATION INTERVAL NUMBER	1B	2	1D	2	1F	2	1H	2	2	2		
SEARLE PARKWAY E/B FAR LEFT & FAR LEFT MAST ARM SIGNALS	←Y	R	R	R	R	R	←Y	R	R	R	R	△
SEARLE PARKWAY E/B RIGHT MAST ARM SIGNAL	Y←	R	Y←	R	R	R	Y←	R	R	R	R	△
SEARLE PARKWAY E/B NEAR RIGHT & FAR RIGHT SIGNALS	Y←	R	Y←	R	R	R	Y←	R	R	R	R	△
SKOKIE BOULEVARD (U.S. RTE. 41) S/B MAST ARM SIGNALS	R	R	R	R	Y	R	R	R	G	R	G	△
SKOKIE BOULEVARD (U.S. RTE. 41) S/B NEAR RIGHT SIGNAL	R	R	R	R	Y	R	R	R	G	R	G	△
SKOKIE BOULEVARD (U.S. RTE. 41) N/B LEFT MAST ARM & FAR LEFT SIGNALS	R	R	G ←Y	R	Y	R	R	R	R	G	G	△
SKOKIE BOULEVARD (U.S. RTE. 41) N/B RIGHT MAST ARM SIGNALS	R	R	G	R	Y	R	R	R	R	G	G	△
PEDESTRIAN SIGNALS CROSSING SKOKIE BLVD. ON NORTHSIDE OF SEARLE PKWY	FH	H	H	H	H	H	H	H	H	H	H	△
PEDESTRIAN SIGNALS CROSSING SKOKIE BLVD. ON SOUTHSIDE OF SEARLE PKWY	FH	H	H	H	H	H	H	H	H	H	H	△
PEDESTRIAN SIGNALS CROSSING SEARLE PKWY ON WESTSIDE OF SKOKIE BLVD.	H	H	H	H	FH	H	H	H	H	H	P	△
INTERNALLY ILLUMINATED NLT SIGN	NLT	NLT	NLT	NLT	NLT	NLT	NLT	NLT	NLT	NLT	NLT	△
											HOLD	

NOTES:

P = ILLUMINATED PERSON = WALK

FH = ILLUMINATED FLASHING HAND = FLASHING DON'T WALK

H = ILLUMINATED SOLID HAND = DON'T WALK

PHASES 2+5 SHALL BE PLACED ON RECALL

• TO APPEAR ONLY UPON PUSHBUTTON ACTUATION

•• FLASHING "DON'T WALK" IS TO TERMINATE AT THE COMPLETION OF THE PEDESTRIAN INTERVAL CLEARANCE.

θ THIS "WALK" OR FLASHING "DON'T WALK" INTERVAL MAY FINISH TIMING IN THE BIDIRECTIONAL STRAIGHT THROUGH MOVEMENT IF THE LEFT ARROW TIME IS NOT SUFFICIENT TO COMPLETE "WALK" OR FLASHING "DON'T WALK" INTERVALS.

△ RAILROAD PREEMPTION SEQUENCE SHALL PROVIDE THE PROPER CLEARANCE INTERVAL TO RESUME THE NORMAL SEQUENCE OF OPERATION OR PROPER CLEARANCE INTERVAL TO DISPLAY AN EMERGENCY VEHICLE INTERVAL (IF APPLICABLE) AFTER RAILROAD PREEMPTION INTERVAL 2 IS TERMINATED.

TRAFFIC SIGNAL CONTROLLER SHALL BE ALLOWED TO CYCLE SEQUENCE OF OPERATION 2+5 INTERVAL 10 AT THE END OF THE RAILROAD PREEMPTION SEQUENCE.

◇ EMERGENCY VEHICLE SEQUENCE SHALL PROVIDE THE PROPER CLEARANCE INTERVAL TO RESUME THE NORMAL SEQUENCE OF OPERATION OR PROPER CLEARANCE INTERVAL TO DISPLAY A DIFFERENT EMERGENCY INTERVAL AFTER EMERGENCY VEHICLE INTERVAL 2 OR 3 IS TERMINATED.

McDONOUGH ASSOCIATES INC.
ENGINEER/ARCHITECTS
16634 S. 107TH COURT
ORLAND PARK, ILLINOIS 60467-8898
(708) 226-8281

USER NAME = MDB | PLOT SCALE = 1:1 | PLOT DATE = 04/30/10

DESIGNED - MDB | DRAWN - MDB | CHECKED - TDW | DATE - 04/30/10

REVISED - | REVISED - | REVISED - | REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

US RTE 41 & SEARLE PKWY IMPROVEMENTS
SEQUENCE OF OPERATION

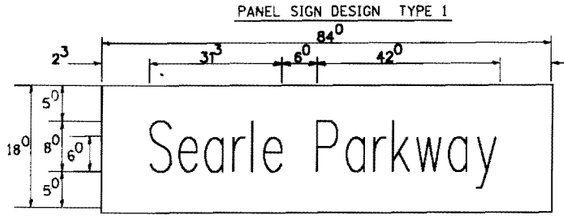
SCALE: N.T.S. | SHEET NO. 5 OF 13 SHEETS | STA. | TO STA.

F.A.P. RTE.	PROJECT	COUNTY	TOTAL SHEETS	SHEET NO.
350	TS 10.2	COOK	13	5

FED. ROAD DIST. NO. 1 | ILLINOIS | LOCAL PROJECT

P:\2006.0048 - Skokie Blvd at Searle Street Intersection Improvement\Dwg\2006D048-TS-Sequence.dwg, 4/30/2010 1:19:16 PM

PANEL SIGN DESIGN TYPE 1

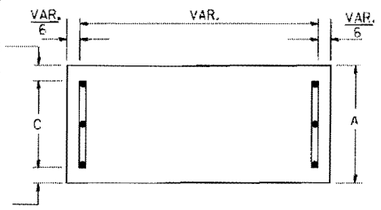


10.50 Sq. Ft. each

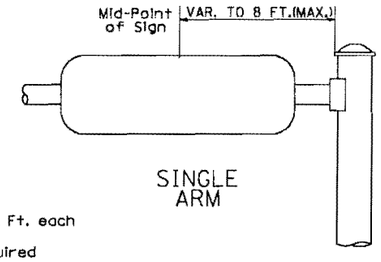
1 Required

Design Series D

SUPPORTING CHANNELS



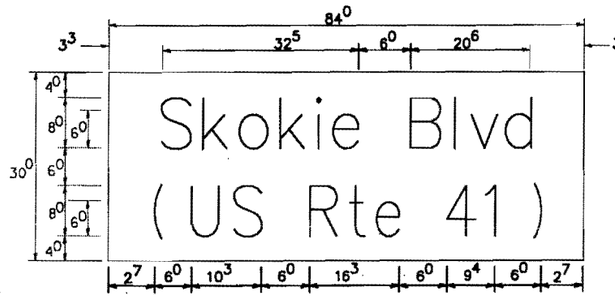
A	B	C
18"	2"	14"



SINGLE ARM

NOTE: SIGN DIMENSIONS ARE IN ENGLISH UNITS

PANEL SIGN DESIGN TYPE 2

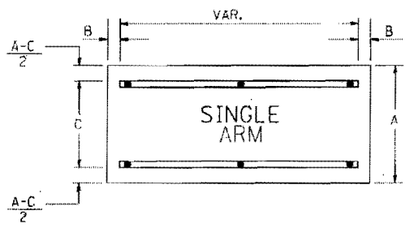


13.75 Sq. Ft. each

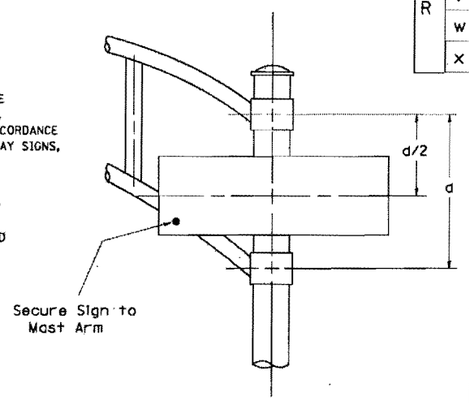
1 Required

Design Series D

SUPPORTING CHANNELS



A	B	C
18"	2"	12"
30"	2"	22"



DUAL ARM

GENERAL NOTES

1. 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 877001, 877002, 877006, 877011 AND 877012, AS APPLICABLE, PLUS TWO (2) SIGN PANELS 2'-6" x 8'-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.
2. ALL SIGNS SHALL HAVE A WHITE REFLECTORIZED LEGEND AND BORDER ON A GREEN REFLECTORIZED BACKGROUND, TYPE A SHEETING.
3. THE SIGN LENGTH SHOULD BE INCREASED IN 6-INCH INCREMENTS, BUT THE OVERALL LENGTH SHOULD NOT EXCEED 8'-0".
4. ALL BORDERS SHALL BE ¾" WIDE AND CORNER RADIUS SHALL BE 2-1/4 ".
5. 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:

* J.O. HERBERT CO.
MIDLOTHIAN, VA.

* WESTERN REMAC INC.
WOODRIDGE, IL.

PARTS LISTING:

SIGN CHANNEL	PART #HPN053 (MED. CHANNEL)
SIGN SCREWS	¼" x 14 x 1" H.W.H. #3 SELF TAPPING WITH NEOPRENE WASHER
BRACKETS	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/BRACKET OF THE ABOVE PRODUCT.

SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM shall be used. See Note #5.

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

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

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

FIRST LETTER	SECOND LETTER: a c d e		b h i k l m n p r u		f w		j		s t		v y		x		z	
SERIES	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
a d h g i j l m n q u	1^{6}	1^{7}	2^{2}	2^{4}	1^{6}	1^{7}	1^{2}	1^{4}	1^{4}	1^{5}	1^{4}	1^{5}	1^{6}	1^{7}	1^{6}	1^{7}
b f k o p s	1^{2}	1^{4}	1^{6}	1^{7}	1^{1}	1^{2}	0^{5}	0^{6}	1^{1}	1^{2}	1^{1}	1^{2}	1^{2}	1^{4}	1^{2}	1^{4}
c e	1^{2}	1^{4}	1^{6}	1^{7}	1^{2}	1^{4}	0^{6}	1^{0}	1^{2}	1^{4}	1^{2}	1^{4}	1^{2}	1^{4}	1^{2}	1^{4}
r	0^{6}	1^{0}	1^{2}	1^{4}	0^{6}	1^{0}	0^{3}	0^{3}	0^{5}	0^{6}	0^{5}	0^{6}	0^{6}	1^{0}	0^{6}	1^{0}
t z	1^{2}	1^{4}	1^{6}	1^{7}	1^{2}	1^{4}	0^{6}	1^{0}	1^{1}	1^{2}	1^{1}	1^{2}	1^{2}	1^{4}	1^{2}	1^{4}
v y	1^{1}	1^{2}	1^{4}	1^{5}	1^{1}	1^{2}	0^{5}	0^{6}	0^{6}	1^{0}	0^{6}	1^{0}	1^{1}	1^{2}	1^{1}	1^{2}
w	1^{1}	1^{2}	1^{4}	1^{5}	1^{1}	1^{2}	0^{5}	0^{6}	1^{1}	1^{2}	1^{1}	1^{2}	1^{1}	1^{2}	1^{2}	1^{4}
x	1^{2}	1^{4}	1^{6}	1^{7}	1^{1}	1^{2}	0^{5}	0^{6}	1^{1}	1^{2}	1^{1}	1^{2}	1^{1}	1^{2}	1^{2}	1^{4}

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

FIRST NUMBER	SECOND NUMBER: 0		1		2		3		4		5		6		7		8		9	
SERIES	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
0 9	1^{6}	1^{7}	1^{6}	1^{7}	1^{4}	1^{5}	1^{2}	1^{4}	1^{4}	1^{5}	1^{4}	1^{5}	1^{6}	1^{7}	1^{2}	1^{4}	1^{6}	1^{7}	1^{6}	1^{7}
1	2^{0}	2^{1}	2^{0}	2^{1}	2^{0}	2^{1}	1^{6}	1^{7}	1^{4}	1^{5}	2^{0}	2^{1}	2^{0}	2^{1}	1^{4}	1^{5}	2^{0}	2^{1}	2^{0}	2^{1}
2 3 4	1^{4}	1^{5}	1^{4}	1^{5}	1^{4}	1^{5}	1^{2}	1^{4}	1^{2}	1^{4}	1^{4}	1^{5}	1^{4}	1^{5}	1^{1}	1^{2}	1^{6}	1^{7}	1^{4}	1^{5}
5	1^{4}	1^{5}	1^{4}	1^{5}	1^{4}	1^{5}	1^{1}	1^{2}	1^{1}	1^{2}	1^{4}	1^{5}	1^{4}	1^{5}	1^{1}	1^{2}	1^{4}	1^{5}	1^{4}	1^{5}
6	1^{6}	1^{7}	1^{4}	1^{5}	1^{4}	1^{5}	1^{2}	1^{5}	1^{2}	1^{4}	1^{4}	1^{5}	1^{4}	1^{5}	1^{1}	1^{2}	1^{4}	1^{5}	1^{4}	1^{5}
7	1^{2}	1^{4}	1^{2}	1^{4}	1^{4}	1^{5}	1^{2}	1^{5}	0^{5}	0^{6}	1^{2}	1^{4}	1^{4}	1^{5}	1^{1}	1^{2}	1^{4}	1^{5}	1^{2}	1^{4}
8	1^{6}	1^{7}	1^{6}	1^{7}	1^{4}	1^{5}	1^{2}	1^{5}	1^{2}	1^{4}	1^{4}	1^{5}	1^{6}	1^{7}	1^{2}	1^{4}	1^{6}	1^{7}	1^{4}	1^{5}

EXAMPLE, $2^{(3)}$ DENOTES $\frac{3}{8}$"

UPPER AND LOWER CASE LETTER WIDTHS

LETTERS	6 INCH UPPER CASE LETTERS, SERIES C	6 INCH UPPER CASE LETTERS, SERIES D	8 INCH UPPER CASE LETTERS, SERIES C	8 INCH UPPER CASE LETTERS, SERIES D	LETTERS	6 INCH LOWER CASE LETTERS, SERIES C	6 INCH LOWER CASE LETTERS, SERIES 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, C	6 INCH SERIES, D	8 INCH SERIES, C	8 INCH SERIES, 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}

McDONOUGH ASSOCIATES INC.
ENGINEER/ARCHITECTS
18634 S. 107TH COURT
ORLAND PARK, ILLINOIS 60467-8588
(708) 226-9281

USER NAME = MDB	DESIGNED - MDB	REVISED -	
	DRAWN - MDB	REVISED -	
PLOT SCALE = 1:1	CHECKED - TDW	REVISED -	
PLOT DATE = 04/30/10	DATE - 04/30/10	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

US RTE 41 & SEARLE PKWY IMPROVEMENTS
DISTRICT ONE MAST ARM MOUNTED STREET NAME SIGNS

SCALE: N.T.S. | SHEET NO. 6 OF 13 SHEETS | STA. | TO STA.

F.A.P. RTE.	PROJECT	COUNTY	TOTAL SHEETS	SHEET NO.
350	TS 10.2	COOK	13	6

FED. ROAD DIST. NO. 1 | ILLINOIS | LOCAL PROJECT

LOOP DETECTOR NOTES

1. EACH PAIR OF LOOP WIRES SHALL BE PLACED IN A SEPARATE EMPTY COILABLE NONMETALLIC CONDUIT FROM THE EDGE OF PAVEMENT TO THE HANDHOLE. SPACING BETWEEN THE HOLES DRILLED IN THE PAVEMENT SHALL NOT BE LESS THAN 6" (150 mm). EMPTY COILABLE NONMETALLIC CONDUIT 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.

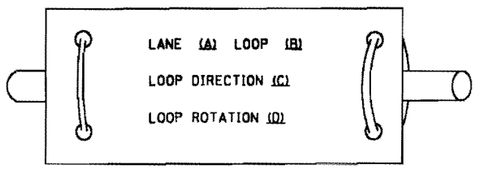
4. ALL LOOP CABLE SHALL BE FASTENED WITH PLASTIC TIE WRAP TO THE HANDHOLE HOOKS.

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.

LOOP LEAD-IN CABLE TAG

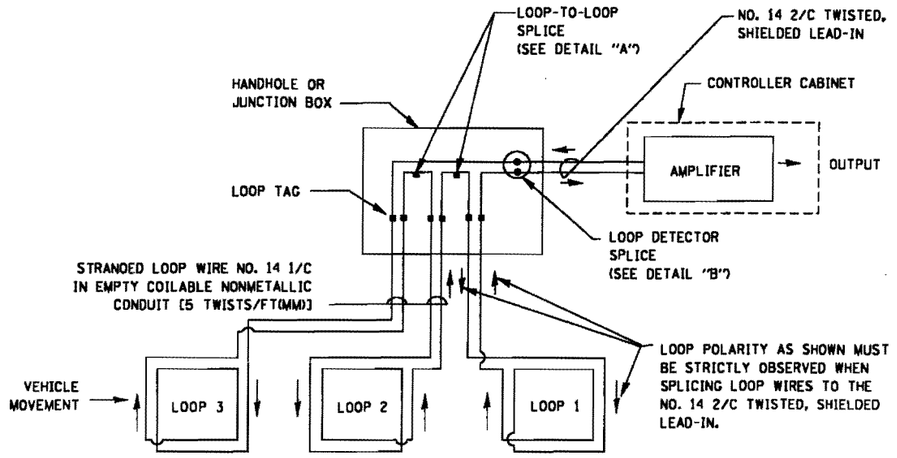


A. LANE 1 IS THE LANE CLOSEST TO THE CENTERLINE OF THE ROADWAY

B. LOOP #1 IS THE LOOP IN THE LANE CLOSEST TO THE INTERSECTION.

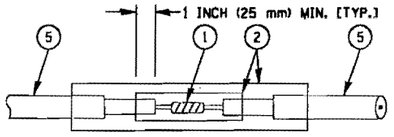
C. LABEL LOOP CABLE "IN" OR LOOP CABLE "OUT".

D. LABEL LOOP CABLE CLOCKWISE OR LOOP CABLE COUNTERCLOCKWISE.

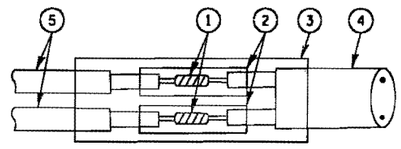


DETECTOR LOOP WIRING SCHEMATIC

- 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.

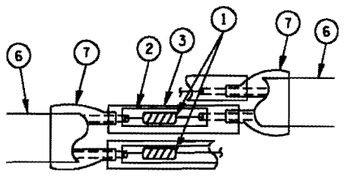


DETAIL "A"
LOOP-TO-LOOP SPLICE



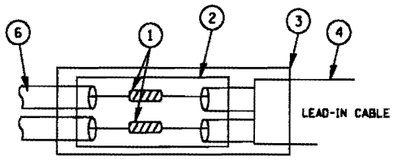
DETAIL "B"
LOOP-TO-CONTROLLER SPLICE

TYPE I LOOP



DETAIL "A"
LOOP-TO-LOOP SPLICE

PRE-FORMED LOOP



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.

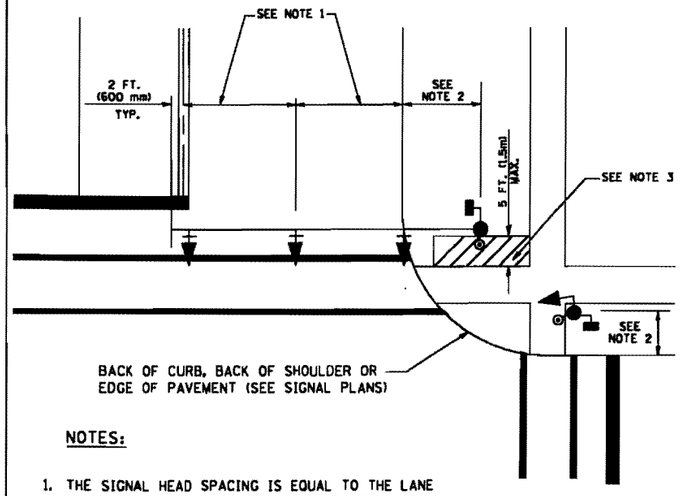
(6) PRE-FORMED LOOP

(7) XL POLYOLEFIN 2 CONDUCTOR BREAKOUT SEALS. TYCO CBR-2 OR APPROVED EQUAL

FILE NAME = c:\pw_work\PWIDOT\BAUEROL\d0188315\ts05.dgn	USER NAME = bauerdl	DESIGNED - DAD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - BCK	REVISED -									
	PLOT SCALE = 50.0000 '/ IN.	CHECKED - DAD	REVISED -						TS-05	CONTRACT NO.		
	PLOT DATE = 11/4/2009	DATE - 10-28-09	REVISED -		SCALE: NONE	SHEET NO. 1 OF 6 SHEETS	STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

TRAFFIC SIGNAL MAST ARM AND SIGNAL POST

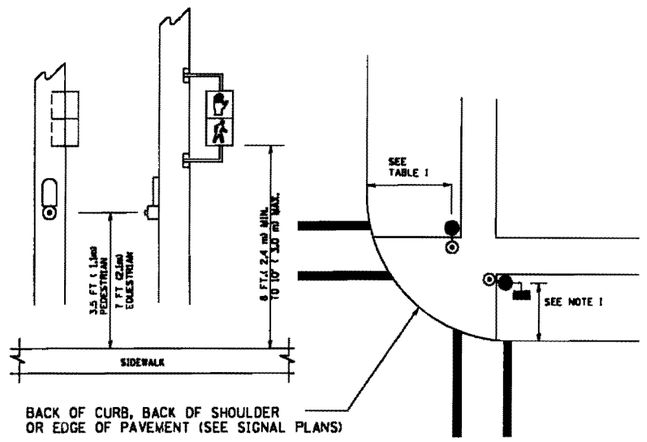
MAST ARM MOUNTED SIGNALS IN EXISTING, PROPOSED OR FUTURE SIDEWALK/BICYCLE PATH AREA. INTERSECTION SHOWN WITH PEDESTRIAN SIGNALS AND PEDESTRIAN PUSHBUTTON DETECTORS.



NOTES:

1. THE SIGNAL HEAD SPACING IS EQUAL TO THE LANE WIDTH OR AS SHOWN ON THE TRAFFIC SIGNAL PLAN.
2. REFER TO THE TRAFFIC SIGNAL EQUIPMENT OFFSET TABLE.
3. PROVIDE A LEVEL ALL-WEATHER SURFACE (CONCRETE SIDEWALK, ASPHALT BICYCLE PATH SURFACE OR MATCHING MATERIAL TO THE ADJACENT SURFACE) UP TO THE MAST ARM SHAFT OR THE SIGNAL POST.
4. THE FACE OF THE PEDESTRIAN PUSHBUTTON SHALL BE PARALLEL TO THE CROSSWALK TO BE USED.
5. THE LOCATIONS AND INSTALLATION OF PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS SHALL MEET THE REQUIREMENTS OF THE MUTCD AND INFORMATION FOUND IN THE "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES."

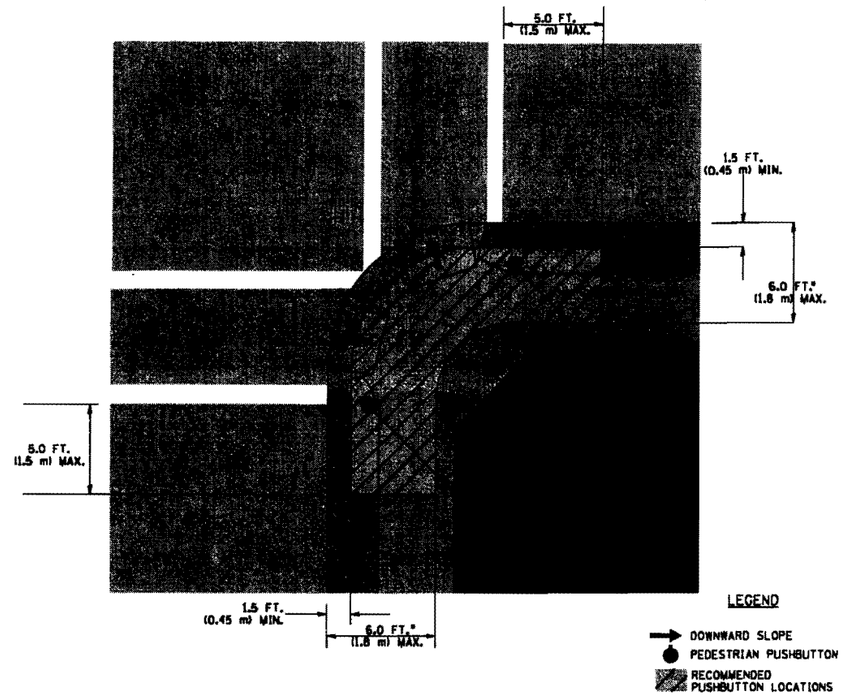
PEDESTRIAN SIGNAL POST AND PEDESTRIAN PUSH BUTTON POST



NOTES:

1. REFER TO THE TRAFFIC SIGNAL EQUIPMENT OFFSET TABLE.
2. PROVIDE A LEVEL ALL-WEATHER SURFACE (CONCRETE SIDEWALK, ASPHALT BICYCLE PATH SURFACE OR MATCHING MATERIAL TO THE ADJACENT SURFACE) UP TO THE PEDESTRIAN SIGNAL POST OR THE PEDESTRIAN PUSH BUTTON POST.
3. THE FACE OF THE PEDESTRIAN PUSHBUTTON SHALL BE PARALLEL TO THE CROSSWALK TO BE USED.
4. THE LOCATIONS AND INSTALLATION OF PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS SHALL MEET THE REQUIREMENTS OF THE MUTCD AND INFORMATION FOUND IN THE "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES."

RECOMMENDED PUSHBUTTON LOCATIONS



* WHERE THERE ARE CONSTRAINTS THAT MAKE IT IMPRACTICAL TO PLACE THE PEDESTRIAN PUSHBUTTON BETWEEN 1.5 FT (0.45 m) AND 6 FT (1.8 m) FROM THE EDGE OF THE CURB, SHOULDER, OR PAVEMENT, IT SHOULD NOT BE FURTHER THAN 10 FT (3 m) FROM THE EDGE OF CURB, SHOULDER, OR PAVEMENT.

** WHERE THERE ARE CONSTRAINTS ON A PARTICULAR CORNER THAT MAKE IT IMPRACTICAL TO PROVIDE THE 10 FT (3 m) SEPERATION BETWEEN THE TWO PEDESTRIAN PUSHBUTTONS, THE PUSHBUTTONS MAY BE PLACED CLOSER TOGETHER OR ON THE SAME POLE.

NOTES:

1. PEDESTRIAN SIGNAL HEADS SHALL BE MOUNTED WITH THE BOTTOM OF THE SIGNAL HOUSING INCLUDING BRACKETS NOT LESS THAN 8 FT (2.4 m) OR MORE THAN 10 FT (3 m) ABOVE SIDEWALK LEVEL, AND SHALL BE POSITIONED AND ADJUSTED TO PROVIDE MAXIMUM VISIBILITY AT THE BEGINNING OF THE CONTROLLED CROSSWALK.
2. THE BOTTOM OF THE SIGNAL HOUSING (INCLUDING BRACKETS) OF A VEHICULAR SIGNAL FACE THAT IS NOT LOCATED OVER A HIGHWAY SHALL BE AT LEAST 8 FT (2.4 m) BUT NOT MORE THAN 19 FT (5.8 m) ABOVE THE SIDEWALK OR, IF THERE IS NO SIDEWALK, ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY.
3. THE BOTTOM OF THE SIGNAL HOUSING AND ANY RELATED ATTACHMENTS TO A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL BE ACCORDING TO CURRENT STATE STANDARDS 877001, 877002, 877006, 877011 AND 877012 WITH A MINIMUM OF 16 FT (5.0 m) AND A MAXIMUM OF 18 FT. (5.5 m) FROM THE HIGHEST POINT OF PAVEMENT.
4. THE BOTTOM OF THE TEMPORARY SPAN WIRE MOUNTED SIGNAL HOUSING AND ANY RELATED ATTACHMENTS TO A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL BE ACCORDING TO CURRENT STATE STANDARD 880001 WITH A MINIMUM OF 17 FT (5.18 m) FROM THE HIGHEST POINT OF PAVEMENT.
5. THE TOP OF THE SIGNAL HOUSING OF A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL NOT BE MORE THAN 25.6 FT (7.8 m) ABOVE THE PAVEMENT.

TRAFFIC SIGNAL EQUIPMENT OFFSET

TRAFFIC SIGNAL EQUIPMENT	COMBINATION CONCRETE CURB AND GUTTER (MINIMUM DISTANCE FROM BACK OF CURB TO CENTERLINE OF FOUNDATION)	SHOULDER/NON-CURBED AREA (MINIMUM DISTANCE FROM EDGE OF PAVEMENT TO CENTERLINE OF FOUNDATION)
TRAFFIC SIGNAL MAST ARM POLE	6 FT (1.8m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
TRAFFIC SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
PEDESTRIAN SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
PEDESTRIAN PUSHBUTTON POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
TEMPORARY WOOD POLE	6 FT (1.8m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
CONTROLLER CABINET	6 FT (1.8m) MINIMUM DISTANCE SEE NOTE 2	SHOULDER WIDTH + 6 FT (1.8m), MINIMUM 16 FT (4.9m) SEE NOTE 3.
SERVICE INSTALLATION, GROUND MOUNT	6 FT (1.8m) MINIMUM DISTANCE SEE NOTE 2	SHOULDER WIDTH + 6 FT (1.8m), MINIMUM 16 FT (4.9m) SEE NOTE 3.

NOTES:

1. CONTACT THE "AREA TRAFFIC SIGNAL MAINTENANCE AND OPERATIONS ENGINEER" FOR ASSISTANCE IN LOCATING THE TRAFFIC SIGNAL EQUIPMENT WHEN THERE ARE CONFLICTS WITH DITCHES OR THE MINIMUM OFFSET DISTANCES CANNOT BE MET.
2. MINIMUM DISTANCE FROM THE BACK OF CURB TO THE ROADWAY SIDE OF THE FOUNDATION.
3. MINIMUM DISTANCE FROM THE EDGE OF PAVEMENT TO THE ROADWAY SIDE OF THE FOUNDATION.
4. ANY CHANGES TO THE OFFSETS OF THE FOUNDATIONS, FROM THE MINIMUM DISTANCES LISTED IN THE "TRAFFIC SIGNAL EQUIPMENT OFFSET" CHART AND THE TRAFFIC SIGNAL INSTALLATION PLAN, COULD EFFECT THE PLACEMENT OF THE SIGNAL HEADS, PEDESTRIAN SIGNAL HEADS AND THE PEDESTRIAN PUSHBUTTONS. THE SIGNAL HEAD PLACEMENT ON THE MAST ARMS SHALL REMAIN AS PER THE TRAFFIC SIGNAL INSTALLATION PLAN AND THE "TRAFFIC SIGNAL MAST ARM AND SIGNAL POST" DETAIL ABOVE. THE PROPOSED MAST ARM LENGTHS MAY NEED TO BE REVISED TO MEET THE ABOVE REQUIREMENTS. THE PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS MUST MEET THE REQUIREMENTS UNDER THE DETAILS ON THIS SHEET.

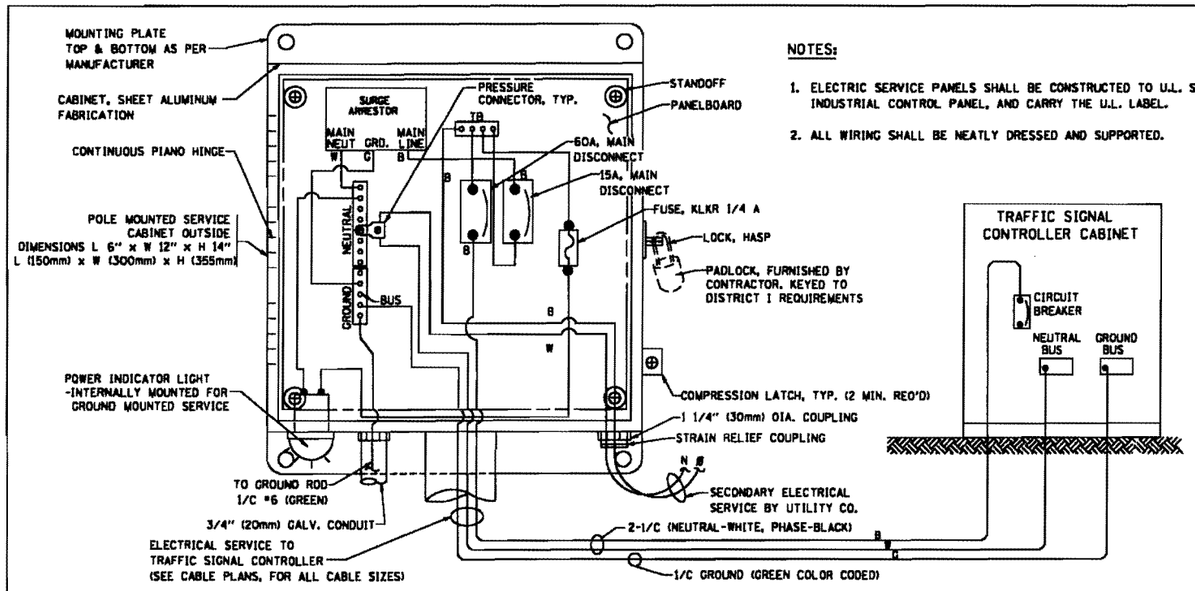
FILE NAME = o:\pw_work\PWIDOT\BAUERDL\d8188315\ts85.dgn	USER NAME = bauerdl	DESIGNED - DAD	REVISED -
		DRAWN - BCK	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED - DAD	REVISED -
	PLOT DATE = 11/4/2009	DATE - 10-28-09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: NONE | SHEET NO. 2 OF 6 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	TS-05	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



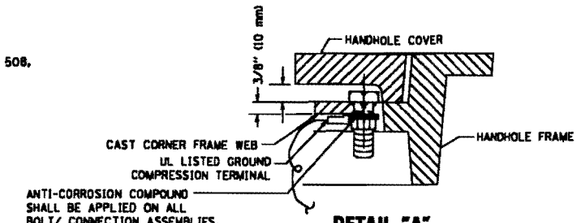
NOTES:

1. ELECTRIC SERVICE PANELS SHALL BE CONSTRUCTED TO U.L. STD 508, INDUSTRIAL CONTROL PANEL, AND CARRY THE U.L. LABEL.
2. ALL WIRING SHALL BE NEATLY DRESSED AND SUPPORTED.

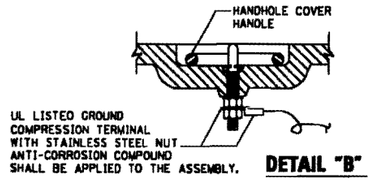
ELECTRICAL SERVICE – PANEL DIAGRAM (TYPICAL FOR POLE AND GROUND MOUNTED SERVICE)

SERVICE INSTALLATION POLE MOUNT (SHOWN)

(NOT TO SCALE)



DETAIL "A"

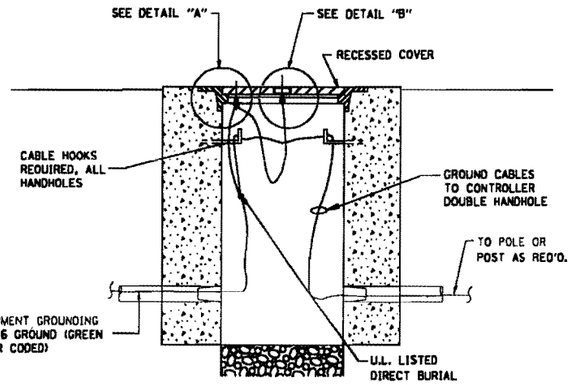


DETAIL "B"

NOTES:

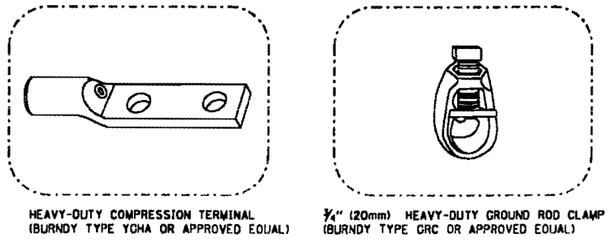
GROUNDING SYSTEM

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.



HANDHOLE COVER & FRAME – GROUNDING DETAIL

(NOT TO SCALE)

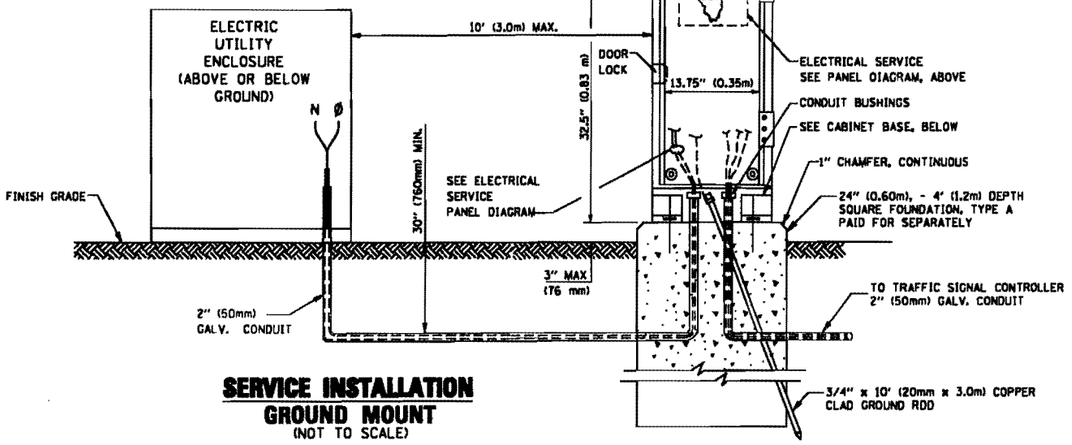


HEAVY-DUTY COMPRESSION TERMINAL (BURNDY TYPE YCHA OR APPROVED EQUAL)

¾" (20mm) HEAVY-DUTY GROUND ROD CLAMP (BURNDY TYPE CRC OR APPROVED EQUAL)

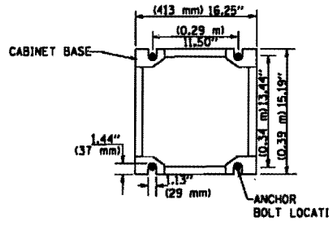
NOTES:

- 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.



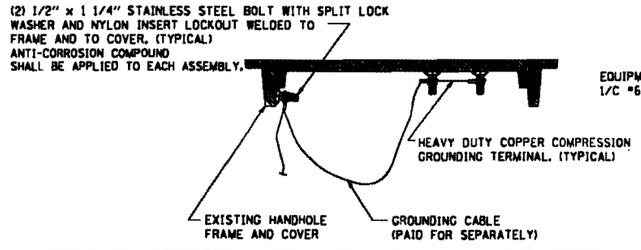
SERVICE INSTALLATION GROUND MOUNT

(NOT TO SCALE)



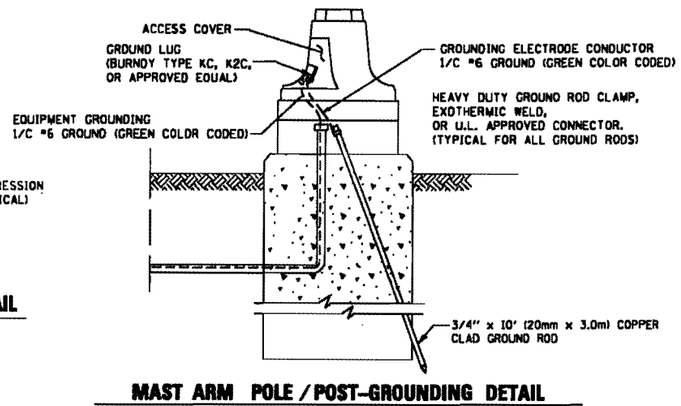
CABINET – BASE BOLT PATTERN

(NOT TO SCALE)



EXISTING HANDHOLE COVER & FRAME – GROUNDING DETAIL

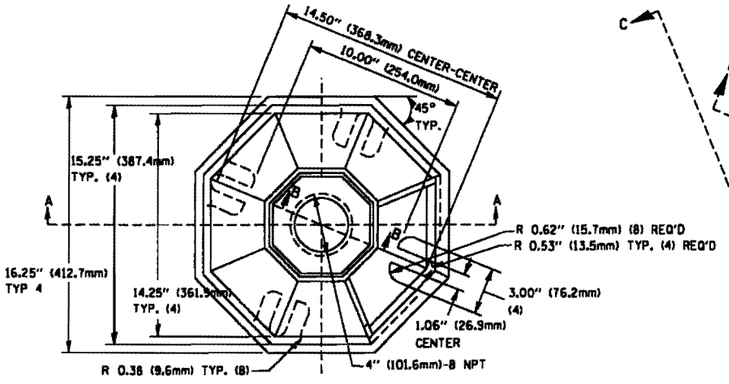
(NOT TO SCALE)



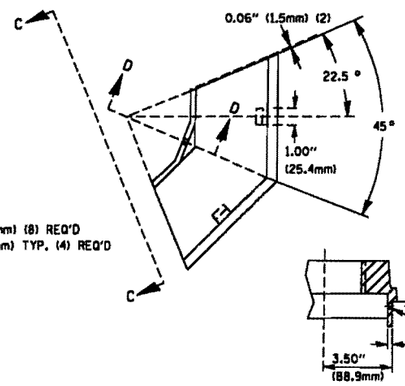
MAST ARM POLE / POST–GROUNDING DETAIL

(NOT TO SCALE)

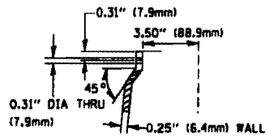
FILE NAME = c:\pw_work\PWIDOT\BAUERDL\d0188315\ts85.dgn	USER NAME = bauerdl	DESIGNED - DAD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 50.0000 ' / IN.	DRAWN - BCK	REVISED -							
	PLOT DATE = 11/4/2009	CHECKED - DAD	REVISED -				TS-05	CONTRACT NO.		
		DATE - 10-28-09	REVISED -		SCALE: NONE SHEET NO. 3 OF 6 SHEETS STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



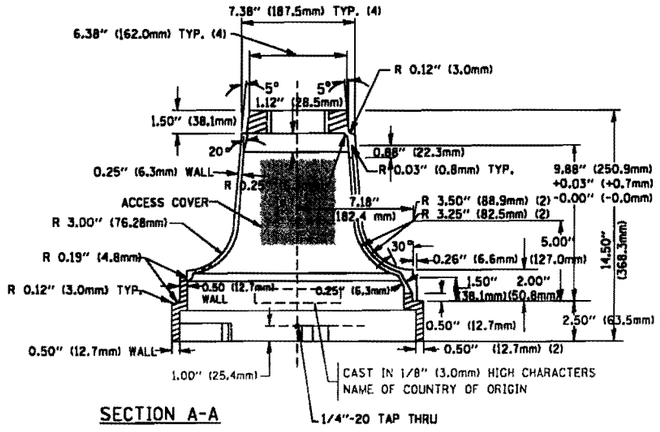
TOP VIEW



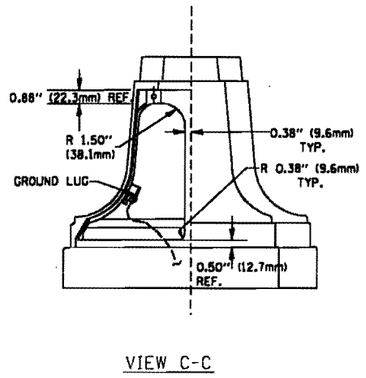
SECTION B-B



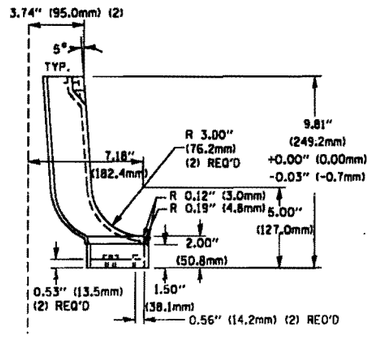
SECTION D-D



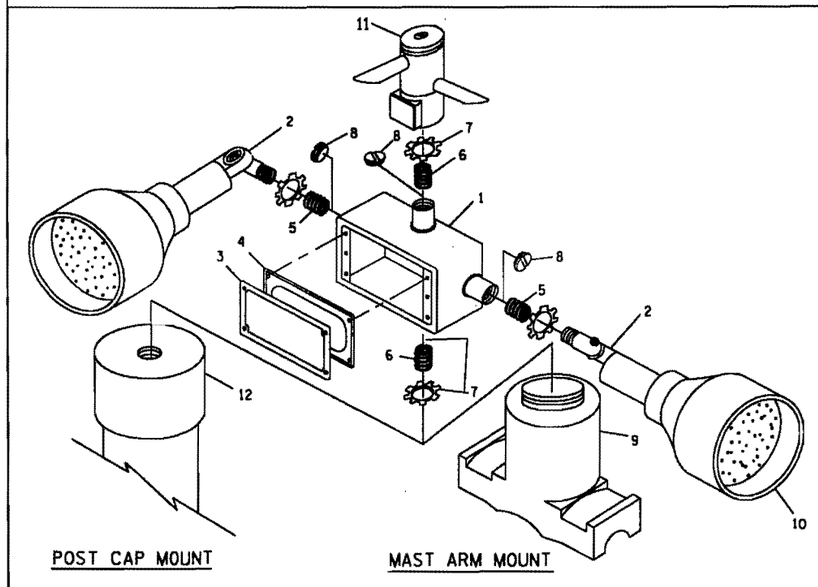
SECTION A-A



VIEW C-C



TRAFFIC SIGNAL POST - MOUNTING BASE - TYPE A



POST CAP MOUNT

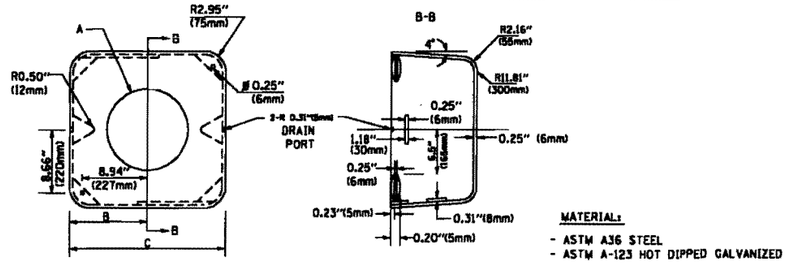
MAST ARM MOUNT

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	¾"(19 mm) CLOSE NIPPLE
7	¾"(19 mm) LOCKNUT
8	¾"(19 mm) HOLE PLUG
9	SADDLE BRACKET - GALV.
10	6 WATT PAR 38 LED FLOOD LAMP
11	DETECTOR UNIT
12	POST CAP (18 FT. (5.4 m) POST MIN.)

NOTES:

1. ALL ELECTRICAL ITEMS, EXCEPT ITEMS #2 AND #11 SHALL BE ALUMINUM OR GALVANIZED
2. ITEM #1- OZ/GEDNEY FSX-1-50 OR EQUIVALENT
   ITEM #2- MULBERRY CON-D-SHADE LAMP SHIELD OR EQUIVALENT
   ITEM #9- "BAND-IT" SADDLE BRACKET OR EQUIVALENT
3. 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 ¾"(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.



MATERIAL:
- ASTM A36 STEEL
- ASTM A-123 HOT DIPPED GALVANIZED

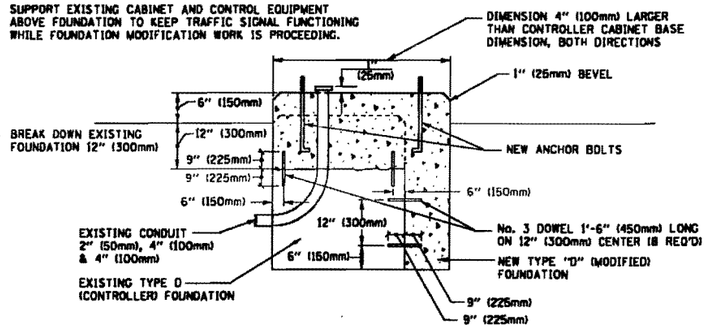
A	B	C	HEIGHT	WEIGHT
VARIES	9.5"(241mm)	19"(483mm)	7" (178mm) - 12" (300mm)	53 lbs (24kg)
VARIES	10.75"(273mm)	21.5"(546mm)	7" (178mm) - 12" (300mm)	68 lbs (31 kg)
VARIES	13.0"(330mm)	26"(660mm)	7" (178mm) - 12" (300mm)	81 lbs (37 kg)
VARIES	18.5"(470mm)	37"(940mm)	7" (178mm) - 12" (300mm)	126 lbs (57 kg)

SHROUD

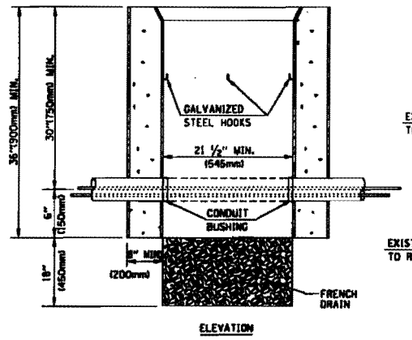
NOTES:

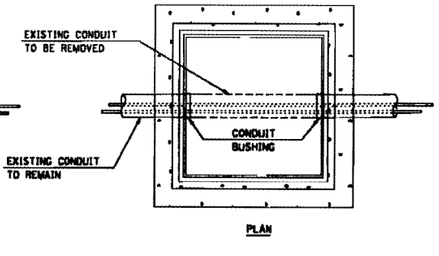
1. DIMENSION "A" IS EQUAL TO THE DIAMETER OF THE MAST ARM POLE AT THE TOP OF THE SHROUD. THE SHROUD SHALL BE TIGHT TO THE MAST ARM POLE.
2. THE SUPPLIER SHALL VERIFIED THE ABOVE DIMENSIONS BASED ON MAST ARM REQUIREMENTS.
3. THE HEIGHT OF THE SHROUD SHALL COVER THE ANCHOR BOLTS, NUTS AND MAST ARM POLE BASE.

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



MODIFY EXISTING TYPE "D" FOUNDATION





NOTES:

1. HANDHOLE CONSTRUCTED PER STATE STANDARD 814001.
2. REMOVAL OF THE EXISTING CONDUIT FROM THE HANDHOLE AND THE INSTALLATION OF THE CONDUIT BUSHINGS SHALL BE INCIDENTAL TO THE HANDHOLE.

HANDHOLE TO INTERCEPT EXISTING CONDUIT

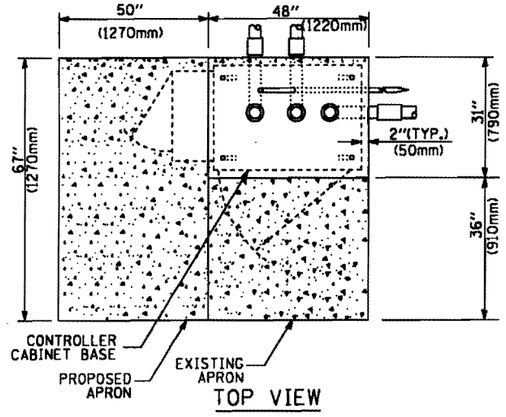
FILE NAME = o:\pw_work\PWIDOT\BAUEROL\d0188315\ts05.dgn	USER NAME = bauerdl	DESIGNED - DAD	REVISED -
		DRAWN - BCK	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED - DAD	REVISED -
	PLOT DATE = 11/4/2009	DATE - 10-28-09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

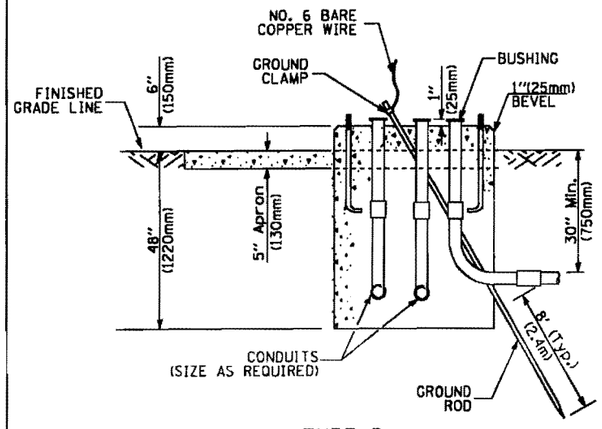
DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: NONE | SHEET NO. 4 OF 6 SHEETS | STA. | TO STA.

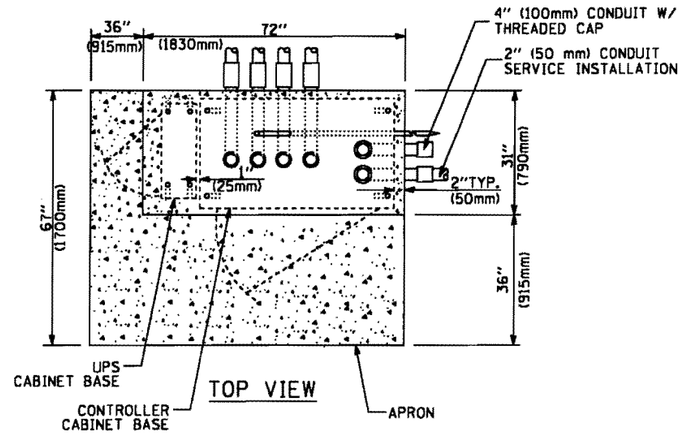
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	TS-05	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



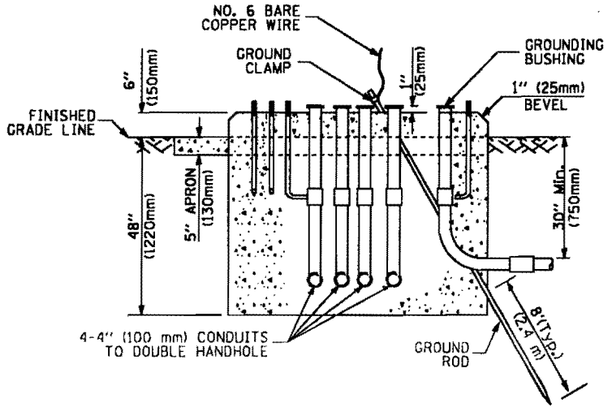
TOP VIEW



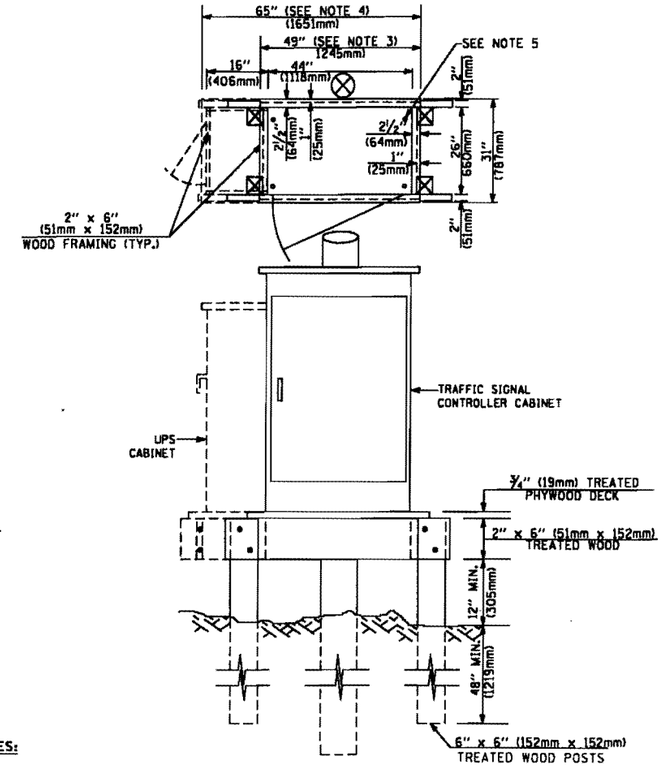
TYPE D
FOR GROUND MOUNTED
CONTROLLER CABINET
AND UPS BATTERY CABINET



TOP VIEW



TYPE C
FOR GROUND MOUNTED
CONTROLLER CABINET
AND UPS BATTERY CABINET



NOTES:

1. BASED ON CONTROLLER CABINET TYPE IV WITH BASE DIMENSIONS OF 26" x 44" (660mm x 1118mm). ADJUST PLATFORM SIZE TO FIT CABINET BASE DIMENSIONS BEING SUPPLIED.
2. BASED ON UNINTERRUPTIBLE POWER SUPPLY CABINET WITH BASE DIMENSIONS OF 16" x 25" (406mm x 635mm). ADJUST PLATFORM SIZE TO FIT CABINET BASE DIMENSIONS BEING SUPPLIED.
3. PLATFORM SIZE FOR CONTROLLER CABINET TYPE IV.
4. PLATFORM SIZE FOR CONTROLLER CABINET TYPE IV AND UNINTERRUPTIBLE POWER SUPPLY CABINET.
5. DRILLED HOLES THROUGH THE PLATFORM BASE TO MATCH THE CONTROLLER CABINET BOLT TEMPLATE. FASTEN THE CONTROLLER CABINET TO THE PLATFORM WITH CARRIAGE BOLTS, WASHERS AND NUTS.
6. FASTEN ALL SUPPORT WOOD FRAMING TO THE WOOD POSTS WITH 2 LAG SCREWS FOR EACH CONNECTION.

TEMPORARY SIGNAL CONTROLLER
WOOD SUPPORT PLATFORM

CABLE SLACK LENGTH	FEET	METER
HANDHOLE	6.5	2.0
DOUBLE HANDHOLE	13.0	4.0
SIGNAL POST	2.0	0.6
MAST ARM	2.0	0.6
CONTROLLER CABINET	1.5	0.5
FIBER OPTIC AT CABINET	13.0	4.0
ELECTRIC SERVICE AT (CABINET OR SERVICE LOCATION)	1.5	0.5
GROUND CABLE (SIGNAL POST, MAST ARM, CABINET)	1.5	0.5
GROUND CABLE (BETWEEN FRAME AND COVER)	5.0	1.6

CABLE SLACK

VERTICAL CABLE LENGTH	FEET	METER
MAST ARM POLE (MAST ARM MOUNTED SIGNAL HEAD) (L = MAST ARM LENGTH - DISTANCE TO SIGNAL HEAD FROM END OF ARM)	20.0+L	6.0+L
BRACKET MOUNTED (MAST ARM POLE OR SIGNAL POLE)	13.0	4.0
PEDESTRIAN PUSH BUTTON	6.0	2.0
SERVICE INSTALLATION POLE MOUNT TO SERVICE DROP	13.5	4.1
SERVICE INSTALLATION POLE MOUNT TO GROUND	13.5	4.1
SERVICE INSTALLATION GROUND MOUNT	6.0	2.0
FOUNDATION (SIGNAL POST, MAST ARM POLE, CONTROLLER CABINET, SERVICE-GROUND MOUNT)	3.0	1.0

VERTICAL CABLE LENGTH

FOUNDATION	DEPTH
TYPE A - Signal Post	4'-0" (1.2m)
TYPE C - CONTROLLER W/ UPS	4'-0" (1.2m)
TYPE D - CONTROLLER	4'-0" (1.2m)
SERVICE INSTALLATION, GROUND MOUNT, TYPE A - SQUARE	4'-0" (1.2m)

DEPTH OF FOUNDATION

Mast Arm Length	① Foundation Depth	Foundation Diameter	Spiral Diameter	Quantity of Rebars	Size of Rebars
Less than 30' (9.1 m)	10'-0" (3.0 m)	30" (750mm)	24" (600mm)	8	6(19)
Greater than or equal to 30' (9.1 m) and less than 40' (12.2 m)	13'-6" (4.1 m)	30" (750mm)	24" (600mm)	8	6(19)
	11'-0" (3.4 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 40' (12.2 m) and less than 50' (15.2 m)	13'-0" (4.0 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 50' (15.2 m) and up to 55' (16.8 m)	15'-0" (4.6 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 56' (16.8 m) and less than 65' (19.8 m)	21'-0" (6.4 m)	42" (1060mm)	36" (900mm)	16	8(25)
Greater than or equal to 65' (19.8 m) and up to 75' (22.9 m)	25'-0" (7.6 m)	42" (1060mm)	36" (900mm)	16	8(25)

NOTES:

1. These foundation depths are for sites which have cohesive soils (clayey silt, sandy clay, etc.) along the length of the shaft, with an average Unconfined Compressive Strength (Q_u) > 1.0 tsf (100 kpa). This strength shall be verified by boring data prior to construction or with testing by the Engineer during foundation drilling. The Bureau of Bridges & Structures should be contacted for a revised design if other conditions are encountered.
2. Combination mast arm assemblies under 55 feet (16.8 m) shall use 36" (900 mm) diameter foundations.
3. Combination mast arm assemblies under 56 feet (16.8 m) through 75 feet (22.9 m) shall use 42" (1060 mm) diameter foundations.
4. For mast arm assemblies with dual arms refer to stats standard 878001.

DEPTH OF MAST ARM FOUNDATIONS, TYPE E

FILE NAME = c:\pw_work\PWIDOT\BAUEROL\d0188315\ta85.dgn	USER NAME = bauerdl	DESIGNED - DAG	REVISED -
		DRAWN - BCK	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED - DAD	REVISED -
	PLOT DATE = 11/4/2009	DATE - 10-28-09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: NONE | SHEET NO. 5 OF 6 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	TS-05	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

TRAFFIC SIGNAL LEGEND

ITEM	REMOVAL	EXISTING	PROPOSED
CONTROLLER CABINET	R		
RAILROAD CONTROL CABINET			
COMMUNICATIONS CABINET	R CC	ECC	CC
MASTER CONTROLLER		EMC	MC
MASTER MASTER CONTROLLER		EMMC	MMC
UNINTERRUPTIBLE POWER SUPPLY	R UPS	EUPS	UPS
SERVICE INSTALLATION, (P) POLE OR (G) GROUND MOUNT	R	P	P
TELEPHONE CONNECTION (P) POLE OR (G) GROUND MOUNT	R T	P T	P T
STEEL MAST ARM ASSEMBLY AND POLE	R		
ALUMINUM MAST ARM ASSEMBLY AND POLE	R		
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE	R		
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH PTZ CAMERA	R PTZ	PTZ	PTZ
SIGNAL POST	R		
TEMPORARY WOOD POLE (CLASS 5 OR BETTER) 45 FOOT (13.7m) MINIMUM	R		
GUY WIRE	R		
SIGNAL HEAD	R		
SIGNAL HEAD CONSTRUCTION STAGES (NUMBERS INDICATE THE CONSTRUCTION STAGE)			2
SIGNAL HEAD WITH BACKPLATE	R		
SIGNAL HEAD OPTICALLY PROGRAMMED	R "P"	"P"	"P"
FLASHER INSTALLATION (S DENOTES SOLAR POWER)	R "F"	"F"	"F"
PEDESTRIAN SIGNAL HEAD	R		
PEDESTRIAN PUSHBUTTON DETECTOR	R		
ACCESSIBLE PEDESTRIAN PUSHBUTTON DETECTOR	R APS	APS	APS
ILLUMINATED SIGN "NO LEFT TURN"	R		
ILLUMINATED SIGN "NO RIGHT TURN"	R		
DETECTOR LOOP, TYPE I			
PREFORMED DETECTOR LOOP		P	P
MICROWAVE VEHICLE SENSOR	R M	M	M
VIDEO DETECTION CAMERA	R V	V	V
VIDEO DETECTION ZONE			
PAN, TILT, ZOOM CAMERA	R PTZ	PTZ	PTZ
WIRELESS DETECTOR SENSOR	R W	W	W
WIRELESS ACCESS POINT	R		

ITEM	REMOVAL	EXISTING	PROPOSED
EMERGENCY VEHICLE LIGHT DETECTOR	R		
CONFIRMATION BEACON	R		
HANDHOLE	R		
HEAVY DUTY HANDHOLE	R H	H	H
DOUBLE HANDHOLE	R		
JUNCTION BOX	R		
GALVANIZED STEEL CONDUIT IN TRENCH (T) OR PUSHED (P)			
TEMPORARY SPAN WIRE, TETHER WIRE, AND CABLE	R		
COMMON TRENCH			CT
COILABLE NONMETALLIC CONDUIT (EMPTY)			CNC
SYSTEM ITEM		S	S
INTERSECTION ITEM		I	IP
REMOVE ITEM	R		
RELOCATE ITEM	RL		
ABANDON ITEM	A		
12" (300mm) TRAFFIC SIGNAL SECTION		R	R
12" (300mm) RED WITH 8" (200mm) YELLOW AND GREEN TRAFFIC SIGNAL FACE		R Y G	
SIGNAL FACE		R Y G ←Y ←G	R Y G ←Y ←G
SIGNAL FACE WITH BACKPLATE. "P" INDICATES PROGRAMMED HEAD		R Y G ←Y ←G "P"	R Y G ←Y ←G "P"
12" (300mm) PEDESTRIAN SIGNAL HEAD WALK/DON'T WALK SYMBOL		DW	
12" (300mm) PEDESTRIAN SIGNAL HEAD INTERNATIONAL SYMBOL, OUTLINED			
12" (300mm) PEDESTRIAN SIGNAL HEAD INTERNATIONAL SYMBOL, SOLID			
PEDESTRIAN SIGNAL HEAD, INTERNATIONAL SYMBOL, WITH COUNTDOWN TIMER		C D	C D
RADIO INTERCONNECT	R		
RADIO REPEATER	R ERR	ERR	RR
DENOTES NUMBER OF CONDUCTORS, ELECTRIC CABLE NO. 14, UNLESS NOTED OTHERWISE, ALL DETECTOR LOOP CABLE TO BE SHIELDED		5	5
GROUND CABLE IN CONDUIT NO. 6 SOLID COPPER (GREEN)		1	1

ITEM	REMOVAL	EXISTING	PROPOSED
ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1/C, UNLESS NOTED OTHERWISE		1	1
COAXIAL CABLE		C	C
VENDOR CABLE FOR CAMERA		V	V
COPPER INTERCONNECT CABLE, NO. 18 3 PAIR TWISTED, SHIELDED		6	6
FIBER OPTIC CABLE NO. 62.5/125, MM12F		12F	
FIBER OPTIC CABLE NO. 62.5/125, MM12F SM12F		24F	24F
FIBER OPTIC CABLE NO. 62.5/125, (NUMBER OF FIBERS & TYPE TO BE NOTED ON PLANS)			
GROUND ROD AT (C) CONTROLLER, (H) HANDHOLE, (P) POST, (M) MAST ARM, OR (S) SERVICE		C	C
CONTROLLER CABINET AND FOUNDATION TO BE REMOVED	RCF		
STEEL MAST ARM POLE AND FOUNDATION TO BE REMOVED	RMF		
ALUMINUM MAST ARM POLE AND FOUNDATION TO BE REMOVED	RMF		
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE AND FOUNDATION TO BE REMOVED	RMF		
SIGNAL POST AND FOUNDATION TO BE REMOVED	RMF		
INTERSECTION & SAMPLING (SYSTEM) DETECTOR		IS	IS
SAMPLING (SYSTEM) DETECTOR		S	S
EXISTING INTERSECTION LOOP DETECTOR PROPOSED INTERSECTION AND SAMPLING (SYSTEM) DETECTOR		P	
EXISTING PREFORMED INTERSECTION LOOP DETECTOR PROPOSED INTERSECTION AND SAMPLING (SYSTEM) DETECTOR		PP	
PREFORMED INTERSECTION AND SAMPLING (SYSTEM) DETECTOR		PIS	PIS
PREFORMED SAMPLING (SYSTEM) DETECTOR		PS	PS

RAILROAD SYMBOLS

	EXISTING	PROPOSED
RAILROAD CONTROL CABINET		
RAILROAD CANTILEVER MAST ARM		
FLASHING SIGNAL		
CROSSING GATE		
CROSSBUCK		

FILE NAME = c:\pw_work\PWIDOT\BAUERDL\d0188315\ts05.dgn	USER NAME = bauerdl	DESIGNED - DAG/BCK	REVISED -
		DRAWN - BCK	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED - DAG	REVISED -
	PLOT DATE = 11/4/2009	DATE - 10-28-09	REVISED -

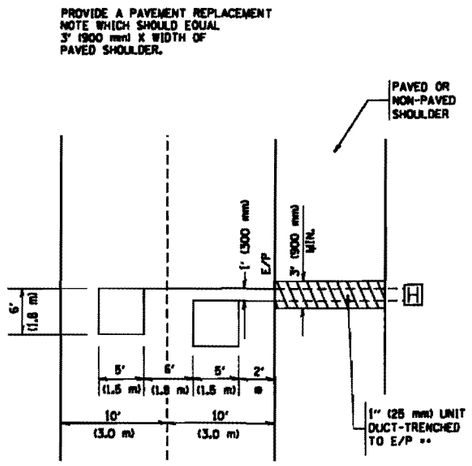
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	TS-05	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

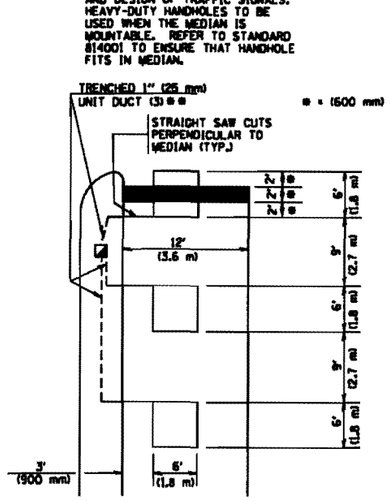
LOOPS NEXT TO SHOULDERS



* = (600 mm)

** UNIT DUCT IS TO BE SHOWN ON PLAN SHEETS BUT SHALL NOT BE INCLUDED IN THE PAY ITEMS.

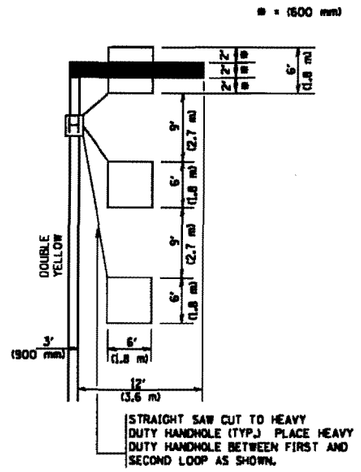
LEFT TURN LANES WITH MEDIANS
VOLUME DENSITY ("FAR OUT" DETECTION) ON SAME APPROACH
(PROTECTED / PERMITTED LEFT TURN PHASING)



** UNIT DUCT IS TO BE SHOWN ON PLAN SHEETS BUT SHALL NOT BE INCLUDED IN THE PAY ITEMS.

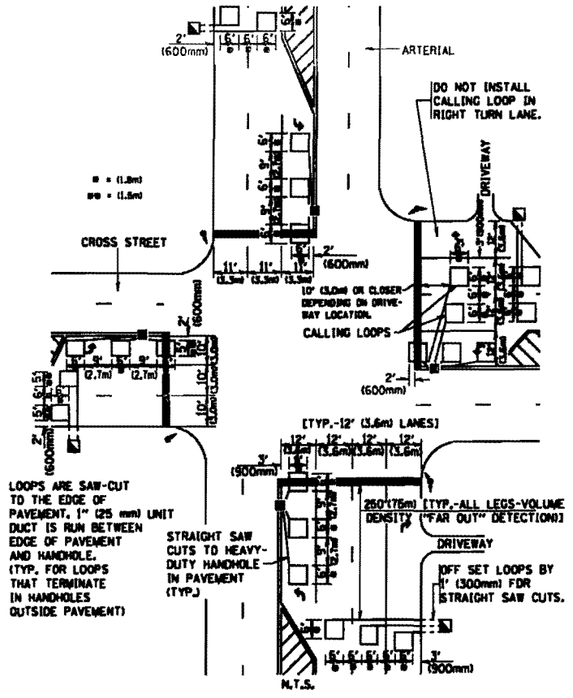
NOTE: DUAL LEFT TURNS NOT SHOWN REFER TO PLAN SHEET FOR DETECTOR LOOP REPLACEMENT

LEFT TURN LANES WITHOUT MEDIANS
VOLUME DENSITY ("FAR OUT" DETECTION) ON SAME APPROACH
(PROTECTED / PERMITTED LEFT TURN PHASING)



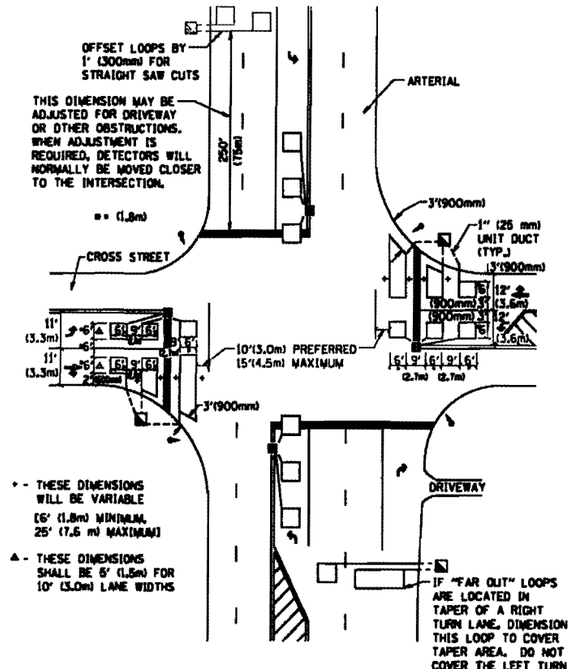
NOTE: DUAL LEFT TURNS NOT SHOWN REFER TO PLAN SHEET FOR DETECTOR LOOP REPLACEMENT

ARTERIAL-VOLUME DENSITY ("FAR OUT" DETECTION)
CROSS STREET-VOLUME DENSITY ("FAR OUT" DETECTION)



DETAIL 1
N.T.S.

ARTERIAL-VOLUME DENSITY ("FAR OUT" DETECTION)
CROSS STREET-NON VOLUME DENSITY ("UPTIGHT" PRESENCE DETECTION)



DETAIL 2
N.T.S.

NOTES:

VEHICLES LOOP DETECTORS

- ALL LEAD IN CABLE SHALL BE TWO CONDUCTOR NO. 14 TWISTED, SHIELDED.
- EACH DETECTOR LOOP SHALL HAVE ITS OWN SAW CUT FROM THE LOOP TO THE EDGE OF PAVEMENT OR TO A HANDHOLE IN THE PAVEMENT.
- EACH DETECTOR LOOP SHALL HAVE ITS OWN ONE INCH (25 mm) UNIT DUCT BETWEEN THE EDGE OF PAVEMENT AND THE FIRST HANDHOLE OR JUNCTION BOX. EACH UNIT DUCT RUN SHALL BE SHOWN ON THE PLANS BY THE DESIGNER, BUT SHALL NOT BE PAID FOR SEPARATLY. THIS ITEM IS INCIDENTAL TO THE PAY ITEM FOR DETECTOR LOOPS.
- ONE DIMENSION OF ALL DETECTOR LOOPS SHALL BE SIX FEET (1.8 m)
- EACH LANE OF NON-LOCKING, PRESENCE DETECTION AND EACH LANE OF A DOUBLE LEFT TURN LANE REQUIRES A SEPARATE INDUCTIVE LOOP DETECTOR AND LEAD IN CABLE.
- WHEN NON-LOCKING, PRESENCE DETECTION IS USED, MORE THAN ONE LOOP PER LANE IS REQUIRED BEHIND THE STOP BAR (i.e. 1-1/2, 1-3/4, 2).
- WHEN SYSTEM LOOPS ARE REQUIRED ON AN APPROACH OF AN INTERSECTION, THE LOOPS USED FOR VOLUME DENSITY AND INTERSECTION TIMING SHALL ALSO BE USED AS SYSTEM DETECTORS. EACH ONE OF THESE TYPE OF LOOPS REQUIRES A SEPARATE TWO CONDUCTOR NO. 14 TWISTED SHIELDED CABLE AND A SEPARATE INDUCTIVE LOOP DETECTOR WHEN NEW CONTROLLERS ARE UTILIZED. THE DESIGNER SHALL LABEL THESE TYPES OF LOOPS AS "INTERSECTION AND SAMPLING (SYSTEM) DETECTORS" ON THE SIGNAL LAYOUT, THE INTERCONNECT PLAN AND THE SYSTEM CABLE PLAN. WHEN AN EXISTING CONTROLLER IS UTILIZED FOR THIS TYPE OF DETECTION, THE PAY ITEM "INDUCTIVE LOOP DETECTOR WITH SYSTEM OUTPUT" SHOULD BE USED.

PLACEMENT OF DETECTORS

THE FOLLOWING FIGURES REPRESENT THE MOST COMMON DETECTOR LOOP LOCATIONS AND SIZES. ADJUSTMENTS WILL BE NECESSARY FOR SPECIFIC GEOMETRIC CONSIDERATIONS.

LOCATIONS AND DEMENSIONS OF DETECTOR LOOPS ARE REQUIRED ON ALL SIGNAL LAYOUT PLAN SHEETS.

"FAR OUT" DETECTION REFERS TO LOCKING, PRESENCE TYPE DETECTION LOCATED IN THRU LANES, RIGHT TURN LANES, AND RIGHT TURN LANE TAPER AREAS (IF APPLICABLE), USUALLY 250' (75 m) IN ADVANCE OF STOP BARS. "UPTIGHT" DETECTION REFERS TO NON-LOCKING PRESENCE TYPE DETECTION LOCATED IN ALL LANES AND 10'-15' (3.0 m-4.5 m) BEHIND THE CROSSING STREET'S EDGE OF PAVEMENT EXTENDED.

NOTE:

ALL DETAILS AND NOTES SHOWN ARE FROM THE I.D.O.T. DISTRICT 1 TRAFFIC SIGNAL DESIGN GUIDELINES DATED JANUARY 1995

THIS DRAWING HAS BEEN PREPARED TO ASSIST THE RESIDENT ENGINEER FOR ALL ROADWAY RESURFACING OR S.M.A.R.T. PROJECTS WHERE THE DIMENSIONS ARE NOT SHOWN ON THE PLANS AND THE FINAL LOCATIONS FOR CROSSWALKS OR STOP BARS ARE NOT DETERMINED.

FILE NAME = W:\district1\22s34\ts07.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED - R.K.F.	REVISED -
	PLOT DATE = 1/4/2000	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT 1 - DETECTOR LOOP INSTALLATION
DETAILS FOR ROADWAY RESURFACING

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	TS-07	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		