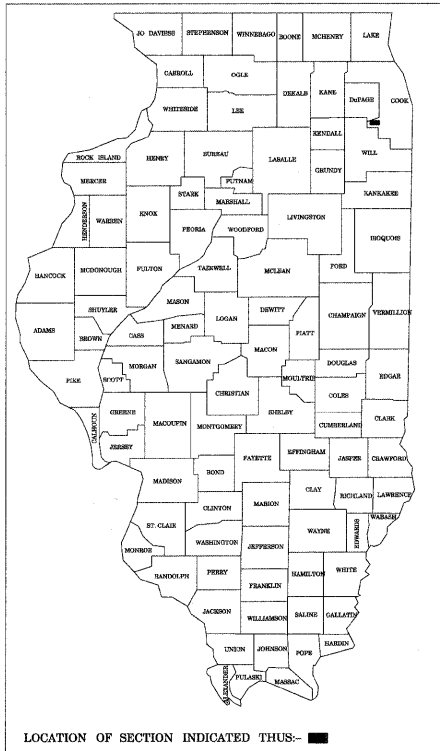


FAU RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1591	09-00046-00-TL	COOK	17	1
F.H.W.A. REG.	ILLINOIS PROJECT	ARA-9003(377)	CONTRACT NO. 63273	

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PLANS FOR PROPOSED FEDERAL AID HIGHWAY

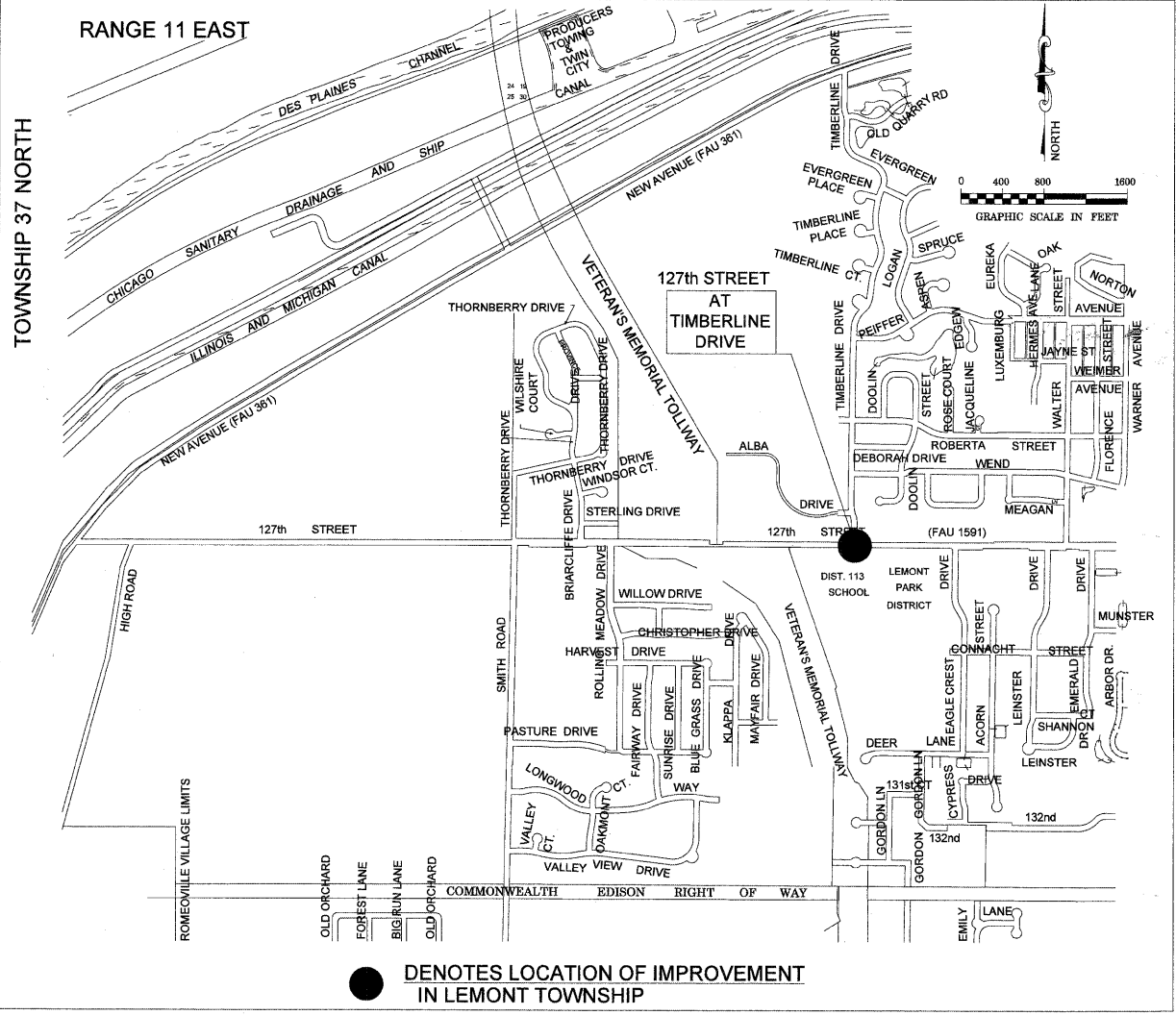
127th STREET (FAU ROUTE 1591)
127th STREET AT TIMBERLINE DRIVE
TRAFFIC SIGNAL IMPROVEMENTS
FEDERAL PROJECT ARA-9003(377)
SECTION NO. 09-00046-00-TL
VILLAGE OF LEMONT
COOK COUNTY
JOB NO. C-91-718-09

- INDEX TO SHEETS**
- 1.) COVER SHEET, INDEX OF SHEETS, LOCATION MAP, INDEX OF STATE STANDARDS
 - 2.) SUMMARY OF QUANTITIES
 - 3.) TRAFFIC SIGNAL INSTALLATION PLAN
 - 4.) TRAFFIC SIGNAL CABLE PLAN, PHASE DESIGNATION DIAGRAM, EMERGENCY VEHICLE PREEMPTION SEQUENCE & SCHEDULE OF QUANTITIES
 - 5.) INTERCONNECT PLANS
 - 6.) INTERCONNECT SCHEMATIC
 - 7.) PAVEMENT MARKING AND SOLAR POWERED SCHOOL FLASHERS INSTALLATION PLAN
 - 8.) MAST ARM MOUNTED STREET NAME SIGNS
 - 9.-12.) STANDARD TRAFFIC SIGNAL DESIGN DETAILS
 - 13.) DISTRICT ONE TYPICAL PAVEMENT MARKINGS
 - 14.) PAVEMENT MARKING LETTERS AND SYMBOLS FOR TRAFFIC STAGING
 - 15.) TRAFFIC CONTROL AND PROTECTION FOR SIDEROADS, INTERSECTIONS, AND DRIVEWAYS
 - 16.) SIGNING FOR FLAGGING OPERATION AT WORK ZONE OPENINGS
 - 17.) SOLAR POWERED SCHOOL FLASHERS DETAIL



STATE STANDARDS

000001-05	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
424001-05	CURB RAMPS FOR SIDEWALK
701301-03	LANE CLOSURE, 2 L, 2 W, SHORT TIME OPERATIONS
701501-05	URBAN LANE CLOSURE, 2 L, 2 W UNDIVIDED
701502-03	URBAN LANE CLOSURE, 2 L, 2 W & BIDIRECTIONAL LEFT TURN LANE
701801-04	LANE CLOSURE MULTILANE 1W OR 2W CROSSWALK OR SIDEWALK CLOSURE
701901-01	TRAFFIC CONTROL DEVICES
720001-01	SIGN PANEL MOUNT DETAILS
780001-02	TYPICAL PAVEMENT MARKINGS
814001-02	HANDHOLES
814006-02	DOUBLE HANDHOLES
857001-01	STANDARD PHASE DESIGNATION DIAGRAMS & PHASE SEQUENCE
862001-01	UPS
877001-04	STEEL MAST ARM ASSEMBLY & POLE 16'-55'
878001-07	CONCRETE FOUNDATION DETAILS
880006-01	TRAFFIC SIGNAL MOUNT DETAILS - POST & BRACKET MOUNT
886001-01	DETECTOR LOOP INSTALLATIONS
886006-01	TYPICAL LAYOUTS FOR DETECTION LOOPS



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

APPROVED 8-21 20 09

VILLAGE PRESIDENT [Signature]

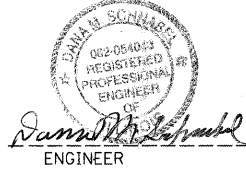
PASSED August 31, 2009
[Signature]
DISTRICT #1 ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID
BASED ON LIMITED
REVIEW SEPTEMBER 1, 2009
[Signature]
DEPUTY DIRECTOR OF HIGHWAYS, REGION #1 ENGINEER

PROJECT LOCATED IN THE VILLAGE OF LEMONT

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

TRAFFIC DATA:
ADT (2009): 8,500
ADT (2030): 12,000
POSTED SPEED LIMIT = 35 MPH
DESIGN SPEED LIMIT = 40 MPH



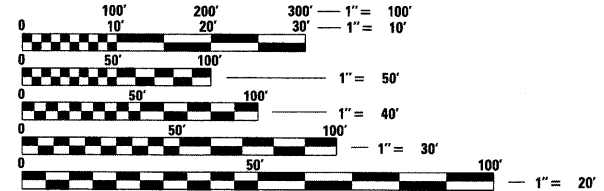
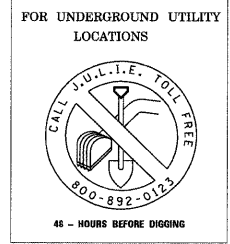
DANA M. SCHNABEL
ILLINOIS REGISTRATION No. 062-054043
EXPIRATION DATE: 11-30-2009
PROFESSIONAL DESIGN FIRM No.: 184-001747



FIELD ENGINEER: MELCHOR MANGOBA (847)705-4408
CONSULTANT: KENIG, LINDGREN, O'HARA, ABOONA, INC. (847) 518-9990

CONTRACT NO. 63273

REVISIONS			
NO.	BY	DATE	DESCRIPTION



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.

LOCATION MAP

LENGTH OF PROJECT

GROSS LENGTH OF PROJECT	0 FEET (0 MILES)
NET LENGTH OF PROJECT	0 FEET (0 MILES)

SUMMARY OF QUANTITIES

			127th St @ Timberline Dr	Interconnect	Flasher & Pavement Marking	TOTAL
Construction Code			YO31-1F	YO31-1F	YO31-1F	
CODE NO.	PAY ITEM	UNIT				
42400200	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	SQ FT			17	17
42400800	DETECTABLE WARNINGS	SQ FT	5			5
* 44001700	COMBINATION CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT	FOOT			10	10
67100100	MOBILIZATION	L SUM	1			1
* 70101700	TRAFFIC CONTROL AND PROTECTION	L SUM	1			1
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	2			2
72000100	SIGN PANEL - TYPE 1	SQ FT	30		18	48
72400310	REMOVE SIGN PANEL - TYPE 1	SQ FT	30		18	48
73700100	REMOVE GROUND-MOUNTED SIGN SUPPORT	EACH	1		2	3
△ 78000100	THERMOPLASTIC PAVEMENT MARKING-LETTERS AND SYMBOLS	SQ FT			36.4	36.4
△ 78000200	THERMOPLASTIC PAVEMENT MARKING-LINE 4"	FOOT			260	260
△ 78000400	THERMOPLASTIC PAVEMENT MARKING-LINE 6"	FOOT			130	130
△ 78000600	THERMOPLASTIC PAVEMENT MARKING-LINE 12"	FOOT			234	234
△ 78000650	THERMOPLASTIC PAVEMENT MARKING-LINE 24"	FOOT			91	91
81000600	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL	FOOT	515	500		1015
81000700	CONDUIT IN TRENCH, 2 1/2" DIA., GALVANIZED STEEL	FOOT	121			121
81001000	CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL	FOOT	10			10
81018500	CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL	FOOT	68	24		92
81018900	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL	FOOT	242			242
81400100	HANDHOLE	EACH	5			5
81400200	HEAVY-DUTY HANDHOLE	EACH	2			2
81400300	DOUBLE HANDHOLE	EACH	1			1
81900200	TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	641	500		1141
* 85000200	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH		1		1
* 85700305	FULL-ACTUATED CONTROLLER AND TYPE V CABINET, SPECIAL	EACH	1			1
86400100	TRANSCEIVER - FIBER OPTIC	EACH	1			1
87301215	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C	FOOT	508			508
87301225	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	FOOT	703			703
87301245	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	1844			1844
87301255	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT	643			643
87301305	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	1425			1425
87301805	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C	FOOT	40			40
87502440	TRAFFIC SIGNAL POST, GALVANIZED STEEL 10 FT.	EACH	1			1

			127th St @ Timberline Dr	Interconnect	Flasher & Pavement Marking	TOTAL
Construction Code			YO31-1F	YO31-1F	YO31-1F	
CODE NO.	PAY ITEM	UNIT				
87502480	TRAFFIC SIGNAL POST, GALVANIZED STEEL 14 FT.	EACH	2			2
87502500	TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.	EACH	2		2	4
87700150	STEEL MAST ARM ASSEMBLY AND POLE, 22 FT.	EACH	1			1
87700170	STEEL MAST ARM ASSEMBLY AND POLE, 26 FT.	EACH	1			1
87700220	STEEL MAST ARM ASSEMBLY AND POLE, 36 FT.	EACH	1			1
87700240	STEEL MAST ARM ASSEMBLY AND POLE, 40 FT.	EACH	1			1
87800100	CONCRETE FOUNDATION, TYPE A	FOOT	20		8	28
87800150	CONCRETE FOUNDATION, TYPE C	FOOT	4			4
87800400	CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER	FOOT	45			45
* 87800415	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	FOOT	15			15
87900200	DRILL EXISTING HANDHOLE	EACH		1		1
88030012	SIGNAL HEAD, LED, 1-FACE, 1-SECTION, BRACKET MOUNTED	EACH			4	4
88030020	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	6			6
88030110	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED	EACH	2			2
88030210	SIGNAL HEAD, LED, 2-FACE, 3-SECTION, BRACKET MOUNTED	EACH	2			2
88030240	SIGNAL HEAD, LED, 2-FACE, 1-3 SECTION, 1-5 SECTION, BRACKET MOUNTED	EACH	2			2
* 88102717	PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER	EACH	2			2
* 88102747	PEDESTRIAN SIGNAL HEAD, LED, 2-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER	EACH	2			2
88200210	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM	EACH	8			8
88500100	INDUCTIVE LOOP DETECTOR	EACH	8			8
88600100	DETECTOR LOOP, TYPE I	FOOT	853			853
88700200	LIGHT DETECTOR	EACH	2			2
88700300	LIGHT DETECTOR AMPLIFIER	EACH	1			1
88800100	PEDESTRIAN PUSH-BUTTON	EACH	4			4
89502200	MODIFY EXISTING CONTROLLER	EACH		1		1
* X0322925	ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1C	FOOT		914		914
* X0325705	RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM - LEVEL 2	EACH		1		1
* X0325936	SOLAR-POWERED FLASHER/POST MOUNTED (YELLOW LED DISPLAY)	EACH			2	2
* X8050015	SERVICE INSTALLATION - POLE MOUNTED	EACH	1			1
* X8620020	UNINTERRUPTABLE POWER SUPPLY	EACH	1			1
* X8710020	FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125 MM12F SM12F	FOOT		914		914
* X8730027	ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C	FOOT	438			438
* X8730250	ELECTRIC CABLE IN CONDUIT, NO. 20 3/C, TWISTED, SHIELDED	FOOT	263			263

△ - SPECIALTY ITEMS
* - DENOTES SPECIAL PROVISION



PROJECT: **OLD QUARRY SCHOOL LEMONT, ILLINOIS**

DESIGNED - GJG	REV DATE	CHECKED	REVISION
DRAWN - GJG	9/8/2009	DMS	REV PER COOK COUNTY 8/24/2009 COMMENTS
CHECKED - DMS			
DATE - 8/13/2009			

SUMMARY OF QUANTITIES
127TH STREET AT TIMBERLINE DRIVE

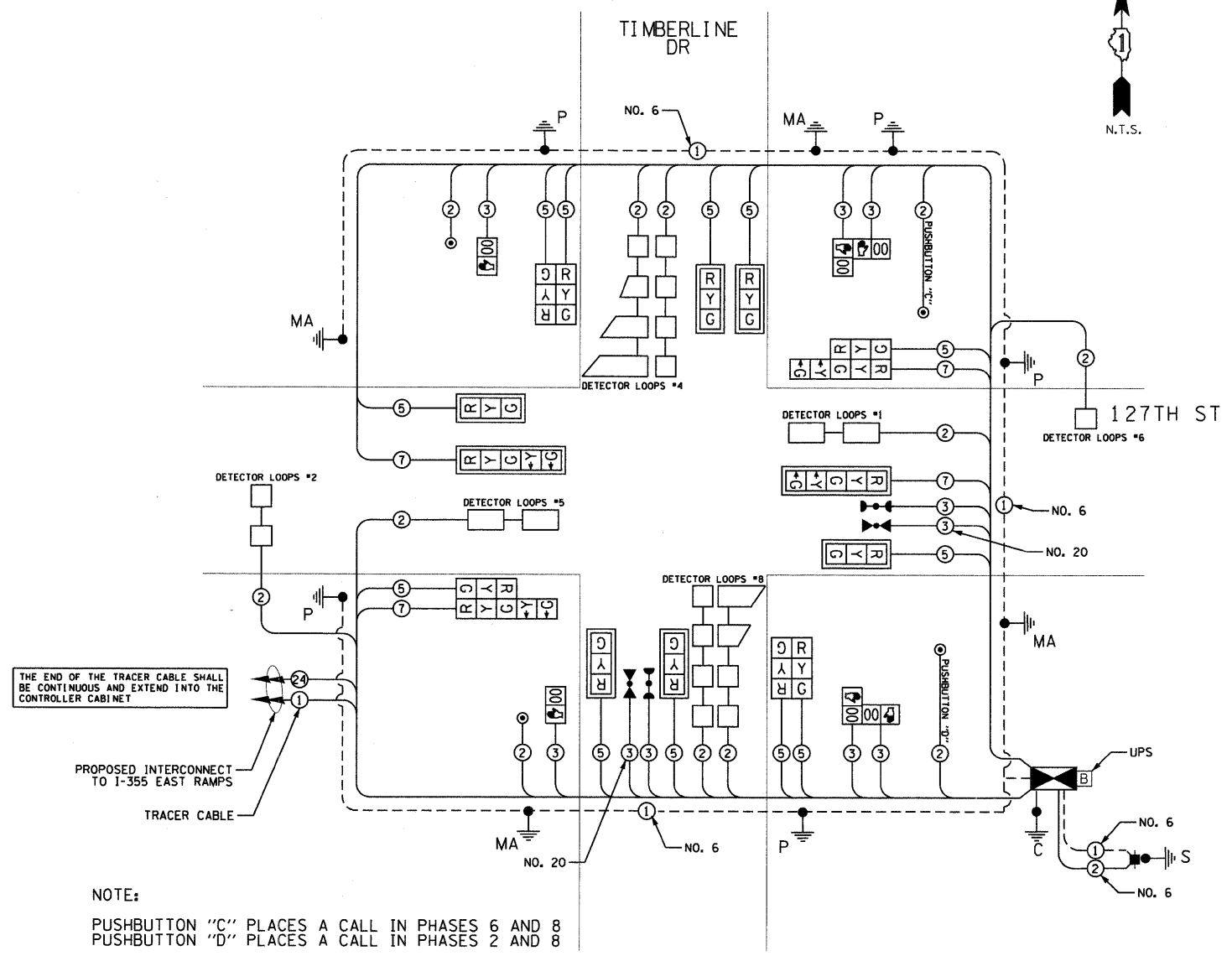
SCALE: NONE FILE NAME: \\signal\02-quer.dgn

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1591	09-00046-00-TL	COOK	17	2
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 63273 ARA-90031377	

CABLE PLAN LEGEND

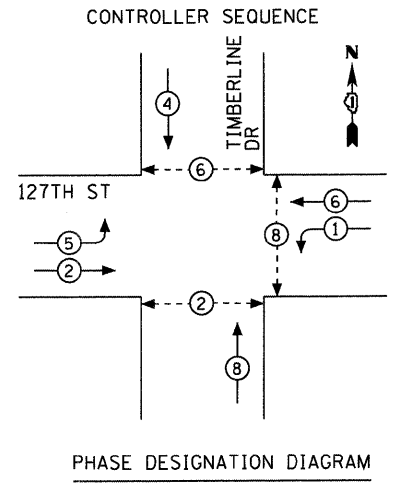
- EXISTING PROPOSED
- 8" (200mm) TRAFFIC SIGNAL SECTION
 - 12" (300mm) TRAFFIC SIGNAL SECTION
 - 12" (300mm) PEDESTRIAN SIGNAL SECTION
 - 12" (300mm) PEDESTRIAN SIGNAL SECTION WITH COUNTDOWN TIMER 16" (406mm) x 18" (457mm)
 - CONTROLLER CABINET
 - UNINTERRUPTIBLE POWER SUPPLY (UPS)
 - SERVICE INSTALLATION
 - TELEPHONE CONNECTION
 - VEHICLE DETECTOR, INDUCTION LOOP
 - MAGNETIC DETECTOR
 - EMERGENCY VEHICLE LIGHT DETECTOR
 - CONFIRMATION BEACON
 - PUSHBUTTON DETECTOR
 - DENOTES NUMBER OF CONDUCTORS. ALL CABLE NO. 14 EXCEPT AS INDICATED. ALL LOOP DETECTOR CABLE TO BE SHIELDED.
 - GROUND CABLE IN CONDUIT NO. 6 SOLID COPPER (GREEN)
 - FIBER OPTIC CABLE IN CONDUIT NO. 62.5/125 MM12F SMI2F
 - SIGNAL FACE WITH BACKPLATE. "P" INDICATES PROGRAMMED HEAD.
 - RAILROAD CONTROL CABINET
 - ILLUMINATED SIGN "NO LEFT TURN"
 - ILLUMINATED SIGN "NO RIGHT TURN"
 - GROUND ROD AT HANDHOLE (H), DOUBLE HANDHOLE (H), OR CONTROLLER (C)
 - GROUND ROD AT POST (P) OR MAST ARM POLE (MA)
 - GROUND ROD AT ELECTRIC SERVICE INSTALLATION
 - VIDEO VEHICLE SENSOR

PROPOSED CABLE PLAN



THE END OF THE TRACER CABLE SHALL BE CONTINUOUS AND EXTEND INTO THE CONTROLLER CABINET

NOTE: PUSHBUTTON "C" PLACES A CALL IN PHASES 6 AND 8
PUSHBUTTON "D" PLACES A CALL IN PHASES 2 AND 8

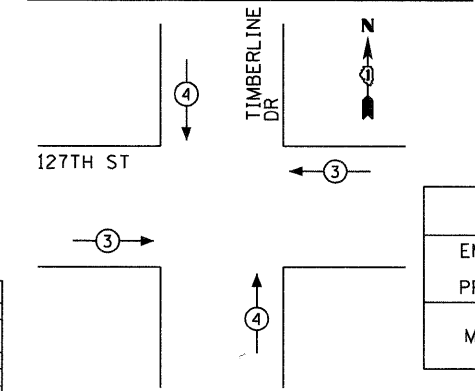


- LEGEND**
- DUAL ENTRY PHASE
 - SINGLE ENTRY PHASE
 - OVERLAP
 - PEDESTRIAN PHASE
 - NUMBER REFERS TO ASSOCIATED PHASE

SCHEDULE OF QUANTITIES

QTY	UNIT	ITEM DESCRIPTION
5	SQ FT	DETECTABLE WARNINGS
1	L SUM	MOBILIZATION
1	L SUM	TRAFFIC CONTROL AND PROTECTION
30	SQ FT	SIGN PANEL - TYPE 1
1	EACH	SERVICE INSTALLATION - POLE MOUNTED
515	FOOT	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL
121	FOOT	CONDUIT IN TRENCH, 2 1/2" DIA., GALVANIZED STEEL
10	FOOT	CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL
88	FOOT	CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL
242	FOOT	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL
5	EACH	HANDHOLE
2	EACH	HEAVY-DUTY HANDHOLE
1	EACH	DOUBLE HANDHOLE
641	FOOT	TRENCH AND BACKFILL FOR ELECTRICAL WORK
1	EACH	FULL-ACTUATED CONTROLLER AND TYPE V CABINET, SPECIAL
1	EACH	UNINTERRUPTIBLE POWER SUPPLY
1	EACH	TRANSCIVER - FIBER OPTIC
438	FOOT	ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C
508	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C
703	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
1844	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C
643	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C
1425	FOOT	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR
263	FOOT	ELECTRIC CABLE IN CONDUIT, NO. 20 3/C, TWISTED, SHIELDED
40	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C
1	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL 10 FT.
2	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL 14 FT.
2	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.
1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 22 FT.
1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 26 FT.
1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 36 FT.
1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 40 FT.
20	FOOT	CONCRETE FOUNDATION, TYPE A
4	FOOT	CONCRETE FOUNDATION, TYPE C
45	FOOT	CONCRETE FOUNDATION, TYPE E
15	FOOT	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER
6	EACH	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED
2	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED
2	EACH	SIGNAL HEAD, LED, 2-FACE, 3-SECTION, BRACKET MOUNTED
2	EACH	SIGNAL HEAD, LED, 2-FACE, 1-3 SECTION, 1-5 SECTION, BRACKET MOUNTED
2	EACH	PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
2	EACH	PEDESTRIAN SIGNAL HEAD, LED, 2-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
8	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM
8	EACH	INDUCTIVE LOOP DETECTOR
853	FOOT	DETECTOR LOOP, TYPE I
2	EACH	LIGHT DETECTOR
1	EACH	LIGHT DETECTOR AMPLIFIER
4	EACH	PEDESTRIAN PUSH-BUTTON
30	SQ FT	REMOVE SIGN PANEL - TYPE 1
1	EACH	REMOVE GROUND-MOUNTED SIGN SUPPORT
2	CAL MO	CHANGEABLE MESSAGE SIGN

EMERGENCY VEHICLE PREEMPTION SEQUENCE



PROPOSED EMERGENCY VEHICLE PREEMPTORS

EMERGENCY VEHICLE PREEMPTOR	3	4
MOVEMENT	←	↑

NOTE: THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

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

TYPE	NO. LAMPS	WATTAGE (INCAND.)	LED	%OPERATION	TOTAL WATTAGE
SIGNAL (RED)	16	17	0.50		136.0
(YELLOW)	16	25	0.25		100.0
(GREEN)	16	15	0.25		60.0
ARROW	8	12	0.10		9.6
PED. SIGNAL	6	25	1.00		150.0
CONTROLLER	1	100	1.00		100.0
ILLUM. SIGN				0.05	
FLASHER				0.50	
TOTAL =					555.6

FOUNDATION (DEPTH)	FT. (m)	CABLE SLACK	FT. (m)	VERTICAL	FT. (m)
TYPE A - POST	4 (1.2)	HANDHOLE	6.5 (2.0)	ALL FOUNDATIONS	3.5 (1.0)
D - CONTROLLER	4 (1.2)	DOUBLE HANDHOLE	13 (4.0)	MAST ARM (L) POLE	20'+L-2=
E - M. ARM POLE		SIGNAL POST	2 (1.0)		(6m+L-0.6m)=
24" (600mm)	10 (3.0)	CONTROLLER CAB.	1 (0.5)	BRACKET MOUNTED	13 (4.0)
30" (750mm)	15 (4.6)	FIBER OPTIC	13 (4.0)	PED. PUSHBUTTON	4 (1.2)
36" (900mm)	15 (4.6)	ELECTRIC SERVICE	1 (0.5)	ELECTRIC SERVICE	13.5 (4.1)
42" (1060mm)	21 (6.4)	GROUND CABLE	1 (0.5)	SERVICE TO GROUND	13.5 (4.1)
				POST MOUNTED	6 (1.8)

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.

9575 West Higgins Road, Suite 400
Rosemont, Illinois 60018
P: (847) 518-9990 F: (847) 518-9987

PROJECT # 09-030

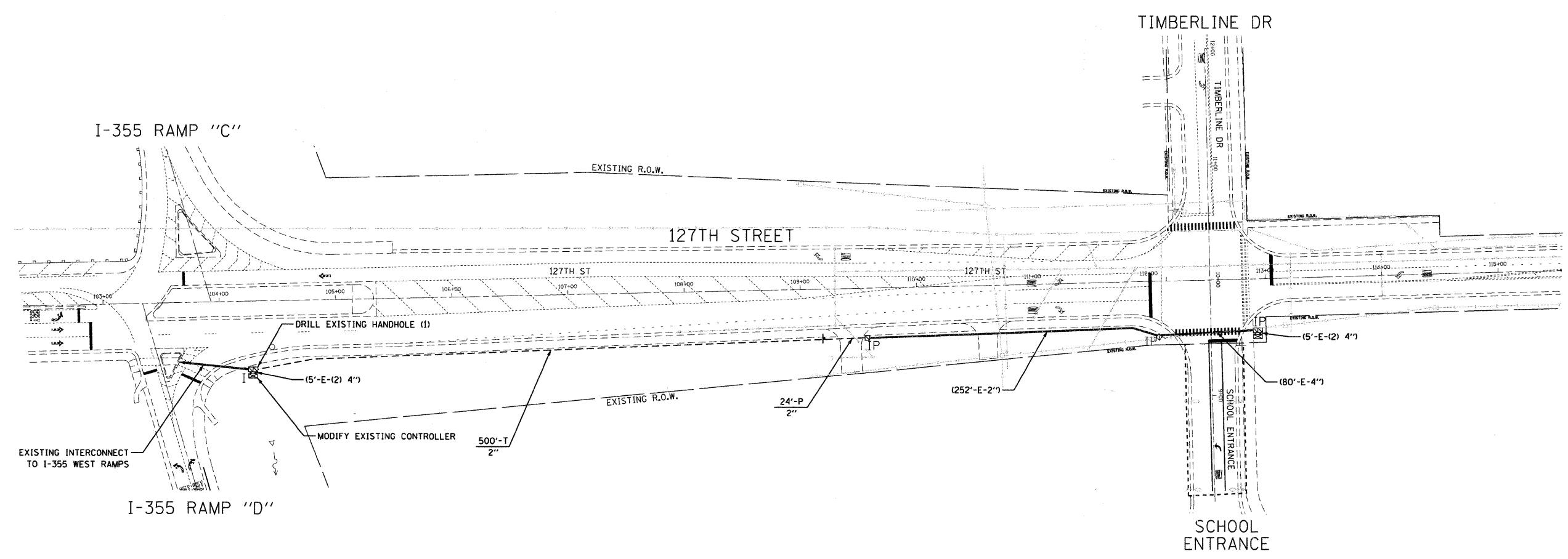
PROJECT: **OLD QUARRY SCHOOL LEMONT, ILLINOIS**

DESIGNED - GJG	REV DATE 9/8/2009	CHECKED DMS	REVISION REV PER COOK COUNTY 8/24/09 COMMENTS
DRAWN - GJG			
CHECKED - DMS			
DATE - 8/13/2009			

CABLE PLAN, PHASE DESIGNATION DIAGRAM, EVP SEQUENCE & SCHEDULE OF QUANTITIES
127TH STREET AT TIMBERLINE DRIVE

SCALE: NONE FILE NAME: ...signal\04-cable.dgn

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1591	09-00046-00-TL	COOK	17	4
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT ARA-9003377)			CONTRACT NO. 63273	



INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER		
HANDHOLE		
DOUBLE HANDHOLE		
HEAVY DUTY HANDHOLE		
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)		
DETECTOR LOOP		
UNIT DUCT	UD	
SYSTEM	S	
INTERSECTION	IP	I
COMMON TRENCH	CT	

NOTE:
THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

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, MEDIANS, 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.

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.
9575 West Higgins Road, Suite 400
Rosemont, Illinois 60018
P: (847) 518-9990 F: (847) 518-9997
PROJECT # 09-030

PROJECT: **OLD QUARRY SCHOOL
LEMONT, ILLINOIS**

DESIGNED - GJG	REV DATE	CHECKED	REVISION
DRAWN - GJG			
CHECKED - DMS			
DATE - 8/13/2009			

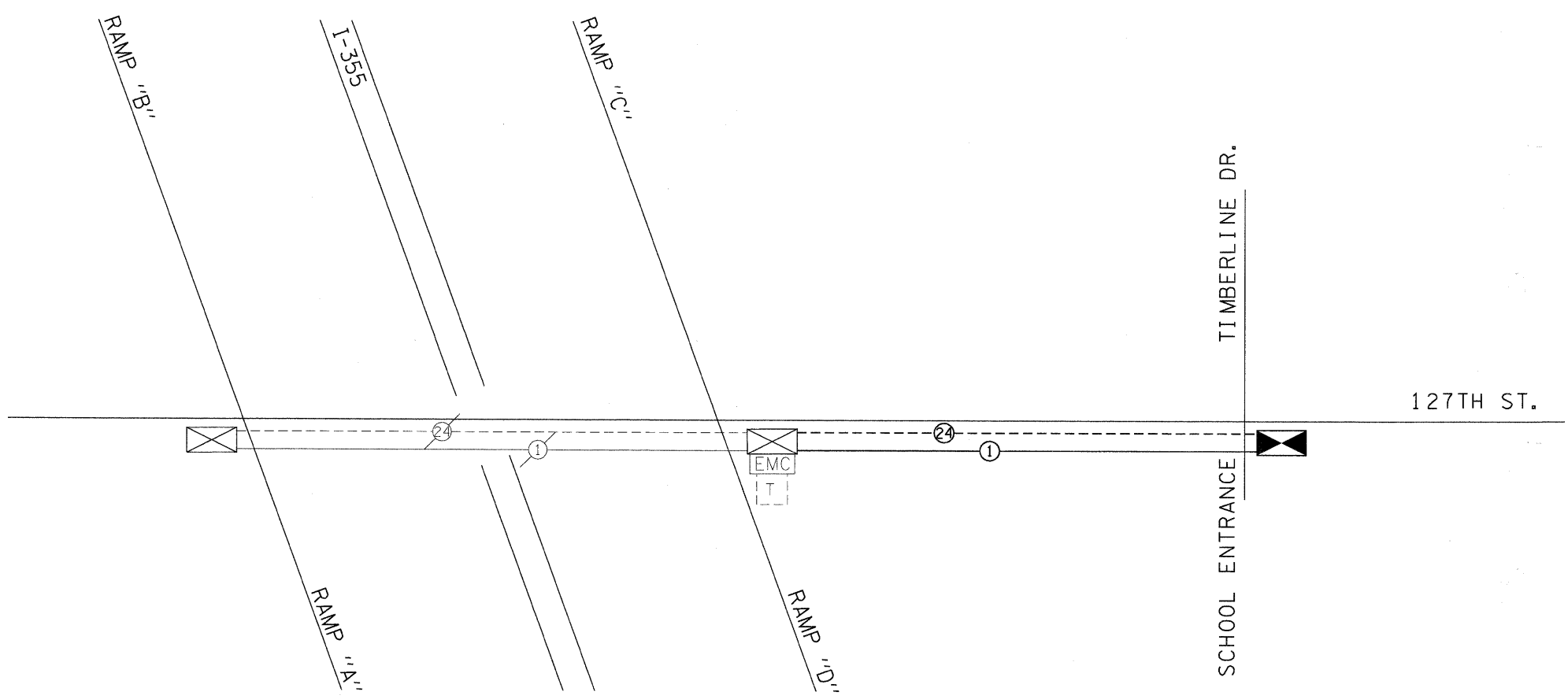
**INTERCONNECT PLANS
127TH STREET AT TIMBERLINE DRIVE**
SCALE: 1" = 50'
FILE NAME: ...signal\05-int.dgn

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1591	09-00046-00-TL	COOK	17	5
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT ARA-90031377	
			CONTRACT NO. 63273	



INTERCONNECT SCHEMATIC LEGEND

EXISTING INTERSECTION CONTROLLER	
PROPOSED INTERSECTION CONTROLLER	
EXISTING MASTER CONTROLLER	
PROPOSED MASTER CONTROLLER	
MASTER MASTER CONTROLLER	
EXISTING INTERSECTION & SAMPLING (SYSTEM) DETECTORS	
PROPOSED INTERSECTION & SAMPLING (SYSTEM) DETECTORS	
EXISTING INTERSECTION LOOP DETECTORS PROPOSED SAMPLING (SYSTEM) DETECTORS	
EXISTING SAMPLING (SYSTEM) DETECTORS	
PROPOSED SAMPLING (SYSTEM) DETECTORS	
EXISTING SAMPLING (SYSTEM) DETECTORS, PROPOSED INTERSECTION AND SAMPLING (SYSTEM) DETECTORS.	
EXISTING SAMPLING (SYSTEM) DETECTORS, PROPOSED SAMPLING (SYSTEM) DETECTORS.	
EXISTING PREFORMED INTERSECTION & SAMPLING (SYSTEM) DETECTORS PROPOSED PREFORMED INTERSECTION & SAMPLING (SYSTEM) DETECTORS	
EXISTING SAMPLING (SYSTEM) PREFORMED DETECTORS	
PROPOSED SAMPLING (SYSTEM) PREFORMED DETECTORS	
EXISTING FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM12F	
PROPOSED FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM12F	
EXISTING INTERCONNECT CABLE - NO. 62.5/125 12F FIBER OPTIC CABLE	
PROPOSED INTERCONNECT CABLE - NO. 62.5/125 12F FIBER OPTIC CABLE	
EXISTING INTERCONNECT CABLE - NO. 18 3 PAIR TWISTED, SHIELDED	
PROPOSED INTERCONNECT CABLE - NO. 18 3 PAIR TWISTED, SHIELDED	
EXISTING LOOP DETECTOR CABLE 2/C TWISTED, SHIELDED	
PROPOSED LOOP DETECTOR CABLE 2/C TWISTED, SHIELDED	
EXISTING ELECTRIC CABLE, 1/C (AS SPECIFIED)	
PROPOSED ELECTRIC CABLE, 1/C (AS SPECIFIED)	
EXISTING TELEPHONE CONNECTION	
PROPOSED TELEPHONE CONNECTION	



SCHEDULE OF QUANTITIES

QTY	UNIT	ITEM DESCRIPTION
500	FOOT	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL
24	FOOT	CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL
500	FOOT	TRENCH AND BACKFILL FOR ELECTRICAL WORK
1	EACH	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION
914	FOOT	ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1C
914	FOOT	FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125 MM12F SM12F
1	EACH	DRILL EXISTING HANDHOLE
1	EACH	MODIFY EXISTING CONTROLLER
1	EACH	RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM - LEVEL 2

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.
9575 West Higgins Road, Suite 400
Rosemont, Illinois 60018
P: (847) 518-9990 F: (847) 518-9987
PROJECT # 09-030

PROJECT: **OLD QUARRY SCHOOL LEMONT, ILLINOIS**

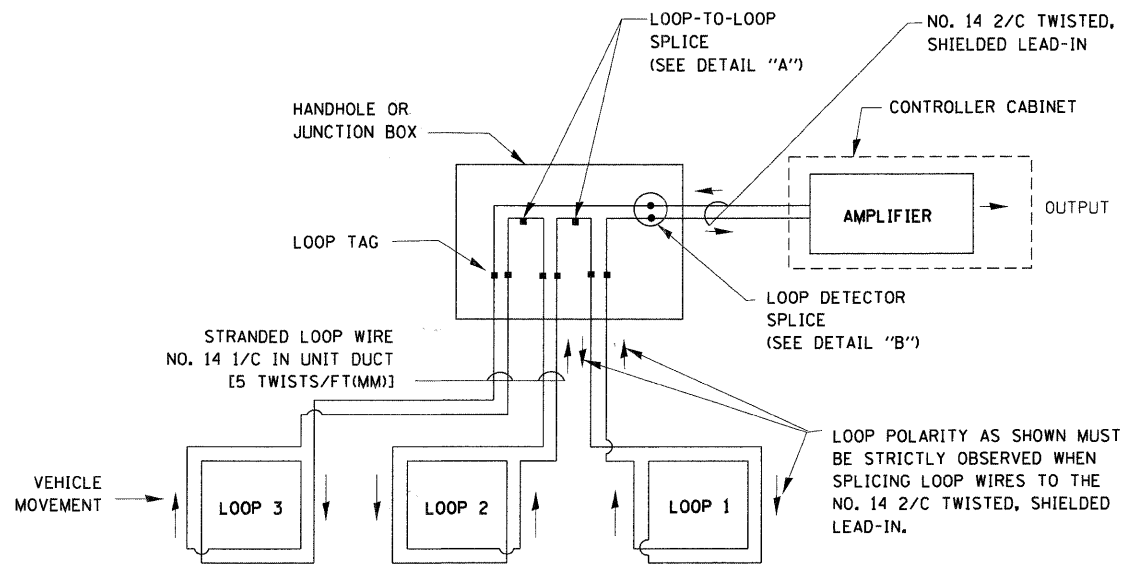
DESIGNED - GJG	REV DATE	CHECKED	REVISION
DRAWN - GJG			
CHECKED - DMS			
DATE - 8/13/2009			

INTERCONNECT SCHEMATIC
127TH STREET AT TIMBERLINE DRIVE
SCALE: NONE FILE NAME: ... \signal\06-schematic.dgn

F.A.U. RTE. 1591	SECTION 09-00046-00-TL	COUNTY COOK	TOTAL SHEETS 17	SHEET NO. 6
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT ARA-9003(377)			CONTRACT NO. 63273	

LOOP DETECTOR NOTES

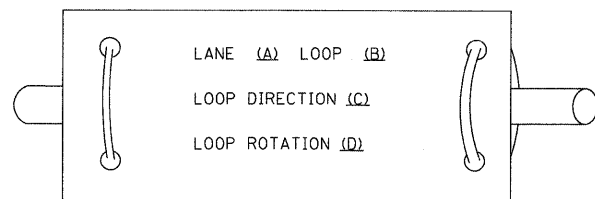
- EACH PAIR OF LOOP WIRES SHALL BE PLACED IN A SEPARATE UNIT DUCT FROM THE EDGE OF PAVEMENT TO THE HANDHOLE. SPACING BETWEEN THE HOLES DRILLED IN THE PAVEMENT SHALL NOT BE LESS THAN 6" (150 mm). UNIT DUCT SHALL BE INCLUDED IN THE COST OF THE LOOP WIRE.
- THE NUMBER OF LOOP TURNS SHALL BE AS RECOMMENDED 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.
- 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.
- ALL LOOP CABLE SHALL BE FASTENED WITH PLASTIC TIE WRAP TO THE HANDHOLE HOOKS.
- 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.
- 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.
- 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.



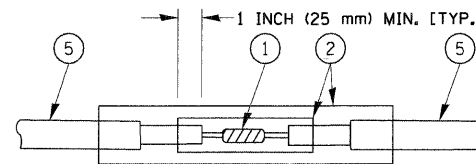
DETECTOR LOOP WIRING SCHEMATIC

- 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.

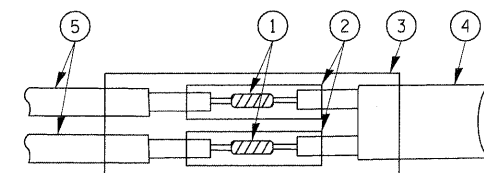
LOOP LEAD-IN CABLE TAG



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



**DETAIL "A"
LOOP-TO-LOOP SPLICE**



**DETAIL "B"
LOOP-TO-CONTROLLER SPLICE**

LOOP DETECTOR SPLICE

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

FILE NAME = ...signal\09-stud1.dgn	USER NAME =	DESIGNED - DAD	REVISED -
		DRAWN - RWP	REVISED -
	PLOT SCALE =	CHECKED - DAZ	REVISED -
	PLOT DATE = 8/13/2009	DATE - 1-01-02	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

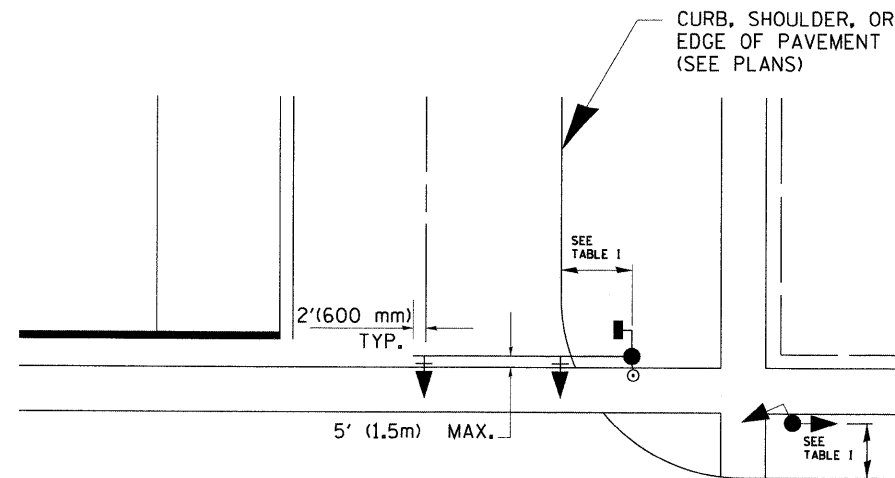
**DISTRICT ONE
STANDARD TRAFFIC SIGNAL
DESIGN DETAILS**

SCALE: NONE SHEET NO. 1 OF 4 SHEETS STA. TO STA.

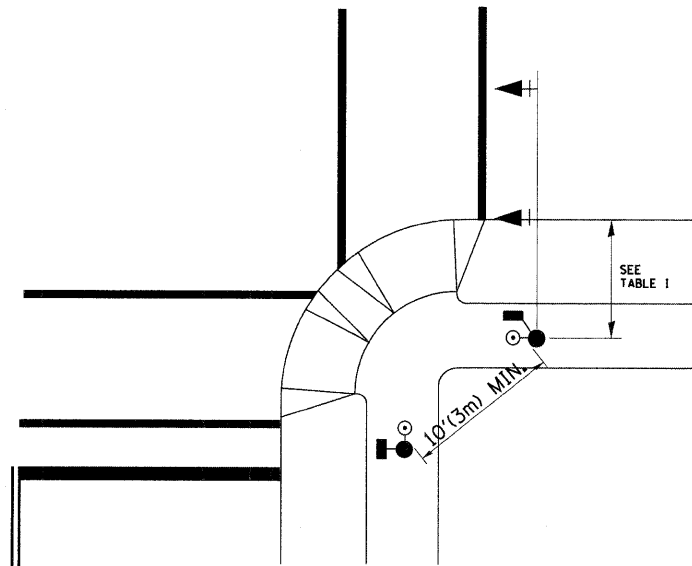
KLOA Kenig, Lindgren, O'Hara, Aboona, Inc.		9275 West Higgins Road, Suite 400 Rosemont, Illinois 60018 P: (847) 518-9990 F: (847) 518-9987	
F.A.U. RTE. 1591	SECTION 09-00046-00-TL	COUNTY COOK	TOTAL SHEETS 17
SHEET NO.		9	
CONTRACT NO.		63273	
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT ARA-9003(377)			

TRAFFIC SIGNAL MAST ARM AND POST

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



PEDESTRIAN SIGNAL PUSHBUTTON



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

NOTES:

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

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

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

PEDESTRIAN SIGNAL POST

PEDESTRIAN SIGNAL HEAD AND PEDESTRIAN PUSHBUTTON DETECTOR LOCATION

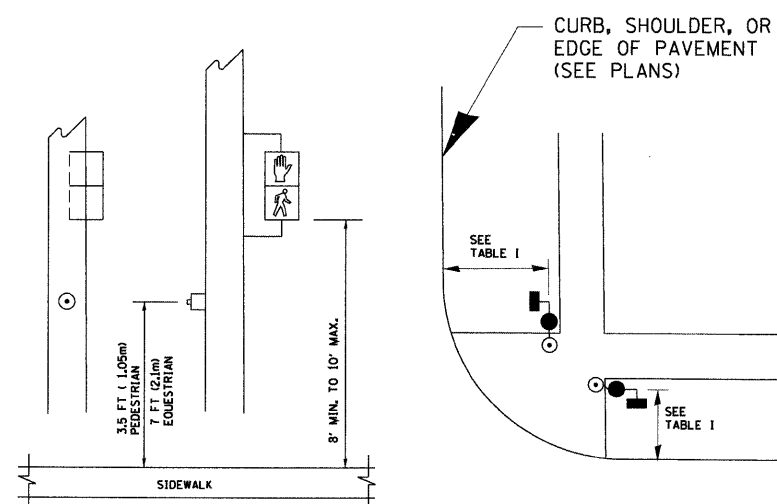


TABLE I

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

FILE NAME =
...signal110-std2.dgn

USER NAME =
PLOT SCALE =
PLOT DATE = 8/13/2009

DESIGNED - DAD
DRAWN - RWP
CHECKED - DAZ
DATE - 1-01-02

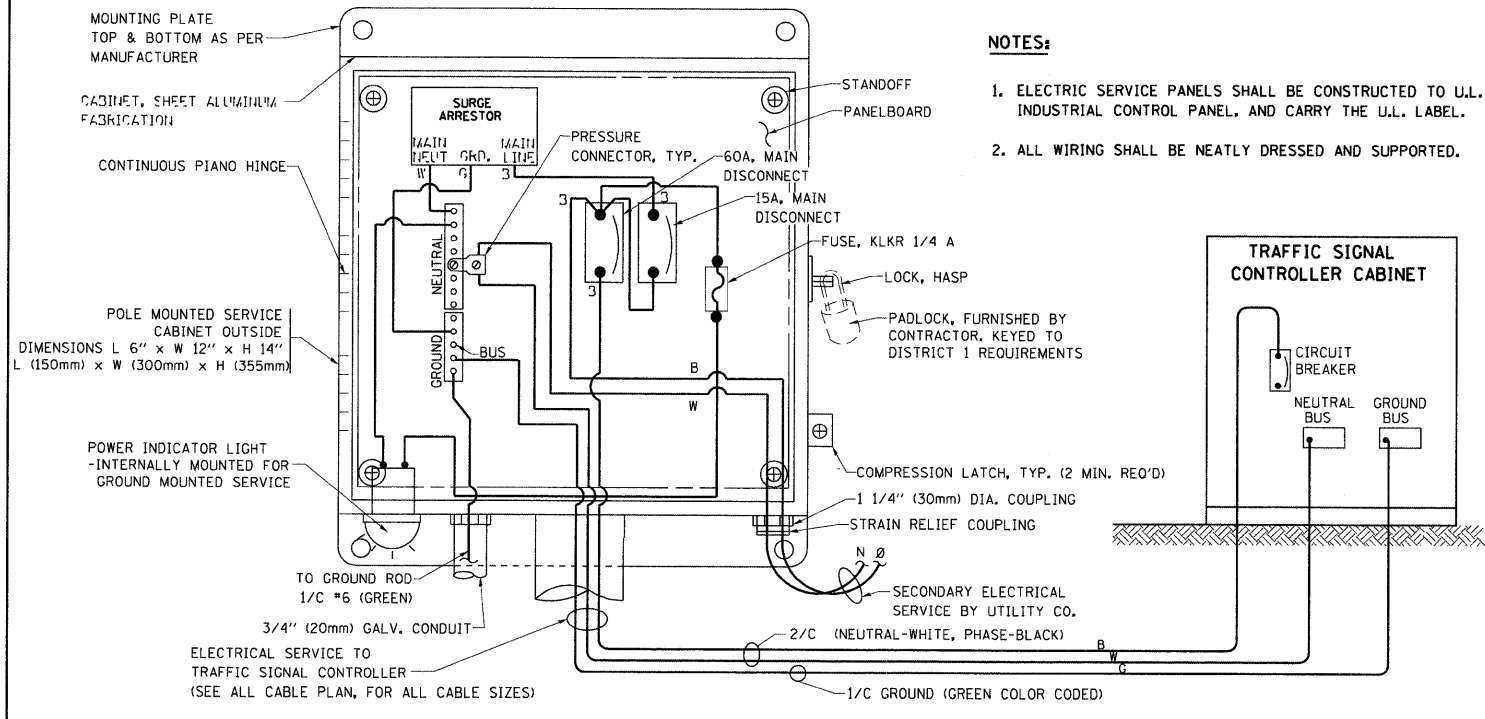
REVISED -
REVISED -
REVISED -
REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

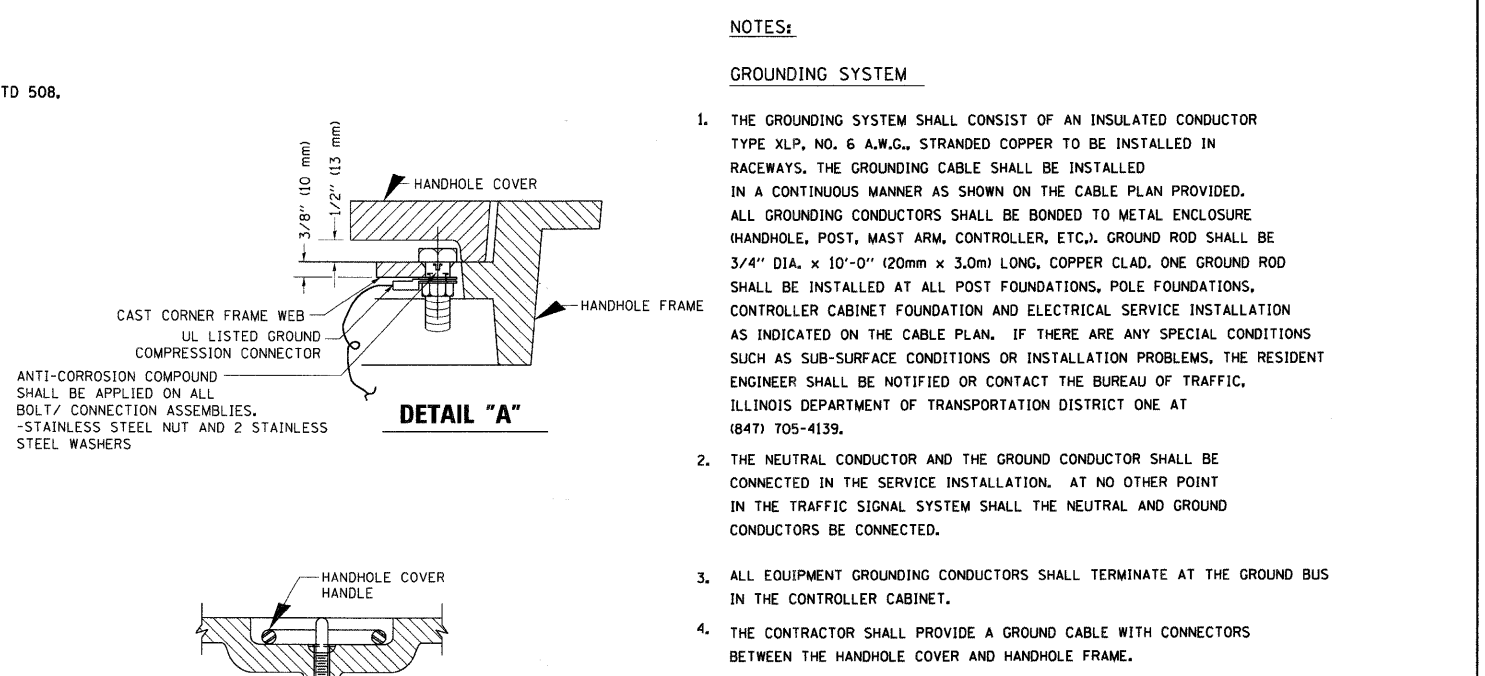
**DISTRICT ONE
STANDARD TRAFFIC SIGNAL
DESIGN DETAILS**
SCALE: NONE SHEET NO. 2 OF 4 SHEETS STA. TO STA.

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.
9575 West Higgins Road, Suite 400
Rosemont, Illinois 60018
P: (847) 518-9990 F: (847) 518-9987
PROJECT # 09-030

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1591	09-00046-00-TL	COOK	17	10
CONTRACT NO. 63273				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT ARA-900313771				



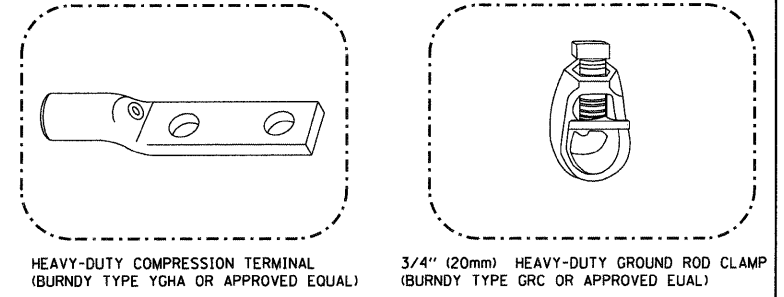
ELECTRICAL SERVICE - PANEL DIAGRAM (TYPICAL FOR POLE AND GROUND MOUNTED SERVICE)
SERVICE INSTALLATION POLE MOUNT (SHOWN)
 (NOT TO SCALE)



NOTES:

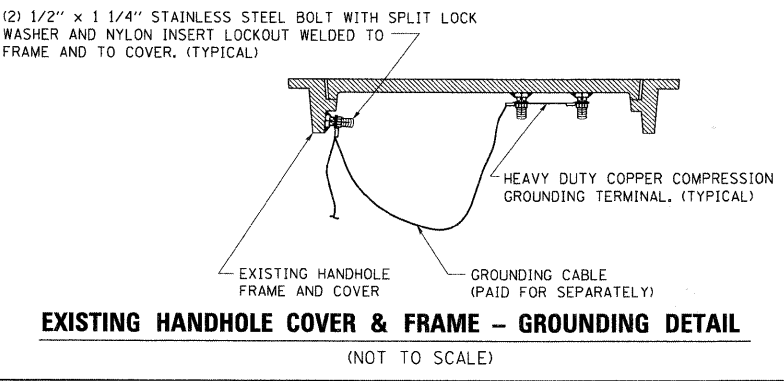
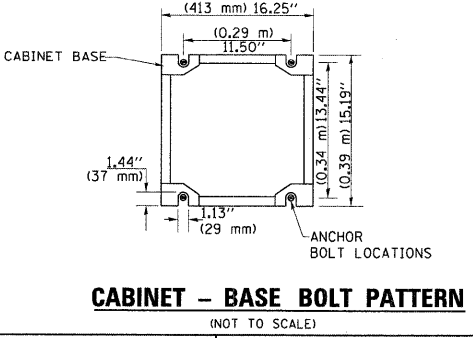
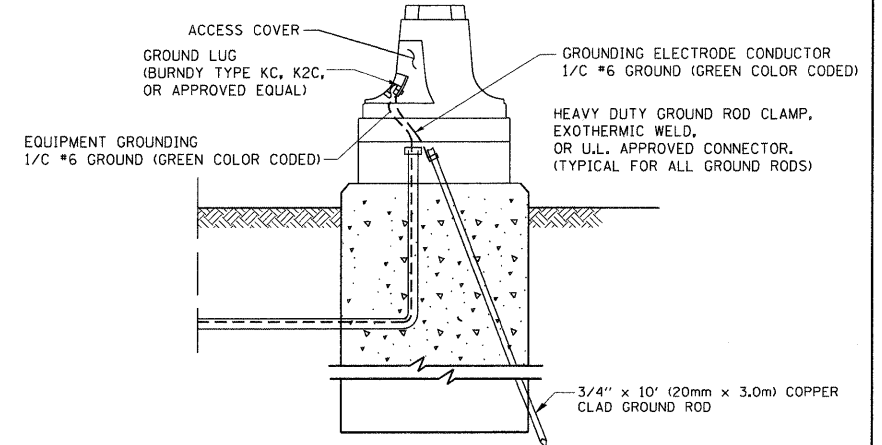
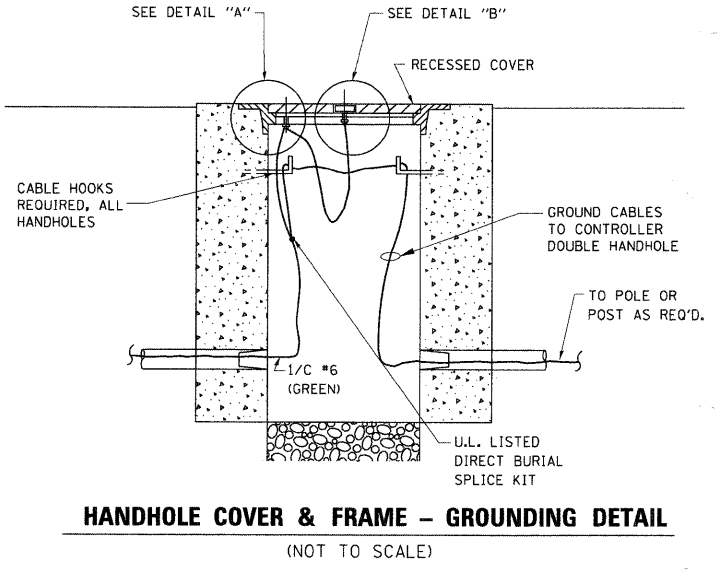
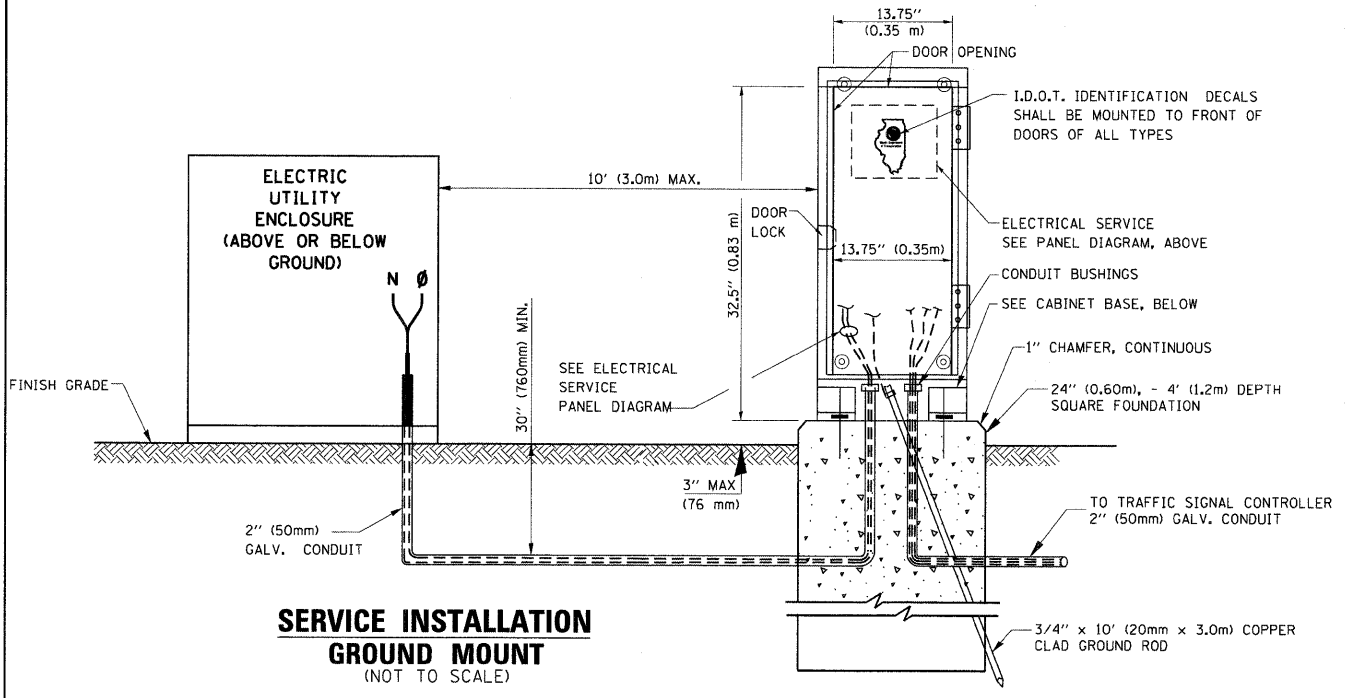
GROUNDING SYSTEM

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



NOTES:

- ALL CLAMPS SHALL BE BRONZE OR COPPER, 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.



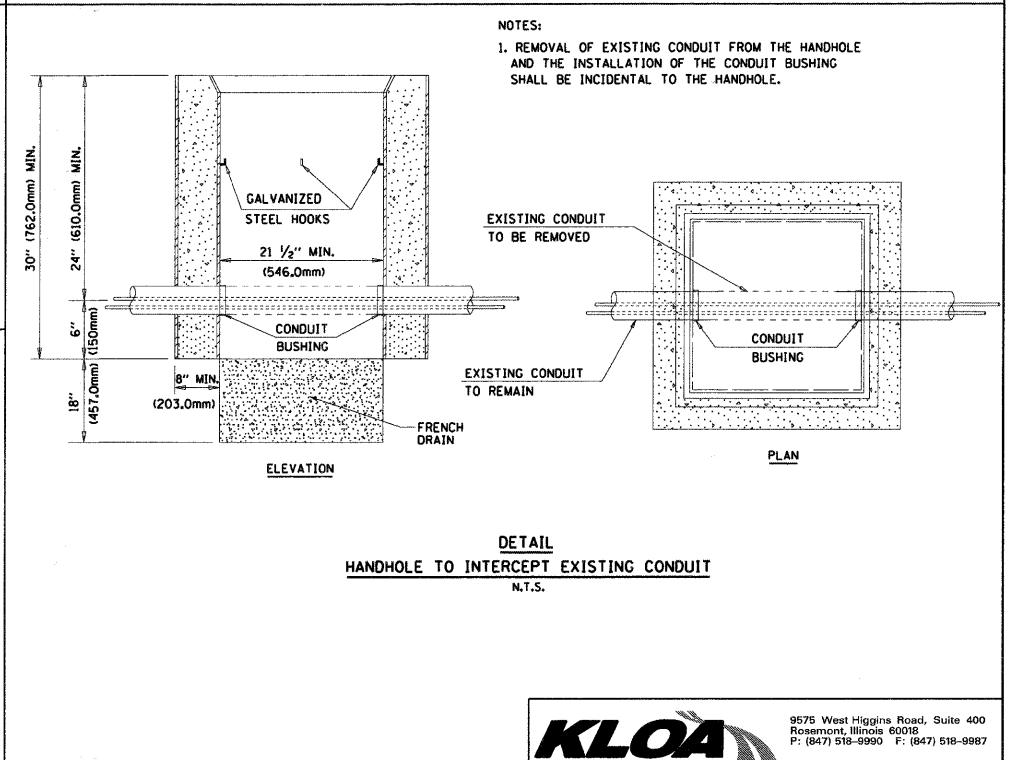
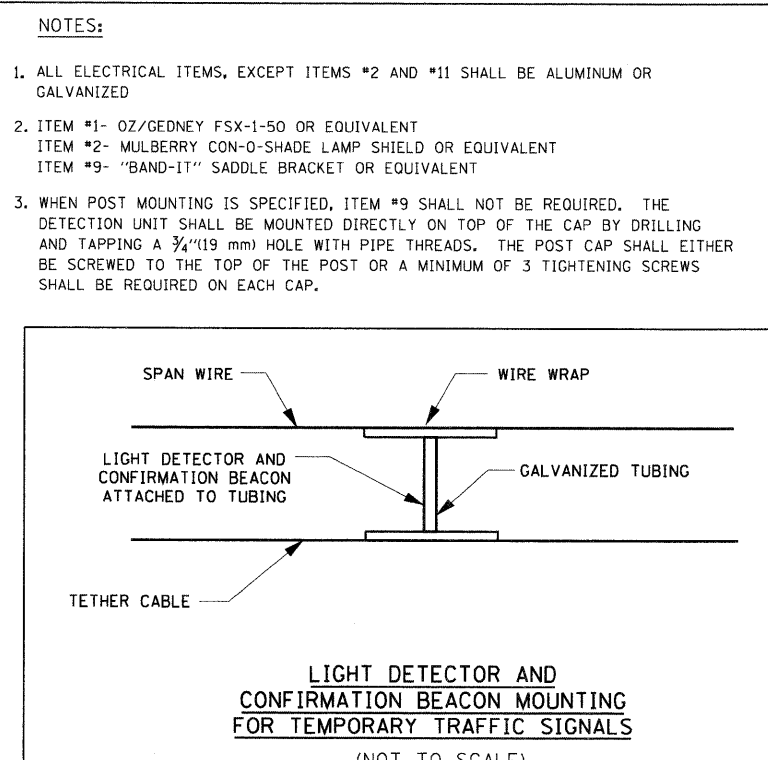
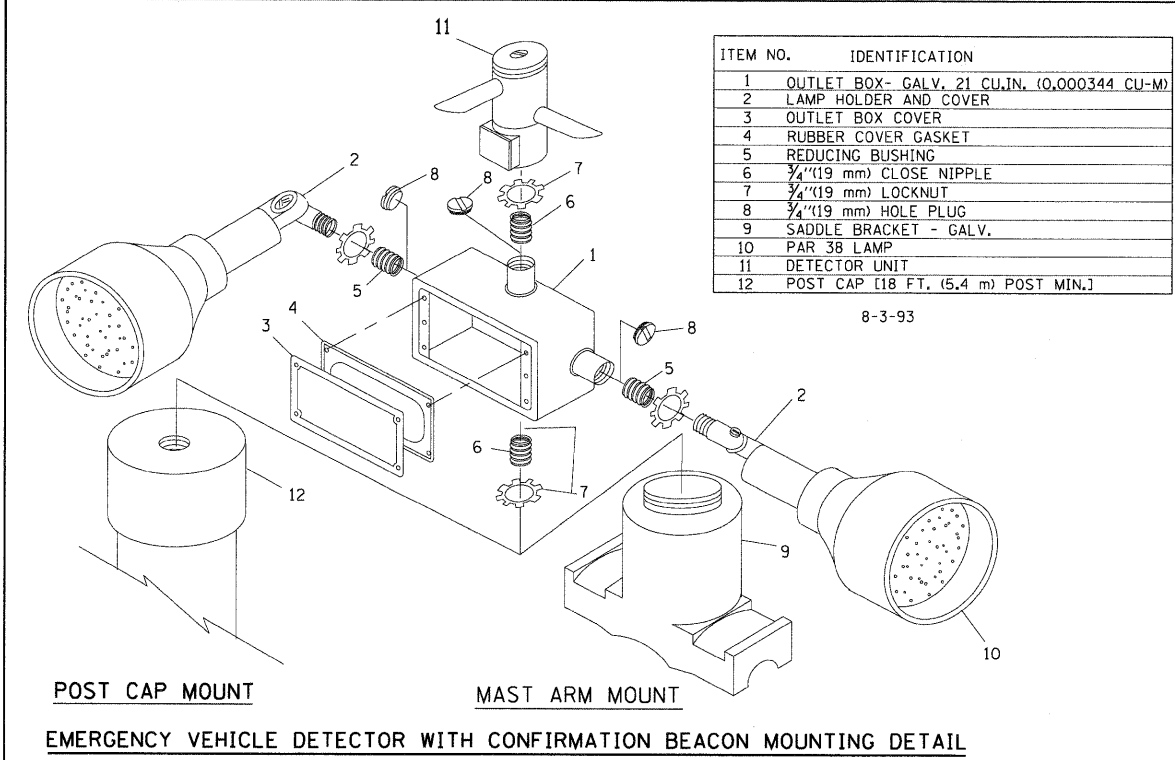
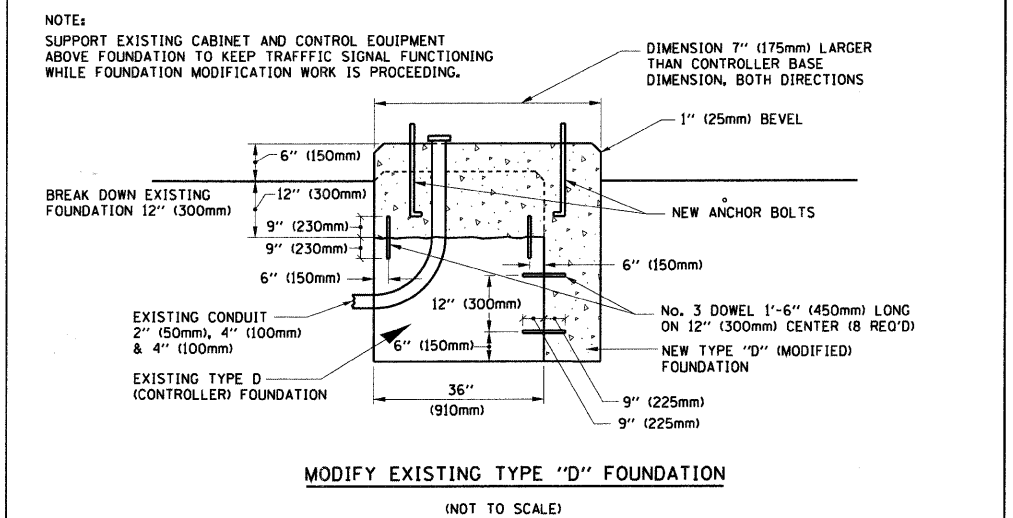
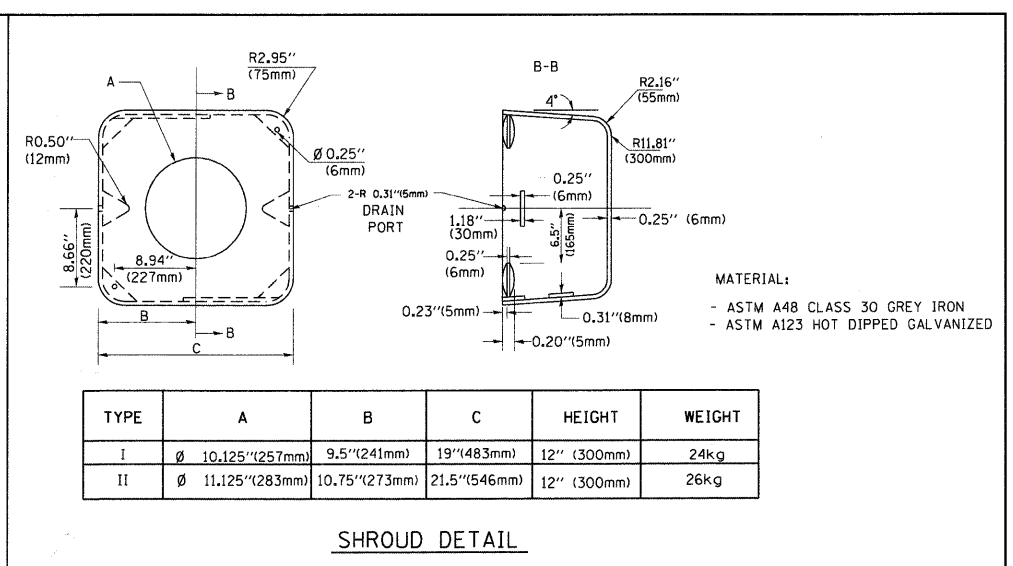
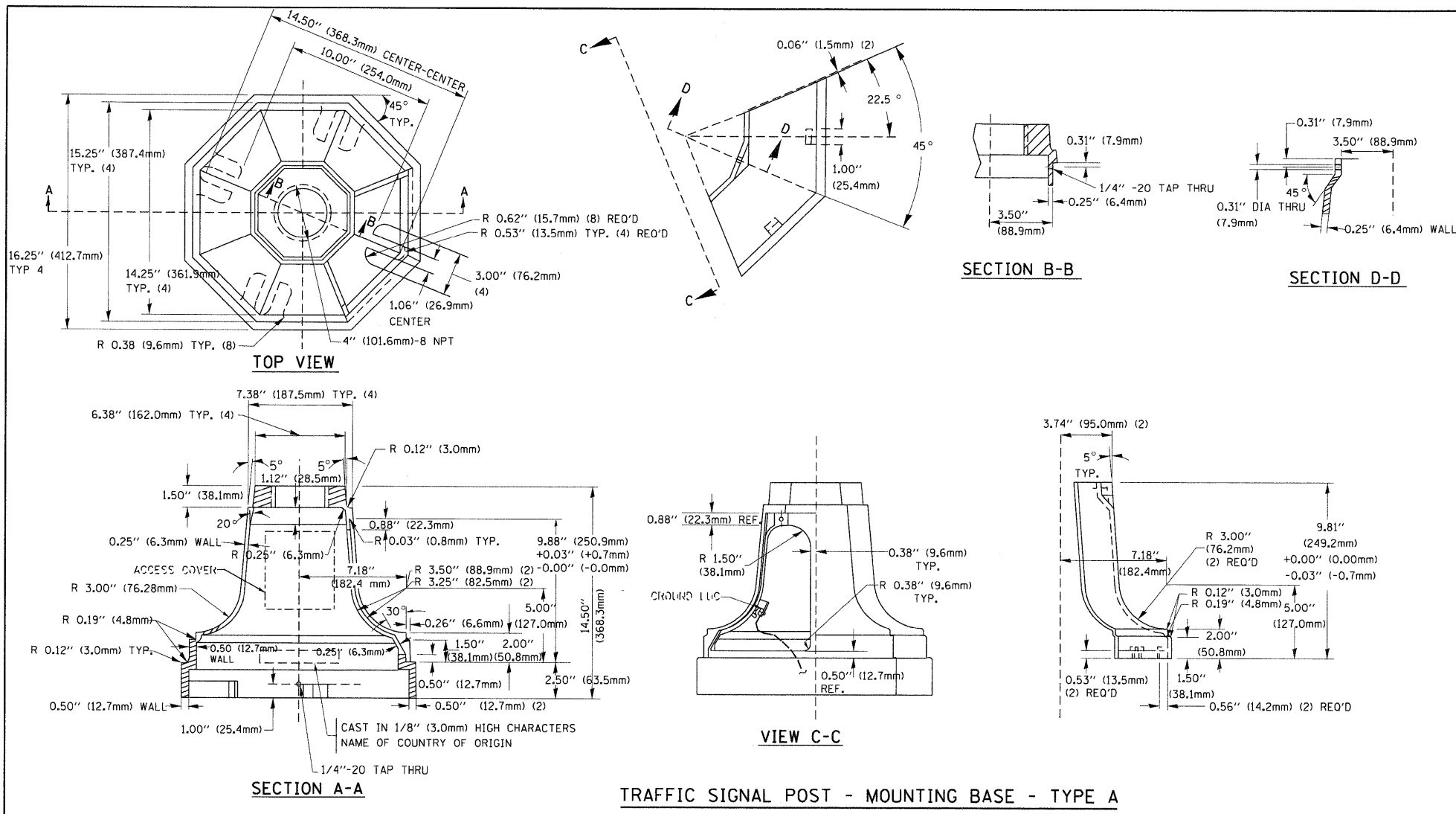
FILE NAME =	USER NAME =	DESIGNED - DAD	REVISED -
...signal\111-std3.dgn		DRAWN - RWP	REVISED -
	PLOT SCALE =	CHECKED - DAZ	REVISED -
	PLOT DATE = 8/13/2009	DATE - 1-01-02	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL
DESIGN DETAILS

SCALE: NONE SHEET NO. 3 OF 4 SHEETS STA. TO STA.

KLOA		9575 West Higgins Road, Suite 400 Rosemont, Illinois 60018 P: (847) 518-9990 F: (847) 518-9987	
Kenig, Lindgren, O'Hara, Aboona, Inc.		PROJECT # 09-030	
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.
1591	09-00046-00-TL	COOK	17 11
		CONTRACT NO. 63273	
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	ARA-90031377	



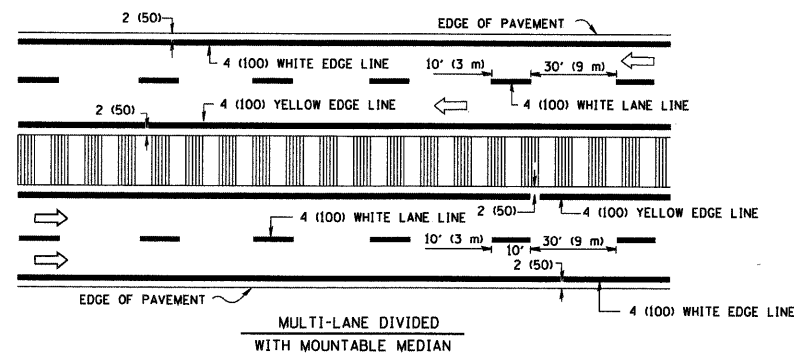
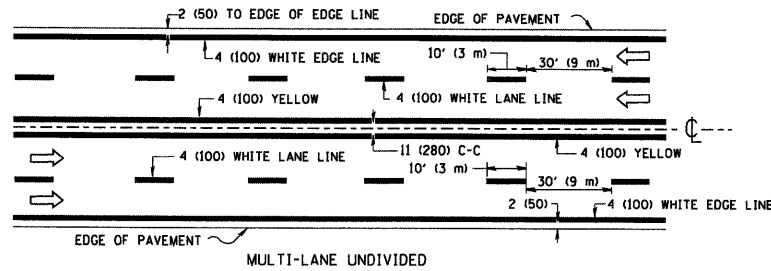
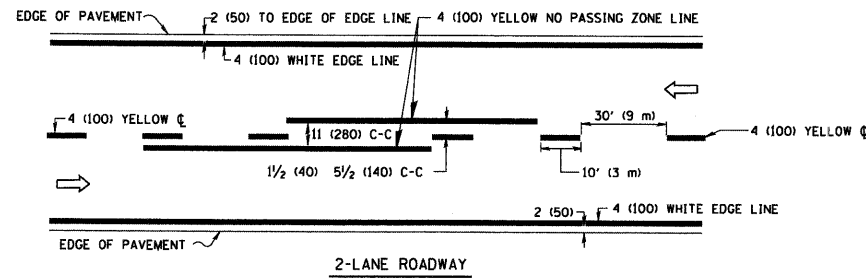
FILE NAME =	USER NAME =	DESIGNED - DAD	REVISED -
...signal\12-std4.dgn		DRAWN - RWP	REVISED -
	PLOT SCALE =	CHECKED - DAZ	REVISED -
	PLOT DATE = 8/13/2009	DATE - 1-01-02	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL
DESIGN DETAILS

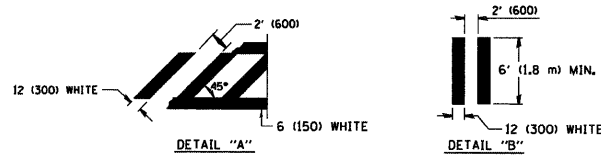
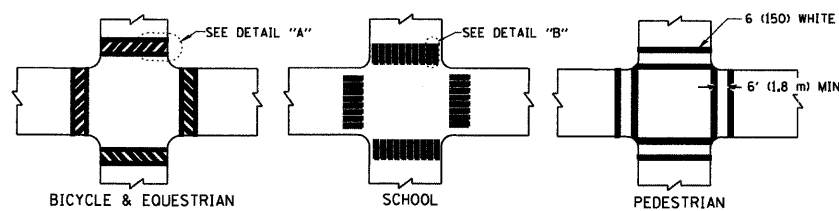
SCALE: NONE SHEET NO. 4 OF 4 SHEETS STA. TO STA.

KLOA Kenig, Lindgren, O'Hara, Aboona, Inc.		9575 West Higgins Road, Suite 400 Rosemont, Illinois 60018 P: (847) 518-9990 F: (847) 518-9987	
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.
1591	09-00046-00-TL	COOK	17 12
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT	CONTRACT NO. 63273
		ARA-9003(377)	

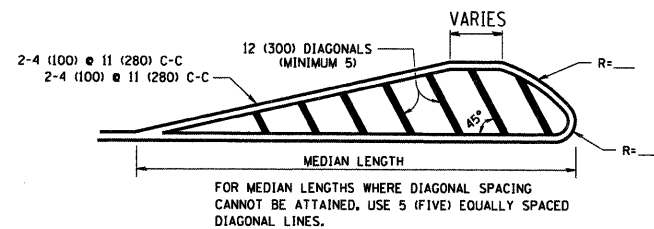
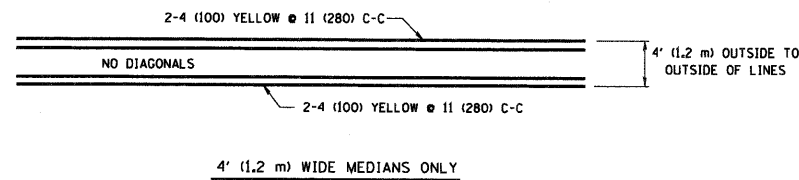


NOTE: MEDIANS WITH BARRIER CURB DO NOT REQUIRE AN EDGE LINE

TYPICAL LANE AND EDGE LINE MARKING



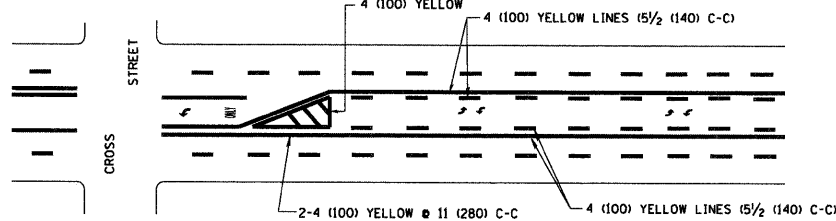
TYPICAL CROSSWALK MARKING



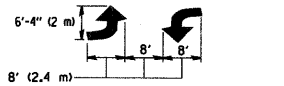
FOR MEDIAN LENGTHS WHERE DIAGONAL SPACING CANNOT BE ATTAINED, USE 5 (FIVE) EQUALLY SPACED DIAGONAL LINES.

DIAGONAL LINE SPACING: 50' (15 m) C-C (LESS THAN 30MPH (50 km/h))
75' (25 m) C-C 30MPH (50 km/h) TO 45MPH (70 km/h)
150' (45 m) C-C (MORE THAN 45MPH (70 km/h))

MEDIANS OVER 4' (1.2 m) WIDE

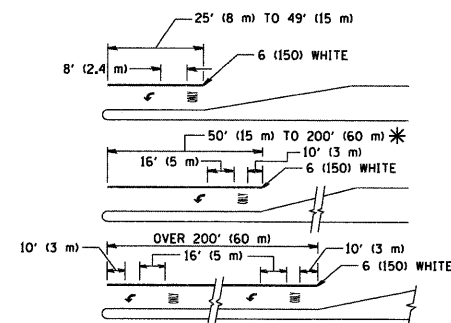


A MINIMUM OF TWO PAIRS OF TURN ARROWS SHALL BE USED, WHITE IN COLOR. ADDITIONAL PAIRS SHALL BE PLACED AT 200' (60 m) TO 300' (90 m) INTERVALS.



MEDIAN WITH TWO-WAY LEFT TURN LANE

TYPICAL PAINTED MEDIAN MARKING

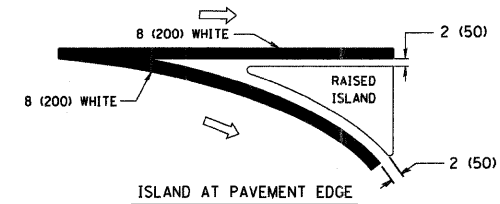
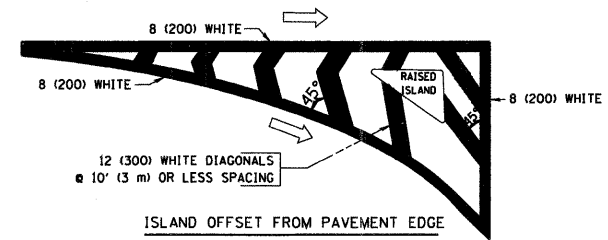


FULL SIZE LETTERS 8' (2.4 m) AND ARROWS SHALL BE USED. AREA = 15.6 SQ. FT. (1.5 m²) ONLY AREA = 20.8 SQ. FT. (1.9 m²)

* 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 1/2 (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 1/2 (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 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" 15 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.

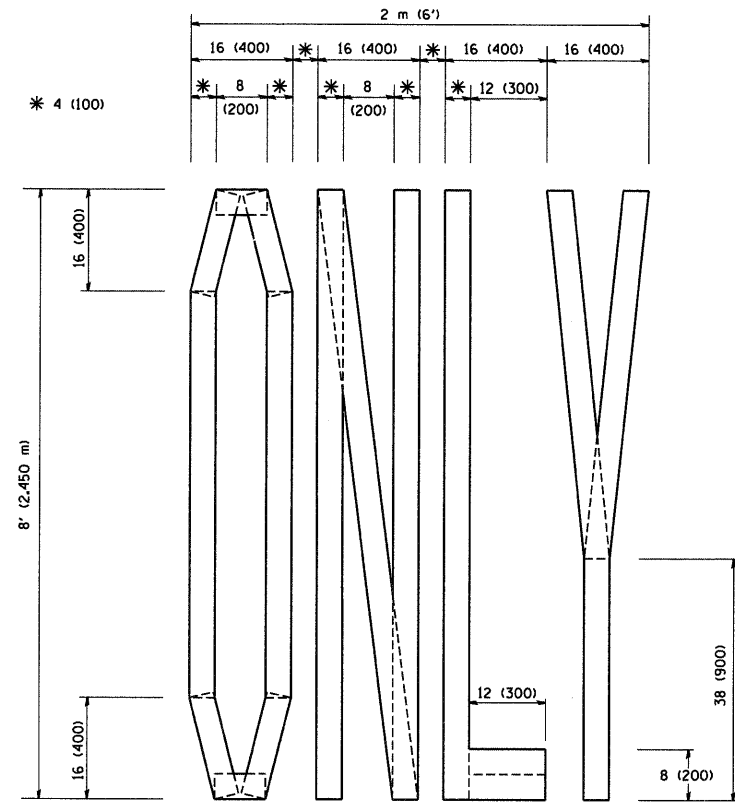
FILE NAME = W:\dststd\22x34\1\13.dgn

USER NAME = gajonobt	DESIGNED - EVERS	REVISED - T. RAMMACHER 10-27-94
PLOT SCALE = 50,000' / IN.	DRAWN -	REVISED - A. HOUSEH 10-09-96
PLOT DATE = 1/4/2008	CHECKED -	REVISED - A. HOUSEH 10-17-96
	DATE - 03-19-90	REVISED - T. RAMMACHER 01-06-00

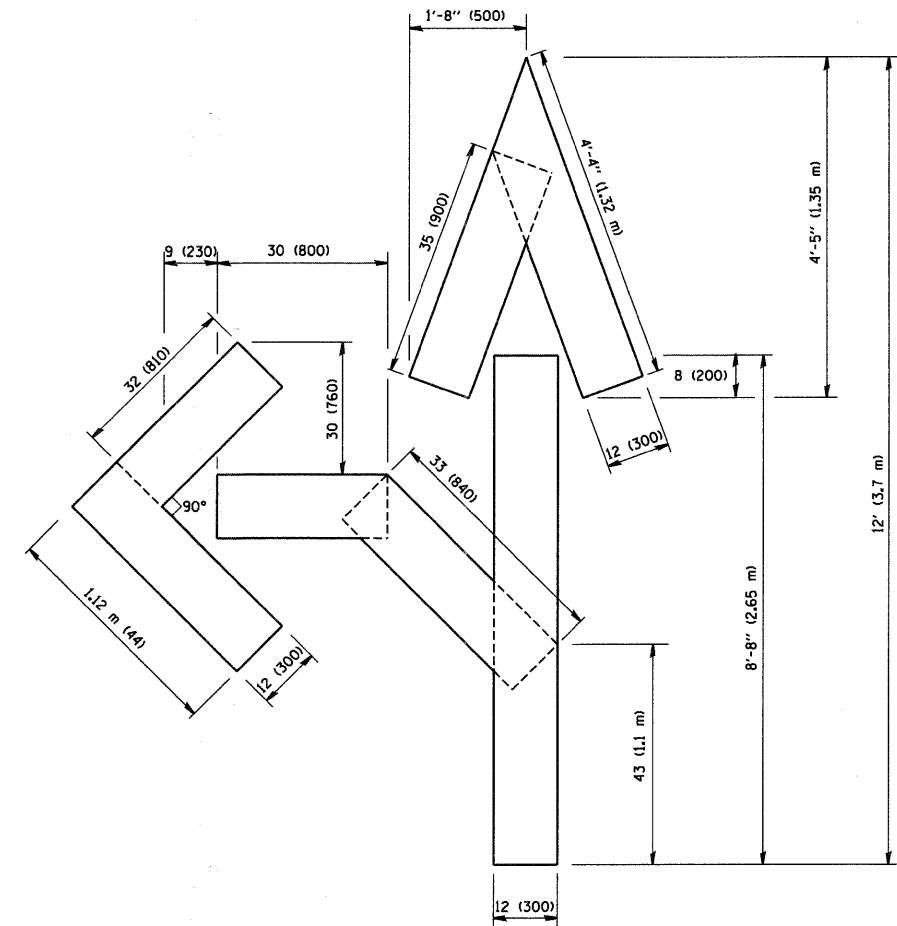
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

DISTRICT ONE		F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TYPICAL PAVEMENT MARKINGS		1591	09-00046-00-TL	COOK	17	13
SCALE: NONE		SHEET NO. 1 OF 1 SHEETS		STA. TO STA.	CONTRACT NO. 63273	

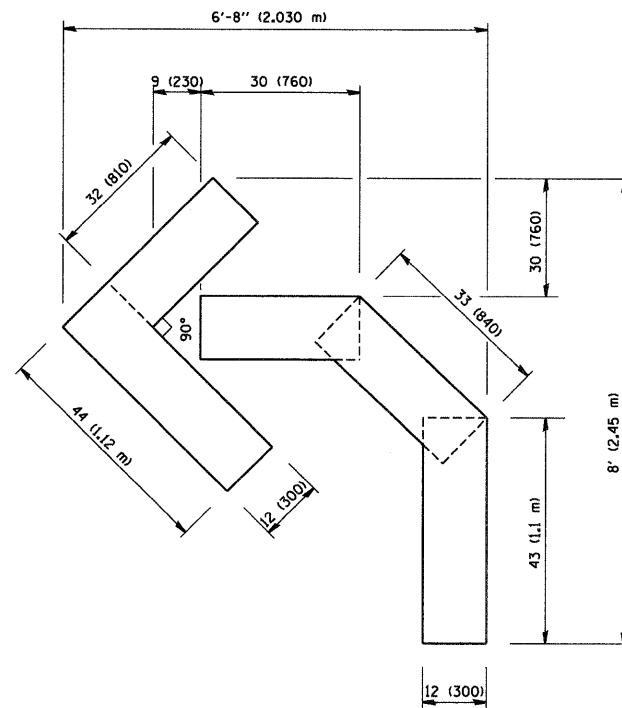
TC-13		CONTRACT NO. 63273	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT ARA-9003(377)			



QUANTITY
 4 (100) LINE = 64.1 ft. (19.7 m)
 21.1 sq. ft. (1.97 sq. m)



QUANTITY
 4 (100) LINE = 82.5 ft. (25.3 m)
 27.5 sq. ft. (2.53 sq. m)



QUANTITY
 4 (100) LINE = 45.5 ft. (13.9 m)
 15.2 sq. ft. (1.39 sq. m)

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

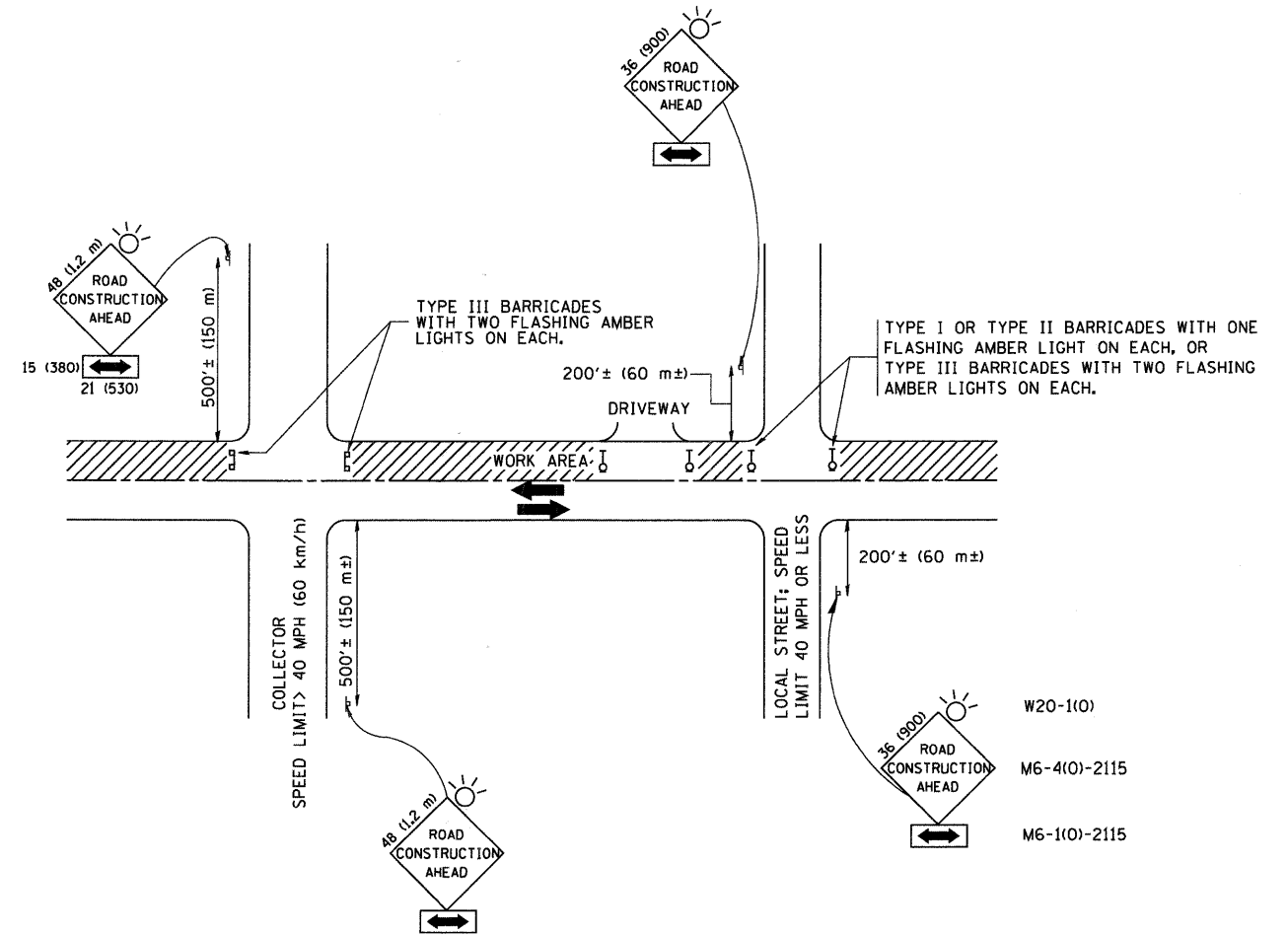
FILE NAME = W:\stated\22x34\to16.dgn	USER NAME = gegl1enobt	DESIGNED -	REVISED -T. RAMMACHER 06-05-96
		DRAWN -	REVISED -T. RAMMACHER 11-04-97
		CHECKED -	REVISED -T. RAMMACHER 03-02-98
		DATE - 09-18-94	REVISED -E. GOMEZ 08-28-00

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING LETTERS AND SYMBOLS
 FOR TRAFFIC STAGING

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

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1591	09-00046-00-TL	COOK	17	14
TC-16			CONTRACT NO. 63273	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT ARA-9003(377)				



TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS

NOTES:

A. FOR NO LANE RESTRICTION ON THE SIDE ROAD OR DRIVEWAYS

1. SIDE ROAD WITH A SPEED LIMIT OF 40 MPH (60 km/h) OR LESS AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
 - a) ONE ROAD CONSTRUCTION AHEAD SIGN 36 x 36 (900x900) WITH A FLASHER AND FLAG MOUNTED ON IT APPROXIMATELY 200' (60 m) IN ADVANCE OF THE MAIN ROUTE.
 - b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE I, TYPE II OR TYPE III BARRICADES, 1/3 OF THE CROSS SECTION OF THE CLOSED PORTION.
2. SIDE ROAD WITH A SPEED LIMIT GREATER THAN 40 MPH (60 km/h) AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
 - a) ONE ROAD CONSTRUCTION AHEAD SIGN 48 x 48 (1.2 m x 1.2 m) WITH A FLASHER MOUNTED ON IT APPROXIMATELY 500' (150 m) IN ADVANCE OF THE MAIN ROUTE.
 - b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE III BARRICADES, 1/2 OF THE CROSS SECTION OF THE CLOSED PORTION.
3. WHEN THE SIDE ROAD LIES BETWEEN THE BEGINNING OF THE MAINLINE SIGNING AND THE WORK ZONE, A SINGLE HEADED ARROW (M6-1) SHALL BE USED IN LIEU OF THE DOUBLE HEADED ARROW (M6-4).

B. FOR A LANE CLOSURE ON A SIDE ROAD OR DRIVEWAY:

- USE APPLICABLE PORTIONS OF THE TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES (STD. 701501, STD. 701606 OR THE APPROPRIATE STANDARD). THE SPACING OF SIGNS AND BARRICADES SHALL BE ADJUSTED FOR FIELD CONDITIONS AS DIRECTED BY THE ENGINEER. THE DIRECTIONAL ARROW SHALL BE COVERED OR REMOVED WHEN NO LONGER CONSISTENT WITH THE SIDE ROAD LANE CLOSURE.
- C. ADVANCE WARNING SIGNS ARE TO BE OMITTED ON DRIVEWAY UNLESS OTHERWISE NOTED.
- D. THE TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS SHALL BE INCIDENTAL TO THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

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

FILE NAME = W:\diststd\22x34\tc10.dgn	USER NAME = geglionobt	DESIGNED - LHA	REVISED - J. OBERLE 10-18-95
		DRAWN -	REVISED - A. HOUSEH 03-06-96
	PLOT SCALE = 50.0000 "/ IN.	CHECKED -	REVISED - A. HOUSEH 10-15-96
	PLOT DATE = 1/4/2008	DATE - 06-89	REVISED - T. RAMMACHER 01-06-00

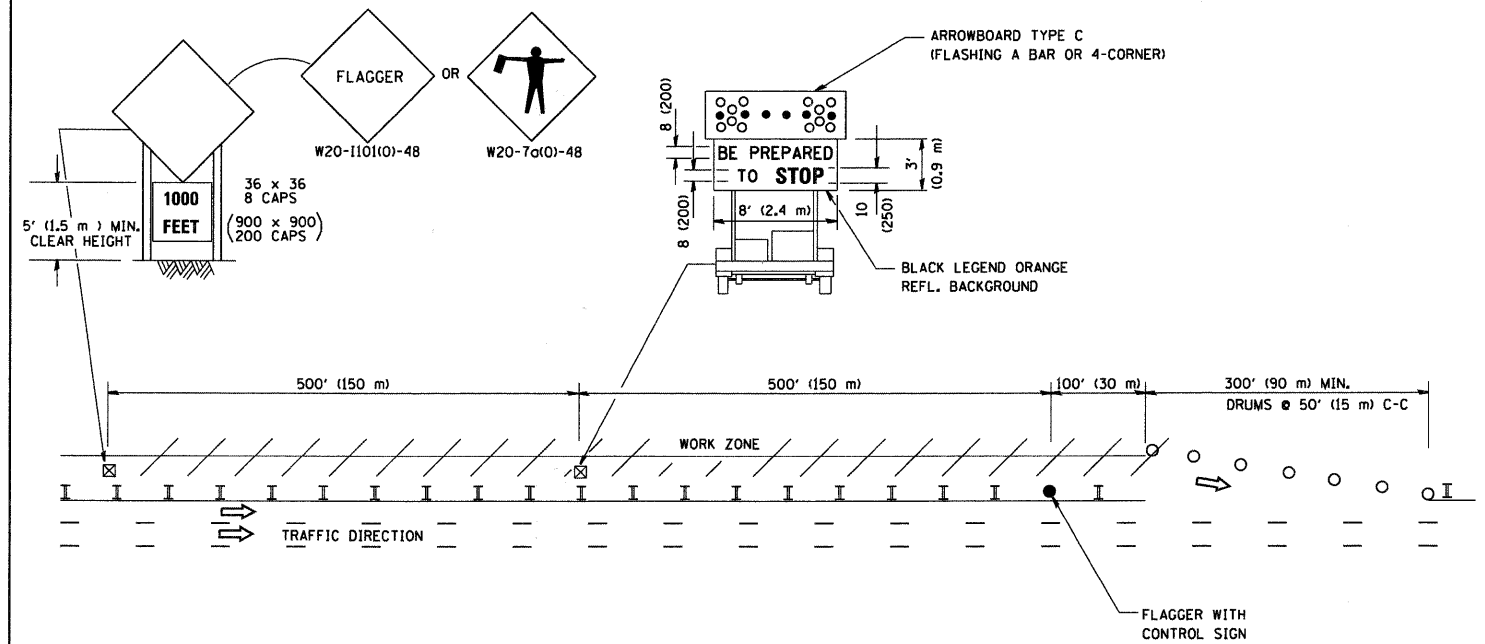
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS			
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.

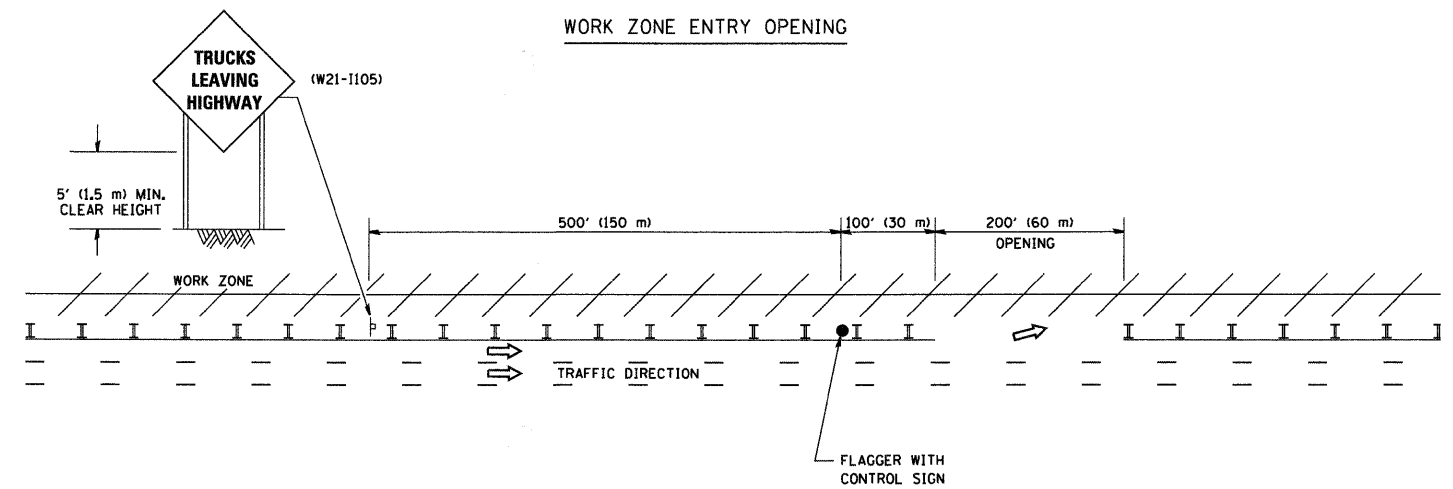
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1591	09-00046-00-TL	COOK	17	15
TC-10				CONTRACT NO. 63273
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT ARA-9003(377)				

SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS

WORK ZONE EXIT OPENING



WORK ZONE ENTRY OPENING

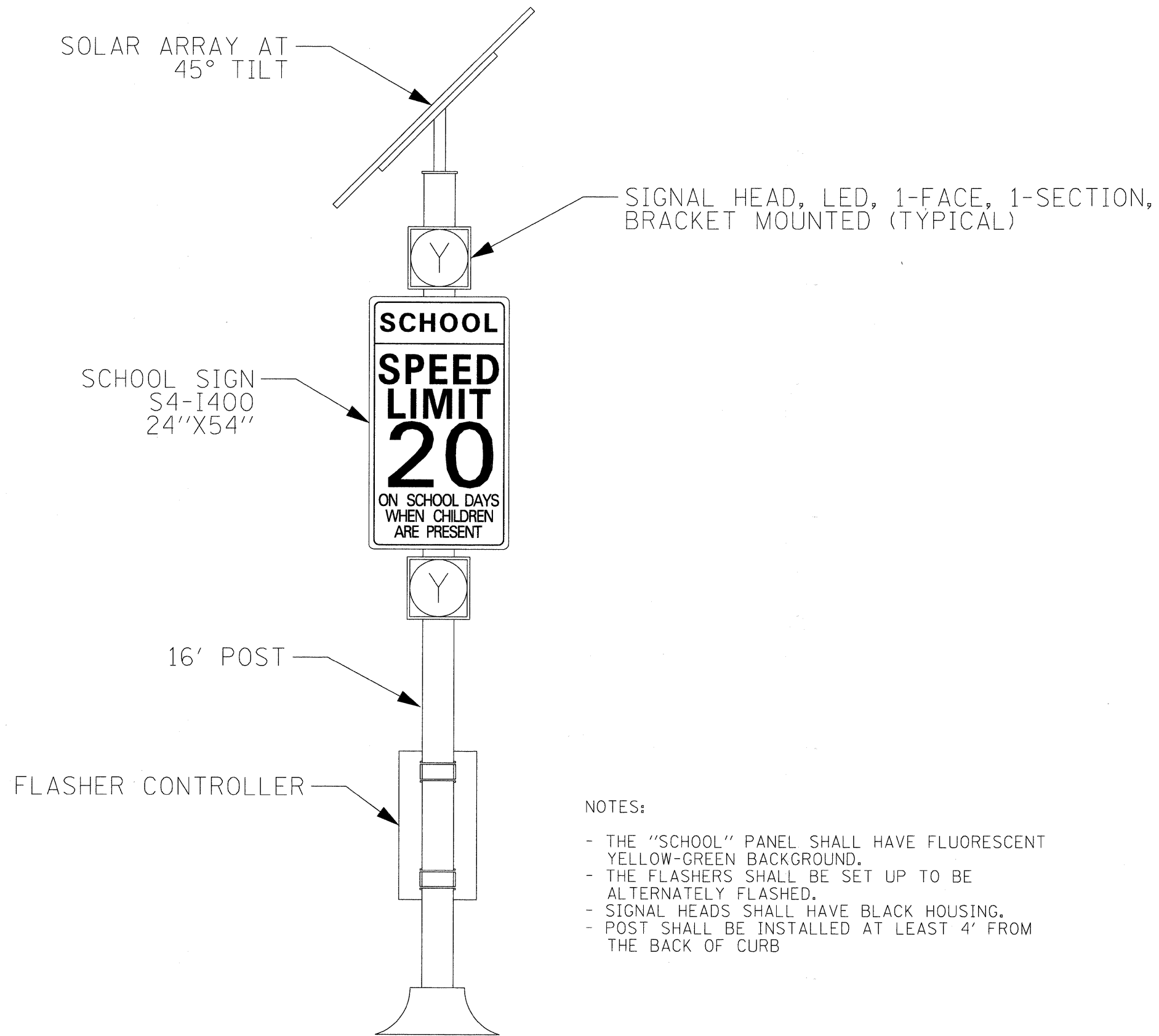


NOTES:

1. The Arrowboard, the Flagger Ahead trailer mounted sign, and the Trucks Leaving Highway sign shall be removed or turned away from traffic and the exit and entry openings shall be closed when the flagging operation ceases.
2. Work Zone Exit Openings should be a minimum of one half mile apart.
3. Exiting the work zone at any place other than at a Work Zone Exit Opening will be prohibited.
4. All vehicles shall enter the work zone at entry openings, using their turn signals to warn motorists

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

FILE NAME = W:\diststd\22x34\1c18.dgn	USER NAME = gegl1enobt	DESIGNED -	REVISED - D.W.S. 08-98	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS			F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.			
		DRAWN -	REVISED - J.A.F. 04-03		SCALE: NONE	SHEET NO. 1	OF 1	SHEETS	STA.	TO STA.	1591	09-00046-00-TL	COOK	17	16
		PLOT SCALE = 50,000' / IN.	CHECKED -		REVISED - J.A.F. 02-06				TC-18		CONTRACT NO. 63273				
		PLOT DATE = 1/4/2008	DATE -		REVISED - S.P.B. 01-07				FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT ARA-9003(377)						



- NOTES:
- THE "SCHOOL" PANEL SHALL HAVE FLUORESCENT YELLOW-GREEN BACKGROUND.
 - THE FLASHERS SHALL BE SET UP TO BE ALTERNATELY FLASHED.
 - SIGNAL HEADS SHALL HAVE BLACK HOUSING.
 - POST SHALL BE INSTALLED AT LEAST 4' FROM THE BACK OF CURB

SOLAR-POWERED FLASHER SYSTEM DETAIL (NOT TO SCALE)

DESIGNED - GJG	REV DATE	CHECKED	REVISION
DRAWN - GJG			
CHECKED - DMS			
DATE - 8/13/2009			

SOLAR POWERED SCHOOL FLASHERS DETAIL	
SCALE: NONE	FILE NAME: ...signal\17-flasherdetail.dgn

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1591	09-00046-00-TL	COOK	17	17
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT ARA-9003(377)	
			CONTRACT NO. 63273	