4-24-09 Letting, Item 185

INDEX OF SHEETS

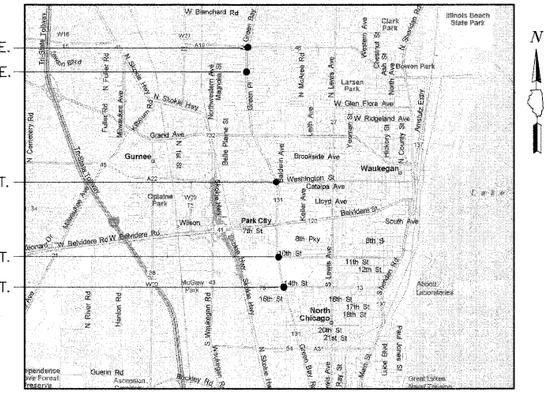
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED FEDERAL AID HIGHWAY

DISTRICT 1
HIGHWAY SAFETY IMPROVEMENT PROJECT
TRAFFIC SIGNAL MODIFICATION PLANS
FAU 2711 / ILL ROUTE 131 (GREEN BAY ROAD)
SECTION: 2009-005 TS
JOB NO. C-91-315-09
CITY OF WAUKEGAN, ILLINOIS
LAKE COUNTY

PROJECT: HSIP-2711(017)

LOCATION MAP
(NOT TO SCALE)



TRAFFIC SIGNAL MODIFICATION PLAN
GRAPHIC SCALE

20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

IDOT STANDARDS:

424101–07 CURB RAMPS FOR SIDEWALK
442101–07 CLASS B PATCHES
606001–03 CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER
701001–02 OFF–ROAD OPERATIONS 2L, 2W, >15' AWAY
701006–03 OFF–ROAD OPERATIONS 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE
701011–02 OFF–ROAD MOVING OPERATIONS, 2L, 2W, DAY ONLY
701301–03 LANE CLOSURE 2L, 2W, SHORT TIME OPERATIONS
701606–06 URBAN LANE CLOSURE MULTILANE 2W WITH MOUNTABLE MEDIAN
701701–06 URBAN LANE CLOSURE MULTILANE INTERSECTION
701901–01 TRAFFIC CONTROL DEVICES
720001–01 SIGN PANEL MOUNTING DETAILS
780001–02 TYPICAL PAVEMENT MARKINGS
814001–02 HANDHOLE
814006–02 DOUBLE HANDHOLE
857001–01 STANDARD PHASE DESIGNATION DIAGRAMS AND PHASE SEQUENCES
862001–01 UNINTERRUPTIBLE POWER SUPPLY (UPS)
873001–02 TRAFFIC SIGNAL GROUNDING
877001–04 STEEL MAST ARM ASSEMBLY AND POLE, 16' THROUGH 55'
877011–04 STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 16' THROUGH 55'
878001–07 CONCRETE FOUNDATION DETAILS
880001–01 SPAN WIRE MOUNTED SIGNALS AND FLASHING BEACON INSTALLATION
880006–01 TRAFFIC SIGNAL MOUNTING DETAILS
886001–01 DETECTOR LOOP INSTALLATIONS

CONTRACT NO: 60G01

J.U.L.I.E. TOLL FREE CALL 1-800-892-0123
JOINT UTILITY LOCATING INFORMATION FOR EXCAVATORS
Call 48 hours before you dig
(Excluding Sat., Sun., & Holidays)
1–800–892–0123

EXISTING UTILITIES: WHEN THE PLANS OR SPECIAL PROVISIONS INCLUDE INFORMATION PERTAINING TO THE LOCATION OF UNDERGROUND UTILITY FACILITIES, SUCH INFORMATION REPRESENTS ONLY THE OPINION OF THE ENGINEER AS TO THE LOCATION OF SUCH UTILITIES AND IS ONLY INCLUDED FOR THE CONVENIENCE OF THE BIDDER. THE ENGINEER AND OWNER ASSUME NO RESPONSIBILITY WHATEVER IN RESPECT TO THE SUFFICIENCY OR ACCURACY OF THE INFORMATION SHOWN ON THE PLANS RELATIVE TO THE LOCATION OF UNDERGROUND UTILITY FACILITIES OR THE MANNER IN WHICH THEY ARE TO BE REMOVED OR ADJUSTED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES. HE SHALL ALSO OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES, DETAILED INFORMATION RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULES OF THE UTILITY COMPANIES FOR REMOVING OR ADJUSTING THEM.

CONTRACTOR IS RESPONSIBLE FOR CONTACTING J.U.L.I.E. AT 1–800–892–0123 AND MUST ACQUIRE A DIG NUMBER A MINIMUM OF 72 HOURS PRIOR TO ANY WORK BEING DONE.

BRUCE L. SHRADE
39505
REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

GEWALT HAMILTON ASSOCIATES, INC.
Consulting Engineers & Surveyors
850 Forest Edge Drive
Vernon Hills, IL 60061
847-478-9700
FAX 847-478-9701

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED: Jan. 30 2009
Jeanne M. O'Keefe /JD
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

March 27, 2009
Charles J. Ingersoll /JD
ENGINEER OF DESIGN AND ENVIRONMENT

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

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

FILE NAME = 4085.800-TR1.dgn	USER NAME =	DESIGNED – JRD	REVISED –
		DRAWN – LJD	REVISED –
	PLOT SCALE = 1"=20'	CHECKED – KLB	REVISED –
	PLOT DATE = 1/29/09	DATE – 1/29/09	REVISED –

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TITLE SHEET

SCALE: NONE | SHEET NO. 1 OF 21 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	2009-005 TS	097(LAKE)IL	21	1
		CONTRACT NO. 60G01		
	ILLINOIS FED. AID PROJECT			

URBAN

SUMMARY OF QUANTITIES

					① ILL RTE 131 (GREEN BAY ROAD) AND 14th STREET/PULASKI MEMORIAL DRIVE	② ILL RTE 131 (GREEN BAY ROAD) AND 10th STREET		③ ILL RTE 131 (GREEN BAY ROAD) AND CRESCENT AVENUE		① ILL RTE 131 (GREEN BAY ROAD) AND SUNSET AVENUE		④ ILL RTE 131 (GREEN BAY ROAD) AND WASHINGTON STREET	
					CONSTRUCTION CODES								
	CODE NUMBER	ITEM	UNIT	TOTAL	Y031-1F	Y031-1F	100% CITY OF WAUKEGAN Y031-3D	Y031-1F	100% CITY OF WAUKEGAN Y031-3D	Y031-1F	100% CITY OF WAUKEGAN Y031-3D	Y031-1F	100% CITY OF WAUKEGAN Y031-3D
	20200100	EARTH EXCAVATION	CU.YD.	40								40	
	31100300	SUB-BASE GRANULAR MATERIAL, TYPE A 4"	SQ.YD.	90								90	
	40603340	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70	TON	12								12	
	40800010	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	10								10	
	42400200	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	SQ.FT.	350				350					
	42400800	DETECTABLE WARNINGS	SQ.FT.	48				48					
	44000500	COMBINATION CURB & GUTTER REMOVAL	FOOT	270				50				220	
	44000600	SIDEWALK REMOVAL AND	SQ.FT.	150				150					
	44003100	MEDIAN REMOVAL	SQ.FT.	500								500	
	44200974	CLASS B PATCHES, TYPE III, 10 INCH	SQ.YD.	90								90	
	60605000	COMBINATION CONCRETE CURB AND GUTTER, TYPE B6.24	FOOT	50				50					
	67000200	ENGINEER'S FIELD OFFICE, TYPE A	CAL.MO.	3	1	1		1					
	67100100	MOBILIZATION	L.SUM	1	1								
	70102625	TRAFFIC CONTROL AND PROTECTION, STANDARD 701606	L.SUM	1	0.20	0.20		0.20		0.20		0.20	
	70102635	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701	L.SUM	1	0.20	0.20		0.20		0.20		0.20	
*	72000100	SIGN PANEL - TYPE 1	SQ.FT.	18								18	
*	72000200	SIGN PANEL - TYPE 2	SQ.FT.	82.5		27.5		27.5				27.5	
*	78000400	THERMOPLASTIC PAVEMENT MARKING - LINE 6"	FOOT	220				220					
*	78000500	THERMOPLASTIC PAVEMENT MARKING - LINE 8"	FOOT	340								340	
*	78000600	THERMOPLASTIC PAVEMENT MARKING - LINE 12"	FOOT	315								315	
*	78000650	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	55				55					
	78300100	PAVEMENT MARKING REMOVAL	SQ.FT.	205				120				85	
	Z0062450	SAWING PAVEMENT (FULL DEPTH)	FOOT	220								220	
	81000600	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL	FOOT	762								762	
	81000700	CONDUIT IN TRENCH, 2 1/2" DIA., GALVANIZED STEEL	FOOT	311	65	52		80				114	
	81000800	CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL	FOOT	7								7	
	81018500	CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL	FOOT	295								295	
	81018900	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL	FOOT	362								362	
	81400100	HANDHOLE	EACH	9								9	
	81400200	HEAVY-DUTY HANDHOLE	EACH	2								2	
	81900200	TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	1,045	65	52		80				848	
	85000200	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	4	1	1		1		1			
	85700500	FULL-ACTUATED CONTROLLER IN EXISTING CABINET	EACH	5	1	1		1		1		1	
	87301215	ELECTRIC CABLE IN CONDUIT, SIGNAL, NO. 14 2C	FOOT	177				177					
	87301235	ELECTRIC CABLE IN CONDUIT, SIGNAL, NO. 14 4C	FOOT	1,153			98	195	175		313		372
	87301245	ELECTRIC CABLE IN CONDUIT, SIGNAL, NO. 14 5C	FOOT	4,841	524	820		812				2,685	
	87301255	ELECTRIC CABLE IN CONDUIT, SIGNAL, NO. 14 7C	FOOT	2,642	524							2,118	
	87301305	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	2,312								2,312	
	87301805	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C	FOOT	243	19	29		79		22		94	
	X8730027	ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C	FOOT	844	19	29		79		22		695	
	X8730250	ELECTRIC CABLE IN CONDUIT, NO. 20 3C TWISTED SHIELDI	FOOT	649			98	179					372
	87502480	TRAFFIC SIGNAL POST, GALVANIZED STEEL 14 FT.	EACH	4		2		2					
	87501200	TRAFFIC SIGNAL POST, 16 FT.	EACH	11	3	2		2		4			
	87700150	STEEL MAST ARM ASSEMBLY AND POLE, 22 FT.	EACH	1								1	
	87700160	STEEL MAST ARM ASSEMBLY AND POLE, 24 FT.	EACH	4	2							2	
	87700180	STEEL MAST ARM ASSEMBLY AND POLE, 28 FT.	EACH	3		2		1					
	87700190	STEEL MAST ARM ASSEMBLY AND POLE, 30 FT.	EACH	1				1					
	87700260	STEEL MAST ARM ASSEMBLY AND POLE, 44 FT.	EACH	2								2	
	87700270	STEEL MAST ARM ASSEMBLY AND POLE, 46 FT.	EACH	1								1	
	87702910	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 36 FT.	EACH	1								1	
	87800100	CONCRETE FOUNDATION, TYPE A INCH	FOOT	12				4				8	
	87800400	CONCRETE FOUNDATION, TYPE E 30 INCH DIAMETER	FOOT	100.5	20	27		23.5				30	
	87800415	CONCRETE FOUNDATION, TYPE E 36 INCH DIAMETER	FOOT	52								52	
	87900200	DRILL EXISTING HANDHOLE	EACH	13	2	2		3				6	
	88030020	SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	25	2	6		6		3		8	
	88030050	SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	7		2		2				3	
	88030100	SIGNAL HEAD, L.E.D., 1-FACE, 5-SECTION, BRACKET MOUNTED	EACH	4		2		2					
	88030110	SIGNAL HEAD, L.E.D., 1-FACE, 5-SECTION, MAST ARM MOUNTED	EACH	18	2	2		2		5		7	
	88030220	SIGNAL HEAD, L.E.D., 2-FACE, 5-SECTION, BRACKET MOUNTED	EACH	1						1			
	88030240	SIGNAL HEAD, L.E.D., 2-FACE, 1-3 SECTION, 1-5 SECTION, BRACKET MOUNTED	EACH	4						3		1	
	88102717	PEDESTRIAN SIGNAL HEAD, L.E.D., 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER	EACH	4				4					
	88200210	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINIUM	EACH	43	4	8		8		8		15	
	88500100	INDUCTIVE LOOP DETECTOR	EACH	8								8	
	88600100	DETECTOR LOOP, TYPE I	FOOT	660								660	
	88700200	LIGHT DETECTOR	EACH	6			1		1		2		2
	88700300	LIGHT DETECTOR AMPLIFIER	EACH	2							1		1
	88800100	PEDESTRIAN PUSH-BUTTON	EACH	4				4					
	89000100	TEMPORARY TRAFFIC SIGNAL INSTALLATION	EACH	1								1	
	89500100	RELOCATE EXISTING SIGNAL HEAD	EACH	6	6								
	89502300	REMOVE ELECTRIC CABLE FROM CONDUIT	EACH	1,368	505	330		385		13		135	
	89502350	REMOVE AND REINSTALL ELECTRIC CABLE FROM CONDUIT	FOOT	21								21	
	89502375	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	EACH	5	1	1		1		1		1	
	89502380	REMOVE EXISTING HANDHOLE	EACH	9								9	
	89502385	REMOVE EXISTING CONCRETE FOUNDATION	EACH	11	2	2		3				4	
	X8050015	SERVICE INSTALLATION - POLE MOUNTED	EACH	5	1	1		1		1		1	
	X8620020	UNINTERRUPTIBLE POWER SUPPLY	EACH	5	1	1		1		1		1	
	X8950210	REBUILD EXISTING HANDHOLE TO HEAVY-DUTY HANDHOLE	EACH	1								1	
	X0326309	RELOCATE EXISTING REMOTE-CONTROLLED VIDEO SYSTEM (SPECIAL)	EACH	1								1	

① 90%FED./5% STATE/5% LAKE CO.

② 90%FED./3.75%STATE/1.25% WAUKEGAN/N.CHICAGO

③ 90%FED./5% STATE/2.5% WAUKEGAN/2.5% GURNEE

④ 90%FED./5% STATE/2.5% WAUKEGAN/2.5% LAKE CO.

*Specialty Items

HOT-MIX ASPHALT MIXTURE REQUIREMENTS

MIX TYPE	AC TYPE	AIR VOIDS
HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70 Esal 9.5mm	PG 64-22	4% @ 70 GYRATIONS

-THE UNIT WEIGHT USED TO CALCULATE ALL HMA SURFACE MIXTURE QUANTITIES IS 112 LBS/SQYD/IN

Rev.

FILE NAME = 4085.800-TR1.dgn	USER NAME =	DESIGNED - JRD	REVISED -
		DRAWN - LJD	REVISED -
	PLOT SCALE = 1"=20'	CHECKED - KLB	REVISED -
	PLOT DATE = 1/29/09	DATE - 1/29/09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: NONE | SHEET NO. 2 OF 21 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	2009-005 TS	097(LAKE)LK	21	2
		CONTRACT NO. 60G01		
		ILLINOIS FED. AID PROJECT		

LOOP DETECTOR NOTES

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

2. THE NUMBER OF LOOP TURNS SHALL BE AS RECOMMENDED BY THE AMPLIFIER MANUFACTURER. ALL ADJACENT SIDES OF THE LOOPS SHALL BE INSTALLED IN SUCH A WAY THAT THE CURRENT FLOW IS IN THE SAME DIRECTION TO REINFORCE ITS MAGNETIC FIELDS FOR SMALL VEHICLE DETECTION.

3. EACH LOOP LEAD-IN SHALL BE IDENTIFIED AND PERMANENTLY TAGGED IN THE HANDHOLE. EACH LEAD-IN CABLE TAG SHALL INDICATE THE LOCATION OF THE LOOP, LOOP ROTATION (CLOCKWISE/COUNTERCLOCKWISE), LOOP LEAD-IN DIRECTION (IN OR OUT), LOOP CABLE NUMBER AND LOCATION IN CABINET, AND NUMBER OF TURNS IN THE DETECTOR LOOPS IN WATER PROOF INK AS INDICATED ON THE DISTRICT 1 STANDARD TRAFFIC SIGNAL DESIGN DETAIL. THE CONTRACTOR SHALL MARK LOOP LOCATIONS ON RECORD DRAWINGS AND PRESENT TO THE ENGINEER AFTER FINAL INSPECTION. LOOPS SHALL BE MARKED BY LANE AND LOOP NUMBER. SEE DETAIL BELOW.

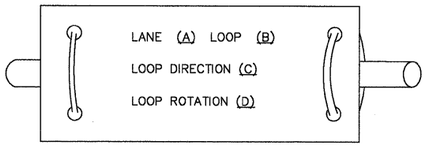
4. ALL LOOP CABLE SHALL BE FASTENED WITH PLASTIC TIE WRAP TO THE HANDHOLE HOOKS.

5. IN ASPHALT PAVEMENT, LOOPS SHOULD BE PLACED IN THE BINDER AND DIVEHOLES MARKED AT THE CURB WITH A SAW-CUT. THE SAW-CUT SHALL BE CUT IN ACCORDANCE WITH LOCAL AND E.P.A. DUST CONTROL REQUIREMENTS. DETECTOR LOOP(S) SHALL NOT BE INSTALLED IN WET CONDITIONS AND THE SAW-CUTS MUST BE FREE OF DEBRIS AND RESIDUE SUCH AS DUST AND WATER WHICH IS TO BE ACHIEVED BY THE USE OF COMPRESSED AIR, WIRE BRUSHING AND HEAT DRYING ACCORDING TO SEALANT MANUFACTURER REQUIREMENTS. THE DETECTOR WIRE SHALL BE HELD IN PLACE BY THE USE OF FORM WEDGES. WEDGES SHALL BE SPACED NO MORE THAN 18" (450 mm) APART.

6. LOOP SPLICES SHALL BE SOLDERED USING A SOLDERING IRON. BLOW TORCHES OR OTHER DEVICES WHICH OXIDIZE COPPER CABLE SHALL NOT BE ALLOWED FOR SOLDERING OPERATIONS. SEE DETAIL BELOW RIGHT.

7. PREFORMED DETECTOR LOOPS SHALL BE USED, AS SHOWN ON THE PLANS, WHERE NEW CONCRETE PAVEMENT IS PROPOSED. THE INSTALLATION OF PREFORMED LOOPS SHALL BE IN ACCORDANCE WITH THE DISTRICT 1 SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.

LOOP LEAD-IN CABLE TAG

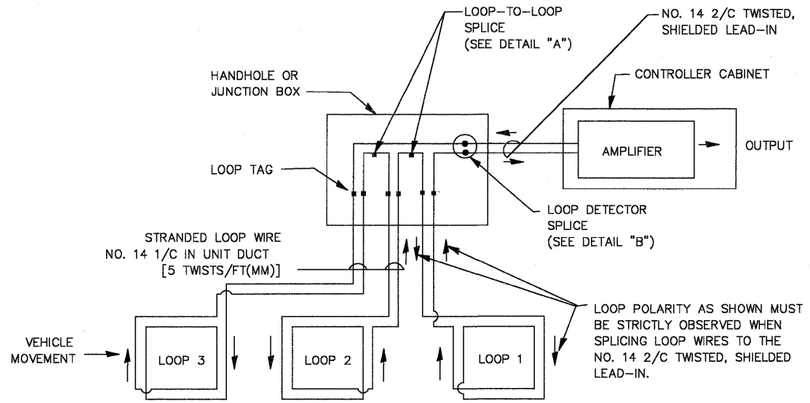


A. LANE 1 IS THE LANE CLOSEST TO THE CENTERLINE OF THE ROADWAY

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

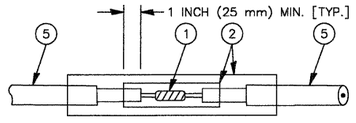
C. LABEL LOOP CABLE "IN" OR LOOP CABLE "OUT".

D. LABEL LOOP CABLE CLOCKWISE OR LOOP CABLE COUNTERCLOCKWISE.

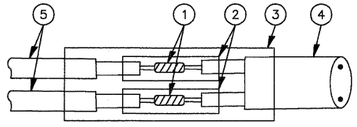


DETECTOR LOOP WIRING SCHEMATIC

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



DETAIL "A"
LOOP-TO-LOOP SPLICE



DETAIL "B"
LOOP-TO-CONTROLLER SPLICE

LOOP DETECTOR SPLICE

(1) WESTERN UNION SPLICE SOLDERED WITH ROSIN CORE FLUX. ALL EXPOSED SURFACES OF THE SOLDER SHALL BE SMOOTH.

(2) WCSMW 30/100 HEAT SHRINK TUBE, MINIMUM LENGTH 3" (75 mm), UNDERWATER GRADE.

(3) WCS 200/750 HEAT SHRINK TUBE, MINIMUM LENGHT 6" (150 mm), UNDERWATER GRADE.

(4) NO. 14 2/C TWISTED, SHIELDED CABLE.

(5) LOOP CONDUCTOR WITH FLEXIBLE PLASTIC TUBE.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS

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

DRAWN BY: RWP
DESIGNED BY: DAD
CHECKED BY: DAZ
SHEET 1 OF 4

FILE NAME = 4085.800-TR1.dgn	USER NAME =	DESIGNED - JRD	REVISED -
		DRAWN - LJD	REVISED -
	PLOT SCALE = 1"=20'	CHECKED - KLB	REVISED -
	PLOT DATE = 1/29/09	DATE - 1/29/09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

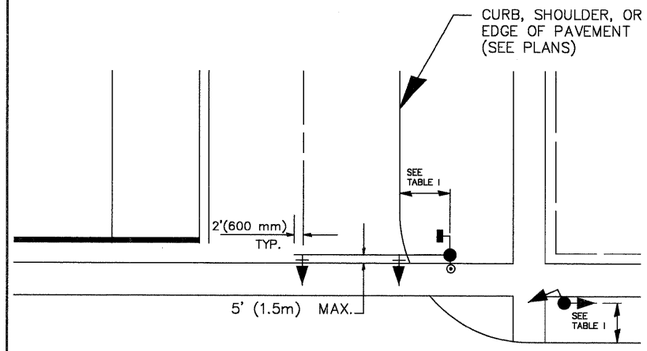
DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: NONE | SHEET NO. 3 OF 21 SHEETS | STA. | TO STA.

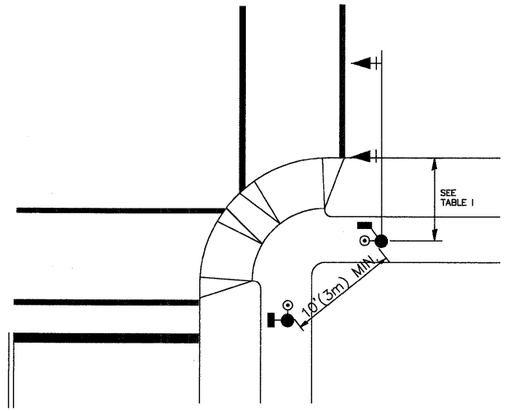
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	2009-005 TS	097(LAKE)LK	21	3
		CONTRACT NO. 60G01		
		ILLINOIS FED. AID PROJECT		

TRAFFIC SIGNAL MAST ARM AND POST

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



PEDESTRIAN SIGNAL PUSHBUTTON



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

NOTES:

1. 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

2. 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.

3. 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.

4. THE BOTTOM OF THE HOUSING OF A VEHICLE SIGNAL FACE, MOUNTED OVER A ROADWAY, SHALL BE ACCORDING TO CURRENT STATE STANDARDS 877001 AND 877006. (16 FT (5m) MIN., 18 FT (5.5m) MAX., FROM HIGHEST POINT OF PAVEMENT)

PEDESTRIAN SIGNAL POST

PEDESTRIAN SIGNAL HEAD AND PEDESTRIAN PUSHBUTTON DETECTOR LOCATION

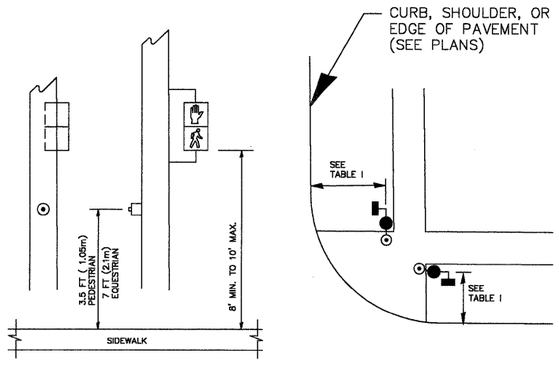


TABLE I

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

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS

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

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

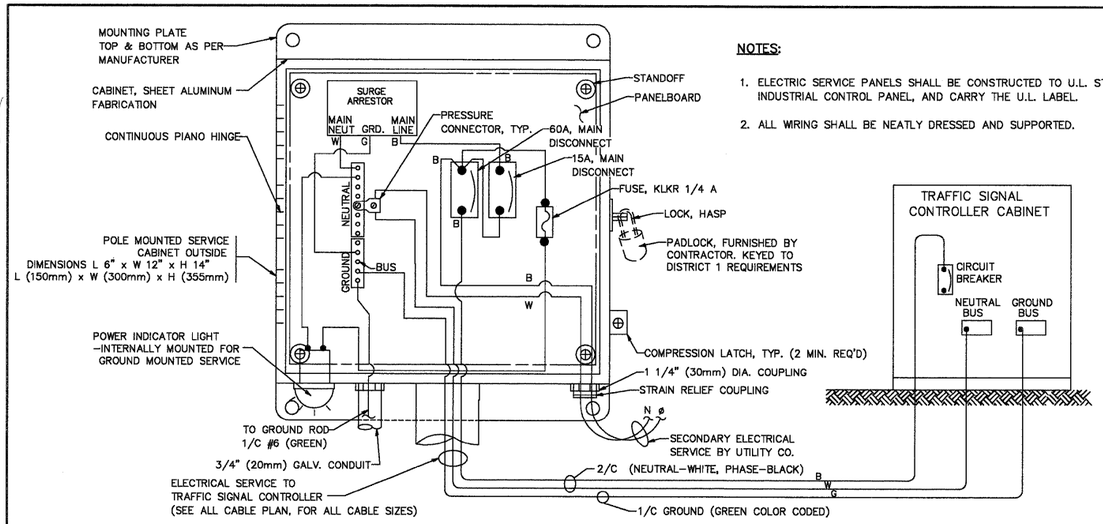
FILE NAME = 4085.800-TR1.dgn	USER NAME =	DESIGNED - JRD	REVISED -
		DRAWN - LJD	REVISED -
	PLOT SCALE = 1"=20'	CHECKED - KLB	REVISED -
	PLOT DATE = 1/29/09	DATE - 1/29/09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: NONE | SHEET NO. 4 OF 21 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	2009-005 TS	097(LAKE)LK	21	4
		CONTRACT NO. 60G01		
	ILLINOIS FED. AID PROJECT			



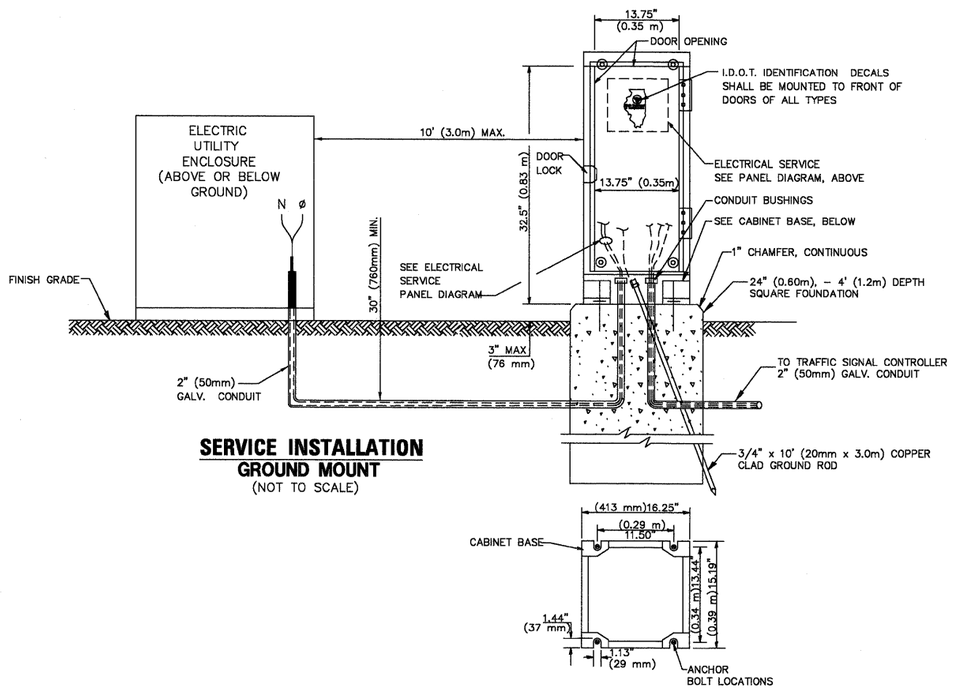
ELECTRICAL SERVICE - PANEL DIAGRAM (TYPICAL FOR POLE AND GROUND MOUNTED SERVICE)

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.

SERVICE INSTALLATION POLE MOUNT (SHOWN)

(NOT TO SCALE)

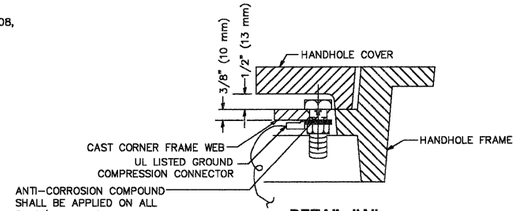


SERVICE INSTALLATION GROUND MOUNT

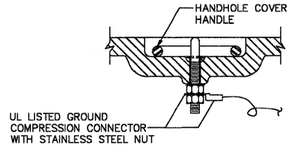
(NOT TO SCALE)

CABINET - BASE BOLT PATTERN

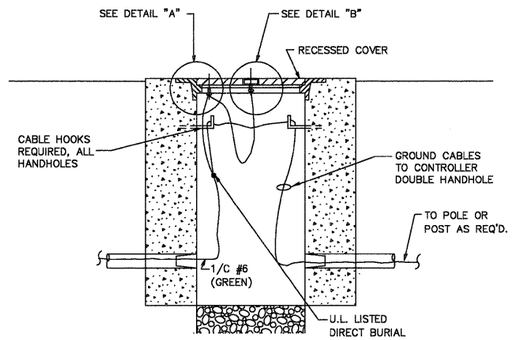
(NOT TO SCALE)



DETAIL "A"

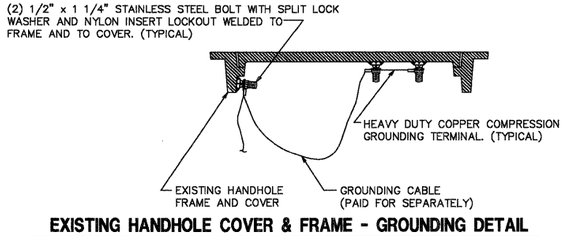


DETAIL "B"



HANDHOLE COVER & FRAME - GROUNDING DETAIL

(NOT TO SCALE)



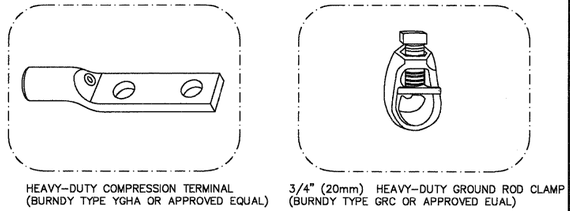
EXISTING HANDHOLE COVER & FRAME - GROUNDING DETAIL

(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, LAKE COUNTY DIVISION 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.

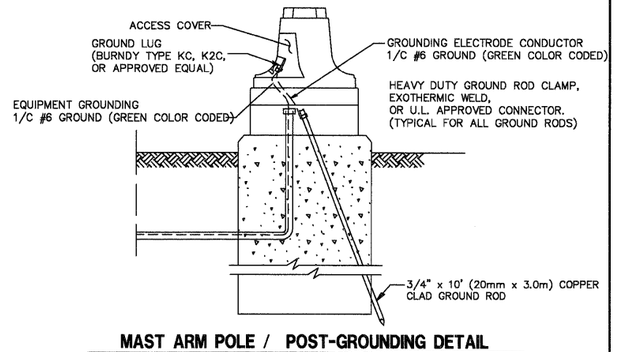


HEAVY-DUTY COMPRESSION TERMINAL (BURNDY TYPE YGHA OR APPROVED EQUAL)

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

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.



MAST ARM POLE / POST-GROUNDING DETAIL

(NOT TO SCALE)

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS

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

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

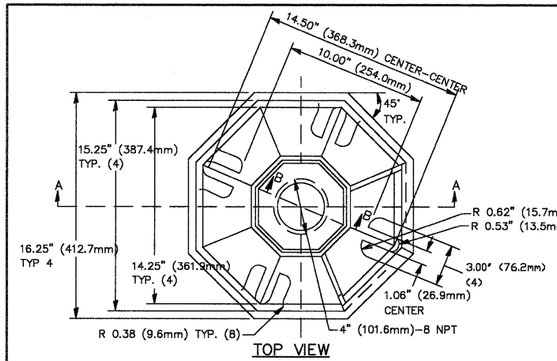
FILE NAME = 4085.800-TR1.dgn	USER NAME =	DESIGNED - JRD	REVISED -
		DRAWN - LJD	REVISED -
	PLOT SCALE = 1"=20'	CHECKED - KLB	REVISED -
	PLOT DATE = 1/29/09	DATE - 1/29/09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

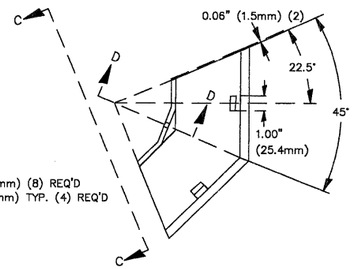
DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS

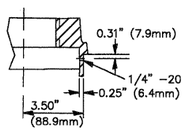
SCALE: NONE | SHEET NO. 5 OF 21 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	2009-005 TS	097(LAKE)LK	21	5
		CONTRACT NO. 60G01		
	ILLINOIS FED. AID PROJECT			

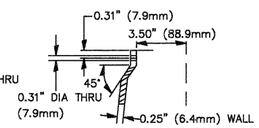


TOP VIEW

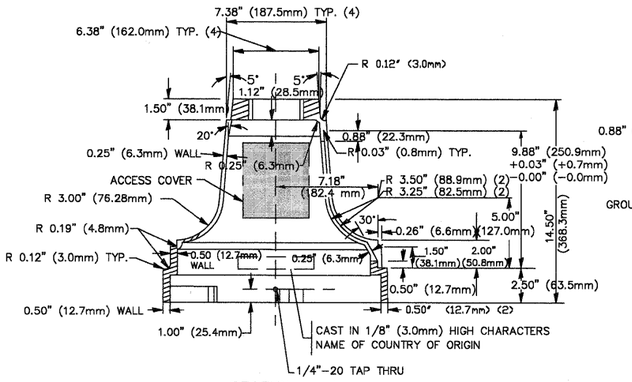




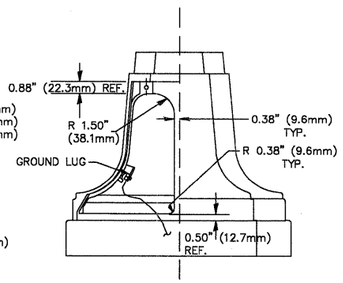
SECTION B-B



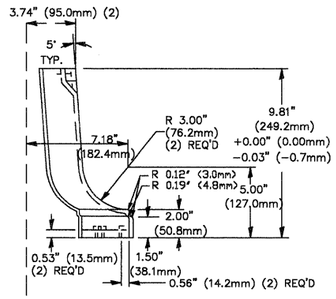
SECTION D-D



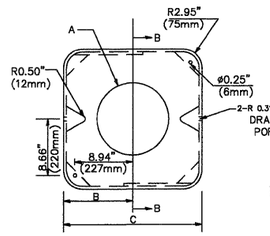
SECTION A-A

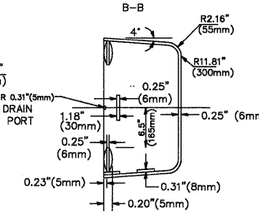


VIEW C-C



TRAFFIC SIGNAL POST - MOUNTING BASE - TYPE A



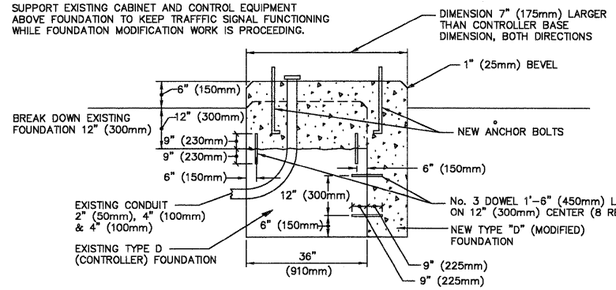


MATERIAL:
- ASTM A48 CLASS 30 GREY IRON
- ASTM A123 HOT DIPPED GALVANIZED

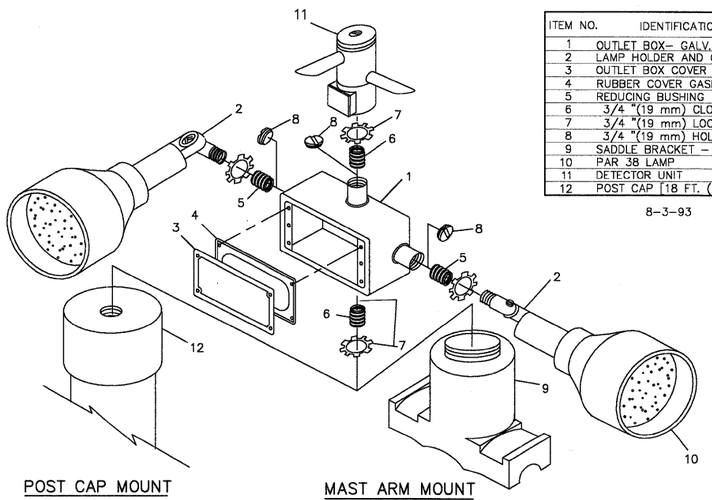
TYPE	A	B	C	HEIGHT	WEIGHT
I	ø 10.125"(257mm)	9.5"(241mm)	19"(483mm)	12" (300mm)	24kg
II	ø 11.125"(283mm)	10.75"(273mm)	21.5"(546mm)	12" (300mm)	26kg

SHROUD DETAIL

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



MODIFY EXISTING TYPE "D" FOUNDATION
(NOT TO SCALE)



POST CAP MOUNT

MAST ARM MOUNT

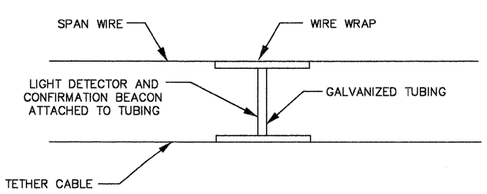
EMERGENCY VEHICLE DETECTOR WITH CONFIRMATION BEACON MOUNTING DETAIL

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

8-3-93

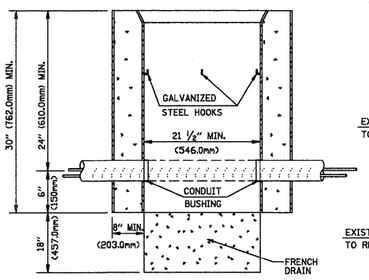
NOTES:

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-O-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 3/4 "(19 mm) HOLE WITH PIPE THREADS. THE POST CAP SHALL EITHER BE SCREWED TO THE TOP OF THE POST OR A MINIMUM OF 3 TIGHTENING SCREWS SHALL BE REQUIRED ON EACH CAP.

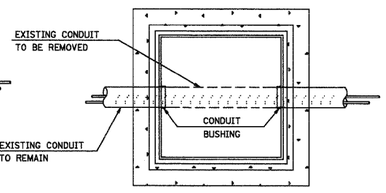


LIGHT DETECTOR AND CONFIRMATION BEACON MOUNTING FOR TEMPORARY TRAFFIC SIGNALS
(NOT TO SCALE)

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



ELEVATION



PLAN

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

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL
DESIGN DETAILS

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

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

FILE NAME =	USER NAME =	DESIGNED - JRD	REVISED -
4085.800-TR1.dgn		DRAWN - LJD	REVISED -
	PLOT SCALE = 1"=20'	CHECKED - KLB	REVISED -
	PLOT DATE = 1/29/09	DATE - 1/29/09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: NONE | SHEET NO. 6 OF 21 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	2009-005 TS	097(LAKE)LK	21	6
		CONTRACT NO. 60G01		
		ILLINOIS FED. AID PROJECT		

TRAFFIC SIGNAL LEGEND

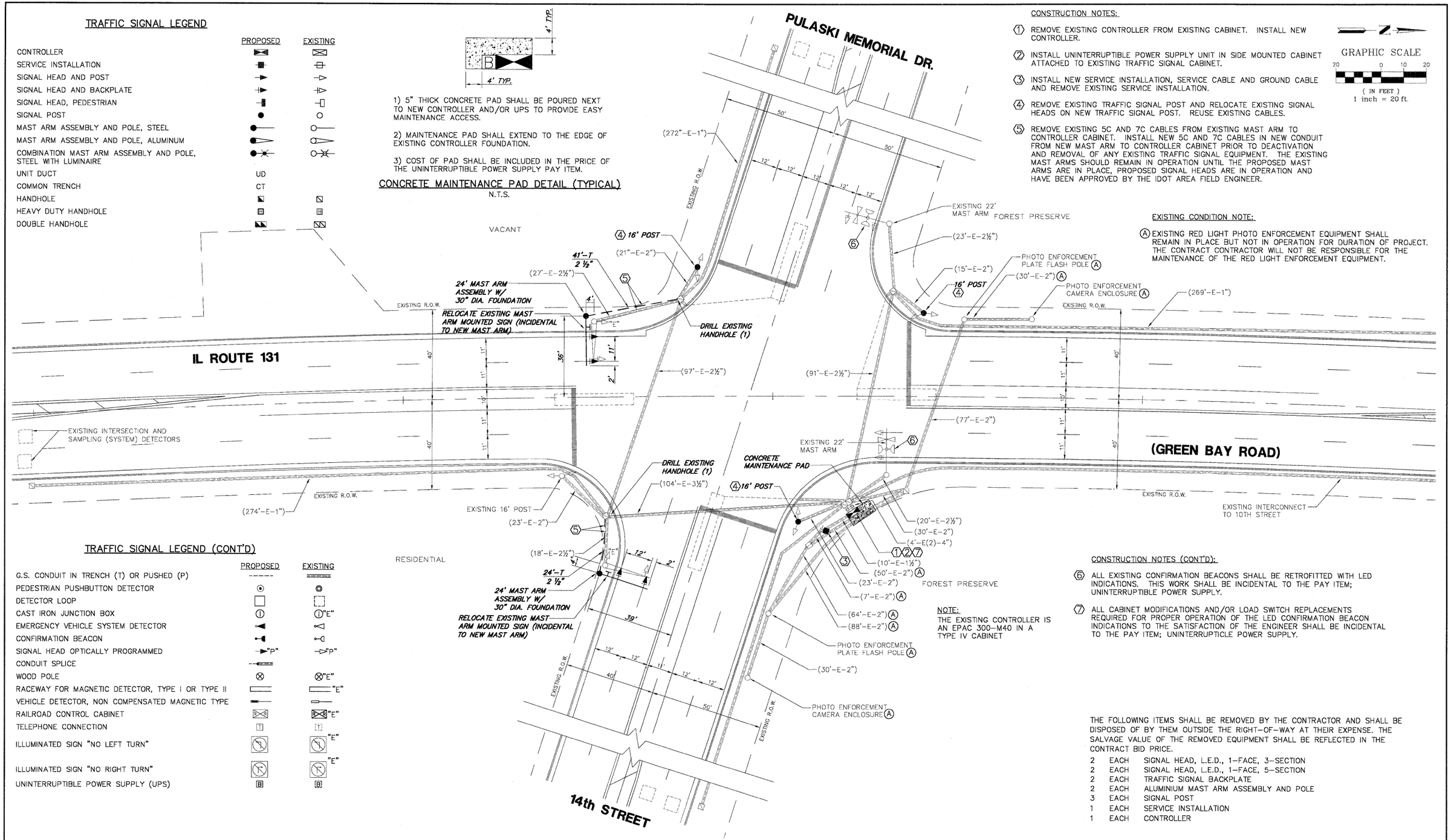
	PROPOSED	EXISTING
CONTROLLER	▣	▣
SERVICE INSTALLATION	▪	▫
SIGNAL HEAD AND POST	→	→
SIGNAL HEAD AND BACKPLATE	→	→
SIGNAL HEAD, PEDESTRIAN	→	→
SIGNAL POST	●	○
MAST ARM ASSEMBLY AND POLE, STEEL	●	○
MAST ARM ASSEMBLY AND POLE, ALUMINUM	●	○
COMBINATION MAST ARM ASSEMBLY AND POLE, STEEL WITH LUMINAIRE	●	○
UNIT DUCT	UD	
COMMON TRENCH	CT	
HANDHOLE	◪	◪
HEAVY DUTY HANDHOLE	◪	◪
DOUBLE HANDHOLE	◪	◪

1) 5" THICK CONCRETE PAD SHALL BE POURED NEXT TO NEW CONTROLLER AND/OR UPS TO PROVIDE EASY MAINTENANCE ACCESS.

2) MAINTENANCE PAD SHALL EXTEND TO THE EDGE OF EXISTING CONTROLLER FOUNDATION.

3) COST OF PAD SHALL BE INCLUDED IN THE PRICE OF THE UNINTERRUPTIBLE POWER SUPPLY PAY ITEM.

CONCRETE MAINTENANCE PAD DETAIL (TYPICAL)
N.T.S.



CONSTRUCTION NOTES:

1. REMOVE EXISTING CONTROLLER FROM EXISTING CABINET. INSTALL NEW CONTROLLER.
2. INSTALL UNINTERRUPTIBLE POWER SUPPLY UNIT IN SIDE MOUNTED CABINET ATTACHED TO EXISTING TRAFFIC SIGNAL CABINET.
3. INSTALL NEW SERVICE INSTALLATION, SERVICE CABLE AND GROUND CABLE AND REMOVE EXISTING SERVICE INSTALLATION.
4. REMOVE EXISTING TRAFFIC SIGNAL POST AND RELOCATE EXISTING SIGNAL HEADS ON NEW TRAFFIC SIGNAL POST. REUSE EXISTING CABLES.
5. REMOVE EXISTING 5C AND 7C CABLES FROM EXISTING MAST ARM TO CONTROLLER CABINET. INSTALL NEW 5C AND 7C CABLES IN NEW CONDUIT FROM NEW MAST ARM TO CONTROLLER CABINET PRIOR TO DEACTIVATION AND REMOVAL OF ANY EXISTING TRAFFIC SIGNAL EQUIPMENT. THE EXISTING MAST ARMS SHOULD REMAIN IN OPERATION UNTIL THE PROPOSED MAST ARMS ARE IN PLACE, PROPOSED SIGNAL HEADS ARE IN OPERATION AND HAVE BEEN APPROVED BY THE IDOT AREA FIELD ENGINEER.

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

EXISTING CONDITION NOTE:

(A) EXISTING RED LIGHT PHOTO ENFORCEMENT EQUIPMENT SHALL REMAIN IN PLACE BUT NOT IN OPERATION FOR DURATION OF PROJECT. THE CONTRACT CONTRACTOR WILL NOT BE RESPONSIBLE FOR THE MAINTENANCE OF THE RED LIGHT ENFORCEMENT EQUIPMENT.

TRAFFIC SIGNAL LEGEND (CONT'D)

	PROPOSED	EXISTING
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)	----	----
PEDESTRIAN PUSHBUTTON DETECTOR	⊙	⊙
DETECTOR LOOP	□	□
CAST IRON JUNCTION BOX	Ⓘ	Ⓘ"E"
EMERGENCY VEHICLE SYSTEM DETECTOR	◀	◁
CONFIRMATION BEACON	◀	◁
SIGNAL HEAD OPTICALLY PROGRAMMED	→"P"	→"P"
CONDUIT SPLICE		
WOOD POLE	⊗	⊗"E"
RACEWAY FOR MAGNETIC DETECTOR, TYPE I OR TYPE II		"E"
VEHICLE DETECTOR, NON COMPENSATED MAGNETIC TYPE		
RAILROAD CONTROL CABINET	▣	▣"E"
TELEPHONE CONNECTION	T	T"E"
ILLUMINATED SIGN "NO LEFT TURN"		"E"
ILLUMINATED SIGN "NO RIGHT TURN"		"E"
UNINTERRUPTIBLE POWER SUPPLY (UPS)	B	B

CONSTRUCTION NOTES (CONT'D):

(6) ALL EXISTING CONFIRMATION BEACONS SHALL BE RETROFITTED WITH LED INDICATIONS. THIS WORK SHALL BE INCIDENTAL TO THE PAY ITEM; UNINTERRUPTIBLE POWER SUPPLY.

(7) ALL CABINET MODIFICATIONS AND/OR LOAD SWITCH REPLACEMENTS REQUIRED FOR PROPER OPERATION OF THE LED CONFIRMATION BEACON INDICATIONS TO THE SATISFACTION OF THE ENGINEER SHALL BE INCIDENTAL TO THE PAY ITEM; UNINTERRUPTICLE POWER SUPPLY.

NOTE:
THE EXISTING CONTROLLER IS AN EPAC 300-M40 IN A TYPE IV CABINET

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

2	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION
2	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 5-SECTION
2	EACH	TRAFFIC SIGNAL BACKPLATE
2	EACH	ALUMINIUM MAST ARM ASSEMBLY AND POLE
3	EACH	SIGNAL POST
1	EACH	SERVICE INSTALLATION
1	EACH	CONTROLLER

THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "NTCIP" COMPLIANT.

GHA #4085.801

FILE NAME = 4085.800-TR1.dgn	USER NAME =	DESIGNED - JRD	REVISED -
		DRAWN - LJD	REVISED -
	PLOT SCALE = 1"=20'	CHECKED - KLB	REVISED -
	PLOT DATE = 1/29/09	DATE - 1/29/09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL MODIFICATION PLAN
ILL RTE 131 (GREEN BAY RD.) AND 14TH ST./PULASKI MEMORIAL DR.

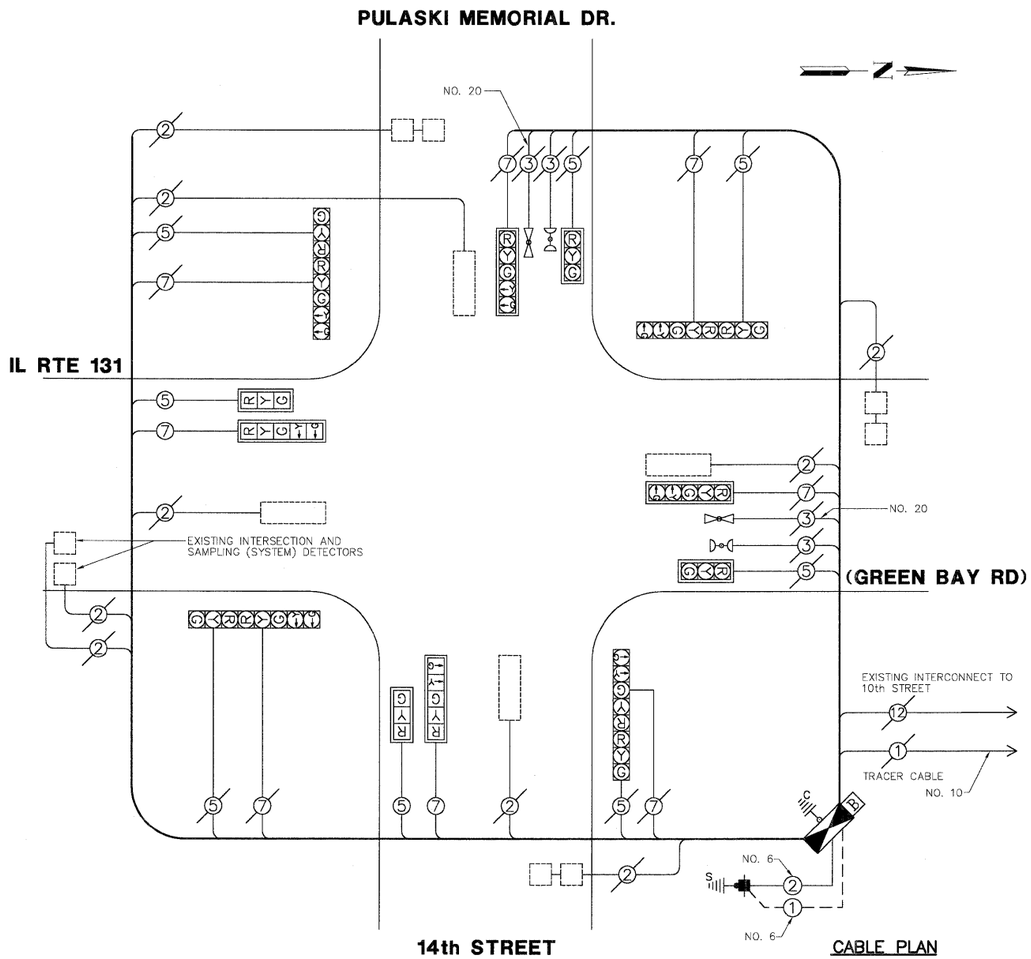
SCALE: 1"=20' | SHEET NO. 7 OF 21 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	2009-005 TS	097(LAKE)ILK	21	7
		CONTRACT NO. 60G01		
		ILLINOIS FED. AID PROJECT		

SCHEDULE OF QUANTITIES

ILLINOIS ROUTE 131 (GREEN BAY ROAD) AND 14th STREET/PULASKI MEMORIAL DRIVE

	QUANT.	UNIT	ITEM
1.	0.20	L.SUM	TRAFFIC CONTROL AND PROTECTION, STANDARD 701606-06
2.	0.20	L.SUM	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701-06
3.	65	FOOT	CONDUIT IN TRENCH, 2-1/2" DIA., GALVANIZED STEEL
4.	65	FOOT	TRENCH AND BACKFILL FOR ELECTRICAL WORK
5.	1	EACH	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION
6.	1	EACH	FULL-ACTUATED CONTROLLER
7.	524	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL, NO. 14 5C
8.	524	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL, NO. 14 7C
9.	19	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C
10.	19	FOOT	ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C
11.	3	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL, 16 FT
12.	2	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 24 FT
13.	20	FOOT	CONCRETE FOUNDATION, TYPE E, 30" DIAMETER
14.	2	EACH	DRILL EXISTING HANDHOLE
15.	2	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, MAST ARM MOUNTED
16.	2	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 5-SECTION, MAST ARM MOUNTED
17.	4	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINIUM
18.	6	EACH	RELOCATE EXISTING SIGNAL HEAD
19.	505	FOOT	REMOVE ELECTRIC CABLE FROM CONDUIT
20.	1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
21.	2	EACH	REMOVE EXISTING CONCRETE FOUNDATION
22.	1	EACH	SERVICE INSTALLATION - POLE MOUNTED
23.	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS)

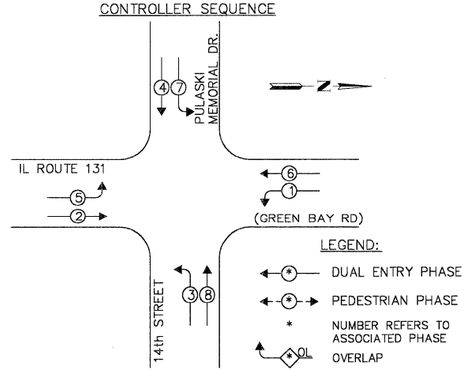


CABLE PLAN

CABLE PLAN LEGEND

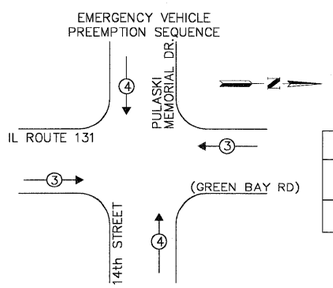
EXISTING	PROPOSED	
G	G	8" (200mm) TRAFFIC SIGNAL SECTION
R	R	12" (300mm) TRAFFIC SIGNAL SECTION
W	W	12" (300mm) PEDESTRIAN SIGNAL SECTION
		12" (300mm) PEDESTRIAN SIGNAL SECTION
		CONTROLLER CABINET
		SERVICE INSTALLATION
T	T	TELEPHONE
		VEHICLE DETECTOR, INDUCTION LOOP
		MAGNETIC DETECTOR
		EMERGENCY VEHICLE LIGHT DETECTOR
		CONFIRMATION BEACON
		PUSHBUTTON DETECTOR
2	2	DENOTES NUMBER OF CONDUCTORS. ALL CABLE NO. 14 EXCEPT AS INDICATED. ALL LOOP DETECTOR CABLE TO BE SHIELDED.
1	1	GROUND CABLE IN CONDUIT NO.6 SOLID COPPER (GREEN)
36	36	FIBER OPTIC CABLE IN CONDUIT NO. 62.5/125 MM12F SM24F
R Y G "P"	R Y G "P"	SIGNAL FACE WITH BACKPLATE. "P" INDICATES PROGRAMMED HEAD
"E"		RAILROAD CONTROL CABINET
"E"		ILLUMINATED SIGN "NO LEFT TURN"
"E"		ILLUMINATED SIGN "NO RIGHT TURN"
H/C	C	GROUND ROD AT HANDHOLE (H), DOUBLE HANDHOLE (H), OR CONTROLLER (C)
P	P	GROUND ROD AT POST (P) OR MAST ARM POLE (MA)
S	S	GROUND ROD AT ELECTRIC SERVICE INSTALLATION
		UNINTERRUPTIBLE POWER SUPPLY (UPS)

EXISTING AND PROPOSED CONTROLLER SEQUENCE



PHASE DESIGNATION DIAGRAM

EMERGENCY VEHICLE PREEMPTION SEQUENCE



EXISTING EMERGENCY VEHICLE PREEMPTORS		
EMERGENCY VEHICLE PREEMPTOR	3	4
MOVEMENT	—	| |

I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE INCAND.	WATTAGE L.E.D.	% OPERATION	
SIGNAL (RED)	16	135	17	0.50	136.0
SIGNAL (YELLOW)	16	135	25	0.25	100.0
SIGNAL (GREEN)	16	135	15	0.25	60.0
ARROW	16	135	12	0.10	19.2
PED.SIGNAL	-	90	25	1.00	-
CONTROLLER	1	-	100	1.00	100.0
LUMINAIRE	-	-	250	0.50	-
L.E.D. ST. NAME SIGN	-	-	64	0.50	-
VIDEO SYSTEM	-	-	150	1.00	-
BATTERY BACKUP	1	-	25	1.00	25.0
			TOTAL =		440.2

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN
(ADDRESS) 100 N. M.L.K. JR. AVENUE
(ADDRESS) WAUKEGAN, IL
ENERGY SUPPLY - CONTACT: NEW BUSINESS
PHONE: 1-866-639-3552
COMPANY: COMED

THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "NTCIP" COMPLIANT.

FOUNDATION (DEPTH)	(FT.)	CABLE SLACK	(FT.)	VERTICAL	(FT.)
TYPE A - POST	4	HANDHOLE	6.5	ALL FOUNDATIONS	3.5
TYPE D - CONTROLLER	4	DOUBLE HANDHOLE	13	MAST ARM (L) POLE	20'+L-2=
TYPE E - M.ARM POLE		SIGNAL POST	2	BRACKET MOUNTED	13
30' (16'-30')	10	CONTROLLER CAB.	1	PED. PUSHBUTTON	4
30' (30'-40')	13.5	FIBER OPTIC	13	ELECTRIC SERVICE	13.5
36' (40'-48')	13	ELECTRIC SERVICE	1	SERVICE TO GROUND	13.5
36' (50'-55')	15	GROUND CABLE	1	POST MOUNTED	6

GHA #4085.801

FILE NAME = 4085.800-TR1.dgn	USER NAME =	DESIGNED - JRD	REVISED -
		DRAWN - LJD	REVISED -
	PLOT SCALE = NONE	CHECKED - KLB	REVISED -
	PLOT DATE = 1/29/09	DATE - 1/29/09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CABLE PLAN, PHASE DESIGNATION DIAGRAM AND SCHEDULE OF QUANTITIES

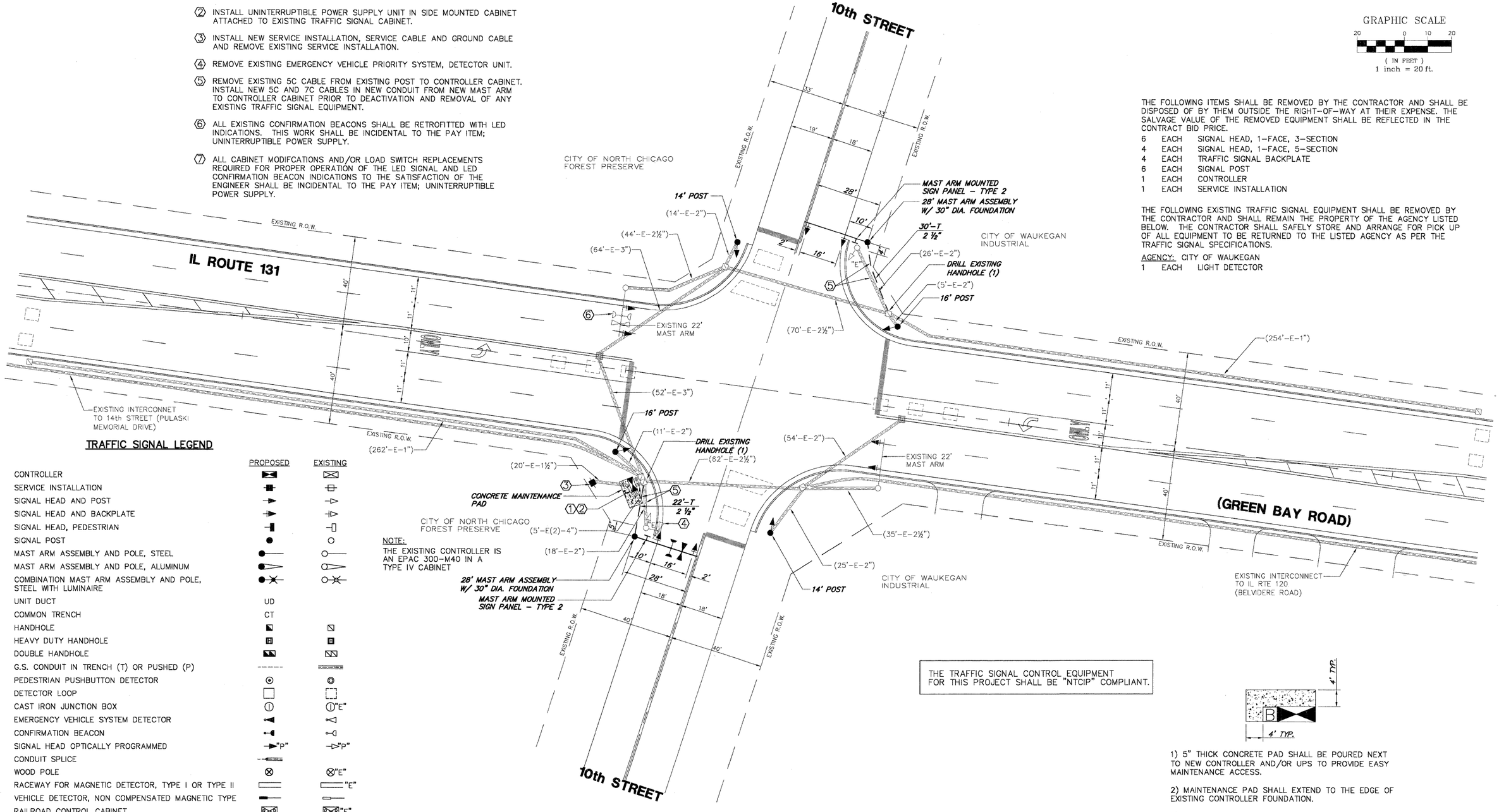
ILL RTE 131 (GREEN BAY RD.) AND 14TH ST./PULASKI MEMORIAL DR.

SCALE: NONE | SHEET NO. 8 OF 21 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	2009-005 TS	097(LAKE)LK	21	8
		CONTRACT NO. 60G01		
	ILLINOIS FED. AID PROJECT			

CONSTRUCTION NOTES:

1. REMOVE EXISTING CONTROLLER FROM EXISTING CABINET. INSTALL NEW CONTROLLER.
2. INSTALL UNINTERRUPTIBLE POWER SUPPLY UNIT IN SIDE MOUNTED CABINET ATTACHED TO EXISTING TRAFFIC SIGNAL CABINET.
3. INSTALL NEW SERVICE INSTALLATION, SERVICE CABLE AND GROUND CABLE AND REMOVE EXISTING SERVICE INSTALLATION.
4. REMOVE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, DETECTOR UNIT.
5. REMOVE EXISTING 5C CABLE FROM EXISTING POST TO CONTROLLER CABINET. INSTALL NEW 5C AND 7C CABLES IN NEW CONDUIT FROM NEW MAST ARM TO CONTROLLER CABINET PRIOR TO DEACTIVATION AND REMOVAL OF ANY EXISTING TRAFFIC SIGNAL EQUIPMENT.
6. ALL EXISTING CONFIRMATION BEACONS SHALL BE RETROFITTED WITH LED INDICATIONS. THIS WORK SHALL BE INCIDENTAL TO THE PAY ITEM; UNINTERRUPTIBLE POWER SUPPLY.
7. ALL CABINET MODIFCATIONS AND/OR LOAD SWITCH REPLACEMENTS REQUIRED FOR PROPER OPERATION OF THE LED SIGNAL AND LED CONFIRMATION BEACON INDICATIONS TO THE SATISFACTION OF THE ENGINEER SHALL BE INCIDENTAL TO THE PAY ITEM; UNINTERRUPTIBLE POWER SUPPLY.



GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20 ft.

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

6	EACH	SIGNAL HEAD, 1-FACE, 3-SECTION
4	EACH	SIGNAL HEAD, 1-FACE, 5-SECTION
4	EACH	TRAFFIC SIGNAL BACKPLATE
6	EACH	SIGNAL POST
1	EACH	CONTROLLER
1	EACH	SERVICE INSTALLATION

THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR AND SHALL REMAIN THE PROPERTY OF THE AGENCY LISTED BELOW. THE CONTRACTOR SHALL SAFELY STORE AND ARRANGE FOR PICK UP OF ALL EQUIPMENT TO BE RETURNED TO THE LISTED AGENCY AS PER THE TRAFFIC SIGNAL SPECIFICATIONS.

AGENCY: CITY OF WAUKEGAN

1	EACH	LIGHT DETECTOR

TRAFFIC SIGNAL LEGEND

	PROPOSED	EXISTING
CONTROLLER	▣	⊠
SERVICE INSTALLATION	■	⊟
SIGNAL HEAD AND POST	→	▷
SIGNAL HEAD AND BACKPLATE	⊣→	⊣▷
SIGNAL HEAD, PEDESTRIAN	⊣■	⊣▯
SIGNAL POST	●	○
MAST ARM ASSEMBLY AND POLE, STEEL	●—	○—
MAST ARM ASSEMBLY AND POLE, ALUMINUM	●▰	○▰
COMBINATION MAST ARM ASSEMBLY AND POLE, STEEL WITH LUMINAIRE	●-✕	○-✕
UNIT DUCT	UD	
COMMON TRENCH	CT	
HANDHOLE	◥	◥
HEAVY DUTY HANDHOLE	⊞	⊞
DOUBLE HANDHOLE	◥◥	◥◥
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)	------	═══
PEDESTRIAN PUSHBUTTON DETECTOR	⊙	◎
DETECTOR LOOP	□	⬚
CAST IRON JUNCTION BOX	ⓘ	ⓘ"E"
EMERGENCY VEHICLE SYSTEM DETECTOR	◄	◁
CONFIRMATION BEACON	-◄	-◁
SIGNAL HEAD OPTICALLY PROGRAMMED	→"P"	▷"P"
CONDUIT SPLICE	-⟨⟩-	
WOOD POLE	⊗	⊗"E"
RACEWAY FOR MAGNETIC DETECTOR, TYPE I OR TYPE II	▭	▭"E"
VEHICLE DETECTOR, NON COMPENSATED MAGNETIC TYPE	▬	▭
RAILROAD CONTROL CABINET	⊠	⊠"E"
TELEPHONE CONNECTION	T	T
ILLUMINATED SIGN "NO LEFT TURN"	⊘	⊘"E"
ILLUMINATED SIGN "NO RIGHT TURN"	⊘	⊘"E"
UNINTERRUPTIBLE POWER SUPPLY (UPS)	B	B

THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "NTCIP" COMPLIANT.

1) 5" THICK CONCRETE PAD SHALL BE POURED NEXT TO NEW CONTROLLER AND/OR UPS TO PROVIDE EASY MAINTENANCE ACCESS.

2) MAINTENANCE PAD SHALL EXTEND TO THE EDGE OF EXISTING CONTROLLER FOUNDATION.

3) COST OF PAD SHALL BE INCLUDED IN THE PRICE OF THE UNINTERRUPTIBLE POWER SUPPLY PAY ITEM.

CONCRETE MAINTENANCE PAD DETAIL (TYPICAL)
N.T.S.

GHA #4085.802

FILE NAME = 4085.800-TR1.dgn	USER NAME =	DESIGNED - JRD	REVISED -
		DRAWN - LJD	REVISED -
	PLOT SCALE = 1"=20'	CHECKED - KLB	REVISED -
	PLOT DATE = 1/29/09	DATE - 1/29/09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL MODIFICATION PLAN
ILL RTE 131 (GREEN BAY RD.) AND 10TH ST.

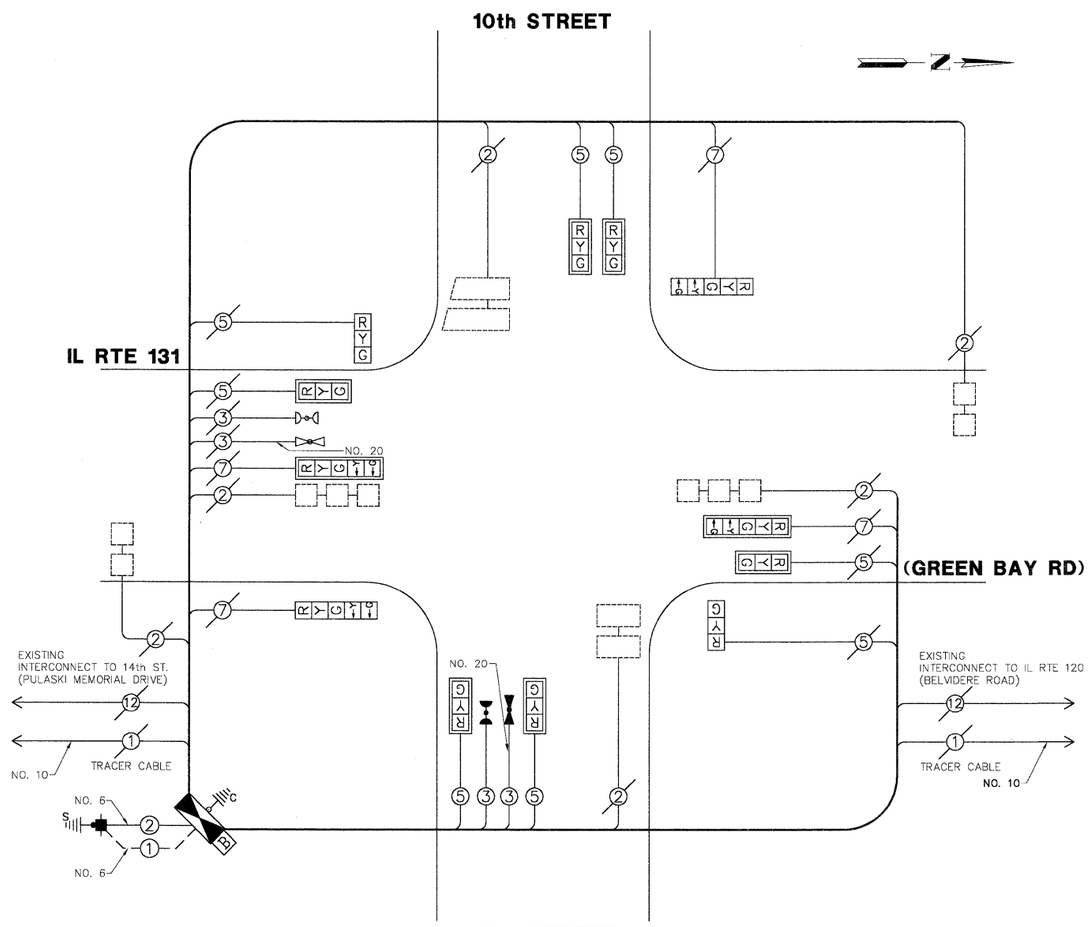
SCALE: 1"=20' | SHEET NO. 9 OF 21 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	2009-005 TS	097(LAKE)IL	21	9
		CONTRACT NO. 60G01		
	ILLINOIS FED. AID PROJECT			

SCHEDULE OF QUANTITIES

ILLINOIS ROUTE 131 (GREEN BAY ROAD) AND 10th STREET

	QUANT.	UNIT	ITEM
1.	0.20	L.SUM	TRAFFIC CONTROL AND PROTECTION, STANDARD 701606-06
2.	0.20	L.SUM	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701-06
3.	27.5	SQ.FT.	SIGN PANEL - TYPE 2
4.	52	FOOT	CONDUIT IN TRENCH, 2-1/2" DIA., GALVANIZED STEEL
5.	52	FOOT	TRENCH AND BACKFILL FOR ELECTRICAL WORK
6.	1	EACH	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION
7.	1	EACH	FULL-ACTUATED CONTROLLER
* 8.	98	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL, NO. 14 3C
9.	820	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL, NO. 14 5C
10.	29	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C
11.	29	FOOT	ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C
* 12.	98	FOOT	ELECTRIC CABLE IN CONDUIT, NO. 20 3C, TWISTED, SHIELDED
13.	2	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL, 14 FT
14.	2	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL, 16 FT
15.	2	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 28 FT
16.	27	FOOT	CONCRETE FOUNDATION, TYPE E, 30" DIAMETER
17.	2	EACH	DRILL EXISTING HANDHOLE
18.	6	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, MAST ARM MOUNTED
19.	2	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, BRACKET MOUNTED
20.	2	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 5-SECTION, BRACKET MOUNTED
21.	2	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 5-SECTION, MAST ARM MOUNTED
22.	8	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINIUM
* 23.	1	EACH	LIGHT DETECTOR
24.	330	FOOT	REMOVE ELECTRIC CABLE FROM CONDUIT
25.	1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
26.	2	EACH	REMOVE EXISTING CONCRETE FOUNDATION
27.	1	EACH	SERVICE INSTALLATION - POLE MOUNTED
28.	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS)
			*100% COST TO THE CITY OF WAUKEGAN

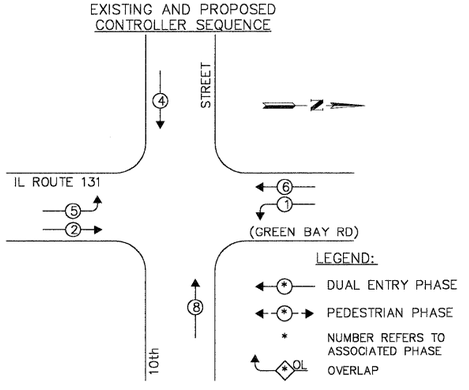


CABLE PLAN

CABLE PLAN LEGEND

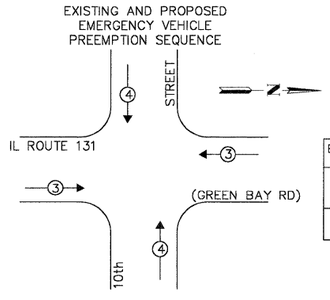
EXISTING	PROPOSED	
G	G	8" (200mm) TRAFFIC SIGNAL SECTION
R	R	12" (300mm) TRAFFIC SIGNAL SECTION
W	W	12" (300mm) PEDESTRIAN SIGNAL SECTION
		12" (300mm) PEDESTRIAN SIGNAL SECTION
		CONTROLLER CABINET
		SERVICE INSTALLATION
T	T	TELEPHONE
		VEHICLE DETECTOR, INDUCTION LOOP
		MAGNETIC DETECTOR
		EMERGENCY VEHICLE LIGHT DETECTOR
		CONFIRMATION BEACON
		PUSHBUTTON DETECTOR
②	②	DENOTES NUMBER OF CONDUCTORS. ALL CABLE NO. 14 EXCEPT AS INDICATED. ALL LOOP DETECTOR CABLE TO BE SHIELDED.
①	①	GROUND CABLE IN CONDUIT NO.6 SOLID COPPER (GREEN)
36	36	FIBER OPTIC CABLE IN CONDUIT NO. 62.5/125 MM12F SM24F
		SIGNAL FACE WITH BACKPLATE. "P" INDICATES PROGRAMMED HEAD
"E"		RAILROAD CONTROL CABINET
"E"		ILLUMINATED SIGN "NO LEFT TURN"
"E"		ILLUMINATED SIGN "NO RIGHT TURN"
H/C	C	GROUND ROD AT HANDHOLE (H), DOUBLE HANDHOLE (H), OR CONTROLLER (C)
P	P	GROUND ROD AT POST (P) OR MAST ARM POLE (MA)
S	S	GROUND ROD AT ELECTRIC SERVICE INSTALLATION
		UNINTERRUPTIBLE POWER SUPPLY (UPS)

EXISTING AND PROPOSED CONTROLLER SEQUENCE



PHASE DESIGNATION DIAGRAM

EXISTING AND PROPOSED EMERGENCY VEHICLE PREEMPTION SEQUENCE



EXISTING AND PROPOSED EMERGENCY VEHICLE PREEMPTORS		
EMERGENCY VEHICLE PREEMPTOR	3	4
MOVEMENT	—	| |

I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE INCAND.	WATTAGE L.E.D.	% OPERATION	
SIGNAL (RED)	12	135	17	0.50	102.0
SIGNAL (YELLOW)	12	135	25	0.25	75.0
SIGNAL (GREEN)	12	135	15	0.25	45.0
ARROW	8	135	12	0.10	9.6
PED.SIGNAL	-	90	25	1.00	-
CONTROLLER	1	-	100	1.00	100.0
LUMINAIRE	-	-	250	0.50	-
L.E.D. ST. NAME SIGN	-	-	64	0.50	-
VIDEO SYSTEM	-	-	150	1.00	-
BATTERY BACKUP	1	-	25	1.00	25.0
				TOTAL =	356.6

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN
(ADDRESS) 100 N. M.L.K. JR. AVENUE
(ADDRESS) WAUKEGAN, IL
ENERGY SUPPLY - CONTACT: NEW BUSINESS
PHONE: 1-866-639-3552
COMPANY: COMED

THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "NTCIP" COMPLIANT.

FOUNDATION (DEPTH)	(FT.)	CABLE SLACK	(FT.)	VERTICAL	(FT.)
TYPE A - POST	4	HANDHOLE	6.5	ALL FOUNDATIONS	3.5
TYPE D - CONTROLLER	4	DOUBLE HANDHOLE	3	MAST ARM (L) POLE	20'+L'-2=
TYPE E - M.ARM POLE		SIGNAL POST	2	BRACKET MOUNTED	13
30" (16'-30')	10	CONTROLLER CAB.	1	PED. PUSHBUTTON	4
30" (30'-40')	13.5	FIBER OPTIC	13	ELECTRIC SERVICE	13.5
36" (40'-48')	13	ELECTRIC SERVICE	1	SERVICE TO GROUND	13.5
36" (50'-55')	15	GROUND CABLE	1	POST MOUNTED	6

GHA #4085.802

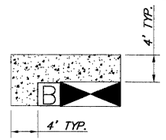
FILE NAME	USER NAME	DESIGNED	JRD	REVISED	-
4085.800-TR1.dgn		DRAWN	- LJD	REVISED	-
	PLOT SCALE = NONE	CHECKED	- KLB	REVISED	-
	PLOT DATE = 1/29/09	DATE	- 1/29/09	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CABLE PLAN, PHASE DESIGNATION DIAGRAM AND SCHEDULE OF QUANTITIES
ILL RTE 131 (GREEN BAY RD.) AND 10TH ST.

SCALE: NONE | SHEET NO. 10 OF 21 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	2009-005 TS	097(LAKE)IL	21	10
		CONTRACT NO. 60G01		
	ILLINOIS FED. AID PROJECT			



1) 5" THICK CONCRETE PAD SHALL BE POURED NEXT TO NEW CONTROLLER AND/OR UPS TO PROVIDE EASY MAINTENANCE ACCESS.

2) MAINTENANCE PAD SHALL EXTEND TO THE EDGE OF EXISTING CONTROLLER FOUNDATION.

3) COST OF PAD SHALL BE INCLUDED IN THE PRICE OF THE UNINTERRUPTIBLE POWER SUPPLY PAY ITEM.

CONCRETE MAINTENANCE PAD DETAIL (TYPICAL)

N.T.S.

NOTE:
THE EXISTING CONTROLLER IS AN EPAC 300-M40 IN A TYPE IV CABINET

GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20 ft.

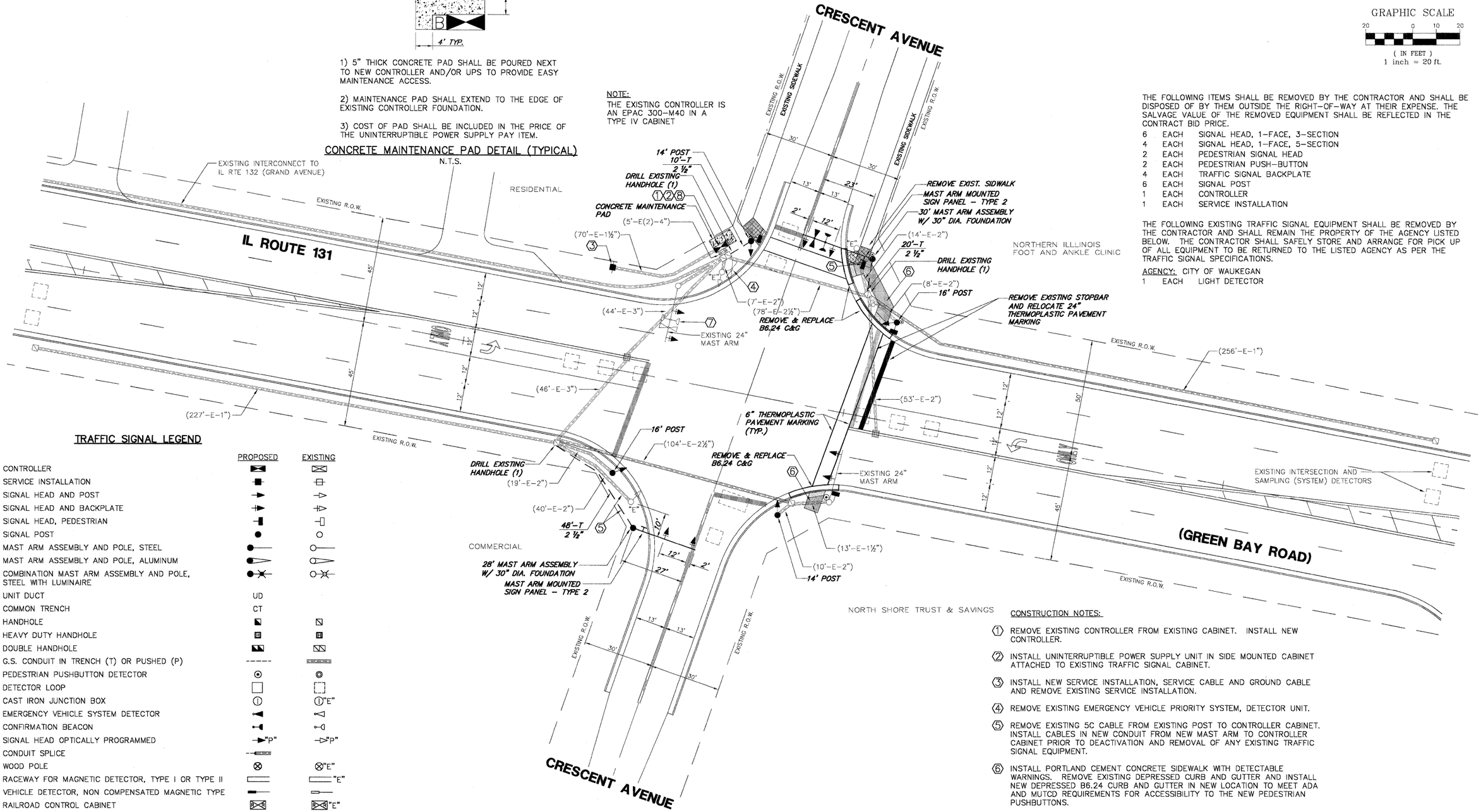
THE FOLLOWING ITEMS SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE DISPOSED OF BY THEM OUTSIDE THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.

6	EACH	SIGNAL HEAD, 1-FACE, 3-SECTION
4	EACH	SIGNAL HEAD, 1-FACE, 5-SECTION
2	EACH	PEDESTRIAN SIGNAL HEAD
2	EACH	PEDESTRIAN PUSH-BUTTON
4	EACH	TRAFFIC SIGNAL BACKPLATE
6	EACH	SIGNAL POST
1	EACH	CONTROLLER
1	EACH	SERVICE INSTALLATION

THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR AND SHALL REMAIN THE PROPERTY OF THE AGENCY LISTED BELOW. THE CONTRACTOR SHALL SAFELY STORE AND ARRANGE FOR PICK UP OF ALL EQUIPMENT TO BE RETURNED TO THE LISTED AGENCY AS PER THE TRAFFIC SIGNAL SPECIFICATIONS.

AGENCY: CITY OF WAUKEGAN

1	EACH	LIGHT DETECTOR



TRAFFIC SIGNAL LEGEND

	PROPOSED	EXISTING
CONTROLLER	▪	▪
SERVICE INSTALLATION	▪	⊟
SIGNAL HEAD AND POST	→	→
SIGNAL HEAD AND BACKPLATE	→	→
SIGNAL HEAD, PEDESTRIAN	▪	⊟
SIGNAL POST	●	○
MAST ARM ASSEMBLY AND POLE, STEEL	●—	○—
MAST ARM ASSEMBLY AND POLE, ALUMINUM	●—	○—
COMBINATION MAST ARM ASSEMBLY AND POLE, STEEL WITH LUMINAIRE	●—	○—
UNIT DUCT	UD	
COMMON TRENCH	CT	
HANDHOLE	▪	▪
HEAVY DUTY HANDHOLE	H	H
DOUBLE HANDHOLE	▪	▪
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)	-----	═══
PEDESTRIAN PUSHBUTTON DETECTOR	⊙	◎
DETECTOR LOOP	□	⬚
CAST IRON JUNCTION BOX	Ⓘ	Ⓘ"E"
EMERGENCY VEHICLE SYSTEM DETECTOR	◀	◁
CONFIRMATION BEACON	◀	◁
SIGNAL HEAD OPTICALLY PROGRAMMED	→"P"	→"P"
CONDUIT SPLICE	---⊗---	
WOOD POLE	⊗	⊗"E"
RACEWAY FOR MAGNETIC DETECTOR, TYPE I OR TYPE II	▭	▭"E"
VEHICLE DETECTOR, NON COMPENSATED MAGNETIC TYPE	▬	▬
RAILROAD CONTROL CABINET	▪	▪"E"
TELEPHONE CONNECTION	T	T
ILLUMINATED SIGN "NO LEFT TURN"	⊘	⊘"E"
ILLUMINATED SIGN "NO RIGHT TURN"	⊘	⊘"E"
UNINTERRUPTIBLE POWER SUPPLY (UPS)	B	B

THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "NTCIP" COMPLIANT.

CONSTRUCTION NOTES:

1. REMOVE EXISTING CONTROLLER FROM EXISTING CABINET. INSTALL NEW CONTROLLER.
2. INSTALL UNINTERRUPTIBLE POWER SUPPLY UNIT IN SIDE MOUNTED CABINET ATTACHED TO EXISTING TRAFFIC SIGNAL CABINET.
3. INSTALL NEW SERVICE INSTALLATION, SERVICE CABLE AND GROUND CABLE AND REMOVE EXISTING SERVICE INSTALLATION.
4. REMOVE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, DETECTOR UNIT.
5. REMOVE EXISTING 5C CABLE FROM EXISTING POST TO CONTROLLER CABINET. INSTALL CABLES IN NEW CONDUIT FROM NEW MAST ARM TO CONTROLLER CABINET PRIOR TO DEACTIVATION AND REMOVAL OF ANY EXISTING TRAFFIC SIGNAL EQUIPMENT.
6. INSTALL PORTLAND CEMENT CONCRETE SIDEWALK WITH DETECTABLE WARNINGS. REMOVE EXISTING DEPRESSED CURB AND GUTTER AND INSTALL NEW DEPRESSED B6.24 CURB AND GUTTER IN NEW LOCATION TO MEET ADA AND MUTCD REQUIREMENTS FOR ACCESSIBILITY TO THE NEW PEDESTRIAN PUSHBUTTONS.
7. ALL EXISTING CONFIRMATION BEACONS SHALL BE RETROFITTED WITH LED INDICATIONS. THIS WORK SHALL BE INCIDENTAL TO THE PAY ITEM; UNINTERRUPTIBLE POWER SUPPLY.
8. ALL CABINET MODIFCATIONS AND/OR LOAD SWITCH REPLACEMENTS REQUIRED FOR PROPER OPERATION OF THE LED SIGNAL AND LED CONFIRMATION BEACON INDICATIONS TO THE SATISFACTION OF THE ENGINEER SHALL BE INCIDENTAL TO THE PAY ITEM; UNINTERRUPTIBLE POWER SUPPLY.

GHA #4085.803

FILE NAME = 4085.800-TR1.dgn	USER NAME =	DESIGNED - JRD	REVISED -
		DRAWN - LJD	REVISED -
	PLOT SCALE = 1"=20'	CHECKED - KLB	REVISED -
	PLOT DATE = 1/29/09	DATE - 1/29/09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL MODIFICATION PLAN

ILL RTE 131 (GREEN BAY RD.) AND CRESCENT AVE.

SCALE: 1"=20' | SHEET NO. 11 OF 21 SHEETS | STA. | TO STA.

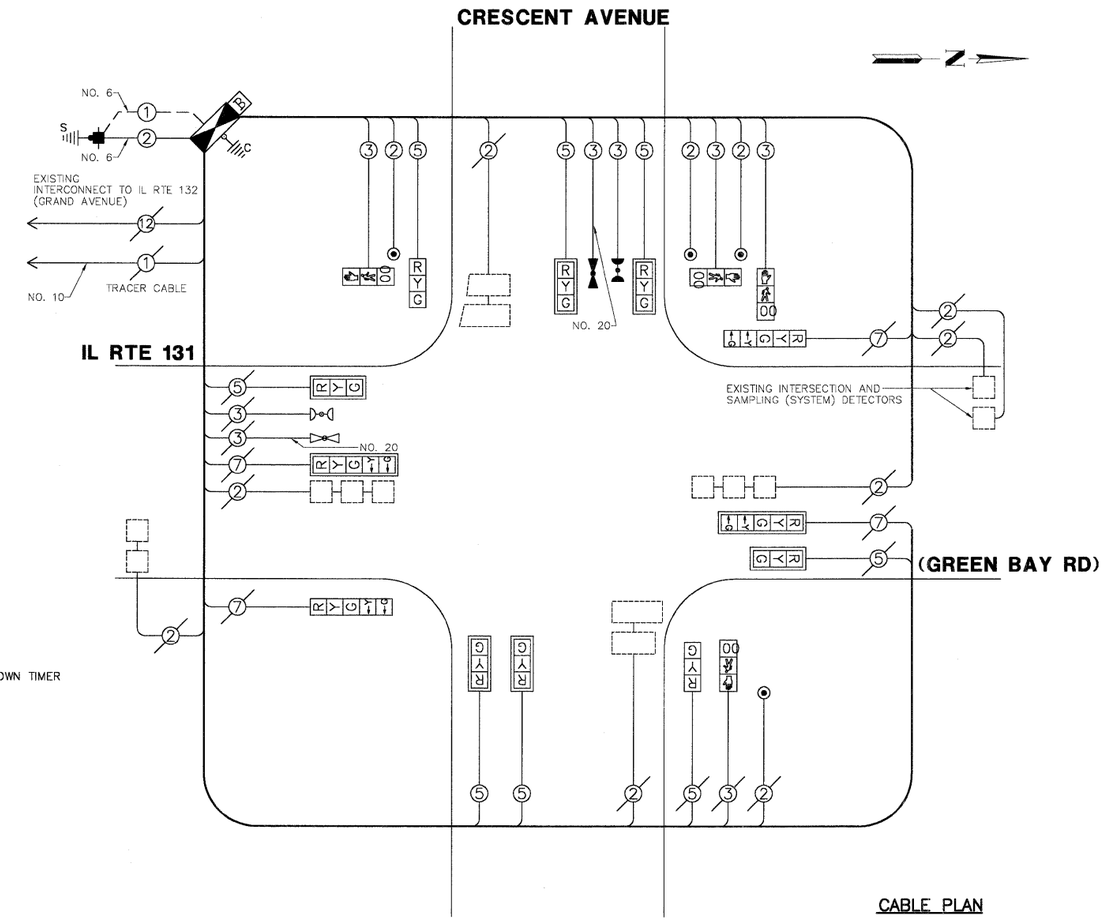
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	2009-005 TS	097(LAKE)IL	21	11
		CONTRACT NO. 60G01		
	ILLINOIS FED. AID PROJECT			

SCHEDULE OF QUANTITIES

ILLINOIS ROUTE 131 (GREEN BAY ROAD) AND CRESCENT AVENUE

	QUANT.	UNIT	ITEM
1.	350	SQ.FT.	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
2.	48	SQ.FT.	DETECTABLE WARNINGS
3.	50	FOOT	COMBINATION CURB AND GUTTER REMOVAL
4.	150	SQ.FT.	SIDEWALK REMOVAL
5.	50	FOOT	COMBINATION CONCRETE CURB AND GUTTER, TYPE B6.24
6.	0.20	L.SUM	TRAFFIC CONTROL AND PROTECTION, STANDARD 701606-06
7.	0.20	L.SUM	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701-06
8.	27.5	SQ.FT.	SIGN PANEL - TYPE 2
9.	220	FOOT	THERMOPLASTIC PAVEMENT MARKING - LINE 6"
10.	55	FOOT	THERMOPLASTIC PAVEMENT MARKING - LINE 24"
11.	120	SQ.FT.	PAVEMENT MARKING REMOVAL
12.	80	FOOT	CONDUIT IN TRENCH, 2-1/2" DIA., GALVANIZED STEEL
13.	80	FOOT	TRENCH AND BACKFILL FOR ELECTRICAL WORK
14.	1	EACH	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION
15.	1	EACH	FULL-ACTUATED CONTROLLER
16.	177	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL, NO. 14 2C
*17.	195	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL, NO. 14 3C
18.	179	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL, NO. 14 3C
19.	812	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL, NO. 14 5C
20.	79	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C
21.	79	FOOT	ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C
*22.	179	FOOT	ELECTRIC CABLE IN CONDUIT, NO. 20 3C, TWISTED, SHIELDED
23.	2	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL, 14 FT
24.	2	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL, 16 FT
25.	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 28 FT
26.	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 30 FT
27.	4	FOOT	CONCRETE FOUNDATION, TYPE A
28.	23.5	FOOT	CONCRETE FOUNDATION, TYPE E, 30" DIAMETER
29.	2	EACH	DRILL EXISTING HANDHOLE
30.	6	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, MAST ARM MOUNTED
31.	2	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, BRACKET MOUNTED
32.	2	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 5-SECTION, BRACKET MOUNTED
33.	2	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 5-SECTION, MAST ARM MOUNTED
34.	2	EACH	PEDESTRIAN SIGNAL HEAD, L.E.D., 1-FACE, BRACKET MOUNTED W/ COUNTDOWN TIMER
35.	8	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINIUM
*36.	1	EACH	LIGHT DETECTOR
37.	2	EACH	PEDESTRIAN PUSH-BUTTON
38.	375	FOOT	REMOVE ELECTRIC CABLE FROM CONDUIT
39.	1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
40.	2	EACH	REMOVE EXISTING CONCRETE FOUNDATION
41.	1	EACH	SERVICE INSTALLATION - POLE MOUNTED
42.	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS)

*100% COST TO THE CITY OF WAUKEGAN

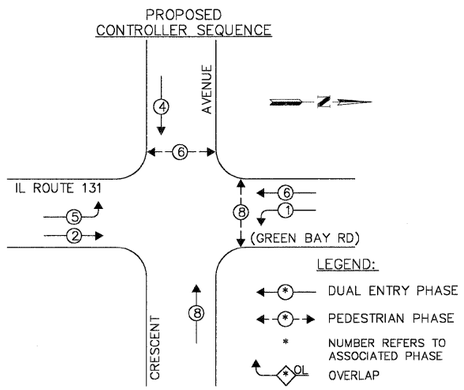


CABLE PLAN

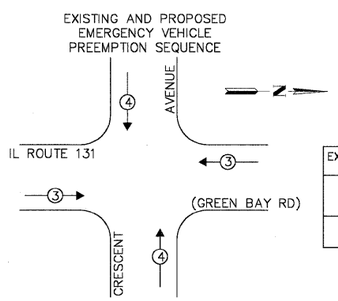
CABLE PLAN LEGEND

EXISTING	PROPOSED	
G	G	8" (200mm) TRAFFIC SIGNAL SECTION
R	R	12" (300mm) TRAFFIC SIGNAL SECTION
W	W	12" (300mm) PEDESTRIAN SIGNAL SECTION
DW	DW	12" (300mm) PEDESTRIAN SIGNAL SECTION
		CONTROLLER CABINET
		SERVICE INSTALLATION
T	T	TELEPHONE
		VEHICLE DETECTOR, INDUCTION LOOP
		MAGNETIC DETECTOR
		EMERGENCY VEHICLE LIGHT DETECTOR
		CONFIRMATION BEACON
		PUSHBUTTON DETECTOR
(2)	(2)	DENOTES NUMBER OF CONDUCTORS. ALL CABLE NO. 14 EXCEPT AS INDICATED. ALL LOOP DETECTOR CABLE TO BE SHIELDED.
(1)	(1)	GROUND CABLE IN CONDUIT NO.6 SOLID COPPER (GREEN)
(36)	(36)	FIBER OPTIC CABLE IN CONDUIT NO. 62.5/125 MM12F SM24F
R Y G LT "P"	R Y G LT "P"	SIGNAL FACE WITH BACKPLATE. "P" INDICATES PROGRAMMED HEAD
"E"	"E"	RAILROAD CONTROL CABINET
"E"	"E"	ILLUMINATED SIGN "NO LEFT TURN"
"E"	"E"	ILLUMINATED SIGN "NO RIGHT TURN"
H/C	C	GROUND ROD AT HANDHOLE (H), DOUBLE HANDHOLE (H), OR CONTROLLER (C)
P	P	GROUND ROD AT POST (P) OR MAST ARM POLE (MA)
S	S	GROUND ROD AT ELECTRIC SERVICE INSTALLATION
		UNINTERRUPTIBLE POWER SUPPLY (UPS)

PROPOSED CONTROLLER SEQUENCE



EXISTING AND PROPOSED EMERGENCY VEHICLE PREEMPTION SEQUENCE



EXISTING AND PROPOSED EMERGENCY VEHICLE PREEMPTORS		
EMERGENCY VEHICLE PREEMPTOR	3	4
MOVEMENT		

PHASE DESIGNATION DIAGRAM

I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE INCAND.	WATTAGE L.E.D.	% OPERATION	
SIGNAL (RED)	12	135	17	0.50	102.0
SIGNAL (YELLOW)	12	135	25	0.25	75.0
SIGNAL (GREEN)	12	135	15	0.25	45.0
ARROW	8	135	12	0.10	9.6
PED.SIGNAL	4	90	25	1.00	100.0
CONTROLLER	1	-	100	1.00	100.0
LUMINAIRE	-	-	250	0.50	-
L.E.D. ST. NAME SIGN	-	-	64	0.50	-
VIDEO SYSTEM	-	-	150	1.00	-
BATTERY BACKUP	1	-	25	1.00	25.0
				TOTAL =	456.6

THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "NTCIP" COMPLIANT.

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN
(ADDRESS) 100 N. M.L.K. JR. AVENUE
(ADDRESS) WAUKEGAN, IL
ENERGY SUPPLY - CONTACT: NEW BUSINESS
PHONE: 1-866-639-3552
COMPANY: COMED

FOUNDATION (DEPTH)	(FT.)	CABLE SLACK	(FT.)	VERTICAL	(FT.)
TYPE A - POST	4	HANDHOLE	6.5	ALL FOUNDATIONS	3.5
TYPE D - CONTROLLER	4	DOUBLE HANDHOLE	13	MAST ARM (L) POLE	20'+L-2=
TYPE E - M.ARM POLE		SIGNAL POST	2	BRACKET MOUNTED	13
30' (25'-30')	10	CONTROLLER CAB.	1	PED. PUSHBUTTON	4
30' (30'-40')	13.5	FIBER OPTIC	13	ELECTRIC SERVICE	13.5
36' (40'-48')	13	ELECTRIC SERVICE	1	SERVICE TO GROUND	13.5
36' (50'-55')	15	GROUND CABLE	1	POST MOUNTED	6

GHA #4085.803

FILE NAME	USER NAME	DESIGNED	JRD	REVISED	-
4085.800-TR1.dgn		DRAWN	LJD	REVISED	-
	PLOT SCALE = NONE	CHECKED	KLB	REVISED	-
	PLOT DATE = 1/29/09	DATE	1/29/09	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

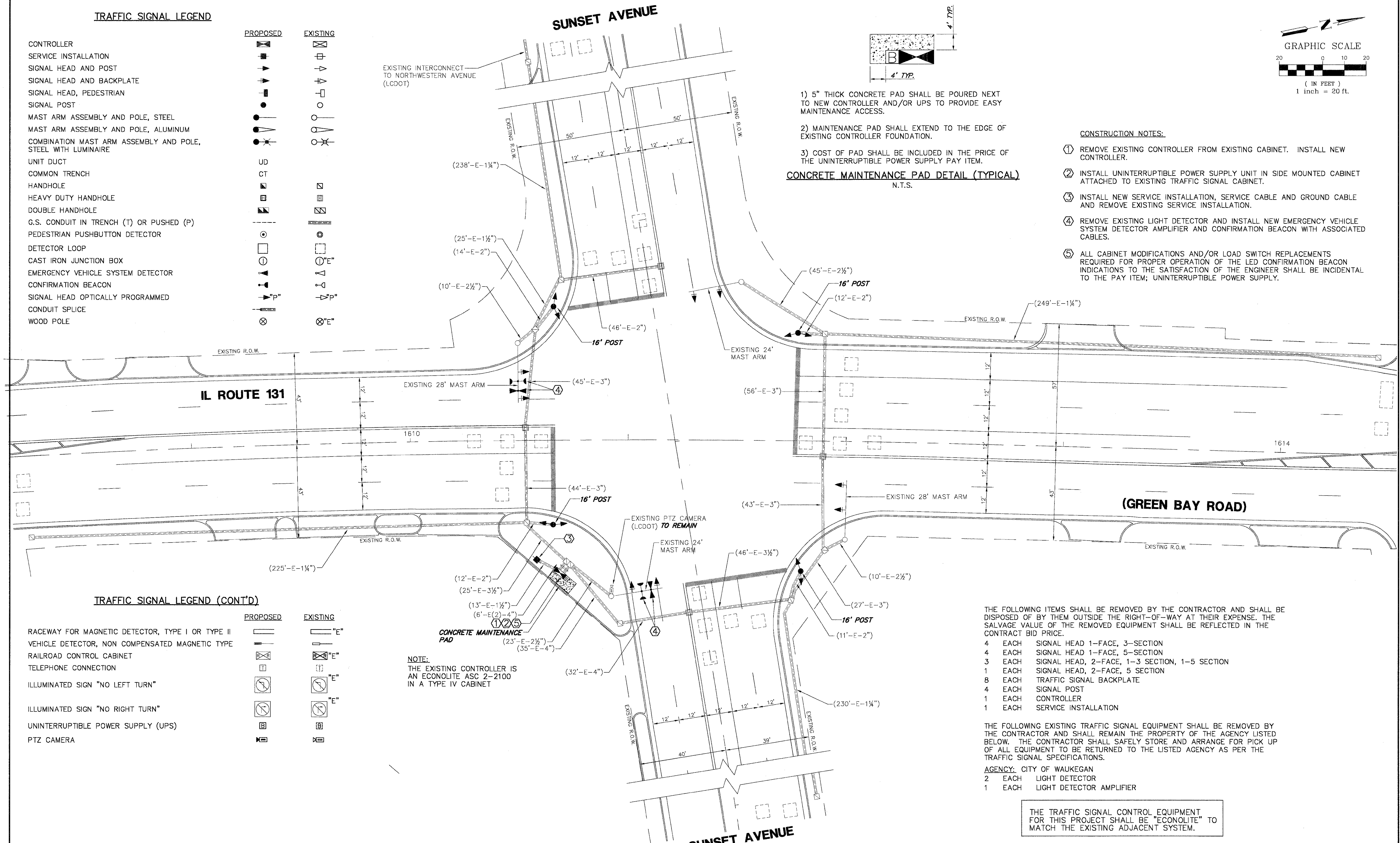
CABLE PLAN, PHASE DESIGNATION DIAGRAM AND SCHEDULE OF QUANTITIES
ILL RTE 131 (GREEN BAY RD.) AND CRESCENT AVE

SCALE: NONE | SHEET NO. 12 OF 21 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	2009-005 TS	097(LAKE)ILK	21	12
		CONTRACT NO. 60G01		
	ILLINOIS FED. AID PROJECT			

TRAFFIC SIGNAL LEGEND

	PROPOSED	EXISTING
CONTROLLER	⊠	⊠
SERVICE INSTALLATION		
SIGNAL HEAD AND POST		
SIGNAL HEAD AND BACKPLATE		
SIGNAL HEAD, PEDESTRIAN		
SIGNAL POST	●	○
MAST ARM ASSEMBLY AND POLE, STEEL		
MAST ARM ASSEMBLY AND POLE, ALUMINUM		
COMBINATION MAST ARM ASSEMBLY AND POLE, STEEL WITH LUMINAIRE		
UNIT DUCT	UD	
COMMON TRENCH	CT	
HANDHOLE		
HEAVY DUTY HANDHOLE		
DOUBLE HANDHOLE		
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)		
PEDESTRIAN PUSHBUTTON DETECTOR		
DETECTOR LOOP		
CAST IRON JUNCTION BOX		"E"
EMERGENCY VEHICLE SYSTEM DETECTOR		
CONFIRMATION BEACON		
SIGNAL HEAD OPTICALLY PROGRAMMED	"P"	"P"
CONDUIT SPLICE		
WOOD POLE	⊗	⊗"E"



1) 5" THICK CONCRETE PAD SHALL BE POURED NEXT TO NEW CONTROLLER AND/OR UPS TO PROVIDE EASY MAINTENANCE ACCESS.

2) MAINTENANCE PAD SHALL EXTEND TO THE EDGE OF EXISTING CONTROLLER FOUNDATION.

3) COST OF PAD SHALL BE INCLUDED IN THE PRICE OF THE UNINTERRUPTIBLE POWER SUPPLY PAY ITEM.

CONCRETE MAINTENANCE PAD DETAIL (TYPICAL)

N.T.S.

CONSTRUCTION NOTES:

1. REMOVE EXISTING CONTROLLER FROM EXISTING CABINET. INSTALL NEW CONTROLLER.
2. INSTALL UNINTERRUPTIBLE POWER SUPPLY UNIT IN SIDE MOUNTED CABINET ATTACHED TO EXISTING TRAFFIC SIGNAL CABINET.
3. INSTALL NEW SERVICE INSTALLATION, SERVICE CABLE AND GROUND CABLE AND REMOVE EXISTING SERVICE INSTALLATION.
4. REMOVE EXISTING LIGHT DETECTOR AND INSTALL NEW EMERGENCY VEHICLE SYSTEM DETECTOR AMPLIFIER AND CONFIRMATION BEACON WITH ASSOCIATED CABLES.
5. ALL CABINET MODIFICATIONS AND/OR LOAD SWITCH REPLACEMENTS REQUIRED FOR PROPER OPERATION OF THE LED CONFIRMATION BEACON INDICATIONS TO THE SATISFACTION OF THE ENGINEER SHALL BE INCIDENTAL TO THE PAY ITEM; UNINTERRUPTIBLE POWER SUPPLY.

TRAFFIC SIGNAL LEGEND (CONT'D)

	PROPOSED	EXISTING
RACEWAY FOR MAGNETIC DETECTOR, TYPE I OR TYPE II		"E"
VEHICLE DETECTOR, NON COMPENSATED MAGNETIC TYPE		
RAILROAD CONTROL CABINET		"E"
TELEPHONE CONNECTION		
ILLUMINATED SIGN "NO LEFT TURN"		"E"
ILLUMINATED SIGN "NO RIGHT TURN"		"E"
UNINTERRUPTIBLE POWER SUPPLY (UPS)		
PTZ CAMERA		

NOTE:
THE EXISTING CONTROLLER IS AN ECONOLITE ASC 2-2100 IN A TYPE IV CABINET

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

4	EACH	SIGNAL HEAD 1-FACE, 3-SECTION
4	EACH	SIGNAL HEAD 1-FACE, 5-SECTION
3	EACH	SIGNAL HEAD, 2-FACE, 1-3 SECTION, 1-5 SECTION
1	EACH	SIGNAL HEAD, 2-FACE, 5 SECTION
8	EACH	TRAFFIC SIGNAL BACKPLATE
4	EACH	SIGNAL POST
1	EACH	CONTROLLER
1	EACH	SERVICE INSTALLATION

THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR AND SHALL REMAIN THE PROPERTY OF THE AGENCY LISTED BELOW. THE CONTRACTOR SHALL SAFELY STORE AND ARRANGE FOR PICK UP OF ALL EQUIPMENT TO BE RETURNED TO THE LISTED AGENCY AS PER THE TRAFFIC SIGNAL SPECIFICATIONS.

AGENCY: CITY OF WAUKEGAN

2	EACH	LIGHT DETECTOR
1	EACH	LIGHT DETECTOR AMPLIFIER

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

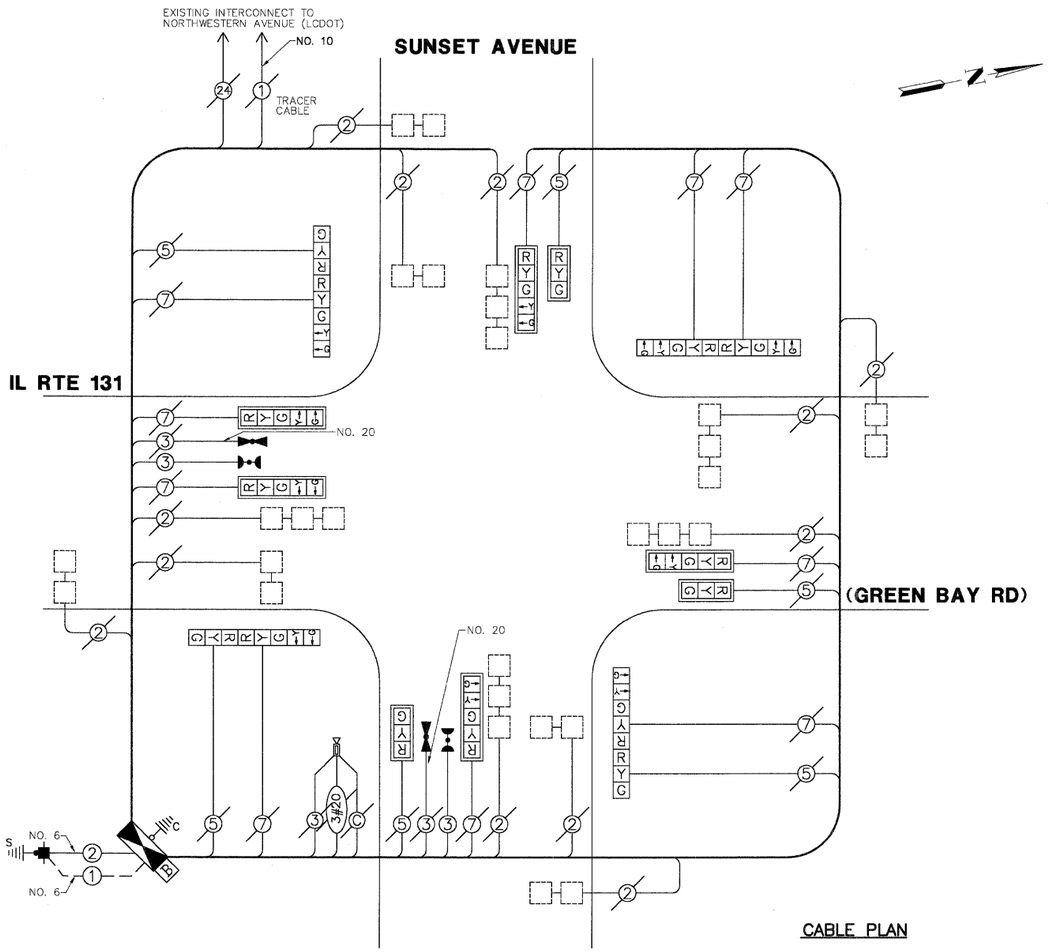
GHA #4085.804

FILE NAME = 4085.800-TR1.dgn	USER NAME =	DESIGNED - JRD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAFFIC SIGNAL MODIFICATION PLAN ILL RTE 131 (GREEN BAY RD.) AND SUNSET AVE.	F.A.U. RTE. 2711	SECTION 2009-005 TS	COUNTY 097(LAKE)LK; TOTAL SHEETS 21; SHEET NO. 13
		DRAWN - LJD	REVISED -					CONTRACT NO. 60G01
	PLOT SCALE = 1"=20'	CHECKED - KLB	REVISED -		SCALE: 1"=20'	SHEET NO. 13 OF 21 SHEETS	STA. TO STA.	ILLINOIS FED. AID PROJECT
	PLOT DATE = 1/29/09	DATE - 1/29/09	REVISED -					

SCHEDULE OF QUANTITIES

ILLINOIS ROUTE 131 (GREEN BAY ROAD) AND SUNSET AVENUE

	QUANT.	UNIT	ITEM
1.	0.20	L.SUM	TRAFFIC CONTROL AND PROTECTION, STANDARD 701606-06
2.	0.20	L.SUM	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701-06
3.	1	EACH	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION
4.	1	EACH	FULL-ACTUATED CONTROLLER, SPECIAL
*5.	313	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL, NO. 14 3C
6.	22	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C
7.	22	FOOT	ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C
8.	4	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL, 16 FT
9.	3	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, MAST ARM MOUNTED
10.	5	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 5-SECTION, MAST ARM MOUNTED
11.	1	EACH	SIGNAL HEAD, L.E.D., 2-FACE, 5-SECTION, BRACKET MOUNTED
12.	3	EACH	SIGNAL HEAD, L.E.D., 2-FACE, 1-3 SECTION, 1-5 SECTION, BRACKET MOUNTED
13.	8	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINIUM
*14.	2	EACH	LIGHT DETECTOR
*15.	1	EACH	LIGHT DETECTOR AMPLIFIER
16.	13	FOOT	REMOVE ELECTRICAL CABLE FROM CONDUIT
17.	1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
18.	1	EACH	SERVICE INSTALLATION - POLE MOUNTED
19.	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS)
			*100% COST TO THE CITY OF WAUKEGAN



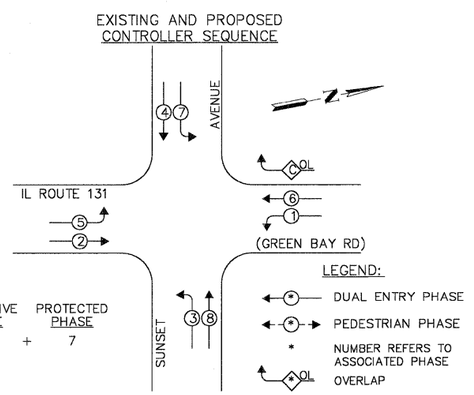
SUNSET AVENUE

CABLE PLAN

CABLE PLAN LEGEND

EXISTING	PROPOSED	
G	G	8" (200mm) TRAFFIC SIGNAL SECTION
R	R	12" (300mm) TRAFFIC SIGNAL SECTION
W	W	12" (300mm) PEDESTRIAN SIGNAL SECTION
		12" (300mm) PEDESTRIAN SIGNAL SECTION
		CONTROLLER CABINET
		SERVICE INSTALLATION
T	T	TELEPHONE
		VEHICLE DETECTOR, INDUCTION LOOP
		MAGNETIC DETECTOR
		EMERGENCY VEHICLE LIGHT DETECTOR
		CONFIRMATION BEACON
		PUSHBUTTON DETECTOR
2	2	DENOTES NUMBER OF CONDUCTORS. ALL CABLE NO. 14 EXCEPT AS INDICATED. ALL LOOP DETECTOR CABLE TO BE SHIELDED.
1	1	GROUND CABLE IN CONDUIT NO.6 SOLID COPPER (GREEN)
36	36	FIBER OPTIC CABLE IN CONDUIT NO. 62.5/125 MM12F SM24F
R Y G "P"	R Y G "P"	SIGNAL FACE WITH BACKPLATE. "P" INDICATES PROGRAMMED HEAD
"E"		RAILROAD CONTROL CABINET
"E"		ILLUMINATED SIGN "NO LEFT TURN"
"E"		ILLUMINATED SIGN "NO RIGHT TURN"
H/C	C	GROUND ROD AT HANDHOLE (H), DOUBLE HANDHOLE (H), OR CONTROLLER (C)
P	P	GROUND ROD AT POST (P) OR MAST ARM POLE (MA)
S	S	GROUND ROD AT ELECTRIC SERVICE INSTALLATION
		PTZ CAMERA
		UNINTERRUPTIBLE POWER SUPPLY (UPS)

EXISTING AND PROPOSED CONTROLLER SEQUENCE

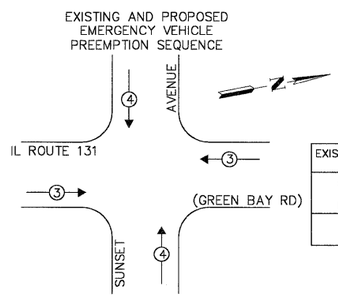


OVERLAP LETTER		PERMISSIVE PHASE		PROTECTED PHASE
C	=	6	+	7

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

PHASE DESIGNATION DIAGRAM

EXISTING AND PROPOSED EMERGENCY VEHICLE PREEMPTION SEQUENCE



EXISTING AND PROPOSED EMERGENCY VEHICLE PREEMPTORS		
EMERGENCY VEHICLE PREEMPTOR	3	4
MOVEMENT		

I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE INCAND.	WATTAGE L.E.D.	% OPERATION	
SIGNAL (RED)	16	135	17	0.50	136.0
SIGNAL (YELLOW)	16	135	25	0.25	100.0
SIGNAL (GREEN)	16	135	15	0.25	60.0
ARROW	20	135	12	0.10	24.0
PED.SIGNAL	-	90	25	1.00	-
CONTROLLER	1	-	100	1.00	100.0
LUMINAIRE	-	-	250	0.50	-
L.E.D. ST. NAME SIGN	-	-	64	0.50	-
VIDEO SYSTEM	-	-	150	1.00	-
BATTERY BACKUP	1	-	25	1.00	25.0
				TOTAL =	445.0

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN
(ADDRESS) 100 N. M.L.K. JR. AVENUE
(ADDRESS) WAUKEGAN, IL
ENERGY SUPPLY - CONTACT: NEW BUSINESS
PHONE: 1-866-639-3552
COMPANY: COMED

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

FOUNDATION (DEPTH)	(FT.)	CABLE SLACK	(FT.)	VERTICAL	(FT.)
TYPE A - POST	4	HANDHOLE	6.5	ALL FOUNDATIONS	3.5
TYPE D - CONTROLLER	4	DOUBLE HANDHOLE	13	MAST ARM (L) POLE	20'+L-2=
TYPE E - M.ARM POLE		SIGNAL POST	2	BRACKET MOUNTED	13
30' (16'-30')	10	CONTROLLER CAB.	1	PED. PUSHBUTTON	4
30' (30'-40')	13.5	FIBER OPTIC	13	ELECTRIC SERVICE	13.5
36' (40'-48')	13	ELECTRIC SERVICE	1	SERVICE TO GROUND	13.5
36' (50'-55')	15	GROUND CABLE	1	POST MOUNTED	6

GHA #4085.804

FILE NAME: 4085.800-TR1.dgn	USER NAME	DESIGNED - JRD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN - LJD	REVISED -	
	PLOT SCALE = NONE	CHECKED - KLB	REVISED -	
	PLOT DATE = 1/29/09	DATE - 1/29/09	REVISED -	

CABLE PLAN, PHASE DESIGNATION DIAGRAM AND SCHEDULE OF QUANTITIES
ILL RTE 131 (GREEN BAY RD.) AND SUNSET AVE

SCALE: NONE | SHEET NO. 14 OF 21 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	2009-005 TS	097(LAKE)IL	21	14
		CONTRACT NO. 60G01		
	ILLINOIS FED. AID PROJECT			

EXISTING EQUIPMENT TO BE REMOVED

- EXISTING TRAFFIC SIGNAL HEAD TO BE REMOVED
- "E" EXISTING SERVICE INSTALLATION TO BE REMOVED
- "E" EXISTING SIGNAL POST AND FOUNDATION TO BE REMOVED
- "E" EXISTING ALUMINUM MAST ARM POLE AND FOUNDATION TO BE REMOVED
- EXISTING CONTROLLER AND FOUNDATION TO BE REMOVED
- "E" EXISTING HANDHOLE TO BE REMOVED
- EXISTING PEDESTRIAN SIGNAL HEAD TO BE REMOVED
- EXISTING PEDESTRIAN PUSHBUTTON TO BE REMOVED
- EMERGENCY VEHICLE LIGHT DETECTOR TO BE REMOVED
- CONFIRMATION BEACON TO BE REMOVED
- "E" EXISTING HEAVY-DUTY HANDHOLE TO BE REMOVED
- "E" EXISTING STEEL MAST ARM POLE AND FOUNDATION TO BE REMOVED
- ISLAND TO BE REMOVED

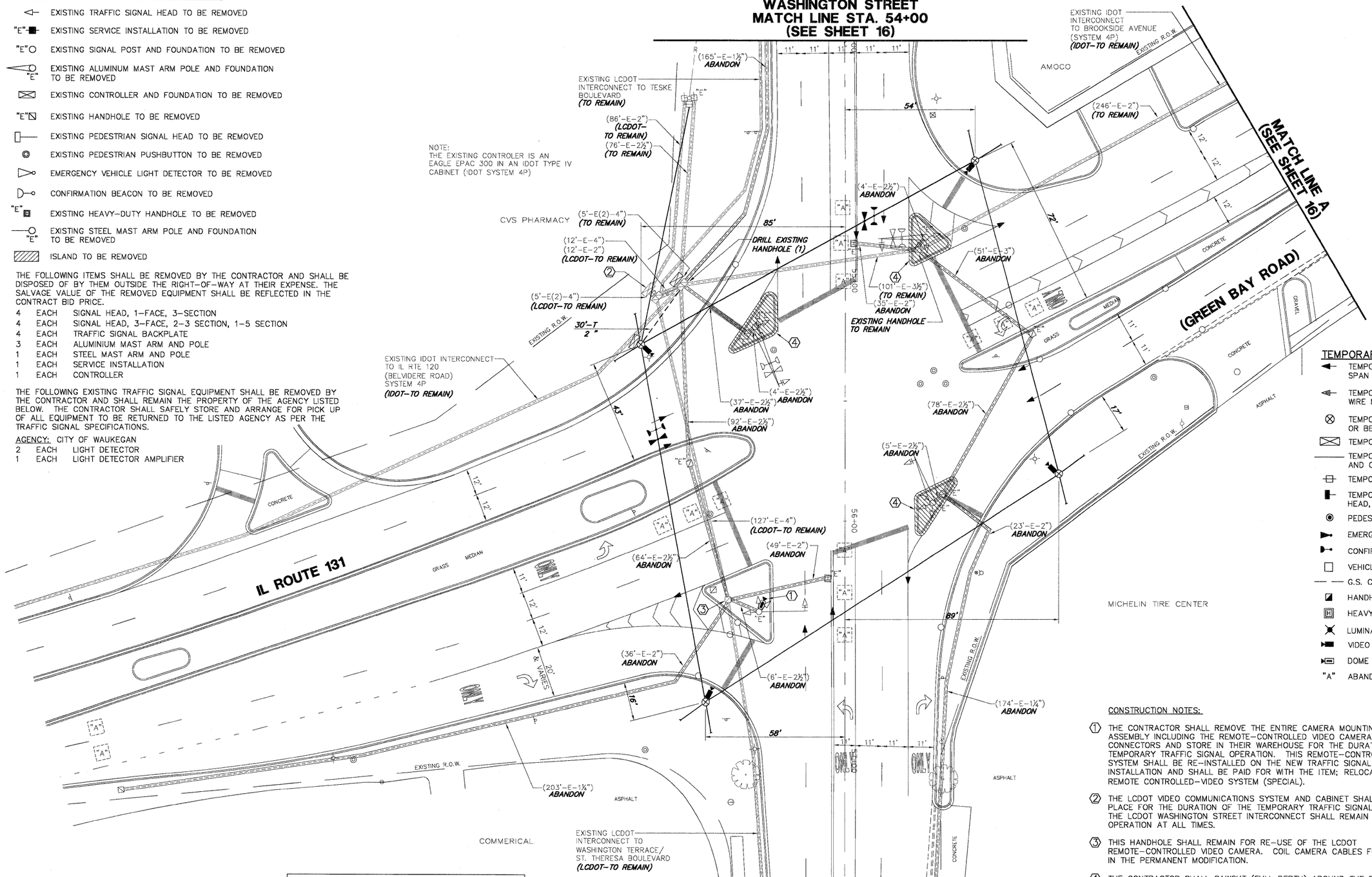
THE FOLLOWING ITEMS SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE DISPOSED OF BY THEM OUTSIDE THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.

4	EACH	SIGNAL HEAD, 1-FACE, 3-SECTION
4	EACH	SIGNAL HEAD, 3-FACE, 2-3 SECTION, 1-5 SECTION
4	EACH	TRAFFIC SIGNAL BACKPLATE
3	EACH	ALUMINIUM MAST ARM AND POLE
1	EACH	STEEL MAST ARM AND POLE
1	EACH	SERVICE INSTALLATION
1	EACH	CONTROLLER

THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR AND SHALL REMAIN THE PROPERTY OF THE AGENCY LISTED BELOW. THE CONTRACTOR SHALL SAFELY STORE AND ARRANGE FOR PICK UP OF ALL EQUIPMENT TO BE RETURNED TO THE LISTED AGENCY AS PER THE TRAFFIC SIGNAL SPECIFICATIONS.

AGENCY: CITY OF WAUKEGAN

2	EACH	LIGHT DETECTOR
1	EACH	LIGHT DETECTOR AMPLIFIER



GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

TEMPORARY TRAFFIC SIGNAL LEGEND

- TEMPORARY TRAFFIC SIGNAL HEAD SPAN WIRE MOUNTED ORIGINAL LOCATION
- TEMPORARY TRAFFIC SIGNAL HEAD SPAN WIRE MOUNTED SECONDARY LOCATION
- TEMPORARY WOOD POLE (CLASS 5 OR BETTER) 45 FOOT (13.7m) MINIMUM.
- TEMPORARY CONTROLLER CABINET
- TEMPORARY SPAN WIRE, TETHER WIRE, AND CABLE
- TEMPORARY SERVICE INSTALLATION
- TEMPORARY PEDESTRIAN SIGNAL HEAD, BRACKET MOUNTED
- PEDESTRIAN PUSHBUTTON DETECTOR
- EMERGENCY VEHICLE LIGHT DETECTOR
- CONFIRMATION BEACON
- VEHICLE DETECTOR, INDUCTION LOOP
- G.S. CONDUIT IN GROUND
- HANDHOLE
- HEAVY DUTY HANDHOLE
- LUMINAIRE
- VIDEO DETECTION CAMERA
- DOME PAN/TILT/ZOOM (PTZ) CAMERA
- "A" ABANDON

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL REMOVE THE ENTIRE CAMERA MOUNTING ASSEMBLY INCLUDING THE REMOTE-CONTROLLED VIDEO CAMERA AND CONNECTORS AND STORE IN THEIR WAREHOUSE FOR THE DURATION OF THE TEMPORARY TRAFFIC SIGNAL OPERATION. THIS REMOTE-CONTROLLED VIDEO SYSTEM SHALL BE RE-INSTALLED ON THE NEW TRAFFIC SIGNAL INSTALLATION AND SHALL BE PAID FOR WITH THE ITEM; RELOCATE EXISTING REMOTE CONTROLLED-VIDEO SYSTEM (SPECIAL).
2. THE LCDOT VIDEO COMMUNICATIONS SYSTEM AND CABINET SHALL REMAIN IN PLACE FOR THE DURATION OF THE TEMPORARY TRAFFIC SIGNAL OPERATION. THE LCDOT WASHINGTON STREET INTERCONNECT SHALL REMAIN IN OPERATION AT ALL TIMES.
3. THIS HANDHOLE SHALL REMAIN FOR RE-USE OF THE LCDOT REMOTE-CONTROLLED VIDEO CAMERA. COIL CAMERA CABLES FOR RE-USE IN THE PERMANENT MODIFICATION.
4. THE CONTRACTOR SHALL SAWCUT (FULL DEPTH) AROUND THE EXISTING ISLAND, REMOVE THE CURB AND GUTTER, ISLAND PAVEMENT AND EXCAVATE FOR CLASS B PATCHING.

THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "NTCIP" COMPLIANT.

GHA #4085.806

FILE NAME = 4085.800-TR1.dgn	USER NAME =	DESIGNED - JRD	REVISED -
		DRAWN - LJD	REVISED -
	PLOT SCALE = 1"=20'	CHECKED - KLB	REVISED -
	PLOT DATE = 1/29/09	DATE - 1/29/09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVAL OF EXISTING TRAFFIC SIGNAL EQUIPMENT
ILL RTE 131 (GREEN BAY RD.) AND WASHINGTON STREET

SCALE: 1"=20' | SHEET NO. 15 OF 21 SHEETS | STA. | TO STA.

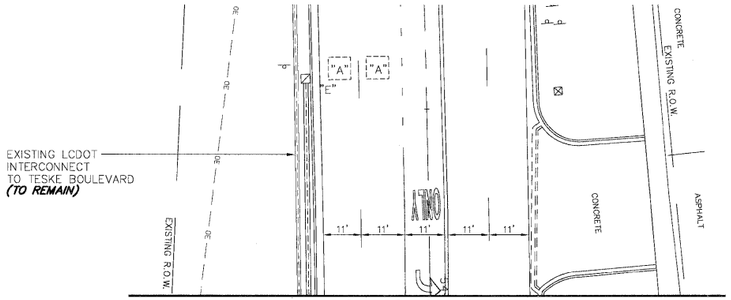
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	2009-005 TS	097(LAKE)LK	21	15
		CONTRACT NO. 60G01		
		ILLINOIS FED. AID PROJECT		

EXISTING EQUIPMENT TO BE REMOVED

- EXISTING TRAFFIC SIGNAL HEAD TO BE REMOVED
- "E" EXISTING SERVICE INSTALLATION TO BE REMOVED
- "E" EXISTING SIGNAL POST AND FOUNDATION TO BE REMOVED
- "E" EXISTING ALUMINUM MAST ARM POLE AND FOUNDATION TO BE REMOVED
- EXISTING CONTROLLER AND FOUNDATION TO BE REMOVED
- "E" EXISTING HANDHOLE TO BE REMOVED
- EXISTING PEDESTRIAN SIGNAL HEAD TO BE REMOVED
- EXISTING PEDESTRIAN PUSHBUTTON TO BE REMOVED
- EXISTING EMERGENCY VEHICLE LIGHT DETECTOR TO BE REMOVED
- CONFIRMATION BEACON TO BE REMOVED
- "E" EXISTING HEAVY-DUTY HANDHOLE TO BE REMOVED
- "E" EXISTING STEEL MAST ARM POLE AND FOUNDATION TO BE REMOVED

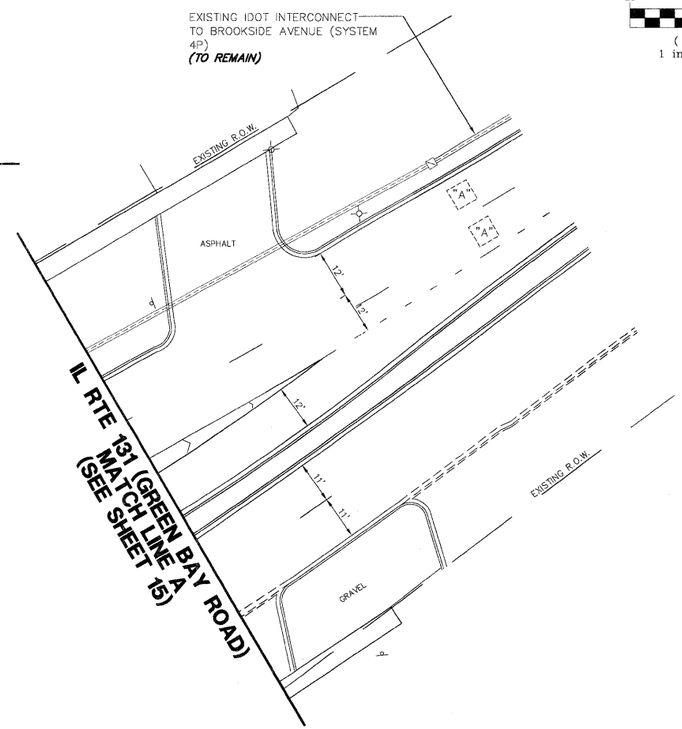
TEMPORARY TRAFFIC SIGNAL LEGEND

- TEMPORARY TRAFFIC SIGNAL HEAD SPAN WIRE MOUNTED ORIGINAL LOCATION
- TEMPORARY TRAFFIC SIGNAL HEAD SPAN WIRE MOUNTED SECONDARY LOCATION
- TEMPORARY WOOD POLE (CLASS 5 OR BETTER) 45 FOOT (13.7m) MINIMUM.
- TEMPORARY CONTROLLER CABINET
- TEMPORARY SPAN WIRE, TETHER WIRE, AND CABLE
- TEMPORARY SERVICE INSTALLATION
- TEMPORARY PEDESTRIAN SIGNAL HEAD, BRACKET MOUNTED
- PEDESTRIAN PUSHBUTTON DETECTOR
- EMERGENCY VEHICLE LIGHT DETECTOR
- CONFIRMATION BEACON
- VEHICLE DETECTOR, INDUCTION LOOP
- G.S. CONDUIT IN GROUND
- HANDHOLE
- HEAVY DUTY HANDHOLE
- LUMINAIRE
- VIDEO DETECTION CAMERA
- DOME PAN/TILT/ZOOM (PTZ) CAMERA
- "A" ABANDON

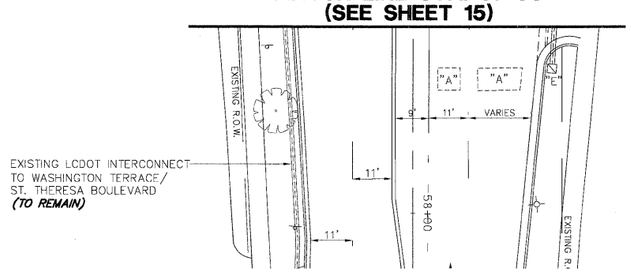


WASHINGTON STREET
MATCH LINE STA. 54+00
(SEE SHEET 15)

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.



WASHINGTON STREET
MATCH LINE STA. 57+50
(SEE SHEET 15)



THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "NTCIP" COMPLIANT.

GHA #4085.806

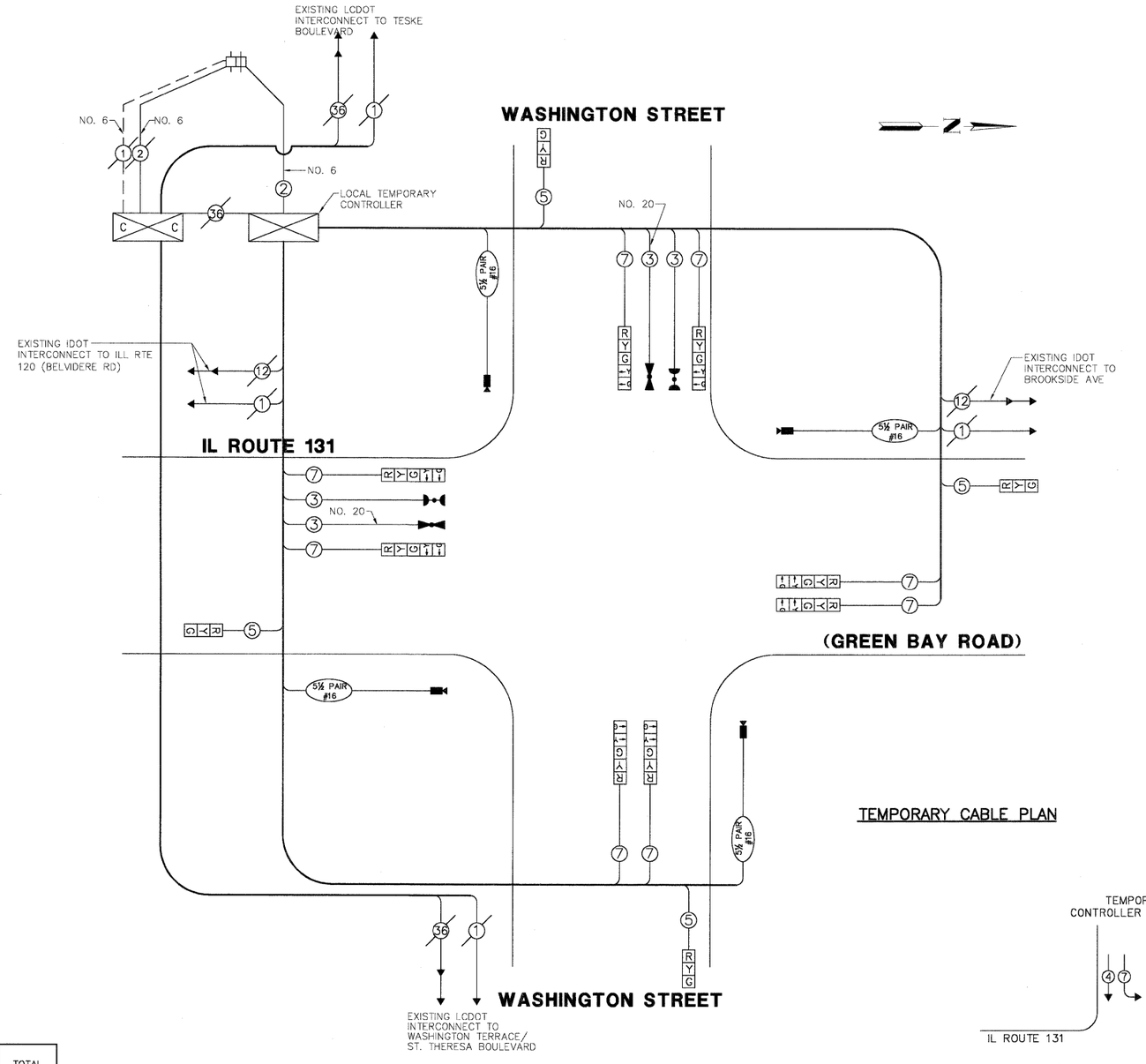
FILE NAME = 4085.800-TR1.dgn	USER NAME =	DESIGNED - JRD	REVISED -
		DRAWN - LJD	REVISED -
	PLOT SCALE = 1"=20'	CHECKED - KLB	REVISED -
	PLOT DATE = 1/29/09	DATE - 1/29/09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVAL OF EXISTING TRAFFIC SIGNAL EQUIPMENT
ILL RTE 131 (GREEN BAY RD.) AND WASHINGTON STREET

SCALE: 1"=20' | SHEET NO. 16 OF 21 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	2009-005 TS	097(LAKE)ILK	21	16
		CONTRACT NO. 60G01		
		ILLINOIS	FED. AID PROJECT	



TEMPORARY CABLE PLAN LEGEND

- R — TEMPORARY TRAFFIC SIGNAL SECTION OR PEDESTRIAN SIGNAL SECTION 12"
- TEMPORARY CONTROLLER CABINET
- TEMPORARY SERVICE INSTALLATION
- (5) — INDICATES NUMBER OF CONDUCTORS IN CABLE. ALL CONDUCTORS TO BE NUMBER 14 AWG WIRE UNLESS OTHERWISE NOTED.
- EMERGENCY VEHICLE LIGHT DETECTOR
- CONFIRMATION BEACON
- VEHICLE DETECTOR, INDUCTION LOOP
- PEDESTRIAN PUSHBUTTON DETECTOR
- PEDESTRIAN SIGNAL HEAD
- VIDEO DETECTION CAMERA
- PTZ CAMERA

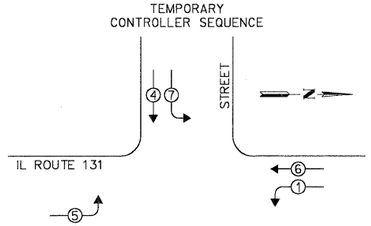
TEMPORARY CABLE PLAN

I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE INCAND.	WATTAGE L.E.D.	% OPERATION	
SIGNAL (RED)	12	135	17	0.50	102.0
SIGNAL (YELLOW)	12	135	25	0.25	75.0
SIGNAL (GREEN)	12	135	15	0.25	45.0
ARROW	16	135	12	0.10	19.2
PED.SIGNAL	-	90	25	1.00	-
CONTROLLER	1	100	100	1.00	100.0
LUMINAIRE	-	150	250	0.50	-
L.E.D. ST. NAME SIGN	-	-	64	0.50	-
VIDEO SYSTEM	-	150	150	1.00	150.0
BATTERY BACKUP	-	-	25	-	-
				TOTAL =	491.2

ENERGY COSTS – BILLED TO: CITY OF WAUKEGAN
(ADDRESS) 100 N. M.L.K. JR. AVENUE
(ADDRESS) WAUKEGAN, IL
ENERGY SUPPLY – CONTACT: MS. ALICE TAYLOR
PHONE: (847) 816-5323
COMPANY: COMED – LIBERTYVILLE

THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "NTCIP" COMPLIANT.

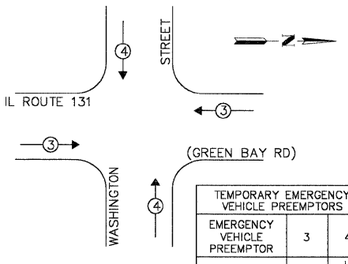
TEMPORARY CONTROLLER SEQUENCE



TEMPORARY PHASE DESIGNATION DIAGRAM

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

TEMPORARY EMERGENCY VEHICLE PREEMPTION SEQUENCE



TEMPORARY EMERGENCY VEHICLE PREEMPTORS		
EMERGENCY VEHICLE PREEMPTOR	3	4
MOVEMENT	—	| |

GHA #4085.806

FILE NAME	USER NAME	DESIGNED	REVISED
4085.800-TR1.dgn		DRAWN – LJD	REVISED –
	PLOT SCALE = NONE	CHECKED – KLB	REVISED –
	PLOT DATE = 1/29/09	DATE – 1/29/09	REVISED –

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

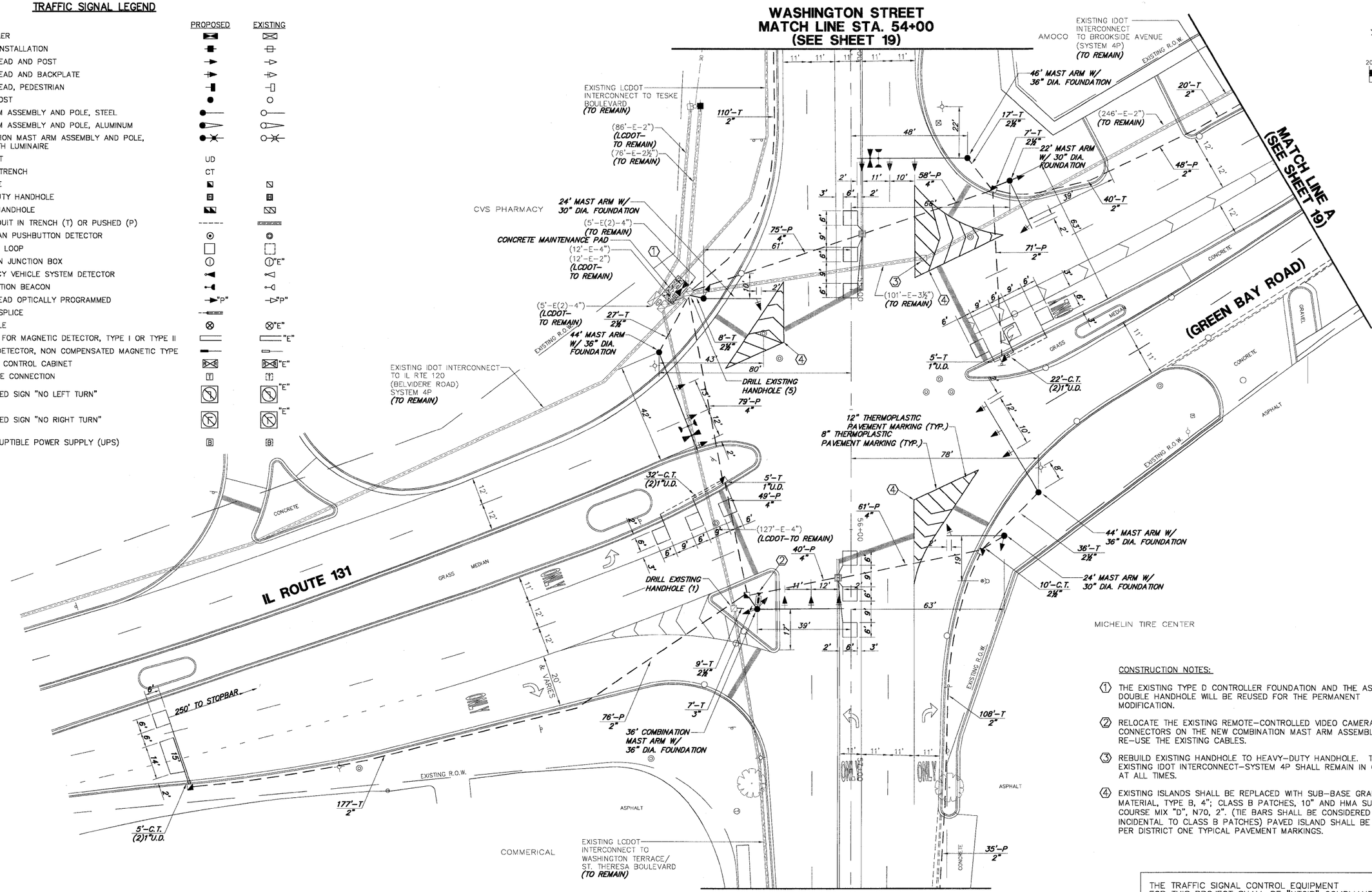
TEMPORARY CABLE PLAN AND TEMPORARY PHASE DESIGNATION DIAGRAM
ILL RTE 131 (GREEN BAY RD.) AND WASHINGTON STREET

SCALE: NONE | SHEET NO. 17 OF 21 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	2009-005 TS	097(LAKE)IL	21	17
		CONTRACT NO. 60G01		
	ILLINOIS FED. AID PROJECT			

TRAFFIC SIGNAL LEGEND

	PROPOSED	EXISTING
CONTROLLER	⊠	⊠
SERVICE INSTALLATION	■	⊣
SIGNAL HEAD AND POST	→	→
SIGNAL HEAD AND BACKPLATE	→	→
SIGNAL HEAD, PEDESTRIAN	■	⊣
SIGNAL POST	●	○
MAST ARM ASSEMBLY AND POLE, STEEL	●—	○—
MAST ARM ASSEMBLY AND POLE, ALUMINUM	●—	○—
COMBINATION MAST ARM ASSEMBLY AND POLE, STEEL WITH LUMINAIRE	●—✕	○—✕
UNIT DUCT	UD	
COMMON TRENCH	CT	
HANDHOLE	◥	◥
HEAVY DUTY HANDHOLE	H	H
DOUBLE HANDHOLE	◥◤	◥◤
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)	----	----
PEDESTRIAN PUSHBUTTON DETECTOR	⊙	◎
DETECTOR LOOP	□	□
CAST IRON JUNCTION BOX	Ⓘ	Ⓘ"E"
EMERGENCY VEHICLE SYSTEM DETECTOR	◀	◁
CONFIRMATION BEACON	■	⊣
SIGNAL HEAD OPTICALLY PROGRAMMED	→"P"	→"P"
CONDUIT SPLICE	—⊗—	—⊗—
WOOD POLE	⊗	⊗"E"
RACEWAY FOR MAGNETIC DETECTOR, TYPE I OR TYPE II	———	———"E"
VEHICLE DETECTOR, NON COMPENSATED MAGNETIC TYPE	▬	▭
RAILROAD CONTROL CABINET	⊠	⊠"E"
TELEPHONE CONNECTION	T	T
ILLUMINATED SIGN "NO LEFT TURN"		"E"
ILLUMINATED SIGN "NO RIGHT TURN"		"E"
UNINTERRUPTIBLE POWER SUPPLY (UPS)	B	B



GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20 ft.

CONSTRUCTION NOTES:

1. THE EXISTING TYPE D CONTROLLER FOUNDATION AND THE ASSOCIATED DOUBLE HANDHOLE WILL BE REUSED FOR THE PERMANENT MODIFICATION.
2. RELOCATE THE EXISTING REMOTE-CONTROLLED VIDEO CAMERA AND CONNECTORS ON THE NEW COMBINATION MAST ARM ASSEMBLY. RE-USE THE EXISTING CABLES.
3. REBUILD EXISTING HANDHOLE TO HEAVY-DUTY HANDHOLE. THE EXISTING IDOT INTERCONNECT-SYSTEM 4P SHALL REMAIN IN OPERATION AT ALL TIMES.
4. EXISTING ISLANDS SHALL BE REPLACED WITH SUB-BASE GRANULAR MATERIAL, TYPE B, 4"; CLASS B PATCHES, 10" AND HMA SURFACE COURSE MIX "D", N70, 2". (TIE BARS SHALL BE CONSIDERED INCIDENTAL TO CLASS B PATCHES) PAVED ISLAND SHALL BE MARKED PER DISTRICT ONE TYPICAL PAVEMENT MARKINGS.

THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "NTCIP" COMPLIANT.

GHA #4085.806

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	PLOT SCALE = 1"=20'	CHECKED - KLB	REVISED -
	PLOT DATE = 1/29/09	DATE - 1/29/09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

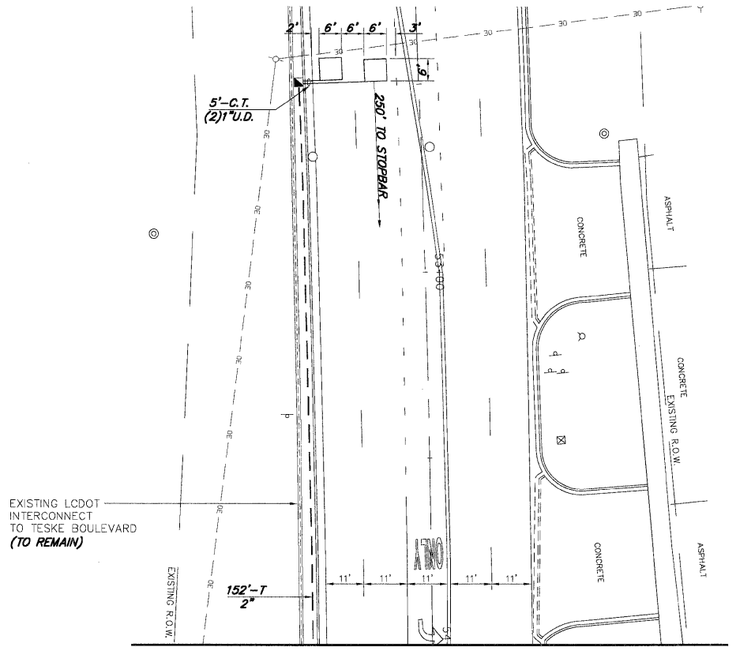
TRAFFIC SIGNAL MODERNIZATION PLAN
ILL RTE 131 (GREEN BAY RD.) AND WASHINGTON STREET

SCALE: 1"=20' | SHEET NO. 18 OF 21 SHEETS | STA. | TO STA.

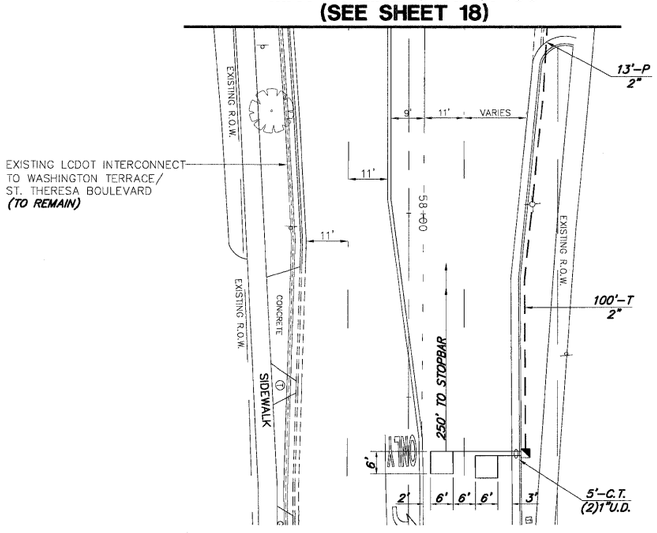
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	2009-005 TS	097(LAKE)LK	21	18
		CONTRACT NO. 60G01		
	ILLINOIS FED. AID PROJECT			

TRAFFIC SIGNAL LEGEND

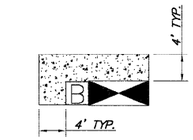
	PROPOSED	EXISTING
CONTROLLER	⊠	⊠
SERVICE INSTALLATION	⊣	⊣
SIGNAL HEAD AND POST	→	→
SIGNAL HEAD AND BACKPLATE	→	→
SIGNAL HEAD, PEDESTRIAN	⊣	⊣
SIGNAL POST	●	○
MAST ARM ASSEMBLY AND POLE, STEEL	●—	○—
MAST ARM ASSEMBLY AND POLE, ALUMINUM	●—	○—
COMBINATION MAST ARM ASSEMBLY AND POLE, STEEL WITH LUMINAIRE	●—	○—
UNIT DUCT	UD	
COMMON TRENCH	CT	
HANDHOLE	◥	◥
HEAVY DUTY HANDHOLE	H	H
DOUBLE HANDHOLE	◥◤	◥◤
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)	-----	═══
PEDESTRIAN PUSHBUTTON DETECTOR	⊙	◎
DETECTOR LOOP	□	⬚
CAST IRON JUNCTION BOX	Ⓘ	Ⓘ"E"
EMERGENCY VEHICLE SYSTEM DETECTOR	◀	◁
CONFIRMATION BEACON	●—	○—
SIGNAL HEAD OPTICALLY PROGRAMMED	→"P"	→"P"
CONDUIT SPLICE	—●—	
WOOD POLE	⊗	⊗"E"
RACEWAY FOR MAGNETIC DETECTOR, TYPE I OR TYPE II	═══	═══"E"
VEHICLE DETECTOR, NON COMPENSATED MAGNETIC TYPE	—▭	▭
RAILROAD CONTROL CABINET	⊠	⊠"E"
TELEPHONE CONNECTION	T	T
ILLUMINATED SIGN "NO LEFT TURN"	⊘	⊘"E"
ILLUMINATED SIGN "NO RIGHT TURN"	⊘	⊘"E"
UNINTERRUPTIBLE POWER SUPPLY (UPS)	B	B



WASHINGTON STREET
MATCH LINE STA. 54+00
(SEE SHEET 18)



WASHINGTON STREET
MATCH LINE STA. 57+50
(SEE SHEET 18)



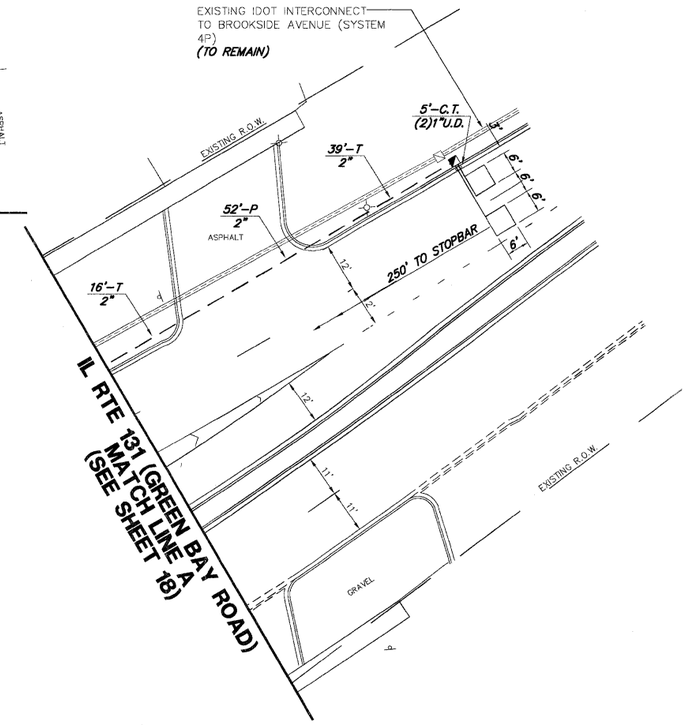
1) 5" THICK CONCRETE PAD SHALL BE POURED NEXT TO NEW CONTROLLER AND/OR UPS TO PROVIDE EASY MAINTENANCE ACCESS.

2) MAINTENANCE PAD SHALL EXTEND TO THE EDGE OF EXISTING CONTROLLER FOUNDATION.

3) COST OF PAD SHALL BE INCLUDED IN THE PRICE OF THE UNINTERRUPTIBLE POWER SUPPLY PAY ITEM.

CONCRETE MAINTENANCE PAD DETAIL (TYPICAL)
N.T.S.

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.



THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "NTCIP" COMPLIANT.

GHA #4085.806

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL MODERNIZATION PLAN
ILL RTE 131 (GREEN BAY RD.) AND WASHINGTON STREET

SCALE: 1"=20' | SHEET NO. 19 OF 21 SHEETS | STA. | TO STA.

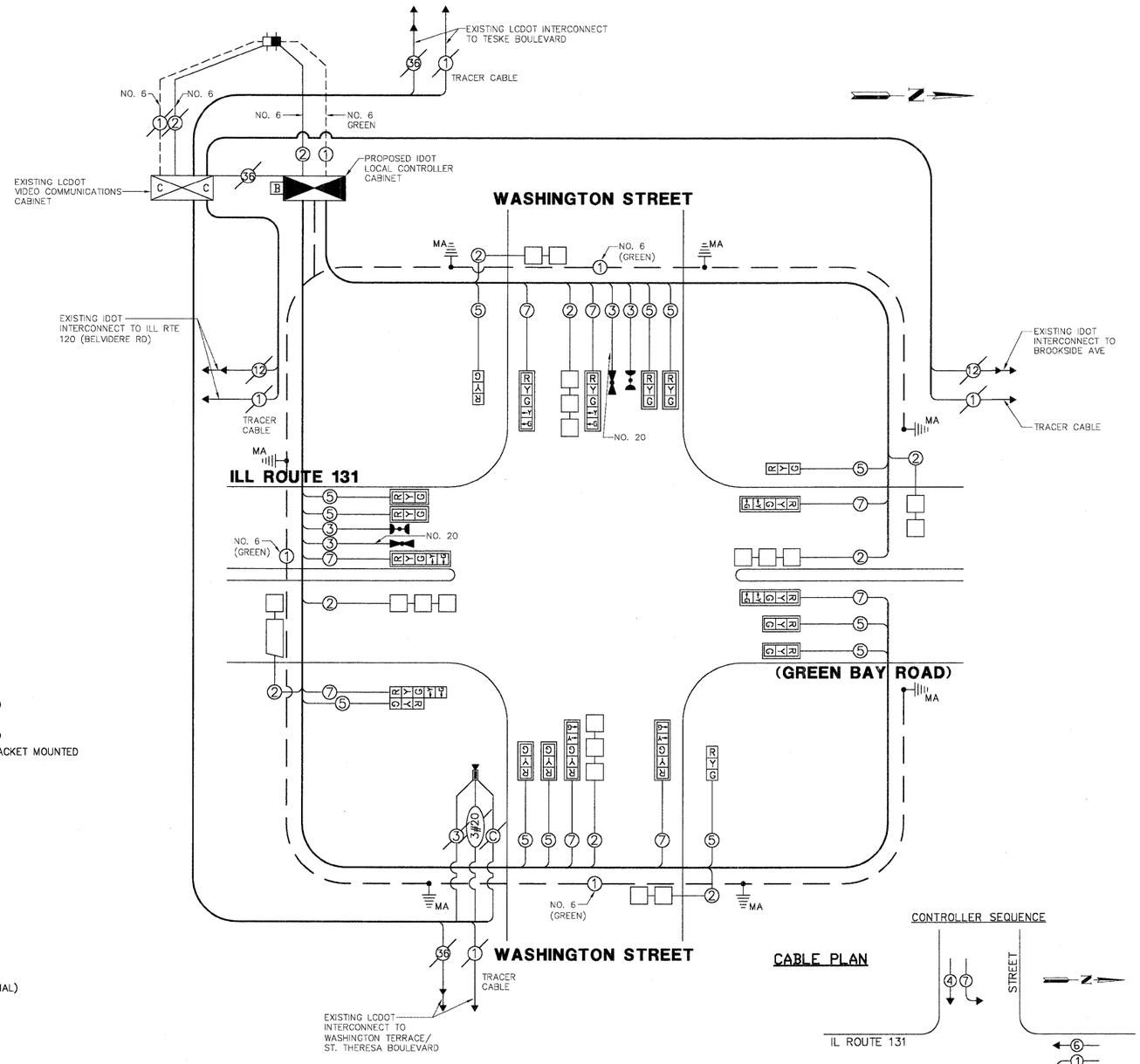
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	2009-005 TS	097(LAKE)LK	21	19
		CONTRACT NO. 60G01		
		ILLINOIS FED. AID PROJECT		

SCHEDULE OF QUANTITIES

ILLINOIS ROUTE 131 (GREEN BAY ROAD) AND WASHINGTON STREET

	QUANT.	UNIT	ITEM
1.	40	CU.YD.	EARTH EXCAVATION
2.	90	SQ.YD.	SUB-BASE GRANULAR MATERIAL, TYPE B, 4"
3.	12	TON	HOT-MIX ASHPALT REPLACEMENT OVER PATCHES
4.	10	GAL	BITUMINOUS MATERIALS (PRIME COAT)
5.	220	FOOT	COMBINATION CURB & GUTTER REMOVAL
6.	500	SQ.FT.	MEDIAN REMOVAL
7.	90	SQ.YD.	CLASS B PATCHES, TYPE III, 10"
8.	0.20	L.SUM	TRAFFIC CONTROL AND PROTECTION, STANDARD 701606-06
9.	0.20	L.SUM	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701-06
10.	18	SQ.FT.	SIGN PANEL - TYPE 1
11.	27.5	SQ.FT.	SIGN PANEL - TYPE 2
12.	340	FOOT	THERMOPLASTIC PAVEMENT MARKING - LINE 8"
13.	315	FOOT	THERMOPLASTIC PAVEMENT MARKING - LINE 12"
14.	85	SQ.FT.	PAVEMENT MARKING REMOVAL
15.	220	FOOT	SAWING PAVEMENT (FULL DEPTH)
16.	762	FOOT	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL
17.	114	FOOT	CONDUIT IN TRENCH, 2-1/2" DIA., GALVANIZED STEEL
18.	7	FOOT	CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL
19.	295	FOOT	CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL
20.	362	FOOT	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL
21.	9	EACH	HANDHOLE
22.	2	EACH	HEAVY-DUTY HANDHOLE
23.	848	FOOT	TRENCH AND BACKFILL FOR ELECTRICAL WORK
* 24.	1	EACH	FULL-ACTUATED CONTROLLER IN EXISTING CABINET
25.	372	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
26.	2685	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C
27.	2118	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C
28.	2312	FOOT	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR
29.	94	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C
* 30.	695	FOOT	ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C
31.	372	FOOT	ELECTRIC CABLE IN CONDUIT, NO. 20 3/C TWISTED, SHIELDED
32.	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 22 FT
33.	2	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 24 FT
34.	2	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 44 FT
35.	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 46 FT
36.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE, 36 FT
37.	8	FOOT	CONCRETE FOUNDATION, TYPE A
38.	30	FOOT	CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER
39.	52	FOOT	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER
40.	6	EACH	DRILL EXISTING HANDHOLE
41.	8	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, MAST ARM MOUNTED
42.	3	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 3-SECTION, BRACKET MOUNTED
43.	7	EACH	SIGNAL HEAD, L.E.D., 1-FACE, 5-SECTION, MAST ARM MOUNTED
44.	1	EACH	SIGNAL HEAD, L.E.D., 2-FACE, 1-3 SECTION, 1-5 SECTION, BRACKET MOUNTED
45.	15	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINIUM
* 46.	8	EACH	INDUCTIVE LOOP DETECTOR
* 47.	660	FOOT	DETECTOR LOOP, TYPE 1
48.	2	EACH	LIGHT DETECTOR
49.	1	EACH	LIGHT DETECTOR AMPLIFIER
50.	1	EACH	TEMPORARY TRAFFIC SIGNAL INSTALLATION
51.	135	FOOT	REMOVE EXISTING CABLE FROM CONDUIT
52.	21	FOOT	REMOVE AND REINSTALL ELECTRIC CABLE FROM CONDUIT
53.	1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
54.	9	EACH	REMOVE EXISTING HANDHOLE
55.	4	EACH	REMOVE EXISTING CONCRETE FOUNDATION
56.	1	EACH	SERVICE INSTALLATION, POLE MOUNT
57.	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS)
58.	1	EACH	REBUILD EXISTING HANDHOLE TO HEAVY-DUTY HANDHOLE
59.	1	EACH	RELOCATE EXISTING REMOTE-CONTROLLER VIDEO SYSTEM (SPECIAL)

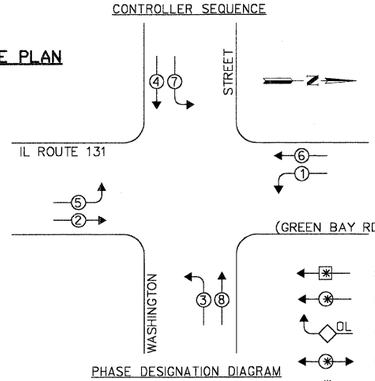
*100% COST TO THE CITY OF WAUKEGAN

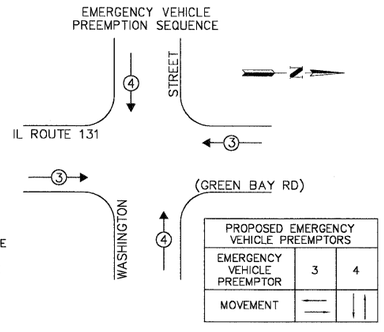


CABLE PLAN LEGEND

EXISTING	PROPOSED	
	G	8" (200mm) TRAFFIC SIGNAL SECTION
	R	12" (300mm) TRAFFIC SIGNAL SECTION
	W	12" (300mm) PEDESTRIAN SIGNAL SECTION
		12" (300mm) PEDESTRIAN SIGNAL SECTION
		CONTROLLER CABINET
		SERVICE INSTALLATION
	T	TELEPHONE
		VEHICLE DETECTOR, INDUCTION LOOP
		MAGNETIC DETECTOR
		EMERGENCY VEHICLE LIGHT DETECTOR
		CONFIRMATION BEACON
		PUSHBUTTON DETECTOR
2	2	DENOTES NUMBER OF CONDUCTORS. ALL CABLE NO. 14 EXCEPT AS INDICATED. ALL LOOP DETECTOR CABLE TO BE SHIELDED.
1	1	GROUND CABLE IN CONDUIT NO.6 SOLID COPPER (GREEN)
36	36	FIBER OPTIC CABLE IN CONDUIT NO. 62.5/125 MM12F SM24F
		SIGNAL FACE WITH BACKPLATE. "P" INDICATES PROGRAMMED HEAD
"E"		RAILROAD CONTROL CABINET
"E"		ILLUMINATED SIGN "NO LEFT TURN"
"E"		ILLUMINATED SIGN "NO RIGHT TURN"
H/C	C	GROUND ROD AT HANDHOLE (H), DOUBLE HANDHOLE (H), OR CONTROLLER (C)
P	P	GROUND ROD AT POST (P) OR MAST ARM POLE (MA)
S	S	GROUND ROD AT ELECTRIC SERVICE INSTALLATION
		PTZ CAMERA
		UNINTERRUPTIBLE POWER SUPPLY (UPS)
"E"		VIDEO COMMUNICATIONS CABINET

CABLE PLAN





PROPOSED EMERGENCY VEHICLE PREEMPTORS		
EMERGENCY VEHICLE PREEMPTOR	3	4
MOVEMENT		

I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE INCAND.	WATTAGE L.E.D.	% OPERATION	
SIGNAL (RED)	20	135	17	0.50	170.0
SIGNAL (YELLOW)	20	135	25	0.25	125.0
SIGNAL (GREEN)	20	135	15	0.25	75.0
ARROW	16	135	12	0.10	19.2
PED.SIGNAL	-	90	25	1.00	-
CONTROLLER	1	-	100	1.00	100.0
LUMINAIRE	-	-	250	0.50	-
L.E.D. ST. NAME SIGN	-	-	64	0.50	-
VIDEO SYSTEM	-	-	150	1.00	-
BATTERY BACKUP	1	-	25	1.00	25.0
TOTAL =					514.2

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN
(ADDRESS) 100 N. M.L.K. JR. AVENUE
(ADDRESS) WAUKEGAN, IL
ENERGY SUPPLY - CONTACT: NEW BUSINESS
PHONE: 1-866-639-3552
COMPANY: COMED

THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "NTCIP" COMPLIANT.

FOUNDATION (DEPTH)	(FT.)	CABLE SLACK	(FT.)	VERTICAL	(FT.)
TYPE A - POST	4	HANDHOLE	6.5	ALL FOUNDATIONS	3.5
TYPE D - CONTROLLER	4	DOUBLE HANDHOLE	13	MAST ARM (L) POLE	20'+L'-2=
TYPE E - M.ARM POLE		SIGNAL POST	2	BRACKET MOUNTED	13
30' (26'-30')	10	CONTROLLER CAB.	1	PED. PUSHBUTTON	4
30' (30'-40')	13.5	FIBER OPTIC	13	ELECTRIC SERVICE	13.5
36' (40'-48')	13	ELECTRIC SERVICE	1	SERVICE TO GROUND	13.5
36' (50'-55')	15	GROUND CABLE	1	POST MOUNTED	6

GHA #4085.806

FILE NAME	USER NAME	DESIGNED	JRD	REVISED	-
4085.800-TR1.dgn		DRAWN	LJD	REVISED	-
	PLOT SCALE = NONE	CHECKED	KLB	REVISED	-
	PLOT DATE = 1/29/09	DATE	1/29/09	REVISED	-

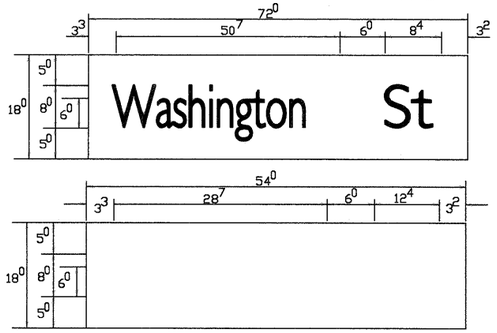
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CABLE PLAN, PHASE DESIGNATION DIAGRAM AND SCHEDULE OF QUANTITIES
ILL RTE 131 (GREEN BAY RD.) AND WASHINGTON STREET

SCALE: NONE | SHEET NO. 20 OF 21 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	2009-005 TS	097(LAKE)ILK	21	20
		CONTRACT NO. 60G01		
	ILLINOIS FED. AID PROJECT			

PANEL SIGN DESIGN TYPE 1

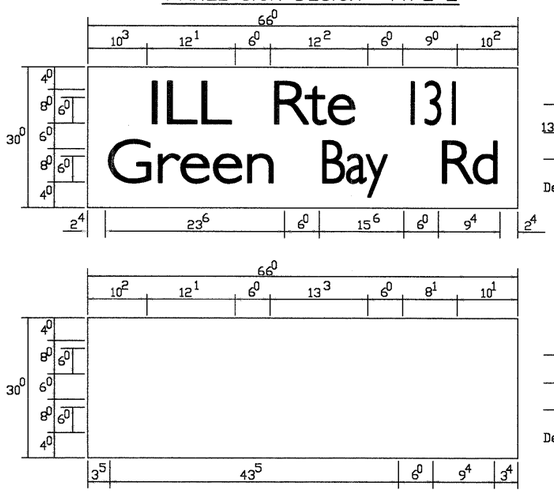


____ Sq. M. each
9.0 Sq. Ft. each
2 Required
Design Series C

____ Sq. M. each
____ Sq. Ft. each
____ Required
Design Series ___

NOTE: SIGN DIMENSIONS ARE IN ENGLISH UNITS

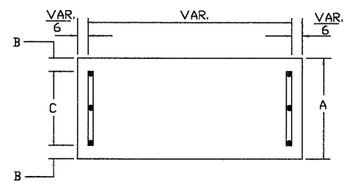
PANEL SIGN DESIGN TYPE 2



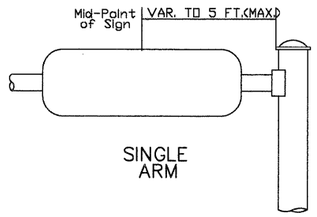
____ Sq. M. each
13.75 Sq. Ft. each
6 Required
Design Series C

____ Sq. M. each
____ Sq. Ft. each
____ Required
Design Series ___

SUPPORTING CHANNELS

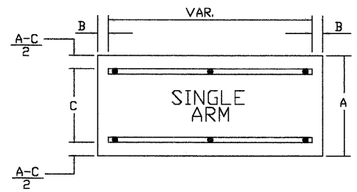


A	B	C
18"	2"	14"



SINGLE ARM

SUPPORTING CHANNELS



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

____ Sq. M. each
____ Sq. Ft. each
____ Required
Design Series ___

GENERAL NOTES

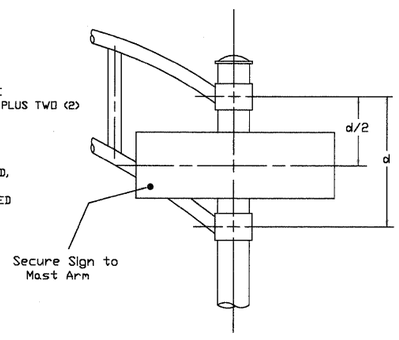
1. WHERE MAST ARM MOUNTED STREET NAME SIGNS ARE SPECIFIED, THE MAST ARM ASSEMBLY AND POLES SHALL BE DESIGNED TO SUPPORT THE LOADINGS CALLED FOR ON STANDARDS 834001, 834006 AND 834011, AS APPLICABLE, PLUS TWO (2) SIGN PANELS 2'-6" x 6'-0" MOUNTED AS SHOWN. THE DESIGN SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS FOR 80 M.P.H. WIND VELOCITY.
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 6'-0".
4. ALL BORDERS SHALL BE 3/4 " 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:

- ✳ A.K.T. CORPORATION, SCHAUMBURG, IL
- ✳ AMERICAN FABRICATION CO., CHICAGO HEIGHTS, IL
- ✳ TUCKER COMPANY, INC., WAUWATOSA, WI
- ✳ WESTERN TRAFFIC CONTROL INC., CICERO, IL

PARTS LISTING:

SIGN CHANNEL	PART #HPN053 (MED. CHANNEL)
SIGN SCREWS	1/4 " x 14 x 1" H.W.H. #3 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.



DUAL ARM

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

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

EXAMPLE, (3) DENOTES 3/8"

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 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 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

UPPER AND LOWER CASE LETTER WIDTHS

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

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

REVISIONS NAME	DATE
D.A.Z./D.A.G.	11/90
	6/98
CADD	10/00

ILLINOIS DEPARTMENT OF TRANSPORTATION

MAST ARM MOUNTED STREET NAME SIGNS

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

DRAWN BY: RDB
DESIGNED BY: JHE
CHECKED BY: DAD

FILE NAME = 4085.800-TR1.dgn	USER NAME =	DESIGNED - JRD	REVISED -
		DRAWN - LJD	REVISED -
	PLOT SCALE = 1"=20'	CHECKED - KLB	REVISED -
	PLOT DATE = 1/29/09	DATE - 1/29/09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MAST ARM MOUNTED STREET NAME SIGNS

SCALE: NONE | SHEET NO. 21 OF 21 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	2009-005 TS	097(LAKE)LK	21	21
		CONTRACT NO. 60G01		
	ILLINOIS FED. AID PROJECT			