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GRAND AVENUE AT WEST AVENUE
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GRAND AVENUE AT COUNTY STREET
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 - LCDOT MAST ARM MOUNTED STREET NAME SIGNS
 - FIBER SPLICING DIAGRAM 23 - GRAND AVENUE FROM IL ROUTE 131
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 - CABINET DETAIL 35 - IL ROUTE 132 (GRAND AVENUE)/IL ROUTE 131
(GREEN BAY ROAD) TO SHERIDAN ROAD
 - LCDOT STANDARD TRAFFIC SIGNAL DESIGN DETAILS
 - LCDOT CURB RAMPS WITH TRAFFIC SIGNAL POSTS AND MAST ARMS
 - 62.-64. DISTRICT ONE DETAILS

CONTRACT NO. 63436

JULIE
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION CALL 811



Know what's below.
Call before you dig.

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 WHATSOEVER 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 JULIE AT 1-800-892-0123 AND MUST ACQUIRE A DIG NUMBER A MINIMUM OF 72 HOURS PRIOR TO ANY WORK BEING DONE.

TRAFFIC DATE:

DESIGN SPEED:

WEST OF LEWIS AVE = 40 MPH
EAST OF LEWIS AVE = 35 MPH

POSTED SPEED:

WEST OF LEWIS AVE = 35 MPH
EAST OF LEWIS AVE = 30 MPH

ADT:

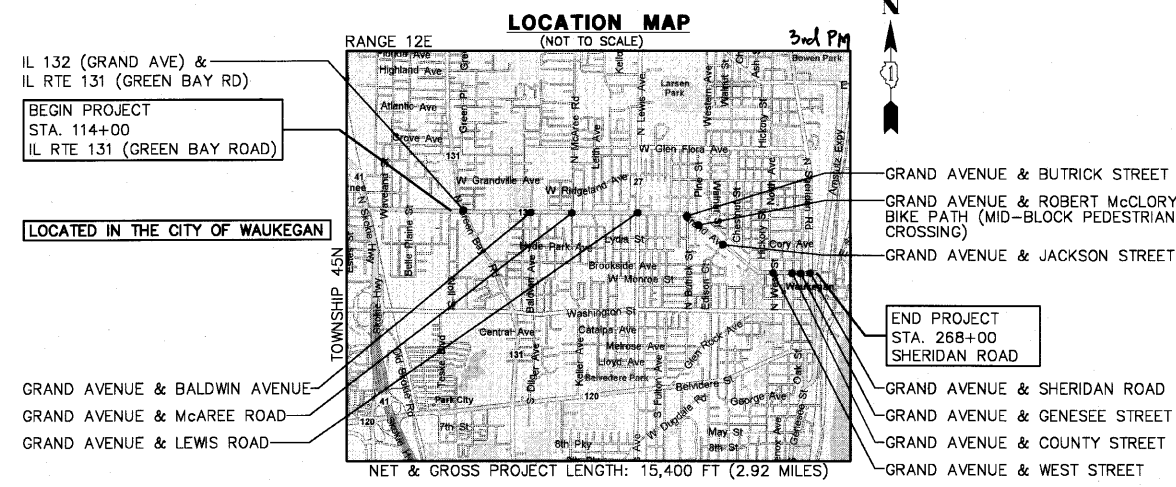
BETWEEN IL RTE 131 (GREEN BAY RD) AND LEWIS AVE = 22,624
BETWEEN LEWIS AVE AND JACKSON ST = 21,479
BETWEEN JACKSON ST AND SHERIDAN RD = 10,853

FUNCTIONAL CLASSIFICATION: ARTERIAL

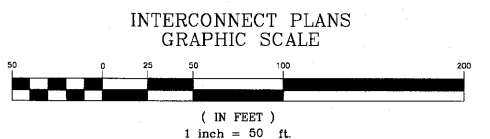
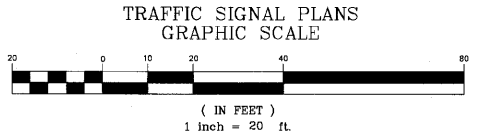
NOTE: SAFETY IS THE SOLE AND EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR



SIGNED: *Bruce L. Shrake*
BRUCE L. SHRAKE
DATE: 7/12/2010
EXPIRES: 11/30/11



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



- DOT STANDARDS:**
- 000001-05 STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
 - 424001-05 CURB RAMPS FOR SIDEWALK
 - 606001-04 CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER
 - 701001-02 OFF-ROAD OPERATIONS 2L, 2W, >1' AWAY
 - 701101-02 OFF-ROAD OPERATIONS, MULTILANE 15' TO 24' FROM PAVEMENT EDGE
 - 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
 - 701501-05 URBAN LANE CLOSURE, 2L, 2W, UNDIVIDED
 - 701502-03 URBAN LANE CLOSURE, 2L, 2W, WITH BIDIRECTIONAL LEFT TURN LANE
 - 701602-04 URBAN LANE CLOSURE, MULTILANE 2W WITH BIDIRECTIONAL LEFT TURN LANE
 - 701606-06 URBAN LANE CLOSURE MULTILANE 2W WITH MOUNTABLE MEDIAN
 - 701701-08 URBAN LANE CLOSURE MULTILANE INTERSECTION
 - 701801-04 LANE CLOSURE MULTILANE 1W OR 2W CROSSWALK OR SIDEWALK CLOSURE
 - 701901-01 TRAFFIC CONTROL DEVICES
 - 805001-01 ELECTRICAL SERVICE INSTALLATION DETAILS
 - 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 AND BONDING
 - 877001-04 STEEL MAST ARM ASSEMBLY AND POLE, 16" THROUGH 55"
 - 877011-04 STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 16" THROUGH 55"
 - 878001-08 CONCRETE FOUNDATION DETAILS
 - 880001-01 SPAN WIRE MOUNTED SIGNALS AND FLASHING BEACON INSTALLATION
 - 880006-01 TRAFFIC SIGNAL MOUNTING DETAILS
 - 888001-01 DETECTOR LOOP INSTALLATIONS
 - 886006-01 TYPICAL LAYOUTS FOR DETECTION LOOPS

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

APPROVED: *July 12 2010*
Maryanne Baudier
DIRECTOR OF TRANSPORTATION/COUNTY ENGINEER

PASSED: *July 13 2010*
C. H. ...
DISTRICT 1 ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID
BASED ON LIMITED
REVIEW
July 15 2010
Diana M. O'Keefe
DEPUTY DIRECTOR OF HIGHWAYS, REGION 1 ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

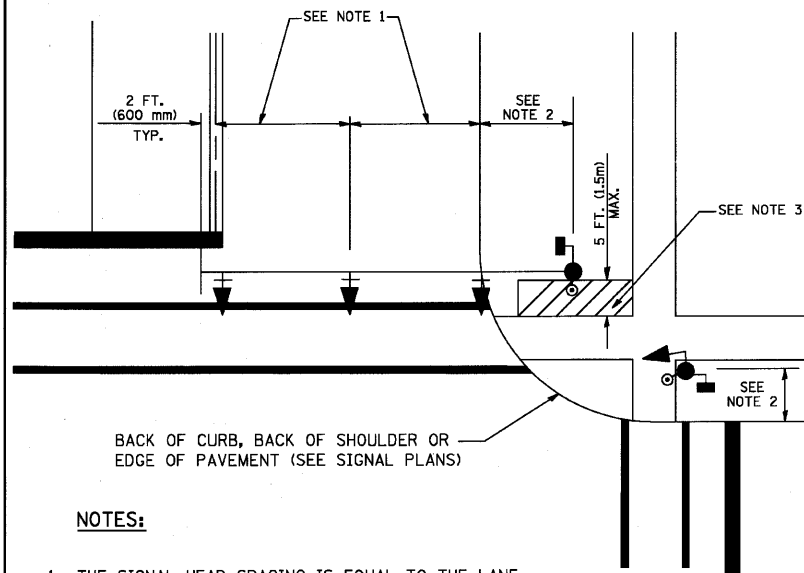
GHA #4136.800

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -	SCALE: NONE	SHEET NO. OF SHEETS	STA. TO STA.	FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - ZCW	REVISED -				541	08-00279-00-TL	LAKE	64	1
		CHECKED - DPB	REVISED -								
		DATE - 3/10/10	REVISED -								
<p>Lake County Division of Transportation</p> <p>TITLE SHEET</p> <p>ILLINOIS FED. AID PROJECT</p>											

PROGRAM AND OFFICE ENGINEER: CHARLES F. BIDDLE, P.E. CAT-705-4406 SCHUMBURG, IL

TRAFFIC SIGNAL MAST ARM AND SIGNAL POST

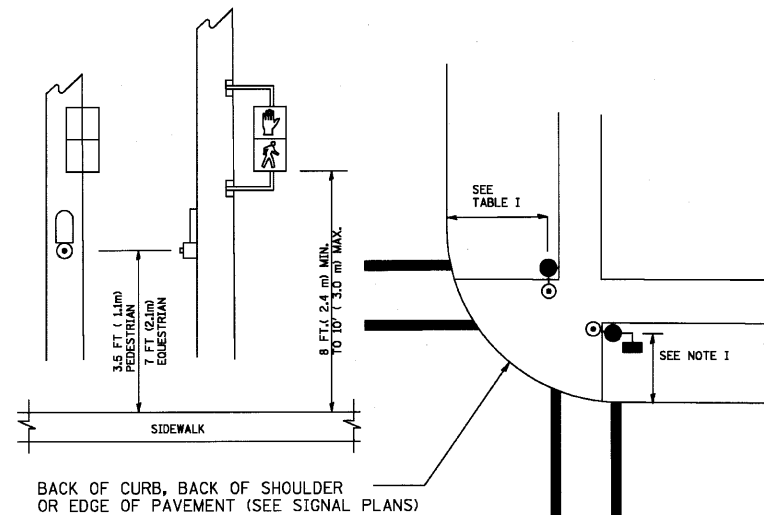
MAST ARM MOUNTED SIGNALS IN EXISTING, PROPOSED OR FUTURE SIDEWALK/BICYCLE PATH AREA. INTERSECTION SHOWN WITH PEDESTRIAN SIGNALS AND PEDESTRIAN PUSHBUTTON DETECTORS.



NOTES:

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

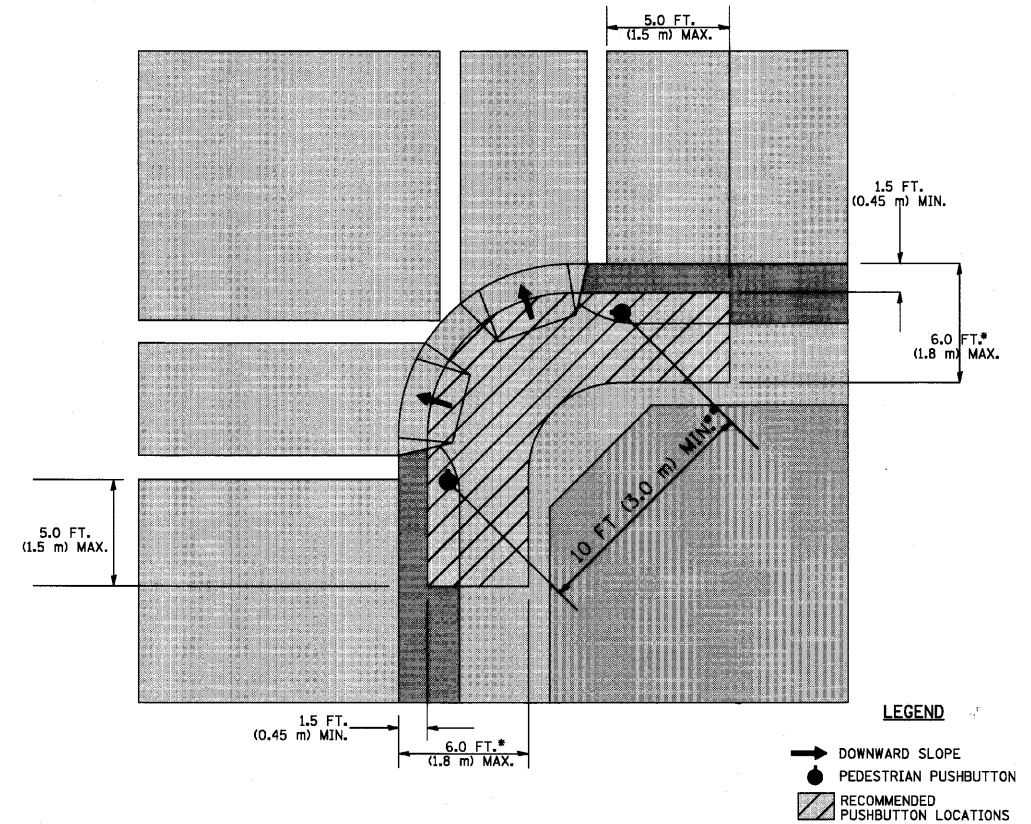
PEDESTRIAN SIGNAL POST AND PEDESTRIAN PUSH BUTTON POST



NOTES:

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

RECOMMENDED PUSHBUTTON LOCATIONS



- WHERE THERE ARE CONSTRAINTS THAT MAKE IT IMPRACTICAL TO PLACE THE PEDESTRIAN PUSHBUTTON BETWEEN 1.5 FT (0.45 m) AND 6 FT (1.8 m) FROM THE EDGE OF THE CURB, SHOULDER, OR PAVEMENT, IT SHOULD NOT BE FURTHER THAN 10 FT (3 m) FROM THE EDGE OF CURB, SHOULDER, OR PAVEMENT.
- WHERE THERE ARE CONSTRAINTS ON A PARTICULAR CORNER THAT MAKE IT IMPRACTICAL TO PROVIDE THE 10 FT (3 m) SEPERATION BETWEEN THE TWO PEDESTRIAN PUSHBUTTONS, THE PUSHBUTTONS MAY BE PLACED CLOSER TOGETHER OR ON THE SAME POLE.

NOTES:

PEDESTRIAN SIGNAL HEADS SHALL BE MOUNTED WITH THE BOTTOM OF THE SIGNAL HOUSING INCLUDING BRACKETS NOT LESS THAN 8 FT (2.4 m) OR MORE THAN 10 FT (3 m) ABOVE SIDEWALK LEVEL, AND SHALL BE POSITIONED AND ADJUSTED TO PROVIDE MAXIMUM VISIBILITY AT THE BEGINNING OF THE CONTROLLED CROSSWALK.

THE BOTTOM OF THE SIGNAL HOUSING (INCLUDING BRACKETS) OF A VEHICULAR SIGNAL FACE THAT IS NOT LOCATED OVER A HIGHWAY SHALL BE AT LEAST 8 FT (2.4 m) BUT NOT MORE THAN 19 FT (5.8 m) ABOVE THE SIDEWALK OR, IF THERE IS NO SIDEWALK, ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY.

THE BOTTOM OF THE SIGNAL HOUSING AND ANY RELATED ATTACHMENTS TO A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL BE ACCORDING TO CURRENT STATE STANDARDS 877001, 877002, 877006, 877011 AND 877012 WITH A MINIMUM OF 16 FT (5.0 m) AND A MAXIMUM OF 18 FT. (5.5 m) FROM THE HIGHEST POINT OF PAVEMENT.

THE BOTTOM OF THE TEMPORARY SPAN WIRE MOUNTED SIGNAL HOUSING AND ANY RELATED ATTACHMENTS TO A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL BE ACCORDING TO CURRENT STATE STANDARD 880001 WITH A MINIMUM OF 17 FT (5.18 m) FROM THE HIGHEST POINT OF PAVEMENT.

THE TOP OF THE SIGNAL HOUSING OF A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL NOT BE MORE THAN 25.6 FT (7.8 m) ABOVE THE PAVEMENT.

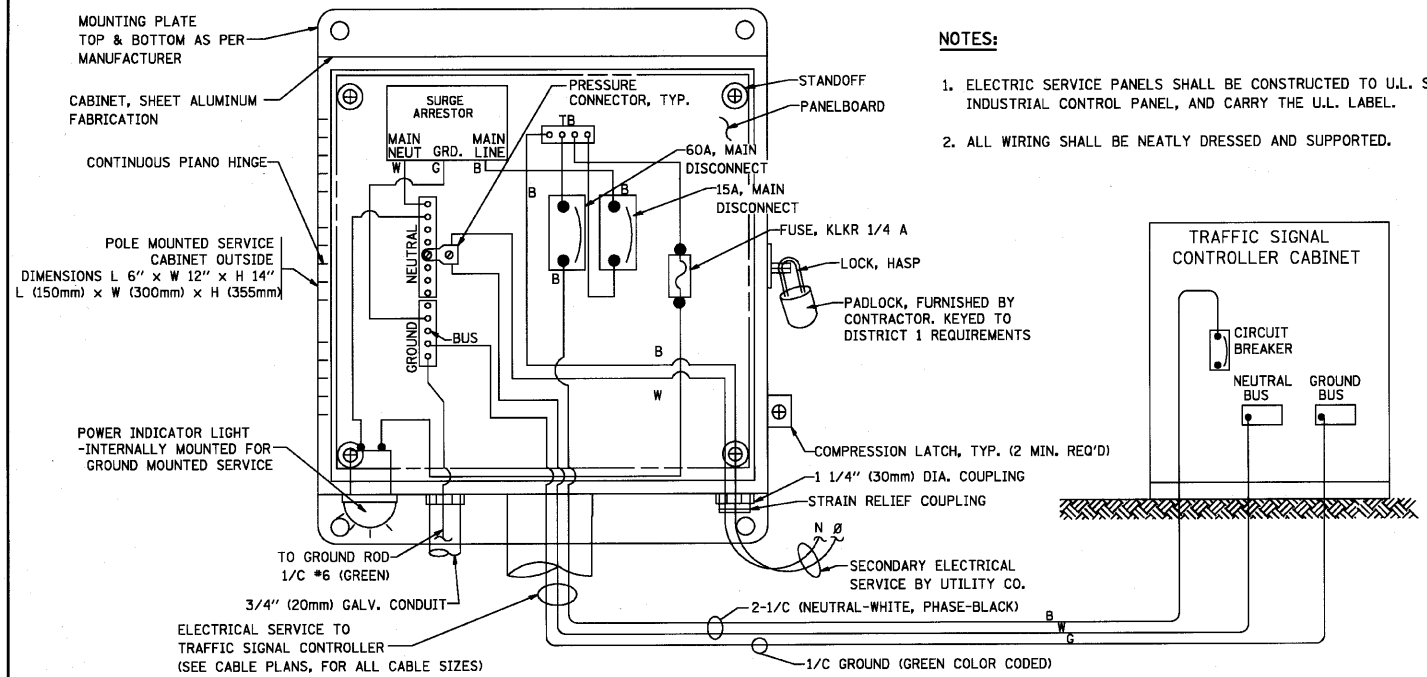
TRAFFIC SIGNAL EQUIPMENT OFFSET

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

NOTES:

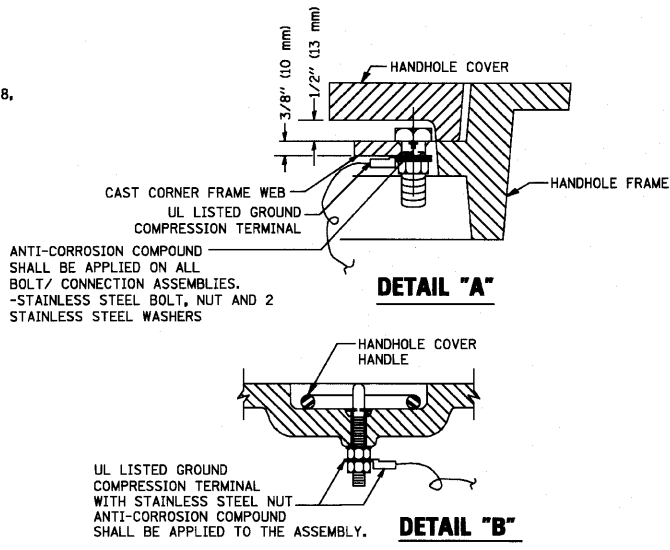
1. CONTACT THE "AREA TRAFFIC SIGNAL MAINTENANCE AND OPERATIONS ENGINEER" FOR ASSISTANCE IN LOCATING THE TRAFFIC SIGNAL EQUIPMENT WHEN THERE ARE CONFLICTS WITH DITCHES OR THE MINIMUM OFFSET DISTANCES CANNOT BE MET.
2. MINIMUM DISTANCE FROM THE BACK OF CURB TO THE ROADWAY SIDE OF THE FOUNDATION.
3. MINIMUM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

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISD -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DISTRICT 1 STANDARD TRAFFIC SIGNAL DESIGN DETAILS			F.A.P. RTE. 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 5
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISD -		SCALE N.A.	SHEET NO. 2 OF 6 SHEETS	STA. TO STA.	CONTRACT #: 63436				
	CHECKED - DPB	DATE - 3/10/10	REVISD -		ILLINOIS FED. AID PROJECT							
	PLOT DATE = 3/10/10		REVISD -									

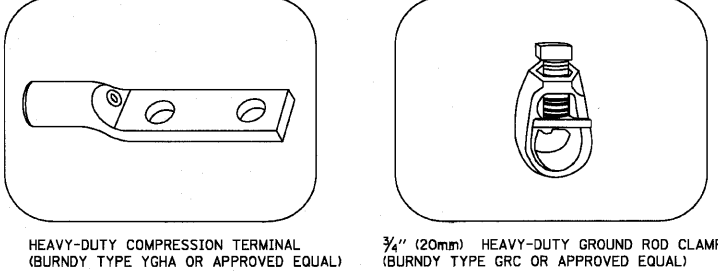


- NOTES:**
1. ELECTRIC SERVICE PANELS SHALL BE CONSTRUCTED TO U.L. STD 508, INDUSTRIAL CONTROL PANEL, AND CARRY THE U.L. LABEL.
 2. ALL WIRING SHALL BE NEATLY DRESSED AND SUPPORTED.

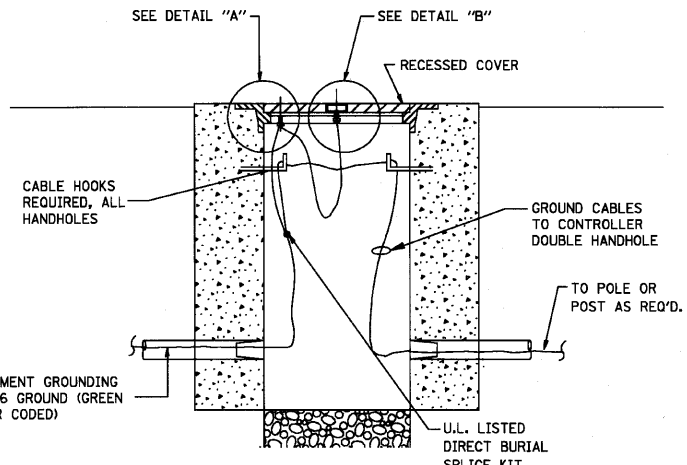
ELECTRICAL SERVICE - PANEL DIAGRAM (TYPICAL FOR POLE AND GROUND MOUNTED SERVICE)
SERVICE INSTALLATION POLE MOUNT (SHOWN)
 (NOT TO SCALE)



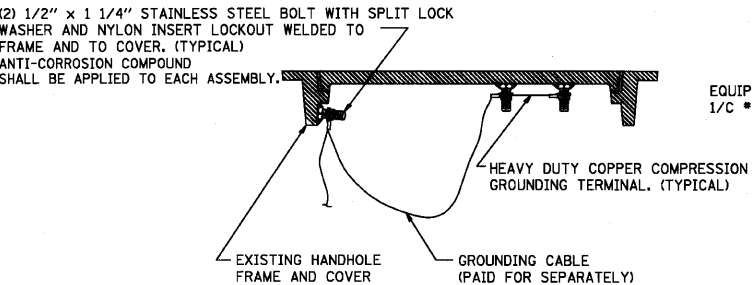
- NOTES:**
- GROUNDING SYSTEM**
1. THE GROUNDING SYSTEM SHALL CONSIST OF AN INSULATED CONDUCTOR TYPE XLP, NO. 6 A.W.G., STRANDED COPPER TO BE INSTALLED IN RACEWAYS. THE GROUNDING CABLE SHALL BE INSTALLED IN A CONTINUOUS MANNER AS SHOWN ON THE CABLE PLAN PROVIDED. ALL GROUNDING CONDUCTORS SHALL BE BONDED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



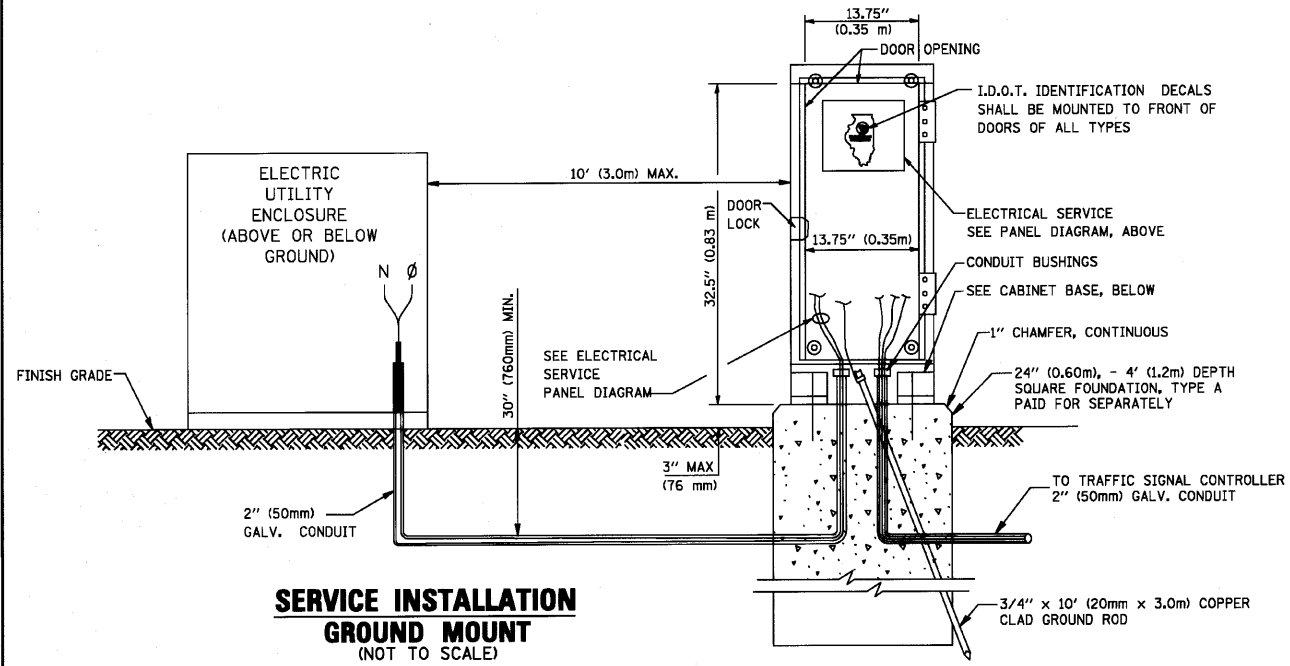
- NOTES:**
- ALL CLAMPS SHALL BE BRONZE OR COPPER, UL APPROVED.
 - GROUND CABLE SHALL BE LOOPED OVER HOOKS IN THE HANDHOLES. 6.5' (2.0m) SLACK SHALL BE PROVIDED IN SINGLE HANDHOLES. 13' (4.0m) OF SLACK SHALL BE PROVIDED IN DOUBLE HANDHOLES. 5' (1.4m) OF SLACK SHALL BE PROVIDED BETWEEN FRAME AND COVER.



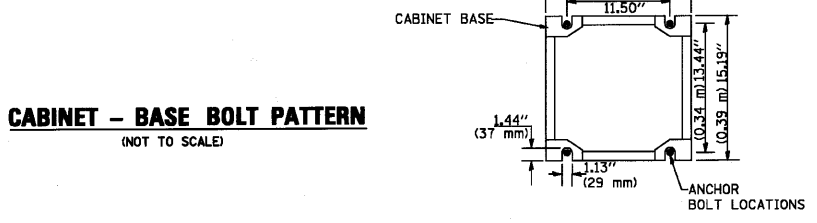
HANDHOLE COVER & FRAME - GROUNDING DETAIL
 (NOT TO SCALE)



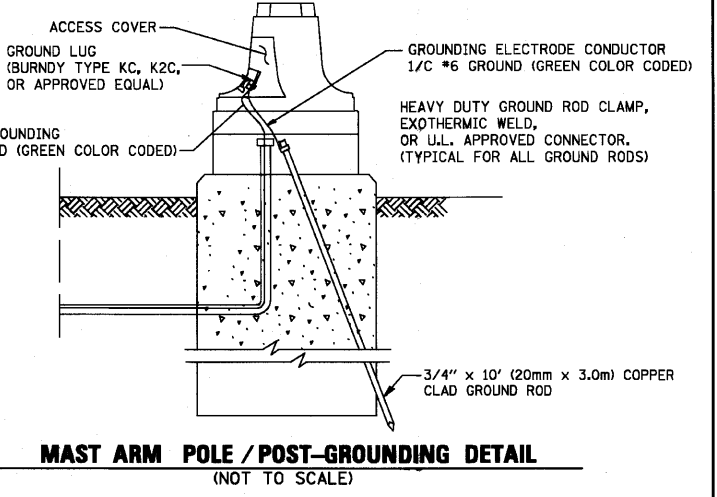
EXISTING HANDHOLE COVER & FRAME - GROUNDING DETAIL
 (NOT TO SCALE)



SERVICE INSTALLATION GROUND MOUNT
 (NOT TO SCALE)

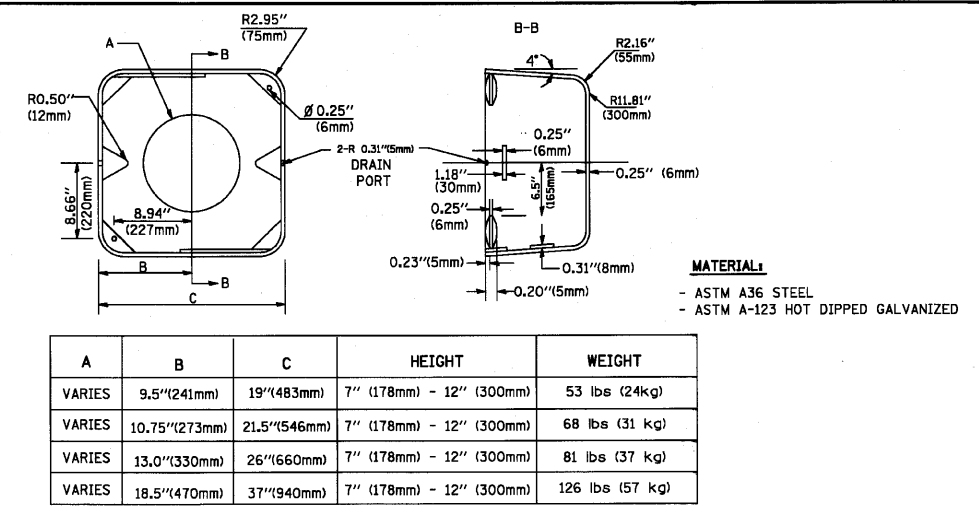
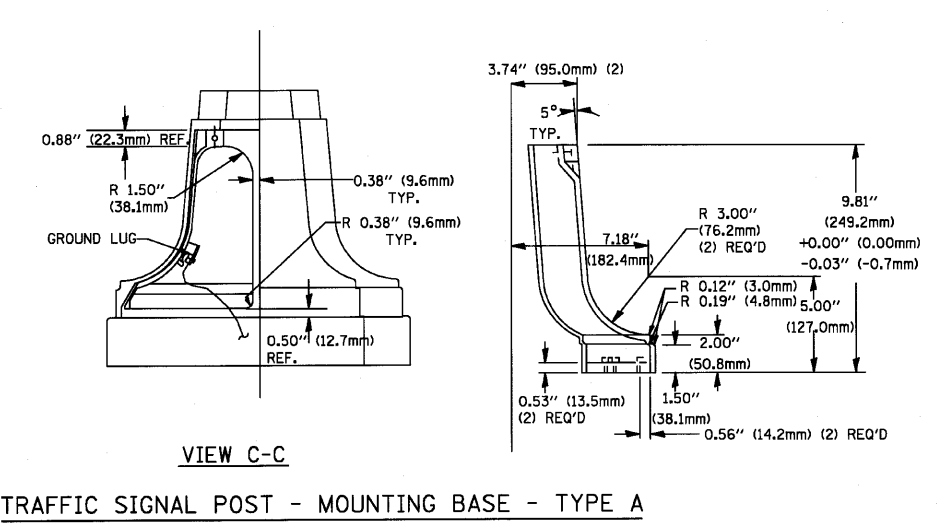
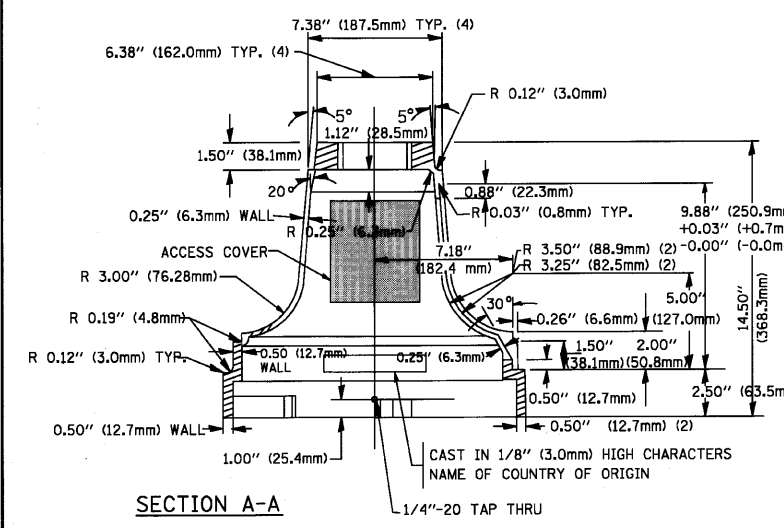
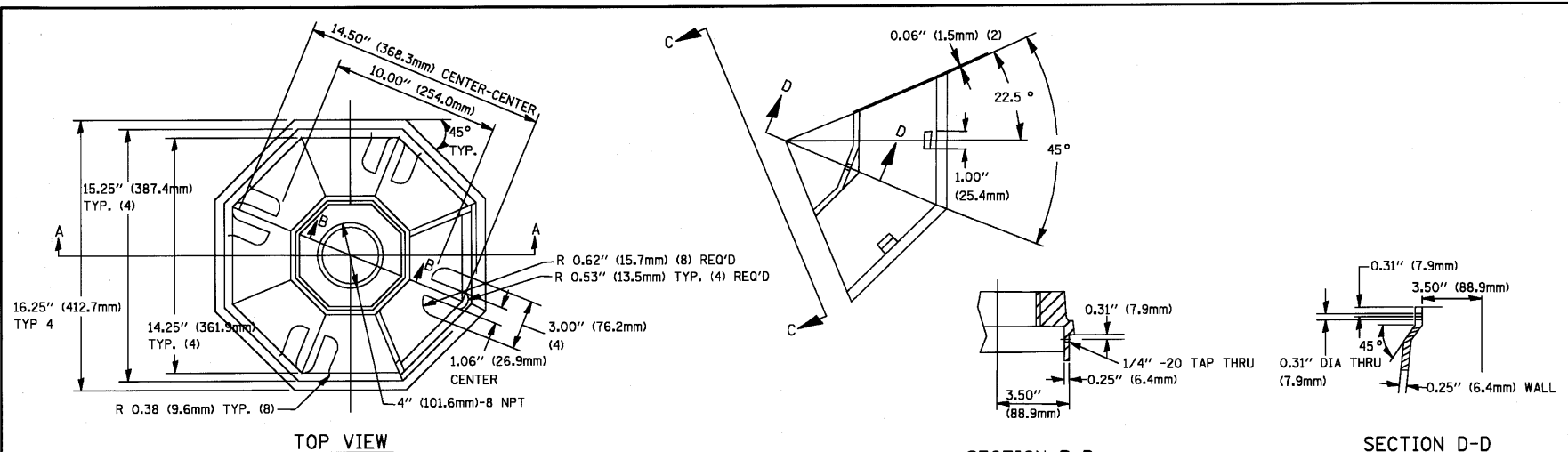


CABINET - BASE BOLT PATTERN
 (NOT TO SCALE)



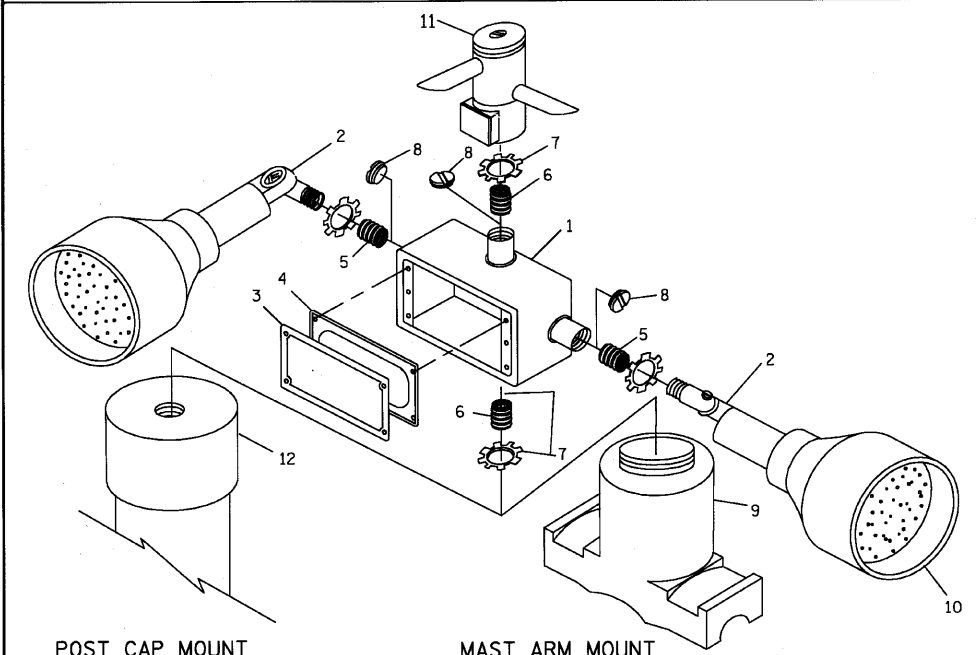
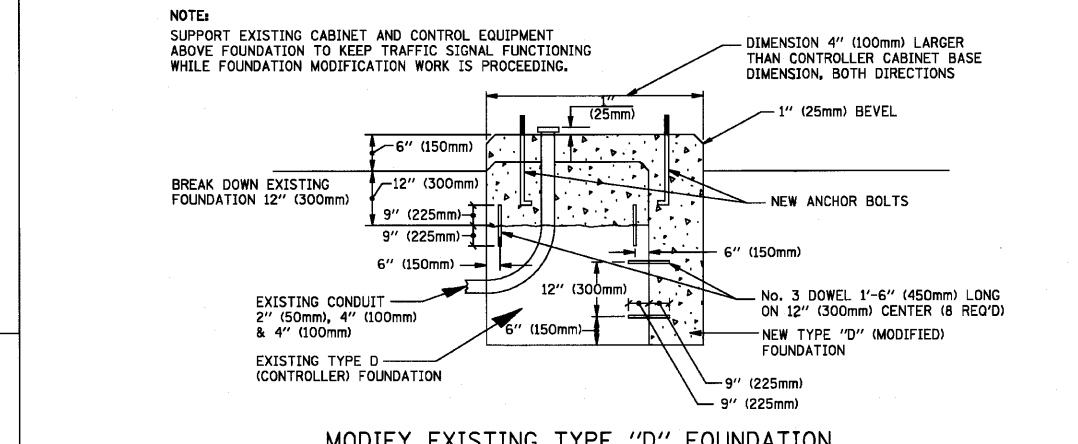
MAST ARM POLE / POST-GROUNDING DETAIL
 (NOT TO SCALE)

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DISTRICT 1 STANDARD TRAFFIC SIGNAL DESIGN DETAILS	F.A.P. R.T.E. = 541	SECTION = 08-00279-00-TL	COUNTY = LAKE	TOTAL SHEETS = 64	SHEET NO. = 6		
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISED -			SCALE = N.A.	SHEET NO. 3 OF 6 SHEETS	STA. TO STA.	CONTRACT # = 63436			
	PLOT DATE = 3/10/10	CHECKED - DPB	REVISED -			ILLINOIS FED. AID PROJECT						
		DATE = 3/10/10	REVISED -									



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

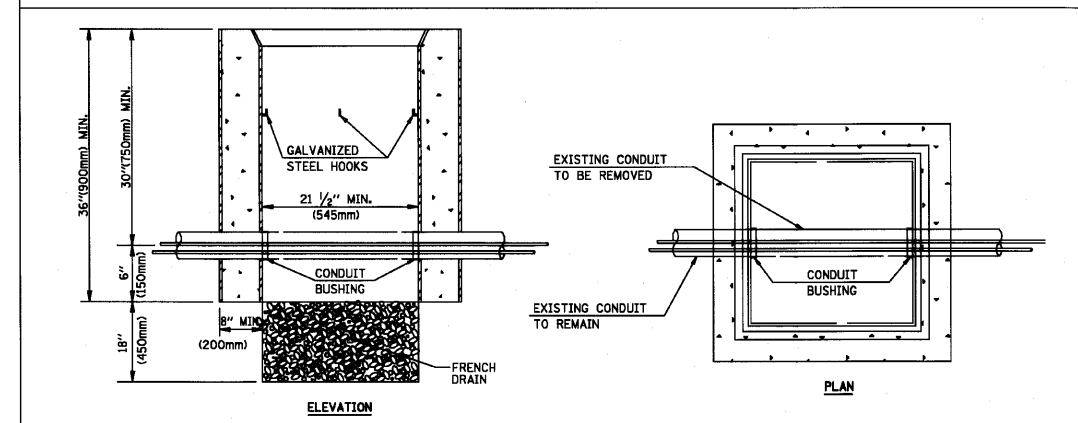
NOTES:
 1. DIMENSION "A" IS EQUAL TO THE DIAMETER OF THE MAST ARM POLE AT THE TOP OF THE SHROUD. THE SHROUD SHALL BE TIGHT TO THE MAST ARM POLE.
 2. THE SUPPLIER SHALL VERIFY THE ABOVE DIMENSIONS BASED ON MAST ARM REQUIREMENTS.
 3. THE HEIGHT OF THE SHROUD SHALL COVER THE ANCHOR BOLTS, NUTS AND MAST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



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	6 WATT PAR 38 LED FLOOD LAMP
11	DETECTOR UNIT
12	POST CAP [18 FT. (5.4 m) POST MIN.]

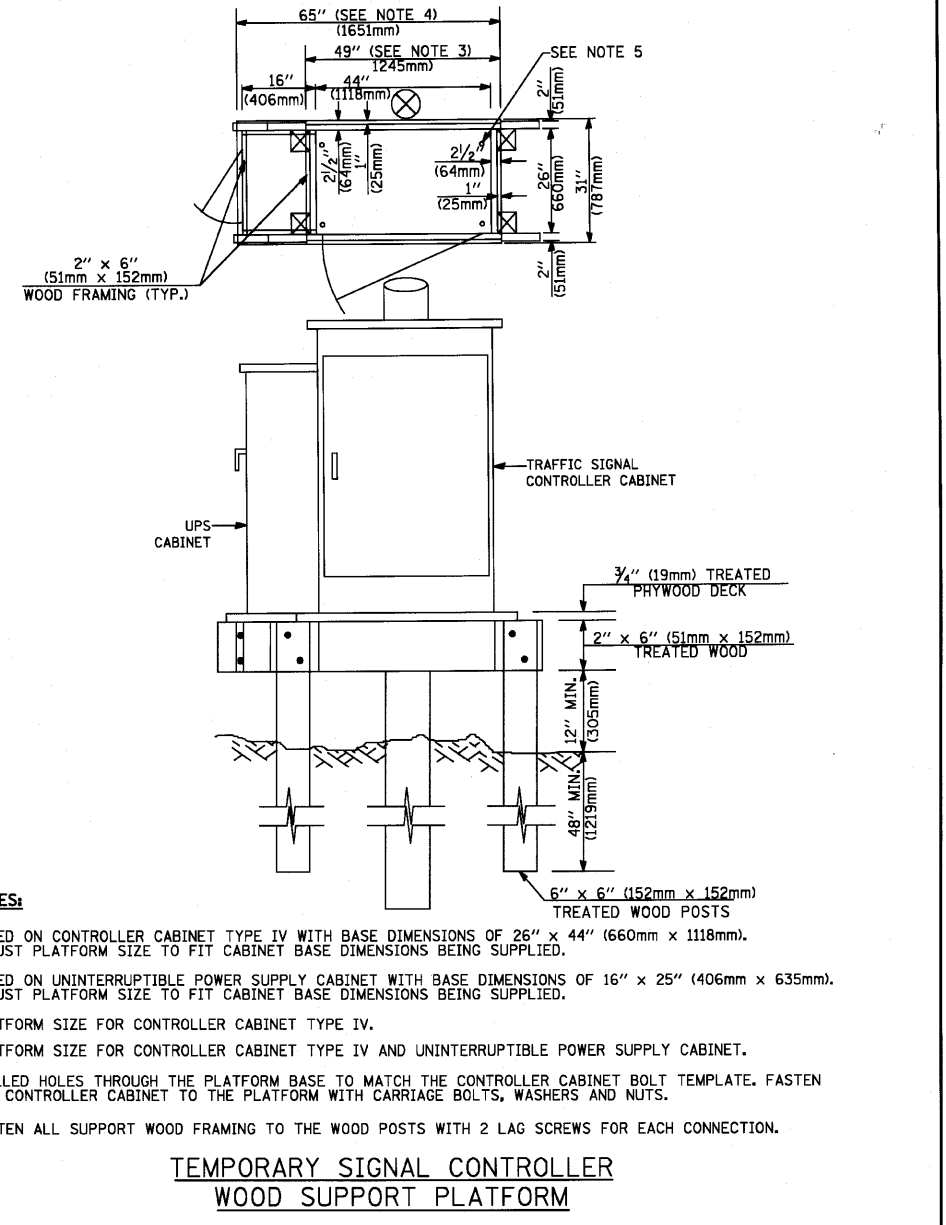
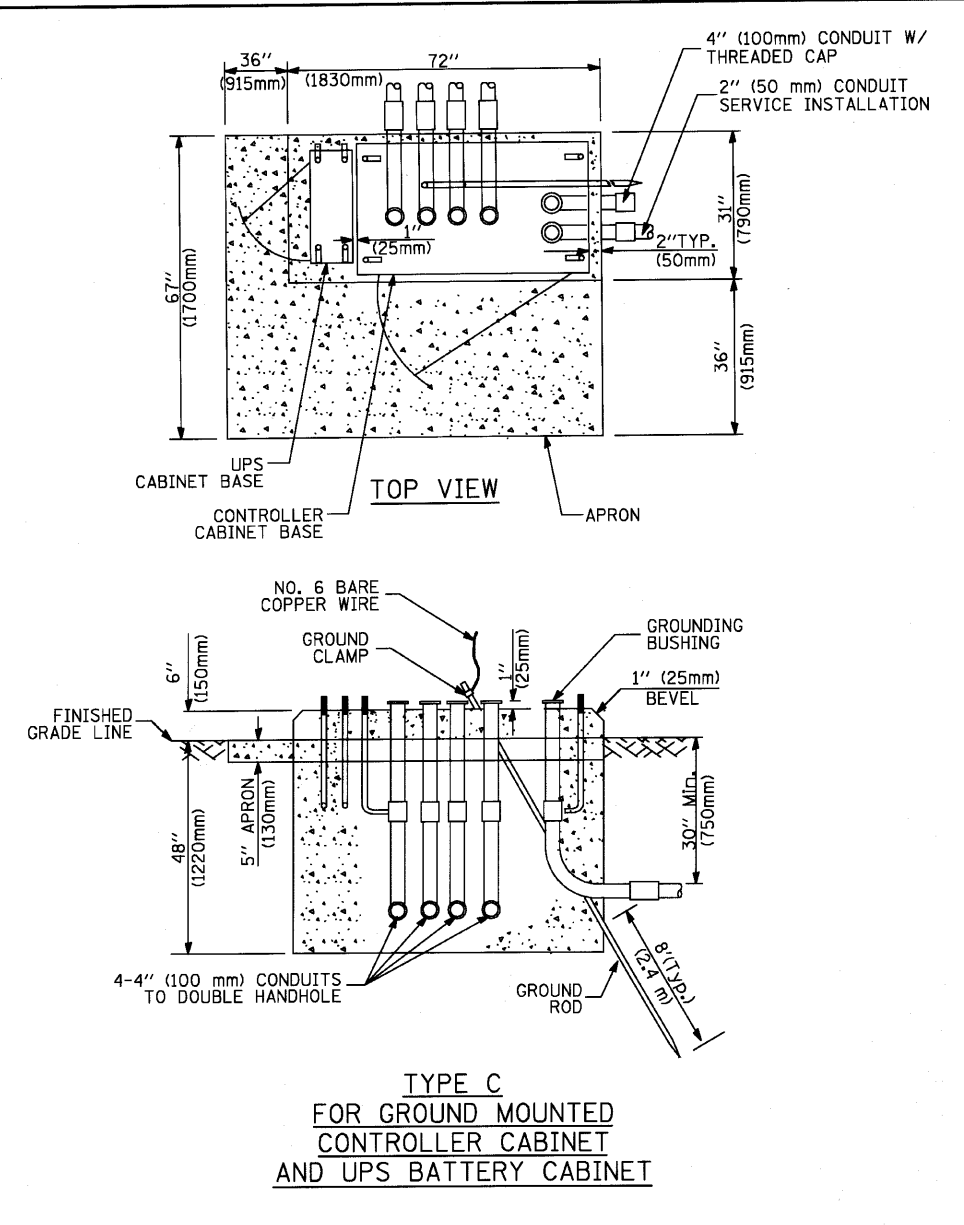
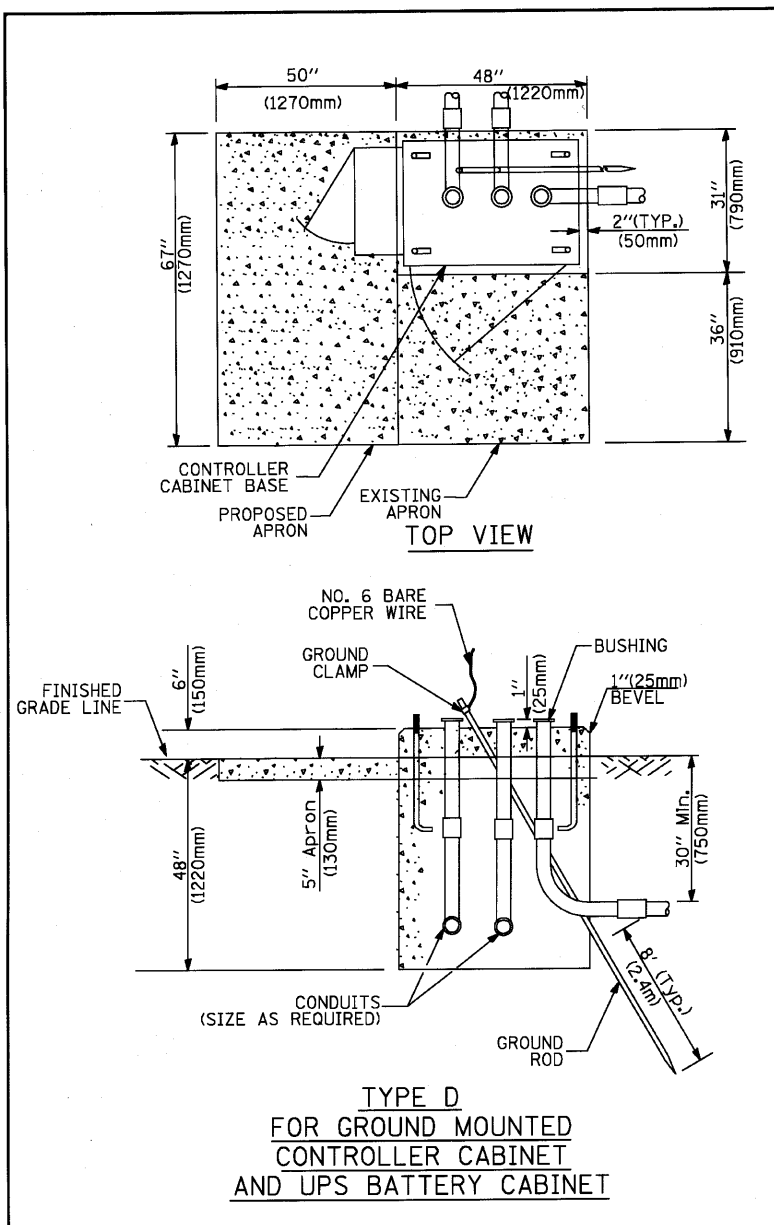
NOTES:
 1. ALL ELECTRICAL ITEMS, EXCEPT ITEMS #2 AND #11 SHALL BE ALUMINUM OR GALVANIZED
 2. ITEM #1- OZ/GEDNEY FSX-1-50 OR EQUIVALENT
 ITEM #2- MULBERRY CON-O-SHADE LAMP SHIELD OR EQUIVALENT
 ITEM #9- "BAND-IT" SADDLE BRACKET OR EQUIVALENT
 3. WHEN POST MOUNTING IS SPECIFIED, ITEM #9 SHALL NOT BE REQUIRED. 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.

EMERGENCY VEHICLE DETECTOR WITH CONFIRMATION BEACON MOUNTING DETAIL



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

HANDHOLE TO INTERCEPT EXISTING CONDUIT



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

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

CABLE SLACK

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

VERTICAL CABLE LENGTH

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

DEPTH OF FOUNDATION

MAST ARM LENGTH	FOUNDATION DEPTH	FOUNDATION DIAMETER	SPIRAL DIAMETER	QUANTITY OF REBARS	SIZE OF REBARS
Less than 30' (9.1 m)	10'-0" (3.0 m)	30" (750mm)	24" (600mm)	8	6(19)
Greater than or equal to 30' (9.1 m) and less than 40' (12.2 m)	13'-6" (4.1 m)	30" (750mm)	24" (600mm)	8	6(19)
	11'-0" (3.4 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 40' (12.2 m) and less than 50' (15.2 m)	13'-0" (4.0 m)	36" (900mm)	30" (750mm)	12	7(22)
	15'-0" (4.6 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 50' (15.2 m) and up to 55' (16.8 m)	15'-0" (4.6 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 56' (16.8 m) and less than 65' (19.8 m)	21'-0" (6.4 m)	42" (1060mm)	36" (900mm)	16	8(25)
Greater than or equal to 65' (19.8 m) and up to 75' (22.9 m)	25'-0" (7.6 m)	42" (1060mm)	36" (900mm)	16	8(25)

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

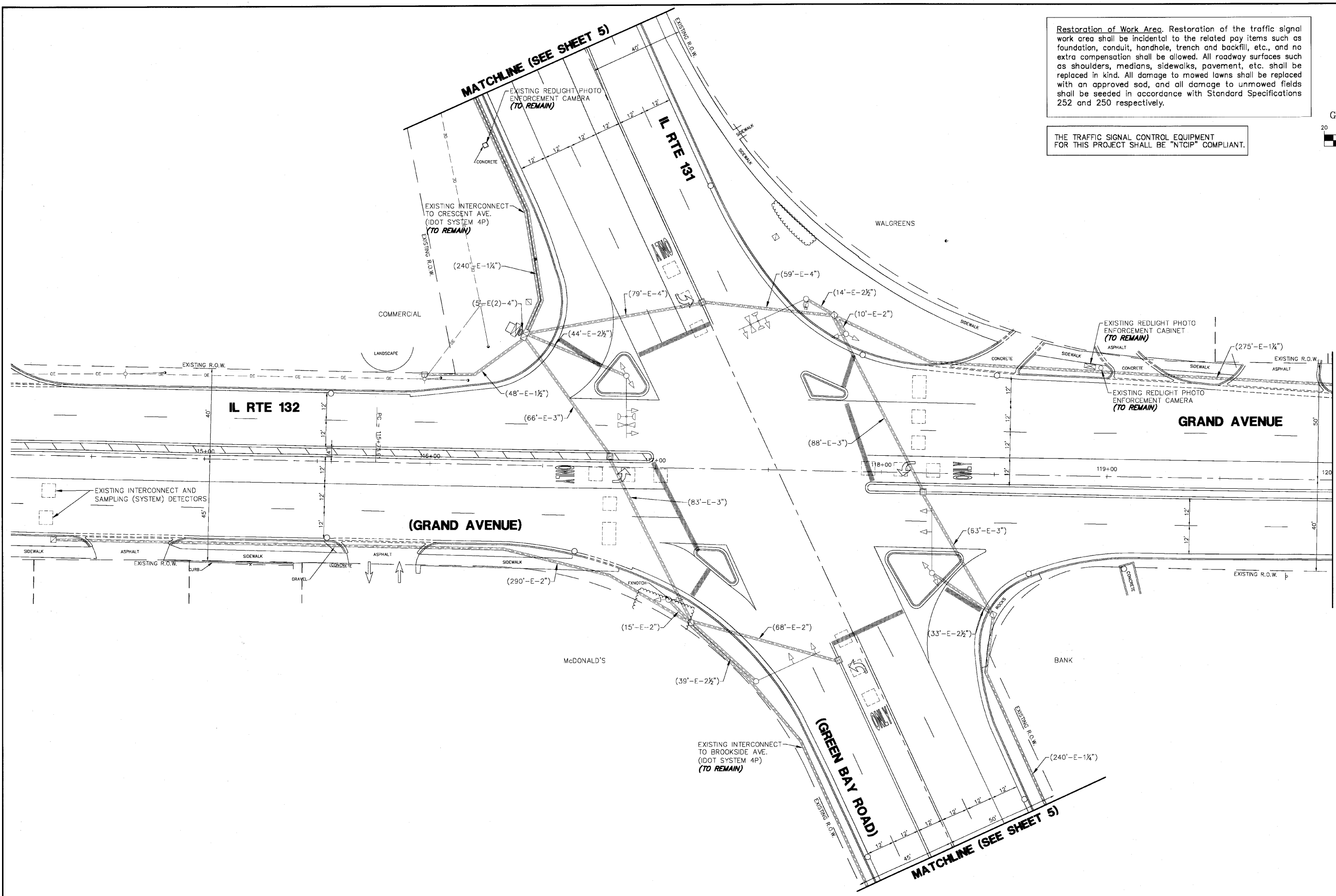
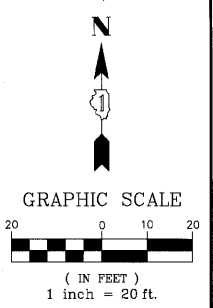
DEPTH OF MAST ARM FOUNDATIONS, TYPE E

TRAFFIC SIGNAL LEGEND

ITEM	REMOVAL	EXISTING	PROPOSED	ITEM	REMOVAL	EXISTING	PROPOSED	ITEM	REMOVAL	EXISTING	PROPOSED
CONTROLLER CABINET				EMERGENCY VEHICLE LIGHT DETECTOR				ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1/C, UNLESS NOTED OTHERWISE			
RAILROAD CONTROL CABINET				CONFIRMATION BEACON				COAXIAL CABLE			
COMMUNICATIONS CABINET				HANDHOLE				VENDOR CABLE FOR CAMERA			
MASTER CONTROLLER				HEAVY DUTY HANDHOLE				COPPER INTERCONNECT CABLE, NO. 18 3 PAIR TWISTED, SHIELDED			
MASTER MASTER CONTROLLER				DOUBLE HANDHOLE				FIBER OPTIC CABLE NO. 62.5/125, MM12F			
UNINTERRUPTIBLE POWER SUPPLY				JUNCTION BOX				FIBER OPTIC CABLE NO. 62.5/125, MM12F SM12F			
SERVICE INSTALLATION, (P) POLE OR (G) GROUND MOUNT				GALVANIZED STEEL CONDUIT IN TRENCH (T) OR PUSHED (P)				FIBER OPTIC CABLE NO. 62.5/125, MM12F (NUMBER OF FIBERS & TYPE TO BE NOTED ON PLANS)			
TELEPHONE CONNECTION (P) POLE OR (G) GROUND MOUNT				TEMPORARY SPAN WIRE, TETHER WIRE, AND CABLE				GROUND ROD AT (C) CONTROLLER, (H) HANDHOLE, (P) POST, (M) MAST ARM, OR (S) SERVICE			
STEEL MAST ARM ASSEMBLY AND POLE				COMMON TRENCH				CONTROLLER CABINET AND FOUNDATION TO BE REMOVED			
ALUMINUM MAST ARM ASSEMBLY AND POLE				COILABLE NONMETALLIC CONDUIT (EMPTY)				STEEL MAST ARM POLE AND FOUNDATION TO BE REMOVED			
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE				SYSTEM ITEM		S	S	ALUMINUM MAST ARM POLE AND FOUNDATION TO BE REMOVED			
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH PTZ CAMERA				INTERSECTION ITEM		I	IP	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE AND FOUNDATION TO BE REMOVED			
SIGNAL POST				REMOVE ITEM	R			SIGNAL POST AND FOUNDATION TO BE REMOVED			
TEMPORARY WOOD POLE (CLASS 5 OR BETTER) 45 FOOT (13.7m) MINIMUM				RELOCATE ITEM	RL			INTERSECTION & SAMPLING (SYSTEM) DETECTOR			
GUY WIRE				ABANDON ITEM	A			SAMPLING (SYSTEM) DETECTOR			
SIGNAL HEAD				12" (300mm) TRAFFIC SIGNAL SECTION				EXISTING INTERSECTION LOOP DETECTOR			
SIGNAL HEAD CONSTRUCTION STAGES (NUMBERS INDICATE THE CONSTRUCTION STAGE)				12" (300mm) RED WITH 8" (200mm) YELLOW AND GREEN TRAFFIC SIGNAL FACE				PROPOSED INTERSECTION AND SAMPLING (SYSTEM) DETECTOR			
SIGNAL HEAD WITH BACKPLATE				SIGNAL FACE				EXISTING PREFORMED INTERSECTION LOOP DETECTOR			
SIGNAL HEAD OPTICALLY PROGRAMMED				SIGNAL FACE WITH BACKPLATE. "P" INDICATES PROGRAMMED HEAD				PROPOSED INTERSECTION AND SAMPLING (SYSTEM) DETECTOR			
FLASHER INSTALLATION (S DENOTES SOLAR POWER)				12" (300mm) PEDESTRIAN SIGNAL HEAD WALK/DON'T WALK SYMBOL				PREFORMED INTERSECTION AND SAMPLING (SYSTEM) DETECTOR			
PEDESTRIAN SIGNAL HEAD				12" (300mm) PEDESTRIAN SIGNAL HEAD INTERNATIONAL SYMBOL, OUTLINED				PREFORMED SAMPLING (SYSTEM) DETECTOR			
PEDESTRIAN PUSHBUTTON DETECTOR				12" (300mm) PEDESTRIAN SIGNAL HEAD INTERNATIONAL SYMBOL, SOLID				RAILROAD SYMBOLS			
ACCESSIBLE PEDESTRIAN PUSHBUTTON DETECTOR				PEDESTRIAN SIGNAL HEAD, INTERNATIONAL SYMBOL, WITH COUNTDOWN TIMER				EXISTING		PROPOSED	
ILLUMINATED SIGN "NO LEFT TURN"				RADIO INTERCONNECT				RAILROAD CONTROL CABINET			
ILLUMINATED SIGN "NO RIGHT TURN"				RADIO REPEATER				RAILROAD CANTILEVER MAST ARM			
DETECTOR LOOP, TYPE I				DENOTES NUMBER OF CONDUCTORS, ELECTRIC CABLE NO. 14, UNLESS NOTED OTHERWISE, ALL DETECTOR LOOP CABLE TO BE SHIELDED				FLASHING SIGNAL			
PREFORMED DETECTOR LOOP				GROUND CABLE IN CONDUIT NO. 6 SOLID COPPER (GREEN)				CROSSING GATE			
MICROWAVE VEHICLE SENSOR								CROSSBUCK			
VIDEO DETECTION CAMERA											
VIDEO DETECTION ZONE											
PAN, TILT, ZOOM CAMERA											
WIRELESS DETECTOR SENSOR											
WIRELESS ACCESS POINT											

Restoration of Work Area. Restoration of the traffic signal work area shall be incidental to the related pay items such as foundation, conduit, handhole, trench and backfill, etc., and no extra compensation shall be allowed. All roadway surfaces such as shoulders, medians, sidewalks, pavement, etc. shall be replaced in kind. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded in accordance with Standard Specifications 252 and 250 respectively.

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



MATCH LINE - STA. 120+00 (SEE SHEET 11)

GHA #4136.800

FILE NAME =	USER NAME = GHA
4136.800-TR2.dwg	

DESIGNED - JRD	REVISD -
DRAWN - ZCW	REVISD -
CHECKED - DPB	REVISD -
DATE - 3/10/10	REVISD -

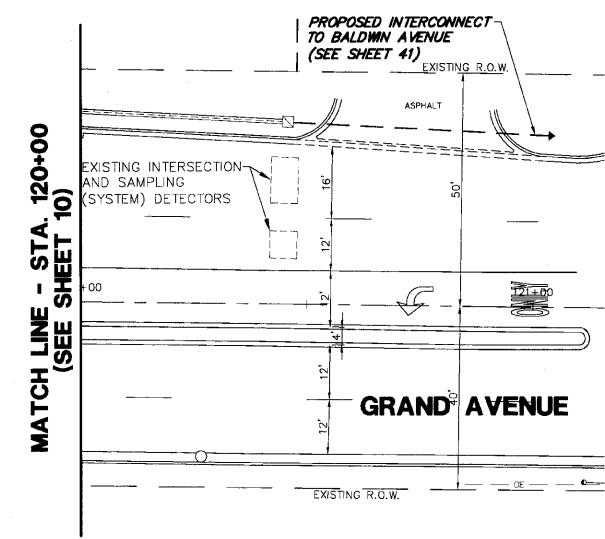
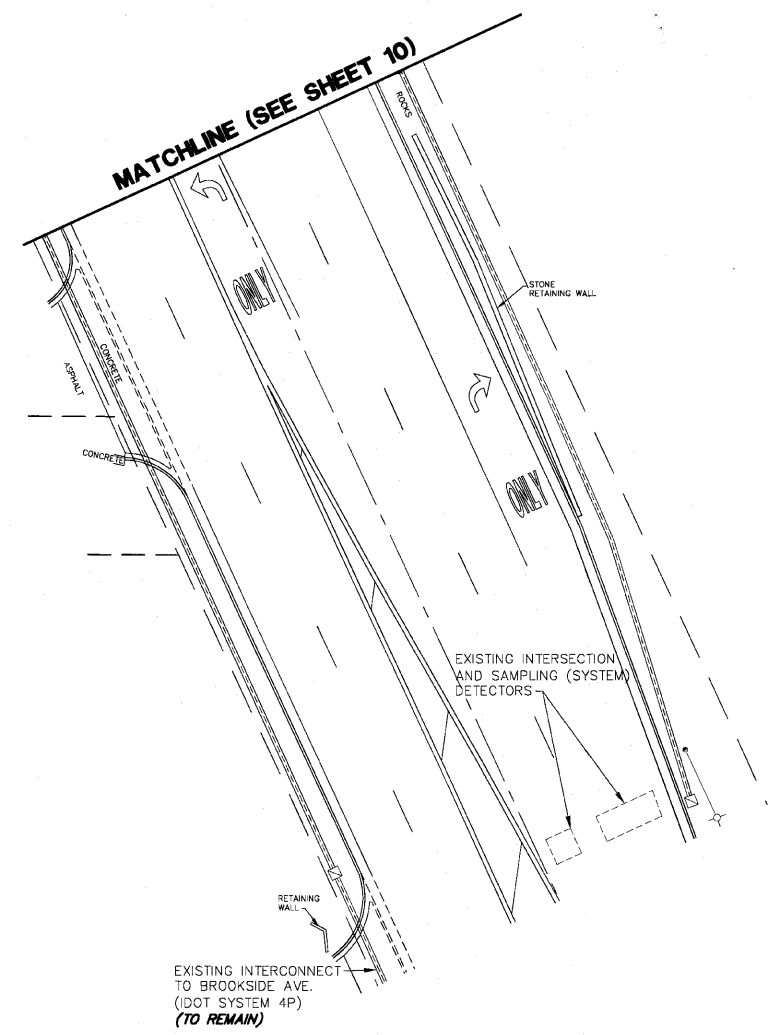
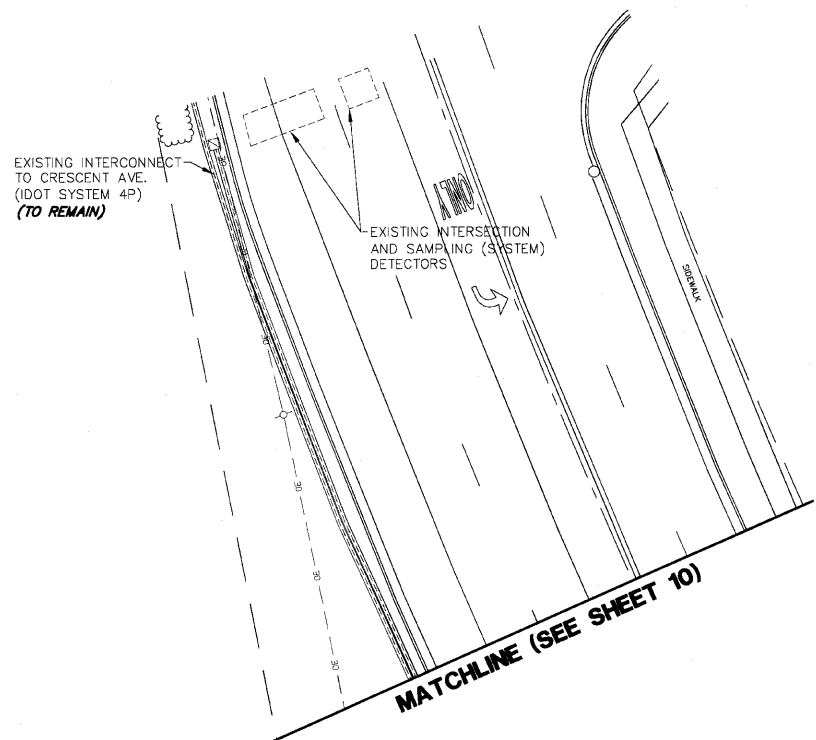
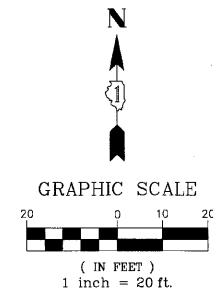
DESIGNED - JRD	REVISD -
DRAWN - ZCW	REVISD -
CHECKED - DPB	REVISD -
DATE - 3/10/10	REVISD -

DESIGNED - JRD	REVISD -
DRAWN - ZCW	REVISD -
CHECKED - DPB	REVISD -
DATE - 3/10/10	REVISD -



TRAFFIC SIGNAL MODIFICATION PLAN			
IL RTE 132 (GRAND AVENUE) AT IL RTE 131 (GREEN BAY ROAD)			
SCALE: 1"=20'	SHEET NO. OF SHEETS	STA.	TO STA.

F&P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	08-00279-00-TL	LAKE	64	10
CONTRACT #:			63436	
ILLINOIS FED. AID PROJECT				



Restoration of Work Area. Restoration of the traffic signal work area shall be incidental to the related pay items such as foundation, conduit, handhole, trench and backfill, etc., and no extra compensation shall be allowed. All roadway surfaces such as shoulders, medians, sidewalks, pavement, etc. shall be replaced in kind. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded in accordance with Standard Specifications 252 and 250 respectively.

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

GHA #4136.800

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = 1" = .0833'	CHECKED - DPB	REVISED -
	PLOT DATE = 3/10/10	DATE - 3/10/10	REVISED -



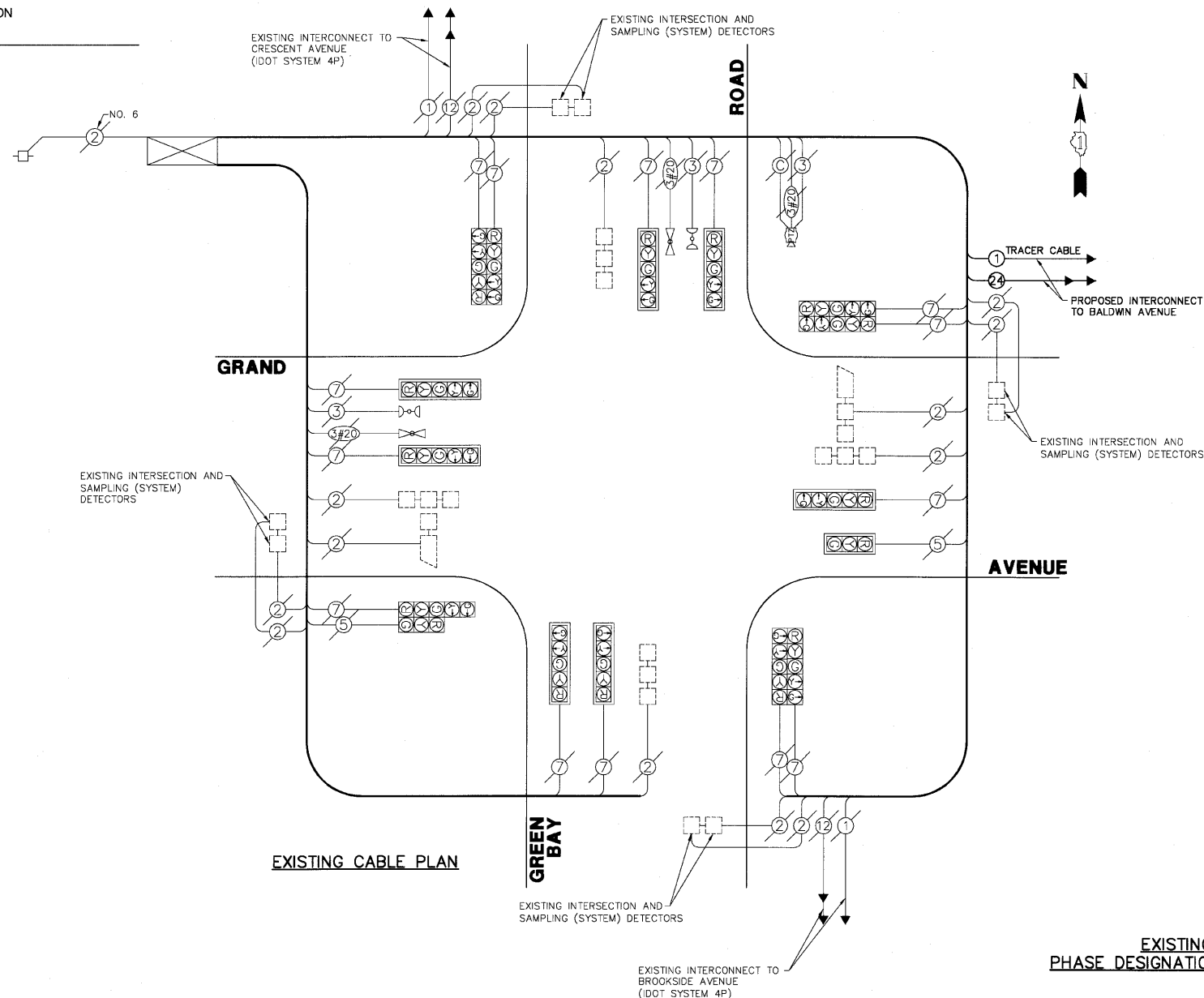
TRAFFIC SIGNAL MODIFICATION PLAN
IL RTE 132 (GRAND AVENUE) AT IL RTE 131 (GREEN BAY ROAD)
 SCALE 1"=20' SHEET NO. OF SHEETS STA. TO STA.

F&P RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	08-00279-00-TL	LAKE	64	11
CONTRACT #			63436	
ILLINOIS FED. AID PROJECT				

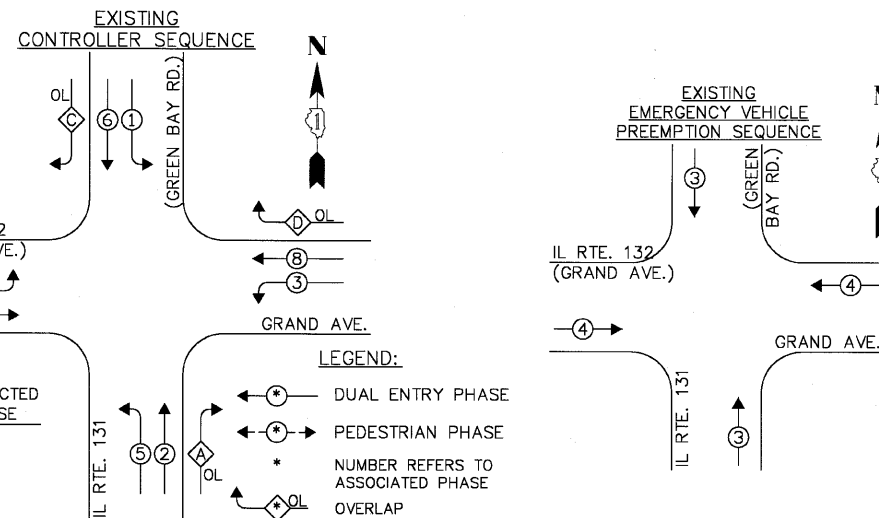
SCHEDULE OF QUANTITIES

GRAND AVENUE AT GREEN BAY ROAD TRAFFIC SIGNAL MODERNIZATION

NO.	QUANT.	UNIT
1.	1	EACH MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION
2.	1	EACH MODIFY EXISTING CONTROLLER



EXISTING PHASE DESIGNATION DIAGRAM



EXISTING EMERGENCY VEHICLE PREEMPTORS	
EMERGENCY VEHICLE PREEMPTOR	3
MOVEMENT	4

L.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE		% OPERATION	
		INCAND.	L.E.D.		
SIGNAL (RED)	16	135	10	0.50	1090.0
SIGNAL (YELLOW)	16	135	19	0.10	216.0
SIGNAL (GREEN)	16	135	11	0.40	864.0
ARROW	28	135	9	0.10	378.0
PED. SIGNAL	-	90	9	1.00	-
CONTROLLER	1	-	100	1.00	100.0
LUMINAIRE	-	-	250	0.50	-
L.E.D. ST. NAME SIGN	-	-	64	0.50	-
VIDEO SYSTEM	1	150	1.00	150.0	-
BATTERY BACKUP	-	-	25	1.00	-
TOTAL =					2788.0

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

FOUNDATION (DEPTH)	(FT.)	CABLE SLACK	(FT.)	VERTICAL	(FT.)
TYPE A - POST	4	HAND-HOLE	6.5	ALL FOUNDATIONS	3.5
TYPE D - CONTROLLER	4	DOUBLE HAND-HOLE	13	MAST ARM (L) POLE	20' H-2=
TYPE E - M.ARM POLE	15	SIGNAL POST	2	BRACKET MOUNTED	13
		CONTROLLER CAB.	1	PED. PUSHBUTTON	4
		FIBER OPTIC	13	ELECTRIC SERVICE	13.5
		ELECTRIC SERVICE	1	SERVICE TO GROUND	13.5
		GROUND CABLE	1	POST MOUNTED	6

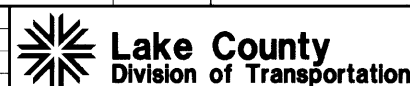
OVERLAP LETTER	PERMISSIVE PHASE	PROTECTED PHASE
A =	2	+ 3
C =	6	+ 7
D =	8	+ 1

ENERGY COSTS - BILLED TO: ILL. DEPT. OF TRANS.
 (ADDRESS) 201 W. CENTER CT.
 (ADDRESS) SCHAUMBURG, IL 60196
 ENERGY SUPPLY - CONTACT: GERRY GRANDBERRY
 PHONE: (847) 816-5463
 COMPANY: COM-ED, LIBERTYVILLE

FILE NAME = 4136.800-TR2.dwg
 USER NAME = GHA

DESIGNED - JRD
 DRAWN - ZCW
 CHECKED - DPB
 PLOT SCALE = 1" = .0833'
 PLOT DATE = 3/10/10

REVISED -
 REVISED -
 REVISED -
 DATE - 3/10/10

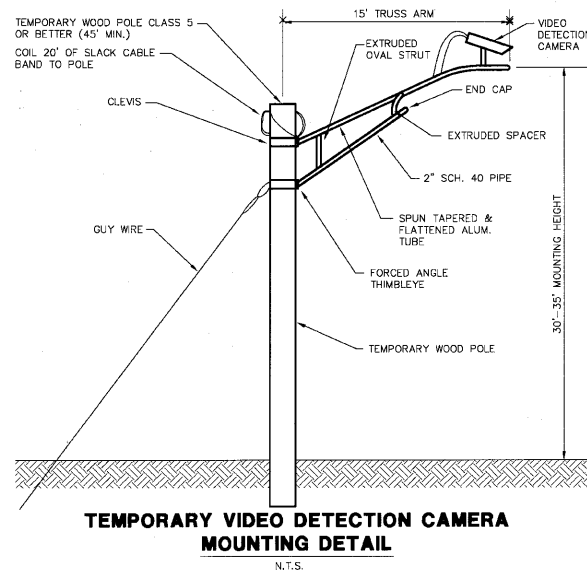


CABLE PLAN, PHASE DESIGNATION DIAGRAM AND SCHEDULE OF QUANTITIES
IL RTE 132 (GRAND AVENUE) AT IL RTE 131 (GREEN BAY ROAD)
 SCALE: NONE SHEET NO. OF SHEETS STA. TO STA.

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	08-00279-00-TL	LAKE	64	12
CONTRACT #			63436	

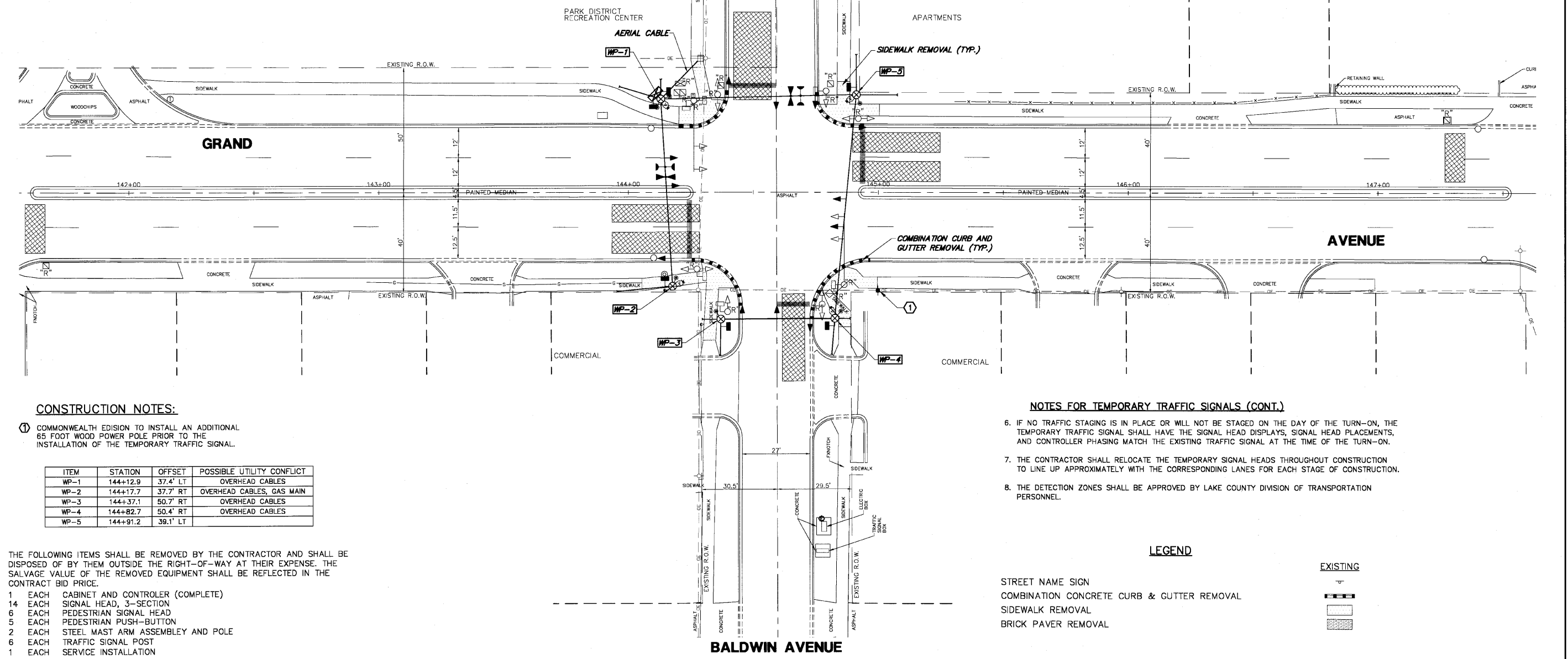
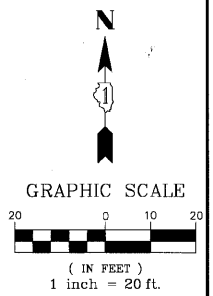
GHA #4136.800

ILLINOIS FED. AID PROJECT



NOTES FOR TEMPORARY TRAFFIC SIGNALS

1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY ECONOLITE CONTROLLERS SUPPLIED BY ONE OF THE COUNTY APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY THE COUNTY, INSTALLED IN A NEMA TS1 OR TS2 CABINET.
3. ALL TRAFFIC SIGNAL SECTIONS AND PEDESTRIAN SIGNAL SECTIONS SHALL BE 12". HEADS SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE OR AT LOCATIONS ILLUSTRATED ON THE PLANS FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
4. ALL EXISTING STREET NAME, INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.
5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM. ANY TEMPORARY TRAFFIC SIGNAL WITHIN AN ICON SYSTEM SHALL BE NTCIP COMPATIBLE AND SHALL BE INTERCONNECTED TO THAT SYSTEM.

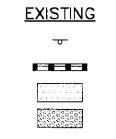


NOTES FOR TEMPORARY TRAFFIC SIGNALS (CONT.)

6. IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN-ON, THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS, AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL AT THE TIME OF THE TURN-ON.
7. THE CONTRACTOR SHALL RELOCATE THE TEMPORARY SIGNAL HEADS THROUGHOUT CONSTRUCTION TO LINE UP APPROXIMATELY WITH THE CORRESPONDING LANES FOR EACH STAGE OF CONSTRUCTION.
8. THE DETECTION ZONES SHALL BE APPROVED BY LAKE COUNTY DIVISION OF TRANSPORTATION PERSONNEL.

LEGEND

- STREET NAME SIGN
- COMBINATION CONCRETE CURB & GUTTER REMOVAL
- SIDEWALK REMOVAL
- BRICK PAVER REMOVAL



CONSTRUCTION NOTES:

- 1 COMMONWEALTH EDISION TO INSTALL AN ADDITIONAL 65 FOOT WOOD POWER POLE PRIOR TO THE INSTALLATION OF THE TEMPORARY TRAFFIC SIGNAL.

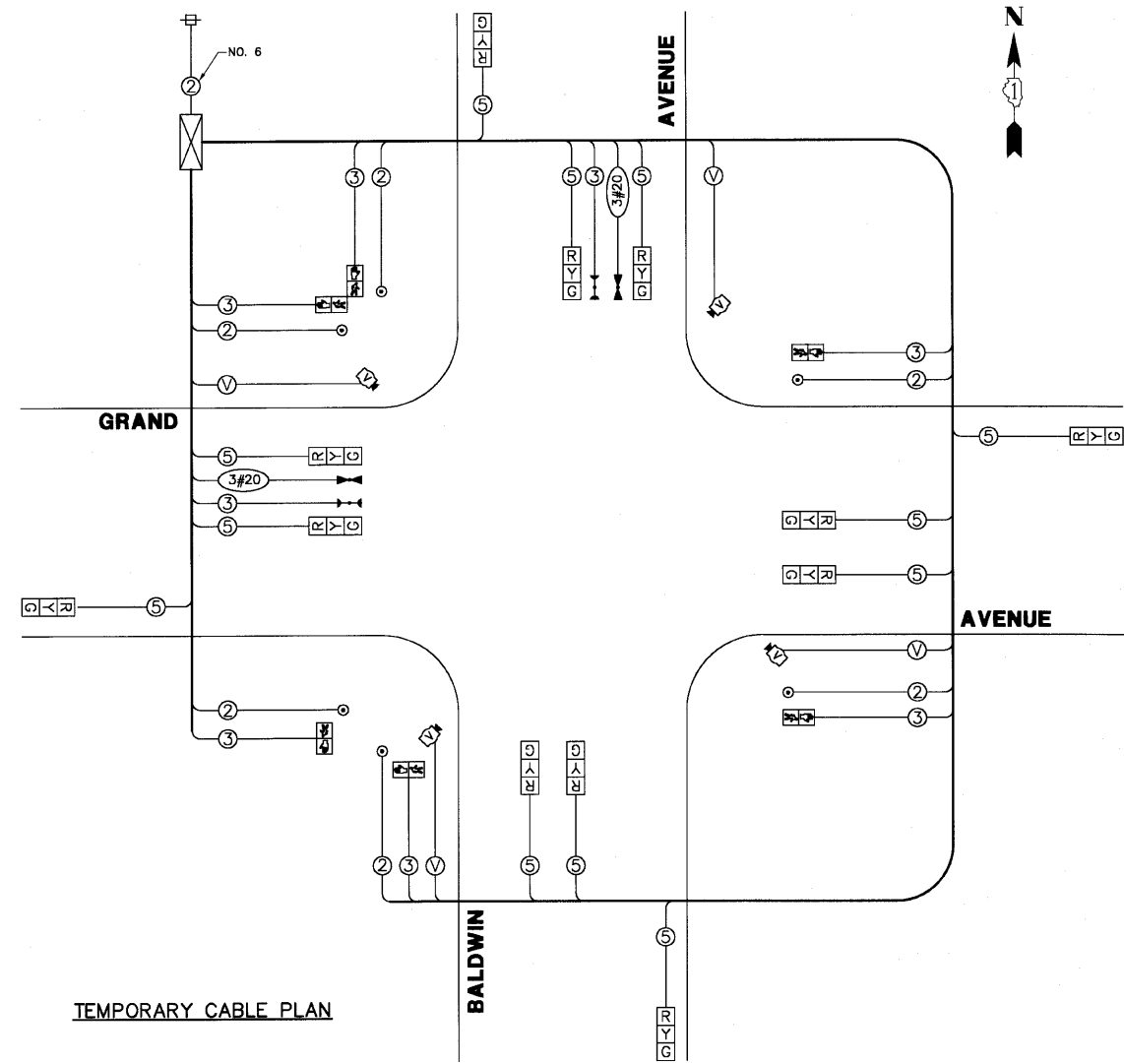
ITEM	STATION	OFFSET	POSSIBLE UTILITY CONFLICT
WP-1	144+12.9	37.4' LT	OVERHEAD CABLES
WP-2	144+17.7	37.7' RT	OVERHEAD CABLES, GAS MAIN
WP-3	144+37.1	50.7' RT	OVERHEAD CABLES
WP-4	144+82.7	50.4' RT	OVERHEAD CABLES
WP-5	144+91.2	38.1' LT	

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

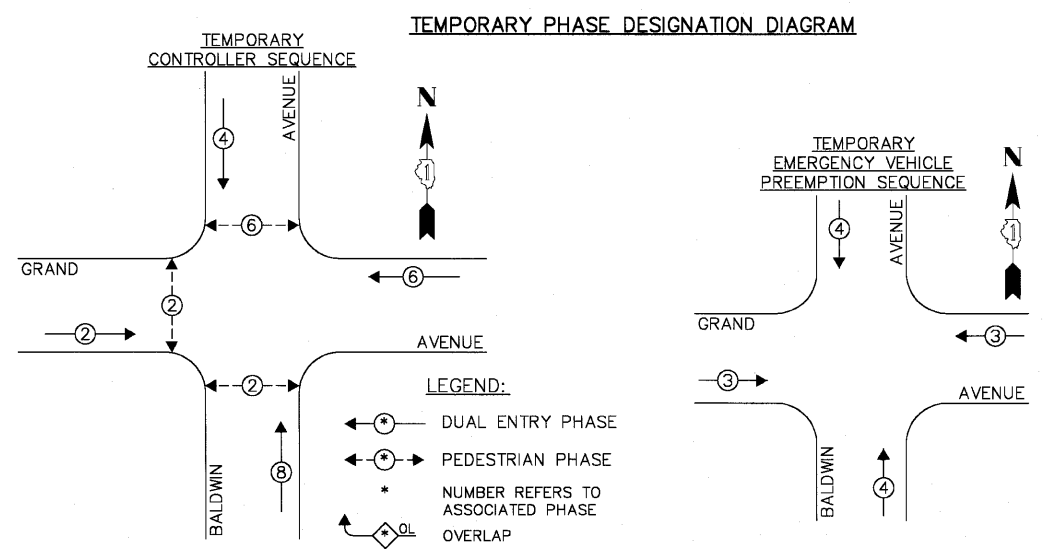
- 1 EACH CABINET AND CONTROLLER (COMPLETE)
- 14 EACH SIGNAL HEAD, 3-SECTION
- 6 EACH PEDESTRIAN SIGNAL HEAD
- 5 EACH PEDESTRIAN PUSH-BUTTON
- 2 EACH STEEL MAST ARM ASSEMBLY AND POLE
- 6 EACH TRAFFIC SIGNAL POST
- 1 EACH SERVICE INSTALLATION

GHA #4136.800

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -		TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVAL OF EXISTING TRAFFIC SIGNAL EQUIPMENT GRAND AVENUE AT BALDWIN AVENUE	F&P R.T.E. 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 13	
PLOT SCALE = 1" = .0833'		DRAWN - ZCW				SCALE: 1"=20'		SHEET NO. OF SHEETS		CONTRACT # 63436	
PLOT DATE = 3/10/10		CHECKED - DPB				STA. TO STA.		ILLINOIS FED. AID PROJECT			
DATE - 3/10/10		REVISED -									



TEMPORARY CABLE PLAN



TEMPORARY EMERGENCY VEHICLE PREEMPTORS	
EMERGENCY VEHICLE PREEMPTOR	3 4
MOVEMENT	← → ↑ ↓

L.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE INCAND.	L.E.D.	% OPERATION	
SIGNAL (RED)	12	135	10	0.50	60.0
SIGNAL (YELLOW)	12	135	9	0.10	22.8
SIGNAL (GREEN)	12	135	11	0.40	52.8
ARROW	-	135	9	0.10	-
PED. SIGNAL	6	90	9	1.00	54.0
CONTROLLER	-	-	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	-	-	25	1.00	-
TOTAL =					289.6

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN
 (ADDRESS) 100 N. M.L.K. JR. AVENUE
 (ADDRESS) WAUKEGAN, IL
 ENERGY SUPPLY - CONTACT: GERRY GRANDBERRY
 PHONE: (847) 816-5463
 COMPANY: COM-ED, LIBERTYVILLE

FILE NAME = 4136.800-TR2.cwg	USER NAME = GHA
DESIGNED - JRD	REVISED -
DRAWN - ZCW	REVISED -
CHECKED - DPB	REVISED -
DATE - 3/10/10	REVISED -

DESIGNED - JRD	REVISED -
DRAWN - ZCW	REVISED -
CHECKED - DPB	REVISED -
DATE - 3/10/10	REVISED -



TEMPORARY CABLE PLAN AND PHASE DESIGNATION DIAGRAM			
GRAND AVENUE AT BALDWIN AVENUE			
SCALE: NONE	SHEET NO. OF SHEETS	STA. TO STA.	

FAP RTE: 541	SECTION: 08-00279-00-TL	COUNTY: LAKE	TOTAL SHEETS: 64	SHEET NO.: 14
CONTRACT #: 63436				
ILLINOIS FED. AID PROJECT				

GHA #4136.800

LEGEND

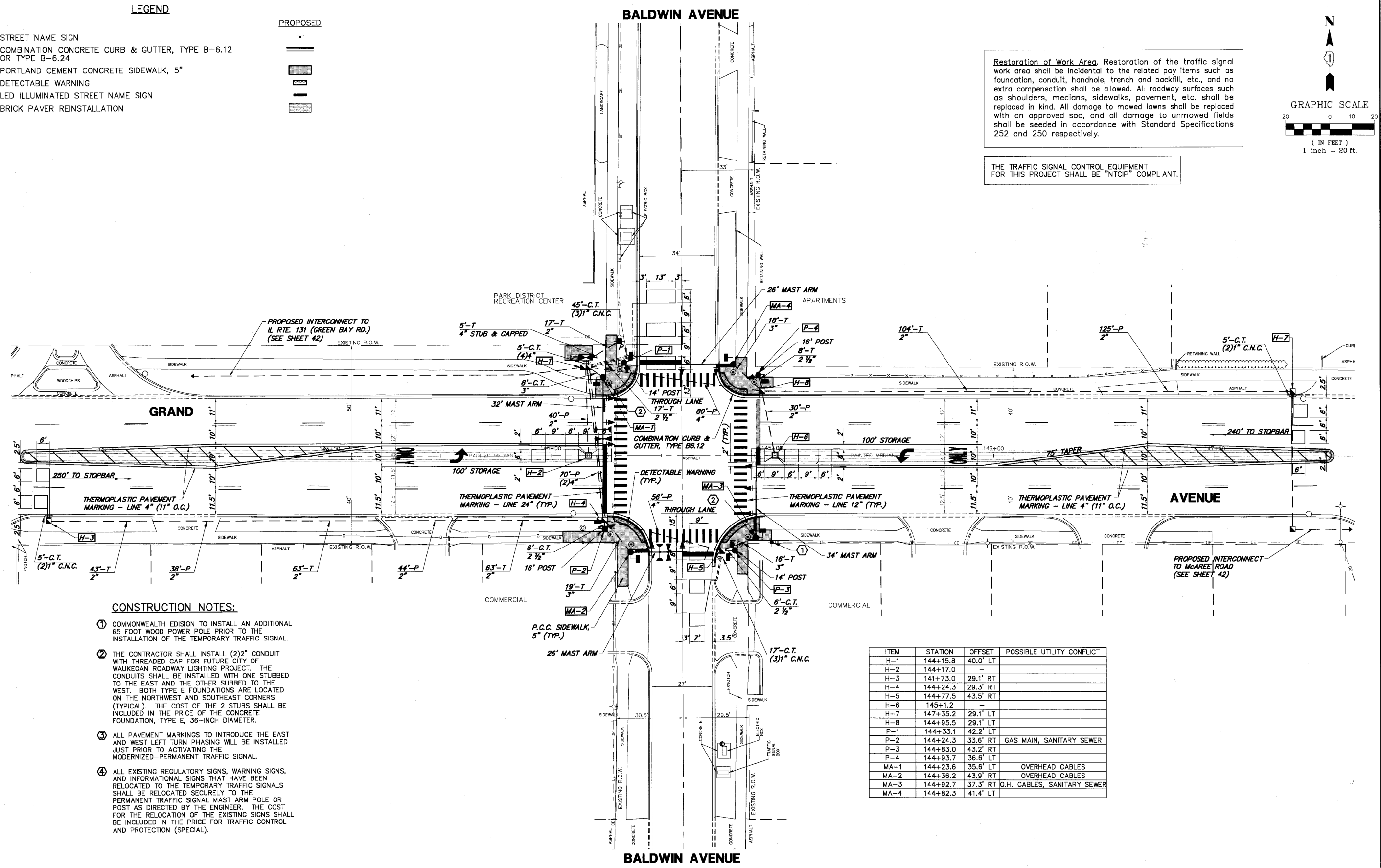
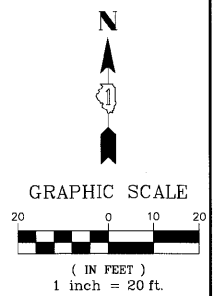
- STREET NAME SIGN
- COMBINATION CONCRETE CURB & GUTTER, TYPE B-6.12 OR TYPE B-6.24
- PORTLAND CEMENT CONCRETE SIDEWALK, 5"
- DETECTABLE WARNING
- LED ILLUMINATED STREET NAME SIGN
- BRICK PAVER REINSTALLATION

PROPOSED

- (Symbol for Street Name Sign)
- (Symbol for Combination Concrete Curb & Gutter)
- (Symbol for Portland Cement Concrete Sidewalk)
- (Symbol for Detectable Warning)
- (Symbol for LED Illuminated Street Name Sign)
- (Symbol for Brick Paver Reinstallation)

Restoration of Work Area. Restoration of the traffic signal work area shall be incidental to the related pay items such as foundation, conduit, handhole, trench and backfill, etc., and no extra compensation shall be allowed. All roadway surfaces such as shoulders, medians, sidewalks, pavement, etc. shall be replaced in kind. All damage to unmowed fields shall be seeded in accordance with Standard Specifications 252 and 250 respectively.

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



CONSTRUCTION NOTES:

- ① COMMONWEALTH EDISON TO INSTALL AN ADDITIONAL 65 FOOT WOOD POWER POLE PRIOR TO THE INSTALLATION OF THE TEMPORARY TRAFFIC SIGNAL.
- ② THE CONTRACTOR SHALL INSTALL (2) 2" CONDUIT WITH THREADED CAP FOR FUTURE CITY OF WAUKEGAN ROADWAY LIGHTING PROJECT. THE CONDUITS SHALL BE INSTALLED WITH ONE STUBBED TO THE EAST AND THE OTHER STUBBED TO THE WEST. BOTH TYPE E FOUNDATIONS ARE LOCATED ON THE NORTHWEST AND SOUTHEAST CORNERS (TYPICAL). THE COST OF THE 2 STUBS SHALL BE INCLUDED IN THE PRICE OF THE CONCRETE FOUNDATION, TYPE E, 36-INCH DIAMETER.
- ③ ALL PAVEMENT MARKINGS TO INTRODUCE THE EAST AND WEST LEFT TURN PHASING WILL BE INSTALLED JUST PRIOR TO ACTIVATING THE MODERNIZED-PERMANENT TRAFFIC SIGNAL.
- ④ ALL EXISTING REGULATORY SIGNS, WARNING SIGNS, AND INFORMATIONAL SIGNS THAT HAVE BEEN RELOCATED TO THE TEMPORARY TRAFFIC SIGNALS SHALL BE RELOCATED SECURELY TO THE PERMANENT TRAFFIC SIGNAL MAST ARM POLE OR POST AS DIRECTED BY THE ENGINEER. THE COST FOR THE RELOCATION OF THE EXISTING SIGNS SHALL BE INCLUDED IN THE PRICE FOR TRAFFIC CONTROL AND PROTECTION (SPECIAL).

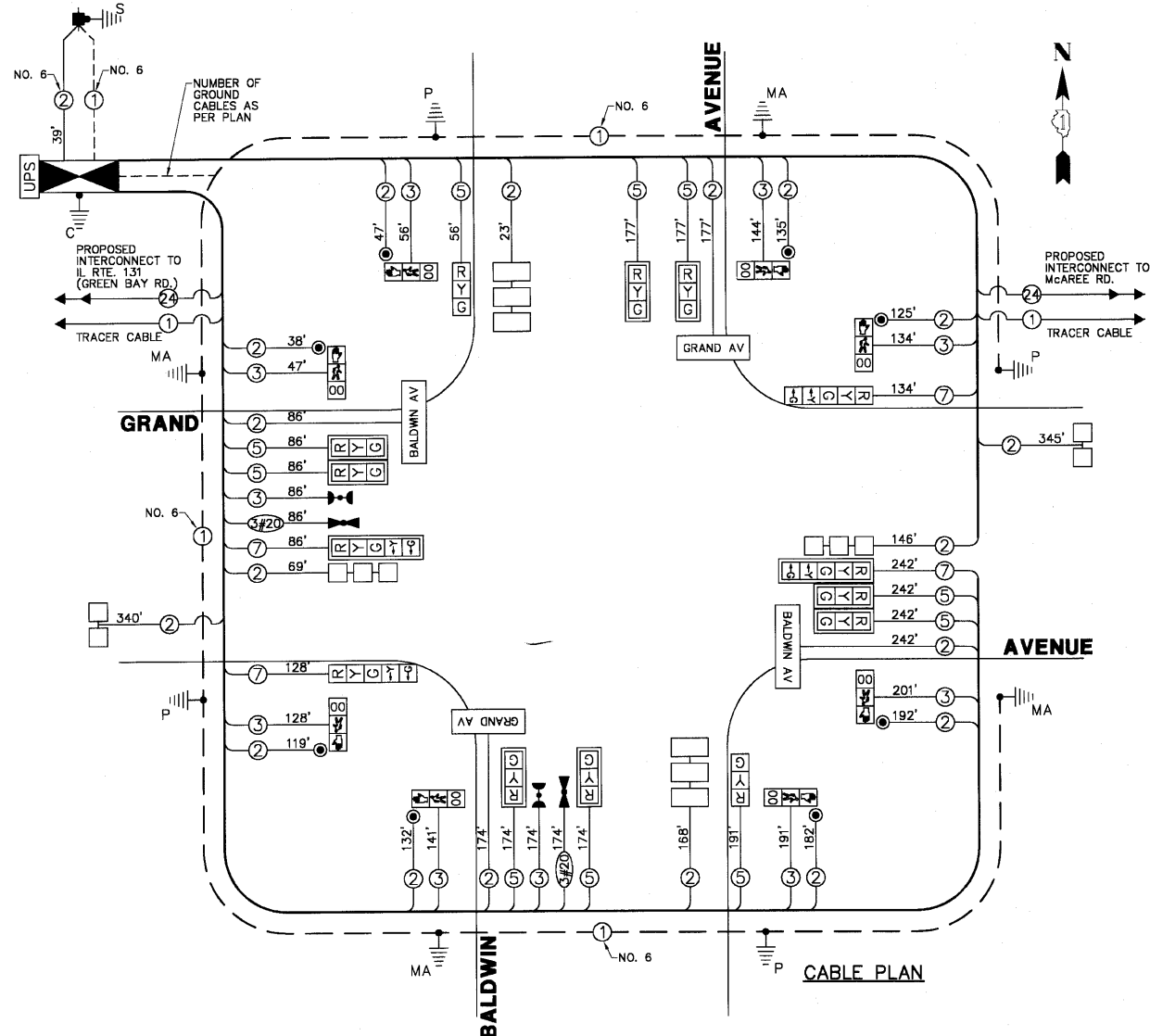
ITEM	STATION	OFFSET	POSSIBLE UTILITY CONFLICT
H-1	144+15.8	40.0' LT	
H-2	144+17.0	-	
H-3	141+73.0	29.1' RT	
H-4	144+24.3	29.3' RT	
H-5	144+77.5	43.5' RT	
H-6	145+1.2	-	
H-7	147+35.2	29.1' LT	
H-8	144+95.5	29.1' LT	
P-1	144+33.1	42.2' LT	
P-2	144+24.3	33.6' RT	GAS MAIN, SANITARY SEWER
P-3	144+83.0	43.2' RT	
P-4	144+93.7	36.6' LT	
MA-1	144+23.6	35.6' LT	OVERHEAD CABLES
MA-2	144+36.2	43.9' RT	OVERHEAD CABLES
MA-3	144+92.7	37.3' RT	O.H. CABLES, SANITARY SEWER
MA-4	144+82.3	41.4' LT	

GHA #4136.800

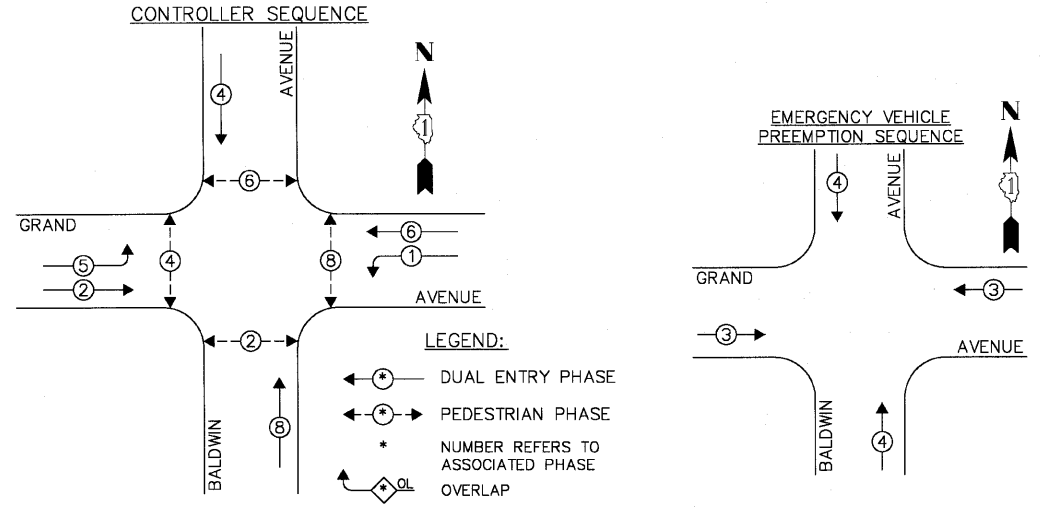
FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -		TRAFFIC SIGNAL MODERNIZATION PLAN	F&P R/E	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISED -		GRAND AVENUE AT BALDWIN AVENUE	541	08-00279-00-TL	LAKE	64	15	
	PLOT DATE = 3/10/10	CHECKED - DPB	REVISED -		SCALE: 1" = 20'	SHEET NO.	OF SHEETS	STA.	TO STA.	CONTRACT #:	63436
		DATE - 3/10/10	REVISED -							ILLINOIS FED. AID PROJECT	

SCHEDULE OF QUANTITIES
GRAND AVENUE AT BALDWIN AVENUE TRAFFIC SIGNAL MODERNIZATION

NO.	QUANT.	UNIT	DESCRIPTION
1.	12	CU YD	EARTH EXCAVATION
2.	40	SQ YD	AGGREGATE BASE COURSE, TYPE B 4"
3.	1,300	SQ FT	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH
4.	130	SQ FT	DETECTABLE WARNINGS
5.	155	FOOT	COMBINATION CURB AND GUTTER REMOVAL
6.	925	SQ FT	SIDEWALK REMOVAL
7.	155	FOOT	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12
8.	73	SQ FT	THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS
9.	1,740	FOOT	THERMOPLASTIC PAVEMENT MARKING - LINE 4"
10.	580	FOOT	THERMOPLASTIC PAVEMENT MARKING - LINE 6"
11.	210	FOOT	THERMOPLASTIC PAVEMENT MARKING - LINE 12"
12.	75	FOOT	THERMOPLASTIC PAVEMENT MARKING - LINE 24"
13.	550	SQ FT	PAVEMENT MARKING REMOVAL
14.	290	FOOT	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL
15.	37	FOOT	CONDUIT IN TRENCH, 2-1/2" DIA., GALVANIZED STEEL
16.	61	FOOT	CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL
17.	25	FOOT	CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL
18.	277	FOOT	CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL
19.	276	FOOT	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL
20.	4	EACH	HANDHOLE
21.	2	EACH	HEAVY-DUTY HANDHOLE
22.	2	EACH	DOUBLE HANDHOLE
23.	373	FOOT	TRENCH AND BACKFILL FOR ELECTRICAL WORK
24.	1	EACH	FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL
25.	1,649	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C
26.	1,302	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
27.	1,605	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C
28.	590	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C
29.	1,091	FOOT	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR
30.	39	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C
31.	2	EACH	STEEL MAST ARM ASSEMBLY AND POLE 26 FT. (SPECIAL)
32.	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE 32 FT. (SPECIAL)
33.	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE 34 FT. (SPECIAL)
34.	16	FOOT	CONCRETE FOUNDATION, TYPE A
35.	4	FOOT	CONCRETE FOUNDATION, TYPE C
36.	30	FOOT	CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER
37.	30	FOOT	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER
38.	8	EACH	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED
39.	2	EACH	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED
40.	2	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED
41.	2	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST-ARM MOUNTED
42.	8	EACH	PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
43.	10	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINIUM
44.	6	EACH	INDUCTIVE LOOP DETECTOR
45.	560	FOOT	DETECTOR LOOP, TYPE 1
46.	2	EACH	LIGHT DETECTOR
47.	1	EACH	LIGHT DETECTOR AMPLIFIER
48.	8	EACH	PEDESTRIAN PUSH-BUTTON
49.	1	EACH	TEMPORARY TRAFFIC SIGNAL INSTALLATION
50.	1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
51.	6	EACH	REMOVE EXISTING HANDHOLE
52.	9	EACH	REMOVE EXISTING CONCRETE FOUNDATION
53.	1	EACH	MEDIA CONVERTER
54.	1	EACH	TEMPORARY TRAFFIC SIGNAL TIMINGS
55.	1	EACH	SERVICE INSTALLATION POLE MOUNT
56.	1	EACH	UNINTERRUPTIBLE POWER SUPPLY
57.	417	FOOT	ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C
58.	260	FOOT	ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED
59.	2	EACH	TRAFFIC SIGNAL POST, 14 FOOT (SPECIAL)
60.	2	EACH	TRAFFIC SIGNAL POST, 16 FOOT (SPECIAL)
61.	4	EACH	LED INTERNALLY ILLUMINATED STREET NAME SIGN



PHASE DESIGNATION DIAGRAM



PROPOSED EMERGENCY VEHICLE PREEMPTORS	
EMERGENCY VEHICLE PREEMPTOR	3
MOVEMENT	4

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

L.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS				TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE INCAND. I.E.D.	% OPERATION	
SIGNAL (RED)	14	135	10	70.0
SIGNAL (YELLOW)	14	135	19	26.6
SIGNAL (GREEN)	14	135	11	61.6
ARROW	8	135	9	7.2
PED. SIGNAL	8	90	9	72.0
CONTROLLER	1	-	100	100.0
LUMINAIRE	-	-	250	0.50
L.E.D. ST. NAME SIGN	4	-	64	128.0
VIDEO SYSTEM	-	-	150	1.00
BATTERY BACKUP	1	-	25	25.0
TOTAL =				490.4

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'-1'-2"
TYPE E - MAST POLE	15	SIGNAL POST	2	BRACKET MOUNTED	13
		CONTROLLER CAB.	1	PEDESTRIAN PUSHBUTTON	4
		FIBER OPTIC	13	ELECTRIC SERVICE	13.5
		ELECTRIC SERVICE	1	SERVICE TO GROUND	13.5
		GROUND CABLE	1	POST MOUNTED	6

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN
(ADDRESS) 700 N. M.L.K. JR. AVENUE
(ADDRESS) WAUKEGAN, IL
ENERGY SUPPLY - CONTACT: GERRY GRANDBERRY
PHONE: (847) 816-5463
COMPANY: COM-ED, LIBERTYVILLE

FILE NAME = 4136.800-TR2.dwg
USER NAME = GHA
DESIGNED - JRD
DRAWN - ZCW
CHECKED - DPB
PLOT SCALE = 1" = .0833"
PLOT DATE = 3/10/10

REVISED -
REVISED -
REVISED -
DATE - 3/10/10

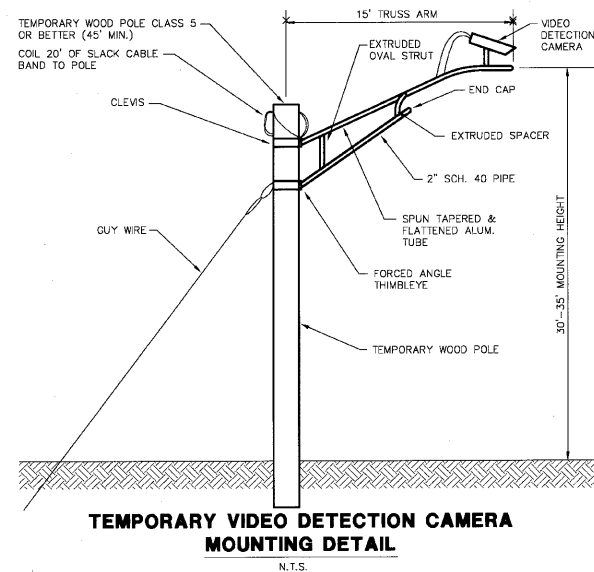


CABLE PLAN, PHASE DESIGNATION DIAGRAM AND SCHEDULE OF QUANTITIES GRAND AVENUE AT BALDWIN AVENUE

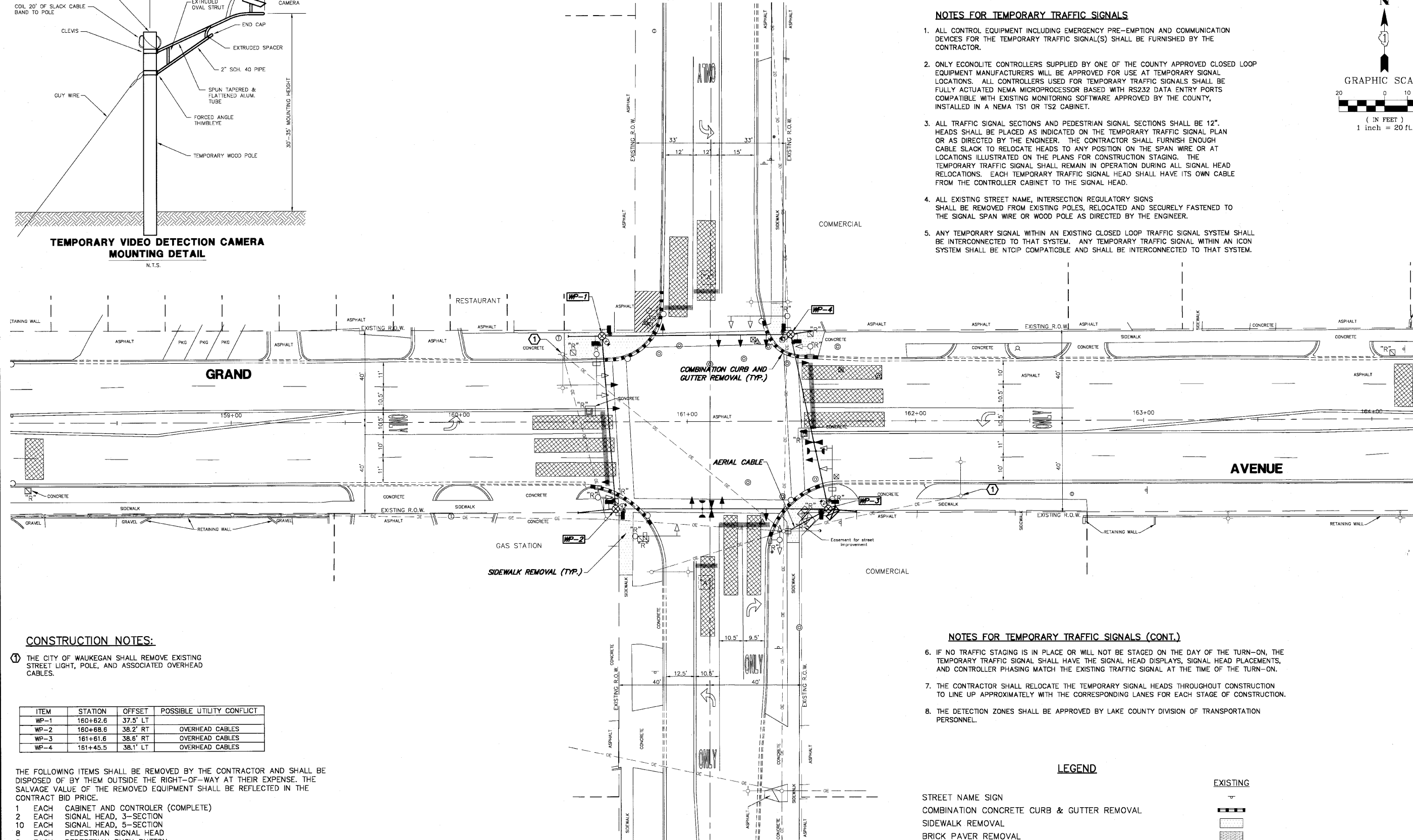
SCALE: NONE SHEET NO. OF SHEETS STA. TO STA.

F.A.P. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	08-00279-00-TL	LAKE	64	16
CONTRACT #: 63436				
ILLINOIS FED. AID PROJECT				

GHA #4136.800

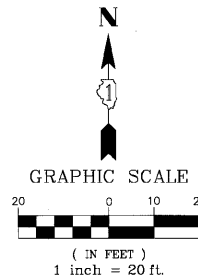


McAREE ROAD



NOTES FOR TEMPORARY TRAFFIC SIGNALS

1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY ECONOLITE CONTROLLERS SUPPLIED BY ONE OF THE COUNTY APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY THE COUNTY, INSTALLED IN A NEMA TS1 OR TS2 CABINET.
3. ALL TRAFFIC SIGNAL SECTIONS AND PEDESTRIAN SIGNAL SECTIONS SHALL BE 12". HEADS SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE OR AT LOCATIONS ILLUSTRATED ON THE PLANS FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
4. ALL EXISTING STREET NAME, INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.
5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM. ANY TEMPORARY TRAFFIC SIGNAL WITHIN AN ICON SYSTEM SHALL BE NTCIP COMPATIBLE AND SHALL BE INTERCONNECTED TO THAT SYSTEM.



CONSTRUCTION NOTES:

- 1 THE CITY OF WAUKEGAN SHALL REMOVE EXISTING STREET LIGHT, POLE, AND ASSOCIATED OVERHEAD CABLES.

ITEM	STATION	OFFSET	POSSIBLE UTILITY CONFLICT
WP-1	160+62.6	37.5' LT	
WP-2	160+68.6	38.2' RT	OVERHEAD CABLES
WP-3	161+61.6	38.6' RT	OVERHEAD CABLES
WP-4	161+45.5	38.1' LT	OVERHEAD CABLES

NOTES FOR TEMPORARY TRAFFIC SIGNALS (CONT.)

6. IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN-ON, THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS, AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL AT THE TIME OF THE TURN-ON.
7. THE CONTRACTOR SHALL RELOCATE THE TEMPORARY SIGNAL HEADS THROUGHOUT CONSTRUCTION TO LINE UP APPROXIMATELY WITH THE CORRESPONDING LANES FOR EACH STAGE OF CONSTRUCTION.
8. THE DETECTION ZONES SHALL BE APPROVED BY LAKE COUNTY DIVISION OF TRANSPORTATION PERSONNEL.

LEGEND

- STREET NAME SIGN
- COMBINATION CONCRETE CURB & GUTTER REMOVAL
- SIDEWALK REMOVAL
- BRICK PAVER REMOVAL

EXISTING



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

- 1 EACH CABINET AND CONTROLLER (COMPLETE)
- 2 EACH SIGNAL HEAD, 3-SECTION
- 10 EACH SIGNAL HEAD, 5-SECTION
- 8 EACH PEDESTRIAN SIGNAL HEAD
- 8 EACH PEDESTRIAN PUSH BUTTON
- 4 EACH STEEL MAST ARM ASSEMBLY AND POLE
- 4 EACH TRAFFIC SIGNAL POST
- 1 EACH SERVICE INSTALLATION

FILE NAME = 4136.800-TR2.dwg

USER NAME = GHA
 PLOT SCALE = 1" = .0833'
 PLOT DATE = 3/10/10

DESIGNED - JRD
 DRAWN - ZCW
 CHECKED - DPB
 DATE - 3/10/10

REVISED -
 REVISED -
 REVISED -
 REVISED -



TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVAL OF EXISTING TRAFFIC SIGNAL EQUIPMENT GRAND AVENUE AT McAREE ROAD

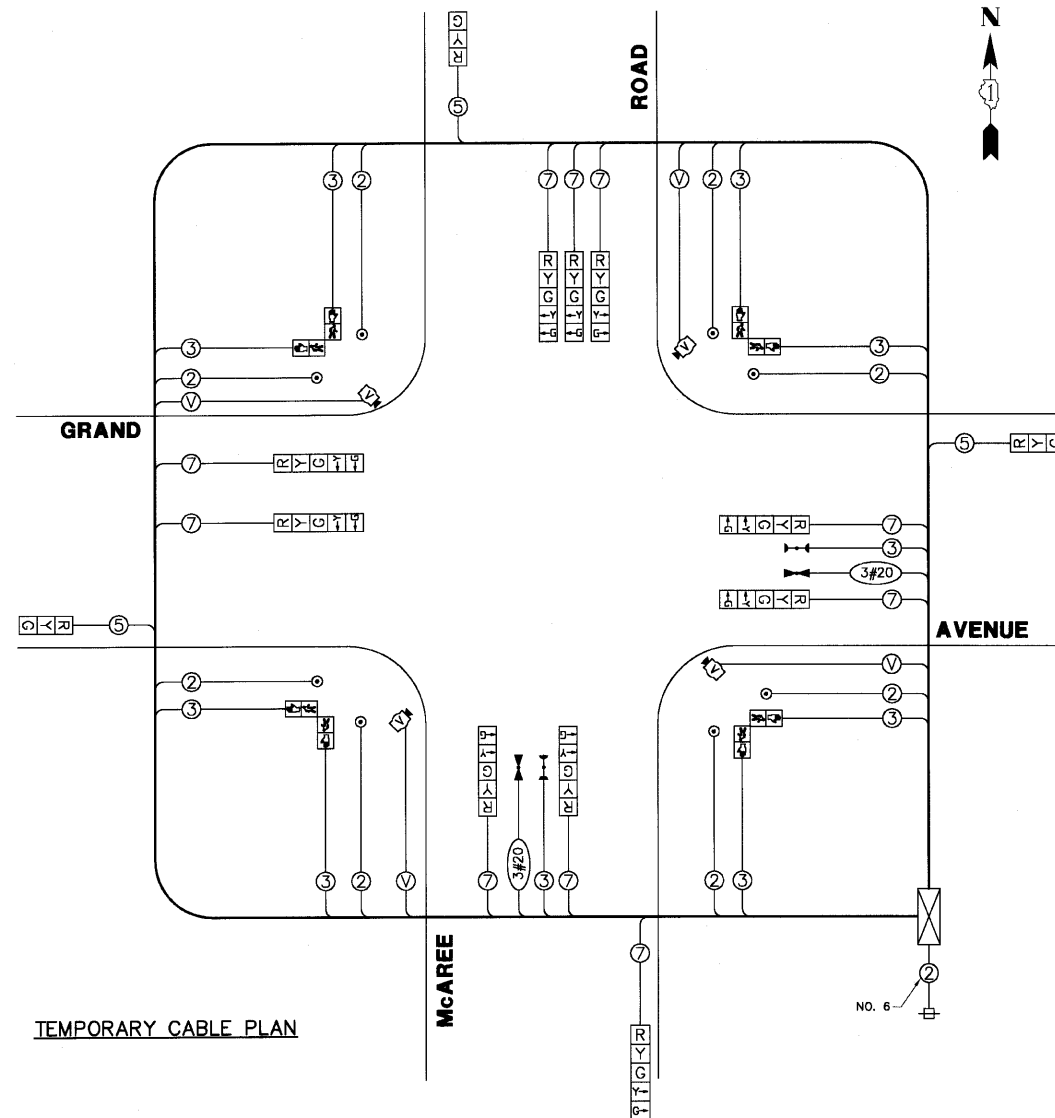
SCALE 1"=20' SHEET NO. OF SHEETS STA. TO STA.

F&P RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	08-00279-00-TL	LAKE	64	17

GHA #4136.800

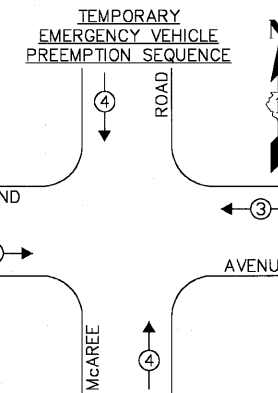
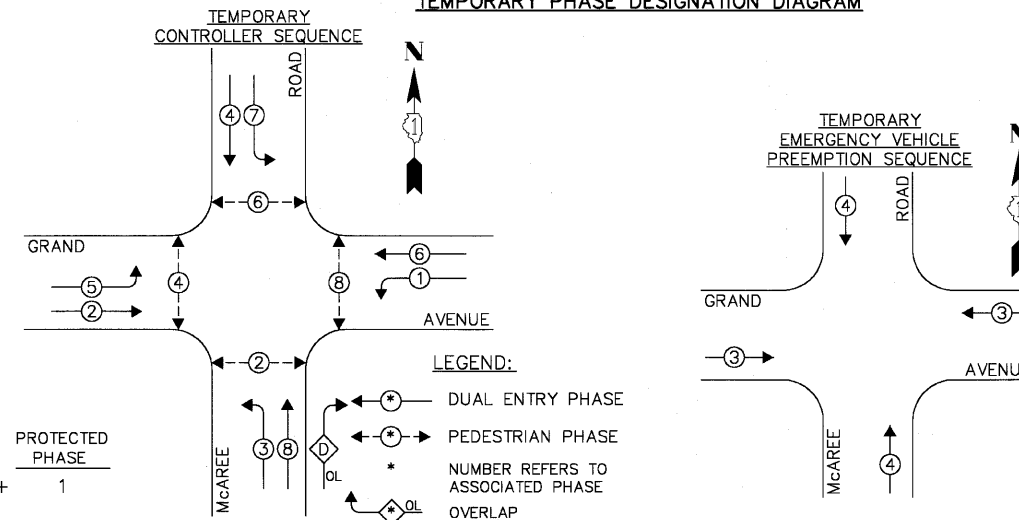
CONTRACT #: 63436

ILLINOIS FED. AID PROJECT



TEMPORARY CABLE PLAN

TEMPORARY PHASE DESIGNATION DIAGRAM



TEMPORARY EMERGENCY VEHICLE PREEMPTORS	
EMERGENCY VEHICLE PREEMPTOR	3 4
MOVEMENT	← → ↑ ↓

L.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE INCAND.	L.E.D.	% OPERATION	
SIGNAL (RED)	13	135	10	0.50	65.0
SIGNAL (YELLOW)	13	135	19	0.10	24.7
SIGNAL (GREEN)	13	135	11	0.40	57.2
ARROW	20	135	9	0.10	18.0
PED.SIGNAL	8	90	9	1.00	72.0
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	-	-	25	1.00	-
TOTAL =					336.9

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN
 (ADDRESS) 100 N. M.L.K. JR. AVENUE
 (ADDRESS) WAUKEGAN, IL
 ENERGY SUPPLY - CONTACT: GERRY GRANDBERRY
 PHONE: (847) 815-5463
 COMPANY: COM-ED, LIBERTYVILLE

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISED -
	PLOT DATE = 3/10/10	CHECKED - DPB	REVISED -
		DATE - 3/10/10	REVISED -



TEMPORARY CABLE PLAN AND PHASE DESIGNATION DIAGRAM			
GRAND AVENUE AT McAREE ROAD			
SCALE: NONE	SHEET NO. OF SHEETS	STA. TO STA.	

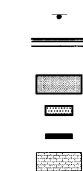
F&P RTE. 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 18
CONTRACT #: 63436				
ILLINOIS FED. AID PROJECT				

GHA #4136.800

LEGEND

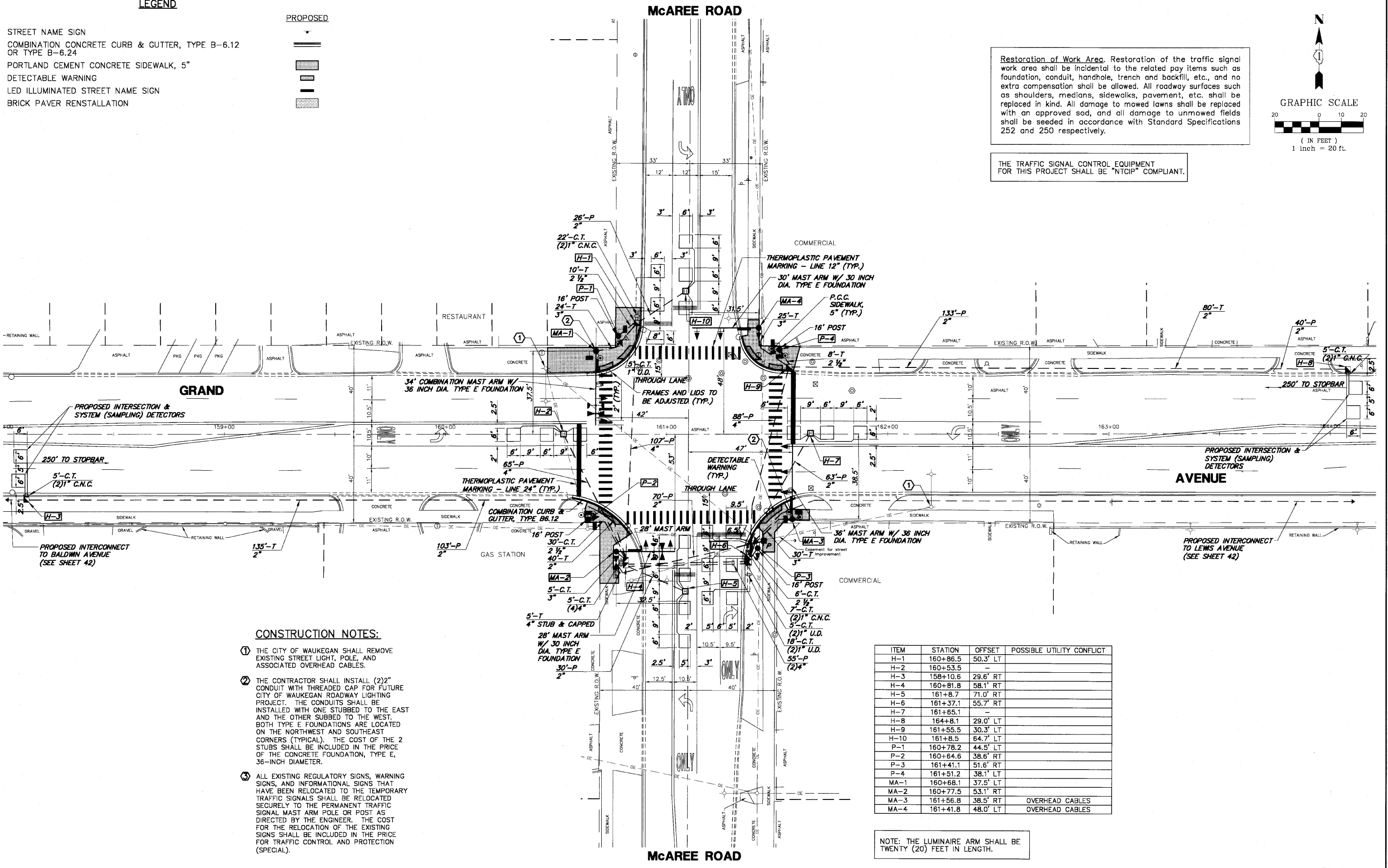
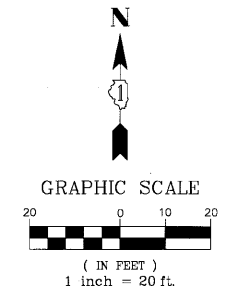
- STREET NAME SIGN
- COMBINATION CONCRETE CURB & GUTTER, TYPE B-6.12 OR TYPE B-6.24
- PORTLAND CEMENT CONCRETE SIDEWALK, 5"
- DETECTABLE WARNING
- LED ILLUMINATED STREET NAME SIGN
- BRICK PAVER RENSTALLATION

PROPOSED



Restoration of Work Area. Restoration of the traffic signal work area shall be incidental to the related pay items such as foundation, conduit, handhole, trench and backfill, etc., and no extra compensation shall be allowed. All roadway surfaces such as shoulders, medians, sidewalks, pavement, etc. shall be replaced in kind. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded in accordance with Standard Specifications 252 and 250 respectively.

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



CONSTRUCTION NOTES:

- 1 THE CITY OF WAUKEGAN SHALL REMOVE EXISTING STREET LIGHT, POLE, AND ASSOCIATED OVERHEAD CABLES.
- 2 THE CONTRACTOR SHALL INSTALL (2)2" CONDUIT WITH THREADED CAP FOR FUTURE CITY OF WAUKEGAN ROADWAY LIGHTING PROJECT. THE CONDUITS SHALL BE INSTALLED WITH ONE STUBBED TO THE EAST AND THE OTHER STUBBED TO THE WEST. BOTH TYPE E FOUNDATIONS ARE LOCATED ON THE NORTHWEST AND SOUTHEAST CORNERS (TYPICAL). THE COST OF THE 2 STUBS SHALL BE INCLUDED IN THE PRICE OF THE CONCRETE FOUNDATION, TYPE E, 36-INCH DIAMETER.
- 3 ALL EXISTING REGULATORY SIGNS, WARNING SIGNS, AND INFORMATIONAL SIGNS THAT HAVE BEEN RELOCATED TO THE TEMPORARY TRAFFIC SIGNALS SHALL BE RELOCATED SECURELY TO THE PERMANENT TRAFFIC SIGNAL MAST ARM POLE OR POST AS DIRECTED BY THE ENGINEER. THE COST FOR THE RELOCATION OF THE EXISTING SIGNS SHALL BE INCLUDED IN THE PRICE FOR TRAFFIC CONTROL AND PROTECTION (SPECIAL).

ITEM	STATION	OFFSET	POSSIBLE UTILITY CONFLICT
H-1	160+86.5	50.3' LT	
H-2	160+53.5	-	
H-3	158+10.6	29.6' RT	
H-4	160+81.8	58.1' RT	
H-5	161+8.7	71.0' RT	
H-6	161+37.1	55.7' RT	
H-7	161+65.1	-	
H-8	164+8.1	29.0' LT	
H-9	161+55.5	30.3' LT	
H-10	161+8.5	64.7' LT	
P-1	160+78.2	44.5' LT	
P-2	160+64.6	38.6' RT	
P-3	161+41.1	51.6' RT	
P-4	161+51.2	38.1' LT	
MA-1	160+68.1	37.5' LT	
MA-2	160+77.5	53.1' RT	
MA-3	161+56.8	38.5' RT	OVERHEAD CABLES
MA-4	161+41.8	48.0' LT	OVERHEAD CABLES

NOTE: THE LUMINAIRE ARM SHALL BE TWENTY (20) FEET IN LENGTH.

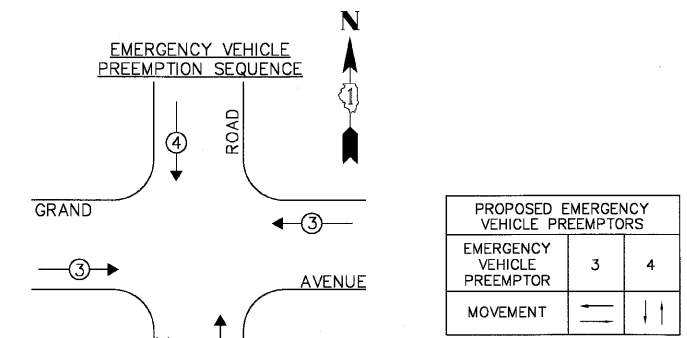
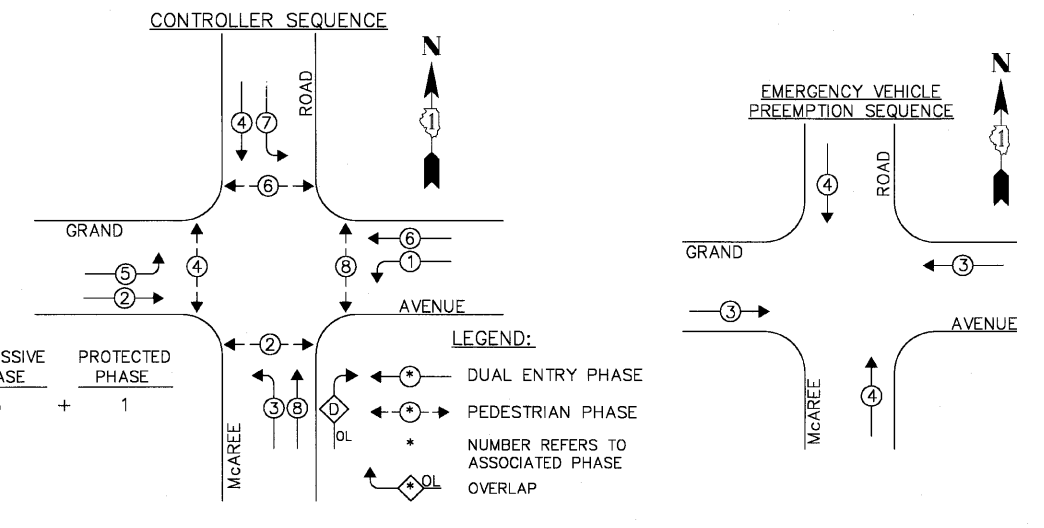
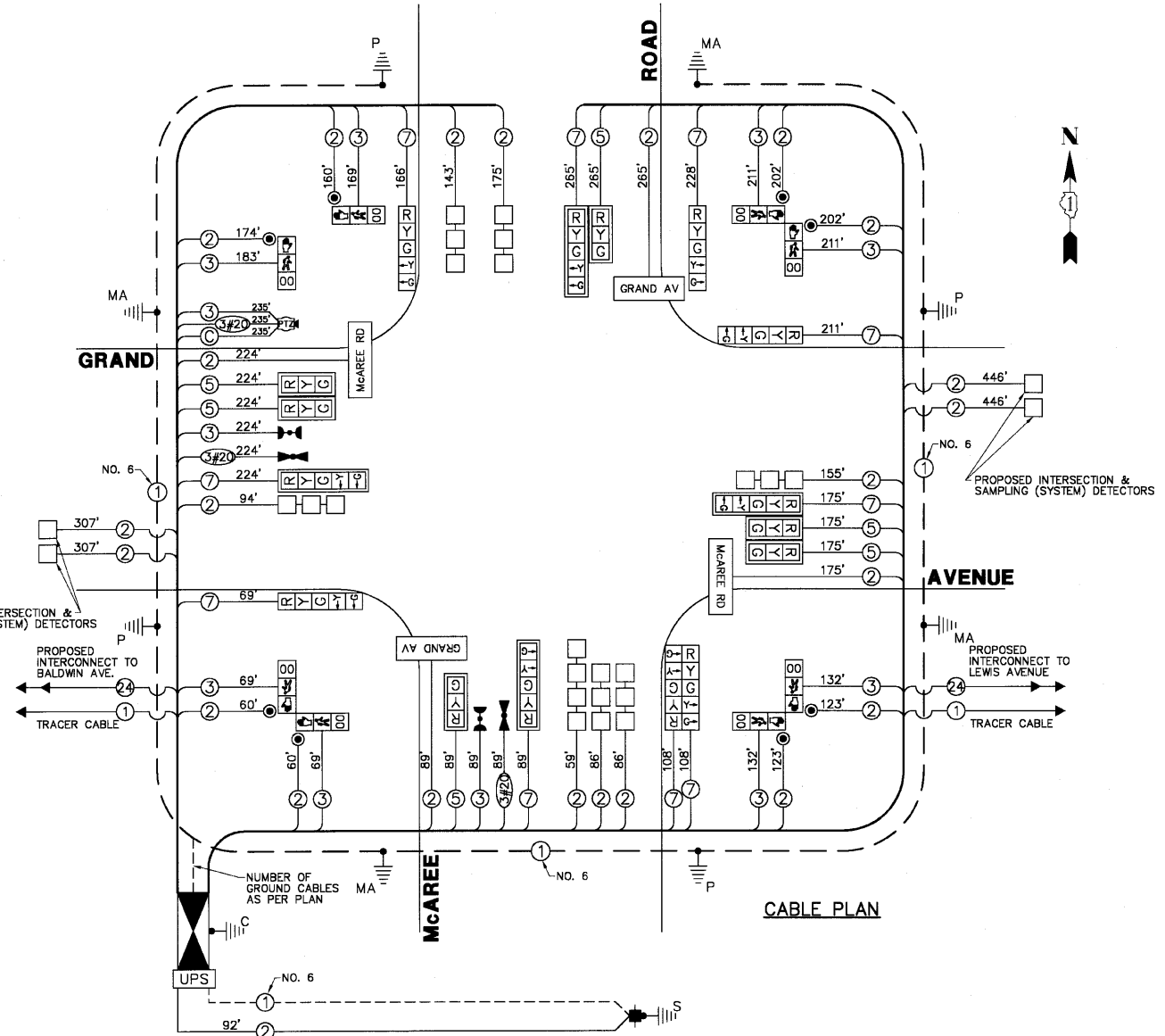
GHA #4136.800

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -		TRAFFIC SIGNAL MODERNIZATION PLAN	F.A.P. RTE. 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 19		
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISED -			SCALE: 1"=20'	SHEET NO. OF SHEETS	STA. TO STA.	CONTRACT # 63436		ILLINOIS FED. AID PROJECT	
	PLOT DATE = 3/10/10	CHECKED - DPB	REVISED -									
		DATE - 3/10/10	REVISED -									

SCHEDULE OF QUANTITIES

GRAND AVENUE AT McAREE ROAD TRAFFIC SIGNAL MODERNIZATION

NO.	QUANT.	UNIT
1.	2	CU YD EARTH EXCAVATION
2.	8	SQ YD AGGREGATE BASE COURSE, TYPE B 4"
3.	1,415	SQ FT PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH
4.	110	SQ FT DETECTABLE WARNINGS
5.	170	FOOT COMBINATION CURB AND GUTTER REMOVAL
6.	1,050	SQ FT SIDEWALK REMOVAL
7.	6	EACH FRAMES AND LIDS TO BE ADJUSTED
8.	170	FOOT COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12
9.	500	FOOT THERMOPLASTIC PAVEMENT MARKING - LINE 6"
10.	70	FOOT THERMOPLASTIC PAVEMENT MARKING - LINE 24"
11.	360	SQ FT PAVEMENT MARKING REMOVAL
12.	255	FOOT CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL
13.	53	FOOT CONDUIT IN TRENCH, 2-1/2" DIA., GALVANIZED STEEL
14.	84	FOOT CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL
15.	25	FOOT CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL
16.	530	FOOT CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL
17.	305	FOOT CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL
18.	4	EACH HANDHOLE
19.	4	EACH HEAVY-DUTY HANDHOLE
20.	2	EACH DOUBLE HANDHOLE
21.	359	FOOT TRENCH AND BACKFILL FOR ELECTRICAL WORK
22.	1	EACH FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL
23.	1,655	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C
24.	1,724	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
25.	1,152	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C
26.	1,643	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C
27.	2,604	FOOT ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR
28.	92	FOOT ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C
29.	1	EACH STEEL MAST ARM ASSEMBLY AND POLE 28 FT. (SPECIAL)
30.	1	EACH STEEL MAST ARM ASSEMBLY AND POLE 30 FT. (SPECIAL)
31.	1	EACH STEEL MAST ARM ASSEMBLY AND POLE 36 FT. (SPECIAL)
32.	1	EACH STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 34 FT. (SPECIAL)
33.	16	FOOT CONCRETE FOUNDATION, TYPE A
34.	4	FOOT CONCRETE FOUNDATION, TYPE C
35.	30	FOOT CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER
36.	30	FOOT CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER
37.	6	EACH SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED
38.	4	EACH SIGNAL HEAD, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED
39.	4	EACH SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST-ARM MOUNTED
40.	1	EACH SIGNAL HEAD, LED, 2-FACE, 5-SECTION, BRACKET MOUNTED
41.	2	EACH PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
42.	3	EACH PEDESTRIAN SIGNAL HEAD, LED, 2-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
43.	10	EACH TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINIUM
44.	11	EACH INDUCTIVE LOOP DETECTOR
45.	887	FOOT DETECTOR LOOP, TYPE 1
46.	2	EACH LIGHT DETECTOR
47.	1	EACH LIGHT DETECTOR AMPLIFIER
48.	8	EACH PEDESTRIAN PUSH-BUTTON
49.	1	EACH TEMPORARY TRAFFIC SIGNAL INSTALLATION
50.	1	EACH REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
51.	10	EACH REMOVE EXISTING HANDHOLE
52.	9	EACH REMOVE EXISTING CONCRETE FOUNDATION
53.	1	EACH MEDIA CONVERTER
54.	1	EACH TEMPORARY TRAFFIC SIGNAL TIMINGS
55.	1	EACH SERVICE INSTALLATION POLE MOUNT
56.	1	EACH UNINTERRUPTIBLE POWER SUPPLY
57.	568	FOOT ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C
58.	548	FOOT ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED
59.	235	FOOT ELECTRIC CABLE IN CONDUIT, COAXIAL
60.	4	EACH TRAFFIC SIGNAL POST, 16 FOOT (SPECIAL)
61.	4	EACH LED INTERNALLY ILLUMINATED STREET NAME SIGN
62.	1	EACH REMOTE CONTROLLED VIDEO SYSTEM
63.	1	EACH LAYER II (DATA LINK) SWITCH
64.	1	EACH VIDEO ENCODER



EMERGENCY VEHICLE PREEMPTOR	MOVEMENT
3	4

TYPE	NO LAMPS	WATTAGE		% OPERATION	TOTAL WATTAGE
		INCAND.	L.E.D.		
SIGNAL (RED)	16	135	10	0.50	80.0
SIGNAL (YELLOW)	16	135	19	0.10	30.4
SIGNAL (GREEN)	16	135	11	0.40	70.4
ARROW	20	135	9	0.10	18.0
PEDESTRIAN SIGNAL	8	90	9	1.00	72.0
CONTROLLER	1	-	100	1.00	100.0
LUMINAIRE	-	-	250	0.50	128.0
L.E.D. ST. NAME SIGN	4	-	64	1.00	150.0
VIDEO SYSTEM	1	-	150	1.00	150.0
BATTERY BACKUP	1	-	25	1.00	25.0
TOTAL =					673.8

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'-1-2"
TYPE E - M-ARM POLE	15	SIGNAL POST	2	BRACKET MOUNTED	13
		CONTROLLER CAB.	1	PEDESTRIAN PUSHBUTTON	4
		FIBER OPTIC	13	ELECTRIC SERVICE	13.5
		ELECTRIC SERVICE	1	SERVICE TO GROUND	13.5
		GROUND CABLE	1	POST MOUNTED	6

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN (ADDRESS) 100 N. M.L.K. JR. AVENUE (ADDRESS) WAUKEGAN, IL
 ENERGY SUPPLY - CONTACT: GERRY GRANDBERRY (PHONE) (847) 816-5463 (COMPANY) COM-ED, LIBERTYVILLE

FILE NAME = 4136.800-TR2.dwg
 USER NAME = GHA
 DESIGNED - JRD
 DRAWN - ZCW
 CHECKED - DPB
 PLOT SCALE = 1" = .0833'
 PLOT DATE = 3/10/10

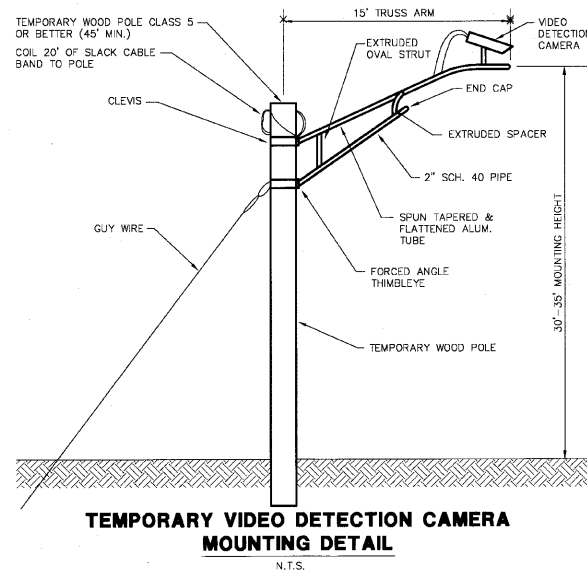
REVISIONS:
 REVISED -
 REVISED -
 REVISED -
 DATE - 3/10/10



CABLE PLAN, PHASE DESIGNATION DIAGRAM AND SCHEDULE OF QUANTITIES
 GRAND AVENUE AT McAREE ROAD
 SCALE: NONE
 SHEET NO. OF SHEETS STA. TO STA.

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	08-00279-00-TL	LAKE	64	20
CONTRACT #: 63436				
ILLINOIS FED. AID PROJECT				

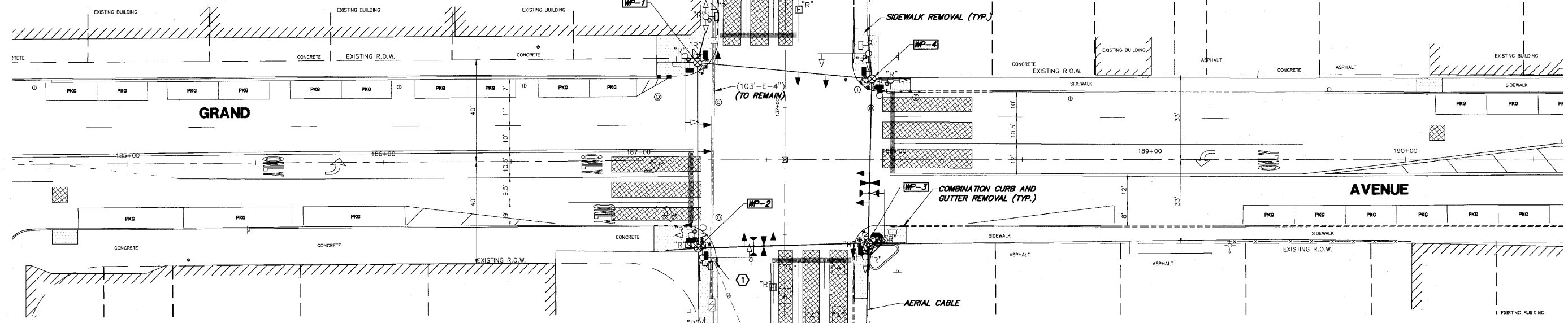
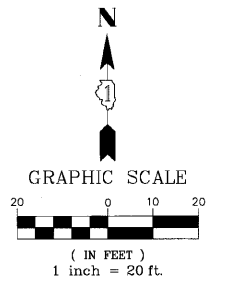
GHA #4136.800



LEWIS AVENUE

NOTES FOR TEMPORARY TRAFFIC SIGNALS

1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY ECONOLITE CONTROLLERS SUPPLIED BY ONE OF THE COUNTY APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY THE COUNTY, INSTALLED IN A NEMA TS1 OR TS2 CABINET.
3. ALL TRAFFIC SIGNAL SECTIONS AND PEDESTRIAN SIGNAL SECTIONS SHALL BE 12". HEADS SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE OR AT LOCATIONS ILLUSTRATED ON THE PLANS FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
4. ALL EXISTING STREET NAME, INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.
5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM. ANY TEMPORARY TRAFFIC SIGNAL WITHIN AN ICON SYSTEM SHALL BE NTCIP COMPATIBLE AND SHALL BE INTERCONNECTED TO THAT SYSTEM.



CONSTRUCTION NOTES:

- 1 THE CITY OF WAUKEGAN SHALL REMOVE EXISTING STREET LIGHT, POLE, AND ASSOCIATED OVERHEAD CABLES.

NOTES FOR TEMPORARY TRAFFIC SIGNALS (CONT.)

6. IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN-ON, THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS, AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL AT THE TIME OF THE TURN-ON.
7. THE CONTRACTOR SHALL RELOCATE THE TEMPORARY SIGNAL HEADS THROUGHOUT CONSTRUCTION TO LINE UP APPROXIMATELY WITH THE CORRESPONDING LANES FOR EACH STAGE OF CONSTRUCTION.
8. THE DETECTION ZONES SHALL BE APPROVED BY LAKE COUNTY DIVISION OF TRANSPORTATION PERSONNEL.

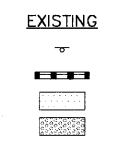
ITEM	STATION	OFFSET	POSSIBLE UTILITY CONFLICT
WP-1	187+23.1	38.2' LT	R.O.W.
WP-2	187+23.1	34.5' RT	R.O.W.
WP-3	187+89.8	32.7' RT	
WP-4	187+91.3	31.5' LT	R.O.W.

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

- 1 EACH CABINET AND CONTROLLER (COMPLETE)
- 9 EACH SIGNAL HEAD, 3-SECTION
- 6 EACH SIGNAL HEAD, 5-SECTION
- 8 EACH PEDESTRIAN SIGNAL HEAD
- 8 EACH PEDESTRIAN PUSH BUTTON
- 4 EACH STEEL MAST ARM ASSEMBLY AND POLE
- 4 EACH TRAFFIC SIGNAL POST
- 1 EACH SERVICE INSTALLATION

LEGEND

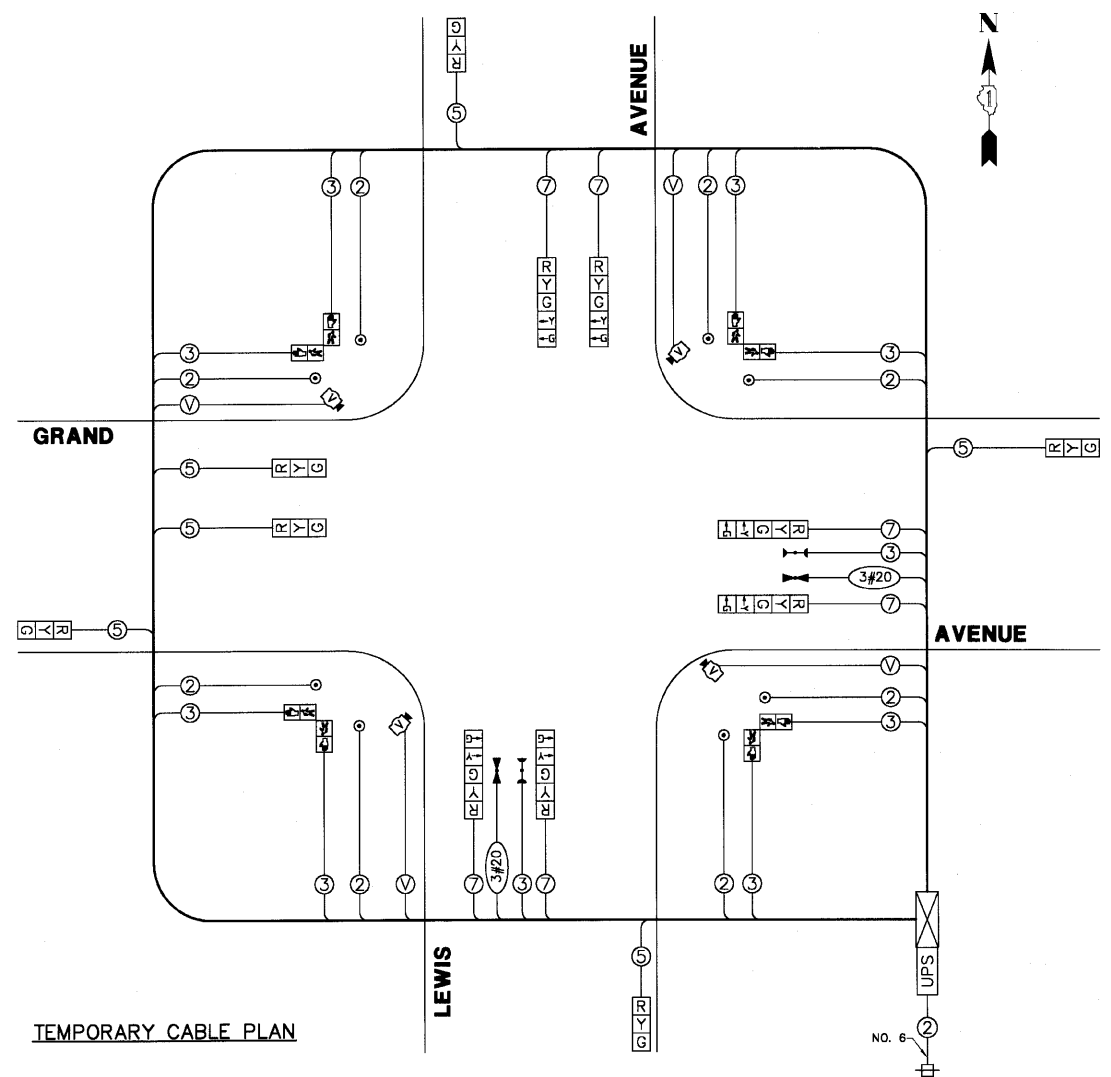
- STREET NAME SIGN
- COMBINATION CONCRETE CURB & GUTTER REMOVAL
- SIDEWALK REMOVAL
- BRICK PAVER REMOVAL



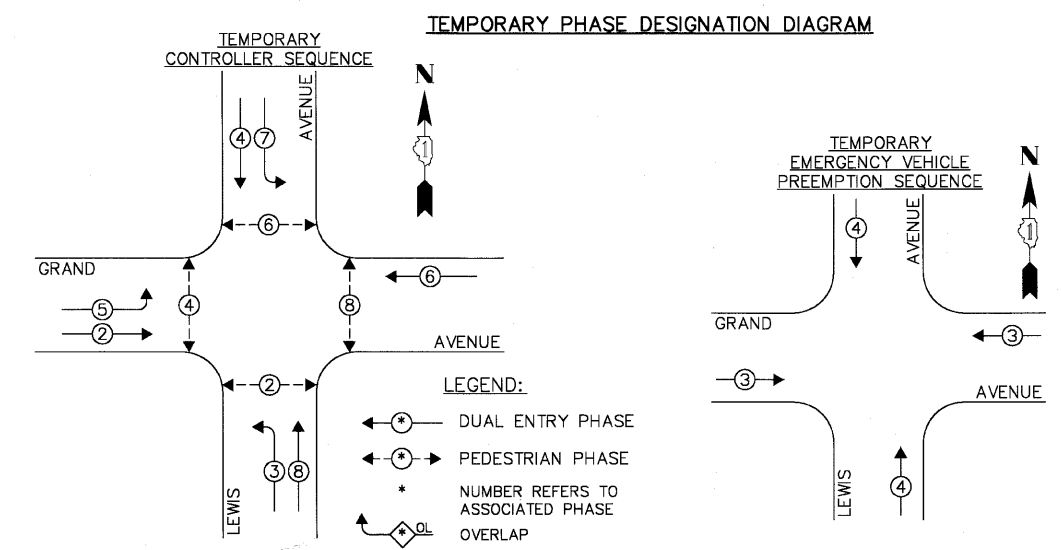
LEWIS AVENUE

GHA #4136.800

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -		TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVAL OF EXISTING TRAFFIC SIGNAL EQUIPMENT GRAND AVENUE AT LEWIS AVENUE	F&P R.T.E. 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 21	
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISED -			SCALE: 1"=20'	SHEET NO. OF SHEETS	STA. TO STA.	ILLINOIS FED. AID PROJECT		
	PLOT DATE = 3/10/10	CHECKED - DPB	REVISED -						CONTRACT #: 63436		
		DATE - 3/10/10	REVISED -								



TEMPORARY CABLE PLAN



TEMPORARY PHASE DESIGNATION DIAGRAM

L.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE INCAND. L.E.D.	% OPERATION		
SIGNAL (RED)	12	135	10	0.50	60.0
SIGNAL (YELLOW)	12	135	19	0.10	22.8
SIGNAL (GREEN)	12	135	11	0.40	52.8
ARROW	12	135	9	0.10	10.8
PED.SIGNAL	8	90	9	1.00	72.0
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	-	-	25	1.00	-
TOTAL =					318.4

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN
(ADDRESS) 100 N. M.L.K. JR. AVENUE
(ADDRESS) WAUKEGAN, IL

ENERGY SUPPLY - CONTACT: GERRY GRANDBERRY
PHONE: (847) 816-5463
COMPANY: COM-ED, LIBERTYVILLE

TEMPORARY EMERGENCY VEHICLE PREEMPTORS	
EMERGENCY VEHICLE PREEMPTOR	3 4
MOVEMENT	← → ↑ ↓

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISED -
	PLOT DATE = 3/10/10	CHECKED - DPB	REVISED -
		DATE - 3/10/10	REVISED -



TEMPORARY CABLE PLAN AND PHASE DESIGNATION DIAGRAM			
GRAND AVENUE AT LEWIS AVENUE			
SCALE: NONE	SHEET NO. OF SHEETS	STA. TO STA.	

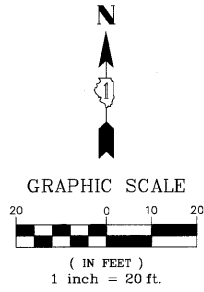
FAP RTE. 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 22
CONTRACT #: 63436				
ILLINOIS FED. AID PROJECT				

GHA #4136.800

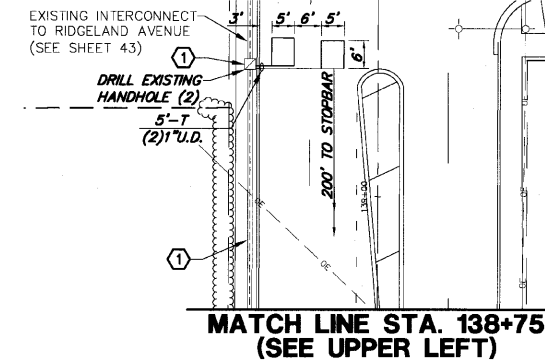
LEGEND

- STREET NAME SIGN
- COMBINATION CONCRETE CURB & GUTTER, TYPE B-6.12 OR TYPE B-6.24
- PORTLAND CEMENT CONCRETE SIDEWALK, 5"
- DETECTABLE WARNING
- LED ILLUMINATED STREET NAME SIGN
- BRICK PAVEMENT REINSTALLATION

PROPOSED



**MATCH LINE STA. 138+75
(SEE RIGHT)**



Restoration of Work Area. Restoration of the traffic signal work area shall be incidental to the related pay items such as foundation, conduit, handhole, trench and backfill, etc., and no extra compensation shall be allowed. All roadway surfaces such as shoulders, medians, sidewalks, pavement, etc. shall be replaced in kind. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded in accordance with Standard Specifications 252 and 250 respectively.

**MATCH LINE STA. 138+75
(SEE UPPER LEFT)**

**MATCH LINE STA. 135+00
(SEE LOWER LEFT)**

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

NOTE: THE LUMINAIRE ARM SHALL BE TWENTY (20) FEET IN LENGTH.

ITEM	STATION	OFFSET	POSSIBLE UTILITY CONFLICT
H-1	187+8.4	1.3' RT	
H-2	184+75.2	27.7' RT	
H-3	187+24.7	175.7' RT	
H-4	187+57.0	46.5' RT	
H-5	187+81.6	289.5' RT	
H-6	187+85.8	37.8' RT	
H-7	188+5.4	0.1' LT	
H-8	190+9.4	27.6' LT	
H-9	187+97.3	27.7' LT	
H-10	187+57.7	56.7' LT	
P-1	187+25.7	53.3' LT	BUILDING
P-2	187+17.2	31.8' RT	
P-3	187+88.7	37.8' RT	R.O.W.
P-4	187+96.5	31.8' LT	
MA-1	187+13.2	38.8' LT	R.O.W.
MA-2	187+24.3	42.0' RT	OVERHEAD CABLES
MA-3	187+98.6	31.6' RT	
MA-4	187+89.3	49.4' LT	HYDRANT, WATER MAIN

CONSTRUCTION NOTES:

- 1 THE EXISTING DOUBLE HANDHOLE, HANDHOLE, CONDUIT, CONDUIT STUBS, AND FIBER OPTIC CABLE WITH TRACER HAVE BEEN INSTALLED AS PART OF THE LEWIS AVENUE TRAFFIC SIGNAL MODERNIZATION AND FIBER OPTIC COMMUNICATION SYSTEM-CONTRACT #63344.
- 2 THE CITY OF WAUKEGAN SHALL REMOVE EXISTING STREET LIGHT, POLE, AND ASSOCIATED OVERHEAD CABLES.
- 3 THE CONTRACTOR SHALL INSTALL (2)2" CONDUIT WITH THREADED CAP FOR FUTURE CITY OF WAUKEGAN ROADWAY LIGHTING PROJECT. THE CONDUITS SHALL BE INSTALLED WITH ONE STUBBED TO THE EAST AND THE OTHER STUBBED TO THE WEST. BOTH TYPE E FOUNDATIONS ARE LOCATED ON THE NORTHWEST AND SOUTHEAST CORNERS (TYPICAL). THE COST OF THE 2 STUBS SHALL BE INCLUDED IN THE PRICE OF THE CONCRETE FOUNDATION, TYPE E, 36-INCH DIAMETER.
- 4 ALL EXISTING REGULATORY SIGNS, WARNING SIGNS, AND INFORMATIONAL SIGNS THAT HAVE BEEN RELOCATED TO THE TEMPORARY TRAFFIC SIGNALS SHALL BE RELOCATED SECURELY TO THE PERMANENT TRAFFIC SIGNAL MAST ARM POLE OR POST AS DIRECTED BY THE ENGINEER. THE COST FOR THE RELOCATION OF THE EXISTING SIGNS SHALL BE INCLUDED IN THE PRICE FOR TRAFFIC CONTROL AND PROTECTION (SPECIAL).

**MATCH LINE STA. 135+00
(SEE RIGHT)**

FILE NAME = 4136.800-TR2.dwg

USER NAME = GHA
 DESIGNED - JRD
 DRAWN - ZCW
 CHECKED - DPB
 DATE - 3/10/10

REVISIONS:
 REVISION -
 REVISION -
 REVISION -
 REVISION -



TRAFFIC SIGNAL MODERNIZATION PLAN

GRAND AVENUE AT LEWIS AVENUE

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

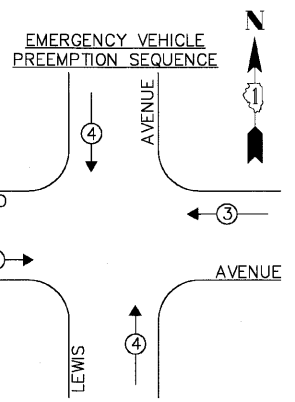
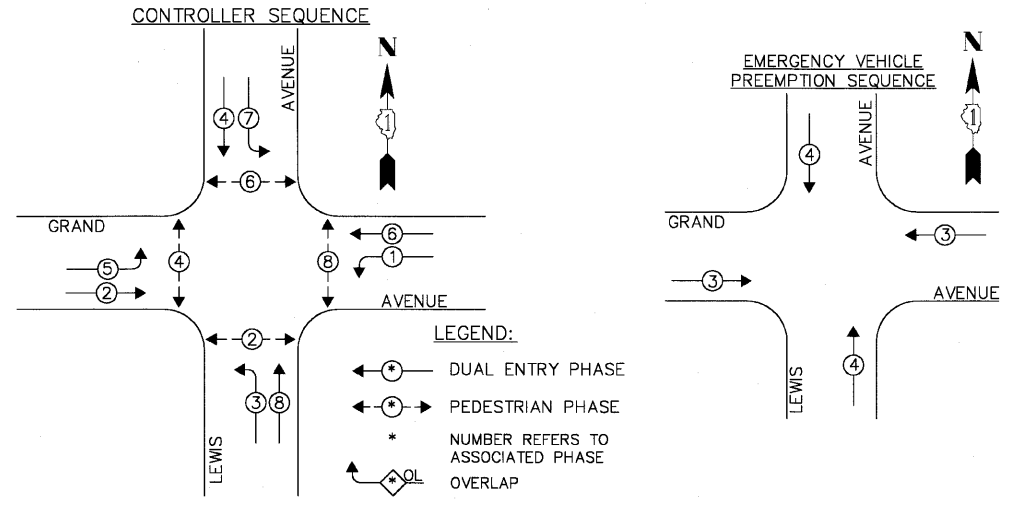
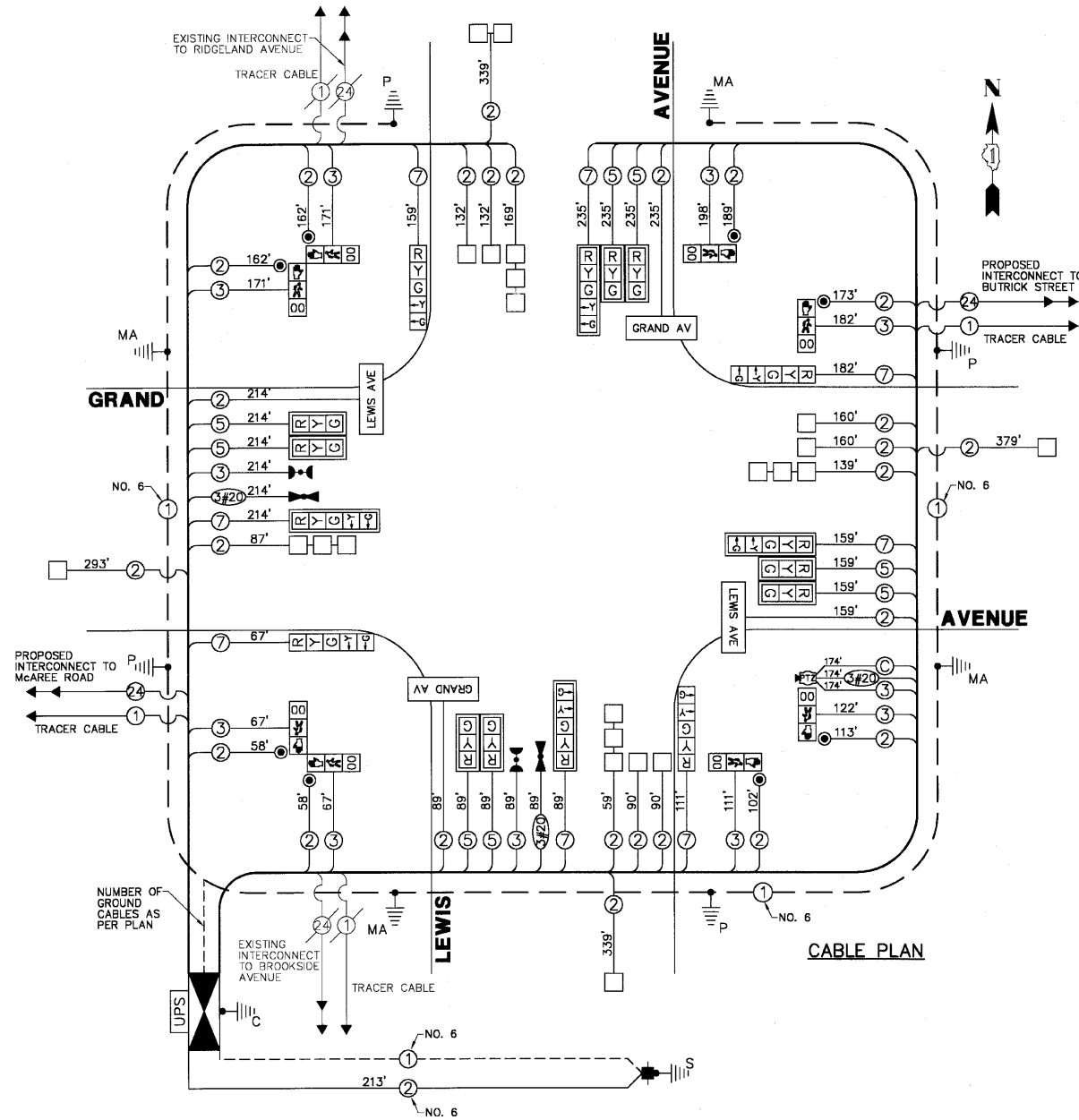
F&P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	08-00279-00-TL	LAKE	64	23

GHA #4136.800

ILLINOIS FED. AID PROJECT

SCHEDULE OF QUANTITIES
GRAND AVENUE AT LEWIS AVENUE TRAFFIC SIGNAL MODERNIZATION

NO.	QUANT.	UNIT
1.	1,440	SQ FT PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH
2.	106	SQ FT DETECTABLE WARNINGS
3.	210	FOOT COMBINATION CURB AND GUTTER REMOVAL
4.	1,440	SQ FT SIDEWALK REMOVAL
5.	210	FOOT COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12
6.	455	FOOT THERMOPLASTIC PAVEMENT MARKING - LINE 6"
7.	125	FOOT THERMOPLASTIC PAVEMENT MARKING - LINE 24"
8.	260	SQ FT PAVEMENT MARKING REMOVAL
9.	45	FOOT CONDUIT IN TRENCH, 2-1/2" DIA., GALVANIZED STEEL
10.	77	FOOT CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL
11.	25	FOOT CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL
12.	951	FOOT CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL
13.	184	FOOT CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL
14.	4	EACH HANDHOLE
15.	4	EACH HEAVY-DUTY HANDHOLE
16.	2	EACH DOUBLE HANDHOLE
17.	127	FOOT TRENCH AND BACKFILL FOR ELECTRICAL WORK
18.	1	EACH FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL
19.	1,714	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C
20.	1,566	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
21.	1,394	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C
22.	1,216	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C
23.	2,568	FOOT ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR
24.	238	FOOT ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C
25.	2	EACH STEEL MAST ARM ASSEMBLY AND POLE 30 FT. (SPECIAL)
26.	1	EACH STEEL MAST ARM ASSEMBLY AND POLE 36 FT. (SPECIAL)
27.	1	EACH STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 30 FT. (SPECIAL)
28.	16	FOOT CONCRETE FOUNDATION, TYPE A
29.	4	FOOT CONCRETE FOUNDATION, TYPE C
30.	30	FOOT CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER
31.	30	FOOT CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER
32.	8	EACH SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED
33.	4	EACH SIGNAL HEAD, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED
34.	4	EACH SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST-ARM MOUNTED
35.	4	EACH PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
36.	2	EACH PEDESTRIAN SIGNAL HEAD, LED, 2-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
37.	12	EACH TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINIUM
38.	14	EACH INDUCTIVE LOOP DETECTOR
39.	731	FOOT DETECTOR LOOP, TYPE 1
40.	2	EACH LIGHT DETECTOR
41.	1	EACH LIGHT DETECTOR AMPLIFIER
42.	8	EACH PEDESTRIAN PUSH-BUTTON
43.	1	EACH TEMPORARY TRAFFIC SIGNAL INSTALLATION
44.	1	EACH REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
45.	7	EACH REMOVE EXISTING HANDHOLE
46.	9	EACH REMOVE EXISTING CONCRETE FOUNDATION
47.	1	EACH TEMPORARY TRAFFIC SIGNAL TIMINGS
48.	1	EACH SERVICE INSTALLATION POLE MOUNT
49.	1	EACH UNINTERRUPTIBLE POWER SUPPLY
50.	600	FOOT ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C
51.	477	FOOT ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED
52.	174	FOOT ELECTRIC CABLE IN CONDUIT, COAXIAL
53.	4	EACH TRAFFIC SIGNAL POST, 16 FOOT (SPECIAL)
54.	4	EACH LED INTERNALLY ILLUMINATED STREET NAME SIGN
55.	1	EACH REMOTE CONTROLLED VIDEO SYSTEM
56.	1	EACH LAYER II (DATA LINK) SWITCH
57.	1	EACH VIDEO ENCODER



EMERGENCY VEHICLE PREEMPTOR	3	4
MOVEMENT	←	→

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

L.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS				TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE INCAND. L.E.D.	% OPERATION	
SIGNAL (RED)	16	135	10	80.0
SIGNAL (YELLOW)	16	135	19	30.4
SIGNAL (GREEN)	16	135	11	70.4
ARROW	16	135	9	14.4
PED. SIGNAL	8	90	9	72.0
CONTROLLER	1	-	100	100.0
LUMINAIRE	-	250	0.50	-
L.E.D. ST. NAME SIGN	4	64	0.50	128.0
VIDEO SYSTEM	1	150	1.00	150.0
BATTERY BACKUP	1	25	1.00	25.0
TOTAL =				670.2

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'-1.25
TYPE E - M.ARM POLE	15	SIGNAL POST	2	BRACKET MOUNTED	13
		CONTROLLER CAB.	1	PED. PUSHBUTTON	4
		FIBER OPTIC	13	ELECTRIC SERVICE	13.5
		ELECTRIC SERVICE	1	SERVICE TO GROUND	13.5
		GROUND CABLE	1	POST MOUNTED	6

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN (ADDRESS) 100 N. M.L.K. JR. AVENUE (ADDRESS) WAUKEGAN, IL
ENERGY SUPPLY - CONTACT: GERRY GRANDBERRY (PHONE: (847) 816-5463) COMPANY: COM-ED, LIBERTYVILLE

FILE NAME = 4136.800-TR2.dwg USER NAME = GHA
DESIGNED - JRD REVISION -
DRAWN - ZCW REVISION -
CHECKED - DPB REVISION -
DATE - 3/10/10 REVISION -

DESIGNED - JRD REVISION -
DRAWN - ZCW REVISION -
CHECKED - DPB REVISION -
DATE - 3/10/10 REVISION -

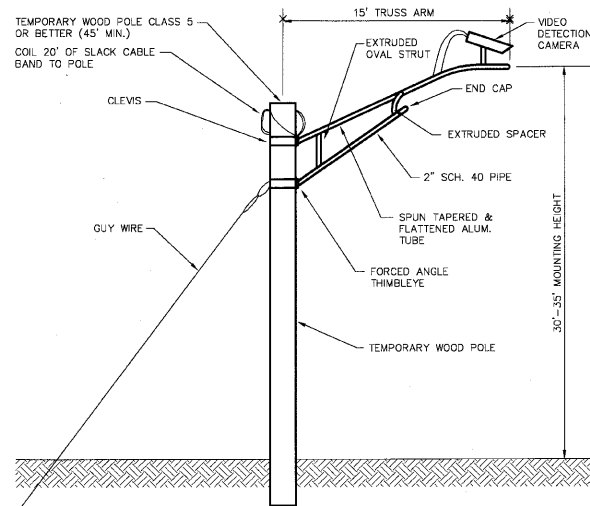


CABLE PLAN, PHASE DESIGNATION DIAGRAM AND SCHEDULE OF QUANTITIES
GRAND AVENUE AT LEWIS AVENUE
SCALE: NONE SHEET NO. OF SHEETS STA. TO STA.

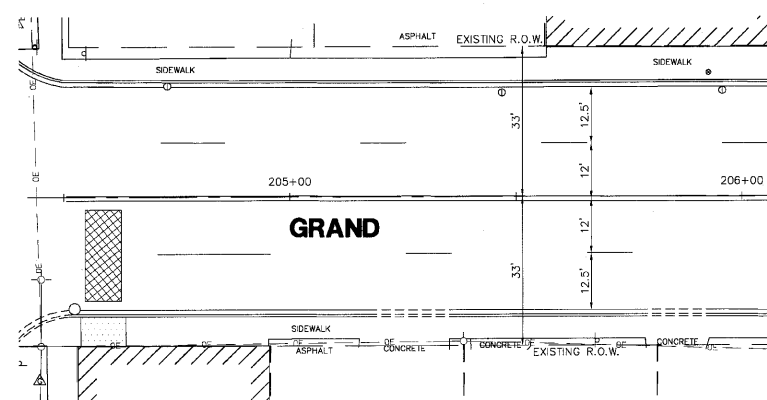
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	08-00279-00-TL	LAKE	64	24
CONTRACT #:			63436	

GHA #4136.800

ILLINOIS FED. AID PROJECT



TEMPORARY VIDEO DETECTION CAMERA MOUNTING DETAIL
N.T.S.



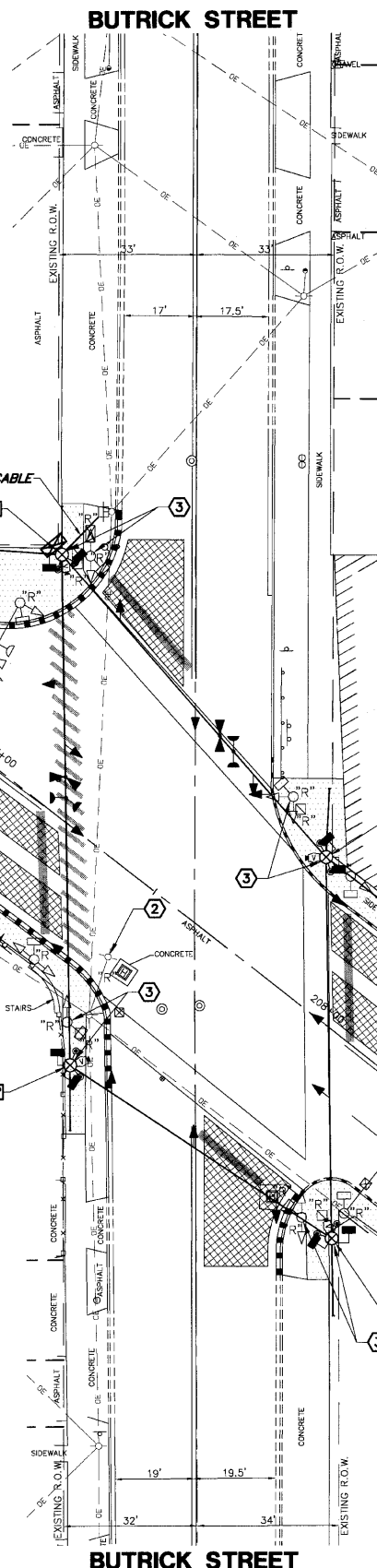
CONSTRUCTION NOTES:

- ① THE EXISTING 40 FOOT WOOD POWER POLE TO BE REMOVED AND REPLACED WITH A 65 FOOT WOOD POWER POLE BY COMMONWEALTH EDISON PRIOR TO INSTALLATION OF THE TEMPORARY TRAFFIC SIGNAL.
- ② THE EXISTING STREET LIGHT TO BE REMOVED BY COMMONWEALTH EDISON PRIOR TO INSTALLATION OF THE TEMPORARY TRAFFIC SIGNAL.
- ③ RELOCATE EXISTING "NO TURN ON RED" SIGN TO TEMPORARY WOOD POLE.

ITEM	STATION	OFFSET	POSSIBLE UTILITY CONFLICT
WP-1	206+82.3	49.9' LT	OVERHEAD CABLES
WP-2	207+59.6	45.4' RT	OVERHEAD CABLES
WP-3	208+34.6	39.4' RT	OVERHEAD CABLES
WP-4	207+77.2	31.8' LT	

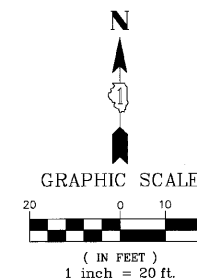
THE FOLLOWING ITEMS SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE DISPOSED OF BY THEM OUTSIDE THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.

- 1 EACH CABINET AND CONTROLLER (COMPLETE)
- 13 EACH SIGNAL HEAD, 3-SECTION
- 8 EACH PEDESTRIAN SIGNAL HEAD
- 8 EACH PEDESTRIAN PUSH BUTTON
- 2 EACH STEEL MAST ARM ASSEMBLY AND POLE
- 6 EACH TRAFFIC SIGNAL POST
- 1 EACH SERVICE INSTALLATION



NOTES FOR TEMPORARY TRAFFIC SIGNALS

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



MATCH LINE STA. 209+50
SEE BELOW

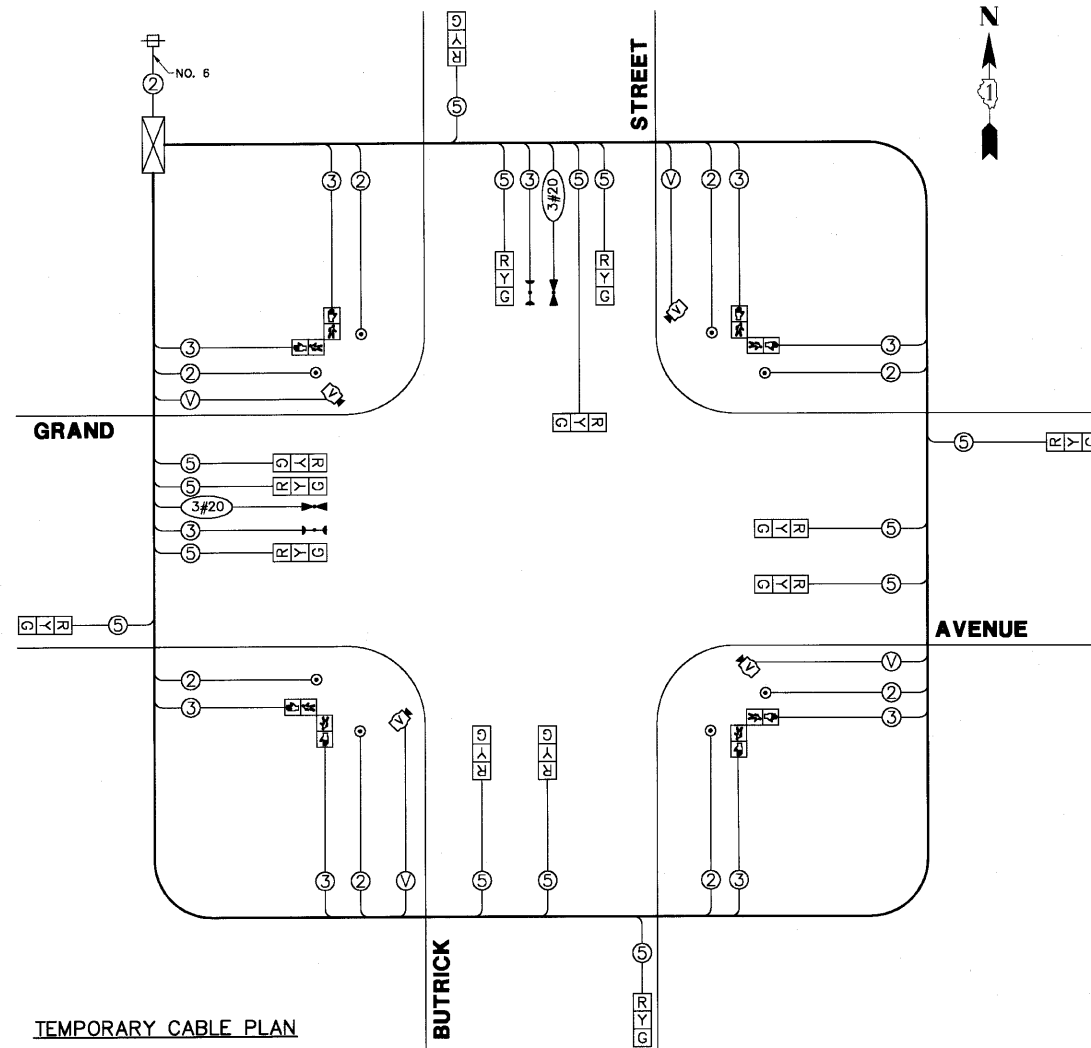
MATCH LINE STA. 209+50
SEE ABOVE

LEGEND

- EXISTING
- STREET NAME SIGN
- COMBINATION CONCRETE CURB & GUTTER REMOVAL
- SIDEWALK REMOVAL
- BRICK PAVER REMOVAL

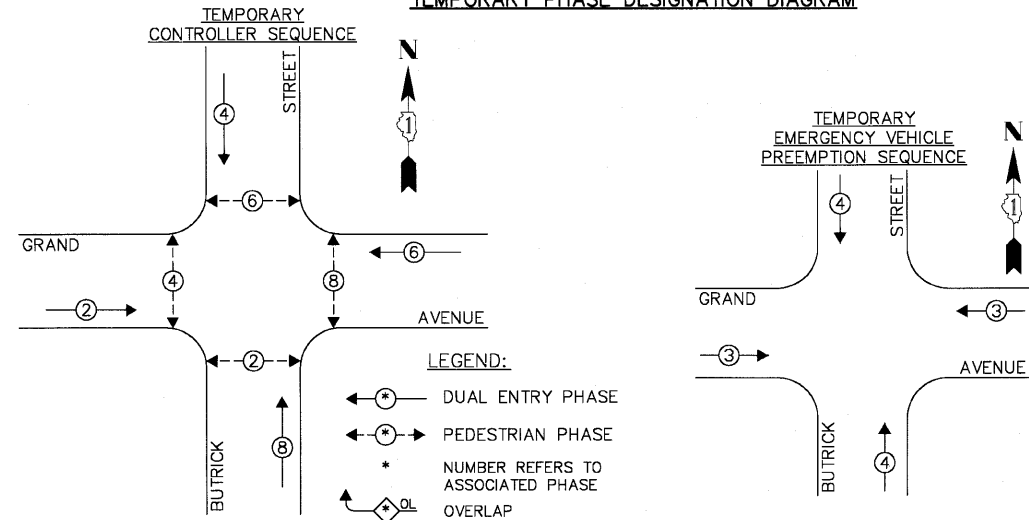
GHA #4136.800

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -	<p>Lake County Division of Transportation</p>	<p>TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVAL OF EXISTING TRAFFIC SIGNAL EQUIPMENT GRAND AVENUE AT BUTTRICK STREET</p>	F&P R/E 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 25		
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISED -			SCALE: 1"=20'	SHEET NO. OF SHEETS	STA. TO STA.	ILLINOIS FED. AID PROJECT			
	PLOT DATE = 3/10/10	CHECKED - DPB	REVISED -									
		DATE - 3/10/10	REVISED -									



TEMPORARY CABLE PLAN

TEMPORARY PHASE DESIGNATION DIAGRAM



TEMPORARY EMERGENCY VEHICLE PREEMPTORS	
EMERGENCY VEHICLE PREEMPTOR	3 4
MOVEMENT	—

L.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE		% OPERATION	
		INCAND.	L.E.D.		
SIGNAL (RED)	13	135	10	0.50	65.0
SIGNAL (YELLOW)	13	135	19	0.10	24.7
SIGNAL (GREEN)	13	135	11	0.40	57.2
ARROW	-	135	9	0.10	-
PED.SIGNAL	8	90	9	1.00	72.0
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	-	-	25	1.00	-
TOTAL =					318.9

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN
 (ADDRESS) 100 N. M.L.K. JR. AVENUE
 (ADDRESS) WAUKEGAN, IL
 ENERGY SUPPLY - CONTACT: GERRY GRANDBERRY
 PHONE: (847) 816-5463
 COMPANY: COM-ED, LIBERTYVILLE

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISED -
	PLOT DATE = 3/10/10	CHECKED - DPB	REVISED -
		DATE - 3/10/10	REVISED -



TEMPORARY CABLE PLAN AND PHASE DESIGNATION DIAGRAM			
GRAND AVENUE AT BUTRICK STREET			
SCALE: NONE	SHEET NO. OF SHEETS	STA. TO STA.	

F&P RATE: 541	SECTION: 08-00279-00-TL	COUNTY: LAKE	TOTAL SHEETS: 64	SHEET NO.: 26
CONTRACT #: 63436			ILLINOIS FED. AID PROJECT	

GHA #4136.800

LEGEND

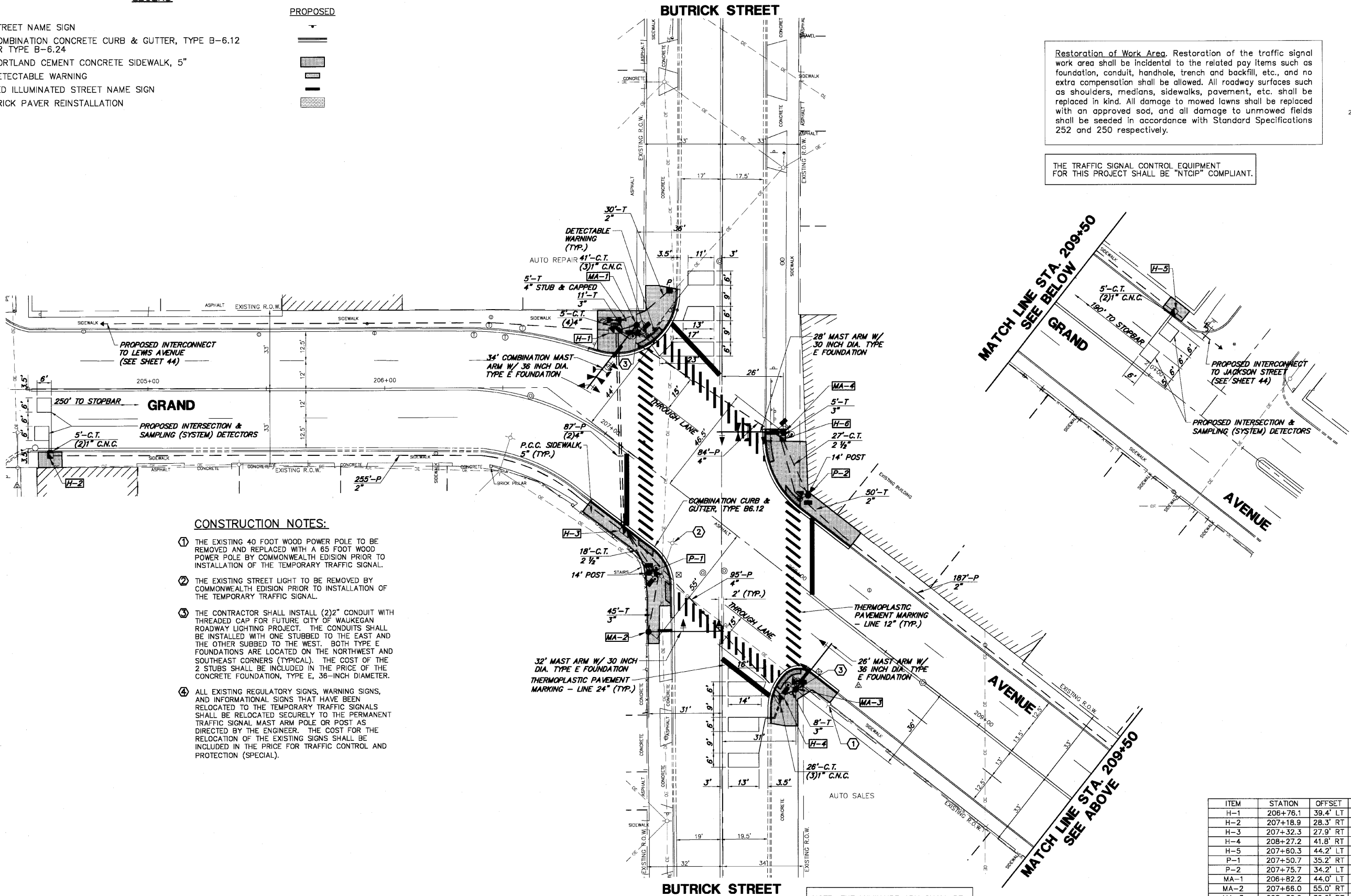
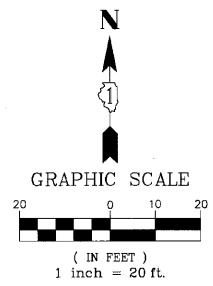
- STREET NAME SIGN
- COMBINATION CONCRETE CURB & GUTTER, TYPE B-6.12 OR TYPE B-6.24
- PORTLAND CEMENT CONCRETE SIDEWALK, 5"
- DETECTABLE WARNING
- LED ILLUMINATED STREET NAME SIGN
- BRICK PAVEMENT REINSTALLATION

PROPOSED

- STREET NAME SIGN
- COMBINATION CONCRETE CURB & GUTTER, TYPE B-6.12 OR TYPE B-6.24
- PORTLAND CEMENT CONCRETE SIDEWALK, 5"
- DETECTABLE WARNING
- LED ILLUMINATED STREET NAME SIGN
- BRICK PAVEMENT REINSTALLATION

Restoration of Work Area. Restoration of the traffic signal work area shall be incidental to the related pay items such as foundation, conduit, handhole, trench and backfill, etc., and no extra compensation shall be allowed. All roadway surfaces such as shoulders, medians, sidewalks, pavement, etc. shall be replaced in kind. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded in accordance with Standard Specifications 252 and 250 respectively.

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



CONSTRUCTION NOTES:

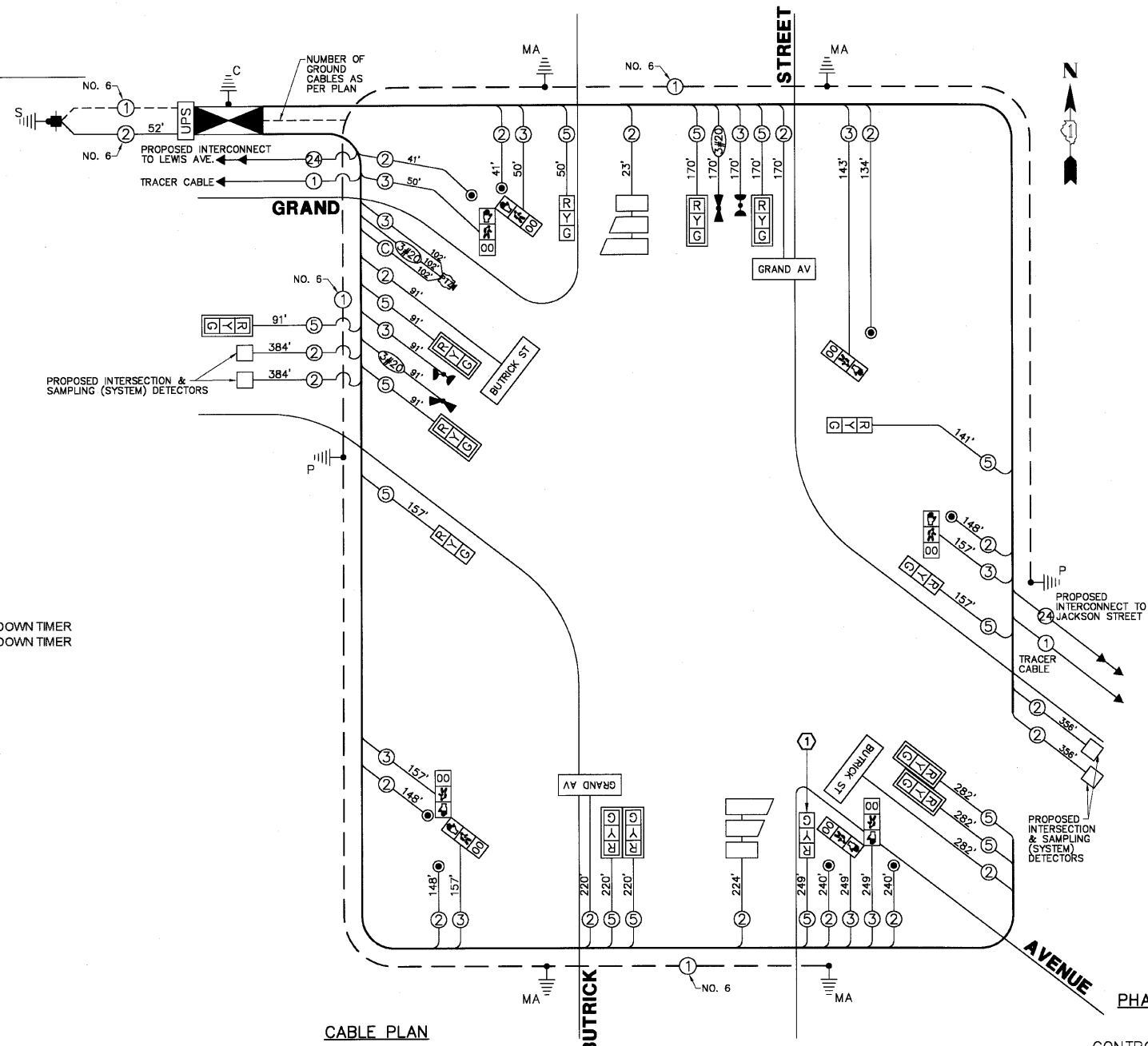
- ① THE EXISTING 40 FOOT WOOD POWER POLE TO BE REMOVED AND REPLACED WITH A 65 FOOT WOOD POWER POLE BY COMMONWEALTH EDISON PRIOR TO INSTALLATION OF THE TEMPORARY TRAFFIC SIGNAL.
- ② THE EXISTING STREET LIGHT TO BE REMOVED BY COMMONWEALTH EDISON PRIOR TO INSTALLATION OF THE TEMPORARY TRAFFIC SIGNAL.
- ③ THE CONTRACTOR SHALL INSTALL (2)2" CONDUIT WITH THREADED CAP FOR FUTURE CITY OF WAUKEGAN ROADWAY LIGHTING PROJECT. THE CONDUITS SHALL BE INSTALLED WITH ONE STUBBED TO THE EAST AND THE OTHER SUBBED TO THE WEST. BOTH TYPE E FOUNDATIONS ARE LOCATED ON THE NORTHWEST AND SOUTHEAST CORNERS (TYPICAL). THE COST OF THE 2 STUBS SHALL BE INCLUDED IN THE PRICE OF THE CONCRETE FOUNDATION, TYPE E, 36-INCH DIAMETER.
- ④ ALL EXISTING REGULATORY SIGNS, WARNING SIGNS, AND INFORMATIONAL SIGNS THAT HAVE BEEN RELOCATED TO THE TEMPORARY TRAFFIC SIGNALS SHALL BE RELOCATED SECURELY TO THE PERMANENT TRAFFIC SIGNAL MAST ARM POLE OR POST AS DIRECTED BY THE ENGINEER. THE COST FOR THE RELOCATION OF THE EXISTING SIGNS SHALL BE INCLUDED IN THE PRICE FOR TRAFFIC CONTROL AND PROTECTION (SPECIAL).

ITEM	STATION	OFFSET	POSSIBLE UTILITY CONFLICT
H-1	206+76.1	39.4' LT	
H-2	207+18.9	28.3' RT	
H-3	207+32.3	27.9' RT	
H-4	208+27.2	41.8' RT	
H-5	207+60.3	44.2' LT	
P-1	207+50.7	35.2' RT	GARDEN WALL
P-2	207+75.7	34.2' LT	
MA-1	206+82.2	44.0' LT	
MA-2	207+68.0	55.0' RT	O.H. CABLES, GARDEN WALL
MA-3	208+30.0	36.0' RT	OVERHEAD CABLES
MA-4	207+58.8	46.5' LT	GUARDRAIL

SCHEDULE OF QUANTITIES

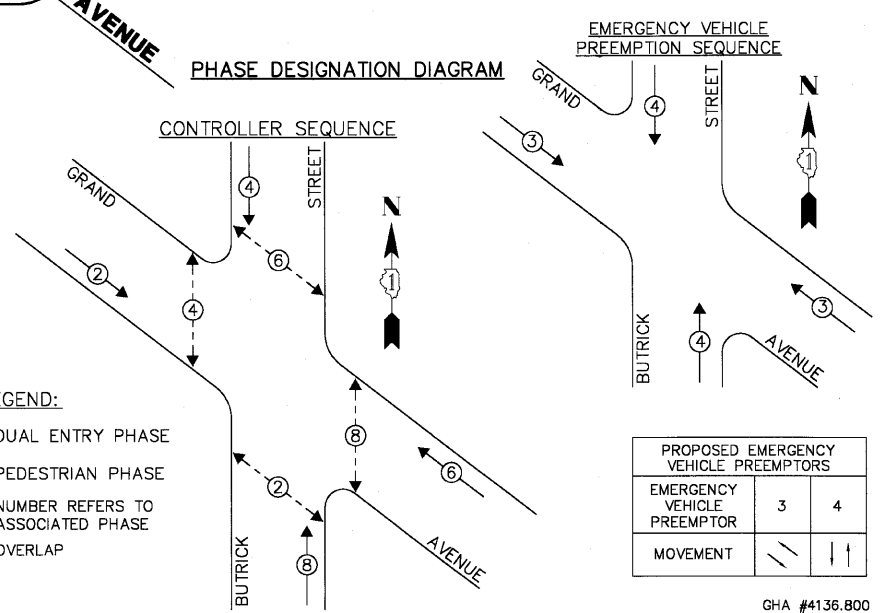
GRAND AVENUE AT BUTRICK STREET TRAFFIC SIGNAL MODERNIZATION

NO.	QUANT.	UNIT
1.	6	CU YD EARTH EXCAVATION
2.	25	SQ YD AGGREGATE BASE COURSE, TYPE B 4"
3.	2,000	SQ FT PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH
4.	114	SQ FT DETECTABLE WARNINGS
5.	270	FOOT COMBINATION CURB AND GUTTER REMOVAL
6.	1,840	SQ FT SIDEWALK REMOVAL
7.	2	EACH FRAMES AND LIDS TO BE ADJUSTED
8.	270	FOOT COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12
9.	470	FOOT THERMOPLASTIC PAVEMENT MARKING - LINE 12"
10.	120	FOOT THERMOPLASTIC PAVEMENT MARKING - LINE 24"
11.	575	SQ FT PAVEMENT MARKING REMOVAL
12.	80	FOOT CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL
13.	45	FOOT CONDUIT IN TRENCH, 2-1/2" DIA., GALVANIZED STEEL
14.	69	FOOT CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL
15.	25	FOOT CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL
16.	422	FOOT CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL
17.	353	FOOT CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL
18.	4	EACH HANDHOLE
19.	2	EACH DOUBLE HANDHOLE
20.	159	FOOT TRENCH AND BACKFILL FOR ELECTRICAL WORK
21.	1	EACH FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL
22.	1,903	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C
23.	1,575	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
24.	2,373	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C
25.	1,727	FOOT ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR
26.	52	FOOT ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C
27.	1	EACH STEEL MAST ARM ASSEMBLY AND POLE 26 FT. (SPECIAL)
28.	1	EACH STEEL MAST ARM ASSEMBLY AND POLE 28 FT. (SPECIAL)
29.	1	EACH STEEL MAST ARM ASSEMBLY AND POLE 32 FT. (SPECIAL)
30.	1	EACH STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 34 FT. (SPECIAL)
31.	8	FOOT CONCRETE FOUNDATION, TYPE A
32.	4	FOOT CONCRETE FOUNDATION, TYPE C
33.	30	FOOT CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER
34.	30	FOOT CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER
35.	9	EACH SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED
36.	5	EACH SIGNAL HEAD, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED
37.	2	EACH PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
38.	3	EACH PEDESTRIAN SIGNAL HEAD, LED, 2-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
39.	9	EACH TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINIUM
40.	6	EACH INDUCTIVE LOOP DETECTOR
41.	443	FOOT DETECTOR LOOP, TYPE 1
42.	2	EACH LIGHT DETECTOR
43.	1	EACH LIGHT DETECTOR AMPLIFIER
44.	8	EACH PEDESTRIAN PUSH-BUTTON
45.	1	EACH TEMPORARY TRAFFIC SIGNAL INSTALLATION
46.	1	EACH REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
47.	8	EACH REMOVE EXISTING HANDHOLE
48.	9	EACH REMOVE EXISTING CONCRETE FOUNDATION
49.	1	EACH TEMPORARY TRAFFIC SIGNAL TIMINGS
50.	1	EACH SERVICE INSTALLATION POLE MOUNT
51.	1	EACH UNINTERRUPTIBLE POWER SUPPLY
52.	473	FOOT ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C
53.	363	FOOT ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED
54.	102	FOOT ELECTRIC CABLE IN CONDUIT, COAXIAL
55.	2	EACH TRAFFIC SIGNAL POST, 14 FOOT (SPECIAL)
56.	4	EACH LED INTERNALLY ILLUMINATED STREET NAME SIGN
57.	1	EACH REMOTE CONTROLLED VIDEO SYSTEM
58.	1	EACH LAYER II (DATA LINK) SWITCH
59.	1	EACH VIDEO ENCODER



CABLE PLAN

PHASE DESIGNATION DIAGRAM



CONSTRUCTION NOTES:
 ① THE CONTRACTOR SHALL INSTALL A LOUVER FOR BRACKET MOUNTED SIGNAL HEAD. COST OF LOUVER TO BE CONSIDERED INCIDENTAL TO ITEM "SIGNAL HEAD, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED."

LEGEND:
 ◀ ⊕ ▶ DUAL ENTRY PHASE
 ◀ ⊕ ▶ PEDESTRIAN PHASE
 * NUMBER REFERS TO ASSOCIATED PHASE
 ◊ OVERLAP

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

L.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS				TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE INCAND. L.E.D.	% OPERATION	
SIGNAL (RED)	13	135	10	65.0
SIGNAL (YELLOW)	13	135	9	24.7
SIGNAL (GREEN)	13	135	11	57.2
ARROW	-	135	9	0.0
PED. SIGNAL	8	90	1.00	72.0
CONTROLLER	1	-	100	100.0
LUMINAIRE	-	250	0.50	-
L.E.D. ST. NAME SIGN	4	-	64	128.0
VIDEO SYSTEM	1	-	150	150.0
BATTERY BACKUP	1	-	25	25.0
TOTAL =				621.9

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'-1-2"
TYPE E - M-ARM POLE	15	SIGNAL POST	2	BRACKET MOUNTED	13
		CONTROLLER CAB.	1	PED. PUSHBUTTON	4
		FIBER OPTIC	13	ELECTRIC SERVICE	13.5
		ELECTRIC SERVICE	1	SERVICE TO GROUND	13.5
		GROUND CABLE	1	POST MOUNTED	6

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN (ADDRESS) 100 N. M.L.K. JR. AVENUE (ADDRESS) WAUKEGAN, IL
 ENERGY SUPPLY - CONTACT: GERRY GRANDBERRY (PHONE: (847) 816-5483) COMPANY: COM-ED, LIBERTYVILLE

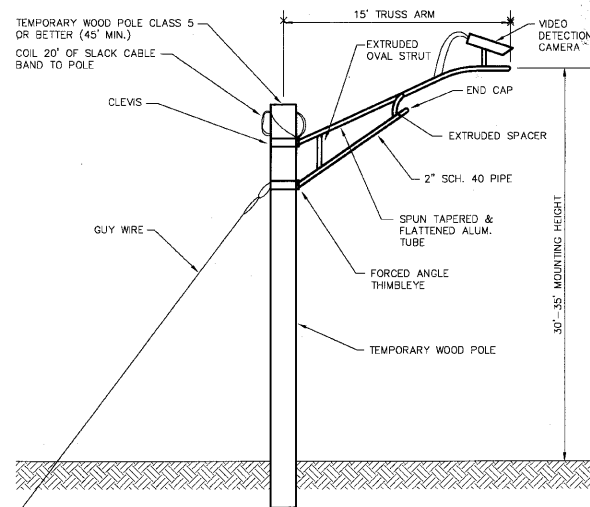
DESIGNED - JRD
 DRAWN - ZCW
 CHECKED - DPB
 DATE - 3/10/10



CABLE PLAN, PHASE DESIGNATION DIAGRAM AND SCHEDULE OF QUANTITIES
 GRAND AVENUE AT BUTRICK STREET

FILE NAME = 4136.800-1R2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -	SCALE: NONE	SHEET NO. OF SHEETS	STA. TO STA.
PLOT SCALE = 1" = .0833'			DATE - 3/10/10	SHEET NO. 64 OF 64		
PLOT DATE = 3/10/10			DATE - 3/10/10	SHEET NO. 28 OF 28		

GHA #4136.800

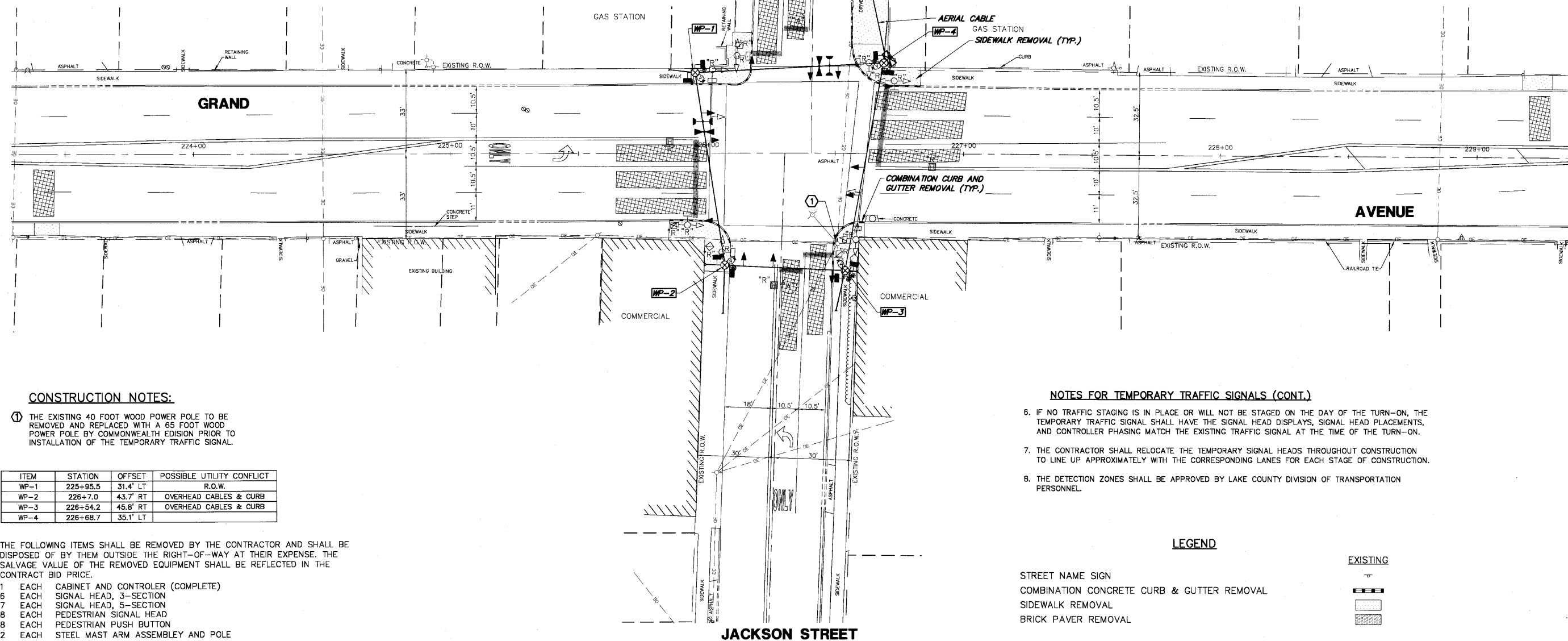
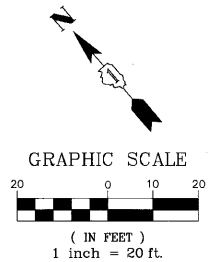


TEMPORARY VIDEO DETECTION CAMERA MOUNTING DETAIL
N.T.S.

JACKSON STREET

NOTES FOR TEMPORARY TRAFFIC SIGNALS

1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY ECONOLITE CONTROLLERS SUPPLIED BY ONE OF THE COUNTY APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY THE COUNTY, INSTALLED IN A NEMA TS1 OR TS2 CABINET.
3. ALL TRAFFIC SIGNAL SECTIONS AND PEDESTRIAN SIGNAL SECTIONS SHALL BE 12" HEADS SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE OR AT LOCATIONS ILLUSTRATED ON THE PLANS FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
4. ALL EXISTING STREET NAME, INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.
5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM. ANY TEMPORARY TRAFFIC SIGNAL WITHIN AN ICON SYSTEM SHALL BE NTCP COMPATIBLE AND SHALL BE INTERCONNECTED TO THAT SYSTEM.



CONSTRUCTION NOTES:

1. THE EXISTING 40 FOOT WOOD POWER POLE TO BE REMOVED AND REPLACED WITH A 65 FOOT WOOD POWER POLE BY COMMONWEALTH EDISON PRIOR TO INSTALLATION OF THE TEMPORARY TRAFFIC SIGNAL.

ITEM	STATION	OFFSET	POSSIBLE UTILITY CONFLICT
WP-1	225+95.5	31.4' LT	R.O.W.
WP-2	226+7.0	43.7' RT	OVERHEAD CABLES & CURB
WP-3	226+54.2	45.8' RT	OVERHEAD CABLES & CURB
WP-4	226+68.7	35.1' LT	

NOTES FOR TEMPORARY TRAFFIC SIGNALS (CONT.)

6. IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN-ON, THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS, AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL AT THE TIME OF THE TURN-ON.
7. THE CONTRACTOR SHALL RELOCATE THE TEMPORARY SIGNAL HEADS THROUGHOUT CONSTRUCTION TO LINE UP APPROXIMATELY WITH THE CORRESPONDING LANES FOR EACH STAGE OF CONSTRUCTION.
8. THE DETECTION ZONES SHALL BE APPROVED BY LAKE COUNTY DIVISION OF TRANSPORTATION PERSONNEL.

LEGEND

- STREET NAME SIGN
- COMBINATION CONCRETE CURB & GUTTER REMOVAL
- SIDEWALK REMOVAL
- BRICK PAVER REMOVAL

EXISTING

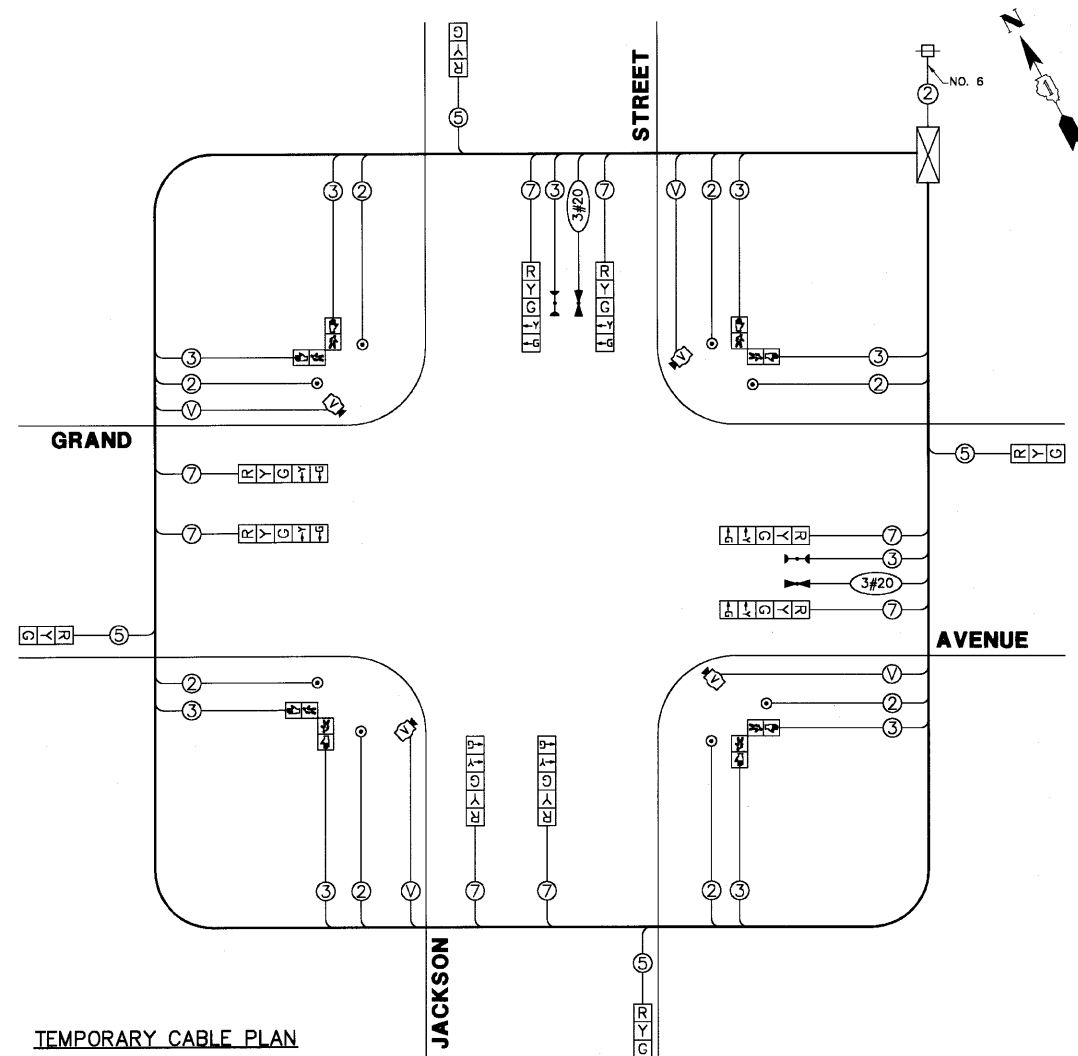


THE FOLLOWING ITEMS SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE DISPOSED OF BY THEM OUTSIDE THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.

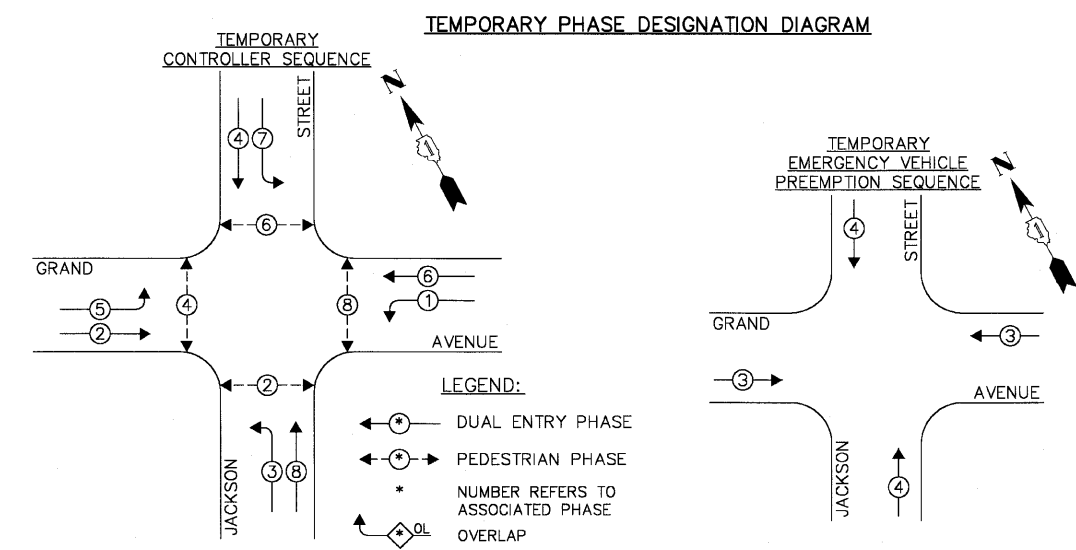
- 1 EACH CABINET AND CONTROLLER (COMPLETE)
- 6 EACH SIGNAL HEAD, 3-SECTION
- 7 EACH SIGNAL HEAD, 5-SECTION
- 8 EACH PEDESTRIAN SIGNAL HEAD
- 8 EACH PEDESTRIAN PUSH BUTTON
- 2 EACH STEEL MAST ARM ASSEMBLY AND POLE
- 5 EACH TRAFFIC SIGNAL POST
- 1 EACH SERVICE INSTALLATION

GHA #4136.800

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JURD	REVISED -		TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVAL OF EXISTING TRAFFIC SIGNAL EQUIPMENT GRAND AVENUE AT JACKSON STREET	F.A.P. RTE. 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 29			
PLOT SCALE = 1" = .0833'	CHECKED - DPB	REVISED -	SCALE: 1"=20'			SHEET NO. OF SHEETS	STA. TO STA.	CONTRACT #:	63436	ILLINOIS FED. AID PROJECT			
PLOT DATE = 3/10/10	DATE - 3/10/10	REVISED -											



TEMPORARY CABLE PLAN



TEMPORARY PHASE DESIGNATION DIAGRAM

L.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE INCAND. L.E.D.	% OPERATION		
SIGNAL (RED)	12	135	0	0.50	60.0
SIGNAL (YELLOW)	12	135	19	0.10	22.8
SIGNAL (GREEN)	12	135	11	0.40	52.8
ARROW	16	135	9	0.10	14.4
PED.SIGNAL	8	90	9	1.00	72.0
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	-	-	25	1.00	-
TOTAL =					322.0

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN
 (ADDRESS) 100 N. M.L.K. JR. AVENUE
 (ADDRESS) WAUKEGAN, IL
 ENERGY SUPPLY - CONTACT: GERRY GRANDBERRY
 PHONE: (847) 818-5463
 COMPANY: COM-ED, LIBERTYVILLE

TEMPORARY EMERGENCY VEHICLE PREEMPTORS	
EMERGENCY VEHICLE PREEMPTOR	3 4
MOVEMENT	← →

GHA #4136.800

LEGEND

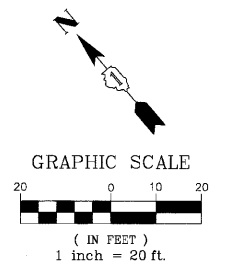
- STREET NAME SIGN
- COMBINATION CONCRETE CURB & GUTTER, TYPE B-6.12 OR TYPE B-6.24
- PORTLAND CEMENT CONCRETE SIDEWALK, 5"
- DETECTABLE WARNING
- LED ILLUMINATED STREET NAME SIGN
- BRICK PAVER REINSTALLATION

PROPOSED

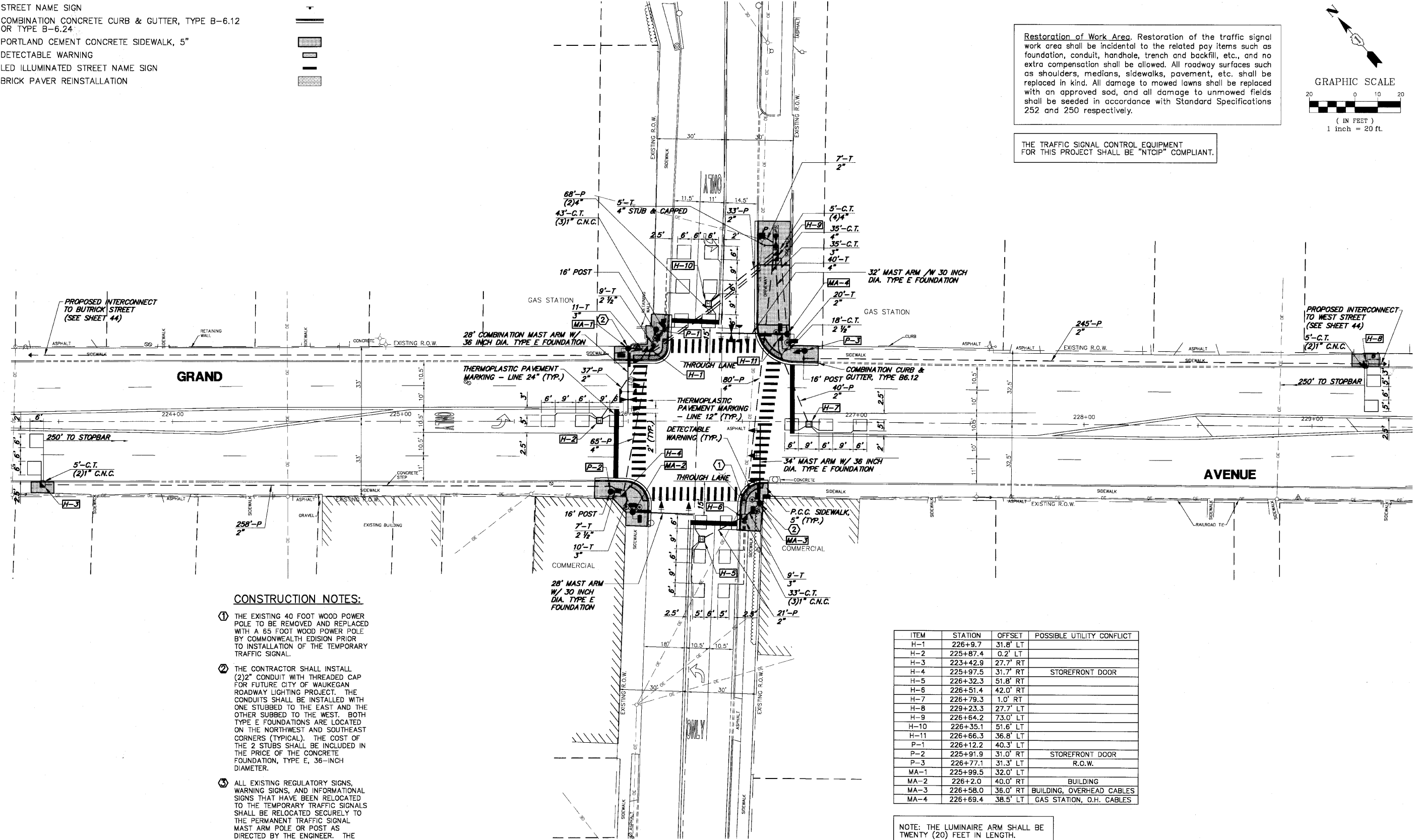


JACKSON STREET

Restoration of Work Area. Restoration of the traffic signal work area shall be incidental to the related pay items such as foundation, conduit, handhole, trench and backfill, etc., and no extra compensation shall be allowed. All roadway surfaces such as shoulders, medians, sidewalks, pavement, etc. shall be replaced in kind. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded in accordance with Standard Specifications 252 and 250 respectively.



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



CONSTRUCTION NOTES:

- 1 THE EXISTING 40 FOOT WOOD POWER POLE TO BE REMOVED AND REPLACED WITH A 65 FOOT WOOD POWER POLE BY COMMONWEALTH EDISON PRIOR TO INSTALLATION OF THE TEMPORARY TRAFFIC SIGNAL.
- 2 THE CONTRACTOR SHALL INSTALL (2)2" CONDUIT WITH THREADED CAP FOR FUTURE CITY OF WAUKEGAN ROADWAY LIGHTING PROJECT. THE CONDUITS SHALL BE INSTALLED WITH ONE STUBBED TO THE EAST AND THE OTHER STUBBED TO THE WEST. BOTH TYPE E FOUNDATIONS ARE LOCATED ON THE NORTHWEST AND SOUTHEAST CORNERS (TYPICAL). THE COST OF THE 2 STUBS SHALL BE INCLUDED IN THE PRICE OF THE CONCRETE FOUNDATION, TYPE E, 36-INCH DIAMETER.
- 3 ALL EXISTING REGULATORY SIGNS, WARNING SIGNS, AND INFORMATIONAL SIGNS THAT HAVE BEEN RELOCATED TO THE TEMPORARY TRAFFIC SIGNALS SHALL BE RELOCATED SECURELY TO THE PERMANENT TRAFFIC SIGNAL MAST ARM POLE OR POST AS DIRECTED BY THE ENGINEER. THE COST FOR THE RELOCATION OF THE EXISTING SIGNS SHALL BE INCLUDED IN THE PRICE FOR TRAFFIC CONTROL AND PROTECTION (SPECIAL).

ITEM	STATION	OFFSET	POSSIBLE UTILITY CONFLICT
H-1	226+9.7	31.8' LT	
H-2	225+87.4	0.2' LT	
H-3	223+42.9	27.7' RT	
H-4	225+97.5	31.7' RT	STOREFRONT DOOR
H-5	226+32.3	51.8' RT	
H-6	226+51.4	42.0' RT	
H-7	226+79.3	1.0' RT	
H-8	229+23.3	27.7' LT	
H-9	226+64.2	73.0' LT	
H-10	226+35.1	51.6' LT	
H-11	226+66.3	36.8' LT	
P-1	226+12.2	40.3' LT	
P-2	225+91.9	31.0' RT	STOREFRONT DOOR
P-3	226+77.1	31.3' LT	R.O.W.
MA-1	225+99.5	32.0' LT	
MA-2	226+2.0	40.0' RT	BUILDING
MA-3	226+58.0	36.0' RT	BUILDING, OVERHEAD CABLES
MA-4	226+69.4	38.5' LT	GAS STATION, O.H. CABLES

NOTE: THE LUMINAIRE ARM SHALL BE TWENTY (20) FEET IN LENGTH.

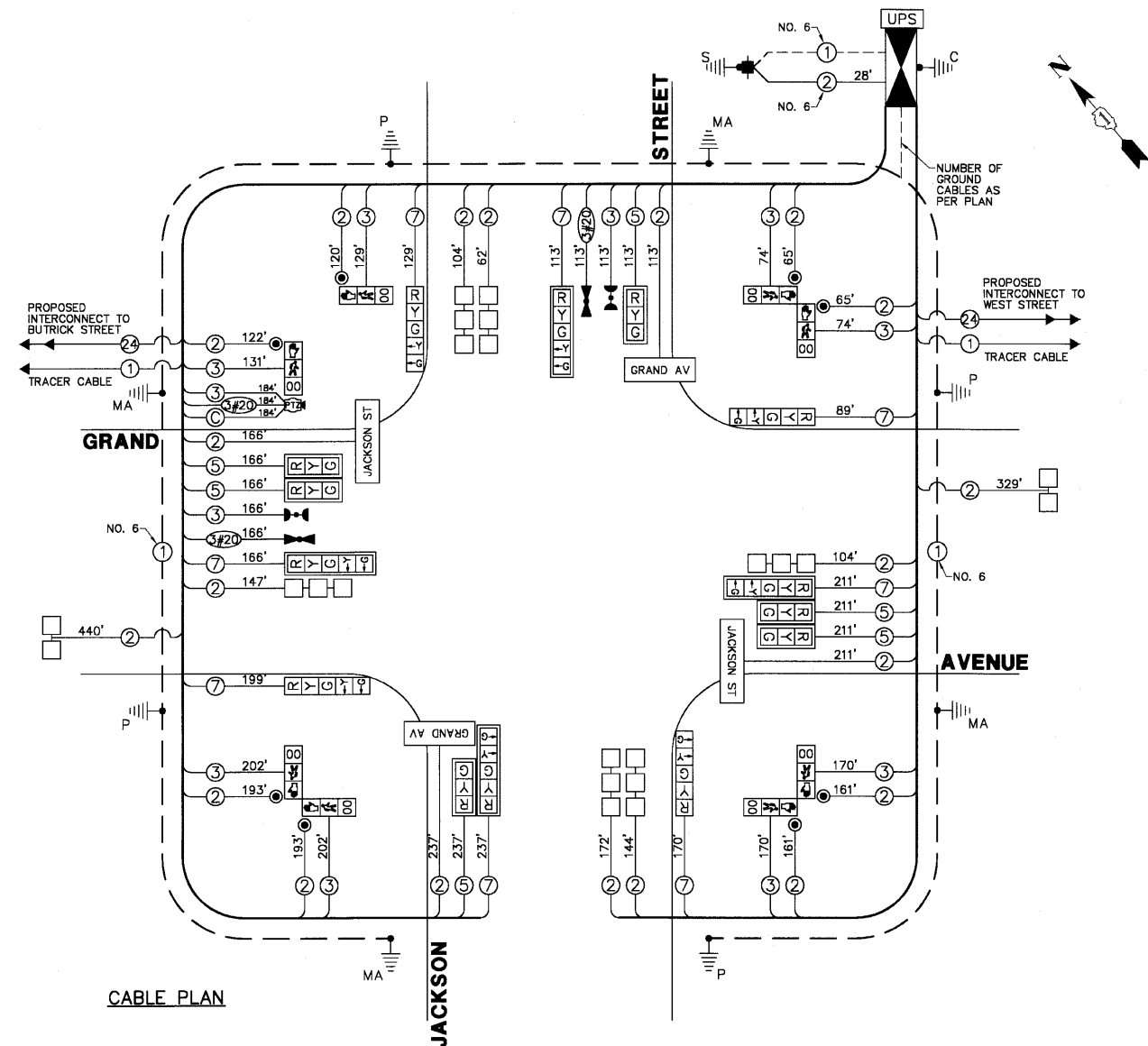
GHA #4136.800

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -		TRAFFIC SIGNAL MODERNIZATION PLAN	F.A.P. RTE. 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 31	
DRAWN - JCW					Lake County Division of Transportation	GRAND AVENUE AT JACKSON STREET		CONTRACT # 63436			
CHECKED - DPB						SCALE: 1"=20'	SHEET NO. OF SHEETS		STA. TO STA.		ILLINOIS FED. AID PROJECT
DATE - 3/10/10											

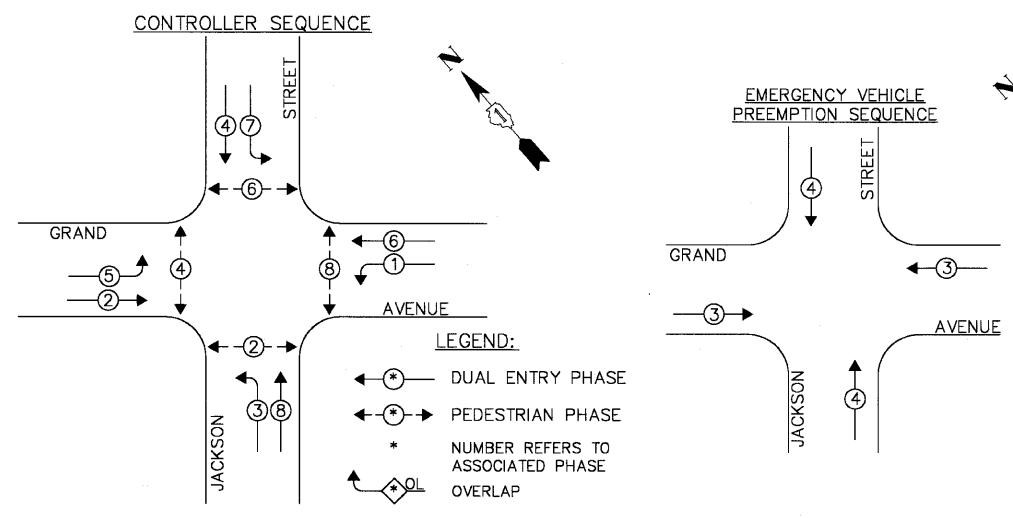
SCHEDULE OF QUANTITIES

GRAND AVENUE AT JACKSON STREET TRAFFIC SIGNAL MODERNIZATION

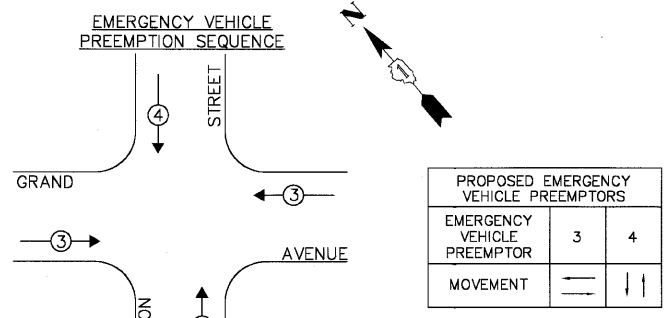
NO.	QUANT.	UNIT
1.	1,730	SQ FT PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH
2.	140	SQ FT DETECTABLE WARNINGS
3.	210	FOOT COMBINATION CURB AND GUTTER REMOVAL
4.	1,730	SQ FT SIDEWALK REMOVAL
5.	3	EACH FRAMES AND LIDS TO BE ADJUSTED
6.	210	FOOT COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12
7.	380	FOOT THERMOPLASTIC PAVEMENT MARKING - LINE 6"
8.	115	FOOT THERMOPLASTIC PAVEMENT MARKING - LINE 24"
9.	400	SQ FT PAVEMENT MARKING REMOVAL
10.	102	FOOT CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL
11.	34	FOOT CONDUIT IN TRENCH, 2-1/2" DIA., GALVANIZED STEEL
12.	65	FOOT CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL
13.	97	FOOT CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL
14.	569	FOOT CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL
15.	281	FOOT CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL
16.	5	EACH HANDHOLE
17.	4	EACH HEAVY-DUTY HANDHOLE
18.	2	EACH DOUBLE HANDHOLE
19.	118	FOOT TRENCH AND BACKFILL FOR ELECTRICAL WORK
20.	1	EACH FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL
21.	1,807	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C
22.	1,615	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
23.	1,104	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C
24.	1,314	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C
25.	1,502	FOOT ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR
26.	28	FOOT ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C
27.	1	EACH STEEL MAST ARM ASSEMBLY AND POLE 28 FT. (SPECIAL)
28.	1	EACH STEEL MAST ARM ASSEMBLY AND POLE 32 FT. (SPECIAL)
29.	1	EACH STEEL MAST ARM ASSEMBLY AND POLE 34 FT. (SPECIAL)
30.	1	EACH STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 28 FT. (SPECIAL)
31.	12	FOOT CONCRETE FOUNDATION, TYPE A
32.	4	FOOT CONCRETE FOUNDATION, TYPE C
33.	30	FOOT CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER
34.	30	FOOT CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER
35.	6	EACH SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED
36.	4	EACH SIGNAL HEAD, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED
37.	4	EACH SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST-ARM MOUNTED
38.	2	EACH PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
39.	3	EACH PEDESTRIAN SIGNAL HEAD, LED, 2-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
40.	10	EACH TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINIUM
41.	8	EACH INDUCTIVE LOOP DETECTOR
42.	702	FOOT DETECTOR LOOP, TYPE 1
43.	2	EACH LIGHT DETECTOR
44.	1	EACH LIGHT DETECTOR AMPLIFIER
45.	8	EACH PEDESTRIAN PUSH-BUTTON
46.	1	EACH TEMPORARY TRAFFIC SIGNAL INSTALLATION
47.	1	EACH REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
48.	10	EACH REMOVE EXISTING HANDHOLE
49.	8	EACH REMOVE EXISTING CONCRETE FOUNDATION
50.	1	EACH TEMPORARY TRAFFIC SIGNAL TIMINGS
51.	1	EACH SERVICE INSTALLATION POLE MOUNT
52.	1	EACH UNINTERRUPTIBLE POWER SUPPLY
53.	467	FOOT ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C
54.	463	FOOT ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED
55.	184	FOOT ELECTRIC CABLE IN CONDUIT, COAXIAL
56.	3	EACH TRAFFIC SIGNAL POST, 16 FOOT (SPECIAL)
57.	4	EACH LED INTERNALLY ILLUMINATED STREET NAME SIGN
58.	1	EACH REMOTE CONTROLLED VIDEO SYSTEM
59.	1	EACH LAYER II (DATA LINK) SWITCH
60.	1	EACH VIDEO ENCODER



CABLE PLAN



PHASE DESIGNATION DIAGRAM



L.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS				TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE INCAND. L.E.D.	% OPERATION	
SIGNAL (RED)	14	135	10	70.0
SIGNAL (YELLOW)	14	135	19	26.6
SIGNAL (GREEN)	14	135	11	61.6
ARROW	16	135	9	14.4
PED.SIGNAL	8	90	9	72.0
CONTROLLER	1	-	100	100.0
LUMINAIRE	-	-	250	0.50
L.E.D. ST. NAME SIGN	4	-	64	0.50
VIDEO SYSTEM	-	-	150	1.00
BATTERY BACKUP	1	-	25	1.00
TOTAL =				497.6

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' H-2"
TYPE E - M.ARM POLE	15	SIGNAL POST	2	BRACKET MOUNTED	13
		CONTROLLER CAB.	1	PED. PUSHBUTTON	4
		FIBER OPTIC	13	ELECTRIC SERVICE	13.5
		ELECTRIC SERVICE	1	SERVICE "O" GROUND	13.5
		GROUND CABLE	1	POST MOUNTED	6

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN (ADDRESS) 100 N. M.L.K. JR. AVENUE (ADDRESS) WAUKEGAN, IL
 ENERGY SUPPLY - CONTACT: GERRY GRANDBERRY (PHONE) (847) 816-5463 (COMPANY) COM-ED, LIBERTYVILLE

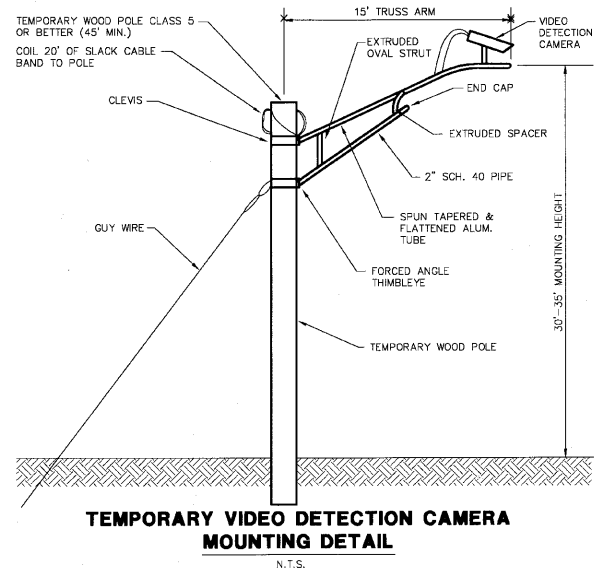
FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = 1" = .0833'	CHECKED - DPB	REVISED -
	PLOT DATE = 3/10/10	DATE - 3/10/10	REVISED -



CABLE PLAN, PHASE DESIGNATION DIAGRAM AND SCHEDULE OF QUANTITIES
 GRAND AVENUE AT JACKSON STREET
 SCALE: NONE SHEET NO. OF SHEETS STA. TO STA.

FAP RITE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	08-00279-00-TL	LAKE	64	32
CONTRACT #: 63436				
ILLINOIS FED. AID PROJECT				

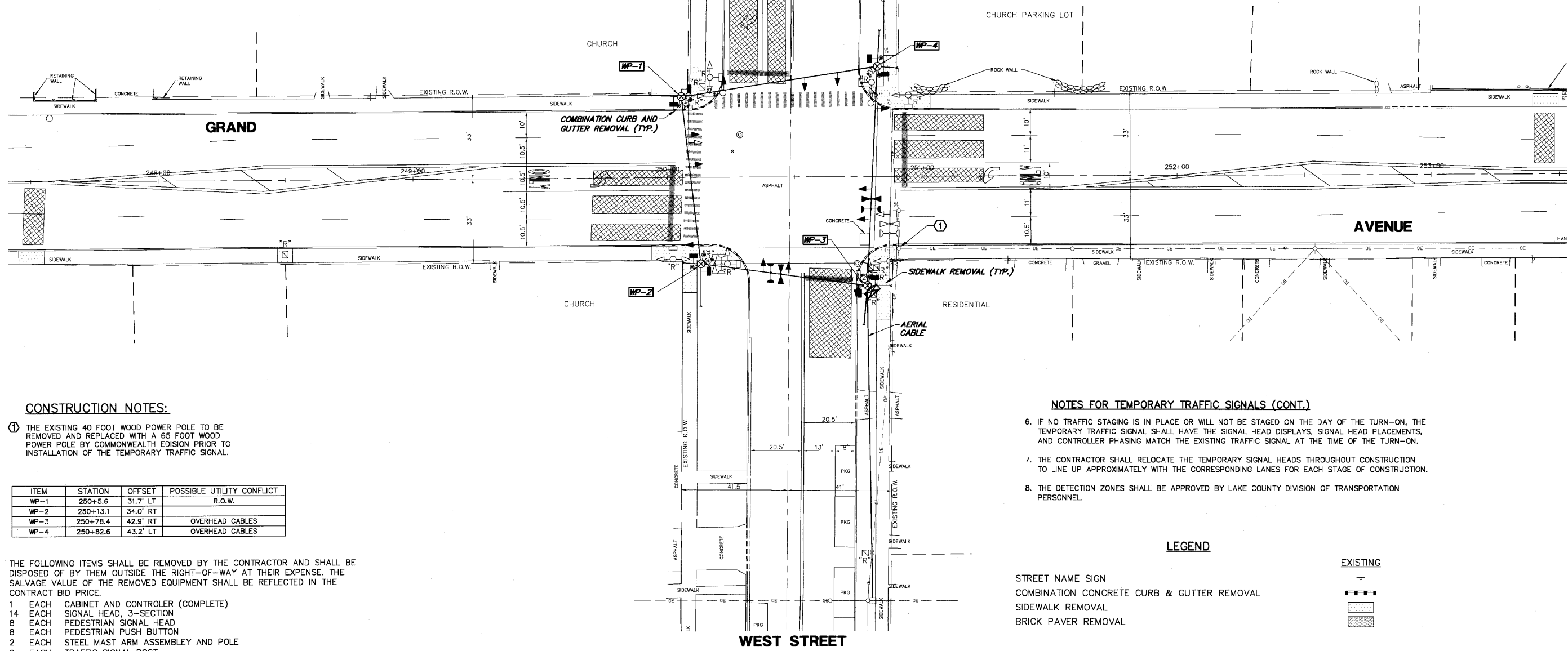
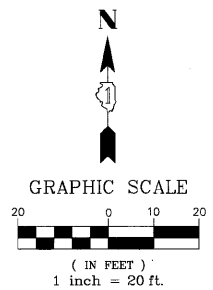
GHA #4136.800



WEST STREET

NOTES FOR TEMPORARY TRAFFIC SIGNALS

1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY ECONOLITE CONTROLLERS SUPPLIED BY ONE OF THE COUNTY APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY THE COUNTY, INSTALLED IN A NEMA TS1 OR TS2 CABINET.
3. ALL TRAFFIC SIGNAL SECTIONS AND PEDESTRIAN SIGNAL SECTIONS SHALL BE 12". HEADS SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE OR AT LOCATIONS ILLUSTRATED ON THE PLANS FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
4. ALL EXISTING STREET NAME, INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.
5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM. ANY TEMPORARY TRAFFIC SIGNAL WITHIN AN ICON SYSTEM SHALL BE NTCIP COMPATIBLE AND SHALL BE INTERCONNECTED TO THAT SYSTEM.



CONSTRUCTION NOTES:

1. THE EXISTING 40 FOOT WOOD POWER POLE TO BE REMOVED AND REPLACED WITH A 65 FOOT WOOD POWER POLE BY COMMONWEALTH EDISION PRIOR TO INSTALLATION OF THE TEMPORARY TRAFFIC SIGNAL.

ITEM	STATION	OFFSET	POSSIBLE UTILITY CONFLICT
WP-1	250+5.6	31.7' LT	R.O.W.
WP-2	250+13.1	34.0' RT	
WP-3	250+78.4	42.9' RT	OVERHEAD CABLES
WP-4	250+82.6	43.2' LT	OVERHEAD CABLES

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

- 1 EACH CABINET AND CONTROLLER (COMPLETE)
- 14 EACH SIGNAL HEAD, 3-SECTION
- 8 EACH PEDESTRIAN SIGNAL HEAD
- 8 EACH PEDESTRIAN PUSH BUTTON
- 2 EACH STEEL MAST ARM ASSEMBLY AND POLE
- 6 EACH TRAFFIC SIGNAL POST
- 1 EACH SERVICE INSTALLATION

NOTES FOR TEMPORARY TRAFFIC SIGNALS (CONT.)

6. IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN-ON, THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS, AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL AT THE TIME OF THE TURN-ON.
7. THE CONTRACTOR SHALL RELOCATE THE TEMPORARY SIGNAL HEADS THROUGHOUT CONSTRUCTION TO LINE UP APPROXIMATELY WITH THE CORRESPONDING LANES FOR EACH STAGE OF CONSTRUCTION.
8. THE DETECTION ZONES SHALL BE APPROVED BY LAKE COUNTY DIVISION OF TRANSPORTATION PERSONNEL.

LEGEND

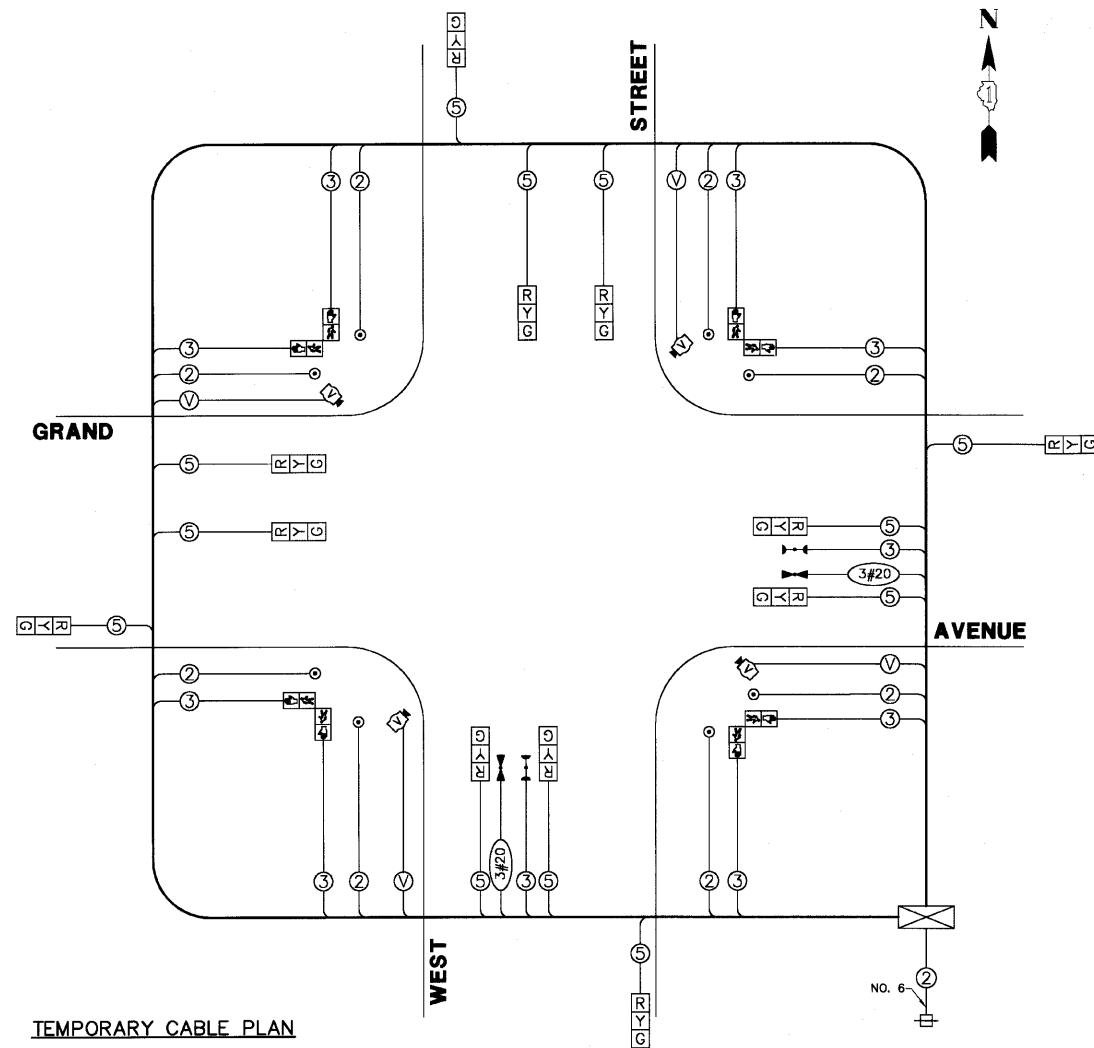
- STREET NAME SIGN
- COMBINATION CONCRETE CURB & GUTTER REMOVAL
- SIDEWALK REMOVAL
- BRICK PAVER REMOVAL

EXISTING

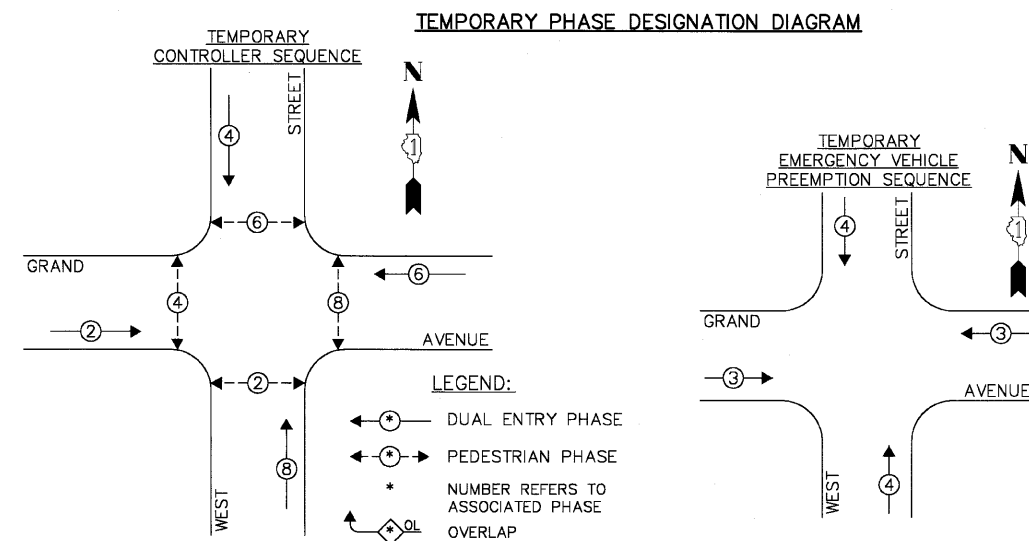


GHA #4136.800

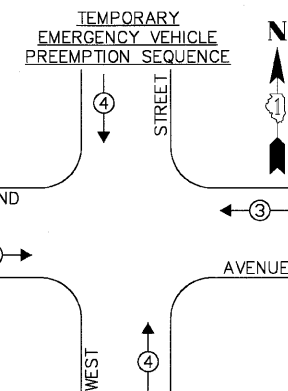
FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -	Lake County Division of Transportation	TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVAL OF EXISTING TRAFFIC SIGNAL EQUIPMENT GRAND AVENUE AT WEST STREET	F&P R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISED -			541	08-00279-00-TL	LAKE	64	33	
	PLOT DATE = 3/10/10	CHECKED - DPB	REVISED -			SCALE: 1" = 20'		SHEET NO. OF SHEETS		CONTRACT #: 63436	
		DATE - 3/10/10	REVISED -			SHEET NO. OF SHEETS		STA. TO STA.		ILLINOIS FED. AID PROJECT	



TEMPORARY CABLE PLAN



TEMPORARY PHASE DESIGNATION DIAGRAM



TEMPORARY EMERGENCY VEHICLE PREEMPTORS	
EMERGENCY VEHICLE PREEMPTOR	3 4
MOVEMENT	==

L.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE		% OPERATION	
		INCAND.	L.E.D.		
SIGNAL (RED)	12	135	10	0.50	60.0
SIGNAL (YELLOW)	12	135	19	0.10	22.8
SIGNAL (GREEN)	12	135	11	0.40	52.8
ARROW	-	135	9	0.10	-
PEJ.SIGNAL	8	90	9	1.00	72.0
CONTROLLER	-	-	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	-	-	25	1.00	-
TOTAL =					307.6

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN
 (ADDRESS) 100 N. M.L.K. JR. AVENUE
 (ADDRESS) WAUKEGAN, IL
 ENERGY SUPPLY - CONTACT: GERRY GRANDBERRY
 PHONE: (847) 816-5463
 COMPANY: COM-ED, LIBERTYVILLE

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISED -
	PLOT DATE = 3/10/10	CHECKED - DPB	REVISED -
		DATE - 3/10/10	REVISED -



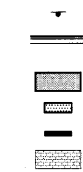
TEMPORARY CABLE PLAN AND PHASE DESIGNATION DIAGRAM			
GRAND AVENUE AT WEST STREET			
SCALE: NONE	SHEET NO. OF SHEETS	STA. TO STA.	

F&P RTE. 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 34
CONTRACT # 63436			GHA #4136.800	
ILLINOIS FED. AID PROJECT				

LEGEND

- STREET NAME SIGN
- COMBINATION CONCRETE CURB & GUTTER, TYPE B-6.12 OR TYPE B-6.24
- PORTLAND CEMENT CONCRETE SIDEWALK, 5"
- DETECTABLE WARNING
- LED ILLUMINATED STREET NAME SIGN
- BRICK PAVER REINSTALLATION

PROPOSED

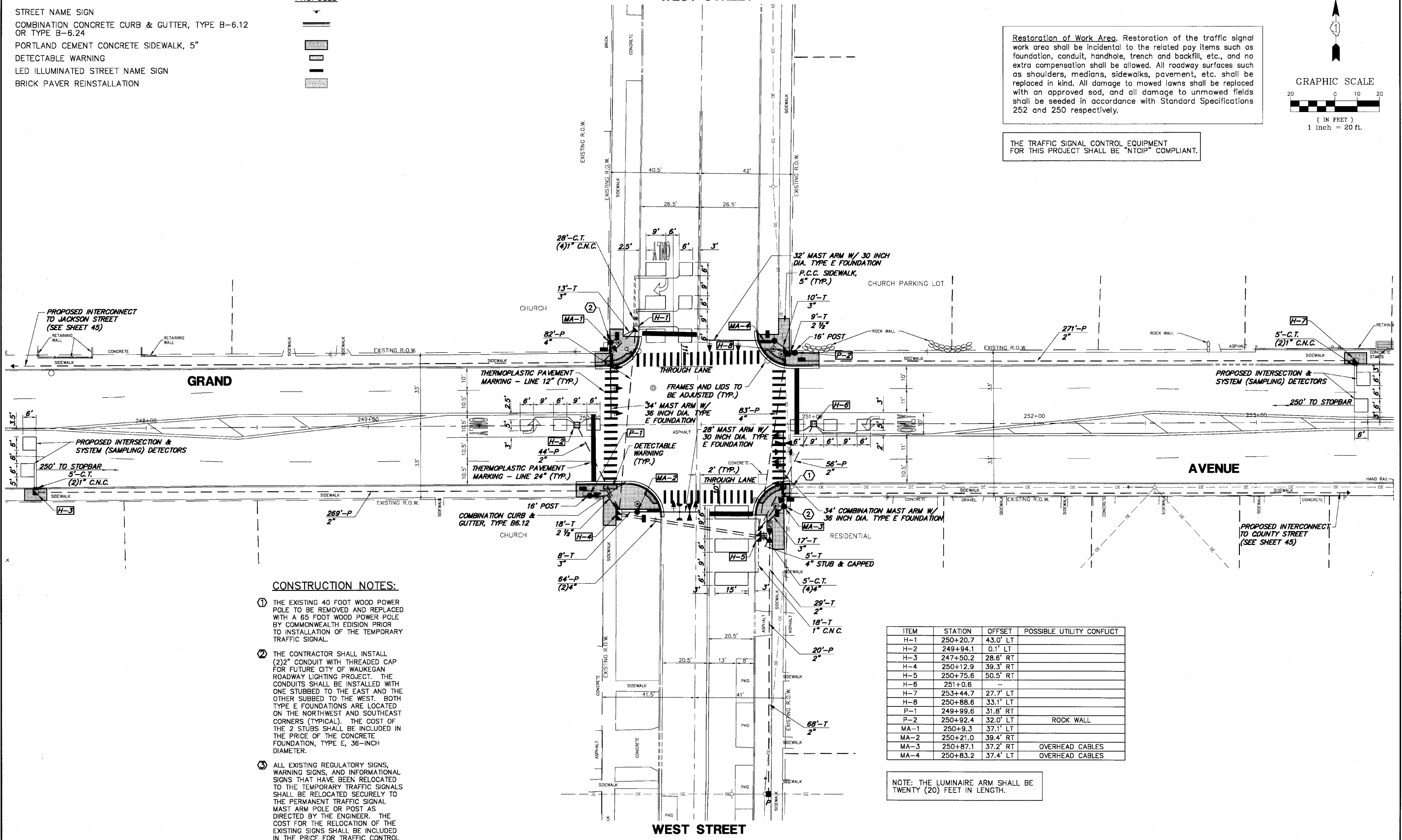
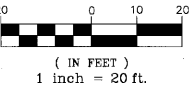


WEST STREET

Restoration of Work Area. Restoration of the traffic signal work area shall be incidental to the related pay items such as foundation, conduit, handhole, trench and backfill, etc., and no extra compensation shall be allowed. All roadway surfaces such as shoulders, medians, sidewalks, pavement, etc. shall be replaced in kind. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded in accordance with Standard Specifications 252 and 250 respectively.

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

GRAPHIC SCALE



CONSTRUCTION NOTES:

- ① THE EXISTING 40 FOOT WOOD POWER POLE TO BE REMOVED AND REPLACED WITH A 65 FOOT WOOD POWER POLE BY COMMONWEALTH EDISON PRIOR TO INSTALLATION OF THE TEMPORARY TRAFFIC SIGNAL.
- ② THE CONTRACTOR SHALL INSTALL (2) 2" CONDUIT WITH THREADED CAP FOR FUTURE CITY OF WAUKEGAN ROADWAY LIGHTING PROJECT. THE CONDUITS SHALL BE INSTALLED WITH ONE STUBBED TO THE EAST AND THE OTHER STUBBED TO THE WEST. BOTH TYPE E FOUNDATIONS ARE LOCATED ON THE NORTHWEST AND SOUTHEAST CORNERS (TYPICAL). THE COST OF THE 2 STUBS SHALL BE INCLUDED IN THE PRICE OF THE CONCRETE FOUNDATION, TYPE E, 36-INCH DIAMETER.
- ③ ALL EXISTING REGULATORY SIGNS, WARNING SIGNS, AND INFORMATIONAL SIGNS THAT HAVE BEEN RELOCATED TO THE TEMPORARY TRAFFIC SIGNALS SHALL BE RELOCATED SECURELY TO THE PERMANENT TRAFFIC SIGNAL MAST ARM POLE OR POST AS DIRECTED BY THE ENGINEER. THE COST FOR THE RELOCATION OF THE EXISTING SIGNS SHALL BE INCLUDED IN THE PRICE FOR TRAFFIC CONTROL AND PROTECTION (SPECIAL).

ITEM	STATION	OFFSET	POSSIBLE UTILITY CONFLICT
H-1	250+20.7	43.0' LT	
H-2	249+94.1	0.1' LT	
H-3	247+50.2	28.6' RT	
H-4	250+12.9	39.3' RT	
H-5	250+75.6	50.5' RT	
H-6	251+0.6	-	
H-7	253+44.7	27.7' LT	
H-8	250+88.6	33.1' LT	
P-1	249+99.6	31.8' RT	
P-2	250+92.4	32.0' LT	ROCK WALL
MA-1	250+9.3	37.1' LT	
MA-2	250+21.0	39.4' RT	OVERHEAD CABLES
MA-3	250+87.1	37.2' RT	OVERHEAD CABLES
MA-4	250+83.2	37.4' LT	OVERHEAD CABLES

NOTE: THE LUMINAIRE ARM SHALL BE TWENTY (20) FEET IN LENGTH.

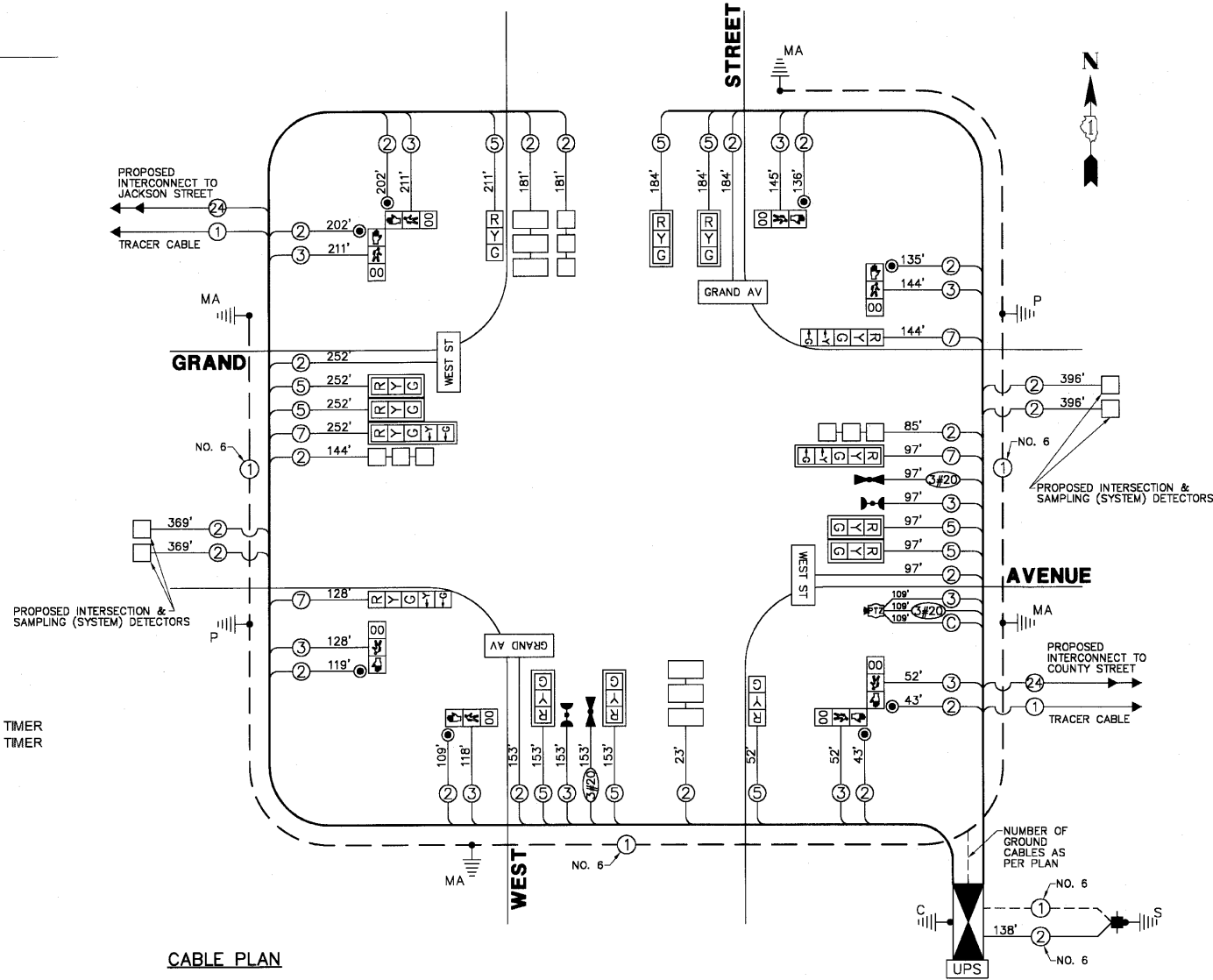
GHA #4136.800

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -		TRAFFIC SIGNAL MODERNIZATION	F&P RTE. 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 35	
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISED -		GRAND AVENUE AT WEST STREET	SCALE: 1" = 20'	SHEET NO. OF SHEETS	STA. TO STA.	CONTRACT #: 63436		
	PLOT DATE = 3/10/10	CHECKED - DPB	REVISED -						ILLINOIS FED. AID PROJECT		
		DATE - 3/10/10	REVISED -								

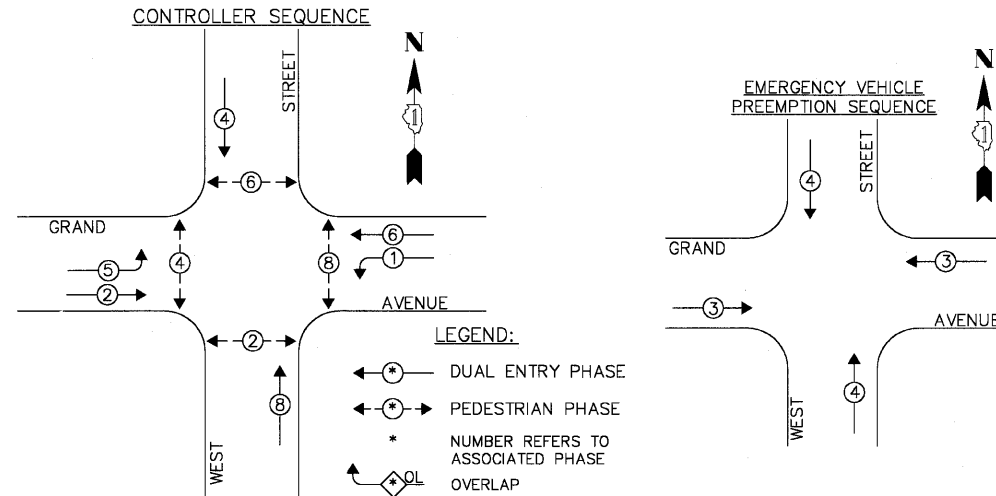
SCHEDULE OF QUANTITIES

GRAND AVENUE AT WEST STREET TRAFFIC SIGNAL MODERNIZATION

NO.	QUANT.	UNIT
1.	6	CU YD EARTH EXCAVATION
2.	25	SQ YD AGGREGATE BASE COURSE, TYPE B 4"
3.	1,200	SQ FT PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH
4.	120	SQ FT DETECTABLE WARNINGS
5.	160	FOOT COMBINATION CURB AND GUTTER REMOVAL
6.	950	SQ FT SIDEWALK REMOVAL
7.	3	EACH FRAMES AND LIDS TO BE ADJUSTED
8.	160	FOOT COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12
9.	325	FOOT THERMOPLASTIC PAVEMENT MARKING - LINE 6"
10.	110	FOOT THERMOPLASTIC PAVEMENT MARKING - LINE 24"
11.	540	SQ FT PAVEMENT MARKING REMOVAL
12.	97	FOOT CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL
13.	27	FOOT CONDUIT IN TRENCH, 2-1/2" DIA., GALVANIZED STEEL
14.	48	FOOT CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL
15.	25	FOOT CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL
16.	660	FOOT CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL
17.	283	FOOT CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL
18.	5	EACH HANDHOLE
19.	4	EACH HEAVY-DUTY HANDHOLE
20.	2	EACH DOUBLE HANDHOLE
21.	122	FOOT TRENCH AND BACKFILL FOR ELECTRICAL WORK
22.	1	EACH FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL
23.	1,675	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C
24.	1,420	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
25.	1,635	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C
26.	621	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C
27.	2,144	FOOT ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR
28.	138	FOOT ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C
29.	1	EACH STEEL MAST ARM ASSEMBLY AND POLE 28 FT. (SPECIAL)
30.	1	EACH STEEL MAST ARM ASSEMBLY AND POLE 32 FT. (SPECIAL)
31.	1	EACH STEEL MAST ARM ASSEMBLY AND POLE 34 FT. (SPECIAL)
32.	1	EACH STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 34 FT. (SPECIAL)
33.	8	FOOT CONCRETE FOUNDATION, TYPE A
34.	4	FOOT CONCRETE FOUNDATION, TYPE C
35.	30	FOOT CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER
36.	30	FOOT CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER
37.	8	EACH SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED
38.	2	EACH SIGNAL HEAD, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED
39.	2	EACH SIGNAL HEAD, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED
40.	2	EACH SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST-ARM MOUNTED
41.	4	EACH PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
42.	2	EACH PEDESTRIAN SIGNAL HEAD, LED, 2-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
43.	10	EACH TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINIUM
44.	9	EACH INDUCTIVE LOOP DETECTOR
45.	682	FOOT DETECTOR LOOP, TYPE 1
46.	2	EACH LIGHT DETECTOR
47.	1	EACH LIGHT DETECTOR AMPLIFIER
48.	8	EACH PEDESTRIAN PUSH-BUTTON
49.	1	EACH TEMPORARY TRAFFIC SIGNAL INSTALLATION
50.	1	EACH REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
51.	5	EACH REMOVE EXISTING HANDHOLE
52.	9	EACH REMOVE EXISTING CONCRETE FOUNDATION
53.	1	EACH TEMPORARY TRAFFIC SIGNAL TIMINGS
54.	1	EACH SERVICE INSTALLATION POLE MOUNT
55.	1	EACH UNINTERRUPTIBLE POWER SUPPLY
56.	506	FOOT ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C
57.	359	FOOT ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED
58.	109	FOOT ELECTRIC CABLE IN CONDUIT, COAXIAL
59.	2	EACH TRAFFIC SIGNAL POST, 16 FOOT (SPECIAL)
60.	4	EACH LED INTERNALLY ILLUMINATED STREET NAME SIGN
61.	1	EACH REMOTE CONTROLLED VIDEO SYSTEM
62.	1	EACH LAYER II (DATA LINK) SWITCH
63.	1	EACH VIDEO ENCODER



CABLE PLAN



PHASE DESIGNATION DIAGRAM

L.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS				TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE INCAND. L.E.D.	% OPERATION	
SIGNAL (RED)	14	135	10	70.0
SIGNAL (YELLOW)	14	135	19	26.6
SIGNAL (GREEN)	14	135	11	61.6
ARROW	6	135	9	7.2
PED.SIGNAL	8	90	9	72.0
CONTROLLER	1	-	100	100.0
LUMINAIRE	2	-	250	250.0
L.E.D. ST. NAME SIGN	4	-	64	128.0
VIDEO SYSTEM	-	-	150	1.00
BATTERY BACKUP	1	-	25	25.0
TOTAL =				740.4

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'-11"-25'
TYPE E - M.ARM POLE	15	SIGNAL POST	2	BRACKET MOUNTED	13
		CONTROLLER CAB.		PED. PUSHBUTTON	4
		FIBER OPTIC	13	ELECTRIC SERVICE	13.5
		ELECTRIC SERVICE	1	SERVICE TO GROUND	13.5
		GROUND CABLE		POST MOUNTED	6

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN (ADDRESS) 100 N. M.L.K. JR. AVENUE (ADDRESS) WAUKEGAN, IL
 ENERGY SUPPLY - CONTACT: GERRY GRANDBERRY (PHONE: (847) 816-5463) COMPANY: COM-ED, LIBERTYVILLE

FILE NAME = 4136.900-TR2.dwg
 USER NAME = GHA
 PLOT SCALE = 1" = .0833'
 PLOT DATE = 3/10/10

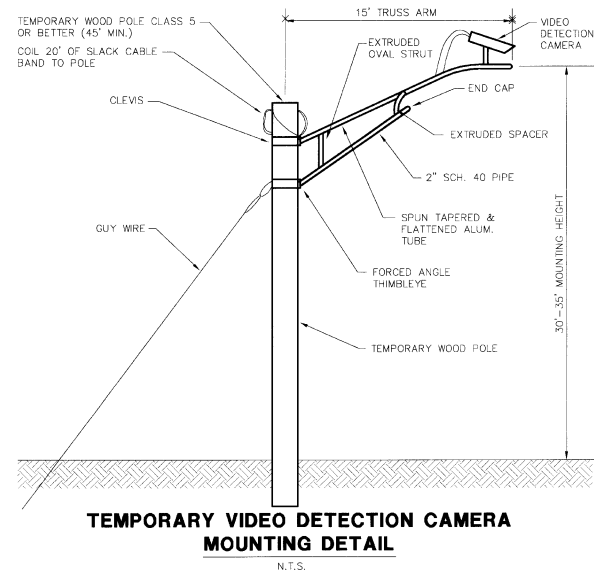
DESIGNED - JRD
 DRAWN - ZCW
 CHECKED - DPB
 DATE - 3/10/10



CABLE PLAN, PHASE DESIGNATION DIAGRAM AND SCHEDULE OF QUANTITIES
 GRAND AVENUE AT WEST STREET
 SCALE: NONE SHEET NO. OF SHEETS STA. TO STA.

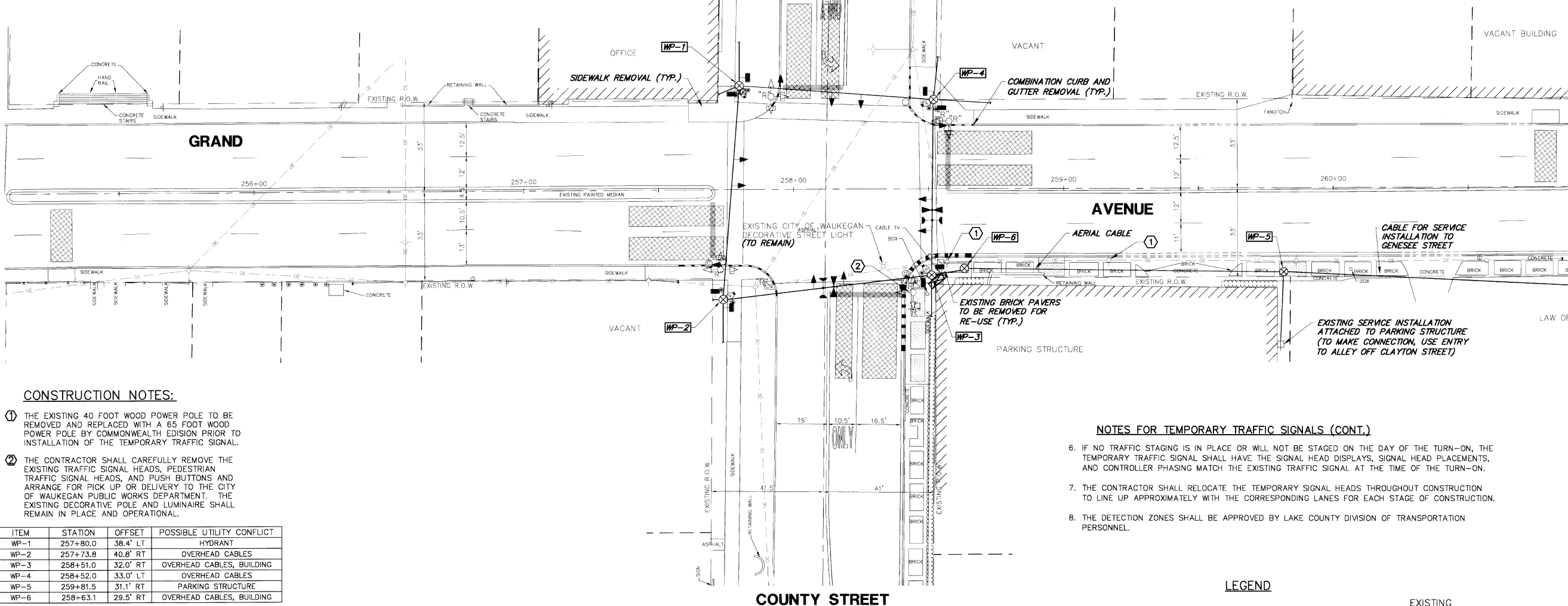
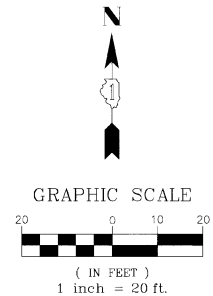
F&P RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	08-00279-00-TL	LAKE	64	36
CONTRACT #:			63436	
ILLINOIS FED. AID PROJECT				

GHA #4136.800



NOTES FOR TEMPORARY TRAFFIC SIGNALS

1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY ECONOLITE CONTROLLERS SUPPLIED BY ONE OF THE COUNTY APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY THE COUNTY, INSTALLED IN A NEMA TS1 OR TS2 CABINET.
3. ALL TRAFFIC SIGNAL SECTIONS AND PEDESTRIAN SIGNAL SECTIONS SHALL BE 12". HEADS SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE OR AT LOCATIONS ILLUSTRATED ON THE PLANS FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
4. ALL EXISTING STREET NAME, INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.
5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM. ANY TEMPORARY TRAFFIC SIGNAL WITHIN AN ICON SYSTEM SHALL BE NTCIP COMPATIBLE AND SHALL BE INTERCONNECTED TO THAT SYSTEM.



CONSTRUCTION NOTES:

- 1 THE EXISTING 40 FOOT WOOD POWER POLE TO BE REMOVED AND REPLACED WITH A 65 FOOT WOOD POWER POLE BY COMMONWEALTH EDISON PRIOR TO INSTALLATION OF THE TEMPORARY TRAFFIC SIGNAL.
- 2 THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING TRAFFIC SIGNAL HEADS, PEDESTRIAN TRAFFIC SIGNAL HEADS, AND PUSH BUTTONS AND ARRANGE FOR PICK UP OR DELIVERY TO THE CITY OF WAUKEGAN PUBLIC WORKS DEPARTMENT. THE EXISTING DECORATIVE POLE AND LUMINAIRE SHALL REMAIN IN PLACE AND OPERATIONAL.

ITEM	STATION	OFFSET	POSSIBLE UTILITY CONFLICT
WP-1	257+80.0	38.4' LT	HYDRANT
WP-2	257+73.8	40.8' RT	OVERHEAD CABLES
WP-3	258+51.0	32.0' RT	OVERHEAD CABLES, BUILDING
WP-4	258+52.0	33.0' LT	OVERHEAD CABLES
WP-5	259+81.5	31.1' RT	PARKING STRUCTURE
WP-6	258+63.1	29.5' RT	OVERHEAD CABLES, BUILDING

NOTES FOR TEMPORARY TRAFFIC SIGNALS (CONT.)

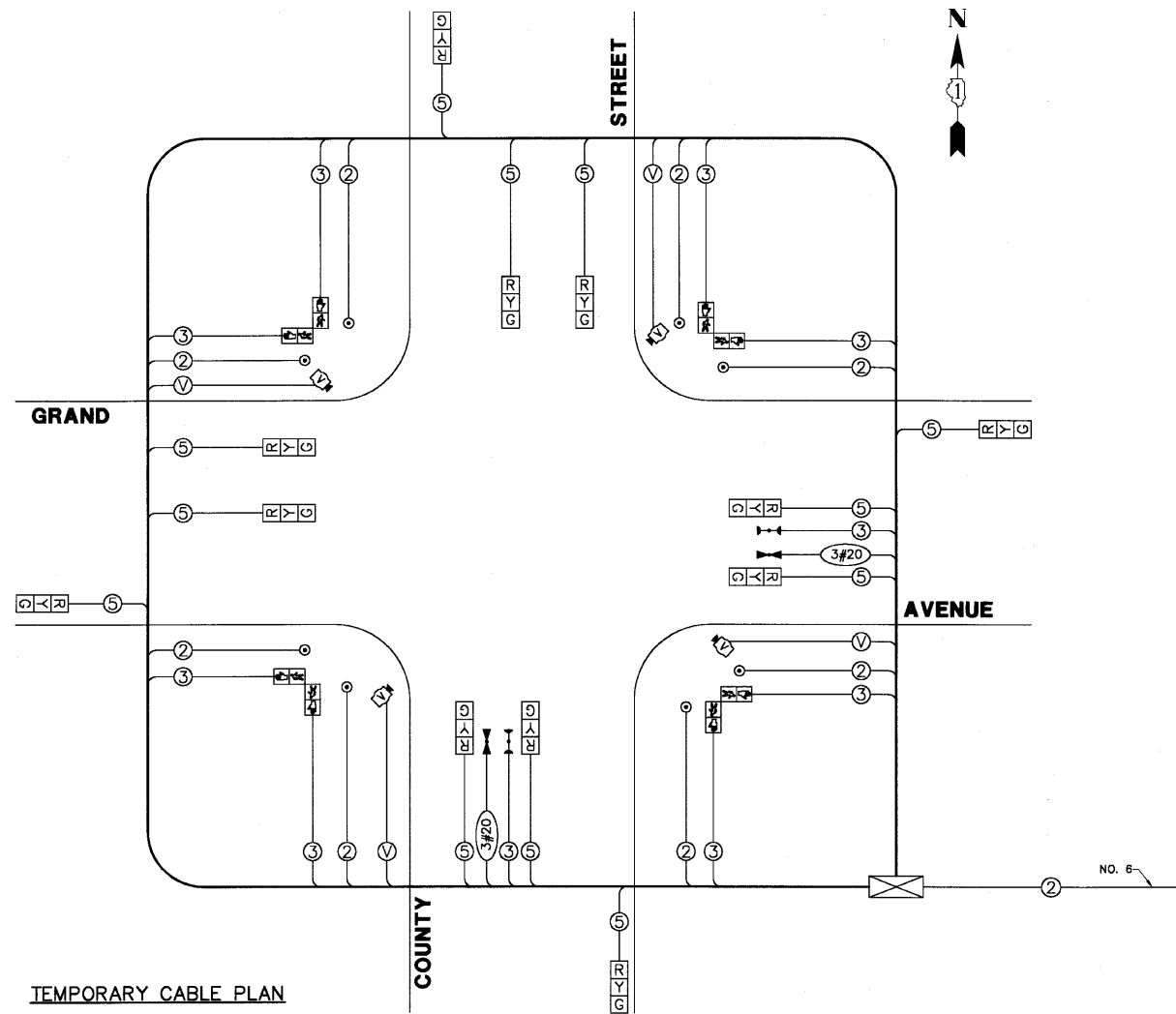
6. IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN-ON, THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS, AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL AT THE TIME OF THE TURN-ON.
7. THE CONTRACTOR SHALL RELOCATE THE TEMPORARY SIGNAL HEADS THROUGHOUT CONSTRUCTION TO LINE UP APPROXIMATELY WITH THE CORRESPONDING LANES FOR EACH STAGE OF CONSTRUCTION.
8. THE DETECTION ZONES SHALL BE APPROVED BY LAKE COUNTY DIVISION OF TRANSPORTATION PERSONNEL.

LEGEND

- EXISTING
- STREET NAME SIGN
 - COMBINATION CONCRETE CURB & GUTTER REMOVAL
 - SIDEWALK REMOVAL
 - BRICK PAVER REMOVAL

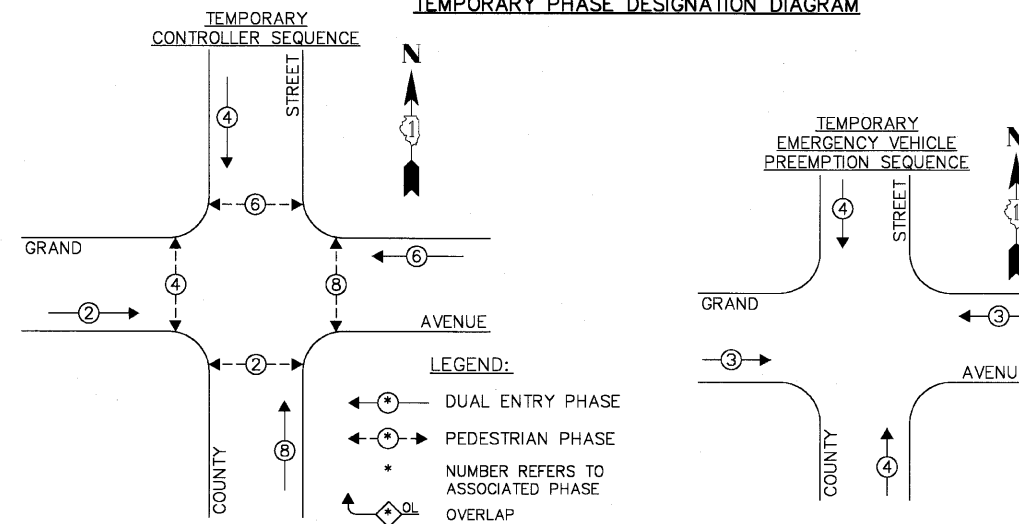
THE FOLLOWING ITEMS SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE DISPOSED OF BY THEM OUTSIDE THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.

- 1 EACH CABINET AND CONTROLLER (COMPLETE)
- 8 EACH SIGNAL HEAD, 3-SECTION
- 6 EACH PEDESTRIAN SIGNAL HEAD
- 4 EACH TRAFFIC SIGNAL POST
- 1 EACH SERVICE INSTALLATION

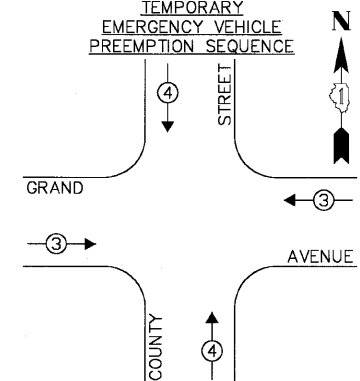


TEMPORARY CABLE PLAN

TEMPORARY PHASE DESIGNATION DIAGRAM



TEMPORARY EMERGENCY VEHICLE PREEMPTION SEQUENCE



TEMPORARY EMERGENCY VEHICLE PREEMPTORS	
EMERGENCY VEHICLE PREEMPTOR	3 4
MOVEMENT	← → ↑ ↓

L.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE INCAND.	L.E.D.	% OPERATION	
SIGNAL (RED)	12	135	10	0.50	60.0
SIGNAL (YELLOW)	12	135	19	0.10	22.8
SIGNAL (GREEN)	12	135	11	0.40	52.8
ARROW	-	135	9	0.10	-
PEDESTAL SIGNAL	8	90	9	1.00	72.0
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	-	-	25	1.00	-
TOTAL =					307.6

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN
 (ADDRESS) 100 N. M.L.K. JR. AVENUE
 (ADDRESS) WAUKEGAN, IL
 ENERGY SUPPLY - CONTACT: GERRY GRANDBERRY
 PHONE: (847) 816-5463
 COMPANY: COM-ED, LIBERTYVILLE

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISED -
	PLOT DATE = 3/10/10	CHECKED - DPB	REVISED -
		DATE - 3/10/10	REVISED -



TEMPORARY CABLE PLAN AND PHASE DESIGNATION DIAGRAM
 GRAND AVENUE AT COUNTY STREET
 SCALE: NONE SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE. 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 38
CONTRACT # 63436			ILLINOIS FED. AID PROJECT	

GHA #4136.800

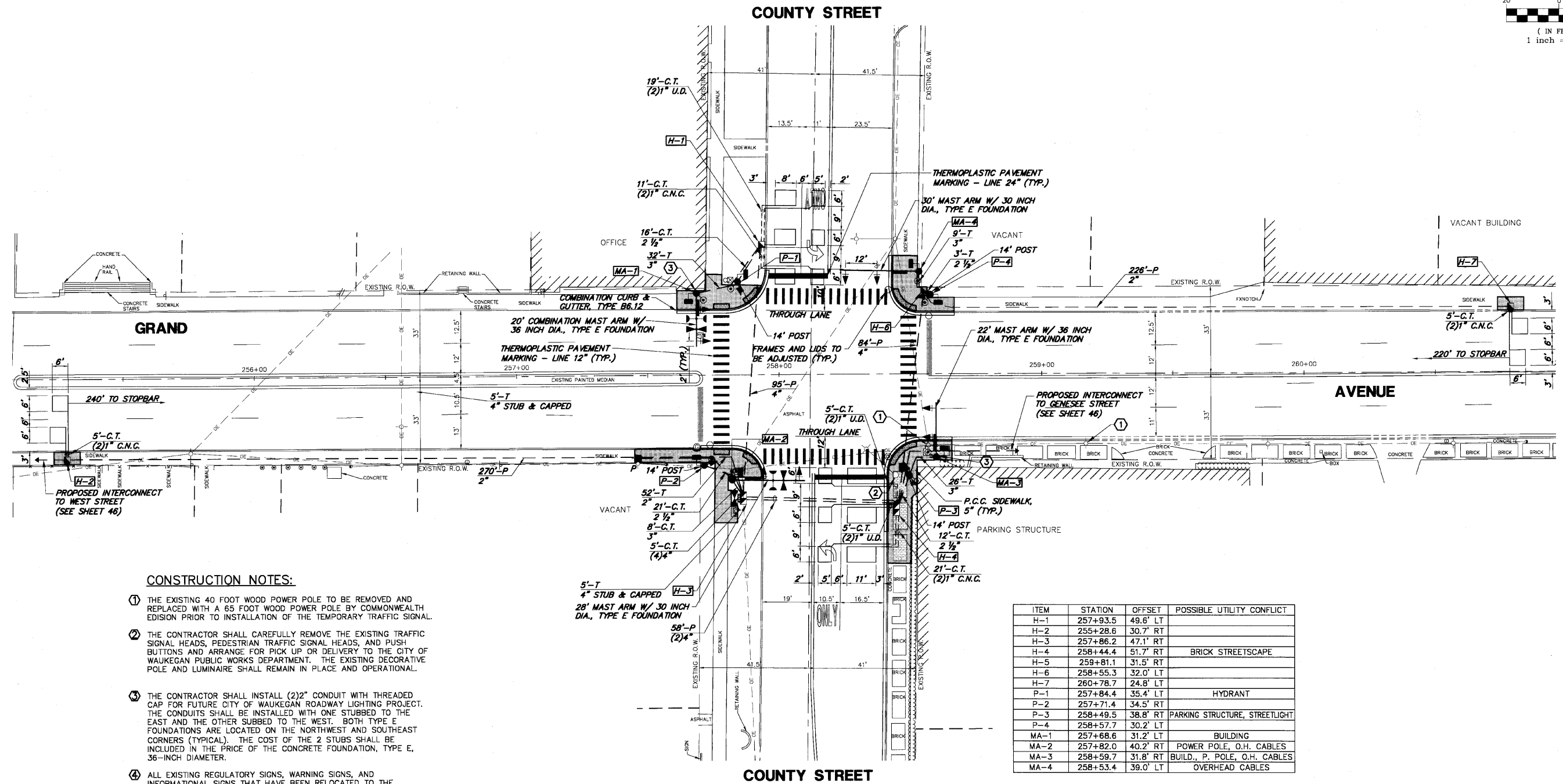
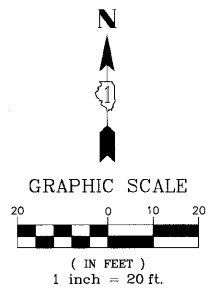
LEGEND

- STREET NAME SIGN
- COMBINATION CONCRETE CURB & GUTTER, TYPE B-6.12 OR TYPE B-6.24
- PORTLAND CEMENT CONCRETE SIDEWALK, 5"
- DETECTABLE WARNING
- LED ILLUMINATED STREET NAME SIGN
- BRICK PAVER REINSTALLATION

PROPOSED



Restoration of Work Area. Restoration of the traffic signal work area shall be incidental to the related pay items such as foundation, conduit, handhole, trench and backfill, etc., and no extra compensation shall be allowed. All roadway surfaces such as shoulders, medians, sidewalks, pavement, etc. shall be replaced in kind. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded in accordance with Standard Specifications 252 and 250 respectively.



CONSTRUCTION NOTES:

- 1 THE EXISTING 40 FOOT WOOD POWER POLE TO BE REMOVED AND REPLACED WITH A 65 FOOT WOOD POWER POLE BY COMMONWEALTH EDISON PRIOR TO INSTALLATION OF THE TEMPORARY TRAFFIC SIGNAL.
- 2 THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING TRAFFIC SIGNAL HEADS, PEDESTRIAN TRAFFIC SIGNAL HEADS, AND PUSH BUTTONS AND ARRANGE FOR PICK UP OR DELIVERY TO THE CITY OF WAUKEGAN PUBLIC WORKS DEPARTMENT. THE EXISTING DECORATIVE POLE AND LUMINAIRE SHALL REMAIN IN PLACE AND OPERATIONAL.
- 3 THE CONTRACTOR SHALL INSTALL (2)2" CONDUIT WITH THREADED CAP FOR FUTURE CITY OF WAUKEGAN ROADWAY LIGHTING PROJECT. THE CONDUITS SHALL BE INSTALLED WITH ONE STUBBED TO THE EAST AND THE OTHER STUBBED TO THE WEST. BOTH TYPE E FOUNDATIONS ARE LOCATED ON THE NORTHWEST AND SOUTHEAST CORNERS (TYPICAL). THE COST OF THE 2 STUBS SHALL BE INCLUDED IN THE PRICE OF THE CONCRETE FOUNDATION, TYPE E, 36-INCH DIAMETER.
- 4 ALL EXISTING REGULATORY SIGNS, WARNING SIGNS, AND INFORMATIONAL SIGNS THAT HAVE BEEN RELOCATED TO THE TEMPORARY TRAFFIC SIGNALS SHALL BE RELOCATED SECURELY TO THE PERMANENT TRAFFIC SIGNAL MAST ARM POLE OR POST AS DIRECTED BY THE ENGINEER. THE COST FOR THE RELOCATION OF THE EXISTING SIGNS SHALL BE INCLUDED IN THE PRICE FOR TRAFFIC CONTROL AND PROTECTION (SPECIAL).

ITEM	STATION	OFFSET	POSSIBLE UTILITY CONFLICT
H-1	257+93.5	49.6' LT	
H-2	255+28.6	30.7' RT	
H-3	257+86.2	47.1' RT	
H-4	258+44.4	51.7' RT	BRICK STREETSCAPE
H-5	259+81.1	31.5' RT	
H-6	258+55.3	32.0' LT	
H-7	260+78.7	24.8' LT	
P-1	257+84.4	35.4' LT	HYDRANT
P-2	257+71.4	34.5' RT	
P-3	258+49.5	38.8' RT	PARKING STRUCTURE, STREETLIGHT
P-4	258+57.7	30.2' LT	
MA-1	257+68.6	31.2' LT	BUILDING
MA-2	257+82.0	40.2' RT	POWER POLE, O.H. CABLES
MA-3	258+59.7	31.8' RT	BUILD., P. POLE, O.H. CABLES
MA-4	258+53.4	39.0' LT	OVERHEAD CABLES

NOTE: THE LUMINAIRE ARM SHALL BE TWENTY (20) FEET IN LENGTH.

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

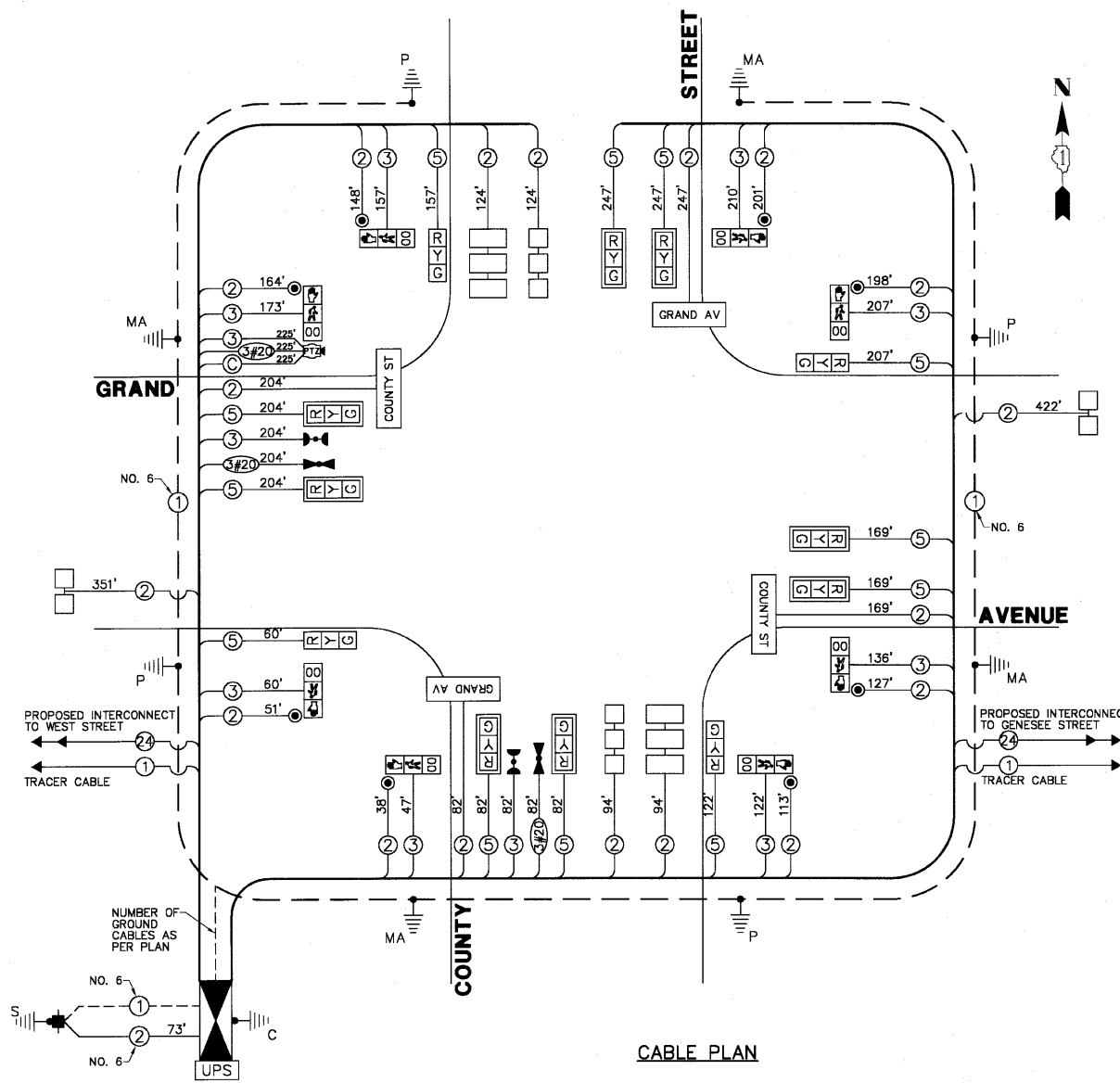
GHA #4136.800

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -		TRAFFIC SIGNAL MODERNIZATION PLAN			F&P RTE. 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 39
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISED -		GRAND AVENUE AT COUNTY STREET							
	PLOT DATE = 3/10/10	CHECKED - DPB	REVISED -		SCALE: 1"=20'			SHEET NO. OF SHEETS	STA. TO STA.	CONTRACT #: 63436		
		DATE - 3/10/10	REVISED -		ILLINOIS FED. AID PROJECT							

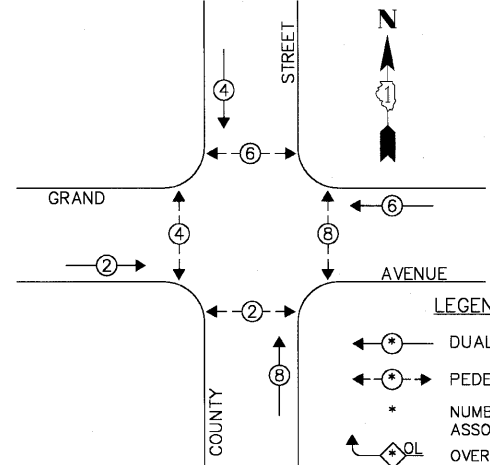
SCHEDULE OF QUANTITIES

GRAND AVENUE AT COUNTY STREET TRAFFIC SIGNAL MODERNIZATION

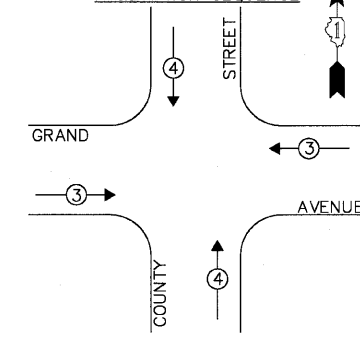
NO.	QUANT.	UNIT	DESCRIPTION
1.	3	CU YD	EARTH EXCAVATION
2.	10	SQ YD	AGGREGATE BASE COURSE, TYPE B 4"
3.	1,000	SQ FT	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH
4.	120	SQ FT	DETECTABLE WARNINGS
5.	195	FOOT	COMBINATION CURB AND GUTTER REMOVAL
6.	950	SQ FT	SIDEWALK REMOVAL
7.	4	EACH	FRAMES AND LIDS TO BE ADJUSTED
8.	195	FOOT	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12
9.	55	FOOT	THERMOPLASTIC PAVEMENT MARKING - LINE 6"
10.	55	FOOT	THERMOPLASTIC PAVEMENT MARKING - LINE 24"
11.	325	SQ FT	PAVEMENT MARKING REMOVAL
12.	52	FOOT	CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL
13.	52	FOOT	CONDUIT IN TRENCH, 2-1/2" DIA., GALVANIZED STEEL
14.	75	FOOT	CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL
15.	25	FOOT	CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL
16.	496	FOOT	CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL
17.	295	FOOT	CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL
18.	4	EACH	HANDHOLE
19.	2	EACH	DOUBLE HANDHOLE
20.	135	FOOT	TRENCH AND BACKFILL FOR ELECTRICAL WORK
21.	1	EACH	FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL
22.	1,742	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C
23.	1,623	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
24.	1,950	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C
25.	1,209	FOOT	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR
26.	73	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C
27.	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE 20 FT. (SPECIAL)
28.	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE 22 FT. (SPECIAL)
29.	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE 30 FT. (SPECIAL)
30.	1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 20 FT. (SPECIAL)
31.	8	FOOT	CONCRETE FOUNDATION, TYPE A
32.	4	FOOT	CONCRETE FOUNDATION, TYPE C
33.	30	FOOT	CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER
34.	30	FOOT	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER
35.	8	EACH	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED
36.	4	EACH	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED
37.	8	EACH	PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
38.	8	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINIUM
39.	6	EACH	INDUCTIVE LOOP DETECTOR
40.	586	FOOT	DETECTOR LOOP, TYPE 1
41.	2	EACH	LIGHT DETECTOR
42.	1	EACH	LIGHT DETECTOR AMPLIFIER
43.	8	EACH	PEDESTRIAN PUSH-BUTTON
44.	1	EACH	TEMPORARY TRAFFIC SIGNAL INSTALLATION
45.	1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
46.	5	EACH	REMOVE EXISTING HANDHOLE
47.	5	EACH	REMOVE EXISTING CONCRETE FOUNDATION
48.	1	EACH	TEMPORARY TRAFFIC SIGNAL TIMINGS
49.	1	EACH	SERVICE INSTALLATION POLE MOUNT
50.	1	EACH	UNINTERRUPTIBLE POWER SUPPLY
51.	734	FOOT	ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C
52.	511	FOOT	ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED
53.	200	SQ FT	BRICK PAVER REMOVAL AND REPLACEMENT
54.	225	FOOT	ELECTRIC CABLE IN CONDUIT, COAXIAL
55.	4	EACH	TRAFFIC SIGNAL POST, 14 FOOT (SPECIAL)
56.	4	EACH	LED INTERNALLY ILLUMINATED STREET NAME SIGN
57.	1	EACH	REMOTE CONTROLLED VIDEO SYSTEM
58.	1	EACH	LAYER II (DATA LINK) SWITCH
59.	1	EACH	VIDEO ENCODER



CONTROLLER SEQUENCE



EMERGENCY VEHICLE PREEMPTION SEQUENCE



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

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

PHASE DESIGNATION DIAGRAM

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'-1'-2"
TYPE E - M.ARM POLE	15	SIGNAL POST	2	BRACKET MOUNTED	13
		CONTROL CAB.	1	PED. PUSHBUTTON	4
		FIBER OPTIC	13	ELECTRIC SERVICE	13.5
		ELECTRIC SERVICE	1	SERVICE TO GROUND	13.5
		GROUND CABLE	1	POST MOUNTED	6

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

L.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE INCAND.	L.E.D.	% OPERATION	
SIGNAL (RED)	12	135	10	0.50	60.0
SIGNAL (YELLOW)	12	135	19	0.10	22.8
SIGNAL (GREEN)	12	135	11	0.40	52.8
ARROW	-	135	9	0.10	72.0
PED. SIGNAL	8	90	9	1.00	100.0
CONTROLLER	1	-	100	0.50	100.0
LUMINAIRE	-	250	9	0.50	72.0
L.E.D. ST. NAME SIGN	4	-	64	0.50	128.0
VIDEO SYSTEM	1	-	150	1.00	150.0
BATTERY BACKUP	1	-	25	1.00	25.0
TOTAL =					610.6

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN (ADDRESS) 100 N. M.L.K. JR. AVENUE (ADDRESS) WAUKEGAN, IL
 ENERGY SUPPLY - CONTACT: GERRY GRANDBERRY (PHONE) (847) 816-5463 (COMPANY) COM-ED, LIBERTYVILLE

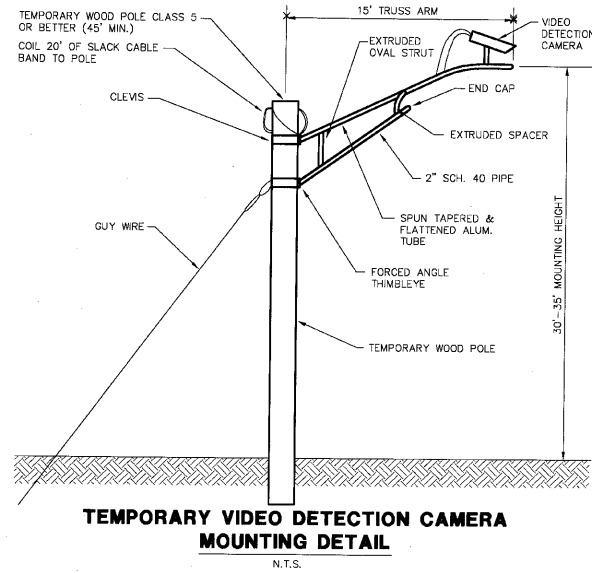
FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -
		DRAWN - ZCW	REVISED -
		CHECKED - DPB	REVISED -
		DATE - 3/10/10	REVISED -



CABLE PLAN, PHASE DESIGNATION DIAGRAM AND SCHEDULE OF QUANTITIES
 GRAND AVENUE AT COUNTY STREET
 SCALE: NONE SHEET NO. OF SHEETS STA. TO STA.

FAP RTE 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 40
CONTRACT # 63436			ILLINOIS FED. AID PROJECT	

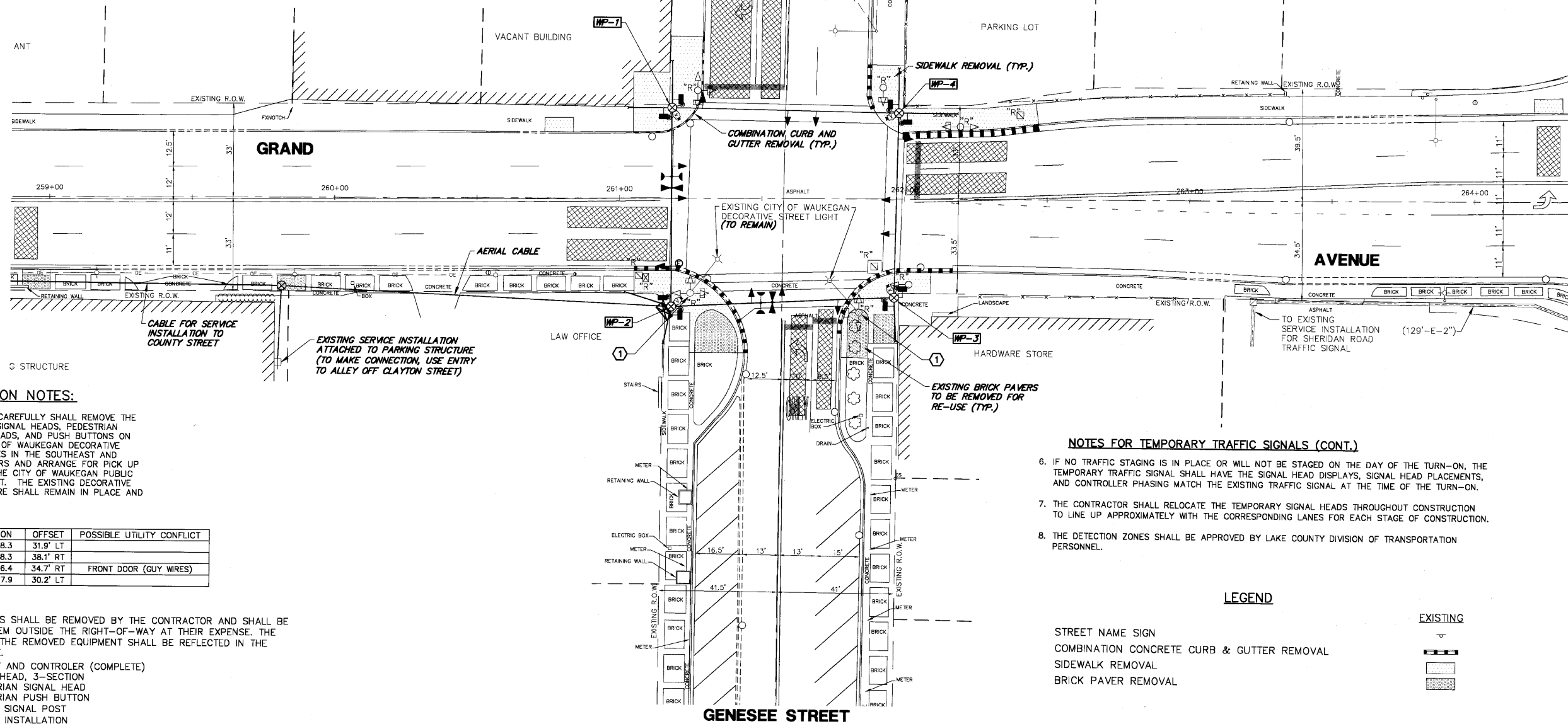
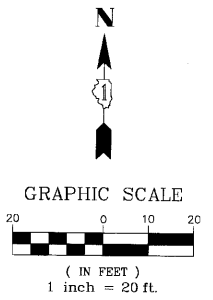
GHA #4136.800



GENESEE STREET

NOTES FOR TEMPORARY TRAFFIC SIGNALS

1. ALL CONTROL EQUIPMENT INCLUDING EMERGENCY PRE-EMPTION AND COMMUNICATION DEVICES FOR THE TEMPORARY TRAFFIC SIGNAL(S) SHALL BE FURNISHED BY THE CONTRACTOR.
2. ONLY ECONOLITE CONTROLLERS SUPPLIED BY ONE OF THE COUNTY APPROVED CLOSED LOOP EQUIPMENT MANUFACTURERS WILL BE APPROVED FOR USE AT TEMPORARY SIGNAL LOCATIONS. ALL CONTROLLERS USED FOR TEMPORARY TRAFFIC SIGNALS SHALL BE FULLY ACTUATED NEMA MICROPROCESSOR BASED WITH RS232 DATA ENTRY PORTS COMPATIBLE WITH EXISTING MONITORING SOFTWARE APPROVED BY THE COUNTY, INSTALLED IN A NEMA TS1 OR TS2 CABINET.
3. ALL TRAFFIC SIGNAL SECTIONS AND PEDESTRIAN SIGNAL SECTIONS SHALL BE 12". HEADS SHALL BE PLACED AS INDICATED ON THE TEMPORARY TRAFFIC SIGNAL PLAN OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ENOUGH CABLE SLACK TO RELOCATE HEADS TO ANY POSITION ON THE SPAN WIRE OR AT LOCATIONS ILLUSTRATED ON THE PLANS FOR CONSTRUCTION STAGING. THE TEMPORARY TRAFFIC SIGNAL SHALL REMAIN IN OPERATION DURING ALL SIGNAL HEAD RELOCATIONS. EACH TEMPORARY TRAFFIC SIGNAL HEAD SHALL HAVE ITS OWN CABLE FROM THE CONTROLLER CABINET TO THE SIGNAL HEAD.
4. ALL EXISTING STREET NAME, INTERSECTION REGULATORY SIGNS SHALL BE REMOVED FROM EXISTING POLES, RELOCATED AND SECURELY FASTENED TO THE SIGNAL SPAN WIRE OR WOOD POLE AS DIRECTED BY THE ENGINEER.
5. ANY TEMPORARY SIGNAL WITHIN AN EXISTING CLOSED LOOP TRAFFIC SIGNAL SYSTEM SHALL BE INTERCONNECTED TO THAT SYSTEM. ANY TEMPORARY TRAFFIC SIGNAL WITHIN AN ICON SYSTEM SHALL BE NTCIP COMPATIBLE AND SHALL BE INTERCONNECTED TO THAT SYSTEM.



CONSTRUCTION NOTES:

1. THE CONTRACTOR CAREFULLY SHALL REMOVE THE EXISTING TRAFFIC SIGNAL HEADS, PEDESTRIAN TRAFFIC SIGNAL HEADS, AND PUSH BUTTONS ON THE EXISTING CITY OF WAUKEGAN DECORATIVE STREET LIGHT POLES IN THE SOUTHEAST AND SOUTHWEST CORNERS AND ARRANGE FOR PICK UP OR DELIVERY TO THE CITY OF WAUKEGAN PUBLIC WORKS DEPARTMENT. THE EXISTING DECORATIVE POLE AND LUMINAIRE SHALL REMAIN IN PLACE AND OPERATIONAL.

ITEM	STATION	OFFSET	POSSIBLE UTILITY CONFLICT
WP-1	261+18.3	31.9' LT	
WP-2	261+18.3	38.1' RT	
WP-3	261+96.4	34.7' RT	FRONT DOOR (GUY WIRES)
WP-4	261+97.9	30.2' LT	

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

- 1 EACH CABINET AND CONTROLLER (COMPLETE)
- 7 EACH SIGNAL HEAD, 3-SECTION
- 4 EACH PEDESTRIAN SIGNAL HEAD
- 4 EACH PEDESTRIAN PUSH BUTTON
- 4 EACH TRAFFIC SIGNAL POST
- 1 EACH SERVICE INSTALLATION

NOTES FOR TEMPORARY TRAFFIC SIGNALS (CONT.)

6. IF NO TRAFFIC STAGING IS IN PLACE OR WILL NOT BE STAGED ON THE DAY OF THE TURN-ON, THE TEMPORARY TRAFFIC SIGNAL SHALL HAVE THE SIGNAL HEAD DISPLAYS, SIGNAL HEAD PLACEMENTS, AND CONTROLLER PHASING MATCH THE EXISTING TRAFFIC SIGNAL AT THE TIME OF THE TURN-ON.
7. THE CONTRACTOR SHALL RELOCATE THE TEMPORARY SIGNAL HEADS THROUGHOUT CONSTRUCTION TO LINE UP APPROXIMATELY WITH THE CORRESPONDING LANES FOR EACH STAGE OF CONSTRUCTION.
8. THE DETECTION ZONES SHALL BE APPROVED BY LAKE COUNTY DIVISION OF TRANSPORTATION PERSONNEL.

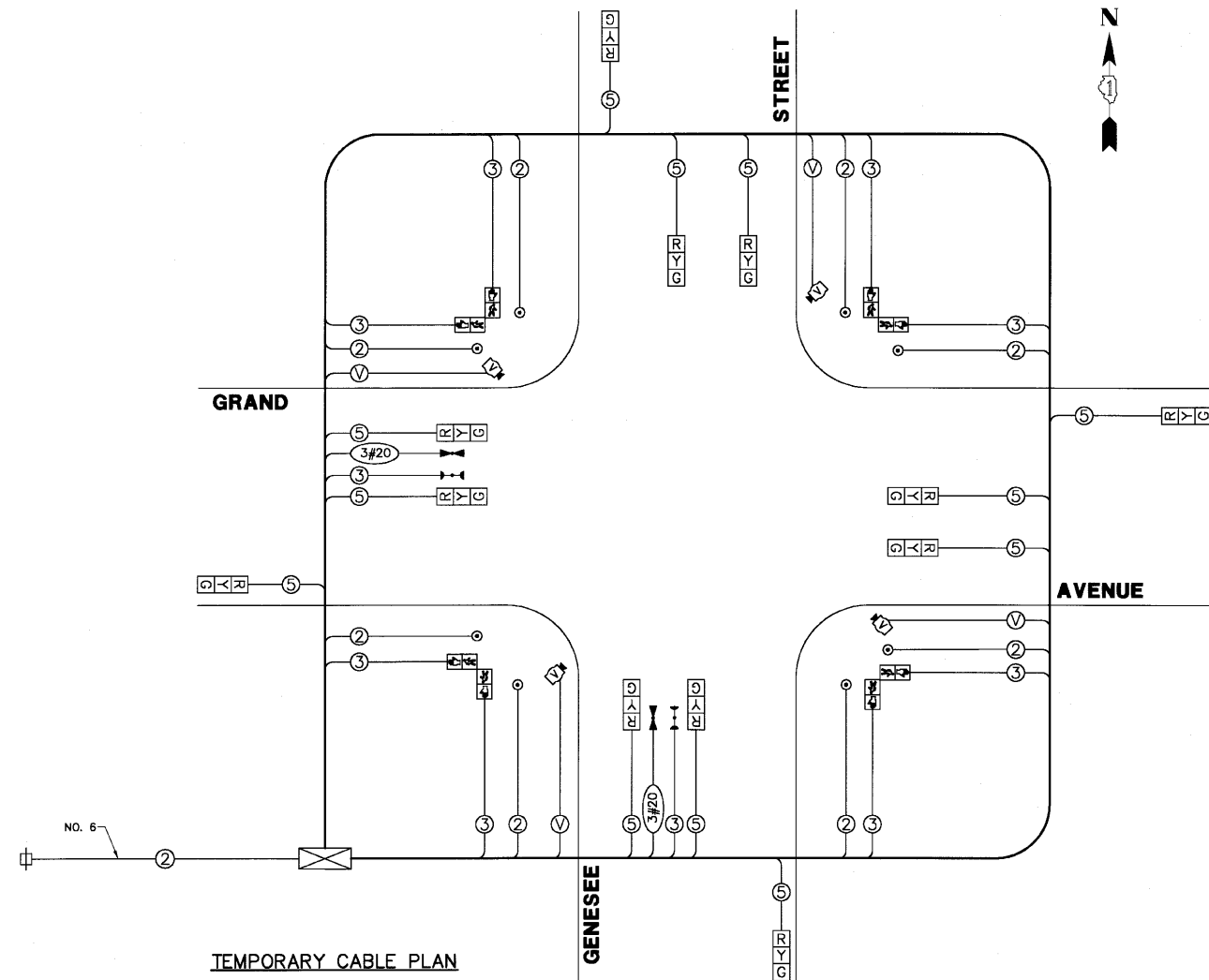
LEGEND

- STREET NAME SIGN
- COMBINATION CONCRETE CURB & GUTTER REMOVAL
- SIDEWALK REMOVAL
- BRICK PAVER REMOVAL

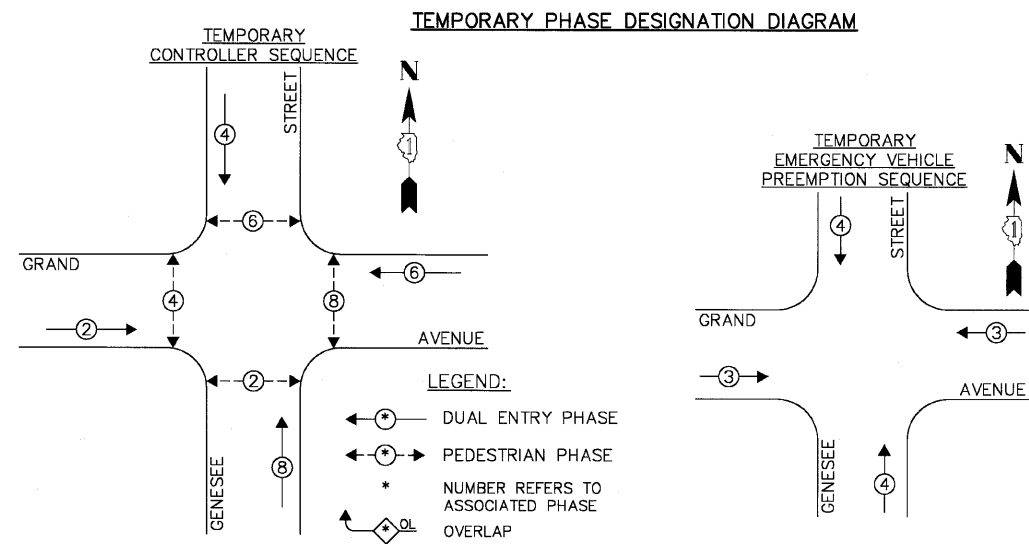
EXISTING



FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -	Lake County Division of Transportation	TEMPORARY TRAFFIC SIGNAL INSTALLATION AND REMOVAL OF EXISTING TRAFFIC SIGNAL EQUIPMENT GRAND AVENUE AT GENESEE STREET	F&P RITE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		DRAWN - ZCW	REVISED -			541	08-00279-00-TL	LAKE	64	41	
		CHECKED - DPB	REVISED -			SCALE: 1"=20'		SHEET NO. OF SHEETS STA. TO STA.		CONTRACT #: 63436	
		DATE - 3/10/10	REVISED -			GHA #4136.800 ILLINOIS FED. AID PROJECT					



TEMPORARY CABLE PLAN



TEMPORARY EMERGENCY VEHICLE PREEMPTORS			
EMERGENCY VEHICLE PREEMPTOR	3	4	
MOVEMENT	←	→	↑ ↓

L.C.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE	INCAND.	L.E.D.	% OPERATION
SIGNAL (RED)	12	135	10	0.50	60.0
SIGNAL (YELLOW)	12	135	19	0.10	22.8
SIGNAL (GREEN)	12	135	11	0.40	52.8
ARROW	-	135	9	0.10	-
PED. SIGNAL	8	90	9	1.00	72.0
CONTROLLER	1	-	100	1.00	100.0
LUMINAIRE	-	-	250	0.50	-
L.E.D. ST. NAME SIGN	-	-	64	0.50	-
VIDEO SYSTEM	1	-	150	1.00	150.0
BATTERY BACKUP	-	-	25	1.00	-
TOTAL =					457.6

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN
 (ADDRESS) 100 N. M.L.K. JR. AVENUE
 (ADDRESS) WAUKEGAN, IL
 ENERGY SUPPLY - CONTACT: GERRY GRANDBERRY
 PHONE: (847) 816-5463
 COMPANY: COM-ED, LIBERTYVILLE

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISED -
	PLOT DATE = 3/10/10	CHECKED - DPB	REVISED -
		DATE - 3/10/10	REVISED -



TEMPORARY CABLE PLAN AND PHASE DESIGNATION DIAGRAM			
GRAND AVENUE AT GENESEE STREET			
SCALE: NONE	SHEET NO. OF SHEETS	STA.	TO STA.

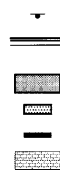
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	08-00279-00-TL	LAKE	64	42
CONTRACT #:			63436	

GHA #4136.800
ILLINOIS FED. AID PROJECT

LEGEND

- STREET NAME SIGN
- COMBINATION CONCRETE CURB & GUTTER, TYPE B-6.12 OR TYPE B-6.24
- PORTLAND CEMENT CONCRETE SIDEWALK, 5"
- DETECTABLE WARNING
- LED ILLUMINATED STREET NAME SIGN
- BRICK PAVEMENT REINSTALLATION

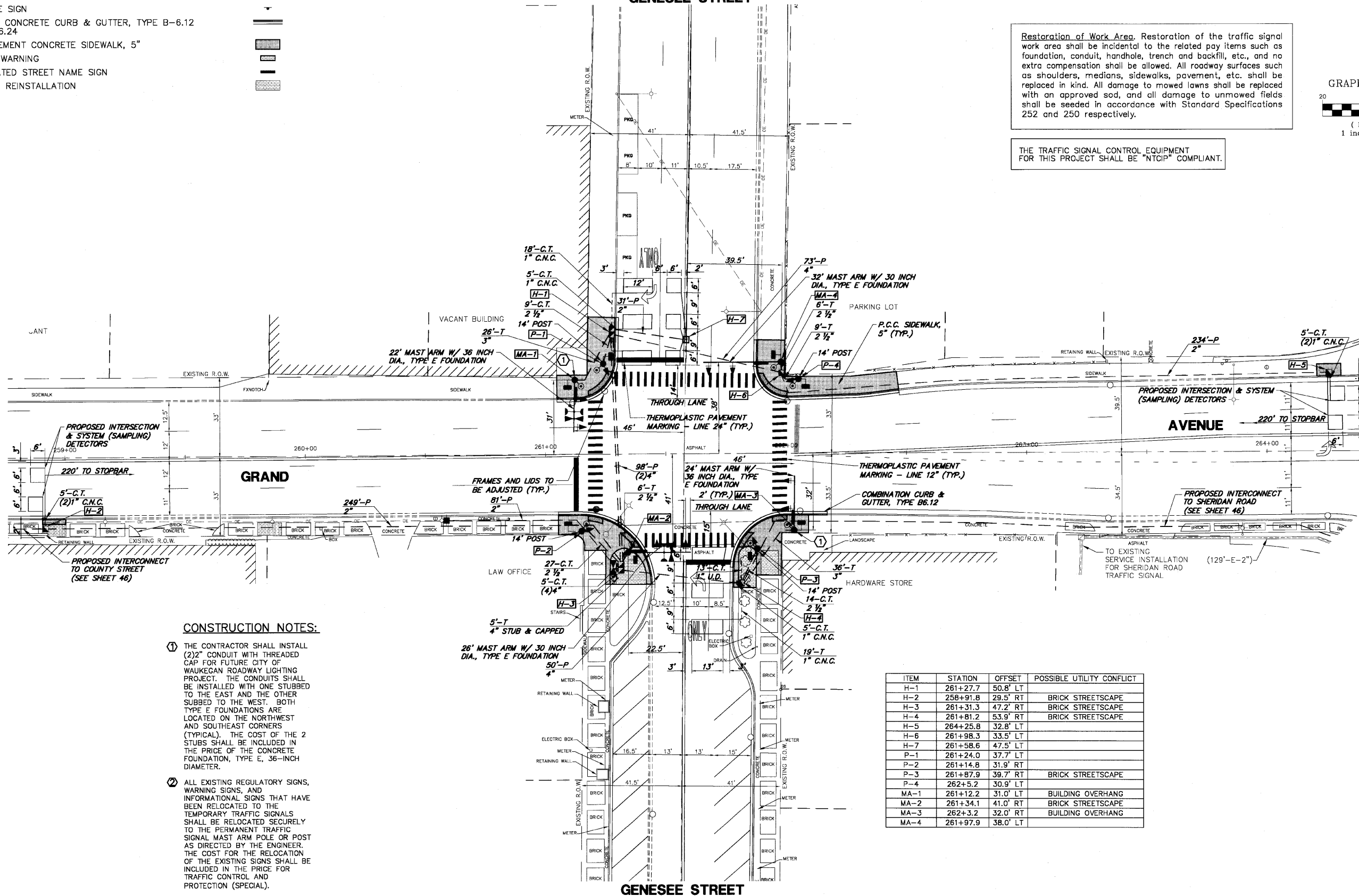
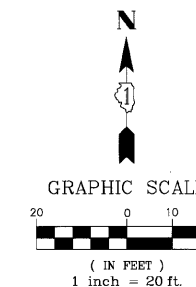
PROPOSED



GENESEE STREET

Restoration of Work Area. Restoration of the traffic signal work area shall be incidental to the related pay items such as foundation, conduit, handhole, trench and backfill, etc., and no extra compensation shall be allowed. All roadway surfaces such as shoulders, medians, sidewalks, pavement, etc. shall be replaced in kind. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded in accordance with Standard Specifications 252 and 250 respectively.

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



CONSTRUCTION NOTES:

- ① THE CONTRACTOR SHALL INSTALL (2)2" CONDUIT WITH THREADED CAP FOR FUTURE CITY OF WAUKEGAN ROADWAY LIGHTING PROJECT. THE CONDUITS SHALL BE INSTALLED WITH ONE STUBBED TO THE EAST AND THE OTHER STUBBED TO THE WEST. BOTH TYPE E FOUNDATIONS ARE LOCATED ON THE NORTHWEST AND SOUTHEAST CORNERS (TYPICAL). THE COST OF THE 2 STUBS SHALL BE INCLUDED IN THE PRICE OF THE CONCRETE FOUNDATION, TYPE E, 36-INCH DIAMETER.
- ② ALL EXISTING REGULATORY SIGNS, WARNING SIGNS, AND INFORMATIONAL SIGNS THAT HAVE BEEN RELOCATED TO THE TEMPORARY TRAFFIC SIGNALS SHALL BE RELOCATED SECURELY TO THE PERMANENT TRAFFIC SIGNAL MAST ARM POLE OR POST AS DIRECTED BY THE ENGINEER. THE COST FOR THE RELOCATION OF THE EXISTING SIGNS SHALL BE INCLUDED IN THE PRICE FOR TRAFFIC CONTROL AND PROTECTION (SPECIAL).

ITEM	STATION	OFFSET	POSSIBLE UTILITY CONFLICT
H-1	261+27.7	50.8' LT	
H-2	258+91.8	29.5' RT	BRICK STREETSCAPE
H-3	261+31.3	47.2' RT	BRICK STREETSCAPE
H-4	261+81.2	53.9' RT	BRICK STREETSCAPE
H-5	264+25.8	32.8' LT	
H-6	261+98.3	33.5' LT	
H-7	261+58.6	47.5' LT	
P-1	261+24.0	37.7' LT	
P-2	261+14.8	31.9' RT	
P-3	261+87.9	39.7' RT	BRICK STREETSCAPE
P-4	262+5.2	30.9' LT	
MA-1	261+12.2	31.0' LT	BUILDING OVERHANG
MA-2	261+34.1	41.0' RT	BRICK STREETSCAPE
MA-3	262+3.2	32.0' RT	BUILDING OVERHANG
MA-4	261+97.9	38.0' LT	

GHA #4136.800

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = 1" = .0833'	CHECKED - DPB	REVISED -
	PLOT DATE = 3/10/10	DATE - 3/10/10	REVISED -



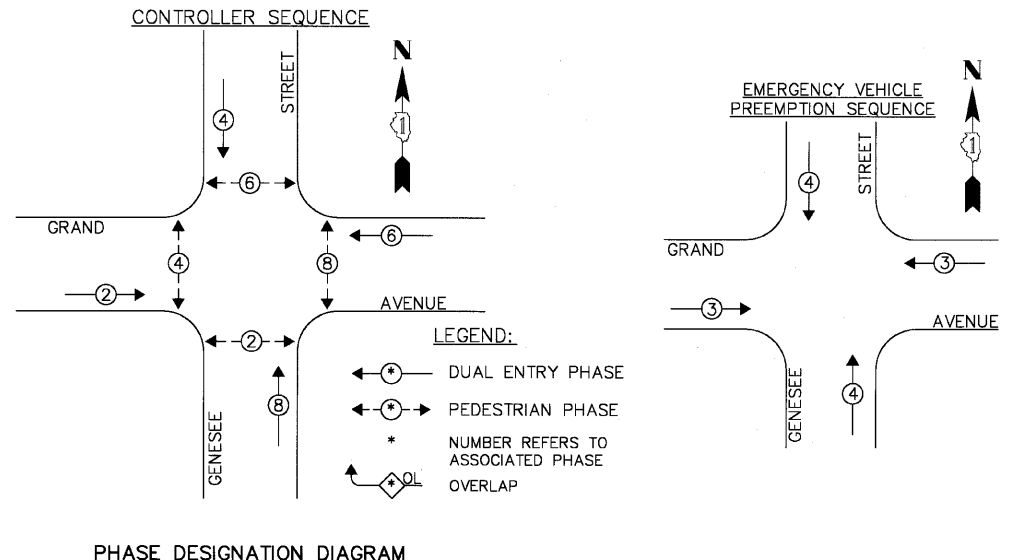
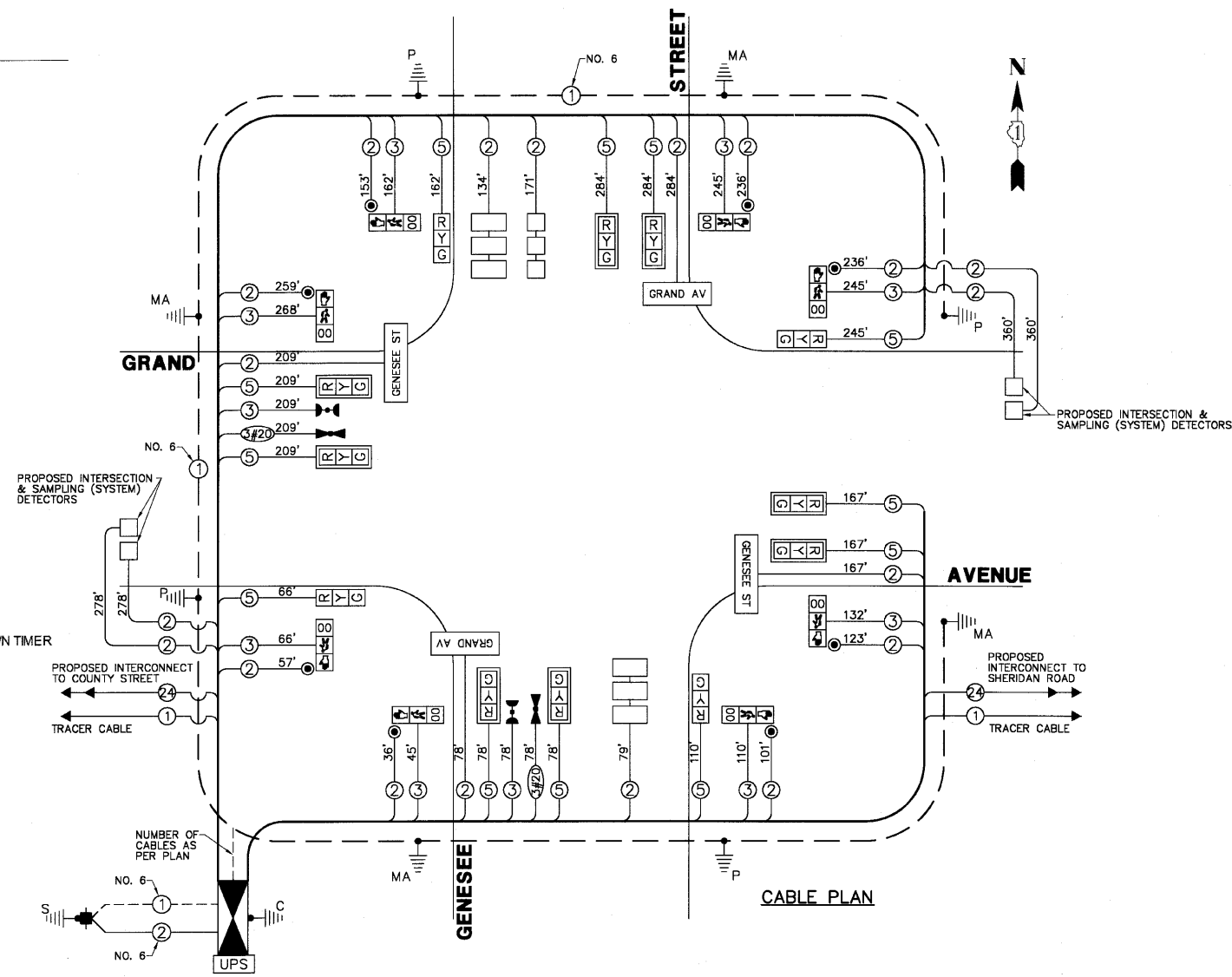
TRAFFIC SIGNAL MODERNIZATION PLAN			
GRAND AVENUE AT GENESEE STREET			
SCALE: 1"=20'	SHEET NO. OF SHEETS	STA. TO STA.	

F.A.P. RTE. 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 43
			CONTRACT #: 63436	
ILLINOIS FED. AID PROJECT				

SCHEDULE OF QUANTITIES

GRAND AVENUE AT GENESEE STREET TRAFFIC SIGNAL MODERNIZATION

NO.	QUANT.	UNIT
1.	2,000	SQ FT PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH
2.	140	SQ FT DETECTABLE WARNINGS
3.	255	FOOT COMBINATION CURB AND GUTTER REMOVAL
4.	2,000	SQ FT SIDEWALK REMOVAL
5.	6	EACH FRAMES AND LIDS TO BE ADJUSTED
6.	210	FOOT COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12
7.	45	FOOT COMBINATION CONCRETE CURB AND GUTTER, TYPE B-8.24
8.	400	FOOT THERMOPLASTIC PAVEMENT MARKING - LINE 6"
9.	75	FOOT THERMOPLASTIC PAVEMENT MARKING - LINE 24"
10.	365	SQ FT PAVEMENT MARKING REMOVAL
11.	71	FOOT CONDUIT IN TRENCH, 2-1/2" DIA., GALVANIZED STEEL
12.	62	FOOT CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL
13.	25	FOOT CONDUIT IN TRENCH, 4" DIA., GALVANIZED STEEL
14.	595	FOOT CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL
15.	319	FOOT CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL
16.	4	EACH HANDHOLE
17.	1	EACH HEAVY-DUTY HANDHOLE
18.	2	EACH DOUBLE HANDHOLE
19.	120	FOOT TRENCH AND BACKFILL FOR ELECTRICAL WORK
20.	1	EACH FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL
21.	1,939	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C
22.	1,560	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
23.	2,059	FOOT ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C
24.	1,666	FOOT ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR
25.	102	FOOT ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C
26.	1	EACH STEEL MAST ARM ASSEMBLY AND POLE 22 FT. (SPECIAL)
27.	1	EACH STEEL MAST ARM ASSEMBLY AND POLE 24 FT. (SPECIAL)
28.	1	EACH STEEL MAST ARM ASSEMBLY AND POLE 26 FT. (SPECIAL)
29.	1	EACH STEEL MAST ARM ASSEMBLY AND POLE 32 FT. (SPECIAL)
30.	16	FOOT CONCRETE FOUNDATION, TYPE A
31.	4	FOOT CONCRETE FOUNDATION, TYPE C
32.	30	FOOT CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER
33.	30	FOOT CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER
34.	8	EACH SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED
35.	4	EACH SIGNAL HEAD, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED
36.	8	EACH PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
37.	8	EACH TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINIUM
38.	7	EACH INDUCTIVE LOOP DETECTOR
39.	473	FOOT DETECTOR LOOP, TYPE 1
40.	2	EACH LIGHT DETECTOR
41.	1	EACH LIGHT DETECTOR AMPLIFIER
42.	8	EACH PEDESTRIAN PUSH-BUTTON
43.	1	EACH TEMPORARY TRAFFIC SIGNAL INSTALLATION
44.	1	EACH REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
45.	5	EACH REMOVE EXISTING HANDHOLE
46.	7	EACH REMOVE EXISTING CONCRETE FOUNDATION
47.	1	EACH MEDIA CONVERTER
48.	1	EACH TEMPORARY TRAFFIC SIGNAL TIMINGS
49.	1	EACH SERVICE INSTALLATION POLE MOUNT
50.	1	EACH UNINTERRUPTIBLE POWER SUPPLY
51.	647	FOOT ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C
52.	287	FOOT ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED
53.	200	SQ FT BRICK PAVER REMOVAL AND REPLACEMENT
54.	4	EACH TRAFFIC SIGNAL POST, 14 FOOT (SPECIAL)
55.	4	EACH LED INTERNALLY ILLUMINATED STREET NAME SIGN



EMERGENCY VEHICLE PREEMPTOR MOVEMENT	3	4
EMERGENCY VEHICLE PREEMPTOR	3	4

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

FOUNDATION (DEPTH) (FT.)	CABLE SLACK (FT.)	VERTICAL (FT.)
TYPE A - POST 4	HAND-HOLE 6.5	ALL FOUNDATIONS 3.5
TYPE D - CONTROLLER 4	DOUBLE HANDHOLE 13	MAST ARM (L) POLE 20'-11"-2"
TYPE E - M-ARM POLE 15	SIGNAL POST 2	BRACKET MOUNTED 13
	CONTROLLER CAB. 1	PEDESTRIAN PUSHBUTTON 4
	FIBER OPTIC 13	ELECTRIC SERVICE 13.5
	ELECTRIC SERVICE 13	SERVICE TO GROUND 13.5
	GROUND CABLE 1	POST MOUNTED 6

TYPE	NO LAMPS	WATTAGE		% OPERATION	TOTAL WATTAGE
		INCAND.	L.E.D.		
SIGNAL (RED)	12	135	10	0.50	60.0
SIGNAL (YELLOW)	12	135	11	0.40	22.8
SIGNAL (GREEN)	12	135	9	0.10	52.8
ARROW	-	135	9	0.10	-
PED. SIGNAL	8	90	9	1.00	72.0
CONTROLLER	1	-	100	1.00	100.0
LUMINAIRE	-	-	250	0.50	-
L.E.D. ST. NAME SIGN	4	-	64	0.50	128.0
VIDEO SYSTEM	-	-	150	1.00	-
BATTERY BACKUP	1	-	25	1.00	25.0
TOTAL =					460.6

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN
 (ADDRESS) 100 N. M.L.K. JR. AVENUE
 (ADDRESS) WAUKEGAN, IL
 ENERGY SUPPLY - CONTACT: GERRY GRANDBERRY
 PHONE: (847) 816-5463
 COMPANY: COM-ED, LIBERTYVILLE

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -
		DRAWN - ZCW	REVISED -
		CHECKED - DPB	REVISED -
		DATE - 3/10/10	REVISED -



CABLE PLAN, PHASE DESIGNATION DIAGRAM AND SCHEDULE OF QUANTITIES
 GRAND AVENUE AT GENESEE STREET

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

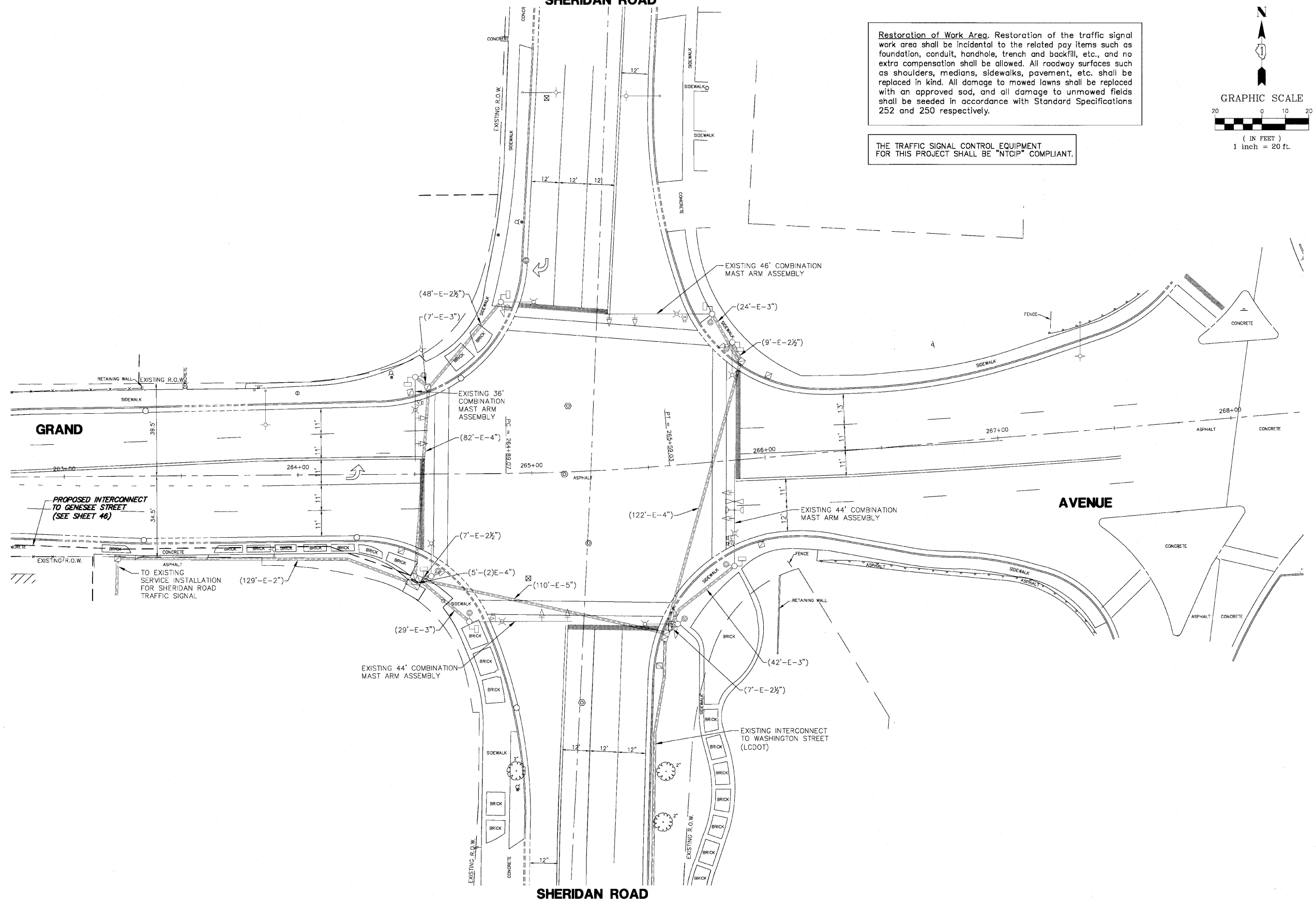
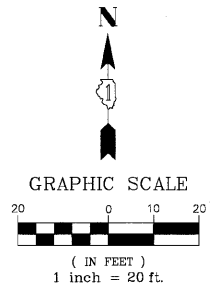
F&P RTE. 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 44
CONTRACT # 63436			ILLINOIS FED. AID PROJECT	

GHA #4136.800

SHERIDAN ROAD

Restoration of Work Area. Restoration of the traffic signal work area shall be incidental to the related pay items such as foundation, conduit, handhole, trench and backfill, etc., and no extra compensation shall be allowed. All roadway surfaces such as shoulders, medians, sidewalks, pavement, etc. shall be replaced in kind. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded in accordance with Standard Specifications 252 and 250 respectively.

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



GHA #4136.800

FILE NAME = 4136.800-TR2.dwg
 USER NAME = GHA
 PLOT SCALE = 1" = .0833'
 PLOT DATE = 3/10/10

DESIGNED - JRD
 DRAWN - ZCW
 CHECKED - DPB
 DATE - 3/10/10

REVISED -
 REVISED -
 REVISED -
 REVISED -

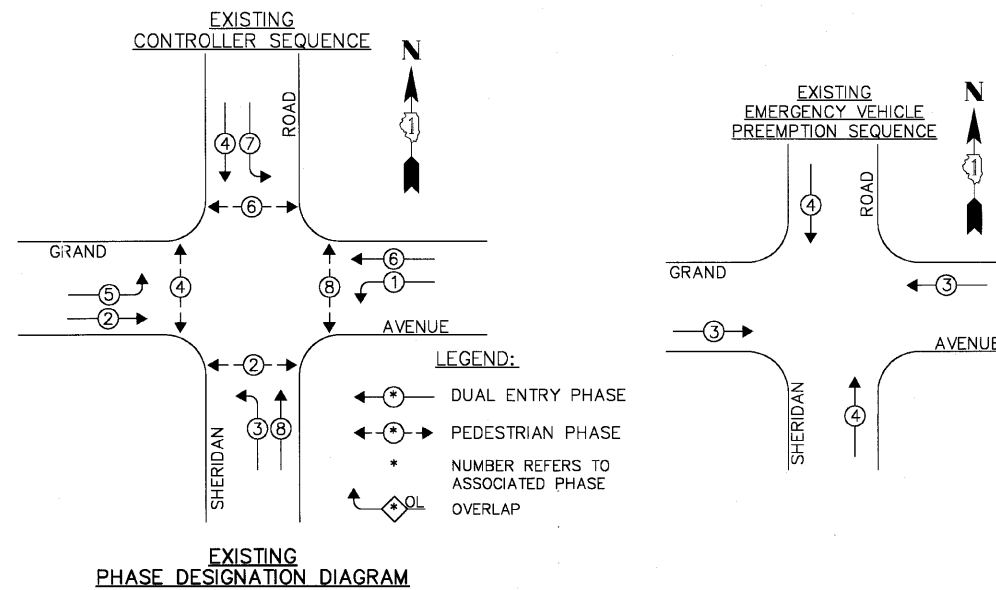
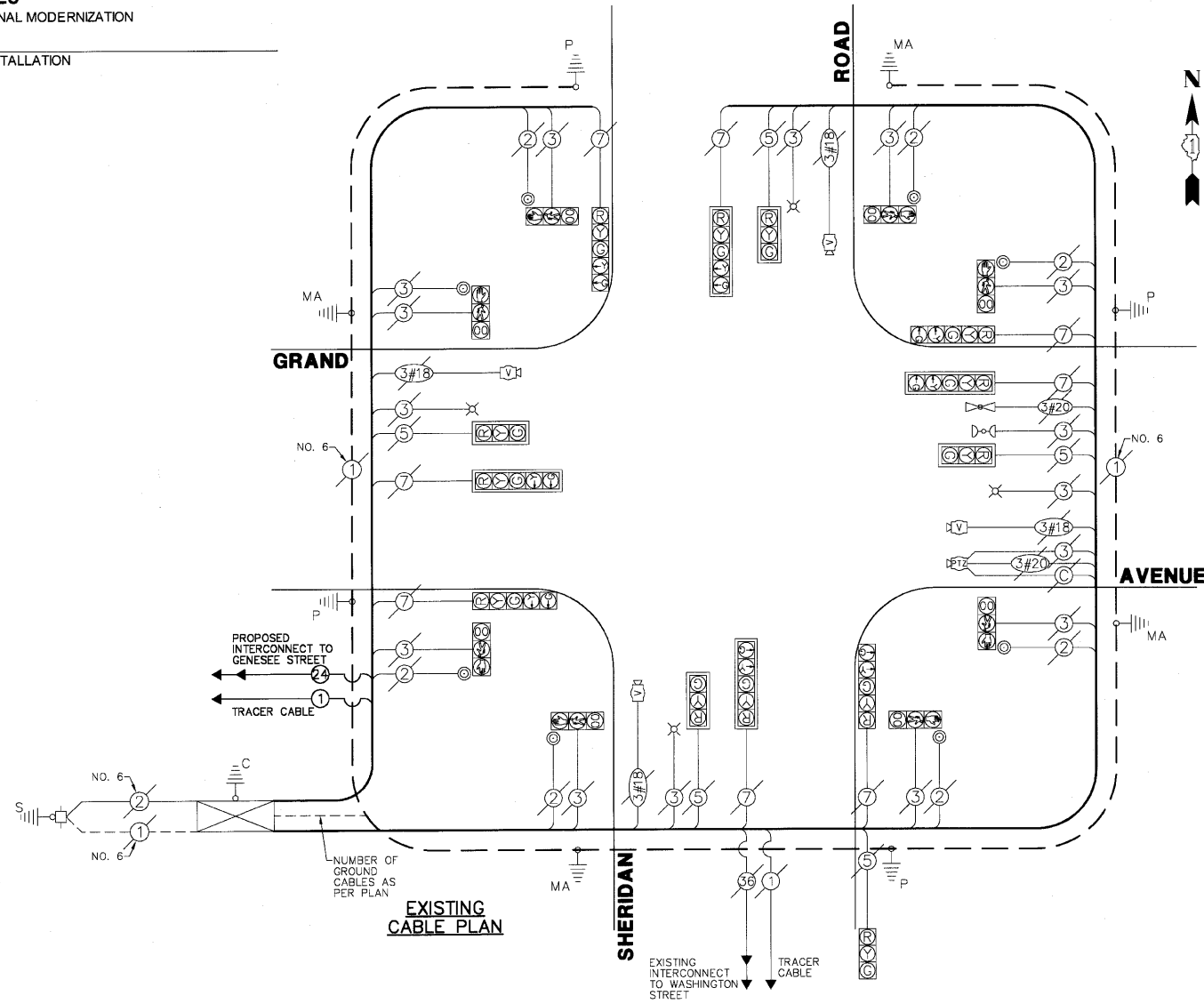


TRAFFIC SIGNAL MODERNIZATION PLAN
GRAND AVENUE AT SHERIDAN ROAD
 SCALE: 1"=20'
 SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	08-00279-00-TL	LAKE	64	45
CONTRACT #:			63436	
ILLINOIS FED. AID PROJECT				

SCHEDULE OF QUANTITIES
GRAND AVENUE AT SHERIDAN ROAD TRAFFIC SIGNAL MODERNIZATION

NO.	QUANT.	UNIT
1.	1 EACH	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION
2.	1 EACH	MODIFY EXISTING CONTROLLER



EMERGENCY VEHICLE PREEMPTOR MOVEMENT	3	4
	=	

TYPE	NO LAMPS	WATTAGE		% OPERATION	TOTAL WATTAGE
		INCAND.	L.E.D.		
SIGNAL (RED)	12	135	10	0.50	60.0
SIGNAL (YELLOW)	12	135	15	0.10	22.8
SIGNAL (GREEN)	12	135	11	0.40	52.8
ARROW	16	135	9	0.10	14.4
PED.SIGNAL	8	90	9	1.00	72.0
CONTROLLER	1	-	100	1.00	100.0
LUMINAIRE	4	-	250	0.50	500.0
L.F.D. ST. NAME SIGN	4	-	64	0.50	128.0
VIDEO SYSTEM	1	-	150	1.00	150.0
BATTERY BACKUP	1	-	25	1.00	25.0
TOTAL =					1,125.0

THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "NCTIP" 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	15	SIGNAL POST 2	BRACKET MOUNTED 13
		CONTROLLER CAB. 1	PED. PUSHBUTTON 4
		FIBER OPTIC 13	ELECTRIC SERVICE 13.5
		ELECTRIC SERVICE 1	SERVICE TO GROUND 13.5
		GROUND CABLE 1	POST MOUNTED 6

ENERGY COSTS - BILLED TO: CITY OF WAUKEGAN
(ADDRESS) 100 N. M.L.K. JR. AVENUE
WAUKEGAN, IL
ENERGY SUPPLY - CONTACT: GERRY GRANDBERRY
PHONE: (847) 816-5463
COMPANY: COM-ED, LIBERTYVILLE

FILE NAME = 4136.800-TR2.dwg

USER NAME = GHA
DESIGNED - JRD
DRAWN - ZCW
CHECKED - DPB
PLOT SCALE = 1" = .0833'
PLOT DATE = 3/10/10

REVISD -
REVISD -
REVISD -
REVISD -
DATE - 3/10/10

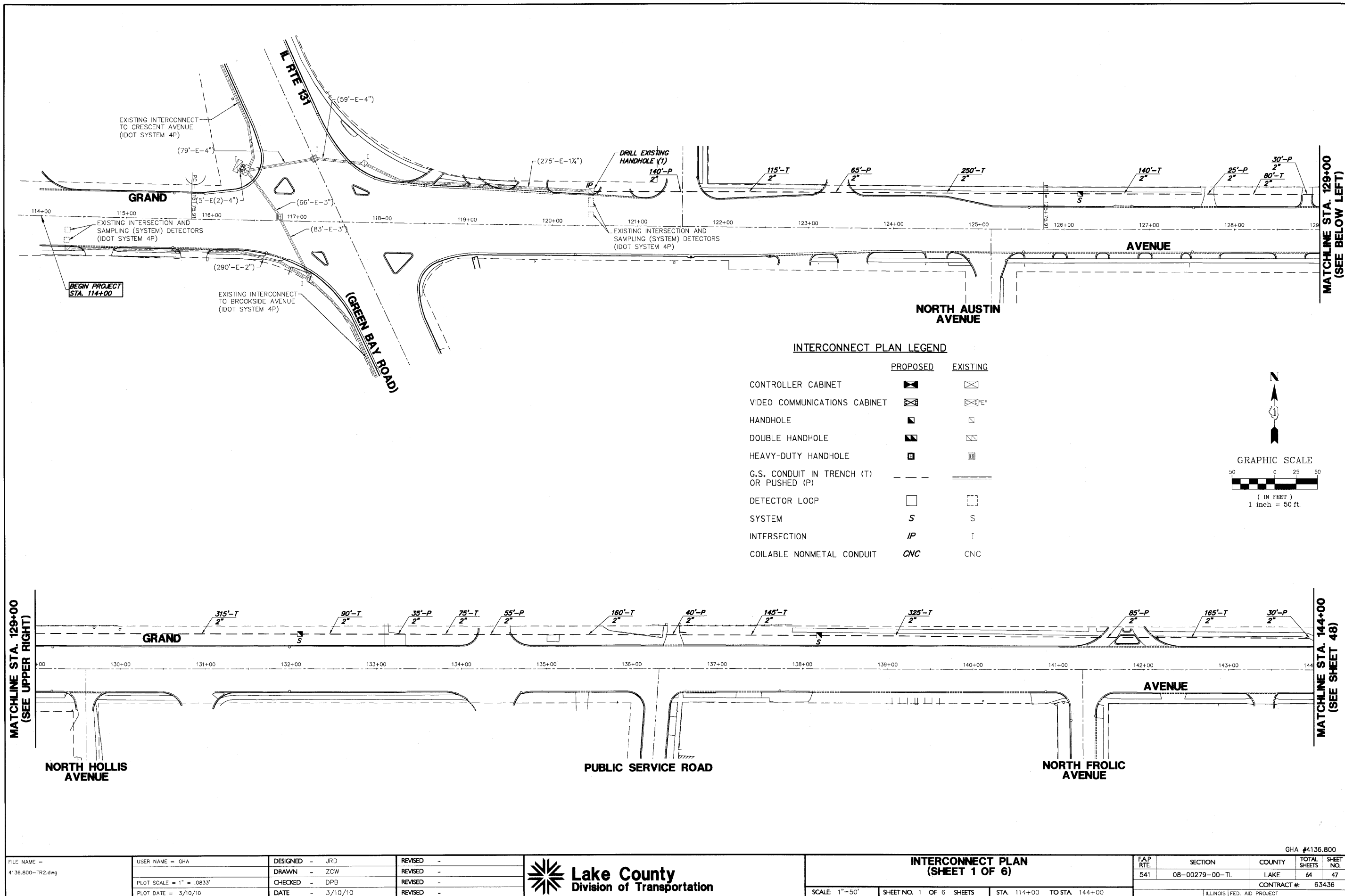


CABLE PLAN, PHASE DESIGNATION DIAGRAM AND SCHEDULE OF QUANTITIES
GRAND AVENUE AT SHERIDAN ROAD

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

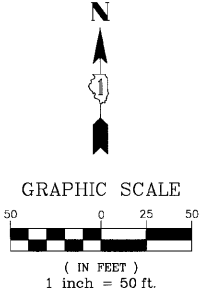
FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	08-00279-00-TL	LAKE	64	46
CONTRACT #:			63436	
ILLINOIS FED. AID PROJECT				

GHA #4136.800



INTERCONNECT PLAN LEGEND

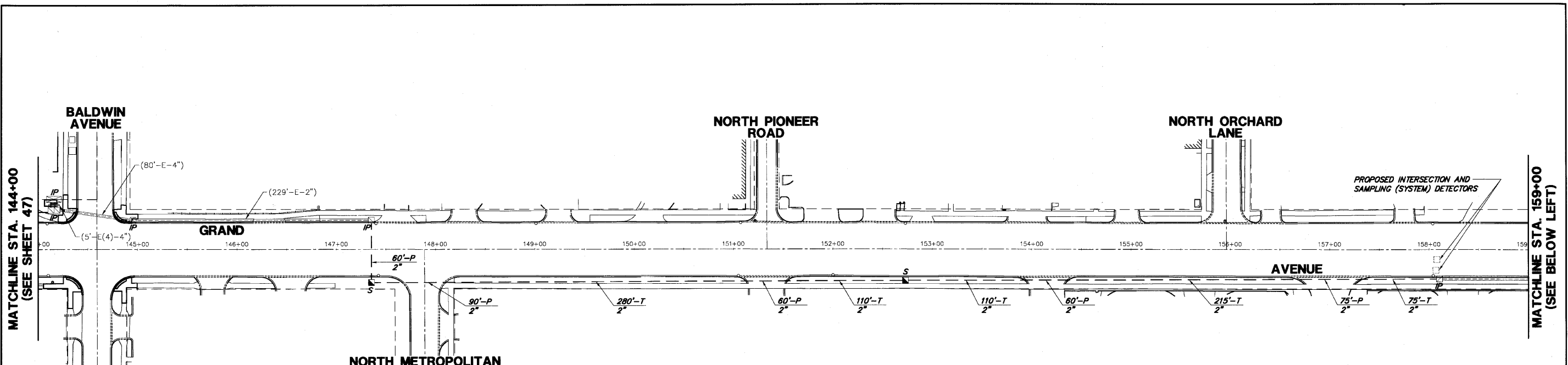
	PROPOSED	EXISTING
CONTROLLER CABINET		
VIDEO COMMUNICATIONS CABINET		
HANDHOLE		
DOUBLE HANDHOLE		
HEAVY-DUTY HANDHOLE		
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)		
DETECTOR LOOP		
SYSTEM	S	S
INTERSECTION	IP	I
COILABLE NONMETAL CONDUIT	CNC	CNC



MATCHLINE STA. 129+00
(SEE UPPER RIGHT)

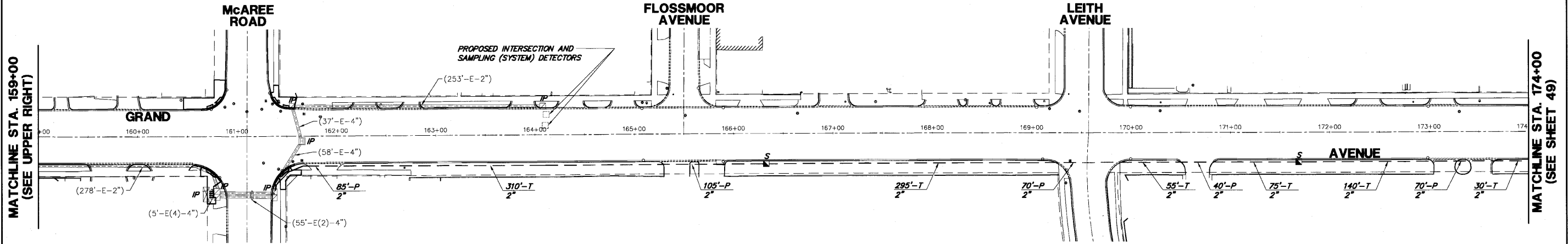
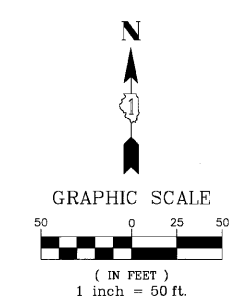
MATCHLINE STA. 144+00
(SEE SHEET 48)

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -		INTERCONNECT PLAN (SHEET 1 OF 6)			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISED -					541	08-00279-00-TL	LAKE	64	47
	PLOT DATE = 3/10/10	CHECKED - DPB	REVISED -		SCALE 1"=50' SHEET NO. 1 OF 6 SHEETS STA. 114+00 TO STA. 144+00			CONTRACT # 63436		ILLINOIS FED. AID PROJECT		
		DATE - 3/10/10	REVISED -		GHA #4136.800							

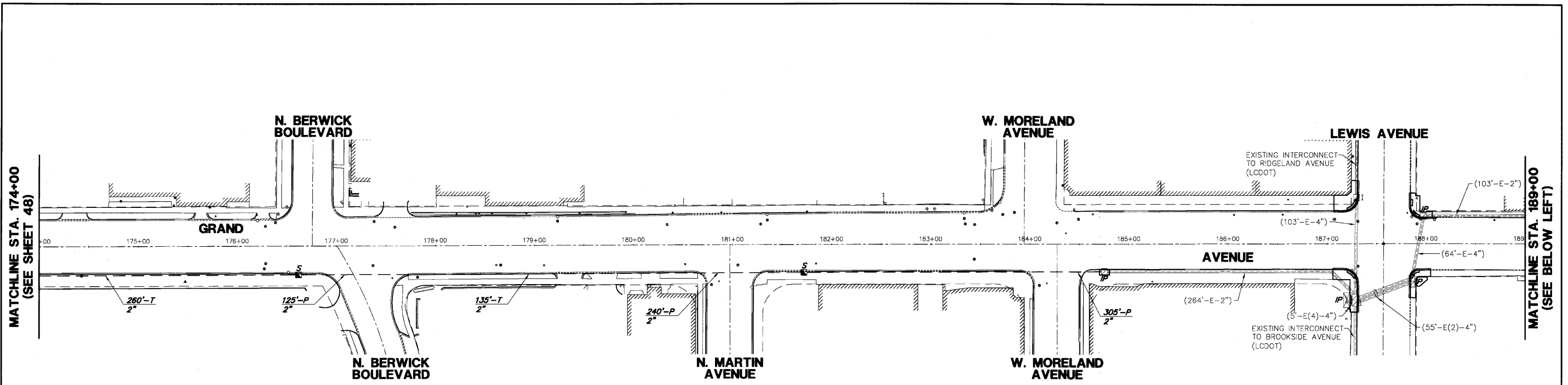


INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER CABINET		
VIDEO COMMUNICATIONS CABINET		
HANDHOLE		
DOUBLE HANDHOLE		
HEAVY-DUTY HANDHOLE		
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)		
DETECTOR LOOP SYSTEM		
INTERSECTION	<i>IP</i>	<i>I</i>
COILABLE NONMETAL CONDUIT	<i>CNC</i>	<i>CNC</i>

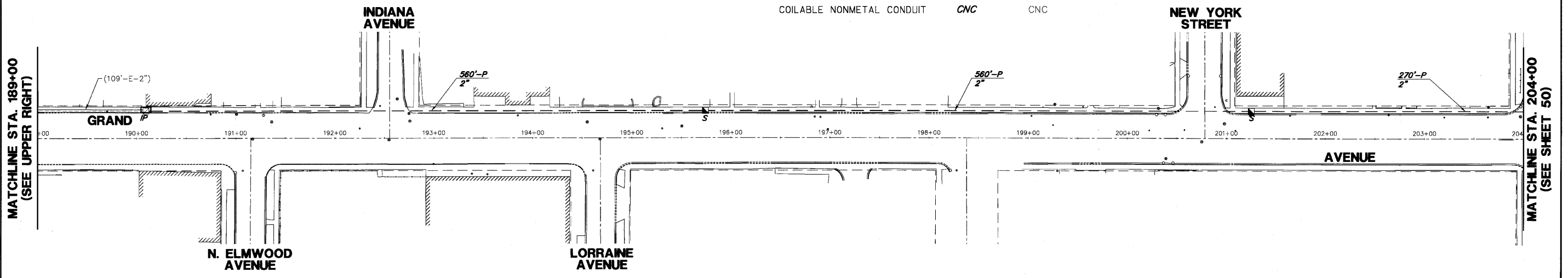
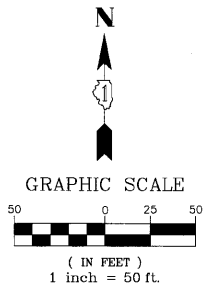


FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -		INTERCONNECT PLAN (SHEET 2 OF 6)	F.A.P. RTE. 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 48		
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISED -			SCALE: 1"=50'	SHEET NO. 2 OF 6 SHEETS	STA. 144+00 TO STA. 174+00	CONTRACT #: 63436		ILLINOIS FED. AID PROJECT	
	CHECKED - DPB	DATE - 3/10/10	REVISED -			GHA #4136.800						
	PLOT DATE = 3/10/10	DATE - 3/10/10	REVISED -									

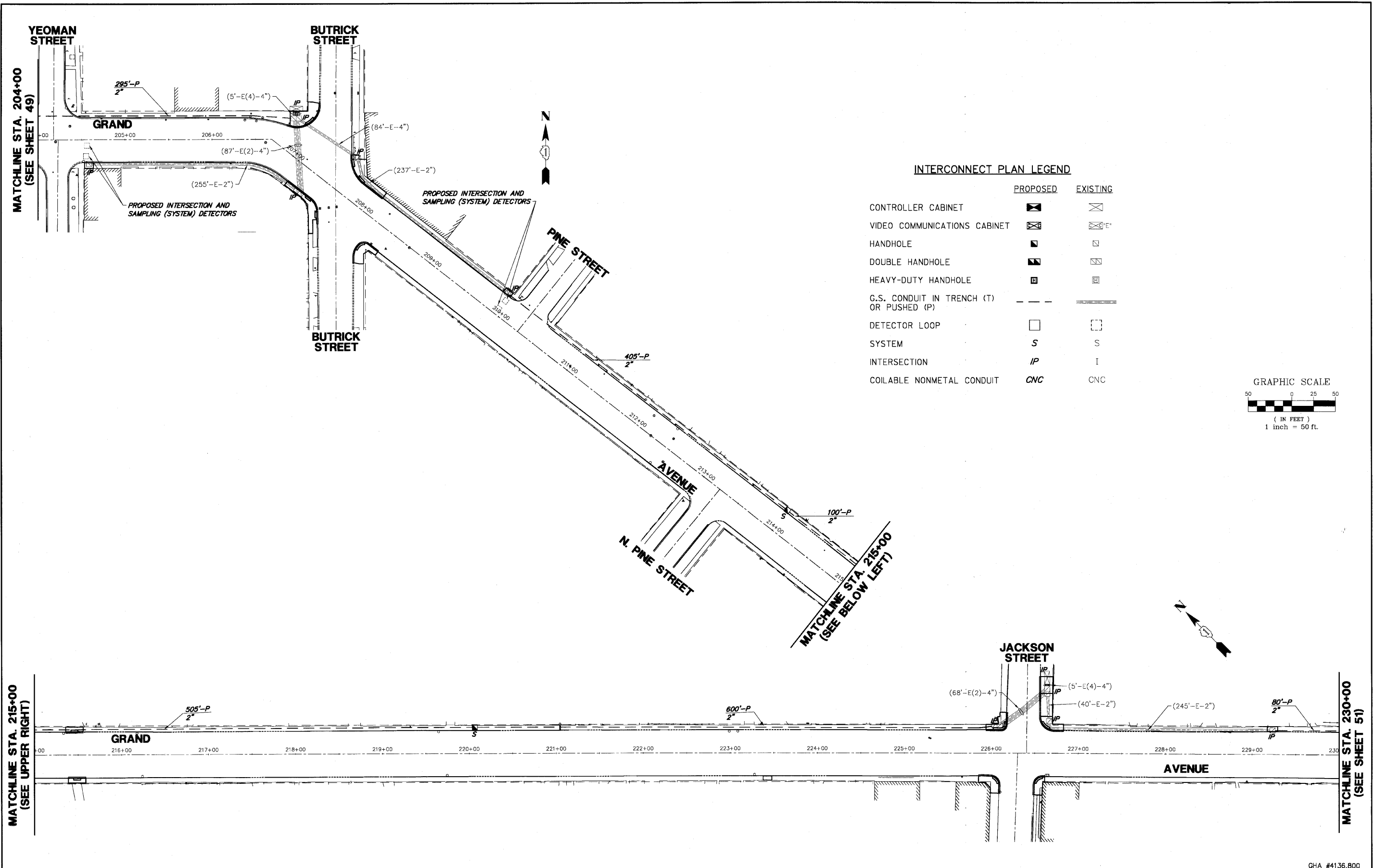


INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER CABINET		
VIDEO COMMUNICATIONS CABINET		
HANDHOLE		
DOUBLE HANDHOLE		
HEAVY-DUTY HANDHOLE		
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)		
DETECTOR LOOP		
SYSTEM	S	S
INTERSECTION	IP	I
COILABLE NONMETAL CONDUIT	CNC	CNC

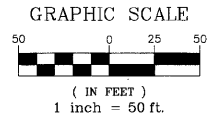


FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -	Lake County Division of Transportation	INTERCONNECT PLAN (SHEET 3 OF 6)	F.A.P. RTE. 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 49		
	PLOT SCALE = 1" = .0833'	CHECKED - DPB	REVISED -			SCALE 1"=50'	SHEET NO. 3 OF 6 SHEETS	STA. 174+00 TO STA. 204+00	CONTRACT # 63436	ILLINOIS FED. AID PROJECT		
	PLOT DATE = 3/10/10	DATE - 3/10/10	REVISED -									
	GHA #4136.800											



INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER CABINET		
VIDEO COMMUNICATIONS CABINET		
HANDHOLE		
DOUBLE HANDHOLE		
HEAVY-DUTY HANDHOLE		
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)		
DETECTOR LOOP		
SYSTEM	S	S
INTERSECTION	IP	I
COILABLE NONMETAL CONDUIT	CNC	CNC



MATCHLINE STA. 204+00
(SEE SHEET 49)

MATCHLINE STA. 215+00
(SEE UPPER RIGHT)

MATCHLINE STA. 215+00
(SEE BELOW LEFT)

MATCHLINE STA. 230+00
(SEE SHEET 51)

GHA #4136.800

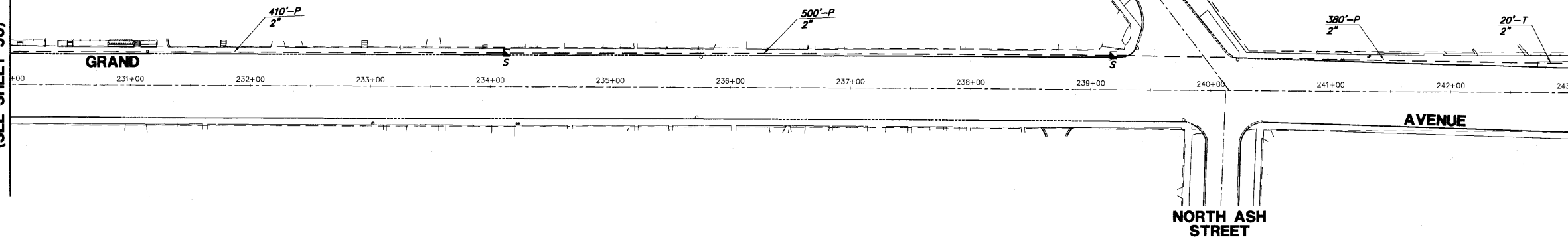
FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -
		DRAWN - ZCW	REVISED -
	PLOT SCALE = 1" = .0833'	CHECKED - DPB	REVISED -
	PLOT DATE = 3/10/10	DATE - 3/10/10	REVISED -



INTERCONNECT PLAN (SHEET 4 OF 6)			
SCALE: 1"=50'	SHEET NO. 4 OF 6 SHEETS	STA. 204+00 TO STA. 230+00	

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	08-00279-00-TL	LAKE	64	50
CONTRACT #:			63436	
ILLINOIS FED. AID PROJECT				

MATCHLINE STA. 230+00
(SEE SHEET 50)

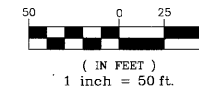


MATCHLINE STA. 243+00
(SEE LOWER LEFT)

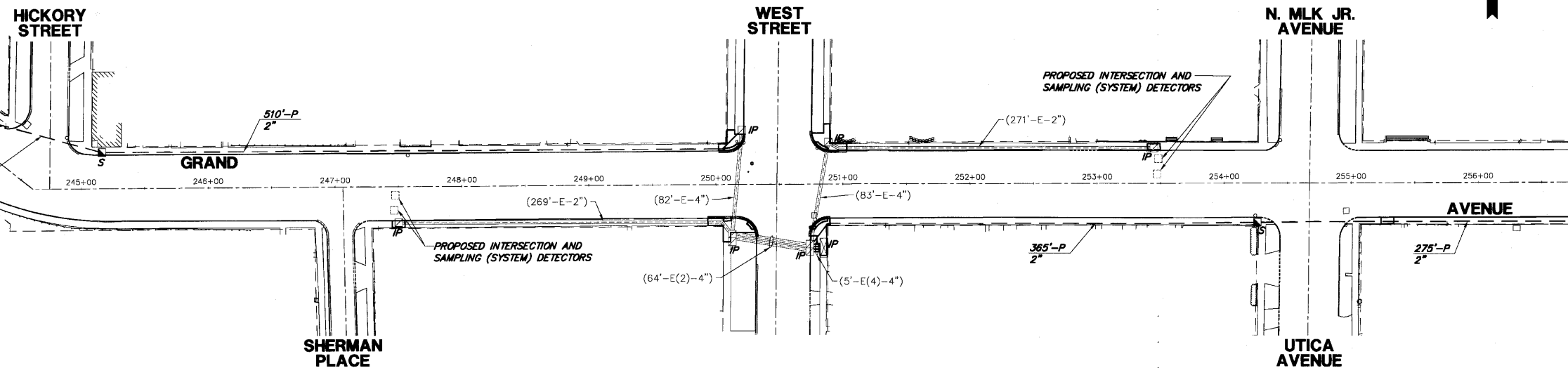
INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER CABINET		
VIDEO COMMUNICATIONS CABINET		
HANDHOLE		
DOUBLE HANDHOLE		
HEAVY-DUTY HANDHOLE		
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)		
DETECTOR LOOP		
SYSTEM	<i>S</i>	<i>S</i>
INTERSECTION	<i>IP</i>	<i>I</i>
COILABLE NONMETAL CONDUIT	<i>CNC</i>	<i>CNC</i>

GRAPHIC SCALE



MATCHLINE STA. 243+00
(SEE UPPER RIGHT)



MATCHLINE STA. 257+00
(SEE SHEET 52)

GHA #4136.800

FILE NAME = 4136.800-TR2.dwg

USER NAME = GHA
DESIGNED - JRD
DRAWN - ZCW
PLOT SCALE = 1" = .0833'
CHECKED - DPB
PLOT DATE = 3/10/10

DATE - 3/10/10

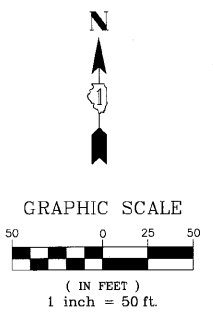
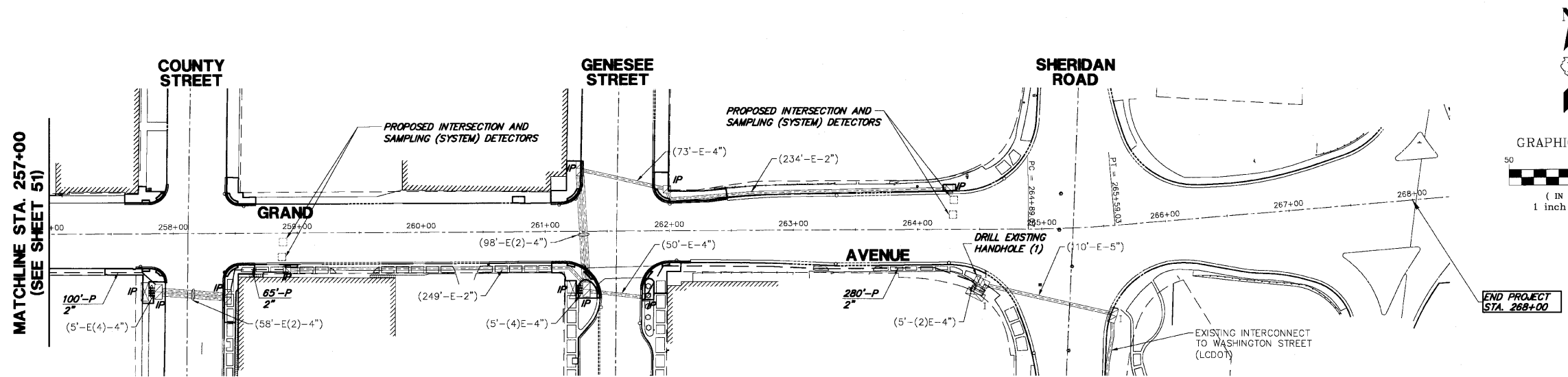
REVISIONS:
REVISD -
REVISD -
REVISD -
REVISD -



**INTERCONNECT PLAN
(SHEET 5 OF 6)**

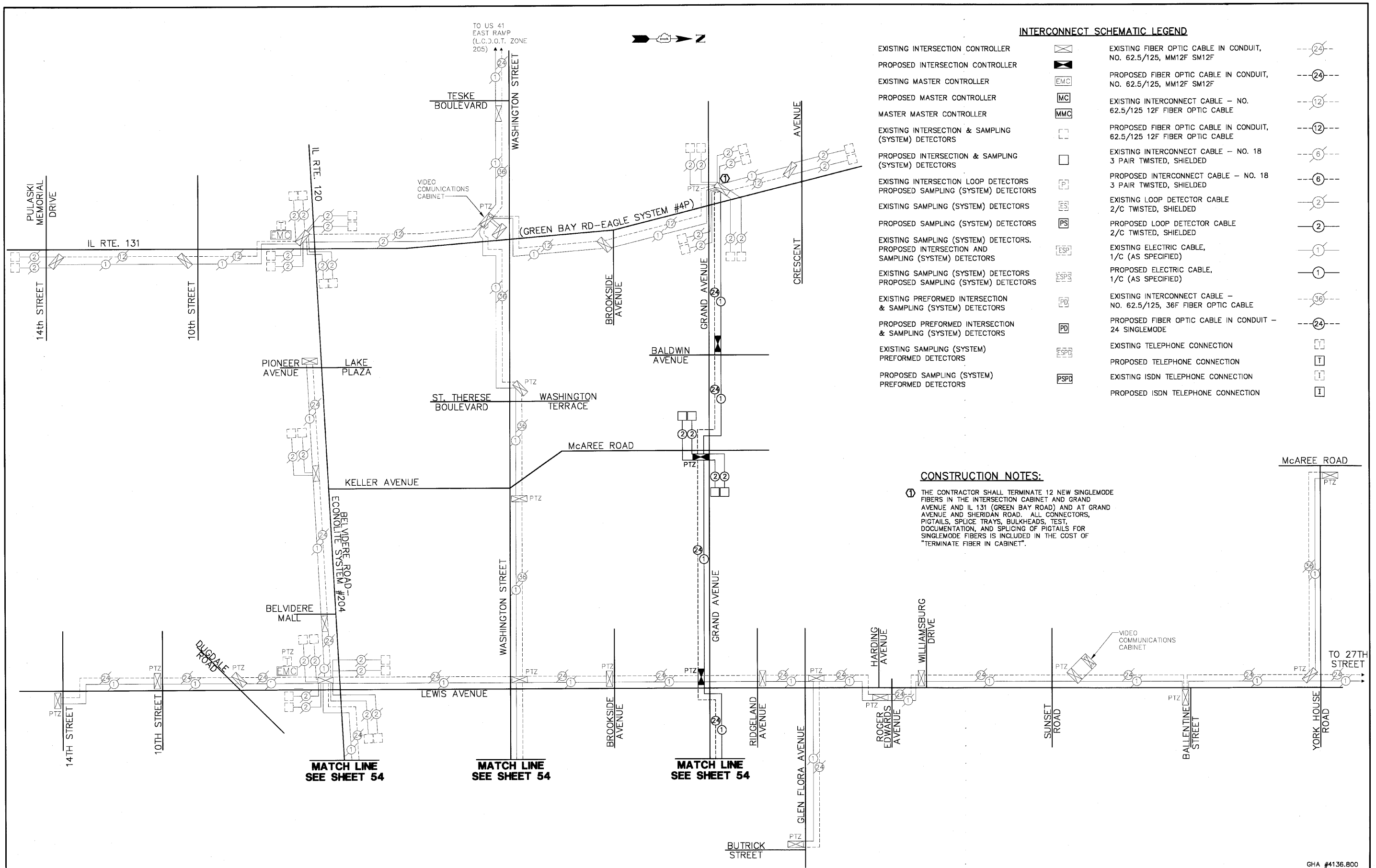
SCALE: 1"=50' SHEET NO. 5 OF 6 SHEETS STA. 230+00 TO STA. 257+00

F&P RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	08-00279-00-TL	LAKE	64	51
CONTRACT #:			63436	
ILLINOIS FED. AID PROJECT				



INTERCONNECT PLAN LEGEND

	PROPOSED	EXISTING
CONTROLLER CABINET		
VIDEO COMMUNICATIONS CABINET		
HANDHOLE		
DOUBLE HANDHOLE		
HEAVY-DUTY HANDHOLE		
G.S. CONDUIT IN TRENCH (T) OR PUSHED (P)		
DETECTOR LOOP		
SYSTEM	<i>S</i>	<i>S</i>
INTERSECTION	<i>IP</i>	<i>I</i>
COILABLE NONMETAL CONDUIT	<i>CNC</i>	<i>CNC</i>



INTERCONNECT SCHEMATIC LEGEND

- | | | | |
|---|--|---|--|
| EXISTING INTERSECTION CONTROLLER | | EXISTING FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM12F | |
| PROPOSED INTERSECTION CONTROLLER | | PROPOSED FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM12F | |
| EXISTING MASTER CONTROLLER | | EXISTING INTERCONNECT CABLE - NO. 62.5/125 12F FIBER OPTIC CABLE | |
| PROPOSED MASTER CONTROLLER | | PROPOSED INTERCONNECT CABLE - NO. 18 3 PAIR TWISTED, SHIELDED | |
| MASTER MASTER CONTROLLER | | PROPOSED INTERCONNECT CABLE - NO. 18 3 PAIR TWISTED, SHIELDED | |
| EXISTING INTERSECTION & SAMPLING (SYSTEM) DETECTORS | | EXISTING LOOP DETECTOR CABLE 2/C TWISTED, SHIELDED | |
| PROPOSED INTERSECTION & SAMPLING (SYSTEM) DETECTORS | | PROPOSED LOOP DETECTOR CABLE 2/C TWISTED, SHIELDED | |
| EXISTING INTERSECTION LOOP DETECTORS | | EXISTING ELECTRIC CABLE, 1/C (AS SPECIFIED) | |
| PROPOSED INTERSECTION LOOP DETECTORS | | PROPOSED ELECTRIC CABLE, 1/C (AS SPECIFIED) | |
| EXISTING SAMPLING (SYSTEM) DETECTORS | | EXISTING INTERCONNECT CABLE - NO. 62.5/125, 36F FIBER OPTIC CABLE | |
| PROPOSED SAMPLING (SYSTEM) DETECTORS | | PROPOSED FIBER OPTIC CABLE IN CONDUIT - 24 SINGLEMODE | |
| EXISTING SAMPLING (SYSTEM) DETECTORS, PROPOSED INTERSECTION AND SAMPLING (SYSTEM) DETECTORS | | EXISTING TELEPHONE CONNECTION | |
| EXISTING SAMPLING (SYSTEM) DETECTORS, PROPOSED SAMPLING (SYSTEM) DETECTORS | | PROPOSED TELEPHONE CONNECTION | |
| EXISTING PREFORMED INTERSECTION & SAMPLING (SYSTEM) DETECTORS | | EXISTING ISDN TELEPHONE CONNECTION | |
| PROPOSED PREFORMED INTERSECTION & SAMPLING (SYSTEM) DETECTORS | | PROPOSED ISDN TELEPHONE CONNECTION | |
| EXISTING SAMPLING (SYSTEM) PREFORMED DETECTORS | | | |
| PROPOSED SAMPLING (SYSTEM) PREFORMED DETECTORS | | | |

CONSTRUCTION NOTES:

① THE CONTRACTOR SHALL TERMINATE 12 NEW SINGLEMODE FIBERS IN THE INTERSECTION CABINET AND GRAND AVENUE AND IL 131 (GREEN BAY ROAD) AND AT GRAND AVENUE AND SHERIDAN ROAD. ALL CONNECTORS, PIGTAILS, SPLICE TRAYS, BULKHEADS, TEST, DOCUMENTATION, AND SPLICING OF PIGTAILS FOR SINGLEMODE FIBERS IS INCLUDED IN THE COST OF "TERMINATE FIBER IN CABINET".

MATCH LINE SEE SHEET 54

MATCH LINE SEE SHEET 54

MATCH LINE SEE SHEET 54

GHA #4136.800

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISED -
	PLOT DATE = 3/10/10	CHECKED - DPB	REVISED -
		DATE - 3/10/10	REVISED -



INTERCONNECT SCHEMATIC (SHEET 1 OF 2)
GRAND AVENUE FROM IL RTE 131 (GREEN BAY RD) TO SHERIDAN ROAD

SCALE: NONE SHEET NO. 1 OF 2 SHEETS STA. TO STA.

F&P RATE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	08-00279-00-TL	LAKE	64	53
CONTRACT #:			63436	
ILLINOIS FED. AID PROJECT				

SCHEDULE OF QUANTITIES

GRAND AVENUE FROM GREEN BAY ROAD TO SHERIDAN ROAD TRAFFIC SIGNAL MODERNIZATION

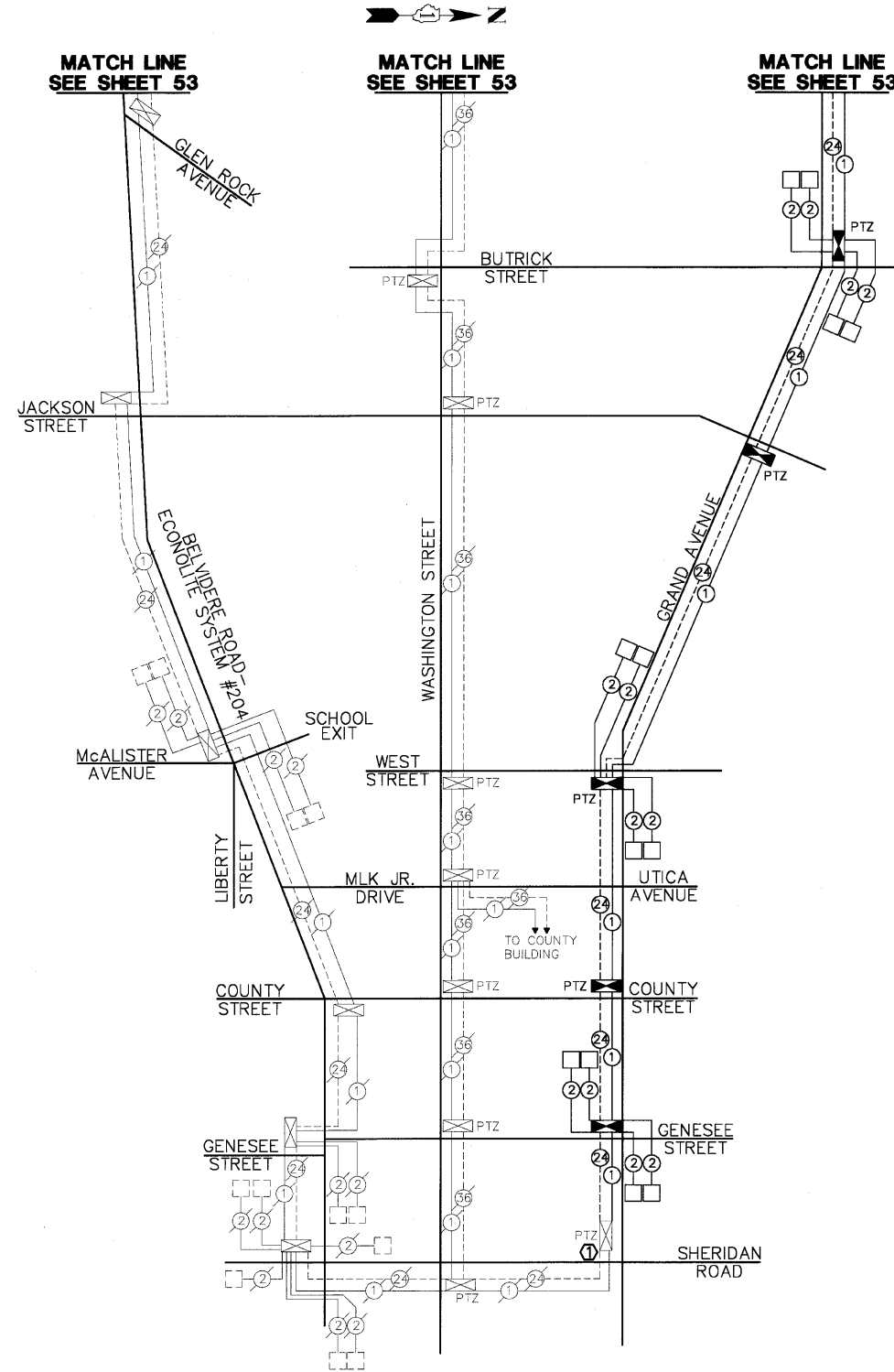
NO.	QUANT.	UNIT
1.	1,600	SQ YD TOPSOIL FURNISH AND PLACE, 4"
2.	45	POUND NITROGEN FERTILIZER NUTRIENT
3.	45	POUND PHOSPHORUS FERTILIZER NUTRIENT
4.	45	POUND POTASSIUM FERTILIZER NUTRIENT
5.	1,600	SQ YD SODDING, SALT TOLERANT
6.	8	UNIT SUPPLEMENTAL WATERING
7.	1,400	SQ FT PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH
8.	1,000	SQ FT TEMPORARY SIDEWALK
9.	1,400	SQ FT SIDEWALK REMOVAL
10.	3,555	FOOT CONDUIT IN TRENCH, 2" DIA., GALVANIZED STEEL
11.	8,240	FOOT CONDUIT PUSHED, 2" DIA., GALVANIZED STEEL
12.	17	EACH HANDHOLE
13.	3,555	FOOT TRENCH AND BACKFILL FOR ELECTRICAL WORK
14.	2	EACH DRILL EXISTING HANDHOLE
15.	51.40	SQ FT TEMPORARY INFORMATION SIGNING
16.	15,734	FOOT ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1C
17.	1	EACH OPTIMIZE TRAFFIC SIGNAL SYSTEM
18.	12	EACH TERMINATE FIBER IN CABINET
19.	15,735	FOOT FIBER OPTIC CABLE IN CONDUIT, 24 SINGLEMODE

CONSTRUCTION NOTES:

- ① THE CONTRACTOR SHALL TERMINATE 12 NEW SINGLEMODE FIBERS IN THE INTERSECTION CABINET AND GRAND AVENUE AND IL 131 (GREEN BAY ROAD) AND AT GRAND AVENUE AND SHERIDAN ROAD. ALL CONNECTORS, PIGTAILS, SPLICE TRAYS, BULKHEADS, TEST, DOCUMENTATION, AND SPLICING OF PIGTAILS FOR SINGLEMODE FIBERS IS INCLUDED IN THE COST OF "TERMINATE FIBER IN CABINET".

INTERCONNECT SCHEMATIC LEGEND

EXISTING INTERSECTION CONTROLLER		EXISTING FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM12F	
PROPOSED INTERSECTION CONTROLLER		PROPOSED FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM12F	
EXISTING MASTER CONTROLLER		EXISTING INTERCONNECT CABLE - NO. 62.5/125 12F FIBER OPTIC CABLE	
PROPOSED MASTER CONTROLLER		PROPOSED FIBER OPTIC CABLE IN CONDUIT, 62.5/125 12F FIBER OPTIC CABLE	
MASTER MASTER CONTROLLER		EXISTING INTERCONNECT CABLE - NO. 18 3 PAIR TWISTED, SHIELDED	
EXISTING INTERSECTION & SAMPLING (SYSTEM) DETECTORS		PROPOSED INTERCONNECT CABLE - NO. 18 3 PAIR TWISTED, SHIELDED	
PROPOSED INTERSECTION & SAMPLING (SYSTEM) DETECTORS		EXISTING LOOP DETECTOR CABLE 2/C TWISTED, SHIELDED	
EXISTING INTERSECTION LOOP DETECTORS		PROPOSED LOOP DETECTOR CABLE 2/C TWISTED, SHIELDED	
PROPOSED SAMPLING (SYSTEM) DETECTORS		EXISTING ELECTRIC CABLE, 1/C (AS SPECIFIED)	
EXISTING SAMPLING (SYSTEM) DETECTORS		PROPOSED ELECTRIC CABLE, 1/C (AS SPECIFIED)	
EXISTING SAMPLING (SYSTEM) DETECTORS AND SAMPLING (SYSTEM) DETECTORS		EXISTING INTERCONNECT CABLE - NO. 62.5/125, 36F FIBER OPTIC CABLE	
EXISTING SAMPLING (SYSTEM) DETECTORS		PROPOSED FIBER OPTIC CABLE IN CONDUIT - 24 SINGLEMODE	
PROPOSED SAMPLING (SYSTEM) DETECTORS		EXISTING TELEPHONE CONNECTION	
EXISTING PREFORMED INTERSECTION & SAMPLING (SYSTEM) DETECTORS		PROPOSED TELEPHONE CONNECTION	
PROPOSED PREFORMED INTERSECTION & SAMPLING (SYSTEM) DETECTORS		EXISTING ISDN TELEPHONE CONNECTION	
EXISTING SAMPLING (SYSTEM) PREFORMED DETECTORS		PROPOSED ISDN TELEPHONE CONNECTION	
PROPOSED SAMPLING (SYSTEM) PREFORMED DETECTORS			

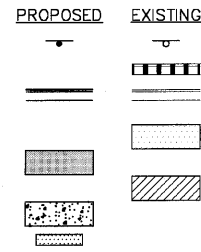


GHA #4136.800

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -		INTERCONNECT SCHEMATIC (SHEET 2 OF 2) GRAND AVENUE FROM IL RTE 131 (GREEN BAY RD) TO SHERIDAN ROAD		F&P RTE. 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 54	
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISED -		SCALE NONE	SHEET NO. 2 OF 2 SHEETS	STA. TO STA.	CONTRACT # 63436				
	CHECKED - DPB	DATE - 3/10/10	REVISED -		ILLINOIS FED. AID PROJECT							
	PLOT DATE = 3/10/10		REVISED -									

TRAFFIC SIGNAL LEGEND

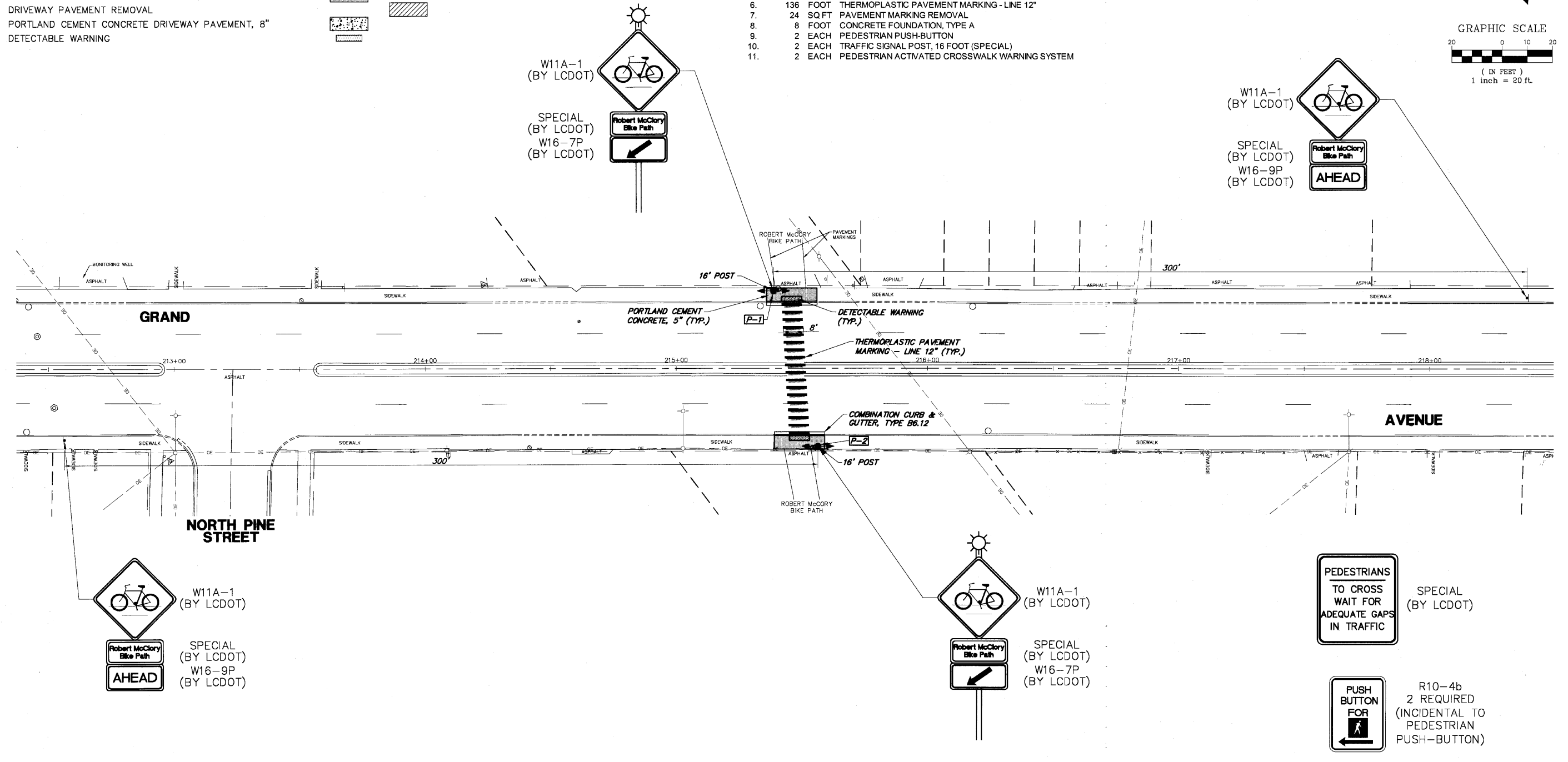
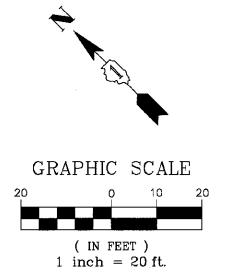
- STREET NAME SIGN
- COMBINATION CURB AND GUTTER REMOVAL
- COMBINATION CONCRETE CURB & GUTTER, TYPE B-6.12 OR TYPE B-6.24
- SIDEWALK REMOVAL
- PORTLAND CEMENT CONCRETE SIDEWALK, 5"
- DRIVEWAY PAVEMENT REMOVAL
- PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8"
- DETECTABLE WARNING



SCHEDULE OF QUANTITIES

GRAND AVE AT ROBERT McCLORY BIKE PATH MID-BLOCK PEDESTRIAN CROSSING

NO.	QUANT.	UNIT	DESCRIPTION
1.	200	SQ FT	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH
2.	32	SQ FT	DETECTABLE WARNINGS
3.	40	FOOT	COMBINATION CURB AND GUTTER REMOVAL
4.	200	SQ FT	SIDEWALK REMOVAL
5.	40	FOOT	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12
6.	136	FOOT	THERMOPLASTIC PAVEMENT MARKING - LINE 12"
7.	24	SQ FT	PAVEMENT MARKING REMOVAL
8.	8	FOOT	CONCRETE FOUNDATION, TYPE A
9.	2	EACH	PEDESTRIAN PUSH-BUTTON
10.	2	EACH	TRAFFIC SIGNAL POST, 16 FOOT (SPECIAL)
11.	2	EACH	PEDESTRIAN ACTIVATED CROSSWALK WARNING SYSTEM

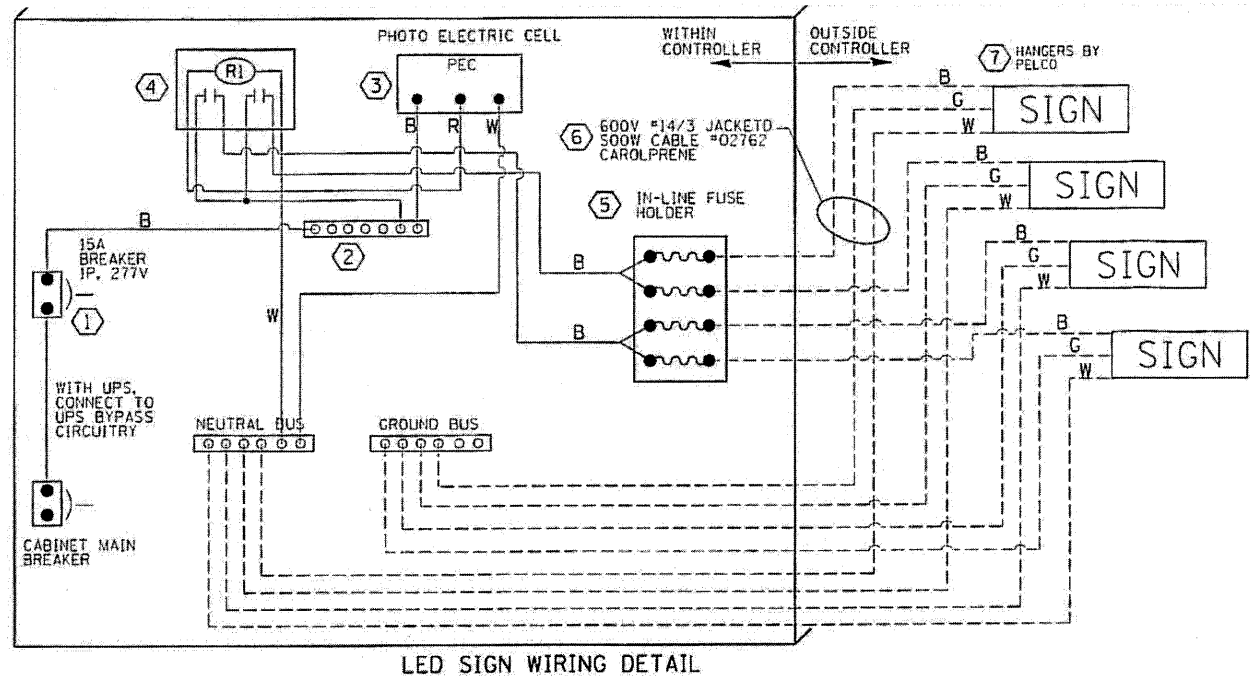


ITEM	STATION	OFFSET	POSSIBLE UTILITY CONFLICT
P-1	215+38.7	30.8' LT	
P-2	215+56.4	31.1' RT	

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

GHA #4136.800

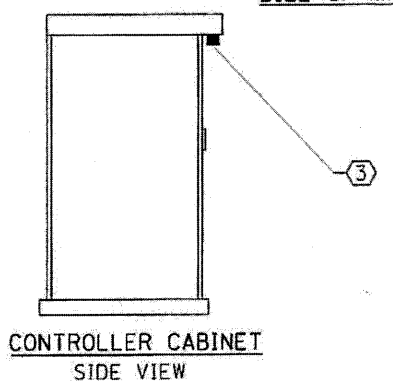
FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -		MID-BLOCK PEDESTRIAN CROSSING GRAND AVENUE AT ROBERT McCLORY BIKE PATH	F&P RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - ZCW	REVISED -		SCALE: 1"=20'	541	08-00279-00-TL	LAKE	64	55
	PLOT SCALE = 1" = .0833'	CHECKED - DPB	REVISED -		SHEET NO. OF SHEETS STA. TO STA.	CONTRACT #: 63436				
	PLOT DATE = 3/10/10	DATE - 3/10/10	REVISED -		ILLINOIS FED. AID PROJECT					



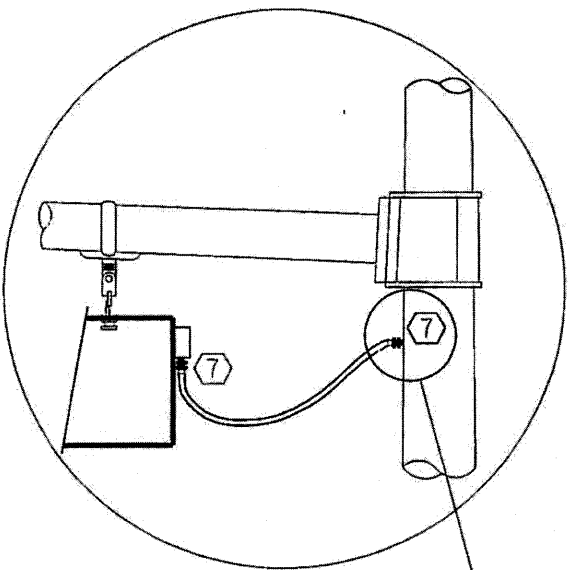
LED SIGN WIRING DETAIL

DESCRIPTION	MANUFACTURER	MODEL	NOTES
① CIRCUIT BREAKER		15 AMPERE	Molded case, Thermal Mag. min. R.I. of 14K R.M.S. symmetrical ampere at 277V.
② TERMINAL BLOCK	MARATHON	1502 DJSV	
③ PHOTO ELECTRIC CONTROL	FISHER PIERCE	B124-1.5-07762	
④ CONTROL RELAY	SQUARE D	8501X020V02	BOLT ON W/SCREW TERMINAL
⑤ INLINE FUSE HOLDER WITH 5 AMP FUSE	BUSSMAN	S-8000 BK/S-8-3-4-R	
⑥ ELECTRIC CABLE, NO. 14, 3/C (BLACK, WHITE, GREEN)	CAROLPRENE/SOOW	02762	
⑦ SIGN MOUNTING HARDWARE	PELCO	SE-5015	S.S. HARDWARE

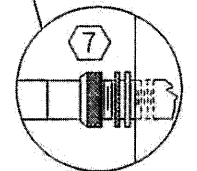
BILL OF MATERIALS



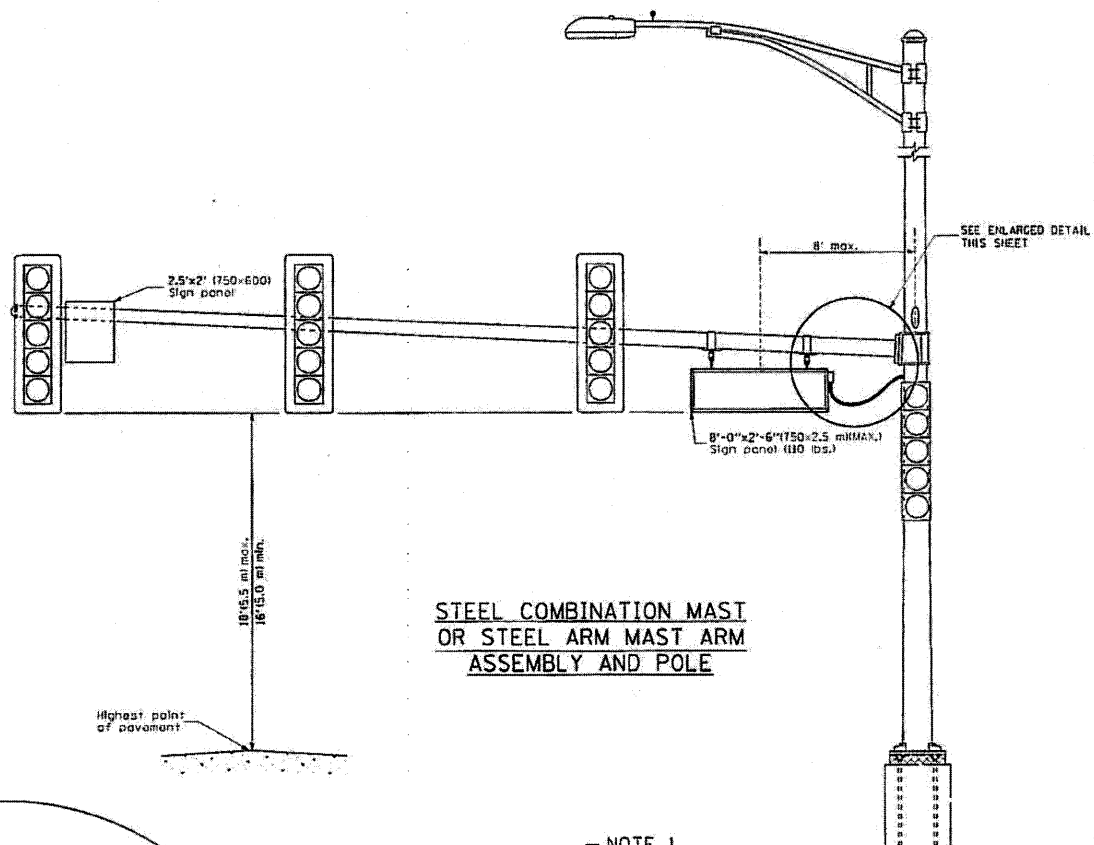
CONTROLLER CABINET SIDE VIEW



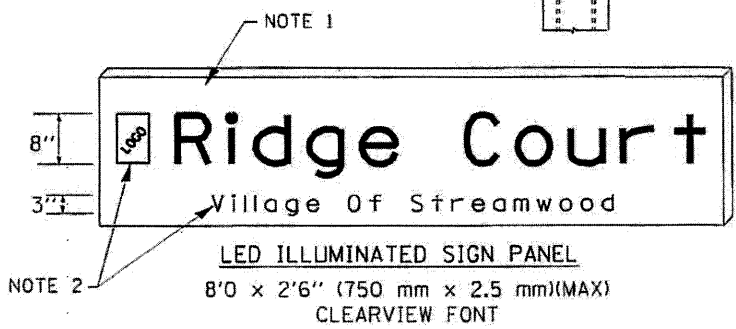
L.E.D. SIGN ENLARGED CABLE CONNECTOR DETAIL



L.E.D. SIGN ENLARGED CABLE CONNECTOR DETAIL

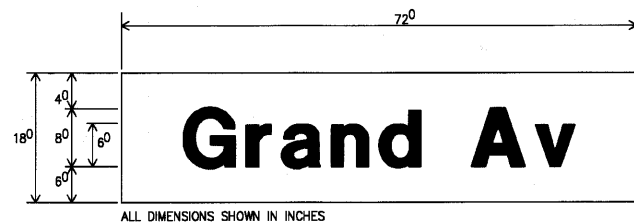


STEEL COMBINATION MAST OR STEEL ARM MAST ARM ASSEMBLY AND POLE

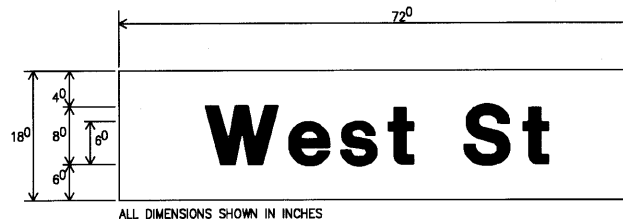


- NOTES:
- SIGNS SHALL BE DUAL SIDED, FRONT AND BACK OF SIGN WILL BE THE SAME.
 - CERTAIN ADDITIONAL INFORMATION MAY BE ALLOWED ON THE SIGN. VERIFY WITH ENGINEER.
 - SIGNS SHALL NOT BE ENERGIZED WHEN TRAFFIC SIGNALS ARE POWERED BY THE UPS. THE SIGNS SHALL BE CONNECTED TO THE UPS BYPASS CIRCUITRY.
 - ALL WIRING WITHIN THE CABINET SHALL BE COLOR CODED AS INDICATED:
R = RED BL = BLUE W = WHITE
B = BLACK Y = YELLOW G = GREEN
 - ALL 120 VOLT SYSTEM AND ALL CONTROL WIRING SHALL BE #12AWG STRANDED UNLESS OTHERWISE INDICATED.
 - ALL WIRING SHALL BE NEATLY DRESSED AND SUPPORTED.

PANEL DESIGN TYPE 1

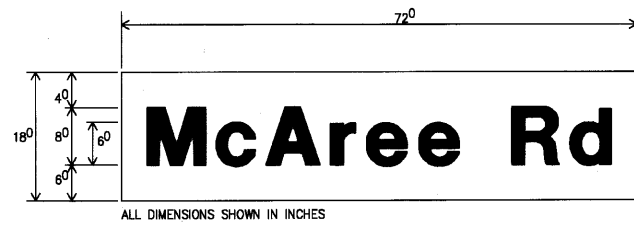


9.0 SQ. FT. EACH
 16 REQUIRED
 SINGLE SIDED REQUIRED
 DOUBLE SIDED REQUIRED
 DESIGN SERIES D
 CLEARVIEW FONT

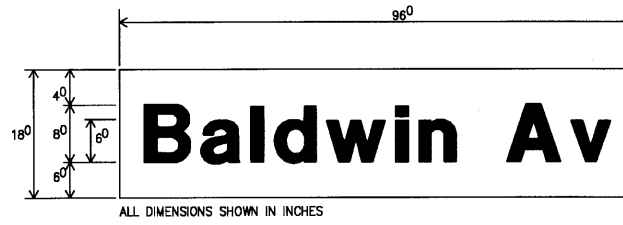


9.0 SQ. FT. EACH
 2 REQUIRED
 SINGLE SIDED REQUIRED
 DOUBLE SIDED REQUIRED
 DESIGN SERIES D
 CLEARVIEW FONT

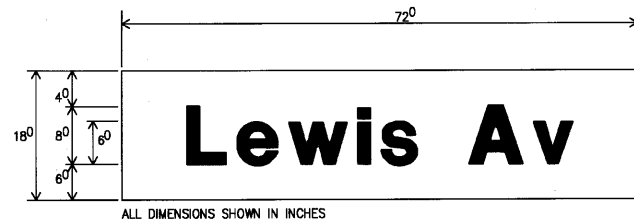
NOTE: L.E.D. ILLUMINATED STREET NAME SIGNS
 AVAILABLE ONLY IN 2 FOOT INCREMENTS.



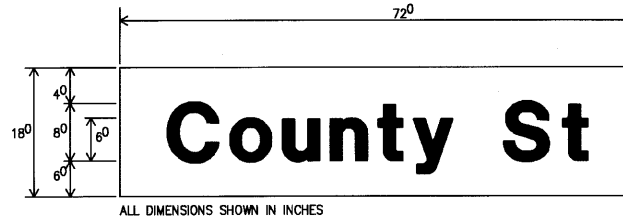
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 DOUBLE SIDED REQUIRED
 DESIGN SERIES D
 CLEARVIEW FONT



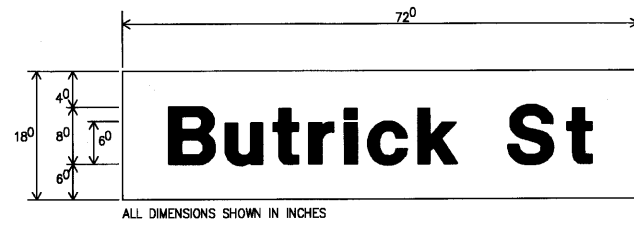
12.0 SQ. FT. EACH
 2 REQUIRED
 SINGLE SIDED REQUIRED
 DOUBLE SIDED REQUIRED
 DESIGN SERIES D
 CLEARVIEW FONT



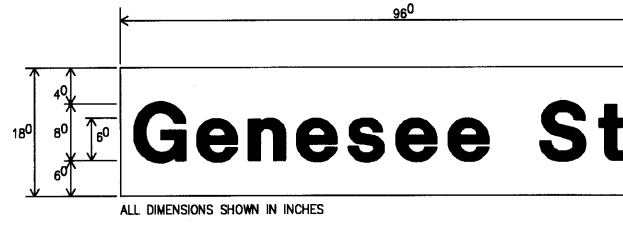
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 DOUBLE SIDED REQUIRED
 DESIGN SERIES D
 CLEARVIEW FONT



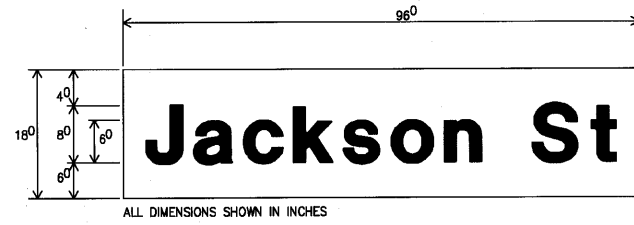
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 2 REQUIRED
 SINGLE SIDED REQUIRED
 DOUBLE SIDED REQUIRED
 DESIGN SERIES D
 CLEARVIEW FONT



9.0 SQ. FT. EACH
 2 REQUIRED
 SINGLE SIDED REQUIRED
 DOUBLE SIDED REQUIRED
 DESIGN SERIES D
 CLEARVIEW FONT



12.0 SQ. FT. EACH
 2 REQUIRED
 SINGLE SIDED REQUIRED
 DOUBLE SIDED REQUIRED
 DESIGN SERIES D
 CLEARVIEW FONT



12.0 SQ. FT. EACH
 2 REQUIRED
 SINGLE SIDED REQUIRED
 DOUBLE SIDED REQUIRED
 DESIGN SERIES D
 CLEARVIEW FONT

FILE NAME = 4136.800-TR2.dwg

USER NAME = GHA
 PLOT SCALE = 1" = .0833'
 PLOT DATE = 3/10/10

DESIGNED - JRD
 DRAWN - ZCW
 CHECKED - DPB
 DATE - 3/10/10

REVISED -
 REVISED -
 REVISED -
 REVISED -



LCDOT MAST ARM MOUNTED STREET NAME SIGNS

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

REVISIONS	
NAME	DATE
COMBINED SHEETS	2/1/07

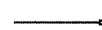
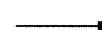




Lake County
 Division of Transportation

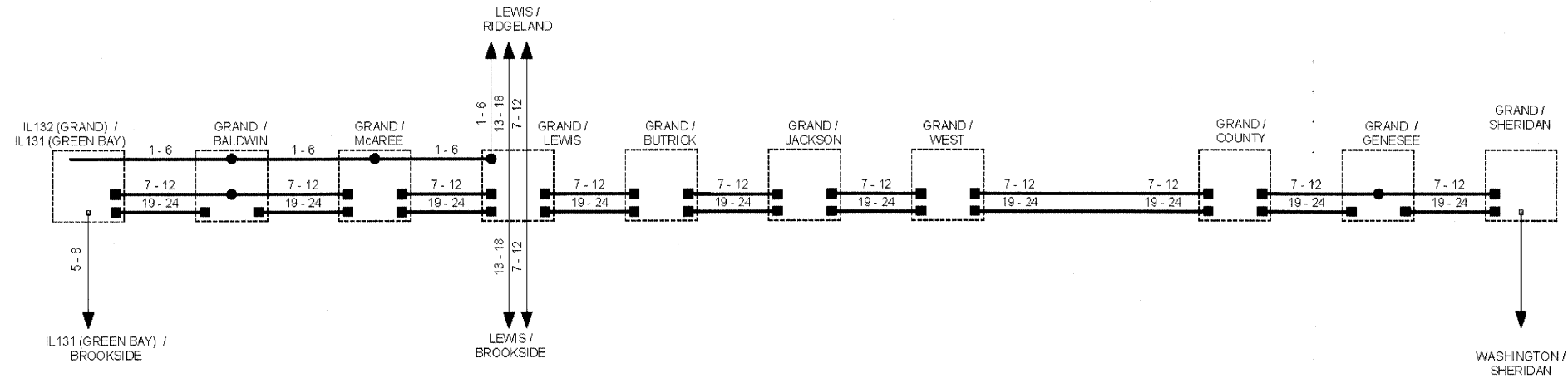
**MAST ARM MOUNTED
 STREET NAME SIGNS**

SCALE: NONE SHEET 1 OF 4 DESIGNED BY: JPS
 DATE: 7/26/06 CHECKED BY: ANK
 GHA #4136.800

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	08-00279-00-TL	LAKE	64	57
CONTRACT #:			63436	

ILLINOIS FED. AID PROJECT

-  EXISTING CONNECTOR / EXISTING FIBER
-  PROPOSED CONNECTOR / EXISTING FIBER
-  PROPOSED FUSION SPLICE / EXISTING FIBER
-  PROPOSED CONNECTOR / PROPOSED FIBER
-  PROPOSED FUSION SPLICE / PROPOSED FIBER
-  FUTURE FIBER (BY OTHERS)



**FIBER OPTIC CABLE TERMINATION/SPLICING QUANTITIES
(BY INTERSECTION/LOCATION)**

INTERSECTION/LOCATION	INCIDENTAL		BID ITEM	
	T	S	T	S
IL 132 (GRAND AVE) @ IL 131 (GREEN BAY RD)			12	
GRAND AVE @ BALDWIN AVE	12	12		
GRAND AVE @ McAREE RD	24	6		
GRAND AVE @ LEWIS AVE	24	6		
GRAND AVE @ BUTRICK ST	24			
GRAND AVE @ JACKSON ST	12	6		
GRAND AVE @ WEST ST	12	6		
GRAND AVE @ COUNTY RD	24			
GRAND AVE @ GENESEE ST	12	6		
GRAND AVE @ SHERIDAN RD				12
TOTAL FOR CONTRACT	144	42	24	

T = TERMINATE FIBER IN CABINET
S = SPLICE FIBER IN CABINET



FILE NAME = 4136.800-TR2.dwg
USER NAME = GHA
PLOT SCALE = 1" = .0833'
PLOT DATE = 3/10/10

DESIGNED - JRD
DRAWN - ZCW
CHECKED - DPB
DATE - 3/10/10



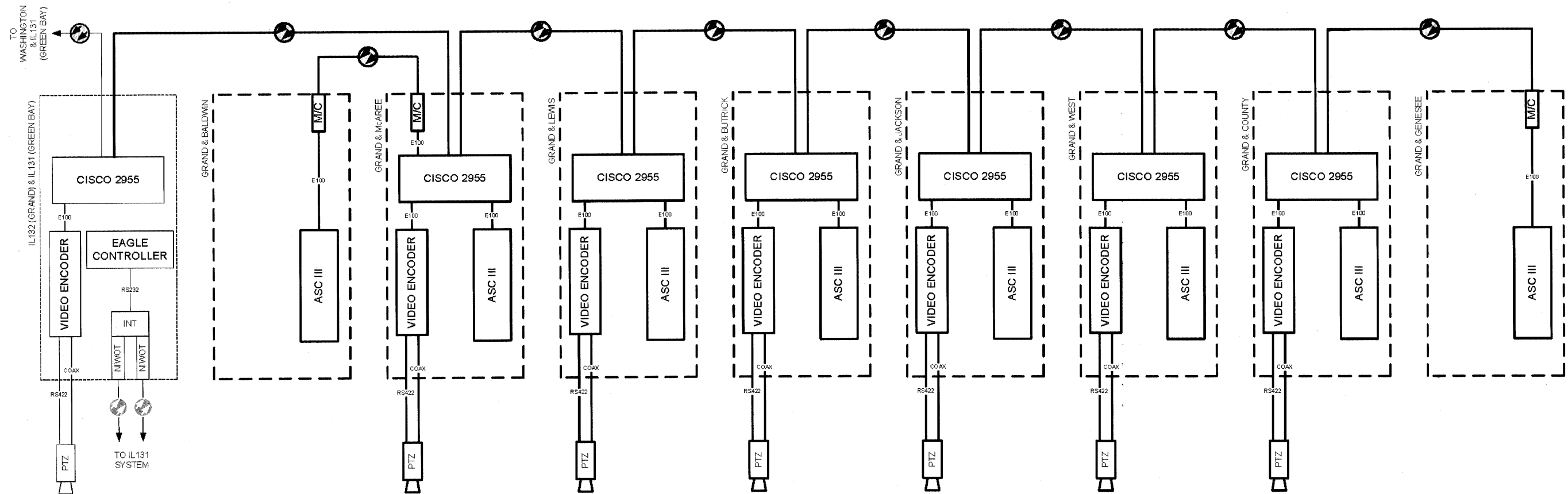
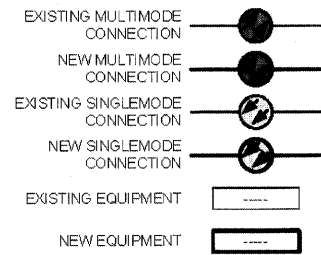
**FIBER SPLICING DIAGRAM 23
GRAND AVENUE FROM IL RTE 131
(GREEN BAY ROAD) TO SHERIDAN RD**

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

4/25/09	MLX ADDITIONS	DESIGN	DJG	1/08
4/4/09	FIBER AS BUILT	DRAWN	DJG	1/08
4/7/09	WASH/S FLAHS ADDITIONS	CHECKED	DJG	1/08
4/8/09	GURNEE POLICE STATION ADDITIONS	SCALE		
4/9/09	CHAOI CASE ADDITIONS	DATE		9/4/2009
4/9/09	GRAND AND LEWIS ADDITIONS			

F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	08-00279-00-TL	LAKE	64	58
CONTRACT #:			63436	
ILLINOIS FED. AID PROJECT				

GHA #4136.800



FILE NAME = 4136.800-TR2.dwg

USER NAME = GHA
 PLOT SCALE = 1" = .0833'
 PLOT DATE = 3/10/10

DESIGNED - JRD
 DRAWN - ZCW
 CHECKED - DPB
 DATE - 3/10/10

REVISED -
 REVISED -
 REVISED -
 REVISED -



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

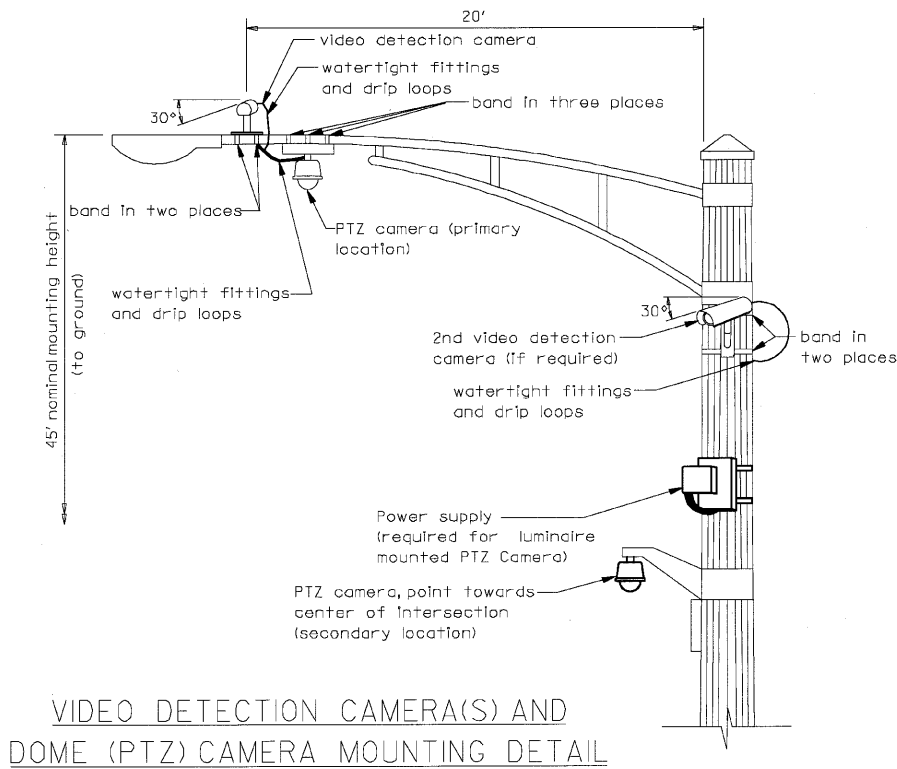
**CABINET DETAIL 35
 GRAND AVENUE / IL RTE 131
 (GREEN BAY ROAD) TO SHERIDAN ROAD**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	08-00279-00-TL	LAKE	64	59

CONTRACT # 63436 ILLINOIS FED. AID PROJECT

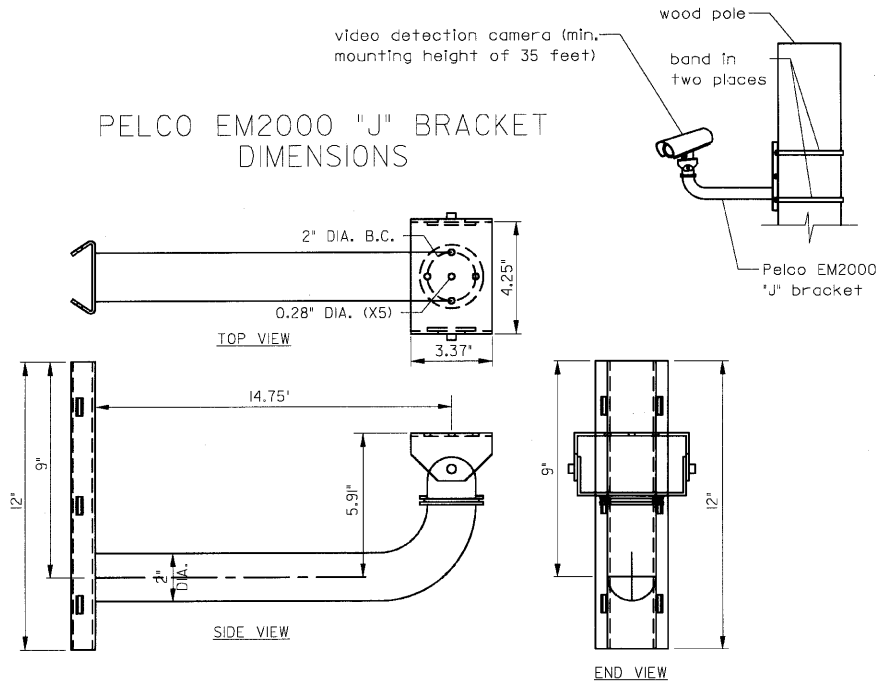
REV.	DATE	BY	DESCRIPTION	SCALE	DATE
V4.3	8/4/09	DJG	MLX ADDITIONS	NOT TO SCALE	8/4/2009
V4.2	5/6/09	DJG	FIBER AS-BUILT		
V4.1	5/6/09	DJG	WASHINGTON PLACE ADDITIONS		
V4.0	5/6/09	DJG	GURNEE POLICE STATION ADDITIONS		
V3.9	5/6/09	DJG	LMAD PHASE 3 ADDITIONS		
V3.8	5/6/09	DJG	GRAND AND LEWIS ADDITIONS		

GHA #4136.800



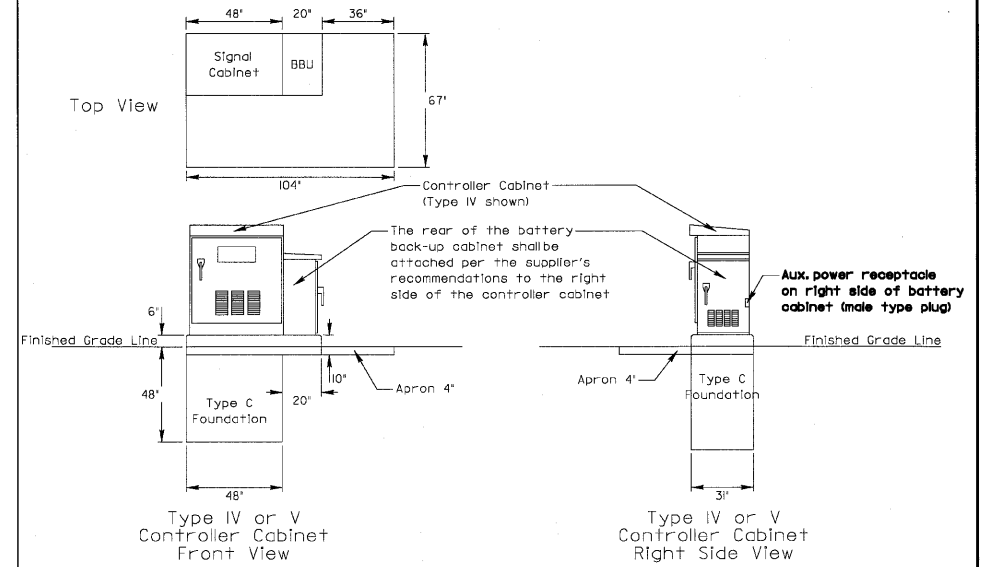
VIDEO DETECTION CAMERA(S) AND DOME (PTZ) CAMERA MOUNTING DETAIL
(NOT TO SCALE)

NOTES FOR SINGLE, DUAL AND MULTIPLE MYP MOUNTING:
 - MOUNT LUMINAIRE MOUNTING BRACKET AS HIGH AS POSSIBLE.
 - AIM BRACKET TOWARD DIRECTION OF TRAFFIC TO BE DETECTED.
 - MOUNT MACHINE VISION PROCESSOR AIMING DOWN AT 30 DEGREE ANGLE.

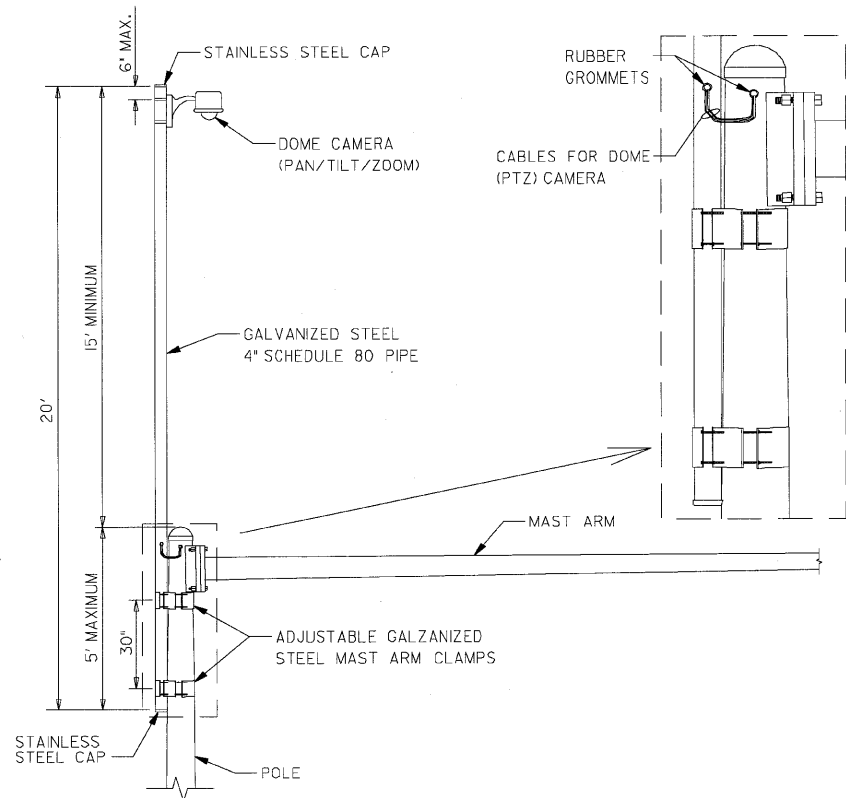


VIDEO DETECTION CAMERA MOUNTING DETAIL FOR TEMPORARY TRAFFIC SIGNALS
(NOT TO SCALE)

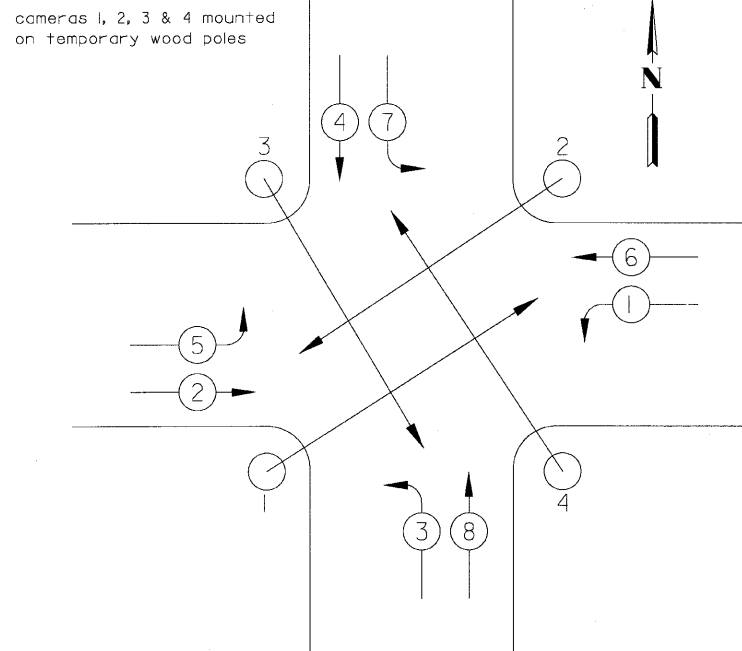
UNINTERRUPTED POWER SUPPLY CABINET INSTALLATION



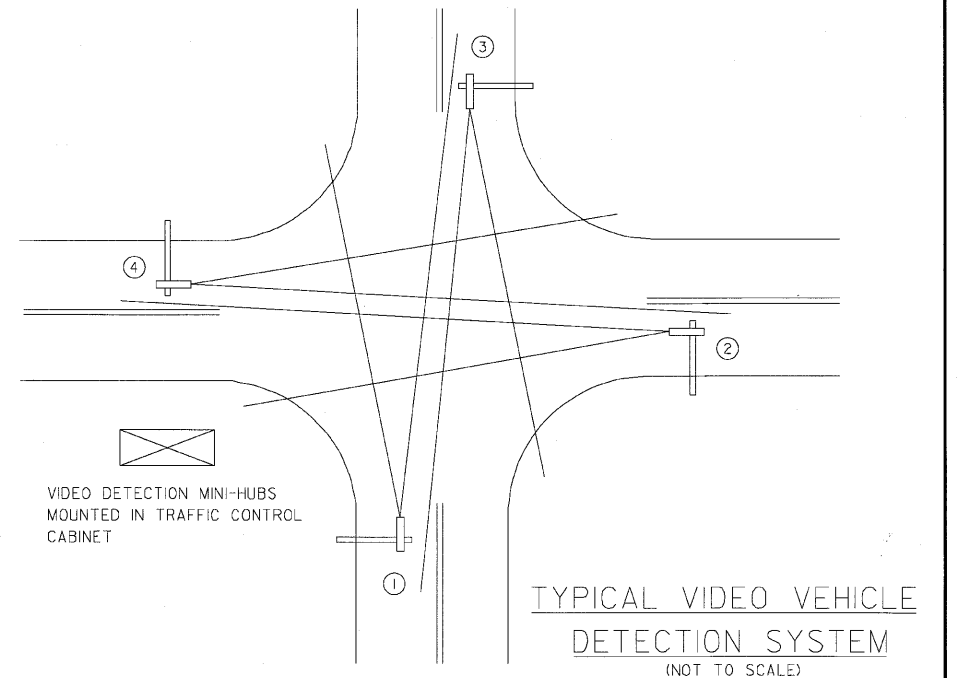
Note: The full depth (54") foundation is only required under the controller cabinet.



CAMERA MOUNTING ASSEMBLY DETAIL
(NOT TO SCALE)



VIDEO DETECTION CAMERA ASSIGNMENT FOR TEMPORARY TRAFFIC SIGNALS
(NOT TO SCALE)



TYPICAL VIDEO VEHICLE DETECTION SYSTEM
(NOT TO SCALE)

(4) MACHINE VISION PROCESSOR ASSEMBLIES AND BRACKETS
 ① ② ③ ④ POWER CABLE TO EACH MACHINE VISION PROCESSOR (24 VAC)

REVISIONS	
NAME	DATE
2nd Camera Locat. Added	1/14/09

Lake County
Division of Transportation

STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: N.T.S.
DATE: 05/20/05

DESIGNED BY: JPS
CHECKED BY: ANK
GHA #4136.800

FILE NAME = 4136.800-TR2.dwg

USER NAME = GHA
 PLOT SCALE = 1" = .0833'
 PLOT DATE = 3/10/10

DESIGNED - JRD
 DRAWN - ZCW
 CHECKED - DPB
 DATE - 3/10/10

REVISED -
 REVISED -
 REVISED -
 REVISED -

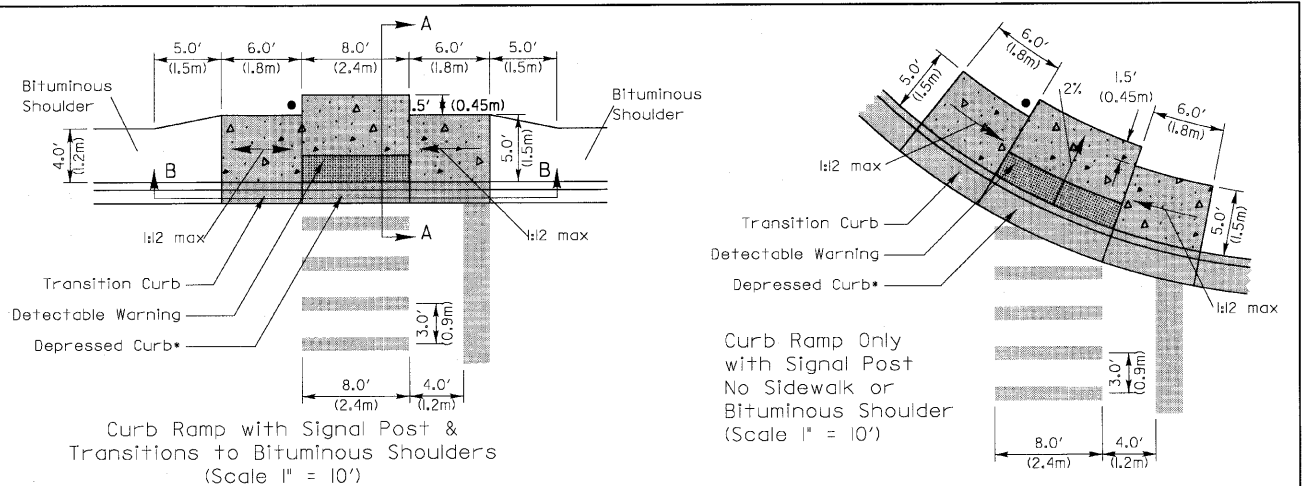


LCDOT VIDEO DETECTION DETAILS

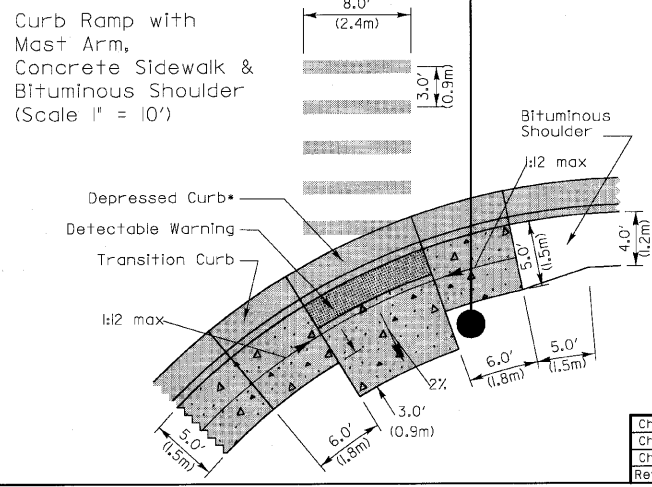
SCALE: NONE SHEET NO. OF SHEETS STA. TO STA.

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	08-00279-00-TL	LAKE	64	60

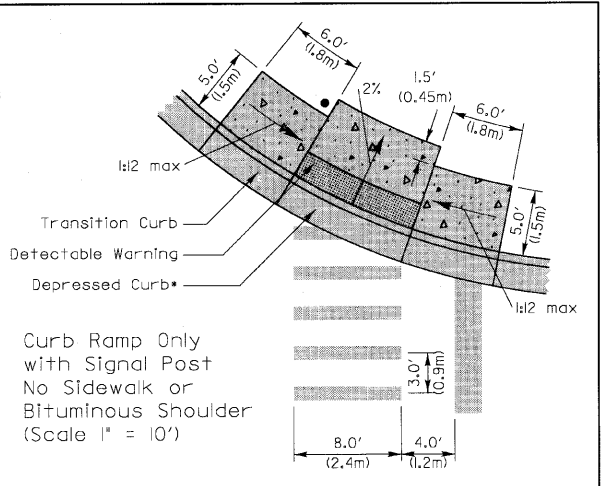
CONTRACT #: 63436
ILLINOIS FED. AID PROJECT



Curb Ramp with Signal Post & Transitions to Bituminous Shoulders
(Scale 1" = 10')



Curb Ramp with Mast Arm, Concrete Sidewalk & Bituminous Shoulder
(Scale 1" = 10')



Curb Ramp Only with Signal Post No Sidewalk or Bituminous Shoulder
(Scale 1" = 10')

- *GENERAL NOTES:**
1. The gutter slope for the DEPRESSED CURB adjacent to the curb ramp is a maximum of 5% (standard curb and gutter is 6%). The back of curb rise is 1/2" (standard depressed curb is 1/4"). See Section A-A (LC6013B) and IDOT standard 606001 for the different curb dimensions.
 2. The Depressed Curb and the Transition Curb will be paid for as COMBINATION CONCRETE CURB AND GUTTER of the type adjacent to the curb ramp.
 3. The concrete area consisting of the landing (2% slope) and the side ramps (behind the transition curb) along with the continuation of the 5' (1.5m) concrete between adjacent ramps (if any) will be measured in square feet and paid for as PORTLAND CEMENT CONCRETE SIDEWALK of the thickness specified.
 4. The detectable warnings shall be installed in accordance with BDE specification 80146 DETECTABLE WARNINGS and shall be measured and paid for per square foot.
 5. Since the width of the flag doesn't affect the construction of the ramp, both B-6.12 and B-6.24 Curb & Gutter are portrayed in this standard.

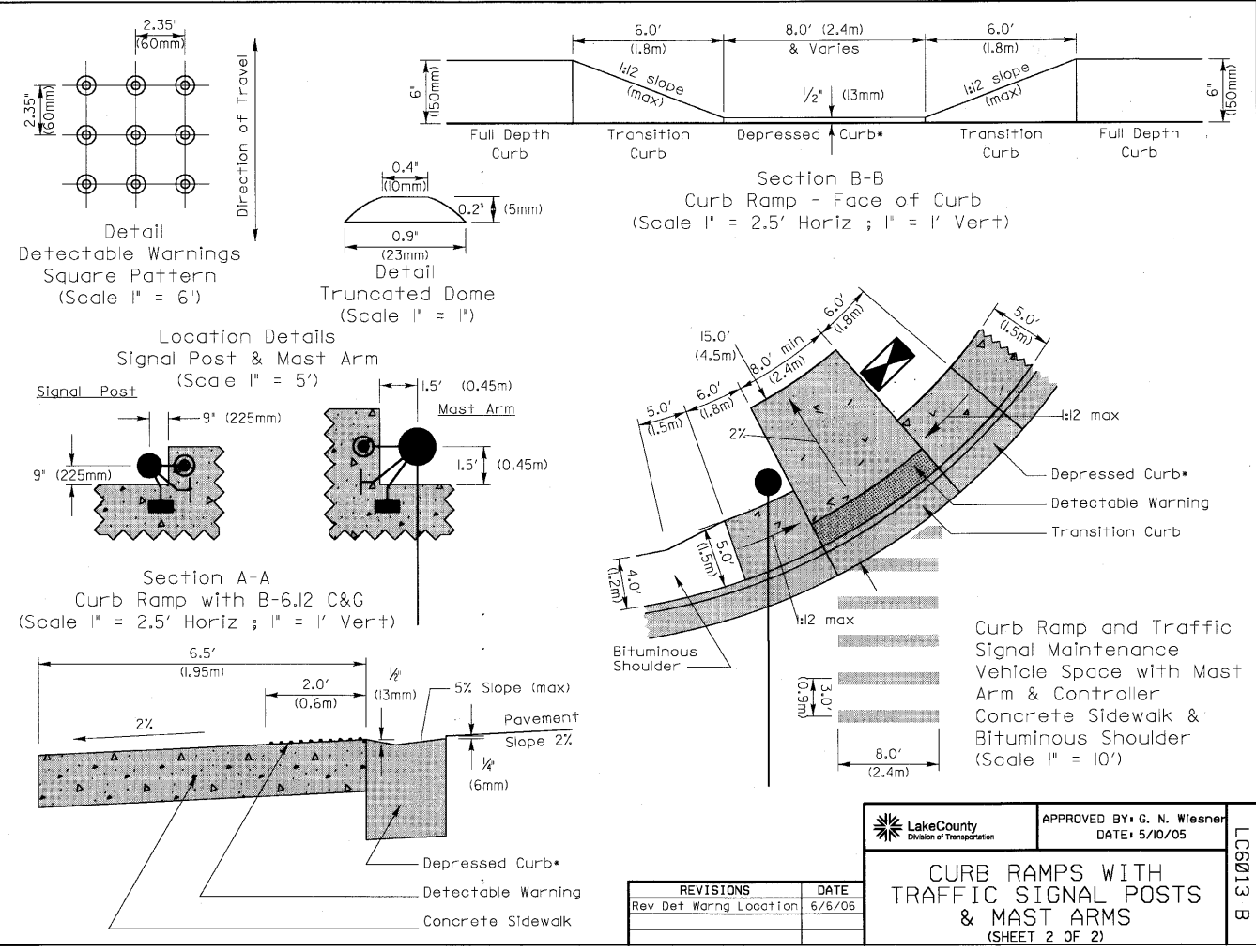
REVISIONS	DATE
Changed General Notes	6/15/05
Changed General Notes	12/7/05
Changed General Notes	1/17/06
Rev Det Waring Location	6/6/06

Lake County
Division of Transportation

APPROVED BY: G. N. Wiesner
DATE: 5/10/05

CURB RAMPS WITH TRAFFIC SIGNAL POSTS & MAST ARMS
(SHEET 1 OF 2)

LC6013 A



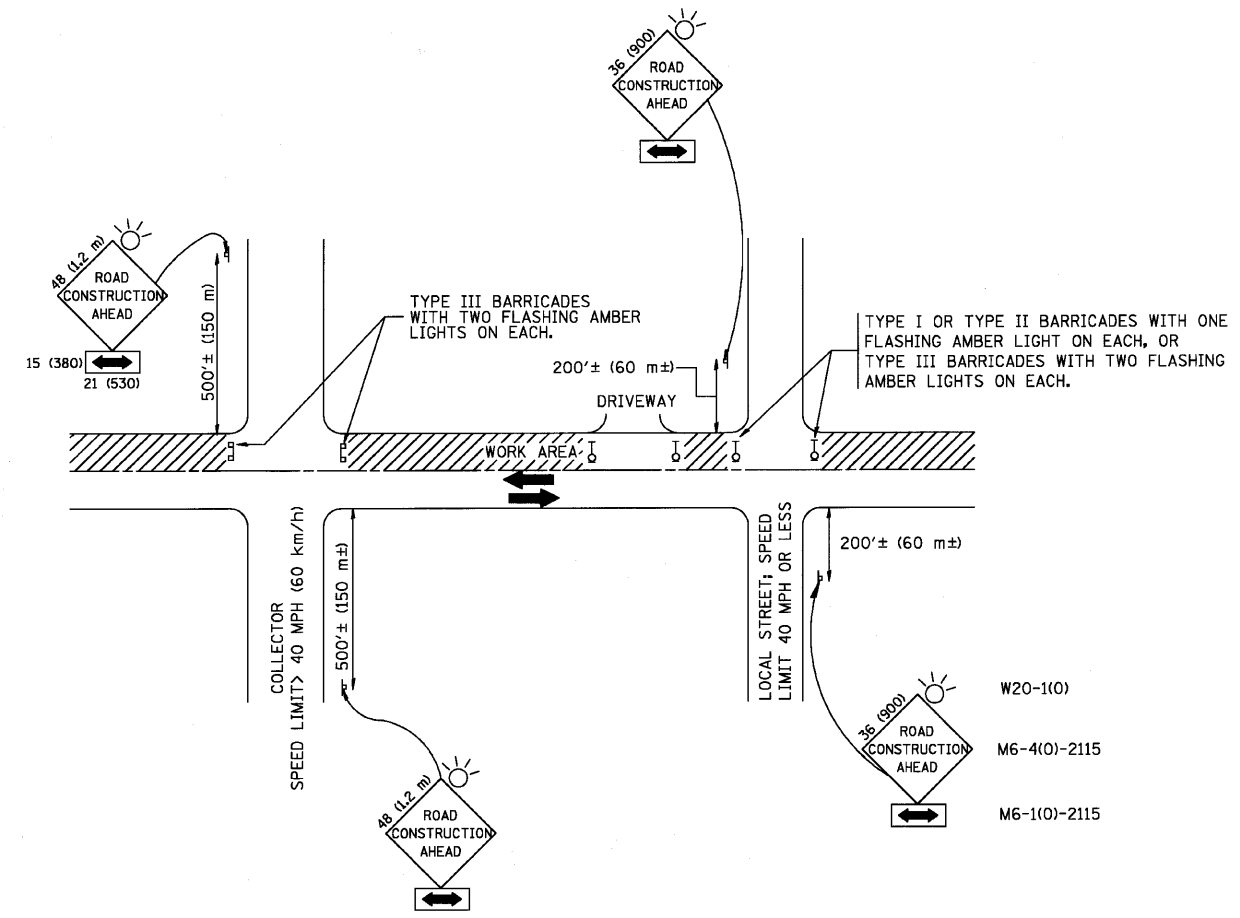
REVISIONS	DATE
Rev Det Waring Location	6/6/06

Lake County
Division of Transportation

APPROVED BY: G. N. Wiesner
DATE: 5/10/05

CURB RAMPS WITH TRAFFIC SIGNAL POSTS & MAST ARMS
(SHEET 2 OF 2)

LC6013 B



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

NOTES:

- A. FOR NO LANE RESTRICTION ON THE SIDE ROAD OR DRIVEWAYS
 1. SIDE ROAD WITH A SPEED LIMIT OF 40 MPH (60 km/h) OR LESS AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
 - a) ONE **ROAD CONSTRUCTION AHEAD** SIGN 36 x 36 (900x900) WITH A FLASHER AND FLAG MOUNTED ON IT APPROXIMATELY 200' (60 m) IN ADVANCE OF THE MAIN ROUTE.
 - b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE I, TYPE II OR TYPE III BARRICADES, 1/3 OF THE CROSS SECTION OF THE CLOSED PORTION.
 2. SIDE ROAD WITH A SPEED LIMIT GREATER THAN 40 MPH (60 km/h) AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
 - a) ONE **ROAD CONSTRUCTION AHEAD** SIGN 48 x 48 (1.2 m x 1.2 m) WITH A FLASHER MOUNTED ON IT APPROXIMATELY 500' (150 m) IN ADVANCE OF THE MAIN ROUTE.
 - b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE III BARRICADES, 1/2 OF THE CROSS SECTION OF THE CLOSED PORTION.
 - 3. WHEN THE SIDE ROAD LIES BETWEEN THE BEGINNING OF THE MAINLINE SIGNING AND THE WORK ZONE, A SINGLE HEADED ARROW (M6-1) SHALL BE USED IN LIEU OF THE DOUBLE HEADED ARROW (M6-4).
- B. FOR A LANE CLOSURE ON A SIDE ROAD OR DRIVEWAY:

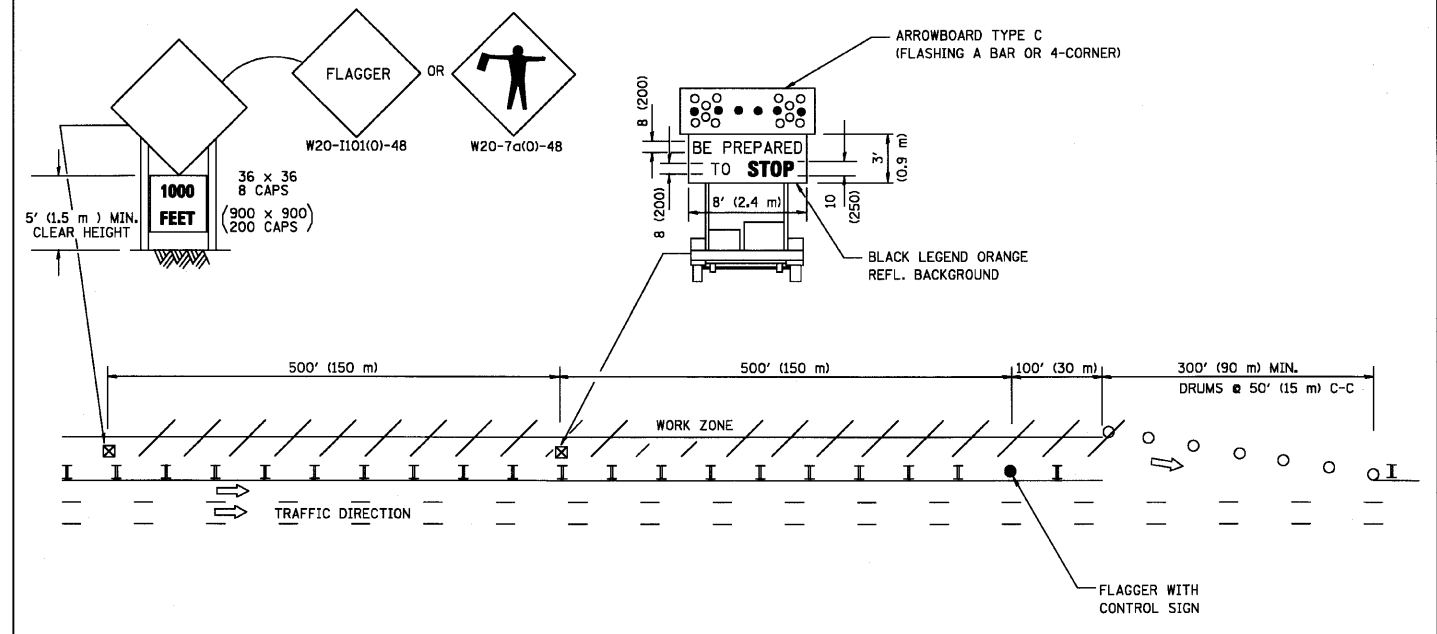
USE APPLICABLE PORTIONS OF THE TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES (STD. 701501, STD. 701606 OR THE APPROPRIATE STANDARD). THE SPACING OF SIGNS AND BARRICADES SHALL BE ADJUSTED FOR FIELD CONDITIONS AS DIRECTED BY THE ENGINEER. THE DIRECTIONAL ARROW SHALL BE COVERED OR REMOVED WHEN NO LONGER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

TC-10, LATEST REVISION DATE: 01-06-00

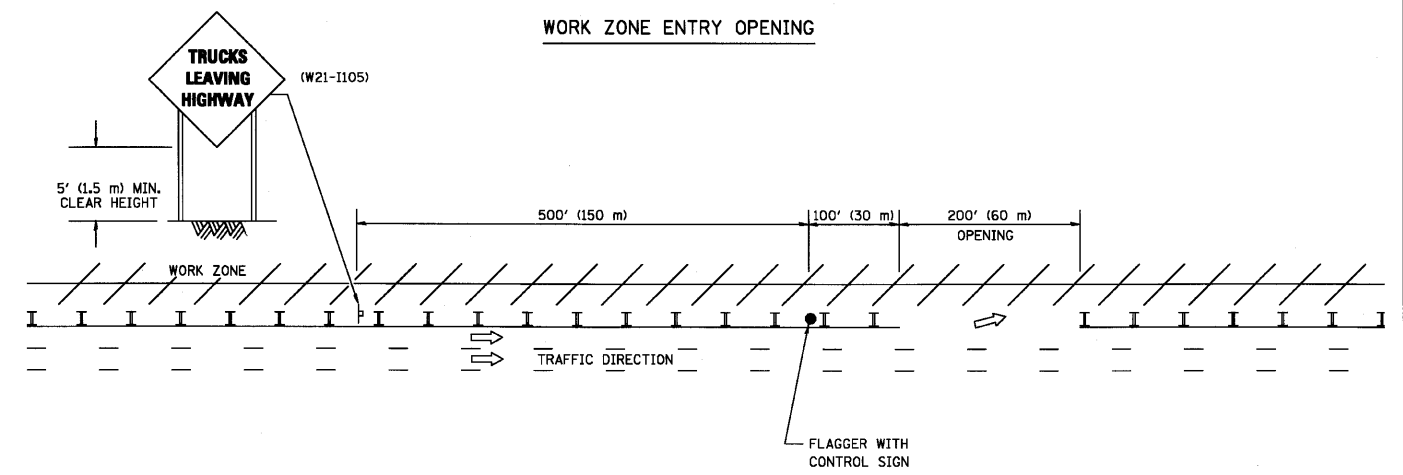
All dimensions are in millimeters (inches) unless otherwise shown.

SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS

WORK ZONE EXIT OPENING



WORK ZONE ENTRY OPENING



NOTES:

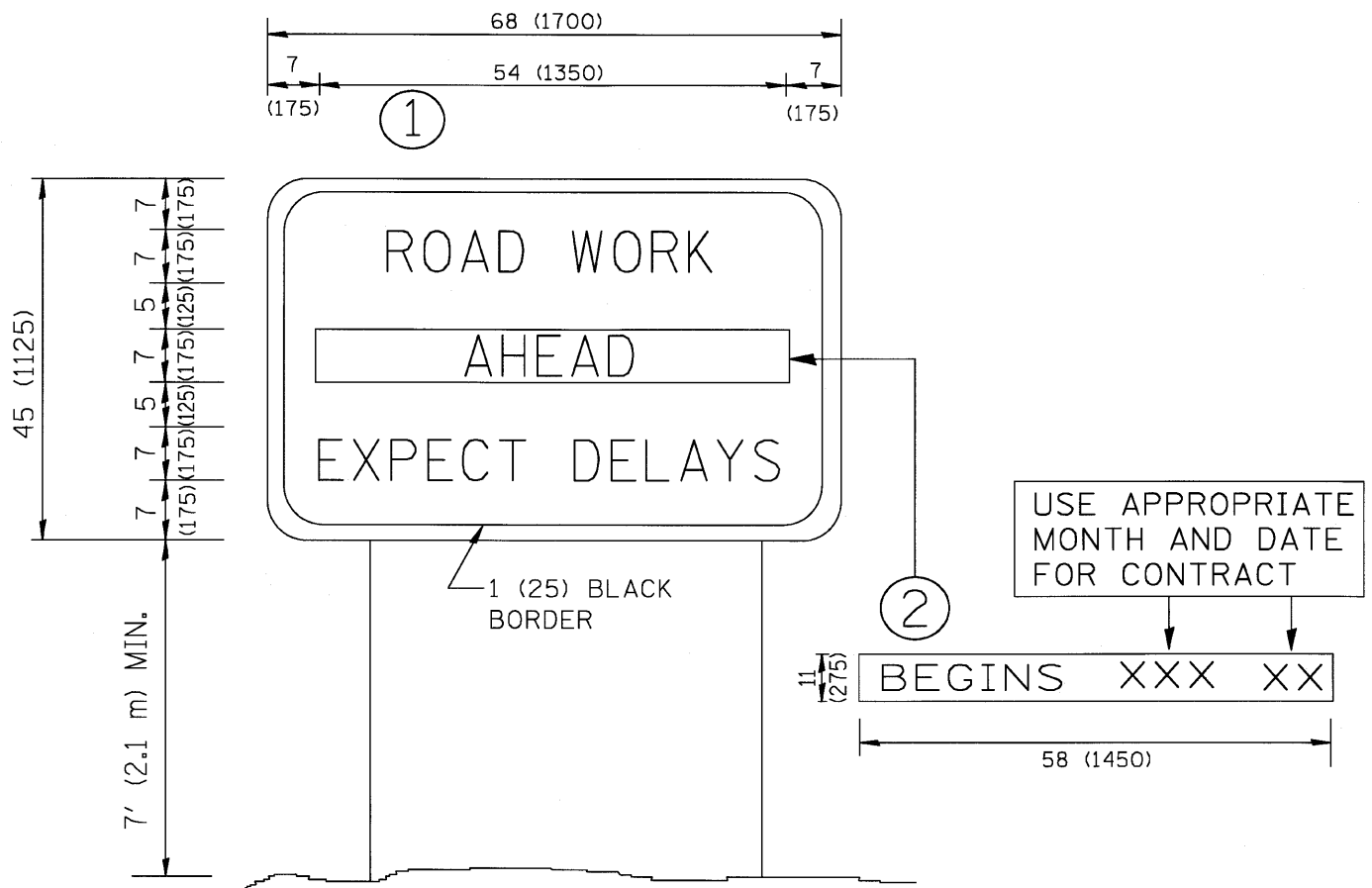
1. THE ARROWBOARD, THE FLAGGER AHEAD SIGN AND THE TRUCKS LEAVING HIGHWAY SIGN SHALL BE REMOVED OR TURNED AWAY FROM TRAFFIC AND THE EXIT AND ENTRY OPENINGS SHALL BE CLOSED WHEN THE FLAGGING OPERATION CEASES. NON OPERATING EQUIPMENT SHALL COMPLY WITH ARTICLE 701.11
2. WORK ZONE EXIT OPENINGS SHOULD BE A MINIMUM OF ONE HALF MILE APART.
3. EXITING THE WORK ZONE AT ANY PLACE OTHER THAN AT A WORK ZONE EXIT OPENING WILL BE PROHIBITED.
4. ALL VEHICLES SHALL ENTER THE WORK ZONE AT ENTRY OPENINGS, USING THEIR TURN SIGNALS TO WARN MOTORISTS

TC-18, LATEST REVISION DATE: 12-09

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DISTRICT 1 STANDARD DETAILS			FAP. RTE. 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 62
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISED -		SCALE N.A.	SHEET NO.	OF SHEETS	STA.	TO STA.	TC-10 & TC-18		
	PLOT DATE = 3/10/10	CHECKED - DPB	REVISED -		CONTRACT # 63436							
		DATE - 3/10/10	REVISED -		ILLINOIS FED. AID PROJECT							

ARTERIAL ROAD INFORMATIONAL SIGN



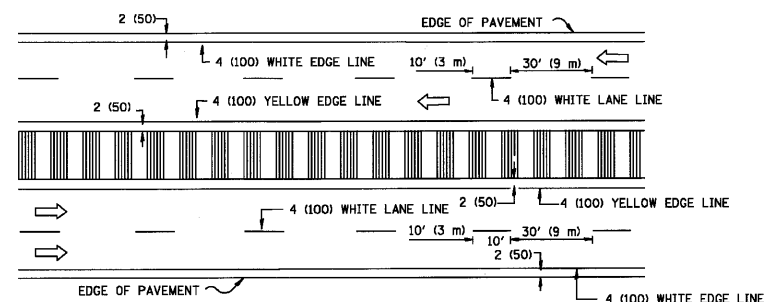
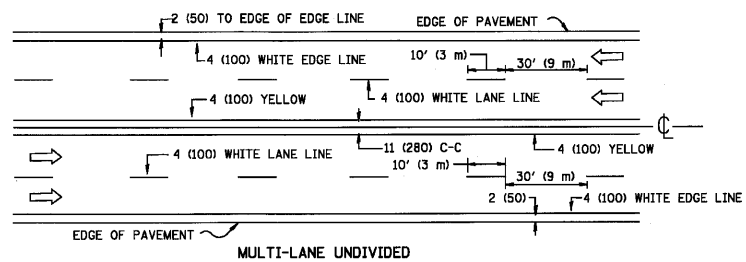
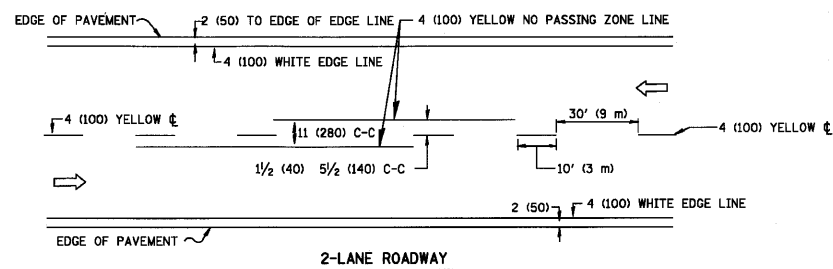
NOTES:

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

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

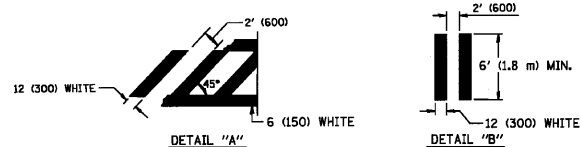
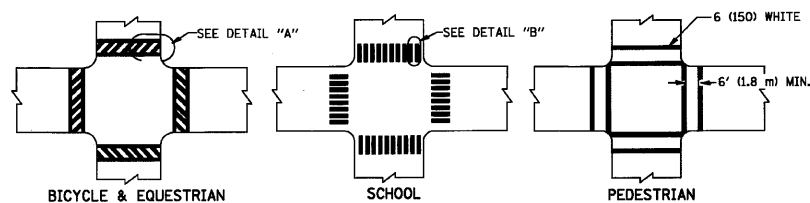
TC-22, LATEST REVISION DATE: 01-31-07

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DISTRICT 1 STANDARD DETAILS			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 1" = .0833'	DRAWN - ZCW	REVISED -					541	08-00279-00-TL	LAKE	64	63
	PLOT DATE = 3/10/10	CHECKED - DPB	REVISED -					TC-22		CONTRACT #:		63436
	DATE - 3/10/10	REVISOR -		SCALE: N.A.			SHEET NO. OF SHEETS		STA. TO STA.		ILLINOIS FED. AID PROJECT	

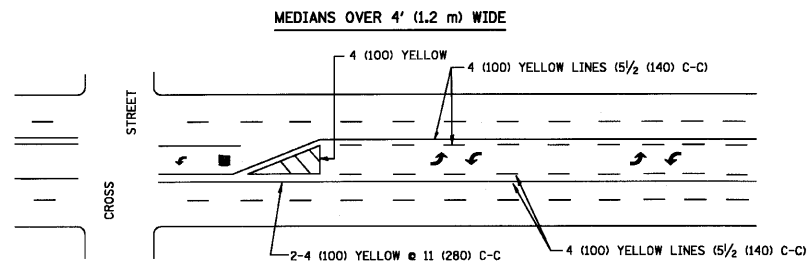
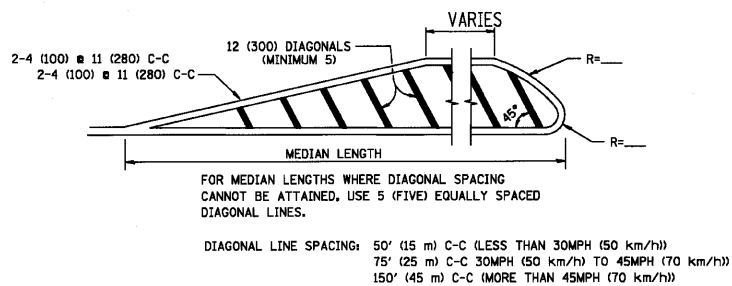
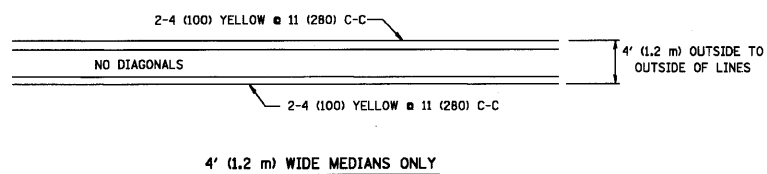


NOTE: MEDIANS WITH BARRIER CURB DO NOT REQUIRE AN EDGE LINE

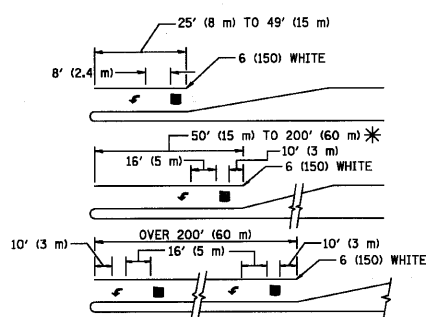
TYPICAL LANE AND EDGE LINE MARKING



TYPICAL CROSSWALK MARKING



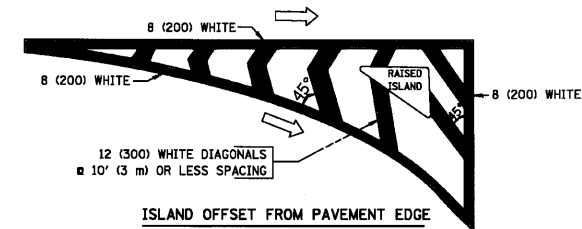
TYPICAL PAINTED MEDIAN MARKING



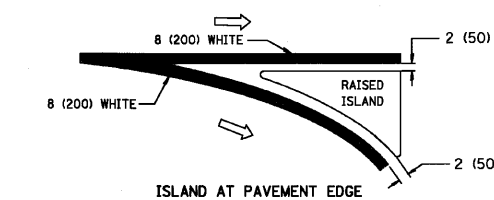
FULL SIZE LETTERS 8' (2.4 m) AND ARROWS SHALL BE USED.
 AREA = 15.6 SQ. FT. (1.5 m²) AREA = 20.8 SQ. FT. (1.9 m²)
 * TURN LANES IN EXCESS OF 400' (120 m) IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW - "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW - "ONLY".

TYPICAL LEFT (OR RIGHT) TURN LANE

TYPICAL TURN LANE MARKING



ISLAND OFFSET FROM PAVEMENT EDGE



ISLAND AT PAVEMENT EDGE

TYPICAL ISLAND MARKING

TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE ON 2 LANE PAVEMENT	4 (100)	SKIP-DASH	YELLOW	10' (3 m) LINE WITH 30' (9 m) SPACE
CENTERLINE ON MULTI-LANE UNDIVIDED PAVEMENT	2 @ 4 (100)	SOLID	YELLOW	11 (280) C-C
NO PASSING ZONE LINES FOR ONE DIRECTION FOR BOTH DIRECTIONS	4 (100) 2 @ 4 (100)	SOLID SOLID	YELLOW YELLOW	5/2 (140) C-C FROM SKIP-DASH CENTERLINE 11 (280) C-C OMIT SKIP-DASH CENTERLINE BETWEEN
LANE LINES	4 (100) 5 (125) ON FREEWAYS	SKIP-DASH SKIP-DASH	WHITE WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE
DOTTED LINES (EXTENSIONS OF CENTER, LANE OR TURN LANE MARKINGS)	SAME AS LINE BEING EXTENDED	SKIP-DASH	SAME AS LINE BEING EXTENDED	2' (600) LINE WITH 6' (1.8 m) SPACE
EDGE LINES	4 (100)	SOLID	YELLOW-LEFT WHITE-RIGHT	OUTLINE MOUNTABLE MEDIANS IN YELLOW; EDGE LINES ARE NOT USED NEXT TO BARRIER CURB
TURN LANE MARKINGS	6 (150) LINE; FULL SIZE LETTERS & SYMBOLS (8' (2.4m))	SOLID	WHITE	SEE TYPICAL TURN LANE MARKING DETAIL
TWO WAY LEFT TURN MARKING	2 @ 4 (100) EACH DIRECTION 8' (2.4m) LEFT ARROW	SKIP-DASH AND SOLID IN PAIRS	YELLOW WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE FOR SKIP-DASH; 5/2 (140) C-C BETWEEN SOLID LINE AND SKIP-DASH LINE SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL
CROSSWALK LINES (PEDESTRIAN) A. DIAGONALS (BIKE & EQUESTRIAN) B. LONGITUDINAL BARS (SCHOOL)	2 @ 6 (150) 12 (300) @ 45° 12 (300) @ 90°	SOLID SOLID SOLID	WHITE WHITE WHITE	NOT LESS THAN 6' (1.8 m) APART 2' (600) APART SEE TYPICAL CROSSWALK MARKING DETAILS.
STOP LINES	24 (600)	SOLID	WHITE	PLACE 4' (1.2 m) IN ADVANCE OF AND PARALLEL TO CROSSWALK, IF PRESENT. OTHERWISE, PLACE AT DESIRED STOPPING POINT, PARALLEL TO CROSSROAD CENTERLINE, WHERE POSSIBLE
PAINTED MEDIANS	2 @ 4 (100) WITH 12 (300) DIAGONALS @ 45° NO DIAGONALS USED FOR 4' (1.2 m) WIDE MEDIANS	SOLID	YELLOW TWO WAY TRAFFIC WHITE ONE WAY TRAFFIC	11 (280) C-C FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING.
GORE MARKING AND CHANNELIZING LINES	8 (200) WITH 12 (300) DIAGONALS @ 45°	SOLID	WHITE	DIAGONALS: 15' (4.5 m) C-C (LESS THAN 30MPH (50 km/h)) 20' (6 m) C-C (30MPH (50 km/h) TO 45MPH (70 km/h)) 30' (9 m) C-C (OVER 45MPH (70 km/h))
RAILROAD CROSSING	24 (600) TRANSVERSE LINES; "RR" IS 6' (1.8 m) LETTERS; 16 (400) LINE FOR "X"	SOLID	WHITE	SEE STATE STANDARD 780001 AREA OF: "R"=3.6 SQ. FT. (0.33 m²) EACH "X"=54.0 SQ. FT. (5.0 m²)
SHOULDER DIAGONALS	12 (300) @ 45°	SOLID	WHITE - RIGHT YELLOW - LEFT	50' (15 m) C-C (LESS THAN 30MPH (50 km/h)) 75' (25 m) C-C (30 MPH (50 km/h) TO 45MPH (70 km/h)) 150' (45 m) C-C (OVER 45MPH (70 km/h))

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

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

TC-13, LATEST REVISION DATE: 09-09-09

FILE NAME = 4136.800-TR2.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DISTRICT 1 TYPICAL PAVEMENT MARKINGS			F.A.P. RTE. 541	SECTION 08-00279-00-TL	COUNTY LAKE	TOTAL SHEETS 64	SHEET NO. 64
PLOT SCALE = 1" = .0833'	CHECKED - DPB	DRAWN - ZCW	REVISED -		SCALE N.A.	SHEET NO. OF SHEETS	STA. TO STA.	CONTRACT # 63436				
PLOT DATE = 3/10/10	DATE - 3/10/10	REVISOR -	REVISED -		ILLINOIS FED. AID PROJECT							