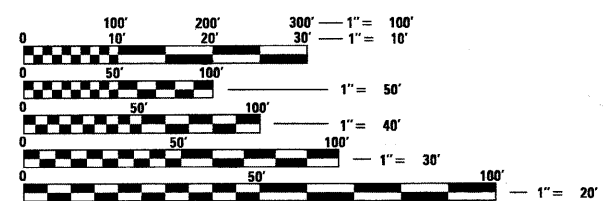


INDEX OF SHEETS

1. TITLE SHEET
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3. SUMMARY OF QUANTITIES
- 4.-9. DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS
10. TEMPORARY TRAFFIC SIGNAL EQUIPMENT REMOVAL PLAN
US ROUTE 6 (W. EAMES STREET) AT BELL ROAD
11. TRAFFIC SIGNAL INSTALLATION PLAN
US ROUTE 6 (W. EAMES STREET) AT BELL ROAD
12. SCHEDULE OF QUANTITIES, CABLE PLAN, PHASE DESIGNATION DIAGRAM
AND EMERGENCY VEHICLE PREMPTION
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13. MAST ARM MOUNTED STREET NAME SIGN
13A. ARTERIAL ROAD INFORMATION SIGN

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- 701106-03 OFF-ROAD OPERATIONS, 2L, 2W, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE
- 701011-02 OFF-RD MOVING OPERATIONS, 2L, 2W, DAY ONLY
- 701101-02 OFF-ROAD OPERATIONS, MULTILANE, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE
- 701301-03 LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
- 701421-02 LANE CLOSURE, MULTILANE, DAY OPERATIONS ONLY, FOR SPEEDS ≥ 45 MPH TO 55MPH
- 701901-01 TRAFFIC CONTROL DEVICES
- 720001-01 SIGN PANEL MOUNTING DETAILS
- 814001-02 HANDHOLES
- 814006-02 DOUBLE HANDHOLES
- 857001-01 STANDARD PHASE DESIGNATION DIAGRAMS AND PHASE SEQUENCES
- 877001-04 STEEL MAST ARM ASSEMBLY AND POLE 16' THROUGH 55'
- 878001-08 CONCRETE FOUNDATION DETAILS
- 880006-01 TRAFFIC SIGNAL MOUNTING DETAILS



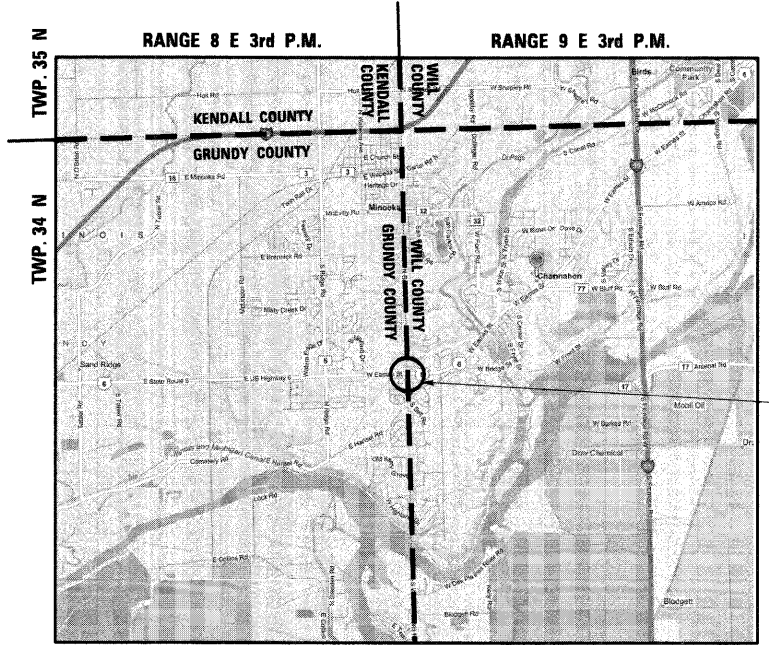
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

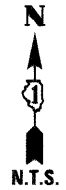
PROJECT ENGINEER: AMIR CUBIC
PROJECT MANAGER: DARYLE DREW

CONTRACT NO. 60J90

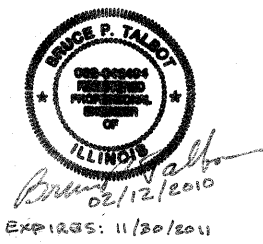
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
FEDERAL AID HIGHWAY
DISTRICT 1
TRAFFIC SIGNAL MODERNIZATION
US ROUTE 6 @ BELL ROAD
F.A.U. ROUTE 392 /US ROUTE 6
WILL COUNTY
SECTION 2009-130 TS
C-91-298-10



LOCATION MAP



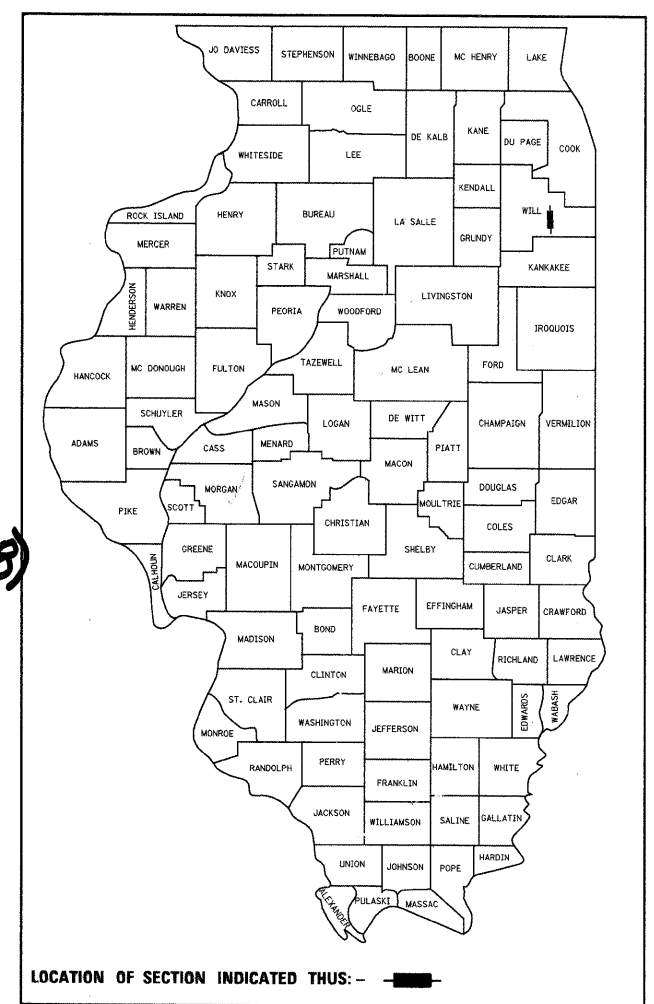
**US ROUTE 6 (W. EAMES STREET)
@
BELL ROAD**



PREPARED BY:
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Consulting Engineers, Land Surveyors & Planners
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Ph: 630.862.2100 Fax: 630.862.2199
E-Mail: cadd@cemcon.com Website: www.cemcon.com

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
392	2009-130 TS	WILL	13*	1
		ILLINOIS	CONTRACT NO. 60J90	

* 13 + 1 = 14



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED April 20 10
Darin M. O'Keefe
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

June 05 2010
Scott E. Stitt, P.E./e
ENGINEER OF DESIGN AND ENVIRONMENT

June 05 2010
Christine M. Reed
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

**PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS**

HOT-MIX ASPHALT MIXTURE REQUIREMENTS	
MIXTURE TYPE	AIR VOIDS @ Ndes
HMA SIDEWALK	
HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N-50 (IL 9.5mm), 2"	4% @ 50 GYR

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

THE "AC TYPE " FOR POLYMERIZED HMA MIXES SHALL BE "SBS/SBR PG 70-22" AND FOR NON-POLYMERIZED HMA THE "AC TYPE" SHALL BE "PG 64-22" UNLESS MODIFIED BY DISTRICT ONE SPECIAL PROVISIONS

FOR "PERCENT OF RAP" SEE DISTRICT ONE SPECIAL PROVISIONS

GENERAL NOTES:


1. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ADOPTED JANUARY 1, 2007 (HEREINAFTER REFERRED TO AS THE "STANDARD SPECIFICATIONS"); THE LATEST "SUPPLEMENTAL SPECIFICATIONS" AND "RECURRING SPECIAL PROVISIONS"; THE LATEST EDITION OF THE "ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS"; THE DETAILS IN THE PLANS AND THE SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS.
2. ANY REFERENCE TO THE STANDARDS THROUGHOUT THE PLANS OR SPECIAL PROVISIONS SHALL BE INTERPRETED AS THE LATEST STANDARD OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION.
3. THE CONTRACTOR SHALL NOTIFY J.U.L.I.E. (1-800-892-0123) AT LEAST 10 DAYS PRIOR TO CONSTRUCTION OF THE PROPOSED IMPROVEMENTS. ALL UTILITIES MUST BE NOTIFIED AND STAKED PRIOR TO CONSTRUCTION.
4. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE PLANS AND SHALL NOTIFY THE ENGINEER AT ONCE OF ANY DISCREPANCIES.
5. THE CONTRACTOR IS REQUIRED TO ATTEND AN ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT) PRECONSTRUCTION MEETING AND SHALL INFORM THE IDOT TRAFFIC ENGINEER BEFORE WORK COMMENCES.
6. THE CONTRACTOR SHALL KEEP PUBLIC STREET PAVEMENTS CLEAN OF DIRT AND DEBRIS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE IN PROVIDING SAFE AND HEALTHFUL CONDITIONS THROUGHOUT THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UNDERGROUND AND SURFACE UTILITIES EVEN THOUGH THEY MAY NOT BE SHOWN ON THE PLANS. ANY UTILITY THAT IS DAMAGED DURING CONSTRUCTION SHALL BE RESTORED TO A CONDITION EQUAL TO THAT EXISTING BEFORE THE DAMAGE INCURRED. THIS WORK SHALL BE AT THE CONTRACTOR'S EXPENSE.
9. RESTORATION OF THE WORK AREA SHALL BE INCIDENTAL TO THE RELATED PAY ITEMS AND 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 THE STANDARD SPECIFICATIONS 252 AND 250, RESPECTIVELY.

FILE NAME =	USER NAME = RDS	DESIGNED - KK	REVISED - 05-26-10
\\MICROST\352086\		DRAWN - RDS	REVISED -
	PLOT SCALE = 1"=20'	CHECKED - BPT	REVISED -
	PLOT DATE = 12-24-09	DATE - 12-24-09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION


GENERAL NOTES
US ROUTE 6 AT BELL ROAD

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

 <p>PREPARED BY: CEMCON, Ltd. Consulting Engineers, Land Surveyors & Planners 2280 White Oak Circle, Suite 100 Aurora, Illinois 60504-9675 Ph: 630.862.2100 Fax: 630.862.2199 E-Mail: ccd@cemcon.com Website: www.cemcon.com</p>				
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
392	2009-130 TS	WILL	13	2
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
CONTRACT NO. 60J90				

PAY NUMBER	CODE	SUMMARY OF TRAFFIC SIGNAL QUANTITIES ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION TYPE CODE	
					90% FED./10% STATE US ROUTE 6 @ BELL RD	100% VILLAGE OF CHANNAHON US ROUTE 6 @ BELL RD
					URBAN	
						Y-031-1F
						Y-031-3D*
35101800		AGGREGATE BASE COURSE, TYPE B 6"	SQ YD	13		13
40603310		HOT- MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	2		2
67100100		MOBILIZATION	L SUM	1		1
70100310		TRAFFIC CONTROL AND PROTECTION, STANDARD 701421	L SUM	1		1
** 72000100		SIGN PANEL, TYPE 1	SQ FT	10.5		10.5
** 72000200		SIGN PANEL, TYPE 2	SQ FT	30.0		30
81000700		CONDUIT IN TRENCH, 2 1/2" DIA., GALVANIZED STEEL	FOOT	43		43
81000800		CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL	FOOT	27		27
81018600		CONDUIT PUSHED, 2 1/2" DIA., GALVANIZED STEEL	FOOT	61		61
81018700		CONDUIT PUSHED, 3" DIA., GALVANIZED STEEL	FOOT	19		19
81018900		CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL	FOOT	92		92
81900200		TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	70		70
87301215		ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C	FOOT	1,158		1158
87301225		ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	FOOT	1,496		1214
87301245		ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	238		238
87301255		ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT	2,518		2518
87502500		TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.	EACH	4		4
87700190		STEEL MAST ARM ASSEMBLY AND POLE, 30 FT.	EACH	1		1
87700230		STEEL MAST ARM ASSEMBLY AND POLE, 38 FT.	EACH	1		1
87700290		STEEL MAST ARM ASSEMBLY AND POLE, 50 FT.	EACH	2		2
87800100		CONCRETE FOUNDATION, TYPE A	FOOT	16		16
87800415		CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	FOOT	52		52
87900200		DRILL EXISTING HANDHOLE	EACH	7		7
88030020		SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED	EACH	4		4
88030110		SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST-ARM MOUNTED	EACH	4		4
88030240		SIGNAL HEAD, L.E.D., 2-FACE, 1-3 SECTION, 1-5 SECTION, BRACKET MOUNTED	EACH	4		4
88102717		PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER	EACH	8		8
88200210		TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM	EACH	8		8
88800100		PEDESTRIAN PUSH-BUTTON	EACH	8		8
89501400		RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, DETECTOR UNIT	EACH	2		2
X0322256		TEMPORARY INFORMATION SIGNING	SQ FT	102.8		102.8
X8730027		ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C	FOOT	496		496
X8730250		ELECTRIC CABLE IN CONDUIT, NO. 20 3/C, TWISTED, SHIELDED	FOOT	282		282
X8900030		REMOVE EXISTING TEMPORARY TRAFFIC SIGNAL EQUIPMENT	EACH	1		1
XX003665		REBUILD EXISTING HANDHOLE TO DOUBLE HANDHOLE	EACH	1		1

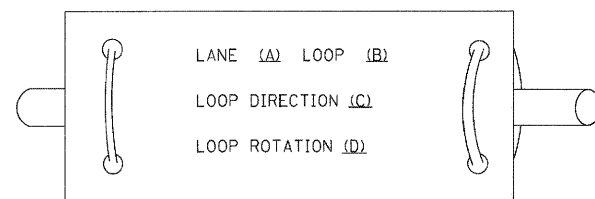
* 100% OF THE COST TO THE VILLAGE OF CHANNAHON
 ** Specialty Items

FILE NAME = MICROST\352086\	USER NAME = RDS	DESIGNED - KK	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES US ROUTE 6 AT BELL ROAD			 CEMCON, Ltd. Consulting Engineers, Land Surveyors & Planners 2280 White Oak Circle, Suite 100 Aurora, Illinois 60504-9675 Ph: 630.862.2100 Fax: 630.862.2199 E-Mail: cadd@cemcon.com Website: www.cemcon.com	F.A.U. RTE. 392	SECTION 2009-130 TS	COUNTY WILL	TOTAL SHEETS 13	SHEET NO. 3	
PLOT SCALE = 1"=20'	CHECKED - BPT	REVISED -	REVISED -		SCALE: N.T.S.	SHEET NO.	OF		SHEETS	STA.	TO STA.	CONTRACT NO. 60J90		
PLOT DATE = 12-24-09	DATE - 12-24-09	REVISED -	REVISED -		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT									

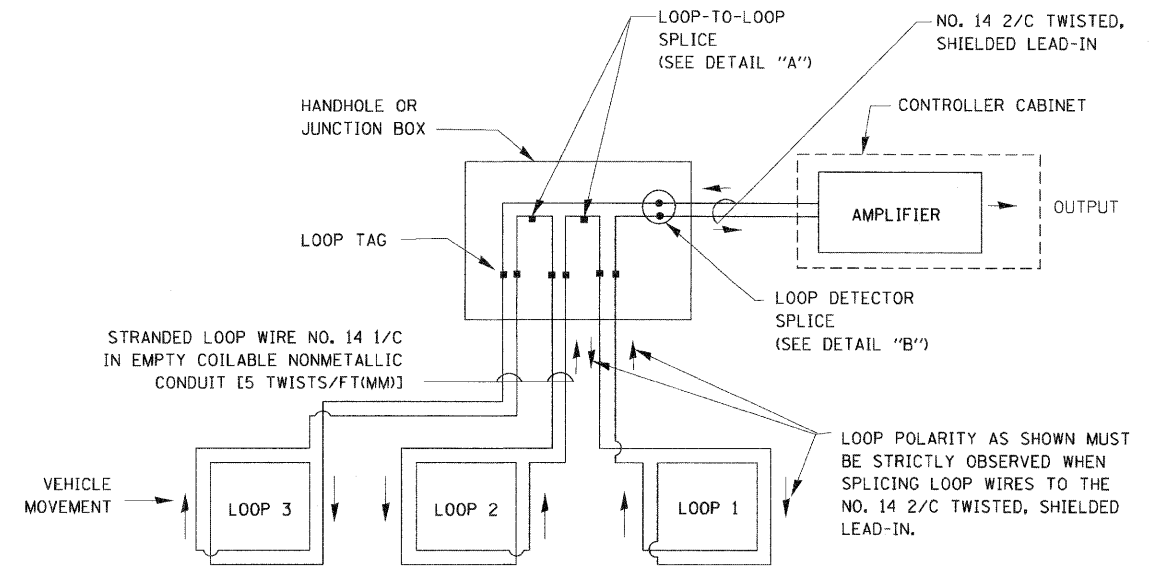
LOOP DETECTOR NOTES

- EACH PAIR OF LOOP WIRES SHALL BE PLACED IN A SEPARATE EMPTY COILABLE NONMETALLIC CONDUIT FROM THE EDGE OF PAVEMENT TO THE HANDHOLE. SPACING BETWEEN THE HOLES DRILLED IN THE PAVEMENT SHALL NOT BE LESS THAN 6" (150 mm). EMPTY COILABLE NONMETALLIC CONDUIT SHALL BE INCLUDED IN THE COST OF THE LOOP WIRE.
- THE NUMBER OF LOOP TURNS SHALL BE AS RECOMMENDED BY THE AMPLIFIER MANUFACTURER. ALL ADJACENT SIDES OF THE LOOPS SHALL BE INSTALLED IN SUCH A WAY THAT THE CURRENT FLOW IS IN THE SAME DIRECTION TO REINFORCE ITS MAGNETIC FIELDS FOR SMALL VEHICLE DETECTION.
- EACH LOOP LEAD-IN SHALL BE IDENTIFIED AND PERMANENTLY TAGGED IN THE HANDHOLE. EACH LEAD-IN CABLE TAG SHALL INDICATE THE LOCATION OF THE LOOP, LOOP ROTATION (CLOCKWISE/COUNTERCLOCKWISE), LOOP LEAD-IN DIRECTION (IN OR OUT), LOOP CABLE NUMBER AND LOCATION IN CABINET, AND NUMBER OF TURNS IN THE DETECTOR LOOPS IN WATER PROOF INK AS INDICATED ON THE DISTRICT 1 STANDARD TRAFFIC SIGNAL DESIGN DETAIL. THE CONTRACTOR SHALL MARK LOOP LOCATIONS ON RECORD DRAWINGS AND PRESENT TO THE ENGINEER AFTER FINAL INSPECTION. LOOPS SHALL BE MARKED BY LANE AND LOOP NUMBER. SEE DETAIL BELOW.
- ALL LOOP CABLE SHALL BE FASTENED WITH PLASTIC TIE WRAP TO THE HANDHOLE HOOKS.
- IN ASPHALT PAVEMENT, LOOPS SHOULD BE PLACED IN THE BINDER AND DIVESHOLES MARKED AT THE CURB WITH A SAW-CUT. THE SAW-CUT SHALL BE CUT IN ACCORDANCE WITH LOCAL AND E.P.A. DUST CONTROL REQUIREMENTS. DETECTOR LOOP(S) SHALL NOT BE INSTALLED IN WET CONDITIONS AND THE SAW-CUTS MUST BE FREE OF DEBRIS AND RESIDUE SUCH AS DUST AND WATER WHICH IS TO BE ACHIEVED BY THE USE OF COMPRESSED AIR, WIRE BRUSHING AND HEAT DRYING ACCORDING TO SEALANT MANUFACTURER REQUIREMENTS. THE DETECTOR WIRE SHALL BE HELD IN PLACE BY THE USE OF FORM WEDGES. WEDGES SHALL BE SPACED NO MORE THAN 18" (450 mm) APART.
- LOOP SPLICES SHALL BE SOLDERED USING A SOLDERING IRON. BLOW TORCHES OR OTHER DEVICES WHICH OXIDIZE COPPER CABLE SHALL NOT BE ALLOWED FOR SOLDERING OPERATIONS. SEE DETAIL BELOW RIGHT.
- PREFORMED DETECTOR LOOPS SHALL BE USED, AS SHOWN ON THE PLANS, WHERE NEW CONCRETE PAVEMENT IS PROPOSED. THE INSTALLATION OF PREFORMED LOOPS SHALL BE IN ACCORDANCE WITH THE DISTRICT 1 SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.

LOOP LEAD-IN CABLE TAG

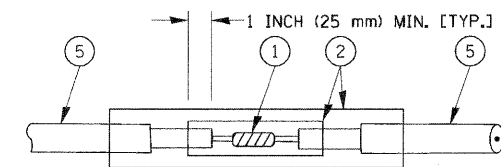


- LANE 1 IS THE LANE CLOSEST TO THE CENTERLINE OF THE ROADWAY
- LOOP #1 IS THE LOOP IN THE LANE CLOSEST TO THE INTERSECTION.
- LABEL LOOP CABLE "IN" OR LOOP CABLE "OUT".
- LABEL LOOP CABLE CLOCKWISE OR LOOP CABLE COUNTERCLOCKWISE.

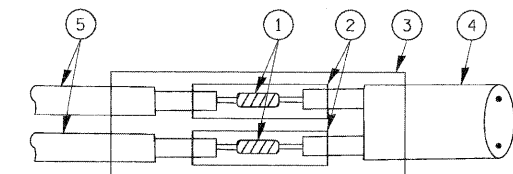


DETECTOR LOOP WIRING SCHEMATIC

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

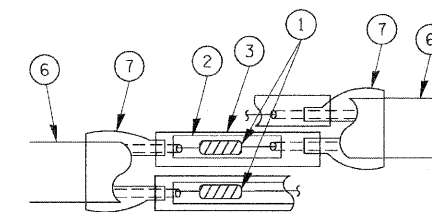


DETAIL "A"
LOOP-TO-LOOP SPLICE

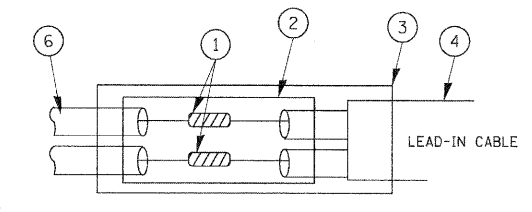


DETAIL "B"
LOOP-TO-CONTROLLER SPLICE

TYPE I LOOP



DETAIL "A"
LOOP-TO-LOOP SPLICE



DETAIL "B"
LOOP-TO-CONTROLLER SPLICE

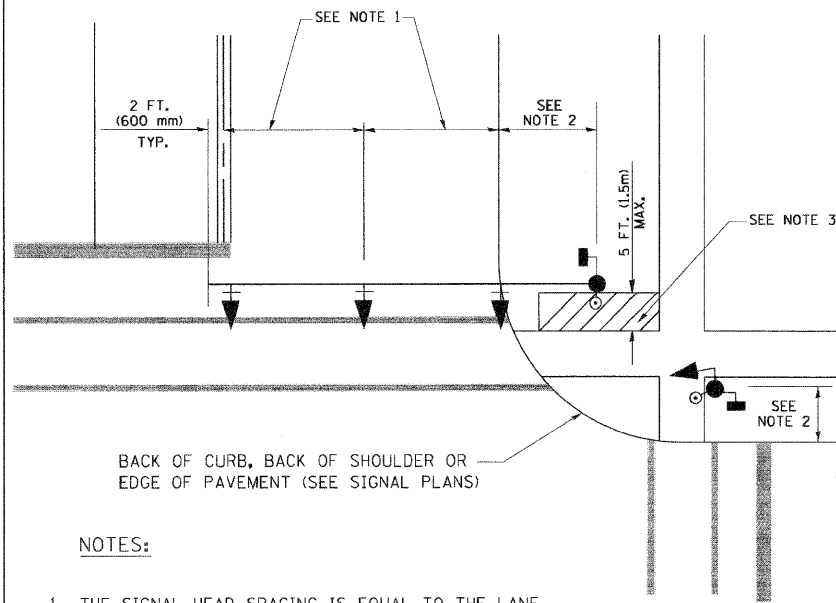
LOOP DETECTOR SPLICE

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

FILE NAME =	USER NAME = kanthaphixaybc	DESIGNED - DAD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS		F.A. RTE. 392	SECTION 2009-130 TS	COUNTY WILL	TOTAL SHEETS 13	SHEET NO. 4	
c:\pwwork\PWIDOT\KANTHAPHIXAYBC\ad01126	4\traffic\legend_v7.dgn	DRAWN - BCK	REVISED -		SCALE:	SHEET NO. 1 OF 6 SHEETS	STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	CONTRACT NO. 60J90		
		CHECKED - DAD	REVISED -									
		DATE - 10/28/09	REVISED -									

TRAFFIC SIGNAL MAST ARM AND SIGNAL POST

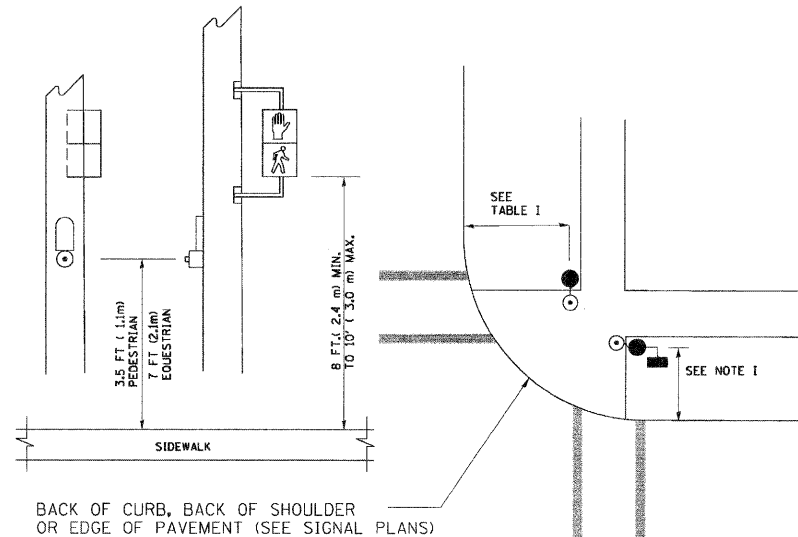
MAST ARM MOUNTED SIGNALS IN EXISTING, PROPOSED OR FUTURE SIDEWALK/BICYCLE PATH AREA. INTERSECTION SHOWN WITH PEDESTRIAN SIGNALS AND PEDESTRIAN PUSHBUTTON DETECTORS.



NOTES:

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

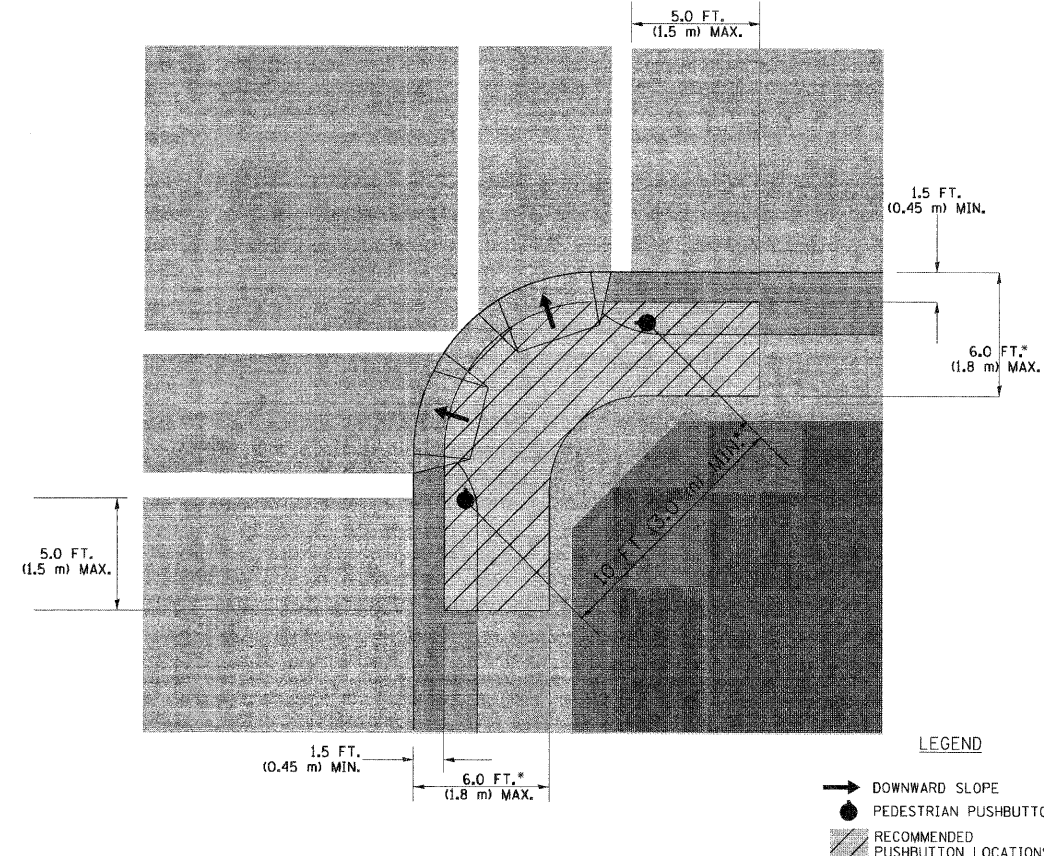
PEDESTRIAN SIGNAL POST AND PEDESTRIAN PUSH BUTTON POST



NOTES:

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

RECOMMENDED PUSHBUTTON LOCATIONS



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

NOTES:

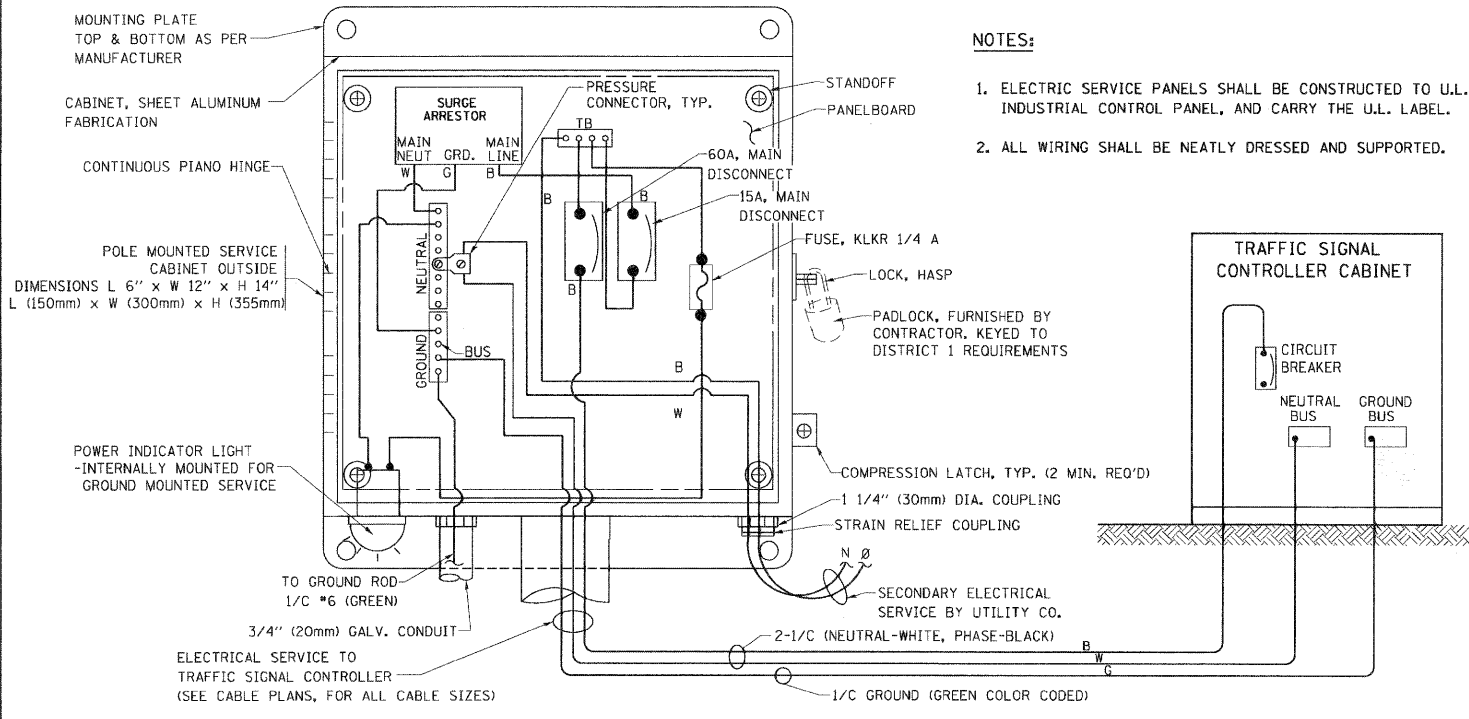
1. PEDESTRIAN SIGNAL HEADS SHALL BE MOUNTED WITH THE BOTTOM OF THE SIGNAL HOUSING INCLUDING BRACKETS NOT LESS THAN 8 FT (2.4 m) OR MORE THAN 10 FT (3 m) ABOVE SIDEWALK LEVEL, AND SHALL BE POSITIONED AND ADJUSTED TO PROVIDE MAXIMUM VISIBILITY AT THE BEGINNING OF THE CONTROLLED CROSSWALK.
2. THE BOTTOM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

TRAFFIC SIGNAL EQUIPMENT OFFSET

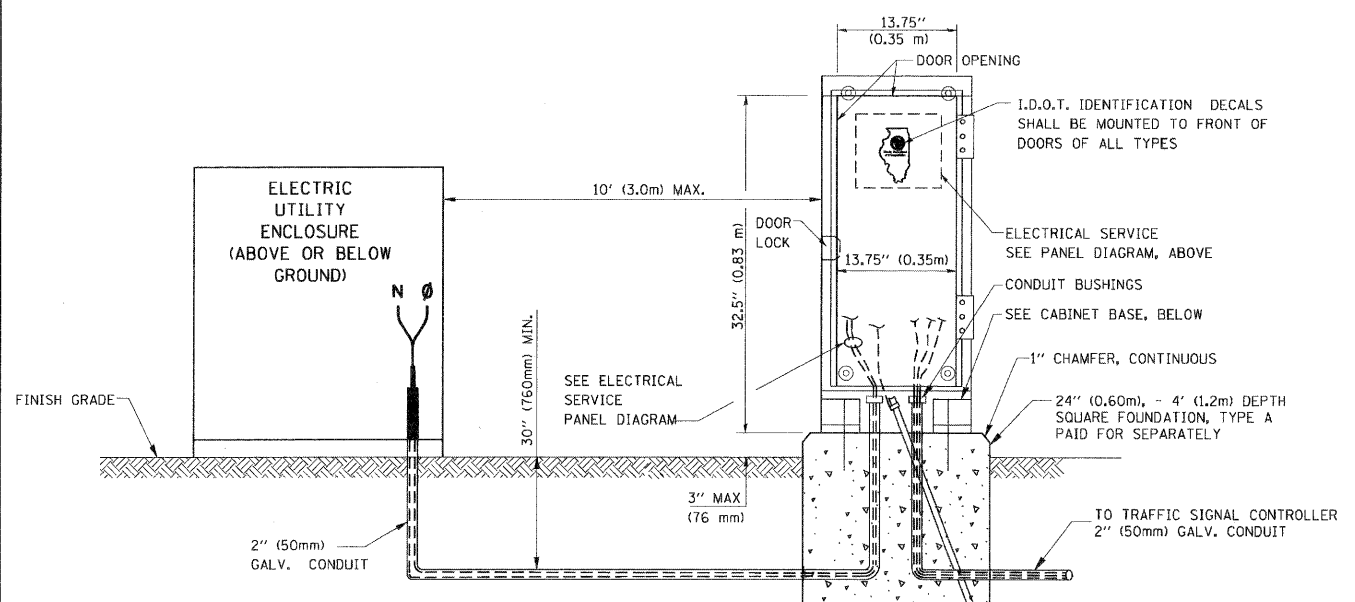
TRAFFIC SIGNAL EQUIPMENT	COMBINATION CONCRETE CURB AND GUTTER (MINIMUM DISTANCE FROM BACK OF CURB TO CENTERLINE OF FOUNDATION)	SHOULDER/NON-CURBED AREA (MINIMUM DISTANCE FROM EDGE OF PAVEMENT TO CENTERLINE OF FOUNDATION)
TRAFFIC SIGNAL MAST ARM POLE	6 FT (1.8m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10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

NOTES:

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

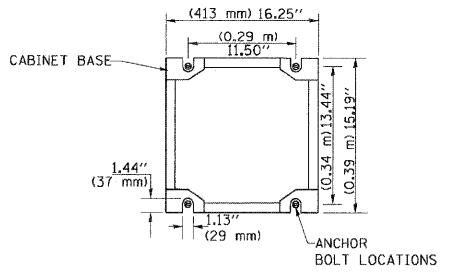


ELECTRICAL SERVICE - PANEL DIAGRAM (TYPICAL FOR POLE AND GROUND MOUNTED SERVICE)
SERVICE INSTALLATION POLE MOUNT (SHOWN)
 (NOT TO SCALE)

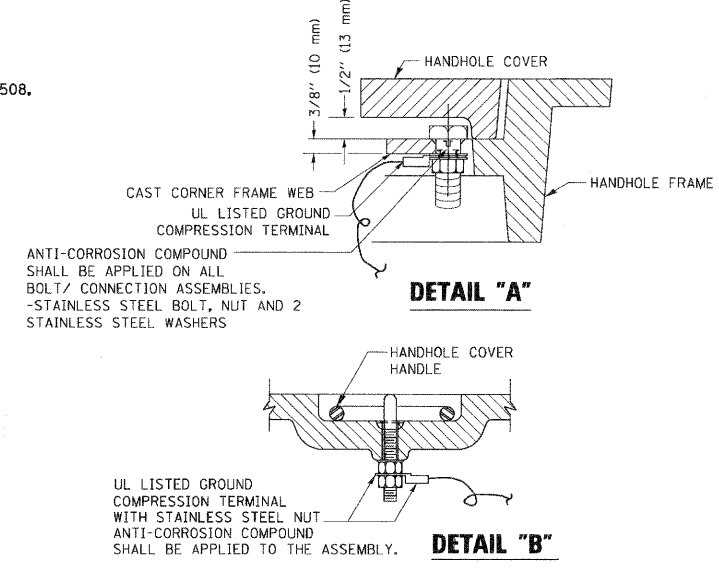


SERVICE INSTALLATION GROUND MOUNT
 (NOT TO SCALE)

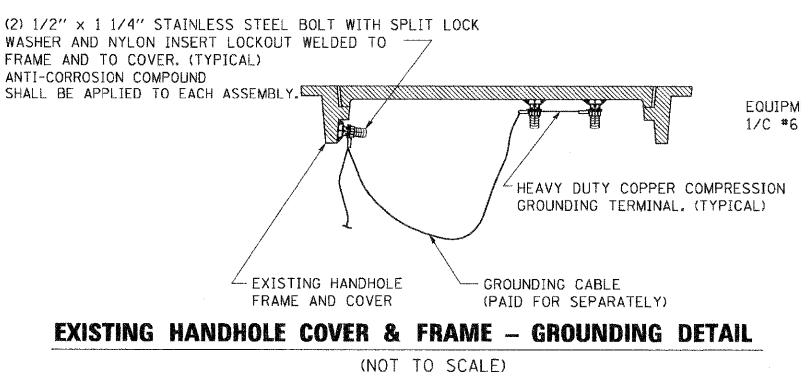
CABINET - BASE BOLT PATTERN
 (NOT TO SCALE)



- NOTES:**
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.

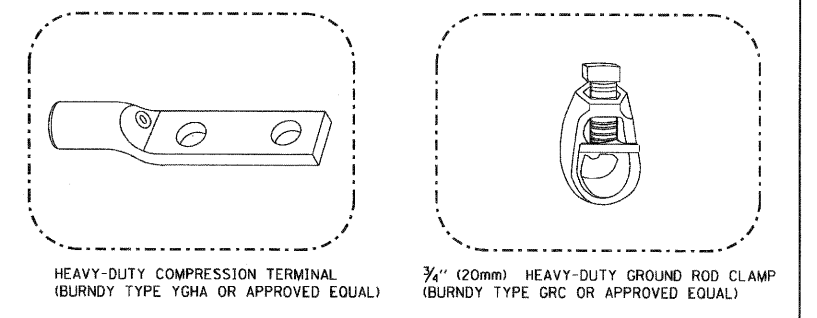


HANDHOLE COVER & FRAME - GROUNDING DETAIL
 (NOT TO SCALE)

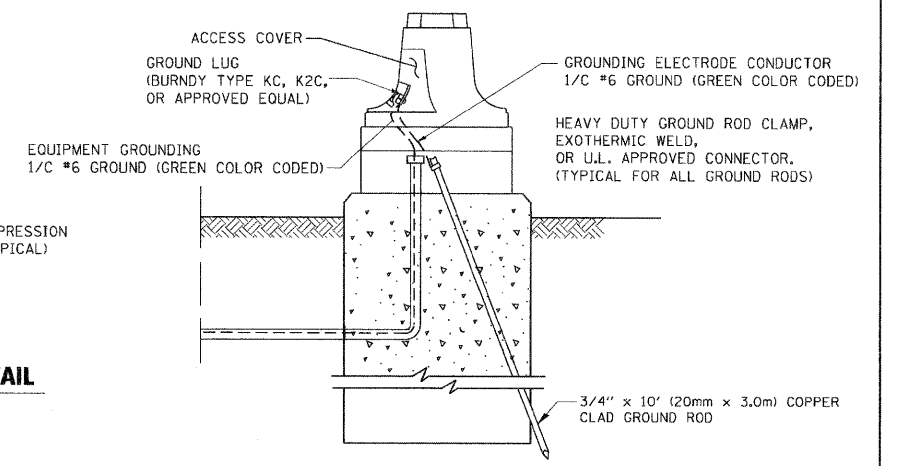


EXISTING HANDHOLE COVER & FRAME - GROUNDING DETAIL
 (NOT TO SCALE)

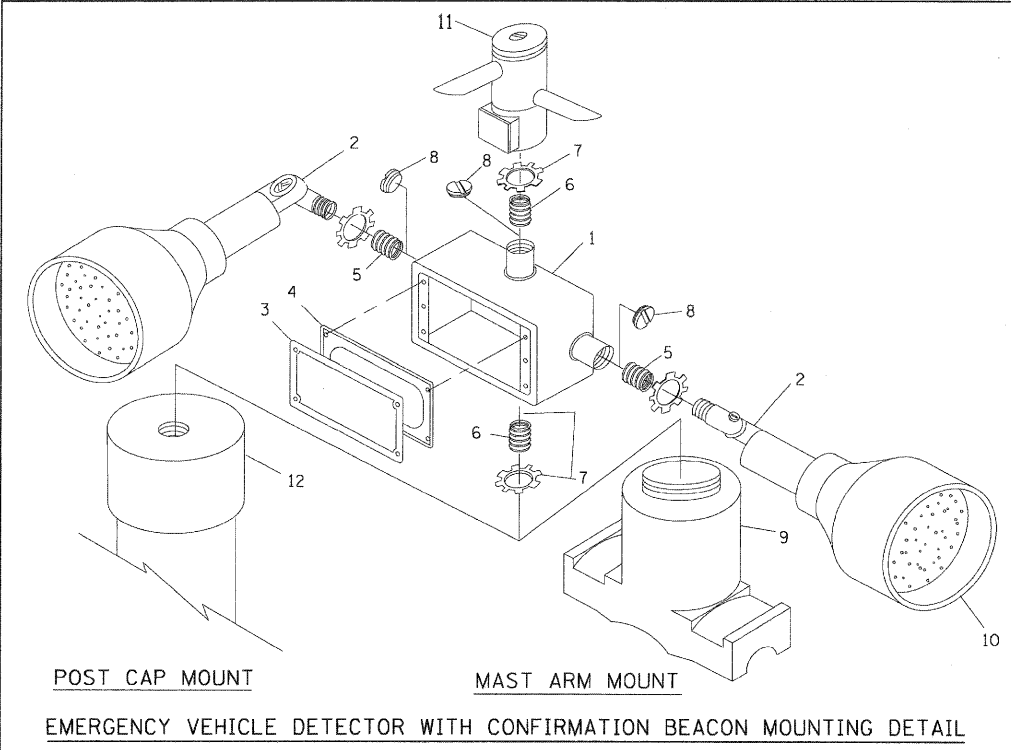
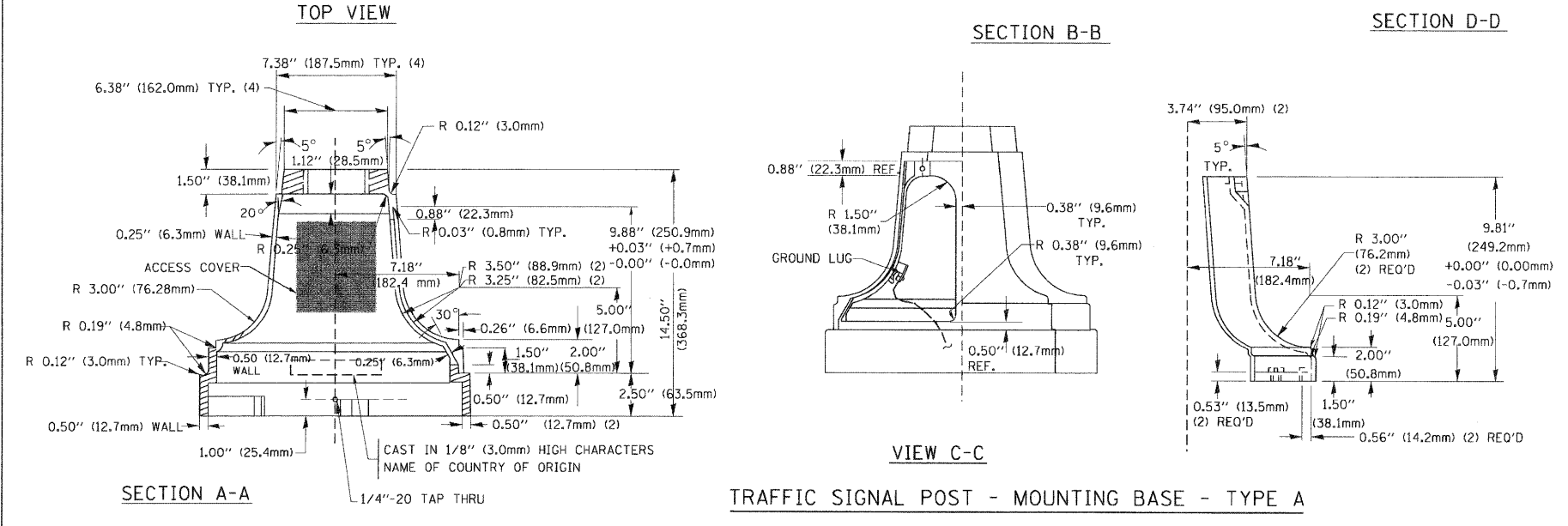
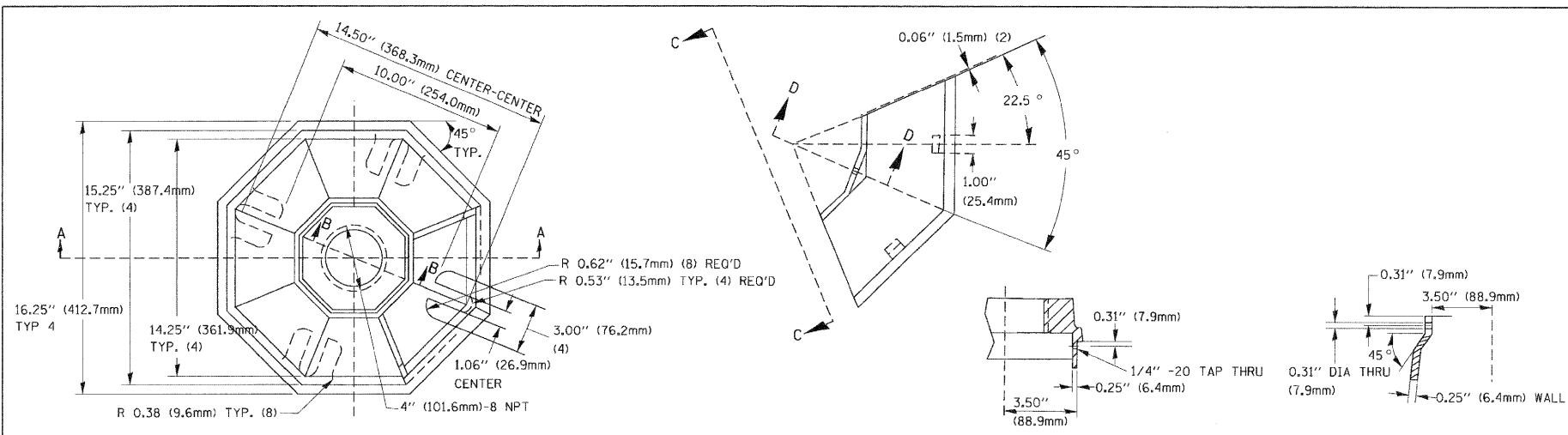
- NOTES:**
- GROUNDING SYSTEM**
1. THE GROUNDING SYSTEM SHALL CONSIST OF AN INSULATED CONDUCTOR TYPE XLP, NO. 6 A.W.G., STRANDED COPPER TO BE INSTALLED IN RACEWAYS. THE GROUNDING CABLE SHALL BE INSTALLED IN A CONTINUOUS MANNER AS SHOWN ON THE CABLE PLAN PROVIDED. ALL GROUNDING CONDUCTORS SHALL BE BONDED TO METAL ENCLOSURE (HANDHOLE, POST, MAST ARM, CONTROLLER, ETC.). GROUND ROD SHALL BE 3/4\"/>
 - 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.



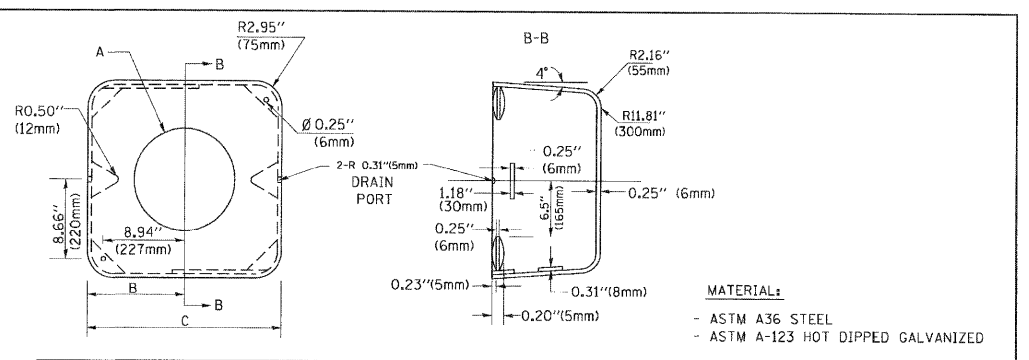
MAST ARM POLE / POST-GROUNDING DETAIL
 (NOT TO SCALE)



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:

- ALL ELECTRICAL ITEMS, EXCEPT ITEMS #2 AND #11 SHALL BE ALUMINUM OR GALVANIZED
- ITEM #1- OZ/GEDNEY FSX-1-50 OR EQUIVALENT
ITEM #2- MULBERRY CON-0-SHADE LAMP SHIELD OR EQUIVALENT
ITEM #9- "BAND-IT" SADDLE BRACKET OR EQUIVALENT
- WHEN POST MOUNTING IS SPECIFIED, ITEM #9 SHALL NOT BE REQUIRED. THE DETECTION UNIT SHALL BE MOUNTED DIRECTLY ON TOP OF THE CAP BY DRILLING AND TAPPING A 3/4\"(19 mm) HOLE WITH PIPE THREADS. THE POST CAP SHALL EITHER BE SCREWED TO THE TOP OF THE POST OR A MINIMUM OF 3 TIGHTENING SCREWS SHALL BE REQUIRED ON EACH CAP.

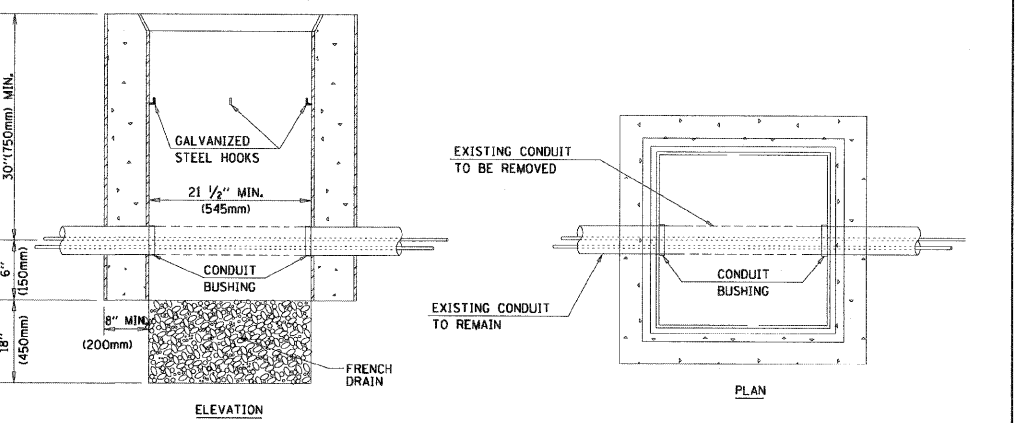
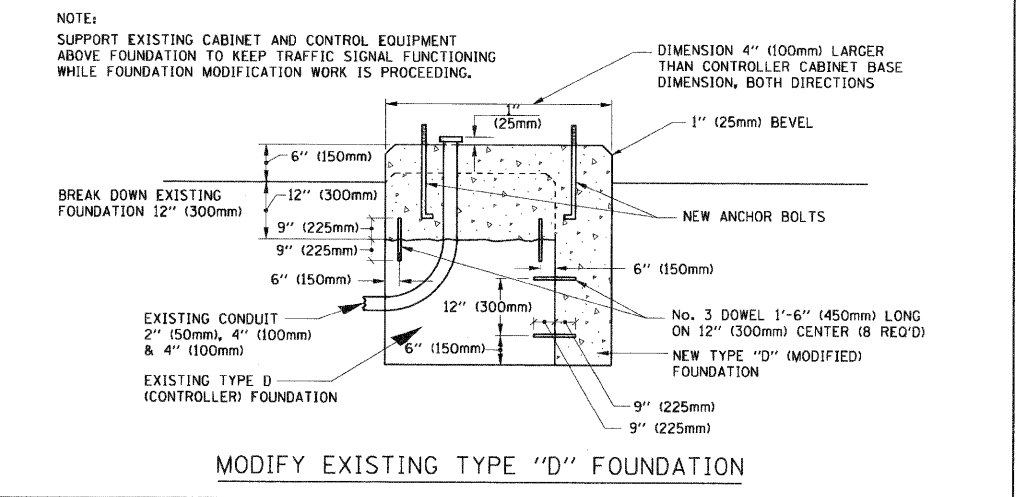


A	B	C	HEIGHT	WEIGHT
VARIABLES	9.5\"(241mm)	19\"(483mm)	7\"(178mm) - 12\"(300mm)	53 lbs (24kg)
VARIABLES	10.75\"(273mm)	21.5\"(546mm)	7\"(178mm) - 12\"(300mm)	68 lbs (31 kg)
VARIABLES	13.0\"(330mm)	26\"(660mm)	7\"(178mm) - 12\"(300mm)	81 lbs (37 kg)
VARIABLES	18.5\"(470mm)	37\"(940mm)	7\"(178mm) - 12\"(300mm)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

SHROUD

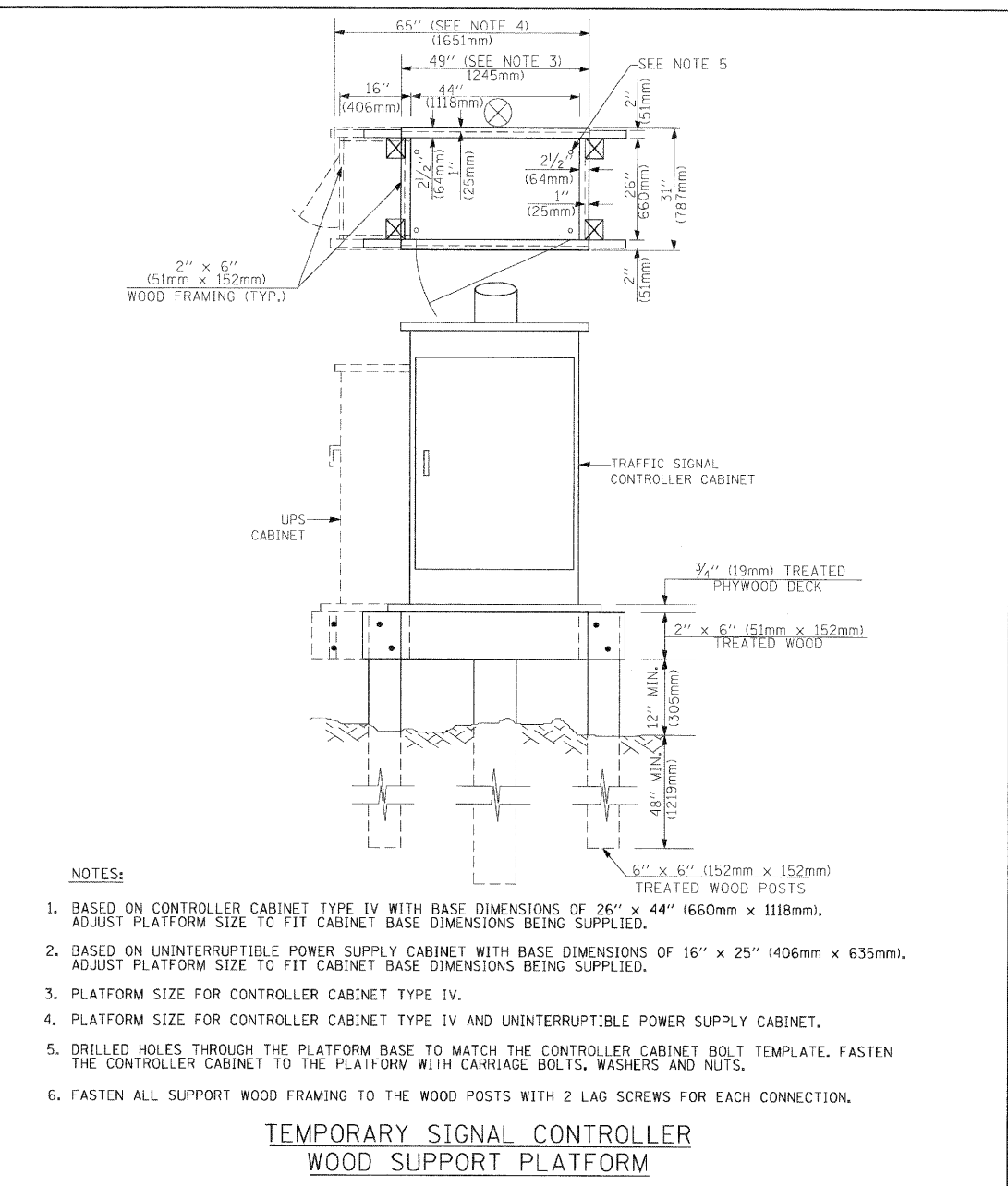
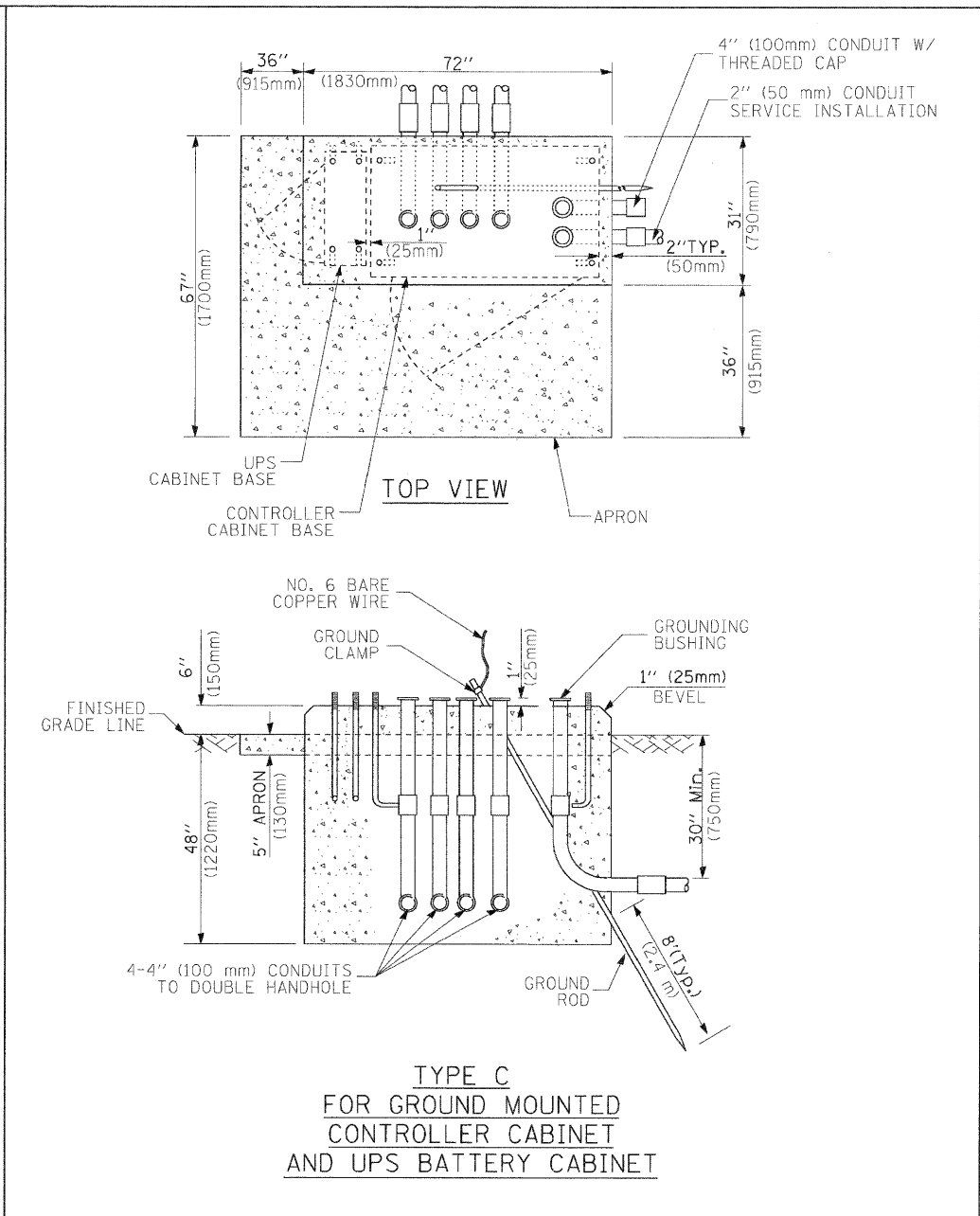
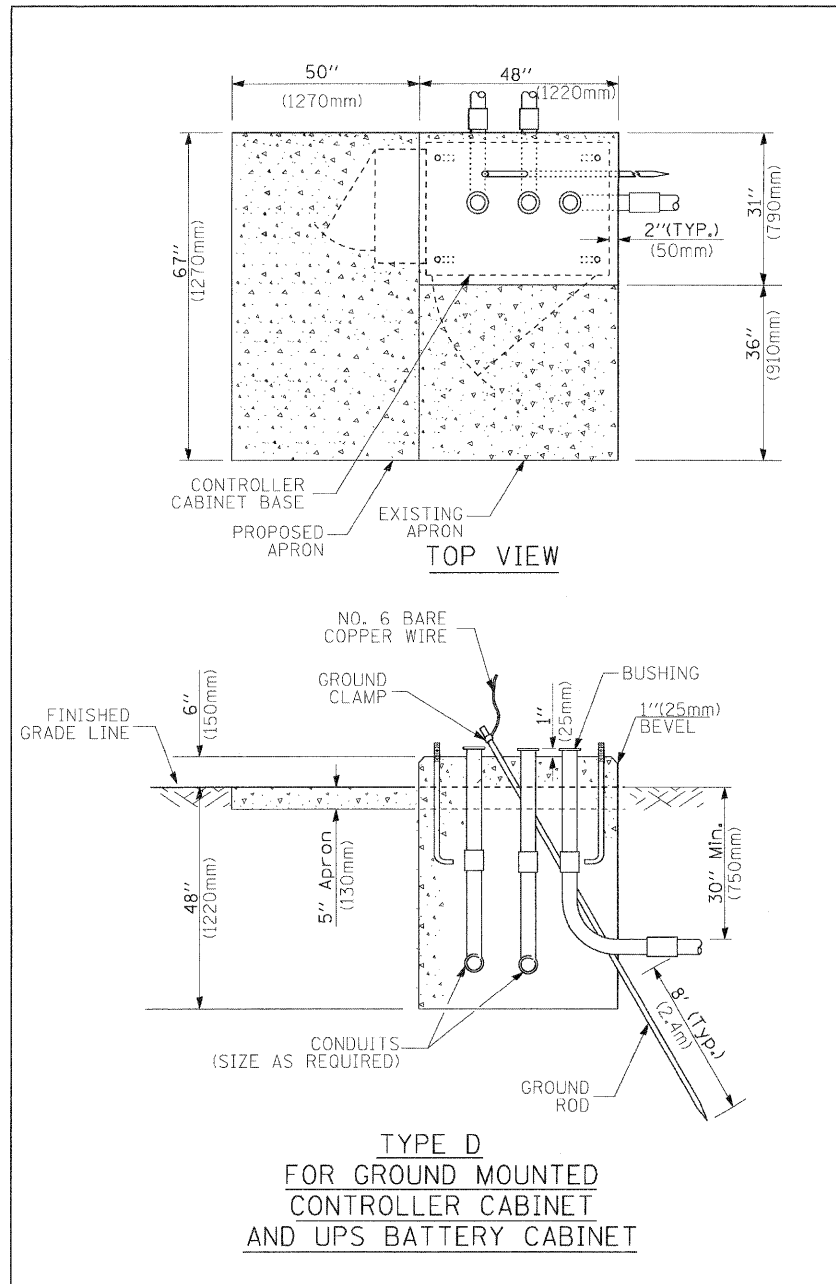
NOTES:

- 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.
- THE SUPPLIER SHALL VERIFY THE ABOVE DIMENSIONS BASED ON MAST ARM REQUIREMENTS.
- THE HEIGHT OF THE SHROUD SHALL COVER THE ANCHOR BOLTS, NUTS AND MAST ARM POLE BASE.



NOTES:

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



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

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)
Greater than or equal to 50' (15.2 m) and up to 55' (16.8 m)	15'-0" (4.6 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 56' (16.8 m) and less than 65' (19.8 m)	21'-0" (6.4 m)	42" (1060mm)	36" (900mm)	16	8(25)
Greater than or equal to 65' (19.8 m) and up to 75' (22.9 m)	25'-0" (7.6 m)	42" (1060mm)	36" (900mm)	16	8(25)

- NOTES:**
1. These foundation depths are for sites which have cohesive soils (clayey silt, sandy clay, etc.) along the length of the shaft, with an average Unconfined Compressive Strength (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.
 2. Combination mast arm assemblies under 55 feet (16.8 m) shall use 36" (900 mm) diameter foundations.
 3. Combination mast arm assemblies under 56 feet (16.8 m) through 75 feet (22.9 m) shall use 42" (1060 mm) diameter foundations.
 4. For mast arm assemblies with dual arms refer to state standard 878001.

DEPTH OF MAST ARM FOUNDATIONS, TYPE E

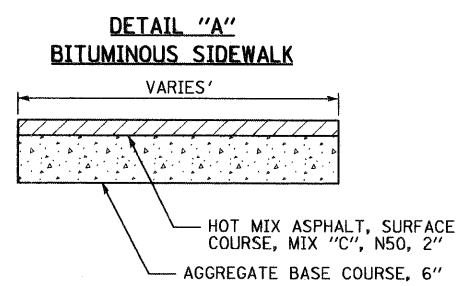
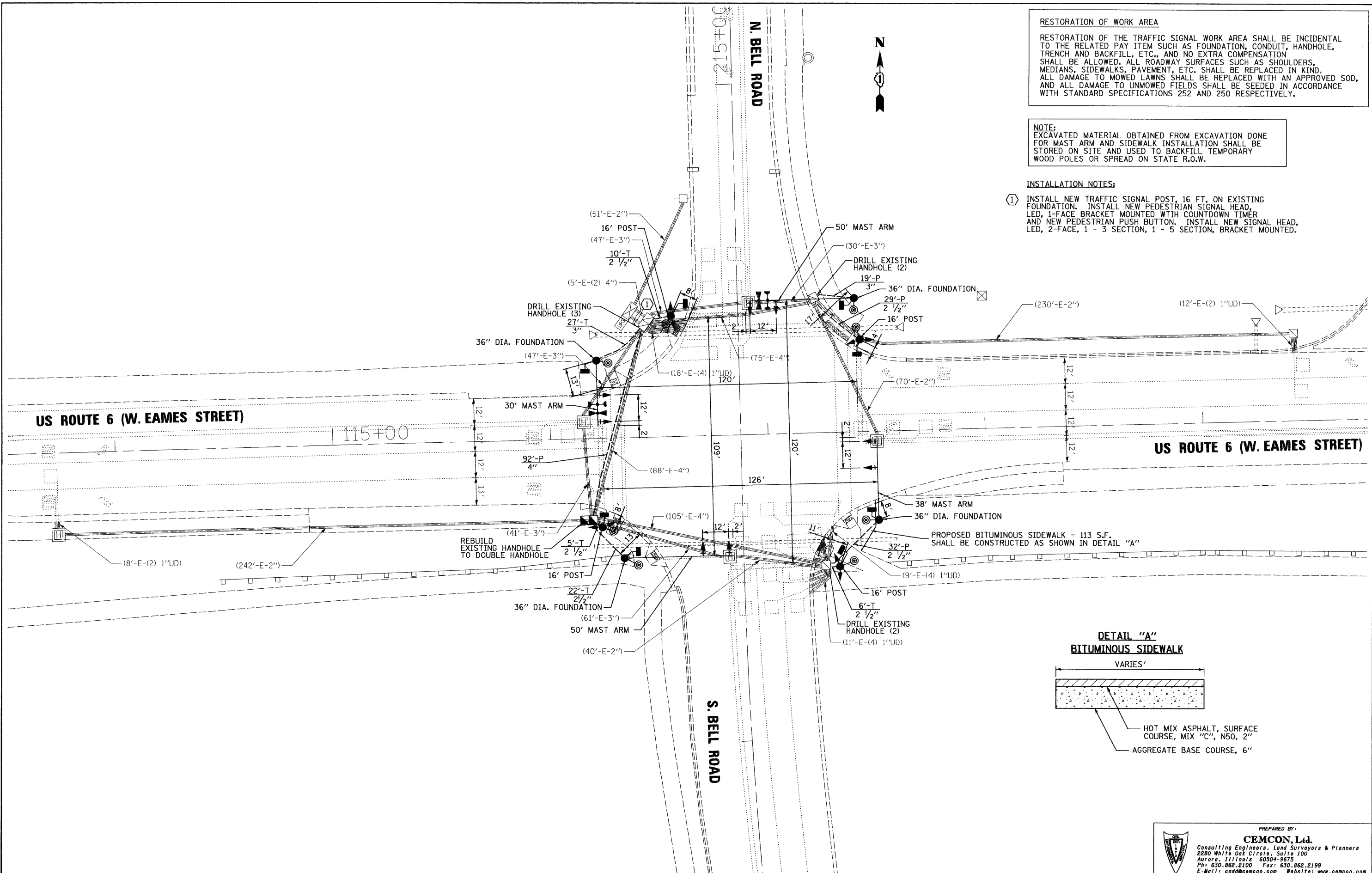
TRAFFIC SIGNAL LEGEND

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 SM12F			
TELEPHONE CONNECTION (P) POLE OR (G) GROUND MOUNT				TEMPORARY SPAN WIRE, TETHER WIRE, AND CABLE				FIBER OPTIC CABLE NO. 62.5/125, (NUMBER OF FIBERS & TYPE TO BE NOTED ON PLANS)			
STEEL MAST ARM ASSEMBLY AND POLE				COMMON TRENCH				GROUND ROD AT (C) CONTROLLER, (H) HANDHOLE, (P) POST, (M) MAST ARM, OR (S) SERVICE			
ALUMINUM MAST ARM ASSEMBLY AND POLE				COILABLE NONMETALLIC CONDUIT (EMPTY)				CONTROLLER CABINET AND FOUNDATION TO BE REMOVED			
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE				SYSTEM ITEM		S	S	STEEL MAST ARM POLE AND FOUNDATION TO BE REMOVED			
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH PTZ CAMERA				INTERSECTION ITEM		I	IP	ALUMINUM MAST ARM POLE AND FOUNDATION TO BE REMOVED			
SIGNAL POST				REMOVE ITEM	R			STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE AND FOUNDATION TO BE REMOVED			
TEMPORARY WOOD POLE (CLASS 5 OR BETTER) 45 FOOT (13.7m) MINIMUM				RELOCATE ITEM	RL			SIGNAL POST AND FOUNDATION TO BE REMOVED			
GUY WIRE				ABANDON ITEM	A			INTERSECTION & SAMPLING (SYSTEM) DETECTOR			
SIGNAL HEAD				12" (300mm) TRAFFIC SIGNAL SECTION				SAMPLING (SYSTEM) DETECTOR			
SIGNAL HEAD CONSTRUCTION STAGES (NUMBERS INDICATE THE CONSTRUCTION STAGE)				12" (300mm) RED WITH 8" (200mm) YELLOW AND GREEN TRAFFIC SIGNAL FACE				EXISTING INTERSECTION LOOP DETECTOR PROPOSED INTERSECTION AND SAMPLING (SYSTEM) DETECTOR			
SIGNAL HEAD WITH BACKPLATE				SIGNAL FACE				EXISTING PREFORMED INTERSECTION LOOP DETECTOR PROPOSED INTERSECTION AND SAMPLING (SYSTEM) DETECTOR			
SIGNAL HEAD OPTICALLY PROGRAMMED				SIGNAL FACE WITH BACKPLATE. "P" INDICATES PROGRAMMED HEAD				PREFORMED INTERSECTION AND SAMPLING (SYSTEM) DETECTOR			
FLASHER INSTALLATION (S DENOTES SOLAR POWER)				12" (300mm) PEDESTRIAN SIGNAL HEAD WALK/DON'T WALK SYMBOL				PREFORMED SAMPLING (SYSTEM) DETECTOR			
PEDESTRIAN SIGNAL HEAD				12" (300mm) PEDESTRIAN SIGNAL HEAD INTERNATIONAL SYMBOL, OUTLINED				RAILROAD SYMBOLS			
PEDESTRIAN PUSHBUTTON DETECTOR				12" (300mm) PEDESTRIAN SIGNAL HEAD INTERNATIONAL SYMBOL, SOLID				EXISTING		PROPOSED	
ACCESSIBLE PEDESTRIAN PUSHBUTTON DETECTOR				PEDESTRIAN SIGNAL HEAD, INTERNATIONAL SYMBOL, WITH COUNTDOWN TIMER				RAILROAD CONTROL CABINET			
ILLUMINATED SIGN "NO LEFT TURN"				RADIO INTERCONNECT				RAILROAD CANTILEVER MAST ARM			
ILLUMINATED SIGN "NO RIGHT TURN"				RADIO REPEATER				FLASHING SIGNAL			
DETECTOR LOOP, TYPE I				DENOTES NUMBER OF CONDUCTORS, ELECTRIC CABLE NO. 14, UNLESS NOTED OTHERWISE, ALL DETECTOR LOOP CABLE TO BE SHIELDED				CROSSING GATE			
PREFORMED DETECTOR LOOP				GROUND CABLE IN CONDUIT NO. 6 SOLID COPPER (GREEN)				CROSSBUCK			
MICROWAVE VEHICLE SENSOR											
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 ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL, ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

NOTE:
 EXCAVATED MATERIAL OBTAINED FROM EXCAVATION DONE FOR MAST ARM AND SIDEWALK INSTALLATION SHALL BE STORED ON SITE AND USED TO BACKFILL TEMPORARY WOOD POLES OR SPREAD ON STATE R.O.W.

INSTALLATION NOTES:
 ① INSTALL NEW TRAFFIC SIGNAL POST, 16 FT. ON EXISTING FOUNDATION. INSTALL NEW PEDESTRIAN SIGNAL HEAD, LED, 1-FACE BRACKET MOUNTED WITH COUNTDOWN TIMER AND NEW PEDESTRIAN PUSH BUTTON. INSTALL NEW SIGNAL HEAD, LED, 2-FACE, 1 - 3 SECTION, 1 - 5 SECTION, BRACKET MOUNTED.



FILE NAME =
 \MICROST\352086\

USER NAME = RDS
 PLOT SCALE = 1"=20'
 PLOT DATE = 12-24-09

DESIGNED - KK
 DRAWN - RDS
 CHECKED - BPT
 DATE - 12-24-09

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

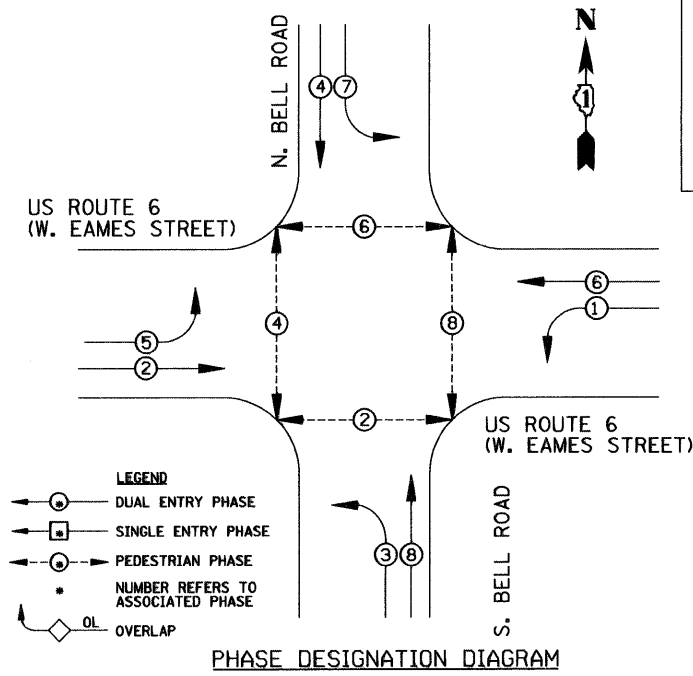
TRAFFIC SIGNAL INSTALLATION PLAN
US ROUTE 6 AT BELL ROAD
 SCALE: N.T.S. SHEET NO. OF SHEETS STA. TO STA.

PREPARED BY:
CEMCON, Ltd.
 Consulting Engineers, Land Surveyors & Planners
 2280 White Oak Circle, Suite 100
 Aurora, Illinois 60504-9675
 Ph: 630.862.2100 Fax: 630.862.2199
 E-Mail: cadd@cemcon.com Website: www.cemcon.com

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
392	2009-130 TS	WILL	13	11

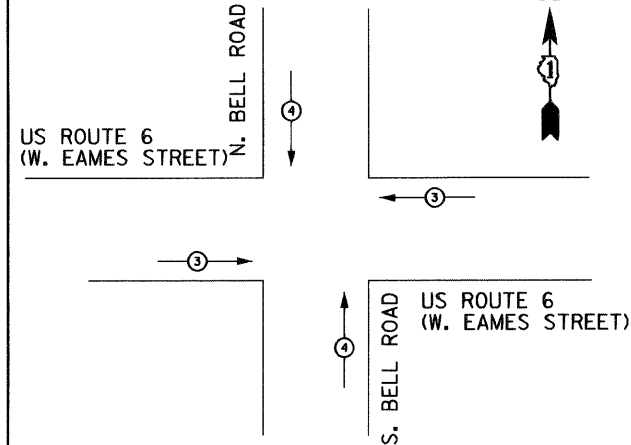
CONTRACT NO. 60J90
 FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

CONTROLLER SEQUENCE



PHASE DESIGNATION DIAGRAM

EMERGENCY VEHICLE PREEMPTION SEQUENCE



PROPOSED EMERGENCY VEHICLE PREEMPTOR			
EMERGENCY VEHICLE PREEMPTOR	3	4	
MOVEMENT	←	↑	

I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO. LAMPS	WATTAGE INCAND.	LED	%OPERATION	
SIGNAL (RED)	16	135	17	0.50	136
(YELLOW)	16	135	25	0.25	100
(GREEN)	16	135	15	0.25	60
ARROW	16	135	12	0.10	19.2
PED. SIGNAL	8	90	25	1.00	200
CONTROLLER	1	100	100	1.00	100
ILLUM. SIGN		84		0.05	
FLASHER					0.50
ENERGY COSTS TO:					TOTAL = 615.2

ILLINOIS DEPARTMENT OF TRANSPORTATION
 201 W. CENTER COURT
 SCHAUMBURG, IL 60196

ENERGY SUPPLY CONTACT: _____
 PHONE: _____
 COMPANY: COMED

FILE NAME = \MICROST\352086\ USER NAME = RDS
 PLOT SCALE = 1"=20'
 PLOT DATE = 12-24-09

RESTORATION OF WORK AREA

RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCIDENTAL TO THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL, ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL BE REPLACED IN KIND. ALL DAMAGE TO MOWED LAWNS SHALL BE REPLACED WITH AN APPROVED SOD, AND ALL DAMAGE TO UNMOWED FIELDS SHALL BE SEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 252 AND 250 RESPECTIVELY.

CONSTRUCTION NOTE:

① 7 - CONDUCTOR CABLES TO BE USED TO ALLOW INSTALLATION OF FIVE SECTION HEAD IN FUTURE TO PERMIT RIGHT TURN OVERLAPS.

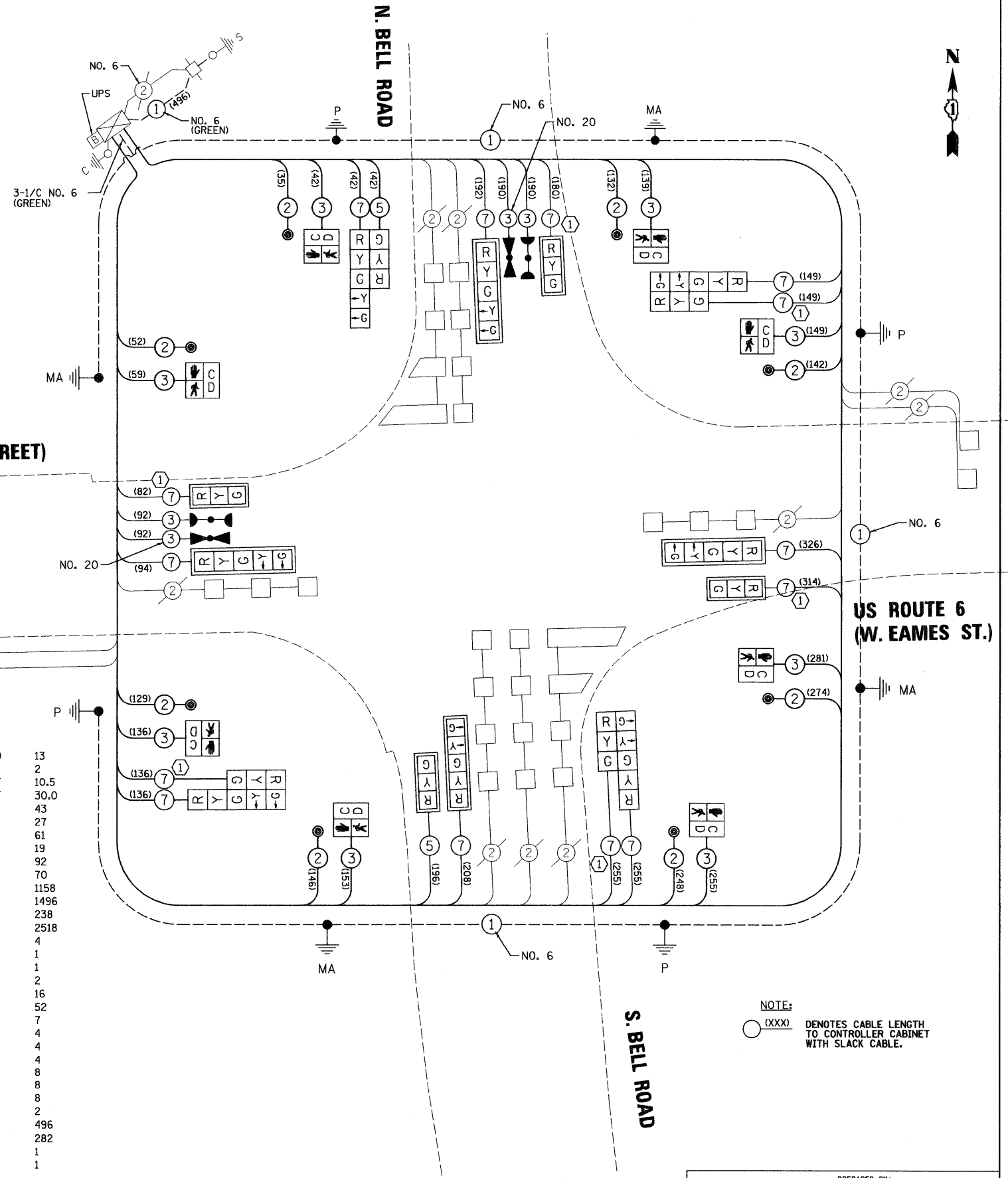
SCHEDULE OF QUANTITIES

AGGREGATE BASE COURSE, TYPE B 6"	SQ YD	13
HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	2
SIGN PANEL, TYPE 1	SQ FT	10.5
SIGN PANEL, TYPE 2	SQ FT	30.0
CONDUIT IN TRENCH, 2 1/2" DIA., GALVANIZED STEEL	FOOT	43
CONDUIT IN TRENCH, 3" DIA., GALVANIZED STEEL	FOOT	27
CONDUIT PUSHED, 2 1/2" DIA., GALVANIZED STEEL	FOOT	61
CONDUIT PUSHED, 3" DIA., GALVANIZED STEEL	FOOT	19
CONDUIT PUSHED, 4" DIA., GALVANIZED STEEL	FOOT	92
TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	70
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C	FOOT	1158
**ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	FOOT	1496
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	238
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT	2518
TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.	EACH	4
STEEL MAST ARM ASSEMBLY AND POLE, 30 FT.	EACH	1
STEEL MAST ARM ASSEMBLY AND POLE, 38 FT.	EACH	1
STEEL MAST ARM ASSEMBLY AND POLE, 50 FT.	EACH	2
CONCRETE FOUNDATION, TYPE A	FOOT	16
CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	FOOT	52
DRILL EXISTING HANDHOLE	EACH	7
SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED	EACH	4
SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST-ARM MOUNTED	EACH	4
SIGNAL HEAD, L.E.D., 2-FACE, 1-3 SECTION, 1-5 SECTION, BRACKET MOUNTED	EACH	4
PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER	EACH	8
TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM	EACH	8
PEDESTRIAN PUSH-BUTTON	EACH	8
*RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, DETECTOR UNIT	EACH	2
ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C	FOOT	496
*ELECTRIC CABLE IN CONDUIT, NO. 20 3/C, TWISTED & SHIELDED	FOOT	282
REMOVE EXISTING TEMPORARY TRAFFIC SIGNAL EQUIPMENT	EACH	1
REBUILD EXISTING HANDHOLE TO DOUBLE HANDHOLE	EACH	1

*100% OF THE COST TO THE VILLAGE OF CHANNAHON
 **PARTIAL COST TO THE VILLAGE OF CHANNAHON

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

DESIGNED - KK	REVISED -
DRAWN - RDS	REVISED -
CHECKED - BPT	REVISED -
DATE - 12-24-09	REVISED -



CABLE PLAN

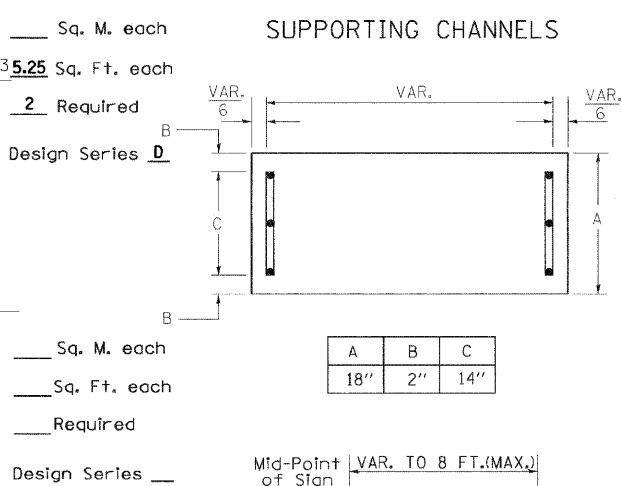
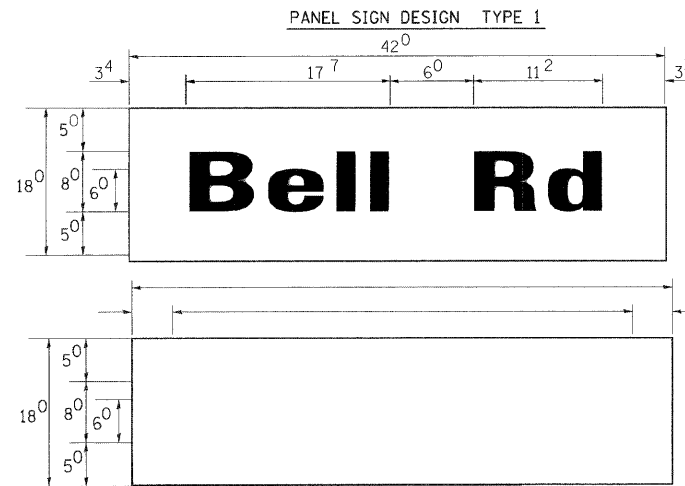
NOTE:
 (XXX) DENOTES CABLE LENGTH TO CONTROLLER CABINET WITH SLACK CABLE.

SCHEDULE OF QUANTITIES, CABLE PLAN, PHASE DESIGNATION DIAGRAM AND EMERGENCY VEHICLE PREEMPTION US ROUTE 6 (EAMES STREET) AT BELL ROAD			
SCALE: N.T.S.	SHEET NO. OF SHEETS	STA. TO STA.	

PREPARED BY:
CEMCON, Ltd.
 Consulting Engineers, Land Surveyors & Planners
 2280 White Oak Circle, Suite 100
 Aurora, Illinois 60504-9675
 Ph: 630.862.2100 Fax: 630.862.2199
 E-Mail: cadd@cemcon.com WebSite: www.cemcon.com

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
392	2009-130 TS	WILL	13	12

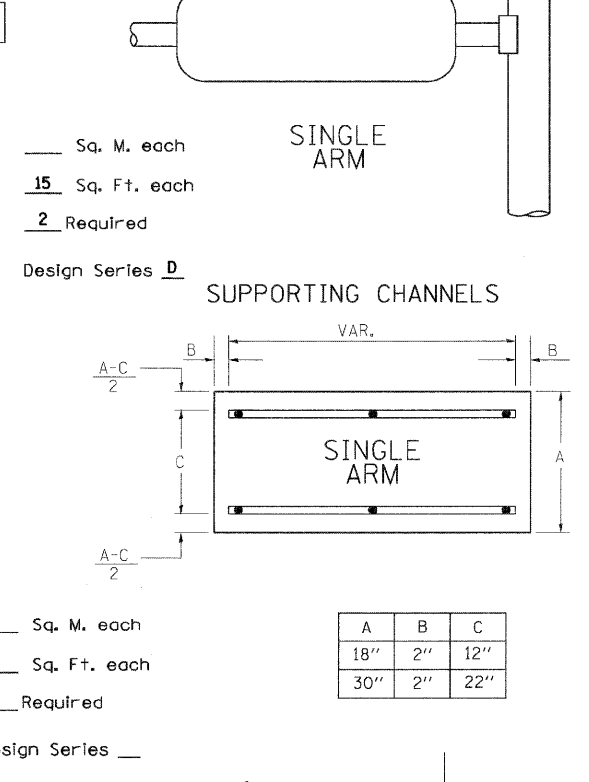
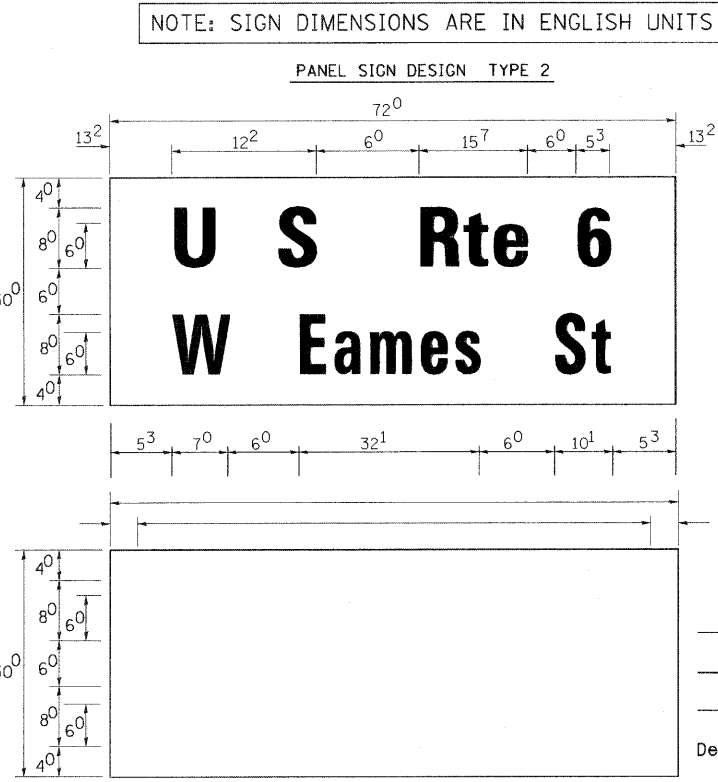
CONTRACT NO. 60J90
 ILLINOIS FED. AID PROJECT



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

SERIES	SECOND LETTER															
	acde		bhikl		f w		j		s t		v y		x		z	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
A W X	12	14	14	15	12	14	06	10	11	14	06	10	11	12	12	14
B	14	15	20	21	14	15	11	12	14	15	12	14	12	14	16	17
C E G	14	15	20	21	12	14	06	10	12	14	12	14	14	15	14	15
D O Q R	14	15	20	21	14	15	06	10	12	14	12	14	14	15	14	15
F	05	06	14	15	06	10	05	06	06	10	06	10	06	10	11	12
H I M N	20	21	22	24	20	21	14	15	16	17	16	17	20	21	20	21
J U	20	21	20	21	16	17	14	15	16	17	16	17	16	17	20	21
K L	11	12	16	17	11	12	05	06	11	12	11	12	11	12	12	14
P	12	14	14	15	12	14	05	06	11	12	11	12	12	14	12	14
S	12	14	16	17	12	14	06	10	12	14	12	14	12	14	12	14
T	11	12	16	17	06	10	06	10	11	12	11	12	11	12	12	14
V	06	10	14	15	11	12	06	10	12	14	12	14	12	14	12	14
Y	05	06	14	15	06	10	05	06	05	07	05	06	06	10	11	12
Z	16	17	22	24	16	17	12	14	16	17	16	17	16	17	20	21

EXAMPLE, 2³ DENOTES $\frac{3''}{8}$



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

SERIES	SECOND LETTER															
	acde		bhikl		f w		j		s t		v y		x		z	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
ad h g i j	16	17	22	24	16	17	12	14	14	15	14	15	16	17	16	17
l m n q u																
b f k o p s	12	14	16	17	11	12	05	06	11	12	11	12	12	14	12	14
c e	12	14	16	17	12	14	06	10	12	14	12	14	12	14	12	14
r	06	10	12	14	06	10	03	03	05	06	05	06	06	10	06	10
t z	12	14	16	17	12	14	06	10	11	12	11	12	12	14	12	14
v y	11	12	14	15	11	12	05	06	06	10	06	10	11	12	11	12
w	11	12	14	15	11	12	05	06	11	12	11	12	11	12	12	14
x	12	14	16	17	11	12	05	06	11	12	11	12	11	12	12	14

UPPER AND LOWER CASE LETTER WIDTHS

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

NOTE: SIGN DIMENSIONS ARE IN ENGLISH UNITS

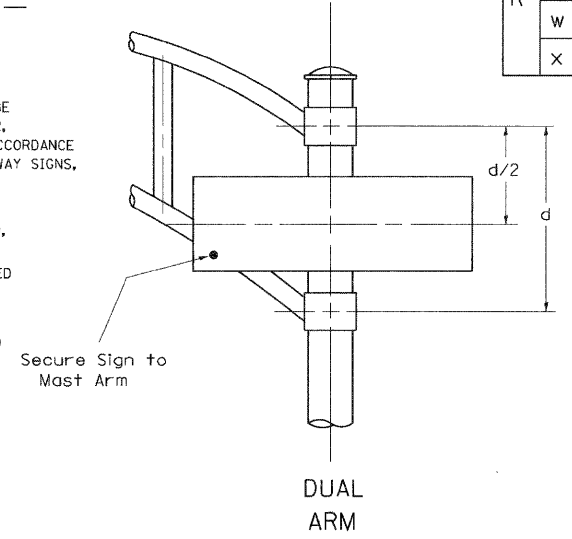
GENERAL NOTES

- WHERE MAST ARM MOUNTED STREET NAME SIGNS ARE SPECIFIED, THE MAST ARM ASSEMBLY AND POLES SHALL BE DESIGNED TO SUPPORT THE LOADINGS CALLED FOR ON STANDARDS 877001, 877002, 877006, 877011 AND 877012, AS APPLICABLE, PLUS TWO (2) SIGN PANELS 2'-6" x 8'-0" MOUNTED AS SHOWN. THE DESIGN SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS FOR 80 M.P.H. WIND VELOCITY.
- ALL SIGNS SHALL HAVE A WHITE REFLECTORIZED LEGEND AND BORDER ON A GREEN REFLECTORIZED BACKGROUND, TYPE A SHEETING.
- THE SIGN LENGTH SHOULD BE INCREASED IN 6-INCH INCREMENTS, BUT THE OVERALL LENGTH SHOULD NOT EXCEED 8'-0".
- ALL BORDERS SHALL BE 3/4" WIDE AND CORNER RADIUS SHALL BE 2-1/4".
- SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM SHALL BE USED FOR ALL SIGNS ATTACHED TO SIGNAL POLES AND POSTS. LOCAL SUPPLIERS OF THE SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM ARE:

* J.O. HERBERT CO. MIDLOTHIAN, VA. * WESTERN REMAC INC. WOODRIDGE, IL.

PARTS LISTING:
SIGN CHANNEL PART #HPN053 (MED. CHANNEL)
SIGN SCREWS 1/4" x 14 x 1" H.W.H. #3
SELF TAPPING WITH NEOPRENE WASHER
BRACKETS PART #HPN034 (UNIVERSAL)
CHANNEL CLAMPS WITH STAINLESS STEEL STRAPPING

OTHER BRANDS OF MOUNTING HARDWARE ARE ACCEPTABLE, BASED UPON THE DEPARTMENT'S APPROVAL AND COMPATIBILITY WITH THE CHANNEL/BACKET OF THE ABOVE PRODUCT.



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

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

SERIES	SECOND NUMBER																			
	0		1		2		3		4		5		6		7		8		9	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
0 9	16	17	16	17	14	15	12	14	14	15	14	15	16	17	12	14	16	17	16	17
1	20	21	20	21	20	21	16	17	14	15	20	21	20	21	14	15	20	21	20	21
2 3 4	14	15	14	15	14	15	12	14	12	14	14	15	14	15	11	12	16	17	14	15
5	14	15	14	15	14	15	11	12	11	12	14	15	14	15	11	12	14	15	14	15
6	16	17	14	15	14	15	12	15	12	14	14	15	14	15	11	12	14	15	14	15
7	12	14	12	14	14	15	12	15	05	06	12	14	14	15	11	12	14	15	12	14
8	16	17	16	17	14	15	12	15	12	14	14	15	16	17	12	14	16	17	14	15

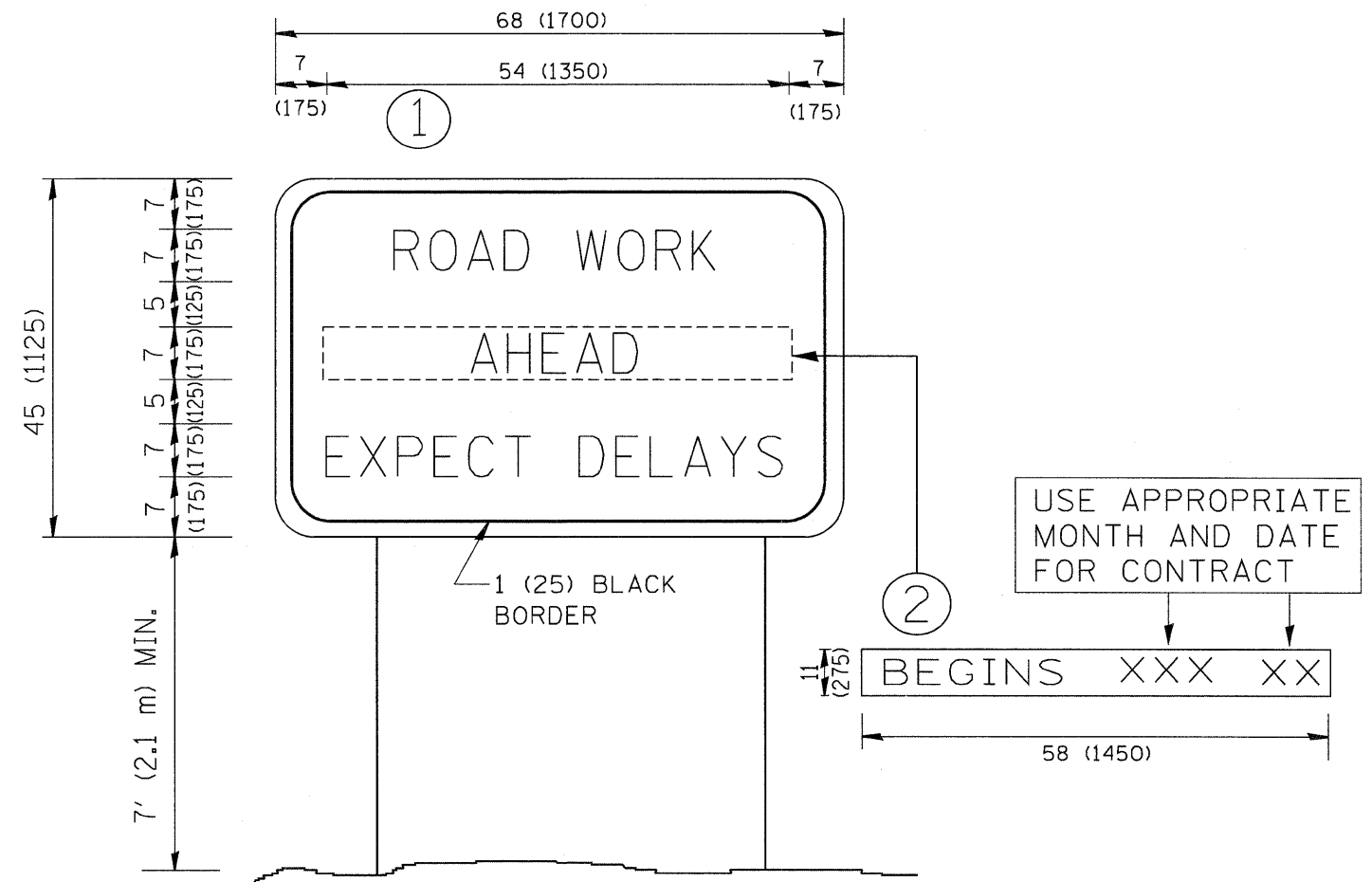
NUMBER	6 INCH SERIES		8 INCH SERIES	
	C	D	C	D
1	12	14	15	20
2	32	40	43	53
3	32	40	43	53
4	35	43	47	57
5	32	40	43	53
6	32	40	43	53
7	32	40	43	53
8	32	40	43	53
9	32	40	43	53
0	34	42	45	55

FILE NAME =	USER NAME = kanthaphixajbo	DESIGNED - DAG./BCK.	REVISED - DAG-10/28/09
ca:\pwwork\pwwid\KANTHAPHIXAJBO\d011264\traf\fig.legend.v7.dgn		DRAWN - BCK.	REVISED -
PLOT SCALE = 20.0000' / IN.		CHECKED - DAG/DAD	REVISED -
PLOT DATE = 10/6/2009		DATE - 03/15/09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT 1
MAST ARM MOUNTED STREET NAME SIGNS

F.A.P. RTE. 392	SECTION 2009-130 TS	COUNTY WILL	TOTAL SHEETS 13	SHEET NO. 13
SCALE: SHEET NO. OF SHEETS STA. TO STA.		CONTRACT NO. 60J90		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



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.

FILE NAME = W:\diststd\22x34\tc22.dgn	USER NAME = ggglenobt	DESIGNED - DRAWN -	REVISED - REVISED -	R. MIRS 09-15-97 R. MIRS 12-11-97	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ARTERIAL ROAD INFORMATION SIGN		F.A. RTE. 393	SECTION 2009-130 TS	COUNTY WILL	TOTAL SHEETS 13	SHEET NO. 13A
PLOT SCALE = 50.000 "/td> <td>CHECKED -</td> <td>REVISED -</td> <td>T. RAMMACHER 02-02-99</td> <td>SCALE: NONE</td> <td>SHEET NO. 1 OF 1 SHEETS</td> <td>STA.</td> <td>TO STA.</td> <td colspan="2" style="text-align: center;">TC-22</td> <td>CONTRACT NO. 60190</td>	CHECKED -	REVISED -	T. RAMMACHER 02-02-99	SCALE: NONE		SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	TC-22		CONTRACT NO. 60190	
PLOT DATE = 1/4/2008	DATE -	REVISED -	C. JUCIUS 01-31-07	FED. ROAD DIST. NO. 1 ILLINOIS		FED. AID PROJECT						