

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
348	10-00047-00-TL	COOK	30	1
		CONTRACT #: 63626		
ILLINOIS FED. AID PROJECT				



**INDEX OF SHEETS 03-09-12 LETTING ITEM 139**

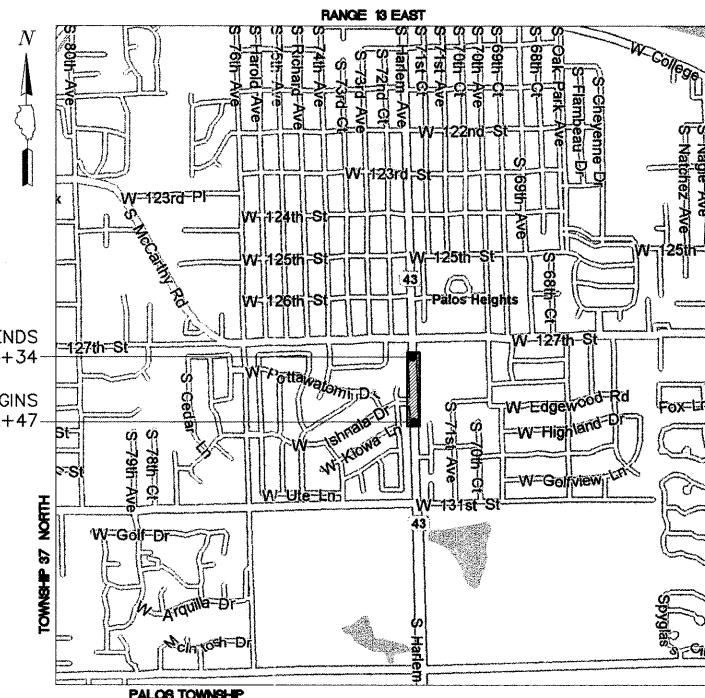
1. TITLE SHEET
- 2.-3. SUMMARY OF QUANTITIES
4. GENERAL NOTES
5. TYPICAL SECTIONS
6. EXISTING CONDITIONS / DEMOLITION PLAN
7. EXISTING CONDITIONS / DEMOLITION PLAN
8. PLAN AND PROFILE - STA. 91+50 TO STA. 95+50
9. PLAN AND PROFILE - STA. 95+50 TO STA. 99+50
10. PLAN AND PROFILE - STA. 99+50 TO STA. 103+50
11. PAVEMENT MARKING PLAN
12. EROSION CONTROL PLAN
13. EROSION CONTROL DETAILS
- 14.-19. DETAIL SHEETS
20. TRAFFIC SIGNAL INSTALLATION PLAN  
ILL RTE 43 (HARLEM AV) AND ISHNALA DRIVE
21. SCHEDULE OF QUANTITIES, CABLE PLAN, PHASE DESIGNATION  
DIAGRAM AND EMERGENCY VEHICLE PREEMPTION SEQUENCE  
ILL RTE 43 (HARLEM AV) AND ISHNALA DRIVE
22. INTERCONNECT PLAN
23. INTERCONNECT SCHEMATIC
24. MAST ARM MOUNTED STREET NAME SIGNS
- 25.-30. DISTRICT 1 STANDARD TRAFFIC SIGNAL DESIGN DETAILS

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS**

**PLANS FOR PROPOSED  
FEDERAL AID HIGHWAY**

**FAP 348 (ILL RTE 43/HARLEM AVE) AT ISHNALA DRIVE  
INTERSECTION IMPROVEMENTS AND  
TRAFFIC SIGNAL INSTALLATION  
SECTION: 10-00047-00-TL  
PROJECT NO. M-9003 (674)  
CITY OF PALOS HEIGHTS, ILLINOIS  
COOK COUNTY  
JOB NO. C-91-693-10**

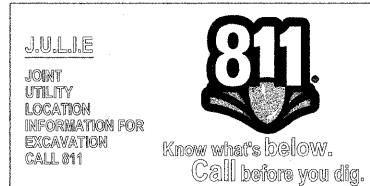
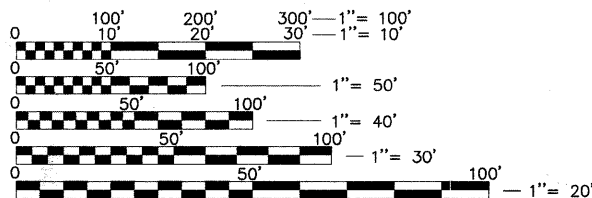
**PROJECT LOCATION MAP  
(NOT TO SCALE)**



PROJECT ENDS  
STA. 104+34

PROJECT BEGINS  
STA. 92+47

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.



**EXISTING UTILITIES:** WHEN THE PLANS OR SPECIAL PROVISIONS INCLUDE INFORMATION PERTAINING TO THE LOCATION OF UNDERGROUND UTILITY FACILITIES, SUCH INFORMATION IS BASED ON RECORD INFORMATION PROVIDED BY THE INDIVIDUAL UTILITY OWNERS AS TO THE LOCATION OF SUCH UTILITIES AND IS ONLY INCLUDED FOR THE CONVENIENCE OF THE BIDDER. 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.

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

**CONTRACT NO. 63626**

NOTE: CONSTRUCTION MEANS, METHODS AND JOB SITE SAFETY IS THE SOLE AND EXCLUSIVE RESPONSIBILITY OF THE CONTRACTOR

**PROJECT INFORMATION**

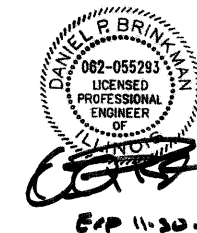
LENGTH OF PROJECT = 1187FT (0.22MI)  
ADT (ILL RTE 43) = 29100 VPD (2009)  
ADT (ISHNALA) = <5000 VPD (2009)  
POSTED SPEED LIMIT = 35 MPH  
DESIGN SPEED = 40 MPH  
ROAD CLASSIFICATION = URBAN ARTERIAL

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

APPROVED: *Robert S. Straz* October 18, 2011  
CITY OF PALOS HEIGHTS

PASSED: *Christoph Christopoulos* November 4, 2011  
DISTRICT ONE ENGINEER OF LOCAL ROADS AND STREETS

RELEASING FOR BID  
BASED ON LIMITED REVIEW: *Diane M. O'Keefe* November 4, 2011  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ONE ENGINEER



850 Forest Edge Drive • Vernon Hills, IL. 60061  
Phone: 847-478-9700 Fax: 847-478-9701

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

PROGRAM AND OFFICE ENGINEER, CHARLES F. RIDDLER, P.E. 847-705-4406 SCHAUMBURG, IL

SUMMARY OF QUANTITIES			ILL ROUTE 43 (HARLEM AV) AT ISHNALA DRIVE					
NO.	CODE NO	ITEM DESCRIPTION	UNIT	TOTAL	ROADWAY IMPROVEMENTS TYPE 0004	TRAFFIC SIGNALS TYPE 0021	INTERCONNECT TYPE 0021	TRAINEES TYPE 0042
1.	20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	51	51			
2.	20101200	TREE ROOT PRUNING	EACH	6	6			
3.	20200100	EARTH EXCAVATION	CU YD	450	450			
4.	20400800	FURNISHED EXCAVATION	CU YD	75	75			
* * *	21101615	TOPSOIL FURNISH AND PLACE, 4"	SQ YD	750	750			
* * *	25000110	SEEDING - CLASS 1A	ACRE	0.25	0.25			
* * *	25000400	NITROGEN FERTILIZER NUTRIENT	POUND	15	15			
* * *	25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	15	15			
* * *	25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	15	15			
* * *	25100630	EROSION CONTROL BLANKET	SQ YD	750	750			
* * *	28000400	PERIMETER EROSION BARRIER	FOOT	310	310			
12.	31101200	SUB-BASE GRANULAR MATERIAL, TYPE B, 4"	SQ YD	1,130	1,130			
13.	31101800	SUB-BASE GRANULAR MATERIAL, TYPE B, 10"	SQ YD	400	400			
14.	40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	650	650			
15.	40600300	AGGREGATE (PRIME COAT)	TON	15	15			
16.	40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT-JOINT	SQ YD	40	40			
17.	40600990	TEMPORARY RAMP	SQ YD	150	150			
18.	40603085	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70	TON	50	50			
19.	40603340	HOT-MIX ASPHALT SURFACE COURSE, MIX 'D', N70	TON	75	75			
20.	40701911	HOT-MIX ASPHALT PAVEMENT (FULL DEPTH), 11 1/2"	SQ YD	560	560			
21.	42300400	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8 INCH	SQ YD	200	200			
22.	42400200	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	SQ FT	2,840	2,840			
23.	42400800	DETECTABLE WARNINGS	SQ FT	180	180			
24.	44000100	PAVEMENT REMOVAL	SQ YD	400	400			
25.	44000155	HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2"	SQ YD	445	445			
26.	44000200	DRIVEWAY PAVEMENT REMOVAL	SQ YD	200	200			
27.	44000300	CURB REMOVAL	FOOT	160	160			
28.	44000500	COMBINATION CURB AND GUTTER REMOVAL	FOOT	735	735			
29.	44000600	SIDEWALK REMOVAL	SQ FT	230	230			
30.	44300200	STRIP REFLECTIVE CRACK CONTROL TREATMENT	FOOT	200	200			
31.	550A2520	STORM SEWERS, RUBBER GASKET, CLASS A, TYPE 2, 12"	FOOT	10	10			
* * *	56400100	FIRE HYDRANTS TO BE MOVED	EACH	1	1			
33.	60200105	CATCH BASINS, TYPE A, 4'-DIAMETER, TYPE 1 FRAME, OPEN LID	EACH	1	1			
34.	60250200	CATCH BASINS TO BE ADJUSTED	EACH	2	2			
35.	60265700	VALVE VAULTS TO BE ADJUSTED	EACH	1	1			
36.	60500050	REMOVING CATCH BASINS	EACH	1	1			
37.	60602800	CONCRETE CURB, TYPE B	FOOT	105	105			
38.	60603800	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	FOOT	460	460			
39.	60605000	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24	FOOT	345	345			
40.	60618300	CONCRETE MEDIAN SURFACE, 4 INCH	SQ FT	150	150			

\* \* \* SPECIALTY ITEMS

SUMMARY OF QUANTITIES			ILL ROUTE 43 (HARLEM AV) AT ISHNALA DRIVE					
NO.	CODE NO	ITEM DESCRIPTION	UNIT	TOTAL	ROADWAY IMPROVEMENTS TYPE 0004	TRAFFIC SIGNALS TYPE 0021	INTERCONNECT TYPE 0021	TRAINEES TYPE 0042
* * *	41.	63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	80	80		
* * *	42.	63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	1	1		
43.	63200310	GUARDRAIL REMOVAL	FOOT	50	50			
44.	67100100	MOBILIZATION	L SUM	1	1			
45.	70102625	TRAFFIC CONTROL AND PROTECTION, STANDARD 701606	L SUM	1			1	
46.	70102635	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701	L SUM	1			1	
47.	70102640	TRAFFIC CONTROL AND PROTECTION, STANDARD 701801	L SUM	1			1	
48.	70106800	CHANGEABLE MESSAGE SIGN	CAL MO	2		2		
49.	72000100	SIGN PANEL - TYPE 1	SQ FT	21.25	6.25	15.00		
50.	72000200	SIGN PANEL - TYPE 2	SQ FT	25.00		25.00		
51.	72400310	REMOVE SIGN PANEL - TYPE 1	SQ FT	6.25	6.25			
52.	72900100	METAL POST, TYPE A	FOOT	11	11			
* * *	53.	78000100	THERMOPLASTIC PAVEMENT MARKINGS - LETTERS AND SYMBOLS	SQ FT	218	218		
* * *	54.	78000200	THERMOPLASTIC PAVEMENT MARKINGS - LINE, 4"	FOOT	2,550	2,550		
* * *	55.	78000400	THERMOPLASTIC PAVEMENT MARKINGS - LINE, 6"	FOOT	1,015	1,015		
* * *	56.	78000600	THERMOPLASTIC PAVEMENT MARKINGS - LINE, 12"	FOOT	120	120		
* * *	57.	78000650	THERMOPLASTIC PAVEMENT MARKINGS - LINE, 24"	FOOT	155	155		
* * *	58.	78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	25	25		
59.	78300100	PAVEMENT MARKING REMOVAL	SQ FT	1,015	1,015			
60.	80500020	SERVICE INSTALLATION - POLE MOUNTED	EACH	1		1		
61.	81028200	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2" DIA.	FOOT	861		861		
62.	81028210	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2 1/2" DIA.	FOOT	53		53		
63.	81028220	UNDERGROUND CONDUIT, GALVANIZED STEEL, 3" DIA.	FOOT	65		65		
64.	81028240	UNDERGROUND CONDUIT, GALVANIZED STEEL, 4" DIA.	FOOT	467		467		
65.	81400100	HANDHOLE	EACH	4		4		
66.	81400200	HEAVY-DUTY HANDHOLE	EACH	4		4		
67.	81400300	DOUBLE HANDHOLE	FOOT	2		2		
68.	85000200	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	1			1	
69.	86200300	UNINTERRUPTIBLE POWER SUPPLY, EXTENDED	EACH	1		1		
70.	86400100	TRANSCEIVER - FIBER OPTIC	EACH	1		1		
71.	87100020	FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM12F	FOOT	991			991	
72.	87300925	ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1C	FOOT	991			991	
73.	87301215	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C	FOOT	427		427		
74.	87301225	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	FOOT	802		802		
75.	87301245	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	1,201		1,201		
76.	87301255	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT	1,535		1,535		
77.	87301305	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	1,639		1,639		
78.	87301805	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C	FOOT	88		88		
79.	87301900	ELECTRIC CABLE IN CONDUIT EQUIPMENT GROUNDING CONDUCTOR, NO. 6 1C	FOOT	592		592		
80.	87502500	TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT	EACH	4		4		

\* \* \* SPECIALTY ITEMS

FILE NAME =  
2806-240-PR6.dwg

USER NAME = GHIA  
PLOT SCALE = 1"=1"  
PLOT DATE = 10/17/2011

DESIGNED - BVS  
DRAWN - BVS  
CHECKED - WCG  
DATE - 11/10/2011

REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES  
ILL RTE 43 (HARLEM AVENUE) ROAD IMPROVEMENTS

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

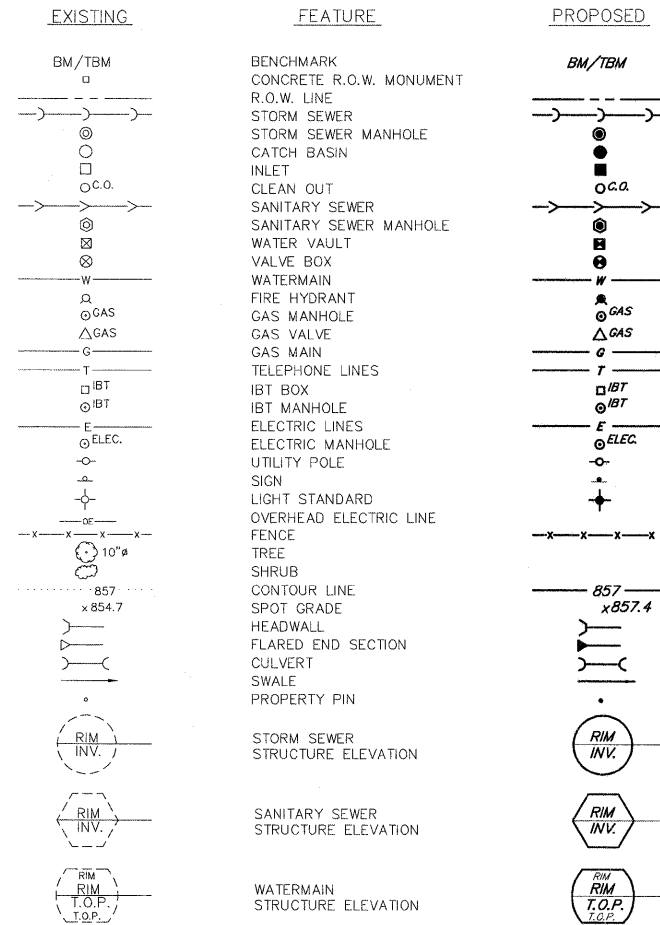
FAP RTE 348 SECTION 10-00047-00-TL COUNTY COOK TOTAL SHEETS 30 SHEET NO. 2 CONTRACT # 63626 ILLINOIS FED. AID PROJECT

CHA #2806.242

SUMMARY OF QUANTITIES		ILL ROUTE 43 (HARLEM AV) AT ISHNALA DRIVE						
NO.	CODE NO	ITEM DESCRIPTION	UNIT	TOTAL	ROADWAY IMPROVEMENTS TYPE 0004	TRAFFIC SIGNALS TYPE 0021	INTERCONNECT TYPE 0021	TRAINEES TYPE 0042
81.	87700210	STEEL MAST ARM ASSEMBLY AND POLE, 34 FT	EACH	1		1		
82.	87700250	STEEL MAST ARM ASSEMBLY AND POLE, 42 FT	EACH	1		1		
83.	87700270	STEEL MAST ARM ASSEMBLY AND POLE, 46 FT	EACH	2		2		
84.	87800100	CONCRETE FOUNDATION, TYPE A	FOOT	16		16		
85.	87800150	CONCRETE FOUNDATION, TYPE C	FOOT	4		4		
86.	87800415	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	FOOT	50		50		
87.	87900200	DRILL EXISTING HANDHOLE	EACH	2		1	1	
88.	88030020	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED	EACH	6		6		
89.	88030100	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED	EACH	4		4		
90.	88030110	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST-ARM MOUNTED	EACH	4		4		
91.	88102717	PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER	EACH	4		4		
92.	88200210	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINIUM	EACH	10		10		
93.	88500100	INDUCTIVE LOOP DETECTOR	EACH	8		8		
94.	88600100	DETECTOR LOOP, TYPE I	FOOT	846		846		
95.	88700200	LIGHT DETECTOR	EACH	2		2		
96.	88700300	LIGHT DETECTOR AMPLIFIER	EACH	1		1		
97.	88800100	PEDESTRIAN PUSH-BUTTON	EACH	4		4		
98.	89502350	REMOVE AND REINSTALL ELECTRIC CABLE FROM CONDUIT	FOOT	1,091		1,091		
* * 99.	B2005616	TREE, PYRUS CALLERYANA BRADFORD (BRAD FORD CALLERY PEAR), 2" CALIPER, TREE FORM, BALLED AND BURLAPPED	EACH	4	4			
100.	X8063401	COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.12	FOOT	230	230			
101.	X8570225	FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL	EACH	1		1		
102.	X8730250	ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED	FOOT	340		340		
* * 103.	XX006188	REMOVE AND RE-ERECT SEGMENTAL BLOCK RETAINING WALL	SQ FT	250	250			
104.	Z0033046	RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM LEVEL 2	EACH	1			1	
105.	Z0076600	TRAINEES	HOUR	500				500

\* \* SPECIALTY ITEMS

# STANDARD SYMBOLS



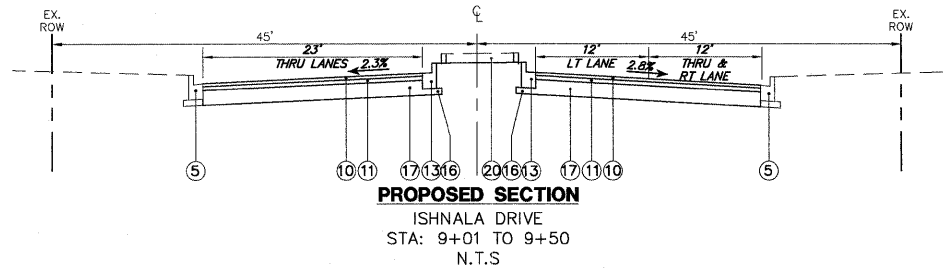
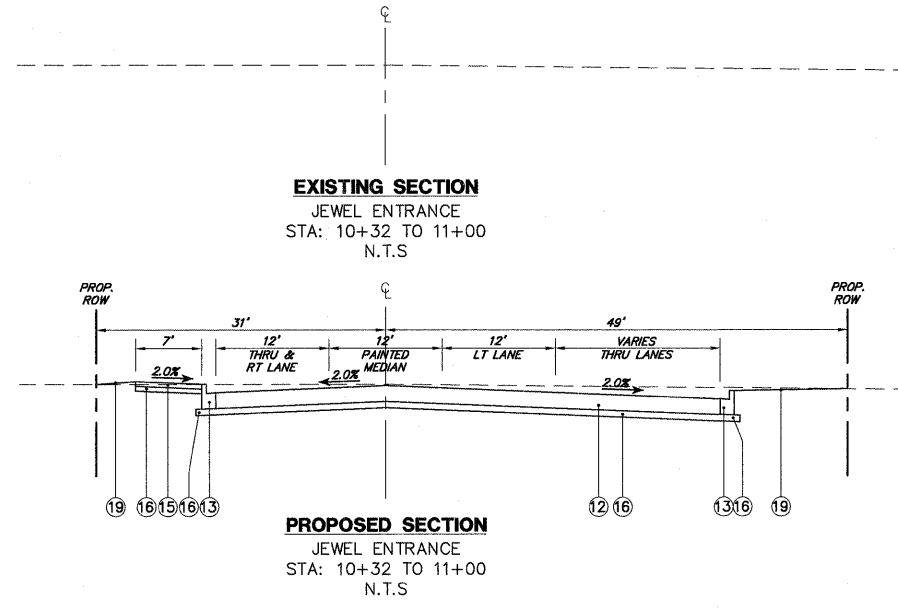
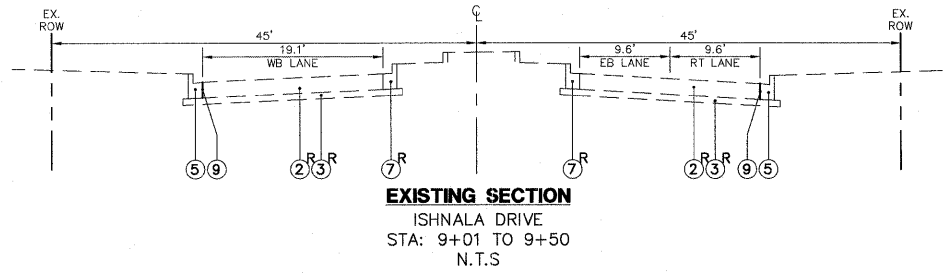
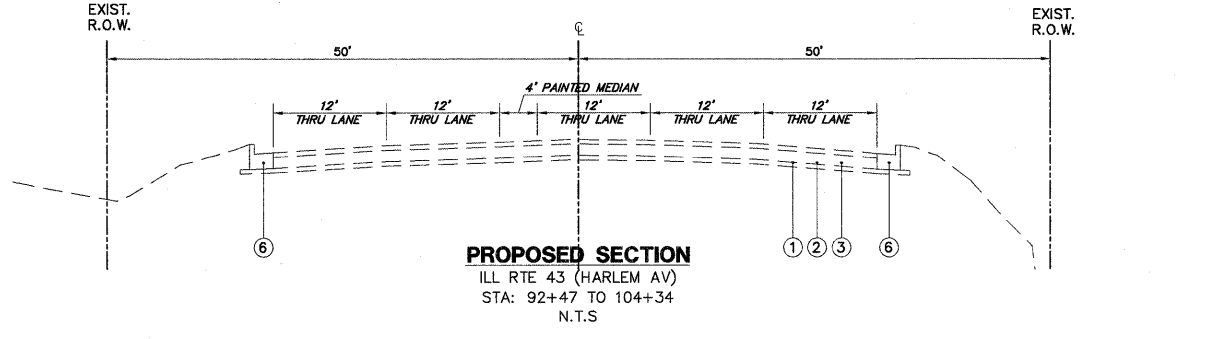
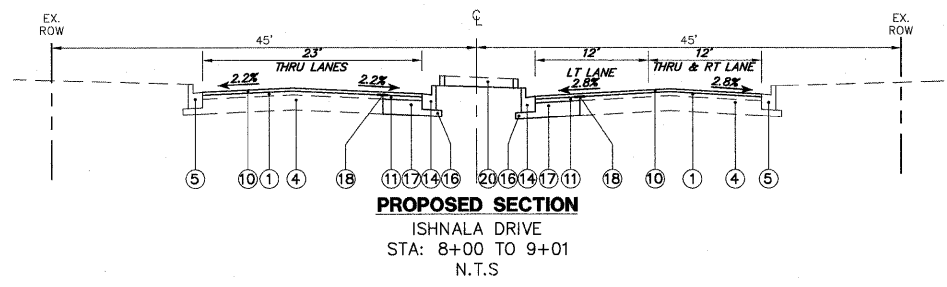
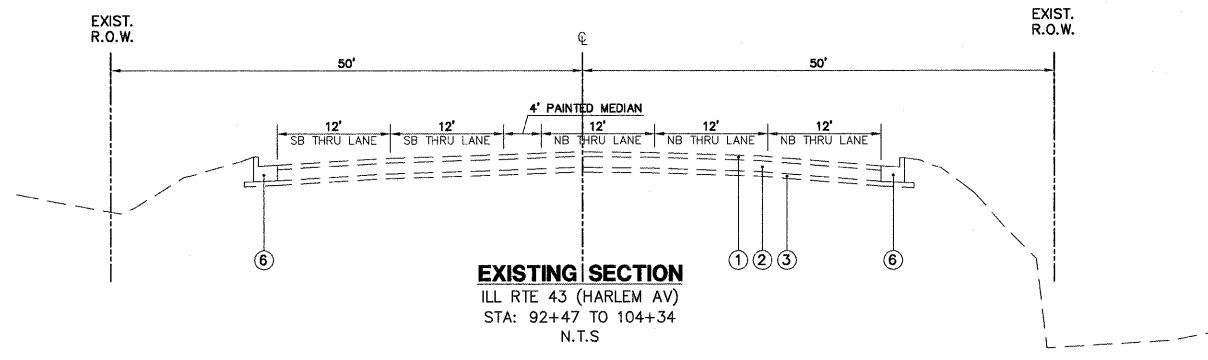
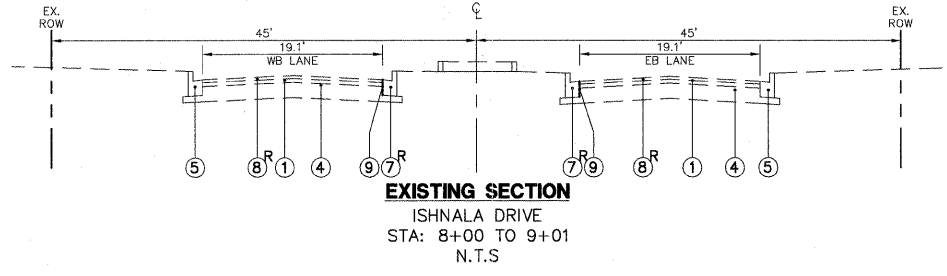
## GENERAL NOTES

- A-1. THE ILLINOIS DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" LATEST EDITION, THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS" LATEST EDITION, PROJECT SPECIFICATIONS, ALL APPLICABLE REQUIREMENTS OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, THE CITY OF PALOS HEIGHTS, ALL APPLICABLE REQUIREMENTS OF THE ORDINANCES OF AUTHORITIES HAVING JURISDICTION AND ALL ADDENDA THERETO SHALL GOVERN THIS WORK.
- A-2. WHENEVER, DURING CONSTRUCTION OPERATIONS, ANY LOOSE MATERIAL IS DEPOSITED IN THE FLOW LINE OF GUTTERS, DRAINAGE STRUCTURES, DITCHES, ETC. SUCH THAT THE NATURAL FLOW LINE OF WATER IS OBSTRUCTED, THE LOOSE MATERIAL WILL BE REMOVED AT THE CLOSE OF EACH WORKING DAY. AT THE CONCLUSION OF CONSTRUCTION OPERATIONS, ALL DRAINAGE STRUCTURES AND FLOW LINES SHALL BE FREE FROM DIRT AND DEBRIS. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
- A-3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ADEQUATE SIGNS, TRAFFIC CONTROL DEVICES, AND WARNING DEVICES TO INFORM AND PROTECT THE PUBLIC DURING ALL PHASES OF CONSTRUCTION.
- A-4. DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHALL ENSURE POSITIVE SITE DRAINAGE AT THE CONCLUSION OF EACH DAY. SITE DRAINAGE MAY BE ACHIEVED BY DITCHING, PUMPING OR ANY OTHER METHOD ACCEPTABLE TO THE ENGINEER AND THE CITY OF PALOS HEIGHTS.
- A-5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE FROM THE SITE ANY AND ALL MATERIALS AND DEBRIS WHICH RESULT FROM HIS CONSTRUCTION OPERATIONS INCIDENTAL TO THE CONTRACT.
- A-6. CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL AREAS AFFECTED BY EQUIPMENT OR LABORERS TO EXISTING CONDITIONS. CONTRACTOR IS ALSO RESPONSIBLE FOR PROTECTING ALL NEW WORK UNTIL COMPLETION OF THIS CONTRACT.
- A-7. 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 CONTRACTOR. 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, JULIE DETAILED INFORMATION RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULES OF THE UTILITY COMPANIES FOR REMOVING OR ADJUSTING THEM. CONTACT MEADE ELECTRIC AT 773-287-7600, FOR INFORMATION REGARDING STATE-OWNED ELECTRIC UTILITIES.
- A-8. EASEMENTS FOR THE EXISTING UTILITIES, BOTH PUBLIC AND PRIVATE, AND UTILITIES WITHIN PUBLIC RIGHTS-OF-WAY ARE SHOWN ON THE PLANS ACCORDING TO AVAILABLE RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION IN THE FIELD OF THESE UTILITY LINES AND THEIR PROTECTION FROM DAMAGE DUE TO CONSTRUCTION OPERATIONS. IF EXISTING UTILITY LINES OF ANY NATURE ARE ENCOUNTERED WHICH CONFLICT IN LOCATION WITH NEW CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT MAY BE RESOLVED.

## STATE STANDARDS

420001 - 07	PAVEMENT JOINTS
424001 - 06	PERPENDICULAR CURB RAMPS FOR SIDEWALKS
424026	ENTRANCE / ALLEY PEDESTRIAN CROSSINGS
424031	MEDIAN PEDESTRIAN CROSSINGS
602001 - 02	CATCH BASIN TYPE A
606001 - 04	CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER
606301 - 04	PC CONCRETE ISLANDS AND MEDIANS
630001 - 10	STEEL PLATE BEAM GUARDRAIL
631011 - 08	TRAFFIC BARRIER TERMINAL TYPE 2
701006 - 03	OFF-ROAD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE
701011 - 02	OFF-ROAD MOVING OPERATIONS, 2L, 2W, DAY ONLY
701101 - 02	OFF-ROAD OPERATIONS, MULTILANE, 15' TO 24" FROM PAVEMENT EDGE
701301 - 04	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701426 - 04	LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPERATION, FOR SPEEDS ≥ 45 MPH
701606 - 08	URBAN LANE CLOSURE, MULTILANE, 2W WITH MOUNTABLE MEDIAN
701701 - 08	URBAN LANE CLOSURE, MULTILANE INTERSECTION
701801 - 05	SIDEWALK, CORNER OR CROSSWALK CLOSURE
701901 - 02	TRAFFIC CONTROL DEVICES
780001 - 03	TYPICAL PAVEMENT MARKING
781001 - 03	TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS
805001 - 01	ELECTRICAL SERVICE INSTALLATION DETAILS
814001 - 02	HANDHOLES
814006 - 02	DOUBLE HANDHOLES
857001 - 01	STANDARD PHASE DESIGNATION DIAGRAMS AND PHASE SEQUENCES
862001 - 01	UNINTERRUPTABLE POWER SUPPLY (ups)
873001 - 02	TRAFFIC SIGNAL GROUNDING AND BONDING
877001 - 05	STEEL MAST ARM ASSEMBLY AND POLE 16' THROUGH 55'
878001 - 09	CONCRETE FOUNDATION DETAILS
880006 - 01	TRAFFIC SIGNAL MOUNTING DETAILS
886001 - 01	DETECTOR LOOP INSTALLATIONS
886006 - 01	TYPICAL LAYOUTS FOR DETECTION LOOPS

FILE NAME = 2806-240-PR6.dwg	USER NAME = GHA	DESIGNED - BVS	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>GENERAL NOTES ILL RTE 43 (HARLEM AVENUE) ROAD IMPROVEMENTS</b>			F&P RTE. 348	SECTION 10-00047-00-TL	COUNTY COOK	TOTAL SHEETS 30	SHEET NO. 4	GHA #2806.242
PLOT SCALE = 1"=1"	CHECKED - WCG	REVISED -	REVISED -		SCALE: N.T.S.	SHEET NO. OF SHEETS	STA. TO STA.	CONTRACT #:		63626		ILLINOIS FED. AID PROJECT	
PLOT DATE = 10/17/2011	DATE - 11/10/2011	REVISED -	REVISED -										



PAVING LEGEND	
NO.	DESCRIPTION
①	EXISTING HMA PAVEMENT 4"±
②	EXISTING CONCRETE PAVEMENT, 10"
③	EXISTING SUB-BASE, 4"
④	EXISTING AGGREGATE SUB GRADE 10"
⑤	EXISTING COMBINATION CONCRETE CURB AND GUTTER, TYPE B6.12
⑥	EXISTING COMBINATION CONCRETE CURB AND GUTTER, TYPE B6.24
⑦	EXISTING COMBINATION CONCRETE CURB AND GUTTER, TYPE M3.12
⑧	EXISTING HOT-MIX ASPHALT MILLING, 1 1/2"
⑨	SAWCUT (FULL DEPTH)
⑩	PROPOSED HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70, 1 1/2"
⑪	PROPOSED HOT-MIX ASPHALT BINDER, IL 19.0 MIX "D", N70, 2"
⑫	PROPOSED HOT-MIX ASPHALT PAVEMENT (FULL DEPTH), 11 1/2"
⑬	PROPOSED B6.12 CURB AND GUTTER
⑭	PROPOSED M4.12 CURB AND GUTTER
⑮	PROPOSED P.C.C. SIDEWALK 5"
⑯	PROPOSED SUB-BASE GRANULAR MATERIAL, TYPE B, 4"
⑰	PROPOSED SUB-BASE GRANULAR MATERIAL, TYPE B, 10"
⑱	STRIP REFLECTIVE CRACK CONTROL TREATMENT
⑲	PROPOSED TOPSOIL 4"/SEEDING CLASS 2A/ EROSION CONTROL BLANKET
Ⓜ	LANDSCAPE AREA (TO REMAIN)/ LANDSCAPE SEGMENT BLOCK WALLS TO BE REINSTALLED
Ⓝ	ITEM TO BE REMOVED

NOTE: 4" SUB-BASE GRANULAR MATERIAL SHALL BE PLACED UNDER ALL CURB AND GUTTER, SIDEWALK AND DRIVEWAYS.

HOT-MIX ASPHALT MIXTURE REQUIREMENTS			
MIXTURE TYPE	AIR VOIDS @ Ndes	DEPTH	LOCATION
HOT-MIX ASPHALT RESURFACING			
HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70 (IL 9.5 mm)	4% @ 70 GYR	1 1/2"	ISHNALA DR.
HOT-MIX ASPHALT FULL DEPTH PAVEMENT			
HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70 (IL 9.5 mm)	4% @ 70 GYR	1 1/2"	JEWEL ENTRANCE
HOT MIX ASPHALT BINDER COURSE IL-19, N70	4% @ 70 GYR	10"	JEWEL ENTRANCE
MISCELLANEOUS			
HOT MIX ASPHALT BINDER COURSE IL-19, N70	4% @ 70 GYR	2"	ISHNALA DR., TEMPORARY RAMPS

THE UNIT WEIGHT TO CALCULATE ALL HMA SURFACE MIXTURE QUANTITIES IS 112 LBS/SY/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 OTHERWISE MODIFIED BY DISTRICT ONE SPECIAL PROVISIONS.  
 FOR "PERCENT OF RAP" SEE DISTRICT ONE SPECIAL PROVISIONS.

FILE NAME = 2806-240-PR6.dwg

USER NAME = GHA  
 PLOT SCALE = 1"=1'  
 PLOT DATE = 10/17/2011

DESIGNED - BVS  
 DRAWN - BVS  
 CHECKED - WCG  
 DATE - 11/10/2011

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

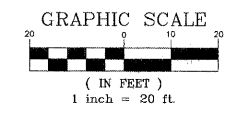
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS  
 ILL RTE 43 (HARLEM AVENUE) ROAD IMPROVEMENTS

F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
348	10-00047-00-TL	COOK	30	5
CONTRACT #			63626	
ILLINOIS FED. AID PROJECT				

GHA #2806.242

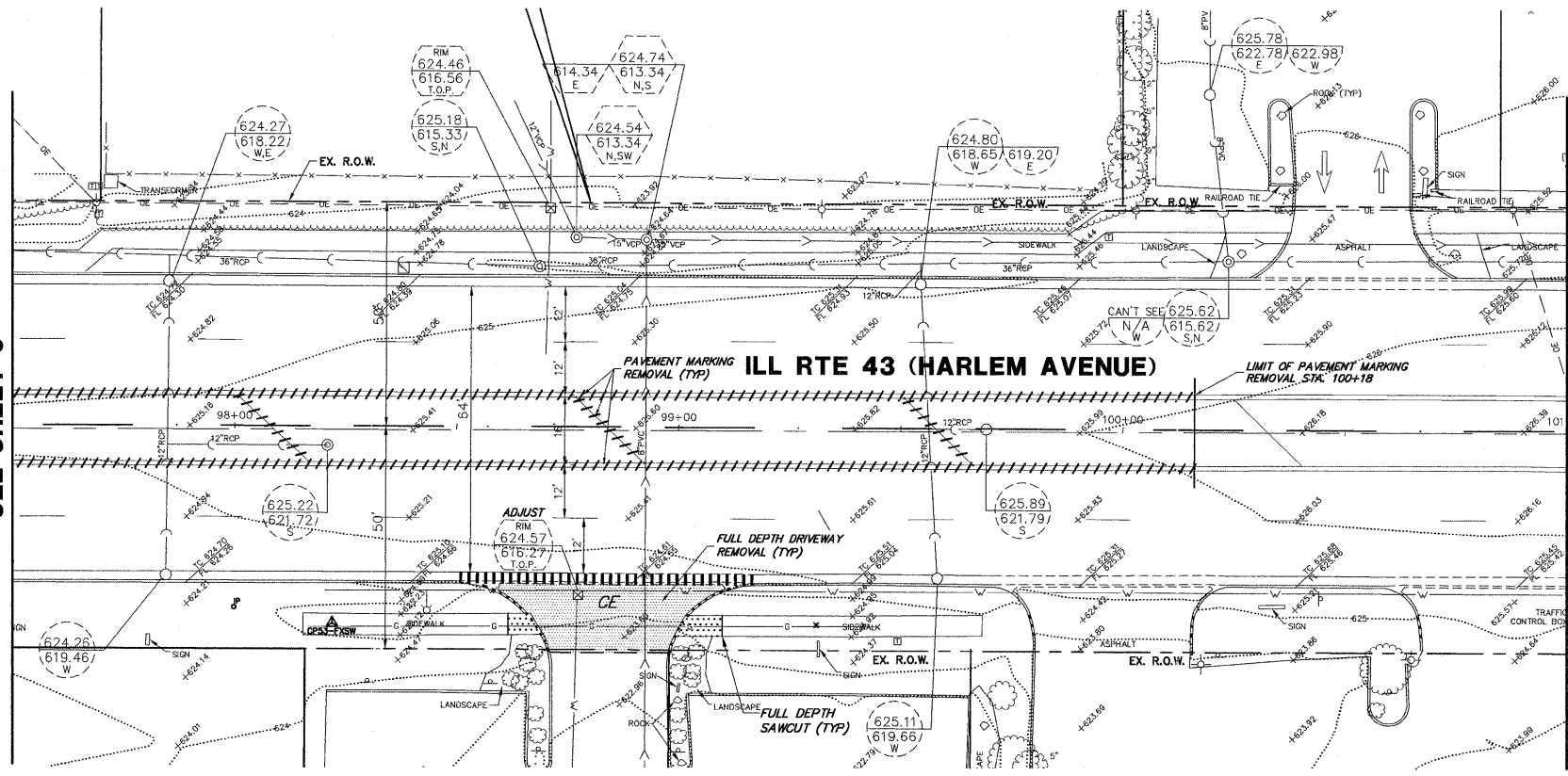




**DEMOLITION LEGEND**

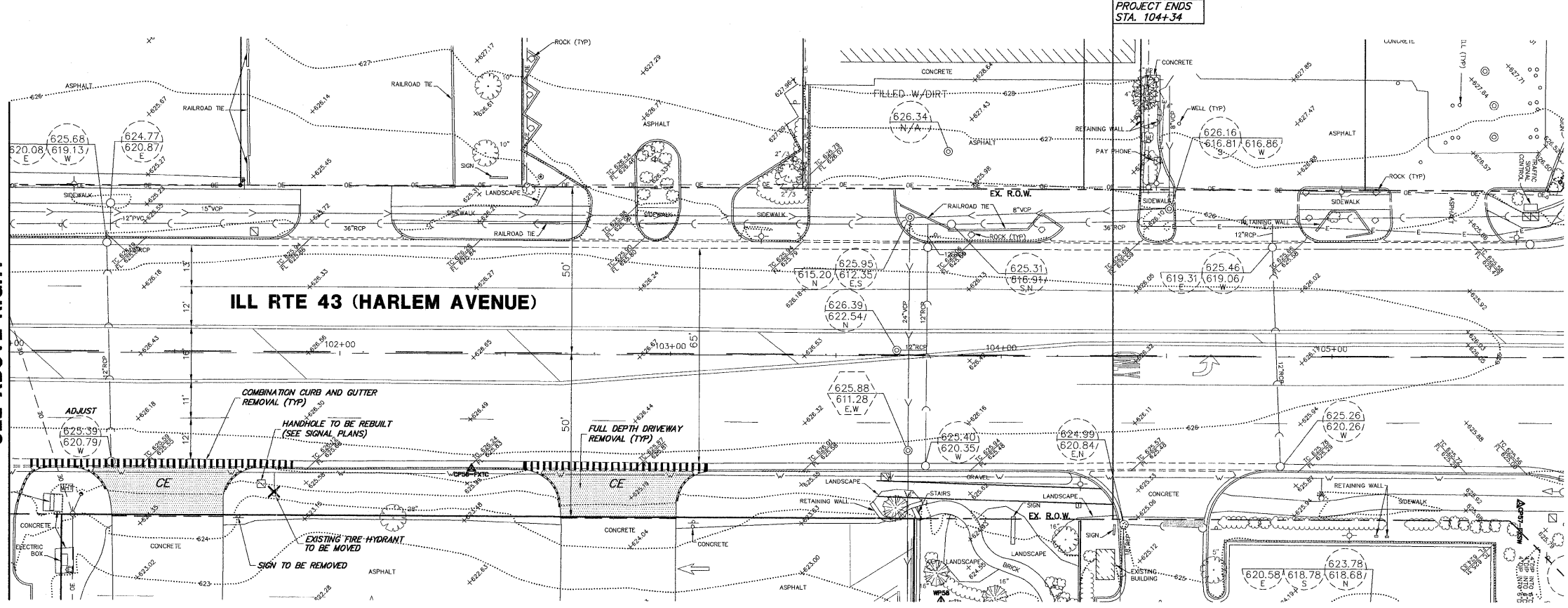
- PAVEMENT REMOVAL
- HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2"
- DRIVEWAY PAVEMENT REMOVAL
- SIDEWALK REMOVAL
- COMBINATION CURB AND GUTTER REMOVAL
- SAW CUT (FULL DEPTH)
- HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT
- PAVEMENT MARKING TO BE REMOVED
- REMOVING CATCH BASINS
- FIRE HYDRANTS TO BE REMOVED
- TREE REMOVAL

MATCH LINE - STA. 97+50  
SEE SHEET 6

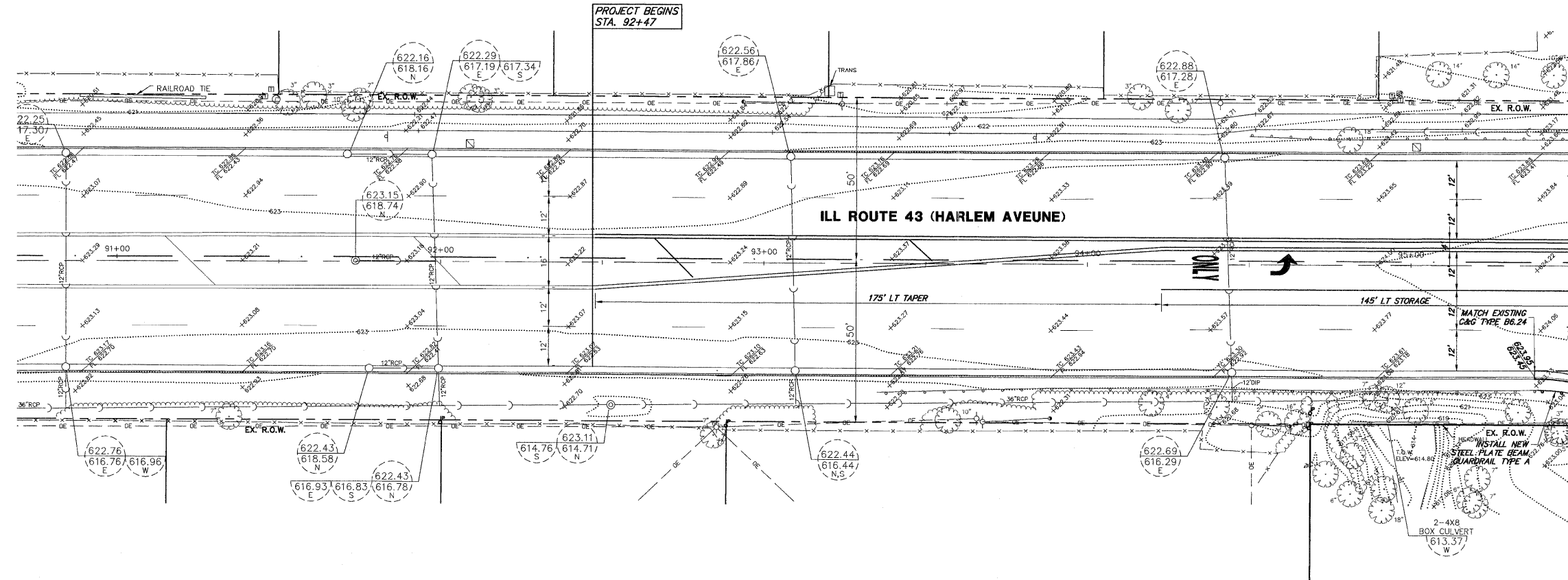
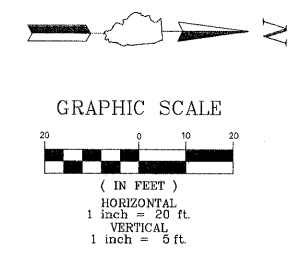


MATCH LINE - STA. 101+00  
SEE BELOW LEFT

MATCH LINE - STA. 101+00  
SEE ABOVE RIGHT

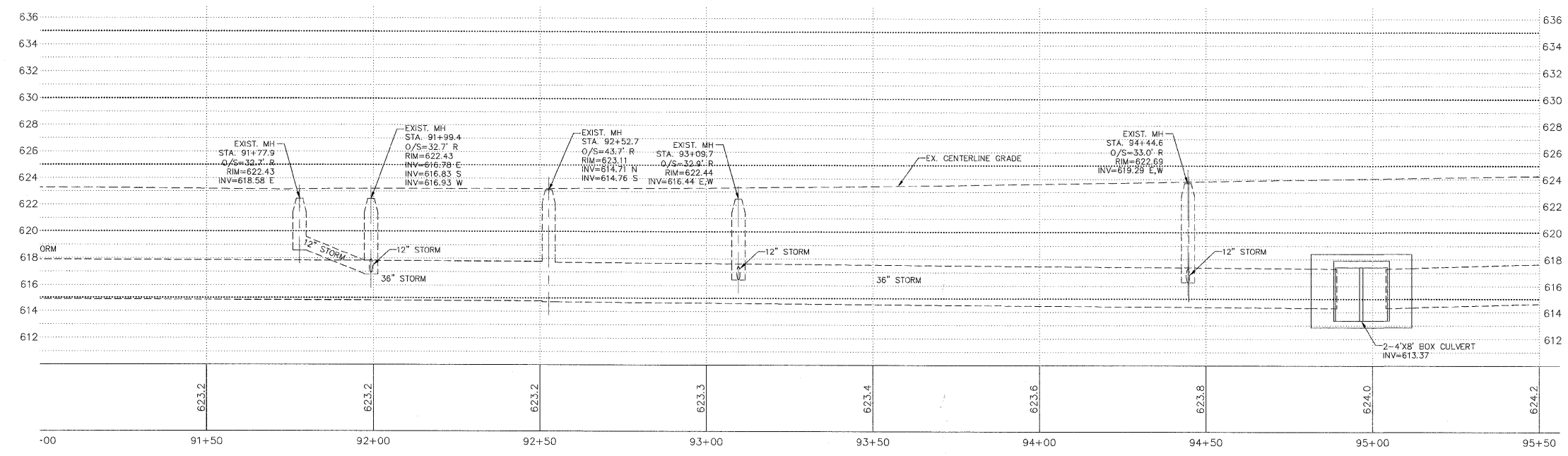


FILE NAME = 2806-240-PR6.dwg	USER NAME = GHA	DESIGNED - BVS	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>EXISTING CONDITIONS / DEMOLITION PLAN ILL RTE 43 (HARLEM AVENUE) ROAD IMPROVEMENTS</b>	FAP R.T.E. 348	SECTION 10-00047-00-TL	COUNTY COOK	TOTAL SHEETS 30	SHEET NO. 7	GHA #2806.242		
PLOT SCALE = 1"=17'						SCALE: 1"=20'		SHEET NO. OF SHEETS		STA. 100+00 TO STA. 104+00		CONTRACT #: 63626	
PLOT DATE = 10/17/2011						DATE = 11/10/2011		ILLINOIS FED. AID PROJECT					



MATCH LINE - STA. 95+50  
SEE SHEET 9

### ILL ROUTE 43 (HARLEM AVENUE)



### PROPOSED CONDITIONS LEGEND

- HOT-MIX ASPHALT PAVEMENT  
(SEE TYPICAL SECTION)
- HOT-MIX ASPHALT SURFACE COURSE,  
MIX 'D', N70
- PORTLAND CEMENT CONCRETE DRIVEWAY  
PAVEMENT, 8 INCH
- PORTLAND CEMENT CONCRETE SIDEWALK,  
5 INCH
- COMBINATION CONCRETE CURB AND GUTTER
- COMBINATION CONCRETE CURB AND GUTTER  
(DEPRESSED)
- COMBINATION CONCRETE CURB AND GUTTER  
(REVERSE PITCH)
- DETECTABLE WARNINGS  
(SEE CURB RAMP DETAIL SHEET)

FILE NAME = 2806-240-PR6.dwg	USER NAME = GHA	DESIGNED - BVS	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>PLAN AND PROFILE ILL RTE 43 (HARLEM AVENUE) ROAD IMPROVEMENTS</b>	F&P RTE. 348	SECTION 10-00047-00-TL	COUNTY COOK	TOTAL SHEETS 30	SHEET NO. 8	
PLOT SCALE = 1"=1"		DRAWN - BVS			SCALE: 1"=20'	SHEET NO. OF SHEETS	STA. 91+50 TO STA. 95+50		CONTRACT # 63626		
PLOT DATE = 10/17/2011		CHECKED - WCG			ILLINOIS FED. AID PROJECT						
		DATE - 11/10/2011									

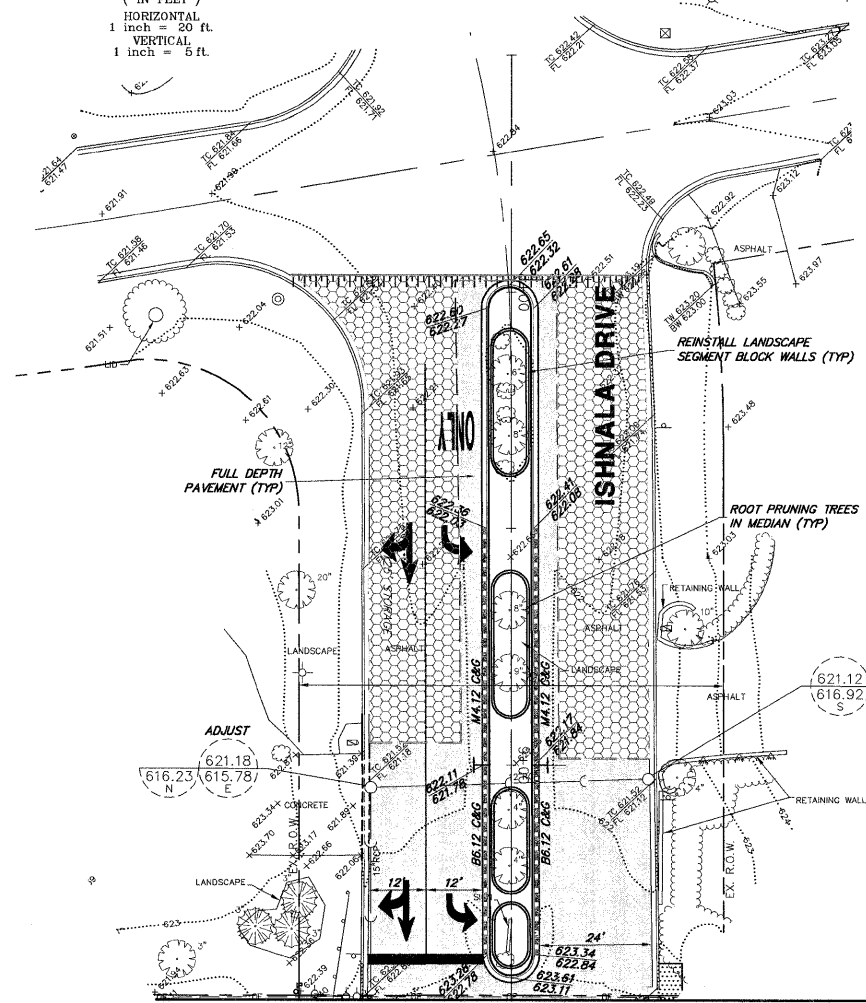
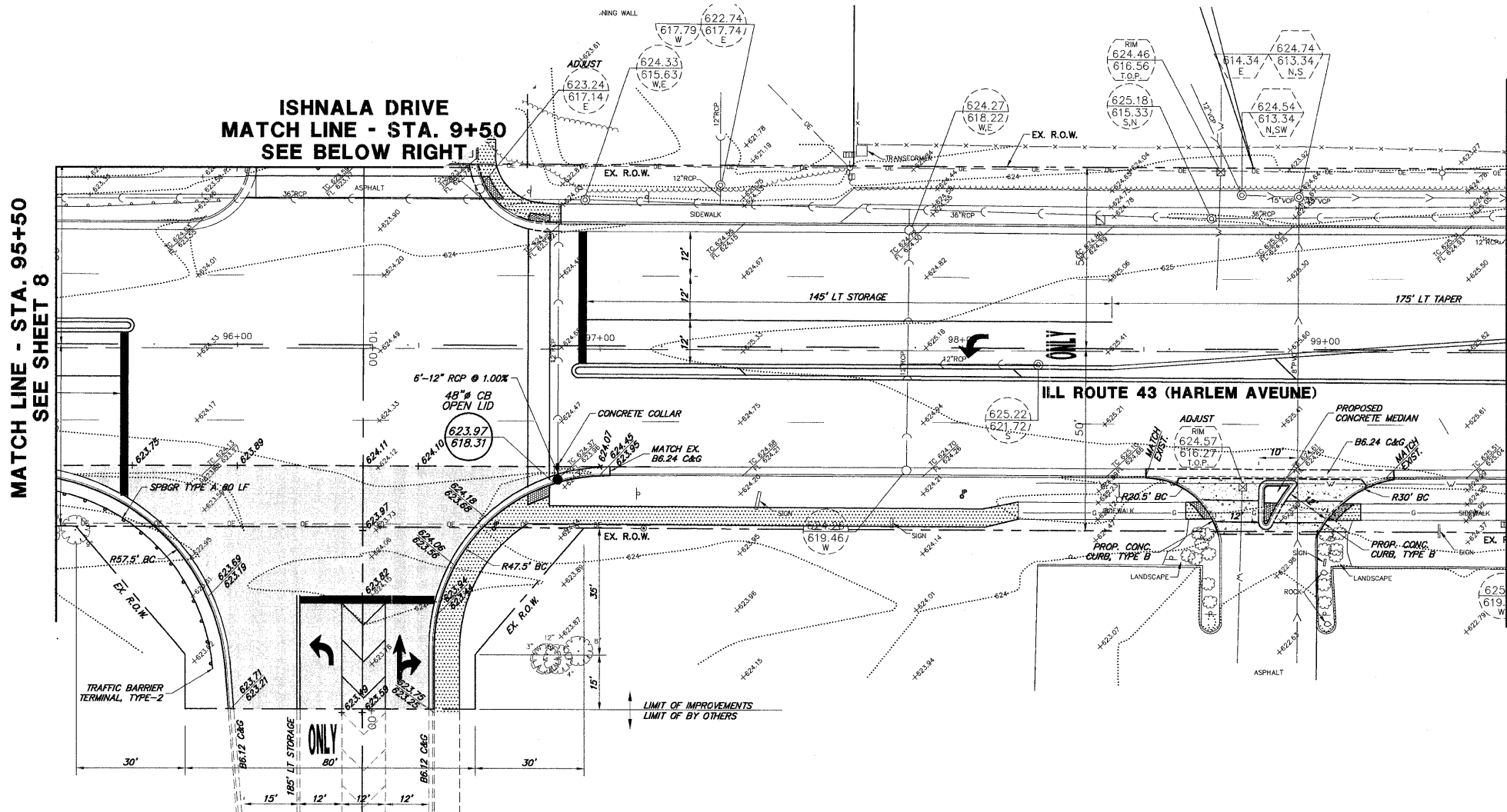
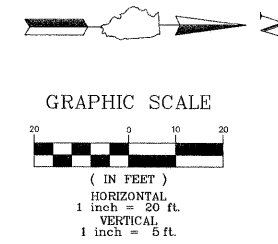
GHA #2806.242



MATCH LINE - STA. 95+50  
SEE SHEET 8

ISHNALA DRIVE  
MATCH LINE - STA. 9+50  
SEE BELOW RIGHT

MATCH LINE - STA. 99+50  
SEE SHEET 10



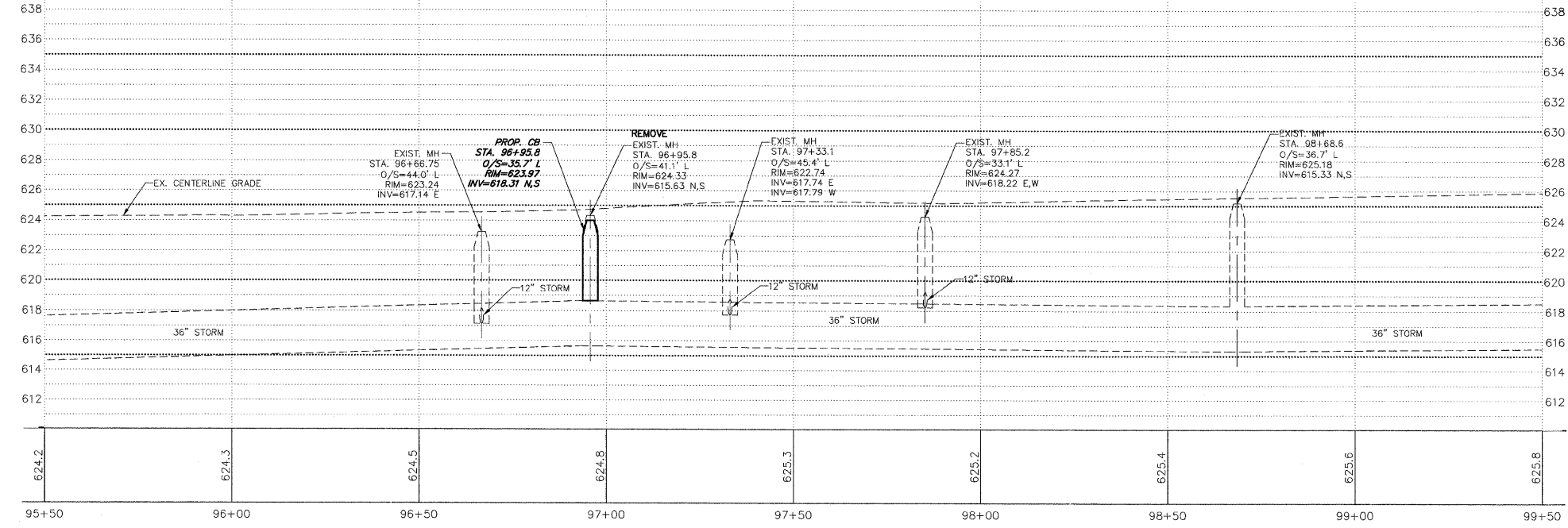
JEWEL/OSCO SITE ACCESS

ILL ROUTE 43 (HARLEM AVENUE)

MATCH LINE - STA. 9+50  
SEE ABOVE LEFT

**PROPOSED CONDITIONS LEGEND**

- HOT-MIX ASPHALT PAVEMENT (SEE TYPICAL SECTION)
- HOT-MIX ASPHALT SURFACE COURSE, MIX 'D', N70
- PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8 INCH
- PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
- COMBINATION CONCRETE CURB AND GUTTER
- COMBINATION CONCRETE CURB AND GUTTER (DEPRESSED)
- COMBINATION CONCRETE CURB AND GUTTER (REVERSE PITCH)
- DETECTABLE WARNINGS (SEE CURB RAMP DETAIL SHEET)



FILE NAME = 2806-240-PR6.dwg

USER NAME = GHA  
PLOT SCALE = 1"=1"  
PLOT DATE = 10/17/2011

DESIGNED - BVS  
DRAWN - BVS  
CHECKED - WCG  
DATE - 11/10/2011

REVISED -  
REVISED -  
REVISED -  
REVISED -

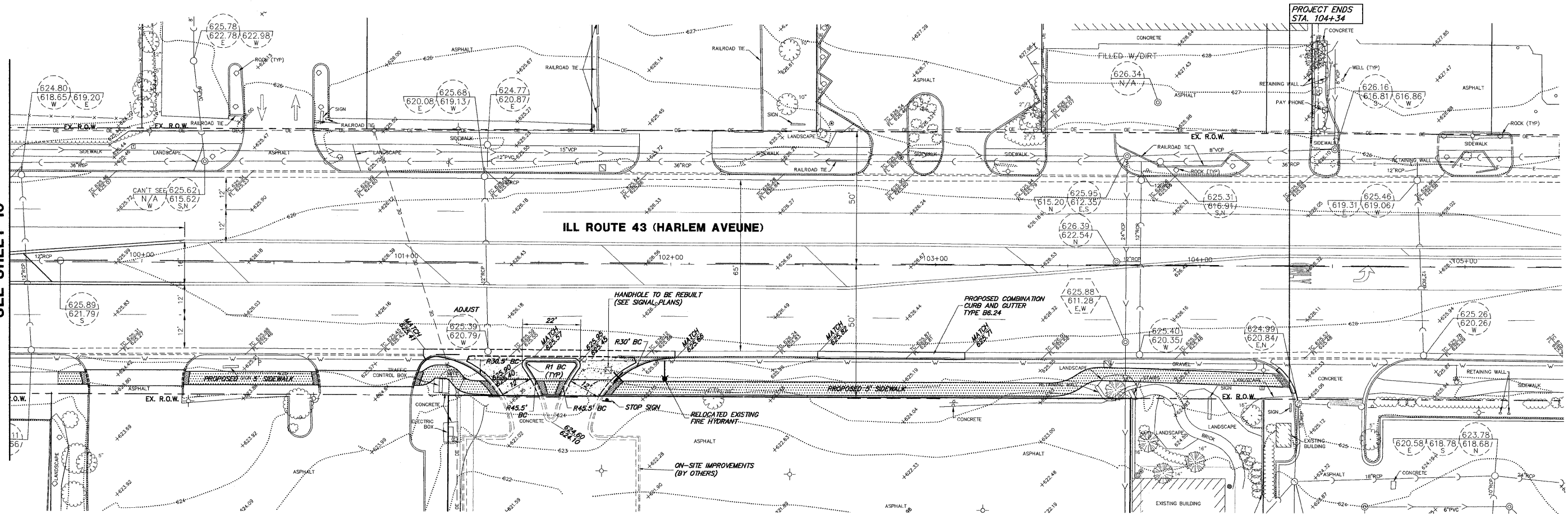
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PLAN AND PROFILE  
ILL RTE 43 (HARLEM AVENUE) ROAD IMPROVEMENTS**  
SCALE: 1"=20' SHEET NO. OF SHEETS STA. 95+50 TO STA. 99+50

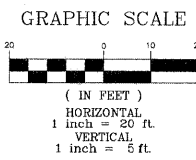
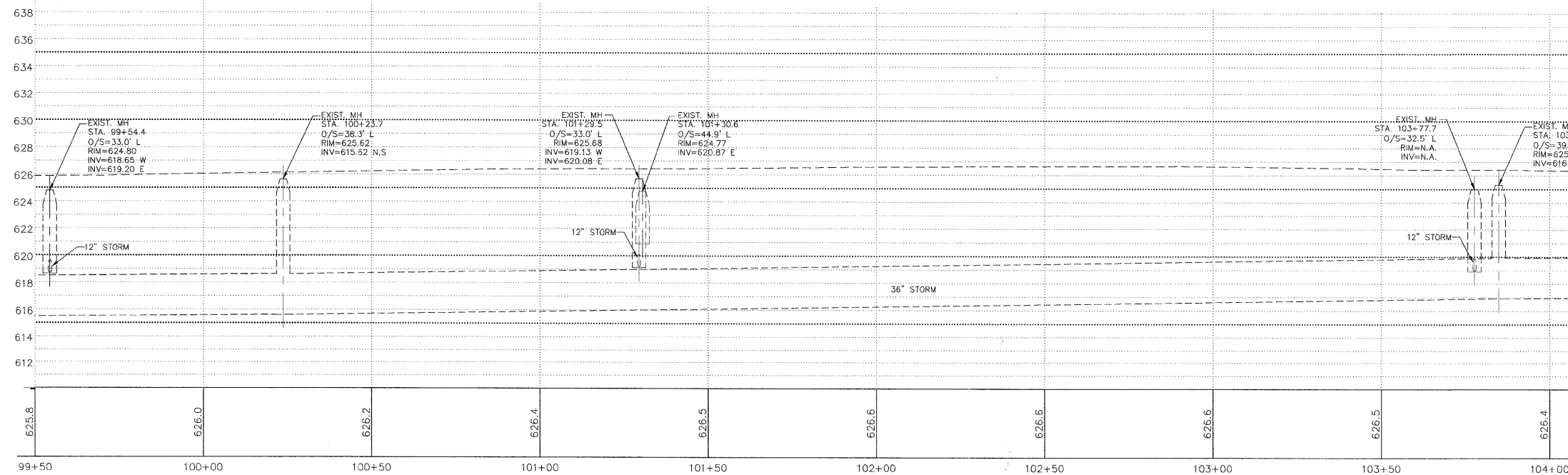
FAP RTE. 348 SECTION 10-00047-00-TL COUNTY COOK TOTAL SHEETS 30 SHEET NO. 9 CONTRACT # 63626 ILLINOIS FED. AID PROJECT

GHA #2806.242

MATCH LINE - STA. 99+50  
SEE SHEET 10



ILL ROUTE 43 (HARLEM AVENUE)



PROPOSED CONDITIONS LEGEND

- HOT-MIX ASPHALT PAVEMENT (SEE TYPICAL SECTION)
- HOT-MIX ASPHALT SURFACE COURSE, MIX 'D', N70
- PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8 INCH
- PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
- COMBINATION CONCRETE CURB AND GUTTER
- COMBINATION CONCRETE CURB AND GUTTER (DEPRESSED)
- COMBINATION CONCRETE CURB AND GUTTER (REVERSE PITCH)
- DETECTABLE WARNINGS (SEE CURB RAMP DETAIL SHEET)

FILE NAME = 2806-240-PR6.dwg

USER NAME = GHA  
PLOT SCALE = 1"=1'  
PLOT DATE = 10/17/2011

DESIGNED - BVS  
DRAWN - BVS  
CHECKED - WCG  
DATE - 11/10/2011

REVISED -  
REVISED -  
REVISED -  
REVISED -

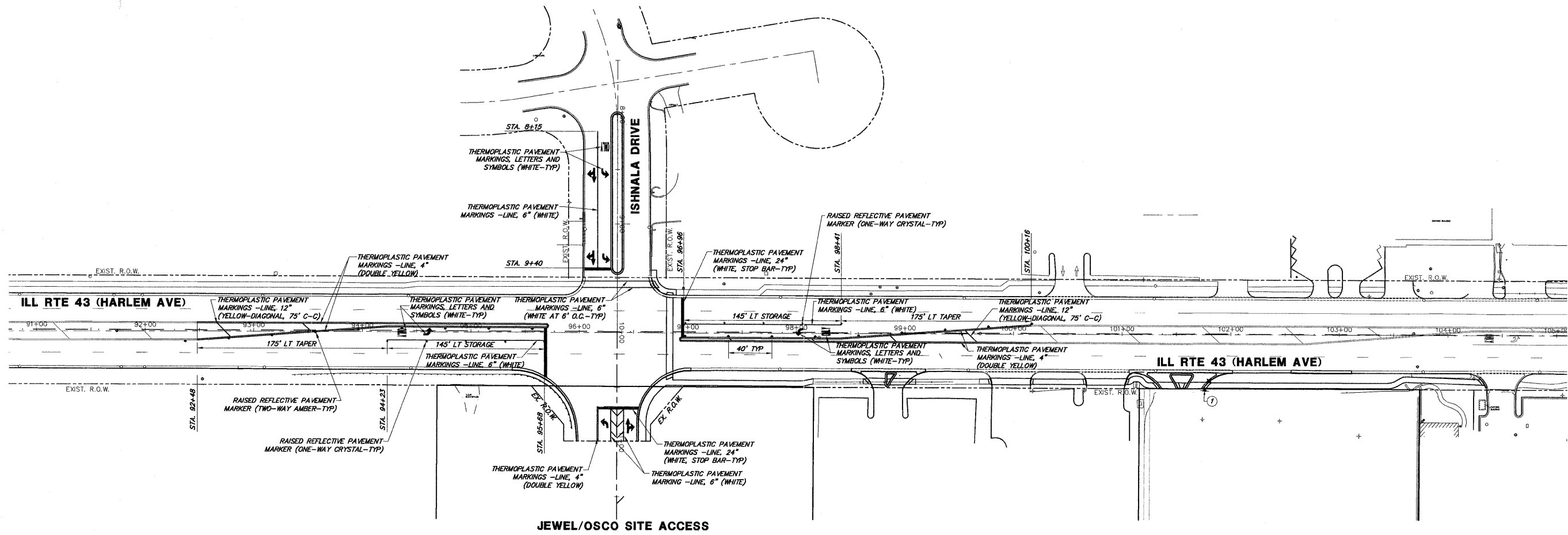
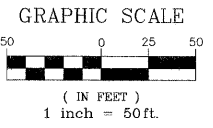
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE  
ILL RTE 43 (HARLEM AVENUE) ROAD IMPROVEMENTS  
SCALE: 1"=20'

FAP RTE 348	SECTION 10-00047-00-TL	COUNTY COOK	TOTAL SHEETS 30	SHEET NO. 10
CONTRACT #			63626	

GHA #2806.242

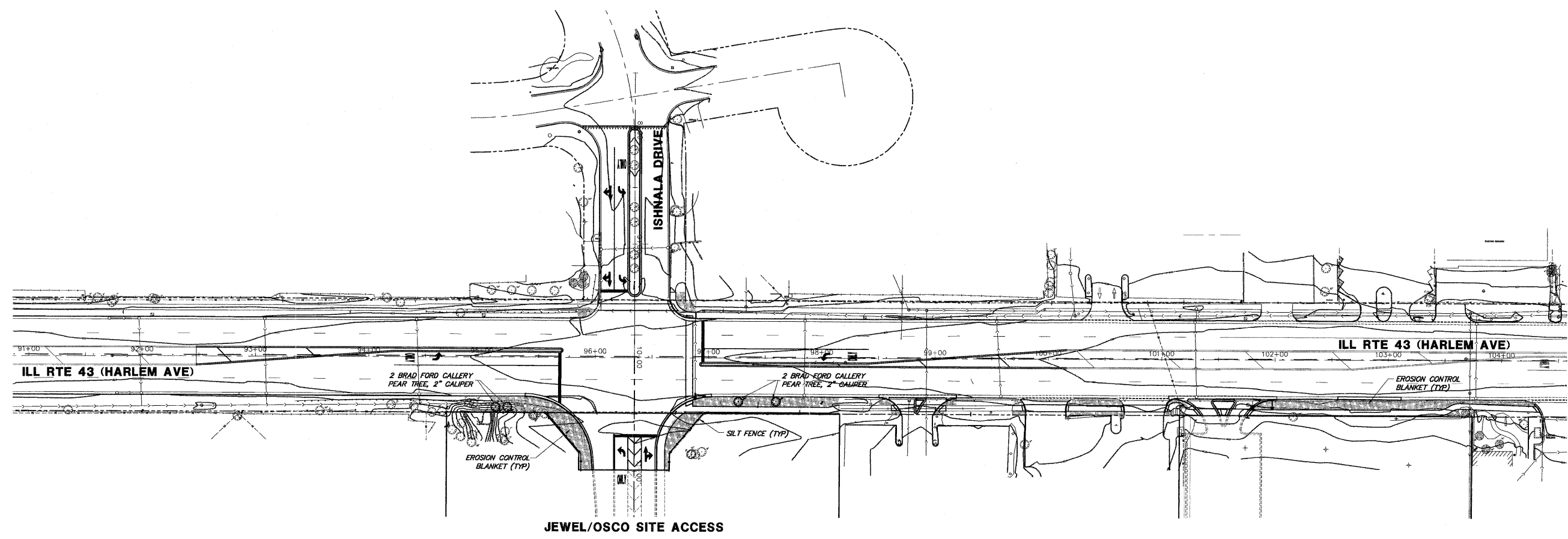
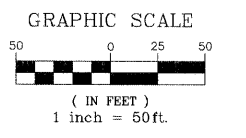
ILLINOIS FED. AID PROJECT



- NOTES:**
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RELOCATING ANY SIGN DUE TO ROADWAY WIDENING OR REPLACING ANY SIGN DAMAGED DUE TO CONSTRUCTION OPERATIONS.
  2. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
  3. TWO WEEKS PRIOR TO PLACEMENT OF PERMANENT PAVEMENT MARKING THE RESIDENT ENGINEER SHALL CONTACT MS. PATRICE HARRIS, AREA TRAFFIC FIELD TECHNICIAN AT 708-597-9800.

FILE NAME = 2806-240-PR6.dwg	USER NAME = GHA	DESIGNED - BVS	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>PAVEMENT MARKING PLAN ILL RTE 43 (HARLEM AVENUE) ROAD IMPROVEMENTS</b>	F&P RTE 348	SECTION 10-00047-00-TL	COUNTY COOK	TOTAL SHEETS 30	SHEET NO. 11	CONTRACT #: 63626	ILLINOIS FED. AID PROJECT	
	PLOT SCALE = 1"=1"	DRAWN - BVS	REVISED -			SCALE: 1"=50'	SHEET NO. OF SHEETS	STA. 91+00 TO STA. 104+50					
	PLOT DATE = 10/17/2011	CHECKED - WCG	REVISED -										
		DATE - 11/10/2011	REVISED -										

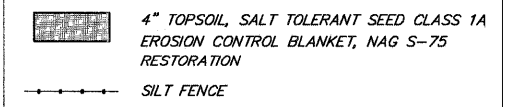
GHA #2806.242



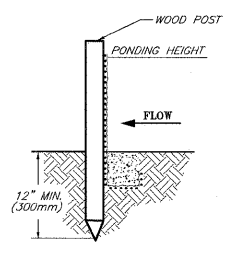
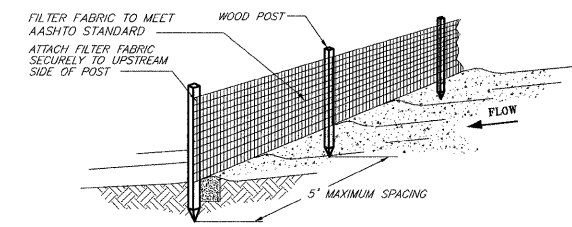
**EROSION CONTROL NOTES**

1. THIS PLAN IS EXPRESSLY MADE A PORTION OF THE CONTRACT FOR THE EARTHWORK, PAVING, UNDERGROUND, BUILDING CONTRACTORS, AND LANDSCAPE CONTRACTORS WHO ARE SUBJECT TO THE PROVISIONS OF THE PLAN.
2. THIS PLAN WILL FOLLOW STANDARDS AND RECOMMENDATIONS IN ACCORDANCE WITH THE "STANDARD AND SPECIFICATIONS FOR SOIL, EROSION AND SEDIMENTATION CONTROL," LATEST EDITION, PUBLISHED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, AND "PROCEDURES AND STANDARDS FOR URBAN SOIL EROSION AND SEDIMENTATION CONTROL," (GREENBOOK, LATEST EDITION) BY THE "NORTHEASTERN ILLINOIS SOIL EROSION AND SEDIMENTATION CONTROL STEERING COMMITTEE". ALL CONSTRUCTION WILL ADHERE TO THE REQUIREMENTS SET FORTH IN THE IEPA'S NEW CONSTRUCTION SITE ACTIVITIES NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER PERMIT.
3. THE PURPOSE OF THIS PLAN IS TO MINIMIZE AND TO CONTROL THE SOIL EROSION AND RESULTANT SEDIMENTATION, WHICH ARE RELATED TO THE DEVELOPMENT OF THE SITE. ALTHOUGH MOST OF THE MEASURES ARE TEMPORARY IN NATURE, THEY ALL TARGET THE LONG-RANGE CONTROL OF EROSION AND SEDIMENTATION IN DOWNSTREAM AREAS. THE SPECIFIC COMPONENTS OF THIS PLAN ARE DIRECTED TOWARD ALL AREA IMPROVEMENTS. ALL AREAS USED BY THE CONTRACTOR'S OPERATIONS ARE SUBJECT TO THE PROVISIONS OF THIS PLAN. THIS INCLUDES BOTH ACTIVE CUT/FILL ZONES AS WELL AS STOCK PILES AND STAGING AREAS.
4. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION CONTROL DEVICES.
5. THE CONTRACTOR SHALL PROVIDE QUALIFIED PERSONNEL TO INSPECT DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED, STRUCTURAL CONTROL MEASURES, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE AT LEAST ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS OF THE A STORM THAT IS OF 0.5 INCHES OR GREATER OR EQUIVALENT SNOWFALL.
6. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. DISCHARGE LOCATIONS SHALL BE INSPECTED TO ASCERTAIN WHETHER SOIL CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATERS. LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFFSITE SEDIMENT TRACKING. SUTTON ROAD WILL BE KEPT FREE OF STONE, MUD, SILT, ETC. AT ALL TIMES.
7. THE CONTRACTOR SHALL PREPARE A WRITTEN REPORT SUMMARIZING THE SCOPE OF EACH INSPECTION, NAMES AND QUALIFICATIONS OF PERSONNEL MAKING THE INSPECTION, THE DATE OF THE INSPECTION, MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF A STORMWATER POLLUTION PREVENTION PLAN, AND ACTIONS TAKEN IN ACCORDANCE WITH PARAGRAPH IV.D.4.B OF THE NPDES PERMIT NUMBER ILR100000 WHICH SHALL BE MADE AND RETAINED AS PART OF THE STORMWATER POLLUTION PREVENTION PLAN FOR AT LEAST 3 YEARS AFTER THE DATE OF THE INSPECTION.
8. THE CONTRACTOR SHALL RETAIN A COPY OF EACH REPORT AND SHALL UPON REQUEST PROVIDE COPIES OF THESE REPORTS TO THE IEPA, THE CITY, OR THE ENGINEER. EACH INSPECTION SHALL INCLUDE PHOTOS OF THE EROSION CONTROL DEVICES DOCUMENTING THE PRESENCE AND EFFECTIVENESS OF THE DEVICES.
9. TO MINIMIZE THE EXTENT OF SOIL EXPOSED AT ANY GIVEN TIME, THE CONSTRUCTION ACTIVITIES WILL BE PHASED IN THE FOLLOWING MANNER.
  - A. PRIOR TO ANY EXCAVATION ON-SITE, TOED & REINFORCED SILT FENCE WILL BE INSTALLED AROUND THE PERIMETER OF THE AREAS TO BE DISTURBED AS SHOWN ON THIS PLAN.
  - B. UPON COMPLETION OF GRADING OPERATIONS, ALL DISTURBED AREAS WILL BE SPREAD WITH TOPSOIL AND SEED OR SODDED IMMEDIATELY. EROSION CONTROL BLANKET (NORTH AMERICAN GREEN P-150 OR M-BFM) WILL BE UTILIZED ON ALL SLOPES 3:1 OR STEEPER OVER SEED IMMEDIATELY TO STABILIZE THE SOIL AND PROMOTE THE CATCHMENT OF GRASS.
11. ANY REQUIRED DRAINAGE CHANNELS MUST BE CONSTRUCTED SO THE CHANNEL FLOWS WILL NOT CAUSE EROSION OF EXCAVATED MATERIAL. OVERFLOW DRAINAGE CHANNELS AS NOTED ON THE PLANS SHALL BE RESTORED WITH TOPSOIL, SEED, AND NAG P-150 EROSION CONTROL BLANKET.
12. PUMPS MAY BE USED AS BYPASS DEVICES, BUT IN NO CASE WILL THE WATER BE DIVERTED OUTSIDE THE PROJECT LIMIT.
13. DURING PERIODS OF EXTENDED DRY WEATHER, THE CONTRACTOR SHALL KEEP A WATER TRUCK ON-SITE FOR THE PURPOSE OF WATERING DOWN SOIL WHICH MAY OTHERWISE BECOME AIRBORNE.

**EROSION CONTROL LEGEND**



FILE NAME = 2806-240-PR6.dwg	USER NAME = GHA	DESIGNED - BVS	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>EROSION CONTROL PLAN ILL RTE 43 (HARLEM AVENUE) ROAD IMPROVEMENTS</b>			FAP RTE. 348	SECTION 10-00047-00-TL	COUNTY COOK	TOTAL SHEETS 30	SHEET NO. 12	CONTRACT #: 63626	GHA #2806.242
	PLOT SCALE = 1"=1"	DRAWN - BVS	REVISED -		SCALE: 1"=50'	SHEET NO. OF SHEETS	STA. 91+00 TO STA. 104+50	ILLINOIS FED. AID PROJECT						
	PLOT DATE = 10/17/2011	CHECKED - WCG	REVISED -											
		DATE - 11/10/2011	REVISED -											



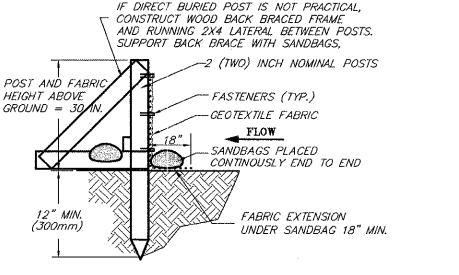
**TRENCH DETAIL**

1. SET POSTS AND EXCAVATE OR SLIT-TRENCH A 6-INCH DEEP TRENCH UPSLOPE ALONG THE LINE OF THE POST
2. ATTACH GEOTEXTILE FILTER FABRIC TO EACH POST WITH A MINIMUM OF 3 (THREE) FASTENERS PER POST AND EXTEND TO THE BOTTOM OF THE TRENCH. ACCEPTABLE FASTENERS INCLUDE STAPLES, ZIP-TIES, OR WIRE TIES.
3. BACKFILL AND COMPACT THE EXCAVATED SPOIL MATERIALS

**NOTES:**

1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" (225mm) MAXIMUM RECOMMENDED STORAGE HEIGHT.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
4. FABRIC AND INSTALLATION SHALL MEET THE REQUIREMENTS OF ASSHTO STANDARD SPECIFICATION M-288-00.

**SILT FENCE INSTALLATION DETAIL**

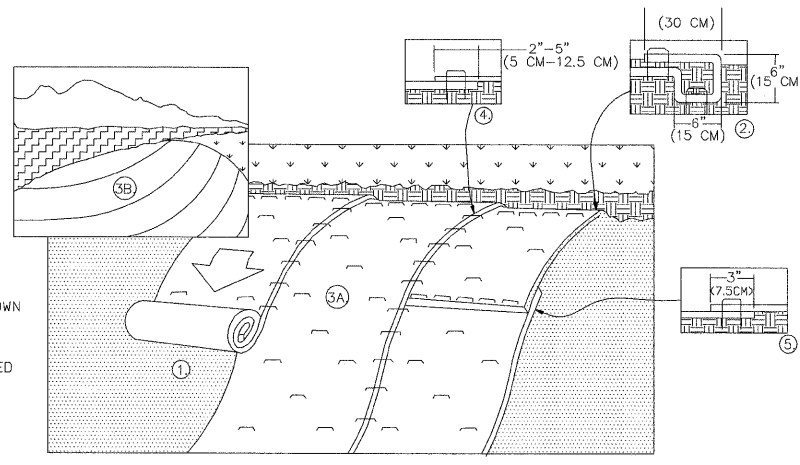


**INSTALLATION WITHOUT TRENCHING**

Geotextile Requirement	Test Method	MARV
Grab Strength	ASTM D 4632	
-Machine direction		550 N
-X-machine direction		450 N
Permittivity	ASTM D 4491	0.05 sec-1
Apparent opening size*	ASTM D 4751	0.60 mm
Ultraviolet stability (retained strength)	ASTM D 4355	70% after 500 hours

Note:  
Value for apparent opening size represents maximum average roll value.

STAPLE PLACEMENTS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. SEE STAPLE PATTERN GUIDES FOR ACTUAL RECOMMENDED PLACEMENTS.

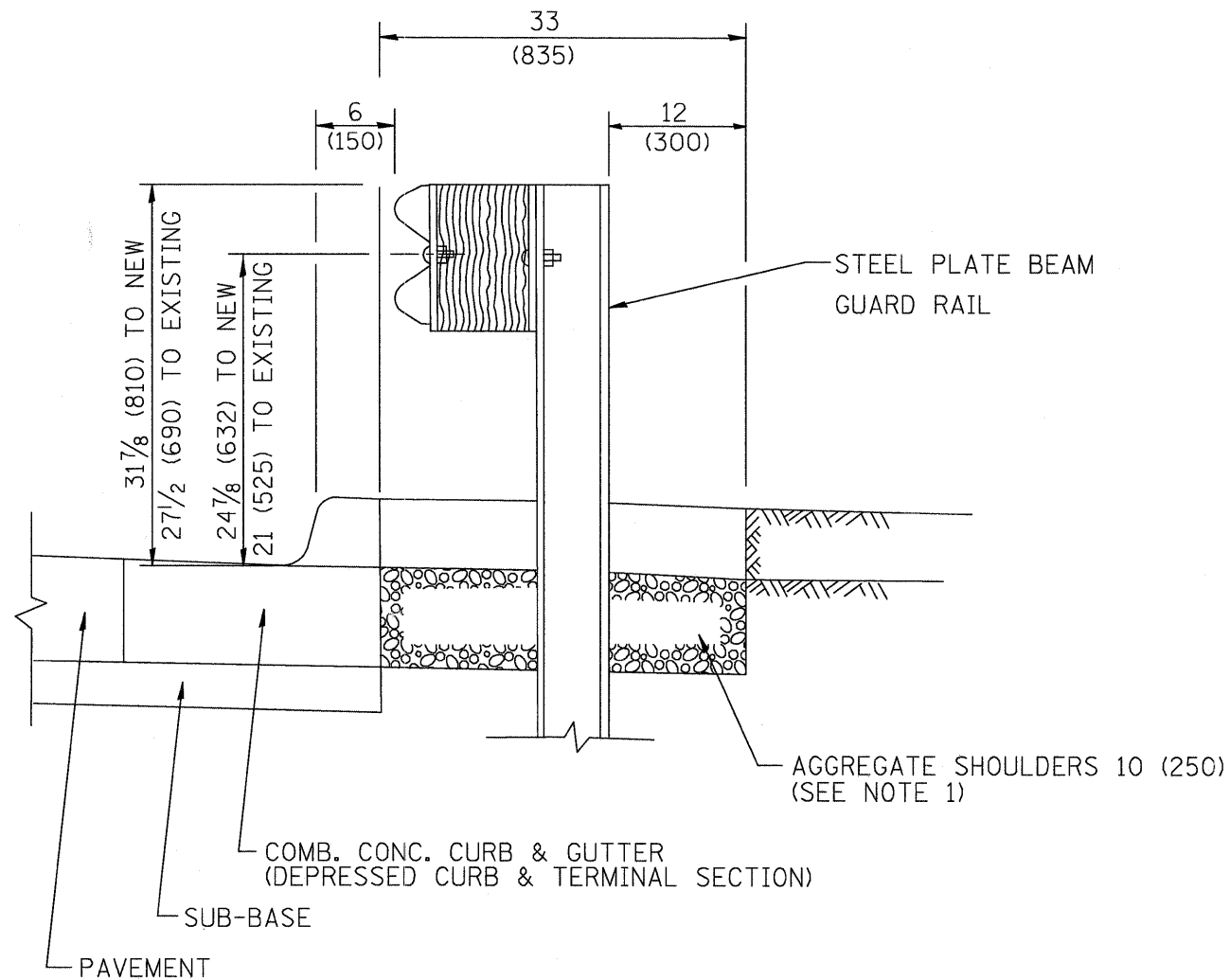


1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP'S), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
  2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP'S IN A 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP'S.
  3. ROLL THE RECP'S (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. RECP'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
  4. THE EDGES OF PARALLEL RECP'S MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5 CM - 12.5 CM) OVERLAP DEPENDING ON RECP'S TYPE.
  5. CONSECUTIVE RECP'S SPliced DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECP'S WIDTH.
- NOTE:  
\*IN LOOSE SOIL, CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECP'S.

**EROSION CONTROL BLANKET SLOPE INSTALLATION**

**SEDIMENTATION AND EROSION CONTROL NOTES**

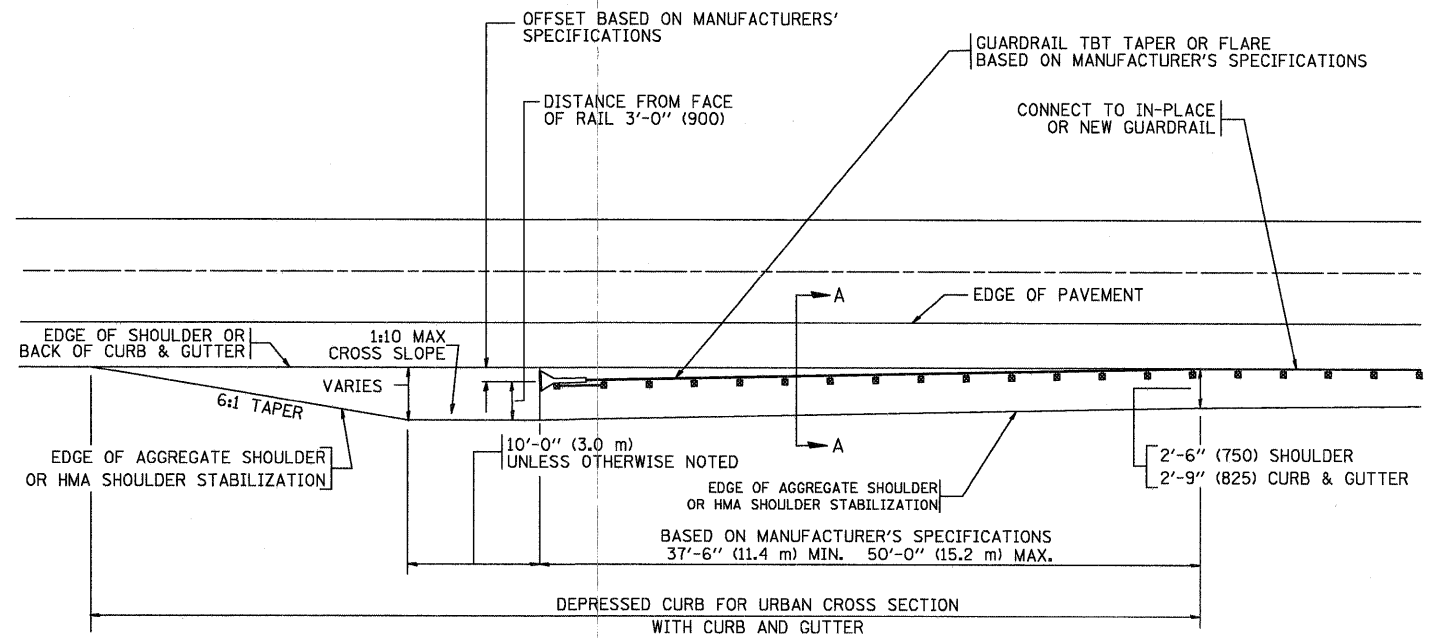
- SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. SOIL STABILIZATION MEASURES SHALL CONSIDER THE TIME OF YEAR, SITE CONDITIONS AND THE USE OF TEMPORARY OR PERMANENT MEASURES.
- SOIL EROSION AND SEDIMENT CONTROL FEATURES SHALL BE CONSTRUCTED PRIOR TO THE COMMENCEMENT OF HYDROLOGIC DISTURBANCE OF UPLAND AREAS.
- DISTURBED AREAS SHALL BE STABILIZED WITH TEMPORARY OR MEASURES WITHIN 14 CALENDAR DAYS OF THE END OF ACTIVE HYDROLOGIC DISTURBANCE, OR REDISTURBANCE.
- AREAS OF ENBANKMENTS HAVING SLOPES GREATER THAN OR EQUAL TO 3H:1V SHALL BE STABILIZED WITH SOD, MAT OR BLANKET IN COMBINATION WITH SEEDING.
- EROSION CONTROL BLANKET SHALL BE REQUIRED ON ALL INTERIOR DETENTION BASIN SIDE SLOPES BETWEEN NORMAL WATER LEVEL AND HIGH WATER LEVEL.
- ALL STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED, BY AN APPROPRIATE SEDIMENT CONTROL MEASURE.
- ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED.
- ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES MUST BE MAINTAINED AND REPAIRED AS NEEDED. THE CONTRACTOR SHALL BE ULTIMATELY RESPONSIBLE FOR MAINTENANCE AND REPAIR.
- A STABILIZED MAT OF AGGREGATE UNDERLAIN WITH FILTER CLOTH (OR OTHER APPROPRIATE MEASURE) SHALL BE LOCATED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE TO OR FROM A PUBLIC RIGHT-OF-WAY, STREET, ALLEY OR PARKING AREA. ANY SEDIMENT OR SOIL REACHING AN IMPROVED PUBLIC RIGHT-OF-WAY, STREET, ALLEY OR PARKING AREA SHALL BE REMOVED BY SCRAPING OR STREET CLEANING AS ACCUMULATIONS WARRANT AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.
- SOIL STOCKPILES SHALL NOT BE LOCATED IN A FLOOD PRONE AREA OR A DESIGNATED BUFFER PROTECTING WATERS OF THE UNITED STATES.
- IF DEWATERING SERVICES ARE USED, ADJOINING PROPERTIES AND DISCHARGE LOCATIONS SHALL BE PROTECTED FROM EROSION. DISCHARGES SHALL BE ROUTED THROUGH AN EFFECTIVE SEDIMENT CONTROL MEASURE (e.g. SEDIMENT TRAP, SEDIMENT BASIN, OR OTHER APPROPRIATE MEASURES).
- THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER.



**SECTION A-A**

- NOTES:
1. THE AGGREGATE SHOULDER, 10" OR HMA SHOULDER, 6" (IF REQUIRED) SHALL EXTEND UNDER THE TRAFFIC BARRIER TERMINAL.
  2. "EXISTING" GUARDRAIL REFERS TO CONNECTING TERMINAL SECTION TO GUARD RAILING PRIOR TO THE MIDWEST GUARDRAIL SYSTEM.
  3. THE CONTRACTOR SHALL VERIFY THE TYPE/HEIGHT OF GUARDRAIL IN-PLACE BEFORE ORDERING THE NEW TERMINAL SECTION. COST INCLUDED WITH THE COST OF THE TERMINAL. THE TERMINAL SECTION HEIGHT TO BE PLACED MUST MATCH THE HEIGHT OF THE IN-PLACE GUARDRAIL.

**DETAILS FOR STEEL PLATE BEAM  
GUARD RAIL ADJACENT TO CURB AND GUTTER  
[FOR ROADWAY SPEED 35 MPH (60 kmh) TO 45 MPH (70 kmh)]**



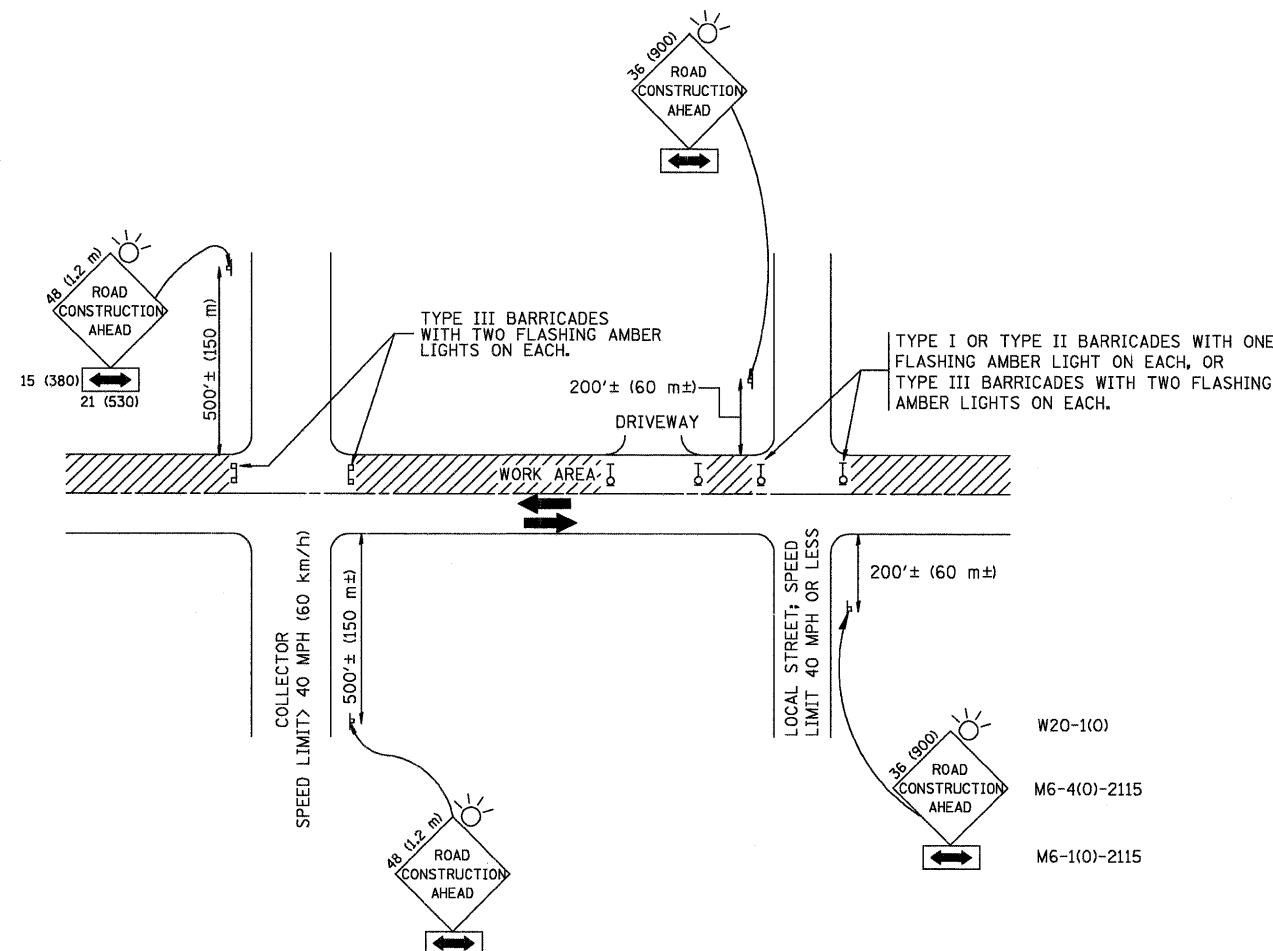
**DEPRESSED CURB AND GUTTER AND  
SHOULDER TREATMENT AT TBT TY. 1 SPL.**

**BASIS OF PAYMENT:** HMA SHOULDERS 6 (150) (IF REQUIRED) WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD (SQUARE METER) FOR "HOT-MIX ASPHALT SHOULDERS 6" (150 mm)".

STEEL PLATE BEAM GUARD RAIL AND TRAFFIC BARRIER TERMINAL, OF THE TYPE SPECIFIED WILL BE PAID FOR SEPARATELY.

TBT = TRAFFIC BARRIER TERMINAL  
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = 2806-240-PR6.dwg	USER NAME = ZACH WALLSTEN	DESIGNED - M. DE YONG	REVISED - E. GOMEZ 08-28-00	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DETAILS FOR DEPRESSED CURB &amp; GUTTER AND SHOULDER TREATMENT AT TBT TY 1 SPL.</b>	F&P RITE. 348	SECTION 10-00047-00-TL	COUNTY COOK	TOTAL SHEETS 30	SHEET NO. 14	
PLOT SCALE = 1" = .0833'	CHECKED -	REVISED - R. BORO 01-01-07	REVISED - R. BORO 12-08-2008			<b>BD600-10 (BD 34)</b>		CONTRACT # 63626		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	
PLOT DATE = 10/17/2011	DATE - 09-22-90	REVISED - R. BORO 09-14-2009	SCALE: NONE			SHEET NO. 1 OF 1 SHEETS	STA. TO STA.				
GHA #2806.242											



**NOTES:**

- A. FOR NO LANE RESTRICTION ON THE SIDE ROAD OR DRIVEWAYS**
- 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:
    - 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.
    - 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.
  - SIDE ROAD WITH A SPEED LIMIT GREATER THAN 40 MPH (60 km/h) AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
    - 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.
    - THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE III BARRICADES, 1/2 OF THE CROSS SECTION OF THE CLOSED PORTION.
- 3. WHEN THE SIDE ROAD LIES BETWEEN THE BEGINNING OF THE MAINLINE SIGNING AND THE WORK ZONE, A SINGLE HEADED ARROW (M6-1) SHALL BE USED IN LIEU OF THE DOUBLE HEADED ARROW (M6-4).**
- B. FOR A LANE CLOSURE ON A SIDE ROAD OR DRIVEWAY:**
- USE APPLICABLE PORTIONS OF THE TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES (STD. 701501, STD. 701606 OR THE APPROPRIATE STANDARD). THE SPACING OF SIGNS AND BARRICADES SHALL BE ADJUSTED FOR FIELD CONDITIONS AS DIRECTED BY THE ENGINEER. THE DIRECTIONAL ARROW SHALL BE COVERED OR REMOVED WHEN NO LONGER CONSISTENT WITH THE SIDE ROAD LANE CLOSURE.
- C. ADVANCE WARNING SIGNS ARE TO BE OMITTED ON DRIVEWAY UNLESS OTHERWISE NOTED.**
- D. THE TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS SHALL BE INCIDENTAL TO THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.**

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

FILE NAME = 2806-240-PR6.dwg	USER NAME = ZACH WALLSTEN	DESIGNED - LHA	REVISED - J. OBERLE 10-18-95
	PLOT SCALE = 1" = .0833'	DRAWN -	REVISED - A. HOUSEH 03-06-96
	PLOT DATE = 10/17/2011	CHECKED -	REVISED - A. HOUSEH 10-15-96
		DATE - 06-89	REVISED - T. RAMMACHER 01-06-00

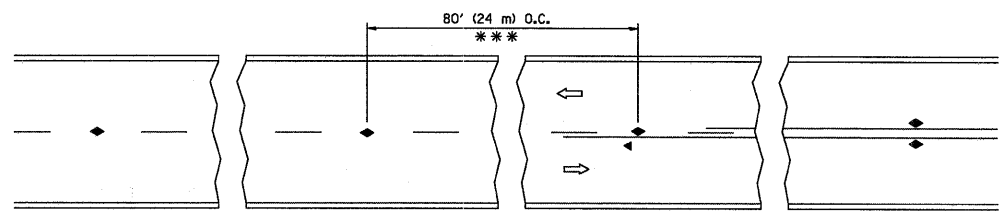
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

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

F&P RTE. 348	SECTION 10-00047-00-TL	COUNTY COOK	TOTAL SHEETS 30	SHEET NO. 15
TC-10			CONTRACT #: 63626	
FED. ROAD DIST. NO. 1   ILLINOIS   FED. AID PROJECT				

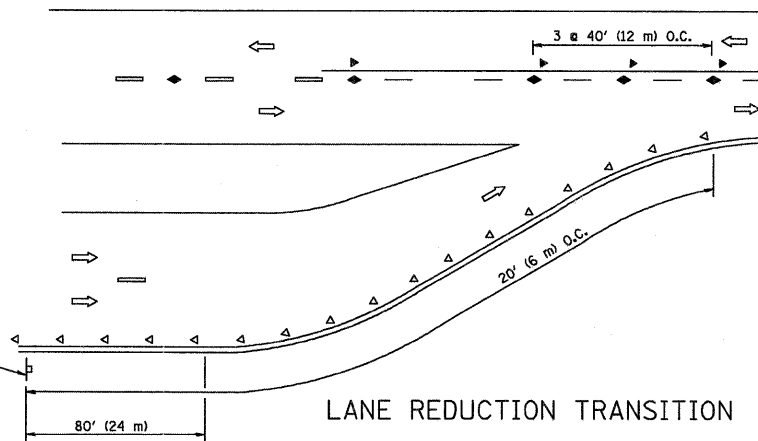
SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

GHA #2806.242

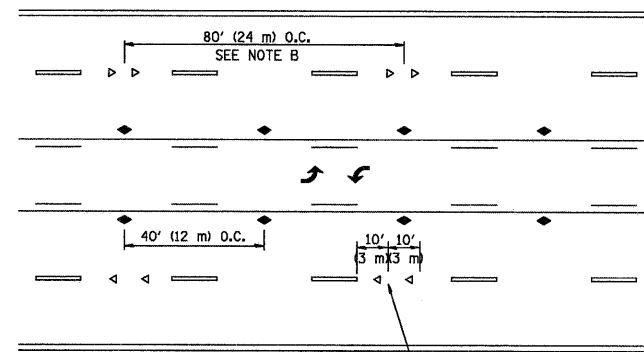


\*\*\* REDUCE TO 40' (12 m) O.C. ON CURVES WITH POSTED OR ADVISORY SPEED 45 M.P.H. (70 km/h) OR LESS.

TWO-LANE/TWO-WAY

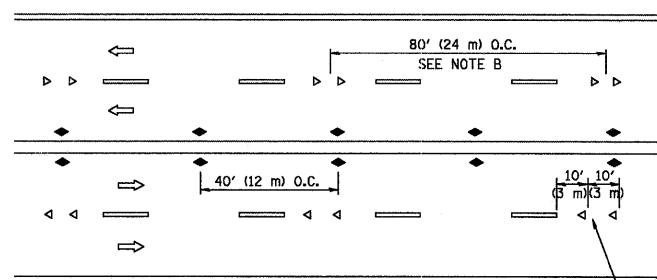


LANE REDUCTION TRANSITION



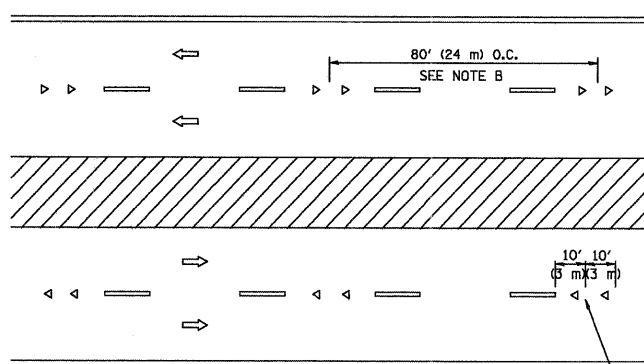
SEE NOTE A

TWO-WAY LEFT TURN



SEE NOTE A

MULTI-LANE/UNDIVIDED



SEE NOTE A

MULTI-LANE/DIVIDED

GENERAL NOTES

1. MARKERS USED WITH DASHED LINES SHALL BE CENTERED IN THE GAP BETWEEN SEGMENTS.
2. MARKERS USED ADJACENT TO SOLID LINES SHALL BE OFFSET 2 TO 3 (50 TO 75) TOWARD TRAFFIC AS SHOWN.
3. MARKERS THROUGH TANGENTS LESS THAN 500' (150 m) IN LENGTH BETWEEN CURVES SHALL BE INSTALLED AT THE LESSER OF THE TWO CURVE SPACINGS.

SYMBOLS

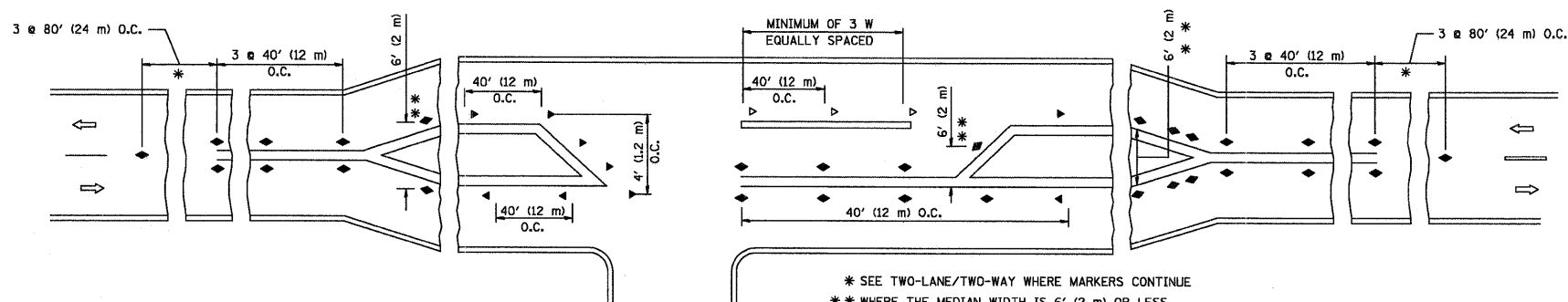
- YELLOW STRIPE
- WHITE STRIPE
- ◀ ONE-WAY AMBER MARKER
- ◀ ONE-WAY CRYSTAL MARKER (W/O)
- ◆ TWO-WAY AMBER MARKER

LANE MARKER NOTES

- A. USE DOUBLE LANE LINE MARKERS SPACED AS SHOWN.
- B. REDUCE TO 40' (12 m) O.C. ON CURVES WHERE ADVISORY SPEEDS ARE 10 M.P.H (20 km/h) LOWER THAN POSTED SPEEDS.

DESIGN NOTES

1. DOUBLE LANE LINE MARKERS SHALL BE USED UNLESS SPECIFIED OTHERWISE.
2. EXCEPT AS SHOWN ON THE LANE REDUCTION TRANSITION AND FREEWAY EXIT RAMP DETAIL, MARKERS ARE NOT TO BE SPECIFIED ON RIGHT EDGE LINES.
3. THE EXACT MARKER LIMITS, SPACING, AND COLOR SHOULD BE INCLUDED IN THE PLANS.
4. MARKERS SHOULD NOT BE USED ALONGSIDE CURBS EXCEPT FOR EXTREMELY SHORT SECTIONS OF CURBS WHERE NOT MORE THAN TWO MARKERS WOULD BE INVOLVED.



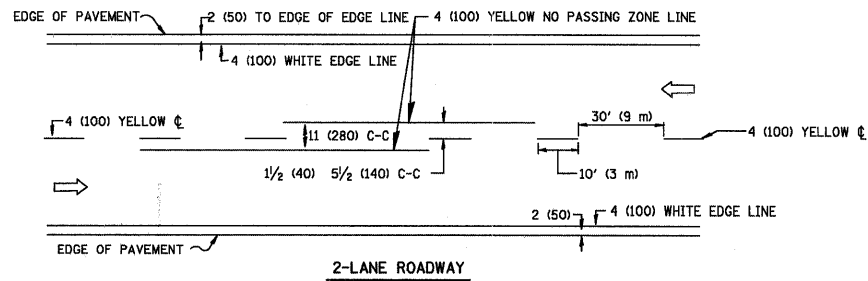
\* SEE TWO-LANE/TWO-WAY WHERE MARKERS CONTINUE  
 \*\* WHERE THE MEDIAN WIDTH IS 6' (2 m) OR LESS USE TWO-WAY MARKERS.

LEFT TURN

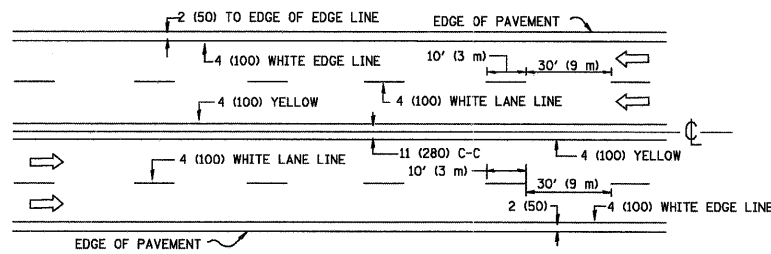
All dimensions are in inches (millimeters) unless otherwise shown.

FILE NAME = 2806-240-PR6.dwg	USER NAME = ZACH WALLSTEN	DESIGNED -	REVISED - T. RAMMACHER 09-19-94	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS (SNOW-PLOW RESISTANT)</b>	F.A.P. RTE. 348	SECTION 10-00047-00-TL	COUNTY COOK	TOTAL SHEETS 30	SHEET NO. 16	GHA #2806.242 CONTRACT #: 63626
PLOT SCALE = 1" = .0833'	CHECKED -	REVISED - T. RAMMACHER 03-12-99	SCALE N.A.			SHEET NO. 1 OF 1 SHEETS	STA. TO STA.	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			
PLOT DATE = 10/17/2011	DATE -	REVISED - T. RAMMACHER 01-06-00									
		REVISED - C. JUCIUS 09-09-09									

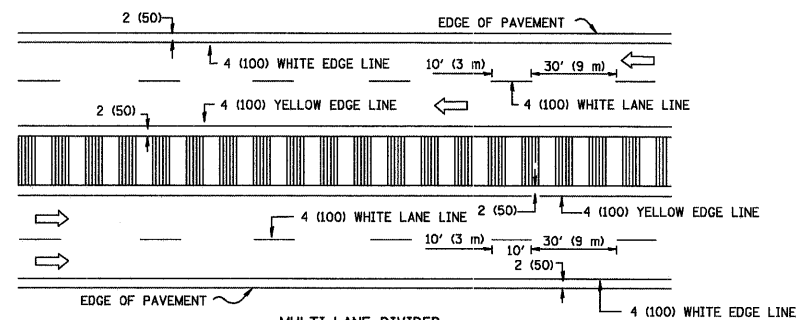




2-LANE ROADWAY



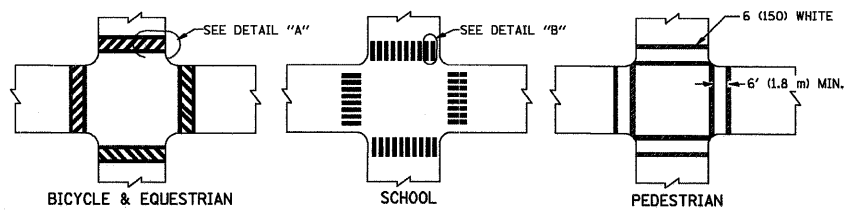
MULTI-LANE UNDIVIDED



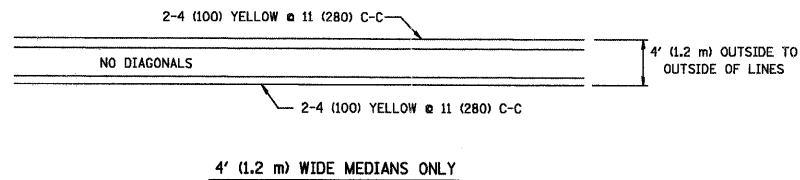
MULTI-LANE DIVIDED WITH MOUNTABLE MEDIAN

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

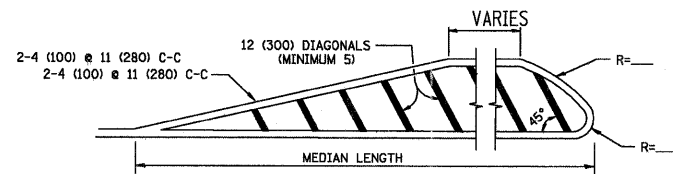
TYPICAL LANE AND EDGE LINE MARKING



TYPICAL CROSSWALK MARKING

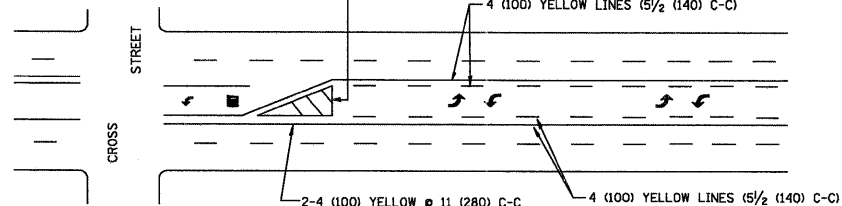


4' (1.2 m) WIDE MEDIANS ONLY



FOR MEDIAN LENGTHS WHERE DIAGONAL SPACING CANNOT BE ATTAINED, USE 5 (FIVE) EQUALLY SPACED DIAGONAL LINES.  
 DIAGONAL LINE SPACING: 50' (15 m) C-C (LESS THAN 30MPH (50 km/h))  
 75' (25 m) C-C 30MPH (50 km/h) TO 45MPH (70 km/h)  
 150' (45 m) C-C (MORE THAN 45MPH (70 km/h))

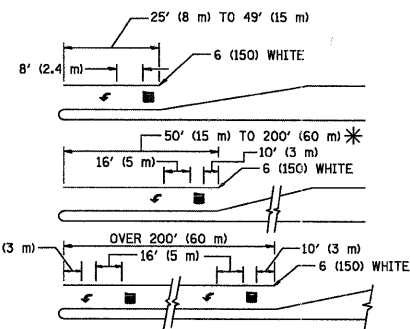
MEDIANS OVER 4' (1.2 m) WIDE



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

MEDIAN WITH TWO-WAY LEFT TURN LANE

TYPICAL PAINTED MEDIAN MARKING

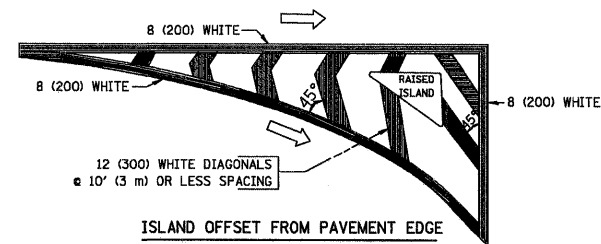


FULL SIZE LETTERS 8' (2.4 m) AND ARROWS SHALL BE USED.  
 AREA = 15.6 SQ. FT. (1.5 m<sup>2</sup>) AREA = 20.8 SQ. FT. (1.9 m<sup>2</sup>)

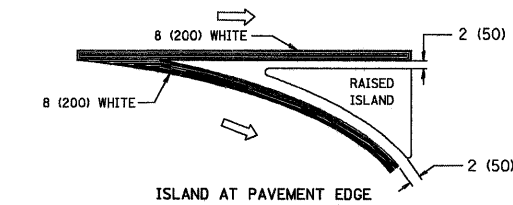
\* TURN LANES IN EXCESS OF 400' (120 m) IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW - "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW - "ONLY".

TYPICAL LEFT (OR RIGHT) TURN LANE

TYPICAL TURN LANE MARKING



ISLAND OFFSET FROM PAVEMENT EDGE



ISLAND AT PAVEMENT EDGE

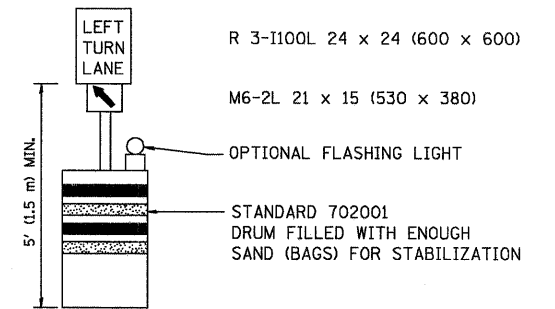
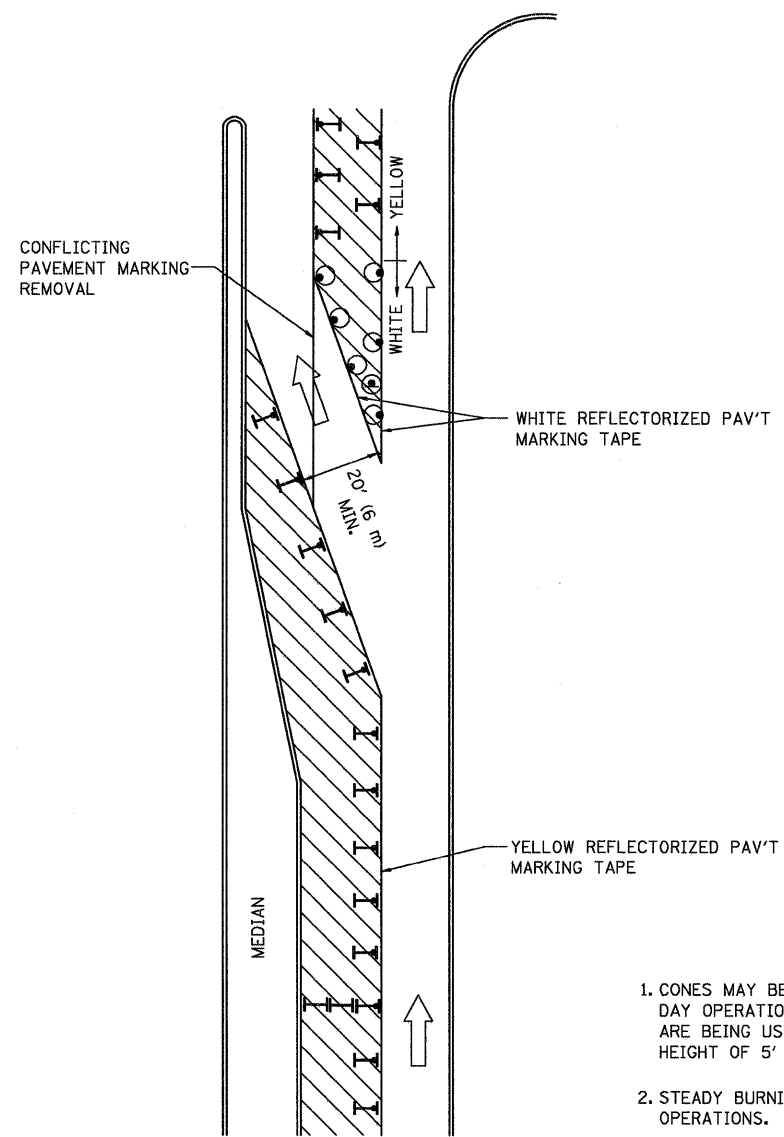
TYPICAL ISLAND MARKING

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 m <sup>2</sup> ) EACH "X"=54.0 SQ. FT. (5.0 m <sup>2</sup> )
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.

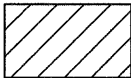





TYPICAL PAVEMENT MARKINGS



**GENERAL NOTES**

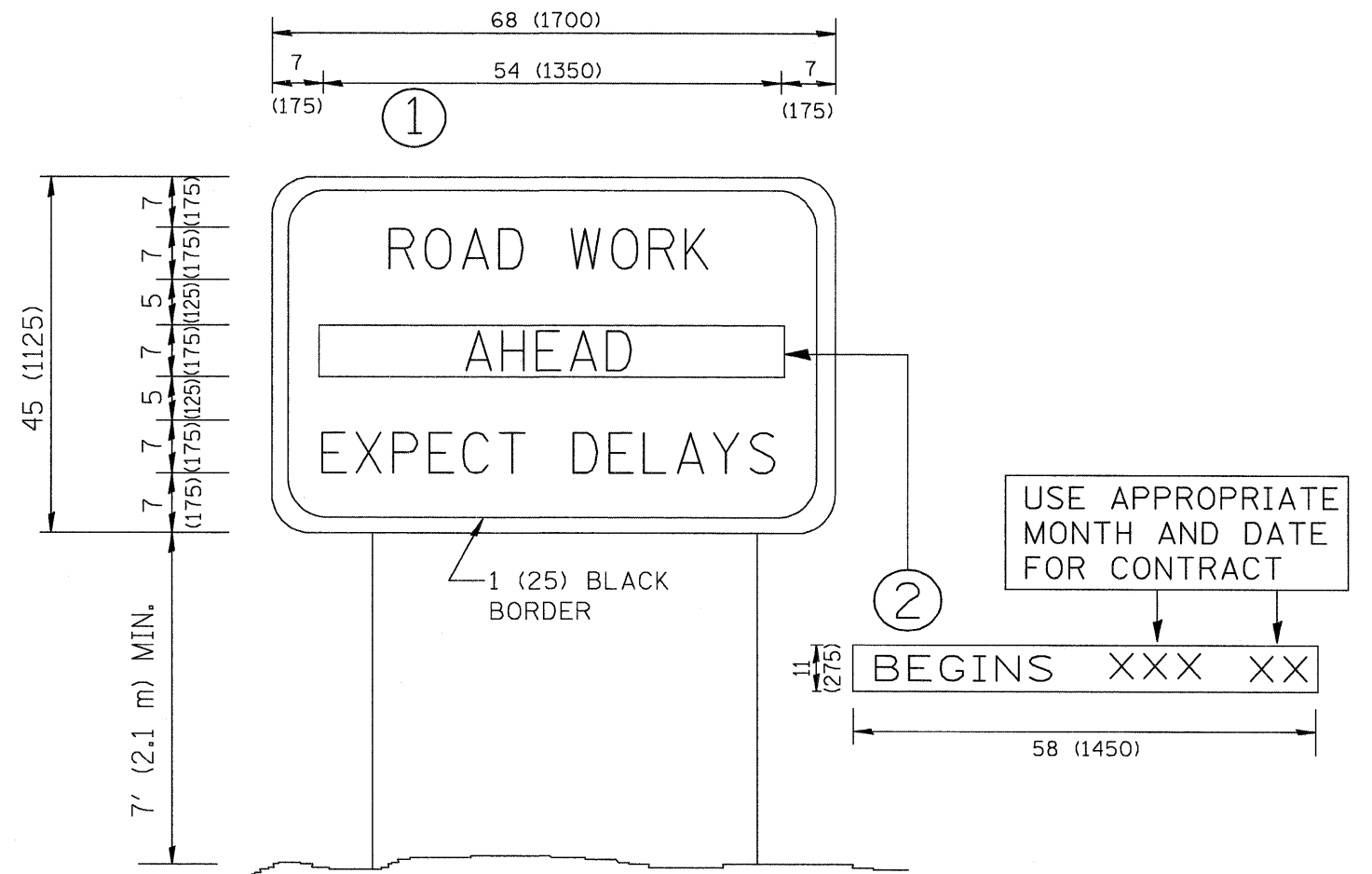
1. CONES MAY BE SUBSTITUTED FOR BARRICADES OR DRUMS AT HALF THE SPACING DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (710) IN HEIGHT. WHEN CONES ARE BEING USED, THE "LEFT TURN LANE" SIGN MAY BE SKID MOUNTED AT A MINIMUM HEIGHT OF 5' (1.5 m).
2. STEADY BURNING LIGHTS WILL NOT BE REQUIRED ON BARRICADES OR DRUMS FOR DAY OPERATIONS. ALL LIGHTS SHALL BE MONODIRECTIONAL.
3. REFLECTORIZED TEMPORARY PAVEMENT MARKING TAPE SHALL BE PLACED THROUGHOUT THE BARRICADED AREA OF EACH TURN BAY WHERE THE CLOSURE TIME IS GREATER THAN FOURTEEN DAYS.
4. THIS APPLICATION ALSO APPLIES WHEN WORK IS BEING PERFORMED IN THE RIGHT LANE(S) AND THE RIGHT TURN BAY IS TO REMAIN OPEN. UNDER THIS CONDITION, "RIGHT TURN LANE" R3-100 24 x 24 (600 x 600) AND M6-2R 21 x 15 (530 x 380) SHALL BE USED.
5. THESE CONTROLS SHALL SUPPLEMENT MAINLINE TRAFFIC CONTROL FOR LANE CLOSURES.
6. LONGITUDINAL DIMENSIONS MAY BE ADJUSTED TO FIT FIELD CONDITIONS.
7. FORM BT 725 IS REQUIRED.
8. TRAFFIC CONTROL AND PROTECTION AT TURN BAYS (TO REMAIN OPEN TO TRAFFIC) SHALL BE INCLUDED IN THE COST SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

**LEGEND**

-  WORK AREA
-  LANE OPEN TO TRAFFIC
-  TYPE I OR II BARRICADE WITH STEADY BURN LIGHT
-  DRUM WITH STEADY BURN LIGHT
-  DRUM WITH SIGN (WITH OPTIONAL FLASHING LIGHT) SEE DETAIL
-  TYPE I OR II CHECK BARRICADE WITH FLASHING LIGHT

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

FILE NAME = 2806-240-PR6.dwg	USER NAME = ZACH WALLSTEN	REVISED - T. RAMMACHER 09-08-94	REVISED - R. BORO 09-14-09	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>TRAFFIC CONTROL AND PROTECTION AT TURN BAYS (TO REMAIN OPEN TO TRAFFIC)</b>	F.A.P. RTE. 348	SECTION 10-00047-00-TL	COUNTY COOK	TOTAL SHEETS 30	SHEET NO. 18	GHA #2806.242	
PLOT SCALE = 1" = .0833'	REVISED - A. HOUSEH 11-07-95	REVISED - A. HOUSEH 10-12-96	REVISED -			SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA. TO STA.	CONTRACT # 63626	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT		
PLOT DATE = 10/17/2011	REVISED - T. RAMMACHER 01-06-00	REVISED -	REVISED -									

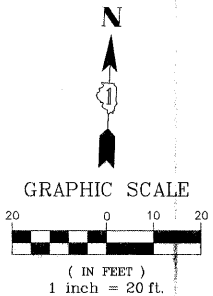


**NOTES:**

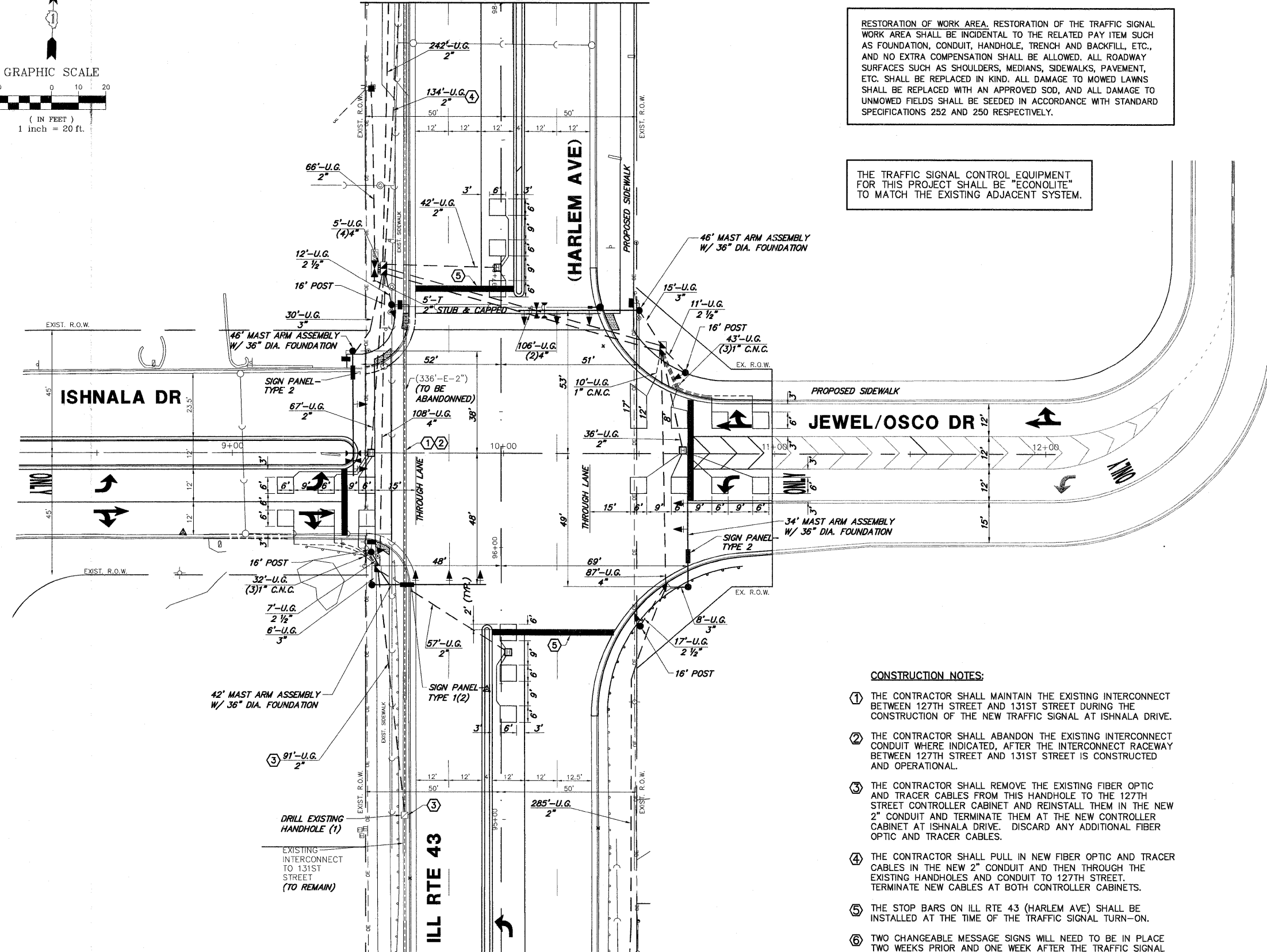
1. USE BLACK LETTERING ON ORANGE BACKGROUND.
2. ERECT SIGNS IN ADVANCE OF THE LOCATION FOR THE "ROAD CONSTRUCTION AHEAD" SIGN AT LOCATIONS AS DIRECTED BY THE ENGINEER.
3. ERECT SIGN ① WITH INSTALLED PANEL ② ONE WEEK PRIOR TO THE START OF CONSTRUCTION.
4. REMOVE PANEL ② SOON AFTER THE START OF CONSTRUCTION.
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 = 2806-240-PR6.dwg	USER NAME = ZACH WALLSTEN	DESIGNED -	REVISED - R. MIRS 09-15-97	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>ARTERIAL ROAD INFORMATION SIGN</b>			F.A.P. RTE. 348	SECTION 10-00047-00-TL	COUNTY COOK	TOTAL SHEETS 30	SHEET NO. 19
PLOT SCALE = 1" = .0833'	CHECKED -	REVISED - T. RAMMACHER 02-02-99	REVISED - R. MIRS 12-11-97		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	<b>TC-22</b>		CONTRACT #:	63626
PLOT DATE = 10/17/2011	DATE -	REVISED - C. JUCIUS 03-31-07	REVISED - R. MIRS 12-11-97		FED. ROAD DIST. NO. 1   ILLINOIS   FED. AID PROJECT							
GHA #2806.242												



MATCH LINE STA. 98+00  
(SEE RIGHT)



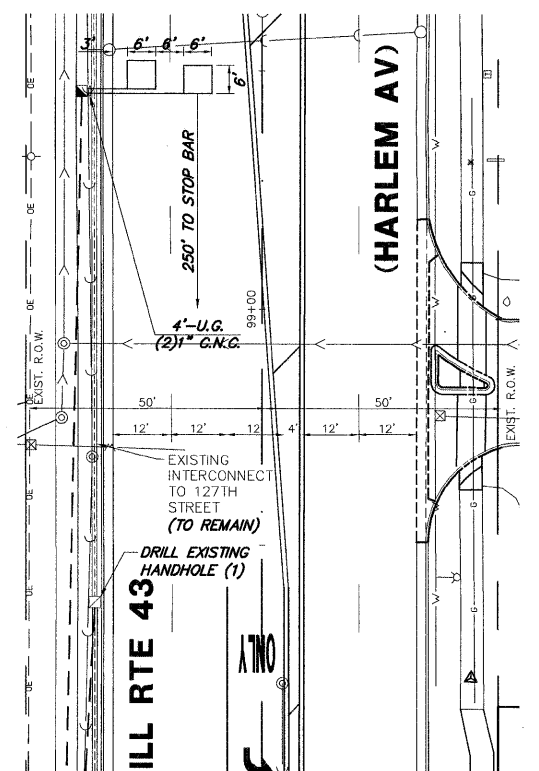
RESTORATION OF WORK AREA. RESTORATION OF THE TRAFFIC SIGNAL WORK AREA SHALL BE INCIDENTAL TO THE RELATED PAY ITEM SUCH AS FOUNDATION, CONDUIT, HANDHOLE, TRENCH AND BACKFILL, ETC., AND NO EXTRA COMPENSATION SHALL BE ALLOWED. ALL ROADWAY SURFACES SUCH AS SHOULDERS, MEDIANS, SIDEWALKS, PAVEMENT, ETC. SHALL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

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

**CONSTRUCTION NOTES:**

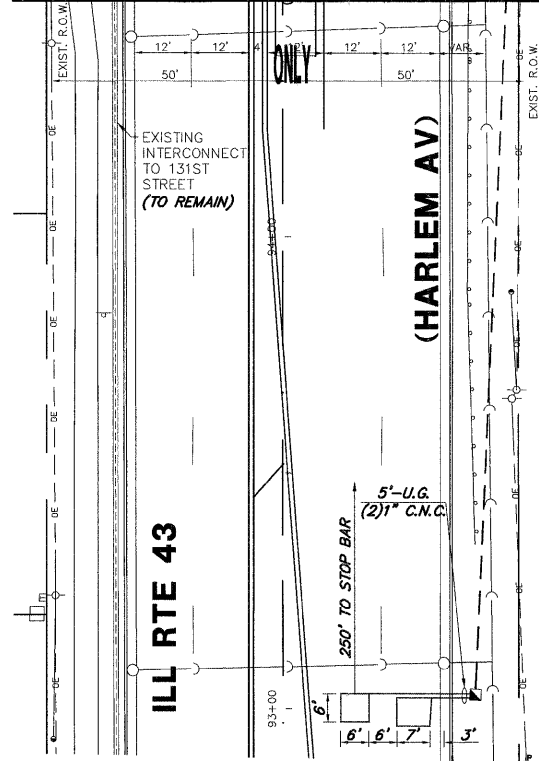
- ① THE CONTRACTOR SHALL MAINTAIN THE EXISTING INTERCONNECT BETWEEN 127TH STREET AND 131ST STREET DURING THE CONSTRUCTION OF THE NEW TRAFFIC SIGNAL AT ISHNALA DRIVE.
- ② THE CONTRACTOR SHALL ABANDON THE EXISTING INTERCONNECT CONDUIT WHERE INDICATED, AFTER THE INTERCONNECT RACEWAY BETWEEN 127TH STREET AND 131ST STREET IS CONSTRUCTED AND OPERATIONAL.
- ③ THE CONTRACTOR SHALL REMOVE THE EXISTING FIBER OPTIC AND TRACER CABLES FROM THIS HANDHOLE TO THE 127TH STREET CONTROLLER CABINET AND REINSTALL THEM IN THE NEW 2" CONDUIT AND TERMINATE THEM AT THE NEW CONTROLLER CABINET AT ISHNALA DRIVE. DISCARD ANY ADDITIONAL FIBER OPTIC AND TRACER CABLES.
- ④ THE CONTRACTOR SHALL PULL IN NEW FIBER OPTIC AND TRACER CABLES IN THE NEW 2" CONDUIT AND THEN THROUGH THE EXISTING HANDHOLES AND CONDUIT TO 127TH STREET. TERMINATE NEW CABLES AT BOTH CONTROLLER CABINETS.
- ⑤ THE STOP BARS ON ILL RTE 43 (HARLEM AVE) SHALL BE INSTALLED AT THE TIME OF THE TRAFFIC SIGNAL TURN-ON.
- ⑥ TWO CHANGEABLE MESSAGE SIGNS WILL NEED TO BE IN PLACE TWO WEEKS PRIOR AND ONE WEEK AFTER THE TRAFFIC SIGNAL TURN-ON. SIGNS SHALL BE PLACED, ONE EACH, NORTH AND SOUTH OF ISHNALA ON IL RTE 43.

MATCH LINE STA. 94+50  
(SEE RIGHT)



MATCH LINE STA. 98+00  
(SEE UPPER LEFT)

MATCH LINE STA. 94+50  
(SEE LOWER LEFT)



FILE NAME =	USER NAME = GHA
2806-240-TR1.dwg	

DESIGNED - JRD	REVISIONS -
DRAWN - ZCW	REVISIONS -
CHECKED - KLB	REVISIONS -
DATE - 11/10/2011	REVISIONS -

PLOT SCALE = 1"=1'	
PLOT DATE = 11/10/2011	

DATE - 11/10/2011	
-------------------	--

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TRAFFIC SIGNAL INSTALLATION PLAN  
ILL RTE 43 (HARLEM AVE) & ISHNALA DR**

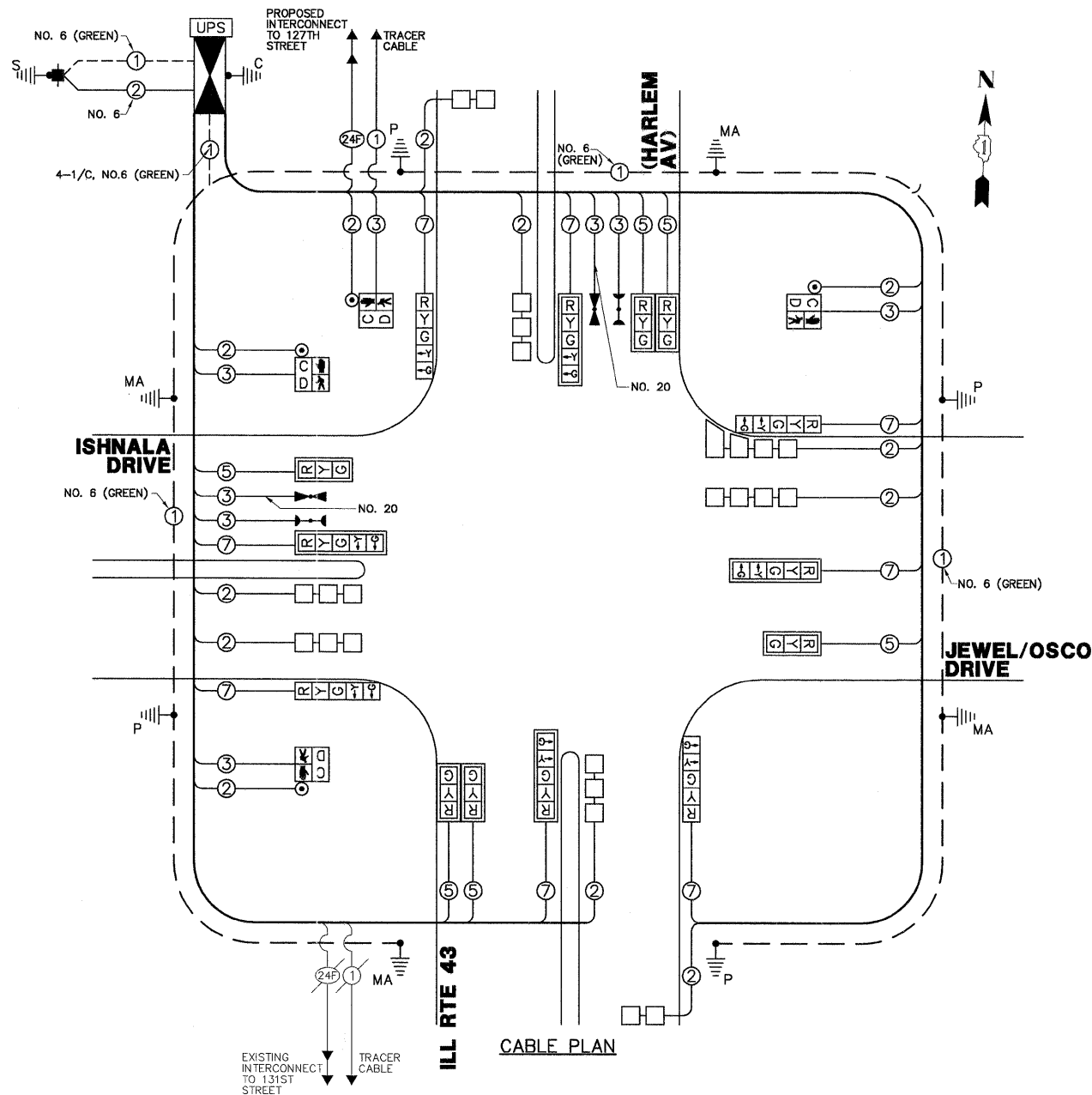
FAP R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
348	10-00047-00-TL	COOK	30	20
SCALE: 1"=20'			CONTRACT #: 63626	

GHA #2806.242

ILLINOIS FED. AID PROJECT

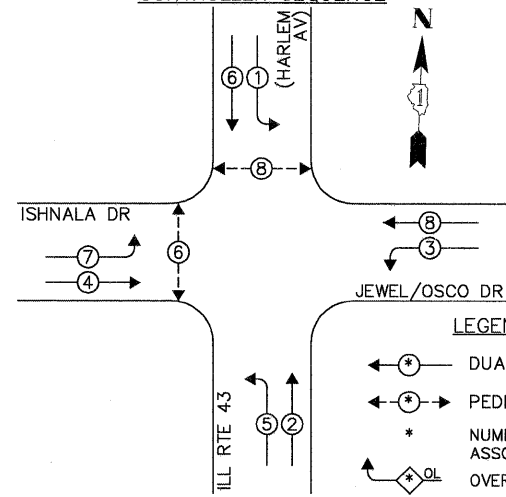
**SCHEDULE OF QUANTITIES**  
ILL ROUTE 43 (HARLEM AV) AT ISHNALA DRIVE

NO.	QUANT.	UNIT	DESCRIPTION
1.	1.50	CAL MO	CHANGEABLE MESSAGE SIGN
2.	15.00	SQ FT	SIGN PANEL - TYPE 1
3.	25.00	SQ FT	SIGN PANEL - TYPE 2
4.	1	EACH	SERVICE INSTALLATION - POLE MOUNTED
5.	861	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2" DIA.
6.	53	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2 1/2" DIA.
7.	65	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 3" DIA.
8.	467	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 4" DIA.
9.	4	EACH	HANDHOLE
10.	4	EACH	HEAVY-DUTY HANDHOLE
11.	2	FOOT	DOUBLE HANDHOLE
12.	1	EACH	UNINTERRUPTIBLE POWER SUPPLY, EXTENDED
13.	1	EACH	TRANSCIVER - FIBER OPTIC
14.	427	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C
15.	802	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
16.	1,201	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C
17.	1,535	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C
18.	1,639	FOOT	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR
19.	88	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2C
20.	592	FOOT	ELECTRIC CABLE IN CONDUIT EQUIPMENT GROUNDING CONDUCTOR, NO. 6 1C
21.	4	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT
22.	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 34 FT
23.	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 42 FT
24.	2	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 46 FT
25.	16	FOOT	CONCRETE FOUNDATION, TYPE A
26.	4	FOOT	CONCRETE FOUNDATION, TYPE C
27.	50	FOOT	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER
28.	1	EACH	DRILL EXISTING HANDHOLE
29.	6	EACH	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED
30.	4	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED
31.	4	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST-ARM MOUNTED
32.	4	EACH	PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
33.	10	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINIUM
34.	8	EACH	INDUCTIVE LOOP DETECTOR
35.	846	FOOT	DETECTOR LOOP, TYPE I
36.	2	EACH	LIGHT DETECTOR
37.	1	EACH	LIGHT DETECTOR AMPLIFIER
38.	4	EACH	PEDESTRIAN PUSH-BUTTON
39.	1,091	FOOT	REMOVE AND REINSTALL ELECTRIC CABLE FROM CONDUIT
40.	1	EACH	FULL-ACTUATED CONTROLLER AND TYPE IV CABINET, SPECIAL
41.	340	FOOT	ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED



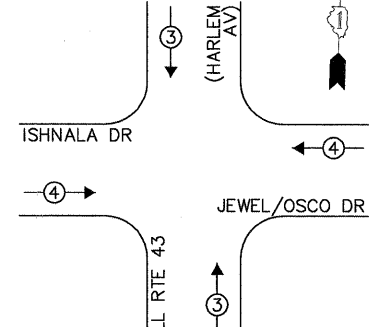
- CONSTRUCTION NOTES:**
- THE CONTRACTOR SHALL MAINTAIN THE EXISTING INTERCONNECT BETWEEN 127TH STREET AND 131ST STREET DURING THE CONSTRUCTION OF THE NEW TRAFFIC SIGNAL AT ISHNALA DRIVE.
  - THE CONTRACTOR SHALL ABANDON THE EXISTING INTERCONNECT CONDUIT WHERE INDICATED, AFTER THE INTERCONNECT RACEWAY BETWEEN 127TH STREET AND 131ST STREET IS CONSTRUCTED AND OPERATIONAL.
  - THE CONTRACTOR SHALL REMOVE THE EXISTING FIBER OPTIC AND TRACER CABLES FROM THIS HANDHOLE TO THE 127TH STREET CONTROLLER CABINET AND REINSTALL THEM IN THE NEW 2" CONDUIT AND TERMINATE THEM AT THE NEW CONTROLLER CABINET AT ISHNALA DRIVE. DISCARD ANY ADDITIONAL FIBER OPTIC AND TRACER CABLES.
  - THE CONTRACTOR SHALL PULL IN NEW FIBER OPTIC AND TRACER CABLES IN THE NEW 2" CONDUIT AND THEN THROUGH THE EXISTING HANDHOLES AND CONDUIT TO 127TH STREET. TERMINATE NEW CABLES AT BOTH CONTROLLER CABINETS.
  - THE STOP BARS ON ILL RTE 43 (HARLEM AVE) SHALL BE INSTALLED AT THE TIME OF THE TRAFFIC SIGNAL TURN-ON.
  - TWO CHANGEABLE MESSAGE SIGNS WILL NEED TO BE IN PLACE TWO WEEKS PRIOR AND ONE WEEK AFTER THE TRAFFIC SIGNAL TURN-ON. SIGNS SHALL BE PLACED, ONE EACH, NORTH AND SOUTH OF ISHNALA ON ILL RTE 43.

**CONTROLLER SEQUENCE**



**PROPOSED PHASE DESIGNATION DIAGRAM**

**EMERGENCY VEHICLE PREEMPTION SEQUENCE**



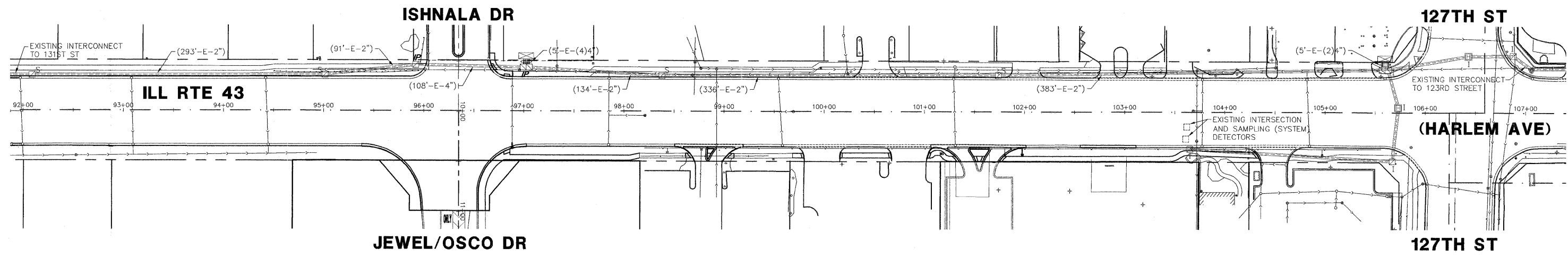
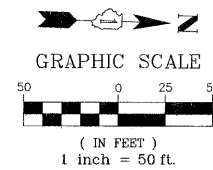
PROPOSED EMERGENCY VEHICLE PREEMPTORS	
EMERGENCY VEHICLE PREEMPTOR	3 4
MOVEMENT	↑ ↓ ← →

I.D.O.T. TRAFFIC SIGNAL INSTALLATION ELECTRICAL SERVICE REQUIREMENTS					TOTAL WATTAGE
TYPE	NO LAMPS	WATTAGE	% OPERATION		
SIGNAL (RED)	14	135	17	0.50	119.0
SIGNAL (YELLOW)	14	135	25	0.10	35.0
SIGNAL (GREEN)	14	135	15	0.40	84.0
ARROW	16	135	12	0.10	19.2
PED. SIGNAL	4	90	25	1.00	100.0
CONTROLLER	1	-	100	1.00	100.0
LUMINAIRE	-	-	250	0.50	-
L.E.D. ST. NAME SIGN	-	-	64	0.50	-
VIDEO SYSTEM	-	-	150	1.00	-
BATTERY BACKUP	1	-	25	1.00	25.0
<b>TOTAL =</b>					<b>482.2</b>

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

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

ENERGY COSTS - BILLED TO: CITY OF PALOS HEIGHTS (ADDRESS) 7607 W. COLLEGE DRIVE (ADDRESS) PALOS HEIGHTS IL, 60463  
ENERGY SUPPLY - CONTACT: NEW BUSINESS PHONE: (866) 639-3532 COMPANY: COMED



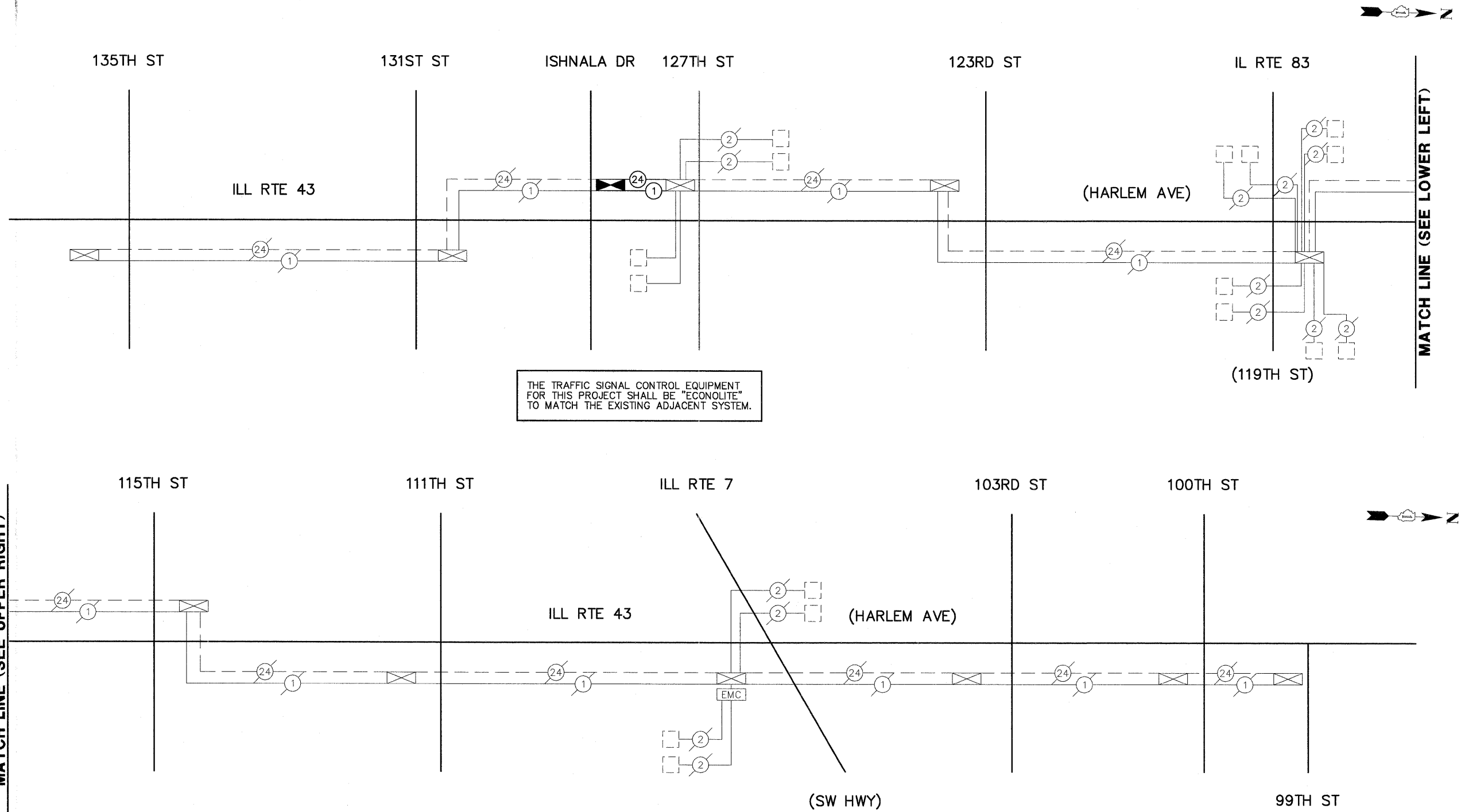
THE TRAFFIC SIGNAL CONTROL EQUIPMENT FOR THIS PROJECT SHALL BE "ECONOLITE" TO MATCH THE EXISTING ADJACENT SYSTEM.

FILE NAME = 2806-240-TR1.dwg	USER NAME = GHA	DESIGNED - JRD	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>INTERCONNECT PLAN ILL RTE 43 (HARLEM AVE) &amp; ISHNALA DR</b>		F.A.P. RTE. 348	SECTION 10-00047-00-TL	COUNTY COOK	TOTAL SHEETS 30	SHEET NO. 22
	PLOT SCALE = 1"=1"	CHECKED - KLB	REVISED -		SCALE 1"=50'	SHEET NO. OF SHEETS	STA. TO STA.	CONTRACT #: 63626			
PLOT DATE = 11/10/2011	DATE - 11/10/2011	REVISED -	REVISED -	GHA #2806.242 ILLINOIS FED. AID PROJECT							

**SCHEDULE OF QUANTITIES**

INTERCONNECT - ILL RTE 43 FROM 135TH ST TO 99TH ST

NO.	QUANT.	UNIT	DESCRIPTION
1.	1	L SUM	TRAFFIC CONTROL AND PROTECTION, STANDARD 701606
2.	1	L SUM	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701
3.	1	L SUM	TRAFFIC CONTROL AND PROTECTION, STANDARD 701801
4.	1	EACH	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION
5.	991	FOOT	FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM12F
6.	991	FOOT	ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1C
7.	1	EACH	DRILL EXISTING HANDHOLE
8.	1	EACH	RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM LEVEL 2



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

FILE NAME =	2806-240-TR1.dwg
-------------	------------------

USER NAME =	GHA
PLOT SCALE =	1"=1"
PLOT DATE =	11/10/2011

DESIGNED -	JRD
DRAWN -	ZCW
CHECKED -	KLB
DATE -	11/10/2011

REVISED -	
REVISED -	
REVISED -	
REVISED -	

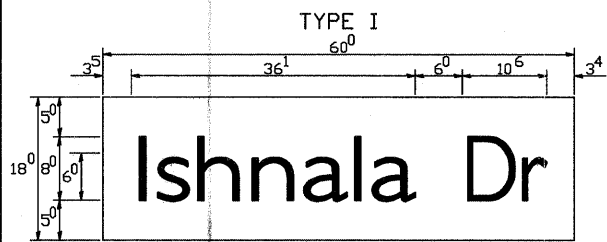
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**INTERCONNECT SCHEMATIC & SCHEDULE OF QUANTITIES  
ILL RTE 43 (HARLEM AVE) & ISHNALA DR**

SCALE: N.A. SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
348	10-00047-00-TL	COOK	30	23
CONTRACT #:			63626	
ILLINOIS FED. AID PROJECT				

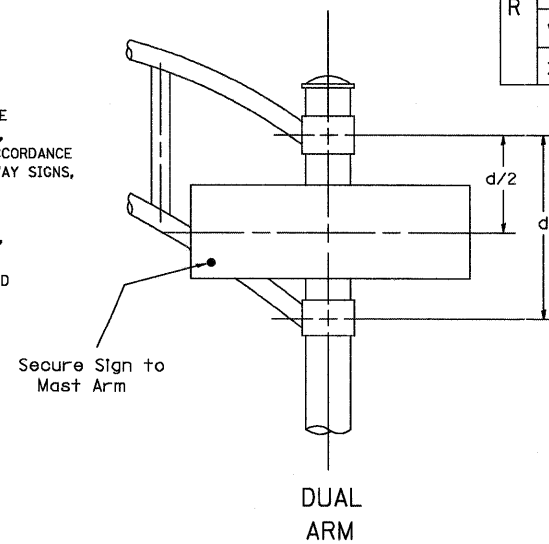
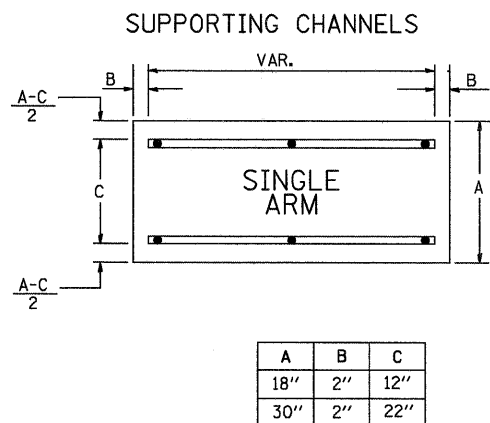
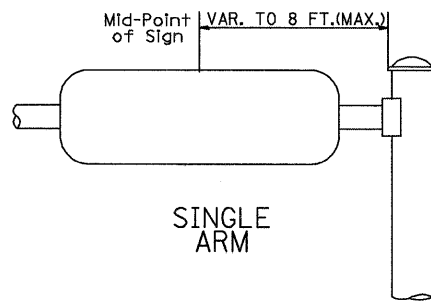
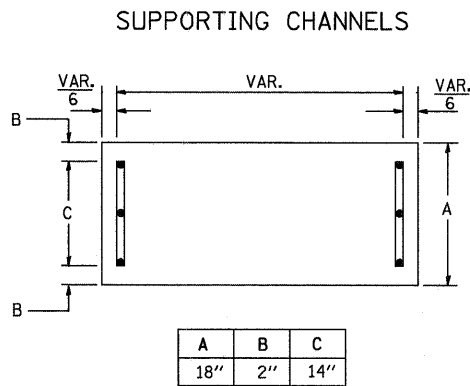
GHA #2806.242



— Sq. M. each  
 7.5 Sq. Ft. each  
 2 Required  
 Design Series D



— Sq. M. each  
 12.5 Sq. Ft. each  
 2 Required  
 Design Series D



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

SERIES	SECOND LETTER															
	a		c		d		e		g		o		q		z	
A W X	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>0</sup>	1 <sup>1</sup>	1 <sup>4</sup>	1 <sup>0</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>2</sup>	1 <sup>4</sup>	
B	1 <sup>4</sup>	1 <sup>5</sup>	2 <sup>0</sup>	2 <sup>1</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>7</sup>	
C E G	1 <sup>4</sup>	1 <sup>5</sup>	2 <sup>0</sup>	2 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>0</sup>	1 <sup>0</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	
D O Q R	1 <sup>4</sup>	1 <sup>5</sup>	2 <sup>0</sup>	2 <sup>1</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>0</sup>	1 <sup>0</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	
F	0 <sup>5</sup>	0 <sup>6</sup>	1 <sup>4</sup>	1 <sup>5</sup>	0 <sup>6</sup>	1 <sup>0</sup>	0 <sup>5</sup>	0 <sup>6</sup>	1 <sup>0</sup>	0 <sup>6</sup>	1 <sup>0</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>1</sup>	1 <sup>2</sup>	
H I M N	2 <sup>0</sup>	2 <sup>1</sup>	2 <sup>2</sup>	2 <sup>4</sup>	2 <sup>0</sup>	2 <sup>1</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>6</sup>	1 <sup>7</sup>	2 <sup>0</sup>	2 <sup>1</sup>	2 <sup>0</sup>	
J U	2 <sup>0</sup>	2 <sup>1</sup>	2 <sup>0</sup>	2 <sup>1</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>6</sup>	1 <sup>7</sup>	2 <sup>0</sup>	
K L	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>1</sup>	1 <sup>2</sup>	0 <sup>5</sup>	0 <sup>6</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	
P	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>4</sup>	0 <sup>5</sup>	0 <sup>6</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	
S	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>2</sup>	1 <sup>4</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	
T	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>6</sup>	1 <sup>7</sup>	0 <sup>6</sup>	1 <sup>0</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	
V	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>1</sup>	1 <sup>2</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	
Y	0 <sup>5</sup>	0 <sup>6</sup>	1 <sup>4</sup>	1 <sup>5</sup>	0 <sup>6</sup>	1 <sup>0</sup>	0 <sup>5</sup>	0 <sup>6</sup>	0 <sup>5</sup>	0 <sup>7</sup>	0 <sup>5</sup>	0 <sup>6</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>2</sup>	
Z	1 <sup>6</sup>	1 <sup>7</sup>	2 <sup>2</sup>	2 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>6</sup>	1 <sup>7</sup>	2 <sup>0</sup>	

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

SERIES	SECOND LETTER															
	a		c		d		e		g		o		q		z	
ad h g l j	1 <sup>6</sup>	1 <sup>7</sup>	2 <sup>2</sup>	2 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>7</sup>	
l m n q u																
b f k o p s	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>1</sup>	1 <sup>2</sup>	0 <sup>5</sup>	0 <sup>6</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	
c e	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>2</sup>	1 <sup>4</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	
r	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>2</sup>	1 <sup>4</sup>	0 <sup>6</sup>	1 <sup>0</sup>	0 <sup>3</sup>	0 <sup>3</sup>	0 <sup>5</sup>	0 <sup>6</sup>	0 <sup>5</sup>	0 <sup>6</sup>	0 <sup>6</sup>	1 <sup>0</sup>	0 <sup>6</sup>	
t z	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>2</sup>	1 <sup>4</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	
v y	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>1</sup>	1 <sup>2</sup>	0 <sup>5</sup>	0 <sup>6</sup>	0 <sup>6</sup>	1 <sup>0</sup>	0 <sup>6</sup>	1 <sup>0</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>2</sup>	
w	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>1</sup>	1 <sup>2</sup>	0 <sup>5</sup>	0 <sup>6</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	
x	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>1</sup>	1 <sup>2</sup>	0 <sup>5</sup>	0 <sup>6</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	

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

SERIES	SECOND NUMBER																			
	0		1		2		3		4		5		6		7		8		9	
0 9	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>6</sup>	1 <sup>7</sup>
1	2 <sup>0</sup>	2 <sup>1</sup>	2 <sup>0</sup>	2 <sup>1</sup>	2 <sup>0</sup>	2 <sup>1</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>4</sup>	1 <sup>5</sup>	2 <sup>0</sup>	2 <sup>1</sup>	2 <sup>0</sup>	2 <sup>1</sup>	1 <sup>4</sup>	1 <sup>5</sup>	2 <sup>0</sup>	2 <sup>1</sup>	2 <sup>0</sup>	2 <sup>1</sup>
2 3 4	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>4</sup>	1 <sup>5</sup>		
5	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>
6	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>4</sup>	1 <sup>5</sup>
7	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>5</sup>	0 <sup>5</sup>	0 <sup>6</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>1</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>4</sup>
8	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>5</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>4</sup>	1 <sup>5</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>6</sup>	1 <sup>7</sup>	1 <sup>4</sup>	1 <sup>5</sup>

EXAMPLE, 2<sup>(3)</sup> DENOTES 3/8

UPPER AND LOWER CASE  
 LETTER WIDTHS

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

NUMBER	6 INCH SERIES		8 INCH SERIES	
	C	D	C	D
1	1 <sup>2</sup>	1 <sup>4</sup>	1 <sup>5</sup>	2 <sup>0</sup>
2	3 <sup>2</sup>	4 <sup>0</sup>	4 <sup>3</sup>	5 <sup>3</sup>
3	3 <sup>2</sup>	4 <sup>0</sup>	4 <sup>3</sup>	5 <sup>3</sup>
4	3 <sup>5</sup>	4 <sup>3</sup>	4 <sup>7</sup>	5 <sup>7</sup>
5	3 <sup>2</sup>	4 <sup>0</sup>	4 <sup>3</sup>	5 <sup>3</sup>
6	3 <sup>2</sup>	4 <sup>0</sup>	4 <sup>3</sup>	5 <sup>3</sup>
7	3 <sup>2</sup>	4 <sup>0</sup>	4 <sup>3</sup>	5 <sup>3</sup>
8	3 <sup>2</sup>	4 <sup>0</sup>	4 <sup>3</sup>	5 <sup>3</sup>
9	3 <sup>2</sup>	4 <sup>0</sup>	4 <sup>3</sup>	5 <sup>3</sup>
0	3 <sup>4</sup>	4 <sup>2</sup>	4 <sup>5</sup>	5 <sup>5</sup>

GENERAL NOTES

1. WHERE MAST ARM MOUNTED STREET NAME SIGNS ARE SPECIFIED, THE MAST ARM ASSEMBLY AND POLES SHALL BE DESIGNED TO SUPPORT THE LOADINGS CALLED FOR ON STANDARDS 877001, 877002, 877006, 877011 AND 877012, AS APPLICABLE, PLUS TWO (2) SIGN PANELS 2'-6" x 8'-0" MOUNTED AS SHOWN. THE DESIGN SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS FOR 80 M.P.H. WIND VELOCITY.

- 2. ALL SIGNS SHALL HAVE A WHITE REFLECTORIZED LEGEND AND BORDER ON A GREEN REFLECTORIZED BACKGROUND, TYPE A SHEETING.
- 3. THE SIGN LENGTH SHOULD BE INCREASED IN 6-INCH INCREMENTS, BUT THE OVERALL LENGTH SHOULD NOT EXCEED 8'-0".
- 4. ALL BORDERS SHALL BE 3/4" WIDE AND CORNER RADIUS SHALL BE 2-1/4".
- 5. SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM SHALL BE USED FOR ALL SIGNS ATTACHED TO SIGNAL POLES AND POSTS. LOCAL SUPPLIERS OF THE SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM ARE:

\* 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/BRACKET OF THE ABOVE PRODUCT.

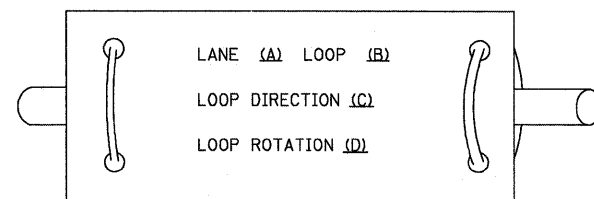
SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM shall be used. See Note #5.



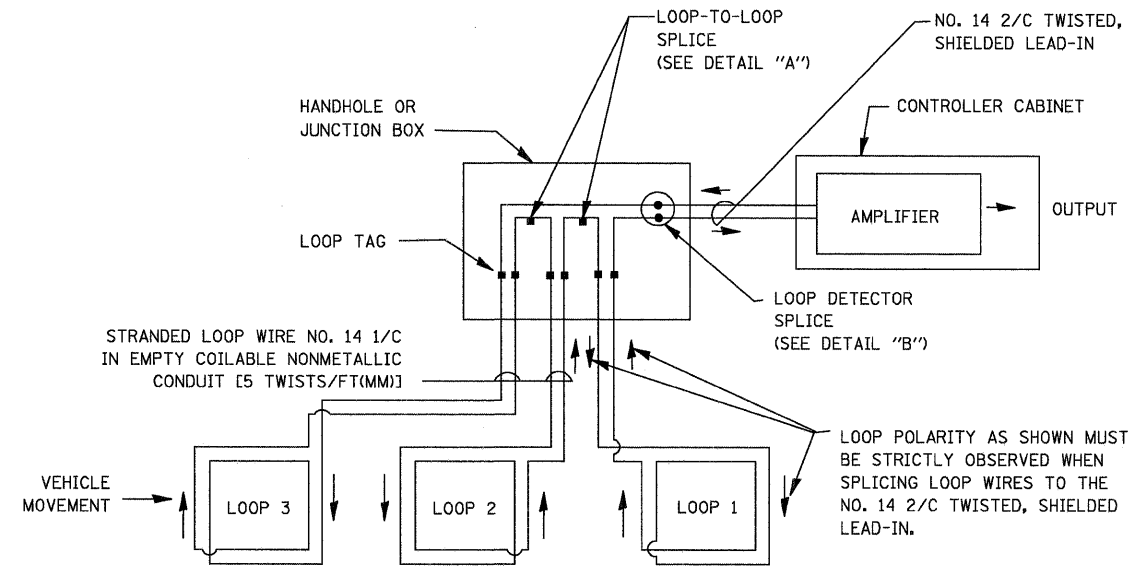
**LOOP DETECTOR NOTES**

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

**LOOP LEAD-IN CABLE TAG**

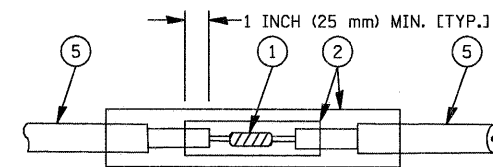


- A. LANE 1 IS THE LANE CLOSEST TO THE CENTERLINE OF THE ROADWAY
- B. LOOP #1 IS THE LOOP IN THE LANE CLOSEST TO THE INTERSECTION.
- C. LABEL LOOP CABLE "IN" OR LOOP CABLE "OUT".
- D. LABEL LOOP CABLE CLOCKWISE OR LOOP CABLE COUNTERCLOCKWISE.

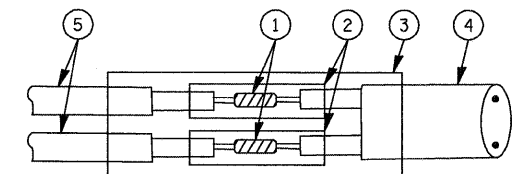


**DETECTOR LOOP WIRING SCHEMATIC**

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

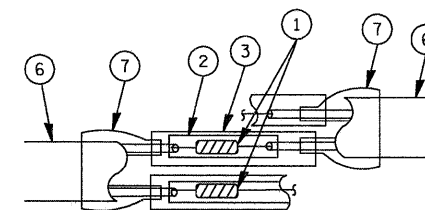


**DETAIL "A"  
LOOP-TO-LOOP SPLICE**

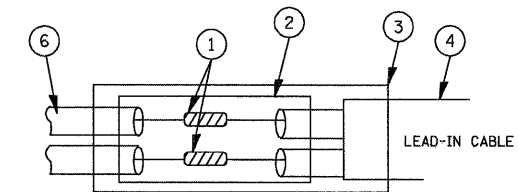


**DETAIL "B"  
LOOP-TO-CONTROLLER SPLICE**

**TYPE I LOOP**



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



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

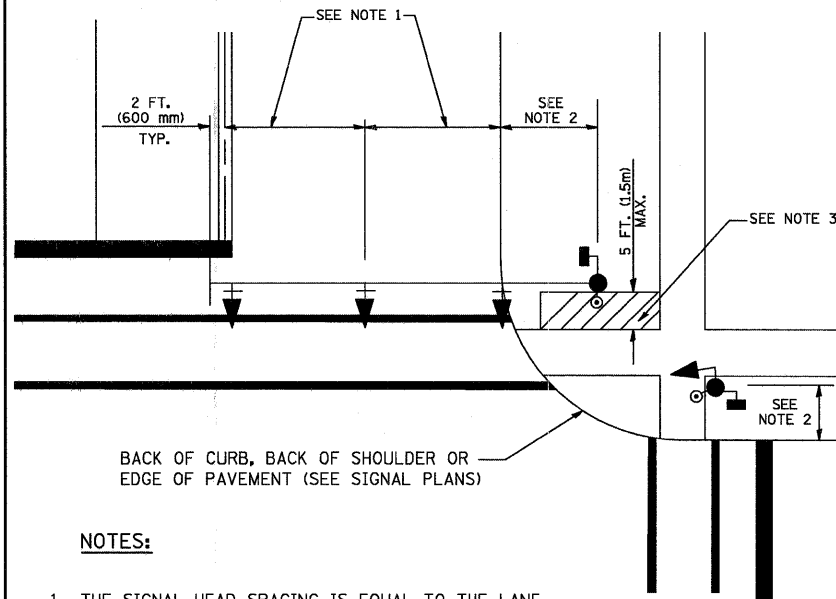
**LOOP DETECTOR SPLICE**

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

FILE NAME = 2806-240-TR2.dwg	USER NAME = ZACH WALLSTEN	DESIGNED - DAD	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS</b>		F&P RTE. 348	SECTION 10-00047-00-TL	COUNTY COOK	TOTAL SHEETS 30	SHEET NO. 25	GHA #2806.242 CONTRACT #: 63626 ILLINOIS FED. AID PROJECT
	PLOT SCALE = 1" = .08'	DRAWN - BCK	REVISED -		SCALE NONE	SHEET NO. 1 OF 6 SHEETS	STA. TO STA.	<b>TS-05</b>				
	PLOT DATE = 11/10/2011	CHECKED - DAD	REVISED -									
		DATE - 10-28-09	REVISED -									

**TRAFFIC SIGNAL MAST ARM AND SIGNAL POST**

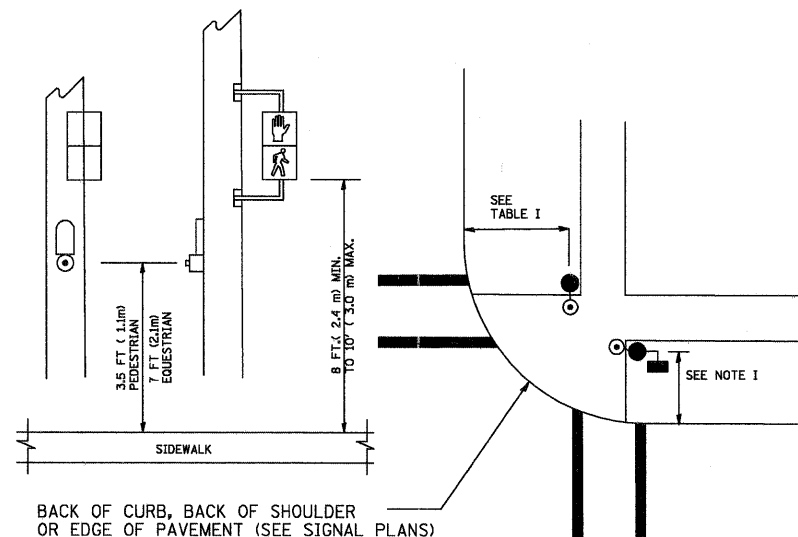
MAST ARM MOUNTED SIGNALS IN EXISTING, PROPOSED OR FUTURE SIDEWALK/BICYCLE PATH AREA. INTERSECTION SHOWN WITH PEDESTRIAN SIGNALS AND PEDESTRIAN PUSHBUTTON DETECTORS.



**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."

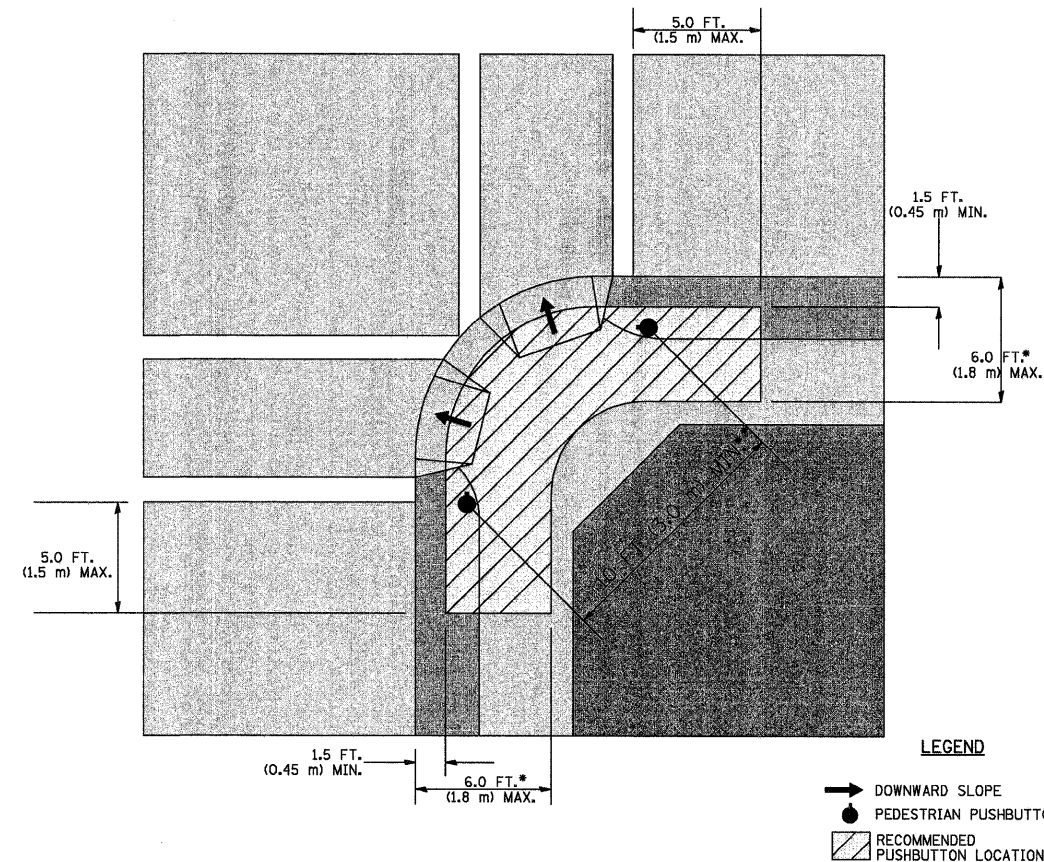
**PEDESTRIAN SIGNAL POST AND PEDESTRIAN PUSH BUTTON POST**



**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) SEPARATION 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.

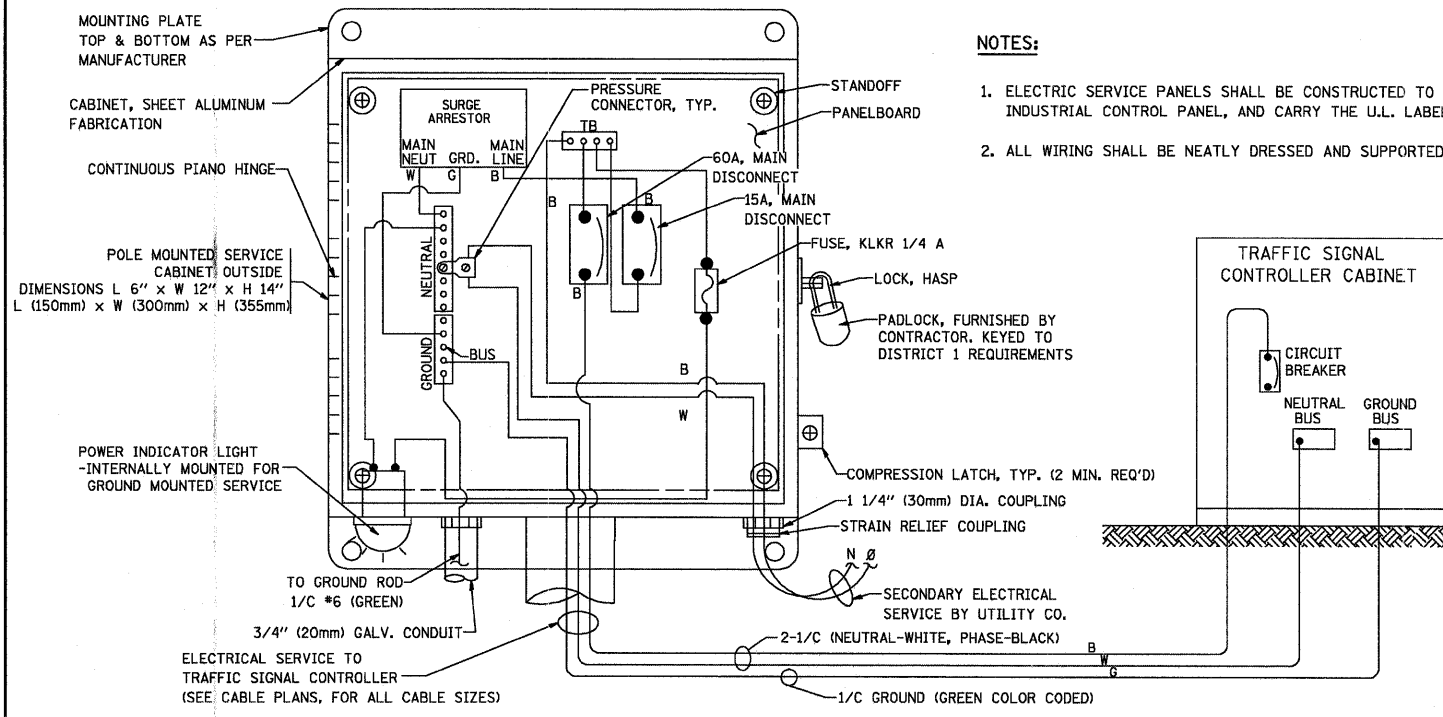
THE TOP OF THE SIGNAL HOUSING OF A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL NOT BE MORE THAN 25.6 FT (7.8 m) ABOVE THE PAVEMENT.

**TRAFFIC SIGNAL EQUIPMENT OFFSET**

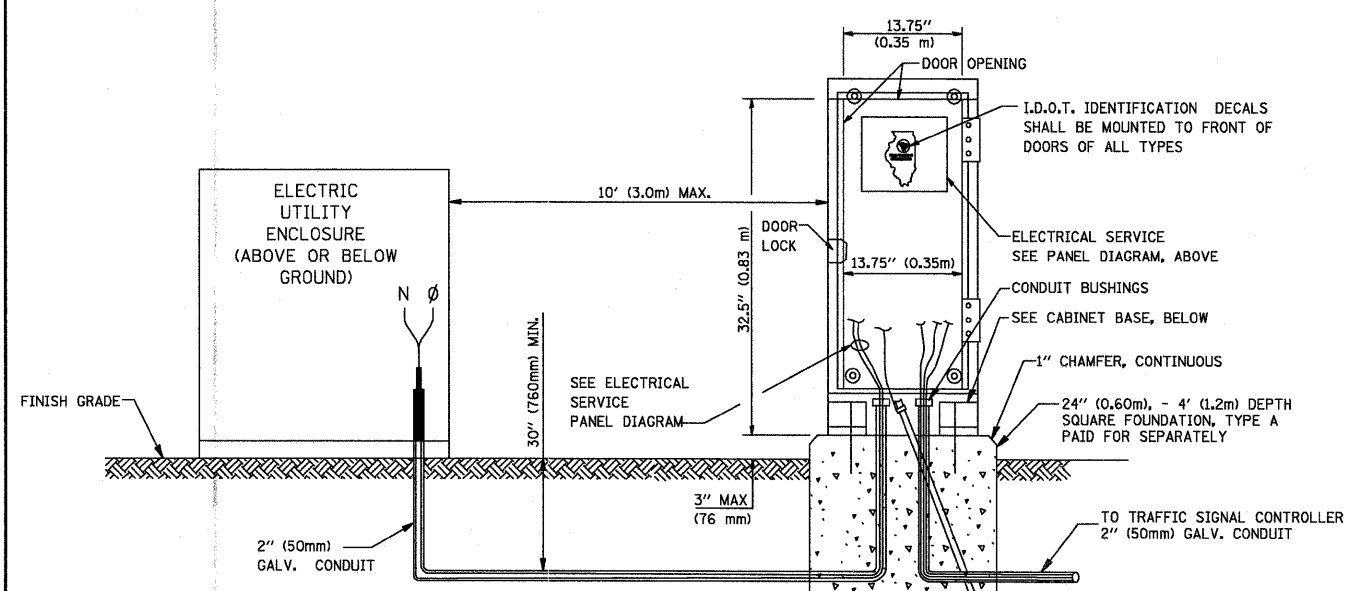
TRAFFIC SIGNAL EQUIPMENT	COMBINATION CONCRETE CURB AND GUTTER (MINIMUM DISTANCE FROM BACK OF CURB TO CENTERLINE OF FOUNDATION)	SHOULDER/NON-CURBED AREA (MINIMUM DISTANCE FROM EDGE OF PAVEMENT TO CENTERLINE OF FOUNDATION)
TRAFFIC SIGNAL MAST ARM POLE	6 FT (1.8m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 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 AFFECT 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.

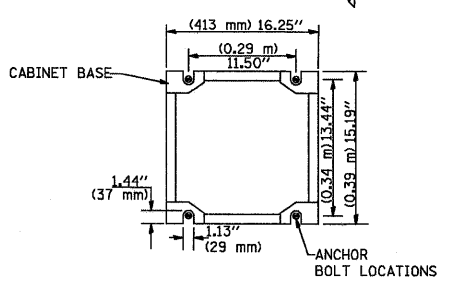


**ELECTRICAL SERVICE - PANEL DIAGRAM (TYPICAL FOR POLE AND GROUND MOUNTED SERVICE)**  
**SERVICE INSTALLATION POLE MOUNT (SHOWN)**  
 (NOT TO SCALE)

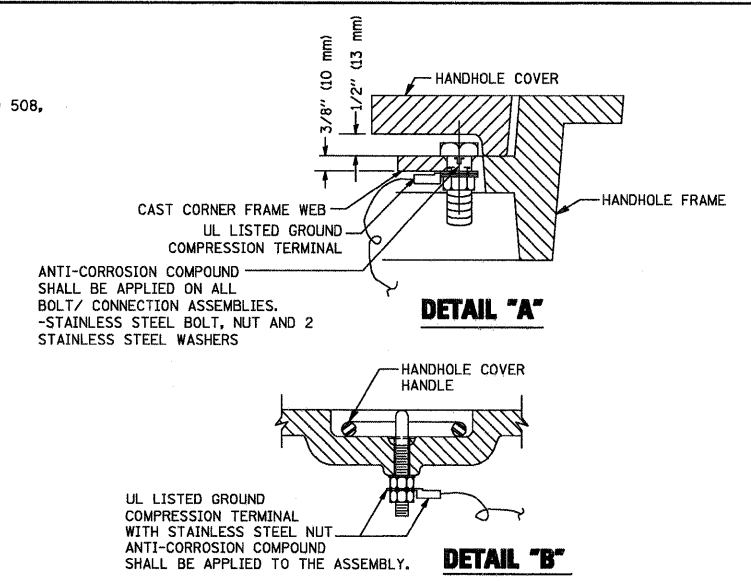


**SERVICE INSTALLATION GROUND MOUNT**  
 (NOT TO SCALE)

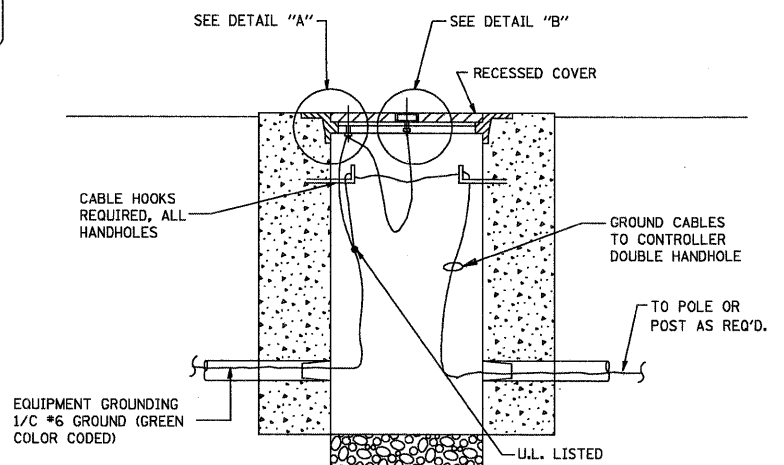
**CABINET - BASE BOLT PATTERN**  
 (NOT TO SCALE)



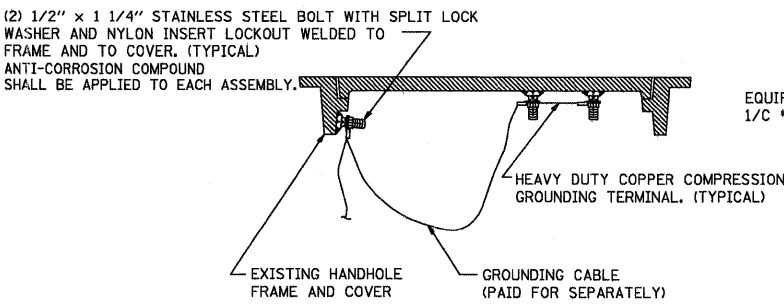
- NOTES:**
1. ELECTRIC SERVICE PANELS SHALL BE CONSTRUCTED TO U.L. STD 508, INDUSTRIAL CONTROL PANEL, AND CARRY THE U.L. LABEL.
  2. ALL WIRING SHALL BE NEATLY DRESSED AND SUPPORTED.



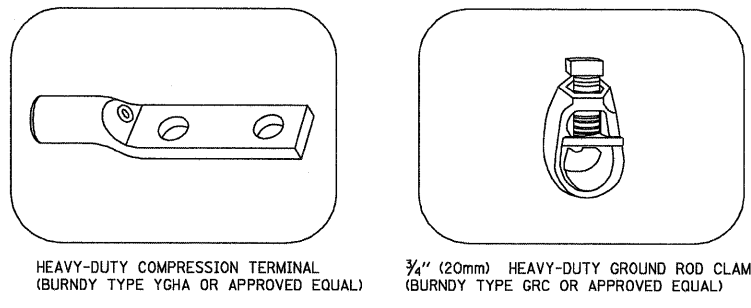
- NOTES:**
- GROUNDING SYSTEM**
1. THE GROUNDING SYSTEM SHALL CONSIST OF AN INSULATED CONDUCTOR TYPE XLP, NO. 6 A.W.G., STRANDED COPPER TO BE INSTALLED IN RACEWAYS. THE GROUNDING CABLE SHALL BE INSTALLED IN A CONTINUOUS MANNER AS SHOWN ON THE CABLE PLAN PROVIDED. ALL GROUNDING CONDUCTORS SHALL BE BONDED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



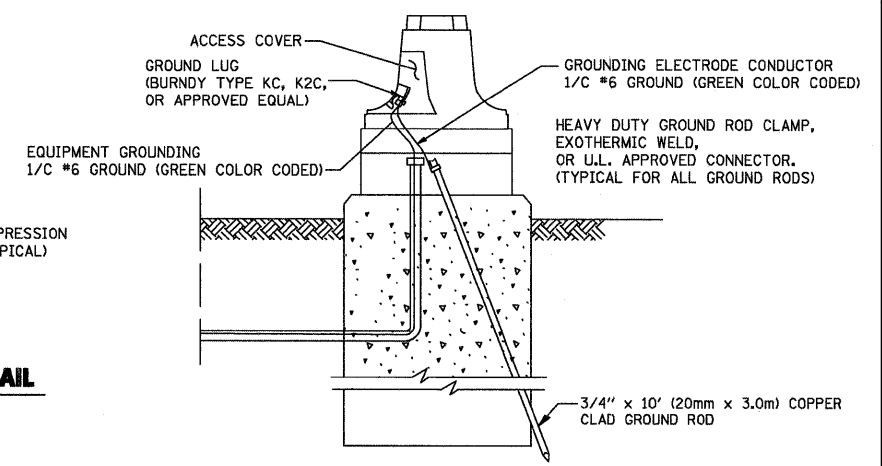
**HANDHOLE COVER & FRAME - GROUNDING DETAIL**  
 (NOT TO SCALE)



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

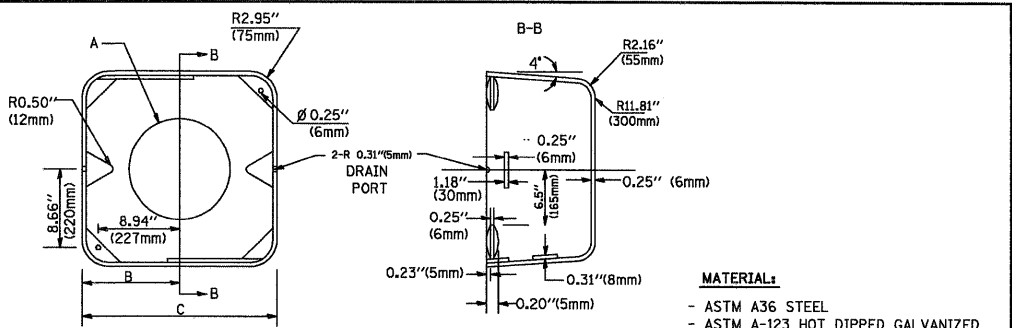
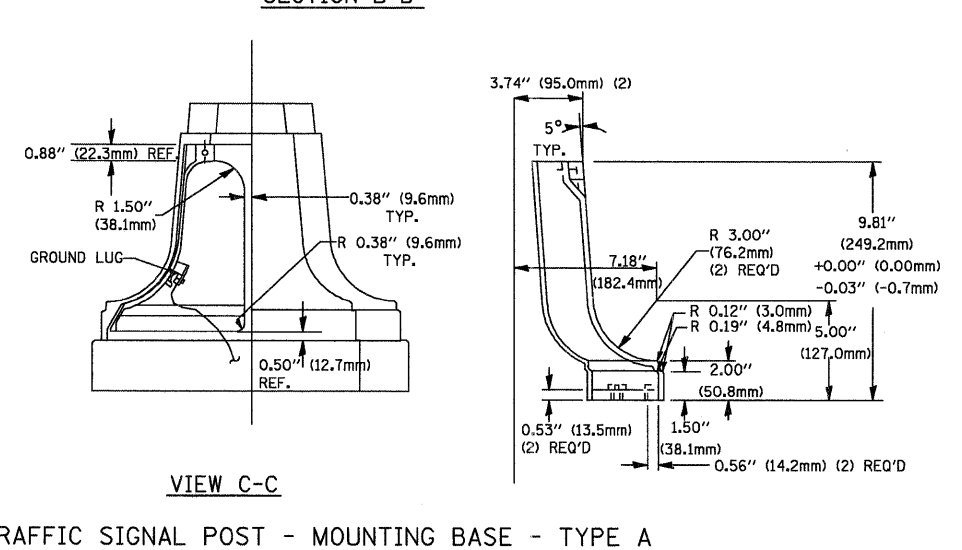
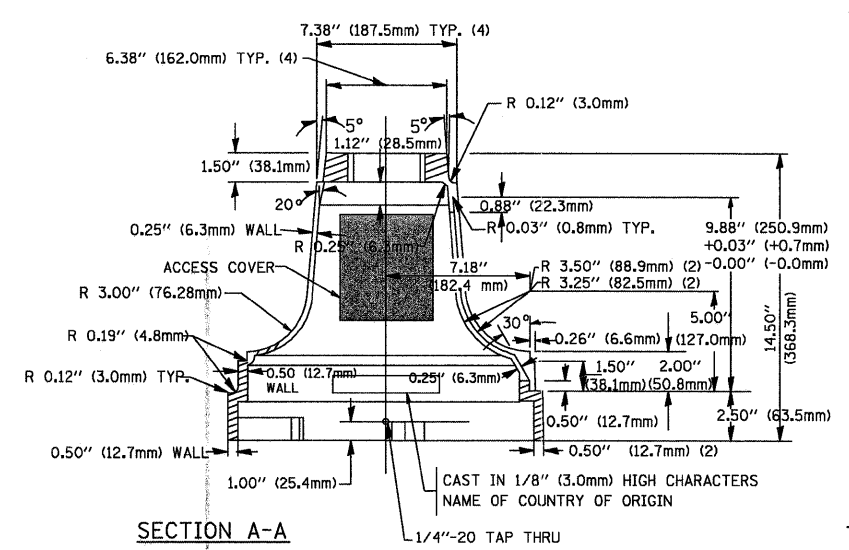
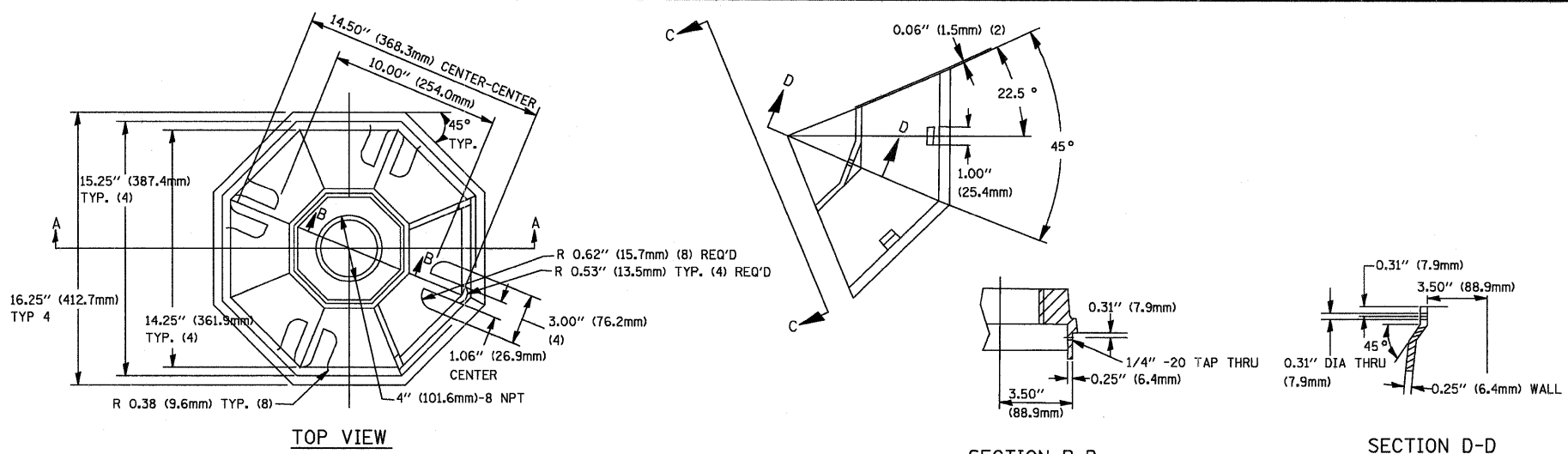


- NOTES:**
- ALL CLAMPS SHALL BE BRONZE OR COPPER, UL APPROVED.
  - GROUND CABLE SHALL BE LOOPED OVER HOOKS IN THE HANDHOLES 6.5' (2.0m) SLACK SHALL BE PROVIDED IN SINGLE HANDHOLES 13' (4.0m) OF SLACK SHALL BE PROVIDED IN DOUBLE HANDHOLES. 5' (1.4m) OF SLACK SHALL BE PROVIDED BETWEEN FRAME AND COVER.



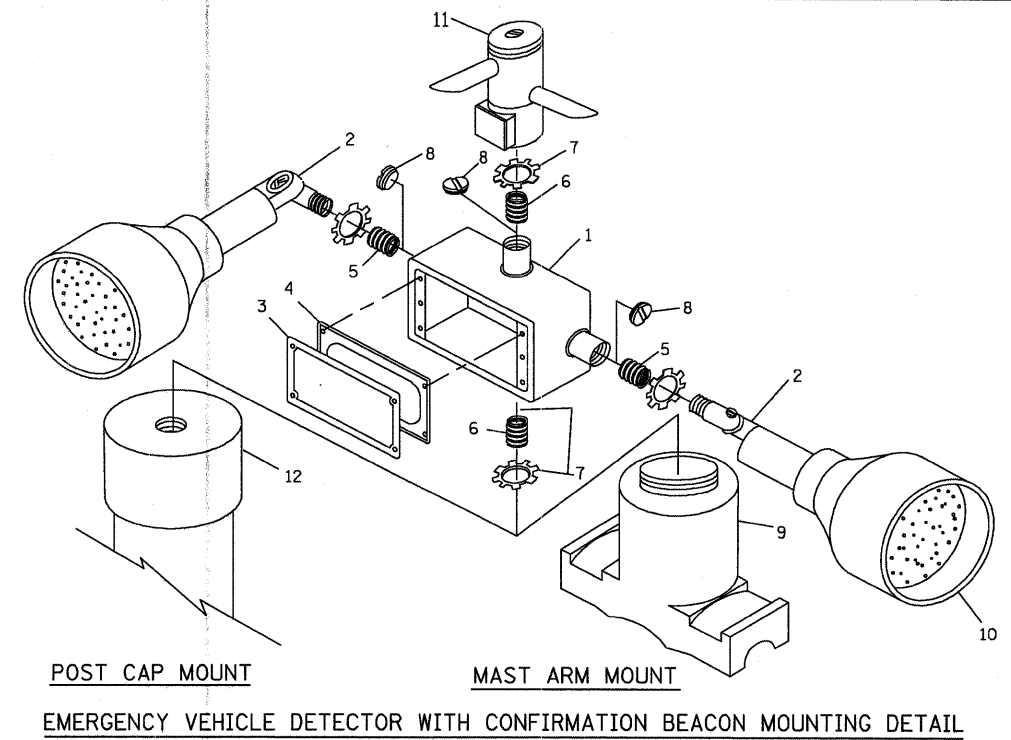
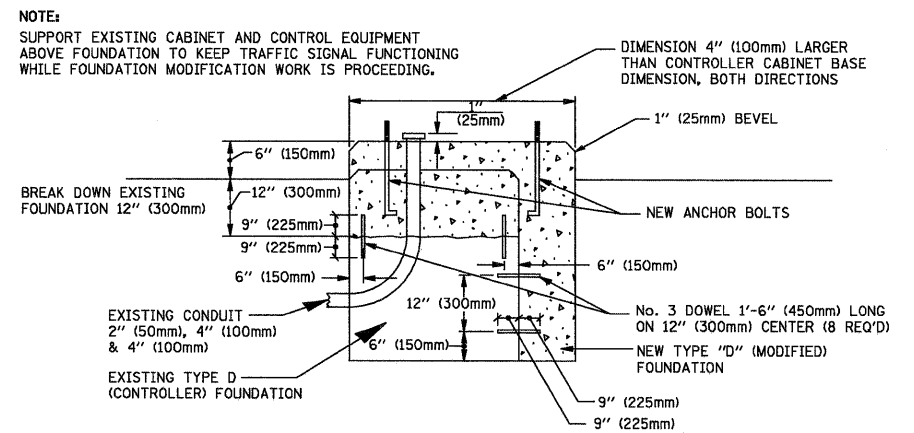
**MAST ARM POLE / POST-GROUNDING DETAIL**  
 (NOT TO SCALE)

FILE NAME = 2806-240-TR2.dwg	USER NAME = ZACH WALLSTEN	DESIGNED - DAD	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS</b>			F.A.P. RTE. 348	SECTION 10-00047-00-TL	COUNTY COOK	TOTAL SHEETS 30	SHEET NO. 27
PLOT SCALE = 1" = .08'	CHECKED - DAD	DATE - 10-28-09	REVISED -		SCALE NONE	SHEET NO. 3 OF 6 SHEETS	STA. TO STA.	<b>TS-05</b>		CONTRACT # 63626	ILLINOIS FED. AID PROJECT	
PLOT DATE = 11/10/2011	DATE - 10-28-09	REVISED -	REVISED -		GHA #2806.242							



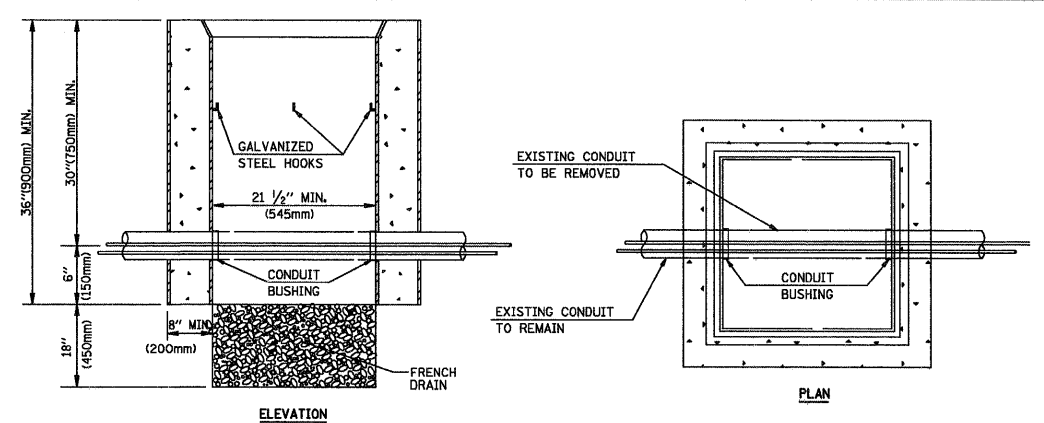
A	B	C	HEIGHT	WEIGHT
VARIABLES	9.5\"(241mm)	19\"(483mm)	7\"(178mm) - 12\"(300mm)	53 lbs (24kg)
VARIABLES	10.75\"(273mm)	21.5\"(546mm)	7\"(178mm) - 12\"(300mm)	68 lbs (31 kg)
VARIABLES	13.0\"(330mm)	26\"(660mm)	7\"(178mm) - 12\"(300mm)	81 lbs (37 kg)
VARIABLES	18.5\"(470mm)	37\"(940mm)	7\"(178mm) - 12\"(300mm)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

- NOTES:**
- 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.

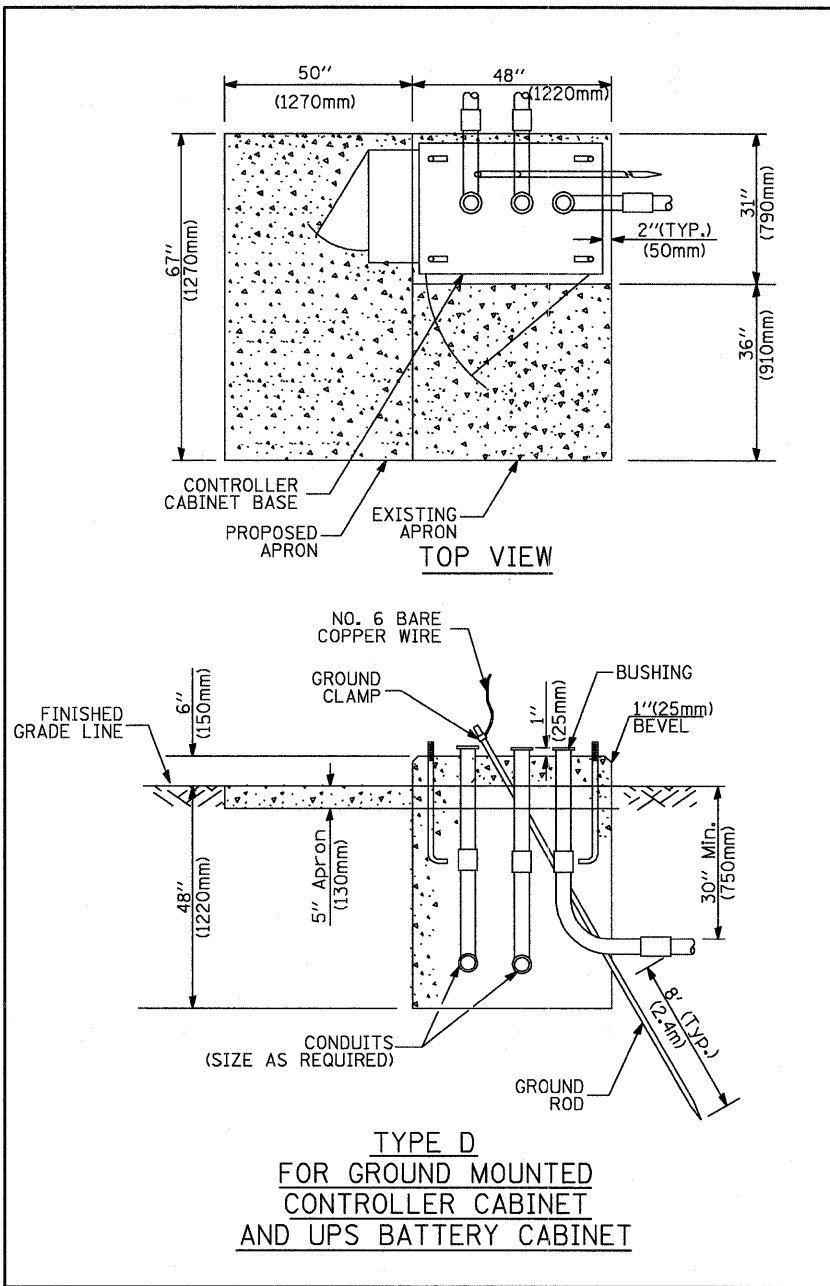


ITEM NO.	IDENTIFICATION
1	OUTLET BOX- GALV. 21 CU.IN. (0.000344 CU-M)
2	LAMP HOLDER AND COVER
3	OUTLET BOX COVER
4	RUBBER COVER GASKET
5	REDUCING BUSHING
6	3/4\"(19 mm) CLOSE NIPPLE
7	3/4\"(19 mm) LOCKNUT
8	3/4\"(19 mm) HOLE PLUG
9	SADDLE BRACKET - GALV.
10	6 WATT PAR 38 LED FLOOD LAMP
11	DETECTOR UNIT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

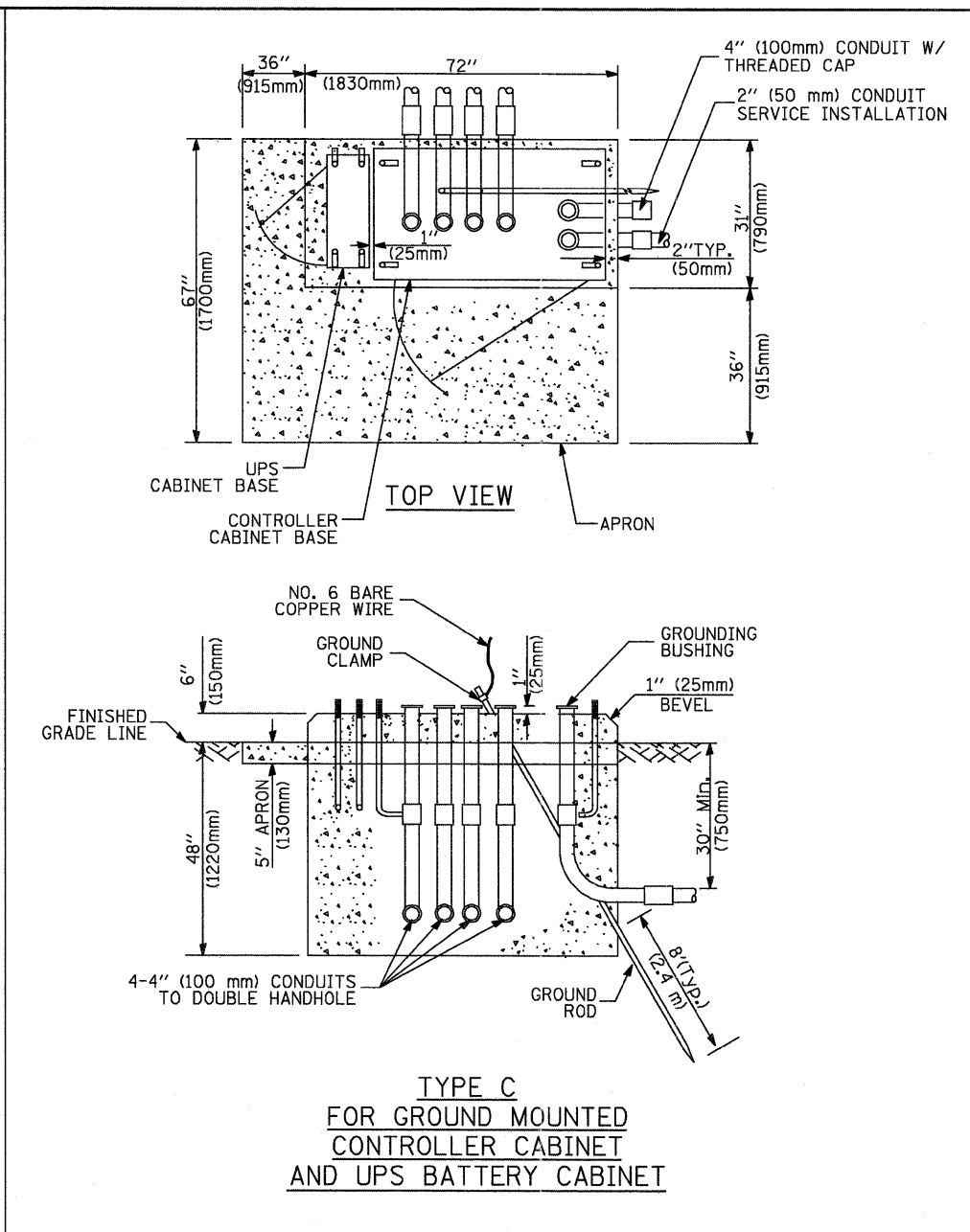
- NOTES:**
- ALL ELECTRICAL ITEMS, EXCEPT ITEMS #2 AND #11 SHALL BE ALUMINUM OR GALVANIZED
  - ITEM #1- OZ/GEDNEY FSX-1-50 OR EQUIVALENT  
ITEM #2- MULBERRY CON-O-SHADE LAMP SHIELD OR EQUIVALENT  
ITEM #9- "BAND-IT" SADDLE BRACKET OR EQUIVALENT
  - WHEN POST MOUNTING IS SPECIFIED, ITEM #9 SHALL NOT BE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



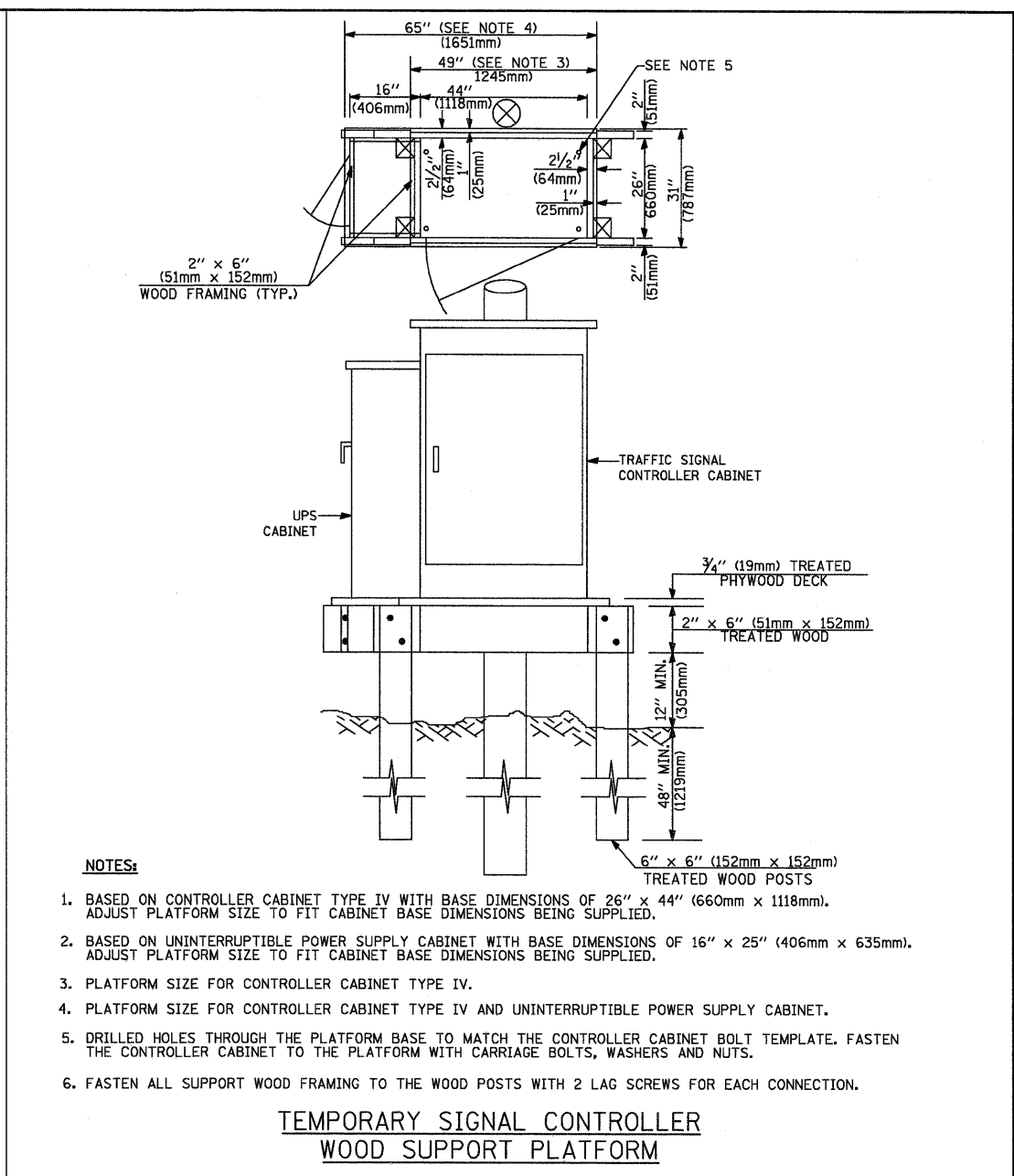
- NOTES:**
- HANDHOLE CONSTRUCTED PER STATE STANDARD 814001.
  - REMOVAL OF THE EXISTING CONDUIT FROM THE HANDHOLE AND THE INSTALLATION OF THE CONDUIT BUSHINGS SHALL BE INCIDENTAL TO THE HANDHOLE.



**TYPE D  
FOR GROUND MOUNTED  
CONTROLLER CABINET  
AND UPS BATTERY CABINET**



**TYPE C  
FOR GROUND MOUNTED  
CONTROLLER CABINET  
AND UPS BATTERY CABINET**



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

**TEMPORARY SIGNAL CONTROLLER  
WOOD SUPPORT PLATFORM**

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

**CABLE SLACK**

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

**VERTICAL CABLE LENGTH**

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

**DEPTH OF FOUNDATION**

Mast Arm Length	① Foundation Depth	Foundation Diameter	Spiral Diameter	Quantity of Rebars	Size of Rebars
Less than 30' (9.1 m)	10'-0" (3.0 m)	30" (750mm)	24" (600mm)	8	6(19)
Greater than or equal to 30' (9.1 m) and less than 40' (12.2 m)	13'-6" (4.1 m)	30" (750mm)	24" (600mm)	8	6(19)
Greater than or equal to 40' (12.2 m) and less than 50' (15.2 m)	11'-0" (3.4 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 50' (15.2 m) and up to 55' (16.8 m)	13'-0" (4.0 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 55' (16.8 m) and up to 65' (19.8 m)	15'-0" (4.6 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 65' (19.8 m) and up to 75' (22.9 m)	21'-0" (6.4 m)	42" (1060mm)	36" (900mm)	16	8(25)
Greater than or equal to 75' (22.9 m) and up to 85' (25.9 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		STEEL MAST ARM POLE AND FOUNDATION TO BE REMOVED			
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH PTZ CAMERA				INTERSECTION ITEM		I		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				<b>RAILROAD SYMBOLS</b>			
PEDESTRIAN PUSHBUTTON DETECTOR				12" (300mm) PEDESTRIAN SIGNAL HEAD INTERNATIONAL SYMBOL, SOLID				RAILROAD CONTROL CABINET			
ACCESSIBLE PEDESTRIAN PUSHBUTTON DETECTOR				PEDESTRIAN SIGNAL HEAD, INTERNATIONAL SYMBOL, WITH COUNTDOWN TIMER				RAILROAD CANTILEVER MAST ARM			
ILLUMINATED SIGN "NO LEFT TURN"				RADIO INTERCONNECT				FLASHING SIGNAL			
ILLUMINATED SIGN "NO RIGHT TURN"				RADIO REPEATER				CROSSING GATE			
DETECTOR LOOP, TYPE I				DENOTES NUMBER OF CONDUCTORS, ELECTRIC CABLE NO. 14, UNLESS NOTED OTHERWISE, ALL DETECTOR LOOP CABLE TO BE SHIELDED				CROSSBUCK			
PREFORMED DETECTOR LOOP				GROUND CABLE IN CONDUIT NO. 6 SOLID COPPER (GREEN)							
MICROWAVE VEHICLE SENSOR											
VIDEO DETECTION CAMERA											
VIDEO DETECTION ZONE											
PAN, TILT, ZOOM CAMERA											
WIRELESS DETECTOR SENSOR											
WIRELESS ACCESS POINT											