

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

F.A.I. ROUTE 90 / 94 (DAN RYAN EXPRESSWAY)
AT 76TH ST., 81ST ST., AND 82ND ST.
SECTION 2011-021-L

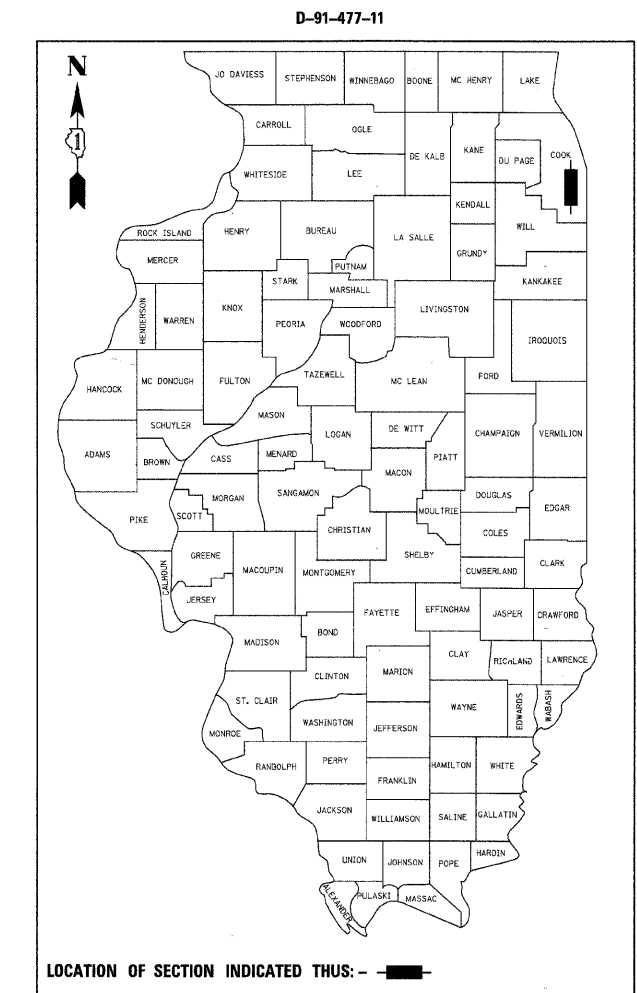
**HIGH MAST LIGHT TOWER FOUNDATION REPAIRS:
POP2, POP4 AND RMN5
COOK COUNTY**
JOB NO. C-91-477-11

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2011-021-L	COOK	19	1
ILLINOIS		CONTRACT NO. 60P16		

* 19 + 12 = 31

FOR INDEX OF SHEETS, SEE SHEET NO. 2
FOR LIST OF STANDARDS, SEE SHEET NO. 2

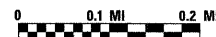
IMPROVEMENTS LOCATED IN
CHICAGO, IL



GRAPHIC SCALES:

COVER SHEET

HORIZONTAL

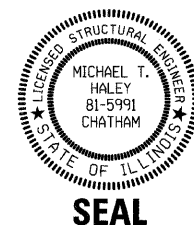


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

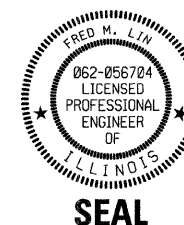
C.U.A.N.
CHICAGO UTILITY ALERT NETWORK
(312) 744-7000

PROJECT ENGINEER: ROBERT T. BORO, PE (847) 705-4237
PROJECT MANAGER: ISSAM RAYYAN, PE (847) 705-4178

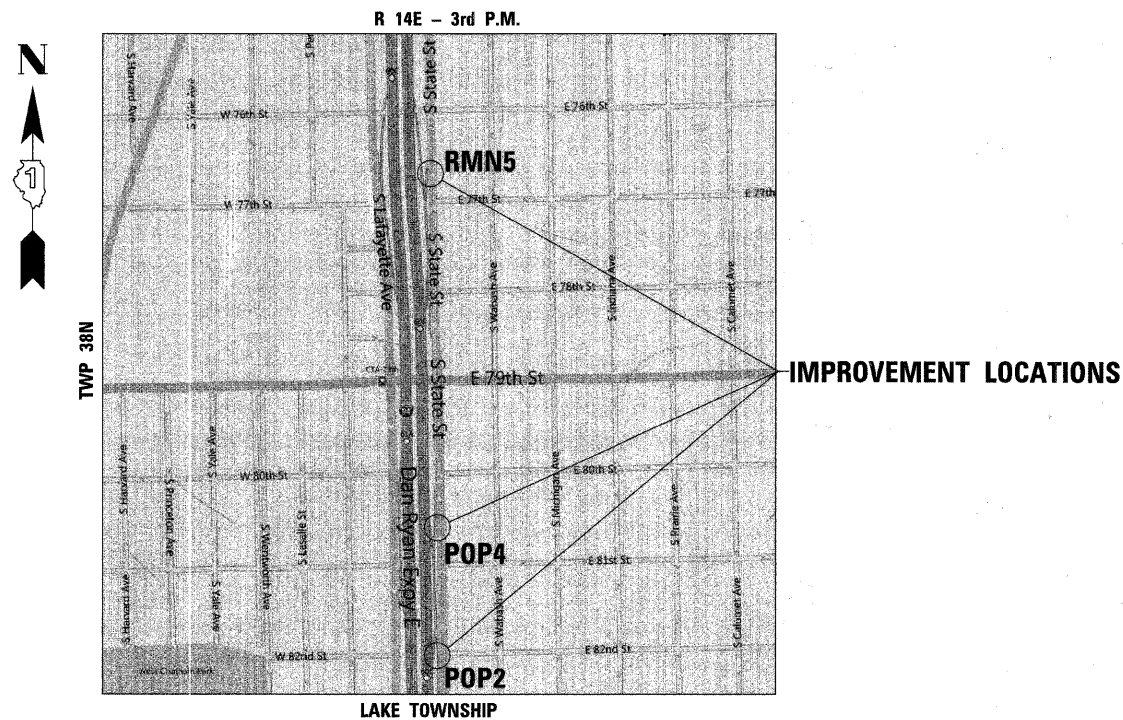
CONTRACT NO.: 60P16



Michael T. Haley 4-12-2011
MICHAEL T. HALEY
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS NO. 81-5991
EXPIRES NOV. 30, 2012



Fred M. Lin 4/12/2011
FRED M. LIN, P.E.
ILLINOIS REGISTERED ENGINEER NO. 062-056704
REGISTRATION EXPIRES NOV. 30, 2011



PREPARED BY:
LIN ENGINEERING, LTD.
CHATHAM, ILLINOIS 62629
(217) 483-4168

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED APRIL 12, 20 11
Diana M. O'Keefe
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
May 13 20 11
Scott E. Stitt, P.E.
acting ENGINEER OF DESIGN AND ENVIRONMENT
May 13 20 11
Christine M. Roodla
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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

INDEX OF SHEETS

- 1 COVER SHEET
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- * 16-17 ELECTRICAL DETAILS
- * 18-19E DISTRICT STANDARDS

* 3A.-3D. MAINTENANCE OF TRAFFIC AND DETOUR PLAN

* 17A-17C. LIGHTING DETAILS

* 19A-19E ADDED

STATE STANDARDS

- 000001-06 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 001001-02 AREA OF REINFORCEMENT BARS
- 001006 DECIMAL OF AN INCH AND OF A FOOT
- 701427 LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPER., FOR SPEEDS ≤ 40 MPH
- 701901-01 TRAFFIC CONTROL DEVICES
- 720001-01 SIGN PANEL MOUNTING DETAILS
- 720011-01 METAL POSTS FOR SIGNS, MARKERS & DELINEATORS
- 728001-01 TELESCOPING STEEL SIGN SUPPORT
- 729001-01 APPLICATIONS OF TYPES A & B METAL POSTS
- 835001 LIGHT TOWER
- 837001 LIGHT TOWER FOUNDATION
- 701601-07
- 704001-06

DISTRICT STANDARDS *(included as plan sheets)*

- TC08 FREEWAY ENTRANCE AND EXIT RAMP CLOSURE DETAILS
- TC22 ARTERIAL ROAD INFORMATION SIGN
- TC10
- TC17
- TC-21
- TC-24

COMMITMENTS

NO COMMITMENTS HAVE BEEN MADE FOR THIS PROJECT.

GENERAL NOTES

1. PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING PLANS ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. THE CONTRACTOR SHALL FIELD VERIFY EXISTING DIMENSIONS AND DETAILS AFFECTING NEW CONSTRUCTION AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN SCOPE OF THE WORK, HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.
2. THE FENCE ON THE RETAINING WALLS SHALL BE CAREFULLY REMOVED TO ALLOW ROOM FOR REPAIRS. THE CONTRACTOR SHALL REINSTALL THE FENCE UPON COMPLETION OF CONSTRUCTION, AND IS RESPONSIBLE FOR THE FENCE DURING CONSTRUCTION. EXISTING HARDWARE MAY BE REUSED WITH THE APPROVAL OF THE ENGINEER. COST IS INCLUDED WITH CONCRETE REMOVAL.
3. WHEN ARTIFICIAL LIGHTING IS USED DURING NIGHT OPERATIONS, THE CONTRACTOR SHALL EXERCISE THE UTMOST PRECAUTIONS IN PREVENTING ADVERSE VISIBILITY TO THE MOTORING PUBLIC AND ADJOINING RESIDENTIAL AREAS.
4. THE CONTRACTOR SHALL CONTACT THE TRAFFIC CONTROL SUPERVISOR AT (847) 705-4470 A MINIMUM OF 72 HOURS PRIOR TO THE PLACEMENT OF ANY TEMPORARY TRAFFIC CONTROL DEVICES.
5. THE CONTRACTOR SHALL CONTACT <<PATRICE HARRIS>>, THE AREA TRAFFIC FIELD TECHNICIAN, AT 708-597-9800 TWO (2) WEEKS PRIOR TO THE PLACEMENT OF PERMANENT PAVEMENT MARKINGS.
6. THE CONTRACTOR SHALL REFER TO THE SPECIAL PROVISIONS FOR MAINTENANCE OF TRAFFIC PLANS. ANY MODIFICATION TO THESE PLANS SHALL BE APPROVED BY THE ENGINEER.
7. THE CONTRACTOR SHALL REQUEST AND GAIN APPROVAL FROM THE ILLINOIS DEPARTMENT OF TRANSPORTATION'S EXPRESSWAY TRAFFIC OPERATIONS ENGINEER (847-705-4151) TWENTY-FOUR (24) HOURS IN ADVANCE OF ALL DAILY LANE, RAMP AND SHOULDER CLOSURES AND SEVENTY-TWO (72) HOURS IN ADVANCE OF ALL PERMANENT AND WEEKEND CLOSURES ON ALL FREEWAYS AND/OR EXPRESSWAYS IN DISTRICT ONE.
8. BEFORE STARTING ANY WORK, THE CONTRACTOR SHALL CALL "C.U.A.N." (CHICAGO UTILITY ALERT NETWORK) AT (312) 744-7000, OR "J.U.L.I.E." (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION) AT (800) 892-0123 FOR FIELD LOCATIONS OF BURIED UTILITIES. 48-HOUR ADVANCED NOTIFICATION IS REQUIRED.

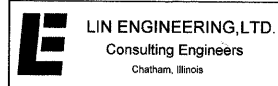
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SUMMARY OF QUANTITIES

URBAN
100% STATE

CODE NUMBER	ITEM	UNIT	TOTAL QUANTITY	0021 STRUCTURE
31101000	SUBBASE GRANULAR MATERIAL, TYPE B	TON	3.5	3.5
44003100	MEDIAN REMOVAL	SQ FT	76	76
50102400	CONCRETE REMOVAL	CU YD	16.9	16.9
50300225	CONCRETE STRUCTURES	CU YD	16.9	16.9
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	1710	1710
60618324	CONCRETE MEDIAN SURFACE, 6 INCH (SPECIAL)	SQ FT	36	36
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	2	2
67100100	MOBILIZATION	L SUM	1	1
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	2	2
X0324534	REMOVE AND REINSTALL LIGHT POLES	L SUM	1	1
X6065740	CONCRETE MEDIAN SURFACE, 5" (MODIFIED)	SQ FT	36	36
X7011015	TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS)	L SUM	1	1
X7015005	CHANGEABLE MESSAGE SIGN	CAL DA	40	40
Z0026346	NIGHTTIME WORK ZONE LIGHTING	L SUM	1	1
Z0030850	TEMPORARY INFORMATION SIGNING	SQ FT	80	80
Z0033028	MAINTENANCE OF LIGHTING SYSTEM	CAL MO	1	1
70301000	WORKZONE PAVEMENT MARKING REMOVAL	SQ FT	899	899
70400100	TEMPORARY CONCRETE BARRIER	FOOT	1762.5	1762.5
* 78000200	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	FOOT	400	400
* 78200530	BARRIER WALL MARKERS, TYPE C	EACH	282	282
78300100	PAVEMENT MARKING REMOVAL	SQ FT	134	134
* 81800300	AERIAL CABLE, 3-1/C NO. 2 WITH MESSENGER WIRE	FOOT	1520	1520
* 83057175	LIGHT POLE, WOOD, 35 FT. CLASS 3 WITH 15 FT. MAST ARM	EACH	6	6
* 84100110	REMOVAL OF TEMPORARY LIGHTING UNIT	EACH	6	6
* 84400205	RELOCATE EXISTING LIGHT TOWER	EACH	3	3
X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1	1
X7030030	WET REFLECTIVE TEMPORARY TAPE TYPE III, 4 INCH	FOOT	2696	2696
Z0030260	IMPACT ATTENUATORS, TEMPORARY (FULLY RE-DIRECTIVE, NARROW), TEST LEVEL 3	EACH	2	2
Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-RE-DIRECTIVE), TEST LEVEL 3	EACH	2	2

*Specialty Items



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DATE - 04/2011

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

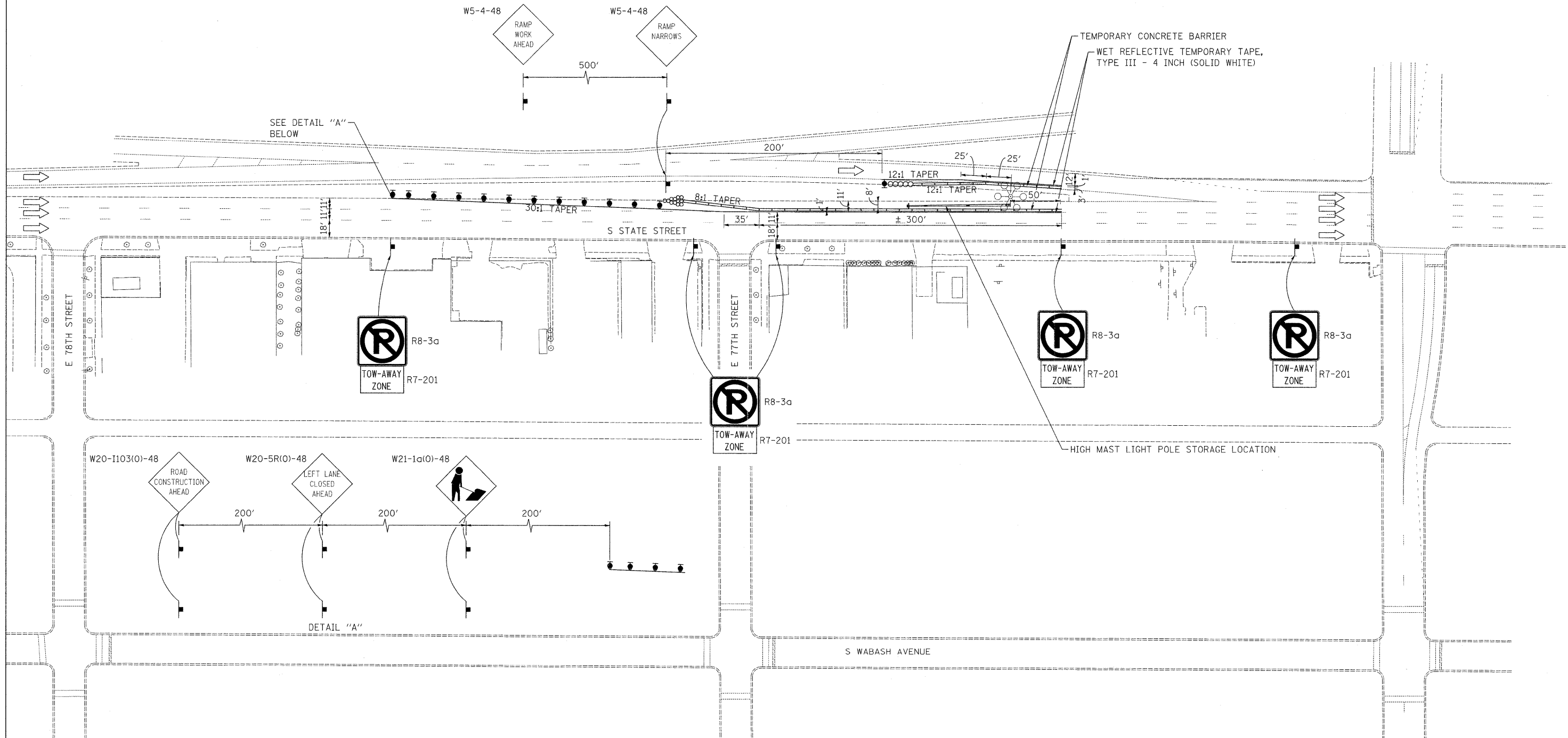
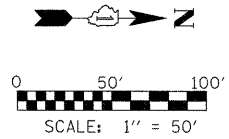
SUMMARY OF QUANTITIES
FAI 9094 HIGH MAST LIGHT TOWER FOUNDATION REPAIRS
SCALE: N/A SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A.I. RTE. 90/94	SECTION 2011-021-L	COUNTY COOK	TOTAL SHEETS 19	SHEET NO. 3
CONTRACT NO. 60P16			ILLINOIS FED. AID PROJECT	

Rev.

LEGEND

- ○ ○ ○ IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3
- ● ● ● IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3
- TEMPORARY CONCRETE BARRIER
- ● ● BARRICADE, DRUM OR DIRECTION INDICATOR BARRICADE
- SIGN
- TEMPORARY WOOD POLE
- ⊕ HIGH MAST LIGHT TOWER
- ⌌ TYPE III BARRICADE



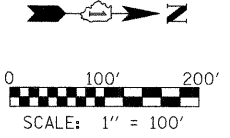
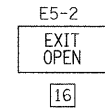
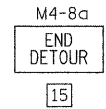
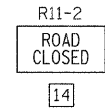
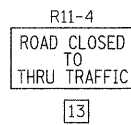
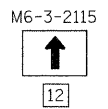
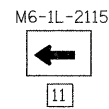
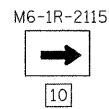
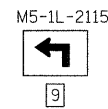
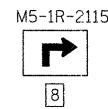
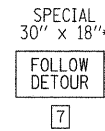
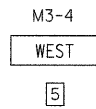
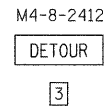
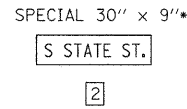
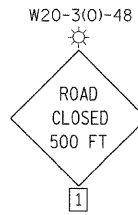
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**MAINTENANCE OF TRAFFIC PLAN
FAI 90/94 HIGH MAST LIGHT TOWER FOUNDATION REPAIRS**

SCALE: 1" = 50' SHEET NO. 2 OF 2 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2011-021-L	COOK	19	3B
CONTRACT NO. 60P16				
ILLINOIS FED. AID PROJECT				



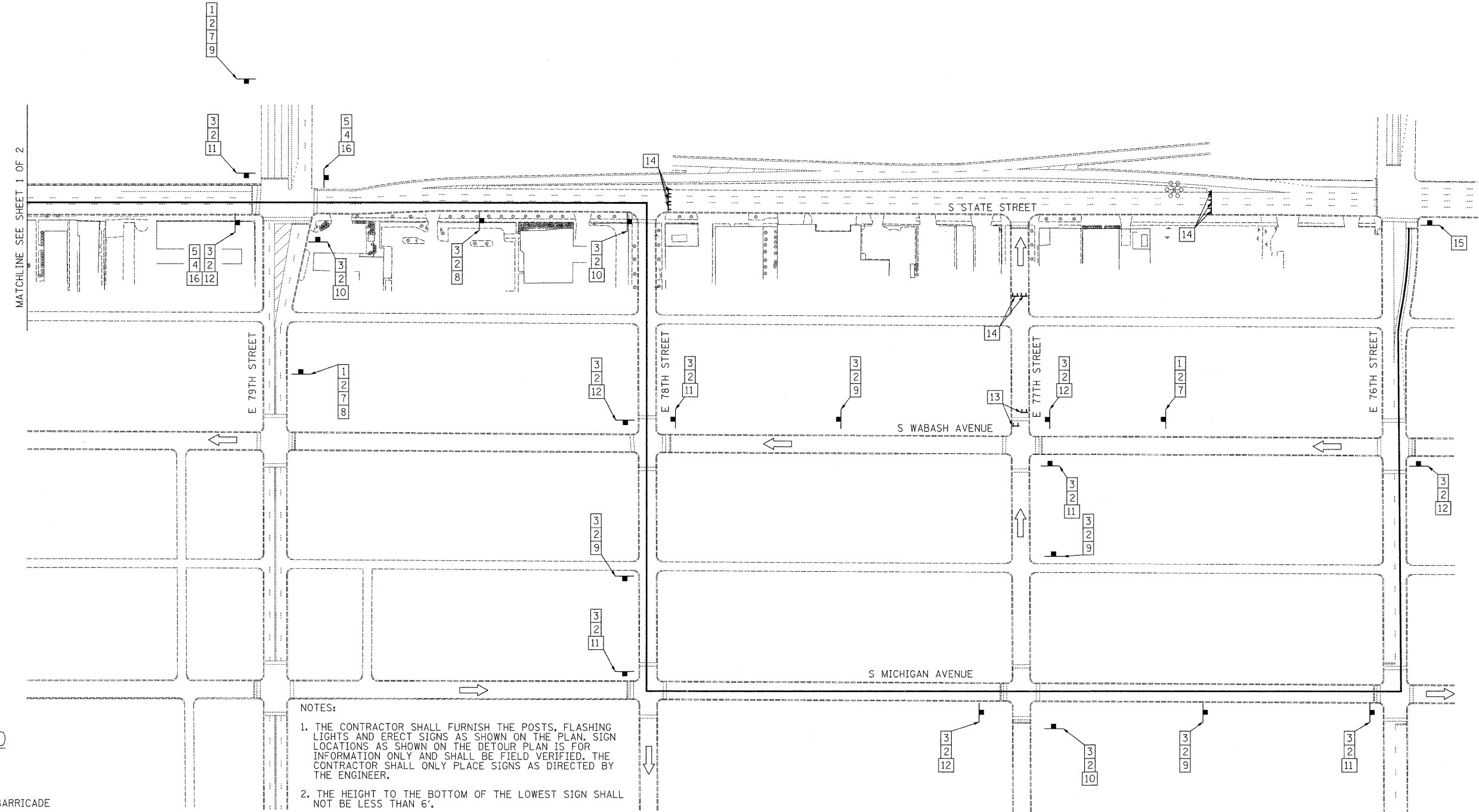
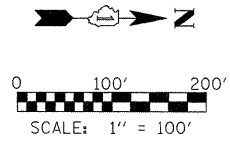
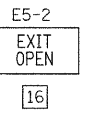
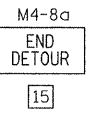
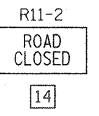
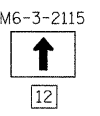
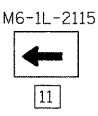
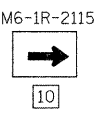
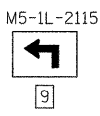
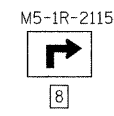
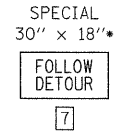
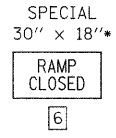
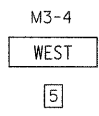
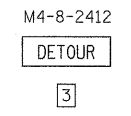
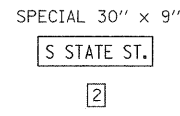
LEGEND

- SIGN
- TYPE III BARRICADE
- DETOUR ROUTE
- HIGH MAST ARM LIGHT POLE LOCATION



- NOTES:**
1. THE CONTRACTOR SHALL FURNISH THE POSTS, FLASHING LIGHTS AND ERECT SIGNS AS SHOWN ON THE PLAN. SIGN LOCATIONS AS SHOWN ON THE DETOUR PLAN IS FOR INFORMATION ONLY AND SHALL BE FIELD VERIFIED. THE CONTRACTOR SHALL ONLY PLACE SIGNS AS DIRECTED BY THE ENGINEER.
 2. THE HEIGHT TO THE BOTTOM OF THE LOWEST SIGN SHALL NOT BE LESS THAN 6'.
 3. ADVANCE WARNING SIGNS SHOULD BE PLACED IN ACCORDANCE WITH DISTRICT ONE STANDARD TC-21 OR AS DIRECTED BY THE ENGINEER.
 4. THE ABOVE NOTED WORK SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LUMP SUM FOR "TRAFFIC CONTROL AND PROTECTION (SPECIAL)".
- *UNLESS OTHERWISE NOTED; ALL SPECIAL SIGNS WILL BE 4" BLACK LETTERS ON AN ORANGE REFLECTIVE BACKGROUND.

LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois	USER NAME = *USER#	DESIGNED - SEW	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETOUR PLAN FAI 9094 HIGH MAST LIGHT TOWER FOUNDATION REPAIRS			F.A.I. RTE. 90/94	SECTION 2011-021-L	COUNTY COOK	TOTAL SHEETS 19	SHEET NO. 3C
	PLOT SCALE = *SCALE#	CHECKED - FML	REVISED -		SCALE: 1" = 100'	SHEET NO. 1 OF 2 SHEETS	STA. TO STA.	CONTRACT NO. 60P16				
	PLOT DATE = *DATE#	DATE - 04/2011	REVISED -		ILLINOIS FED. AID PROJECT							



LEGEND

- SIGN
- TYPE III BARRICADE
- DETOUR ROUTE
- HIGH MAST ARM LIGHT POLE LOCATION

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LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois

USER NAME = #USER#	DESIGNED - SEW	REVISED -
PLOT SCALE = #SCALE#	DRAWN - SEW	REVISED -
PLOT DATE = #DATE#	CHECKED - FML	REVISED -
	DATE - 04/2011	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETOUR PLAN
FAI 9094 HIGH MAST LIGHT TOWER FOUNDATION REPAIRS
SCALE: 1" = 100' SHEET NO. 2 OF 2 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2011-021-L	COOK	19	3D
CONTRACT NO. 60P16			ILLINOIS FED. AID PROJECT	

GENERAL NOTES

REINFORCEMENT BARS

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.

HIGH MAST LIGHT TOWER

1. The light tower shall not be erected until after the concrete has properly cured according to Article 1020.13 of the Standard Specifications.
2. After erection the tower shall be straight and centered on its longitudinal axis, under no-wind conditions, so when examined with a transit from any direction, the deviation from the normal shall not exceed $\frac{1}{8}$ inch in 3 feet within any 5 feet of height, with total deviation not to exceed 3 inches from the vertical axis through the center of the tower base.
3. The gap between the foundation and the base plate shall be enclosed with a stainless steel screen fastened with a stainless steel band. Existing hardware may be reused with approval from the Engineer.
4. Any damage to the protective coating on the pole shall be repaired.
5. Orientation of pole and luminaire shall remain as in current position.

CONCRETE

1. The top of foundation shall be constructed level and all sides chamfered $\frac{3}{4}$ ".
2. See sheets 11 and 12 of 19 for concrete rustication details. Contractor is responsible for matching the proposed concrete surface finishes with existing conditions. Cost included with Concrete Structures.

ANCHOR RODS

1. Anchor rods shall be straight (vertical) and shall be according to AASHTO M 314 or ASTM F1554, Grade 105 and galvanized according to Article 1006.09 of the Standard Specifications.
2. Anchor rods and raceways shall be properly secured in place before the concrete is in place. Misaligned anchor rods shall be cause for rejection and the foundation shall be replaced at the Contractor's expense. No adjustment shall be allowed after the concrete has cured.
3. Anchor rods shall project 9" min. above top of foundation concrete.
4. Anchor rod information shall be submitted for approval by the Engineer.
5. Two anchor rods opposite each other shall have their threads peened after nuts are installed.
6. Existing anchor rods, nuts, and washers shall not be incorporated into new construction.
7. Leveling nuts should be in a horizontal plane and adjusted prior to erecting the pole.
8. Anchor rod nuts for all towers shall be a self-locking type with steel inserts.

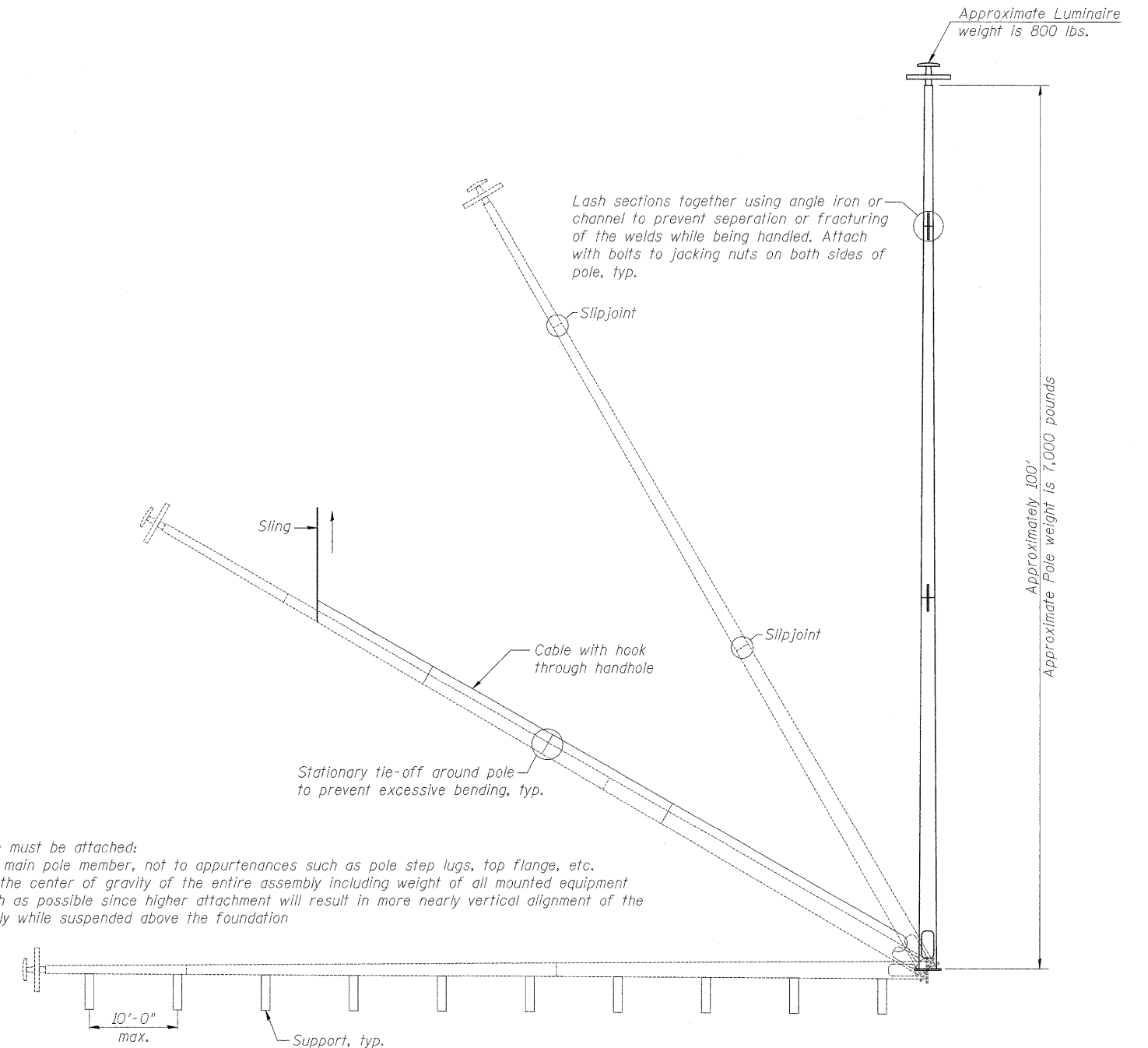
UTILITIES

1. Contractor is responsible for locating and coordinating all utility related activities.

DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)



Lifting crane must be attached:

- a. to the main pole member, not to appurtenances such as pole step lugs, top flange, etc.
- b. above the center of gravity of the entire assembly including weight of all mounted equipment
- c. as high as possible since higher attachment will result in more nearly vertical alignment of the assembly while suspended above the foundation

TOWER TAKE-DOWN & ERECTION GUIDELINES

(The procedure above is intended to be a helpful guide to the Contractor. This information is not comprehensive. Therefore it is essential that the Contractor carefully plan all aspects of the process and not solely rely on these guidelines. Due to the varied methods used by the Contractor in actual field operations, only the Contractor is responsible for structural damage occurring during take-down and erection. See Special Provisions for more details.)

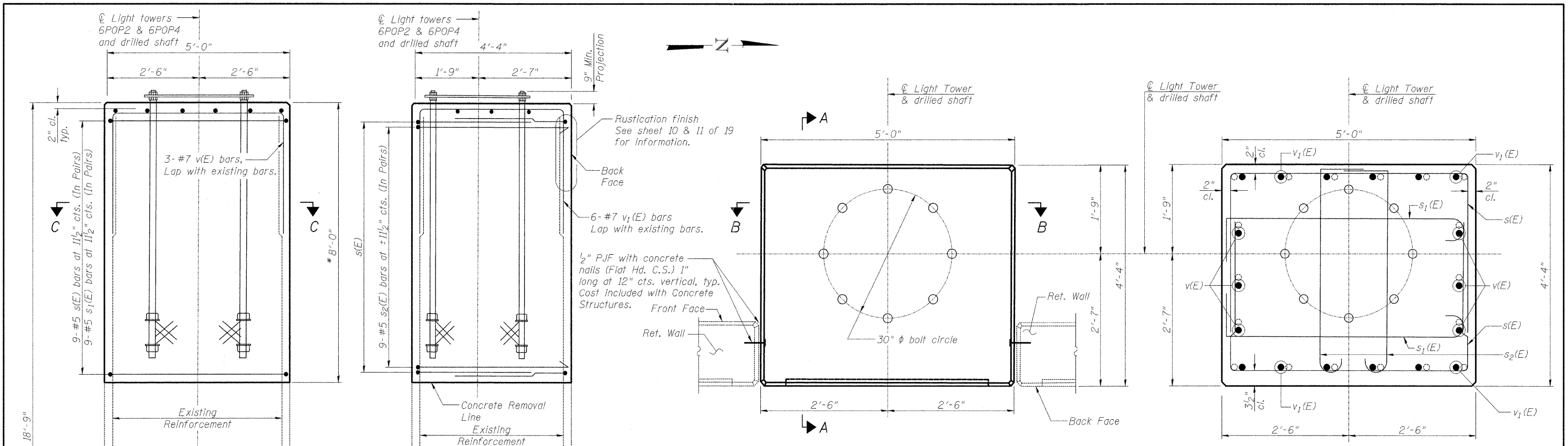


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FILE NAME =	CHECKED - ADB	REVISED -
PLOT SCALE =	DRAWN - AJF	REVISED -
PLOT DATE =	CHECKED - MTH	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL DATA
6POP2, 6POP4, & 5RMNS**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2011-021-L	COOK	19	4
CONTRACT NO. 60P16				
ILLINOIS FED. AID PROJECT				



PLAN - LIGHT TOWERS 6POP2 & 6POP4

SECTION C-C

*The Contractor shall saw cut at 8'-0" from top of existing foundation or level with south knee wall on Expressway side of the wall, whichever is lower in elevation.

Notes:

Contractor shall take special care to ensure that backfill material behind the wall remains in place, or if any is lost during construction the backfill is properly replaced as necessary. Contractor has the option of using CLSM as an alternative backfill material, see Section 593 of the Standard Specifications. Cost included with Concrete Removal.

Any damage to the adjacent retaining wall or knee wall shall be repaired or replaced in kind at no additional cost to the Department.

Conduit is not shown for clarity.

Cost of anchor rod assembly and wires for grounding are included with "Concrete Structures".

Welding to anchor rod assembly is not allowed.

All existing vertical reinforcement bars shall be cleaned and incorporated into the new construction. Epoxy coating shall be reapplied if damaged during removal. Cost included with Concrete Removal.

Space reinforcement bars to miss anchor rods.

Contractor shall minimize median removal required for excavation and removal work. Limits to be approved by the Engineer.

6POP2
BILL OF MATERIAL

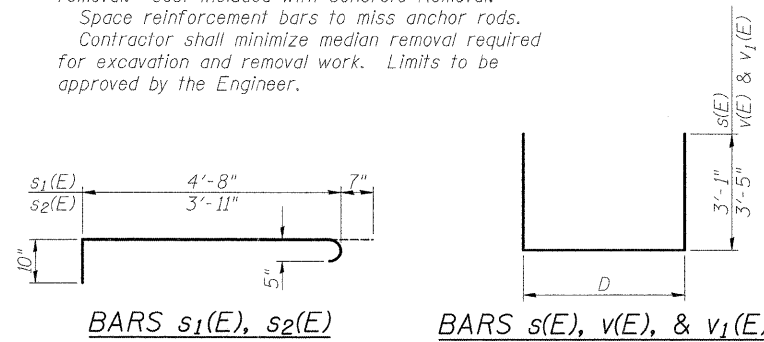
Bar	No.	Size	Length	Shape
s(E)	18	#5	10'-10"	[Symbol]
s1(E)	18	#5	6'-1"	[Symbol]
s2(E)	18	#5	5'-4"	[Symbol]
v(E)	3	#7	11'-5"	[Symbol]
v1(E)	6	#7	10'-9"	[Symbol]
Reinforcement Bars, Epoxy Coated			Pound	620
Concrete Structures			Cu. Yd.	6.4
Concrete Removal			Cu. Yd.	6.4
**	Concrete Median Surface, 5" (Modified)		Sq. Ft.	18
	Median Removal		Sq. Ft.	18
***	Subbase Granular Material, Type B		Ton	1.0

6POP4
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
s(E)	18	#5	10'-10"	[Symbol]
s1(E)	18	#5	6'-1"	[Symbol]
s2(E)	18	#5	5'-4"	[Symbol]
v(E)	3	#7	11'-5"	[Symbol]
v1(E)	6	#7	10'-9"	[Symbol]
Reinforcement Bars, Epoxy Coated			Pound	620
Concrete Structures			Cu. Yd.	6.4
Concrete Removal			Cu. Yd.	6.4
**	Concrete Median Surface, 5" (Modified)		Sq. Ft.	18
	Median Removal		Sq. Ft.	18
***	Subbase Granular Material, Type B		Ton	1.0

**See Special Provisions

***Contractor has the option of using CLSM as an alternative material, see Section 593 of the Standard Specifications.



BARS s1(E), s2(E)

BARS s(E), v(E), & v1(E)

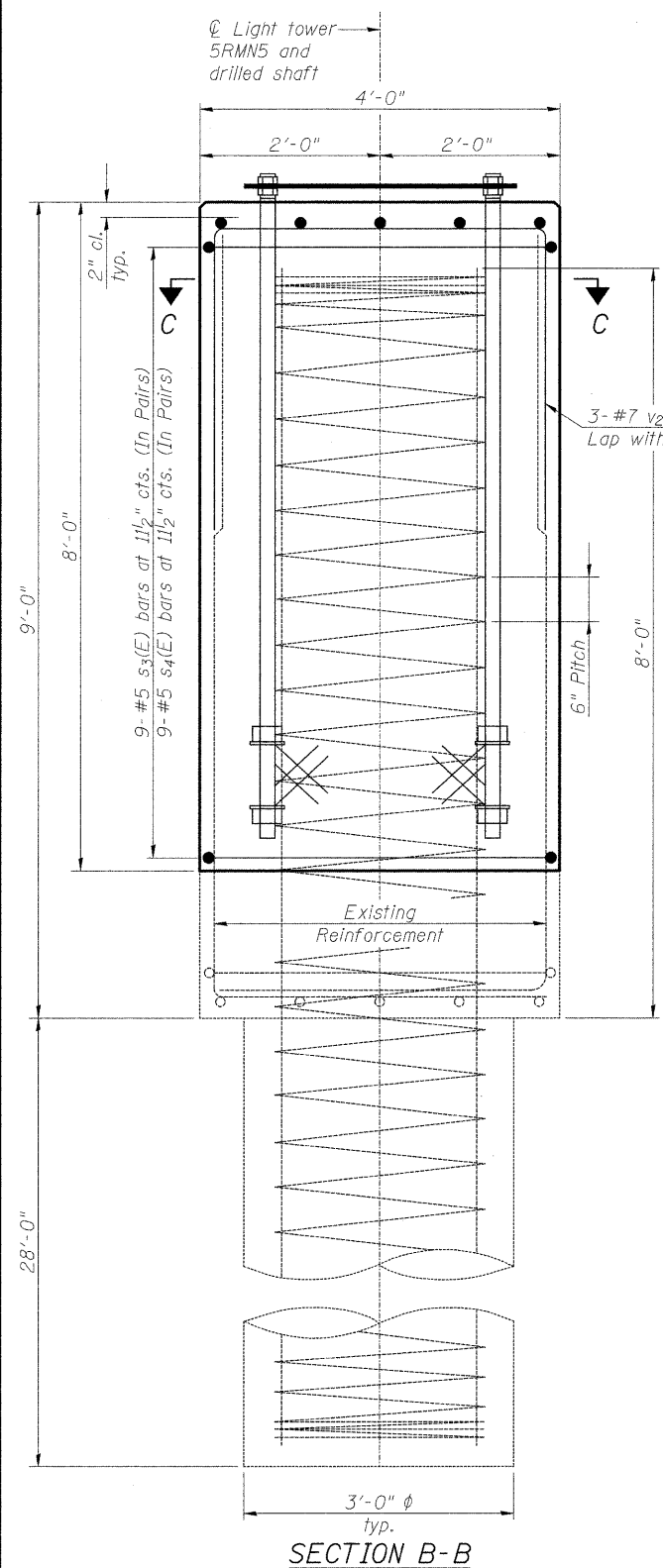
MARK TABLE

Bar	D
s(E)	4'-8"
v(E)	4'-7"
v1(E)	3'-11"

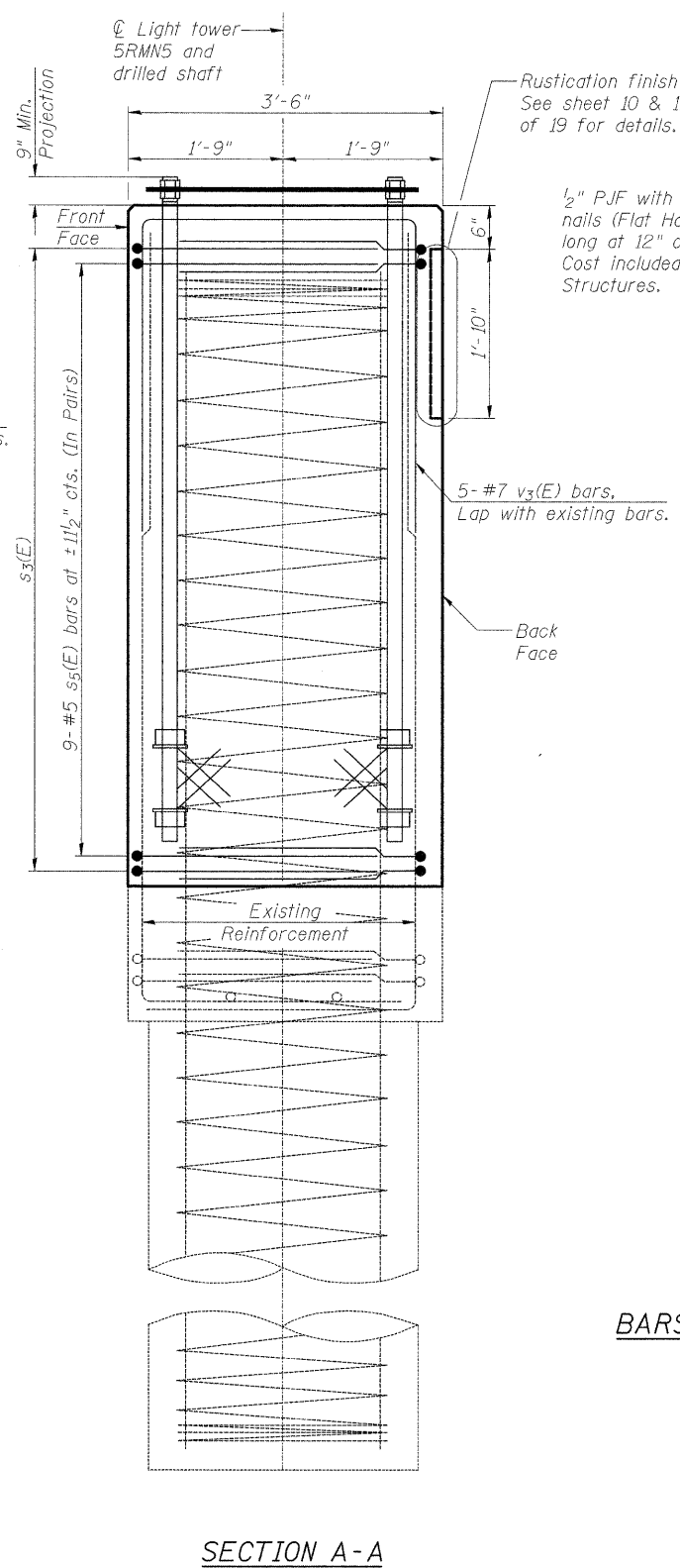
MIN. BAR LAPS

#5 = 2'-0"
#7 = 3'-2"

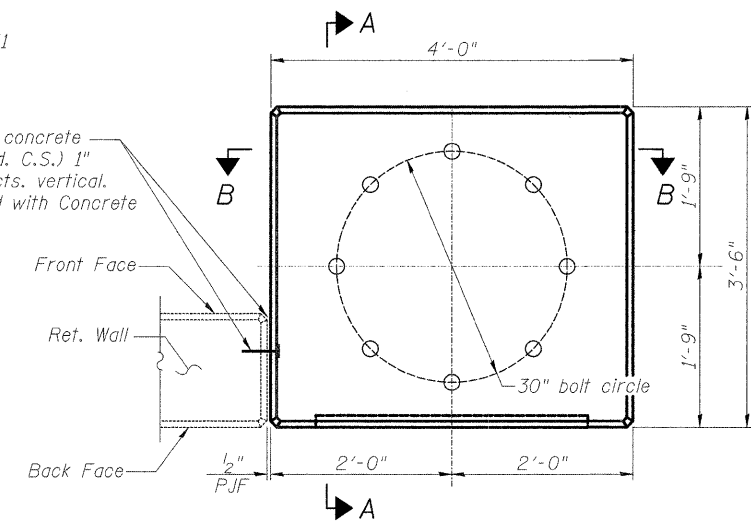
(Sheet 1 of 2)



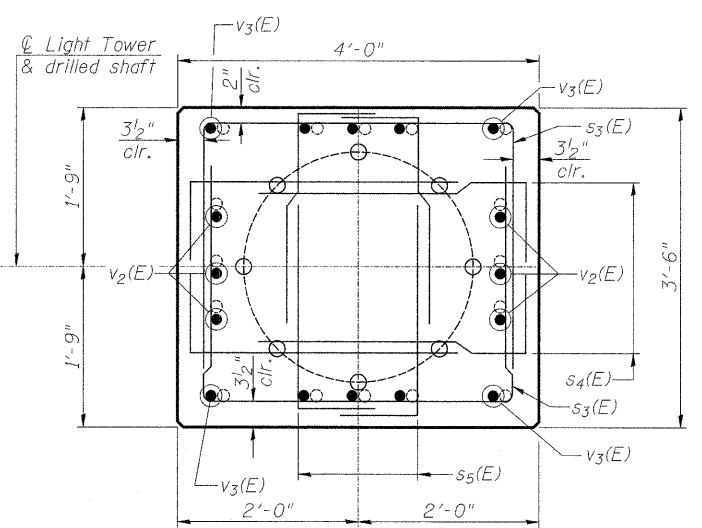
SECTION B-B



SECTION A-A



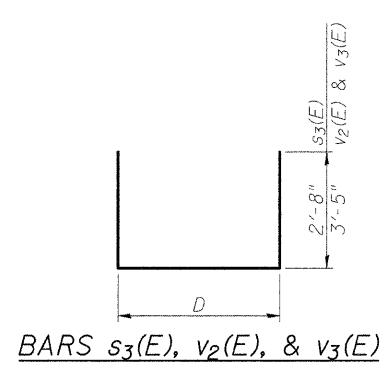
PLAN - LIGHT TOWER 5RMN5



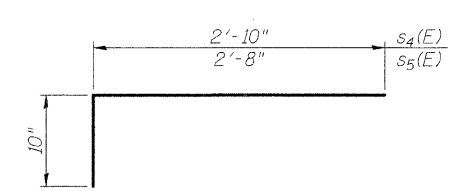
SECTION C-C

MIN. BAR LAPS

#5 = 2'-0"
#7 = 3'-2"



BARS s3(E), v2(E), & v3(E)



BARS s4(E), s5(E)

MARK TABLE

Bar	D
s(E)	3'-5"
v2(E)	3'-4"
v3(E)	3'-0"

5RMN5
BILL OF MATERIAL

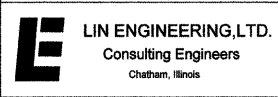
Bar	No.	Size	Length	Shape
s3(E)	18	#5	8'-9"	
s4(E)	18	#5	3'-8"	
s5(E)	18	#5	3'-6"	
v2(E)	3	#7	10'-2"	
v3(E)	5	#7	9'-10"	
Reinforcement Bars, Epoxy Coated			Pound	470
Concrete Structures			Cu. Yd.	4.1
Concrete Removal			Cu. Yd.	4.1
* Concrete Median Surface, 6 inch (Special)			Sq. Ft.	36
** Median Removal			Sq. Ft.	36
** Subbase Granular Material, Type B			Ton	1.5

*See Special Provisions
**Contractor has the option of using CLSM as an alternative material, see Section 593 of the Standard Specifications.

Notes:
Cost of subbase excavation required to remove concrete foundation is included with Concrete Removal. Conduit is not shown for clarity.
Cost of anchor rod assembly and wires for grounding are included with "Concrete Structures". Welding to anchor rod assembly is not allowed.
All existing spiral and vertical bars shall be cleaned and incorporated into the new construction. Epoxy coating shall be reapplied if damaged during removal. Cost included with Concrete Removal.
Space reinforcement bars to miss anchor rods. Contractor shall minimize median removal required for excavation and removal work. Limits to be approved by the Engineer.

If the Contractor elects to remove and replace a section of the existing spiral reinforcement at his cost then:
1. No adjustments to the quantities shall be made and no additional payment shall be made.
2. Spiral bar size is #5, and shall be lapped 1/2 turns minimum with the existing spiral.
3. Provide 1/2 extra turns at top and bottom of new spiral bar.
4. Spiral diameter shall be 2'-2" and shall be placed around the existing #10 vertical bars.
5. All vertical reinforcement is to be cleaned and reincorporated.

(Sheet 2 of 2)

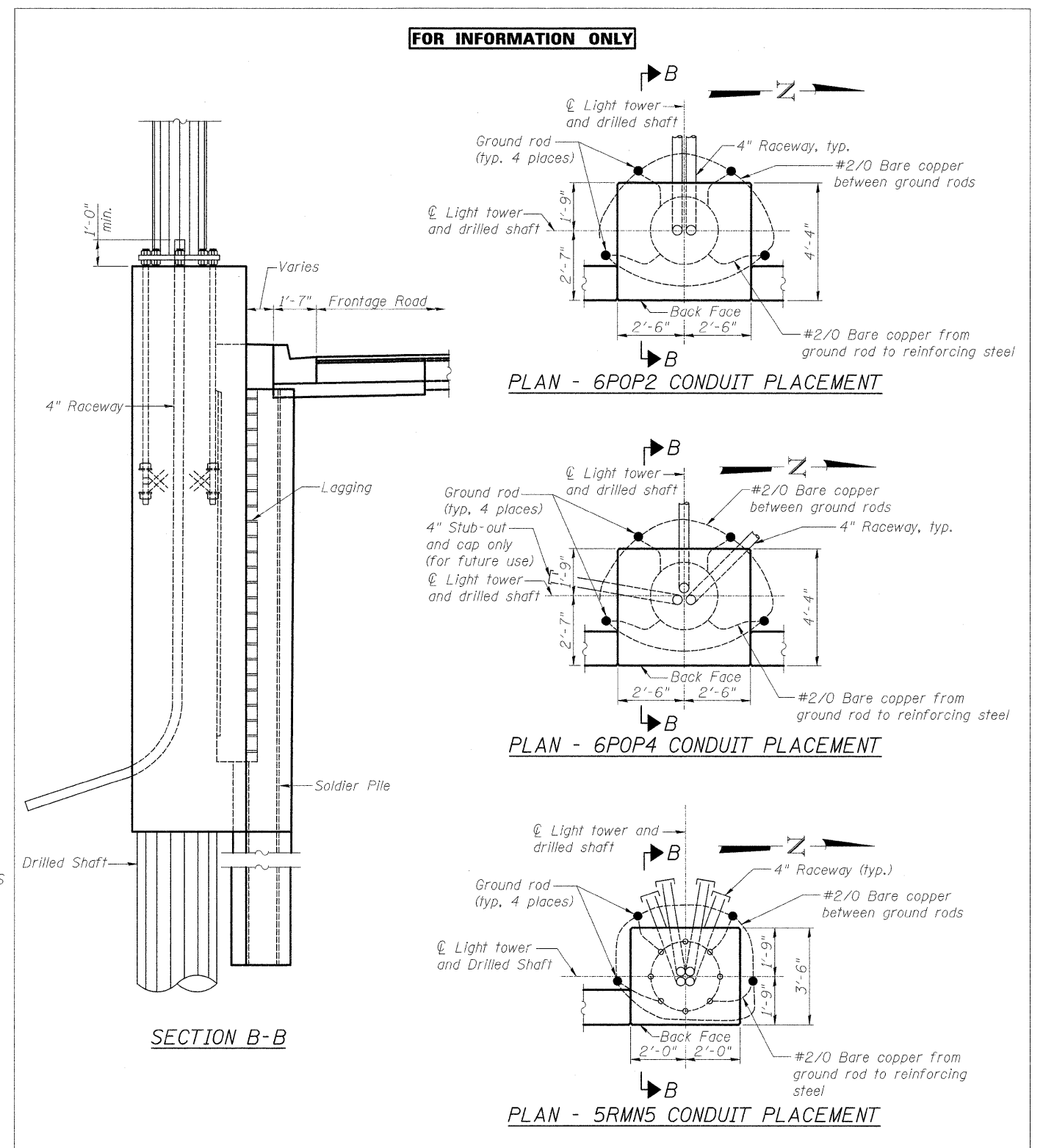
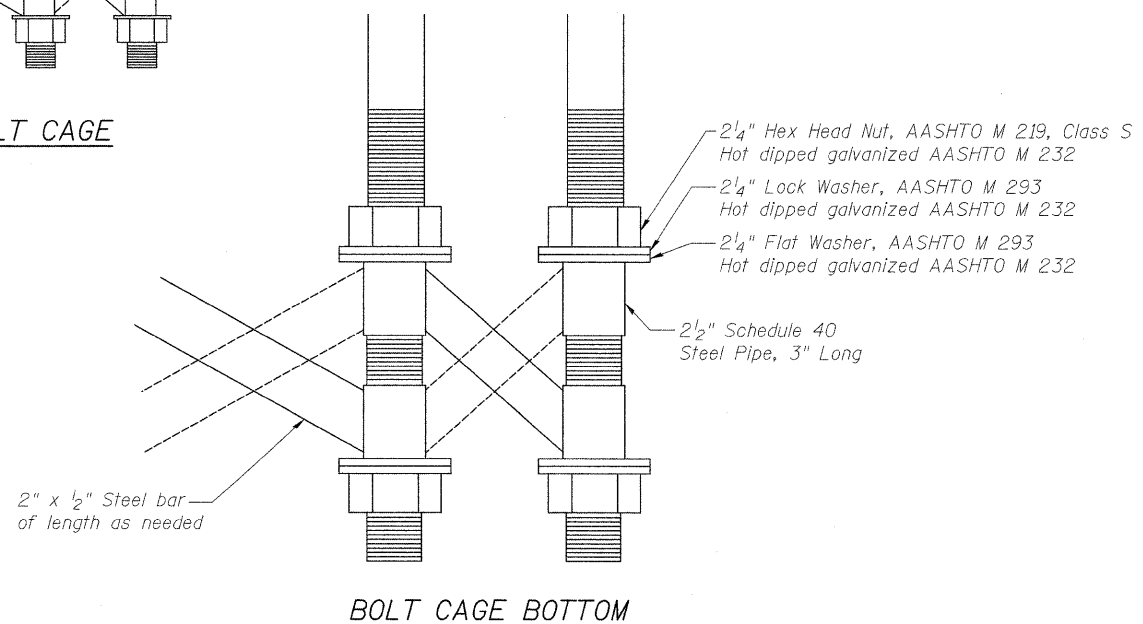
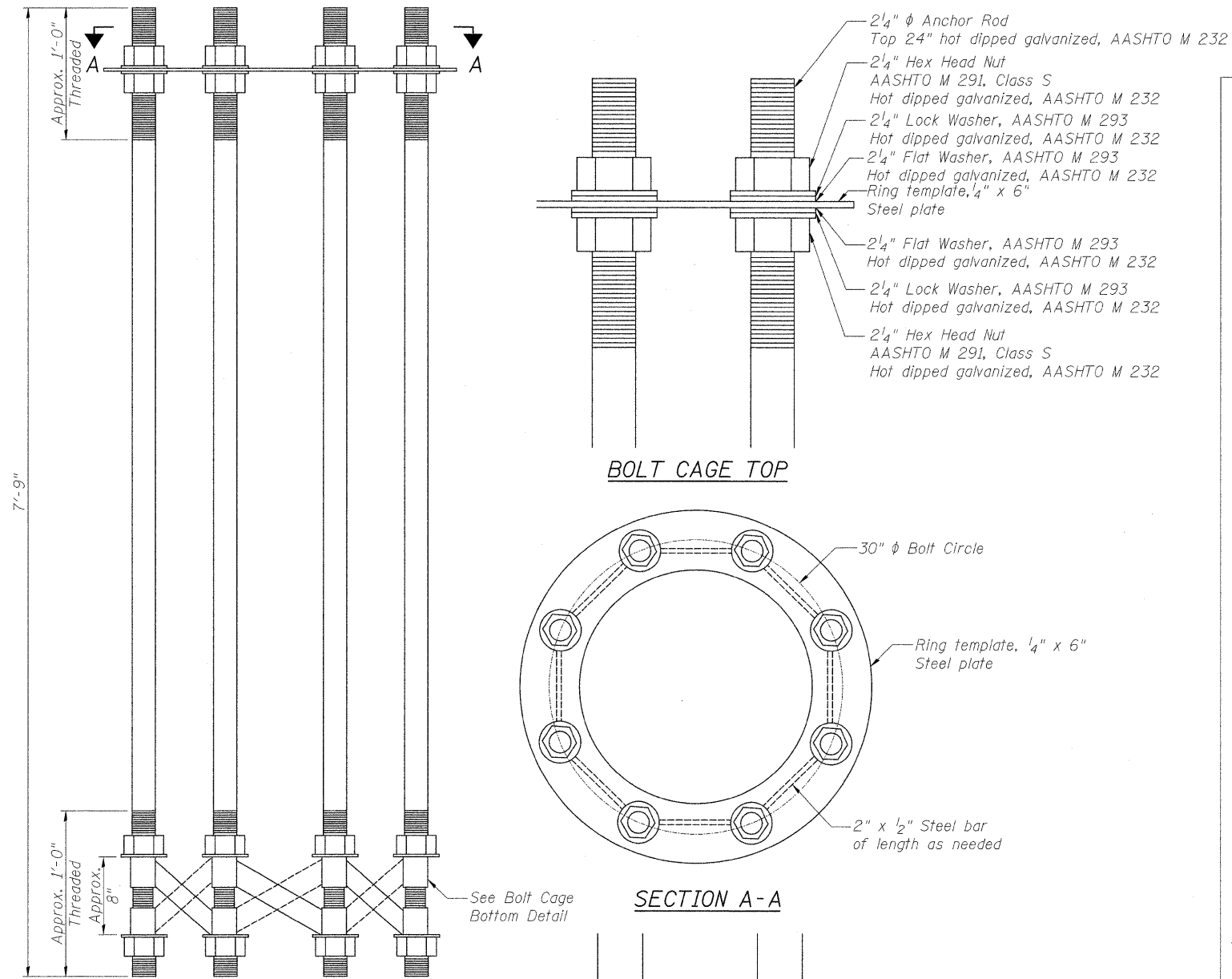


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FILE NAME =	CHECKED - ADB	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

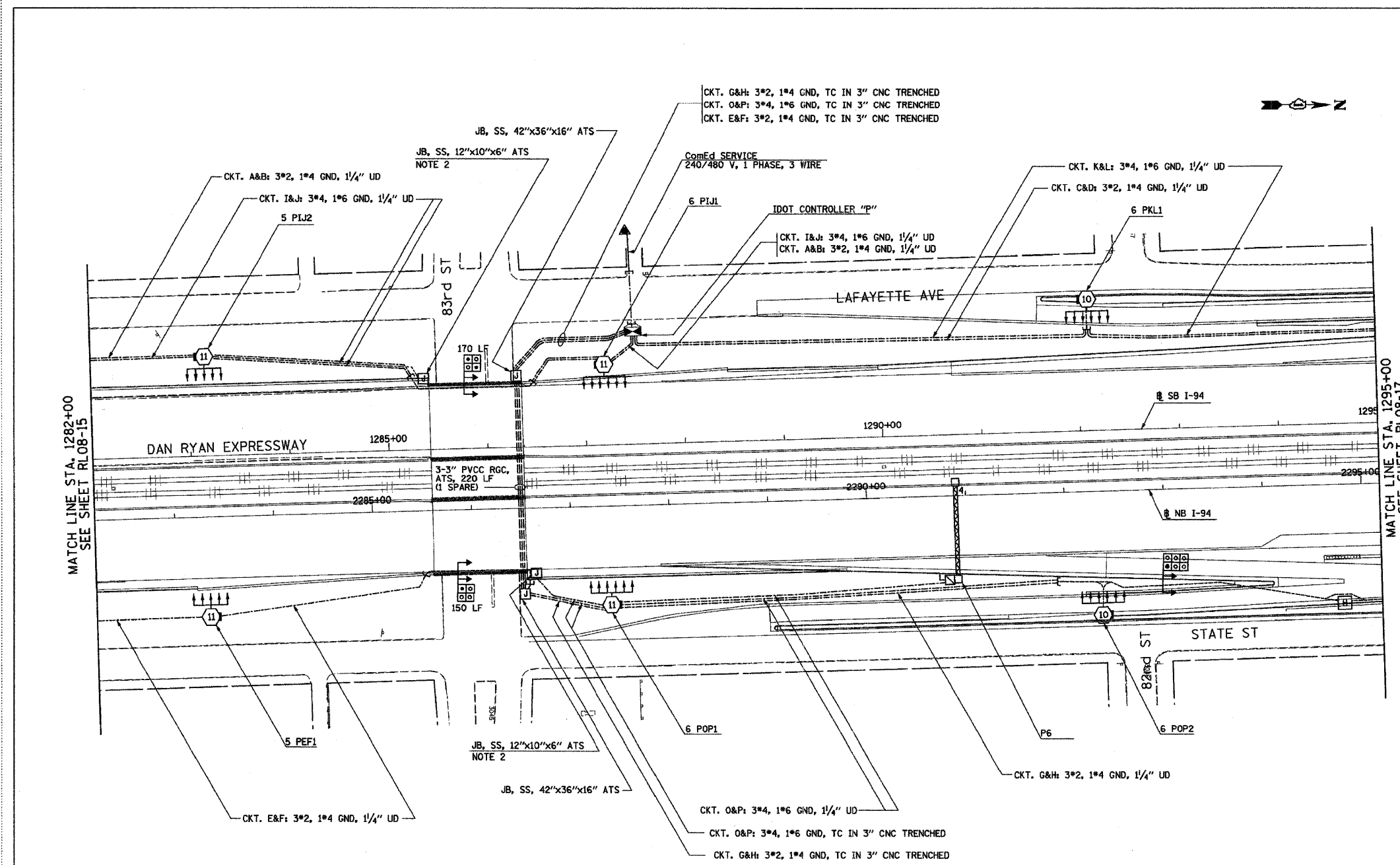
HIGH MAST LIGHT TOWER FOUNDATION REPAIRS
5RMN5

F.A.I. RTE. 90/94	SECTION 2011-021-L	COUNTY COOK	TOTAL SHEETS 19	SHEET NO. 6
CONTRACT NO. 60P16				
ILLINOIS FED. AID PROJECT				



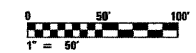
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2003-03II	COOK	976	272
STA. 1282+00		TO STA. 1295+00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
			62583	

- NOTES:
- SEE DRAWINGS ME-01 AND ME-02 FOR ELECTRICAL SYMBOLS AND ABBREVIATIONS.
 - SEE DRAWING UL-16 FOR 83rd STREET UNDERPASS LIGHTING PLANS.



MATCH LINE STA. 1282+00
SEE SHEET RL08-15

MATCH LINE STA. 1295+00
SEE SHEET RL08-17



RL08-16

SINGH 300 N. ADAMS ST.
CHICAGO, IL 60606
TEL: (312) 629-2240
SINGH & ASSOCIATES, INC. FAX: (312) 629-8449
CONSULTING ENGINEERS

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 90/94 (DAN RYAN EXPRESSWAY)
31st STREET TO I-57
ROADWAY LIGHTING PLANS
PROPOSED IMPROVEMENTS 2008
SCALE: 1"=50'
DATE: OCTOBER 29, 2004
DRAWN BY: VG
CHECKED BY: TM

FOR INFORMATION ONLY

(Sheet 1 of 3)

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**ROADWAY LIGHTING LOCATION
6POP2**



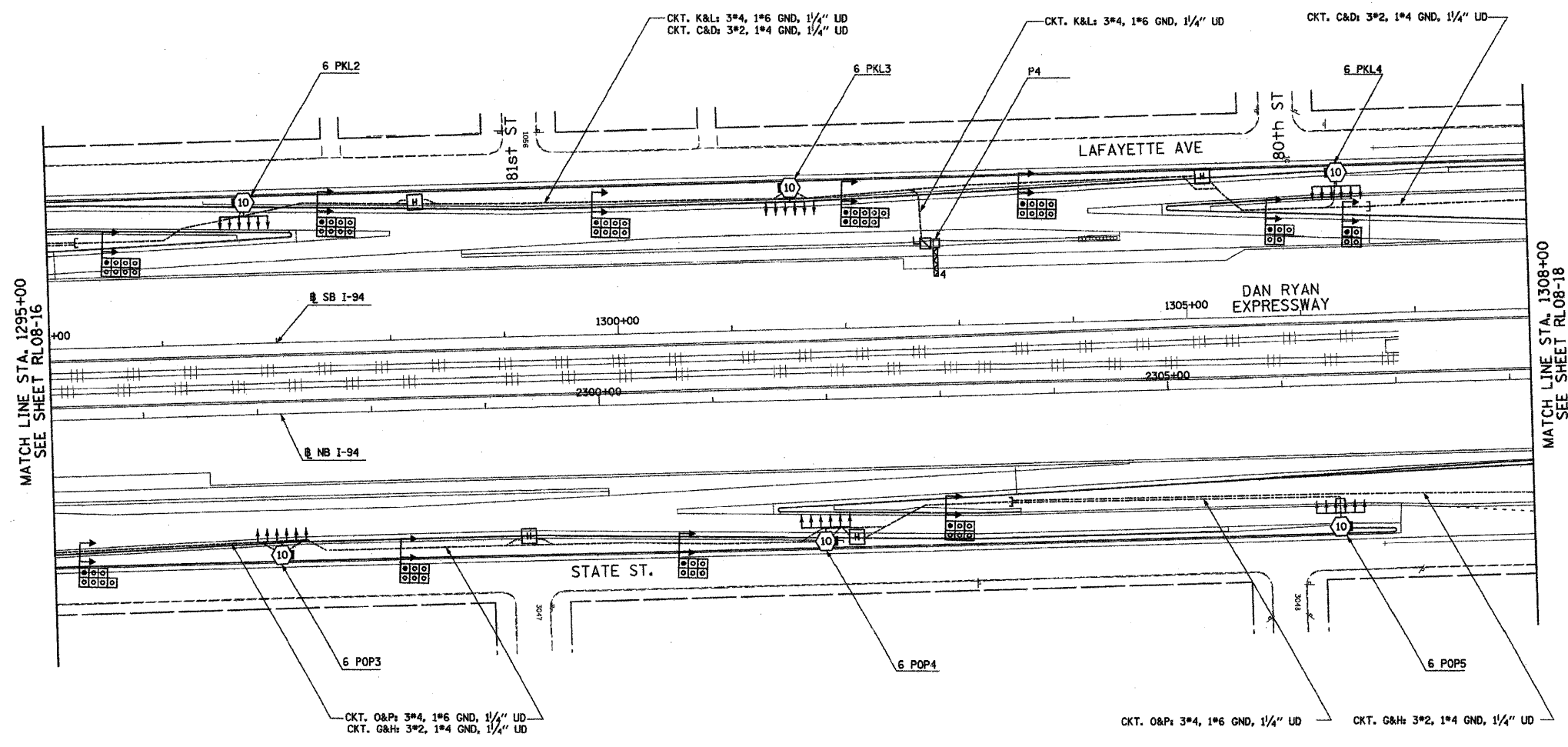
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2011-021-L	COOK	19	8
				CONTRACT NO. 60P16
ILLINOIS FED. AID PROJECT				

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2003-0311	COOK	976	273
STA. 1295+00		TO STA. 1308+00		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

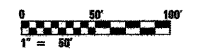
62583

NOTES:
1. SEE DRAWINGS ME-01 AND ME-02 FOR ELECTRICAL SYMBOLS AND ABBREVIATIONS.



MATCH LINE STA. 1295+00
SEE SHEET RL08-16

MATCH LINE STA. 1308+00
SEE SHEET RL08-18



RL08-17

SINGH 300 W. ADAMS ST.
CHICAGO, IL 60606
SINGH & ASSOCIATES, INC. TEL: (312) 629-0240
CONSULTING ENGINEERS FAX: (312) 629-8449

REVISIONS	NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 90/94 (DAN RYAN EXPRESSWAY)
31st STREET TO I-57
ROADWAY LIGHTING PLANS
PROPOSED IMPROVEMENTS 2008
SCALE: 1"=50'
DATE: OCTOBER 29, 2004
DRAWN BY: VG
CHECKED BY: TM

FOR INFORMATION ONLY

(Sheet 2 of 3)



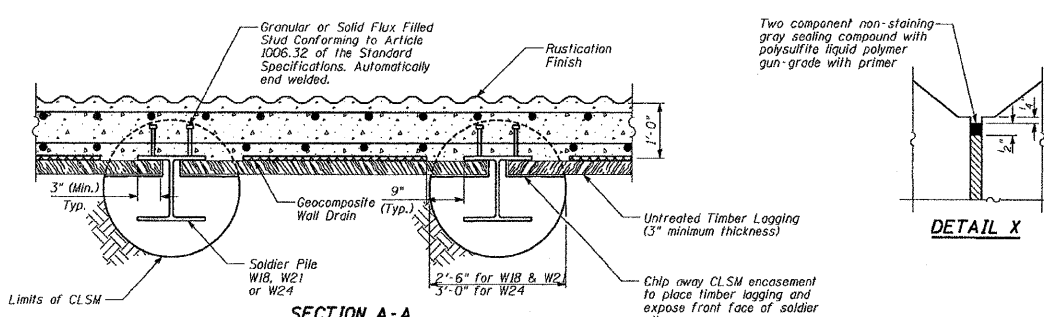
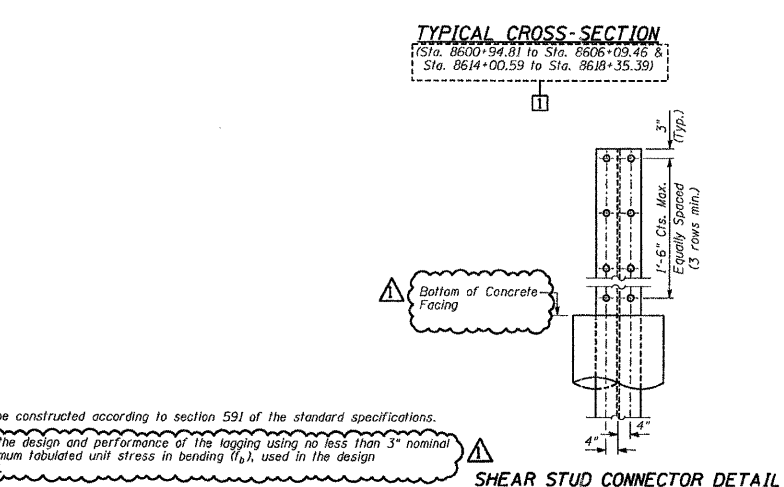
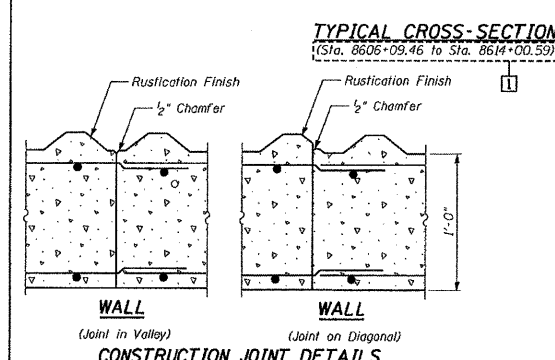
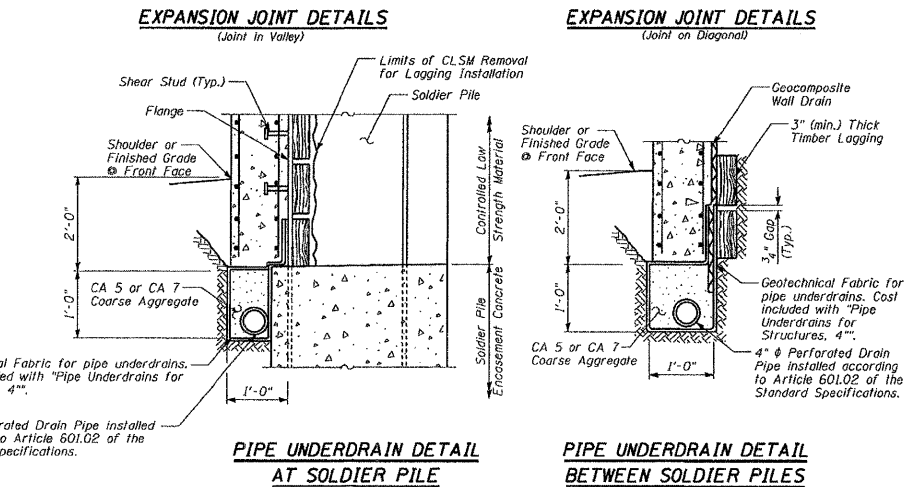
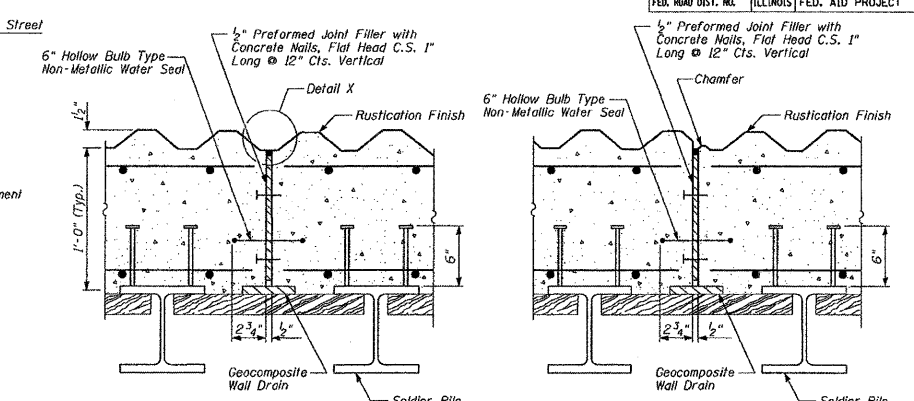
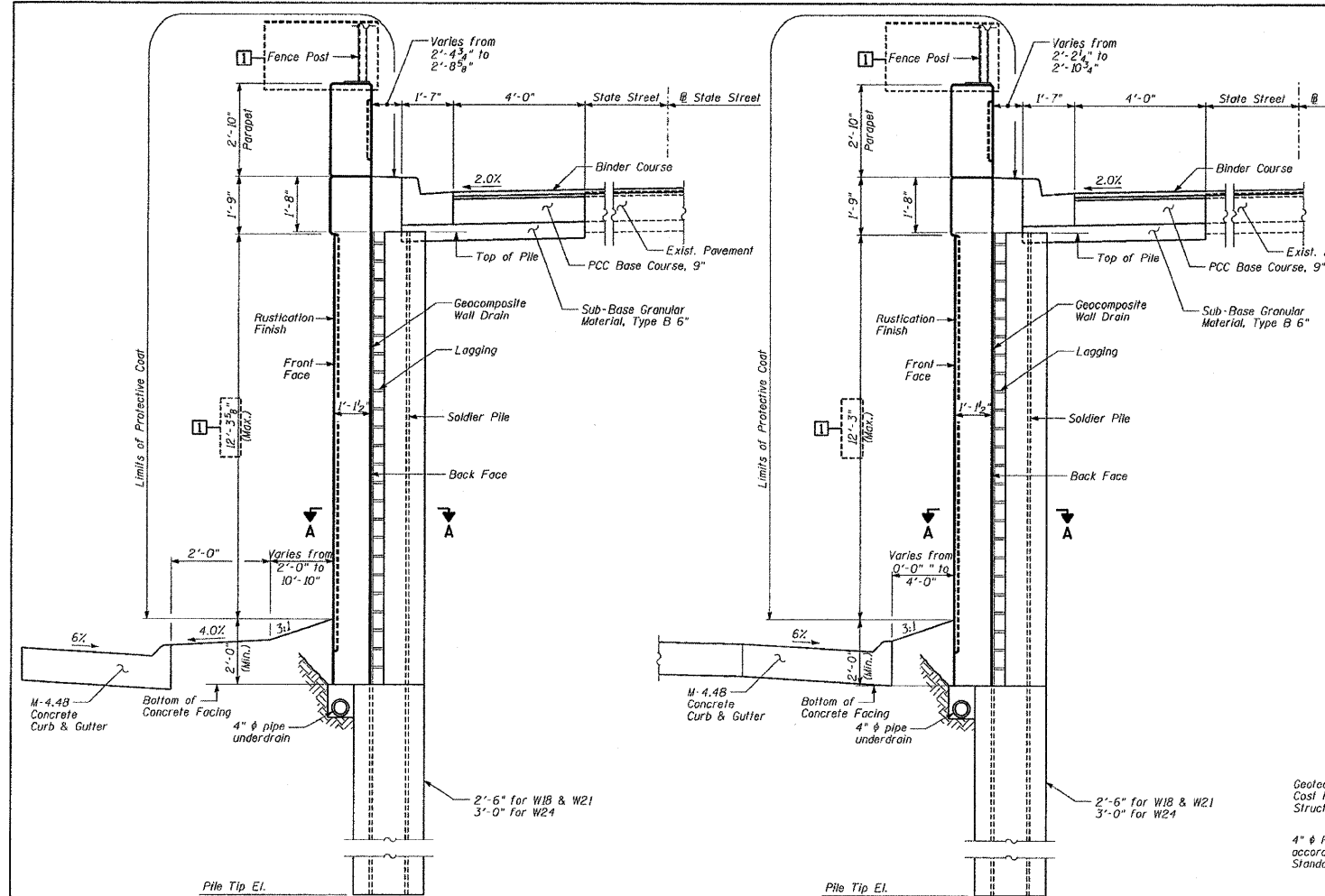
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**ROADWAY LIGHTING LOCATION
6POP4**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2011-021-L	COOK	19	9
CONTRACT NO. 60P16				ILLINOIS FED. AID PROJECT

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(1717 & 1818) K	COOK	432	243
STA. 1288+76.55		TO STA. 1312+13.74		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



TYLIN INTERNATIONAL

- NOTES:**
- The geocomposite wall drain shall be constructed according to section 591 of the standard specifications.
 - The Contractor is responsible for the design and performance of the lagging using no less than 3" nominal rough-sawn thickness and the minimum tabulated unit stress in bending (f_b), used in the design of timber lagging shall be 1000 psi.
 - Stud shear connectors shall be 1/2" x 6" granular or solid flux filled headed studs, automatically end welded to the front flange of the soldier piles.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Stud Shear Connectors	EACH	4,676
Untreated Timber Lagging	SO FT	19,078
Geocomposite Wall Drain	SO YD	2,120
Pipe Underdrains for Structures, 4"	FOOT	1,740

REVISIONS

NAME	DATE

CROSS SECTIONS-MI 03/08/04
NOTE 2 & CALLOUT-MI 12/19/03

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.I. 94 (DAN RYAN EXPRESSWAY)
SECTION (1717 & 1818) K COOK COUNTY
RETAINING WALL ALONG STATE STREET
WALL CROSS SECTIONS & DETAILS

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SCALE: N.T.S. DRAWN BY: DJR
DATE: OCT 24, 2003 CHECKED BY: TD

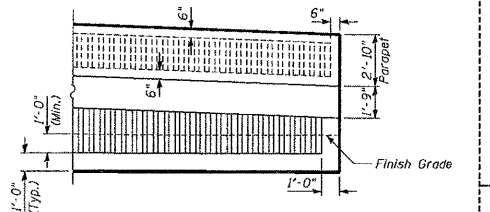
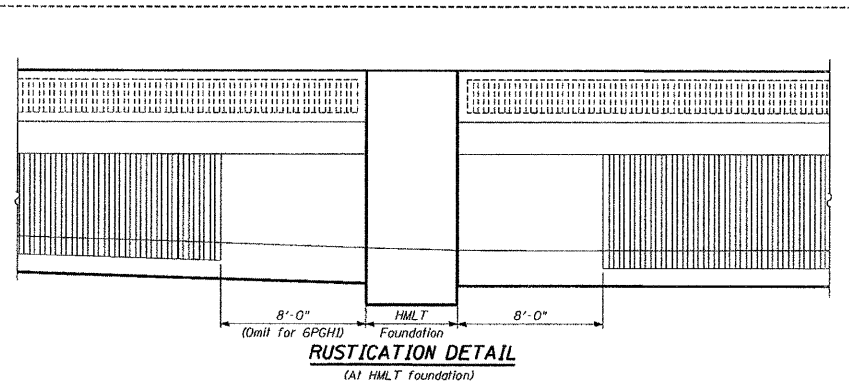
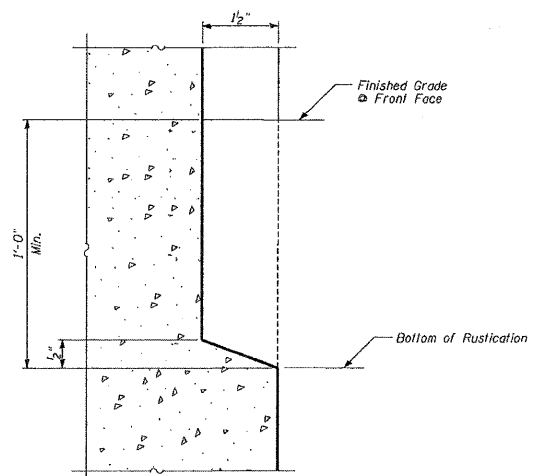
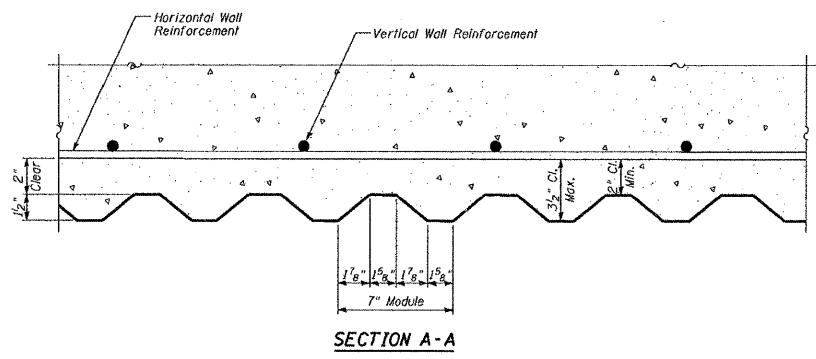
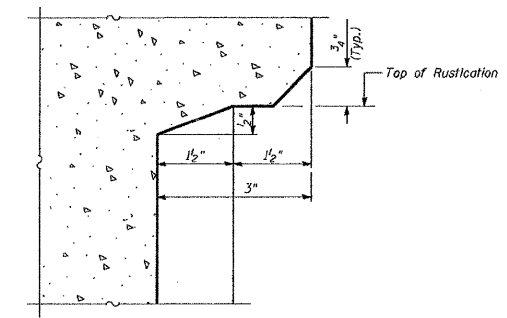
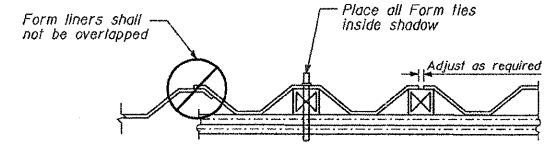
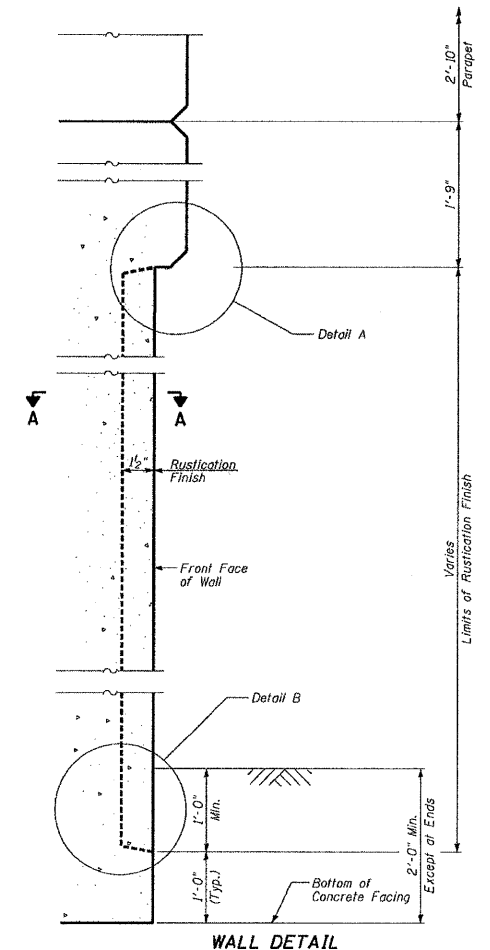
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FOR INFORMATION ONLY

(Sheet 1 of 2)

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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(1717 & 1818) K	COOK	432	244
STA. 1288+76.55 TO STA. 1312+13.74				
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



BILL OF MATERIAL

ITEM	UNIT	TOTAL
Rustication Finish	SO FT	16,551

- NOTES**
- See sheet 18 of 36 for expansion and construction joint details.
 - For details of rustication at High Mast Tower Protection, see sheets 13A thru 13C of 36.

REVISIONS

NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. 94 (DAN RYAN EXPRESSWAY)
 SECTION (1717 & 1818) K COOK COUNTY
 NORTHBOUND ENTRANCE RAMP RETAINING WALL
 RUSTICATION DETAILS
 S.N. 016-W937
 SCALE: N.T.S.
 DATE: OCT 24, 2003

DESIGNED BY: MI
 DRAWN BY: DJR
 CHECKED BY: TD

TYLIN INTERNATIONAL

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FOR INFORMATION ONLY

(Sheet 2 of 2)



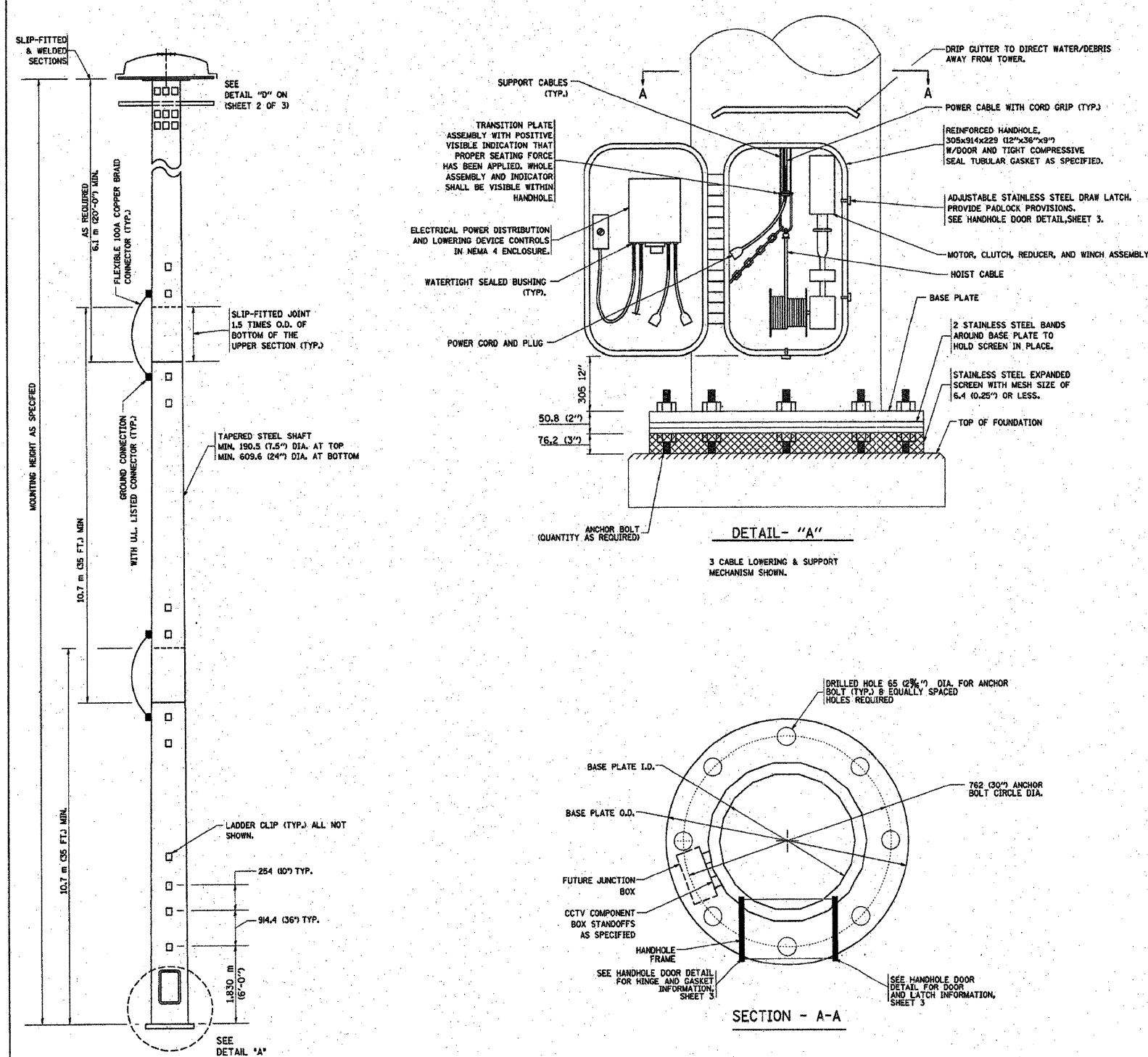
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

CONCRETE RUSTICATION DETAILS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2011-021-L	COOK	19	12
CONTRACT NO. 60P16				
ILLINOIS FED. AID PROJECT				

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2011-021-L	COOK	19	13
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
		62583		



- NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE SHOWN.
 2. THE DESIGN SHALL BE BASED UPON AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" CURRENT AT THE TIME THE PROJECT IS ADVERTISED AND A TOTAL COMBINED LUMINAIRE WEIGHT OF 326 KG (720 LBS.) AND HAVING A TOTAL PROJECTED AREA OF 7.3 SQ M (24 SQ. FT.).
 3. ALL TOWER SHAFT COMPONENTS, INCLUDING, BUT NOT LIMITED TO THE SHAFT SECTIONS, BASE PLATE, LADDER CLIPS, HANDHOLE DOOR, HANDHOLE REINFORCING, RAIN CUTTER, AND BASE PLATE, SHALL BE FABRICATED FROM HIGH-STRENGTH, LOW ALLOY, STEEL WITH A MINIMUM YIELD STRENGTH OF 345 K PA (50,000 PSI) ACCORDING TO AASHTO M 223 (ASTM A 572 GR50).
 4. THE ELECTRIC MOTOR, MOTOR GEAR REDUCER, WINCH DRUM ASSEMBLY AND AUTOMATIC SHUTOFF SWITCH OF THE LOWERING DEVICE SHALL BE ACCESSIBLE FROM THE FRONT OF THE TOWER FOR EASY REMOVAL AND MAINTENANCE. ALL COMPONENTS SHALL BE REMOVABLE THROUGH THE HANDHOLE.
 5. THE LIGHT TOWER SHAFT SHALL HAVE LADDER CLIPS. CLIPS SHALL BEGIN 1.8 M (6 FT.) ABOVE THE BASE PLATE WITH ALTERNATE 900 (36 INCH) AND 250 (10 INCH) SPACING THEREAFTER, FOR THE ENTIRE LENGTH. THE TOP 3 M (10 FT.) OF THE POLE SHAFT SHALL HAVE 3 SETS OF CLIPS. EACH SET OF CLIPS SHALL BE 120 DEGREES APART. CLIPS SHALL BE 6 X 50 (0.25 X 2 INCHES) WELDED TO THE SHAFT TO PRODUCE A SLOT 15.9 (0.625 INCHES) DEEP AND 41.3 (1.625 INCHES) LONG. THE TOP INSIDE EDGE SHALL BE CHAMFERED.
 6. A COPPER BONDING JUMPER SHALL BOND SLIP-FIT POLE SECTIONS TOGETHER WITH A FLAT COPPER MESH AND STAINLESS STEEL GROUND LUGS.
 7. ALL TOWER SHAFT HARDWARE, SUCH AS GROUND LUGS, JUNCTION BOXES, HARDWARE FOR THE HANDHOLE DOOR, INCLUDING THE HANDLE/LATCH MECHANISM, HINGE AND DOOR STOP, SHALL BE STAINLESS STEEL. ALL CONDUIT AND CONDUIT FITTINGS SHALL BE PVC COATED GALVANIZED STEEL.
 8. THE ENTIRE TOWER INCLUDING THE SHAFT, HANDHOLE, HANDHOLE DOOR, BASE PLATE AND ALL OTHER ELEMENTS WELDED TO THE SHAFT SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111 (ASTM A 123) AND THEN PAINTED AS SPECIFIED. THE LUMINAIRE RING SHALL BE PRIMED AND PAINTED AS SPECIFIED.
 9. THE FINISH COAT SHALL BE FEDERAL STANDARD COLOR NUMBER 15307 (HAWFORD GREY). COLOR SAMPLE TO BE SUBMITTED FOR APPROVAL.
 10. ALL MULTI-CONDUCTOR CABLES SHALL BE FITTED WITH A HEAT-SHRINK MULTI-LEG BOOT. THE BOOT SHALL MEET MILITARY SPECIFICATION MIL-I-81765/1.
 11. PRIOR TO DELIVERY, THE TOWER AND ALL ITS COMPONENTS SHALL BE INSPECTED BY THE MANUFACTURER'S REPRESENTATIVE IN THE PRESENCE OF THE ENGINEER. ANY PARTS FOUND TO BE DEFECTIVE SHALL BE REPAIRED OR REPLACED.
 12. THE LIGHT TOWER SHALL BE STRAIGHT AND CENTERED ON ITS LONGITUDINAL AXIS, UNDER NO-WIND CONDITIONS, SO WHEN EXAMINED WITH A TRANSIT FROM ANY DIRECTION, THE DEVIATION FROM THE NORMAL SHALL NOT EXCEED 2 MM (IN 1 M (1/2 IN. IN 3 FT)) WITHIN ANY 15 M (5 FT) OF HEIGHT, WITH TOTAL DEVIATION NOT TO EXCEED 75 (3 IN) FROM THE VERTICAL AXIS THROUGH THE CENTER OF THE POLE BASE.
 13. PVC CONDUIT WILL NOT BE ALLOWED.
 14. THE NUMBER OF COUNTER WEIGHTS TO BE SUPPLIED AS A PART OF THE LIGHT TOWER PAY ITEM IS

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION	
NAME	DATE		
		HIGH MAST LIGHT TOWER	
		27m to 36m (90FT TO 120FT)	
		SHEET 1 OF 3	
		SCALE: VERT. NONE	DRAWN BY
		HORIZ. NONE	CHECKED BY
		DATE	

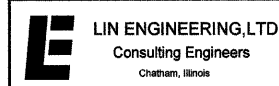
FOR INFORMATION ONLY

(Sheet 1 of 3)

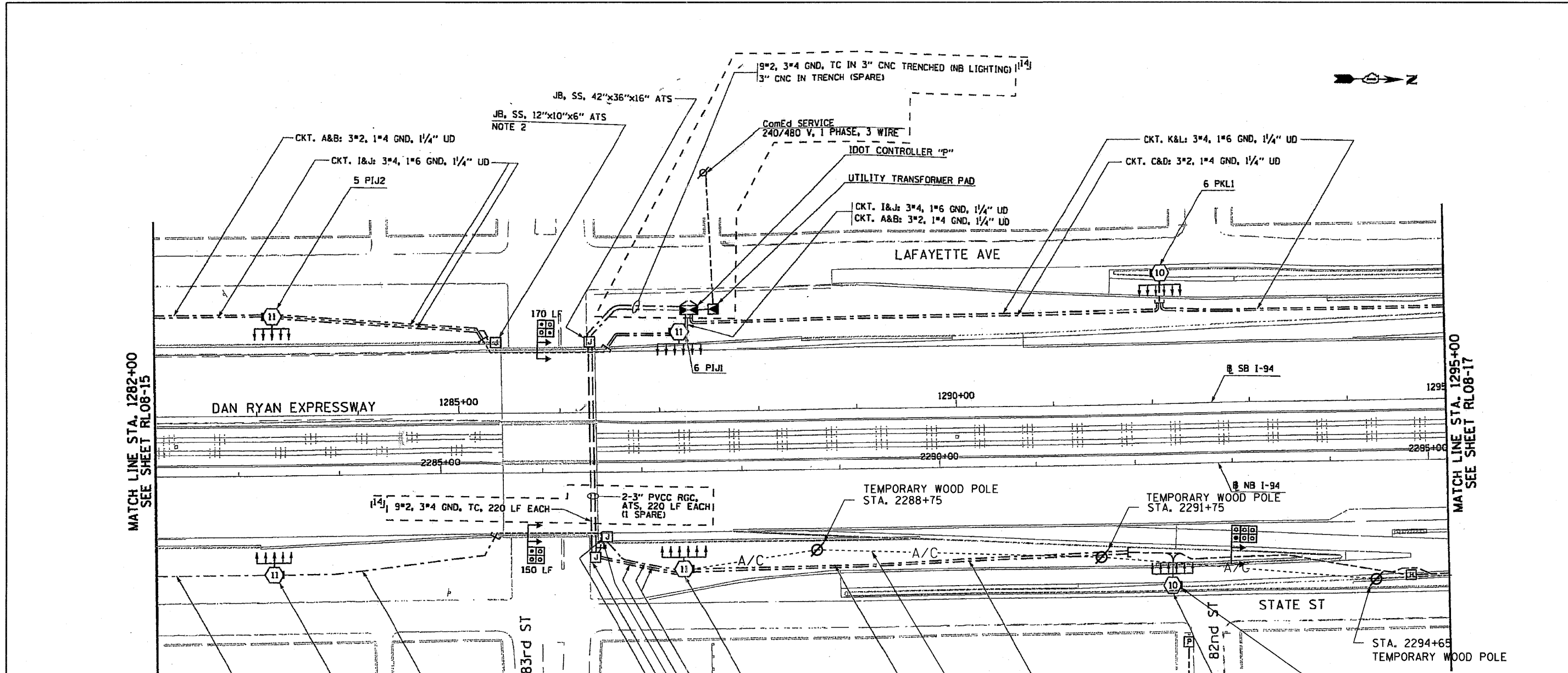
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOWER DETAILS
6POP2, 6POP4, & 5RMN5**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2011-021-L	COOK	19	13
				CONTRACT NO. 60P16
ILLINOIS FED. AID PROJECT				



USER NAME =	DESIGNED - MTH	REVISED -
FILE NAME =	CHECKED - ADB	REVISED -
PLOT SCALE =	DRAWN - AJF	REVISED -
PLOT DATE =	CHECKED - MTH	REVISED -



- NOTES:
- TEMPORARY WOOD POLES AND AERIAL CABLE SHALL BE INSTALLED TO EXTEND POWER TO HIGH MAST LIGHT TOWERS WHICH SHALL REMAIN IN PLACE (POP1 AND POP3).
 - TOWER POP2 SHALL NOT BE REMOVED UNTIL TEMPORARY EQUIPMENT IS IN PLACE.
 - THE LUMINAIRES ON POP2 SHALL BE REMOVED FROM HIGH MAST LIGHT TOWER PRIOR TO REMOVING HIGH MAST LIGHT TOWER. THE LUMINAIRES SHALL BE BOXED, TRANSPORTED AND STORED BY THE CONTRACTOR. THE SECURITY OF THE LUMINAIRE IS THE CONTRACTOR'S RESPONSIBILITY. IF THE LUMINAIRE IS DAMAGED THE CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE IN KIND TO THE SATISFACTION OF THE ENGINEER.
 - THE HIGH MAST LIGHT TOWER SHALL BE REMOVED, TRANSPORTED TO THE APPROXIMATE LOCATION SHOWN ON THE MAINTENANCE OF TRAFFIC PLAN SHEETS AND STORED BY THE CONTRACTOR. THE ENGINEER SHALL APPROVE THE HIGH MAST LIGHT TOWER LOCATIONS. THE SECURITY OF THE HIGH MAST LIGHT TOWERS IS THE CONTRACTOR'S RESPONSIBILITY. IF ANY PART OF THE TOWER BECOMES DAMAGED BY WHATEVER MEANS, THE CONTRACTOR IS RESPONSIBLE TO REPLACE IN KIND AT NO ADDITIONAL COST AND TO THE SATISFACTION OF THE ENGINEER.
 - EXISTING CABLE RUNS BETWEEN TOWERS POP1 AND POP2 AND BETWEEN TOWERS POP2 AND POP3 SHALL BE TESTED BEFORE AND AFTER PULLING PER SPECIAL PROVISIONS.
 - CONTRACTOR SHALL TAKE CARE IN REMOVING EXISTING FOUNDATION SO AS NOT TO DAMAGE CABLE AND TO LIMIT DAMAGE TO RACEWAY.

- THE RACEWAY SHALL BE CAPPED PRIOR TO POURING CONCRETE FOUNDATION TO ENSURE THAT NO CONCRETE IS POURED INTO RACEWAY.
- PRIOR TO POURING CONCRETE A COUPLING AND RACEWAY EXTENSION SHALL BE INSTALLED TO REPLACE DAMAGED RACEWAY. IF THE CABLE IS NOT PULLED INTO THE EXISTING RACEWAY PRIOR TO INSTALLING THE EXTENSION, THE CONTRACTOR SHALL TAKE CARE IN PLACING THE RACEWAY SLEEVE EXTENSION OVER THE CABLE TO ENSURE THERE IS NO DAMAGE TO THE CABLE.
- AFTER FOUNDATION IS IN PLACE THE CABLE SHALL BE PULLED BACK IN PLACE AS REQUIRED AND TESTED PER SPECIAL PROVISIONS.
- HIGH MAST LIGHT TOWER SHALL BE INSTALLED ON NEW FOUNDATION AND LUMINAIRES SHALL BE INSTALLED ON TOWER. CONTRACTOR SHALL RE-INSTALL TOWER IN SAME POSITION/ORIENTATION AS WHEN REMOVED. LUMINAIRES SHALL BE RE-INSTALLED AT ORIENTATION AS WHEN REMOVED. RESIDENT ENGINEER SHALL APPROVE PRIOR TO FINAL PLACEMENT.
- TEMPORARY AERIAL CABLE SHALL BE DISCONNECTED AND THE PERMANENT CONNECTIONS SHALL BE RE-ESTABLISHED.

CONTRACTOR SHALL FURNISH AND INSTALL 30 AMP 2 POLE CIRCUIT BREAKER INSIDE JUNCTION BOX TO ISOLATE THE CIRCUITS "OP & GH". THIS SHALL BE INCLUDED IN THE COST OF MAINTENANCE OF LIGHTING SYSTEM.

BILL OF MATERIALS- ELECTRICAL WORK				
PAY ITEM	DESCRIPTION	UNIT	QUANTITY	
81800300	AERIAL CABLE, 3-1/C NO. 2 WITH MESSENGER WIRE	FOOT	1520	
83057175	LIGHT POLE, WOOD, 35FT, CLASS 3 WITH 15FT MAST ARM	EACH	6	
84100110	REMOVAL OF TEMPORARY LIGHTING UNIT	EACH	6	
84400205	RELOCATE EXISTING LIGHT TOWER	EACH	3	
20033028	MAINTENANCE OF LIGHTING SYSTEM	CAL MO	1	

* REQUIRES SPECIAL PROVISIONS



DATE 05-05-11
 EXPIRES ON 11-30-11
 FOR SHEET NO'S. RLP-01 THRU RLP-03

AMES Engineering, Inc.
 CONSULTING ENGINEERS
 1341 Wilmet Avenue
 Downers Grove, IL 60515
 (630) 737-1987 (F); (630) 470-8891 (T)
 www.amesengineering.com

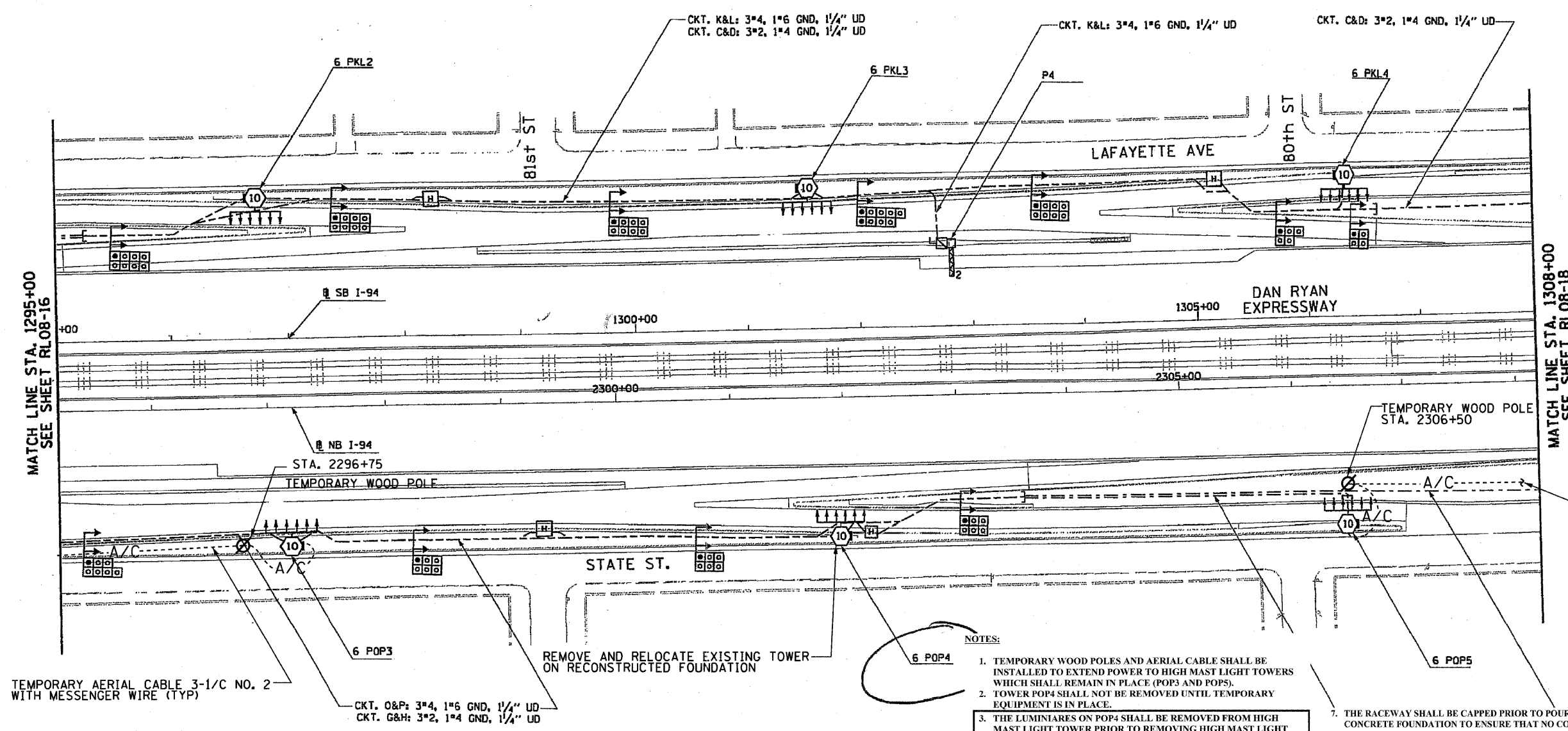
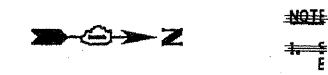
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

TEMPORARY CONNECTION PLAN FOR LIGHTING

F.A.I. RTE. 90/94	SECTION 2011-021-L	COUNTY COOK	TOTAL SHEETS 19	SHEET NO. 17A
CONTRACT NO. 60P16				
ILLINOIS FED. AID PROJECT				

RLP-01



MATCH LINE STA. 1295+00
SEE SHEET RLO8-16

MATCH LINE STA. 1308+00
SEE SHEET RLO8-18

NOTES:

1. TEMPORARY WOOD POLES AND AERIAL CABLE SHALL BE INSTALLED TO EXTEND POWER TO HIGH MAST LIGHT TOWERS WHICH SHALL REMAIN IN PLACE (POP3 AND POP5).
2. TOWER POP4 SHALL NOT BE REMOVED UNTIL TEMPORARY EQUIPMENT IS IN PLACE.
3. THE LUMINAIRES ON POP4 SHALL BE REMOVED FROM HIGH MAST LIGHT TOWER PRIOR TO REMOVING HIGH MAST LIGHT TOWER. THE LUMINAIRES SHALL BE BOXED, TRANSPORTED AND STORED BY THE CONTRACTOR. THE SECURITY OF THE LUMINAIRES IS THE CONTRACTOR'S RESPONSIBILITY. IF THE LUMINAIRES ARE DAMAGED THE CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE IN KIND TO THE SATISFACTION OF THE ENGINEER.
4. THE HIGH MAST LIGHT TOWER SHALL BE REMOVED, TRANSPORTED TO THE APPROXIMATE LOCATION SHOWN ON THE MAINTENANCE OF TRAFFIC PLAN SHEETS AND STORED BY THE CONTRACTOR. THE ENGINEER SHALL APPROVE THE HIGH MAST LIGHT TOWER LOCATIONS. THE SECURITY OF THE HIGH MAST LIGHT TOWERS IS THE CONTRACTOR'S RESPONSIBILITY. IF ANY PART OF THE TOWER BECOMES DAMAGED BY WHATEVER MEANS, THE CONTRACTOR IS RESPONSIBLE TO REPLACE IN KIND AT NO ADDITIONAL COST AND TO THE SATISFACTION OF THE ENGINEER.
5. EXISTING CABLE RUNS BETWEEN TOWERS POP3 AND POP4 AND BETWEEN TOWERS POP4 AND POP5 SHALL BE TESTED BEFORE AND AFTER PULLING PER SPECIAL PROVISIONS.
6. CONTRACTOR SHALL TAKE CARE IN REMOVING EXISTING FOUNDATION SO AS NOT TO DAMAGE CABLE AND TO LIMIT DAMAGE TO RACEWAY.
7. THE RACEWAY SHALL BE CAPPED PRIOR TO POURING CONCRETE FOUNDATION TO ENSURE THAT NO CONCRETE IS POURED INTO RACEWAY.
8. PRIOR TO POURING CONCRETE A COUPLING AND RACEWAY EXTENSION SHALL BE INSTALLED TO REPLACE DAMAGED RACEWAY. IF THE CABLE IS NOT PULLED INTO THE EXISTING RACEWAY PRIOR TO INSTALLING THE EXTENSION, THE CONTRACTOR SHALL TAKE CARE IN PLACING THE RACEWAY SLEEVE EXTENSION OVER THE CABLE TO ENSURE THERE IS NO DAMAGE TO THE CABLE.
9. AFTER FOUNDATION IS IN PLACE THE CABLE SHALL BE PULLED BACK IN PLACE AS REQUIRED AND TESTED PER SPECIAL PROVISIONS.
10. HIGH MAST LIGHT TOWER SHALL BE INSTALLED ON NEW FOUNDATION AND LUMINAIRES SHALL BE INSTALLED ON TOWER. CONTRACTOR SHALL RE-INSTALL TOWER IN SAME POSITION/ORIENTATION AS WHEN REMOVED. LUMINAIRES SHALL BE RE-INSTALLED AT ORIENTATION AS WHEN REMOVED. RESIDENT ENGINEER SHALL APPROVE PRIOR TO FINAL PLACEMENT.
11. TEMPORARY AERIAL CABLE SHALL BE DISCONNECTED AND THE PERMANENT CONNECTIONS SHALL BE RE-ESTABLISHED.

SPLICE AERIAL CABLE AT TOWER PGH1. TEMPORARY WOOD POLE SHALL BE INSTALLED AT STA. 2308+85 TO SUPPORT AERIAL CABLE FROM TOWER POP5 TO PGH1

TEMPORARY AERIAL CABLE 3-1/C NO. 2 WITH MESSENGER WIRE (TYP)

REMOVE AND RELOCATE EXISTING TOWER ON RECONSTRUCTED FOUNDATION



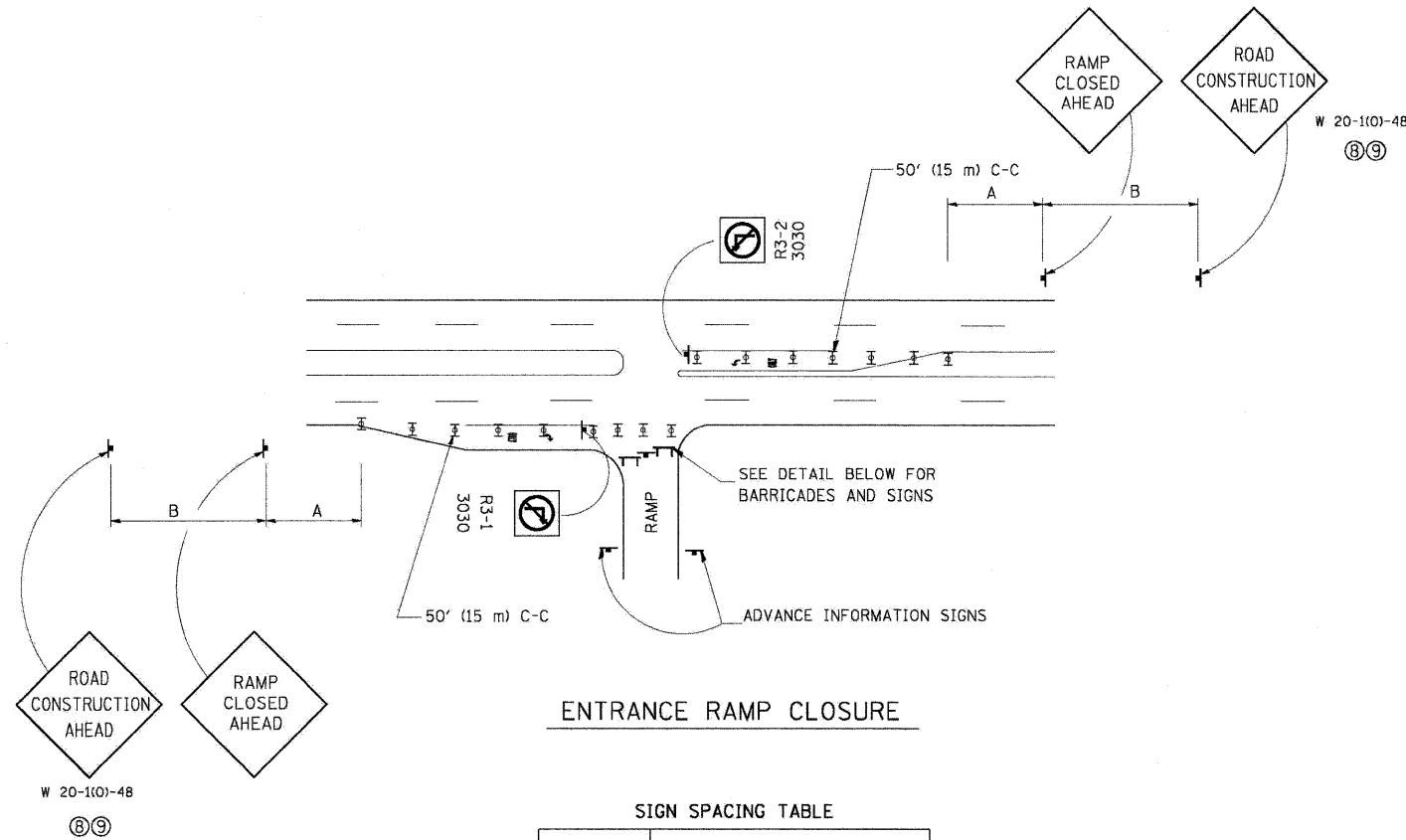
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

TEMPORARY CONNECTION PLAN FOR LIGHTING

F.A.I. RTE. 90/94	SECTION 2011-021-L	COUNTY COOK	TOTAL SHEETS 19	SHEET NO. 17B
CONTRACT NO. 60P16				
ILLINOIS FED. AID PROJECT				

RLP-02

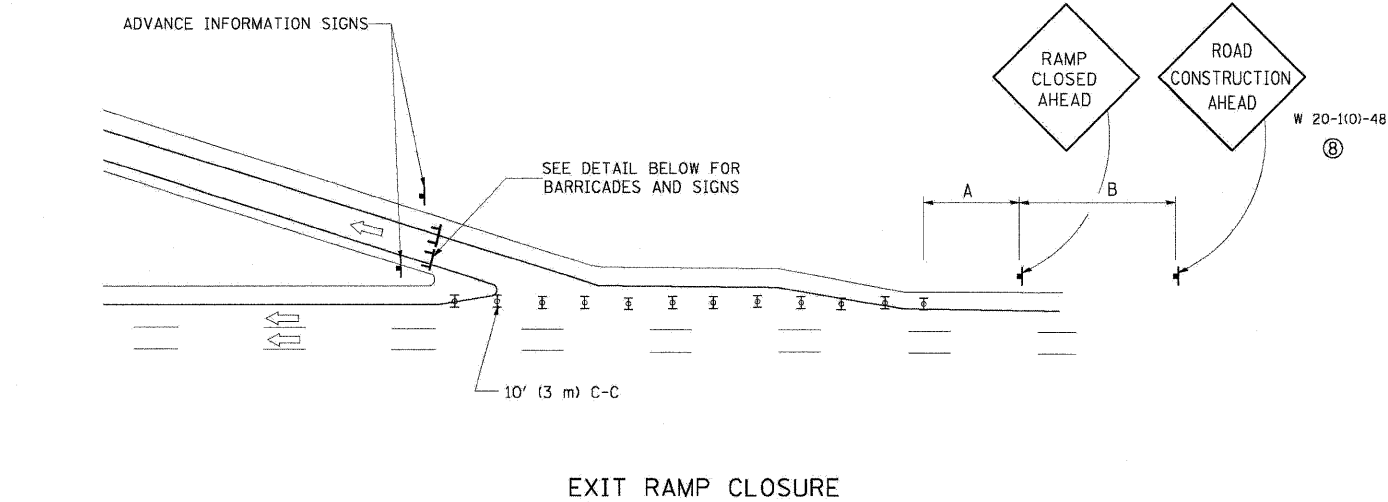


ENTRANCE RAMP CLOSURE

SIGN SPACING TABLE

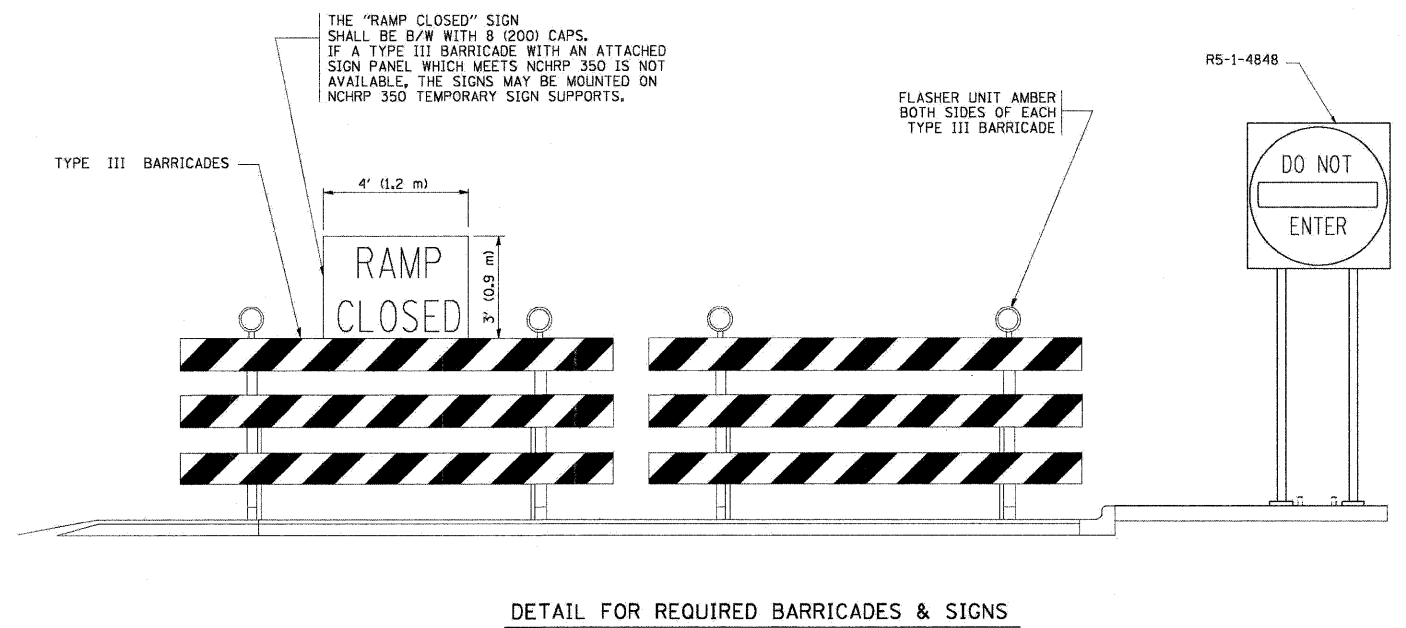
FACILITY	DISTANCE BETWEEN SIGNS	
	A	B
EXPRESSWAY >24 HOURS	1000' (300 m)	1500' (450 m)
EXPRESSWAY ≤24 HOURS	500' (150 m)	500' (150 m)
ARTERIAL ≥45 MPH	350' (100 m)	350' (100 m)
ARTERIAL <45 MPH	150' (45 m)	150' (45 m)

DISTANCES MAY BE SHORTENED DEPENDING UPON THE PROXIMITY OF ADJACENT RAMPS OR INTERSECTIONS.

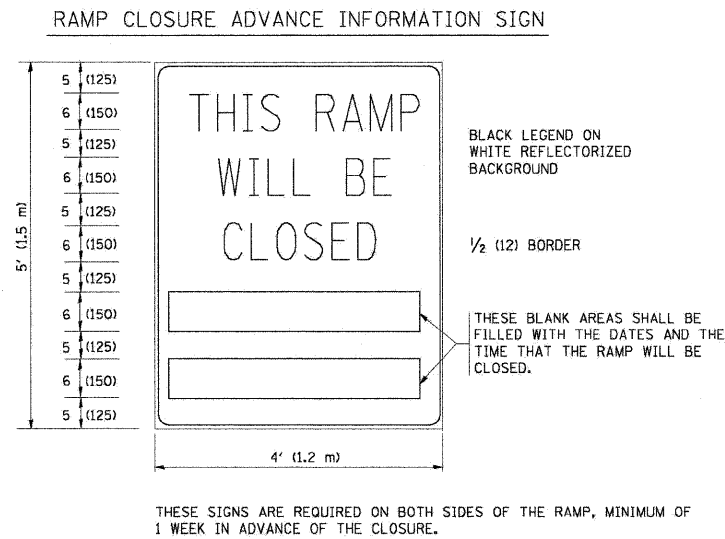
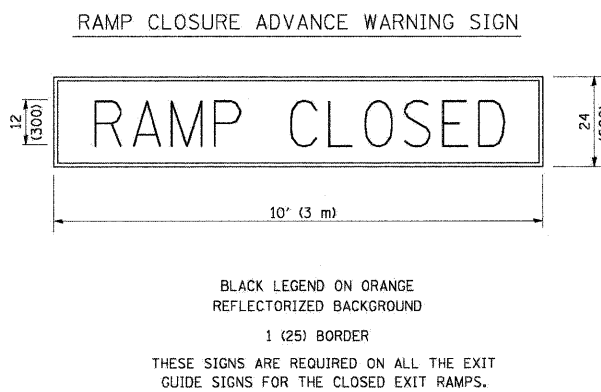


EXIT RAMP CLOSURE

- SYMBOLS**
- ⊥ TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE WITH STEADY BURN MONO-DIRECTIONAL LIGHT
 - ⊥ TYPE III BARRICADE WITH FLASHING LIGHT



DETAIL FOR REQUIRED BARRICADES & SIGNS



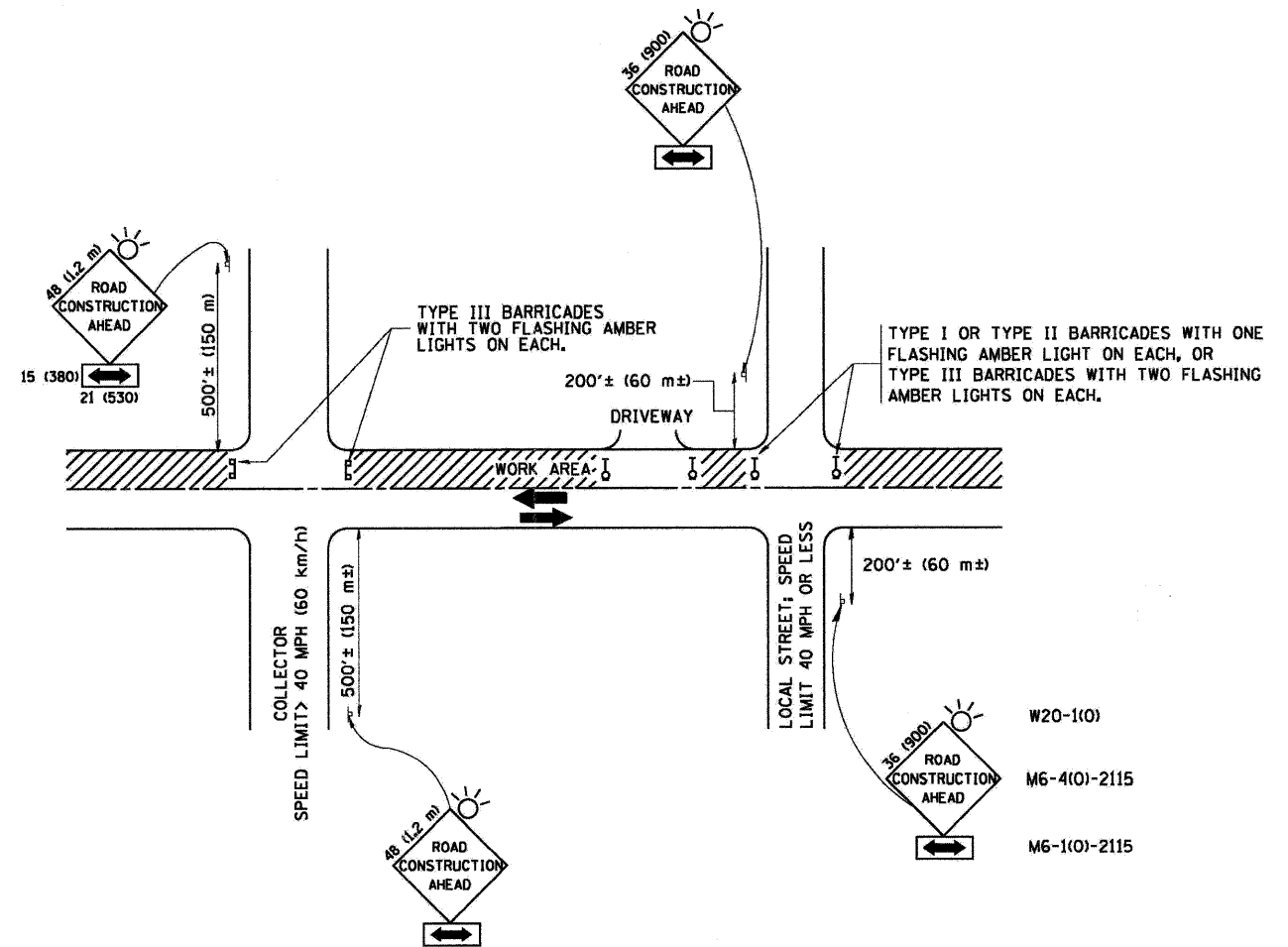
THESE SIGNS ARE REQUIRED ON BOTH SIDES OF THE RAMP, MINIMUM OF 1 WEEK IN ADVANCE OF THE CLOSURE.

GENERAL NOTES:

- 1 CONES MAY BE SUBSTITUTED FOR DRUMS OR TYPE II BARRICADES DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (700) HIGH.
- 2 STEADY BURN LIGHTS WILL NOT BE REQUIRED FOR DAY OPERATIONS.
- 3 A FLAGGER SHALL BE POSITIONED AT EACH CLOSED RAMP THAT IS OPEN TO CONSTRUCTION VEHICLES.
- 4 ALL ROUTE MARKERS AND TRAILBLAZER ASSEMBLIES WHICH DIRECT MOTORISTS TO A CLOSED ENTRANCE RAMP SHALL BE COVERED.
- 5 THE SIGNING AND BARRICADING WHICH IS REQUIRED BY THIS DETAIL SHALL BE INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS).
- 6 AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL RAMP CLOSURES.
- 7 THE RAMP CLOSURE ADVANCE INFORMATION SIGNS SHALL BE ERECTED IF THE CLOSURE TIME EXCEEDS TWENTY-FOUR (24) HOURS. ADDITIONAL ADVANCE WARNING SIGNS ON EXIT GUIDE SIGNING WILL BE REQUIRED FOR EXIT RAMP CLOSURES THAT EXCEED TWENTY-FOUR (24) HOURS IN LENGTH.
- 8 ROAD CONSTRUCTION AHEAD SIGNS MAY BE OMITTED WHEN THIS DETAIL IS USED IN CONJUNCTION WITH OTHER TRAFFIC CONTROL THAT ALREADY INCLUDES A ROAD CONSTRUCTION AHEAD SIGN.
- 9 ARTERIAL ROAD CONSTRUCTION AHEAD SIGNS MAY BE OMITTED ON CLOSURES LESS THAN 24 HOURS IN DURATION.

FREWAY ENTRANCE AND EXIT RAMP CLOSURE DETAILS

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



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

NOTES:

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

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

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

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

TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS AND DRIVEWAYS

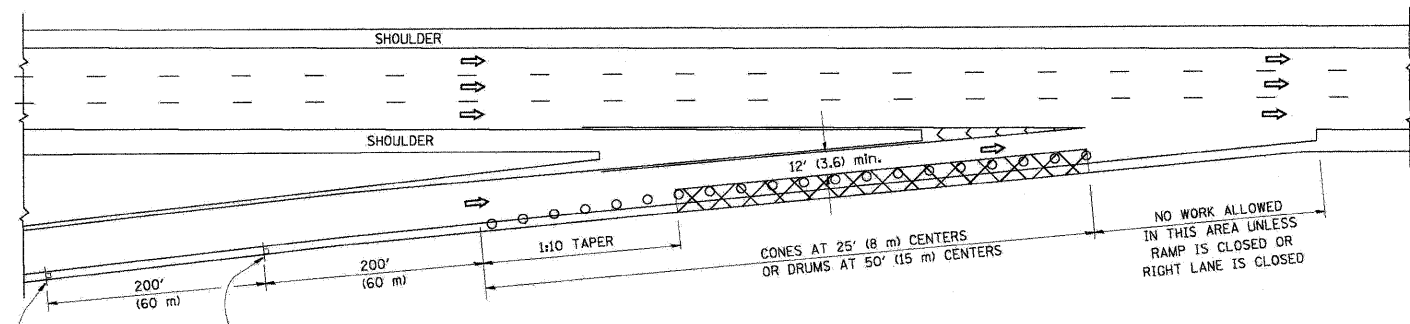
All dimensions are in millimeters (inches) unless otherwise shown.

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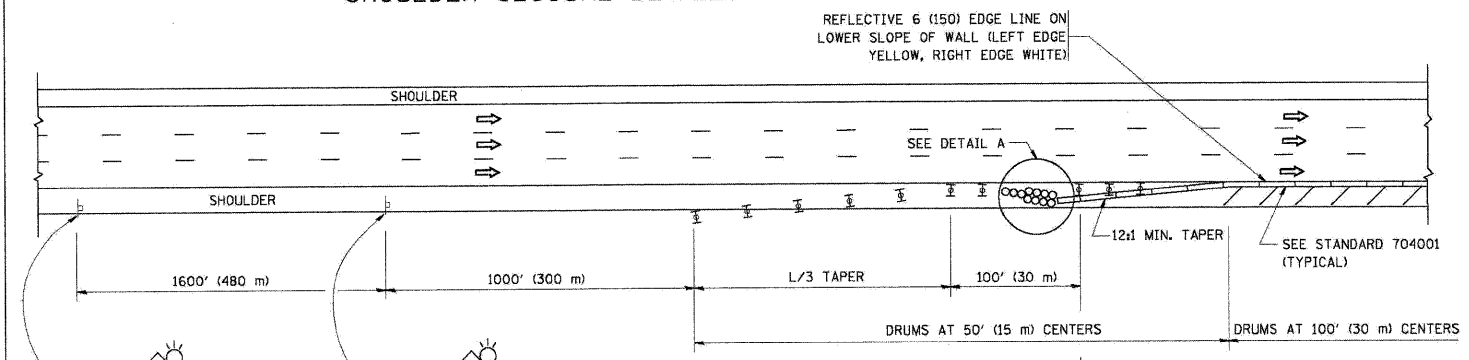
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90/94	2011-021-L	COOK	19	19
TC-10			CONTRACT NO. 60P16	
ILLINOIS FED. AID PROJECT				

PARTIAL RAMP CLOSURE DETAILS

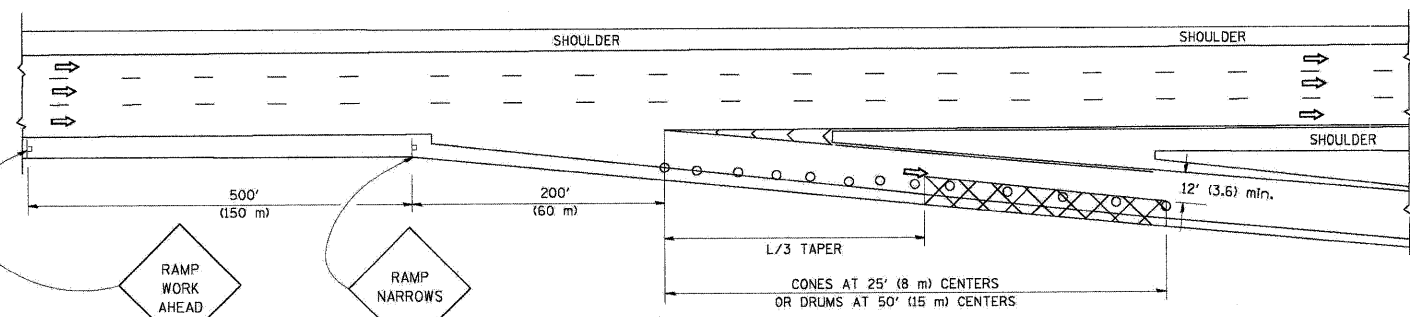
SHOULDER CLOSURE DETAILS



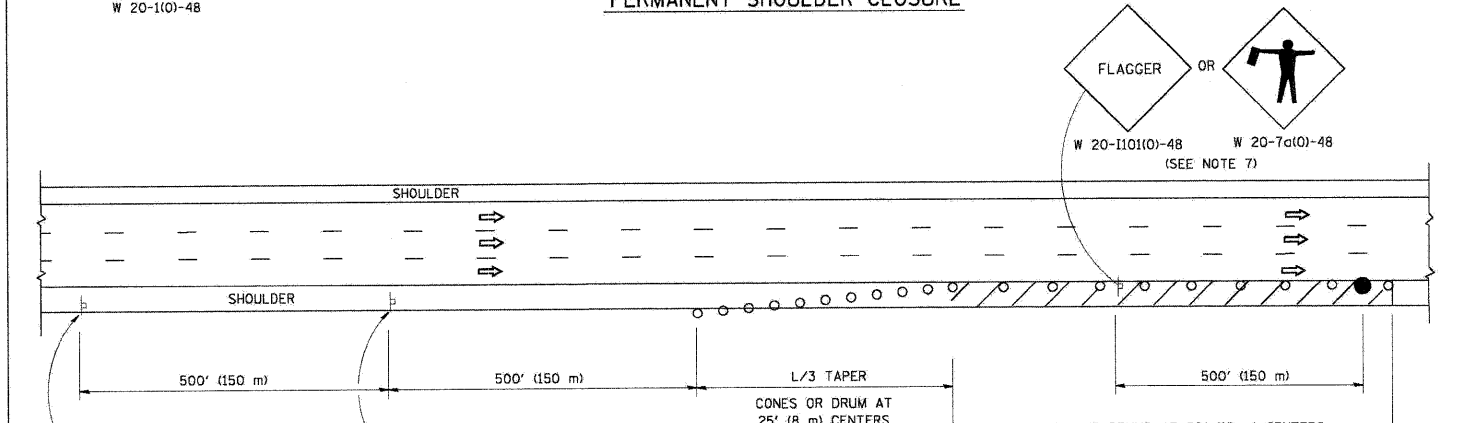
TYPICAL ENTRANCE RAMP



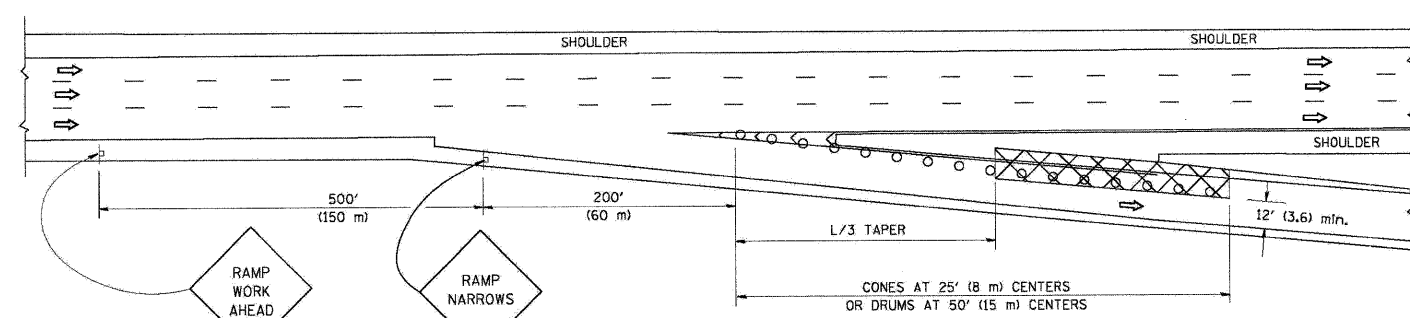
PERMANENT SHOULDER CLOSURE



TYPICAL EXIT RAMP



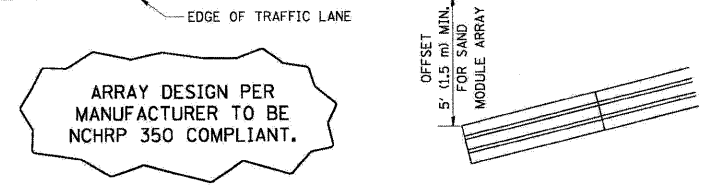
DAYTIME SHOULDER CLOSURE



TYPICAL EXIT RAMP

OR WHEN SPECIFIED INSTALL TEMPORARY CONCRETE BARRIER WALL WITH BARRIER WALL REFLECTORS PER TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS)

THIS DETAIL IS USED WHERE:
 1. VEHICLES, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCR OACH IN AN AREA CLOSER THAN 15' (4.5 m) TO THE EDGE OF PAVEMENT FOR A PERIOD IN EXCESS OF 15 MINUTES.



DETAIL "A"
 IMPACT ATTENUATOR, TEMPORARY
 (SEE NOTE 5)

SYMBOLS

- ACTIVE WORK AREA
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- FLAGGER WITH CONTROL SIGN
- TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE WITH STEADY BURN MONO-DIRECTIONAL LIGHT
- CONE, DRUM OR BARRICADE

GENERAL NOTES

1. THE "L" DISTANCE EQUALS:

SPEED LIMIT	FORMULAS
45 mph (80 km/h) OR GREATER:	METRIC $L=0.65(W)(S)$ ENGLISH $L=(W)(S)$
	W = WIDTH OF OFFSET IN FEET (METERS)
	S = NORMAL POSTED SPEED MPH (KM/H)
2. PLASTIC DRUMS WITH HIGH PERFORMANCE REFLECTIVE SHEETING AND STEADY BURNING LIGHTS ARE REQUIRED FOR ALL NIGHTTIME CLOSURES.
3. ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.
4. FLASHING LIGHTS SHALL BE USED DURING THE HOURS OF DARKNESS AND SHALL BE INSTALLED ABOVE THE FIRST TWO SETS OF SIGNS.
5. THE IMPACT ATTENUATOR, TEMPORARY IS NOT REQUIRED WHEN THE TEMPORARY CONCRETE BARRIER WALL IS PROTECTED BY OR IS TIED INTO THE EXISTING GUARDRAIL. IF OFFSET IS LESS THAN 5 FEET USE NARROW USE TYPE DEVICE TO MEET NCHRP350.
6. AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL FREEWAY CLOSURES.
7. THE FLAGGER AND FLAGGER SIGN ARE REQUIRED AT THE ABOVE WORK SITES WHEN:
 - a. FOUR OR MORE WORK VEHICLES ENTER THE TRAFFIC LANES IN A ONE HOUR PERIOD.
 - b. THE WORK AVTIVITY REQUIRES FREQUENT ENCR OACHMENT INTO THE LANE OPEN TO TRAFFIC.
 THE FLAGGER SHALL BE STATIONED APPROXIMATELY 100' (30 m) TO 200' (60 m) IN ADVANCE OF THE WORKERS.

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

TRAFFIC CONTROL DETAILS FOR FREEWAY SHOULDER AND PARTIAL RAMP CLOSURES

Lin Engineering, Ltd. Consulting Engineers Chatham, Illinois	USER NAME = #USER#	DESIGNED - SEW	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DISTRICT STANDARDS			F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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	DATE - 04/2011	REVISED -			ILLINOIS FED. AID PROJECT							

ROUTE MARKERS

FOR U.S. ROUTES
M1-40-2424

FOR ILLINOIS ROUTES
M1-50-2424

R.R. UNMARKED ROUTES
SPECIAL 24" x 18" VARIABLE
4" BLACK LETTERS ON WHITE
REFLECTIVE BACKGROUND

ARROWS SIGNS

M5-1L-2115

M5-1R-2115

M6-1-2115

M6-1-2115

M6-3-2115

CARDINAL DIRECTION & DETOUR SIGNS

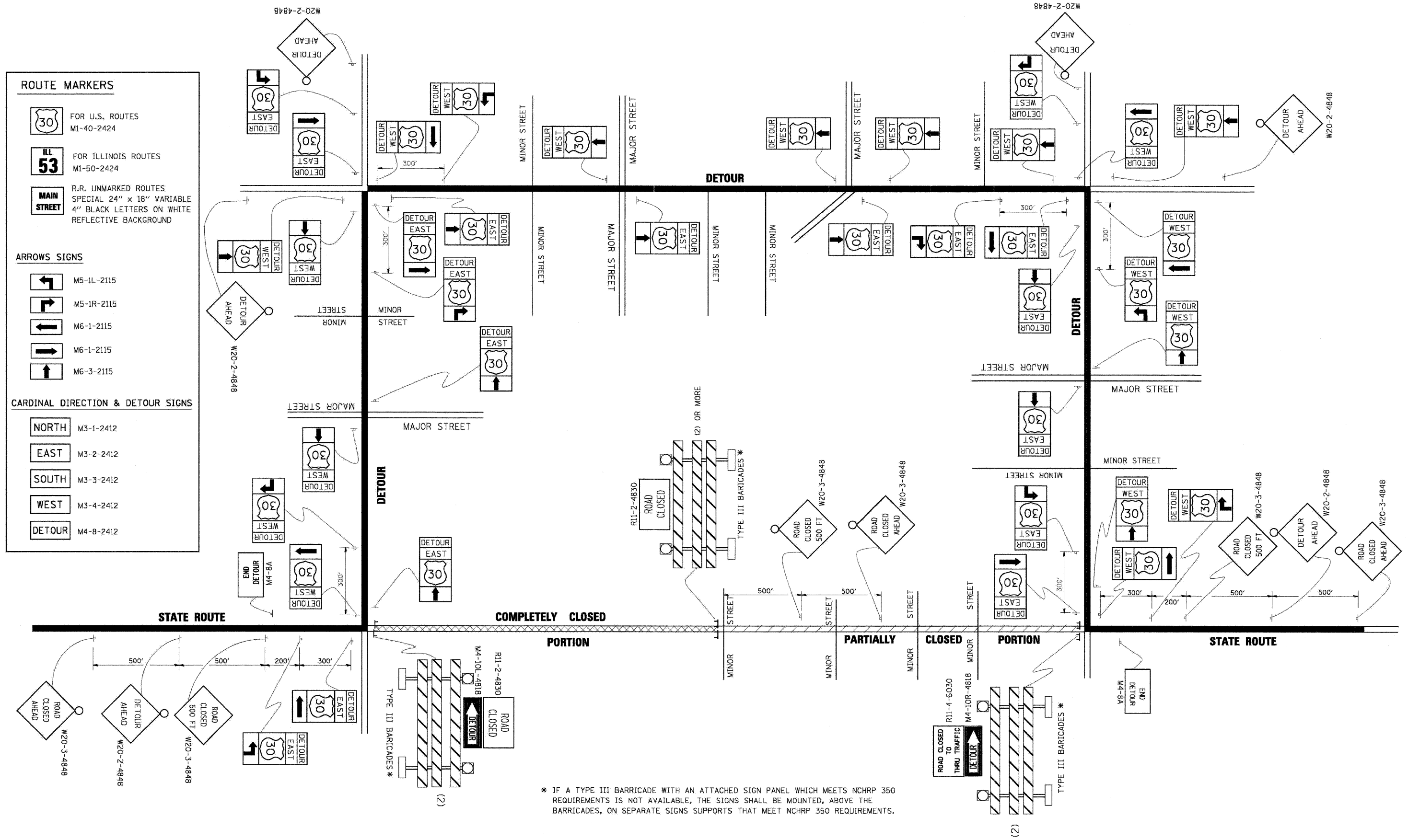
NORTH M3-1-2412

EAST M3-2-2412

SOUTH M3-3-2412

WEST M3-4-2412

DETOUR M4-8-2412



* IF A TYPE III BARRICADE WITH AN ATTACHED SIGN PANEL WHICH MEETS NCHRP 350 REQUIREMENTS IS NOT AVAILABLE, THE SIGNS SHALL BE MOUNTED, ABOVE THE BARRICADES, ON SEPARATE SIGNS SUPPORTS THAT MEET NCHRP 350 REQUIREMENTS.

DETOUR SIGNING FOR CLOSING STATE HIGHWAYS

LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois

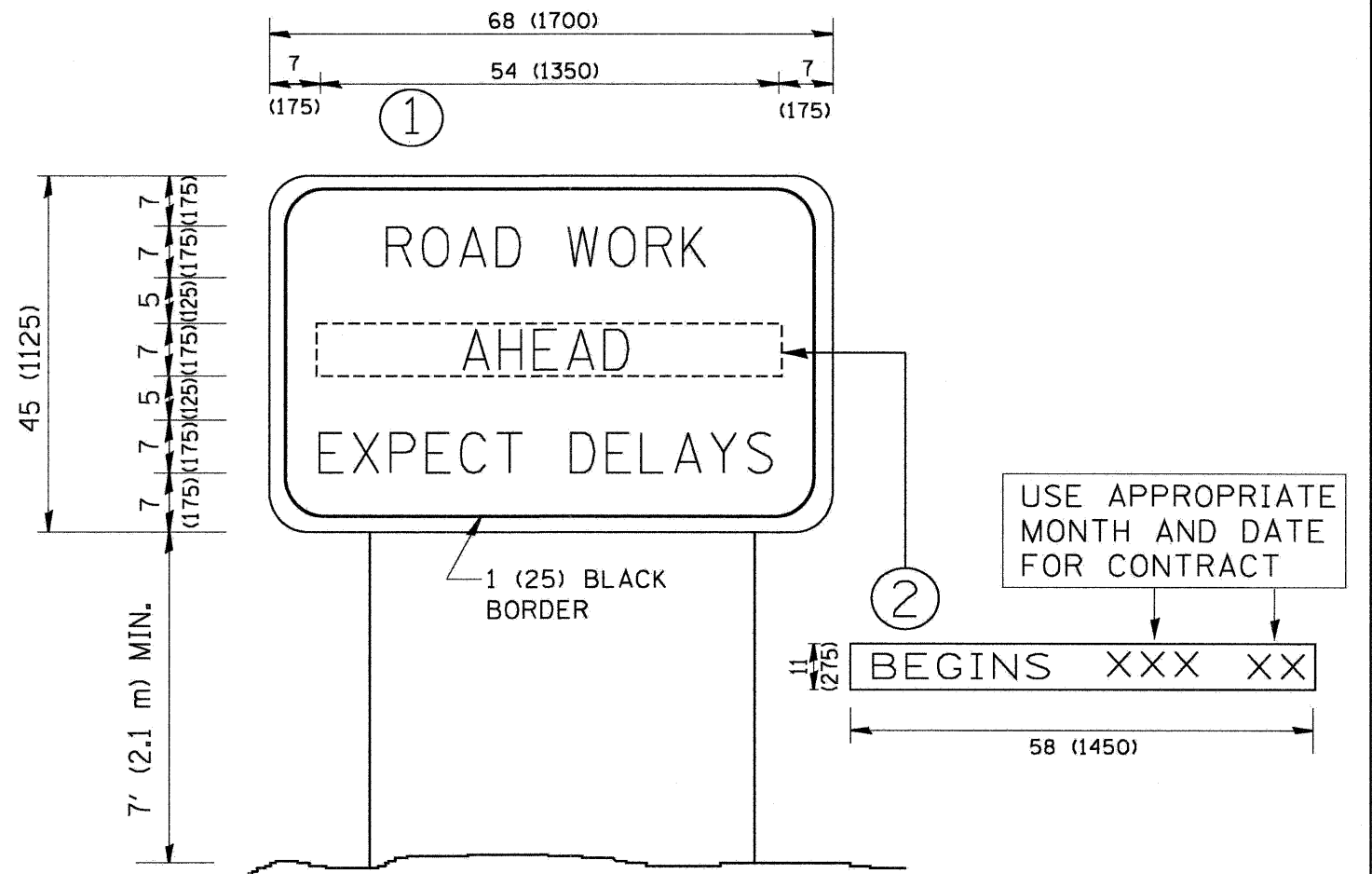
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

DISTRICT STANDARDS
FAI 9094 HIGH MAST LIGHT TOWER FOUNDATION REPAIRS
SCALE: N/A SHEET NO. 4 OF 7 SHEETS STA. TO STA.

F.A.I. RTE. 90/94	SECTION 2011-021-L	COUNTY COOK	TOTAL SHEETS 19	SHEET NO. 19B
TC-21			CONTRACT NO. 60P16	
ILLINOIS FED. AID PROJECT				



NOTES:

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

ARTERIAL ROAD INFORMATION SIGN

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



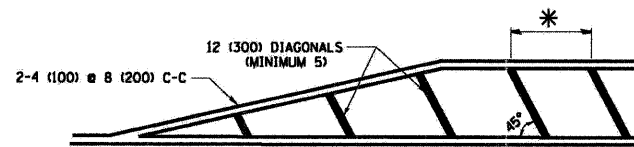
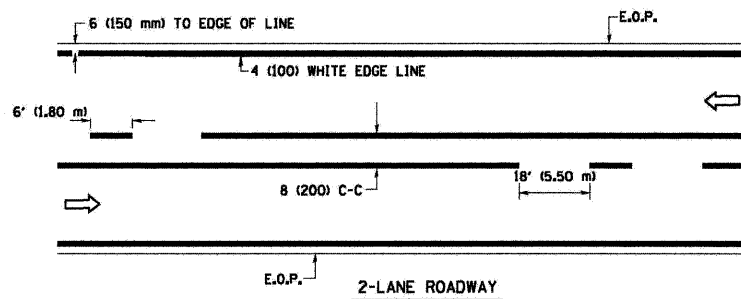
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT STANDARDS
FAI 9094 HIGH MAST LIGHT TOWER FOUNDATION REPAIRS

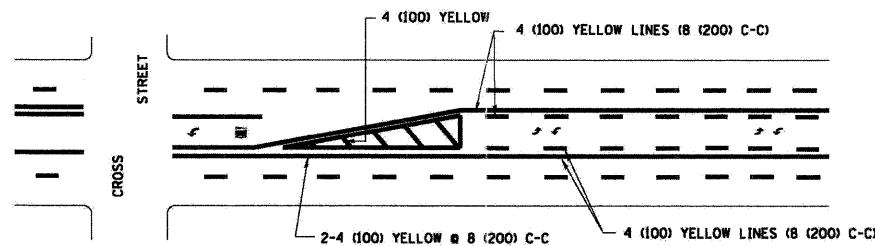
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2011-021-L	COOK	19	19C
TC-22			CONTRACT NO. 60P16	
ILLINOIS FED. AID PROJECT				

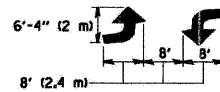


* FOR MEDIAN LENGTHS WHERE DIAGONAL SPACING CANNOT BE ATTAINED, USE 5 (FIVE) EQUALLY SPACED DIAGONAL LINES.
 * DIAGONAL LINE SPACING: 20' (6.1 m) C-C

PAINTED MEDIANS

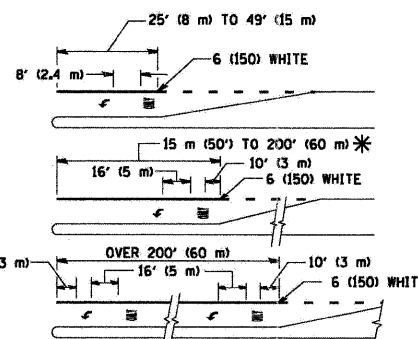
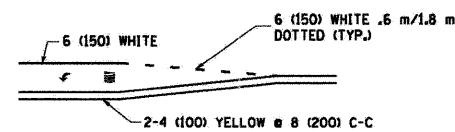


A MINIMUM OF TWO PAIRS OF TURN ARROWS SHALL BE USED, WHITE IN COLOR. ADDITIONAL PAIRS SHALL BE PLACED AT 200' (60 m) TO 300' (90 m) INTERVALS.



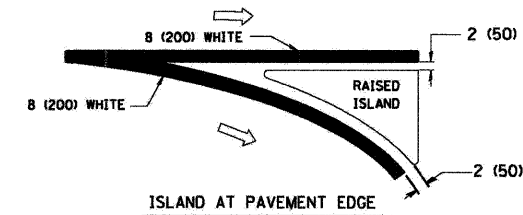
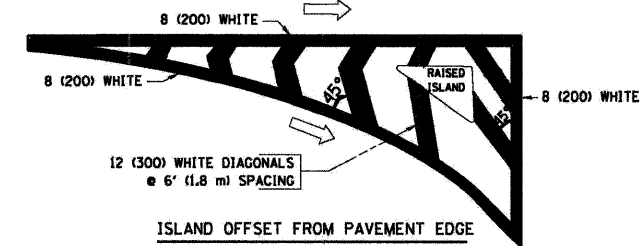
MEDIAN WITH TWO-WAY LEFT TURN LANE

TYPICAL PAINTED MEDIAN MARKING



FULL SIZE LETTERS 8" (2.4 m) AND ARROWS SHALL BE USED.
 * 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

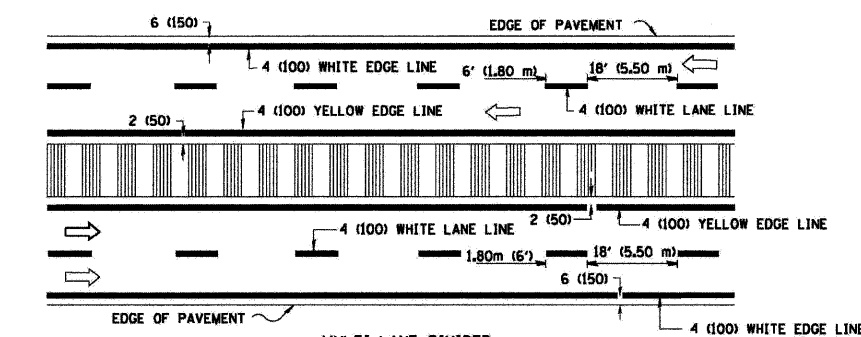
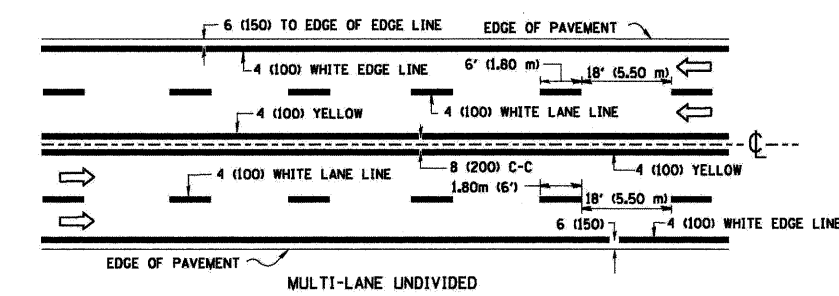


TYPICAL ISLAND MARKING

TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE ON 2 LANE PAVEMENT	4 (100)	SKIP-DASH	YELLOW	6' (1.80 m) LINE WITH 18' (5.50 m) SPACE
CENTERLINE ON MULTI-LANE UNDIVIDED PAVEMENT	2 @ 4 (100)	SOLID	YELLOW	8 (200) C-C
NO PASSING ZONE LINES FOR ONE DIRECTION FOR BOTH DIRECTIONS	4 (100) 2 @ 4 (100)	SOLID SOLID	YELLOW YELLOW	8 (200) C-C
LANE LINES	4 (100) 5 (125) ON FREEWAYS	SKIP-DASH SKIP-DASH	WHITE WHITE	6' (1.80 m) LINE WITH 18' (5.50 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) 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" (2.4 m))	SOLID	WHITE	SEE TYPICAL TURN LANE MARKING DETAIL
TWO WAY LEFT TURN MARKING	2 @ 4 (100) EACH DIRECTION 8' (2.4 m) LEFT ARROW	SKIP-DASH AND SOLID IN PAIRS	YELLOW WHITE	6' (1.8 m) LINE WITH 18' (5.50 m) SPACE FOR SKIP-DASH; 8 (200) 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° 8 (200) @ 90°	SOLID SOLID SOLID	WHITE WHITE WHITE	NOT LESS THAN 6' (1.8 m) APART 2' (600) APART 2'-4" (700) 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°	SOLID	YELLOW; TWO WAY TRAFFIC WHITE; ONE WAY TRAFFIC	8 (200) 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; 20' (6.1 m) (LESS THAN 30 MPH (50 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. (0.33m ²) EACH "X"=54.0 SQ. FT. (5.0 m ²)

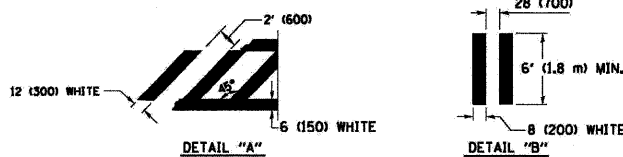
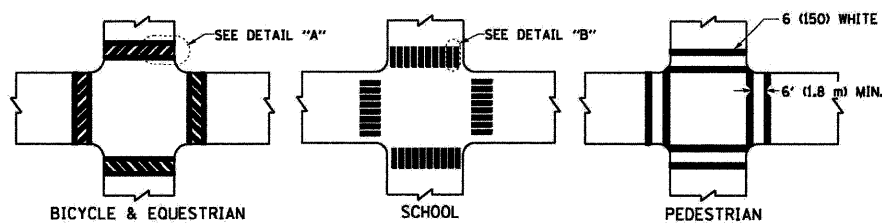
FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO STREET MARKING STANDARDS, PRINTED BY CITY OF CHICAGO, DEPARTMENT OF TRANSPORTATION, BUREAU OF TRAFFIC.

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



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

TYPICAL LANE AND EDGE LINE MARKING



TYPICAL CROSSWALK MARKING

TYPICAL TURN LANE MARKING

CITY OF CHICAGO TYPICAL PAVEMENT MARKINGS



USER NAME = #USER#	DESIGNED - SEW	REVISED -
PLOT SCALE = #SCALE#	DRAWN - SEW	REVISED -
PLOT DATE = #DATE#	CHECKED - FML	REVISED -
	DATE - 04/2011	REVISED -

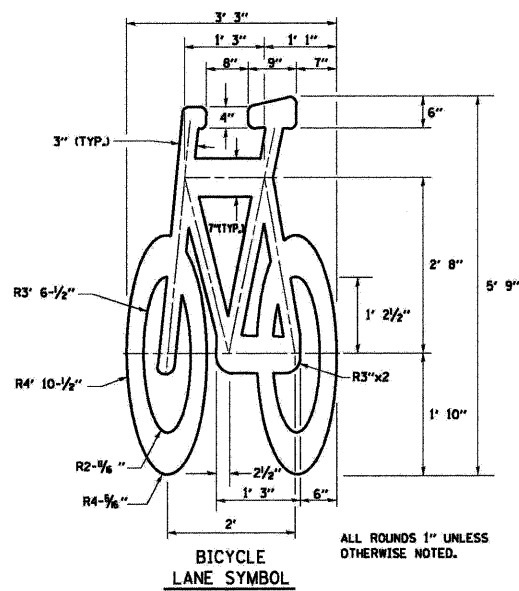
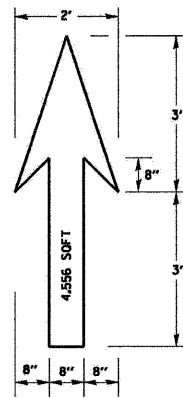
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT STANDARDS

FAI 9094 HIGH MAST LIGHT TOWER FOUNDATION REPAIRS

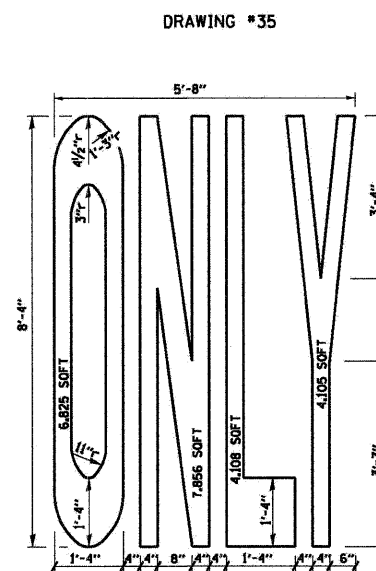
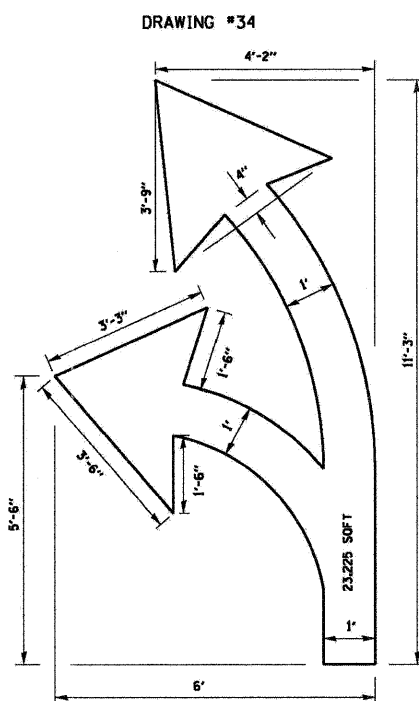
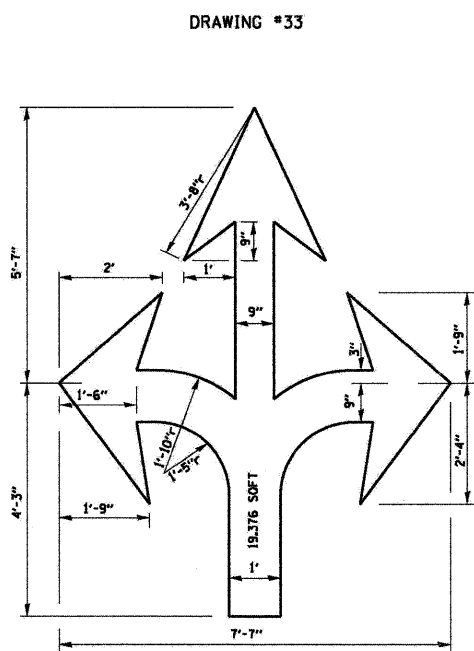
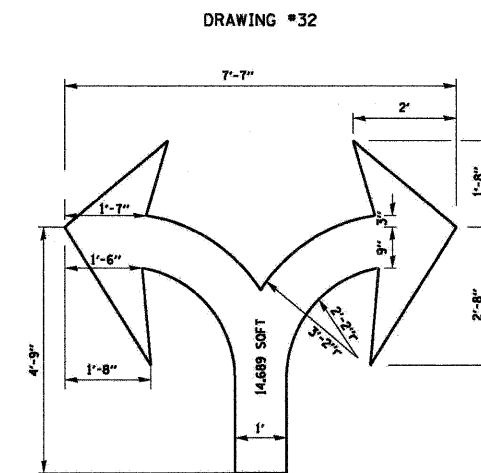
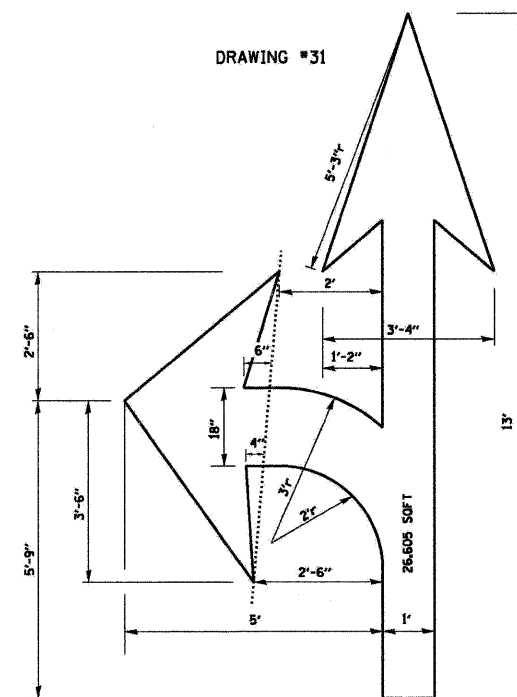
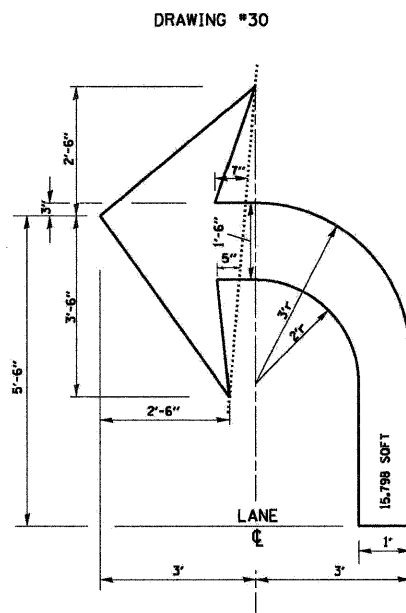
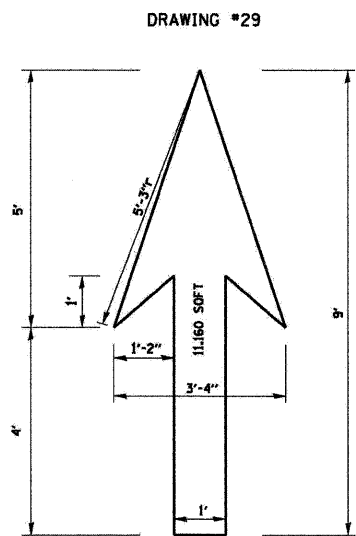
SCALE: N/A SHEET NO. 6 OF 7 SHEETS STA. TO STA.

F.A.I. RTE. 90/94	SECTION 2011-021-L	COUNTY COOK	TOTAL SHEETS 19	SHEET NO. 19D
TC-24 (1 OF 2)			CONTRACT NO. 60P16	
ILLINOIS FED. AID PROJECT				



- NOTE:**
- FOR BIKE LANE SYMBOLS ONLY, USE PRE-FORMED THERMOPLASTIC WITH A MINIMUM THICKNESS OF 90 MILS, MINIMUM SKID RESISTANCE VALUE OF 60 BPN, & A MINIMUM INDEX OF REFRACTION OF 1.50.
 - THE RESIDENT ENGINEER SHALL CONTACT MR. BEN GOMBERG AT 312-744-8093 AT LEAST ONE CALENDAR WEEK PRIOR TO INSTALLING BIKE LANE SYMBOLS.

TYPICAL BIKE LANE SYMBOLS
DRAWING #28



NOTE: ALL MARKINGS SHALL BE SOLID WHITE UNLESS OTHERWISE NOTED IN THE PLANS