

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
808	(28X)TS-3	CHAMPAIGN	14	1

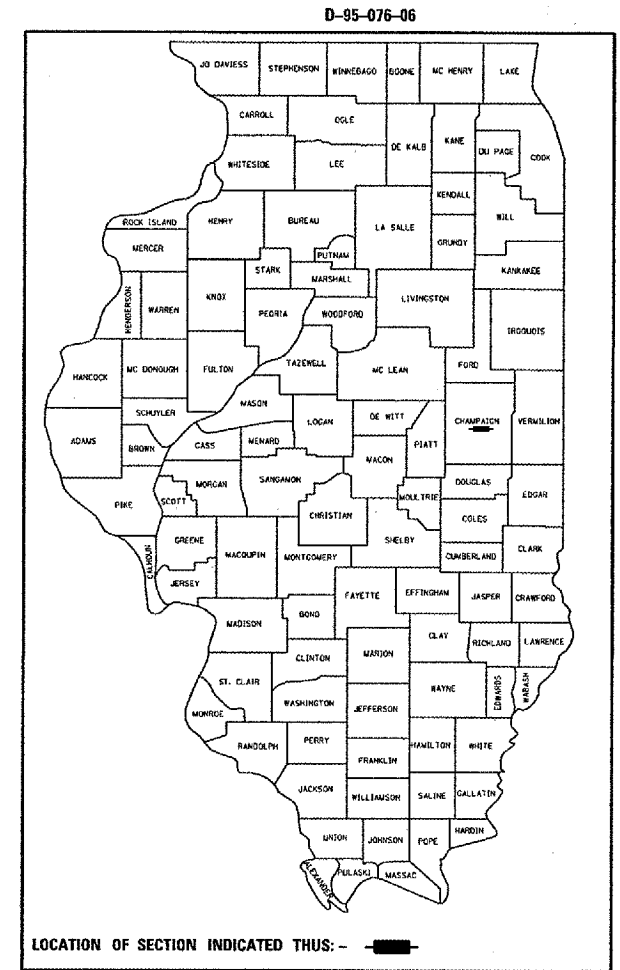
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PROPOSED  
HIGHWAY PLANS**

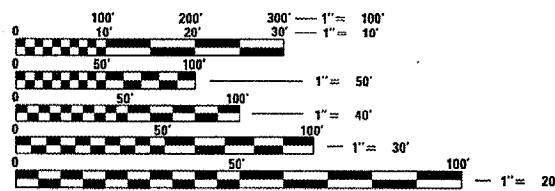
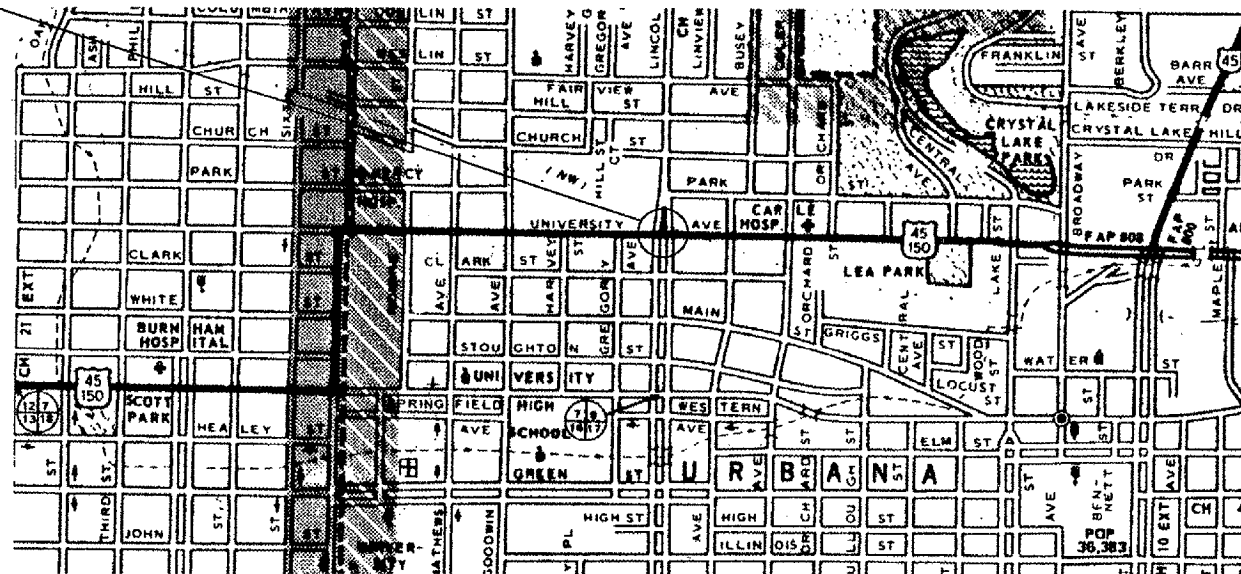
FAP ROUTE 808 (U.S. 45/150)  
SECTION (28X)TS-3  
CHAMPAIGN COUNTY

C-95-076-06  
TRAFFIC SIGNAL MODERNIZATION  
CITY OF URBANA

FOR INDEX OF SHEETS, SEE SHEET NO. 2  
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 3



U.S. ROUTE 45/150 (UNIVERSITY AVE.)  
& LINCOLN AVE.  
SECTION (28X)TS-3



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

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

CONTRACT NO. 70562

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED *Oct 24, 2006*  
*Joseph R. Cooney*  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

*December 8, 2006*  
*Eric E. Harman*  
ENGINEER OF DESIGN AND ENVIRONMENT

*December 8, 2006*  
*Milton R. Sees, P.E.*  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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

PROJECT ENGINEER: SCOTT NEIHART  
SQUAD LEADER: ROGER BIGGS  
(217)465-4181

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
808	(28X)TS-3	CHAMPAIGN	14	2

**G.N.-100**

ENGLISH UNITS OF MEASUREMENT SHALL GOVERN OVER AND SUPERSEDE ANY METRIC UNITS SHOWN IN THIS CONTRACT. WHERE INCLUDED, METRIC UNITS ARE FOR INFORMATION ONLY.

**G.N.-107.12**

THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE LOCAL RAILROAD CONTACT IS:

Mr. T Brian Matthews  
 Assistant Division Engineer  
 Norfolk Southern Railway Company  
 1735 East Condit Street  
 Decatur, IL. 62521  
 217-425-2037

SPECIAL ATTENTION IS CALLED TO ARTICLE 107.12 REGARDING RAILROAD FLAGGERS. THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE RAILROAD CONTACT PERSON FOR FLAGGERS IS:

Mr. Ken Michael  
 Norfolk Southern Railway Company  
 P.O. Box 242  
 Sidney, IL 61877  
 (217) 425-2130

**INDEX OF SHEETS**

1	COVER SHEET
2	GENERAL NOTES, INDEX OF SHEETS & STANDARDS IN THE PLANS
3-5	SUMMARY OF QUANTITIES
6	SCHEDULE OF QUANTITIES
7-11	TRAFFIC SIGNAL PLAN SHEETS
12	MAST ARM DAMPENING DEVICE MOUNTING DETAIL & RAILROAD INTERCONNECT CIRCUIT DETAIL
13-14	TRAFFIC SIGNAL INTERCONNECT PLAN SHEETS

**STANDARDS IN THE PLANS**

701602-02	TRAFFIC CONTROL
701701-04	TRAFFIC CONTROL
701801-03	TRAFFIC CONTROL
702001-06	TRAFFIC CONTROL DEVICES
720016-01	MAST ARM MOUNTED STREET NAME SIGNS
805001	ELECTRICAL SERVICE INSTALLATION DETAILS
814001-01	CONCRETE HANDHOLES
814006-01	DOUBLE HANDHOLES
857001	STANDARD PHASE DESIGNATION DIAGRAMS AND PHASE SEQUENCES
862001	UNINTERRUPTIBLE POWER SUPPLY
873001-01	TRAFFIC SIGNAL BONDING AND GROUNDING
877001-02	STEEL MAST ARM ASSEMBLY AND POLE
877006-02	STEEL MAST ARM ASSEMBLY AND POLE WITH DUAL MAST ARMS
877011-02	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE
878001-05	CONCRETE FOUNDATION DETAILS
880006	TRAFFIC SIGNAL MOUNTING DETAILS
886001	DETECTOR LOOP INSTALLATIONS
886006	TYPICAL LAYOUT FOR DETECTION LOOPS
000001-04	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
001001-01	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
808	(28X)TS-3	CHAMPAIGN	14	3

70562

### SUMMARY OF QUANTITIES

CODE NO	ITEM	UNIT	URBAN TOTAL QUANTITY	LOCATION OF WORK:			
				Y031-1F QUANTITY	Y031-3D QUANTITY	Y030-1E QUANTITY	Y031-1F QUANTITY
				FAP 808 U.S. 45/U.S 150 & LINCOLN AVE. 90% STATE 10% URBANA FAP 808 U.S. 45/U.S 150 & LINCOLN AVE. 100% URBANA FAP 808 U.S. 45/U.S 150 & LINCOLN AVE. 100% URBANA FAP 808 U.S. 45/U.S 150 & LINCOLN AVE. 88.6% STATE 10% URBANA 1.4% CHAMPAIGN Y031-1F			
87704512	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH DUAL MAST ARMS, 48 FT. AND 22 FT.	EACH	1.0	1.0			
42400100	PORTLAND CEMENT CONCRETE SIDEWALK 4 INCH	SQ FT	25.0	25.0			
44000600	SIDEWALK REMOVAL	SQ FT	38.0	38.0			
44002020	CONCRETE MEDIAN SURFACE REMOVAL	SQ FT	267.0	267.0			
60618300	CONCRETE MEDIAN SURFACE, 4 INCH	SQ FT	266.0	266.0			
67100100	MOBILIZATION	L SUM	1.0	1.0			
70102632	TRAFFIC CONTROL AND PROTECTION, STANDARD 701602	L SUM	1.0	1.0			
70102635	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701	L SUM	1.0	1.0			
70102640	TRAFFIC CONTROL AND PROTECTION, STANDARD 701801	L SUM	1.0	1.0			
80500200	SERVICE INSTALLATION, TYPE B	EACH	1.0	1.0			
81012300	CONDUIT IN TRENCH, 1" DIA., PVC	FOOT	197.0	197.0			
81012500	CONDUIT IN TRENCH, 1 1/2" DIA., PVC	FOOT	671.0	671.0			
81012800	CONDUIT IN TRENCH, 2" DIA., PVC	FOOT	157.0	157.0			
81012700	CONDUIT IN TRENCH, 2 1/2" DIA., PVC	FOOT	118.0	118.0			
81013000	CONDUIT IN TRENCH, 4" DIA., PVC	FOOT	28.0	28.0			
81013200	CONDUIT IN TRENCH, 6" DIA., PVC	FOOT	4.0	4.0			
81021550	CONDUIT, AUGERED 2" DIA, PVC	FOOT	93.0	93.0			
81021570	CONDUIT, AUGERED 3" DIA., PVC	FOOT	164.0	164.0			
81021590	CONDUIT, AUGERED 4" DIA., PVC	FOOT	90.0	90.0			
81030100	CONDUIT SPLICE	EACH	1.0	1.0			
<del>81026000</del>	<del>CONDUIT ATTACHED TO STRUCTURE, 2" DIA., PVC</del>	<del>FOOT</del>	<del>30.0</del>	<del>30.0</del>			
81400100	HANDHOLE	EACH	9.0	9.0			
81400300	DOUBLE HANDHOLE	EACH	1.0	1.0			
81500100	GULFBOX JUNCTION	EACH	4.0	4.0			
81500130	GULFBOX JUNCTION REMOVAL	EACH	6.0	6.0			

PLOT DATE = 11/20/2006  
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 USER NAME = bsggnd

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
808	(28X)TS-3	CHAMPAIGN	14	4

70562

**SUMMARY OF QUANTITIES**

CODE NO	ITEM	UNIT	URBAN TOTAL QUANTITY	LOCATION OF WORK:			
				CONSTRUCTION TYPE CODE:	FAP 808 U.S. 45/U.S 150 & LINCOLN AVE. 90% STATE 10% URBANA	FAP 808 U.S. 45/U.S 150 & LINCOLN AVE. 100% URBANA	FAP 808 U.S. 45/U.S 150 & LINCOLN AVE. 100% URBANA
				Y031-1F	Y031-3D	Y030-1E	Y031-1F
				QUANTITY	QUANTITY	QUANTITY	QUANTITY
81702110	ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 10	FOOT	283.0	283.0			
81900200	TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	1,120.0	1,120.0			
83057180	LIGHT POLE, WOOD, 35 FOOT, CLASS 4	EACH	1.0	1.0			
85707000	RAILROAD, FULL-ACTUATED CONTROLLER AND CABINET	EACH	1.0	1.0			
85900100	TRANSCEIVER	EACH	1.0	1.0			
87301225	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	FOOT	636.0	636.0			
87301245	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	2,308.0	2,308.0			
87301255	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT	2,151.0	2,151.0			
87301515	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 3 PAIR	FOOT	2,943.0	2,943.0			
87301805	ELECTRIC CABLE IN CONDUIT, COMMUNICATION NO. 16 3 PAIR	FOOT	161.0	161.0			
87301805	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2 C	FOOT	99.0	99.0			
87502640	TRAFFIC SIGNAL POST, ALUMINUM 10 FT.	EACH	1.0	1.0			
87502660	TRAFFIC SIGNAL POST, ALUMINUM 12 FT.	EACH	2.0	2.0			
87502700	TRAFFIC SIGNAL POST, ALUMINUM 16 FT.	EACH	3.0	3.0			
87700210	STEEL MAST ARM ASSEMBLY AND POLE, 34 FT.	EACH	1.0	1.0			
87700230	STEEL MAST ARM ASSEMBLY AND POLE, 38 FT.	EACH	1.0	1.0			
87700240	STEEL MAST ARM ASSEMBLY AND POLE, 40 FT.	EACH	1.0	1.0			
87800100	CONCRETE FOUNDATION, TYPE A	FOOT	18.6	18.6			
87800150	CONCRETE FOUNDATION, TYPE C	FOOT	3.5	3.5			
87800400	CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER	FOOT	13.5	13.5			
87800415	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	FOOT	37.0	37.0			
88040070	SIGNAL HEAD ,POLYCARBONATE, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	1.0	1.0			
88040090	SIGNAL HEAD ,POLYCARBONATE, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	8.0	8.0			
88040150	SIGNAL HEAD ,POLYCARBONATE, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED	EACH	2.0	2.0			

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
808	(28X)TS-3	CHAMPAIGN	14	5

70562

**SUMMARY OF QUANTITIES**

CODE NO	ITEM	UNIT	URBAN TOTAL QUANTITY	LOCATION OF WORK:			
				FAP 808 U.S. 45/U.S 150 & LINCOLN AVE. 90% STATE 10% URBANA	FAP 808 U.S. 45/U.S 150 & LINCOLN AVE. 100% URBANA	FAP 808 U.S. 45/U.S 150 & LINCOLN AVE. 100% URBANA	FAP 808 U.S. 45/U.S 150 & LINCOLN AVE. 88.6% STATE 10% URBANA 1.4% CHAMPAIGN
CONSTRUCTION TYPE CODE:			Y031-1F	Y031-3D	Y030-1E	Y031-1F	
			QUANTITY	QUANTITY	QUANTITY	QUANTITY	
88040160	SIGNAL HEAD ,POLYCARBONATE, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED	EACH	4.0	4.0			
88040230	SIGNAL HEAD ,POLYCARBONATE, LED, 2-FACE, 3-SECTION, BRACKET MOUNTED	EACH	1.0	1.0			
88040260	SIGNAL HEAD ,POLYCARBONATE, LED, 2-FACE, 1-3 SECTION, 1-5 SECTION, BRACKET MOUNTED	EACH	2.0	2.0			
88102830	PEDESTRIAN SIGNAL HEAD, POLYCARBONATE, LED, 2-FACE, BRACKET MOUNTED	EACH	4.0	4.0			
88200110	TRAFFIC SIGNAL BACKPLATE, LOUVERED	EACH	12.0	12.0			
88500100	INDUCTIVE LOOP DETECTOR	EACH	22.0	22.0			
88600100	DETECTOR LOOP, TYPE I	FOOT	1,355.0	1,355.0			
88700200	LIGHT DETECTOR	EACH	4.0		4.0		
88700300	LIGHT DETECTOR AMPLIFIER	EACH	1.0		1.0		
88800100	PEDESTRIAN PUSH-BUTTON	EACH	8.0	8.0			
89502300	REMOVE ELECTRIC CABLE FROM CONDUIT	FOOT	4,300.0	4,300.0			
89502375	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	EACH	1.0	1.0			
89502380	REMOVE EXISTING HANDHOLE	EACH	10.0	10.0			
89502385	REMOVE EXISTING CONCRETE FOUNDATION	EACH	17.0	17.0			
X0323713	RADIO INTERCONNECT SYSTEM COMPLETE, LOCAL	EACH	1.0			1.0	
X8730027	ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C	FOOT	711.0	711.0			
X8730250	ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED	FOOT	1,728.0			1,728.0	
XX000876	LUMINAIRE, METAL HALIDE HORIZONTAL MOUNT 250 WATT	EACH	1.0			1.0	
XX006661	UNINTERRUPTIBLE POWER SUPPLY	EACH	1.0	1.0			
Z0048665	RAILROAD PROTECTIVE LIABILITY INSURANCE	L SUM	1.0	1.0			

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
808	(28X)TS-3	CHAMPAIGN	14	6

## SCHEDULE OF QUANTITIES

**81400100 HANDHOLE**

STA. 120+34.25, 35.34' LT.	1	EACH
STA. 120+74.63, 44.56' RT.	1	EACH
STA. 121+20.88, 82.98' RT.	1	EACH
STA. 121+97.73, 83.31' RT.	1	EACH
STA. 122+03.47, 55.89' RT.	1	EACH
STA. 122+32.40, 32.75' LT.	1	EACH
STA. 122+15.59, 32.53' LT.	1	EACH
STA. 121+26.39, 65.22' LT.	1	EACH
STA. 121+33.44, 105.32' LT.	1	EACH
<b>TOTAL = 9 EACH</b>		

**81500100 GULFBOX JUNCTION**

STA. 119+14.66, 30.13 RT.	1	EACH
STA. 121+36.22, 236.94' LT.	1	EACH
STA. 121+92.95, 245.58' RT.	1	EACH
STA. 124+47.49, 31.78' LT.	1	EACH
<b>TOTAL = 4 EACH</b>		

**81500105 GULFBOX JUNCTION REMOVAL**

STA. 118+91.80, 29.94' RT.	1	EACH
STA. 119+77.71, 29.99' RT.	1	EACH
STA. 121+35, 235' LT.	1	EACH
STA. 121+90.19, 231.04' RT.	1	EACH
STA. 123+56.65, 32.01' LT.	1	EACH
STA. 124+63.53, 32.17' LT.	1	EACH
<b>TOTAL = 6 EACH</b>		

**87502640 TS POST A 10**

STA. 122+06.74, 78.42' LT.	1	EACH
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**87502660 TS POST A 12**

STA. 121+26.85, 77.03' LT.	1	EACH
STA. 122+36.18, 33.59' LT.	1	EACH
<b>TOTAL = 2 EACH</b>		

**87502700 TS. POST A 16**

STA. 121+04.74, 56.14' RT.	1	EACH
STA. 121+23.27, 57.51' LT	1	EACH
STA. 121+96.75, 56.10' RT.	1	EACH
<b>TOTAL = 3 EACH</b>		

**87800100 CONC FDN TY A**

STA. 121+04.74, 56.14' RT.	1	EACH
STA. 121+23.27, 57.51 LT.	1	EACH
STA. 121+26.85, 77.03 LT.	1	EACH
STA. 121+96.75, 56.10' RT.	1	EACH
STA. 122+06.74, 78.42' LT.	1	EACH
STA. 122+36.18, 33.59' LT.	1	EACH
<b>TOTAL = 6 EACH</b>		

**87800400 CONC FDN TY E 30D**

STA. 120+38.80, 35.39' LT.	13.5'	FT.
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**87800415 CONC FDN TY E 36D**

STA. 121+22.75, 86.89' RT.	11.0'	FT.
STA. 122+10.59, 35.89' LT.	13.0'	FT.
STA. 122+12.78, 56.88' RT.	13.0'	FT.
<b>TOTAL = 37.0' FT.</b>		

**89502380 REMOVE EX HANDHOLE**

STA. 120+72.88, 31.98' LT.	1	EACH
STA. 121+21.64, 55.67' LT.	1	EACH
STA. 121+30.93, 95.90' LT.	1	EACH
STA. 121+31.88, 87.60' LT.	1	EACH
STA. 122+07.00, 39.26' LT.	1	EACH
STA. 122+12.97, 64.67' LT.	1	EACH
STA. 120+94.26, 47.14' RT.	1	EACH
STA. 121+15.39, 67.16' RT.	1	EACH
STA. 121+93.10, 67.32' RT.	1	EACH
STA. 122+08.84, 45.73' RT.	1	EACH

**89502385 REMOVE EX CONC FDN**

NW QUAD STA. 120+64.07, 34.32' LT.	1	EACH
STA. 121+19.89, 51.02' LT.	1	EACH
STA. 121+26.84, 60.03' LT.	1	EACH
STA. 121+32.75, 78.22' LT.	1	EACH
STA. 121+28.07, 83.65' LT.	1	EACH
NE QUAD STA. 121+98.26, 84.93' LT.	1	EACH
STA. 121+97.57, 37.21' LT.	1	EACH
STA. 122+10.08, 76.69' LT.	1	EACH
STA. 122+21.61, 34.93' LT.	1	EACH
STA. 122+40.02, 33.70' LT.	1	EACH
SW QUAD STA. 121+04.30, 51.78' RT.	1	EACH
STA. 121+04.56, 57.01' RT.	1	EACH
STA. 121+19.91, 73.98' RT.	1	EACH
STA. 121+26.71, 34.68' RT.	1	EACH
SE QUAD STA. 121+94.45, 61.62' RT.	1	EACH
STA. 122+06.21, 46.26' RT.	1	EACH
STA. 122+13.32, 41.24' RT.	1	EACH
<b>TOTAL = 17 EACH</b>		

**44000600 SIDEWALK REMOVAL**

NW QUAD	38	SQ FT
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**42400100 PC CONC SIDEWALK 4**

NW QUAD	25	SQ FT
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**44002020 CONC MEDIAN SURFACE REMOVAL**

EAST CORNER ISLAND	267	SQ FT
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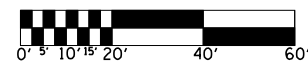
**60618300 CONC MEDIAN SURFACE**

EAST CORNER ISLAND	266	SQ FT
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
808	(28X)TS-3	CHAMPAIGN	14	7
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

**TRAFFIC SIGNAL MODERNIZATION**

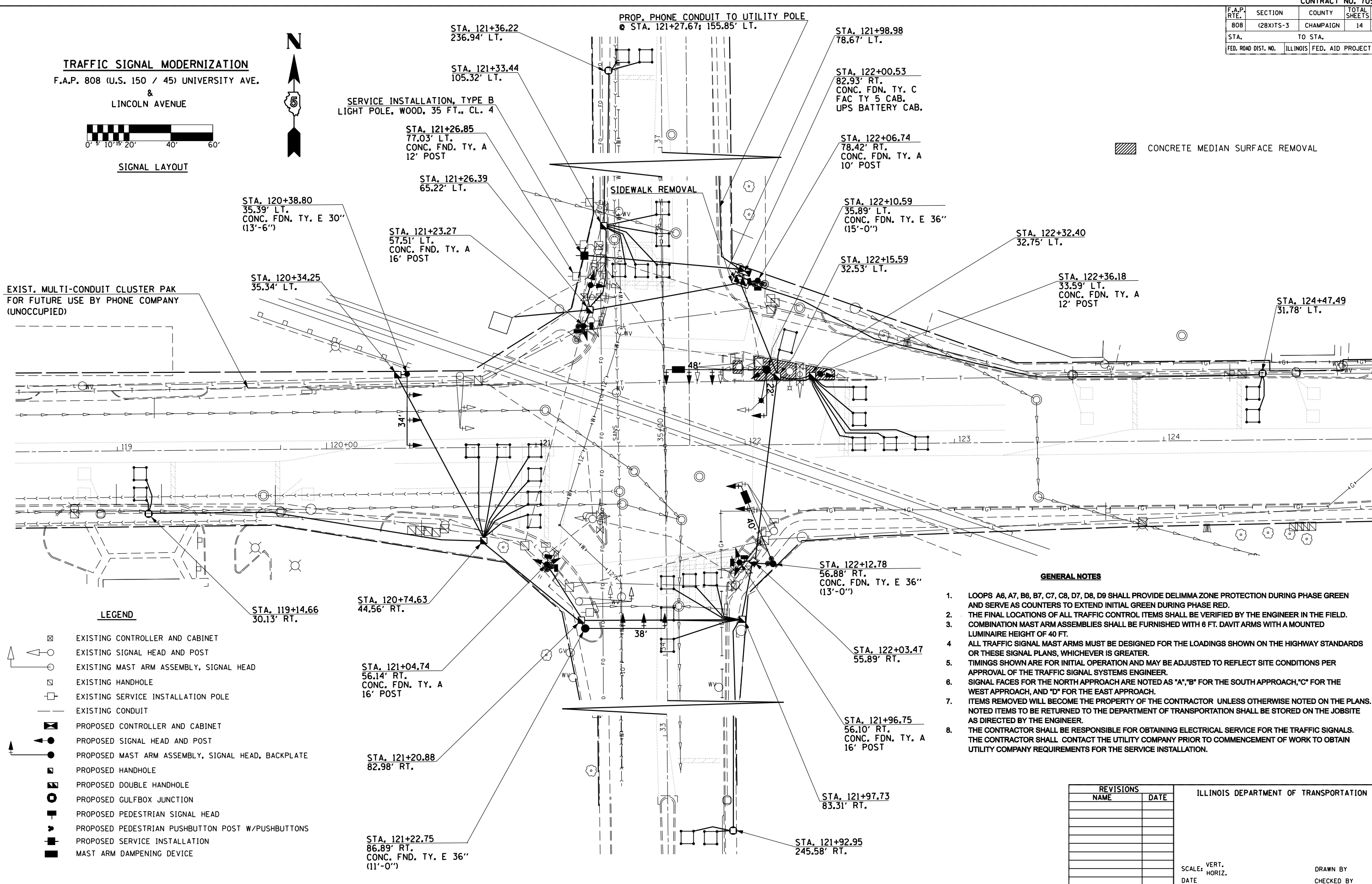
F.A.P. 808 (U.S. 150 / 45) UNIVERSITY AVE.  
&  
LINCOLN AVENUE



SIGNAL LAYOUT



EXIST. MULTI-CONDUIT CLUSTER PAK FOR FUTURE USE BY PHONE COMPANY (UNOCCUPIED)



CONCRETE MEDIAN SURFACE REMOVAL

**LEGEND**

- EXISTING CONTROLLER AND CABINET
- EXISTING SIGNAL HEAD AND POST
- EXISTING MAST ARM ASSEMBLY, SIGNAL HEAD
- EXISTING HANDHOLE
- EXISTING SERVICE INSTALLATION POLE
- EXISTING CONDUIT
- PROPOSED CONTROLLER AND CABINET
- PROPOSED SIGNAL HEAD AND POST
- PROPOSED MAST ARM ASSEMBLY, SIGNAL HEAD, BACKPLATE
- PROPOSED HANDHOLE
- PROPOSED DOUBLE HANDHOLE
- PROPOSED GULFBOX JUNCTION
- PROPOSED PEDESTRIAN SIGNAL HEAD
- PROPOSED PEDESTRIAN PUSHBUTTON POST W/PUSHBUTTONS
- PROPOSED SERVICE INSTALLATION
- MAST ARM DAMPENING DEVICE

**GENERAL NOTES**

1. LOOPS A6, A7, B6, B7, C7, C8, D7, D8, D9 SHALL PROVIDE DELIMMA ZONE PROTECTION DURING PHASE GREEN AND SERVE AS COUNTERS TO EXTEND INITIAL GREEN DURING PHASE RED.
2. THE FINAL LOCATIONS OF ALL TRAFFIC CONTROL ITEMS SHALL BE VERIFIED BY THE ENGINEER IN THE FIELD.
3. COMBINATION MAST ARM ASSEMBLIES SHALL BE FURNISHED WITH 6 FT. DAVIT ARMS WITH A MOUNTED LUMINAIRE HEIGHT OF 40 FT.
4. ALL TRAFFIC SIGNAL MAST ARMS MUST BE DESIGNED FOR THE LOADINGS SHOWN ON THE HIGHWAY STANDARDS OR THESE SIGNAL PLANS, WHICHEVER IS GREATER.
5. TIMINGS SHOWN ARE FOR INITIAL OPERATION AND MAY BE ADJUSTED TO REFLECT SITE CONDITIONS PER APPROVAL OF THE TRAFFIC SIGNAL SYSTEMS ENGINEER.
6. SIGNAL FACES FOR THE NORTH APPROACH ARE NOTED AS "A", "B" FOR THE SOUTH APPROACH, "C" FOR THE WEST APPROACH, AND "D" FOR THE EAST APPROACH.
7. ITEMS REMOVED WILL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE NOTED ON THE PLANS. NOTED ITEMS TO BE RETURNED TO THE DEPARTMENT OF TRANSPORTATION SHALL BE STORED ON THE JOBSITE AS DIRECTED BY THE ENGINEER.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ELECTRICAL SERVICE FOR THE TRAFFIC SIGNALS. THE CONTRACTOR SHALL CONTACT THE UTILITY COMPANY PRIOR TO COMMENCEMENT OF WORK TO OBTAIN UTILITY COMPANY REQUIREMENTS FOR THE SERVICE INSTALLATION.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

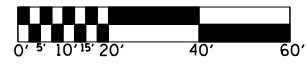
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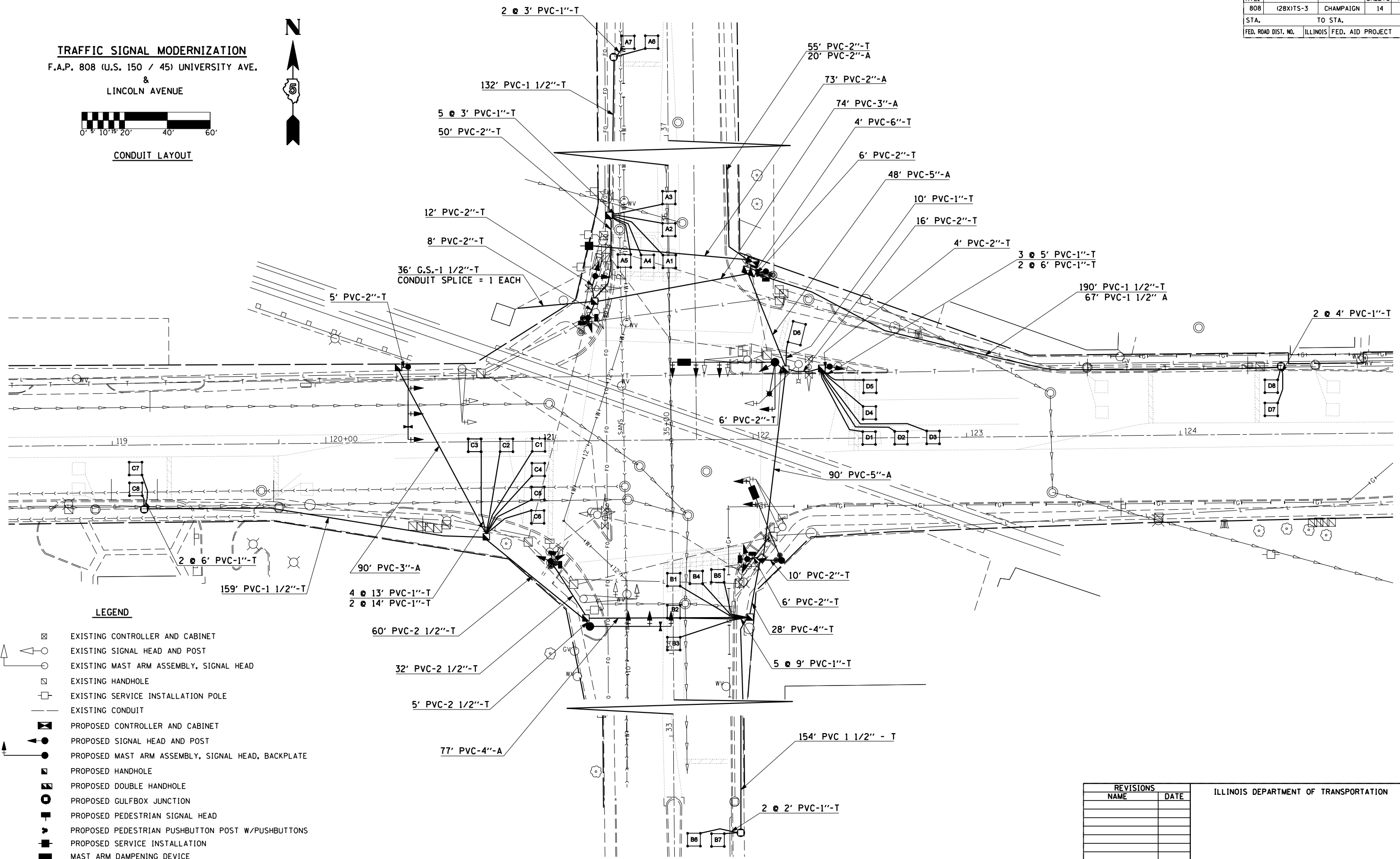
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
808	(28X)TS-3	CHAMPAIGN	14	8
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

**TRAFFIC SIGNAL MODERNIZATION**

F.A.P. 808 (U.S. 150 / 45) UNIVERSITY AVE. & LINCOLN AVENUE



CONDUIT LAYOUT



**LEGEND**

- |  |  |
|--|--|
|  | EXISTING CONTROLLER AND CABINET                    |
|  | EXISTING SIGNAL HEAD AND POST                      |
|  | EXISTING MAST ARM ASSEMBLY, SIGNAL HEAD            |
|  | EXISTING HANDHOLE                                  |
|  | EXISTING SERVICE INSTALLATION POLE                 |
|  | EXISTING CONDUIT                                   |
|  | PROPOSED CONTROLLER AND CABINET                    |
|  | PROPOSED SIGNAL HEAD AND POST                      |
|  | PROPOSED MAST ARM ASSEMBLY, SIGNAL HEAD, BACKPLATE |
|  | PROPOSED HANDHOLE                                  |
|  | PROPOSED DOUBLE HANDHOLE                           |
|  | PROPOSED GULFTOP JUNCTION                          |
|  | PROPOSED PEDESTRIAN SIGNAL HEAD                    |
|  | PROPOSED PEDESTRIAN PUSHBUTTON POST W/PUSHBUTTONS  |
|  | PROPOSED SERVICE INSTALLATION                      |
|  | MAST ARM DAMPENING DEVICE                          |

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	DATE	
		SCALE: VERT. HORIZ. DATE

DRAWN BY  
CHECKED BY



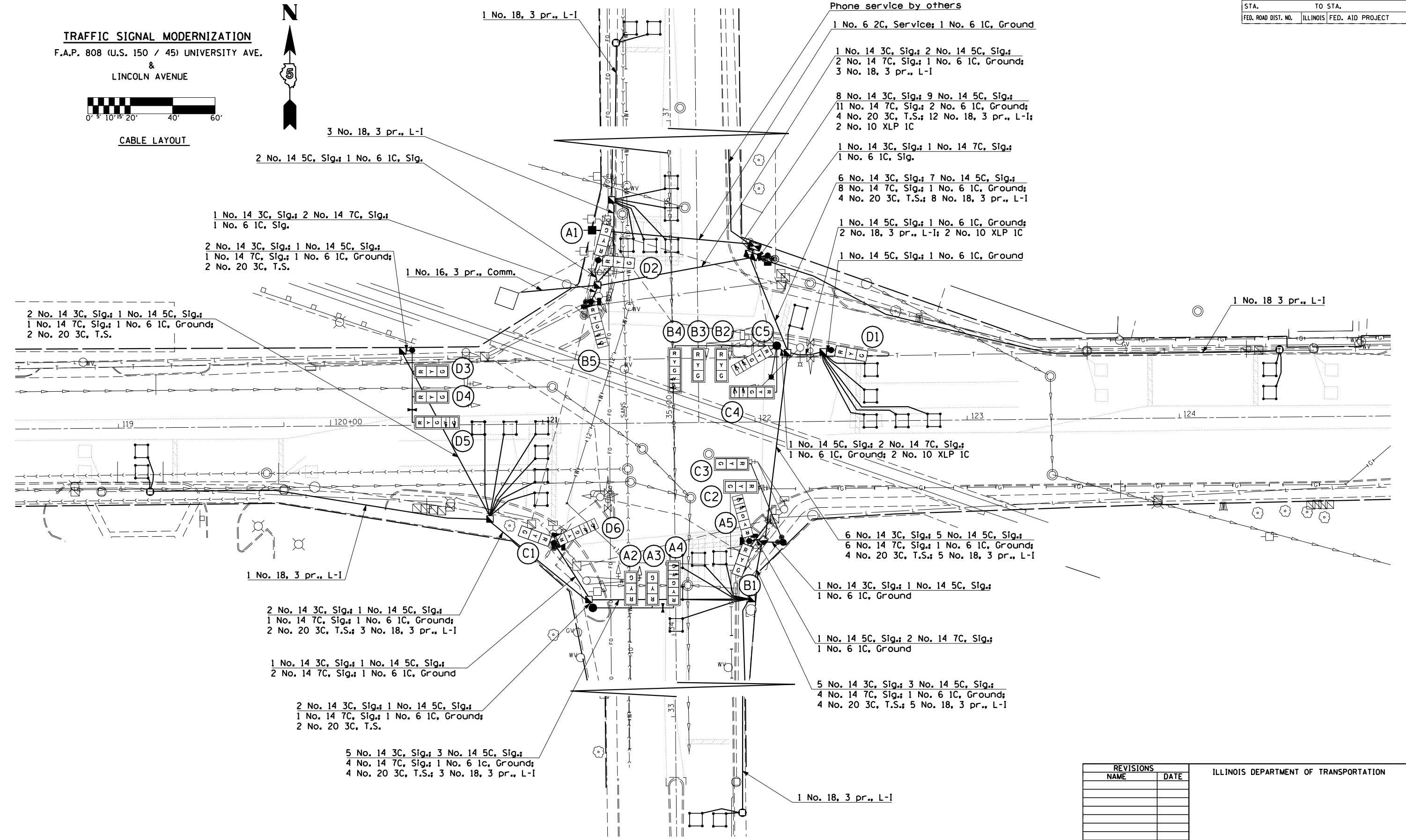
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
808	(28X)TS-3	CHAMPAIGN	14	9
STA. TO STA.		ILLINOIS FED. AID PROJECT		

**TRAFFIC SIGNAL MODERNIZATION**

F.A.P. 808 (U.S. 150 / 45) UNIVERSITY AVE. & LINCOLN AVENUE



CABLE LAYOUT



PLOT DATE = 11/30/2006  
 FILE NAME = c:\projects\4587686 (v8)\sigplan\sheet.dgn  
 PLOT SCALE = 42.3529' / IN.  
 USER NAME = biggard

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

SCALE: VERT. HORIZ.  
DATE

DRAWN BY  
CHECKED BY

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
808	(28X)TS-3	CHAMPAIGN	14	10

**DETECTOR LOOP DATA**

Loop	Size	Turns	Mode	Delay / Ext.	Loop Output	Veh. Phase
A1-2	6' x 6'	4	PRESENCE	2 /	VD 7	7
A3	6' x 6'	4	PRESENCE		PD 7	7
A4	6' x 6'	4	PRESENCE		SD 3	4
A5	6' x 6'	4	PRESENCE		SD 4	4
A6-7	6' x 6'	5	PRESENCE	/ 5	VD 4	4
B1-2	6' x 6'	4	PRESENCE	2 /	VD 3	3
B3	6' x 6'	4	PRESENCE		PD 3	3
B4	6' x 6'	4	PRESENCE		SD 7	8
B5	6' x 6'	4	PRESENCE		SD 8	8
B6-7	6' x 6'	5	PRESENCE	/ 5	VD 8	8
C1-2	6' x 6'	5	PRESENCE	2 /	VD 5	5
C3	6' x 6'	5	PRESENCE		PD 5	5
C4	6' x 6'	5	PRESENCE		SD 1	2
C5	6' x 6'	5	PRESENCE		SD 2	2
C6	6' x 6'	5	PRESENCE	10 /	VD 2	2
C7-8	6' x 6'	5	PRESENCE	/ 5	VD 2	2
D1-2	6' x 6'	3	PRESENCE	2 /	VD 1	1
D3	6' x 6'	3	PRESENCE		PD 1	1
D4	6' x 6'	3	PRESENCE		SD 5	6
D5	6' x 6'	3	PRESENCE		SD 6	6
D6	6' x 10'	3	PRESENCE	10 /	VD 6	6
D7-8	6' x 6'	5	PRESENCE	/ 5	VD 6	6

**GENERAL NOTES**

1. THE FOLLOWING SIGNAL HEADS SHALL BE WIRED IN PARALLEL AT THE MAST POLE HANDHOLE: (A2, A3), (B2, B3), (C2, C3), (C4, C5), (D3, D4) - EACH MAST ARM MOUNTED SIGNAL HEAD SHALL HAVE ITS OWN INDIVIDUAL CABLE FROM THE MAST POLE HANDHOLE TO THE SIGNAL HEAD.
2. THE ACTUAL LOCATION OF ALL SIGNAL FOUNDATIONS, HANDHOLES, AND TRAFFIC CONTROLLER WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
3. POST MOUNTED SIGNALS SHALL BE INSTALLED SO THAT NO PART OF THE SIGNAL HEAD IS WITHIN 2 FT. OF THE FACE OF CURB.
4. ALL MAST ARM POLES SHALL BE A MINIMUM OF 6 FT. FROM THE CENTER OF THE POLE TO THE FACE OF CURB (ON THE MAST ARM SIDE) OR AS SHOWN ON THE PLANS.
5. ALIGN ADJACENT RED INDICATIONS TO SAME HEIGHT ABOVE PAVEMENT.
6. THE BASE FOR A TRAFFIC SIGNAL POST SHALL BE SITUATED SUCH THAT THE HANDHOLE IS LOCATED ON A SIDE AWAY FROM A TRAVELED LANE.
7. PEDESTRIAN PUSHBUTTON SIGNAL SIGNS SHALL BE MOUNTED ABOVE THE APPROPRIATE PEDESTRIAN PUSHBUTTON.
8. THE ANTI-BACKUP FEATURE SHALL BE HARDWIRED ON THE BACKPANEL OF THE CONTROLLER CABINET.

LOOPS SHALL BE WIRED TO COMMON AMPLIFIERS AS LISTED ABOVE.

THE FOLLOWING LOOP SHALL SERVE AS PRESENCE DETECTORS AND TRAFFIC COUNT LOOPS: A3, A4, A5, B3, B4, B5, C3, C4, C5, D3, D4, D5, D6

22 AMPLIFIERS TOTAL REQUIRED

**RAILROAD PRE-EMPTION SEQUENCE**

UPON ACTUATION OF THE RAILROAD PRE-EMPTION, THE PHASES IN SERVICE SHALL TERMINATE TO ALL WAY RED, THE ASSOCIATED PEDESTRIAN PHASES SHALL BE ABBREVIATED TO THE YELLOW CHANGE INTERVAL AND TIMED CONCURRENTLY. PEDESTRIAN INDICATIONS SHALL STAY IN SOLID DON'T WALK DURING THE PRE-EMPTION. UPON COMPLETION OF THE PRE-EMPTION, THE CONTROLLER SHALL RESUME NORMAL OPERATIONS.

**Suggested Timings**

PHASE	1	2	3	4	5	6	7	8
Min. Grn.	7	15	7	15	7	15	7	15
add sec./act.	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0
Max Init Grn	0	0	0	0	0	0	0	0
Max Green	15	55	15	45	15	55	15	45
Passage	3.0	1.5	3.0	1.5	3.0	1.5	3.0	1.5
T.B.R.	0	0	0	0	0	0	0	0
T.T.R.	0	0	0	0	0	0	0	0
Min. Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amber Clear	3.0	3.5	3.0	3.5	3.0	3.5	3.0	3.5
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Walk		4		4		4		4
Ped Clear		22		26		22		28

Timing Plan 1/1/1 Mon-Fri 9:00-1600  
 Mon-Fri 18:00-19:00  
 Sat 7:00-19:00  
 Timing Plan 2/1/1 Mon-Fri 7:00-9:00  
 Timing Plan 3/1/1 Mon-Fri 16:00-18:00  
 Coordination Mode=Permissive-Yield  
 Correction=Shortway

Timing Plan 1/1/1	13	31	13	28	13	31	13	28
-Phase Mode	0	1	0	3	0	1	0	3
Timing Plan 2/1/1	13	31	13	28	13	31	13	28
-Phase Mode	0	1	0	3	0	1	0	3
Timing Plan 3/1/1	13	41	13	28	15	39	16	25
-Phase Mode	0	1	0	3	0	1	0	3

Cycle=85s, offset=28s

Cycle=85s, offset=28s

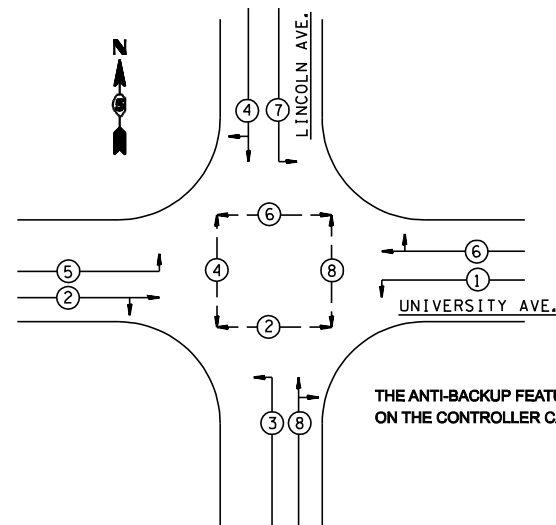
Cycle=95s, offset=62s

All vehicle detectors shall be set for non-locking operation

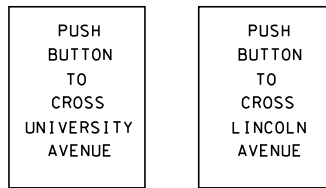
All active detector channels shall have 30 min. set into max-call field of detector diagnostics.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
808	(28X)TS-3	CHAMPAIGN	13	11

**PHASE DESIGNATION DIAGRAM**



**PEDESTRIAN PUSH-BUTTON SIGNS**



PEDESTRIAN PUSH-BUTTON SIGNS SHALL BE MOUNTED ABOVE THE PEDESTRIAN PUSH BUTTONS. THE SIGNS SHALL BE BOLTED TO THE POSTS.

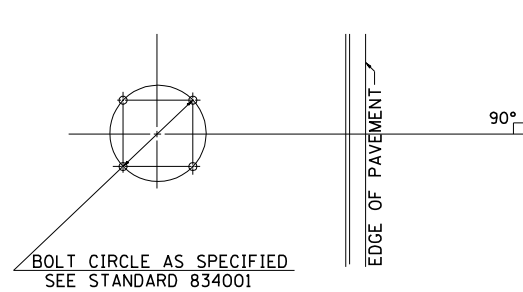
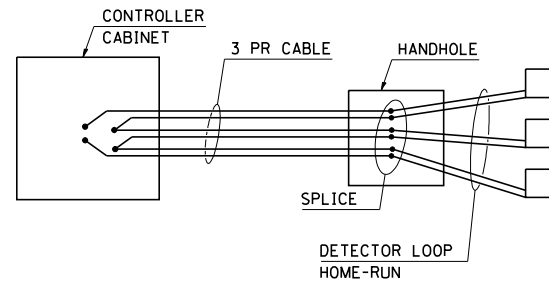
**BILL OF MATERIALS**

U.S. 45 / 150 (UNIVERSITY AVE.) & LINCOLN AVE.

ITEM	UNIT	QUANTITY
STEEL COMBINATION MAST ARM ASSEMBLY ANDPOLE WITH DUAL MAST ARMS, 48 FT. AND 22FT. SERVICE INSTALLATION, TYPE B	EACH	1
CONDUIT IN TRENCH, 1" DIA., PVC	EACH	1
CONDUIT IN TRENCH, 1 1/2" DIA., PVC	FOOT	197
CONDUIT IN TRENCH, 2" DIA., PVC	FOOT	671
CONDUIT IN TRENCH, 2 1/2" DIA., PVC	FOOT	157
CONDUIT IN TRENCH, 4" DIA., PVC	FOOT	118
CONDUIT IN TRENCH, 6" DIA., PVC	FOOT	28
CONDUIT, AUGERED 2" DIA., PVC	FOOT	4
CONDUIT, AUGERED 3" DIA., PVC	FOOT	93
CONDUIT, AUGERED 4" DIA., PVC	FOOT	164
CONDUIT SPLICE	FOOT	90
CONDUIT ATTACHED TO STRUCTURE, 2" DIA., PVC	EACH	1
HANDHOLE	FOOT	30
DOUBLE HANDHOLE	EACH	9
GULFBOX JUNCTION	EACH	1
GULFBOX JUNCTION REMOVAL	EACH	4
ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 10	EACH	6
TRENCH AND BACKFILL FOR ELECTRICAL WORK	FOOT	283
LIGHT POLE, WOOD, 35 FOOT, CLASS 4	FOOT	1120
RAILROAD, FULL-ACUATED CONTROLLER AND CABINET	EACH	1
TRANSCEIVER	EACH	1
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	EACH	1
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	636
ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT	2308
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 3 PAIR	FOOT	2151
ELECTRIC CABLE IN CONDUIT, COMMUNICATION NO. 16 3 PAIR	FOOT	2943
ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2 C	FOOT	161
TRAFFIC SIGNAL POST, ALUMINUM 10 FT.	FOOT	99
TRAFFIC SIGNAL POST, ALUMINUM 12 FT.	EACH	1
TRAFFIC SIGNAL POST, ALUMINUM 16 FT.	EACH	2
STEEL MAST ARM ASSEMBLY AND POLE, 34 FT.	EACH	3
STEEL MAST ARM ASSEMBLY AND POLE, 38 FT.	EACH	1
STEEL MAST ARM ASSEMBLY AND POLE, 40 FT.	EACH	1
CONCRETE FOUNDATION, TYPE A	FOOT	18.6
CONCRETE FOUNDATION, TYPE C	FOOT	3.5
CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER	FOOT	13.5
CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	FOOT	37
SIGNAL HEAD ,POLYCARBONATE, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	1
SIGNAL HEAD ,POLYCARBONATE, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	8
SIGNAL HEAD ,POLYCARBONATE, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED	EACH	2
SIGNAL HEAD ,POLYCARBONATE, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED	EACH	4
SIGNAL HEAD ,POLYCARBONATE, LED, 2-FACE, 3-SECTION, BRACKET MOUNTED	EACH	1
SIGNAL HEAD ,POLYCARBONATE, LED, 2-FACE, 1-3 SECTION, 1-5 SECTION, BRACKET MOUNTED	EACH	2
PEDESTRIAN SIGNAL HEAD, POLYCARBONATE, 2-FACE, BRACKET MOUNTED	EACH	4
TRAFFIC SIGNAL BACKPLATE, LOUVERED	EACH	12
INDUCTIVE LOOP DETECTOR	EACH	22
DETECTOR LOOP, TYPE I	FOOT	1355
LIGHT DETECTOR	EACH	4
LIGHT DETECTOR AMPLIFIER	EACH	1
PEDESTRIAN PUSH-BUTTON	EACH	8
REMOVE ELECTRIC CABLE FROM CONDUIT	FOOT	4300
REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	EACH	1
REMOVE EXISTING HANDHOLE	EACH	10
REMOVE EXISTING CONCRETE FOUNDATION	EACH	17
UNINTERRUPTIBLE POWER SUPPLY	EACH	1
RADIO INTERCONNECT SYSTEM LOCAL, COMPLETE	EACH	1
ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6 1C	FOOT	711
ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED	FOOT	1728
LUMINAIRE, METAL HALIDE HORIZONTAL MOUNT 250 WATT	EACH	1

**DETAIL OF DETECTOR LOOP WIRING**

WIRED IN SERIES WITH MULTI-PAIR CABLE



**DETAIL OF MAST ARM FOUNDATION BOLT PATTERN**

**ITEMS TO BE RETURNED TO IL. DEPT. OF TRANSPORTATION**

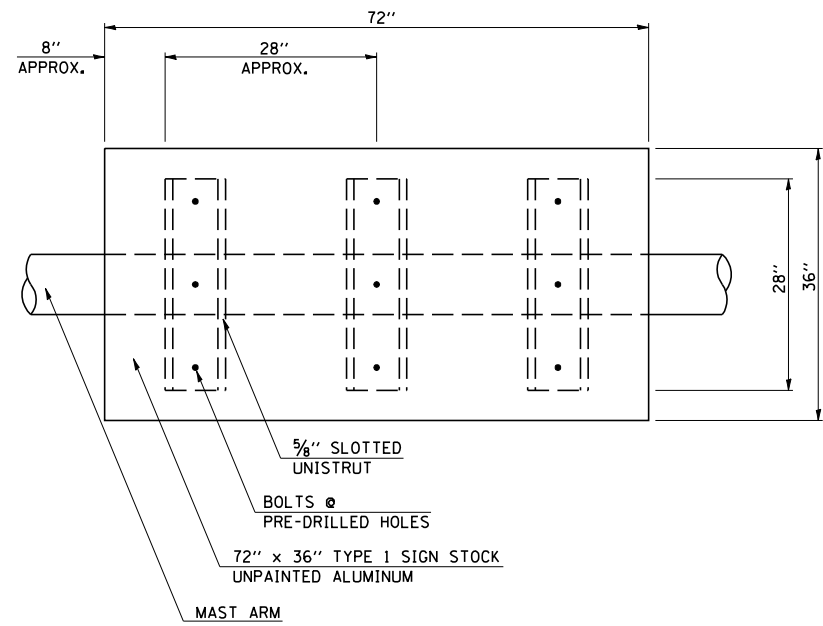
ITEM	QUANTITY
CONTROLLER CABINET	1 EACH
CONTROLLER CABINET	1 EACH

**ITEMS TO BE RETURNED TO THE CITY OF URBANA**

ITEM	QUANTITY
LED MODULES	ALL-CONFIRM IN FIELD

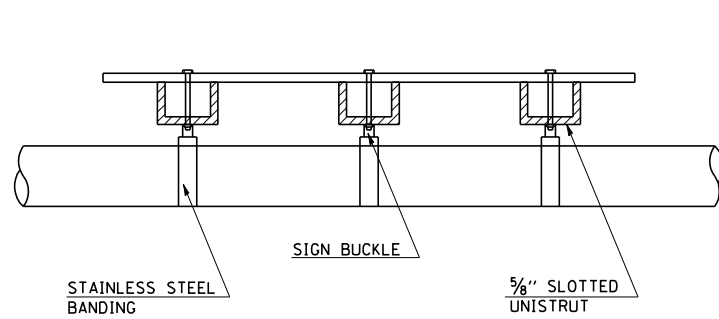
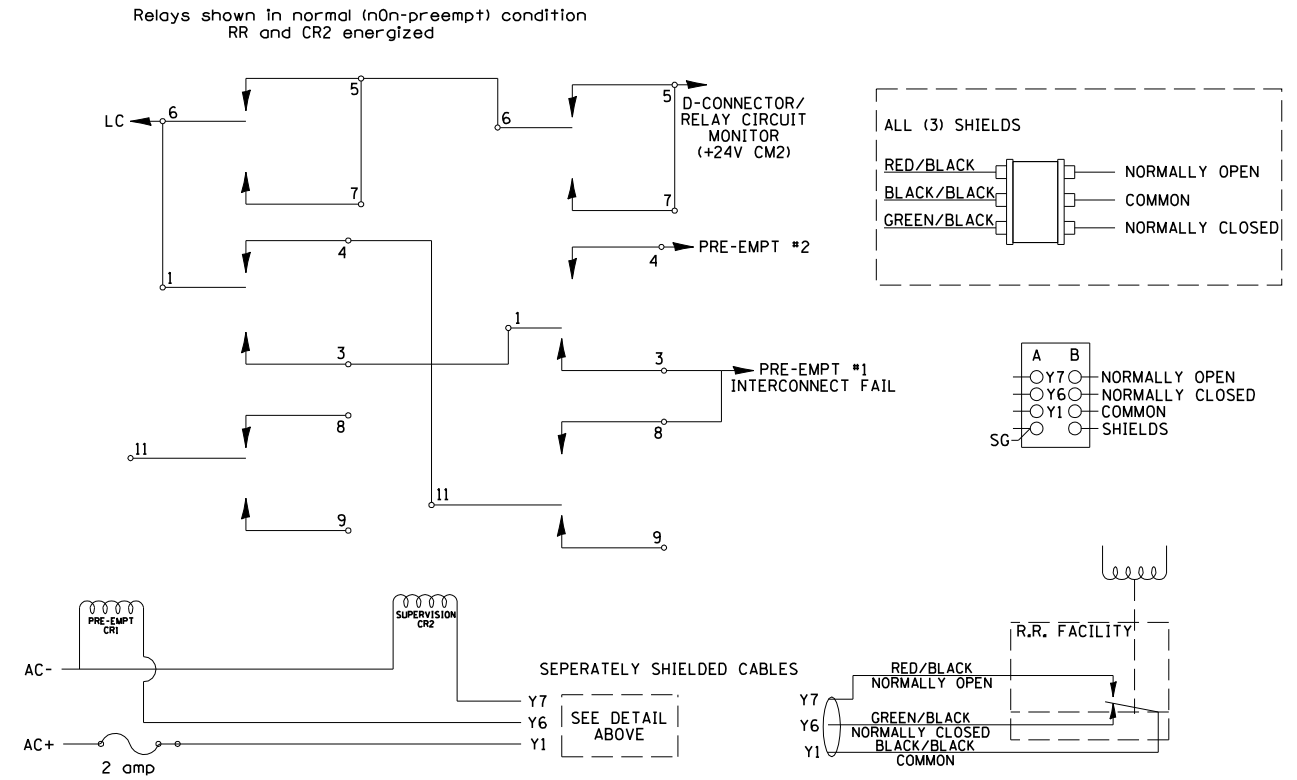
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
808	(28X)TS-3	CHAMPAIGN	14	12

### MAST ARM DAMPENING DEVICE MOUNTING DETAIL

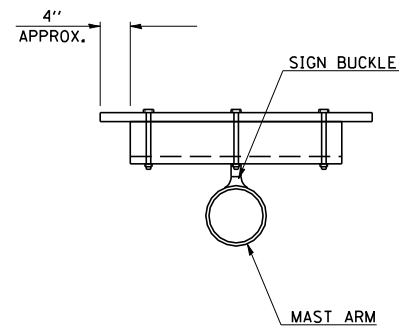


**PLAN VIEW**

### DETAIL OF RAILROAD INTERCONNECT CIRCUIT



**ELEVATION**

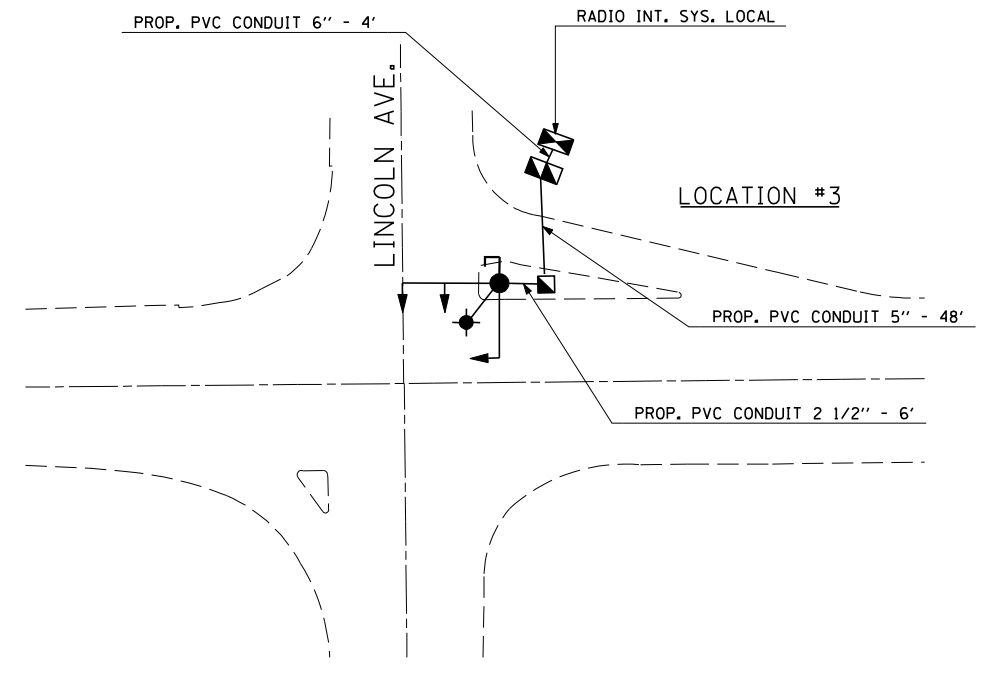
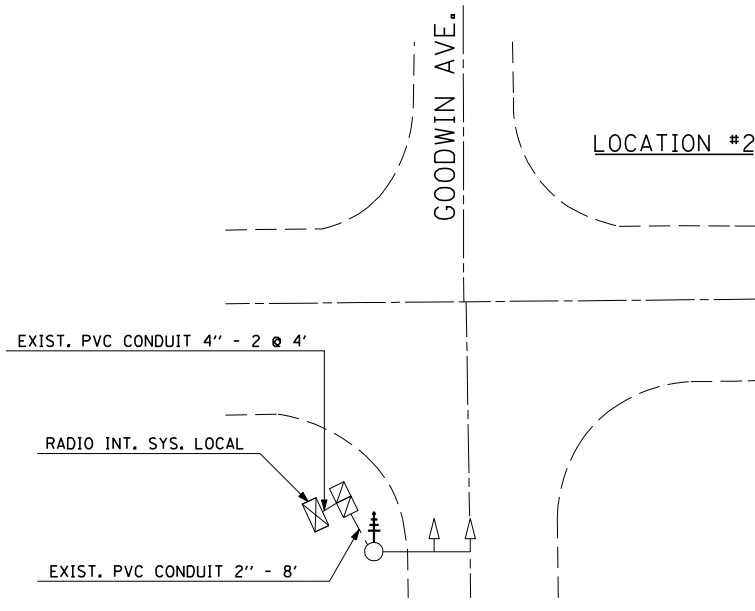
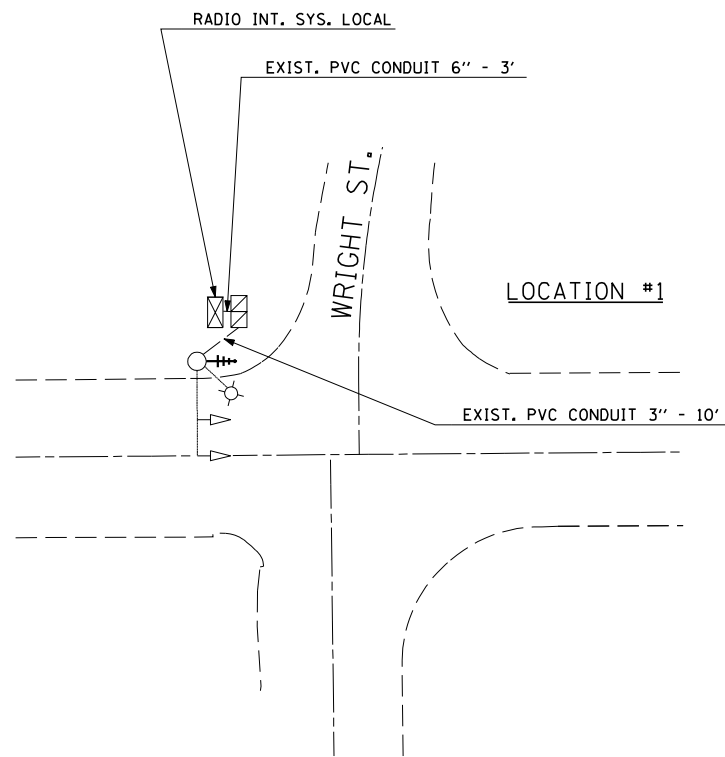
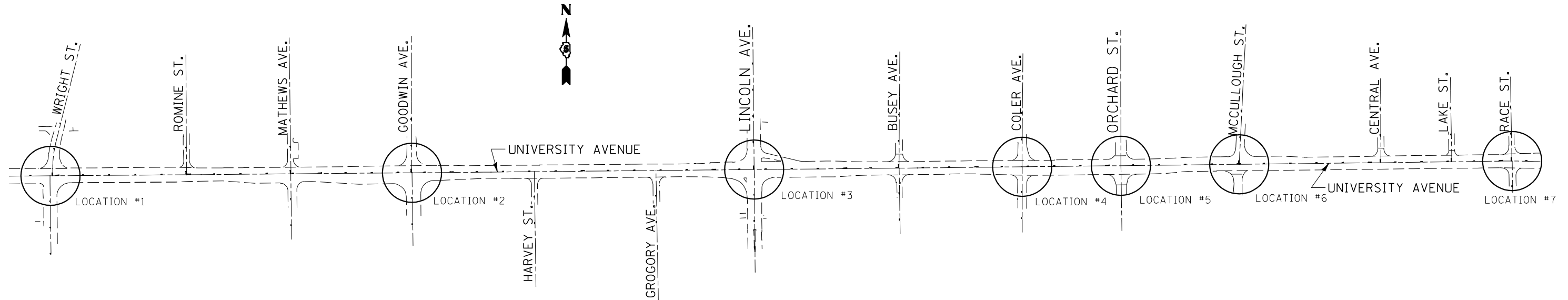


**CROSS SECTION**

NOTE: PAINT ENDS OF UNISTRUT WITH  
SPRAY ON GALVANIZED PAINT

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
808	(28X)TS-3	CHAMPAIGN	14	13

# PROPOSED RADIO INTERCONNECT SYSTEM LAYOUT



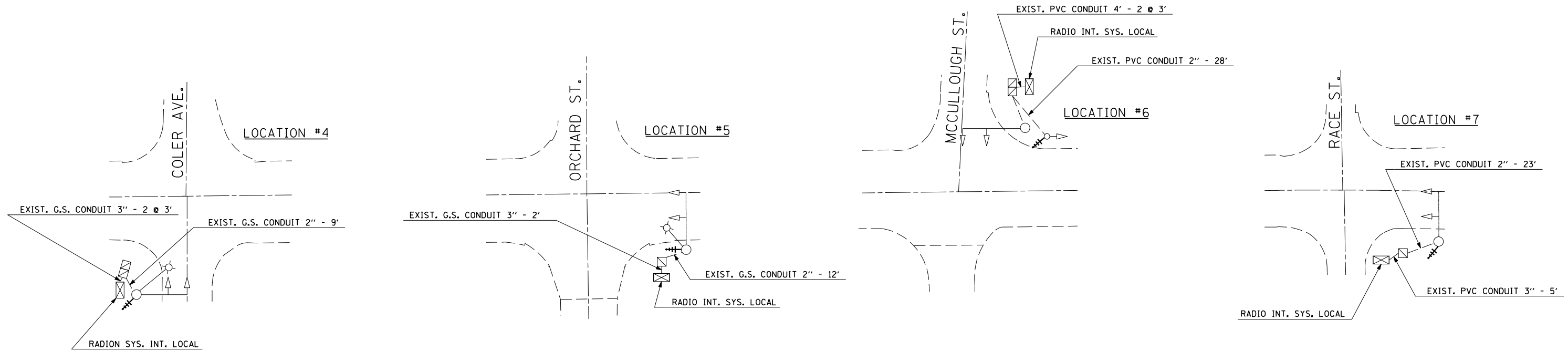
### LEGEND

- EXISTING CONTROLLER AND CABINET
- EXISTING SIGNAL HEAD AND POST
- EXISTING MAST ARM ASSEMBLY, SIGNAL HEAD
- EXISTING HANDHOLE
- EXISTING SERVICE INSTALLATION POLE
- EXISTING CONDUIT
- PROPOSED RADIO INTERCONNECT ANTENNA - YAGI DIRECTIONAL
- PROPOSED RADIO INTERCONNECT ANTENNA - OMNI DIRECTIONAL

NOTE:  
RADIO ANTENNA TO BE MOUNTED ON MAST  
ARM STRAIN POLE (SEE ANTENNA DETAILS).

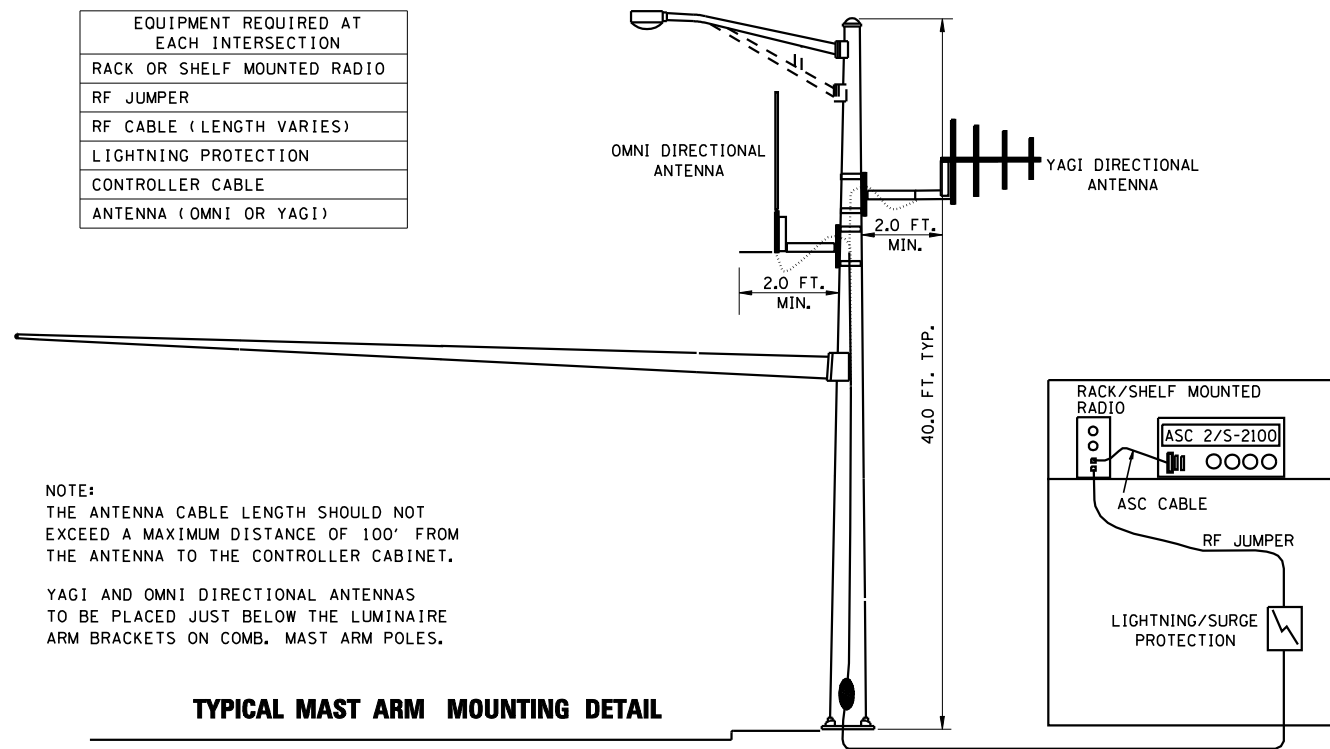
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
808	(28X)TS-3	CHAMPAIGN	14	14

# PROPOSED RADIO INTERCONNECT SYSTEM LAYOUT



## RADIO INTERCONNECT ANTENNA MOUNTING DETAILS

EQUIPMENT REQUIRED AT EACH INTERSECTION
RACK OR SHELF MOUNTED RADIO
RF JUMPER
RF CABLE (LENGTH VARIES)
LIGHTNING PROTECTION
CONTROLLER CABLE
ANTENNA (OMNI OR YAGI)



NOTE:  
THE ANTENNA CABLE LENGTH SHOULD NOT EXCEED A MAXIMUM DISTANCE OF 100' FROM THE ANTENNA TO THE CONTROLLER CABINET.

YAGI AND OMNI DIRECTIONAL ANTENNAS TO BE PLACED JUST BELOW THE LUMINAIRE ARM BRACKETS ON COMB. MAST ARM POLES.

TYPICAL MAST ARM MOUNTING DETAIL

NOT TO SCALE

### LEGEND

- ☒ EXISTING CONTROLLER AND CABINET
- ⊙ EXISTING SIGNAL HEAD AND POST
- ⊙ EXISTING MAST ARM ASSEMBLY, SIGNAL HEAD
- ☒ EXISTING HANDHOLE
- ⊙ EXISTING SERVICE INSTALLATION POLE
- EXISTING CONDUIT
- ⊕ PROPOSED RADIO INTERCONNECT ANTENNA - YAGI DIRECTIONAL
- ⊔ PROPOSED RADIO INTERCONNECT ANTENNA - OMNI DIRECTIONAL

NOTE:  
RADIO ANTENNA TO BE MOUNTED ON MAST ARM STRAIN POLE (SEE ANTENNA DETAILS).