06-14-2024 LETTING ITEM 049

FOR INDEX OF SHEETS, SEE SHEET NO. 2

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# STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

# PROPOSED HIGHWAY PLANS

**FAP ROUTE: 693 (IL. 9)** 

SECTION: (23)N

PROJECT: HSIP-GZPY(629)

TRAFFIC SIGNAL MODERNIZATION

**MCLEAN COUNTY** 

C-95-016-24

IL. 9 & TOWANDA BARNES RD.

SERVICE DE LA COMMOTON

BLOOMINGTON

CASTILIDAD DE LA COMMOTON

CASTILIDAD

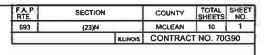
CITY OF BLOOMINGTON

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

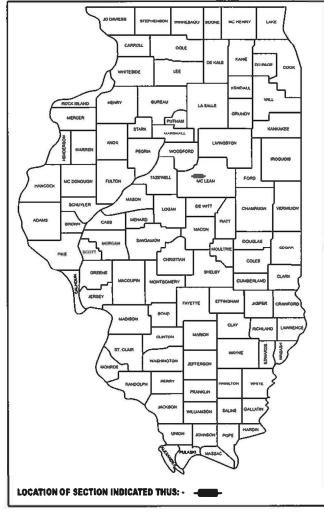
J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

PROJECT ENGINEER - JEFFERY L. ALLEN PROJECT MANAGER - ROGER D. BIGGS

CONTRACT NO. 70G90







STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED

3/18
2024

Kensil a Manettson

REGIONAL ENGINEER

May 10, 2024

ENGINEER OF DESIGN AND ENVIRONMENT

May 10, 2024

DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

### **INDEX OF SHEETS**

- 1 COVER SHEET
- 2 INDEX OF SHEETS, STANDARDS TO BE INCLUDED IN PLANS, GENERAL NOTES
- 3 6 SUMMARY OF QUANTITIES
- 7 SCHEDULE OF QUANTITIES
- 8 TRAFFIC SIGNAL LAYOUT
- 9 TRAFFIC SIGNAL CONDUIT AND CABLE LAYOUT
- 10 DETAILS, PHASING DIAGRAM, BILL OF MATERIALS

#### STANDARDS TO BE INCLUDED IN THE PLANS

000001-08	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
701101-05	OFF RD. OPERATIONS, MULTILANE, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE
701106-02	OFF RD. OPERATIONS, MULTILANE, MORE THAN 15' (4.5 m) AWAY
701701-10	URBAN LANE CLOSURE, MULTILANE INTERSECTION
701901-09	TRAFFIC CONTROL DEVICES
720001-01	SIGN PANEL MOUNTING DETAILS
720016-04	MAST ARM MOUNTED STREET NAME SIGNS
805001-01	ELECTRICAL SERVICE INSTALLATION DETAILS
814001-03	HANDHOLES
814006-03	DOUBLE HANDHOLES
821101-02	LUMINAIRE WIRING IN POLE
857001-01	STANDARD PHASE DESIGNATION DIAGRAMS AND PHASE SEQUENCES
862001-01	UNINTERRUPTABLE POWER SUPPLY
873001-02	TRAFFIC SIGNAL GROUNDING & BONDING
877001-08	STEEL MAST ARM ASSEMBLY AND POLE 16' THROUGH 55'
877011-10	STEEL COMB. MAST ARM ASSEMBLY AND POLE 16' THROUGH 55'
878001-11	CONCRETE FOUNDATION DETAILS
880006-01	TRAFFIC SIGNAL MOUNTING DETAILS

#### **GENERAL NOTES**

G.N.-100A ELECTRONIC FILES AND/OR ELECTRONIC SURVEY INFORMATION INCLUDING CADD FILES WILL NOT BE AVAILABLE TO THE CONTRACTOR.

G.N.-105.09A ALL ELEVATIONS SHOWN IN THE PLANS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988. (NAVD 88)

USER NAME = roger.biggs	DESIGNED -	REVISED -
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	CHECKED -	REVISED -
PLOT DATE = 3/21/2024	DATE -	REVISED -
		DRAWN - CHECKED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCALE:

INDEX OF SHEETS, STANDARDS TO BE INCLUDED IN PLANS,
& GENERAL NOTES

SHEET 1 OF 1 SHEETS STA. TO STA.

dot/biggsrd/d0918178\D570G90-Sht-GenNote

**LOCATION OF WORK:** 

FAP 693 IL. 9

FAP 693 IL. 9 &

TOWANDA -BARNES RD. MCLEAN

TOWANDA -BARNES RD. MCLEAN

90% FED 5% STATE 100% City

5% STATE 5% CITY

CONSTRUCTION TYPE CODE:

0021 URBAN U

0021 URBAN

		URBAN				
			TOTAL			
CODE NO.	ITEM	<u>UNIT</u>	QUANTITY	QUANTITY	QUANTITY	
67100100	MOBILIZATION	LSUM	1.0	1.0		
70102635	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701	LSUM	1.0	1.0		
81028350	UNDERGROUND CONDUIT, PVC, 2" DIA.	FOOT	169.5	169.5		
81028370	UNDERGROUND CONDUIT, PVC, 3" DIA.	FOOT	427.0	427.0		
81028390	UNDERGROUND CONDUIT, PVC, 4" DIA.	FOOT	156.8	156.8		
81100600	CONDUIT ATTACHED TO STRUCTURE, 2" DIA. GALVANIZED STEEL	FOOT	12.0	12.0		
81400100	HANDHOLE	EACH	4.0	4.0		
81400300	DOUBLE HANDHOLE	EACH	1.0	1.0		
81702110	ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 10	FOOT	1073.0		1,073.0	
82110007	LUMINAIRE, LED, ROADWAY, OUTPUT DESIGNATION G	EACH	2.0		2.0	
85700200	FULL-ACTUATED CONTROLLER AND TYPE IV CABINET	EACH	1.0	1.0		
86200200	UNINTERRUPTABLE POWER SUPPLY, STANDARD	EACH	1.0	1.0		
87300925	ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1C	FOOT	56.0	56.0		
87301225	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	UNIT	1059.0		1,059.0	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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CONSTRUCTION TYPE CODE:

				URBAN	URBAN
			TOTAL		
CODE NO.	<u>ITEM</u>	UNIT	QUANTITY	QUANTITY	QUANTITY
87301245	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	1743.0	1743.0	
87301255	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 147C	FOOT	2793.0	2793.0	
87301805	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2 C	FOOT	103.0	103.0	
87301900	ELECTRIC CABLE IN CONDUIT, EQUIPMENT GROUNDING CONDUCTOR, NO. 6 1C	FOOT	789.0	789.0	
87502680	TRAFFIC SIGNAL POST, ALUMINUM 14 FT.	EACH	4.0	4.0	
87700260	STEEL MAST ARM ASSEMBLY AND POLE, 44 FT.	EACH	1.0	1.0	
87700270	STEEL MAST ARM ASSEMBLY AND POLE, 46 FT.	EACH	1.0	1.0	
87702910	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 36 FT.	EACH	1.0	1.0	
87702960	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 46 FT.	EACH	1.0	1.0	
87800100	CONCRETE FOUNDATION, TYPE A	FOOT	12.4	12.4	
87800150	CONCRETE FOUNDATION, TYPE C	FOOT	3.5	3.5	
87800415	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	FOOT	50.0	50.0	
88040070	SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	2.0	2.0	
88040090	SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	7.0	7.0	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITES						F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
					693	(23)N	MCLEAN	10	4	
								CONTRACT	NO. 700	<b>390</b>
	SHEET 2	OF 4	SHEETS	STA.	TO STA.		ILLINOIS FED. AII	O PROJECT		

**LOCATION OF WORK: FAP 693 FAP 693** IL. 9 IL. 9 TOWANDA -TOWANDA -BARNES RD. BARNES RD. **MCLEAN** MCLEAN 90% FED 100% City 5% STATE 5% CITY 0021 URBAN 0021

SCALE:

CONSTRUCTION TYPE CODE:

				URBAN	
			TOTAL		
CODE NO.	ITEM	UNIT	QUANTITY	QUANTITY	QUANTITY
88040110	SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 4-SECTION, BRACKET MOUNTED	EACH	4.0	4.0	
88040120	SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 4-SECTION, MAST ARM MOUNTED	EACH	4.0	4.0	
88040150	SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED	EACH	3.0	3.0	
88040160	SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED	EACH	1.0	1.0	
88200510	TRAFFIC SIGNAL BACKPLATE, RETROREFLECTIVE	EACH	21.0	21.0	
89501420	RELOCATE EMERGENCY VEHICLE PRIORITY SYSTEM, COMPLETE	EACH	1.0		1.0
89502375	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	EACH	1.0	1.0	
89502380	REMOVE EXISTING HANDHOLE	EACH	4.0	4.0	
89502382	REMOVE EXISTING DOUBLE HANDHOLE	EACH	1.0	1.0	
89502385	REMOVE EXISTING CONCRETE FOUNDATION	EACH	9.0	9.0	
X0324085	EMERGENCY VEHICLE PRIORITY SYSTEM LINE SENSOR CABLE, NO. 20 3/C	FOOT	1059.0		1,059.0
X1400368	RELOCATE EXISTING PTZ CAMERA	EACH	1.0	1.0	
X8050115	SERVICE INSTALLATION, TYPE A (MODIFIED)	EACH	1.0	1.0	
X8710036	FIBER OPTIC CABLE 12 FIBERS, SINGLE MODE	FOOT	97.0	97.0	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES						F.A.P. RTE.	SEC <sup>-</sup>	TION		COUNTY	TOTAL SHEETS	SHEET NO.
						693	(23	B)N		MCLEAN	10	5
										CONTRACT	NO. 700	390
	SHEET 3	OF 4	SHEETS	STA.	TO STA.			ILLINOIS	FED. AID	PROJECT		

**LOCATION OF WORK: FAP 693 FAP 693** IL. 9 IL. 9 & TOWANDA -TOWANDA -BARNES RD. BARNES RD. **MCLEAN** MCLEAN 90% FED 100% City 5% STATE 5% CITY 0021

SCALE:

0021

CONSTRUCTION TYPE CODE:

	CONSTRUCT	ON THE CODE.		URBAN	0021
			TOTAL		
CODE NO.	<u>ITEM</u>	UNIT	QUANTITY	QUANTITY	QUANTITY
X8710103	ETHERNET SWITCH	EACH	1.0	1.0	
X8870510	CONFIRMATION BEACON	EACH	4.0		4.0
X8891007	VIDEO DETECTION SYSTEM COMPLETE	EACH	1.0	1.0	
X0324913	RELOCATE EXISTING RADIO INTERCONNECT SYSTEM	EACH	1.0	1.0	
Z0013798	CONSTRUCTION LAYOUT	EACH	1.0	1.0	

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PLOT DATE = 3/21/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES				F.A.P. RTE	SECTION			COUNTY	TOTAL SHEETS	SHEET NO.		
			693	(23	(23)N		MCLEAN	10	6			
										CONTRACT	NO. 700	390
	SHEET 4	OF 4	SHEETS	STA.	TO STA.		ILLINOIS FED. AID PROJECT					

#### **SCHEDULE OF QUANTITIES**

81400100 HANDHOLE

 STA. 202+54.3; 55.3' LT.
 1.0 EACH

 STA. 203+08.2; 87.3' RT.
 1.0 EACH

 STA. 204+62.5; 60.2' LT.
 1.0 EACH

 STA. 204+41.0; 91.6' RT.
 1.0 EACH

TOTAL = 4.0 EACH

81400300 DOUBLE HANDHOLE

STA 202+98 2; 53 6' I T 1.0 EACH

87800100 CONCRETE FOUNDATION, TYPE A

 STA. 203+07.8; 50.0' LT.
 3.1 FOOT

 STA. 203+03.5; 81.1' RT.
 3.1 FOOT

 STA. 204+44.0; 80.3' RT.
 3.1 FOOT

 STA. 204+65.5; 60.2' LT.
 3.1 FOOT

87502680 TRAFFIC SIGNAL POST, ALUMINUM 14 FT.

 STA. 203+07.8; 50.0' LT.
 1.0
 EACH

 STA. 203+03.5; 81.1' RT.
 1.0
 EACH

 STA. 204+44.0; 80.3' RT.
 1.0
 EACH

 STA. 204+65.5; 60.2' LT.
 1.0
 EACH

TOTAL = 4.0 EACH

TOTAL = 12.4 FOOT

87800415 CONCRETE FOUNDATION TY. E 36 IN.

 STA. 202+67.6; 28.0' LT.
 13.0 FOOT

 STA. 203+43.6; 141.8' RT.
 13.0 FOOT

 STA. 204+29.2; 76.0' LT.
 13.0 FOOT

 STA. 204+82.1; 57.6' RT.
 11.0 FOOT

TOTAL = 50.0 FOOT

87800150 CONCRETE FOUNDATION, TY. C

STA. 202+93.5; 53.6' LT. 3.5 FOOT

87700260 STEEL MAST ARM ASSEMB. AND POLE, 44 FT.

STA. 203+43.6; 141.8' RT. 1.0 EACH

87700270 STEEL MAST ARM ASSEMB. AND POLE, 46 FT.

STA. 204+29.2; 76.0' LT. 1.0 EACH

87702910 STEEL COMB. MAST ARM ASSEMB. AND POLE 36

STA. 204+82.1; 57.6' RT. 1.0 EACH

87702960 STEEL COMB. MAST ARM ASSEMB. AND POLE 46

STA. 202+67.6; 28.0' LT. 1.0 EACH

89502380 REMOVE EXISTING HANDHOLE

 STA. 203+26.4; 81.3' LT.
 1.0 EACH

 STA. 202+97.5; 77.5' RT.
 1.0 EACH

 STA. 204+83.0; 25.1' LT.
 1.0 EACH

 STA. 204+53.3; 69.4' RT.
 1.0 EACH

TOTAL = 4.0 EACH

89502382 REMOVE EXIST. DBL. HANDHOLE

STA. 203+05.1; 45.2' LT. 1.0 EACH

89502385 REMOVE EXISTING CONCRETE FND.

STA. 202+60.3: 55.9' LT. 1.0 EACH STA. 202+74.7; 26.7' LT. 1.0 EACH STA. 203+22.7; 65.6' LT. 1.0 EACH STA. 202+86.5; 69.9' RT. 1.0 EACH STA 203+43.7; 131.8' RT. 1.0 EACH STA. 204+25.8; 84.0' LT. 1.0 EACH 1.0 EACH STA. 204+69.1; 27.3' LT. STA. 204+33.1; 98.0' RT. 1.0 EACH 1.0 EACH STA. 201+71.2; 60.8' RT.

SCALE:

TOTAL = 9.0 EACH

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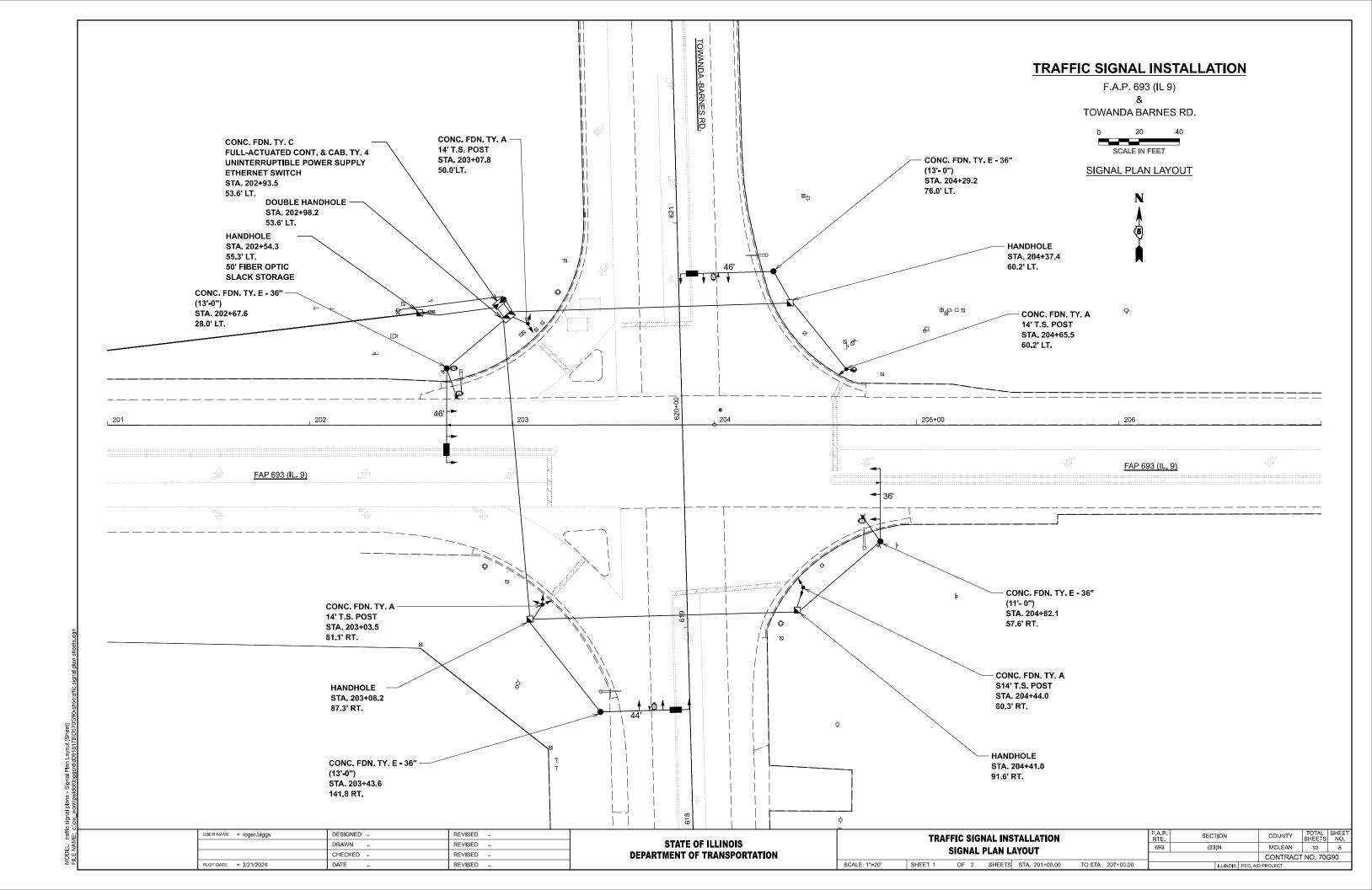
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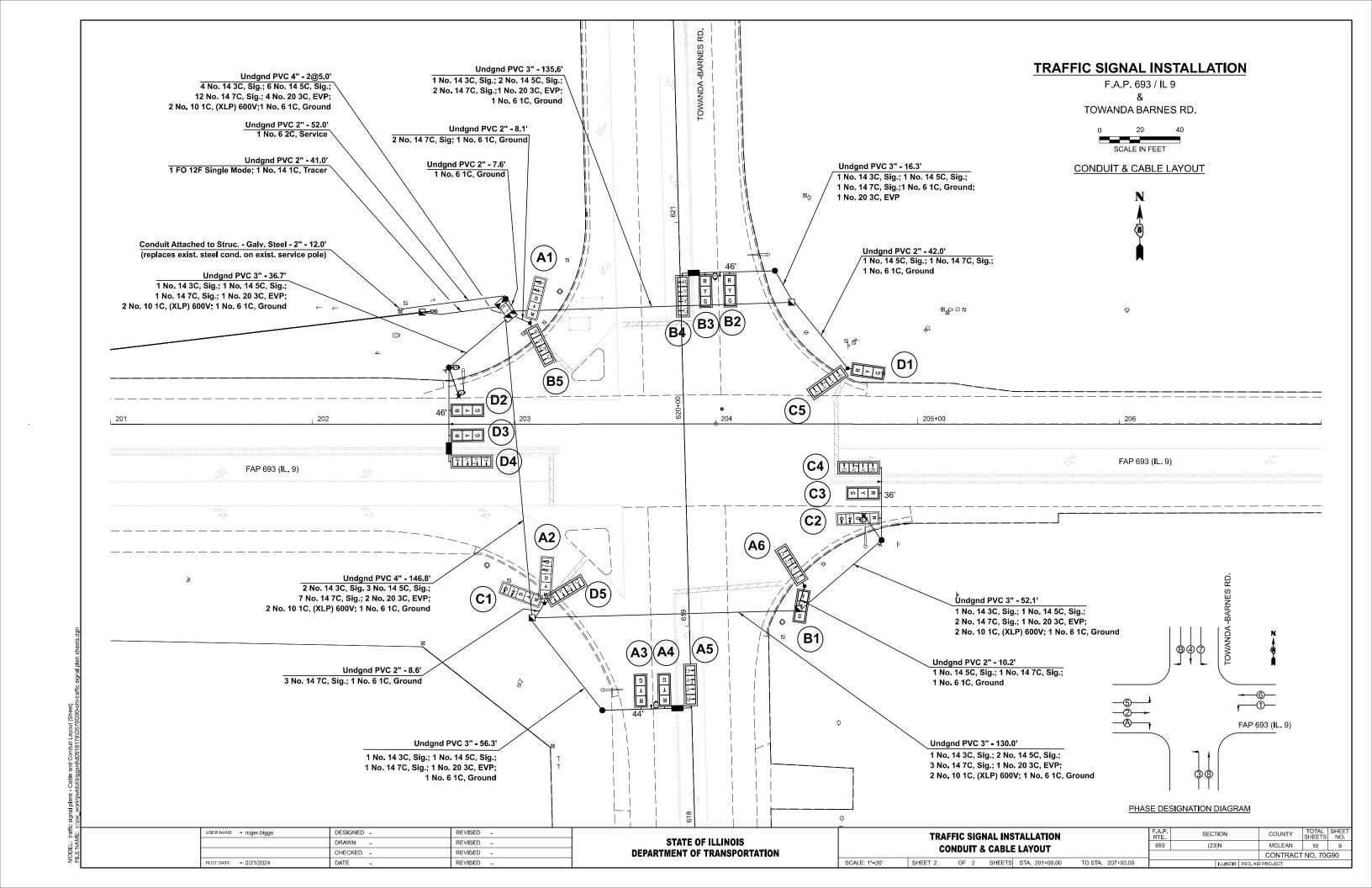
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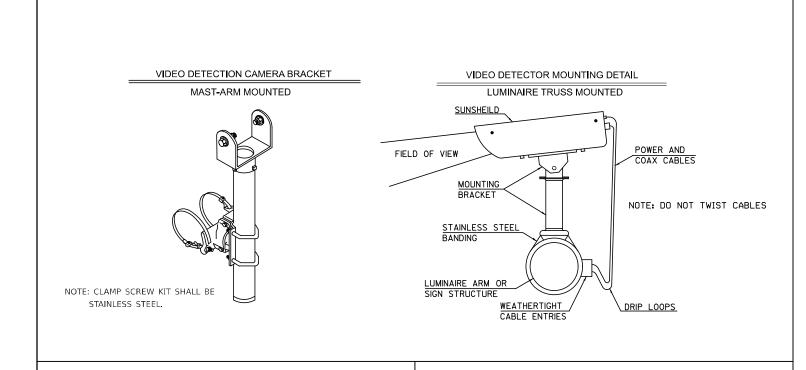
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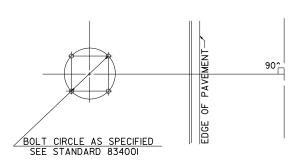
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

pw work/pwidot/biggsrd/d0918178/D570G90 Sht-Schedule dgn









# DETAIL OF MAST ARM FOUNDATION BOLT PATTERN

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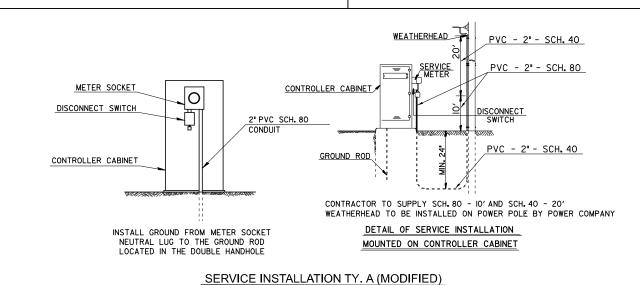
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#### PEDESTRIAN PUSH-BUTTON SIGNS



R10-3e

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



DESIGNED -

DRAWN

DATE

CHECKED

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REVISED

REVISED

## MAST ARM DAMPENING DEVICE MOUNTING DETAIL 28" APPROX. APPROX. Ш %' SLOTTED UNISTRUT BOLTS @ PRE-DRILLED HOLES 72" × 36" TYPE ISIGN STOCK UNPAINTED ALUMINUM MAST ARM PLAN VIEW APPROX. SIGN BUCKLE SIGN BUCKLE MAST ARM STAINLESS STEEL %" SLOTTED UNISTRUT BANDING

**CROSS SECTION** 

#### TRAFFIC SIGNAL GENERAL NOTES

NOTE: PAINT ENDS OF UNISTRUT WITH

SPRAY ON GALVANIZED PAINT

- 1 THE ACTUAL LOCATION OF ALL SIGNAL FOUNDATIONS, HANDHOLES, AND TRAFFIC CONTROLLER WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 2 THE FINAL LOCATIONS OF ALL TRAFFIC CONTROL ITEMS SHALL BE VERIFIED BY THE ENGINEER IN THE FIELD.
- 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 COMBINATION MAST ARM ASSEMBLIES SHALL BE FURNISHED WITH 15' LUMINAIRE TRUSS ARMS WITH A MOUNTED LUMINAIRE HEIGHT OF 40 FT.
- 6 ALL TRAFFIC SIGNAL MAST ARMS MUST BE DESIGNED FOR THE LOADINGS SHOWN ON THE HIGHWAY STANDARDS OR THESE SIGNAL PLANS, WHICHEVER IS GREATER.
- 7 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.
- 8 ALIGN ADJACENT RED INDICATIONS TO SAME HEIGHT ABOVE PAVEMENT.

**ELEVATION** 

- 9 THE BASE FOR A TRAFFIC SIGNAL POST SHALL BE SITUATED SUCH THAT THE HANDHOLE IS LOCATED ON A SIDE AWAY FROM A TRAVELED LANE.
- 10 PEDESTRIAN PUSHBUTTON SIGNAL SIGNS SHALL BE MOUNTED ABOVE THE APPROPRIATE PEDESTRIAN PUSHBUTTON.
- 11 ITEMS REMOVED WILL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE NOTED IN THE CONTRACT.
- 12 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 INSTALLATIONS.
- 13 THE ANTI-BACKUP FEATURE SHALL BE HARDWIRED ON THE BACKPANEL OF THE CONTROLLER CABINET.
- 14 TIMINGS SHOWN ARE FOR INITIAL OPERATION AND MAY BE ADJUSTED TO REFLECT SITE CONDITIONS PER APPROVAL OF THE TRAFFIC OPERATIONS ENGINEER.
- 15 THE CONTRACTOR SHALL SUPPLY AND MOUNT SIGNS BY THE MASTARM MOUNTED FYA SIGNAL HEADS STATING "LEFT TURN YIELD ON FLASHING YELLOW ARROW" (R10-I109 AS SHOWN IN THE ILLINOIS STANDARD HIGHWAY SIGNS BOOK JULY 1, 2014)

OTATE OF ILLINOIS	DETAILS, PHASING DIAGRAM,						F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
STATE OF ILLINOIS	& BILL OF MATERIALS					693	(23)N	MCLEAN	10	10	
DEPARTMENT OF TRANSPORTATION						·		CONTRACT NO. 70G90			
	SCALE:	SHEET 1	OF 1	SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT				

MODEL: Details [Sheet]