

INDEX OF SHEETS

SHEET NO.	ITEM
1	COVER SHEET
2	GENERAL NOTES AND COMMITMENTS
3-4	SUMMARY OF QUANTITIES
5	TYPICAL SECTIONS
6-8	TRAFFIC SIGNAL SHEETS
9-15	INTERCONNECT PLAN
16	CONSTRUCTION DETAILS
17-20	MAST ARM FOUNDATION DETAILS
21	SOIL BORING LOGS

06-12-2026 LETTING ITEM 176

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION PLANS FOR PROPOSED INTERSECTION SIGNALIZATION

**CMAQ FUNDS
CITY OF COLLINSVILLE
MCDONOUGH LAKE RD AND HORSESHOE LAKE RD (FAU 9111)
SECTION 23-00106-00-TL
MADISON COUNTY
PROJECT: M8P2(957)
JOB NO. C-98-118-24**

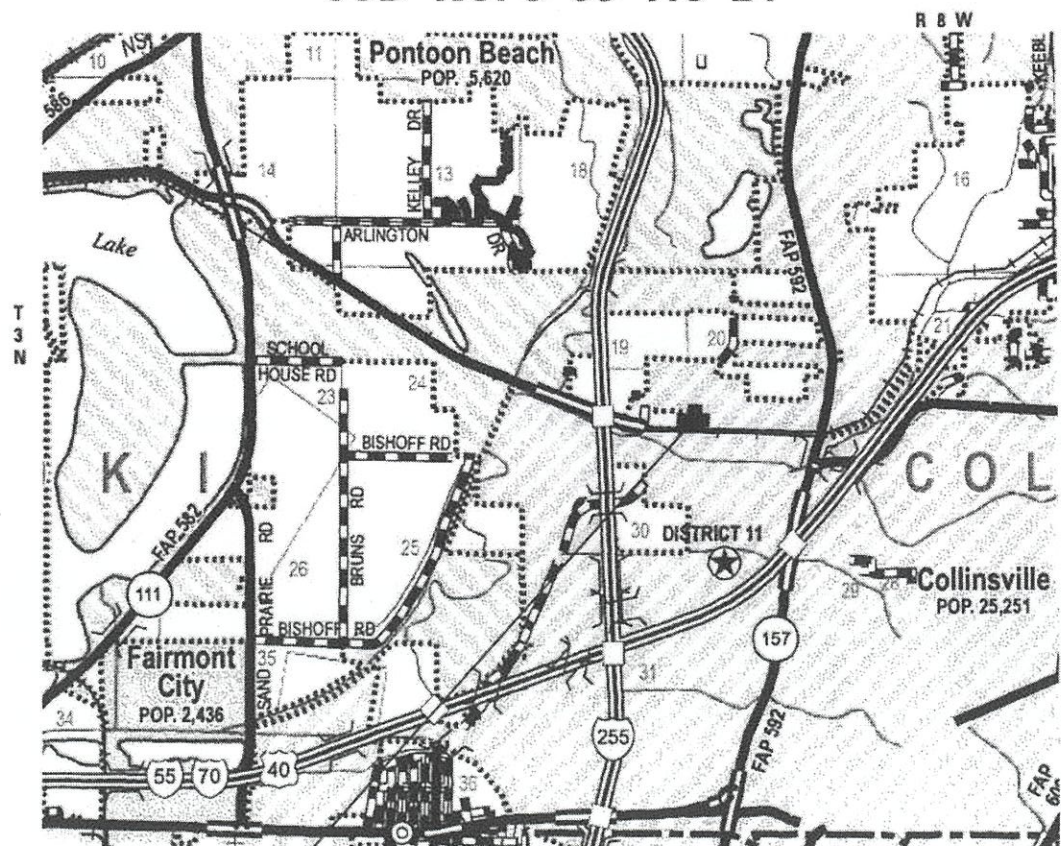
HIGHWAY STANDARDS

000001-09	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
701001-02	OFF-RD OPERATIONS, 2L, 2W, MORE THAN 15' (4.5 m) AWAY
701006-05	OFF-RD OPERATIONS, 2L, 2W 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE
701502-09	URBAN LANE CLOSURE, 2L, 2W, WITH BIDIRECTIONAL LEFT TURN LANE
701701-10	URBAN LANE CLOSURE, MULTILANE INTERSECTION
701901-11	TRAFFIC CONTROL DEVICES
720016-04	MAST ARM MOUNTED STREET NAME SIGNS
780001-05	TYPICAL PAVEMENT MARKINGS
805001-01	ELECTRICAL SERVICE INSTALLATION DETAILS
814001-03	HANDHOLES
814006-03	DOUBLE HANDHOLES
857001-01	STANDARD PHASE DESIGNATION DIAGRAMS AND PHASE SEQUENCES
862001-01	UNINTERRUPTABLE POWER SUPPLY (UPS)
873001-02	TRAFFIC SIGNAL GROUNDING & BONDING
877001-08	STEEL MAST ARM ASSEMBLY AND POLE 16' THROUGH 55'
877002-04	STEEL MAST ARM ASSEMBLY AND POLE 56' THROUGH 75'
878001-11	CONCRETE FOUNDATION DETAILS
880006-01	TRAFFIC SIGNAL MOUNTING DETAILS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9111	23-00106-00-TL	MADISON	21	1
		ILLINOIS	CONTRACT NO. 97903	



LOCATION OF SECTION INDICATED THIS: -



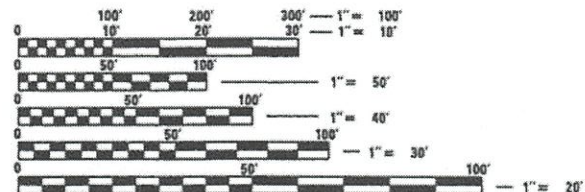
LOCATION MAP

SCALE: 1" = 1000'

PROJECT LOCATION	STA.	ROADWAY CLASSIFICATION	LENGTH	MILES
MCDONOUGH LAKE ROAD	STA. 10+00	MINOR COLLECTOR	0'	0.00
HORSESHOE LAKE RD	STA. 246+31	MINOR ARTERIAL	0'	0.00

DESIGN DESIGNATION

ROADWAY CLASSIFICATION	DESIGN SPEED	POSTED SPEED	CURRENT ADT (2022)	DESIGN YEAR ADT (2046)
MINOR COLLECTOR	30 MPH	30 MPH	1,720	6,180
MINOR ARTERIAL	50 MPH	45 MPH	13,550	29,000



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



Brian Heil 4/2/26
BRIAN HEIL, P.E.
License Expires 11/30/2027

AGENCY RESPONSIBLE FOR LETTING	
APPROVED	<i>Corin Nelson</i> DATE 4/2/26 MAYOR, CITY OF COLLINSVILLE, MAYOR
PASSED	<i>Corin Nelson</i> DATE 4/3/2026 DISTRICT 8 ENGINEER OF LOCAL ROADS & STREETS
RELEASING FOR BID BASED ON LIMITED REVIEW	<i>Corin Nelson</i> DATE 4/3/2026 REGION 5 ENGINEER



Collinsville
100 Lambert Court, Suite 1
Collinsville, IL 62234
618.545.2200

St. Louis
720 Olive, Suite 700
St. Louis, MO 63101
314.588.8381

Belleville
1 South Church, Suite 200
Belleville, IL 62220
618.416.4688
www.oatesassociates.com

St. Charles
820 South Main, Suite 309
St. Charles, MO 63301
636.493.6277

ILLINOIS DESIGN FIRM LICENSE NO.: 184.001115

GENERAL NOTES

UTILITIES

- 1. THE FOLLOWING UTILITY COMPANIES MAY HAVE FACILITIES LOCATED WITHIN THE LIMITS OF CONSTRUCTION WHICH MAY REQUIRE ADJUSTMENT, RELOCATION OR REMOVAL. REFER TO THE "STATUS OF UTILITIES TO BE ADJUSTED" SPECIAL PROVISION FOR ADDITIONAL INFORMATION.

AMEREN ILLINOIS (GAS & ELECTRIC)
 2600 NORTH CENTER
 MARYVILLE, IL 62062
 (618) 346-1287

ATT (LOCAL TELEPHONE)
 2501 NORTH CENTER STREET
 MARYVILLE, IL 62062
 (618) 346-6426

AT&T (LONG DISTANCE) (TELEPHONE)
 866 ROCK CREEK ROAD
 PLANO, IL 60545
 (630) 552-9785

CHARTER COMMUNICATIONS (COMMUNICATIONS)
 210 WEST DIVISION STREET
 MARYVILLE, IL 62062
 (618) 345-8121

CITY OF COLLINSVILLE (WATER & SANITARY SEWER)
 125 SOUTH CENTER STREET
 COLLINSVILLE, IL 62234

GENERAL

- 2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO ORDERING MATERIALS AND COMMENCING CONSTRUCTION.
- 3. THE CONTRACTOR SHALL STAGE ALL WORK IN SUCH A WAY AS TO MAINTAIN INGRESS AND EGRESS TO ALL ABUTTING PROPERTIES AT ALL TIMES DURING CONSTRUCTION.
- 4. THE CONTRACTOR SHALL CONFINE ALL OPERATIONS TO THE CONSTRUCTION LIMITS LINE SHOWN ON THE PLANS. ANY AREA DISTURBED BEYOND THESE LIMITS SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
- 5. THE CONTRACTOR SHALL FERTILIZE, SEED AND MULCH ALL EARTH SURFACES DISTURBED BY CONSTRUCTION.

COMMITMENTS

NONE

MODEL: C:\projects\9111\Drawings\Improvements\CADD\H\restofplan\CADD\Drawings\Intersection\9111\restofplan\08222093.dwg
 FILE NAME: H:\9111\Drawings\Improvements\CADD\H\restofplan\CADD\Drawings\Intersection\9111\restofplan\08222093.dwg



OATES ASSOCIATES
 www.oatesassociates.com
 ILLINOIS DESIGN FIRM LICENSE NO.: 184.001115

USER NAME = ben.grapperhaus	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 0.16666633' / in.	CHECKED -	REVISED -
PLOT DATE = 4/1/2026	DATE -	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

GENERAL NOTES	
SCALE:	SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9111	23-00106-00-TL	MADISON	21	2
CONTRACT NO. 97903				
ILLINOIS			FED. AID PROJECT	

SI	SP	CODE NO.	ITEM	UNIT	TOTAL QUANTITY
		67100100	MOBILIZATION	L SUM	1
		70102622	TRAFFIC CONTROL AND PROTECTION, STANDARD 701502	L SUM	1
		70102635	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701	L SUM	1
	*	70107025	CHANGEABLE MESSAGE SIGN	CAL DA	12
		72000100	SIGN PANEL - TYPE 1	SQ FT	5.0
	*	78001180	PAINT PAVEMENT MARKING - LINE 24"	FOOT	34
		80500100	SERVICE INSTALLATION, TYPE A	EACH	1
		81028350	UNDERGROUND CONDUIT, PVC, 2" DIA.	FOOT	1,398
		81028370	UNDERGROUND CONDUIT, PVC, 3" DIA.	FOOT	235
		81028390	UNDERGROUND CONDUIT, PVC, 4" DIA.	FOOT	82
		81028400	UNDERGROUND CONDUIT, PVC, 5" DIA.	FOOT	6
		81400700	HANDHOLE, PORTLAND CEMENT CONCRETE	EACH	7
		81400720	DOUBLE HANDHOLE, PORTLAND CEMENT CONCRETE	EACH	1
	*	85700200	FULL-ACTUATED CONTROLLER AND TYPE IV CABINET	EACH	1

SI	SP	CODE NO.	ITEM	UNIT	TOTAL QUANTITY
		87301245	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	1,375
		87301255	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT	1,166
		87501200	TRAFFIC SIGNAL POST, 16 FT.	EACH	1
		87700230	STEEL MAST ARM ASSEMBLY AND POLE, 38 FT.	EACH	1
		87700240	STEEL MAST ARM ASSEMBLY AND POLE, 40 FT.	EACH	1
		87700265	STEEL MAST ARM ASSEMBLY AND POLE, 45 FT.	EACH	1
		87800100	CONCRETE FOUNDATION, TYPE A	FOOT	3
		87800200	CONCRETE FOUNDATION, TYPE D	FOOT	3
		87800415	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	FOOT	42
		87800420	CONCRETE FOUNDATION, TYPE E 42-INCH DIAMETER	FOOT	25
		87900200	DRILL EXISTING HANDHOLE	EACH	1
		88040070	SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	4
		88040090	SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	5
		88040150	SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED	EACH	1

SP - SEE PROJECT SPECIFIC SPECIAL PROVISION
SI - SPECIALTY ITEM

MODEL: SDO (Sheet) FILE NAME: H:\P222033 - McDonough Lake Rd. Intersection Improvements\CADD\H-Restauran\CADD Drawings\Intersection Sign\Sheet\B08222093-HIS-SDO.dgn



USER NAME = ben.grapperhaus
DESIGNED -
DRAWN -
PLOT SCALE = 0.16666633 ' / in.
CHECKED -
DATE = 4/1/2026

REVISER -
REVISOR -
REVISOR -
REVISOR -
REVISOR -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

SCALE: SHEET 1 OF 2 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9111	23-00103-00-TL	MADISON	21	3
			CONTRACT NO. 97903	
		ILLINOIS	FED. AID PROJECT	

SI	SP	CODE NO.	ITEM	UNIT	TOTAL QUANTITY
		88040160	SIGNAL HEAD, POLYCARBONATE, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED	EACH	1
	*	88200100	TRAFFIC SIGNAL BACKPLATE	EACH	6
		89502210	MODIFY EXISTING CONTROLLER CABINET	EACH	1
		X0327698	LED INTERNALLY ILLUMINATED STREET NAME SIGN	EACH	3
		X1400216	LAYER II (DATALINK) SWITCH	EACH	2
		X1400217	TERMINATE FIBER IN CABINET	EACH	2
		X1400424	ELECTRIC CABLE IN CONDUIT, STREET NAME SIGN, NO. 14 3C, TYPE SOOW	FOOT	474
		X1400437	GPS CLOCK SYNC UNIT	EACH	2
		X8710030	FIBER OPTIC CABLE 48 FIBERS, SINGLE MODE	FOOT	1485
		X8710071	FIBER OPTIC FUSION SPLICE	EACH	30
		X8710072	FIBER OPTIC SPLICE ENCLOSURE	EACH	2
		X8710094	FIBER OPTIC INTERCONNECT CENTER, 48 PORT	EACH	1
		X8891007	VIDEO VEHICLE DETECTION SYSTEM COMPLETE	EACH	1
		Z0013798	CONSTRUCTION LAYOUT	L SUM	1

SP - SEE PROJECT SPECIFIC SPECIAL PROVISION
SI - SPECIALTY ITEM

MODEL: SPO-1 (Sheet)
FILE NAME: H:\222033 - McDermogh Lake Rd. Intersection Improvements\CADD\Drawings\Intersection Sign\11a1a1a1\08222093-his-500.dgn



USER NAME = ben.grapperhaus
DESIGNED -
DRAWN -
PLOT SCALE = 0.16666633 ' / in.
CHECKED -
PLOT DATE = 4/1/2026
DATE -

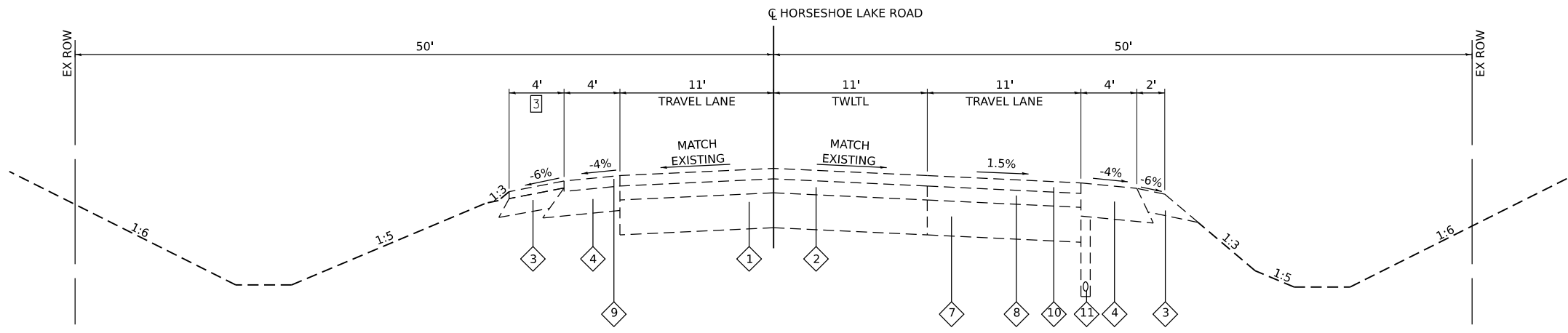
REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

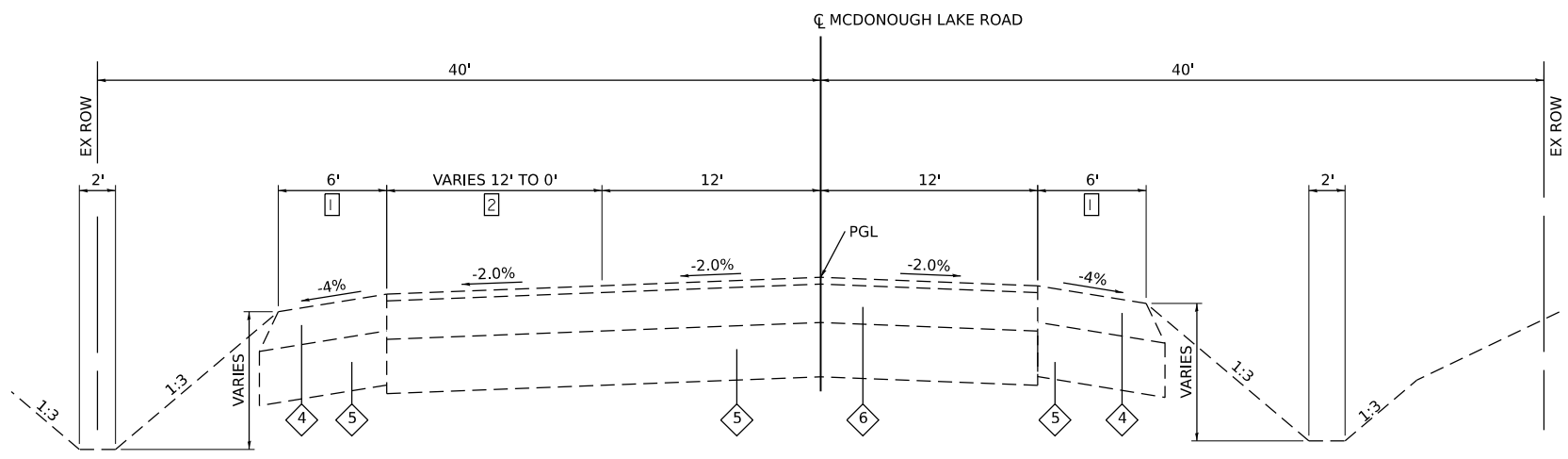
SUMMARY OF QUANTITIES

SCALE: SHEET 2 OF 2 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9111	23-00106-00-TL	MADISON	21	4
			CONTRACT NO. 97903	
		ILLINOIS	FED. AID PROJECT	



EXISTING HORSESHOE LAKE ROAD
 STA. 242+79 TO STA 248+63



EXISTING MCDONOUGH LAKE ROAD
 STA. 10+11.17 TO STA 13+44.81
 STA. 24+72.54 TO STA 29+62.26

TYPICAL SECTION LEGEND

- 1 EXISTING PORTLAND CEMENT CONCRETE PAVEMENT, 10"
- 2 EXISTING HMA PAVEMENT, 2.5"
- 3 EXISTING AGGREGATE SHOULDER, TYPE B
- 4 EXISTING HOT-MIX ASPHALT SHOULDERS, 8"
- 5 EXISTING PROCESSING MODIFIED SOIL, 12"
- 6 EXISTING HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10"
- 7 EXISTING SUBBASE GRANULAR MATERIAL, TYPE A 12"
- 8 EXISTING HOT-MIX ASPHALT BINDER, 2"
- 9 EXISTING HOT -MIX ASPHALT (HMA) SHOULDERS, 1.5"
- 10 EXISTING HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70, 1.5"
- 11 EXISTING 4" PIPE UNDERDRAINS

MODEL: TYPICAL SECTIONS (Sheet)
 FILE NAME: H:\222033 - McDonough Lake Rd. Intersection Improvements\CADD\H\restofplan\CADD Drawings\Intersection\Typical\184-001-typical.dgn

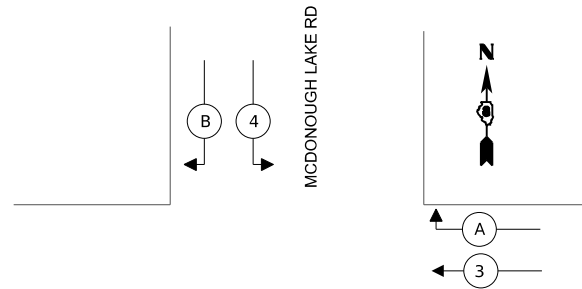


USER NAME = ben.grapperhaus	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 0.16666633' / in.	CHECKED -	REVISED -
PLOT DATE = 4/1/2026	DATE -	REVISED -

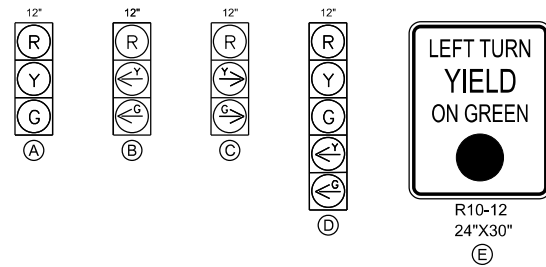
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

TYPICAL SECTIONS			
SCALE:	SHEET 1	OF 1 SHEETS	STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9111	23-00106-00-TL	MADISON	21	5
CONTRACT NO. 97903				
ILLINOIS FED. AID PROJECT				

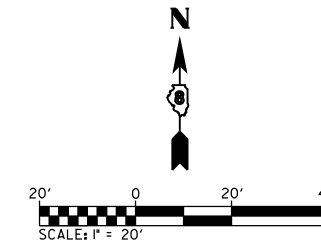


PROPOSED TRAFFIC SIGNAL FACES

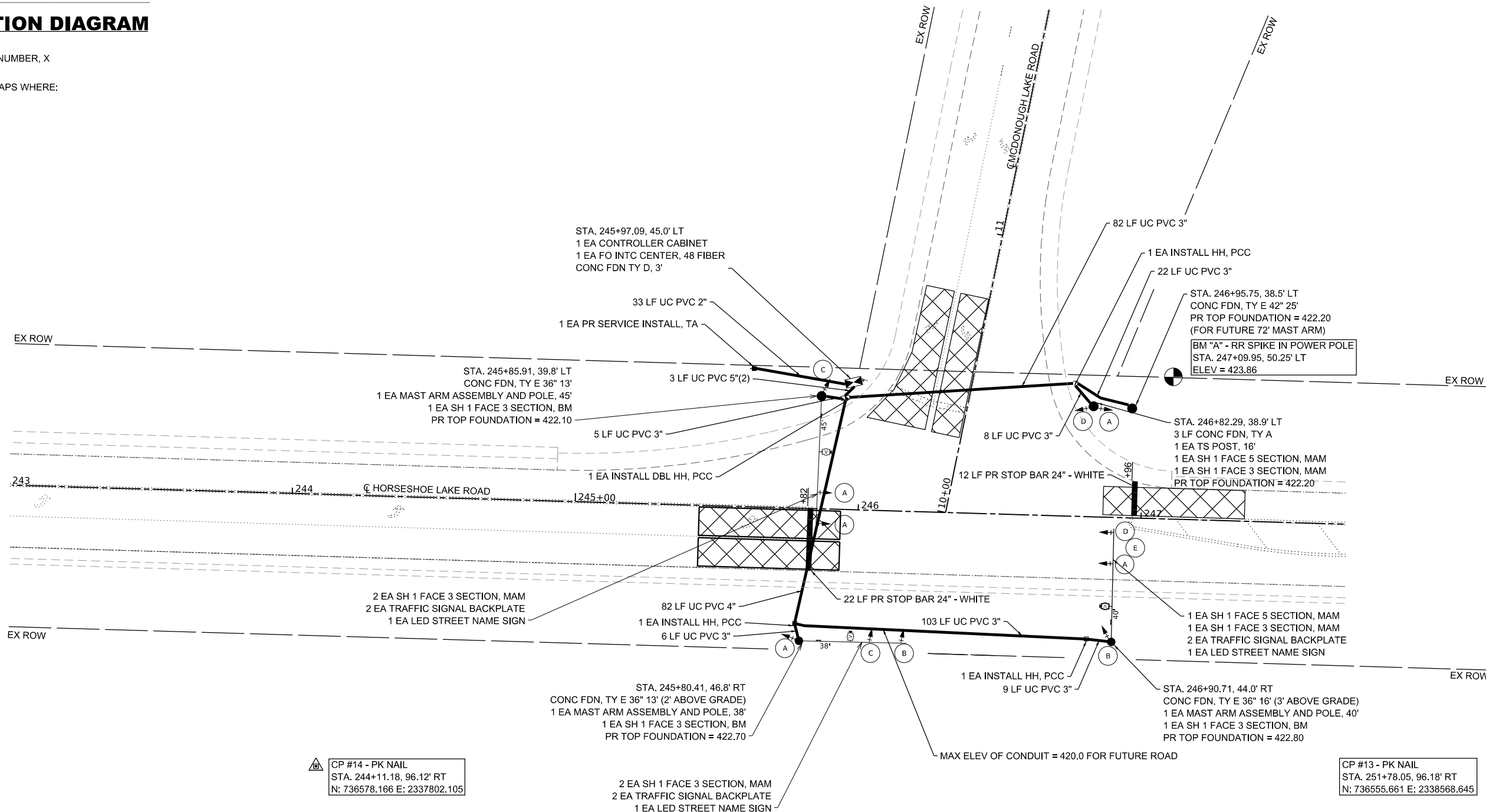
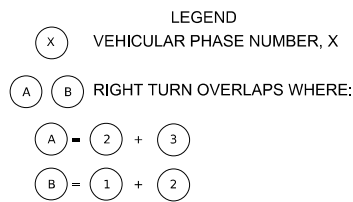


PROPOSED SEQUENCE OF OPERATION

PROPOSED FULL-ACTUATED CONTROLLER AND TYPE IV CABINET			
PHASE	1	2	3
MOVEMENT			



PHASE DESIGNATION DIAGRAM



MODEL: D:\ESK\116\116.dwg
 FILE NAME: H:\222033 - McDonough Lake Rd Intersection Improvements\CADD\H:\restofplan\CADD Drawings\Intersection_Sign\station\ben\08222093_001.sht.dwg
 ILLINOIS DESIGN FIRM LICENSE NO.: 184.001115



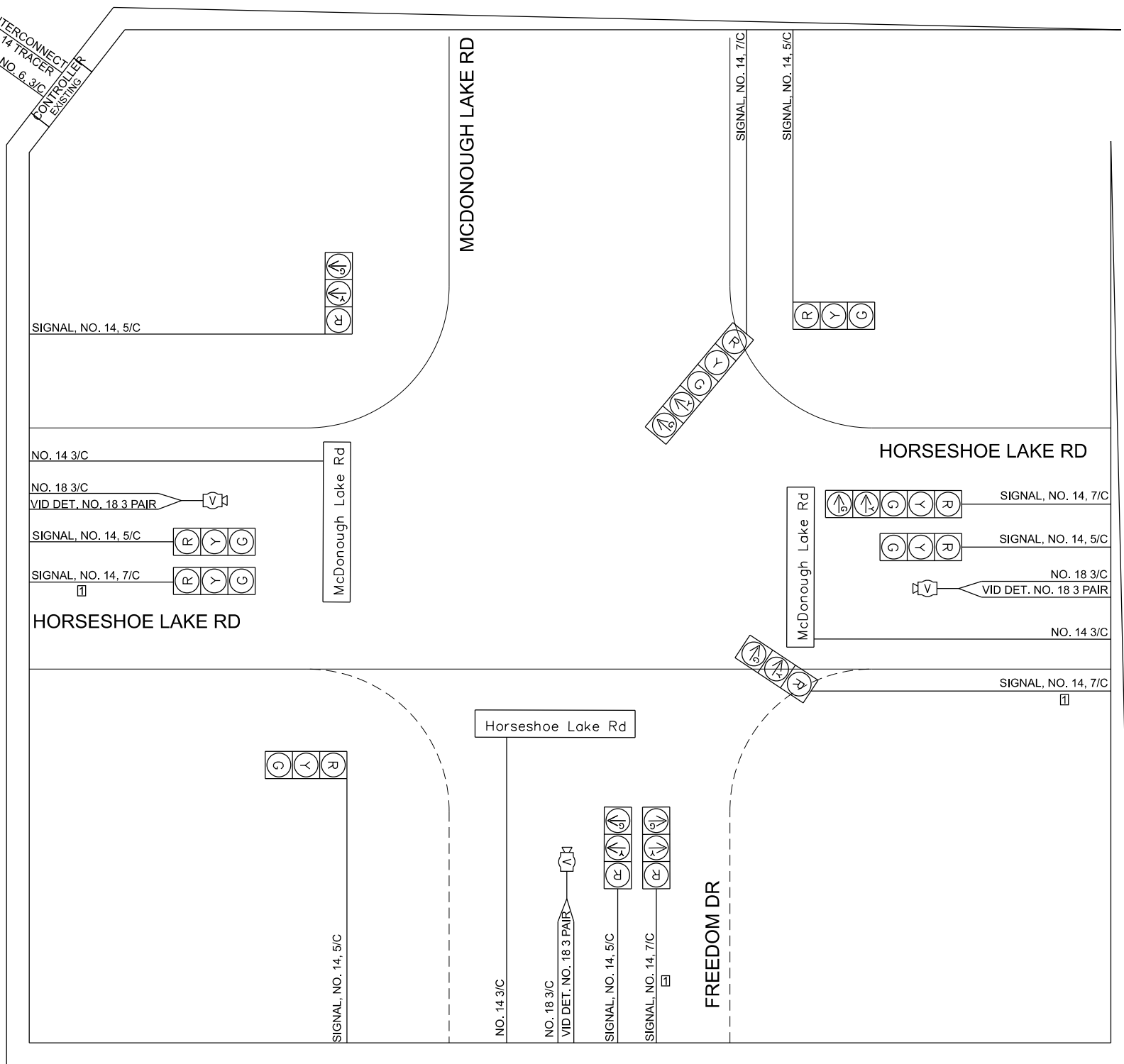
USER NAME = ben.grapperhaus	DESIGNED -	REVISED -
PLOT SCALE = 0.16666633 ' / in.	DRAWN -	REVISED -
PLOT DATE = 4/3/2026	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL SHEETS	
SCALE:	SHEET 2 OF 3 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9111	23-00106-00-TL	MADISON	21	7
CONTRACT NO. 97903				
ILLINOIS FED. AID PROJECT				

PR FIBER OPTIC INTERCONNECT CABLE WITH 7 C NO. 14 TRACER
 PR SERVICE NO. 6, 3/C
 CONTROL LED
 EXISTING



CABLE DIAGRAM LEGEND

- PROPOSED ELECTRIC CABLE IN CONDUIT
- 2/C INDICATES NUMBER OF CONDUCTORS IN CABLE
- NO. 6 INDICATES AMERICAN WIRE (AWG) SIZE 6



NOTES:

☐ USING 7C CABLE FOR POTENTIAL FUTURE 5 SECTION SIGNAL HEAD

MODEL: I:\projects\1181115\1181115.dwg
 FILE NAME: I:\projects\1181115\1181115.dwg
 ILLINOIS DESIGN FIRM LICENSE NO.: 184.001115



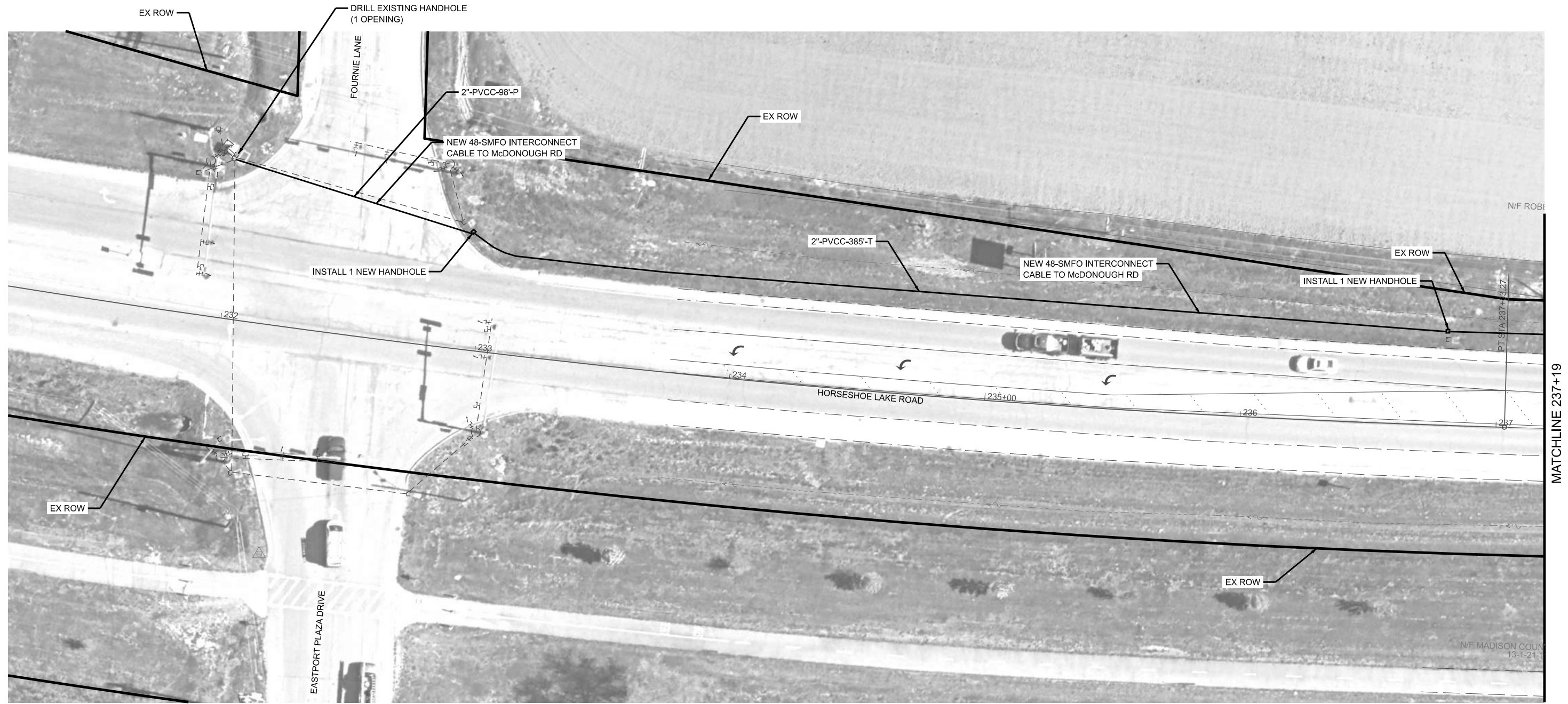
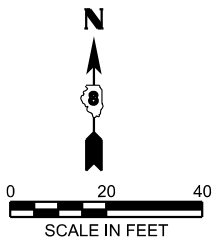
USER NAME = ben.grapperhaus	DESIGNED -	REVISED -
PLOT SCALE = 0.16666633 ' / in.	DRAWN -	REVISED -
PLOT DATE = 4/3/2026	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

TRAFFIC SIGNAL SHEETS

SCALE: SHEET 3 OF 3 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9111	23-00106-00-TL	MADISON	21	8
CONTRACT NO. 97903				
ILLINOIS FED. AID PROJECT				



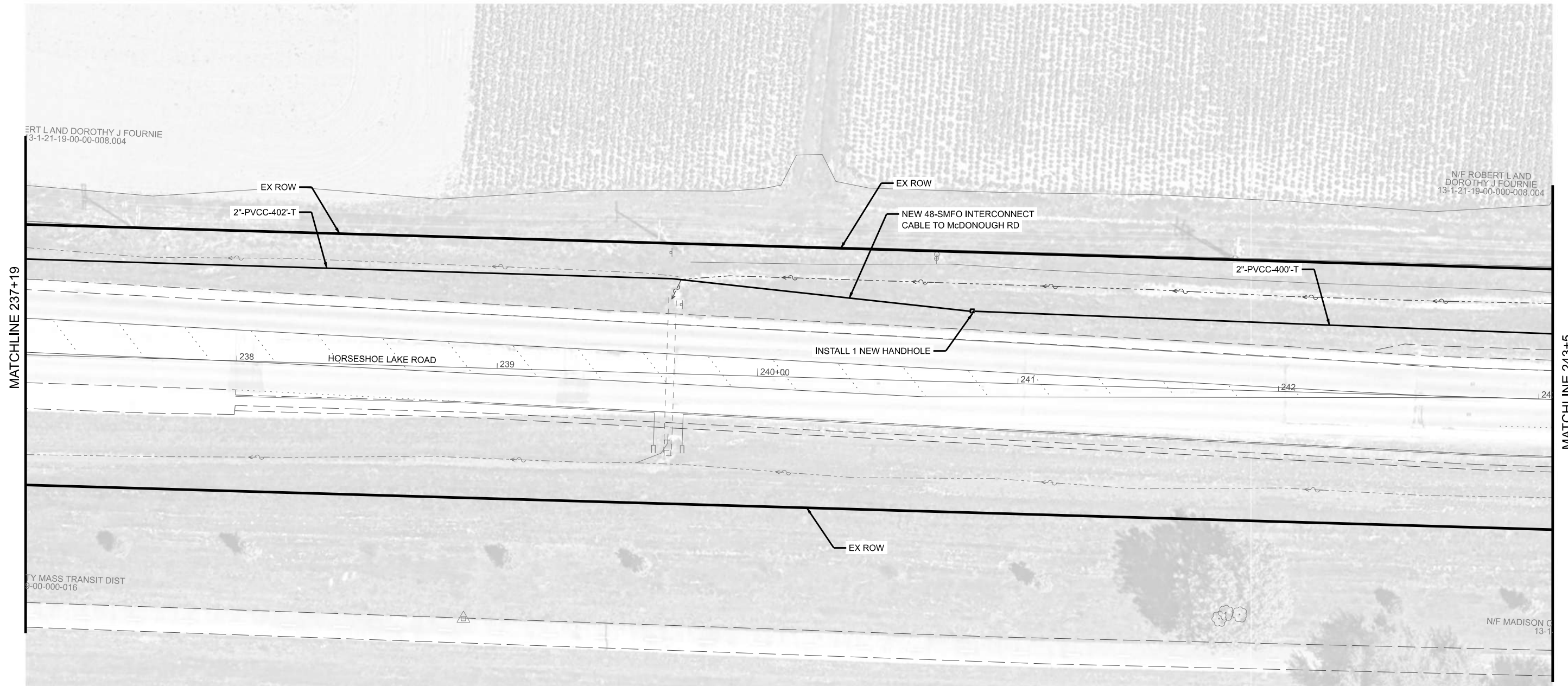
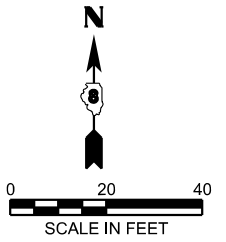
USER NAME =	DESIGNED = EF	REVISED =
DRAWN = BR	REVISED =	
CHECKED = RT	REVISED =	
DATE =	REVISED =	
PLOT SCALE = 20"=1"		
PLOT DATE = 3/30/2026		

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**INTERCONNECT PLAN
HORSESHOE LAKE RD**

SCALE: 20"=1" SHEET NO. 2 OF 7 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9111	23-00106-00-TL	MADISON	21	10
CONTRACT NO. 97903				
ILLINOIS FED. AID PROJECT				



MATCHLINE 237+19

MATCHLINE 243+5



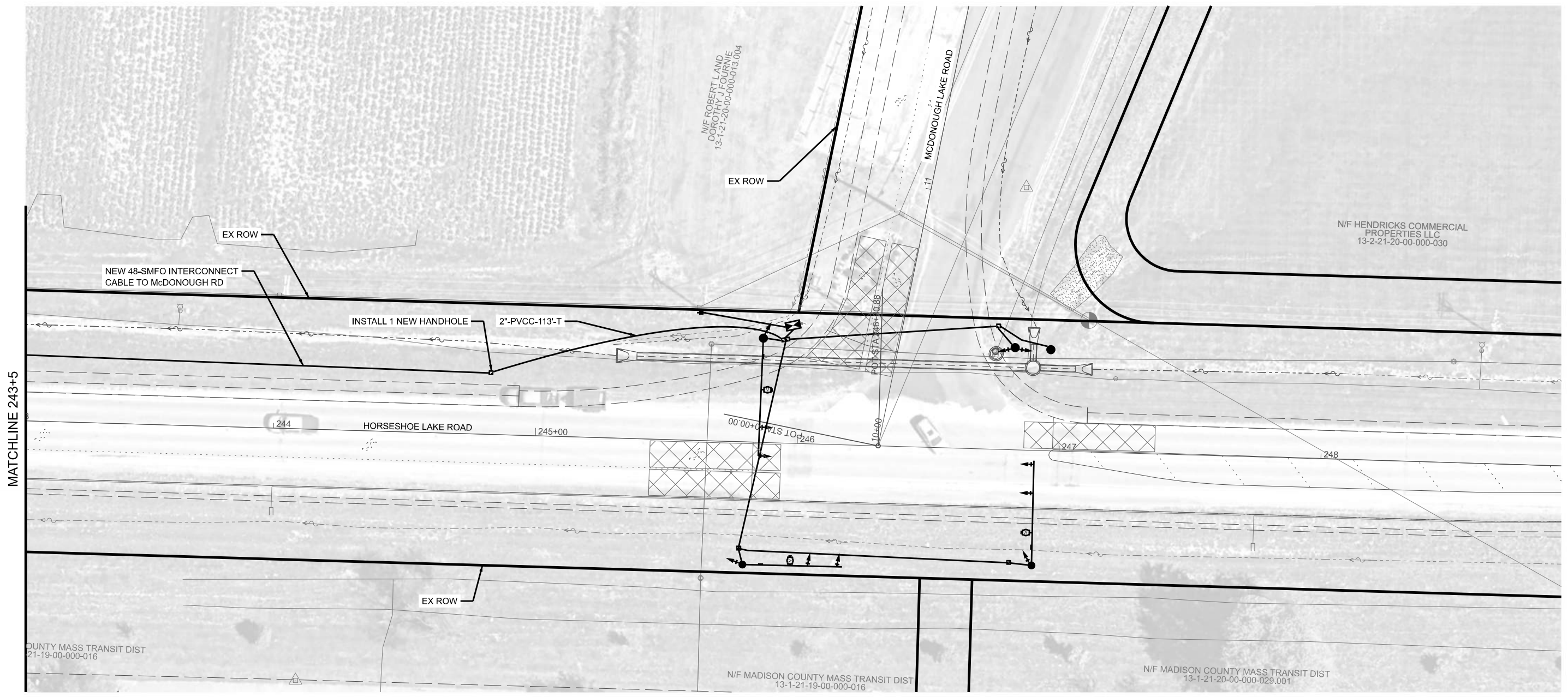
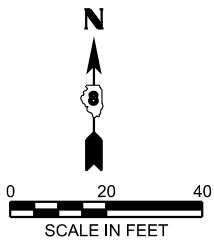
USER NAME =	DESIGNED = EF	REVISED =
DRAWN = BR	REVISED =	
PLOT SCALE = 20"=1"	CHECKED = RT	REVISED =
PLOT DATE = 3/30/2026	DATE =	REVISED =

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**INTERCONNECT PLAN
HORSESHOE LAKE RD**

SCALE: 20"=1" SHEET NO. 3 OF 7 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9111	23-00106-00-TL	MADISON	21	11
CONTRACT NO. 97903			ILLINOIS FED. AID PROJECT	



MATCHLINE 243+5



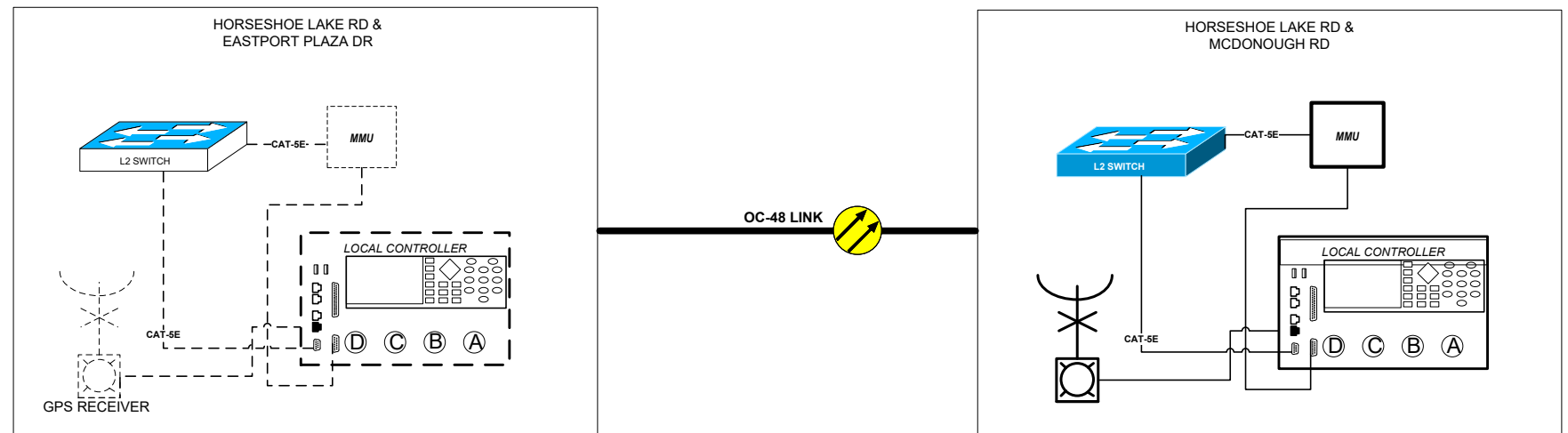
USER NAME =	DESIGNED = EF	REVISED =
DRAWN = BR	REVISED =	
PLOT SCALE = 20"=1"	CHECKED = RT	REVISED =
PLOT DATE = 3/30/2026	DATE =	REVISED =

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INTERCONNECT PLAN
HORSESHOE LAKE RD

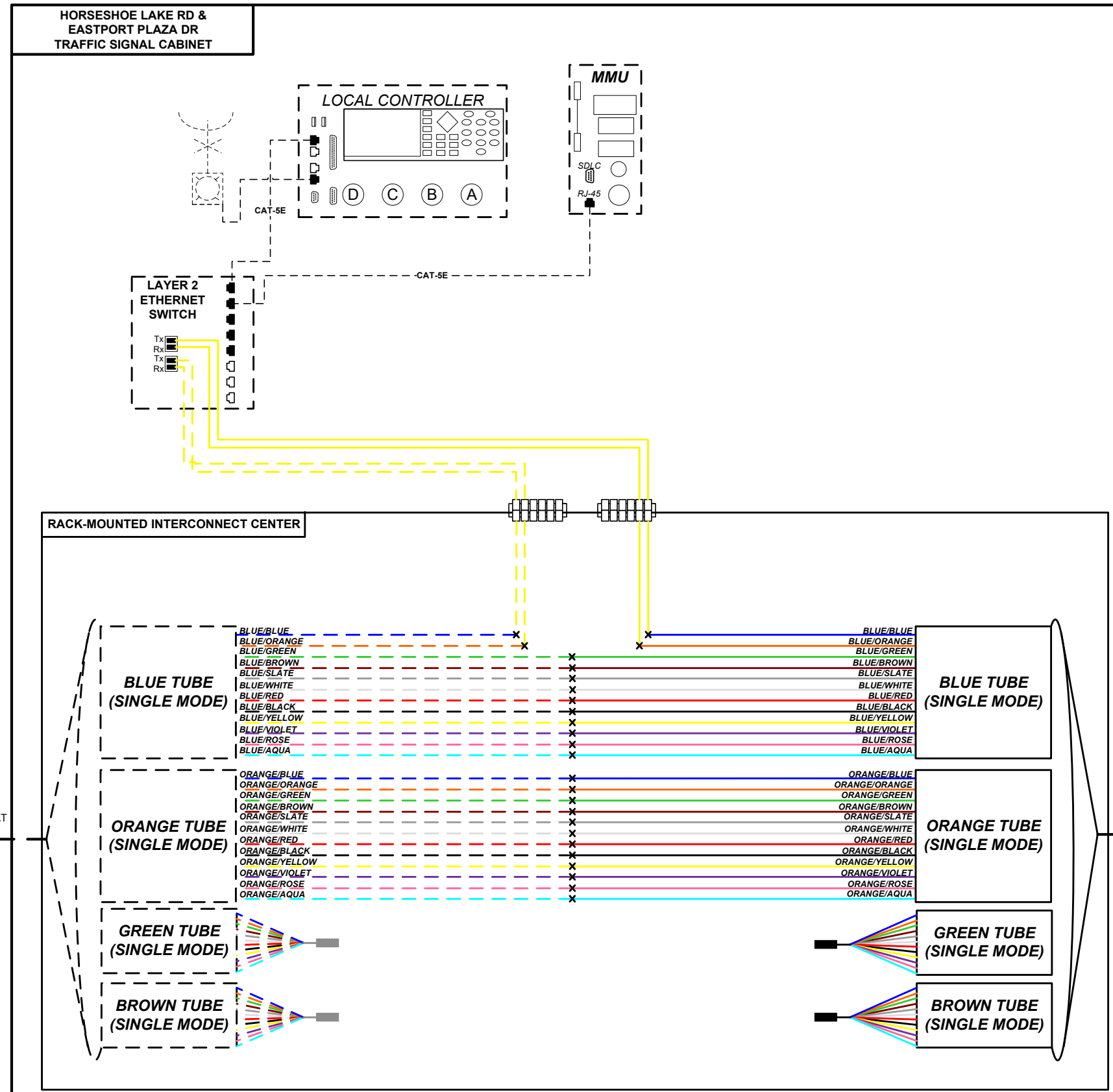
SCALE: 20"=1" SHEET NO. 4 OF 7 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9111	23-00106-00-TL	MADISON	21	12
CONTRACT NO. 97903			ILLINOIS FED. AID PROJECT	



NOTE:
 1) DASHED LINES INDICATE EXISTING EQUIPMENT OR CABLING.
 2) ALL FIBER SPLICES ARE NOT SHOWN. SEE SPLICE DIAGRAMS.

MI055E001.8T	DEVICE IDENTIFIER		EXISTING/PROPOSED L2 SWITCH		MALFUNCTION MANAGEMENT UNIT		MEDIA CONVERTER		VIDEO DETECTION SYSTEM		FIBER OPTIC CABLE		10/100 MBPS ETHERNET LINK		EXISTING GPS RECEIVER
	EXISTING/PROPOSED CCTV CAMERA		EXISTING/PROPOSED L2 SWITCH (AS SHOWN)		POE POWER INJECTOR		FIBER OPTIC DATA MODEM		SENSYS DETECTION SYSTEM		COAX CABLE		OC-48 LINK		PROPOSED GPS RECEIVER
	EXISTING/PROPOSED DYNAMIC MESSAGE SIGN WITH CONTROLLER		EXIST/PROPOSED L2 SWITCH		WIRELESS ETHERNET BRIDGE		10 MBPS ETHERNET		IP VIDEO ENCODER		TWISTED PAIR CABLE		PROPOSED CABLE		EXISTING CABLE
	PROPOSED DYNAMIC TRAILBLAZER SIGN		EXISTING/PROPOSED TRAFFIC SIGNAL CONTROLLER		DEVICE SERVER		100 MBPS ETHERNET		EXISTING/PROPOSED FUSION SPLICE		WIRELESS CONNECTION		EXISTING CABLE WIRELESS CONNECTION		

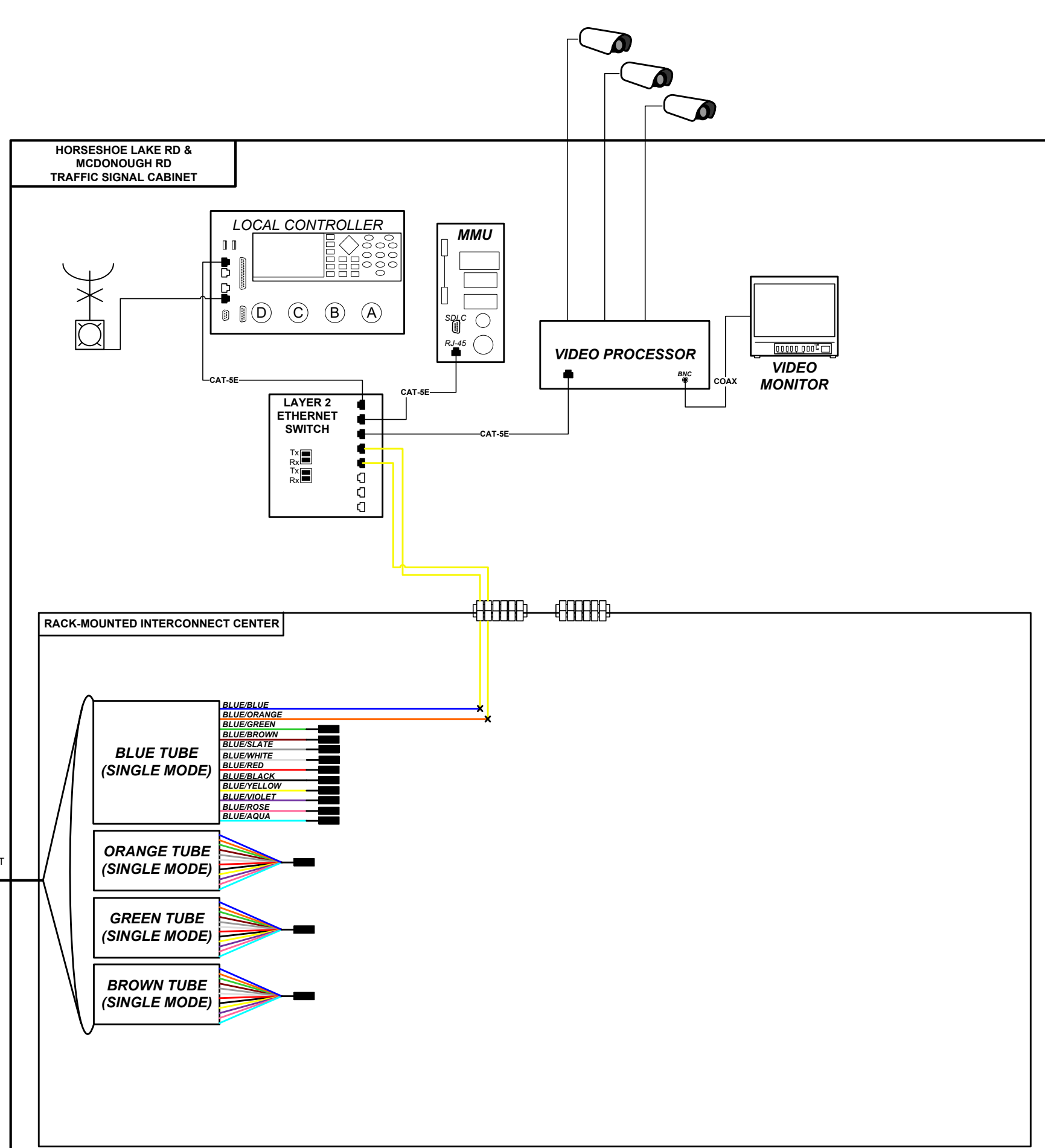


KEY

- EQUIPMENT CONNECTION
- FIBER OPTIC JUMPER
- FIBER OPTIC PIGTAIL
- BARE FIBER LEFT COILED IN SPLICE TRAY
- FUSION SPLICE
- MECHANICAL SPLICE
- GPS RECEIVER
- PATCH PANEL MODULE
- LOCAL CONTROLLER

DASHED OR SHADED LINES DENOTE EXISTING CABLES, DEVICES, OR ENCLOSURES.

- (1) MAXIMUM SPLICE LOSS SHALL BE 0.1 dB
- (2) NO INTERMEDIATE SPLICES ALLOWED
- (3) ALL SPLICES SHALL BE FUSION SPLICES



KEY

- EQUIPMENT CONNECTION
- FIBER OPTIC JUMPER
- FIBER OPTIC PIGTAIL
- BARE FIBER LEFT COILED IN SPLICE TRAY
- FUSION SPLICE
- MECHANICAL SPLICE
- GPS RECEIVER
- PATCH PANEL MODULE
- LOCAL CONTROLLER

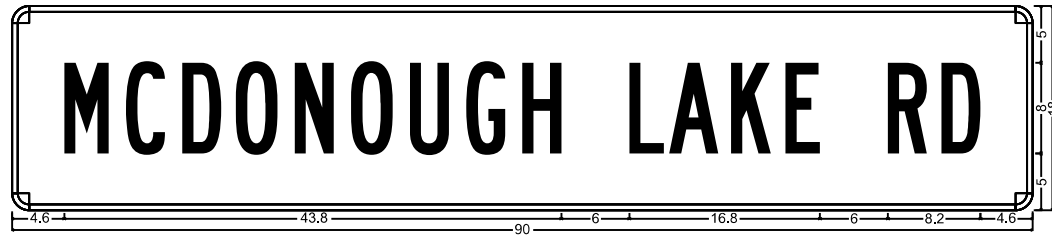
DASHED OR SHADED LINES DENOTE EXISTING CABLES, DEVICES, OR ENCLOSURES.

- (1) MAXIMUM SPLICE LOSS SHALL BE 0.1 dB
- (2) NO INTERMEDIATE SPLICES ALLOWED
- (3) ALL SPLICES SHALL BE FUSION SPLICES

48SM FIBER OPTIC CABLE TO SIGNAL CABINET AT EASTPORT PLAZA DR

ONE SIDED ILLUMINATED SIGN PANEL - TYPE 1

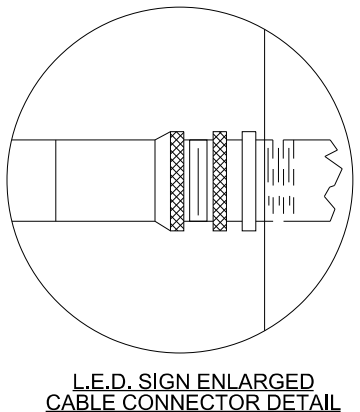
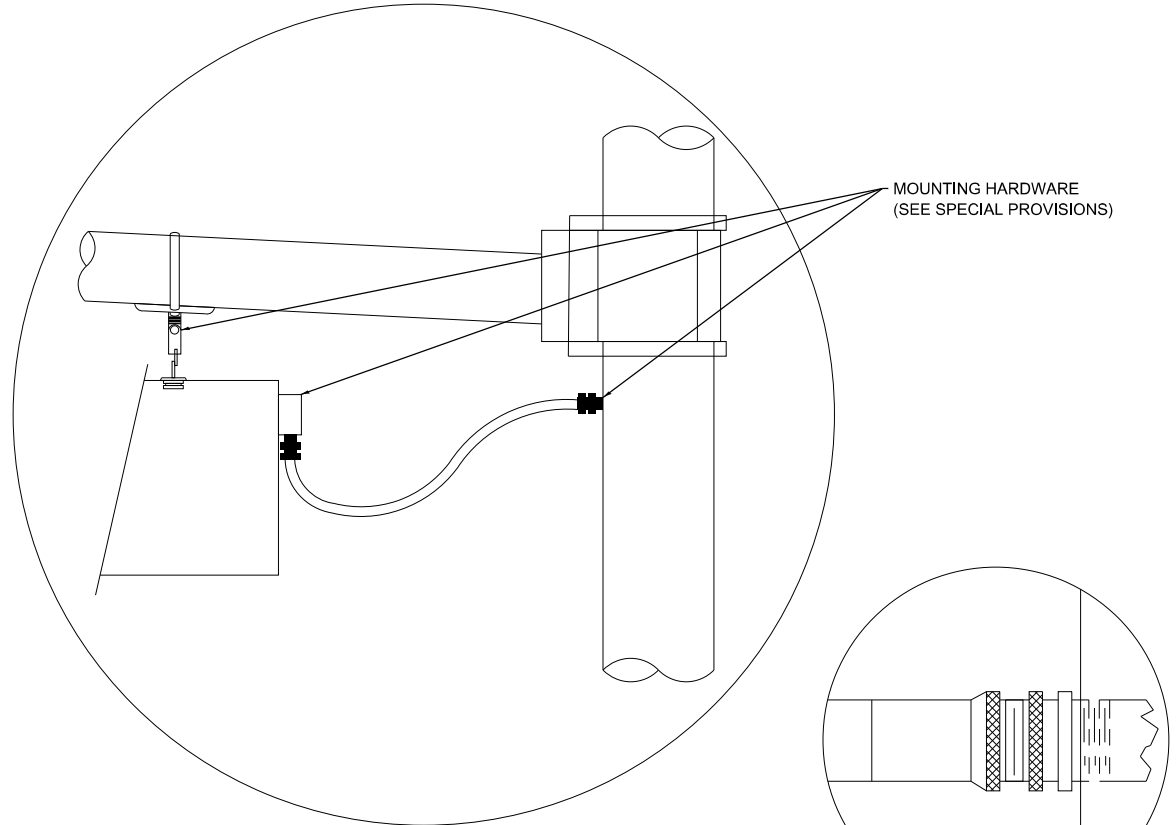
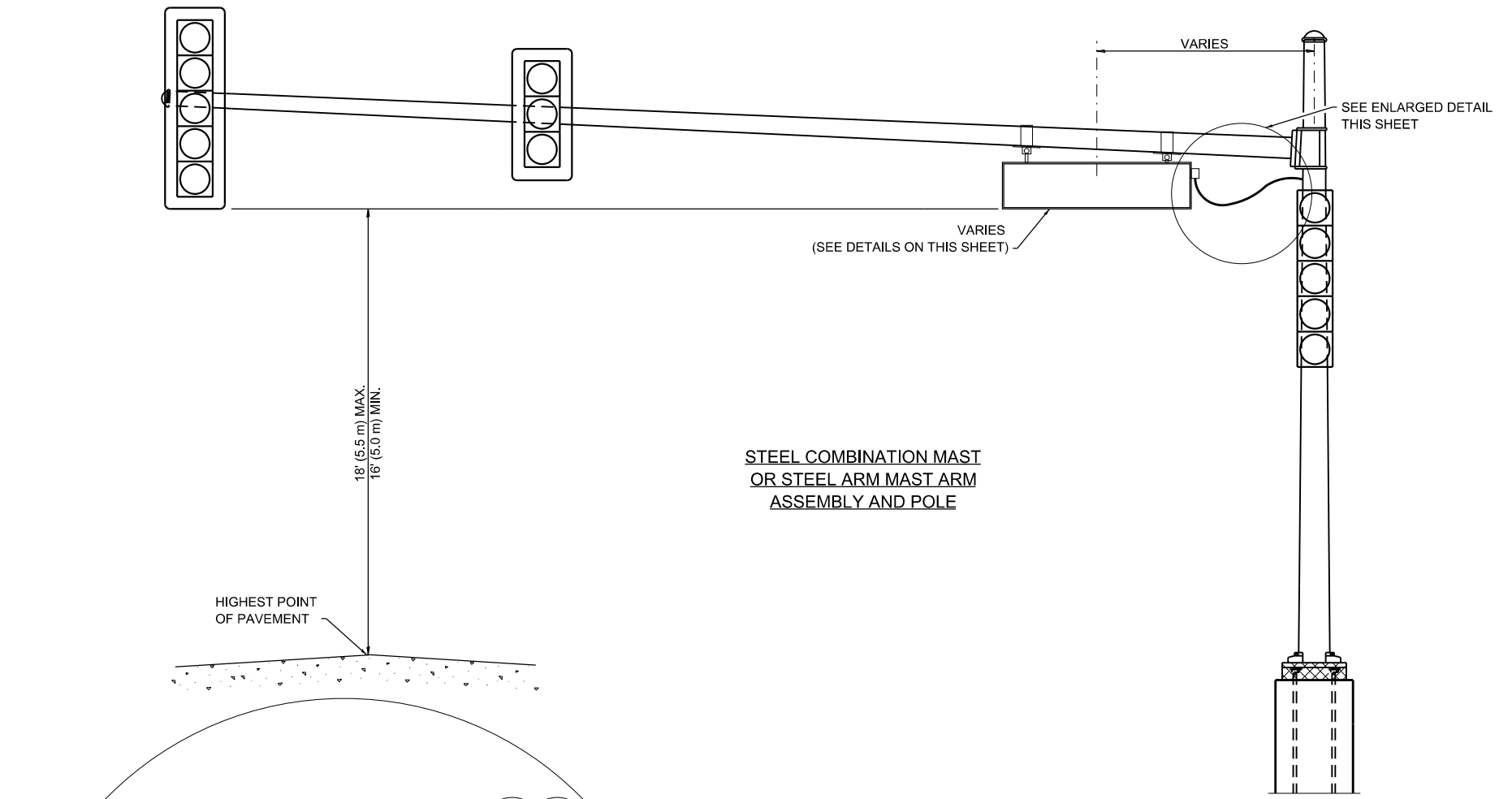
ALL DIMENSIONS ARE IN INCHES UNLESS NOTED OTHERWISE



DESIGN SERIES	AREA (SQ FT)	SIGN PANEL TYPE	SHEETING TYPE	QTY REQUIRED
C	11.25	LED ILL.	ZZ	1



DESIGN SERIES	AREA (SQ FT)	SIGN PANEL TYPE	SHEETING TYPE	QTY REQUIRED
C	10.5	LED ILL.	ZZ	1



GENERAL NOTES

1. THE DESIGN SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, TRANSPORTATION OFFICIALS FOR 80 M.P.H. WIND VELOCITY.
2. ALL SIGNS SHALL CONSIST OF A WHITE LEGEND AND BORDER (TYPE ZZ SHEETING) ON A GREEN BACKGROUND (TYPE ZZ SHEETING)
3. THE SIGN LENGTH SHALL BE IN 6-INCH INCREMENTS, BUT THE OVERALL LENGTH SHALL NOT EXCEED 8'-0". A MINIMUM OF 2-1/2" SHALL BE INCLUDED BETWEEN THE WORD AND THE RIGHT AND LEFT EDGES OF THE SIGN.
4. A PREFERRED METHOD FOR THE SIGN DESIGN IS TO USE THE SERIES "D" LETTER ON A ONE-LINE SIGN 18" HEIGHT AND A MAXIMUM OF 8'-0" IN WIDTH. IF SERIES "D" DOES NOT FIT ON A 8'-0" SIGN, THEN SERIES "C" SHOULD BE TRIED. IF SERIES "C" DOES NOT FIT ON A 8'-0" SIGN, A 30" HIGH TWO-LINE SIGN CAN BE USED. THE CROSSROAD DESIGNATION AS TO STREET, AVENUE, ETC. SHOULD BE SPELLED OUT ON THE SECOND LINE, IF THE ABBREVIATION CANNOT FIT ON THE FIRST LINE.
5. LED ILLUMINATED STREET NAME SIGNS CAN BE USED IN PLACE OF REGULAR SIGNS BUT ANY SPECIAL WORDING AND SYMBOLOGY MUST BE APPROVED BY THE DEPARTMENT. GENERAL DESIGN REQUIREMENT AS LISTED ABOVE (COLOR, FONT, SIZE, ETC.) MUST BE FOLLOWED.
6. BRANDS OF MOUNTING MATERIAL MUST BE APPROVED BY DEPARTMENT.

LED ILLUMINATED SIGN PANEL

NOTES:

1. SIGNS SHALL BE DUAL SIDED. FRONT AND BACK OF SIGN WILL BE THE SAME.
2. SIGNS SHALL NOT BE ENERGIZED WHEN TRAFFIC SIGNALS ARE POWERED BY THE UPS. THE SIGNS SHALL BE CONNECTED TO THE UPS BYPASS CIRCUITRY.
3. ALL WIRING WITHIN THE CABINET SHALL BE COLOR CODED AS INDICATED:
R = RED BL = BLUE W = WHITE
B = BLACK Y = YELLOW G = GREEN
4. ALL 120 VOLT SYSTEM AND ALL CONTROL WIRING SHALL BE #12 AWG STRANDED UNLESS OTHERWISE INDICATED.
5. ALL WIRING SHALL BE NEATLY DRESSED AND SUPPORTED.

LED INTERNALLY ILLUMINATED STREET NAME SIGN DETAIL

MODEL: ILLUMINATED STREET SIGN (Sheet)
FILE NAME: H:\222033 - McDonough Lake Rd, Intersection Improvements\CADD\Drawings\Intersection Sign\Sheet\IlluminatedSign.dgn



USER NAME = ben.grapperhaus	DESIGNED -	REVISED -
PLOT SCALE = 0.16666633 ' / in.	DRAWN -	REVISED -
PLOT DATE = 4/1/2026	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS
SCALE: SHEET 1 OF 10 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9111	23-00106-00-TL	MADISON	21	16
CONTRACT NO. 97903				
ILLINOIS FED. AID PROJECT				

GENERAL NOTES

The design shown on this sheet is for the foundation only and does not include the design of structural elements above the top of the foundation including the anchor bolts, base plates, mast arm assembly, etc.

The Design Loading Diagram depicts the loading used in the foundation design. The loading shown in IDOT Highway Standard 877001-08 and 877002-04 governed the design.

The Engineer shall be notified if the sign and signal head configuration changes from that shown in the contract plans for this project.

The foundation and its construction shall conform to Section 878 of the IDOT Standard Specifications for Road and Bridge Construction.

Backfill shall be clean sand thoroughly compacted by tamping layers not more than 8 inches thick.

Foundation details not shown shall conform to IDOT Standard 878001-11.

DESIGN LOADS AND SPECIFICATIONS

IDOT Standard Specifications for Road and Bridge Construction

AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals

Wind Speed = 90 mph

Ice Load = 3 psf

Dead Load as shown in loading diagram

DESIGN STRESSES

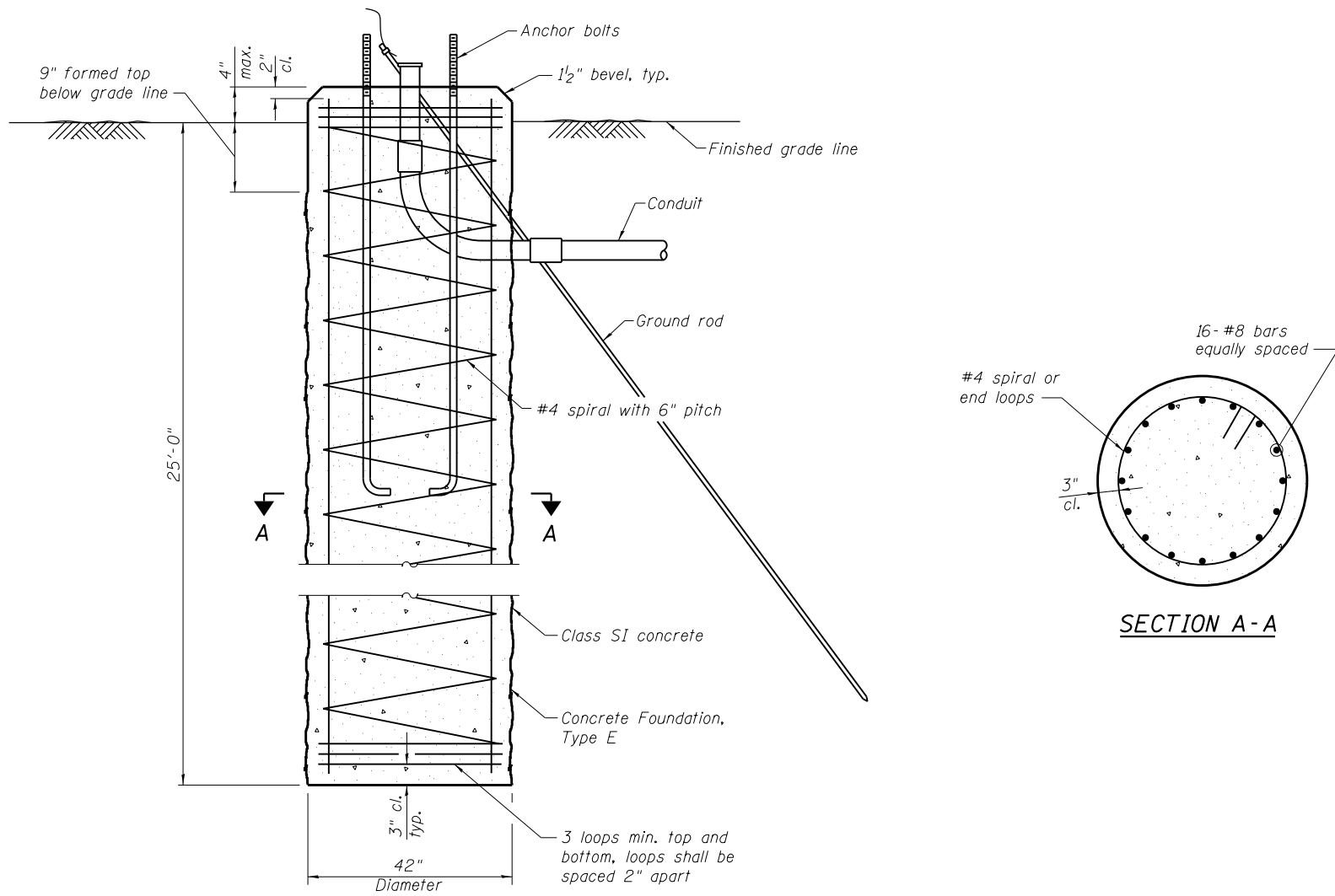
FIELD UNITS

$f'_c = 4,000 \text{ psi}$

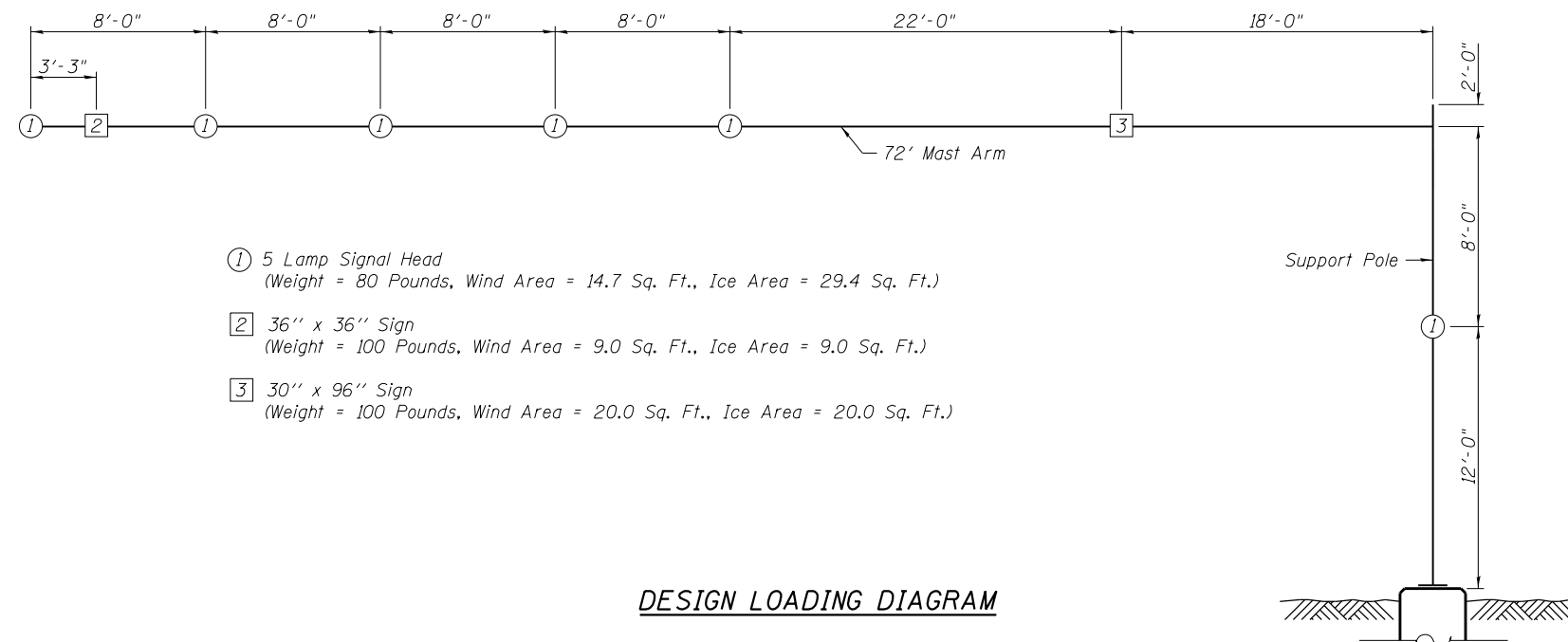
$f_y = 60,000 \text{ psi (Reinforcement)}$

INDEX OF SHEETS

Sheet No.	Description
1	Northeast Mast Arm Foundation
2	Northwest Mast Arm Foundation
3	Southeast Mast Arm Foundation
4	Southwest Mast Arm Foundation
5	Soil Boring Logs



MAST ARM FOUNDATION



DESIGN LOADING DIAGRAM

- ① 5 Lamp Signal Head
(Weight = 80 Pounds, Wind Area = 14.7 Sq. Ft., Ice Area = 29.4 Sq. Ft.)
- ② 36" x 36" Sign
(Weight = 100 Pounds, Wind Area = 9.0 Sq. Ft., Ice Area = 9.0 Sq. Ft.)
- ③ 30" x 96" Sign
(Weight = 100 Pounds, Wind Area = 20.0 Sq. Ft., Ice Area = 20.0 Sq. Ft.)

DATE: 4/1/2026
 EXPIRATION: 11/30/2026

FILE NAME: H:\P\222093 - McDonough Lake Rd. Intersection Improvements\Bridgel\Microstation\224033-001-Northeast Mast Arm Foundations\72ft.dgn



USER NAME =	DESIGNED - KP	REVISED -
	CHECKED - DGL	REVISED -
PLOT SCALE =	DRAWN - KP	REVISED -
PLOT DATE = 4/3/2026	CHECKED - DGL	REVISED -

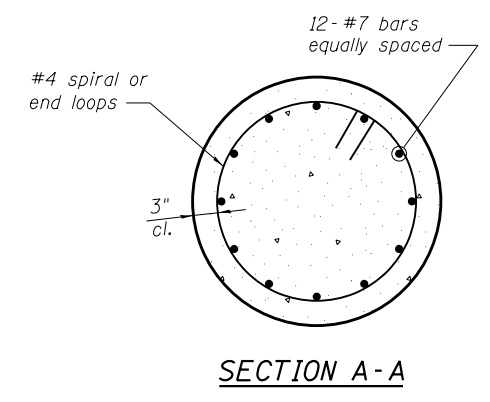
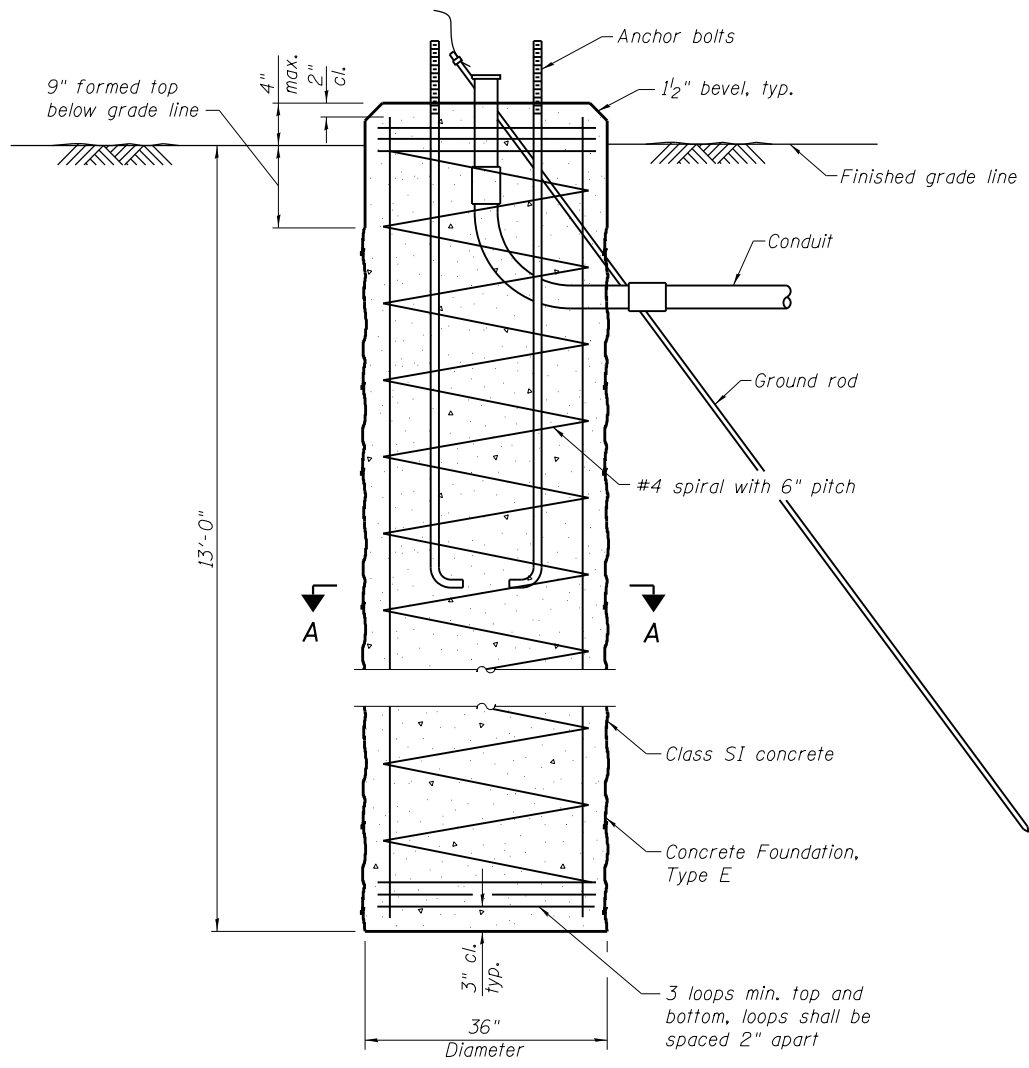
**MCDONOUGH LAKE RD & HORSESHOE LAKE RD
NORTHEAST MAST ARM FOUNDATION**

SHEET 1 OF 5 SHEETS

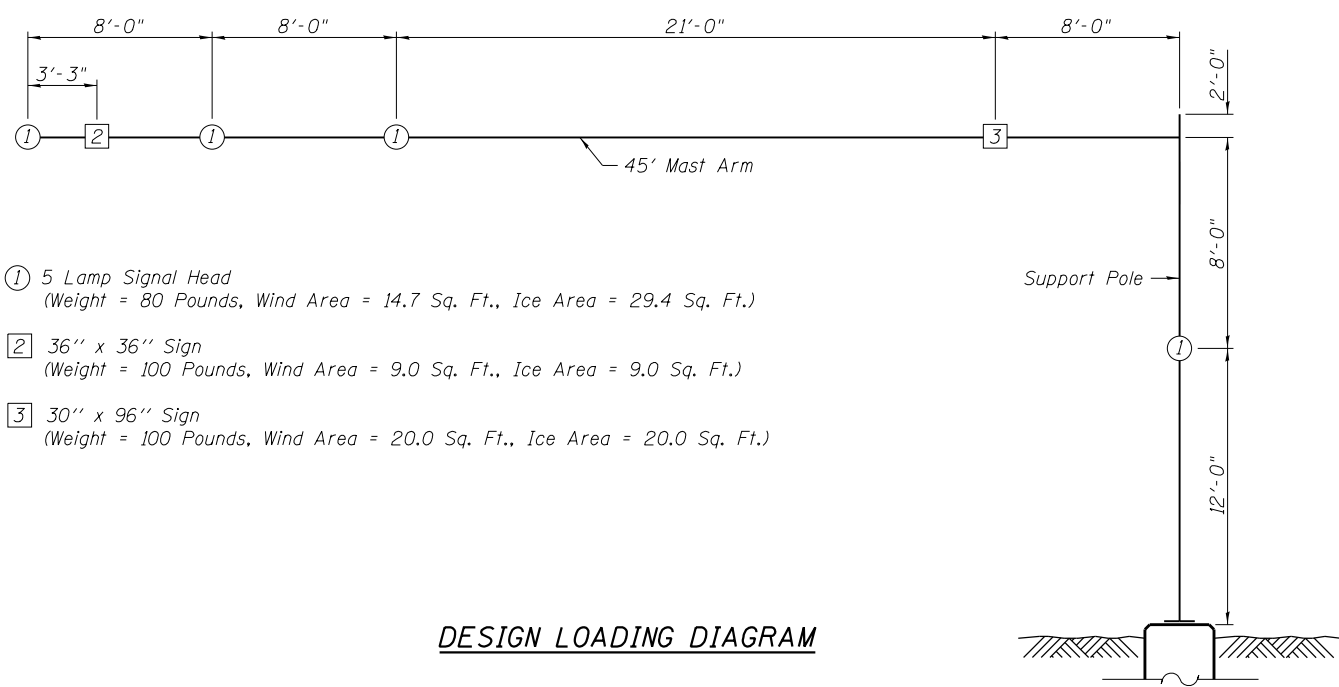
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9111	23-00106-00-TL	MADISON	21	17
CONTRACT NO. 97903				

ILLINOIS FED. AID PROJECT

FILE NAME: H:\P222093 - McDonough Lake Rd. Intersection Improvements\Bridgel\Microstation\224033-002-Northwest Mast Arm Foundations-45ft.dgn



MAST ARM FOUNDATION



- ① 5 Lamp Signal Head
(Weight = 80 Pounds, Wind Area = 14.7 Sq. Ft., Ice Area = 29.4 Sq. Ft.)
- ② 36" x 36" Sign
(Weight = 100 Pounds, Wind Area = 9.0 Sq. Ft., Ice Area = 9.0 Sq. Ft.)
- ③ 30" x 96" Sign
(Weight = 100 Pounds, Wind Area = 20.0 Sq. Ft., Ice Area = 20.0 Sq. Ft.)

DESIGN LOADING DIAGRAM



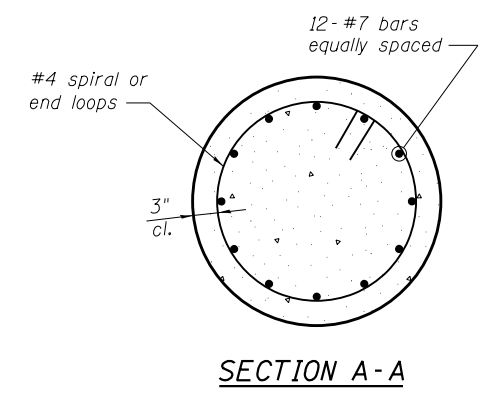
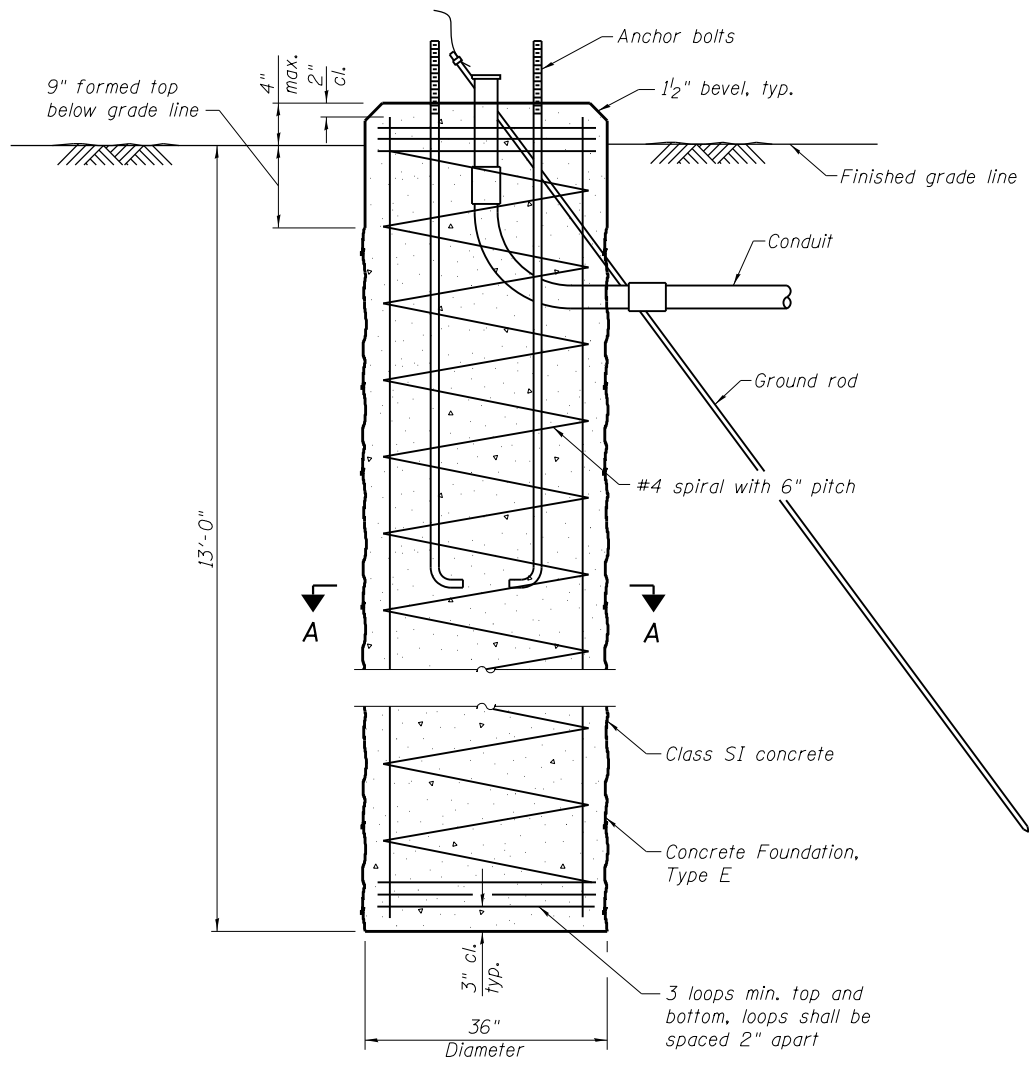
USER NAME =	DESIGNED - KP	REVISED -
	CHECKED - DGL	REVISED -
PLOT SCALE =	DRAWN - KP	REVISED -
PLOT DATE = 4/3/2026	CHECKED - DGL	REVISED -

**MCDONOUGH LAKE RD & HORSESHOE LAKE RD
NORTHWEST MAST ARM FOUNDATION**

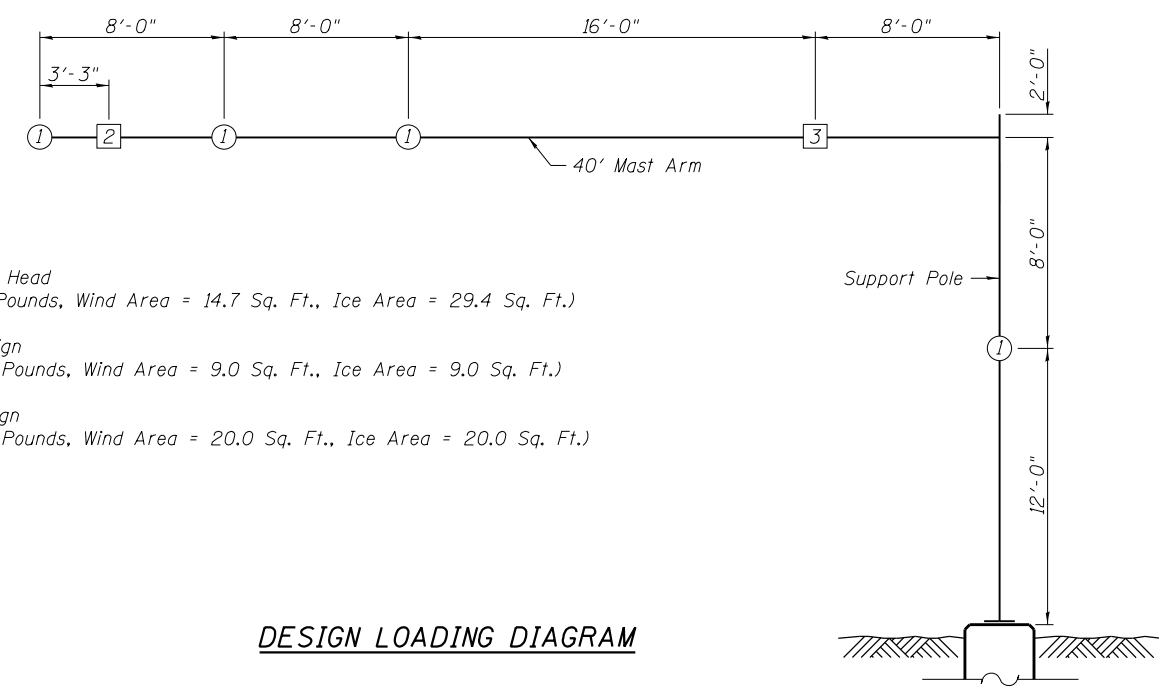
SHEET 2 OF 5 SHEETS

F.A.U. RTE. 9111	SECTION 23-00106-00-TL	COUNTY MADISON	TOTAL SHEETS 21	SHEET NO. 18
CONTRACT NO. 97903			ILLINOIS FED. AID PROJECT	

FILE NAME: H:\P222093 - McDonough Lake Rd. Intersection Improvements\Bridgel\Microstation\224033-003-Southeast Mast Arm Foundations-40ft.dgn



MAST ARM FOUNDATION



- ① 5 Lamp Signal Head
(Weight = 80 Pounds, Wind Area = 14.7 Sq. Ft., Ice Area = 29.4 Sq. Ft.)
- ② 36" x 36" Sign
(Weight = 100 Pounds, Wind Area = 9.0 Sq. Ft., Ice Area = 9.0 Sq. Ft.)
- ③ 30" x 96" Sign
(Weight = 100 Pounds, Wind Area = 20.0 Sq. Ft., Ice Area = 20.0 Sq. Ft.)

DESIGN LOADING DIAGRAM



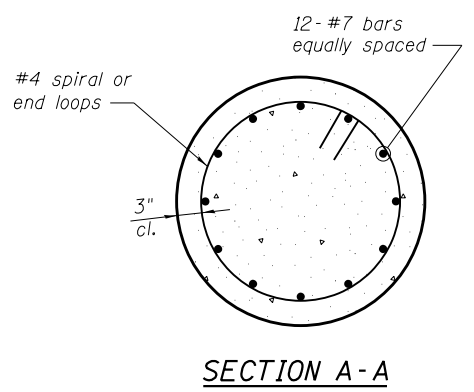
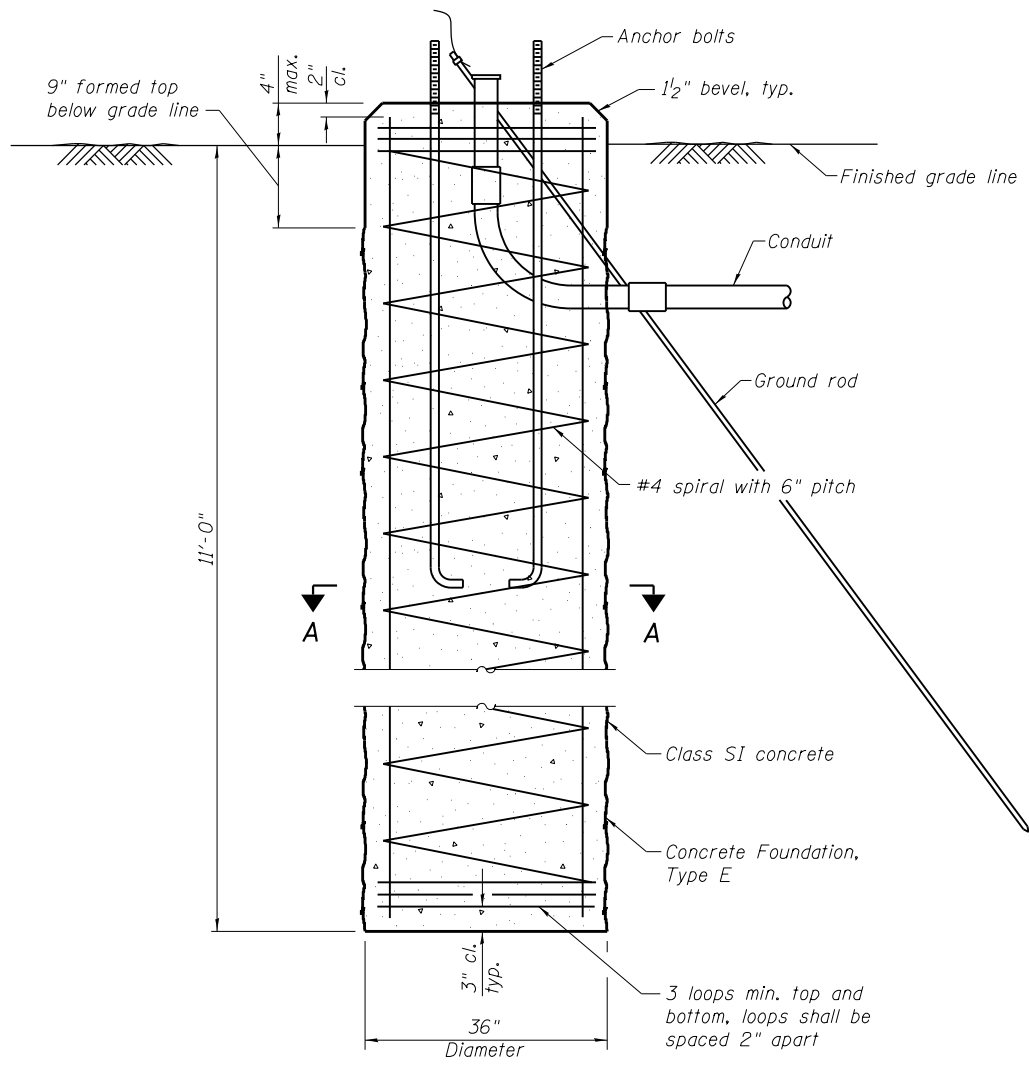
USER NAME =	DESIGNED - KP	REVISED -
	CHECKED - DGL	REVISED -
PLOT SCALE =	DRAWN - KP	REVISED -
PLOT DATE = 4/3/2026	CHECKED - DGL	REVISED -

**MCDONOUGH LAKE RD & HORSESHOE LAKE RD
SOUTHEAST MAST ARM FOUNDATION**

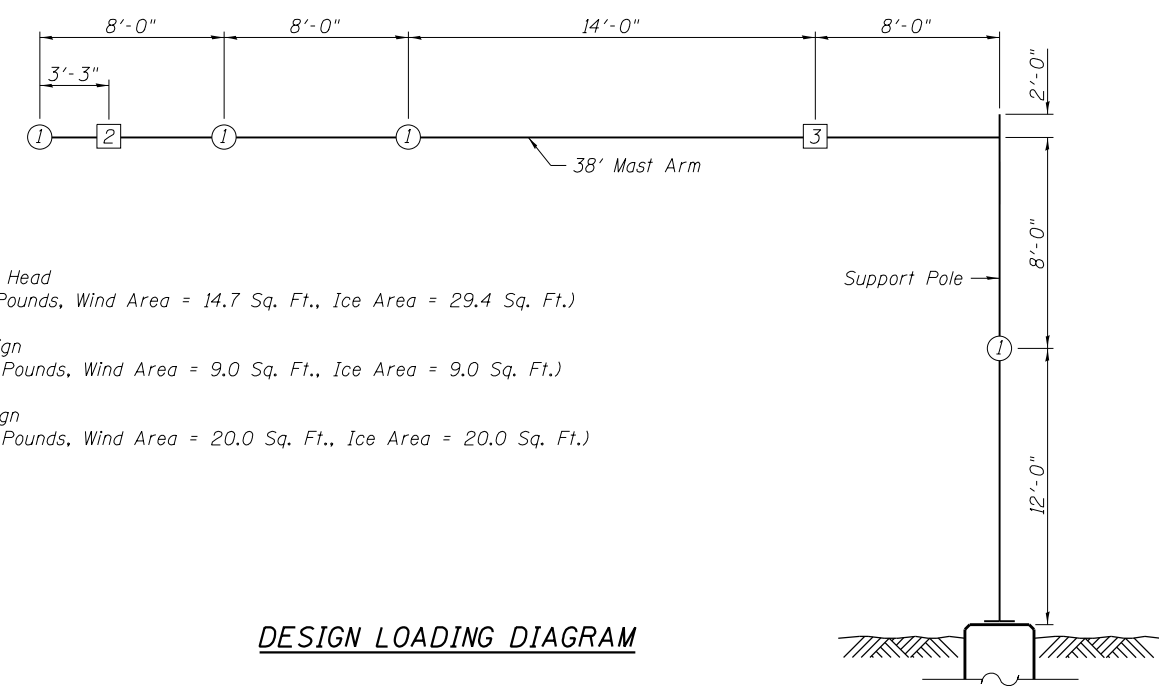
SHEET 3 OF 5 SHEETS

F.A.U. RTE. 9111	SECTION 23-00106-00-TL	COUNTY MADISON	TOTAL SHEETS 21	SHEET NO. 19
CONTRACT NO. 97903			ILLINOIS FED. AID PROJECT	

FILE NAME: H:\P222093 - McDonough Lake Rd. Intersection Improvements\Bridgel\Microstation\224033-004-Southwest Mast Arm Foundations-38ft.dgn



MAST ARM FOUNDATION



- ① 5 Lamp Signal Head
(Weight = 80 Pounds, Wind Area = 14.7 Sq. Ft., Ice Area = 29.4 Sq. Ft.)
- ② 36" x 36" Sign
(Weight = 100 Pounds, Wind Area = 9.0 Sq. Ft., Ice Area = 9.0 Sq. Ft.)
- ③ 30" x 96" Sign
(Weight = 100 Pounds, Wind Area = 20.0 Sq. Ft., Ice Area = 20.0 Sq. Ft.)

DESIGN LOADING DIAGRAM



USER NAME =	DESIGNED - KP	REVISED -
	CHECKED - DGL	REVISED -
PLOT SCALE =	DRAWN - KP	REVISED -
PLOT DATE = 4/3/2026	CHECKED - DGL	REVISED -

**MCDONOUGH LAKE RD & HORSESHOE LAKE RD
SOUTHWEST MAST ARM FOUNDATION**

SHEET 4 OF 5 SHEETS

F.A.U. RTE. 9111	SECTION 23-00106-00-TL	COUNTY MADISON	TOTAL SHEETS 21	SHEET NO. 20
CONTRACT NO. 97903			ILLINOIS FED. AID PROJECT	



Millennia Professional Services

BORING NUMBER H-1

PAGE 1 OF 1

CLIENT City of Collinsville PROJECT NAME Horseshoe Lake Rd and McDonough Lake Rd Mast Arms
 PROJECT NUMBER MG26007 PROJECT LOCATION Collinsville, Illinois
 DATE STARTED 2/19/26 COMPLETED 2/19/26 GROUND ELEVATION 421.6 ft HOLE SIZE inches
 DRILLING CONTRACTOR UES GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 16.00 ft / Elev 405.60 ft
 LOGGED BY M. Jenkins CHECKED BY J. Schaeffer AT END OF DRILLING --- N/A (augers flooded)
 NOTES augers flooded below 18 ft. AFTER DRILLING ---

G:\PROJECT FILES\2026\MG26007 HORSESHOE LAKE ROAD AND MCDONOUGH LAKE ROAD MAST ARMS\FIELD DATA\BORING LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		FILL: Dark grey and brown, CLAY LOAM										
			SS 1	89	3-6-5 (11)	2.0		21				
		Brown, CLAY LOAM										
			SS 2	78	2-2-2 (4)	1.0		29				
		- rimac unconfined compressive strength = 1.65 at 6.0 ft.										
			SS 3	100	2-3-5 (8)	1.5		22				
		Brown, sandy CLAY LOAM										
		- rimac unconfined compressive strength = 1.61 at 8.5 ft.										
			SS 4	100	2-3-4 (7)	1.5		22				
		Brown, fine grained SAND										
		- with clay to 13 ft.										
			SS 5	89	3-4-6 (10)			11				
			SS 6	100	3-4-6 (10)			10				
			SS 7	89	2-4-6 (10)							
			SS 8	100	3-3-5 (8)							
			SS 9	100	2-2-4 (6)							
			SS 10	1	5-8-10 (18)							

Bottom of borehole at 25.0 feet.



Millennia Professional Services

BORING NUMBER H-2

PAGE 1 OF 1

CLIENT City of Collinsville PROJECT NAME Horseshoe Lake Rd and McDonough Lake Rd Mast Arms
 PROJECT NUMBER MG26007 PROJECT LOCATION Collinsville, Illinois
 DATE STARTED 2/19/26 COMPLETED 2/19/26 GROUND ELEVATION 420 ft HOLE SIZE inches
 DRILLING CONTRACTOR UES GROUND WATER LEVELS:
 DRILLING METHOD Hollow Stem Auger ∇ AT TIME OF DRILLING 11.00 ft / Elev 409.00 ft
 LOGGED BY M. Jenkins CHECKED BY J. Schaeffer AT END OF DRILLING --- N/A (augers flooded)
 NOTES augers flooded below 15 ft. AFTER DRILLING ---

G:\PROJECT FILES\2026\MG26007 HORSESHOE LAKE ROAD AND MCDONOUGH LAKE ROAD MAST ARMS\FIELD DATA\BORING LOGS.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		TOPSOIL (3")										
		Dark brown to brown, CLAY LOAM										
		- rimac unconfined compressive strength = 0.78 at 1.0 ft.										
			SS 1	83	1-2-2 (4)	0.5		24				
		- rimac unconfined compressive strength = 1.28 at 3.5 ft.										
			SS 2	67	2-2-4 (6)	1.5		22				
		Brown, sandy CLAY LOAM										
		- rimac unconfined compressive strength = 1.40 at 6.0 ft.										
			SS 3	72	1-2-4 (6)	1.0		23				
		Brown, fine grained SAND										
			SS 4	78	2-5-5 (10)			14				
			SS 5	83	2-4-3 (7)							
			SS 6	100	2-4-5 (9)							
			SS 7	100	1-2-3 (5)							
			SS 8	56	2-2-4 (6)							
			SS 9	78	2-3-5 (8)							
			SS 10	1	3-5-7 (12)							

Bottom of borehole at 25.0 feet.

FILE NAME: H:\P222093 - McDonough Lake Rd. Intersection Improvements\Bridgel\Microstation\224033-005-Soil Boring_Logs.dgn



USER NAME =	DESIGNED -	REVISED -
PLOT SCALE =	CHECKED -	REVISED -
PLOT DATE = 4/3/2026	DRAWN -	REVISED -
	CHECKED -	REVISED -

MCDONOUGH LAKE RD & HORSESHOE LAKE RD SOIL BORING LOGS

SHEET 5 OF 5 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9111	23-00106-00-TL	MADISON	21	21
CONTRACT NO. 97903				
ILLINOIS		FED. AID PROJECT		