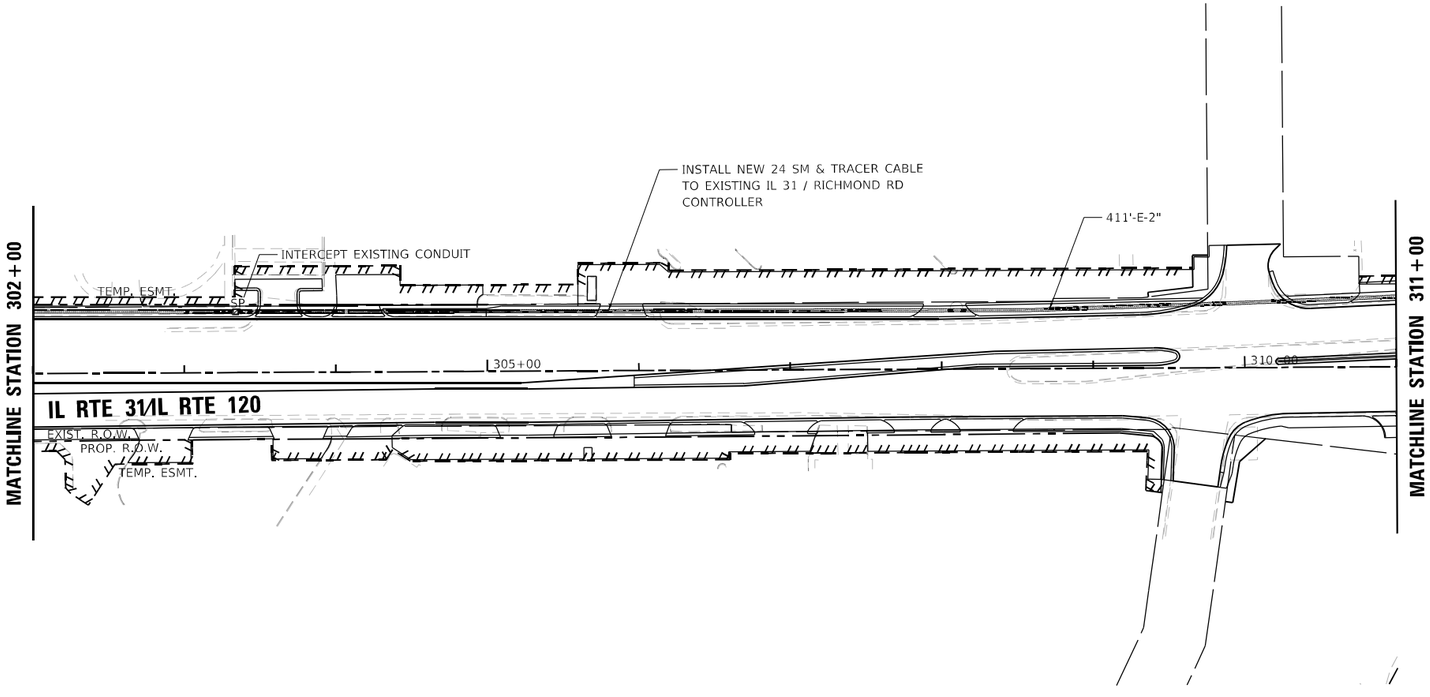

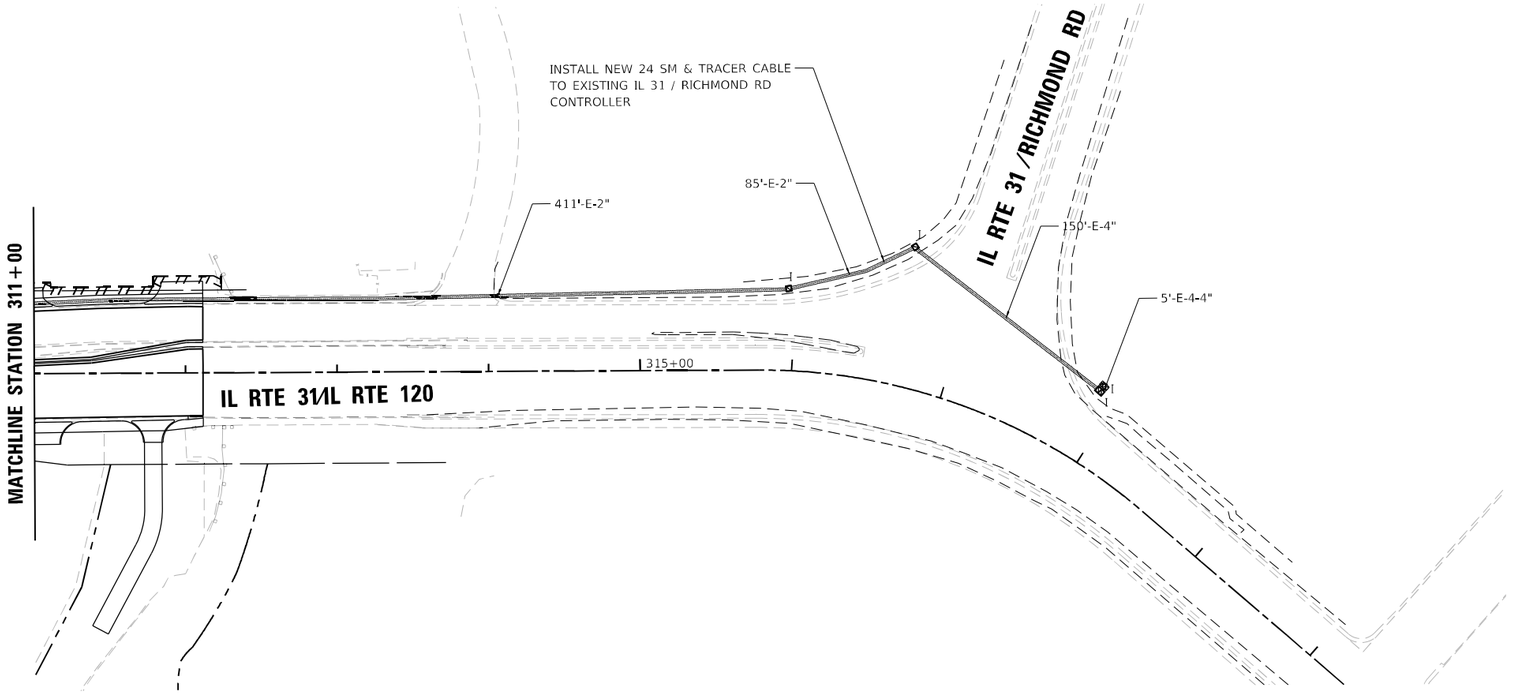

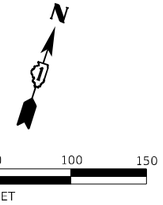

TS SHT NO.

IDOT TACTICS
ZONE 40

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Peralte-Clark LLC

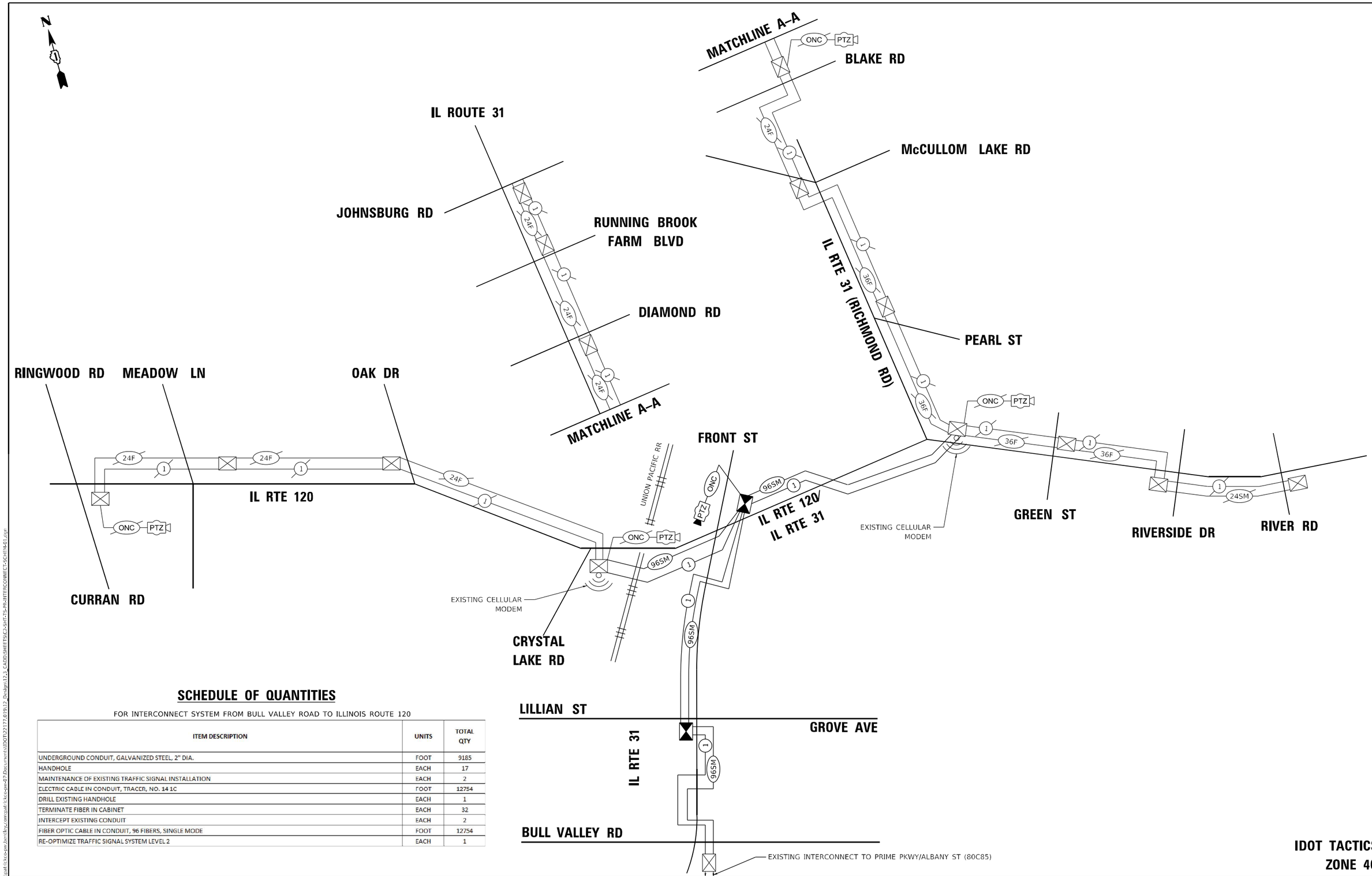
USER NAME = akshar.patel	DESIGNED - BT	REVISED -
	DRAWN - AP	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED - 04/30/2024	REVISED -
PLOT DATE = 2/27/2026	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED INTERCONNECT PLAN
ILLINOIS ROUTE 120 – ILLINOIS ROUTE 30 TO ILLINOIS ROUTE 31

SCALE: 1"=50' | SHEET 1 OF 2 SHEETS | STA. | TO STA.

F.A. P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	401
		CONTRACT NO. 62U72		
	ILLINOIS	FED. AID PROJECT		



SCHEDULE OF QUANTITIES

FOR INTERCONNECT SYSTEM FROM BULL VALLEY ROAD TO ILLINOIS ROUTE 120

ITEM DESCRIPTION	UNITS	TOTAL QTY
UNDERGROUND CONDUIT, GALVANIZED STEEL, 2" DIA.	FOOT	9185
HANDHOLE	EACH	17
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EACH	2
ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1C	FOOT	12754
DRILL EXISTING HANDHOLE	EACH	1
TERMINATE FIBER IN CABINET	EACH	32
INTERCEPT EXISTING CONDUIT	EACH	2
FIBER OPTIC CABLE IN CONDUIT, 96 FIBERS, SINGLE MODE	FOOT	12754
RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM LEVEL 2	EACH	1

IDOT TACTICS ZONE 40

TS SHT NO. 34

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Peralte-Clark LLC

USER NAME = akshar.patel	DESIGNED - BT	REVISED -	
	DRAWN - AP	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 4/29/2026	DATE - 04/30/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED INTERCONNECT SCHEMATIC AND SOQ
ILLINOIS ROUTE 31 – LILLIAN STREET TO ILLINOIS ROUTE 120

SCALE: NTS | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	402
		CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			

INSERT
FIBER SPLICE DIAGRAM
FIBER SPLICE DIAGRAM
BY OTHERS

TS SHT NO.

Peralte-Clark LLC

USER NAME = akshar.patel	DESIGNED - BT	REVISED -
	DRAWN - AP	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED - 04/30/2024	REVISED -
PLOT DATE = 2/27/2026	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FIBER SPLICE DIAGRAM
ILLINOIS ROUTE 31 AND ILLINOIS ROUTE 120

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

F.A. P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	403
		CONTRACT NO. 62U72		
	ILLINOIS	FED. AID PROJECT		

INSERT
CABINET DETAILS
BY OTHERS

TS SHT NO.

Peralte-Clark LLC

USER NAME = akshar.patel	DESIGNED - BT	REVISED -	
	DRAWN - AP	REVISED -	
PLOT SCALE = 40.0000 ' / in.	CHECKED - 04/30/2024	REVISED -	
PLOT DATE = 2/27/2026	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CABINET DETAIL
ILLINOIS ROUTE 31 AND ILLINOIS ROUTE 120

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

F.A. P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	404
		CONTRACT NO. 62U72		
	ILLINOIS	FED. AID PROJECT		

LIGHTING AND ELECTRICAL LEGEND

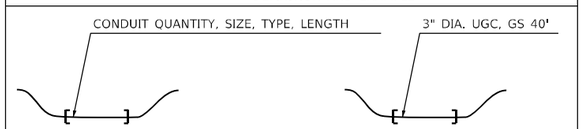
SYMBOL	DESCRIPTION
	EXISTING VILLAGE OF MCHENRY LIGHTING UNIT TO BE REMOVED, NO SALVAGE
	EXISTING VILLAGE OF MCHENRY DECORATIVE LIGHTING UNIT TO BE RELOCATED
	RELOCATED VILLAGE OF MCHENRY DECORATIVE LIGHTING UNIT, CONCRETE FOUNDATION
	EXISTING VILLAGE OF MCHENRY LIGHTING UNIT TO REMAIN
	TEMPORARY LIGHTING UNIT, WOOD POLE, 50 FT, CLASS 4, HORIZONTAL MOUNT LED ROADWAY LUMINAIRE, 35 FT LUMINAIRE MOUNTING HEIGHT (LUMEN OUTPUT DESIGNATION PACKAGE I)
	EXISTING UTILITY POLE MOUNTED LIGHTING UNIT TO BE REMOVED BY OTHERS
	PROPOSED VILLAGE OF MCHENRY DECORATIVE LIGHTING UNIT, 35 FT M.H., 8 FT MAST ARM, BREAKAWAY COUPLINGS, HORIZONTAL MOUNT LED ROADWAY LUMINAIRE WITH MID-MOUNT LED PEDESTRIAN LUMINAIRE (LUMINAIRE TYPE AS SHOWN ON THE PLANS) 120V. LUMINAIRE, POLE, POLE BASE AND ALL ATTACHMENTS SHALL HAVE A BLACK FINISH.
	EXISTING LIGHTING CONTROLLER TO REMAIN (VILLAGE OF MCHENRY)
R	EXISTING LIGHTING CONTROLLER TO BE REMOVED (VILLAGE OF MCHENRY)
R	EXISTING HANDHOLE TO BE REMOVED
	EXISTING HANDHOLE TO REMAIN
	PROPOSED HANDHOLE
	PROPOSED VILLAGE OF MCHENRY LIGHTING CONTROLLER
	PROPOSED ELECTRIC UTILITY SERVICE
A	PROPOSED AERIAL CABLE, TYPE AS NOTED ON THE PLANS
R	EXISTING UNDERGROUND CIRCUITS TO BE ABANDONED IN PLACE
E	EXISTING UNDERGROUND CIRCUITS TO REMAIN
	EXISTING CIRCUITS IN EXISTING UNDERGROUND CONDUIT SLEEVE
	PROPOSED CABLE IN CONDUIT, SIZE AND TYPE AS NOTED
	PROPOSED CABLE IN CONDUIT IN UNDERGROUND CONDUIT SLEEVE, SIZE AND TYPE AS NOTED

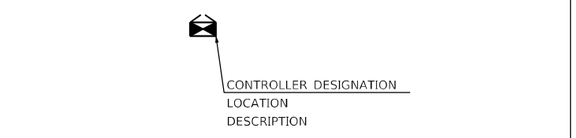
ABBREVIATIONS

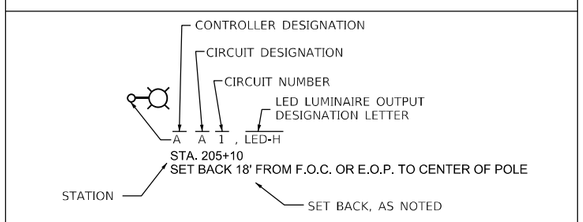
ABBREVIATION	DESCRIPTION
AC	ALTERNATING CURRENT
A/C	AERIAL CABLE
ATS	ATTACHED TO STRUCTURE
B.O.C.	BACK OF CURB
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CM	CENTIMETER
COMED	COMMONWEALTH EDISON COMPANY
CP	CONTROL PANEL
CT	CURRENT TRANSFORMER
DA	DAVIT ARM
DC	DIRECT CURRENT
DIA	DIAMETER
DP	DISTRIBUTION PANEL
E	EXISTING UNIT TO REMAIN
EX.	EXISTING
ECA	ELECTRIC CABLE ASSEMBLY
EIS	EMBEDDED IN STRUCTURE
E.O.P.	EDGE OF PAVEMENT
F.O.C.	FACE OF CURB
FT	FEET OR FOOT
FU	FUSE
GND	GROUND
HID	HIGH INTENSITY DISCHARGE
JB	JUNCTION BOX
KVA	KILOVOLT-AMPERE
KW	KILOWATTS
LED	LIGHT EMITTING DIODE
LP	LIGHT POLE
M	METER
MA	MAST ARM
MC	MULTI-CONDUCTOR
MM	MILLIMETER
M.H.	MOUNTING HEIGHT
MW	MESSENGER WIRE
NESC	NATIONAL ELECRIC SAFETY CODE
NO. #	NUMBER
N.T.S.	NOT TO SCALE
PR	PROPOSED
PB	PUSH BUTTON
PNL	PANEL
PVC	POLYVINYL CHLORIDE
PVCC RGC	PVC COATED RIGID GALVANIZED CONDUIT
PT	POTENTIAL TRANSFORMER
R	EXISTING UNIT TO BE REMOVED (OWNER SALVAGED U.N.O.)
RR	EXISTING UNIT TO BE REMOVED AND REINSTALLED
RECP	RECEPTACLE
RGC	RIGID GALVANIZED CONDUIT
SEL SW	SELECTOR SWITCH
SPARE	SPARE
SPACE	SPACE
SS	STAINLESS STEEL
STA	STATION
T/F	TOP OF FOUNDATION
UD	UNIT DUCT
U.N.O.	UNLESS NOTED OTHERWISE
UGC, GS	UNDERGROUND CONDUCT, GALVANIZED STEEL
VAC	VOLTS, ALTERNATING CURRENT
W	WATTS
WP	WOOD POLE
XFMR	TRANSFORMER
HPS	HIGH PRESSURE SODIUM
LPS	LOW PRESSURE SODIUM
LTFM	LIQUID TIGHT FLEXIBLE METALLIC

CALL-OUT SAMPLE

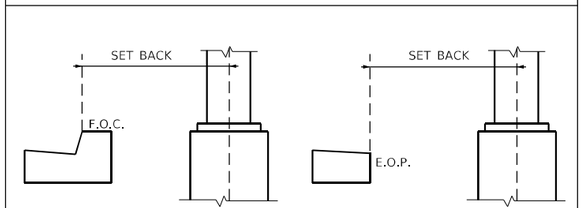
DEFINITION AND EXAMPLE







PROPOSED LIGHTING UNIT



POLE SET BACK DETAIL

PROPOSED LIGHTING UNIT SCHEDULE		
OUTPUT DESIGNATION	WATTAGE	MINIMUM LUMEN OUTPUT
F	129	12,500
G	170	15,500
I	290	33,000

GENERAL NOTES

1. THE ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST CODES INCLUDING THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC), STANDARDS, THE IDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED JANUARY 1, 2022, SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS.
2. VILLAGE OF MCHENRY LIGHTING CONTROLLERS
   COMED ENERGY CONTACT PERSON:
   SHAQUETTA LLOYD
   779-231-3268
   SHAQUETTA.LLOYD@COMED.COM
3. THE CONTRACTOR IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE TEMPORARY LIGHTING SYSTEM AND SHALL ENSURE CONTINUOUS OPERATION DURING NIGHT-TIME HOURS.

IDOT–D1 STANDARDS

STANDARD NO.	TITLE
BE-220	ELECTRIC SERVICE INSTALLATION AERIAL, REMOTE DISCONNECT
BE-301	LIGHT POLE FOUNDATION 40' (12.192m) TO 47 1/2' (14.478m) M.H., 15" (381mm) BOLT CIRCLE
BE-305	LIGHT POLE FOUNDATION, METAL
BE-701	LUMINAIRE SAFETY CABLE ASSEMBLY
BE-702	MISC. ELECTRICAL DETAILS SHEET A
BE-800	TEMPORARY LIGHT POLE DETAILS
BE-801	TEMPORARY AERIAL CABLE INSTALLATION

HIGHWAY STANDARDS

STANDARD NO.	TITLE
814001-03	HANDHOLES
825001-04	LIGHTING CONTROLLER POLE MOUNTED, 240V
838001-01	BREAKAWAY DEVICES

LT–01

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SINGH + ASSOCIATES, INC. CONSULTING ENGINEERS

USER NAME = vnunez		DESIGNED - SG		REVISED -	
		DRAWN - VN		REVISED -	
PLOT SCALE = 100.0000 ' / in.		CHECKED - RP		REVISED -	
PLOT DATE = 1/8/2026		DATE - 01/09/2026		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING GENERAL NOTES & LEGEND

SCALE: NTS | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	MCHENRY	575	405
		CONTRACT NO. 62U72		
		ILLINOIS	FED. AID PROJECT	

ITEM	UNIT	QUANTITY
ELECTRIC SERVICE INSTALLATION AND UTILITY CONNECTION	EACH	3
UNDERGROUND CONDUIT, GALVANIZED STEEL, 3" DIA.	FOOT	50
UNDERGROUND CONDUIT, PVC, 2" DIA.	FOOT	8,531
UNDERGROUND CONDUIT, PVC, 4" DIA.	FOOT	2,731
HANDHOLE	EACH	4
ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 6	FOOT	9,301
ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 4	FOOT	65,107
ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C 350MCM	FOOT	210
AERIAL CABLE, 2-1/C NO. 4 WITH MESSENGER WIRE	FOOT	1,569
LUMINAIRE, LED, ROADWAY, OUTPUT DESIGNATION F	EACH	46
LUMINAIRE, LED, ROADWAY, OUTPUT DESIGNATION G	EACH	18
LIGHTING CONTROLLER, POLE MOUNTED, 240VOLT, 60AMP	EACH	1
LIGHTING CONTROLLER, BASE MOUNTED, 240VOLT, 200AMP	EACH	2
LIGHT POLE, WOOD, 50 FOOT, CLASS 4, WITH 15FT MAST ARM	EACH	7
LIGHT POLE, WOOD, 50 FOOT, CLASS 4, WITH TWO 15FT MAST ARM	EACH	3
LIGHT POLE FOUNDATION, 24" DIAMETER	FOOT	329
LIGHT POLE FOUNDATION, METAL, 15" BOLT CIRCLE, 8 5/8" X 6'	EACH	17
BREAKAWAY DEVICE, COUPLING WITH STAINLESS STEEL SCREEN	EACH	256
REMOVAL OF TEMPORARY LIGHTING UNIT	EACH	10
REMOVAL OF LIGHTING UNIT, NO SALVAGE	EACH	13
REMOVAL OF POLE FOUNDATION	EACH	13
RELOCATE EXISTING LIGHTING UNIT	EACH	10
REMOVAL OF LIGHTING CONTROLLER	EACH	2
REMOVAL OF ELECTRIC SERVICE INSTALLATION	EACH	2
REMOVE EXISTING HANDHOLE	EACH	1
LUMINAIRE SHIELD	EACH	5
TEMPORARY LUMINAIRE, LED, ROADWAY, OUTPUT DESIGNATION I	EACH	13
LIGHTING UNIT COMPLETE (SPECIAL)	EACH	64
LUMINAIRE SAFETY CABLE ASSEMBLY	EACH	77
MAINTENANCE OF LIGHTING SYSTEM	CAL MO	24

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CONSULTING ENGINEERS

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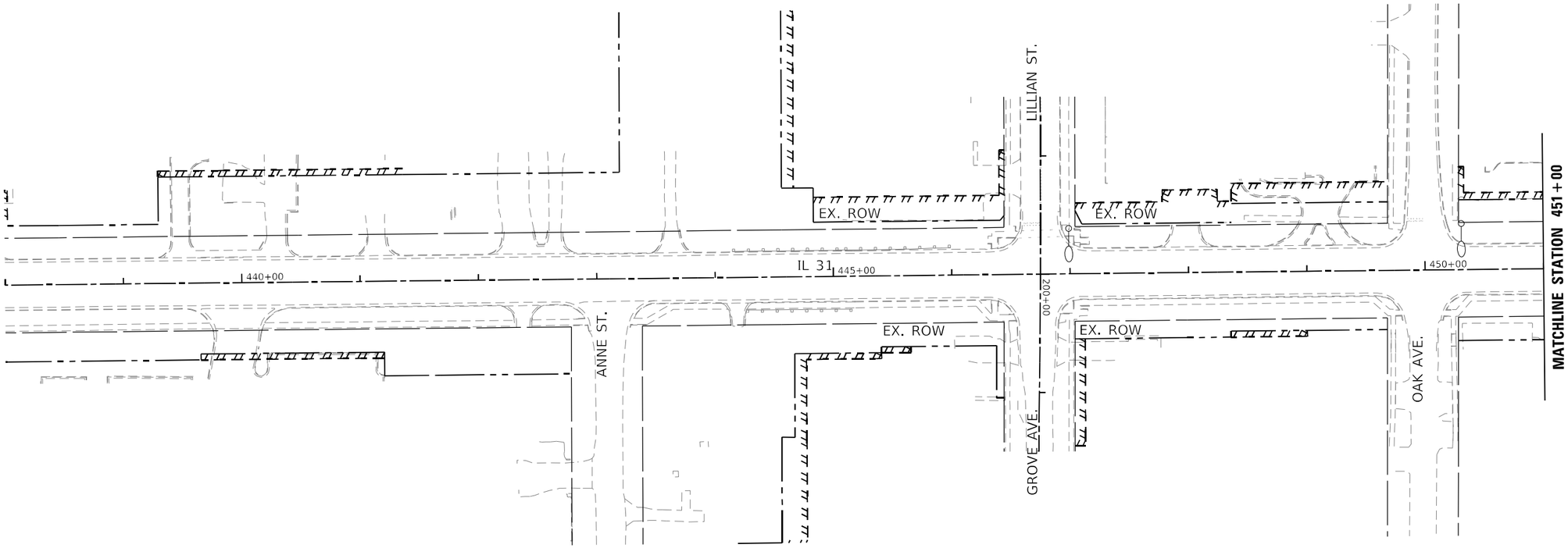
PLOT SCALE = 100.0000 ' / in.	CHECKED - RP	REVISED -	
PLOT DATE = 1/8/2026	DATE - 01/09/2026	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING BILL OF MATERIALS

SCALE: NTS | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	MCHENRY	575	406
		CONTRACT NO. 62U72		
		ILLINOIS	FED. AID PROJECT	



NOTES:

1. SEE SHEET LT-01 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.
2. EXISTING VILLAGE OF MCHENRY LIGHTING UNITS SHALL REMAIN OPERATIONAL UNTIL THE TEMPORARY LIGHTING SYSTEM IS INSTALLED AND OPERATIONAL.
3. TEMPORARY LIGHTING UNITS AND TEMPORARY BRANCH CIRCUITS SHALL BE INSTALLED AND OPERATIONAL PRIOR TO THE START OF STAGE 1.

0 50 100 150
SCALE IN FEET

LT-03

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SINGH + ASSOCIATES, INC.
CONSULTING ENGINEERS

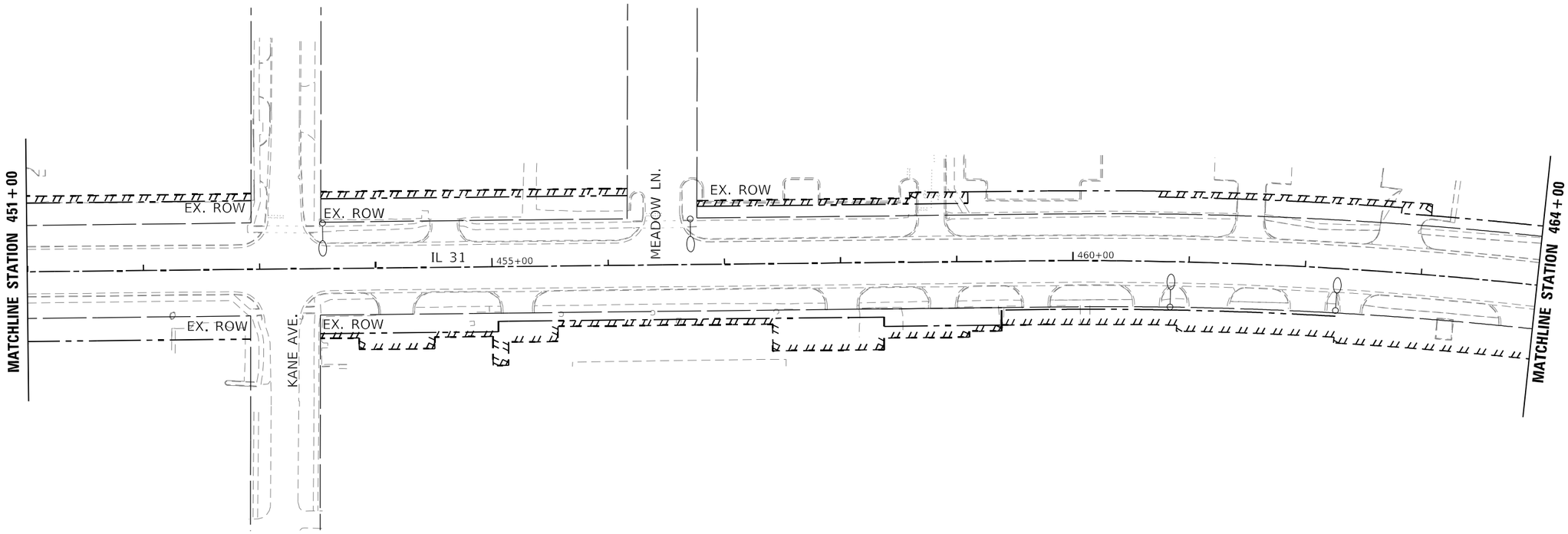
USER NAME = vnunez		DESIGNED - SG		REVISED -	
		DRAWN - VN		REVISED -	
PLOT SCALE = 100.0000 ' / in.		CHECKED - RP		REVISED -	
PLOT DATE = 1/8/2026		DATE - 01/09/2026		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY LIGHTING AND REMOVAL PLAN
ILLINOIS ROUTE 31

SCALE: 1" = 50' | SHEET 1 OF 5 SHEETS | STA. 438+00 | TO STA. 451+00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	MCHENRY	575	407
		CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			



NOTES:

1. SEE SHEET LT-01 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.
2. EXISTING VILLAGE OF MCHENRY LIGHTING UNITS SHALL REMAIN OPERATIONAL UNTIL THE TEMPORARY LIGHTING SYSTEM IS INSTALLED AND OPERATIONAL.
3. TEMPORARY LIGHTING UNITS AND TEMPORARY BRANCH CIRCUITS SHALL BE INSTALLED AND OPERATIONAL PRIOR TO THE START OF STAGE 1.

0 50 100 150
SCALE IN FEET

LT-04

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SINGH
SINGH + ASSOCIATES, INC.
CONSULTING ENGINEERS

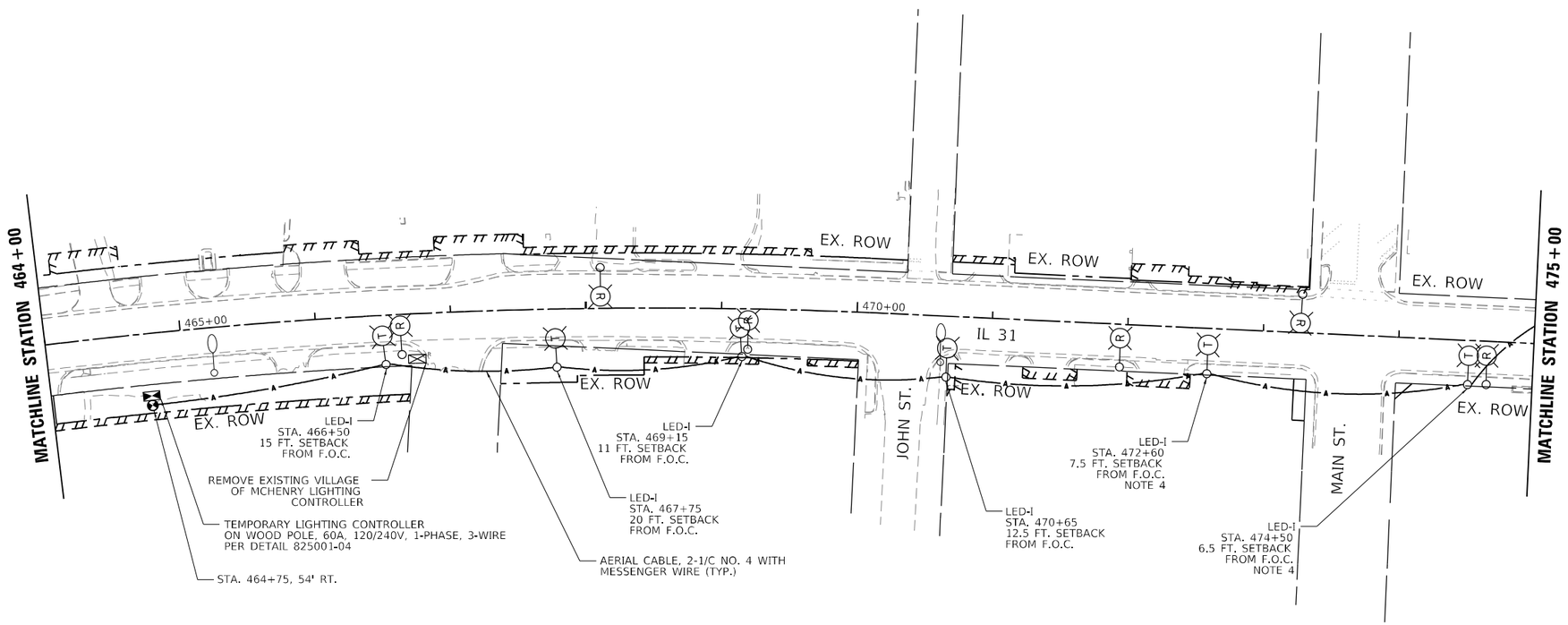
USER NAME = vnunez	DESIGNED - SG	REVISED -
	DRAWN - VN	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED - RP	REVISED -
PLOT DATE = 1/8/2026	DATE - 01/09/2026	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY LIGHTING AND REMOVAL PLAN
ILLINOIS ROUTE 31

SCALE: 1" = 50' | SHEET 2 OF 5 SHEETS | STA. 451+00 | TO STA. 464+00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	MCHENRY	575	408
		CONTRACT NO. 62U72		
	ILLINOIS	FED. AID PROJECT		



NOTES:

1. SEE SHEET LT-01 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.
2. EXISTING VILLAGE OF MCHENRY LIGHTING UNITS SHALL REMAIN OPERATIONAL UNTIL THE TEMPORARY LIGHTING SYSTEM IS INSTALLED AND OPERATIONAL.
3. TEMPORARY LIGHTING UNITS AND TEMPORARY BRANCH CIRCUITS SHALL BE INSTALLED AND OPERATIONAL PRIOR TO THE START OF STAGE 1.
4. LUMINAIRE SHALL INCLUDE 180 DEGREE HOUSE SIDE SHIELD.
5. TEMPORARY LIGHTING UNITS SHALL NOT BE REMOVED UNTIL THE PERMANENT LIGHTING SYSTEM IS IN PLACE AND IN APPROVED OPERATION.

0 50 100 150
SCALE IN FEET

LT-05

SINGH + ASSOCIATES, INC.
CONSULTING ENGINEERS

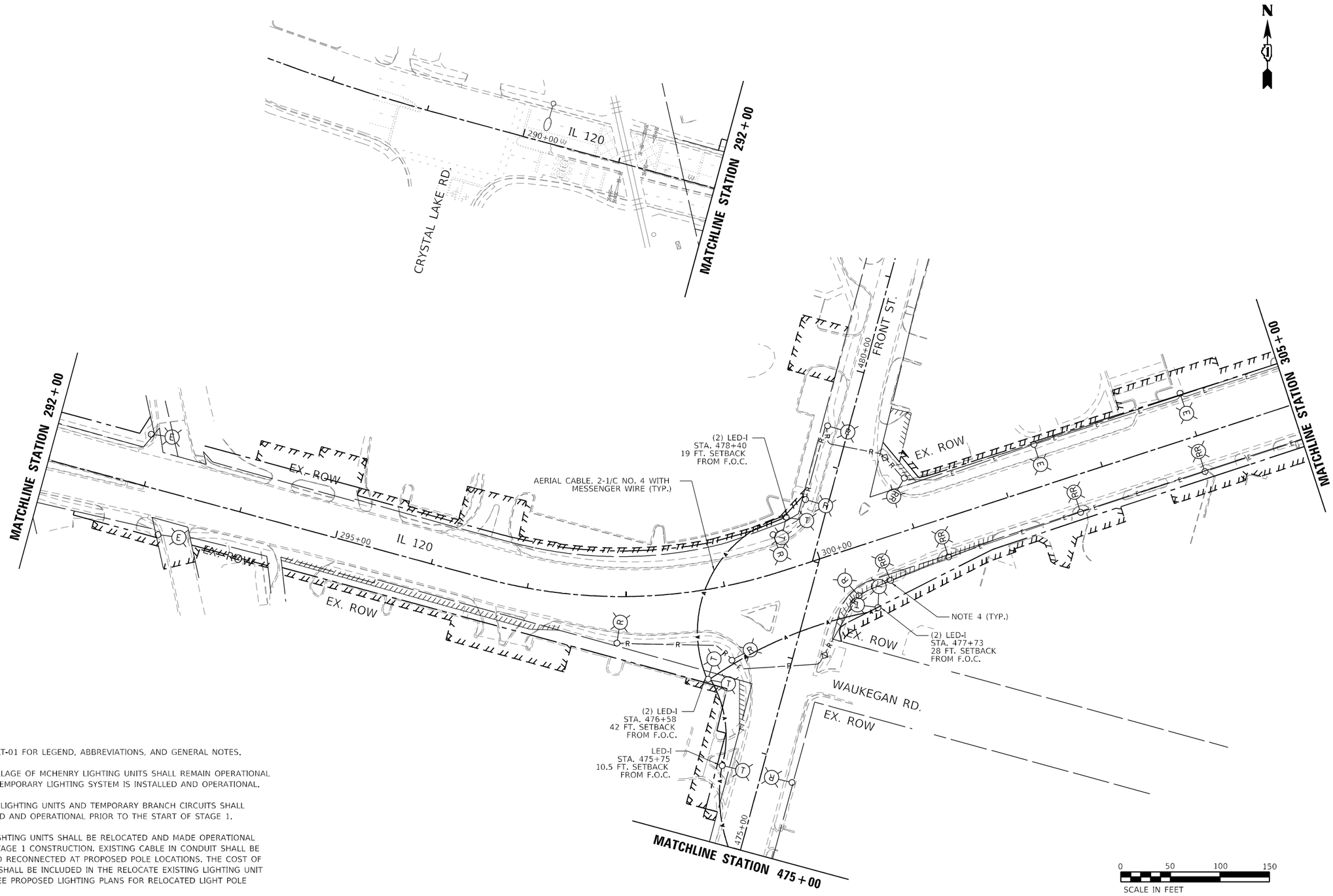
USER NAME = vnunez	DESIGNED - SG	REVISED -	
	DRAWN - VN	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - RP	REVISED -	
PLOT DATE = 1/8/2026	DATE - 01/09/2026	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY LIGHTING AND REMOVAL PLAN
ILLINOIS ROUTE 31

SCALE: 1" = 50' | SHEET 3 OF 5 SHEETS | STA. 464+00 TO STA. 475+00

F.A. P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	MCHENRY	575	409
		CONTRACT NO. 62U72		
	ILLINOIS	FED. AID PROJECT		



NOTES:

1. SEE SHEET LT-01 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.
2. EXISTING VILLAGE OF MCHENRY LIGHTING UNITS SHALL REMAIN OPERATIONAL UNTIL THE TEMPORARY LIGHTING SYSTEM IS INSTALLED AND OPERATIONAL.
3. TEMPORARY LIGHTING UNITS AND TEMPORARY BRANCH CIRCUITS SHALL BE INSTALLED AND OPERATIONAL PRIOR TO THE START OF STAGE 1.
4. EXISTING LIGHTING UNITS SHALL BE RELOCATED AND MADE OPERATIONAL PRIOR TO STAGE 1 CONSTRUCTION. EXISTING CABLE IN CONDUIT SHALL BE ROUTED AND RECONNECTED AT PROPOSED POLE LOCATIONS. THE COST OF THIS WORK SHALL BE INCLUDED IN THE RELOCATE EXISTING LIGHTING UNIT PAY ITEM. SEE PROPOSED LIGHTING PLANS FOR RELOCATED LIGHT POLE LOCATIONS.
5. TEMPORARY LIGHTING UNITS SHALL NOT BE REMOVED UNTIL THE PERMANENT LIGHTING SYSTEM IS IN PLACE AND IN APPROVED OPERATION.

LT-06

SINGH
SINGH + ASSOCIATES, INC.
CONSULTING ENGINEERS

USER NAME = vnunez	DESIGNED - SG	REVISED -	
	DRAWN - VN	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - RP	REVISED -	
PLOT DATE = 1/8/2026	DATE - 01/09/2026	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY LIGHTING AND REMOVAL PLAN
ILLINOIS ROUTE 120

SCALE: 1" = 50' | SHEET 4 OF 5 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	MCHENRY	575	410
		CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			

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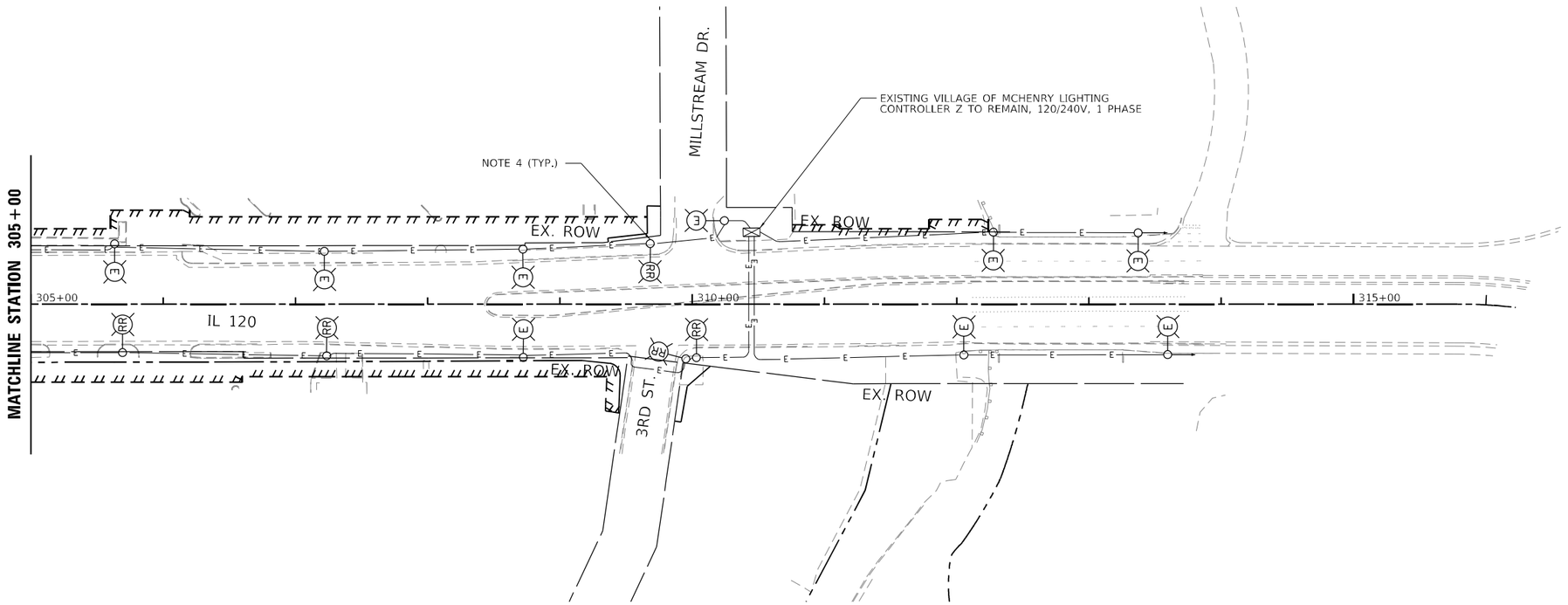

NOTES:

1. SEE SHEET LT-01 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.
2. EXISTING VILLAGE OF MCHENRY LIGHTING UNITS SHALL REMAIN OPERATIONAL UNTIL THE TEMPORARY LIGHTING SYSTEM IS INSTALLED AND OPERATIONAL.
3. TEMPORARY LIGHTING UNITS AND TEMPORARY BRANCH CIRCUITS SHALL BE INSTALLED AND OPERATIONAL PRIOR TO THE START OF STAGE 1.
4. EXISTING LIGHTING UNITS SHALL BE RELOCATED AND MADE OPERATIONAL PRIOR TO STAGE 1 CONSTRUCTION. EXISTING CABLE IN CONDUIT SHALL BE ROUTED AND RECONNECTED AT PROPOSED POLE LOCATIONS. THE COST OF THIS WORK SHALL BE INCLUDED IN THE RELOCATE EXISTING LIGHTING UNIT PAY ITEM. SEE PROPOSED LIGHTING PLANS FOR RELOCATED LIGHT POLE LOCATIONS.

0 50 100 150
SCALE IN FEET

LT-07

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CONSULTING ENGINEERS

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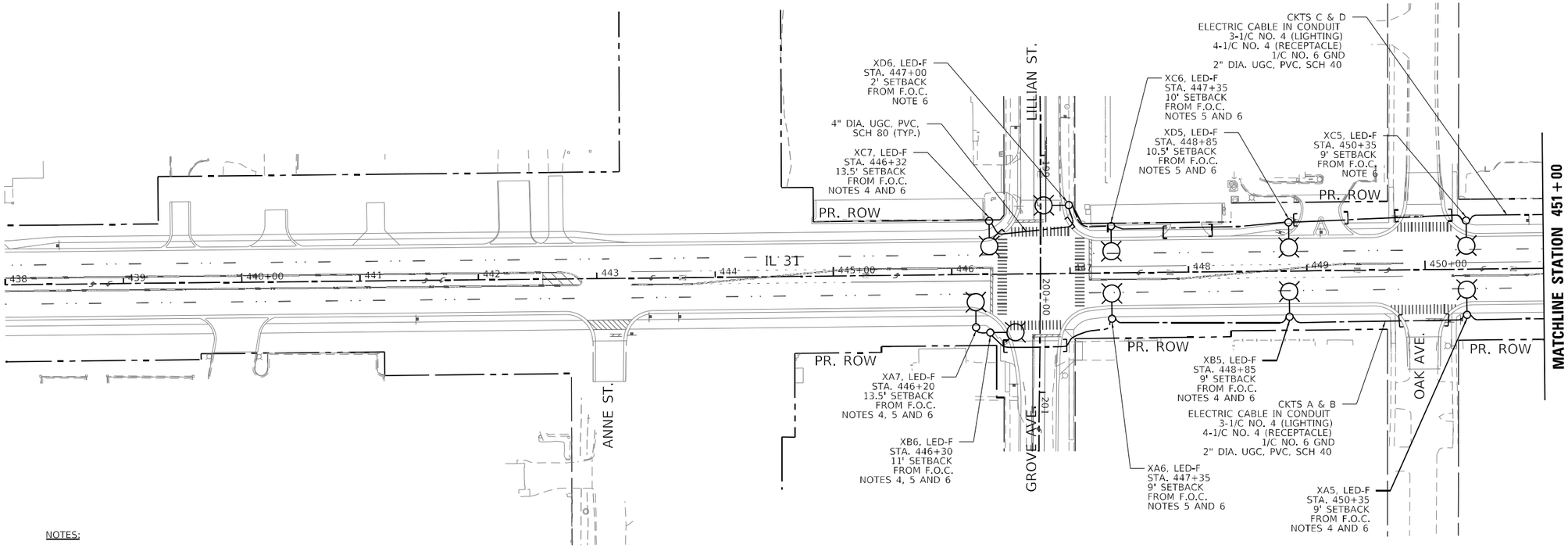
	DRAWN - VN	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - RP	REVISED -	
PLOT DATE = 1/8/2026	DATE - 01/09/2026	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY LIGHTING AND REMOVAL PLAN
ILLINOIS ROUTE 120

SCALE: 1" = 50' | SHEET 5 OF 5 SHEETS | STA. 305+00 | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	MCHENRY	575	411
		CONTRACT NO. 62U72		
	ILLINOIS	FED. AID PROJECT		



NOTES:

1. SEE SHEET LT-01 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.
2. PROPOSED LIGHTING UNITS SHALL BE INSTALLED ON CONCRETE FOUNDATIONS EXCEPT WHERE NOTED OTHERWISE.
3. PEDESTRIAN LUMINAIRE TYPE III OPTICS SHALL BE ORIENTED 180 DEGREES AWAY FROM THE ROAD WITH THE 180 DEGREE INTERNAL SHIELD ORIENTED ON THE STREET SIDE, EXCEPT WHERE LIGHT POLES ARE INSTALLED NEAR RESIDENCES AS NOTED ON THE PLANS.
4. PEDESTRIAN LUMINAIRE TYPE III OPTICS SHALL BE ORIENTED TOWARDS THE ROAD AND THE 180 DEGREE INTERNAL SHIELD SHALL BE ORIENTED ON THE HOUSE SIDE.
5. PROPOSED LIGHTING UNIT SHALL BE INSTALLED ON A METAL FOUNDATION.
6. PROPOSED LIGHTING UNIT SHALL NOT INCUDE BANNER ARMS.

0 50 100 150
SCALE IN FEET

LT-08

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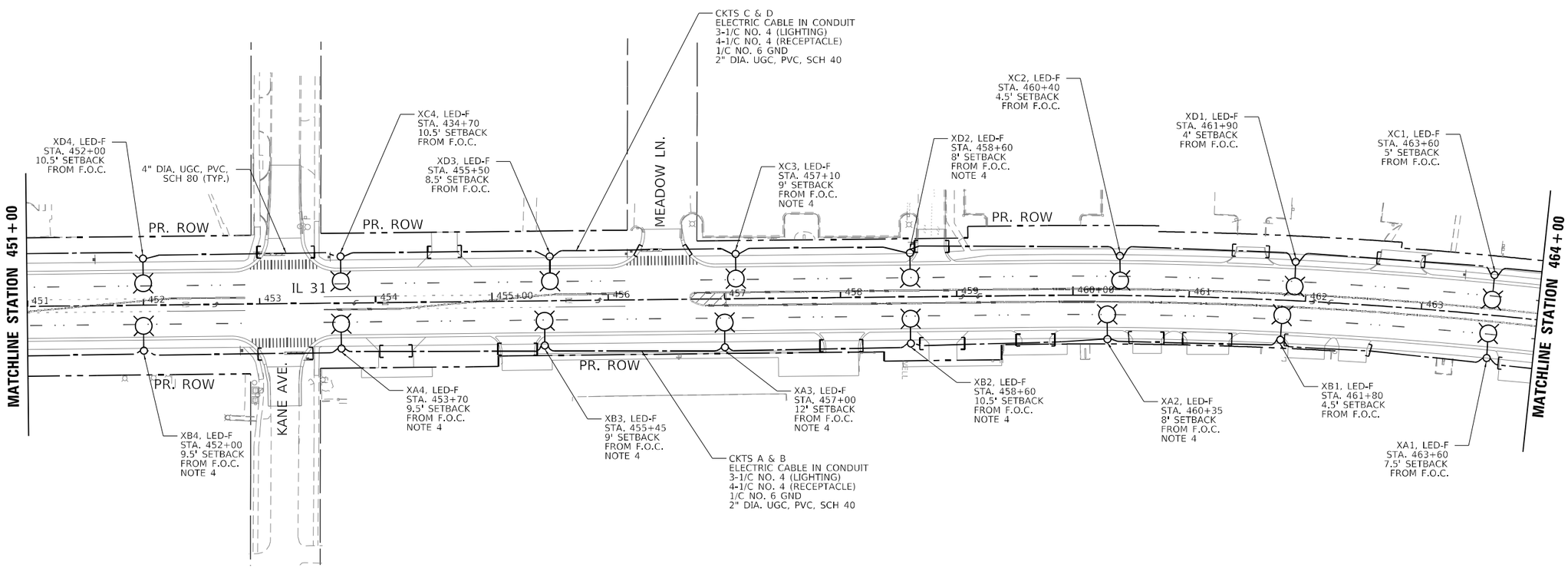
PLOT DATE = 1/8/2026	DATE - 01/09/2026	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN
ILLINOIS ROUTE 31

SCALE: 1" = 50' | SHEET 1 OF 5 SHEETS | STA. 438+00 TO STA. 451+00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	MCHENRY	575	412
		CONTRACT NO. 62U72		
	ILLINOIS	FED. AID PROJECT		



NOTES:

1. SEE SHEET LT-01 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.
2. PROPOSED LIGHTING UNITS SHALL BE INSTALLED ON CONCRETE FOUNDATIONS EXCEPT WHERE NOTED OTHERWISE.
3. PEDESTRIAN LUMINAIRE TYPE III OPTICS SHALL BE ORIENTED 180 DEGREES AWAY FROM THE ROAD WITH THE 180 DEGREE INTERNAL SHIELD ORIENTED ON THE STREET SIDE, EXCEPT WHERE LIGHT POLES ARE INSTALLED NEAR RESIDENCES AS NOTED ON THE PLANS.
4. PROPOSED LIGHTING UNIT SHALL BE INSTALLED ON A METAL FOUNDATION.

0 50 100 150
SCALE IN FEET

LT–09

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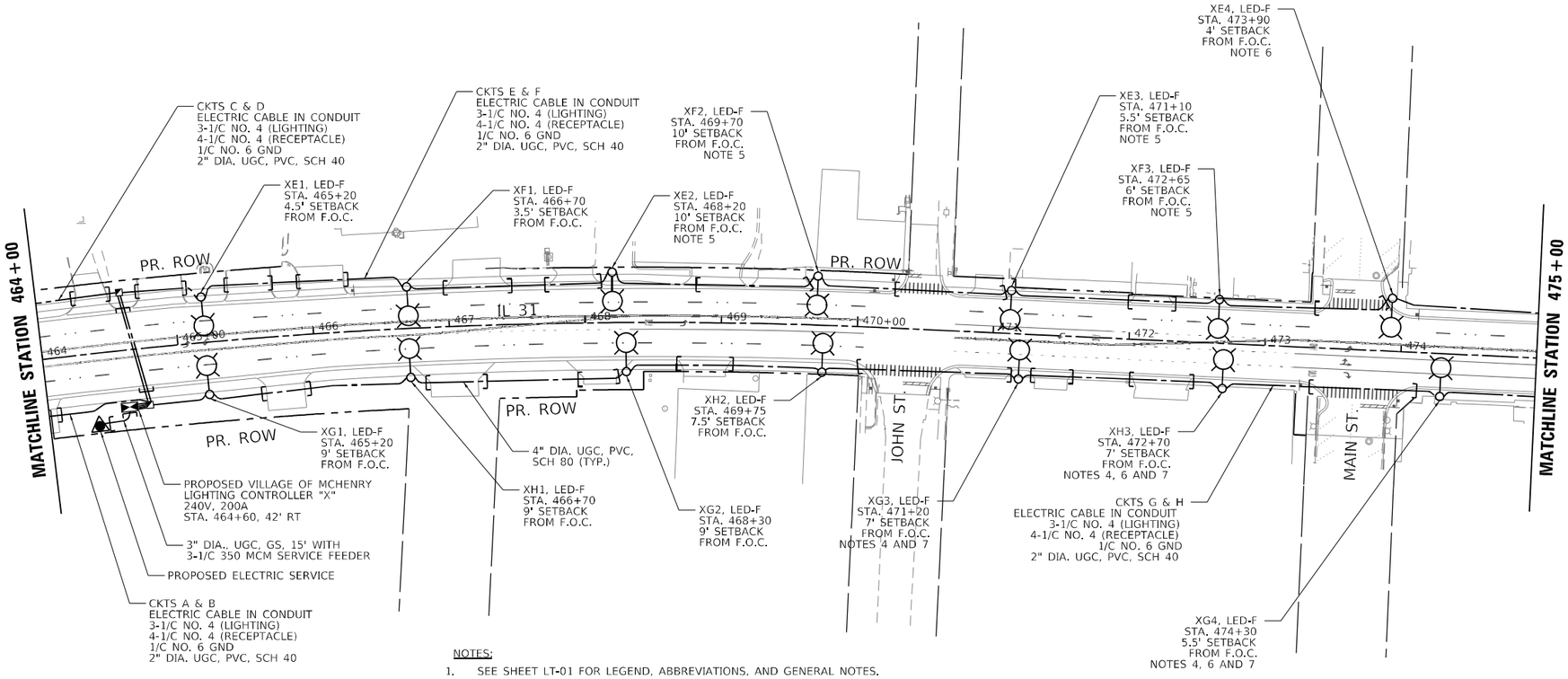
	DRAWN - VN	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - RP	REVISED -	
PLOT DATE = 1/8/2026	DATE - 01/09/2026	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN
ILLINOIS ROUTE 31

SCALE: 1" = 50' | SHEET 2 OF 5 SHEETS | STA. 451+00 | TO STA. 464+00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	MCHENRY	575	413
		CONTRACT NO. 62U72		
		ILLINOIS	FED. AID PROJECT	



NOTES:

1. SEE SHEET LT-01 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.
2. PROPOSED LIGHTING UNITS SHALL BE INSTALLED ON CONCRETE FOUNDATIONS EXCEPT WHERE NOTED OTHERWISE.
3. PEDESTRIAN LUMINAIRE TYPE III OPTICS SHALL BE ORIENTED 180 DEGREES AWAY FROM THE ROAD WITH THE 180 DEGREE INTERNAL SHIELD ORIENTED ON THE STREET SIDE, EXCEPT WHERE LIGHT POLES ARE INSTALLED NEAR RESIDENCES AS NOTED ON THE PLANS.
4. PEDESTRIAN LUMINAIRE TYPE III OPTICS SHALL BE ORIENTED TOWARDS THE ROAD AND THE 180 DEGREE INTERNAL SHIELD SHALL BE ORIENTED ON THE HOUSE SIDE.
5. PROPOSED LIGHTING UNIT SHALL BE INSTALLED ON A METAL FOUNDATION.
6. PROPOSED LIGHTING UNIT SHALL NOT INCUDE BANNER ARMS.
7. PROPOSED ROADWAY LUMINAIRE SHALL INCLUDE 180 DEGREE HOUSE SIDE SHIELD.

LT-10

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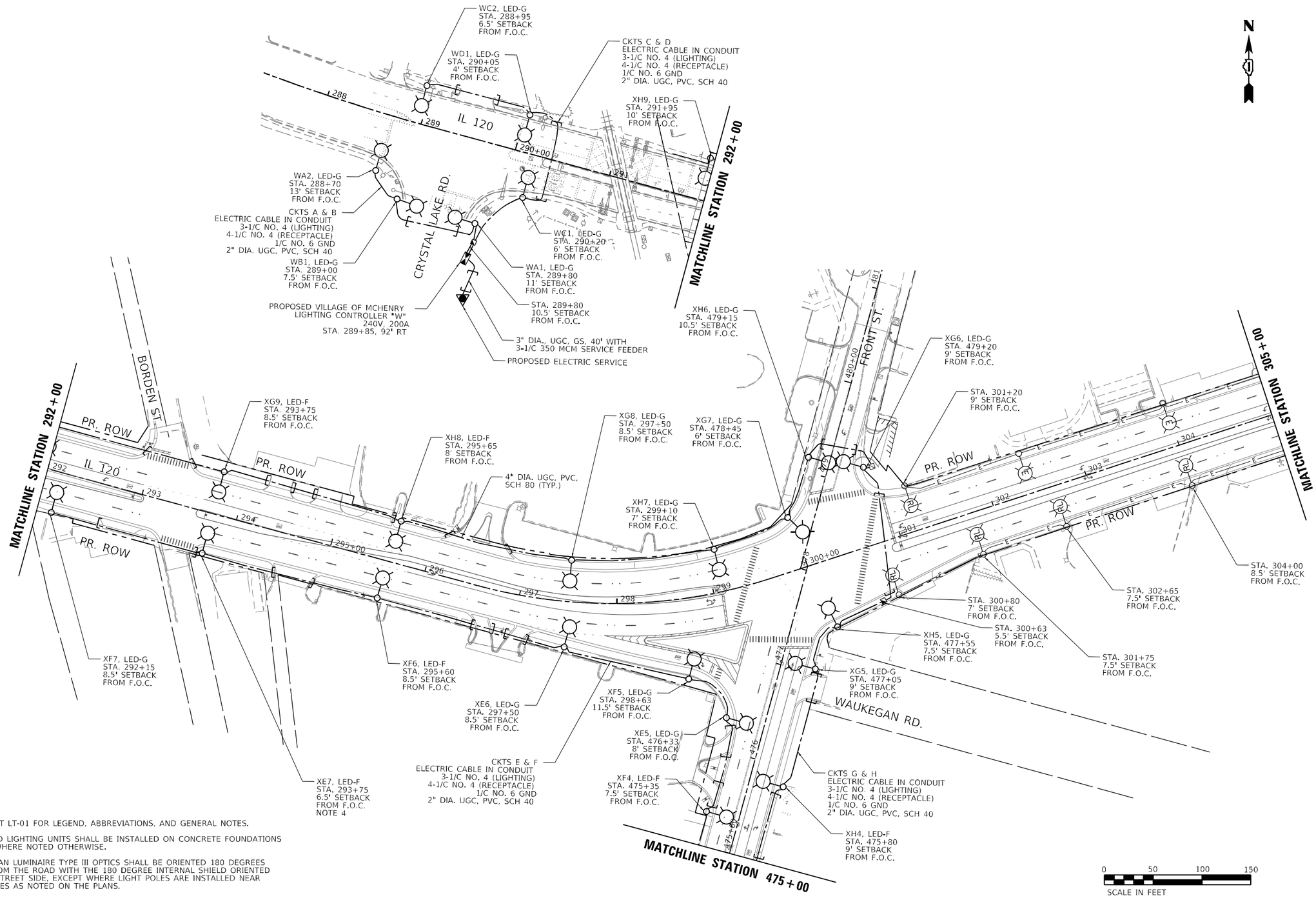
PLOT SCALE = 100.0000 ' / in.	CHECKED - RP	REVISED -	
PLOT DATE = 1/8/2026	DATE - 01/09/2026	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN
ILLINOIS ROUTE 31

SCALE: 1" = 50' | SHEET 3 OF 5 SHEETS | STA. 464+00 TO STA. 475+00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	MCHENRY	575	414
		CONTRACT NO. 62U72		
		ILLINOIS	FED. AID PROJECT	



NOTES:

1. SEE SHEET LT-01 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.
2. PROPOSED LIGHTING UNITS SHALL BE INSTALLED ON CONCRETE FOUNDATIONS EXCEPT WHERE NOTED OTHERWISE.
3. PEDESTRIAN LUMINAIRE TYPE III OPTICS SHALL BE ORIENTED 180 DEGREES AWAY FROM THE ROAD WITH THE 180 DEGREE INTERNAL SHIELD ORIENTED ON THE STREET SIDE, EXCEPT WHERE LIGHT POLES ARE INSTALLED NEAR RESIDENCES AS NOTED ON THE PLANS.
4. PEDESTRIAN LUMINAIRE TYPE III OPTICS SHALL BE ORIENTED TOWARDS THE ROAD AND THE 180 DEGREE INTERNAL SHIELD SHALL BE ORIENTED ON THE HOUSE SIDE.
5. NO PROPOSED LIGHTING UNITS SHOWN ON THIS SHEET SHALL INCLUDE BANNER ARMS.

LT-11

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PLOT DATE = 1/8/2026	DATE - 01/09/2026	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN
ILLINOIS ROUTE 120

SCALE: 1" = 50' | SHEET 4 OF 5 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	MCHENRY	575	415
		CONTRACT NO. 62U72		
	ILLINOIS	FED. AID PROJECT		

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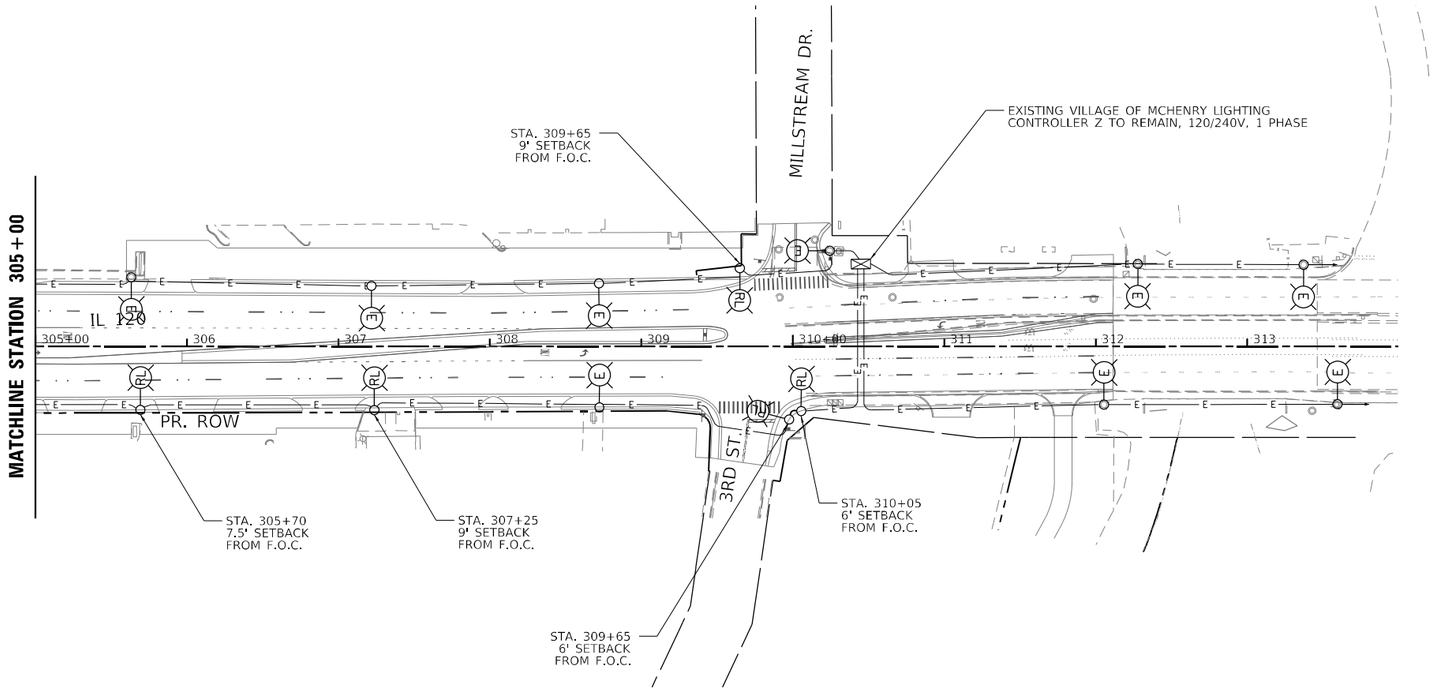

NOTES:

1. SEE SHEET LT-01 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.

0 50 100 150
SCALE IN FEET

LT-12

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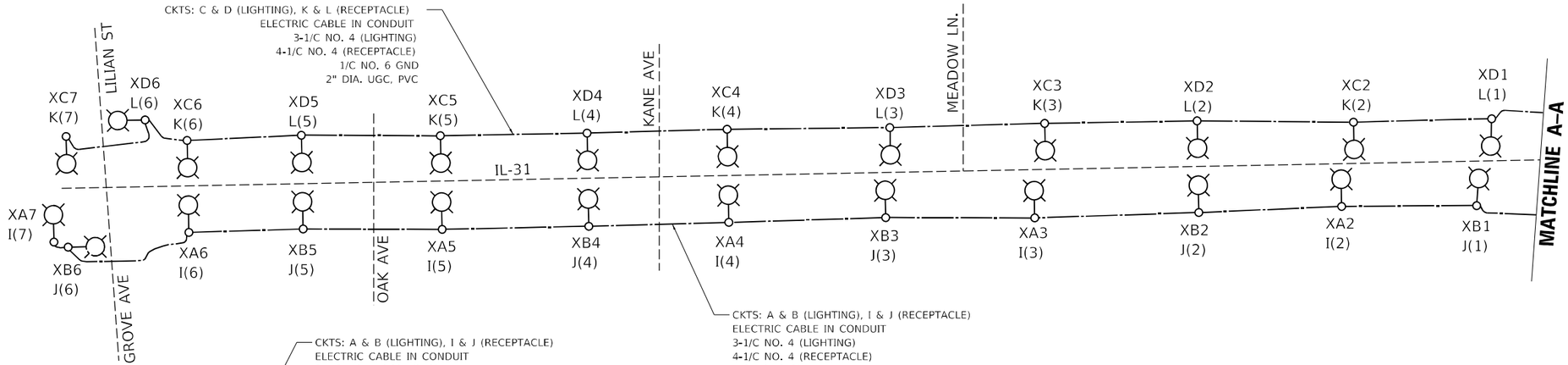
PLOT DATE = 1/8/2026	DATE - 01/09/2026	REVISED -	

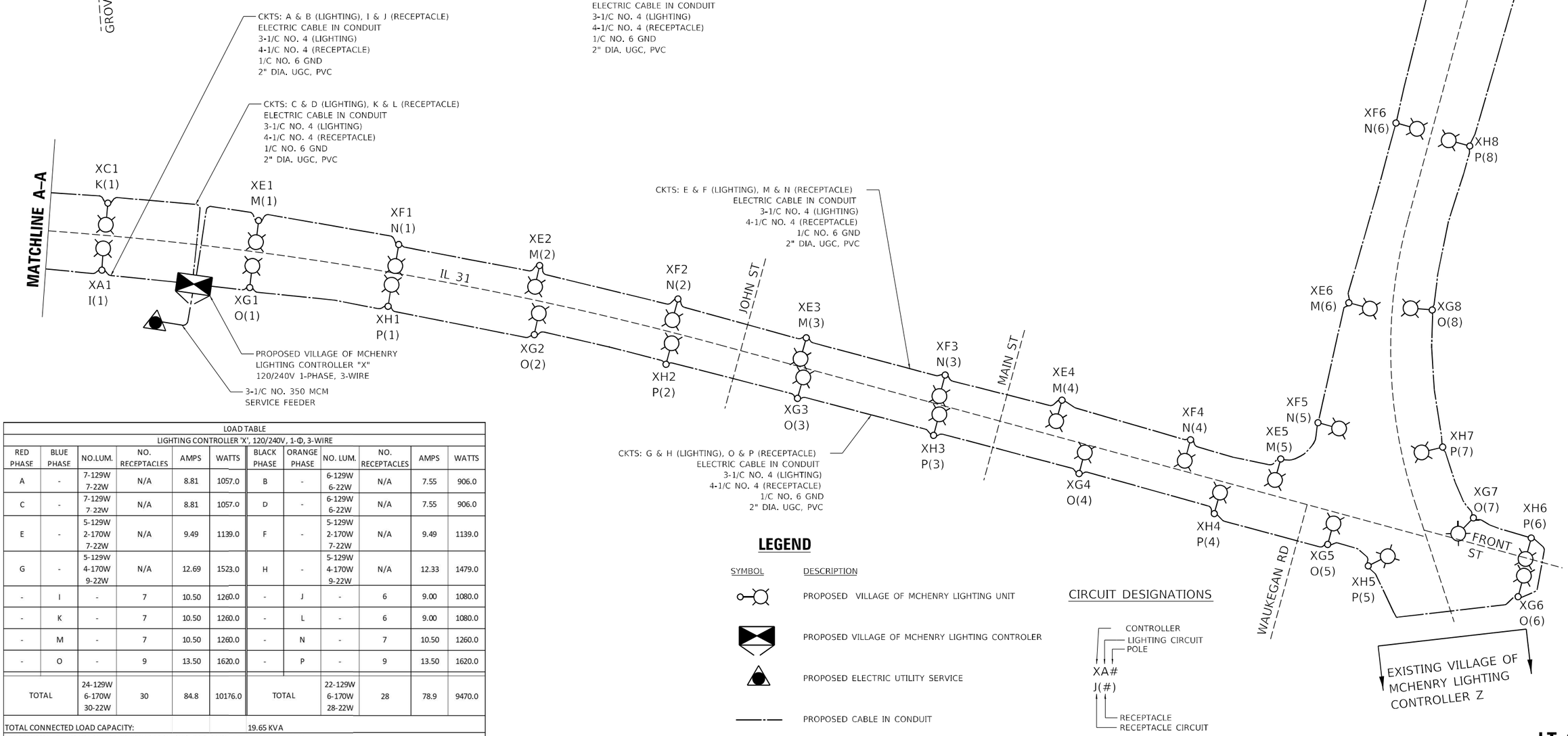
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN
ILLINOIS ROUTE 120

SCALE: 1" = 50' | SHEET 5 OF 5 SHEETS | STA. 305+00 TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	MCHENRY	575	416
		CONTRACT NO. 62U72		
	ILLINOIS	FED. AID PROJECT		





N.T.S.

LOAD TABLE											
LIGHTING CONTROLLER 'X', 120/240V, 1-Φ, 3-WIRE											
RED PHASE	BLUE PHASE	NO.LUM.	NO. RECEPTACLES	AMPS	WATTS	BLACK PHASE	ORANGE PHASE	NO. LUM.	NO. RECEPTACLES	AMPS	WATTS
A	-	7-129W 7-22W	N/A	8.81	1057.0	B	-	6-129W 6-22W	N/A	7.55	906.0
C	-	7-129W 7-22W	N/A	8.81	1057.0	D	-	6-129W 6-22W	N/A	7.55	906.0
E	-	5-129W 2-170W 7-22W	N/A	9.49	1139.0	F	-	5-129W 2-170W 7-22W	N/A	9.49	1139.0
G	-	5-129W 4-170W 9-22W	N/A	12.69	1523.0	H	-	5-129W 4-170W 9-22W	N/A	12.33	1479.0
-	I	-	7	10.50	1260.0	-	J	-	6	9.00	1080.0
-	K	-	7	10.50	1260.0	-	L	-	6	9.00	1080.0
-	M	-	7	10.50	1260.0	-	N	-	7	10.50	1260.0
-	O	-	9	13.50	1620.0	-	P	-	9	13.50	1620.0
TOTAL		24-129W 6-170W 30-22W	30	84.8	10176.0	TOTAL		22-129W 6-170W 28-22W	28	78.9	9470.0
TOTAL CONNECTED LOAD CAPACITY:					19.65 KVA						
ROADWAY LED F = 129W, LED G = 170W, PEDESTRIAN LED = 22W. RECEPTACLE = 180W											

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED VILLAGE OF MCHENRY LIGHTING UNIT
	PROPOSED VILLAGE OF MCHENRY LIGHTING CONTROLER
	PROPOSED ELECTRIC UTILITY SERVICE
	PROPOSED CABLE IN CONDUIT

CIRCUIT DESIGNATIONS

XA# — CONTROLLER
J(#) — LIGHTING CIRCUIT, POLE, RECEPTACLE, RECEPTACLE CIRCUIT

LT–13

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PLOT DATE = 1/8/2026		DATE - 01/09/2026	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING WIRING SCHEMATIC DIAGRAM – CONTROLLER X

SCALE: 1" = 50' | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	MCHENRY	575	417
		CONTRACT NO. 62U72		
		ILLINOIS	FED. AID PROJECT	

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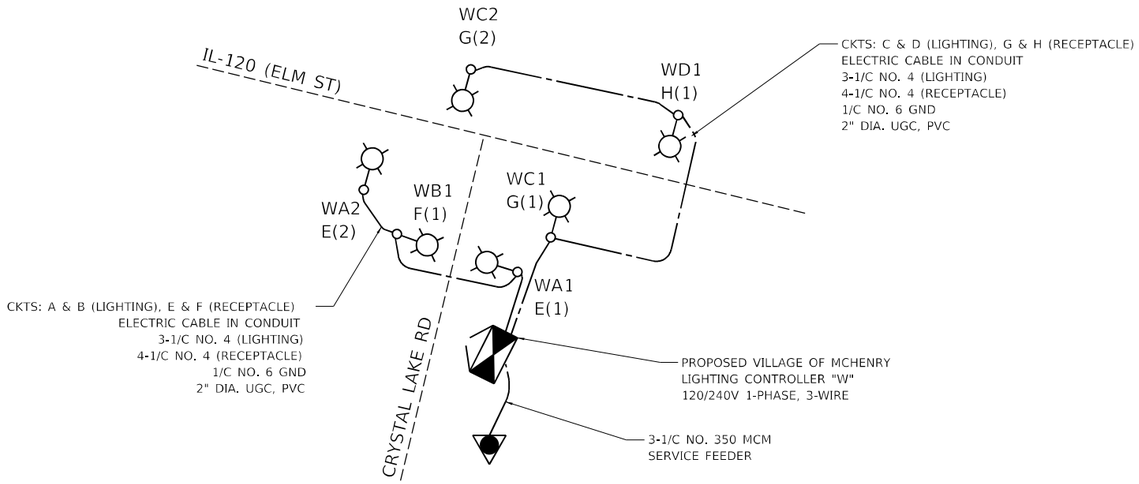
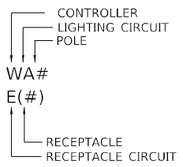
N.T.S.



CIRCUIT DESIGNATIONS



LOAD TABLE											
LIGHTING CONTROLLER 'W', 120/240V, 1-Φ, 3-WIRE											
RED PHASE	BLUE PHASE	NO.LUM.	NO. RECEPTACLES	AMPS	WATTS	BLACK PHASE	ORANGE PHASE	NO. LUM.	NO. RECEPTACLES	AMPS	WATTS
A	-	2-170W 2-22W	-	3.02	362.0	B	-	1-170W 1-22W	-	3.02	362.0
C	-	2-170W 2-22W	-	3.02	362.0	D	-	1-170W 1-22W	-	3.02	362.0
-	E	-	2	3.00	360.0	-	F	-	1	1.50	180.0
-	G	-	2	3.00	360.0	-	H	-	1	1.50	180.0
TOTAL		4-170W 4-22W	4	12.0	1444.0	TOTAL		2-170W 2-22W	2	9.0	1084.0
TOTAL CONNECTED LOAD CAPACITY:						2.53 KVA					
ROADWAY LED F = 129W, LED G = 170W, PEDESTRIAN LED = 22W, RECEPTACLE = 180W											

LEGEND

SYMBOL	DESCRIPTION
	PROPOSED VILLAGE OF MCHENRY LIGHTING UNIT
	PROPOSED VILLAGE OF MCHENRY LIGHTING CONTROLER
	PROPOSED ELECTRIC UTILITY SERVICE
	PROPOSED CABLE IN CONDUIT

LT-14

MODEL: Default
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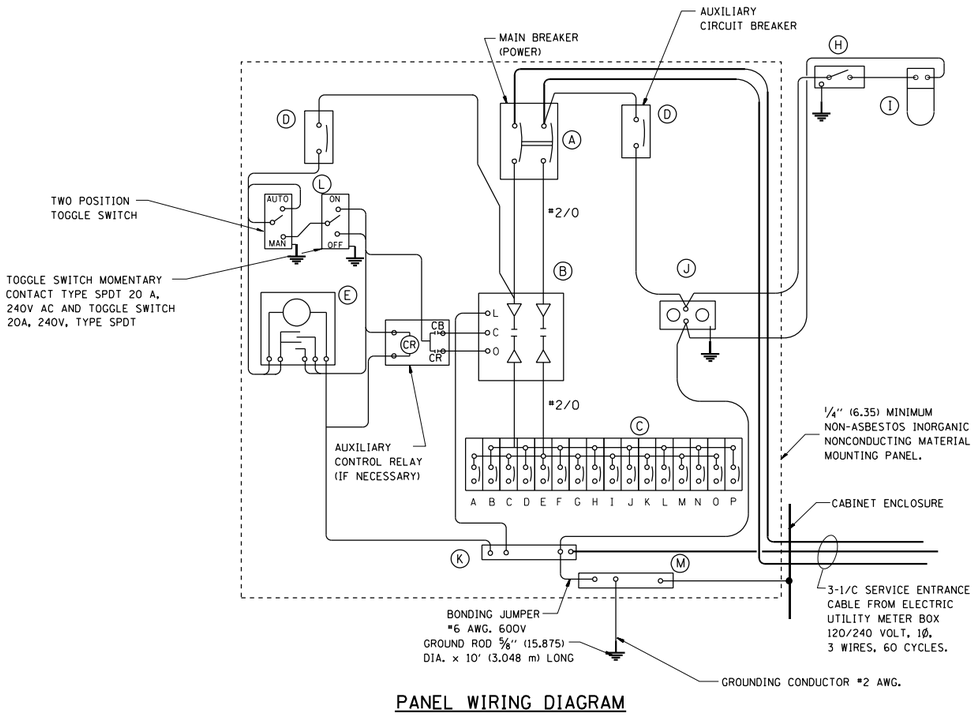
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING WIRING SCHEMATIC DIAGRAM – CONTROLLER W

SCALE: 1" = 50' | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	MCHENRY	575	418
		CONTRACT NO. 62U72		
		ILLINOIS	FED. AID PROJECT	

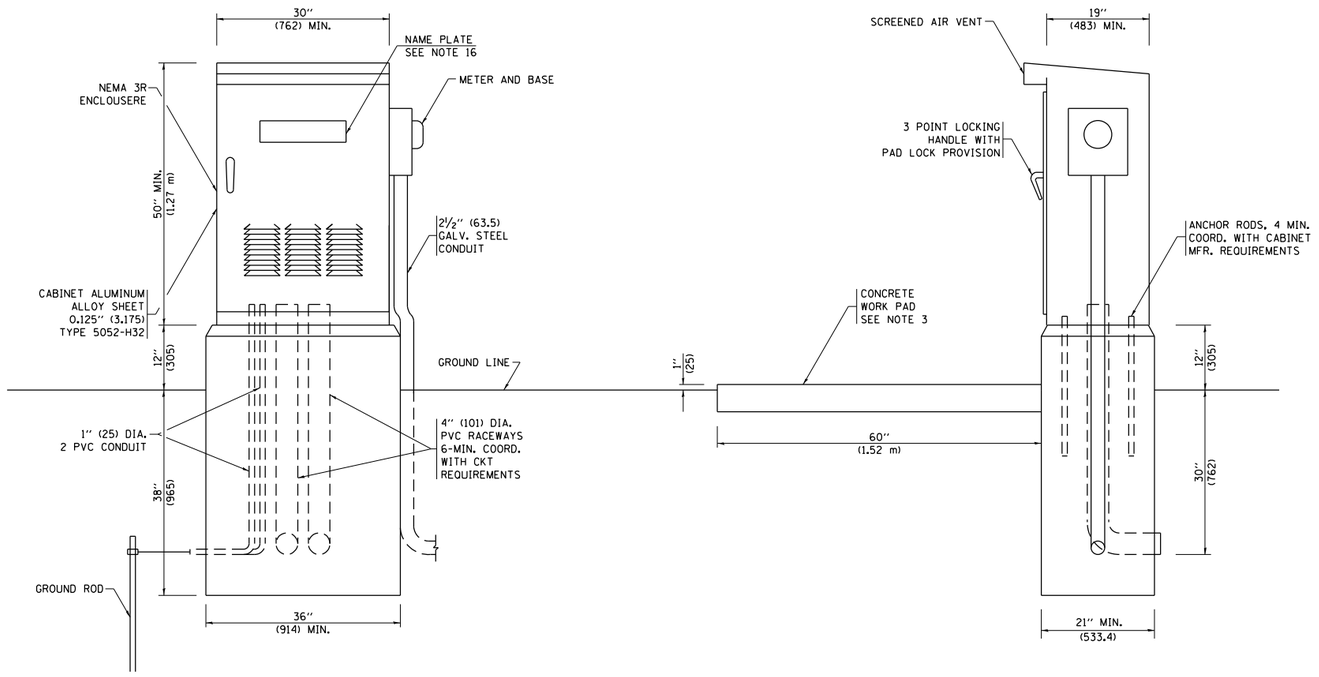


PANEL WIRING DIAGRAM

PANEL EQUIPMENT

BILL OF MATERIAL

ITEM	QUANTITY	DESCRIPTION
A	1	MAIN CIRCUIT BREAKER, 2 POLE, 200 AMP, 600 VOLT
B	1	REMOTE CONTROL SWITCH, ELECTRICALLY OPERATED, MECHANICALLY HELD, 2 POLE, SINGLE THROW, 200 AMP., 600 VOLTS CONTROL CIRCUIT 240 VOLT.
C	16	CIRCUIT BREAKERS, 1 POLE, 100 AMP. FRAME, 30 AMP. NON-INTERCHANGEABLE TRIP INTERRUPTING RATING NEMA-10,000 AMP. AT 240 V.
D	2	CONTROL CIRCUIT-CIRCUIT BREAKER. 1 POLE, 240 V., 100 AMP. FRAME, 15 AMP. NON-INTERCHANGEABLE TRIP INTERRUPTING RATING NEMA-5000 AMP. AT 240 V.
E	1	ASTRONOMIC MICROPROCESSOR-BASED 2-CHANNEL CONTROLLER [TIME SWITCH].
F	1	NOT USED
G	1	NOT USED
H	1	SPST 20A SWITCH ON DOOR, TO TURN LIGHT ON WHEN DOOR IS OPEN,
I	1	LED LIGHTING FIXTURE ENCLOSED AND GASKETED WITH 60 WATT EQUIVALENT, 120V LAMP.
J	1	20A, 120V, DUPLEX RECEPTACLE, GFCI.
K	1	COPPER GROUND BUS 1/4" (6.35) X 1" (25.4) X 12" (304.8 mm) LONG MOUNTED ON PANEL WITH LUGS AND 4 SPARE LUGS
L	1	TOGGLE SWITCHES MOUNTED IN 4" (101.6) X 4" (101.6 mm) BOX.
M	1	COPPER GROUND BUS 1/4" (6.35) X 1" (25.4) X 12" (304.8 mm) LONG MOUNTED ON PANEL WITH LUGS AND SPARE LUGS



NOTES:

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. FOUNDATION SIZE SHALL BE COORDINATED WITH CABINET SIZE AND MFR.
3. IN FRONT OF CONTROL CABINET DOOR, REMOVE VEGETATION AND 2" (50.8 mm) TOP SOIL, LEVEL THE AREA AND ON TOP, PLACE LENGTH WISE PARALLEL TO CONTROL CABINET, A CONCRETE PAD 36" (914.4 mm) x 60" (18.288 m) x 4" (101 mm) MIN. SIZE. THE COST OF LABOR AND MATERIALS ARE INCLUDED IN THE COST OF THE CONTROLLER.
4. DOOR SHALL BE CONSTRUCTED FROM SAME TYPE OF MATERIAL AND THICKNESS AS CABINET.
5. DOOR SHALL BE EQUIPPED WITH THREE POINT LATCHING MECHANISM WITH NYLON ROLLERS AT TOP THE BOTTOM.
6. DOOR HINGE SHALL BE A HEAVY GAUGE CONTINUOUS HINGE WITH A 1/4" (6.35 mm) DIA. STAINLESS STEEL HINGE PIN.
7. ALL EXTERNAL HARDWARE SHALL BE STAINLESS STEEL.
8. CONTROL WIRING TO BE #12 AWG, 600V, TYPE "SIS" GRAY SWITCH BOARD WIRE, STRANDED COPPER.
9. METER BOX SHALL BE MOUNTED ON THE SIDE OF CONTROL CABINET, NEAR TO THE SERVICE POLE.
10. CABINETS SHALL BE PRIMED AND PAINTED FOREST GREEN.
11. THE HEADS OF CONNECTORS SCREWS SHALL BE PAINTED WHITE FOR NEUTRAL BAR CONNECTION AND GREEN FOR GROUND BAR CONNECTORS.
12. ALL WIRING WITHIN THE CABINET SHALL BE COLOR CODED AS INDICATED.
    R = RED BL = BLUE W = WHITE
    B = BLACK Y = YELLOW G = GREEN
13. PROVIDE SEALING GROMMETS FOR ALL OPEN WIRING EXTENDED FROM DEVICES IN BOXES OR CABINETS WITHIN THE CONTROL CABINET.
14. ALL WIRING SHALL BE NEATLY DRESSED AND SUPPORTED.
15. THE CONTROLLER SHALL BE CONSTRUCTED TO U.L. STD. 508 AND BEAR THE U.L. LABEL "ENCLOSED INDUSTRIAL CONTROL PANEL".
16. 12" (304.8) X 16" (406.4 mm) STAINLESS STEEL EXTERIOR NAMEPLATE SHALL BE ENGRAVED TO " LIGHTING" UNLESS OTHERWISE SPECIFIED.

LT-15

MODEL: Default
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CONSULTING ENGINEERS

USER NAME = vnunez	DESIGNED - SG	REVISED -	
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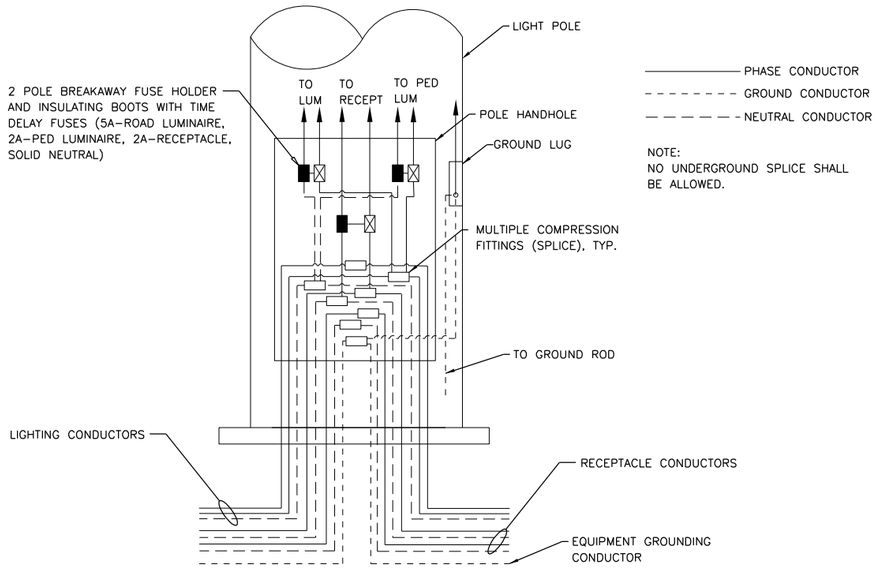
PLOT SCALE = 100.0000 ' / in.	CHECKED - RP	REVISED -	
PLOT DATE = 1/8/2026	DATE - 01/09/2026	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

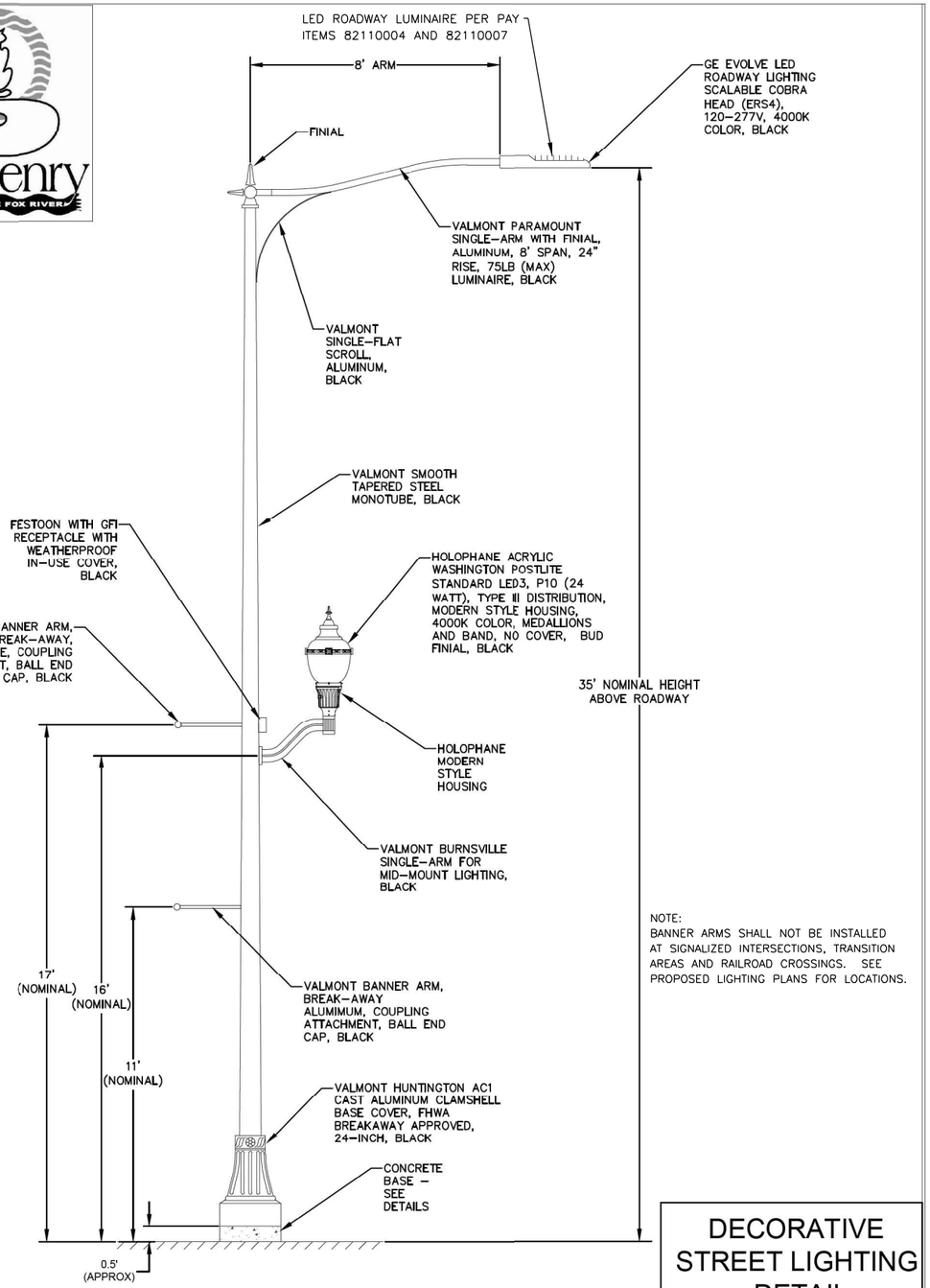
LIGHTING DETAILS
ILLINOIS ROUTE 31

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

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	MCHENRY	575	419
		CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			



POLE HANDHOLE WIRING DETAIL
NO SCALE



NOTE:
BANNER ARMS SHALL NOT BE INSTALLED AT SIGNALIZED INTERSECTIONS, TRANSITION AREAS AND RAILROAD CROSSINGS. SEE PROPOSED LIGHTING PLANS FOR LOCATIONS.

DECORATIVE STREET LIGHTING DETAIL IL120 & IL31

LIGHTING UNIT COMPLETE, SPECIAL

LT–16

SINGH + ASSOCIATES, INC. CONSULTING ENGINEERS

USER NAME = vnunez	DESIGNED - SG	REVISED -	
	DRAWN - VN	REVISED -	
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PLOT DATE = 1/8/2026	DATE - 01/09/2026	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING DETAILS
ILLINOIS ROUTE 31

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

F.A. P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	MCHENRY	575	420
		CONTRACT NO. 62U72		
	ILLINOIS	FED. AID PROJECT		

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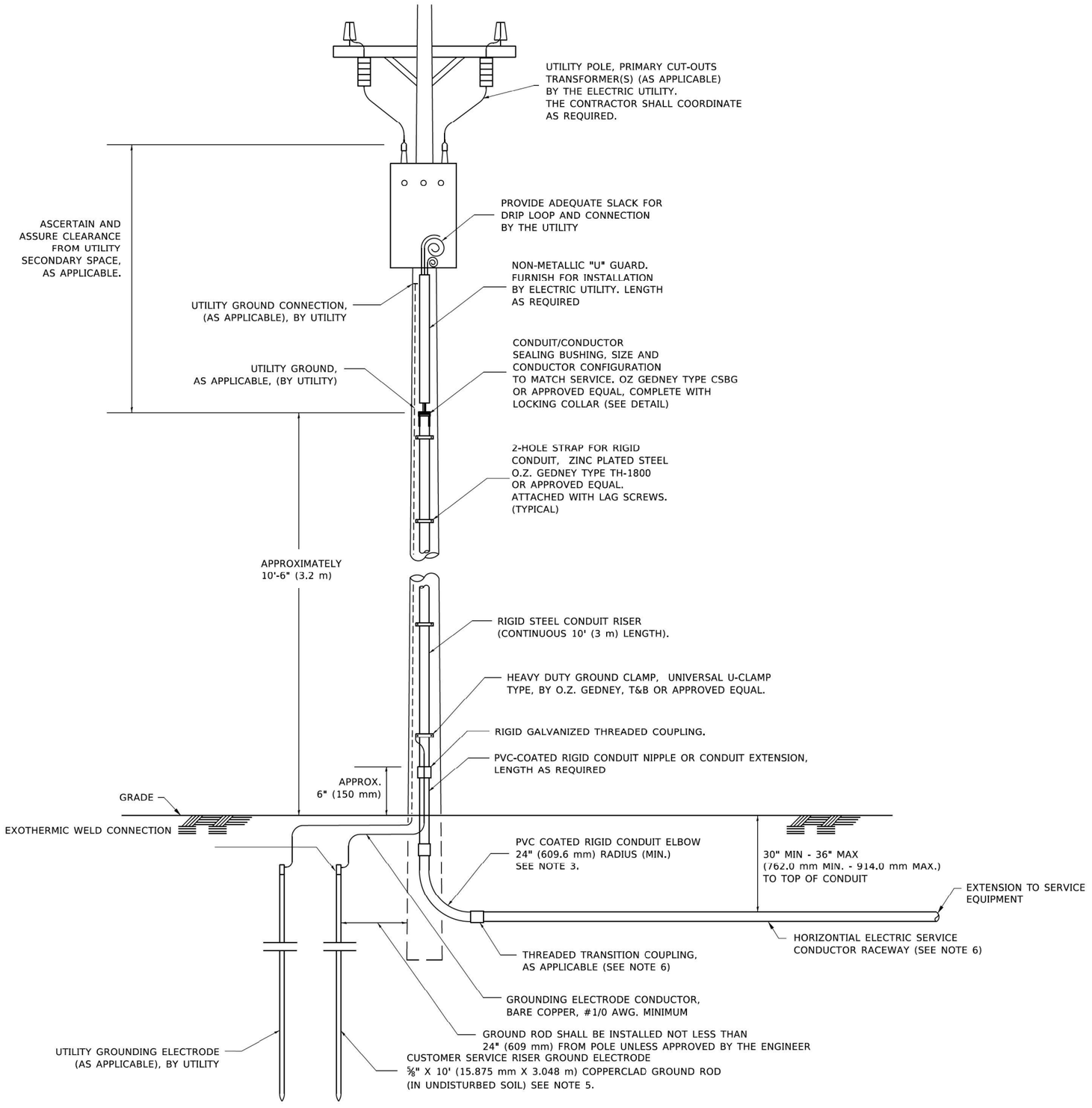
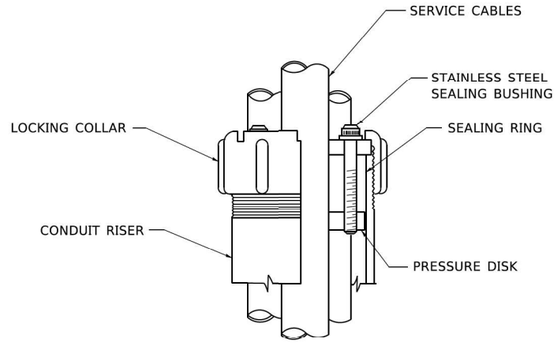


APPLICATION

THIS DETAIL APPLIES FOR LOW VOLTAGE ELECTRIC SERVICE (660 V OR LESS) FROM AN OVERHEAD UTILITY SUPPLY TO SEPERATLY-MOUNTED SERVICE EQUIPMENT.

NOTES

1. SERVICE VOLTAGE SHALL BE AS INDICATED ELSEWHERE IN THE DRAWINGS.
2. UNLESS OTHERWISE INDICATED, ITEMS AND WORK SHALL BE INCLUDED AND PAID AS PART OF THE ELECTRIC UTILITY SERVICE INSTALLATION PAY ITEM.
3. CONDUIT AND CONNECTOR DIAMETER SHALL MATCH THE DIAMETER OF THE SERVICE CONDUCTOR RACEWAY AS INDICATED ON THE PLANS.
4. PVC COATED RACEWAYS AND ACCESSORIES SHALL BE CAREFULLY INSTALLED WITH MFR RECOMMENDED TOOLS AND PROCEDURES TO AVOID DAMAGE. ANY DAMAGE SHALL BE REPAIRED WITH COMPATIBLE PVC TOUCH-UP MATERIAL TO THE SATISFACTION OF THE ENGINEER OR THE DAMAGED MATERIAL SHALL BE REPLACED AT NO ADDITIONAL COST.
5. THE CONTRACTOR SHALL OBTAIN INSPECTION AND APPROVAL BY THE ENGINEER OF SERVICE RISER GROUND ELECTRODE, RISER ELBOW, NIPPLE AND CONNECTION TO SERVICE CONDUCTOR RACEWAY EXTENSION BEFORE BACKFILL AND SHALL ALSO OBTAIN INSPECTION OF SERVICE RISER AND SEALING BUSHING BEFORE UTILITY "U" GUARD INSTALLATION AND SERVICE CONNECTION.
6. THE HORIZONTAL ELECTRIC SERVICE CONDUCTOR RACEWAY SHALL BE AS INDICATED AND SHALL BE MEASURED SEPARATELY FOR PAYMENT. WHEN THE RACEWAY IS PVC-COATED RIGID GALVANIZED STEEL, THE COUPLING SHALL BE THE SAME. WHEN THE RACEWAY IS PVC CONDUIT (IN CONCRETE), THE COUPLING SHALL BE A METALIC TO NON METALIC ADAPTER. WHEN THE RACEWAY IS ENCASED IN CONCRETE, THE CONCRETE SHALL EXTEND TO COVER THE COUPLING.
7. PLANS AND DETAILS INDICATE THE GENERAL NATURE AND REQUIREMENTS. THEY DO NOT SHOW EVERY ACCESSORY AND ATTACHMENT, AND THEY DO NOT RELIEVE THE CONTRACTOR OF THE REQUIREMENTS OF THE SPECIFICATIONS AND SPECIAL PROVISIONS TO ASCERTAIN UTILITY REQUIREMENTS AND TO COORDINATE ACCORDINGLY, FURNISHING ALL ITEMS AND WORK NOT PROVIDED BY THE UTILITY, BUT NECESSARY FOR A COMPLETE SERVICE INSTALLATION IS REQUIRED AND SHALL BE INCLUDED IN THE ELECTRIC UTILITY SERVICE INSTALLATION PAY ITEM.



SEALING BUSHING DETAIL

LT–17

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PLOT DATE = 4/19/2019	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

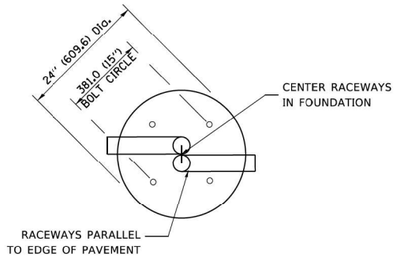
ELECTRIC SERVICE INSTALLATION
AERIAL, REMOTE DISCONNECT

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

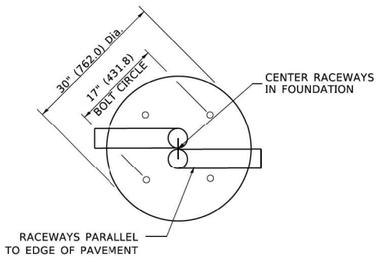
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	421
	BE–220	CONTRACT NO. 62U72		
		ILLINOIS FED. AID PROJECT		

LIGHT POLE FOUNDATION DEPTH TABLE
40 FT. (12.192 m) TO 47.5 FT. (14.478 m) MOUNTING HEIGHT

SOIL CONDITIONS	DESIGN DEPTH "D" OF FOUNDATION	
	SINGLE ARM POLE	TWIN ARM POLE
SOFT CLAY Qu = 0.375 TON/SQ. FT.	13'-0" (3.96 m)	15'-0" (4.57 m)
MEDIUM CLAY Qu = 0.75 TON/SQ.FT	9'-6" (2.09 m)	10'-9" (3.23 m)
STIFF CLAY Qu = 1.50 TON/SQ. FT.	7'-0" (2.13 m)	8'-0" (2.44 m)
LOOSE SAND ∅ = 34°	9'-0" (2.74 m)	10'-0" (3.05 m)
MEDIUM SAND ∅ = 37.5°	8'-3" (2.52 m)	9'-0" (2.74 m)
DENSE SAND ∅ = 40°	7'-9" (2.36 m)	9'-0" (2.74 m)

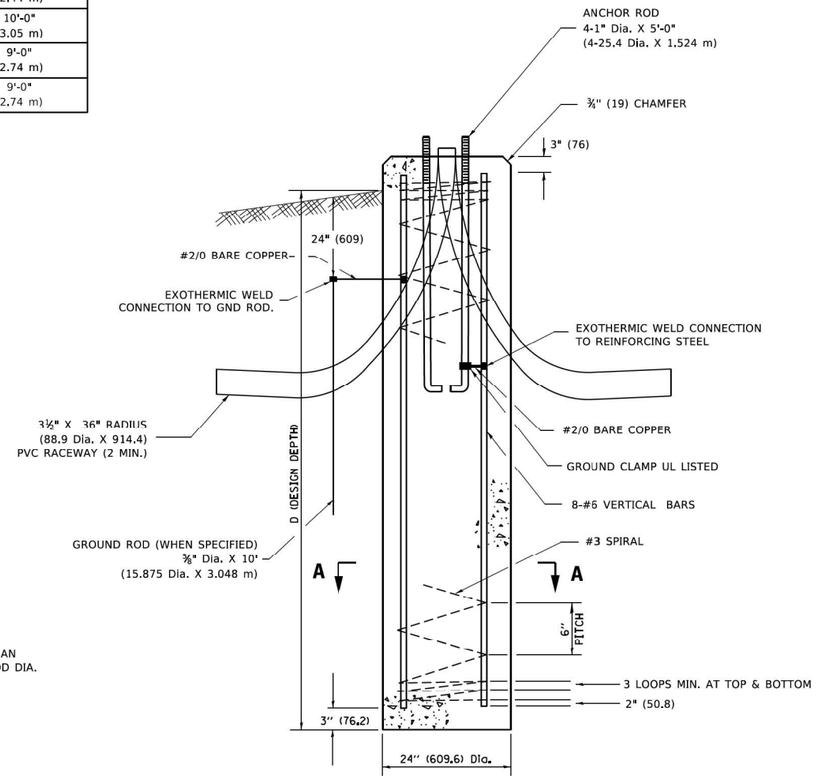


TOP VIEW



TOP VIEW

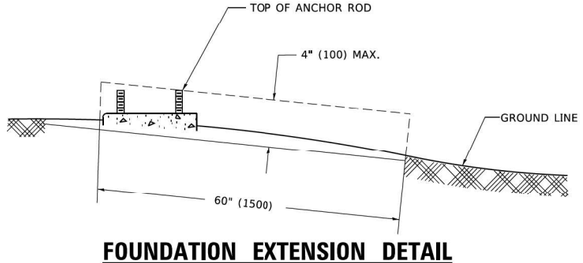
ANCHOR ROD DETAIL



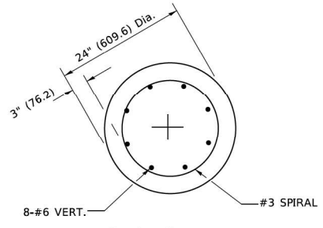
FOUNDATION DETAIL

NOTES

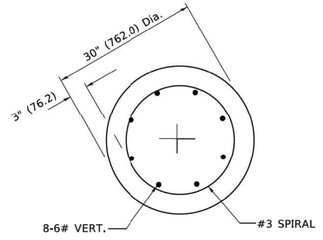
1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. THE ANCHOR RODS AND RACEWAYS SHALL BE PROPERLY SECURED IN PLACE BEFORE THE CONCRETE IN PLACED.
3. THE FOUNDATION SHALL NOT PROTRUDE MORE THAN 100MM (4 IN.) ABOVE THE FINISHED GRADE WITHIN A 60 IN. (1.5 m) CHORD ACROSS THE FOUNDATION, WITH ANCHOR RODS INCLUDED, IN ACCORDANCE WITH AASHTO GUIDELINES. IF THE FOUNDATION HEIGHT, INCLUDING ANCHOR RODS, EXTENDS BEYOND THESE SPECIFIED LIMITS, THE FOUNDATION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. SEE FOUNDATION EXTENSION DETAIL.
4. THE HOLE FOR THE FOUNDATION SHALL BE MADE BY DRILLING WITH AN AUGER, OF THE SAME DIAMETER AS THE FOUNDATION. IF SOIL CONDITIONS REQUIRE THE USE OF A LINER TO FORM THE HOLE, THE LINER SHALL BE WITHDRAWN AS THE CONCRETE IS DEPOSITED.
5. THE TOP OF THE FOUNDATION SHALL BE CONSTRUCTED LEVEL. A LINER OR FORM SHALL BE USED TO PRODUCE A UNIFORM SMOOTH SIDE TO THE TOP OF THE FOUNDATION. FOUNDATION TOP SHALL BE CHAMFERED 3#4-IN. (20 mm).
6. THE CONCRETE SHALL BE CLASS SI. CONCRETE SHALL CURE ACCORDING TO ARTICLE 1020.13 BEFORE LIGHT POLES ARE INSTALLED.
7. THE ANCHOR ROD SHALL BE A HOOK ROD TYPE. COLD BENDING OF THE ANCHOR ROD WILL NOT BE ALLOWED. THE RADIUS OF THE HOOK BEND SHALL NOT BE LESS THAN 4 TIMES THE NOMINAL DIAMETER OF THE ANCHOR ROD. A TACK WELDED ANCHOR ROD MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER.
8. THE ANCHOR RODS SHALL BE ACCORDING TO ASTM F1554 GRADE 725 (GRADE 105). NUTS SHALL BE HEXAGON NUTS ACCORDING TO ASTM A 194 2H OR ASTM A 563 DH, AND WASHERS SHALL BE ACCORDING TO ASTM F 436.
9. ANCHOR RODS, NUTS AND WASHERS SHALL BE COMPLETELY GALVANIZED BY EITHER THE HOT-DIPPED PROCESS CONFORMING WITH AASHTO M 232, THE MECHANICAL PLATING METHOD CONFORMING TO AASHTO M 298, CLASS 50 WITH A MAXIMUM COATING THICKNESS OF 150 UM(6 MILS) OR THE ELECTROLYTIC PROCESS ACCORDING TO ASTM F 1135.
10. THE ANCHOR RODS SHALL BE THREADED A MINIMUM OF 6 INCHES (150 mm) WITH A MINIMUM OF 3 INCHES (75 mm) OF THREADED ANCHOR ROD EMBEDDED IN THE FOUNDATION.
11. ANCHOR RODS SHALL PROJECT 23#4" (69.9 mm) ABOVE THE TOP OF THE FOUNDATION. IF BREAKAWAY COUPLINGS ARE SPECIFIED, THE CONTRACTOR SHALL CAREFULLY COORDINATE THE ANCHOR ROD PROJECTION WITH THE INSTALLATION REQUIREMENTS OF THE BREAKAWAY COUPLINGS.
12. THE CONTRACTOR SHALL USE A #3 SPIRAL AT 6" (152.4 mm) PITCH OR MAY SUBSTITUTE #3 TIES AT 12" (304.8 mm) O.C. WITH THE APPROVAL OF THE ENGINEER.
13. THE CABLE TRENCHES AND FOUNDATION SHALL BE BACK FILLED AND COMPACTED AS SPECIFIED BEFORE THE LIGHT POLE IS ERECTED.
14. THE RACEWAYS SHALL PROJECT 1" (25.4 mm) ABOVE THE TOP OF THE FOUNDATION.



FOUNDATION EXTENSION DETAIL



SECTION A–A



SECTION A–A

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHT POLE FOUNDATION
40' (12.192 m) TO 47 1/2' (14.478 m) M.H. 15" (381 mm) BOLT CIRCLE

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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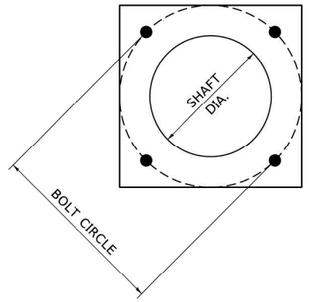
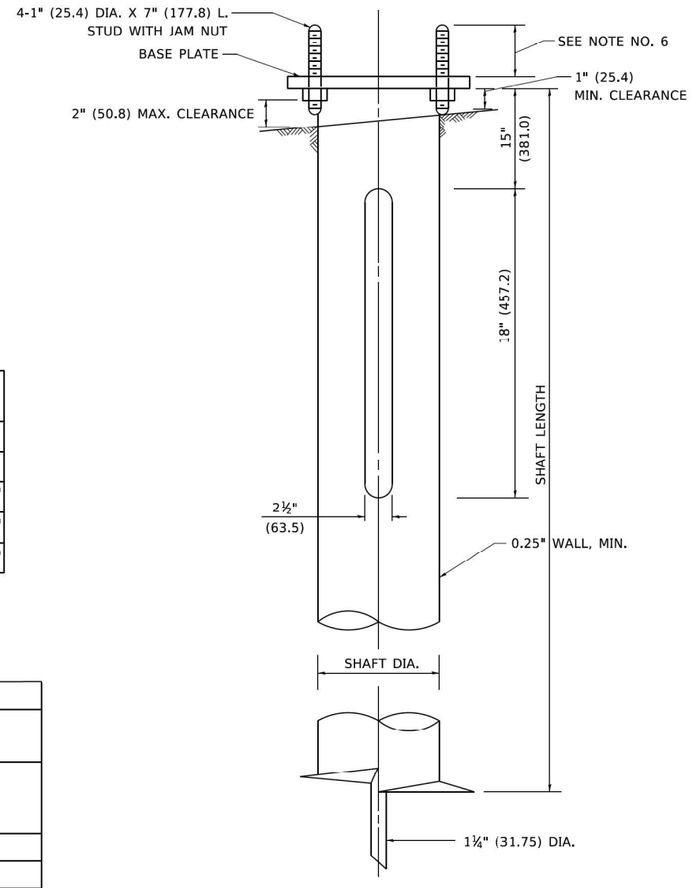
	BE-301	CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			





HELIX FOUNDATION SIZE

POLE MOUNTING HEIGHT	BOLT CIRCLE	SHAFT DIAMETER	SHAFT LENGTH	BASEPLATE
30 FT.	11½"	8⅝"	6 FT.	12"x12"x1"
31 FT.-35 FT.	11½"	8⅝"	6 FT.	12"x12"x1"
36 FT.-40FT.	15"	8⅝"	6 FT.	15"x15"x1¼"
41 FT.-45 FT.	15"	8⅝"	6 FT.	15"x15"x1¼"
46 FT.-50 FT.	15"	10"	8 FT.	15"x15"x1¼"

METAL HELIX FOUNDATION MATERIALS

ITEM	MATERIAL REQUIREMENT
BASEPLATE	AASHTO M 270M, GRADE 36 (M270M, GRADE 250)
SHAFT	ASTM A 252, GRADE 2 (PHOSPHOROUS 0.04% MAXIMUM, SULFUR 0.05% MAXIMUM)
HELIX SCREW	AASHTO M 183 (ASTM A 635)
PILOT POINT	AASHTO M 270 (ASTM A 575)
ANCHOR RODS/STUDS	AASHTO M 314 (ASTM F 1554)
HEXAGON NUTS	AASHTO M 291M (ASTM A 563) GRADE DH, OR AASHTO M 292 (ASTM A 194) GRADE 2H
WASHERS	AASHTO M 293 (ASTM F 436)

NOTES

1. ALL DIMENSION IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. ALL MATERIAL SHALL BE GALVINIZED ACCORDING TO AASHTO M111, UNLESS OTHERWISE SPECIFIED.
3. ALL WELDS SHALL BE CONTINUOUS AND NOT LESS THAN 1#4" (6.35 mm) FILLET WELDS. THE WELDED FOUNDATION SHALL BE CAPABLE OF WITHSTANDING 10,000 FT/LBS (13558.18 n.m) OF INSTALLATION TORQUE APPLIED ABOUT THE AXIS OF THE FOUNDATION.
4. THE HELIX FOUNDATION SHAFT SHALL BE INSTALLED VERTICAL AND THE BASE PLATE SHALL BE IN LEVEL. THE BREAKAWAY COUPLINGS AND HARDWARE SHALL NOT BE USED TO ALIGN THE POLE INSTALLATION.
5. THE CABLE TRENCH SHALL BE BACKFILLED AND FIRMLY COMPACTED BEFORE THE INSTALLATION OF THE LIGHT POLE.
6. THE CONTRACTOR SHALL COORDINATE EXTENSION OF ANCHOR BOLTS ABOVE TOP OF THE BASE PLATE WITH THE BREAKAWAY DEVICE MANUFACTURER'S REQUIREMENTS.
7. ANY VOIDS WITHIN THE METAL FOUNDATION SHALL BE FILLED WITH FINE AGGREGATE.
8. METAL FOUNDATIONS SHALL BE INSTALLED IN UNDISTURBED SOIL. PREDRILLING A PILOT HOLE AND/OR BACKFILLING AROUND THE FOUNDTION IS NOT ALLOWED.
9. THE METAL FOUNDATION SHALL NOT BE INSTALLED TO A TORQUE WHICH EXCEEDS THE MANUFACTURER'S MAXIMUM TORQUE RATING NOR SHALL IT BE INSTALLED TO AN INSTALLATION TORQUE VALUE OF LESS THAN 3,500 FT LB (4,750 KNM). METAL FOUNDATIONS THAT ARE NOT INSTALLED TO FULL INSTALLATION DEPTH OR DO NOT ACHIEVE THE MINIMUM INSTALLATION TORQUE SHALL BE REMOVED AND REPLACED WITH A CONCRETE FOUNDATION AT NO ADDITIONAL COST.
10. THE BASEPLATE SHALL BE PERPENDICULAR TO THE SHAFT AXIS (± 1°) AND THE HOLE CENTERLINE SHALL BE CONCENTRIC (± 0.188) TO THE SHAFT AXIS.
11. THE PILOT POINT AND SHAFT AXIS SHALL BE CONCENTRIC (± 0.125) AND IN LINE (± 2°).
12. THE BASEPLATE SHALL BE STAMPED WITH THE MANUFACTURERS NAME AND DATE OF MANUFACTURE.

LT–19

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHT POLE FOUNDATION, METAL

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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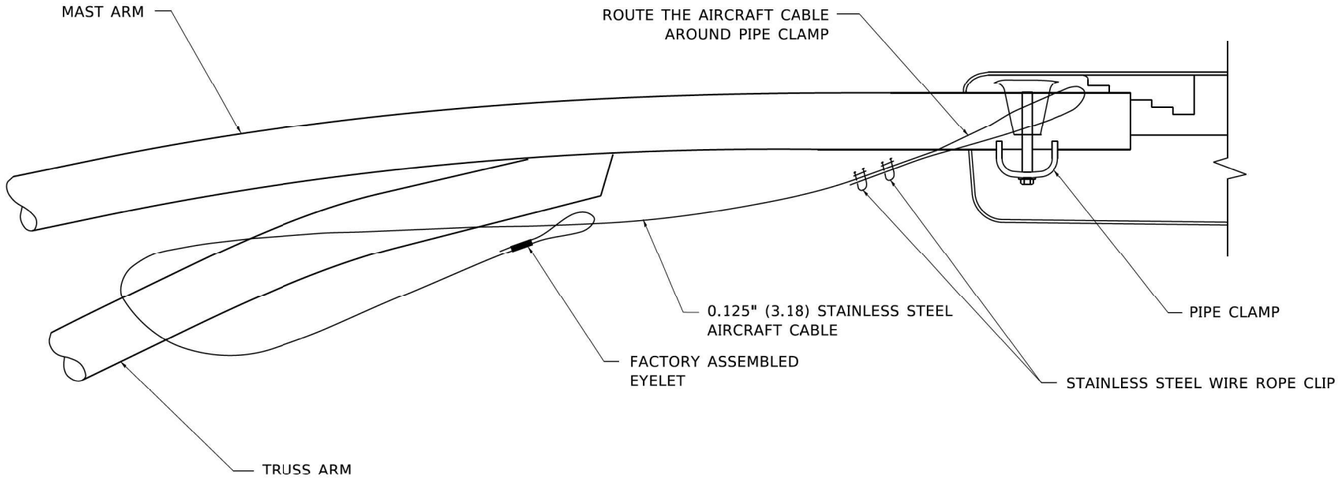
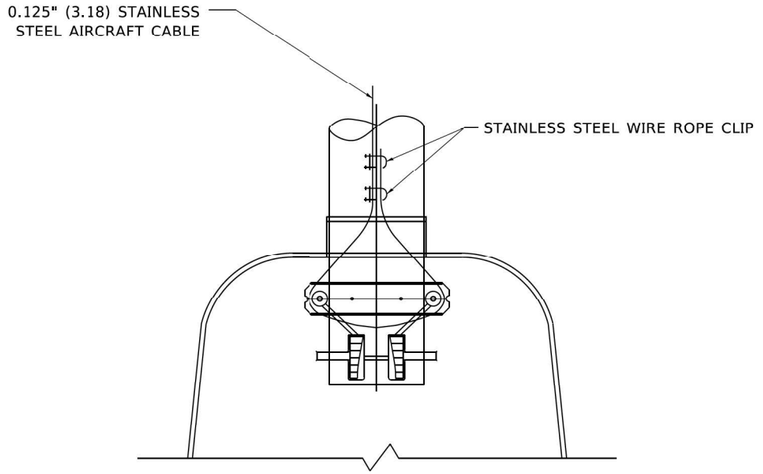
	BE–305	CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			



SIDE VIEW (TRUSS ARM)
N.T.S.



BOTTOM VIEW
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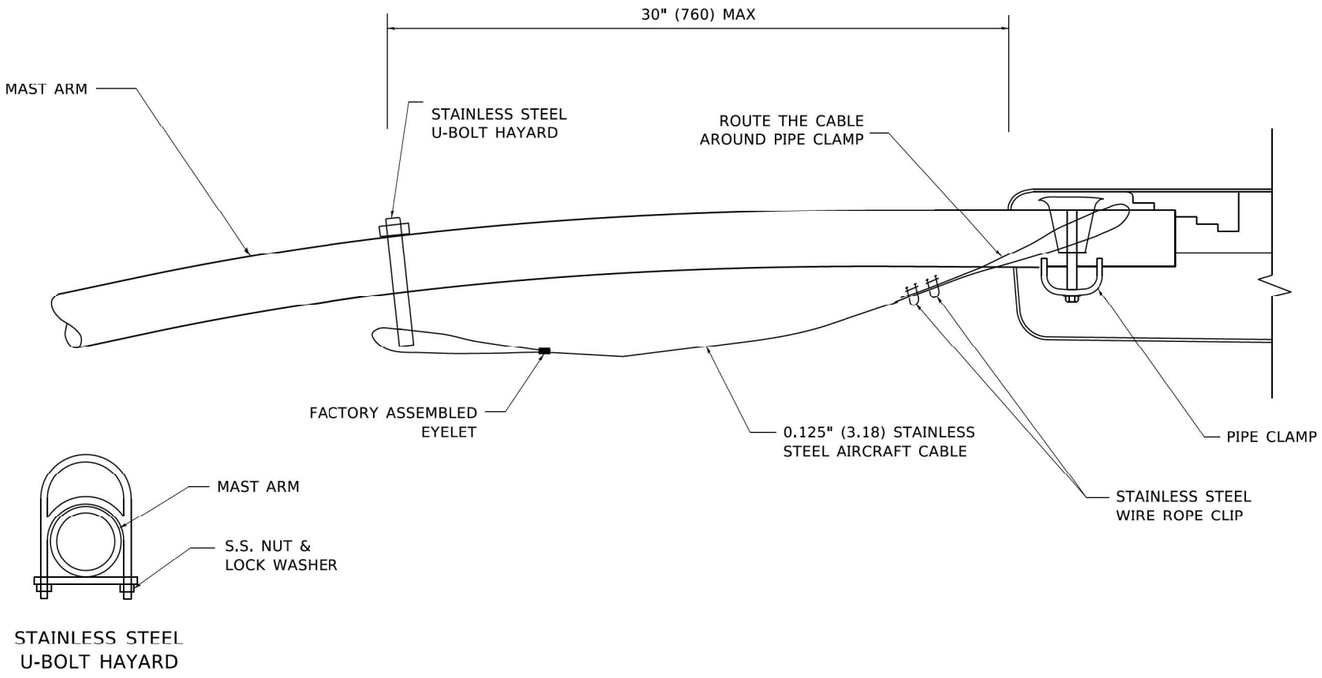

SIDE VIEW (SINGLE MEMBER OR DAVIT ARM)
N.T.S.

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE SHOWN.
2. CONTRACTOR SHALL ADJUST THE WIRE CLIP TO ELIMINATE ANY SLACK FROM THE WIRE ROPE.
3. THE 0.125" (3.18) STAINLESS STEEL AIRCRAFT CABLE SHALL REMAIN VISIBLE FROM THE GROUND LEVEL.
4. THE BREAKING STRENGTH OF THE CABLE SHALL BE 1700 LBS. MIN.

LT–20

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PLOT DATE = 4/19/2019	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LUMINAIRE SAFETY CABLE ASSEMBLY

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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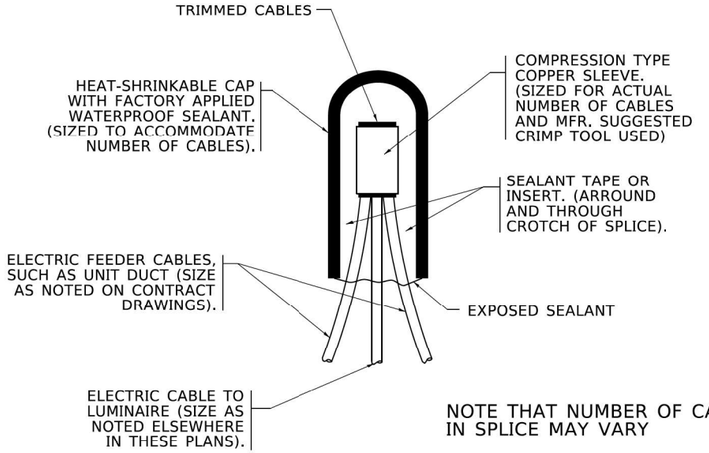
	BE–701	CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			



NOTE THAT NUMBER OF CABLES IN SPLICE MAY VARY

TYPICAL SPLICE DETAIL

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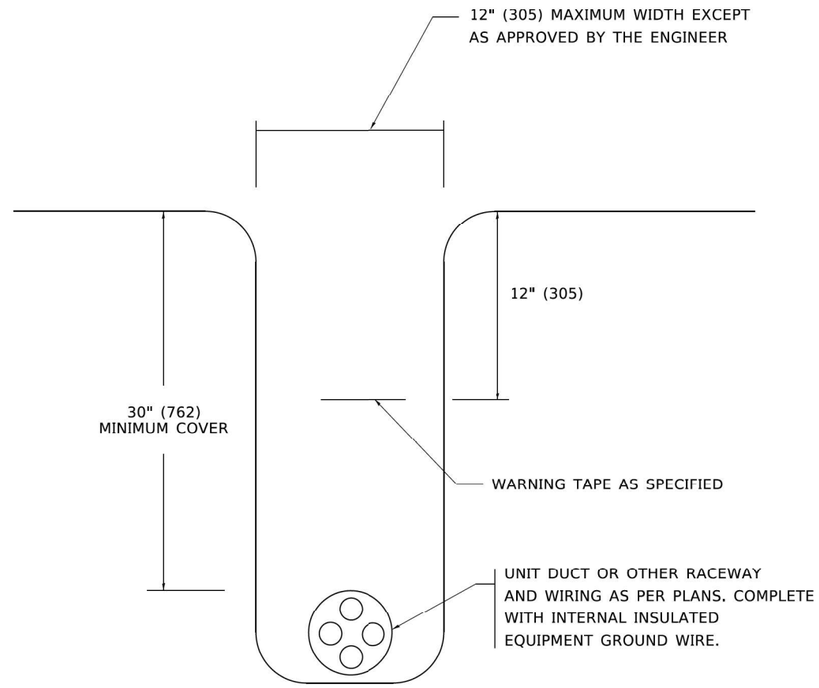

TYPICAL WIRING IN TRENCH DETAIL

N.T.S.

LT–21

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	DRAWN -	REVISED -	
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PLOT DATE = 4/19/2019	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MISC. ELECTRICAL DETAILS
SHEET A

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	425
	BE–702	CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			

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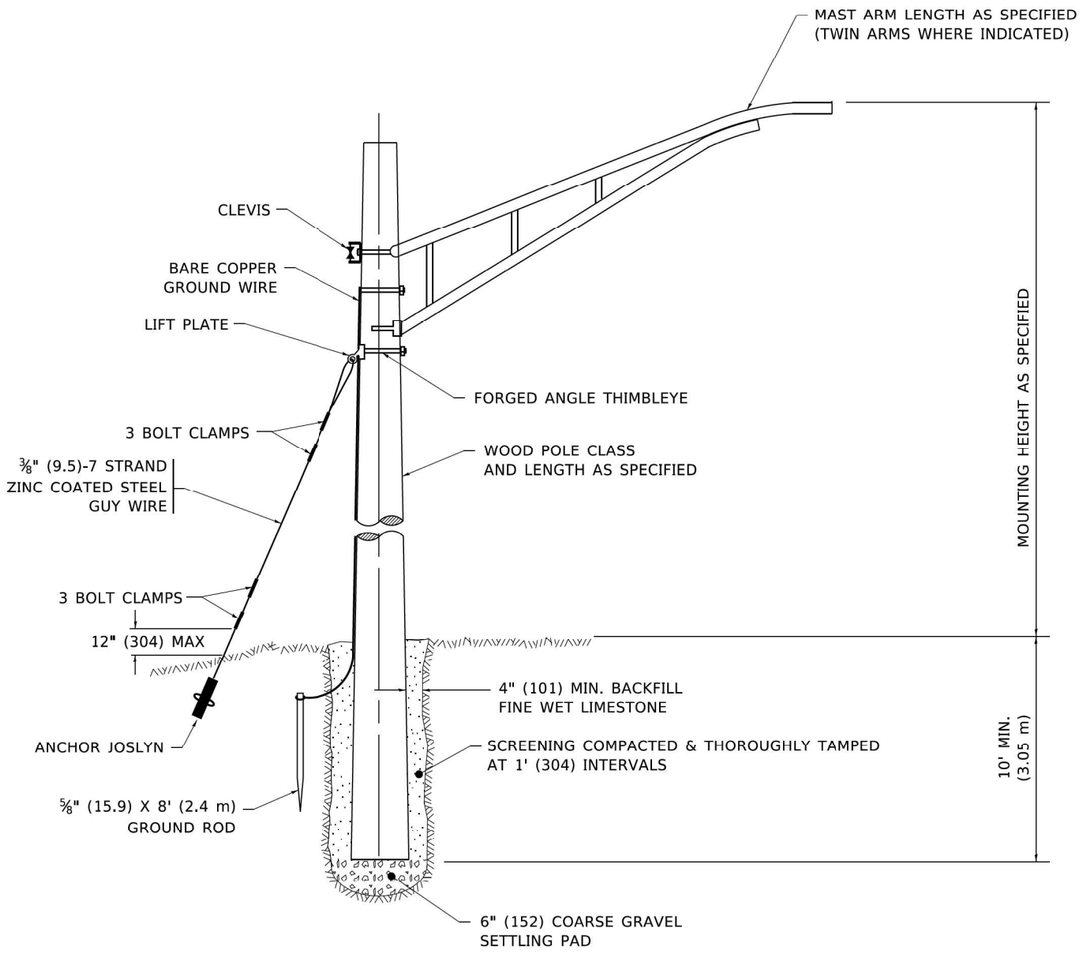
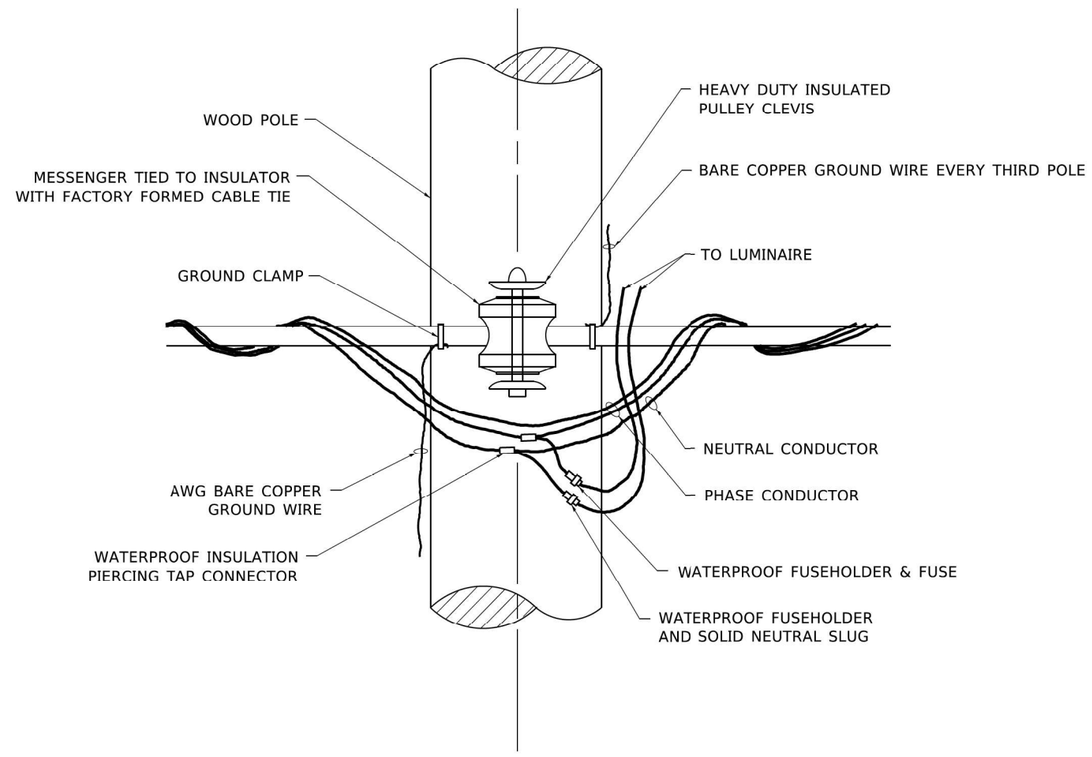


TEMPORARY LIGHT POLE DETAIL



TEMPORARY LIGHT POLE ATTACHMENT DETAIL

NOTE:

1. ALL DIMENSIONS IN INCHES (MILLIMETERS) UNLESS OTHERWISE INDICATED.
2. MAST ARM SHALL BE RATED FOR THE SPECIFIED MOUNTING HEIGHT.

LT–22

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	DRAWN -	REVISED - R.T. 07-26-16			
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PLOT DATE = 4/19/2019	DATE -	REVISED -			

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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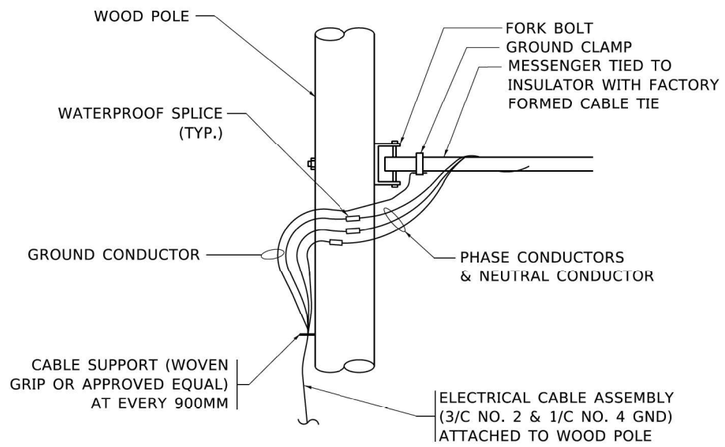
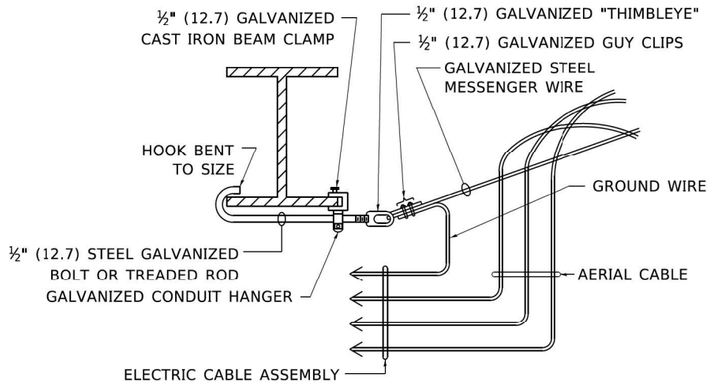
	BE–800	CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			



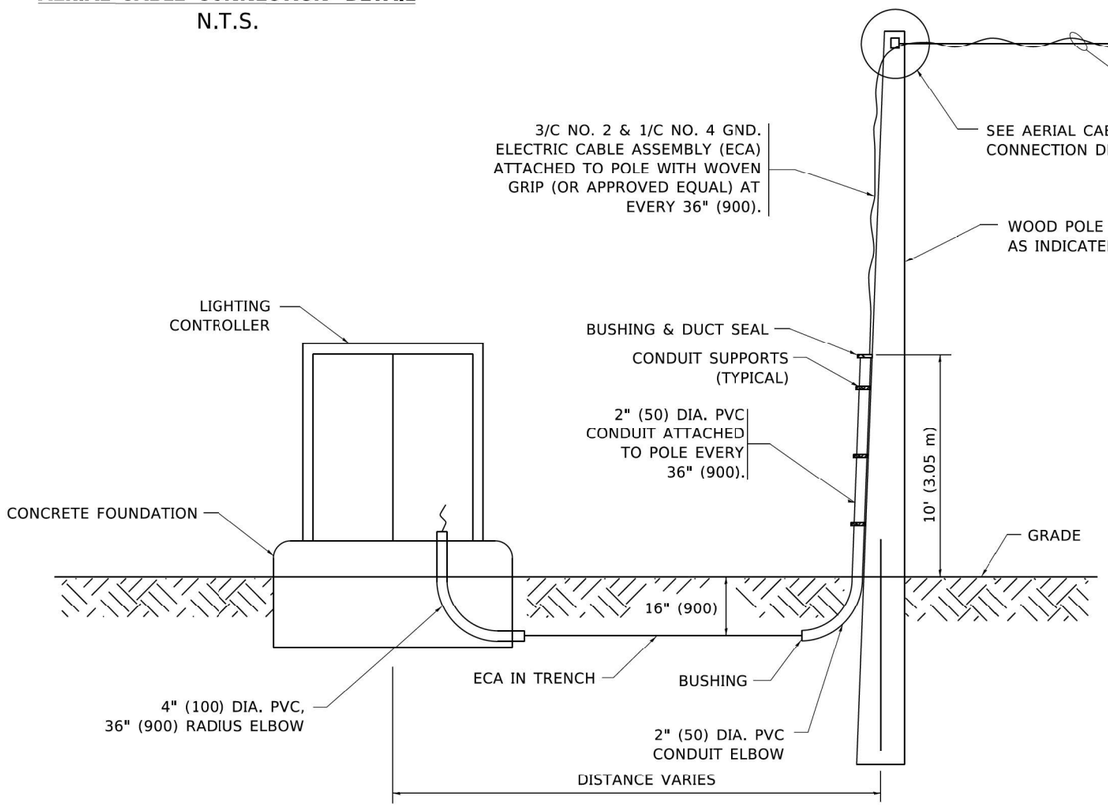
AERIAL CABLE CONNECTION DETAIL

N.T.S.



AERIAL CABLE ATTACHED TO STRUCTURE

NOT TO SCALE



WOOD POLE TO LIGHTING CONTROLLER WIRING CONNECTION DETAIL

N.T.S.

NOTES:

1. ALL DIMENSIONS IN INCHES (MILLIMETERS) UNLESS OTHERWISE INDICATED.
2. SEE PROPOSED LIGHTING PLAN FOR CONDUIT, CABLE AND ROUTING.
3. THE CONTRACTOR SHALL PROVIDE INTERMEDIATE SUPPORTS TO MAINTAIN MINIMUM CLEARANCES. REFER TO AERIAL AERIAL CABLE ATTACHED TO STRUCTURE DETAIL.
4. COST OF SPLICES AND MOUNTING HARDWARE SHALL BE INCLUDED IN THE UNIT PRICE FOR AERIAL CABLE.

LT–23

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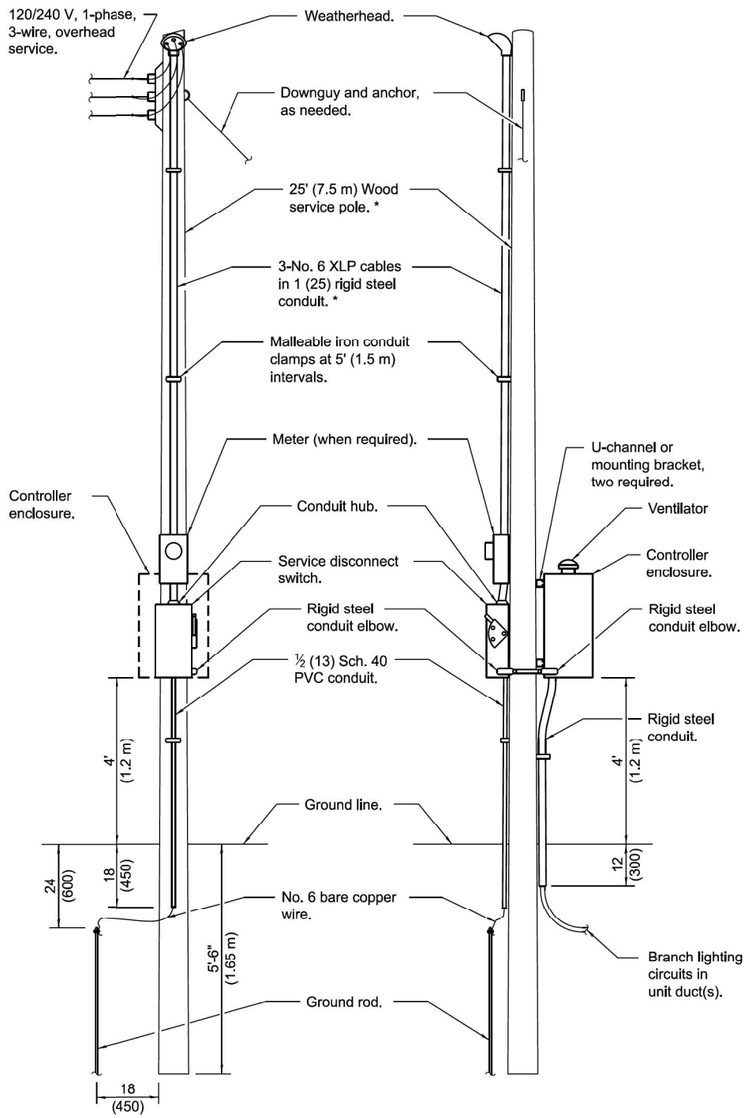
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY AERIAL CABLE INSTALLATION

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	427
	BE–801	CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			

60 AMP

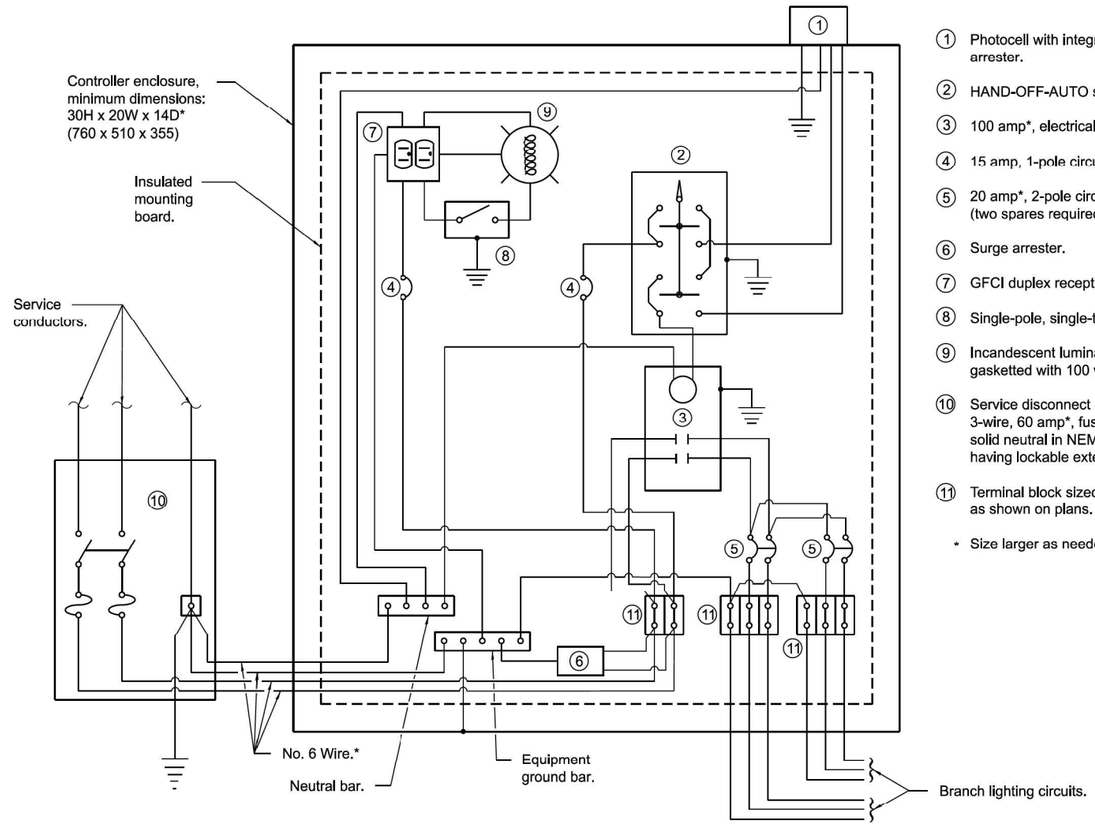


FRONT **SIDE**

ELECTRIC SERVICE INSTALLATION

(Typical overhead service shown. Cut pole off for underground service and treat cut surface with preservative. Consult utility company standards for exact requirements.)

* Size larger as needed.



CONTROL SCHEMATIC

1. Photocell with integral surge arrester.
2. HAND-OFF-AUTO selector switch.
3. 100 amp*, electrically held contactor.
4. 15 amp, 1-pole circuit breaker.
5. 20 amp*, 2-pole circuit breaker (two spares required but not shown).
6. Surge arrester.
7. GFCI duplex receptacle.
8. Single-pole, single-throw switch.
9. Incandescent luminaire, enclosed and gasketted with 100 watt lamp.
10. Service disconnect switch - 2-pole, 3-wire, 60 amp*, fused at 60 amp*, solid neutral in NEMA 4X enclosure having lockable external handle.
11. Terminal block sized for conductors as shown on plans.

* Size larger as needed.

Illinois Department of Transportation

APPROVED January 1, 2019
ELECTRICAL AND MECHANICAL UNIT CHIEF

APPROVED January 1, 2019
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-10

LIGHTING CONTROLLER POLE MOUNTED, 240V

(Sheet 2 of 2)

STANDARD 825001-04

LT–24

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SINGH + ASSOCIATES, INC. CONSULTING ENGINEERS

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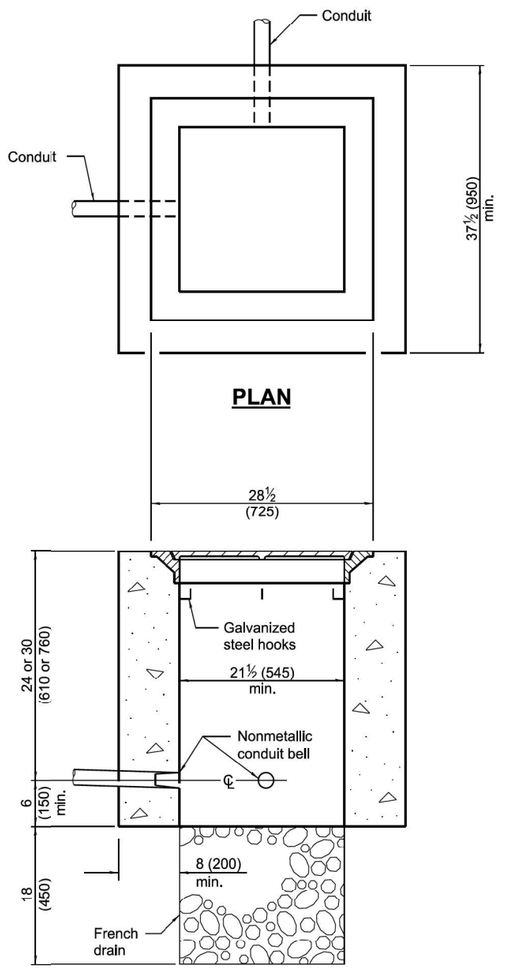
PLOT DATE = 1/8/2026	DATE - 01/09/2026	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT HIGHWAY STANDARDS

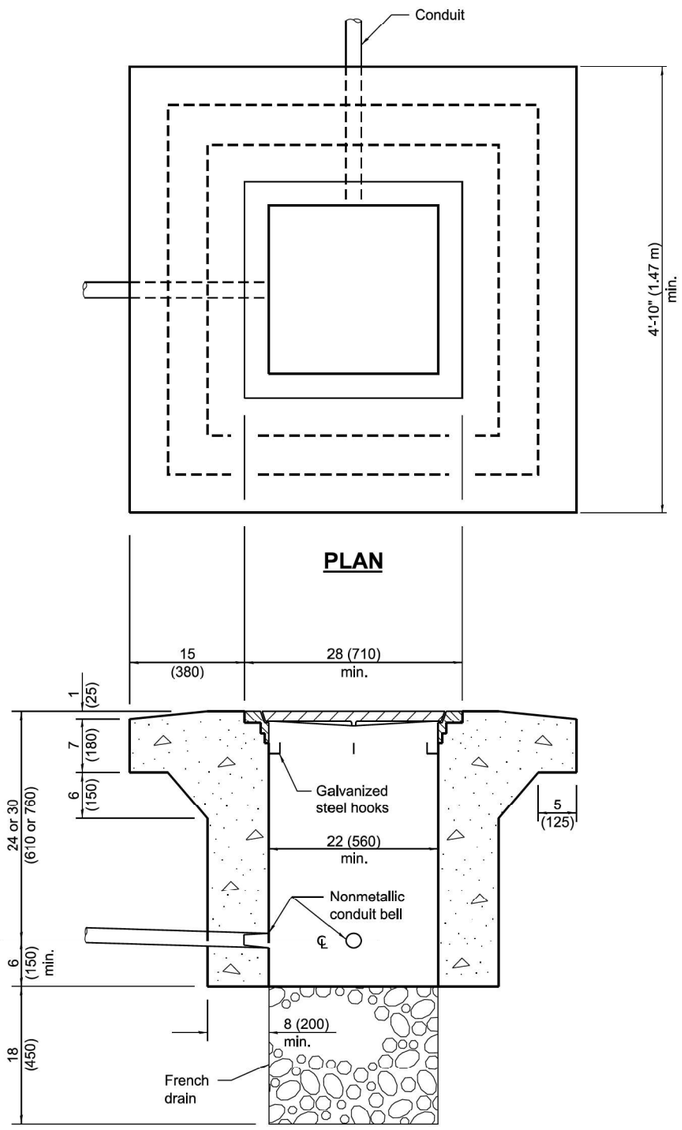
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	MCHENRY	575	428
		CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			



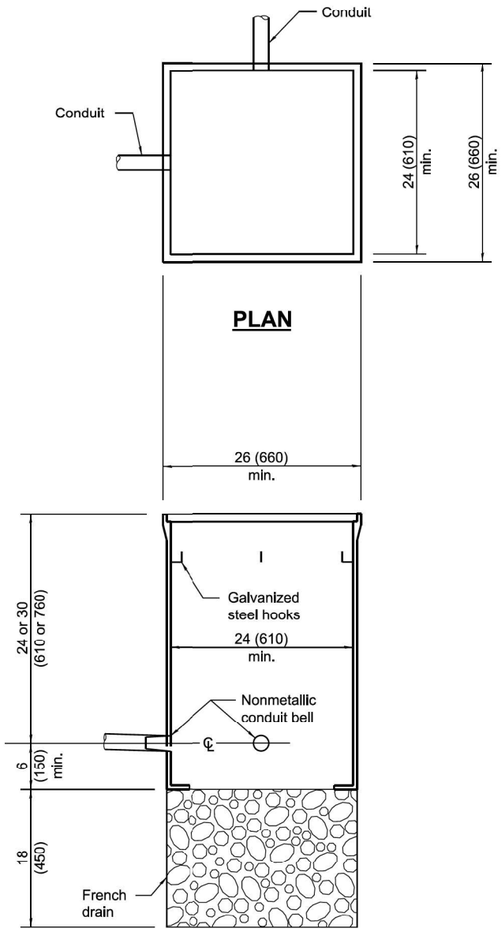
ELEVATION

PORTLAND CEMENT CONCRETE



ELEVATION

PORTLAND CEMENT CONCRETE HEAVY DUTY



ELEVATION

COMPOSITE CONCRETE

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

QUANTITIES

Depth	Concrete yd³ (m³) Handhole	Heavy Duty Handhole
30 (762)	0.61 (0.47)	0.98 (0.75)
36 (914)	0.73 (0.56)	1.10 (0.84)

Illinois Department of Transportation

APPROVED January 1, 2015
ENGINEER OF OPERATIONS

APPROVED January 1, 2015
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

DATE	REVISIONS
1-1-15	Corrected dimension on heavy
	duty handhole. Added concrete
	quantities table.
1-1-09	Switched units to English (metric).

HANDHOLES

STANDARD 814001-03

LT–25

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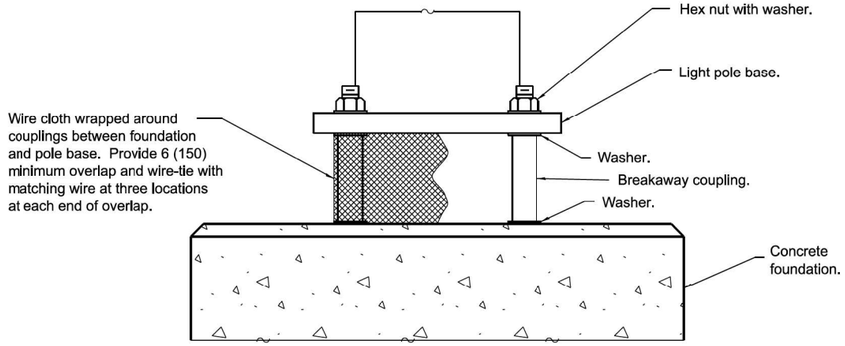
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT HIGHWAY STANDARDS

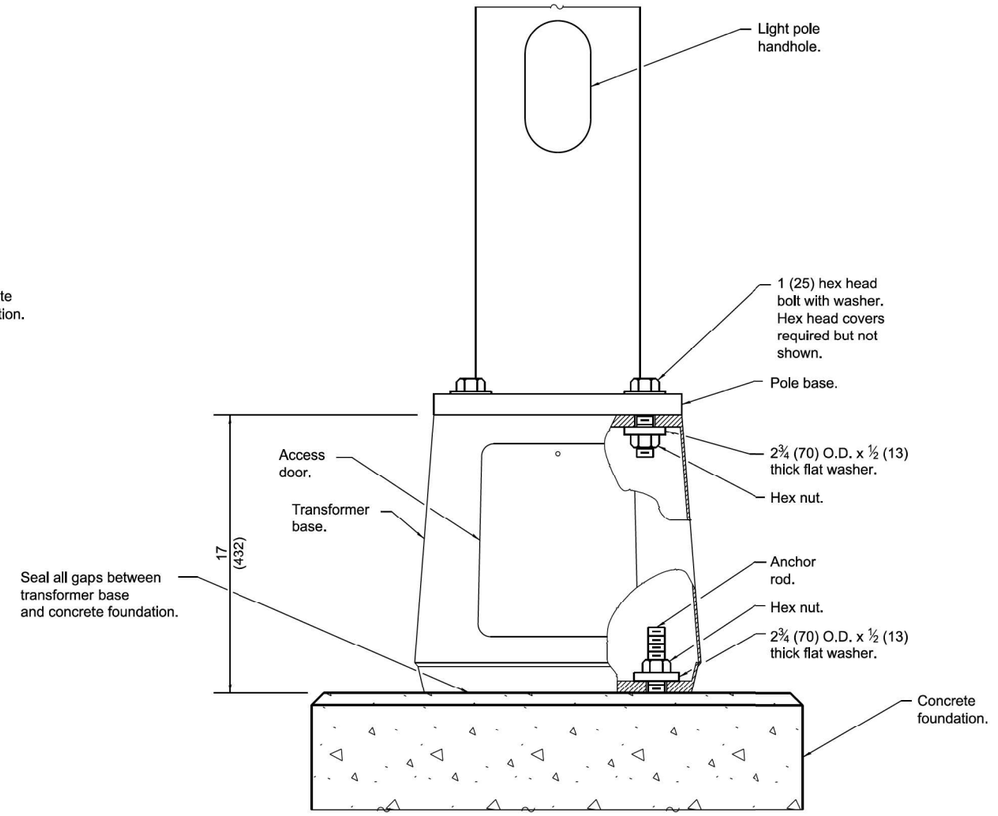
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	MCHENRY	575	429
		CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			



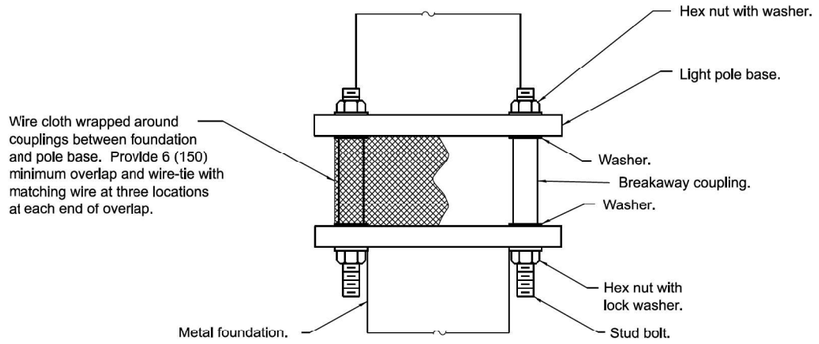
BREAKAWAY COUPLINGS ON CONCRETE FOUNDATION FOR STEEL LIGHT POLE

(Provide pole base skirt around wire cloth when required.)



BREAKAWAY TRANSFORMER BASE FOR STEEL OR ALUMINUM POLE

(Steel pole shown)



BREAKAWAY COUPLINGS ON METAL FOUNDATION FOR STEEL POLE

(Provide pole base skirt around wire cloth when required.)

See Sheet 2 for GENERAL NOTES.

Illinois Department of Transportation

APPROVED January 1, 2018
ENGINEER OF PRELIMINARY ENGINEERING

APPROVED January 1, 2018
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-12

DATE	REVISIONS
1-1-18	Revised to show rodent shield
	Installation for aluminum poles.
1-1-14	New Standard.

BREAKAWAY DEVICES

(Sheet 1 of 2)

STANDARD 838001-01

LT–26

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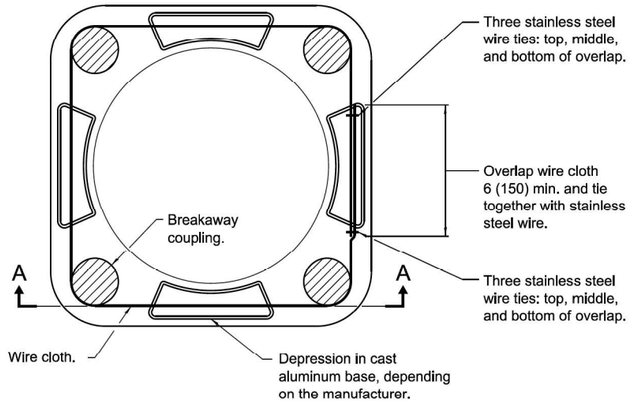
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

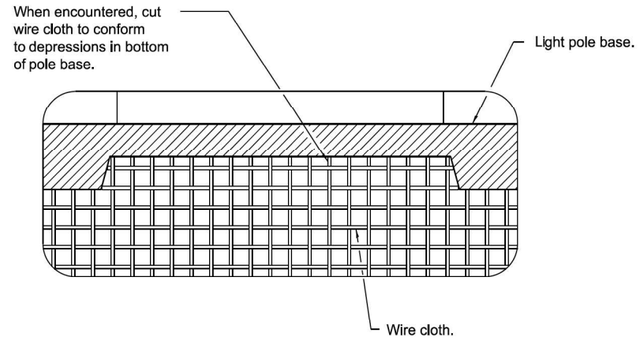
IDOT HIGHWAY STANDARDS

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

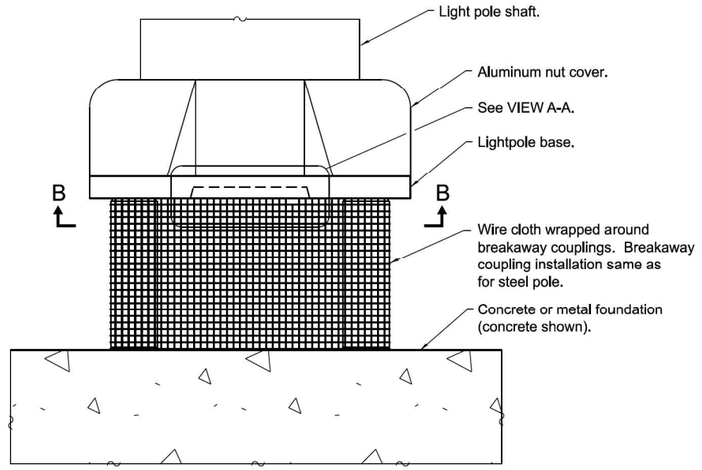
F.A. P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	MCHENRY	575	430
		CONTRACT NO. 62U72		
	ILLINOIS	FED. AID PROJECT		



VIEW B-B



VIEW A-A



BREAKAWAY COUPLINGS FOR ALUMINUM POLES

(Provide pole base skirt around wire cloth when required.)

GENERAL NOTES

See light pole standard for details not shown.

Use largest transformer base bolt circle possible.

Transformer bases shall not be installed on metal foundations.

Washers on top of pole base shall cover the entire bolt slot.

See Standard 836001 for Light Pole Foundation.

Wire cloth shall be stainless steel, have a maximum opening of ¼ (6), and have a minimum wire size of AWG No. 16 (1.6).

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

Illinois Department of Transportation

APPROVED January 1, 2018
ENGINEER OF PRELIMINARY ENGINEERING

APPROVED January 1, 2018
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-12

BREAKAWAY DEVICES

(Sheet 2 of 2)

STANDARD 838001-01

LT–27

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT HIGHWAY STANDARDS

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

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	MCHENRY	575	431
		CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			

Benchmark: CP #182. MAG nail set in pavement of Anne St. Sta. 443+00.57, Offset 74.98' Rt., Elev. 754.20.

Existing Structure: The existing structure SN 056-0105 built in 2019 under Section 2018-056-DR-1 as 5'-0"x12'-6" cast-in-place (CIP) single-cell box culvert with a 30'-0" CIP approach slab at the south end and headwalls parallel to the roadway. The culvert top slab acts as the riding surface, and the box culvert measures 66'-2" out-to-out of headwalls. Structure replaced existing structure SN 056-0227, and portions of SN 056-0227 were filled with lean concrete and abandoned in-place. Existing structure and remaining abandoned box culvert to be completely removed and replaced. Traffic to be maintained using stage construction.

No Salvage

LEGEND

- Soil Boring
- Exist. Sanitary Sewer
- Prop. Storm Sewer
- Prop. Water Main
- C&G Curb & Gutter, Type B-6.24
- Exist. Underground Gas
- FO Exist. Underground Fiber Optic
- E Exist. Electric
- W Exist. Water Main
- CTV Exist. Cable TV
- PCBC Precast Concrete Box Culvert

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi (substructure)
f'c = 4,000 psi (superstructure)
fy = 60,000 psi (reinforcement)

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface

LIVE LOAD DEFLECTION CRITERIA

Span/1,000

DESIGN SPECIFICATIONS

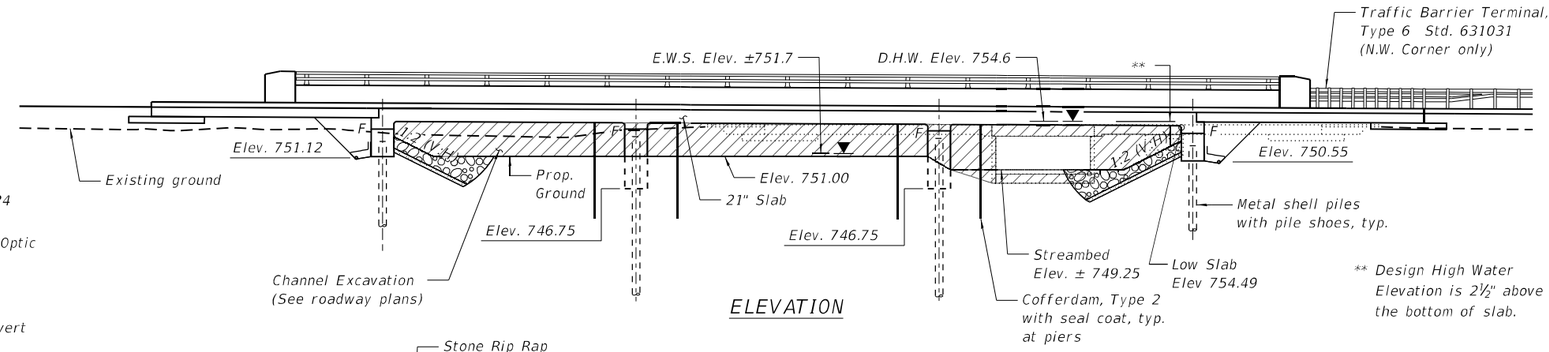
2024 AASHTO LRFD Bridge Design Specifications, 10th Edition

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.078 g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.131 g
Soil Site Class = D

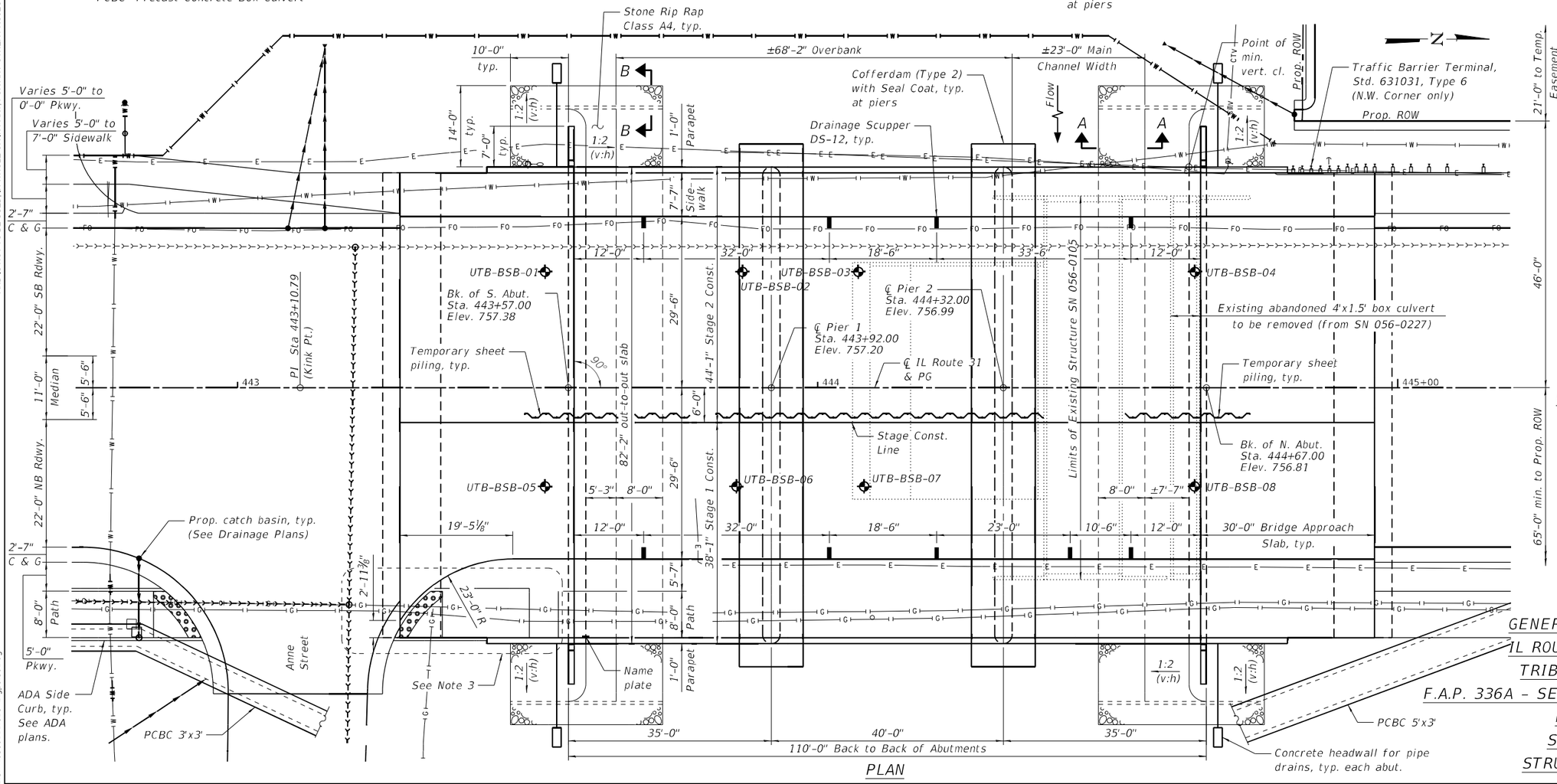
NOTES:

1. See sheet S-02 of S-33 for Sections A-A and B-B, Waterway Information, and suggested construction sequence.
2. All existing utilities within the proposed bridge limits shall be relocated prior to construction.
3. See Roadway Plans and Sheet S-15 of S-33 for ADA ramp dimensions and elevations.

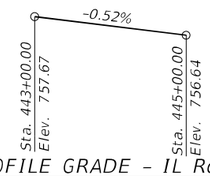


ELEVATION

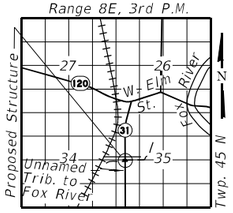
** Design High Water Elevation is 2½" above the bottom of slab.



PLAN



PROFILE GRADE - IL Route 31



LOCATION SKETCH

GENERAL PLAN & ELEVATION
IL ROUTE 31 OVER UNNAMED TRIBUTARY TO FOX RIVER
F.A.P. 336A - SECTION FAP 336 23 RECON NORTH
McHENRY COUNTY
STATION 444+12.00
STRUCTURE NO. 056-0111

LICENSED STRUCTURAL ENGINEER
LAURA F. BLOOMBERG
081-007649
STATE OF ILLINOIS

Laura F. Bloomberg P.E., S.E.
State of Illinois No. 081.007649
Expires 11/30/2026
Date: 01/22/2026

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SHEET S-01 OF S-33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	432
		CONTRACT NO.	62U72	
		ILLINOIS	FED. AID PROJECT	

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GENERAL NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.

2. The Contractor shall make allowance for the deflection of forms, shrinkage, and settlement of falsework, in addition to allowance for dead load deflection. Forms for deck slab shall be removed prior to placement of bridge approach slab.

3. The Seal coat design thickness is estimated based on the Cofferdam Design Water Elevation (CDWE) shown. Final cofferdam design, details and `seal coat thickness shall be submitted to the Engineer for approval.

4. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

5. Slipforming of the parapets is not allowed.

INDEX OF SHEETS

BYPASS FLOWRATE FROM BRIDGE LIMITS (END OF APPROACH SLAB) TO ROADWAY

	NW CURBLINE	SW CURBLINE	NE CURBLINE	SE CURBLINE
Q (C.F.S.)	0.287	N/A	0.293	N/A

DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.)				
	S. Abut.	Pier 1	Pier 2	N. Abut.	Item 113
Q100	751.12	740.55	740.55	750.55	5
Q200	751.12	739.13	739.13	750.55	
Design	751.12	740.55	740.55	750.55	
Check	751.12	739.13	739.13	750.55	

SUGGESTED ABUTMENT CONSTRUCTION SEQUENCE

1. Maintain water thru the existing box culvert. Water shall remain at this location until both abutments are constructed.
2. Install stage line Temporary Sheet Piling.
3. Perform Stage I removal, except bottom slab and portions of the sidewalls of existing box culvert.
4. Complete Stage I abutment construction.
5. Perform Stage I Channel Excavation, except for span 3.
6. Install the proposed Stone Riprap for Stage I, except for span 3.
7. Remove selected portions of the Temporary Sheet Piling that are not necessary to retain the recently completed Stage I construction.
8. Complete Stage II abutment construction.
9. Remove any remaining portions of the existing structure.
10. Perform remaining Channel Excavation.
11. Install the remaining proposed Stone Riprap.

Notes:
The Contractor shall be responsible for diverting the water flow from the proposed abutment construction areas using a method with the approval of the Engineer. This work is included in the cost of Concrete Structures.

TOTAL BILL OF MATERIAL

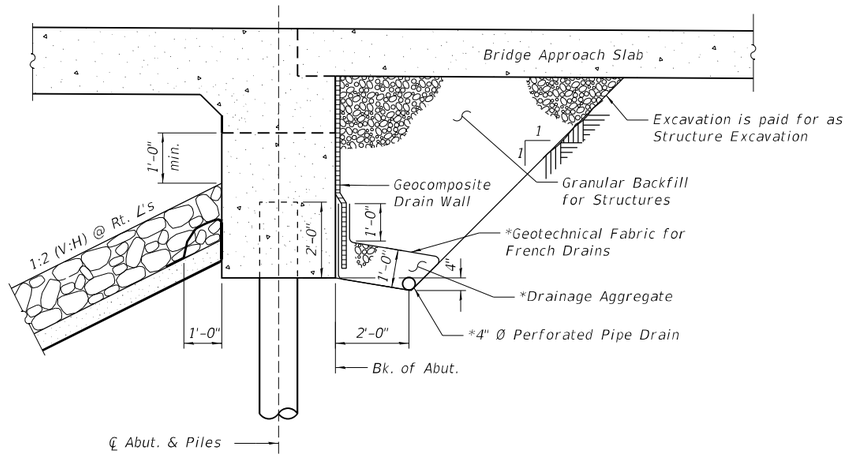
Item	Unit	Super	Sub	Total
Stone Riprap, Class A4	Sq Yd	-	435	435
Filter Fabric	Sq Yd	-	435	435
Removal Of Existing Structures	Each	1	-	1
Structure Excavation	Cu Yd	-	318	318
Cofferdam Excavation	Cu Yd	-	1,646	1,646
Cofferdam (Type 2) (Location - 1)	Each	-	1	1
Cofferdam (Type 2) (Location - 2)	Each	-	1	1
Concrete Structures	Cu Yd	49.5	214.7	264.2
Concrete Superstructure	Cu Yd	728.2	-	728.2
Bridge Deck Grooving	Sq Yd	1,064	-	1,064
Seal Coat Concrete	Cu Yd	-	185.7	185.7
Protective Coat	Sq Yd	1,623	-	1,623
Concrete Superstructure (Approach Slab)	Cu Yd	225.5	-	225.5
Reinforcement Bars, Epoxy Coated	Pound	274,020	22,200	296,220
Bar Splicers	Each	546	60	606
Aluminum Railing, Type L	Foot	260	-	260
Furnishing Metal Shell Piles 12" X 0.250"	Foot	-	864	864
Furnishing Metal Shell Piles 14" X 0.312"	Foot	-	1,404	1,404
Driving Piles	Foot	-	2,268	2,268
Test Pile Metal Shells	Each	-	4	4
Pile Shoes	Each	-	52	52
Name Plates	Each	1	-	1
Temporary Sheet Piling	Sq Ft	-	1,901	1,901
Granular Backfill For Structures	Cu Yd	-	144	144
Geocomposite Wall Drain	Sq Yd	-	100	100
Pipe Underdrains For Structures 4"	Foot	-	220	220
Drainage Scuppers, DS-12	Each	9	-	9

WATERWAY INFORMATION

Drainage Area = 2.82 sq. miles — Existing Overtopping Elev. = 754.32 at Sta. 450+20 — Proposed Overtopping Elev. = 756.05 at Sta. 446+40

Flood	Frequency Year	EX/PR Discharge (cfs)	Waterway Opening (sq. ft.) Existing	Waterway Opening (sq. ft.) Proposed	Existing Natural H.W.E - ft	Proposed Natural H.W.E - ft	Head (ft.) Existing	Head (ft.) Proposed	Headwater Elev. - ft Existing	Headwater Elev. - ft Proposed
	10	432 / 416	46	309.3	754.4	753.8	0.5	0.2	754.9	754.0
Design	50	840 / 811	46	382.7	755.0	754.6	0.1	0.2	755.1	754.8
Base	100	1151 / 1111	46	382.7	755.3	754.9	0.1	0.3	755.4	755.2
Scour Design Check	200	1489 / 1439	46	382.7	755.7	755.3	0.0	0.3	755.7	755.6
Overtop Existing	< 10			N/A	N/A	N/A		N/A		N/A
Overtop Proposed	> 200		N/A		N/A	N/A	N/A		N/A	
Max Calc.	500	2300 / 2200	46	382.7	756.7	756.4	0.0	0.7	756.7	757.1

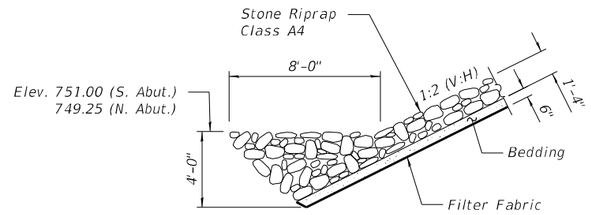
10-Year Velocity through Existing Structure: 4.33 fps
10-Year Velocity through Proposed Structure: 1.24 fps



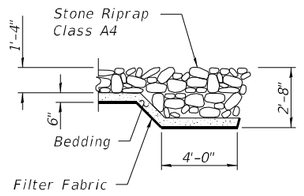
SECTION THRU INTEGRAL ABUTMENTS

* Included in the cost of Pipe Underdrains for Structures.

All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).



SECTION A-A



SECTION B-B

STA. 444+12.00
BUILT 20__ BY
STATE OF ILLINOIS
FAP RT. 336A - SEC. FAP 336 23 RECON NORTH
HL-93 LOADING
STR. NO. 056-0111

NAME PLATE

See Std. 515001

USER NAME = BP003	DESIGNED - KP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL DATA STRUCTURE NO., 056-0111	SHEET S-02 OF S-33 SHEETS
	CHECKED - LFB	REVISED -			
PLOT SCALE = 8.0000 ' / in.	DRAWN - BMP	REVISED -			
PLOT DATE = 1/23/2026	CHECKED - LFB	REVISED -			

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	433
		CONTRACT NO.	62U72	
		ILLINOIS	FED. AID PROJECT	

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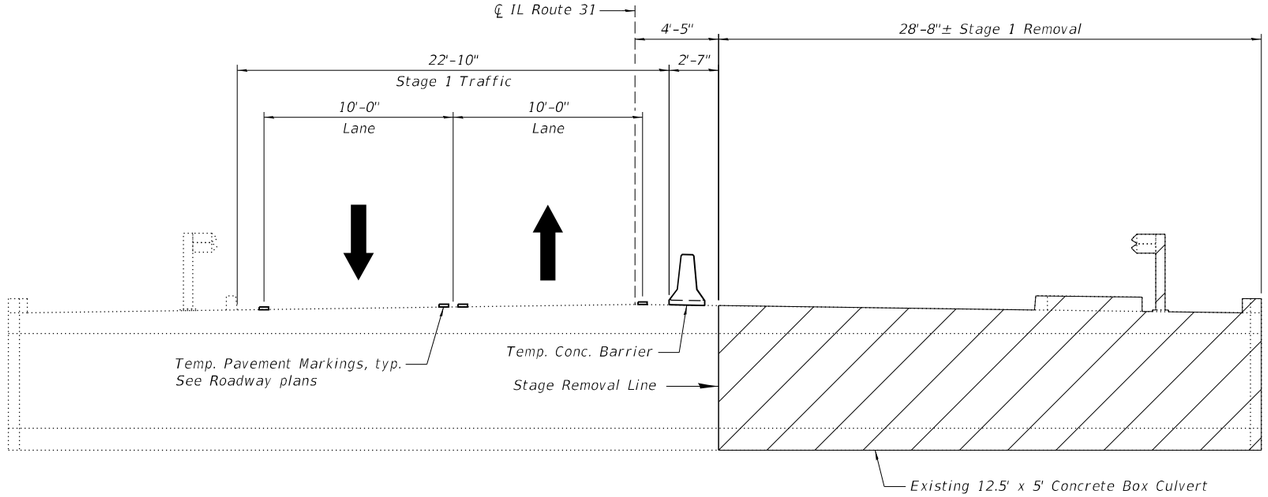
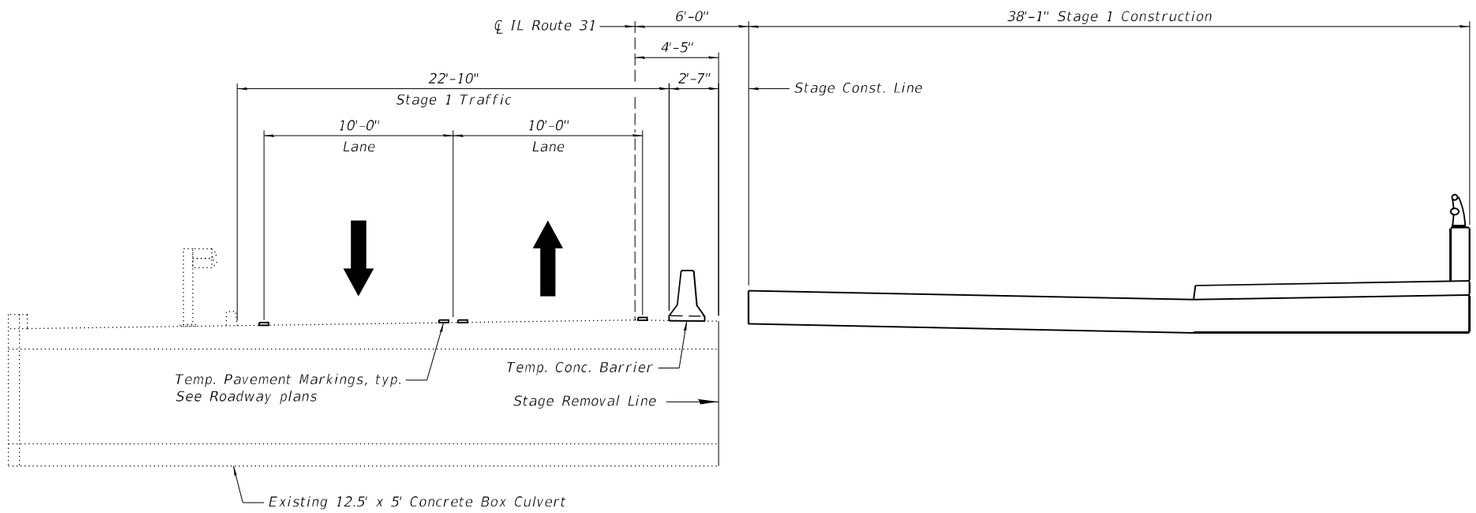


STAGE 1 REMOVAL

LEGEND

Removal of Existing Structure



STAGE 1 CONSTRUCTION

NOTE:

See Roadway Plans for quantity of Temporary Concrete Barrier.

USER NAME = BP003	DESIGNED - KP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE CONSTRUCTION DETAILS 1 STRUCTURE NO. 056-0111	
	CHECKED - LFB	REVISED -			
PLOT SCALE = 8.000000 ' / in.	DRAWN - BMP	REVISED -			
PLOT DATE = 1/23/2026	CHECKED - LFB	REVISED -		SHEET S-03 OF S-33 SHEETS	

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	434
		CONTRACT NO. 62U72		
		ILLINOIS	FED. AID PROJECT	

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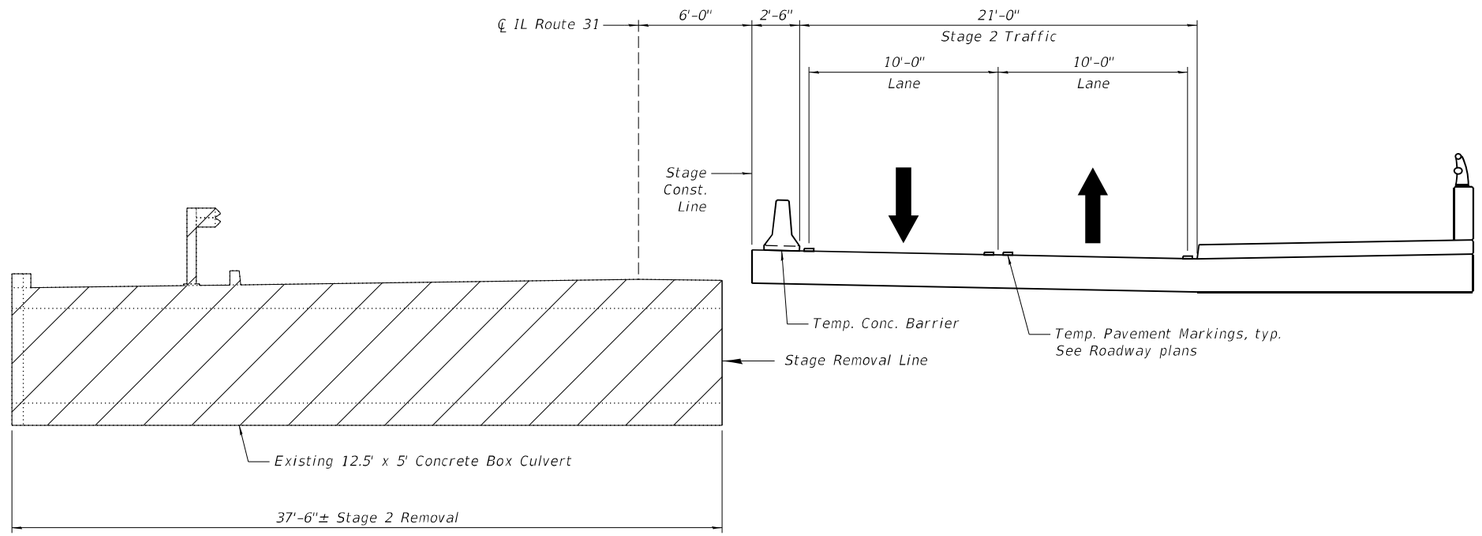
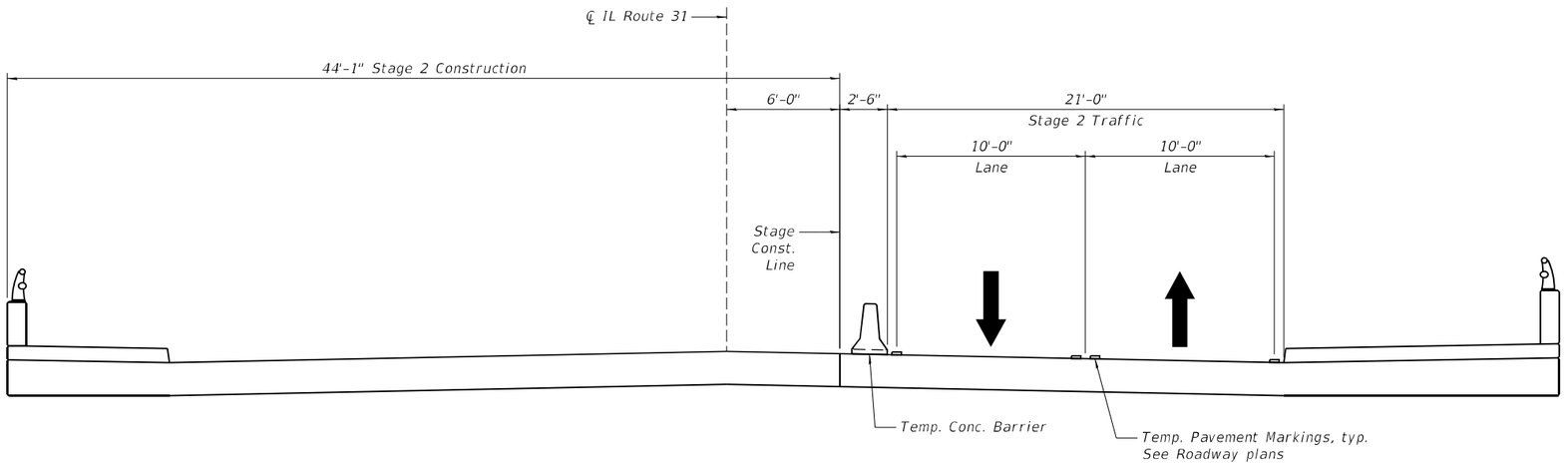
LEGEND

Removal of Existing Structure



STAGE 2 REMOVAL



STAGE 2 CONSTRUCTION

NOTE:

See Roadway Plans for quantity of Temporary Concrete Barrier.

PATRICK a KCI company	USER NAME = BP003	DESIGNED - KP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE CONSTRUCTION DETAILS 2 STRUCTURE NO. 056–0111
		CHECKED - LFB	REVISED -		
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	PLOT DATE = 1/23/2026	CHECKED - LFB	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	435
		CONTRACT NO. 62U72		
		ILLINOIS	FED. AID PROJECT	

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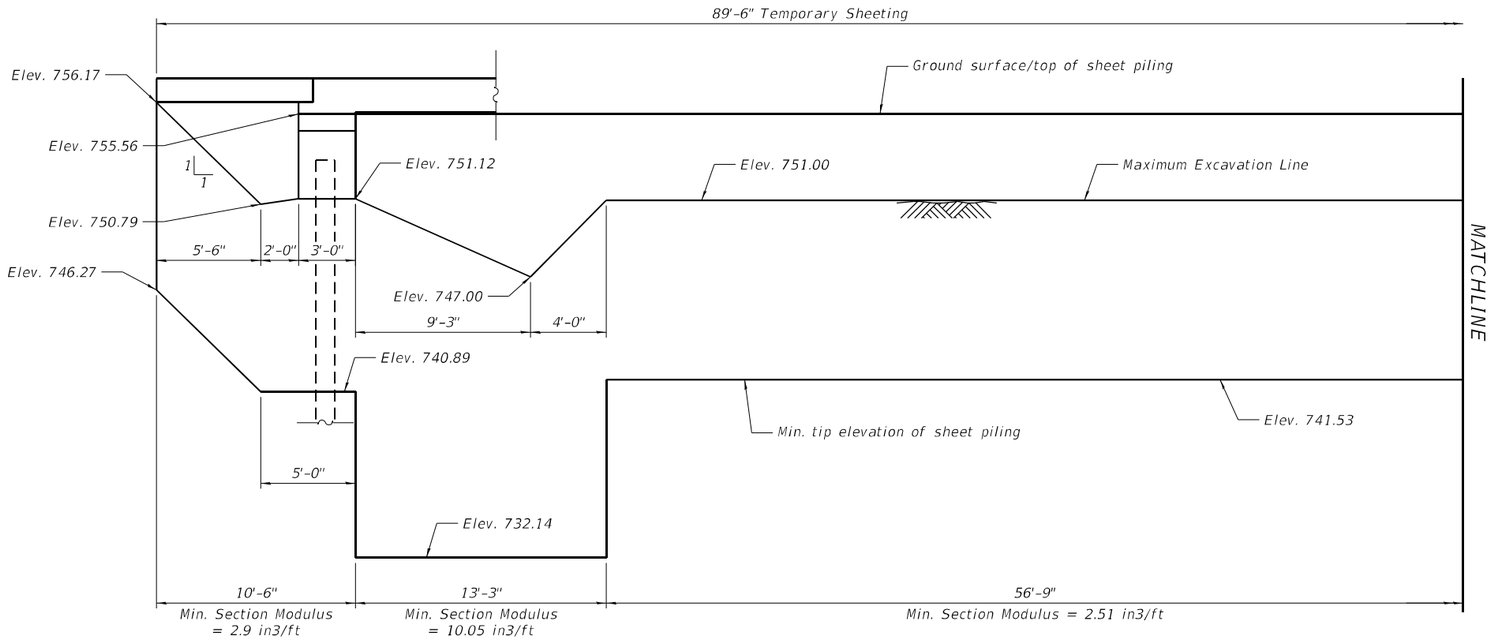

TEMPORARY SHEET PILING

NOTES:

1. If the contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plan, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.

TEMPORARY SHEET PILING

USER NAME = BP003	DESIGNED - KP/SP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TEMPORARY SHEET PILING STRUCTURE NO. 056–0111	
	CHECKED - LFB	REVISED -			
PLOT SCALE = 8.000000 ' / in.	DRAWN - BMP	REVISED -			
PLOT DATE = 1/23/2026	CHECKED - LFB	REVISED -		SHEET S-05 OF S-33 SHEETS	

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	436
		CONTRACT NO.	62U72	
		ILLINOIS	FED. AID PROJECT	

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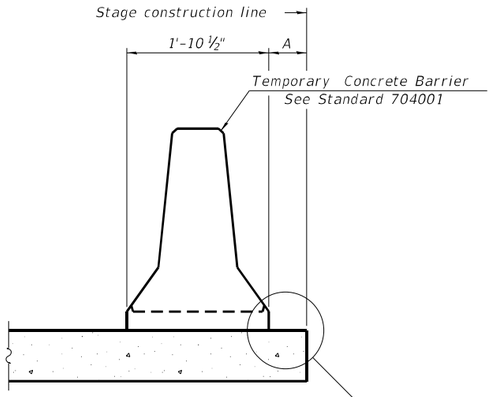
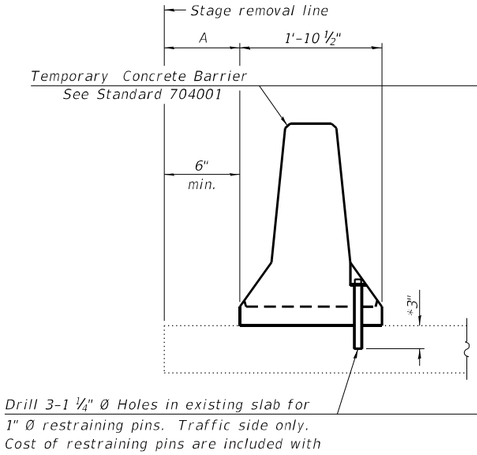


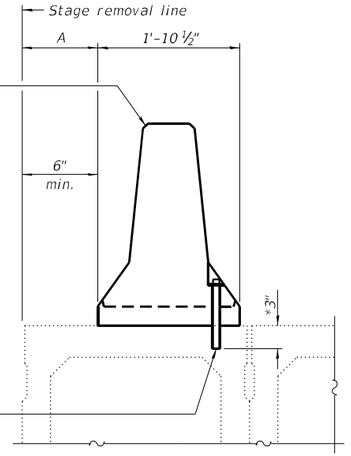
When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM



Drill 3-1 ¼" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

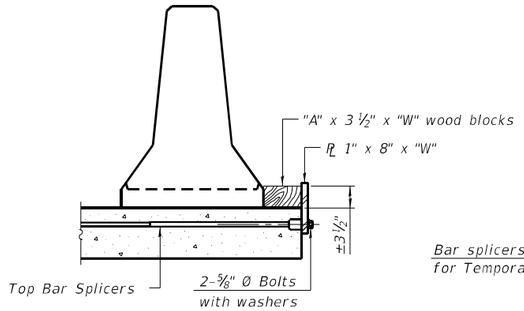
EXISTING SLAB



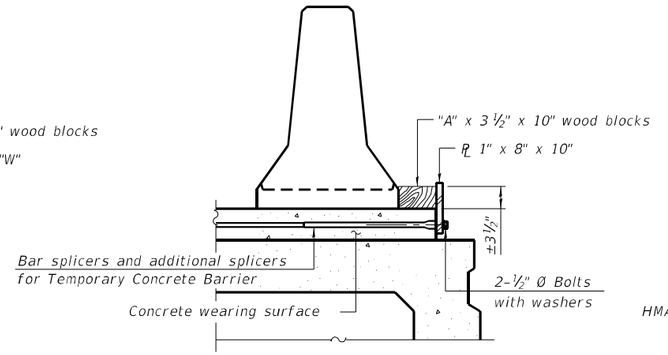
* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

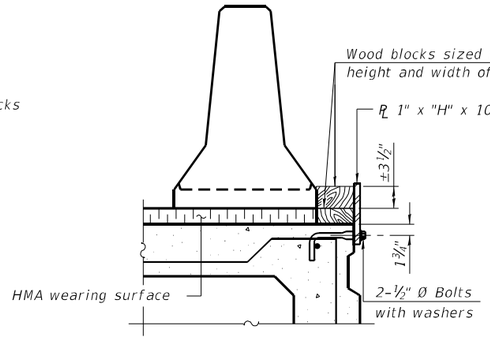
SECTIONS THRU SLAB OR DECK BEAM



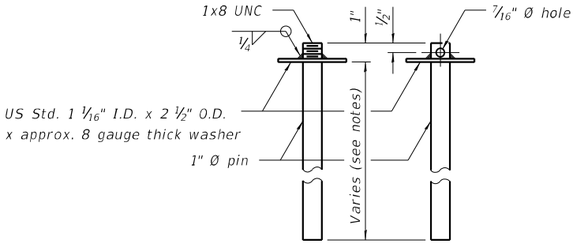
DETAIL I



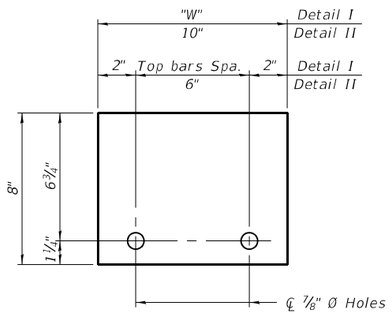
DETAIL II



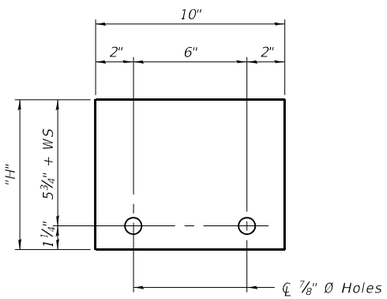
DETAIL III



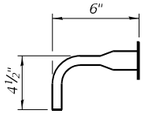
RESTRAINING PIN



STEEL RETAINER PL 1" x 8" x "W"
(Detail I and II)



STEEL RETAINER PL 1" x "H" x 10"
(Detail III)



BAR SPLICER FOR #4 BAR - DETAIL III

Notes:

Cost of retainer assembly is included with Temporary Concrete Barrier.

A retainer assembly shall be located at the approximate ℄ of each temporary concrete barrier.

The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.

When the 'A' dimension is less than 1½", the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

Detail I - Installation for a new bridge deck or bridge slab.

Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.

Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present. The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the side of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6" apart, shall be placed at 6'-0" centers along the length of the beam. The cost of the bar splicers is included with the deck beam.

RAILING CRITERIA

NCHRP 350 Test Level	3
Railing Weight (plf)	440

R-27

5-15-2023

USER NAME = BP003	DESIGNED - KP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TEMPORARY CONCRETE BARRIER STRUCTURE NO. 056-0111 SHEET S-06 OF S-33 SHEETS	F.A.P. RTE. 336A; SECTION FAP 336 23 RECON NORTH; COUNTY McHENRY; TOTAL SHEETS 575; SHEET NO. 437; CONTRACT NO. 62U72; ILLINOIS FED. AID PROJECT
	CHECKED - LFB	REVISED -			
PLOT SCALE = 0:2 ':' / in.	DRAWN - BMP	REVISED -			
PLOT DATE = 1/23/2026	CHECKED - LFB	REVISED -			

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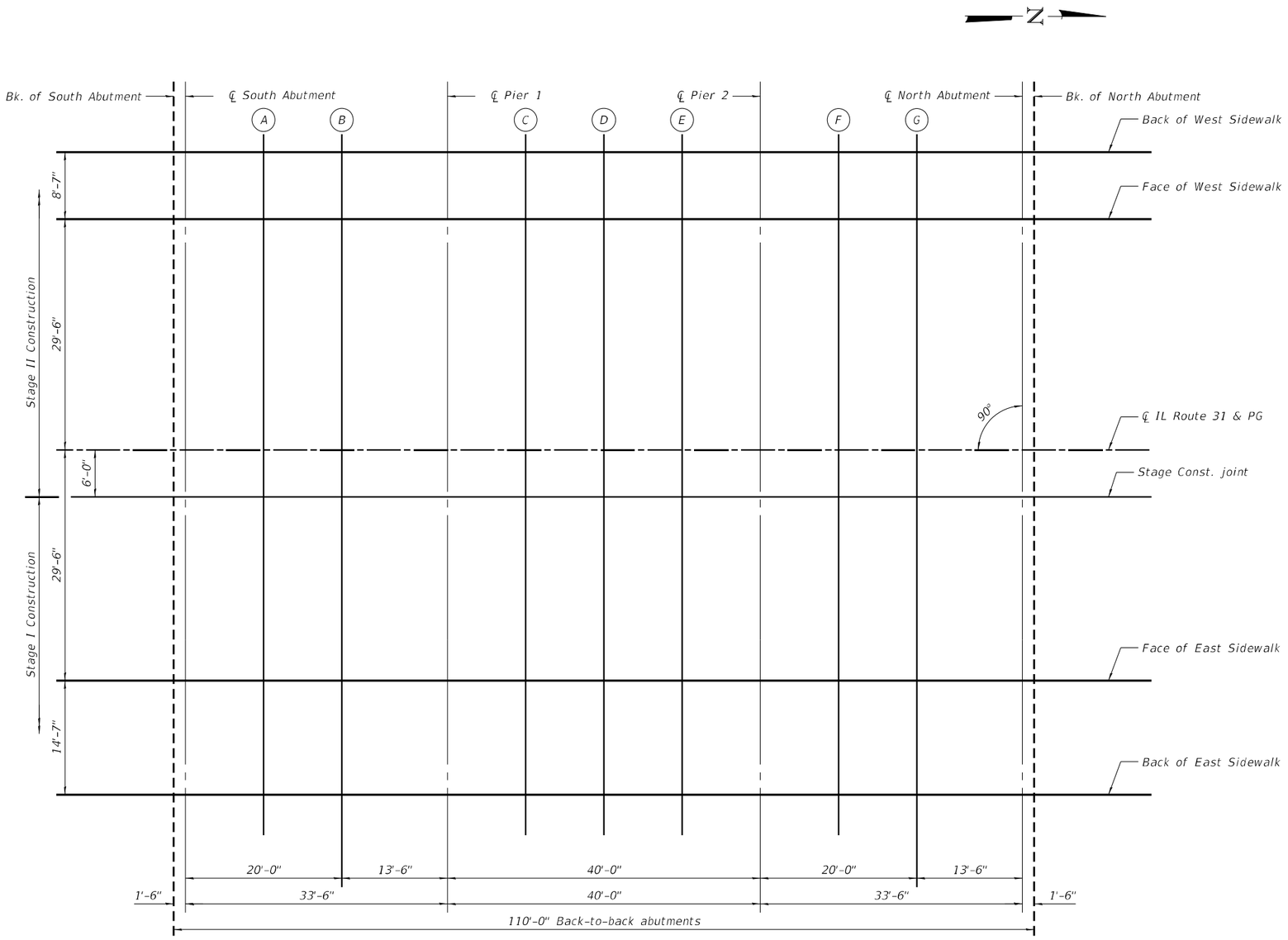

PLAN

PATRICK a STRAND company	USER NAME = BP003	DESIGNED - KP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TOP OF SLAB ELEVATIONS PLAN STRUCTURE NO. 056–0111
		CHECKED - LFB	REVISED -		
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	PLOT DATE = 1/23/2026	CHECKED - LFB	REVISED -		

F.A. P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	438
		CONTRACT NO.	62U72	
	ILLINOIS	FED. AID PROJECT		

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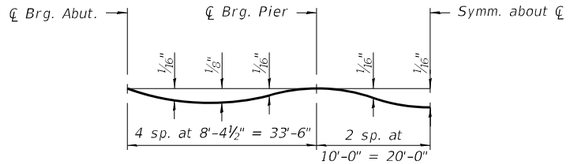

DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below.

BACK OF WEST SIDEWALK

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	443+57.00	-38.08	756.93	756.93
CL Brg. S. Abut.	443+58.50	-38.08	756.93	756.93
A	443+68.50	-38.08	756.87	756.88
B	443+78.50	-38.08	756.82	756.83
CL Pier 1	443+92.00	-38.08	756.75	756.75
C	444+02.00	-38.08	756.70	756.71
D	444+12.00	-38.08	756.65	756.66
E	444+22.00	-38.08	756.60	756.60
CL Pier 2	444+32.00	-38.08	756.55	756.55
F	444+42.00	-38.08	756.50	756.50
G	444+52.00	-38.08	756.44	756.45
CL Brg. N. Abut.	444+65.50	-38.08	756.38	756.38
Bk. N. Abut.	444+67.00	-38.08	756.37	756.37

FRONT OF WEST SIDEWALK

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	443+57.00	-29.50	756.79	756.79
CL Brg. S. Abut.	443+58.50	-29.50	756.78	756.78
A	443+68.50	-29.50	756.73	756.74
B	443+78.50	-29.50	756.68	756.68
CL Pier 1	443+92.00	-29.50	756.61	756.61
C	444+02.00	-29.50	756.56	756.56
D	444+12.00	-29.50	756.50	756.51
E	444+22.00	-29.50	756.45	756.46
CL Pier 2	444+32.00	-29.50	756.40	756.40
F	444+42.00	-29.50	756.35	756.36
G	444+52.00	-29.50	756.30	756.31
CL Brg. N. Abut.	444+65.50	-29.50	756.23	756.23
Bk. N. Abut.	444+67.00	-29.50	756.22	756.22

PROFILE GRADE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	443+57.00	0.00	757.38	757.38
CL Brg. S. Abut.	443+58.50	0.00	757.37	757.37
A	443+68.50	0.00	757.32	757.33
B	443+78.50	0.00	757.27	757.27
CL Pier 1	443+92.00	0.00	757.20	757.20
C	444+02.00	0.00	757.15	757.15
D	444+12.00	0.00	757.09	757.10
E	444+22.00	0.00	757.04	757.05
CL Pier 2	444+32.00	0.00	756.99	756.99
F	444+42.00	0.00	756.94	756.95
G	444+52.00	0.00	756.89	756.90
CL Brg. N. Abut.	444+65.50	0.00	756.82	756.82
Bk. N. Abut.	444+67.00	0.00	756.81	756.81

STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	443+57.00	6.00	757.26	757.26
CL Brg. S. Abut.	443+58.50	6.00	757.25	757.25
A	443+68.50	6.00	757.20	757.21
B	443+78.50	6.00	757.15	757.15
CL Pier 1	443+92.00	6.00	757.08	757.08
C	444+02.00	6.00	757.03	757.03
D	444+12.00	6.00	756.97	756.98
E	444+22.00	6.00	756.92	756.93
CL Pier 2	444+32.00	6.00	756.87	756.87
F	444+42.00	6.00	756.82	756.83
G	444+52.00	6.00	756.77	756.78
CL Brg. N. Abut.	444+65.50	6.00	756.70	756.70
Bk. N. Abut.	444+67.00	6.00	756.69	756.69

FRONT OF EAST SIDEWALK

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	443+57.00	29.50	756.79	756.79
CL Brg. S. Abut.	443+58.50	29.50	756.78	756.78
A	443+68.50	29.50	756.73	756.74
B	443+78.50	29.50	756.68	756.68
CL Pier 1	443+92.00	29.50	756.61	756.61
C	444+02.00	29.50	756.56	756.56
D	444+12.00	29.50	756.50	756.51
E	444+22.00	29.50	756.45	756.46
CL Pier 2	444+32.00	29.50	756.40	756.40
F	444+42.00	29.50	756.35	756.36
G	444+52.00	29.50	756.30	756.31
CL Brg. N. Abut.	444+65.50	29.50	756.23	756.23
Bk. N. Abut.	444+67.00	29.50	756.22	756.22

BACK OF EAST SIDEWALK

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	443+57.00	44.08	757.04	757.04
CL Brg. S. Abut.	443+58.50	44.08	757.03	757.03
A	443+68.50	44.08	756.98	756.98
B	443+78.50	44.08	756.93	756.93
CL Pier 1	443+92.00	44.08	756.86	756.86
C	444+02.00	44.08	756.80	756.81
D	444+12.00	44.08	756.75	756.76
E	444+22.00	44.08	756.70	756.71
CL Pier 2	444+32.00	44.08	756.65	756.65
F	444+42.00	44.08	756.60	756.60
G	444+52.00	44.08	756.55	756.56
CL Brg. N. Abut.	444+65.50	44.08	756.48	756.48
Bk. N. Abut.	444+67.00	44.08	756.47	756.47

E-S

5-15-2023

USER NAME = BP003		DESIGNED - KP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TOP OF SLAB ELEVATIONS STRUCTURE NO. 056-0111
		CHECKED - LFB	REVISED -		
PLOT SCALE = 0:2 ':" / in.		DRAWN - BMP	REVISED -		SHEET S-08 OF S-33 SHEETS
PLOT DATE = 1/23/2026		CHECKED - LFB	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	439
		CONTRACT NO.	62U72	
		ILLINOIS	FED. AID PROJECT	

MODEL: Default
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BACK OF WEST SIDEWALK

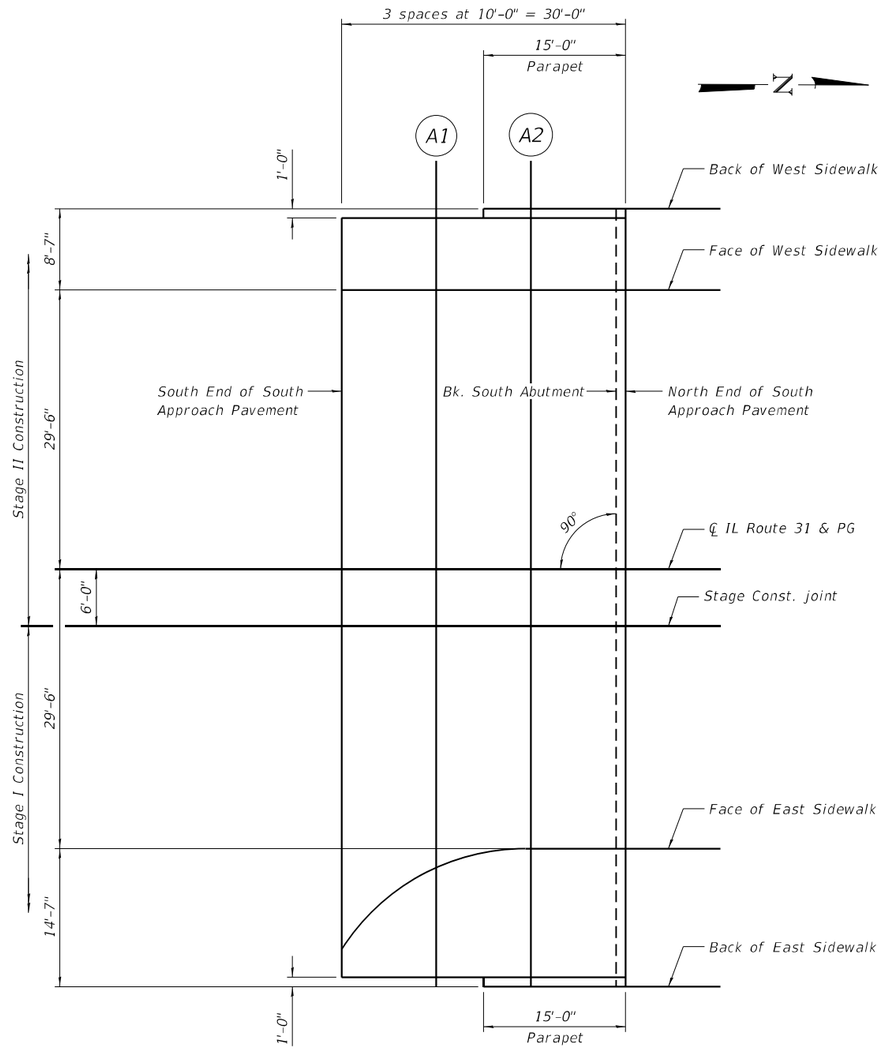
Location	Station	Offset	Theoretical Grade Elevations
S. End of South Appr. Slab	443+28.00	-37.08	757.07
A1	443+38.00	-37.08	757.02
A2	443+48.00	-38.08	756.98
N. End of South Appr. Slab	443+58.00	-38.08	756.93

FRONT OF WEST SIDEWALK

Location	Station	Offset	Theoretical Grade Elevations
S. End of South Appr. Slab	443+28.00	-29.50	756.94
A1	443+38.00	-29.50	756.89
A2	443+48.00	-29.50	756.83
N. End of South Appr. Slab	443+58.00	-29.50	756.78

PROFILE GRADE

Location	Station	Offset	Theoretical Grade Elevations
S. End of South Appr. Slab	443+28.00	0.00	757.53
A1	443+38.00	0.00	757.48
A2	443+48.00	0.00	757.42
N. End of South Appr. Slab	443+58.00	0.00	757.37



PLAN

STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations
S. End of South Appr. Slab	443+28.00	6.00	757.41
A1	443+38.00	6.00	757.36
A2	443+48.00	6.00	757.30
N. End of South Appr. Slab	443+58.00	6.00	757.25

FRONT OF EAST SIDEWALK

Location	Station	Offset	Theoretical Grade Elevations
S. End of South Appr. Slab	443+28.00	29.50	756.94
A1	443+38.00	29.50	756.89
A2	443+48.00	29.50	756.83
N. End of South Appr. Slab	443+58.00	29.50	756.78

BACK OF EAST SIDEWALK

Location	Station	Offset	Theoretical Grade Elevations
S. End of South Appr. Slab	443+28.00	43.08	757.17
A1	443+38.00	43.08	757.12
A2	443+48.00	44.08	757.08
N. End of South Appr. Slab	443+58.00	44.08	757.03

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USER NAME = BP003		DESIGNED - KP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TOP OF SOUTH APPROACH SLAB ELEVATIONS STRUCTURE NO. 056-0111
		CHECKED - LFB	REVISED -		
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PLOT DATE = 1/23/2026		CHECKED - LFB	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	440
		CONTRACT NO. 62U72		
		ILLINOIS	FED. AID PROJECT	

BACK OF WEST SIDEWALK

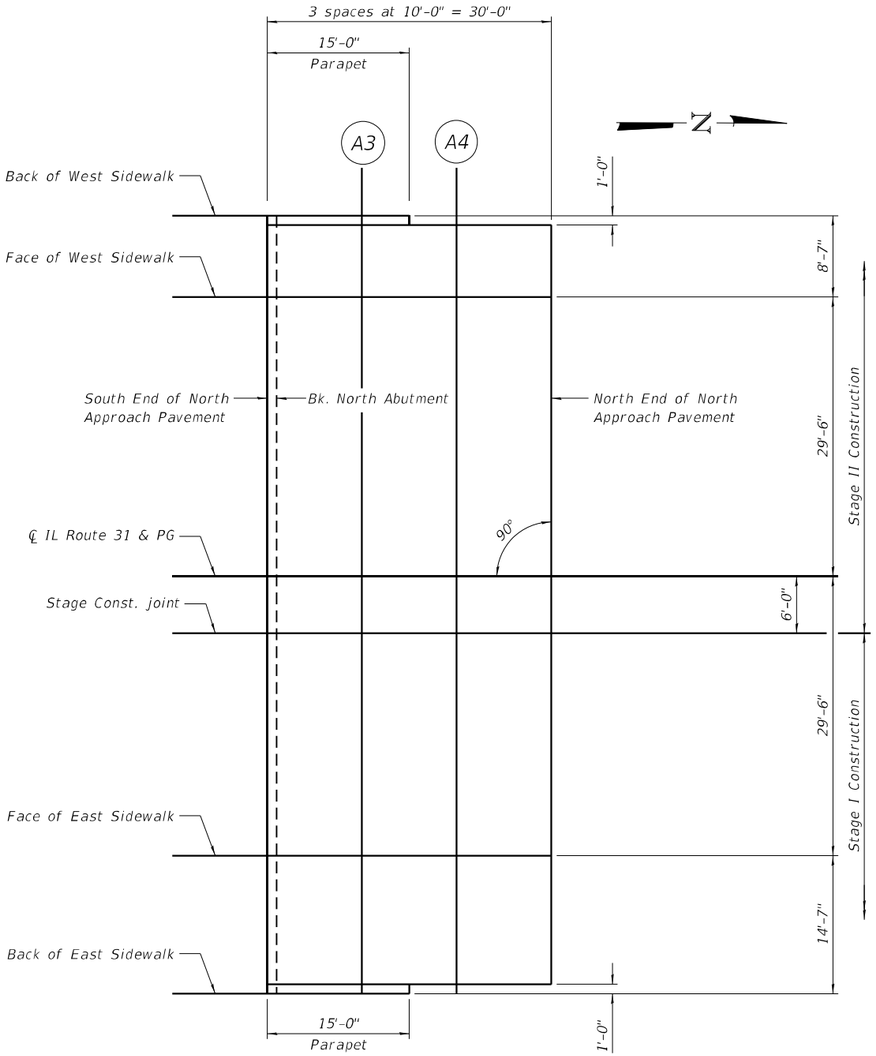
Location	Station	Offset	Theoretical Grade Elevations
S. End of North Appr. Slab	444+66.00	-38.08	756.37
A3	444+76.00	-38.08	756.32
A4	444+86.00	-37.08	756.25
N. End of North Appr. Slab	444+96.00	-37.08	756.20

FRONT OF WEST SIDEWALK

Location	Station	Offset	Theoretical Grade Elevations
S. End of North Appr. Slab	444+66.00	-29.50	756.23
A3	444+76.00	-29.50	756.18
A4	444+86.00	-29.50	756.12
N. End of North Appr. Slab	444+96.00	-29.50	756.07

PROFILE GRADE

Location	Station	Offset	Theoretical Grade Elevations
S. End of North Appr. Slab	444+66.00	0.00	756.82
A3	444+76.00	0.00	756.77
A4	444+86.00	0.00	756.71
N. End of North Appr. Slab	444+96.00	0.00	756.66



PLAN

STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations
S. End of North Appr. Slab	444+66.00	6.00	756.70
A3	444+76.00	6.00	756.65
A4	444+86.00	6.00	756.59
N. End of North Appr. Slab	444+96.00	6.00	756.54

FRONT OF EAST SIDEWALK

Location	Station	Offset	Theoretical Grade Elevations
S. End of North Appr. Slab	444+66.00	29.50	756.23
A3	444+76.00	29.50	756.18
A4	444+86.00	29.50	756.12
N. End of North Appr. Slab	444+96.00	29.50	756.07

BACK OF EAST SIDEWALK

Location	Station	Offset	Theoretical Grade Elevations
S. End of North Appr. Slab	444+66.00	44.08	756.47
A3	444+76.00	44.08	756.42
A4	444+86.00	43.08	756.35
N. End of North Appr. Slab	444+96.00	43.08	756.30

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		CHECKED - LFB	REVISED -		
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	441
		CONTRACT NO. 62U72		
		ILLINOIS	FED. AID PROJECT	

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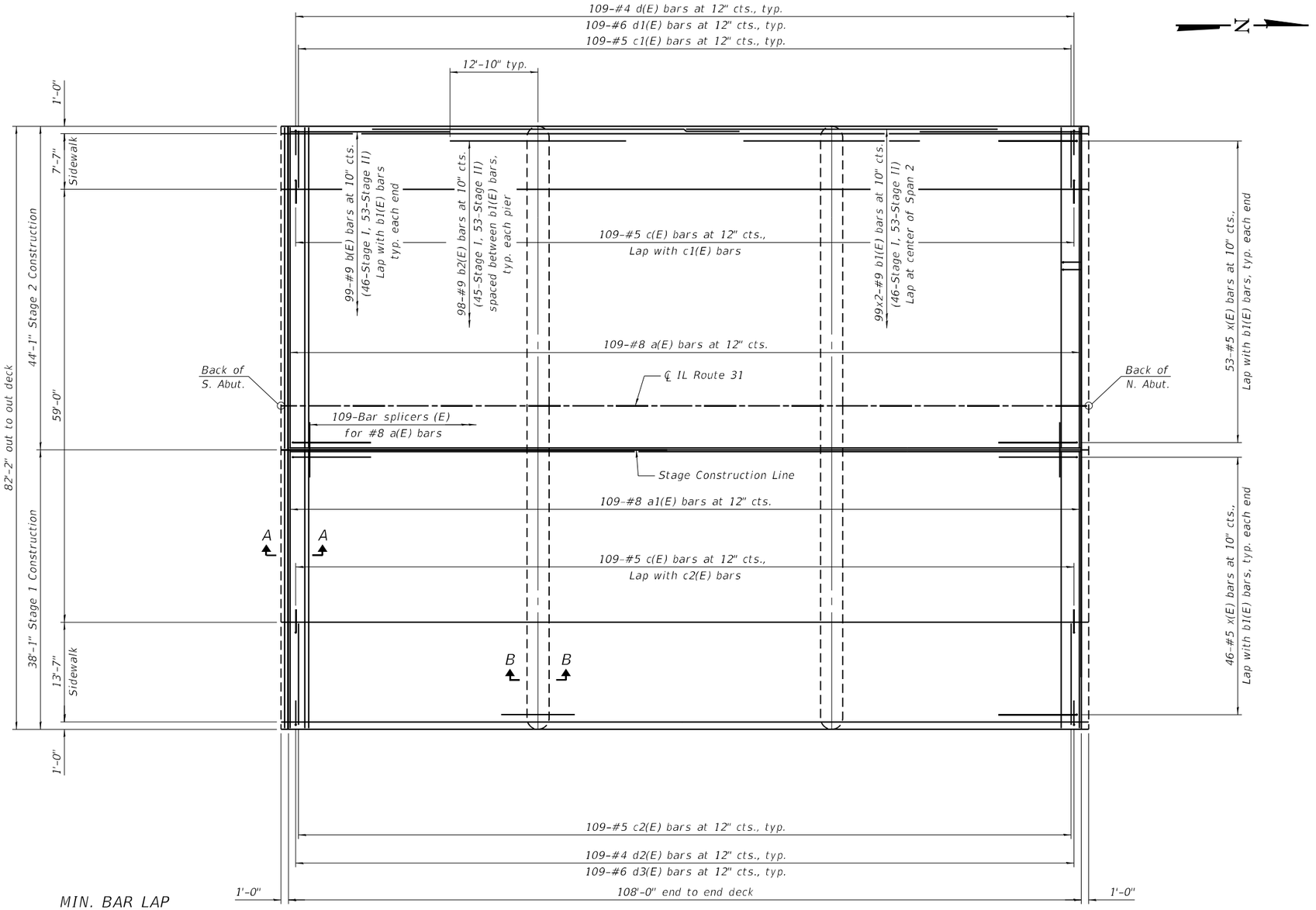
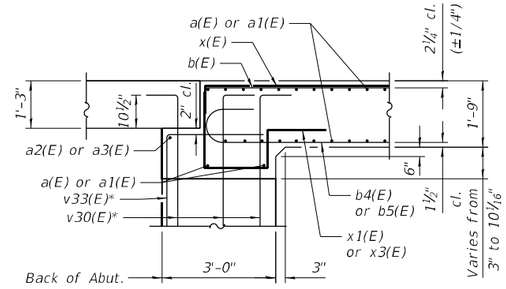


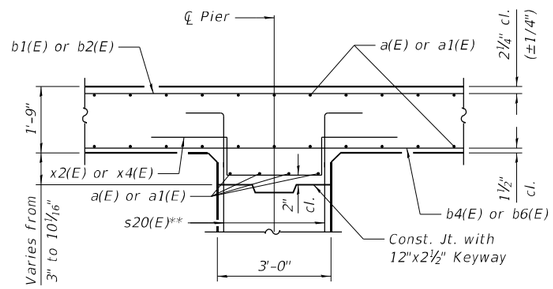
PLAN
(Showing Top Reinforcement)

MIN. BAR LAP

#4 Bar = 2'–0"
#5 Bar = 3'–5"
#8 Bar = 6'–5"
#9 Bar = 7'–3"



SECTION A–A
(* see sheet S–20 of S–33 for abutment bar details)



SECTION B–B
(** see sheet S–21 of S–33 for pier bar details)

NOTES:

1. Bars indicated thus 20 x 3–#5 etc. indicates 20 lines of bars with 3 lengths per line.

2. See Section Thru Sidewalk on sheet S–13 of S–33 for longitudinal reinforcement in sidewalk.

PATRICK a KCI company	USER NAME = BP003	DESIGNED - KP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE 1 STRUCTURE NO. 056–0111 SHEET S-11 OF S-33 SHEETS
		CHECKED - LFB	REVISED -		
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336A	FAP 336 23 RECON NORTH	McHENRY	575	442
		CONTRACT NO.	62U72	
		ILLINOIS	FED. AID PROJECT	

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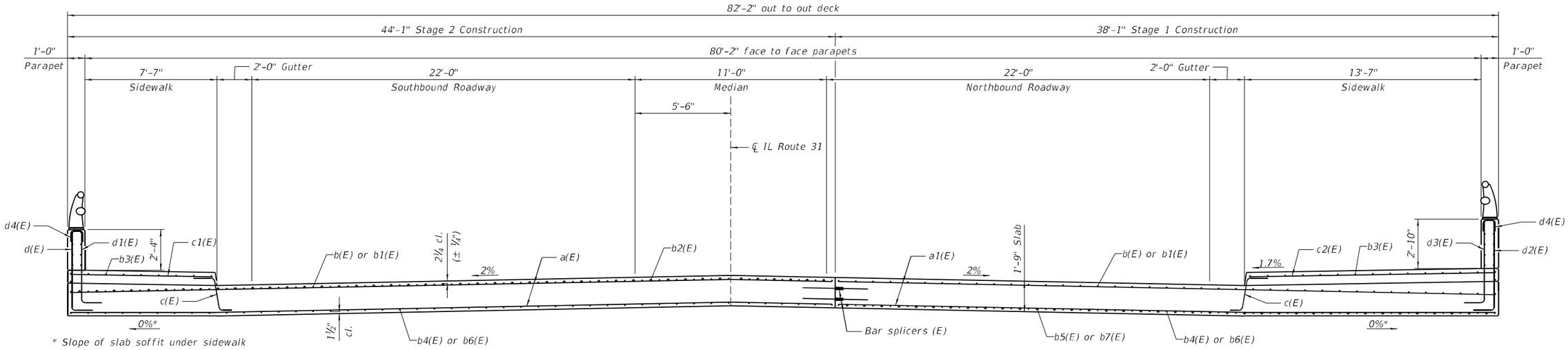
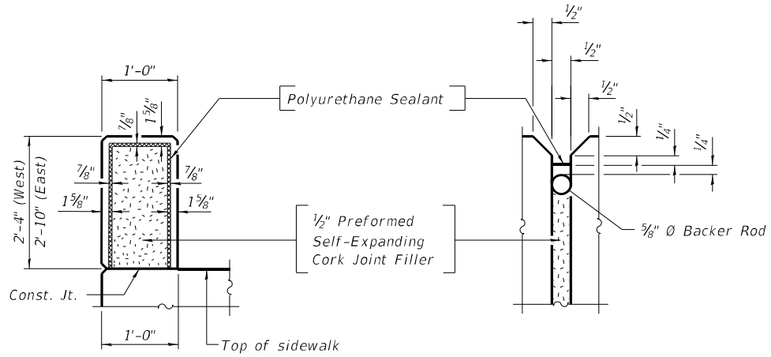
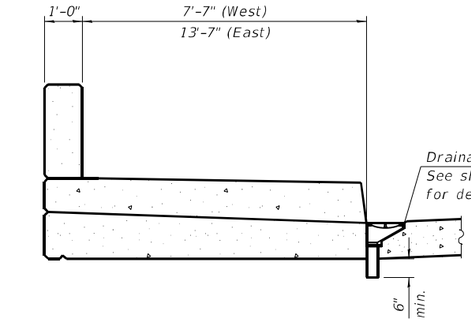


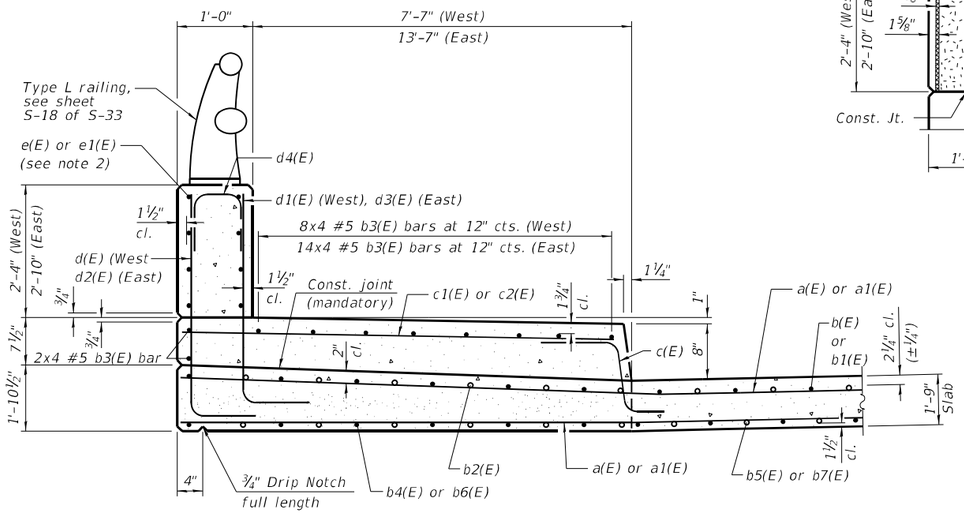
NEAR PIER — CROSS SECTION (Looking North) — NEAR MIDSPAN



PARAPET JOINT DETAILS



SECTION A-A



SECTION THRU SIDEWALK

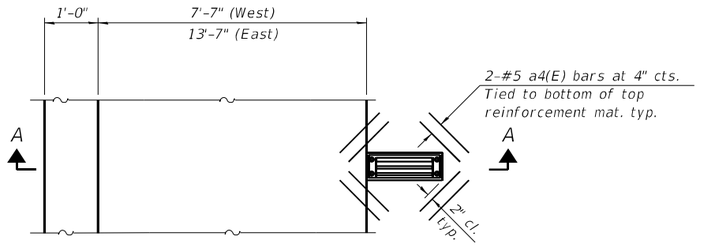
Note:
1. Cut longitudinal reinforcement to clear drainage scuppers.

2. 5 sets of 2 e(E) bars shall be used in the East barrier and 14 b2(E) bars shall be used in the East sidewalk

3. An 11"-dia. block-out shall be provided in the bottom of the slab for the connection of the downspout to the scupper.

4. The exterior surfaces of the scuppers shall be painted according to Article 506 with the finish coat as specified. the exterior surfaces of the drains shall be cleaned according to the Society of Protective Coating's Spec. SSPC-SP1 prior to painting.

5. The top portion of aluminum floor drains shall be coated to minimize reaction with wet concrete.



PLAN

Notes:
The Polyurethane Sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.

USER NAME = BP003	DESIGNED - KP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE DETAILS 1 STRUCTURE NO. 056-0111	SHEET S-13 OF S-33 SHEETS
	CHECKED - LFB	REVISED -			
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PLOT DATE = 3/16/2026	CHECKED - LFB	REVISED -			

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	443
		CONTRACT NO.	62U72	
		ILLINOIS	FED. AID PROJECT	

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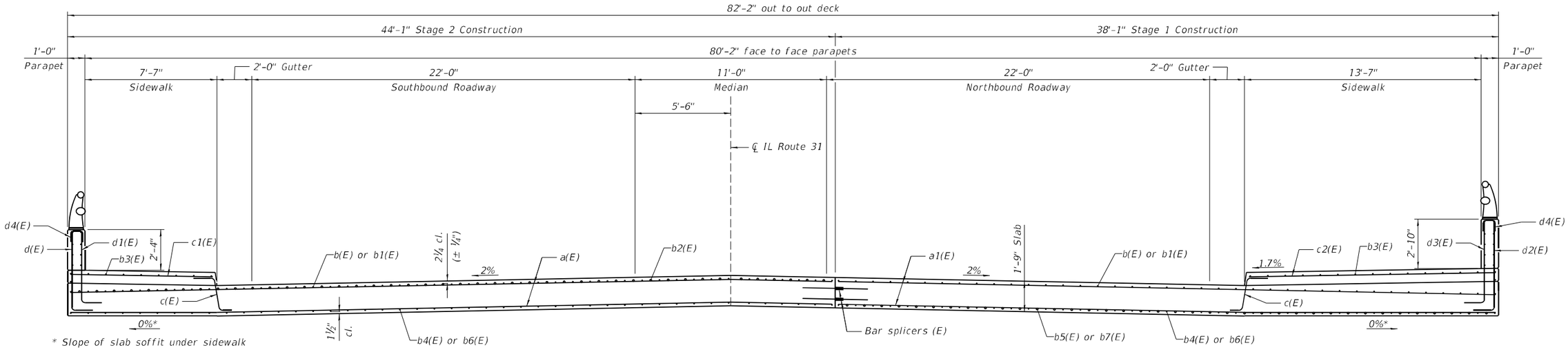
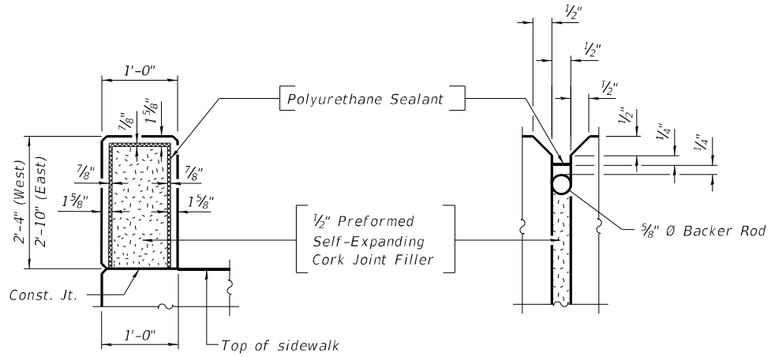
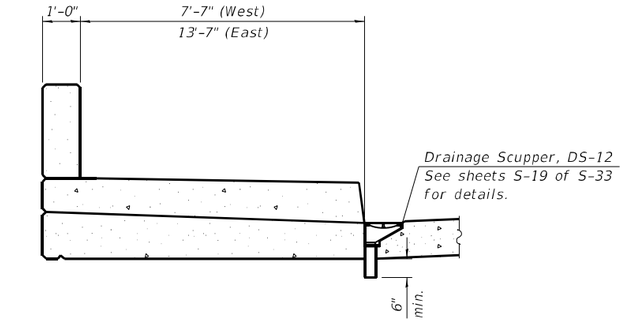


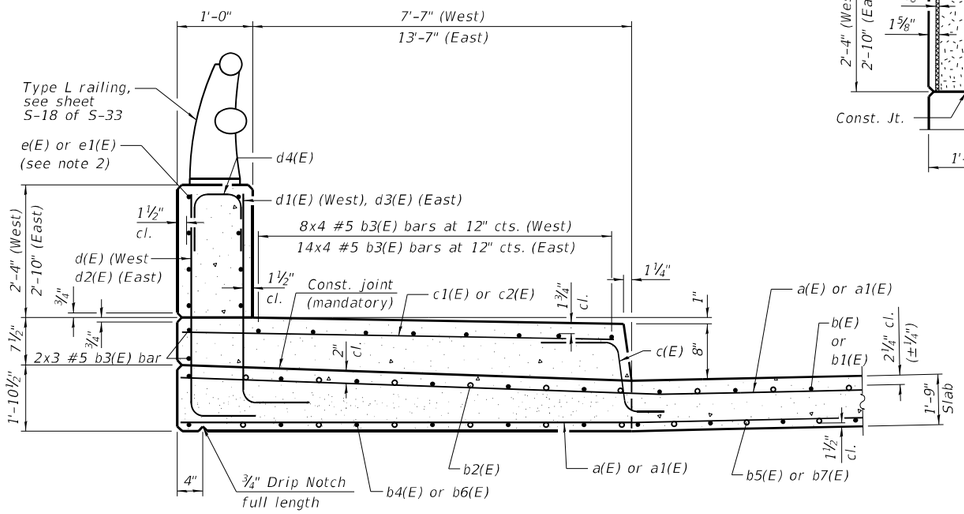
NEAR PIER — CROSS SECTION (Looking North) — NEAR MIDSPAN



PARAPET JOINT DETAILS



SECTION A-A



SECTION THRU SIDEWALK

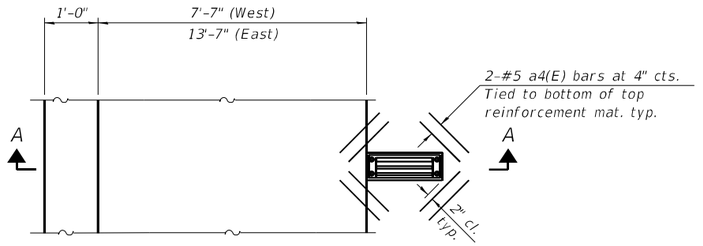
Note:
1. Cut longitudinal reinforcement to clear drainage scuppers.

2. 5 sets of 2 e(E) bars shall be used in the East barrier and 14 b2(E) bars shall be used in the East sidewalk

3. An 11"-dia. block-out shall be provided in the bottom of the slab for the connection of the downspout to the scupper.

4. The exterior surfaces of the scuppers shall be painted according to Article 506 with the finish coat as specified. the exterior surfaces of the drains shall be cleaned according to the Society of Protective Coating's Spec. SSPC-SP1 prior to painting.

5. The top portion of aluminum floor drains shall be coated to minimize reaction with wet concrete.



PLAN

Notes:
The Polyurethane Sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.

USER NAME = BP003	DESIGNED - KP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE DETAILS 1 STRUCTURE NO. 056-0111	SHEET S-13 OF S-33 SHEETS
	CHECKED - LFB	REVISED -			
PLOT SCALE = 8.0000 ' / in.	DRAWN - BMP	REVISED -			
PLOT DATE = 1/23/2026	CHECKED - LFB	REVISED -			

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	444
		CONTRACT NO.	62U72	
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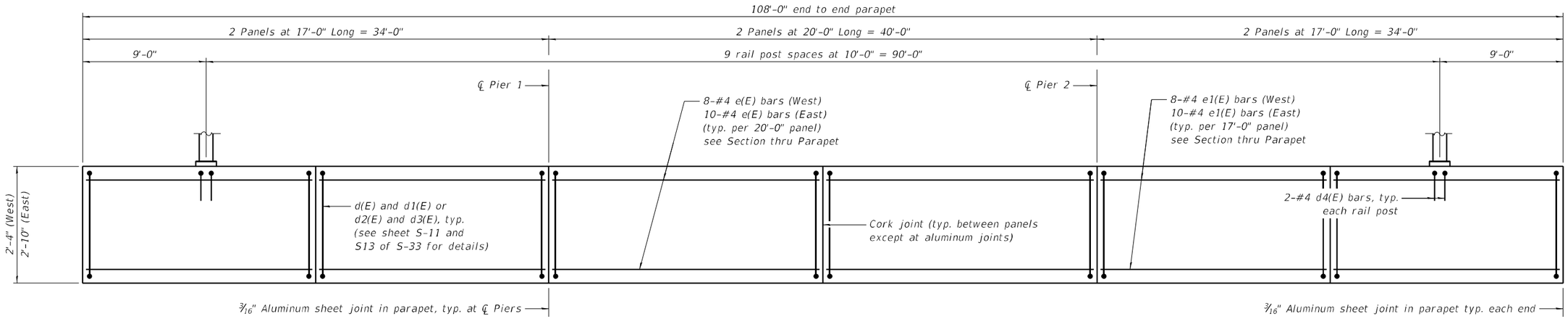


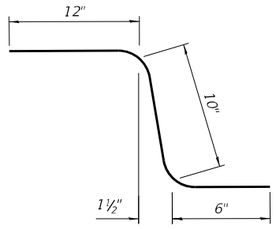
INSIDE ELEVATION OF PARAPET

NOTES:

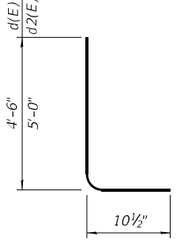
1. *In lieu of bottom leg, c(E) bars may be drilled and set according to Article 509.06 of the Standard Specifications. Drilled holes shall be roughened or scored per maufacturer's recommendations. Maximum depth of drill hole shall not exceed 6".

2. Contractor shall take all necessary precautions to prevent drilled hole interference with deck reinforcement bars. Locate longitudinal bars to miss drilled locations. Locate drilled holes to miss transverse bars in deck.

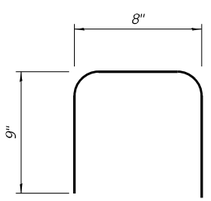
3. The 3/16" min. aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated with 5 mils of either bitumen paint or epoxy paint to minimize reaction with wet concrete. Cost included with Concrete Superstructure.



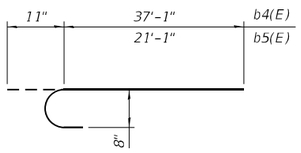
BAR c(E)*



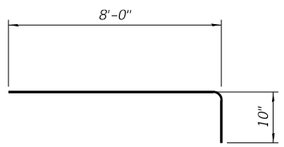
BARS d(E), d1(E), d3(E) and d2(E)



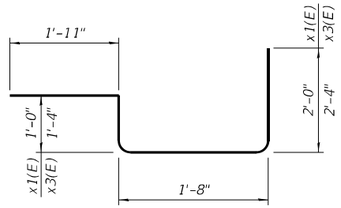
BAR d4(E)



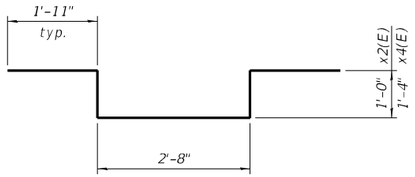
BARS b4(E) and b5(E)



BAR x(E)



BARS x1(E) and x3(E)



BARS x2(E) and x4(E)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	252	#8	43'-9"	———
a1(E)	252	#8	37'-9"	———
a2(E)	4	#4	22'-8"	———
a3(E)	2	#4	37'-9"	———
a4(E)	72	#5	1'-6"	———
b(E)	198	#9	21'-1"	———
b1(E)	198	#9	43'-8"	———
b2(E)	196	#9	25'-8"	———
b3(E)	104	#5	29'-6"	———
b4(E)	198	#8	38'-0"	⊂
b5(E)	196	#8	22'-0"	⊂
b6(E)	99	#8	46'-11"	———
b7(E)	98	#8	24'-0"	———
c(E)	218	#5	2'-4"	⌐
c1(E)	109	#5	8'-3"	———
c2(E)	109	#5	14'-3"	———
d(E)	109	#4	5'-5"	⌊
d1(E)	109	#6	5'-5"	⌊
d2(E)	109	#4	5'-11"	⌊
d3(E)	109	#6	5'-11"	⌊
d4(E)	40	#4	2'-2"	⌴
e(E)	36	#4	19'-8"	———
e1(E)	72	#4	16'-8"	———
x(E)	198	#5	8'-10"	ı
x1(E)	86	#5	6'-7"	⌐¬
x2(E)	86	#5	8'-6"	⌐¬
x3(E)	82	#5	7'-3"	⌐¬
x4(E)	82	#5	9'-2"	⌐¬
Concrete Superstructure		Cu Yd	687.3	
Reinforcement Bars, Epoxy Coated		Pound	180,930	

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PATRICK a KCI company	USER NAME = BP003	DESIGNED - KP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE DETAILS 2 STRUCTURE NO. 056-0111
		CHECKED - LFB	REVISED -		
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	PLOT DATE = 1/23/2026	CHECKED - LFB	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	445
		CONTRACT NO.	62U72	
		ILLINOIS	FED. AID PROJECT	

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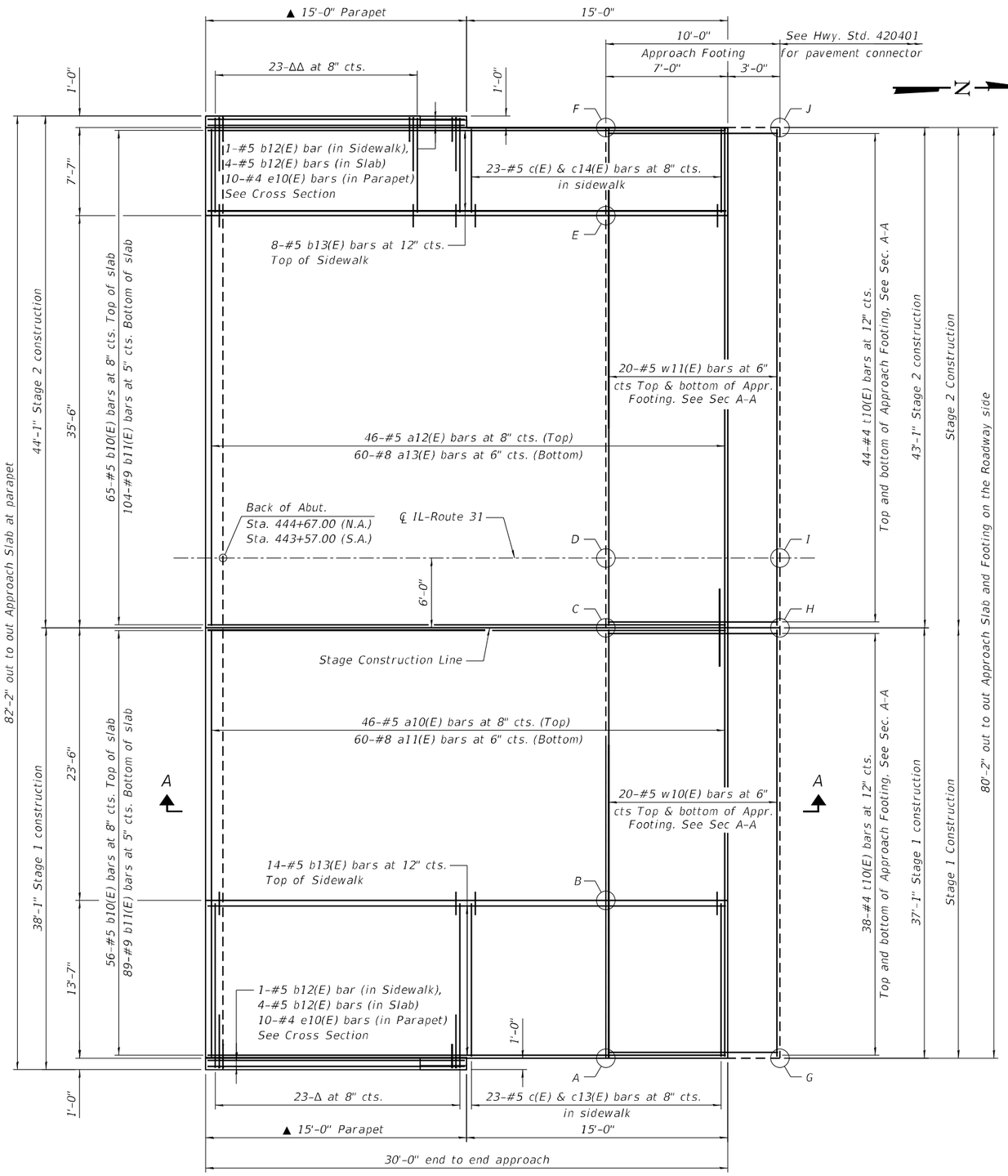


PLAN

North approach slab shown; South approach slab similar by mirror hand with exception of Sidewalk limits, See Detail A

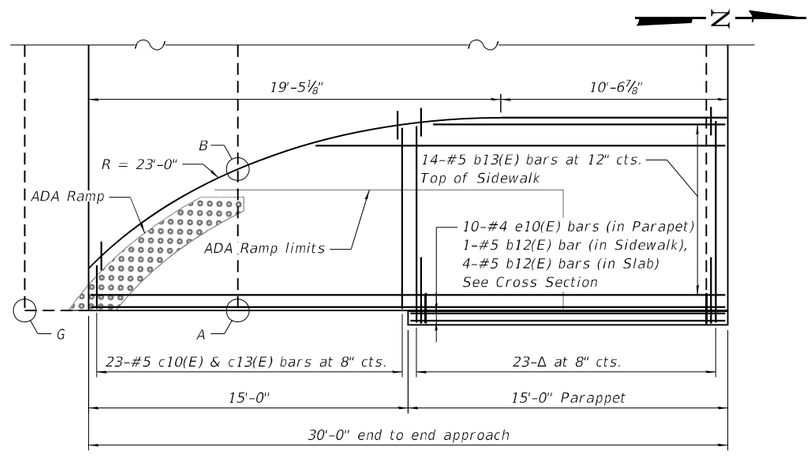
Δ – One set of #5 c(E) & c11(E) bars in sidewalk, and one #5 a14(E) lap with a10(E) See Cross Section

ΔΔ – One set of #5 c(E) & c12(E) bars in sidewalk, and one #5 a14(E) lap with a12(E) See Cross Section

▲ – See sheet S-16 of S-33 for Parapet dimensions and reinforcement details

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

South Approach			North Approach		
Point/ Location	Top	Bottom	Point/ Location	Top	Bottom
A	755.58	754.75	A	754.86	754.02
B	755.58	754.75	B	754.86	754.02
C	756.12	755.29	C	755.33	754.49
D	756.24	755.41	D	755.45	754.61
E	755.65	754.82	E	754.86	754.02
F	755.65	754.82	F	754.86	754.02
G	755.63	754.80	G	754.81	753.97
H	756.17	755.34	H	755.28	754.44
I	756.29	755.46	I	755.40	754.56
J	755.70	754.87	J	754.81	753.97



DETAIL A

Southeast Sidewalk details
Field cut or field bend b13(E) and c13(E) bars as needed to fit Sidewalk Curb and ADA Ramp

USER NAME = BP003	DESIGNED - JH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE APPROACH SLAB DETAILS 1 STRUCTURE NO. 056–0111
	CHECKED - LFB	REVISED -		
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PLOT DATE = 1/23/2026	CHECKED - LFB	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	446
		CONTRACT NO.	62U72	
		ILLINOIS	FED. AID PROJECT	

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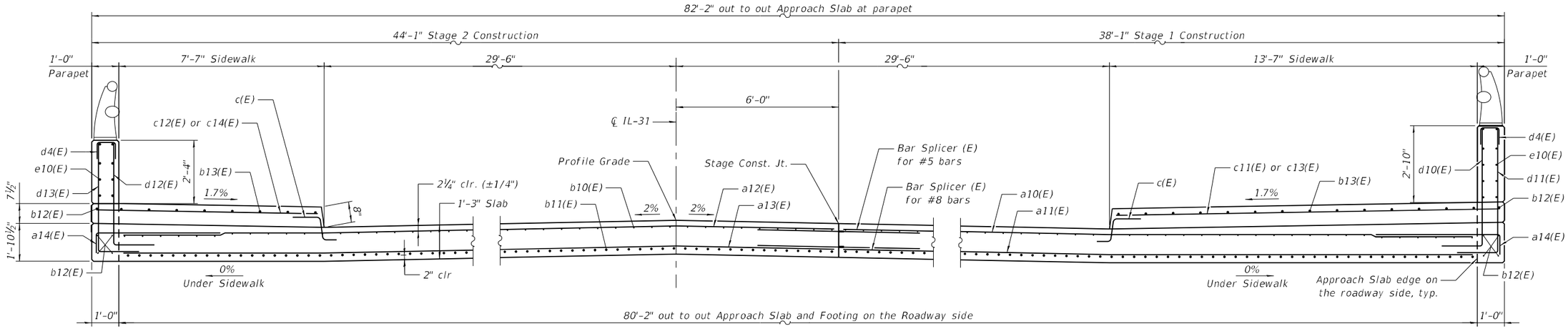
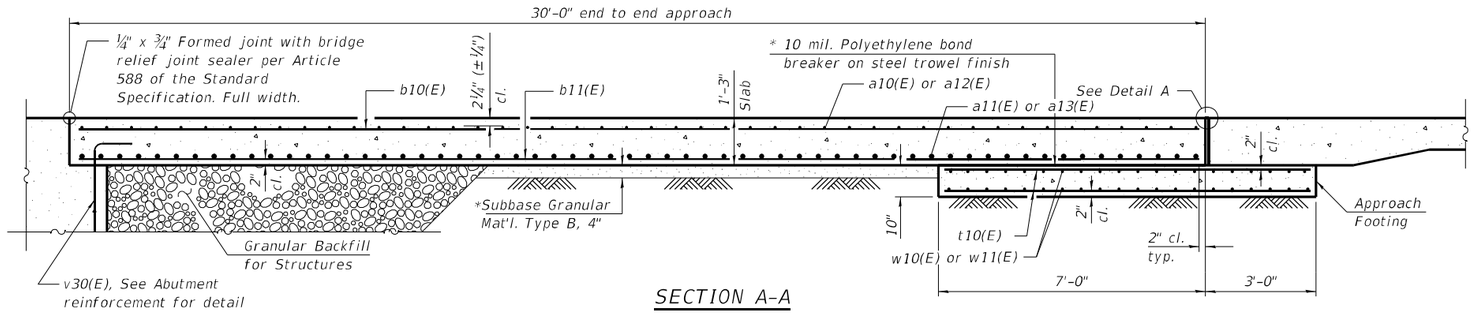


CROSS SECTION

(Looking North)



SECTION A-A

* Cost included with Concrete Superstructure (Approach Slab).

Notes:

The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach slab.

Parapet concrete shall be paid for as Concrete Superstructure.

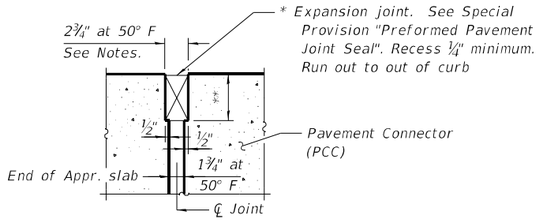
Approach slab shall be paid for as Concrete Superstructure (Approach Slab).

Approach footing concrete shall be paid for as Concrete Structures.

The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

Cost of excavation for approach footing included with Concrete Structures.

For Granular Backfill for Structures and drainage treatment details, see sheet S-02 of S-33.



DETAIL A

* Cost included with Concrete Superstructure (Approach Slab).

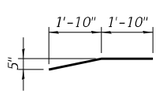
** Per manufacturer recommendations

* In lieu of bottom leg, c(E) bars may be drilled and set according to Article 509.06 of the Standard Specification. Drilled hole shall be roughened or scored per manufacturer's recommendations. Maximum depth of drilled hole shall not exceed 6".

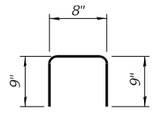
Contractor shall take all necessary precautions to prevent drilled hole interference with approach slab reinforcement bars. Locate longitudinal bars to miss drilled locations. Locate drilled holes to miss transverse bars in approach slab.

TWO APPROACHES BILL OF MATERIAL

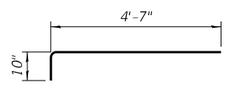
Bar	No.	Size	Length	Shape
a10(E)	92	#5	36'-9"	———
a11(E)	120	#8	36'-9"	———
a12(E)	92	#5	42'-9"	———
a13(E)	120	#8	42'-9"	———
a14(E)	92	#5	5'-5"	⌊
b10(E)	242	#5	29'-8"	———
b11(E)	386	#9	29'-8"	———
b12(E)	20	#5	14'-8"	———
b13(E)	44	#5	29'-8"	———
c(E)	184	#5	2'-4"	⌒
c11(E)	46	#5	14'-2"	———
c12(E)	46	#5	8'-2"	———
c13(E)	46	#5	13'-2"	———
c14(E)	46	#5	7'-2"	———
d4(E)	16	#4	2'-2"	⌴
d10(E)	34	#4	5'-10"	⌊
d11(E)	34	#4	6'-1"	⌊
d12(E)	34	#4	5'-3"	⌊
d13(E)	34	#4	5'-6"	⌊
d14(E)	12	#4	7'-8"	⌊
d15(E)	12	#4	7'-11"	⌊
d16(E)	12	#4	7'-1"	⌊
d17(E)	12	#4	7'-4"	⌊
e10(E)	36	#4	14'-8"	———
e11(E)	16	#4	3'-8"	———
e12(E)	8	#4	3'-9"	⌒
t10(E)	164	#4	9'-8"	———
w10(E)	80	#5	36'-9"	———
w11(E)	80	#5	42'-9"	———
Concrete Structures		Cu Yd	49.5	
Concrete Superstructure		Cu Yd	40.9	
Concrete Superstructure (Approach Slab)		Cu Yd	225.5	
Reinforcement Bars, Epoxy Coated		Pound	93,090	



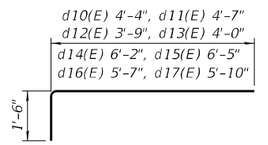
BAR e12(E)



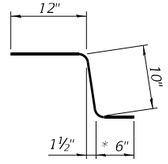
BAR d4(E)



BAR a14(E)



BARS d10(E) thru d13(E)



BAR c(E)

USER NAME = BP003		DESIGNED - JH		REVISED -	
		CHECKED - LFB		REVISED -	
PLOT SCALE = 8:0 ':" / in.		DRAWN - JH/BMP		REVISED -	
PLOT DATE = 1/23/2026		CHECKED - LFB		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS 2
STRUCTURE NO. 056-0111
SHEET S-16 OF S-33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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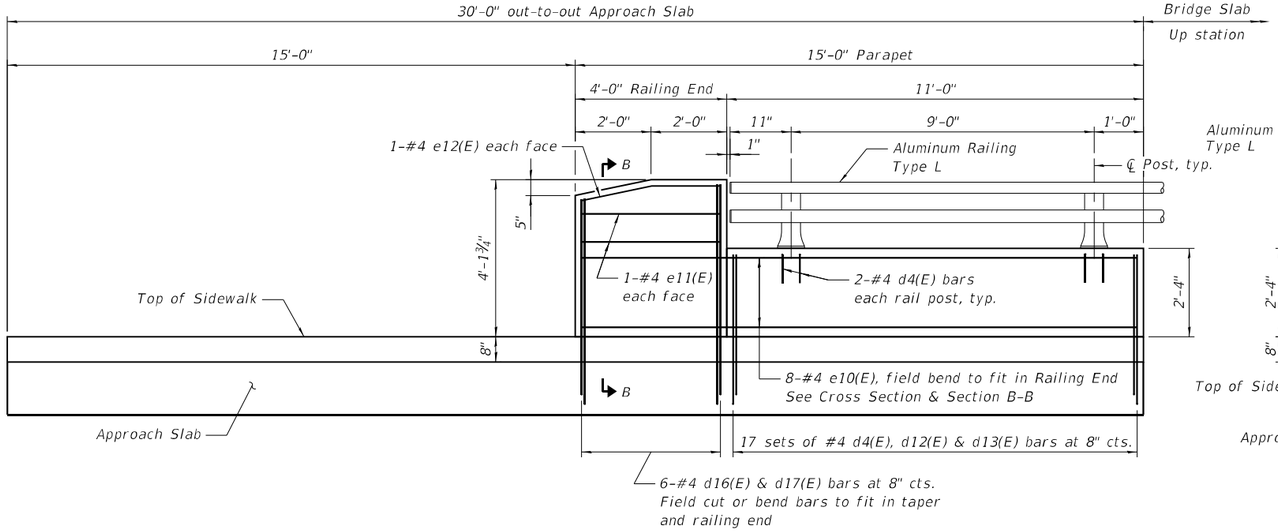
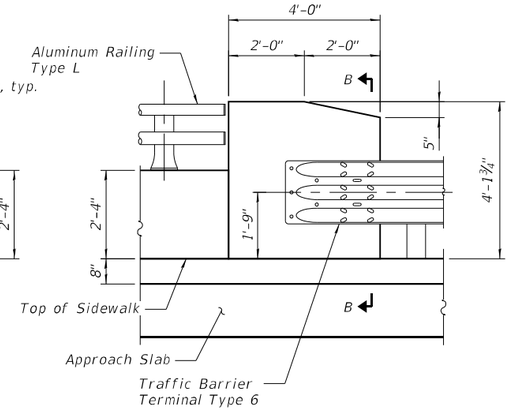
		CONTRACT NO. 62U72		
		ILLINOIS	FED. AID PROJECT	



INSIDE ELEVATION OF WEST PARAPET

(Looking West)

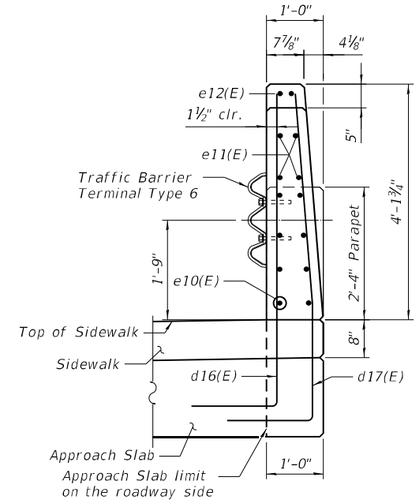
(South parapet shown, North parapet similar by mirror hand)



GUARDRAIL TRANSITION

(Looking West)

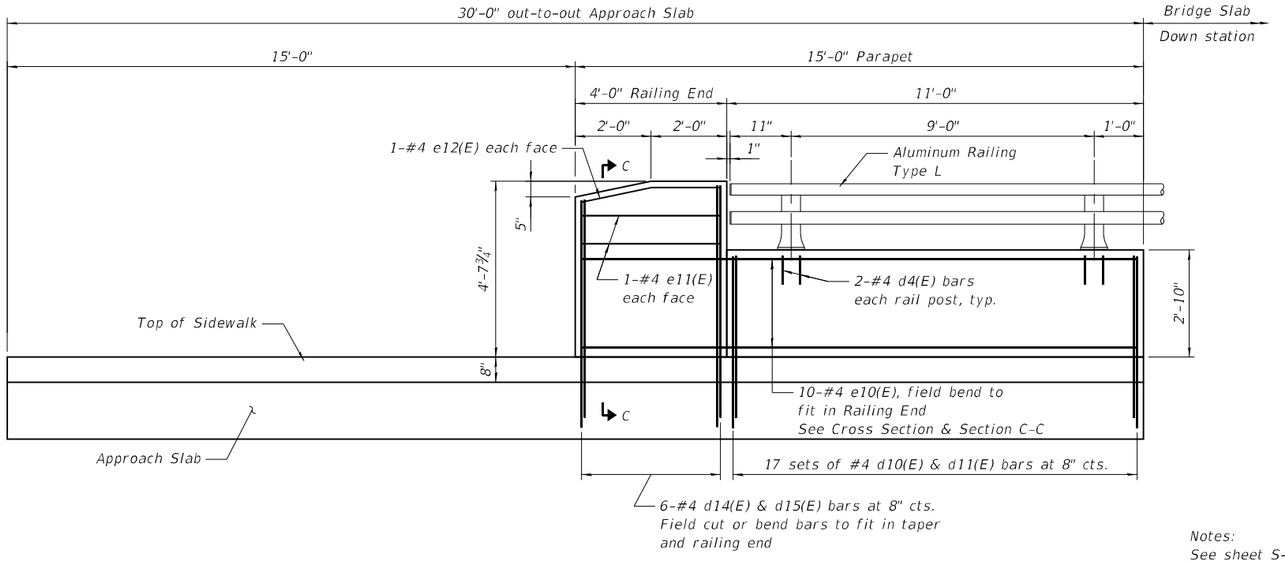
(For Northwest parapet only)



SECTION B-B

(North Railing End Shown)

(Mirror hand for South Railing End w/o Traffic Barrier Terminal)

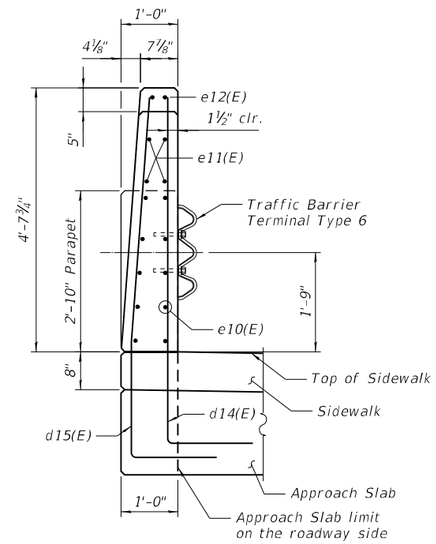


INSIDE ELEVATION OF EAST PARAPET

(Looking East)

(North parapet shown, South parapet similar by mirror hand)

Notes:
See sheet S-15 of S-33 for Approach Slab Plan view.
See sheet S-16 of S-33 for Approach Slab Cross Section.
For railing details, see sheet S-18 of S-33.



SECTION C-C

(Typical for both South and North Railing Ends)

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1/23/2026 2:59:14 PM

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	CHECKED - LFB	REVISED -		
PLOT SCALE = 4:0 ':" / in.	DRAWN - JH/BMP	REVISED -		
PLOT DATE = 1/23/2026	CHECKED - LFB	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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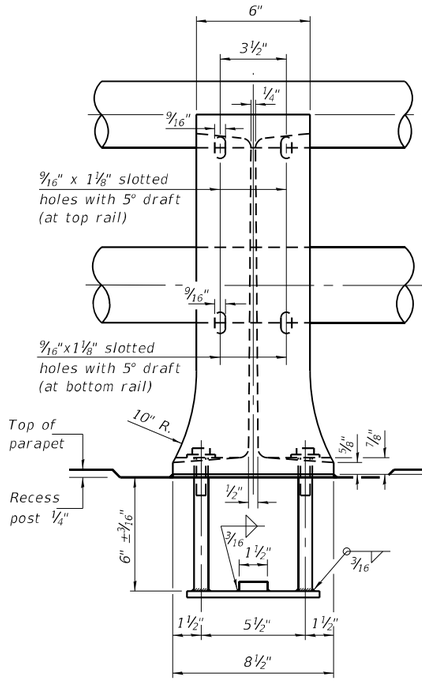
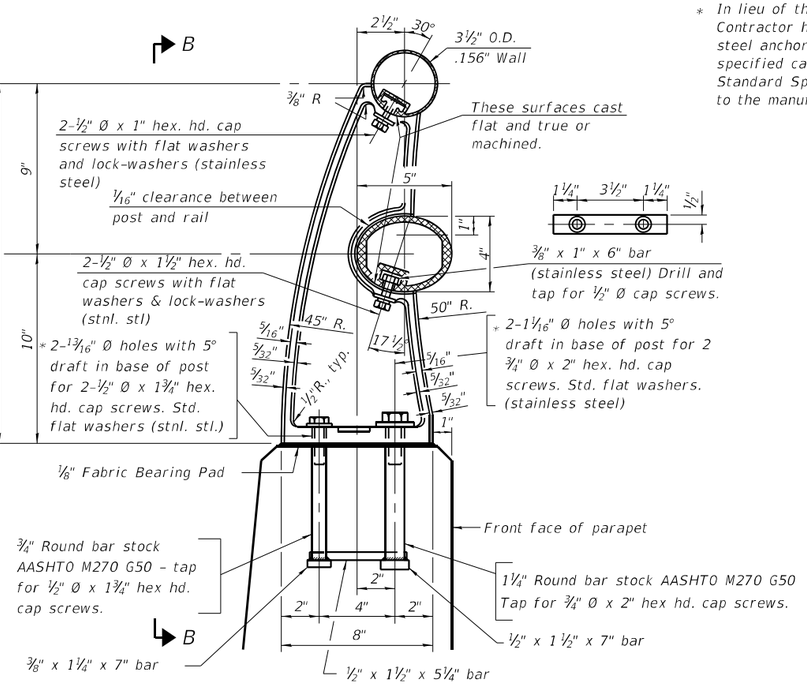
		CONTRACT NO. 62U72		
		ILLINOIS	FED. AID PROJECT	

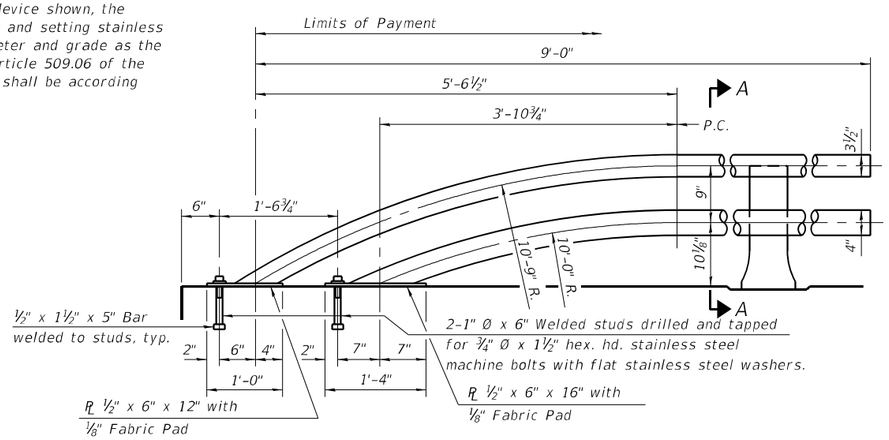


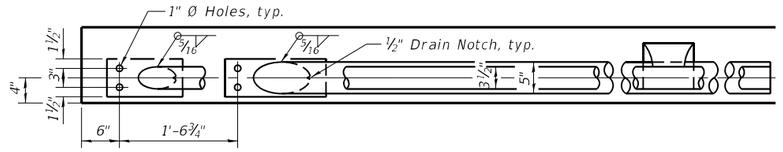
VIEW B-B



SECTION A-A

* *In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting stainless steel anchor rods of the same diameter and grade as the specified cap screws according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.*

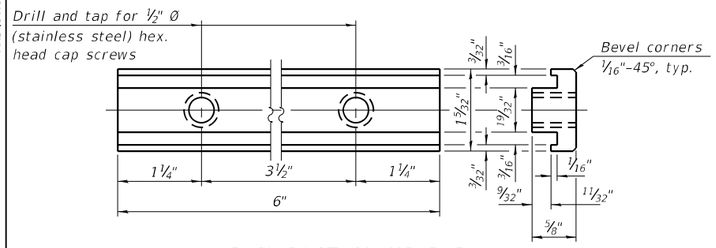




RAIL TERMINAL SECTION

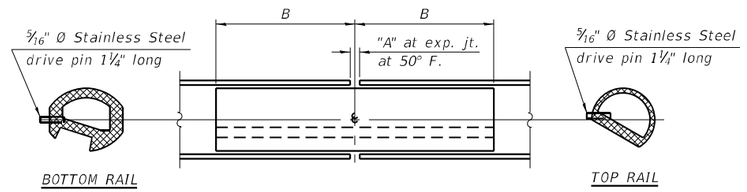
Note: The end rail post shall be set back as required for the terminal rail section.

RAIL POST DETAILS

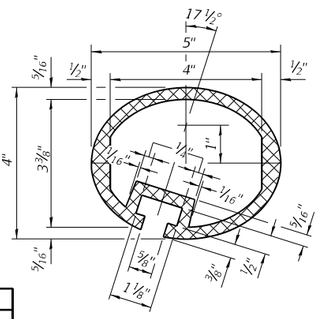


RAIL POST CLAMP BAR

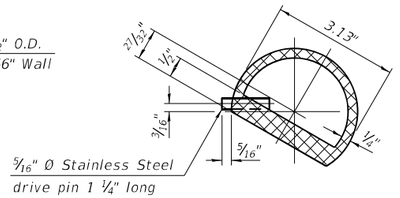
For Top Rail



RAIL SPLICE

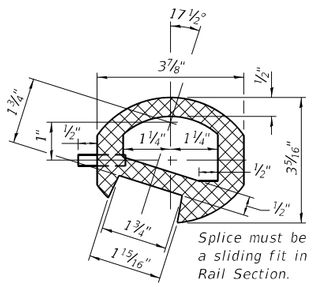


SECTION THRU TOP RAIL

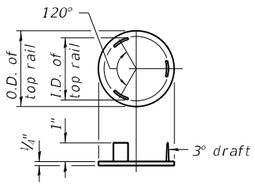


SECTION THRU TOP RAIL SPLICE

SECTION THRU BOTTOM RAIL

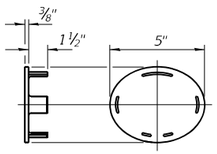


SECTION THRU BOTTOM RAIL SPLICE



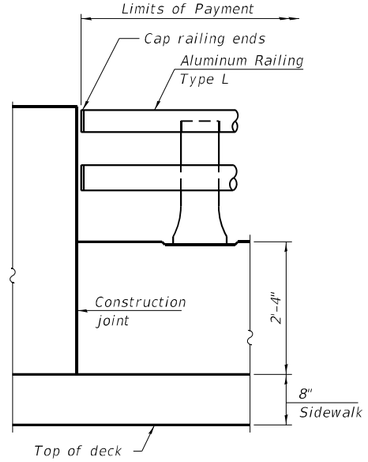
CAST END CAP

For top rail Drive Fit Type



CAST END CAP

For bottom rail Drive Fit Type



RAIL END TREATMENT FOR TYPE 5 AND 6 TERMINAL

Notes:

All Posts shall be normal to parapet.

All joints in rail shall be spliced per detail.

All exposed rail ends shall be capped per detail.

Provide 1-⅛" and 2-1/16" Aluminum Shims for 25% of the Posts. Rail elements shall be parallel to Grade, high spots shall be ground and low spots shimmed.

Place reinforcement bars to miss anchor rod locations.

See sheet S-14 and S-17 of S-33 for rail post spacing.

RAILING CRITERIA

NCHRP 350 Test Level	4
Post Spacing Range	7'-0" - 10'-0"
Rail Weight (plf)	40

SPLICE DIMENSIONS

Location	T	A	B
All locs. not over exp. jts.	0	⅜"	1'-2"
Over Strip Seal Jt.	≤4"	2½"	1'-2"
Over Finger or Modular Jt.	≤9½"	5½"	1'-7 ¾"
Over Finger or Modular Jt.	≤15"	8¼"	2'-1 ¼"

T = ; total movement along centerline of roadway at expansion joint.

BILL OF MATERIAL

Item	Unit	Quantity
Aluminum Railing, Type L	Foot	260

R-20 5-15-2023

USER NAME = BP003		DESIGNED - KP		REVISED -	
		CHECKED - LFB		REVISED -	
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PLOT DATE = 1/23/2026		CHECKED - LFB		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALUMINUM RAILING, TYPE L
STRUCTURE NO. 056-0111
SHEET S-18 OF S-33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	449
		CONTRACT NO.	62U72	
		ILLINOIS	FED. AID PROJECT	

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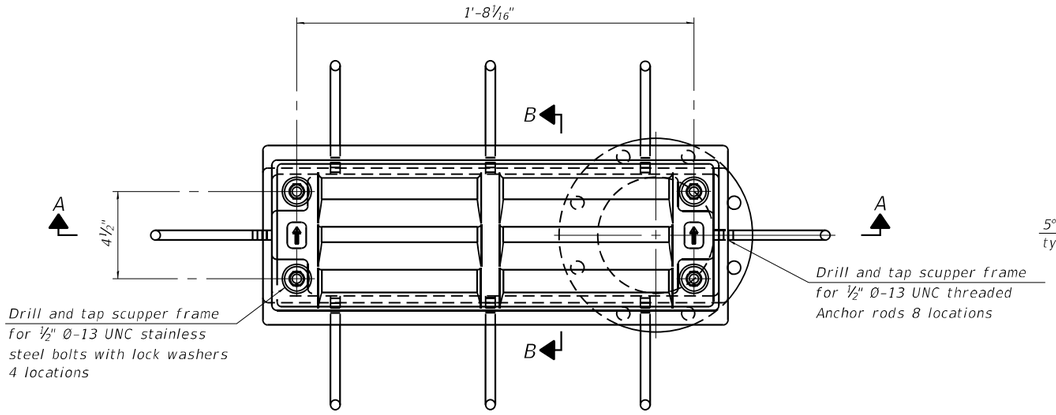
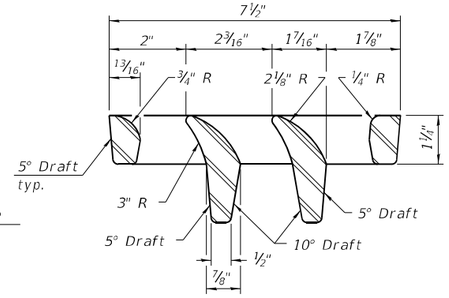
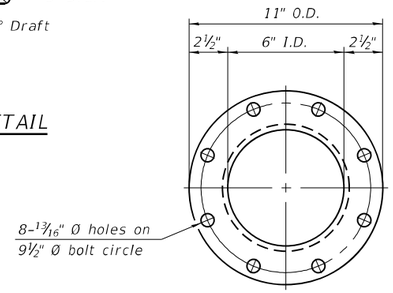


PLAN



VANE GRATE DETAIL



Notes:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M105, Class 35B and AASHTO M306.

Bolts, anchor rods, nuts and washers shall be according to ASTM A307 and shall be galvanized according to AASHTO M232. As an alternate stainless steel may be used.

Stainless steel hardware shall be according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frames and downspouts; however, the scupper grates shall remain cast iron. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval.

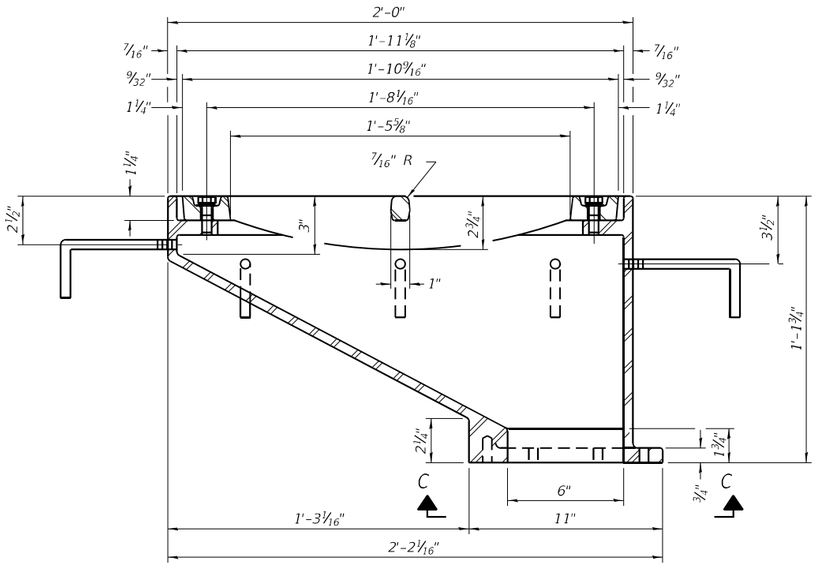
Structural steel scupper frames and downspouts, when utilized, shall be galvanized according to AASHTO M111.

As an alternate, fiberglass may be used for downspouts according to ASTM D2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. in lieu of the cast iron or structural steel.

Exterior surfaces of downspouts and exterior exposed surfaces of the scupper frame below deck shall be treated as specified on sheet S-13 of S-33.

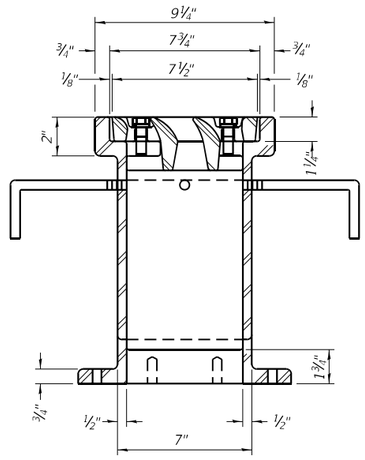
The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.

Cost of the grate, frame, downspout, anchor rods, nuts and washers including complete installation of the scupper shall be paid for at the contract unit price for Drainage Scuppers, DS-12.

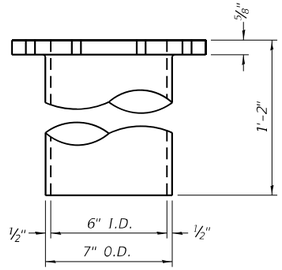


SECTION A-A

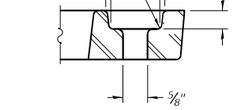
See sheet S-13 of S-33 for scupper location relative to parapet.



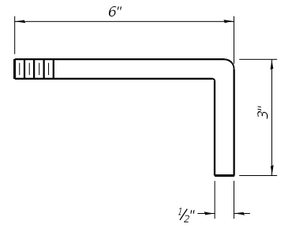
SECTION B-B



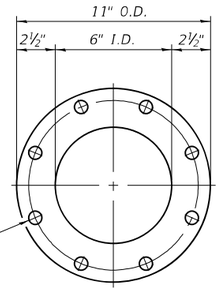
DOWNSPOUT



GRATE BOLT HOLE DETAIL



ANCHOR ROD DETAIL



Drill and tap 8 holes for 3/4" Ø-10 UNC bolts on 9 1/2" Ø bolt circle. (2 blind holes are 1 1/4" deep, 6 thru holes)

VIEW C-C

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scuppers, DS-12	Each	9

DS-12 4-4-2025

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		CHECKED - LFB		REVISED -	
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PLOT DATE = 1/23/2026		CHECKED - LFB		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPERS, DS-12
STRUCTURE NO. 056-0111
SHEET S-19 OF S-33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	450
		CONTRACT NO.	62U72	
		ILLINOIS	FED. AID PROJECT	

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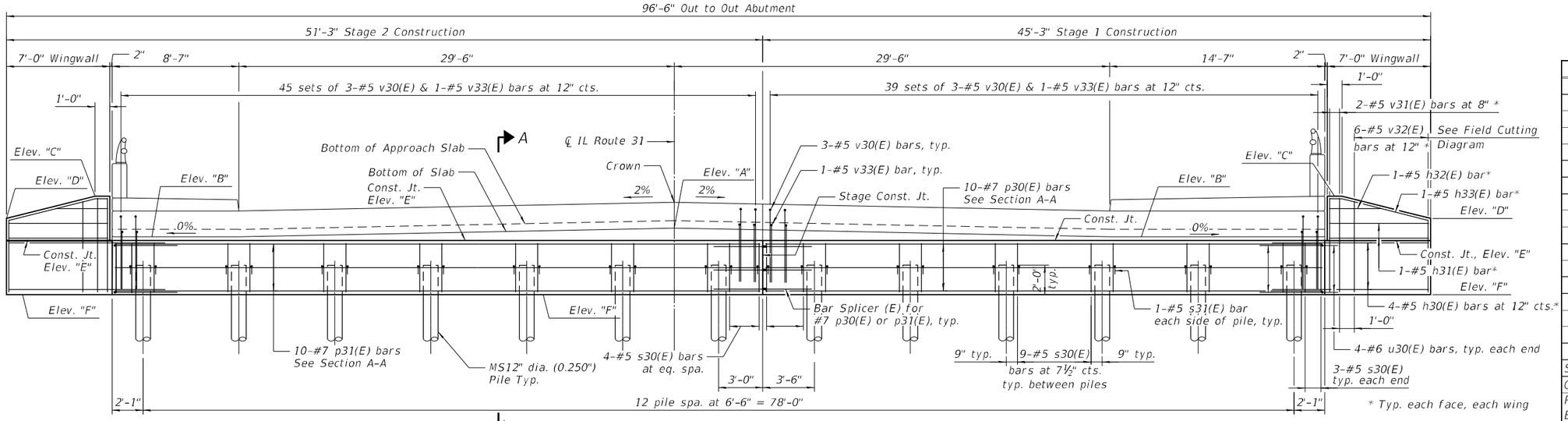


ABUTMENT ELEVATION

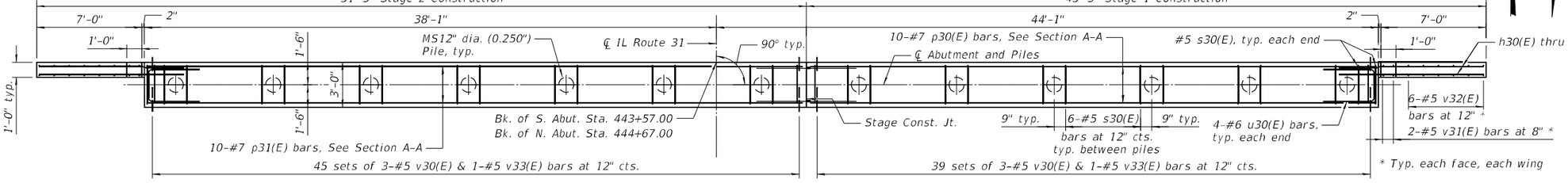
(North Abutment shown, South Abutment similar)

ELEVATION TABLE						
	A	B	C	D	E	F
South Abut.	755.63	755.04	757.79	756.29	754.79	751.12
North Abut.	755.06	754.47	757.22	755.72	754.22	750.55

N.A. N S.A. N

SOUTH ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h30(E)	16	#5	10'-0"	——
h31(E)	8	#5	6'-8"	——
h32(E)	4	#5	3'-7"	——
h33(E)	4	#5	6'-10"	⌿
p30(E)	10	#7	37'-9"	——
p31(E)	10	#7	43'-7"	——
s30(E)	114	#5	12'-11"	▭
s31(E)	26	#5	3'-8"	⊔
v30(E)	246	#5	5'-11"	⌊
v31(E)	8	#5	6'-4"	——
v32(E)	12	#5	11'-0"	——
v33(E)	84	#5	6'-8"	⌊
Structure Excavation		Cu Yd	56	
Concrete Structures		Cu Yd	36.7	
Reinforcement Bars, Epoxy Coated		Pound	5,860	
Furnishing Metal Shell Piles 12" X 0.250"		Foot	348	
Driving Piles		Foot	348	
Test Pile Metal Shells		Each	1	
Pile Shoes		Each	13	

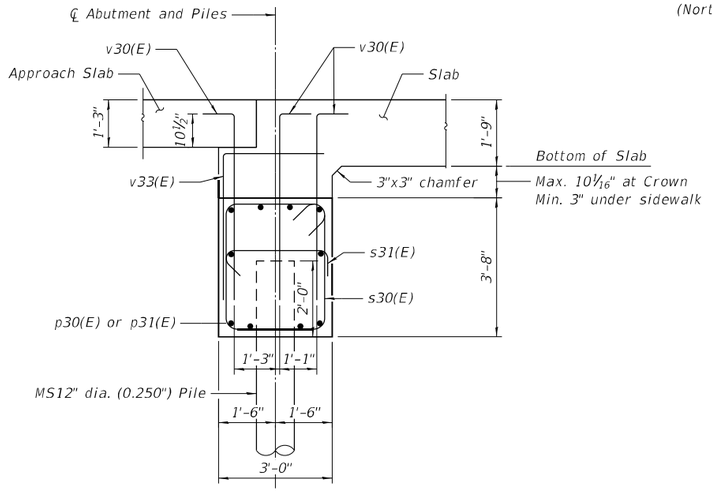


ABUTMENT PLAN

(North Abutment shown, South Abutment similar)

NORTH ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h30(E)	16	#5	10'-0"	——
h31(E)	8	#5	6'-8"	——
h32(E)	4	#5	3'-7"	——
h33(E)	4	#5	6'-10"	⌿
p30(E)	10	#7	37'-9"	——
p31(F)	10	#7	43'-7"	——
s30(E)	114	#5	12'-11"	▭
s31(E)	26	#5	3'-8"	⊔
v30(E)	246	#5	5'-11"	⌊
v31(E)	8	#5	6'-4"	——
v32(E)	12	#5	11'-0"	——
v33(E)	84	#5	6'-8"	⌊
Structure Excavation		Cu Yd	60	
Concrete Structures		Cu Yd	36.7	
Reinforcement Bars, Epoxy Coated		Pound	5,860	
Furnishing Metal Shell Piles 12" X 0.250"		Foot	516	
Driving Piles		Foot	516	
Test Pile Metal Shells		Each	1	
Pile Shoes		Each	13	



SECTION A-A

LAP LENGTH

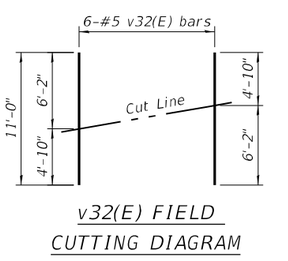
Min. lap length for #7: 5'-0"

NORTH ABUTMENT PILE DATA

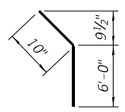
Type: MS12" dia. (0.250")
Nominal Required Bearing: 392 kips
Factored Resistance Available: 135 kips
Est. Length: 43 feet (Including 2' in cap)
No. Production Piles: 12
No. Test Piles: 1

SOUTH ABUTMENT PILE DATA

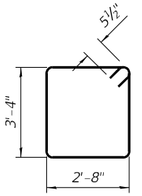
Type: MS12" dia. (0.250")
Nominal Required Bearing: 392 kips
Factored Resistance Available: 135 kips
Est. Length: 29 feet (Including 2' in cap)
No. Production Piles: 12
No. Test Piles: 1



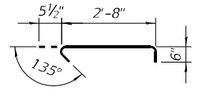
v32(E) FIELD CUTTING DIAGRAM



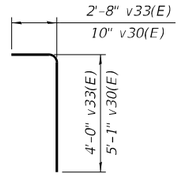
BAR h33(E)



BAR s30(E)



BAR s31(E)



BARS v30(E) & v33(E)

PATRICK a STV company	USER NAME = BP003	DESIGNED - JH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO. 056-0111
		CHECKED - LFB	REVISED -		
	PLOT SCALE = 8:0 ':' / in.	DRAWN - JH/BMP	REVISED -		SHEET S-20 OF S-33 SHEETS
	PLOT DATE = 1/23/2026	CHECKED - LFB	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	451
		CONTRACT NO.	62U72	
		ILLINOIS	FED. AID PROJECT	

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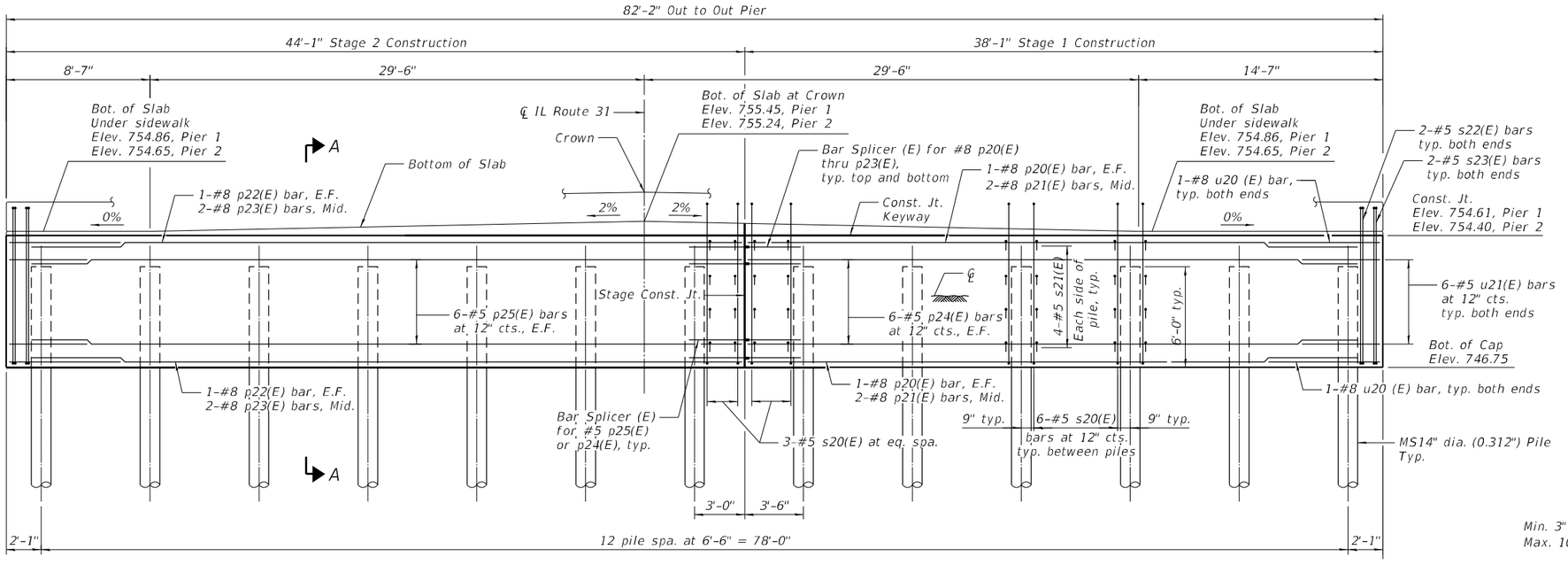
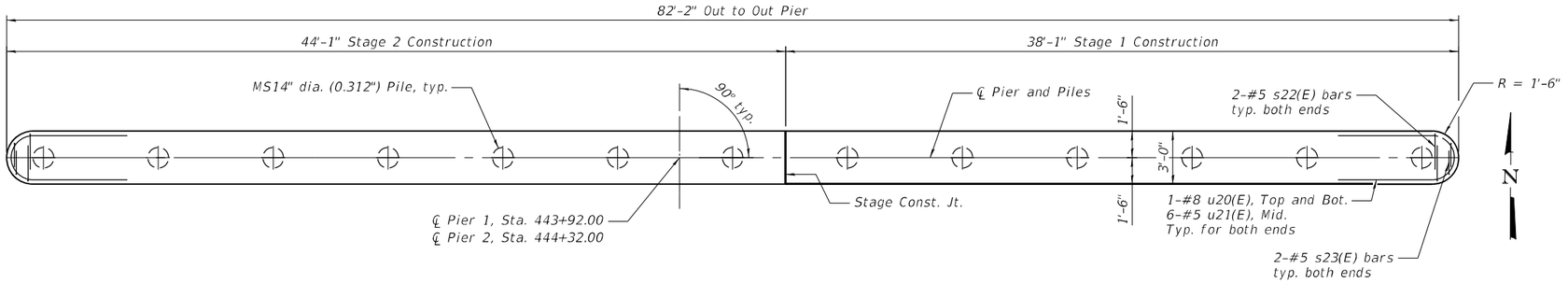


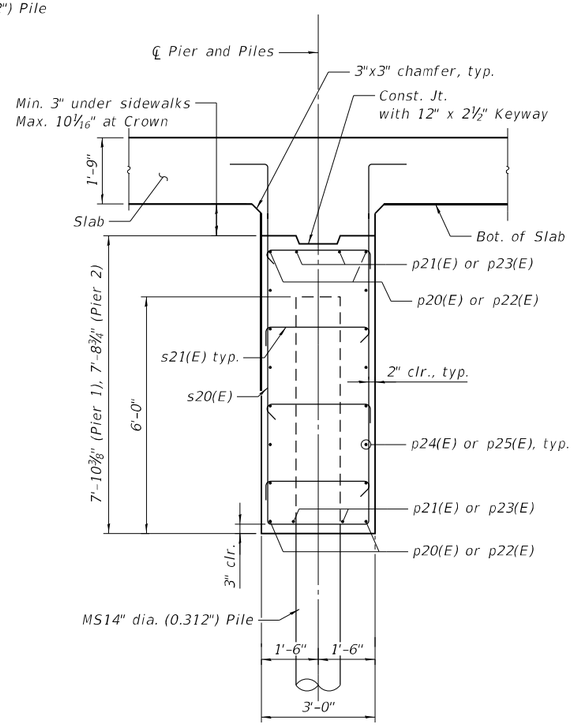
PIER ELEVATION

(Looking North)
(Typical for both piers)



PIER PLAN

(Typical for both piers)



SECTION A-A

LEGEND:

℄ - Groundline
Elev. 751.00 (Pier 1), Elev. 749.25 (Pier 2)
E.F. - each face

USER NAME = BP003	DESIGNED - JH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PIERS 1 AND 2 STRUCTURE NO. 056-0111	SHEET S-21 OF S-33 SHEETS
	CHECKED - LFB	REVISED -			
PLOT SCALE = 8.0 ':" / in.	DRAWN - JH/BMP	REVISED -			
PLOT DATE = 1/23/2026	CHECKED - LFB	REVISED -			

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	452
		CONTRACT NO. 62U72		
		ILLINOIS	FED. AID PROJECT	

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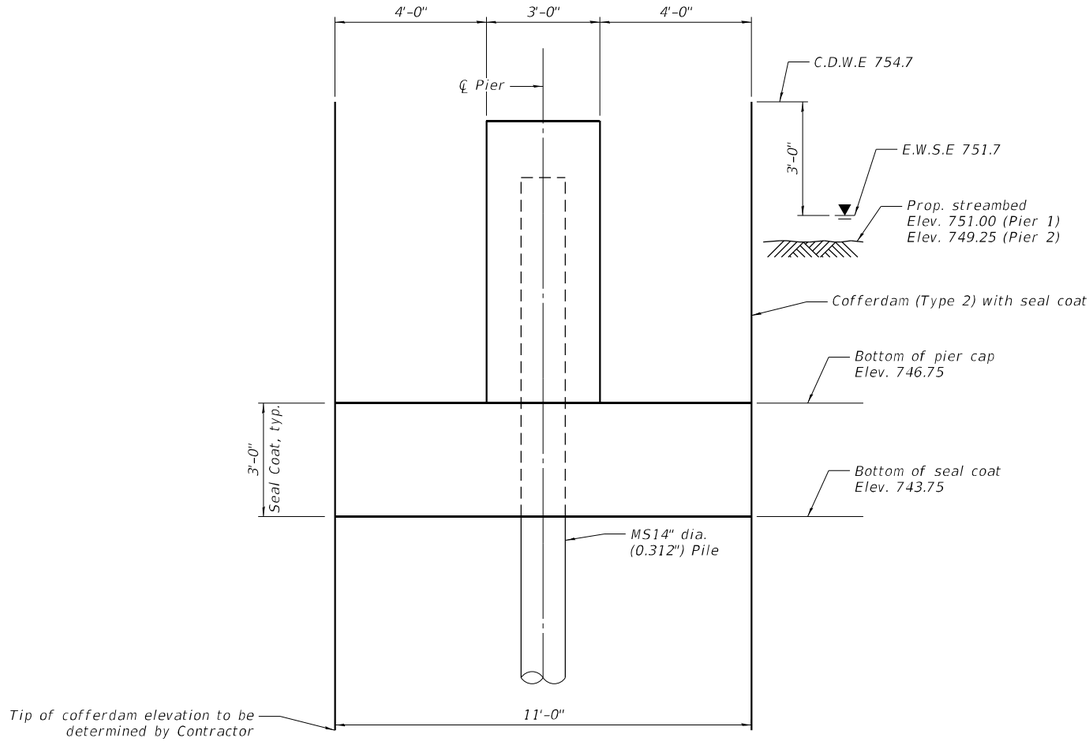


TYPE 2 COFFERDAM DETAIL

(section view through pier)

PIER 1 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
p20(E)	4	#8	36'-5"	———
p21(E)	4	#8	37'-8"	———
p22(E)	4	#8	42'-5"	———
p23(E)	4	#8	43'-9"	———
p24(E)	12	#5	36'-5"	———
p25(E)	12	#5	42'-5"	———
s20(E)	72	#5	23'-0"	⊔
s21(E)	104	#5	3'-8"	⊔
s22(E)	4	#5	13'-6"	⊔
s23(E)	4	#5	12'-2"	⊔
u20(E)	4	#8	16'-6"	⊂
u21(E)	12	#5	10'-8"	⊂
Structure Excavation			Cu Yd	106
Concrete Structures			Cu Yd	71.2
Reinforcement Bars, Epoxy Coated			Pound	5,240
Furnishing Metal Shell Piles 14" X 0.312"			Foot	684
Driving Piles			Foot	684
Test Pile Metal Shells			Each	1
Pile Shoes			Each	13

PIER 2 BILL OF MATERIAL

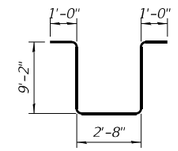
Bar	No.	Size	Length	Shape
p20(E)	4	#8	36'-5"	———
p21(E)	4	#8	37'-8"	———
p22(E)	4	#8	42'-5"	———
p23(E)	4	#8	43'-9"	———
p24(E)	12	#5	36'-5"	———
p25(E)	12	#5	42'-5"	———
s20(E)	72	#5	23'-0"	⊔
s21(E)	104	#5	3'-8"	⊔
s22(E)	4	#5	13'-6"	⊔
s23(E)	4	#5	12'-2"	⊔
u20(E)	4	#8	16'-6"	⊂
u21(E)	12	#5	10'-8"	⊂
Structure Excavation			Cu Yd	96
Concrete Structures			Cu Yd	70.1
Reinforcement Bars, Epoxy Coated			Pound	5,240
Furnishing Metal Shell Piles 14" X 0.312"			Foot	720
Driving Piles			Foot	720
Test Pile Metal Shells			Each	1
Pile Shoes			Each	13

PIER 1 PILE DATA

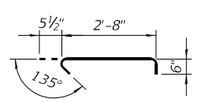
Type: MS14" dia. (0.312")
Nominal Required Bearing: 570 kips
Factored Resistance Available: 313 kips
Est. Length: 57 feet (Including 6' in cap)
No. Production Piles: 12
No. Test Piles: 1

PIER 2 PILE DATA

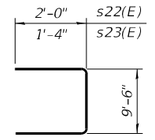
Type: MS14" dia. (0.312")
Nominal Required Bearing: 570 kips
Factored Resistance Available: 313 kips
Est. Length: 60 feet (Including 6' in cap)
No. Production Piles: 12
No. Test Piles: 1



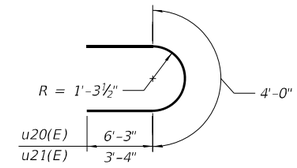
BAR s20(E)



BAR s21(E)



BARS s22(E) & s23(E)



BARS u20(E) & u21(E)

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USER NAME = BP003	DESIGNED - JH/KP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PIER DETAILS STRUCTURE NO. 056–0111	
	CHECKED - LFB	REVISED -			
PLOT SCALE = 8.000000 ' / in.	DRAWN - BMP	REVISED -		SHEET S-22 OF S-33 SHEETS	
PLOT DATE = 1/23/2026	CHECKED - LFB	REVISED -			

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	453
		CONTRACT NO.	62U72	
		ILLINOIS FED. AID PROJECT		

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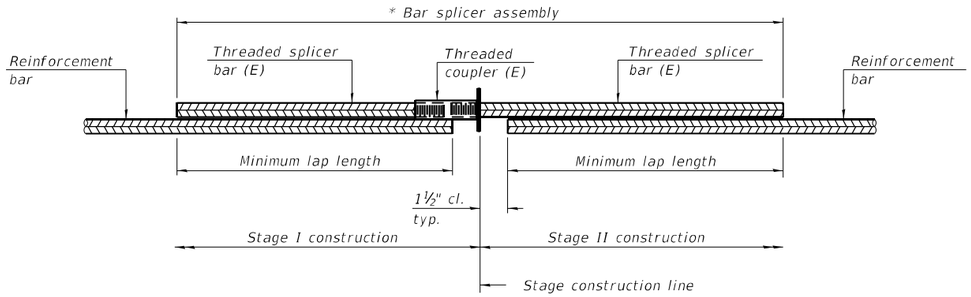


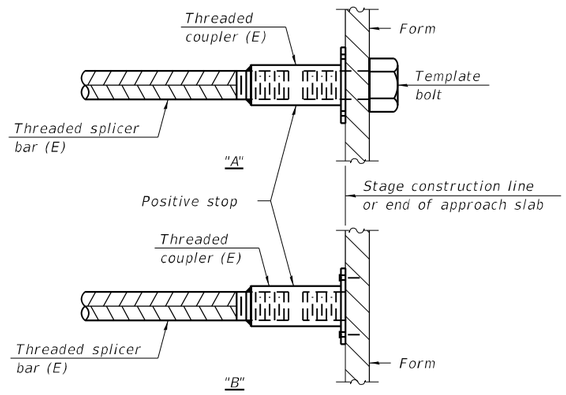
STANDARD BAR SPLICER ASSEMBLY PLAN

Only bar splicer assemblies as presented on the approved QPL list may be used.

Threaded splicer bar length = min. lap length + 1 ½" + thread length

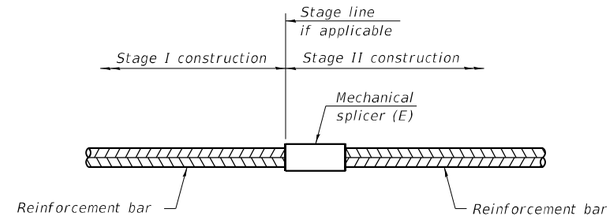
** Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.*

Location	Bar size	No. assemblies required	Minimum lap length
Superstructure	#8	252	7'-4"
Superstructure	#4	2	1'-7"
Approach Slab	#8	120	5'-2"
Approach Slab	#5	172	2'-10"
Pier	#8	16	5'-10"
Pier	#5	24	3'-2"
Abutment	#7	20	4'-7"



INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required

Notes:
Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
All reinforcement shall be lapped and tied to the splicer bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1

4-4-2025

USER NAME = BP003	DESIGNED - KP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS STRUCTURE NO. 056–0111	
	CHECKED - LFB	REVISED -			
PLOT SCALE = 0:2 ':" / in.	DRAWN - BMP	REVISED -			
PLOT DATE = 1/23/2026	CHECKED - LFB	REVISED -		SHEET S-23 OF S-33 SHEETS	

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	454
		CONTRACT NO.	62U72	
		ILLINOIS	FED. AID PROJECT	

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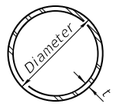
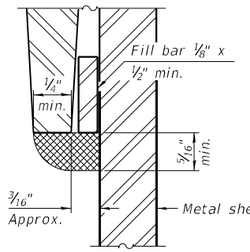
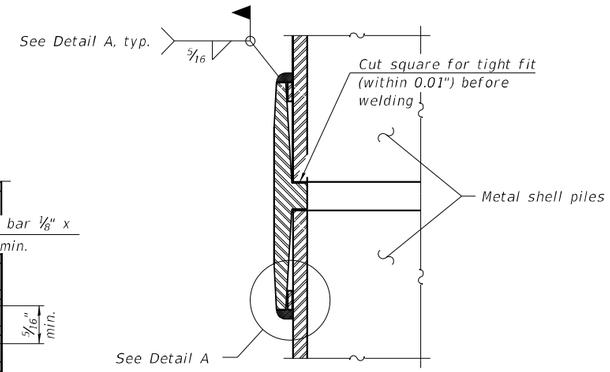


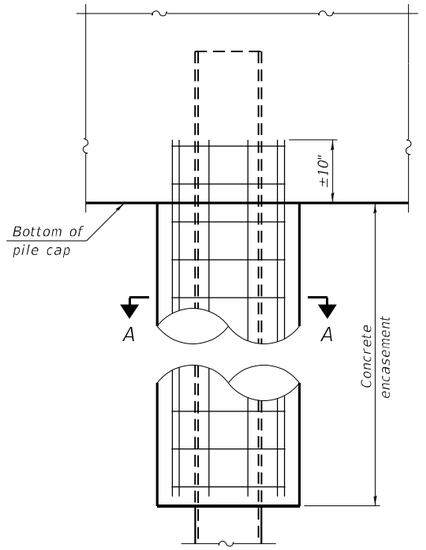
METAL SHELL PILE TABLE

Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd.³/ft.)
PP12	0.250"	31.40	0.0267
PP14	0.250"	36.75	0.0368
PP14	0.312"	45.65	0.0361
PP16	0.312"	52.32	0.0478
PP16	0.375"	62.64	0.0470



DETAIL A





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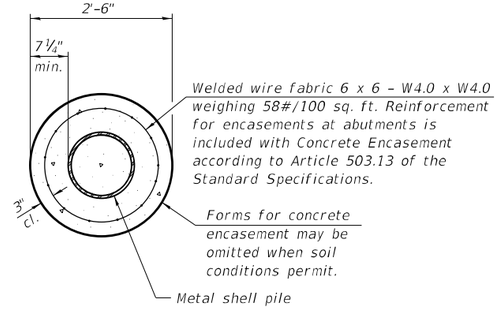
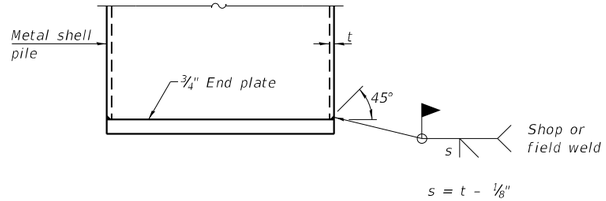


SECTION A–A

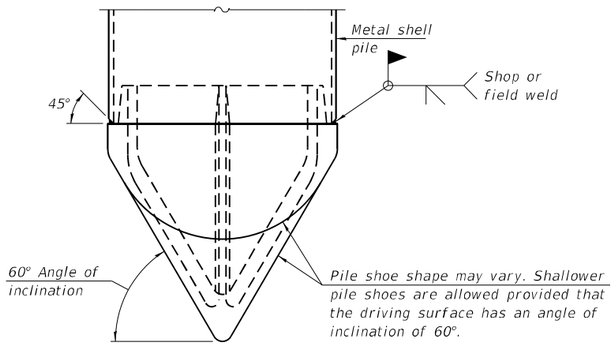
INDIVIDUAL PILE CONCRETE ENCASEMENT

(When specified)



$s = t - \frac{1}{8}"$

END PLATE ATTACHMENT



PILE SHOE ATTACHMENT

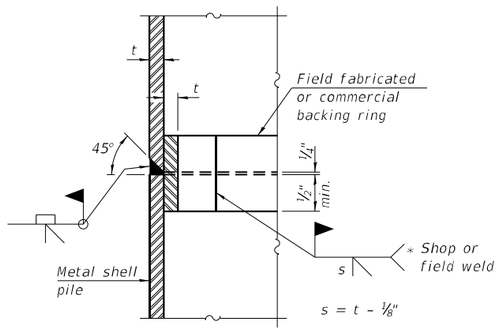
(When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 80–50 or AASHTO M 103 Grade 65–35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld).

WELDED COMMERCIAL SPLICE

Notes:

The ⅛" x ½" min. fill bar may be constructed of 2 bars with a ⅛" max. gap between them.

Pile segments shall be driven to solid contact with splicer before welding.



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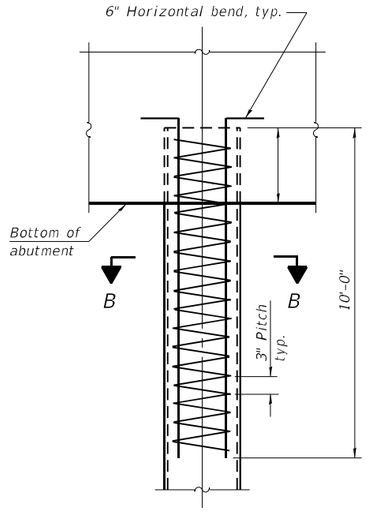
COMPLETE PENETRATION WELD SPLICE

* *Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.*



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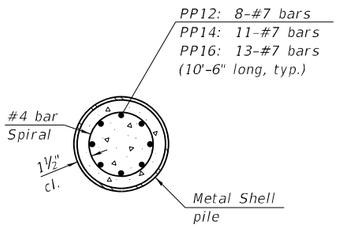

SECTION B-B

REINFORCEMENT AT ABUTMENTS

(Omit when concrete encasement is specified)

Note:

The metal shell piles shall be according to Article 1006.05 of the Standard Specifications.

F-MS 4-4-2025

USER NAME = BP003		DESIGNED - KP		REVISED -	
		CHECKED - LFB		REVISED -	
PLOT SCALE = 0.2 ':" / in.		DRAWN - BMP		REVISED -	
PLOT DATE = 1/23/2026		CHECKED - LFB		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

METAL SHELL PILE DETAILS
STRUCTURE NO. 056–0111
SHEET S-24 OF S-33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	455
		CONTRACT NO. 62U72		
		ILLINOIS	FED. AID PROJECT	

MODEL: Default
FILE NAME: C:\SHT-0560111-62U72-pile-S24.dgn
1/23/2026 3:00:04 PM

Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
www.interraservices.com

SOIL BORING LOG

Date 11/22/21

ROUTE IL 31 **DESCRIPTION** Unnamed Tributary to Fox River 3-Span Bridge SN 056-0111 **LOGGED BY** Abde Sellah

SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2042363.1,1000133.456

COUNTY McHenry **DRILLING METHOD** Hollow Stem Auger/Mud Rotary **HAMMER TYPE** D50 Auto (93% efficiency)

STRUCT. NO. 056-0105
Station IL 31 Stn. 444+46

BORING NO. UTB-BSB-01
Station 443+53
Offset 20.00ft LT
Ground Surface Elev. 755.22 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 749.2 ft
Upon Completion Mud rotary ft
After Hrs. Filled ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
754.89 ASPHALT (4") / 754.30 CONCRETE (7")			
Medium dense, light brown SAND FILL, trace gravel. Dry.	13		
	8		3.8
752.22	4		
Loose, brown SAND FILL, trace gravel. Dry.	4		
	3		5.4
-5	3		
749.72			
Medium dense, gray SAND, some gravel. Wet. ▼	8		
	7		13.9
	10		
747.22			
Medium dense, gray SAND, trace gravel. Wet.	10		
	7		25.4
-10	8		
744.72			
Loose, gray SAND, trace gravel and rock aggregate. Wet.	3		
	5		21.6
	3		
742.22			
Medium dense, gray SAND, trace gravel. Wet.	15		
	10		12.8
-15	12		
739.72			
Very dense, gray SAND, little gravel. Wet.	13		
	32		20.4
	41		
737.22			
Loose, gray SAND, trace gravel. Wet.	7		
	5		16.1
-20	4		
734.72			
Medium dense, gray SAND, trace gravel. Wet.	6		
	4		16.6
	7		
732.22			
Loose, gray SAND, trace gravel. Wet.	4		
	3		19.9
-25	3		
729.72			
Medium dense, gray SAND. trace gravel. Wet.	9		
	9		16.5
	11		
727.22			
Medium dense, gray SAND. Wet.	22		
	15		13.8
-30	4		
723.22			
Hard , gray CLAY LOAM, some gravel. Moist.	22		
	25		7.8
-35	29	6.8 B	
-40	50/5"	8.7	7.8

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

BBS, from 137 (Rev. 8-99)

Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
www.interraservices.com

SOIL BORING LOG

Date 11/22/21

ROUTE IL 31 **DESCRIPTION** Unnamed Tributary to Fox River 3-Span Bridge SN 056-0111 **LOGGED BY** Abde Sellah

SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2042363.1,1000133.456

COUNTY McHenry **DRILLING METHOD** Hollow Stem Auger/Mud Rotary **HAMMER TYPE** D50 Auto (93% efficiency)

STRUCT. NO. 056-0105
Station IL 31 Stn. 444+46

BORING NO. UTB-BSB-01
Station 443+53
Offset 20.00ft LT
Ground Surface Elev. 755.22 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 749.2 ft
Upon Completion Mud rotary ft
After Hrs. Filled ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Hard , gray CLAY LOAM, some gravel. Moist. *(continued)*		B	
	23		
	29		9.6
-45	24	6.3 B	
708.22			
Hard , gray CLAY LOAM, trace gravel. Moist.	15		
	17		9.0
-50	42	7.3 B	
	30		
	23		8.5
-55	24	6.6 B	
	23		
-60	50/2"	9.2	9.3
Hard , gray CLAY LOAM, trace gravel. Moist. *(continued)*		B	
693.22			
Hard , gray CLAY LOAM, some gravel. Moist.	12		
	50/4"		12.6
-65		8.2 B	
688.22			
Hard, gray and slightly brown CLAY, trace gravel. Moist.	14		
	20		11.1
-70	24	5.3 B	
	12		
	12		11.3
680.22 -75	26	6.3 B	
End of Boring @ 75'.			
-80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

BBS, from 137 (Rev. 8-99)

USER NAME = BP003	DESIGNED - KP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORINGS LOGS 1 STRUCTURE NO. 056–0111
	CHECKED - LFB	REVISED -		
PLOT SCALE = 0:2 ':" / in.	DRAWN - BMP	REVISED -		SHEET S-25 OF S-33 SHEETS
PLOT DATE = 1/23/2026	CHECKED - LFB	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	456
		CONTRACT NO.	62U72	
		ILLINOIS	FED. AID PROJECT	

MODEL: Default
FILE NAME: C:\SHT-056011-62U72-sborings-525.dgn
1/23/2026 3:00:10 PM

Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
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SOIL BORING LOG

Date 11/23/21

ROUTE IL 31 DESCRIPTION Unnamed Tributary to Fox River 3-Span Bridge SN 056-0111 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2064796.804,1000133.209

COUNTY McHenry DRILLING METHOD Hollow Stem Auger/Mud Rotary HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO. 056-0105
Station IL 31 Stn. 444+46

BORING NO. UTB-BSB-02
Station 443+87
Offset 20.00ft LT
Ground Surface Elev. 755.04 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 746.5 ft
Upon Completion Mud rotary ft
After Hrs. Filled ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Soil Description
754.71				ASPHALT (4")
754.12				CONCRETE (7")
	11			Medium dense, brown and gray SAND FILL, some gravel. Moist.
	11		7.6	
	7			
751.04	4			
	1		33.6	Very soft, black CLAY LOAM FILL, trace gravel. Moist.
-5	1	0.0 P		
749.54	3			Very soft, gray SANDY CLAY LOAM, trace gravel. Moist.
	2		12.9	
	3	0.0 P		
747.04				Medium dense, gray SANDY CLAY LOAM, little gravel. Wet.
	4			
	7		6.1	
-10	10			
744.54	3			Loose, gray SILTY LOAM, trace gravel. Wet.
	2		12.1	
	3			
742.04	1			Very loose, gray SAND AND GRAVEL. Wet.
	1		21.7	
-15	2			
739.54	5			Medium dense, gray SAND AND GRAVEL. Wet.
	7		9.4	
	8			
	5			
	6		16.0	
-20	8			
	3			Medium dense, gray SAND AND GRAVEL. Wet. *(continued)*
	6		15.7	
	5			
	4			
	10		11.5	
-25	4			
729.54	4			Loose, gray SAND, some gravel. Wet.
	3		15.0	
	3			
727.04	12			Medium dense, gray SAND, some gravel. Wet.
	9		16.2	
-30	5			
723.04	12			Hard, brown and gray CLAY LOAM, some gravel. Moist.
	30		8.1	
-35	50/4"	7.3 B		
	12			
	17		9.6	
-40	18	5.3		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

BBS, from 137 (Rev. 8-99)

Interra, Inc.
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Bolingbrook, IL 60440
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SOIL BORING LOG

Date 11/23/21

ROUTE IL 31 DESCRIPTION Unnamed Tributary to Fox River 3-Span Bridge SN 056-0111 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2064796.804,1000133.209

COUNTY McHenry DRILLING METHOD Hollow Stem Auger/Mud Rotary HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO. 056-0105
Station IL 31 Stn. 444+46

BORING NO. UTB-BSB-02
Station 443+87
Offset 20.00ft LT
Ground Surface Elev. 755.04 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 746.5 ft
Upon Completion Mud rotary ft
After Hrs. Filled ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Soil Description
		B		Hard, brown and gray CLAY LOAM, some gravel. Moist. *(continued)*
	17			
	20		8.1	
-45	21	5.8 B		
	13			
	16		8.9	
-50	18	6.3 B		
703.04				Hard, brown and gray CLAY LOAM, little gravel. Moist.
	17			
	23		9.2	
-55	31	5.6 B		
698.04				Hard, brown and gray CLAY LOAM, some gravel. Moist.
	20			
	20		10.7	
-60	32	7.8		
		B		Hard, brown and gray CLAY LOAM, some gravel. Moist. *(continued)*
	20			
	50/5"		11.5	
-65		8.2 B		
688.04	13			Hard, brown CLAY, trace gravel and cobbles. Moist.
	18		11.7	
-70	29	6.6 B		
	14			
	17		11.6	
680.04 -75	23	6.8 B		
				End of Boring @ 75'.
-80				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

BBS, from 137 (Rev. 8-99)

USER NAME = BP003	DESIGNED - KP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORINGS LOGS 2 STRUCTURE NO. 056-0111	
	CHECKED - LFB	REVISED -			
PLOT SCALE = 0:2 ':' / in.	DRAWN - BMP	REVISED -			
PLOT DATE = 1/23/2026	CHECKED - LFB	REVISED -		SHEET S-26 OF S-33 SHEETS	

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	457
		CONTRACT NO. 62U72		
		ILLINOIS FED. AID PROJECT		

MODEL: Default
FILE NAME: C:\SHT-056011-62U72-sborings-s26.dgn
1/23/2026 3:00:20 PM

Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
www.interraservices.com

SOIL BORING LOG

Date 11/19/21

ROUTE IL 31 DESCRIPTION Unnamed Tributary to Fox River 3-Span Bridge SN 056-0111 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2064817.678,1000132.884

COUNTY McHenry DRILLING METHOD Hollow Stem Auger/Mud Rotary HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO. 056-0105
Station IL 31 Stn. 444+46

BORING NO. UTB-BSB-03
Station 444+07
Offset 20.00ft LT
Ground Surface Elev. 755.04 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 746.0 ft
Upon Completion Mud rotary ft
After Hrs. Filled ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
754.71				ASPHALT (4")
754.04				CONCRETE (8")
	5			Medium stiff, black CLAY, Moist.
	4		29.3	
	2	0.5 P		
752.04				
	1			Medium stiff, dark brown organic CLAY, Moist.
	1		70.5	
-5	2	0.5 P		
749.54				
	7			Medium dense, dark brown organic SANDY CLAY LOAM, some gravel. Moist.
	5		12.1	
	5			
747.04				
	9			Medium dense, gray SANDY CLAY LOAM, trace gravel. Wet.
	7		10.8	
-10	5			
744.54				
	3			Medium dense, gray SANDY LOAM, some gravel. Wet.
	5		12.3	
	8			
742.04				
	5			Medium dense, gray SAND, some gravel. Wet.
	10		15.4	
-15	17			
	5			
	7		13.7	
	10			
	5			
	6		19.4	
-20	6			
	4			Medium dense, gray SAND, some gravel. Wet. *(continued)*
	7			
	10		18.8	
	5			
	7		17.4	
-25	9			
	19			
	17		13.5	
	15			
	24		10.0	
-30	36			
723.04				
	23			Hard, gray SANDY CLAY LOAM, little gravel. Wet.
	27		7.9	
-35	34	4.5 P		
	16			
	19		8.7	
-40	21	4.5		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

BBS, from 137 (Rev. 8-99)

Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
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SOIL BORING LOG

Date 11/19/21

ROUTE IL 31 DESCRIPTION Unnamed Tributary to Fox River 3-Span Bridge SN 056-0111 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2064817.678,1000132.884

COUNTY McHenry DRILLING METHOD Hollow Stem Auger/Mud Rotary HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO. 056-0105
Station IL 31 Stn. 444+46

BORING NO. UTB-BSB-03
Station 444+07
Offset 20.00ft LT
Ground Surface Elev. 755.04 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 746.0 ft
Upon Completion Mud rotary ft
After Hrs. Filled ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
		P		Hard, gray SANDY CLAY LOAM, little gravel. Wet. *(continued)*
	9			
	15		7.8	
-45	17	4.5 P		
708.04				
	21			Very dense, gray SANDY CLAY LOAM AND GRAVEL. Wet.
	27		15.1	
-50	35			
703.04				
	13			Hard, gray SANDY CLAY LOAM, trace gravel. Wet.
	19		11.7	
-55	34	4.3 P		
698.04				
	15			Very stiff, gray CLAY LOAM, trace gravel. Moist
	17		12.1	
-60	26	3.5		
		P		Very stiff, gray CLAY LOAM, trace gravel. Moist *(continued)*
	12			
	16		10.8	
-65	28	3.5 P		
688.04				
	36			Hard, gray CLAY LOAM, trace gravel. Moist
	26		9.7	
-70	26	4.5 P		
683.04				
	12			Very stiff, gray CLAY LOAM, trace gravel. Moist
	14		9.7	
-75	24	3.5 P		
680.04				End of Boring @ 75'.
-80				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

BBS, from 137 (Rev. 8-99)

Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
www.interraservices.com

SOIL BORING LOG

Date 11/18/21

ROUTE IL 31 **DESCRIPTION** Unnamed Tributary to Fox River 3-Span Bridge SN 056-0111 **LOGGED BY** Vianney

SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2064875.375,1000131.779

COUNTY McHenry **DRILLING METHOD** Hollow Stem Auger/Mud Rotary **HAMMER TYPE** D50 Auto (93% efficiency)

STRUCT. NO. 056-0105
Station IL 31 Stn. 444+46

BORING NO. UTB-BSB-04
Station 444+65
Offset 20.00ft LT
Ground Surface Elev. 754.99 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 744.0 ft ▼
Upon Completion Mud rotary ft
After Hrs. Filled ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
754.66				ASPHALT (4")
753.99				CONCRETE (8")
	5			Loose, brown SAND FILL, trace gravel, Moist
	4		4.7	
	3			
	4			
	3		6.7	
-5	3			
749.49				
	3			Medium dense, brown and gray SAND AND GRAVEL. Moist.
	5		17.2	
	7			
746.99				
	5			Medium stiff, gray CLAY LOAM, trace gravel. Moist.
	5		9.0	
-10	4	0.5 P		
744.49				
	5			Medium dense, gray SANDY LOAM. Wet.
	5		14.3	
	10			
741.99				
	5			Medium dense, gray SAND AND GRAVEL. Wet.
	7		6.4	
-15	9			
739.49				
	3			Medium stiff, gray CLAY LOAM. Wet.
	5		8.7	
	7			
736.99				
	4			Medium dense, gray SAND, some gravel. Wet.
	5		13.1	
-20	8			
	5			Medium dense, gray SAND, some gravel. Wet. *(continued)*
	8		14.0	
	9			
731.99				
	6			Medium dense, gray SILTY CLAY LOAM, trace gravel. Wet.
	7		10.0	
-25	8	0.3 P		
729.49				
	4			Medium dense, gray SAND, trace gravel. Wet.
	10		13.9	
	11			
726.99				
	3			Medium dense, gray SANDY LOAM, trace gravel. Wet.
	5		14.4	
-30	6			
722.99				
	7			Hard gray CLAY LOAM, trace gravel. Wet.
	27		9.8	
-35	21	4.5 P		
717.99				
	13			Very stiff gray CLAY LOAM, trace gravel. Wet.
	15		9.2	
-40	24	2.3		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

BBS, from 137 (Rev. 8-99)

Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
www.interraservices.com

SOIL BORING LOG

Date 11/18/21

ROUTE IL 31 **DESCRIPTION** Unnamed Tributary to Fox River 3-Span Bridge SN 056-0111 **LOGGED BY** Vianney

SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2064875.375,1000131.779

COUNTY McHenry **DRILLING METHOD** Hollow Stem Auger/Mud Rotary **HAMMER TYPE** D50 Auto (93% efficiency)

STRUCT. NO. 056-0105
Station IL 31 Stn. 444+46

BORING NO. UTB-BSB-04
Station 444+65
Offset 20.00ft LT
Ground Surface Elev. 754.99 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 744.0 ft ▼
Upon Completion Mud rotary ft
After Hrs. Filled ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
		P		Very stiff gray CLAY LOAM, trace gravel. Wet. *(continued)*
	17			
	16		8.4	
-45	16	2.8 P		
707.99				
	20			Hard gray CLAY LOAM, trace gravel. Wet.
	24		10.6	
	37	4.5 P		
-50				
701.99				
	50/3"			Dense, gray SILTY CLAY LOAM, some gravel, Wet.
			14.2	
-55				
697.99				
	15			Hard gray CLAY LOAM, trace gravel. Wet.
	16		11.3	
-60	23	4.5		
		P		Hard gray CLAY LOAM, trace gravel. Wet. *(continued)*
692.99				
	26			Very dense, gray SAND, trace gravel. Wet.
	30		17.9	
-65	25			
687.99				
	50/4"			Very dense, gray SAND, some gravel and cobbles. Wet
			16.3	
-70				
682.99				
	20			Dense, gray SANDY LOAM, trace gravel. Wet.
	18		11.8	
679.99 -75	24			
				End of Boring @ 75.0'.
-80				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

BBS, from 137 (Rev. 8-99)

USER NAME = BP003	DESIGNED - KP	REVISED -	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**SOIL BORINGS LOGS 4 STRUCTURE NO. 056–0111**	
	CHECKED - LFB	REVISED -			
PLOT SCALE = 0.2 ':' / in.	DRAWN - BMP	REVISED -			
PLOT DATE = 1/23/2026	CHECKED - LFB	REVISED -		SHEET S-28 OF S-33 SHEETS	

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	459
		CONTRACT NO.	62U72	
		ILLINOIS	FED. AID PROJECT	

MODEL: Default
FILE NAME: C:\SHI-056011-62U72-sborings-528.dgn
1/23/2026 3:00:41 PM

Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
www.interraservices.com

SOIL BORING LOG

Date 11/15/21

ROUTE IL 31 **DESCRIPTION** Unnamed Tributary to Fox River 3-Span Bridge SN 056-0111 **LOGGED BY** Vianney

SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2064763.709,1000170.336

COUNTY McHenry **DRILLING METHOD** Hollow Stem Auger/Mud Rotary **HAMMER TYPE** D50 Auto (93% efficiency)

STRUCT. NO. 056-0105
Station IL 31 Stn. 444+46

BORING NO. UTB-BSB-05
Station 443+53
Offset 17.00ft RT
Ground Surface Elev. 755.33 ft

Surface Water Elev. ____ ft
Stream Bed Elev. ____ ft

Groundwater Elev.:
First Encounter 751.8 ft ▼
Upon Completion Mud rotary ft
After ____ **Hrs.** Filled ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
755.00				ASPHALT (4")
754.33				CONCRETE (8")
	20			Dense, brown SAND, some cobbles and gravel, Moist.
	23		5.0	
	26			
752.33				
				Loose, brown SAND, some cobbles and gravel. Wet. ▼
	20			
	5		11.5	
-5	3			
749.83				
	5			Medium dense, brown and gray SAND, trace gravel and cobbles. Wet.
	8		14.7	
	11			
747.33				
	3			Medium dense, brown SAND, trace gravel and cobbles. Wet.
	6		18.3	
-10	8			
744.83				
	7			Loose, gray SANDY CLAY LOAM, trace gravel and cobbles. Wet.
	4		8.7	
	4			
742.33				
	3			Medium dense, gray SAND, trace rock aggregate and gravel. Wet.
	7		8.4	
-15	9			
	5			
	6		15.1	
	7			
	5			
	7		11.7	
-20	8			
	5			Medium dense, gray SAND, trace rock aggregate and gravel. Wet. *(continued)*
	8		11.6	
	9			
732.33				
	3			Medium dense, GRAVEL. Wet.
	7		17.1	
-25	15			
729.83				
	9			Medium dense, gray SAND AND GRAVEL, trace cobbles. Wet.
	16		18.6	
	11			
727.33				
	8			Medium dense, gray SILTY LOAM, trace gravel and cobbles. Wet.
	8		13.8	
-30	12			
724.83				
	50/4"			Very dense, gray SAND AND GRAVEL, trace rock aggregate. Wet.
			13.6	
-35				
718.33				
	6			Very stiff, gray CLAY LOAM, trace gravel and cobbles, Moist.
	10		8.3	
-40	16	3.3		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

BBS, from 137 (Rev. 8-99)

Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
www.interraservices.com

SOIL BORING LOG

Date 11/15/21

ROUTE IL 31 **DESCRIPTION** Unnamed Tributary to Fox River 3-Span Bridge SN 056-0111 **LOGGED BY** Vianney

SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2064763.709,1000170.336

COUNTY McHenry **DRILLING METHOD** Hollow Stem Auger/Mud Rotary **HAMMER TYPE** D50 Auto (93% efficiency)

STRUCT. NO. 056-0105
Station IL 31 Stn. 444+46

BORING NO. UTB-BSB-05
Station 443+53
Offset 17.00ft RT
Ground Surface Elev. 755.33 ft

Surface Water Elev. ____ ft
Stream Bed Elev. ____ ft

Groundwater Elev.:
First Encounter 751.8 ft ▼
Upon Completion Mud rotary ft
After ____ **Hrs.** Filled ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
		P		Very stiff, gray CLAY LOAM, trace gravel and cobbles, Moist. *(continued)*
713.33				
	18			Hard gray CLAY LOAM, trace gravel, Moist
	16		8.5	
-45	20	4.3		
		P		
708.33				
	29			Dense, gray SANDY CLAY LOAM, trace gravel, Moist.
	17		10.5	
-50	24			
703.33				
	11			Very stiff gray CLAY LOAM, trace gravel, Moist
	12		9.4	
-55	22	3.0		
		P		
698.33				
	27			Hard gray CLAY LOAM, trace gravel, Moist
	33		9.2	
-60	31	4.5		
		P		Hard gray CLAY LOAM, trace gravel, Moist *(continued)*
693.33				
	17			Very stiff gray CLAY LOAM, trace gravel, Moist
	20		11.1	
-65	26	3.8		
		P		
	14			
	20		12.0	
-70	25	3.8		
		P		
	15			
	27		8.6	
680.33 -75	35	3.3		
		P		End of Boring @ 75.0'.
-80				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

BBS, from 137 (Rev. 8-99)

PATRICK an AECOM company	USER NAME = BP003	DESIGNED - KP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORINGS LOGS 5 STRUCTURE NO. 056–0111
		CHECKED - LFB	REVISED -		SHEET S-29 OF S-33 SHEETS
	PLOT SCALE = 0:2 ':" / in.	DRAWN - BMP	REVISED -		
	PLOT DATE = 1/23/2026	CHECKED - LFB	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	460
		CONTRACT NO.	62U72	
		ILLINOIS	FED. AID PROJECT	

MODEL: Default
FILE NAME: C:\SHT-056011-62U72-sborings-529.dgn
1/23/2026 3:00:51 PM

Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
www.interraservices.com

SOIL BORING LOG

Date 11/12/21

ROUTE IL 31 DESCRIPTION Unnamed Tributary to Fox River 3-Span Bridge SN 056-0111 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2064796.625,1000170.318

COUNTY McHenry DRILLING METHOD Hollow Stem Auger/Mud Rotary HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO. 056-0105
Station IL 31 Stn. 444+46

BORING NO. UTB-BSB-06
Station 443+86
Offset 17.00ft RT
Ground Surface Elev. 755.02 ft

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter 749.0 ft ▼
Upon Completion Mud rotary ft
After _____ Hrs. Filled ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
754.69				ASPHALT (4")
754.02				CONCRETE (8")
	15			Medium dense, gray SAND FILL, trace crushed rock aggregate. Moist.
	15		4.7	
752.02	12			
				Very loose, ROCK AGGREGATE. Moist.
	3			
	1		22.5	
-5	1			
749.52				Medium dense, gray SAND, trace rock aggregate and gravel. Wet. ▼
	2			
	5		12.2	
747.02	8			
				Loose, gray SAND, trace rock aggregate and gravel. Wet.
	2			
	4		10.8	
-10	4			
	2			
	4		20.7	
742.02	4			
				Medium dense, gray SAND, trace gravel. Wet.
	2			
	7		15.2	
-15	6			
	2			
	3		14.5	
	7			
	5			
	4		16.3	
-20	7			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Medium dense, gray SAND, trace gravel. Wet. *(continued)*
	6			
	13		16.4	
	11			
	8			
	11		15.9	
-25	14			
729.52				Medium dense, gray SANDY LOAM, trace gravel and cobbles. Wet.
	6			
	7		16.3	
727.02	9			
				Dense, gray SANDY CLAY LOAM, trace gravel. Wet.
	10			
	11		7.8	
-30	20			
	14			
	18		13.9	
-35	22			
718.02	27			
				Hard, gray CLAY, trace gravel. Moist.
	17		9.1	
-40	20	5.7		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

BBS, from 137 (Rev. 8-99)

Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
www.interraservices.com

SOIL BORING LOG

Date 11/12/21

ROUTE IL 31 DESCRIPTION Unnamed Tributary to Fox River 3-Span Bridge SN 056-0111 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2064796.625,1000170.318

COUNTY McHenry DRILLING METHOD Hollow Stem Auger/Mud Rotary HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO. 056-0105
Station IL 31 Stn. 444+46

BORING NO. UTB-BSB-06
Station 443+86
Offset 17.00ft RT
Ground Surface Elev. 755.02 ft

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter 749.0 ft ▼
Upon Completion Mud rotary ft
After _____ Hrs. Filled ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
		B		Hard, gray CLAY, trace gravel. Moist. *(continued)*
713.02				
				Very stiff, gray CLAY, trace gravel. Moist.
	10			
	17		9.4	
-45	29	2.9		
708.02		B		
				Very stiff gray SANDY CLAY LOAM, trace rock aggregate and gravel. Moist.
	50/4"			
			8.4	
-50		3.5		
703.02		P		
				Very dense, gray GRAVEL AND COBBLES. Moist.
	50/2"			
			5.5	
-55				
698.02				
				Hard gray CLAY LOAM, trace gravel, Moist.
	14			
	30		10.8	
-60	33	4.5		

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
		P		Hard gray CLAY LOAM, trace gravel, Moist. *(continued)*
693.02				
				Very dense, gray SANDY CLAY LOAM, trace gravel, Moist.
	50/5"			
			12.5	
-65				
688.02				
				Very stiff, gray CLAY LOAM, trace gravel, Moist.
	30			
	30		11.3	
-70	26	3.8		
683.02		P		
				Hard, gray CLAY LOAM, trace gravel, Moist.
	15			
	21		10.0	
-75	24	4.0		
680.02		P		
				End of Boring @ 75.0'.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

BBS, from 137 (Rev. 8-99)

MODEL: Default
FILE NAME: C:\SHT-0560111-62U72-sborings-S30.dgn

USER NAME = BP003	DESIGNED - KP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORINGS LOGS 6 STRUCTURE NO. 056–0111
	CHECKED - LFB	REVISED -		
PLOT SCALE = 0:2 ':" / in.	DRAWN - BMP	REVISED -		SHEET S-30 OF S-33 SHEETS
PLOT DATE = 1/23/2026	CHECKED - LFB	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	461
		CONTRACT NO. 62U72		
		ILLINOIS	FED. AID PROJECT	

1/23/2026 3:01:02 PM

Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
www.interraservices.com

SOIL BORING LOG

Date 12/6/21

ROUTE IL 31 **DESCRIPTION** Unnamed Tributary to Fox River 3-Span Bridge SN 056-0111 **LOGGED BY** Abde Sellah

SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2064819.141,1000170.729

COUNTY McHenry **DRILLING METHOD** Hollow Stem Auger/Mud Rotary **HAMMER TYPE** D50 Auto (93% efficiency)

STRUCT. NO. 056-0105
Station IL 31 Stn. 444+46

BORING NO. UTB-BSB-07
Station 444+08
Offset 17.00ft RT
Ground Surface Elev. 754.99 ft

Surface Water Elev. ____ ft
Stream Bed Elev. ____ ft

Groundwater Elev.:
First Encounter 743.0 ft ▼
Upon Completion Mud rotary ft
After ____ Hrs. Filled ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Very dense, brown SILT. Wet. *(continued)*				
	672.99			
Hard, brown CLAY, trace gravel. Moist		14		
		19		12.7
	-85	26	8.0 B	
		22		
		45		13.0
	-90	36	8.5 B	
		31		
		22		15.8
	-95	27	7.8 B	
	657.99			
Very dense, gray SAND. Wet.		35		
		38		14.3
End of boring at 100'.	654.99 -100	35		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

BBS, from 137 (Rev. 8-99)

Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
www.interraservices.com

SOIL BORING LOG

Date 11/16/21

ROUTE IL 31 **DESCRIPTION** Unnamed Tributary to Fox River 3-Span Bridge SN 056-0111 **LOGGED BY** Vianney

SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2064876.291,1000168.945

COUNTY McHenry **DRILLING METHOD** Hollow Stem Auger/Mud Rotary **HAMMER TYPE** D50 Auto (93% efficiency)

STRUCT. NO. 056-0105
Station IL 31 Stn. 444+46

BORING NO. UTB-BSB-08
Station 444+65
Offset 17.00ft RT
Ground Surface Elev. 754.92 ft

Surface Water Elev. ____ ft
Stream Bed Elev. ____ ft

Groundwater Elev.:
First Encounter 746.4 ft ▼
Upon Completion Mud rotary ft
After ____ **Hrs.** Filled ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Material Description
754.50				ASPHALT (5")
754.00				CONCRETE (6")
753.50	11			STONE (6")
	12		7.6	Medium dense, brown SAND, some gravel, little cobbles. Moist.
	8			
751.92				
	2			Soft to very soft, dark gray and black CLAY. Moist
	2		44.0	
-5	2	0.5 B		
	2			
	3		46.9	
	4	0.0 P		
746.92				
	5			Medium dense, gray SANDY LOAM, trace gravel. Wet. ▼
	5		15.4	
-10	7			
744.42				
	5			Medium dense, gray SANDY LOAM trace gravel. Wet.
	8		7.4	
	5			
741.92				
	3			Medium dense, gray SAND, little gravel and crushed aggregate. Wet.
	6		10.6	
-15	11			
739.42				
	6			Medium dense, gray SAND, trace gravel. Wet.
	7		16.5	
	10			
	6			
	7		20.5	
-20	7			
	5			Medium dense, gray SAND, trace gravel. Wet. *(continued)*
	6		17.8	
	7			
	4			
	6		14.7	
-25	7			
729.42				
	6			Medium stiff, gray CLAY LOAM, trace gravel. Moist.
	4		9.8	
	6	0.5 P		
726.92				
	15			Medium dense, gray SANDY CLAY LOAM, trace gravel, Moist.
	13		7.3	
-30	24	2.8 P		
722.92				
	21			Dense, gray SANDY CLAY LOAM, trace gravel, Moist.
	21		8.7	
-35	24	2.0 P		
717.92				
	12			Very stiff, gray CLAY LOAM, trace gravel. Moist.
	14		8.9	
-40	14	3.3		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

BBS, from 137 (Rev. 8-99)

Benchmark: Found mag nail in parking lot. N2068252.501, E1000376.786, Elev. 754.933
Existing Structure: None
One lane of traffic in each direction to be maintained using staged construction. Wall to be constructed in Stage 1.

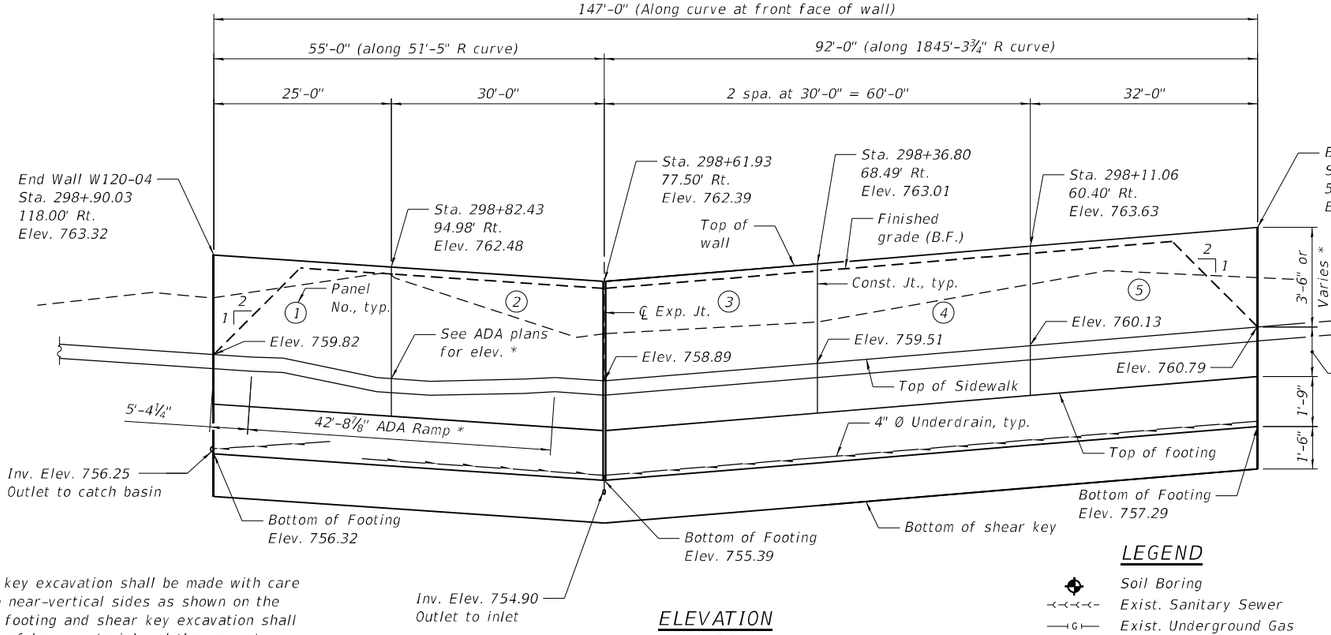
INDEX OF SHEETS

DESIGN STRESSES

FIELD UNITS
fc' = 3,500 psi (Substructure)
fy = 60,000 psi (Reinforcement)

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition and IDOT Bridge Manual



ELEVATION

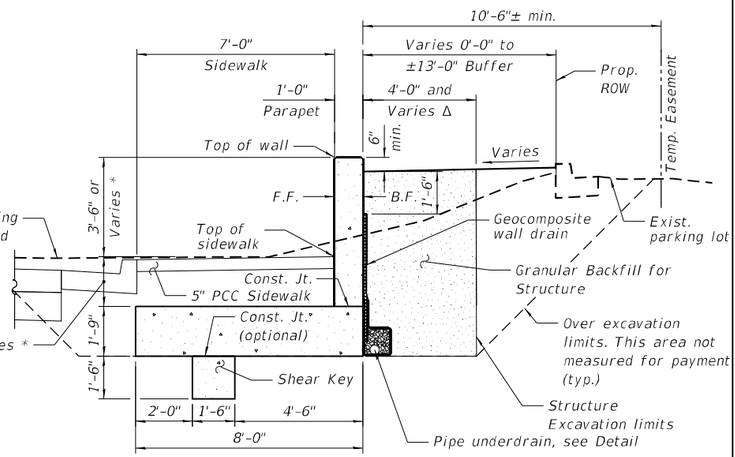
(Looking at F.F. of wall)
* See ADA plans for top of sidewalk elevations within ADA Ramp

Notes:

The shear key excavation shall be made with care to produce near-vertical sides as shown on the plans. The footing and shear key excavation shall be cleaned of loose material and the concrete poured against undisturbed in-place soils.

LEGEND

- Soil Boring
- Exist. Sanitary Sewer
- Exist. Underground Gas
- Exist. Underground Telephone
- Exist. Underground Fiber Optic
- Exist. Underground Electric
- Exist. Underground Water
- Exist. Underground Cable TV
- Prop. Storm Sewer
- Prop. Light in Cable duct
- Prop. Lighting
- B.F. Back Face
- F.F. Front Face
- E.F. Each face



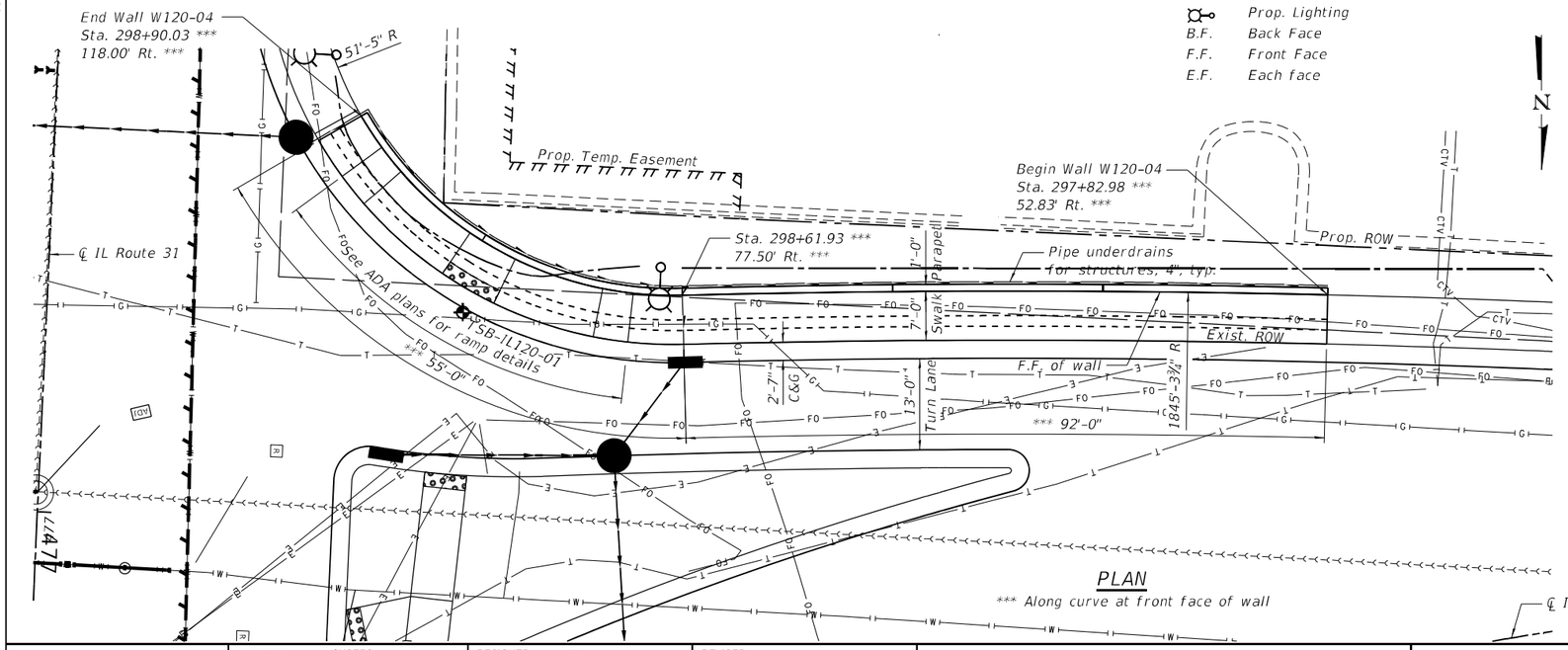
TYPICAL WALL SECTION

Δ Place Granular Backfill for Structures at 4'-0" width where R/W allows. Taper to 0'-0" at min R/W.
* See ADA plans for top of sidewalk elevations within ADA Ramp

PIPE UNDERDRAIN DETAIL

ΔΔ Included in the cost of "Pipe Underdrains for Structures, 4".

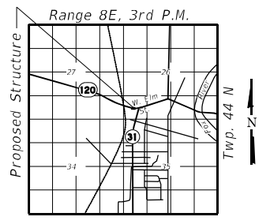
PROFILE GRADE - IL ROUTE 120



PLAN

*** Along curve at front face of wall

PROP. CURVE P_IL120_6
PI STA. = 298+12.86
Δ = 33° 15' 34" (LT)
D = 10° 53' 10"
R = 526.32'
T = 157.20'
L = 305.52'
E = 22.97'
P.C. STA. = 296+55.66
P.T. STA. = 299+61.19



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
WALL W120-04 - IL ROUTE 120
F.A.P. 336A - SECTION FAP 336 23 RECON NORTH
MCHENRY COUNTY
STA. 297+82.98 TO STA. 298+90.03

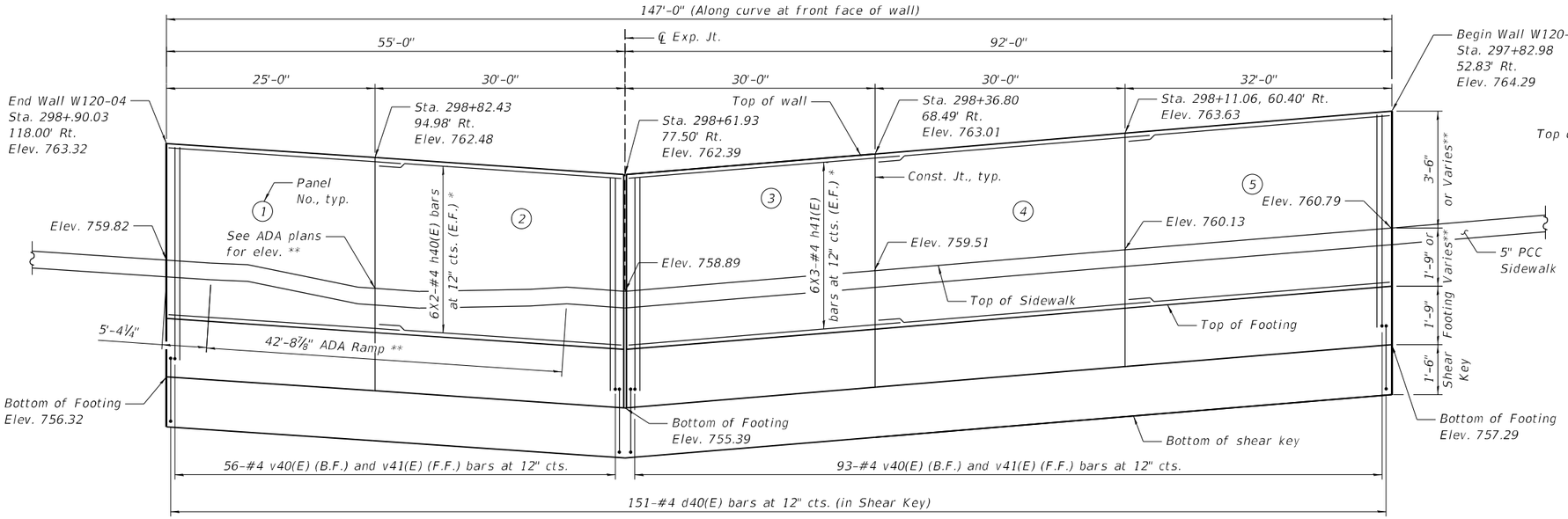
USER NAME = $USER$	DESIGNED - JH	REVISED -	
	CHECKED - LFB	REVISED -	
PLOT SCALE = $SCALE$	DRAWN - JH	REVISED -	
PLOT DATE = $DATE$	CHECKED - LFB	REVISED -	

FILE NAME: $DATE$ $TIME$

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET SA-01 OF SA-03 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	464
		CONTRACT NO.	62U72	
		ILLINOIS	FED. AID PROJECT	

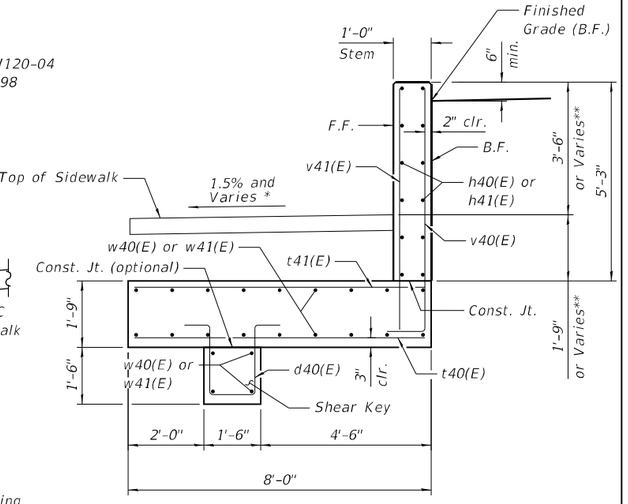


ELEVATION

(Looking at F.F. of wall)

* Bend h(E) bars as needed along curve.

** See ADA plans for top sidewalk elevations within ADA Ramp

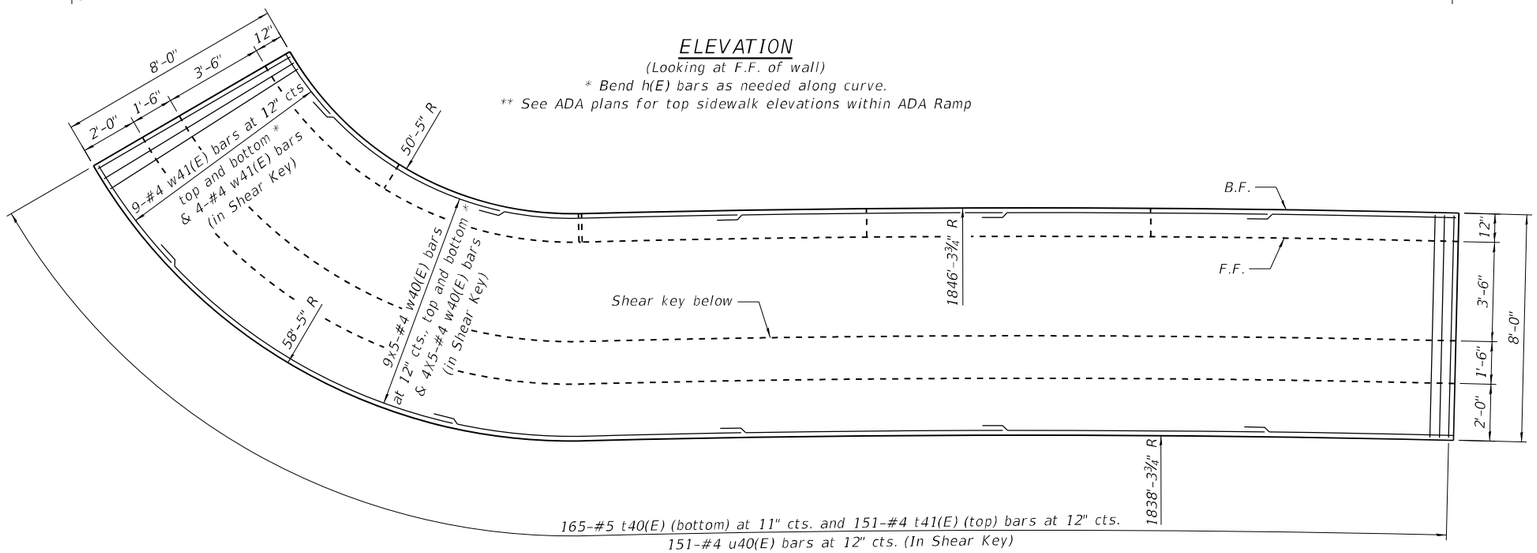


TYPICAL WALL SECTION

* See ADA Plans for varying slopes at ramp.

** See ADA plans for top sidewalk elevations within ADA Ramp

Maximum service bearing pressure = 1.03 ksf



PLAN

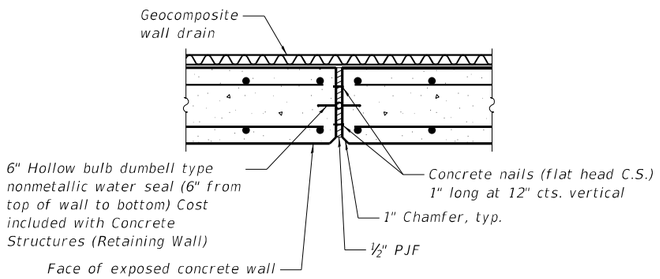
* Bend w(E) bars as needed along curve.

BILL OF MATERIALS

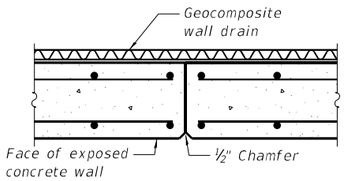
Bar	No.	Size	Length	Shape
h40(E)	24	4	28'-5"	———
h41(E)	36	4	32'-0"	———
t40(E)	165	5	7'-8"	———
t41(E)	151	4	7'-8"	———
u40(E)	151	4	6'-2"	⌴
v40(E)	149	4	7'-2"	⌴
v41(E)	149	4	6'-6"	———
w40(E)	110	4	30'-0"	———
w41(E)	22	4	10'-6"	———
Structure Excavation			Cu Yd	324
Protective Coat			Sq Yd	74
Reinforcement Bars, Epoxy Coated			Pound	7,660
Name Plates			Each	1
Concrete Structures (Retaining Wall)			Cu Yd	120
Granular Backfill For Structures			Cu Yd	147
Geocomposite Wall Drain			Sq Yd	90
Pipe Underdrains For Structures 4"			Foot	163

Notes:

1. Bars indicated thus 8x2-#5 etc. indicates 8 lines of bars with 2 lengths per line.
2. Sidewalk shall be finished per section 424.06 of the standard specifications.



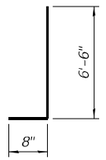
EXPANSION JOINT DETAIL



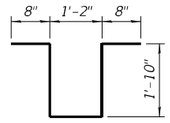
CONSTRUCTION JOINT

MIN. BAR LAPS

#4 = 2'-2"



BAR v40(E)



BAR u40(E)

MODEL: $MODELNAME$
FILE NAME: $FILE$

$DATE$ $TIME$

USER NAME = $USER$	DESIGNED - JH	REVISED -	**STATE OF ILLINOIS**	**DETAILED PLAN AND ELEVATION**	
	CHECKED - LFB	REVISED -	**DEPARTMENT OF TRANSPORTATION**	**ILLINOIS ROUTE 120**	
PLOT SCALE = $SCALE$	DRAWN - JH/BMP	REVISED -		SHEET SA-02 OF SA-03 SHEETS	
PLOT DATE = $DATE$	CHECKED - LFB	REVISED -			

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	465
		CONTRACT NO.	62U72	
		ILLINOIS	FED. AID PROJECT	

Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
www.interraservices.com

SOIL BORING LOG

Date 12/22/21

ROUTE IL 31 **DESCRIPTION** IL 31, from IL 176 to IL 120 **LOGGED BY** Atul Kumar

SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2068060.4416,1000364.8412 (offset 14' N & 10' W)

COUNTY McHenry **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** D50 Auto (93% efficiency)

STRUCT. NO. _____
Station _____

BORING NO. TSB-IL120-01
Station 476+69
Offset 59.00ft LT
Ground Surface Elev. 759.02 ft

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion Dry ft
After _____ **Hrs.** Filled ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Very stiff dark brown, SILTY CLAY LOAM. Moist.		4		
		4 4	3.5 P	13.7
		4		
		2		13.9
	-5	3	3.0 P	
	753.52			
Stiff, dark brown SILTY CLAY LOAM. Moist. Thin layer of sand at 6.0'.		3		
		2 3	1.0 P	27.1
	751.02			
Very stiff, dark brown SILTY CLAY LOAM. Moist.		3		
		3 3	2.0 P	14.2
	-10			
	748.52			
Medium stiff, brown LOAM, Moist. NP.			0.7 B	15.1
	746.02			
Very stiff, brown SILTY CLAY LOAM. Wet.		7		
		7 8	3.0 P	19.9
	-15			
	743.52			
Hard brown, SILTY CLAY. Moist.		3		
		5 6	4.5 P	21.4
		8		
		8		17.5
End of Boring @ 20.0'	739.02 -20	10	4.5	

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
			P	
	-25			
	-30			
	-35			
	-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

BBS, from 137 (Rev. 8-99)

MODEL: $MODELNAME$
FILE NAME: $FILE$

USER NAME = $USER$	DESIGNED - JH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - LFB	REVISED -	
PLOT SCALE = $SCALE$	DRAWN - BMP	REVISED -	
PLOT DATE = $DATE$	CHECKED - LFB	REVISED -	

SOIL BORINGS LOG
ILLINOIS ROUTE 120
SHEET SA-03 OF SA-03 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	466
		CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			

$DATE$ $TIME$

Interra, Inc.
600 Territorial Drive, Suite G
Bolingbrook, IL 60440
www.interraservices.com

SOIL BORING LOG

Date 12/22/21

ROUTE IL 31 **DESCRIPTION** IL 31, from IL 176 to IL 120 **LOGGED BY** Atul Kumar

SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2068060.4416,1000364.8412 (offset 14' N & 10' W)

COUNTY McHenry **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** D50 Auto (93% efficiency)

STRUCT. NO. _____
Station _____

BORING NO. TSB-IL120-01
Station 476+69
Offset 59.00ft LT
Ground Surface Elev. 759.02 ft

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion Dry ft
After _____ **Hrs.** Filled ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Very stiff dark brown, SILTY CLAY LOAM. Moist.		4		
		4 4	3.5 P	13.7
		4		
		2		13.9
	-5	3	3.0 P	
	753.52			
Stiff, dark brown SILTY CLAY LOAM. Moist. Thin layer of sand at 6.0'.		3		
		2 3	1.0 P	27.1
	751.02			
Very stiff, dark brown SILTY CLAY LOAM. Moist.		3		
		3 3	2.0 P	14.2
	-10			
	748.52			
Medium stiff, brown LOAM, Moist. NP.			0.7 B	15.1
	746.02			
Very stiff, brown SILTY CLAY LOAM. Wet.		7		
		7 8	3.0 P	19.9
	-15			
	743.52			
Hard brown, SILTY CLAY. Moist.		3		
		5 6	4.5 P	21.4
		8		
		8		17.5
End of Boring @ 20.0'	739.02 -20	10	4.5	

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
			P	
	-25			
	-30			
	-35			
	-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

BBS, from 137 (Rev. 8-99)

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PATRICK a RAR company

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	CHECKED - LFB	REVISED -	
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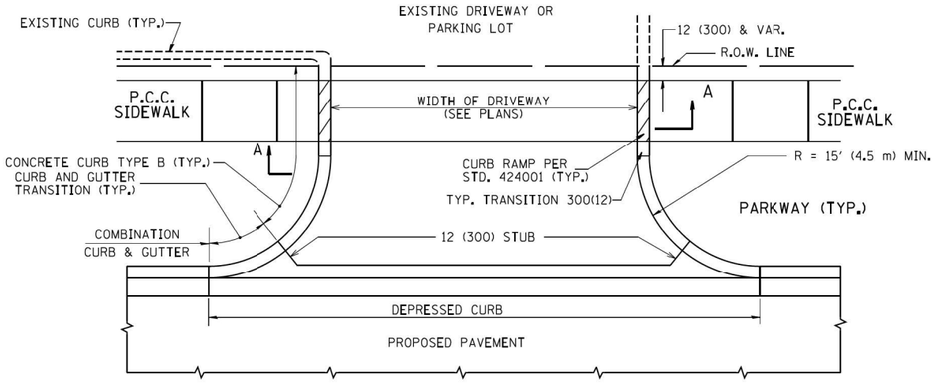
PLOT DATE = $DATE$	CHECKED - LFB	REVISED -	

$DATE$ $TIME$

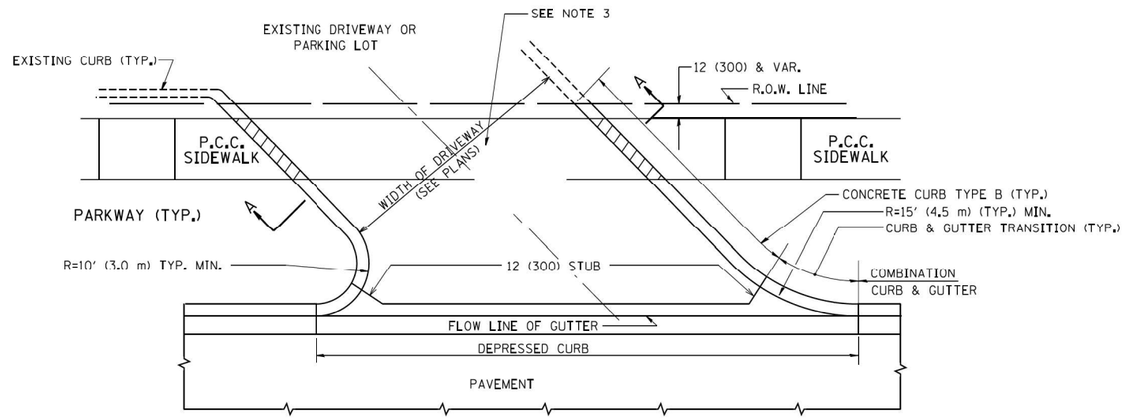
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORINGS LOG
ILLINOIS ROUTE 120
SHEET SA-03 OF SA-03 SHEETS

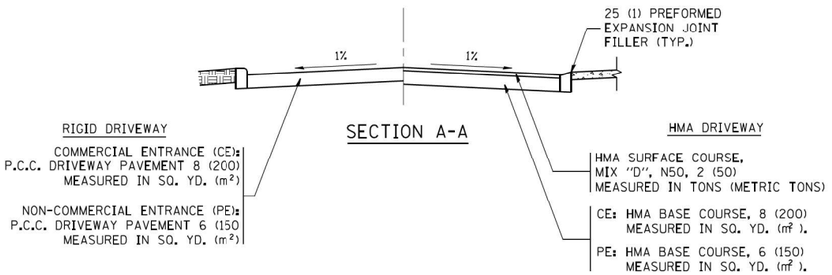
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	2019-196-W&R	McHENRY	575	467
		CONTRACT NO.	62U72	
	ILLINOIS FED. AID PROJECT			

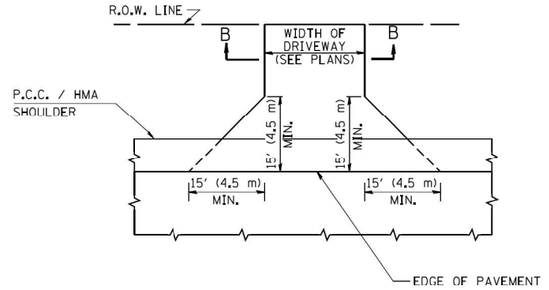


WITH CONCRETE CURB, TYPE B

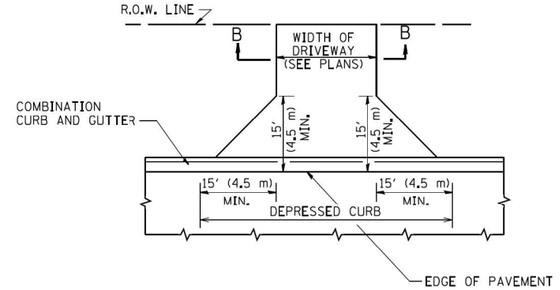


WITH CONCRETE CURB, TYPE B





ADJACENT TO P.C.C. / HMA SHOULDER



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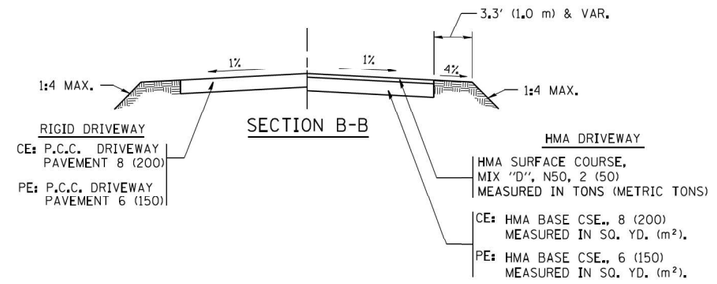

RURAL FIELD ENTRANCE (FE)

HMA SURFACE COURSE,
MIX "D", N50, 2 (50)
MEASURED IN TONS (METRIC TONS)

AGGREGATE BASE CSE., TYPE B, 8 (200)
MEASURED IN SQ. YD. (m²).

GENERAL NOTES:

DRIVEWAY SLOPES, LOCATIONS, & GEOMETRIC LAYOUT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "HANDBOOK FOR POLICY ON PERMITS FOR ACCESS DRIVEWAYS TO STATE HIGHWAYS". FOR FURTHER LAYOUT REQUIREMENTS, REFER TO ILLUSTRATIONS IN THE PERMIT HANDBOOK. DRIVEWAYS SHALL BE REPLACED IN KIND, UNLESS OTHERWISE NOTED ON THE PLANS.

COMMERCIAL DRIVEWAYS SHALL BE CONSTRUCTED WITH CONCRETE CURB, TYPE B RETURNS EXCEPT WHEN THE SIDEWALK EDGE IS 4 FEET (1.2 METERS) OR LESS FROM THE BACK OF CURB, CONSTRUCT A FLARE DRIVEWAY WITHOUT CURB.

THE RESIDENT ENGINEER SHALL CONTACT THE TRAFFIC PERMIT OFFICE AT 847/ 705-4131 FOR ANY QUESTIONS ON DRIVEWAYS SHOWN IN THE PLANS; SPECIFICALLY IN REFERENCE TO ADDITIONAL AND/OR RELOCATION/REMOVAL OF A DRIVEWAY.

COMBINATION CONCRETE CURB & GUTTER SHALL BE MEASURED STRAIGHT ACROSS THE DRIVEWAY. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THE CURB & GUTTER TRANSITION.

1 (25) PREFORMED EXPANSION JOINT FILLER WILL NOT BE PAID SEPARATELY, BUT SHALL BE CONSIDERED INCLUDED IN THE COST OF THE P.C.C. DRIVEWAY PAVEMENT OR P.C.C. SIDEWALK.

WHEN THE P.C.C. SIDEWALK EXTENDS THROUGH THE DRIVEWAY, THE THICKNESS OF THE SIDEWALK IN THE DRIVEWAY AREA SHALL BE THE SAME AS THE DRIVEWAY THICKNESS. SIDEWALK WILL BE PAID FOR AS P.C.C. SIDEWALK OF THE THICKNESS SPECIFIED. SIDEWALK CROSS SLOPE THRU DRIVEWAY AREA TO BE A MAXIMUM OF 1:50.

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		DRAWN -	REVISED - R. BORO 01-01-07
	PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED - R. BORO 06-11-08
	PLOT DATE = 9/6/2011	DATE - 09/04/2025	REVISED - R. BORO 09-06-11

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRIVEWAY DETAILS – DISTANCE BETWEEN R.O.W. AND FACE OF CURB & EDGE OF SHOULDER >= 15' (4.5 m)

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	468
	BD0156-07 (BD-01)	CONTRACT NO. 62U72		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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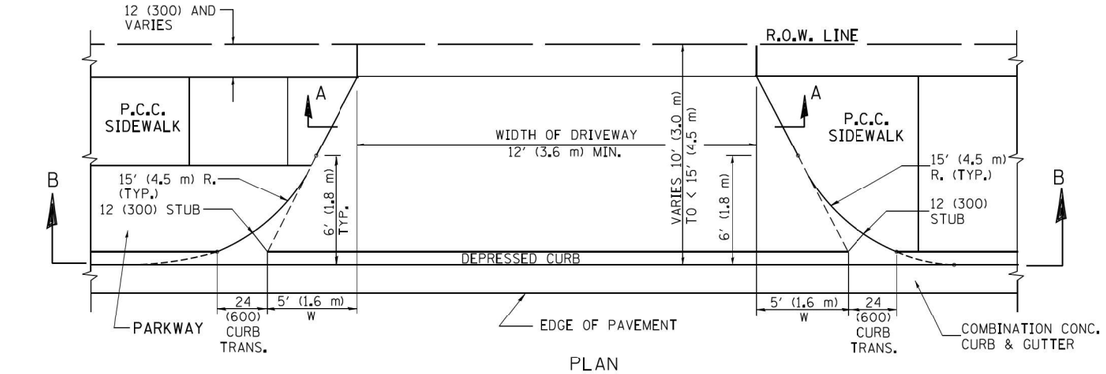
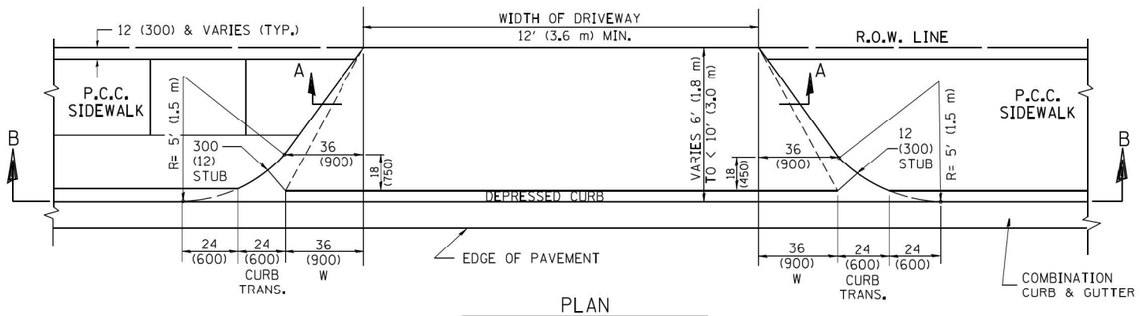


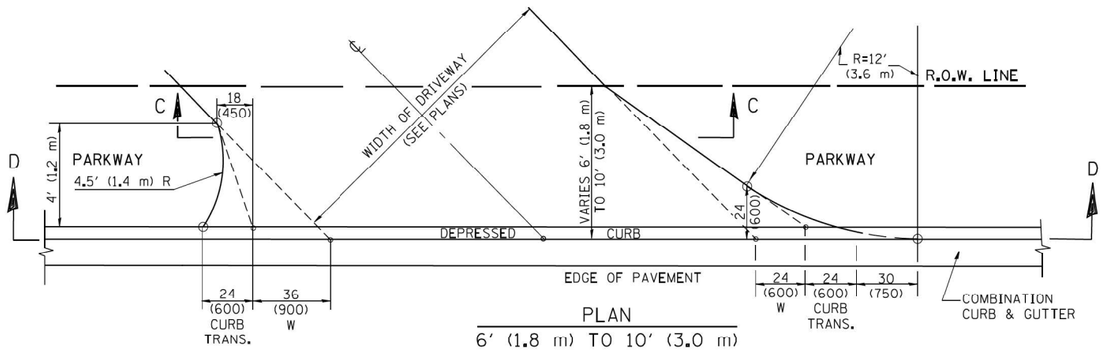
PLAN

10' (3.0 m) TO < 15' (4.5 m)



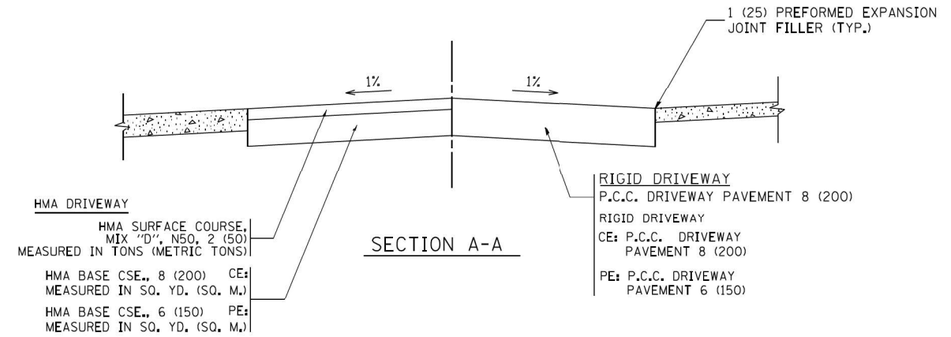
PLAN

6' (1.8 m) TO < 10' (3.0 m)

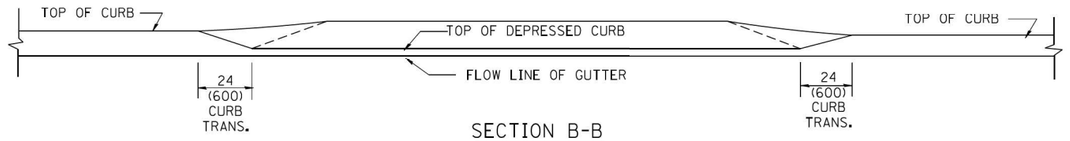


PLAN

6' (1.8 m) TO 10' (3.0 m)



SECTION A-A



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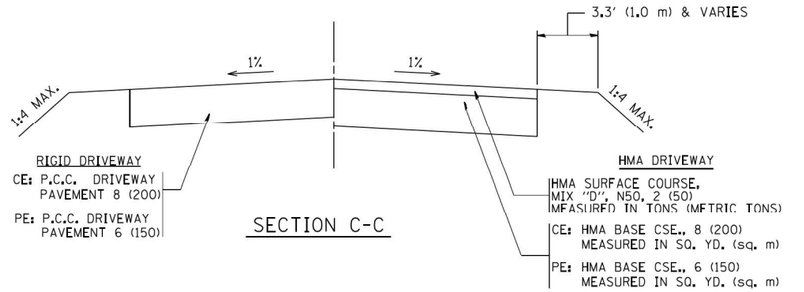
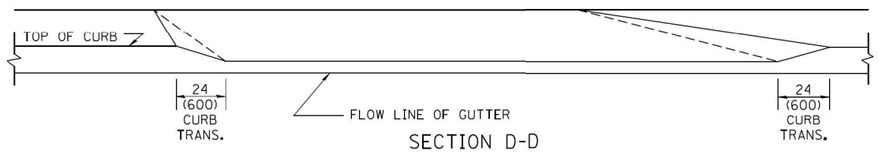


SECTION C-C



SECTION D-D

GENERAL NOTES

DRIVEWAY SLOPES, LOCATIONS, & GEOMETRIC LAYOUT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "HANDBOOK FOR POLICY ON PERMITS FOR ACCESS DRIVEWAYS TO STATE HIGHWAYS". FOR FURTHER LAYOUT REQUIREMENTS. REFER TO ILLUSTRATION 10 IN THE PERMIT HANDBOOK. WHERE SIDEWALKS EXIST, DRIVEWAYS SHALL BE REPLACED WITH RIGID PAVEMENT. WHERE NO SIDEWALKS EXIST, DRIVEWAYS SHALL BE REPLACED IN KIND. SIDEWALK CROSS SLOPE THRU DRIVEWAY AREA TO BE A MAXIMUM OF 1:50.

WHEN THE DISTANCE BETWEEN R.O.W. AND THE BACK OF CURB IS EQUAL TO OR LESS THAN 8' (2.4 m), THE P.C.C. SIDEWALK SHALL EXTEND TO THE BACK OF CURB.

THE RESIDENT ENGINEER SHALL CONTACT THE TRAFFIC PERMIT OFFICE AT 847/ 705-4131 FOR ANY QUESTIONS ON DRIVEWAYS SHOWN IN THE PLANS; SPECIFICALLY IN REFERENCE TO ADDITIONAL AND/OR RELOCATION/REMOVAL OF A DRIVEWAY.

COMBINATION CONCRETE CURB & GUTTER SHALL BE MEASURED STRAIGHT ACROSS THE DRIVEWAY. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THE CURB & GUTTER TRANSITION.

THE 1 (25) PREFORMED EXPANSION JOINT FILLER WILL NOT BE PAID SEPARATELY, BUT SHALL BE CONSIDERED INCLUDED IN THE COST OF THE P.C.C. DRIVEWAY PAVEMENT OR P.C.C. SIDEWALK.

"W" VARIES FROM 36 (900) TO 5' (1.5 m) PROPORTIONAL TO THE LENGTH (L), FROM 6' (1.8 m) TO 10' (3 m).

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

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	PLOT DATE = 10/28/2011	DATE - 10/06/95	REVISED - R. BORO 09-06-11

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRIVEWAY DETAILS
DISTANCE BETWEEN ROW AND FACE OF CURB < 15' (4.5 m)

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	469
	BD400-02 (BD-02)	CONTRACT NO. 62U72		
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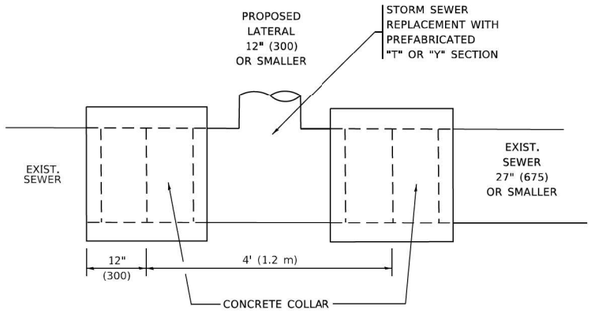
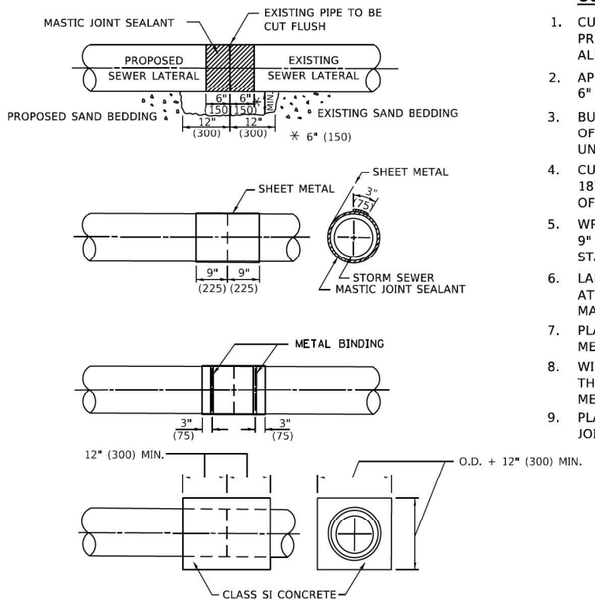


DETAIL "A"

LATERAL CONNECTION TO EXISTING SEWER
OF 27" (675) OR SMALLER

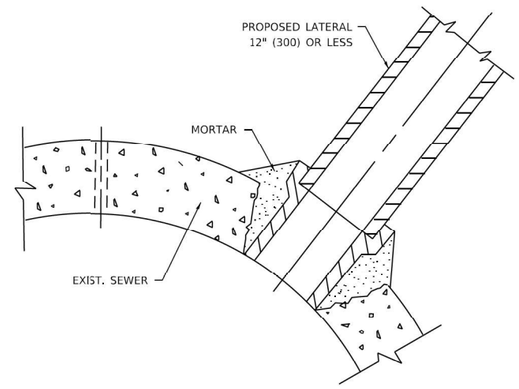


DETAIL "B"

CLASS SI CONCRETE COLLAR

CONSTRUCTION SEQUENCE

1. CUT THE EXISTING END OF THE PIPE SO AS TO PRESENT A FLUSH BUTT JOINT. BRUSH AND CLEAN ALL PIPES.
2. APPLY THE MASTIC JOINT SEALANT TO THE FIRST 6" (150) OF EACH PIPE.
3. BUTT THE PIPES TOGETHER LEAVING A MINIMUM OF 12' x 6' (300 x 150) DEEP EXCAVATION UNDER AND AROUND EACH PIPE END.
4. CUT A PIECE OF SHEET METAL GAGE NO. 19 1.1 (0.0418) 18" (450) WIDE BY THE OUTSIDE CIRCUMFERANCE OF THE PIPE PLUS 3" (75) LONG.
5. WRAP THE SHEET METAL AROUND THE PIPES, 9" (225) ON EACH SIDE OF THE JOINT, STARTING AT THE TOP OF THE PIPE.
6. LAP THE SHEET METAL AT LEAST 3" (75) AT THE TOP OF THE PIPE AND PLACE THE MASTIC JOINT SEALANT BETWEEN THE LAP.
7. PLACE TWO METAL BANDS AROUND THE SHEET METAL AND TIGHTEN.
8. WIPE OFF ANY EXCESS MASTIC JOINT SEALANT THAT OOZES OUT FROM BETWEEN THE SHEET METAL AND THE PIPES.
9. PLACE CLASS SI CONCRETE AROUND THE JOINT.



DETAIL "C"

PROPOSED LATERAL
CONNECTION TO EXISTING SEWER
OF 30" (750) OR LARGER

NOTES:

MATERIAL

MATERIAL USED FOR THE TEE OR WYE SECTION SHALL BE COMPATIBLE WITH THE EXISTING STORM SEWER OR THE PROPOSED STORM SEWER.

CONSTRUCTION METHODS

I. THIS WORK SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE APPLICABLE PORTIONS OF SECTION 550 OF THE STANDARD SPECIFICATIONS.

II. CONNECTION TO AN EXISTING STORM SEWER SHALL BE BY EITHER OF THE FOLLOWING METHODS:
- A) PROPOSED STORM SEWER CONNECTION TO EXISTING SEWER OF 27" (675) OR SMALLER SEE DETAIL "A" AND "B".
- B) PROPOSED STORM SEWER CONNECTION TO EXISTING SEWER OF 30" (750) OR LARGER SEE DETAIL "C".

IF THE EXISTING SEWER PIPE IS CRACKED, BROKEN OR OTHERWISE DAMAGED BY THE CONTRACTOR IN MAKING THE CIRCULAR OPENING, THE CONTRACTOR SHALL REPLACE THAT SECTION OF PIPE WITH PIPE EQUAL AND SIMILAR IN ALL RESPECTS TO THE PIPE IN THE EXISTING SEWER, IN A CAREFUL WORKMANLIKE MANNER, WITHOUT EXTRA COMPENSATION.

GENERAL

1. CARE MUST BE TAKEN TO PREVENT DEBRIS FROM ENTERING THE SEWER. ALL DEBRIS WHICH ENTERS THE SEWER MUST BE REMOVED. THE SEWER MUST BE LEFT CLEAN AND UNOBSTRUCTED UPON COMPLETION OF THE CONTRACT.

2. CARE MUST BE TAKEN TO PREVENT ANY PART OF THE NEW PIPE CONNECTION FROM PROJECTING INTO THE EXISTING SEWER.

BASIS OF PAYMENT

1. TEE OR WYE CONNECTIONS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR STORM SEWER TEE OR WYE OF THE TYPE AND SIZE SPECIFIED IN THE PLANS. THIS PRICE SHALL INCLUDE ALL EXCAVATION OF THE TRENCH, REMOVAL OF THE EXISTING STORM SEWER, FURNISHING AND INSTALLING THE SPECIFIED TEE OR WYE SECTION, FURNISHING AND INSTALLING THE REQUIRED CONCRETE COLLAR, AND ALL OTHER MATERIAL NECESSARY TO COMPLETE THIS WORK AS SHOWN AND SPECIFIED.

2. REMOVAL AND REINSTALLATION OF EXISTING STORM SEWER ADJACENT TO THE PROPOSED TEE OR WYE SECTION, FOR THE PURPOSE OF FACILITATING THE INSTALLATION OF THE TEE OR WYE SECTION, WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE WORK.

3. TRENCH BACKFILL, EXCAVATION IN ROCK AND REMOVAL AND REPLACEMENT OF UNSUITABLE MATERIAL BELOW PLAN BEDDING GRADE WILL BE PAID FOR SEPARATELY.

4. CONCRETE COLLAR FOR CONNECTING A PROPOSED STORM SEWER TO AN EXISTING STORM SEWER WILL NOT BE PAID PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE PROPOSED STORM SEWER.

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

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PLOT DATE = 11/18/2022	DATE - 07/25/95	REVISED - K. SMITH 11-18-22	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAIL OF STORM SEWER CONNECTION TO EXISTING SEWER

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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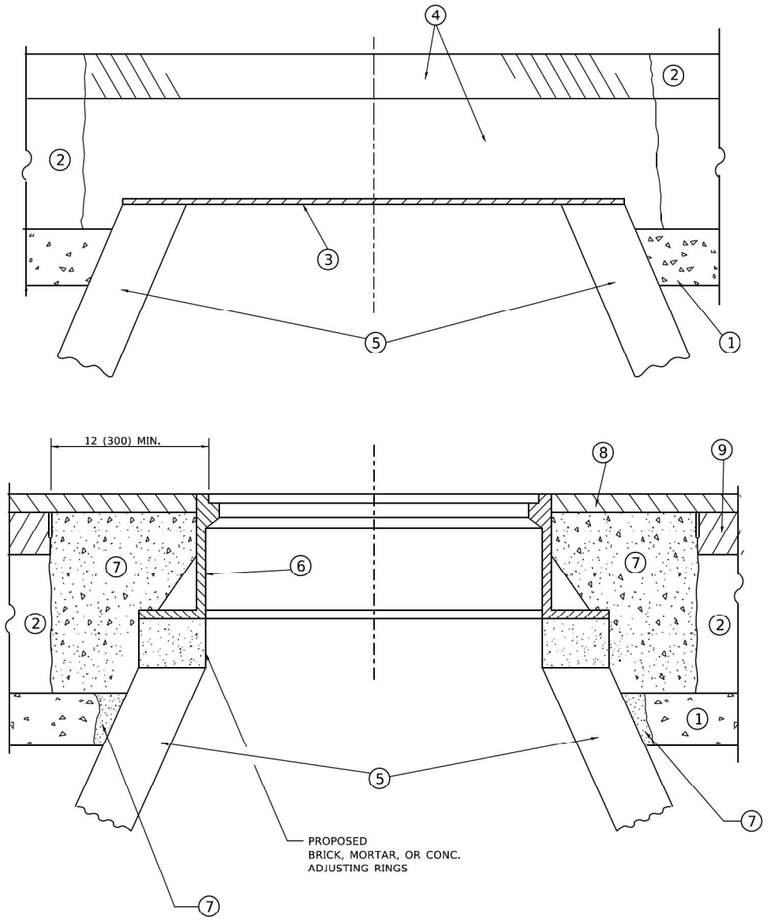
	BD500-01 (BD-07)	CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			



DETAILS FOR FRAMES AND LIDS ADJUSTMENT WITH MILLING

NOTES

1. EXISTING BROKEN FRAMES AND LIDS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AND SHALL BE REPLACED AS DIRECTED BY THE ENGINEER. REPLACEMENT FRAMES AND LIDS WILL BE PAID FOR IN ACCORDANCE WITH ARTICLE 109.04 OF THE STANDARD SPECIFICATIONS UNLESS A SEPARATE PAY ITEM HAS BEEN PROVIDED.

2. IF THE EXISTING LIDS ARE OPEN, THE FRAME WILL BE ADJUSTED TO THE ELEVATION OF THE MILLED PAVEMENT SURFACE PRIOR TO THE MILLING OPERATION. THE FRAME WILL NOT BE REMOVED AND COVERED BY THE METAL PLATE.

3. CITY OF CHICAGO CASTINGS ARE THE PROPERTY OF THE CITY AND THE CONTRACTOR SHALL NOTIFY THE CITY FOR REMOVAL AND DISPOSITION OF THE CASTINGS.

4. THE METAL PLATE USED TO COVER THE STRUCTURE SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.

5. THE CONTRACTOR SHALL REMOVE ALL TRAFFIC CONTROL DEVICES BY THE END OF EACH WORK SHIFT.

CONSTRUCTION PROCEDURES

STAGE 1 (BEFORE PAVEMENT MILLING)

A) REMOVE A MINIMUM OF 12 (300) OF THE PAVEMENT FROM AROUND THE STRUCTURE.

B) REMOVE THE EXISTING FRAME AND LID FROM THE STRUCTURE.

C) COVER THE STRUCTURE OPENING WITH A 36 (900) DIAMETER METAL PLATE.

D) BACKFILL WITH CRUSHED STONE AND HMA SURFACE MIX APPROVED BY THE ENGINEER. (MIN. 3 (80) HMA TO REMAIN AFTER MILLING).

STAGE 2 (AFTER PAVEMENT MILLING)

A) REMOVE THE HMA SURFACE MIX AND CRUSHED STONE.

B) INSTALL THE FRAME AND LID; ADJUST THE FRAME TO ITS FINAL SURFACE ELEVATION.

C) THE SURROUNDING SPACE SHALL BE FILLED WITH CLASS PP-2* CONCRETE TO THE ELEVATION OF THE SURFACE OF THE EXISTING BASE COURSE OR THE BINDER COURSE.

*UNLESS OTHERWISE SPECIFIED IN THE PLANS.

THE PROCEDURE EXPLAINED ABOVE SHALL CONFORM TO THE APPLICABLE PORTIONS OF SECTIONS 353, 406, 602, AND 603 OF THE STANDARD SPECIFICATIONS EXCEPT THAT "THE CONTRACTOR SHALL ADJUST THE STRUCTURES TO THE FINISHED PAVEMENT ELEVATION NO MORE THAN 5 CALENDAR DAYS PRIOR TO PLACEMENT OF THE FINAL LIFT OF SURFACE UNLESS APPROVED BY THE ENGINEER."

LEGEND

1. SUB-BASE GRANULAR MATERIAL
2. EXISTING PAVEMENT
3. 36 (900) DIAMETER METAL PLATE
4. PROPOSED CRUSHED STONE AND HMA SURFACE MIX
5. EXISTING STRUCTURE
6. FRAME AND LID (SEE NOTES)
7. CLASS PP-2* CONCRETE
8. PROPOSED HMA SURFACE COURSE
9. PROPOSED HMA BINDER COURSE

LOCATION OF STRUCTURES

THE CONTRACTOR WILL BE REQUIRED TO KEEP A RECORD OF THE LOCATIONS OF THE BURIED STRUCTURES ACCORDING TO THE STATION AND DISTANCE LEFT OR RIGHT OF THE CENTERLINE OF PAVEMENT. UPON COMPLETION OF THE WORK, THE CONTRACTOR WILL DELIVER THE RECORD TO THE ENGINEER.

BASIS OF PAYMENT

1. REMOVING FRAMES AND LIDS ON DRAINAGE AND UTILITY STRUCTURES IN THE PAVEMENT PRIOR TO MILLING, AND ADJUSTING TO FINAL GRADE PRIOR TO PLACING THE SURFACE COURSE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR "FRAMES AND LIDS TO BE ADJUSTED (SPECIAL)."

2. THIS WORK WILL NOT BE PAID FOR WHEN DRAINAGE AND UTILITY STRUCTURES ARE SPECIFIED FOR PAYMENT AS STRUCTURE RECONSTRUCTION.

3. NEW FRAMES AND LIDS, WHEN SPECIFIED, WILL BE PAID FOR SEPARATELY.

4. WHEN STRUCTURES ARE TO BE ADJUSTED OR RECONSTRUCTED, THE LOWERING AND RAISING OF THE FRAMES AND LIDS WILL NOT BE PAID FOR SEPARATELY BUT WILL BE INCLUDED IN THE COST OF THE CORRESPONDING PAY ITEM.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

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PLOT DATE = 9/15/2023	DATE - 10-25-96	REVISED - K. SMITH 09-15-23

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAILS FOR
FRAMES AND LIDS ADJUSTMENT WITH MILLING

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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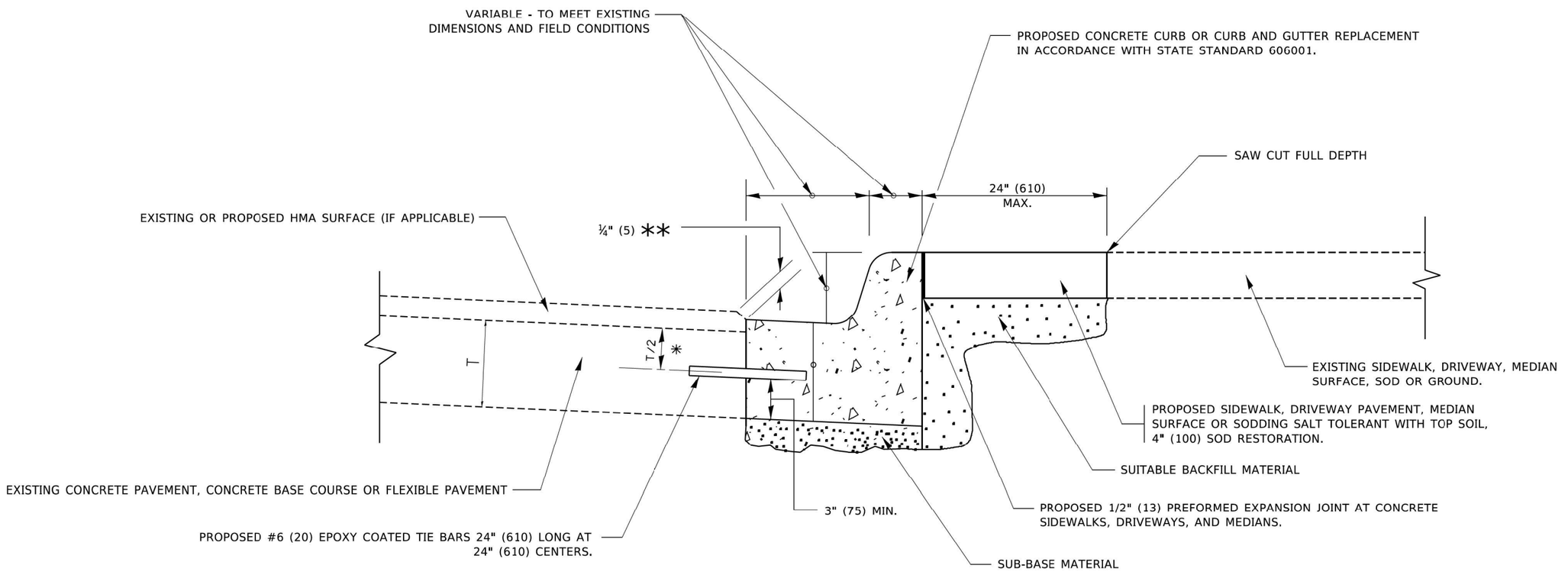
	BD600-03 (BD-08)	CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			



* 3" (75) MINIMUM FROM TOP AND BOTTOM OF THE CONCRETE PAVEMENT OR BASE COURSE.

** IF THE FINAL SURFACE OF THE PAVEMENT IS CONCRETE, THE GUTTER IS TO BE FLUSH WITH THE PAVEMENT.

CURB OR CURB AND GUTTER REMOVAL AND REPLACEMENT

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

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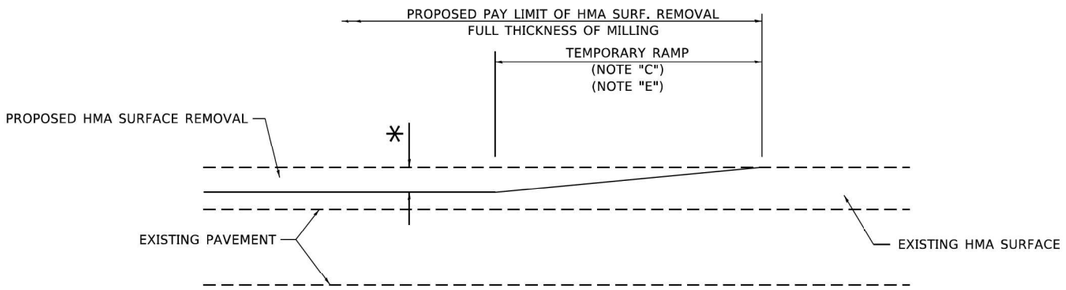
	DRAWN -	REVISED - M. GOMEZ 01-22-01	
PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED - R. BORO 12-15-09	
PLOT DATE = 7/11/2019	DATE - 07/30/2025	REVISED - K. SMITH 07-11-19	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CURB OR CURB AND GUTTER REMOVAL AND REPLACEMENT

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

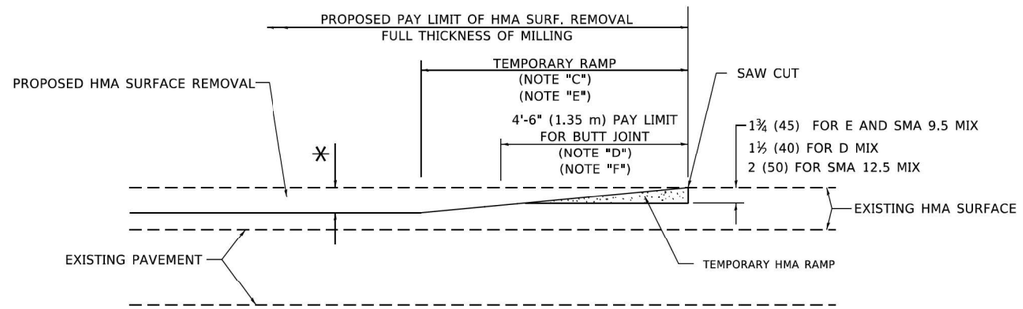
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	472
	BD600–06 (BD–24)	CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			



MILLED TEMPORARY RAMP

(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

OPTION 1

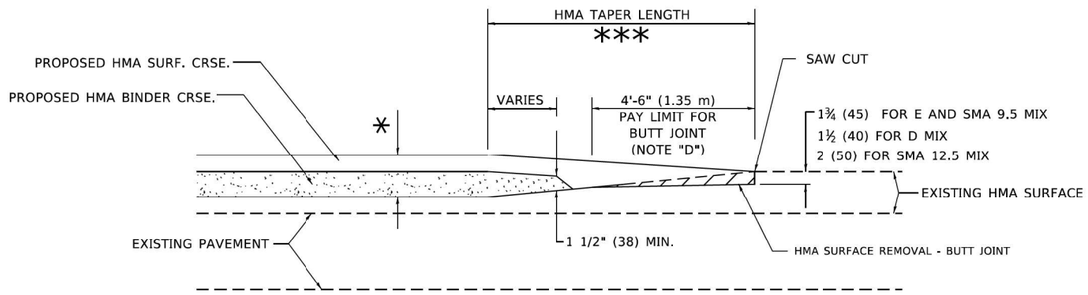


HMA CONSTRUCTED TEMPORARY RAMP

(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

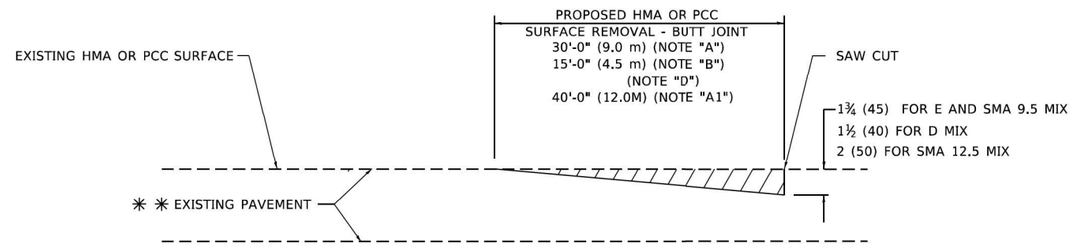
OPTION 2

TYPICAL TEMPORARY RAMP

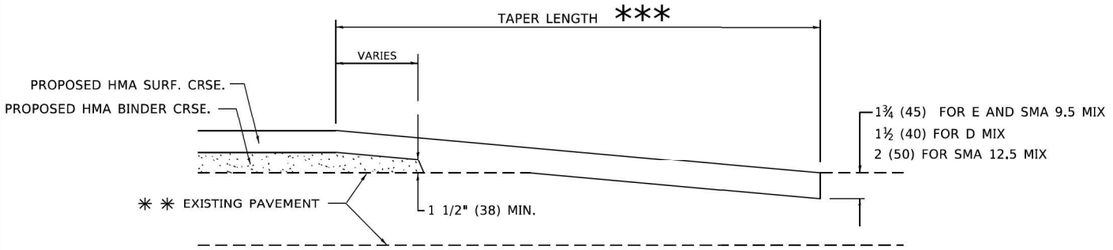


BUTT JOINT AND HMA TAPER

TYPICAL BUTT JOINT AND HMA TAPER FOR MILLING AND RESURFACING



BUTT JOINT DETAIL



HMA TAPER DETAIL

TYPICAL BUTT JOINT AND HMA TAPER FOR RESURFACING ONLY

** PC CONCRETE, HMA OR HMA RESURFACED PAVEMENT.

GENERAL NOTES

A. MAINLINE ARTERIAL ROADWAYS AND MAJOR SIDE ROADS.

A1. INTERSTATES

B. MINOR SIDE ROADS.

C. THE TEMP. RAMP SHALL BE CONSTRUCTED IMMEDIATELY UPON REMOVAL OF THE EXISTING HMA SURFACE.

D. THE BUTT JOINT SHALL BE CONSTRUCTED IMMEDIATELY PRIOR TO PLACING THE PROPOSED HMA COURSES.

E. TAPER THE TEMP. RAMP AT A RATE OF 3' - 4" (1.02m) PER 1 INCH (25 mm) OF MILLING THICKNESS.

* SEE TYPICAL SECTIONS FOR MILLING THICKNESS.

F. SEE ARTICLE 406.08 AND 406.14 OF THE STANDARD SPECIFICATIONS FOR "HMA AND/OR PCC SURFACE REMOVAL, BUTT JOINT".

*** 20'-0" (6.1 m) PER 1 (25) RESURFACING (NOTE "A")
10'-0" (3.0 m) PER 1 (25) RESURFACING (NOTE "B")

BASIS OF PAYMENT

1. THE BUTT JOINT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD (SQUARE METER) FOR "HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT" OR FOR "PORTLAND CEMENT CONCRETE SURFACE REMOVAL- BUTT JOINT".

2. THE TEMPORARY RAMP AND SAW CUT SHALL BE INCLUDED IN THE UNIT COST FOR HMA OR PCC SURFACE REMOVAL-BUTT JOINT.

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

MODEL: Default
FILE NAME: pw:\\dot-pw.bentley.com:PWIDOT\Documents\IDOT Offices\District 1\Projects\Dist\St22x34\CADData\CADSheets\sd32.dgn

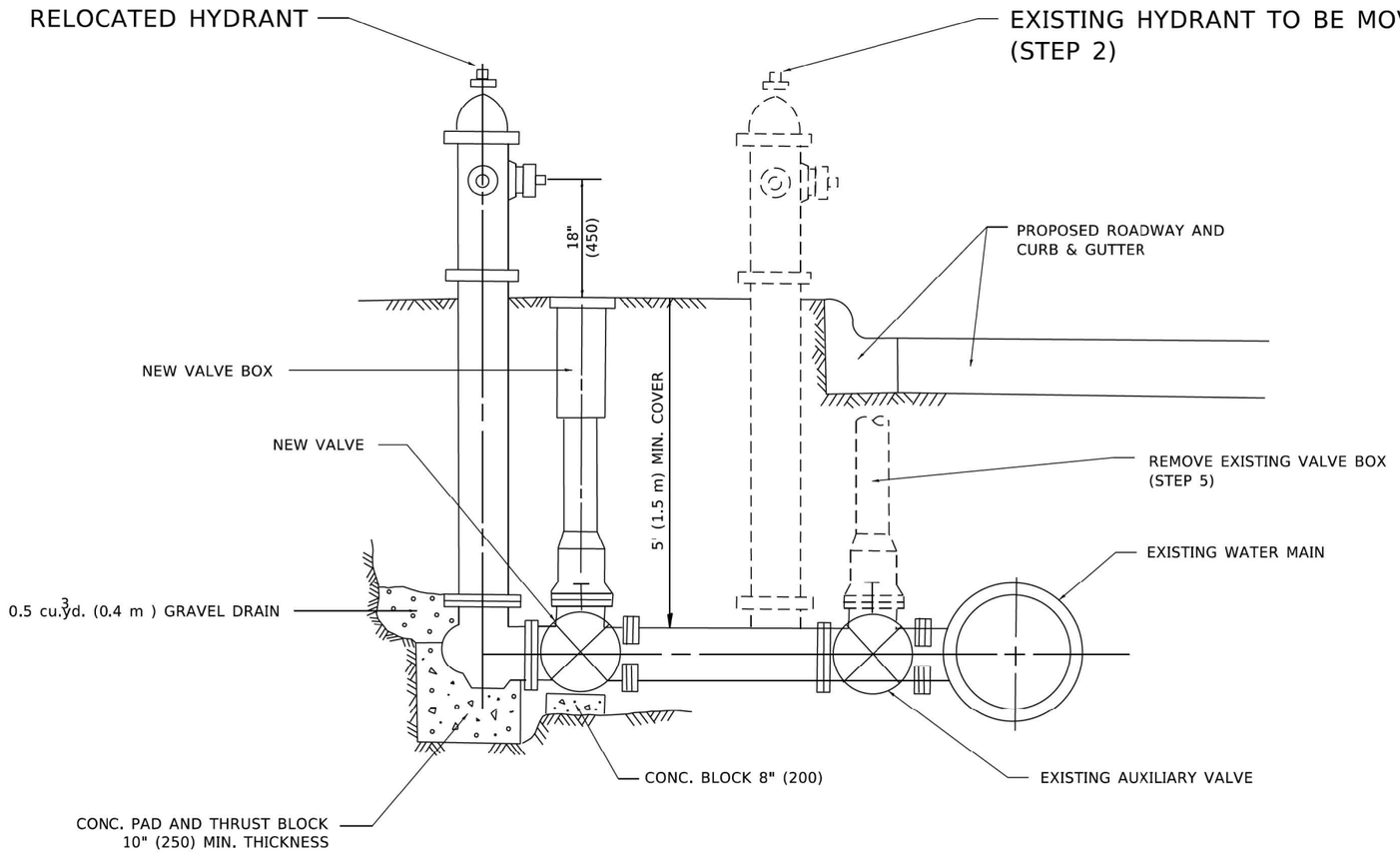
USER NAME = Lawrence,DeManche	DESIGNED - M. DE YONG	REVISED - A. ABBAS 03-21-97	
	DRAWN -	REVISED - M. GOMEZ 04-06-01	
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED - R. BORO 01-01-07	
PLOT DATE = 11/18/2022	DATE - 06/01/2005	REVISED - K. SMITH 11-18-22	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BUTT JOINT AND HMA TAPER DETAILS

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	473
	BD400-05 BD-32	CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			



SEQUENCE OF CONSTRUCTION:

1. CLOSE EXISTING VALVE.
2. REMOVE EXISTING HYDRANT.
3. INSTALL HYDRANT EXTENSION AND NEW VALVE.
4. RELOCATE EXISTING HYDRANT.
5. OPEN EXISTING VALVE, REMOVE BOX.
6. BACKFILL.
7. FLUSH AND TEST FOR CHLORIDE RESIDUAL AND PROVIDE TEST.

NOTE:

ALL WORK TO BE DONE IN ACCORDANCE WITH SECTION 564 OF THE STANDARD SPECIFICATIONS. NEW VALVE AND BOX SHALL BE SAME MAKE AND MODEL AS EXISTING.

FIRE HYDRANT TO BE MOVED

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

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FILE NAME: pw:\\dot-pw.bentley.com:PWIDOT\Documents\IDOT Offices\District 1\Projects\Dist1Std22x34\CAD\Data\CADsheets\sd36.dgn

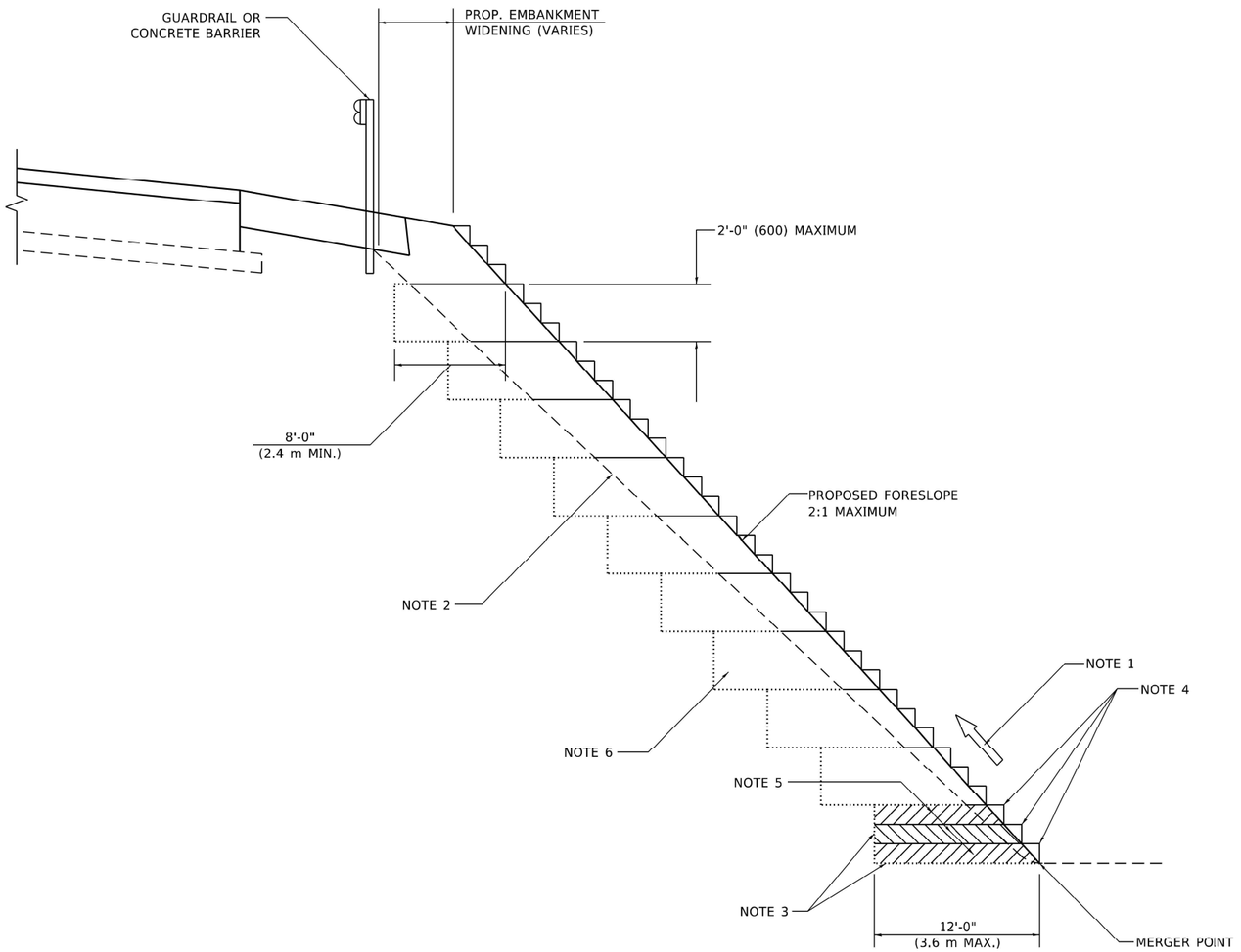
USER NAME = Lawrence.DeManche	DESIGNED -	REVISED -	R. SHAH 09-09-94
	DRAWN -	REVISED -	R. SHAH 10-25-94
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -	K. SMITH 11-18-22
PLOT DATE = 11/18/2022	DATE - 09/30/2025	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FIRE HYDRANT TO BE MOVED

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	474
	BD-36	CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			



TYPICAL BENCHING DETAIL FOR EMBANKMENT

GENERAL NOTES

1. CONSTRUCT SUCCEEDING BENCH CUTS AND EMBANKMENT PLACEMENT AND COMPACTION FROM BOTTOM TO TOP IN STAIRSTEP FASHION.
2. EXISTING FORESLOPE PREPARED IN ACCORDANCE WITH ARTICLE 205.03 OF THE STANDARD SPECIFICATIONS.
3. BENCH CUT EXISTING SLOPE TYPICAL FOR EACH STEP.
4. TRIM TO FINAL SLOPE.
5. EQUAL 8-INCH (200) LIFTS OF EMBANKMENT COMPACTED IN ACCORDANCE WITH ARTICLE 205.05 OF THE STANDARD SPECIFICATIONS.

BASIS OF PAYMENT

1. EXCAVATION OF BENCH CUTS WITHIN EXISTING EMBANKMENT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC METER OR CUBIC YARD FOR "EARTH EXCAVATION". THIS PRICE WILL INCLUDE ALL LABOR AND MATERIAL, NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

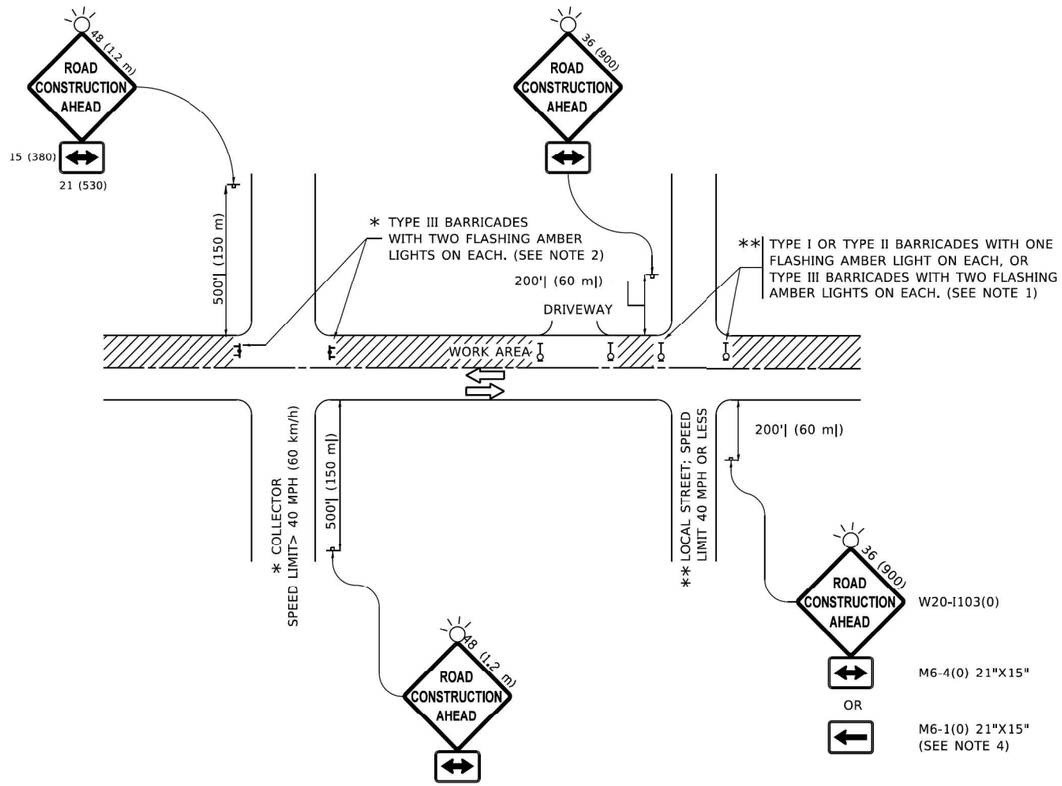
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

USER NAME = Lawrence.DeManche	DESIGNED -	REVISED - K. SMITH 11-18-22	**STATE OF ILLINOIS** **DEPARTMENT OF TRANSPORTATION**
	DRAWN - CADD	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - S.E.B.	REVISED -	
PLOT DATE = 11/18/2022	DATE - 06-16-04	REVISED -	

BENCHING DETAIL
FOR EMBANKMENT WIDENING

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	475
	BD-51	CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			



NOTES:

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 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. CONES MAY BE SUBSTITUTED FOR BARRICADES OR DRUMS AT HALF THE SPACING DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (710) IN HEIGHT.
4. 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).
5. WHEN WORK IS BEING PERFORMED ON A SIDE ROAD OR DRIVEWAY, FOLLOW THE APPLICABLE STANDARD(S). THE DIRECTIONAL ARROW (M6-1 OR M6-4) SHALL BE COVERED OR REMOVED WHEN NO LONGER CONSISTENT WITH THE TRAFFIC CONTROL SET-UP.
6. ADVANCE WARNING SIGNS ARE TO BE OMITTED ON DRIVEWAYS UNLESS OTHERWISE SPECIFIED IN THE PLANS OR BY THE ENGINEER.
7. THE TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS SHALL BE INCLUDED IN THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

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

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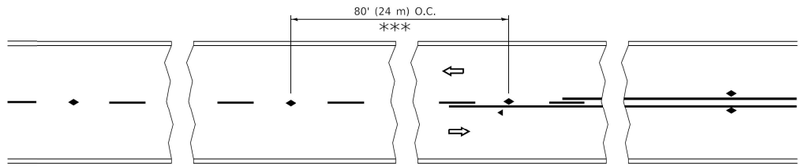
	DRAWN -	REVISED - A. SCHUETZE 07-01-13	
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED - A. SCHUETZE 09-15-16	
PLOT DATE = 5/3/2024	DATE - 06/30/2025	REVISED - D. SENDERAK 05-03-24	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

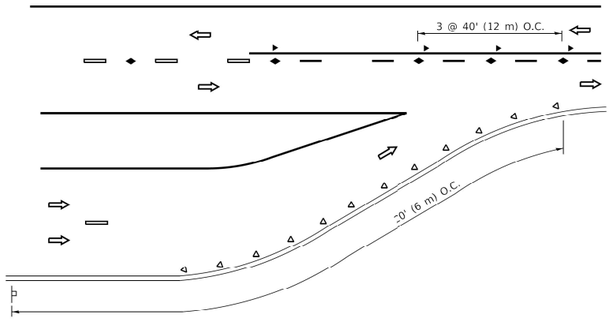
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	476
	TC-10	CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			



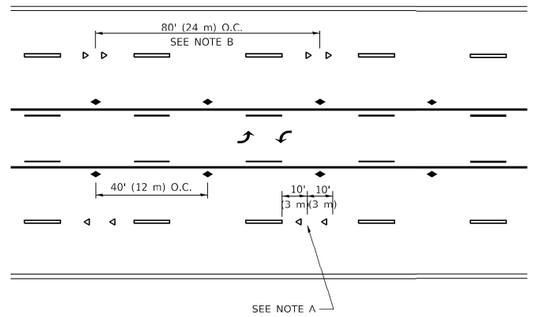
*** REDUCE TO 40' (12 m) O.C. ON CURVES WITH POSTED OR ADVISORY SPEED 45 M.P.H. (70 km/h) OR LESS.

TWO–LANE/TWO–WAY

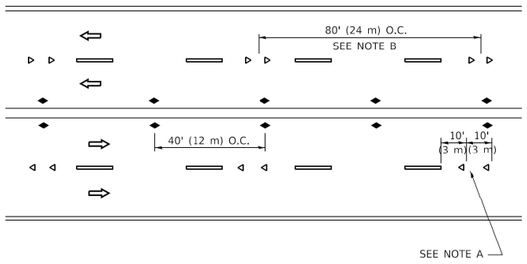
SEE FIGURE 3B-14 MUTCD



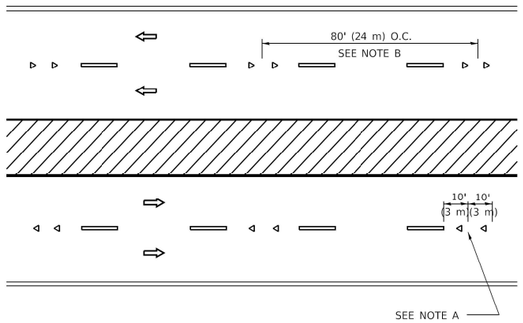
LANE REDUCTION TRANSITION



TWO–WAY LEFT TURN



MULTI–LANE/UNDIVIDED



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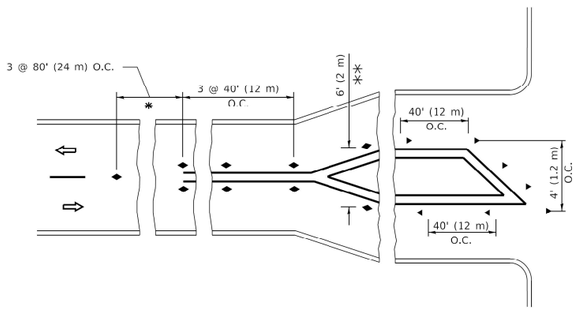

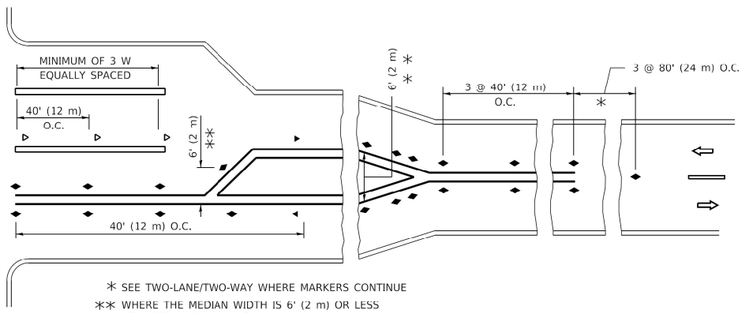

* SEE TWO-LANE/TWO-WAY WHERE MARKERS CONTINUE

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

TURN LANES

GENERAL NOTES

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

SYMBOLS

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

LANE MARKER NOTES

A. USE DOUBLE LANE LINE MARKERS SPACED AS SHOWN.

B. REDUCE TO 40' (12 m) O.C. ON CURVES WHERE ADVISORY SPEEDS ARE 10 M.P.H (20 km/h) LOWER THAN POSTED SPEEDS.

DESIGN NOTES

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

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

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USER NAME = footemj	DESIGNED -	REVISED - T. RAMMACHER 03-12-99	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS (SNOW–PLOW RESISTANT)	
	DRAWN -	REVISED - T. RAMMACHER 01-06-00			
PLOT SCALE = 50.0000 ' / in.	CHECKED - KE	REVISED - C. JUCIUS 09-09-09		SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. TO STA.	
PLOT DATE = 3/4/2019	DATE - 1/9/2026	REVISED - C. JUCIUS 07-01-13			

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	477
	TC–11	CONTRACT NO. 62U72		
	ILLINOIS | FED. AID PROJECT			

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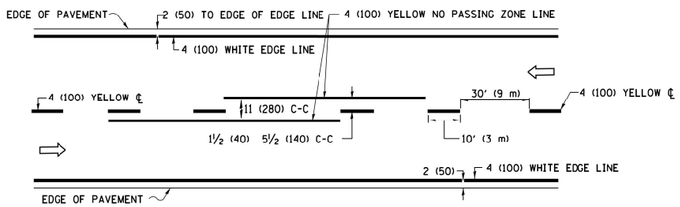
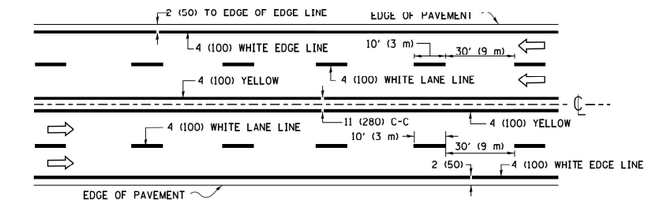
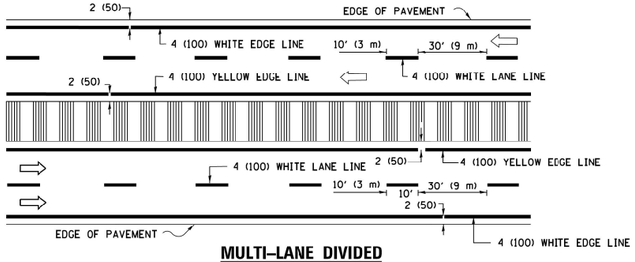


2–LANE ROADWAY

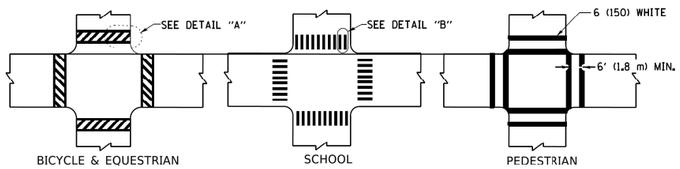


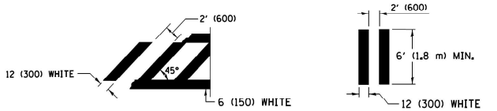
MULTI–LANE UNDIVIDED



MULTI–LANE DIVIDED
WITH MEDIAN

TYPICAL LANE AND EDGE LINE MARKING

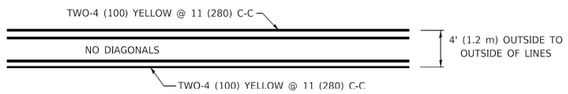




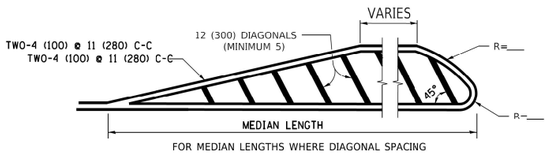
DETAIL "A" **DETAIL "B"**

TYPICAL CROSSWALK MARKING

✳ MARKINGS SHALL BE INSTALLED PARALLEL TO THE CENTERLINE OF THE ROAD WHICH IT CROSSES



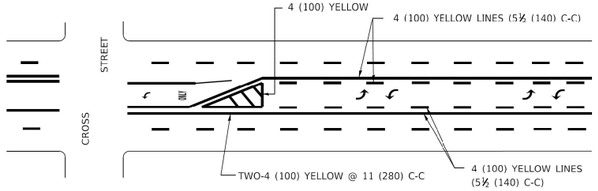
4' (1.2 m) WIDE MEDIANS ONLY



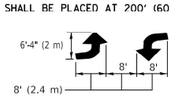
FOR MEDIAN LENGTHS WHERE DIAGONAL SPACING CANNOT BE ATTAINED, USE 5 (FIVE) EQUALLY SPACED DIAGONAL LINES.

DIAGONAL LINE SPACING: 50' (15 m) C-C (LESS THAN 30MPH (50 km/h))
75' (25 m) C-C 30MPH (50 km/h) TO 45MPH (70 km/h))
150' (45 m) C-C (MORE THAN 45MPH (70 km/h))

MEDIANS OVER 4' (1.2 m) WIDE

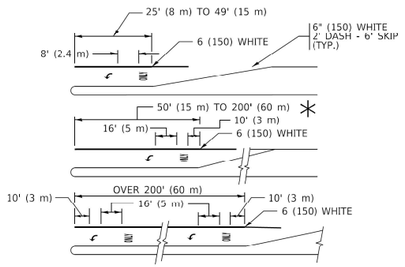


A MINIMUM OF TWO PAIRS OF TURN ARROWS SHALL BE USED, WHITE IN COLOR. ADDITIONAL PAIRS SHALL BE PLACED AT 200' (60 m) TO 300' (90 m) INTERVALS.



MEDIAN WITH TWO–WAY LEFT TURN LANE

TYPICAL PAINTED MEDIAN MARKING

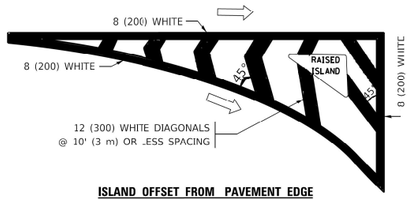


FULL SIZE LETTERS 8' (2.4 m) AND ARROWS SHALL BE USED.
AREA = 15.6 SQ. FT. (1.5 m²) **ONLY** AREA = 20.8 SQ. FT. (1.9 m²)

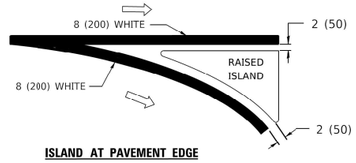
✳ TURN LANES IN EXCESS OF 400' (120 m) IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW - "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW - "ONLY".

TYPICAL LEFT (OR RIGHT) TURN LANE

TYPICAL TURN LANE MARKING

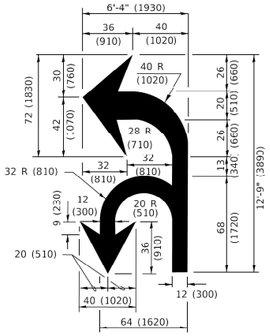


ISLAND OFFSET FROM PAVEMENT EDGE

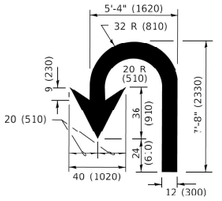


ISLAND AT PAVEMENT EDGE

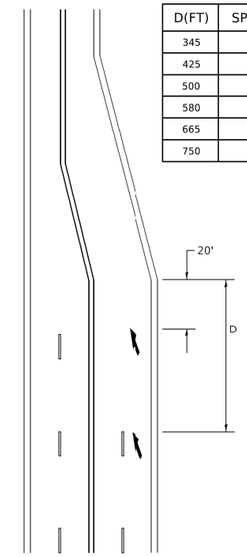
TYPICAL ISLAND MARKING



COMBINATION LEFT AND U–TURN



U–TURN



D(FT)	SPEED LIMIT
345	30
425	35
500	40
580	45
665	50
750	55

LANE REDUCTION TRANSITION

✳ LANE REDUCTION ARROWS REQUIRED AT SPEEDS OF 45 MPH OR GREATER OR WHEN SPECIFIED IN PLANS.

TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE ON 2 LANE PAVEMENT	4 (100)	SKIP-DASH	YELLOW	10' (3 m) LINE WITH 30' (9 m) SPACE
CENTERLINE ON MULTI-LANE UNDIVIDED PAVEMENT	2 @ 4 (100)	SOLID	YELLOW	11 (280) C-C
NO PASSING ZONE LINES: FOR ONE DIRECTION FOR BOTH DIRECTIONS	4 (100) 2 @ 4 (100)	SOLID SOLID	YELLOW YELLOW	5½ (140) C C FROM SKIP DASH CENTERLINE 11 (280) C-C OMIT SKIP-DASH CENTERLINE BETWEEN
LANE LINES	4 (100) 5 (125) ON FREEWAYS	SKIP-DASH SKIP-DASH	WHITE WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE
DOTTED LINES (EXTENSIONS OF CENTER, LANE OR TURN LANE MARKINGS)	SAME AS LINE BEING EXTENDED	SKIP-DASH	SAME AS LINE BEING EXTENDED	2' (600) LINE WITH 6' (1.8 m) SPACE
EDGE LINES	4 (100)	SOLID	YELLOW-LEFT WHITE-RIGHT	OUTLINE MEDIANS IN YELLOW
TURN LANE MARKINGS	6 (150) LINE; FULL SIZE LETTERS & SYMBOLS (8' (2.4m))	SOLID	WHITE	SEE TYPICAL TURN LANE MARKING DETAIL
TWO WAY LEFT TURN MARKING	2 @ 4 (100) EACH DIRECTION 8' (2.4m) LEFT ARROW	SKIP-DASH AND SOLID IN PAIRS	YELLOW WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE FOR SKIP-DASH; 5½ (140) C-C BETWEEN SOLID LINE AND SKIP-DASH LINE SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL
CROSSWALK LINES (PEDESTRIAN) A. DIAGONALS (BIKE & EQUESTRIAN) B. LONGITUDINAL BARS (SCHOOL)	2 @ 6 (150) 12 (300) @ 45° 12 (300) @ 90°	SOLID SOLID SOLID	WHITE WHITE WHITE	NOT LESS THAN 6' (1.8 m) APART 2' (600) APART 2' (600) APART SEE TYPICAL CROSSWALK MARKING DETAILS.
STOP LINES	24 (600)	SOLID	WHITE	PLACE 4' (1.2 m) IN ADVANCE OF AND PARALLEL TO CROSSWALK, IF PRESENT. OTHERWISE, PLACE AT DESIRED STOPPING POINT. PARALLEL TO CROSSROAD CENTERLINE, WHERE POSSIBLE
PAINTED MEDIANS	2 @ 4 (100) WITH 12 (300) DIAGONALS @ 45° NO DIAGONALS USED FOR 4' (1.2 m) WIDE MEDIANS	SOLID	YELLOW: TWO WAY TRAFFIC WHITE: ONE WAY TRAFFIC	11 (280) C-C FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING.
GORE MARKING AND CHANNELIZING LINES	8 (200) WITH 12 (300) DIAGONALS @ 45°	SOLID	WHITE	DIAGONALS: 15' (4.5 m) C-C (LESS THAN 30MPH (50 km/h)) 20' (6 m) C-C 30MPH (50 km/h) TO 45MPH (70 km/h)) 30' (9 m) C-C (OVER 45MPH (70 km/h))
RAILROAD CROSSING	24 (600) TRANSVERSE LINES; "RR" IS 6' (1.8 m) LETTERS; 16 (400) LINE FOR "X"	SOLID	WHITE	SEE STATE STANDARD 780001 AREA OF: "R"=3.6 SQ. FT. (0.33 m² EACH "X"=54.0 SQ. FT. (5.0 m²
SHOULDER DIAGONALS (REQUIRED FOR SHOULDERS ≥ 8')	12 (300) @ 45°	SOLID	WHITE - RIGHT YELLOW - LEFT	50' (15 m) C-C (LESS THAN 30MPH (50 km/h)) 75' (25 m) C-C (30 MPH (50 km/h) TO 45MPH (70 km/h)) 150' (45 m) C-C (OVER 45MPH (70 km/h))
U TURN ARROW	SEE DETAIL	SOLID	WHITE	16.3 SF
2 ARROW COMBINATION LEFT AND U TURN	SEE DETAIL	SOLID	WHITE	30.4 SF

FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STATE STANDARD 780001.

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

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	DRAWN -	REVISED - C. JUCIUS 07-01-13	
PLOT SCALE = 50.0000 ' / in.	CHECKED - KE	REVISED - C. JUCIUS 12-21-15	
PLOT DATE = 3/4/2019	DATE - 10/3/2000	REVISED - C. JUCIUS 04-12-16	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
TYPICAL PAVEMENT MARKINGS

SCALE: NONE | SHEET 1 OF 2 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	478
	TC–13		CONTRACT NO. 62U72	
		ILLINOIS	FED. AID PROJECT	

eetstc13.dgn 3/4/2019 10:34:37 AM User=footemj

TURN BAY ENTRANCE AT START OF LANE CLOSURE TAPER

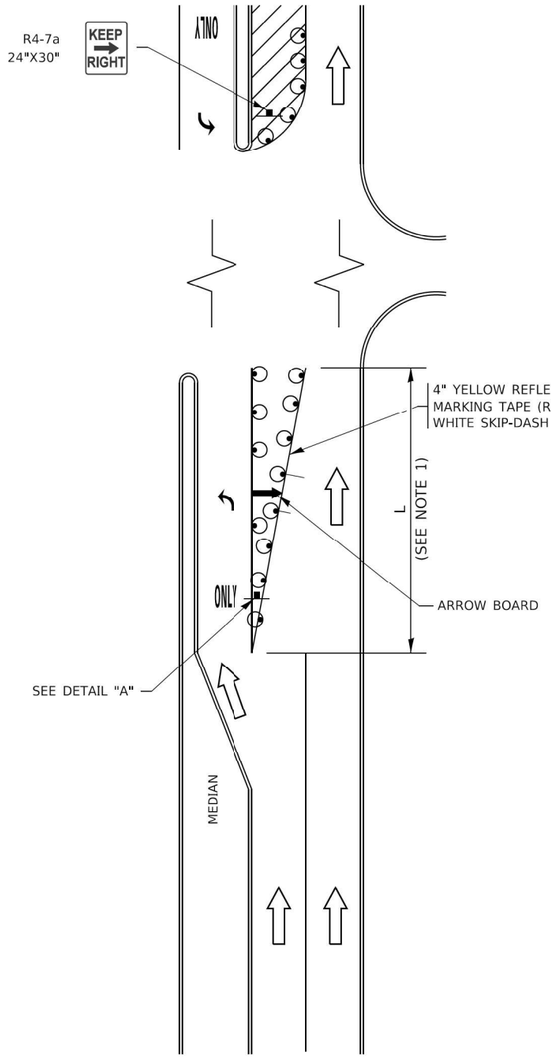


FIGURE 1

LEGEND

- WORK AREA
- LANE OPEN TO TRAFFIC
- ARROW BOARD
- TYPE I OR II BARRICADE OR DRUM WITH STEADY BURN LIGHT
- DRUM WITH STEADY BURN LIGHT
- SIGN ASSEMBLY
- TYPE I OR II CHECK BARRICADE WITH FLASHING LIGHT

NOTES:

1. A) WHEN "L" IS ≤ THE STORAGE LENGTH OF THE TURN LANE (AS SHOWN IN FIG. 1), USE FIGURE 1.

   B) WHEN "L" IS > THE STORAGE LENGTH OF THE TURN LANE OR THE TURN LANE IS WITHIN THE LANE CLOSURE, USE FIGURE 2.

2. CONES MAY BE SUBSTITUTED FOR BARRICADES OR DRUMS AT HALF THE SPACING DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (710) IN HEIGHT.

3. LIGHTS WILL NOT BE REQUIRED ON BARRICADES OR DRUMS FOR DAY OPERATIONS. ALL LIGHTS SHALL BE MONODIRECTIONAL.

4. REFLECTIVE TEMPORARY PAVEMENT MARKINGS SHALL BE PLACED THROUGHOUT THE BARRICADED AREAS OF EACH TURN BAY AS SHOWN WHERE THE CLOSURE TIME IS GREATER THAN FOURTEEN (14) DAYS.

5. THIS APPLICATION ALSO APPLIES WHEN WORK IS BEING PERFORMED IN THE RIGHT LANE(S) AND THE RIGHT TURN BAY IS TO REMAIN OPEN. UNDER THIS CONDITION, "RIGHT TURN LANE" R3-I100R 24 x 24 (600 x 600) AND M6-2R 21 x 15 (530 x 380) SHALL BE USED.

6. THESE CONTROLS SHALL SUPPLEMENT MAINLINE TRAFFIC CONTROL FOR LANE CLOSURES.

7. THE SIGNS SHALL BE MOUNTED ABOVE THE BARRICADES/DRUMS ON SEPARATE SIGN SUPPORTS THAT MEET NCHRP 350 OR MASH PREQUIREMENTS.

8. TRAFFIC CONTROL AND PROTECTION AT TURN BAYS (TO REMAIN OPEN TO TRAFFIC) SHALL BE INCLUDED IN THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

TURN BAY ENTRANCE WITHIN A LANE CLOSURE

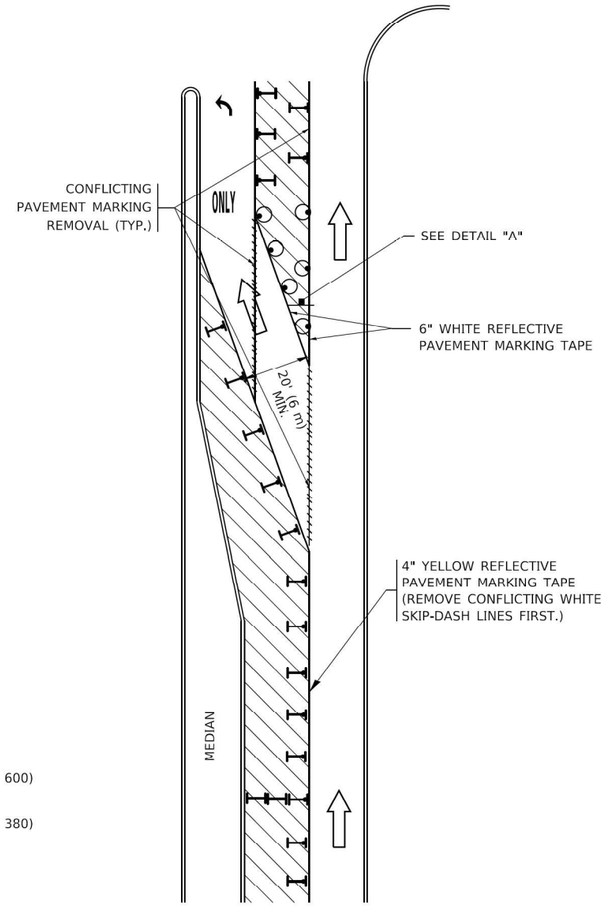
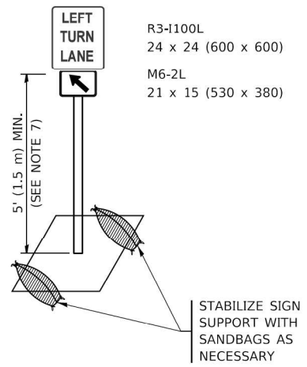


FIGURE 2



DETAIL A

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

MODE:: Default
FILE NAME: pw:\\UL084EBI0INTEG.illinois.gov:dPWIDOT\Documents\IDOT Offices\District 1\Projects\Dist5\d22x34\CADData\CADsheets\tc14.dgn

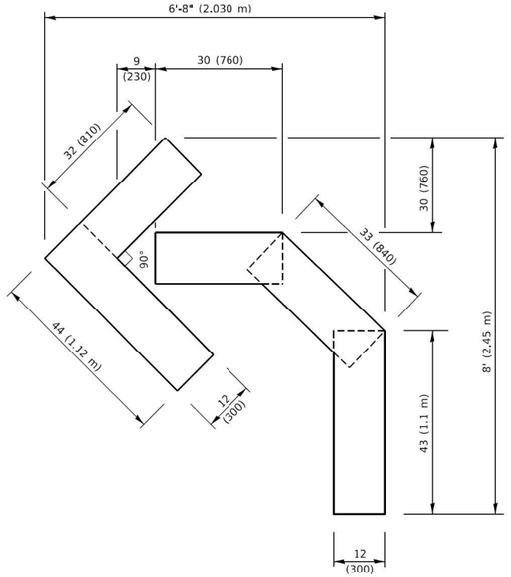
USER NAME = footemj	DESIGNED - T. RAMMACHER 09-08-94	REVISED - R. BORO 09-14-09	
	DRAWN - A. HOUSEH 11-07-95	REVISED - A. SCHUETZE 07-01-13	
PLOT SCALE = 50.0000 ' / in.	CHECKED - A. HOUSEH 10-12-96	REVISED - A. SCHUETZE 09-15-16	
PLOT DATE = 3/4/2019	DATE - T. RAMMACHER 01-06-00	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL AND PROTECTION AT TURN BAYS (TO REMAIN OPEN TO TRAFFIC)

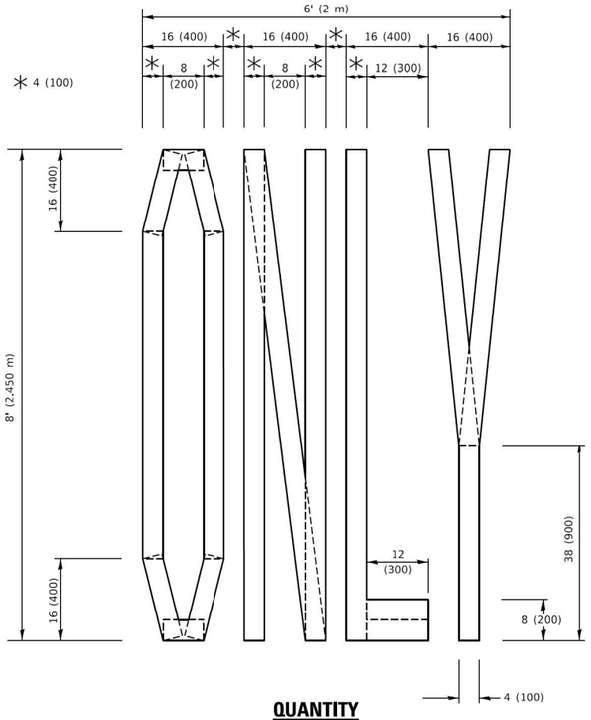
SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	479
	TC-14	CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			



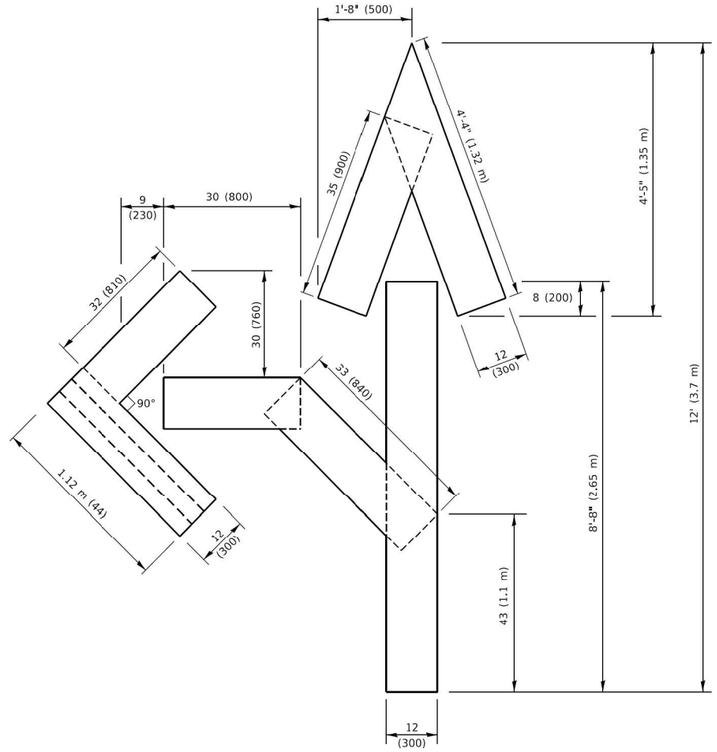
QUANTITY

4 (100) LINE = 45.5 ft. (13.9 m)
15.2 sq. ft. (1.41 sq. m)



QUANTITY

4 (100) LINE = 64.1 ft. (19.5 m)
21.4 sq. ft. (1.99 sq. m)

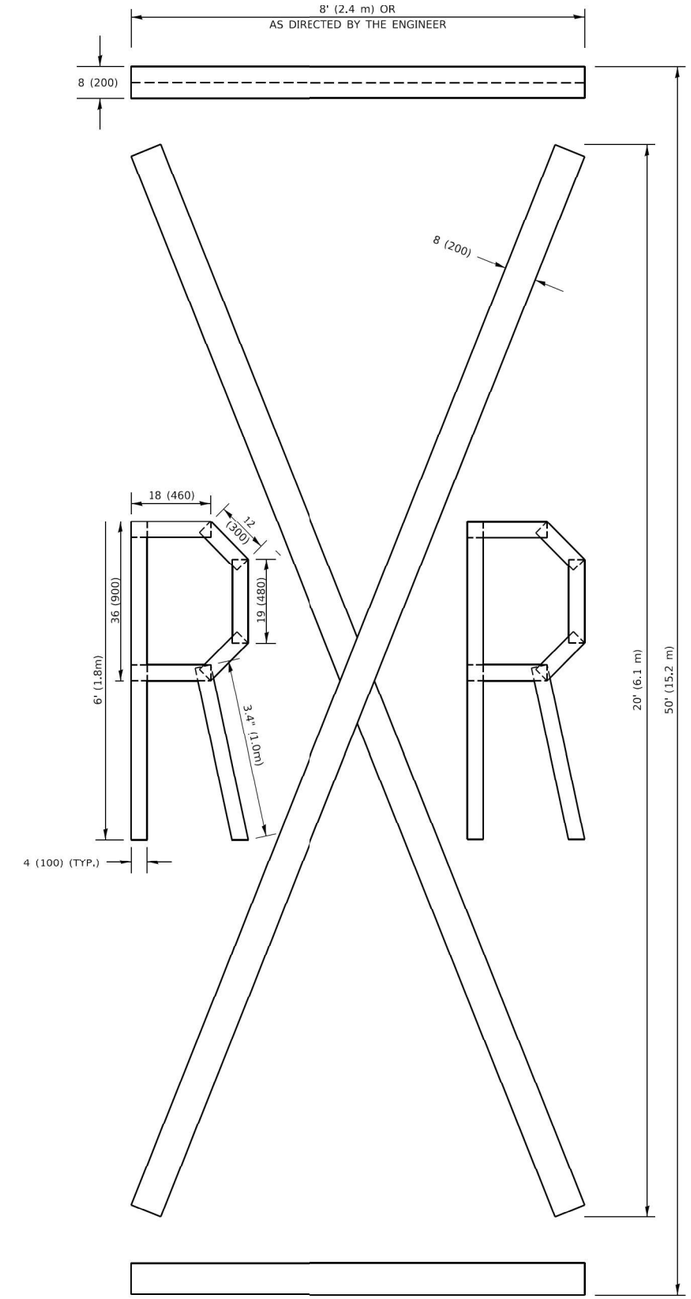


QUANTITY

4 (100) LINE = 82.5 ft. (25.1 m)
27.5 sq. ft. (2.53 sq. m)

NOTE:

ALL QUANTITIES OF PLACEMENT ARE REPRESENTED IN LINEAR FEET OF 4" LINES TO MATCH THE 4" TEMPORARY TAPE PAY ITEM AND REPRESENTS THE TOTAL QUANTITY OF 4" TAPE REQUIRED.



QUANTITY

4 (100) LINE = 225.9 ft. (68.9 m)
75.3 sq. ft. (6.99 sq. m)

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

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USER NAME = footemj	DESIGNED -	REVISED - T. RAMMACHER 03-02-98	
	DRAWN -	REVISED - E. GOMEZ 08-28-00	
PLOT SCALE = 50.0068 ' / In.	CHECKED -	REVISED - E. GOMEZ 08-28-00	
PLOT DATE = 3/4/2019	DATE - 09/18/97	REVISED - A. SCHUETZE 09-15-16	

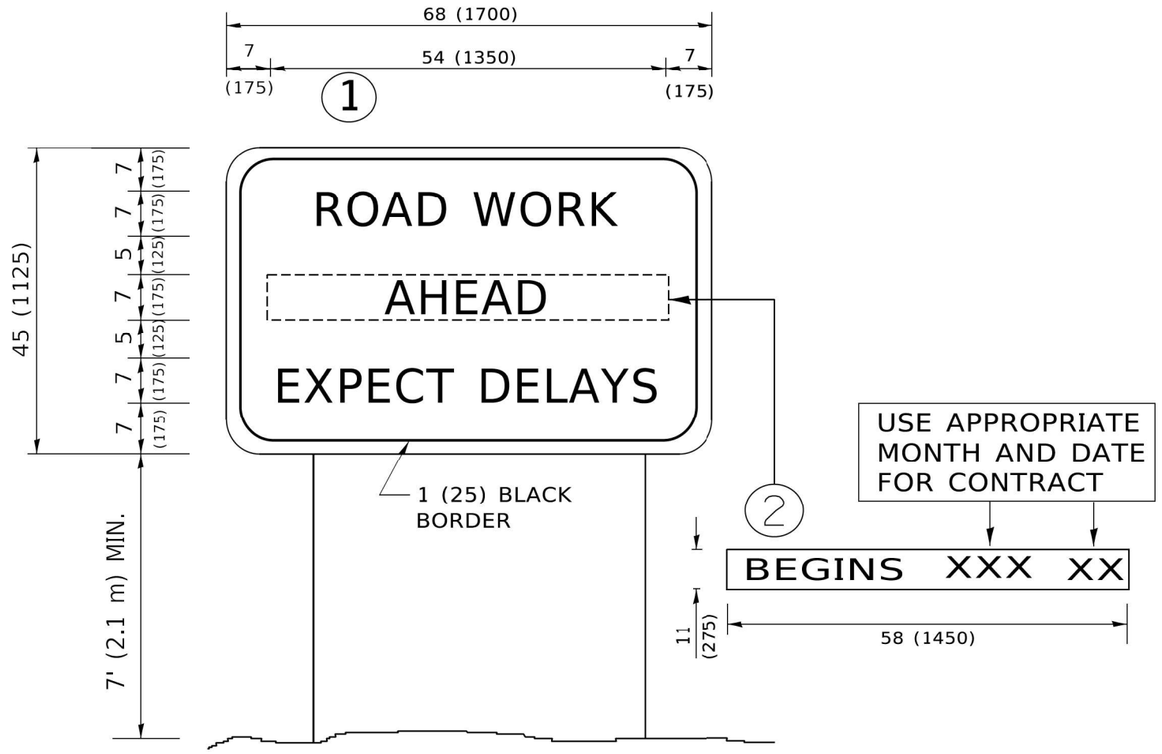
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHORT TERM PAVEMENT MARKING LETTERS AND SYMBOLS

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	480
	TC-16	CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			

tc16.dgn 3/4/2019 10:37:35 AM User=footemj



NOTES:

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

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

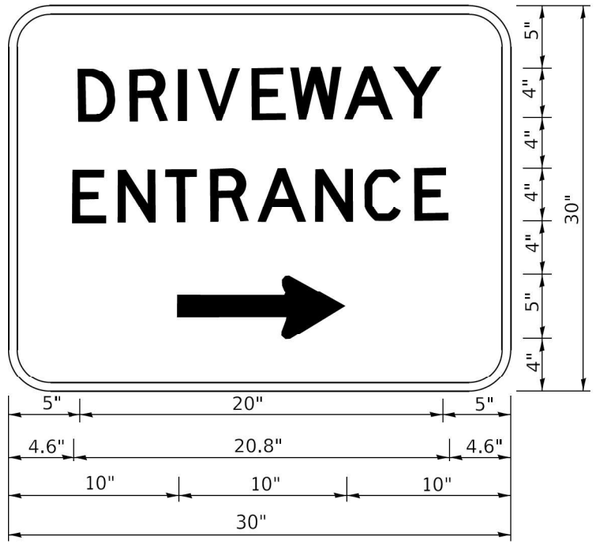
USER NAME = footemj	DESIGNED -	REVISED -	R. MIRS 09-15-97
	DRAWN -	REVISED -	R. MIRS 12-11-97
PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED -	T. RAMMACHER 02-02-99
PLOT DATE = 3/4/2019	DATE - 09/30/2025	REVISED -	C. JUCIUS 01-31-07

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ARTERIAL ROAD INFORMATION SIGN

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	481
	TC–22	CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			



3.0" RADIUS, 0.5" BORDER, WHITE ON GREEN; REFLECTORIZED
"DRIVEWAY" D; "ENTRANCE" D; STANDARD ARROW CUSTOM 12.0" x 5.0"

NOTES:

1. HALF OF THE SIGNS WILL REQUIRE A LEFT HAND FACING ARROW.
2. TWO SIGNS SHALL BE USED AT EACH COMMERCIAL ENTRANCE PLACED BACK-TO-BACK: ONE WITH A RIGHT HAND ARROW (SHOWN) SHALL BE PLACED ON THE NEAR RIGHT SIDE THE DRIVEWAY AND ONE WITH A LEFT HAND ARROW SHALL BE PLACED ON THE FAR LEFT SIDE OF THE DRIVEWAY.
3. SIGNS TO BE PAID FOR AS ITEM "TEMPORARY INFORMATION SIGNING".

USER NAME = leysa	DESIGNED -	REVISED - C. JUCIUS 02-15-07	
	DRAWN -	REVISED -	
PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 8/6/2021	DATE - 09/30/2025	REVISED -	

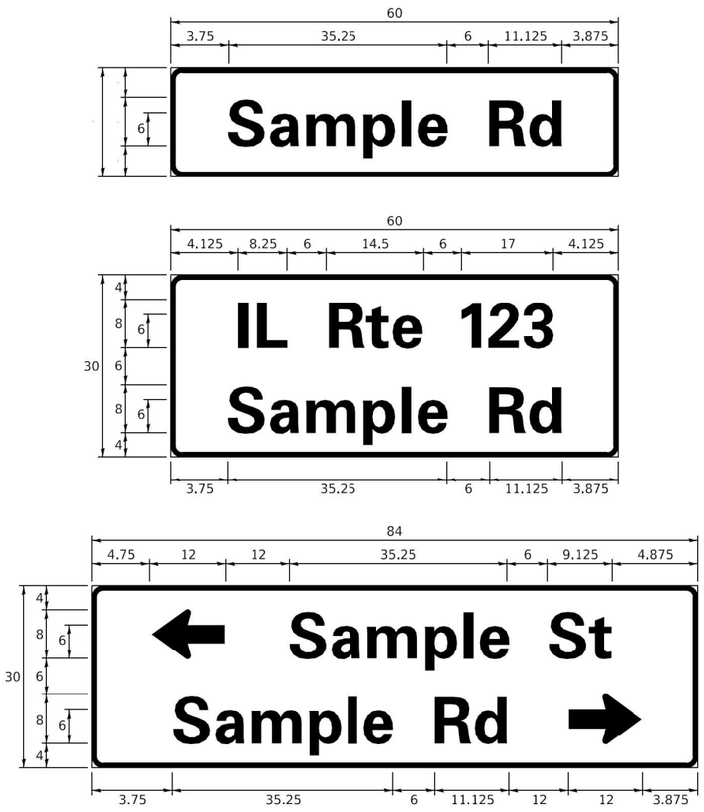
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRIVEWAY ENTRANCE SIGNING

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	482
	TC-26	CONTRACT NO. 62U72		
	ILLINOIS	FED. AID PROJECT		

SIGN PANEL – TYPE 1 OR TYPE 2



DESIGN SERIES	AREA (SQ FT)	SIGN PANEL TYPE	SHEETING TYPE	QTY. REQUIRED
D OR C	-	1 OR 2	ZZ	-

COMMON STREET NAME ABBREVIATIONS AND WIDTHS

NAME	ABBREVATION	WIDTH (INCH)	
		SERIES "C"	SERIES "D"
AVENUE	Ave	15.000	18.250
BOULEVARD	Blvd	17.125	20.000
CIRCLE	Cir	11.125	13.000
COURT	Ct	8.250	9.625
DRIVE	Dr	8.625	10.125
HIGHWAY	Hwy	18.375	22.000
ILLINOIS	IL	7.000	8.250
LANE	Ln	9.125	10.750
PARKWAY	Pkwy	23.375	27.375
PLACE	Pl	7.125	7.750
ROAD	Rd	9.625	11.125
ROUTE	Rte	12.625	14.500
STREET	St	8.000	9.125
TERRACE	Ter	12.625	14.625
TRAIL	Tr	7.750	9.125
UNITED STATES	US	10.375	12.250

GENERAL NOTES

1. WHERE MAST ARM MOUNTED STREET NAME SIGNS ARE SPECIFIED, THE MAST ARM ASSEMBLY AND POLES SHALL BE DESIGNED TO SUPPORT THE LOADINGS CALLED FOR ON STANDARDS 877001, 877002, 877006, 877011 AND 877012, AS APPLICABLE, PLUS TWO (2) SIGN PANELS 2'-6" x 8'-0" MOUNTED AS SHOWN. THE DESIGN SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS FOR 80 M.P.H. WIND VELOCITY.
2. ALL SIGNS SHALL 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". ALL BORDERS IF POSSIBLE, BUT MAY BE REDUCED TO 5" WHEN SPACING IS CRITICAL. 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 SERIES "D" LETTER ON A ONE-LINE SIGN 18" IN 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 SIGN PANELS 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. SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM SHALL BE USED FOR ALL SIGNS ATTACHED TO SIGNAL POLES AND POSTS.

LOCAL SUPPLIERS:

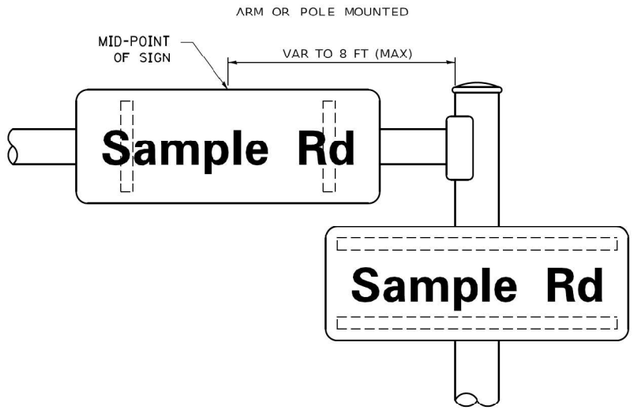
- J.O. HERBERT COMPANY, INC
  MIDLOTHIAN, VA
- WESTERN REMAC, INC.
  WOODRIDGE, IL

PARTS LISTING:

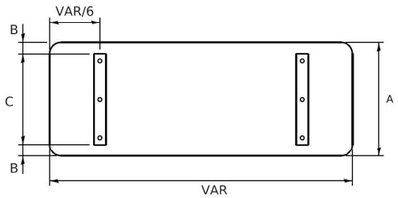
SIGN CHANNEL	PART #HPN053 (MED. CHANNEL)
SIGN SCREWS	1/4" x 14 x 1" H.W.H. #3 SELF TAPPING WITH NEOPRENE WASHER
BRACKETS	PART #HPN034 (UNIVERSAL) CHANNEL CLAMPS WITH STAINLESS STEEL STRAPPING

OTHER BRANDS OF MOUNTING HARDWARE ARE ACCEPTABLE, BASED UPON THE DEPARTMENT'S APPROVAL AND COMPATIBILITY WITH THE CHANNEL/BRACKET OF THE ABOVE PRODUCT.

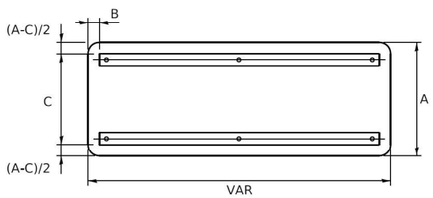
MOUNTING LOCATION



SUPPORTING CHANNELS



A	B	C
18"	2"	14"
30"	2"	24"



A	B	C
18"	2"	12"
30"	2"	22"

STANDARD ALPHABETS SPACING CHART

(8") UPPER CASE AND (6") LOWER CASE

FHWA SERIES "C"				FHWA SERIES "D"			
CHARACTER	LEFT SPACING (INCH)	WIDTH (INCH)	RIGHT SPACING (INCH)	CHARACTER	LEFT SPACING (INCH)	WIDTH (INCH)	RIGHT SPACING (INCH)
A	0.240	5.122	0.240	A	0.240	6.804	0.240
B	0.880	4.432	0.480	B	0.960	5.446	0.400
C	0.720	4.432	0.720	C	0.800	5.446	0.800
D	0.880	4.432	0.720	D	0.960	5.446	0.800
E	0.880	4.082	0.480	E	0.960	4.962	0.400
F	0.880	4.082	0.240	F	0.960	4.962	0.240
G	0.720	4.432	0.720	G	0.800	5.446	0.800
H	0.880	4.432	0.880	H	0.960	5.446	0.960
I	0.880	1.120	0.880	I	0.960	1.280	0.960
J	0.240	4.082	0.880	J	0.240	5.122	0.960
K	0.880	4.432	0.480	K	0.960	5.604	0.400
L	0.880	4.082	0.240	L	0.960	4.962	0.240
M	0.880	5.284	0.880	M	0.960	6.244	0.960
N	0.880	4.432	0.880	N	0.960	5.446	0.960
O	0.720	4.722	0.720	O	0.800	5.684	0.800
P	0.880	4.432	0.720	P	0.960	5.446	0.240
Q	0.720	4.722	0.720	Q	0.800	5.684	0.800
R	0.880	4.432	0.480	R	0.960	5.446	0.400
S	0.480	4.432	0.480	S	0.400	5.446	0.400
T	0.240	4.082	0.240	T	0.240	4.962	0.240
U	0.880	4.432	0.880	U	0.960	5.446	0.960
V	0.240	4.962	0.240	V	0.240	6.084	0.240
W	0.240	6.084	0.240	W	0.240	7.124	0.240
X	0.240	4.722	0.240	X	0.400	5.446	0.400
Y	0.240	5.122	0.240	Y	0.240	6.884	0.240
Z	0.480	4.432	0.480	Z	0.400	5.446	0.400
a	0.320	3.842	0.640	a	0.400	4.562	0.720
b	0.720	4.082	0.480	b	0.800	4.802	0.480
c	0.480	4.002	0.240	c	0.480	4.722	0.240
d	0.480	4.082	0.720	d	0.480	4.802	0.800
e	0.480	4.082	0.320	e	0.480	4.722	0.320
f	0.320	2.480	0.160	f	0.320	2.882	0.160
g	0.480	4.082	0.720	g	0.480	4.802	0.800
h	0.720	4.082	0.640	h	0.800	4.722	0.720
i	0.720	1.120	0.720	i	0.800	1.280	0.800
j	0.000	2.320	0.720	j	0.000	2.642	0.800
k	0.720	4.322	0.160	k	0.800	5.122	0.160
l	0.720	1.120	0.720	l	0.800	1.280	0.800
m	0.720	6.724	0.640	m	0.800	7.926	0.720
n	0.720	4.082	0.640	n	0.800	4.722	0.720
o	0.480	4.082	0.480	o	0.480	4.882	0.480
p	0.720	4.082	0.480	p	0.800	4.802	0.480
q	0.480	4.082	0.720	q	0.480	4.802	0.800
r	0.720	2.642	0.160	r	0.800	3.042	0.160
s	0.320	3.362	0.240	s	0.320	3.762	0.240
t	0.080	2.882	0.080	t	0.080	3.202	0.080
u	0.640	4.082	0.720	u	0.720	4.722	0.800
v	0.160	4.722	0.160	v	0.160	5.684	0.160
w	0.160	7.524	0.160	w	0.160	9.046	0.160
x	0.000	5.202	0.000	x	0.000	6.244	0.000
y	0.160	4.952	0.160	y	0.160	6.004	0.160
z	0.240	3.362	0.240	z	0.240	4.002	0.240
1	0.720	1.680	0.880	1	0.800	2.000	0.960
2	0.480	4.432	0.480	2	0.800	5.446	0.800
3	0.480	4.432	0.480	3	1.440	5.446	0.800
4	0.240	4.962	0.720	4	0.160	6.004	0.960
5	0.480	4.432	0.480	5	0.800	5.446	0.800
6	0.720	4.432	0.720	6	0.800	5.446	0.800
7	0.240	4.432	0.720	7	0.560	5.446	0.560
8	0.480	4.432	0.480	8	0.800	5.446	0.800
9	0.480	4.432	0.480	9	0.800	5.446	0.800
0	0.720	4.722	0.720	0	0.800	5.684	0.800
-	0.240	2.802	0.240	-	0.240	2.802	0.240

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	DRAWN - LP	REVISED -		
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PLOT DATE = 3/4/2019	DATE - 07/01/2014	REVISED -		

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	483
	TS-02	CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			

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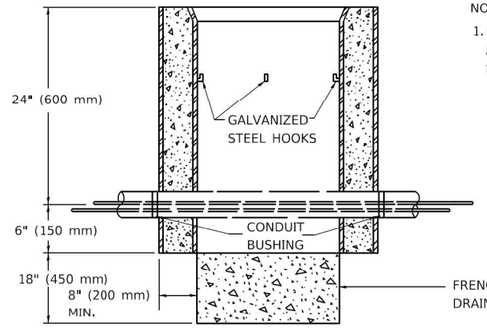
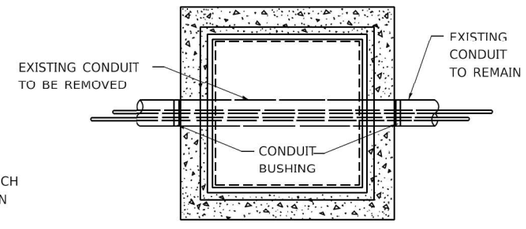


NOTES:

1. REMOVAL OF EXISTING CONDUIT FROM THE HANDHOLE AND THE INSTALLATION OF THE CONDUIT BUSHING SHALL BE INCIDENTAL TO THE HANDHOLE.



ELEVATION **PLAN**

DETAIL

HANDHOLE TO INTERCEPT EXISTING CONDUIT

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HANDHOLE TO INTERCEPT EXISTING CONDUIT

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

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	484
	TS-03	CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			

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TRAFFIC SIGNAL LEGEND

(NOT TO SCALE)

ITEM	EXISTING	PROPOSED
CONTROLLER CABINET		
COMMUNICATION CABINET	CC	CC
MASTER CONTROLLER	MC	MC
MASTER MASTER CONTROLLER	MMC	MMC
UNINTERRUPTABLE POWER SUPPLY		
SERVICE INSTALLATION -(P) POLE MOUNTED	P	P
SERVICE INSTALLATION -(G) GROUND MOUNTED -(GM) GROUND MOUNTED METERED	G GM	G GM
TELEPHONE CONNECTION	ET	T
STEEL MAST ARM ASSEMBLY AND POLE		
ALUMINUM MAST ARM ASSEMBLY AND POLE		
STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH LUMINAIRE		
SIGNAL POST -(BM) BARREL MOUNTED - TEMPORARY		BM
WOOD POLE		
GUY WIRE		
SIGNAL HEAD		
SIGNAL HEAD WITH BACKPLATE		
SIGNAL HEAD OPTICALLY PROGRAMMED	P P	P P
FLASHER INSTALLATION -(FS) SOLAR POWERED	F FS F FS	F FS F FS
PEDESTRIAN SIGNAL HEAD		
PEDESTRIAN PUSH BUTTON -(APS) ACCESSIBLE PEDESTRIAN PUSH BUTTON	APS	APS
RADAR DETECTION SENSOR	R	R
VIDEO DETECTION CAMERA	V	V
RADAR/VIDEO DETECTION ZONE		
PAN, TILT, ZOOM (PTZ) CAMERA	PTZ	PTZ
EMERGENCY VEHICLE LIGHT DETECTOR		
CONFIMATION BEACON		
WIRELESS INTERCONNECT		
WIRELESS INTERCONNECT RADIO REPEATER	RR	RR

ITEM	EXISTING	PROPOSED
HANDHOLE -SQUARE -ROUND		
HEAVY DUTY HANDHOLE -SQUARE -ROUND	H	H
DOUBLE HANDHOLE		
JUNCTION BOX		
RAILROAD CANTILEVER MAST ARM		
RAILROAD FLASHING SIGNAL		
RAILROAD CROSSING GATE		
RAILROAD CROSSBUCK		
RAILROAD CONTROLLER CABINET		
UNDERGROUND CONDUIT (UC), GALVANIZED STEEL		
TEMPORARY SPAN WIRE, TETHER WIRE, AND CABLE		
SYSTEM ITEM	S	SP
INTERSECTION ITEM	I	IP
REMOVE ITEM		R
RELOCATE ITEM		RL
ABANDON ITEM		A
CONTROLLER CABINET AND FOUNDATION TO BE REMOVED		RCF
MAST ARM POLE AND FOUNDATION TO BE REMOVED		RMF
SIGNAL POST AND FOUNDATION TO BE REMOVED		RPF
DETECTOR LOOP, TYPE I		
PREFORMED DETECTOR LOOP	P P	P P
SAMPLING (SYSTEM) DETECTOR	S S	S S
INTERSECTION AND SAMPLING (SYSTEM) DETECTOR	IS IS	IS IS
QUEUE AND SAMPLING (SYSTEM) DETECTOR	QS QS	QS QS
WIRELESS DETECTOR SENSOR	W	W
WIRELESS ACCESS POINT		

ITEM	EXISTING	PROPOSED
SIGNAL HEAD -(P) PROGRAMMABLE SIGNAL HEAD	P	P
SIGNAL HEAD WITH BACKPLATE -(P) PROGRAMMABLE SIGNAL HEAD -(RB) RETROREFLECTIVE BACKPLATE	P RB	P RB
PEDESTRIAN SIGNAL HEAD AT RAILROAD INTERSECTIONS		
PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN TIMER	C D	C D
ILLUMINATED SIGN "NO LEFT TURN"/"NO RIGHT TURN"		
NUMBER OF CONDUCTORS, ELECTRIC CABLE NO. 14, UNLESS NOTED OTHERWISE. ALL DETECTOR LOOP CABLE TO BE SHIELDED	5	5
GROUND CABLE IN CONDUIT, NO. 6 SOLID COPPER (GREEN)	1#6	1#6
ELECTRIC CABLE IN CONDUIT, TRACER NO. 14 1/C	1	1
COAXIAL CABLE	C	C
VENDOR CABLE	V	V
COPPER INTERCONNECT CABLE, NO. 18, 3 PAIR TWISTED, SHIELDED	6#18	6#18
FIBER OPTIC CABLE -NO. 62.5/125, MM12F -NO. 62.5/125, MM12F SM12F -NO. 62.5/125, MM12F SM24F	12F 24F 36F	12F 24F 36F
GROUND ROD -(C) CONTROLLER -(M) MAST ARM -(P) POST -(S) SERVICE	C M P S	C M P S

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: NONE | SHEET 1 OF 7 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	485
	TS-05	CONTRACT NO. 62U72		
		ILLINOIS	FED. AID PROJECT	

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LOOP DETECTOR NOTES

1. EACH PAIR OF LOOP WIRES SHALL BE PLACED IN A SEPARATE EMPTY COILABLE NONMETALLIC CONDUIT FROM THE EDGE OF PAVEMENT TO THE HANDHOLE. SPACING BETWEEN THE HOLES DRILLED IN THE PAVEMENT SHALL NOT BE LESS THAN 6" (150 mm). EMPTY COILABLE NONMETALLIC CONDUIT SHALL BE INCLUDED IN THE COST OF THE LOOP WIRE.

2. THE NUMBER OF LOOP TURNS SHALL BE AS RECOMMENDED BY THE AMPLIFIER MANUFACTURER. ALL ADJACENT SIDES OF THE LOOPS SHALL BE INSTALLED IN SUCH A WAY THAT THE CURRENT FLOW IS IN THE SAME DIRECTION TO REINFORCE ITS MAGNETIC FIELDS FOR SMALL VEHICLE DETECTION.

3. EACH LOOP LEAD-IN SHALL BE IDENTIFIED AND PERMANENTLY TAGGED IN THE HANDHOLE. EACH LEAD-IN CABLE TAG SHALL INDICATE THE LOCATION OF THE LOOP, LOOP ROTATION (CLOCKWISE/COUNTERCLOCKWISE), LOOP LEAD-IN DIRECTION (IN OR OUT), LOOP CABLE NUMBER AND LOCATION IN CABINET, AND NUMBER OF TURNS IN THE DETECTOR LOOPS IN WATER PROOF INK AS INDICATED ON THE DISTRICT 1 STANDARD TRAFFIC SIGNAL DESIGN DETAIL. THE CONTRACTOR SHALL MARK LOOP LOCATIONS ON RECORD DRAWINGS AND PRESENT TO THE ENGINEER AFTER FINAL INSPECTION. LOOPS SHALL BE MARKED BY LANE AND LOOP NUMBER. SEE DETAIL BELOW.

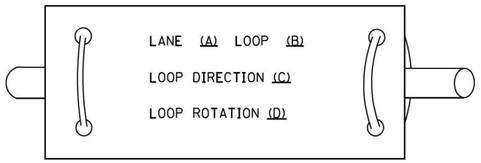
4. ALL LOOP CABLE SHALL BE FASTENED WITH PLASTIC TIE WRAP TO THE HANDHOLE HOOKS.

5. IN ASPHALT PAVEMENT, LOOPS SHOULD BE PLACED IN THE BINDER AND DIVEHOLES MARKED AT THE CURB WITH A SAW-CUT. THE SAW-CUT SHALL BE CUT IN ACCORDANCE WITH LOCAL AND E.P.A. DUST CONTROL REQUIREMENTS. DETECTOR LOOP(S) SHALL NOT BE INSTALLED IN WET CONDITIONS AND THE SAW-CUTS MUST BE FREE OF DEBRIS AND RESIDUE SUCH AS DUST AND WATER WHICH IS TO BE ACHIEVED BY THE USE OF COMPRESSED AIR, WIRE BRUSHING AND HEAT DRYING ACCORDING TO SEALANT MANUFACTURER REQUIREMENTS. THE DETECTOR WIRE SHALL BE HELD IN PLACE BY THE USE OF FORM WEDGES. WEDGES SHALL BE SPACED NO MORE THAN 18" (450 mm) APART.

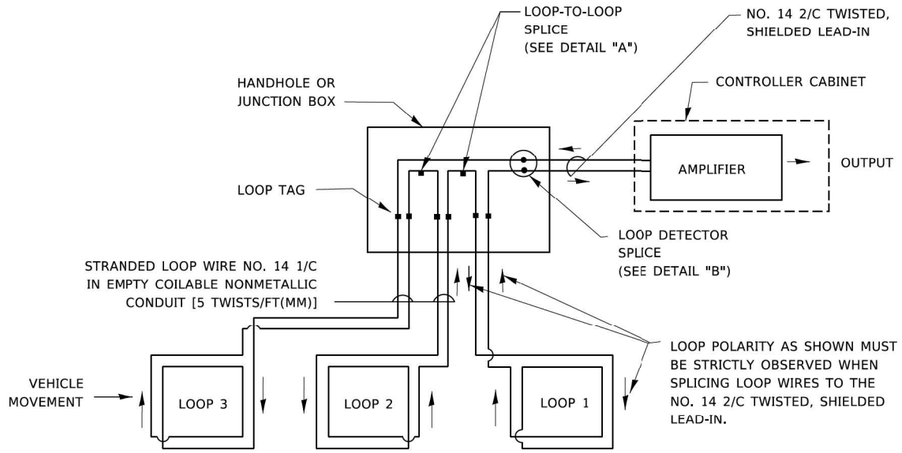
6. LOOP SPLICES SHALL BE SOLDERED USING A SOLDERING IRON. BLOW TORCHES OR OTHER DEVICES WHICH OXIDIZE COPPER CABLE SHALL NOT BE ALLOWED FOR SOLDERING OPERATIONS. SEE DETAIL BELOW RIGHT.

7. PREFORMED DETECTOR LOOPS SHALL BE USED, AS SHOWN ON THE PLANS, WHERE NEW CONCRETE PAVEMENT IS PROPOSED. THE INSTALLATION OF PREFORMED LOOPS SHALL BE IN ACCORDANCE WITH THE DISTRICT 1 SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.

LOOP LEAD-IN CABLE TAG

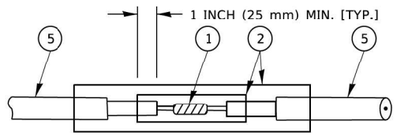


A. LANE 1 IS THE LANE CLOSEST TO THE CENTERLINE OF THE ROADWAY
B. LOOP #1 IS THE LOOP IN THE LANE CLOSEST TO THE INTERSECTION.
C. LABEL LOOP CABLE "IN" OR LOOP CABLE "OUT".
D. LABEL LOOP CABLE CLOCKWISE OR LOOP CABLE COUNTERCLOCKWISE.

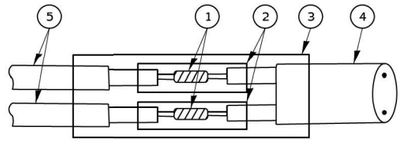


DETECTOR LOOP WIRING SCHEMATIC

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

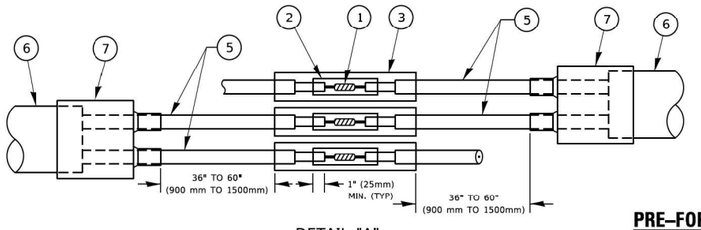


DETAIL "A"
LOOP-TO-LOOP SPLICE



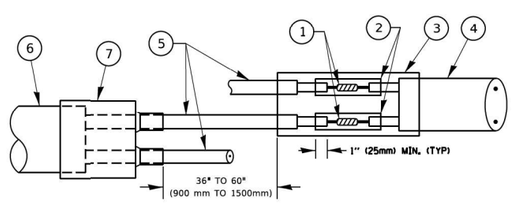
DETAIL "B"
LOOP-TO-CONTROLLER SPLICE

TYPE I LOOP



DETAIL "A"
LOOP-TO-LOOP SPLICE

PRE-FORMED LOOP



DETAIL "B"
LOOP-TO-CONTROLLER SPLICE

LOOP DETECTOR SPLICE

(1) WESTERN UNION SPLICE SOLDERED WITH ROSIN CORE FLUX. ALL EXPOSED SURFACES OF THE SOLDER SHALL BE SMOOTH. THE WESTERN UNION SPLICES SHALL BE STAGGERED.

(2) WCSMW 30/100 HEAT SHRINK TUBE, MINIMUM LENGTH 3" (75 mm), UNDERWATER GRADE.

(3) WCS 200/750 HEAT SHRINK TUBE, MINIMUM LENGHT 6" (150 mm), UNDERWATER GRADE.

(4) NO. 14 2/C TWISTED, SHIELDED CABLE.

(5) LOOP CONDUCTOR WITH FLEXIBLE PLASTIC TUBE. PRE-FORMED LOOP

(6) XL POLYOLEFIN 2 CONDUCTOR

(7) BREAKOUT SEALS. TYCO CBR-2 OR APPROVED EQUAL

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: NONE | SHEET 2 OF 7 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	486
	TS-05	CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			

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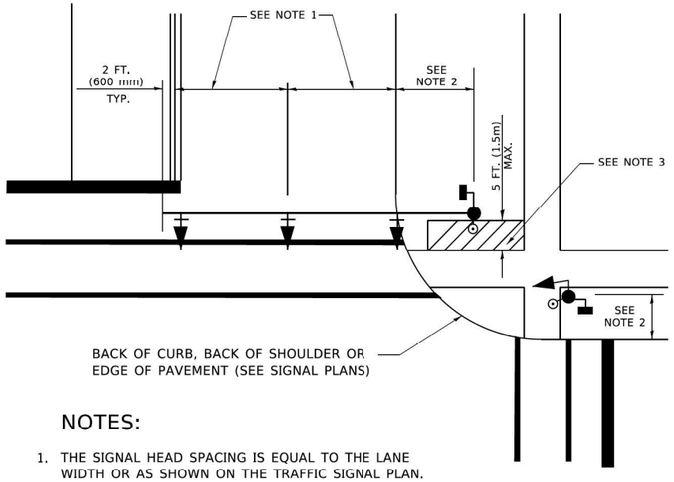
TRAFFIC SIGNAL MAST ARM AND SIGNAL POST

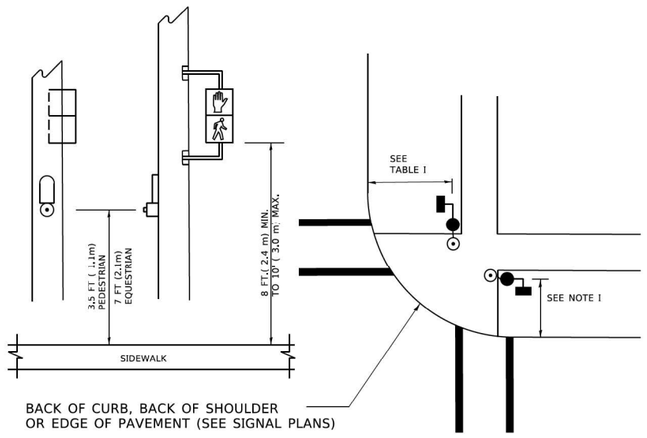
MAST ARM MOUNTED SIGNALS IN EXISTING, PROPOSED OR FUTURE SIDEWALK/BICYCLE PATH AREA. INTERSECTION SHOWN WITH PEDESTRIAN SIGNALS AND PEDESTRIAN PUSHBUTTON DETECTORS.



NOTES:

1. THE SIGNAL HEAD SPACING IS EQUAL TO THE LANE WIDTH OR AS SHOWN ON THE TRAFFIC SIGNAL PLAN.
2. REFER TO THE TRAFFIC SIGNAL EQUIPMENT OFFSET TABLE.
3. PROVIDE A LEVEL ALL-WEATHER SURFACE (CONCRETE SIDEWALK, ASPHALT BICYCLE PATH SURFACE OR MATCHING MATERIAL TO THE ADJACENT SURFACE) UP TO THE MAST ARM SHAFT OR THE SIGNAL POST.
4. THE FACE OF THE PEDESTRIAN PUSHBUTTON SHALL BE PARALLEL TO THE CROSSWALK TO BE USED.
5. THE LOCATIONS AND INSTALLATION OF PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS SHALL MEET THE REQUIREMENTS OF THE MUTCD AND INFORMATION FOUND IN THE "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES."

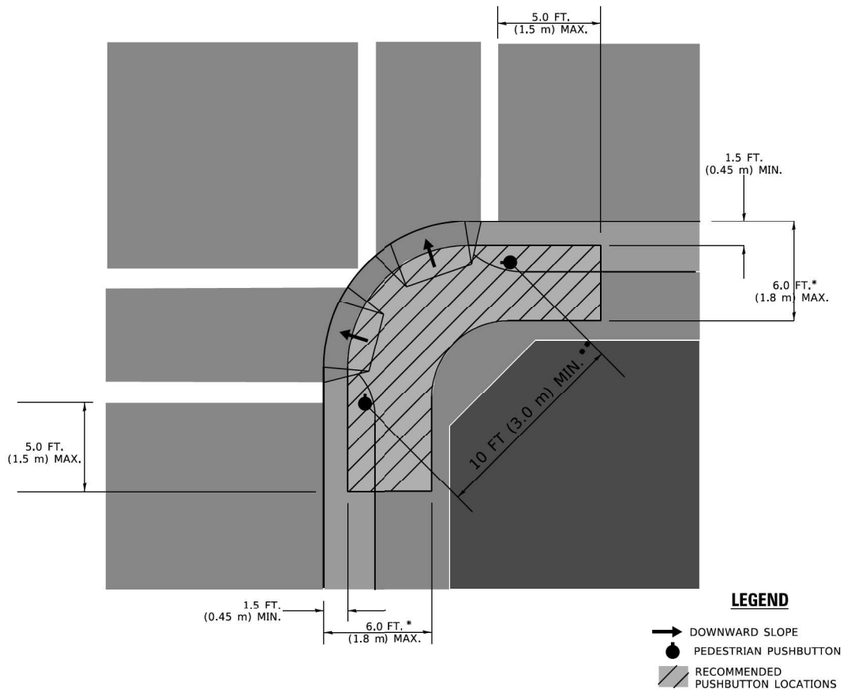
PEDESTRIAN SIGNAL POST AND PEDESTRIAN PUSH BUTTON POST



NOTES:

1. REFER TO THE TRAFFIC SIGNAL EQUIPMENT OFFSET TABLE.
2. PROVIDE A LEVEL ALL-WEATHER SURFACE (CONCRETE SIDEWALK, ASPHALT BICYCLE PATH SURFACE OR MATCHING MATERIAL TO THE ADJACENT SURFACE) UP TO THE PEDESTRIAN SIGNAL POST OR THE PEDESTRIAN PUSH BUTTON POST.
3. THE FACE OF THE PEDESTRIAN PUSHBUTTON SHALL BE PARALLEL TO THE CROSSWALK TO BE USED.
4. THE LOCATIONS AND INSTALLATION OF PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS SHALL MEET THE REQUIREMENTS OF THE MUTCD AND INFORMATION FOUND IN THE "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES."

RECOMMENDED PUSHBUTTON LOCATIONS



* WHERE THERE ARE CONSTRAINTS THAT MAKE IT IMPRACTICAL TO PLACE THE PEDESTRIAN PUSHBUTTON BETWEEN 1.5 FT (0.45 m) AND 6 FT (1.8 m) FROM THE EDGE OF THE CURB, SHOULDER, OR PAVEMENT, IT SHOULD NOT BE FURTHER THAN 10 FT (3 m) FROM THE EDGE OF CURB, SHOULDER, OR PAVEMENT.

** WHERE THERE ARE CONSTRAINTS ON A PARTICULAR CORNER THAT MAKE IT IMPRACTICAL TO PROVIDE THE 10 FT (3 m) SEPERATION BETWEEN THE TWO PEDESTRIAN PUSHBUTTONS, THE PUSHBUTTONS MAY BE PLACED CLOSER TOGETHER OR ON THE SAME POLE.

NOTES:

1. PEDESTRIAN SIGNAL HEADS SHALL BE MOUNTED WITH THE BOTTOM OF THE SIGNAL HOUSING INCLUDING BRACKETS NOT LESS THAN 8 FT (2.4 m) OR MORE THAN 10 FT (3 m) ABOVE SIDEWALK LEVEL, AND SHALL BE POSITIONED AND ADJUSTED TO PROVIDE MAXIMUM VISIBILITY AT THE BEGINNING OF THE CONTROLLED CROSSWALK.
2. THE BOTTOM OF THE SIGNAL HOUSING (INCLUDING BRACKETS) OF A VEHICULAR SIGNAL FACE THAT IS NOT LOCATED OVER A HIGHWAY SHALL BE AT LEAST 8 FT (2.4 m) BUT NOT MORE THAN 19 FT (5.8 m) ABOVE THE SIDEWALK OR, IF THERE IS NO SIDEWALK, ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY.
3. THE BOTTOM OF THE SIGNAL HOUSING AND ANY RELATED ATTACHMENTS TO A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL BE ACCORDING TO CURRENT STATE STANDARDS 877001, 877002, 877006, 877011 AND 877012 WITH A MINIMUM OF 16 FT (5.0 m) AND A MAXIMUM OF 18 FT. (5.5 m) FROM THE HIGHEST POINT OF PAVEMENT.
4. THE BOTTOM OF THE TEMPORARY SPAN WIRE MOUNTED SIGNAL HOUSING AND ANY RELATED ATTACHMENTS TO A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL BE ACCORDING TO CURRENT STATE STANDARD 880001 WITH A MINIMUM OF 17 FT (5.18 m) FROM THE HIGHEST POINT OF PAVEMENT.
5. THE TOP OF THE SIGNAL HOUSING OF A SIGNAL FACE LOCATED OVER ANY PORTION OF A HIGHWAY SHALL NOT BE MORE THAN 25.6 FT (7.8 m) ABOVE THE PAVEMENT.

TRAFFIC SIGNAL EQUIPMENT OFFSET

TRAFFIC SIGNAL EQUIPMENT	COMBINATION CONCRETE CURB AND GUTTER (MINIMUM DISTANCE FROM BACK OF CURB TO CENTERLINE OF FOUNDATION)	SHOULDER/NON-CURBED AREA (MINIMUM DISTANCE FROM EDGE OF PAVEMENT TO CENTERLINE OF FOUNDATION)
TRAFFIC SIGNAL MAST ARM POLE	6 FT (1.8m)	SHOULDER WIDTH + 2 FT (0.5m), MINIMUM 10 FT (3.0m)
TRAFFIC SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.5m), MINIMUM 10 FT (3.0m)
PEDESTRIAN SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.5m), MINIMUM 10 FT (3.0m)
PEDESTRIAN PUSHBUTTON POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.5m), MINIMUM 10 FT (3.0m)
TEMPORARY WOOD POLE	6 FT (1.8m)	SHOULDER WIDTH + 2 FT (0.5m), MINIMUM 10 FT (3.0m)
CONTROLLER CABINET	6 FT (1.8m) MINIMUM DISTANCE SEE NOTE 2	SHOULDER WIDTH + 6 FT (1.8m), MINIMUM 16 FT (4.9m) SEE NOTE 3.
SERVICE INSTALLATION, GROUND MOUNT	6 FT (1.8m) MINIMUM DISTANCE SEE NOTE 2	SHOULDER WIDTH + 6 FT (1.8m), MINIMUM 16 FT (4.9m) SEE NOTE 3.

NOTES:

1. CONTACT THE "AREA TRAFFIC SIGNAL MAINTENANCE AND OPERATIONS ENGINEER" FOR ASSISTANCE IN LOCATING THE TRAFFIC SIGNAL EQUIPMENT WHEN THERE ARE CONFLICTS WITH DITCHES OR THE MINIMUM OFFSET DISTANCES CANNOT BE MET.
2. MINIMUM DISTANCE FROM THE BACK OF CURB TO THE ROADWAY SIDE OF THE FOUNDATION.
3. MINIMUM DISTANCE FROM THE EDGE OF PAVEMENT TOTHE ROADWAY SIDE OF THE FOUNDATION.
4. ANY CHANGES TO THE OFFSETS OF THE FOUNDATIONS, FROM THE MINIMUM DISTANCES LISTED IN THE "TRAFFIC SIGNAL EQUIPMENT OFFSET" CHART AND THE TRAFFIC SIGNAL INSTALLATION PLAN, COULD EFFECT THE PLACEMENT OF THE SIGNAL HEADS, PEDESTRIAN SIGNAL HEADS AND THE PEDESTRIAN PUSHBUTTONS. THE SIGNAL HEAD PLACEMENT ON THE MAST ARMS SHALL REMAIN AS PER THE TRAFFIC SIGNAL INSTALLATION PLAN AND THE "TRAFFIC SIGNAL MAST ARM AND SIGNAL POST" DETAIL ABOVE. THE PROPOSED MAST ARM LENGTHS MAY NEED TO BE REVISED TO MEET THE ABOVE REQUIREMENTS. THE PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS MUST MEET THE REQUIREMENTS UNDER THE DETAILS ON THIS SHEET.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: NONE | SHEET 3 OF 7 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	487
	TS-05	CONTRACT NO. 62U72		
	ILLINOIS	FED. AID PROJECT		

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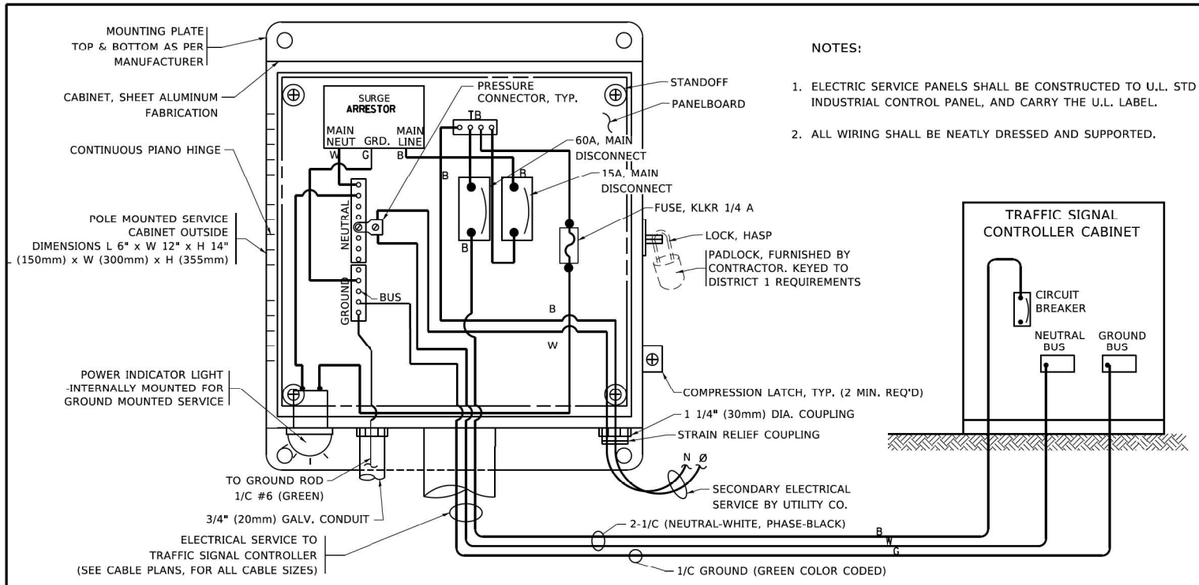


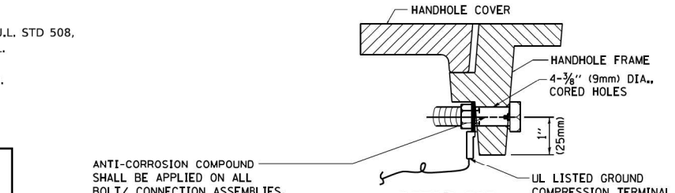
NOTES:

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

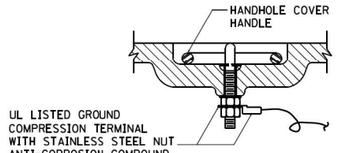
ELECTRICAL SERVICE – PANEL DIAGRAM (TYPICAL FOR POLE AND GROUND MOUNTED SERVICE)

SERVICE INSTALLATION POLE MOUNT (SHOWN)

(NOT TO SCALE)



DETAIL "A"

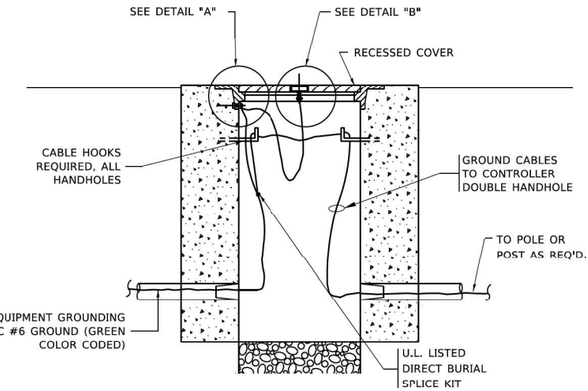


DETAIL "B"

NOTES:

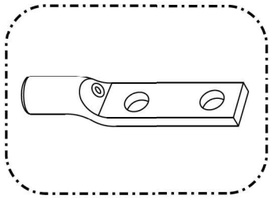
GROUNDING SYSTEM

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

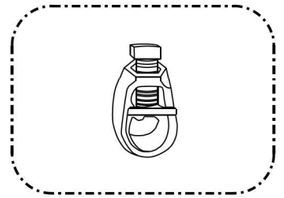


HANDHOLE COVER & FRAME – GROUNDING DETAIL

(NOT TO SCALE)



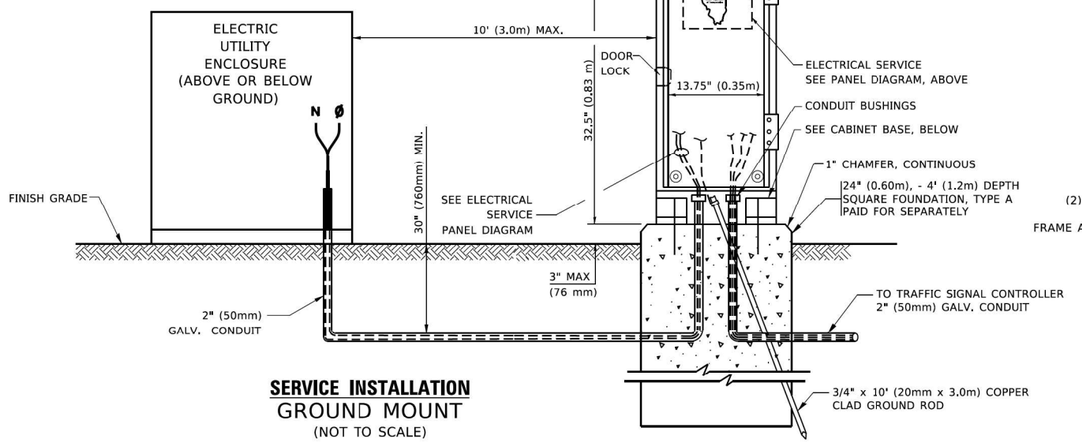
HEAVY-DUTY COMPRESSION TERMINAL (BURNDY TYPE YGHA OR APPROVED EQUAL)



¾" (20mm) HEAVY-DUTY GROUND ROD CLAMP (BURNDY TYPE GRC OR APPROVED EQUAL)

NOTES:

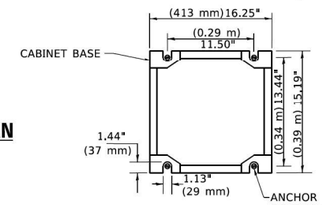
- ALL CLAMPS SHALL BE BRONZE OR COPPER, UL APPROVED.
- GROUND CABLE SHALL BE LOOPED OVER HOOKS IN THE HANDHOLES
  6.5' (2.0m) SLACK SHALL BE PROVIDED IN SINGLE HANDHOLES
  13' (4.0m) OF SLACK SHALL BE PROVIDED IN DOUBLE HANDHOLES.
  5' (1.4m) OF SLACK SHALL BE PROVIDED BETWEEN FRAME AND COVER.



SERVICE INSTALLATION

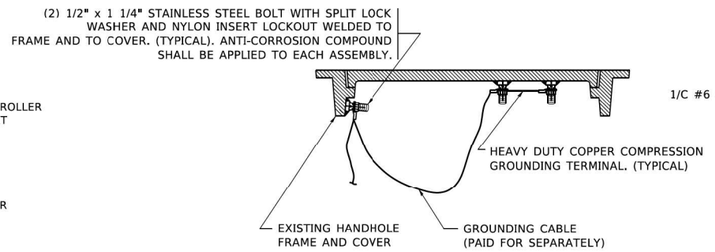
GROUND MOUNT

(NOT TO SCALE)



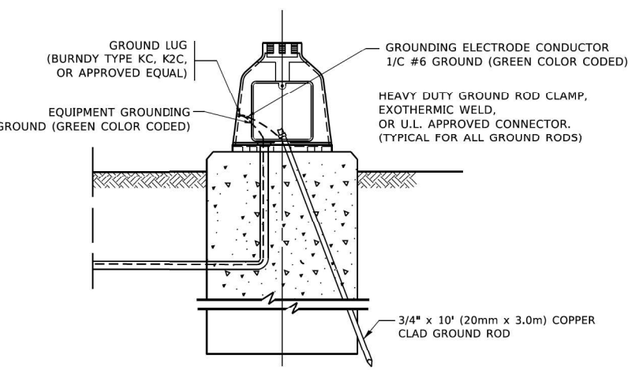
CABINET – BASE BOLT PATTERN

(NOT TO SCALE)



EXISTING HANDHOLE COVER & FRAME – GROUNDING DETAIL

(NOT TO SCALE)



MAST ARM POLE /POST–GROUNDING DETAIL

(NOT TO SCALE)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: NONE | SHEET 4 OF 7 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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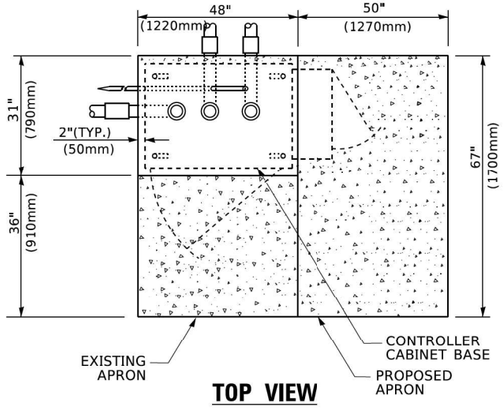
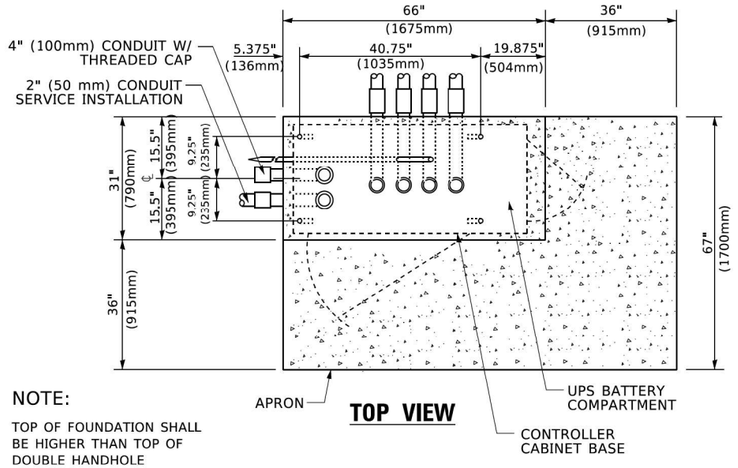


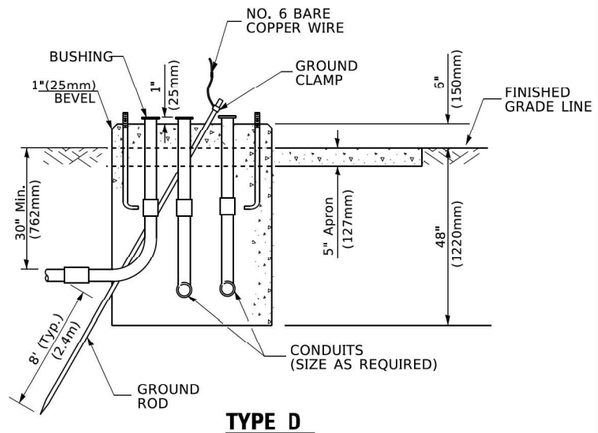
TOP VIEW



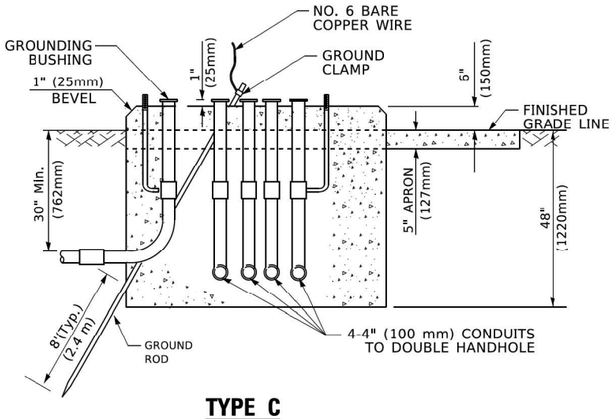
NOTE:

TOP OF FOUNDATION SHALL BE HIGHER THAN TOP OF DOUBLE HANDHOLE

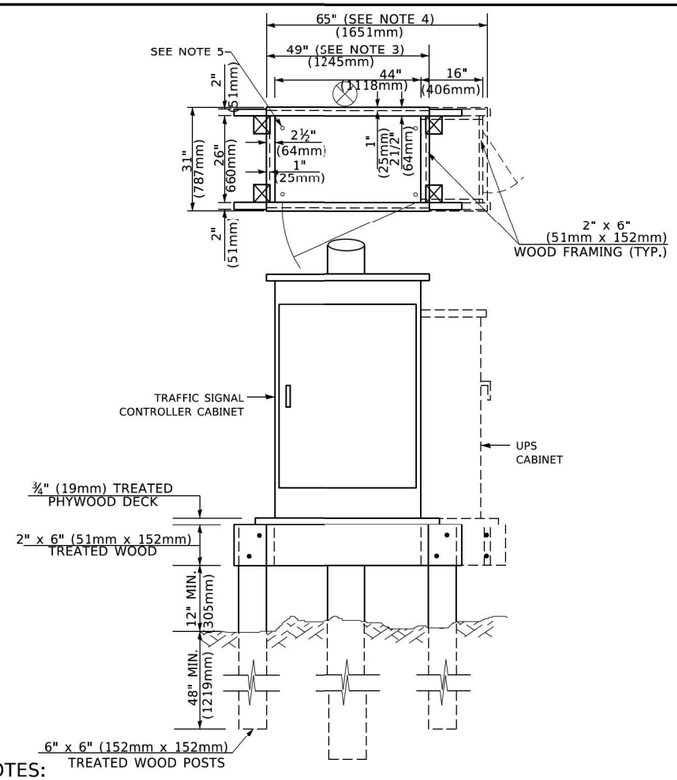
TOP VIEW



TYPE D
FOR GROUND MOUNTED CONTROLLER CABINET AND UPS BATTERY CABINET



TYPE C
FOR GROUND MOUNTED SUPER P (TYPE IV) AND SUPER R (TYPE V) CONTROLLER CABINETS



NOTES:

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

TEMPORARY SIGNAL CONTROLLER WOOD SUPPORT PLATFORM

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

CABLE SLACK

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

VERTICAL CABLE LENGTH

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

DEPTH OF FOUNDATION

Mast Arm Length	① Foundation Depth	Foundation Diameter	Spiral Diameter	Quantity of Rebars	Size of Rebars
Less than 30' (9.1 m)	10'-0" (3.0 m)	30" (750mm)	24" (600mm)	8	6(19)
Greater than or equal to 30' (9.1 m) and less than 40' (12.2 m)	13'-6" (4.1 m)	30" (750mm)	24" (600mm)	8	6(19)
	11'-0" (3.4 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 40' (12.2 m) and less than 50' (15.2 m)	13'-0" (4.0 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 50' (15.2 m) and up to 55' (16.8 m)	15'-0" (4.6 m)	36" (900mm)	30" (750mm)	12	7(22)
Greater than or equal to 56' (16.8 m) and less than 65' (19.8 m)	21'-0" (6.4 m)	42" (1060mm)	36" (900mm)	16	8(25)
Greater than or equal to 65' (19.8 m) and up to 75' (22.9 m)	25'-0" (7.6 m)	42" (1060mm)	36" (900mm)	16	8(25)

NOTES:

1. These foundation depths are for sites which have cohesive soils (clayey silt, sandy clay, etc.) along the length of the shaft, with an average Unconfined Compressive Strength (Qu) > 1.0 tsf (100 kpa). This strength shall be verified by boring data prior to construction or with testing by the Engineer during foundation drilling. The Bureau of Bridges & Structures should be contacted for a revised design if other conditions are encountered.
2. Combination mast arm assemblies under 55 feet (16.8 m) shall use 36" (900 mm) diameter foundations.
3. Combination mast arm assemblies under 56 feet (16.8 m) through 75 feet (22.9 m) shall use 42" (1060 mm) diameter foundations
4. For mast arm assemblies with dual arms refer to state standard 878001..

DEPTH OF MAST ARM FOUNDATIONS, TYPE E

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: NONE | SHEET 5 OF 7 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	489
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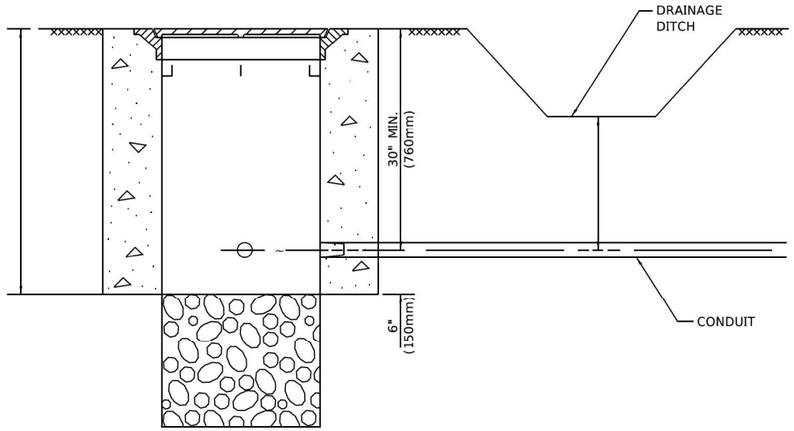
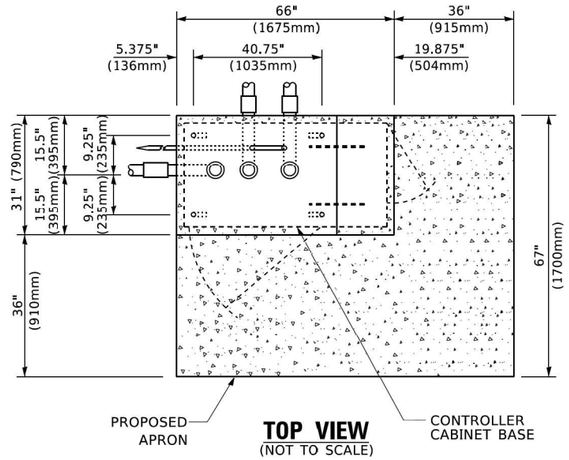


NOTES:

1. CONDUIT DEPTH SHALL BE A MINIMUM OF 30" (760mm) BELOW THE BOTTOM OF THE DRAINAGE DITCH OR ANY SLOPING GROUND
2. THE MINIMUM CONDUIT DEPTH APPLIES TO ALL CONDUIT PLACED UNDER ROADWAY PAVEMENT, MULTI-USE PATHS, SIDEWALKS AND SOIL SURFACES.
3. THE MINIMUM CONDUIT DEPTH APPLIES TO ALL HANDHOLES, HEAVY DUTY HANDHOLES AND DOUBLE HANDHOLES.

HANDHOLE WITH MINIMUM CONDUIT DEPTH

(NOT TO SCALE)



TOP VIEW

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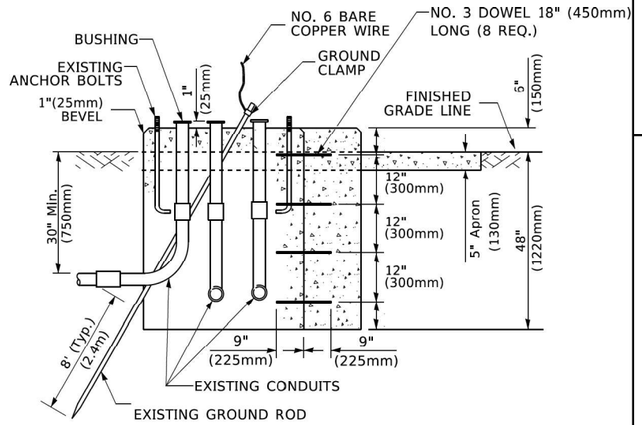

MODIFY EXISTING TYPE "D" FOUNDATION TO TYPE "C" FOUNDATION

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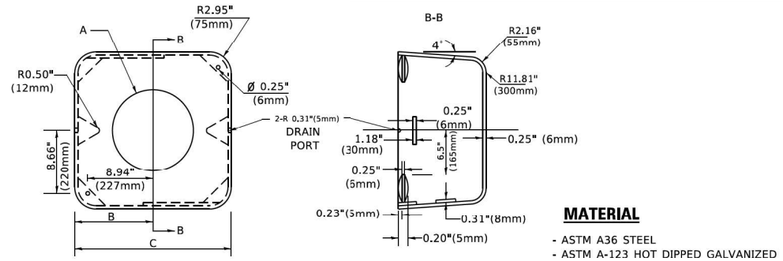


MATERIAL

- ASTM A36 STEEL
- ASTM A-123 HOT DIPPED GALVANIZED

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

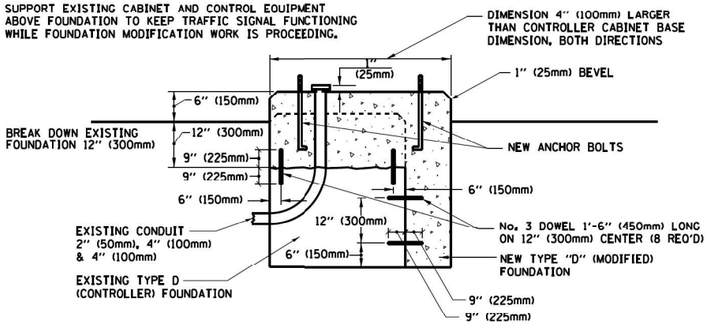
SHROUD

NOTES:

1. DIMENSION "A" IS EQUAL TO THE DIAMETER OF THE MAST ARM POLE AT THE TOP OF THE SHROUD. THE SHROUD SHALL BE TIGHT TO THE MAST ARM POLE.
2. THE SUPPLIER SHALL VERIFIED THE ABOVE DIMENSIONS BASED ON MAST ARM REQUIREMENTS.
3. THE HEIGHT OF THE SHROUD SHALL COVER THE ANCHOR BOLTS, NUTS AND MAST ARM POLE BASE.

NOTE:

SUPPORT EXISTING CABINET AND CONTROL EQUIPMENT ABOVE FOUNDATION TO KEEP TRAFFIC SIGNAL FUNCTIONING WHILE FOUNDATION MODIFICATION WORK IS PROCEEDING.



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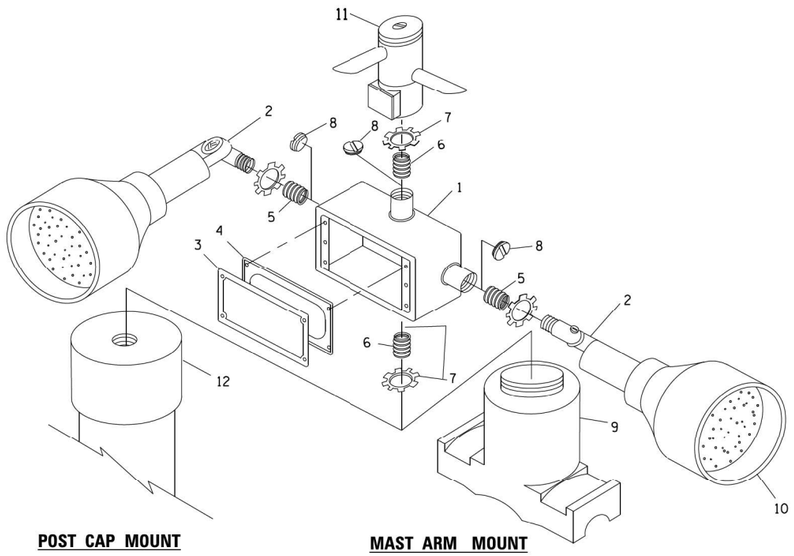


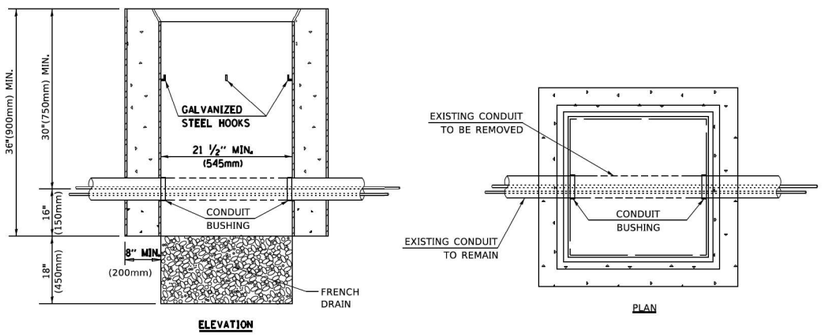
POST CAP MOUNT **MAST ARM MOUNT**

EMERGENCY VEHICLE DETECTOR WITH CONFIRMATION BEACON MOUNTING DETAIL

ITEM NO.	IDENTIFICATION
1	OUTLET BOX- GALV. 21 CU.IN. (0.000344 CU-M)
2	LAMP HOLDER AND COVER
3	OUTLET BOX COVER
4	RUBBER COVER GASKET
5	REDUCING BUSHING
6	¾"(19 mm) CLOSE NIPPLE
7	¾"(19 mm) LOCKNUT
8	¾"(19 mm) HOLE PLUG
9	SADDLE BRACKET - GALV.
10	6 WATT PAR 38 LED FLOOD LAMP
11	DETECTOR UNIT
12	POST CAP [18 FT. (5.4 m) POST MIN.]

NOTES:

1. ALL ELECTRICAL ITEMS, EXCEPT ITEMS #2 AND #11 SHALL BE ALUMINUM OR GALVANIZED
2. ITEM #1- OZ/GEDNEY FSX-1-50 OR EQUIVALENT
   ITEM #2- MULBERRY CON-O-SHADE LAMP SHIELD OR EQUIVALENT
   ITEM #9- "BAND-IT" SADDLE BRACKET OR EQUIVALENT
3. WHEN POST MOUNTING IS SPECIFIED, ITEM #9 SHALL NOT BE REQUIRED. THE DETECTION UNIT SHALL BE MOUNTED DIRECTLY ON TOP OF THE CAP BY DRILLING AND TAPPING A 3/4 "(19 mm) HOLE WITH PIPE THREADS. THE POST CAP SHALL EITHER BE SCREWED TO THE TOP OF THE POST OR A MINIMUM OF 3 TIGHTENING SCREWS SHALL BE REQUIRED ON EACH CAP.



NOTES:

1. HANDHOLE CONSTRUCTED PER STATE STANDARD 814001.
2. REMOVAL OF THE EXISTING CONDUIT FROM THE HANDHOLE AND THE INSTALLATION OF THE CONDUIT BUSHINGS SHALL BE INCLUDED WITH THE COST OF THE HANDHOLE.

HANDHOLE TO INTERCEPT EXISTING CONDUIT

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: NONE | SHEET 6 OF 7 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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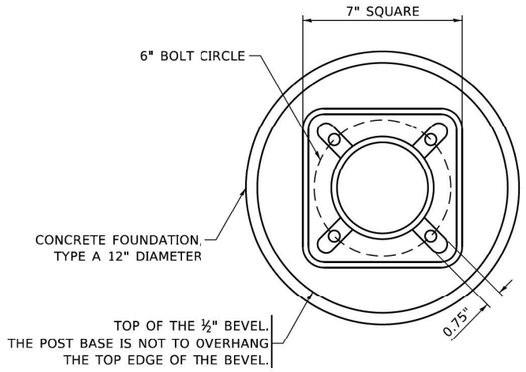
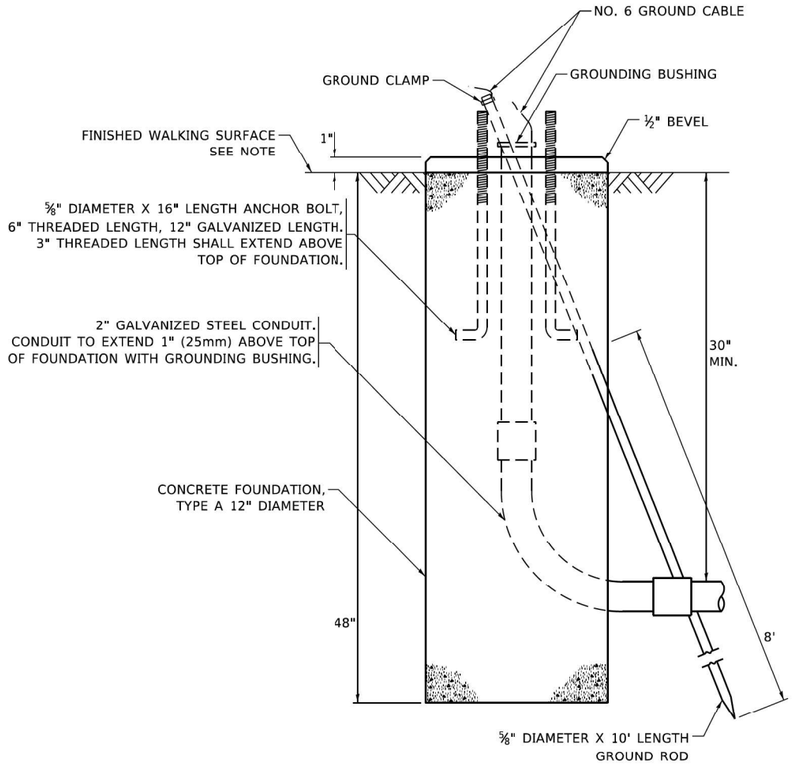
	TS-05	CONTRACT NO. 62U72		
		ILLINOIS	FED. AID PROJECT	



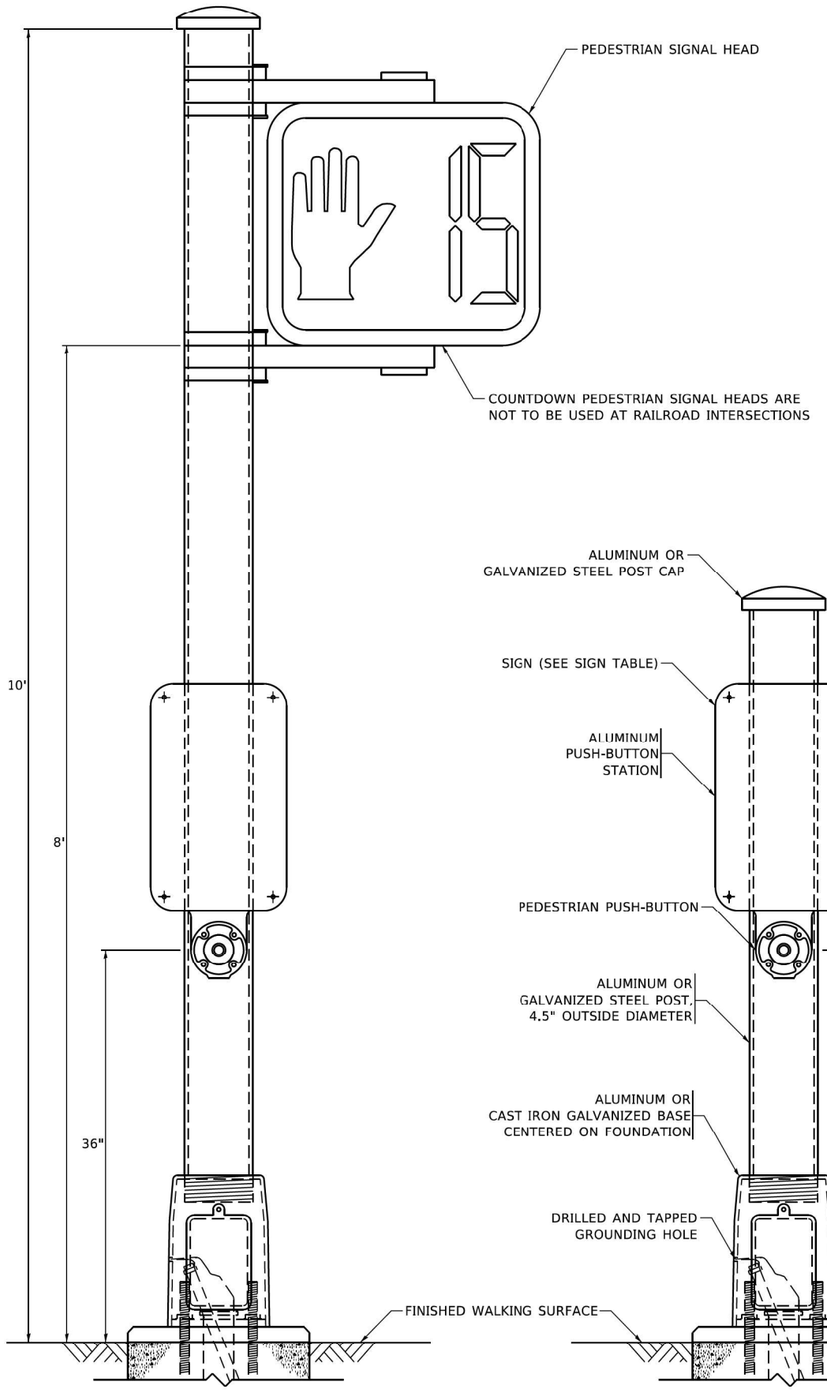
BOLT PATTERN

NOTE:

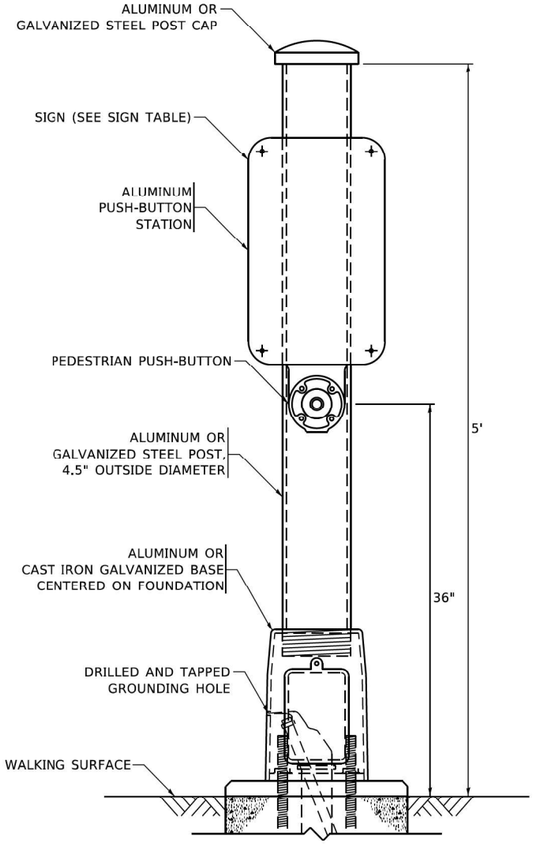
1. IF THE PEDESTRIAN SIGNAL POST FOUNDATION IS INSTALLED WITHIN OR BEHIND A BARRIER CURB, THE TOP OF THE FOUNDATION SHALL BE INSTALLED FLUSH WITH THE TOP OF THE BARRIER CURB.



CONCRETE FOUNDATION, TYPE A 12–INCH DIAMETER



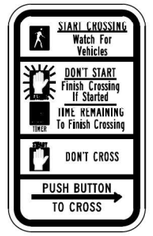
PEDESTRIAN SIGNAL POST, 10 FT.



PEDESTRIAN SIGNAL POST, 5 FT.

R10–3b

R10–3d



R10–3e

SIGN TABLE

SIGN	DIMENSIONS
R10-3b (RAILROAD ONLY)	9" X 12"
R10-3d (RAILROAD ONLY)	9" X 12"
R10-3e	9" X 12"

NOTES:

1. THE SIGN PANELS SHALL BE TYPE AP SHEETING.
2. THE ARROW ON SIGNS FOR PUSH-BUTTONS SERVING TWO DIRECTIONS ON THE SAME PHASE SHALL BE BI-DIRECTIONAL.
3. THE SIGN FOR DUAL-CALL PUSH-BUTTONS SHALL HAVE NO ARROW.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

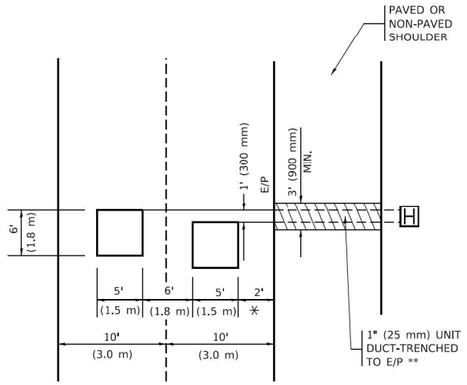
DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: NONE | SHEET 7 OF 7 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	491
	TS–05	CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			

LOOPS NEXT TO SHOULDERS

PROVIDE A PAVEMENT REPLACEMENT NOTE WHICH SHOULD EQUAL 3' (900 mm) X WIDTH OF PAVED SHOULDER.



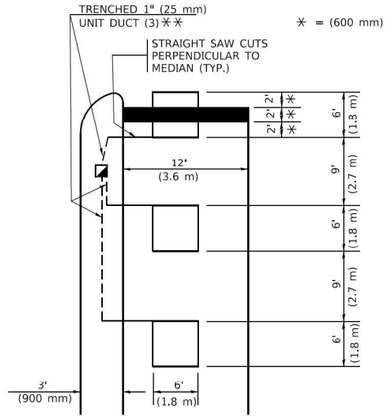
∗ = (600 mm)

∗∗ UNIT DUCT IS TO BE SHOWN ON PLAN SHEETS BUT SHALL NOT BE INCLUDED IN THE PAY ITEMS.

LEFT TURN LANES WITH MEDIANS

VOLUME DENSITY ("FAR OUT" DETECTION) ON SAME APPROACH (PROTECTED / PERMITTED LEFT TURN PHASING)

HANDHOLE LOCATION MAY VARY DEPENDING ON GEOMETRICS AND DESIGN OF TRAFFIC SIGNALS. HEAVY-DUTY HANDHOLES TO BE USED WHEN THE MEDIAN IS MOUNTABLE. REFER TO STANDARD 814001 TO ENSURE THAT HANDHOLE FITS IN MEDIAN.



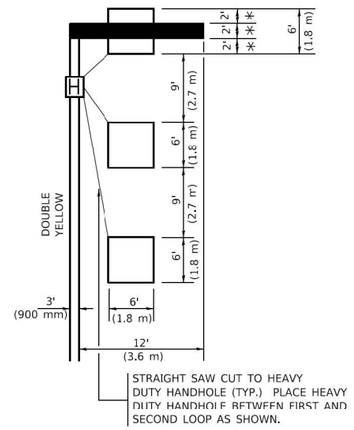
** UNIT DUCT IS TO BE SHOWN ON PLAN SHEETS BUT SHALL NOT BE INCLUDED IN THE PAY ITEMS.

NOTE: DUAL LEFT TURNS NOT SHOWN REFER TO PLAN SHEET FOR DETECTOR LOOP REPLACEMENT

LEFT TURN LANES WITHOUT MEDIANS

VOLUME DENSITY (''FAR OUT'' DETECTION) ON SAME APPROACH (PROTECTED / PERMITTED LEFT TURN PHASING)

∗ = (600 mm)



NOTE: DUAL LEFT TURNS NOT SHOWN REFER TO PLAN SHEET FOR DETECTOR LOOP REPLACEMENT

NOTES:

VEHICLES LOOP DETECTORS

∗ ALL LEAD IN CABLE SHALL BE TWO CONDUCTOR NO. 14 TWISTED, SHIELDED.

∗ EACH DETECTOR LOOP SHALL HAVE ITS OWN SAW CUT FROM THE LOOP TO THE EDGE OF PAVEMENT OR TO A HANDHOLE IN THE PAVEMENT.

∗ EACH DETECTOR LOOP SHALL HAVE ITS OWN ONE INCH (25 mm) UNIT DUCT BETWEEN THE EDGE OF PAVEMENT AND THE FIRST HANDHOLE OR JUNCTION BOX. EACH UNIT DUCT RUN SHALL BE SHOWN ON THE PLANS BY THE DESIGNER, BUT SHALL NOT BE PAID FOR SEPARATLY. THIS ITEM IS INCIDENTAL TO THE PAY ITEM FOR DETECTOR LOOPS.

∗ ONE DIMENSION OF ALL DETECTOR LOOPS SHALL BE SIX FEET (1.8 m)

∗ EACH LANE OF NON-LOCKING, PRESENCE DETECTION AND EACH LANE OF A DOUBLE LEFT TURN LANE REQUIRES A SEPARATE INDUCTIVE LOOP DETECTOR AND LEAD IN CABLE.

∗ WHEN NON-LOCKING, PRESENCE DETECTION IS USED, MORE THAN ONE LOOP PER LANE IS REQUIRED BEHIND THE STOP BAR (i.e. 1-1/2, 1-3/4, 2).

∗ WHEN SYSTEM LOOPS ARE REQUIRED ON AN APPROACH OF AN INTERSECTION, THE LOOPS USED FOR VOLUME DENSITY AND INTERSECTION TIMING SHALL ALSO BE USED AS SYSTEM DETECTORS. EACH ONE OF THESE TYPE OF LOOPS REQUIRES A SEPARATE TWO CONDUCTOR NO. 14 TWISTED SHIELDED CABLE AND A SEPARATE INDUCTIVE LOOP DETECTOR WHEN NEW CONTROLLERS ARE UTILIZED. THE DESIGNER SHALL LABEL THESE TYPES OF LOOPS AS "INTERSECTION AND SAMPLING (SYSTEM) DETECTORS" ON THE SIGNAL LAYOUT, THE INTERCONNECT PLAN AND THE SYSTEM CABLE PLAN. WHEN AN EXISTING CONTROLLER IS UTILIZED FOR THIS TYPE OF DETECTION, THE PAY ITEM "INDUCTIVE LOOP DETECTOR WITH SYSTEM OUTPUT" SHOULD BE USED.

PLACEMENT OF DETECTORS

THE FOLLOWING FIGURES REPRESENT THE MOST COMMON DETECTOR LOOP LOCATIONS AND SIZES. ADJUSTMENTS WILL BE NECESSARY FOR SPECIFIC GEOMETRIC CONSIDERATIONS.

LOCATIONS AND DEMENSIONS OF DETECTOR LOOPS ARE REQUIRED ON ALL SIGNAL LAYOUT PLAN SHEETS.

"FAR OUT" DETECTION REFERS TO LOCKING, PRESENCE TYPE DETECTION LOCATED IN THRU LANES, RIGHT TURN LANES, AND RIGHT TURN LANE TAPER AREAS (IF APPLICABLE), USUALLY 250' (75 m) IN ADVANCE OF STOP BARS. "UPTIGHT" DETECTION REFERS TO NON-LOCKING PRESENCE TYPE DETECTION LOCATED IN ALL LANES AND 10'-15' (3.0 m-4.5 m) BEHIND THE CROSSING STREET'S EDGE OF PAVEMENT EXTENDED.

NOTE:

ALL DETAILS AND NOTES SHOWN ARE FROM THE I.D.O.T. DISTRICT 1 TRAFFIC SIGNAL DESIGN GUIDELINES DATED JANUARY 1995

THIS DRAWING HAS BEEN PREPARED TO ASSIST THE RESIDENT ENGINEER FOR ALL ROADWAY RESURFACING OR S.M.A.R.T. PROJECTS WHERE THE DIMENSIONS ARE NOT SHOWN ON THE PLANS AND THE FINAL LOCATIONS FOR CROSSWALKS OR STOP BARS ARE NOT DETERMINED.

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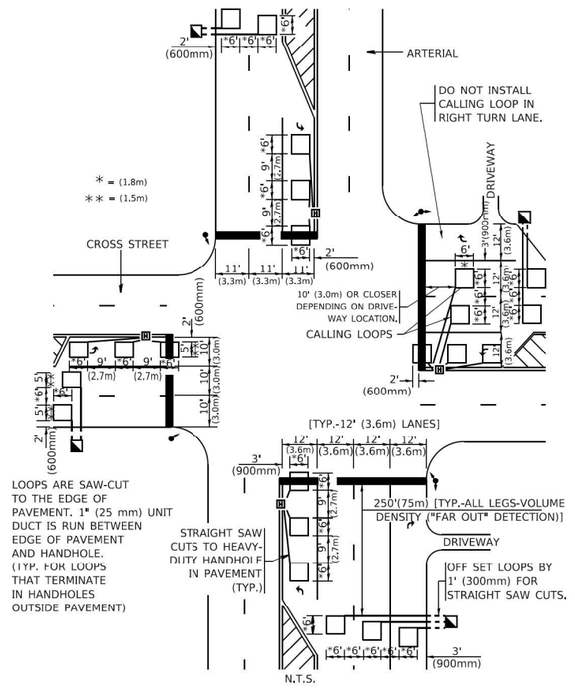
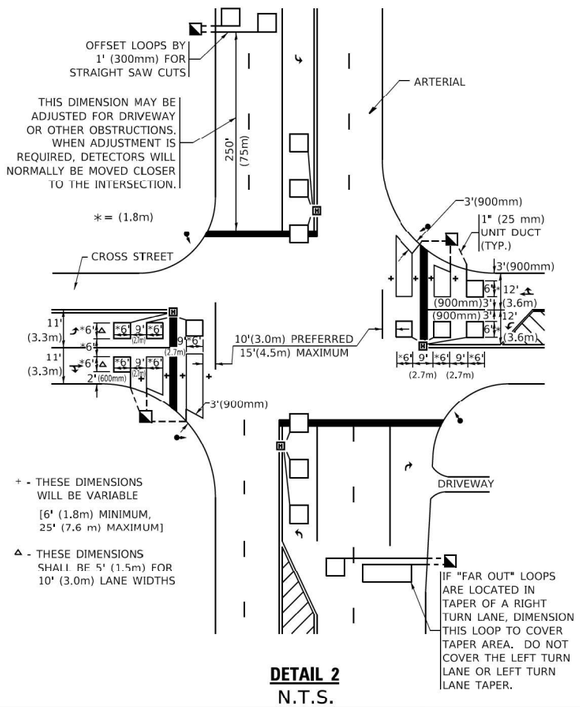
CROSS STREET-NON VOLUME DENSITY ("FAR OUT" DETECTION)



DETAIL 1
N.T.S.

ARTERIAL-VOLUME DENSITY ("FAR OUT" DETECTION)
CROSS STREET-NON VOLUME DENSITY ("UPTIGHT" PRESENCE DETECTION)



DETAIL 2
N.T.S.

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DISTRICT 1 – DETECTOR LOOP INSTALLATION DETAILS FOR ROADWAY RESURFACING

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	492
	TS-07	CONTRACT NO. 62U72		
		ILLINOIS FED. AID PROJECT		

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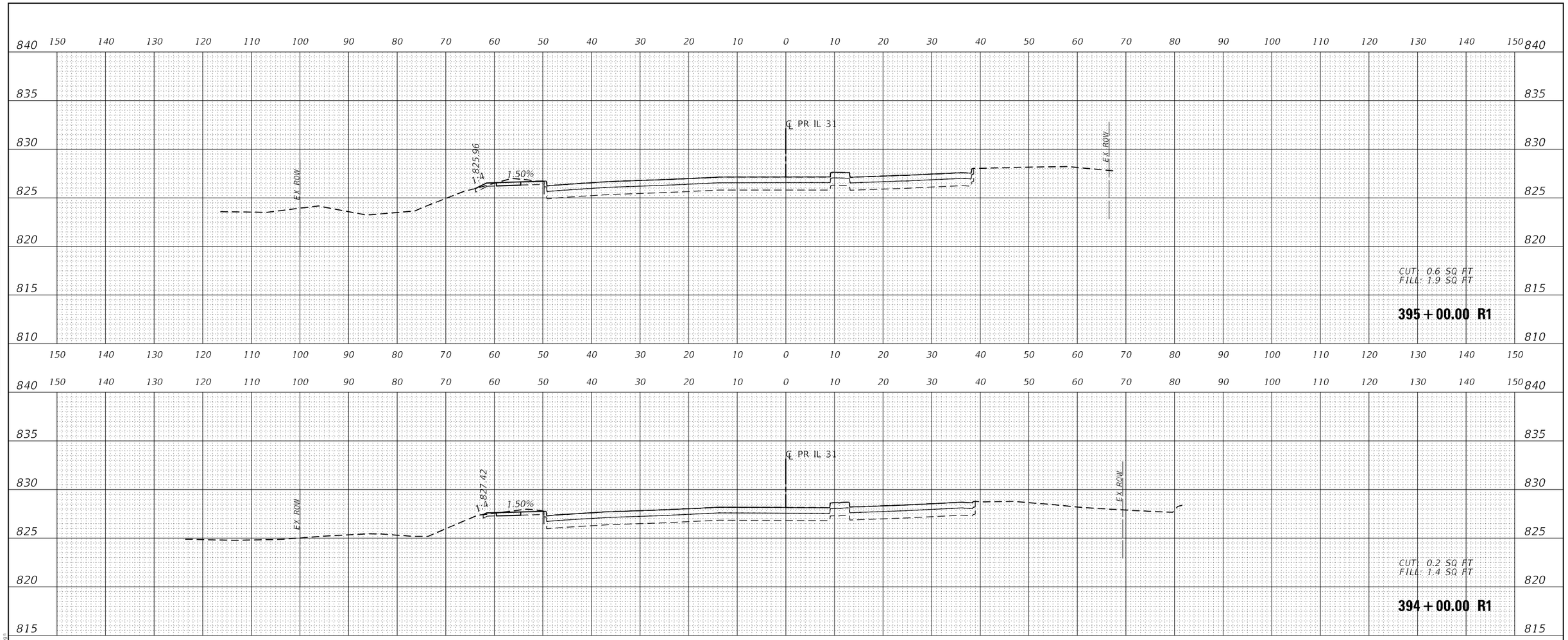

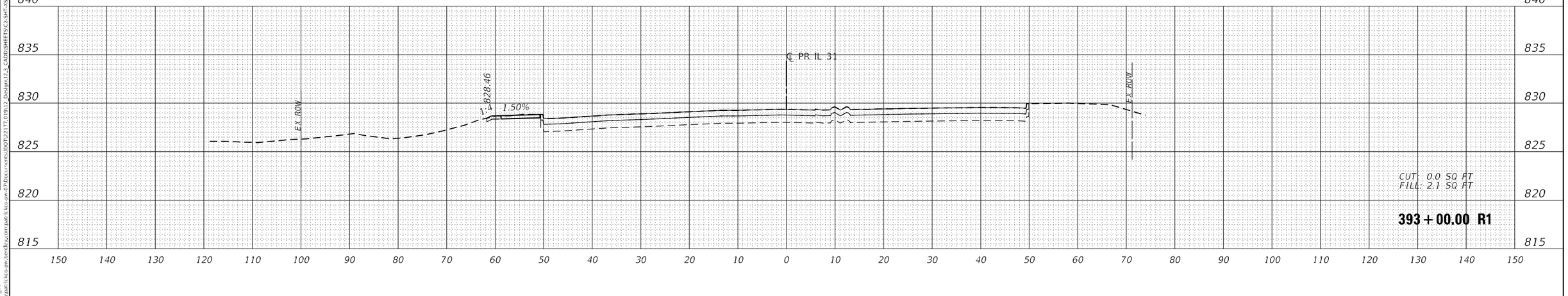

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PLOT DATE = 1/16/2026	DATE - 1/9/2026	REVISED -			

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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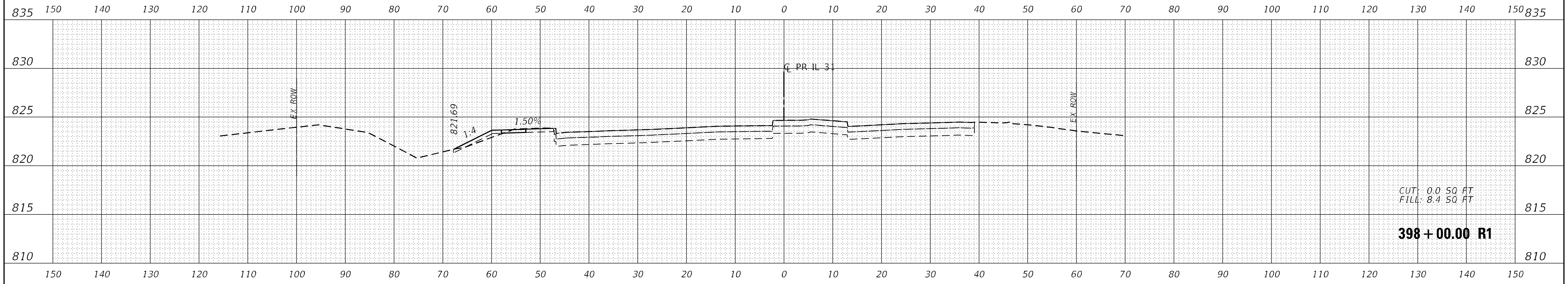
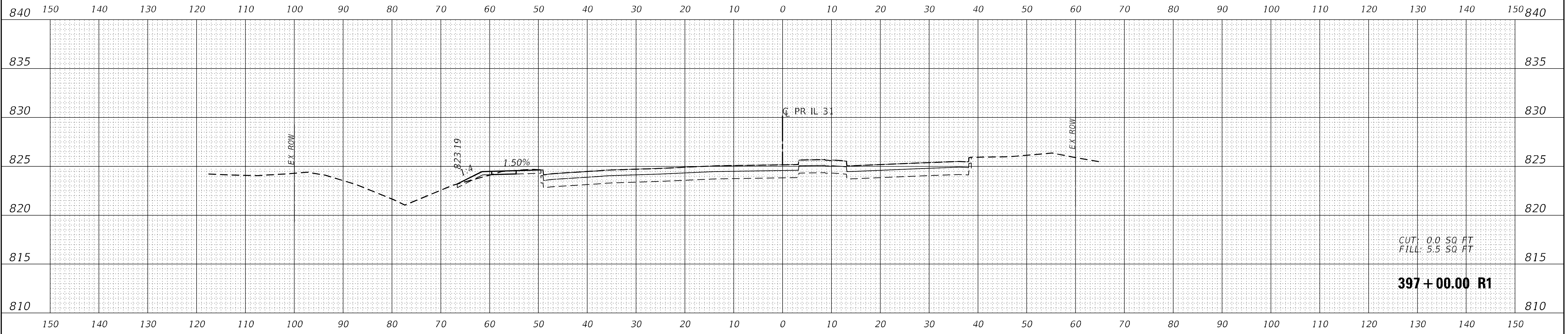
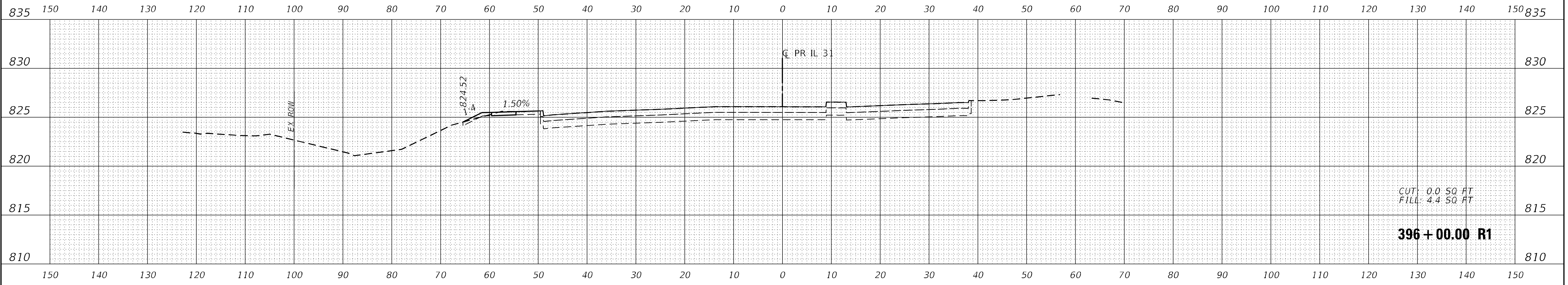
		CONTRACT NO. 62U72		
		ILLINOIS	FED. AID PROJECT	







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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
ILLINOIS ROUTE 31

SCALE: 1" = 10' | SHEET OF 58 SHEETS | STA. 396+00.00 R1 TO STA. 398+00.00 R1

F.A. P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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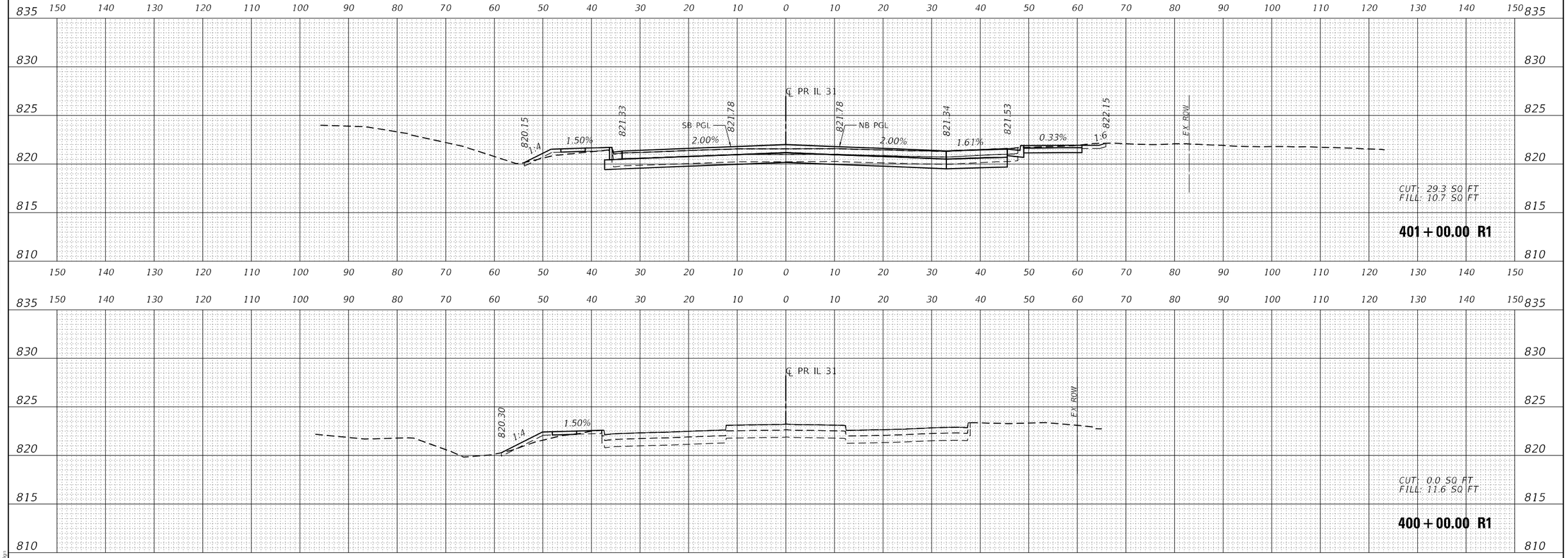
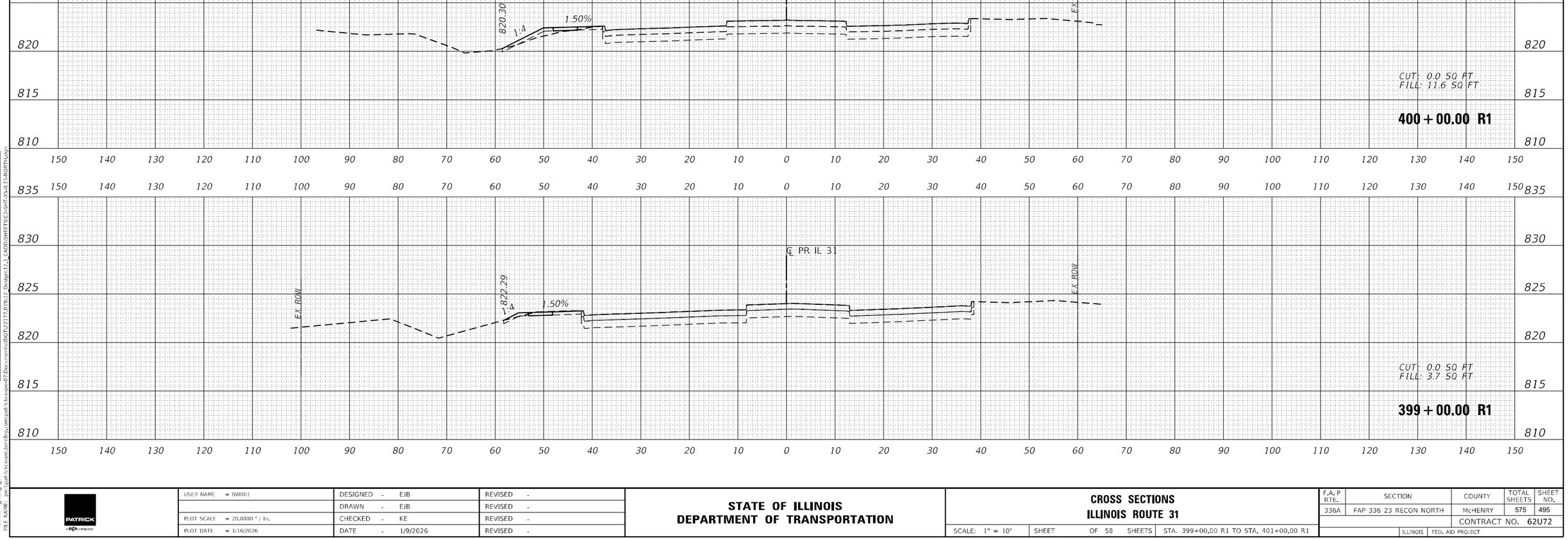
		CONTRACT NO. 62U72		
	ILLINOIS	FED. AID PROJECT		





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		CONTRACT NO. 62U72		
		ILLINOIS	FED. AID PROJECT	

DATE | BY | SURVEYED | PLOTTED | TEMPLATE | AREAS | AREAS CHECKED | NO. | NOTE BOOK | ORIGINAL SURVEY | FINAL SURVEY

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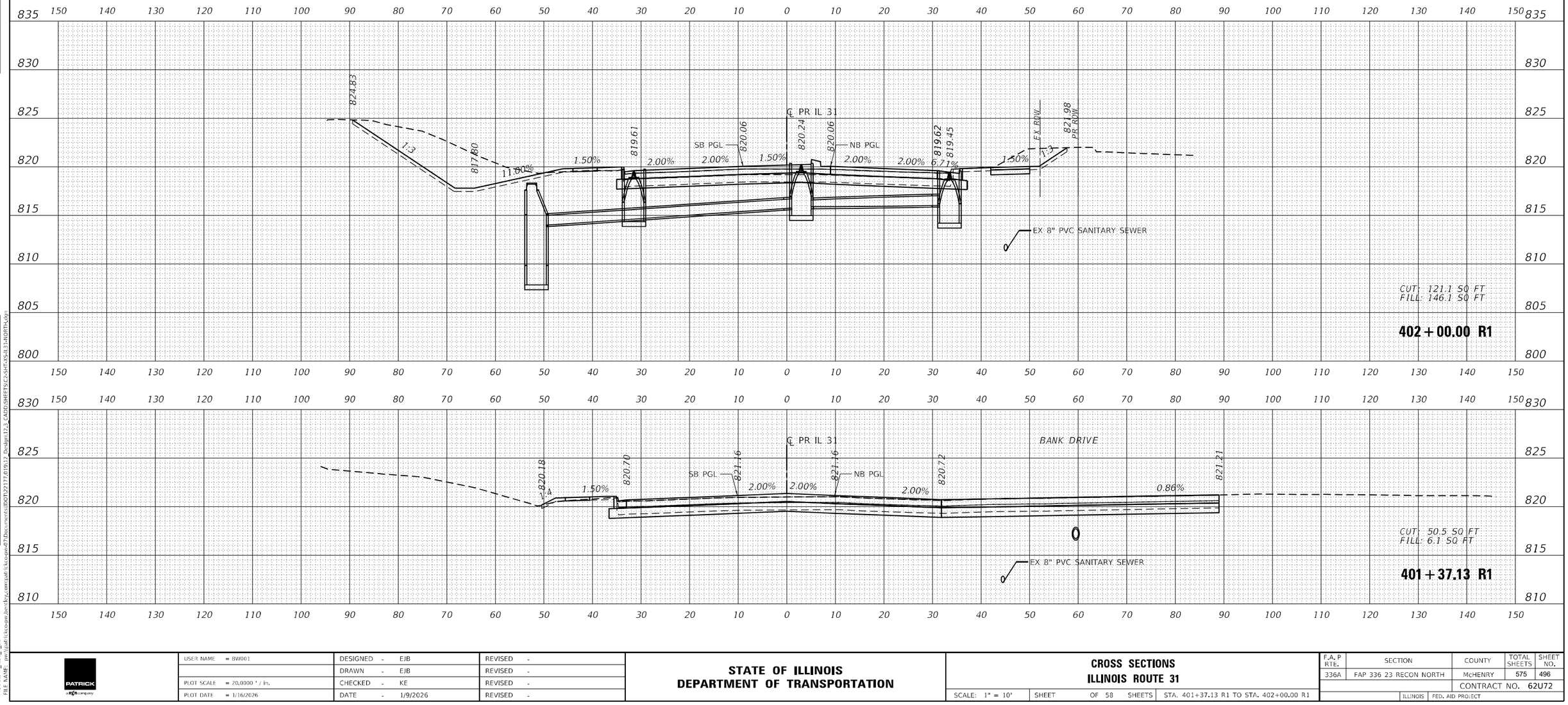

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336A	FAP 336 23 RECON NORTH	McHENRY	575	496
		CONTRACT NO. 62U72		
	ILLINOIS | FED. AID PROJECT			

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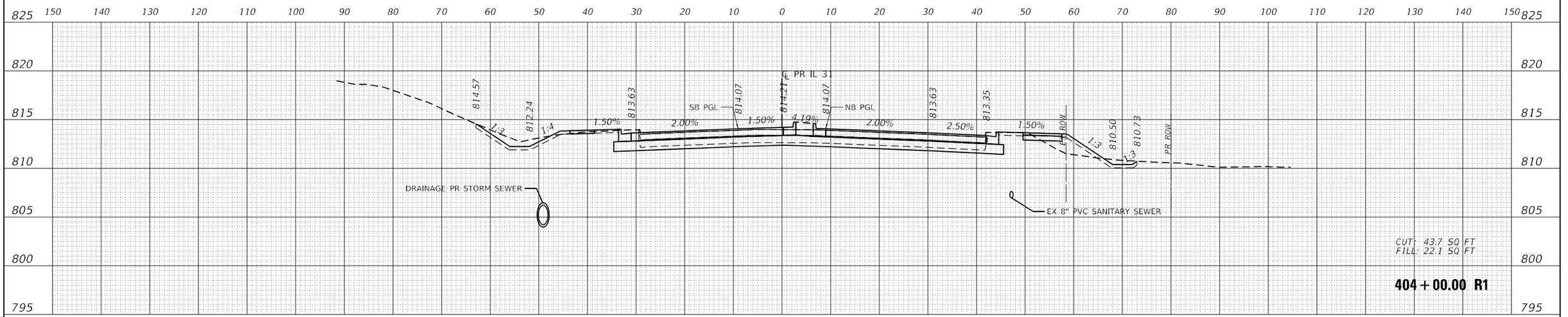

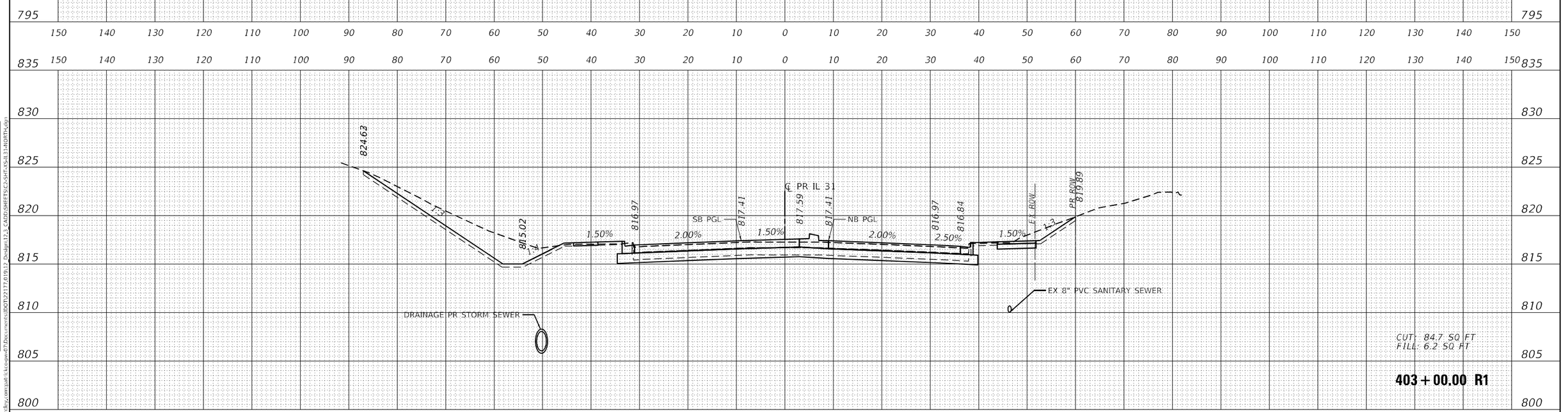

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336A	FAP 336 23 RECON NORTH	McHENRY	575	497
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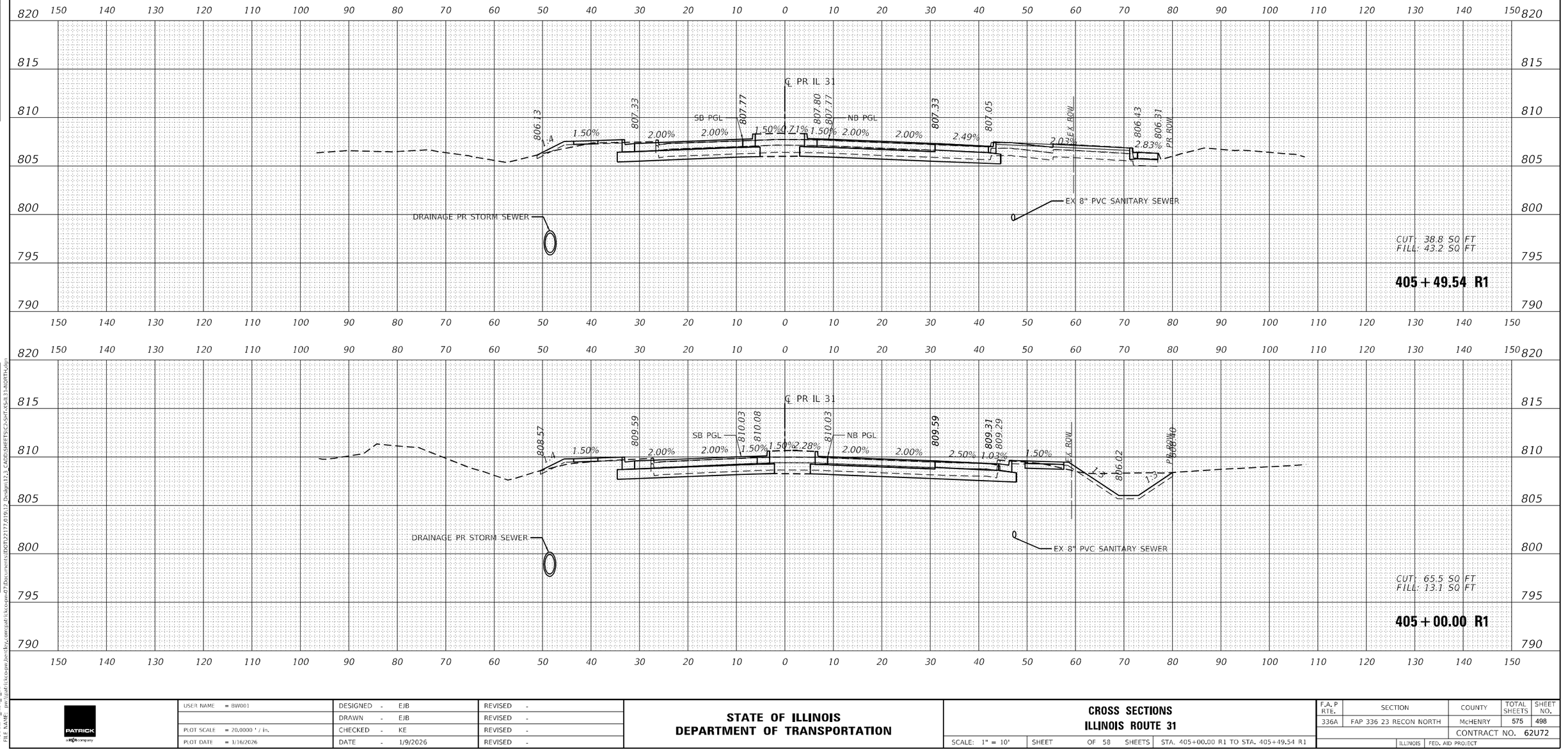

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F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	498
		CONTRACT NO. 62U72		
	ILLINOIS FED. AID PROJECT			

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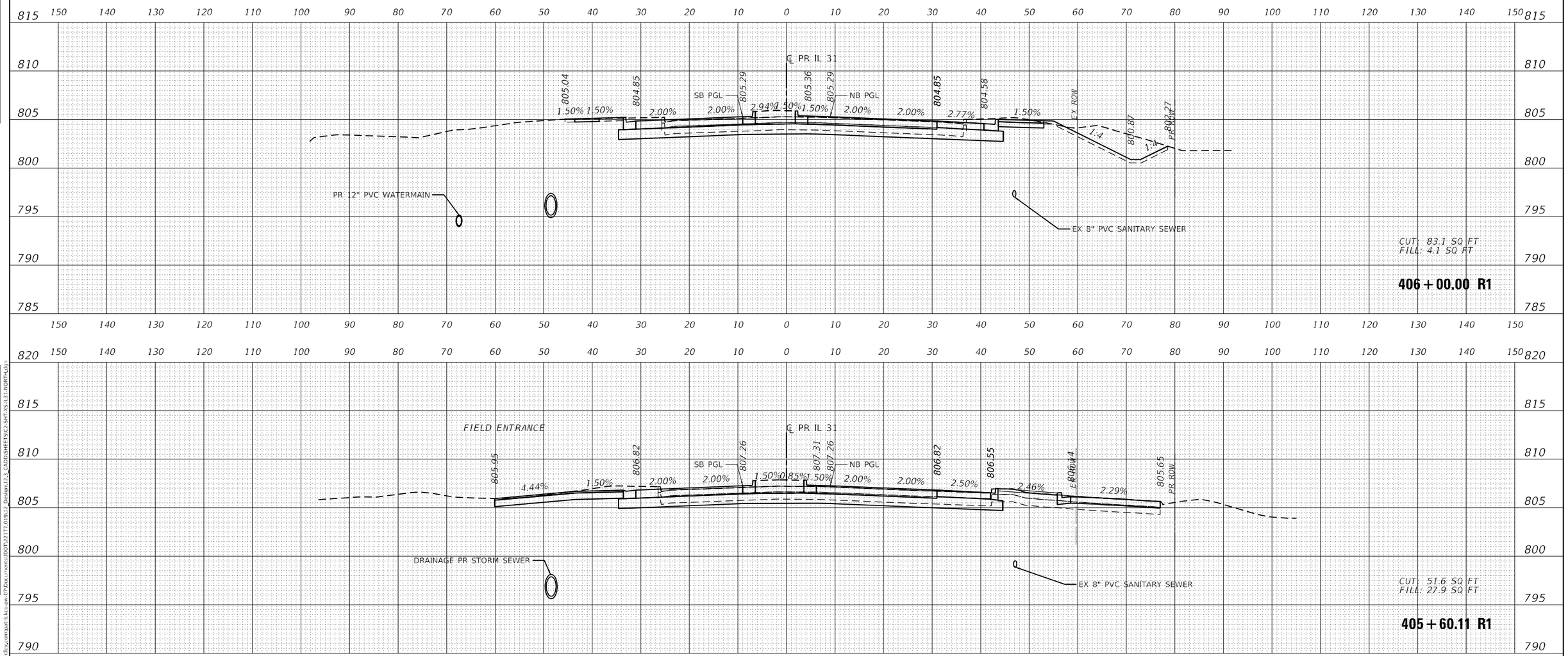

USER NAME = BW001	DESIGNED - EJB	REVISED -	**STATE OF ILLINOIS**	**CROSS SECTIONS**	
	DRAWN - EJB	REVISED -	**DEPARTMENT OF TRANSPORTATION**	**ILLINOIS ROUTE 31**	
PLOT SCALE = 20.0000 ' / in.	CHECKED - KE	REVISED -		SCALE: 1" = 10' SHEET OF 58 SHEETS STA. 405+60.11 R1 TO STA. 406+00.00 R1	
PLOT DATE = 1/16/2026	DATE - 1/9/2026	REVISED -			

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	499
		CONTRACT NO. 62U72		
		ILLINOIS	FED. AID PROJECT	

MODEL: P_IL31_N_02
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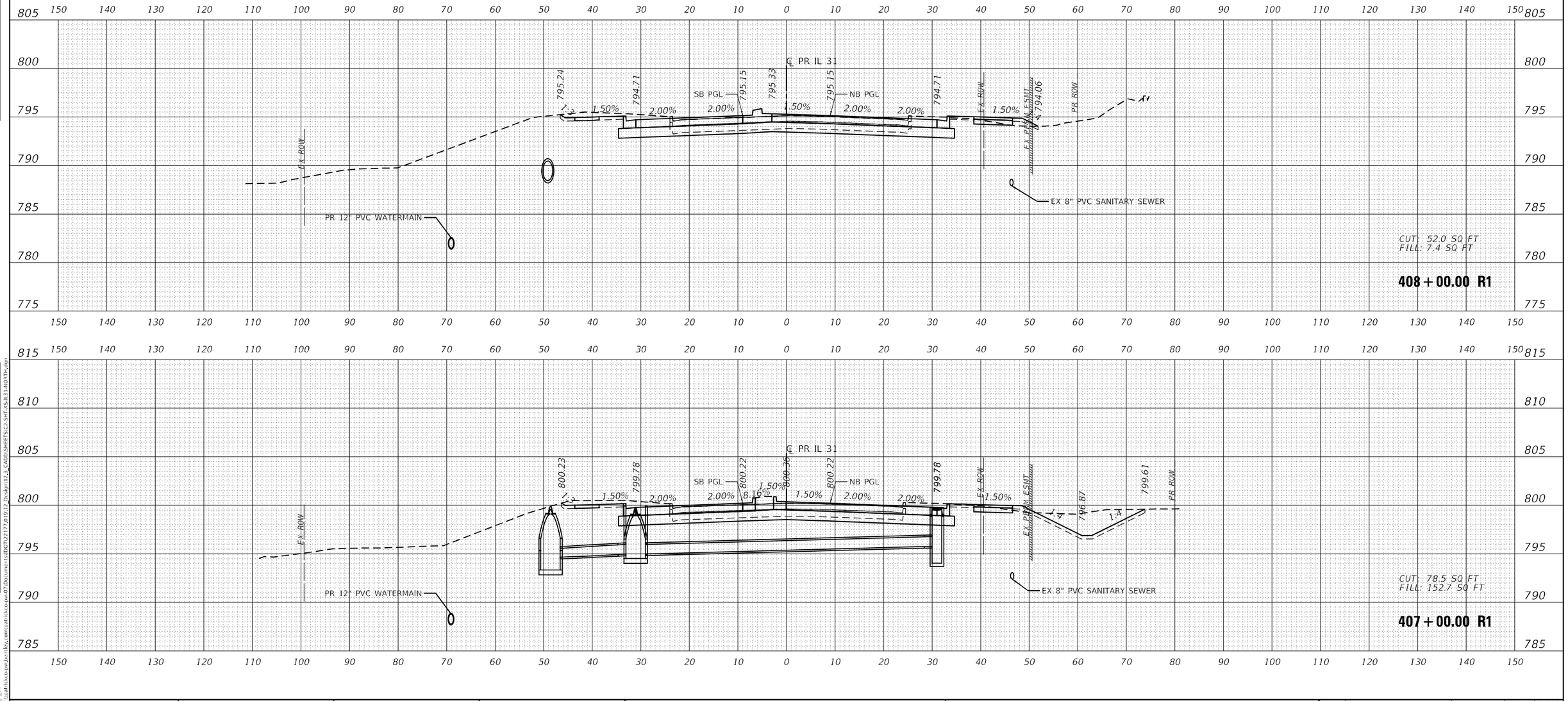

FINAL SURVEY / ORIGINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

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PATRICK a KCI company

USER NAME = BW001		DESIGNED - EJB		REVISED -	
		DRAWN - EJB		REVISED -	
PLOT SCALE = 20.0000 ' / in.		CHECKED - KE		REVISED -	
PLOT DATE = 1/16/2026		DATE - 1/9/2026		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
ILLINOIS ROUTE 31

SCALE: 1" = 10' | SHEET OF 58 SHEETS | STA. 407+00.00 R1 TO STA. 408+00.00 R1

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
336A	FAP 336 23 RECON NORTH	McHENRY	575	500
		CONTRACT NO. 62U72		
	ILLINOIS	FED. AID PROJECT		