NOTES:

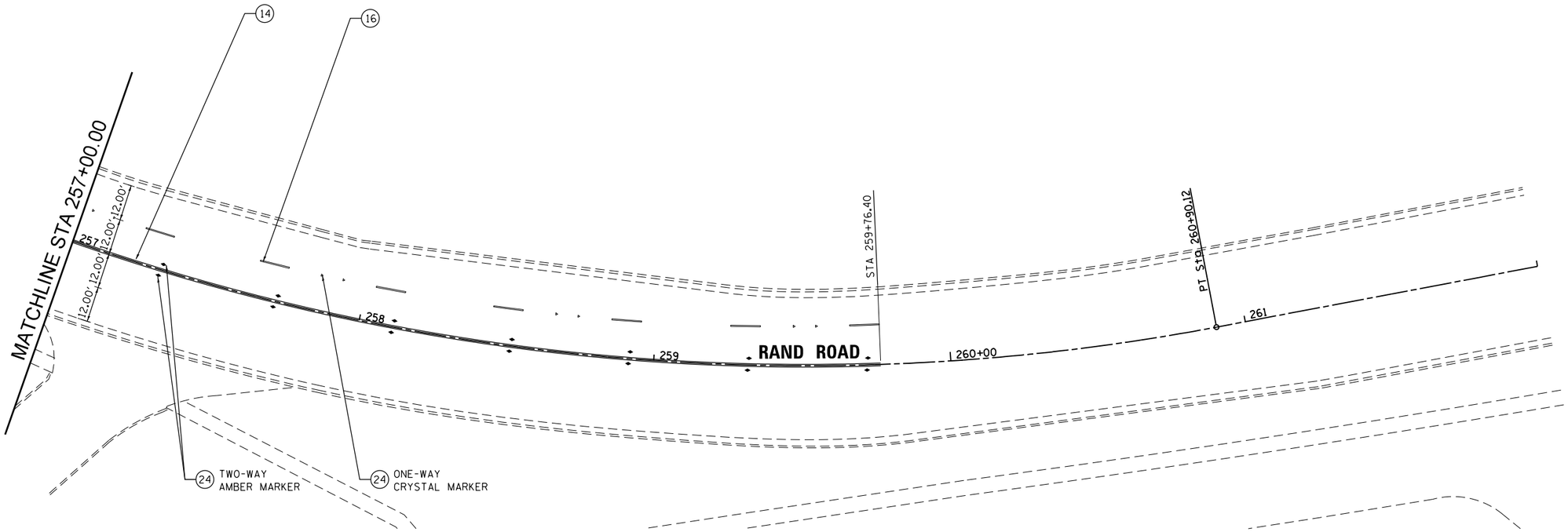
1. SEE DISTRICT ONE TYPICAL PAVEMENT MARKINGS FOR TURN LANE, CROSSWALK, AND ISLAND MARKING DETAILS.

2. PAVEMENT MARKINGS SHOWN EXTENDING OUTSIDE OF THE PROJECT LIMITS ARE BEING REPLACED DUE TO THEIR REMOVAL FOR TRAFFIC MAINTENANCE DURING CONSTRUCTION. REPLACE PAVEMENT MARKINGS AFTER CONSTRUCTION USING THERMOPLASTIC MATERIAL.

3. THERMOPLASTIC PAVEMENT MARKING REPLACEMENT ENDS AT STA. 259+76.40 ON RAND ROAD AND MATCHES EXISTING PAVEMENT MARKINGS AT THIS POINT.

N

0 20' 40' 60'
SCALE IN FEET



LEGEND

1. POLYUREA PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE)
2. POLYUREA PAVEMENT MARKING - 4" DOUBLE YELLOW CENTERLINE @ 11" C-C
3. POLYUREA PAVEMENT MARKING - 4" YELLOW TWO WAY LT TURN (10' DASH, 30' SKIP) @ 5.5" C-C
4. PREFORMED PLASTIC PAVEMENT MARKING, TYPE B - LINE 7" (10' DASH, 30' SKIP)
5. POLYUREA PAVEMENT MARKING - 4" WHITE SOLID LINE
6. POLYUREA PAVEMENT MARKING - 6" WHITE SOLID LINE
7. POLYUREA PAVEMENT MARKING - 6" WHITE DOTTED LINE EXTENSION (2' DASH, 6' SKIP)
8. POLYUREA PAVEMENT MARKING - 12" YELLOW DIAGONAL LINE @ 45° AND 75' C-C
9. POLYUREA PAVEMENT MARKING - 12" WHITE CROSSWALK LINE
10. POLYUREA PAVEMENT MARKING - 24" WHITE STOP BAR
11. PAINT PAVEMENT MARKING - LETTERS AND SYMBOLS (YELLOW)
12. PAINT PAVEMENT MARKING - 4" YELLOW SOLID LINE
13. THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE)
14. THERMOPLASTIC PAVEMENT MARKING - 4" DOUBLE YELLOW CENTERLINE @ 11" C-C
15. THERMOPLASTIC PAVEMENT MARKING - 4" WHITE SOLID LINE
16. THERMOPLASTIC PAVEMENT MARKING - 4" WHITE SKIP DASH LINE (10' DASH, 30' SKIP)
17. THERMOPLASTIC PAVEMENT MARKING - 4" YELLOW SOLID LINE
18. THERMOPLASTIC PAVEMENT MARKING - 6" WHITE SOLID LINE
19. THERMOPLASTIC PAVEMENT MARKING - 6" WHITE DOTTED LINE EXTENSION (2' DASH, 6' SKIP)
20. THERMOPLASTIC PAVEMENT MARKING - 8" WHITE SOLID LINE
21. THERMOPLASTIC PAVEMENT MARKING - 12" YELLOW DIAGONAL LINE @ 45° AND 75' C-C
22. THERMOPLASTIC PAVEMENT MARKING - 12" WHITE CROSSWALK LINE
23. THERMOPLASTIC PAVEMENT MARKING - 24" WHITE STOP BAR
24. RAISED REFLECTIVE PAVEMENT MARKER
25. RAISED REFLECTIVE PAVEMENT MARKER (BRIDGE)

FILE NAME = D160J10-sht-pmk207.dgn

RS&H

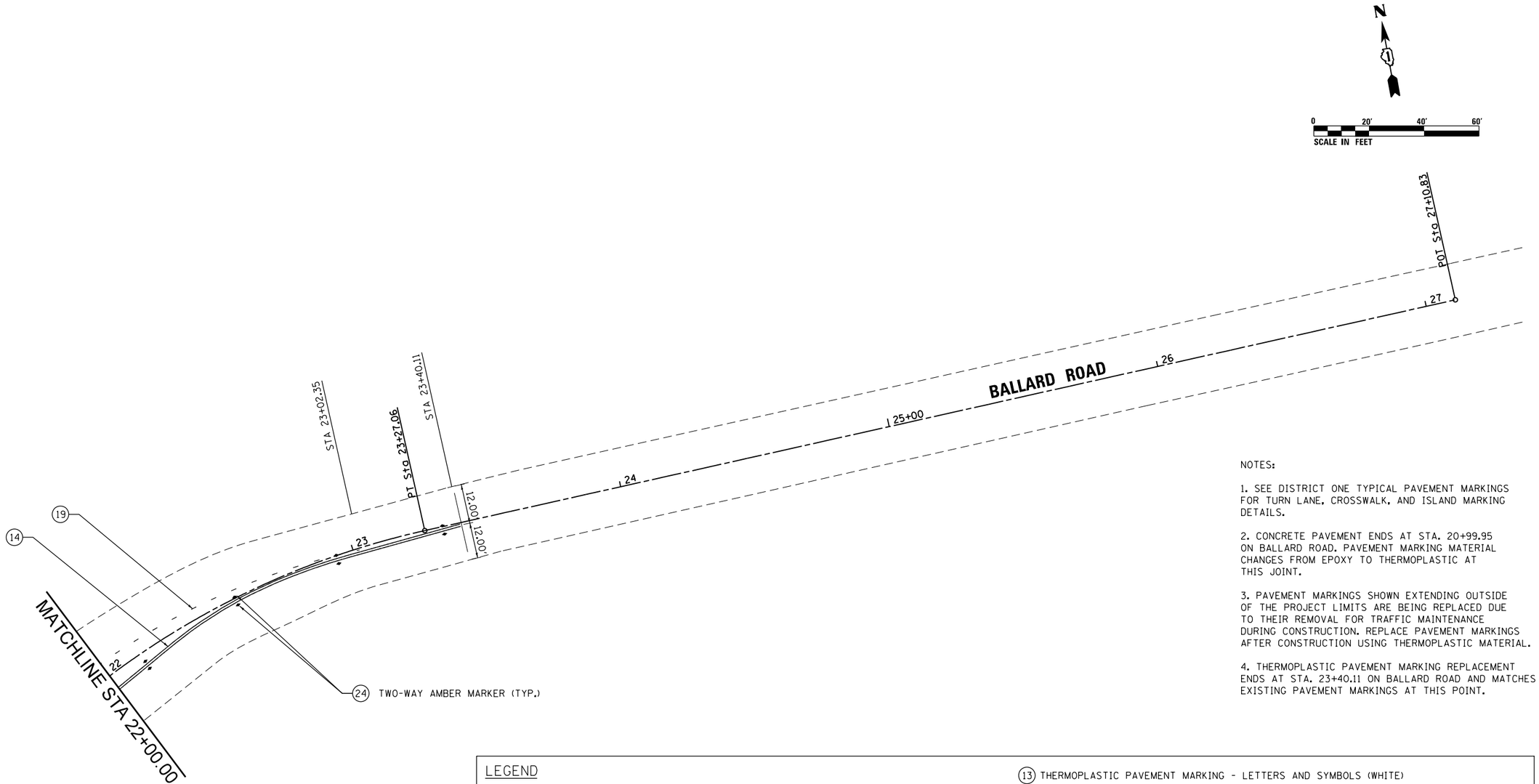
USER NAME = EtzwileE	DESIGNED - MCK	REVISED -
	DRAWN - MCK	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 3/18/2024	DATE - 01/10/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
RAND ROAD

SCALE: 1" = 20' | SHEET 8 OF 9 SHEETS | STA. 257+00.00 TO STA. 262+00.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	101
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			



NOTES:

1. SEE DISTRICT ONE TYPICAL PAVEMENT MARKINGS FOR TURN LANE, CROSSWALK, AND ISLAND MARKING DETAILS.

2. CONCRETE PAVEMENT ENDS AT STA. 20+99.95 ON BALLARD ROAD. PAVEMENT MARKING MATERIAL CHANGES FROM EPOXY TO THERMOPLASTIC AT THIS JOINT.

3. PAVEMENT MARKINGS SHOWN EXTENDING OUTSIDE OF THE PROJECT LIMITS ARE BEING REPLACED DUE TO THEIR REMOVAL FOR TRAFFIC MAINTENANCE DURING CONSTRUCTION. REPLACE PAVEMENT MARKINGS AFTER CONSTRUCTION USING THERMOPLASTIC MATERIAL.

4. THERMOPLASTIC PAVEMENT MARKING REPLACEMENT ENDS AT STA. 23+40.11 ON BALLARD ROAD AND MATCHES EXISTING PAVEMENT MARKINGS AT THIS POINT.

LEGEND

1. POLYUREA PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE)
2. POLYUREA PAVEMENT MARKING - 4'' DOUBLE YELLOW CENTERLINE @ 11'' C-C
3. POLYUREA PAVEMENT MARKING - 4'' YELLOW TWO WAY LT TURN (10' DASH, 30' SKIP) @ 5.5'' C-C
4. PREFORMED PLASTIC PAVEMENT MARKING, TYPE B - LINE 7'' (10' DASH, 30' SKIP)
5. POLYUREA PAVEMENT MARKING - 4'' WHITE SOLID LINE
6. POLYUREA PAVEMENT MARKING - 6'' WHITE SOLID LINE
7. POLYUREA PAVEMENT MARKING - 6'' WHITE DOTTED LINE EXTENSION (2' DASH, 6' SKIP)
8. POLYUREA PAVEMENT MARKING - 12'' YELLOW DIAGONAL LINE @ 45° AND 75' C-C
9. POLYUREA PAVEMENT MARKING - 12'' WHITE CROSSWALK LINE
10. POLYUREA PAVEMENT MARKING - 24'' WHITE STOP BAR
11. PAINT PAVEMENT MARKING - LETTERS AND SYMBOLS (YELLOW)
12. PAINT PAVEMENT MARKING - 4'' YELLOW SOLID LINE
13. THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS (WHITE)
14. THERMOPLASTIC PAVEMENT MARKING - 4'' DOUBLE YELLOW CENTERLINE @ 11'' C-C
15. THERMOPLASTIC PAVEMENT MARKING - 4'' WHITE SOLID LINE
16. THERMOPLASTIC PAVEMENT MARKING - 4'' WHITE SKIP DASH LINE (10' DASH, 30' SKIP)
17. THERMOPLASTIC PAVEMENT MARKING - 4'' YELLOW SOLID LINE
18. THERMOPLASTIC PAVEMENT MARKING - 6'' WHITE SOLID LINE
19. THERMOPLASTIC PAVEMENT MARKING - 6'' WHITE DOTTED LINE EXTENSION (2' DASH, 6' SKIP)
20. THERMOPLASTIC PAVEMENT MARKING - 8'' WHITE SOLID LINE
21. THERMOPLASTIC PAVEMENT MARKING - 12'' YELLOW DIAGONAL LINE @ 45° AND 75' C-C
22. THERMOPLASTIC PAVEMENT MARKING - 12'' WHITE CROSSWALK LINE
23. THERMOPLASTIC PAVEMENT MARKING - 24'' WHITE STOP BAR
24. RAISED REFLECTIVE PAVEMENT MARKER
25. RAISED REFLECTIVE PAVEMENT MARKER (BRIDGE)

FILE NAME = D160110-sht-pmk209.dgn

RS&H

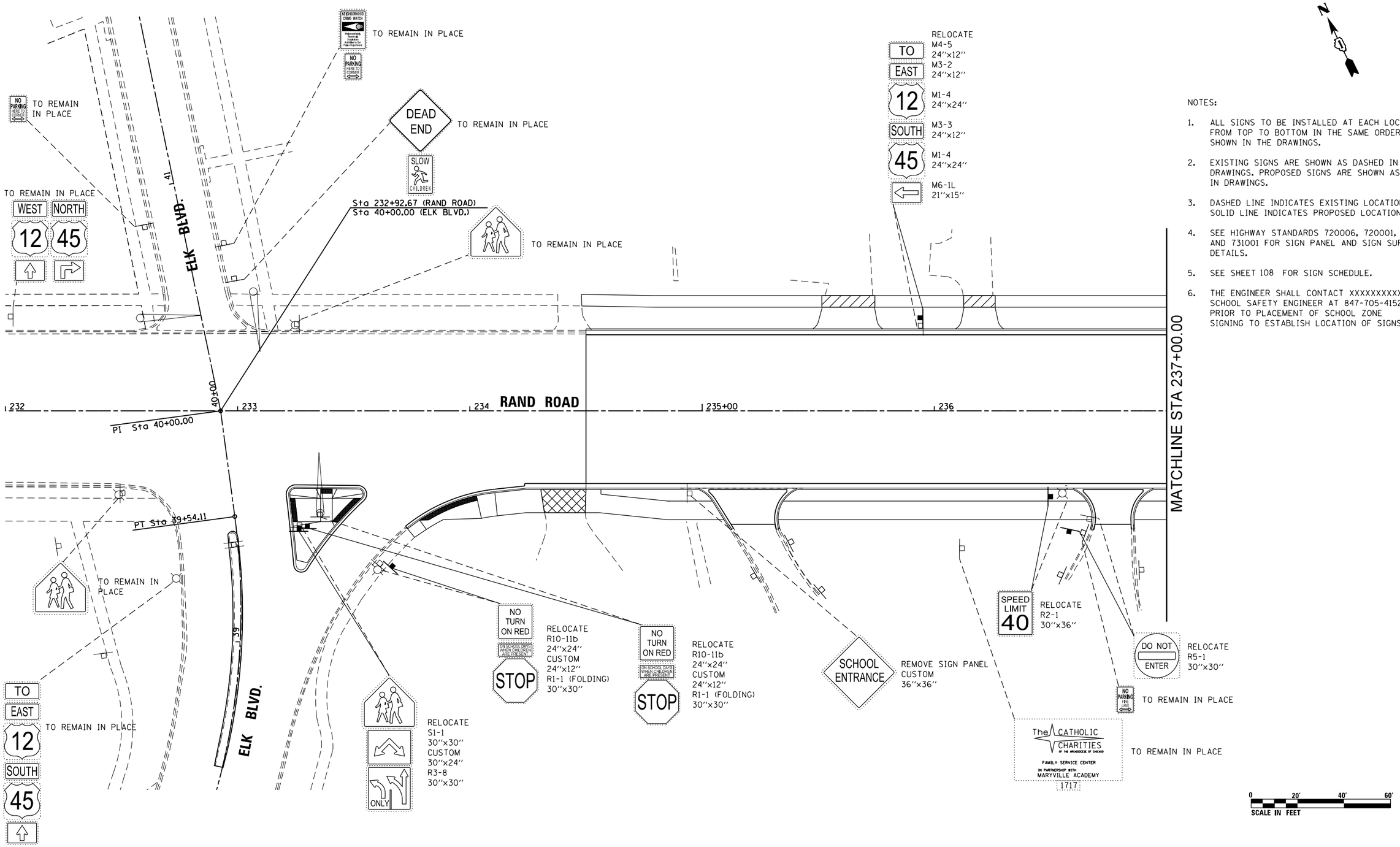
USER NAME = EtzwileE	DESIGNED - MCK	REVISED -
	DRAWN - MCK	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 3/18/2024	DATE - 01/10/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
BALLARD ROAD

SCALE: 1'' = 20' | SHEET 9 OF 9 SHEETS | STA. 22+00.00 TO STA. 27+00.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	102
		CONTRACT NO. 60J10		
	ILLINOIS	FED. AID PROJECT		



NOTES:

1. ALL SIGNS TO BE INSTALLED AT EACH LOCATION FROM TOP TO BOTTOM IN THE SAME ORDER AS SHOWN IN THE DRAWINGS.
2. EXISTING SIGNS ARE SHOWN AS DASHED IN DRAWINGS. PROPOSED SIGNS ARE SHOWN AS SOLID IN DRAWINGS.
3. DASHED LINE INDICATES EXISTING LOCATION. SOLID LINE INDICATES PROPOSED LOCATION.
4. SEE HIGHWAY STANDARDS 720006, 720001, 728001, AND 731001 FOR SIGN PANEL AND SIGN SUPPORT DETAILS.
5. SEE SHEET 108 FOR SIGN SCHEDULE.
6. THE ENGINEER SHALL CONTACT XXXXXXXXXX, SCHOOL SAFETY ENGINEER AT 847-705-4152 PRIOR TO PLACEMENT OF SCHOOL ZONE SIGNING TO ESTABLISH LOCATION OF SIGNS.

FILE NAME = D1601J0-sht-sign201.dgn

RS&H

USER NAME = EtzwileE	DESIGNED - MCK	REVISED -
	DRAWN - MCK	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 3/18/2024	DATE - 01/10/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

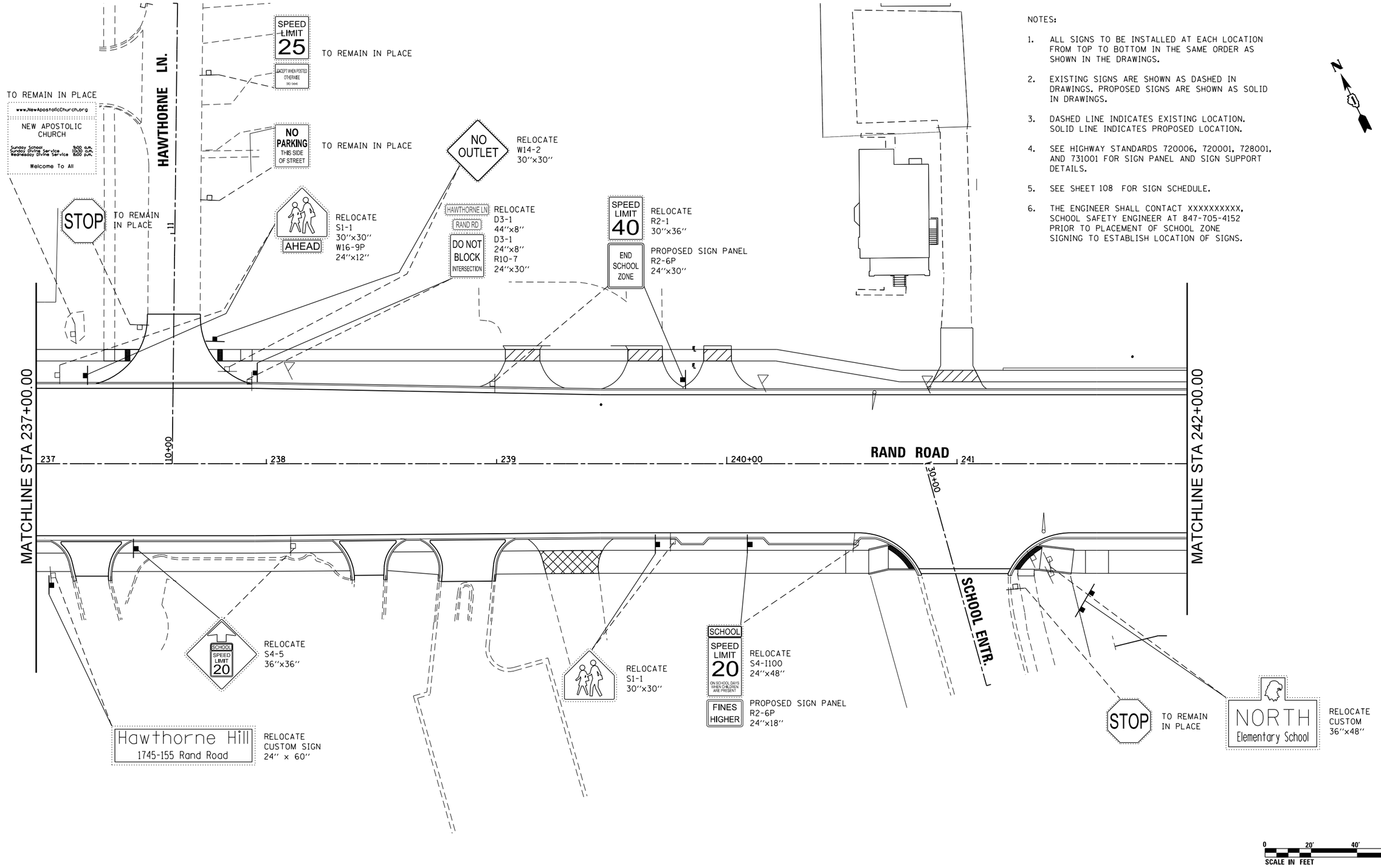
SIGNING PLAN
RAND ROAD

SCALE: 1" = 20' | SHEET 1 OF 5 SHEETS | STA. 232+00.00 | TO STA. 237+00.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	103
		CONTRACT NO. 60J10		
	ILLINOIS	FED. AID PROJECT		

NOTES:

1. ALL SIGNS TO BE INSTALLED AT EACH LOCATION FROM TOP TO BOTTOM IN THE SAME ORDER AS SHOWN IN THE DRAWINGS.
2. EXISTING SIGNS ARE SHOWN AS DASHED IN DRAWINGS. PROPOSED SIGNS ARE SHOWN AS SOLID IN DRAWINGS.
3. DASHED LINE INDICATES EXISTING LOCATION. SOLID LINE INDICATES PROPOSED LOCATION.
4. SEE HIGHWAY STANDARDS 720006, 720001, 728001, AND 731001 FOR SIGN PANEL AND SIGN SUPPORT DETAILS.
5. SEE SHEET 108 FOR SIGN SCHEDULE.
6. THE ENGINEER SHALL CONTACT XXXXXXXXXX, SCHOOL SAFETY ENGINEER AT 847-705-4152 PRIOR TO PLACEMENT OF SCHOOL ZONE SIGNING TO ESTABLISH LOCATION OF SIGNS.



FILE NAME = D160J10-sht-sign202.dgn

RS&H

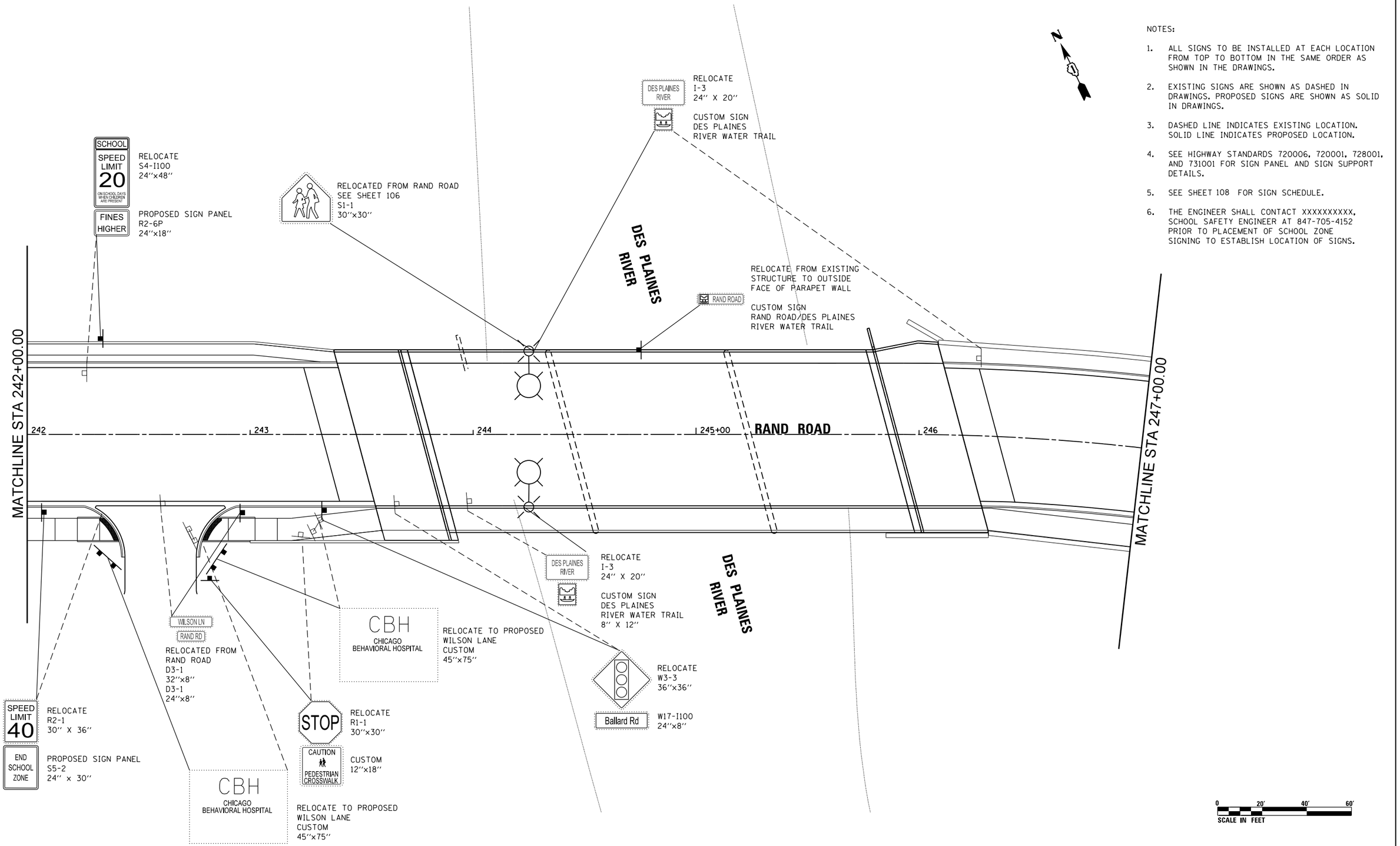
USER NAME = EtzwileE	DESIGNED - MCK	REVISED -
	DRAWN - MCK	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 3/18/2024	DATE - 01/10/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SIGNING PLAN
RAND ROAD

SCALE: 1" = 20' | SHEET 2 OF 5 SHEETS | STA. 237+00.00 | TO STA. 242+00.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	104
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			



FILE NAME = D160J10-sht-sign203.dgn

RS&H

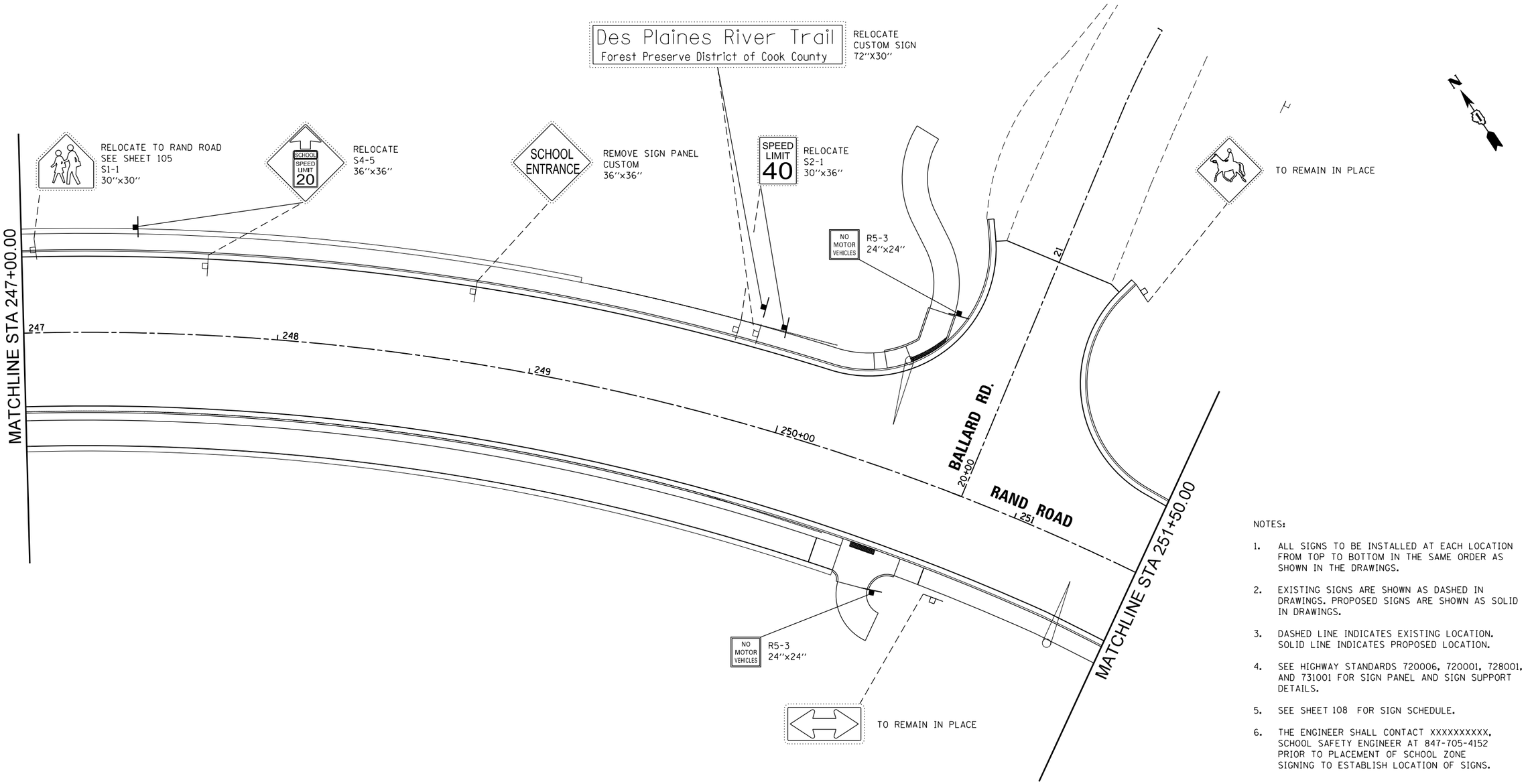
USER NAME = EtzwileE	DESIGNED - MCK	REVISED -
	DRAWN - MCK	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 3/18/2024	DATE - 01/10/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SIGNING PLAN
RAND ROAD

SCALE: 1" = 20' | SHEET 3 OF 5 SHEETS | STA. 242+00.00 | TO STA. 247+00.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	105
		CONTRACT NO. 60J10		
	ILLINOIS	FED. AID PROJECT		



NOTES:

1. ALL SIGNS TO BE INSTALLED AT EACH LOCATION FROM TOP TO BOTTOM IN THE SAME ORDER AS SHOWN IN THE DRAWINGS.
2. EXISTING SIGNS ARE SHOWN AS DASHED IN DRAWINGS. PROPOSED SIGNS ARE SHOWN AS SOLID IN DRAWINGS.
3. DASHED LINE INDICATES EXISTING LOCATION. SOLID LINE INDICATES PROPOSED LOCATION.
4. SEE HIGHWAY STANDARDS 720006, 720001, 728001, AND 731001 FOR SIGN PANEL AND SIGN SUPPORT DETAILS.
5. SEE SHEET 108 FOR SIGN SCHEDULE.
6. THE ENGINEER SHALL CONTACT XXXXXXXXXX, SCHOOL SAFETY ENGINEER AT 847-705-4152 PRIOR TO PLACEMENT OF SCHOOL ZONE SIGNING TO ESTABLISH LOCATION OF SIGNS.

0 20' 40' 60'
SCALE IN FEET

FILE NAME = D160J10-sht-sign204.dgn

RS&H

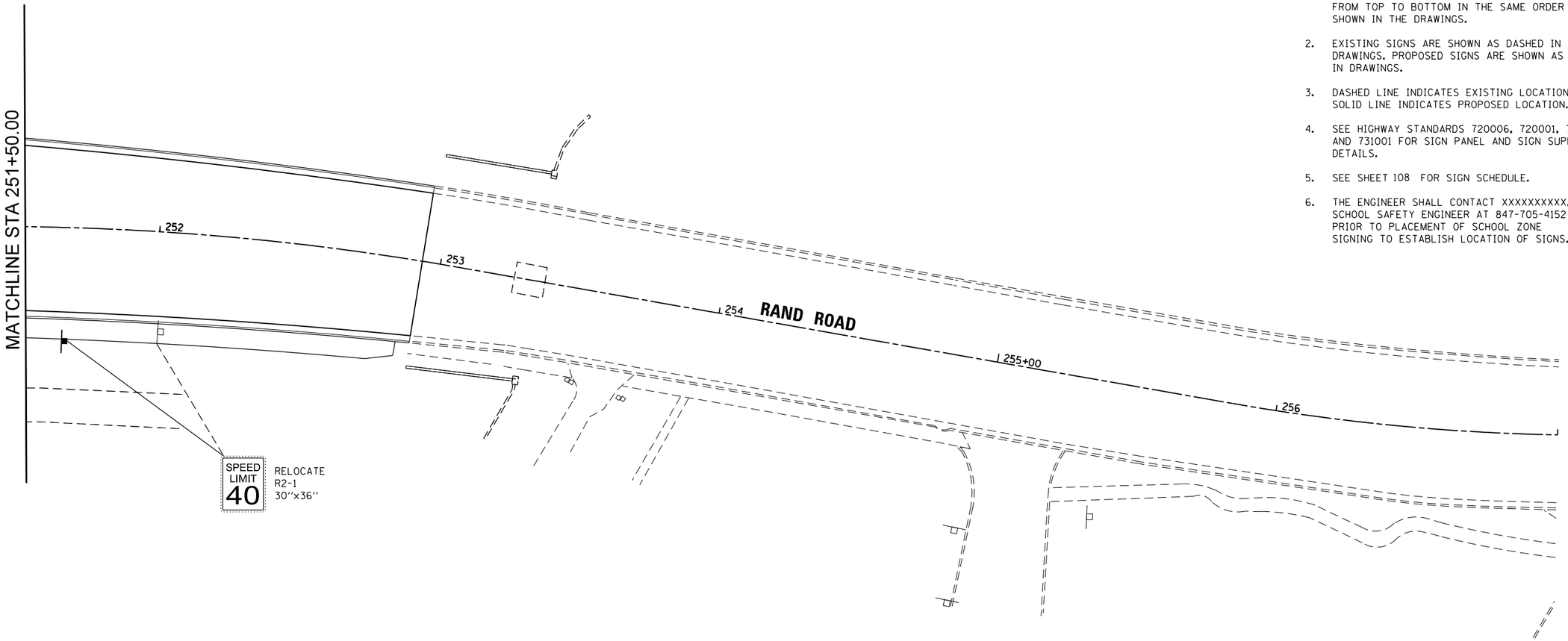
USER NAME = EtzwileE	DESIGNED - MCK	REVISED -
	DRAWN - MCK	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 3/18/2024	DATE - 01/10/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SIGNING PLAN
RAND ROAD

SCALE: 1" = 20' | SHEET 4 OF 5 SHEETS | STA. 247+00.00 | TO STA. 251+50.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	106
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			



NOTES:

1. ALL SIGNS TO BE INSTALLED AT EACH LOCATION FROM TOP TO BOTTOM IN THE SAME ORDER AS SHOWN IN THE DRAWINGS.
2. EXISTING SIGNS ARE SHOWN AS DASHED IN DRAWINGS. PROPOSED SIGNS ARE SHOWN AS SOLID IN DRAWINGS.
3. DASHED LINE INDICATES EXISTING LOCATION. SOLID LINE INDICATES PROPOSED LOCATION.
4. SEE HIGHWAY STANDARDS 720006, 720001, 728001, AND 731001 FOR SIGN PANEL AND SIGN SUPPORT DETAILS.
5. SEE SHEET 108 FOR SIGN SCHEDULE.
6. THE ENGINEER SHALL CONTACT XXXXXXXXXX, SCHOOL SAFETY ENGINEER AT 847-705-4152 PRIOR TO PLACEMENT OF SCHOOL ZONE SIGNING TO ESTABLISH LOCATION OF SIGNS.

FILE NAME = D160J10-sht-sign205.dgn

RS&H

USER NAME = EtzwileE	DESIGNED - MCK	REVISED -
	DRAWN - MCK	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 3/18/2024	DATE - 01/10/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SIGNING PLAN
RAND ROAD

SCALE: 1" = 20' | SHEET 5 OF 5 SHEETS | STA. 251+50.00 | TO STA. 257+00.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	107
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

LOCATION					SIGN DESIGNATION	SIGN LEGEND	SIGN PANEL DIMENSION			PROPOSED	REMOVE				RELOCATE				SIGN SUPPORT			
										72000100	72400310	72400320	72400100	72400200	72400710	72400720	72400500	72400600	X7270025	73000100	72800100	73100100
ROADWAY	EXISTING STATION	PROPOSED STATION	OFFSET (FT)	LT/RT			WIDTH (IN)	HEIGHT (IN)	AREA (SQ FT)	SIGN PANEL TYPE 1 (SQ FT)	SIGN PANEL TYPE 1 (SQ FT)	SIGN PANEL TYPE 2 (SQ FT)	SIGN PANEL ASSEMBLY TYPE A (EACH)	SIGN PANEL ASSEMBLY TYPE B (EACH)	SIGN PANEL TYPE 1 (SQ FT)	SIGN PANEL TYPE 2 (SQ FT)	SIGN PANEL ASSEMBLY TYPE A (EACH)	SIGN PANEL ASSEMBLY TYPE B (EACH)	REMOVE EXISTING SIGN SUPPORT (EACH)	WOOD (FT)	TELESCOPING STEEL (FT)	BASE FOR TELESCOPING STEEL (EACH)
RAND ROAD	233+26.81	233+26.44	51.81	RT	S1-1	SCHOOL	30	30	6.25	-	-	-	-	-	-	-	-	1.00	1.00	-	19.00	1.00
					CUSTOM	ARROWS DOWN LEFT AND RIGHT	30	24	5													
					R3-8	ADVANCE INTERSECTION LANE CONTROL	30	30	6.25													
RAND ROAD	233+26.81	233+26.44	51.81	RT	R10-11b	NO TURN ON RED	24	24	4	-	-	-	-	-	-	-	-	1.00	-	-	-	-
					CUSTOM	ON SCHOOL DAYS WHEN CHILDREN ARE PRESENT	24	12	2													
					R1-1	STOP (FOLDING)	30	30	6.25													
RAND ROAD	233+60.27	233+65.96	67.56	RT	R10-11b	NO TURN ON RED	24	24	4	-	-	-	-	-	-	-	-	1.00	-	-	-	-
					CUSTOM	ON SCHOOL DAYS WHEN CHILDREN ARE PRESENT	24	12	2													
					R1-1	STOP (FOLDING)	30	30	6.25													
RAND ROAD	234+95.24	-	-	RT	CUSTOM	SCHOOL ENTRANCE	36	36	9	-	9.00	-	-	-	-	-	-	-	1.00	-	-	-
RAND ROAD	236+55.15	236+50.00	37.0	RT	R2-1	SPEED LIMIT 40	30	36	7.50	-	7.50	-	-	-	7.50	-	-	-	-	-	15.00	1.00
RAND ROAD	236+66.77	236+58.00	52.0	RT	R5-1	DO NOT ENTER	30	30	6.25	-	6.25	-	-	-	6.25	-	-	-	1.00	-	14.50	1.00
RAND ROAD	235+93.48	235+94.00	40.0	LT	M4-5	TO AUXILIARY	24	12	2.00	-	-	-	-	1.00	-	-	-	1.00	-	-	20.25	1.00
					M3-2	CARDINAL DIRECTION AUXILIARY (EAST)	24	12	2.00													
					M1-4	U.S. ROUTE MARKER FOR INDEPENDENT USE (U.S. 12)	24	24	4.00													
					M3-3	CARDINAL DIRECTION AUXILIARY (SOUTH)	24	12	2.00													
					M1-4	U.S. ROUTE MARKER FOR INDEPENDENT USE (U.S. 45)	24	24	4.00													
					M6-1L	ARROW (LEFT TURN)	21	15	2.19													
RAND ROAD	237+07.36	237+07.00	53.0	RT	CUSTOM	HAWTHORNE HILL	48	18	6.00	-	6.00	-	-	-	6.00	-	-	-	1.00	8.00	-	-
RAND ROAD	238+12.22	237+44.00	36.8	RT	S4-5	REDUCED SPEED (SCHOOL) ZONE AHEAD	36	36	9	-	9.00	-	-	-	9.00	-	-	-	-	-	15.00	1.00
RAND ROAD	239+77.06	239+70.00	35.0	RT	S1-1	SCHOOL	30	30	6.25	-	6.25	-	-	-	6.25	-	-	-	-	-	14.50	1.00
RAND ROAD	240+55.22	240+10.00	35.0	RT	S4-I100	SCHOOL SPEED LIMIT 20 ON SCHOOL DAYS WHEN CHILDREN ARE PRESENT	24	48	8.00	-	8.00	-	-	-	8.00	-	-	-	1.00	-	17.50	1.00
	-				R2-6P	FINES HIGHER	24	18	3.00	3.00	-	-	-	-	-	-	-	-	-	-		
WILSON LANE	29+42.51	29+24.29	51.0	RT	CUSTOM	NORTH ELEMENTARY SCHOOL	36	48	12.00	-	12.00	-	-	-	12.00	-	-	-	2.00	16.00	32.00	1.00
RAND ROAD	237+10.21	237+21.00	38.3	LT	S1-1	SCHOOL	30	30	6.25	-	6.25	-	-	-	6.25	-	-	-	1.00	-	14.50	1.00
					W16-9P	AHEAD	24	12	2	-	2.00	-	-	-	2.00	-	-	-				
RAND ROAD	237+82.87	237+77.66	54.3	LT	W14-2	NO OUTLET	30	30	6.25	-	6.25	-	-	-	6.25	-	-	-	1.00	-	14.50	1.00
RAND ROAD	237+92.00	237+95.00	39.5	LT	D3-1	STREET NAME (HAWTHORNE LN)	44	8	2.44	-	-	-	1.00	-	-	-	1.00	-	-	-	15.83	1.00
					D3-1	STREET NAME (RAND RD)	24	8	1.33													
					R10-7	DO NOT BLOCK INTERSECTION	24	30	5.00													
RAND ROAD	238+98.00	239+81.13	36.4	LT	R2-1	SPEED LIMIT 40	30	36	7.50	-	7.50	-	-	-	7.50	-	-	-	-	-	17.50	1.00
	-				S5-2	END SCHOOL ZONE	24	30	5.00	5.00	-				-							
RAND ROAD	242+33.77	242+07.56	35.0	RT	R2-1	SPEED LIMIT 40	30	36	7.50	-	7.50	-	-	-	7.50	-	-	-	-	-	17.50	1.00
	-				S5-2	END SCHOOL ZONE	24	30	5.00	5.00	-				-							
RAND ROAD	242+59.78	242+96.55	35.1	RT	D3-1	STREET NAME (WILSON LN)	32	8	1.78	-	-	-	1.00	-	-	-	1.00	-	1.00	-	13.33	1.00
					D3-1	STREET NAME (RAND RD)	24	8	1.33													
RAND ROAD	242+73.45	242+36.10	55.2	RT	CUSTOM	MARYVILLE ACADEMY SCOTT NOLAN CENTER ENTRANCE	45	75	23.44	-	-	23.44	-	-	-	23.44	-	-	2.00	18.25	-	-
RAND ROAD	243+21.56	242+81.86	64.6	RT	R1-1	STOP	30	30	6.25	-		-	1.00	-		-	1.00	-	1.00	-	16.00	1.00
	-				CUSTOM	CAUTION - PEDESTRIAN CROSSWALK	12	18	1.5	-												
RAND ROAD	243+31.21	242+85.00	55.8	RT	CUSTOM	MARYVILLE ACADEMY SCOTT NOLAN CENTER ENTRANCE	45	75	23.44	-	-	23.44	-		-	23.44	-	-	2.00	18.25	-	-
RAND ROAD	243+64.75	243+33.22	34.0	RT	W3-3	ADVANCED SIGNAL WARNING	36	36	9	-	-	-	1.00	-	-	-	1.00	-	1.00	-	15.67	1.00
					W17-I100	ADVANCED WARNING (BALLARD ROAD)	24	8	1.33													
RAND ROAD	243+97.60	244+22.80	32.6	RT	I-3	DES PLAINES RIVER	24	20	3.33	-	-	-	1.00	-	-	-	1.00	-	1.00	-	-	-
					CUSTOM	DES PLAINES RIVER WATER TRAIL	8	12	0.67													
RAND ROAD	242+26.72	242+32.93	42.0	LT	S4-I100	SCHOOL SPEED LIMIT 20 ON SCHOOL DAYS WHEN CHILDREN ARE PRESENT	24	48	8.00	-	8.00	-	-	-	8.00	-	-	-	1.00	-	17.50	1.00
					R2-6P	FINES HIGHER	24	18	3.00	3.00	-				-				-			
RAND ROAD	246+26.71	244+27.20	37.5	LT	I-3	DES PLAINES RIVER	24	20	3.33	-	-	-	1.00	-	-	-	1.00	-	1.00	-	-	-
					CUSTOM	DES PLAINES RIVER WATER TRAIL	8	12	0.67													
RAND ROAD	247+05.27	244+27.20	37.5	LT	S1-1	SCHOOL	30	30	6.25	-	6.25	-	-	-	6.25	-	-	-	1.00	-	-	-
RAND ROAD	244+74.30	244+74.30	38.0	LT	CUSTOM	RAND ROAD/ DES PLAINES RIVER WATER TRAIL	24	8	1.33	-	1.33	-	-	-	1.33	-	-	-	1.00	-	-	-
RAND ROAD	247+71.18	247+43.15	41.6	LT	S4-5	REDUCED SPEED (SCHOOL) ZONE AHEAD	36	36	9.00	-	9.00	-	-	-	9.00	-	-	-	1.00	-	15.00	1.00
RAND ROAD	248+74.22	-	-	LT	CUSTOM	SCHOOL ENTRANCE	36	36	9.00	-	9.00	-	-	-	-	-	-	-	1.00	-	-	-
RAND ROAD	249+75.27	249+91.81	40.8	LT	S2-1	SPEED LIMIT 40	30	36	7.50	-	7.50	-	-	-	7.50	-	-	-	1.00	-	15.00	1.00
RAND ROAD	249+81.42	249+81.00	46.4	LT	CUSTOM	DES PLAINES RIVER TRAIL	72	30	15.00	-	-	15.00	-	-	-	15.00	-	-	1.00	8.00	-	-
RAND ROAD	-	250+52.32	66.2	LT	R5-3	NO MOTOR VEHICLES	24	24	4.00	4.00	-	-	-	-	-	-	-	-	-	-	14.00	1.00
RAND ROAD	-	250+57.03	46.9	RT	R5-3	NO MOTOR VEHICLES	24	24	4.00	4.00	-	-	-	-	-	-	-	-	-	-	14.00	1.00
RAND ROAD	252+01.53	251+67.16	40.2	RT	R2-1	SPEED LIMIT 40	30	36	7.50	-	7.50	-	-	-	7.50	-	-	-	1.00	-	15.00	1.00
							TOTAL			24.00	143.00	62.00	6.00	1.00	125.00	62.00	6.00	4.00	26.00	69.00	364.00	22.00

NOTE: SEE HIGHWAY STANDARDS 720001, 720006, 728001, AND 731001 FOR SIGN PANEL AND SIGN SUPPORT DETAILS.

FILE NAME = D160J10-sht-sign211.dgn

RS&H

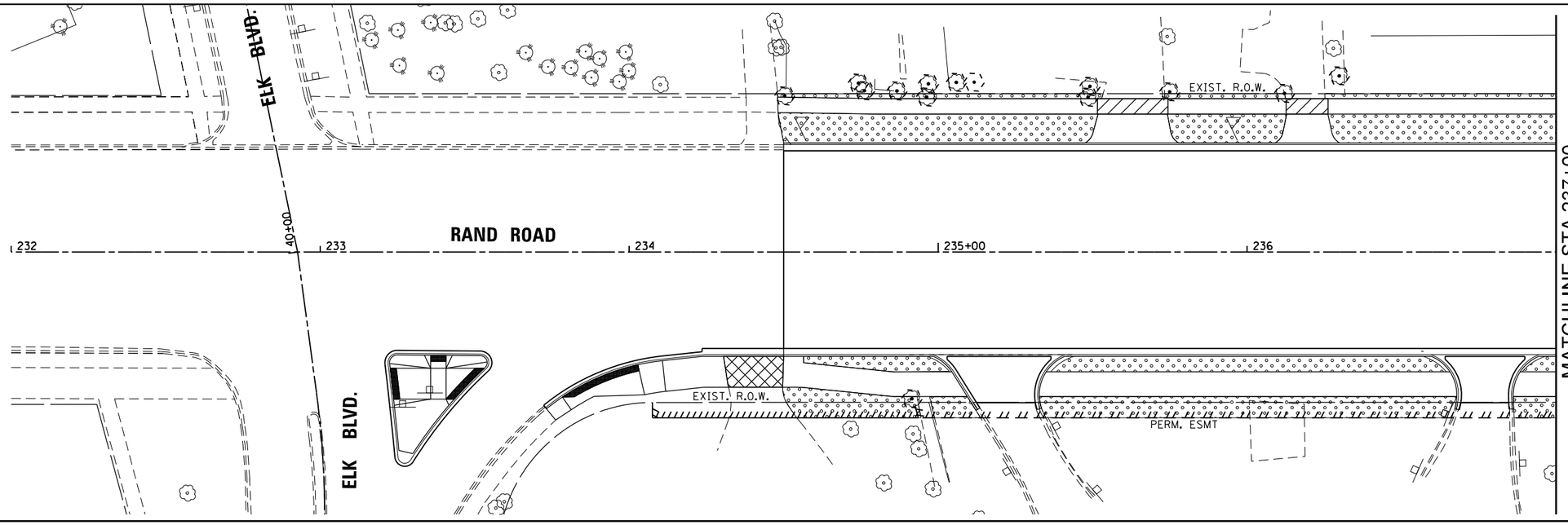
USER NAME = EtzwileE	DESIGNED - MCK	REVISED -	
	DRAWN - MCK	REVISED -	
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 3/18/2024	DATE - 01/10/2024	REVISED -	

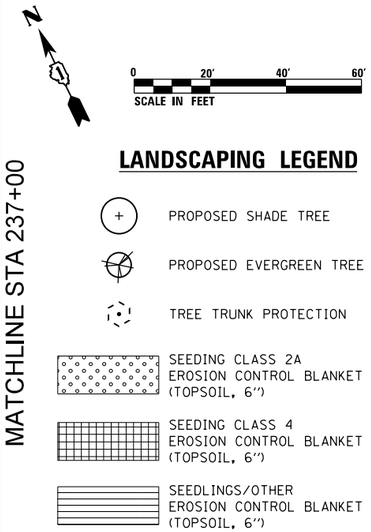
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SIGN SCHEDULE

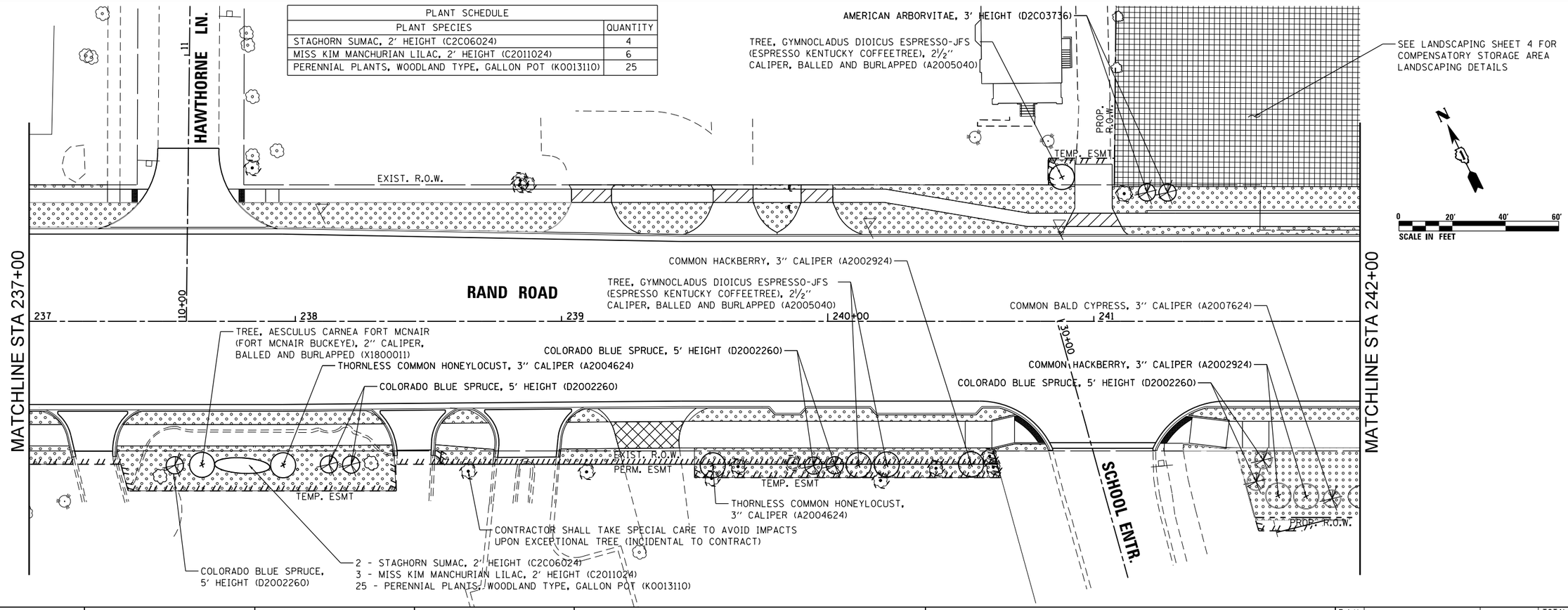
SCALE: NA | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	108
		CONTRACT NO. 60J10		
		ILLINOIS FED. AID PROJECT		





PLANT SCHEDULE	
PLANT SPECIES	QUANTITY
STAGHORN SUMAC, 2' HEIGHT (C2C06024)	4
MISS KIM MANCHURIAN LILAC, 2' HEIGHT (C2011024)	6
PERENNIAL PLANTS, WOODLAND TYPE, GALLON POT (K0013110)	25



FILE NAME = D160J10-sht-lndscp201.dgn

RS&H

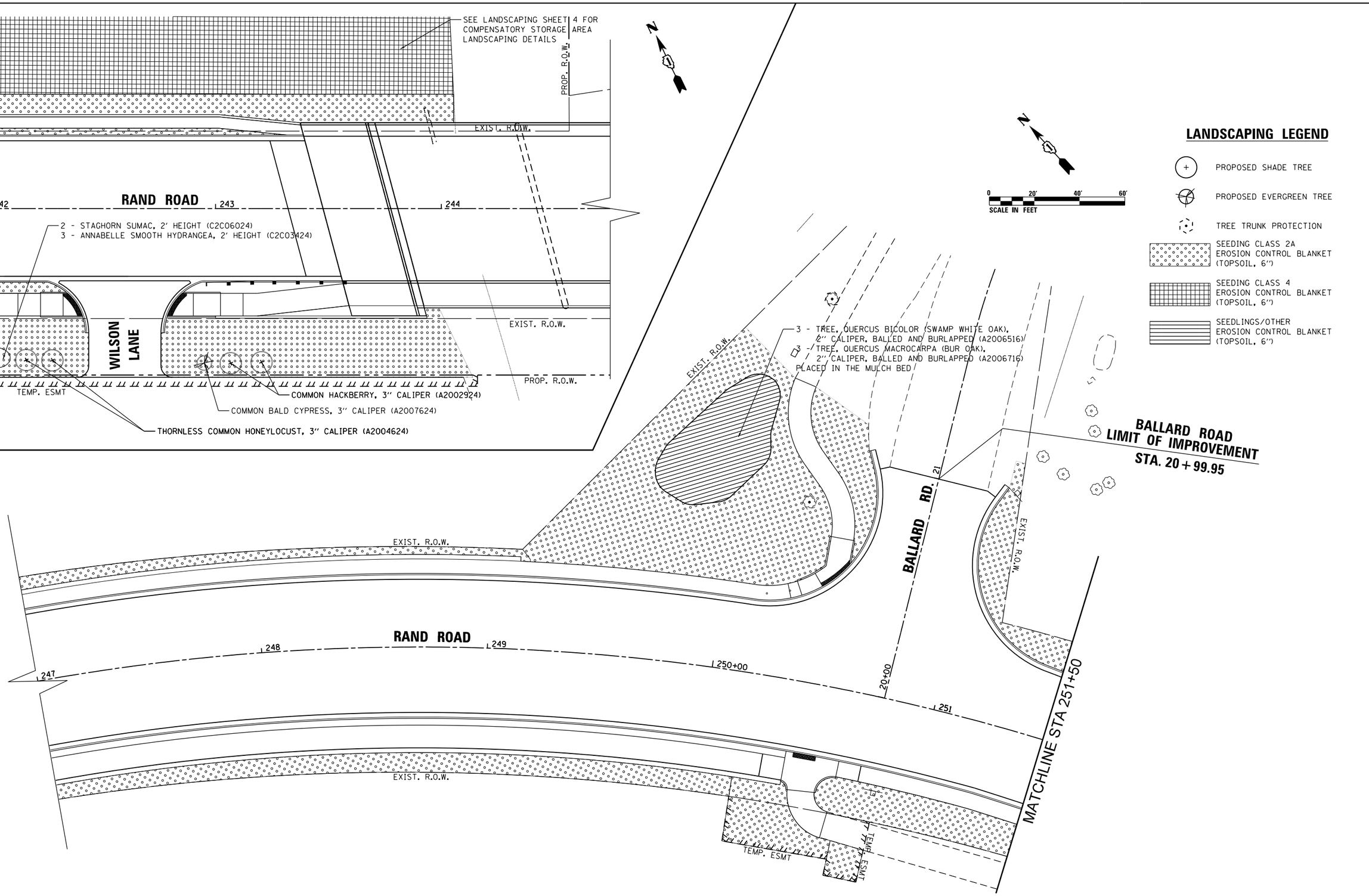
USER NAME = EtzwileE	DESIGNED - MCK	REVISED -	
	DRAWN - MCK	REVISED -	
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 3/18/2024	DATE - 01/10/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LANDSCAPING PLAN

SCALE: 1" = 20' | SHEET 1 OF 4 SHEETS | STA. 234+50.00 | TO STA. 242+00.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	109
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			



FILE NAME = D160J10-anc-lndscp202.dgn

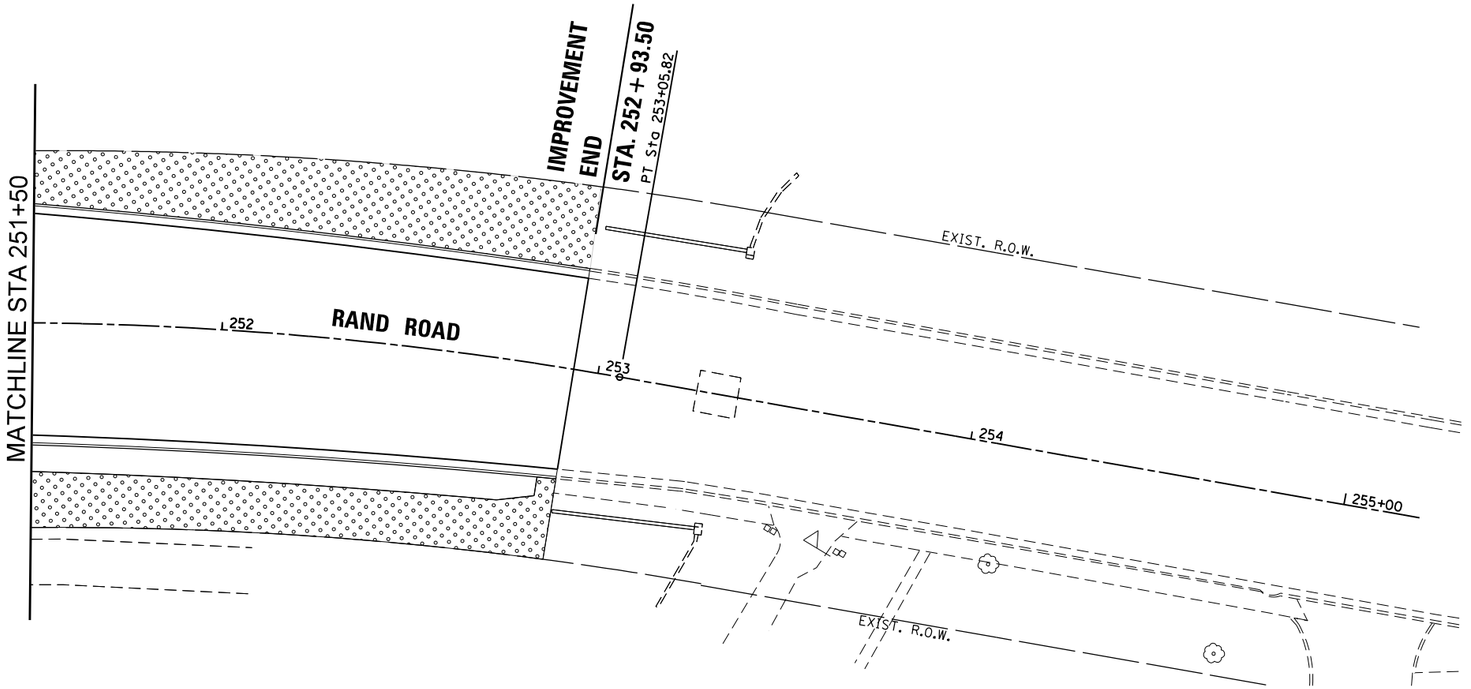
USER NAME = EtzwileE	DESIGNED - MCK	REVISED -	
	DRAWN - MCK	REVISED -	
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 3/18/2024	DATE - 01/10/2024	REVISED -	

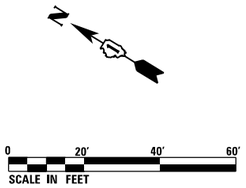
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LANDSCAPING PLAN

SCALE: 1" = 20' | SHEET 2 OF 4 SHEETS | STA. 242+00.00 | TO STA. 251+50.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	110
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			





LANDSCAPING LEGEND

- PROPOSED SHADE TREE
- PROPOSED EVERGREEN TREE
- TREE TRUNK PROTECTION
- SEEDING CLASS 2A EROSION CONTROL BLANKET (TOPSOIL, 6")
- SEEDING CLASS 4 EROSION CONTROL BLANKET (TOPSOIL, 6")
- SEEDLINGS/OTHER EROSION CONTROL BLANKET (TOPSOIL, 6")

FILE NAME = D160J10-sht-lndscp203.dgn

RS&H

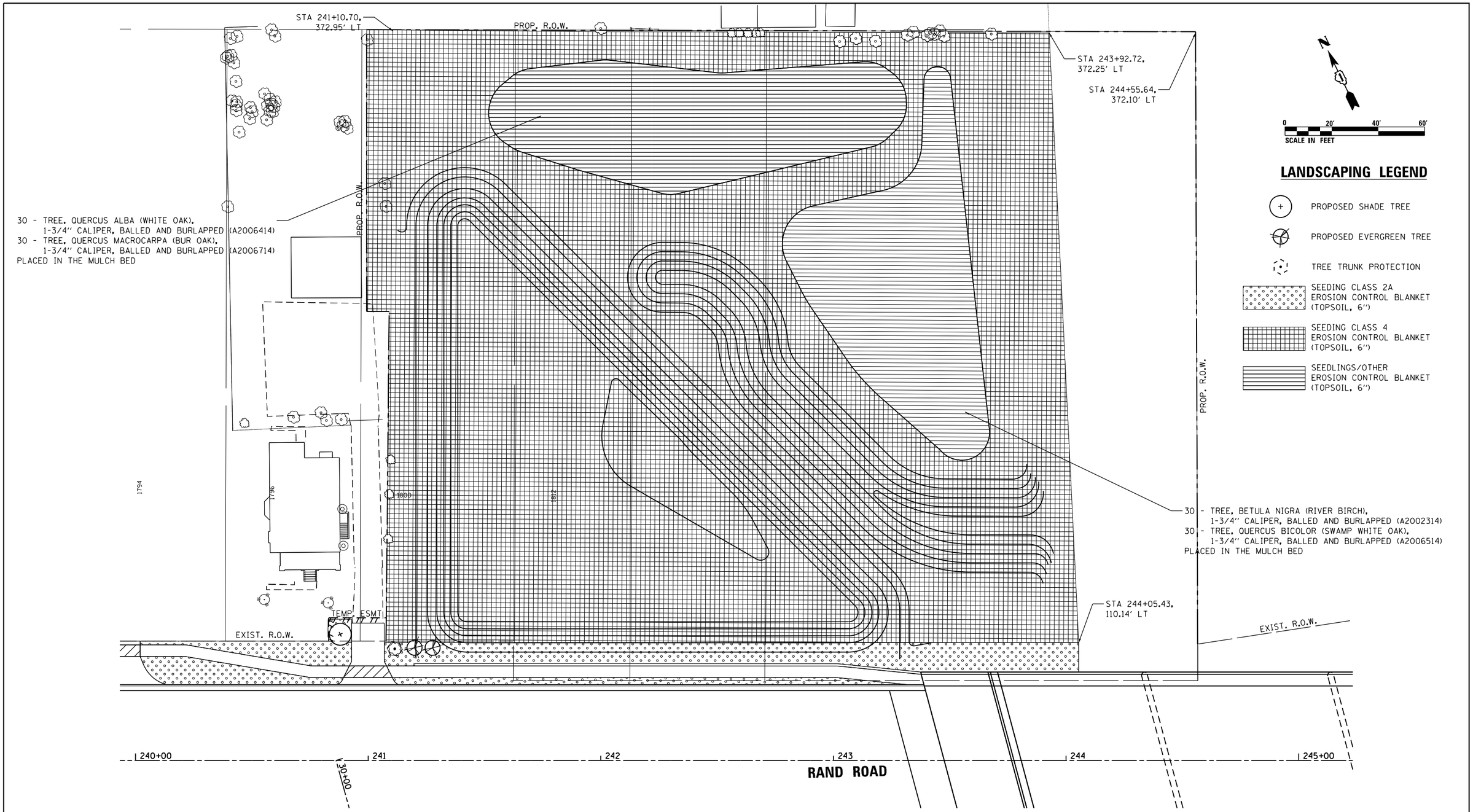
USER NAME = EtzwileE	DESIGNED - MCK	REVISED -
	DRAWN - MCK	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 3/18/2024	DATE - 01/10/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LANDSCAPING PLAN

SCALE: 1" = 20' | SHEET 3 OF 4 SHEETS | STA. 251+50.00 TO STA. 253+36.02

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	111
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			



LANDSCAPING LEGEND

- PROPOSED SHADE TREE
- PROPOSED EVERGREEN TREE
- TREE TRUNK PROTECTION
- SEEDING CLASS 2A EROSION CONTROL BLANKET (TOPSOIL, 6")
- SEEDING CLASS 4 EROSION CONTROL BLANKET (TOPSOIL, 6")
- SEEDLINGS/OTHER EROSION CONTROL BLANKET (TOPSOIL, 6")

FILE NAME = D160J10-snt-lndscp204.dgn

RS&H

USER NAME = EtzwileE	DESIGNED - MCK	REVISED -
	DRAWN - MCK	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 3/18/2024	DATE - 01/10/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LANDSCAPING PLAN

SCALE: 1" = 20' | SHEET 4 OF 4 SHEETS | STA. 241+00.00 TO STA. 245+00.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	112
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

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	ERR	RR

ITEM	EXISTING	PROPOSED
HANDHOLE -SQUARE -ROUND		
HEAVY DUTY HANDHOLE -SQUARE -ROUND	H	H
DOUBLE HANDHOLE		
JUNCTION BOX	J	
RAILROAD CANTILEVER MAST ARM		
RAILROAD FLASHING SIGNAL		
RAILROAD CROSSING GATE		
RAILROAD CROSSBUCK		
RAILROAD CONTROLLER CABINET	RX	RX
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	R Y G ◄Y ◄G (P)	R Y G ◄Y ◄G (P)
SIGNAL HEAD WITH BACKPLATE -(P) PROGRAMMABLE SIGNAL HEAD -(RB) RETROREFLECTIVE BACKPLATE	R Y G ◄Y ◄G (P) (RB)	R Y G ◄Y ◄G (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

MODEL: Default
FILE NAME: pw:\\L084EBIDINTEG.illinois.gov:PWIDOT\Documents\IDOT Offices\District 1\Projects\Std Sts\22x34\CADData\CADsheets\ts05.dgn

TS SHT NO. 1

USER NAME = footemj	DESIGNED - IP	REVISED -	
	DRAWN - IP	REVISED -	
PLOT SCALE = 50.0000 ' / in.	CHECKED - LP	REVISED -	
PLOT DATE = 3/4/2019	DATE - 9/29/2016	REVISED -	

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. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	113
	TS-05	CONTRACT NO. 60J10		
	ILLINOIS	FED. AID PROJECT		

ts05.dgn 3/4/2019 11:21:59 AM User: footemj

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.

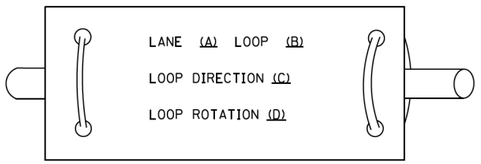
4. ALL LOOP CABLE SHALL BE FASTENED WITH PLASTIC TIE WRAP TO THE HANDHOLE HOOKS.

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

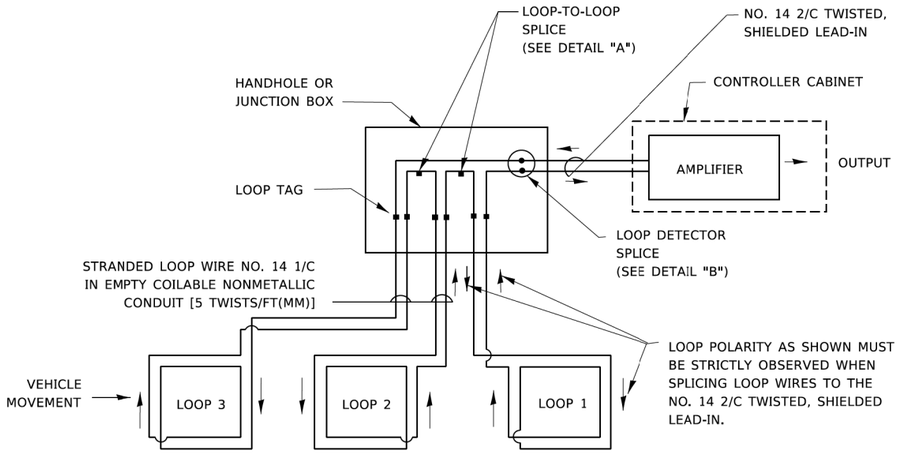


A. LANE 1 IS THE LANE CLOSEST TO THE CENTERLINE OF THE ROADWAY

B. LOOP #1 IS THE LOOP IN THE LANE CLOSEST TO THE INTERSECTION.

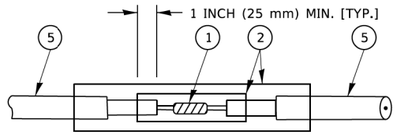
C. LABEL LOOP CABLE "IN" OR LOOP CABLE "OUT".

D. LABEL LOOP CABLE CLOCKWISE OR LOOP CABLE COUNTERCLOCKWISE.

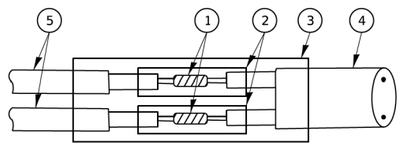


DETECTOR LOOP WIRING SCHEMATIC

- 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.

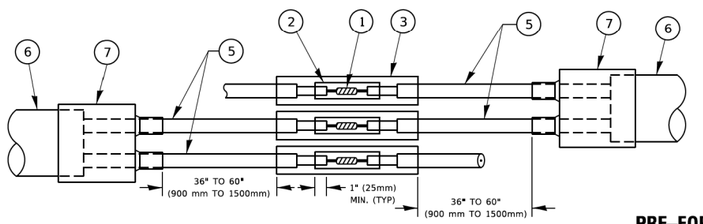


DETAIL "A"
LOOP-TO-LOOP SPLICE



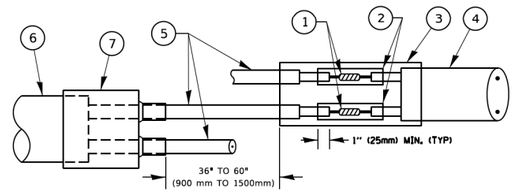
DETAIL "B"
LOOP-TO-CONTROLLER SPLICE

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

TS SHT NO. 2

MODEL: Default
FILE NAME: pw:\\IL084EBIDINTEG:Illinois.gov:PWIDOTDocuments\IDOT Offices\District 1\Projects\Dist1\d22x34\CADData\CADSheets\ts02.dgn

USER NAME = footemj	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 3/4/2019	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

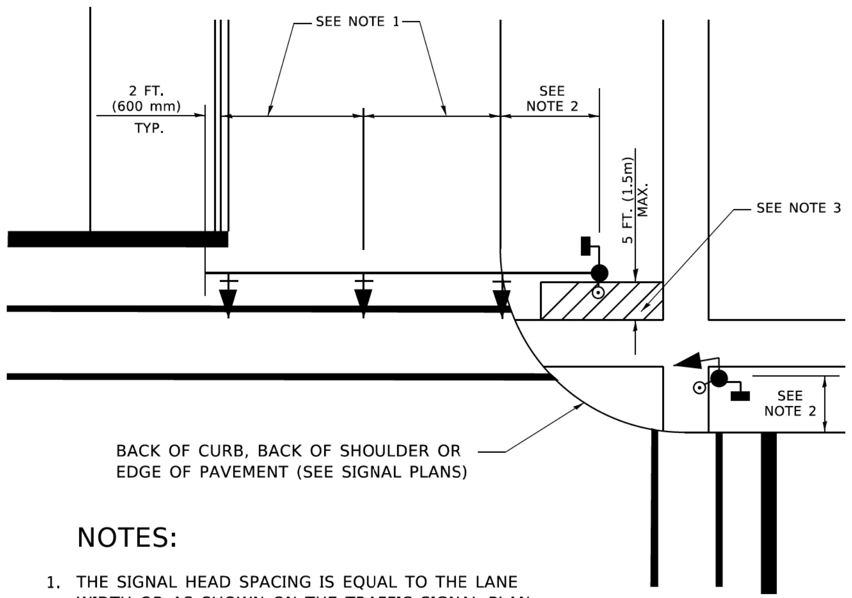
SCALE: NONE | SHEET 2 OF 7 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			267	114
	TS-05		CONTRACT NO.	
		ILLINOIS	FED. AID PROJECT	

ts02.dgn 3/4/2019 11:22:18 AM User: dotbtit

TRAFFIC SIGNAL MAST ARM AND SIGNAL POST

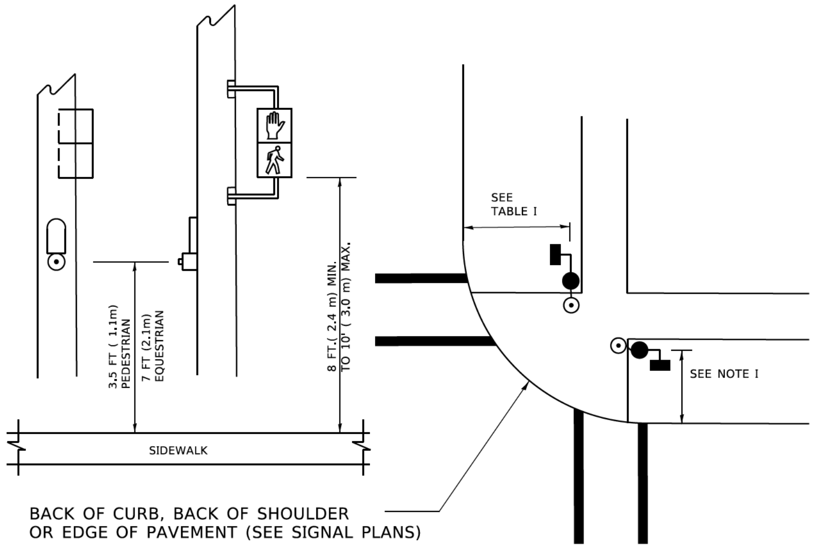
MAST ARM MOUNTED SIGNALS IN EXISTING, PROPOSED OR FUTURE SIDEWALK/BICYCLE PATH AREA. INTERSECTION SHOWN WITH PEDESTRIAN SIGNALS AND PEDESTRIAN PUSHBUTTON DETECTORS.



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."

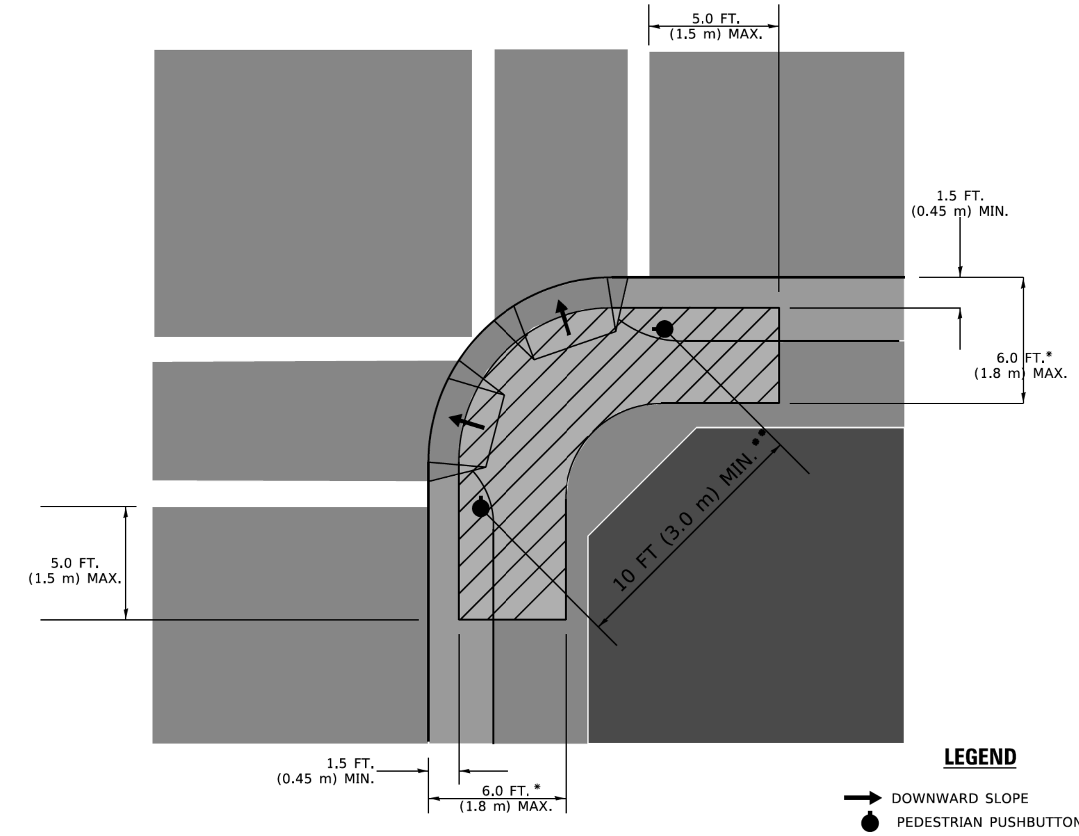
PEDESTRIAN SIGNAL POST AND PEDESTRIAN PUSH BUTTON POST



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



LEGEND

- DOWNWARD SLOPE
- PEDESTRIAN PUSHBUTTON
- 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:

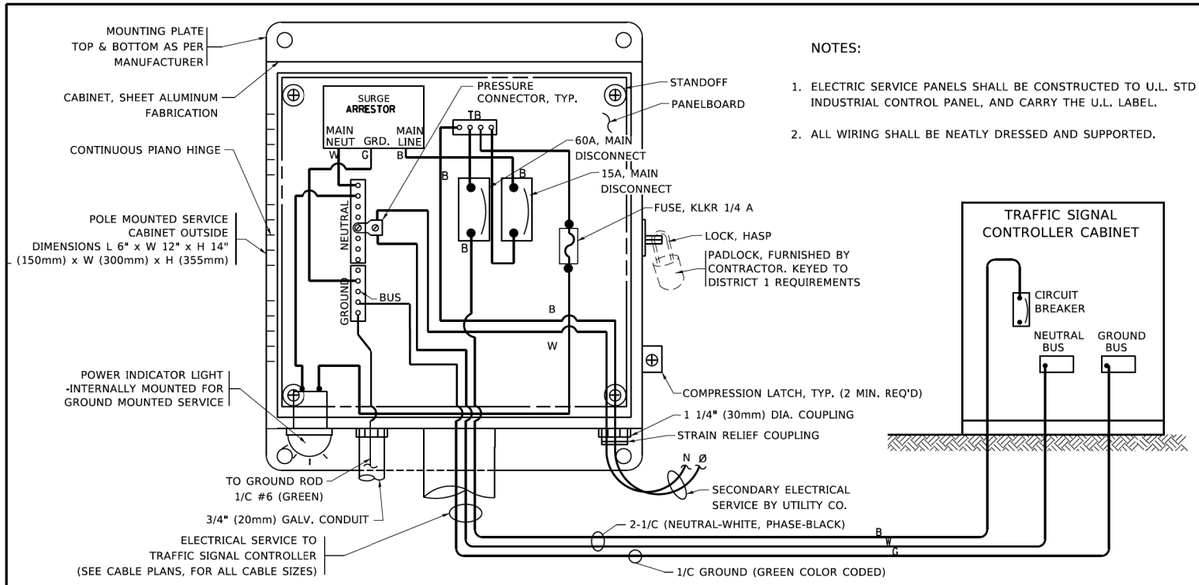
1. PEDESTRIAN SIGNAL HEADS SHALL BE MOUNTED WITH THE BOTTOM OF THE SIGNAL HOUSING INCLUDING BRACKETS NOT LESS THAN 8 FT (2.4 m) OR MORE THAN 10 FT (3 m) ABOVE SIDEWALK LEVEL, AND SHALL BE POSITIONED AND ADJUSTED TO PROVIDE MAXIMUM VISIBILITY AT THE BEGINNING OF THE CONTROLLED CROSSWALK.
2. THE BOTTOM 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 (0.6m), MINIMUM 10 FT (3.0m)
TRAFFIC SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
PEDESTRIAN SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
PEDESTRIAN PUSHBUTTON POST	4 FT (1.2m)	SHOULDER WIDTH + 2 FT (0.6m), MINIMUM 10 FT (3.0m)
TEMPORARY WOOD POLE	6 FT (1.8m)	SHOULDER WIDTH + 2 FT (0.6m), 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.



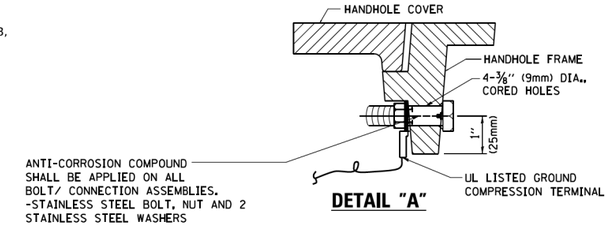
NOTES:

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.

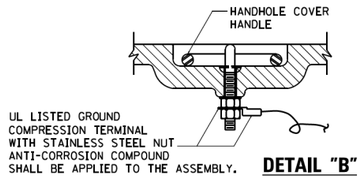
ELECTRICAL SERVICE – PANEL DIAGRAM (TYPICAL FOR POLE AND GROUND MOUNTED SERVICE)

SERVICE INSTALLATION POLE MOUNT (SHOWN)

(NOT TO SCALE)



DETAIL "A"

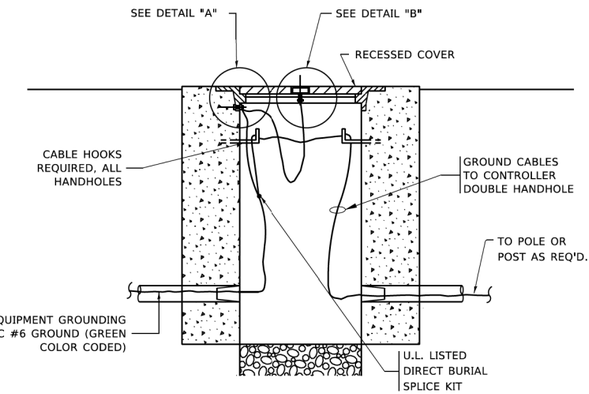


DETAIL "B"

NOTES:

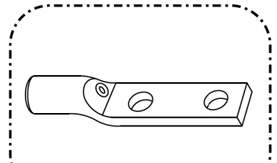
GROUNDING SYSTEM

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)

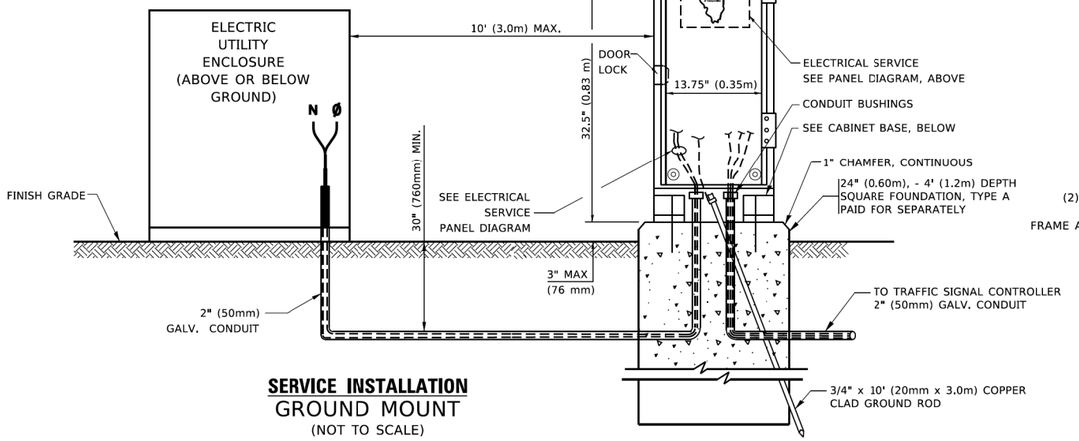


HEAVY-DUTY COMPRESSION TERMINAL (BURNDY TYPE YGHA OR APPROVED EQUAL)

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

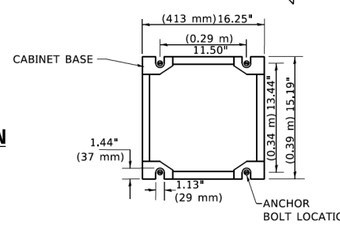
NOTES:

- 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.



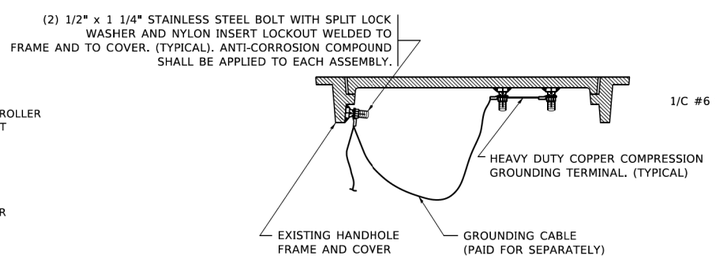
SERVICE INSTALLATION GROUND MOUNT

(NOT TO SCALE)



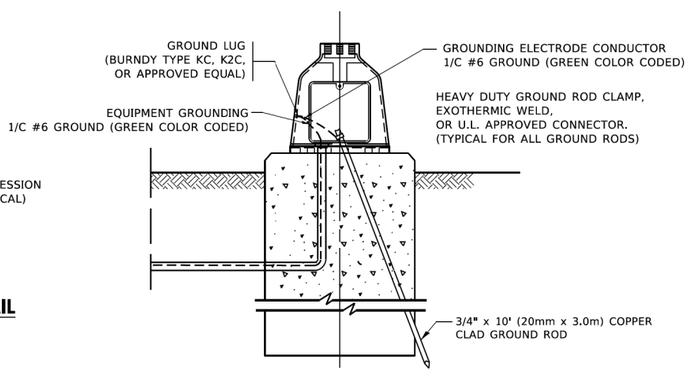
CABINET – BASE BOLT PATTERN

(NOT TO SCALE)



EXISTING HANDHOLE COVER & FRAME – GROUNDING DETAIL

(NOT TO SCALE)



MAST ARM POLE /POST–GROUNDING DETAIL

(NOT TO SCALE)

TS SHT NO. 4

MODEL: Default
FILE NAME: pw:\\IL084EBIDINTEG.Illinois.gov:PWIDOT\Documents\IDOT Offices\District 1\Projects\Dist5\d22x34\CADData\CADSheets\ts05.dgn

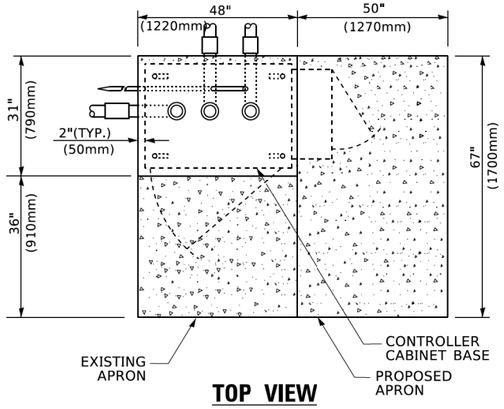
USER NAME = footemj	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 3/4/2019	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

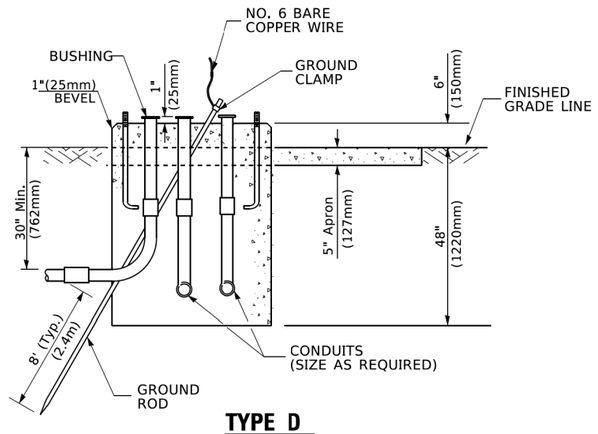
DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

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

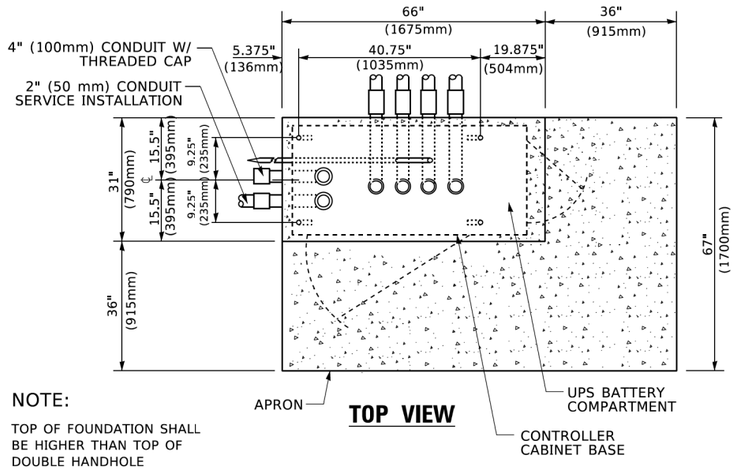
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			267	116
	TS-05	CONTRACT NO.		
	ILLINOIS FED. AID PROJECT			



TOP VIEW



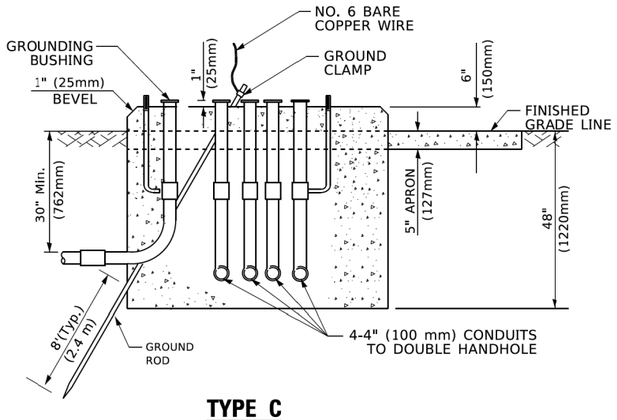
TYPE D
FOR GROUND MOUNTED
CONTROLLER CABINET
AND UPS BATTERY CABINET



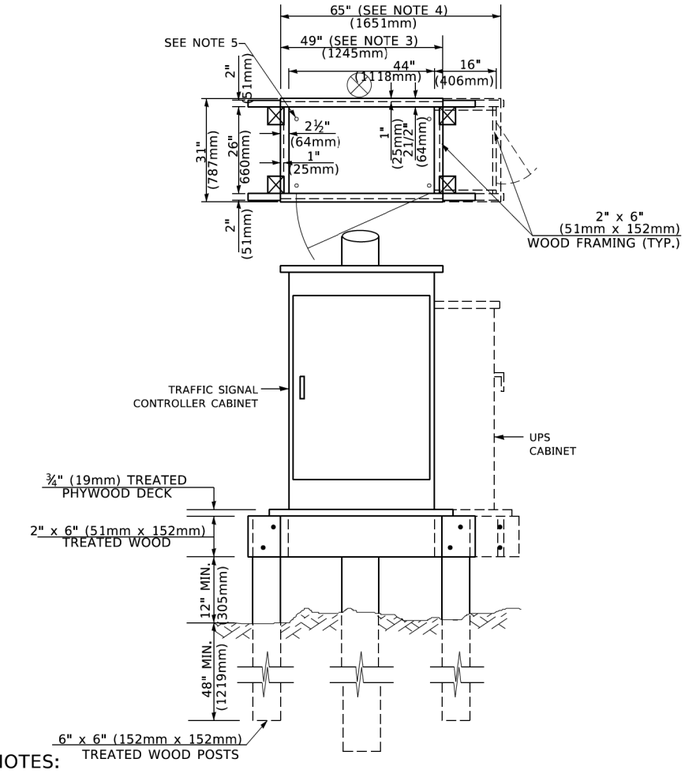
NOTE:

TOP OF FOUNDATION SHALL BE HIGHER THAN TOP OF DOUBLE HANDHOLE

TOP VIEW



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

TS SHT NO. 5

MODEL: Default
FILE NAME: pw:\\IL084EBIDINTEG.Illinois.gov:PWIDOTDocuments\IDOT Offices\District 1\Projects\Dist1s0d22x34\CADData\CADSheets\ts05.dgn

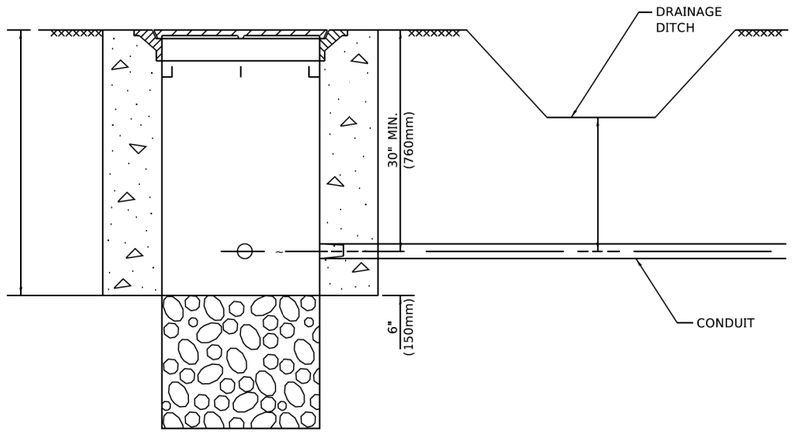
USER NAME = footemj	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 3/4/2019	DATE -	REVISED -	

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. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			267	117
	TS-05		CONTRACT NO.	
		ILLINOIS	FED. AID PROJECT	

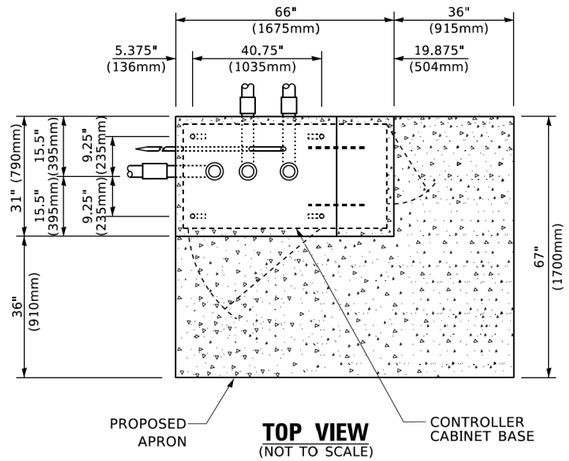


NOTES:

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.

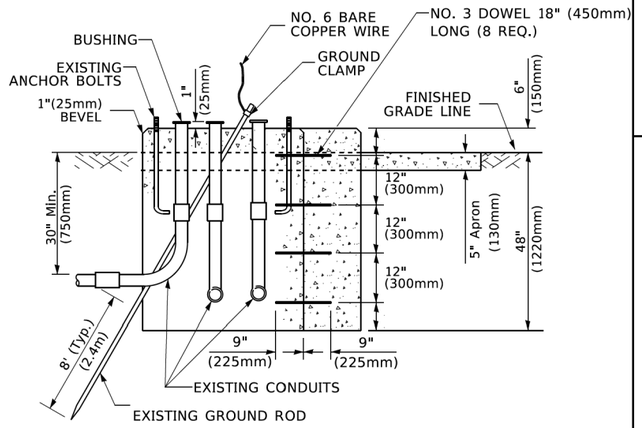
HANDHOLE WITH MINIMUM CONDUIT DEPTH

(NOT TO SCALE)



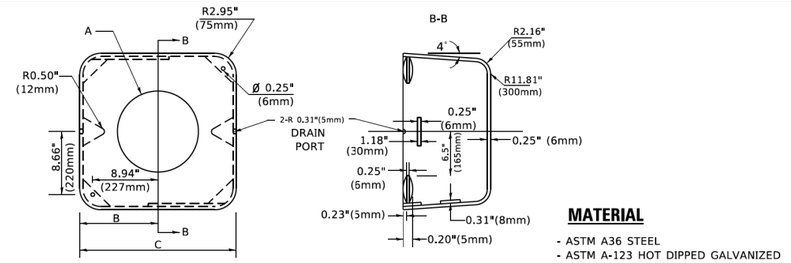
TOP VIEW

(NOT TO SCALE)



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

(NOT TO SCALE)



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)

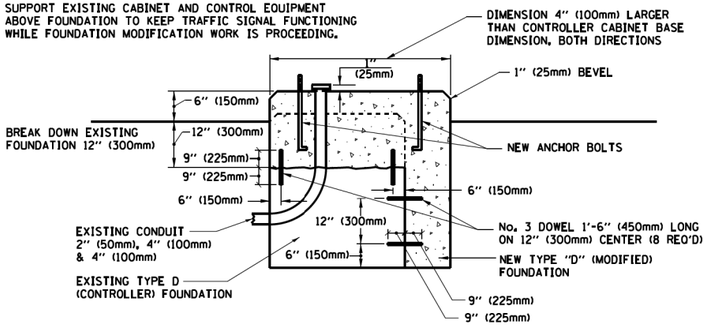
SHROUD

NOTES:

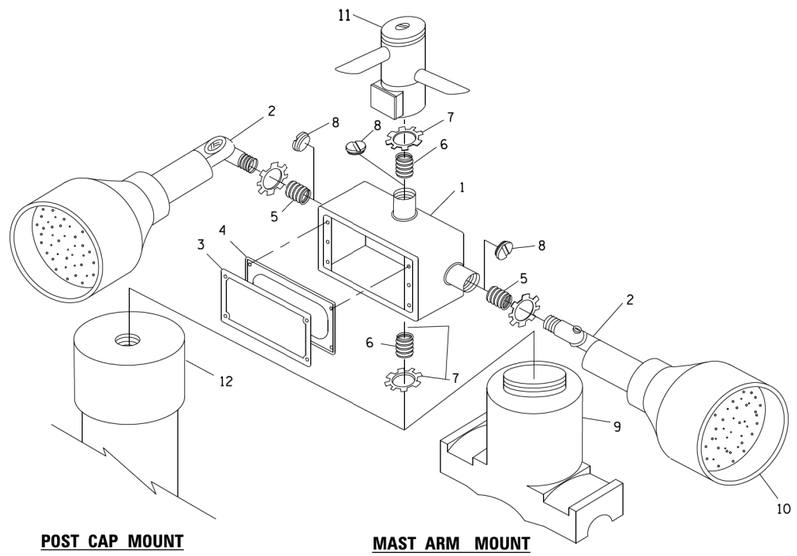
1. DIMENSION "A" IS EQUAL TO THE DIAMETER OF THE MAST ARM POLE AT THE TOP OF THE SHROUD. THE SHROUD SHALL BE TIGHT TO THE MAST ARM POLE.
2. THE SUPPLIER SHALL VERIFIED THE ABOVE DIMENSIONS BASED ON MAST ARM REQUIREMENTS.
3. THE HEIGHT OF THE SHROUD SHALL COVER THE ANCHOR BOLTS, NUTS AND MAST ARM POLE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

NOTE:

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



MODIFY EXISTING TYPE "D" FOUNDATION



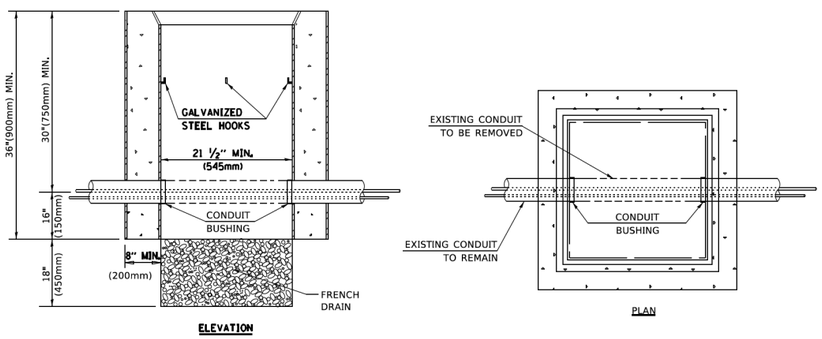
POST CAP MOUNT **MAST ARM MOUNT**

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

USER NAME = footemj	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 3/4/2019	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

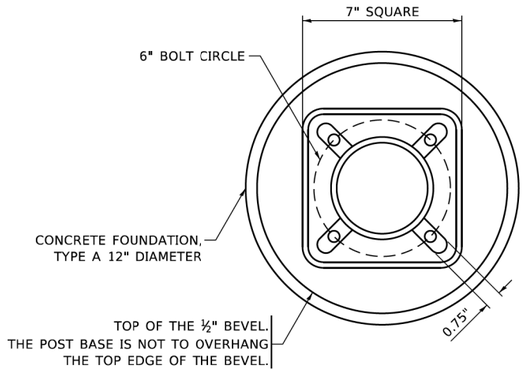
DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			267	118
TS-05		CONTRACT NO.		
ILLINOIS	FED. AID PROJECT			

MODEL: Default TS SHT NO. 6
FILE NAME: pw:\\IL084EBIDINTEG.Illinois.gov:PWIDOTDocuments\IDOT Offices\District 1\Projects\D1x51x022x34\CADData\CADsheets\ts05.dgn

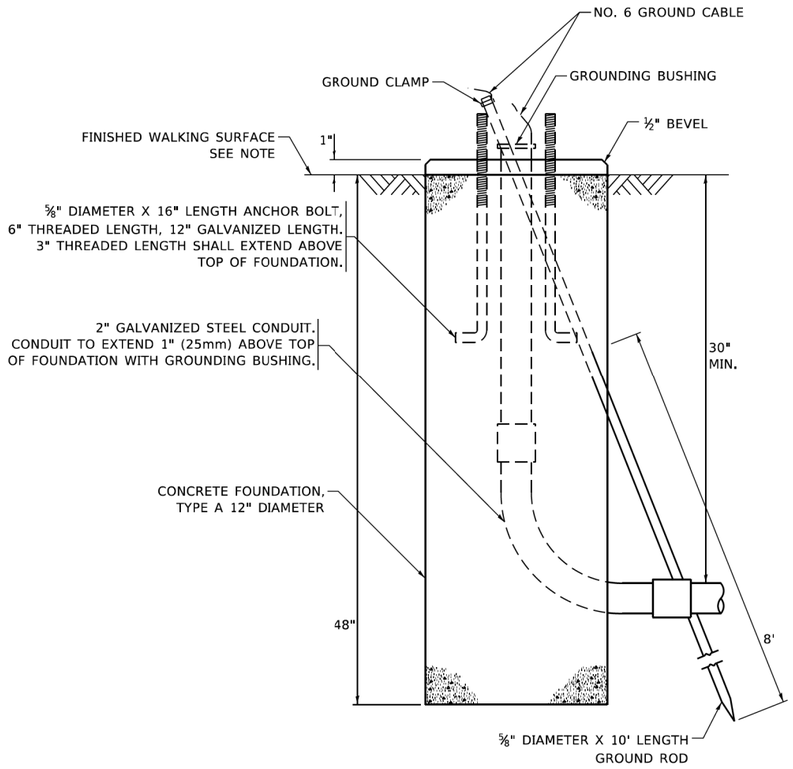
ts05.dgn 3/4/2019 11:23:51 AM User: footemj



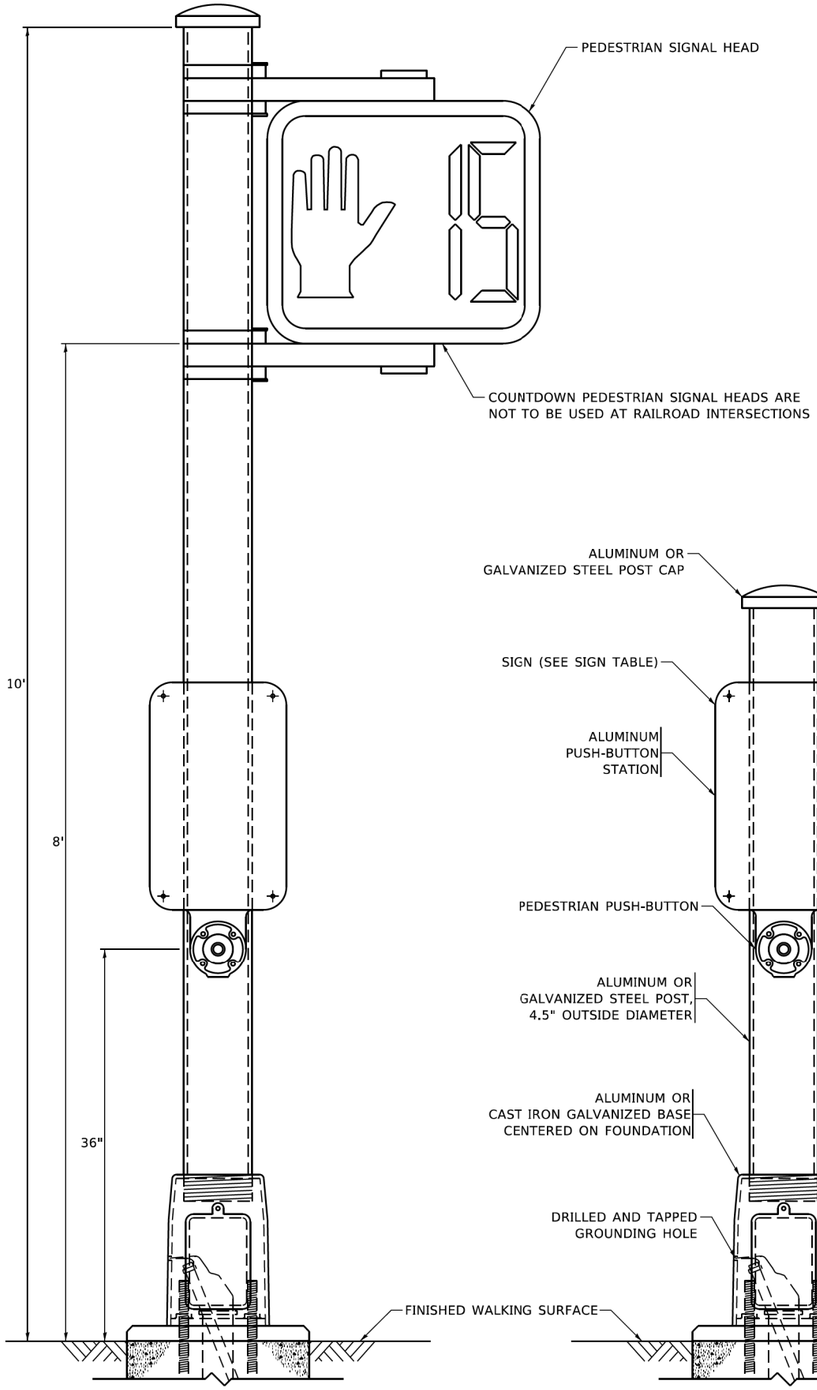
BOLT PATTERN

NOTE:

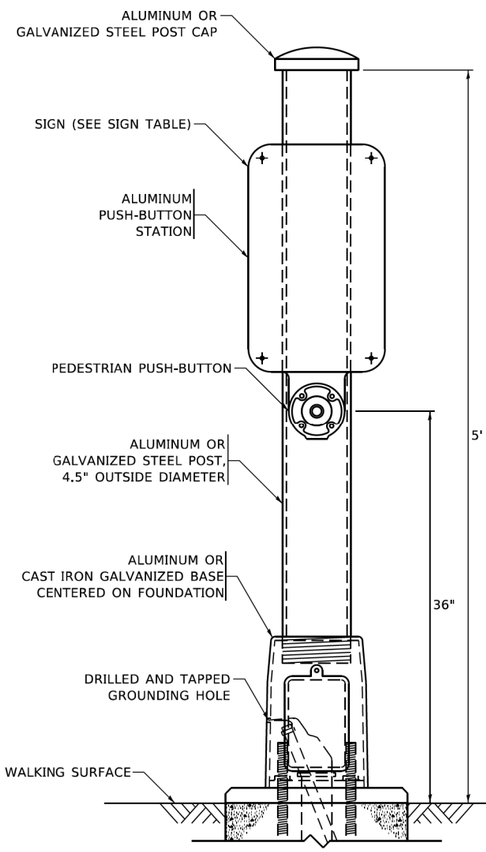
1. IF THE PEDESTRIAN SIGNAL POST FOUNDATION IS INSTALLED WITHIN OR BEHIND A BARRIER CURB, THE TOP OF THE FOUNDATION SHALL BE INSTALLED FLUSH WITH THE TOP OF THE BARRIER CURB.



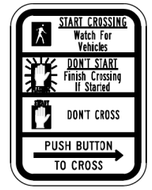
CONCRETE FOUNDATION, TYPE A 12–INCH DIAMETER



PEDESTRIAN SIGNAL POST, 10 FT.

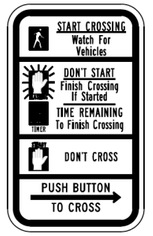


PEDESTRIAN SIGNAL POST, 5 FT.



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.

TS SHT NO. 7

MODEL: Default
FILE NAME: pw:\\gfanroom.dot.illinois.gov:PWIDOT\Documents\IDOT Offices\District 1\Projects\Dist5\d22x334\CADData\CADdrawings\ts05.dgn

USER NAME = gaglianobt	DESIGNED - IP	REVISED - 10-15-2020	
	DRAWN - IP	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - LP	REVISED -	
PLOT DATE = 11/23/2020	DATE - 10-15-2018	REVISED -	

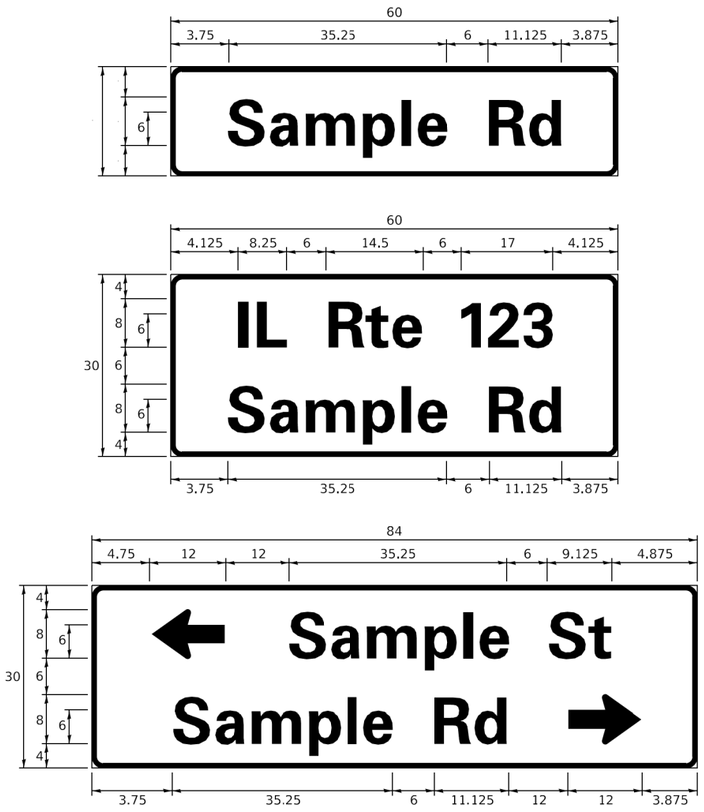
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			267	119
	TS–05		CONTRACT NO.	
		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

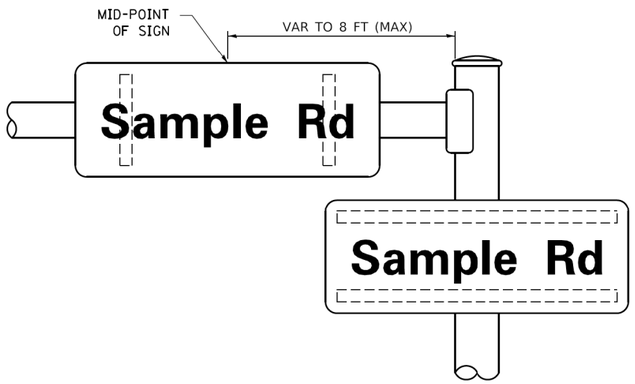
PARTS LISTING:

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

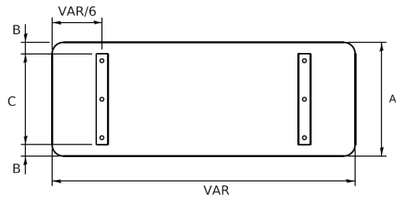
OTHER BRANDS OF MOUNTING HARDWARE ARE ACCEPTABLE, BASED UPON THE DEPARTMENT'S APPROVAL AND COMPATIBILITY WITH THE CHANNEL/BRACKET OF THE ABOVE PRODUCT.

MOUNTING LOCATION

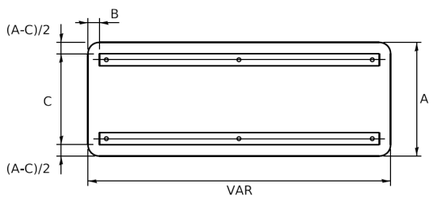
ARM OR POLE MOUNTED



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	4.482	0.480	B	0.960	5.446	0.400
C	0.720	4.482	0.720	C	0.800	5.446	0.800
D	0.880	4.482	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	4.482	0.720	G	0.800	5.446	0.800
H	0.880	4.482	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	4.482	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	4.482	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	4.482	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	4.482	0.480	R	0.960	5.446	0.400
S	0.480	4.482	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	4.482	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	4.482	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	4.962	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	4.482	0.480	2	0.800	5.446	0.800
3	0.480	4.482	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	4.482	0.480	5	0.800	5.446	0.800
6	0.720	4.482	0.720	6	0.800	5.446	0.800
7	0.240	4.482	0.720	7	0.560	5.446	0.560
8	0.480	4.482	0.480	8	0.800	5.446	0.800
9	0.480	4.482	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

TS SHT NO. 8

MODEL: Default
FILE NAME: pw:\\IL084EBI0INTEG.illinois.gov:PWIDOT\Documents\IDOT Offices\District 1\Projects\Dist5\d22x34\CADData\CADsheets\ts02.dgn

USER NAME = footemj	DESIGNED - LP/IP	REVISED - LP 07/01/2015	
	DRAWN - LP	REVISED -	
PLOT SCALE = 50.0000 ' / in.	CHECKED - IP	REVISED -	
PLOT DATE = 3/4/2019	DATE - 10/01/2014	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
MAST ARM MOUNTED STREET NAME SIGNS

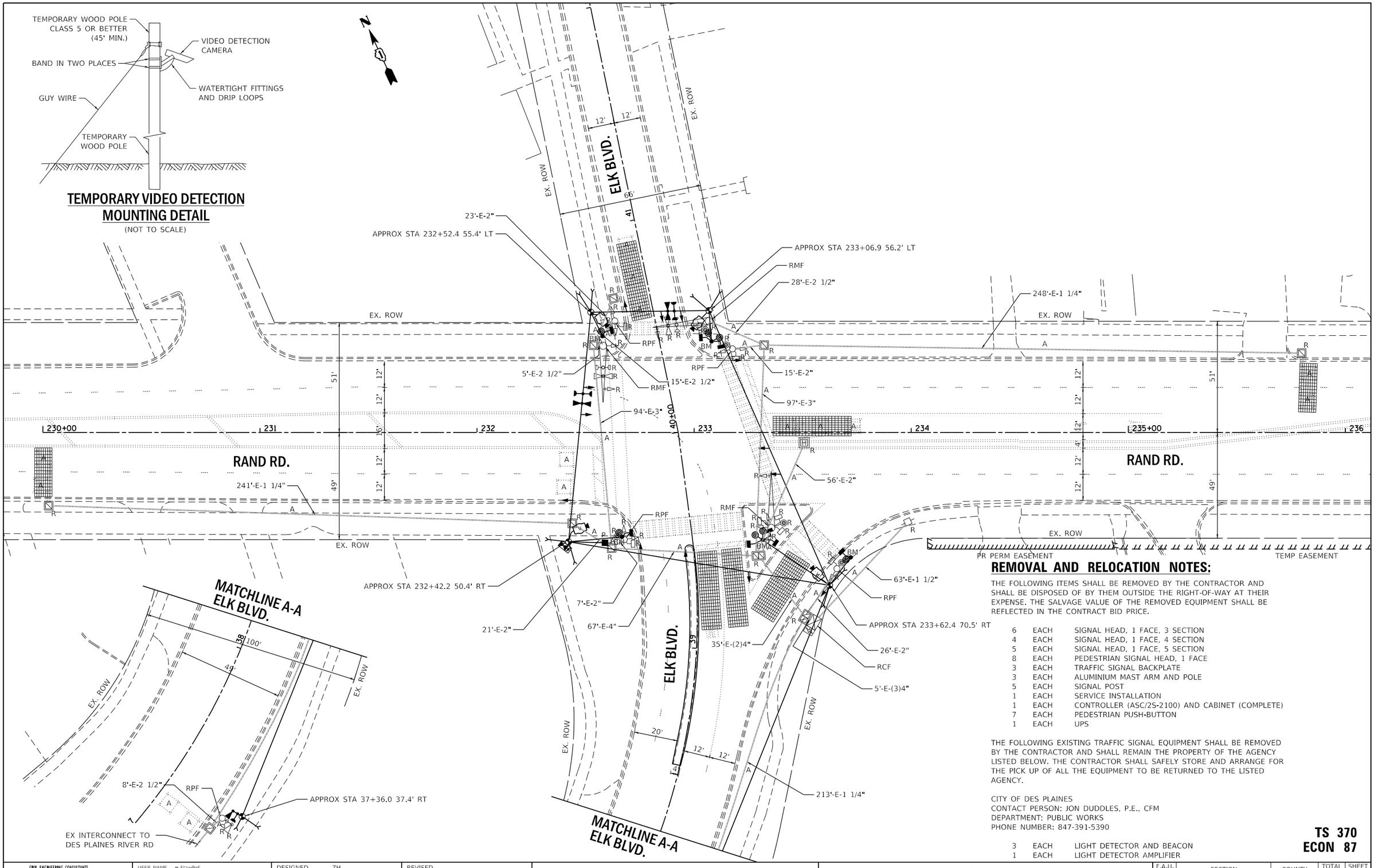
SCALE: | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	120
	TS-02	CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

Plot date: 3/6/2019 11:09:17 AM User: footemj

TEMPORARY VIDEO DETECTION MOUNTING DETAIL

(NOT TO SCALE)



REMOVAL AND RELOCATION NOTES:

THE FOLLOWING ITEMS SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE DISPOSED OF BY THEM OUTSIDE THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.

6	EACH	SIGNAL HEAD, 1 FACE, 3 SECTION
4	EACH	SIGNAL HEAD, 1 FACE, 4 SECTION
5	EACH	SIGNAL HEAD, 1 FACE, 5 SECTION
8	EACH	PEDESTRIAN SIGNAL HEAD, 1 FACE
3	EACH	TRAFFIC SIGNAL BACKPLATE
3	EACH	ALUMINIUM MAST ARM AND POLE
5	EACH	SIGNAL POST
1	EACH	SERVICE INSTALLATION
1	EACH	CONTROLLER (ASC/2S-2100) AND CABINET (COMPLETE)
7	EACH	PEDESTRIAN PUSH-BUTTON
1	EACH	UPS

THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR AND SHALL REMAIN THE PROPERTY OF THE AGENCY LISTED BELOW. THE CONTRACTOR SHALL SAFELY STORE AND ARRANGE FOR THE PICK UP OF ALL THE EQUIPMENT TO BE RETURNED TO THE LISTED AGENCY.

CITY OF DES PLAINES
CONTACT PERSON: JON DUDDLES, P.E., CFM
DEPARTMENT: PUBLIC WORKS
PHONE NUMBER: 847-391-5390

3	EACH	LIGHT DETECTOR AND BEACON
1	EACH	LIGHT DETECTOR AMPLIFIER

TS 370
ECON 87

TS SHT NO. 9

FILE NAME = D160J10-sht-ts-Rand-Elk-01-Temp.dgn
$MODELNAMES

CIVIL ENGINEERING CONSULTANTS
RWA Regina Webster & Associates, Inc.

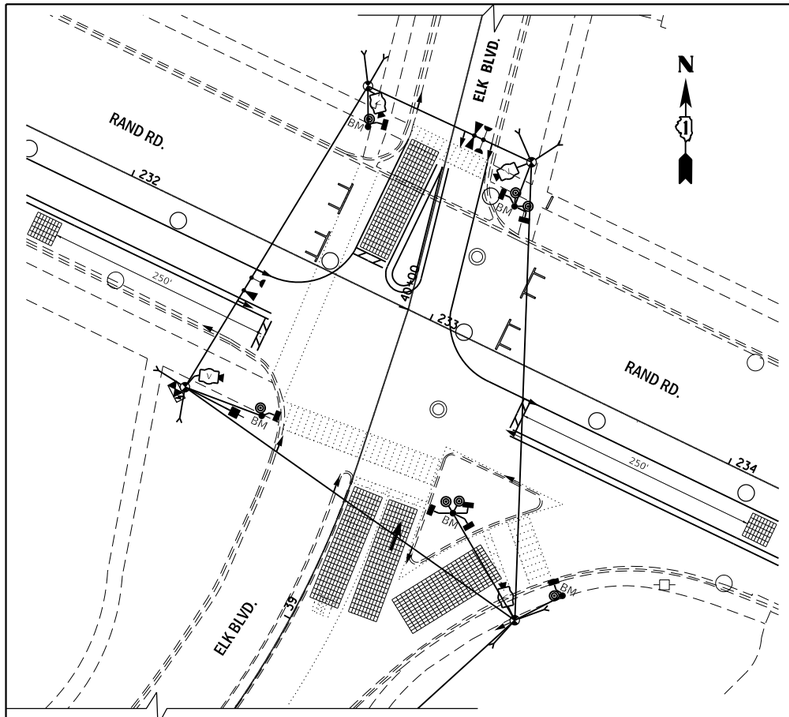
USER NAME = EtzwilleE	DESIGNED - ZH	REVISED -	
	DRAWN - ZH	REVISED -	
PLOT SCALE = 40.0000 ' / in.	CHECKED - DW	REVISED -	
PLOT DATE = 3/18/2024	DATE - 12/23/22	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

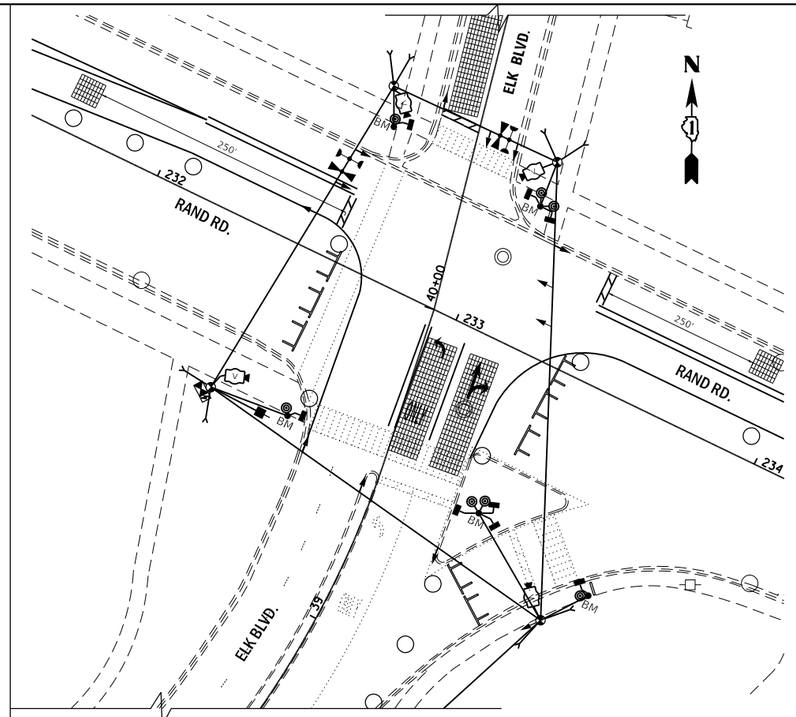
TEMPORARY TRAFFIC SIGNAL INSTALLATION
RAND ROAD AND ELK BOULEVARD

SCALE: 1" = 20' | SHEET 1 OF 6 SHEETS | STA. | TO STA.

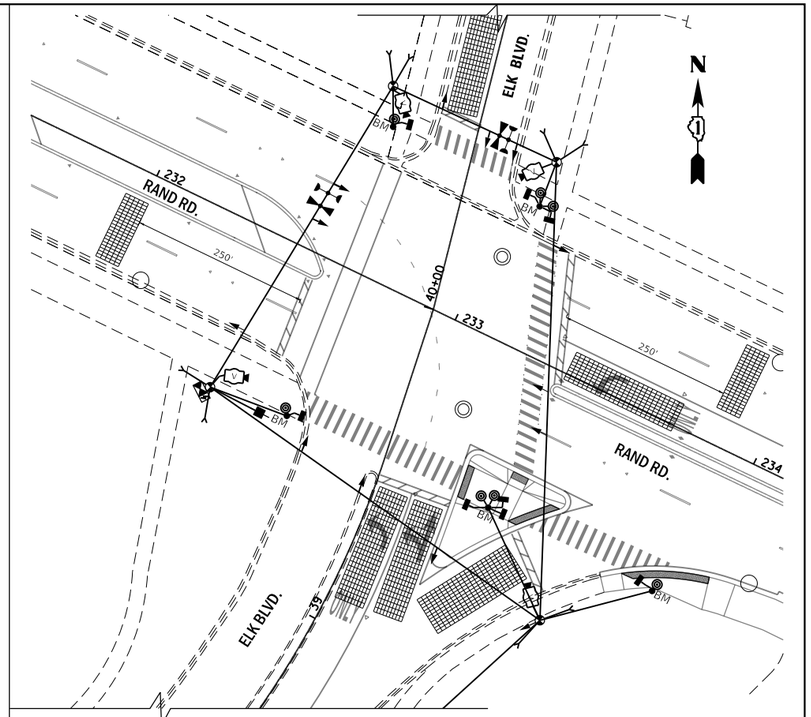
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	121
		CONTRACT NO. 60J10		
	ILLINOIS	FED. AID PROJECT		



TEMPORARY TRAFFIC SIGNAL STAGE 1



TEMPORARY TRAFFIC SIGNAL STAGE 2



TEMPORARY TRAFFIC SIGNAL FINAL CONDITION

TS 370
ECON 87

TS SHT NO. 10

FILE NAME = D160J10-sht-ts-Rand-Elk-02-Temp.dgn
$MODELNAMES

CIVIL ENGINEERING CONSULTANTS
RWA
Regina Webster & Associates, Inc.

USER NAME = EtzwilleE	DESIGNED - ZH	REVISED -	
	DRAWN - ZH	REVISED -	
PLOT SCALE = 80.000 ' / in.	CHECKED - DW	REVISED -	
PLOT DATE = 3/18/2024	DATE - 12/23/22	REVISED -	

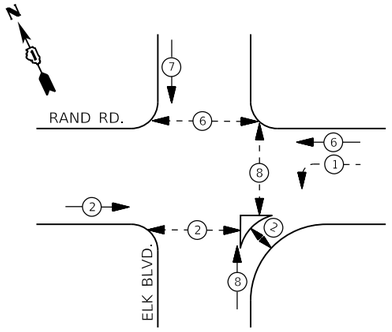
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL INSTALLATION
STAGE CONSTRUCTION PLAN
RAND ROAD AT ELK BLVD

SCALE: N.T.S. | SHEET 2 OF 6 SHEETS | STA. | TO STA.

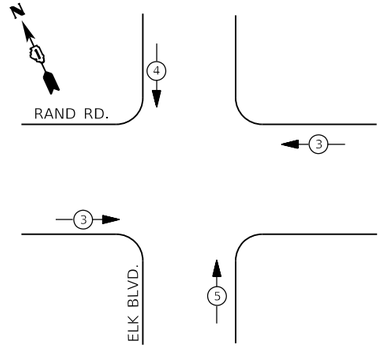
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	122
		CONTRACT NO. 60J10		
	ILLINOIS	FED. AID PROJECT		

PROPOSED CONTROLLER SEQUENCE



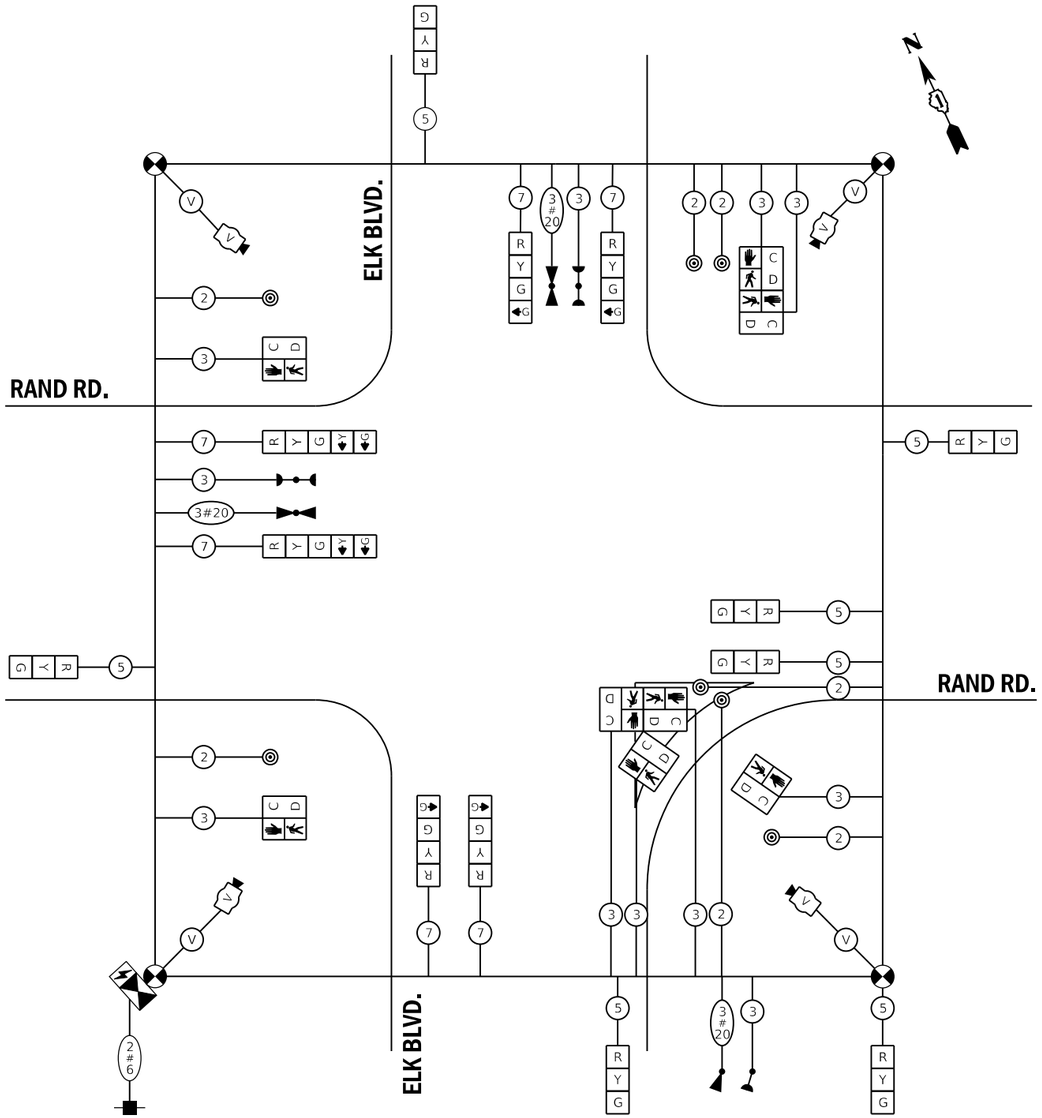
PHASE 1 SHALL BE ON ADVANCED RECALL DURING STAGE 1 & 2

PROPOSED EMERGENCY VEHICLE PREEMPTION SEQUENCE



LEGEND:

- PROTECTED PHASE
- PROTECTED/PERMITTED PHASE
- PEDESTRIAN PHASE
- OL — OVERLAP



TEMPORARY CABLE PLAN

(NOT TO SCALE)

ALL PEDESTRIAN HEADS SHALL BE BAGGED AND DISCONNECTED AT LOCATIONS WHERE EXISTING PAVEMENT IS REMOVED. ALL PEDESTRIAN SIGNAL HEADS SHALL REMAIN BAGGED UNTIL THE PAVEMENT IS RESTORED TO PROVIDE A SAFE CROSSING AREA. USAGE OF PEDESTRIAN SIGNALS IS BASED ON CONSTRUCTION STAGING AND SHALL BE DETERMINED BY THE RESIDENT ENGINEER. IF SIDEWALKS AND PEDESTRIAN CROSSINGS ARE NOT PROVIDED, THE PEDESTRIAN SIGNAL EQUIPMENT SHALL REMAIN DISCONNECTED UNTIL WARRANTED PRIOR TO THE PERMANENT SIGNAL TURN-ON.

TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	13	11	50	71.5
(YELLOW)	13	20	5	13.0
(GREEN)	17	12	45	91.8
PERMISSIVE ARROW	4	10	10	4.0
PED. SIGNAL	8	20	100	160.0
CONTROLLER	1	100	100	100.0
UPS	1	25	100	25.0
VIDEO SYSTEM	1	150	100	150.0
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	-	-	-	-
			TOTAL =	615.3

ENERGY COSTS TO:

CITY OF DES PLAINES

1420 MINER ST
DES PLAINES, IL 60016

ENERGY SUPPLY: CONTACT: DAVE SCHACHT
PHONE: (630) 437-2129
COMPANY: COMMONWEALTH EDISON
ACCOUNT NUMBER: 00270-86219

TS 370
ECON 87

TS SHT NO. 11

FILE NAME = D160110-sht-ts-Rand-Elk-03-Temp Cable.dgn
$MODELNAMES

CIVIL ENGINEERING CONSULTANTS
RWA Regina Webster & Associates, Inc.

USER NAME = EtzwilleE	DESIGNED - ZH	REVISED -	
	DRAWN - ZH	REVISED -	
PLOT SCALE = 40.000 ' / in.	CHECKED - DW	REVISED -	
PLOT DATE = 3/18/2024	DATE - 12/23/22	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

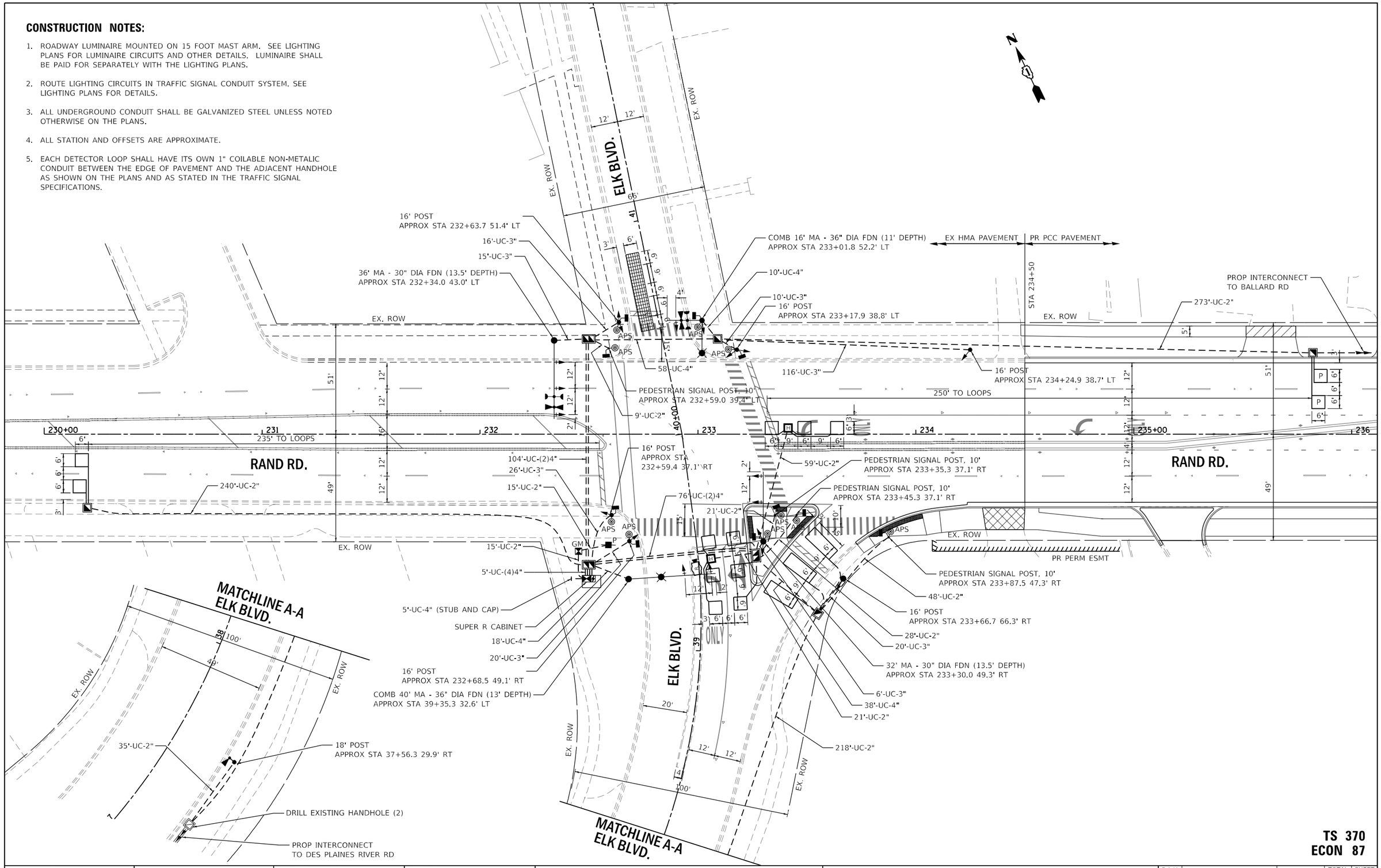
RAND ROAD AT ELK BOULEVARD
TEMPORARY CABLE PLAN, TEMPORARY PHASE DESIGNATION DIAGRAM & TEMPORARY EMERGENCY VEHICLE PREEMPTION SEQUENCE – STAGE 1, 2 & FINAL

SCALE: N.T.S. | SHEET 3 OF 6 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	123
		CONTRACT NO. 60J10		
	ILLINOIS	FED. AID PROJECT		

CONSTRUCTION NOTES:

1. ROADWAY LUMINAIRE MOUNTED ON 15 FOOT MAST ARM. SEE LIGHTING PLANS FOR LUMINAIRE CIRCUITS AND OTHER DETAILS. LUMINAIRE SHALL BE PAID FOR SEPARATELY WITH THE LIGHTING PLANS.
2. ROUTE LIGHTING CIRCUITS IN TRAFFIC SIGNAL CONDUIT SYSTEM. SEE LIGHTING PLANS FOR DETAILS.
3. ALL UNDERGROUND CONDUIT SHALL BE GALVANIZED STEEL UNLESS NOTED OTHERWISE ON THE PLANS.
4. ALL STATION AND OFFSETS ARE APPROXIMATE.
5. EACH DETECTOR LOOP SHALL HAVE ITS OWN 1" COILABLE NON-METALIC CONDUIT BETWEEN THE EDGE OF PAVEMENT AND THE ADJACENT HANDHOLE AS SHOWN ON THE PLANS AND AS STATED IN THE TRAFFIC SIGNAL SPECIFICATIONS.



TS SHT NO. 12

TS 370
ECON 87

FILE NAME = D160110-sht-ts-Rand-Elk-04.dgn
$MODELNAME$

CIVIL ENGINEERING CONSULTANTS RWA Regina Webster & Associates, Inc.	USER NAME = EtzwilleE	DESIGNED - ZH	REVISED -
		DRAWN - ZH	REVISED -
	PLOT SCALE = 40.0000 ' / in.	CHECKED - DW	REVISED -
	PLOT DATE = 3/18/2024	DATE - 12/23/22	REVISED -

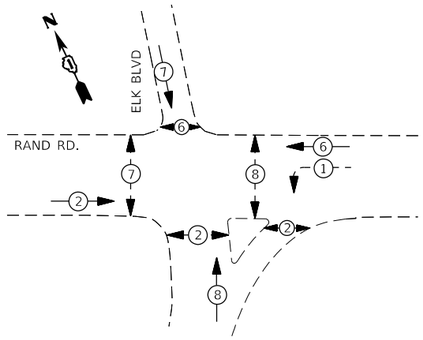
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL MODERNIZATION PLAN
RAND ROAD AND ELK BOULEVARD

SCALE: 1" = 20' | SHEET 4 OF 6 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	124
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

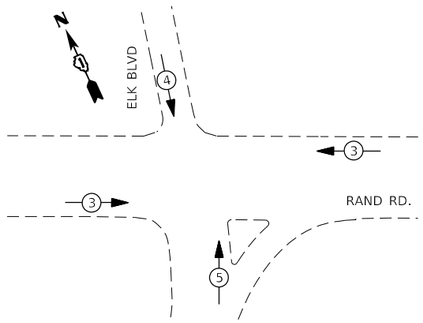
PROPOSED CONTROLLER SEQUENCE



LEGEND:

- PROTECTED PHASE
- PROTECTED/PERMITTED PHASE
- PEDESTRIAN PHASE
- OL OVERLAP

PROPOSED EMERGENCY VEHICLE PREEMPTION SEQUENCE



TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS

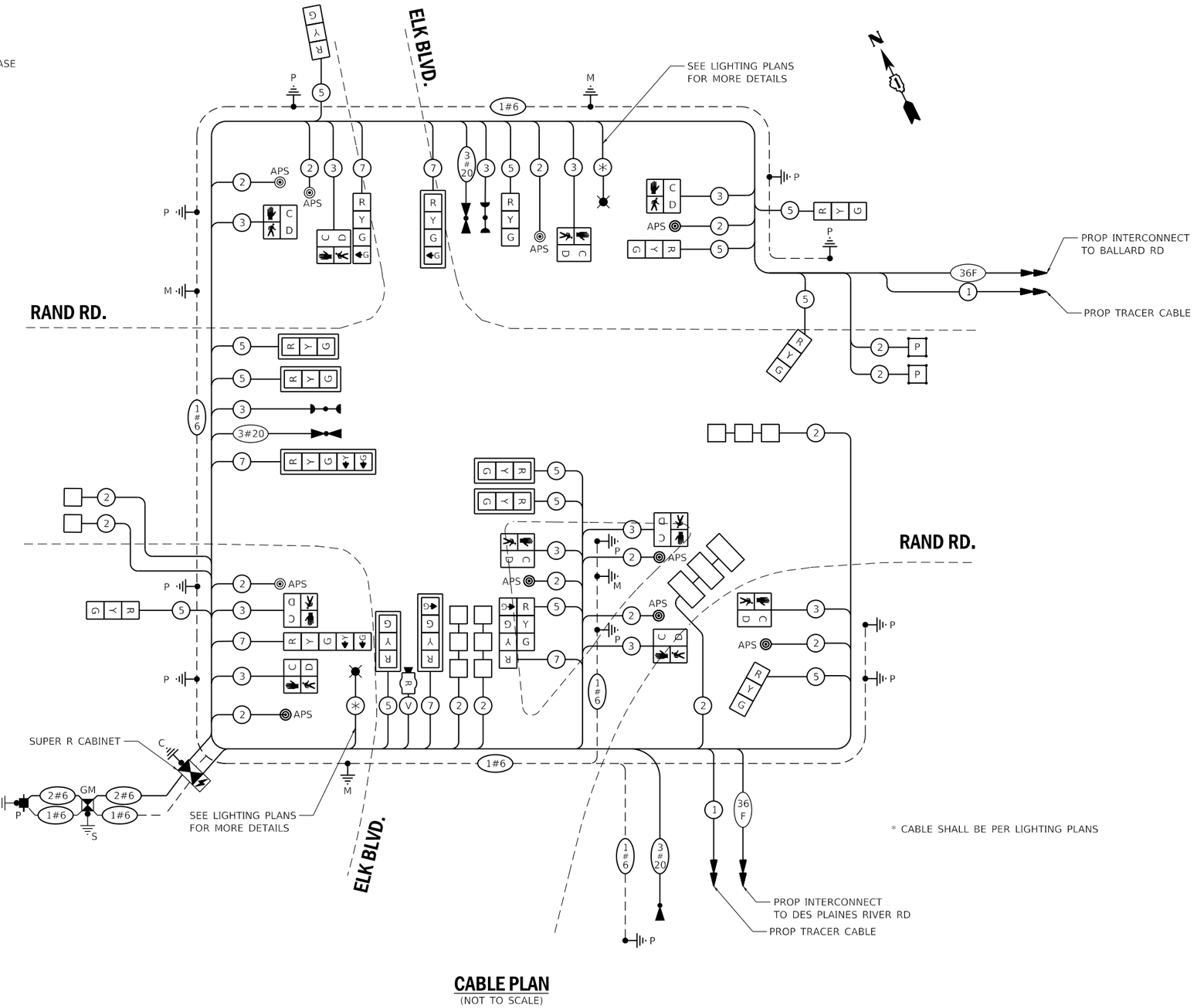
TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	19	11	50	104.5
(YELLOW)	19	20	5	19.0
(GREEN)	23	12	45	124.2
PERMISSIVE ARROW	4	10	10	4.0
PED. SIGNAL	10	20	100	200.0
CONTROLLER	1	100	100	100.0
UPS	1	25	100	25.0
RADAR SYSTEM	1	150	100	150.0
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	2	250	50	250.0
			TOTAL =	976.7

ENERGY COSTS TO:

CITY OF DES PLAINES

1420 MINER ST
DES PLAINES, IL 60016

ENERGY SUPPLY: CONTACT: DAVE SCHACHT
PHONE: (630) 437-2129
COMPANY: COMMONWEALTH EDISON
ACCOUNT NUMBER: 00270-86219



CABLE PLAN
(NOT TO SCALE)

TS 370
ECON 87

TS SHT NO. 13

FILE NAME = D160110-sht-ss-Rand-Elk-05-Cable.dgn
$MODELNAME$

CIVIL ENGINEERING CONSULTANTS RWA Regina Webster & Associates, Inc.	USER NAME = EtzwilleE	DESIGNED - ZH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN - ZH	REVISED -	
	PLOT SCALE = 40.000 ' / in.	CHECKED - DW	REVISED -	
	PLOT DATE = 3/18/2024	DATE - 12/23/22	REVISED -	

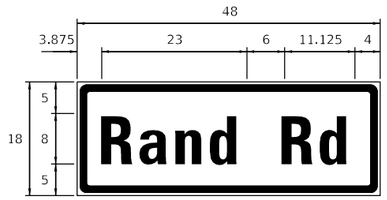
RAND ROAD AND ELK BOULEVARD
CABLE PLAN, SCHEDULE OF QUANTITIES, PHASE DESIGNATION DIAGRAM & EMERGENCY VEHICLE PREEMPTION SEQUENCE

SCALE: N.T.S. | SHEET 5 OF 6 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	125
		CONTRACT NO. 60J10		
		ILLINOIS	FED. AID PROJECT	

SIGN PANEL - TYPE 1 OR TYPE 2

ALL DIMENSIONS ARE IN INCHES UNLESS NOTED OTHERWISE.



DESIGN SERIES	AREA (SQ FT)	SIGN PANEL TYPE	SHEETING TYPE	QUANTITY REQUIRED
D	6	1	ZZ	2

DESIGN SERIES	AREA (SQ FT)	SIGN PANEL TYPE	SHEETING TYPE	QUANTITY REQUIRED
D	6	1	ZZ	2

NOTE:
FOR ADDITIONAL DESIGN AND INSTALLATION INFORMATION PLEASE SEE DISTRICT ONE MAST ARM MOUNTED STREET NAME SIGN DETAIL.

SCHEDULE OF QUANTITIES

	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY
	SIGN PANEL - TYPE 1	SQ FT	24
	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2" DIA.	FOOT	982
	UNDERGROUND CONDUIT, GALVANIZED STEEL, 3" DIA.	FOOT	229
	UNDERGROUND CONDUIT, GALVANIZED STEEL, 4" DIA.	FOOT	509
	HANDHOLE	EACH	4
	HEAVY-DUTY HANDHOLE	EACH	2
	DOUBLE HANDHOLE	EACH	3
	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C	FOOT	1525
	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	FOOT	2030
	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	2420
	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT	940
	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	2090
	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2 C	FOOT	65
	ELECTRIC CABLE IN CONDUIT, EQUIPMENT GROUNDING CONDUCTOR, NO. 6 1C	FOOT	1485
	TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.	EACH	6
	TRAFFIC SIGNAL POST, GALVANIZED STEEL 18 FT.	EACH	1
	STEEL MAST ARM ASSEMBLY AND POLE, 32 FT.	EACH	1
	STEEL MAST ARM ASSEMBLY AND POLE, 36 FT.	EACH	1
	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 16 FT.	EACH	1
	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 40 FT.	EACH	1
	CONCRETE FOUNDATION, TYPE A	FOOT	32
	CONCRETE FOUNDATION, TYPE C	FOOT	4
	CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER	FOOT	27
	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	FOOT	24
	DRILL EXISTING HANDHOLE	EACH	2
	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED	EACH	5
	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	8
	SIGNAL HEAD, LED, 1-FACE, 4-SECTION, BRACKET MOUNTED	EACH	2
	SIGNAL HEAD, LED, 1-FACE, 4-SECTION, MAST ARM MOUNTED	EACH	2
	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED	EACH	1
	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST-ARM MOUNTED	EACH	1
	PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER	EACH	10
	TRAFFIC SIGNAL BACKPLATE, LOUVERED, FORMED PLASTIC	EACH	8
	INDUCTIVE LOOP DETECTOR	EACH	8
	DETECTOR LOOP, TYPE I	FOOT	499
	PREFORMED DETECTOR LOOP	FOOT	66
*	LIGHT DETECTOR	EACH	3
*	LIGHT DETECTOR AMPLIFIER	EACH	1
	TEMPORARY TRAFFIC SIGNAL INSTALLATION	EACH	1
	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	EACH	1
	REMOVE EXISTING HANDHOLE	EACH	8
	REMOVE EXISTING DOUBLE HANDHOLE	EACH	2
	REMOVE EXISTING CONCRETE FOUNDATION	EACH	9
*	EMERGENCY VEHICLE PRIORITY SYSTEM LINE SENSOR CABLE, NO. 20 3/C	FOOT	875
	FULL-ACTUATED CONTROLLER AND TYPE SUPER R CABINET (SPECIAL)	EACH	1
	SERVICE INSTALLATION, GROUND MOUNTED, METERED	EACH	1
	RADAR VEHICLE DETECTION SYSTEM, SINGLE APPROACH, STOP BAR	EACH	1
	PEDESTRIAN SIGNAL POST, 10 FT.	EACH	4
	UNINTERRUPTABLE POWER SUPPLY, SPECIAL	EACH	1
	ACCESSIBLE PEDESTRIAN SIGNALS	EACH	10
	CONCRETE FOUNDATION, TYPE A 12-INCH DIAMETER	FOOT	16
	TEMPORARY TRAFFIC SIGNAL TIMING	EACH	1

* - 100% COST TO THE CITY OF DES PLAINES

TS 370
ECON 87

TS SHT NO. 14

FILE NAME = D160110-sht-ts-Rand-Elk-06-SOQ.dgn
sMODELNAMES

CIVIL ENGINEERING CONSULTANTS
RWA
Regina Webster & Associates, Inc.

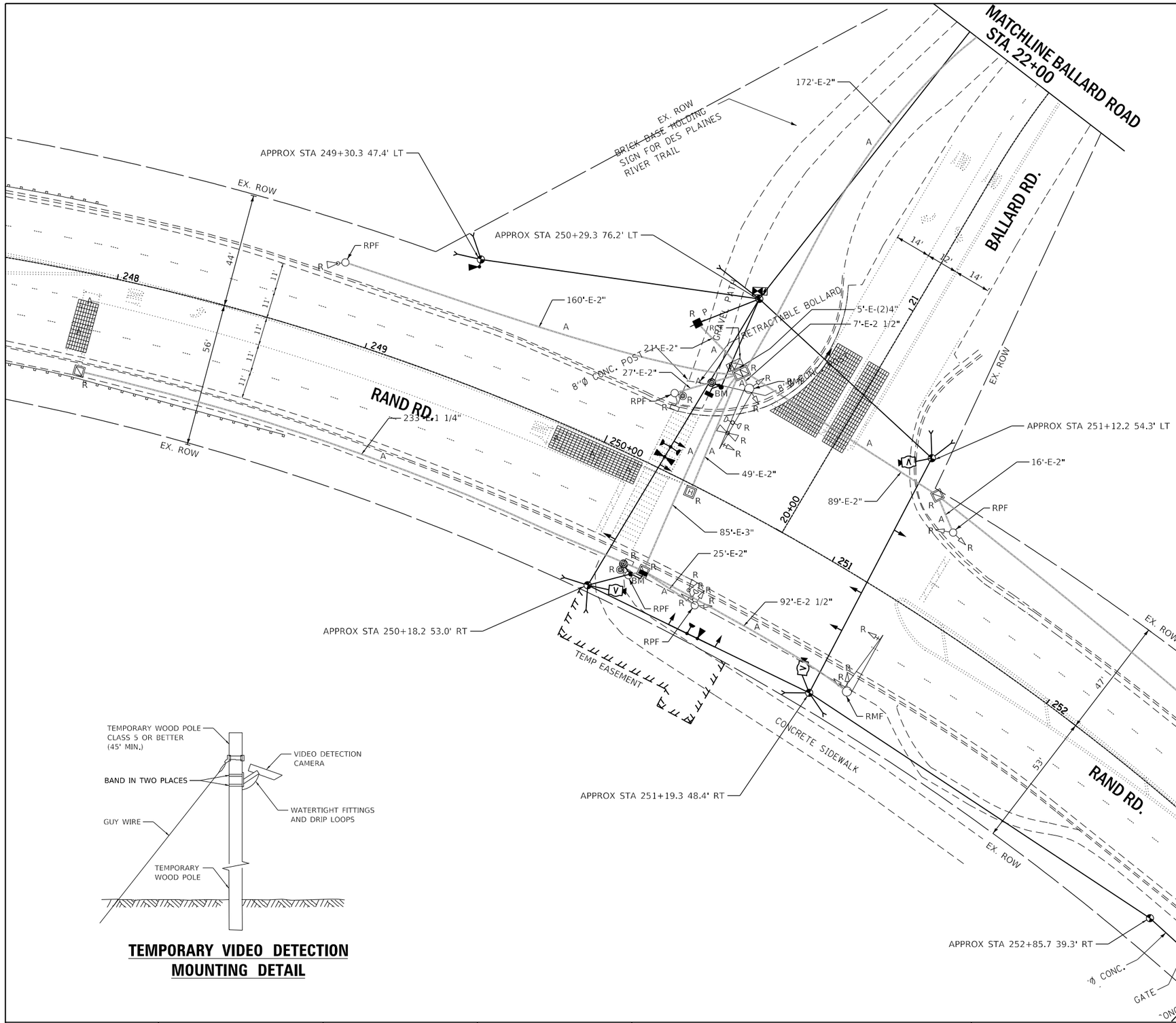
USER NAME = EtzwilleE	DESIGNED - ZH	REVISED -	
	DRAWN - ZH	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - DW	REVISED -	
PLOT DATE = 3/18/2024	DATE - 12/23/22	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MAST ARM MOUNTED STREET NAME SIGNS AND SCHEDULE OF QUANTITIES
RAND RD AND ELK BLVD

SCALE: | SHEET 6 OF 6 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	126
		CONTRACT NO. 60J10		
		ILLINOIS	FED. AID PROJECT	



TEMPORARY VIDEO DETECTION MOUNTING DETAIL

REMOVAL AND RELOCATION NOTES:

THE FOLLOWING ITEMS SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE DISPOSED OF BY THEM OUTSIDE THE RIGHT-OF-WAY AT THEIR EXPENSE. THE SALVAGE VALUE OF THE REMOVED EQUIPMENT SHALL BE REFLECTED IN THE CONTRACT BID PRICE.

7	EACH	SIGNAL HEAD, 1 FACE, 3 SECTION
4	EACH	SIGNAL HEAD, 1 FACE, 5 SECTION
2	EACH	PEDESTRIAN SIGNAL HEAD, 1 FACE
2	EACH	TRAFFIC SIGNAL BACKPLATE
2	EACH	ALUMINIUM MAST ARM AND POLE
6	EACH	SIGNAL POST
1	EACH	SERVICE INSTALLATION

THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR AND SHALL REMAIN THE PROPERTY OF THE AGENCY LISTED BELOW. THE CONTRACTOR SHALL SAFELY STORE AND ARRANGE FOR THE PICK UP OF ALL THE EQUIPMENT TO BE RETURNED TO THE LISTED AGENCY.

CITY OF DES PLAINES
CONTACT PERSON: JON DUDDLES, P.E., CFM
DEPARTMENT: PUBLIC WORKS
PHONE NUMBER: 847-391-5390

5	EACH	LIGHT DETECTOR
2	EACH	LIGHT DETECTOR BEACON
2	EACH	LIGHT DETECTOR AMPLIFIER

THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR, SHALL REMAIN THE PROPERTY OF THE STATE OF ILLINOIS, AND SHALL BE DELIVERED BY THE CONTRACTOR TO THE STATE:

1	EACH	CONTROLLER (COBALT) AND CABINET (COMPLETE)
1	EACH	UPS

TS 4160
ECON 87

TS SHT NO. 15

FILE NAME = D160110-sht-ts-Rand-Ballard-01-Temp.dgn
$MODELNAME$

CIVIL ENGINEERING CONSULTANTS
RWA Regina Webster & Associates, Inc.

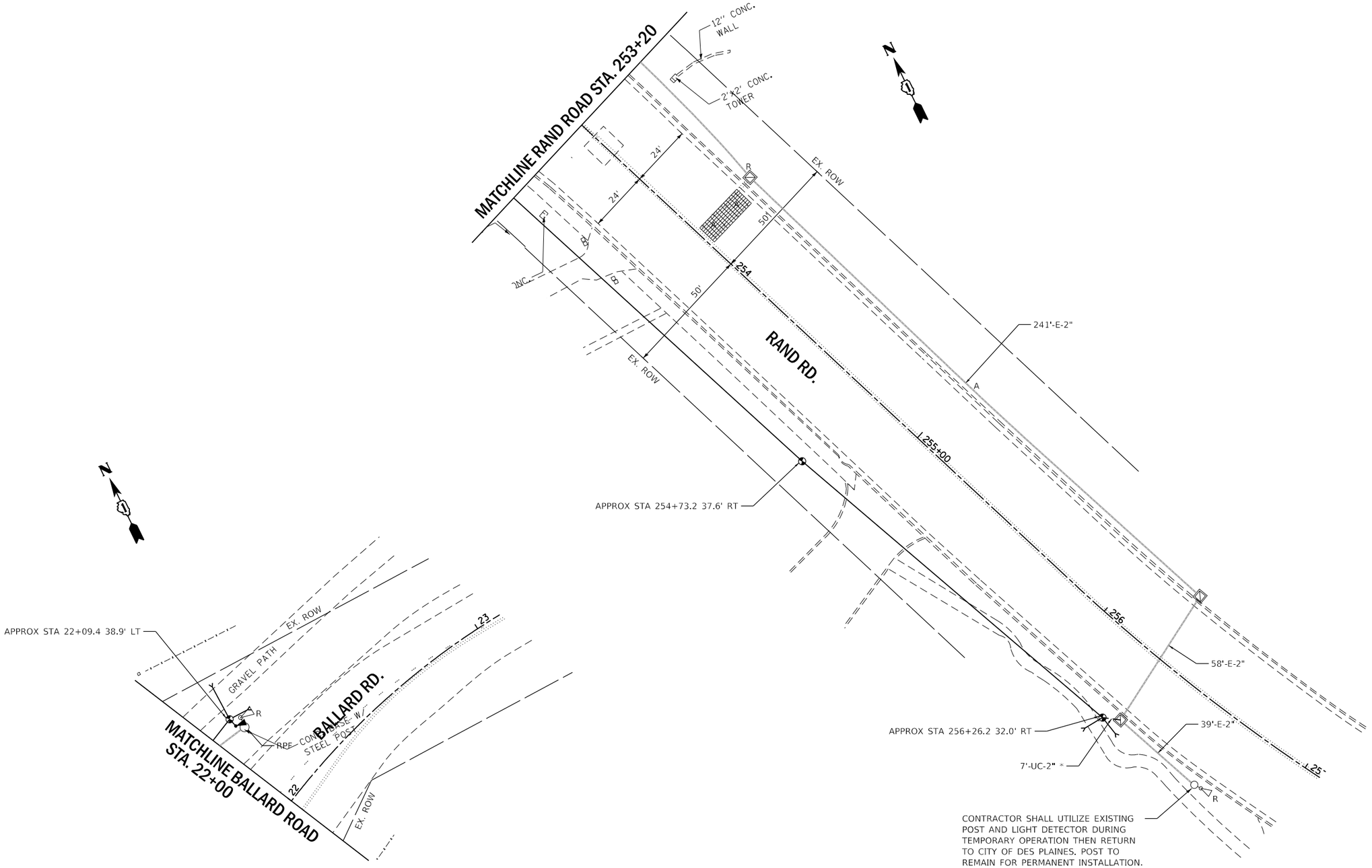
USER NAME = EtzwilleE		DESIGNED - ZH		REVISED -	
		DRAWN - ZH		REVISED -	
PLOT SCALE = 40.0000 ' / in.		CHECKED - DW		REVISED -	
PLOT DATE = 3/18/2024		DATE - 12/23/22		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL INSTALLATION
RAND ROAD AND BALLARD ROAD

SCALE: 1" = 20' | SHEET 1 OF 8 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	127
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			



* THE COST FOR THE 2" CONDUIT AND DRILLING OF THE EXISTING HANDHOLE SHALL BE INCLUDED IN THE COST FOR THE TEMPORARY TRAFFIC SIGNAL INSTALLATION.

TS 4160
ECON 87

TS SHT NO. 16

FILE NAME = D160J10-tit-ts-Rand-Ballard-02-Temp.dgn
$MODELNAMES

CIVIL ENGINEERING CONSULTANTS
RWA Regina Webster & Associates, Inc.

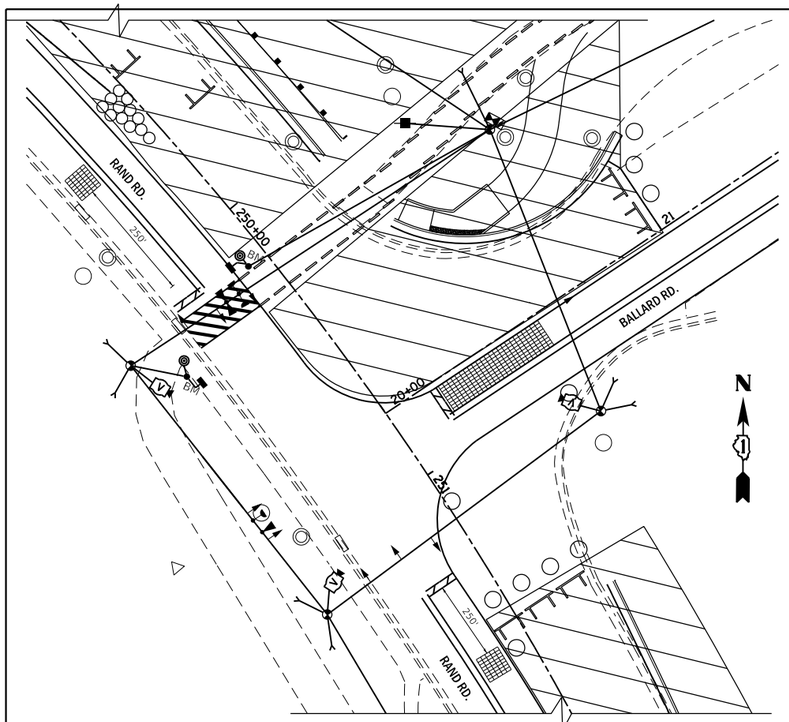
USER NAME = EtzwilleE	DESIGNED - ZH	REVISED -	
	DRAWN - ZH	REVISED -	
PLOT SCALE = 40.0000 ' / in.	CHECKED - DW	REVISED -	
PLOT DATE = 3/18/2024	DATE - 12/23/22	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

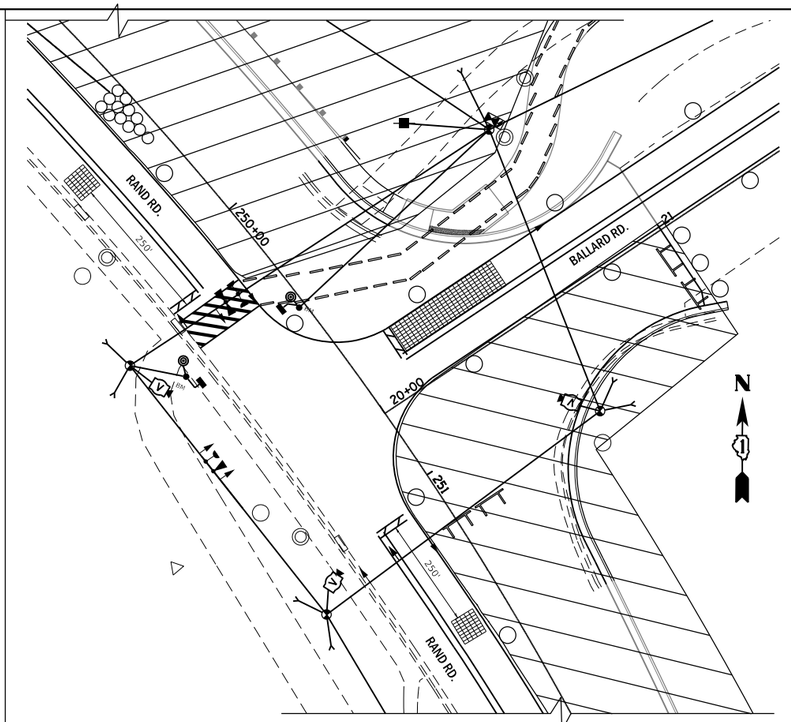
TEMPORARY TRAFFIC SIGNAL INSTALLATION
RAND ROAD AND BALLARD ROAD

SCALE: 1" = 20' | SHEET 2 OF 8 SHEETS | STA. | TO STA.

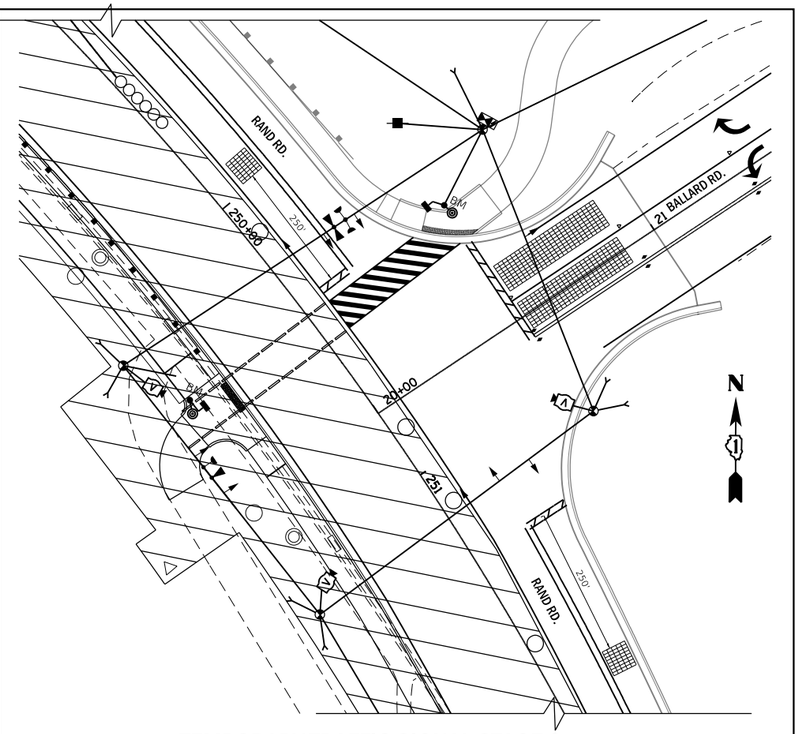
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	128
		CONTRACT NO. 60J10		
		ILLINOIS FED. AID PROJECT		



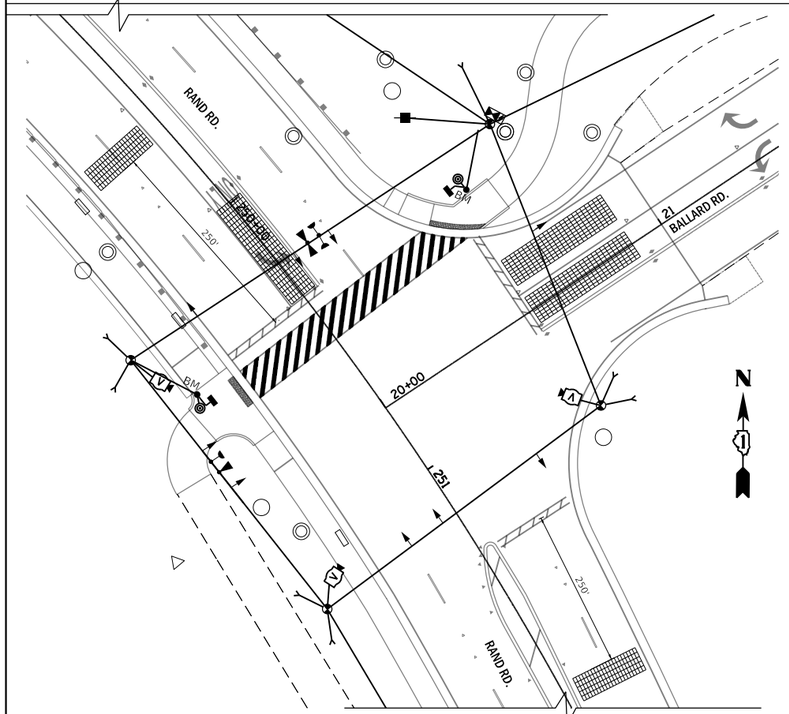
TEMPORARY TRAFFIC SIGNAL STAGE 1



TEMPORARY TRAFFIC SIGNAL STAGE 1B



TEMPORARY TRAFFIC SIGNAL STAGE 2



TEMPORARY TRAFFIC SIGNAL FINAL CONDITION

TS 4160
ECON 87

TS SHT NO. 17

FILE NAME = D160J10-sht-ts-Rand-Ballard-03-Temp.dgn
$MODELNAMES

CIVIL ENGINEERING CONSULTANTS
RWA
Regina Webster & Associates, Inc.

USER NAME = EtzwilleE	DESIGNED - ZH	REVISED -	
	DRAWN - ZH	REVISED -	
PLOT SCALE = 80.000 ' / in.	CHECKED - DW	REVISED -	
PLOT DATE = 3/18/2024	DATE - 12/23/22	REVISED -	

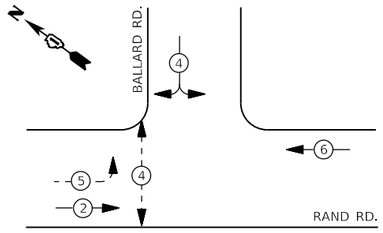
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY TRAFFIC SIGNAL INSTALLATION
STAGE CONSTRUCTION PLAN
RAND ROAD AT BALLARD ROAD

SCALE: N.T.S. | SHEET 3 OF 8 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	129
		CONTRACT NO. 60J10		
		ILLINOIS	FED. AID PROJECT	

PROPOSED CONTROLLER SEQUENCE

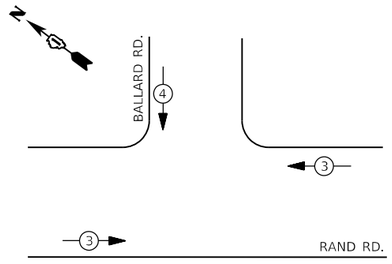


NOTE:
1. PHASE 5 SHALL BE ON ADVANCED RECALL DURING STAGE 1, 1B, & 2.

LEGEND:

- PROTECTED PHASE
- PROTECTED/PERMITTED PHASE
- PEDESTRIAN PHASE
- OL — OVERLAP

PROPOSED EMERGENCY VEHICLE PREEMPTION SEQUENCE



TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS

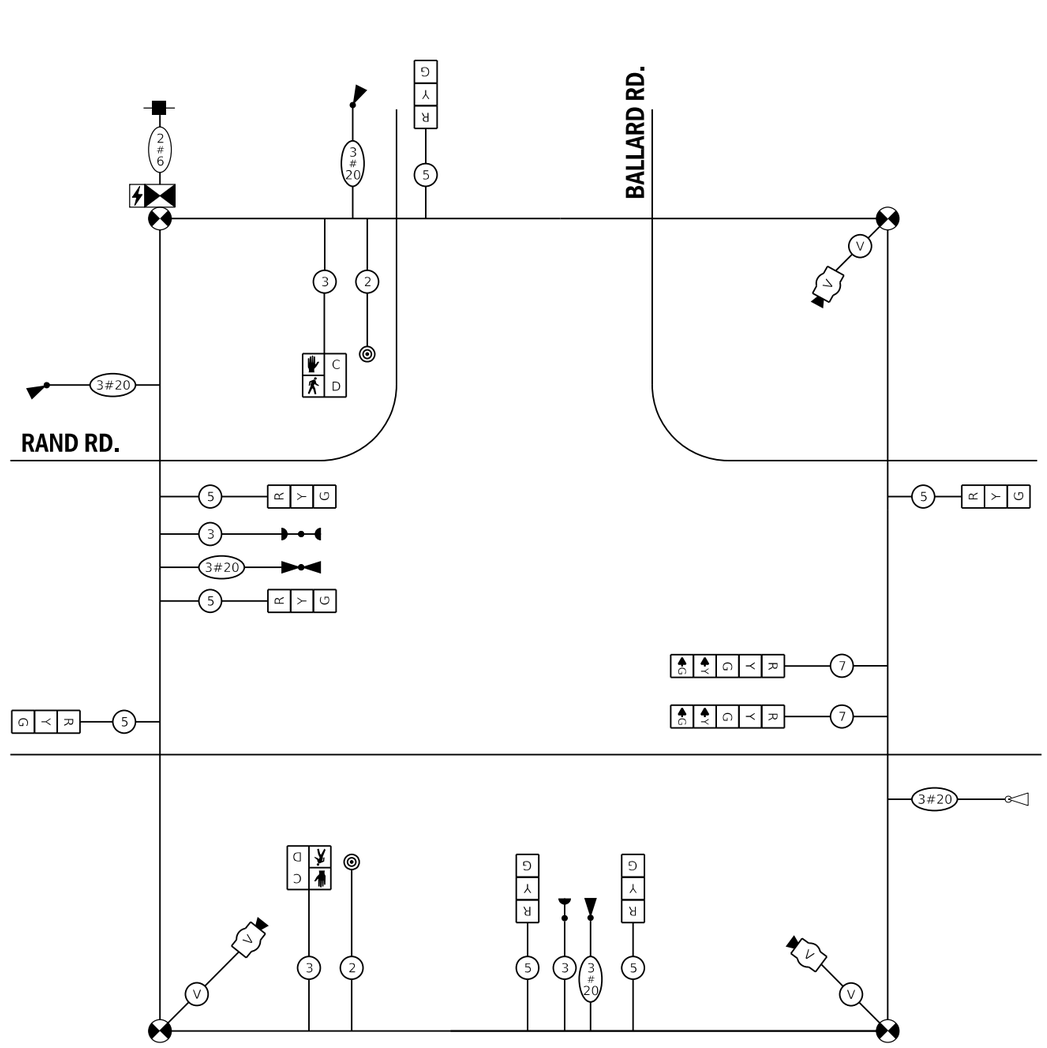
TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	9	11	50	49.5
(YELLOW)	9	20	5	9.0
(GREEN)	9	12	45	48.6
PERMISSIVE ARROW	4	10	10	4.0
PED. SIGNAL	2	20	100	40.0
CONTROLLER	1	100	100	100.0
UPS	1	25	100	25.0
VIDEO SYSTEM	1	150	100	150.0
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	-	-	-	-
			TOTAL =	426.1

ENERGY COSTS TO:

CITY OF DES PLAINES

1420 MINER ST
DES PLAINES, IL 60016

ENERGY SUPPLY: CONTACT: DAVE SCHACHT
PHONE: (630) 437-2129
COMPANY: COMMONWEALTH EDISON
ACCOUNT NUMBER: 00270-86219



TEMPORARY CABLE PLAN
(NOT TO SCALE)

TS SHT NO. 18

TS 4160
ECON 87

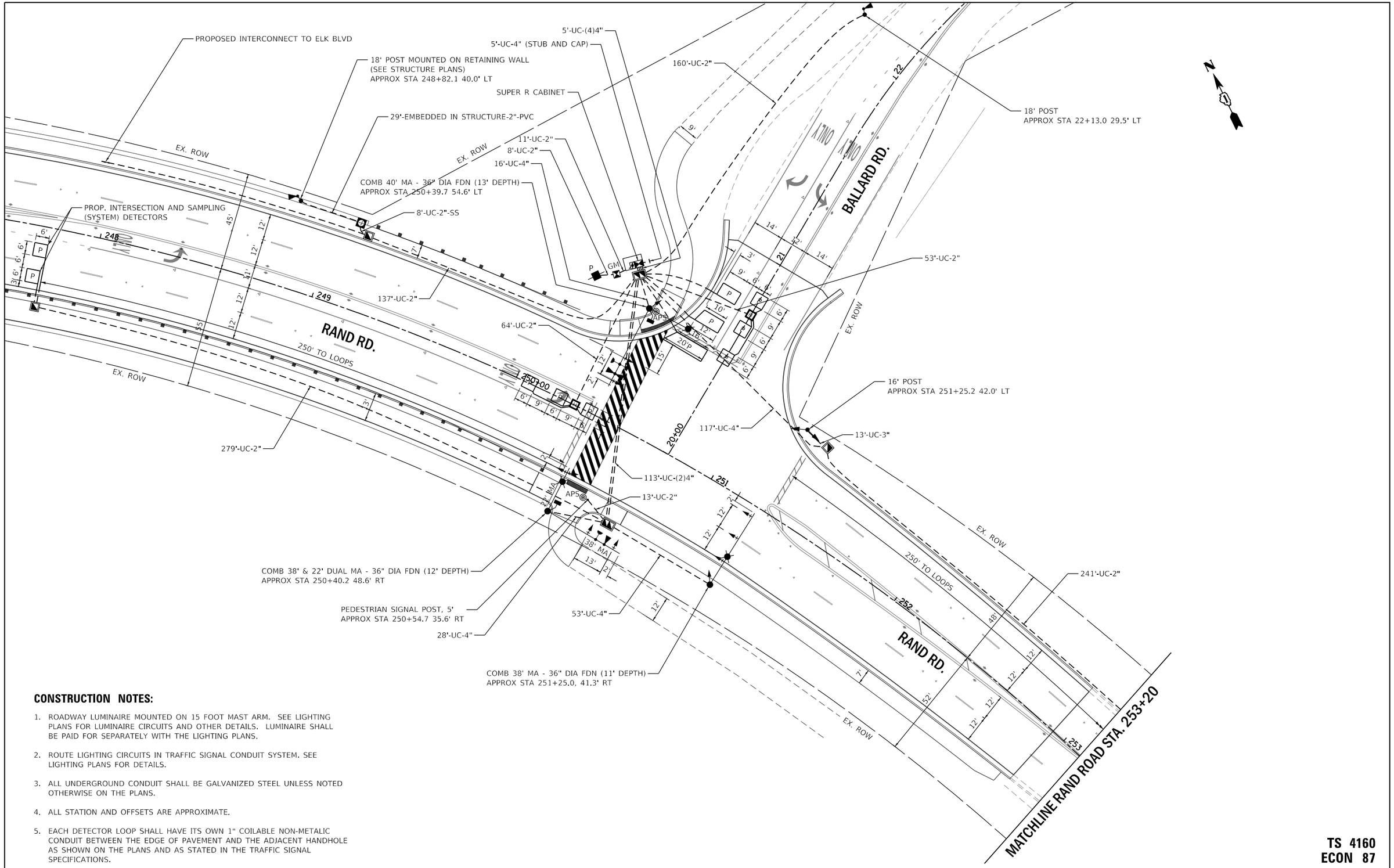
FILE NAME = D160110-sht-ts-Rand-Ballard-04-Temp Cable.dgn
$MODELNAME$

CIVIL ENGINEERING CONSULTANTS RWA Regina Webster & Associates, Inc.	USER NAME = EtzwilleE	DESIGNED - ZH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN - ZH	REVISED -	
	PLOT SCALE = 40.000 ' / in.	CHECKED - DW	REVISED -	
	PLOT DATE = 3/18/2024	DATE - 12/23/22	REVISED -	

RAND ROAD AT BALLARD ROAD
TEMPORARY CABLE PLAN, TEMPORARY PHASE DESIGNATION DIAGRAM & TEMPORARY EMERGENCY VEHICLE PREEMPTION SEQUENCE – STAGE 1, 1B, 2 & FINAL

SCALE: N.T.S. | SHEET 4 OF 8 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	130
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			



CONSTRUCTION NOTES:

1. ROADWAY LUMINAIRE MOUNTED ON 15 FOOT MAST ARM. SEE LIGHTING PLANS FOR LUMINAIRE CIRCUITS AND OTHER DETAILS. LUMINAIRE SHALL BE PAID FOR SEPARATELY WITH THE LIGHTING PLANS.
2. ROUTE LIGHTING CIRCUITS IN TRAFFIC SIGNAL CONDUIT SYSTEM. SEE LIGHTING PLANS FOR DETAILS.
3. ALL UNDERGROUND CONDUIT SHALL BE GALVANIZED STEEL UNLESS NOTED OTHERWISE ON THE PLANS.
4. ALL STATION AND OFFSETS ARE APPROXIMATE.
5. EACH DETECTOR LOOP SHALL HAVE ITS OWN 1" COILABLE NON-METALIC CONDUIT BETWEEN THE EDGE OF PAVEMENT AND THE ADJACENT HANDHOLE AS SHOWN ON THE PLANS AND AS STATED IN THE TRAFFIC SIGNAL SPECIFICATIONS.

TS 4160
ECON 87

TS SHT NO. 19

FILE NAME = D1601l0-sht-1s-Rand-Ballard-05.dgn
$MODELNAMES

CIVIL ENGINEERING CONSULTANTS
RWA
Regina Webster & Associates, Inc.

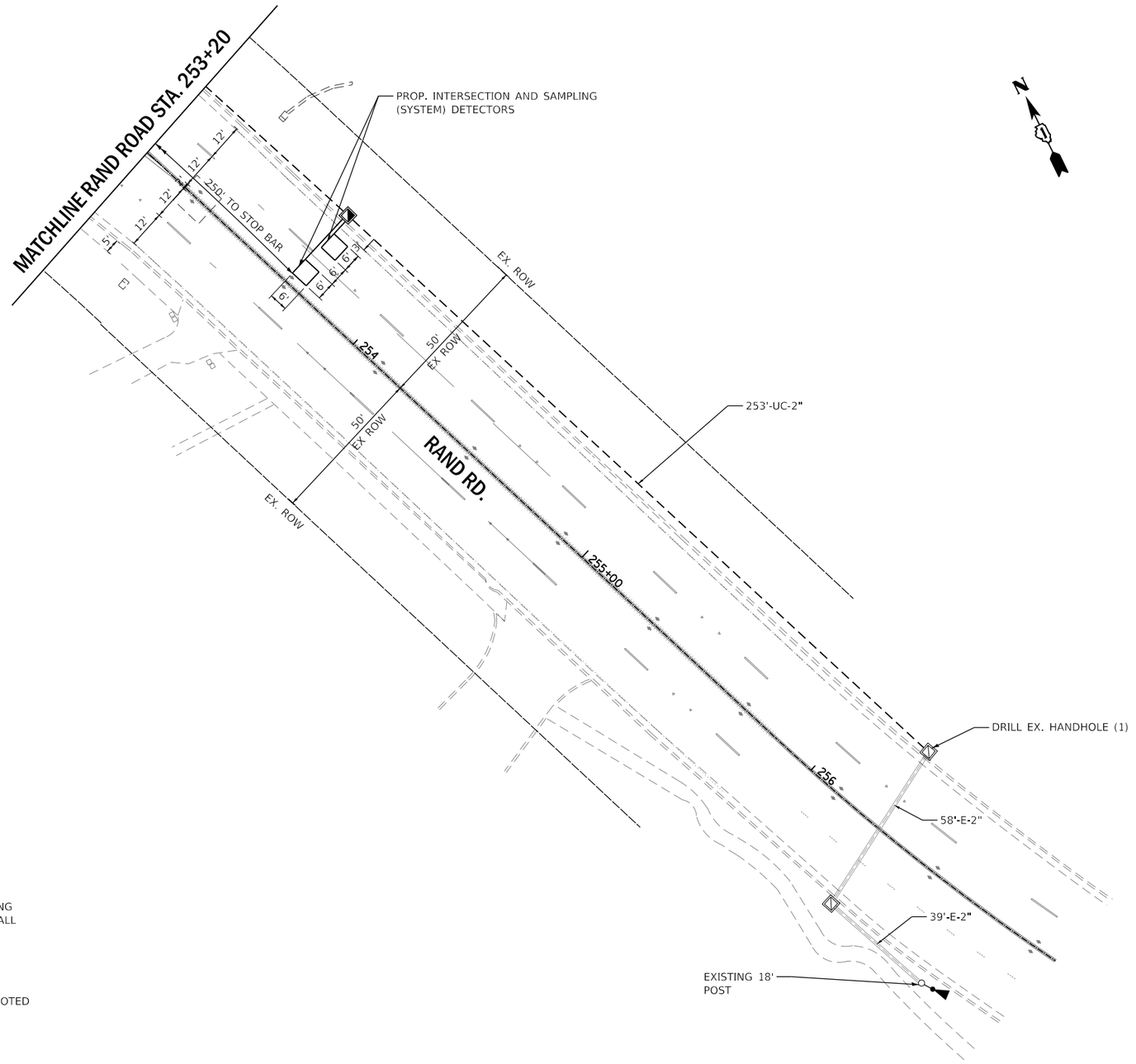
USER NAME = EtzwilleE	DESIGNED - ZH	REVISED -	
	DRAWN - ZH	REVISED -	
PLOT SCALE = 40.0000 ' / in.	CHECKED - DW	REVISED -	
PLOT DATE = 3/18/2024	DATE - 12/23/22	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL MODERNIZATION PLAN
RAND ROAD AND BALLARD ROAD

SCALE: 1"= 20' | SHEET 5 OF 8 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	131
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			



CONSTRUCTION NOTES:

1. ROADWAY LUMINAIRE MOUNTED ON 15 FOOT MAST ARM. SEE LIGHTING PLANS FOR LUMINAIRE CIRCUITS AND OTHER DETAILS. LUMINAIRE SHALL BE PAID FOR SEPARATELY WITH THE LIGHTING PLANS.
2. ROUTE LIGHTING CIRCUITS IN TRAFFIC SIGNAL CONDUIT SYSTEM. SEE LIGHTING PLANS FOR DETAILS.
3. ALL UNDERGROUND CONDUIT SHALL BE GALVANIZED STEEL UNLESS NOTED OTHERWISE ON THE PLANS.
4. ALL STATION AND OFFSETS ARE APPROXIMATE.
5. EACH DETECTOR LOOP SHALL HAVE ITS OWN 1" COILABLE NON-METALIC CONDUIT BETWEEN THE EDGE OF PAVEMENT AND THE ADJACENT HANDHOLE AS SHOWN ON THE PLANS AND AS STATED IN THE TRAFFIC SIGNAL SPECIFICATIONS.

TS 4160
ECON 87

TS SHT NO. 20

FILE NAME = D160110-sht-1s-Rand-Ballard-06.dgn
SMODELNAMES

CIVIL ENGINEERING CONSULTANTS
RWA Regina Webster & Associates, Inc.

USER NAME = EtzwilleE	DESIGNED - ZH	REVISED -	
	DRAWN - ZH	REVISED -	
PLOT SCALE = 40.0000 ' / in.	CHECKED - DW	REVISED -	
PLOT DATE = 3/18/2024	DATE - 12/23/22	REVISED -	

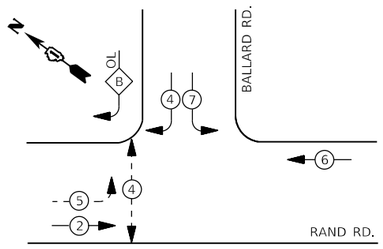
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SIGNAL MODERNIZATION PLAN
RAND ROAD AND BALLARD ROAD

SCALE: 1'' = 20' | SHEET 6 OF 8 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	132
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

PROPOSED CONTROLLER SEQUENCE



ADVANCED PEDESTRIAN PHASING SHALL BE USED FOR PEDESTRIAN PHASE 4 OR AS DIRECTED BY THE ENGINEER

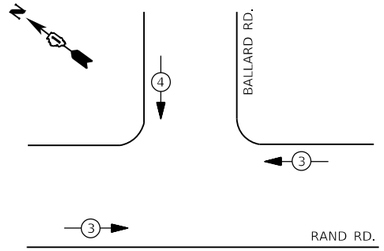
LEGEND:

- PROTECTED PHASE
- PROTECTED/PERMITTED PHASE
- PEDESTRIAN PHASE
- OL — OVERLAP

RIGHT TURN OVERLAP PHASE DESIGNATION:

OVERLAP LETTER		PERMISSIVE PHASE		PROTECTED PHASE
B	=	4	+	5

PROPOSED EMERGENCY VEHICLE PREEMPTION SEQUENCE



TRAFFIC SIGNAL ELECTRICAL SERVICE REQUIREMENTS

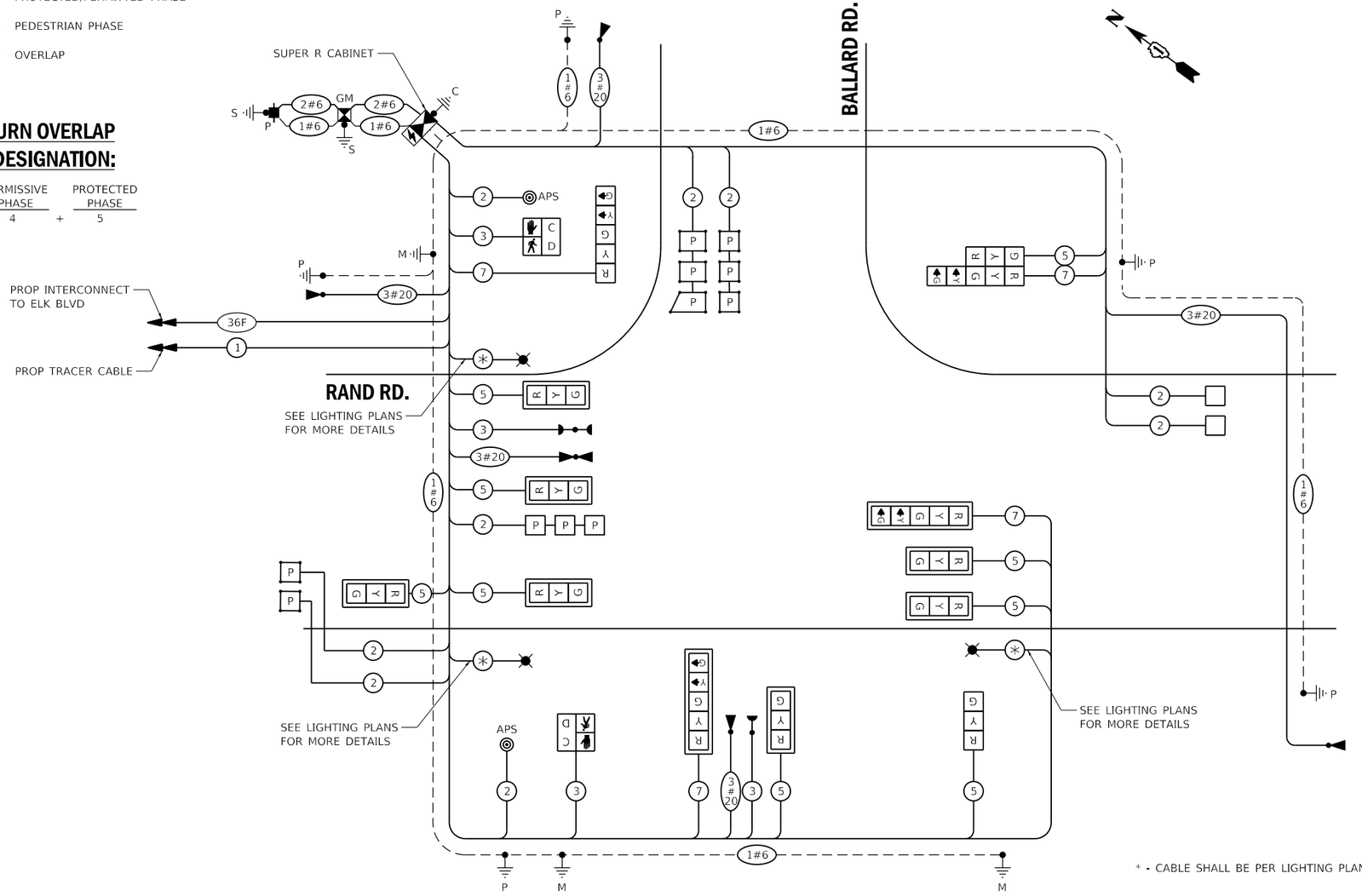
TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	13	11	50	71.5
(YELLOW)	13	20	5	13.0
(GREEN)	13	12	45	70.2
PERMISSIVE ARROW	8	10	10	8.0
PED. SIGNAL	2	20	100	40.0
CONTROLLER	1	100	100	100.0
UPS	1	25	100	25.0
VIDEO SYSTEM	-	150	100	-
BLANK-OUT SIGN	-	25	5	-
FLASHER	-	-	50	-
STREET NAME SIGN	-	120	50	-
LUMINAIRE	3	250	50	375.0
			TOTAL =	702.7

ENERGY COSTS TO:

CITY OF DES PLAINES

1420 MINER ST
DES PLAINES, IL 60016

ENERGY SUPPLY: CONTACT: DAVE SCHACHT
PHONE: (630) 437-2129
COMPANY: COMMONWEALTH EDISON
ACCOUNT NUMBER: 00270-86219



* - CABLE SHALL BE PER LIGHTING PLANS

CABLE PLAN
(NOT TO SCALE)

TS 4160
ECON 87

TS SHT NO. 21

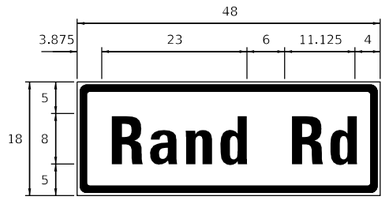
FILE NAME = D160110-sht-ts-Rand-Ballard-07-Cable.dgn
$MODELNAMES

CIVIL ENGINEERING CONSULTANTS RWA Regina Webster & Associates, Inc.	USER NAME = EtzwilleE	DESIGNED - ZH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	RAND ROAD AND BALLARD ROAD CABLE PLAN, SCHEDULE OF QUANTITIES, PHASE DESIGNATION DIAGRAM & EMERGENCY VEHICLE PREEMPTION SEQUENCE
		DRAWN - ZH	REVISED -		
	PLOT SCALE = 40.000 ' / in.	CHECKED - DW	REVISED -		SCALE: N.T.S. SHEET 7 OF 8 SHEETS STA. TO STA.
	PLOT DATE = 3/18/2024	DATE - 12/23/22	REVISED -		

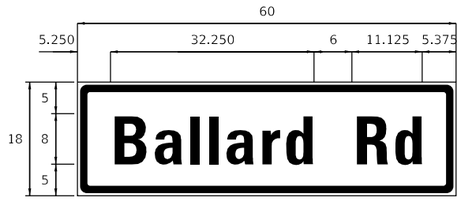
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	133
		CONTRACT NO. 60J10		
		ILLINOIS	FED. AID PROJECT	

SIGN PANEL - TYPE 1 OR TYPE 2

ALL DIMENSIONS ARE IN INCHES UNLESS NOTED OTHERWISE.



DESIGN SERIES	AREA (SQ FT)	SIGN PANEL TYPE	SHEETING TYPE	QUANTITY REQUIRED
D	6	1	ZZ	1



DESIGN SERIES	AREA (SQ FT)	SIGN PANEL TYPE	SHEETING TYPE	QUANTITY REQUIRED
D	7.5	1	ZZ	2

NOTE:
FOR ADDITIONAL DESIGN AND INSTALLATION INFORMATION PLEASE SEE DISTRICT ONE MAST ARM MOUNTED STREET NAME SIGN DETAIL.

SCHEDULE OF QUANTITIES

	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY
	SIGN PANEL - TYPE 1	SQ FT	21
	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2" DIA.	FOOT	1219
	UNDERGROUND CONDUIT, GALVANIZED STEEL, 3" DIA.	FOOT	13
	UNDERGROUND CONDUIT, GALVANIZED STEEL, 4" DIA.	FOOT	465
	CONDUIT EMBEDDED IN STRUCTURE, 2" DIA., PVC	FOOT	29
	HANDHOLE	EACH	4
	HEAVY-DUTY HANDHOLE	EACH	2
	DOUBLE HANDHOLE	EACH	2
	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C	FOOT	215
	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C	FOOT	560
	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C	FOOT	1755
	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C	FOOT	720
	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	1855
	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6 2 C	FOOT	65
	ELECTRIC CABLE IN CONDUIT, EQUIPMENT GROUNDING CONDUCTOR, NO. 6 1C	FOOT	1545
	TRAFFIC SIGNAL POST, GALVANIZED STEEL 16 FT.	EACH	1
	TRAFFIC SIGNAL POST, GALVANIZED STEEL 18 FT.	EACH	2
	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 38 FT.	EACH	1
	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE 40 FT.	EACH	1
	CONCRETE FOUNDATION, TYPE A	FOOT	12
	CONCRETE FOUNDATION, TYPE C	FOOT	4
	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER	FOOT	36
	DRILL EXISTING HANDHOLE	EACH	1
	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST-ARM MOUNTED	EACH	7
	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED	EACH	2
	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED	EACH	2
	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST-ARM MOUNTED	EACH	2
	PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER	EACH	2
	TRAFFIC SIGNAL BACKPLATE, LOUVERED, FORMED PLASTIC	EACH	9
	INDUCTIVE LOOP DETECTOR	EACH	7
	DETECTOR LOOP, TYPE I	FOOT	66
	PREFORMED DETECTOR LOOP	FOOT	400
*	LIGHT DETECTOR	EACH	5
*	LIGHT DETECTOR AMPLIFIER	EACH	1
	TEMPORARY TRAFFIC SIGNAL INSTALLATION	EACH	1
	REMOVE ELECTRIC CABLE FROM CONDUIT	FOOT	97
	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	EACH	1
	REMOVE EXISTING HANDHOLE	EACH	5
	REMOVE EXISTING DOUBLE HANDHOLE	EACH	1
	REMOVE EXISTING CONCRETE FOUNDATION	EACH	9
	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE WITH DUAL MAST ARMS, 22 FT. AND 38 FT.	EACH	1
*	EMERGENCY VEHICLE PRIORITY SYSTEM LINE SENSOR CABLE, NO. 20 3/C	FOOT	1540
	ROD AND CLEAN EXISTING CONDUIT	FOOT	97
	FULL-ACTUATED CONTROLLER AND TYPE SUPER R CABINET (SPECIAL)	EACH	1
	SERVICE INSTALLATION, GROUND MOUNTED, METERED	EACH	1
	UNDERGROUND CONDUIT, STAINLESS STEEL, 2" DIA.	FOOT	8
	PEDESTRIAN SIGNAL POST, 5 FT.	EACH	1
	UNINTERRUPTABLE POWER SUPPLY, SPECIAL	EACH	1
	ACCESSIBLE PEDESTRIAN SIGNALS	EACH	2
	CONCRETE FOUNDATION, TYPE A 12-INCH DIAMETER	FOOT	4
	TEMPORARY TRAFFIC SIGNAL TIMING	EACH	1

* - 100% COST TO THE CITY OF DES PLAINES

TS 4160
ECON 87

TS SHT NO. 22

FILE NAME = D160110-sht-ts-Rand-Ballard-08-SOQ.dgn
$MODELNAME$

CIVIL ENGINEERING CONSULTANTS
RWA
Regina Webster & Associates, Inc.

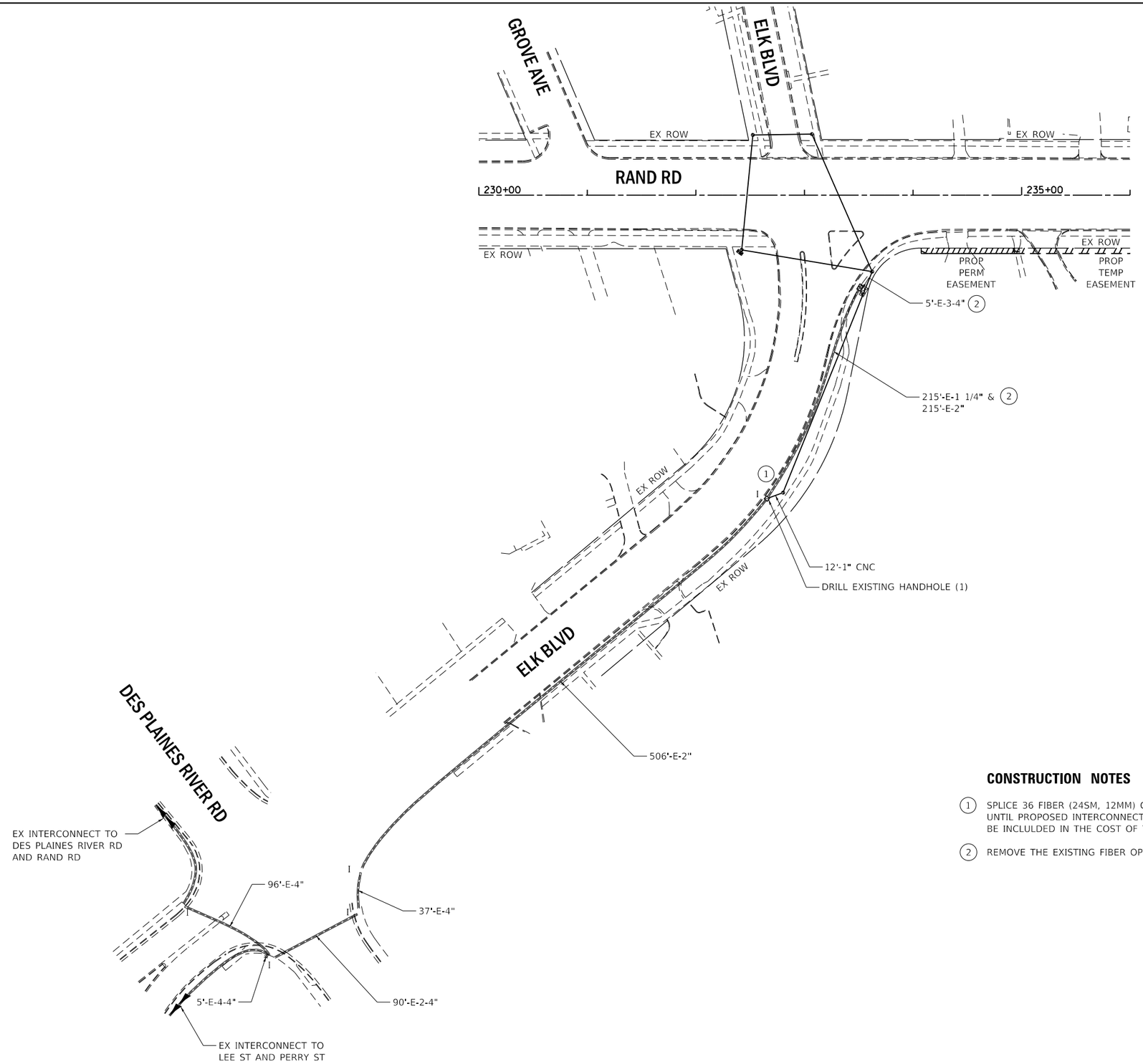
USER NAME = EtzwilleE	DESIGNED - ZH	REVISED -	
	DRAWN - ZH	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - DW	REVISED -	
PLOT DATE = 3/18/2024	DATE - 12/23/22	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MAST ARM MOUNTED STREET NAME SIGNS AND SCHEDULE OF QUANTITIES
RAND RD AND BALLARD RD

SCALE: | SHEET 8 OF 8 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	134
		CONTRACT NO. 60J10		
		ILLINOIS	FED. AID PROJECT	



CONSTRUCTION NOTES

(1) SPLICE 36 FIBER (24SM, 12MM) CABLE TO EXISTING FIBER CABLE TO MAINTAIN EXISTING INTERCONNECT UNTIL PROPOSED INTERCONNECT IS FULLY OPERATIONAL. 1" CNC AND DRILL EXISTING HANDHOLE TO BE INCLULDED IN THE COST OF TEMPORARY TRAFFIC SIGNAL INSTALLATION.

(2) REMOVE THE EXISTING FIBER OPTIC AND TRACER CABLE FROM THE EXISTING CONDUIT.

ECON 87

TS SHT NO. 23

FILE NAME = D160J10-sht-ts-interconnp-01.dgn

$MODELNAME$

CIVIL ENGINEERING CONSULTANTS
RWA
Regina Webster & Associates, Inc.

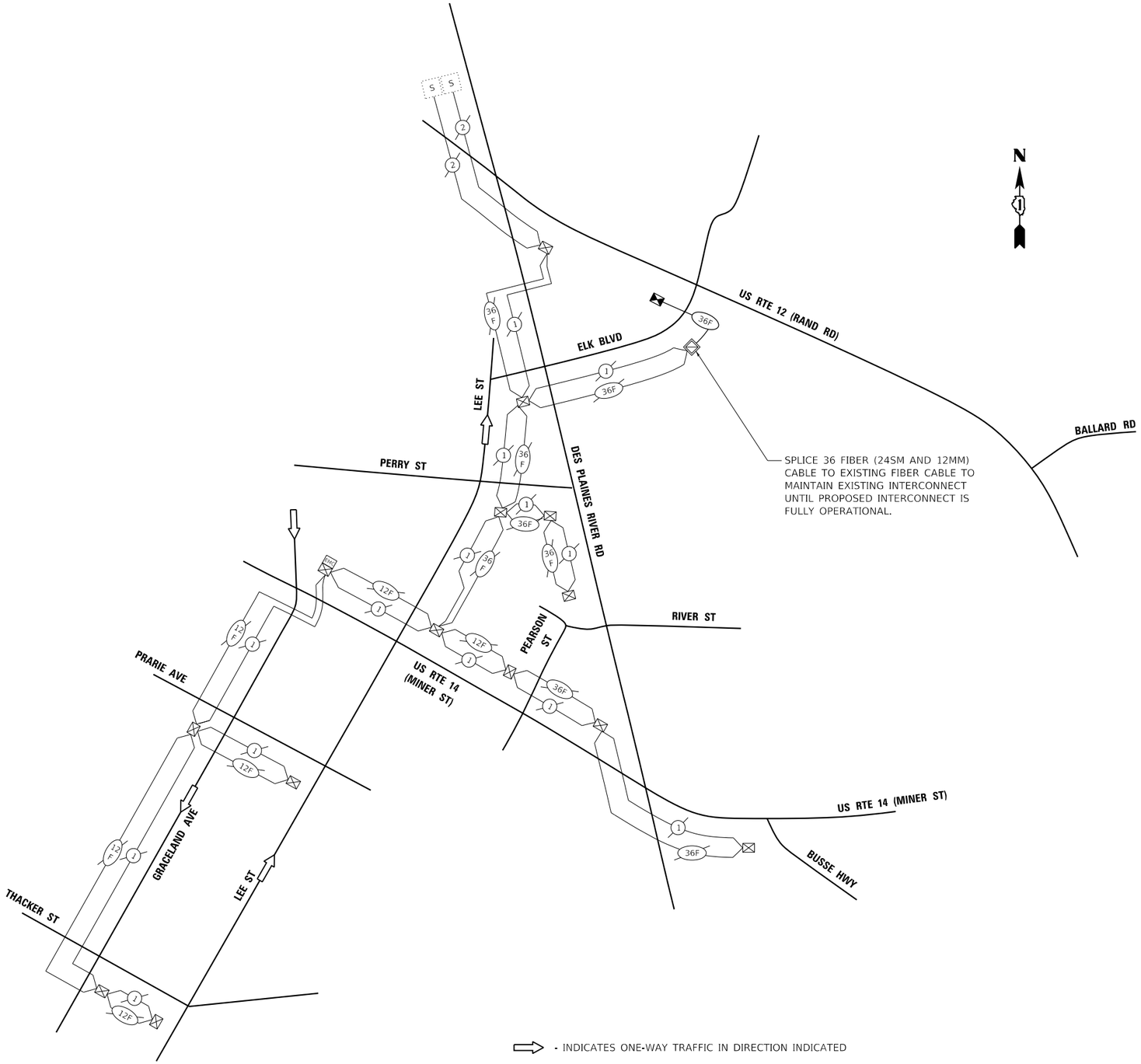
USER NAME = EtzwilleE	DESIGNED - ZH	REVISED -	
	DRAWN - ZH	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - DW	REVISED -	
PLOT DATE = 3/18/2024	DATE - 12/23/22	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY INTERCONNECT PLAN
ELK BLVD FROM RIVER RD TO RAND RD

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

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	135
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			



TS SHT NO. 24

ECON 87

FILE NAME = D160110-sht-ts-intconn\mp02-schem.dgn

$MODELNAME$

CIVIL ENGINEERING CONSULTANTS
RWA
Regina Webster & Associates, Inc.

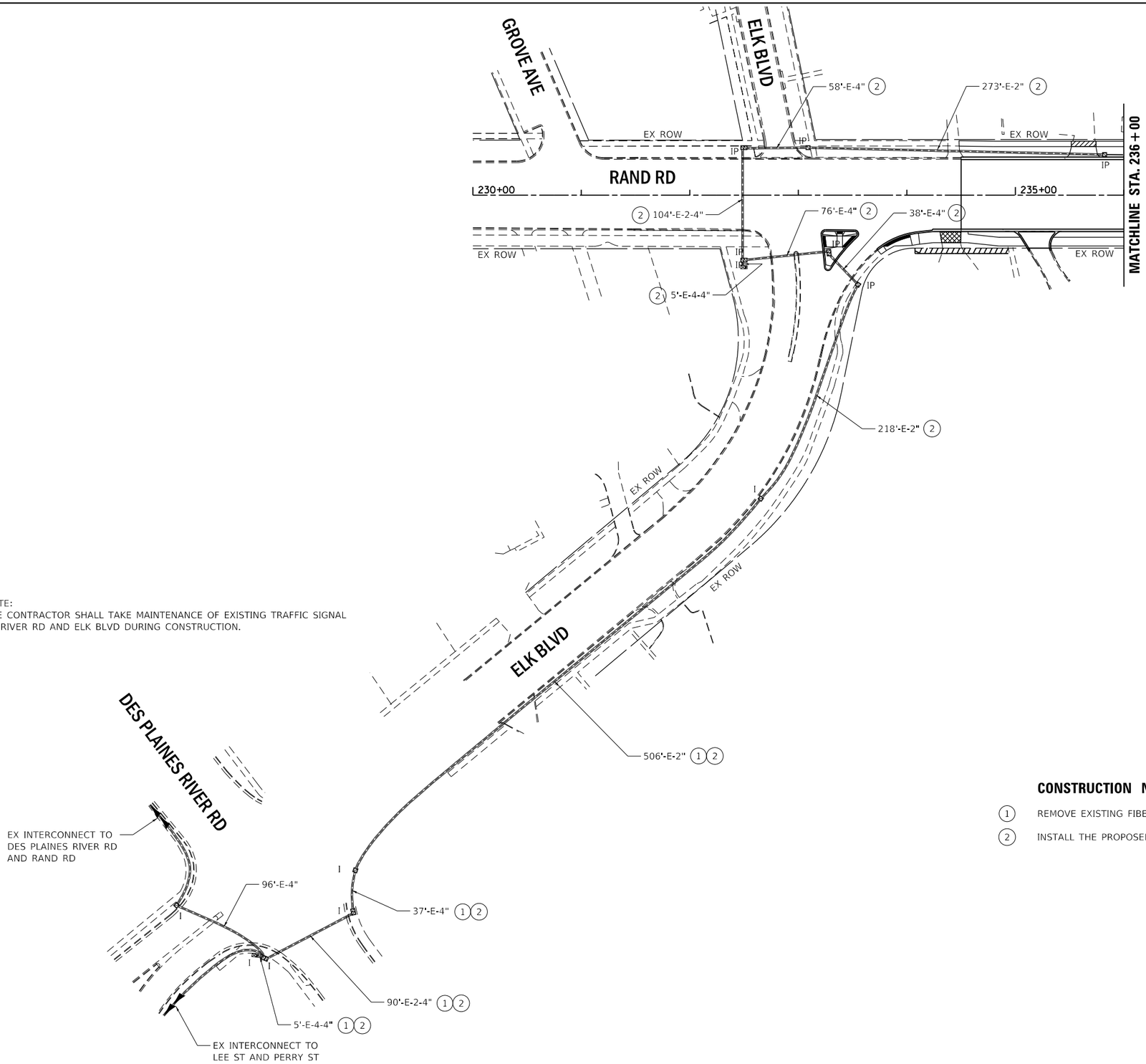
USER NAME = EtzwilleE	DESIGNED - ZH	REVISED -	
	DRAWN - ZH	REVISED -	
PLOT SCALE = 600.0000 ' / in.	CHECKED - DW	REVISED -	
PLOT DATE = 3/18/2024	DATE - 12/23/22	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY INTERCONNECT SCHEMATIC
ELK BLVD FROM RIVER RD TO RAND RD

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

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	136
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			



NOTE:
THE CONTRACTOR SHALL TAKE MAINTENANCE OF EXISTING TRAFFIC SIGNAL AT RIVER RD AND ELK BLVD DURING CONSTRUCTION.

CONSTRUCTION NOTES

(1) REMOVE EXISTING FIBER OPTIC CABLE AND TRACER CABLE FROM THE EXISTING CONDUIT.

(2) INSTALL THE PROPOSED FIBER OPTIC CABLE AND TRACER CABLE.

ECON 87

TS SHT NO. 25

FILE NAME = D160110-sht-ts-intcon01.dgn

$MODELNAME$

CIVIL ENGINEERING CONSULTANTS
RWA
Regina Webster & Associates, Inc.

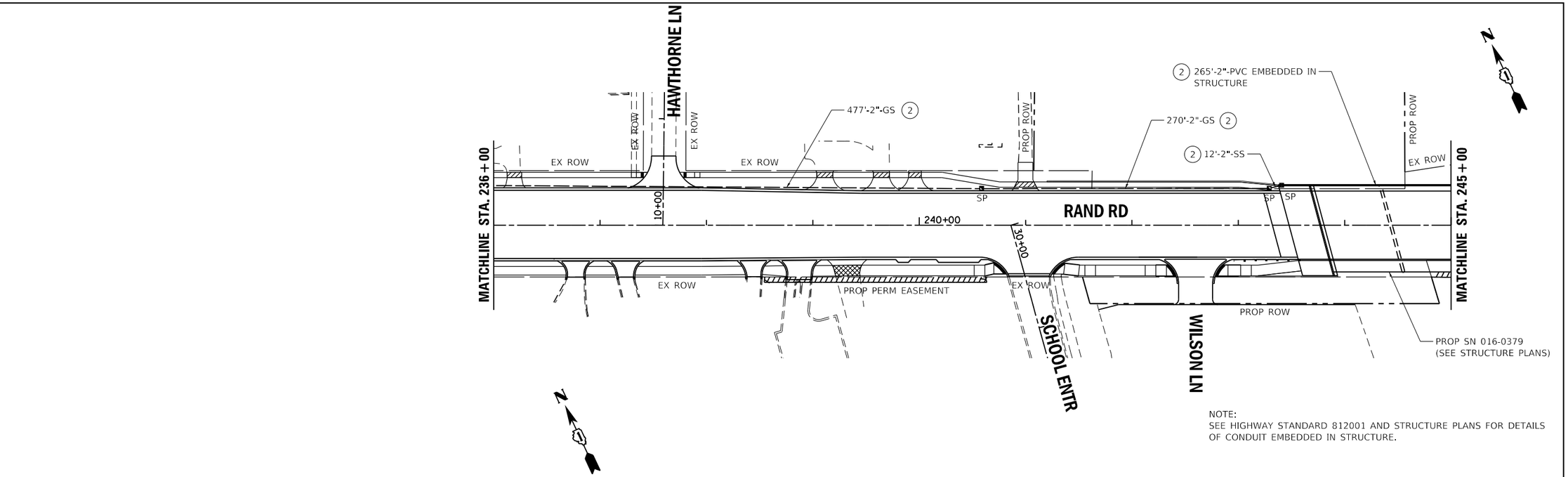
USER NAME = EtzwilleE	DESIGNED - ZH	REVISED -	
	DRAWN - ZH	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - DW	REVISED -	
PLOT DATE = 3/18/2024	DATE - 12/23/22	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED INTERCONNECT PLAN
RAND RD FROM ELK BLVD TO BALLARD RD

SCALE: 1" = 50' | SHEET 1 OF 3 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	137
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			



CONSTRUCTION NOTES

(1) REMOVE EXISTING FIBER OPTIC CABLE AND TRACER CABLE FROM THE EXISTING CONDUIT.

(2) INSTALL THE PROPOSED FIBER OPTIC CABLE AND TRACER CABLE.

TS SHT NO. 26

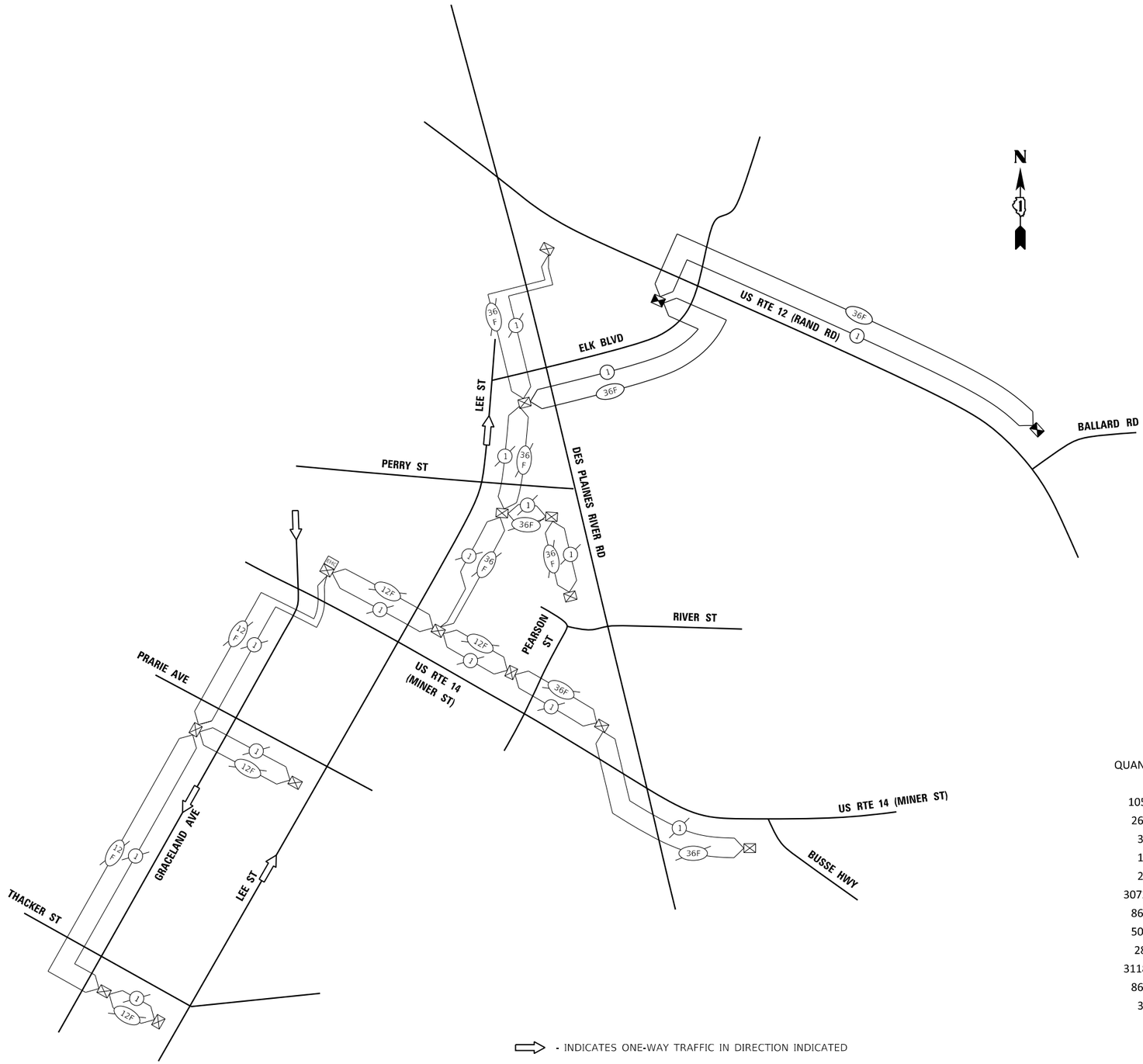
ECON 87

FILE NAME = D160J10-sht-ts-incon02.dgn

$MODELNAME$

CIVIL ENGINEERING CONSULTANTS RWA Regina Webster & Associates, Inc.	USER NAME = EtzwilleE	DESIGNED - ZH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PROPOSED INTERCONNECT PLAN RAND RD FROM ELK BLVD TO BALLARD RD
		DRAWN - ZH	REVISED -		
	PLOT SCALE = 100.0000 ' / in.	CHECKED - DW	REVISED -		SCALE: 1" = 50' SHEET 2 OF 3 SHEETS STA. TO STA.
	PLOT DATE = 3/18/2024	DATE - 12/23/22	REVISED -		

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	138
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			



NOTE:
AFTER PROPOSED INTERCONNECT IS CONSTRUCTED THE FOLLOWING INTERSECTIONS SHALL BE RE-OPTIMIZED (LEVEL 2):

- RIVER RD AND ELK BLVD
- RAND RD AND ELK BLVD
- RAND RD AND BALLARD RD

SCHEDULE OF QUANTITIES

QUANTITY	UNIT	PAY ITEM DESCRIPTION
1052	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2" DIA.
265	FOOT	CONDUIT EMBEDDED IN STRUCTURE, 2" DIA., PVC
3	EACH	HANDHOLE
1	EACH	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION
2	EACH	TRANSCEIVER - FIBER OPTIC
3072.5	FOOT	ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1C
860	FOOT	REMOVE ELECTRIC CABLE FROM CONDUIT
506	FOOT	ROD AND CLEAN EXISTING CONDUIT
28	FOOT	UNDERGROUND CONDUIT, STAINLESS STEEL, 2" DIA.
3118.5	FOOT	FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM24F
860	FOOT	REMOVE FIBER OPTIC CABLE FROM CONDUIT
3	EACH	RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM LEVEL 2

⇨ - INDICATES ONE-WAY TRAFFIC IN DIRECTION INDICATED

ECON 87

TS SHT NO. 27

FILE NAME = D160110-sht-ts-intconn03-schem.dgn
$MODELNAME$

CIVIL ENGINEERING CONSULTANTS
RWA Regina Webster & Associates, Inc.

USER NAME = EtzwilleE		DESIGNED - ZH	REVISED -	
		DRAWN - ZH	REVISED -	
PLOT SCALE = 600.0000 ' / in.		CHECKED - DW	REVISED -	
PLOT DATE = 3/18/2024		DATE - 12/23/22	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED INTERCONNECT SCHEMATIC
RAND RD FROM ELK BLVD TO BALLARD RD

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

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	139
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

GENERAL NOTES:

1. THIS PROJECT INCLUDES THE INSTALLATION OF NEW LIGHTING ALONG RAND ROAD FROM EAST OF DES PLAINES RIVER RD. TO BALLARD RD. THE LIGHTING SHALL BE CONNECTED TO THE EXISTING LIGHTING CONTROLLER "AD". PROPOSED LIGHTING SHALL BE OWNED AND MAINTAINED BY THE STATE OF ILLINOIS, DEPARTMENT OF TRANSPORTATION.
2. MEADE ELECTRIC CO. DISTRICT 1 ELECTRICAL MAINTENANCE CONTRACTOR LOCATES IDOT ELECTRICAL EQUIPMENT AND UNDERGROUND CABLES. CALL MEADE ELECTRIC CO. TO TRANSFER IDOT MAINTAINED EQUIPMENT TO THE CONTRACTOR BEFORE THE START OF ANY WORK. THEIR PHONE NUMBER IS 773-287-7672.
3. THE EXISTING LIGHT POLES AND LUMINAIRES SHALL BE SALVAGED TO IDOT.
4. THE QUANTITIES OF RACEWAY WHEREVER INDICATED ON THESE PLANS ARE APPROXIMATIONS ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL LENGTHS AND SHALL INSTALL RACEWAYS IN COMPLETE COMPLIANCE WITH THE SPECIFIED REQUIREMENTS.
5. THE CONTRACTOR SHALL NOTIFY J.U.L.I.E. TO LOCATE AND MARK/STAKE ALL UNDERGROUND UTILITIES.
6. THE CONTRACTOR SHALL VERIFY LOCATIONS OF UNDERGROUND/OVERHEAD UTILITIES PRIOR TO INSTALLATION OF LIGHT POLES AND CONDUITS. IF THERE IS A CONFLICT WITH THE LIGHT POLES/CONDUITS INSTALLATION AS SHOWN ON THE PLANS, THE CONTRACTOR SHALL SUGGEST ALTERNATIVE LOCATIONS AND COORDINATE WITH THE ENGINEER PRIOR TO PERFORMING ANY CONSTRUCTION WORK. IT SHALL ALSO BE THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION ACTIVITIES.
7. TRENCHES FOR LIGHTING RACEWAYS SHALL HAVE A MINIMUM DEPTH OF 30".
8. LIGHTING SYSTEM INSTALLATION SHALL CONFORM TO THE LATEST IDOT STANDARDS, NEC AND LOCAL CODES.
9. ALL ELECTRICAL EQUIPMENT AND PRODUCTS SHALL BE UL LISTED AND LABELED.
10. THE CONTRACTOR SHALL TAKE PRECAUTION WHEN INSTALLING UNIT DUCT TO AVOID CONFLICTS WITH EXISTING UNDERGROUND UTILITIES AND TREES ROOTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE AS DETERMINED BY THE ENGINEER.
11. LUMINAIRE SAFETY CABLE SHALL BE INSTALLED FOR EACH LUMINAIRE SEE SHEET LT-15 FOR DETAILS

HIGHWAY STANDARDS

812001-01 RACEWAYS EMBEDDED IN STRUCTURE

BILL OF MATERIALS

DESCRIPTION	UNIT	QUANTITY
UNDERGROUND CONDUIT, GALVANIZED STEEL, 4" DIA.	FOOT	523
CONDUIT EMBEDDED IN STRUCTURE, 2" DIA., PVC	FOOT	1054
JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 12"X12"X6"	EACH	2
UNIT DUCT, 600V, 3-1C NO. 4, 1/C NO. 6 GROUND, (XLP-TYPE USE) , 1 1/4" DIA. POLYETHYLENE	FOOT	7041
ELECTRIC CABLE IN CONTUIT, 600V (XLP-TYPE USE) 1/C NO. 10	FOOT	992
ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 6	FOOT	814
ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 4	FOOT	2442
LUMINAIRE, LED, ROADWAY, OUTPUT DESIGNATION G .	EACH	41
LIGHT POLE, ALUMINUM, 47.5FT. M.H. 15 FT. MAST ARM	EACH	36
LIGHT POLE FOUNDATION, METAL, 15" BOLT CIRCLE, 10" X 8'	EACH	28
BREAKAWAY DEVICE, TRANSFORMER BASE, 15 INCH BOLT CIRCLE	EACH	17
REMOVAL OF LIGHTING UNIT SALVAGE	EACH	34
REMOVAL OF POLE FOUNDATION	EACH	34
COMBINATION LIGHTING CONTROLLER	EACH	2
LIGHT POLE FOUNDATION, 24" DIAMETER, OFFSET	FOOT	10
LUMINAIRE SAFETY CABLE ASSEMBLY	EACH	41
MAINTENANCE OF LIGHTING SYSTEM	CAL MO	18

LEGEND

- PROPOSED LIGHTING UNIT, 47.5 FT MH, 15 FT MAST ARM 240V (LINE TO NEUTRAL) LED LUMINAIRE OUTPUT DESIGNATION G WITH BREAKAWAY DEVICE UNLESS OTHERWISE INDICATED
- PROPOSED BRIDGE MOUNTED LIGHTING UNIT, 47.5 FT MH, 15 FT MAST ARM 240V (LINE TO NEUTRAL) WITH LED LUMINAIRE OUTPUT DESIGNATION G
- PROPOSED COMBINATION SIGNAL/LIGHT POLE, 45 FT MH, 15 FT MAST ARM, 120V (LINE TO NEUTRAL) LED LUMINAIRE OUTPUT DESIGNATION G
- EXISTING LIGHTING UNIT TO BE REMOVED, LIGHT POLE AND LUMINAIRE SALVAGED
- EXISTING LIGHTING UNIT TO REMAIN
- UNIT DUCT, 600V, 3-1/C #4, 1/C #6 GROUND (XLP-TYPE USE) 1 1/4" DIA. POLYETHYLENE
- UNDERGROUND CONDUIT GALVANIZED STEEL
- 2" DIA. PVC CONDUIT EMBEDDED IN STRUCTURE WITH 3-1/C NO. 4 AND 1/C NO. 6 GROUND ELECTRIC CABLE WITHIN
- EXISTING LIGHTING CONTROLLER "AD" 240/480V, 3 WIRE 200 AMP, PAD MOUNTED
- GROUND ROD 5/8" DIA. X 10 FT
- JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 12"X12"X6"

LT–01

AMES Engineering, Inc.
CONSULTING ENGINEERS
6330 Belmont Road, Sulte 4B
Downers Grove, IL 60516

USER NAME = EtzwilleE	DESIGNED - BL	REVISED -	
	DRAWN - MD	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - MB	REVISED -	
PLOT DATE = 3/19/2024	DATE - 03-15-2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES, BILL OF MATERIALS AND LEGEND
RAND ROAD

SCALE: N.T.S. | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	140
		CONTRACT NO. 60J10		
	ILLINOIS	FED. AID PROJECT		

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET LT-01.
2. THE EXISTING LIGHTING UNITS TO BE REMOVED SHALL REMAIN TO PROVIDE LIGHTING UNTIL THE PROPOSED IS INSTALLED AND OPERATIONAL. THE EXISTING LIGHTING ON THE NORTH SIDE OF THE ROADWAY SHALL BE REMOVED WHILE TRAFFIC IS MOVED TO THE SOUTH SIDE OF THE ROAD. THEN WHEN TRAFFIC IS MOVED TO THE NORTH SIDE OF THE ROADWAY THE EXISTING LIGHTING ON THE SOUTH SIDE SHALL BE REMOVED.
3. THE CONTRACTOR SHALL MAINTAIN THE LIGHTING SYSTEM AS NEEDED WITH AERIAL CABLE THAT MATCHES THE EXISTING CABLE SIZE AND TYPE. THIS WORK SHALL BE INCLUDED IN THE MAINTENANCE OF LIGHTING SYSTEM PAY ITEM.

EXISTING IDOT LIGHTING CONTROLLER " AD" TO REMAIN.

RAND ROAD

GROVE AVE.

ELK BLVD.

HAWTHORNE LN.

DES PLAINES RIVER RD.

ADC1 ADD2 ADC2 ADD3 ADC3 ADD4 ADC4 ADD5 ADC5 ADD6

ADF2 ADE2 ADF3 ADE3 ADF4 ADE4 ADF5 ADF6 ADF7 ADE7 ADF8

230+00 235+00 40+00 10+00

43 42 41 39 38 37 36 35+00 34 33

ADG9 ADE5 ADG6 ADH9 ADH7 ADH8 ADG8 ADG7

EXISTING LIGHTING UNIT TO BE REMOVED, LIGHT POLE AND LUMINAIRE SALVAGED TO IDOT

MATCH LINE STA. 238+50
SEE SHEET LT-03

SCALE IN FEET 0 50 100 150

LT–02

MODEL: $MODELNAME$
FILE NAME: X:\P\113-2838-000 Rand Road\CAD\CADD Sheets\AMES 12-7-22 Sheet -lllts ready to print\D16010-sht-lllynt-02.dgn

AMES Engineering, Inc.
CONSULTING ENGINEERS
6330 Belmont Road, Suite 4B
Downers Grove, IL 60516

USER NAME = EtzwilleE	DESIGNED - BL	REVISED -
	DRAWN - MD	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED - MB	REVISED -
PLOT DATE = 3/19/2024	DATE - 03-15-2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

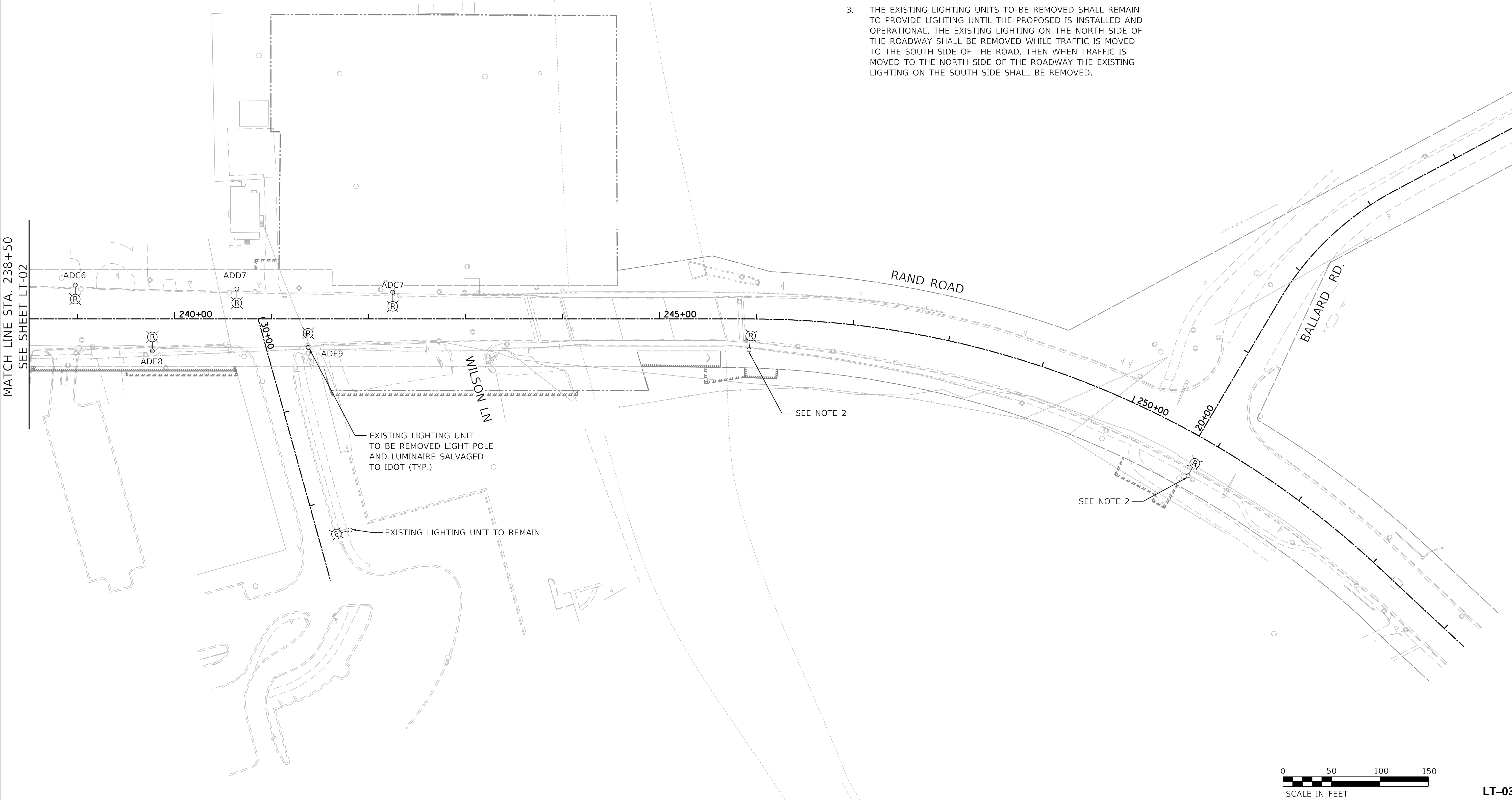
REMOVAL / TEMPORARY ROADWAY LIGHTING PLAN
RAND ROAD

SCALE: 1"=50' | SHEET 1 OF 2 SHEETS | STA. 230+00 TO STA. 238+50

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	141
		CONTRACT NO. 60J10		
		ILLINOIS	FED. AID PROJECT	

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET LT-01.
2. THE CONTRACTOR SHALL COORDINATE WITH ComEd REGARDING THE REMOVAL OF EXISTING MAST ARMS WITH LUMINAIRES ATTACHED TO UTILITY POLES. THE CONTRACTOR SHALL ALSO CONTACT AND NOTIFY THE CITY OF DES PLAINES DEPARTMENT OF PUBLIC WORKS AT (847) 391-5464 TO CANCEL THEIR ACCOUNT WITH ComEd.
3. THE EXISTING LIGHTING UNITS TO BE REMOVED SHALL REMAIN TO PROVIDE LIGHTING UNTIL THE PROPOSED IS INSTALLED AND OPERATIONAL. THE EXISTING LIGHTING ON THE NORTH SIDE OF THE ROADWAY SHALL BE REMOVED WHILE TRAFFIC IS MOVED TO THE SOUTH SIDE OF THE ROAD. THEN WHEN TRAFFIC IS MOVED TO THE NORTH SIDE OF THE ROADWAY THE EXISTING LIGHTING ON THE SOUTH SIDE SHALL BE REMOVED.



LT-03

MODEL: $MODELNAME$
FILE NAME: X:\P\113-2838-000 Rand Road\CADD\CADD Sheets\AMES 12-7-22 Sheet files ready to print\D160J10-sht-lt-03.dgn

AMES Engineering, Inc. CONSULTING ENGINEERS 6330 Belmont Road, Suite 4B Downers Grove, IL 60516	USER NAME = EtzwileE	DESIGNED - BL	REVISED -
		DRAWN - MD	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED - MB	REVISED -
	PLOT DATE = 3/19/2024	DATE - 03-15-2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REMOVAL / TEMPORARY ROADWAY LIGHTING PLAN
RAND ROAD

SCALE: 1"=50' | SHEET 2 OF 2 SHEETS | STA. 230+00 TO STA. 255+50

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	142
		CONTRACT NO. 60J10		
		ILLINOIS	FED. AID PROJECT	

EXISTING IDOT LIGHTING CONTROLLER "AD" L1603
200A, 240/480V, 1 PHASE, 3 WIRE

PROPOSED LIGHTING UNIT, 47.5 FT. MH, 15 FT. MAST ARM,
240V (LINE TO NEUTRAL) LED LUMINAIRE (TYP)

ADD1
SEE NOTE 7

ADC1

ADD2

ADD3
STA. 231+60
SEE NOTE 4
SET BACK 10 FT.

ADC2

55 FT-UCGS
4" DIA.

150.00'

145.00'

(TYP)

RAND ROAD

GROVE AVE.

ELK BLVD.

40 FT-UCGS
4" DIA.

PROPOSED COMBINATION SIGNAL/LIGHT POLE,
45 FT. MH, 15 FT. MAST ARM, 120V (LINE TO NEUTRAL)
LED LUMINAIRE (TYP)

SEE IDOT COMBINATION
LIGHTING PLAN LT-06

ADC3
STA. 234+20
SEE NOTE 4

ADD4
STA. 236+40
SEE NOTE 4

52 FT-UCGS
4" DIA.

HAWTHORNE
LN.

L 230+00

L 235+00

L 40+00

L 10+00

MATCH LINE STA. 238+50
SEE SHEET LT-05

65 FT-UCGS
4" DIA.

ADE1

ADF1

ADF2
STA. 231+65
SEE NOTE 4
SET BACK 16 FT.

ADE2
SET BACK 16 FT.

DES PLAINES RIVER RD.

240.00'

220.00'

200.00'

ADF3
STA. 234+20
SEE NOTE 4
SET BACK 4 FT.

ADE6
STA. 236+40.00
SEE NOTE 4
SET BACK 4 FT.

135 FT-UCGS
4" DIA.

UNIT DUCT, 600V, 3-1/C #4, 1/C #6
GROUND (XLP-TYPE USE)
1 1/4" DIA. POLYETHYLENE (TYP)

ADE3
STA. 39+30
SET BACK 9 FT
SEE NOTE 4

L 43

L 42

L 41

L 39

L 38

L 37

L 36

L 35+00

L 34

L 33

ADE4
STA. 37+30

56 FT-UCGS
4" DIA.

ADF4
STA. 37+30
SET BACK 12 FT

ADF5
STA. 35+50

ADE5
STA. 33+50

ADE6
STA. 35+50
SET BACK 15 FT

ADF6
STA. 33+50
SET BACK 15 FT

NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET LT-01.
2. COMBO LIGHTING IS MAINTAINED BY IDOT.
3. ROADWAY LIGHT POLES SHALL NOT BE CONNECTED TO THE IDOT COMBO POLES.
4. LIGHTING UNIT SHALL NOT HAVE BREAKAWAY DEVICE BECAUSE LOCATED WITHIN SCHOOL ZONE. LIGHTING UNITS SHALL BE SET BACK 7 FT. FROM FACE OF CURB TO CENTER OF POLE UNLESS OTHERWISE INDICATED,
5. UCGS STANDS FOR UNDERGROUND CONDUIT GALVANIZED STEEL.
6. LIGHTING UNITS SHALL BE SET BACK 3 FT. FROM FACE OF CURB TO THE CENTER OF THE POLE UNLESS OTHERWISE INDICATED.
7. THE CONTRACTOR MAY REUSE THE EXISTING FOUNDATION WITH THE APPROVAL OF THE ENGINEER.

0 50 100 150
SCALE IN FEET

LT-04

MODEL: $MODELNAME$
FILE NAME: X:\P\113-2838-000 Rand Road\CADD\CADD Sheets\AMES 12-7-22 Sheet files ready to print\D160J10-sht-ltgnt-04.dgn

AMES Engineering, Inc.
CONSULTING ENGINEERS
6330 Belmont Road, Suite 4B
Downers Grove, IL 60516

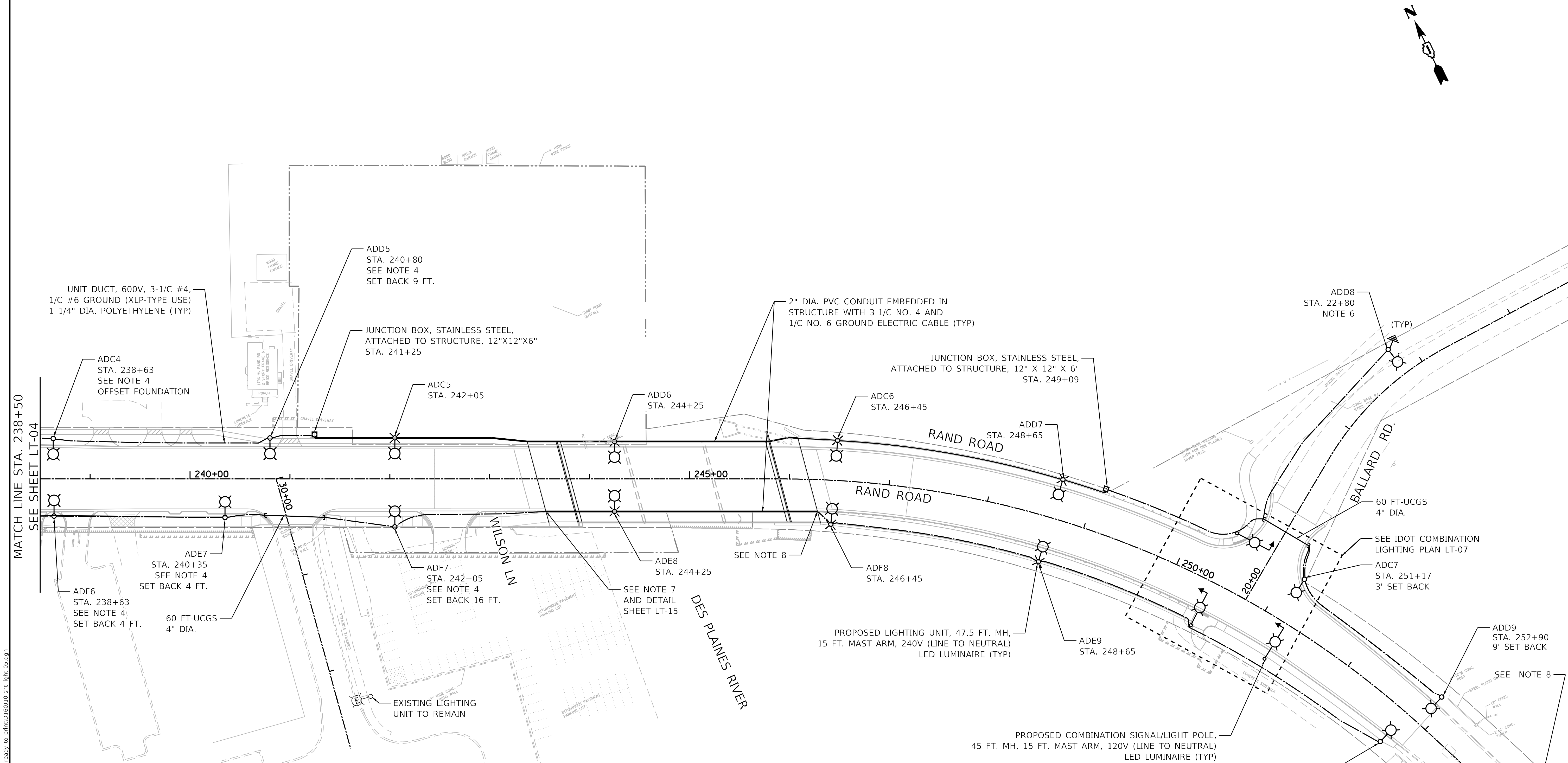
USER NAME = EtzwilleE	DESIGNED - BL	REVISED -	
	DRAWN - MD	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED - MB	REVISED -	
PLOT DATE = 3/19/2024	DATE - 03-15-2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED ROADWAY LIGHTING PLAN
RAND ROAD

SCALE: 1"=50' | SHEET 1 OF 2 SHEETS | STA. 230+00 | TO STA. 238+50

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	143
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			



NOTES:

1. FOR GENERAL NOTES AND LEGEND, SEE SHEET LT-01.
2. COMBO LIGHTING IS MAINTAINED BY IDOT.
3. ROADWAY LIGHT POLES SHALL NOT BE CONNECTED TO THE IDOT COMBO POLES.
4. LIGHTING UNIT SHALL NOT HAVE BREAKAWAY DEVICE BECAUSE LOCATED WITHIN SCHOOL ZONE. LIGHTING UNITS SHALL BE SET BACK 7 FT. FROM FACE OF CURB TO CENTER OF POLE, UNLESS OTHERWISE INDICATED.
5. UCGS STANDS FOR UNDERGROUND CONDUIT GALVANIZED STEEL.
6. LIGHTING UNIT SHALL BE SET 15 FT. FROM EOP TO CENTER OF POLE.
7. THE UNIT DUCT SHALL BE TRANSITION INTO THE 2" DUCT AND PULL THE ELECTRIC CABLES TO ADF8 FROM ADE8 AND FROM ADE9.
8. EXISTING COMED POLE WITH MAST ARM AND LUMINIARE TO REMAIN.

0 50 100 150
SCALE IN FEET

LT-05

MODEL: $MODELNAME$
FILE NAME: X:\P113-2838-000 Rand Road\CADD\CADD Sheets\AMES 12-7-22 Sheet files ready to print\D160J10-sht-lght-05.dgn

AMES Engineering, Inc.
CONSULTING ENGINEERS
6330 Belmont Road, Suite 4B
Downers Grove, IL 60516

USER NAME = EtzwilleE	DESIGNED - BL	REVISED -
	DRAWN - MD	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED - MB	REVISED -
PLOT DATE = 3/19/2024	DATE - 03-15-2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED ROADWAY LIGHTING PLAN
RAND ROAD

SCALE: 1"=50' SHEET 2 OF 2 SHEETS STA. 238+50 TO STA. 254+00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	144

CONTRACT NO. 60J10
ILLINOIS FED. AID PROJECT

45 FT IDOT COMBINATION LIGHT POLE
15 FT LUMINAIRE MOUNTING HEIGHT
LUMINAIRE MAST ARM
LUMINAIRE, LED OUTPUT G, 120V
WITH 6 AMP FUSE AND NEUTRAL SLUG

GROVE AVE.

ELK BLVD.

41

B1
IDOT COMBO POLE

CIRCUIT B

CIRCUIT A

A1

ONE LINE DIAGRAM

230+00 231 232 40+00 233 234 235+00

RAND ROAD

GM

2#10 ELECTRICAL CABLE
IN 4" DIA. CONDUIT

IDOT COMBO CONTROLLER
INSIDE TRAFFIC CONTROLLER

PROPOSED COMBO LIGHTING ELECTRICAL
CABLE IN CONDUIT, 2#10,
ROUTED THRU TRAFFIC 4" DIA. CONDUIT
SEE TRAFFIC PLANS FOR CONDUIT
SIZE AND CONDUIT ROUTE

A1
IDOT COMBO POLE

39

38

IDOT COMBO LIGHTING SCHEDULE OF QUANTITIES

DESCRIPTION	UNIT	QUANTITY
LUMINAIRE, LED, ROADWAY, OUTPUT DESIGNATION G	EACH	2
COMBINATION LIGHTING CONTROLLER	EACH	1
LUMINAIRE SAFETY CABLE ASSEMBLY	EACH	2
ELECTRICAL CABLE IN CONDUIT, 600 V, (XLP TYPE USE) 1/C NO. 10	FOOT	490

NOTES:

1. THE IDOT COMBO LIGHTING CIRCUITING SHALL NOT BE CONNECTED TO THE ROADWAY LIGHTING CIRCUITS.
2. LUMINAIRES ARE POWERED FROM IDOT TRAFFIC CONTROLLER. SEE DETAIL BE-240
3. THE COMBO LIGHTING CABLE AND SIGNAL CABLES WILL BE IN SHARED CONDUIT.
4. SEE TRAFFIC PLANS FOR LOCATION OF COMBO POLES, HANDHOLES AND CONDUIT.
5. CIRCUIT DECALS SHALL NOT BE INSTALLED ON COMBO POLES. CIRCUITING DECALS SHOWN IN FOR GUIDANCE ONLY.

0 20 40 60
SCALE IN FEET

LT–06

MODEL: $MODELNAME$
FILE NAME: X:\P\13-2838-000 Rand Road\CAD\CivCADD Sheets\AMES 12-7-22 Sheet files ready to print\D160J10-sht-ltlgnt-06.dgn

AMES Engineering, Inc.
CONSULTING ENGINEERS
6330 Belmont Road, Suite 4B
Downers Grove, IL 60516

USER NAME = EtzwilleE	DESIGNED - BL	REVISED -	
	DRAWN - MD	REVISED -	
PLOT SCALE = 40.0000 ' / in.	CHECKED - MH	REVISED -	
PLOT DATE = 3/19/2024	DATE - 03-15-2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT PROPOSED LIGHTING COMBINATION PLAN
ELK BLVD AND RAND ROAD

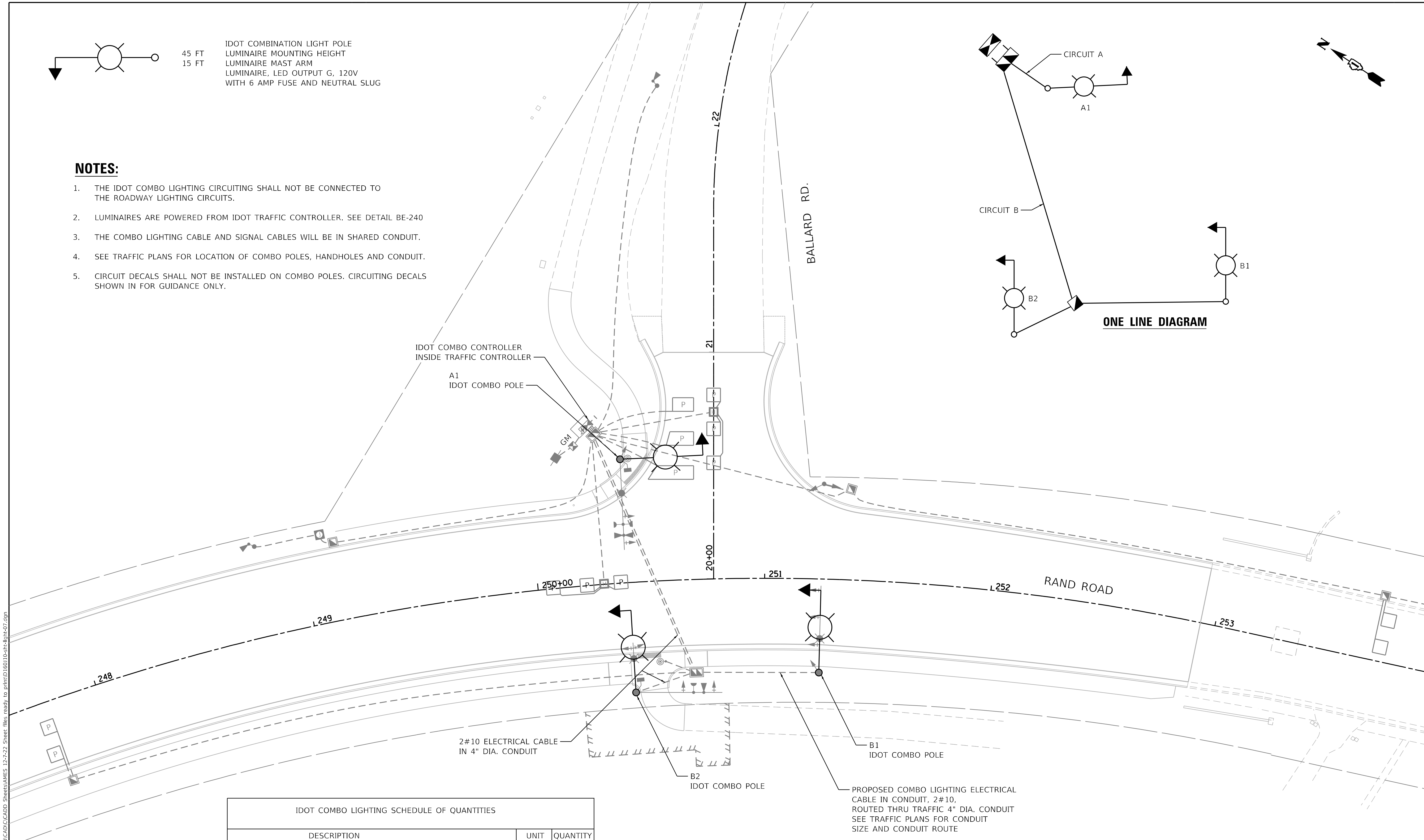
SCALE: 1"=20' | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	145
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

45 FT	IDOT COMBINATION LIGHT POLE LUMINAIRE MOUNTING HEIGHT
15 FT	LUMINAIRE MAST ARM LUMINAIRE, LED OUTPUT G, 120V WITH 6 AMP FUSE AND NEUTRAL SLUG

NOTES:

1. THE IDOT COMBO LIGHTING CIRCUITING SHALL NOT BE CONNECTED TO THE ROADWAY LIGHTING CIRCUITS.
2. LUMINAIRES ARE POWERED FROM IDOT TRAFFIC CONTROLLER. SEE DETAIL BE-240
3. THE COMBO LIGHTING CABLE AND SIGNAL CABLES WILL BE IN SHARED CONDUIT.
4. SEE TRAFFIC PLANS FOR LOCATION OF COMBO POLES, HANDHOLES AND CONDUIT.
5. CIRCUIT DECALS SHALL NOT BE INSTALLED ON COMBO POLES. CIRCUITING DECALS SHOWN IN FOR GUIDANCE ONLY.



IDOT COMBO LIGHTING SCHEDULE OF QUANTITIES

DESCRIPTION	UNIT	QUANTITY
LUMINAIRE, LED, ROADWAY, OUTPUT DESIGNATION G	EACH	3
COMBINATION LIGHTING CONTROLLER	EACH	1
LUMINAIRE SAFETY CABLE ASSEMBLY	EACH	3
ELECTRICAL CABLE IN CONDUIT, 600 V, (XLP TYPE USE) 1/C NO. 10	FOOT	502

0 20 40 60
SCALE IN FEET

LT-07

MODEL: $MODELNAME$
FILE NAME: X:\P\113-2838-000 Rand Road\CAD\C\CADD Sheets\AMES 12-7-22 Sheet files ready to print\D160J10-sht-light-07.dgn

AMES Engineering, Inc.
CONSULTING ENGINEERS
6330 Belmont Road, Suite 4B
Downers Grove, IL 60516

USER NAME = EtzwilleE	DESIGNED - BL	REVISED -	
	DRAWN - MD	REVISED -	
PLOT SCALE = 40.0000 ' / in.	CHECKED - MH	REVISED -	
PLOT DATE = 3/19/2024	DATE - 03-15-2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT PROPOSED LIGHTING COMBINATION PLAN
BALLARD RD AND RAND ROAD

SCALE: 1"=20' | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	146

CONTRACT NO. 60J10

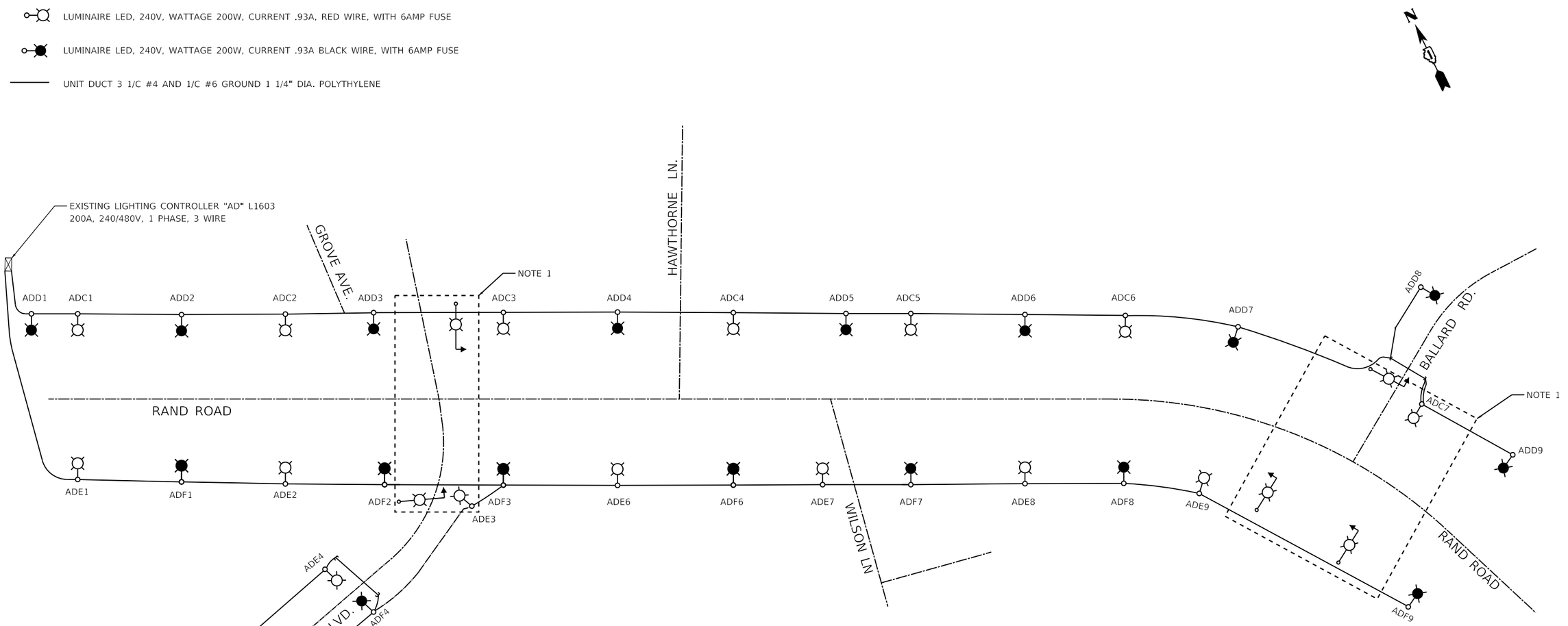
ILLINOIS | FED. AID PROJECT

LEGEND

LUMINAIRE LED, 240V, WATTAGE 200W, CURRENT .93A, RED WIRE, WITH 6AMP FUSE

LUMINAIRE LED, 240V, WATTAGE 200W, CURRENT .93A BLACK WIRE, WITH 6AMP FUSE

UNIT DUCT 3 1/C #4 AND 1/C #6 GROUND 1 1/4" DIA. POLYTHYLENE



NOTES:

1. IDOT COMBINATION LIGHTING POWERED FROM TRAFFIC CABINET COMBO CONTROLLER, REFER TO COMBO LIGHTING/TRAFFIC PLANS.

2. THE LOAD TABLE VALUES FOR CIRCUITS NOT INCLUDED IN THIS CONTRACT ARE FROM SHEET LT-09.

LOAD TABLE LIGHTING CONTROLLER "AD", L1603

RED		BLACK	
CIRCUIT	AMPS @ 240V	CIRCUIT	AMPS @ 240V
A	5.2	B	5.2
C	6.51	D	8.37
E	8.37	F	8.37
G	6.0	H	6.5
K	3.3	L	3.8
M	6.2	N	6.7
O	SPARE	P	SPARE
TOTAL	35.58	TOTAL	38.94
TOTAL AMPS "AD" L1603 74.52A @ 240V			

LT–08

AMES Engineering, Inc.
CONSULTING ENGINEERS
6330 Belmont Road, Sulte 4B
Downers Grove, IL 60516

USER NAME = EtzvilleE	DESIGNED - BL	REVISED -
	DRAWN - MD	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED - MB	REVISED -
PLOT DATE = 3/19/2024	DATE - 03-15-2024	REVISED -

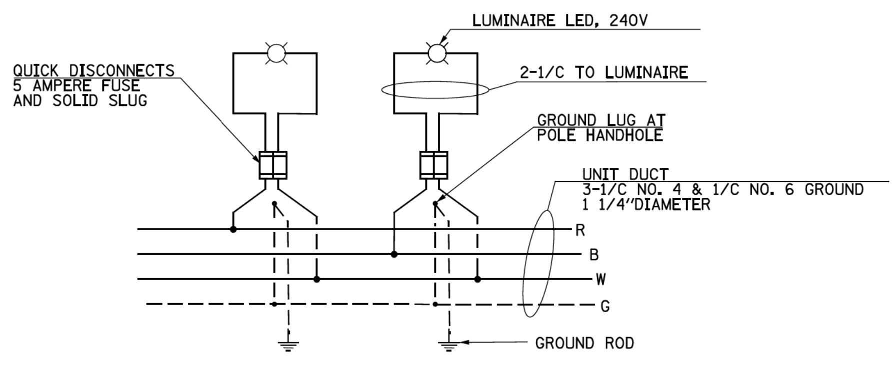
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SINGLE LINE DIAGRAM
RAND ROAD

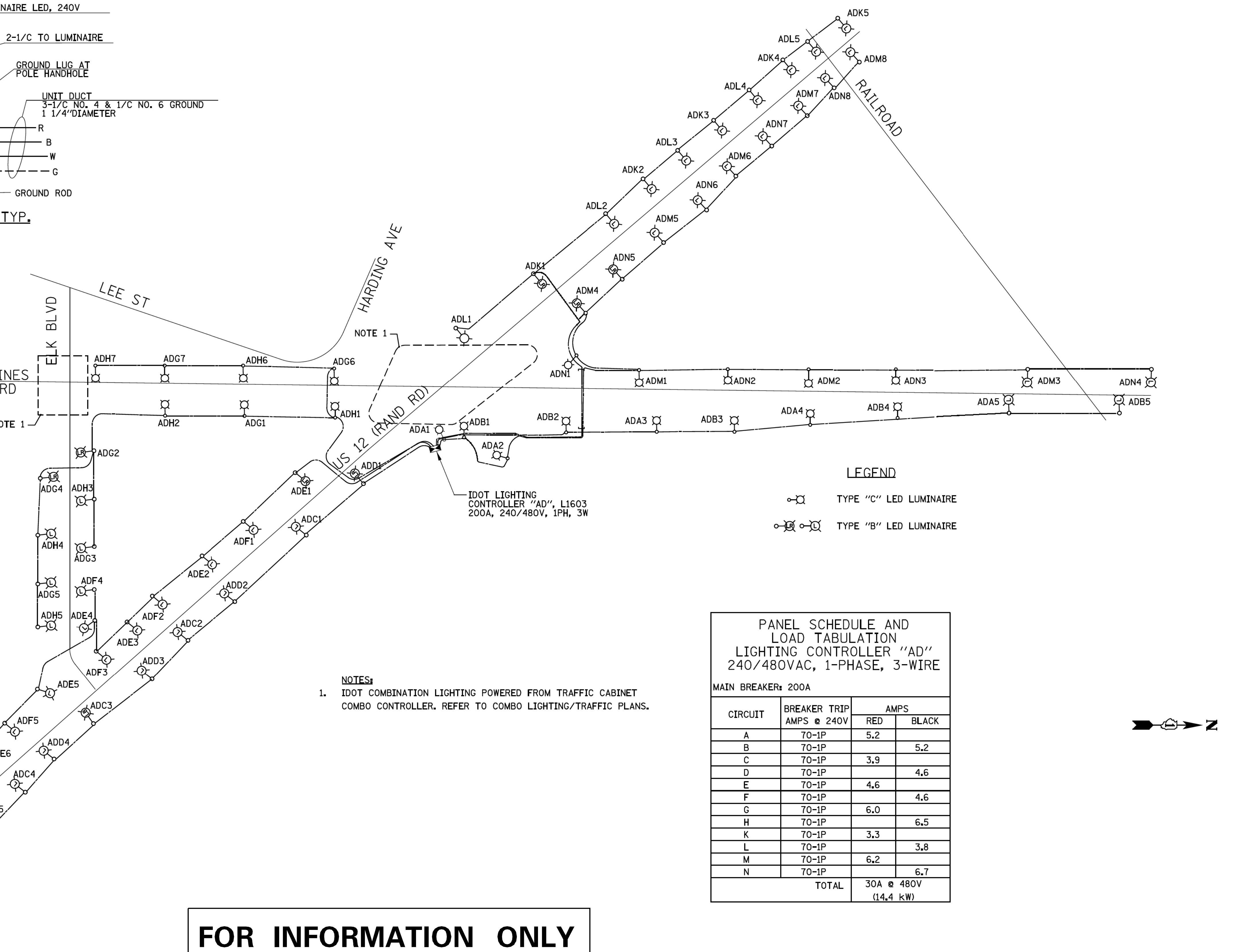
SCALE: N.T.S. | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	147
		CONTRACT NO. 60J10		
	ILLINOIS	FED. AID PROJECT		

MODEL: $MODELNAME$
FILE NAME: X:\P\113-2838-000 Rand Road\CAD\C\CADD Sheets\AMES 12-7-22 Sheet files ready to print\D160J10-clt-lltpln-08.dgn



CIRCUIT DETAILS TYP.



LEGEND

(symbol)	TYPE "C" LED LUMINAIRE
(symbol)	TYPE "B" LED LUMINAIRE

NOTES:

1. IDOT COMBINATION LIGHTING POWERED FROM TRAFFIC CABINET COMBO CONTROLLER. REFER TO COMBO LIGHTING/TRAFFIC PLANS.

PANEL SCHEDULE AND
LOAD TABULATION
LIGHTING CONTROLLER "AD"
240/480VAC, 1-PHASE, 3-WIRE

MAIN BREAKER: 200A

CIRCUIT	BREAKER TRIP AMPS @ 240V	AMPS RED	AMPS BLACK
A	70-1P	5.2	
B	70-1P		5.2
C	70-1P	3.9	
D	70-1P		4.6
E	70-1P	4.6	
F	70-1P		4.6
G	70-1P	6.0	
H	70-1P		6.5
K	70-1P	3.3	
L	70-1P		3.8
M	70-1P	6.2	
N	70-1P		6.7
	TOTAL	30A @ 480V (14.4 kW)	

FOR INFORMATION ONLY

KNIGHT
Engineers & Architects

USER NAME = cogren	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 1:2	CHECKED -	REVISED -
PLOT DATE = 5/1/2018	DATE - 4/30/2018	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROADWAY LIGHTING PLANS
LINE DIAGRAM
IDOT LIGHTING CONTROLLER "AD"

SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2710	1213R	COOK	617	498

CONTRACT NO. 62267

ILLINOIS FED. AID PROJECT

FILE NAME = D162267-sht-36-light.s1-01.dgn

LT-09

MODEL: $MODELNAME$
FILE NAME: X:\P\113-2838-000 Rand Road\CADD\CADD Sheets\AMES 12-7-22 Sheet files ready to print\D16J10-sht-light-09.dgn

AMES Engineering, Inc.
CONSULTING ENGINEERS
6330 Belmont Road, Suite 4B
Downers Grove, IL 60516

USER NAME = EtzwilleE	DESIGNED - BL	REVISED -
	DRAWN - MD	REVISED -
PLOT SCALE = 0.0917 ' / in.	CHECKED - MB	REVISED -
PLOT DATE = 3/19/2024	DATE - 03-15-2024	REVISED -

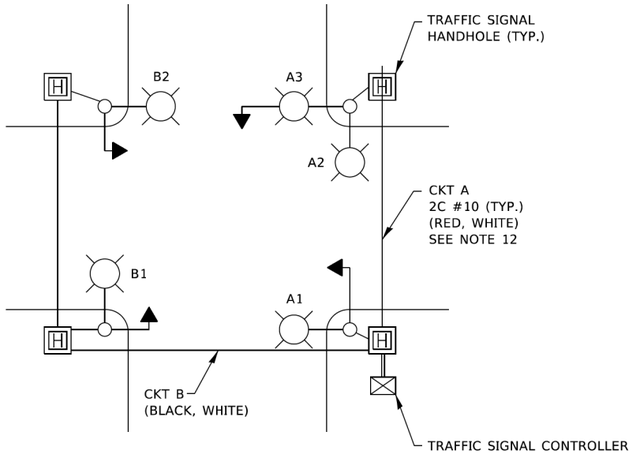
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	148

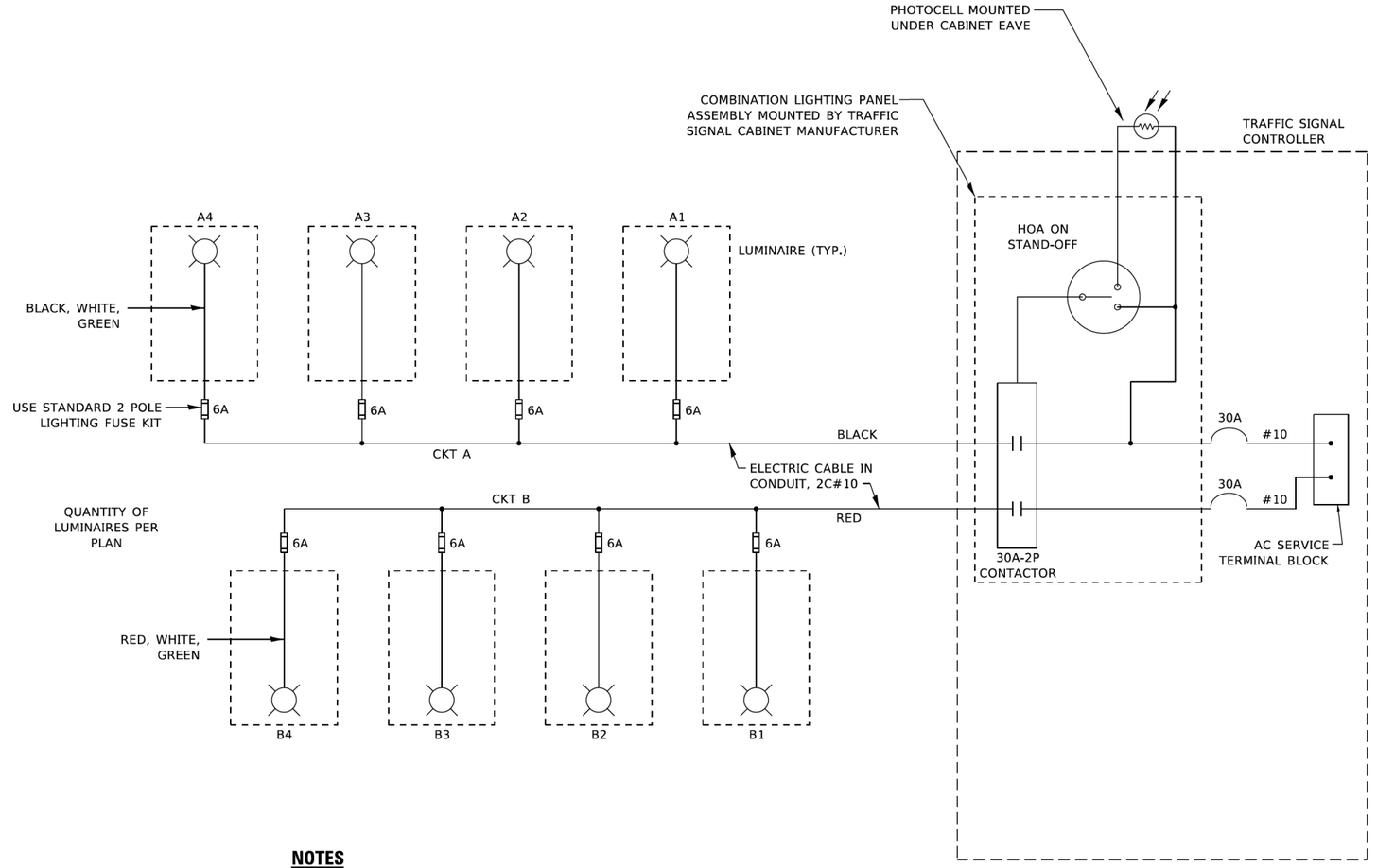
CONTRACT NO. 60J10

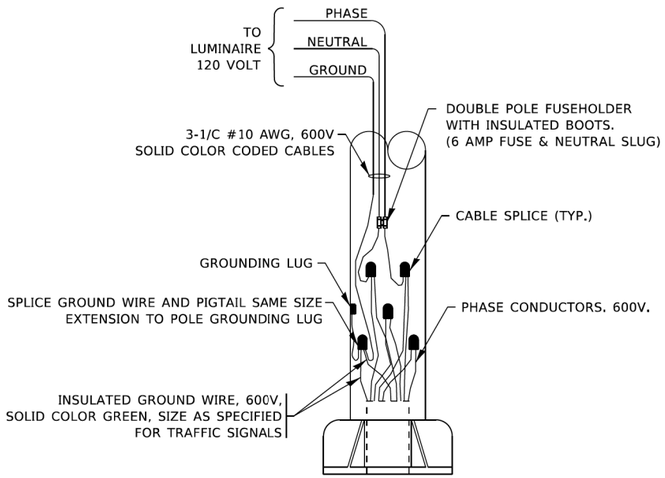
ILLINOIS FED. AID PROJECT



TYPICAL LIGHTING CIRCUIT

(NOT TO SCALE)





COMBINATION POLE WIRING DETAIL

(NOT TO SCALE)

NOTES

1. 4 LUMINAIRES PER CIRCUIT, MAXIMUM.
2. TWO #10 (XLP-TYPE USE) CABLES TO BE USED FOR LIGHTING CIRCUITS.
3. ROUTE LIGHTING CIRCUITS IN TRAFFIC SIGNAL CONDUIT SYSTEM.
4. ALL SPLICES AND CONNECTIONS FOR ROADWAY LIGHTING SHALL BE AT POLE BASE ONLY.
5. FOR LIGHTING CIRCUITS, CONNECT TWO CIRCUIT BREAKERS TO AC SERVICE TERMINAL BLOCK.
6. ALL WIRING SHALL BE NEATLY DRESSED, IDENTIFIED BY TAGS, AND SUPPORTED. (UNDERGROUND SPLICING OF LIGHTING CONDUCTORS IS NOT PERMITTED).
7. THE H.O.A. SWITCH SHALL BE LABELED AS "LIGHTING CONTROL" WITH THE POSITIONS "AUTO", "OFF" AND "TEST" WITH ENGRAVED NAME PLATES.
8. LIGHTING CONNECTED TO UPS BYPASS CIRCUIT.
9. COMBINATION LIGHTING MUST BE INSTALLED PRIOR TO SIGNAL TURN ON.
10. LUMINAIRE VOLTAGE SHALL BE 120V
11. POLE WIRING & FUSE KITS ARE INCLUDED IN THE LUMINAIRE PAY ITEM.
12. THE UNDERGROUND EQUIPMENT GROUND WIRE IS SHOWN IN THE TRAFFIC SIGNAL PLANS AND IS INCLUDED IN THE SIGNAL PLANS. IT IS SHARED GROUND BETWEEN SIGNALS AND LIGHTING.

MODEL: Default
FILE NAME: pw:\\dot-pw.bentley.com:PWIDOT\Documents\IDOT Offices\District 1\Projects\Dist1Std22x34\CADData\CADsheets\be240.dgn

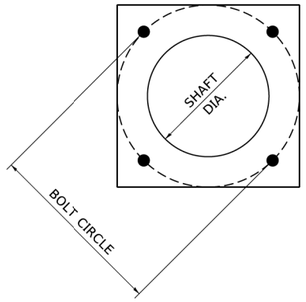
USER NAME = demanchelt	DESIGNED - RT	REVISED - T.G. 4/12/2017	
	DRAWN -	REVISED - R. TOMSONS 3/22/18	
PLOT SCALE = 100.0000 ' / in.	CHECKED - RT	REVISED - T.G. 8/03/2021	
PLOT DATE = 5/5/2022	DATE - 08/18/2014	REVISED - **T.G. 5/05/2022**	

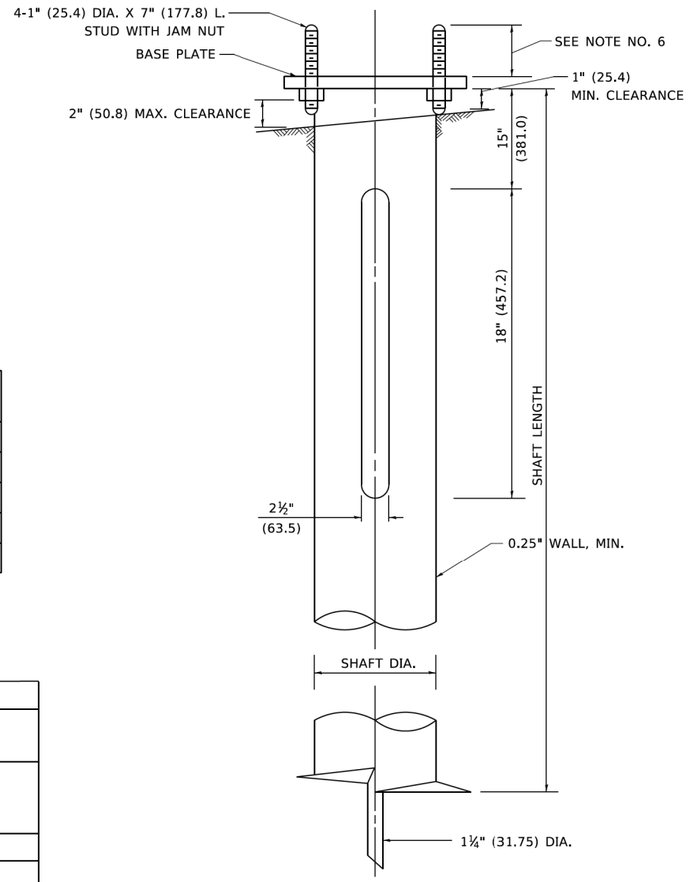
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

COMBINATION LIGHTING, TRAFFIC SIGNAL SCHEMATIC

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	149
	BE–240	CONTRACT NO. 60J10		
	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–11

USER NAME = footemj	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	DRAWN - DLB	REVISED -	
PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 4/19/2019	DATE - 02-27-07	REVISED -	

LIGHT POLE FOUNDATION, METAL

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	150
	BE-305	CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

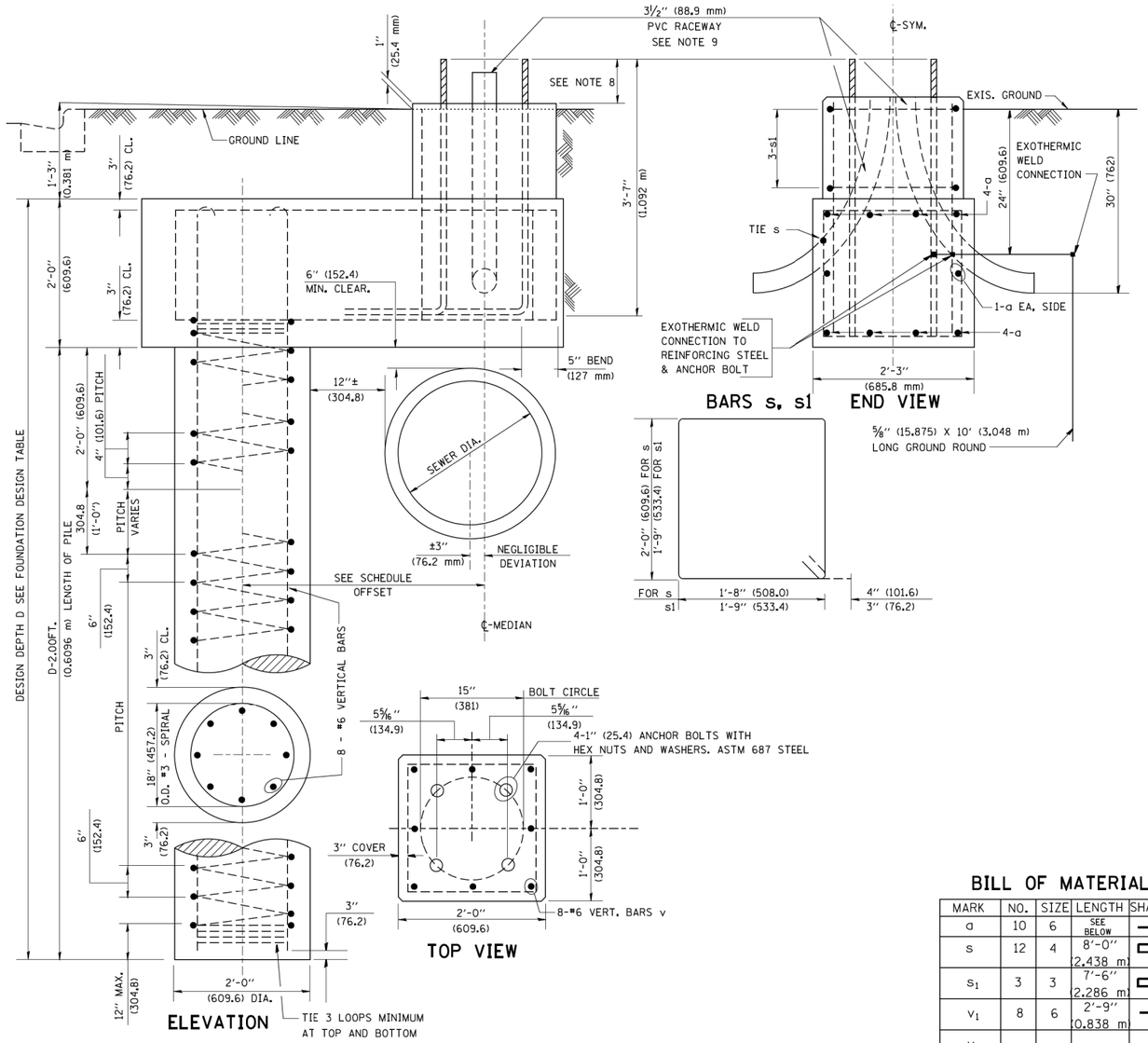
MODEL: Default
FILE NAME: pw:\\planroom.dot.illinois.gov:PWIDOT\Documents\IDOT Offices\District 1\Projects\Std22x34\CADData\CADsheets\be305.dgn

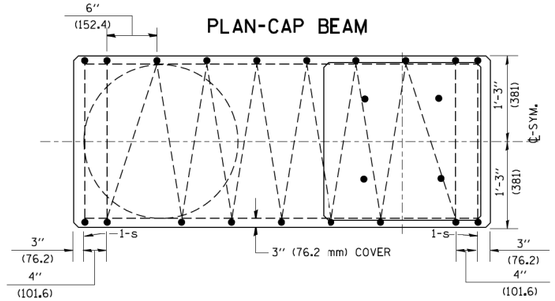
FOUNDATION DESIGN TABLE

TYPE OF SOIL	DESIGN DEPTH OF FOUNDATION		REINFORCEMENT IN FOUNDATION			
	SINGLE ARM D	TWIN ARM D	SINGLE ARM		TWIN ARM	
			VERT BARS	SPIRAL	VERT BARS	SPIRAL
SOFT CLAY	13′-0″ (3.962 m)	15′-0″ (4.572 m)	8-#6X12′-6″ (3.810 m)	#3X122′ (37.186 m)	8-#6X14′-3″ (4.343 m)	#3X141′ (42.977 m)
MEDIUM CLAY	9′-6″ (2.896 m)	10′-9″ (3.277 m)	8-#6X9′-0″ (2.743 m)	#3X90′ (27.432 m)	8-#6X10′-0″ (3.048 m)	#3X100′ (30.480 m)
STIFF CLAY	7′-0″ (2.134 m)	8′-0″ (2.438 m)	8-#6X6′-6″ (1.981 m)	#3X66′ (20.112 m)	8-#6X7′-6″ (2.286 m)	#3X76′ (23.165 m)
LOOSE SAND	9′-0″ (2.743 m)	10′-0″ (3.048 m)	8-#6X8′-6″ (2.591 m)	#3X85′ (25.908 m)	8-#6X9′-6″ (2.896 m)	#3X94′ (28.651 m)
MEDIUM SAND	8′-3″ (2.515 m)	9′-0″ (2.743 m)	8-#6X8′-0″ (2.438 m)	#3X78′ (23.774 m)	8-#6X8′-6″ (2.591 m)	#3X85′ (25.908 m)
DENSE SAND	7′-9″ (2.362 m)	9′-0″ (2.743 m)	8-#6X7′-6″ (2.286 m)	#3X73′ (22.250 m)	8-#6X8′-6″ (2.591 m)	#3X85′ (25.908 m)
ROCK OR SOLIDIFIED SLAG	5′-0″ (1.524 m)	5′-0″ (1.524 m)	NONE	NONE	NONE	NONE

NOTES

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. THE ENGINEER SHALL DETERMINE THE CLASS OF SOIL DURING EXCAVATION AND SELECT THE DESIGN DEPTH OF FOUNDATION FROM THE DESIGN TABLE.
3. EXCAVATION OF THE POLE FOUNDATION SHALL BE MADE WITH AN AUGER, 24″ (609.6 mm) OR 30″ (762.0 mm) IN DIAMETER.
4. 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.
5. THE ANCHOR BOLTS AND RACEWAYS SHALL BE PROPERLY SECURED IN PLACE BEFORE THE CONCRETE IS PLACED IN THE FORM.
6. 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.
7. THE CONTRACTOR SHALL COORDINATE EXTENSION OF ANCHOR BOLTS ABOVE TOP OF FOUNDATION WITH THE BREAKAWAY DEVICE MANUFACTURER'S REQUIREMENTS. IF LIGHT POLE IS MOUNTED WITHOUT BREAKAWAY DEVICE, ANCHOR BOLTS SHALL PROJECT 2¾″ (69.9 mm) ABOVE TOP OF THE FOUNDATION. THE CONTRACTOR SHALL CONFIRM ANCHOR BOLT EXTENTION WITH ENGINEER.
8. RACEWAYS SHALL PROJECT 1″ (25.4 mm) ABOVE THE TOP OF THE FOUNDATION.
9. THE CABLE TRENCH SHALL BE BACKFILLED AND FIRMLY COMPACTED BEFORE THE LIGHT IS ERECTED.





BILL OF MATERIAL

MARK	NO.	SIZE	LENGTH	SHAPE
a	10	6	SEE BELOW	—
s	12	4	8′-0″ (2.438 m)	▭
s_1	3	3	7′-6″ (2.286 m)	▭
v_1	8	6	2′-9″ (0.838 m)	—
v_2				

OFFSET SCHEDULE

SEWER DIAM. d IN.	PILE OFFSET from℄-MED'N FT.	LENGTH of BAR a FT.
UP TO 24″ (609.6 mm)	3′-3″ (0.991 m)	#6 x 5′-3″ (1.600 m)
27″ (685.8 m)TO 36″ (914.4 mm)	3′-9″ (1.143 m)	5′-9″ (1.753 m)
42″ (1066.8 mm) TO 48″ (1219.2 mm)	4′-6″ (1.372 m)	6′-6″ (1.981 m)
54″ (1371.6 mm) TO 60″ (1524.0 mm)	5′-0″ (1.524 m)	7′-0″ (2.134 m)
66″ (1676.4 mm) TO 72″ (1828.8 mm)	5′-6″ (1.676 m)	7′-6″ (2.286 m)

LT-12

FILE NAME = K:\diststd22x34\be310.dgn	USER NAME = bauerdl	DESIGNED -	REVISED - 06-16-08 R. TOWSONS
		DRAWN -	REVISED -
	PLOT SCALE = 50.000 ′ / IN.	CHECKED -	REVISED -
	PLOT DATE = 6/16/2008	DATE -	REVISED -

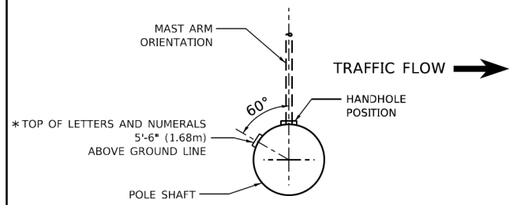
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

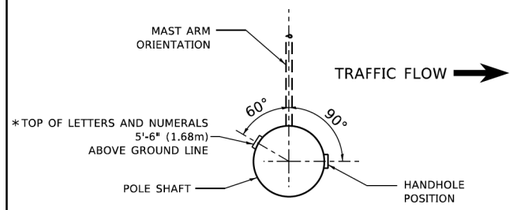
SCALE: | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	151
	BE-310	CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

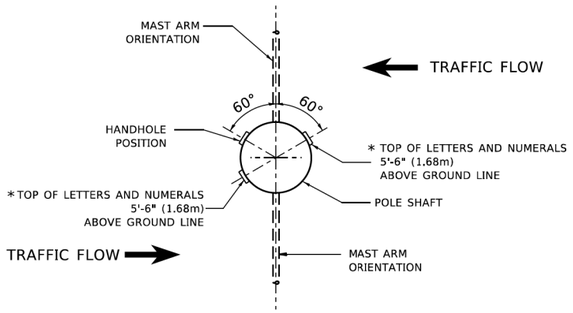
6/16/2008
K:\diststd22x34\be310.dgn
bauerdl



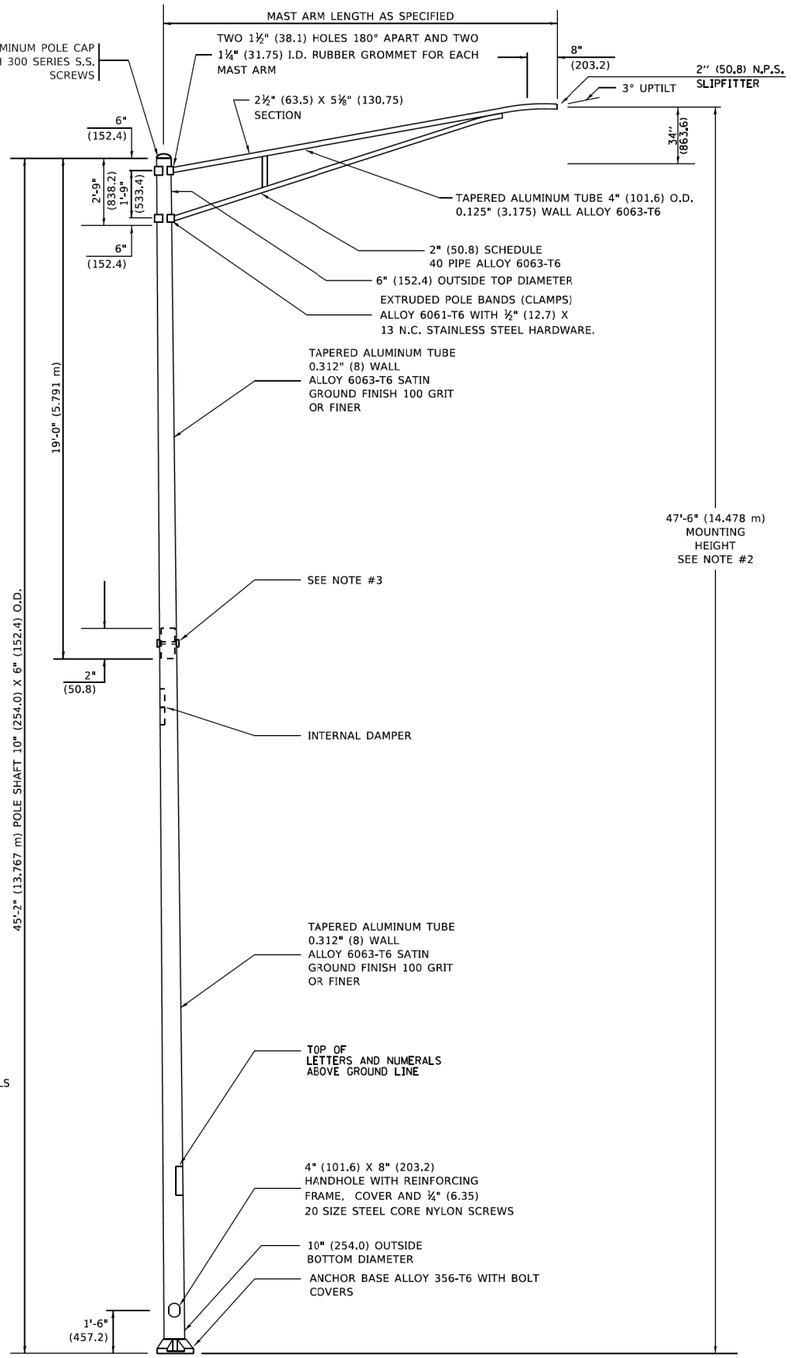
POSITION OF HANDHOLE AND POLE NUMBER FOR SINGLE MAST ARM POLES MOUNTED ON BRIDGE PARAPET OR BARRIER WALL



POSITION OF HANDHOLE AND POLE NUMBER FOR SINGLE MAST ARM POLES

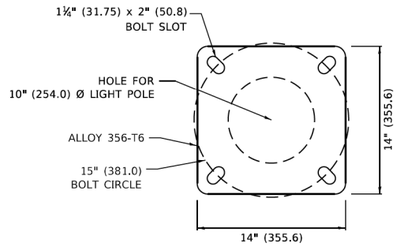


POSITION OF HANDHOLE AND POLE NUMBER FOR TWIN MAST ARM POLES



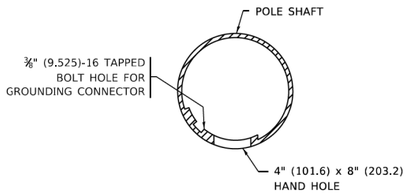
NOTES

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. MOUNTING HEIGHT IS DEFINED AS THE DISTANCE FROM THE CENTERLINE OF THE TENON TO THE BOTTOM OF THE ANCHOR BASE.
3. TWO PIECE SHAFT WILL BE MATCHED MARKED AND INTERCHANGEABLE BETWEEN DIFFERENT UNITS. FIELD DRILLING OF THE HOLES WILL NOT BE ALLOWED.
4. THE LIGHT POLE WILL MEET AASHTO DESIGN CRITERIA AS SPECIFIED.
5. THE INSTALLING CONTRACTOR WILL PROVIDE A UL LISTED GROUNDING CONNECTOR. BURNDY K2C23, T&B SP4DL OR APPROVED EQUAL.
6. LIGHT POLES WILL NOT BE INSTALLED WITHOUT MAST ARMS AND LUMINAIRES.
7. LIGHT POLES WILL BE SET PLUMB ON THE FOUNDATION WITHOUT THE USE OF LEVELING NUTS, WASHERS OR SHIMS.
8. LIGHTING UNIT IDENTIFICATION NUMBERS SHALL BE INSTALLED BEFORE THE LIGHTING UNIT IS ENERGIZED.



LIGHT POLE BASE PLATE DETAIL

15 INCH (381.0) BOLT CIRCLE



HANDHOLE DETAIL

(N.T.S.)

LT–13

MODEL: Default
FILE NAME: W:\dist\std22x34\be400.dgn

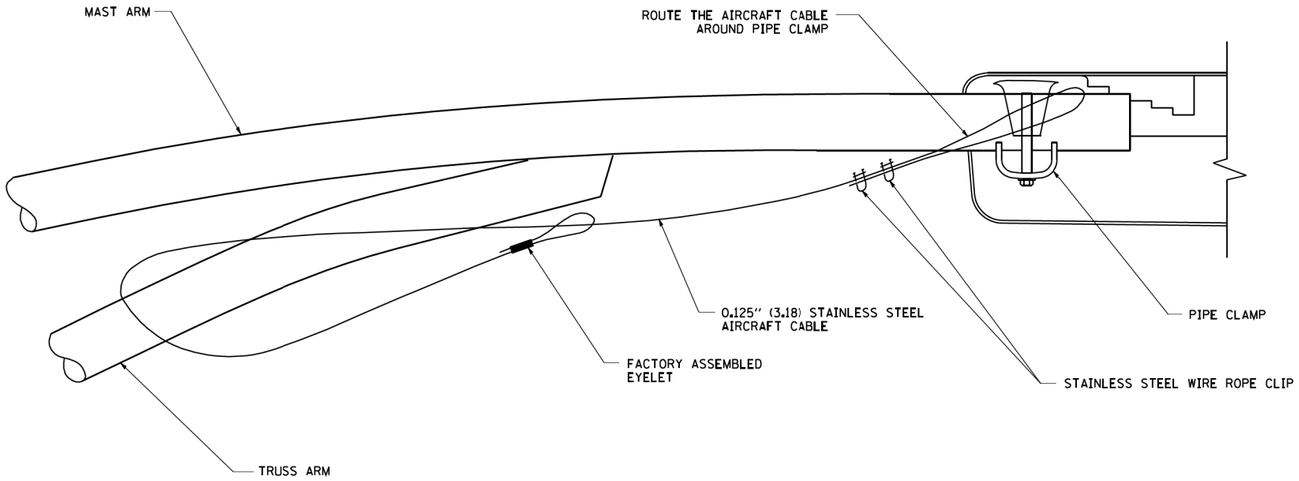
USER NAME = Lawrence,DeManche	DESIGNED -	REVISED - R. TOMSONS 09-03-03	
	DRAWN -	REVISED - R. TOMSONS 01-18-13	
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED - R. TOMSONS 03-18-15	
PLOT DATE = 6/27/2022	DATE -	REVISED - 06/13/2022 TG	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALUMINUM LIGHT POLE
47'–6" (14.478 m) MOUNTING HEIGHT

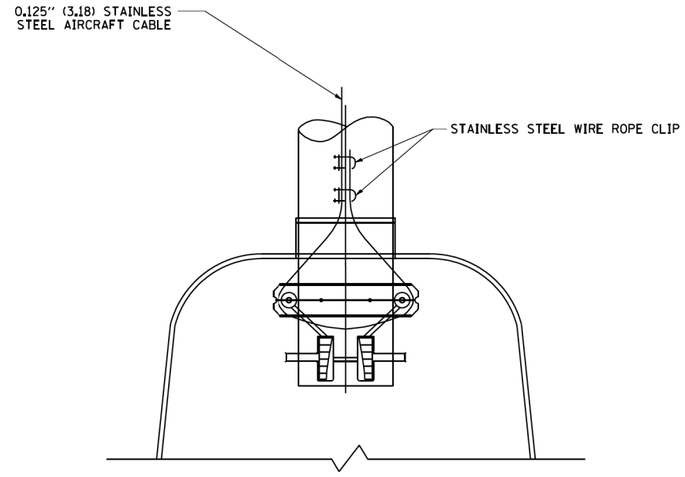
SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	152
	BE–400	CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			



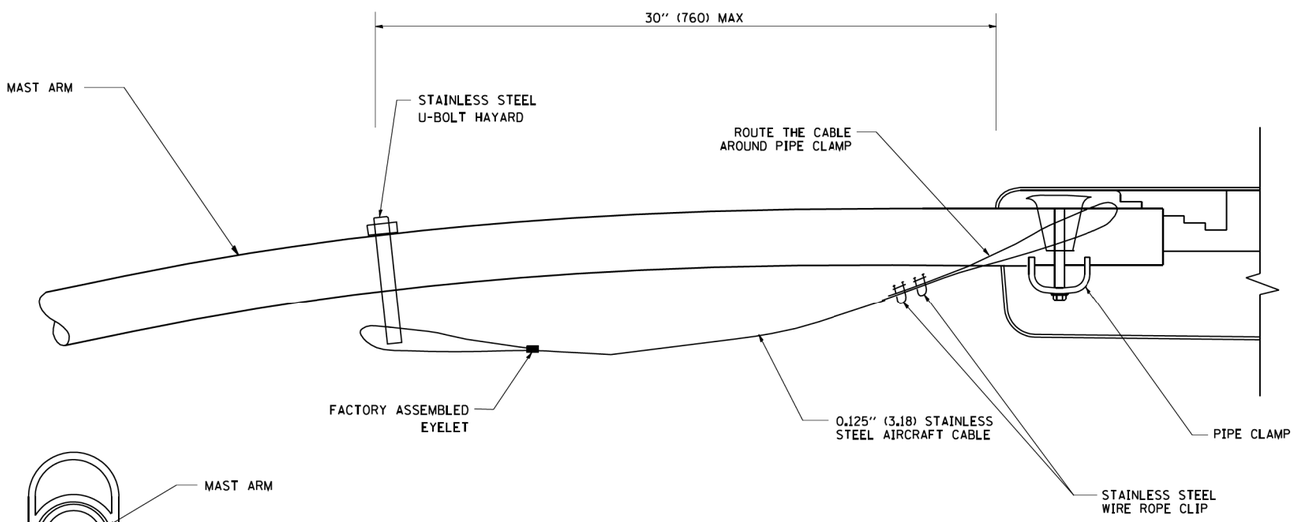
SIDE VIEW (TRUSS ARM)

N.T.S.



BOTTOM VIEW

N.T.S.



SIDE VIEW (SINGLE MEMBER OR DAVIT ARM)

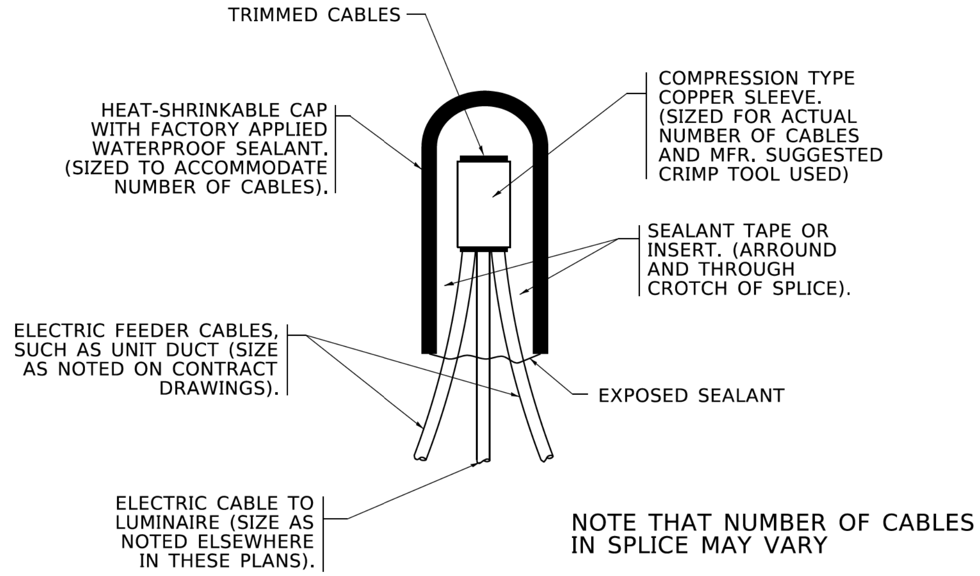
N.T.S.

NOTES:

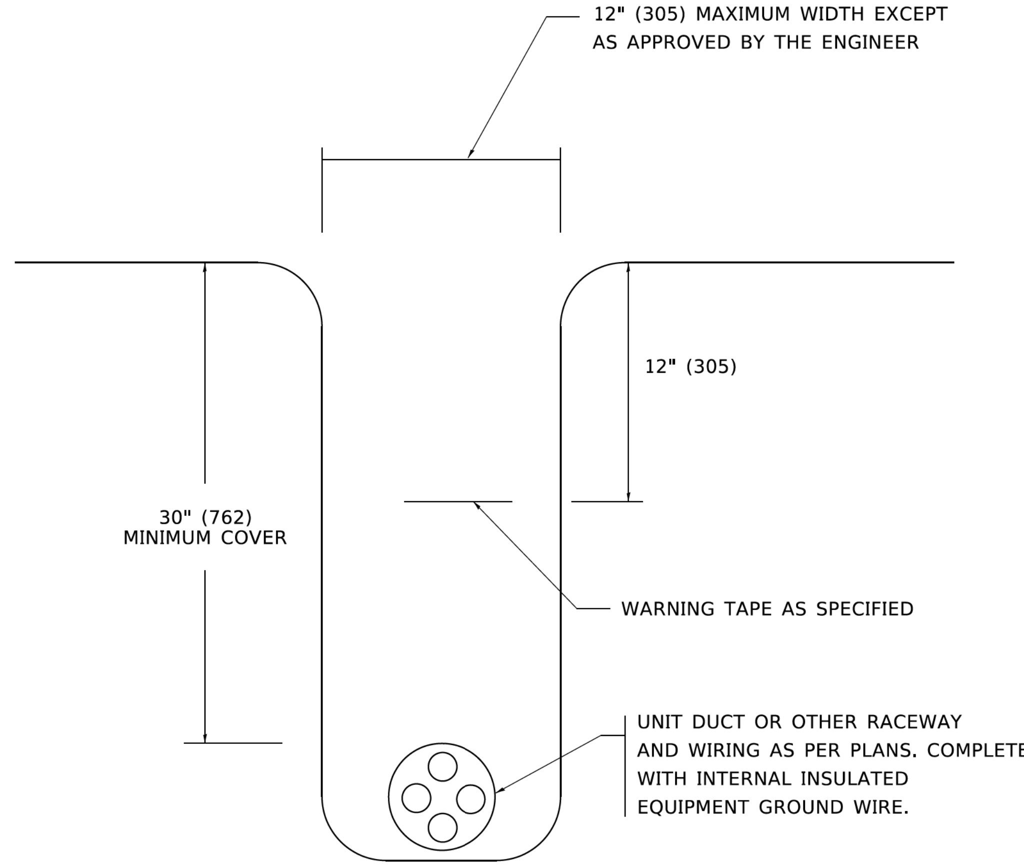
1. ALL DIMENSIONS ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE SHOWN.
2. CONTRACTOR SHALL ADJUST THE WIRE CLIP TO ELIMINATE ANY SLACK FROM THE WIRE ROPE.
3. THE 0.125" (3.18) STAINLESS STEEL AIRCRAFT CABLE SHALL REMAIN VISIBLE FROM THE GROUND LEVEL.
4. THE BREAKING STRENGTH OF THE CABLE SHALL BE 1700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

LT-14

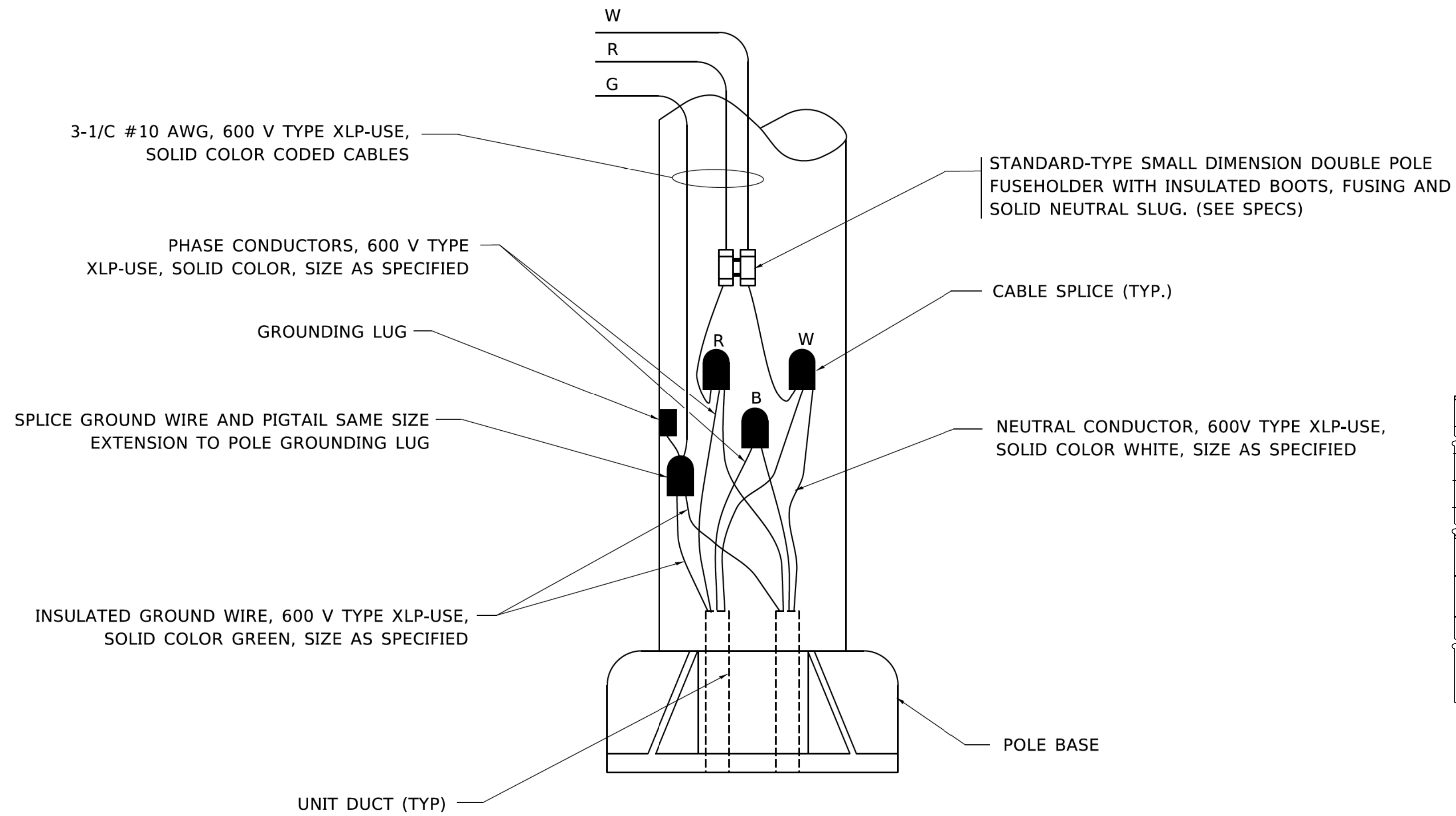
FILE NAME = W:\diststd\22x34\be701.dgn	USER NAME = geglienobt	DESIGNED -	REVISED - 08-08-03	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	LUMINAIRE SAFETY CABLE ASSEMBLY	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -			3523	120-Y-B	COOK	267	153
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -				BE-701		CONTRACT NO. 60J10	
	PLOT DATE = 1/4/2008	DATE -	REVISED -		SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



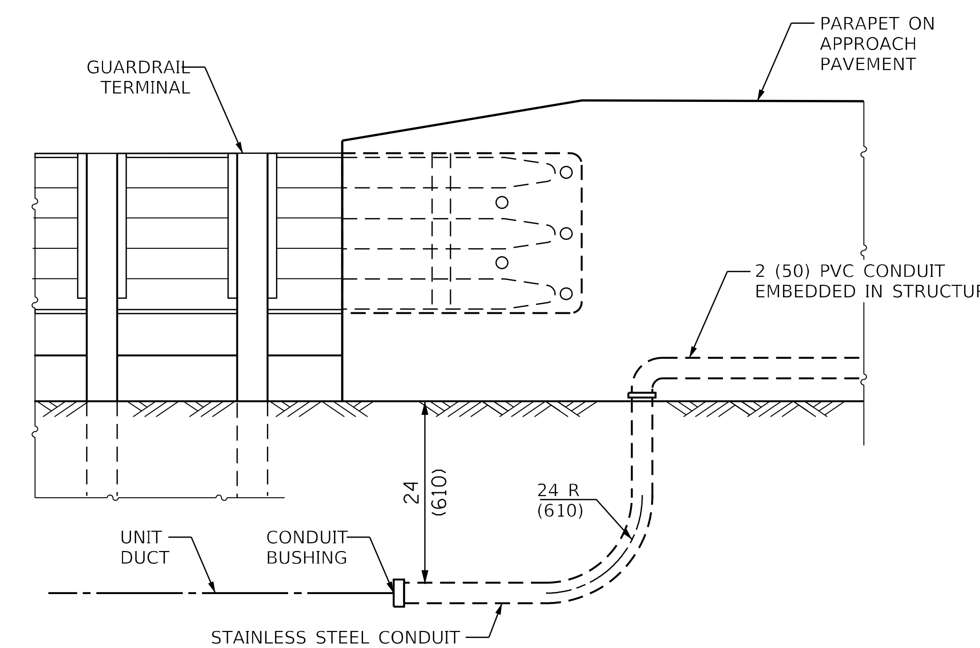
TYPICAL SPLICE DETAIL
N.T.S.



TYPICAL WIRING IN TRENCH DETAIL
N.T.S.



POLE WIRING DETAIL
N.T.S.



CONDUIT TRANSITION FOR ROUTING UNIT DUCT FROM LIGHT POLE ADE8 TO ADF8
N.T.S.

LT-15

MODEL: Default
FILE NAME: pw:\\planroom.dot.illinois.gov:PWIDOT\Documents\IDOT Offices\District 1\Projects\Dist5d22x34\CADData\CADSheets\be702.dgn

AMES Engineering, Inc. CONSULTING ENGINEERS 6330 Belmont Road, Suite 4B Downers Grove, IL 60516	USER NAME = leysa	DESIGNED -	REVISED - 02/04/2020	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	MISC. ELECTRICAL DETAILS SHEET A
		DRAWN -	REVISED -		
	PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED -		
	PLOT DATE = 3/2/2020	DATE - 08/08/2003	REVISED -		SCALE: NONE SHEET 1 OF 1 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120-Y-B	COOK	267	154
	BE-702	CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

Benchmark: BM-92 Chiseled square on sidewalk at S.W. corner of S.N. 016-0362, Elev. 635.39.

Existing Structure: S.N. 016-0362 was originally built as Rt. SAR 5, Section 1289-15D in 1928 and widened as F.A.U. 3523, Section 120-Y-RS(80) in 1982. The existing superstructure consists of three spans of cast-in-place concrete tee beams. The existing substructure consists of two solid wall concrete piers on spread footings and closed wall abutments on spread footings. The existing structure is 56'-6" wide, out-to-out, and 159'-0" long, back-to-back of abutments. The existing structure will be removed and replaced using staged construction.

Salvage: None.

DESIGN SCOUR TABLE

Event/Limit State	Design Scour Elevations (ft.)				Item 113
	W. Abut.	Pier 1	Pier 2	E. Abut.	
Q100	630.52	613.73	613.73	630.34	8
Q500	630.52	606.00	606.00	630.34	
Design	630.52	613.73	613.73	630.34	
Check	630.52	606.00	606.00	630.34	

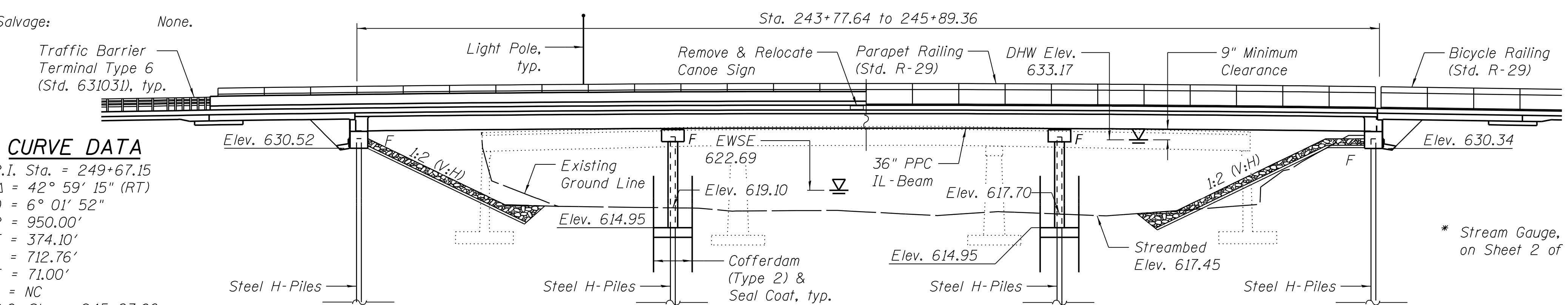
WATERWAY INFORMATION

Drainage Area = 374.6 Sq. Mi.

Existing Low Grade Elev. 631.02 @ Sta. 249+50
Proposed Low Grade Elev. 631.86 @ Sta. 240+42.99

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
	10	4385	1701	2183	631.27	0.19	0.13	631.46	631.40
Design	50	5728	1701	2548	633.17	0.25	0.10	633.42	633.27
Base	100	6193	1701	2670	633.78	0.05	0.04	633.83	633.82
Overtopping (Ex)	8	4160	1701		630.83	0.19		631.02	
Overtopping (Pr)	21	4780		2270	631.73		0.13		631.86
Max. Calc.	500	7256	1701	2846	635.10	0.18	0.13	635.28	635.23

10 Year velocity through existing bridge = 2.60 ft/s
10 Year velocity through proposed bridge = 2.00 ft/s
2 Year flow through bridge = 3,150 C.F.S.

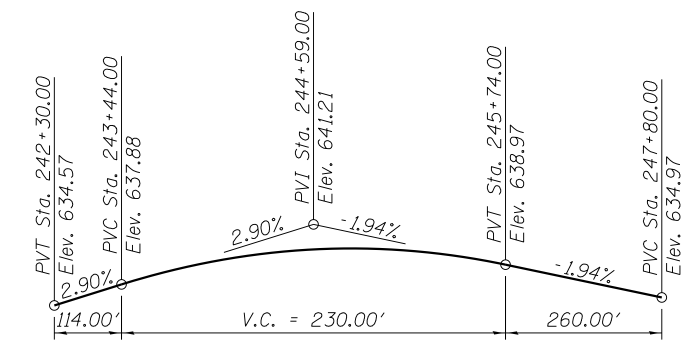


ELEVATION

CURVE DATA

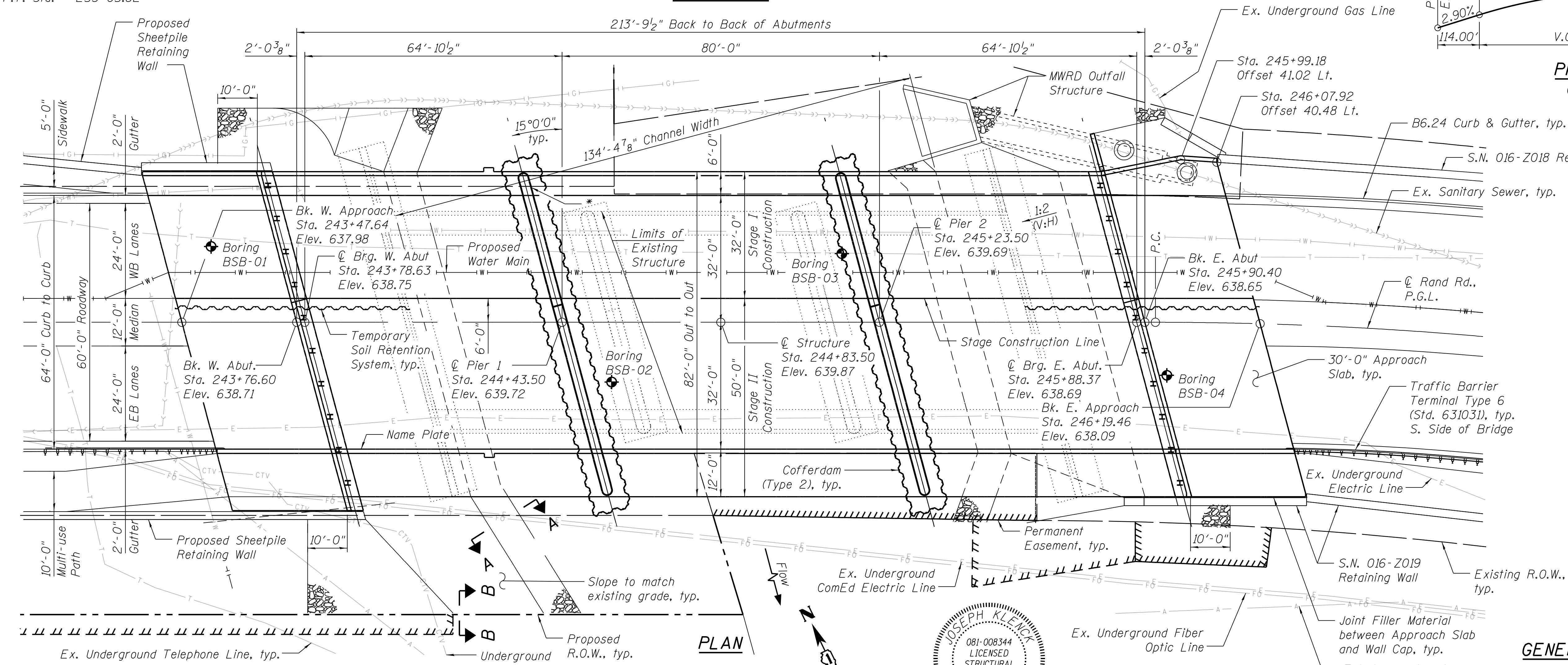
P.I. Sta. = 249+67.15
Δ = 42° 59' 15" (RT)
D = 6° 01' 52"
R = 950.00'
T = 374.10'
L = 712.76'
E = 71.00'
e = NC
P.C. Sta. = 245+93.06
P.T. Sta. = 253+05.82

* Stream Gauge, See Detail on Sheet 2 of 34



PROFILE GRADE

(along ℄ Rand Road)

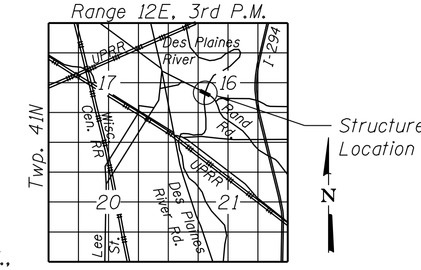


PLAN

STATION 244+83.50
BUILT 20__ BY
STATE OF ILLINOIS
F.A.U RT. 3523 SEC. 120Y-B
LOADING HL-93
STRUCTURE NO. 016-0379

NAME PLATE

See Std. 515001



LOCATION SKETCH

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.
Proposed Water Main = 75 plf

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design, 9th Edition

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
f'c = 4,000 psi (Superstructure Concrete)
fy = 60,000 psi (Reinforcement)

PRECAST PRESTRESSED UNITS

f'c = 8,500 psi
f'ci = 6,500 psi
fpu = 270,000 psi (0.6" dia. low-lax strands)
fpbt = 202,300 psi (0.6" dia. low-lax strands)

JOSEPH KLENCK
081-008344
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS

BY: ____________

DATE SIGNED: ____________

LICENSE EXPIRES: 11/30/2024

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.084g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.144g
Soil Site Class = D

GENERAL PLAN AND ELEVATION
RAND ROAD OVER DES PLAINES RIVER
F.A.U. RT. 3523 - SEC. 120Y-B
COOK COUNTY
STA. 244+83.50
STRUCTURE NO. 016-0379

FILE NAME = X:\P\113-2838-000 Rand Road\CAD\S\CADD Sheets\0160379-60J10-001-GPE.dgn

RS&H

USER NAME = EtzwileE	DESIGNED - JIK 12-15-2023	REVISED	
PLOT DATE = 3/18/2024	CHECKED - JGT 01-05-2024	REVISED	
	DRAWN - OR 12-15-2023	REVISED	
	CHECKED - JIK 01-05-2024	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL PLANS
GENERAL PLAN AND ELEVATION – STRUCTURE NO. 016–0379
SHEET NO. 1 OF 34 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	155

CONTRACT NO. 60J10

ILLINOIS FED. AID PROJECT

GENERAL NOTES

1. Reinforcement bars designated (E) shall be epoxy coated
2. Layout of slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
3. Seal coat thickness design is based on the Estimated Water Surface Elevation (EWSE). Cofferdam design details and proposed changes in seal coat thickness shall be submitted to the Engineer for approval with the cofferdam design.
4. All (embedded and separate) bearing plates, side retainers, anchor bolts, nuts, washers and pintles shall be galvanized according to AASHTO M111 or M232 as applicable.
5. Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure. The Contractor shall sawcut the upper portion of the existing abutment at the stage removal line before Stage I removal to ensure the remaining portion will not be prematurely damaged.
6. A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.
7. Slipforming of the parapets is not allowed.
8. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
9. The Contractor shall retain the services of an engineering firm, prequalified in the IDOT consultant selection category of Highway Bridges (Typical), for preparation of the Structural Assessment Report(s). Contractor's pre-approval shall not be applicable for this project. See Special Provision.
10. The Contractor is advised that the existing structure contains members that are in a deteriorated condition with reduced load carrying capacity. It is the Contractor's responsibility to account for the condition of the existing structure when developing construction procedures for the complete or partial removal, or replacement of the structure. An Existing Structure Information Package is available upon request as noted in the special provisions.

    Current Ratings on File for Existing Structure
    Inventory: HS 0.86
    Operating: HS 1.42
    Live Load Restrictions: Yes (30 ton)

    Inventory and Operating Ratings and Live Load Restrictions are provided for information only. Inventory and Operating Ratings are based on HS loading and configuration. Live Load Restrictions are based on Illinois legal loads and configurations. The Ratings and Live Load Restrictions are not necessarily representative of capacities to support the Contractor's equipment.

INDEX OF SHEETS

STREAM GAUGE NOTES

The gauge plates shall be porcelain enameled iron plate graduated in feet and tenths, plates shall be "WaterMark" Style "E" or approved equivalent.

Each individual number plate should be a black numeral on a 2" x 3" white porcelain enameled iron plate. Number plates shall be "WaterMark" Style "E" or approved equivalent.

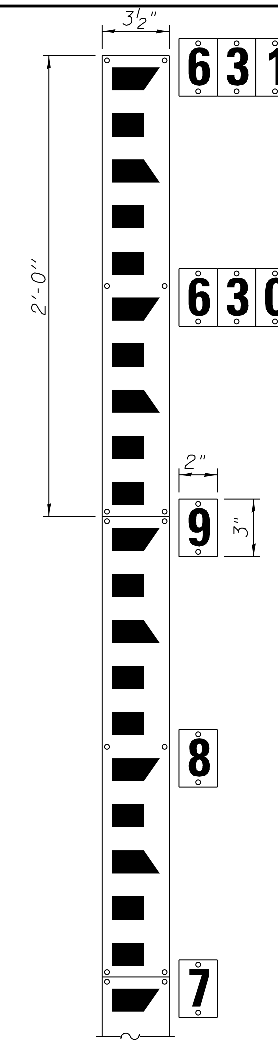
Both the gauge plates and number plates shall be fastened directly to the pier with a ¼" diameter, 1½" long masonry screw with a hex washer head.

Three digit elevations to be installed at the top of the gauge and at every elevation ending with a 0. At all of the other whole elevations, place the last digit as shown in the example to the right.

Start at Elevation 618 and continue to Elevation 631 at top of pier.

The Stream Guauge is to be located on the east face of Pier 1, approximately 4 feet from the north pier nose.

The Contractor must determine exact elevation of the Gauge Plates in the field. Cost of all Stream Gauge work to be included in the cost of "Concrete Structures".



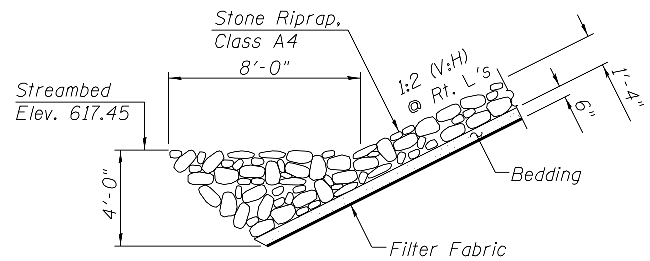
STREAM GAUGE DETAIL

TOTAL BILL OF MATERIAL

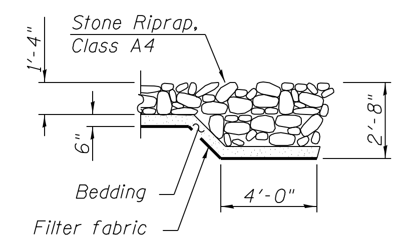
ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Sq. Yd.		1,300	1,300
Filter Fabric	Sq. Yd.		1,300	1,300
Removal Of Existing Structures	Each			1
Structure Excavation	Cu. Yd.		246	246
Cofferdam Excavation	Cu. Yd.		171	171
Cofferdam (Type 2) (Location-1)	Each		1	1
Cofferdam (Type 2) (Location-2)	Each		1	1
Concrete Structures	Cu. Yd.		515.1	515.1
Concrete Superstructure	Cu. Yd.	740.7		740.7
Bridge Deck Grooving	Sq. Yd.	1,933		1,933
Seal Coat Concrete	Cu. Yd.		125.2	125.2
Protective Coat	Sq. Yd.	2,326		2,326
Concrete Superstructure (Approach Slab)	Cu. Yd.	236.3		236.3
Furnishing and Erecting Precast Prestressed Concrete Beams, IL36N	Foot	2,090.0		2,090.0
Reinforcement Bars, Epoxy Coated	Pound	268,690	41,960	310,650
Bar Splicers	Each	1,081	118	1,199
Aluminum Railing, Type L	Foot	272		272
Bicycle Railing	Foot	272		272
Parapet Railing	Foot	264		264
Furnishing Steel Piles HP 14 x 89	Foot		4,590	4,590
Driving Piles	Foot		4,590	4,590
Test Pile Steel HP 14 x 89	Each		4	4
Name Plates	Each	1		1
Temporary Soil Retention System	Sq. Ft		693	693
Granular Backfill For Structures	Cu. Yd.		246	246
Geocomposite Wall Drain	Sq. Yd.		128	128
Pipe Underdrains For Structures 4"	Foot		174	174
Manholes to be Reconstructed	Each		1	1
* Debris Removal	L Sum		1	1

* Indicates Pay Item is Governed by a Special Provision

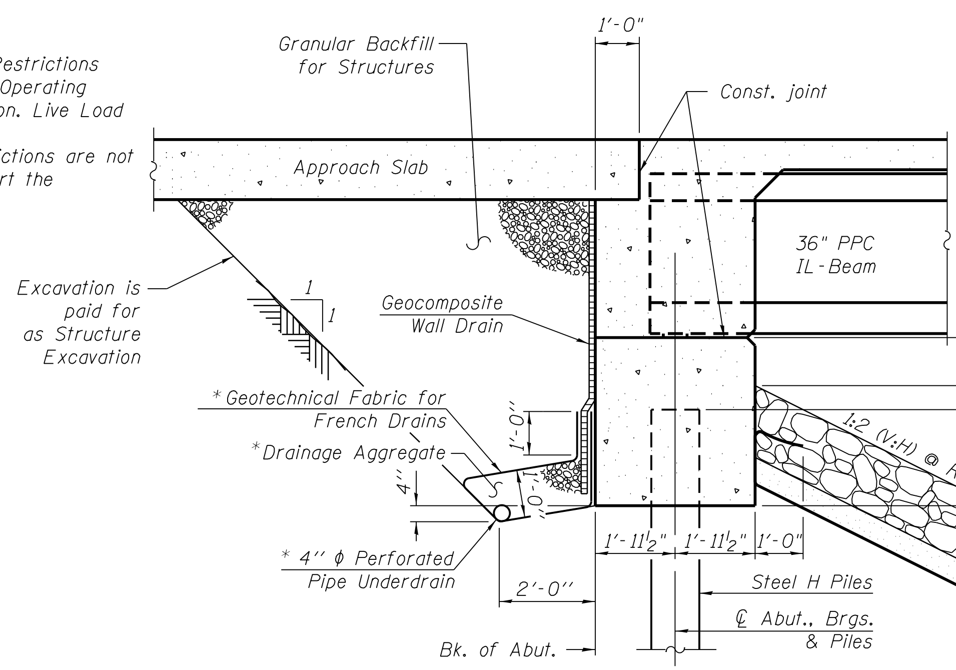
Note:
All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).



SECTION A-A



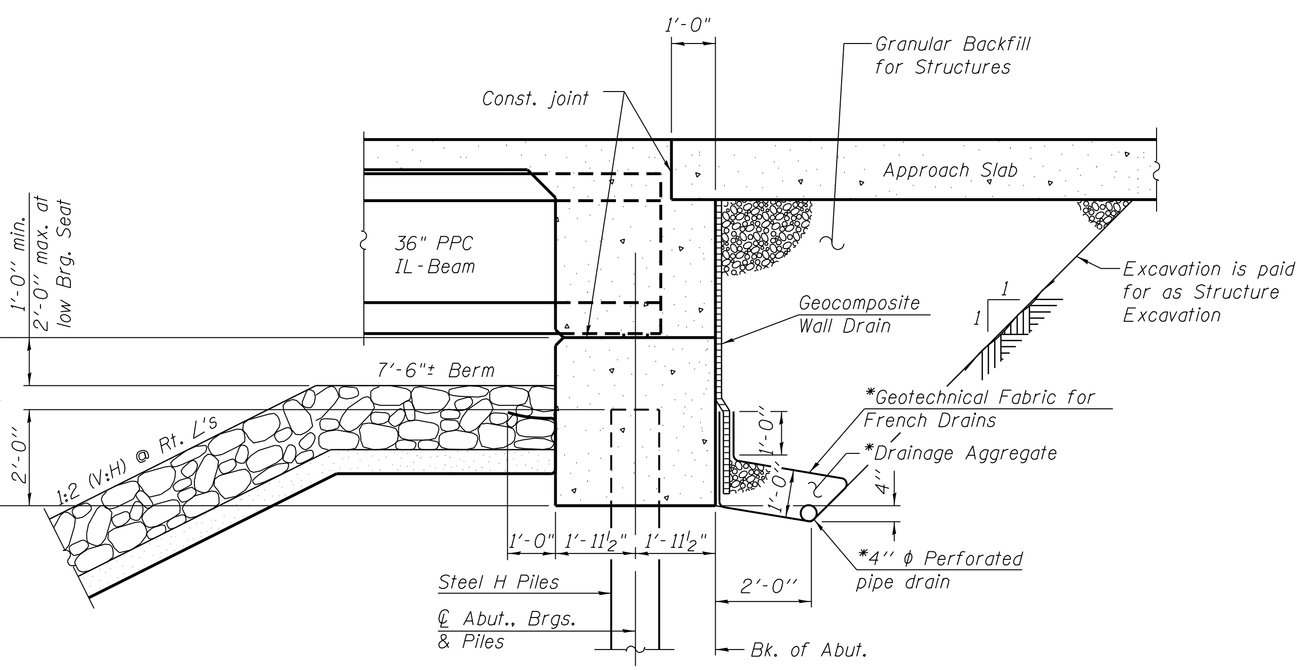
SECTION B-B



SECTION THRU WEST INTEGRAL ABUTMENT

(Horiz. dim. @ Rt. ∠'s)

*Included in the cost of Pipe Underdrains for Structures.



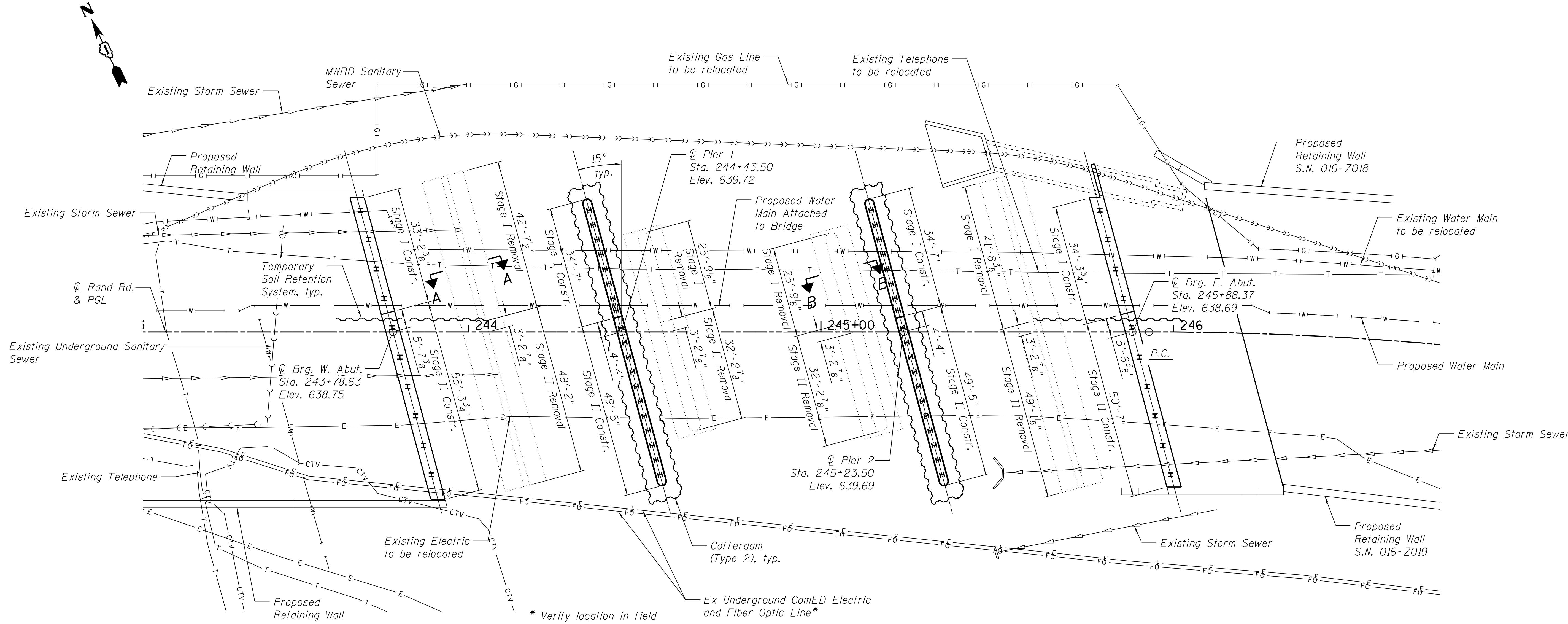
SECTION THRU EAST INTEGRAL ABUTMENT

(Horiz. dim. @ Rt. ∠'s)

RS&H	USER NAME = EtzwileE	DESIGNED - JIK 12-15-2023	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STRUCTURAL PLANS GENERAL NOTES & DATA - STRUCTURE NO. 016-0379
	PLOT DATE = 3/18/2024	CHECKED - JGT 01-05-2024	REVISED		
		DRAWN - OR 12-15-2023	REVISED		
		CHECKED - JIK 01-05-2024	REVISED		SHEET NO. 2 OF 34 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	156
		CONTRACT NO. 60J10		
		ILLINOIS FED. AID PROJECT		

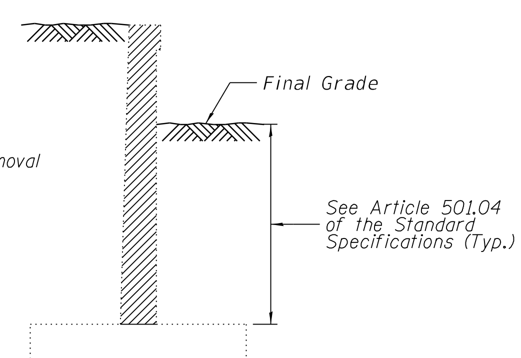
FILE NAME = X:\P\113-2838-000 Rand Road\CAD\S\CADD Sheets\016037 9-60J10-002-GenNotes.dgn



FOOTING LAYOUT

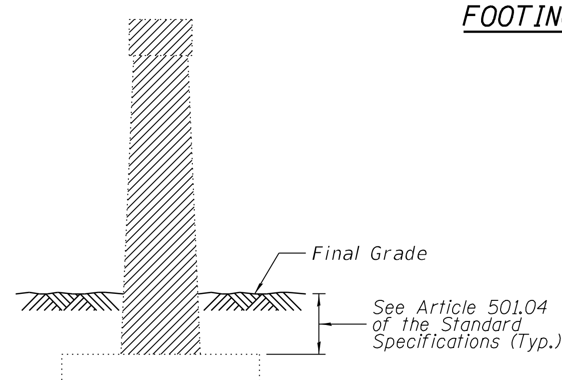
LEGEND

Structure Removal



SECTION A-A

Abutment, typ



SECTION B-B

Pier, typ

NOTES

1. Riprap is located near existing piers and may need to be removed prior to driving piles for Piers 1 and 2. Cost included in Structure Excavation.

RS&H

USER NAME = EtzwileE	DESIGNED - OR	12-15-2023	REVISED
PLOT DATE = 3/18/2024	CHECKED - JIK	01-05-2024	REVISED
	DRAWN - OR	12-15-2023	REVISED
	CHECKED - JIK	01-05-2024	REVISED

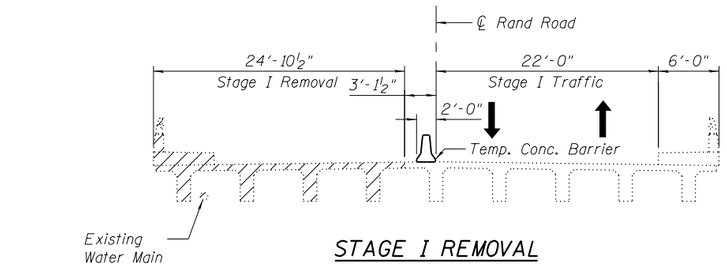
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL PLANS
FOOTING LAYOUT – STRUCTURE NO. 016-0379

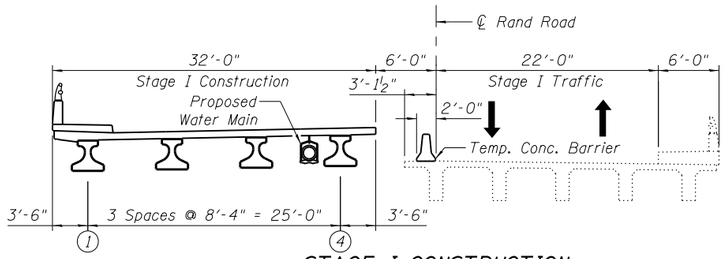
SHEET NO. 3 OF 34 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	157
		CONTRACT NO. 60J10		
		ILLINOIS FED. AID PROJECT		

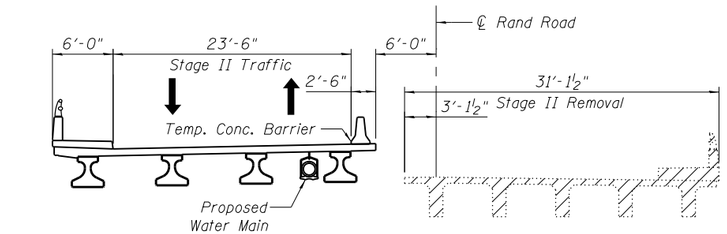
FILE NAME = X:\P\113-2838-000 Rand Road\CAD\S\CADD Sheets\0160379-60J10-003-FootingLayout.dgn



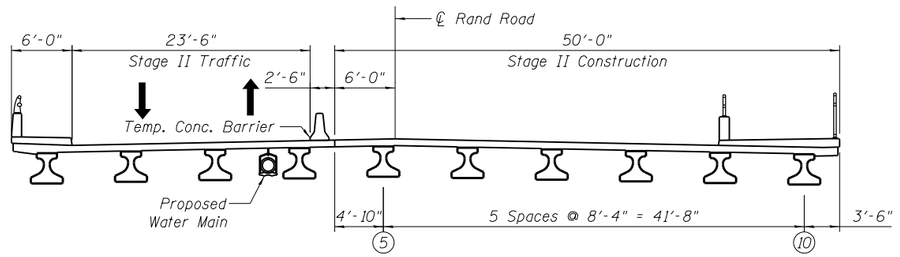
STAGE I REMOVAL



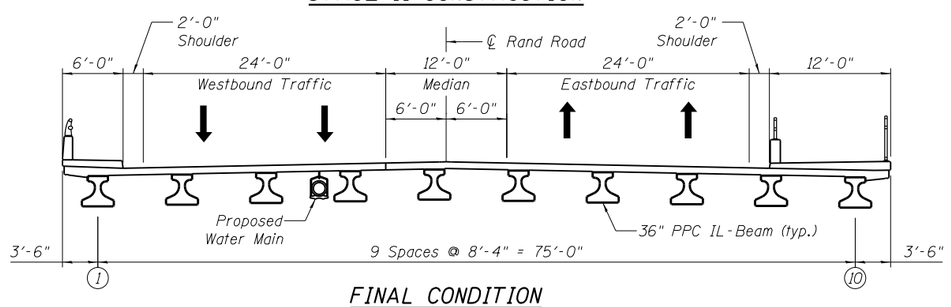
STAGE I CONSTRUCTION



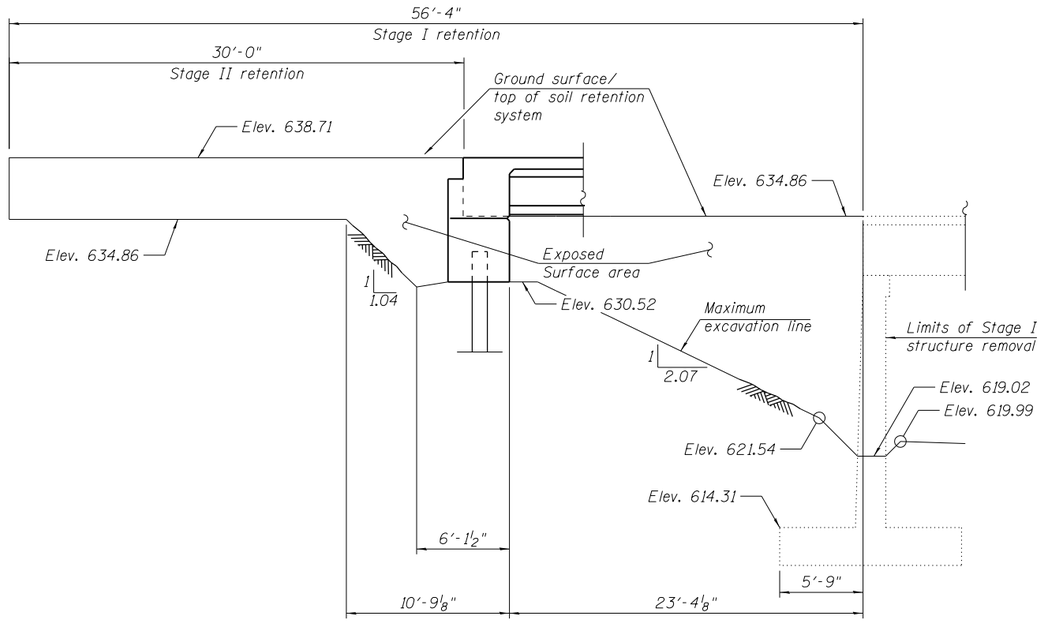
STAGE II REMOVAL



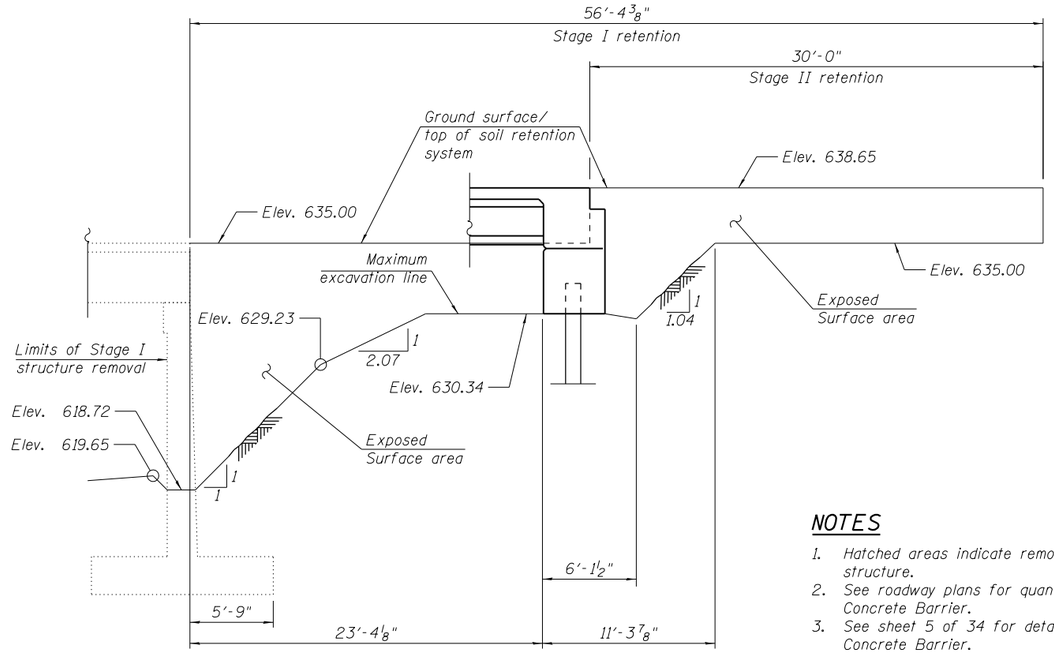
STAGE II CONSTRUCTION



FINAL CONDITION



WEST ABUTMENT TEMPORARY SOIL RETENTION SYSTEM



EAST ABUTMENT TEMPORARY SOIL RETENTION SYSTEM

NOTES

1. Hatched areas indicate removal of existing structure.
2. See roadway plans for quantity of Temporary Concrete Barrier.
3. See sheet 5 of 34 for details of Temporary Concrete Barrier.
4. Removal of existing bridge railing is included with Removal of Existing Structures.
5. Excavation of earth between existing structure and back face of proposed abutments is included with Removal of Existing Structures.
6. All staging cross sections are looking East.

FILE NAME = X:\P\113\2038-008 Rand Road\CAD\S\CADD Sheets\016B379-60J10-004-StageConstr.dgn

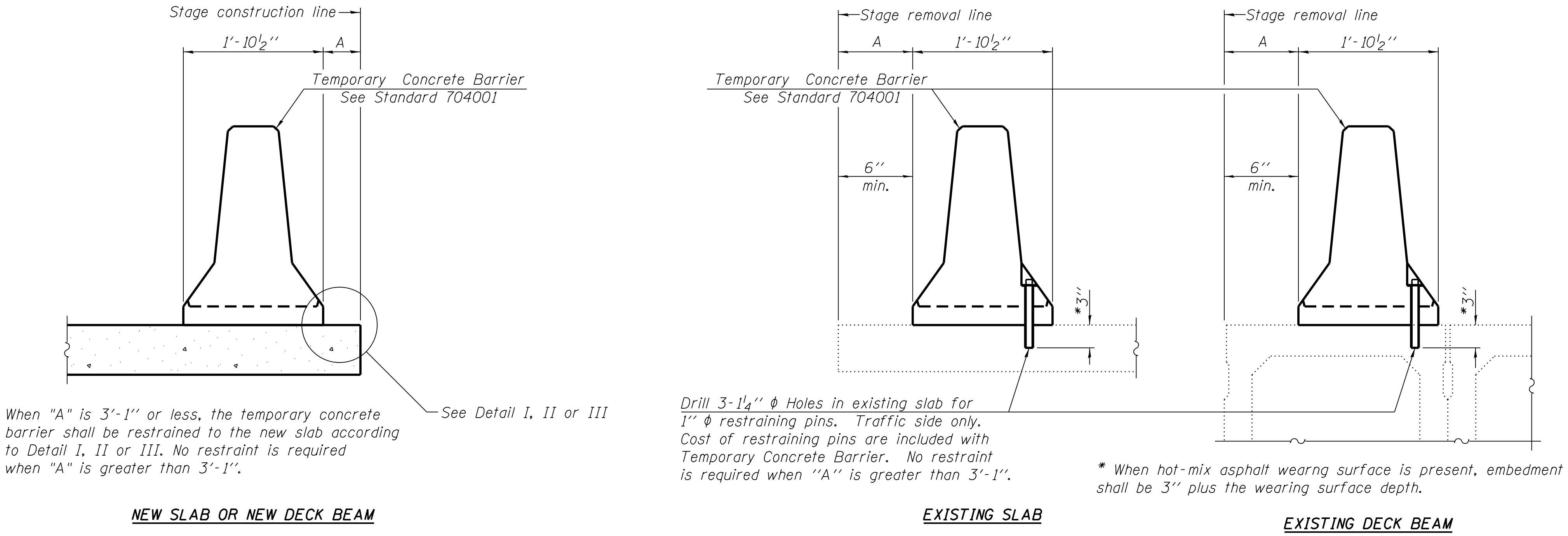
RS&H

USER NAME = EtzwilleE	DESIGNED - JIK 12-15-2023	REVISED	
PLOT DATE = 3/18/2024	CHECKED - JGT 01-05-2024	REVISED	
	DRAWN - OR 12-15-2023	REVISED	
	CHECKED - JIK 01-05-2024	REVISED	

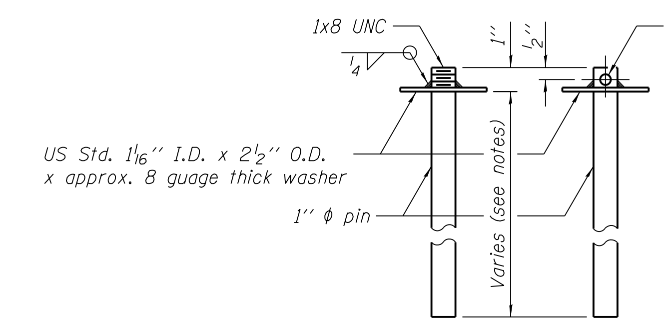
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL PLANS
STAGE CONSTRUCTION DETAILS – STRUCTURE NO. 016-0379
SHEET NO. 4 OF 34 SHEETS

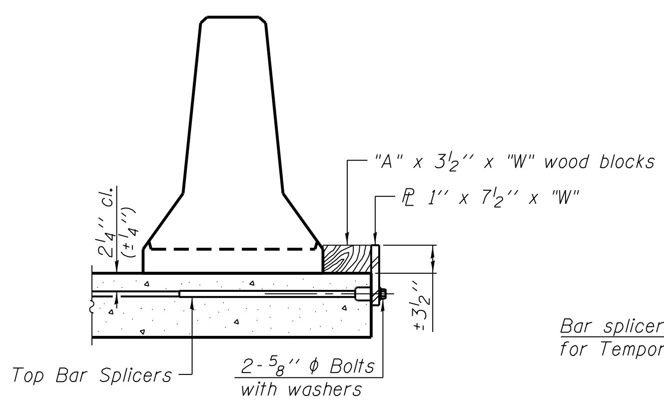
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	158
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			



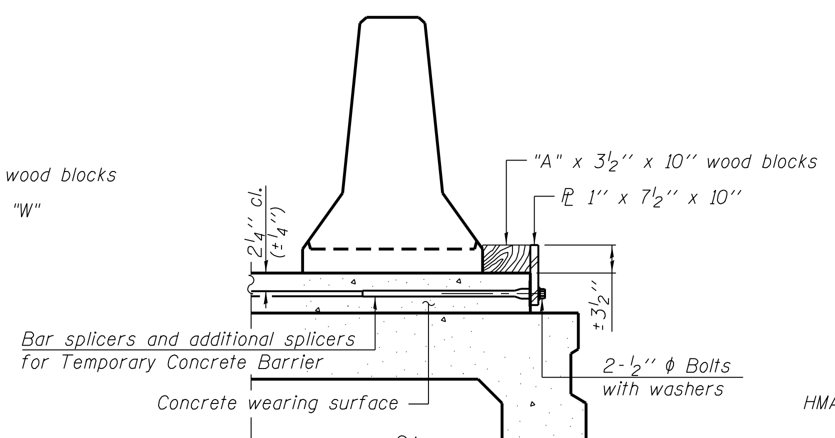
SECTIONS THRU SLAB OR DECK BEAM



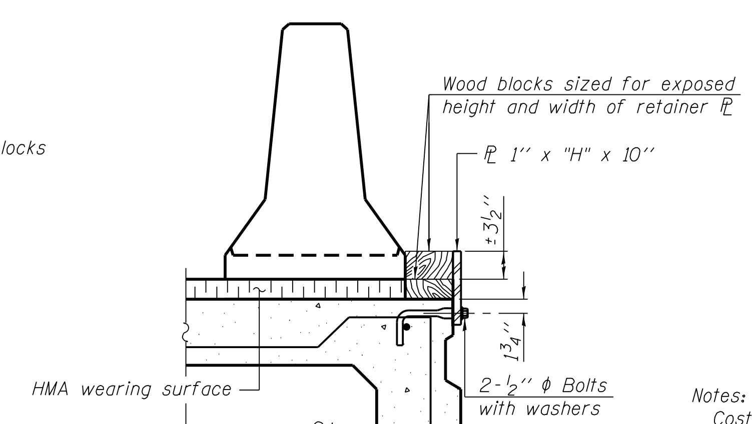
RESTRAINING PIN



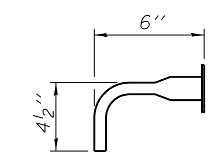
DETAIL I



DETAIL II



DETAIL III



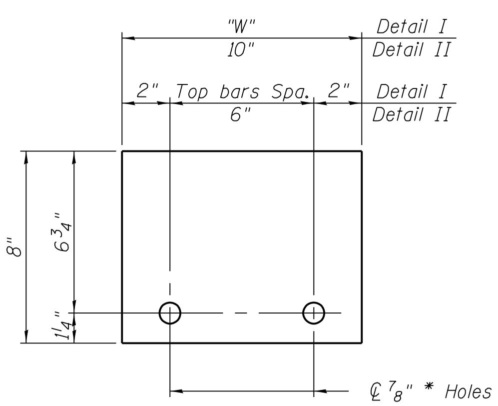
BAR SPLICER FOR #4 BAR - DETAIL III

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.

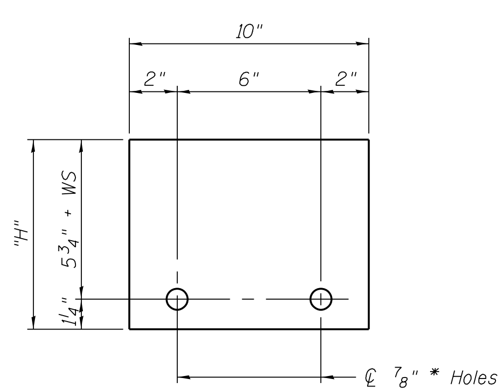
Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0'' centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the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



STEEL RETAINER PL 1" x 8" x "W"

(Detail I and II)



STEEL RETAINER PL 1" x "H" x 10"

(Detail III)

RAILING CRITERIA

NCHRP 350 Test Level	3
Railing Weight (plf)	440

R-27 10-12-2021

FILE NAME = X:\P\113-2838-000 Rand Road\CAD\S\CADD Sheets\0160379-60J10-005-TempBarrier.dgn

RS&H

USER NAME = EtzwilleE	DESIGNED - OR	12-15-2023	REVISED
PLOT DATE = 3/18/2024	CHECKED - JIK	01-05-2024	REVISED
	DRAWN - OR	12-15-2023	REVISED
	CHECKED - JIK	01-05-2024	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

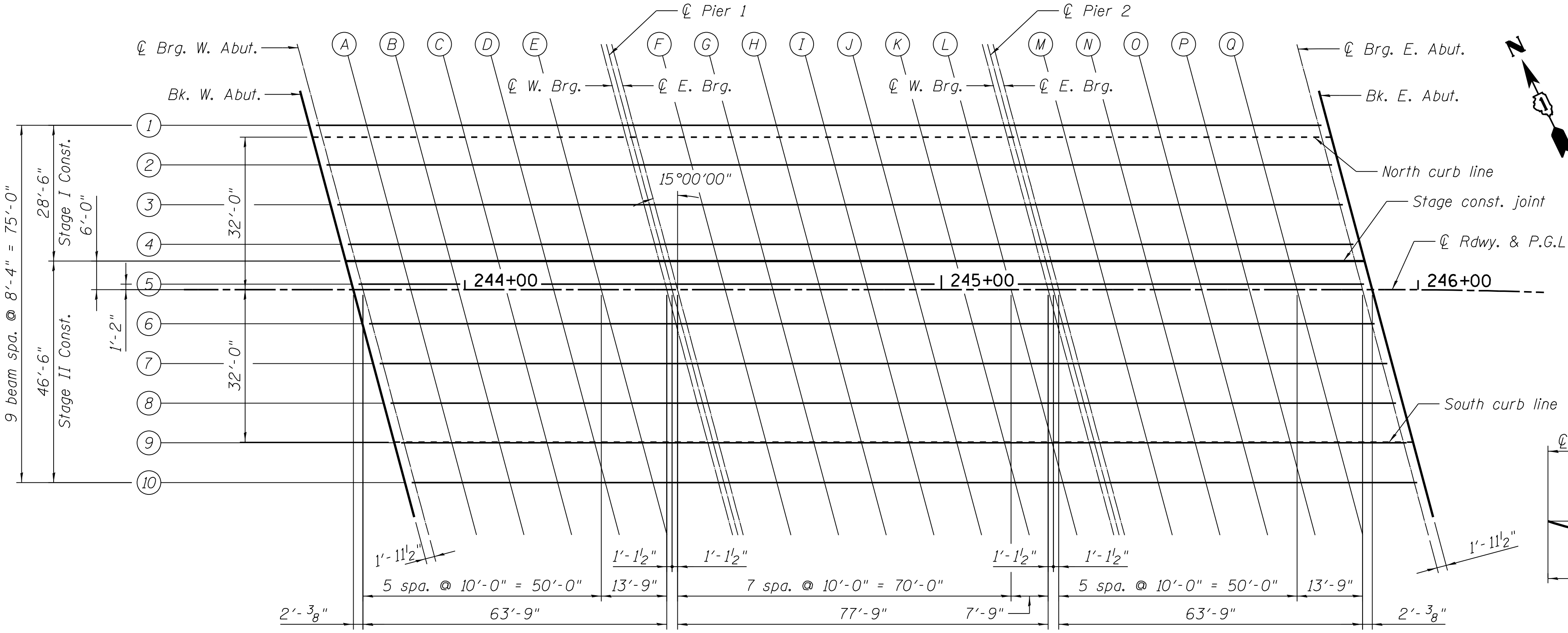
STRUCTURAL PLANS
TEMPORARY CONCRETE BARRIER DETAIL – STRUCTURE NO. 016-0379

SHEET NO. 5 OF 34 SHEETS

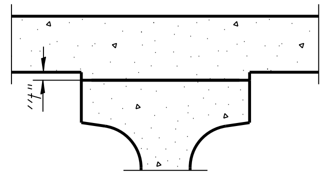
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	159

CONTRACT NO. 60J10

ILLINOIS FED. AID PROJECT

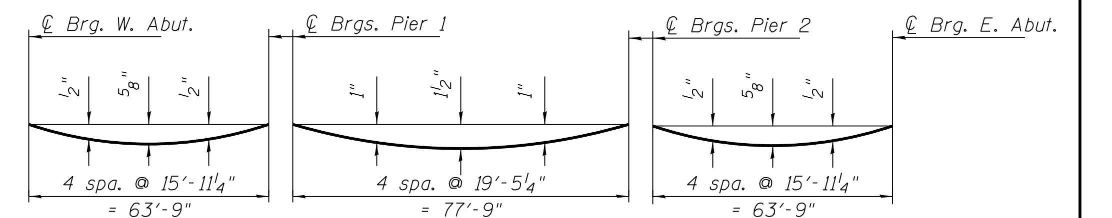


PLAN



To determine "t": After all precast prestressed beams have been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflections" shown below, minus slab thickness, equals the fillet heights "t" above top flanges of beams.

FILLET HEIGHTS



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete, excluding beams).

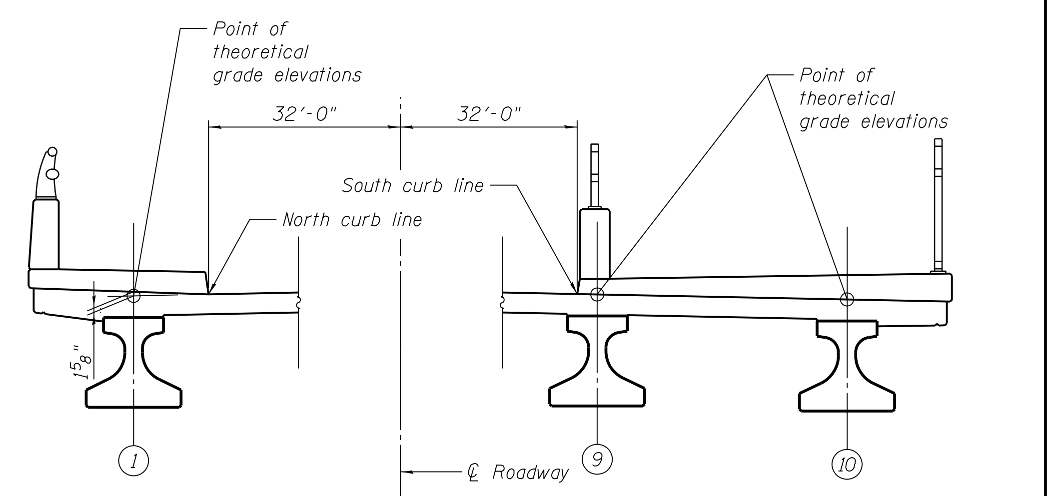
Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below.

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflections
Bk. W. Abut.	243+67.36	-34.50	637.81	637.81
℄ Brg. W. Abut.	243+69.39	-34.50	637.85	637.85
A	243+79.39	-34.50	638.08	638.11
B	243+89.39	-34.50	638.28	638.33
C	243+99.39	-34.50	638.47	638.52
D	244+09.39	-34.50	638.63	638.68
E	244+19.39	-34.50	638.77	638.81
℄ W. Brg. Pier 1	244+33.13	-34.50	638.93	638.93
℄ E. Brg. Pier 1	244+35.38	-34.50	638.96	638.96
F	244+45.38	-34.50	639.04	639.09
G	244+55.38	-34.50	639.11	639.20
H	244+65.38	-34.50	639.15	639.27
I	244+75.38	-34.50	639.18	639.30
J	244+85.38	-34.50	639.18	639.29
K	244+95.38	-34.50	639.16	639.24
L	245+05.38	-34.50	639.12	639.16
℄ W. Brg. Pier 2	245+13.13	-34.50	639.08	639.08
℄ E. Brg. Pier 2	245+15.38	-34.50	639.06	639.06
M	245+25.38	-34.50	638.98	639.01
N	245+35.38	-34.50	638.88	638.92
O	245+45.38	-34.50	638.75	638.81
P	245+55.38	-34.50	638.61	638.66
Q	245+65.38	-34.50	638.44	638.48
℄ Brg. E. Abut.	245+79.13	-34.50	638.18	638.18
Bk. E. Abut.	245+81.15	-34.50	638.14	638.14

NORTH CURB LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflections
Bk. W. Abut.	243+68.03	-32.00	637.87	637.87
℄ Brg. W. Abut.	243+70.06	-32.00	637.92	637.92
A	243+80.06	-32.00	638.14	638.17
B	243+90.06	-32.00	638.35	638.39
C	244+00.06	-32.00	638.53	638.59
D	244+10.06	-32.00	638.69	638.74
E	244+20.06	-32.00	638.83	638.87
℄ W. Brg. Pier 1	244+33.80	-32.00	638.99	638.99
℄ E. Brg. Pier 1	244+36.05	-32.00	639.01	639.01
F	244+46.05	-32.00	639.10	639.15
G	244+56.05	-32.00	639.16	639.25
H	244+66.05	-32.00	639.21	639.32
I	244+76.05	-32.00	639.23	639.35
J	244+86.05	-32.00	639.23	639.34
K	244+96.05	-32.00	639.21	639.29
L	245+06.05	-32.00	639.17	639.21
℄ W. Brg. Pier 2	245+13.80	-32.00	639.12	639.12
℄ E. Brg. Pier 2	245+16.05	-32.00	639.11	639.11
M	245+26.05	-32.00	639.02	639.05
N	245+36.05	-32.00	638.92	638.97
O	245+46.05	-32.00	638.79	638.85
P	245+56.05	-32.00	638.65	638.70
Q	245+66.05	-32.00	638.48	638.52
℄ Brg. E. Abut.	245+79.80	-32.00	638.22	638.22
Bk. E. Abut.	245+81.82	-32.00	638.18	638.18



SECTION SHOWING
POINT OF THEORETICAL GRADE ELEVATIONS

(Looking east)

FILE NAME = X:\P\113-2838-000 Rand Road\CAD\S\CADD Sheets\016037-60J10-006-TopOfSlabElev01.dgn

RS&H

USER NAME = EtzwileE	DESIGNED - JIK 12-15-2023	REVISED
PLOT DATE = 3/18/2024	CHECKED - JGT 01-05-2024	REVISED
	DRAWN - OR 12-15-2023	REVISED
	CHECKED - JIK 01-05-2024	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL PLANS
TOP OF SLAB ELEVATIONS (1 OF 3) – STRUCTURE NO. 016-0379

SHEET NO. 6 OF 34 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	160

CONTRACT NO. 60J10

ILLINOIS FED. AID PROJECT

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflections
Bk. W. Abut.	243+69.59	-26.17	638.03	638.03
℄ Brg. W. Abut.	243+71.62	-26.17	638.07	638.07
A	243+81.62	-26.17	638.29	638.32
B	243+91.62	-26.17	638.49	638.54
C	244+01.62	-26.17	638.67	638.72
D	244+11.62	-26.17	638.83	638.88
E	244+21.62	-26.17	638.97	639.00
℄ W. Brg. Pier 1	244+35.36	-26.17	639.12	639.12
℄ E. Brg. Pier 1	244+37.61	-26.17	639.14	639.14
F	244+47.61	-26.17	639.23	639.27
G	244+57.61	-26.17	639.29	639.37
H	244+67.61	-26.17	639.33	639.43
I	244+77.61	-26.17	639.35	639.46
J	244+87.61	-26.17	639.34	639.44
K	244+97.61	-26.17	639.32	639.39
L	245+07.61	-26.17	639.28	639.31
℄ W. Brg. Pier 2	245+15.36	-26.17	639.23	639.23
℄ E. Brg. Pier 2	245+17.61	-26.17	639.21	639.21
M	245+27.61	-26.17	639.13	639.15
N	245+37.61	-26.17	639.02	639.06
O	245+47.61	-26.17	638.89	638.94
P	245+57.61	-26.17	638.74	638.79
Q	245+67.61	-26.17	638.57	638.60
℄ Brg. E. Abut.	245+81.36	-26.17	638.31	638.31
Bk. E. Abut.	245+83.39	-26.17	638.27	638.27

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflections
Bk. W. Abut.	243+71.82	-17.83	638.24	638.24
℄ Brg. W. Abut.	243+73.85	-17.83	638.29	638.29
A	243+83.85	-17.83	638.51	638.53
B	243+93.85	-17.83	638.70	638.75
C	244+03.85	-17.83	638.88	638.93
D	244+13.85	-17.83	639.03	639.08
E	244+23.85	-17.83	639.16	639.19
℄ W. Brg. Pier 1	244+37.60	-17.83	639.31	639.31
℄ E. Brg. Pier 1	244+39.85	-17.83	639.33	639.33
F	244+49.85	-17.83	639.41	639.45
G	244+59.85	-17.83	639.46	639.55
H	244+69.85	-17.83	639.50	639.61
I	244+79.85	-17.83	639.51	639.63
J	244+89.85	-17.83	639.51	639.61
K	244+99.85	-17.83	639.48	639.55
L	245+09.85	-17.83	639.43	639.47
℄ W. Brg. Pier 2	245+17.60	-17.83	639.38	639.38
℄ E. Brg. Pier 2	245+19.85	-17.83	639.36	639.36
M	245+29.85	-17.83	639.27	639.29
N	245+39.85	-17.83	639.16	639.20
O	245+49.85	-17.83	639.02	639.08
P	245+59.85	-17.83	638.87	638.92
Q	245+69.85	-17.83	638.70	638.73
℄ Brg. E. Abut.	245+83.59	-17.83	638.43	638.43
Bk. E. Abut.	245+85.62	-17.83	638.39	638.39

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflections
Bk. W. Abut.	243+74.06	-9.50	638.46	638.46
℄ Brg. W. Abut.	243+76.08	-9.50	638.51	638.51
A	243+86.08	-9.50	638.72	638.74
B	243+96.08	-9.50	638.91	638.95
C	244+06.08	-9.50	639.08	639.13
D	244+16.08	-9.50	639.23	639.28
E	244+26.08	-9.50	639.36	639.39
℄ W. Brg. Pier 1	244+39.83	-9.50	639.50	639.50
℄ E. Brg. Pier 1	244+42.08	-9.50	639.52	639.52
F	244+52.08	-9.50	639.59	639.63
G	244+62.08	-9.50	639.64	639.72
H	244+72.08	-9.50	639.67	639.78
I	244+82.08	-9.50	639.68	639.79
J	244+92.08	-9.50	639.67	639.77
K	245+02.08	-9.50	639.64	639.71
L	245+12.08	-9.50	639.58	639.62
℄ W. Brg. Pier 2	245+19.83	-9.50	639.53	639.53
℄ E. Brg. Pier 2	245+22.08	-9.50	639.51	639.51
M	245+32.08	-9.50	639.41	639.44
N	245+42.08	-9.50	639.30	639.34
O	245+52.08	-9.50	639.16	639.21
P	245+62.08	-9.50	639.00	639.05
Q	245+72.08	-9.50	638.82	638.85
℄ Brg. E. Abut.	245+85.82	-9.50	638.55	638.55
Bk. E. Abut.	245+87.85	-9.50	638.51	638.51

STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflections
Bk. W. Abut.	243+74.99	-6.00	638.55	638.55
℄ Brg. W. Abut.	243+77.02	-6.00	638.60	638.60
A	243+87.02	-6.00	638.81	638.83
B	243+97.02	-6.00	639.00	639.04
C	244+07.02	-6.00	639.16	639.22
D	244+17.02	-6.00	639.31	639.36
E	244+27.02	-6.00	639.44	639.47
℄ W. Brg. Pier 1	244+40.77	-6.00	639.57	639.57
℄ E. Brg. Pier 1	244+43.02	-6.00	639.59	639.59
F	244+53.02	-6.00	639.66	639.71
G	244+63.02	-6.00	639.71	639.80
H	244+73.02	-6.00	639.74	639.85
I	244+83.02	-6.00	639.75	639.86
J	244+93.02	-6.00	639.74	639.84
K	245+03.02	-6.00	639.70	639.78
L	245+13.02	-6.00	639.65	639.68
℄ W. Brg. Pier 2	245+20.77	-6.00	639.59	639.59
℄ E. Brg. Pier 2	245+23.02	-6.00	639.57	639.57
M	245+33.02	-6.00	639.47	639.50
N	245+43.02	-6.00	639.35	639.40
O	245+53.02	-6.00	639.21	639.27
P	245+63.02	-6.00	639.05	639.10
Q	245+73.02	-6.00	638.87	638.91
℄ Brg. E. Abut.	245+86.76	-6.00	638.60	638.60
Bk. E. Abut.	245+88.79	-6.00	638.57	638.57

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflections
Bk. W. Abut.	243+76.29	-1.17	638.68	638.68
℄ Brg. W. Abut.	243+78.32	-1.17	638.72	638.72
A	243+88.32	-1.17	638.93	638.96
B	243+98.32	-1.17	639.12	639.16
C	244+08.32	-1.17	639.28	639.33
D	244+18.32	-1.17	639.43	639.47
E	244+28.32	-1.17	639.55	639.58
℄ W. Brg. Pier 1	244+42.06	-1.17	639.68	639.68
℄ E. Brg. Pier 1	244+44.31	-1.17	639.70	639.70
F	244+54.31	-1.17	639.77	639.81
G	244+64.31	-1.17	639.82	639.90
H	244+74.31	-1.17	639.84	639.95
I	244+84.31	-1.17	639.85	639.96
J	244+94.31	-1.17	639.83	639.93
K	245+04.31	-1.17	639.79	639.87
L	245+14.31	-1.17	639.74	639.77
℄ W. Brg. Pier 2	245+22.06	-1.17	639.68	639.68
℄ E. Brg. Pier 2	245+24.31	-1.17	639.66	639.66
M	245+34.31	-1.17	639.56	639.58
N	245+44.31	-1.17	639.43	639.48
O	245+54.31	-1.17	639.29	639.34
P	245+64.31	-1.17	639.13	639.18
Q	245+74.31	-1.17	638.94	638.98
℄ Brg. E. Abut.	245+88.06	-1.17	638.68	638.68
Bk. E. Abut.	245+90.09	-1.17	638.64	638.64

PROFILE GRADE LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflections
Bk. W. Abut.	243+76.60	0.00	638.71	638.71
℄ Brg. W. Abut.	243+78.63	0.00	638.75	638.75
A	243+88.63	0.00	638.96	638.98
B	243+98.63	0.00	639.15	639.19
C	244+08.63	0.00	639.31	639.36
D	244+18.63	0.00	639.45	639.50
E	244+28.63	0.00	639.57	639.61
℄ W. Brg. Pier 1	244+42.38	0.00	639.71	639.71
℄ E. Brg. Pier 1	244+44.63	0.00	639.73	639.73
F	244+54.63	0.00	639.79	639.84
G	244+64.63	0.00	639.84	639.92
H	244+74.63	0.00	639.87	639.97
I	244+84.63	0.00	639.87	639.98
J	244+94.63	0.00	639.85	639.95
K	245+04.63	0.00	639.82	639.89
L	245+14.63	0.00	639.76	639.79
℄ W. Brg. Pier 2	245+22.38	0.00	639.70	639.70
℄ E. Brg. Pier 2	245+24.63	0.00	639.68	639.68
M	245+34.63	0.00	639.58	639.60
N	245+44.63	0.00	639.45	639.50
O	245+54.63	0.00	639.31	639.36
P	245+64.63	0.00	639.15	639.19
Q	245+74.63	0.00	638.96	638.99
℄ Brg. E. Abut.	245+88.37	0.00	638.69	638.69
Bk. E. Abut.	245+90.40	0.00	638.65	638.65

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflections
Bk. W. Abut.	243+78.52	7.17	638.61	638.61
℄ Brg. W. Abut.	243+80.55	7.17	638.65	638.65
A	243+90.55	7.17	638.85	638.88
B	244+00.55	7.17	639.03	639.08
C	244+10.55	7.17	639.20	639.25
D	244+20.55	7.17	639.33	639.38
E	244+30.55	7.17	639.45	639.48
℄ W. Brg. Pier 1	244+44.30	7.17	639.58	639.58
℄ E. Brg. Pier 1	244+46.55	7.17	639.60	639.60
F	244+56.55	7.17	639.66	639.71
G	244+66.55	7.17	639.70	639.78
H	244+76.55	7.17	639.72	639.83
I	244+86.55	7.17	639.73	639.84
J	244+96.55	7.17	639.70	639.81
K	245+06.55	7.17	639.66	639.74
L	245+16.55	7.17	639.60	639.63
℄ W. Brg. Pier 2	245+24.30	7.17	639.54	639.54
℄ E. Brg. Pier 2	245+26.55	7.17	639.52	639.52
M	245+36.55	7.17	639.41	639.43
N	245+46.55	7.17	639.28	639.33
O	245+56.55	7.17	639.14	639.19
P	245+66.55	7.17	638.97	639.02
Q	245+76.55	7.17	638.78	638.81
℄ Brg. E. Abut.	245+90.29	7.17	638.51	638.51
Bk. E. Abut.	245+92.32	7.17	638.47	638.47

BEAM 7

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflections
Bk. W. Abut.	243+80.76	15.50	638.49	638.49
℄ Brg. W. Abut.	243+82.78	15.50	638.53	638.53
A	243+92.78	15.50	638.73	638.75
B	244+02.78	15.50	638.91	638.95
C	244+12.78	15.50	639.06	639.11
D	244+22.78	15.50	639.20	639.24
E	244+32.78	15.50	639.31	639.34
℄ W. Brg. Pier 1	244+46.53	15.50	639.43	639.43
℄ E. Brg. Pier 1	244+48.78	15.50	639.45	639.45
F	244+58.78	15.50	639.51	639.55
G	244+68.78	15.50	639.54	639.62
H	244+78.78	15.50	639.56	639.67
I	244+88.78	15.50	639.56	639.67
J	244+98.78	15.50	639.53	639.63
K	245+08.78	15.50	639.48	639.56
L	245+18.78	15.50	639.42	639.45
℄ W. Brg. Pier 2	245+26.53	15.50	639.35	639.35
℄ E. Brg. Pier 2	245+28.78	15.50	639.33	639.33
M	245+38.78	15.50	639.22	639.24
N	245+48.78	15.50	639.09	639.13
O	245+58.78	15.50	638.93	638.99
P	245+68.78	15.50	638.76	638.81
Q	245+78.78	15.50	638.57	638.60
℄ Brg. E. Abut.	245+92.52	15.50	638.30	638.30
Bk. E. Abut.	245+94.58	15.50	638.26	638.26

BEAM 8

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflections
Bk. W. Abut.	243+82.99	23.83	638.37	638.37
℄ Brg. W. Abut.	243+85.02	23.83	638.41	638.41
A	243+95.02	23.83	638.60	638.63
B	244+05.02	23.83	638.78	638.82
C	244+15.02	23.83	638.93	638.98
D	244+25.02	23.83	639.06	639.10
E	244+35.02	23.83	639.17	639.20
℄ W. Brg. Pier 1	244+48.76	23.83	639.28	639.28
℄ E. Brg. Pier 1	244+51.01	23.83	639.30	639.30
F	244+61.01	23.83	639.35	639.39
G	244+71.01	23.83	639.38	639.46
H	244+81.01	23.83	639.39	639.50
I	244+91.01	23.83	639.39	639.50
J	245+01.01	23.83	639.35	639.46
K	245+11.01	23.83	639.30	639.38
L	245+21.01	23.83	639.23	639.27
℄ W. Brg. Pier 2	245+28.76	23.83	639.16	639.16
℄ E. Brg. Pier 2	245+31.01	23.83	639.14	639.14
M	245+41.01	23.83	639.02	639.05
N	245+51.01	23.83	638.89	638.93
O	245+61.01	23.83	638.73	638.78
P	245+71.01	23.83	638.55	638.60
Q	245+81.01	23.83	638.36	638.39
℄ Brg. E. Abut.	245+94.80	23.83	638.09	638.09
Bk. E. Abut.	245+96.88	23.83	638.05	638.05

SOUTH CURB LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflections
Bk. W. Abut.	243+85.18	32.00	638.25	638.25
℄ Brg. W. Abut.	243+87.20	32.00	638.29	638.29
A	243+97.20	32.00	638.48	638.50
B	244+07.20	32.00	638.65	638.69
C	244+17.20	32.00	638.79	638.85
D	244+27.20	32.00	638.92	638.97
E	244+37.20	32.00	639.02	639.06
℄ W. Brg. Pier 1	244+50.95	32.00	639.13	639.13
℄ E. Brg. Pier 1	244+53.20	32.00	639.15	639.15
F	244+63.20	32.00	639.20	639.24
G	244+73.20	32.00	639.22	639.30
H	244+83.20	32.00	639.23	639.34
I	244+93.20	32.00	639.22	639.33
J	245+03.20	32.00	639.18	639.28
K	245+13.20	32.00	639.13	639.20
L	245+23.20	32.00	639.05	639.08
℄ W. Brg. Pier 2	245+30.95	32.00	638.98	638.98
℄ E. Brg. Pier 2	245+33.20	32.00	638.95	638.95
M	245+43.20	32.00	638.83	638.86
N	245+53.20	32.00	638.69	638.74
O	245+63.20	32.00	638.53	638.58
P	245+73.20	32.00	638.35	638.40
Q	245+83.20	32.00	638.15	638.19
℄ Brg. E. Abut.	245+97.08	31.99	637.88	637.88
Bk. E. Abut.	245+99.18	31.98	637.84	637.84

BEAM 9

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflections
Bk. W. Abut.	243+85.22	32.17	638.25	638.25
℄ Brg. W. Abut.	243+87.25	32.17	638.29	638.29
A	243+97.25	32.17	638.48	638.50
B	244+07.25	32.17	638.64	638.69
C	244+17.25	32.17	638.79	638.84
D	244+27.25	32.17	638.92	638.96
E	244+37.25	32.17	639.02	639.05
℄ W. Brg. Pier 1	244+50.99	32.17	639.13	639.13
℄ E. Brg. Pier 1	244+53.24	32.17	639.14	639.14
F	244+63.24	32.17	639.19	639.24
G	244+73.24	32.17	639.22	639.30
H	244+83.24	32.17	639.23	639.33
I	244+93.24	32.17	639.21	639.33
J	245+03.24	32.17	639.18	639.28
K	245+13.24	32.17	639.12	639.20
L	245+23.24	32.17	639.05	639.08
℄ W. Brg. Pier 2	245+30.99	32.17	638.97	638.97
℄ E. Brg. Pier 2	245+33.24	32.17	638.95	638.95
M	245+43.24	32.17	638.83	638.85
N	245+53.24	32.17	638.69	638.73
O	245+63.24	32.17	638.53	638.58
P	245+73.24	32.17	638.34	638.39
Q	245+83.24	32.17	638.15	638.18
℄ Brg. E. Abut.	245+97.13	32.16	637.88	637.88
Bk. E. Abut.	245+99.23	32.15	637.84	637.84

BEAM 10

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflections
Bk. W. Abut.	243+87.45	40.50	638.13	638.13
℄ Brg. W. Abut.	243+89.48	40.50	638.17	638.17
A	243+99.48	40.50	638.35	638.37
B	244+09.48	40.50	638.51	638.56
C	244+19.48	40.50	638.65	638.71
D	244+29.48	40.50	638.77	638.82
E	244+39.48	40.50	638.87	638.91
℄ W. Brg. Pier 1	244+53.23	40.50	638.98	638.98
℄ E. Brg. Pier 1	244+55.48	40.50	638.99	638.99
F	244+65.48	40.50	639.03	639.08
G	244+75.48	40.50	639.06	639.14
H	244+85.48	40.50	639.06	639.17
I	244+95.48	40.50	639.04	639.15
J	245+05.48	40.50	639.00	639.10
K	245+15.48	40.50	638.94	639.01
L	245+25.48	40.50	638.86	638.89
℄ W. Brg. Pier 2	245+33.23	40.50	638.78	638.78
℄ E. Brg. Pier 2	245+35.48	40.50	638.76	638.76
M	245+45.48	40.50	638.63	638.66
N	245+55.48	40.50	638.49	638.53
O	245+65.48	40.50	638.32	638.37
P	245+75.48	40.50	638.13	638.18
Q	245+85.48	40.50	637.94	637.97
℄ Brg. E. Abut.	245+99.50	40.48	637.67	637.67
Bk. E. Abut.	246+01.61	40.46	637.63	637.63

NORTH EDGE OF SLAB

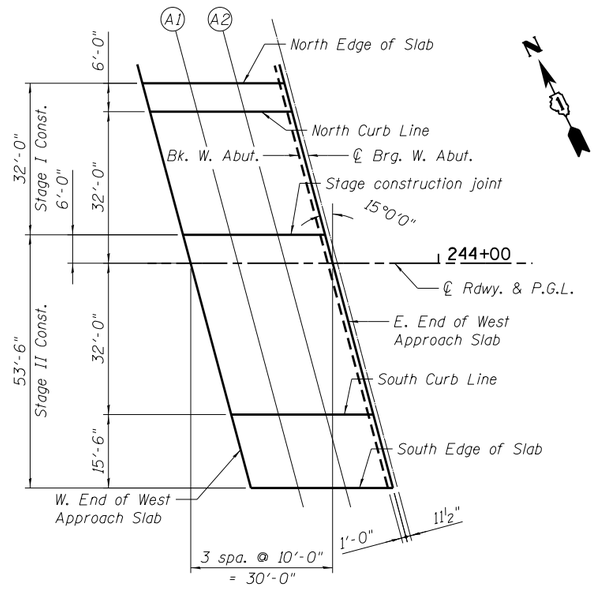
Location	Station	Offset	Theoretical Grade Elevations
W. End West Appr. Slab	243+37.45	-38.00	636.93
A1	243+47.45	-38.00	637.21
A2	243+57.45	-38.00	637.49
E. End West Appr. Slab	243+67.45	-38.00	637.74

NORTH CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
W. End West Appr. Slab	243+39.06	-32.00	637.09
A1	243+49.06	-32.00	637.38
A2	243+59.06	-32.00	637.65
E. End West Appr. Slab	243+69.06	-32.00	637.90

STAGE CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations
W. End West Appr. Slab	243+46.03	-6.00	637.81
A1	243+56.03	-6.00	638.09
A2	243+66.03	-6.00	638.34
E. End West Appr. Slab	243+76.03	-6.00	638.58



PLAN

℄ ROADWAY & PROFILE GRADE LINE

Location	Station	Offset	Theoretical Grade Elevations
W. End West Appr. Slab	243+47.64	0.00	637.98
A1	243+57.64	0.00	638.25
A2	243+67.64	0.00	638.50
E. End West Appr. Slab	243+77.64	0.00	638.73

SOUTH CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
W. End West Appr. Slab	243+56.21	32.00	637.57
A1	243+66.21	32.00	637.83
A2	243+76.21	32.00	638.06
E. End West Appr. Slab	243+86.21	32.00	638.27

SOUTH EDGE OF SLAB

Location	Station	Offset	Theoretical Grade Elevations
W. End West Appr. Slab	243+60.36	47.50	637.37
A1	243+70.36	47.50	637.62
A2	243+80.36	47.50	637.84
E. End West Appr. Slab	243+90.36	47.50	638.04

FILE NAME = X:\P\113-2838-000 Rand Road\CAD\S\CADD Sheets\016@379-60J10-00P1-WestAppr-SlabElev.dgn

RS&H

USER NAME = EtzwilleE	DESIGNED - JIK	12-15-2023	REVISED
PLOT DATE = 3/18/2024	CHECKED - JGT	01-05-2024	REVISED
	DRAWN - OR	12-15-2023	REVISED
	CHECKED - JIK	01-05-2024	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL PLANS
WEST APPROACH SLAB ELEVATIONS – STRUCTURE NO. 016-0379
SHEET NO. 9 OF 34 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	163
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

NORTH EDGE OF SLAB

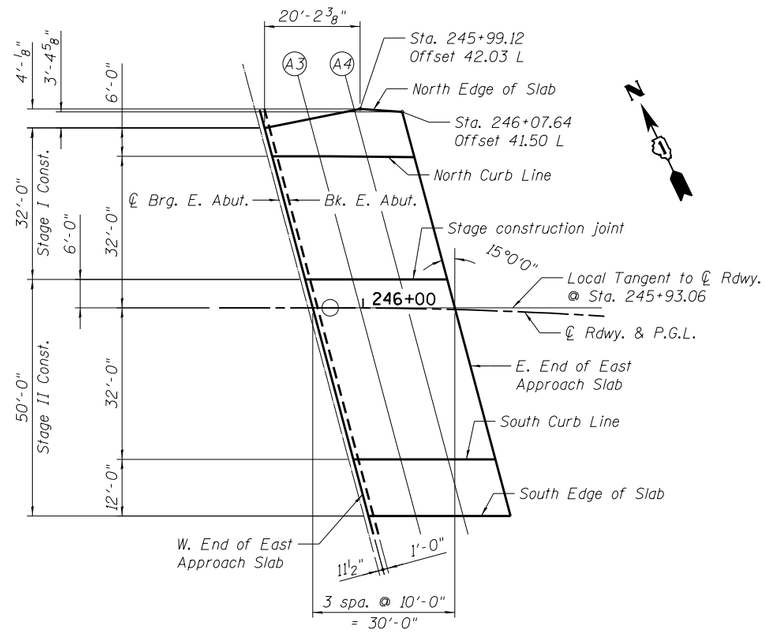
Location	Station	Offset	Theoretical Grade Elevations
W. End East Appr. Slab	245+79.19	-37.97	638.11
A3	245+88.68	-39.87	637.89
A4	245+97.96	-41.78	637.67
E. End East Appr. Slab	246+07.64	-41.50	637.49

NORTH CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
W. End East Appr. Slab	245+80.79	-32.00	638.20
A3	245+90.79	-32.00	638.01
A4	246+00.56	-32.00	637.82
E. End East Appr. Slab	246+10.25	-32.00	637.63

STAGE CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations
W. End East Appr. Slab	245+87.76	-6.00	638.59
A3	245+97.73	-6.01	638.39
A4	246+07.66	-6.11	638.20
E. End East Appr. Slab	246+17.59	-6.32	638.00



PLAN

℄ ROADWAY & PROFILE GRADE LINE

Location	Station	Offset	Theoretical Grade Elevations
W. End East Appr. Slab	245+89.36	0.00	638.67
A3	245+99.37	0.00	638.48
A4	246+09.40	0.00	638.28
E. End East Appr. Slab	246+19.46	0.00	638.09

SOUTH CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
W. End East Appr. Slab	245+98.11	31.99	637.86
A3	246+08.45	31.88	637.67
A4	246+18.80	31.66	637.47
E. End East Appr. Slab	246+29.14	31.34	637.27

SOUTH EDGE OF SLAB

Location	Station	Offset	Theoretical Grade Elevations
W. End East Appr. Slab	246+01.55	43.96	637.56
A3	246+12.03	43.82	637.36
A4	246+22.51	43.56	637.16
E. End East Appr. Slab	246+32.98	43.20	636.96

FILE NAME = X:\P\113-2038-008 Rand Road\CAD\S\CADD Sheets\016B379-68J10-B18 EastApprSlabElev.dgn

RS&H

USER NAME = EtzwilleE	DESIGNED - JIK	12-15-2023	REVISED
PLOT DATE = 3/18/2024	CHECKED - JGT	01-05-2024	REVISED
	DRAWN - OR	12-15-2023	REVISED
	CHECKED - JIK	01-05-2024	REVISED

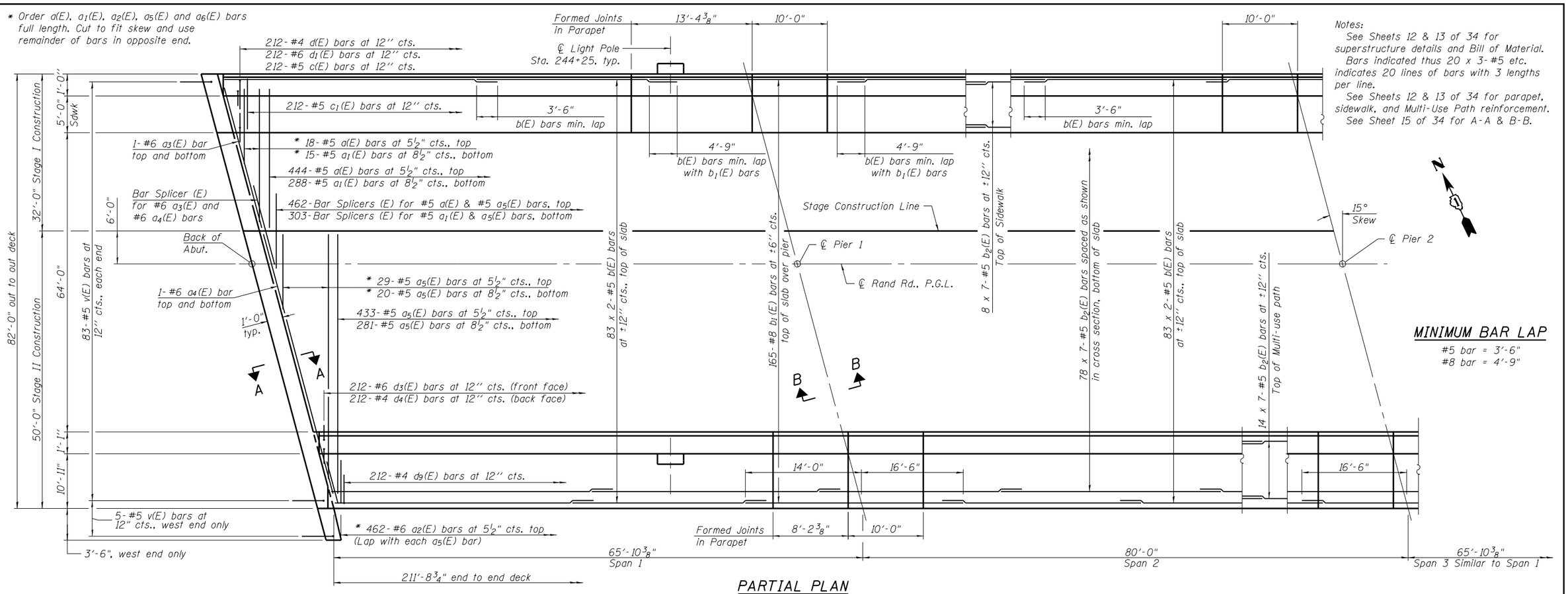
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL PLANS
EAST APPROACH SLAB ELEVATIONS – STRUCTURE NO. 016-0379
SHEET NO. 10 OF 34 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	164
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

* Order a(E), a_1(E), a_2(E), a_5(E) and a_6(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

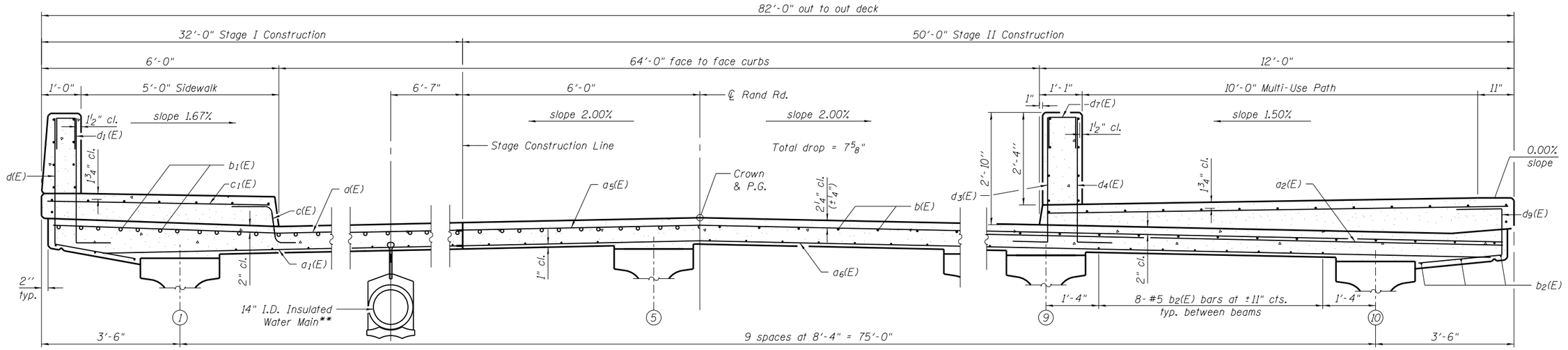
Notes:
See Sheets 12 & 13 of 34 for superstructure details and Bill of Material.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheets 12 & 13 of 34 for parapet, sidewalk, and Multi-Use Path reinforcement.
See Sheet 15 of 34 for A-A & B-B.



PARTIAL PLAN

MINIMUM BAR LAP

#5 bar = 3′-6″
#8 bar = 4′-9″



CROSS SECTION
(Looking East)

NEAR PIER

NEAR MIDSPAN

** Concrete inserts and hangers for water main will be provided by the Contractor. The installation of concrete inserts and hangers will be coordinated and determined in the field by the Contractor. Do not extend below bottom of girders. Cost included with Concrete Superstructure. See Water Main plans for additional details.

FILE NAME = X:\P\113-2838-R00 Rand Road\CAD\S\CADD Sheets\R1868379-68J10-R11-Superstructure.dgn

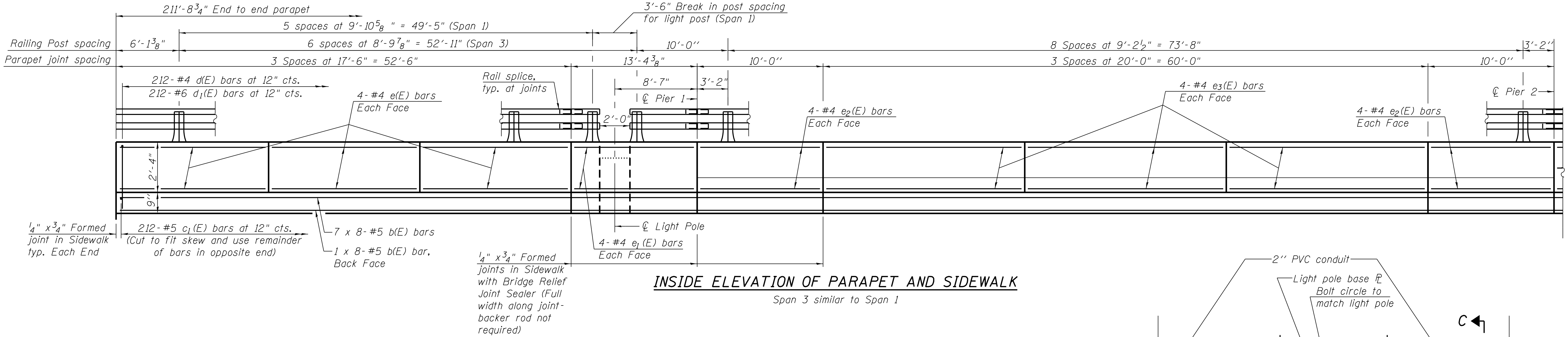
RS&H

USER NAME = EtzwilleE	DESIGNED - JIK	12-15-2023	REVISED
PLOT DATE = 3/18/2024	CHECKED - JGT	01-05-2024	REVISED
	DRAWN - OR	12-15-2023	REVISED
	CHECKED - JIK	01-05-2024	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

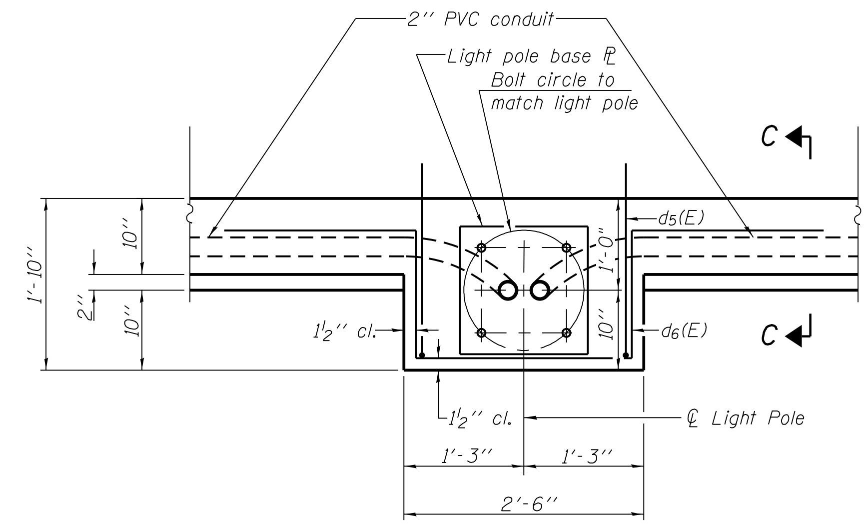
STRUCTURAL PLANS
SUPERSTRUCTURE PLAN & CROSS SECTION – STRUCTURE NO. 016-0379
SHEET NO. 11 OF 34 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	165
		CONTRACT NO. 60J10		
	ILLINOIS	FED. AID PROJECT		



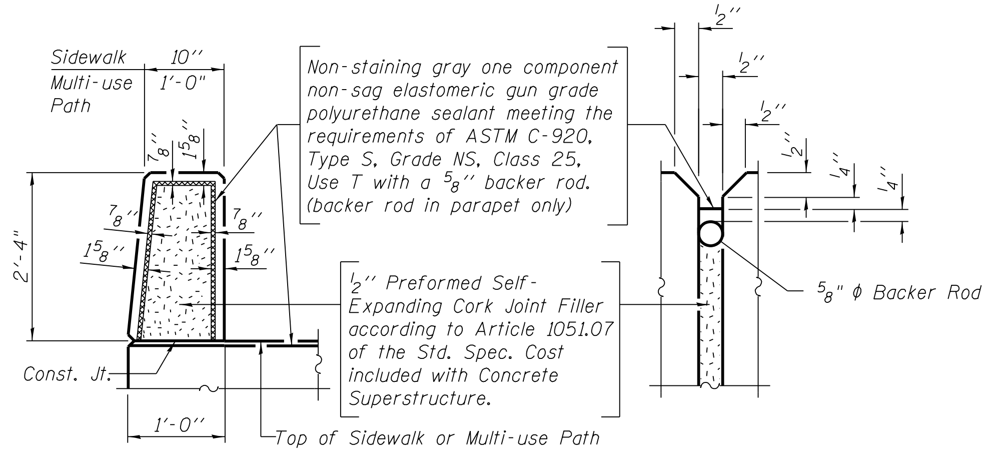
INSIDE ELEVATION OF PARAPET AND SIDEWALK

Span 3 similar to Span 1

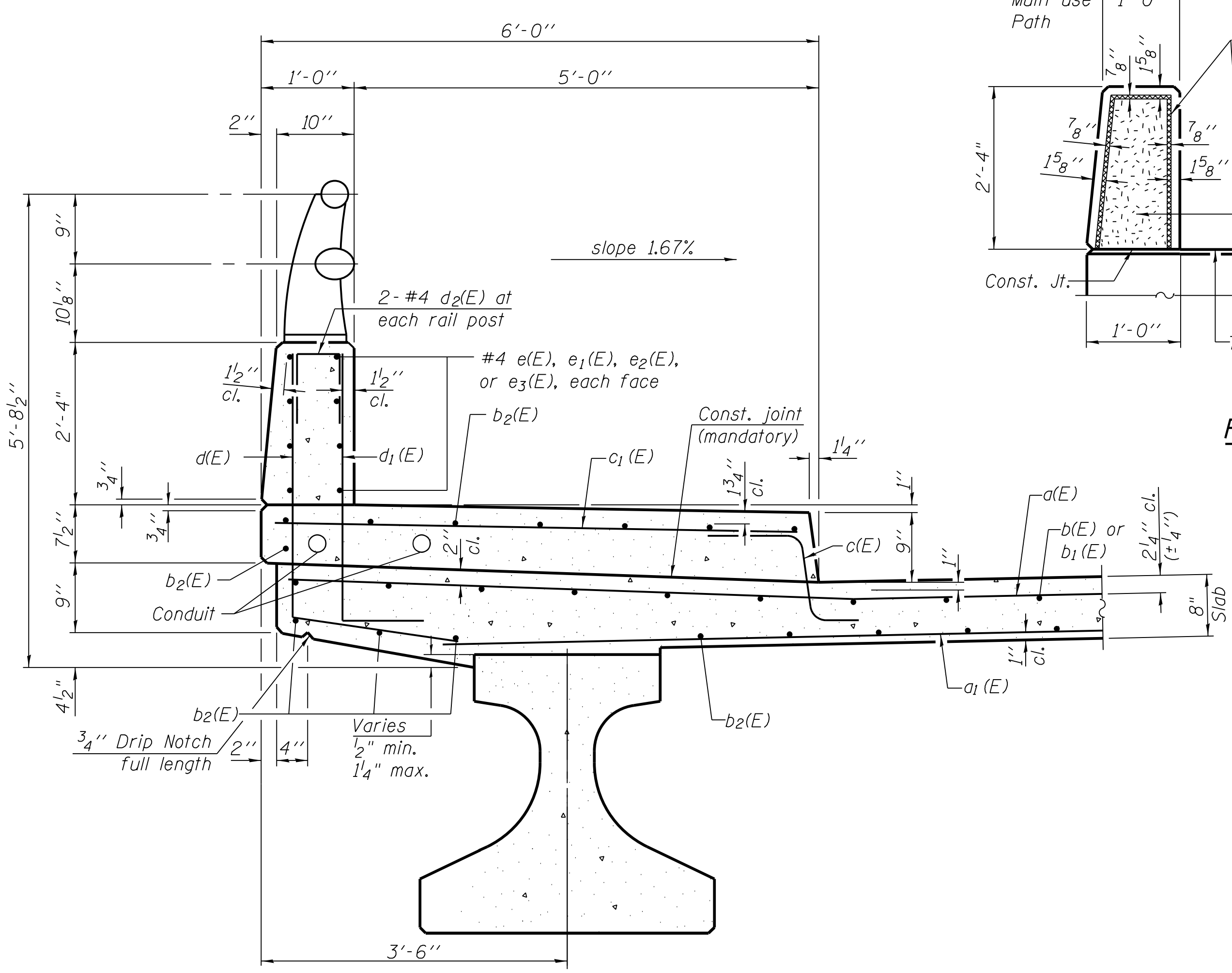


LIGHT POLE PLAN

Note:
Cost of anchor rods and conduit is included with Concrete Superstructure.



PARAPET JOINT AND FORMED JOINT DETAILS

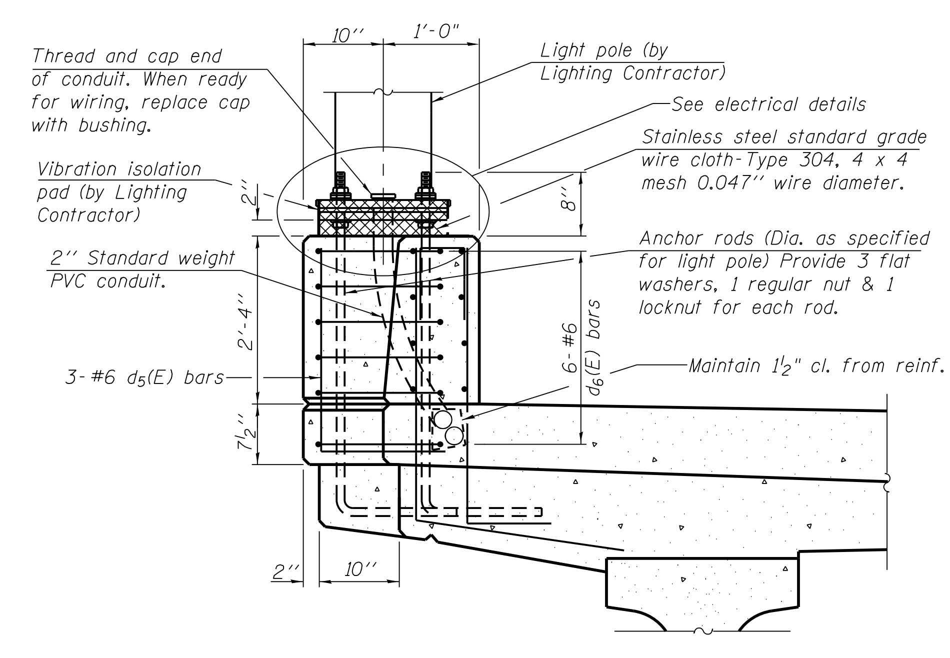


SECTION THRU SIDEWALK

Showing conduit for lighting and interconnect

MINIMUM BAR LAP

#5 bar = 3'-6"

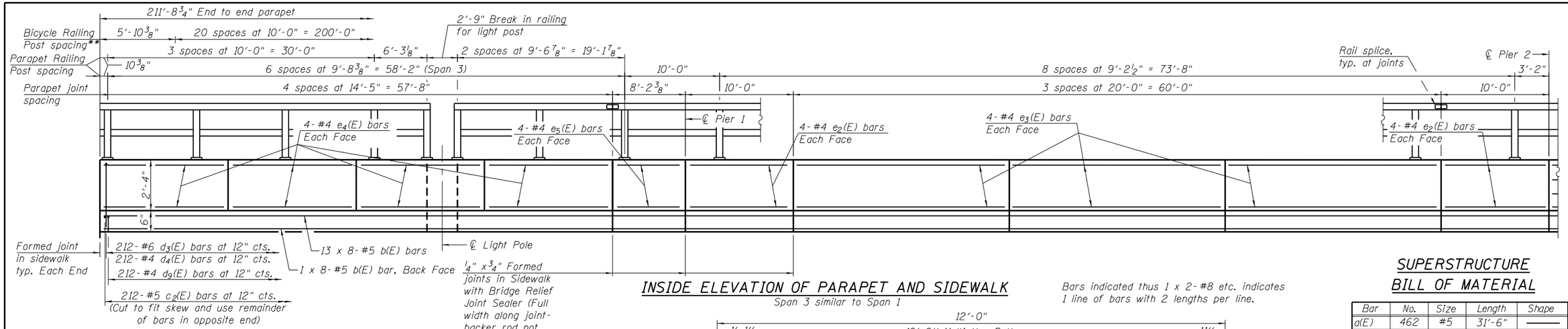


SECTION C-C

RS&H	USER NAME = EtzwileE	DESIGNED - JIK 12-15-2023	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STRUCTURAL PLANS SUPERSTRUCTURE DETAILS (1 OF 2) – STRUCTURE NO. 016–0379
	PLOT DATE = 3/18/2024	CHECKED - JGT 01-05-2024	REVISED		
		DRAWN - OR 12-15-2023	REVISED		
		CHECKED - JIK 01-05-2024	REVISED		SHEET NO. 12 OF 34 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	166
		CONTRACT NO. 60J10		
		ILLINOIS FED. AID PROJECT		

FILE NAME = X:\P\113-2838-000 Rand Road\CAD\S\CADD Sheets\0160379-60J10-012-SuperDet.dgn

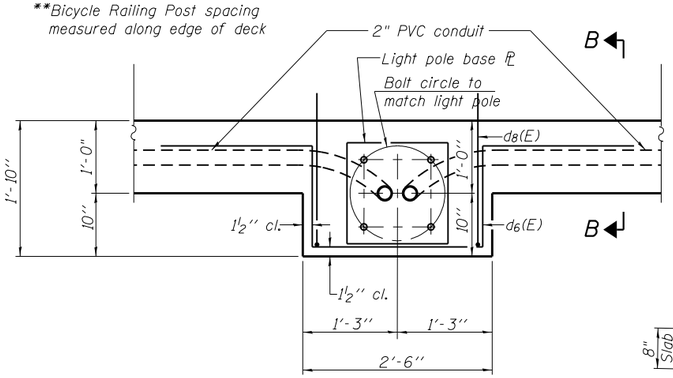


INSIDE ELEVATION OF PARAPET AND SIDEWALK

Span 3 similar to Span 1

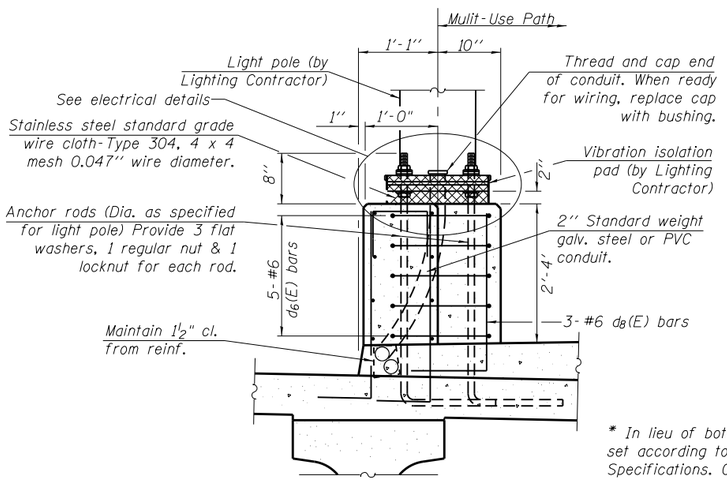
Bars indicated thus 1 x 2-#8 etc. indicates 1 line of bars with 2 lengths per line.

**Bicycle Railing Post spacing measured along edge of deck

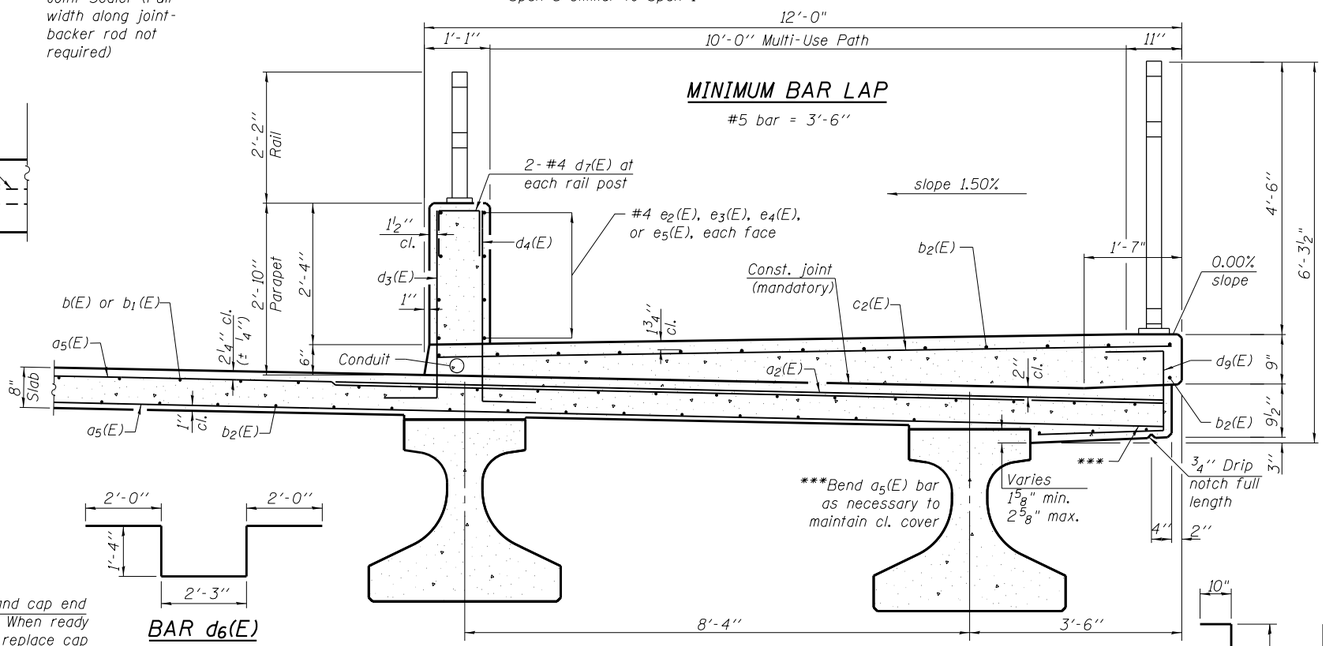


LIGHT POLE PLAN

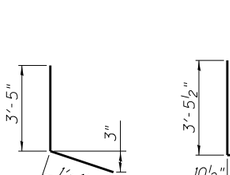
Note:
Cost of anchor rods and conduit is included with Concrete Superstructure.



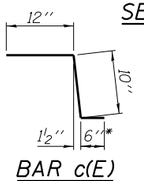
SECTION B-B



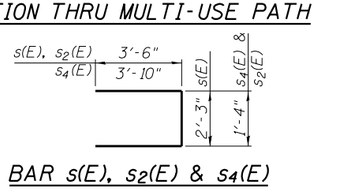
BAR $d_6(E)$



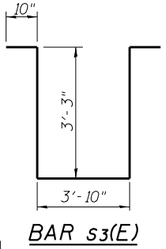
BAR d(E) BAR $d_1(E)$



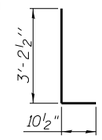
BAR c(E)



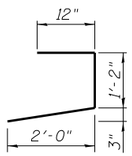
BAR s(E), $s_2(E)$ & $s_4(E)$



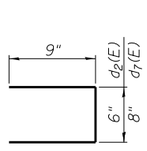
BAR $s_3(E)$



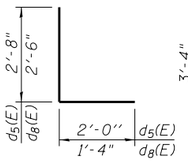
BAR $d_3(E)$ & $d_4(E)$



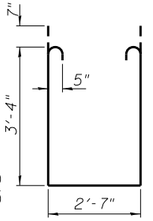
BAR $d_9(E)$



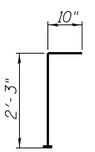
BAR $d_2(E)$ & $d_7(E)$



BAR $d_5(E)$ & $d_8(E)$



BAR $s_1(E)$



BAR v(E)

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

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	462	#5	31'-6"	——
$a_1(E)$	303	#5	30'-0"	——
$a_2(E)$	462	#6	16'-1"	——
$a_3(E)$	4	#6	32'-7"	——
$a_4(E)$	4	#6	51'-3"	——
$a_5(E)$	763	#5	49'-6"	——
b(E)	498	#5	30'-0"	——
$b_1(E)$	330	#8	30'-6"	——
$b_2(E)$	700	#5	33'-3"	——
c(E)	212	#5	2'-4"	⌐
$c_1(E)$	212	#5	5'-8"	——
$c_2(E)$	212	#5	11'-8"	——
d(E)	212	#4	5'-4"	⌐
$d_1(E)$	212	#6	4'-4"	⌐
$d_2(E)$	46	#4	2'-0"	⊐
$d_3(E)$	212	#6	4'-1"	⌐
$d_4(E)$	212	#4	4'-1"	⌐
$d_5(E)$	3	#6	4'-8"	⌐
$d_6(E)$	11	#6	8'-11"	⌐
$d_7(E)$	48	#4	2'-2"	⊐
$d_8(E)$	3	#6	3'-10"	⌐
$d_9(E)$	212	#4	4'-2"	⊐
e(E)	48	#4	17'-2"	——
$e_1(E)$	16	#4	13'-0"	——
$e_2(E)$	32	#4	9'-8"	——
$e_3(E)$	48	#4	19'-8"	——
$e_4(E)$	64	#4	14'-1"	——
$e_5(E)$	16	#4	7'-10"	——
m(E)	8	#6	32'-9"	——
$m_1(E)$	4	#6	50'-11"	——
$m_2(E)$	4	#6	53'-11"	——
$m_3(E)$	96	#6	7'-2"	——
$m_4(E)$	18	#6	2'-9"	——
$m_5(E)$	12	#6	4'-2"	——
$m_7(E)$	2	#6	6'-4"	——
$m_8(E)$	16	#6	4'-10"	——
$m_9(E)$	6	#6	1'-8"	——
$m_{10}(E)$	6	#6	3'-0"	——
$m_{11}(E)$	3	#6	1'-7"	——
$m_{12}(E)$	1	#6	5'-3"	——
$m_{13}(E)$	80	#5	4'-0"	——
$m_{14}(E)$	32	#6	5'-0"	——
s(E)	123	#5	9'-3"	⊐
$s_1(E)$	123	#5	10'-5"	⊐
$s_2(E)$	80	#5	8'-4"	⊐
$s_3(E)$	108	#5	12'-0"	⊐
$s_4(E)$	72	#5	9'-0"	⊐
v(E)	171	#5	3'-1"	⌐
Bar Splicers		Each	795	
Reinforcement Bars, Epoxy Coated		Lbs.	162,750	
Concrete Superstructure		Cu. Yds.	693.8	

RS&H

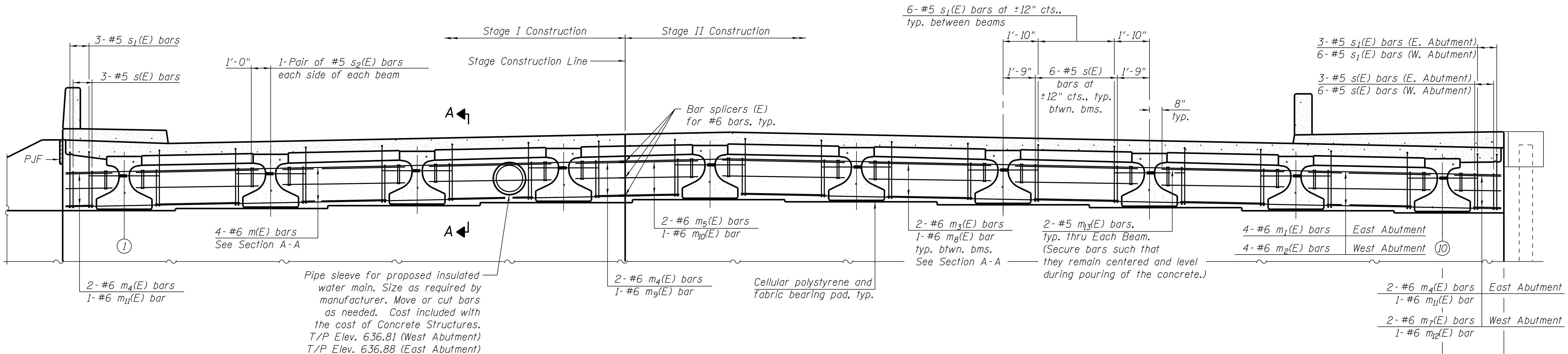
USER NAME = EtzwilleE	DESIGNED - JIK	12-15-2023	REVISED
PLOT DATE = 3/18/2024	CHECKED - JGT	01-05-2024	REVISED
	DRAWN - OR	12-15-2023	REVISED
	CHECKED - JIK	01-05-2024	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

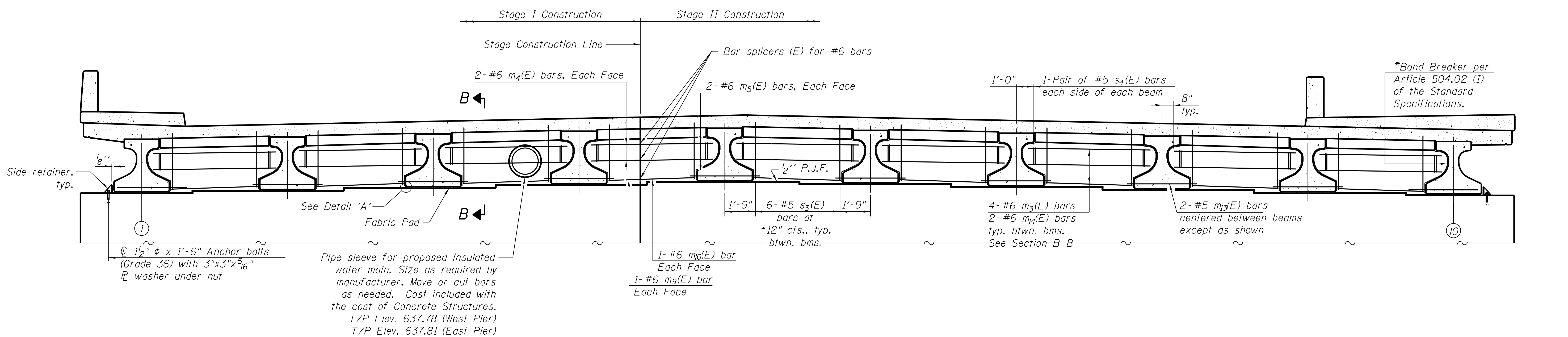
STRUCTURAL PLANS
SUPERSTRUCTURE DETAILS (2 OF 2) – STRUCTURE NO. 016-0379
SHEET NO. 13 OF 34 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	167
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

FILE NAME = X:\P\113-2039-008 Rand Road\CAD\S\CADD Sheets\016B379-60J10-0813-SuperDet02.dgn

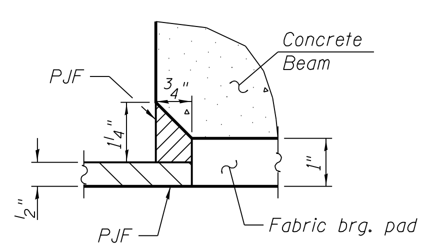


DIAPHRAGM ELEVATION AT ABUTMENT



DIAPHRAGM ELEVATION AT PIER

*Bonded to sides of beams embedded into diaphragm.



DETAIL 'A'

MINIMUM BAR LAP

#6 BAR = 4'-0"

Note:
See sheet 15 of 34 for additional details, sections and notes.
Bars indicated thus 4 x 2-#6 etc. indicates 4 lines of bars with 2 lengths per line.

FILE NAME = X:\P\113-2838-000 Rand Road\CAD\S\CADD Sheets\0160379-60J10-014-Diaphragm01.dgn

RS&H

USER NAME = EtzwileE	DESIGNED - JIK	12-15-2023	REVISED
PLOT DATE = 3/18/2024	CHECKED - JGT	01-05-2024	REVISED
	DRAWN - OR	12-15-2023	REVISED
	CHECKED - JIK	01-05-2024	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

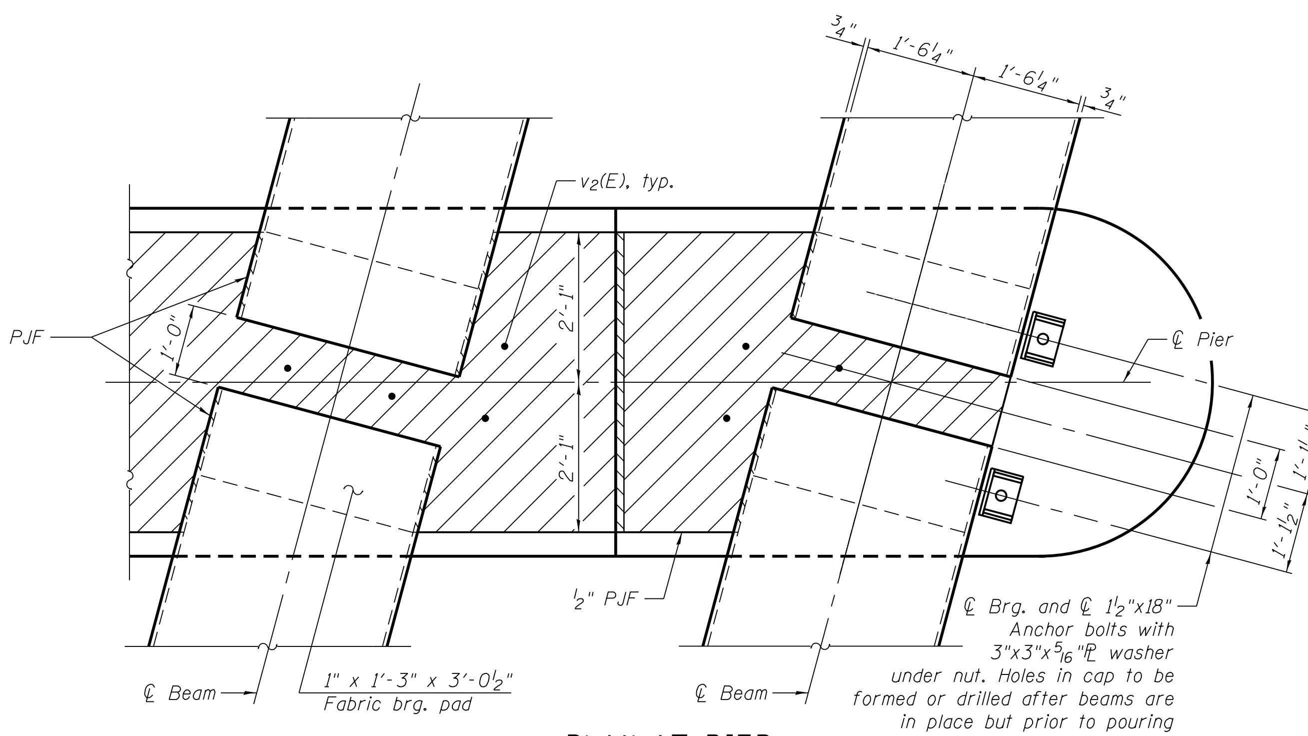
STRUCTURAL PLANS
DIAPHRAGM DETAILS (1 OF 2) – STRUCTURE NO. 016–0379

SHEET NO. 14 OF 34 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	168

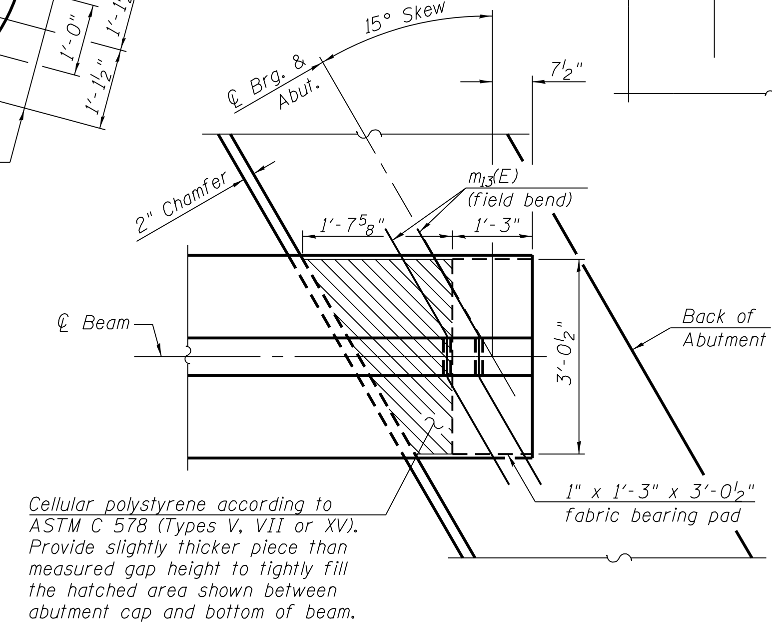
CONTRACT NO. 60J10

ILLINOIS FED. AID PROJECT



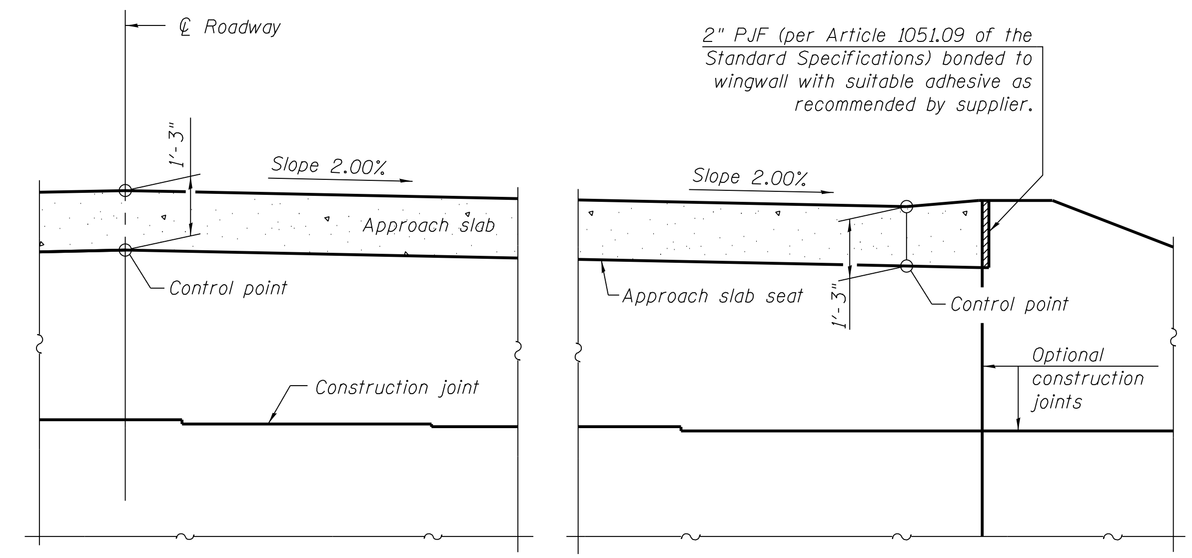
PLAN AT PIER

(Showing bearing pads and PJF details)

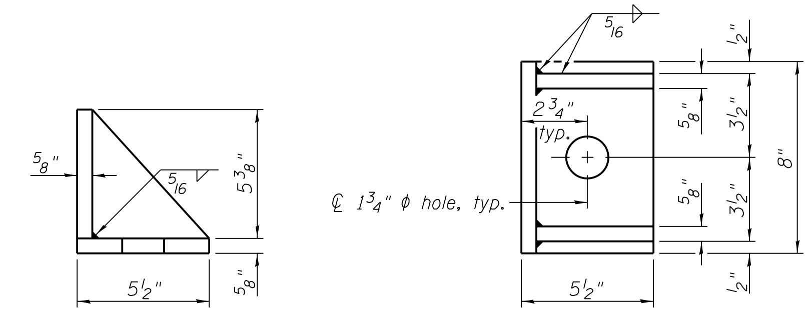


PLAN AT ABUTMENT

(Showing bottom flange of beam)

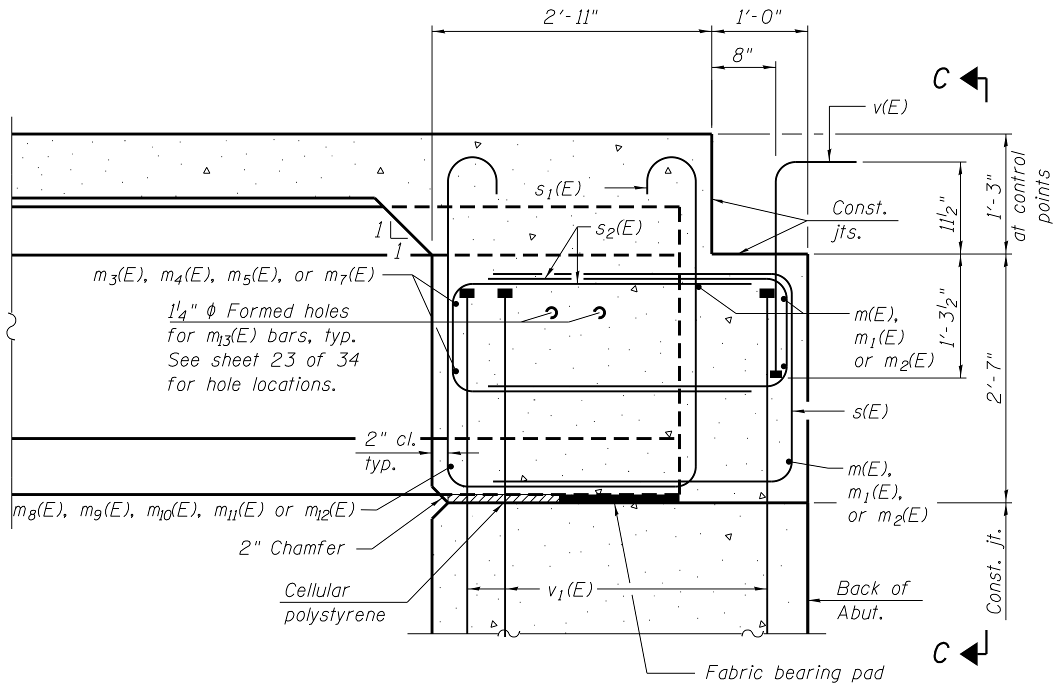


VIEW C-C



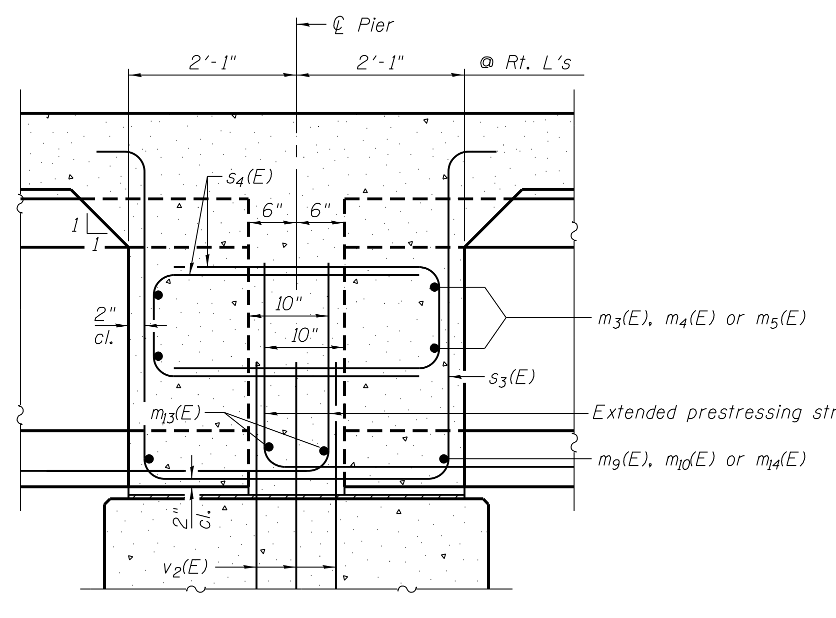
SIDE RETAINER

(2 required each side of pier).
Equivalent rolled angle with stiffeners
will be allowed in lieu of welded plates.



SECTION A-A

(at Rt. L's)



SECTION B-B

(Dimensions along ℄ of beam except as shown)

Notes:

For details of bars s(E), $s_{1,2,3,4}$(E) and v(E) see sheet 13 of 34.
For details of bar v_1(E) see sheets 26 and 27 of 34.
For details of bar v_6(E) see sheet 28 of 34.
The s(E) and $s_{1,2,3,4}$(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.

Cost of 30 Lb. roofing felt is included with Concrete Superstructure.

The side retainer shall be galvanized after shop fabrication according to AASHTO M 111. Cost of side retainer, anchor bolts, nuts, and washers shall be included with Concrete Structures.

Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications.

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Anchor bolts and side retainers shall be installed as each exterior beam is erected unless an equivalent temporary means of lateral restraint is used.

Anchor bolts for side retainers may be cast in place or installed in holes drilled before or after members are in place.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

The approach slab seat shall have a constant slope determined from the control points shown.

Cost of cellular polystyrene is included with Concrete Superstructure.

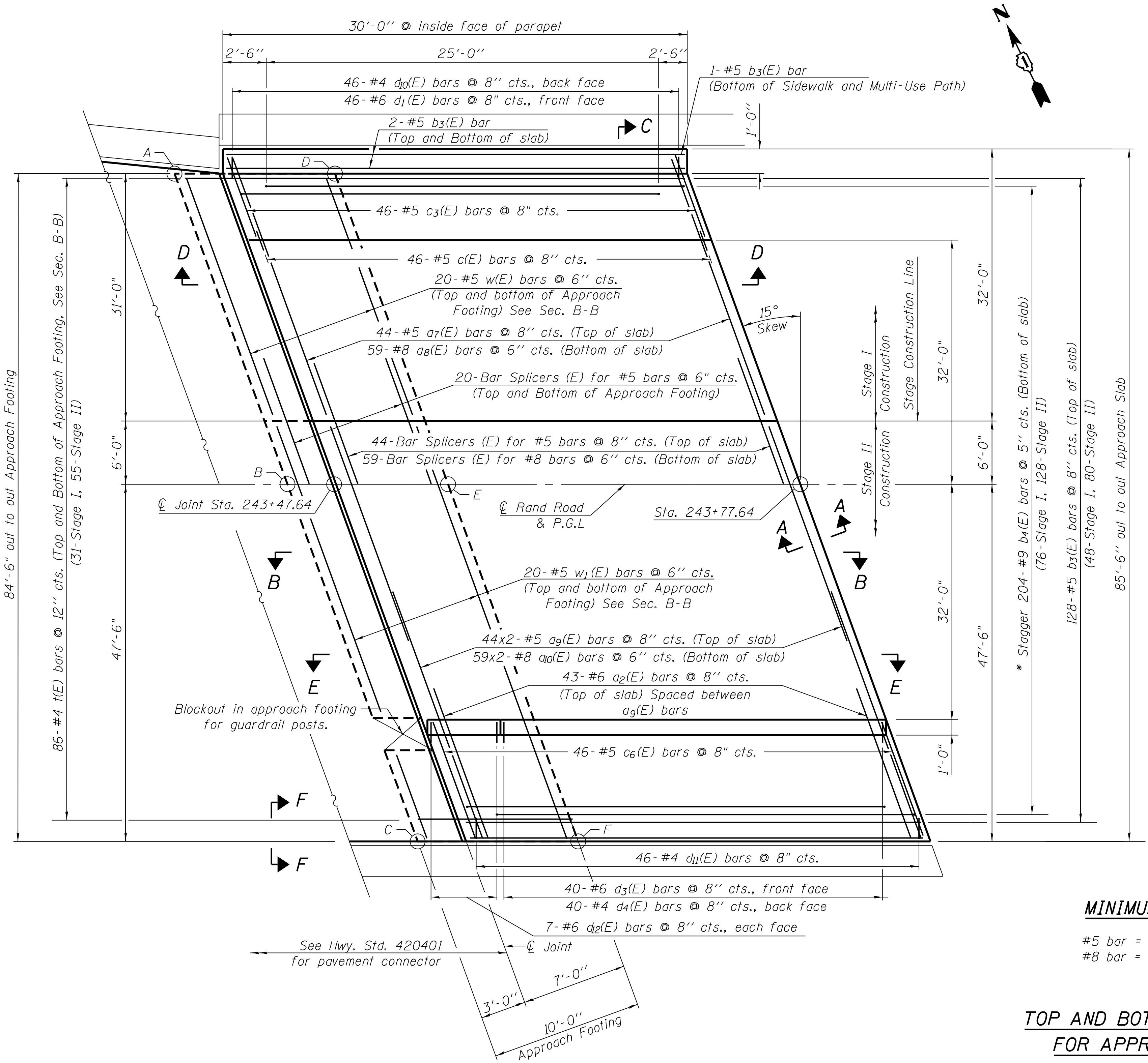
Beams shall be braced for stability during erection and remain braced until deck is poured and cured.

Reinforcement bars in diaphragm are billed with superstructure on sheet 13 of 34.

Concrete in diaphragm is included with Concrete Superstructure on sheet 13 of 34.

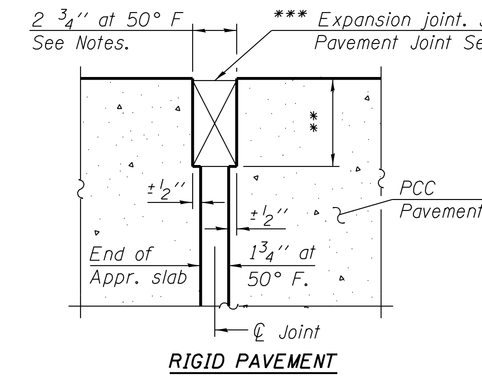
Notes:
See sheet 17 of 34 for Sections B-B & C-C and View D-D & E-E.
$a_{7,8,9,10}$(E) spacings measured along ℄ Rdwy.
The joint opening shall be determined per Article 520.04 except that on jointless structures, the distance described as the bridge length between the nearest fixed bearings each way from the joint shall be taken as half the bridge length plus the approach slab length. The minimum dimension shall be 1½'' for installation purposes.

*** Cost included with Concrete Superstructure (Approach Slab).
** Per manufacturer recommendations

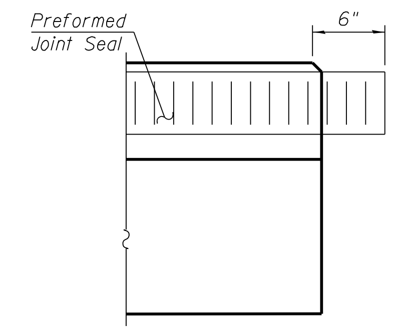


PLAN

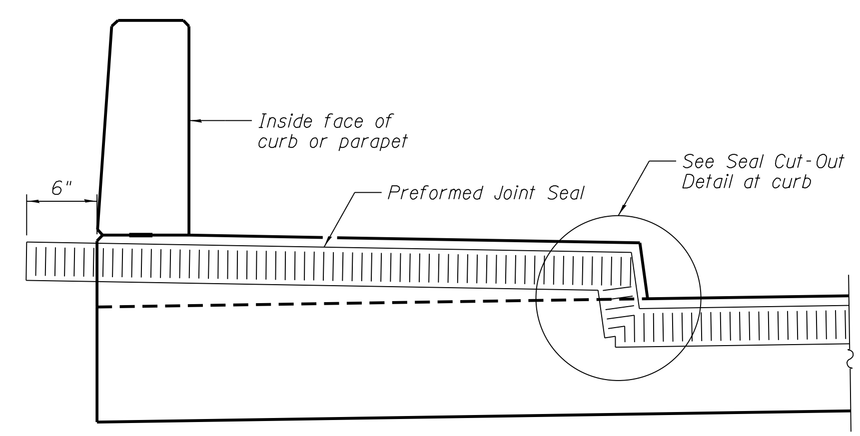
* Tilt #9 b4(E) bars as required to maintain clearance.



SECTION A-A



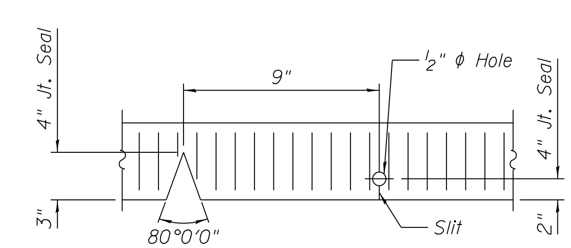
VIEW F-F



SECTION AT SIDEWALK

MINIMUM BAR LAP

#5 bar = 3'-4'' (Top bars)
#8 bar = 4'-9''



END OF SEAL CUT-OUT

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

Point	Top	Bottom
A	635.61	634.78
B	636.64	635.81
C	636.04	635.21
D	635.91	635.08
E	636.93	636.10
F	636.30	635.47

FILE NAME = X:\P\113-2838-000 Rand Road\CAD\S\CADD Sheets\016037 9-60J10-016-WestApprSlabPlan.dgn

RS&H

USER NAME = EtzwileE	DESIGNED - OR	12-15-2023	REVISED
PLOT DATE = 3/18/2024	CHECKED - JIK	01-05-2024	REVISED
	DRAWN - OR	12-15-2023	REVISED
	CHECKED - JIK	01-05-2024	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

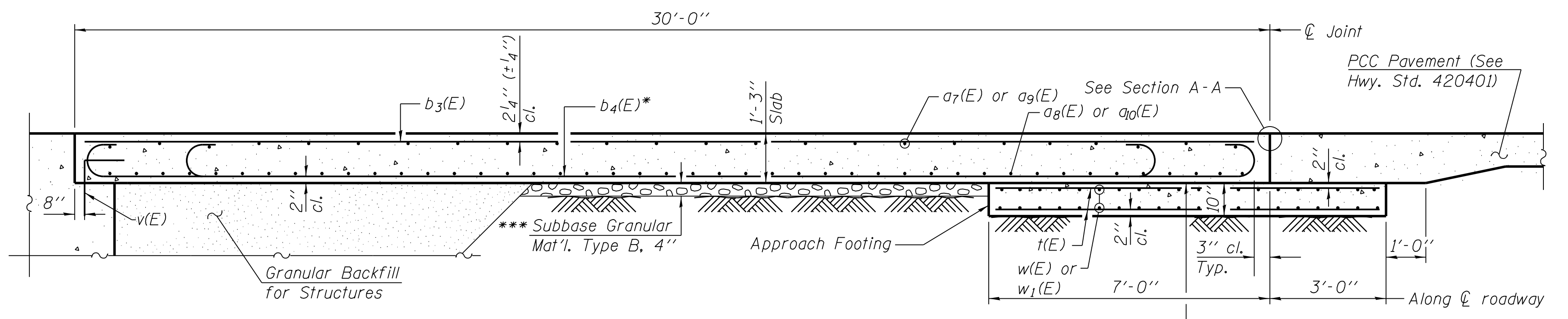
STRUCTURAL PLANS
WEST APPROACH SLAB PLAN – STRUCTURE NO. 016–0379

SHEET NO. 16 OF 34 SHEETS

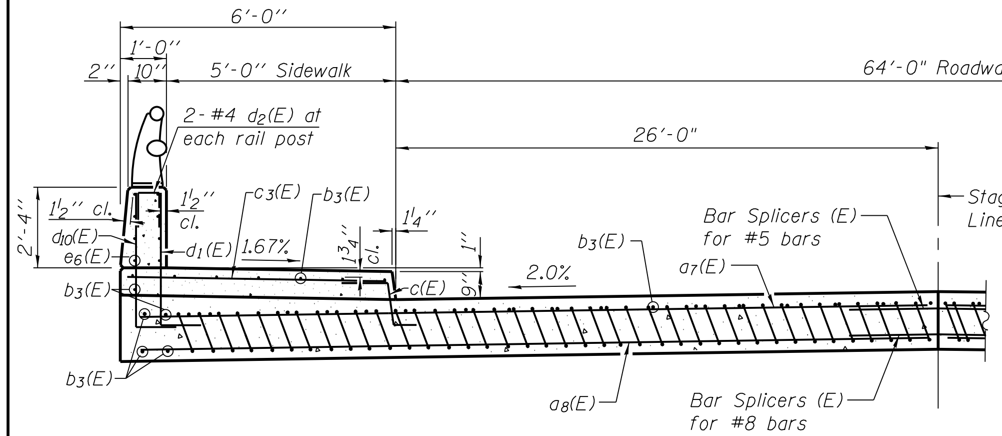
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	170
		CONTRACT NO. 60J10		
		ILLINOIS FED. AID PROJECT		

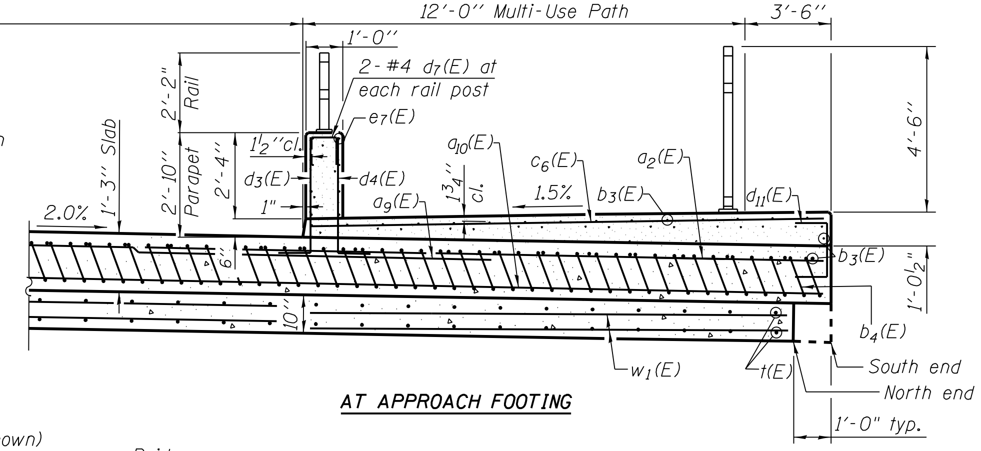
Notes:

- See sheet 16 of 34 for Section A-A.
- Parapet, sidewalk, and multi-use path concrete shall be paid for as Concrete Superstructure.
- Approach footing concrete shall be paid for as Concrete Structures.
- Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
- For v(E) bar details, see sheet 13 of 34.
- The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
- For bar splicer details, see sheet 30 of 34.
- Cost of excavation for approach footing included with Concrete Structures.
- For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 34.
- For additional parapet details, see sheet 12 of 34.
- For additional railing details, see sheets 20 and 21 of 34.



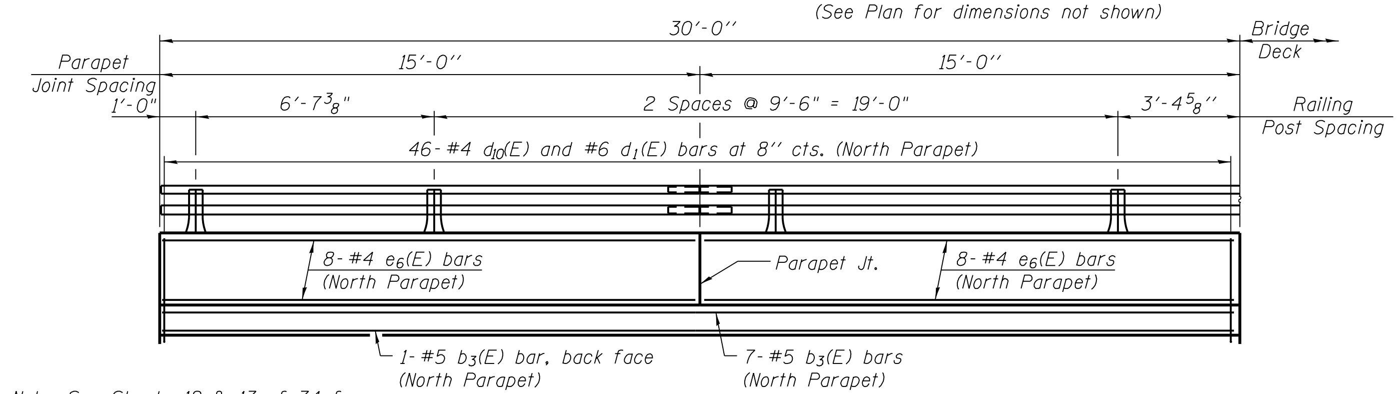
SECTION B-B





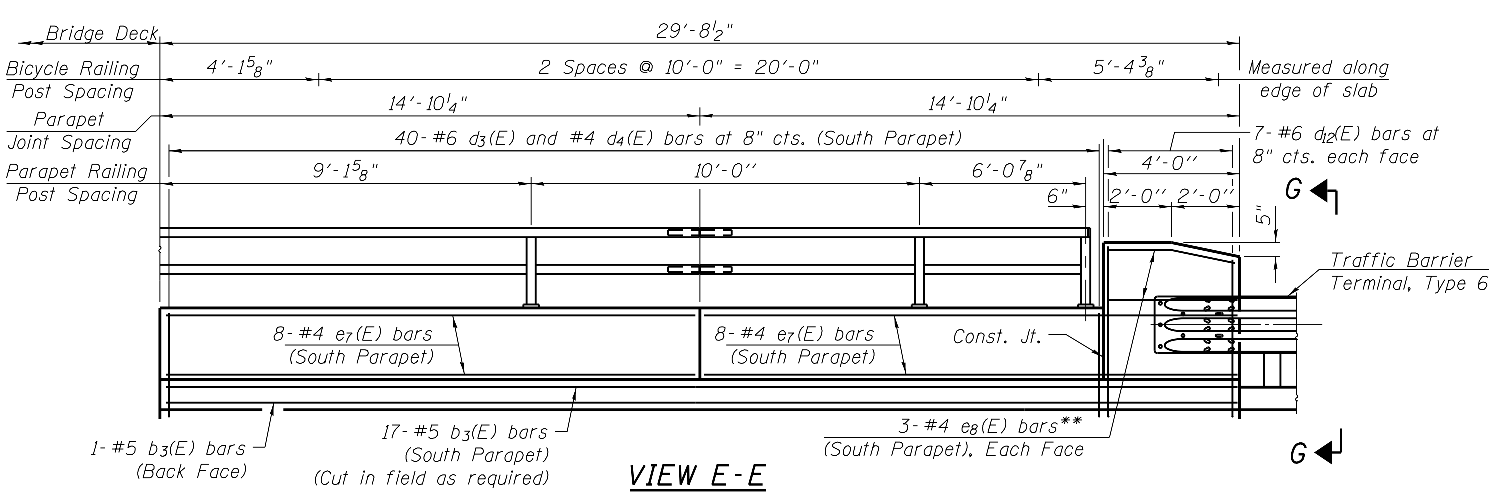
SECTION C-C

(See Plan for dimensions not shown)



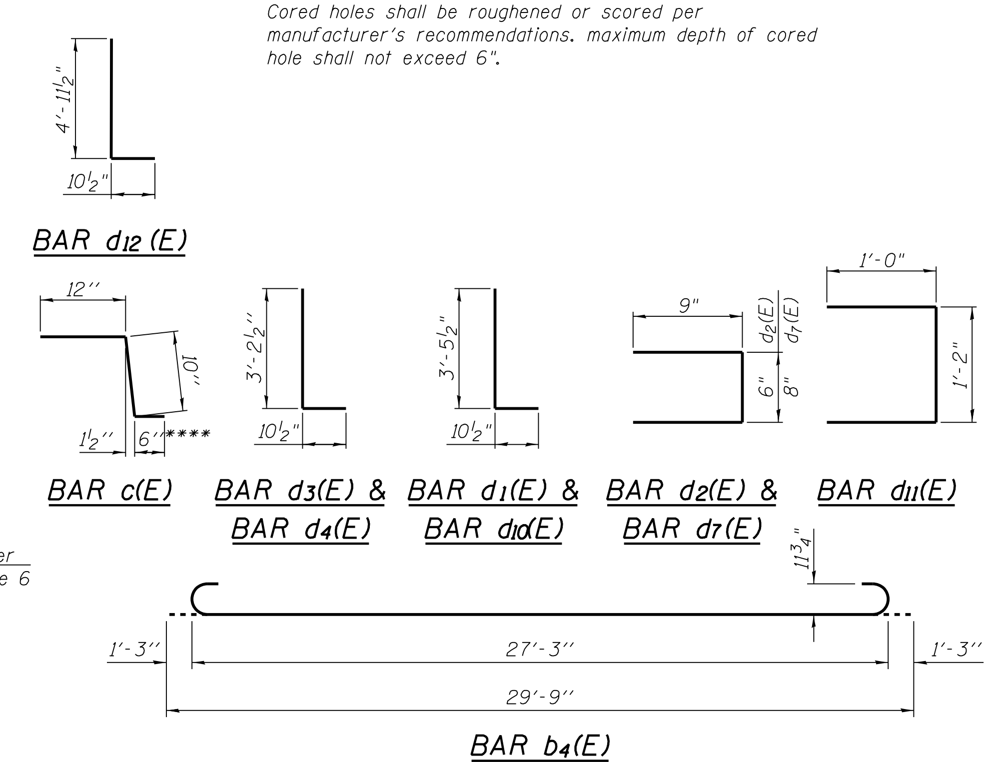
Note: See Sheets 12 & 13 of 34 for parapet joint spacing and details

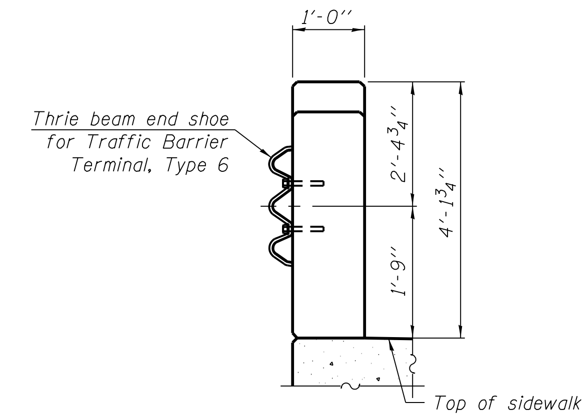
VIEW D-D



VIEW E-E

* Tilt #9 b4(E) bars as required to maintain clearance.
** Bend bars as required to maintain clearance.
*** Cost included with Concrete Superstructure.
**** In lieu of bottom leg, c3(E) bars may be cored and set according to Article 509.06 of the Standard Specifications. Cored holes shall be roughened or scored per manufacturer's recommendations, maximum depth of cored hole shall not exceed 6".





VIEW G-G

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a2(E)	43	#6	16'-1"	
a7(E)	44	#5	32'-9"	
a8(E)	59	#8	32'-9"	
a9(E)	88	#5	29'-3"	
a10(E)	118	#8	29'-11"	
b3(E)	158	#5	29'-8"	
b4(E)	204	#9	29'-9"	
c(E)	46	#5	2'-4"	
c3(E)	46	#5	5'-10"	
c6(E)	46	#5	15'-9"	
d1(E)	46	#6	4'-4"	
d2(E)	8	#4	2'-0"	
d3(E)	40	#6	4'-1"	
d4(E)	40	#4	4'-1"	
d7(E)	6	#4	2'-2"	
d10(E)	46	#4	4'-4"	
d11(E)	46	#4	3'-2"	
d12(E)	14	#6	5'-10"	
e6(E)	16	#4	14'-8"	
e7(E)	16	#4	14'-6"	
e8(E)	6	#4	3'-8"	
t(E)	172	#4	10'-0"	
w(E)	40	#5	31'-9"	
w1(E)	40	#5	54'-0"	
Concrete Superstructure		Cu. Yd.	24.5	
Concrete Superstructure (Approach Slab)		Cu. Yd.	118.8	
Concrete Structures		Cu. Yd.	27.1	
Reinforcement Bars, Epoxy Coated		Pound	52,570	
Bar Splicers		Each	143	

FILE NAME = X:\P\113-2838-000 Rand Road\CAD\S\CADD Sheets\016037\9-60J10-017-WestApprSlabDet.dgn

RS&H

USER NAME = EtzwileE	DESIGNED - OR	12-15-2023	REVISED
PLOT DATE = 3/18/2024	CHECKED - JIK	01-05-2024	REVISED
	DRAWN - OR	12-15-2023	REVISED
	CHECKED - JIK	01-05-2024	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

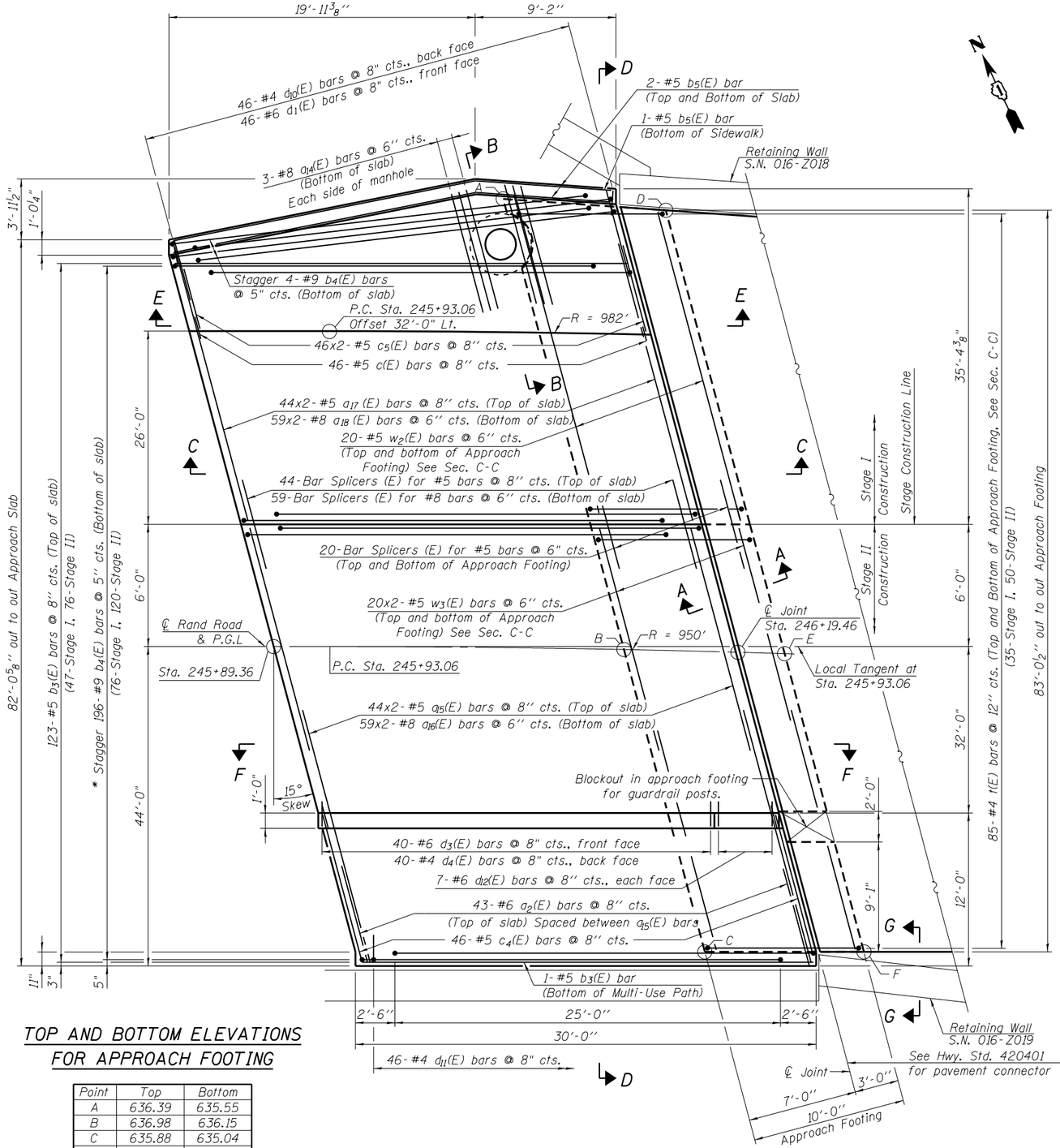
STRUCTURAL PLANS
WEST APPROACH SLAB DETAILS – STRUCTURE NO. 016-0379

SHEET NO. 17 OF 34 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	171

CONTRACT NO. 60J10

ILLINOIS FED. AID PROJECT

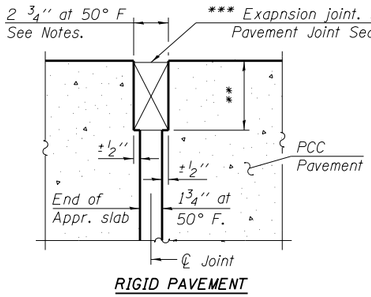


TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

Point	Top	Bottom
A	636.39	635.55
B	636.98	636.15
C	635.88	635.04
D	636.20	635.37
E	636.78	635.94
F	635.68	634.84

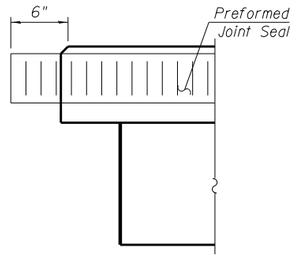
PLAN

* Tilt #9 b_4(E) bars as required to maintain clearance.



RIGID PAVEMENT

SECTION A-A



VIEW G-G

Notes:

See sheet 19 of 34 for Sections C-C & D-D and Views E-E & F-F.

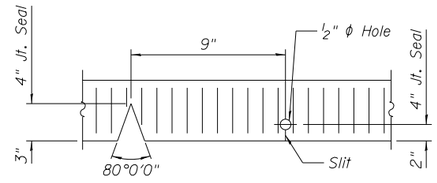
$a_{15,16,17,18}$(E) bar spacings measured along ℄ Rdwy.

The joint opening shall be determined per Article 520.04 except that on jointless structures, the distance described as the bridge length between the nearest fixed bearings each way from the joint shall be taken as half the bridge length plus the approach slab length. The minimum dimension shall be 1½" for installation purposes.

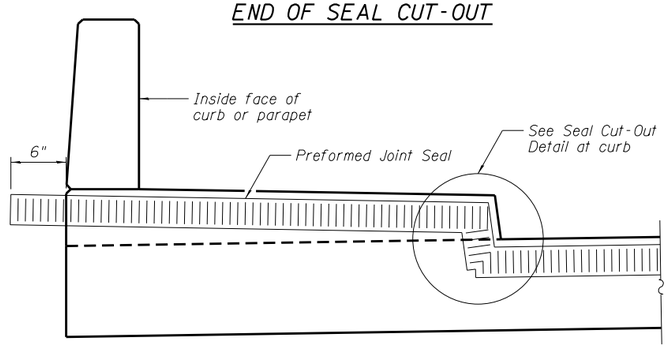
For additional preformed joint seal details, see sheet 16 of 34.

*** Cost included with Concrete Superstructure (Approach Slab).

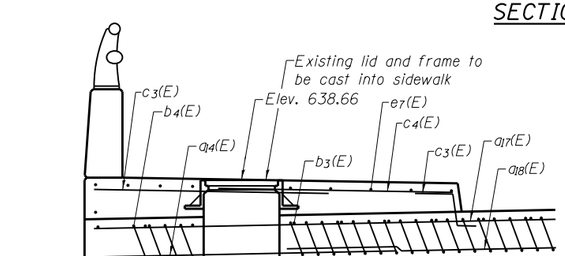
** Per manufacturer recommendations



END OF SEAL CUT-OUT



SECTION AT SIDEWALK



SECTION B-B

(Parapet steel not shown for clarity)

MINIMUM BAR LAP

#5 bar = 3'-4" (Top bars)
#8 bar = 4'-9"

Note:
Manhole reconstruction shall be according to Standard Drawing No. 5stm in the Standard Specifications for Water and Sewer Construction in Illinois, and be paid for as Manholes to be Reconstructed, each.

The PJF, ladder rungs, and removal of existing manhole structure shall be included in the cost of Manholes to be Reconstructed.

FILE NAME = X:\P\113-2838-000 Rand Road\CAD\S\C400 Sheets\01683179-GBJ18-018 EastApprSlabPlan.dgn

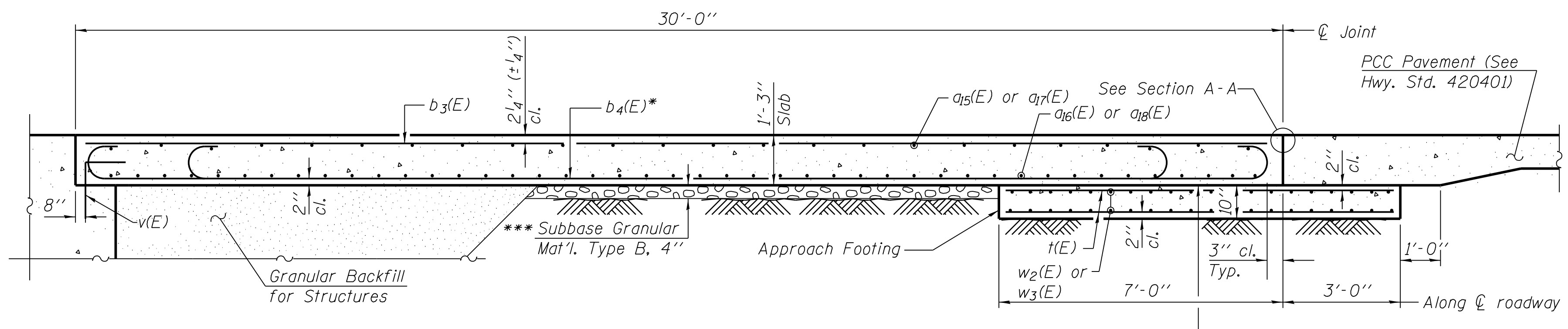
RS&H

USER NAME = EtzwilleE	DESIGNED - OR	12-15-2023	REVISED
PLOT DATE = 3/18/2024	CHECKED - JIK	01-05-2024	REVISED
	DRAWN - OR	12-15-2023	REVISED
	CHECKED - JIK	01-05-2024	REVISED

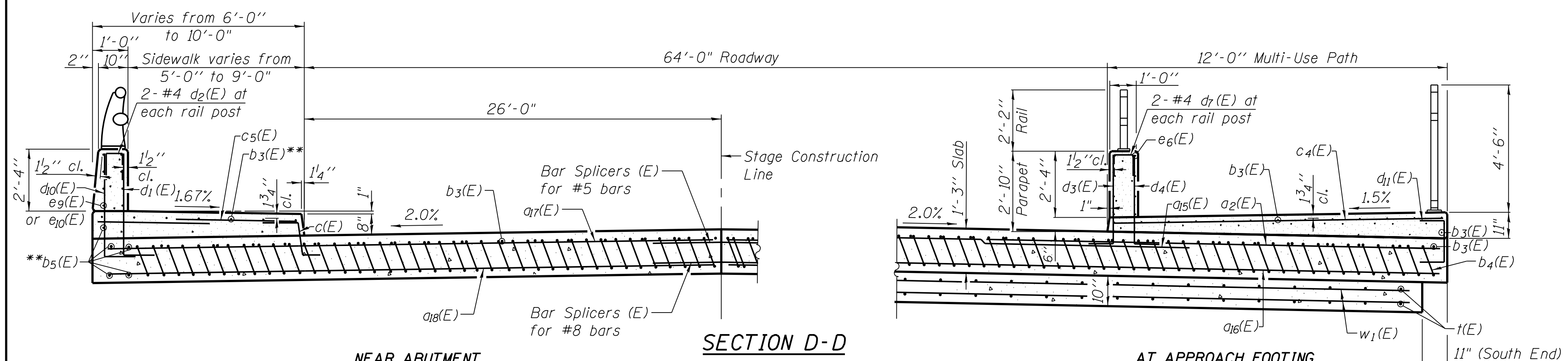
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL PLANS
EAST APPROACH SLAB PLAN – STRUCTURE NO. 016-0379
SHEET NO. 18 OF 34 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	172
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

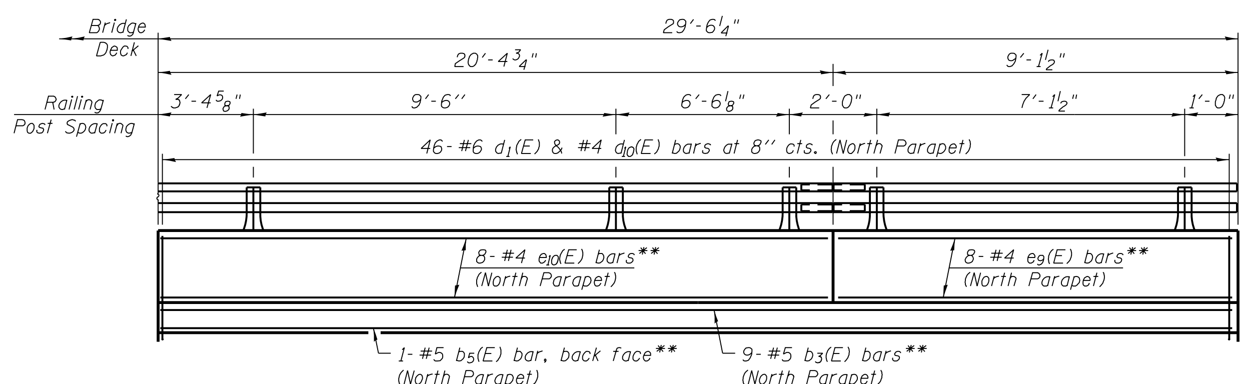


SECTION C-C



SECTION D-D

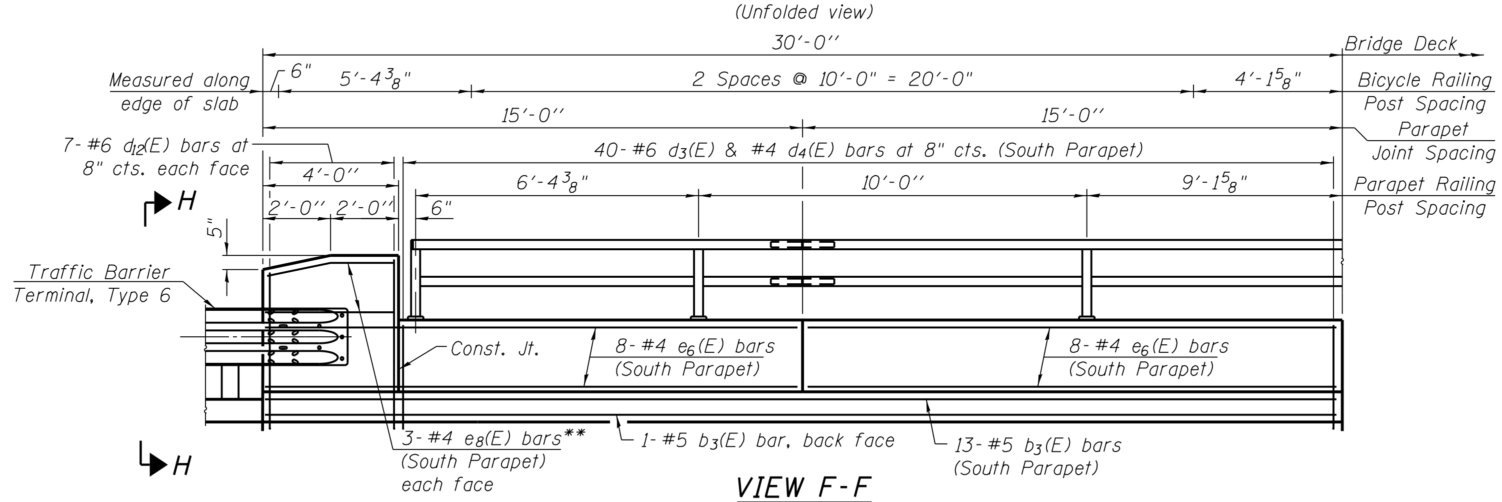
(See Plan for dimensions not shown)



Note: See Sheets 12 & 13 of 34 for parapet joint spacing and details

VIEW E-E

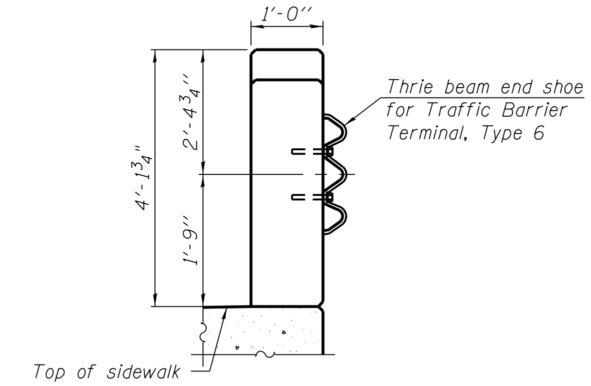
(Unfolded view)



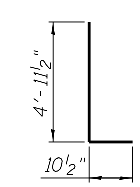
VIEW F-F

* Tilt #9 b_4(E) bars as required to maintain clearance.
** Bend bars as required to maintain clearance.
*** Cost included with Concrete Superstructure.
**** In lieu of bottom leg, c(E) bars may be cored and set according to Article 509.06 of the Standard Specifications. Cored holes shall be roughened or scored per manufacturer's recommendations. maximum depth of cored hole shall not exceed 6".

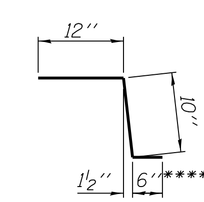
Notes:
See sheet 18 of 34 for Section A-A.
Parapet, sidewalk, and multi-use path concrete shall be paid for as Concrete Superstructure.
Approach footing concrete shall be paid for as Concrete Structures.
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
For v(E) bar details, see sheet 13 of 34.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
For bar splicer details, see sheet 30 of 34.
Cost of excavation for approach footing included with Concrete Structures.
For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 34.
For additional parapet details, see sheet 12 of 34.
For additional railing details, see sheets 20 and 21 of 34.



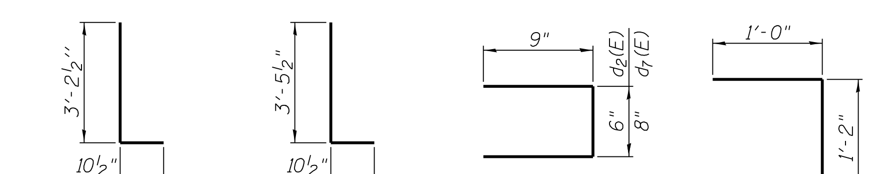
VIEW H-H



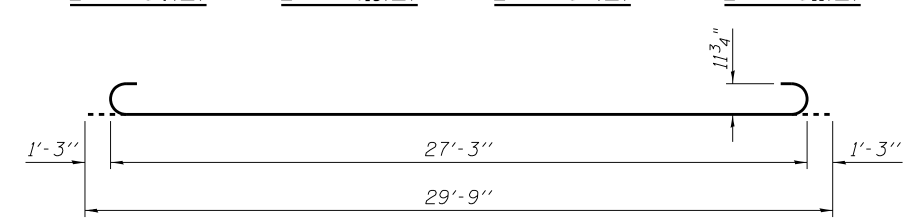
BAR d_{12} (E)



BAR c(E)



BAR d_3(E) & BAR d_4(E) — BAR d_1(E) & BAR d_{10}(E) — BAR d_2(E) & BAR d_7(E) — BAR d_{11}(E)



BAR b_4(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_2(E)	43	#6	16'-1"	
q_{14}(E)	6	#8	8'-0"	
q_{15}(E)	88	#5	27'-5"	
q_{16}(E)	118	#8	28'-2"	
q_{17}(E)	88	#5	20'-2"	
q_{18}(E)	118	#8	20'-11"	
b_3(E)	146	#5	29'-8"	
b_4(E)	200	#9	29'-9"	
b_5(E)	5	#5	29'-2"	
c(E)	46	#5	2'-4"	
c_4(E)	46	#5	12'-1"	
c_5(E)	92	#5	6'-6"	
d_1(E)	46	#6	4'-4"	
d_2(E)	10	#4	2'-0"	
d_3(E)	40	#6	4'-1"	
d_4(E)	40	#4	4'-1"	
d_7(E)	6	#4	2'-2"	
d_{10}(E)	46	#4	4'-4"	
d_{11}(E)	46	#4	3'-2"	
d_{12}(E)	14	#6	5'-10"	
e_6(E)	16	#4	14'-8"	
e_8(E)	6	#4	3'-8"	
e_9(E)	8	#4	8'-9"	
e_{10}(E)	8	#4	20'-0"	
t(E)	170	#4	10'-0"	
w_2(E)	40	#5	34'-10"	
w_3(E)	80	#5	26'-6"	

Concrete Superstructure	Cu. Yd.	22.4
Concrete Superstructure (Approach Slab)	Cu. Yd.	117.5
Concrete Structures	Cu. Yd.	26.8
Reinforcement Bars, Epoxy Coated	Pound	53,360
Bar Splicers	Each	143

RS&H

USER NAME = EtzwileE	DESIGNED - OR	12-15-2023	REVISED	
PLOT DATE = 3/18/2024	CHECKED - JIK	01-05-2024	REVISED	
	DRAWN - OR	12-15-2023	REVISED	
	CHECKED - JIK	01-05-2024	REVISED	

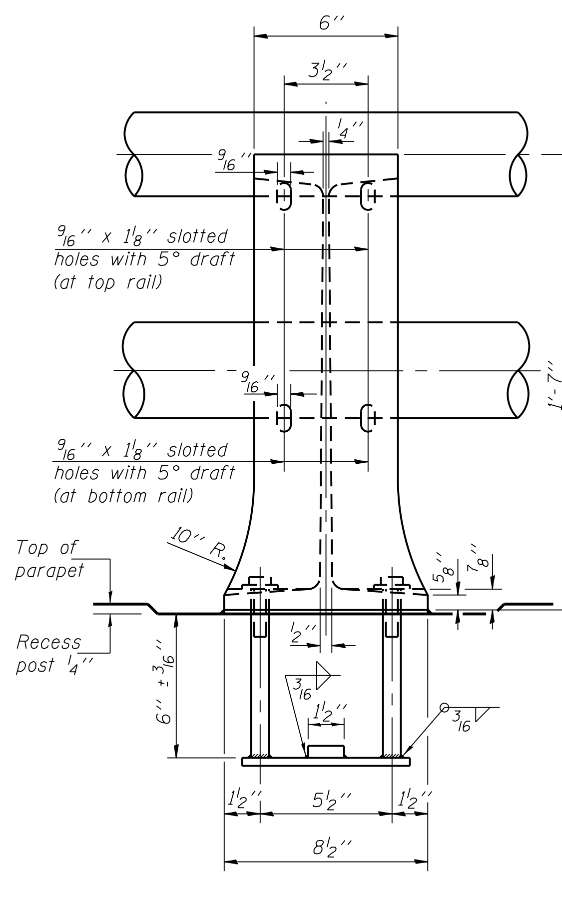
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL PLANS
EAST APPROACH SLAB DETAILS – STRUCTURE NO. 016-0379

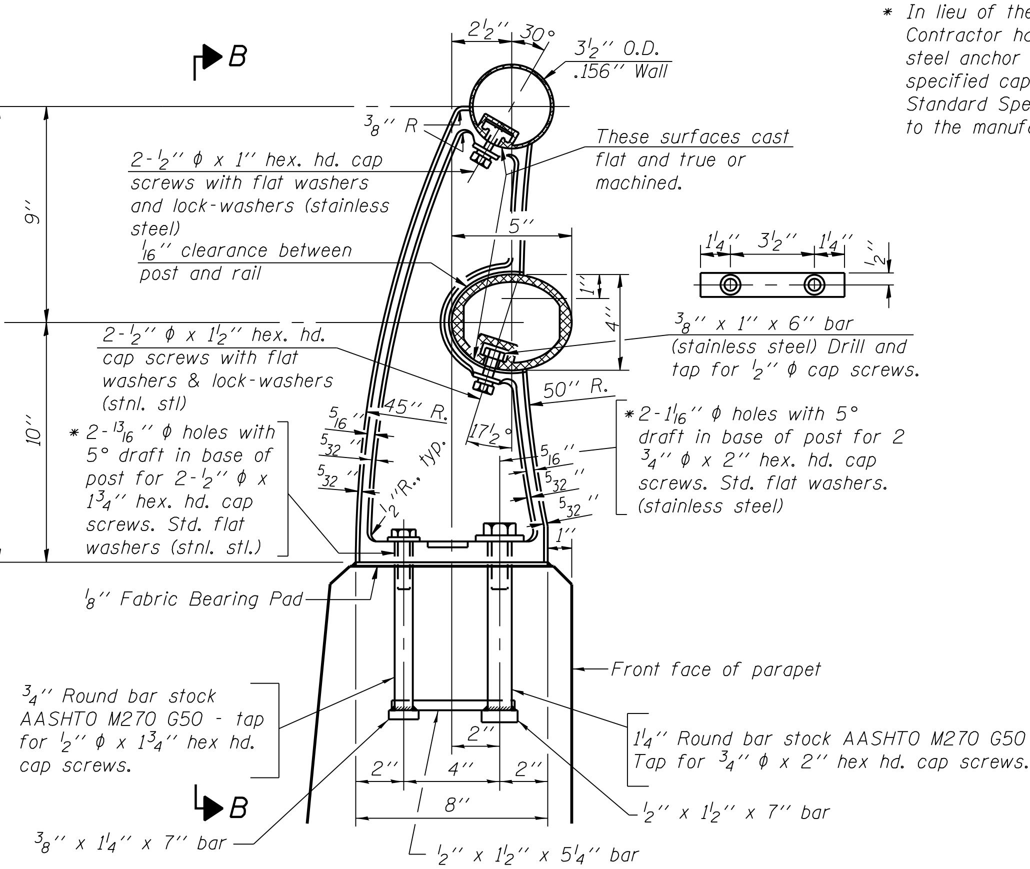
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	173

CONTRACT NO. 60J10
ILLINOIS FED. AID PROJECT

FILE NAME = X:\P\113-2838-000 Rand Road\CAD\S\CADD Sheets\0160379-60J10-019-EastApprSlabDet.dgn



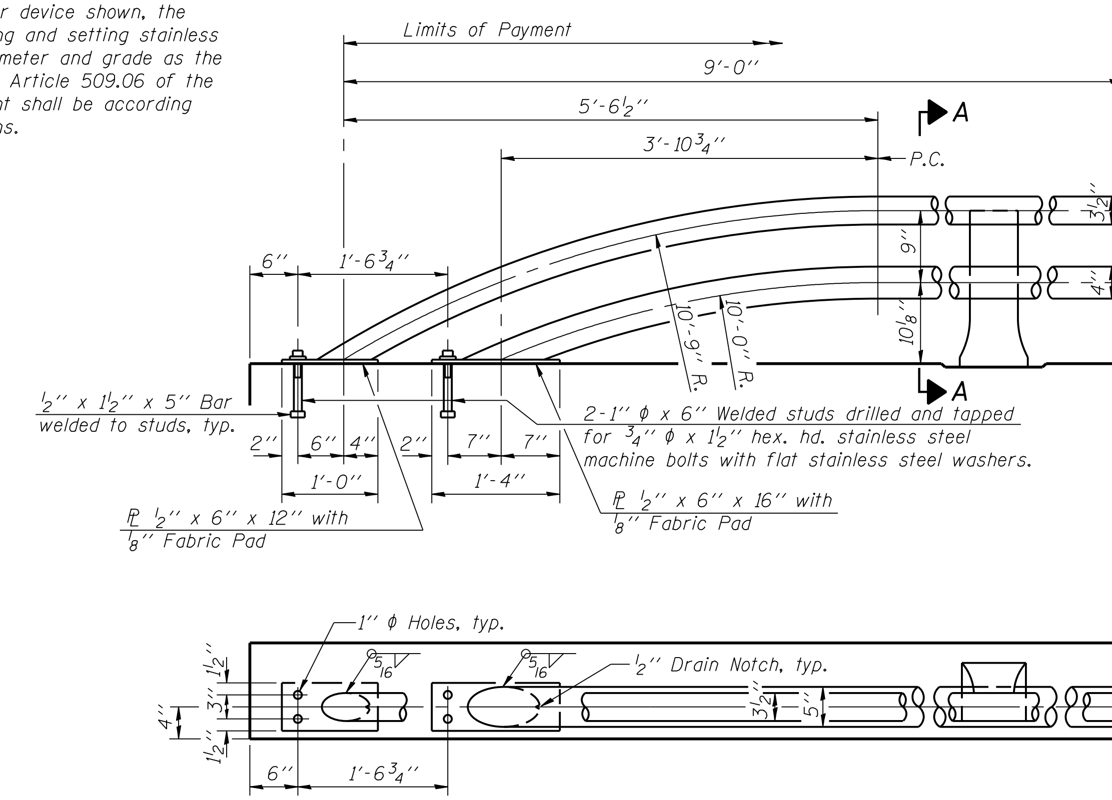
VIEW B-B



SECTION A-A

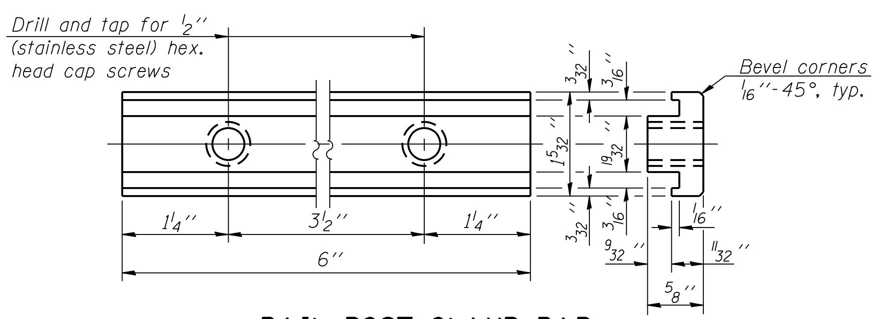
RAIL POST DETAILS

* 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.



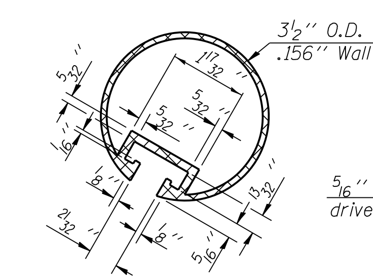
RAIL TERMINAL SECTION

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

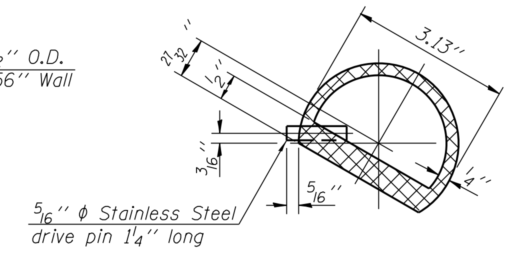


RAIL POST CLAMP BAR

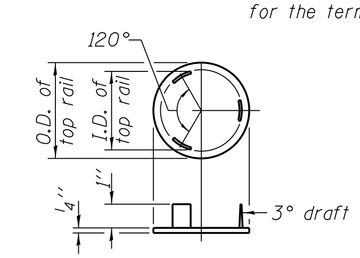
For Top Rail



SECTION THRU TOP RAIL

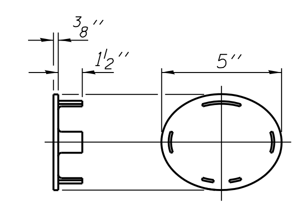


SECTION THRU TOP RAIL SPLICE



CAST END CAP

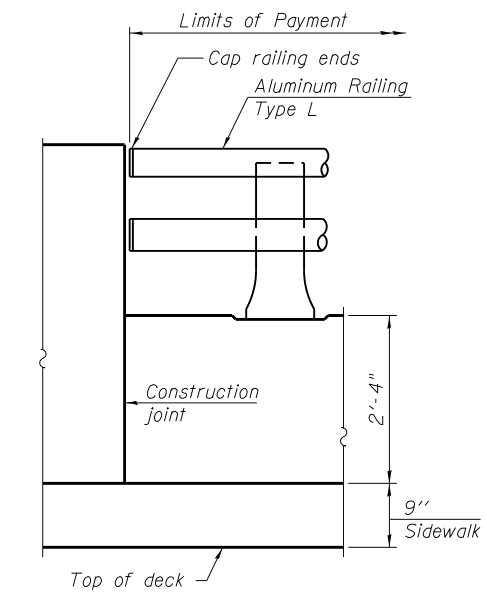
For top rail



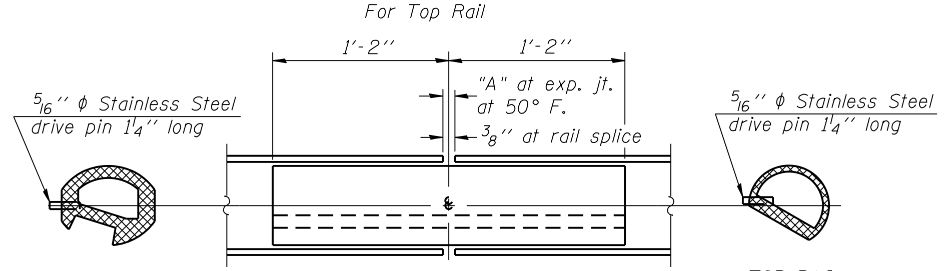
CAST END CAP

For bottom rail

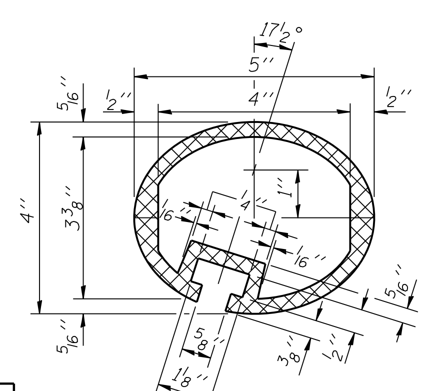
DRIVE FIT TYPE



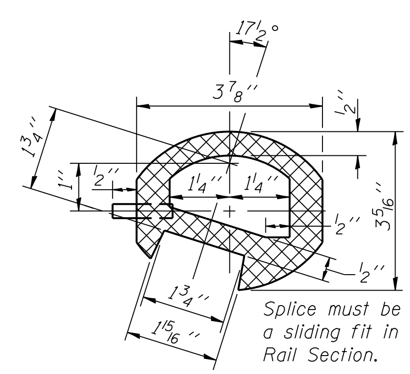
RAIL END TREATMENT FOR TYPE 5 AND 6 TERMINAL



RAIL SPLICE



SECTION THRU BOTTOM RAIL



SECTION THRU BOTTOM RAIL SPLICE

SPLICE DIMENSIONS

Location	T	A	B
All locs. not over exp. jts.	0	3/8"	1'-2"
Over Strip Seal Jt.	≤4"	2 1/2"	1'-2"
Over Finger or Modular Jt.	≤9 1/2"	5 1/2"	1'-7 3/4"
Over Finger or Modular Jt.	≤15"	8 1/4"	2'-1 1/4"

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

RAILING CRITERIA

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

R-20 10-12-2021

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 1-1/8" and 2-1/16" Aluminum Shims for 25% of the Posts. Rail elements shall be parallel to Grade-high spots will be ground and low spots shimmed.
See sheet 12 of 34 for rail post spacing.

BILL OF MATERIAL

Item	Unit	Quantity
Aluminum Railing, Type L	Foot	272

FILE NAME = X:\P\113-2838-000 Rand Road\CAD\S\CADD Sheets\0160379-60J10-020-AluRail.dgn

RS&H

USER NAME = EtzwileE	DESIGNED - OR	12-15-2023	REVISED
PLOT DATE = 3/18/2024	CHECKED - JIK	01-05-2024	REVISED
	DRAWN - OR	12-15-2023	REVISED
	CHECKED - JIK	01-05-2024	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

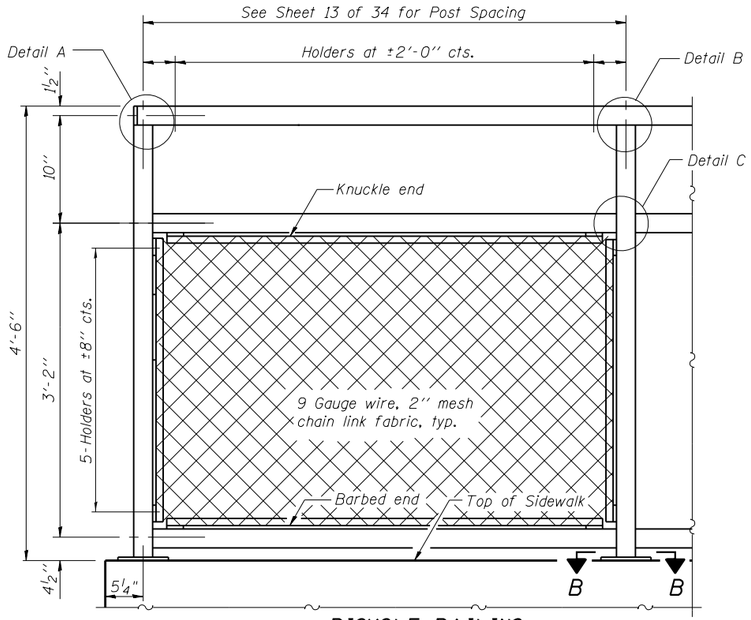
STRUCTURAL PLANS
ALUMINUM RAILING, TYPE L – STRUCTURE NO. 016–0379

SHEET NO. 20 OF 34 SHEETS

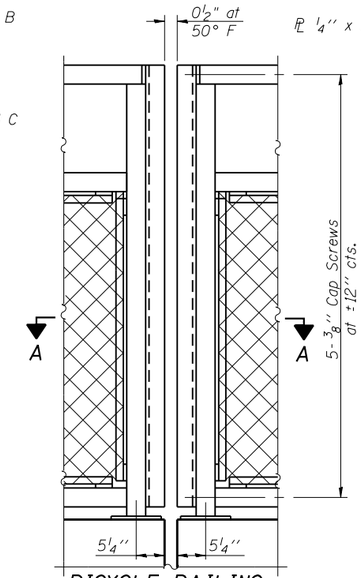
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	174

CONTRACT NO. 60J10

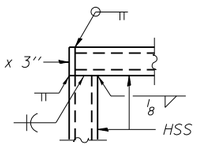
ILLINOIS FED. AID PROJECT



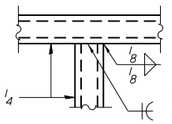
BICYCLE RAILING



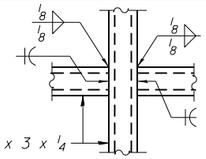
BICYCLE RAILING



DETAIL A

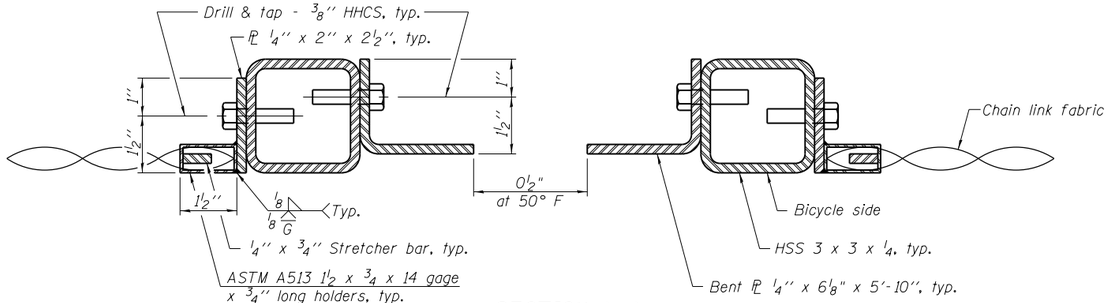


DETAIL B



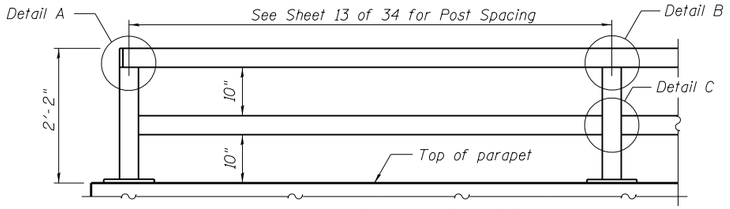
DETAIL C

Note:
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.



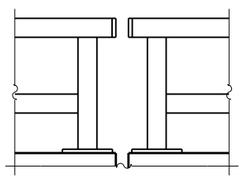
SECTION A-A

* Assume ⅜" radius. Dimensions may need to be modified for larger joints to avoid gaps greater than 6".



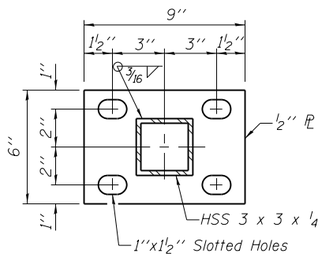
PARAPET RAILING ELEVATION

(Inside Face of Two Element Rail)

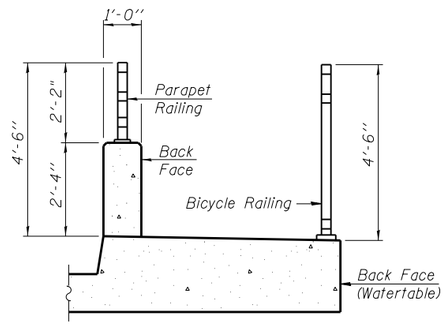


PARAPET RAILING ELEVATION AT EXPANSION JOINT

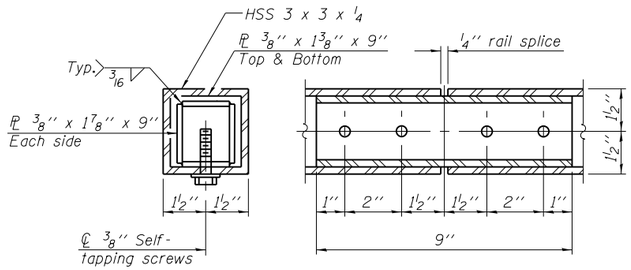
(Two Element Rail Shown - Three Element Rail Similar)



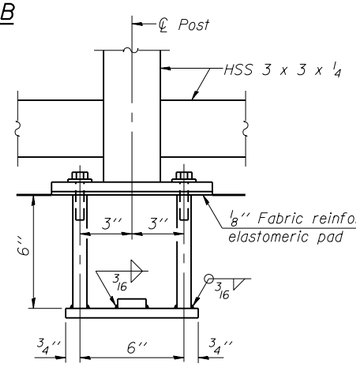
SECTION B-B

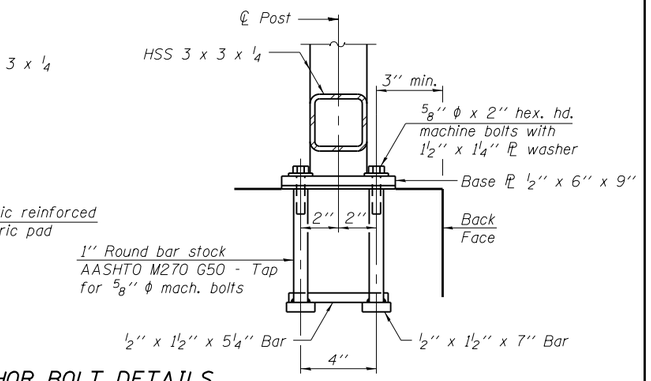


SECTION THRU SIDEWALK



RAIL SPLICE





ANCHOR BOLT DETAILS

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting ⅝" ϕ anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

RAILING CRITERIA

MASH 2016 Test Level	4
Railing Weight (plf)	25
Bicycle Railing Weight (plf)	50
Max Post Spacing	10'-0"

Notes:
Place reinforcement bars to miss anchor rod locations.
CVN testing is not required for the HSS tubing used in the Bicycle Railing.
All HSS tubing used for the Parapet Railing shall be CVN tested according to Article 1006.34(b) of the Standard Specifications.

BILL OF MATERIAL

Item	Unit	Quantity
Bicycle Railing	Foot	272
Parapet Railing	Foot	264

RS&H

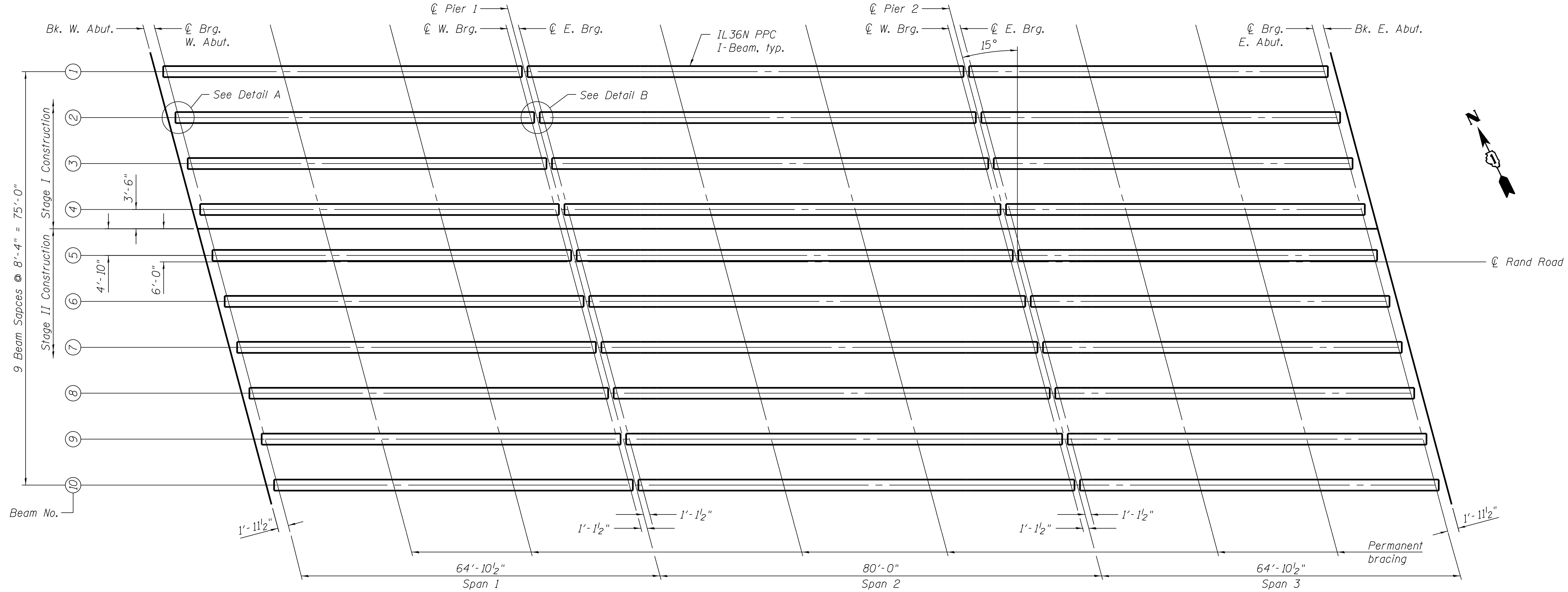
USER NAME = EtzwilleE	DESIGNED - OR	12-15-2023	REVISED	
PLOT DATE = 3/18/2024	CHECKED - JIK	01-05-2024	REVISED	
	DRAWN - OR	12-15-2023	REVISED	
	CHECKED - JIK	01-05-2024	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

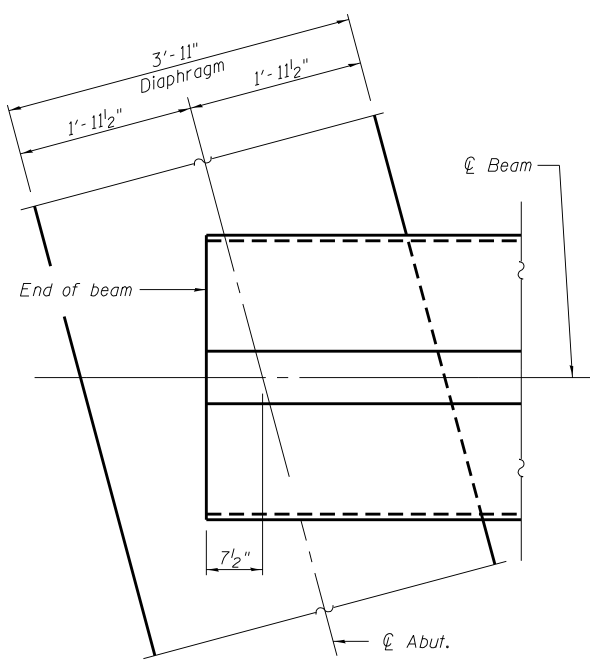
STRUCTURAL PLANS
BICYCLE RAILING – STRUCTURE NO. 016-0379
SHEET NO. 21 OF 34 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	175
		CONTRACT NO. 60J10		
ILLINOIS FED. AID PROJECT				

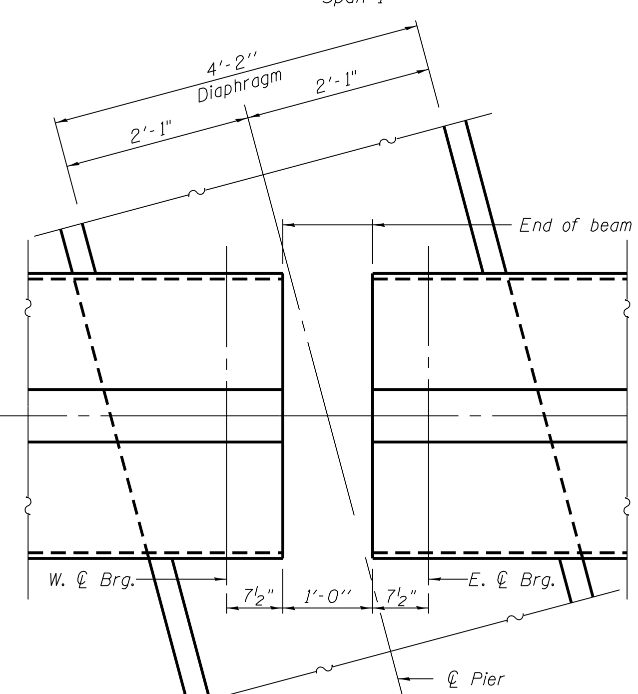
FILE NAME = X:\PW\113-2838-000 Rand Road\CADD\S\CADD Sheets\016379-60J10-021-BikeRail.dgn



PLAN



DETAIL A



DETAIL B

I: Non-composite moment of inertia of beam section (in.^{4}).
I': Composite moment of inertia of beam section (in.^{4}).
S_b: Non-composite section modulus for the bottom fiber of the prestressed beam (in.^{3}).
S_b': Composite section modulus for the bottom fiber of the prestressed beam (in.^{3}).
S_t: Non-composite section modulus for the top fiber of the prestressed beam (in.^{3}).
S_t': Composite section modulus for the top fiber of the prestressed beam (in.^{3}).
DC1: Un-factored non-composite dead load (kips/ft.).
M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).
DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft).
LLDF: Live Load Distribution Factor for moment and shear computed according to Article 4.6.2.2 and further IDOT provisions.
M_{LL+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
OCF: Obtuse Correction Factor computed according to Article 4.6.2.2.3c or as further simplified by IDOT provisions.
R_{DC1}: Un-factored reaction due to non-composite dead load (kip).
R_{DC2}: Un-factored reaction due to long-term composite (superimposed excluding future wearing surface) dead load (kip).
R_{DW}: Un-factored reaction due to long-term composite (superimposed future wearing surface only) dead load (kip).
R_{LL}: Un-factored live load reaction (kip).
R_{IM}: Un-factored dynamic load allowance (impact) (kip).
R_{Total} (Strength I) (Impact): Total factored reaction including dynamic load allowance (impact) (kip.)

Symmetrical 3 span

INTERIOR BEAM MOMENT TABLE

		0.5 Sp. 1 0.5 Sp. 3	Pier 1 or 2	0.5 Sp. 2
I	(in^4)	100,433	100,433	100,433
I'	(in^4)	310,750	310,750	310,750
S_b	(in^3)	6,832	6,832	6,832
S_b'	(in^3)	11,975	11,975	11,975
S_t	(in^3)	4,715	4,715	4,715
S_t'	(in^3)	17,216	17,216	17,216
DC1	(k/')	1.641	1.641	1.641
M_{DC1}	('k)	836.9	0	1,245
DC2	(k/')	0.270	0.270	0.270
M_{DC2}	('k)	73.8	-133.2	72
DW	(k/')	0.318	0.318	0.318
M_{DW}	('k)	84.8	-155.7	86.1
LLDF	('k)	0.730	0.709	0.692
M_{LL+IM}	('k)	886.1	-862.9	868.2

INTERIOR BEAM REACTION TABLE

		Abutments	Pier 1 Span 1 Pier 2 Span 3	Pier 1 Span 2 Pier 2 Span 2
LLDF	(k)	0.886	0.889	0.886
OCF	(k)	1.0	1.0	1.0
R_{DC1}	(k)	67.1	59.1	70.5
* R_{DC2}	(k)	6.6	10.9	10.5
* R_{DW}	(k)	7.8	12.6	12.4
* R_{LL+IM}	(k)	86.8	96.3	98.8
R_{Total} (Strength I) (Impact)	(k)	168.3	178.9	192.2

* At continuous piers, reactions from composite loads are assumed to be equally distributed to each bearing line.

FILE NAME = X:\P\113-2838-000 Rand Road\CAD\S\CADD Sheets\0160379-60J10-022-GirderFrame.dgn

RS&H

USER NAME = EtzwileE	DESIGNED - JIK 12-15-2023	REVISED
PLOT DATE = 3/18/2024	CHECKED - JGT 01-05-2024	REVISED
	DRAWN - OR 12-15-2023	REVISED
	CHECKED - JIK 01-05-2024	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

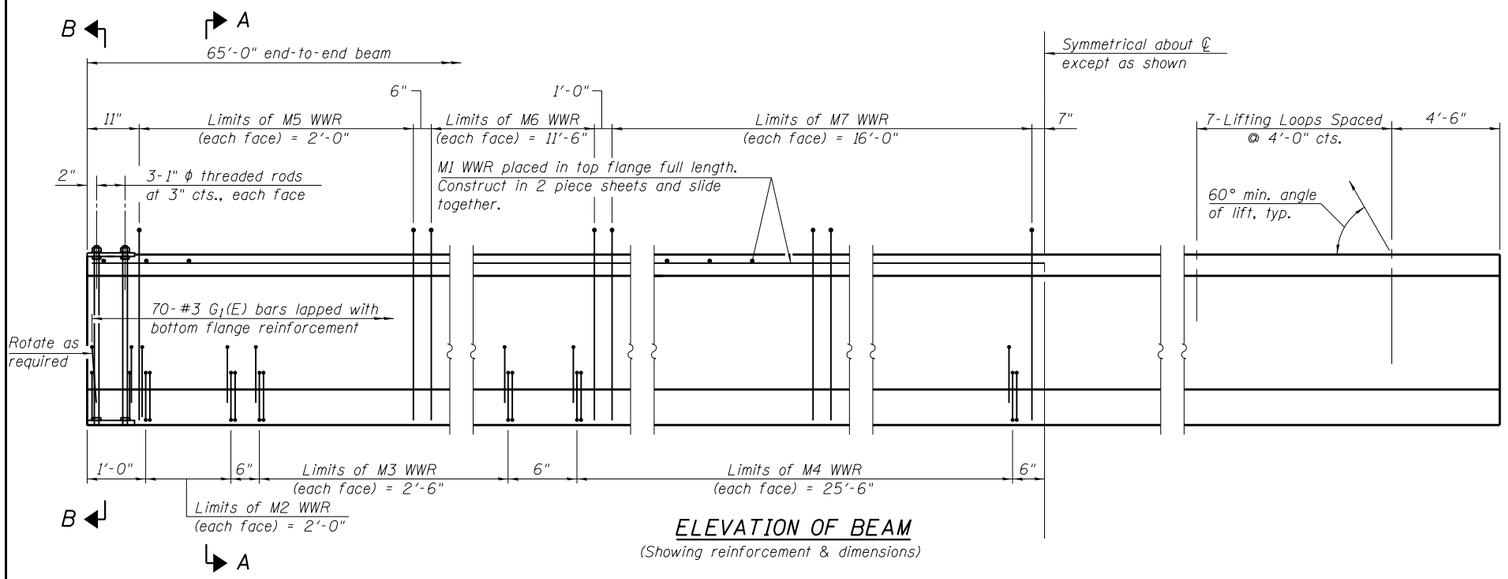
STRUCTURAL PLANS
GIRDER & FRAMING DETAILS – STRUCTURE NO. 016–0379

SHEET NO. 22 OF 34 SHEETS

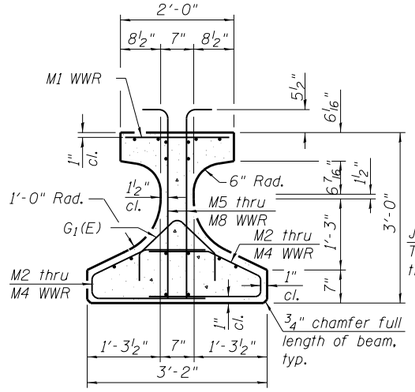
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	176

CONTRACT NO. 60J10

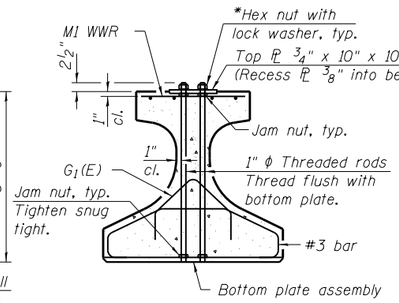
ILLINOIS FED. AID PROJECT



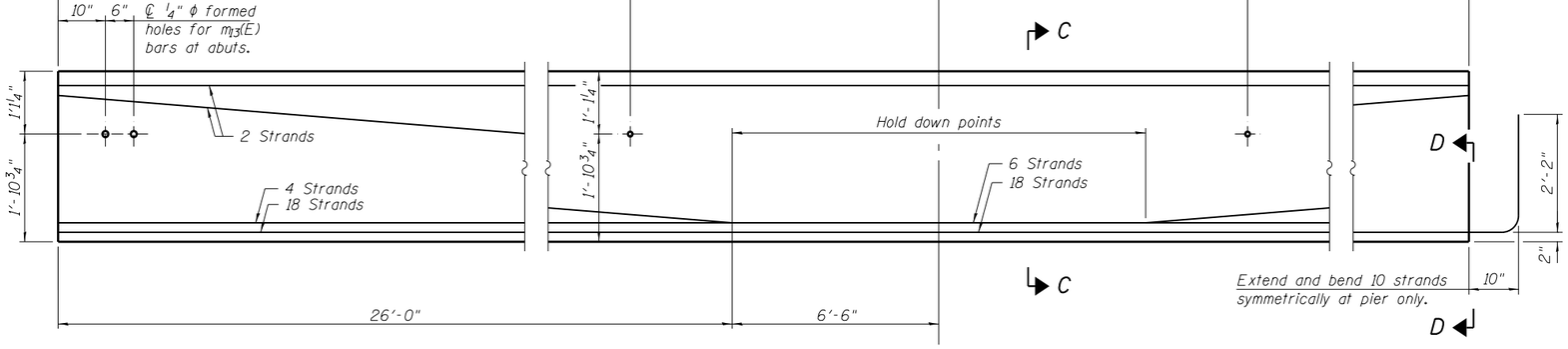
ELEVATION OF BEAM
(Showing reinforcement & dimensions)



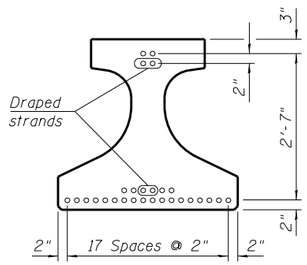
SECTION A-A



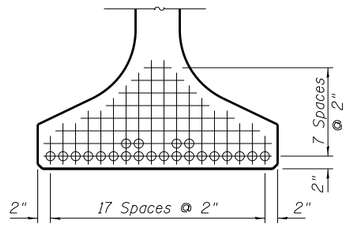
SECTION B-B
*Only tighten sufficiently to compress lock washers



ELEVATION OF BEAM
(Showing prestressing steel)



SECTION C-C
(26-0.6" ϕ 270 ksi strands)



VIEW D-D

○ Fully bonded strand

▲ Partially debonded strand

Note:
See sheet 25 of 34 for additional details and Bill of Material.

FILE NAME = X:\P\113-2038-000 Rand Road\CAD\S\CADD Sheets\0160379-60J10-023-PPCIBeamB1.dgn

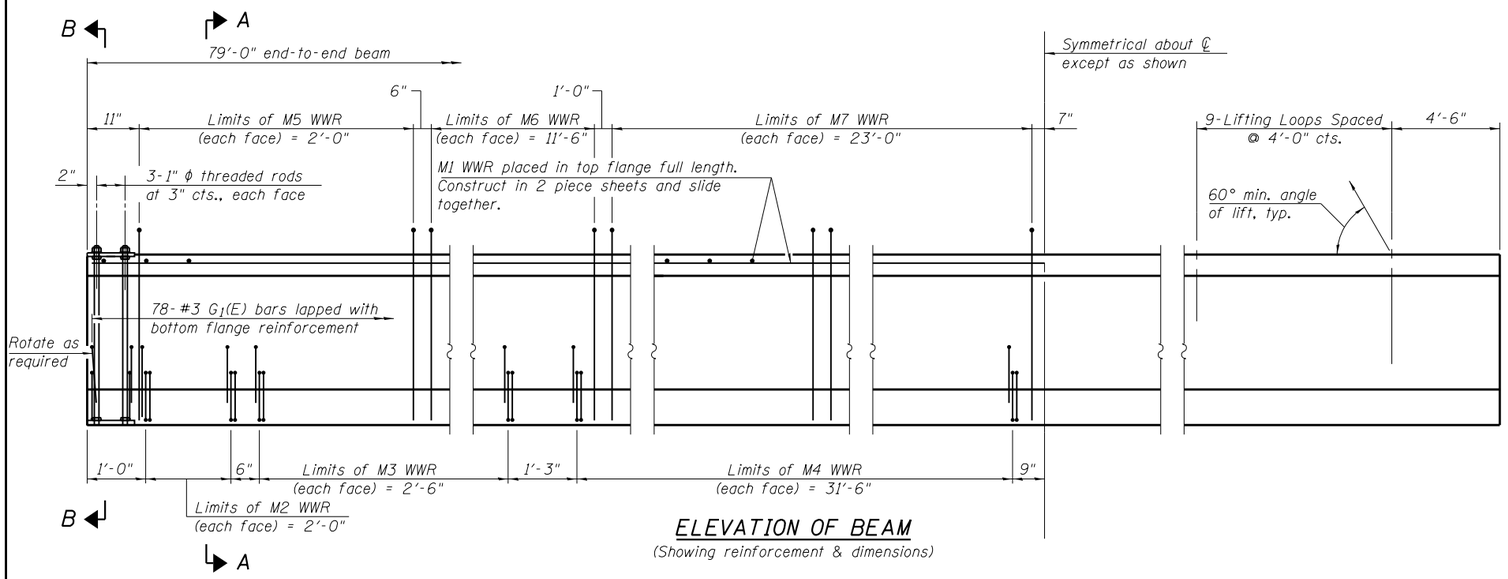
RS&H

USER NAME = EtzwilleE	DESIGNED - JIK	12-15-2023	REVISED
PLOT DATE = 3/18/2024	CHECKED - JGT	01-05-2024	REVISED
	DRAWN - OR	12-15-2023	REVISED
	CHECKED - JIK	01-05-2024	REVISED

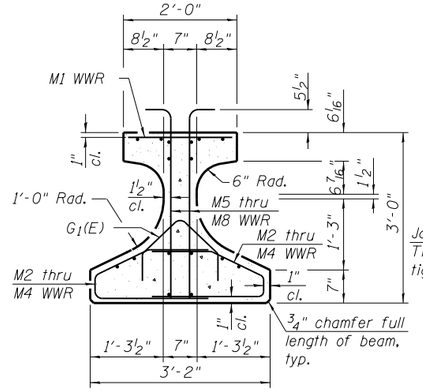
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL PLANS
IL36N BEAM – SPANS 1 & 3 – STRUCTURE NO. 016-0379
SHEET NO. 23 OF 34 SHEETS

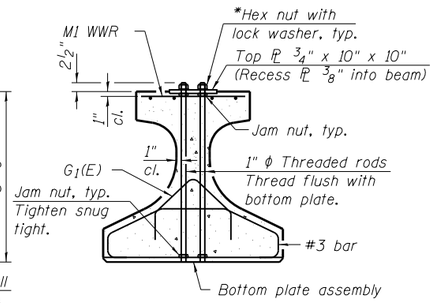
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	177
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			



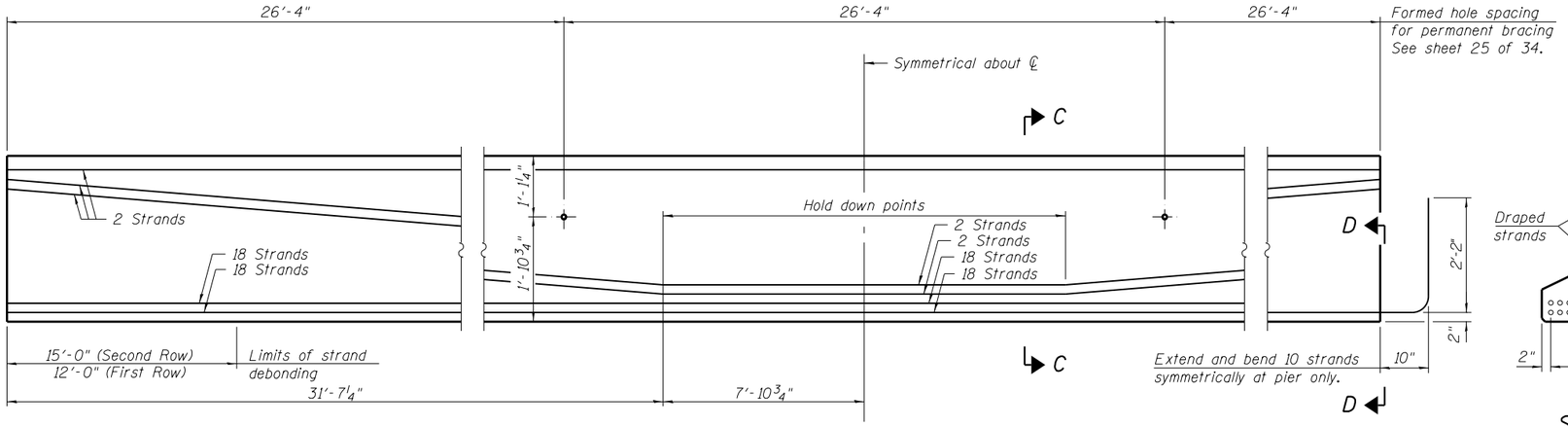
ELEVATION OF BEAM
(Showing reinforcement & dimensions)



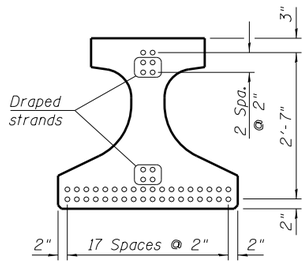
SECTION A-A



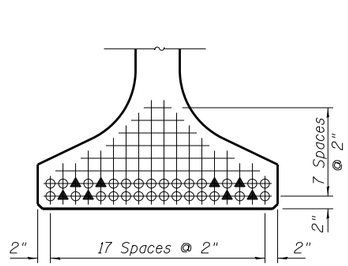
SECTION B-B
*Only tighten sufficiently to compress lock washers



ELEVATION OF BEAM
(Showing prestressing steel)



SECTION C-C
(42-0.6" ϕ 270 ksi strands)



VIEW D-D
○ Fully bonded strand

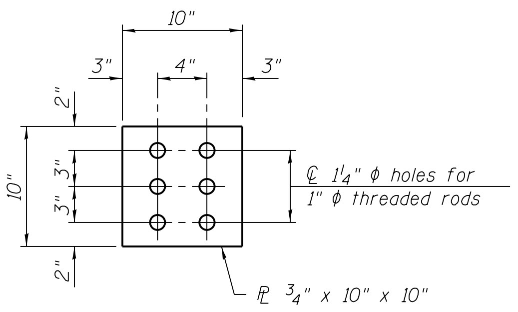
▲ Partially debonded strand

Note:
See sheet 25 of 34 for additional details and Bill of Material.

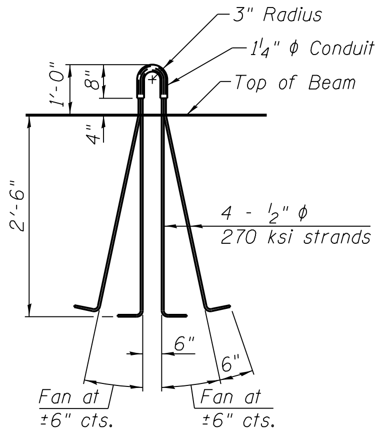
RS&H	USER NAME = EtzwilleE	DESIGNED - JIK 12-15-2023	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STRUCTURAL PLANS IL36N BEAM – SPAN 2 – STRUCTURE NO. 016-0379 SHEET NO. 24 OF 34 SHEETS
	PLOT DATE = 3/18/2024	CHECKED - JGT 01-05-2024	REVISED		
		DRAWN - OR 12-15-2023	REVISED		
		CHECKED - JIK 01-05-2024	REVISED		

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	178
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

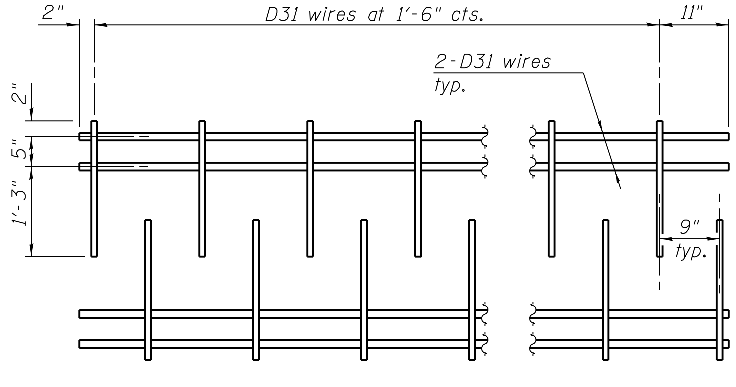
FILE NAME = X:\PW\13-2038-000 Rand Road\CAD\S\CADD Sheets\0160379-60J10-024-PPCIBeamB2.dgn



PLAN - TOP PLATE



LIFTING LOOP DETAIL



M1 WWR DETAIL

When multiple sheets of M1 WWR are required along the beam length, #5(E) bars (5'-0" long) shall be used to splice the longitudinal D31 wires together (Min. Lap 2'-2").

NOTES

Inserts for ¾" ϕ threaded dowel rods, when specified, are to be two strut, ferrule type for interior beams and single ferrule, flared loop type for exterior beams.

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter for beam strands shall be 0.6" and the nominal cross-sectional area shall be 0.217 sq. in. The nominal diameter for lifting loops shall be ½" and the nominal cross sectional area shall be 0.153 sq. in.

The beams shall have a final concrete compressive strength, f'c, of 8500 psi and a release concrete compressive strength, f'ci, of 6500 psi.

A minimum 2½" ϕ lifting pin shall be used to engage the lifting loops during handling.

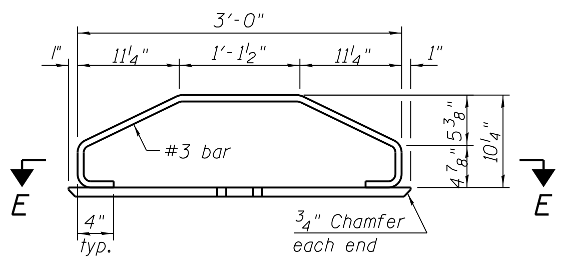
Bend the extended strands inward on the fascia beams to maintain 1½" clearance inside the pier diaphragm.

The top and bottom plates shall be AASHTO M270 Grade 50.

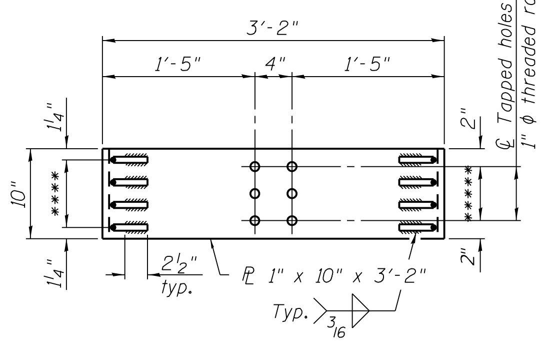
The top plates and bottom plate assemblies shall be galvanized according to AASHTO M111. The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

Threaded rods shall be ASTM F 1554 Grade 55.

Welded Wire Reinforcement (WWR) shall conform to ASTM A884 with a Class A, Type 1 epoxy coating or ASTM A1060, Table 3 galvanized coating.



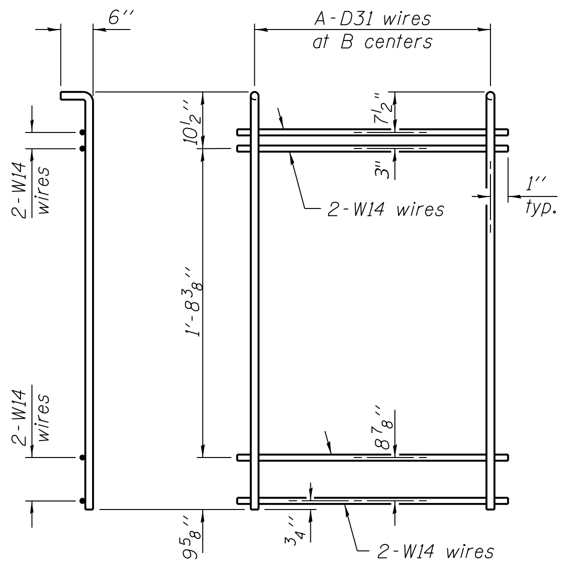
ELEVATION - BOTTOM PLATE ASSEMBLY



SECTION E-E

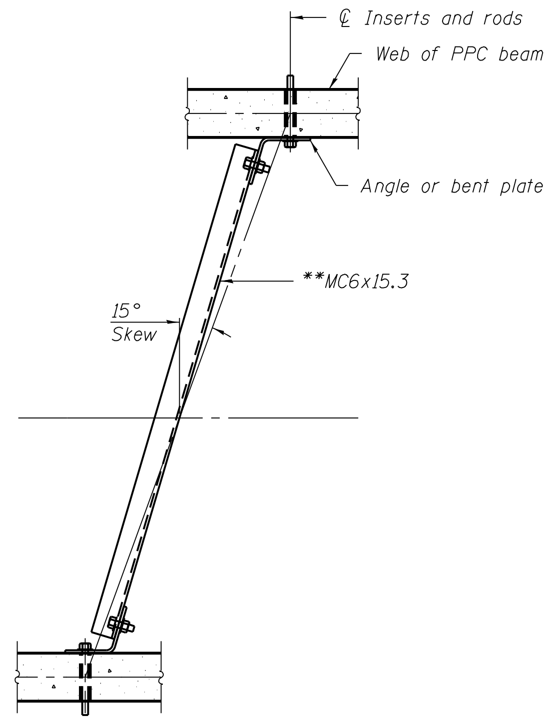
**** 3 Spaces at 2½" = 7½"

***** 2 Spaces at 3" = 6"



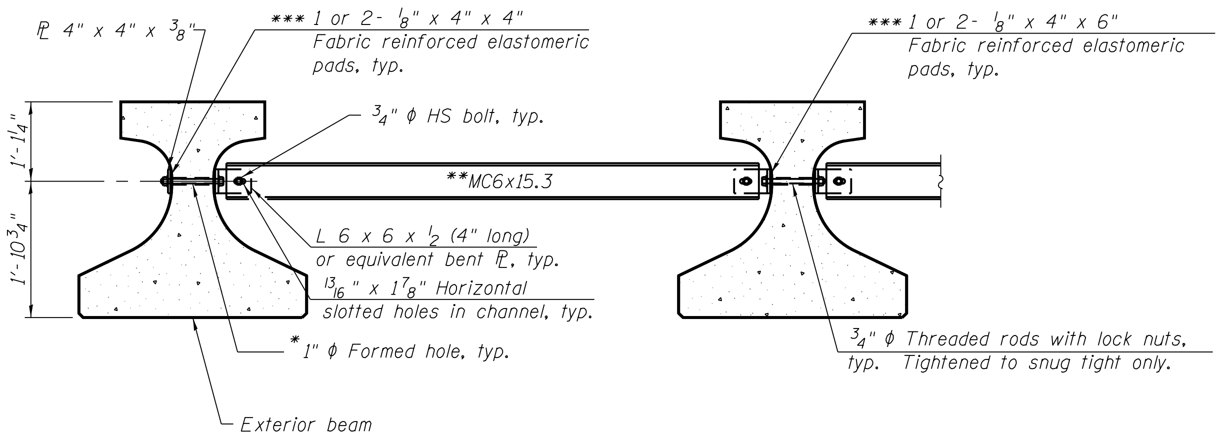
M5 THRU M8 WWR DETAIL

(See Table of Dimensions)



PERMANENT BRACING PLAN

(See Permanent Bracing Details for IL36N Beams for dimensions and details not shown)



Notes:

All material for bracing shall be hot dip galvanized according to AASHTO M111 unless otherwise noted.

Two hardened washers are required for each set of oversized holes.

All holes shall be 15/16" ϕ unless otherwise noted.

5/16" x 3" x 3" plate washers are required over all slotted holes.

All bolts, threaded rods, and hardware shall be galvanized according to AASHTO M232.

Threaded rods shall be ASTM F 1554 Grade 55.

Bracing shall be installed as beams are erected and tightened as soon as possible during erection.

Permanent bracing shall not be paid for separately, but shall be included in the cost of Furnishing and Erecting Precast Prestressed Concrete Beams.

The MC6x15.3 channels shall be AASHTO M270 Grade 50.

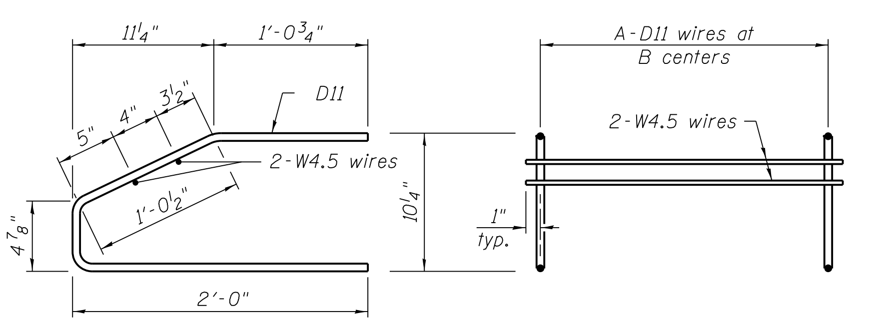
Fasteners shall be ASTM F3125 Grade A325 Type 1.

* Fabricator shall locate to miss strands within permissible tolerances.

** Alternate MC6x18 channels as permitted to facilitate material acquisition.

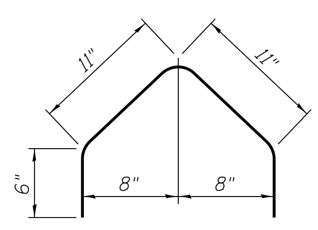
*** Place pads as necessary to provide a flat mounting surface between the steel and concrete.

PERMANENT BRACING DETAILS FOR IL36N BEAMS



M2 THRU M4 WWR DETAIL

(See Table of Dimensions)



BAR G_1(E)

TABLE OF DIMENSIONS

(WWR tables are based on Grade 60.)

SPANS 1 & 3

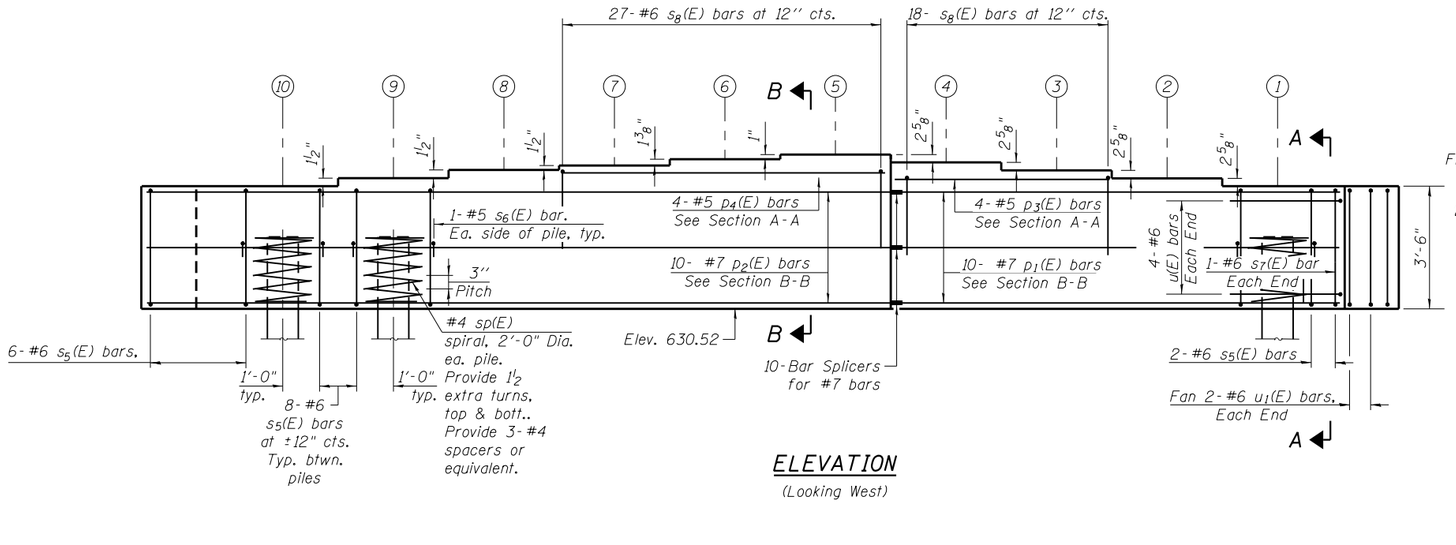
WWR	A	B
M2	9	3"
M3	6	6"
M4	18	1'-6"
M5	9	3"
M6	24	6"
M7	17	1'-0"
M8	-	2'-0"

SPAN 2

WWR	A	B
M2	9	3"
M3	6	6"
M4	22	1'-6"
M5	9	3"
M6	24	6"
M7	24	1'-0"
M8	-	2'-0"

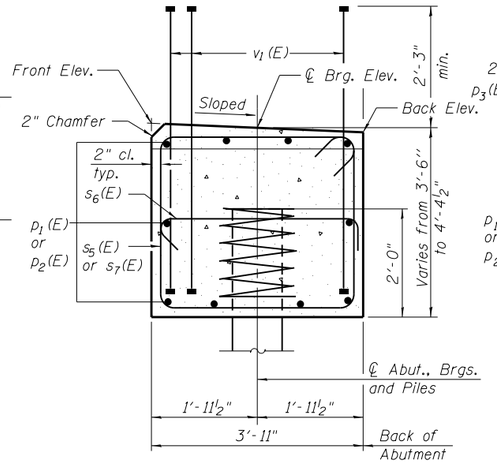
BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete Beams, IL36N	Ft.	2,090



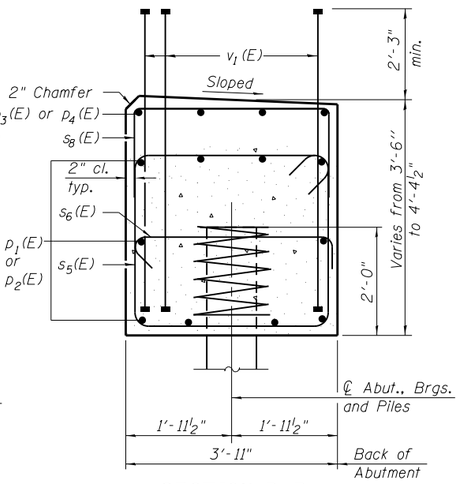
ELEVATION

(Looking West)



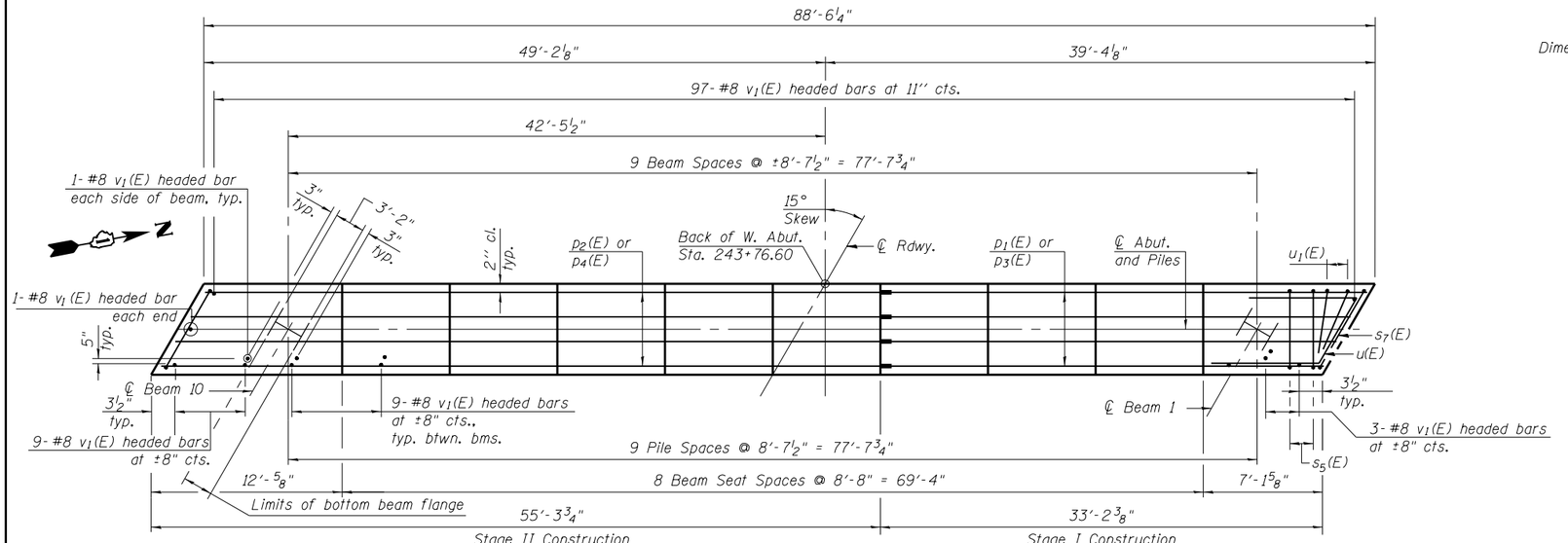
SECTION A-A

Dimensions at right angles to abutment.



SECTION B-B

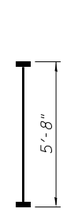
Dimensions at right angles to abutment.



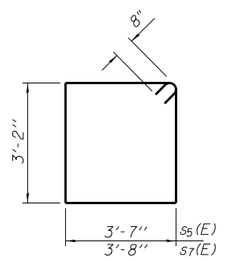
PLAN

PILE DATA

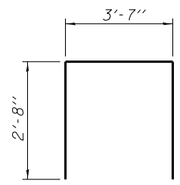
Type: HP14x89
Nominal Required Bearing: 511 kips
Factored Resistance Available: 281 kips
Est. Length: 75'-0"
No. Production Piles: 9
No. Test Piles: 1



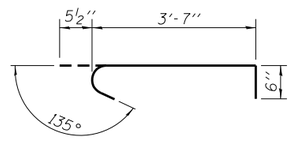
BAR v_1(E)
(Headed)



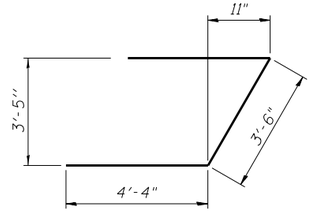
BAR s_5(E) & s_7(E)



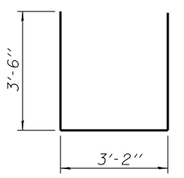
BAR s_8(E)



BAR s_6(E)



BAR u(E)



BAR u_1(E)

BEARING SEAT ELEVATION TABLE

Beam No.	Back Elev.	℄ Brg Elev.	Front Elev.
1	633.99	634.02	634.05
2	634.21	634.24	634.27
3	634.43	634.46	634.49
4	634.65	634.68	634.71
5	634.86	634.90	634.93
6	634.79	634.82	634.85
7	634.68	634.71	634.74
8	634.56	634.58	634.60
9	634.44	634.46	634.48
10	634.31	634.33	634.35

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
p_1(E)	10	#7	33'-10"	
p_2(E)	10	#7	55'-1"	
p_3(E)	4	#5	17'-0"	
p_4(E)	4	#5	25'-8"	
s_5(E)	80	#6	14'-10"	
s_6(E)	20	#5	4'-7"	
s_7(E)	2	#6	15'-0"	
s_8(E)	45	#6	8'-11"	
* sp(E)	10	#4	2'-0"	
u(E)	8	#6	12'-2"	
u_1(E)	4	#6	10'-2"	
v_1(E)	212	#8	5'-8"	
Concrete Structures		Cu. Yd.	51.4	
Reinforcement Bars, Epoxy Coated		Pound	8,400	
Bar Splicers		Each	10	
Furnishing Steel Piles, HP14x89		Foot	675	
Driving Piles		Foot	675	
Test Pile, HP14x89		Each	1	

* Length is height of spiral.

Notes:
Pour steps monolithically with cap.
Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinfocrement Bars, Epoxy Coated.
See Sheet 29 of 34 for pile details.
s_5(E) bars are placed at right angles to cap and spaced along cap.
Order p_1(E) and p_2(E) bars full length and trim to fit skew.

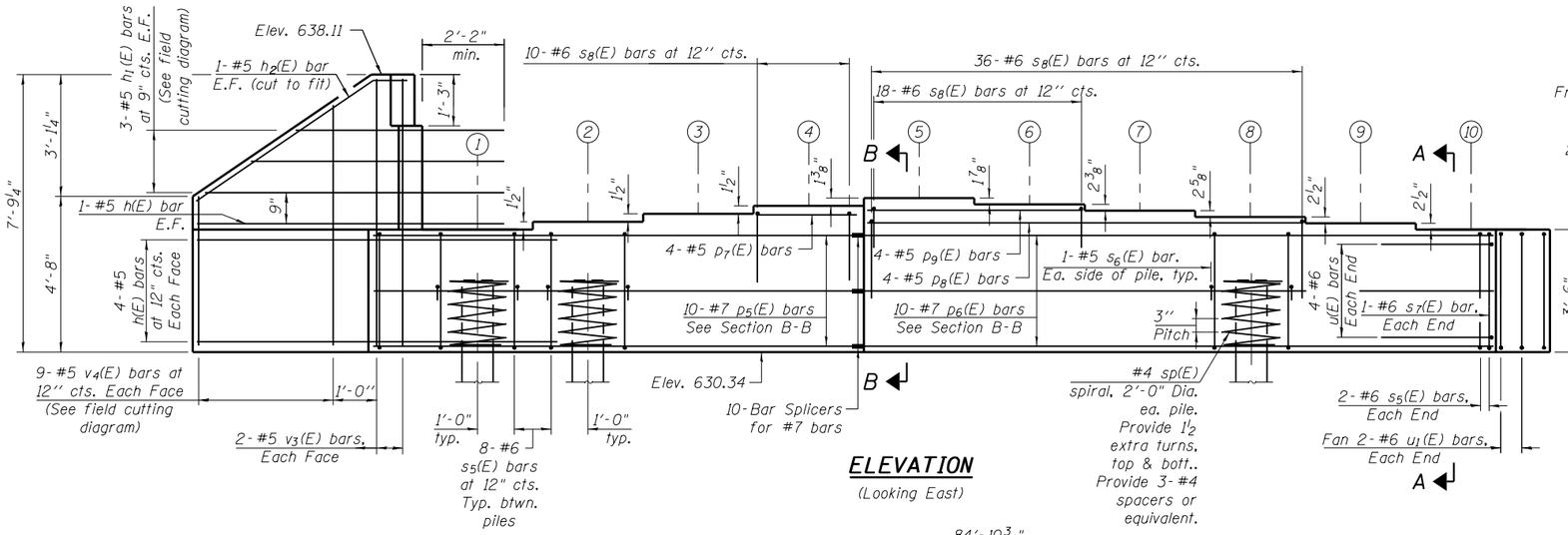
RS&H

USER NAME = EtzwilleE	DESIGNED - OR	12-15-2023	REVISED
PLOT DATE = 3/18/2024	CHECKED - JIK	01-05-2024	REVISED
	DRAWN - OR	12-15-2023	REVISED
	CHECKED - JIK	01-05-2024	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

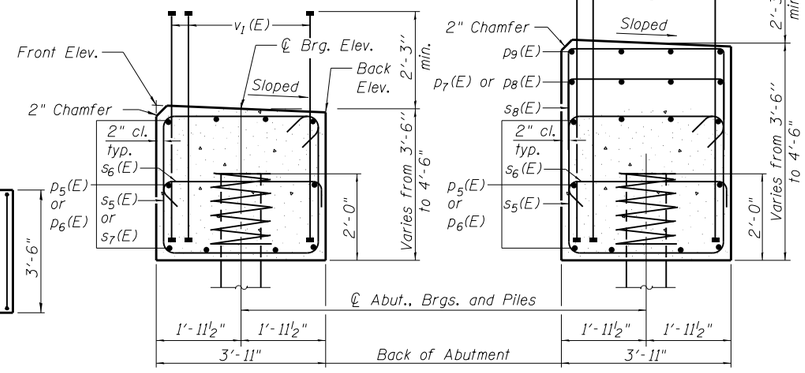
STRUCTURAL PLANS
WEST ABUTMENT – STRUCTURE NO. 016–0379
SHEET NO. 26 OF 34 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	180
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			



ELEVATION

(Looking East)

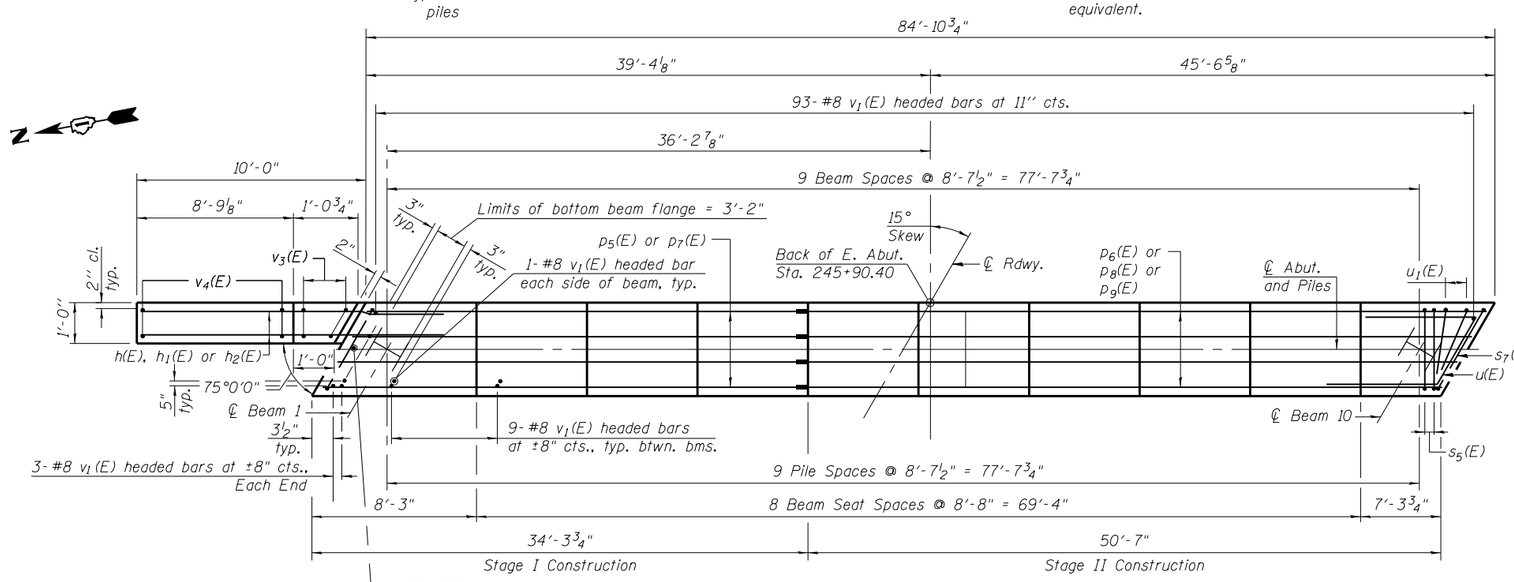


SECTION A-A

Dimensions at right angles to abutment.

SECTION B-B

Dimensions at right angles to abutment.



PLAN

BEARING SEAT ELEVATION TABLE

Beam No.	Back Elev.	℄ Brg Elev.	Front Elev.
1	634.33	634.35	634.38
2	634.45	634.48	634.51
3	634.57	634.60	634.64
4	634.70	634.73	634.76
5	634.81	634.84	634.88
6	634.66	634.69	634.72
7	634.45	634.48	634.51
8	634.23	634.26	634.29
9	634.02	634.05	634.08
10	633.81	633.84	633.88

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	10	#5	12'-6"	
h1(E)	6	#5	17'-4"	
h2(E)	2	#5	10'-0"	
p5(E)	10	#7	34'-0"	
p6(E)	10	#7	51'-4"	
p7(E)	4	#5	8'-5"	
p8(E)	4	#5	34'-3"	
p9(E)	4	#5	16'-11"	
s5(E)	76	#6	14'-10"	
s6(E)	20	#5	4'-7"	
s7(E)	2	#6	15'-0"	
s8(E)	64	#6	8'-11"	
* sp(E)	10	#4	2'-0"	
u(E)	8	#6	12'-2"	
u1(E)	4	#6	10'-2"	
v1(E)	202	#8	5'-8"	
v3(E)	4	#5	7'-5"	
v4(E)	9	#5	11'-5"	
Concrete Structures		Cu. Yd.	54.0	
Reinforcement Bars, Epoxy Coated		Pound	8,390	
Bar Splicers		Each	10	
Furnishing Steel Piles, HP14x89		Foot	675	
Driving Piles		Foot	675	
Test Pile, HP14x89		Each	1	

* Length is height of spiral.

Notes:

Pour steps monolithically with cap.

Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.

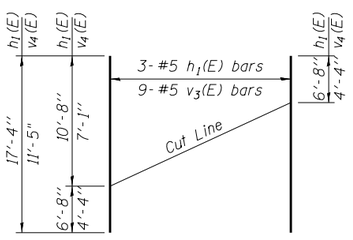
See Sheet 29 of 34 for pile details.

$s_5(E)$ bars are placed at right angles to cap and spaced along cap.

Order $p_5(E)$ and $p_6(E)$ bars full length and trim to fit skew.

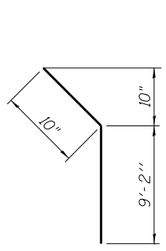
PILE DATA

Type: HP14x89
Nominal Required Bearing: 457 kips
Factored Resistance Available: 252 kips
Est. Length: 75'-0"
No. Production Piles: 9
No. Test Piles: 1
Piles shall be driven through 24" diameter precored holes extending to elevation 613.0 according to Article 512.09(c) of the Standard Specifications. Cost included in driving piles.

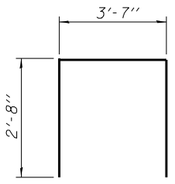


FIELD CUTTING DIAGRAM

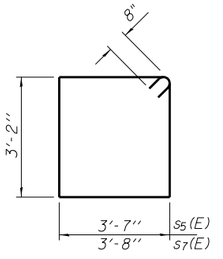
Order $h_1(E)$ and $v_3(E)$ full length. Cut as shown and use remainder of bars in opposite face.



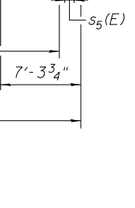
BAR $h_2(E)$



BAR $s_8(E)$

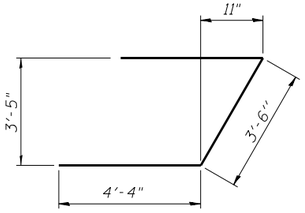


BAR $s_5(E)$ & $s_7(E)$

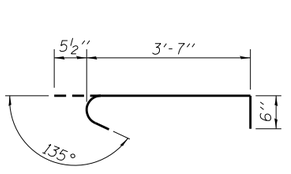


BAR $v_1(E)$

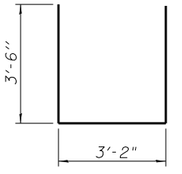
(Headed)



BAR $u(E)$



BAR $s_4(E)$



BAR $u_1(E)$

USER NAME = EtzwilleE	DESIGNED - OR	12-15-2023	REVISED	
PLOT DATE = 3/18/2024	CHECKED - JIK	01-05-2024	REVISED	
	DRAWN - OR	12-15-2023	REVISED	
	CHECKED - JIK	01-05-2024	REVISED	

RS&H

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL PLANS
EAST ABUTMENT – STRUCTURE NO. 016–0379
SHEET NO. 27 OF 34 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	181
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

FILE NAME = X:\P\113-2938-000 Pond Road\GND\S\C400 Sheets\016B379-GBJ18-027-EastAbut.dgn

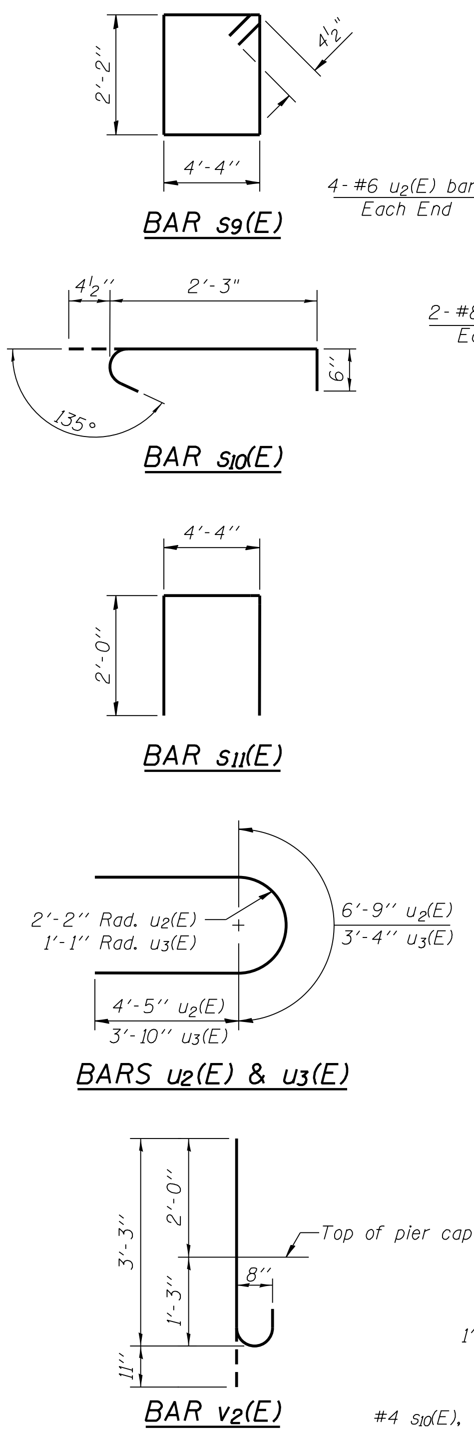
PILE DATA

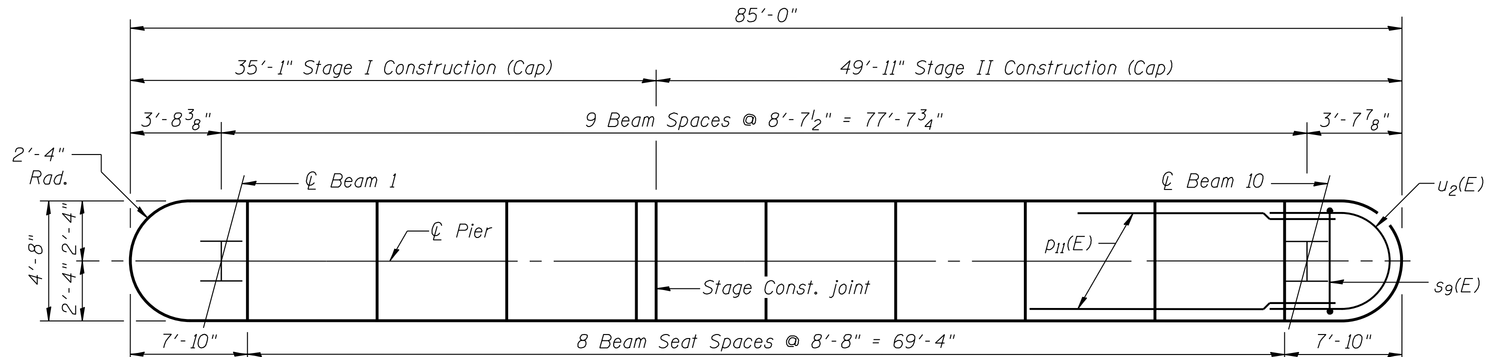
PIER 1

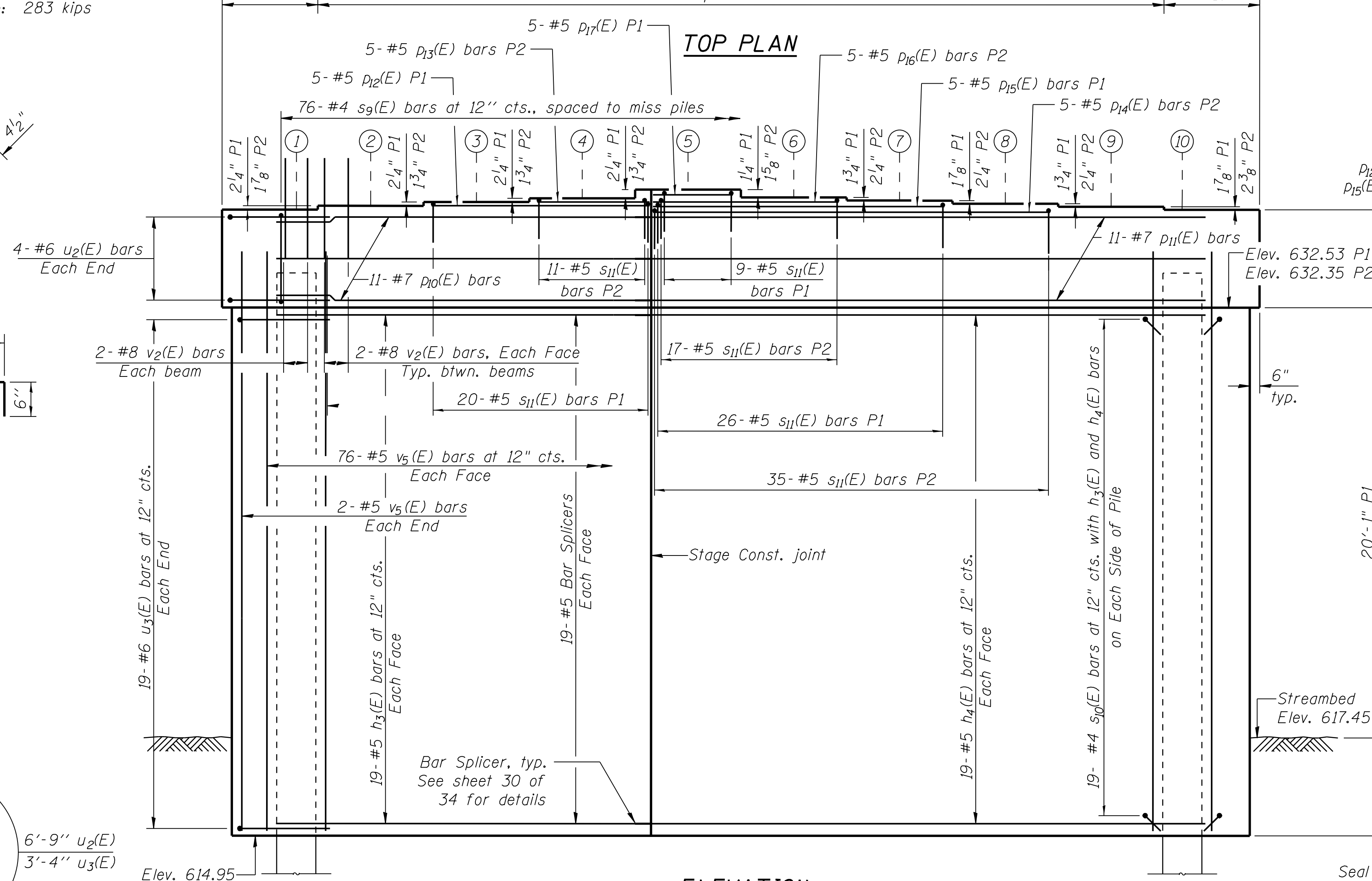
Type: HP14x89
Nominal Required Bearing: 514 kips
Factored Resistance Available: 283 kips
Est. Length: 90'-0"
No. Production Piles: 18
No. Test Piles: 1

PIER 2

Type: HP14x89
Nominal Required Bearing: 514 kips
Factored Resistance Available: 283 kips
Est. Length: 90'-0"
No. Production Piles: 18
No. Test Piles: 1

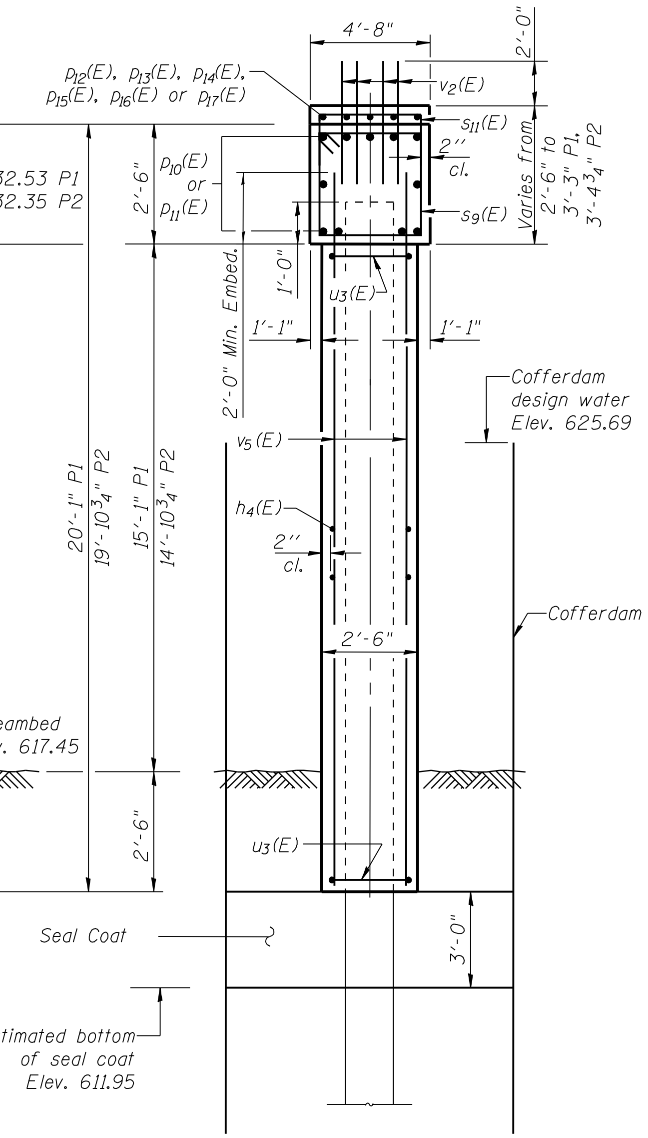




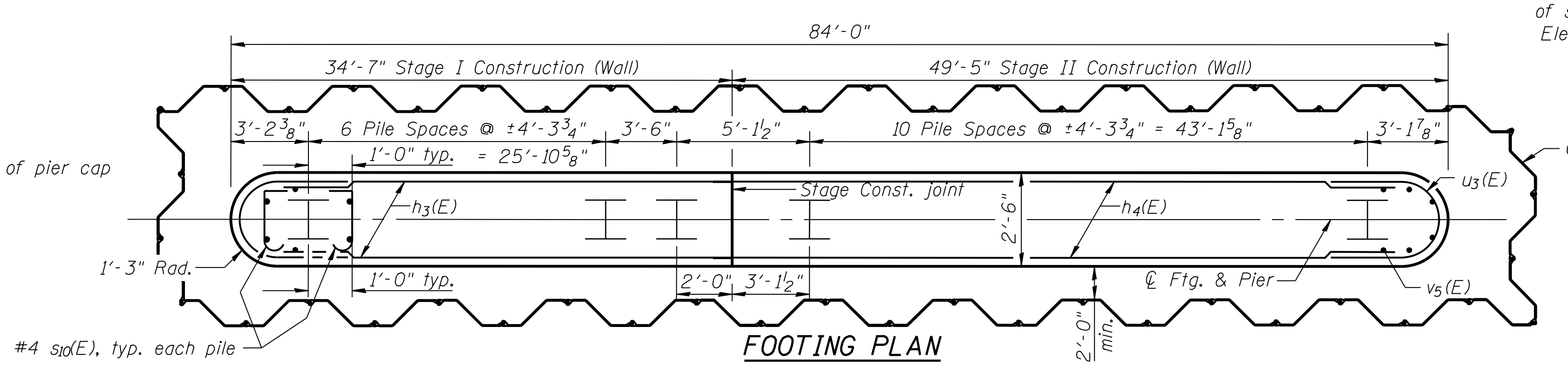


ELEVATION

(Looking East)
Reinforcement shown for Pier 2, Pier 1 similar
Dimensions designated as P1 for Pier 1, P2 for Pier 2



END VIEW



FOOTING PLAN

Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 29 of 34.
For spacing of v_2(E) bars, see sheet 15 of 34.
The s_9(E), s_{10}(E), and s_{11}(E) bars are placed at right angles to cap and spaced along cap.

BEARING SEAT ELEVATION TABLE

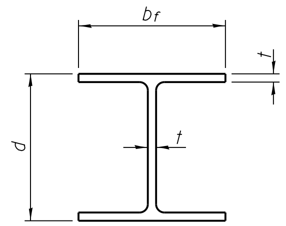
Beam No.	Pier 1	Pier 2
1	635.03	635.16
2	635.22	635.31
3	635.41	635.46
4	635.59	635.60
5	635.78	635.75
6	635.68	635.61
7	635.53	635.43
8	635.38	635.24
9	635.23	635.05
10	635.07	634.85

PIER 1 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_3(E)	38	#5	33'-0"	——
h_4(E)	38	#5	47'-10"	——
p_{10}(E)	11	#7	32'-5"	——
p_{11}(E)	11	#7	47'-3"	——
p_{12}(E)	5	#5	18'-3"	——
p_{15}(E)	5	#5	24'-5"	——
p_{17}(E)	5	#5	7'-2"	——
s_9(E)	76	#4	13'-9"	◻
s_{10}(E)	722	#4	3'-2"	┐
s_{11}(E)	55	#5	8'-4"	⊓
u_2(E)	8	#6	15'-7"	⊃
u_3(E)	38	#6	11'-0"	⊃
v_2(E)	54	#8	4'-2"	┐
v_5(E)	156	#5	19'-5"	——
Cofferdam Excavation		Cu. Yd.	103	
Cofferdam (Type 2) (Location 1)		Each	1	
Concrete Structures		Cu. Yd.	177.6	
Seal Coat Concrete		Cu. Yd.	62.6	
Reinforcement Bars, Epoxy Coated		Pound	12,540	
Bar Splicers		Each	49	
Furnishing Steel Piles, HP14x89		Foot	1,620	
Driving Piles		Foot	1,620	
Test Pile, HP14x89		Each	1	

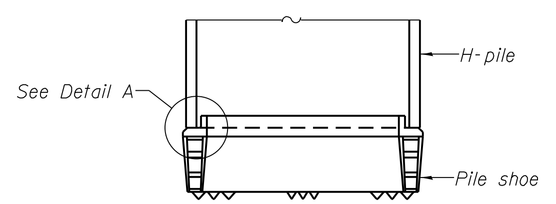
PIER 2 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_3(E)	38	#5	33'-0"	——
h_4(E)	38	#5	47'-10"	——
p_{10}(E)	11	#7	32'-5"	——
p_{11}(E)	11	#7	47'-3"	——
p_{13}(E)	5	#5	9'-7"	——
p_{14}(E)	5	#5	33'-1"	——
p_{16}(E)	5	#5	15'-9"	——
s_9(E)	76	#4	13'-9"	◻
s_{10}(E)	722	#4	3'-2"	┐
s_{11}(E)	63	#5	8'-4"	⊓
u_2(E)	8	#6	15'-7"	⊃
u_3(E)	38	#6	11'-0"	⊃
v_2(E)	54	#8	4'-2"	┐
v_5(E)	156	#5	19'-5"	——
Cofferdam Excavation		Cu. Yd.	68	
Cofferdam (Type 2) (Location 2)		Each	1	
Concrete Structures		Cu. Yd.	178.2	
Seal Coat Concrete		Cu. Yd.	62.6	
Reinforcement Bars, Epoxy Coated		Pound	12,630	
Bar Splicers		Each	49	
Furnishing Steel Piles, HP14x89		Foot	1,620	
Driving Piles		Foot	1,620	
Test Pile, HP14x89		Each	1	

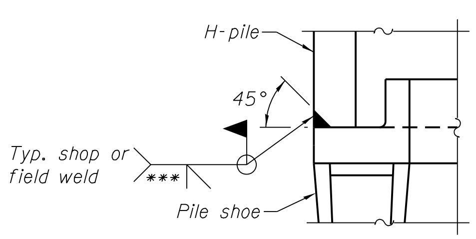


STEEL PILE TABLE

Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	11/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"

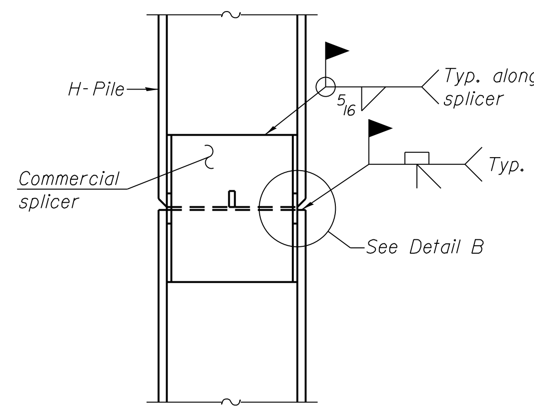


ELEVATION

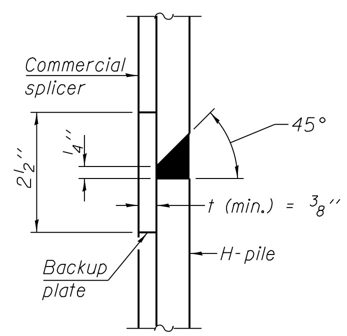


DETAIL A

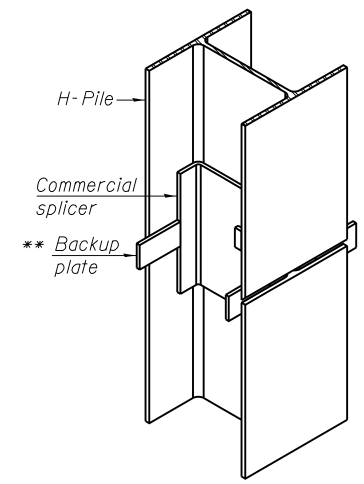
SHOE ATTACHMENT



ELEVATION

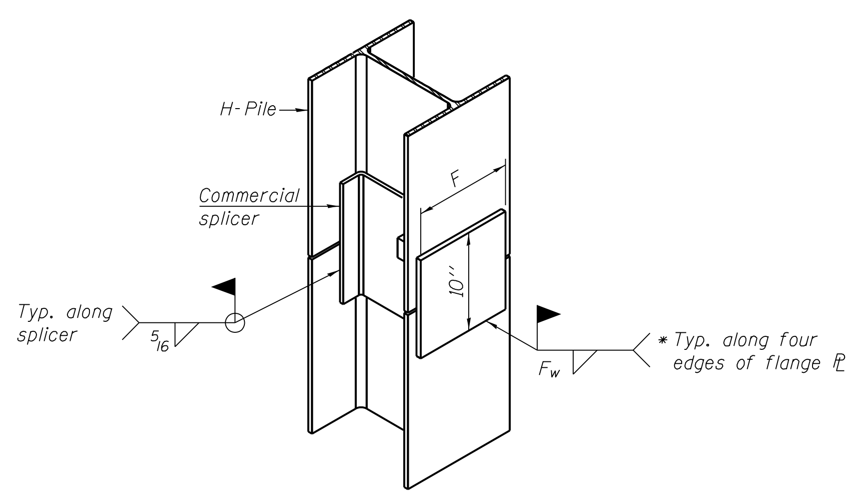


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



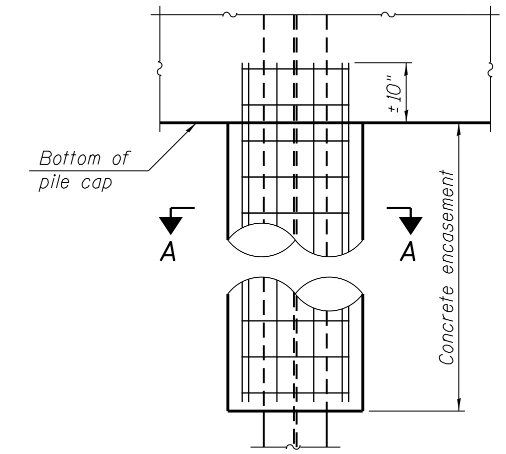
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

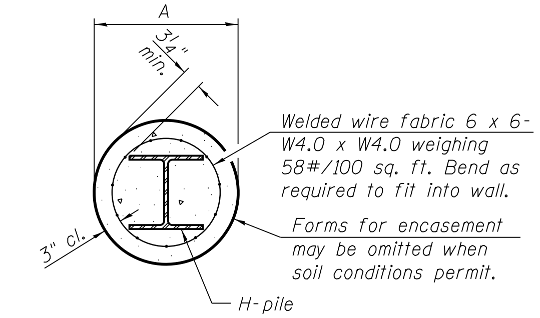
* Interrupt welds 1/4" from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

*** Weld size per pile shoe manufacturer (5/16" min.).

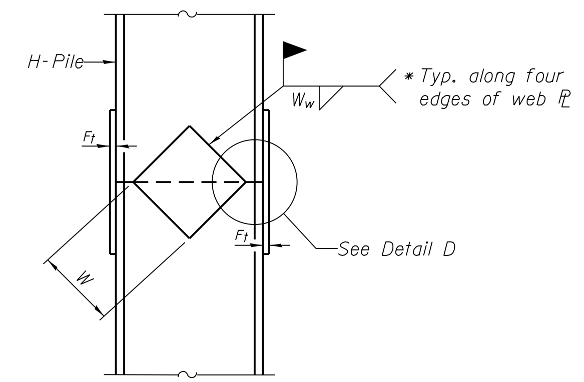


ELEVATION

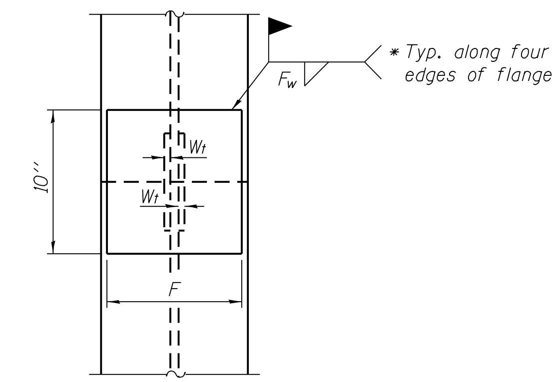


SECTION A-A

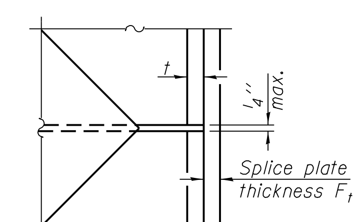
INDIVIDUAL PILE
CONCRETE ENCASEMENT
(when specified)



ELEVATION



END VIEW



DETAIL D

Designation	F	F_t	F_w	W	W_t	W_w
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	11/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

WELDED PLATE FIELD SPLICE

Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.

F-HP 5-15-2023

FILE NAME = X:\P\113-2838-000 Rand Road\CAD\S\CADD Sheets\0160379-60J10-029-HPPileDet.dgn

RS&H

USER NAME = EtzwileE	DESIGNED - OR 12-15-2023	REVISED
PLOT DATE = 3/18/2024	CHECKED - JIK 01-05-2024	REVISED
	DRAWN - OR 12-15-2023	REVISED
	CHECKED - JIK 01-05-2024	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

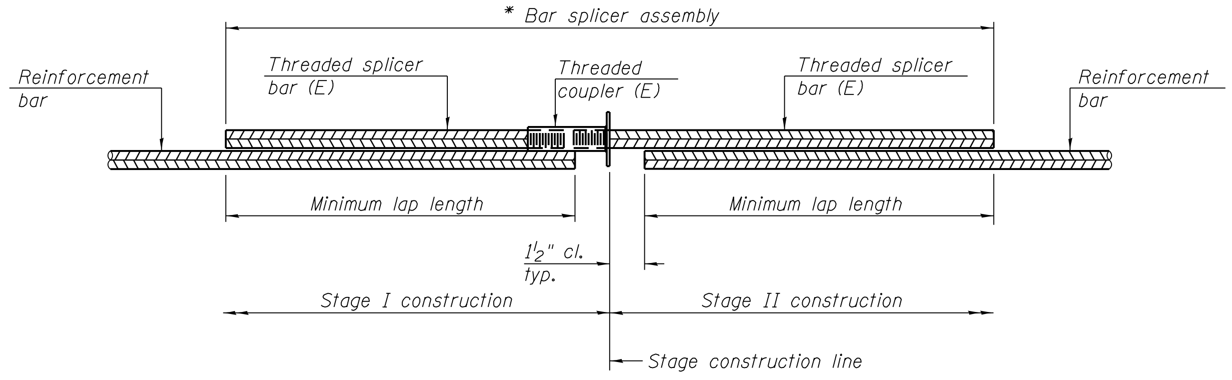
STRUCTURAL PLANS
HP PILE DETAILS – STRUCTURE NO. 016-0379

SHEET NO. 29 OF 34 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	183

CONTRACT NO. 60J10

ILLINOIS FED. AID PROJECT



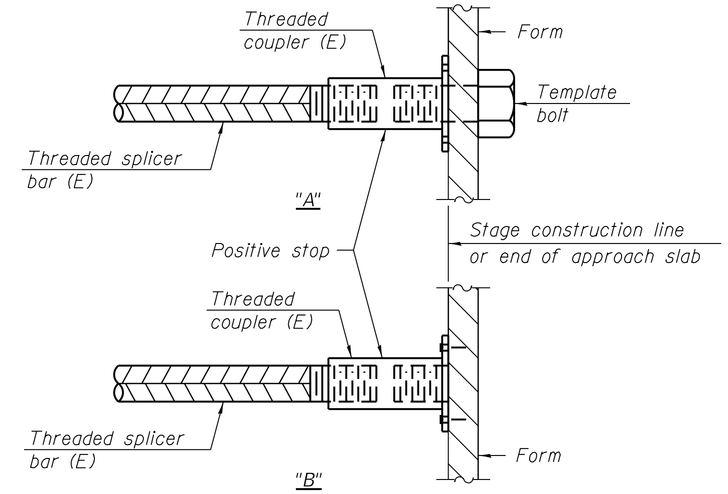
STANDARD BAR SPLICER ASSEMBLY PLAN

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

Threaded splicer bar length = min. lap length + 1½" + thread length

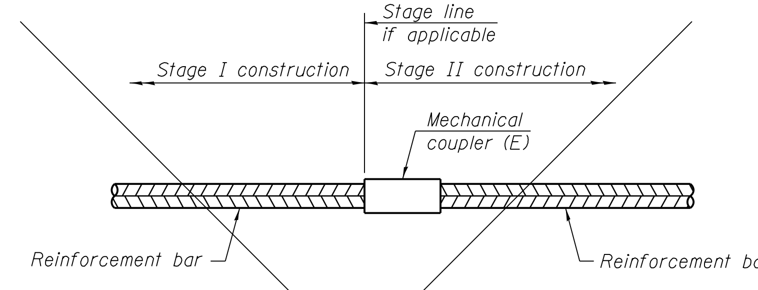
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
Deck	#5	765	3'-6"
Deck	#6	4	4'-10"
Abut Diaphragms	#6	14	4'-0"
Pier Diaphragms	#6	12	4'-0"
Appr. Slabs	#5	168	3'-4"
Appr. Slabs	#8	118	4'-9"
W. Abutment Cap	#7	10	5'-0"
E. Abutment Cap	#7	10	5'-0"
Pier Caps	#7	22	5'-0"
Pier Walls	#5	76	3'-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 5-15-2023

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2838

SOIL BORING LOG

GSI Job No. 10148
Page 1 of 2
Date 6/4/13

ROUTE ____ DESCRIPTION US-12 (Rand Road) Over The DesPlaines River LOGGED BY KD

SECTION - LOCATION SW 1/4, **SEC.** 16, **TWP.** T41N, **RNG.** R12E, 3rd **PM**

COUNTY Cook DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. NO. ____
Station ____

BORING NO. BSB-01
Station 243+55
Offset 18.30ft Left
Ground Surface Elev. 633.80 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter Dry To 10.0' ft
Upon Completion n/a ft
After ____ Hrs. ____ ft

Description	Elev. (ft)	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
7.0" ASPHALT, 11.0" CONCRETE	632.30				
SANDY CLAY LOAM-brown-loose to medium dense (Fill)			3		
			6	2.0	19
			9	P	
			4		
			3	1.8	21
	628.30	-5	2	P	
SANDY CLAY LOAM-dark brown-loose			2		
			2	1.8	17
	625.80		3	P	
SAND-dark brown-medium dense			3		
			6		15
	623.30	-10	8		
CLAY LOAM-gray-stiff to very stiff			6		
			8	2.3	17
			11	P	
			6		
			10	1.5	22
	618.30	-15	13	P	
SILTY CLAY LOAM-gray-medium dense			6		
			9	4.5	14
			12	P	
			5		
			8	4.3	15
	613.30	-20	12	P	
CLAY LOAM-gray-stiff to hard			5		
			6	1.3	15
			9	P	
			5		
			5	1.5	19
		-25	5	B	
			12		
			13	4.0	17
			17	P	
			17		
			50/5"	4.5	15
		-30		P	
			9		
			14	4.5	16
		-35	17	P	
			7		
			14	4.8	14
		-40	19	B	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2838

SOIL BORING LOG

GSI Job No. 10148
Page 2 of 2
Date 6/4/13

ROUTE ____ DESCRIPTION US-12 (Rand Road) Over The DesPlaines River LOGGED BY KD

SECTION - LOCATION SW 1/4, **SEC.** 16, **TWP.** T41N, **RNG.** R12E, 3rd **PM**

COUNTY Cook DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. NO. ____
Station ____

BORING NO. BSB-01
Station 243+55
Offset 18.30ft Left
Ground Surface Elev. 633.80 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter Dry To 10.0' ft
Upon Completion n/a ft
After ____ Hrs. ____ ft

Description	Elev. (ft)	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY LOAM-gray-stiff to hard *(continued)*			8		
			16	4.9	15
		-45	22	B	
			8		
			14	4.5	17
		-50	22	P	
			7		
			11	4.5	21
	576.80	-55	15	P	
SILTY LOAM-gray-medium dense			5		
			8		12
		-60	11		
SILTY LOAM-gray-medium dense *(continued)*	571.80				
SANDY LOAM-gray-very dense			30		
			50/5"		17
	566.80	-65			
SILT-gray-medium dense			12		
			12		20
	561.80	-70	12		
CLAY LOAM-gray-very stiff			12		
			20	3.6	12
		-75	25	B	
			13		
End Of Boring @ -80.0'. Boring backfilled with cuttings.			18	3.8	13
	553.80	-80	30	B	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

Z:\PROJECTS\2010\10148 RSH, US-12 (RAND) OVER DES PLAINES RIVER (PTB 156, ITEM 17)\10148 BORING LOGS\10148_LOG.GPJ 7/9/13

FILE NAME = X:\P\113-2838-000 Rand Road\CAD\S\CAD Sheets\0160379-60J10-031-Borings01.dgn

RS&H

USER NAME = EtzwilleE	DESIGNED - LM 11-04-2016	REVISED	
PLOT DATE = 3/18/2024	CHECKED - JLR 11-25-2016	REVISED	
	DRAWN - JIK 11-04-2016	REVISED	
	CHECKED - LM 11-25-2016	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL PLANS
SOIL BORING LOGS (1 OF 4) – STRUCTURE NO. 016-0379
SHEET NO. 31 OF 34 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	185

CONTRACT NO. 60J10
ILLINOIS FED. AID PROJECT

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2818

SOIL BORING LOG

GSI Job No. 10148
Page 1 of 2
Date 6/13/13

ROUTE _____ DESCRIPTION US-12 (Rand Road) Over The DesPlaines River LOGGED BY TK

SECTION _____ - _____ LOCATION SW 1/4, **SEC.** 16, **TWP.** T41N, **RNG.** R12E, 3rd **PM**

COUNTY Cook DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. _____
Station _____

BORING NO. BSB-02
Station 244+56
Offset 15.90ft Right
Ground Surface Elev. 635.80 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter n/a ft
Upon Completion n/a ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
15.0" CONCRETE			
634.55			
VOID / WATER			
-5			
-10			
-15			
618.80			
FRACTURED ROCK	3		
	4 6/8		15
	11		
-20	15		8
FRACTURED ROCK *(continued)*	19/21		
	4		
613.30	3 2		NR
CLAY LOAM-gray-stiff to very stiff			
	10		
-25	7 9	3.0 P	18
	3		
	5 8	1.5 B	14
	4		
-30	7 12	3.3 B	18
	28		
-35	39 45	2.9 B	15
	5		
-40	6 9	3.2 B	15

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2818

SOIL BORING LOG

GSI Job No. 10148
Page 2 of 2
Date 6/13/13

ROUTE _____ DESCRIPTION US-12 (Rand Road) Over The DesPlaines River LOGGED BY TK

SECTION _____ - _____ LOCATION SW 1/4, **SEC.** 16, **TWP.** T41N, **RNG.** R12E, 3rd **PM**

COUNTY Cook DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. _____
Station _____

BORING NO. BSB-02
Station 244+56
Offset 15.90ft Right
Ground Surface Elev. 635.80 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter n/a ft
Upon Completion n/a ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY LOAM-gray-stiff to very stiff *(continued)*			
592.30			
SILTY CLAY LOAM-gray-very stiff	9		
	11 14	2.1 B	31
-45			
587.80			
CLAY LOAM-gray-stiff to hard	5		
	6 9	2.2 B	18
-50			
	5		
	7 11	4.5 P	15
-55			
	6		
	10 14	4.2 B	16
-60			
CLAY LOAM-gray-stiff to hard *(continued)*			
	5		
-65	7 7	2.6 B	15
	19		
-70	50/5"	1.9 B	19
	9		
-75	11 16	3.2 B	12
557.30			
SILTY LOAM-gray-medium dense	6		
End Of Boring @ -80.0'. Boring backfilled with cuttings.	10 14		13
555.80 -80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

RS&H

USER NAME = EtzwilleE	DESIGNED - LM	11-04-2016	REVISED
PLOT DATE = 3/18/2024	CHECKED - JLR	11-25-2016	REVISED
	DRAWN - JIK	11-04-2016	REVISED
	CHECKED - LM	11-25-2016	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL PLANS
SOIL BORING LOGS (2 OF 4) – STRUCTURE NO. 016–0379
SHEET NO. 32 OF 34 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	186
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

Z:\PROJECTS\2010\10148 RSH, US-12 (RAND) OVER DES PLAINES RIVER (PTB 156, ITEM 17)\10148 BORING LOGS\10148_LOG.GPJ 7/9/13

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2838

SOIL BORING LOG

GSI Job No. 10148
Page 1 of 2
Date 6/3/13

ROUTE ____ **DESCRIPTION** US-12 (Rand Road) Over The DesPlaines River **LOGGED BY** KD

SECTION - **LOCATION** SW 1/4, **SEC.** 16, **TWP.** T41N, **RNG.** R12E, 3rd **PM**

COUNTY Cook **DRILLING METHOD** Hollow Stem Auger/Rotary **HAMMER TYPE** CME Automatic

STRUCT. NO. ____
Station ____

BORING NO. BSB-03
Station 245+14
Offset 16.50ft Left
Ground Surface Elev. 635.60 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter n/a ft
Upon Completion n/a ft
After ____ Hrs. ____ ft

Description	Elev. (ft)	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
14.0" CONCRETE BRIDGE DECK	634.43				
VOID / RIVER		-5			
		-10			
		-15			
CRUSHED STONE-very dense (Fill)	618.60		50/5"		3
			50/5"		7
		-20			
CRUSHED STONE-very dense (Fill) *(continued)*	614.10		10		
SILTY SAND & GRAVEL-gray-medium dense (Apparent Fill)	612.10		6 4		15
CLAY LOAM-gray-stiff to very stiff			4 4 5	1.2 B	16
		-25			
			4 5 6	1.8 B	19
			5 8 13	3.2 B	18
		-30			
SILTY LOAM-gray-very dense	603.60		21 35 35		13
		-35			
CLAY LOAM-gray-stiff to hard	598.60		8 12 15	5.0 B	14
		-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

Z:\PROJECTS\2010\10148 RSH, US-12 (RAND) OVER DES PLAINES RIVER (PTB 156, ITEM 17)\10148 BORING LOGS\10148_LOG.GPJ 7/9/13

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2838

SOIL BORING LOG

GSI Job No. 10148
Page 2 of 2
Date 6/3/13

ROUTE ____ **DESCRIPTION** US-12 (Rand Road) Over The DesPlaines River **LOGGED BY** KD

SECTION - **LOCATION** SW 1/4, **SEC.** 16, **TWP.** T41N, **RNG.** R12E, 3rd **PM**

COUNTY Cook **DRILLING METHOD** Hollow Stem Auger/Rotary **HAMMER TYPE** CME Automatic

STRUCT. NO. ____
Station ____

BORING NO. BSB-03
Station 245+14
Offset 16.50ft Left
Ground Surface Elev. 635.60 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter n/a ft
Upon Completion n/a ft
After ____ Hrs. ____ ft

Description	Elev. (ft)	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY LOAM-gray-stiff to hard *(continued)*			7 15 16	2.4 B	12
		-45			
			7 11 16	4.2 B	17
		-50			
			8 13 15	4.5 P	19
		-55			
CLAY-gray-very stiff	578.60		9 13 20	3.3 B	22
		-60			
CLAY-gray-very stiff *(continued)*	573.60				
SILT-gray-dense to very dense			30 50/5"		17
		-65			
			6 14 31		17
		-70			
CLAY LOAM-gray-very stiff to hard	563.60		6 10 10	2.3 P	15
		-75			
			9 12 13	2.9 B	18
End Of Boring @ -80.0'. Boring backfilled with cuttings.	555.60	-80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

FILE NAME = X:\P\13-2838-000 Rand Road\CAD\S\CADD Sheets\0160379-60J10-033-Borings03.dgn

RS&H	USER NAME = EtzwileE	DESIGNED - LM 11-04-2016	REVISED
	PLOT DATE = 3/18/2024	CHECKED - JLR 11-25-2016	REVISED
		DRAWN - JIK 11-04-2016	REVISED
		CHECKED - LM 11-25-2016	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL PLANS
SOIL BORING LOGS (3 OF 4) – STRUCTURE NO. 016-0379

SHEET NO. 33 OF 34 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	187

CONTRACT NO. 60J10
ILLINOIS FED. AID PROJECT

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2838

SOIL BORING LOG

GSI Job No. 10148
Page 1 of 2
Date 6/12/13

ROUTE ________ DESCRIPTION US-12 (Rand Road) Over The DesPlaines River LOGGED BY TK

SECTION - LOCATION SW 1/4, **SEC.** 16, **TWP.** T41N, **RNG.** R12E, 3rd **PM**

COUNTY Cook DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. NO. ________
Station ________

BORING NO. BSB-04
Station 245+96
Offset 14.20ft Right
Ground Surface Elev. 633.80 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter Dry To 10.0' ft
Upon Completion n/a ft
After _____ Hrs. ______ ft

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
6.0" ASPHALT	633.30				
CRUSHED STONE-gray-loose	631.30		1 2 2		7
SILTY CLAY LOAM-brown-medium stiff		-5	1 1 2	0.7 B	19
	625.30		2 2 2	1.0 P	18
CLAY-dark brown to black-soft to medium stiff		-10	1 2 2	1.0 P	35
			1 2 3	0.5 P	34
	617.80	-15	0 1 0	0.3 P	28
SILTY CLAY LOAM-brown & gray-soft	615.30		1 1 3	0.3 P	28
SANDY CLAY LOAM-dark gray-soft		-20	3 2 3	0.3 P	25
SANDY CLAY LOAM-dark gray-soft *(continued)*	612.80				
CLAY LOAM-gray-stiff to hard			3 6 8	1.9 B	17
		-25	4 6 10	2.2 B	15
			5 8 11	2.7 B	17
		-30	21 28 32	3.5 B	14
		-35	6 9 11	4.4 B	14
		-40	8 10 11	5.0 B	16

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

Z:\PROJECTS\2010\10148 RSH, US-12 (RAND) OVER DES PLAINES RIVER (PTB 156, ITEM 17)\10148 BORING LOGS\10148_LOG.GPJ 7/9/13

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2838

SOIL BORING LOG

GSI Job No. 10148
Page 2 of 2
Date 6/12/13

ROUTE ________ DESCRIPTION US-12 (Rand Road) Over The DesPlaines River LOGGED BY TK

SECTION - LOCATION SW 1/4, **SEC.** 16, **TWP.** T41N, **RNG.** R12E, 3rd **PM**

COUNTY Cook DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. NO. ________
Station ________

BORING NO. BSB-04
Station 245+96
Offset 14.20ft Right
Ground Surface Elev. 633.80 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter Dry To 10.0' ft
Upon Completion n/a ft
After _____ Hrs. ______ ft

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY LOAM-gray-stiff to hard *(continued)*		-45	7 10 12	5.2 B	15
		-50	6 9 12	1.9 B	17
	580.30				
SANDY CLAY LOAM-gray-hard		-55	7 11 11	4.5 P	11
		-60	10 10 12	4.4 B	19
SANDY CLAY LOAM-gray-hard *(continued)*	570.80				
SILTY LOAM-gray-very dense		-65	20 27 28		20
	565.30				
CLAY LOAM-gray-stiff to very stiff		-70	5 8 10	1.7 B	18
		-75	6 8 11	2.9 B	15
End Of Boring @ -80.0'. Boring backfilled with cuttings.	553.80	-80	6 10 13	3.0 B	18

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

Z:\PROJECTS\2010\10148 RSH, US-12 (RAND) OVER DES PLAINES RIVER (PTB 156, ITEM 17)\10148 BORING LOGS\10148_LOG.GPJ 7/9/13

FILE NAME = X:\P\13-2838-000 Rand Road\CAD\S\CAD Sheets\0160379-60J10-034-Borings04.dgn

RS&H

USER NAME = EtzwileE	DESIGNED - LM 11-04-2016	REVISED	
PLOT DATE = 3/18/2024	CHECKED - JLR 11-25-2016	REVISED	
	DRAWN - JIK 11-04-2016	REVISED	
	CHECKED - LM 11-25-2016	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

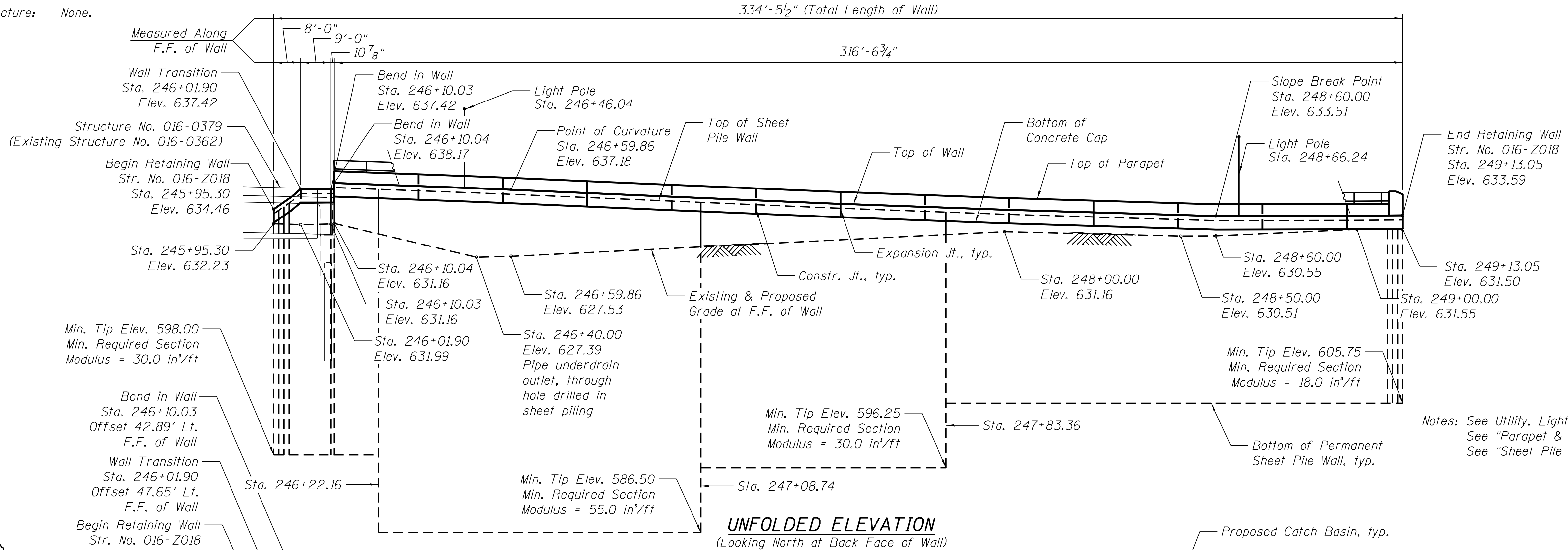
STRUCTURAL PLANS
SOIL BORING LOGS (4 OF 4) – STRUCTURE NO. 016-0379
SHEET NO. 34 OF 34 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	188

CONTRACT NO. 60J10
ILLINOIS FED. AID PROJECT

Benchmark: BM-92 Chiseled square on sidewalk at S.W. corner of S.N. 016-0362, Elev. 635.39.

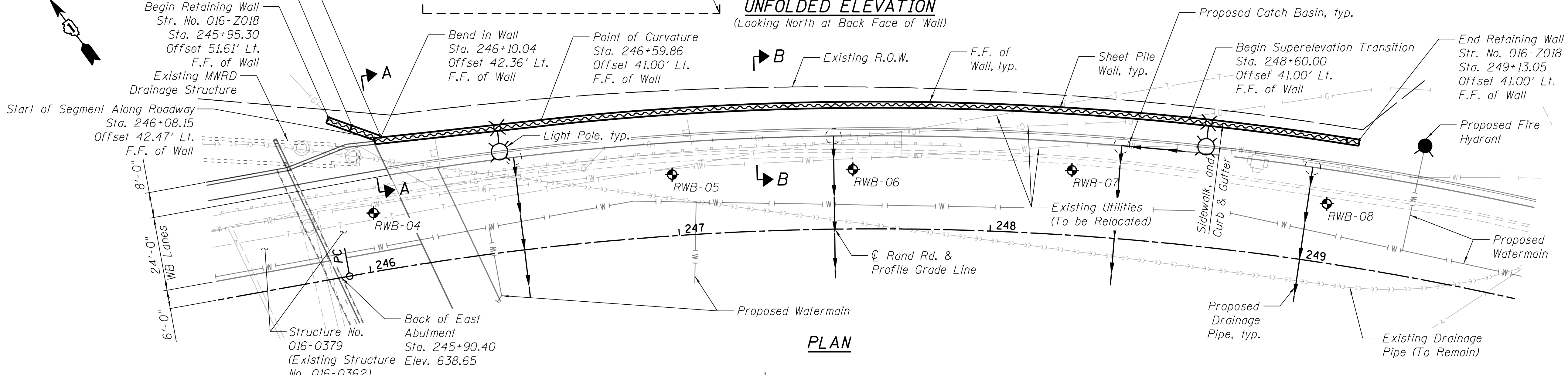
Existing Structure: None.



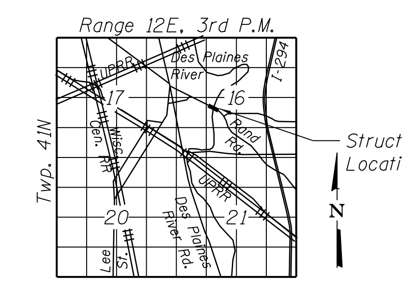
UNFOLDED ELEVATION

(Looking North at Back Face of Wall)

Notes: See Utility, Lighting, and Drainage Plans for additional information.
See "Parapet & Cap Details" for parapet joint spacing.
See "Sheet Pile & Cap Details" for Section Views A-A & B-B.



PLAN

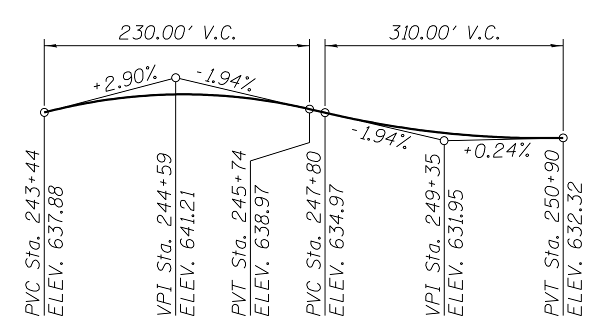


LOCATION SKETCH

CURVE DATA

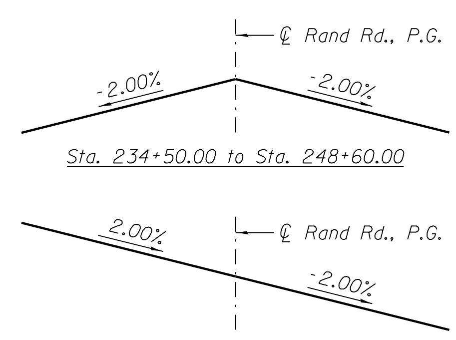
(℄ of Rand Rd.)

P.I. Sta. = 249+67.15
Δ = 42° 59' 15" (RT)
D = 6° 01' 52"
R = 950.00'
T = 374.10'
L = 712.76'
E = 71.00'
P.C. Sta. = 245+93.06
P.T. Sta. = 253+05.82



PROFILE GRADE

(Along ℄ Rand Rd.)



SUPERELEVATION TRANSITION
RAND ROAD

(Looking Upstation)

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition with 2013 Interims

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (Sheet Pile)
fu = 60,000 psi (Shear Studs)

JOSEPH KLENCK 081-008344 LICENSED STRUCTURAL ENGINEER STATE OF ILLINOIS

BY: ____________

DATE SIGNED: ____________

LICENSE EXPIRES: 11/30/2024

GENERAL PLAN AND ELEVATION
RAND ROAD
RTE. FAU 3523 - SEC. 120Y-B
COOK COUNTY
STATION 245+95.30 TO 249+13.05
STRUCTURE NO. 016-Z018

FILE NAME = X:\P\113-2838-000 Rand Road\CAD\S\CADD Sheets\016Z018-60J10-001-GPE.dgn

RS&H

USER NAME = EtzwileE	DESIGNED - TLR 05-15-2014	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
PLOT DATE = 3/18/2024	CHECKED - LM 05-27-2014	REVISED	
	DRAWN - OR 12-01-2023	REVISED	
	CHECKED - JIK 01-05-2024	REVISED	

GENERAL PLAN & ELEVATION
STRUCTURE NO. 016-Z018
SHEET NO. 1 OF 8 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	189
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

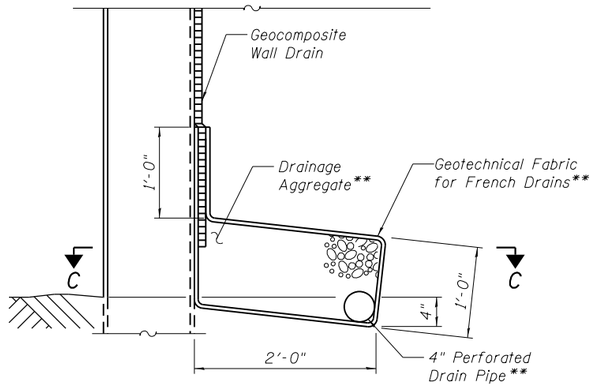
INDEX OF SHEETS

GENERAL NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Slipforming of the parapet is not allowed.
3. Protective coat shall be applied to the top face of cap and the top and traffic face of parapet.

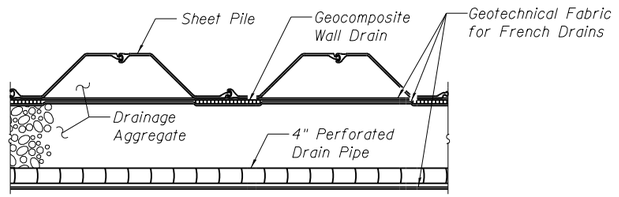
TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structure Excavation	Cu. Yd.	71
Concrete Structures	Cu. Yd.	49.6
Concrete Superstructure	Cu. Yd.	26.1
Protective Coat	Sq. Yd.	153
Stud Shear Connectors	Each	670
Reinforcement Bars, Epoxy Coated	Pound	9,270
Aluminum Railing, Type L	Foot	314
Permanent Sheet Piling	Sq. Ft.	12,457
Granular Backfill for Structures	Cu. Yd.	85
Geocomposite Wall Drain	Sq. Yd.	111
Pipe Underdrains for Structures 4"	Foot	335



PIPE UNDERDRAIN DETAIL

**Note: Included in the cost of pipe underdrains for structures 4"



SECTION C-C

FILE NAME = X:\P\113-2038-008 Rand Road\CAD\S\CADD Sheets\016Z018-GBJ10-002-GenNotes.dgn

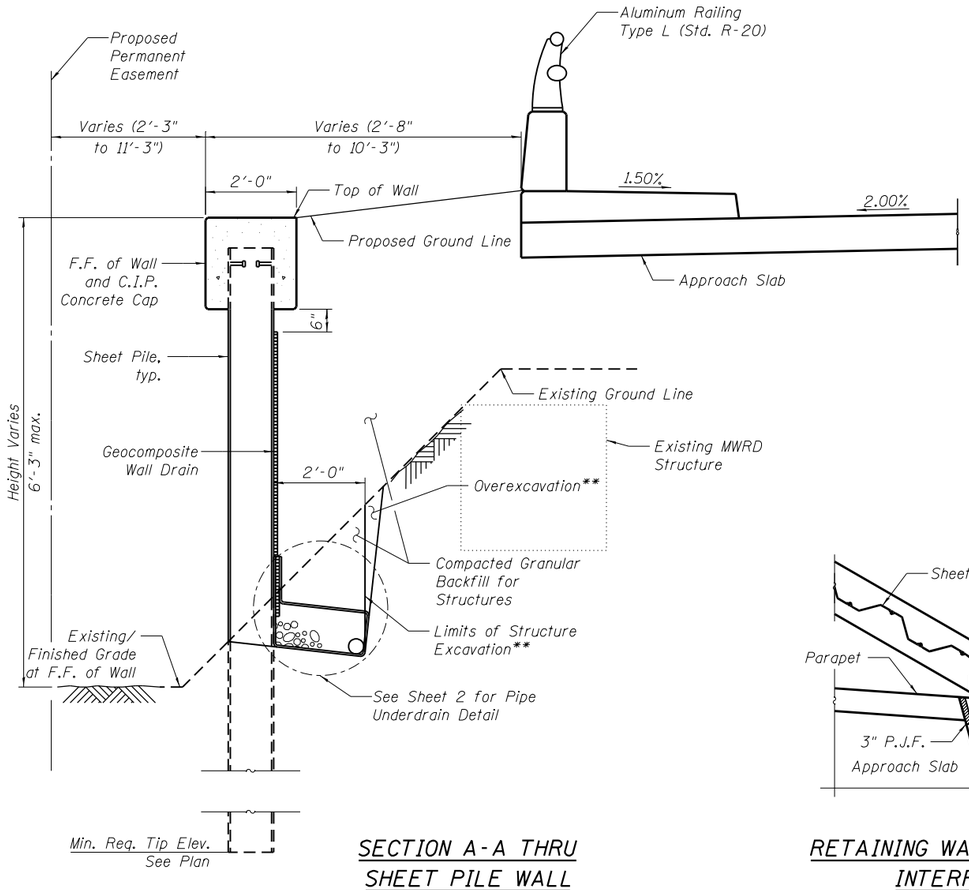
RS&H

USER NAME = EtzwileE	DESIGNED - TLR	05-15-2014	REVISED	
PLOT DATE = 3/18/2024	CHECKED - LM	05-27-2014	REVISED	
	DRAWN - OR	12-01-2023	REVISED	
	CHECKED - JIK	01-05-2024	REVISED	

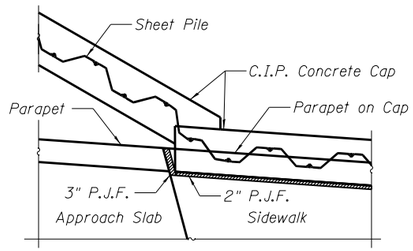
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES & DETAILS
STRUCTURE NO. 016-Z018
SHEET NO. 2 OF 8 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	190
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

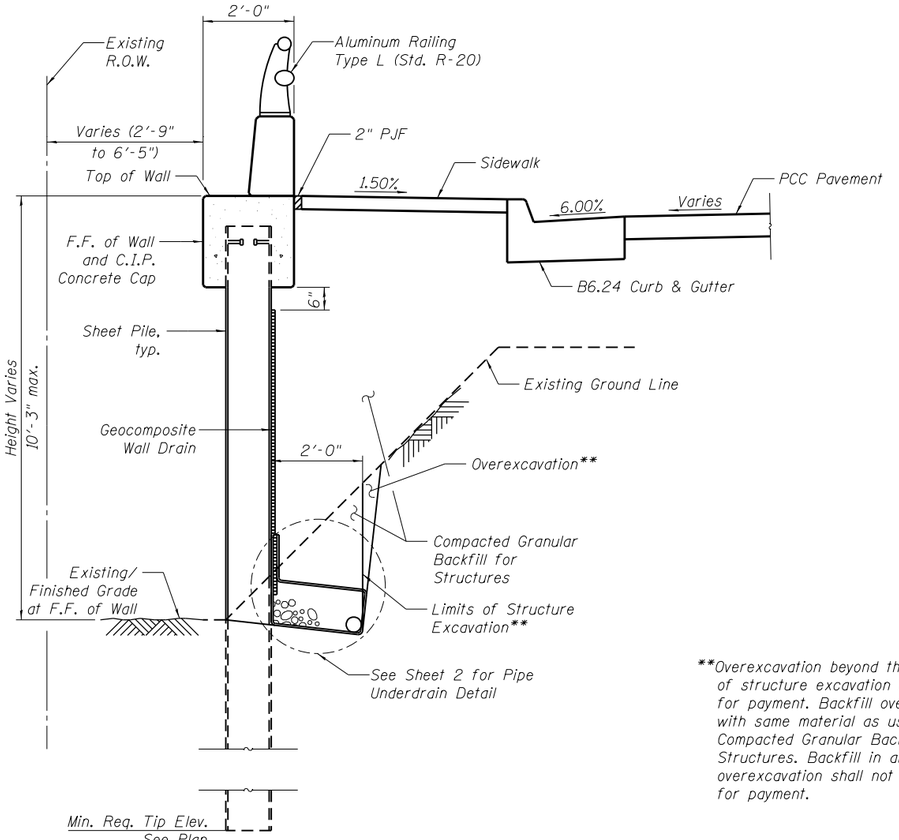


SECTION A-A THRU SHEET PILE WALL



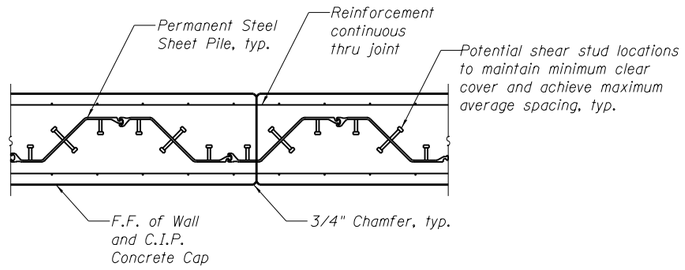
RETAINING WALL/APPROACH SLAB INTERFACE DETAIL

Cost of P.J.F. included with Concrete Superstructure

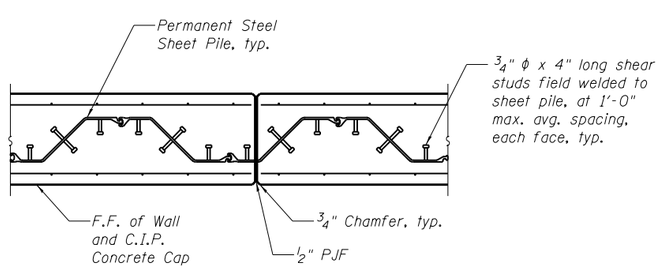


SECTION B-B THRU SHEET PILE WALL

**Overexcavation beyond the limits of structure excavation not measured for payment. Backfill overexcavation with same material as used for Compacted Granular Backfill for Structures. Backfill in areas of overexcavation shall not be measured for payment.



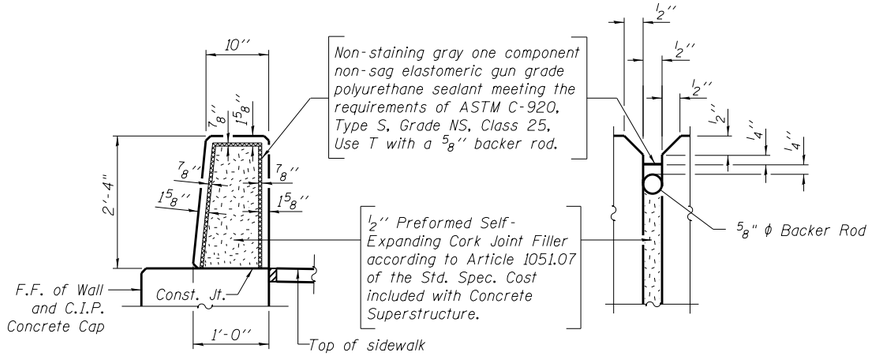
CONSTRUCTION JOINT



EXPANSION JOINT

TYPICAL SECTIONS THRU CAP

(See Sheet 4 for Cap Reinforcement Details)



PARAPET JOINT DETAILS

FILE NAME = X:\PW\13-2938-000 Pond Road\GND\S\C400 Sheets\016Z018-60J10-003-PileACapDetails.dgn

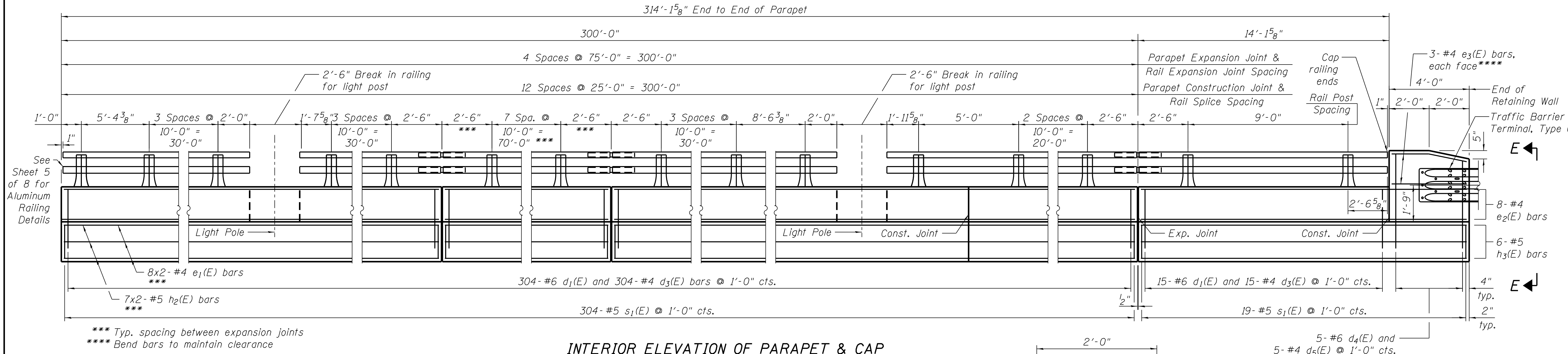
RS&H

USER NAME = EtzwileE	DESIGNED - TLR	05-15-2014	REVISED
PLOT DATE = 3/18/2024	CHECKED - LM	05-27-2014	REVISED
	DRAWN - OR	12-01-2023	REVISED
	CHECKED - JIK	01-05-2024	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET PILE & CAP DETAILS
STRUCTURE NO. 016-Z018
SHEET NO. 3 OF 8 SHEETS

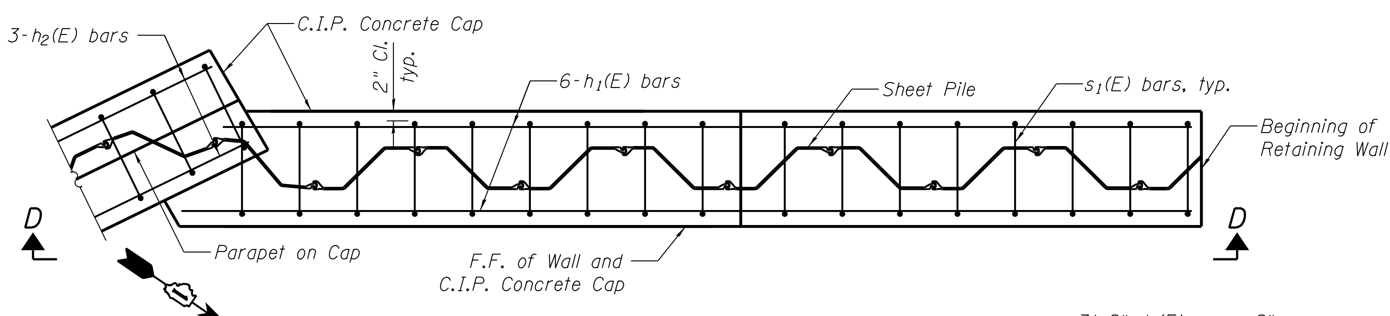
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	191
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			



*** Typ. spacing between expansion joints

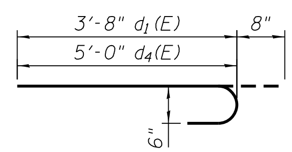
**** Bend bars to maintain clearance

INTERIOR ELEVATION OF PARAPET & CAP

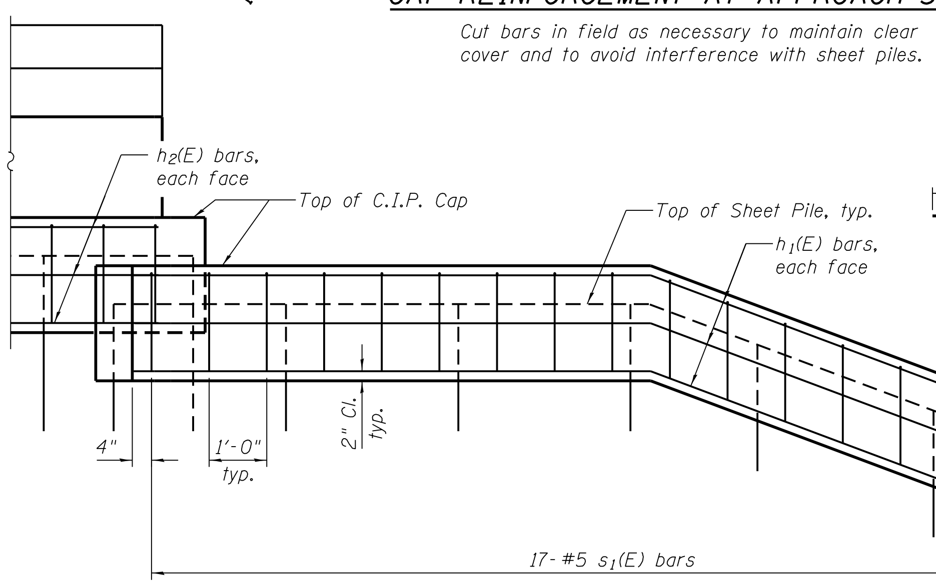


CAP REINFORCEMENT AT APPROACH SLAB

Cut bars in field as necessary to maintain clear cover and to avoid interference with sheet piles.

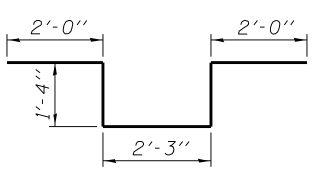


BAR $d_1(E)$ & $d_4(E)$

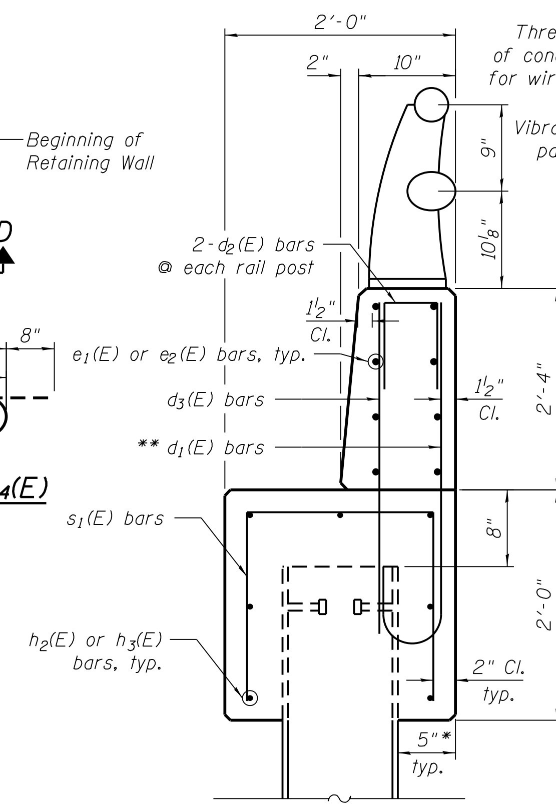


VIEW D-D OF RETAINING WALL AT APPROACH SLAB

(Looking South at Front Face of Wall)



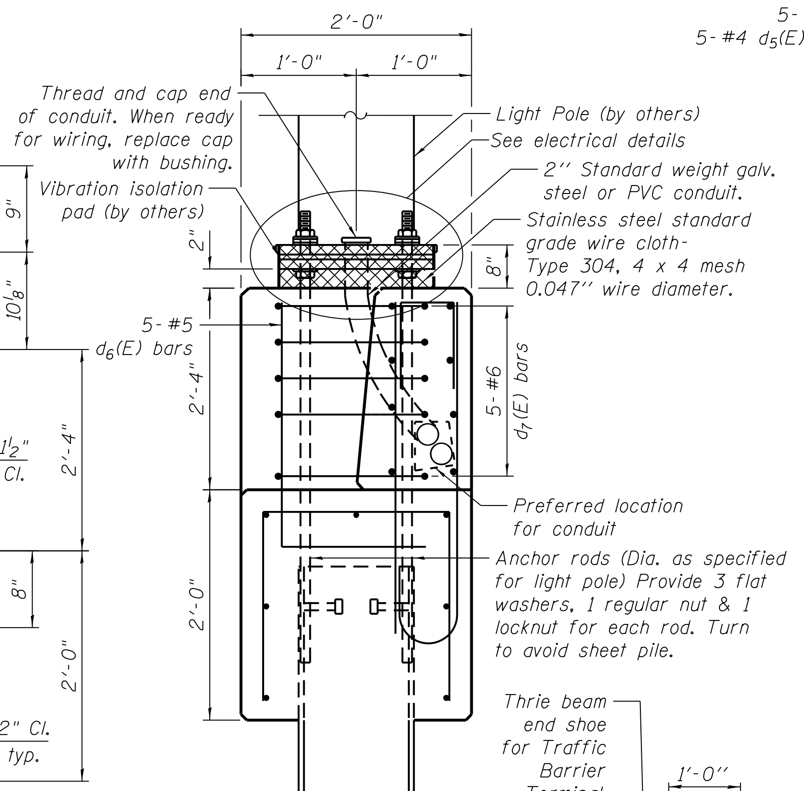
BAR $d_7(E)$



PARAPET & CAP REINFORCEMENT DETAILS

* Dimension shown is based on the use of PZ 35. If an alternate sheet pile section is chosen, this dimension must be adjusted. If necessary, Contractor shall make adjustments at no additional cost to the Department.

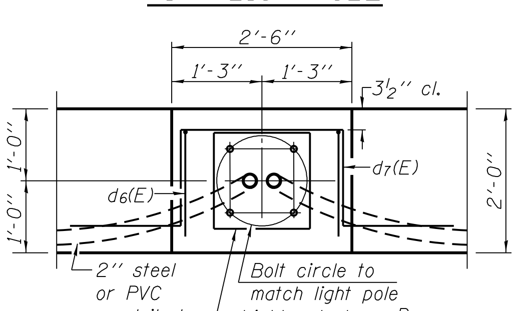
** Tilt $d_1(E)$ bars as required to avoid interference with sheet piles.



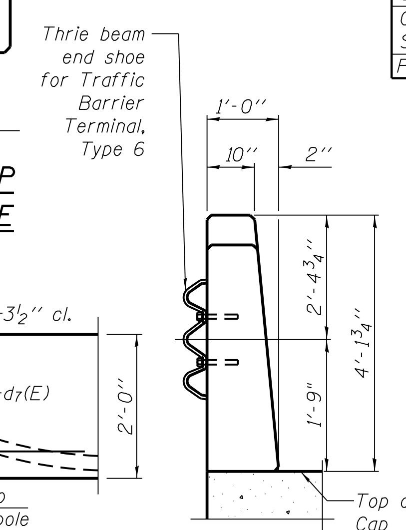
PARAPET & CAP WITH LIGHTPOLE

BILL OF MATERIAL

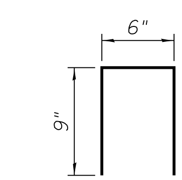
Bar	No.	Size	Length	Shape
$d_1(E)$	319	#6	4'-4"	
$d_2(E)$	72	#6	2'-0"	
$d_3(E)$	319	#4	3'-6"	
$d_4(E)$	5	#6	5'-8"	
$d_5(E)$	5	#4	4'-9"	
$d_6(E)$	10	#5	3'-11"	
$d_7(E)$	10	#5	8'-11"	
$e_1(E)$	64	#4	38'-5"	
$e_2(E)$	8	#4	17'-9"	
$e_3(E)$	6	#4	3'-9"	
$h_1(E)$	6	#5	17'-4"	
$h_2(E)$	56	#5	38'-10"	
$h_3(E)$	7	#5	17'-9"	
$s_1(E)$	340	#5	5'-0"	
Reinforcement Bars, Epoxy Coated		Pound	9,270	
Concrete Structures		Cu. Yd.	49.6	
Concrete Superstructure		Cu. Yd.	26.1	
Protective Coat		Sq. Yd.	153	



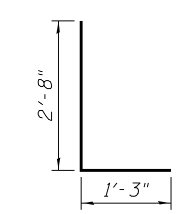
PLAN



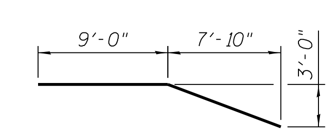
SECTION E-E



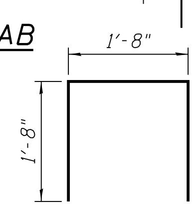
BAR $d_2(E)$



BAR $d_6(E)$



BAR $h_1(E)$



BAR $s_1(E)$

Notes:

1. Minimum lap lengths: #4 bar - 2'-1"
   #5 bar - 2'-11"
2. Bars indicated thus 7 x 2-#5 etc. indicates 7 lines of bars with 2 lengths per line.
3. Apply protective coat to interior face and top of parapet.
4. See sheet 3 of 8 for expansion joint details.
5. Cost of anchor rods and conduit is included with Concrete Superstructure.

RS&H

USER NAME = EtzwileE	DESIGNED - TLR	05-15-2014	REVISED
PLOT DATE = 3/18/2024	CHECKED - LM	05-27-2014	REVISED
	DRAWN - OR	12-01-2023	REVISED
	CHECKED - JIK	01-05-2024	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PARAPET & CAP DETAILS
STRUCTURE NO. 016-Z018

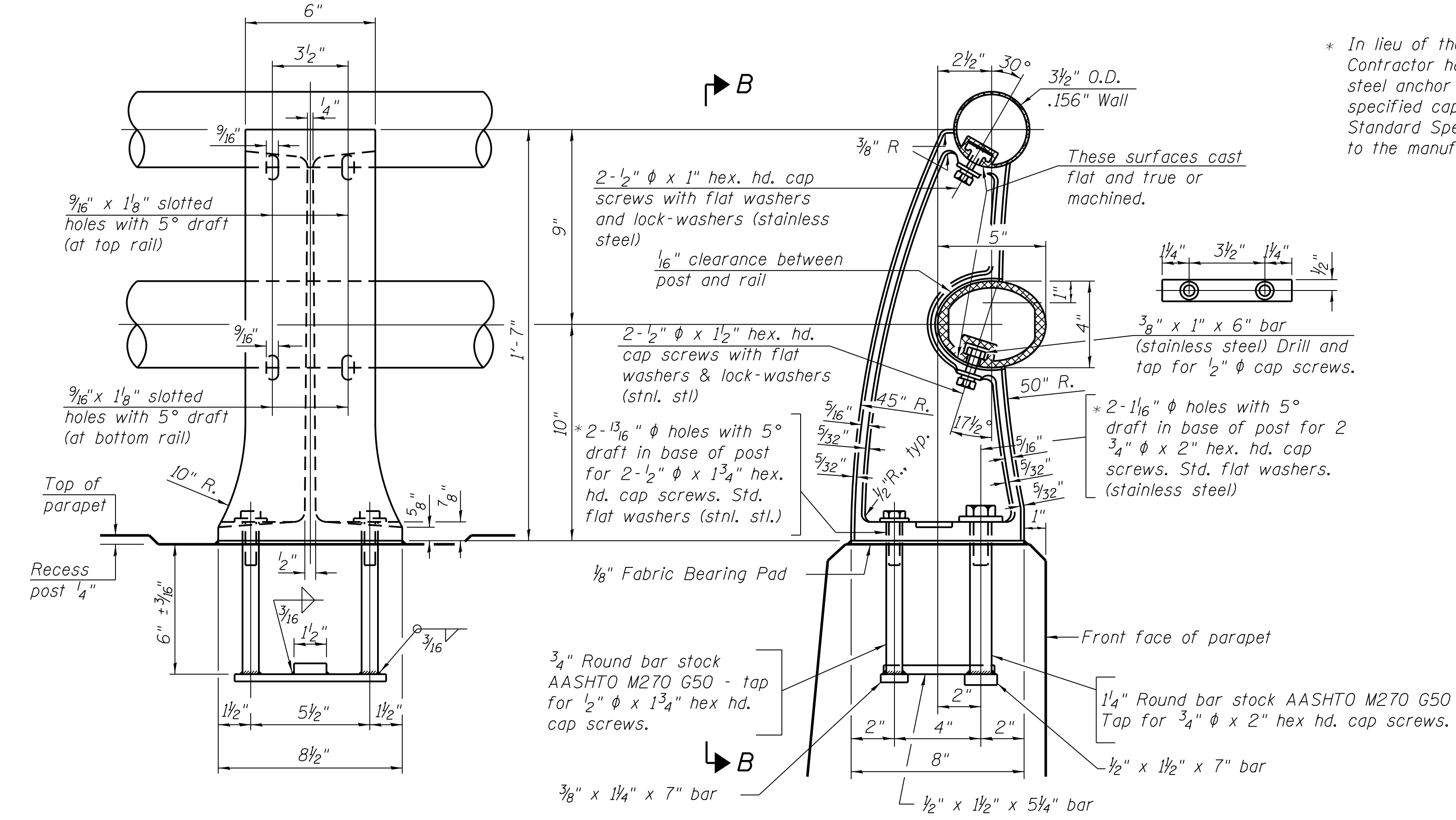
SHEET NO. 4 OF 8 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	192

CONTRACT NO. 60J10

ILLINOIS FED. AID PROJECT

FILE NAME = X:\P\113-2838-000 Rand Road\CAD\S\CADD Sheets\0162018-60J10-004-Parapet&CapDetails.dgn

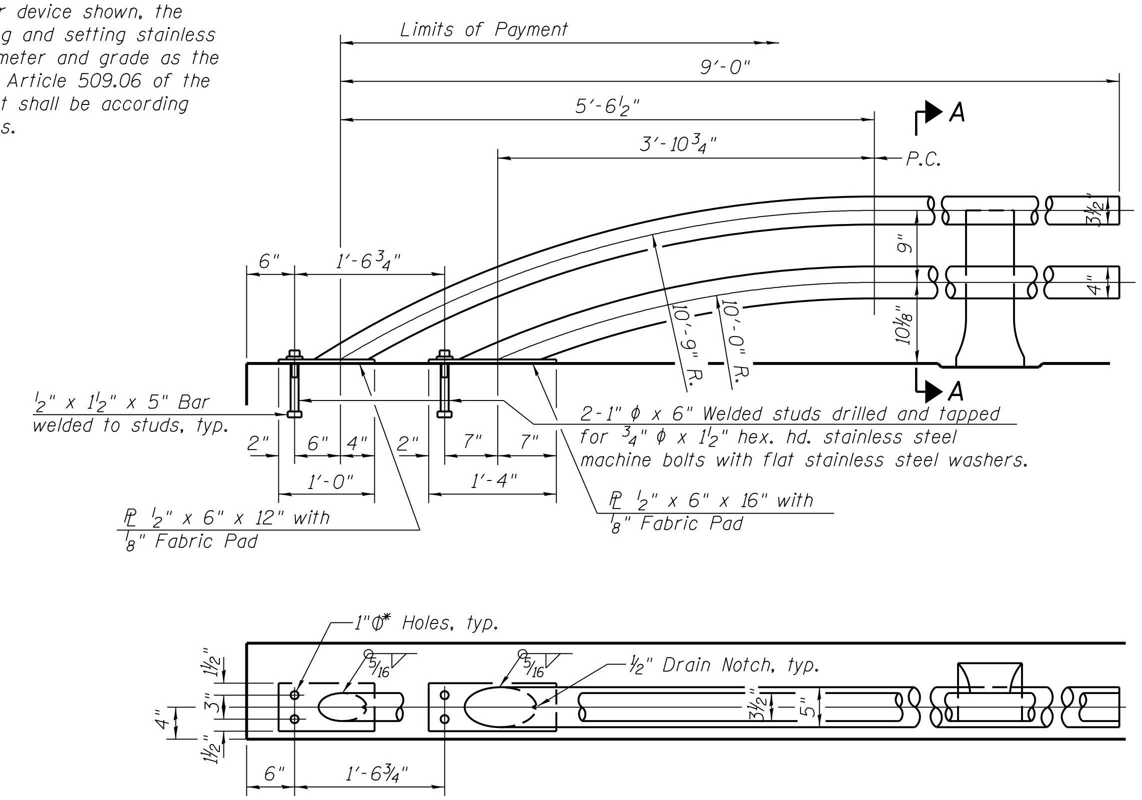


VIEW B-B

SECTION A-A

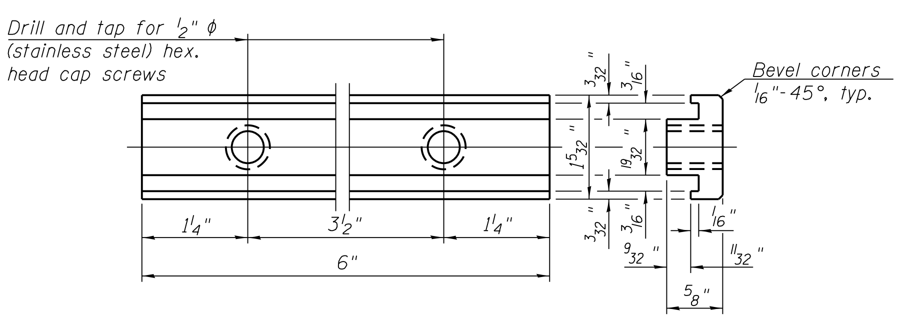
RAIL POST DETAILS

* 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.



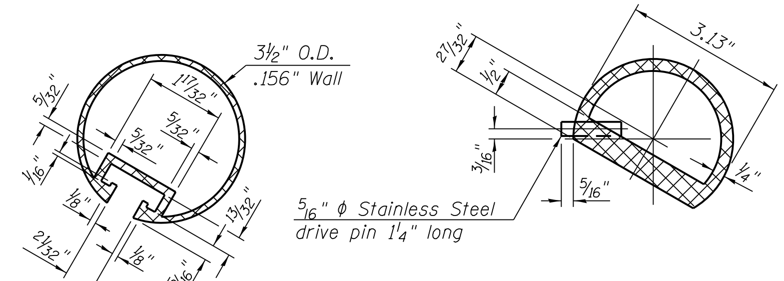
RAIL TERMINAL SECTION

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



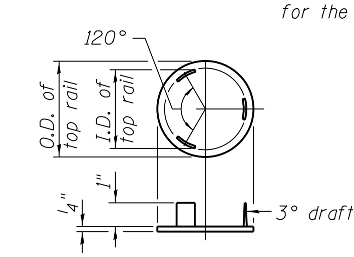
RAIL POST CLAMP BAR

For Top Rail



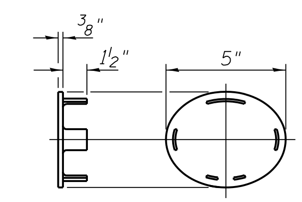
SECTION THRU TOP RAIL

SECTION THRU TOP RAIL SPLICE



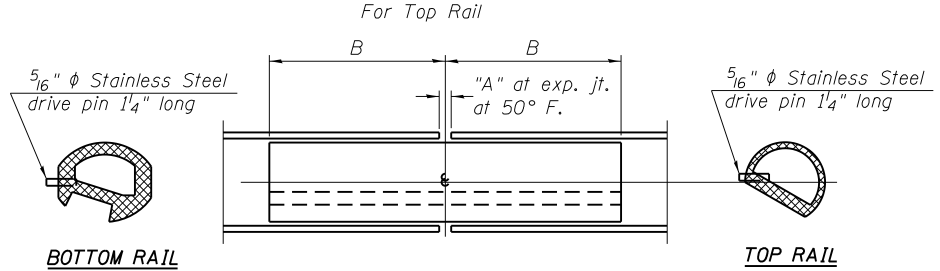
CAST END CAP

For top rail
Drive Fit Type

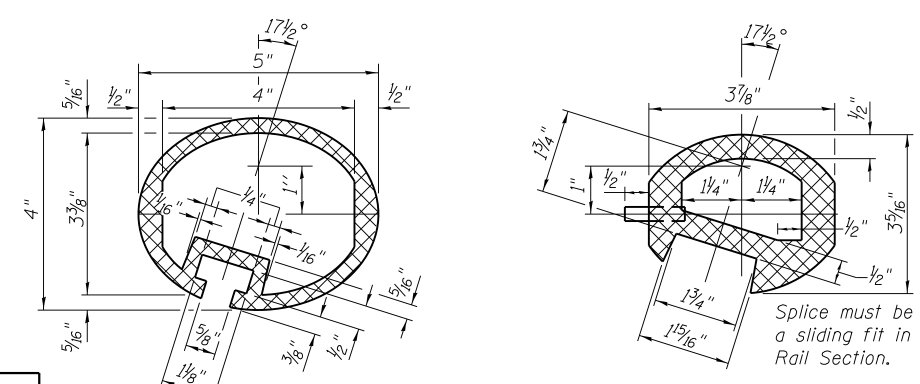


CAST END CAP

For bottom rail
Drive Fit Type



RAIL SPLICE



SECTION THRU BOTTOM RAIL

SECTION THRU BOTTOM RAIL SPLICE

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'-7¾"
Over Finger or Modular Jt.	=<15"	8¼"	2'-1¼"

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

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 4 of 8 for rail post spacing.

BILL OF MATERIAL

Item	Unit	Quantity
Aluminum Railing, Type L	Foot	314

RS&H	USER NAME = EtzwileE	DESIGNED - TLR 05-15-2014	REVISED
	PLOT DATE = 3/18/2024	CHECKED - LM 05-27-2014	REVISED
		DRAWN - OR 12-01-2023	REVISED
		CHECKED - JIK 01-05-2024	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALUMINUM RAILING, TYPE L
STRUCTURE NO. 016–Z018
SHEET NO. 5 OF 8 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	193
		CONTRACT NO. 60J10		
		ILLINOIS FED. AID PROJECT		

FILE NAME = X:\P\13-2838-000 Rand Road\CAD\S\CADD Sheets\0162018-60J10-005-AlumRail.dgn

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2818

SOIL BORING LOG

GSI Job No. 10148
Page 1 of 1
Date 6/10/13

ROUTE F.A.U. RT. 3523 **DESCRIPTION** US-12 (Rand Road) Over The DesPlaines River **LOGGED BY** TK

SECTION 120Y-B **LOCATION** SW 1/4, **SEC.** 16, **TWP.** T41N, **RNG.** R12E, 3rd **PM**

COUNTY Cook **DRILLING METHOD** Hollow Stem Auger/Rotary **HAMMER TYPE** CME Automatic

STRUCT. NO. 016-Z018
Station 246+07.80 to 249+13.05

BORING NO. RWB-04
Station 246+04
Offset 18.70ft Left
Ground Surface Elev. 633.80 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter Dry To 10.0' ft
Upon Completion n/a ft
After ____ **Hrs.** ____ ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
4.5" ASPHALT, 10.0" CONCRETE, 3.5" CRUSHED STONE				
632.30		6		
SANDY CLAY LOAM-dark brown-loose (Fill)		5		14
		4		
630.80				
SILTY CLAY LOAM-dark brown, gray & black-medium stiff to hard (Fill)		4		
		3	2.2	16
	-5	3	B	
		1		
		1	1.0	24
		2	P	
		1		
		1	0.5	23
	-10	2	P	
623.30				
CLAYEY TOPSOIL-black		3		
		2	0.5	24
		3	P	
620.80				
SILTY CLAY-dark brown-medium stiff (Wet)		1		
		2	0.8	30
	-15	2	P	
		1		
		1	0.5	25
		1	B	
615.80				
SANDY CLAY LOAM-gray-very loose		1		
		0		26
	-20	1		

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
613.30				
CLAY LOAM-gray-stiff to very stiff		4		
		6	1.1	16
		8	B	
		6		
		9	1.5	17
	-25	14	B	
		9		
		13	3.2	17
		18	B	
605.80				
SILT-gray-very dense		21		
		25		23
	-30	26		
601.80				
CLAY LOAM-gray-very stiff		21		
		18	2.3	14
	-35	12	B	
		8		
End Of Boring @ -40.0'. Boring backfilled with cuttings. 593.80	-40	14	3.3	15
		17	B	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2818

SOIL BORING LOG

GSI Job No. 10148
Page 1 of 1
Date 6/7/13

ROUTE F.A.U. RT. 3523 **DESCRIPTION** US-12 (Rand Road) Over The DesPlaines River **LOGGED BY** TK

SECTION 120Y-B **LOCATION** SW 1/4, **SEC.** 16, **TWP.** T41N, **RNG.** R12E, 3rd **PM**

COUNTY Cook **DRILLING METHOD** Hollow Stem Auger/Rotary **HAMMER TYPE** CME Automatic

STRUCT. NO. 016-Z018
Station 246+07.80 to 249+13.05

BORING NO. RWB-05
Station 246+99
Offset 19.70ft Left
Ground Surface Elev. 634.00 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter Dry To 10.0' ft
Upon Completion n/a ft
After ____ **Hrs.** ____ ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
15.0" ASPHALT				
632.75		11		
SAND & GRAVEL-brown-medium dense (Fill)		14		3
		15		
631.00				
CLAY LOAM-dark brown & gray-stiff (Fill)		3		
		2	1.0	17
	-5	3	P	
628.50				
SANDY CLAY LOAM-brown-medium stiff to stiff (Apparent Fill)		1		
		2	1.0	20
		1	P	
		0		
		1	0.5	19
	-10	1	P	
		0		
		1	0.5	20
		1	P	
621.00				
SILTY CLAY-brown-soft (Wet)		1		
		0	0.3	25
	-15	1	P	
		1		
		2	0.3	26
		1	P	
616.00				
SILT-gray-medium dense		6		
		7		17
	-20	8		

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SILT-gray-medium dense *(continued)* 613.50				
SILTY CLAY LOAM-gray-medium dense		9		
		11		20
		14		
611.00				
CLAY LOAM-gray-very stiff		5		
		9	2.3	18
	-25	10	B	
		5		
		8	2.4	18
		11	B	
		5		
		7	3.9	17
	-30	9	B	
602.00				
SILT-gray-very dense		27		
		36		15
	-35	50/4"		
597.00				
CLAY LOAM-gray-hard		7		
End Of Boring @ -40.0'. Boring backfilled with cuttings. 594.00	-40	14	5.0	16
		15	B	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

Z:\PROJECTS\2010\10148 RSH, US-12 (RAND) OVER DES PLAINES RIVER (PTB 156, ITEM 17)\10148 BORING LOGS\10148_LOG.GPJ 8/6/13

Z:\PROJECTS\2010\10148 RSH, US-12 (RAND) OVER DES PLAINES RIVER (PTB 156, ITEM 17)\10148 BORING LOGS\10148_LOG.GPJ 8/5/13

FILE NAME = X:\PW\113-2838-000 Rand Road\CAD\S\C400 Sheets\016Z018 602J10 005 Boring Logs01.dgn

RS&H

USER NAME = EtzwileE	DESIGNED - TLR 05-15-2014	REVISED
PLOT DATE = 3/18/2024	CHECKED - LM 05-27-2014	REVISED
	DRAWN - JIK 05-27-2014	REVISED
	CHECKED - LM 05-28-2014	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS (1 OF 3)
STRUCTURE NO. 016-Z018
SHEET NO. 6 OF 8 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	194
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2818

SOIL BORING LOG

GSI Job No. 10148
Page 1 of 1
Date 6/7/13

ROUTE F.A.U. RT. 3523 **DESCRIPTION** US-12 (Rand Road) Over The DesPlaines River **LOGGED BY** TK

SECTION 120Y-B **LOCATION** SW 1/4, **SEC.** 16, **TWP.** T41N, **RNG.** R12E, 3rd **PM**

COUNTY Cook **DRILLING METHOD** Hollow Stem Auger/Rotary **HAMMER TYPE** CME Automatic

STRUCT. NO. 016-Z018
Station 246+07.80 to 249+13.05

BORING NO. RWB-06
Station 247+56
Offset 19.20ft Left
Ground Surface Elev. 633.70 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter 625.2 ft ▼
Upon Completion n/a ft
After ____ **Hrs.** ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
12.0" ASPHALT 632.70			
SAND & GRAVEL-brown-medium dense (Fill)	10		
	15		4
	12		
630.70			
CLAYEY SAND with GRAVEL-brown & gray-very loose to loose (Fill)	5		
	4		13
-5	4		
	1		
	3		17
	2		
▼	1		
	1		19
-10	1		
623.20			
SANDY CLAY LOAM-dark brown-very loose (Apparent Fill)	1		
	1		19
	2		
620.70			
SILTY CLAY-brown & gray-soft	1		
	0	0.3	23
-15	1	P	
618.20			
SANDY LOAM-brown-loose	2		
	3		23
	3		
615.70			
SILTY LOAM to SILT-gray-medium dense to dense	12		
	12		15
-20	15		

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SILTY LOAM to SILT-gray-medium dense to dense *(continued)*	10		
	20		16
	20		
610.70			
SILTY CLAY LOAM with GRAVEL-gray-medium dense	6		
	10		8
-25	10		
608.20			
CLAY LOAM-gray-stiff	6		
	9	1.5	18
	12	B	
605.70			
SILTY LOAM-gray-very dense	11		
	28		15
-30	37		
601.70			
CLAY LOAM-gray-very stiff			
	11	3.0	15
-35	15	B	
End Of Boring @ -40.0'. Boring backfilled with cuttings. 593.70	15	3.5	14
-40	17	B	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2818

SOIL BORING LOG

GSI Job No. 10148
Page 1 of 1
Date 6/5/13

ROUTE F.A.U. RT. 3523 **DESCRIPTION** US-12 (Rand Road) Over The DesPlaines River **LOGGED BY** TK

SECTION 120Y-B **LOCATION** SW 1/4, **SEC.** 16, **TWP.** T41N, **RNG.** R12E, 3rd **PM**

COUNTY Cook **DRILLING METHOD** Hollow Stem Auger/Rotary **HAMMER TYPE** CME Automatic

STRUCT. NO. 016-Z018
Station 246+07.80 to 249+13.05

BORING NO. RWB-07
Station 248+25
Offset 20.90ft Left
Ground Surface Elev. 633.00 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter Dry To 10.0' ft
Upon Completion n/a ft
After ____ **Hrs.** ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
10.0" ASPHALT 632.93			
SAND & GRAVEL-brown-medium dense (Fill)	9		
	10		5
	7		
630.00			
SANDY CLAY LOAM-dark brown-stiff (Apparent Fill)	3		
	4	1.8	16
-5	4	P	
627.50			
CLAYEY SAND-dark brown-very loose to loose	2		
	2		18
	1		
	1		
	1		25
-10	1		
622.50			
SILTY CLAY-dark brown & gray-medium stiff (Wet)	1		
	2	0.9	39
	3	B	
620.00			
CLAY-brown-medium stiff	1		
	1	0.5	25
-15	2	B	
617.50			
SILTY LOAM-brown-medium dense	3		
	7		20
	9		
615.00			
SILTY CLAY LOAM-gray-medium dense	7		
	7		13
-20	10		

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
612.50			
CLAY LOAM-gray-stiff to hard	6		
	7	1.3	17
	10	B	
	4		
	6	1.0	18
-25	7	P	
	5		
	10	2.3	17
	11	B	
	6		
	12	1.8	15
-30	15	B	
	10		
	13	4.2	14
-35	14	B	
	15		
End Of Boring @ -40.0'. Boring backfilled with cuttings. 593.00	16	1.9	16
-40	13	B	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

Z:\PROJECTS\2010\10148 RSH, US-12 (RAND) OVER DES PLAINES RIVER (PTB 156, ITEM 17)\10148 BORING LOGS\10148_LOG.GPJ 8/5/13

FILE NAME = N:\PW\113-2838-008 Rand Road\CAD\S\CADD Sheets\016Z018-60J10-007-BoringLogsRE2.dgn

RS&H

USER NAME = EtzwileE	DESIGNED - TLR	05-15-2014	REVISED
PLOT DATE = 3/18/2024	CHECKED - LM	05-27-2014	REVISED
	DRAWN - JIK	05-27-2014	REVISED
	CHECKED - LM	05-28-2014	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS (2 OF 3)
STRUCTURE NO. 016-Z018
SHEET NO. 7 OF 8 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	195
		CONTRACT NO. 60J10		
		ILLINOIS FED. AID PROJECT		

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2818

SOIL BORING LOG

GSI Job No. 10148
Page 1 of 1
Date 6/5/13

ROUTE F.A.U. RT. 3523 **DESCRIPTION** US-12 (Rand Road) Over The DesPlaines River **LOGGED BY** TK

SECTION 120Y-B **LOCATION** SW 1/4, **SEC.** 16, **TWP.** T41N, **RNG.** R12E, 3rd **PM**

COUNTY Cook **DRILLING METHOD** Hollow Stem Auger/Rotary **HAMMER TYPE** CME Automatic

STRUCT. NO. 016-Z018
Station 246+07.80 to 249+13.05

BORING NO. RWB-08
Station 249+06
Offset 19.00ft Left
Ground Surface Elev. 632.40 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter Dry To 10.0' ft
Upon Completion n/a ft
After ____ **Hrs.** ____ ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAYEY SAND, GRAVEL & STONE-dark gray to black (fill)	631.40			
CLAY LOAM-brown & gray-very stiff (Fill)		3		
		3 4	2.4 B	15
SANDY CLAY LOAM-black-stiff (Fill)	629.40			
		2		
	-5	3 3	1.0 P	18
SILTY CLAY-black-soft to medium stiff (Fill)	626.90			
		0		
		1 1	0.3 P	23
		1		
	-10	2 2	0.9 B	28
CLAY LOAM with STONE-brown, gray & black-soft (Fill)	621.90			
		1		
		1 1	0.3 P	28
CLAY-brown-stiff	619.40			
		5		
	-15	4 5	1.8 B	24
SILTY LOAM-gray-medium dense	616.90			
		6		
		9 12		17
CLAY LOAM-gray-medium stiff to very stiff	614.40			
		7		
	-20	6 6	0.5 P	16
CLAY LOAM-gray-medium stiff to very stiff *(continued)*				
		4		
		4 6	0.5 B	20
		5		
	-25	7 10	2.8 B	12
		5		
		15 19	3.7 B	18
SILTY LOAM-gray-dense	604.40			
		20		
	-30	23 24		17
CLAY LOAM-gray-very stiff	600.40			
		22		
	-35	22 13	2.3 P	12
		7		
End Of Boring @ -40.0'. Boring backfilled with cuttings.	592.40 -40	9 12	3.9 B	16

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

Z:\PROJECTS\2010\10148 RSH, US-12 (RAND) OVER DES PLAINES RIVER (PTB 156, ITEM 17)\10148 BORING LOGS\10148_LOG.GPJ 8/5/13

FILE NAME = X:\P\113-2838-000 Rand Road\CAD\S\C400 Sheets\016Z818-602J8-000 Boring Logs03.dgn

RS&H

USER NAME = EtzwileE	DESIGNED - TLR 05-15-2014	REVISED
PLOT DATE = 3/18/2024	CHECKED - LM 05-27-2014	REVISED
	DRAWN - JIK 05-27-2014	REVISED
	CHECKED - LM 05-28-2014	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS (3 OF 3)
STRUCTURE NO. 016-Z018
SHEET NO. 8 OF 8 SHEETS

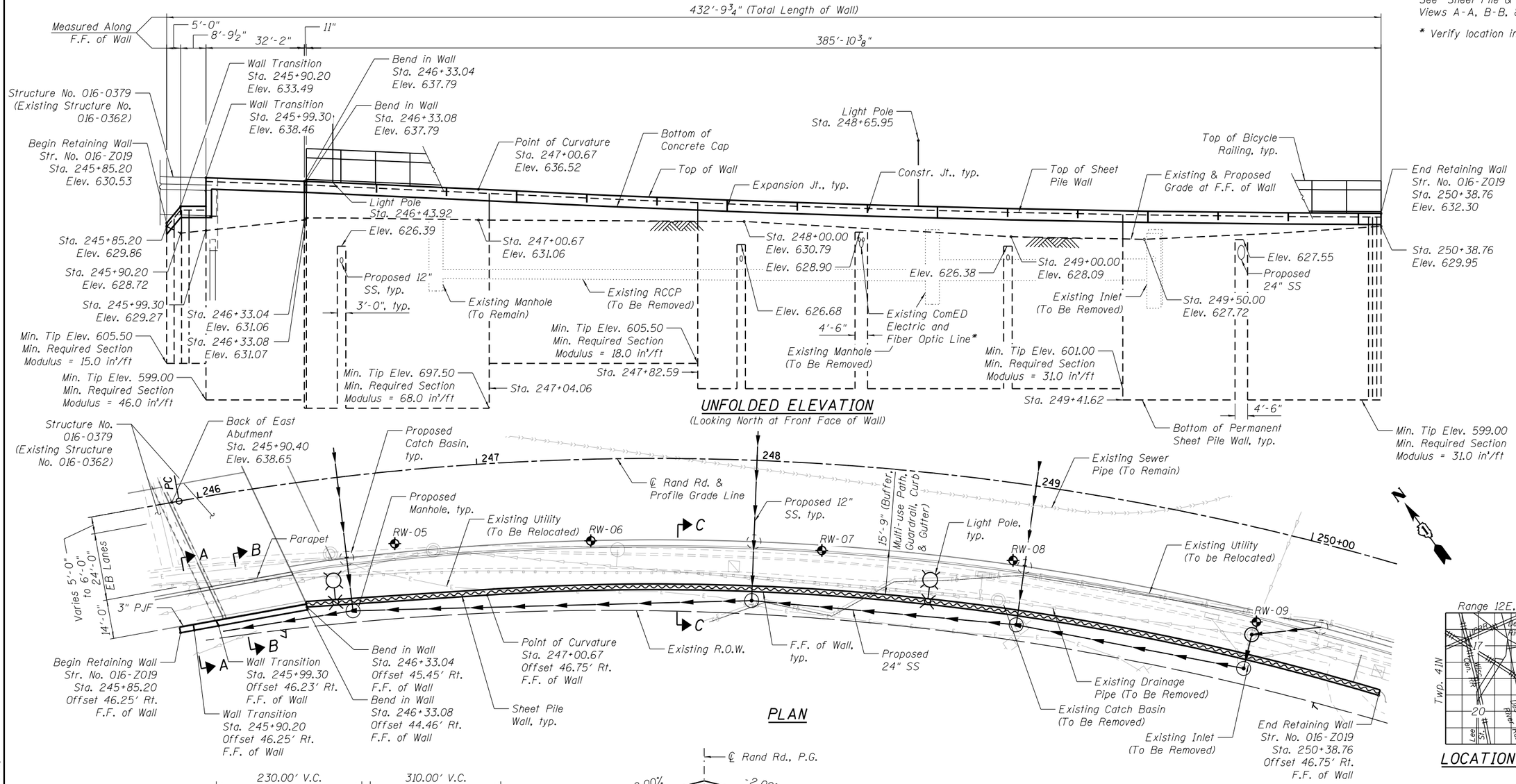
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	196
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

Benchmark: BM-92 Chiseled square on sidewalk at S.W. corner of S.N. 016-0362, Elev. 635.39.

Existing Structure: None.

Notes: See Utility, Lighting, and Drainage Plans for additional information.
See "Sheet Pile & Cap Details" for Section Views A-A, B-B, & C-C.

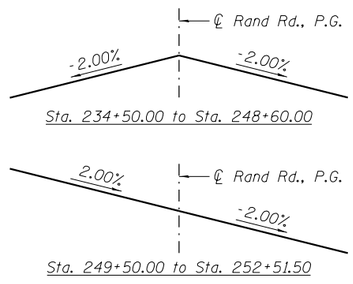
* Verify location in field



UNFOLDED ELEVATION

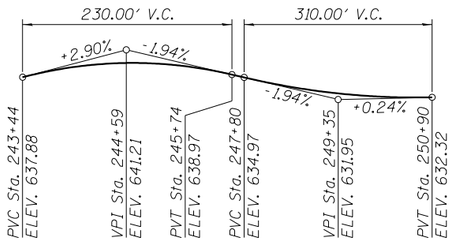
(Looking North at Front Face of Wall)

PLAN



SUPERELEVATION TRANSITION
RAND ROAD

(Looking Upstation)



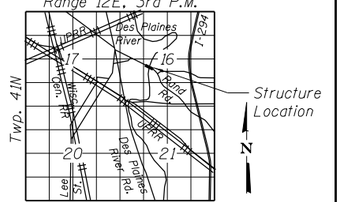
PROFILE GRADE

(Along ℄ Rand Rd.)

CURVE DATA

(℄ of Rand Rd.)

P.I. Sta. = 249+67.15
Δ = 42° 59' 15" (RT)
D = 6° 01' 52"
R = 950.00'
T = 374.10'
L = 712.76'
E = 71.00'
P.C. Sta. = 245+93.06
P.T. Sta. = 253+05.82



LOCATION SKETCH

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition with 2013 Interims

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (Sheet Pile)
fu = 60,000 psi (Shear Studs)

JOSEPH KLENCK
081-008344
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS

BY: _____

DATE SIGNED: _____

LICENSE EXPIRES: 11/30/2024

GENERAL PLAN & ELEVATION
RAND ROAD
RTE. FAU 3523 - SEC. 120Y-B
COOK COUNTY
STATION 245+85.20 TO 250+38.76
STRUCTURE NO. 016-Z019

RS&H

USER NAME = EtzwileE	DESIGNED - TLR	05-15-2014	REVISED
PLOT DATE = 3/18/2024	CHECKED - LM	05-27-2014	REVISED
	DRAWN - OR	12-01-2023	REVISED
	CHECKED - JIK	01-05-2024	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
STRUCTURE NO. 016-Z019
SHEET NO. 1 OF 8 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	197
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			

FILE NAME = X:\P\113-2839-000 Rand Road\CAD\S\CADD Sheets\016Z019-GB10 001-GPE.dgn

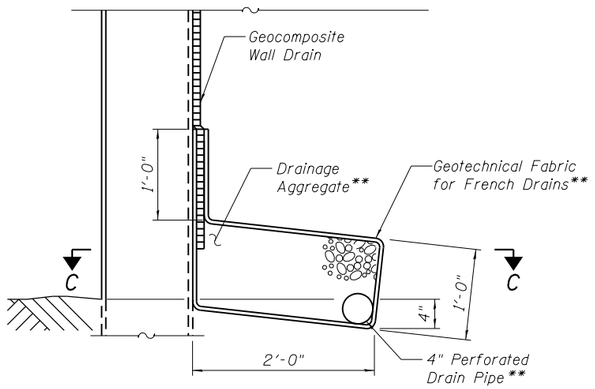
INDEX OF SHEETS

GENERAL NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Protective coat shall be applied to the top face of cap.

TOTAL BILL OF MATERIAL

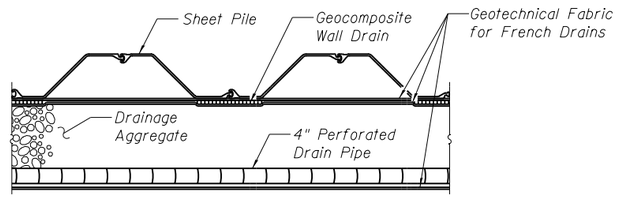
ITEM	UNIT	TOTAL
Structure Excavation	Cu. Yd.	92
Concrete Structures	Cu. Yd.	65.5
Protective Coat	Sq. Yd.	88
Stud Shear Connectors	Each	586
Reinforcement Bars, Epoxy Coated	Pound	5,880
Bicycle Railing	Foot	385
Permanent Sheet Piling	Sq. Ft.	14,357
Granular Backfill for Structures	Cu. Yd.	91
Geocomposite Wall Drain	Sq. Yd.	112
Pipe Underdrains for Structures 4"	Foot	432



PIPE UNDERDRAIN DETAIL

(Installed only at fill sections of wall only Sta. 245+87.70 to Sta. 250+37.86)

**Note: Included in the cost of pipe underdrains for structures 4"



SECTION C-C

FILE NAME = X:\P\113-2838-000 Pond Road\CAD\S\C400 Sheets\B162819-60J10-002-GenNotes.dgn

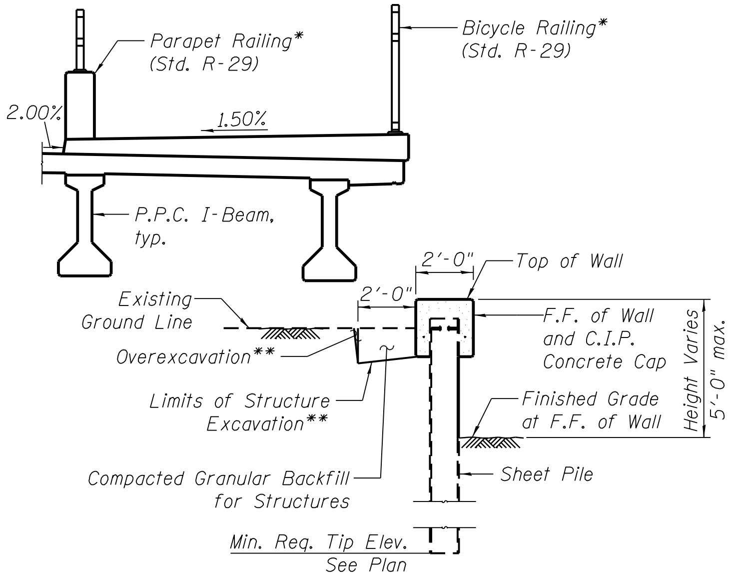
RS&H

USER NAME = EtzwileE	DESIGNED - TLR	05-15-2014	REVISED	
PLOT DATE = 3/18/2024	CHECKED - LM	05-27-2014	REVISED	
	DRAWN - OR	12-01-2023	REVISED	
	CHECKED - JIK	01-05-2024	REVISED	

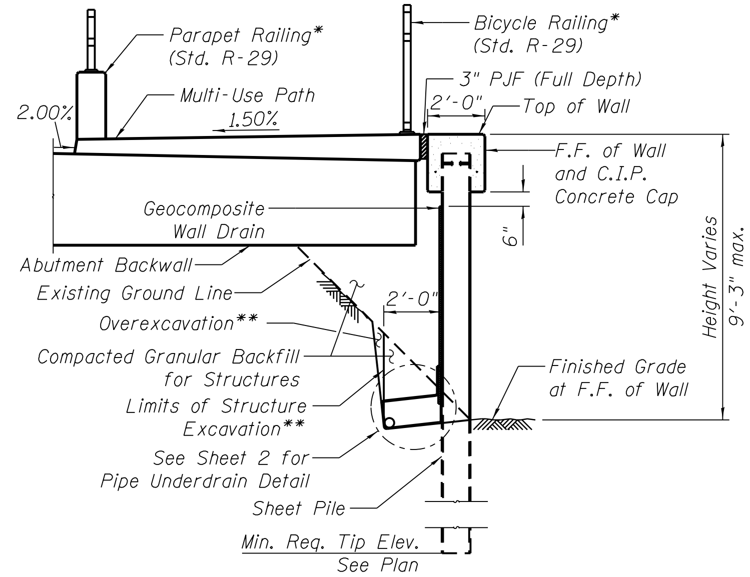
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES & DETAILS
STRUCTURE NO. 016-Z019
SHEET NO. 2 OF 8 SHEETS

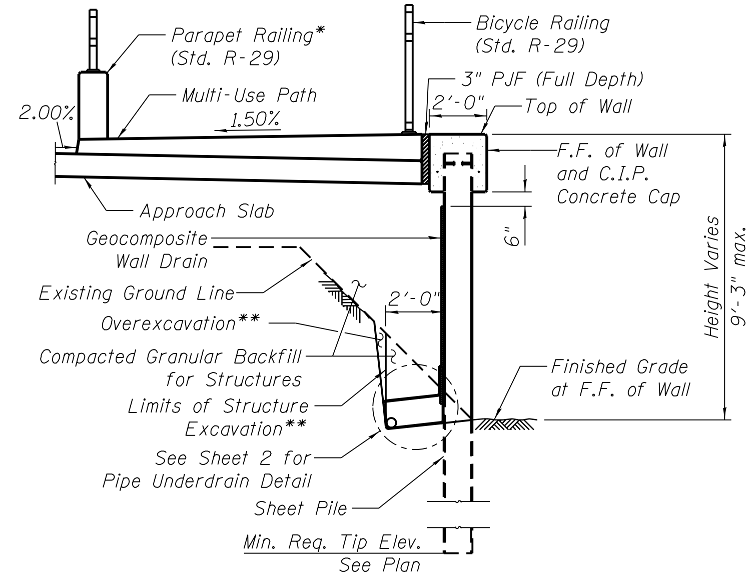
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	198
		CONTRACT NO. 60J10		
	ILLINOIS FED. AID PROJECT			



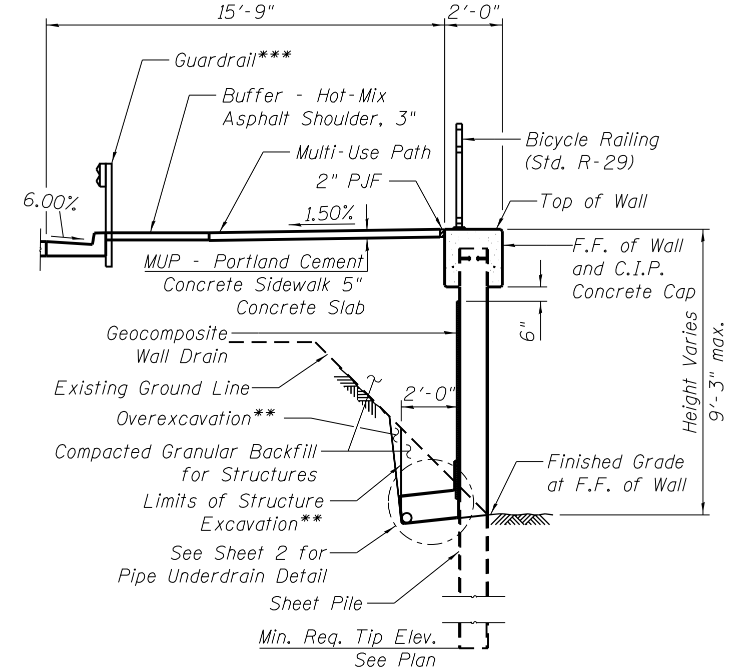
SECTION A-A THRU SHEET PILE WALL



SECTION THRU ABUTMENT



SECTION B-B THRU SHEET PILE WALL



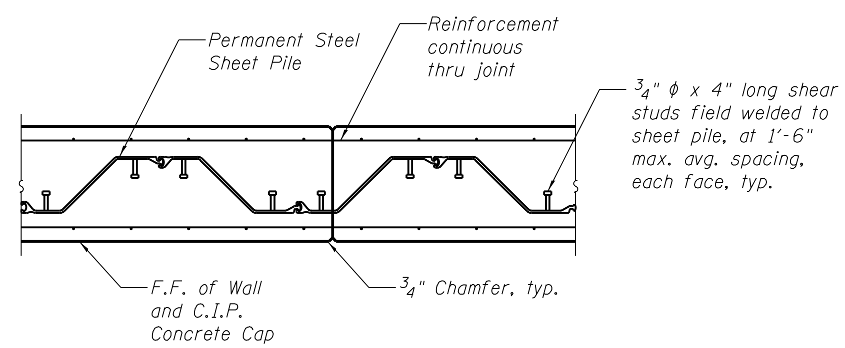
SECTION C-C THRU SHEET PILE WALL

Note: At the interface between the approach slab and the retaining walls, a 3" wide by "H", Preformed Joint Filler shall be installed for the entire length of the approach slab and the abutment. The "H" is the vertical dimension required to separate the bridge abutment and approach slab from the retaining wall. Cost included with Concrete Structures.

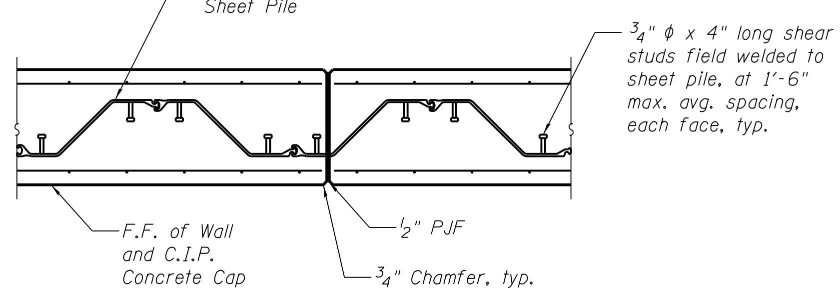
* See Bridge (S.N. 016-0379) plans for additional information.

** Overexcavation beyond the limits of structure excavation not measured for payment. Backfill overexcavation with same material as used for Compacted Granular Backfill for Structures. Backfill in areas of overexcavation shall not be measured for payment.

*** See Roadway plans for additional information.



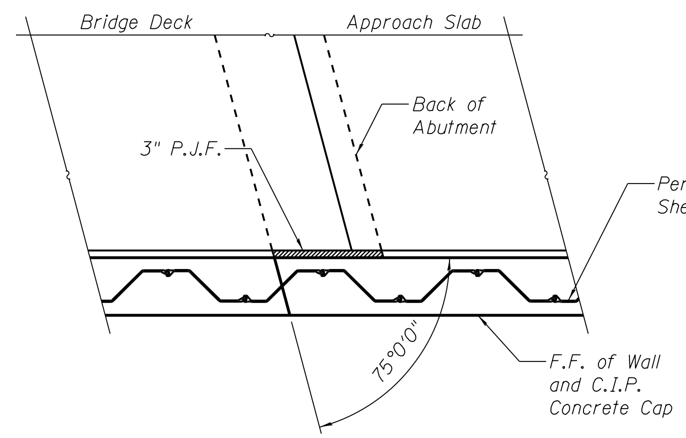
CONSTRUCTION JOINT



EXPANSION JOINT

TYPICAL SECTIONS THRU CAP

(See Sheet 4 for Cap Reinforcement Details)



RETAINING WALL/ABUTMENT INTERFACE DETAIL

FILE NAME = X:\P\113-2838-000 Rand Road\CAD\S\CADD Sheets\0162019-60J10-003-Pile&CapDetails01.dgn

RS&H

USER NAME = EtzwileE	DESIGNED - TLR	05-15-2014	REVISED	
PLOT DATE = 3/18/2024	CHECKED - LM	05-27-2014	REVISED	
	DRAWN - OR	12-01-2023	REVISED	
	CHECKED - JIK	01-05-2024	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

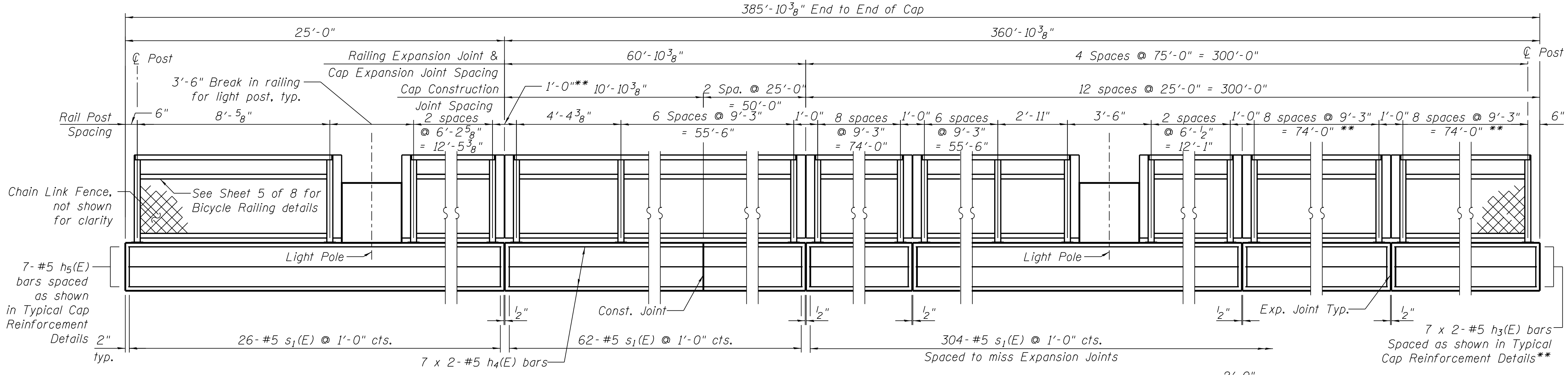
SHEET PILE & CAP DETAILS
STRUCTURE NO. 016–Z019

SHEET NO. 3 OF 8 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3523	120Y-B	COOK	267	199

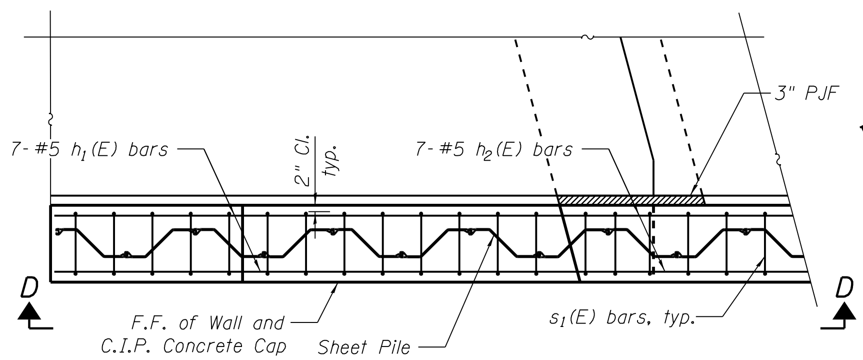
CONTRACT NO. 60J10

ILLINOIS FED. AID PROJECT

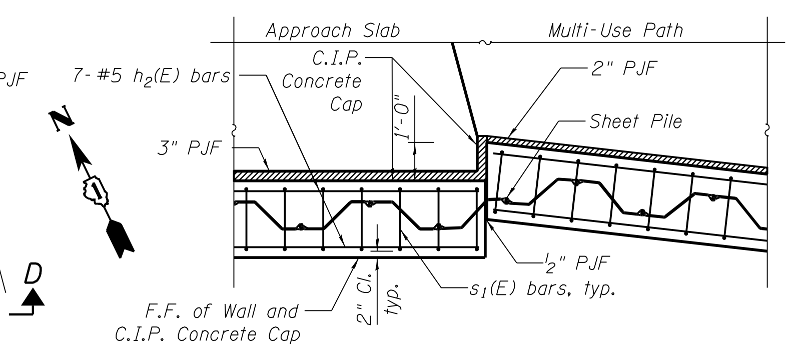


** Typ. spacing between expansion joints

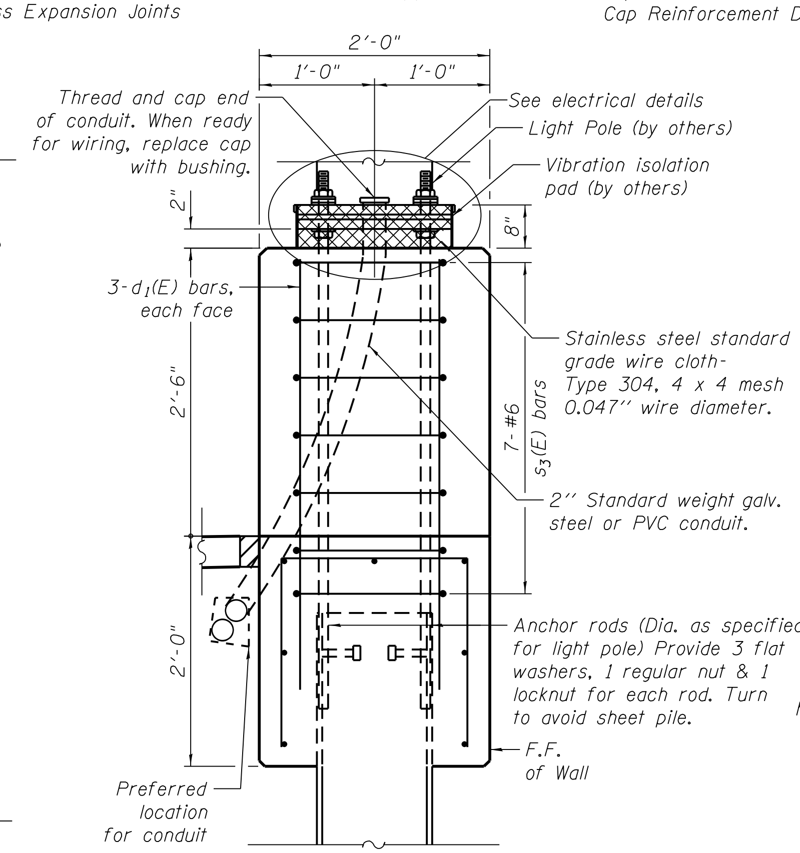
ELEVATION OF BICYCLE RAILING & CAP



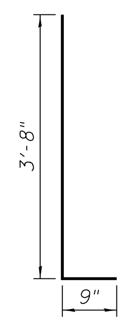
CAP REINFORCEMENT AT ABUTMENT



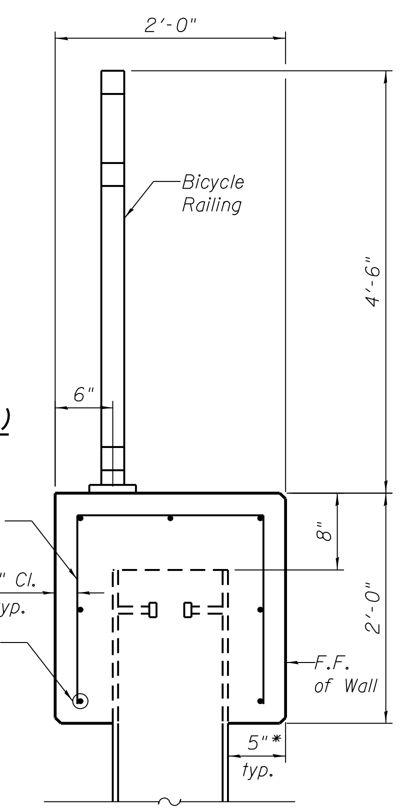
CAP REINFORCEMENT AT APPROACH SLAB



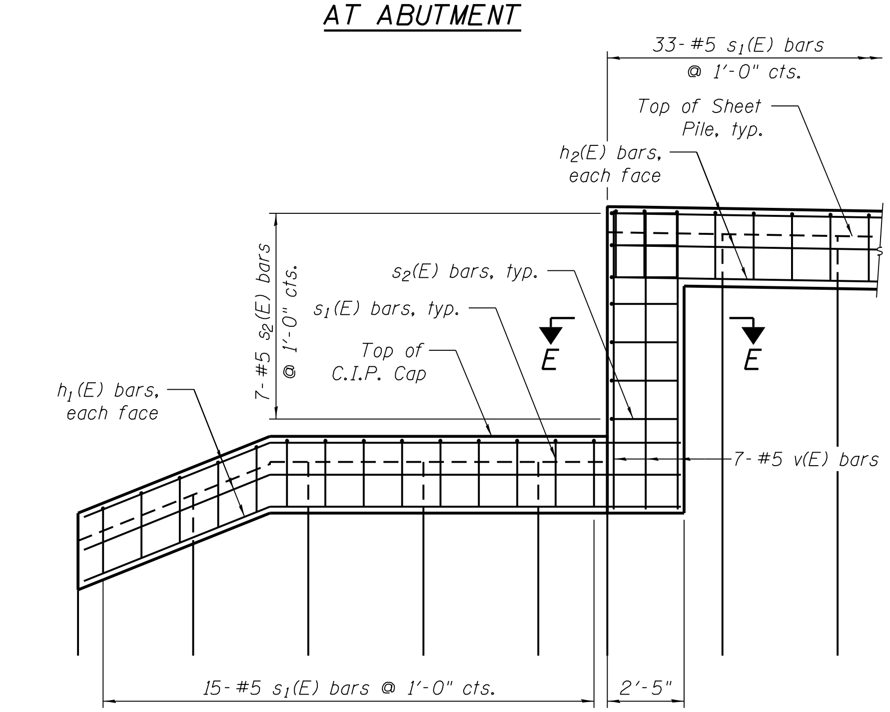
LIGHT POLE PEDESTAL REINFORCEMENT DETAILS



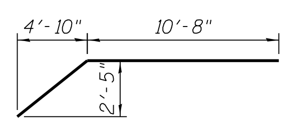
BAR $d_1(E)$



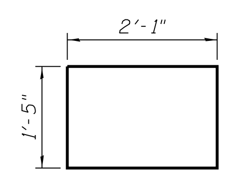
TYPICAL CAP REINFORCEMENT DETAILS



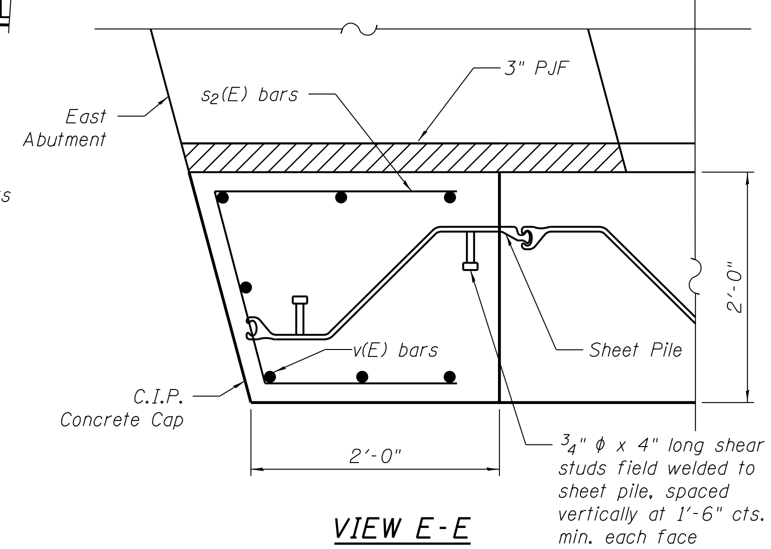
VIEW D-D OF RETAINING WALL AT ABUTMENT



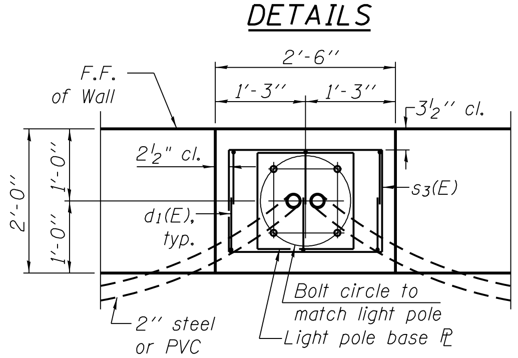
BAR $h_1(E)$



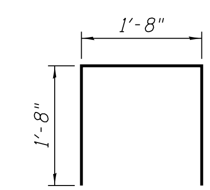
BAR $s_3(E)$



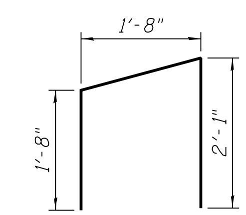
VIEW E-E



PLAN



BAR $s_1(E)$



BAR $s_2(E)$

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$d_1(E)$	12	#6	4'-5"	L
$h_1(E)$	7	#5	16'-0"	⁄
$h_2(E)$	7	#5	31'-10"	—
$h_3(E)$	56	#5	38'-10"	—
$h_4(E)$	14	#5	31'-9"	—
$h_5(E)$	7	#5	24'-8"	—
$s_1(E)$	440	#5	5'-0"	⊓
$s_2(E)$	7	#5	5'-5"	⊓
$s_3(E)$	14	#6	7'-0"	▯
$v(E)$	7	#5	6'-7"	—
Reinforcement Bars, Epoxy Coated		Pound	5,880	
Concrete Structures		Cu. Yd.	65.5	
Protective Coat		Sq. Yd.	88	

* Dimension shown is based on the use of PZ 35. If an alternate sheet pile section is chosen, this dimension must be adjusted. If necessary, Contractor shall make adjustments at no additional cost to the Department.

Notes:

1. Minimum lap lengths: #5 bar - 2'-11"
2. Bars indicated thus 7 x 2-#5 etc. indicates 7 lines of bars with 2 lengths per line.
3. Apply protective coat to top of cap and top and front pedestal.
4. For bicycle railing details, see sheet 5 of 8.
5. Cost of anchor rods is included with Concrete Structure.