PAVEMENT MARKING LEGEND

1. 4" THERMOPLASTIC PMK
5" GROOVING FOR RECESSED PMK
DOUBLE YELLOW CENTERLINE @ 11" C-C
2. 4" THERMOPLASTIC PMK
5" GROOVING FOR RECESSED PMK
YELLOW EDGE LINE
3. 4" THERMOPLASTIC PMK
5" GROOVING FOR RECESSED PMK
WHITE SKIP-DASH (10' LINE, 30' SPACE)
4. 4" THERMOPLASTIC PMK
5" GROOVING FOR RECESSED PMK
WHITE EDGE LINE
4A. 4" THERMOPLASTIC PMK
WHITE EDGE LINE
5. 5" THERMOPLASTIC PMK
6" GROOVING FOR RECESSED PMK
WHITE EDGE LINE
6. 6" THERMOPLASTIC PMK
7" GROOVING FOR RECESSED PMK
WHITE TURN LANE LINE
7. 6" THERMOPLASTIC PMK
7" GROOVING FOR RECESSED PMK
WHITE CROSSHATCH
@ 45^ 8' C-C (TYP)
8. 6" THERMOPLASTIC PMK
7" GROOVING FOR RECESSED PMK
WHITE SKIP-DASH (2' LINE, 6' SPACE)
9. 8" THERMOPLASTIC PMK
9" GROOVING FOR RECESSED PMK
WHITE EDGE LINE
10. 12" THERMOPLASTIC PMK
13" GROOVING FOR RECESSED PMK
WHITE LINES @ 5' @ 3' C-C
11. 12" THERMOPLASTIC PMK
13" GROOVING FOR RECESSED PMK
WHITE LINES @ 10' @ 3' C-C
12. 12" THERMOPLASTIC PMK
13" GROOVING FOR RECESSED PMK
WHITE LINES @ 10' @ 45^
13. 12" THERMOPLASTIC PMK
13" GROOVING FOR RECESSED PMK
YELLOW DIAGONAL LINE
@ 45^ 20' C-C (TYP)
14. 12" THERMOPLASTIC PMK
13" GROOVING FOR RECESSED PMK
YELLOW DIAGONAL LINE
@ 45^ 75' C-C (TYP)
15. 12" THERMOPLASTIC PMK
13" GROOVING FOR RECESSED PMK
WHITE DIAGONAL LINE 45^
@ 25' C-C (TYP)
16. 24" THERMOPLASTIC PMK
25" GROOVING FOR RECESSED PMK
WHITE STOP BAR
17. 24" THERMOPLASTIC PMK
25" GROOVING FOR RECESSED PMK
TRANSVERSE LINE
18. THERMOPLASTIC PMK
GROOVING FOR RECESSED PMK
LETTER & SYMBOLS

NOTES:

1. THERMOPLASTIC PAVEMENT MARKINGS SHALL BE USED ON U.S. ROUTE 14.
2. SEE IDOT DISTRICT ONE DETAIL TC-11 FOR RAISED REFLECTIVE PAVEMENT MARKING DETAILS & LOCATIONS FOR U.S. ROUTE 14.
3. SEE LCDOT STANDARD LC7800 FOR RECESSED REFLECTIVE PAVEMENT MARKING DETAILS & LOCATIONS FOR HART ROAD.
4. SEE DRAINAGE PLANS FOR RIP-RAP DETAILS.

LEGEND

SEEDING, CLASS 2A
(SALT TOLERANT ROADSIDE MIXTURE)
TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD) OR
TOPSOIL FURNISH AND PLACE, 6" (ALONG U.S. ROUTE 14)
NITROGEN AND POTASSIUM FERTILIZER NUTRIENT
EROSION CONTROL BLANKET OR
EROSION CONTROL BLANKET, SPECIAL OR
HEAVY DUTY EROSION CONTROL BLANKET

SEEDING, CLASS 4A, LOW PROFILE NATIVE GRASS
TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
EROSION CONTROL BLANKET OR
EROSION CONTROL BLANKET, SPECIAL

SEEDING, CLASS 4B, WETLAND GRASS AND SEDGE MIXTURE
TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
EROSION CONTROL BLANKET
EROSION CONTROL BLANKET, SPECIAL

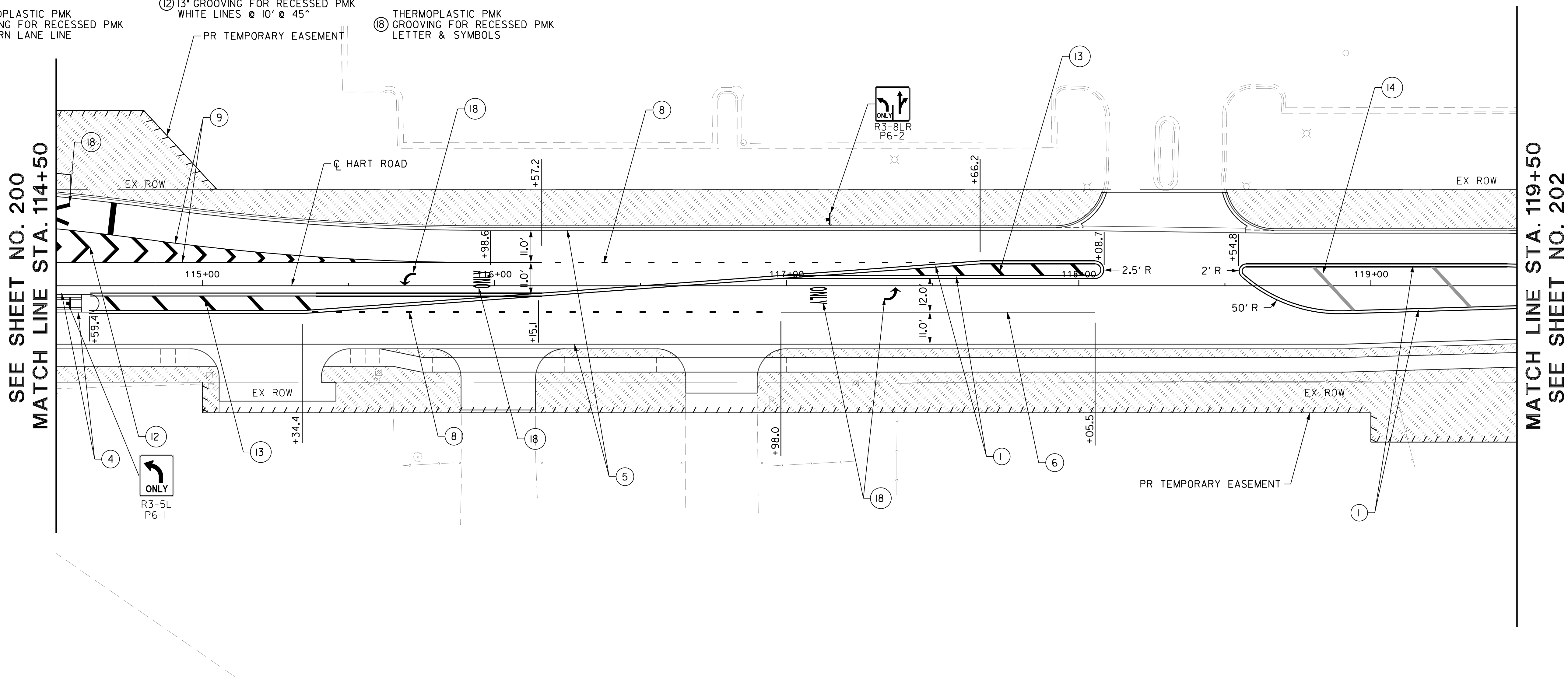
RIP-RAP
FILTER FABRIC

SODDING SALT TOLERANT
TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
TOPSOIL FURNISH AND PLACE, 6" (ALONG U.S. ROUTE 14)
NITROGEN AND POTASSIUM FERTILIZER NUTRIENT
SUPPLEMENTAL WATERING

PROPOSED ORNAMENTAL TREES:
AH - AMERICAN HORNBEAM
AS - APPLE SERVICEBERRY
CC - CORNELIAN CHERRY DOG WOOD
EH - COLUMNAR EUROPEAN HORNBEAM

PROPOSED SHADE TREES:
BC - COMMON BALD CYPRESS
RO - RED OAK
SW - SWAMP WHITE OAK

SCALE
1" = 20'
0 20 40



TranSystems	USER NAME = amkidd	DESIGNED - JLV	REVISED -
	PLOT SCALE = 40.00 ' / in.	DRAWN - AMK	REVISED -
	PLOT DATE = 5/22/2019	CHECKED - JWC	REVISED -
		DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LANDSCAPING, PAVEMENT MARKING & SIGNING PLAN

SCALE: 1:20 | SHEET 6 OF 16 SHEETS | STA. 114+00.00 TO STA. 119+50.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	201
		CONTRACT NO. 61D65		
		ILLINOIS FED. AID PROJECT		

FILE NAME: g:\ch09\0176\road\Sheets\08084-LSS-06.dgn

NOTES:

1. THERMOPLASTIC PAVEMENT MARKINGS SHALL BE USED ON U.S. ROUTE 14.
2. SEE IDOT DISTRICT ONE DETAIL TC-11 FOR RAISED REFLECTIVE PAVEMENT MARKING DETAILS & LOCATIONS FOR U.S. ROUTE 14.
3. SEE LCDOT STANDARD LC7800 FOR RECESSED REFLECTIVE PAVEMENT MARKING DETAILS & LOCATIONS FOR HART ROAD.
4. SEE DRAINAGE PLANS FOR RIP-RAP DETAILS.

LEGEND

SEEDING, CLASS 2A
(SALT TOLERANT ROADSIDE MIXTURE)
TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD) OR
TOPSOIL FURNISH AND PLACE, 6" (ALONG U.S. ROUTE 14)
NITROGEN AND POTASSIUM FERTILIZER NUTRIENT
EROSION CONTROL BLANKET OR
EROSION CONTROL BLANKET, SPECIAL OR
HEAVY DUTY EROSION CONTROL BLANKET

SEEDING, CLASS 4A, LOW PROFILE NATIVE GRASS
TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
EROSION CONTROL BLANKET OR
EROSION CONTROL BLANKET, SPECIAL

SEEDING, CLASS 4B, WETLAND GRASS AND SEDGE MIXTURE
TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
EROSION CONTROL BLANKET
EROSION CONTROL BLANKET, SPECIAL

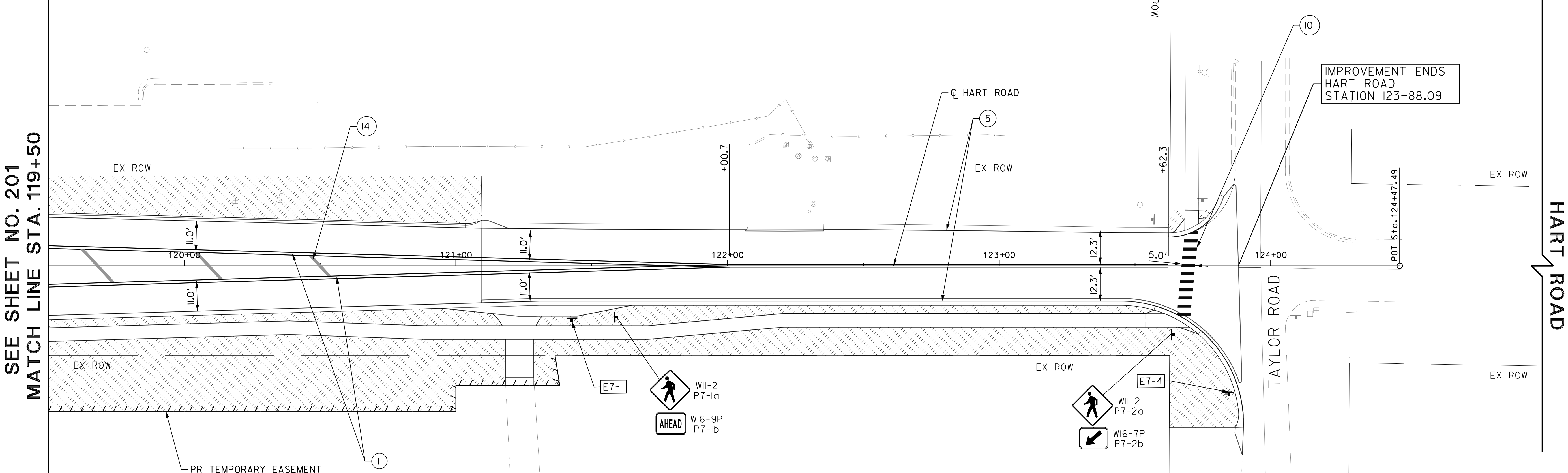
RIP-RAP
FILTER FABRIC

SODDING SALT TOLERANT
TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
TOPSOIL FURNISH AND PLACE, 6" (ALONG U.S. ROUTE 14)
NITROGEN AND POTASSIUM FERTILIZER NUTRIENT
SUPPLEMENTAL WATERING

PROPOSED ORNAMENTAL TREES:
AH - AMERICAN HORNBEAM
AS - APPLE SERVICEBERRY
CC - CORNELIAN CHERRY DOG WOOD
EH - COLUMNAR EUROPEAN HORNBEAM

PROPOSED SHADE TREES:
BC - COMMON BALD CYPRESS
RO - RED OAK
SW - SWAMP WHITE OAK

SCALE
1" = 20'
0 20 40



PAVEMENT MARKING LEGEND

1. 4" THERMOPLASTIC PMK
5" GROOVING FOR RECESSED PMK
DOUBLE YELLOW CENTERLINE @ 11" C-C
2. 4" THERMOPLASTIC PMK
5" GROOVING FOR RECESSED PMK
YELLOW EDGE LINE
3. 4" THERMOPLASTIC PMK
5" GROOVING FOR RECESSED PMK
WHITE SKIP-DASH (10' LINE, 30' SPACE)
4. 4" THERMOPLASTIC PMK
5" GROOVING FOR RECESSED PMK
WHITE EDGE LINE
4A. 4" THERMOPLASTIC PMK
WHITE EDGE LINE
5. 5" THERMOPLASTIC PMK
6" GROOVING FOR RECESSED PMK
WHITE EDGE LINE
6. 6" THERMOPLASTIC PMK
7" GROOVING FOR RECESSED PMK
WHITE TURN LANE LINE
7. 6" THERMOPLASTIC PMK
7" GROOVING FOR RECESSED PMK
WHITE CROSSHATCH
@ 45° 8' C-C (TYP)
8. 6" THERMOPLASTIC PMK
7" GROOVING FOR RECESSED PMK
WHITE SKIP-DASH (2' LINE, 6' SPACE)
9. 8" THERMOPLASTIC PMK
9" GROOVING FOR RECESSED PMK
WHITE EDGE LINE
10. 12" THERMOPLASTIC PMK
13" GROOVING FOR RECESSED PMK
WHITE LINES @ 5' @ 3' C-C
11. 12" THERMOPLASTIC PMK
13" GROOVING FOR RECESSED PMK
WHITE LINES @ 10' @ 3' C-C
12. 12" THERMOPLASTIC PMK
13" GROOVING FOR RECESSED PMK
WHITE LINES @ 10' @ 45°
13. 12" THERMOPLASTIC PMK
13" GROOVING FOR RECESSED PMK
YELLOW DIAGONAL LINE
@ 45° 20' C-C (TYP)
14. 12" THERMOPLASTIC PMK
13" GROOVING FOR RECESSED PMK
YELLOW DIAGONAL LINE
@ 45° 75' C-C (TYP)
15. 12" THERMOPLASTIC PMK
13" GROOVING FOR RECESSED PMK
WHITE DIAGONAL LINE 45°
@ 25' C-C (TYP)
16. 24" THERMOPLASTIC PMK
25" GROOVING FOR RECESSED PMK
WHITE STOP BAR
17. 24" THERMOPLASTIC PMK
25" GROOVING FOR RECESSED PMK
TRANSVERSE LINE
18. THERMOPLASTIC PMK
GROOVING FOR RECESSED PMK
LETTER & SYMBOLS

EXISTING SIGN NUMBER	PANEL DESCRIPTION	STATION	OFFSET	LT/RT
E7-1	BCFPD ZON 909	121+42.73	20.02	RT
E7-4a E7-4b	DEAD END ADVISORY SPEED LIMIT 15 MPH	123+84.57	47.51	RT

TranSystems	USER NAME = amkidd	DESIGNED - JLV	REVISED -
		DRAWN - AMK	REVISED -
	PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -
	PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LANDSCAPING, PAVEMENT MARKING & SIGNING PLAN

SCALE: 1:20 | SHEET 7 OF 16 SHEETS | STA. 119+50.00 TO STA. 125+00.00

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	202
		CONTRACT NO. 61D65		

ILLINOIS FED. AID PROJECT

FILE NAME: g:\ch09\0176\road\Sheets\08084-LSS-07.dgn

NOTES:

1. THERMOPLASTIC PAVEMENT MARKINGS SHALL BE USED ON U.S. ROUTE 14.
2. SEE IDOT DISTRICT ONE DETAIL TC-11 FOR RAISED REFLECTIVE PAVEMENT MARKING DETAILS & LOCATIONS FOR U.S. ROUTE 14.
3. SEE LCDOT STANDARD LC7800 FOR RECESSED REFLECTIVE PAVEMENT MARKING DETAILS & LOCATIONS FOR HART ROAD.
4. SEE DRAINAGE PLANS FOR RIP-RAP DETAILS.

LEGEND

SEEDING, CLASS 2A (SALT TOLERANT ROADSIDE MIXTURE)
TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD) OR
TOPSOIL FURNISH AND PLACE, 6" (ALONG U.S. ROUTE 14)
NITROGEN AND POTASSIUM FERTILIZER NUTRIENT
EROSION CONTROL BLANKET OR
EROSION CONTROL BLANKET, SPECIAL OR
HEAVY DUTY EROSION CONTROL BLANKET

SEEDING, CLASS 4A, LOW PROFILE NATIVE GRASS
TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
EROSION CONTROL BLANKET OR
EROSION CONTROL BLANKET, SPECIAL

SEEDING, CLASS 4B, WETLAND GRASS AND SEDGE MIXTURE
TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
EROSION CONTROL BLANKET
EROSION CONTROL BLANKET, SPECIAL

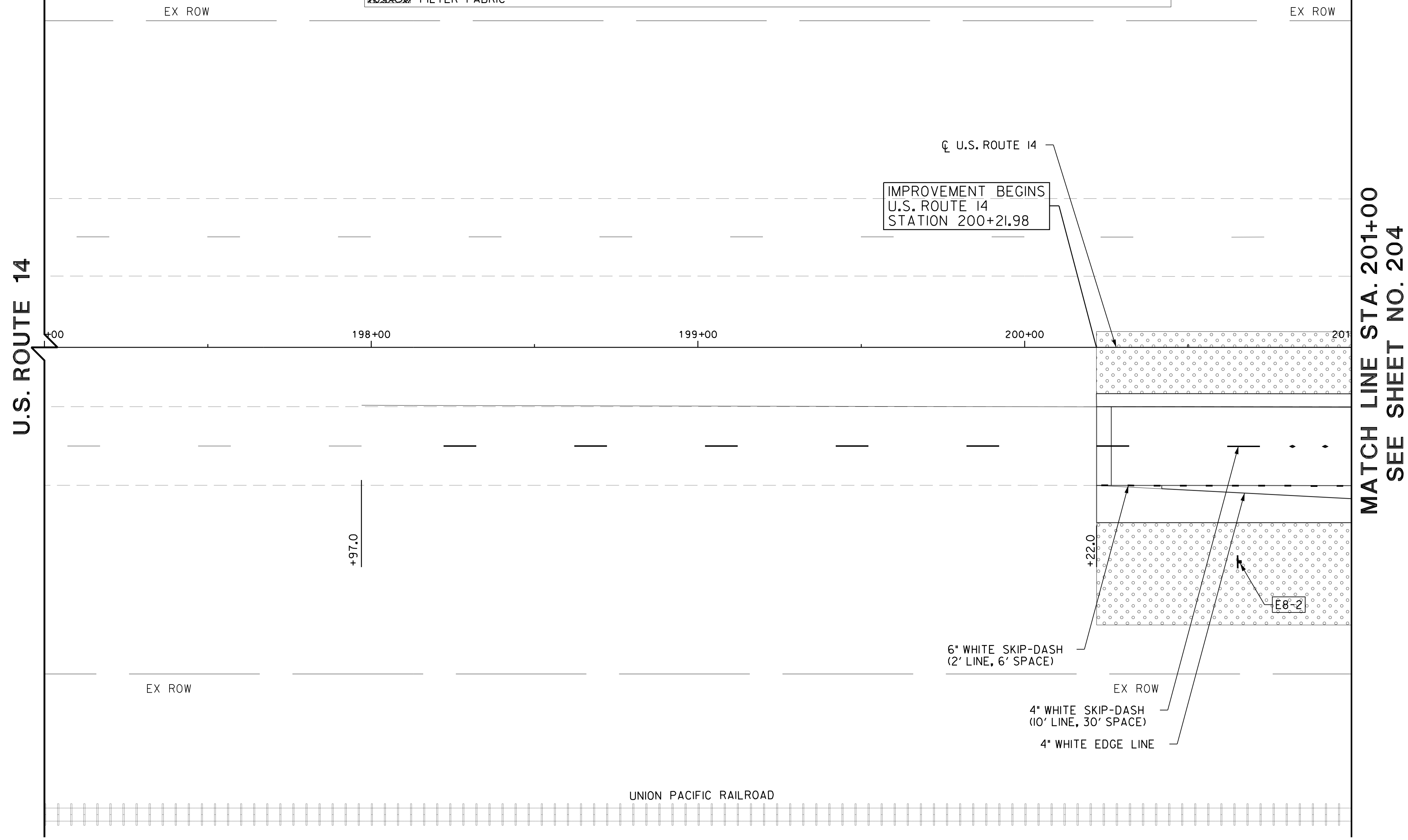
RIP-RAP
FILTER FABRIC

SODDING SALT TOLERANT
TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
TOPSOIL FURNISH AND PLACE, 6" (ALONG U.S. ROUTE 14)
NITROGEN AND POTASSIUM FERTILIZER NUTRIENT
SUPPLEMENTAL WATERING

PROPOSED ORNAMENTAL TREES:
AH - AMERICAN HORNBEAM
AS - APPLE SERVICEBERRY
CC - CORNELIAN CHERRY DOG WOOD
EH - COLUMNAR EUROPEAN HORNBEAM

PROPOSED SHADE TREES:
BC - COMMON BALD CYPRESS
RO - RED OAK
SW - SWAMP WHITE OAK

SCALE
1" = 20'
0 20 40



EXISTING SIGN NUMBER	PANEL DESCRIPTION	STATION	OFFSET	LT/RT
E8-2	SPEED LIMIT 45 MPH	200+65.93	65.69	RT

FILE NAME: g:\ch09\0176\road\Sheets\08084-LSS-08.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -	
	DRAWN - AMK	REVISED -	
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LANDSCAPING, PAVEMENT MARKING & SIGNING PLAN

SCALE: 1:20 | SHEET 8 OF 16 SHEETS | STA. 197+00.00 TO STA. 201+00.00

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	203

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT

NOTES:

1. THERMOPLASTIC PAVEMENT MARKINGS SHALL BE USED ON U.S. ROUTE 14.
2. SEE IDOT DISTRICT ONE DETAIL TC-11 FOR RAISED REFLECTIVE PAVEMENT MARKING DETAILS & LOCATIONS FOR U.S. ROUTE 14.
3. SEE LCDOT STANDARD LC7800 FOR RECESSED REFLECTIVE PAVEMENT MARKING DETAILS & LOCATIONS FOR HART ROAD.
4. SEE DRAINAGE PLANS FOR RIP-RAP DETAILS.

LEGEND

SEEDING, CLASS 2A
(SALT TOLERANT ROADSIDE MIXTURE)
TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD) OR
TOPSOIL FURNISH AND PLACE, 6" (ALONG U.S. ROUTE 14)
NITROGEN AND POTASSIUM FERTILIZER NUTRIENT
EROSION CONTROL BLANKET OR
EROSION CONTROL BLANKET, SPECIAL OR
HEAVY DUTY EROSION CONTROL BLANKET

SEEDING, CLASS 4A, LOW PROFILE NATIVE GRASS
TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
EROSION CONTROL BLANKET OR
EROSION CONTROL BLANKET, SPECIAL

SEEDING, CLASS 4B, WETLAND GRASS AND SEDGE MIXTURE
TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
EROSION CONTROL BLANKET
EROSION CONTROL BLANKET, SPECIAL

RIP-RAP
FILTER FABRIC

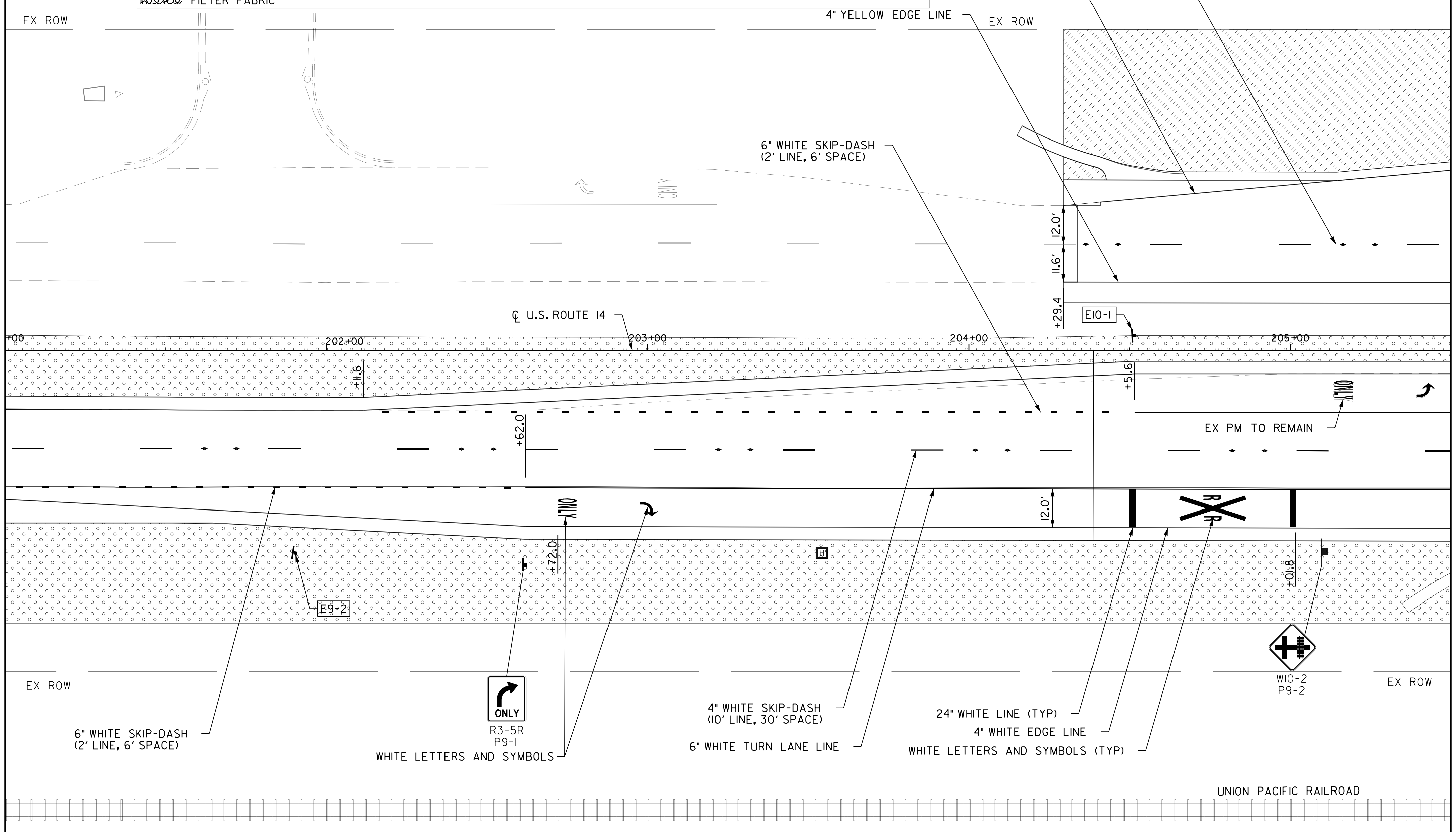
SODDING SALT TOLERANT
TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
TOPSOIL FURNISH AND PLACE, 6" (ALONG U.S. ROUTE 14)
NITROGEN AND POTASSIUM FERTILIZER NUTRIENT
SUPPLEMENTAL WATERING

PROPOSED ORNAMENTAL TREES:
AH - AMERICAN HORNBEAM
AS - APPLE SERVICEBERRY
CC - CORNELIAN CHERRY DOG WOOD
EH - COLUMNAR EUROPEAN HORNBEAM

PROPOSED SHADE TREES:
BC - COMMON BALD CYPRESS
RO - RED OAK
SW - SWAMP WHITE OAK

SCALE
1" = 20'
0 20 40

SEE SHEET NO. 203
MATCH LINE STA. 201+00



MATCH LINE STA. 205+50
SEE SHEET NO. 205

EXISTING SIGN NUMBER	PANEL DESCRIPTION	STATION	OFFSET	LT/RT
E9-2a E9-2b E9-2c E9-2d	JCT LAKE COUNTY V53 HART RD RIGHT TURN ARROW	201+90.26	63.03	RT
E10-1a E10-1b	DO NOT ENTER LEFT TURN ONLY	204+51.59	4.73	LT

FILE NAME: g:\ch09\0176\road\Sheets\08084-LSS-09.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -	
	DRAWN - AMK	REVISED -	
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

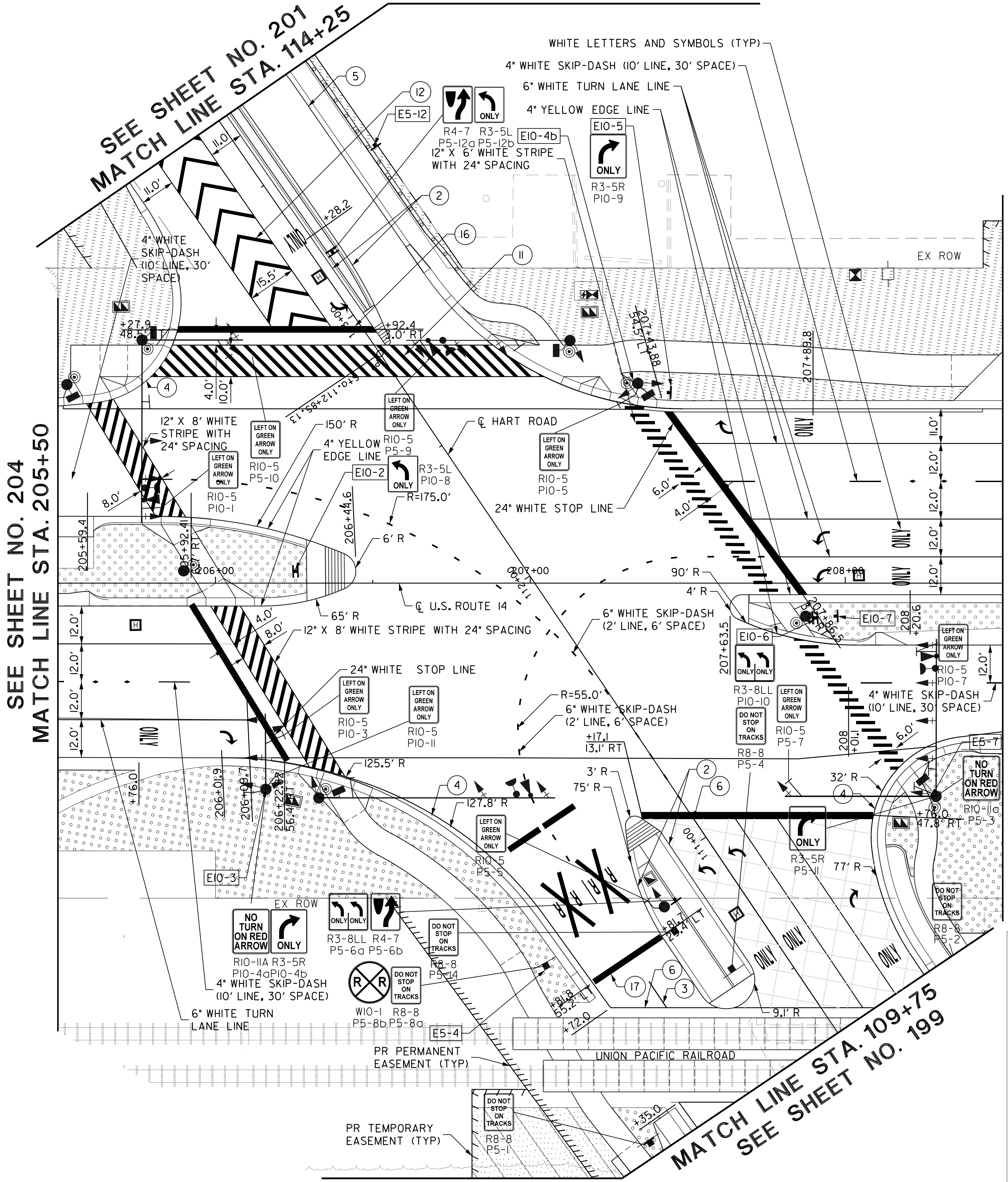
LANDSCAPING, PAVEMENT MARKING & SIGNING PLAN

SCALE: 1:20 | SHEET 9 OF 16 SHEETS | STA. 201+00.00 TO STA. 205+50.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	204

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT



EXISTING SIGN NUMBER	PANEL DESCRIPTION	STATION	OFFSET	LT/RT
E10-2	KEEP RIGHT	206+25.45	3.72	LT
E10-3a E10-3b E10-3c E10-3d	LAKE COUNTY V53 HART RD RIGHT ARROW FOLDED STOP SIGN	206+16.05	65.46	RT
E10-4b	FOLDED STOP SIGN			
E10-5a E10-5b E10-5c	LAKE COUNTY V53 HART RD LEFT ARROW	207+43.86	60.47	LT
E10-6	KEEP RIGHT	207+90.42	11.02	RT
E10-7a E10-7b E10-7c	LAKE COUNTY V53 HART RD LEFT ARROW	207+96.82	10.48	RT

SCALE
1" = 20'
0 20 40

NOTES:

1. THERMOPLASTIC PAVEMENT MARKINGS SHALL BE USED ON U.S. ROUTE 14.
2. SEE IDOT DISTRICT ONE DETAIL TC-1 FOR RAISED REFLECTIVE PAVEMENT MARKING DETAILS & LOCATIONS FOR U.S. ROUTE 14.
3. SEE LCDOT STANDARD LC7800 FOR RECESSED REFLECTIVE PAVEMENT MARKING DETAILS & LOCATIONS FOR HART ROAD.
4. SEE DRAINAGE PLANS FOR RIP-RAP DETAILS.

LEGEND

- SEEDING, CLASS 2A (SALT TOLERANT ROADSIDE MIXTURE) TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD) OR TOPSOIL FURNISH AND PLACE, 6" (ALONG U.S. ROUTE 14) NITROGEN AND POTASSIUM FERTILIZER NUTRIENT EROSION CONTROL BLANKET OR EROSION CONTROL BLANKET, SPECIAL OR HEAVY DUTY EROSION CONTROL BLANKET
- SEEDING, CLASS 4A, LOW PROFILE NATIVE GRASS TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD) EROSION CONTROL BLANKET OR EROSION CONTROL BLANKET, SPECIAL
- SEEDING, CLASS 4B, WETLAND GRASS AND SEDGE MIXTURE TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD) EROSION CONTROL BLANKET EROSION CONTROL BLANKET, SPECIAL
- RIP-RAP FILTER FABRIC
- SODDING SALT TOLERANT TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD) TOPSOIL FURNISH AND PLACE, 6" (ALONG U.S. ROUTE 14) NITROGEN AND POTASSIUM FERTILIZER NUTRIENT SUPPLEMENTAL WATERING
- PROPOSED ORNAMENTAL TREES:
  - AH - AMERICAN HORNBEAM
  - AS - APPLE SERVICEBERRY
  - CC - CORNELIAN CHERRY DOG WOOD
  - EH - COLUMNAR EUROPEAN HORNBEAM
- PROPOSED SHADE TREES:
  - BC - COMMON BALD CYPRESS
  - RO - RED OAK
  - SW - SWAMP WHITE OAK

FILE NAME: g:\ch09\0176\road\Sheets\08084-LSS-10.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -	
	DRAWN - AMK	REVISED -	
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

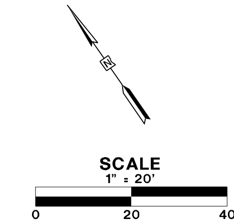
LANDSCAPING, PAVEMENT MARKING & SIGNING PLAN

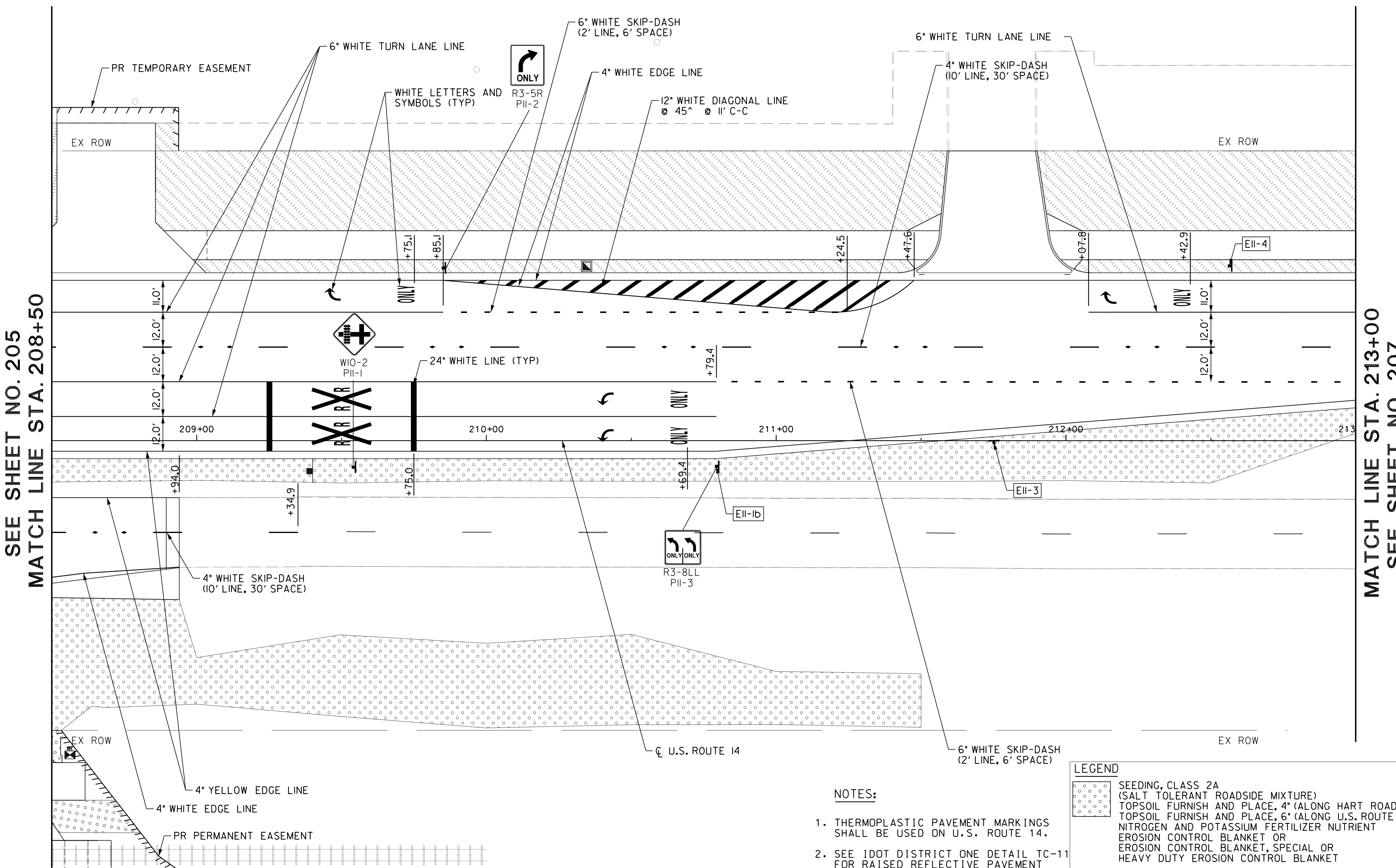
SCALE: 1:20 | SHEET 10 OF 16 SHEETS | STA. 205+50.00 TO STA. 208+50.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	205

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT





EXISTING SIGN NUMBER	PANEL DESCRIPTION	STATION	OFFSET	LT/RT
E11-1b	DO NOT ENTER	210+79.36	8.91	RT
E11-3	ONE WAY	211+75.15	0.77	LT
E11-4a	JCT	212+56.43	60.36	LT
E11-4b	LAKE COUNTY V53			
E11-4c	HART RD			
E11-4d	LEFT TURN ARROW			

NOTES:

1. THERMOPLASTIC PAVEMENT MARKINGS SHALL BE USED ON U.S. ROUTE 14.
2. SEE IDOT DISTRICT ONE DETAIL TC-11 FOR RAISED REFLECTIVE PAVEMENT MARKING DETAILS & LOCATIONS FOR U.S. ROUTE 14.
3. SEE LCDOT STANDARD LC7800 FOR RECESSED REFLECTIVE PAVEMENT MARKING DETAILS & LOCATIONS FOR HART ROAD.
4. SEE DRAINAGE PLANS FOR RIP-RAP DETAILS.

LEGEND

- SEEDING, CLASS 2A (SALT TOLERANT ROADSIDE MIXTURE)
  TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD) OR
  TOPSOIL FURNISH AND PLACE, 6" (ALONG U.S. ROUTE 14)
  NITROGEN AND POTASSIUM FERTILIZER NUTRIENT
  EROSION CONTROL BLANKET OR
  EROSION CONTROL BLANKET, SPECIAL OR
  HEAVY DUTY EROSION CONTROL BLANKET
- SEEDING, CLASS 4A, LOW PROFILE NATIVE GRASS
  TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
  EROSION CONTROL BLANKET OR
  EROSION CONTROL BLANKET, SPECIAL
- SEEDING, CLASS 4B, WETLAND GRASS AND SEDGE MIXTURE
  TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
  EROSION CONTROL BLANKET
  EROSION CONTROL BLANKET, SPECIAL
- RIP-RAP
  FILTER FABRIC
- SODDING SALT TOLERANT
  TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
  TOPSOIL FURNISH AND PLACE, 6" (ALONG U.S. ROUTE 14)
  NITROGEN AND POTASSIUM FERTILIZER NUTRIENT
  SUPPLEMENTAL WATERING
- PROPOSED ORNAMENTAL TREES:
  AH - AMERICAN HORNBEAM
  AS - APPLE SERVICEBERRY
  CC - CORNELIAN CHERRY DOG WOOD
  EH - COLUMNAR EUROPEAN HORNBEAM
- PROPOSED SHADE TREES:
  BC - COMMON BALD CYPRESS
  RO - RED OAK
  SW - SWAMP WHITE OAK

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -	
	DRAWN - AMK	REVISED -	
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LANDSCAPING, PAVEMENT MARKING & SIGNING PLAN

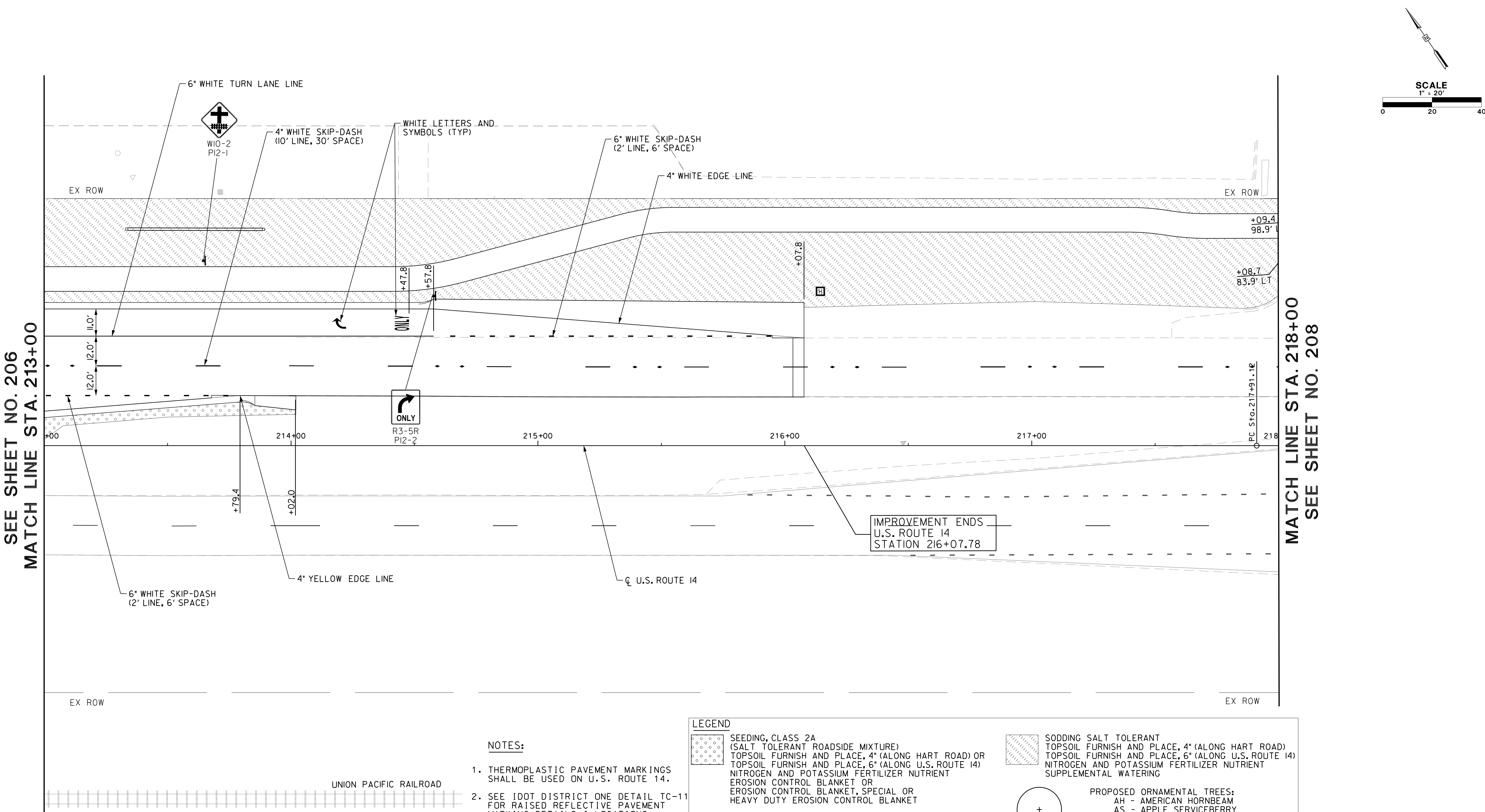
SCALE: 1:20 | SHEET 11 OF 16 SHEETS | STA. 208+50.00 TO STA. 213+00.00

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	206

CONTRACT NO. 61D65

ILLINOIS FED. AID PROJECT

FILE NAME: g:\ch09\0176\road\Sheets\08084-LSS-11.dgn



NOTES:

1. THERMOPLASTIC PAVEMENT MARKINGS SHALL BE USED ON U.S. ROUTE 14.
2. SEE IDOT DISTRICT ONE DETAIL TC-11 FOR RAISED REFLECTIVE PAVEMENT MARKING DETAILS & LOCATIONS FOR U.S. ROUTE 14.
3. SEE LCDOT STANDARD LC7800 FOR RECESSED REFLECTIVE PAVEMENT MARKING DETAILS & LOCATIONS FOR HART ROAD.
4. SEE DRAINAGE PLANS FOR RIP-RAP DETAILS.

LEGEND

- SEEDING, CLASS 2A (SALT TOLERANT ROADSIDE MIXTURE)
  TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD) OR
  TOPSOIL FURNISH AND PLACE, 6" (ALONG U.S. ROUTE 14)
  NITROGEN AND POTASSIUM FERTILIZER NUTRIENT
  EROSION CONTROL BLANKET OR
  EROSION CONTROL BLANKET, SPECIAL OR
  HEAVY DUTY EROSION CONTROL BLANKET
- SEEDING, CLASS 4A, LOW PROFILE NATIVE GRASS
  TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
  EROSION CONTROL BLANKET OR
  EROSION CONTROL BLANKET, SPECIAL
- SEEDING, CLASS 4B, WETLAND GRASS AND SEDGE MIXTURE
  TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
  EROSION CONTROL BLANKET
  EROSION CONTROL BLANKET, SPECIAL
- RIP-RAP
  FILTER FABRIC
- SODDING SALT TOLERANT
  TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
  TOPSOIL FURNISH AND PLACE, 6" (ALONG U.S. ROUTE 14)
  NITROGEN AND POTASSIUM FERTILIZER NUTRIENT
  SUPPLEMENTAL WATERING
- PROPOSED ORNAMENTAL TREES:
  AH - AMERICAN HORNBEAM
  AS - APPLE SERVICEBERRY
  CC - CORNELIAN CHERRY DOG WOOD
  EH - COLUMNAR EUROPEAN HORNBEAM
- PROPOSED SHADE TREES:
  BC - COMMON BALD CYPRESS
  RO - RED OAK
  SW - SWAMP WHITE OAK

FILE NAME: g:\ch09\0176\road\Sheets\08084-LSS-12.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -	
	DRAWN - AMK	REVISED -	
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

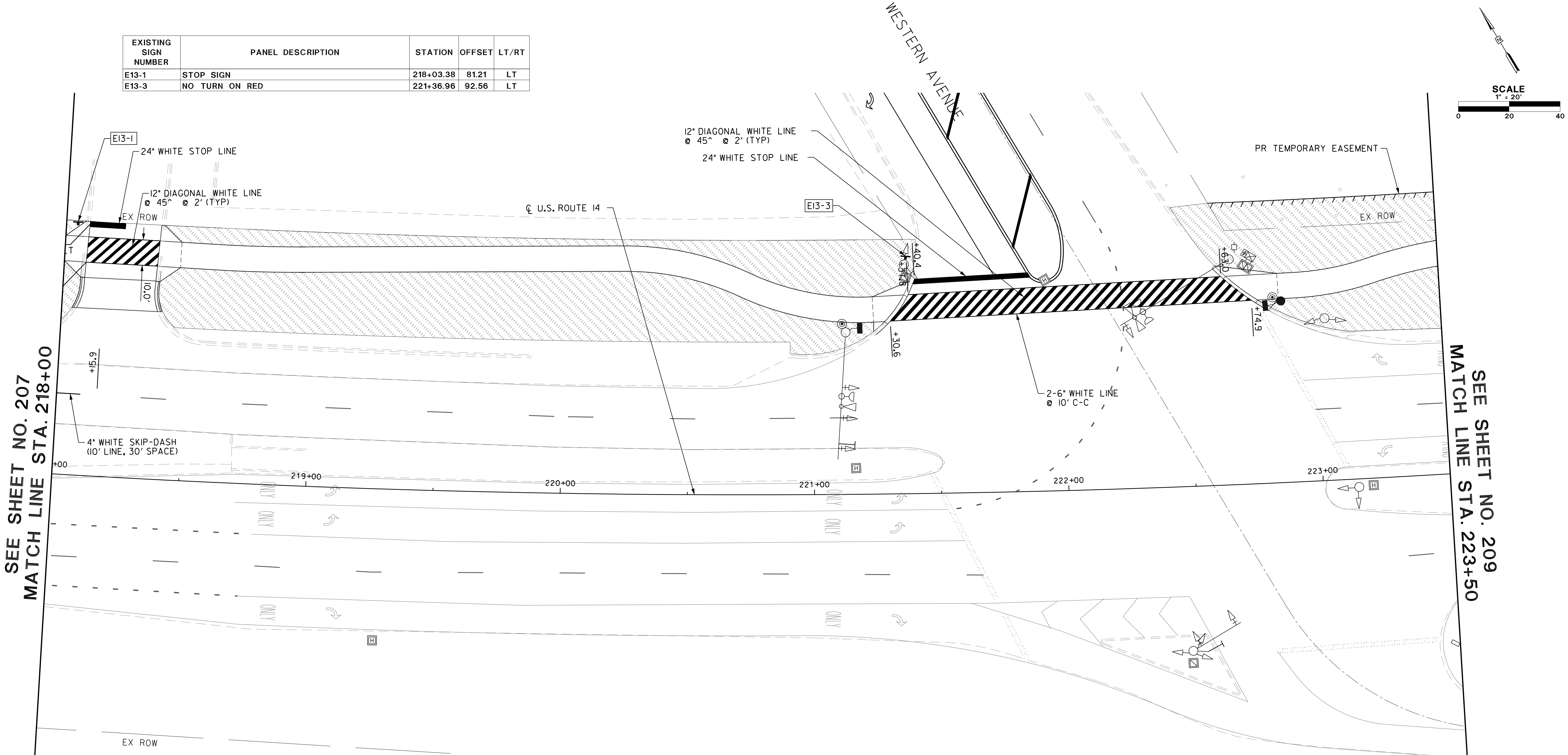
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LANSCAPING, PAVEMENT MARKING & SIGNING PLAN

SCALE: 1:20 | SHEET 12 OF 16 SHEETS | STA. 213+00.00 TO STA. 218+00.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	207
		CONTRACT NO. 61D65		
	ILLINOIS FED. AID PROJECT			

EXISTING SIGN NUMBER	PANEL DESCRIPTION	STATION	OFFSET	LT/RT
E13-1	STOP SIGN	218+03.38	81.21	LT
E13-3	NO TURN ON RED	221+36.96	92.56	LT



NOTES:

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2. SEE IDOT DISTRICT ONE DETAIL TC-11 FOR RAISED REFLECTIVE PAVEMENT MARKING DETAILS & LOCATIONS FOR U.S. ROUTE 14.
3. SEE LCDOT STANDARD LC7800 FOR RECESSED REFLECTIVE PAVEMENT MARKING DETAILS & LOCATIONS FOR HART ROAD.
4. SEE DRAINAGE PLANS FOR RIP-RAP DETAILS.

LEGEND

- SEEDING, CLASS 2A (SALT TOLERANT ROADSIDE MIXTURE) TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD) OR TOPSOIL FURNISH AND PLACE, 6" (ALONG U.S. ROUTE 14) NITROGEN AND POTASSIUM FERTILIZER NUTRIENT EROSION CONTROL BLANKET OR EROSION CONTROL BLANKET, SPECIAL OR HEAVY DUTY EROSION CONTROL BLANKET
- SEEDING, CLASS 4A, LOW PROFILE NATIVE GRASS TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD) EROSION CONTROL BLANKET OR EROSION CONTROL BLANKET, SPECIAL
- SEEDING, CLASS 4B, WETLAND GRASS AND SEDGE MIXTURE TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD) EROSION CONTROL BLANKET EROSION CONTROL BLANKET, SPECIAL
- RIP-RAP FILTER FABRIC
- SODDING SALT TOLERANT TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD) TOPSOIL FURNISH AND PLACE, 6" (ALONG U.S. ROUTE 14) NITROGEN AND POTASSIUM FERTILIZER NUTRIENT SUPPLEMENTAL WATERING
- PROPOSED ORNAMENTAL TREES:
  - AH - AMERICAN HORNBEAM
  - AS - APPLE SERVICEBERRY
  - CC - CORNELIAN CHERRY DOG WOOD
  - EH - COLUMNAR EUROPEAN HORNBEAM
- PROPOSED SHADE TREES:
  - BC - COMMON BALD CYPRESS
  - RO - RED OAK
  - SW - SWAMP WHITE OAK

FILE NAME: g:\ch09\0176\road\Sheets\08084-LSS-13.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -	
	DRAWN - AMK	REVISED -	
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

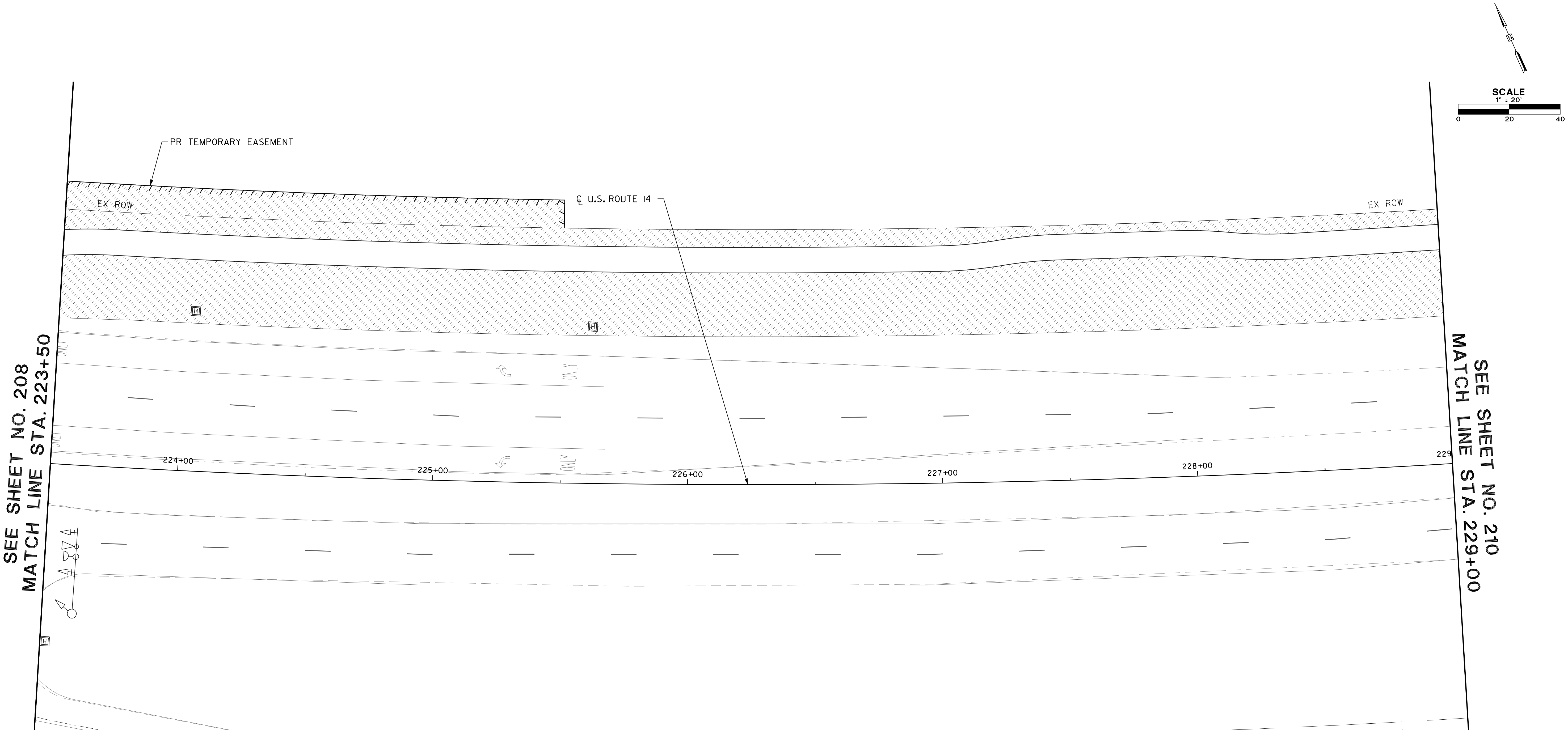
LANDSCAPING, PAVEMENT MARKING & SIGNING PLAN

SCALE: 1:20 | SHEET 13 OF 16 SHEETS | STA. 218+00.00 TO STA. 223+50.00

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	208

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT



NOTES:

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4. SEE DRAINAGE PLANS FOR RIP-RAP DETAILS.

LEGEND

- SEEDING, CLASS 2A (SALT TOLERANT ROADSIDE MIXTURE) TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD) OR TOPSOIL FURNISH AND PLACE, 6" (ALONG U.S. ROUTE 14) NITROGEN AND POTASSIUM FERTILIZER NUTRIENT EROSION CONTROL BLANKET OR EROSION CONTROL BLANKET, SPECIAL OR HEAVY DUTY EROSION CONTROL BLANKET
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- PROPOSED ORNAMENTAL TREES:
  - AH - AMERICAN HORNBEAM
  - AS - APPLE SERVICEBERRY
  - CC - CORNELIAN CHERRY DOG WOOD
  - EH - COLUMNAR EUROPEAN HORNBEAM
- PROPOSED SHADE TREES:
  - BC - COMMON BALD CYPRESS
  - RO - RED OAK
  - SW - SWAMP WHITE OAK

FILE NAME: g:\ch09\0176\road\Sheets\08084-LS5-14.dgn

TranSystems ®

USER NAME = amkidd	DESIGNED - JLV	REVISED -
	DRAWN - AMK	REVISED -
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

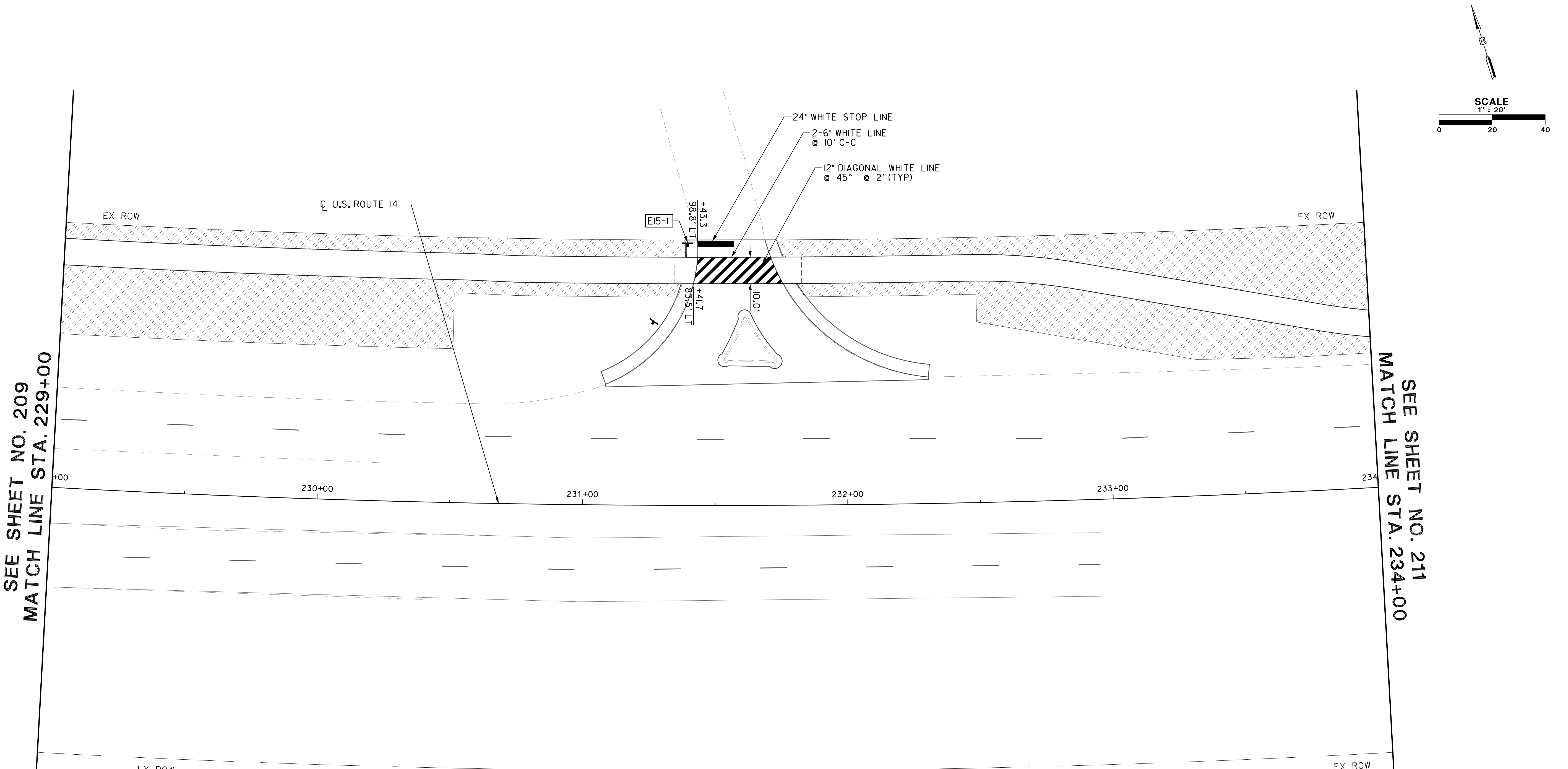
LANDSCAPING, PAVEMENT MARKING & SIGNING PLAN

SCALE: 1:20 | SHEET 14 OF 16 SHEETS | STA. 223+00.00 TO STA. 229+00.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	209

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT



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4. SEE DRAINAGE PLANS FOR RIP-RAP DETAILS.

LEGEND

SEEDING, CLASS 2A (SALT TOLERANT ROADSIDE MIXTURE)
TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD) OR
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EROSION CONTROL BLANKET OR
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TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
EROSION CONTROL BLANKET
EROSION CONTROL BLANKET, SPECIAL

RIP-RAP
FILTER FABRIC

SODDING SALT TOLERANT
TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
TOPSOIL FURNISH AND PLACE, 6" (ALONG U.S. ROUTE 14)
NITROGEN AND POTASSIUM FERTILIZER NUTRIENT
SUPPLEMENTAL WATERING

PROPOSED ORNAMENTAL TREES:
AH - AMERICAN HORNBEAM
AS - APPLE SERVICEBERRY
CC - CORNELIAN CHERRY DOG WOOD
EH - COLUMNAR EUROPEAN HORNBEAM

PROPOSED SHADE TREES:
BC - COMMON BALD CYPRESS
RO - RED OAK
SW - SWAMP WHITE OAK

FILE NAME: g:\ch09\0176\road\Sheets\08084-LS5-15.dgn

TranSystems

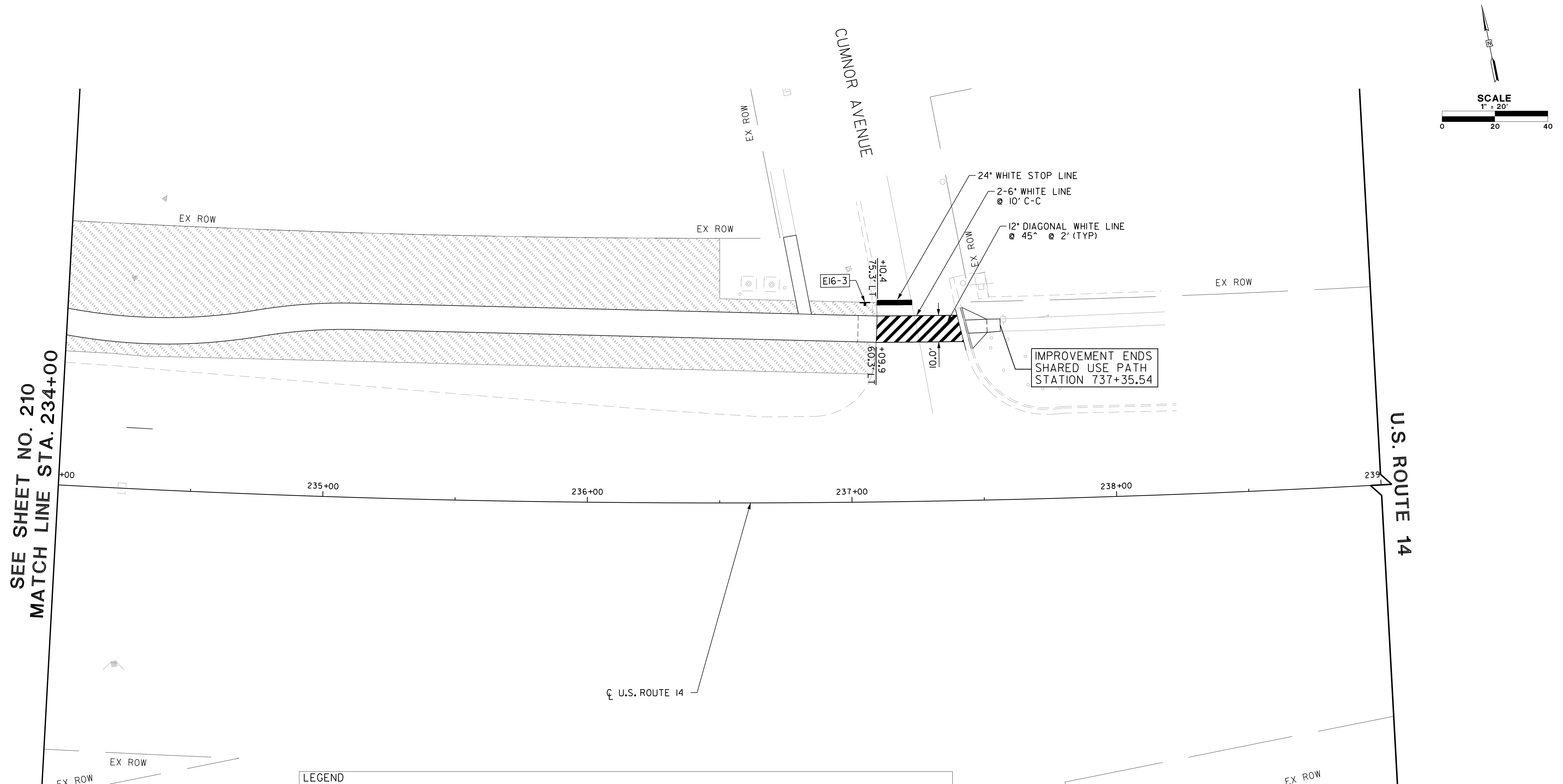
USER NAME = amkidd	DESIGNED - JLV	REVISED -
	DRAWN - AMK	REVISED -
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LANDSCAPING, PAVEMENT MARKING & SIGNING PLAN

SCALE: 1:20 | SHEET 15 OF 16 SHEETS | STA. 229+00.00 TO STA. 234+00.00

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	210
		CONTRACT NO. 61D65		
	ILLINOIS	FED. AID PROJECT		



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LEGEND

SEEDING, CLASS 2A (SALT TOLERANT ROADSIDE MIXTURE)
TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD) OR
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NITROGEN AND POTASSIUM FERTILIZER NUTRIENT
EROSION CONTROL BLANKET OR
EROSION CONTROL BLANKET, SPECIAL OR
HEAVY DUTY EROSION CONTROL BLANKET

SEEDING, CLASS 4A, LOW PROFILE NATIVE GRASS
TOPSOIL FURNISH AND PLACE, 4" (ALONG HART ROAD)
EROSION CONTROL BLANKET OR
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SEEDING, CLASS 4B, WETLAND GRASS AND SEDGE MIXTURE
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RIP-RAP
FILTER FABRIC

SODDING SALT TOLERANT
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SUPPLEMENTAL WATERING

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AH - AMERICAN HORNBEAM
AS - APPLE SERVICEBERRY
CC - CORNELIAN CHERRY DOG WOOD
EH - COLUMNAR EUROPEAN HORNBEAM

PROPOSED SHADE TREES:
BC - COMMON BALD CYPRESS
RO - RED OAK
SW - SWAMP WHITE OAK

FILE NAME: g:\ch09\0176\road\Sheets\08084-LSS-16.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	DRAWN - AMK	REVISED -	
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

LANDSCAPING, PAVEMENT MARKING & SIGNING PLAN

SCALE: 1:20 | SHEET 16 OF 16 SHEETS | STA. 234+00.00 TO STA. 239+00.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	211
		CONTRACT NO. 61D65		
		ILLINOIS FED. AID PROJECT		

TRAFFIC SIGNAL LEGEND
(NOT TO SCALE)

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

ITEM	EXISTING	PROPOSED
SIGNAL HEAD -(P) PROGRAMMABLE SIGNAL HEAD	R Y G ◄Y ◄G R Y G ◄Y ◄G P	R Y G ◄Y ◄G R Y G ◄Y ◄G P
SIGNAL HEAD WITH BACKPLATE -(P) PROGRAMMABLE SIGNAL HEAD -(RB) RETROREFLECTIVE BACKPLATE	R Y G ◄Y ◄G R Y G ◄Y ◄G P R Y G ◄Y ◄G RB	R Y G ◄Y ◄G R Y G ◄Y ◄G P R Y G ◄Y ◄G 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

FILE NAME = ts05.dgn Default	USER NAME = leysa PLOT SCALE = 50.0000 ' / in. PLOT DATE = 9/29/2016	DESIGNED - IP DRAWN - IP CHECKED - LP DATE - 9/29/2016	REVISED - REVISED - REVISED - 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.
2549	09-00174-05-CH	LAKE	423	212
	TS-05	CONTRACT NO. 61D65		
		ILLINOIS FED. AID PROJECT		

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.

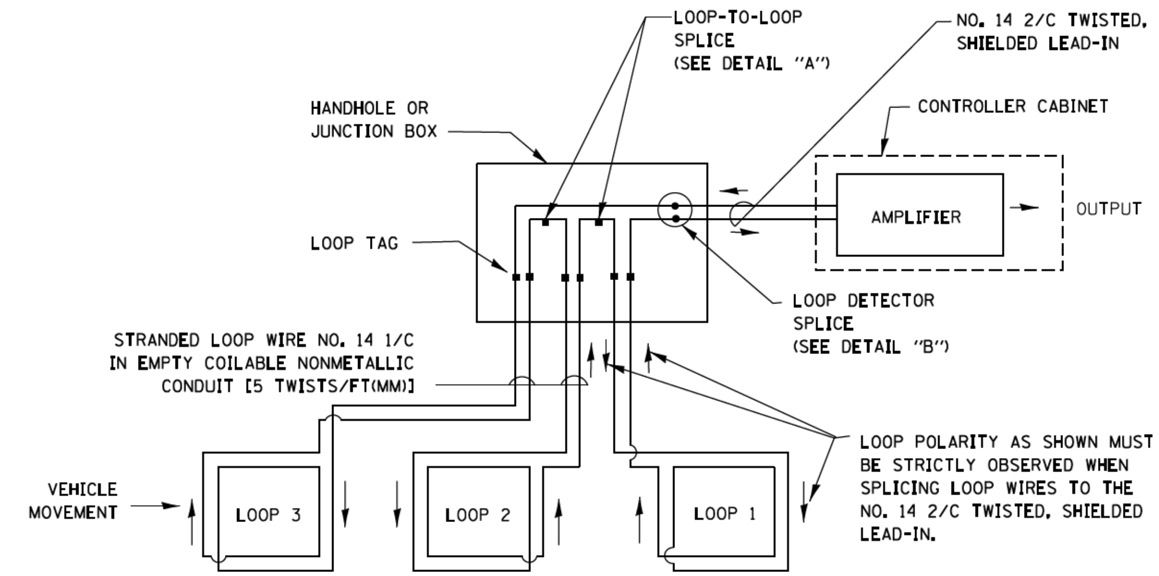
3. EACH LOOP LEAD-IN SHALL BE IDENTIFIED AND PERMANENTLY TAGGED IN THE HANDHOLE. EACH LEAD-IN CABLE TAG SHALL INDICATE THE LOCATION OF THE LOOP, LOOP ROTATION (CLOCKWISE/COUNTERCLOCKWISE), LOOP LEAD-IN DIRECTION (IN OR OUT), LOOP CABLE NUMBER AND LOCATION IN CABINET, AND NUMBER OF TURNS IN THE DETECTOR 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.

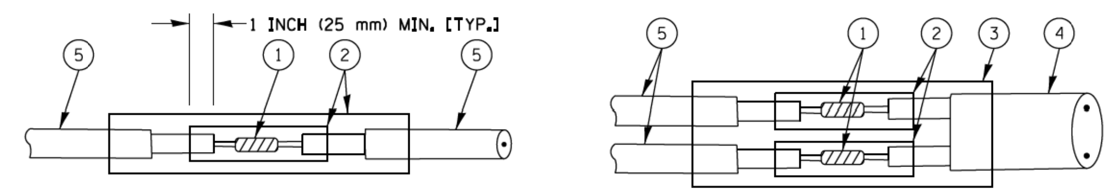
6. LOOP SPLICES SHALL BE SOLDERED USING A SOLDERING IRON. BLOW TORCHES OR OTHER DEVICES WHICH OXIDIZE COPPER CABLE SHALL NOT BE ALLOWED FOR SOLDERING OPERATIONS. SEE DETAIL BELOW RIGHT.

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.



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.

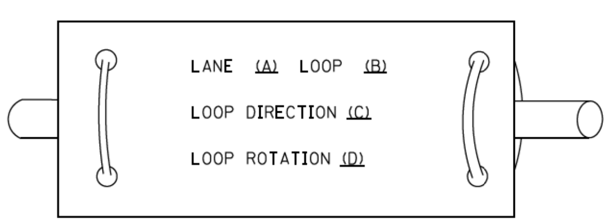


DETAIL "A"
LOOP-TO-LOOP SPLICE

DETAIL "B"
LOOP-TO-CONTROLLER SPLICE

TYPE I LOOP

LOOP LEAD-IN CABLE TAG

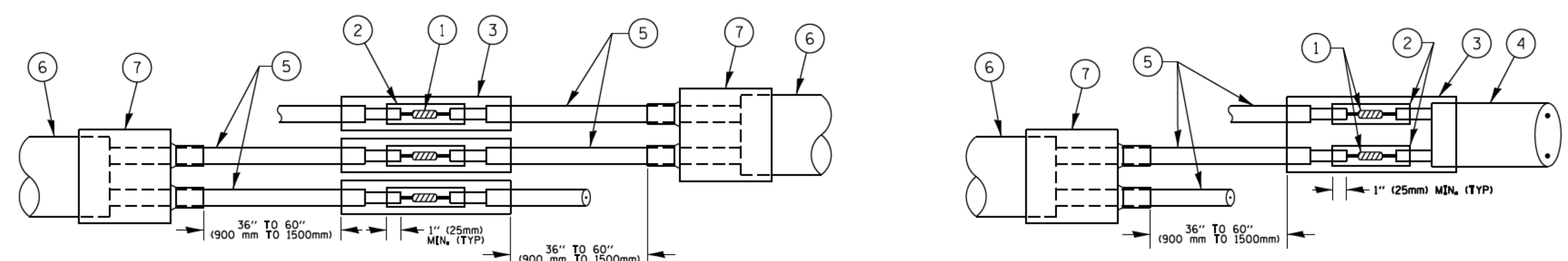


A. LANE 1 IS THE LANE CLOSEST TO THE CENTERLINE OF THE ROADWAY

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.



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.

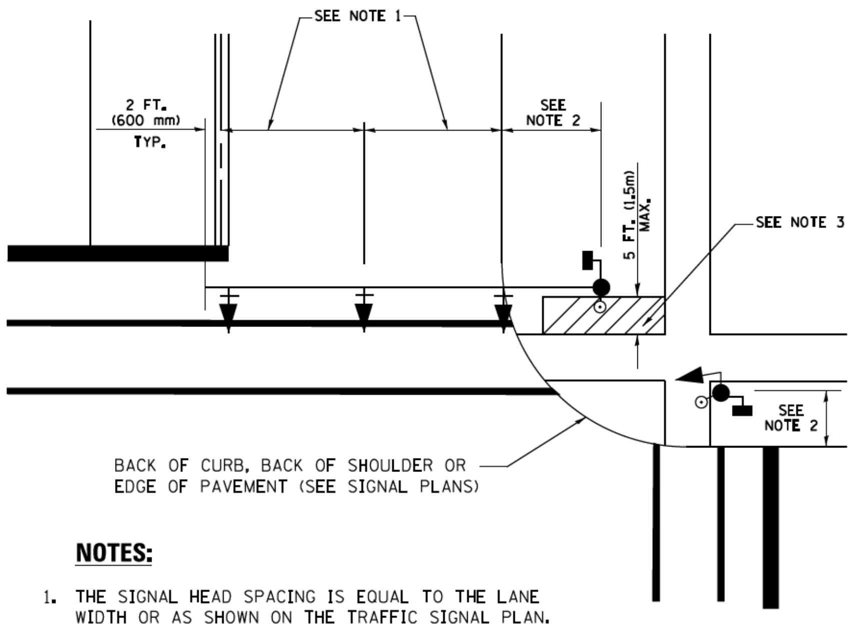
(6) PRE-FORMED LOOP

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

FILE NAME = c:\pw_work\pwidot\footemj\d0108315\ts05.dgn	USER NAME = footemj	DESIGNED - DAD	REVISED - DAG 1-1-14	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS	F.A. RTE. 2549	SECTION 09-00174-05-CH	COUNTY LAKE	TOTAL SHEETS 423 / SHEET NO. 213
		DRAWN - BCK	REVISED -				TS-05	CONTRACT NO. 61D65	
	PLOT SCALE = 50.0000 ' / in.	CHECKED - DAD	REVISED -		SCALE: NONE / SHEET NO. 2 OF 7 SHEETS / STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	
	PLOT DATE = 1/13/2014	DATE - 10-28-09	REVISED -						

TRAFFIC SIGNAL MAST ARM AND SIGNAL POST

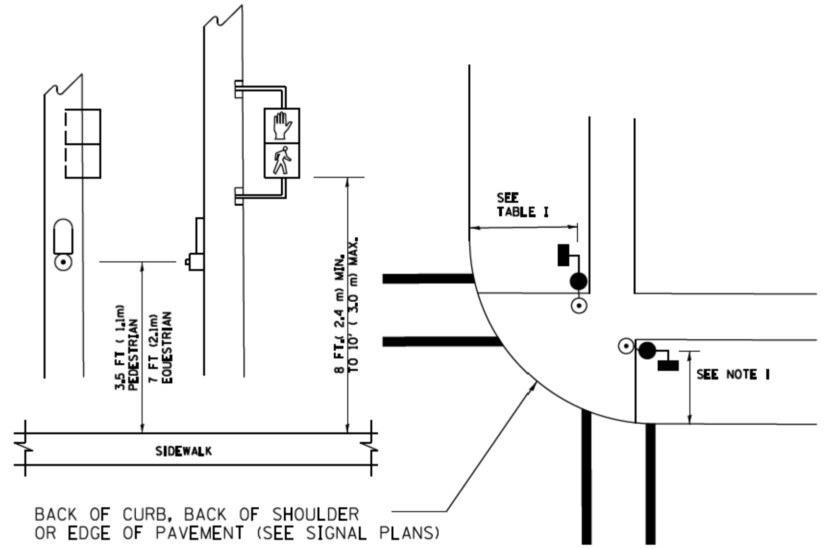
MAST ARM MOUNTED SIGNALS IN EXISTING, PROPOSED OR FUTURE SIDEWALK/BICYCLE PATH AREA. INTERSECTION SHOWN WITH PEDESTRIAN SIGNALS AND PEDESTRIAN PUSHBUTTON DETECTORS.



NOTES:

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

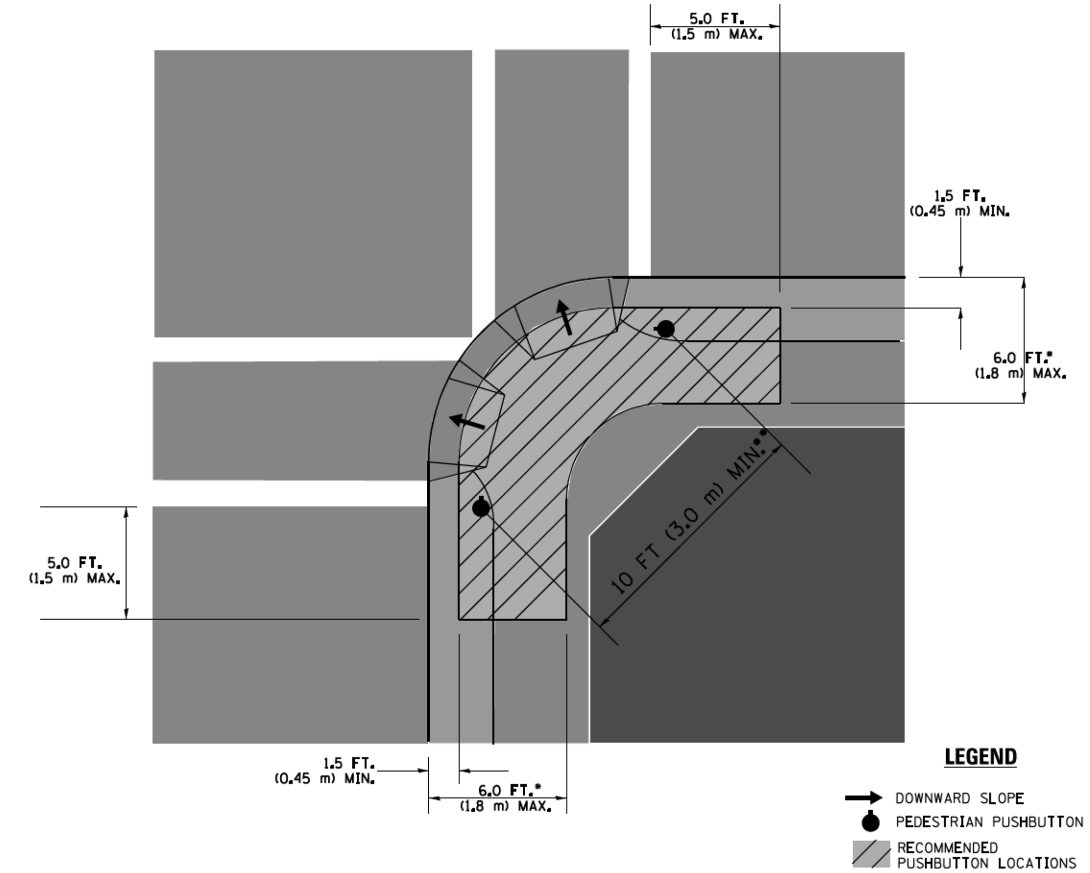
PEDESTRIAN SIGNAL POST AND PEDESTRIAN PUSH BUTTON POST



NOTES:

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

RECOMMENDED PUSHBUTTON LOCATIONS



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

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

NOTES:

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

TRAFFIC SIGNAL EQUIPMENT OFFSET

TRAFFIC SIGNAL EQUIPMENT	COMBINATION CONCRETE CURB AND GUTTER (MINIMUM DISTANCE FROM BACK OF CURB TO CENTERLINE OF FOUNDATION)	SHOULDER/NON-CURBED AREA (MINIMUM DISTANCE FROM EDGE OF PAVEMENT TO CENTERLINE OF FOUNDATION)
TRAFFIC SIGNAL MAST ARM POLE	6 FT (1.8m)	SHOULDER WIDTH + 2 FT (0.6m), 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.

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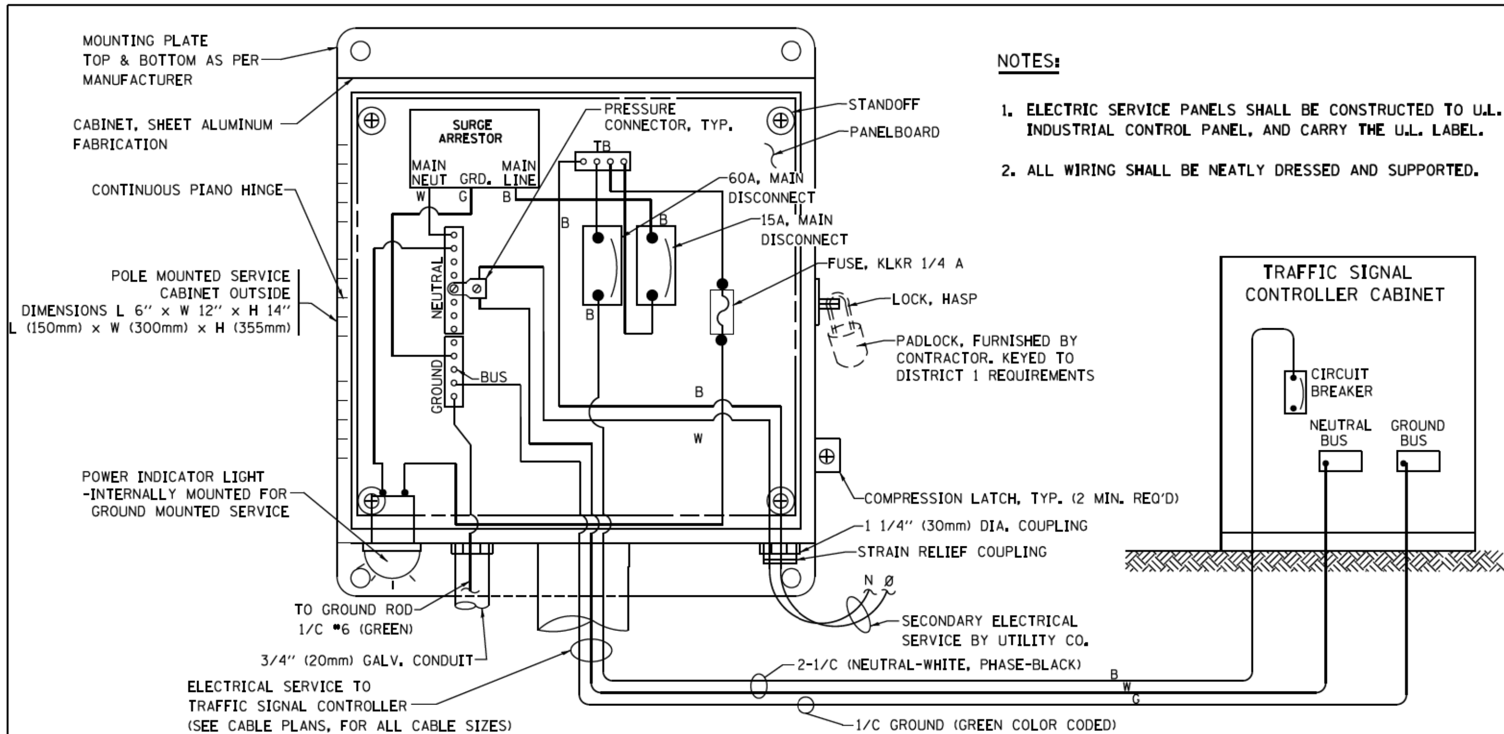
	PLOT SCALE = 50.0000 ' / in.	DRAWN - BCK	REVISED -		SCALE: NONE / SHEET NO. 3 OF 7 SHEETS / STA. TO STA.	TS-05 / CONTRACT NO. 61D65
	PLOT DATE = 1/13/2014	CHECKED - DAD	REVISED -			FED. ROAD DIST. NO. 1 / ILLINOIS / FED. AID PROJECT
		DATE - 10-28-09	REVISED -			

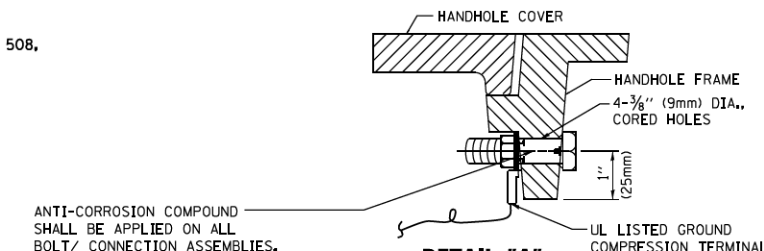


ELECTRICAL SERVICE – PANEL DIAGRAM (TYPICAL FOR POLE AND GROUND MOUNTED SERVICE)
SERVICE INSTALLATION POLE MOUNT (SHOWN)

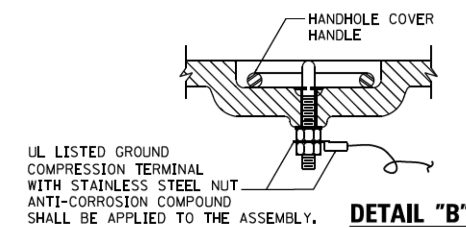
(NOT TO SCALE)

NOTES:

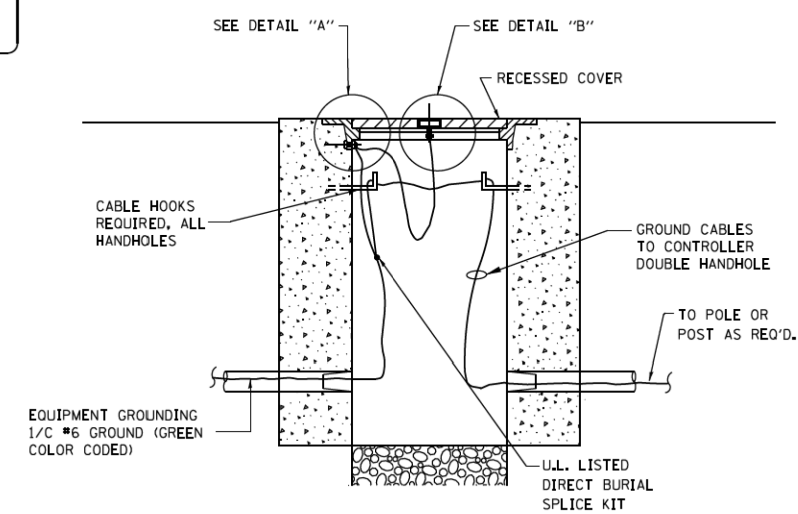
1. ELECTRIC SERVICE PANELS SHALL BE CONSTRUCTED TO U.L. STD 508, INDUSTRIAL CONTROL PANEL, AND CARRY THE U.L. LABEL.
2. ALL WIRING SHALL BE NEATLY DRESSED AND SUPPORTED.



DETAIL "A"



DETAIL "B"



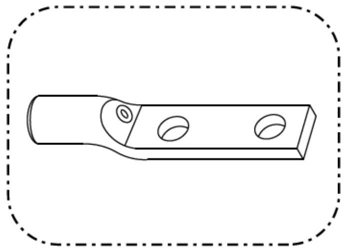
HANDHOLE COVER & FRAME – GROUNDING DETAIL

(NOT TO SCALE)

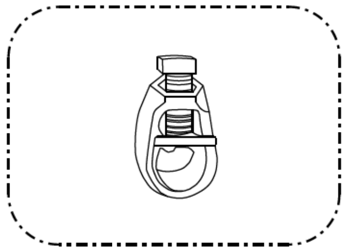
NOTES:

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.



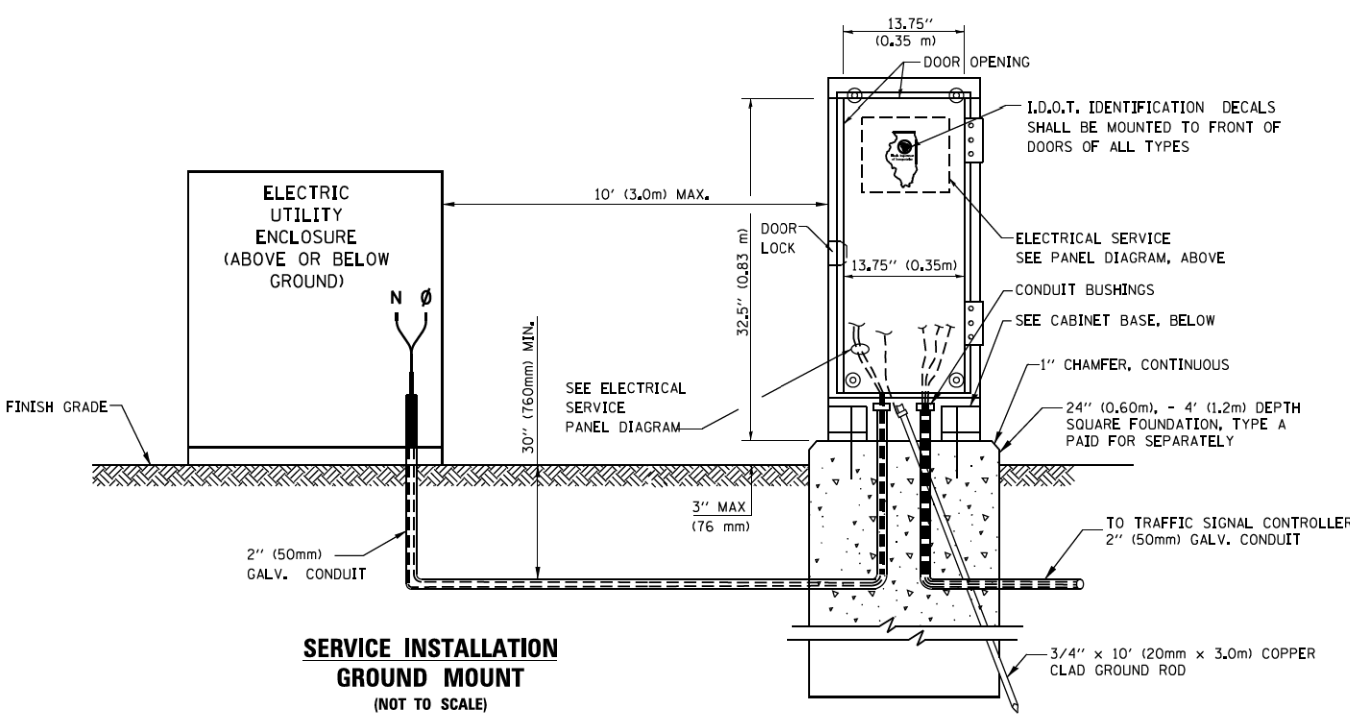
HEAVY-DUTY COMPRESSION TERMINAL (BURNDY TYPE YGHA OR APPROVED EQUAL)



3/4" (20mm) HEAVY-DUTY GROUND ROD CLAMP (BURNDY TYPE GRC OR APPROVED EQUAL)

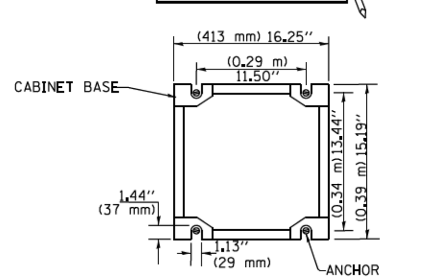
NOTES:

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



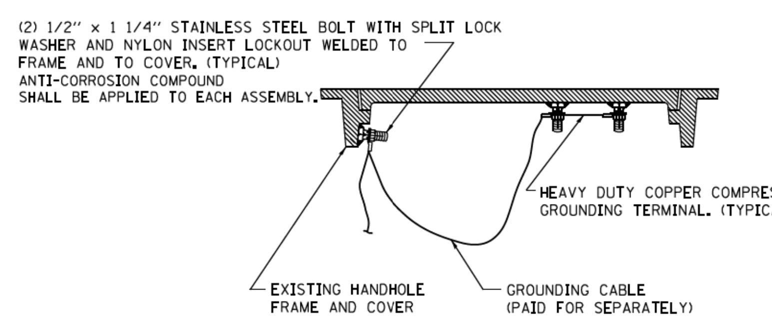
SERVICE INSTALLATION GROUND MOUNT

(NOT TO SCALE)



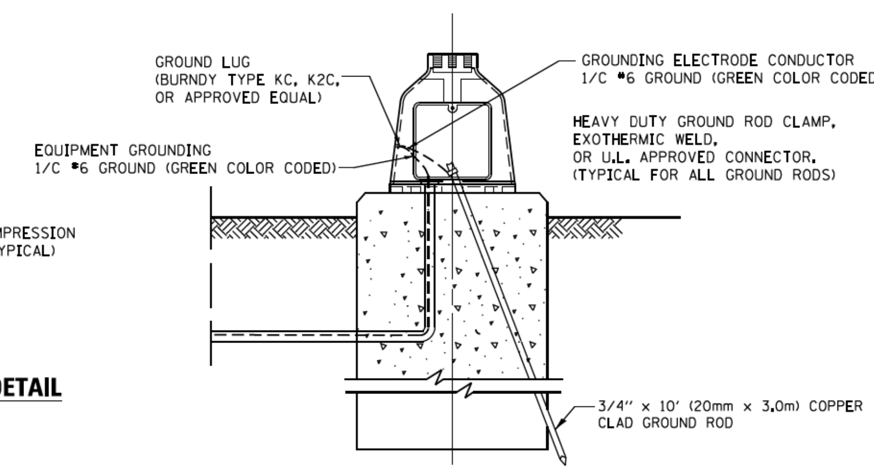
CABINET – BASE BOLT PATTERN

(NOT TO SCALE)



EXISTING HANDHOLE COVER & FRAME – GROUNDING DETAIL

(NOT TO SCALE)



MAST ARM POLE / POST–GROUNDING DETAIL

(NOT TO SCALE)

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		DRAWN - BCK	REVISED -
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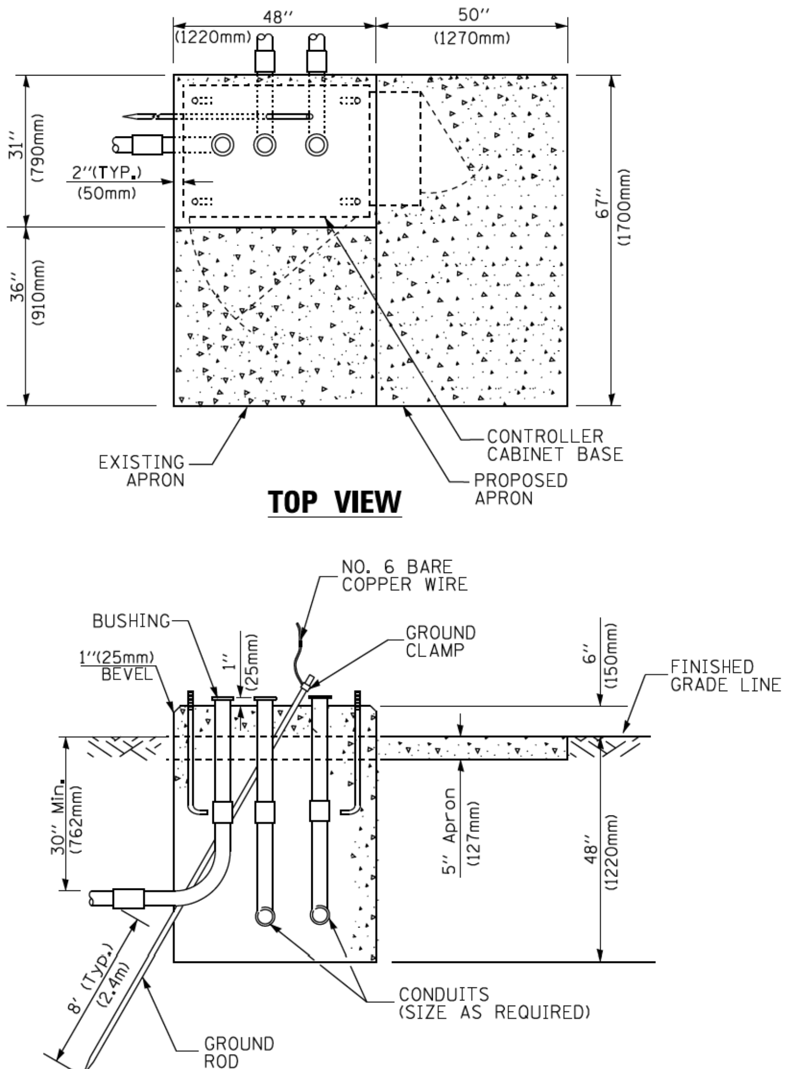
	PLOT DATE = 1/13/2014	DATE - 10-28-09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

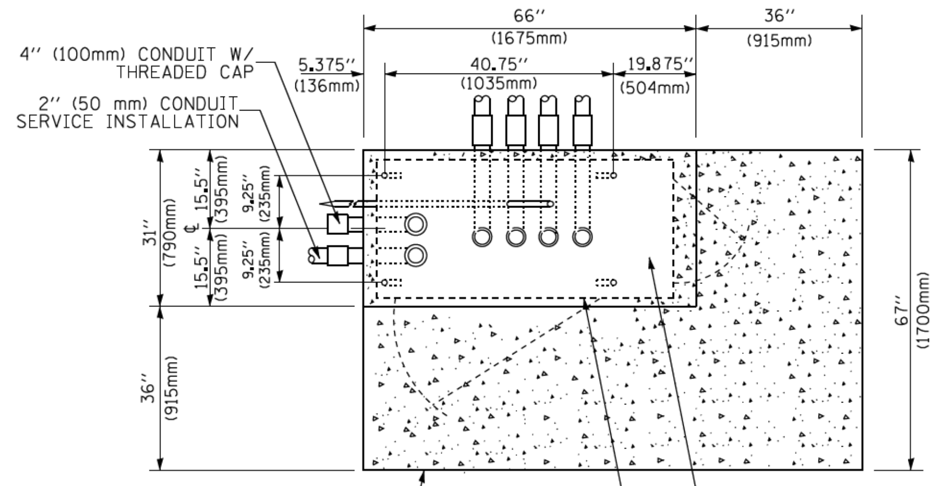
DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: NONE | SHEET NO. 4 OF 7 SHEETS | STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	215
	TS-05	CONTRACT NO. 61D65		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

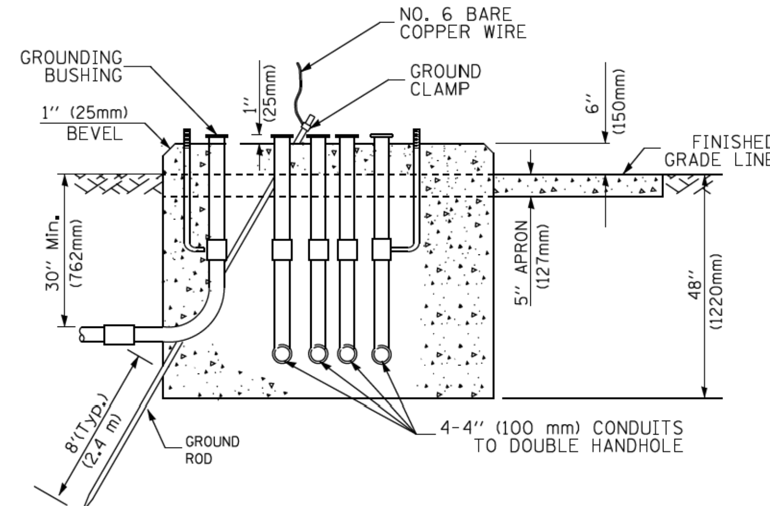


TYPE D
FOR GROUND MOUNTED
CONTROLLER CABINET
AND UPS BATTERY CABINET

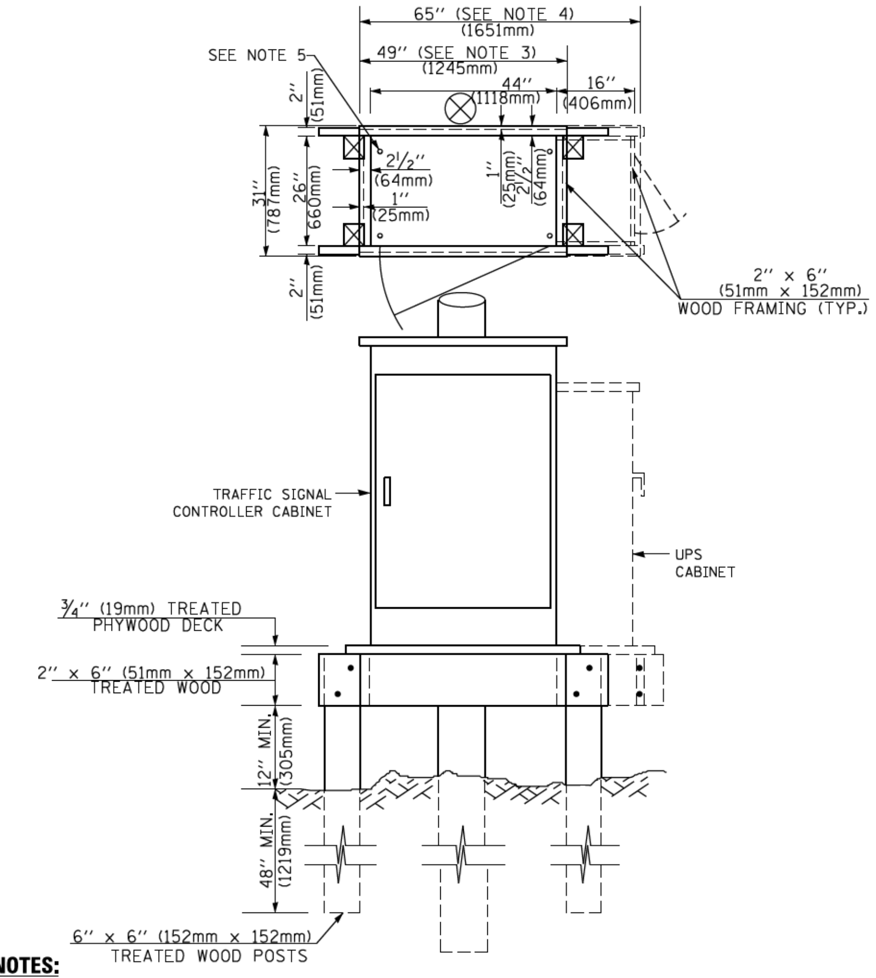


NOTE:

TOP OF FOUNDATION SHALL BE HIGHER THAN TOP OF DOUBLE HANDHOLE



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



NOTES:

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

TEMPORARY SIGNAL CONTROLLER
WOOD SUPPORT PLATFORM

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

CABLE SLACK

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

VERTICAL CABLE LENGTH

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

DEPTH OF FOUNDATION

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

NOTES:

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

DEPTH OF MAST ARM FOUNDATIONS, TYPE E

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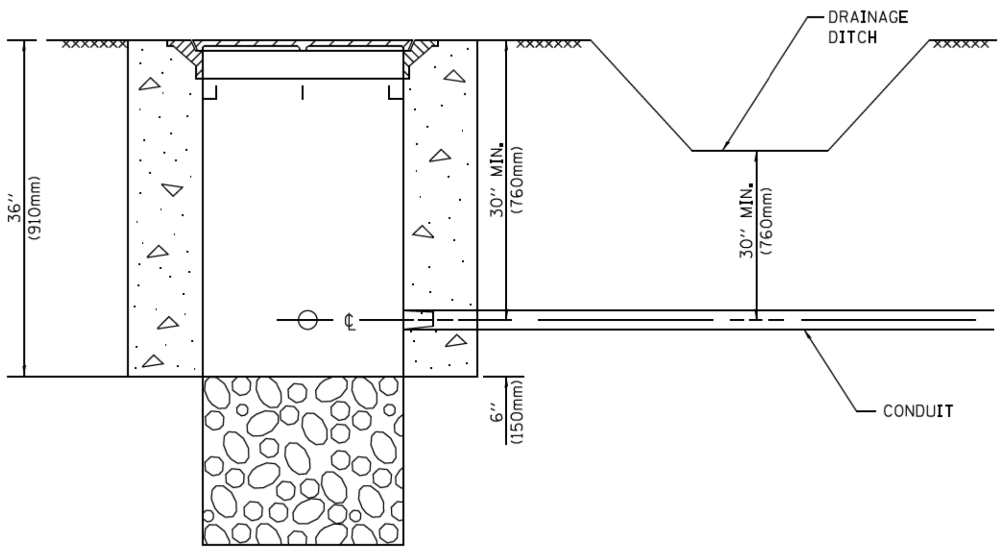
	PLOT DATE = 1/13/2014	DATE - 10-28-09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: NONE | SHEET NO. 5 OF 7 SHEETS | STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	216
	TS-05	CONTRACT NO. 61D65		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

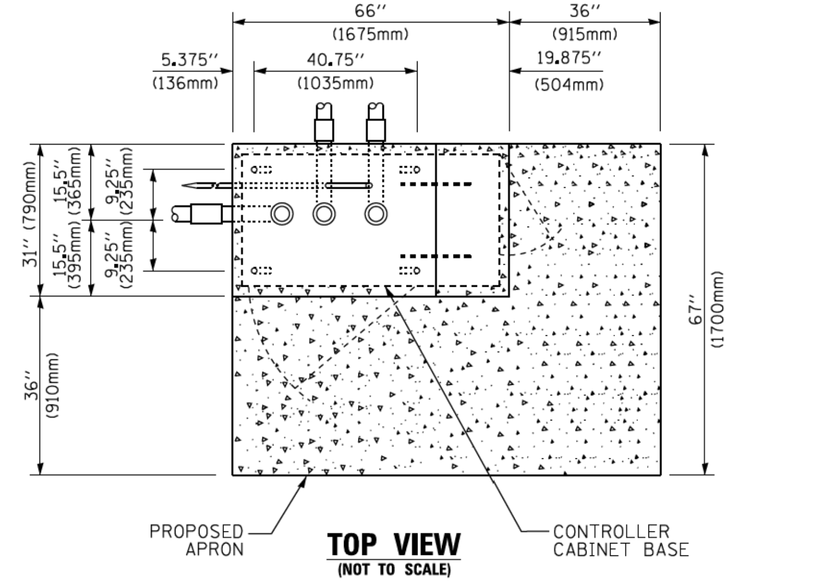


NOTES:

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.

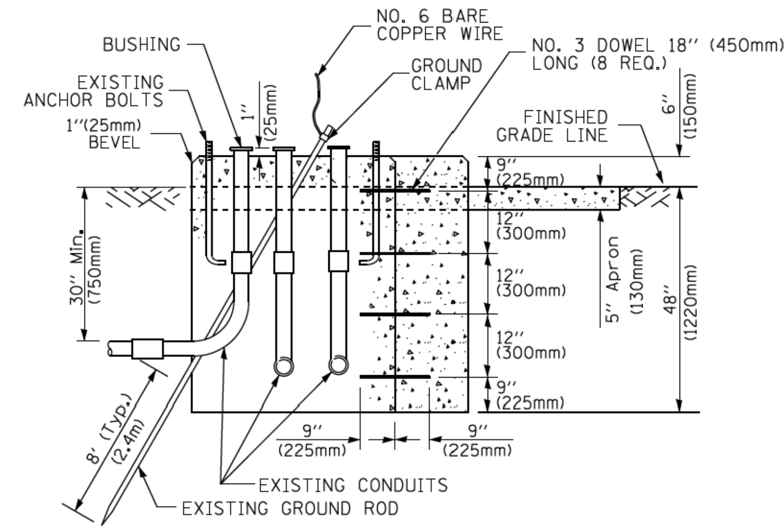
HANDHOLE WITH MINIMUM CONDUIT DEPTH

(NOT TO SCALE)



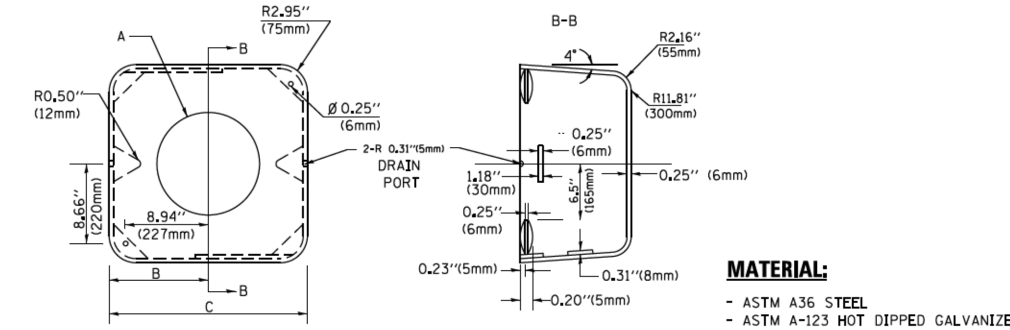
TOP VIEW

(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)

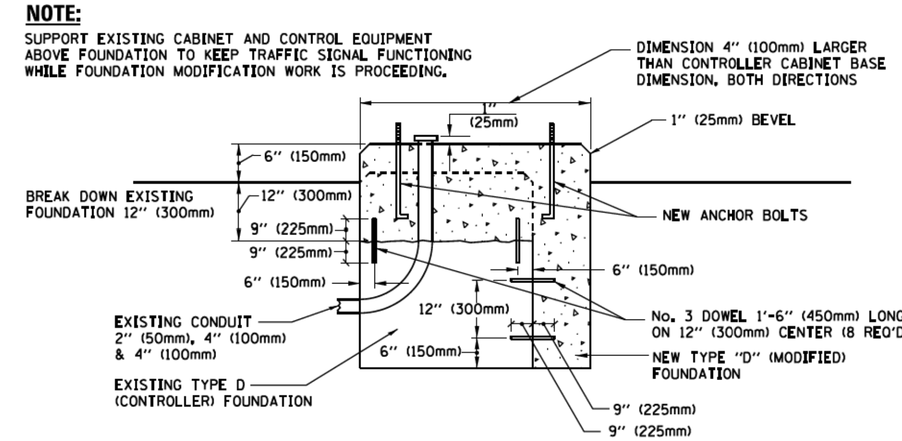
SHROUD

NOTES:

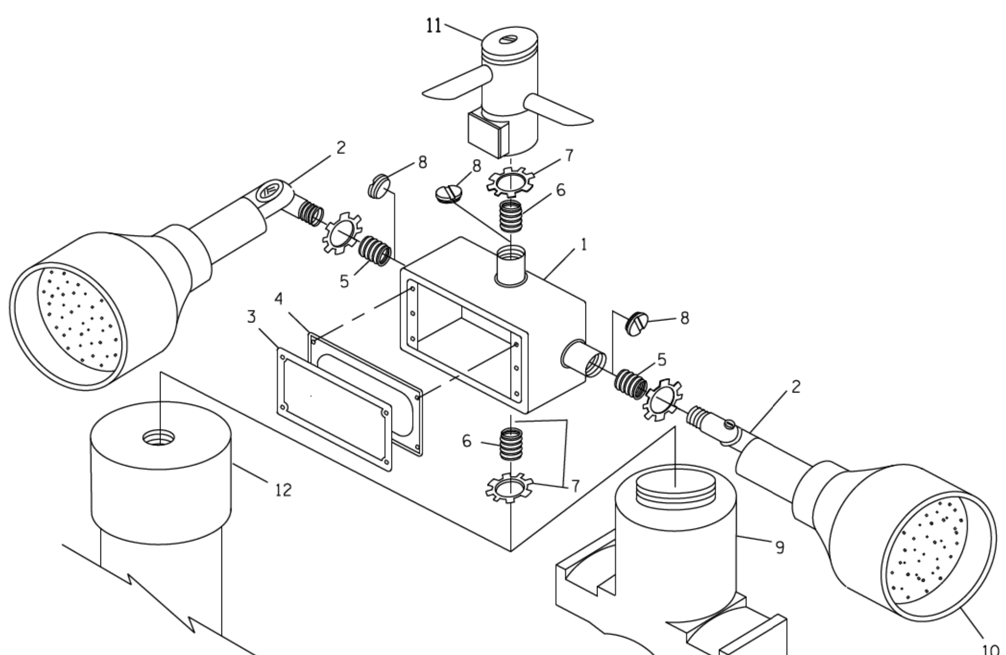
1. DIMENSION "A" IS EQUAL TO THE DIAMETER OF THE MAST ARM POLE AT THE TOP OF THE SHROUD. THE SHROUD SHALL BE TIGHT TO THE MAST ARM POLE.
2. THE SUPPLIER SHALL VERIFIED THE ABOVE DIMENSIONS BASED ON MAST ARM REQUIREMENTS.
3. THE HEIGHT OF THE SHROUD SHALL COVER THE ANCHOR BOLTS, NUTS AND MAST ARM POLE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

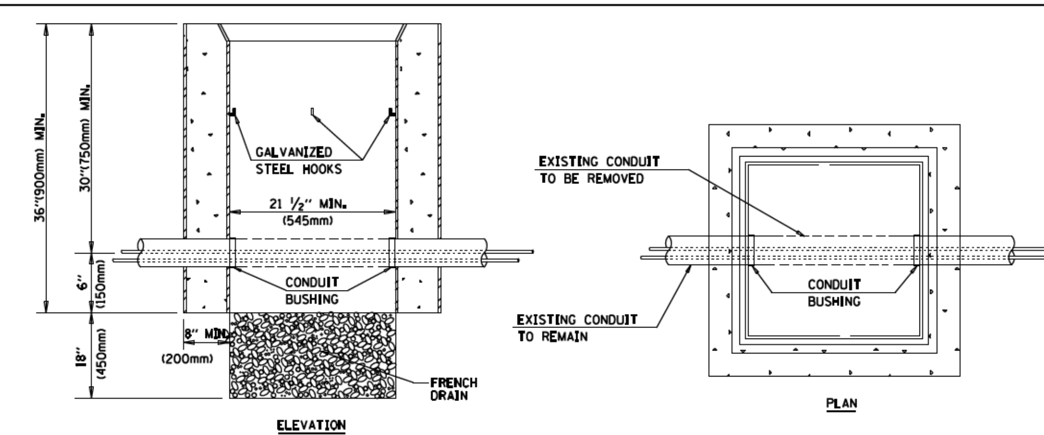
MAST ARM MOUNT

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	3/4"(19 mm) CLOSE NIPPLE
7	3/4"(19 mm) LOCKNUT
8	3/4"(19 mm) HOLE PLUG
9	SADDLE BRACKET - GALV.
10	6 WATT PAR 38 LED FLOOD LAMP
11	DETECTOR UNIT
12	POST CAP [18 FT. (5.4 m) POST MIN.]

NOTES:

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



NOTES:

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

HANDHOLE TO INTERCEPT EXISTING CONDUIT

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		CHECKED - DAD	REVISED -
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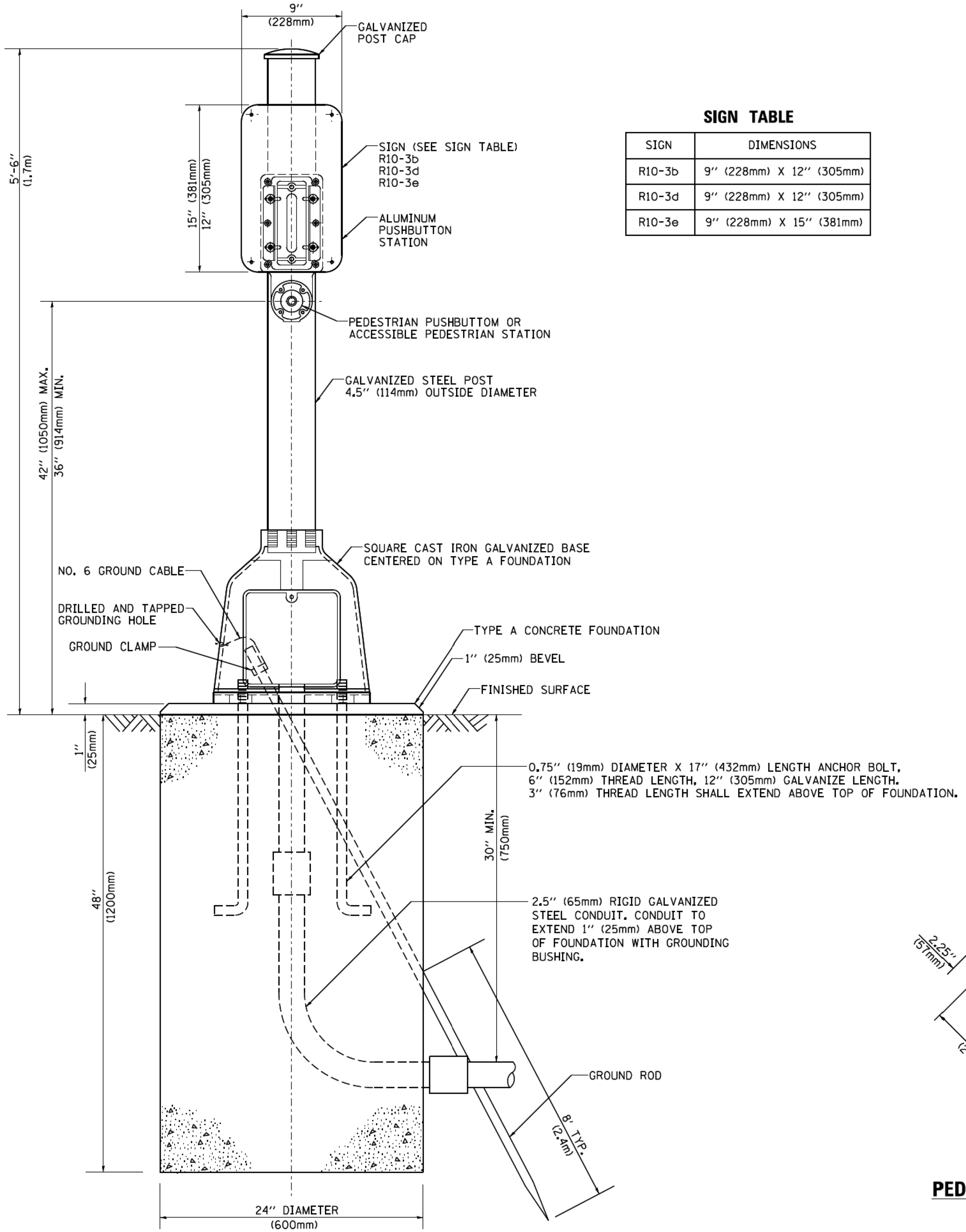
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

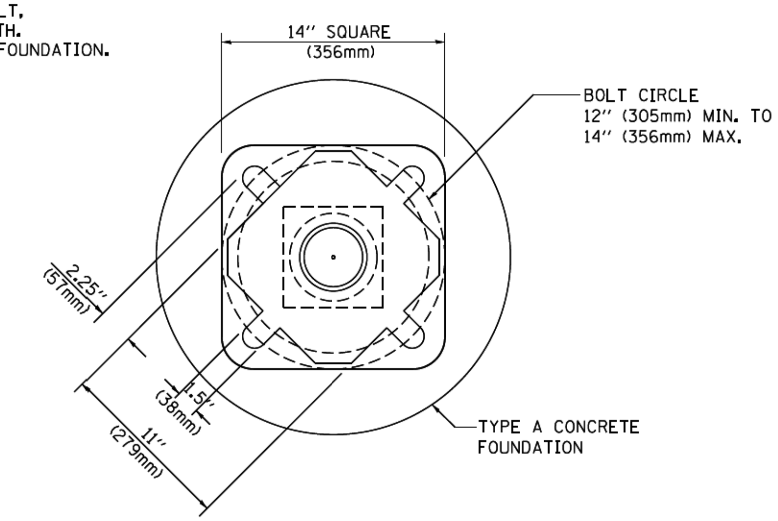
SCALE: NONE | SHEET NO. 6 OF 7 SHEETS | STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	217
	TS-05	CONTRACT NO. 61D65		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



SIGN TABLE

SIGN	DIMENSIONS
R10-3b	9" (228mm) X 12" (305mm)
R10-3d	9" (228mm) X 12" (305mm)
R10-3e	9" (228mm) X 15" (381mm)



BOLT PATTERN

PEDESTRIAN PUSH BUTTON POST, TYPE A

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		DRAWN - GND	REVISED -
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	PLOT DATE = 1/13/2014	DATE - 10/1/2012	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

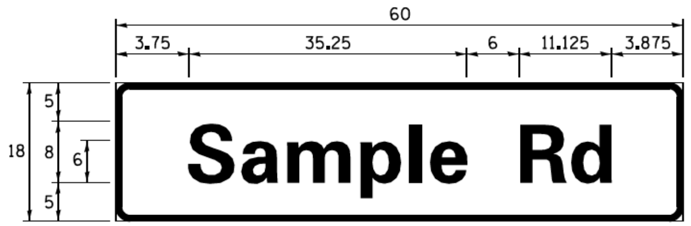
DISTRICT ONE
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

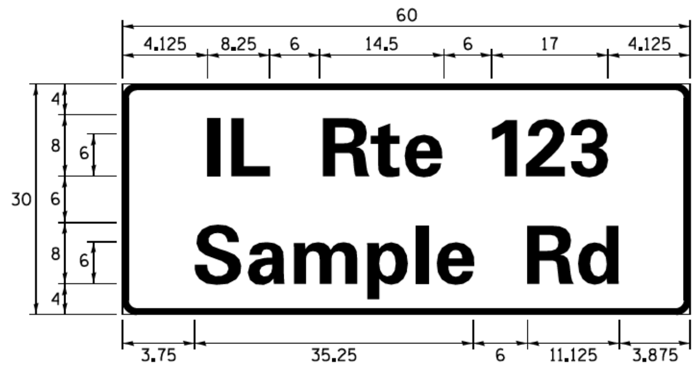
SCALE: NONE | SHEET NO. 7 OF 7 SHEETS | STA. TO STA.

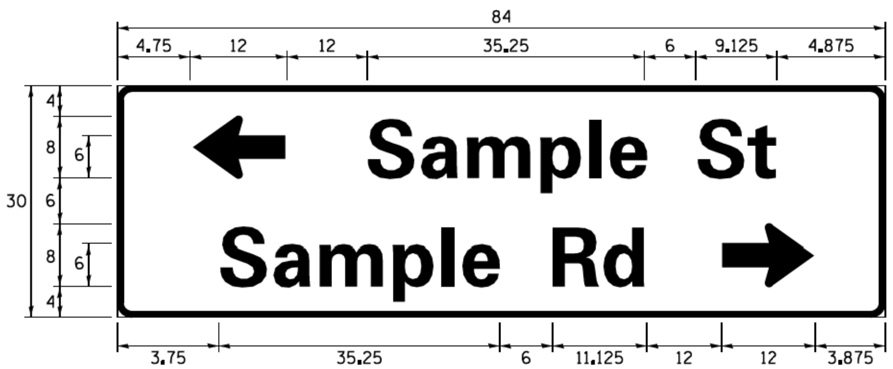
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	218
	TS-05	CONTRACT NO. 61D65		

FED. ROAD DIST. NO. 1 | 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	-

ALL DIMENSIONS ARE IN INCHES EXCEPT NOTED OTHERWISE

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	Clr	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

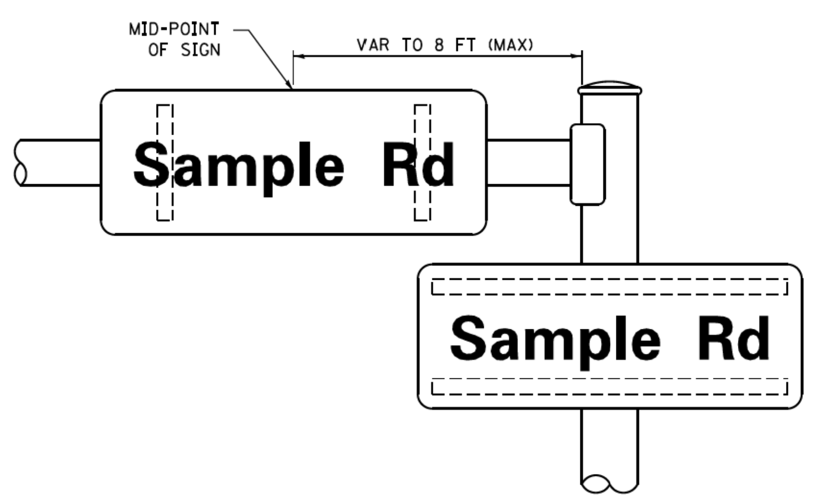
1. WHERE MAST ARM MOUNTED STREET NAME SIGNS ARE SPECIFIED, THE MAST ARM ASSEMBLY AND POLES SHALL BE DESIGNED TO SUPPORT THE LOADINGS CALLED FOR ON STANDARDS 877001, 877002, 877006, 877011 AND 877012, AS APPLICABLE, PLUS TWO (2) SIGN PANELS 2'-6" x 8'-0" MOUNTED AS SHOWN. THE DESIGN SHALL BE IN ACCORDANCE 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 SHALL BE ¾" WIDE, CORNER RADIUS SHALL BE 1-7/8". THE SPACING BETWEEN THE WORDS SHOULD BE 6", 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:	PARTS LISTING:	
- J.O. HERBERT COMPANY, INC MIDLOTHIAN, VA	SIGN CHANNEL	PART #HPN053 (MED. CHANNEL)
	SIGN SCREWS	1/4" x 14 x 1" H.W.H. #3 SELF TAPPING WITH NEOPRENE WASHER
- WESTERN REMAC, INC. WOODRIDGE, IL	BRACKETS	PART #HPN034 (UNIVERSAL) CHANNEL CLAMPS WITH STAINLESS STEEL STRAPPING

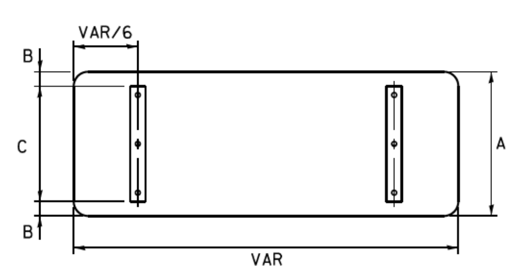
OTHER BRANDS OF MOUNTING HARDWARE ARE ACCEPTABLE, BASED UPON THE DEPARTMENT'S APPROVAL AND COMPATIBILITY WITH THE CHANNEL/BRACKET OF THE ABOVE PRODUCT.

MOUNTING LOCATION

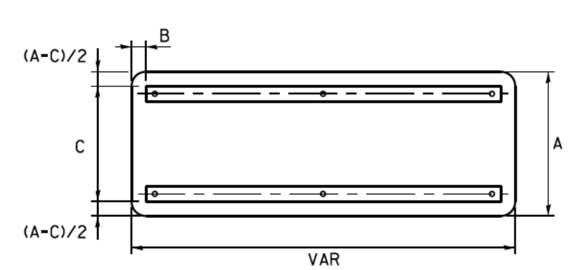
ARM OR POLE MOUNTED



SUPPORTING CHANNELS



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

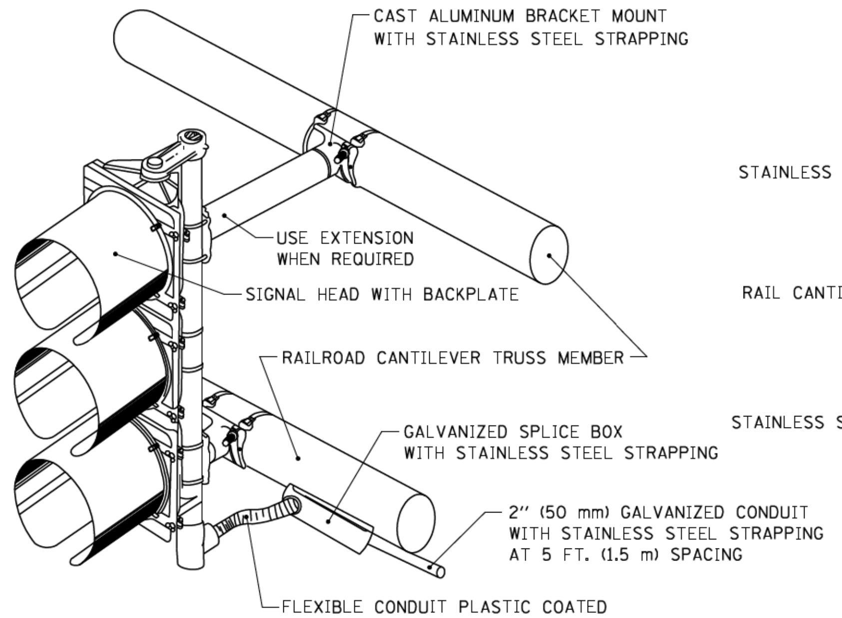


A	B	C
18"	2"	12"
30"	2"	22"

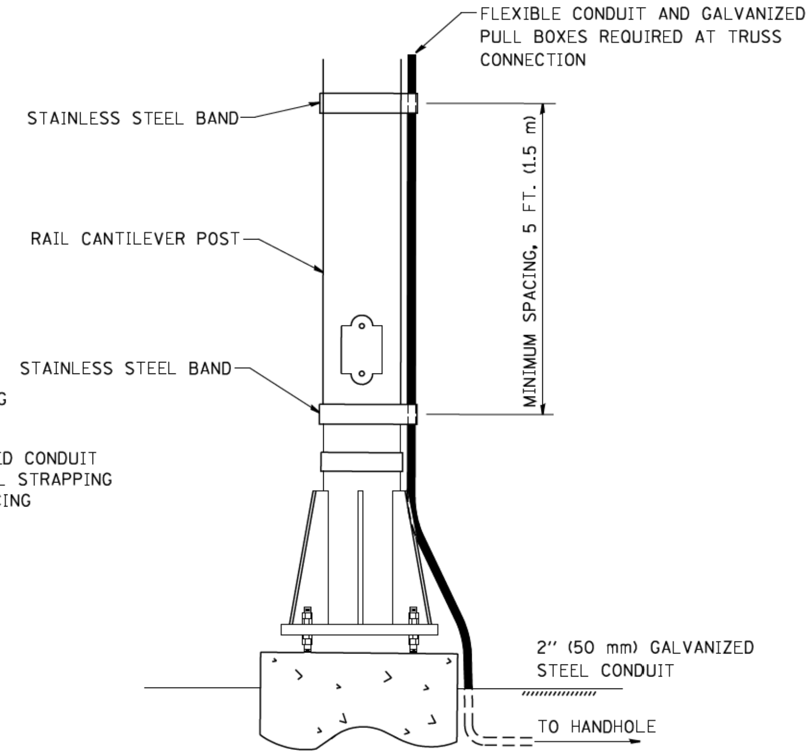
STANDARD ALPHABETS SPACING CHART

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

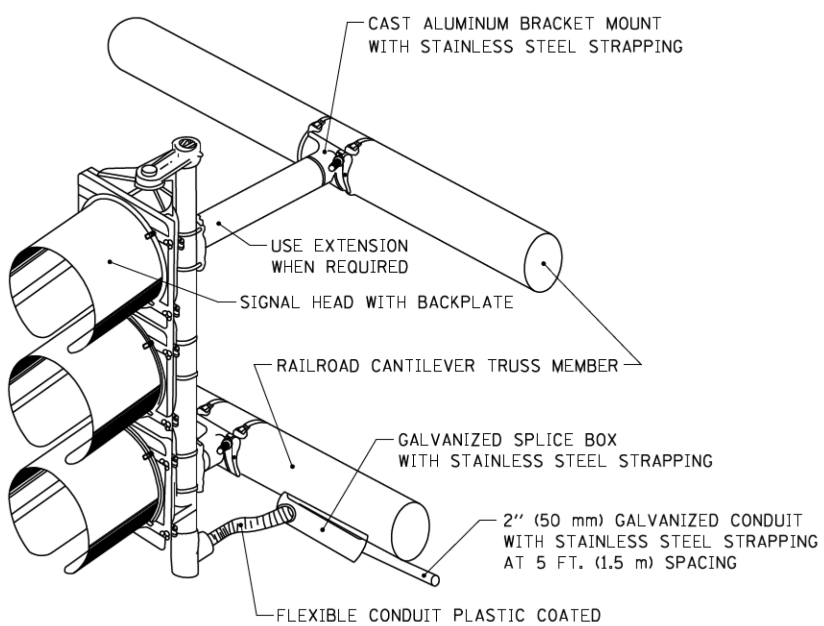
FHWA SERIES "C"				FHWA SERIES "D"			
CHARACTER	LEFT SPACING (INCH)	WIDTH (INCH)	RIGHT SPACING (INCH)	CHARACTER	LEFT SPACING (INCH)	WIDTH (INCH)	RIGHT SPACING (INCH)
A	0.240	5.122	0.240	A	0.240	6.804	0.240
B	0.880	4.482	0.480	B	0.960	5.446	0.400
C	0.720	4.482	0.720	C	0.800	5.446	0.800
D	0.880	4.482	0.720	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	0.240	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	0.720	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	0.720	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	0.720	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



RAILROAD CANTILEVER SIGNAL HEAD MOUNTING

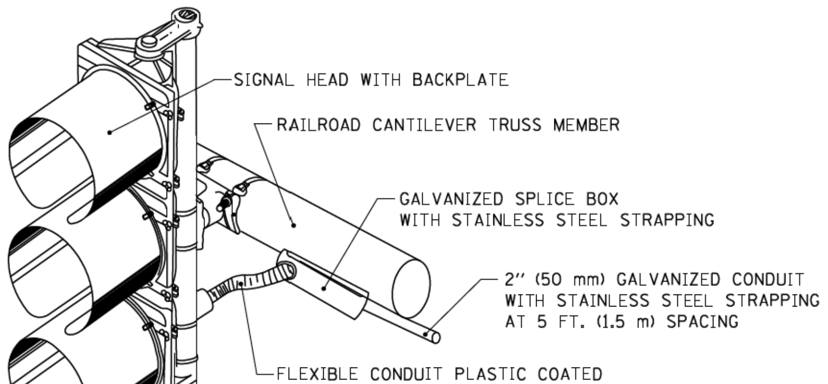


SIGNAL CONDUIT CONNECTION TO
RAIL CANTILEVER DETAIL



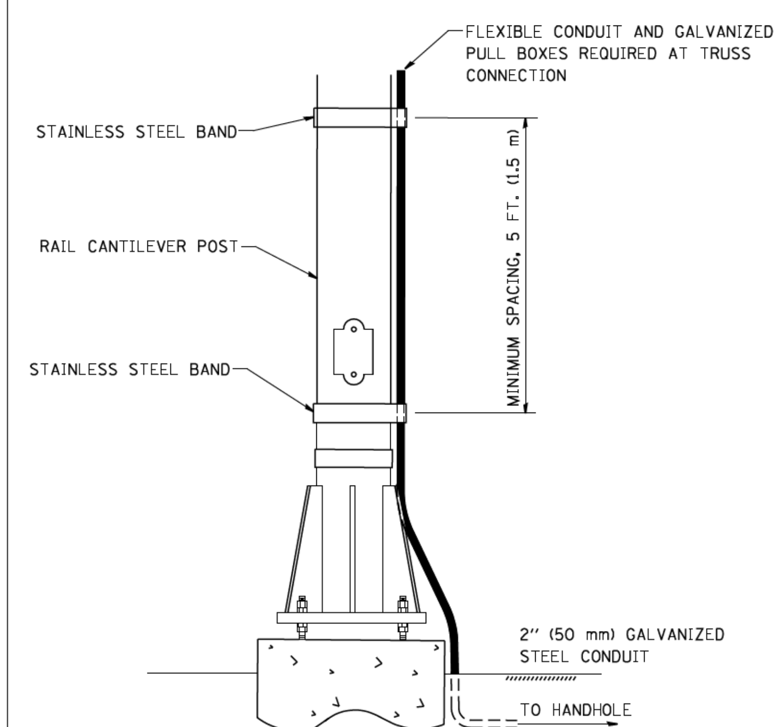
NOTE: USE NONCONDUCTIVE SPACERS BETWEEN THE TRAFFIC SIGNAL EQUIPTMENT AND THE RAILROAD CANTILEVER TO PREVENT DISSIMILAR METAL CORRSION.

RAILROAD CANTILEVER SIGNAL HEAD MOUNTING



NOTE: USE NONCONDUCTIVE SPACERS BETWEEN THE TRAFFIC SIGNAL EQUIPTMENT AND THE RAILROAD CANTILEVER TO PREVENT DISSIMILAR METAL CORRSION.

RAILROAD CANTILEVER SIGNAL HEAD MOUNTING



NOTE: USE NONCONDUCTIVE SPACERS BETWEEN THE TRAFFIC SIGNAL EQUIPTMENT AND THE RAILROAD CANTILEVER TO PREVENT DISSIMILAR METAL CORRSION.

SIGNAL CONDUIT CONNECTION TO
RAIL CANTILEVER DETAIL

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		DRAWN -	REVISED -
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	PLOT DATE = 1/4/2008	DATE -	REVISED -

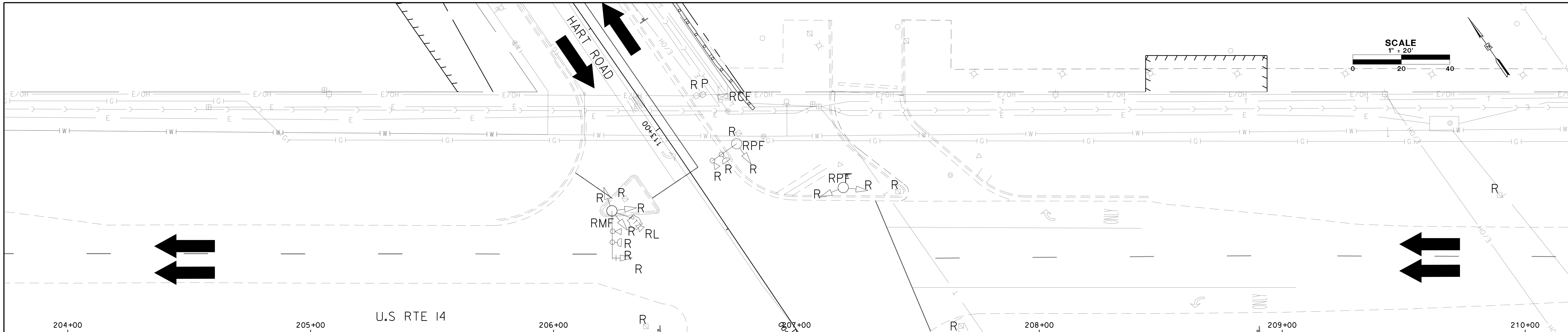
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

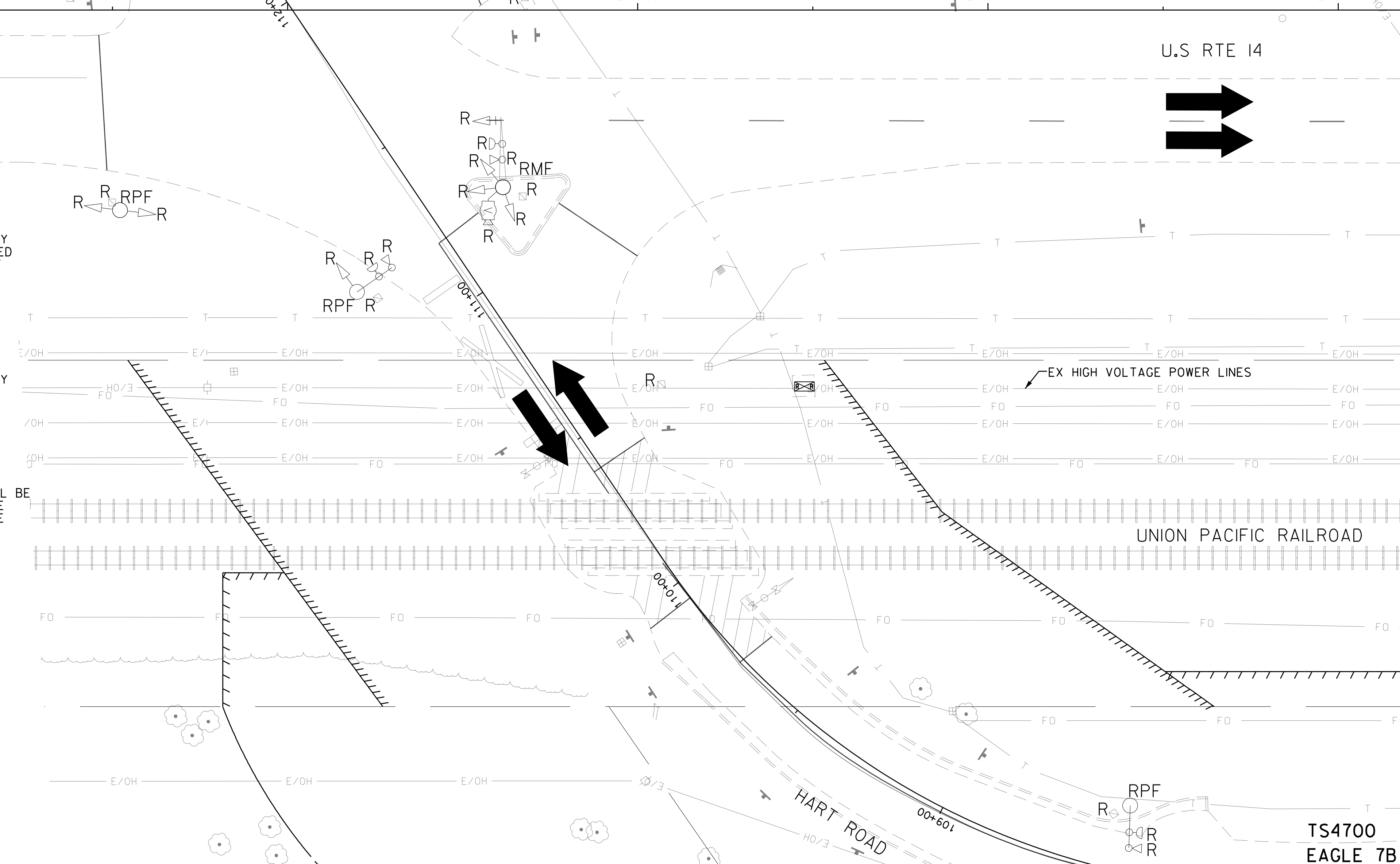
RAILROAD CANTILEVER
SIGNAL HEAD MOUNTING DETAIL

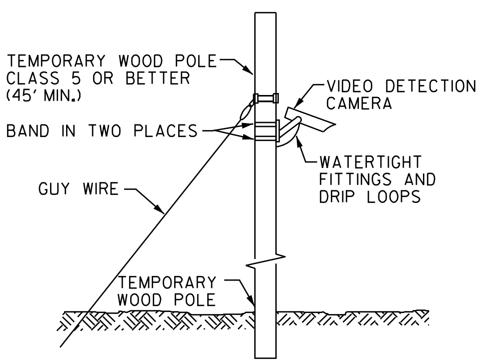
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	220
	TS-06	CONTRACT NO. 61D65		

FED. ROAD DIST. NO. 1 | ILLINOIS | FED. AID PROJECT







TEMPORARY VIDEO DETECTION MOUNTING DETAIL
(NOT TO SCALE)

REMOVAL AND RELOCATION NOTES:

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 DELIVERY OF ALL EQUIPMENT TO THE LISTED AGENCY AS PER THE TRAFFIC SIGNAL SPECIFICATIONS.

AGENCY: VILLAGE OF BARRINGTON

5 EACH LIGHT DETECTOR AND BEACON
1 EACH LIGHT DETECTOR AMPLIFIER

THE FOLLOWING EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE REMOVED BY THE CONTRACTOR AND SHALL BE RELOCATED TO THE TEMPORARY TRAFFIC SIGNAL INSTALLATION AND THEN ULTIMATELY TO THE NEW PERMANENT TRAFFIC SIGNAL INSTALLATION UPON COMPLETION:

AGENCY: LCDOT

1 EACH PTZ CAMERA, SWITCH, ENCODER

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.

1 EACH CONTROLLER AND CABINET (COMPLETE)
1 EACH STEEL - MAST ARM ASSEMBLY AND POLE
1 EACH ALUMINUM - MAST ARM ASSEMBLY AND POLE
5 EACH SIGNAL POSTS
6 EACH SIGNAL HEAD, 1-FACE, 3-SECTION
2 EACH SIGNAL HEAD, 1-FACE, 4-SECTION
6 EACH SIGNAL HEAD, 1-FACE, 5-SECTION
1 EACH SERVICE INSTALLATION
1 EACH VIDEO DETECTION CAMERA
2 EACH TRAFFIC SIGNAL BACKPLATE

NOTE:

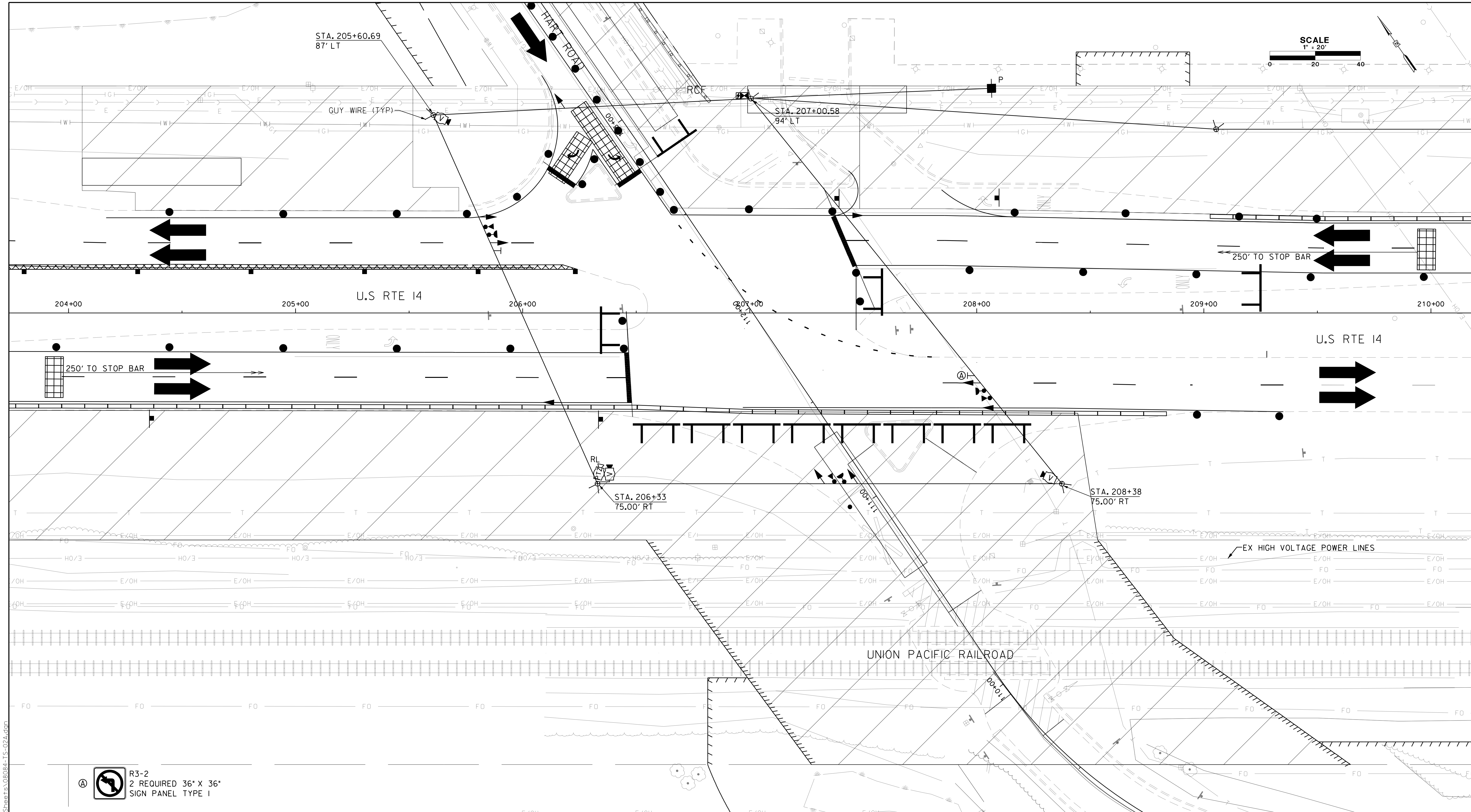
PRE-STAGE TRAFFIC SHALL OPERATE UNDER EXISTING TRAFFIC SIGNAL INSTALLATION

FILE NAME: g:\ch09\0176\road\Sheets\08084-TS-02.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	U.S. ROUTE 14 AT HART ROAD EXISTING TRAFFIC SIGNAL REMOVAL PLAN
	DRAWN - AMK	REVISED -		
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -		
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -		SCALE: 1:20 SHEET 1 OF 25 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	221
		CONTRACT NO. 61D65		
		ILLINOIS FED. AID PROJECT		



THE CONTRACTOR SHALL INSTALL, RELOCATE, DISCONNECT, COVER AND REMOVE SIGNAL HEADS AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT COST OF TEMPORARY TRAFFIC SIGNAL INSTALLATION.

TS4700
EAGLE 7B

FILE NAME: G:\CH09\0176\Road\Sheets\08084-TS-02A.dgn

USER NAME = amkidd	DESIGNED - JLV	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	DRAWN - AMK	REVISED -	
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

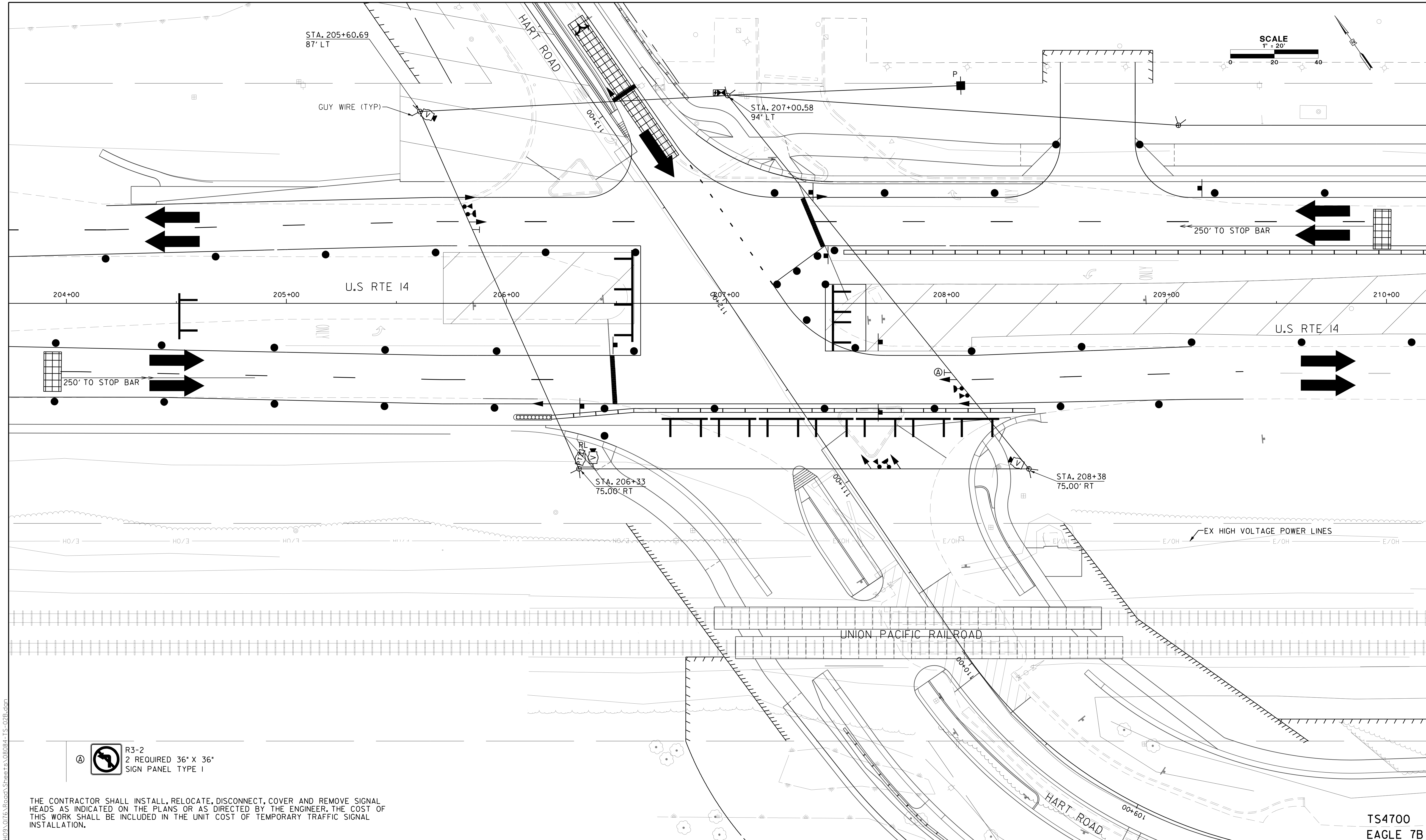
U.S. ROUTE 14 AT HART ROAD
TEMPORARY TRAFFIC SIGNAL
INSTALLATION PLAN – STAGE 1

SCALE: 1:20 | SHEET 2 OF 25 SHEETS | STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	222

CONTRACT NO. 61D65

ILLINOIS FED. AID PROJECT



Ⓐ R3-2
2 REQUIRED 36" X 36"
SIGN PANEL TYPE I

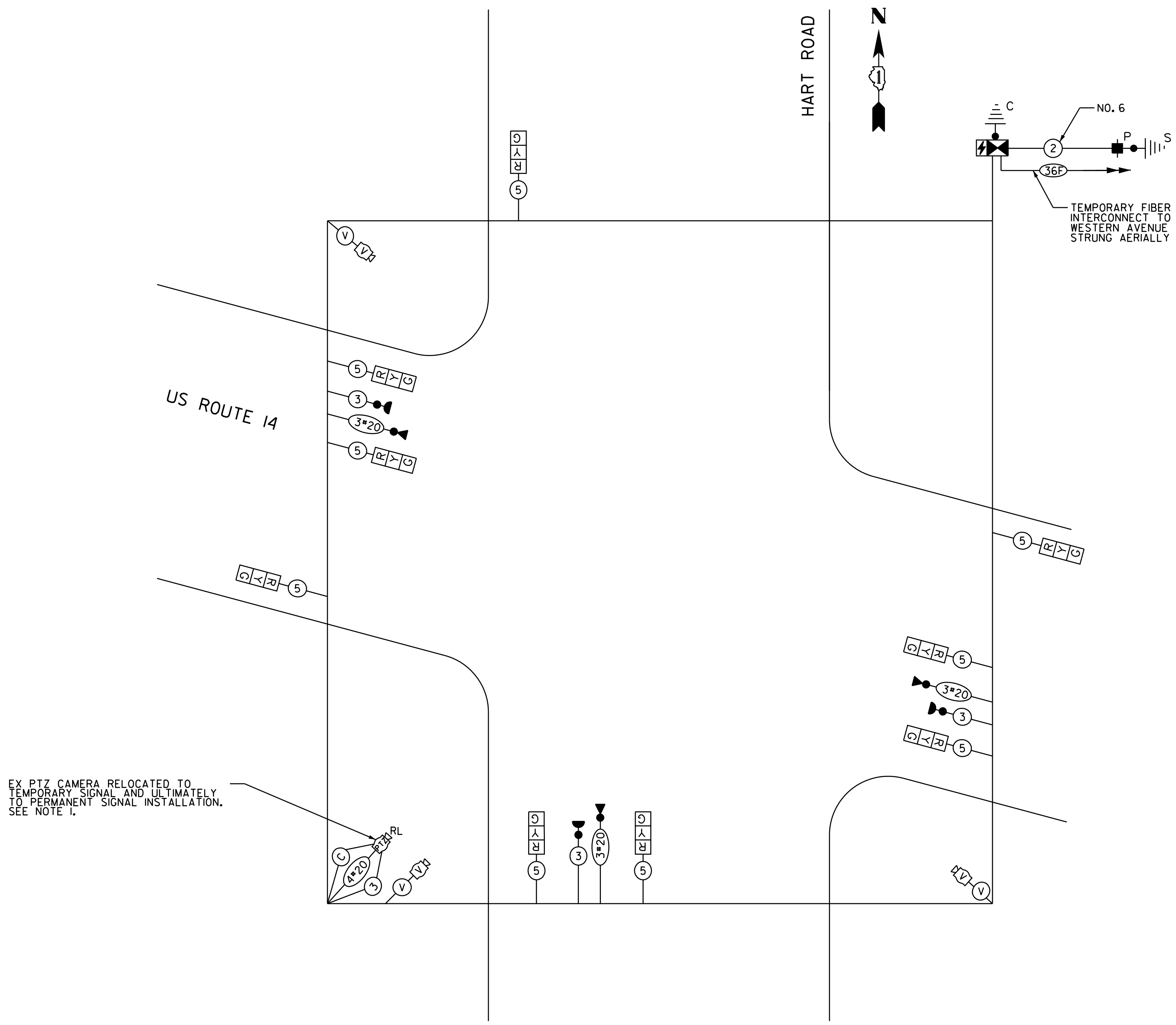
THE CONTRACTOR SHALL INSTALL, RELOCATE, DISCONNECT, COVER AND REMOVE SIGNAL HEADS AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT COST OF TEMPORARY TRAFFIC SIGNAL INSTALLATION.

TS4700
EAGLE 7B

FILE NAME: G:\CH09\0176\Road\Sheets\08084-TS-02B.dgn

TranSystems	USER NAME = amkidd	DESIGNED - JLV	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	U.S. ROUTE 14 AT HART ROAD TEMPORARY TRAFFIC SIGNAL INSTALLATION PLAN - STAGE 2
		DRAWN - AMK	REVISED -		
	PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -		
	PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -		SCALE: 1:20 SHEET 3 OF 25 SHEETS STA. TO STA.

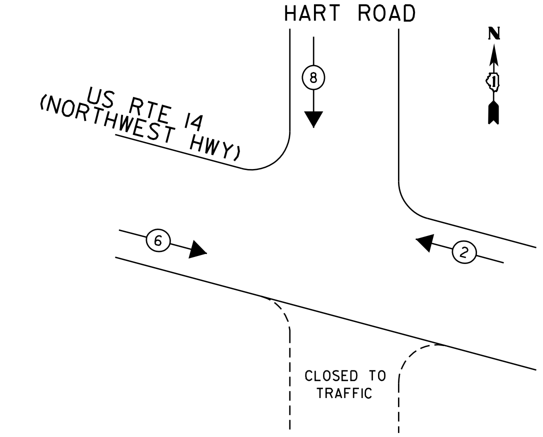
FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	223
		CONTRACT NO. 61D65		
		ILLINOIS FED. AID PROJECT		



TEMPORARY CABLE PLAN - STAGE 1 AND STAGE 2

NOT TO SCALE

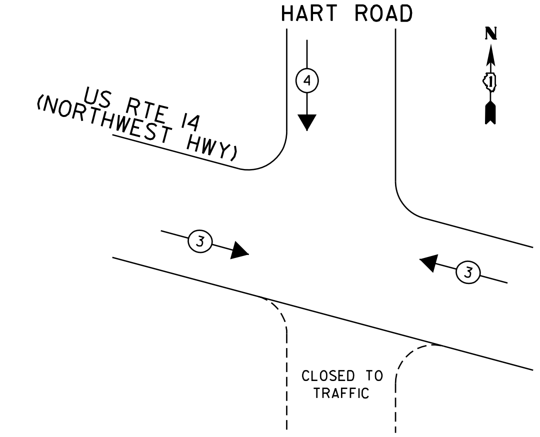
TEMPORARY CONTROLLER SEQUENCE
STAGE 1 AND STAGE 2



LEGEND

- DUAL ENTRY PHASE
- PEDESTRIAN PHASE
- SINGLE ENTRY PHASE
- OL OVERLAP
- * NUMBER REFERS TO ASSOCIATED PHASE

TEMPORARY EMERGENCY VEHICLE
PREEMPTION SEQUENCE
STAGE 1 AND STAGE 2



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	-	10	10	-
PED. SIGNAL	-	20	100	-
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 =	382.1

ENGERGY COSTS TO:
VILLAGE OF BARRINGTON
200 SOUTH HOUGH STREET
BARRINGTON, IL 60010

ENGERGY SUPPLY CONTACT: ANA KUNZE
PHONE: (630) 437-2129
COMPANY: COMMONWEALTH EDISON COMPANY

NOTES:

1. RELOCATION OF PTZ CAMERA SYSTEM, ENCODER, AND SWITCH FROM EXISTING TO TEMPORARY AND FROM TEMPORARY TO PROPOSED SIGNAL INSTALLATION SHALL BE INCLUDED IN THE COST OF ONE RELOCATION (IEA).

TS4700
EAGLE 7B

A — LEFT ON GREEN ARROW ONLY — R 10-5, 11 REQUIRED 30" X 36", SIGN PANEL TYPE I

B — RR — W 10-1, 2 REQUIRED 36" DIA., SIGN PANEL TYPE I

C — DO NOT STOP ON TRACKS — R 8-8, 8 REQUIRED 24" X 30", SIGN PANEL TYPE I

D — STOP HERE ON RED / STOP HERE ON RED — R 10-6 (L) (R), 2 REQUIRED 24" X 36", SIGN PANEL TYPE I

E — NO TURN ON RED — R 10-11A, 1 REQUIRED 24" X 30", SIGN PANEL TYPE I

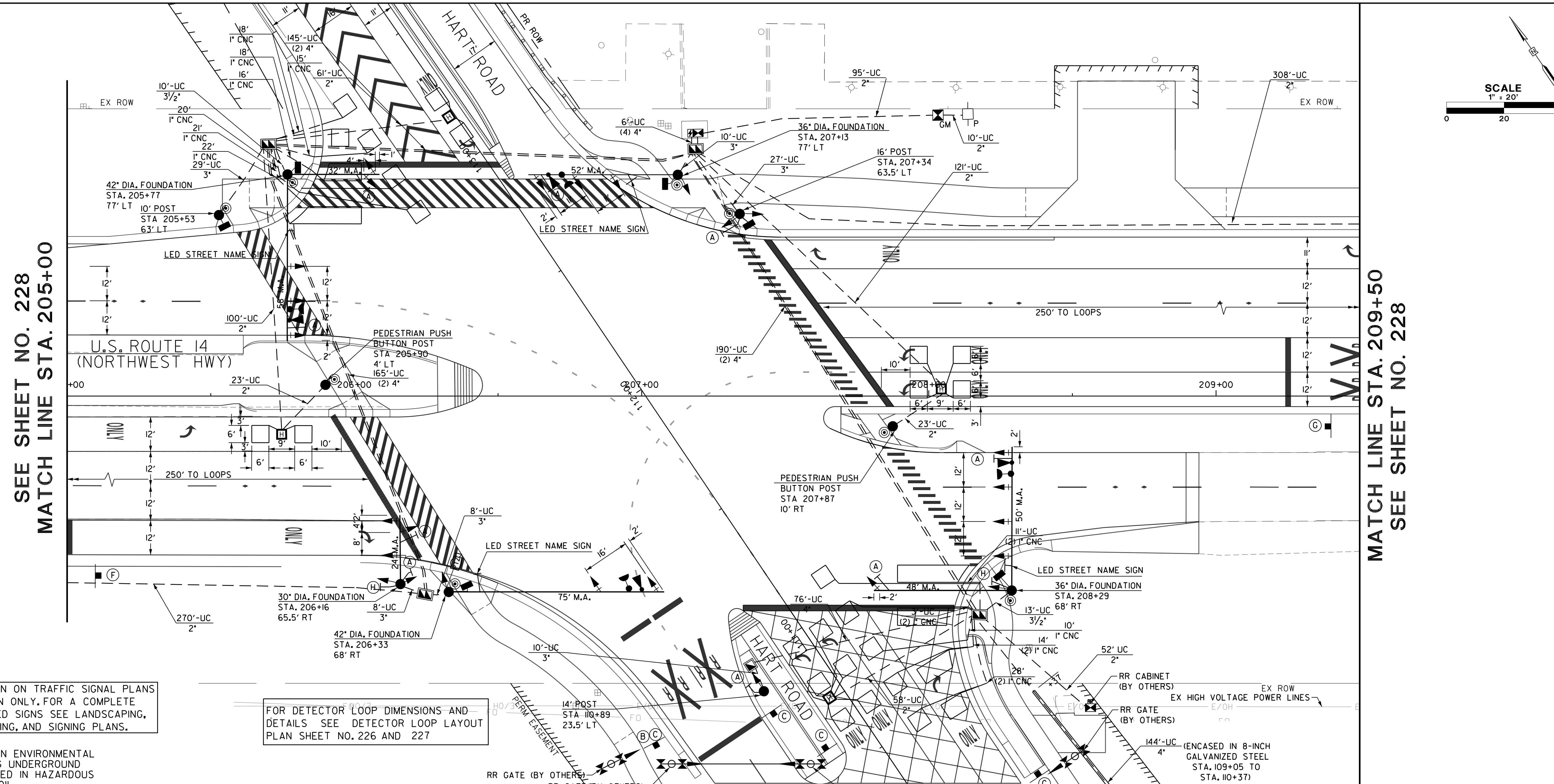
F — W 10-2, 1 REQUIRED 36" X 36", SIGN PANEL TYPE I

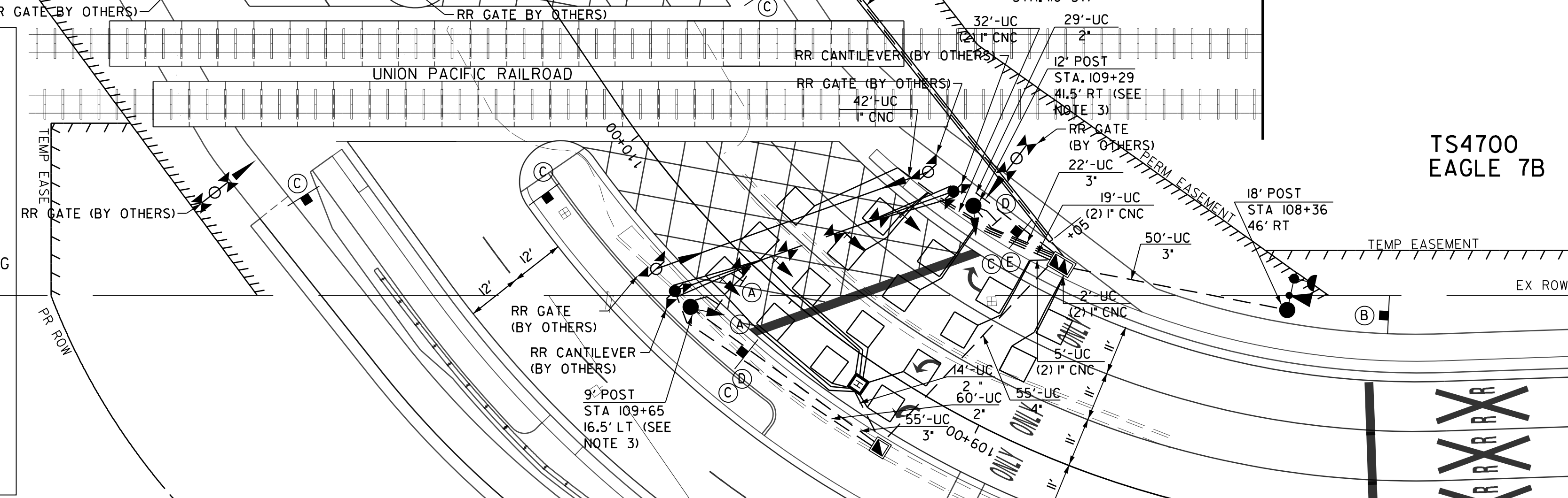
G — W 10-2, 1 REQUIRED 36" X 36", SIGN PANEL TYPE I

H — NO TURN ON RED ARROW — R 10-1102, 2 REQUIRED 24" X 30", SIGN PANEL TYPE I

SIGNS ARE SHOWN ON TRAFFIC SIGNAL PLANS FOR INFORMATION ONLY. FOR A COMPLETE LIST OF REQUIRED SIGNS SEE LANDSCAPING, PAVEMENT MARKING, AND SIGNING PLANS.

FOR DETECTOR LOOP DIMENSIONS AND DETAILS SEE DETECTOR LOOP LAYOUT PLAN SHEET NO. 226 AND 227

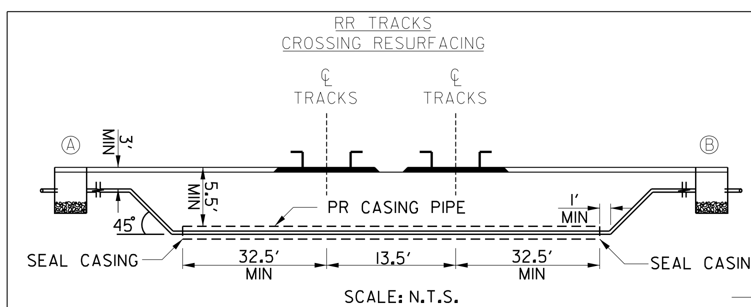




1. THE GENERAL CONTRACTOR IS REQUIRED TO HIRE AN ENVIRONMENTAL FIRM WITH AT LEAST FIVE (5) DOCUMENTED LEAKING UNDERGROUND STORAGE TANK CLEANUPS OR THAT IS PRE-QUALIFIED IN HAZARDOUS WASTE BY THE DEPARTMENT TO REMEDIATE THE SOIL CONTAMINATION AND MONITOR FOR WORKER PROTECTION.
2. CONTRACTOR SHALL MOUNT TRAFFIC SIGNAL HEADS TO THE RAILROAD CANTILEVER AS SHOWN ON THE "RAILROAD CANTILEVER SIGNAL HEAD MOUNTING" SEE SHEET NO. 220
3. THE BOTTOM OF THE SIGNAL HOUSING (INCLUDING BRACKETS) OF A VEHICULAR SIGNAL FACE SHALL BE 4.5 FEET ABOVE THE MEDIAN ISLAND GRADE OF A CENTER MEDIAN ISLAND AND SHALL BE 8 FEET ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY LOCATED ON THE PARKWAY SIDE OF THE ROAD.
4. TEMPORARY TRAFFIC CONTROL AT THE RAILROAD CROSSING DURING CONSTRUCTION SHALL FOLLOW SECTION B OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AS FOLLOWS:

   WHEN A GRADE CROSSING EXISTS EITHER WITHIN OR IN THE VICINITY OF A TEMPORARY TRAFFIC CONTROL ZONE, LANE RESTRICTIONS, FLAGGING (SEE CHAPTER 6E), OR OTHER OPERATIONS SHALL NOT BE PERFORMED IN A MANNER THAT WOULD CAUSE HIGHWAY VEHICLES TO STOP ON THE RAILROAD OR LRT TRACKS, UNLESS A FLAGGER OR UNIFORMED LAW ENFORCEMENT OFFICER IS PROVIDED AT THE GRADE CROSSING TO MINIMIZE THE POSSIBILITY OF HIGHWAY VEHICLES STOPPING ON THE TRACKS, EVEN IF AUTOMATIC WARNING DEVICES ARE IN PLACE.
5. EACH DETECTOR LOOP SHALL HAVE ITS OWN 1" COILABLE NON-METALLIC CONDUIT BETWEEN THE EDGE OF PAVEMENT AND ADJACENT HH AS SHOWN ON THE PLANS AND AS STATED IN THE TRAFFIC CONTROL SIGNAL SPECIFICATIONS.

RR TRACKS CROSSING RESURFACING



SCALE: N.T.S.

CONDUIT		CASING PIPE	
WALL THICKNESS	0.25"	WALL THICKNESS	0.25"
DIAMETER	4"	DIAMETER	8"
MATERIAL	STEEL	MATERIAL	STEEL
		LENGTH	78.5'

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -
PLOT SCALE = 40.00 ' / in.	DRAWN - AMK	REVISED -
	CHECKED - JWC	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

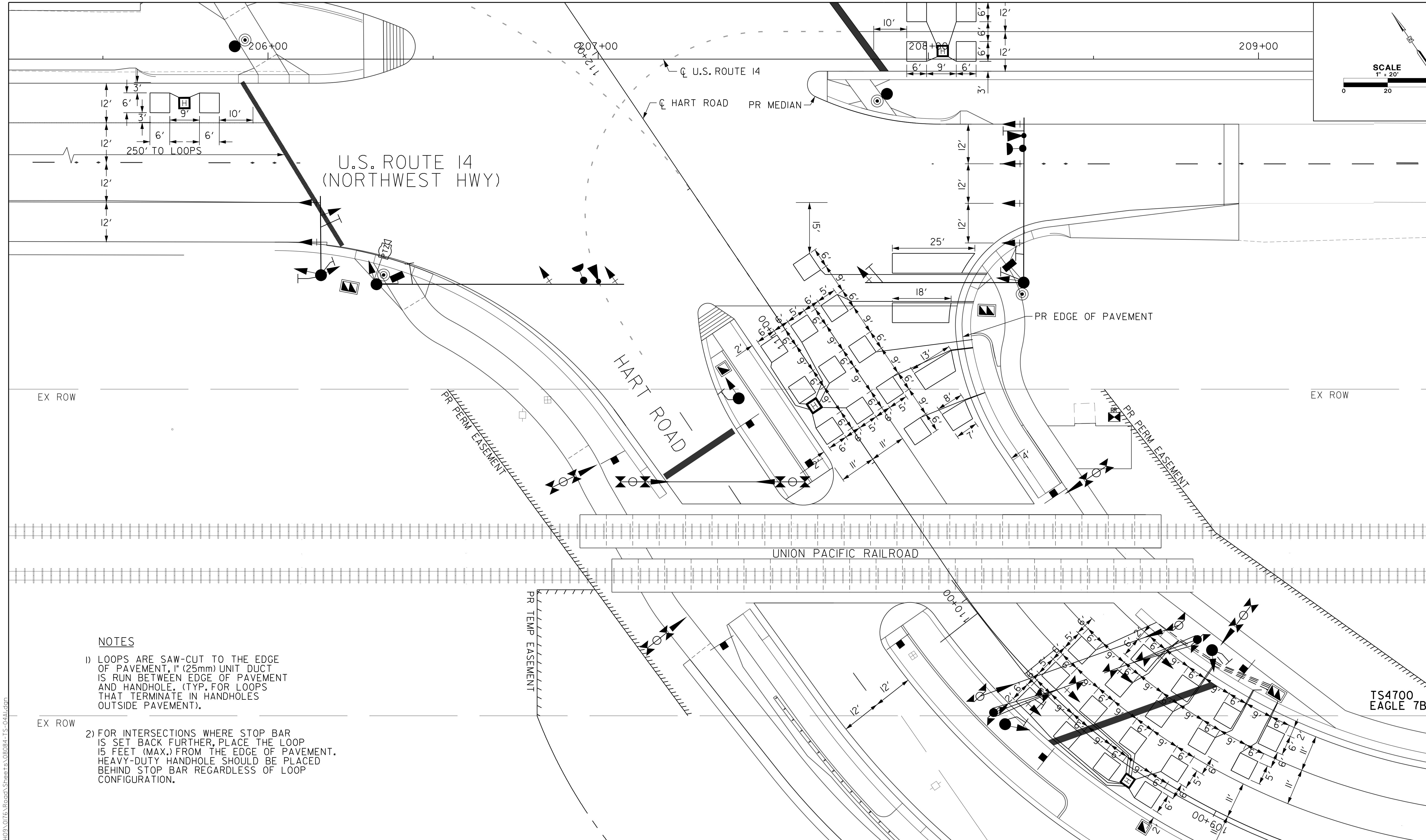
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

U.S. ROUTE 14 (NORTHWEST HWY.) AT HART ROAD
TRAFFIC SIGNAL MODERNIZATION PLAN

SCALE: 1:20 | SHEET 5 OF 25 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	225
		CONTRACT NO. 61D65		
	ILLINOIS	FED. AID PROJECT		

FILE NAME: G:\CH09\0176\Road\Sheets\08084-TS-04A.dgn



NOTES

1) LOOPS ARE SAW-CUT TO THE EDGE OF PAVEMENT. 1" (25mm) UNIT DUCT IS RUN BETWEEN EDGE OF PAVEMENT AND HANDHOLE. (TYP. FOR LOOPS THAT TERMINATE IN HANDHOLES OUTSIDE PAVEMENT).

2) FOR INTERSECTIONS WHERE STOP BAR IS SET BACK FURTHER, PLACE THE LOOP 15 FEET (MAX.) FROM THE EDGE OF PAVEMENT. HEAVY-DUTY HANDHOLE SHOULD BE PLACED BEHIND STOP BAR REGARDLESS OF LOOP CONFIGURATION.

FILE NAME: G:\CH09\0176\Road\Sheets\08084-TS-04A.dgn

TranSystems®

USER NAME = amkidd	DESIGNED - JLV	REVISED -	STATE OF ILLINOIS
	DRAWN - AMK	REVISED -	DEPARTMENT OF TRANSPORTATION
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

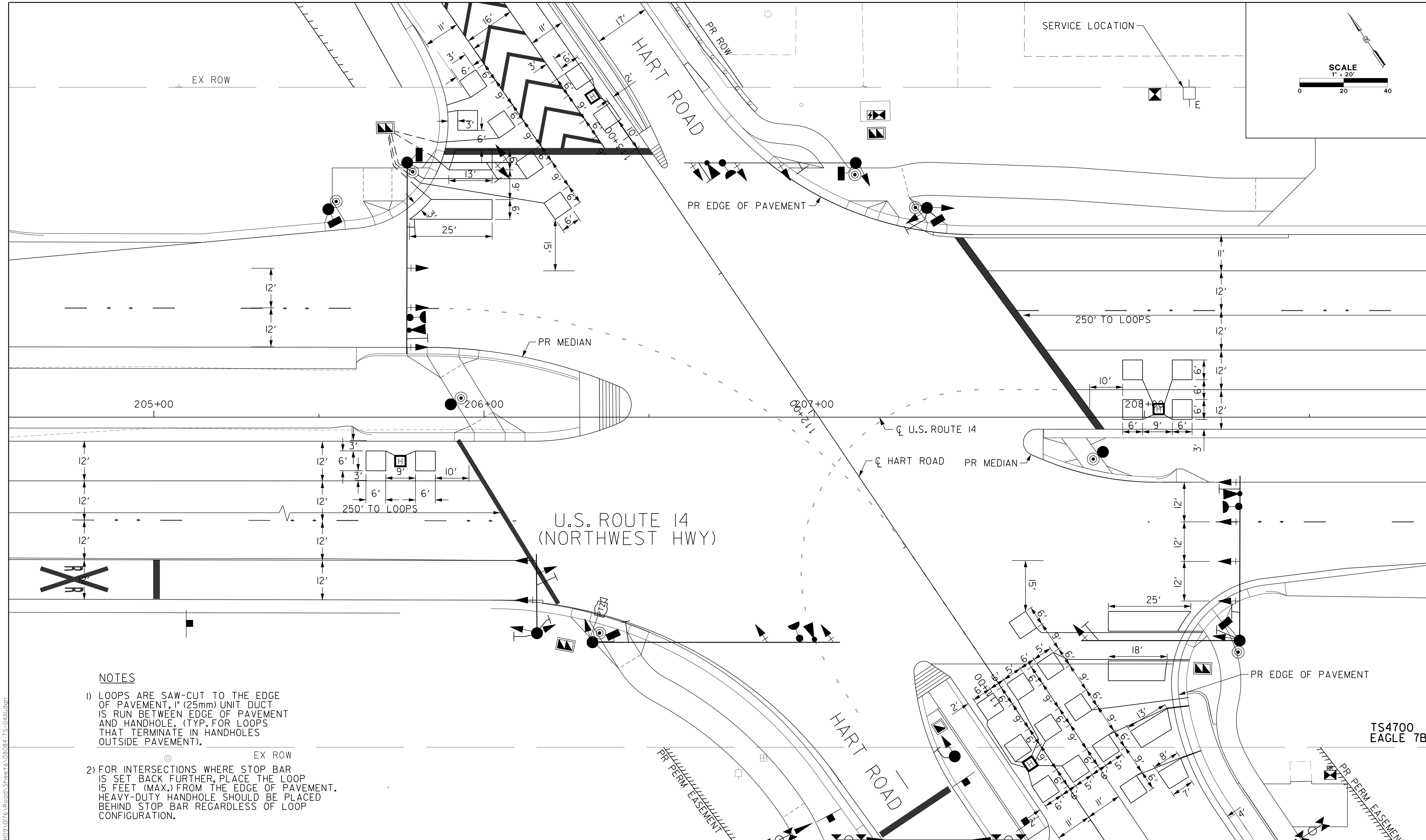
U.S. ROUTE 14 (NORTHWEST HWY.) AT HART ROAD
DETECTOR LOOP LAYOUT PLAN

SCALE: 1:20 | SHEET 6 OF 25 SHEETS | STA. TO STA.

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	226

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT



NOTES

1) LOOPS ARE SAW-CUT TO THE EDGE OF PAVEMENT, 1" (25mm) UNIT DUCT IS RUN BETWEEN EDGE OF PAVEMENT AND HANDHOLE. (TYP. FOR LOOPS THAT TERMINATE IN HANDHOLES OUTSIDE PAVEMENT).

2) FOR INTERSECTIONS WHERE STOP BAR IS SET BACK FURTHER, PLACE THE LOOP 15 FEET (MAX.) FROM THE EDGE OF PAVEMENT. HEAVY-DUTY HANDHOLE SHOULD BE PLACED BEHIND STOP BAR REGARDLESS OF LOOP CONFIGURATION.

FILE NAME: G:\CH09\0176\Road\Sheets\08084-TS-04A1.dgn

TranSystems	USER NAME = amkidd	DESIGNED - JLV	REVISED -
		DRAWN - AMK	REVISED -
	PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -
	PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

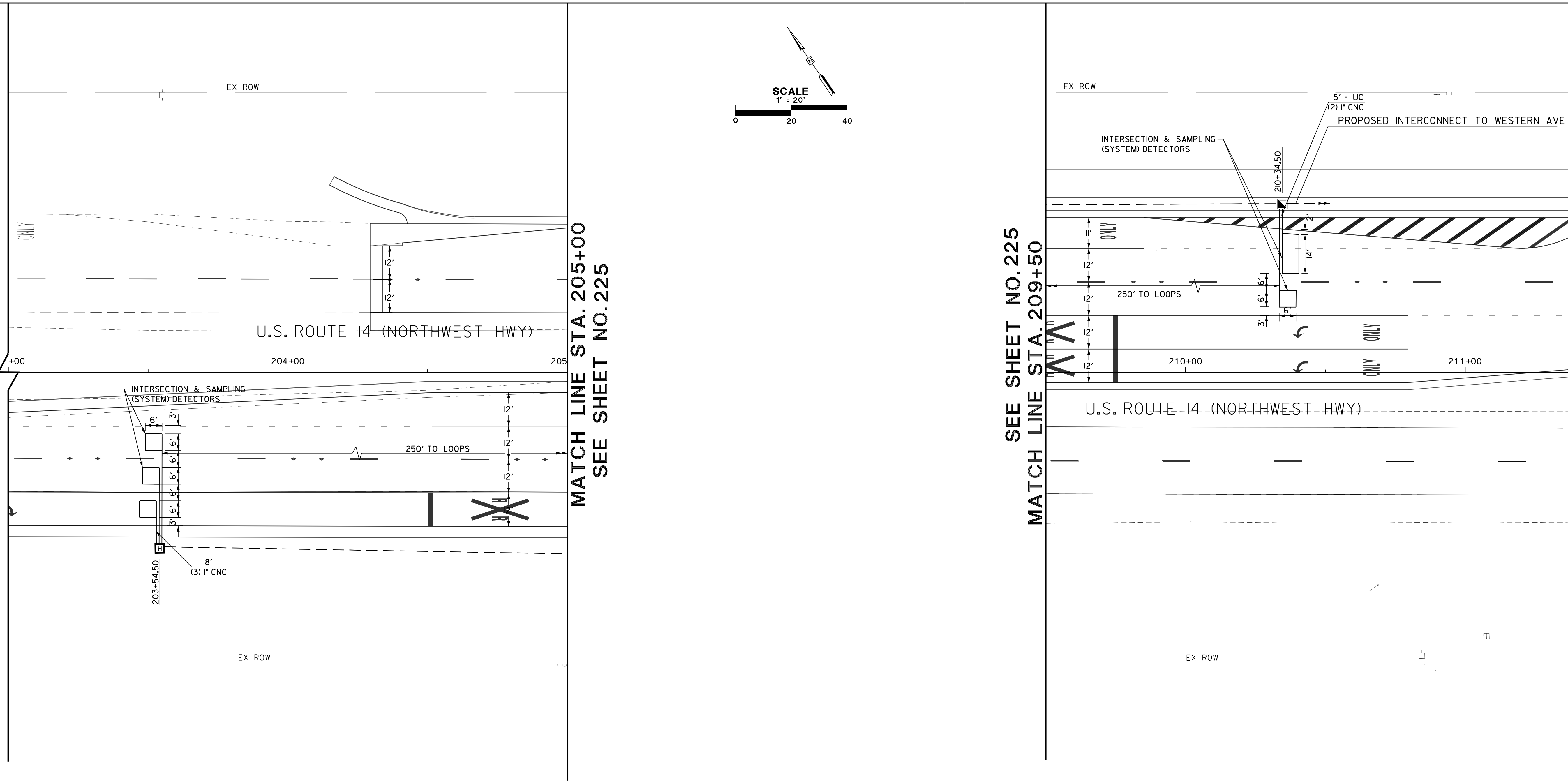
U.S. ROUTE 14 (NORTHWEST HWY.) AT HART ROAD
DETECTOR LOOP LAYOUT PLAN

SCALE: 1:20 | SHEET 7 OF 25 SHEETS | STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	227

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT



NOTES:

1. EACH DETECTOR LOOP SHALL HAVE ITS OWN 1" COILABLE NON-METALLIC CONDUIT BETWEEEN THE EDGE OF PAVEMENT AND ADJACENT HH AS SHOWN ON THE PLANS AND AS STATED IN THE TRAFFIC CONTROL SIGNAL SPECIFICATIONS.

TS4700
EAGLE 7B

FILE NAME: G:\CH09\0176\Road\Sheets\08084-TS-04B.dgn

TranSystems

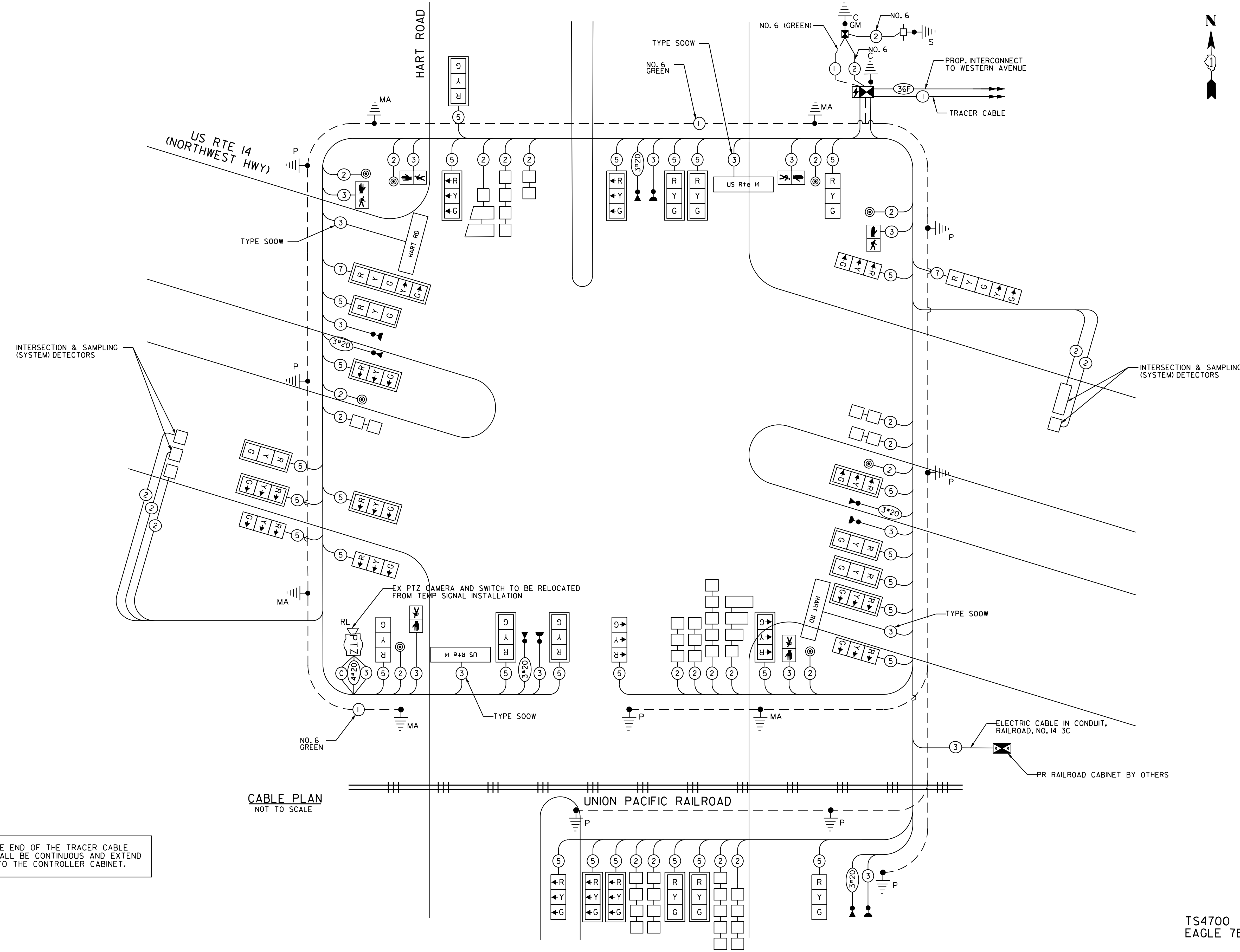
USER NAME = amkidd	DESIGNED - JLV	REVISED -	
	DRAWN - AMK	REVISED -	
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

U.S. ROUTE 14 (NORTHWEST HWY.) AT HART ROAD
TRAFFIC SIGNAL MODERNIZATION PLAN

SCALE: 1:20 | SHEET 8 OF 25 SHEETS | STA. | TO STA.

F.A.U RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	228
		CONTRACT NO. 61D65		
		ILLINOIS FED. AID PROJECT		



CABLE PLAN
NOT TO SCALE

THE END OF THE TRACER CABLE SHALL BE CONTINUOUS AND EXTEND INTO THE CONTROLLER CABINET.

TS4700
EAGLE 7B

TRAFFIC SIGNAL
ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	32	11	50	176.0
(YELLOW)	32	20	5	32.0
(GREEN)	32	12	45	172.8
PERMISSIVE ARROW	4	10	10	4.0
PED. SIGNAL	6	20	100	120.0
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	4	120	50	240.0
LUMINAIRE	-	-	-	-
			TOTAL =	1019.8

ENGERGY COSTS TO:
VILLAGE OF BARRINGTON
200 SOUTH HOUGH STREET
BARRINGTON, IL 60010

ENGERGY SUPPLY CONTACT: ANA KUNZE
PHONE: (630) 437-2129
COMPANY: COMMONWEALTH EDISON COMPANY

FILE NAME: g:\ch09\0176\road\Sheets\08084-TS-05.dgn

TranSystems	USER NAME = amkidd	DESIGNED - JLV	REVISED -
		DRAWN - AMK	REVISED -
	PLOT SCALE = 99.9998 ' / in.	CHECKED - JWC	REVISED -
	PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

U.S. ROUTE 14 (NORTHWEST HWY.) AT HART RD.
PROPOSED TRAFFIC SIGNAL CABLE PLAN

SCALE: 1:20 | SHEET 9 OF 25 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	229
		CONTRACT NO. 61D65		

ILLINOIS | FED. AID PROJECT

TRAFFIC SIGNAL SCHEDULE OF QUANTITIES

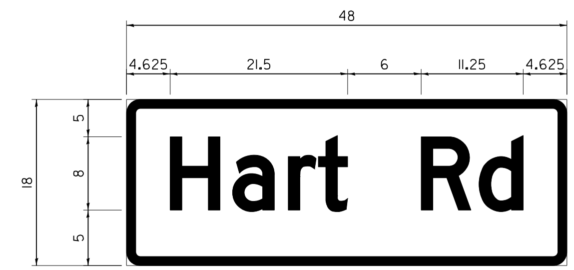
QUANTITY	UNIT	ITEM
1	EACH	SERVICE INSTALLATION, GROUND MOUNTED, METERED
1214	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2" DIA.
219	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 3" DIA.
23	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 3 1/2" DIA.
1299	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 4" DIA.
3	EACH	HANDHOLE
6	EACH	HEAVY-DUTY HANDHOLE
5	EACH	DOUBLE HANDHOLE
1	EACH	RAILROAD, FULL-ACTUATED CONTROLLER AND TYPE SUPER P CABINET (SPECIAL)
1	EACH	UNINTERRUPTABLE POWER SUPPLY, SPECIAL
1671	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C
2813	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
9745	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 5C
327	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 7C
5428	FOOT	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR
1259	FOOT	ELECTRIC CABLE IN CONDUIT, EQUIPMENT GROUNDING CONDUCTOR, NO. 6 1C
106	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE, NO. 6, 2C
292	FOOT	ELECTRIC CABLE IN CONDUIT, RAILROAD, NO. 14, 3C
2	EACH	PEDESTRIAN PUSH BUTTON POST, TYPE A
1	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL, 9 FT.
1	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL, 10 FT.
1	EACH	TRAFFIC SIGNAL POST GALVANIZED STEEL, 12 FT.
1	EACH	TRAFFIC SIGNAL POST GALVANIZED STEEL, 14 FT.
1	EACH	TRAFFIC SIGNAL POST GALVANIZED STEEL, 16 FT.
1	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL, 18 FT.
1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 24 FT.
1	EACH	STEEL MAST ARM ASSEMBLY AND POLE, 52 FT.
1	EACH	STEEL COMBINATION MAST ARM ASSEMBLY AND POLE, 75 FT.
1	EACH	STEEL MAST ARM ASSEMBLY AND POLE WITH DUAL MAST ARMS, 48 FT. AND 50 FT.
1	EACH	STEEL MAST ARM ASSEMBLY AND POLE WITH DUAL MAST ARMS, 32 FT. AND 58 FT.
36	FOOT	CONCRETE FOUNDATION, TYPE A
4	FOOT	CONCRETE FOUNDATION, TYPE C
10	FOOT	CONCRETE FOUNDATION, TYPE E 30-INCH DIAMETER
32	FOOT	CONCRETE FOUNDATION, TYPE E 36-INCH DIAMETER
48	FOOT	CONCRETE FOUNDATION, TYPE E 42-INCH DIAMETER
21	EACH	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED
1	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED
9	EACH	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, BRACKET MOUNTED
1	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, BRACKET MOUNTED
6	EACH	PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED
22	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, FORMED PLASTIC
19	EACH	INDUCTIVE LOOP DETECTOR
2150	FOOT	DETECTOR LOOP, TYPE 1
5	EACH	LIGHT DETECTOR
1	EACH	LIGHT DETECTOR AMPLIFIER
8	EACH	PEDESTRIAN PUSH-BUTTON
1	EACH	TEMPORARY TRAFFIC SIGNAL INSTALLATION
1	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT
12	EACH	REMOVE EXISTING HANDHOLE
8	EACH	REMOVE EXISTING CONCRETE FOUNDATION
2039	FOOT	EMERGENCY VEHICLE PRIORITY SYSTEM LINE SENSOR CABLE, NO. 20 3/C
4	EACH	LED INTERNALLY ILLUMINATED STREET NAME SIGN
1	EACH	TEMPORARY TRAFFIC SIGNAL TIMING
107	FOOT	STEEL CASING PIPE, BORED AND JACKED, 8"
983	FOOT	CABLE, SPECIAL

REMOTE-CONTROLLED VIDEO SYSTEM SCHEDULE OF QUANTITIES

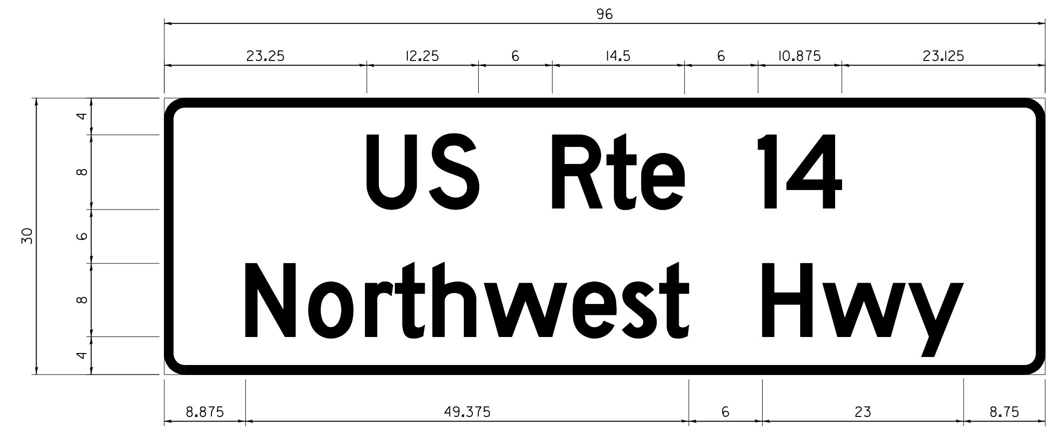
QUANTITY	UNIT	ITEM
6,380	FOOT	FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM12F
6,380	FOOT	ELECTRIC CABLE IN CONDUIT, TRACER NO. 14 1C
434	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
1	EACH	RELOCATE EXISTING SWITCH (SPECIAL)
1	EACH	RELOCATE EXISTING ENCODER
434	FOOT	ELECTRIC CABLE IN CONDUIT, COAXIAL
434	FOOT	ELECTRIC CABLE IN CONDUIT, VIDEO, NO. 20 4C
1	EACH	RELOCATE EXISTING REMOTE-CONTROLLED VIDEO SYSTEM

LED INTERNALLY ILLUMINATED STREET NAME SIGN

ALL DIMENSIONS ARE IN INCHES UNLESS NOTED OTHERSWISE



DESIGN SERIES	AREA (SQ FT)	SIGN PANEL TYPE	SHEETING TYPE	QTY. REQUIRED
D	6.0	LED ILLUMINATED	N/A	2



DESIGN SERIES	AREA (SQ FT)	SIGN PANEL TYPE	SHEETING TYPE	QTY. REQUIRED
D	20.0	LED ILLUMINATED	N/A	2

NOTE: FOR ADDITIONAL DESIGN AND INSTALLATION INFORMATION PLEASE SEE DISTRICT ONE MAST ARM MOUNDED STREET NAME SIGNS DETAILS.

TS4700
EAGLE 7B

PROPOSED SEQUENCE OF OPERATION

MOVEMENT	1 5							1 6			2 5			
PHASE	1+5							1+6			2+5			
INTERVAL	1	2A	2B	3A	3B	4A	4B	5	6A	6B	7	8	9A	9B
CHANGE TO		1+6		2+5		2+6			2+6		θ	θ	2+6	
HART ROAD (SOUTH OF TRACKS) NEAR LEFT POST AND LEFT CANTILEVER SIGNALS N/B	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
HART ROAD (SOUTH OF TRACKS) NEAR RIGHT POST AND RIGHT CANTILEVER SIGNALS N/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R
HART ROAD (NORTH OF TRACKS) FAR LEFT REVERSE MAST ARM AND END OF MAST ARM (FAR RIGHT MAST ARM) SIGNALS N/B	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
HART ROAD (NORTH OF TRACKS) FAR MIDDLE, FAR RIGHT MAST ARM AND FAR RIGHT MAST ARM SHAFT SIGNALS N/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R
HART ROAD MEDIAN POST SIGNAL AND FAR LEFT REVERSE MAST ARM SIGNAL S/B	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
HART ROAD NEAR RIGHT MAST ARM SIGNAL, END OF MAST ARM, FAR RIGHT MAST ARM AND FAR RIGHT MAST ARM SHAFT SIGNALS S/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R
US ROUTE 14 FAR LEFT, FAR LEFT REVERSE MAST ARM AND END OF MAST ARM (FAR RIGHT MAST ARM) SIGNALS W/B	←G	←Y	←R	←G	←G	←Y	←R	←R	←R	←R	←G	←G	←Y	←R
US ROUTE 14 FAR MIDDLE MAST ARM SIGNAL W/B	R	R	R	R	R	R	R	R	R	R	G	G	G	G
US ROUTE 14 FAR RIGHT MAST ARM MOUNTED AND NEAR RIGHT SIGNALS W/B	R	R	R	R	R	R	R	R	R	R	G	G	G	G
US ROUTE 14 FAR LEFT AND END OF MAST ARM SIGNALS E/B	←G	←G	←G	←Y	←R	←Y	←R	←G	←Y	←R	←R	←R	←R	←R
US ROUTE 14 TWO FAR MIDDLE MAST ARM AND NEAR RIGHT REVERSE MAST ARM SIGNALS E/B	R	R	R	R	R	R	R	G	G	G	R	R	R	R
US ROUTE 14 FAR RIGHT MAST ARM, FAR RIGHT MAST ARM SHAFT, RIGHT NEAR REVERSE MAST ARM AND NEAR RIGHT MAST ARM SHAFT SIGNALS E/B	R→	R→	R→	R→	R→	R→	R→	G→	G→	G→	R→	R→	R→	R→
PEDESTRIAN SIGNAL CROSSING HART RD ON NORTH SIDE OF US RTE 14	H	H	H	H	H	H	H	H	H	H	•P	••FH	H	H
PEDESTRIAN SIGNAL CROSSING US RTE 14 ON EAST SIDE OF HART RD	H	H	H	H	H	H	H	H	H	H	H	H	H	H
PEDESTRIAN SIGNAL CROSSING US RTE 14 ON WEST SIDE OF HART RD	H	H	H	H	H	H	H	H	H	H	H	H	H	H

MOVEMENT	2 6											
PHASE	2+6											
INTERVAL	10	11	12A	12B	13A	13B	14A	14B	15A	15B	16A	16B
CHANGE TO			1+5		1+6		2+5		3+8 4+8		3+7 4+7	
HART ROAD (SOUTH OF TRACKS) NEAR LEFT POST AND LEFT CANTILEVER SIGNALS N/B	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
HART ROAD (SOUTH OF TRACKS) NEAR RIGHT POST AND RIGHT CANTILEVER SIGNALS N/B	R	R	R	R	R	R	R	R	R	R	R	R
HART ROAD (NORTH OF TRACKS) FAR LEFT REVERSE MAST ARM AND END OF MAST ARM (FAR RIGHT MAST ARM) SIGNALS N/B	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
HART ROAD (NORTH OF TRACKS) FAR MIDDLE, FAR RIGHT MAST ARM AND FAR RIGHT MAST ARM SHAFT SIGNALS N/B	R	R	R	R	R	R	R	R	R	R	R	R
HART ROAD MEDIAN POST SIGNAL AND FAR LEFT REVERSE MAST ARM SIGNAL S/B	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
HART ROAD NEAR RIGHT MAST ARM SIGNAL, END OF MAST ARM, FAR RIGHT MAST ARM AND FAR RIGHT MAST ARM SHAFT SIGNALS S/B	R	R	R	R	R	R	R	R	R	R	R	R
US ROUTE 14 FAR LEFT, FAR LEFT REVERSE MAST ARM AND END OF MAST ARM (FAR RIGHT MAST ARM) SIGNALS W/B	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
US ROUTE 14 FAR MIDDLE MAST ARM SIGNAL W/B	G	G	Y	R	Y	R	G	G	Y	R	Y	R
US ROUTE 14 FAR RIGHT MAST ARM MOUNTED AND NEAR RIGHT SIGNALS W/B	G	G	Y	R	Y	R	G	G	Y	R	Y	R
US ROUTE 14 FAR LEFT AND END OF MAST ARM SIGNALS E/B	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
US ROUTE 14 TWO FAR MIDDLE MAST ARM AND NEAR RIGHT REVERSE MAST ARM SIGNALS E/B	G	G	Y	R	G	G	Y	R	Y	R	Y	R
US ROUTE 14 FAR RIGHT MAST ARM, FAR RIGHT MAST ARM SHAFT, RIGHT NEAR REVERSE MAST ARM AND NEAR RIGHT MAST ARM SHAFT SIGNALS E/B	G→	G→	Y→	R→	G→	G→	Y→	R→	Y→	R→	G→	G→
PEDESTRIAN SIGNAL CROSSING HART RD ON NORTH SIDE OF US RTE 14	•P	••FH	H	H	H	H	H	H	H	H	H	H
PEDESTRIAN SIGNAL CROSSING US RTE 14 ON EAST SIDE OF HART RD	H	H	H	H	H	H	H	H	H	H	H	H
PEDESTRIAN SIGNAL CROSSING US RTE 14 ON WEST SIDE OF HART RD	H	H	H	H	H	H	H	H	H	H	H	H

MOVEMENT	3 7														
PHASE	3+7														
INTERVAL	17	18A	18B	18C	18D	19A	19B	19C	19D	20A	20B	20C	20D	21A	21B
CHANGE TO		1+5 2+5 4+8				1+6 2+6				3+8				4+7	
HART ROAD (SOUTH OF TRACKS) NEAR LEFT POST AND LEFT CANTILEVER SIGNALS N/B	←G	←Y	←R	←R	←R	←Y	←R	←R	←R	←Y	←R	←R	←R	←G	←G
HART ROAD (SOUTH OF TRACKS) NEAR RIGHT POST AND RIGHT CANTILEVER SIGNALS N/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
HART ROAD (NORTH OF TRACKS) FAR LEFT REVERSE MAST ARM AND END OF MAST ARM (FAR RIGHT MAST ARM) SIGNALS N/B	←G	←G	←G	←Y	←R	←G	←G	←Y	←R	←G	←G	←Y	←R	←G	←G
HART ROAD (NORTH OF TRACKS) FAR MIDDLE, FAR RIGHT MAST ARM AND FAR RIGHT MAST ARM SHAFT SIGNALS N/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
HART ROAD MEDIAN POST SIGNAL AND FAR LEFT REVERSE MAST ARM SIGNAL S/B	←G	←G	←G	←Y	←R	←G	←G	←Y	←R	←G	←G	←G	←G	←Y	←R
HART ROAD NEAR RIGHT MAST ARM SIGNAL, END OF MAST ARM, FAR RIGHT MAST ARM AND FAR RIGHT MAST ARM SHAFT SIGNALS S/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
US ROUTE 14 FAR LEFT, FAR LEFT REVERSE MAST ARM AND END OF MAST ARM (FAR RIGHT MAST ARM) SIGNALS W/B	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
US ROUTE 14 FAR MIDDLE MAST ARM SIGNAL W/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
US ROUTE 14 FAR RIGHT MAST ARM MOUNTED AND NEAR RIGHT SIGNALS W/B	R G→	R G→	R G→	R Y→	R	R G→	R G→	R Y→	R	R G→	R G→	R G→	R G→	R Y→	R
US ROUTE 14 FAR LEFT AND END OF MAST ARM SIGNALS E/B	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
US ROUTE 14 TWO FAR MIDDLE MAST ARM AND NEAR RIGHT REVERSE MAST ARM SIGNALS E/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
US ROUTE 14 FAR RIGHT MAST ARM, FAR RIGHT MAST ARM SHAFT, RIGHT NEAR REVERSE MAST ARM AND NEAR RIGHT MAST ARM SHAFT SIGNALS E/B	G→	G→	G→	Y→	R→	G→	G→	G→	G→	G→	G→	Y→	R→	G→	G→
PEDESTRIAN SIGNAL CROSSING HART RD ON NORTH SIDE OF US RTE 14	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
PEDESTRIAN SIGNAL CROSSING US RTE 14 ON EAST SIDE OF HART RD	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
PEDESTRIAN SIGNAL CROSSING US RTE 14 ON WEST SIDE OF HART RD	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H

CONTINUED ON SHEET 232

PHASE 2+6 SHALL BE PLACED ON RECALL

- • TO APPEAR ONLY UPON PUSHBUTTON ACTIVATION
- •• FLASHING IS TO TERMINATE AT THE COMPLETION OF THE PEDESTRIAN INTERVAL CLEARANCE.

θ THIS OR FLASHING INTERVAL MAY FINISH TIMING IN THE BIDIRECTIONAL STRAIGHT THROUGH MOVEMENT IF THE LEFT ARROW TIME IS NOT SUFFICIENT TO COMPLETE OR FLASHING INTERVALS. AND FLASHING TIMINGS TO BE SET ONLY ON PHASES WHERE AND FLASHING ARE INDICATED IN THE SEQUENCE OF OPERATION.

P = ILLUMINATED PERSON = WALK
FH = ILLUMINATED FLASHING HAND = FLASHING DON'T WALK
H = ILLUMINATED SOLID HAND = DON'T WALK

TS4700
EAGLE 7B

TranSystems	USER NAME = amkidd	DESIGNED - JLV	REVISED -
		DRAWN - AMK	REVISED -
	PLOT SCALE = 99.9998 ' / in.	CHECKED - JWC	REVISED -
	PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

U.S. ROUTE 14 (NORTHWEST HWY.) AT HART RD.
SEQUENCE OF OPERATION

SCALE: 1:20 | SHEET 11 OF 25 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	231

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT

PROPOSED SEQUENCE OF OPERATION

CONTINUED FROM SHEET 231

MOVEMENT																											F L A S H
PHASE		3+8						4+7														4+8					
INTERVAL		22	23	24A	24B	25A	25B	26	27	28A	28B	28C	28D	29A	29B	29C	29D	30A	30B	30C	30D	31	32	33A	33B	33C	33D	
CHANGE TO		θ	θ	1+5 2+5	1+6 2+6	4+8		θ	θ	1+5 2+5				1+6 2+6				4+8						1+5 2+5 1+6 2+6				
HART ROAD (SOUTH OF TRACKS) NEAR LEFT POST AND LEFT CANTILEVER SIGNALS	N/B	←R	←R	←R	←R	←R	←R	←G	←G	←Y	←R	←R	←R	←Y	←R	←R	←R	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
HART ROAD (SOUTH OF TRACKS) NEAR RIGHT POST AND RIGHT CANTILEVER SIGNALS	N/B	R	R	R	R	R	R	G	G	Y	R	R	R	Y	R	R	R	G	G	G	G	G	G	Y	R	R	R	R
HART ROAD (NORTH OF TRACKS) FAR LEFT REVERSE MAST ARM AND END OF MAST ARM (FAR RIGHT MAST ARM) SIGNALS	N/B	←R	←R	←R	←R	←R	←R	←G	←G	←G	←G	←Y	←R	←G	←G	←Y	←R	←G	←G	←Y	←R	←R	←R	←R	←R	←R	←R	←R
HART ROAD (NORTH OF TRACKS) FAR MIDDLE, FAR RIGHT MAST ARM AND FAR RIGHT MAST ARM SHAFT SIGNALS	N/B	R	R	R	R	R	R	G	G	G	G	Y	R	G	G	Y	R	G	G	G	G	G	G	G	G	Y	R	R
HART ROAD MEDIAN POST SIGNAL AND FAR LEFT REVERSE MAST ARM SIGNAL	S/B	←G	←G	←Y	←R	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
HART ROAD NEAR RIGHT MAST ARM SIGNAL, END OF MAST ARM, FAR RIGHT MAST ARM AND FAR RIGHT MAST ARM SHAFT SIGNALS	S/B	G	G	Y	R	G	G	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	G	G	G	Y	R	R
US ROUTE 14 FAR LEFT, FAR LEFT REVERSE MAST ARM AND END OF MAST ARM (FAR RIGHT MAST ARM) SIGNALS	W/B	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
US ROUTE 14 FAR MIDDLE MAST ARM SIGNAL	W/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
US ROUTE 14 FAR RIGHT MAST ARM MOUNTED AND NEAR RIGHT SIGNALS	W/B	R G→	R G→	R Y→	R	R Y→	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
US ROUTE 14 FAR LEFT AND END OF MAST ARM SIGNALS	E/B	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
US ROUTE 14 TWO FAR MIDDLE MAST ARM AND NEAR RIGHT REVERSE MAST ARM SIGNALS	E/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
US ROUTE 14 FAR RIGHT MAST ARM, FAR RIGHT MAST ARM SHAFT, RIGHT NEAR REVERSE MAST ARM AND NEAR RIGHT MAST ARM SHAFT SIGNALS	E/B	R→	R→	R→	R→	R→	R→	G→	G→	G→	G→	Y→	R→	G→	G→	G→	G→	G→	G→	Y→	R→	R→	R→	R→	R→	R→	R→	R→
PEDESTRIAN SIGNAL CROSSING HART RD ON NORTH SIDE OF US RTE 14		H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	D A R K
PEDESTRIAN SIGNAL CROSSING US RTE 14 ON EAST SIDE OF HART RD		H	H	H	H	H	H	•P	••FH	H	H	H	H	H	H	H	H	H	H	H	H	•P	••FH	H	H	H	H	
PEDESTRIAN SIGNAL CROSSING US RTE 14 ON WEST SIDE OF HART RD		•P	••FH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	•P	••FH	H	H	H	H	

PHASE 2+6 SHALL BE PLACED ON RECALL

• TO APPEAR ONLY UPON PUSHBUTTON ACTIVATION

•• FLASHING [hand] IS TO TERMINATE AT THE COMPLETION OF THE PEDESTRIAN INTERVAL CLEARANCE.

θ THIS [walk] OR FLASHING [hand] INTERVAL MAY FINISH TIMING IN THE BIDIRECTIONAL STRAIGHT THROUGH MOVEMENT IF THE LEFT ARROW TIME IS NOT SUFFICIENT TO COMPLETE [walk] OR FLASHING [hand] INTERVALS. [walk] AND FLASHING [hand] TIMINGS TO BE SET ONLY ON PHASES WHERE [walk] AND FLASHING [hand] ARE INDICATED IN THE SEQUENCE OF OPERATION.

P = ILLUMINATED PERSON = WALK
FH = ILLUMINATED FLASHING HAND = FLASHING DON'T WALK
H = ILLUMINATED SOLID HAND = DON'T WALK

TS4700
EAGLE 7B

TranSystems	USER NAME = amkidd	DESIGNED - JLV	REVISED -
		DRAWN - AMK	REVISED -
	PLOT SCALE = 99.9998 ' / in.	CHECKED - JWC	REVISED -
	PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

U.S. ROUTE 14 (NORTHWEST HWY.) AT HART RD.
SEQUENCE OF OPERATION

SCALE: 1:20 | SHEET 11 OF 25 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	232

CONTRACT NO. 61D65

ILLINOIS FED. AID PROJECT

FILE NAME: G:\CH09\0176\Road\Sheets\08084-TS-06A.dgn

PROPOSED EMERGENCY VEHICLE PREEMPTION SEQUENCE OF OPERATION

CHANGE FROM NORMAL SEQUENCE OF OPERATION INTERVAL NUMBER	1		1		1		5		5	7	7			10			10			10		
EMERGENCY VEHICLE PREEMPTION SEQUENCE OF OPERATION INTERVAL NUMBER	1A	1B	1C	1D	1E	1F	1G	1H	1J	1K	1L	1M	1N	1P	1Q	1R	1S	1T	1U	1V	1W	1X
CHANGE TO EMERGENCY VEHICLE PREEMPTION SEQUENCE OF OPERATION INTERVAL NUMBER	1B	2	1D	3 OR 5	1F	4	1H	2,3 &5	4	2	1M	1N	3,4 &5	1Q	1R	2	1T	1U	3 OR 5	1W	1X	4
HART ROAD (SOUTH OF TRACKS) NEAR LEFT POST AND LEFT CANTILEVER SIGNALS N/B	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
HART ROAD (SOUTH OF TRACKS) NEAR RIGHT POST AND RIGHT CANTILEVER SIGNALS N/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
HART ROAD (NORTH OF TRACKS) FAR LEFT REVERSE MAST ARM AND END OF MAST ARM (FAR RIGHT MAST ARM) SIGNALS N/B	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
HART ROAD (NORTH OF TRACKS) FAR MIDDLE, FAR RIGHT MAST ARM AND FAR RIGHT MAST ARM SHAFT SIGNALS N/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
HART ROAD MEDIAN POST SIGNAL AND FAR LEFT REVERSE MAST ARM SIGNAL S/B	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
HART ROAD NEAR RIGHT MAST ARM SIGNAL, END OF MAST ARM, FAR RIGHT MAST ARM AND FAR RIGHT MAST ARM SHAFT SIGNALS S/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
US ROUTE 14 FAR LEFT, FAR LEFT REVERSE MAST ARM AND END OF MAST ARM (FAR RIGHT MAST ARM) SIGNALS W/B	←G	←G	←Y	←R	←Y	←R	←R	←R	←R	←G	←G	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
US ROUTE 14 FAR MIDDLE MAST ARM SIGNAL W/B	R	R	R	R	R	R	R	R	R	G	G	Y	R	G	G	G	G	Y	R	G	Y	R
US ROUTE 14 FAR RIGHT MAST ARM MOUNTED AND NEAR RIGHT SIGNALS W/B	R	R	R	R	R	R	R	R	R	G	G	Y	R	G	G	G	G	Y	R	G	Y	R
US ROUTE 14 FAR LEFT AND END OF MAST ARM SIGNALS E/B	←Y	←R	←Y	←R	←G	←G	←Y	←R	←G	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
US ROUTE 14 TWO FAR MIDDLE MAST ARM AND NEAR RIGHT REVERSE MAST ARM SIGNALS E/B	R	R	R	R	R	R	Y	R	G	R	R	R	R	G	Y	R	G	Y	R	G	G	G
US ROUTE 14 FAR RIGHT MAST ARM, FAR RIGHT MAST ARM SHAFT, RIGHT NEAR REVERSE MAST ARM AND NEAR RIGHT MAST ARM SHAFT SIGNALS E/B	R→	R→	R→	R→	R→	R→	Y→	R→	G→	R→	R→	R→	R→	G→	Y→	R→	G→	Y→	R→	G→	G→	G→
PEDESTRIAN SIGNAL CROSSING HART RD ON NORTH SIDE OF US RTE 14	H	H	H	H	H	H	H	H	H	FH	FH	H	H	FH	H	H	FH	H	H	FH	H	H
PEDESTRIAN SIGNAL CROSSING US RTE 14 ON EAST SIDE OF HART RD	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
PEDESTRIAN SIGNAL CROSSING US RTE 14 ON WEST SIDE OF HART RD	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H

CHANGE FROM NORMAL SEQUENCE OF OPERATION INTERVAL NUMBER	17				17		17				17				22			22	
EMERGENCY VEHICLE PREEMPTION SEQUENCE OF OPERATION INTERVAL NUMBER	1Y	1Z	1AA	1BB	1CC	1DD	1EE	1FF	1GG	1HH	1JJ	1KK	1LL	1MM	1NN	1PP	1QQ	1RR	1SS
CHANGE TO EMERGENCY VEHICLE PREEMPTION SEQUENCE OF OPERATION INTERVAL NUMBER	1Z	1AA	1BB	2	1DD	3	1FF	1GG	1HH	4	1KK	1LL	1MM	5	1PP	1QQ	2,3 &4	1SS	5
HART ROAD (SOUTH OF TRACKS) NEAR LEFT POST AND LEFT CANTILEVER SIGNALS N/B	←Y	←R	←R	←R	←G	←G	←Y	←R	←R	←R	←Y	←R	←R	←R	←R	←R	←R	←R	←R
HART ROAD (SOUTH OF TRACKS) NEAR RIGHT POST AND RIGHT CANTILEVER SIGNALS N/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
HART ROAD (NORTH OF TRACKS) FAR LEFT REVERSE MAST ARM AND END OF MAST ARM (FAR RIGHT MAST ARM) SIGNALS N/B	←G	←G	←Y	←R	←G	←G	←G	←G	←Y	←R	←G	←G	←Y	←R	←R	←R	←R	←R	←R
HART ROAD (NORTH OF TRACKS) FAR MIDDLE, FAR RIGHT MAST ARM AND FAR RIGHT MAST ARM SHAFT SIGNALS N/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
HART ROAD MEDIAN POST SIGNAL AND FAR LEFT REVERSE MAST ARM SIGNAL S/B	←G	←G	←Y	←R	←Y	←R	←G	←G	←Y	←R	←G	←G	←G	←G	←G	←Y	←R	←G	←G
HART ROAD NEAR RIGHT MAST ARM SIGNAL, END OF MAST ARM, FAR RIGHT MAST ARM AND FAR RIGHT MAST ARM SHAFT SIGNALS S/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	G	G
US ROUTE 14 FAR LEFT, FAR LEFT REVERSE MAST ARM AND END OF MAST ARM (FAR RIGHT MAST ARM) SIGNALS W/B	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
US ROUTE 14 FAR MIDDLE MAST ARM SIGNAL W/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
US ROUTE 14 FAR RIGHT MAST ARM MOUNTED AND NEAR RIGHT SIGNALS W/B	R G→	R G→	R Y→	R	R Y→	R	R G→	R G→	R Y→	R	R G→	R G→	R Y→	R	R G→	R Y→	R	R G→	R Y→
US ROUTE 14 FAR LEFT AND END OF MAST ARM SIGNALS E/B	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R
US ROUTE 14 TWO FAR MIDDLE MAST ARM AND NEAR RIGHT REVERSE MAST ARM SIGNALS E/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
US ROUTE 14 FAR RIGHT MAST ARM, FAR RIGHT MAST ARM SHAFT, RIGHT NEAR REVERSE MAST ARM AND NEAR RIGHT MAST ARM SHAFT SIGNALS E/B	G→	G→	Y→	R→	Y→	R→	G→	G→	G→	G→	G→	G→	Y→	R→	R→	R→	R→	R→	R→
PEDESTRIAN SIGNAL CROSSING HART RD ON NORTH SIDE OF US RTE 14	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
PEDESTRIAN SIGNAL CROSSING US RTE 14 ON EAST SIDE OF HART RD	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
PEDESTRIAN SIGNAL CROSSING US RTE 14 ON WEST SIDE OF HART RD	H	H	H	H	H	H	H	H	H	H	H	H	H	H	FH	H	H	FH	H

CHANGE FROM NORMAL SEQUENCE OF OPERATION INTERVAL NUMBER	26					26			26					31					31			31					PREEMPTOR NUMBER 3	PREEMPTOR NUMBER 4	PREEMPTOR NUMBER 5	PREEMPTOR NUMBER 6	
EMERGENCY VEHICLE PREEMPTION SEQUENCE OF OPERATION INTERVAL NUMBER	1TT	1UU	1VV	1WW	1XX	1YY	1ZZ	1AAA	1BBB	1CCC	1DDD	1EEE	1FFF	1GGG	1HHH	1JJJ	1KKK	1LLL	1MMM	1NNN	1PPP	1QQQ	1RRR	1SSS	1TTT	1UUU	2 WB	3 NB	4 EB	5 SB	CLEAR TO NORMAL SEQUENCE
CHANGE TO EMERGENCY VEHICLE PREEMPTION SEQUENCE OF OPERATION INTERVAL NUMBER	1UU	1VV	1WW	1XX	2& 5	1ZZ	1AAA	3	1CCC	1DDD	1EEE	1FFF	4	1HHH	1JJJ	1KKK	1LLL	2 OR 4	1NNN	1PPP	3	1RRR	1SSS	1TTT	1UUU	5					
HART ROAD (SOUTH OF TRACKS) NEAR LEFT POST AND LEFT CANTILEVER SIGNALS N/B	←G	←Y	←R	←R	←R	←G	←G	←G	←G	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←G	←R	←R	◇
HART ROAD (SOUTH OF TRACKS) NEAR RIGHT POST AND RIGHT CANTILEVER SIGNALS N/B	G	Y	R	R	R	G	G	G	G	Y	R	R	R	G	Y	R	R	R	G	G	G	G	Y	R	R	R	R	G	R	R	◇
HART ROAD (NORTH OF TRACKS) FAR LEFT REVERSE MAST ARM AND END OF MAST ARM (FAR RIGHT MAST ARM) SIGNALS N/B	←G	←G	←G	←Y	←R	←G	←G	←G	←G	←G	←G	←Y	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←G	←R	←R	◇
HART ROAD (NORTH OF TRACKS) FAR MIDDLE, FAR RIGHT MAST ARM AND FAR RIGHT MAST ARM SHAFT SIGNALS N/B	G	G	G	Y	R	G	G	G	G	G	G	Y	R	G	G	G	Y	R	G	G	G	G	G	G	Y	R	R	G	R	R	◇
HART ROAD MEDIAN POST SIGNAL AND FAR LEFT REVERSE MAST ARM SIGNAL S/B	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←G	◇
HART ROAD NEAR RIGHT MAST ARM SIGNAL, END OF MAST ARM, FAR RIGHT MAST ARM AND FAR RIGHT MAST ARM SHAFT SIGNALS S/B	R	R	R	R	R	R	R	R	R	R	R	R	R	G	G	G	Y	R	G	Y	R	G	G	G	G	G	R	R	R	G	◇
US ROUTE 14 FAR LEFT, FAR LEFT REVERSE MAST ARM AND END OF MAST ARM (FAR RIGHT MAST ARM) SIGNALS W/B	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←G	←R	←R	←R	◇
US ROUTE 14 FAR MIDDLE MAST ARM SIGNAL W/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	R	R	R	◇
US ROUTE 14 FAR RIGHT MAST ARM MOUNTED AND NEAR RIGHT SIGNALS W/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	R	R	R	◇
US ROUTE 14 FAR LEFT AND END OF MAST ARM SIGNALS E/B	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←R	←G	←R	◇
US ROUTE 14 TWO FAR MIDDLE MAST ARM AND NEAR RIGHT REVERSE MAST ARM SIGNALS E/B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	R	◇
US ROUTE 14 FAR RIGHT MAST ARM, FAR RIGHT MAST ARM SHAFT, RIGHT NEAR REVERSE MAST ARM AND NEAR RIGHT MAST ARM SHAFT SIGNALS E/B	G→	G→	G→	Y→	R→	G→	Y→	R→	G→	G→	G→	G→	G→	R→	R→	R→	R→	R→	R→	R→	R→	R→	R→	R→	R→	R→	R→	R→	G→	R→	◇
PEDESTRIAN SIGNAL CROSSING HART RD ON NORTH SIDE OF US RTE 14	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	◇
PEDESTRIAN SIGNAL CROSSING US RTE 14 ON EAST SIDE OF HART RD	FH	H	H	H	H	FH	H	H	FH	H	H	H	H	FH	H	H	H	H	FH	H	H	FH	H	H	H	H	H	H	H	H	◇
PEDESTRIAN SIGNAL CROSSING US RTE 14 ON WEST SIDE OF HART RD	H	H	H	H	H	H	H	H	H	H	H	H	H	FH	H	H	H	H	FH	H	H	FH	H	H	H	H	H	H	H	H	◇

◇ EMERGENCY VEHICLE SEQUENCE SHALL PROVIDE THE PROPER CLEARANCE INTERVAL TO RESUME THE NORMAL SEQUENCE OF OPERATION OR PROPER CLEARANCE INTERVAL TO DISPLAY A DIFFERENT EMERGENCY VEHICLE INTERVAL AFTER EMERGENCY VEHICLE INTERVAL 2, 3, 4 OR 5 IS TERMINATED.

TS4700
EAGLE 7B

FILE NAME: g:\ch09\0176\road\Sheets\08084-TS-07.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -
PLOT SCALE = 99.9998 ' / in.	DRAWN - AMK	REVISED -
	CHECKED - JWC	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

U.S. ROUTE 14 (NORTHWEST HWY.) AT HART RD.
EMERGENCY VEHICLE PREEMPTION
SEQUENCE OF OPERATION

SCALE: 1:20 | SHEET 13 OF 25 SHEETS | STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	233

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT

PROPOSED RAILROAD PREEMPTION SEQUENCE OF OPERATION

																		PREEMPTOR NUMBER 3		PREEMPTOR NUMBER 4		PREEMPTOR NUMBER 5		PREEMPTOR NUMBER 6		PREEMPTOR NUMBER 2				
CHANGE FROM NORMAL SEQUENCE OF OPERATION INTERVAL NUMBER		1		5		7		10		17		22		26		31														
CHANGE FROM EMERGENCY VEHICLE PREEMPTION SEQUENCE OF OPERATION INTERVAL NUMBER																		2		3		4		5						
RAILROAD PREEMPTION SEQUENCE OF OPERATION INTERVAL NUMBER		1A	1B	1C	1D	1E	1F	1G	1H	1J	1K	1L	1M	1N	1P	1Q	1R	1S	1T	1U	1V	1W	1X	1Y	1Z	2	3	4	5	CLEAR TO NORMAL SEQUENCE
CHANGE TO RAILROAD PREEMPTION SEQUENCE OF OPERATION INTERVAL NUMBER		1B	2	1D	2	1F	2	1H	2	1K	2	1M	2	1P	2	1R	2	1T	2	1V	2	1X	2	1Z	2	3	4	5		
HART ROAD (SOUTH OF TRACKS) NEAR LEFT POST AND LEFT CANTILEVER SIGNALS	N/B	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄Y	◄R	◄R	◄R	◄Y	◄R	◄R	◄R	◄R	◄R	◄Y	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	△
HART ROAD (SOUTH OF TRACKS) NEAR RIGHT POST AND RIGHT CANTILEVER SIGNALS	N/B	R	R	R	R	R	R	R	R	R	R	R	R	Y	R	Y	R	R	R	Y	R	R	R	R	R	R	R	R	R	△
HART ROAD (NORTH OF TRACKS) FAR LEFT REVERSE MAST ARM AND END OF MAST ARM (FAR RIGHT MAST ARM) SIGNALS	N/B	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄G	◄G	◄R	◄R	◄G	◄G	◄R	◄R	◄R	◄R	◄G	◄G	◄R	◄R	◄R	◄R	◄G	◄Y	◄R	◄R	△
HART ROAD (NORTH OF TRACKS) FAR MIDDLE, FAR RIGHT MAST ARM AND FAR RIGHT MAST ARM SHAFT SIGNALS	N/B	R	R	R	R	R	R	R	R	R	R	R	R	G	G	G	G	R	R	G	G	R	R	R	R	G	Y	R	R	△
HART ROAD MEDIAN POST SIGNAL AND FAR LEFT REVERSE MAST ARM SIGNAL	S/B	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄Y	◄R	◄Y	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄Y	◄R	◄R	◄R	◄R	◄R	△
HART ROAD NEAR RIGHT MAST ARM SIGNAL, END OF MAST ARM, FAR RIGHT MAST ARM AND FAR RIGHT MAST ARM SHAFT SIGNALS	S/B	R	R	R	R	R	R	R	R	R	R	Y	R	R	R	Y	R	R	R	R	R	R	R	Y	R	R	R	R	R	△
US ROUTE 14 FAR LEFT, FAR LEFT REVERSE MAST ARM AND END OF MAST ARM (FAR RIGHT MAST ARM) SIGNALS	W/B	◄Y	◄R	◄R	◄R	◄Y	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄Y	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	△
US ROUTE 14 FAR MIDDLE MAST ARM SIGNAL	W/B	R	R	R	R	Y	R	Y	R	R	R	R	R	R	R	R	R	Y	R	R	R	R	R	R	R	R	R	R	G	△
US ROUTE 14 FAR RIGHT MAST ARM MOUNTED AND NEAR RIGHT SIGNALS	W/B	R	R	R	R	Y	R	Y	R	R Y►	R	R Y►	R	R	R	R	R	Y	R	R	R	R	R	R	R	R	R	R	G	△
US ROUTE 14 FAR LEFT AND END OF MAST ARM SIGNALS	E/B	◄Y	◄R	◄Y	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄R	◄Y	◄R	◄R	◄R	◄R	◄R	◄R	◄R	△
US ROUTE 14 TWO FAR MIDDLE MAST ARM AND NEAR RIGHT REVERSE MAST ARM SIGNALS	E/B	R	R	Y	R	R	R	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	R	R	R	R	R	R	G	△
US ROUTE 14 FAR RIGHT MAST ARM, FAR RIGHT MAST ARM SHAFT, RIGHT NEAR REVERSE MAST ARM AND NEAR RIGHT MAST ARM SHAFT SIGNALS	E/B	R►	R►	Y►	R►	R►	R►	Y►	R►	Y►	R►	R►	R►	Y►	R►	R►	R►	R►	R►	R►	R►	Y►	R►	R►	R►	R►	R►	R►	R►	△
PEDESTRIAN SIGNAL CROSSING HART RD ON NORTH SIDE OF US RTE 14		H	H	H	H	FH	H	FH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	△
PEDESTRIAN SIGNAL CROSSING US RTE 14 ON EAST SIDE OF HART RD		H	H	H	H	H	H	H	H	H	H	H	H	FH	H	FH	H	H	H	H	H	H	H	H	H	H	H	H	H	△
PEDESTRIAN SIGNAL CROSSING US RTE 14 ON WEST SIDE OF HART RD		H	H	H	H	H	H	H	H	H	H	FH	H	H	H	FH	H	H	H	H	H	H	H	H	H	H	H	H	H	△
																													HOLD	

△ RAILROAD PREEMPTION SEQUENCE SHALL PROVIDE THE PROPER CLEARANCE INTERVAL TO RESUME THE NORMAL SEQUENCE OF OPERATION OR PROPER CLEARANCE INTERVAL TO DISPLAY AN EMERGENCY VEHICLE INTERVAL (IF APPLICABLE) AFTER RAILROAD PREEMPTION INTERVAL 5 IS TERMINATED.

TS4700
EAGLE 7B

FILE NAME: g:\ch09\0176\road\Sheets\08084-TS-08.dgn

TranSystems

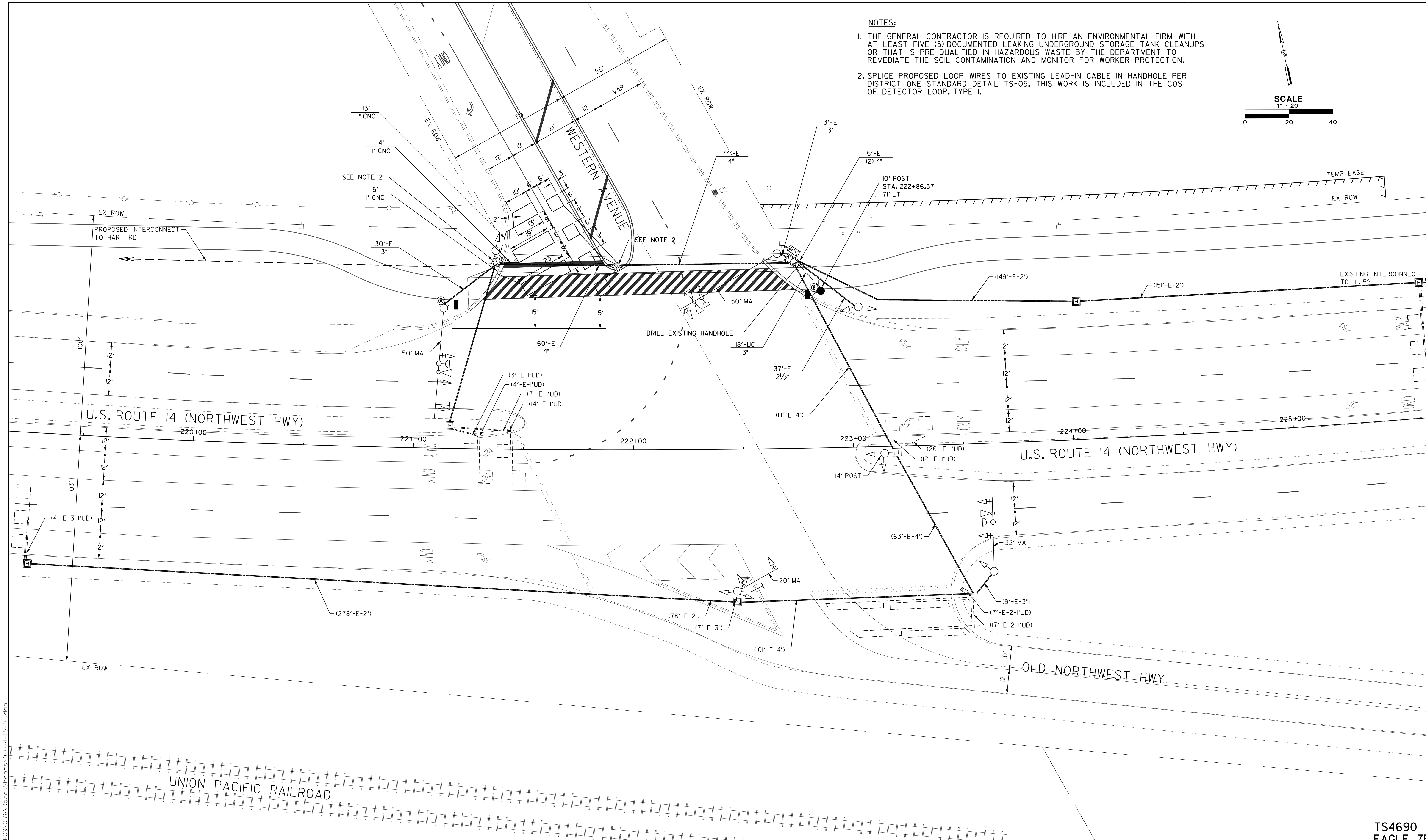
USER NAME = amkidd	DESIGNED - JLV	REVISED -	
	DRAWN - AMK	REVISED -	
PLOT SCALE = 99.9998 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

U.S. ROUTE 14 (NORTHWEST HWY.) AT HART RD.
RAILROAD PREEMPTION SEQUENCE OF OPERATION

SCALE: 1:20 | SHEET 14 OF 25 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	234
		CONTRACT NO. 61D65		
	ILLINOIS	FED. AID PROJECT		



NOTES:

1. THE GENERAL CONTRACTOR IS REQUIRED TO HIRE AN ENVIRONMENTAL FIRM WITH AT LEAST FIVE (5) DOCUMENTED LEAKING UNDERGROUND STORAGE TANK CLEANUPS OR THAT IS PRE-QUALIFIED IN HAZARDOUS WASTE BY THE DEPARTMENT TO REMEDIATE THE SOIL CONTAMINATION AND MONITOR FOR WORKER PROTECTION.
2. SPLICE PROPOSED LOOP WIRES TO EXISTING LEAD-IN CABLE IN HANDHOLE PER DISTRICT ONE STANDARD DETAIL TS-05. THIS WORK IS INCLUDED IN THE COST OF DETECTOR LOOP, TYPE I.

TS4690
EAGLE 7B

FILE NAME: G:\CH09\0176\Road\Sheets\08084-TS-09.dgn

TranSystems

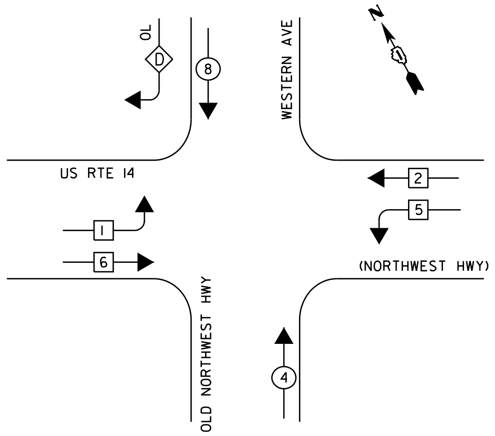
USER NAME = amkidd	DESIGNED - JLV	REVISED -	STATE OF ILLINOIS
	DRAWN - AMK	REVISED -	DEPARTMENT OF TRANSPORTATION
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

U.S. ROUTE 14 AND WESTERN AVE / OLD NORTHWEST HWY
TRAFFIC SIGNAL MODIFICATION PLAN

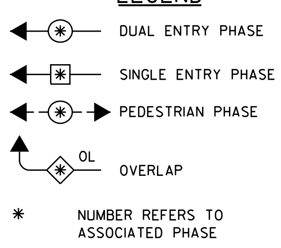
SCALE: 1:20 | SHEET 15 OF 25 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	235
		CONTRACT NO. 61D65		
	ILLINOIS	FED. AID PROJECT		

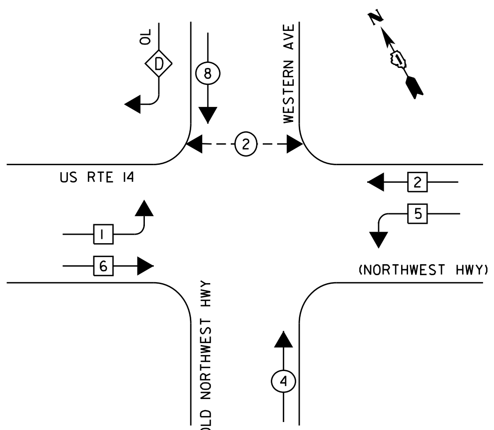
EXISTING CONTROLLER SEQUENCE



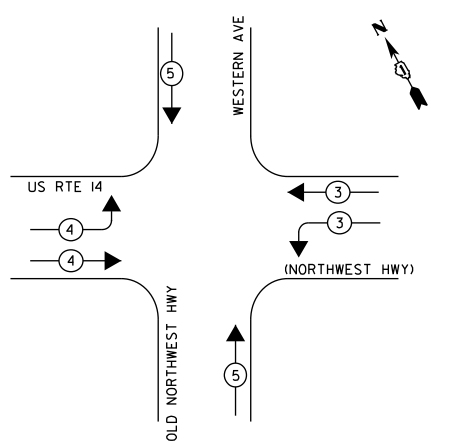
LEGEND



PROPOSED CONTROLLER SEQUENCE



EMERGENCY VEHICLE PREEMPTION SEQUENCE



RIGHT TURN OVERLAP PHASE DESIGNATION

OVERLAP LETTER		PERMISSIVE PHASE		PROTECTED PHASE
D	=	8	+	1

EMERGENCY VEHICLE PREEMPTORS			
EMERGENCY VEHICLE PREEMPTOR	3	4	5
MOVEMENT			

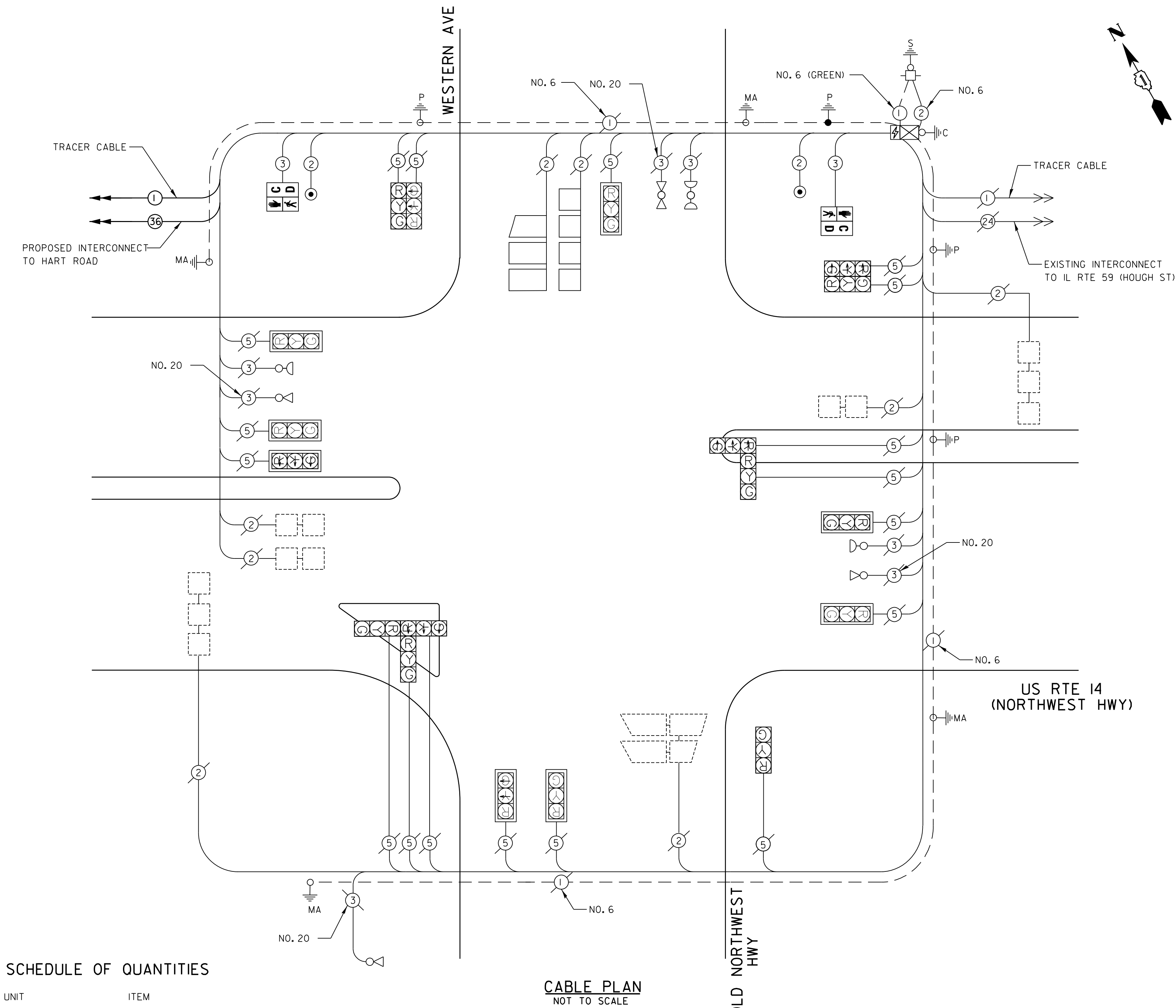
TRAFFIC SIGNAL
ELECTRICAL SERVICE REQUIREMENTS

TYPE	NO. OF LAMPS	LED WATTAGE	% OPERATION	TOTAL WATTAGE
SIGNAL (RED)	18	11	50	99.0
(YELLOW)	18	20	5	18.0
(GREEN)	18	12	45	97.2
PERMISSIVE ARROW	-	10	10	-
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	-	-	-	-
			TOTAL =	379.2

ENGERGY COSTS TO:

VILLAGE OF BARRINGTON
200 SOUTH HOUGH STREET
BARRINGTON, IL 60010

ENGERGY SUPPLY CONTACT: ANA KUNZE
PHONE: (630) 437-2129
COMPANY: COMMONWEALTH EDISON COMPANY

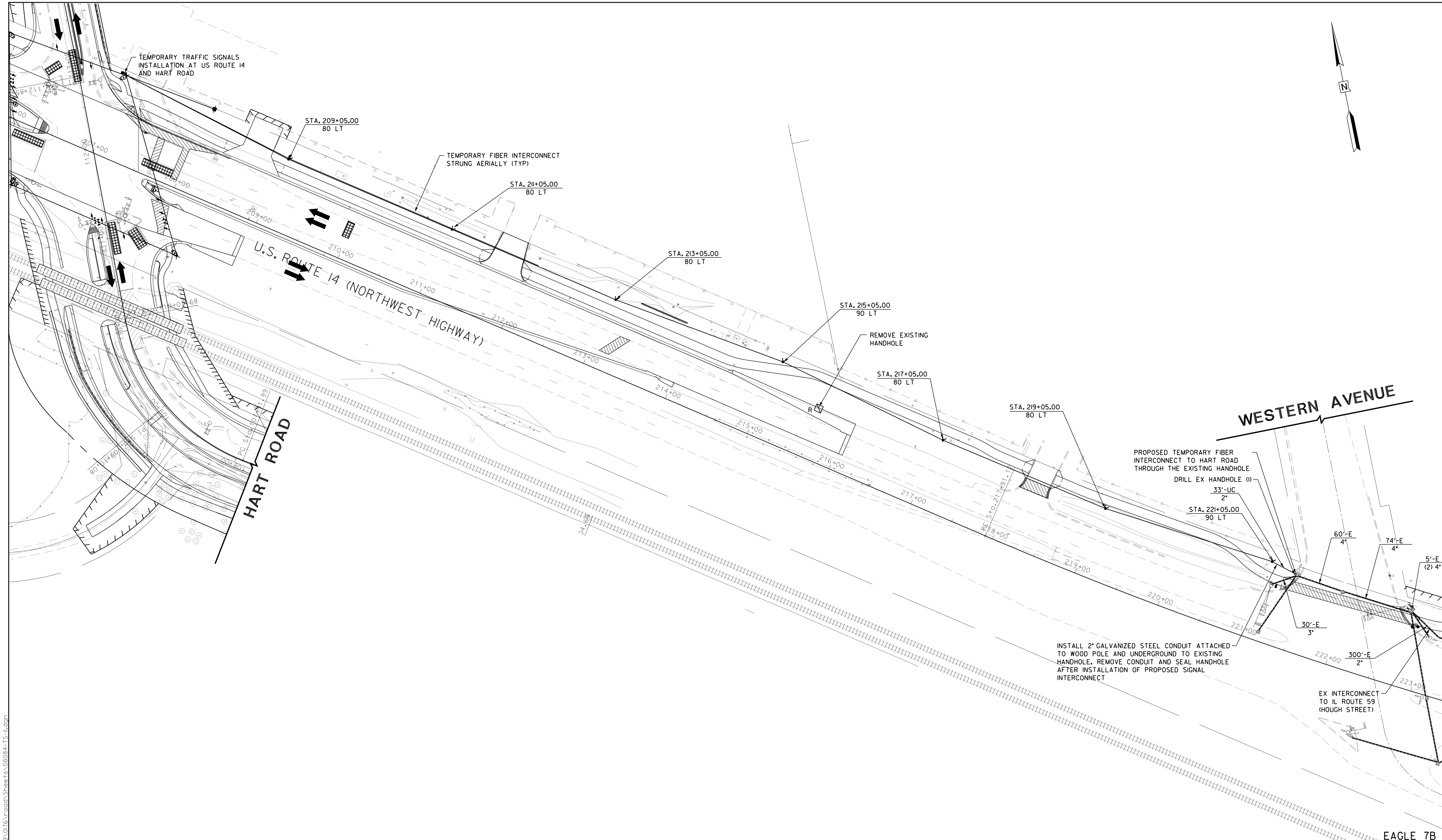


CABLE PLAN
NOT TO SCALE

SCHEDULE OF QUANTITIES

QUANTITY	UNIT	ITEM
18	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 3" DIA.
259	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 2C
273	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL NO. 14 3C
26	FOOT	ELECTRIC CABLE IN CONDUIT, EQUIPMENT GROUNDING CONDUCTOR, NO. 6 1C
1	EACH	TRAFFIC SIGNAL POST, GALVANIZED STEEL, 10 FT.
4	FOOT	CONCRETE FOUNDATION, TYPE A
2	EACH	PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, BRACKET MOUNTED WITH COUNTDOWN TIMER
330	FOOT	DETECTOR LOOP, TYPE I
2	EACH	PEDESTRIAN PUSH-BUTTON
1	EACH	MODIFY EXISTING CONTROLLER CABINET
1	EACH	DRILL EXISTING HANDHOLE
1	EACH	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION

TS 4690
EAGLE 7B



EAGLE 7B

FILE NAME: g:\ch09\0176\road\Sheets\08084-TS-11.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -
	DRAWN - AMK	REVISED -
PLOT SCALE = 100.00 ' / in.	CHECKED - JWC	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

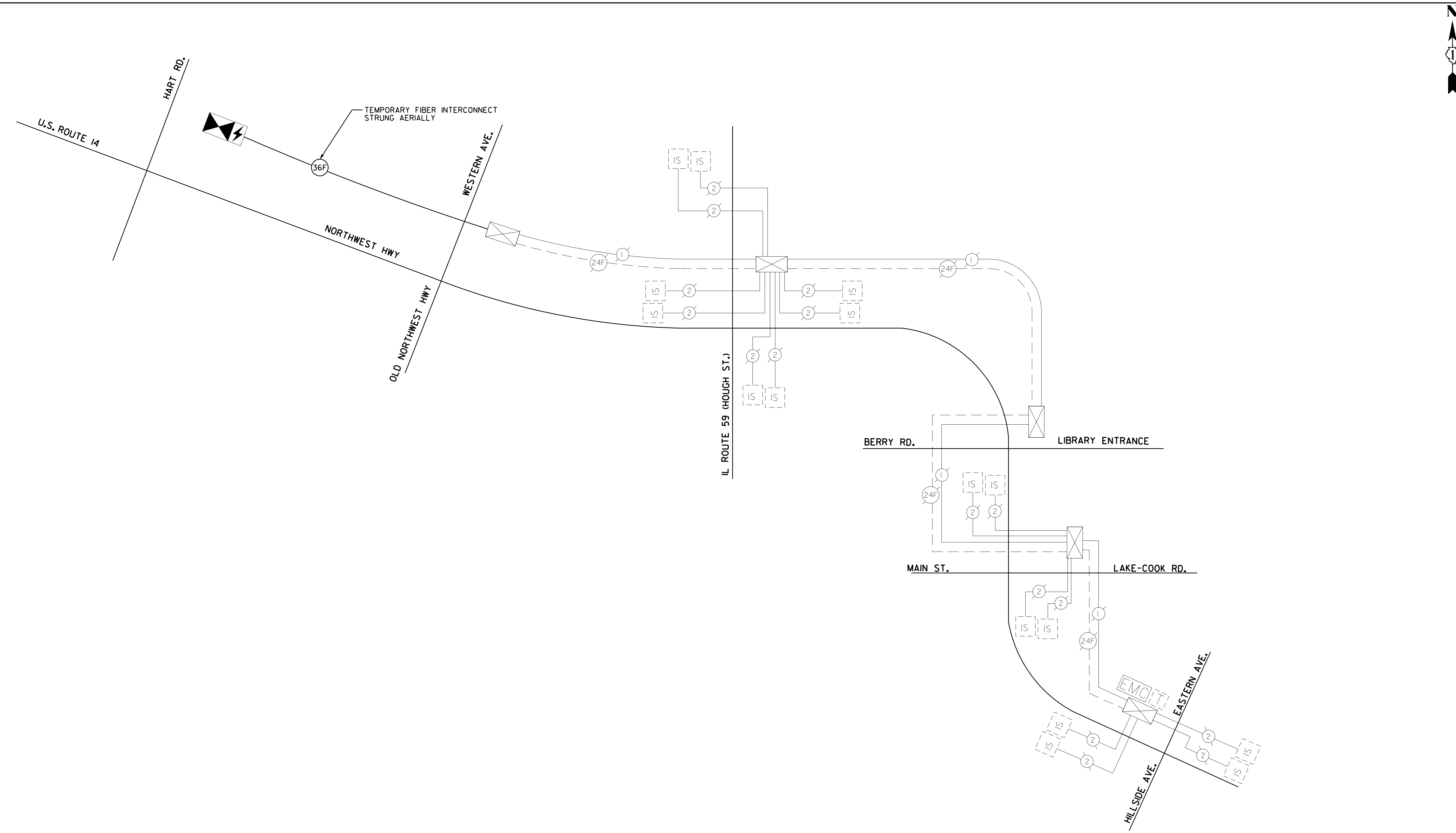
U.S. ROUTE 14 (NORTHWEST HWY)
HART ROAD TO WESTERN AVENUE
TEMPORARY INTERCONNECT PLAN

SCALE: 1:20 | SHEET 17 OF 25 SHEETS | STA. | TO STA.

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	237

CONTRACT NO. 61D65

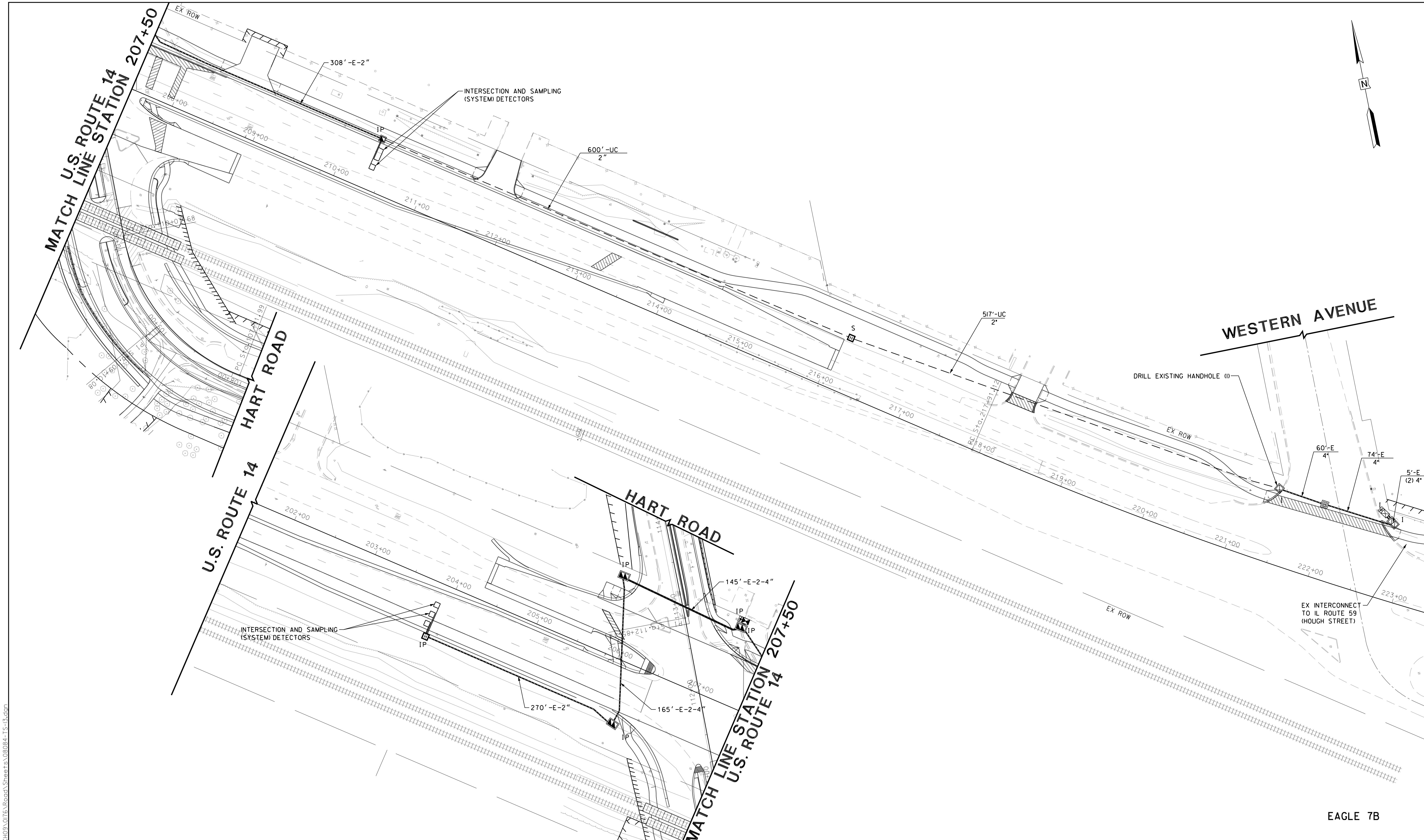
ILLINOIS | FED. AID PROJECT



EAGLE 7B

TranSystems	USER NAME = amkidd	DESIGNED - JLV	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	U.S. ROUTE 14 (NORTHWEST HWY.) HART ROAD TO EASTERN AVENUE TEMPORARY INTERCONNECT SCHEMATIC PLAN	FAU RTE.	SECTION	COUNTY	TOTAL SHEETS / SHEET NO.
		DRAWN - AMK	REVISED -			2549	09-00174-05-CH	LAKE	423 / 238
	PLOT SCALE = 99.9998 ' / in.	CHECKED - JWC	REVISED -					CONTRACT NO. 61D65	
	PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -		SCALE: 1:20 / SHEET 18 OF 25 SHEETS / STA. / TO STA.		ILLINOIS	FED. AID PROJECT	

FILE NAME: g:\ch09\0176\road\Sheets\08084-TS-12-interconnectSchematic.dgn



FILE NAME: G:\CH09\0176\Road\Sheets\08084-TS-13.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	DRAWN - AMK	REVISED -	
PLOT SCALE = 100.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

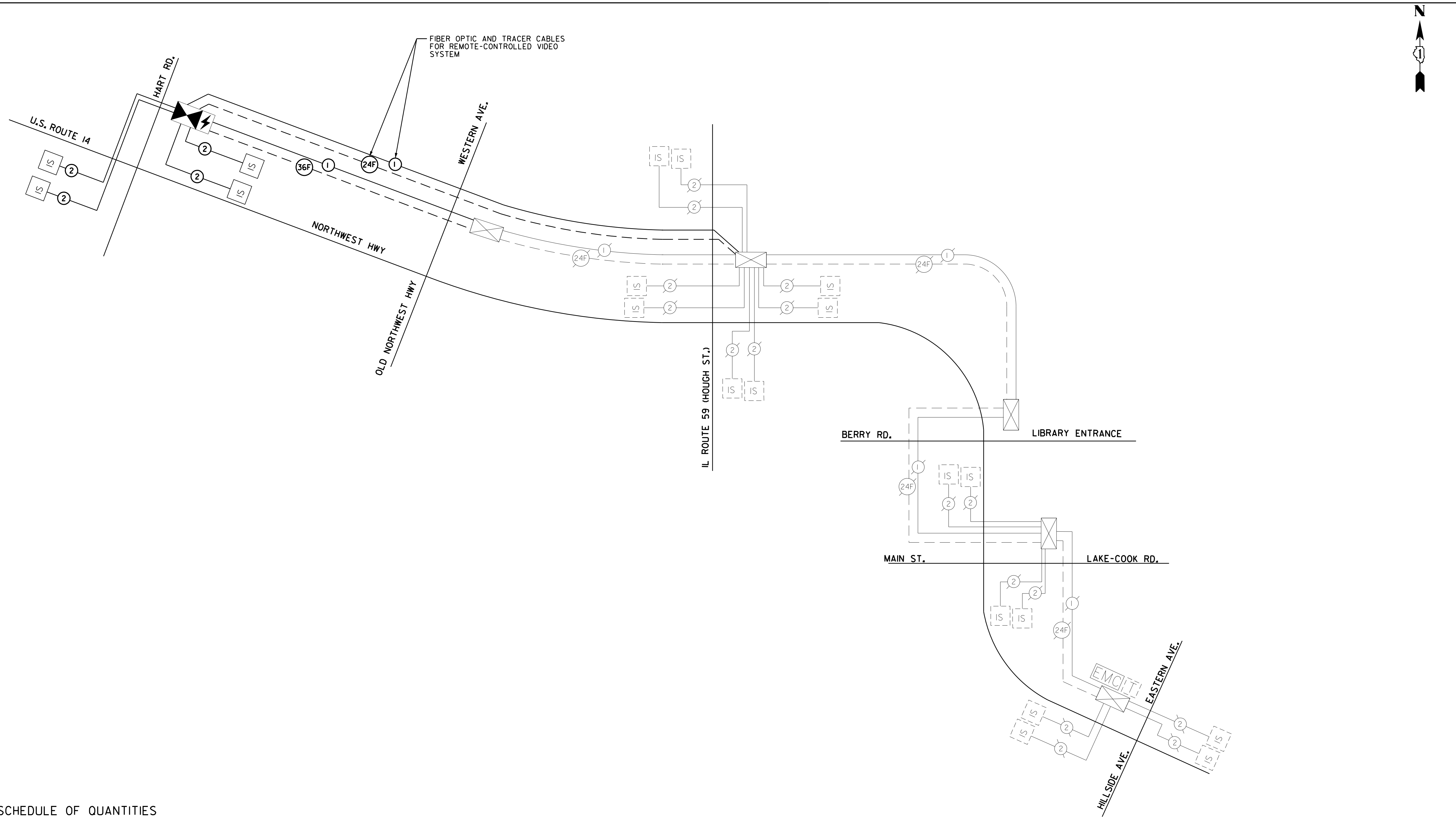
U.S. ROUTE 14 (NOTRHWEST HWY.)
HART ROAD TO WESTERN AVENUE
INTERCONNECT PLAN

SCALE: 1:20 | SHEET 19 OF 25 SHEETS | STA. | TO STA.

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	239

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT



INTERCONNECT SCHEDULE OF QUANTITIES

QUANTITY	UNIT	ITEM
1117	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2"
1	EACH	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION
1	EACH	TRANSCEIVER - FIBER OPTIC
2	EACH	DRILL EXISTING HANDHOLE
1	EACH	REMOVE EXISTING HANDHOLE
1	EACH	HEAVY-DUTY HANDHOLE
1674	FOOT	REMOVE ELECTRIC CABLE FROM CONDUIT
1662	FOOT	FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125 MM12F & SM24F
1639	FOOT	ELECTRIC CABLE IN CONDUIT, TRACER NO. 14 IC
1	EACH	OPTIMIZE TRAFFIC SIGNAL SYSTEM

EAGLE 7B

FILE NAME: g:\ch09\0176\road\Sheets\08084-TS-14-interconnectSchematic.dgn

TranSystems

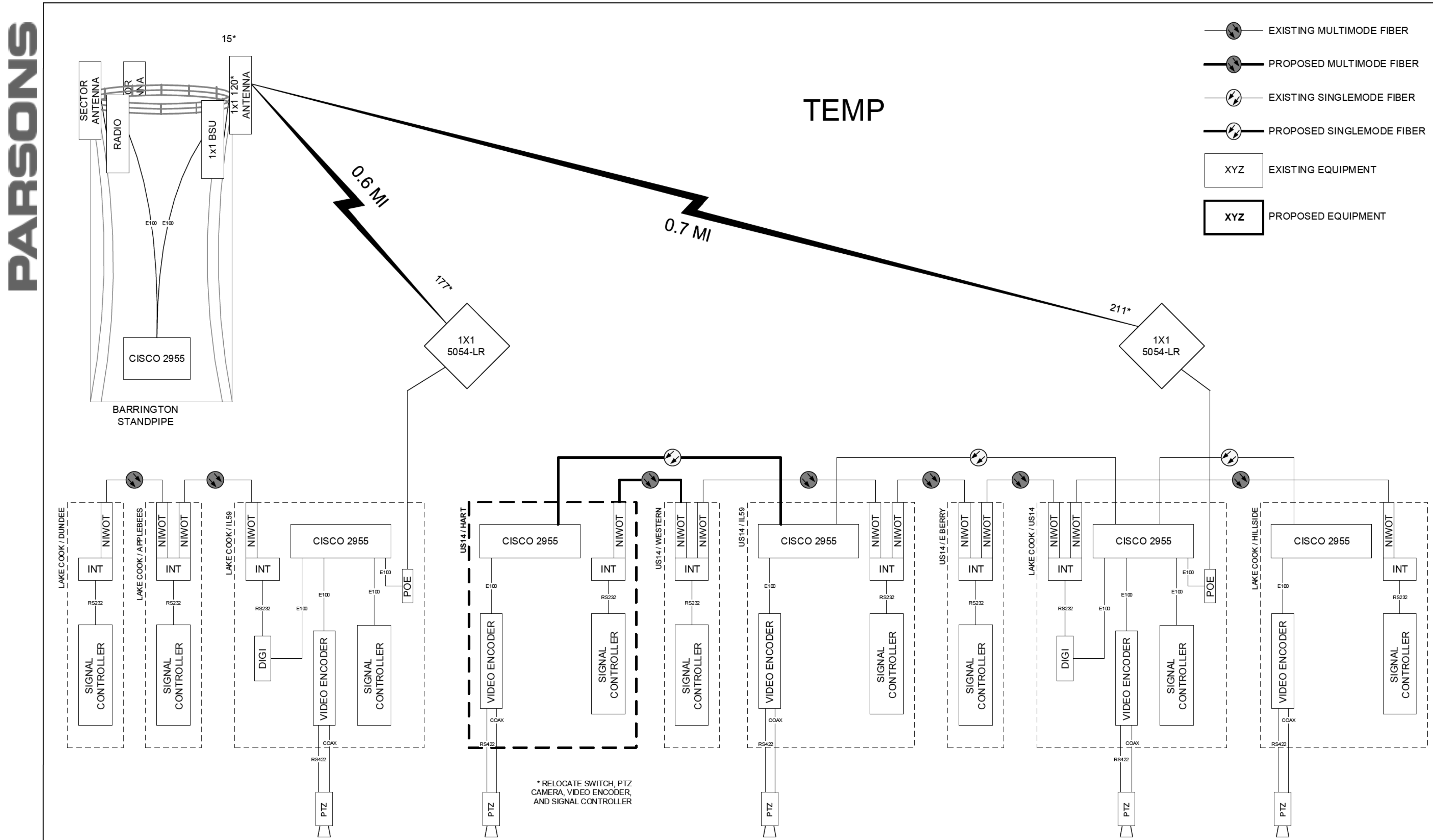
USER NAME = amkidd	DESIGNED - JLV	REVISED -	
	DRAWN - AMK	REVISED -	
PLOT SCALE = 99.9998 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

U.S. ROUTE 14 (NORTHWEST HWY.)
HART ROAD TO EASTERN AVENUE
PERMANENT INTERCONNECT SCHEMATIC PLAN

SCALE: 1:20 | SHEET 20 OF 25 SHEETS | STA. TO STA.

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	240
		CONTRACT NO. 61D65		
		ILLINOIS FED. AID PROJECT		



DESIGNED - DG	REVISED –		
DRAWN - DG	REVISED –		
CHECKED - DG	REVISED –		
DATE 2017/10/17	REVISED –		

220C
BARRINGTON STANDPIPE
SCALE N/A

ROUTE	SECTION	ROUTE SECTION	SHEET	SHEETS
			220C	

FILE NAME: G:\CH09\0176\Road\Sheets\V08084-TS-14a-Fiber Diagram Hart to Western.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -	
	DRAWN - AMK	REVISED -	
PLOT SCALE = 99.9998 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

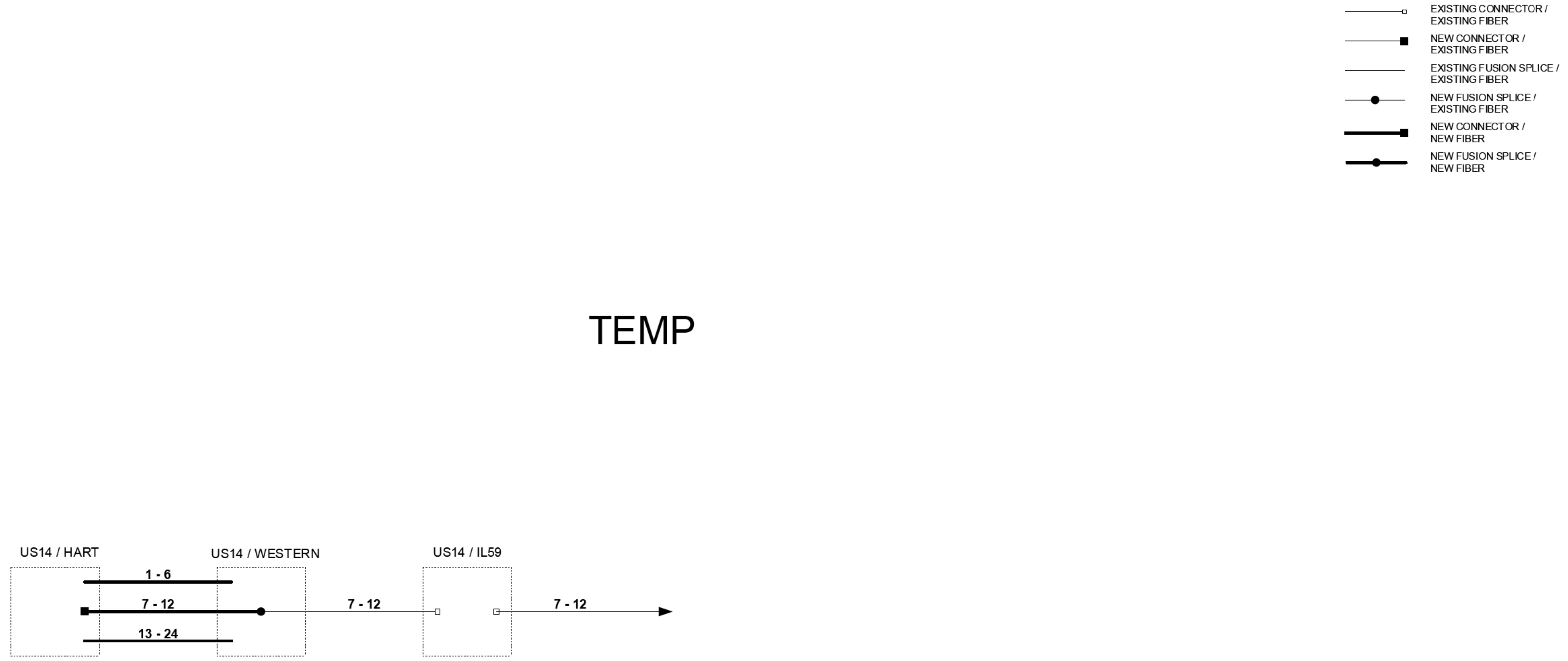
U.S. ROUTE 14 (NORTHWEST HWY.) AT HART ROAD
LAKE COUNTY PASSAGE SYSTEM DETAILS

SCALE: 1:20 | SHEET 21 OF 25 SHEETS | STA. | TO STA.

F.A.U RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	241

CONTRACT NO. 61D65
ILLINOIS FED. AID PROJECT

TEMP



DESIGNED - DG	REVISED –		US14 from HART to WESTERN	ROUTE	SECTION	ROUTE SECTION	SHEET	SHEETS
DRAWN - DG	REVISED –							
CHECKED - DG	REVISED –							
DATE 2017/10/17	REVISED –		SCALE N/A					

USER NAME = amkidd	DESIGNED - JLV	REVISED -	
	DRAWN - AMK	REVISED -	
PLOT SCALE = 99.9998 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

U.S. ROUTE 14 (NORTHWEST HWY.) AT HART ROAD
LAKE COUNTY PASSAGE SYSTEM DETAILS

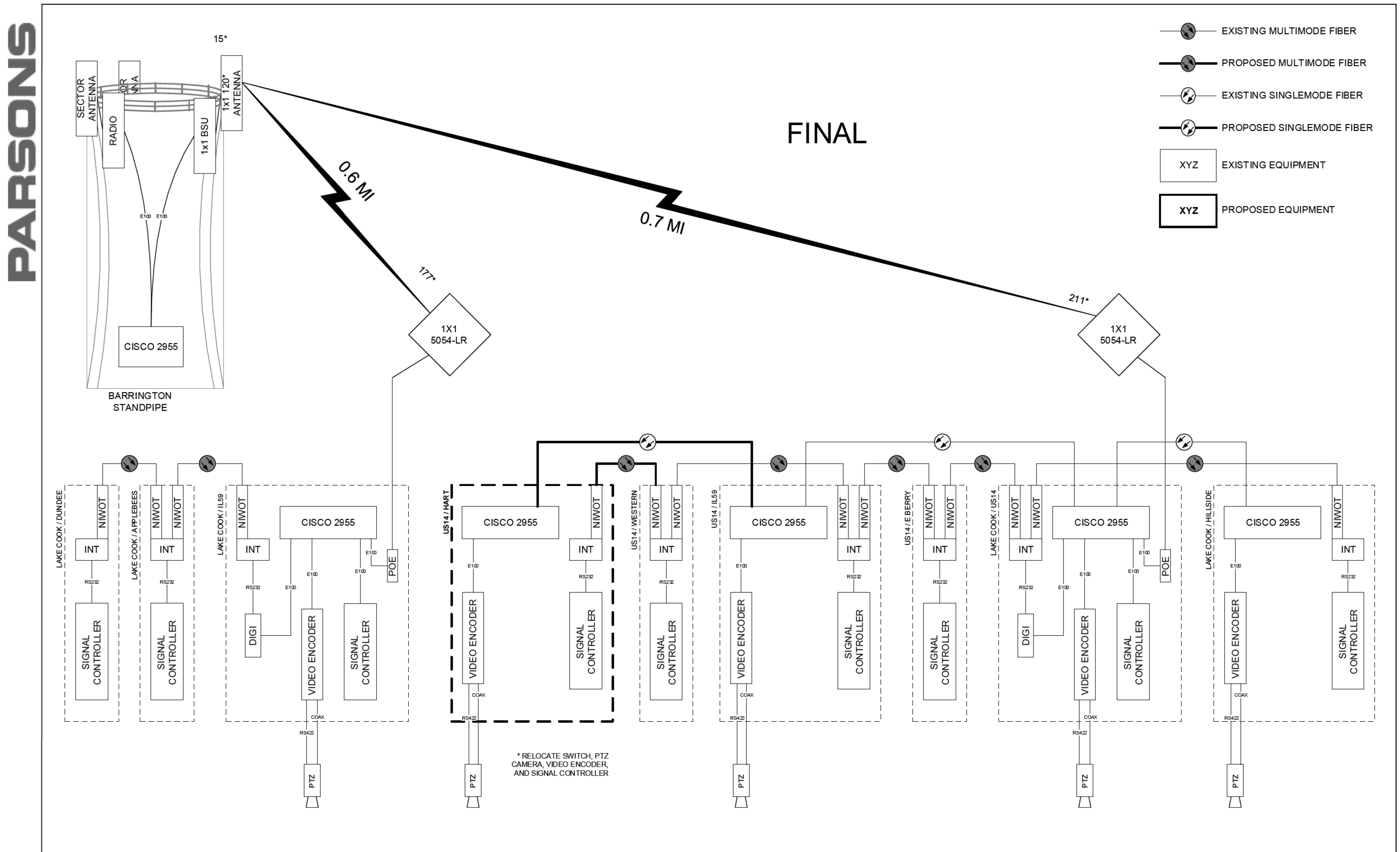
SCALE: 1:20 | SHEET 22 OF 25 SHEETS | STA. | TO STA.

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	242

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT

FILE NAME: G:\CH09\0176\Road\Sheets\08084-TS-14a-Fiber Diagram Hart to Western.dgn



DESIGNED - DG	REVISED –		
DRAWN - DG	REVISED –		
CHECKED - DG	REVISED –		
DATE 2017/10/17	REVISED –		

220C
BARRINGTON STANDPIPE

SCALE N/A

ROUTE	SECTION	ROUTE SECTION	SHEET	SHEETS
			220C	

FILE NAME: G:\CH09\0176\Road\Sheets\08084-TS-14a-Fiber Diagram Hart to Western.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -	
	DRAWN - AMK	REVISED -	
PLOT SCALE = 99.9998 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

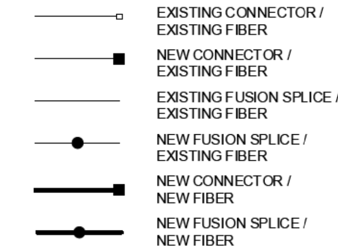
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

U.S. ROUTE 14 (NORTHWEST HWY.) AT HART ROAD
LAKE COUNTY PASSAGE SYSTEM DETAILS

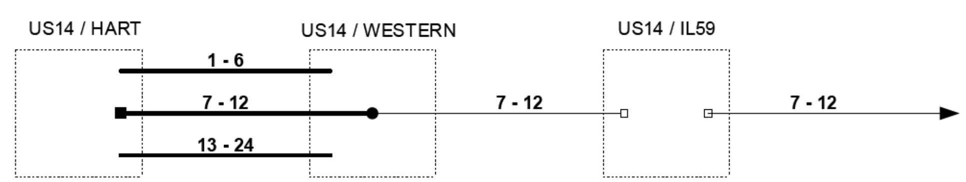
SCALE: 1:20 | SHEET 23 OF 25 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	243
		CONTRACT NO. 61D65		
		ILLINOIS FED. AID PROJECT		

PARSONS



FINAL



DESIGNED - DG	REVISED –	
DRAWN - DG	REVISED –	
CHECKED - DG	REVISED –	
DATE 2017/10/17	REVISED –	

US14 from HART to WESTERN

SCALE N/A

ROUTE	SECTION	ROUTE SECTION	SHEET	SHEETS

FILE NAME: G:\CH09\0176\Road\Sheets\08084-TS-14a-Fiber Diagram Hart to Western.dgn

TranSystems®

USER NAME = amkidd	DESIGNED - JLV	REVISED -
	DRAWN - AMK	REVISED -
PLOT SCALE = 99.9998 ' / in.	CHECKED - JWC	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

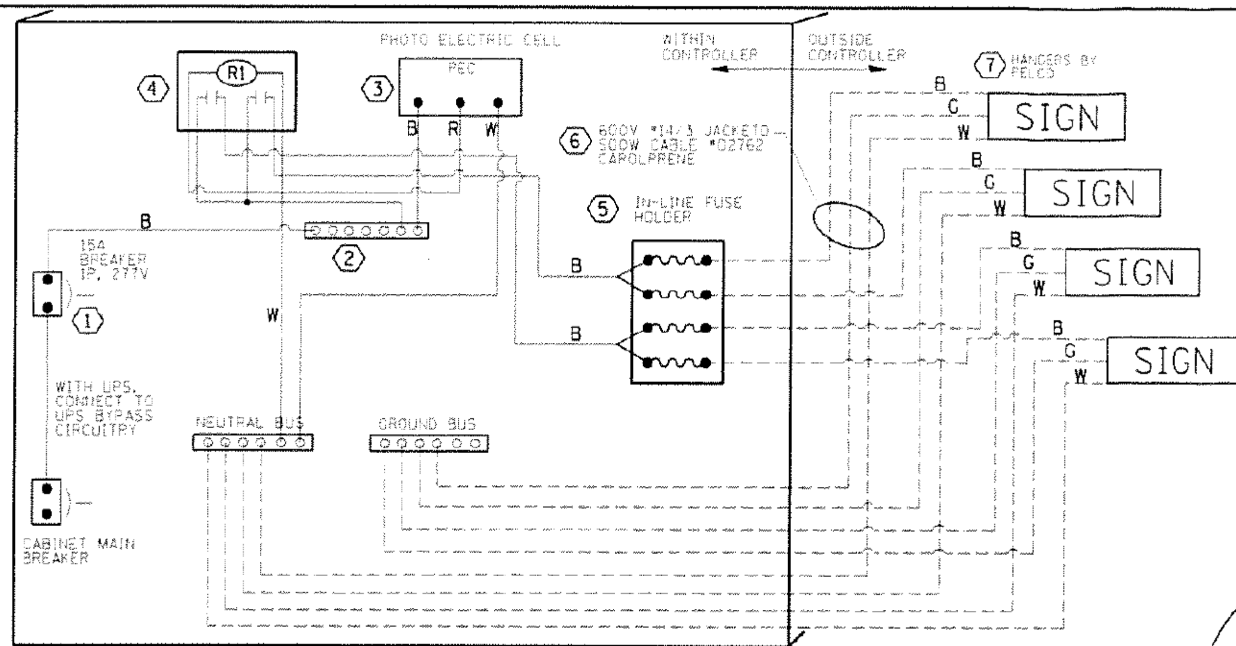
U.S. ROUTE 14 (NORTHWEST HWY.) AT HART ROAD
LAKE COUNTY PASSAGE SYSTEM DETAILS

SCALE: 1:20 | SHEET 24 OF 25 SHEETS | STA. | TO STA.

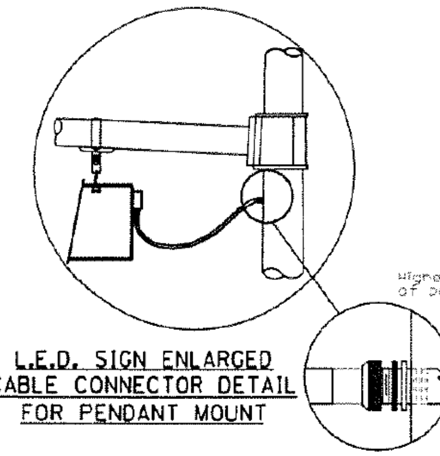
FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	244

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT

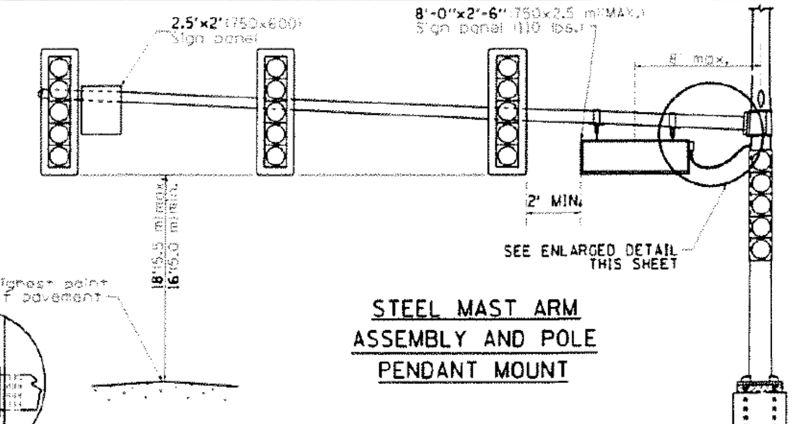


LED SIGN WIRING DETAIL



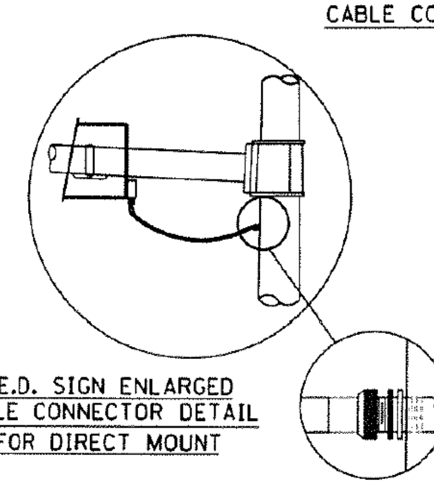
L.E.D. SIGN ENLARGED CABLE CONNECTOR DETAIL FOR PENDANT MOUNT

L.E.D. SIGN ENLARGED CABLE CONNECTOR DETAIL



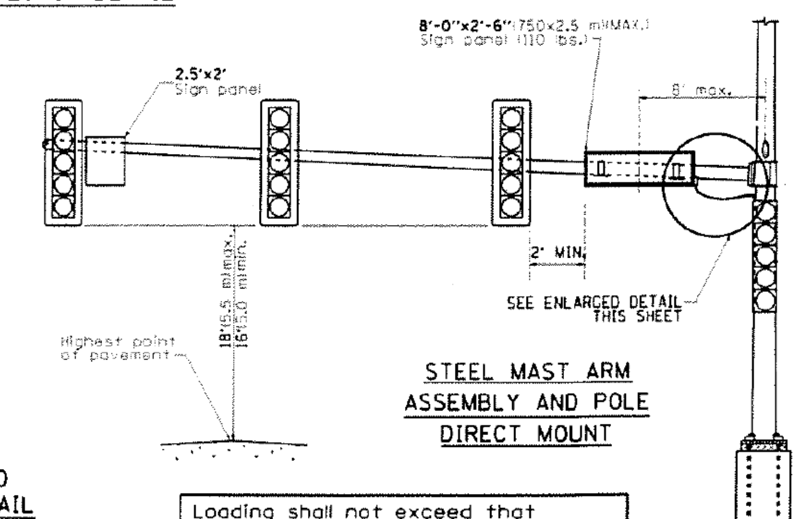
STEEL MAST ARM ASSEMBLY AND POLE PENDANT MOUNT

Loading shall not exceed that shown on current Highway Standard.



L.E.D. SIGN ENLARGED CABLE CONNECTOR DETAIL FOR DIRECT MOUNT

L.E.D. SIGN ENLARGED CABLE CONNECTOR DETAIL

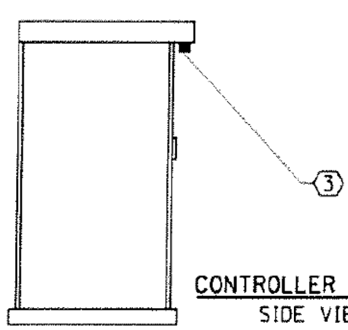


STEEL MAST ARM ASSEMBLY AND POLE DIRECT MOUNT

Loading shall not exceed that shown on current Highway Standard.

BILL OF MATERIALS

DESCRIPTION	MANUFACTURER	MODEL	NOTES
(1) CIRCUIT BREAKER		15 AMPERE	Molded case, Thermal Mag. min. R.I. of 14K R.M.S. symmetrical ampere at 277V.
(2) TERMINAL BLOCK	MARATHON	1502 DJSV	
(3) PHOTO ELECTRIC CONTROL	FISHER PIERCE	8124-1.5-07762	
(4) CONTROL RELAY	SQUARE D	8501X020V02	BOLT ON W/SCREW TERMINAL
(5) INLINE FUSE HOLDER WITH 5 AMP FUSE	BUSSMAN	S-8000 BK/S-8-3-4-R	
(6) ELECTRIC CABLE, NO. 14, 3/C (BLACK, WHITE, GREEN)	CAROLPRENE/SOOW	02762	
(7) SIGN MOUNTING HARDWARE	PELCO	Pendant (SE-5015) Direct mount (AB-0104-L-SP) Additional sign stiffeners may be required for direct mounted signs.	S.S. HARDWARE



CONTROLLER CABINET
SIDE VIEW

LED ILLUMINATED SIGN PANEL
8'0 x 2'6" (750 mm x 2.5 mm)(MAX)
C or D FONT

NOTES:

1. SIGNS SHALL BE SIGNLE SIDED FOR DIRECT MOUNT AND DOUBLE SIDED FOR PENDANT MOUNT.
2. CERTAIN ADDITIONAL INFORMATION MAY BE ALLOWED ON THE SIGN. VERIFY WITH ENGINEER.
3. SIGNS SHALL NOT BE ENERGIZED WHEN TRAFFIC SIGNALS ARE POWERED BY THE UPS. THE SIGNS SHALL BE CONNECTED TO THE UPS BYPASS CIRCUITRY.
4. ALL WIRING WITHIN THE CABINET SHALL BE COLOR CODED AS INDICATED:
   R = RED BL = BLUE W = WHITE
   B = BLACK Y = YELLOW G = GREEN
5. ALL 120 VOLT SYSTEM AND ALL CONTROL WIRING SHALL BE #12AWG STRANDED UNLESS OTHERWISE INDICATED.
6. ALL WIRING SHALL BE NEATLY DRESSED AND SUPPORTED.

DISTRICT ONE
ILLUMINATED STREET NAME SIGN

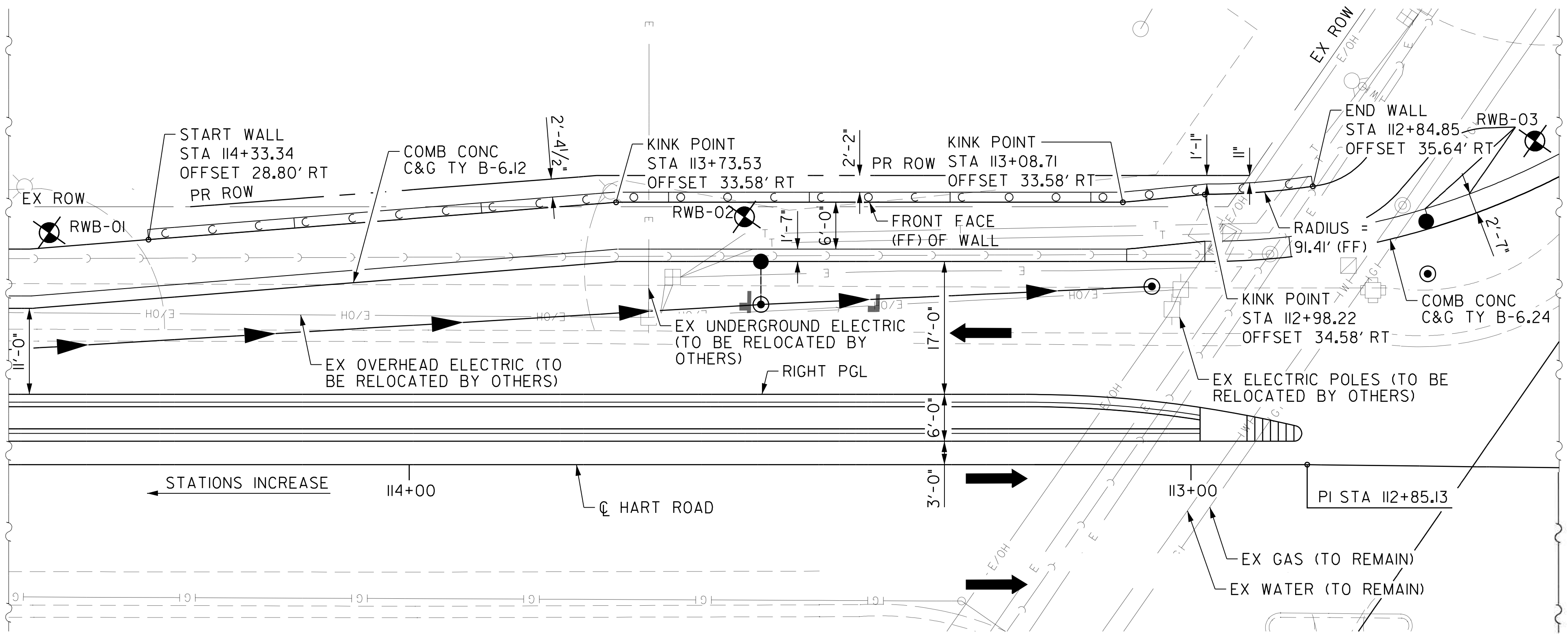
FILE NAME	USER NAME	DESIGNED	REVISED
	PLOT SCALE = 39.9359 ' / in.	DRAWN	REVISED
	PLOT DATE = 1/16/2019	CHECKED	REVISED
		DATE	REVISED

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

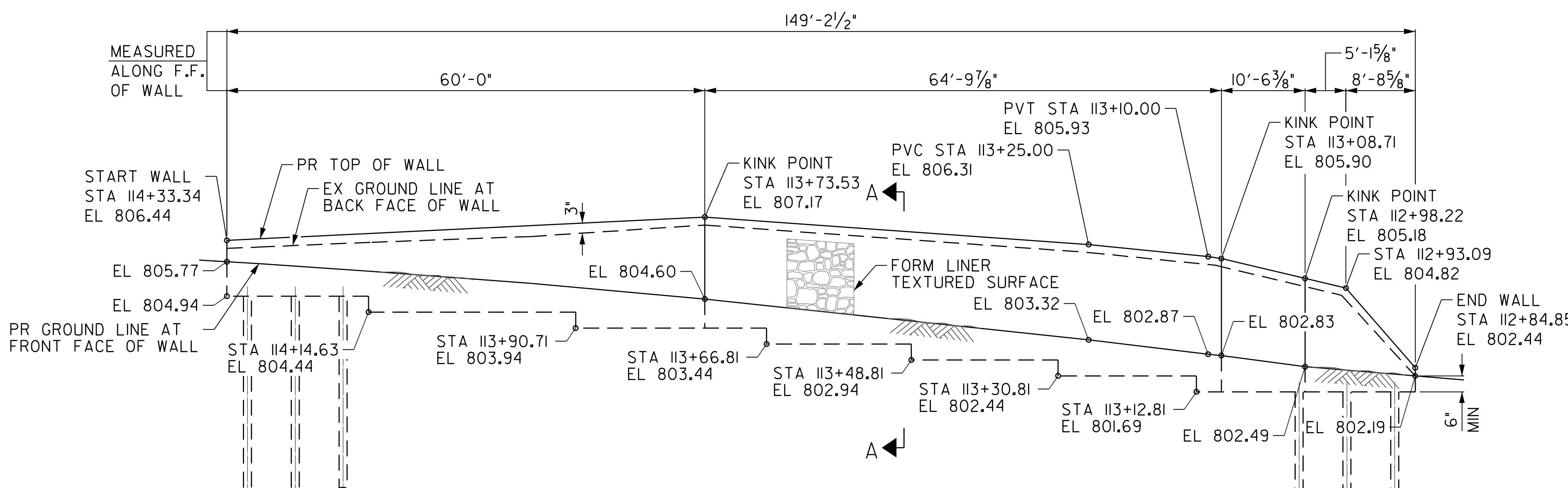
F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO.
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT

BENCH MARK: CUT "X" IN EAST BOLT OF THE FIRE HYDRANT AT THE NORTHEAST CORNER OF U.S. ROUTE 14 AND HART ROAD. ELEV. 805.11

TRAFFIC CONTROL: TRAFFIC TO BE MAINTAINED BY STAGED CONSTRUCTION.



PLAN

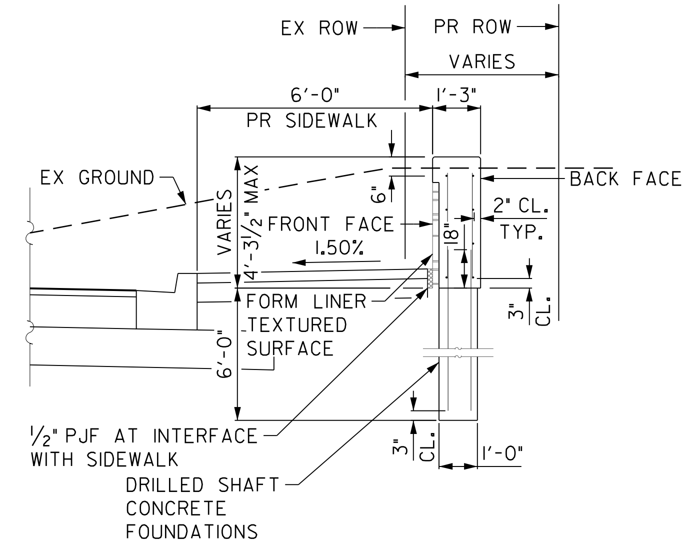


ELEVATION

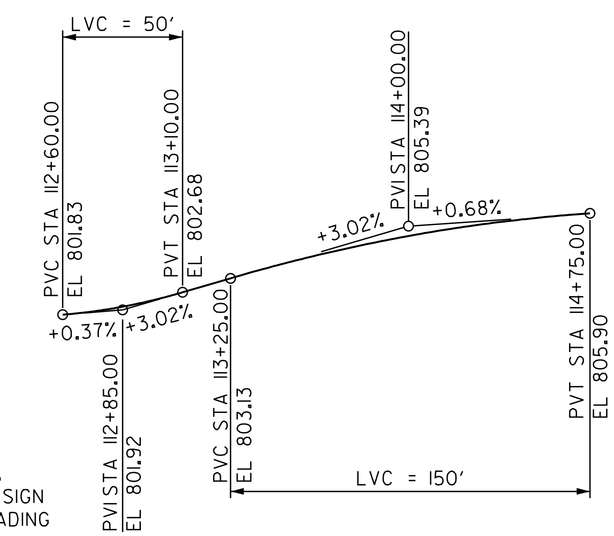
(LOOKING EAST)

NOTES:

1. STATIONS AND OFFSETS ARE MEASURED FROM THE CENTERLINE OF HART ROAD TO THE FRONT FACE OF THE WALL.



SECTION A-A



PROFILE GRADE

MATTHEW D. SANTEFORD
081-007244
LICENSED
STRUCTURAL
ENGINEER
OF
STATE OF ILLINOIS

05/16/2019

MATTHEW D. SANTEFORD, P.E., S.E.
NO. 081-007244
EXP. DATE 11/30/2020

"I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THIS RETAINING WALL DESIGN IS STRUCTURALLY ADEQUATE FOR THE DESIGN LOADING SHOWN ON THE PLANS. THE DESIGN IS AN ECONOMICAL ONE FOR THE STYLE OF STRUCTURE AND COMPLIES WITH THE REQUIREMENTS OF THE CURRENT 'AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS'."

INDEX OF SHEETS

1. GENERAL PLAN AND ELEVATION
2. WALL DETAILS
3. BORING LOGS 1
4. BORING LOGS 2

GENERAL NOTES:

1. ALL EXPOSED CONCRETE EDGES SHALL HAVE A STANDARD ¾" CHAMFER UNLESS OTHERWISE NOTED.
2. REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.
3. PROTECTIVE COAT SHALL BE APPLIED TO THE TRAFFIC FACE AND TOP OF RETAINING WALL.

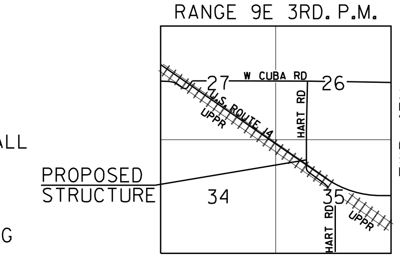
DESIGN SPECIFICATIONS

2014 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION WITH 2015 INTERIMS

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 PSI
fy = 60,000 PSI (REINFORCEMENT)



LOCATION SKETCH

SHEET 1 OF 4

TranSystems	USER NAME = amkidd	DESIGNED - JNP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN AND ELEVATION RETAINING WALL
	PLOT SCALE = 20.0 ' / in.	DRAWN - JNP	REVISED -		
	PLOT DATE = 5/22/2019	CHECKED - MDS	REVISED -		SCALE: 1:20 SHEET 1 OF 9 SHEETS STA. TO STA.
		DATE - 5/22/2019	REVISED -		

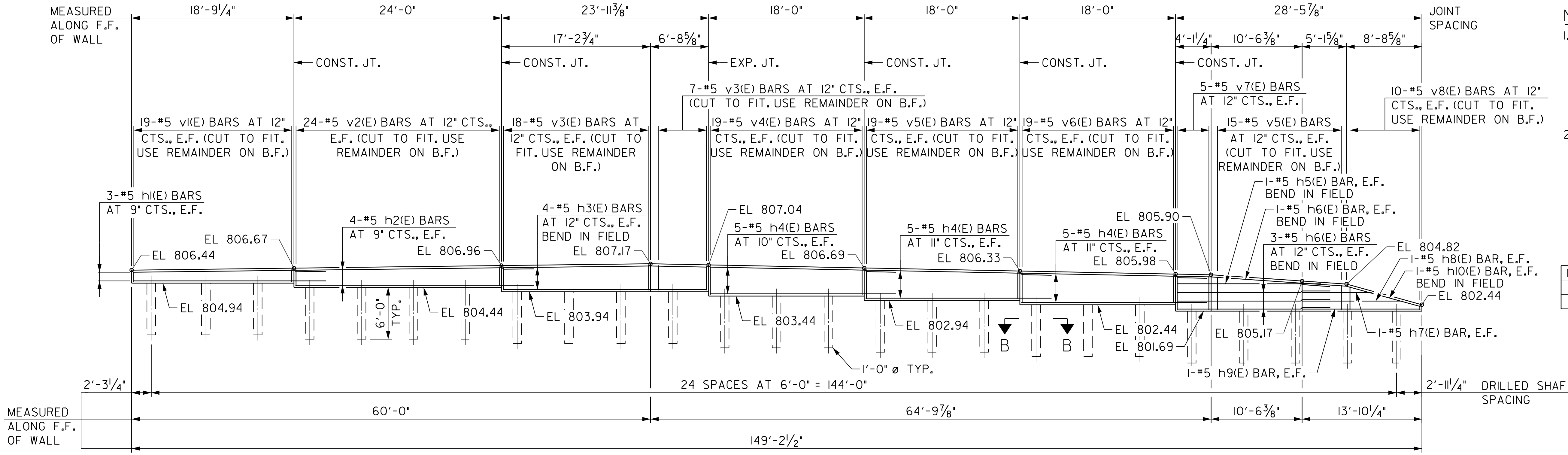
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	246
		CONTRACT NO. 61D65		
		ILLINOIS FED. AID PROJECT		

FILE NAME: g:\ch09\0176\Structural\CAD\Sheets\08084-SEG WALL-01.dgn

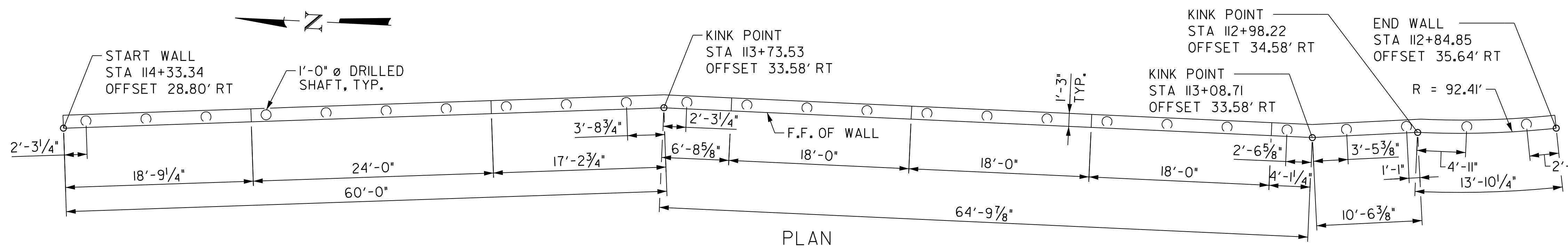
NOTES:

1. PREFORMED FLEXIBLE FOAM EXPANSION JOINT FILLER (CALLED OUT AS PJF IN PLANS) SHALL FOLLOW ARTICLE 1051.09 OF IDOT STANDARD SPECIFICATIONS. COST INCLUDED WITH CONCRETE STRUCTURES.
2. E.F DENOTES EACH FACE
   B.F. DENOTES BACK FACE
   F.F. DENOTES FRONT FACE

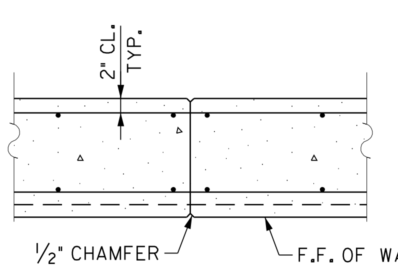
MINIMUM BAR LAPS	
BAR	LAP
#5(E)	3'-3"



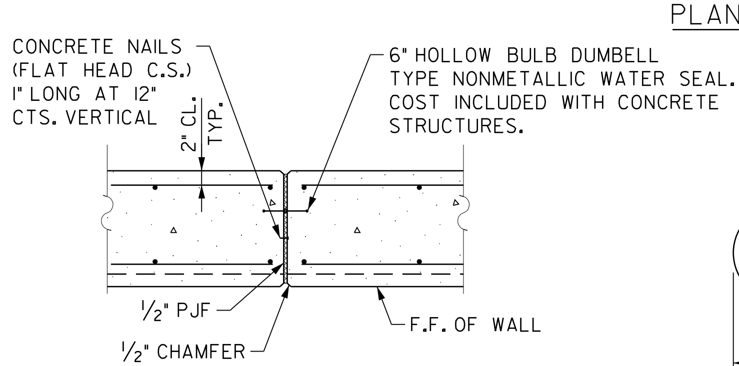
ELEVATION
(LOOKING EAST)



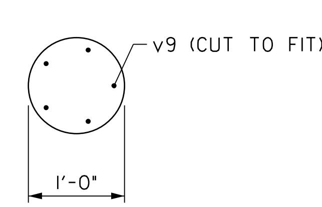
PLAN



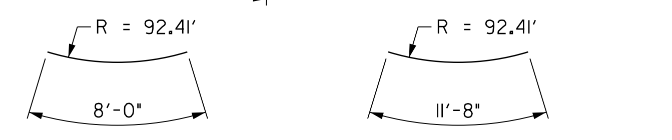
CONSTRUCTION JOINT DETAIL



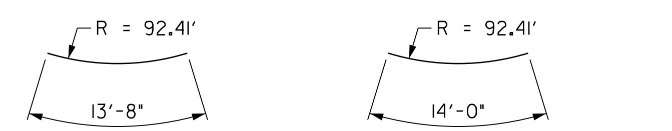
EXPANSION JOINT DETAIL



SECTION B-B
SECTION THRU DRILLED SHAFT



BAR h7(E)   BAR h8(E)



BAR h9(E)   BAR h10(E)

TOTAL BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h1(E)	6	#5	22'-1"	
h2(E)	8	#5	27'-3"	
h3(E)	8	#5	23'-7"	
h4(E)	30	#5	21'-3"	
h5(E)	2	#5	16'-8"	
h6(E)	8	#5	17'-9"	
h7(E)	2	#5	8'-0"	
h8(E)	2	#5	11'-8"	
h9(E)	2	#5	13'-8"	
h10(E)	2	#5	14'-0"	
v1(E)	19	#5	2'-5"	
v2(E)	24	#5	3'-11"	
v3(E)	25	#5	5'-5"	
v4(E)	19	#5	6'-0"	
v5(E)	34	#5	6'-6"	
v6(E)	19	#5	6'-8"	
v7(E)	10	#5	3'-10"	
v8(E)	10	#5	3'-1"	
v9	125	#5	7'-3"	
STRUCTURE EXCAVATION			CU. YD.	50
CONCRETE STRUCTURES			CU. YD.	20.8
FORM LINER TEXTURED SURFACE			SQ. FT.	450
REINFORCEMENT BARS			POUND	950
REINFORCEMENT BARS, EPOXY COATED			POUND	2,350
DRILLED SHAFT CONCRETE FOUNDATIONS			CU. YD.	4.4
STAINING CONCRETE STRUCTURES			SQ. FT.	450

BORING LOG RWB-01

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

WEI Job No.: 790-73-01

Client: TranSystems Corporation
Project: Hart Rd and US 14
Location: Barringotn, IL

Datum: NAVD 88
Elevation: ft
North: 2003192.36 ft
East: 1032451.74 ft
Station: 114+46.35
Offset: 31.17 RT

Soil and Rock Description	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
4-inch thick, black SILTY LOAM --TOPSOIL--					
Very stiff to hard, black, brown, and gray CLAY to SILTY CLAY, trace gravel		1	7 / 4 / 5 / 5	NP	17
--L_L(%)=42, P_L(%)=20-- --%Gravel=1.0-- --%Sand=8.2-- --%Silt=48.8-- --%Clay=42.0-- --A-7-6 (21)--		2	4 / 5 / 7 / 7	2.38 B	21
	5	3	5 / 8 / 9 / 11	5.66 B	19
		4	13 / 15 / 16 / 19	5.25 S	17
	10	4	7 / 10 / 13 / 15	4.43 S	18
Boring terminated at 10.00 ft					
	15				

GENERAL NOTES

Begin Drilling: 10-29-2013 Complete Drilling: 10-29-2013
Drilling Contractor: Wang Testing Services Drill Rig: D-25 ATV
Driller: P & N Logger: N. Boddy Checked by: AZH
Drilling Method: 2.25 inch HSA, boring backfilled upon completion

WATER LEVEL DATA

While Drilling: DRY
At Completion of Drilling: DRY
Time After Drilling: NA
Depth to Water: NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 7907301.GPJ WANGENG.GDT 11/2/13

BORING LOG RWB-02

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

WEI Job No.: 790-73-01

Client: TranSystems Corporation
Project: Hart Rd and US 14
Location: Barringotn, IL

Datum: NAVD 88
Elevation: ft
North: 2003103.42 ft
East: 1032453.90 ft
Station: 113+57.43
Offset: 33.43 RT

Soil and Rock Description	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
4-inch thick, black SILTY LOAM --TOPSOIL--					
Hard, brown SILTY CLAY, trace to little gravel		1	4 / 4 / 4 / 4	4.00 P	16
		2	7 / 11 / 11 / 14	5.99 B	17
	5	3	5 / 10 / 11 / 14	6.48 B	18
		4	10 / 8 / 12 / 14	5.66 B	18
	10	5	4 / 6 / 12 / 14	4.59 S	17
Boring terminated at 10.00 ft					
	15				

GENERAL NOTES

Begin Drilling: 10-29-2013 Complete Drilling: 10-29-2013
Drilling Contractor: Wang Testing Services Drill Rig: D-25 ATV
Driller: P & N Logger: N. Boddy Checked by: AZH
Drilling Method: 2.25 inch HSA, boring backfilled upon completion

WATER LEVEL DATA

While Drilling: DRY
At Completion of Drilling: DRY
Time After Drilling: NA
Depth to Water: NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 7907301.GPJ WANGENG.GDT 11/2/13

Page 1 of 1

Wang Engineering

wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG RWB-03

WEI Job No.: 790-73-01

Client: TranSystems Corporation
Project: Hart Rd and US 14
Location: Barringotn, IL

Datum: NAVD 88
Elevation: ft
North: 2003007.65 ft
East: 1032459.64 ft
Station: 112+61.77
Offset: 39.48 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	6-inch thick, black and brown SILTY LOAM --TOPSOIL--		1	7, 6, 7, 9	NP	14
	Medium dense, brown SILTY LOAM, little gravel					
	Hard, brown and gray SILTY CLAY, trace to little gravel		2	9, 11, 8, 12	> 4.50 P	14
		5	3	6, 9, 13, 15	> 4.50 P	18
			4	13, 20, 23, 27	6.31 B	18
		10	5	6, 10, 15, 19	7.30 B	18
	Boring terminated at 10.00 ft					
		15				

GENERAL NOTES

Begin Drilling: 10-29-2013 Complete Drilling: 10-29-2013
Drilling Contractor: Wang Testing Services Drill Rig: D-25 ATV
Driller: P & N Logger: N. Boddy Checked by: AZH
Drilling Method: 2.25 inch HSA, boring backfilled upon completion

WATER LEVEL DATA

While Drilling ∇ DRY
At Completion of Drilling ▼ DRY
Time After Drilling NA
Depth to Water ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 7907301.GPJ WANGENG.GDT 11/20/13

SHEET 4 OF 4

FILE NAME: g:\ch09\0176\Structural\CAD\Sheets\08084-SEG WALL-03-BL.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JNP	REVISED -
	DRAWN - JNP	REVISED -
PLOT SCALE = 20.00 ' / in.	CHECKED - MDS	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

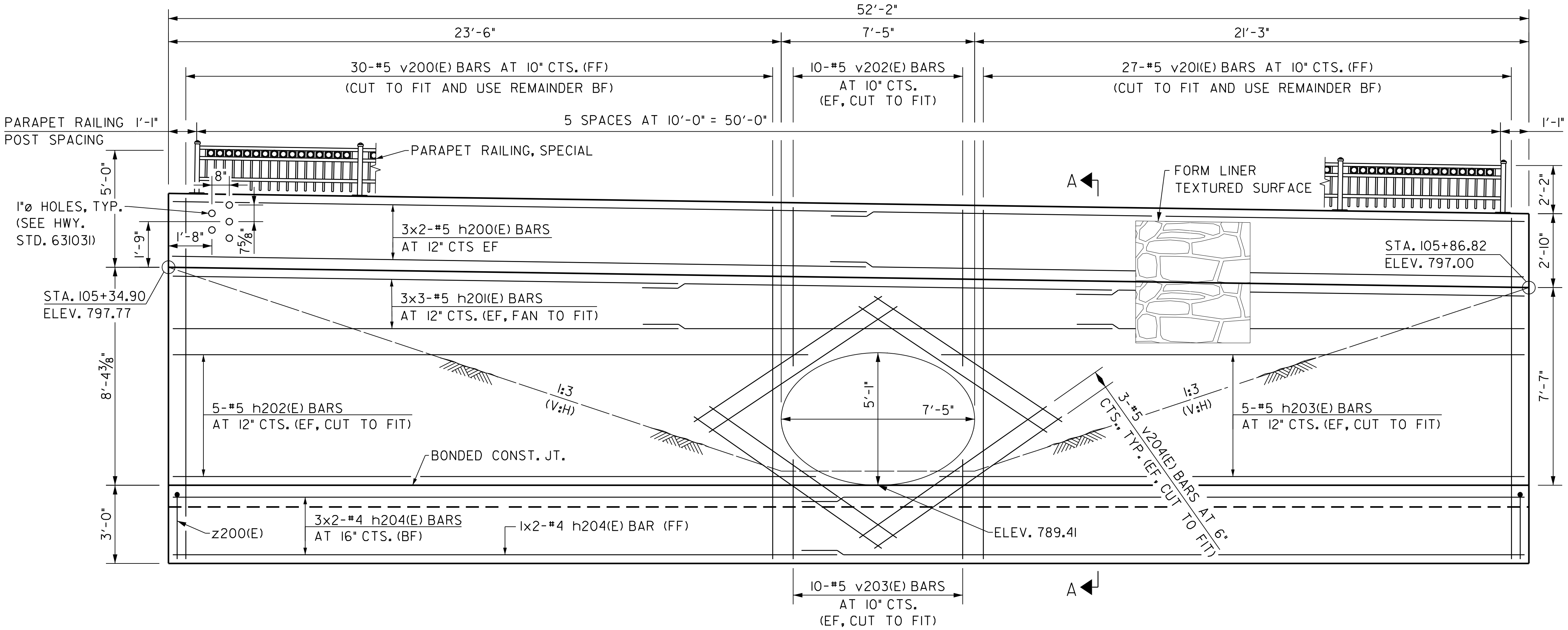
BORING LOGS 2
RETAINING WALL

SCALE: 1:20 | SHEET 4 OF 9 SHEETS | STA. | TO STA.

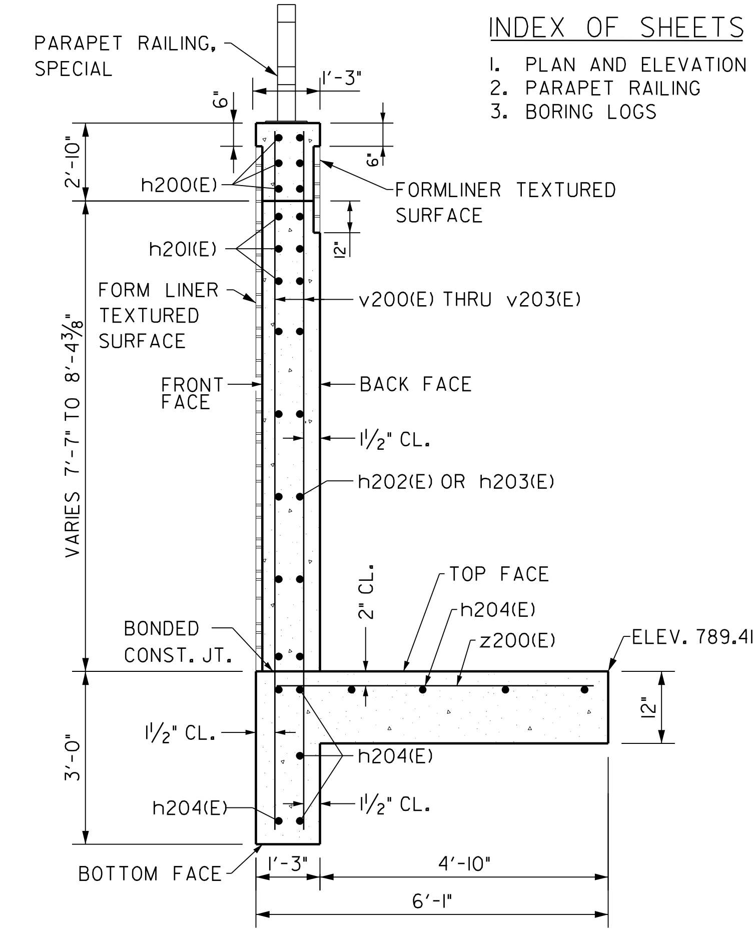
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	249

CONTRACT NO. 61D65

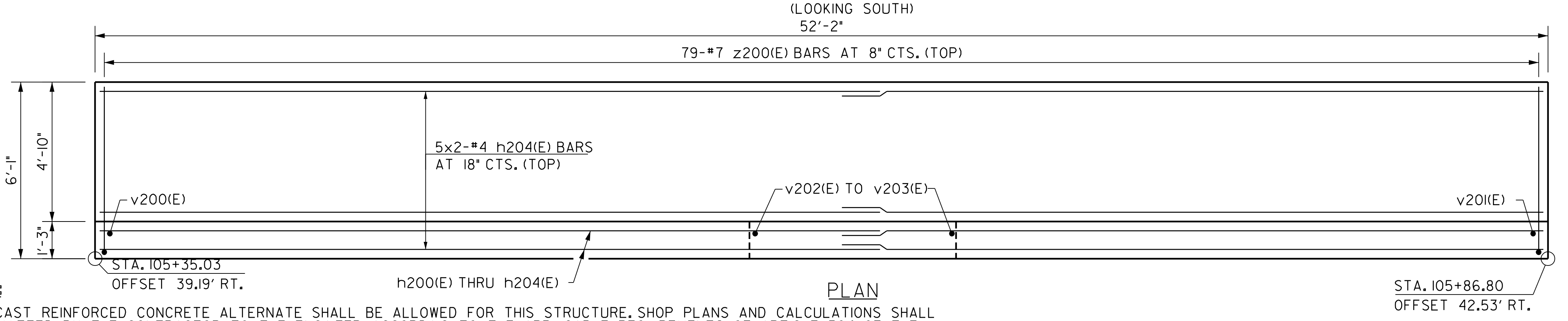
ILLINOIS | FED. AID PROJECT



ELEVATION
(LOOKING SOUTH)



SECTION A-A



PLAN

INDEX OF SHEETS

1. PLAN AND ELEVATION
2. PARAPET RAILING
3. BORING LOGS

BILL OF MATERIAL

(FOR INFORMATION ONLY)

BAR	NO.	SIZE	LENGTH	SHAPE
h200(E)	12	#5	27'-7"	
h201(E)	18	#5	19'-6"	
h202(E)	10	#5	25'-2"	
h203(E)	10	#5	22'-11"	
h204(E)	18	#4	27'-3"	
v200(E)	30	#5	27'-4"	
v201(E)	27	#5	26'-5"	
v202(E)	20	#5	6'-5"	
v203(E)	20	#5	3'-9"	
v204(E)	24	#5	9'-5"	
z200(E)	79	#7	8'-2"	
CONCRETE STRUCTURES			CU YD	42.7
REINFORCEMENT BARS, EPOXY COATED			POUND	4,910

BARS INDICATED THUS 20X3-#5 ETC. INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.

COST OF CONCRETE STRUCTURES AND REINFORCEMENT BARS, EPOXY COATED IS INCLUDED WITH CAST-IN-PLACE REINFORCED CONCRETE END SECTIONS 60" (SPECIAL)

NOTES:

1. A PRECAST REINFORCED CONCRETE ALTERNATE SHALL BE ALLOWED FOR THIS STRUCTURE. SHOP PLANS AND CALCULATIONS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER ACCORDING TO THE APPLICABLE REQUIREMENTS OF ARTICLE 504 OF THE STANDARD SPECIFICATIONS.

2. THE CONTRACT UNIT PRICE FOR EACH SHALL INCLUDE ALL EXCAVATION, BACKFILL, CONCRETE, REINFORCEMENT AND OTHER INCIDENTALS AS SPECIFIED ON THIS DETAIL AND AS DIRECTED BY THE ENGINEER.

3. ALL INVERTS AND ELEVATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS AND CONSTRUCTION. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED WITHIN THE CONTRACT UNIT PRICE FOR CAST-IN-PLACE REINFORCED CONCRETE END SECTIONS 60" (SPECIAL)

4. STATIONS AND OFFSETS ARE MEASURED FROM THE CENTERLINE OF HART ROAD TO THE FRONT FACE OF THE WALL.

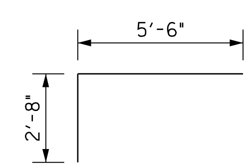
5. SEE SHEET 156 FOR ELLIPTICAL PIPE LOCATION AND DETAILS.

6. THE SUBGRADE SOILS PRESENT AT THE BASE OF THE CULVERT SHOULD BE EVALUATED IN ACCORDANCE WITH ARTICLE 502.07 OF THE SSRBC. ANY UNSUITABLE SOILS ENCOUNTERED IN THE FIELD DURING CONSTRUCTION SHOULD BE REMOVED AND REPLACED WITH MATERIAL MEETING THE POROUS GRANULAR EMBANKMENT, SPECIAL SPECIAL PROVISION, CAPPED WITH A MINIMUM OF 6 INCHES OF CRUSHED AGGREGATE MEETING CA-7 GRADATION LIMITS. THE ACTUAL NEED FOR REMOVAL AND REPLACEMENT SHOULD BE DETERMINED IN THE FIELD AT THE TIME OF CONSTRUCTION BY THE GEOTECHNICAL ENGINEER OR SOILS INSPECTOR. ANY MATERIAL NOT NEEDED FOR UNDERCUT REPLACEMENT AT THE TIME OF CONSTRUCTION SHOULD BE DELETED FROM THE CONTRACT WITH NO EXTRA COMPENSATION TO THE CONTRACTOR.

7. PAID FOR AS EARTH EXCAVATION.

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
CAST-IN-PLACE REINFORCED CONCRETE END SECTIONS 60" (SPECIAL)	EACH	1
PARAPET RAILING, SPECIAL	FOOT	52
POROUS GRANULAR EMBANKMENT, SPECIAL	CU. YD.	21
REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL FOR STRUCTURES (SEE NOTE 7)	CU. YD.	21
FORM LINER TEXTURE SURFACE	SQ. FT.	712
STAINING CONCRETE STRUCTURES	SQ. FT.	777



BAR z200(E)

SHEET 1 OF 3

FILE NAME: g:\ch09\0176\Structural\CAD\Sheets\08084-DRSTR-04.dgn

TranSystems

USER NAME = amkidd	DESIGNED - RVV	REVISED -
	DRAWN - RVV	REVISED -
PLOT SCALE = 5.0000 ' / in.	CHECKED - MDS	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

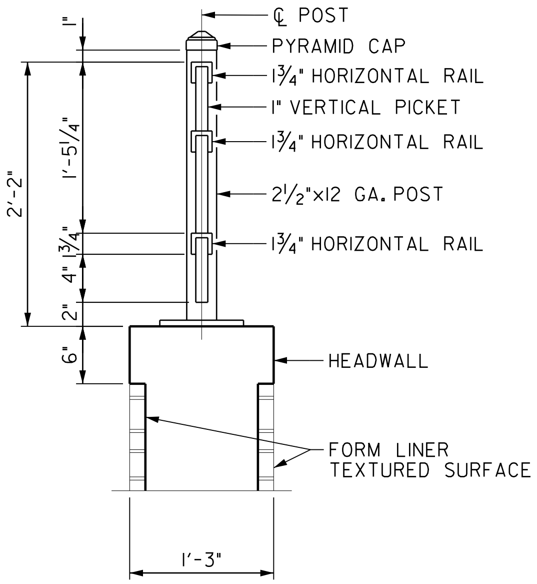
PLAN AND ELEVATION
HEADWALL – HART ROAD

SCALE: 1:20 | SHEET 5 OF 9 SHEETS | STA. | TO STA.

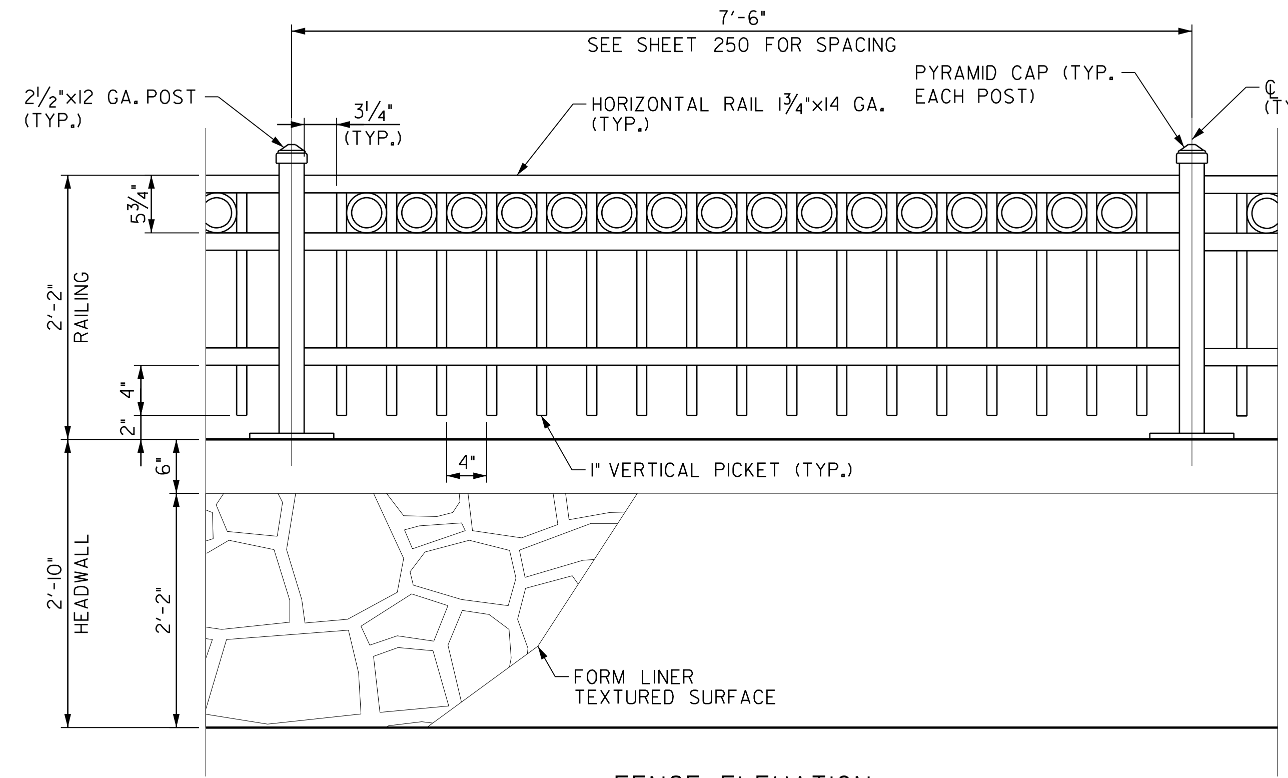
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	250

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT



TYPICAL SECTION AT POST

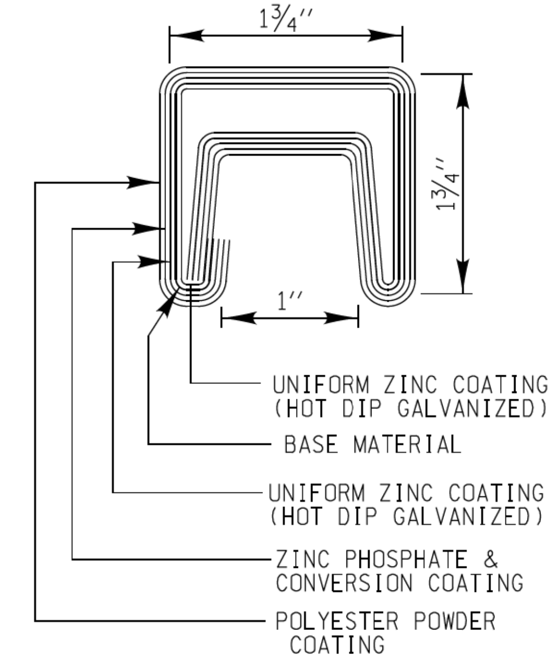


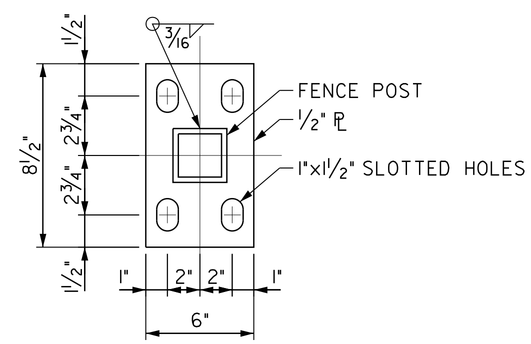
FENCE ELEVATION

NOTES:

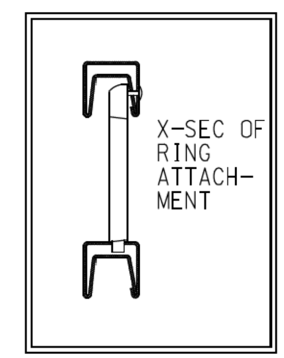
1. ALL POST, RAILING, SPLICES, ANCHOR DEVICES, AND BENT PLATES SHALL BE PAINTED BLACK ACCORDING TO ARTICLE 506.08(b) OF THE STANDARD SPECIFICATION.

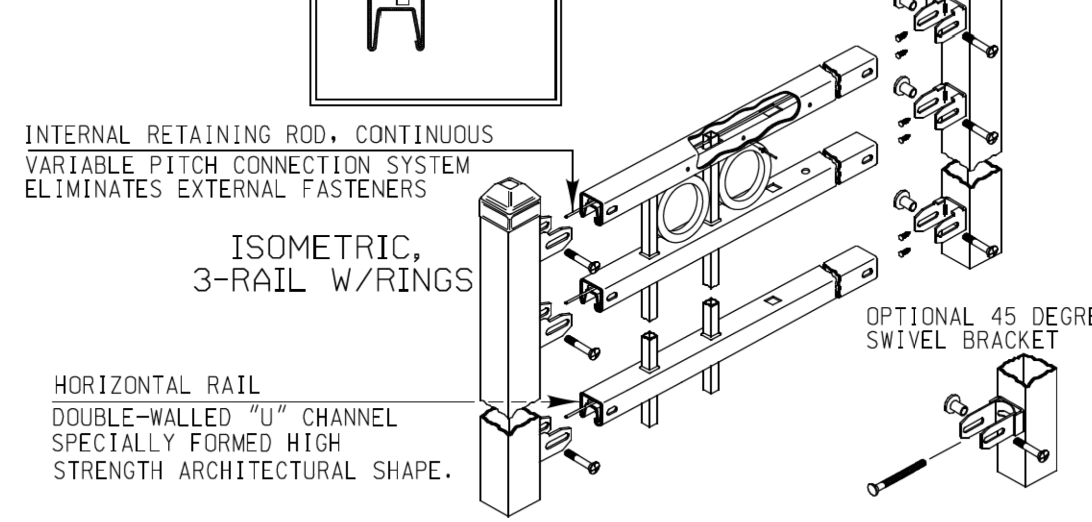
CROSS SECTION OF HORIZONTAL RAIL

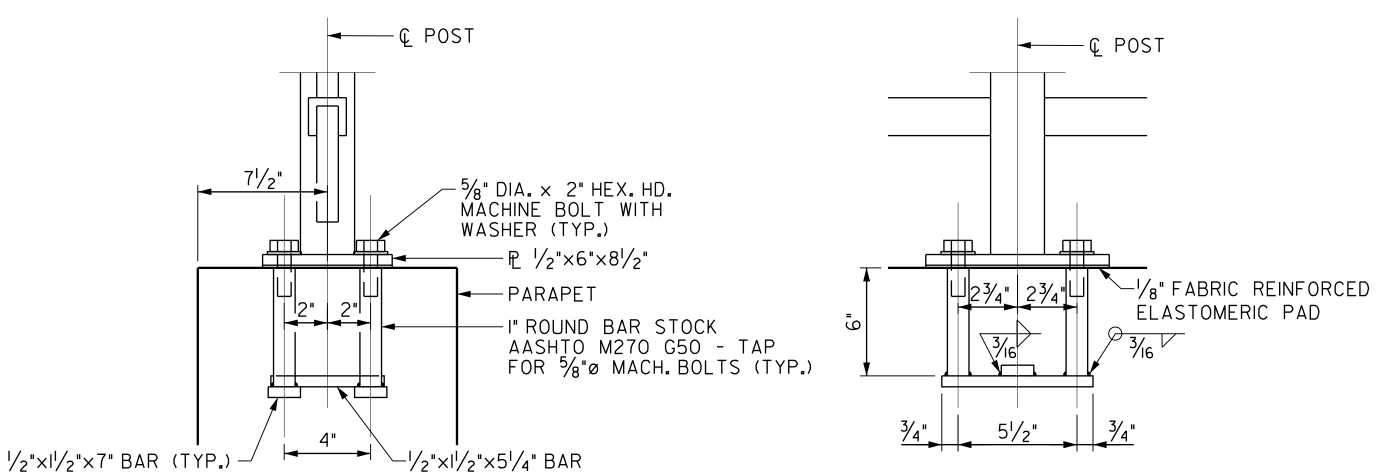




BASE ℙ







ANCHOR BOLT DETAILS

IN LIEU OF THE CAST-IN-PLACE ANCHOR DEVICE SHOWN, THE CONTRACTOR HAS THE OPTION OF DRILLING AND SETTING ⅝" DIA. ANCHOR RODS ACCORDING TO ARTICLE 509.06 OF THE STANDARD SPECIFICATIONS. EMBEDMENT SHALL BE ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.

SHEET 2 OF 3

BORING LOG RWB-08

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

WEI Job No.: 790-73-01

Client: TranSystems Corporation
Project: Hart Rd and US 14
Location: Barringotn, IL

Datum: NAVD 88
Elevation: ft
North: 2002474.27 ft
East: 1032696.20 ft
Station: 105+88.76
Offset: 14.08 RT

Depth (ft)	Soil and Rock Description	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
0	8-inch thick asphalt --PAVEMENT--				
	Stiff to very stiff, brown and gray SILTY CLAY LOAM, trace gravel and roots	1	4, 4, 4	2.25 P	20
5		2	3, 3, 5	1.15 B	31
		3	3, 6, 11	2.00 P	24
	Loose to medium dense, brown very fine SAND to SANDY GRAVEL, trace gravel and silt lenses	4	4, 5, 7	NP	21
10		5	5, 5, 7	NP	23
15		6	2, 3, 6	NP	18
		7	6, 6, 6	NP	12
	Stiff, gray SILTY CLAY, trace gravel	8	3, 4, 6	1.25 P	19
20	Boring terminated at 20.00 ft				
25					
30					

GENERAL NOTES

Begin Drilling 11-04-2013 Complete Drilling 11-04-2013
Drilling Contractor Wang Testing Services Drill Rig D-25 ATV
Driller P & N Logger D. Kolpacki Checked by AZH
Drilling Method 2.25 inch HSA, boring backfilled upon completion

WATER LEVEL DATA

While Drilling 10.50 ft
At Completion of Drilling 13.00 ft
Time After Drilling NA
Depth to Water NA
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 7907301.GPJ WANGENG.GDT 11/2/2013

BORING LOG RWB-09

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

WEI Job No.: 790-73-01

Client: TranSystems Corporation
Project: Hart Rd and US 14
Location: Barringotn, IL

Datum: NAVD 88
Elevation: ft
North: 2002467.70 ft
East: 1032756.92 ft
Station: 105+34.31
Offset: 41.47 RT

Depth (ft)	Soil and Rock Description	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
0	18-inch thick, black SILTY LOAM, trace roots --TOPSOIL--				
	Medium stiff, black and brown LOAM, trace roots	1	6, 8, 9	NP	22
5		2	5, 11, 9	0.50 P	22
	Medium dense, brown and white SANDY LOAM, some gravel	3	6, 9, 10	NP	14
10		4	3, 7, 4	NP	22
	Medium stiff to very stiff, gray SILTY CLAY, trace gravel --L_L(%)=28, P_L(%)=15-- --%Gravel=13.0-- --%Sand=12.6-- --%Silt=46.7-- --%Clay=27.7-- --A-6 (7)--	5	6, 9, 7	1.97 B	13
15		6	4, 6, 22	2.38 B	13
		7	7, 9, 8	0.98 B	14
		8	4, 6, 9	2.38 B	16
20	Boring terminated at 20.00 ft				
25					
30					

GENERAL NOTES

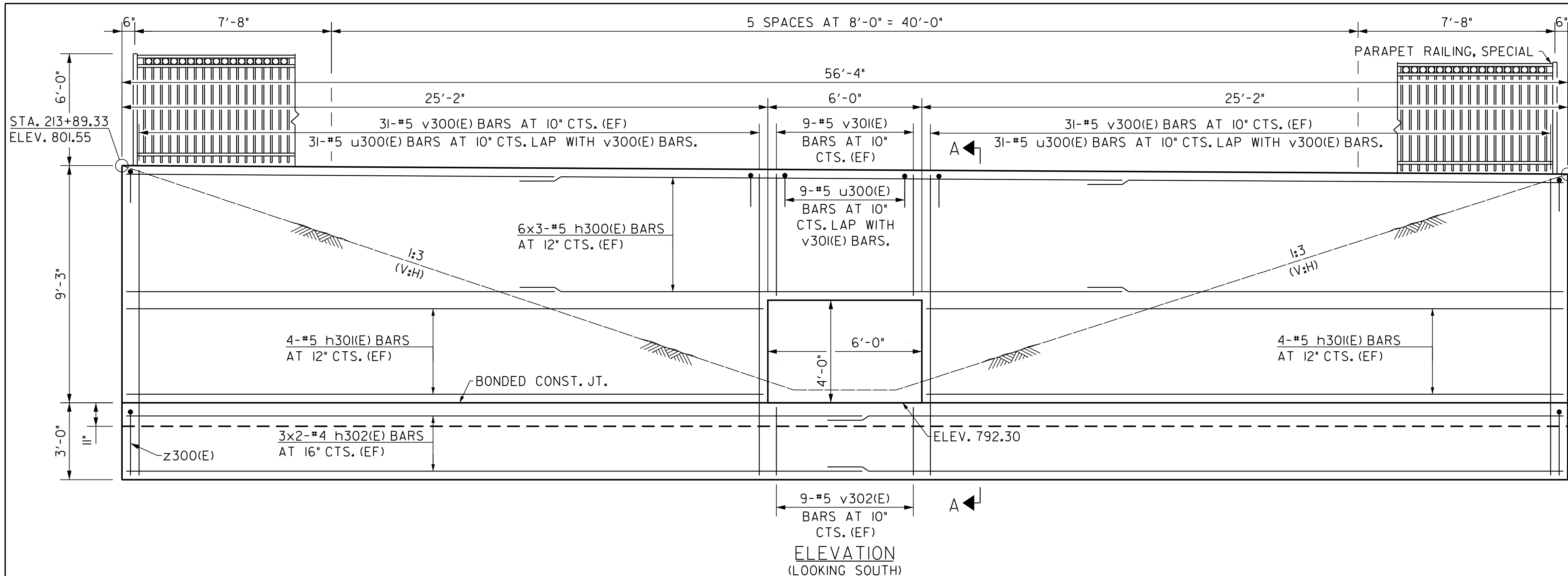
Begin Drilling 10-30-2013 Complete Drilling 10-30-2013
Drilling Contractor Wang Testing Services Drill Rig D-25 ATV
Driller P & N Logger N. Boddy Checked by AZH
Drilling Method 2.25 inch HSA, boring backfilled upon completion

WATER LEVEL DATA

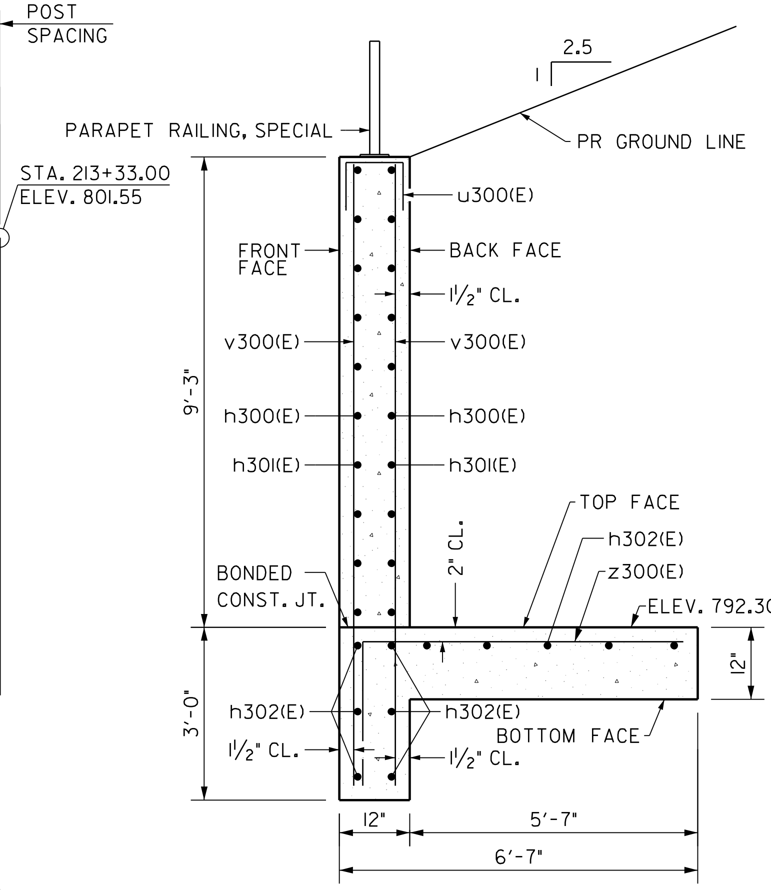
While Drilling 16.00 ft
At Completion of Drilling DRY
Time After Drilling NA
Depth to Water NA
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 7907301.GPJ WANGENG.GDT 11/2/2013

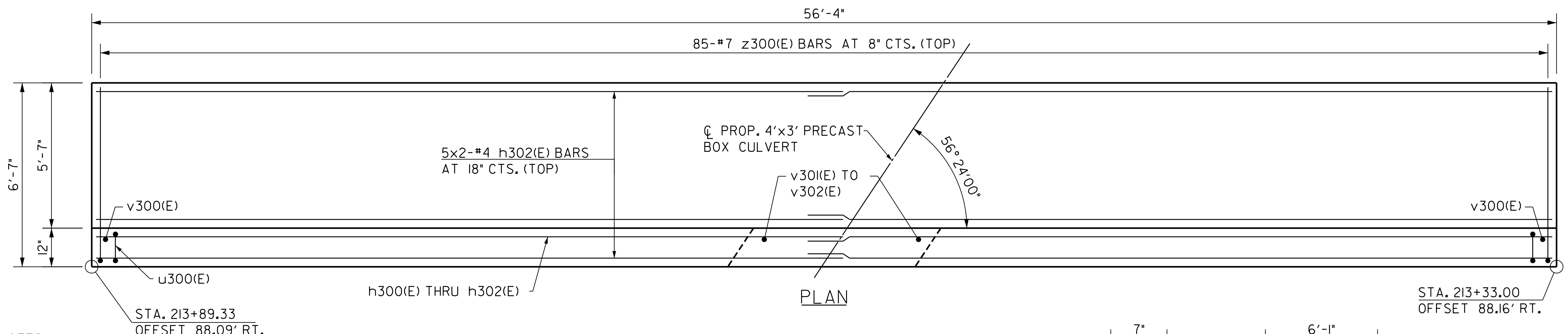
SHEET 3 OF 3



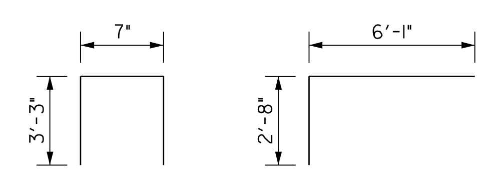
ELEVATION
(LOOKING SOUTH)



SECTION A-A



PLAN



BAR u300(E)   BAR z300(E)

NOTES:

1. A PRECAST REINFORCED CONCRETE ALTERNATE SHALL BE ALLOWED FOR THIS STRUCTURE. SHOP PLANS AND CALCULATIONS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER ACCORDING TO THE APPLICABLE REQUIREMENTS OF ARTICLE 504 OF THE STANDARD SPECIFICATIONS.

2. THE CONTRACT UNIT PRICE FOR EACH SHALL INCLUDE ALL EXCAVATION, BACKFILL, CONCRETE, REINFORCEMENT AND OTHER INCIDENTALS AS SPECIFIED ON THIS DETAIL AND AS DIRECTED BY THE ENGINEER.

3. ALL INVERTS AND ELEVATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS AND CONSTRUCTION. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED WITHIN THE CONTRACT UNIT PRICE FOR BOX CULVERT END SECTIONS, CULVERT NO. 1.

4. STATIONS AND OFFSETS ARE MEASURED FROM THE CENTERLINE OF US ROUTE 14 TO THE FRONT FACE OF THE WALL.

5. SEE SHEET 164 FOR BOX CULVERT LOCATION AND DETAILS.

6. THE SUBGRADE SOILS PRESENT AT THE BASE OF THE CULVERT SHOULD BE EVALUATED IN ACCORDANCE WITH ARTICLE 502.07 OF THE SSRBC. ANY UNSUITABLE SOILS ENCOUNTERED IN THE FIELD DURING CONSTRUCTION SHOULD BE REMOVED AND REPLACED WITH MATERIAL MEETING THE DISTRICT ONE AGGREGATE SUBGRADE IMPROVEMENT SPECIAL PROVISION, CAPPED WITH A MINIMUM OF 6 INCHES OF CRUSHED AGGREGATE MEETING CA-7 GRADATION LIMITS. THE ACTUAL NEED FOR REMOVAL AND REPLACEMENT SHOULD BE DETERMINED IN THE FIELD AT THE TIME OF CONSTRUCTION BY THE GEOTECHNICAL ENGINEER OR SOILS INSPECTOR. ANY MATERIAL NOT NEEDED FOR UNDERCUT REPLACEMENT AT THE TIME OF CONSTRUCTION SHOULD BE DELETED FROM THE CONTRACT WITH NO EXTRA COMPENSATION TO THE CONTRACTOR.

7. PAID FOR AS EARTH EXCAVATION.

TOTAL BILL OF MATERIAL

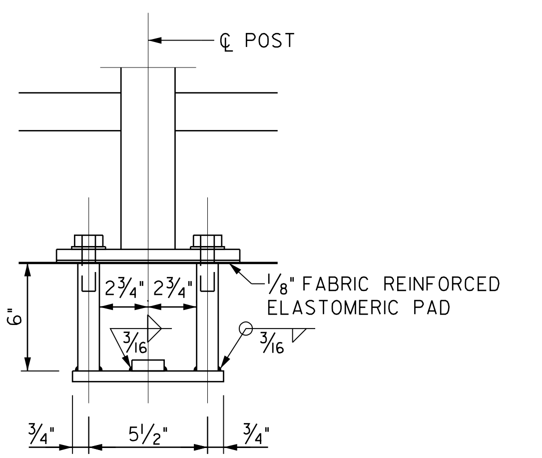
ITEM	UNIT	QUANTITY
BOX CULVERT END SECTIONS, CULVERT NO. 1	EACH	1
PARAPET RAILING, SPECIAL	FOOT	56
AGGREGATE SUBGRADE IMPROVEMENT	CU. YD.	25
REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL FOR STRUCTURES (SEE NOTE 7)	CU. YD.	25

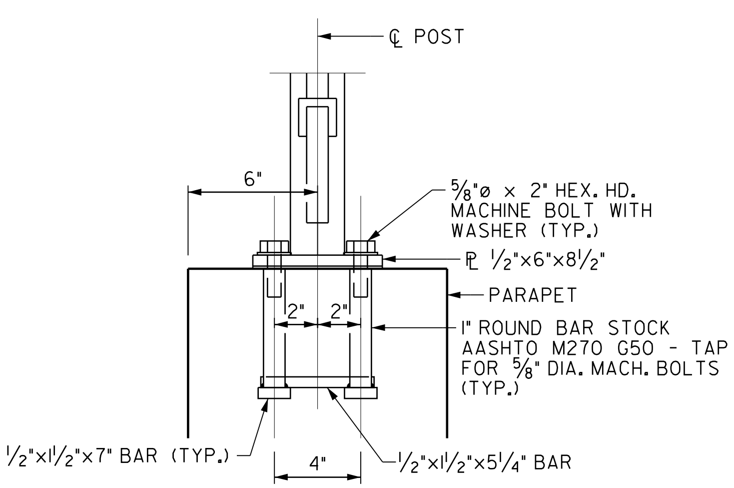
BILL OF MATERIAL
(FOR INFORMATION ONLY)

BAR	NO.	SIZE	LENGTH	SHAPE
h300(E)	36	#5	20'-10"	
h301(E)	16	#5	24'-10"	
h302(E)	22	#4	29'-4"	
u300(E)	71	#5	7'-1"	
v300(E)	124	#5	12'-0"	
v301(E)	18	#5	4'-11"	
v302(E)	18	#5	2'-8"	
z300(E)	85	#7	8'-8"	
CONCRETE STRUCTURES		CU YD	36.5	
REINFORCEMENT BARS, EPOXY COATED		POUND	5,360	

BARS INDICATED THUS 20X3-#5 ETC. INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.

COST OF CONCRETE STRUCTURES AND REINFORCEMENT BARS, EPOXY COATED IS INCLUDED WITH BOX CULVERT END SECTIONS, CULVERT NO. 1.

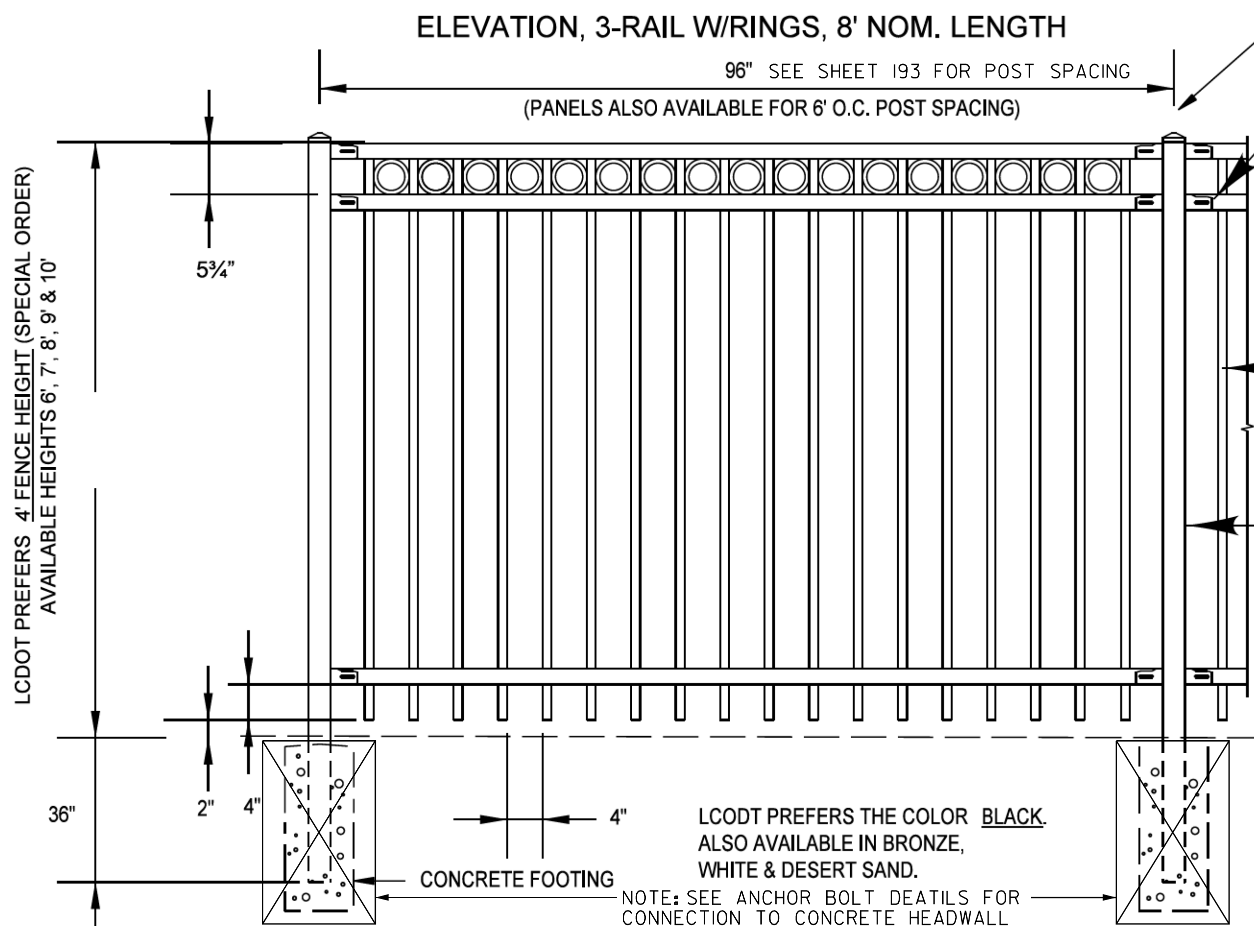




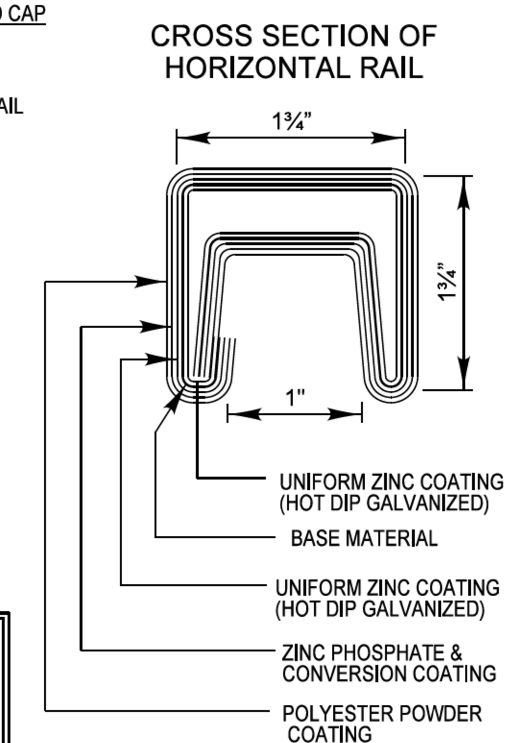
ANCHOR BOLT DETAILS

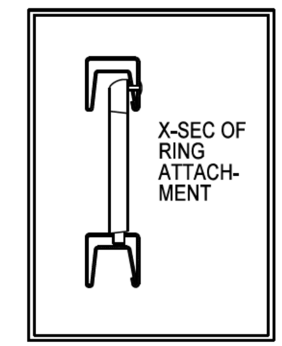
IN LIEU OF THE CAST-IN-PLACE ANCHOR DEVICE SHOWN, THE CONTRACTOR HAS THE OPTION OF DRILLING AND SETTING ⅝" DIA. ANCHOR RODS ACCORDING TO ARTICLE 509.06 OF THE STANDARD SPECIFICATIONS. EMBEDMENT SHALL BE ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.

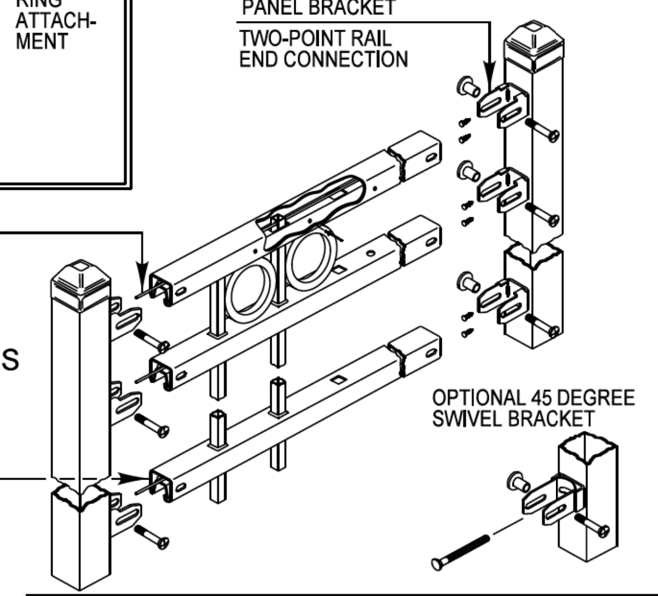
ELEVATION, 3-RAIL W/RINGS, 8' NOM. LENGTH



CROSS SECTION OF HORIZONTAL RAIL







Post Selection for Fence Height 6' - 10'

Wind Loading

Fence Height (FT)	Rail Length (FT)	Post Size	Wind Load Capacity Factor (PSF)	Typical Wind Load Capacity (mph)
6	6	~~2 ½" x 12 GA.~~	~~45.5~~	~~133.0~~
		~~3" x 12 GA.~~	~~54.6~~	~~146.0~~
	8	2 ½" x 12 GA.	34.2	116.0
		3" x 12 GA.	41.0	127.0
7	6	2 ½" x 12 GA.	33.4	114.0
		3" x 12 GA.	40.0	125.0
	8	2 ½" x 12 GA.	25.0	99.0
		3" x 12 GA.	30.0	108.0
8	6	2 ½" x 12 GA.	25.6	100.0
		3" x 12 GA.	30.7	110.0
	8	2 ½" x 12 GA.	19.2	87.0
		3" x 12 GA.	23.0	95.0
		4" x 12 GA.	30.6	110.0
9	6	4" x 12 GA.	32.0	113.0
10	6	4" x 12 GA.	28.7	107.0

GATES: SPECIFY OPENING WIDTHS
SINGLE ______ QUANTITY______
DOUBLE ______ QUANTITY______

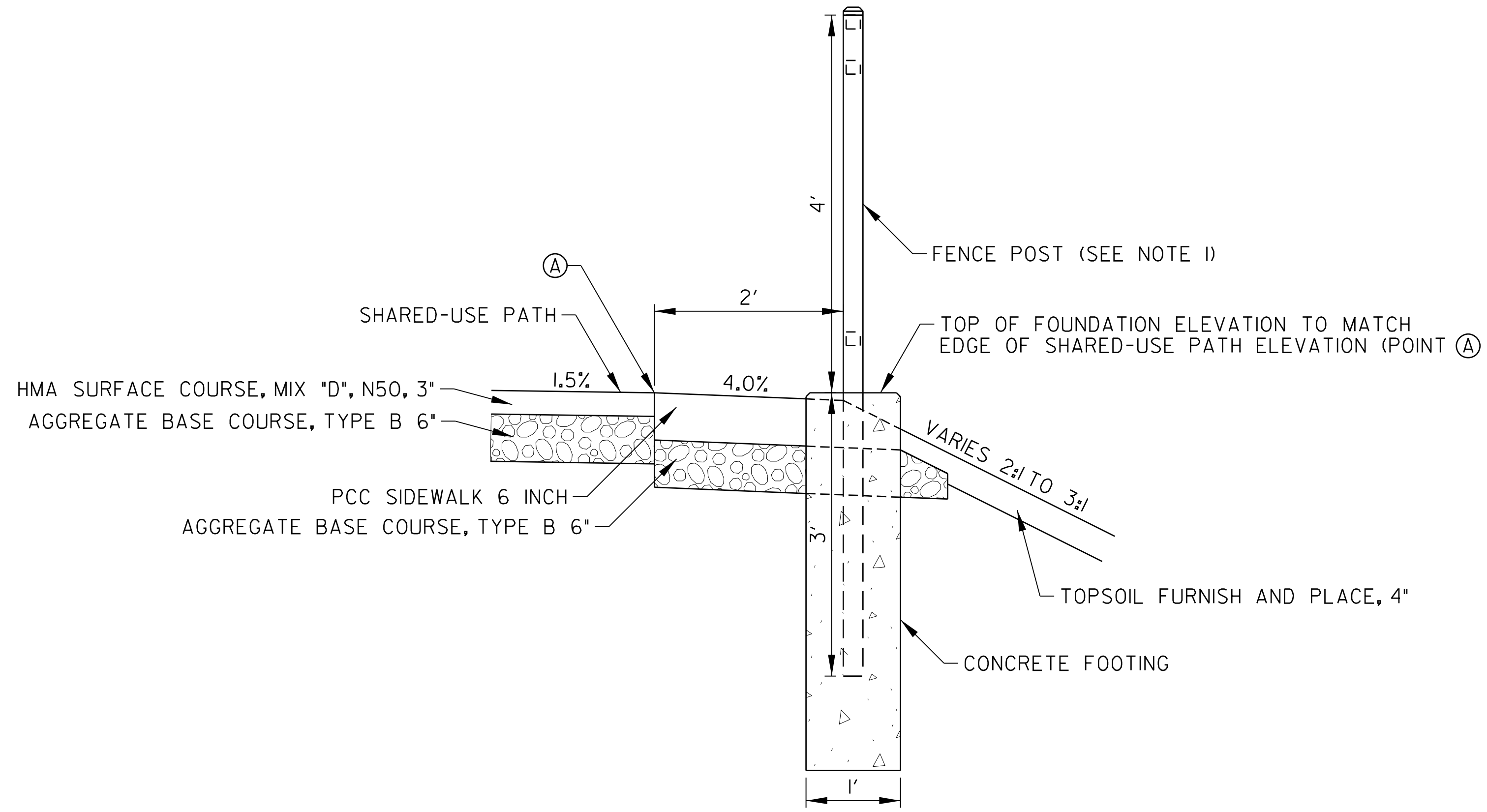
REVISIONS	DATE
Update Text	7/15/11

LakeCounty
Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

ORNAMENTAL FENCE THREE RAIL W/RINGS (ONE MFGR'S DETAILS)

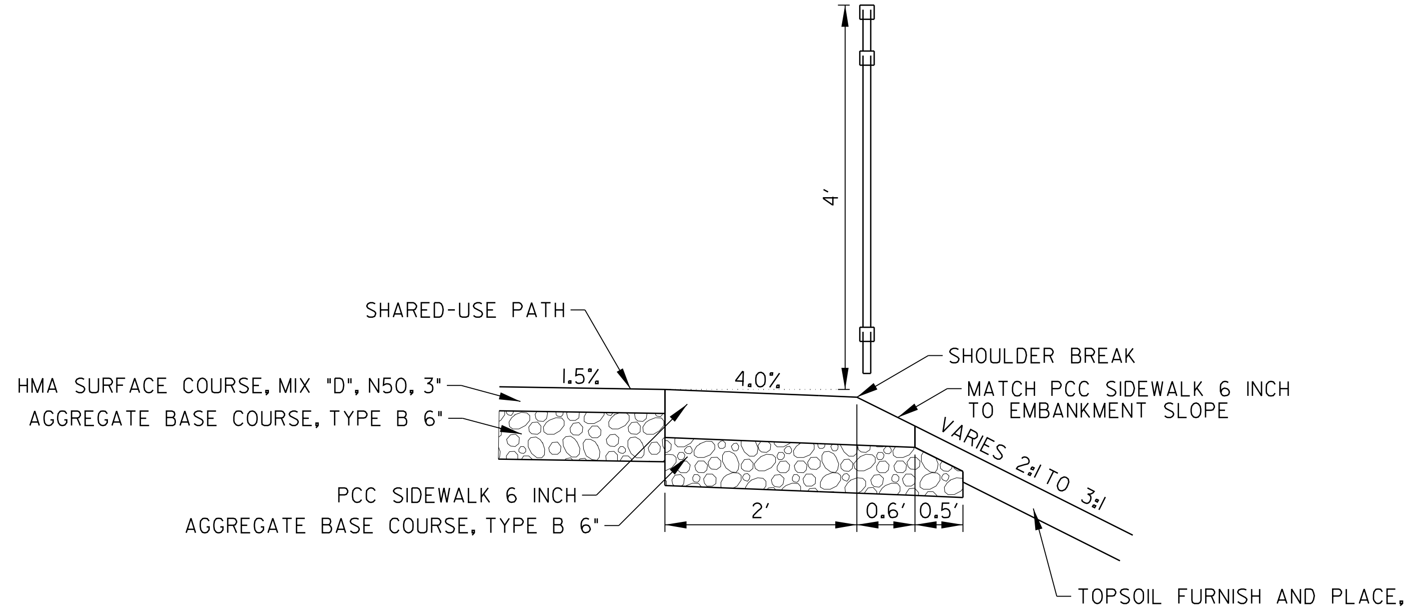
LC6602



SHARED-USE PATH SHOULDER WITH 4' ORNAMENTAL FENCE
THREE RAIL WITH RINGS FOUNDATION DETAIL

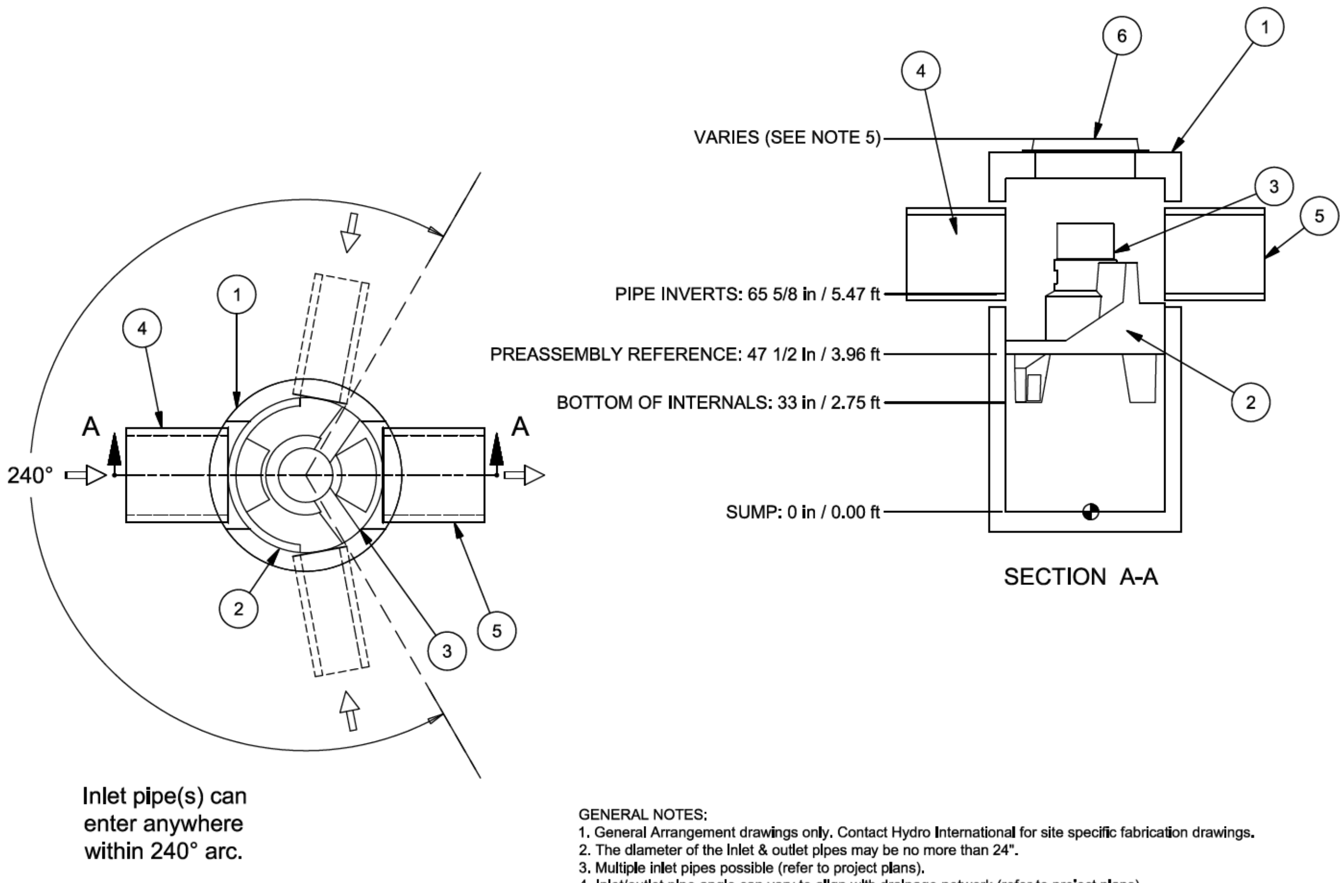
NOTE:

1. THE COLOR OF THE FINAL FINISH FOR THE ORNAMENTAL FENCE SHALL BE BLACK.
2. THE 4' ORNAMENTAL FENCE THREE RAIL WITH RINGS SHALL FOLLOW STANDARD LC6602.



SHARED-USE PATH SHOULDER WITH 4' ORNAMENTAL FENCE
THREE RAIL WITH RINGS DETAIL

FILE NAME: G:\CH09\0176\Road\Sheets\08084-SSTREATMENT.dgn



Inlet pipe(s) can enter anywhere within 240° arc.

Notes

1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE.
3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

	RC	1/14/15	FIRST ISSUE
REV	BY	DATE	DESCRIPTION

REVISION HISTORY

Date	Scale
11/25/14	1/4" = 1'0"

Drawn	Checked	Approved
RC		

Title

4-FT DIAMETER FIRST DEFENSE

HIGH CAPACITY GENERAL ARRANGEMENT

Hydro International

Stormwater Solutions
94 Hutchins Drive
Portland, Maine 04102
Tel: (207) 756-6200
Fax: (207) 756-6212
stormwaterinquiry@hydro-int.com

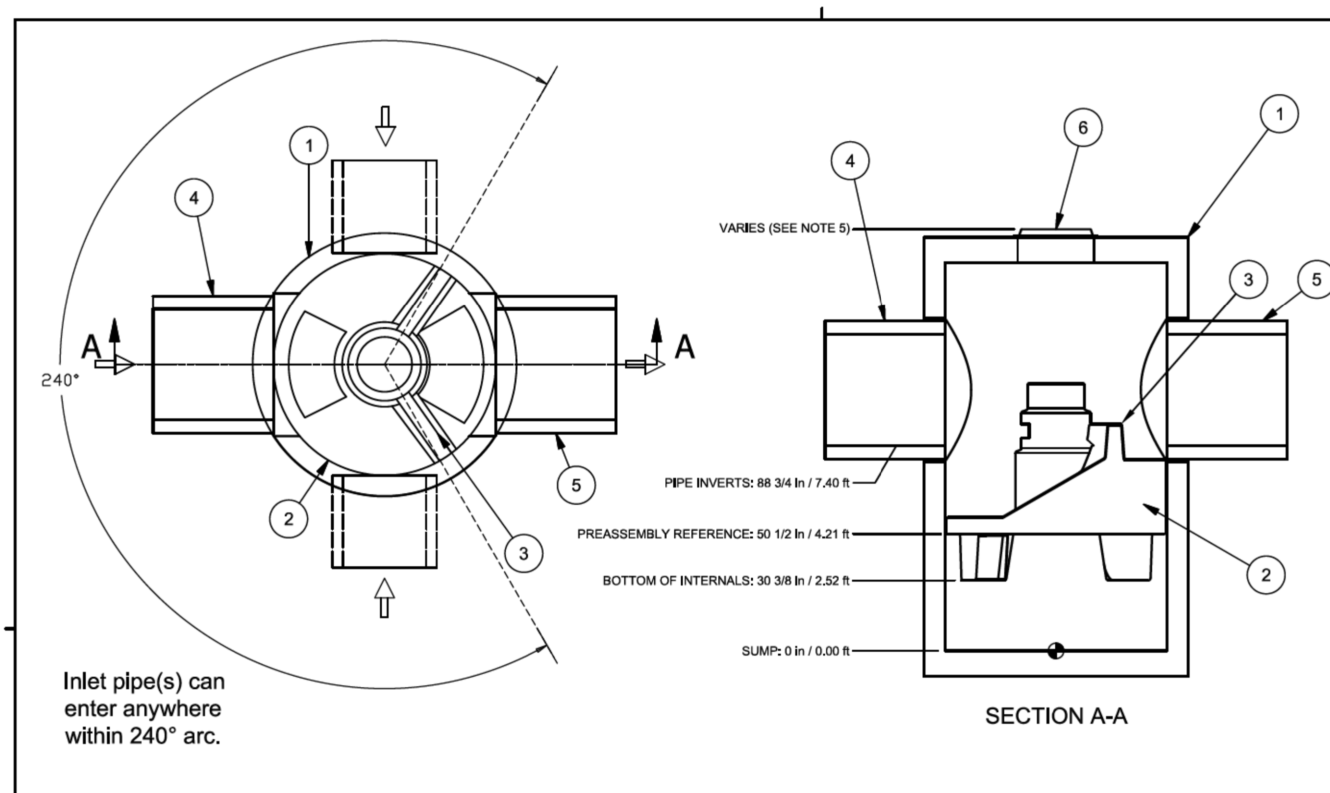
CAD Ref: F4HC-MAX
Project No. xx-xxxx
Drawing No. F4HCS1 Rev.

GENERAL NOTES:
1. General Arrangement drawings only. Contact Hydro International for site specific fabrication drawings.
2. The diameter of the inlet & outlet pipes may be no more than 24".
3. Multiple inlet pipes possible (refer to project plans).
4. Inlet/outlet pipe angle can vary to align with drainage network (refer to project plans).
5. Peak flow rate and minimum height limited by available cover and pipe diameter.
6. Larger sediment storage capacity may be provided with a deeper sump depth.

PRODUCT SPECIFICATIONS:
A. The treatment system shall use an induced vortex to separate pollutants from stormwater runoff.
B. The treatment system shall fit within the limits of excavation (area and depth) as shown in the project plans and will not exceed the dimensions for the design flow rates specified herein.
C. The treatment system shall remove greater than or equal to 90% of TSS based on the Target Particle Size (TPS) of 106 microns and/or 80% of TSS based on the TPS of 230 microns at 0.7 cfs and 1.2 cfs, respectively.
D. The treatment system shall convey the Peak On-line Flow Rates of up to 18 cfs without causing upstream surcharge conditions. Full-scale independent laboratory scour testing shall demonstrate effluent control of less than or equal to 5 mg/L for all flows up to 200% of MTFR-106.
E. The treatment system shall be capable of capturing and retaining fine silt and sand size particles. Analysis of captured sediment from full-scale field installations shall demonstrate particle sizes predominately in the 20-micron range

Parts List

ITEM	SIZE (In)	DESCRIPTION
1	48	I.D. PRECAST MANHOLE
2		LEDGER SUPPORT
3		SEPARATION MODULE
4	24	INLET PIPE (BY OTHERS)
5	24	OUTLET PIPE (BY OTHERS)
6	30	FRAME AND COVER (OR GRATE) (ROUND)



Inlet pipe(s) can enter anywhere within 240° arc.

Notes

1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE.
3. CONTRACTOR TO CONFIRMRIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

*	JLL3	3/16/16	FIRST RELEASE
REV	BY	DATE	DESCRIPTION

REVISION HISTORY

Date	Scale
3/16/2016	3/6"=1'

Drawn	Checked	Approved
JLL3		

Title

8-FT DIAMETER FIRST DEFENSE® HC

GENERAL ARANGEMENT

Hydro International

Stormwater Solutions
94 Hutchins Drive
Portland, Maine 04102
Tel: (207) 756-6200
Fax: (207) 756-6212
stormwaterinquiry@hydro-int.com

CAD Ref: F8HC-MAX
Project No. xx-xxxx
DrawingNo. F8HCS1 Rev.

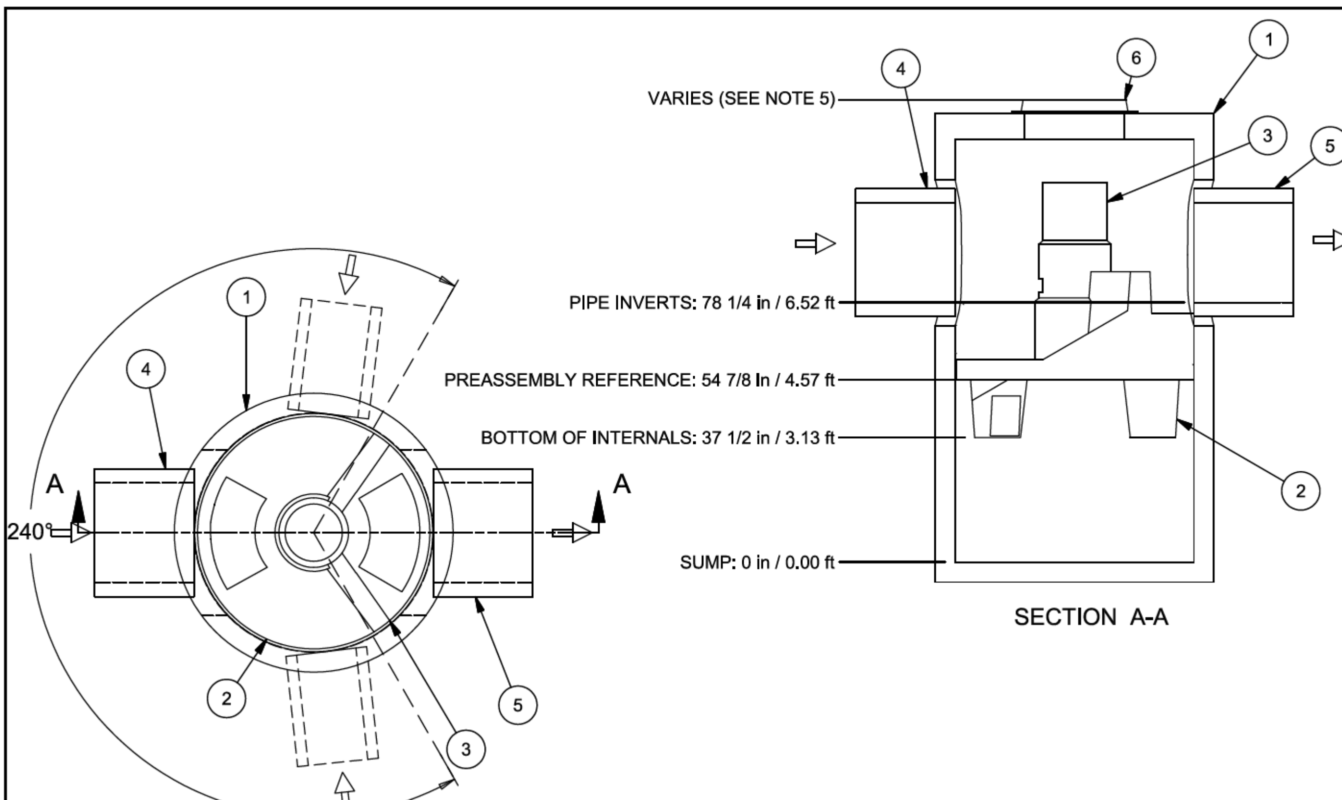
GENERAL NOTES:
1. General Arrangement drawings only. Contact Hydro International for site specific fabrication drawings.
2. The diameter of the inlet & outlet pipes may be no more than 48".
3. Multiple inlet pipes possible (refer to project plans).
4. Inlet/outlet pipe angle can vary to align with drainage network (refer to project plans).
5. Peak flow rate and minimum height limited by available cover and pipe diameter.
6. Larger sediment storage capacity may be provided with a deeper sump depth.

PRODUCT SPECIFICATIONS:
A. The treatment system shall use an induced vortex to separate pollutants from stormwater runoff.
B. The treatment system shall fit within the limits of excavation (area and depth) as shown in the project plans and will not exceed the dimensions for the design flow rates specified herein.
C. The treatment system shall convey the Peak On-line Flow Rates of up to 30 cfs without causing upstream surcharge conditions. Full-scale independent laboratory scour testing shall demonstrate effluent control of less than or equal to 5 mg/L for all flows up to 200% of MTFR-106.
D. The treatment system shall be capable of capturing and retaining fine silt and sand size particles. Analysis of captured sediment from full-scale field installations shall demonstrate particle sizes predominately in the 20-micron range

Parts List

ITEM	SIZE (In)	DESCRIPTION
1	96	I.D. PRECAST MANHOLE
2		LEDGER SUPPORT
3		SEPARATION MODULE
4	48	INLET PIPE (BY OTHERS)
5	48	OUTLET PIPE (BY OTHERS)
6	30	FRAME AND COVER (OR GRATE) (ROUND)

WATER QUALITY STRUCTURE NUMBER	STRUCTURE NAME	VORTSENTRY MODEL OPTION	DOWNSTREAM DEFENDER MODEL OPTION	UNRESTRICTED FLOW (cfs)
1	4-03	HS96	8' FDHC	7.12
2	4-06	HS72	6' FDHC	3.51
3	7-06	HS60	6' FDHC	1.70



Inlet pipe(s) can enter anywhere within 240° arc.

Notes

1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE.
3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

REV	BY	DATE	DESCRIPTION
	RC	1/15/15	FIRST ISSUE

REVISION HISTORY

Date	Scale
11/25/14	1/4" = 1'0"

Drawn	Checked	Approved
RC		

Title

6-FT DIAMETER FIRST DEFENSE

HIGH CAPACITY GENERAL ARRANGEMENT

Hydro International

Stormwater Solutions
94 Hutchins Drive
Portland, Maine 04102
Tel: (207) 756-6200
Fax: (207) 756-6212
stormwaterinquiry@hydro-int.com

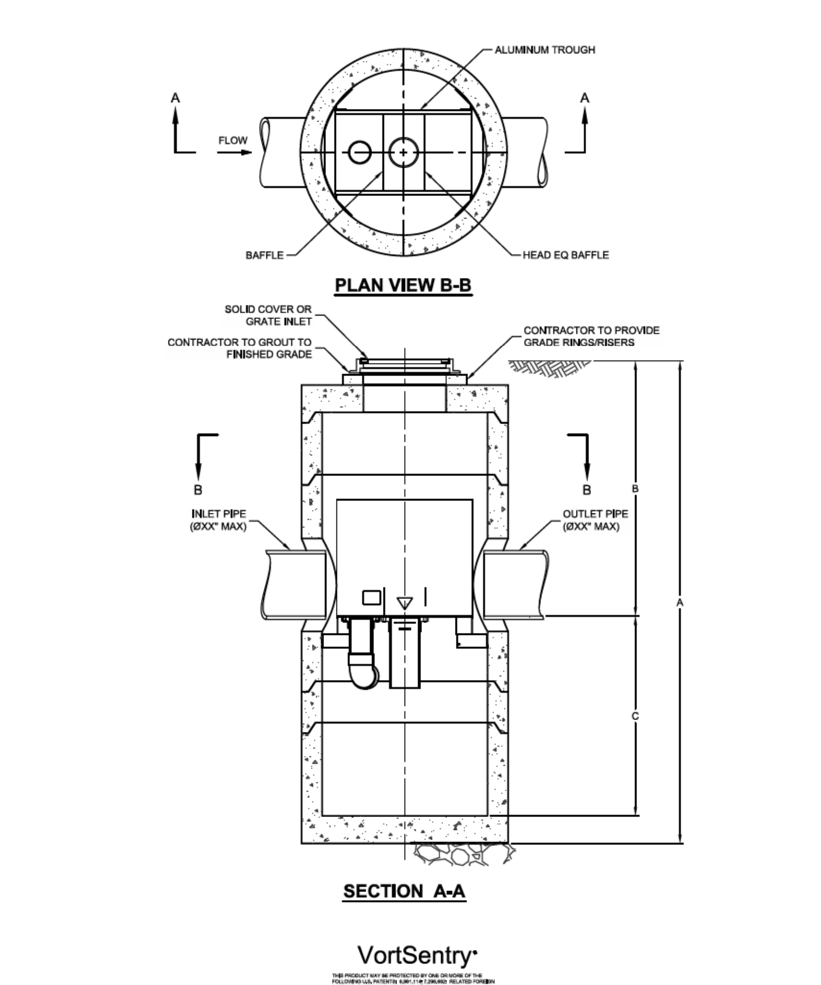
GENERAL NOTES:
1. General Arrangement drawings only. Contact Hydro International for site specific fabrication drawings.
2. The maximum diameter of the inlet & outlet pipes is 30". For pipes larger than 30", please contact Hydro International for additional design assistance.
3. Multiple inlet pipes possible (refer to project plans).
4. Inlet/outlet pipe angle can vary to align with drainage network (refer to project plans).
5. Peak flow rate and minimum height limited by available cover and pipe diameter.
6. Larger sediment storage capacity may be provided with a deeper sump depth.

PRODUCT SPECIFICATIONS:
A. The treatment system shall use an induced vortex to separate pollutants from stormwater runoff.
B. The treatment system shall fit within the limits of excavation (area and depth) as shown in the project plans and will not exceed the dimensions for the design flow rates specified herein.
C. The treatment system shall remove greater than or equal to 90% of TSS based on the Target Particle Size (TPS) of 106 microns and/or 80% of TSS based on the TPS of 230 microns at 2.2 cfs and 3.8 cfs, respectively.
D. The treatment system shall convey the Peak On-line Flow Rates of up to 32 cfs without causing upstream surcharge conditions. Full-scale independent laboratory scour testing shall demonstrate effluent control of less than or equal to 5 mg/L for all flows up to 200% of MTFR-106.
E. The treatment system shall be capable of capturing and retaining fine silt and sand size particles. Analysis of captured sediment from full-scale field installations shall demonstrate particle sizes predominately in the 20-micron range

Parts List

ITEM	SIZE (in)	DESCRIPTION
1	72	I.D. PRECAST MANHOLE
2		LEDGER SUPPORT
3		SEPARATION MODULE
4	30	INLET PIPE (BY OTHERS)
5	30	OUTLET PIPE (BY OTHERS)
6	30	FRAME AND COVER (OR GRATE) (ROUND)

CAD Ref: F6HC-MAX
Project No. xx-xxxx
Drawing No. F6HCS1 Rev.



VORTSENTRY HS DESIGN NOTES

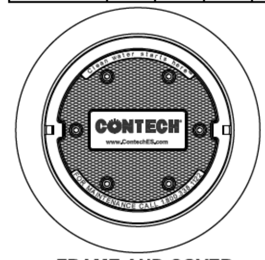
VSHS RATED TREATMENT CAPACITY IS SHOWN IN THE TABLE BELOW, OR PER LOCAL REGULATIONS. MAXIMUM HYDRAULIC INTERNAL BYPASS CAPACITY VARIES. CONTACT YOUR CONTECH REPRESENTATIVE FOR ADITIONAL INFORMATION.

THE STANDARD SOLID COVER CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW.

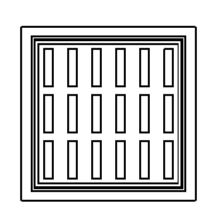
	CONFIGURATION OPTION DESCRIPTION
	GRATE INLET (NO INLET PIPE)
	GRATE INLET WITH INLET PIPE

VORTSENTRY HS GENERAL INFORMATION

Model	Manhole Diameter (ID)		Total Treatment Flow Rate		Typical Total Distance Rim to Outside Bottom A		Typical Distance Rim to Invert B		Typical Depth Below Invert (Inside) C		Approximate Minimum Distance Rim to Invert		Maximum Pipe Diameter (ID)	
	FT	mm	CFS	L/S	FT	m	FT	m	FT	mm	FT	m	IN	mm
HS36	3	900	0.55	15.6	10.16	3.10	4.08	1.24	5.58	1702	3.00	0.91	18	450
HS48	4	1200	1.20	34.0	13.25	4.04	6.00	1.83	6.75	2057	4.00	1.22	24	600
HS60	5	1500	2.20	62.3	15.13	4.61	6.50	1.98	7.96	2426	4.82	1.47	30	750
HS72	6	1800	3.70	104.8	16.56	5.05	6.75	2.06	9.15	2788	5.59	1.70	36	900
HS84	7	2100	5.60	158.6	18.85	5.75	7.75	2.36	10.35	3156	5.00	1.52	42	1050
HS96	8	2400	8.10	229.4	20.87	6.36	8.50	2.59	11.54	3518	6.91	2.11	48	1200



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.



FRAME AND GRATE
(24" SQUARE)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (CFS)			*
PEAK FLOW RATE (CFS)			*
RETURN PERIOD OF PEAK FLOW (YRS)			*
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION			*
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		*	*
NOTES/SPECIAL REQUIREMENTS:			

* PER ENGINEER OF RECORD

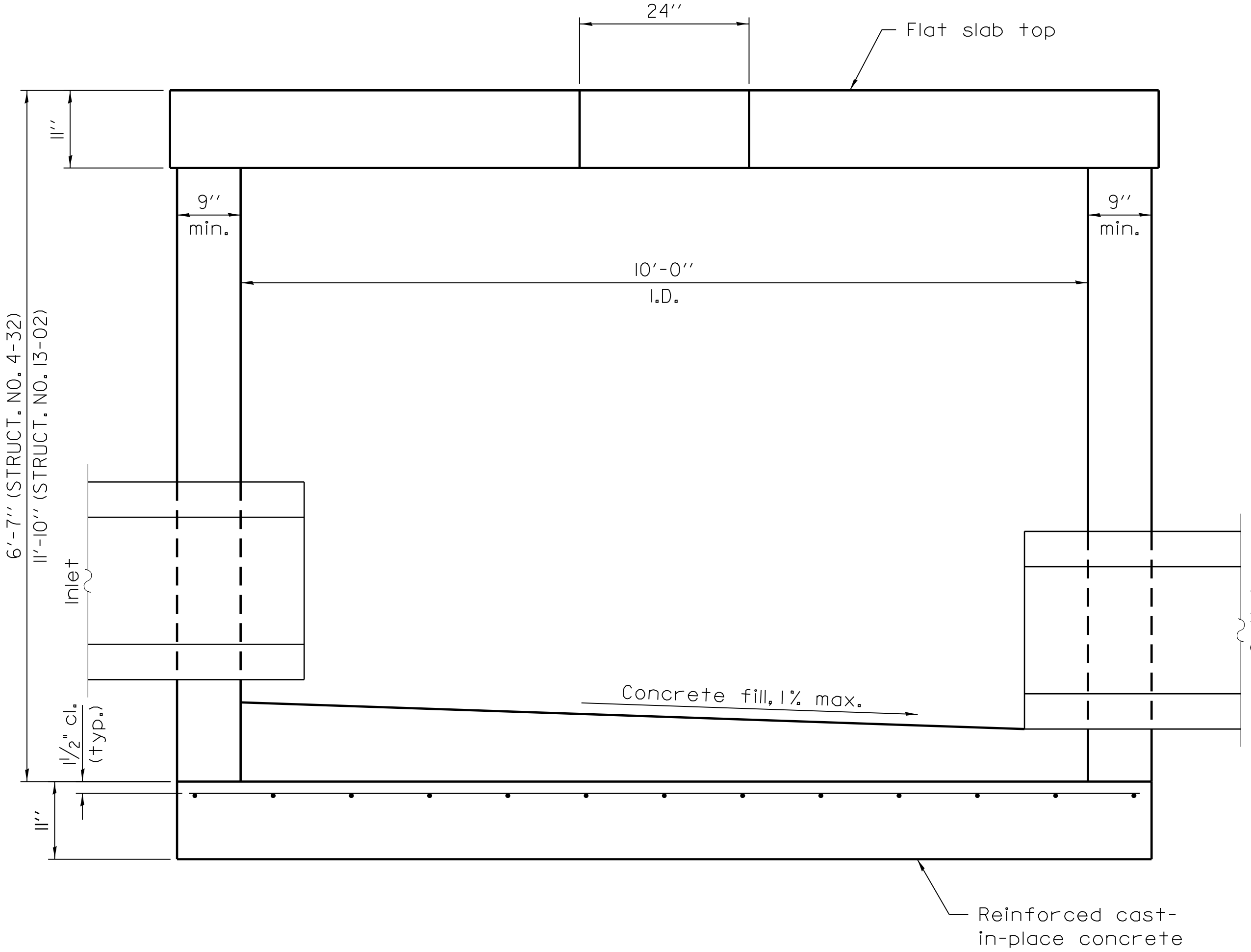
GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
4. VORTSENTRY HS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET AASHTO M306 LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.

INSTALLATION NOTES
1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
2. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE VORTSENTRY HS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
3. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
4. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
5. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

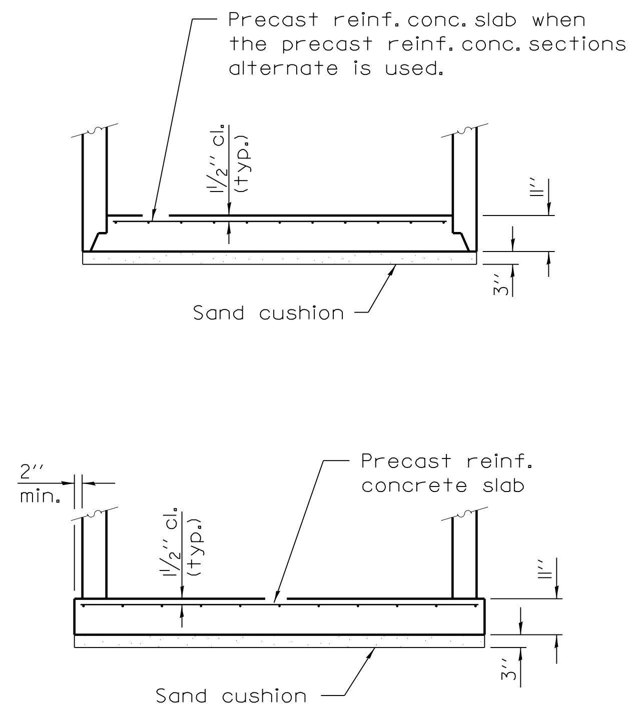
VORTSENTRY HS STANDARD DETAIL

WATER QUALITY STRUCTURE NUMBER	STRUCTURE NAME	VORTSENTRY MODEL OPTION	DOWNSTREAM DEFENDER MODEL OPTION	UNRESTRICTED FLOW (cfs)
1	4-03	HS96	8' FDHC	7.12
2	4-06	HS72	6' FDHC	3.51
3	7-06	HS60	6' FDHC	1.70

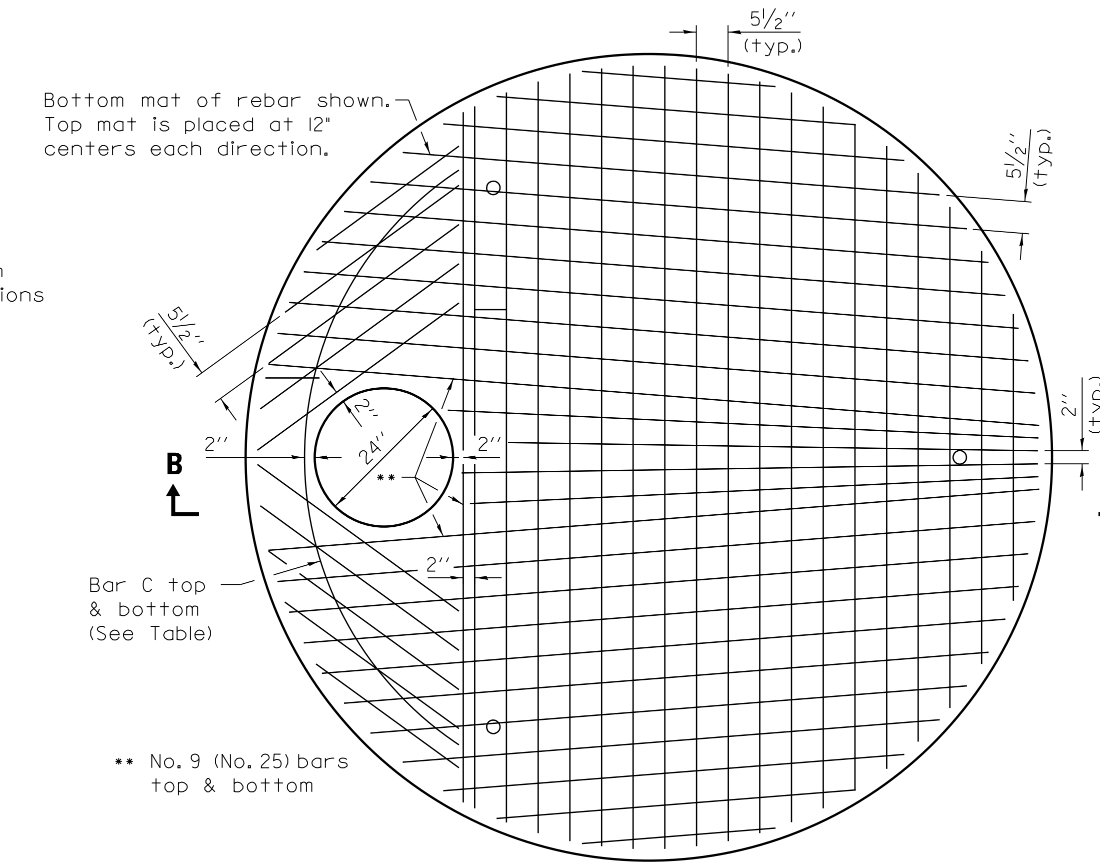


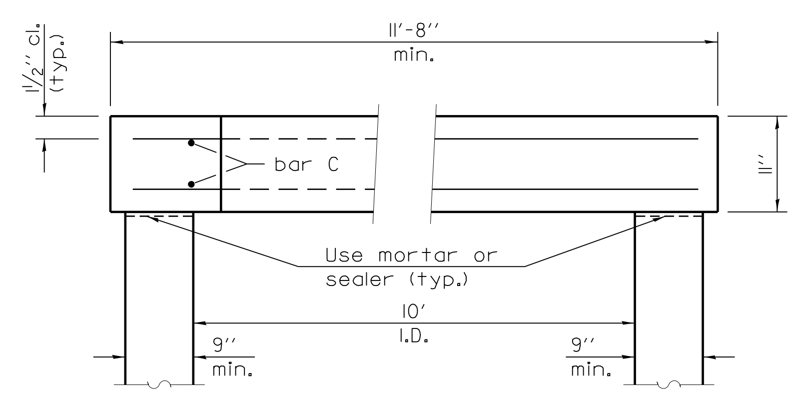
ELEVATION

(With Flat Slab Top Only)

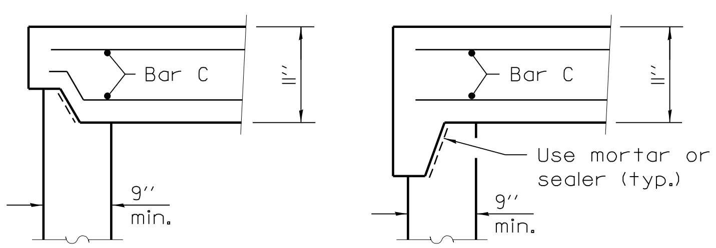


ALTERNATE BOTTOM SLABS





SECTION B–B



ALTERNATE JOINT CONFIGURATIONS

Diameter of opening	Reinforcement Bar Size	No. 4 Bar C	
		Length	Radius
24''	Bottom mat No. 9	9'-10''	5'-0"
	Top mat No. 4		

BILL OF MATERIAL

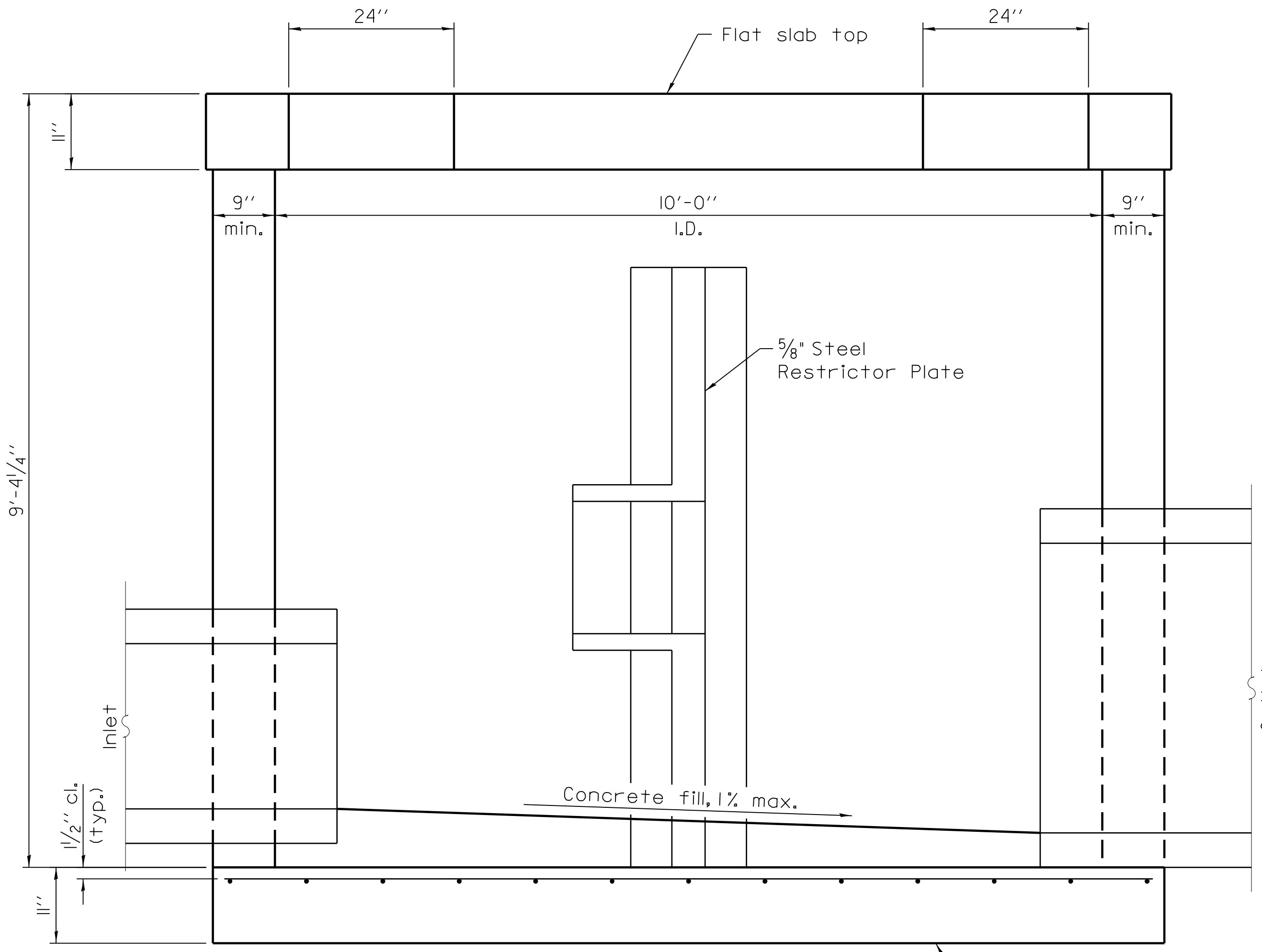
Item	Unit	Quantity
Manholes, Type A, 10' Diameter	Each	2

GENERAL NOTES

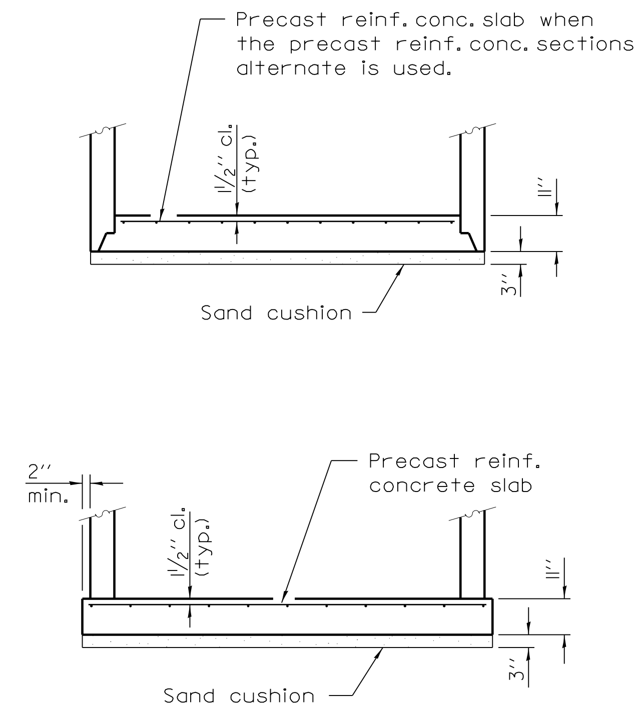
Joint configuration and dimensions of flat slab top shall match and fit the riser joint detail.

Bottom slabs shall be reinforced with a minimum of 0.37 sq. in./ft. in both directions with a maximum spacing of 10''.

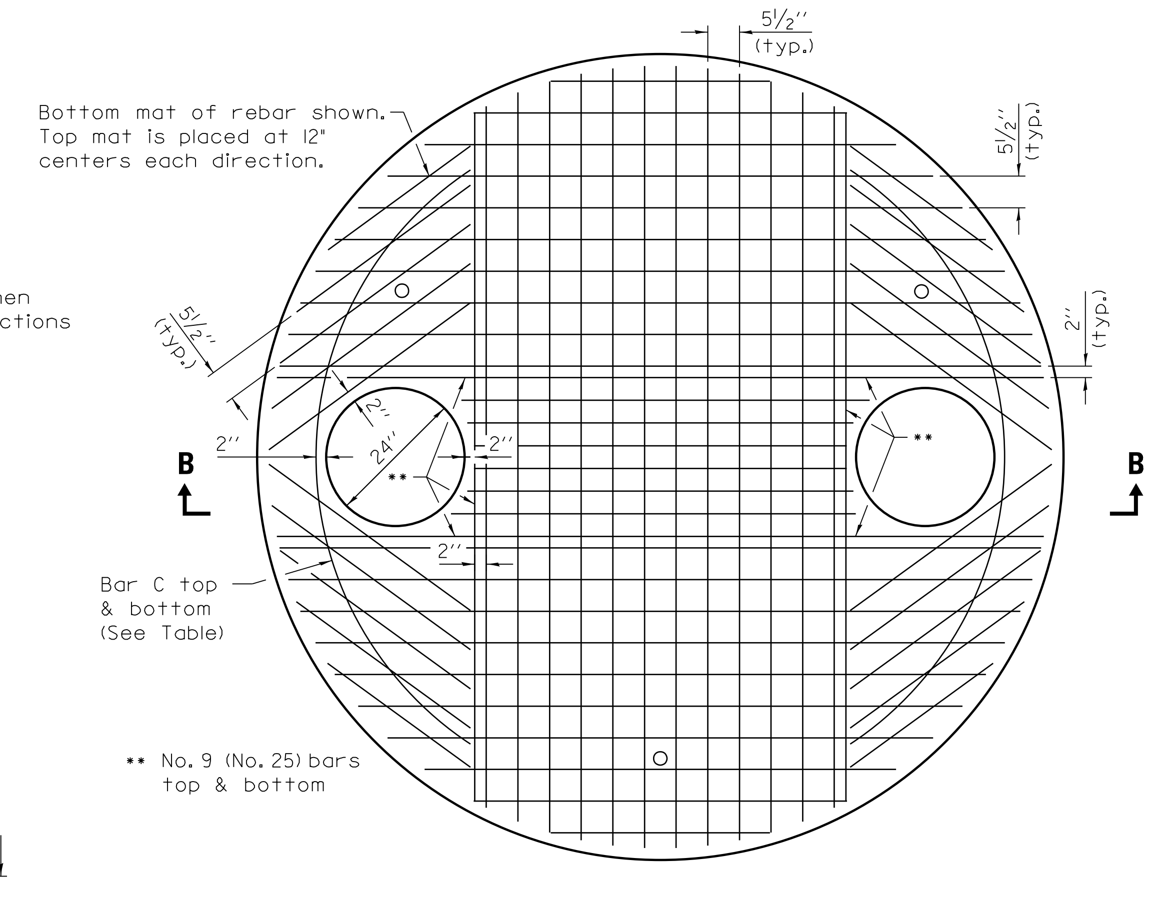
Bottom slabs may be connected to the riser as determined by the fabricator; however, only a single row of reinforcement around the perimeter may be utilized.



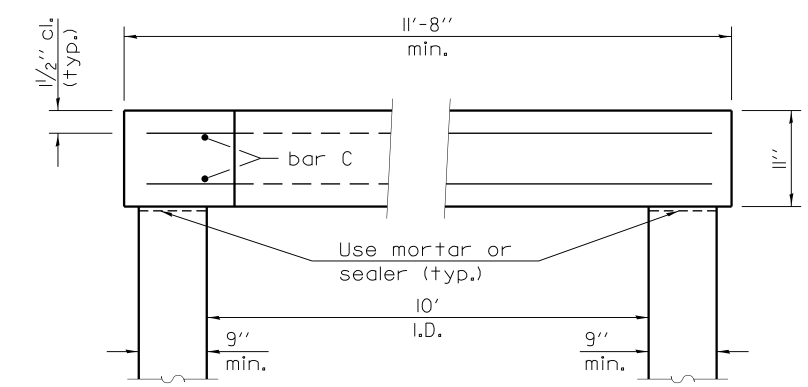
ELEVATION
(With Flat Slab Top Only)



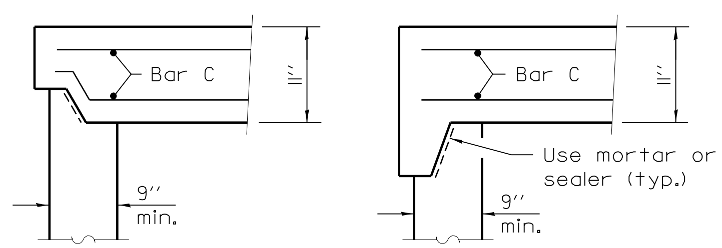
ALTERNATE BOTTOM SLABS



PLAN
Showing Rebar Reinforcement



SECTION B–B



ALTERNATE JOINT CONFIGURATIONS

Diameter of opening	Reinforcement Bar Size	No. 4 Bar C	
		Length	Radius
24″	Bottom mat No. 9	9′-10″	5′-0″
	Top mat No. 4		

BILL OF MATERIAL

Item	Unit	Quantity
Manholes, Type A, 10′ Diameter, With 2 Type 1 Frame, Closed Lid, Restrictor Plate	Each	1

GENERAL NOTES

Joint configuration and dimensions of flat slab top shall match and fit the riser joint detail.

Bottom slabs shall be reinforced with a minimum of 0.37 sq. in./ft. in both directions with a maximum spacing of 10″.

Bottom slabs may be connected to the riser as determined by the fabricator; however, only a single row of reinforcement around the perimeter may be utilized.

See Standard BD600-04 for details of steel restrictor plate.

FILE NAME: G:\CH09\0176\Road\Sheets\08084-DRAIN-STRUCT-02.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JM	REVISED -
	DRAWN - JM	REVISED -
PLOT SCALE = 2.222218 ' / in.	CHECKED - MDS	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

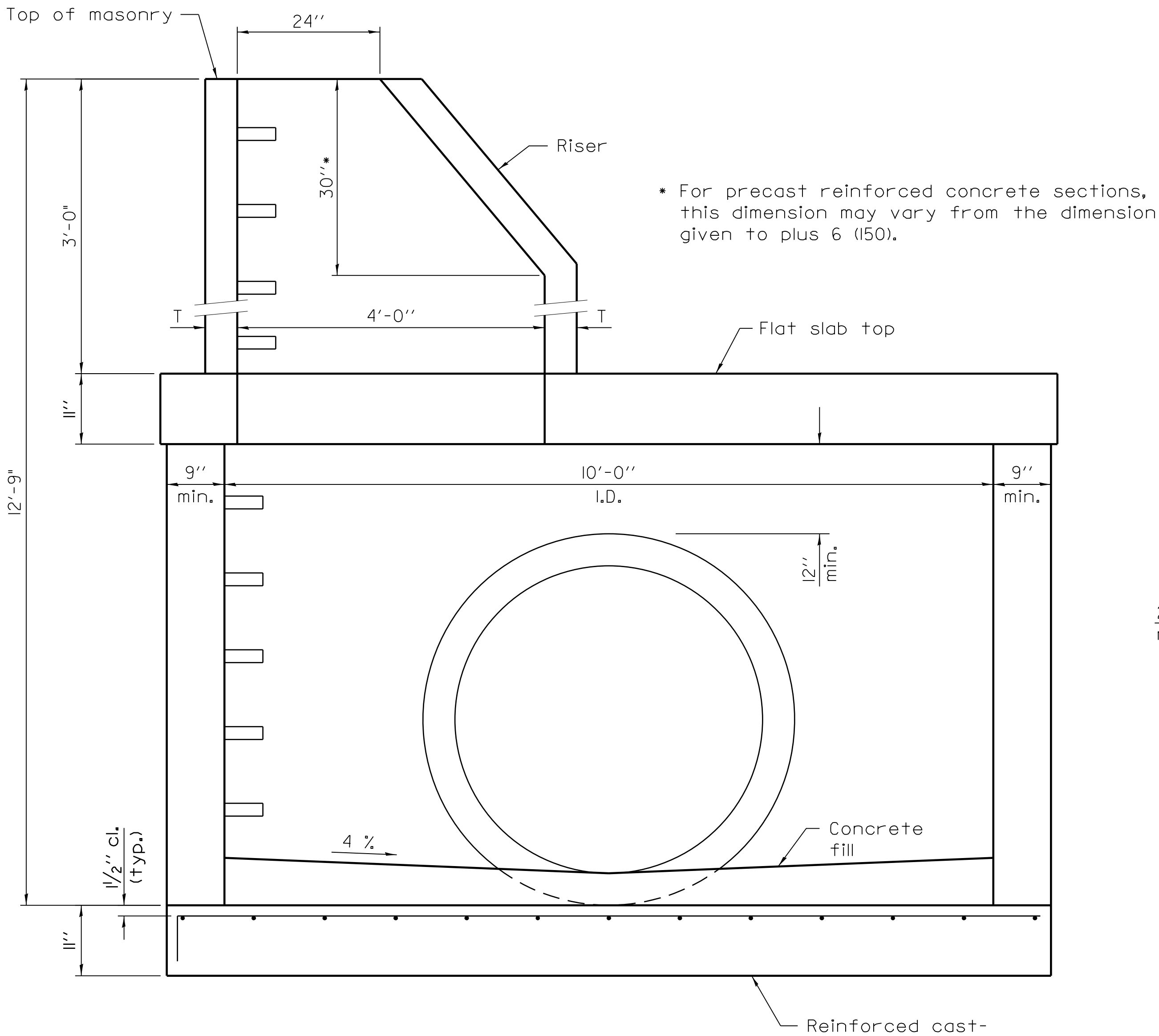
MH TY A 10′ DIA - STRUCT NO. 12-02
PROJECT DETAILS

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

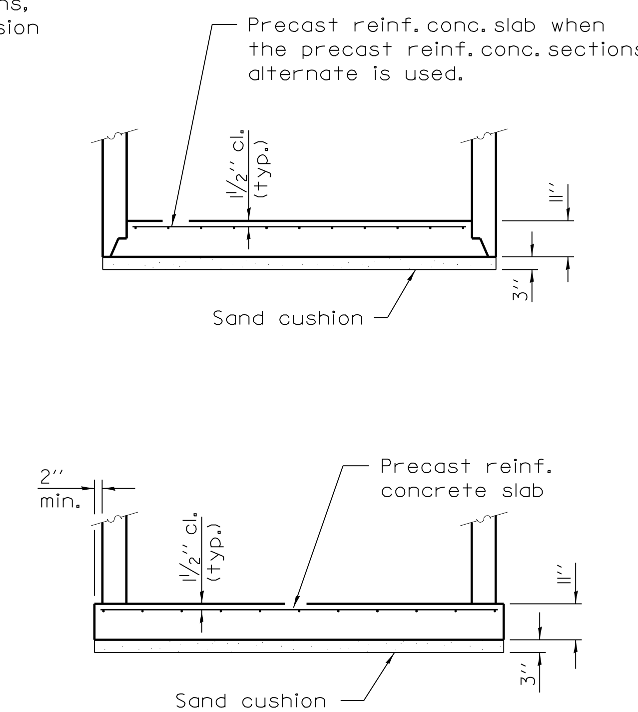
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	259

CONTRACT NO. 61D65

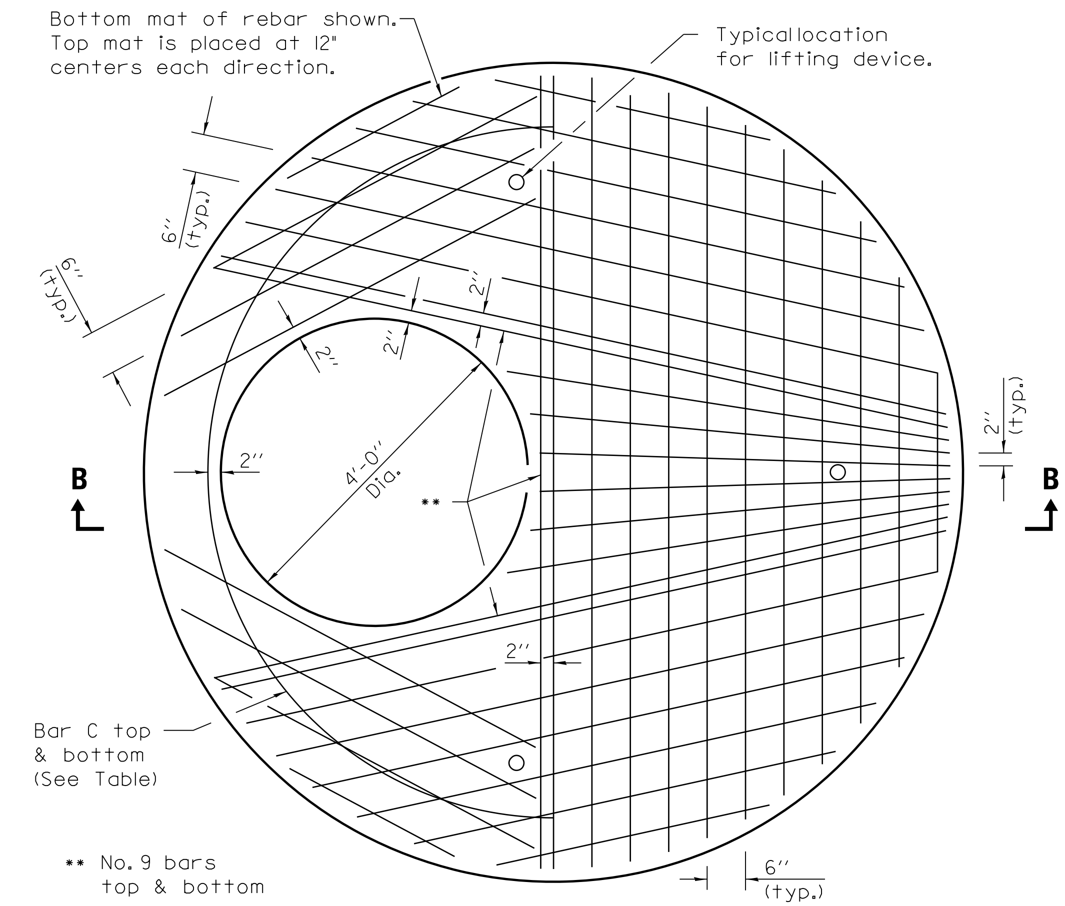
ILLINOIS FED. AID PROJECT



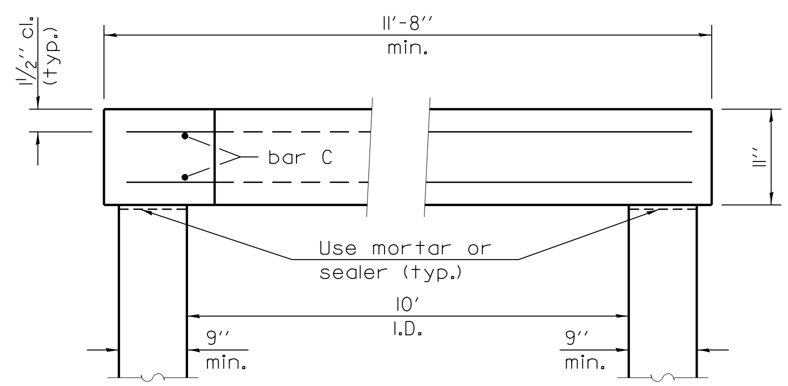
ELEVATION
(With Flat Slab Top Only)



ALTERNATE BOTTOM SLABS

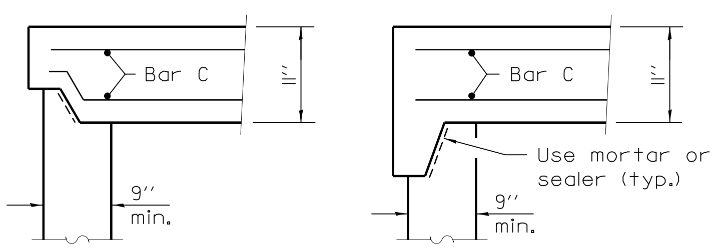


PLAN
Showing Rebar Reinforcement



SECTION B-B

Diameter of opening	Reinforcement Bar Size	No. 4 Bar C	
		Length	Radius
4′-0″	Bottom mat No. 9	14′-8″	5′-0″
	Top mat No. 4		



ALTERNATE JOINT CONFIGURATIONS

ALTERNATE MATERIALS FOR RISER WALLS	T (min)
Concrete Masonry Units	5″
Precast Reinforced Concrete Sections	4″
Cast-in-Place Concrete	6″

BILL OF MATERIAL

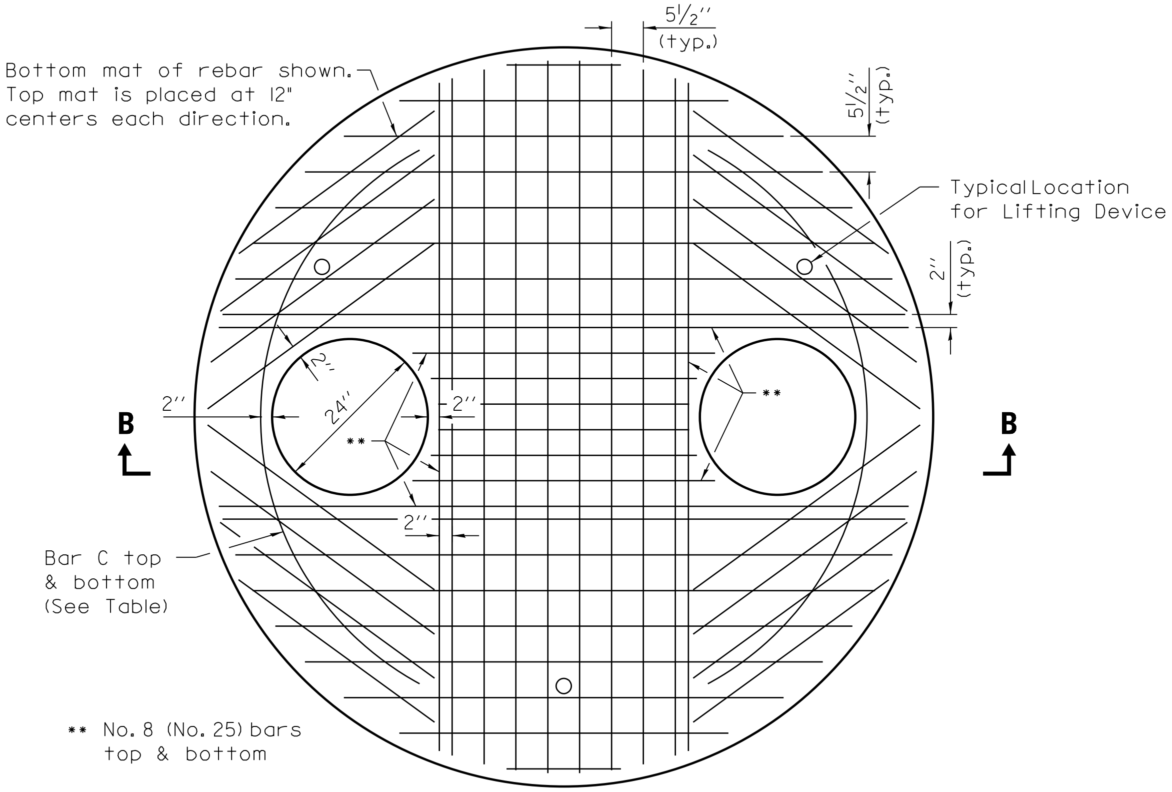
Item	Unit	Quantity
Manholes, Type A, 10′ Diameter	Each	1

GENERAL NOTES

Joint configuration and dimensions of flat slab top shall match and fit the riser joint detail.

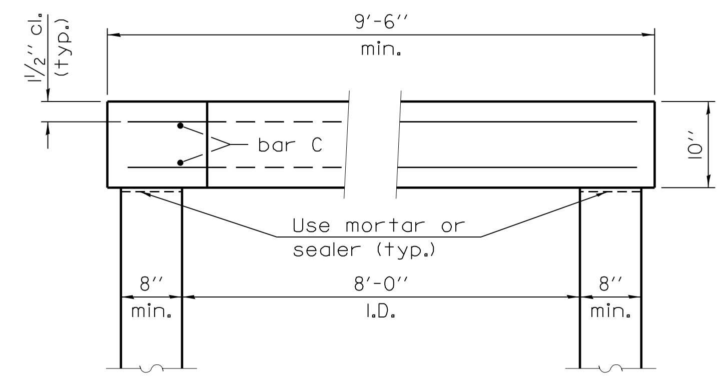
Bottom slabs shall be reinforced with a minimum of 0.37 sq. in./ft. in both directions with a maximum spacing of 10″.

Bottom slabs may be connected to the riser as determined by the fabricator; however, only a single row of reinforcement around the perimeter may be utilized.

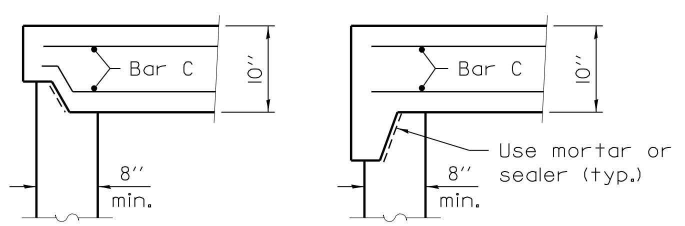


PLAN

Showing Rebar Reinforcement



SECTION B–B



ALTERNATE JOINT CONFIGURATIONS

Diameter of opening	Reinforcement Bar Size	No. 4 Bar C	
		Length	Radius
24″	Bottom mat No. 8	8′-5″	4′-0″
	Top mat No. 4		

BILL OF MATERIAL

Item	Unit	Quantity
Manholes, Type A, 8′ Diameter, With 2 Type 1 Frame, Closed Lid, Restrictor Plate	Each	1

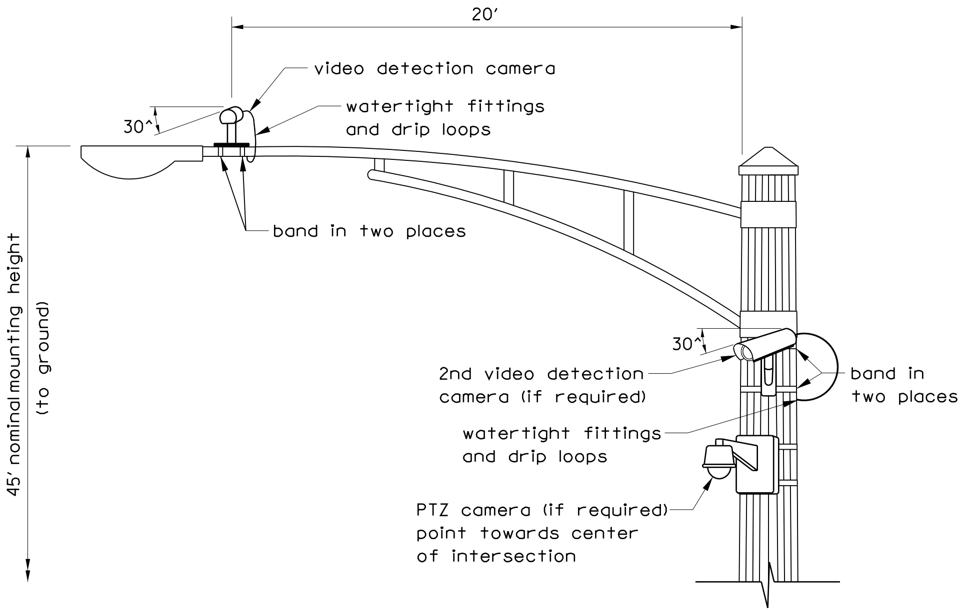
GENERAL NOTES

Joint configuration and dimensions of flat slab top shall match and fit the riser joint detail.

Bottom slabs shall be reinforced with a minimum of 0.37 sq. in./ft. in both directions with a maximum spacing of 10″.

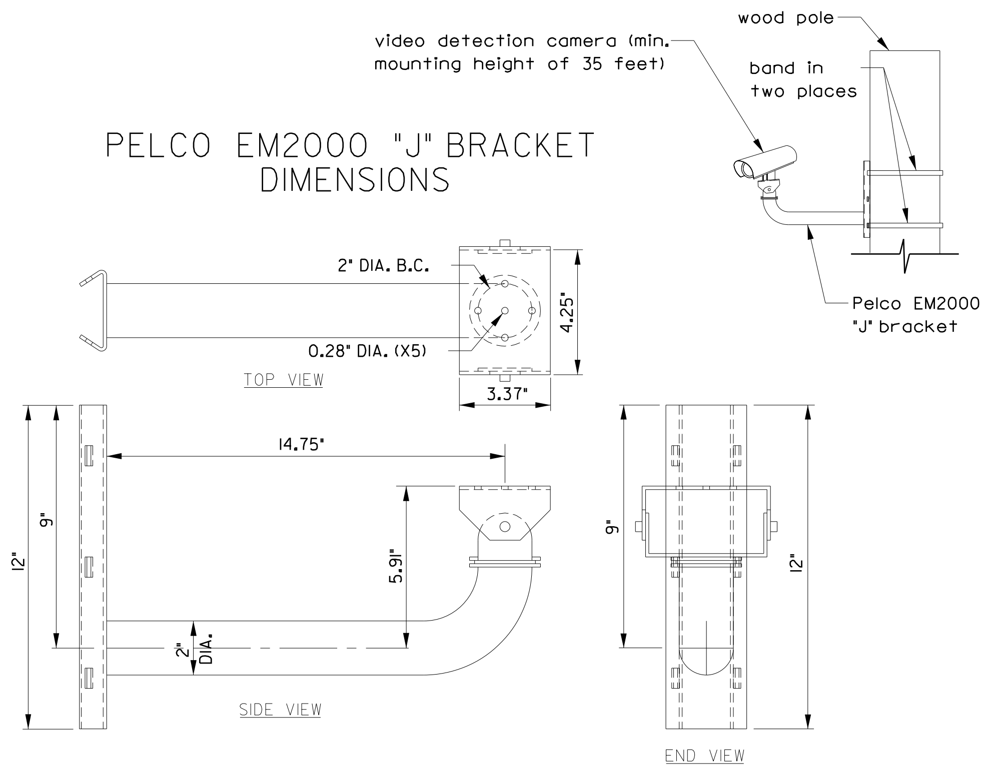
Bottom slabs may be connected to the riser as determined by the fabricator; however, only a single row of reinforcement around the perimeter may be utilized.

See Standard 602416-05 for details of 8′ diameter manhole.



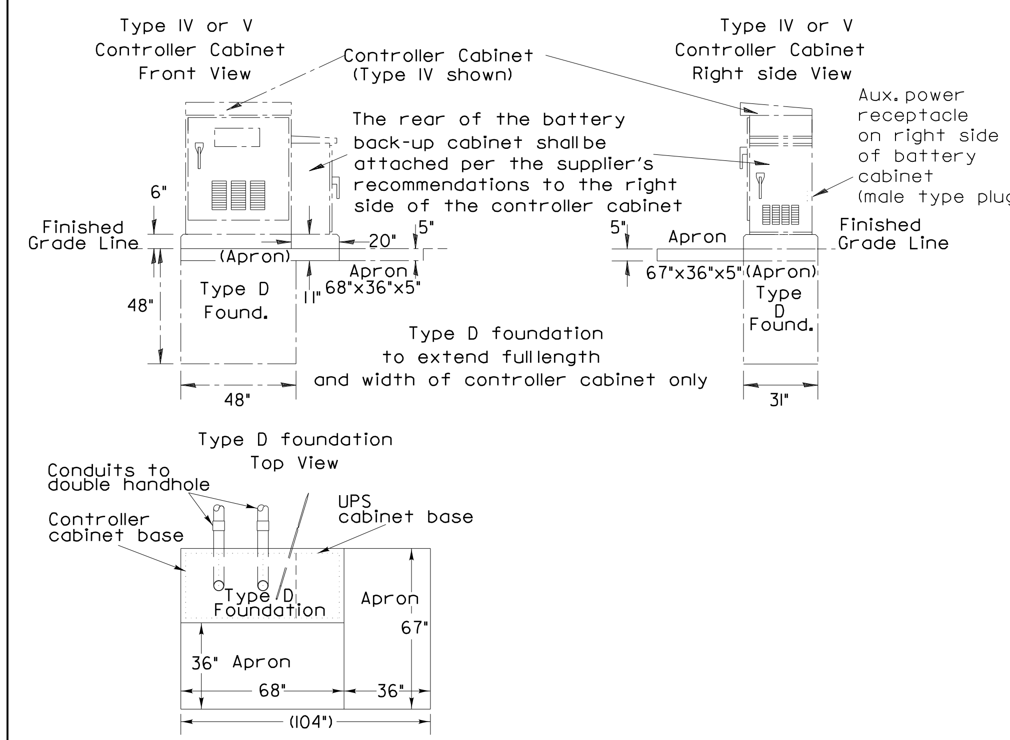
VIDEO DETECTION CAMERA(S) AND PTZ CAMERA MOUNTING DETAIL

(NOT TO SCALE)



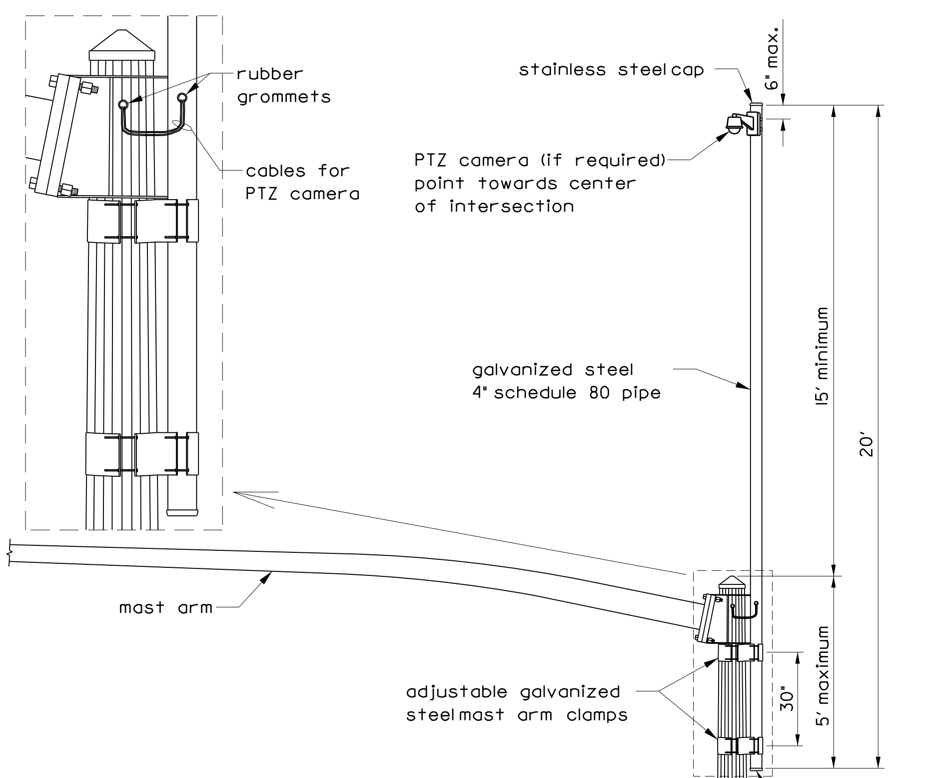
VIDEO DETECTION CAMERA MOUNTING DETAIL FOR TEMPORARY TRAFFIC SIGNALS

(NOT TO SCALE)



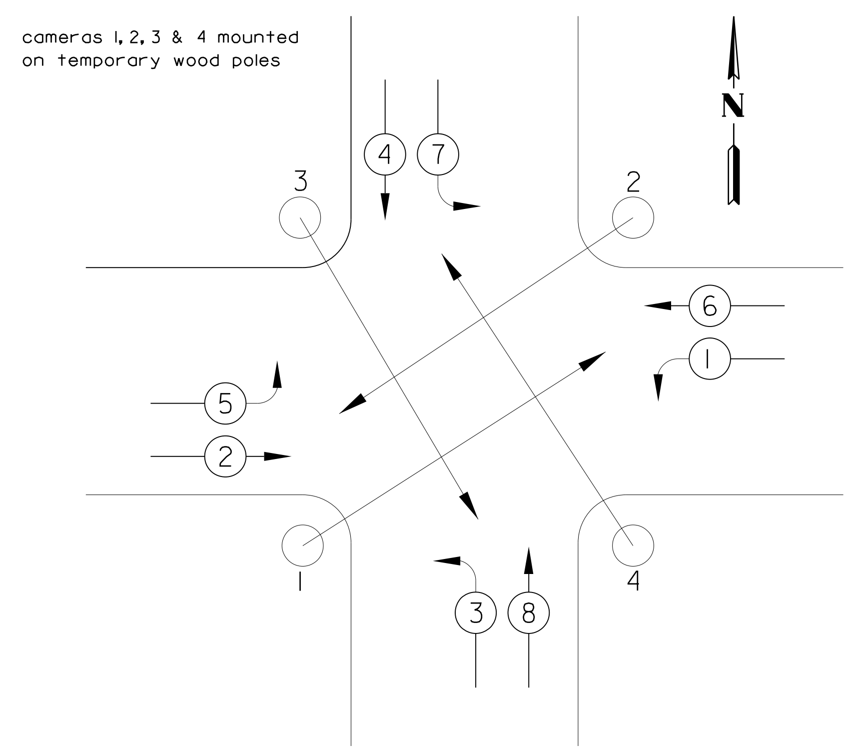
UNINTERRUPTABLE POWER SUPPLY (UPS) CABINET INSTALLATION DETAIL

(NOT TO SCALE)



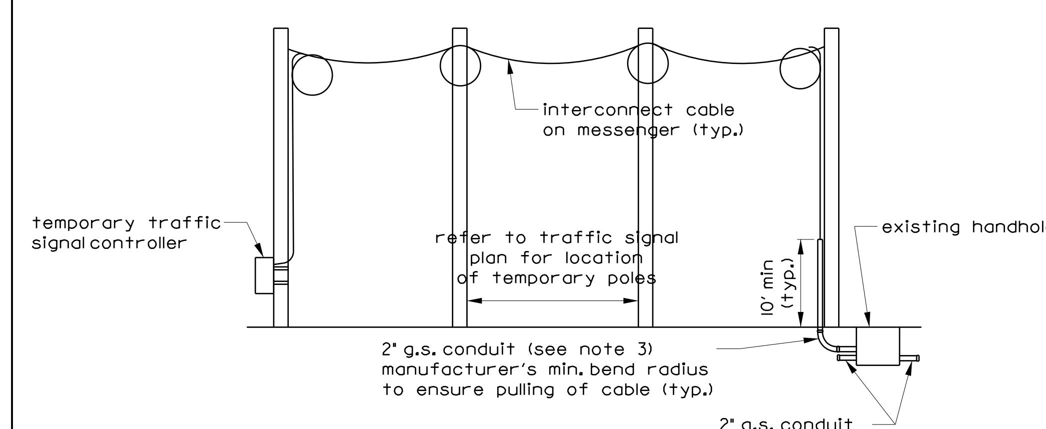
CAMERA MOUNTING ASSEMBLY DETAIL FOR NON-COMBINATION MAST ARMS

(NOT TO SCALE)



VIDEO DETECTION CAMERA ASSIGNMENT FOR TEMPORARY TRAFFIC SIGNALS

(NOT TO SCALE)



1) Transfer of existing to temporary interconnect cable and temporary to proposed interconnect cable must be completed in one working day during non-peak hours or as directed by the Engineer.

2) The existing interconnect cable shall be removed after the proposed interconnect is turned on.

3) The 2" conduit used for the temporary interconnect cable shall be removed to below the ground level and capped at the time the temporary traffic signal is removed. The conduit shall be incidental to the cost of the Temporary Traffic Signal Installation.

4) The Contractor must notify the County Traffic Engineer a minimum of seven working days prior to the start of any work on the traffic signal interconnect system.

AERIALLY SUPPORTED INTERCONNECT CABLE

(NOT TO SCALE)

FILE NAME: g:\ch09\0176\road\Sheets\08084-TS-22-Detail_7.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -	
	DRAWN - AMK	REVISED -	
PLOT SCALE = 39.9999 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LCDOT STANDARD TRAFFIC SIGNAL DESIGN DETAILS
PROJECT DETAILS

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

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	262
		CONTRACT NO. 61D65		
	ILLINOIS	FED. AID PROJECT		

ENGLISH		TRENCH WIDTH (W)		MIN OFFSET FROM E.O.P.* FOR NO TB		½ PIPE AREA [O.D.]
S.S. DIA.	T	WITHOUT SHORING	WITH SHORING	WITHOUT SHORING	WITH SHORING	
(IN)	(IN)	(FT)	(FT)	(FT)	(FT)	(SQ FT)
10	2.00	2.67	4.17	3.33	4.08	0.53
12	2.00	2.83	4.33	3.42	4.17	0.70
15	2.25	3.13	4.63	3.56	4.31	1.04
18	2.50	3.42	4.92	3.71	4.46	1.44
21	2.75	3.71	5.21	3.85	4.60	1.92
24	3.00	4.00	5.50	4.00	4.75	2.45
27	3.25	4.29	5.79	4.15	4.90	3.06
30	3.50	4.58	6.08	4.29	5.04	3.73
36	4.00	5.17	6.67	4.58	5.33	5.28
42	4.50	5.75	7.25	4.88	5.63	7.09
48	5.00	6.33	7.83	5.17	5.92	9.17

* TO CENTER LINE OF PIPE

DESIGN NOTES:

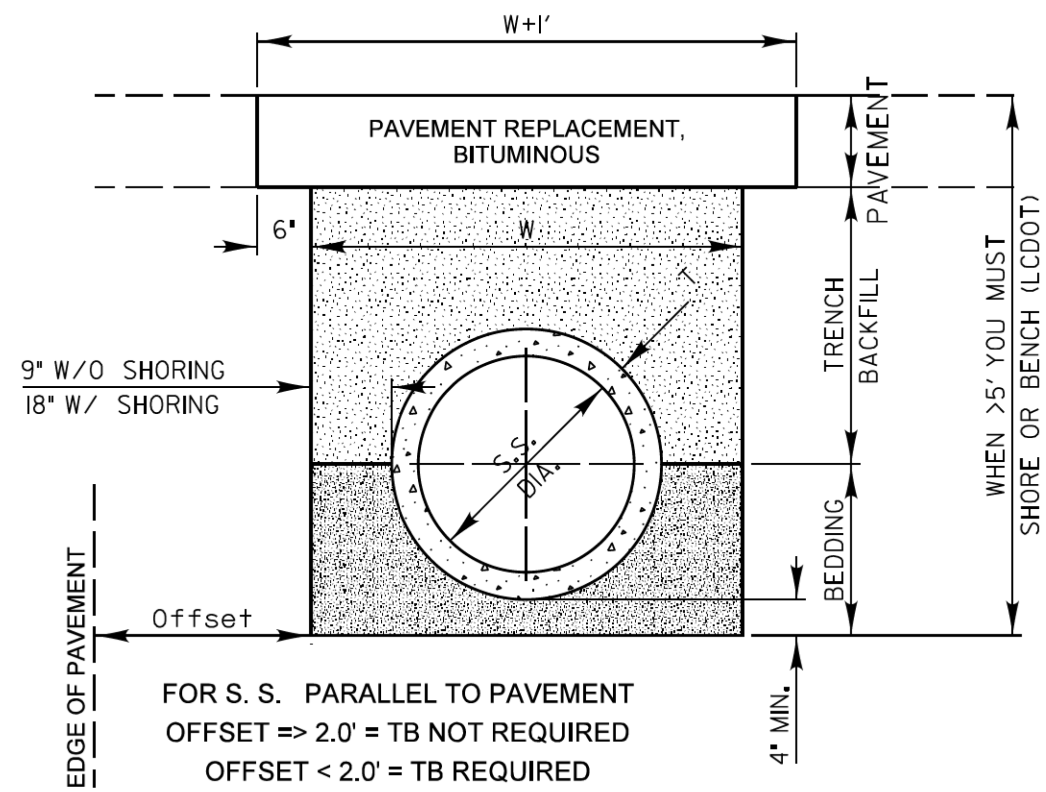
1. Trench backfill is required if the storm sewer or culvert offset from the edge of the pavement is less than the tabulated values (the inner trench wall is closer than 2' to the edge of pavement)

2. Payment for the trench backfill shall not exceed the quantity computed using the maximum trench width dimensions. If the trench is excavated beyond these limits, the contractor shall furnish and place any additional trench backfill at his/her expense.

3. If the trench width is less than the above maximum values, payment will be based on the actual dimensions of the dug trench.

4. Bedding shall be placed from 4" under the pipe to the spring line of the pipe and is incidental to the corresponding storm sewer or culvert pay item.

5. If any part of the excavation for a drainage structure falls within 2' of the edge of pavement, the space between the side of the excavation and the outer surface of the drainage structure shall be filled with trench backfill. The cost of this item is included in the pay item for the drainage structure.



FOR S. S. PARALLEL TO PAVEMENT
OFFSET => 2.0' = TB NOT REQUIRED
OFFSET < 2.0' = TB REQUIRED

SCALE: 1" = 2'

REVISIONS	DATE
Text Revision	11/06/07
Text Update	7/14/11

LakeCounty
Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

TRENCH WIDTHS FOR TRENCH BACKFILL & PAVEMENT REPLACEMENT, BITUMINOUS

LC0020

FILE NAME: G:\CHD9\0176\Road\Sheets\V08084-LCDOT-STANDARD-DETAIL-01.dgn

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PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

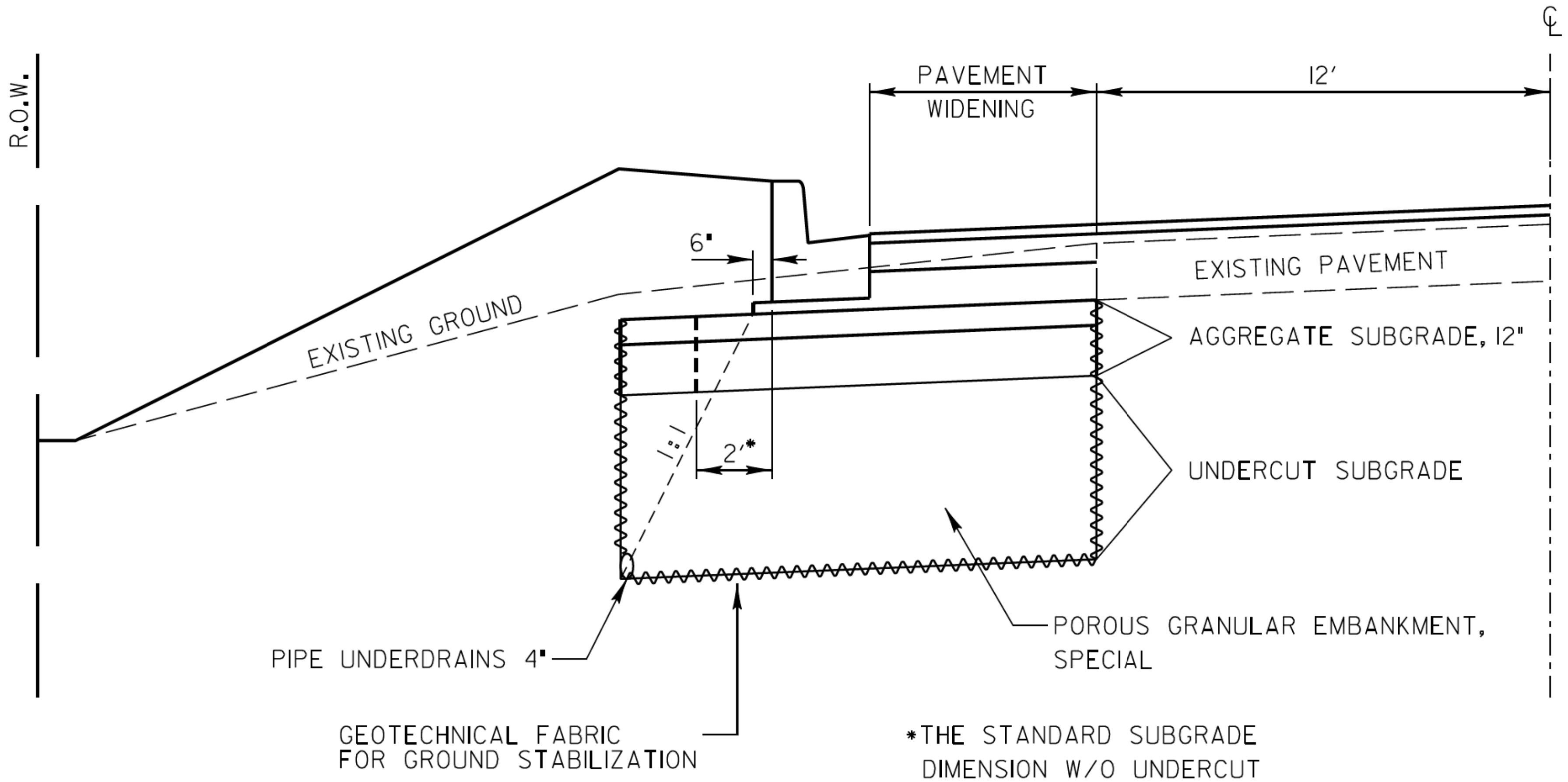
LAKE COUNTY STANDARD DETAIL

SCALE: 1:20 SHEET 1 OF 43 SHEETS STA. TO STA.

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	263

CONTRACT NO. 61D65

ILLINOIS FED. AID PROJECT



*THE STANDARD SUBGRADE
DIMENSION W/O UNDERCUT
IS 2 FEET.

IN UNSTABLE AREAS, THE SUBGRADE SHALL BE:
- UNDERCUT (PAID FOR AS EARTH EXCAVATION PER CU YD);
- REINFORCED WITH GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (PAID FOR PER SQ YD);
- DRAINED BY INSTALLATION OF PIPE UNDERDRAINS, 4" (PAID FOR PER FOOT);
- BACKFILLED WITH POROUS GRANULAR EMBANKMENT, SPECIAL (PAID FOR PER TON) AND;
- TOPPED WITH AGGREGATE SUBGRADE, 12" (300mm) (PAID FOR PER SQ YD).

SCALE:
HORIZONTAL 1" = 5'
VERTICAL 1" = 2.5'

REVISIONS	DATE

LakeCounty Division of Transportation

APPROVED BY: M. G. Zemaitis
DATE: APRIL 1, 2007

UNDERCUT DETAIL

LC2000

USER NAME = amkidd	DESIGNED - JLV	REVISED -	
	DRAWN - AMK	REVISED -	
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LAKE COUNTY STANDARD DETAIL

SCALE: 1:20 | SHEET 2 OF 43 SHEETS | STA. | TO STA.

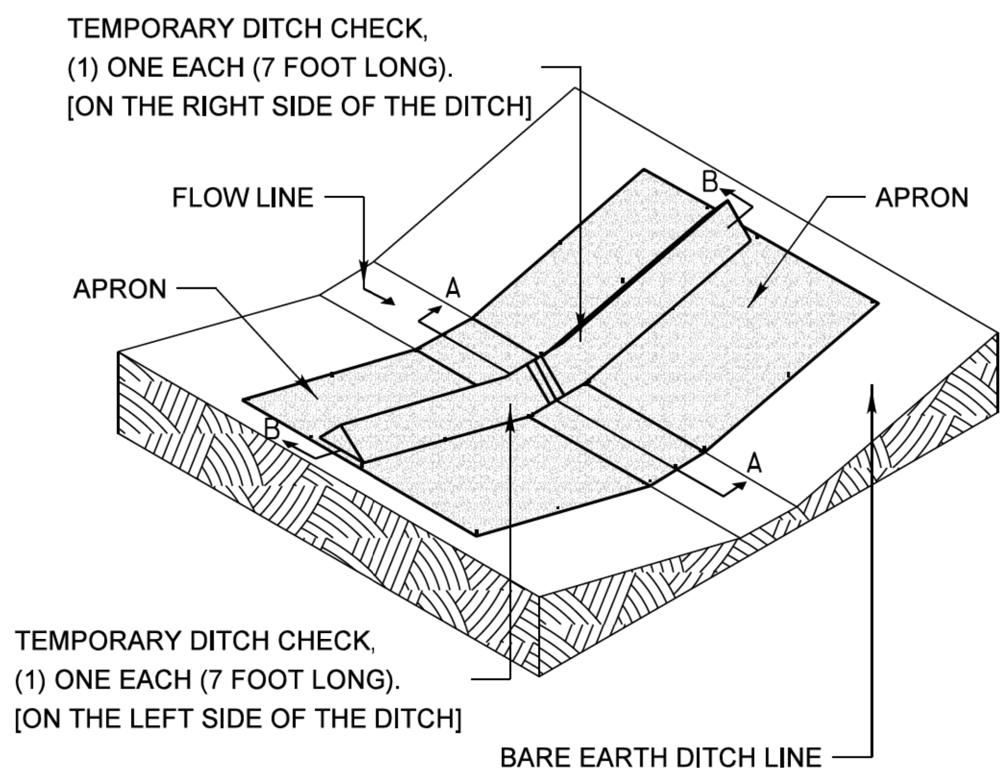
FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	264

CONTRACT NO. 61D65

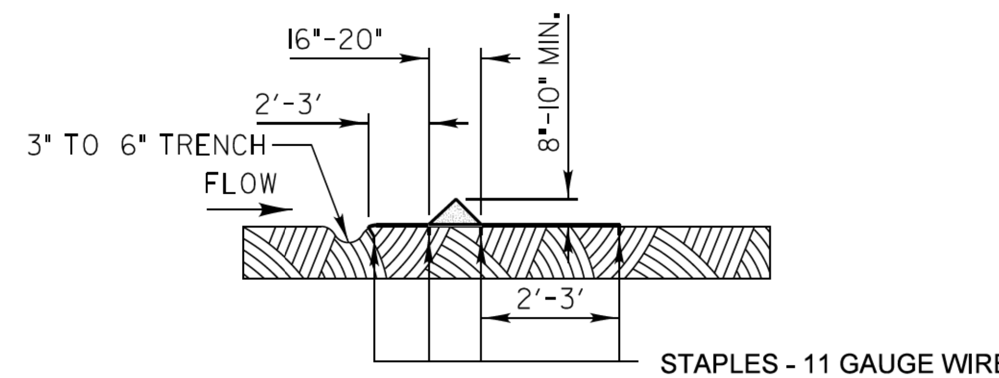
ILLINOIS | FED. AID PROJECT

FILE NAME: G:\CHD9\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

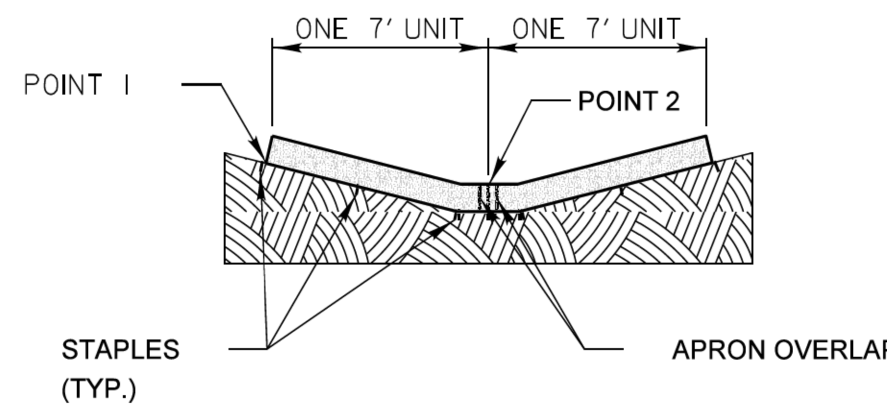
FOR BARE EARTH APPLICATION ONLY



SILT DIKE UNIT
ISOMETRIC



SECTION A-A



SECTION B-B

NOTES:

THE TEMPORARY DITCH CHECK SHALL BE USED IN BARE EARTH DITCH LINES AND SHALL BE REMOVED JUST PRIOR TO THE INSTALLATION OF EROSION CONTROL BLANKET AND SEEDING.

THE INSTALLATION SHOWN WILL BE MEASURED AND PAID FOR AS A TEMPORARY DITCH CHECK 14 FEET IN LENGTH.

STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTER OF THE 7' UNIT AS SHOWN ON THE DIAGRAM.

POINT 1 MUST BE HIGHER THAN POINT 2 TO INSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

REVISIONS	DATE
ADDED DIMENSIONS	04/11/08
REVISED PAY ITEM	04/15/10
ADDED PLASTIC BERM (pg2)	10/10/12

LakeCounty
Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

TEMPORARY DITCH CHECK INSTALLATION FOR ROADWAY OR DRAINAGE DITCH

(SHEET 1 OF 2)

LC2050

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -	
	DRAWN - AMK	REVISED -	
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PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LAKE COUNTY STANDARD DETAIL

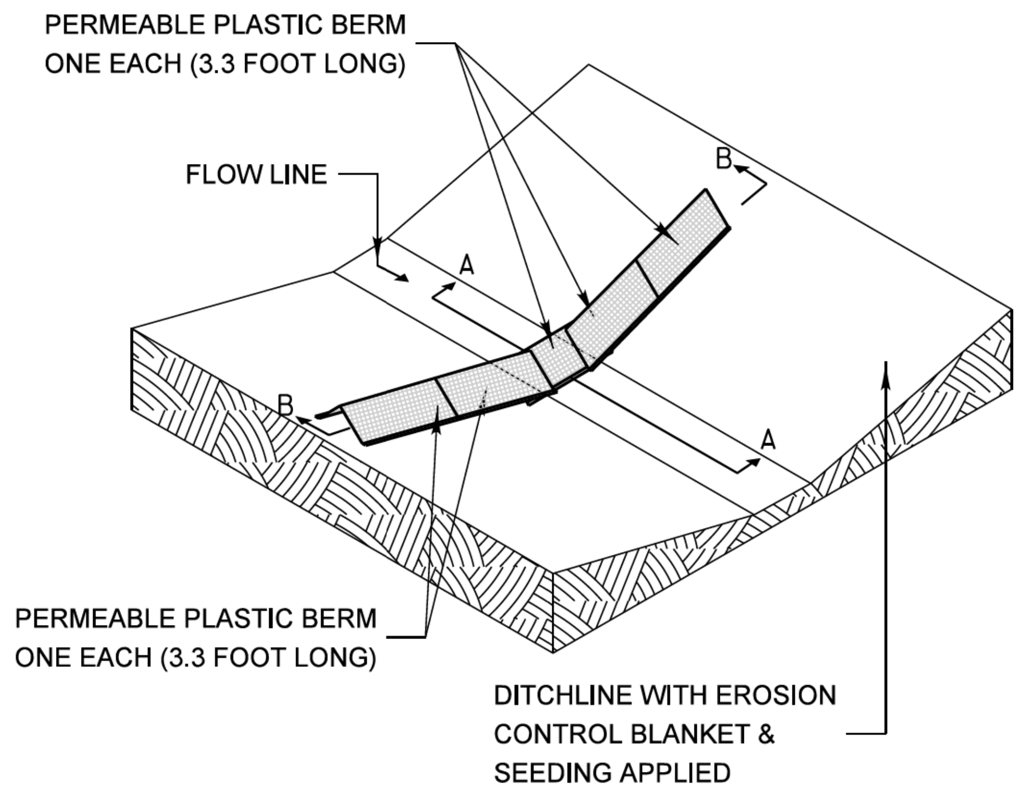
SCALE: 1:20 | SHEET 3 OF 43 SHEETS | STA. TO STA.

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	265

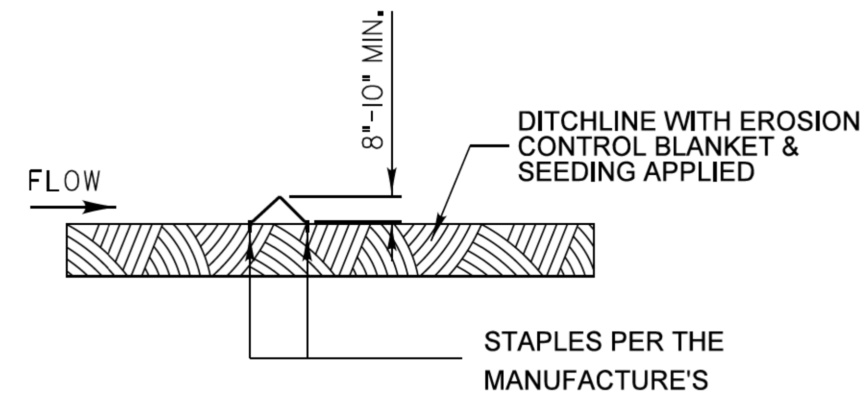
CONTRACT NO. 61D65

ILLINOIS FED. AID PROJECT

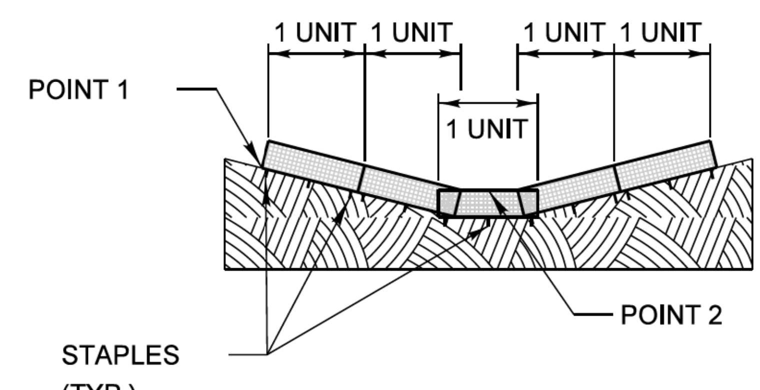
FOR USE WHILE ESTABLISHING FINAL LANDSCAPING



PERMEABLE PLASTIC BERM
ISOMETRIC



SECTION A-A



SECTION B-B

NOTES:
THE PERMEABLE PLASTIC BERM SHALL REPLACE THE TEMPORARY DITCH CHECK AFTER THE INSTALLATION OF EROSION CONTROL BLANKET AND SEEDING.

EACH PERMEABLE PLASTIC BERM IS 3.3 FEET IN LENGTH. THE MINIMUM INSTALLATION IN A DITCH SHALL BE THREE UNITS. THE INSTALLATION SHOWN WILL BE MEASURED AND PAID FOR AS A PERMEABLE PLASTIC BERM 16.5 FEET IN LENGTH (5 UNITS).

STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND ACCORDING TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

POINT 1 MUST BE HIGHER THAN POINT 2 TO INSURE THAT WATER FLOWS THROUGH OR OVER THE BERM AND NOT AROUND THE ENDS.

REVISIONS	DATE
ADDED DIMENSIONS	04/11/08
REVISED PAY ITEM	04/15/10
ADDED PLASTIC BERM (pg2)	10/10/12

LakeCounty
Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

TEMPORARY DITCH CHECK INSTALLATION FOR ROADWAY OR DRAINAGE DITCH

(SHEET 2 OF 2)

LC2050

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -	
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PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

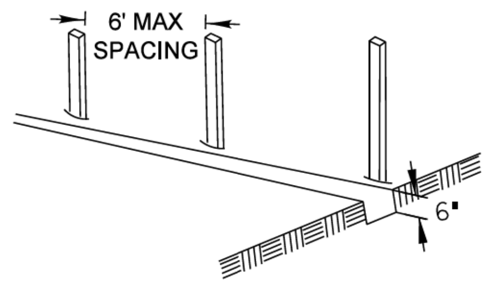
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LAKE COUNTY STANDARD DETAIL

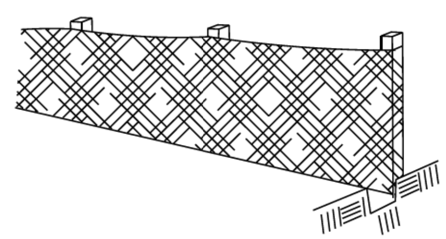
SCALE: 1:20 | SHEET 4 OF 43 SHEETS | STA. TO STA.

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	266
		CONTRACT NO. 61D65		
		ILLINOIS	FED. AID PROJECT	

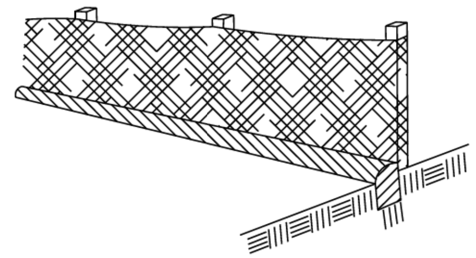
1. SET POSTS AND EXCAVATE OR SLIT-TRENCH A 6-INCH DEEP TRENCH UPSLOPE ALONG THE LINE OF POSTS



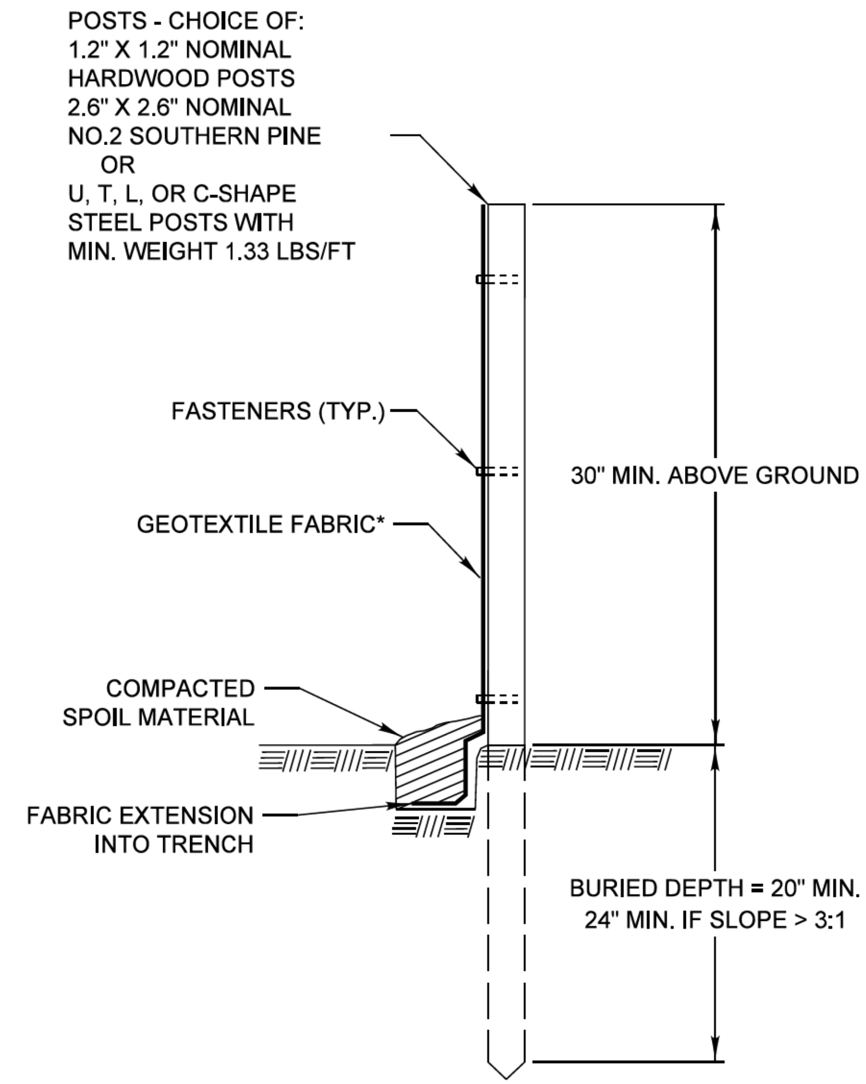
2. ATTACH GEOTEXTILE FILTER FABRIC TO EACH POST WITH A MINIMUM OF 3 (THREE) FASTENERS PER POST AND EXTEND FABRIC TO THE BOTTOM OF THE TRENCH



3. BACKFILL AND COMPACT THE EXCAVATED MATERIALS



Requirements	Test Methods	Wire Backed Supported Silt Fence [a]	Unsupported Silt Fence: Geotextile Elongation >=50% [b]	Unsupported Silt Fence: Geotextile Elongation <50% [b]
Maximum Post Spacing		4 feet	4 feet	6 feet
Grab Strength	ASTM D 4632			
Machine direction		90 lbs	124 lbs	124 lbs
X-Machine direction		90 lbs	100 lbs	100lbs
Permittivity [c]	ASTM D 4491	0.05 sec $^{-1}$	0.05 sec $^{-1}$	0.05 sec $^{-1}$
Apparent Opening Size	ASTM D 4751	0.024in maximum average roll value		
Ultraviolet stability (retained strength)	ASTM D 4355	70% after 500 hours of exposure		



* NOTE: OPTIONAL WIRE SUPPORT
- MIN. 30" HEIGHT
- MIN. 14 GAUGE WIRE
- MIN. 6 HORIZ. WIRES
- MIN. 6" VERTICAL SPACING

SCALE 1" = 1'

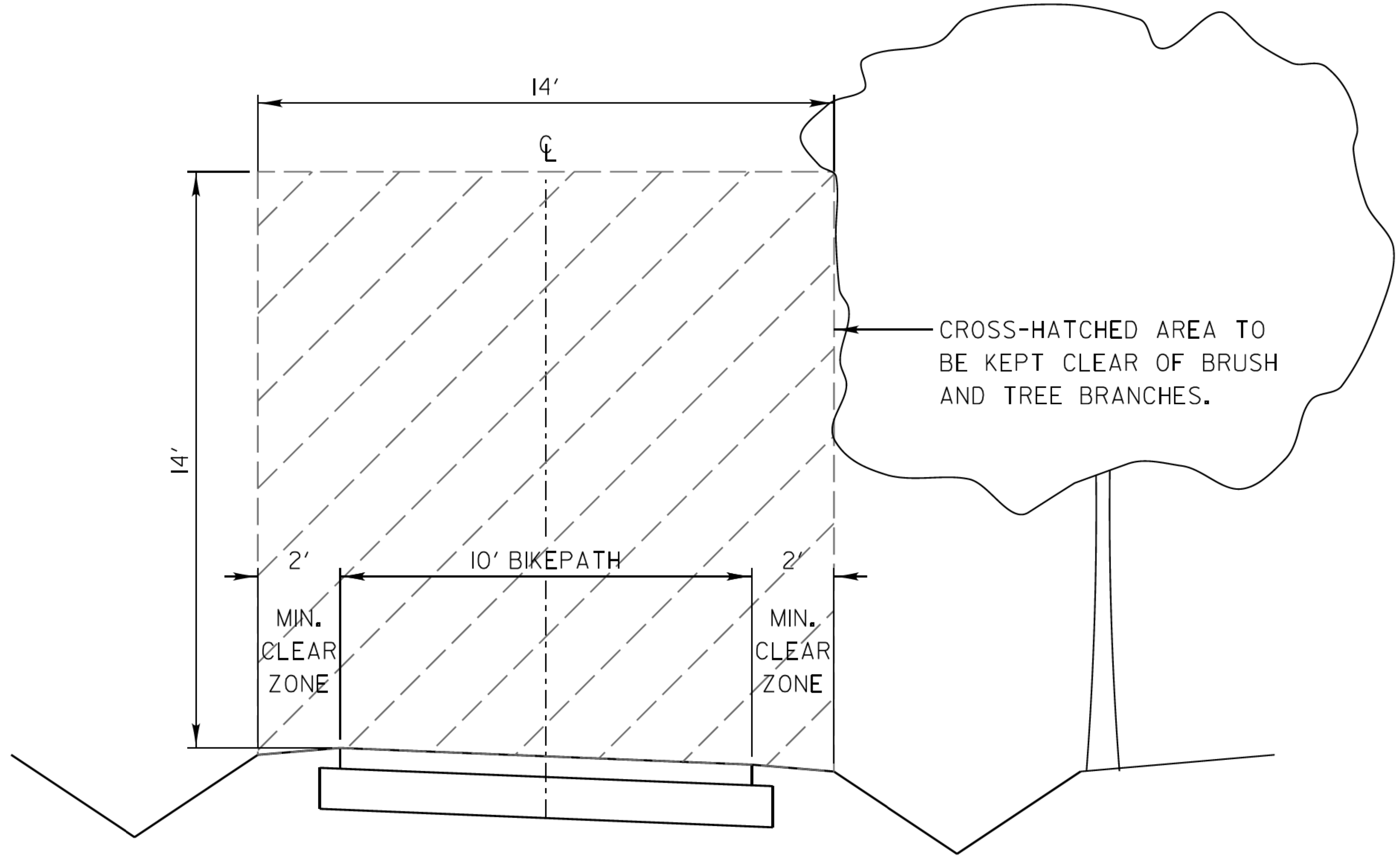
REVISIONS	DATE
ORIG. by LCSMC	4/21/08
Update Text	7/15/11

LakeCounty
Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: JUNE 20, 2008

PERIMETER EROSION BARRIER INSTALLATION

LC2051



SCALE:
VERTICAL 1" = 2'
HORIZONTAL 1" = 4'

REVISIONS	DATE

LakeCounty
Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: 04/10/13

VEGETATION MAINTENANCE REQUIRED CLEARANCE FOR 10' BIKEPATH

LC2200

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems®

USER NAME = amkidd	DESIGNED - JLV	REVISED -	
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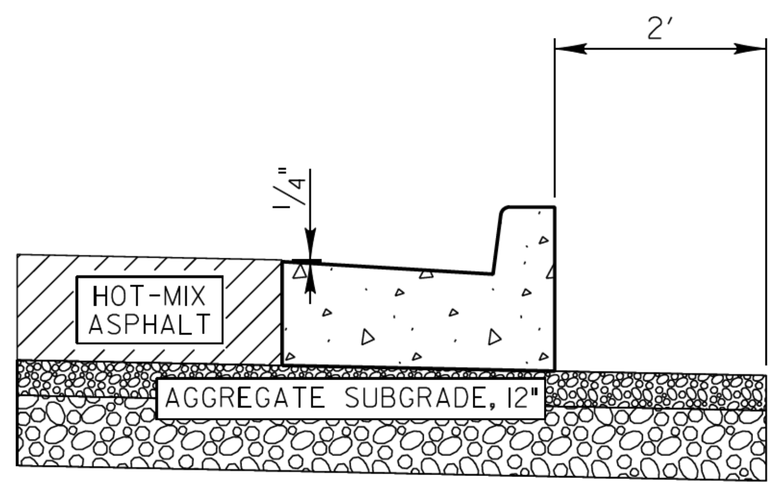
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

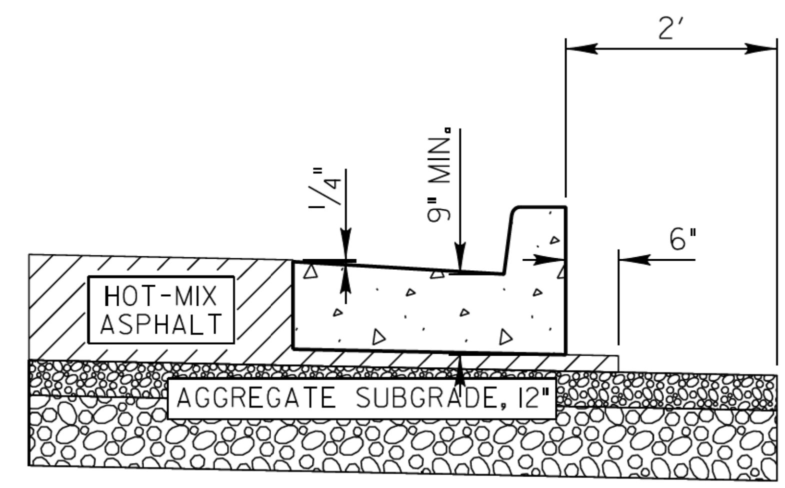
LAKE COUNTY STANDARD DETAIL

SCALE: 1:20 | SHEET 6 OF 43 SHEETS | STA. TO STA.

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	268
		CONTRACT NO. 61D65		
	ILLINOIS	FED. AID PROJECT		



TYPICAL METHOD



OPTIONAL METHOD

NOTE:

MINIMUM FLAG THICKNESS 9"

NOTE:
COST OF HOT-MIX ASPHALT MATERIAL UNDER CURB AND 6" OUTSIDE OF CURB TO BE INCIDENTAL TO COST OF COMBINATION CONCRETE CURB AND GUTTER.

SCALE: 1" = 2'

REVISIONS	DATE

LakeCounty
Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

CURB & GUTTER
SUBGRADE OPTIONS

LC3000

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -	
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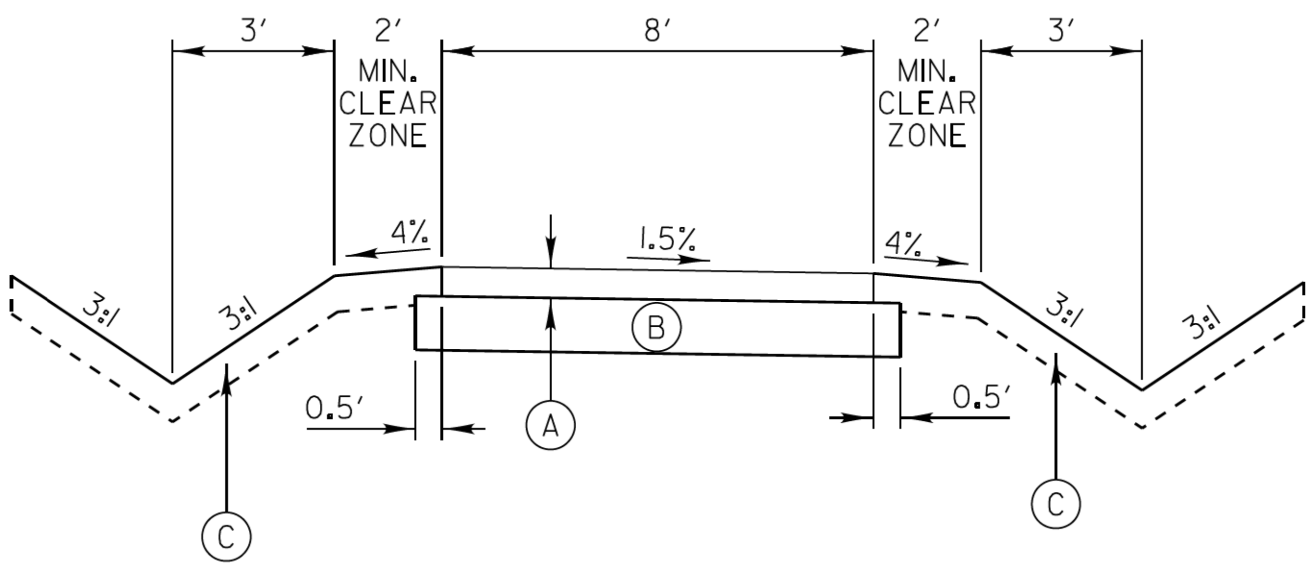
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LAKE COUNTY STANDARD DETAIL

SCALE: 1:20	SHEET 7 OF 43 SHEETS	STA.	TO STA.

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	269
		CONTRACT NO. 61D65		
	ILLINOIS	FED. AID PROJECT		



(A) 3" HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50

(B) AGGREGATE BASE COURSE, TYPE B 6"

(C) FURNISHING AND PLACING TOPSOIL, 4", and SEEDING, CLASS 2A or SODDING

DESIGN NOTE:

If the Bike Path is being constructed in conjunction with the road improvement, then the Hot-Mix Asphalt mixes shall be the same as those used on the road in order to avoid multiple mix requirements.

SCALE:
VERTICAL 1" = 2'
HORIZONTAL 1" = 4'

REVISIONS	DATE
Changed BP to 3" Surface	5/1/2008
Modified Agg. Base Course	3/1/2011
Change To Mix "D"	2/20/12
Revised Type A to Type B Aggregate	12/20/12
1.5% Path Slope	9/11/2015

LakeCounty
Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

TYPICAL SECTION
8' HOT-MIX ASPHALT BIKEPATH

LC4051

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -
	DRAWN - AMK	REVISED -
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

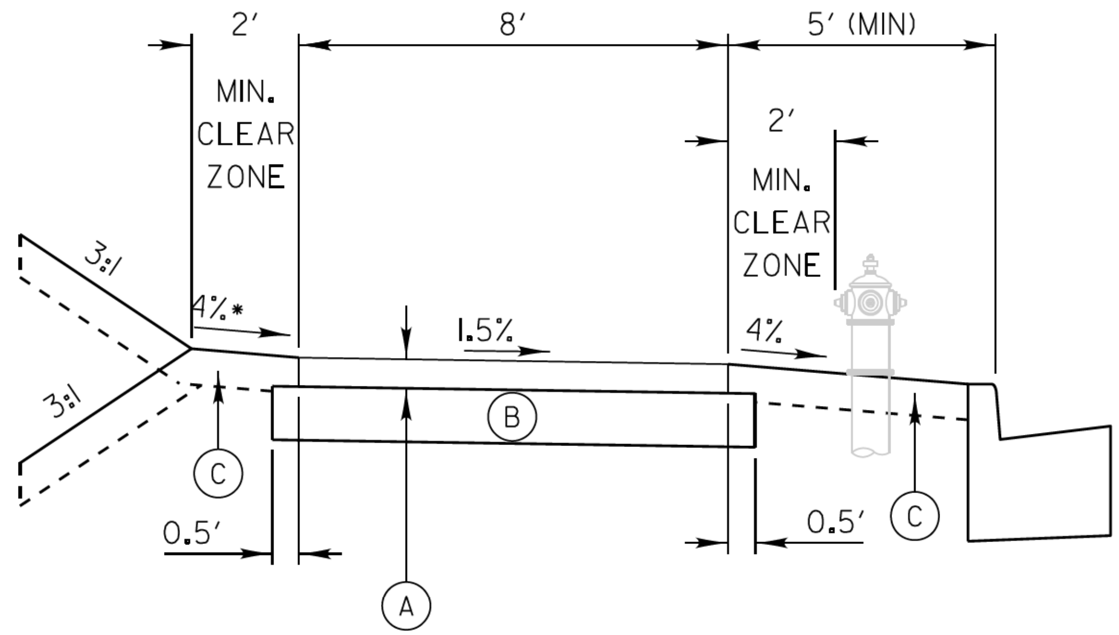
LAKE COUNTY STANDARD DETAIL

SCALE: 1:20 | SHEET 8 OF 43 SHEETS | STA. TO STA.

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	270

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT



(A) 3" HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50

(B) AGGREGATE BASE COURSE, TYPE B 6"

(C) FURNISHING AND PLACING TOPSOIL, 4", and SEEDING, CLASS 2A or SODDING

DESIGN NOTE:

*Slope away from road in fill sections
Slope toward road in cut sections

If the Bike Path is being constructed in conjunction with the road improvement, then the Hot-Mix Asphalt mixes shall be the same as those used on the road in order to avoid multiple mix requirements.

SCALE:
VERTICAL 1" = 2'
HORIZONTAL 1" = 4'

REVISIONS	DATE
Changed BP to 3" Surface	5/1/2008
Modified Agg. Base Course	3/1/2011
Change To Mix "D"	2/20/2012
Revised Type A to Type B Aggregate	12/20/12
1.5% Path Slope	9/11/2015

LakeCounty Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

TYPICAL SECTION 8' HOT-MIX ASPHALT BIKEPATH IN VICINITY OF CURB & GUTTER

LC4052

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -	
	DRAWN - AMK	REVISED -	
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

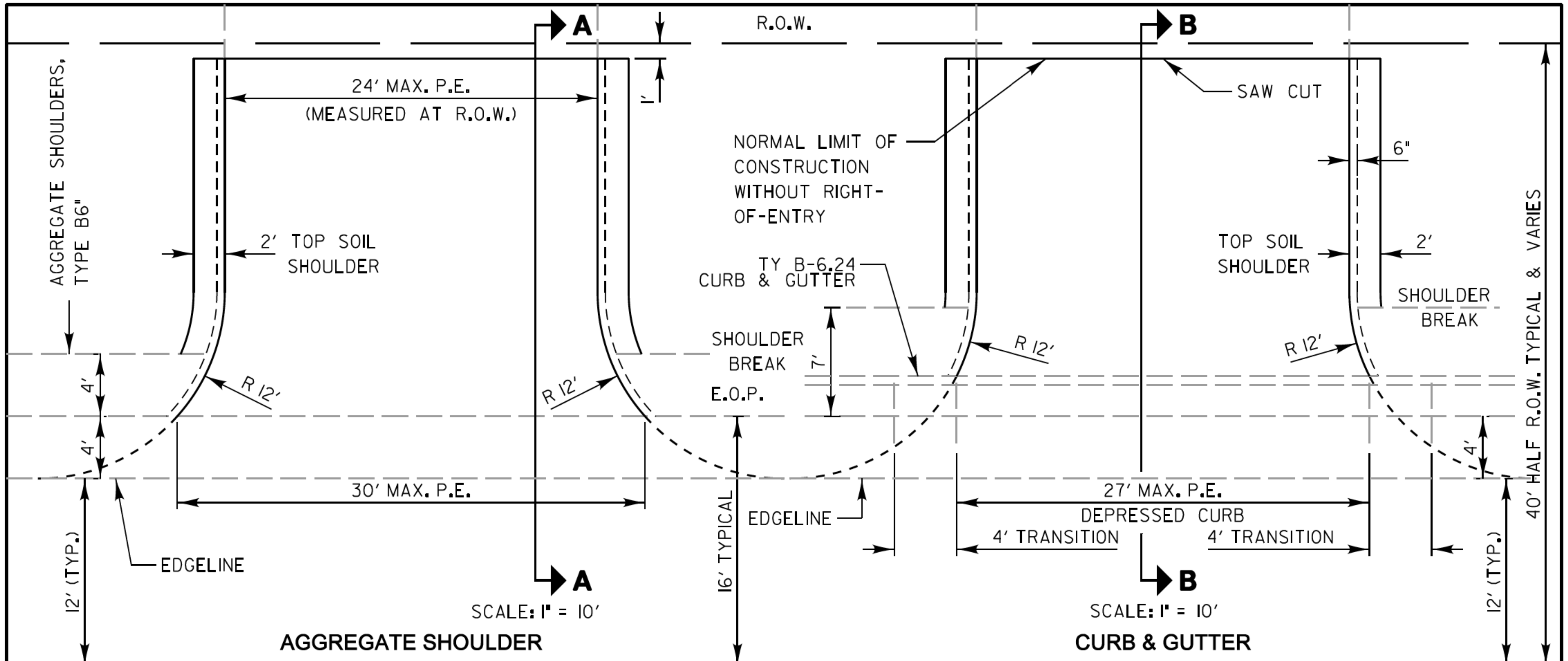
LAKE COUNTY STANDARD DETAIL

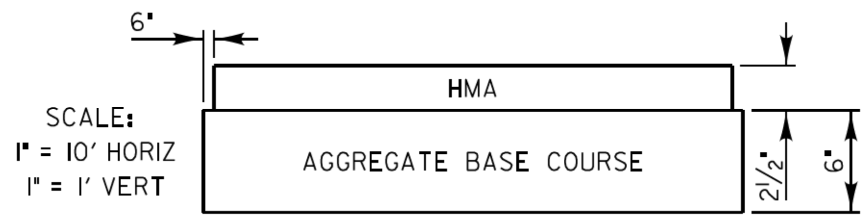
SCALE: 1:20 | SHEET 9 OF 43 SHEETS | STA. | TO STA.

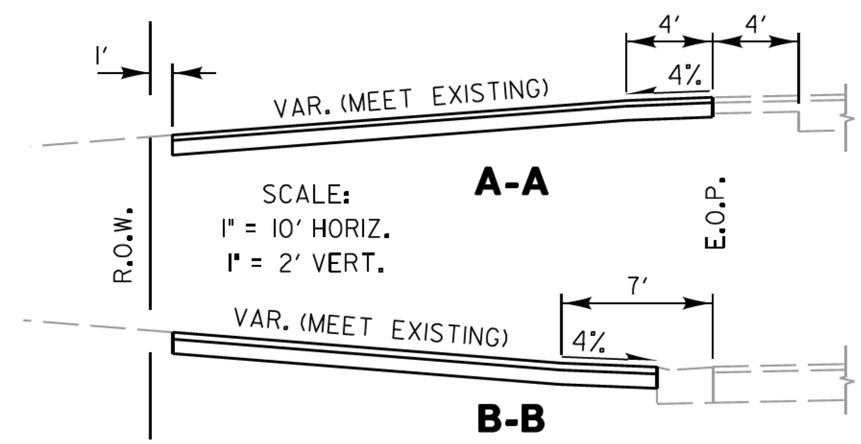
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	271

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT







PEs: 2 1/2 " HOT-MIX ASPHALT SURFACE COURSE on 6" AGGREGATE BASE COURSE, TYPE B

Calculated Quantities for PRIVATE ENTRANCE w/o Curb and Gutter:

1. HMA Surface Course Weight Used = 112 lbs/Sq Yd/Inch thickness
   Area = 63.0 Sq Yd
   63.0 Sq Yd X 112 lb/Sq Yd/Inch x 2.5 Inches = **9 Ton**
2. Aggregate Base Course Weight Used = 2 Ton/Cu Yd
   65.7 Sq Yd x 2 Ton/Cu Yd x 6 Inch thickness = **22 Ton**

Calculated Quantities for PRIVATE ENTRANCE with Curb and Gutter:

1. HMA Surface Course Weight Used = 112 lbs/Sq Yd/Inch thickness
   Area = 55.0 Sq Yd
   55.0 Sq Yd X 112 lb/Sq Yd/Inch x 2.5 Inches = **8 Ton**
2. Aggregate Base Course Weight Used = 2 Ton/Cu Yd
   57.2 Sq Yd x 2 Ton/Cu Yd x 6 Inch thickness = **19 Ton**

REVISIONS	DATE
Removed Prime Coat Qty	5/20/08
Revised Ent. EOP Radius	6/4/10
Revised Type A to Type B Aggregate	12/20/12
Revised Curb Transition	1/7/15

LakeCounty
Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

TYPICAL MINOR ACCESS (PRIVATE ENTRANCE)

LC4100

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems

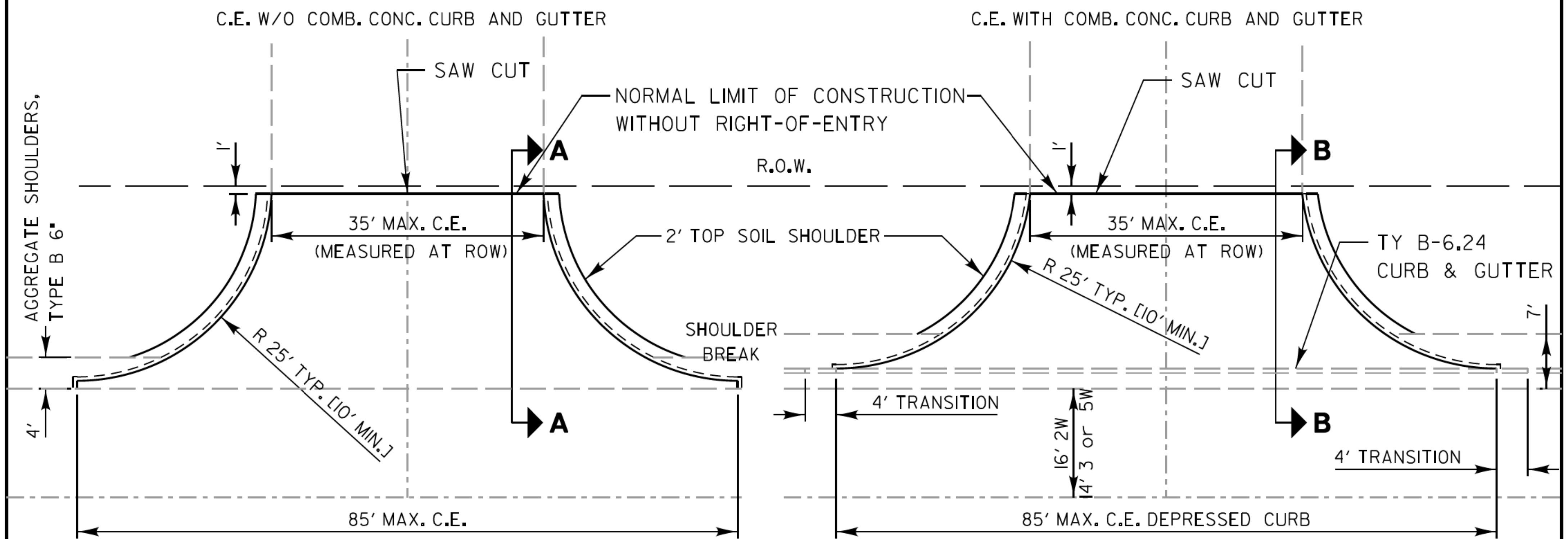
USER NAME = amkidd	DESIGNED - JLV	REVISED -	
	DRAWN - AMK	REVISED -	
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LAKE COUNTY STANDARD DETAIL

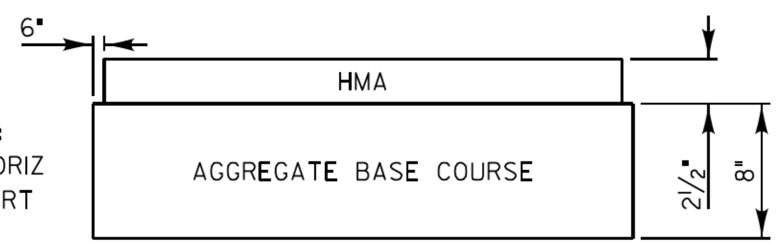
SCALE: 1:20 | SHEET 10 OF 43 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	272
		CONTRACT NO. 61D65		
	ILLINOIS	FED. AID PROJECT		

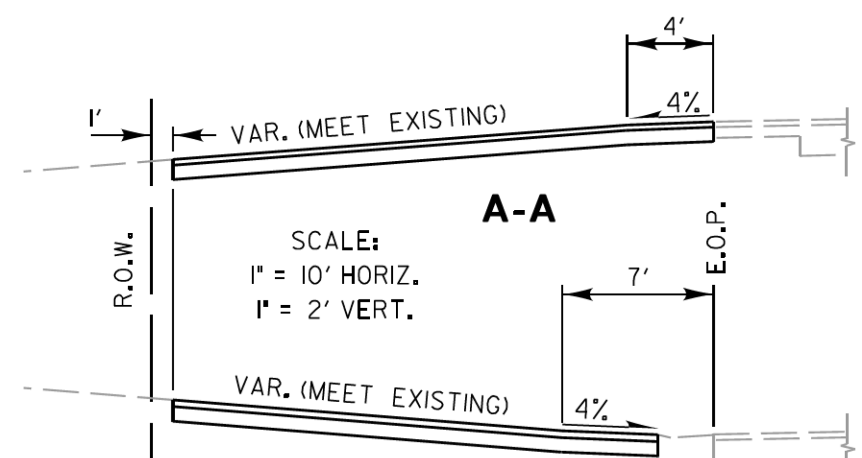


SCALE: 1" = 20'
AGGREGATE SHOULDER

SCALE: 1" = 20'
CURB & GUTTER



SCALE:
1" = 10' HORIZ
1" = 1' VERT



A-A

SCALE:
1" = 10' HORIZ.
1" = 2' VERT.

B-B

CEs: 2 1/2 " HOT-MIX ASPHALT CONCRETE SURFACE COURSE on 8" AGGREGATE BASE COURSE, TYPE B

Calculated Quantities for COMMERCIAL ENTRANCE w/o Curb & Gutter above:

1. HMA Surface Course Weight Used = 112 lbs/Sq Yd/Inch thickness
   Area = 132.6 Sq Yd
   132.6 Sq Yd x 112 lb/Sq Yd/Inch x 2.5 Inches = **19 Ton**
2. Aggregate Base Course Weight Used = 2 Ton/Cu Yd
   137.0 Sq Yd x 2 Ton/Cu Yd x 8 Inch thickness = **61 Ton**

Calculated Quantities for COMMERCIAL ENTRANCE with Curb & Gutter above:

1. HMA Surface Course Weight Used = 112 lbs/Sq Yd/Inch thickness
   Area = 116.3 Sq Yd
   116.3 Sq Yd x 112 lb/Sq Yd/Inch x 2.5 Inches = **16 Ton**
2. Aggregate Base Course Weight Used = 2 Ton/Cu Yd
   120.4 Sq Yd x 2 Ton/Cu Yd x 8 Inch thickness = **54 Ton**

REVISIONS	DATE
Removed Prime Coat Qty	5/20/08
Revised Type A to Type B Aggregate	12/20/12
Revised Curb Transition	1/7/15

LakeCounty
Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

TYPICAL MAJOR ACCESS (COMMERCIAL ENTRANCE)

LC4101

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -
	DRAWN - AMK	REVISED -
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

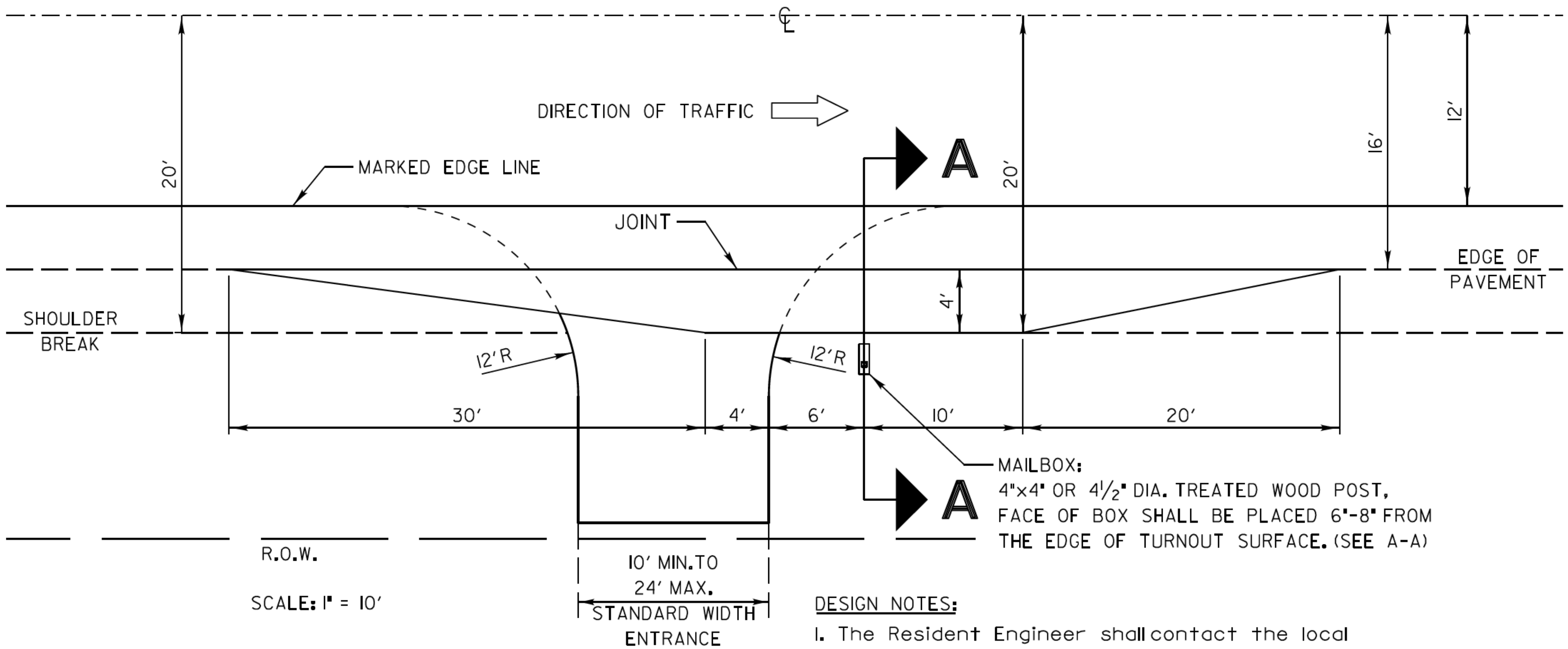
LAKE COUNTY STANDARD DETAIL

SCALE: 1:20 | SHEET 11 OF 43 SHEETS | STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	273

CONTRACT NO. 61D65
ILLINOIS FED. AID PROJECT

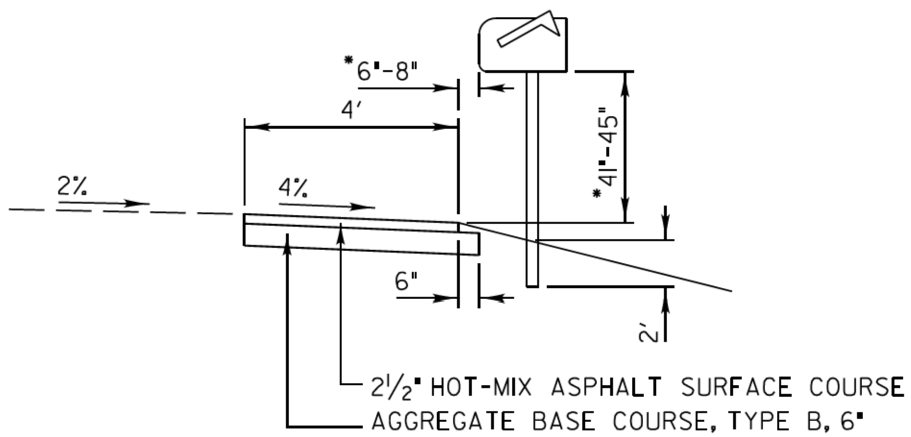
FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn



SCALE: 1" = 10'

DESIGN NOTES:

1. The Resident Engineer shall contact the local postmaster prior to installing the new mailbox posts for the local mounting height of the mailbox. The standard mounting height is 3 1/2'; however, local post- masters may vary this height.
2. The standard mailbox post is a 4"x4" or a 4 1/2" dia. treated wood post. The standard bury length of the post is 2'. Do not shorten or exceed this bury length.
3. Depending on the location of the shoulder break with respect to the edge of the mailbox turnout the overall post length may vary from 5' 8" to 6' 4" to maintain the 2' bury length and the 3 1/2' mounting height.



SECTION A-A

SCALE: 1" = 5'

* USPS RESIDENTIAL MAILBOX STANDARD

REVISIONS	DATE
4' PAVED SHOULDER ADDED	9/21/10
6"-8" BOX OFFSET ADDED	12/22/11
Revised Type A to Type B Aggregate	12/20/12

LakeCounty Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

MAILBOX TURNOUT ALONG UNCURBED ROADS

LC4120

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -
	DRAWN - AMK	REVISED -
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

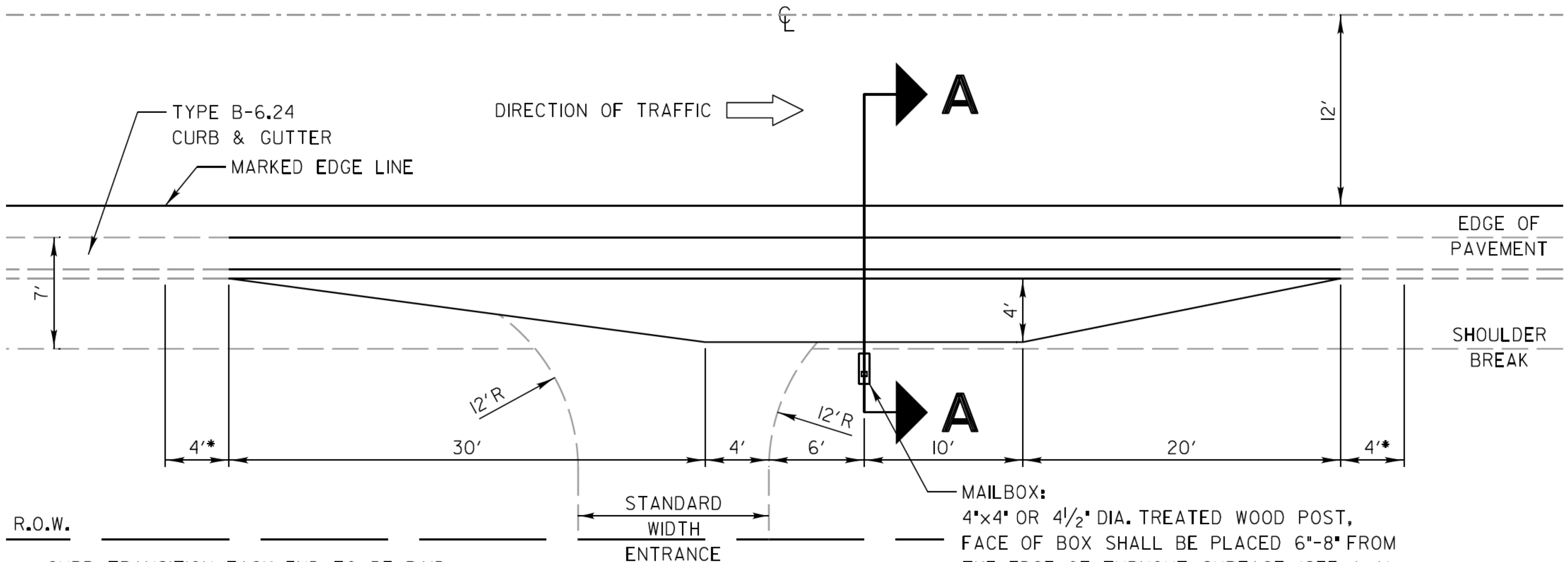
LAKE COUNTY STANDARD DETAIL

SCALE: 1:20 | SHEET 12 OF 43 SHEETS | STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	274

CONTRACT NO. 61D65

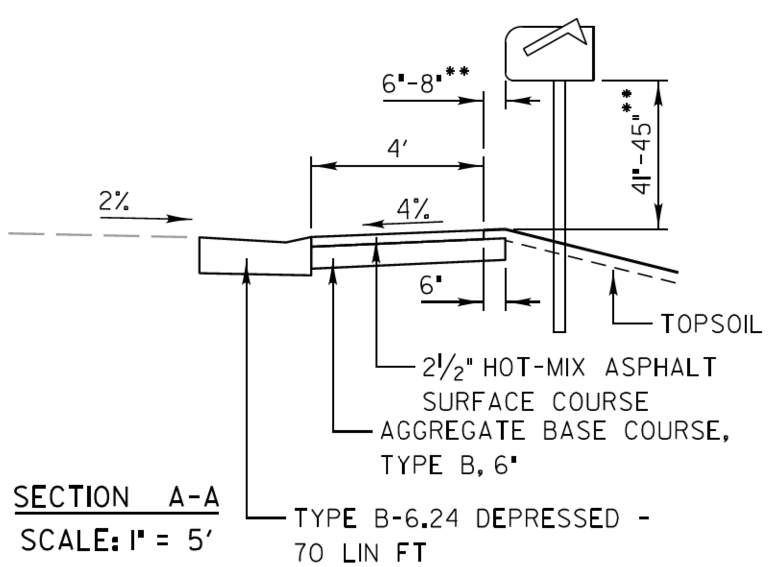
ILLINOIS FED. AID PROJECT



*CURB TRANSITION EACH END TO BE PAID FOR AT THE CONTRACT UNIT PRICE FOR COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24.

DESIGN NOTES:

1. The Resident Engineer shall contact the local postmaster prior to installing the new mailbox posts for the local mounting height of the mailbox. The standard mounting height is 3 1/2'; however, local post-masters may vary this height.
2. The standard mailbox post is a 4"x4" or a 4 1/2" dia. treated wood post. The standard bury length of the post is 2'. Do not shorten or exceed this bury length.
3. Depending on the location of the shoulder break with respect to the edge of the mailbox turnout the overall post length may vary from 5' 8" to 6' 4" to maintain the 2' bury length and the 3 1/2' mounting height.



SECTION A-A
SCALE: 1" = 5'

** USPS RESIDENTIAL MAILBOX STANDARD

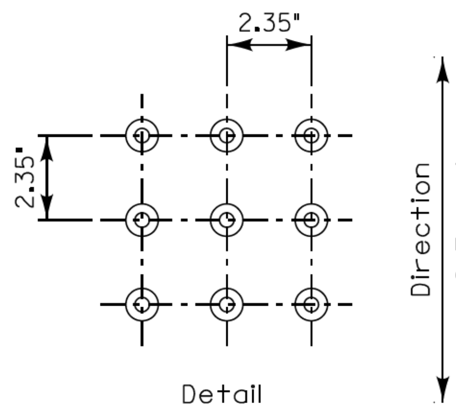
REVISIONS	DATE
6"-8" BOX OFFSET ADDED	12/22/11
Revised Type A to Type B Aggregate	12/20/12
Revised Curb Transition	1/7/15
Pave Shldr = 3' (all cases)	2/24/2017

LakeCounty Division of Transportation

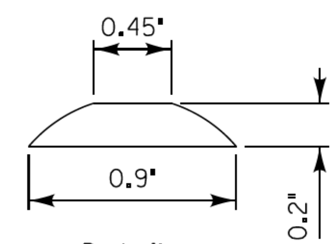
APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

MAILBOX TURNOUT ALONG CURBED ROADS

LC4121

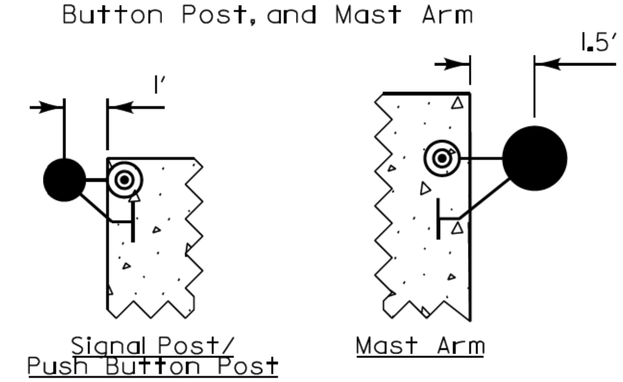


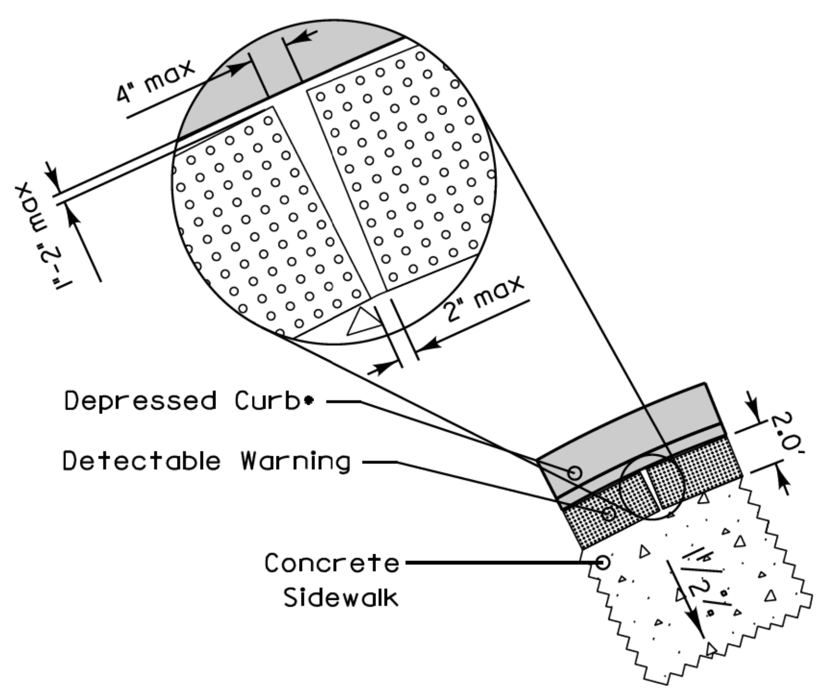
Detail
Detectable Warnings
Square Pattern
(Scale 1" = 6")



Detail
Truncated Dome
(Scale 1" = 1")

Location Detail
Signal Post, Pedestrian Push
Button Post, and Mast Arm





•GENERAL NOTES:

1. Cross slopes on sidewalks and paths shall not exceed 1.5% except at locations detailed on the plans.

2. Only whole cast iron panels from the manufacturer shall be used for the detectable warnings. Cut panels shall not be allowed.

3. The gutter slope for the DEPRESSED CURB adjacent to the curb ramp shall be a maximum of 5% (standard curb and gutter is 6%). The back of curb rise shall be a maximum of 1/2" (standard depressed curb is 1 1/2"). See IDOT standard 606001 for the different curb dimensions.

4. The Depressed Curb and the Transition Curb will be paid for as COMBINATION CONCRETE CURB AND GUTTER of the type adjacent to the curb ramp.

5. The DETECTABLE WARNINGS shall be installed according to Article 424.09 of the IDOT Standard Specifications and the LCDOT specification 42400800 DETECTABLE WARNINGS. Detectable warnings shall be measured and paid for per square foot.

REVISIONS	DATE
Added Warning Details	8/1/2009
Updates & Remove Duplicates	7/14/2015

LakeCounty
Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

DETECTABLE WARNINGS and PEDESTRIAN PUSHBUTTON LOCATIONS

LC4201

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems®

USER NAME = amkidd	DESIGNED - JLV	REVISED -
	DRAWN - AMK	REVISED -
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

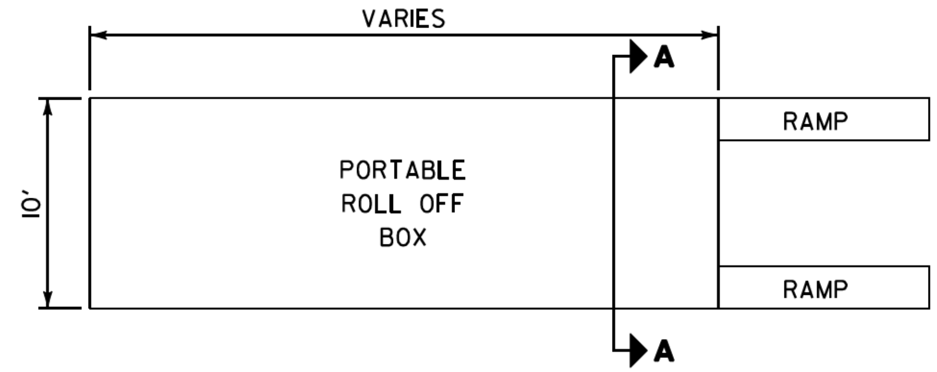
LAKE COUNTY STANDARD DETAIL

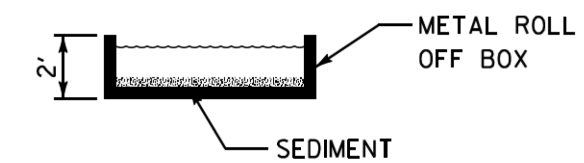
SCALE: 1:20 | SHEET 14 OF 43 SHEETS | STA. | TO STA.

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	276

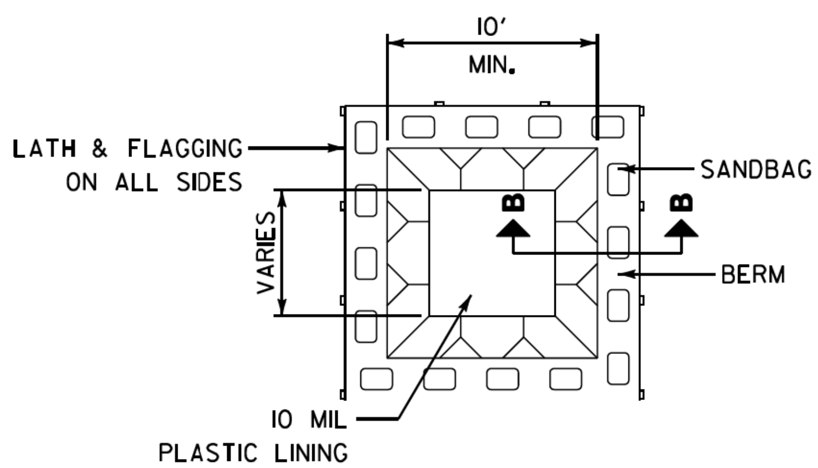
CONTRACT NO. 61D65

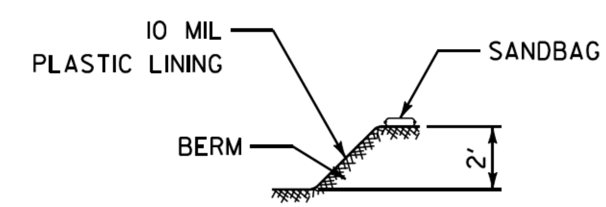
ILLINOIS | FED. AID PROJECT





PLAN VIEW ***PREFAB PORTABLE WASHOUT*** *SECTION A-A*





PLAN VIEW ***BELOW GRADE*** *SECTION B-B*

NOTES:

1. ACTUAL LAYOUT DETERMINED IN FIELD.

2. OTHER WASHOUT DESIGNS MAY BE USED IF APPROVED BY THE ENGINEER.

3. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FEET OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

NOT TO SCALE

REVISIONS	DATE

LakeCounty
Division of Transportation

APPROVED BY: MGZ
DATE: March 17, 2008

CONCRETE WASHOUT FACILITIES
SHEET 1 OF 2

LC4202

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -
	DRAWN - AMK	REVISED -
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

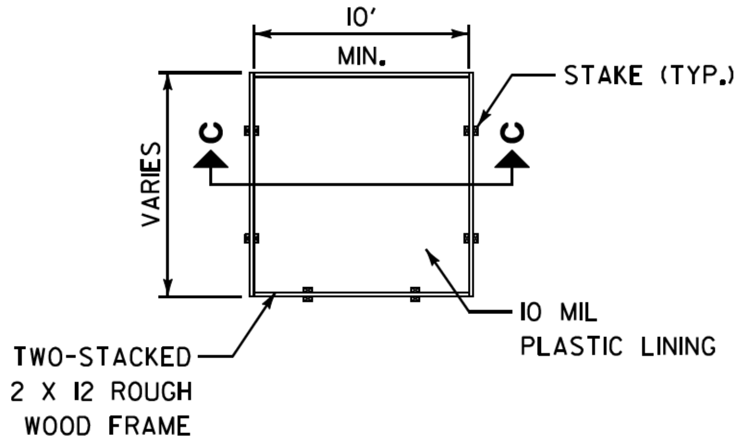
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LAKE COUNTY STANDARD DETAIL

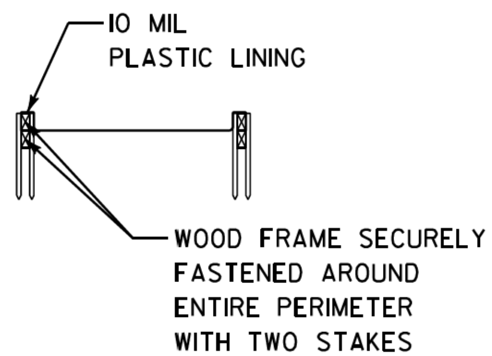
SCALE: 1:20 | SHEET 15 OF 43 SHEETS | STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	277
		CONTRACT NO. 61D65		
		ILLINOIS FED. AID PROJECT		

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

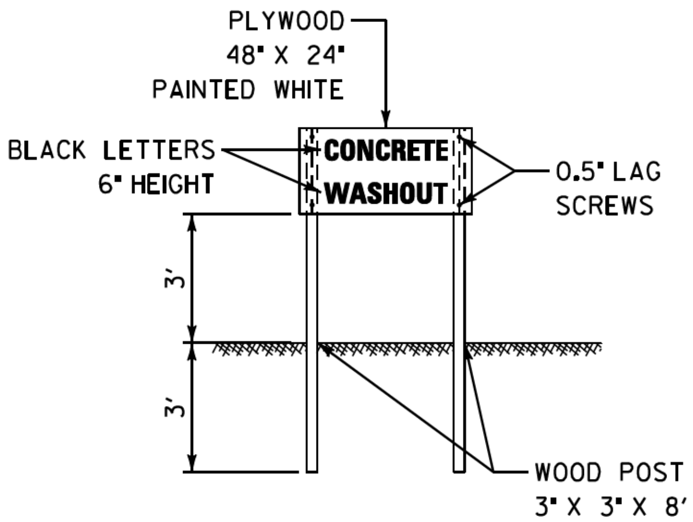


PLAN VIEW

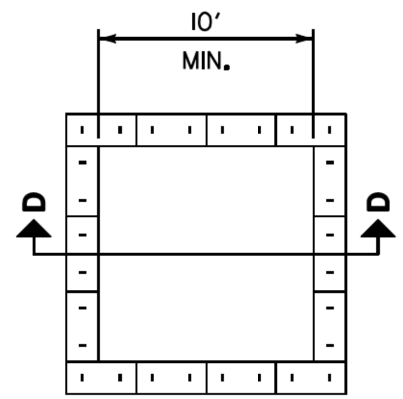


SECTION C-C

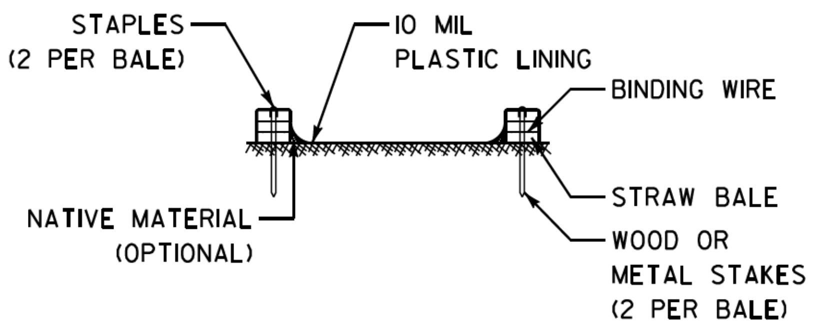
ABOVE GRADE



CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)

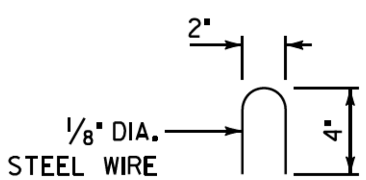


PLAN VIEW



SECTION D-D

ABOVE GRADE WITH STRAW BALES



STAPLE DETAIL

NOTES:

1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. OTHER WASHOUT DESIGNS MAY BE USED IF APPROVED BY THE ENGINEER.
3. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FEET OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

NOT TO SCALE

REVISIONS	DATE

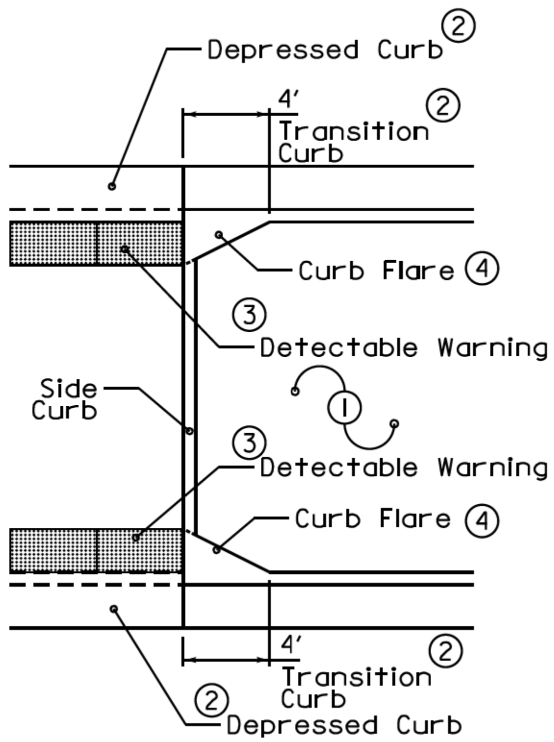
LakeCounty Division of Transportation

APPROVED BY: MGZ
DATE: March 17, 2008

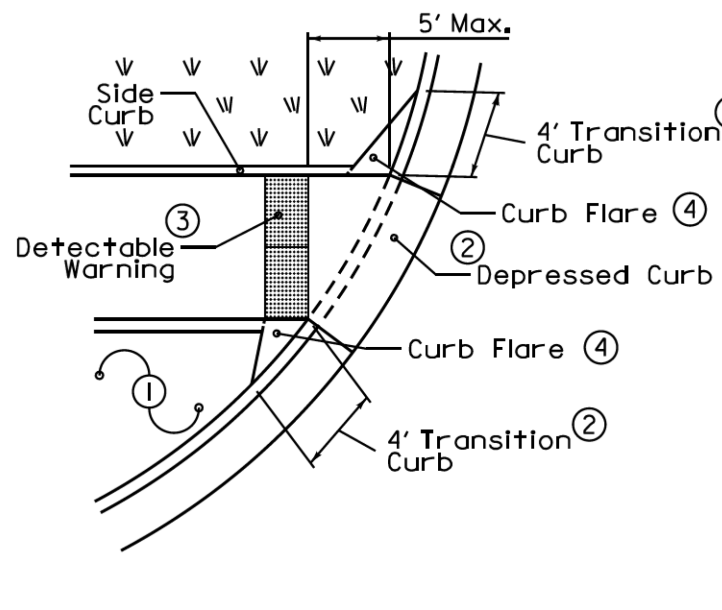
CONCRETE WASHOUT FACILITIES

SHEET 2 OF 2

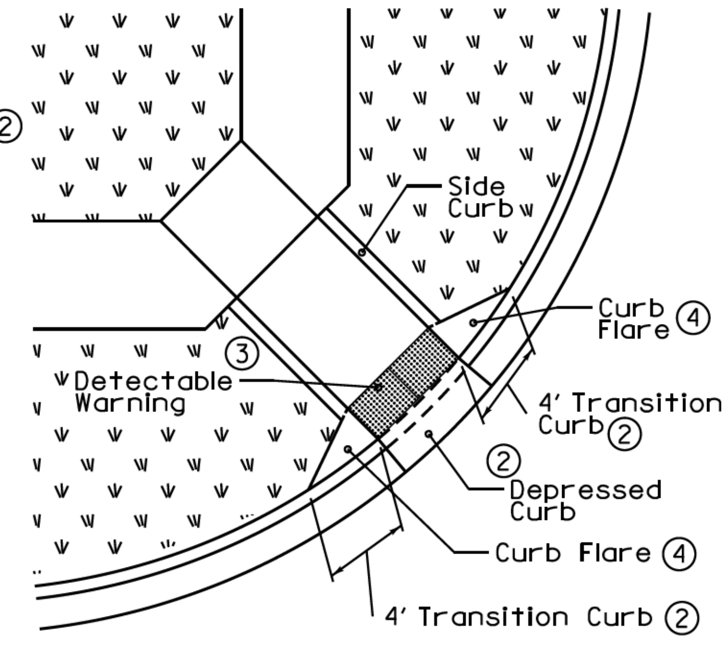
LC4202



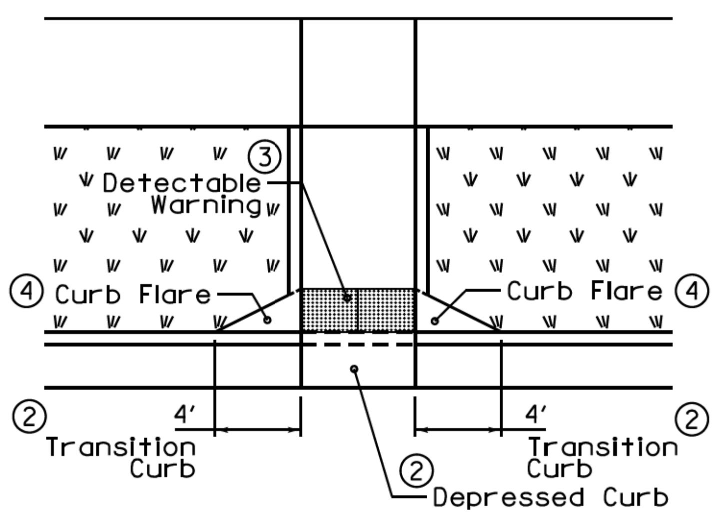
Median Curb Ramp



Perpendicular Curb Ramp



Diagonal Curb Ramp



Mid-Block Curb Ramp

Design Notes:

1. Pavement type and details are shown elsewhere in the plans.
2. The Depressed Curb and the Transition Curb willbe paid for as COMBINATION CONCRETE CURB AND GUTTER of the type adjacent to the curb ramp. See IDOT Standard 606001for details of Depressed Curb adjacent to curb ramp.
3. The Detectable Warnings shallbe installed in accordance with Article 424.09 of the IDOT Standard Specifications and the LCDOT Specification 42400800 DETECTABLE WARNINGS and willbe measured and paid for per square foot.
4. The curb flare willbe paid for as CONCRETE CURB, TYPE B, measured along the 4' transistion.

REVISIONS	DATE
Added Note 4	12/10/15

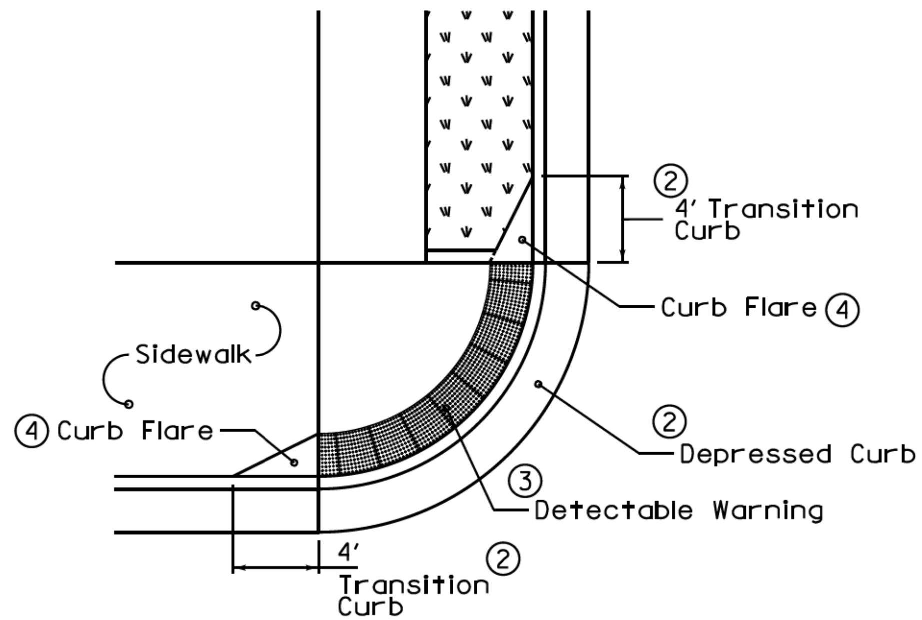
LakeCounty Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: JAN 7, 2015

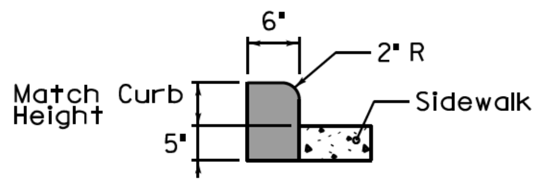
CURB FLARES FOR SIDEWALKS

(SHEET 1 OF 2)

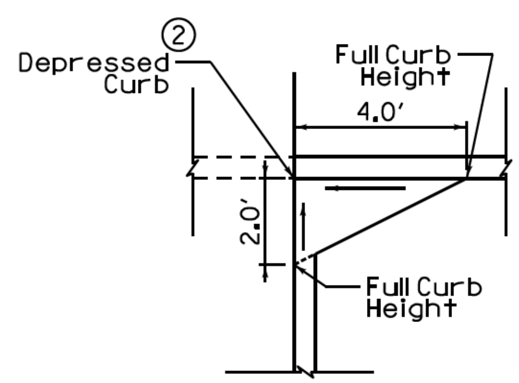
LC4204



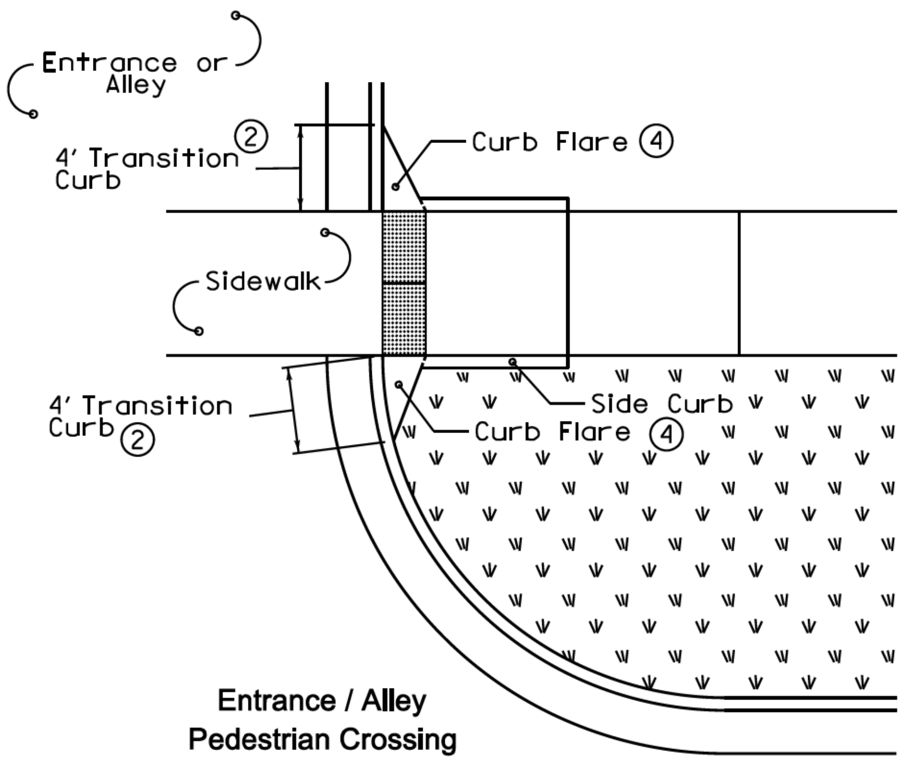
Depressed Corner



Side Curb Type "B" Detail



Curb Flare Detail ④



Entrance / Alley Pedestrian Crossing

Design Notes:

1. Pavement type and details are shown elsewhere in the plans.
2. The Depressed Curb and the Transition Curb willbe paid for as COMBINATION CONCRETE CURB AND GUTTER of the type adjacent to the curb ramp. See IDOT Standard 606001for details of Depressed Curb adjacent to curb ramp.
3. The Detectable Warnings shallbe installed in accordance with Article 424.09 of the IDOT Standard Specifications and the LCDOT Specification 42400800 DETECTABLE WARNINGS and willbe measured and paid for per square foot.
4. The curb flare willbe paid for as CONCRETE CURB, TYPE B, measured along the 4' transistion.

REVISIONS	DATE
Added Note 4	12/10/15

LakeCounty
Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: JAN 7, 2015

CURB FLARES FOR SIDEWALKS

(SHEET 2 OF 2)

LC4204

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -
	DRAWN - AMK	REVISED -
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

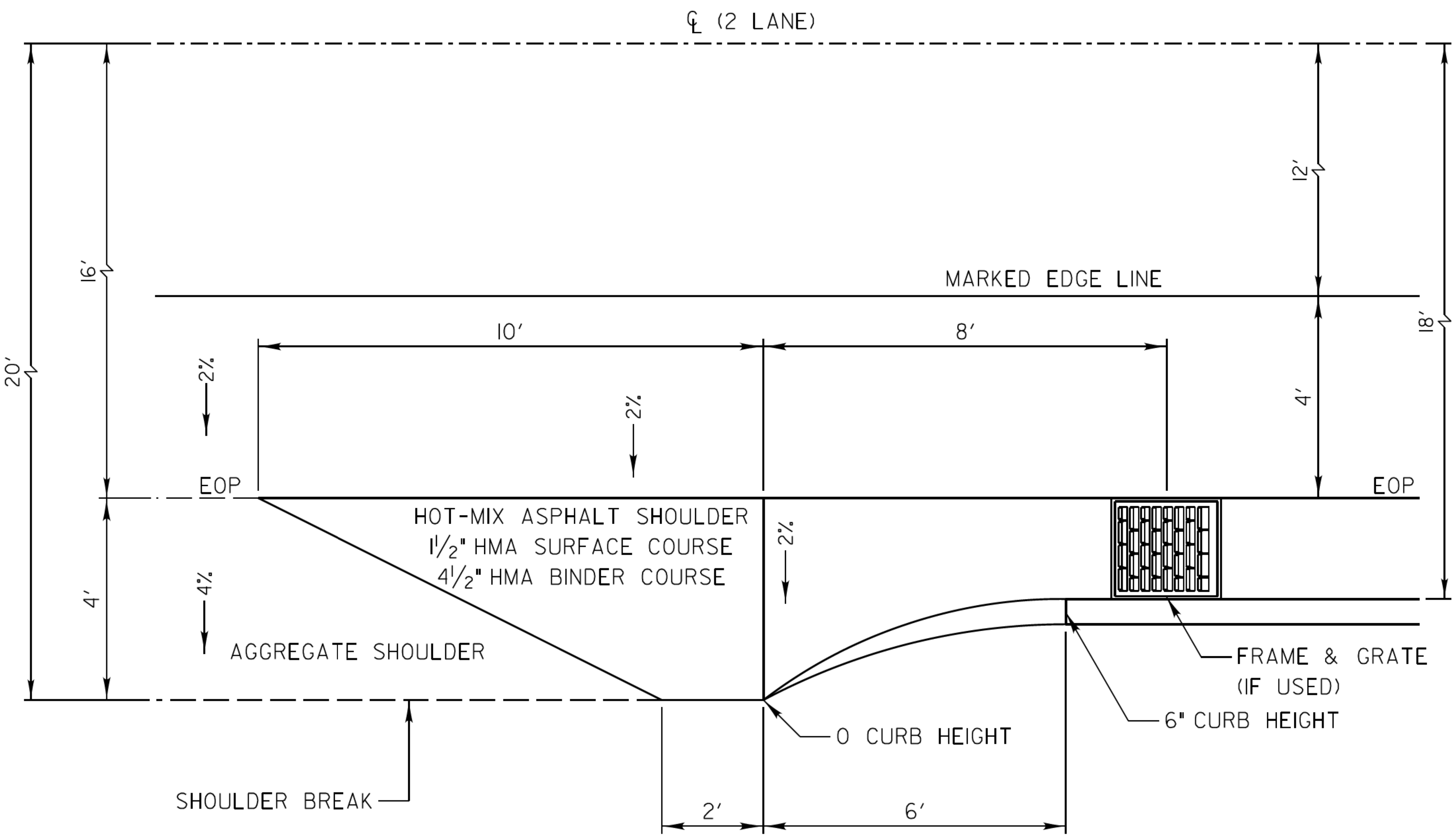
LAKE COUNTY STANDARD DETAIL

SCALE: 1:20 | SHEET 18 OF 43 SHEETS | STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	280

CONTRACT NO. 61D65

ILLINOIS FED. AID PROJECT



SCALE: 1" = 3'

REVISIONS	DATE
Revised Shoulder Widths	8/3/2015

LakeCounty
Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

TRANSITION FROM AGGREGATE SHOULDER TO B-6.24 FOR 18' OFFSET TO FACE

LC4801

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**
	DRAWN - AMK	REVISED -	
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

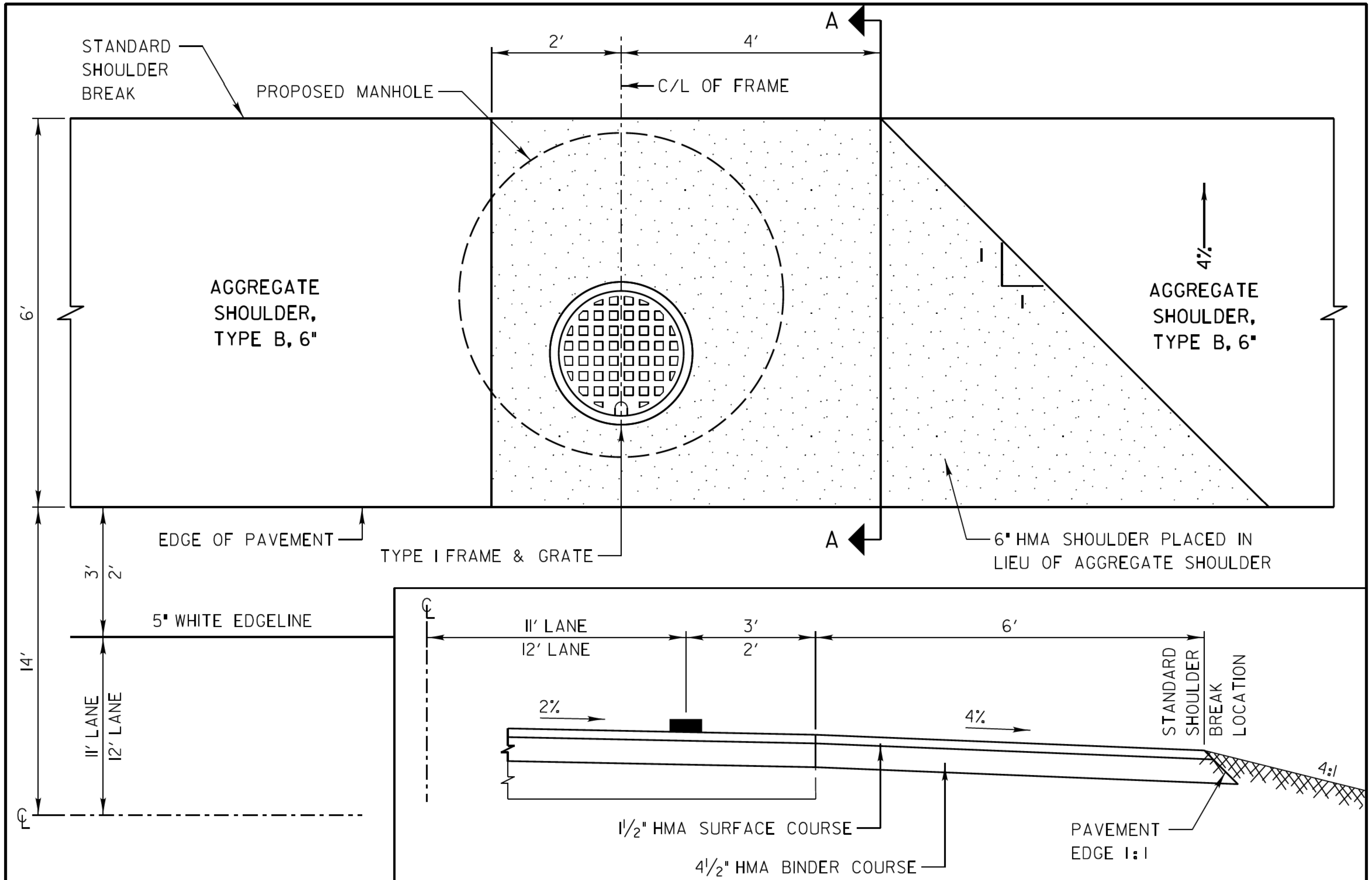
LAKE COUNTY STANDARD DETAIL

SCALE: 1:20 | SHEET 19 OF 43 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	281

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT



DESIGN NOTE:
LCDOT PREFERS NOT TO HAVE FRAMES IN AGGREGATE SHOULDERS. FRAMES SHALL BE PLACED IN THE SHOULDER WHEN NO OTHER OPTION IS AVAILABLE.

SECTION A-A

SCALE: 1" = 2'

REVISIONS	DATE
Revised Type A to Type B Aggregate	12/20/12

LakeCounty Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

HOT-MIX ASPHALT APRON FOR STRUCTURES IN AGGREGATE SHOULDERS

LC4820

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems ®

USER NAME = amkidd	DESIGNED - JLV	REVISED -
	DRAWN - AMK	REVISED -
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

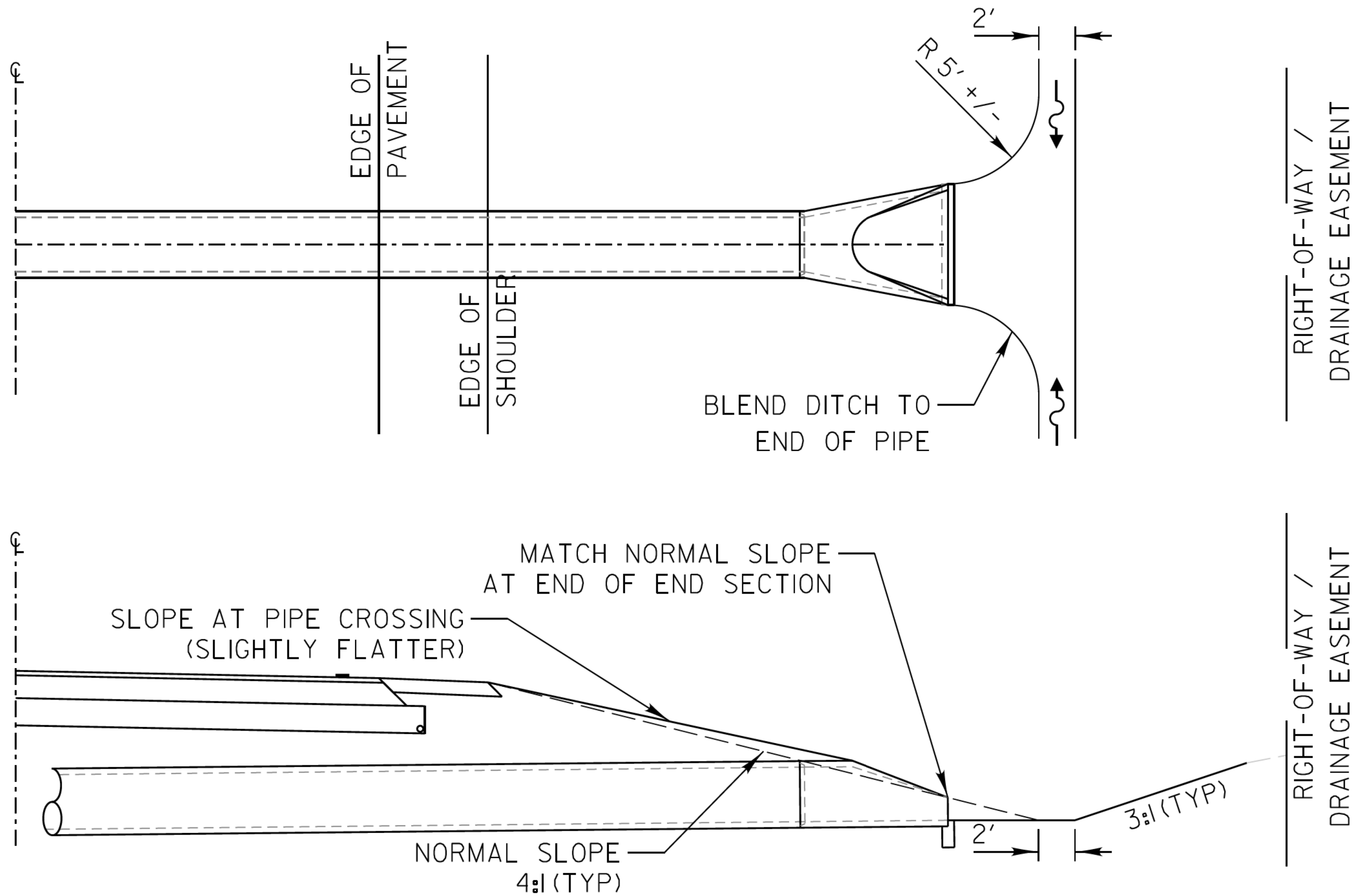
LAKE COUNTY STANDARD DETAIL

SCALE: 1:20 | SHEET 20 OF 43 SHEETS | STA. TO STA.

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	282

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT



REVISIONS	DATE

LakeCounty Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: JANUARY 19, 2009

TYPICAL PLACEMENT OF PRECAST END SECTIONS ON CROSSROAD CULVERTS

LC5401

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -
	DRAWN - AMK	REVISED -
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

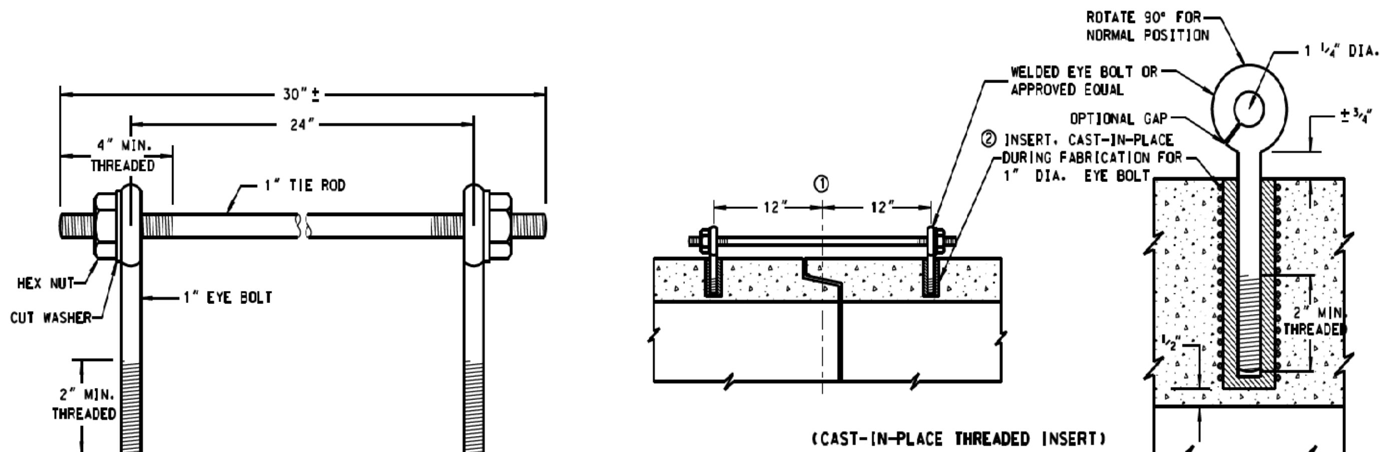
LAKE COUNTY STANDARD DETAIL

SCALE: 1:20 | SHEET 21 OF 43 SHEETS | STA. | TO STA.

F.A.U RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	283

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT



EYE BOLTS AND TIE ROD

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS. JOINT TIES AND HARDWARE SHALL BE GALVANIZED STEEL.

CONCRETE CULVERT PIPE AND SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT THE LAST THREE JOINTS BEFORE A FLARED END SECTION

THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR CONCRETE PIPE.

UNLESS OTHERWISE STATED IN THE CONTRACT THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE CULVERT PIPE AS INDICTED ON THE PLANS AND BY THIS DETAIL WILL BE CONSIDERED INCLUDED IN THE COST OF PIPE CULVERTS OR STORM SEWERS.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR GALVANIZED STEEL JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

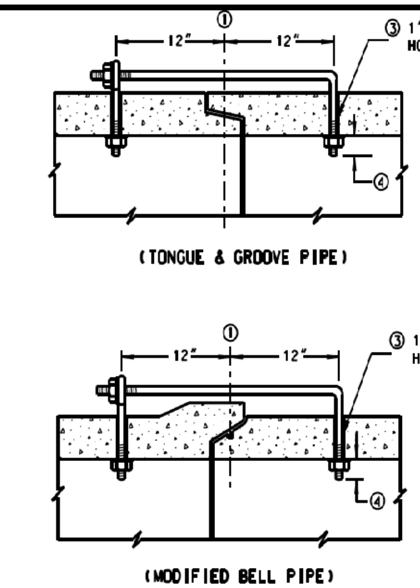
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12" FROM ℄ OF TONGUE AND GROOVE.

④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2".

⑤ OPENING TO BE ROD DIAMETER + 1 INCH.

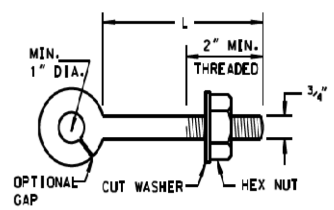
⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



LONGITUDINAL SECTION

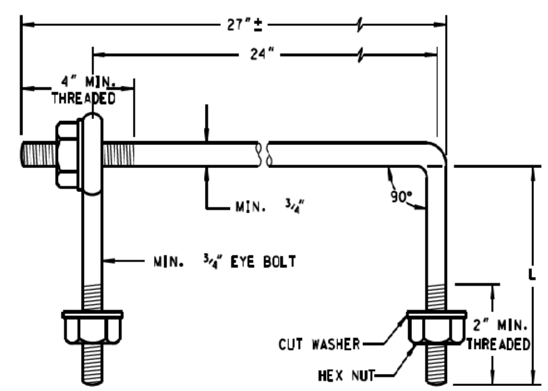
EYE BOLT DIMENSION TABLE

PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



EYE BOLT

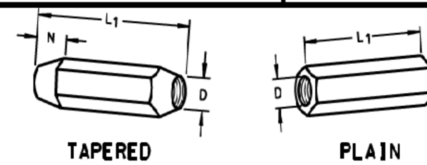
NOTE:
TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD

(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

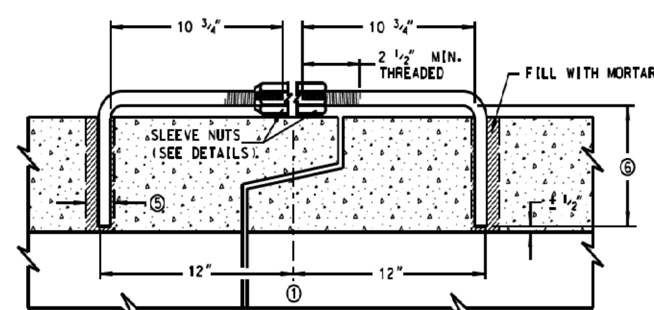


TAPERED

PLAIN

RIGHT AND LEFT THREADS

SLEEVE NUTS



LONGITUDINAL SECTION

(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

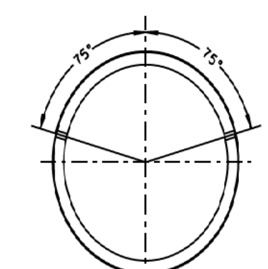
ADJUSTABLE TIE ROD (ALTERNATE NO. 3)

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 7/16

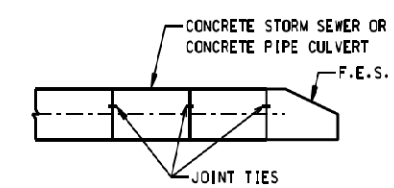
DIMENSIONS SHOWN ARE IN INCHES

NOT TO SCALE



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



TYPICAL JOINT TIE LOCATIONS

REVISIONS	DATE
ADDED JOINT TIE MAT'L	7/8/11

LakeCounty Division of Transportation

APPROVED BY: M. ZEMAITIS
DATE: 04/01/11

JOINT TIES FOR CONCRETE PIPE

LC5402

NO.	REVISIONS / REMARKS DESCRIPTION	DATE	BY		
		/ /		SURVEYOR:	/
		/ /		DSGNR/LIAISON:	
		/ /		PLOTTED BY:	hdrmc 7/15/2011

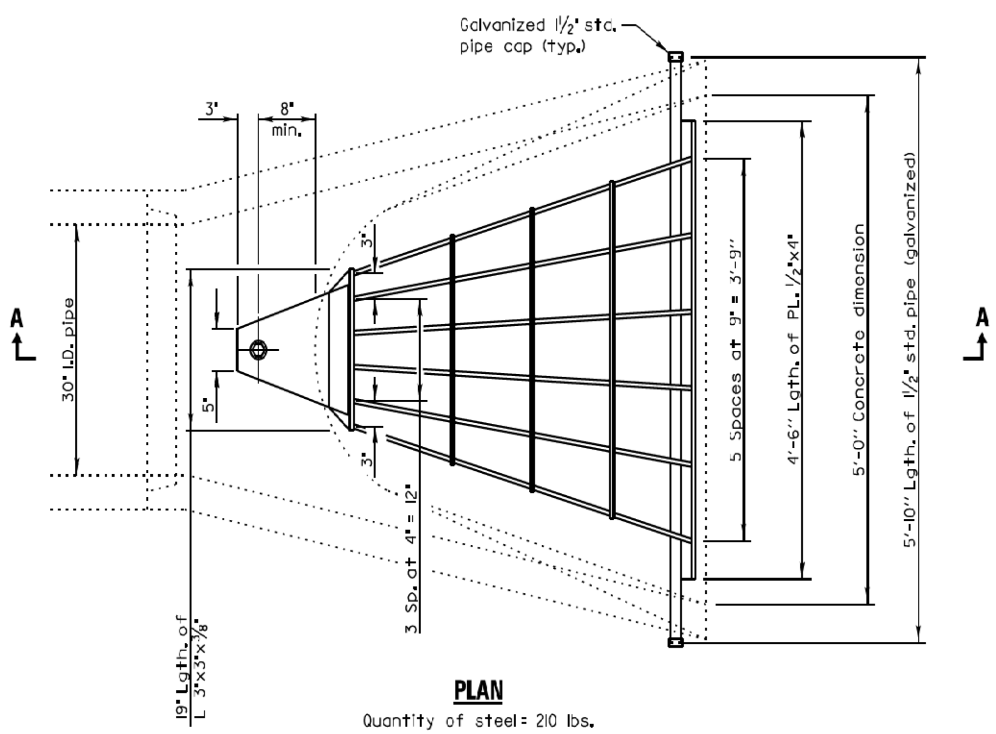
LakeCounty Division of Transportation

PROJECT NAME

LAKE COUNTY STANDARDS & DETAILS

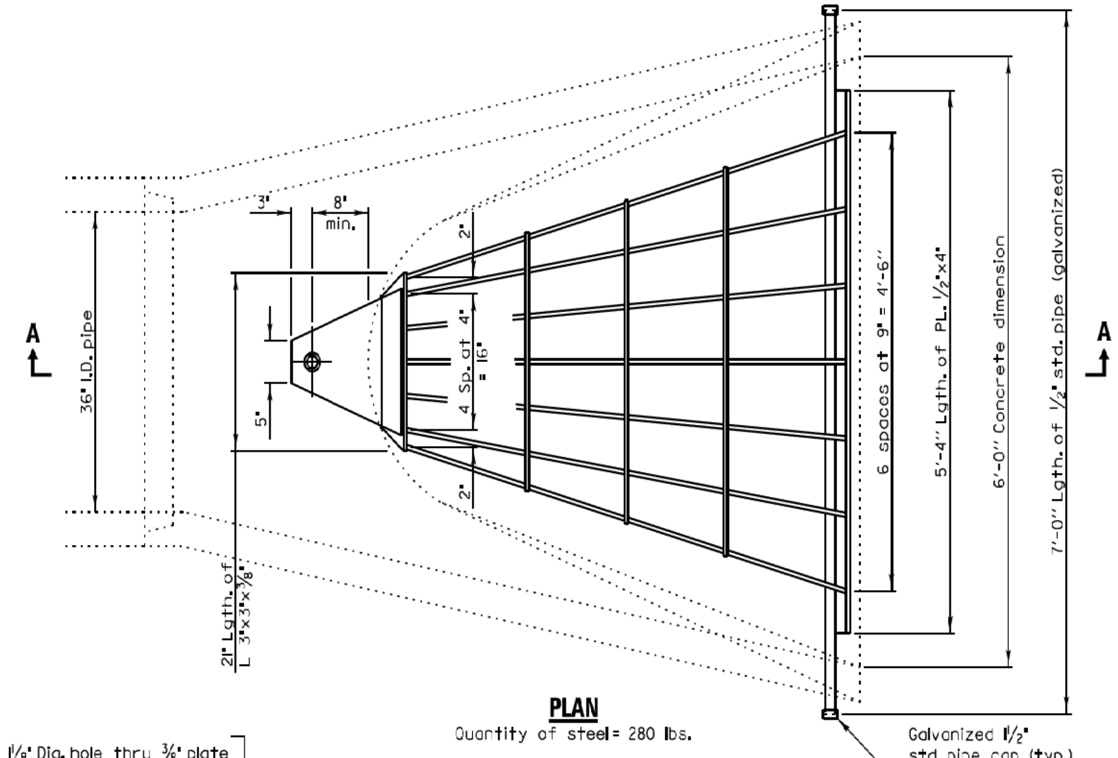
ROUTE	SECTION	SECTION NUMBER	SHEET	SHEETS
CH		- - -	XX	XX

FILE NAME: C:\Documents and Settings\hdrmc\My Documents\To RTS\LC5402 JOINT TIES FOR CONCRETE PIPE.dgn



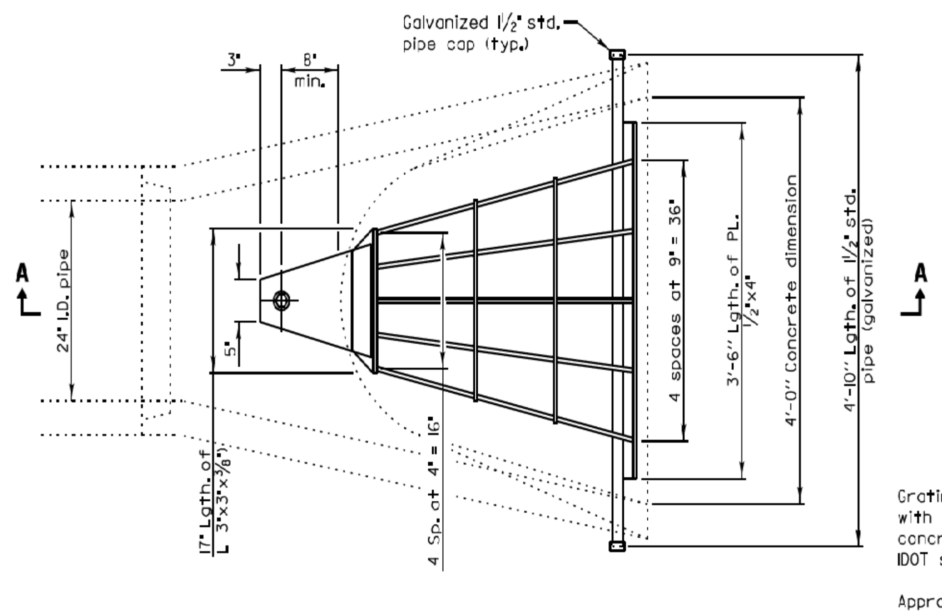
PLAN

Quantity of steel = 210 lbs.



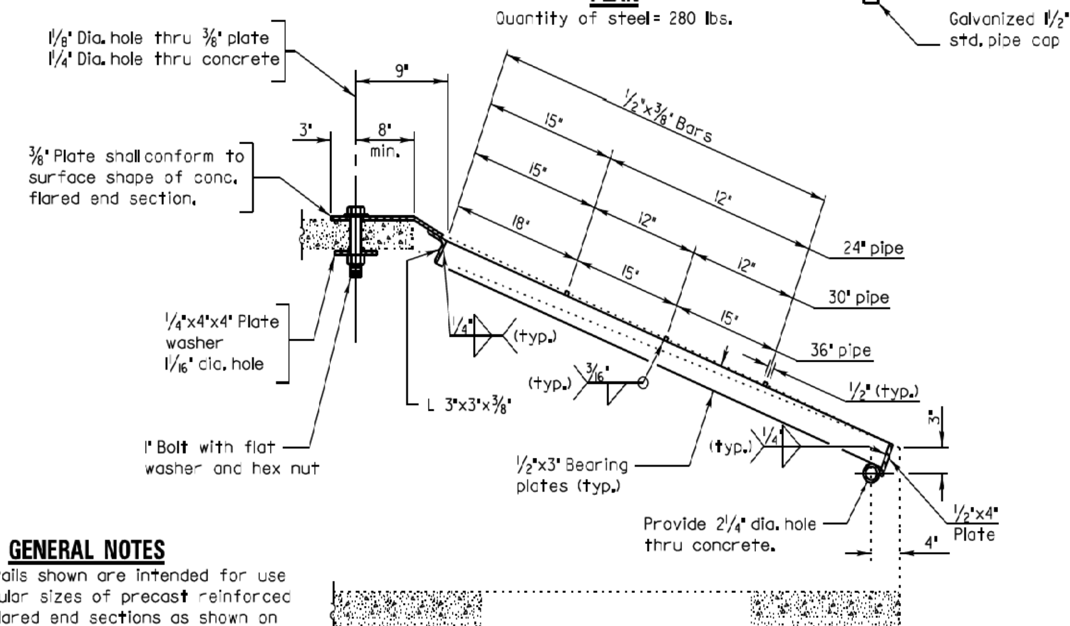
PLAN

Quantity of steel = 280 lbs.



PLAN

Quantity of steel = 150 lbs.



SECTION A–A

GENERAL NOTES

Grating details shown are intended for use with particular sizes of precast reinforced concrete flared end sections as shown on IDOT standards 542301 and 542306.

Approximate quantity of steel shown includes total quantity of grating, bolts, nuts, washers and steel pipe.

Holes in the precast concrete flared end sections shall be cored to the diameters noted. If cone-cut on the other end of the hole occurs, the hole shall be filled with grout to correct the diameter of the hole.

REVISIONS	DATE

LakeCounty Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: DEC. 18, 2014

GRATING FOR CONCRETE FLARED END SECTIONS (24"-54")

SHEET 1 OF 2

LC5403

NO.	REVISIONS / REMARKS DESCRIPTION	DATE	BY	SURVEYOR:	/
		/ /		DSGNR/LMSON:	
		/ /		PLOTTED BY:	hcl7512 12/19/2014

LakeCounty Division of Transportation

PROJECT NAME	ROUTE	SECTION	SECTION NUMBER	SHEET	SHEETS
LAKE COUNTY STANDARDS & DETAILS	CHXX	XXX	XX-00XXX-XX-XX	X	X

FILE NAME: U:\Design\Nauman\Lake\Standard Details\LC5403 Grating for Conc Flared End Section 24-54 in pipe.dgn

FILE NAME: G:\CH09\0176\Road\Sheets\V08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems

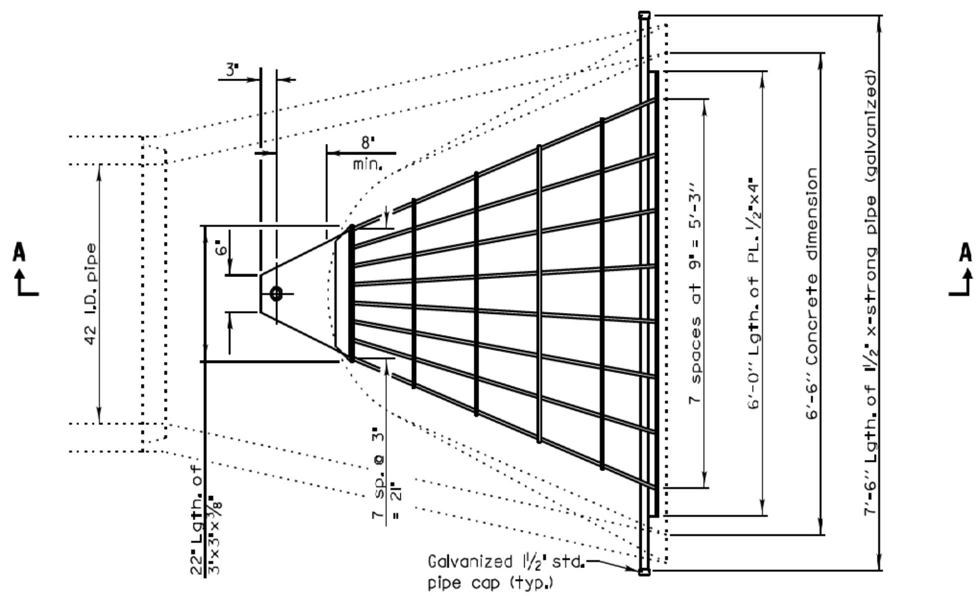
USER NAME = amkidd	DESIGNED - JLV	REVISED -
	DRAWN - AMK	REVISED -
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LAKE COUNTY STANDARD DETAIL

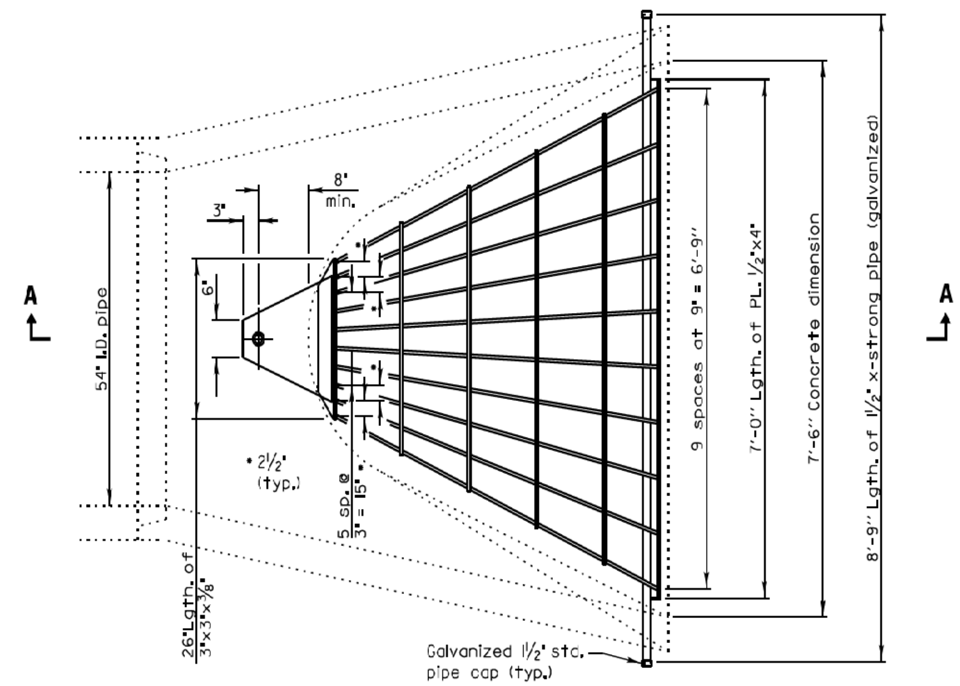
SCALE: 1:20 | SHEET 23 OF 43 SHEETS | STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	285
		CONTRACT NO. 61D65		
		ILLINOIS FED. AID PROJECT		



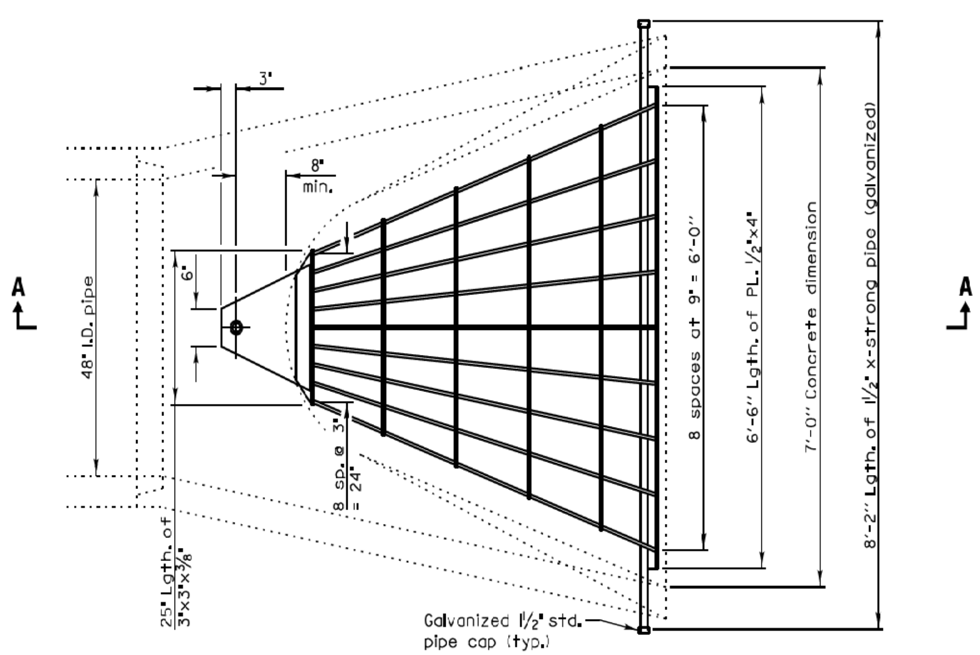
PLAN

Quantity of steel= 320 lbs.



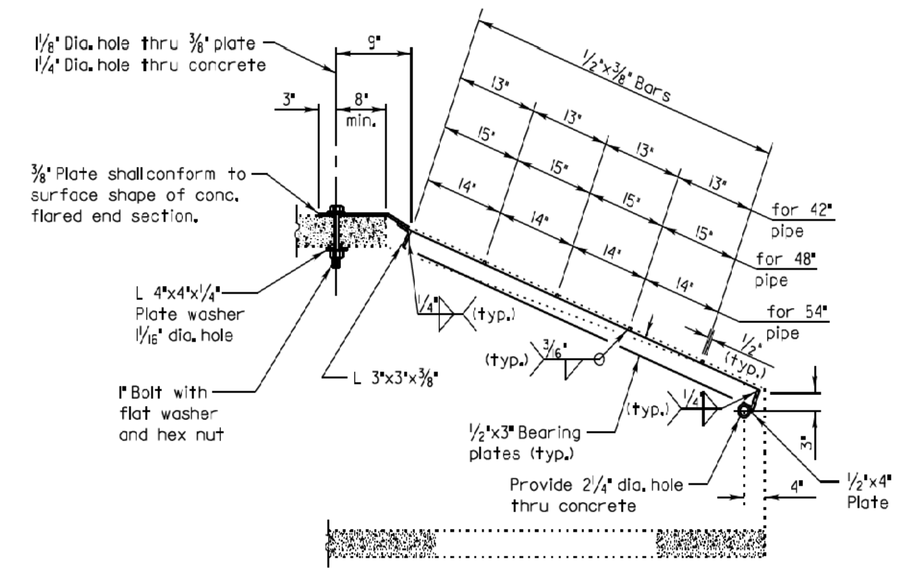
PLAN

Quantity of steel= 425 lbs.



PLAN

Quantity of steel= 400 lbs.



SECTION A–A

REVISIONS	DATE

LakeCounty Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: DEC. 18, 2014

GRATING FOR CONCRETE FLARED END SECTIONS (24"-54")

SHEET 2 OF 2

LC5403

REVISIONS / REMARKS					
NO.	DESCRIPTION	DATE	BY	SURVEYOR:	/
		/ /		DSGNR/LMISON:	
		/ /		PLOTTED BY:	hd17512 12/19/2014

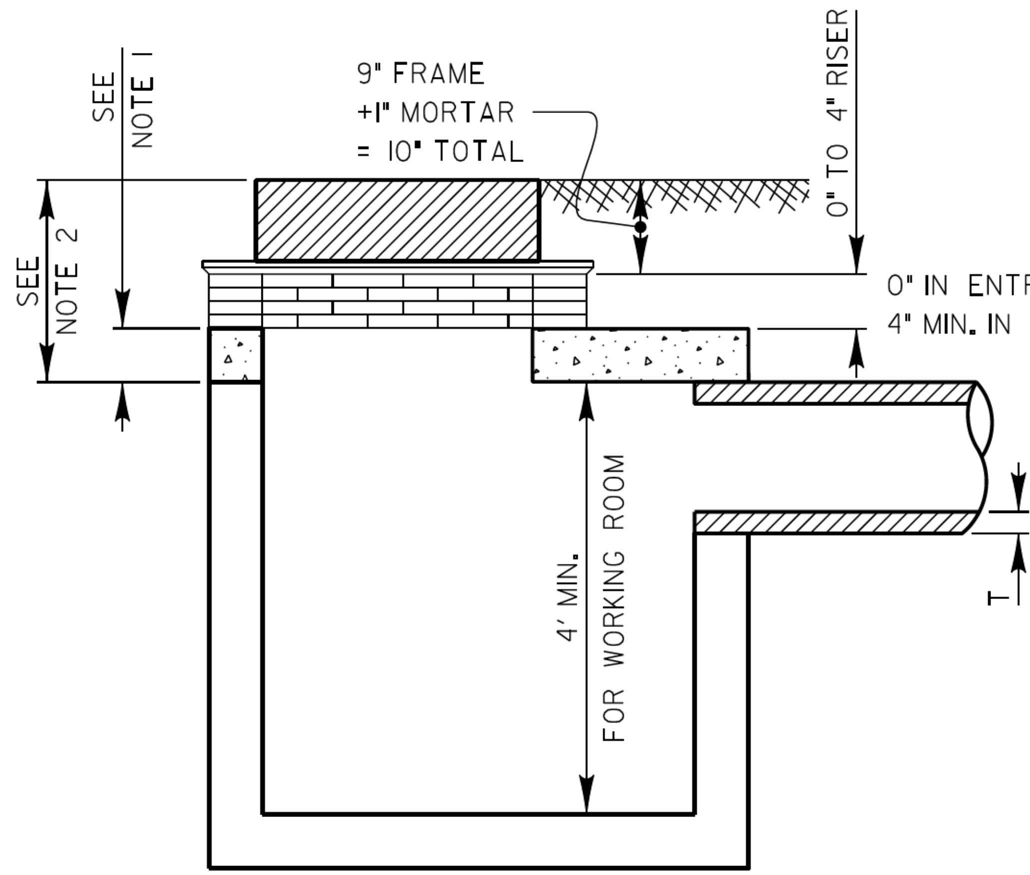
LakeCounty Division of Transportation

PROJECT NAME

LAKE COUNTY STANDARDS & DETAILS

ROUTE	SECTION	SECTION NUMBER	SHEET	SHEETS
CHXX	XXX	XX-00XXX-XX-XX	X	X

FILE NAME: U:\Design\Nauman\Lake\Standard Details\LC5403 Grating for Conc Flared End Section 24-54 in pipe.dgn



NOTE 1:
6" - 4' DIA. M.H.
8" - 5' DIA. M.H.

NOTE 2:
4' M.H.
1'-8" DESIRABLE
1'-4" MIN.
5' M.H.
1'10" DESIRABLE
1'-6" MIN.

		MINIMUM DEPTH			
		4' DIAMETER		5' DIAMETER	
PIPE DIA.	T	0" RISER	4" RISER	0" RISER	4" RISER
10"	2"	2.33'	2.67'	2.50'	2.83'
12"	2"	2.50'	2.83'	2.67'	3.00'
15"	2 1/4"	2.77'	3.10'	2.94'	3.27'
18"	2 1/2"	3.04'	3.38'	3.21'	3.54'
21"	2 3/4"	—	—	3.48'	3.81'
24"	3"	—	—	3.75'	4.08'
30"	3 1/2"	—	—	4.29'	4.63'
36"	4"	—	—	4.83'	5.17'
42"	4 1/2"	—	—	5.38'	5.71'

STRUCTURES REQUIRE SUMP FOR HEADROOM

SCALE: 1"=2'

REVISIONS	DATE

LakeCounty
Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

RESTRICTED DEPTH MANHOLE

LC6000

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -
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PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LAKE COUNTY STANDARD DETAIL

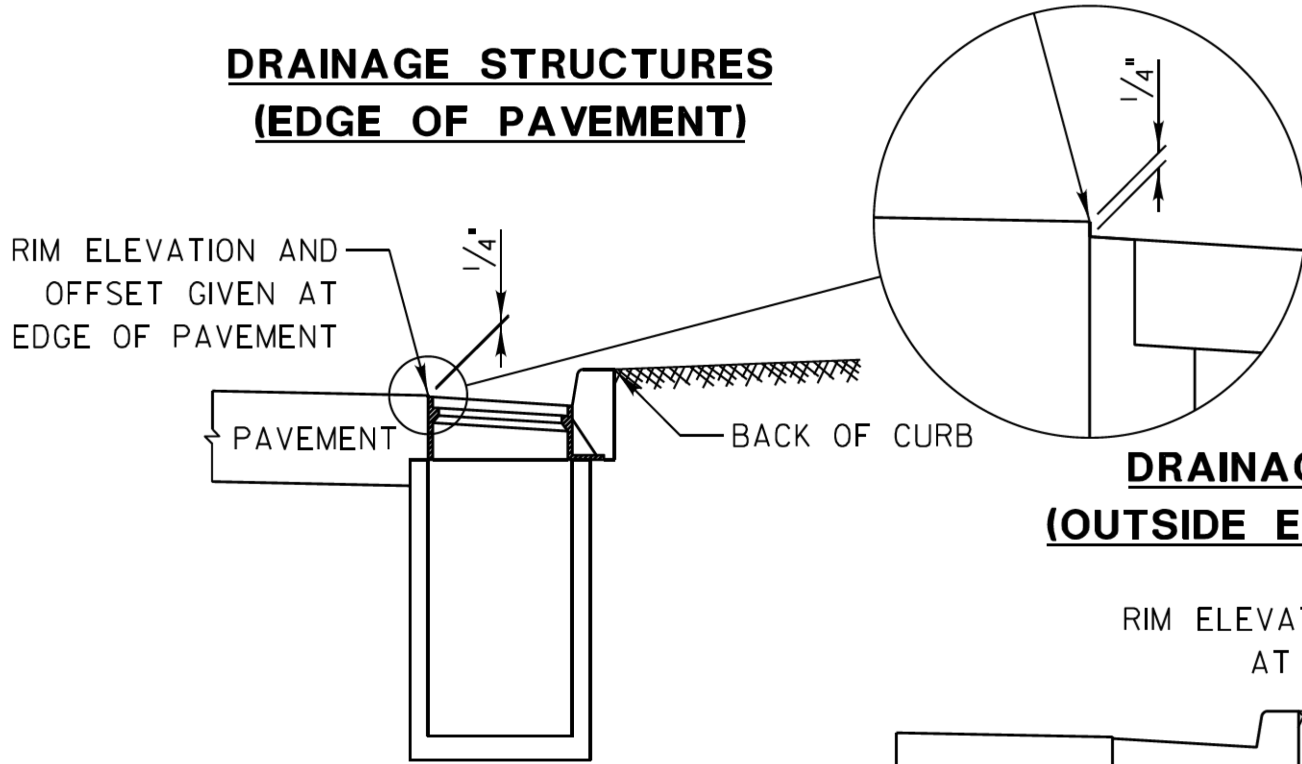
SCALE: 1:20 | SHEET 25 OF 43 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	287

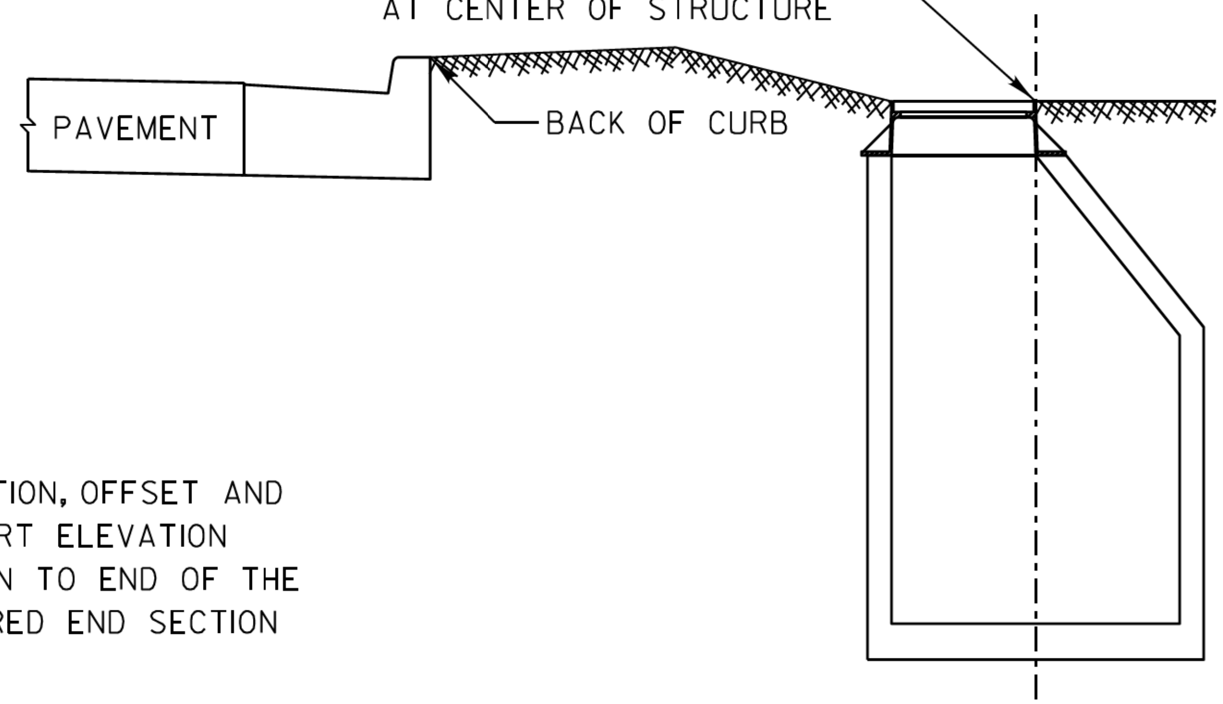
CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT

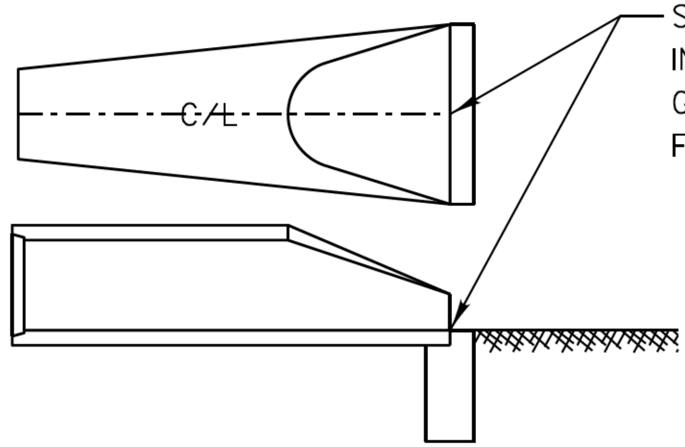
DRAINAGE STRUCTURES (EDGE OF PAVEMENT)



DRAINAGE STRUCTURES (OUTSIDE EDGE OF PAVEMENT)



END SECTION



REVISIONS	DATE

LakeCounty Division of Transportation

APPROVED BY: MGZ
DATE: 03/09/2012

DRAINAGE STRUCTURE RIM ELEVATIONS AND OFFSETS

LC6003

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

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USER NAME = amkidd	DESIGNED - JLV	REVISED -	
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PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

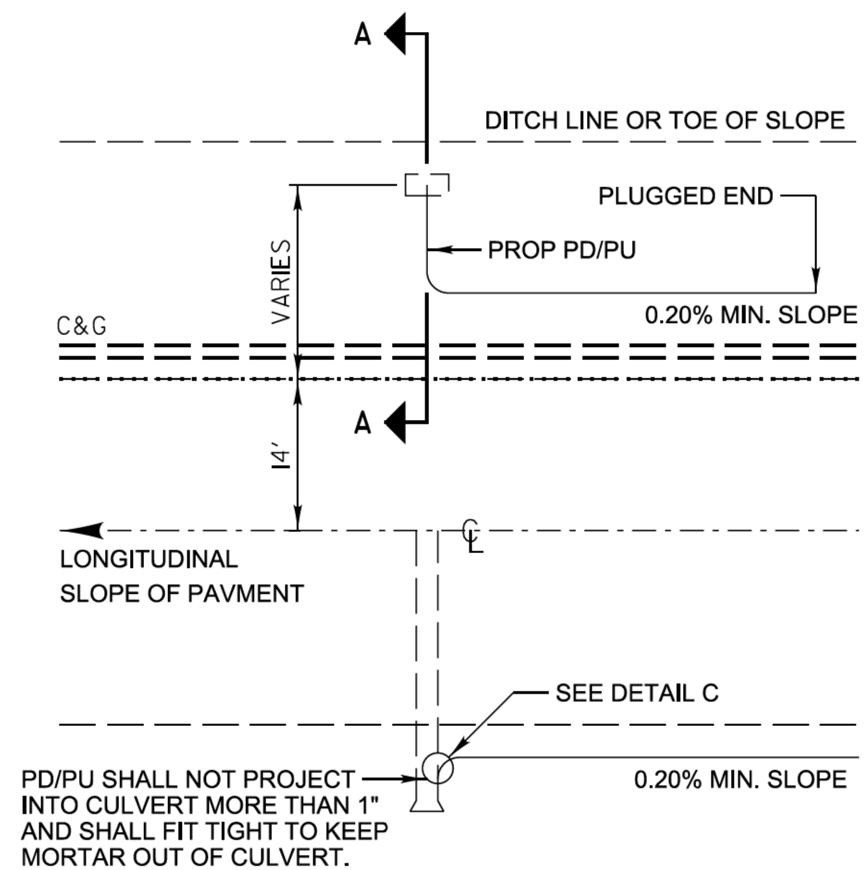
LAKE COUNTY STANDARD DETAIL

SCALE: 1:20 | SHEET 26 OF 43 SHEETS | STA. TO STA.

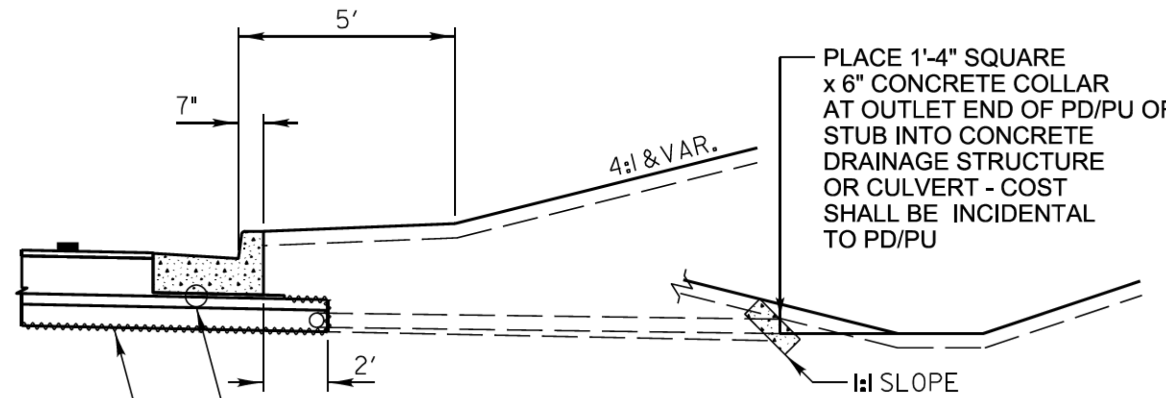
FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	288

CONTRACT NO. 61D65

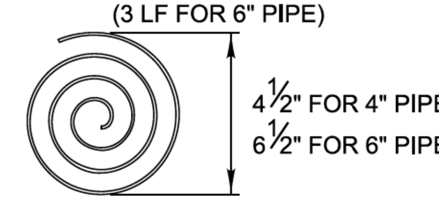
ILLINOIS | FED. AID PROJECT



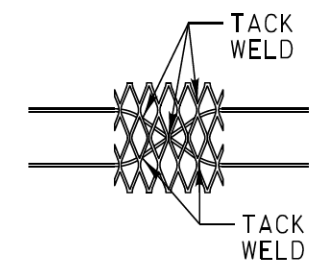
TYPICAL PIPE DRAIN/ PIPE UNDERDRAIN OUTLET



SECTION A-A



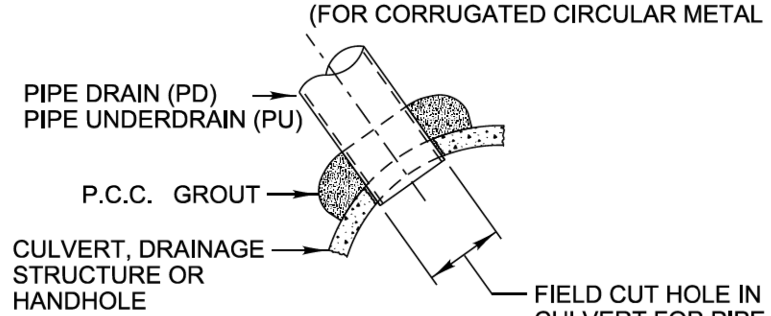
3/16" WIRE STOCK BENT TO A SPIRAL CONFIGURATION.
TO INSTALL, TWIST INTO PD/PU END.
(FOR CORRUGATED CIRCULAR METAL PIPE)



6"x6" EXPANDED METAL SHIELD WITH
TWO 2'-6" LONG PREFABRICATED
6 GAGE STEEL STRUTS FOR SNUG FIT
INTO THE PD/PU END.

RODENT SHIELDS DETAIL

(ALTERNATES)



DETAIL C

DESIGN NOTES:

All work shall be according to the applicable portions of the "Standard Specifications" except as modified hereon.

In addition to the requirements of Article 601.08 of the "Standard Specifications", the contract unit price per foot for pipe drains 4" & 6" and pipe underdrains 4" shall include the cost of furnishing and placing the rodent shield.

The removable rodent shield shall be furnished and installed in accordance with one of the configurations shown. The shield shall be fabricated from steel wire, or expanded metal, as detailed above and shall be galvanized after fabrication in accordance with AASHTO M-111. Other submitted designs for a removable rodent shield will be allowed with the approval of the Engineer.

NOT TO SCALE

REVISIONS	DATE
Pipe Drain Added to Labels	5/19/2009
Revised Type A to Type B Aggregate	12/20/12
Removed HMA Shldr & Agg	11/20/13

LakeCounty
Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

SUB-SURFACE DRAINS

LC6020

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -
	DRAWN - AMK	REVISED -
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LAKE COUNTY STANDARD DETAIL

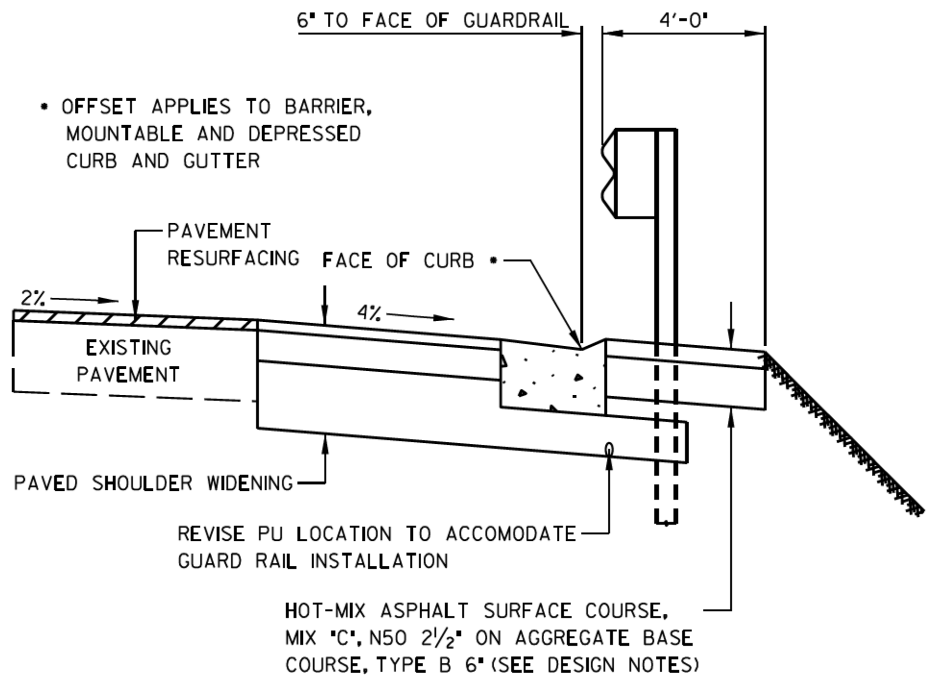
SCALE: 1:20 | SHEET 27 OF 43 SHEETS | STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	289

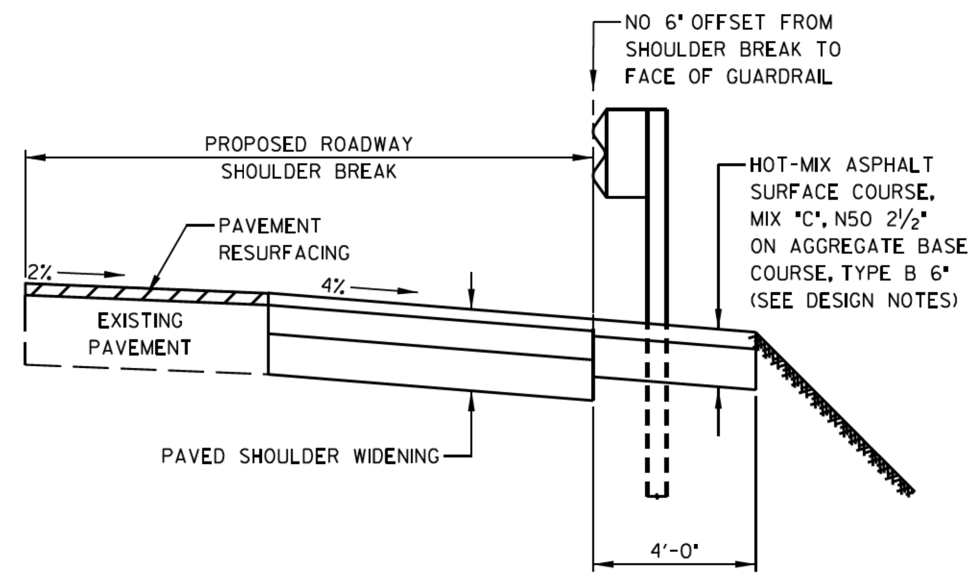
CONTRACT NO. 61D65

ILLINOIS FED. AID PROJECT

HOT-MIX ASPHALT PAVEMENT FOR MIDWEST GUARDRAIL SYSTEM WITH COMBINATION CURB & GUTTER



HOT-MIX ASPHALT PAVEMENT FOR MIDWEST GUARDRAIL SYSTEM



FOR NEW CONSTRUCTION / RECONSTRUCTION PROJECTS THE PAVED SHOULDER WIDENING WILL CHANGE TO FULL DEPTH PAVEMENT.

DESIGN NOTES:
THIS DETAIL SUPPLEMENTS IDOT STANDARD 630301-06 ADDING HMA SURFACE COURSE AND AGGREGATE BASE COURSE UNDER THE GUARDRAIL AND TRAFFIC BARRIER TERMINALS.

IF THE HMA PAVEMENT UNDER THE GUARDRAIL AND TRAFFIC BARRIER TERMINAL IS BEING CONSTRUCTED IN CONJUNCTION WITH A ROAD IMPROVEMENT, THE HOT-MIX ASPHALT SURFACE COURSE SHALL BE THE SAME AS THAT USED ON THE ROADWAY.

REVISIONS	DATE

LakeCounty Division of Transportation

APPROVED BY: MGZ
DATE: 04/01/2013

HMA PAVEMENT UNDER GUARDRAIL AND TRAFFIC BARRIER TERMINALS

LC6304

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -	
	DRAWN - AMK	REVISED -	
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

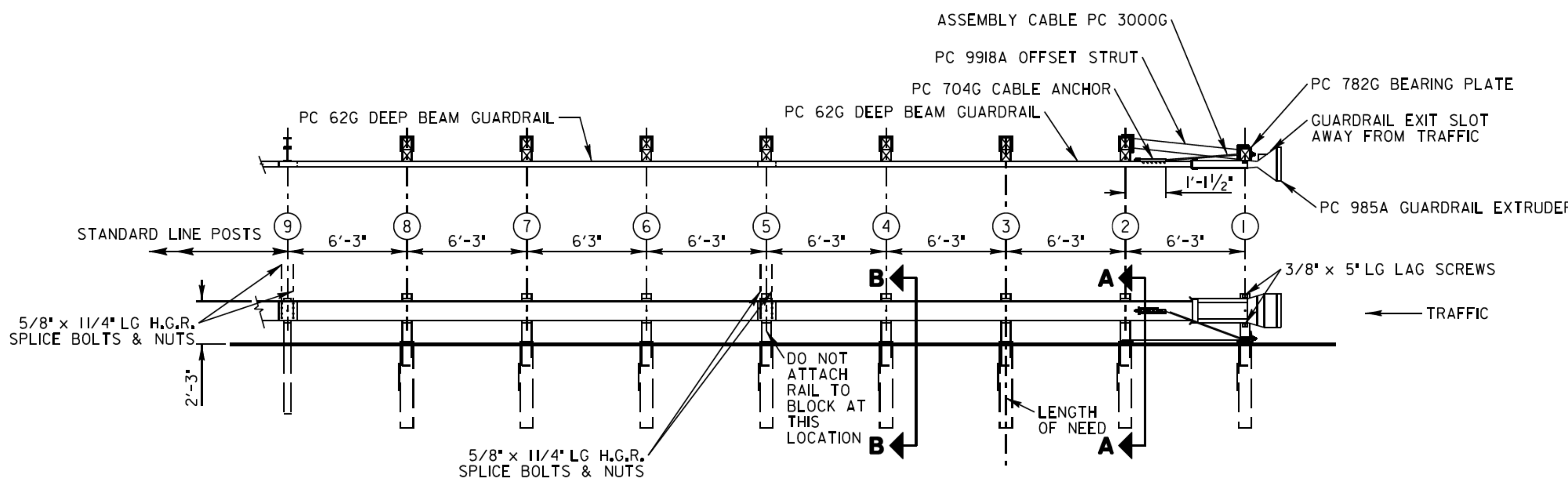
LAKE COUNTY STANDARD DETAIL

SCALE: 1:20 | SHEET 28 OF 43 SHEETS | STA. TO STA.

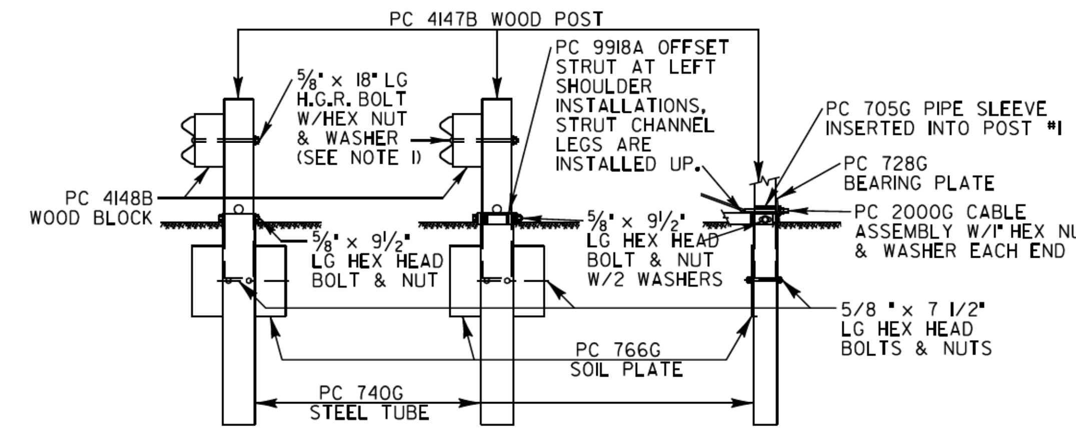
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	290

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT



SCALE: 1"= 6'



SECTION "B-B"

(TYP @ POSTS #3, 4, 6, 7 & 8)

SECTION "A-A"

(@ POST #2)

PARTIAL VIEW

(@ POST #1)

SCALE: 1' = 3'

NOTE:
SECTION "B-B" IS SIMILAR @ POST #5 EXCEPT RAIL IS NOT ATTACHED.

BILL OF MATERIAL

PC	QTY	DESCRIPTION
60G	1	DEEP BEAM GUARD RAIL (12GA)
62G	1	DEEP BEAM GUARD RAIL (12GA)
705G	1	PIPE SLEEVE
766G	8	SOIL PLATE
4148B	7	WOOD BLOCK
4147B	8	WOOD POST
740G	8	STEEL TUBE
782G	1	BEARING PLATE
704A	1	CABLE ANCHOR
3000G	1	CABLE ASSEMBLY
9918G	1	OFFSET STRUT
985A	1	GUARDRAIL EXTRUDER
		HARDWARE
3497G	8	5/8"% x 9 1/2" HEX HD BOLT
3580G	7	5/8"% x 18" H.G.R. POST BOLT
3360G	16	5/8"% x 1 1/4" H.G.R. SPLICE BOLT
3478G	16	5/8"% x 7 1/2" HEX HD BOLT
3340G	47	5/8" H.G.R. NUT
3300G	11	5/8" WASHER
3264G	2	3/8"% x 5" LAG SCREW
3910G	2	1" HEX NUT
3900G	2	1" WASHER

NOTES:

1. THE 5/8" FLAT WASHER IS USED UNDER THE NUT, BEHIND THE POST ONLY. NO WASHER IS USED AT THE RAIL

2. THE BREAKAWAY POSTS @ LOCATIONS #5, 6, 7 & 8 MAY BE AS SHOWN OR MAY UTILIZE POSTS AS SHOWN IN OPTION "B" WITHOUT FOUNDATION TUBES. (SEE DRAWING NO SS 241.) POSTS @ LOCATIONS #1, 2, 3 & 4 MUST USE FOUNDATION TUBES.

3. THE ER-2000 WAS TESTED ON FLAT & LEVEL TERRAIN. IT IS NOT RECOMMENDED ON SLOPES.

4. MANUFACTURER SUGGESTS CUSTOMER TO PROVIDE REFLECTORIZATION OF TERMINAL.

ET-2000
PLAN, ELEVATION & SECTIONS
OPTION "A"
1994 EDITION
SYRO, INC.
SS 240
B.T.
E.N.
4-12-94
NONE
REVISIONS

REVISIONS	DATE

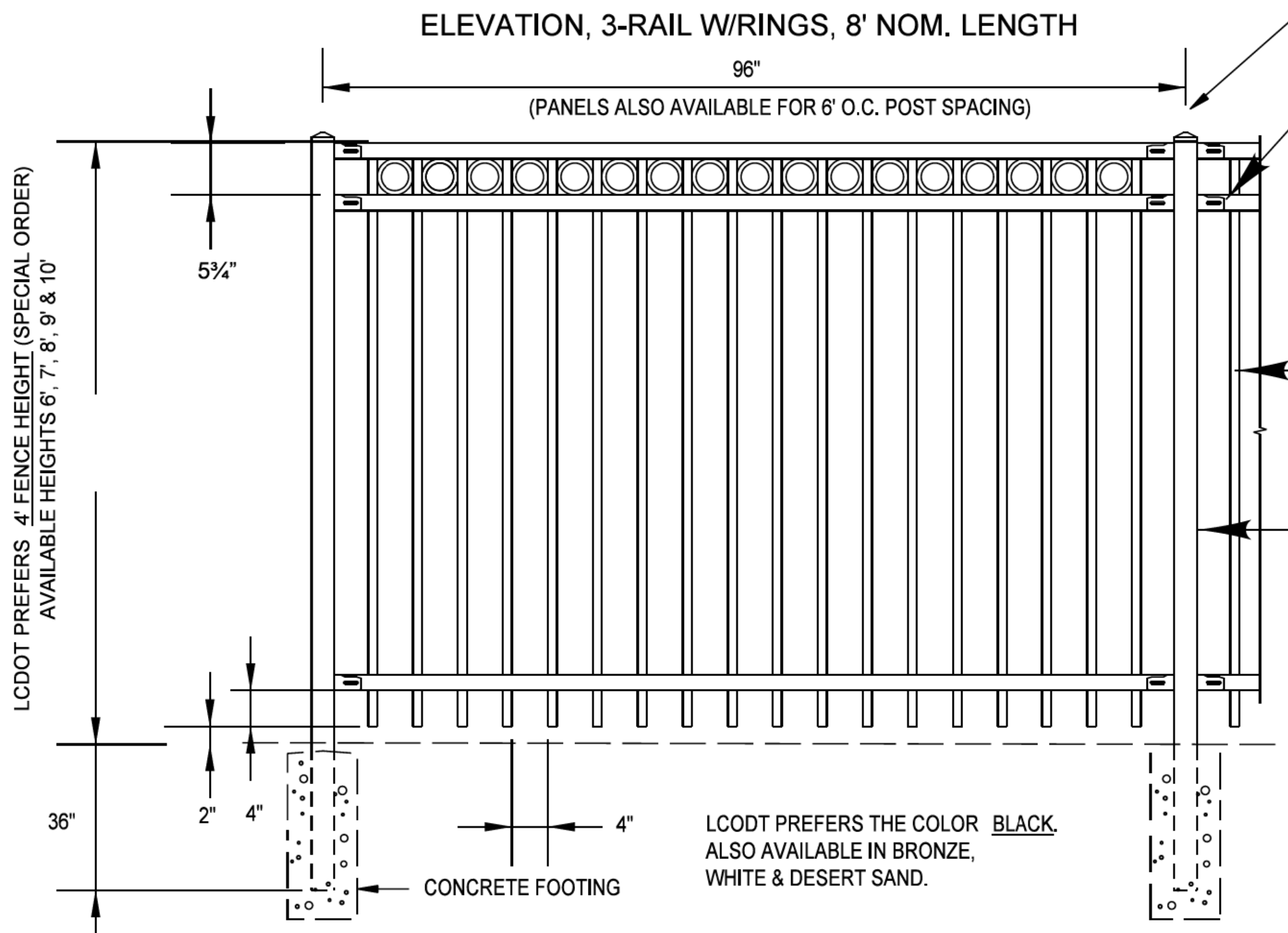
LakeCounty
Division of Transportation

APPROVED BY: A. KHAWAJA
DATE: APRIL 1, 2007

TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL (TANGENT)

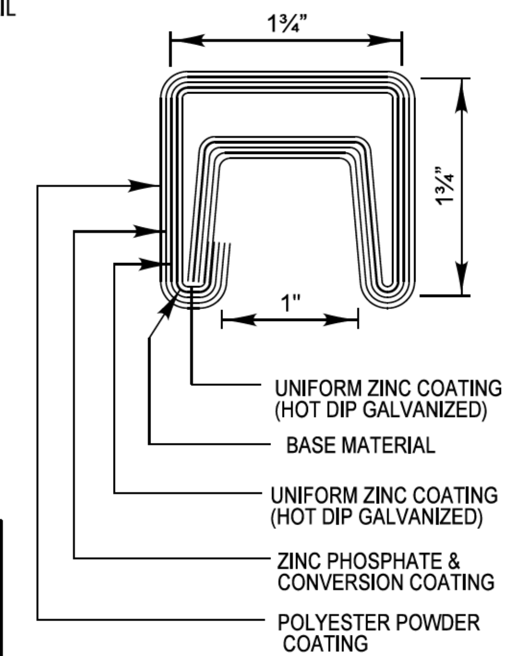
LC6310

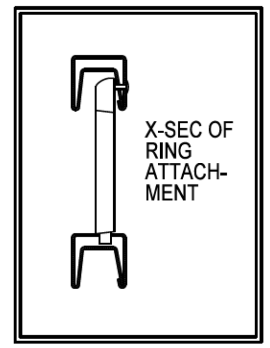
ELEVATION, 3-RAIL W/RINGS, 8' NOM. LENGTH



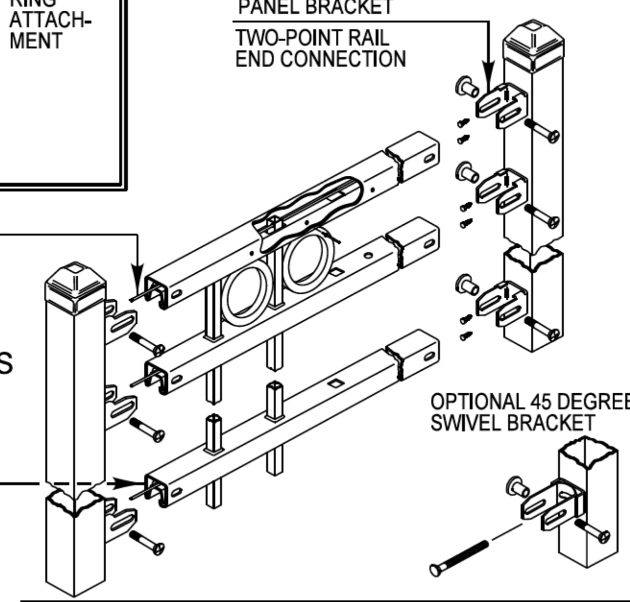
LCODT PREFERS THE COLOR BLACK.
ALSO AVAILABLE IN BRONZE,
WHITE & DESERT SAND.

CROSS SECTION OF HORIZONTAL RAIL





ISOMETRIC, 3-RAIL W/RINGS



Post Selection for Fence Height 6' - 10'				
Wind Loading				
Fence Height (FT)	Rail Length (FT)	Post Size	Wind Load Capacity Factor (PSF)	Typical Wind Load Capacity (mph)
6	6	2 ½" x 12 GA.	45.5	133.0
		3" x 12 GA.	54.6	146.0
	8	2 ½" x 12 GA.	34.2	116.0
		3" x 12 GA.	41.0	127.0
7	6	2 ½" x 12 GA.	33.4	114.0
		3" x 12 GA.	40.0	125.0
	8	2 ½" x 12 GA.	25.0	99.0
		3" x 12 GA.	30.0	108.0
8	6	2 ½" x 12 GA.	25.6	100.0
		3" x 12 GA.	30.7	110.0
	8	2 ½" x 12 GA.	19.2	87.0
		3" x 12 GA.	23.0	95.0
		4" x 12 GA.	30.6	110.0
9	6	4" x 12 GA.	32.0	113.0
10	6	4" x 12 GA.	28.7	107.0

GATES: SPECIFY OPENING WIDTHS
SINGLE ______ QUANTITY______
DOUBLE ______ QUANTITY______

REVISIONS	DATE
Update Text	7/15/11

LakeCounty
Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

ORNAMENTAL FENCE THREE RAIL W/RINGS (ONE MFGR'S DETAILS)

LC6602

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -
	DRAWN - AMK	REVISED -
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

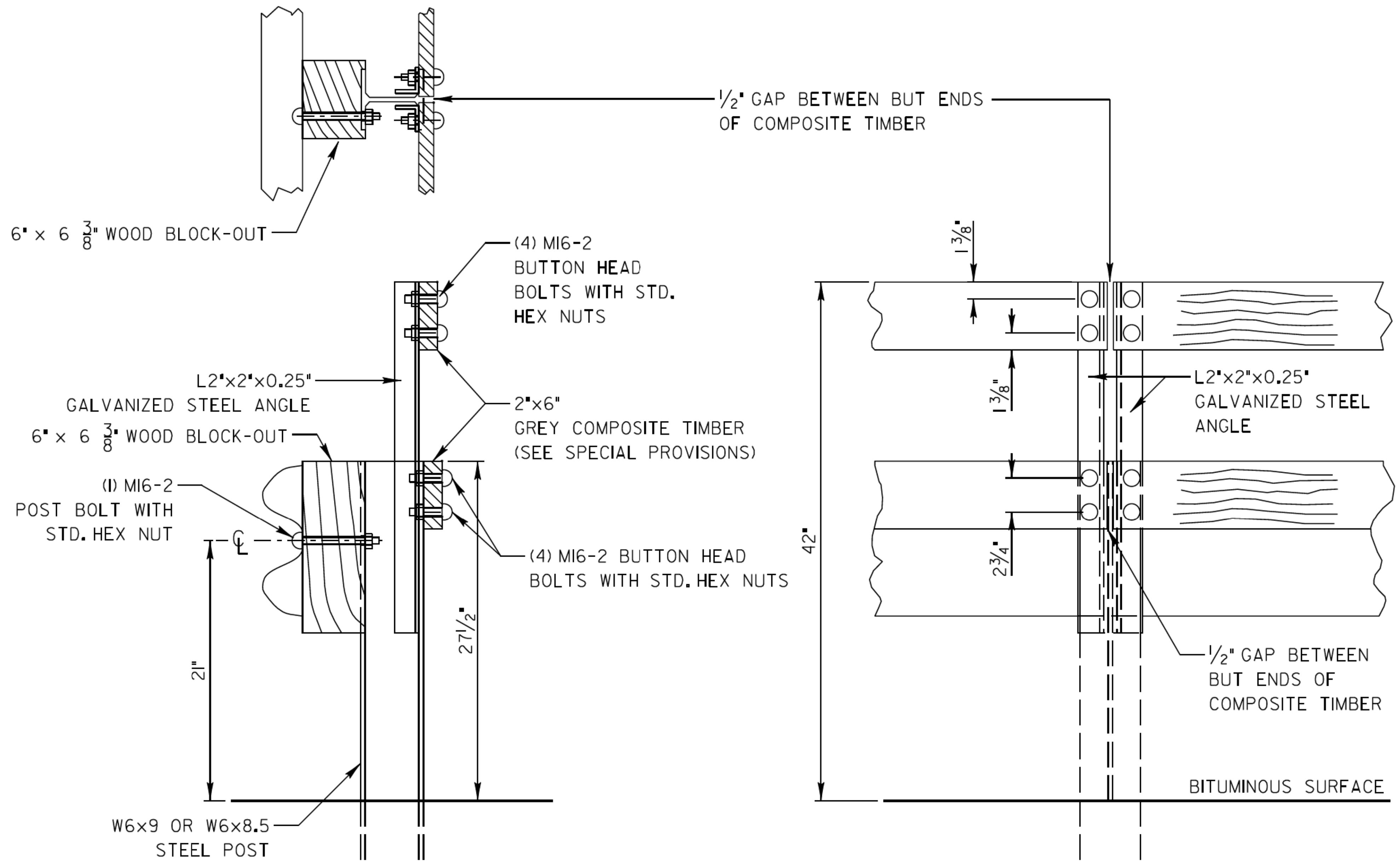
LAKE COUNTY STANDARD DETAIL

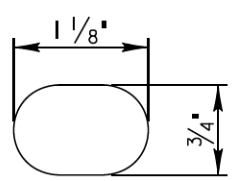
SCALE: 1:20 SHEET 30 OF 43 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	292

CONTRACT NO. 61D65

ILLINOIS FED. AID PROJECT





BOLT HOLE DETAIL

DUE TO EXPANSION AND CONTRACTION OF THE COMPOSITE TIMBER, THE LOCATION OF THE BOLTS WITH RESPECT TO THE SLOTTED BOLT HOLES IN THE COMPOSITE TIMBER WILL BE DEPENDANT ON THE AMBIENT TEMPERATURE AT PLACEMENT. CONSULT THE MANUFACTURER FOR BOLT HOLE LOCATION IN THE COMPOSITE TIMBER AND BOLT LOCATION IN THE SLOTTED BOLT HOLE.

REVISIONS	DATE

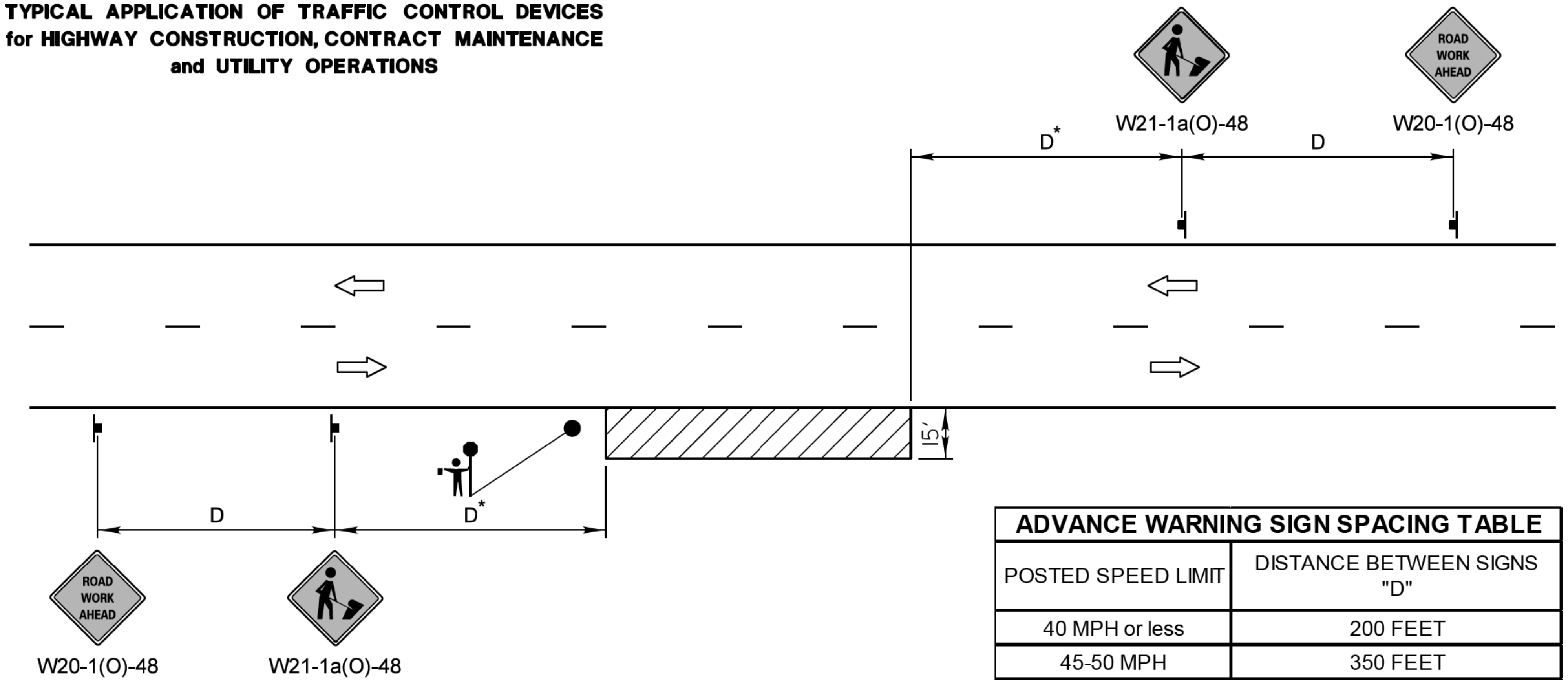
LakeCounty Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: APRIL 1, 2007

BIKE PATH APPROACH GUARDRAIL ADJUSTMENT

LC6621

TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES for HIGHWAY CONSTRUCTION, CONTRACT MAINTENANCE and UTILITY OPERATIONS



ADVANCE WARNING SIGN SPACING TABLE	
POSTED SPEED LIMIT	DISTANCE BETWEEN SIGNS "D"
40 MPH or less	200 FEET
45-50 MPH	350 FEET
55 MPH	500 FEET

GENERAL NOTES:

This special detail is used at any time, any vehicle, equipment, workers or their activities require a stationary, intermittent or continuous moving operation within 15 feet of the traffic lane, where the average speed is 1 mph or less.

* Minimum distance "D" is shown in the Advance Warning Sign Spacing Table. If the work is a moving operation, the maximum distance "D" may be extended to ½ the length required for one normal working day's operation or 4 miles, whichever is less.

If the work operation does not exceed 60 minutes, traffic control may be according to I.D.O.T. Highway Standard 701301.

SYMBOLS

- WORK AREA
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- FLAGGER WITH TRAFFIC CONTROL SIGN WHEN REQUIRED

MODIFIED IDOT STANDARD 701011-04

NOT TO SCALE

REVISIONS	DATE
Title Block Revision	8/1/09
Reformat LCDOT Standard	7/15/10
Updated IDOT Standard Version #	3/29/16

LakeCounty Division of Transportation

APPROVED BY: A. KHAWAJA
DATE: APRIL 1, 2007

TWO LANE, TWO WAY, OFF-ROAD OPERATIONS DAY OPERATIONS ONLY

LC7000

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems

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PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

LAKE COUNTY STANDARD DETAIL

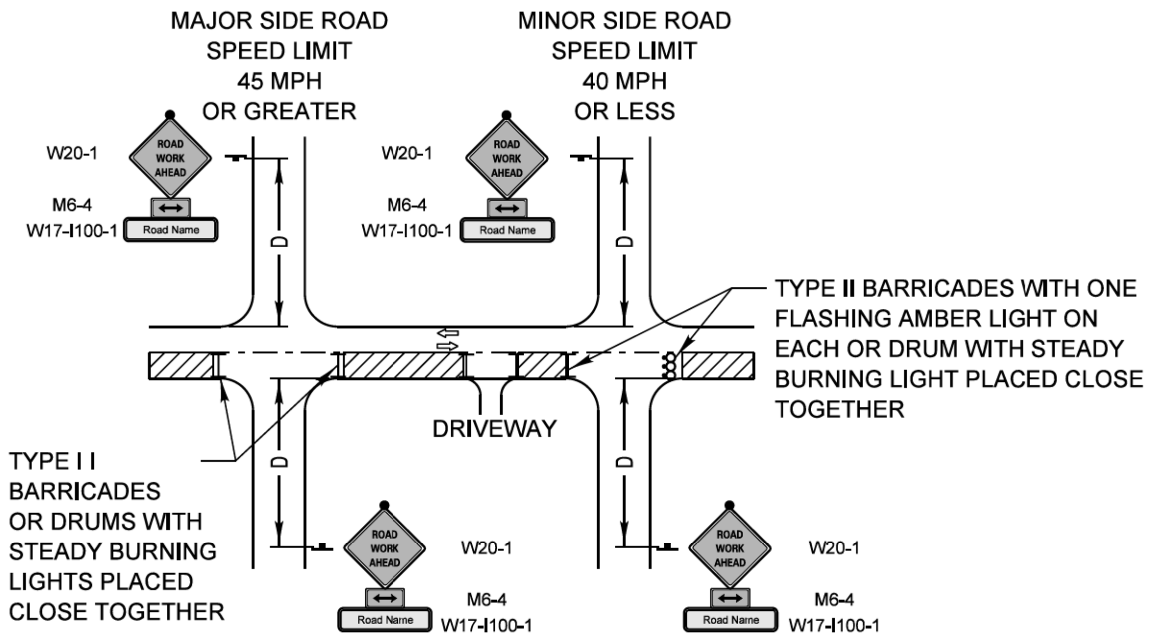
SCALE: 1:20 | SHEET 32 OF 43 SHEETS | STA. | TO STA.

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	294

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT

TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES for HIGHWAY CONSTRUCTION, CONTRACT MAINTENANCE and UTILITY OPERATIONS



SYMBOLS

- WORK AREA
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- TYPE II BARRICADE W/TYPE A FLASHING LIGHT
- DRUM WITH STEADY BURNING LIGHT

ADVANCE WARNING SIGN SPACING TABLE	
POSTED SPEED LIMIT	DISTANCE BETWEEN SIGNS "D"
40 MPH or less	200 FEET
45-50 MPH	350 FEET
55 MPH	500 FEET

GENERAL NOTE:

This Standard is used where at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement or where construction requires lane closures.

DESIGN NOTES:

1. For a side road with a speed limit of 40 mph or less, the closed portion of the main route shall be protected by blocking with Type II barricades or drums, 1/3 of the cross section of the closed portion of the roadway.
2. For a side road with a speed limit of 45 mph or greater, the closed portion of the main route shall be protected by blocking with Type II barricades or drums, 1/2 of the cross section of the closed portion of the roadway.
3. All W20-1 "ROAD WORK AHEAD" signs shall be 48"x48" with fluorescent orange reflective sheeting with an amber Type A flashing light mounted on the sign.
4. When the side road lies between the beginning of the mainline signing and the work zone, a M6-1 Single Headed Arrow shall be used in lieu of the M6-4 Double Headed Arrow.
5. For a lane closure on a side road, use the applicable portions of the appropriate Highway Standard or Traffic Control Detail. The spacing of the signs and barricades or drums shall be adjusted for field conditions as directed by the engineer. The directional arrow shall be covered or removed when no longer consistent with the side road closure.
6. Advance warning signs shall be omitted on driveways unless otherwise noted.
7. The traffic control and protection for side roads and intersections shall be included in the contract lump sum price for "TRAFFIC CONTROL AND PROTECTION, SPECIAL."

MODIFIED IDOT DISTRICT ONE SIDE ROAD DETAIL

NOT TO SCALE

REVISIONS	DATE
Title Block Revision	8/1/09
Reformat LCDOT Standard	7/15/10
Use of Drums in lieu Type III Barricade	4/22/14

LakeCounty Division of Transportation

APPROVED BY: ANTHONY KHAWAJA
DATE: APRIL 1, 2007

TRAFFIC CONTROL and PROTECTION for SIDEROADS, INTERSECTIONS and DRIVEWAYS

LC7004

FILE NAME: G:\CHD9\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -	
	DRAWN - AMK	REVISED -	
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LAKE COUNTY STANDARD DETAIL

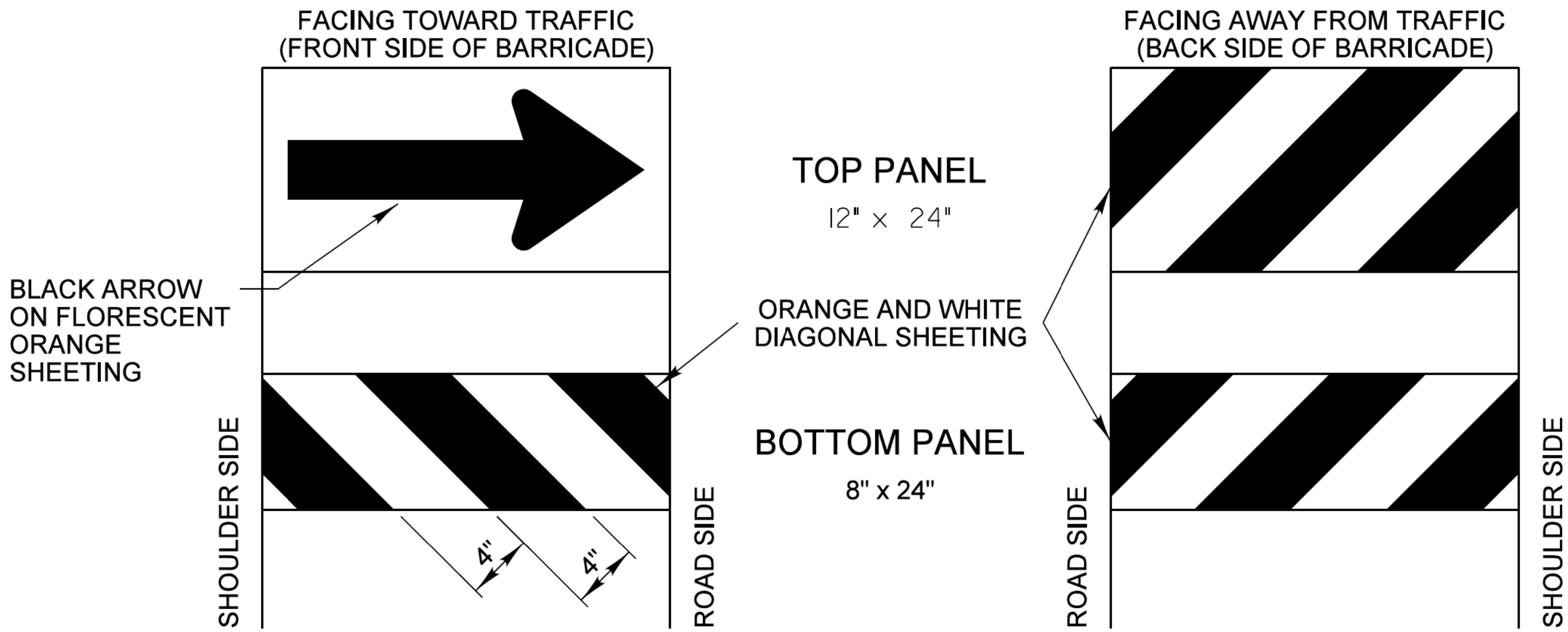
SCALE: 1:20 | SHEET 33 OF 43 SHEETS | STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	295

CONTRACT NO. 61D65

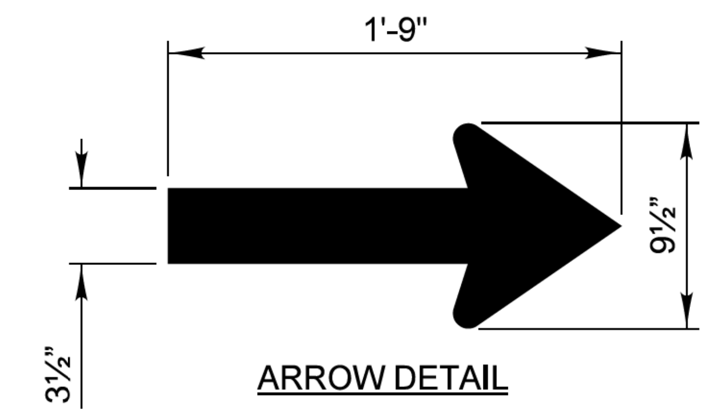
ILLINOIS | FED. AID PROJECT

DIRECTION INDICATOR BARRICADES



GENERAL NOTES

1) Direction Indicator Barricades shall be constructed from non-metallic Type II barricades meeting the requirements of Article 1106.02 of the Standard Specifications, except where modified by this detail.
2) The Direction Indicator Barricades shall be equipped with Type C steady burning lights if used to channelize traffic during the hours of darkness.
3) The reflective sheeting for the top panel shall be Type AZ fluorescent orange. The diagonal panels shall have orange and white Type A or better reflective sheeting.



ARROW DETAIL

REVISIONS	DATE
Text Update	7/15/11

LakeCounty Division of Transportation

APPROVED BY: ANTHONY KHAWAJA
DATE: APRIL 1, 2007

TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
HIGHWAY CONSTRUCTION, CONTRACT MAINTENANCE

DIRECTION INDICATOR BARRICADES

LC7200

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

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PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LAKE COUNTY STANDARD DETAIL

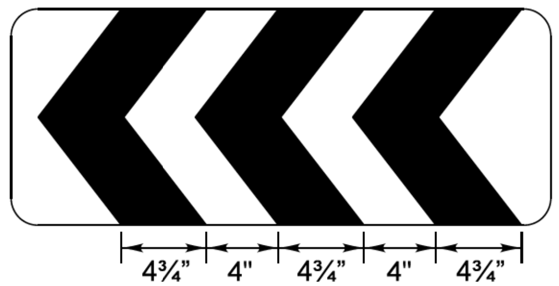
SCALE: 1:20 | SHEET 34 OF 43 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	296

CONTRACT NO. 61D65

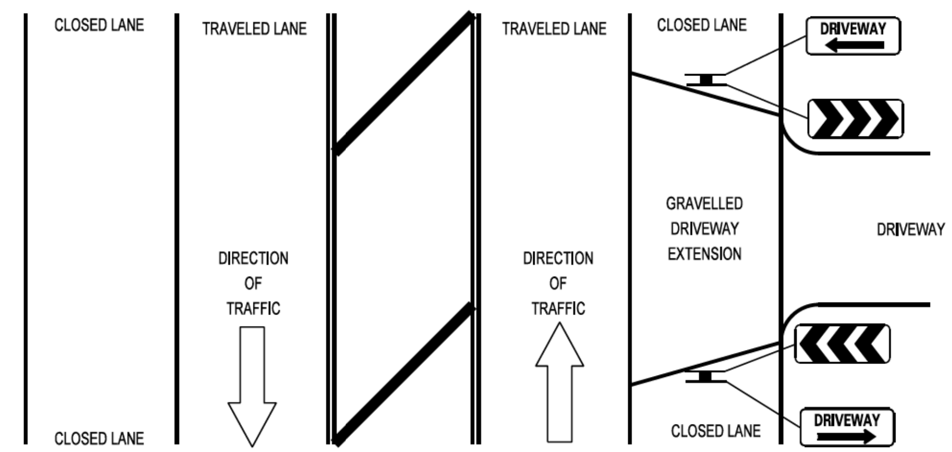
ILLINOIS | FED. AID PROJECT

30" X 12" WHITE ON GREEN REFLECTIVE BACKGROUND, ⅝" BORDER, LETTER SIZE 4C



30" X 12" BLACK ON FLOURESCENT ORANGE CHEVRONS

EXAMPLE OF DRIVEWAY SIGN ASSEMBLY INSTALLATION



TEMPORARY CONSTRUCTION INFORMATION SIGNING NOTES:

1. The driveway and chevron signs shall be mounted back to back on the near side of the roadway where the entrance is located. There will be two sign assemblies per driveway.
2. Temporary construction information signs shall be post mounted 7' above the near edge of pavement and shall be a minimum of 6' beyond the edge of the nearest traveled lane, or as directed by the Engineer.
3. The retroreflective sign face shall be a minimum of Type "A" material.
4. The temporary construction information signs shall be removed or relocated when the Engineer determines the signs to be no longer necessary.
5. Existing traffic control signs and messages that are in conflict with the proposed maintenance of traffic shall be covered or modified with a temporary overlay as shown in the plans and/or as directed by the Engineer.
6. Install additional temporary sign panel assemblies as shown in the plans and/or directed by the Engineer.

REVISIONS	DATE
Revised Signs & Text	1/1/09
Text Update	7/15/11

LakeCounty
Division of Transportation

APPROVED BY: A KHAWAJA
DATE: APRIL 1, 2007

TEMPORARY CONSTRUCTION INFORMATION SIGNS

SHEET 1 OF 2

LC7201

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems

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	DRAWN - AMK	REVISED -
PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LAKE COUNTY STANDARD DETAIL

SCALE: 1:20 | SHEET 35 OF 43 SHEETS | STA. TO STA.

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	297
		CONTRACT NO. 61D65		
		ILLINOIS FED. AID PROJECT		

48" X 36"
BLACK ON FLUORESCENT ORANGE
REFLECTIVE BACKGROUND
1" BORDER WITH ⅝"INSET
LETTER SIZE 6D
*LETTER SIZE 6E BOLD

REVISIONS	DATE
Revised Signs & Text	1/1/09
Text Update	7/15/11

LakeCounty
Division of Transportation

APPROVED BY: A KHAWAJA
DATE: APRIL 1, 2007

TEMPORARY CONSTRUCTION INFORMATION SIGNS
SHEET 2 OF 2

LC7201

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -
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PLOT SCALE = 40.00 ' / in.	CHECKED - JWC	REVISED -
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

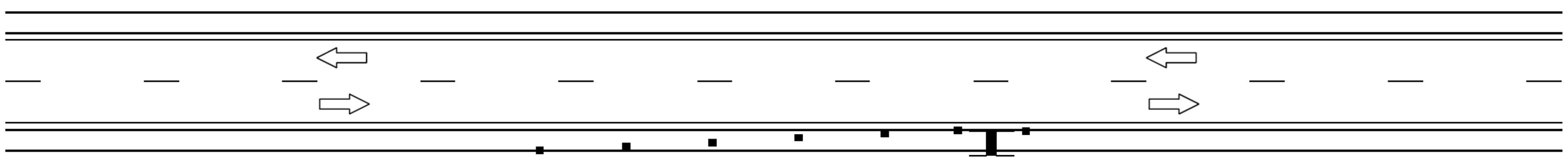
LAKE COUNTY STANDARD DETAIL

SCALE: 1:20 | SHEET 36 OF 43 SHEETS | STA. | TO STA.

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	298

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT



SHOULDER CLOSURE TAPER

SHOULDER TAPER LENGTH TABLE		
POSTED SPEED	TAPER LENGTH	NUMBER OF DEVICES REQUIRED
30 MPH	40 FEET	4
35 MPH	55 FEET	4
40 MPH	70 FEET	5
45 MPH	120 FEET	7
50 MPH	135 FEET	8
55MPH	150 FEET	8

General Notes

This special detail is intended for use with a Changeable Message Sign and its support trailer when located on the shoulder or within 15 feet of the edge line of a County Highway without curb and gutter.

The Shoulder Taper (1/3 L) length is shown in the table for the current posted speed limit.

The Channelizing Device Spacing shall not exceed 25 feet for the Shoulder Taper.

SYMBOLS

 CHANGEABLE MESSAGE SIGN

CHANNELIZING DEVICE

MODIFIED M.U.T.C.D. TYPICAL APPLICATION DIAGRAM TA-3

REVISIONS	DATE
Text Update	7/15/11

LakeCounty
Division of Transportation

APPROVED BY: A. KHAWAJA
DATE: JAN. 28, 2008

TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES HIGHWAY CONSTRUCTION, CONTRACT MAINTENANCE AND UTILITY OPERATIONS

SHOULDER CLOSURE AND TAPER FOR CHANGEABLE MESSAGE SIGNS

LC7202

FILE NAME: G:\CH09\0176\Road\Sheets\08084-LCDOT-STANDARD-DETAIL-01.dgn

TranSystems

USER NAME = amkidd	DESIGNED - JLV	REVISED -	
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PLOT SCALE = 40.00 '/ in.	CHECKED - JWC	REVISED -	
PLOT DATE = 5/22/2019	DATE - 5/22/2019	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LAKE COUNTY STANDARD DETAIL

SCALE: 1:20 | SHEET 37 OF 43 SHEETS | STA. TO STA.

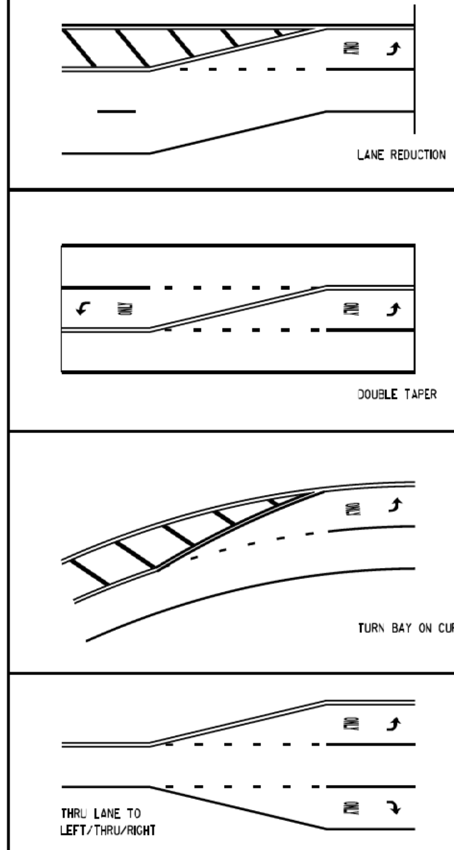
FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2549	09-00174-05-CH	LAKE	423	299

CONTRACT NO. 61D65

ILLINOIS | FED. AID PROJECT

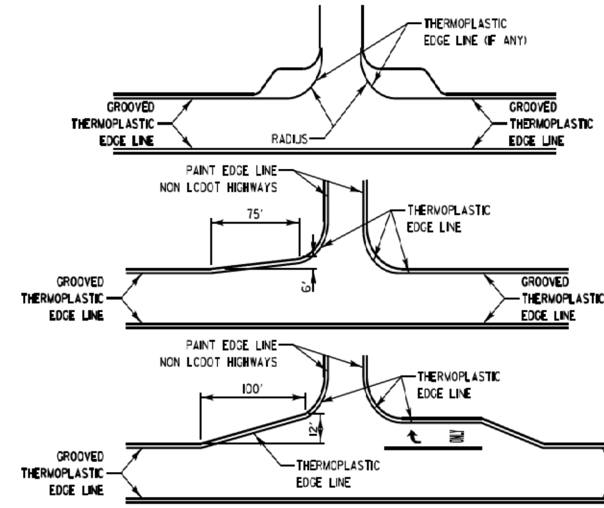
TYPICAL PAVEMENT MARKINGS

TYPICAL MINI-SKIP PAVEMENT MARKINGS



MINI-SKIPS ARE 2 FEET WHITE LINE WITH 6 FEET SPACING. THE MINI-SKIP IS THE SAME WIDTH AS THE PAVEMENT MARKING LINE, IT EXTENDS.

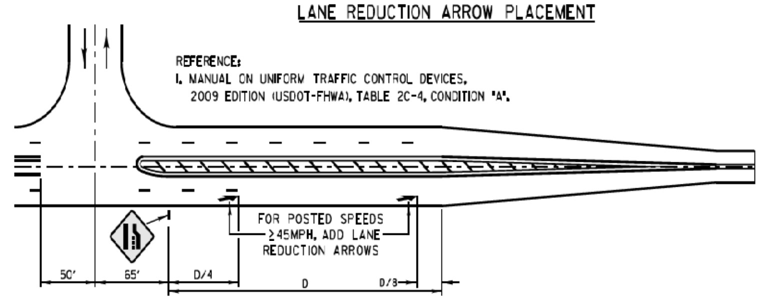
EDGE LINE RADII AT SIDE STREETS



NOTE:
EDGE LINES ON LCDOT HIGHWAYS SHALL BE GROOVED THERMOPLASTIC. SIDEROAD RETURNS SHALL BE A THERMOPLASTIC EDGE LINE (NOT GROOVED) AND THE SIDEROAD EDGE LINE SHALL BE PAINT ON ALL NON LCDOT HIGHWAYS.

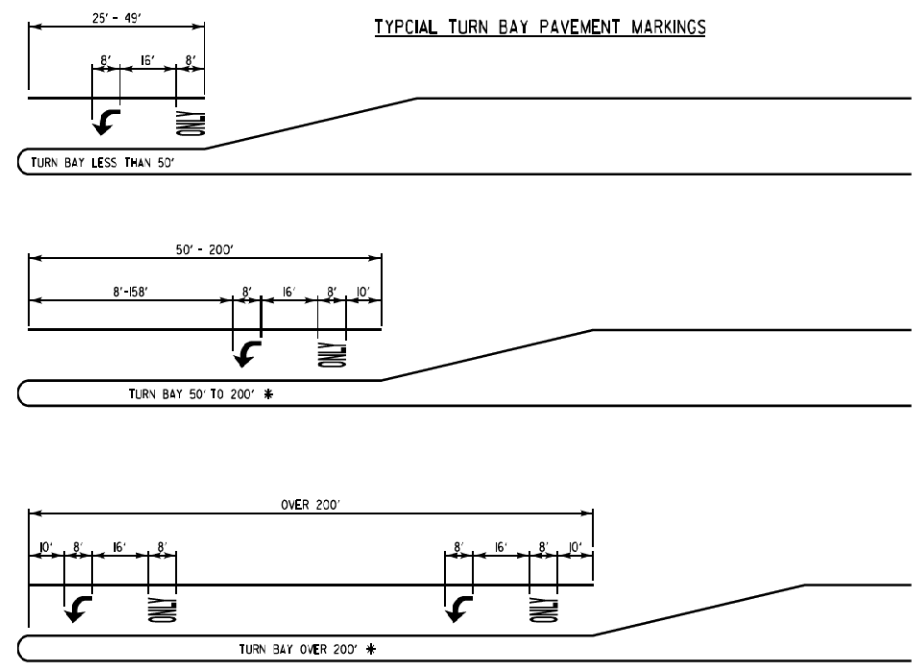
LANE REDUCTION ARROW PLACEMENT

REFERENCE:
1. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 EDITION (USDOT-FHWA), TABLE 2C-4, CONDITION "A".



DESIGN SPEED MPH	D (FEET)
<45	VARIES
45	775'
50	885'
55	990'

TYPCIAL TURN BAY PAVEMENT MARKINGS



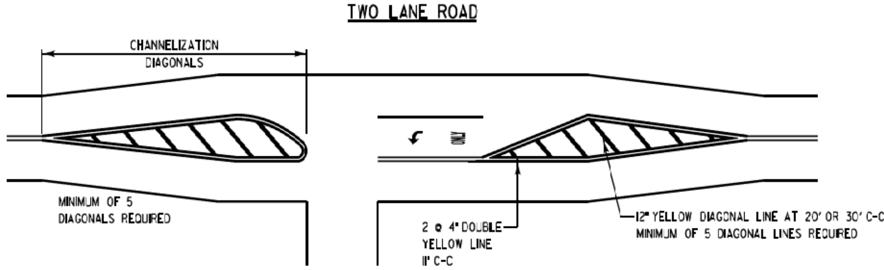
* AT INTERSECTIONS WITH VIDEO DETECTION, THE ARROW AND ONLY PAVEMENT MARKINGS SHALL BE A MINIMUM OF 30' BEHIND THE STOP BAR.

AREA = 15.6 SQ. FT.

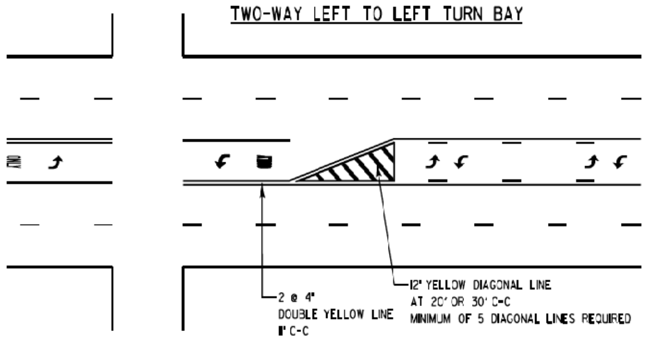
ONLY AREA = 20.8 SQ FT.

FULL SIZE LETTERS (8') AND ARROWS SHALL BE USED.
TURN LANES IN EXCESS OF 400' IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW W/ "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW W/ "ONLY".

TWO LANE ROAD



TWO-WAY LEFT TO LEFT TURN BAY



TYPICAL DIAGONAL SPACING

DIAGONAL SPACING

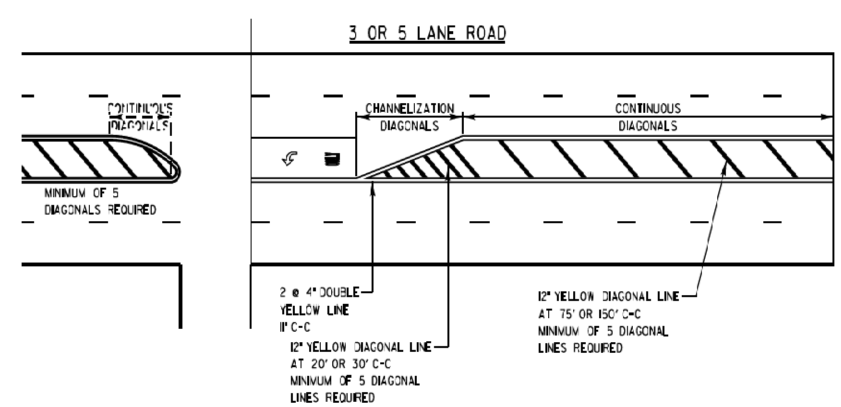
SPEED LIMIT RANGE	CONTINUOUS	INTERSECTION CHANNELIZATION
30-45 MPH	75 FT.	20 FT.
OVER 45 MPH	150 FT.	30 FT.

DUAL LEFT TURN ARROWS

312 SQ. FT. MINIMUM OF 2 SETS REQUIRED

A MINIMUM OF TWO PAIRS OF DUAL LEFT TURN ARROWS SHALL BE USED. THE DUAL LEFT TURN ARROWS SHALL BE WHITE IN COLOR. THE INTERVAL BETWEEN SETS OF DUAL LEFT TURN ARROWS SHOULD BE 200' AND 300'.

3 OR 5 LANE ROAD



REVISIONS	DATE
SEPARATED RAILROAD SHEET	06/02/06
ADDED LANE REDUCTION ARROWS	07/1/12
RAISED TO RECESSED MARKERS	12/2/13
REMOVE STATION NUMBERS	5/30/14
THERMO EDGELINES at RETURNS	11/18/16
ALL PM TO GROOVED THERMO	1/26/17
REVISED EDGELINES at RETURNS	4/10/17
REVISED STOB BAR/DBL YELLOW	8/3/17

LakeCounty Division of Transportation

APPROVED BY: A. KHAWAJA
DATE: APRIL 1, 2007

TYPICAL PAVEMENT MARKINGS FOR COUNTY HIGHWAYS
SHEET 1 OF 2

LC7800

REVISIONS / REMARKS					
NO.	DESCRIPTION	DATE	BY	SURVEYOR:	/
		/ /		DSGNR/LIAISON:	
		/ /		PLOTTED BY:	hdrmc 9/5/2017

LakeCounty Division of Transportation

PROJECT NAME
LAKE COUNTY STANDARDS & DETAILS

ROUTE	SECTION	SECTION NUMBER	SHEET	SHEETS
CHXX	XXX	XX-XXXXX-XX-XX	XXX	XXX

FILE NAME: C:\Users\hdrmc\Desktop\LC7800 TYPICAL PAVEMENT MARKINGS FOR COUNTY HIGHWAYS.dgn