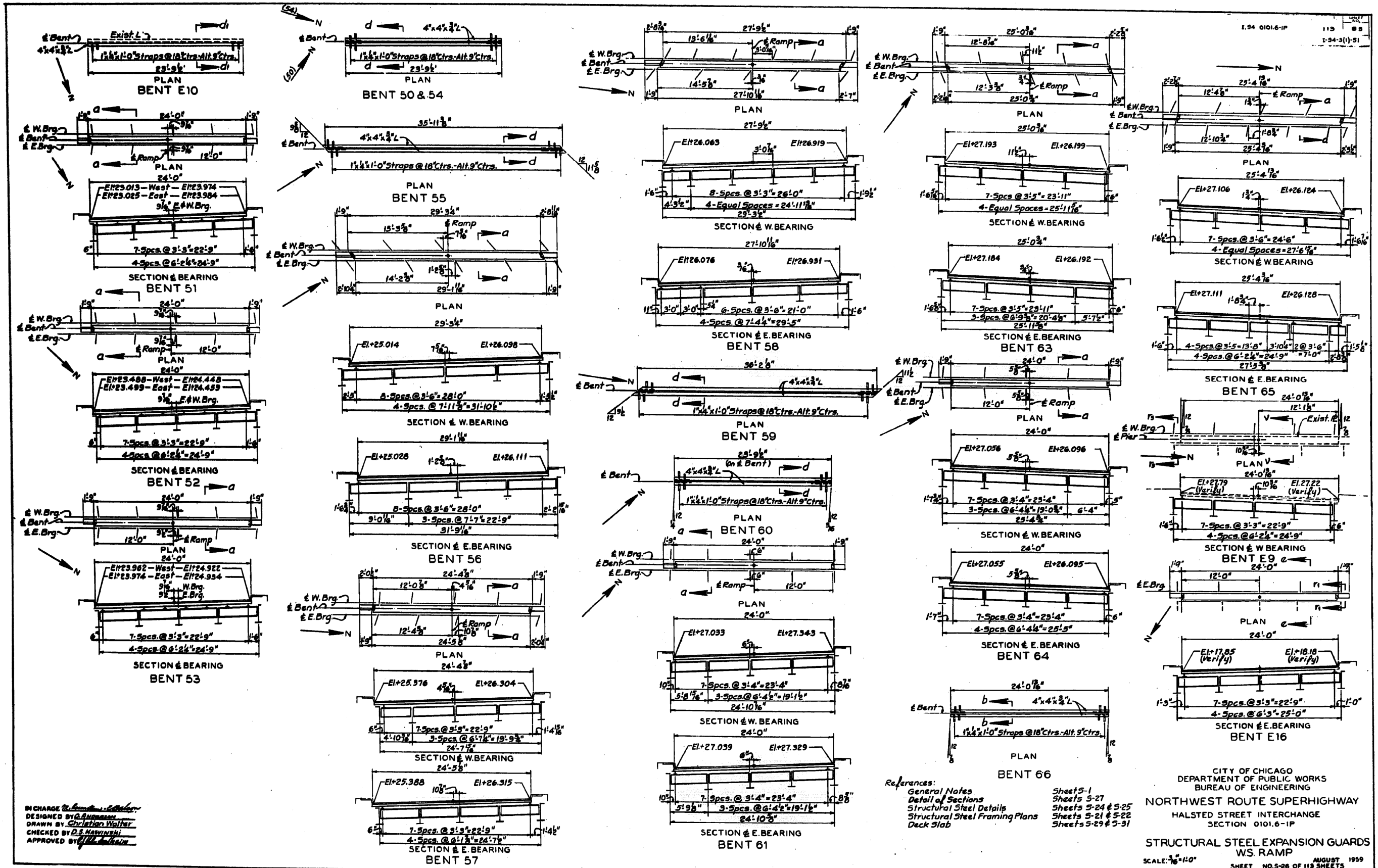


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IN CHARGE: *[Signature]*  
 DESIGNED BY: *[Signature]*  
 DRAWN BY: *[Signature]*  
 CHECKED BY: *[Signature]*  
 APPROVED BY: *[Signature]*

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 NORTHWEST ROUTE SUPERHIGHWAY  
 HALSTED STREET INTERCHANGE  
 SECTION 0101.6-1P  
 STRUCTURAL STEEL EXPANSION GUARDS  
 WS RAMP  
 SCALE: 3/8"=1'-0"  
 AUGUST 1959  
 SHEET NO. 5 OF 113 SHEETS

FILE PATH = C:\Projects\14-0425 - 60W28 StructBulbs\14-0425-60W28 StructBulbs\14-0425-60W28-AS-BUILT-31.dgn



D:\60W28-sht-AS-BUILT-31.dgn  
 USER NAME = ayeunguh  
 PLOT SCALE = 1:8000 / 1"  
 PLOT DATE = 4/25/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

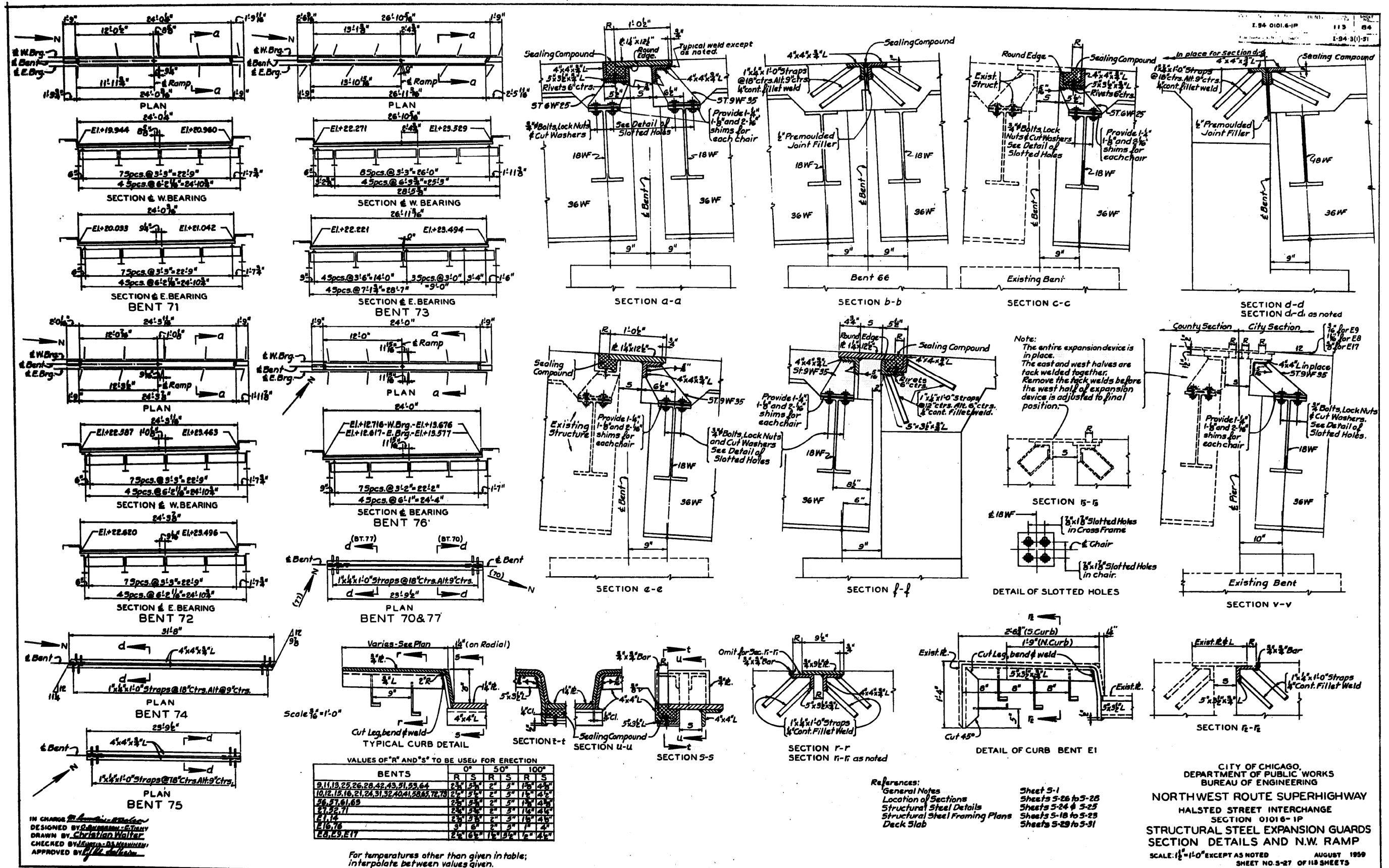
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS  
 SN 016-2449 & SN 016-2451

SCALE: NTS SHEET 31 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	501
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				

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FILE PATH = C:\Projects\14-0425 - 60W28-Structural\14-0425-60W28-Structural\AS-BUILT.rvt-32.dgn



D16W28-sht-AS-BUILT-32.dgn  
 USER NAME = auyeuongh  
 PLOT SCALE = 1:8000 / in.  
 PLOT DATE = 4/25/2014

DESIGNED -  
 DRAWN -  
 CHECKED -  
 DATE - 04/28/14

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

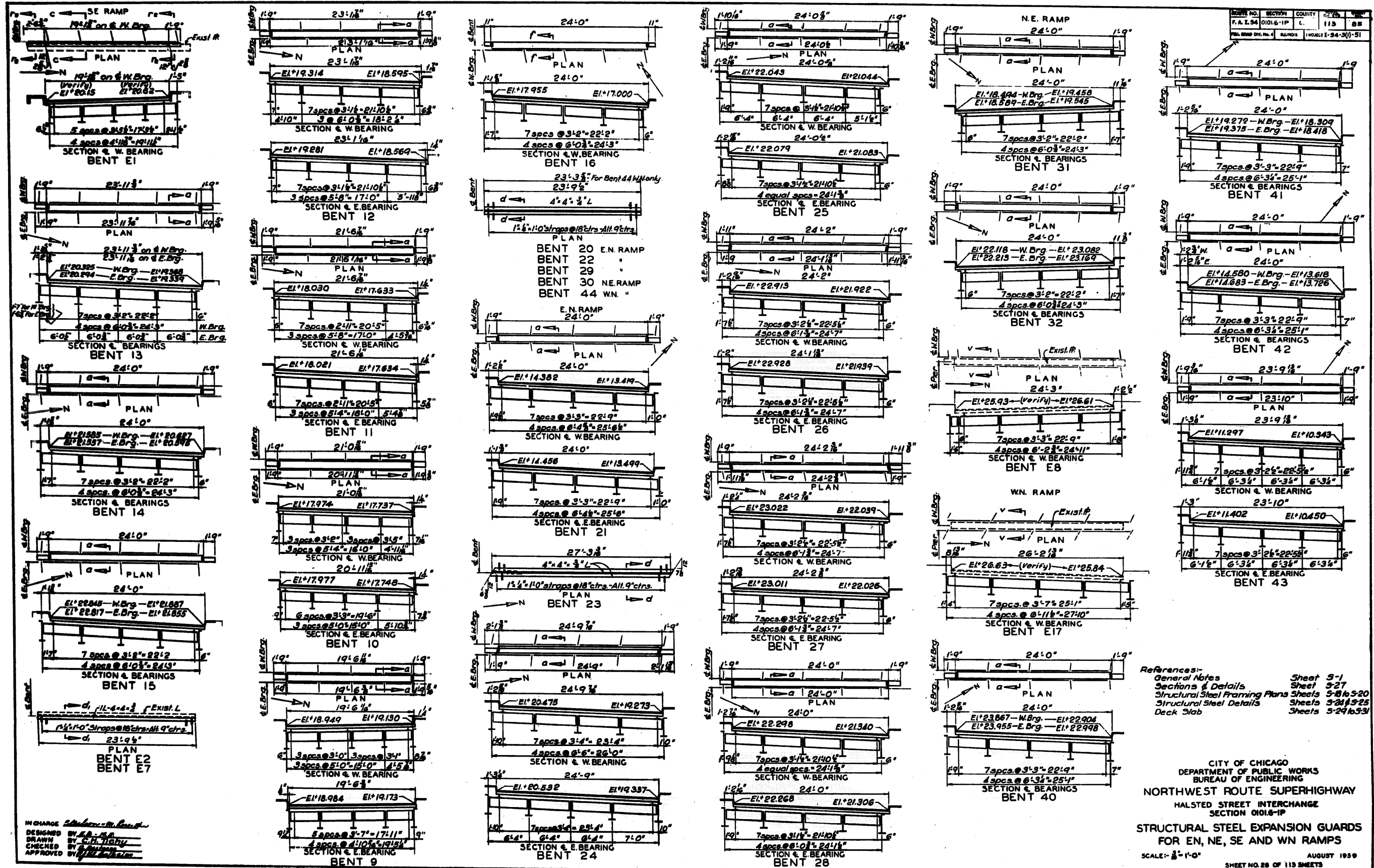
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS  
 SN 016-2449 & SN 016-2451

SCALE: NTS SHEET 32 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	502
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

FOR INFORMATION ONLY



ROUTE NO.	SECTION	COUNTY	POST MILE	SHEET NO.
F.A.I. 94	01016-1P	C.	113	08
SHEET NO. 28 OF 113 SHEETS				

References:-  
 General Notes Sheet 5-1  
 Sections & Details Sheet 5-27  
 Structural Steel Framing Plans Sheets 5-28 to 5-30  
 Structural Steel Details Sheets 5-31 to 5-35  
 Deck Slab Sheets 5-29 to 5-31

CITY OF CHICAGO  
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 NORTHWEST ROUTE SUPERHIGHWAY  
 HALSTED STREET INTERCHANGE  
 SECTION 01016-1P  
 STRUCTURAL STEEL EXPANSION GUARDS  
 FOR EN, NE, SE AND WN RAMP  
 SCALE: 1/4" = 1'-0"  
 AUGUST 1959  
 SHEET NO. 28 OF 113 SHEETS

FILE PATH = C:\Projects\14-0425 - 60W28-Structural\14-0425-60W28-Structural\AS-BUILT-33.dgn



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 PLOT SCALE = 1:8000 / in.  
 PLOT DATE = 4/25/2014

DESIGNED -  
 DRAWN -  
 CHECKED -  
 DATE - 04/28/14

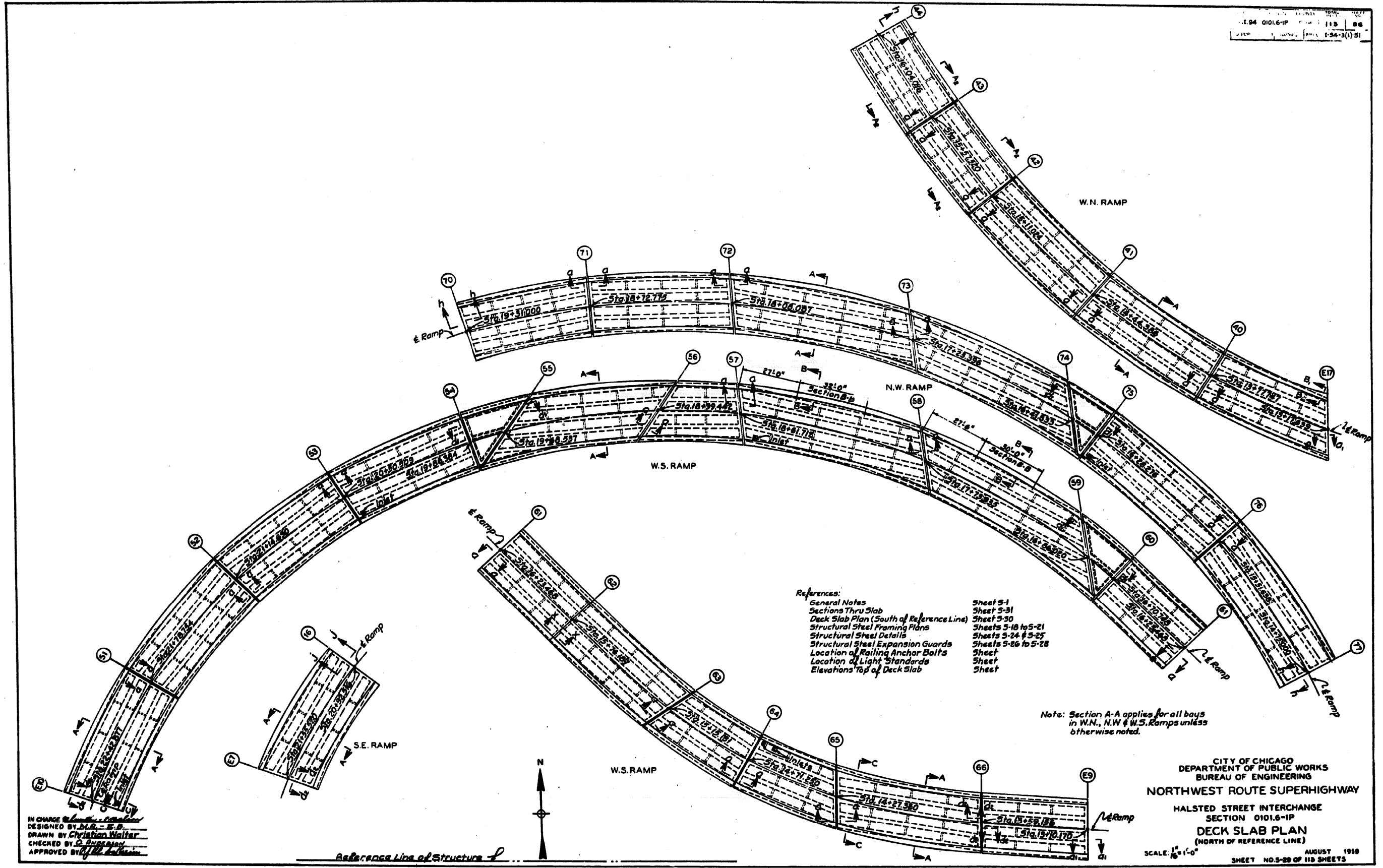
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS  
 SN 016-2449 & SN 016-2451  
 SCALE: NTS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	503
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				

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.I.94 0101.6-1P 113 86  
 I-94-3(1)-51



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 DESIGNED BY *[Signature]*  
 DRAWN BY Christian Walter  
 CHECKED BY *[Signature]*  
 APPROVED BY *[Signature]*

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 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
**NORTHWEST ROUTE SUPERHIGHWAY**  
 HALSTED STREET INTERCHANGE  
 SECTION 0101.6-1P  
**DECK SLAB PLAN**  
 (NORTH OF REFERENCE LINE)  
 SCALE: 1/8" = 1'-0"  
 SHEET NO. 5-29 OF 113 SHEETS  
 AUGUST 1959

FILE PATH = C:\Projects\14-0425 - 60W28 Structure\14-0425 - 60W28 Structure\14-0425 - 60W28 - sht-AS-BUILT-34.dgn



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 PLOT SCALE = 1:8000 / in.  
 PLOT DATE = 4/25/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

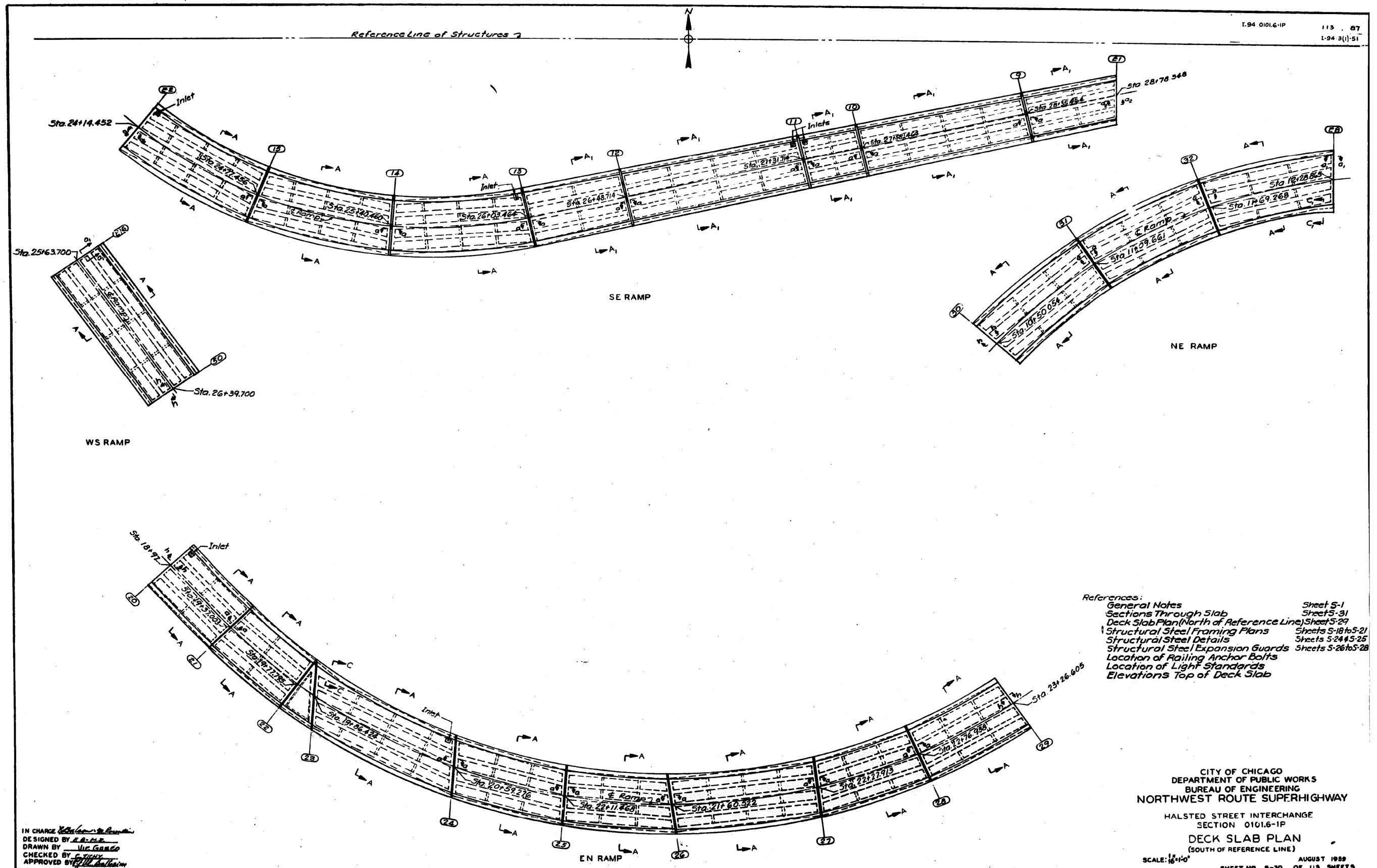
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS  
 SN 016-2449 & SN 016-2451  
 SCALE: NTS SHEET 34 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	504
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				

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I-94 0101.6-IP 113 07  
I-94 3(1)-51



- References:
- General Notes
  - Sections Through Slab
  - Deck Slab Plan (North of Reference Line)
  - Structural Steel Framing Plans
  - Structural Steel Details
  - Structural Steel Expansion Guards
  - Location of Railing Anchor Bolts
  - Location of Light Standards
  - Elevations Top of Deck Slab
- Sheet S-1  
Sheet S-31  
Sheet S-27  
Sheets S-18 to S-21  
Sheets S-24 & S-25  
Sheets S-26 to S-28

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DRAWN BY *[Signature]*  
CHECKED BY *[Signature]*  
APPROVED BY *[Signature]*

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
NORTHWEST ROUTE SUPERHIGHWAY  
HALSTED STREET INTERCHANGE  
SECTION 0101.6-IP  
DECK SLAB PLAN  
(SOUTH OF REFERENCE LINE)  
SCALE: 1/8"=1'-0"  
AUGUST 1989  
SHEET NO. S-30 OF 113 SHEETS

FILE PATH = C:\Project\use\14-0425 - 60W28 Struct\Buil\14-0425-60W28-sht-AS-BUILT-35.dgn



D160W28-sht-AS-BUILT-35.dgn  
USER NAME = auyeungh  
PLOT SCALE = 1:8000 / 1 in.  
PLOT DATE = 4/25/2014

DESIGNED -  
DRAWN -  
CHECKED -  
DATE - 04/28/14

REVISED -  
REVISED -  
REVISED -  
REVISED -

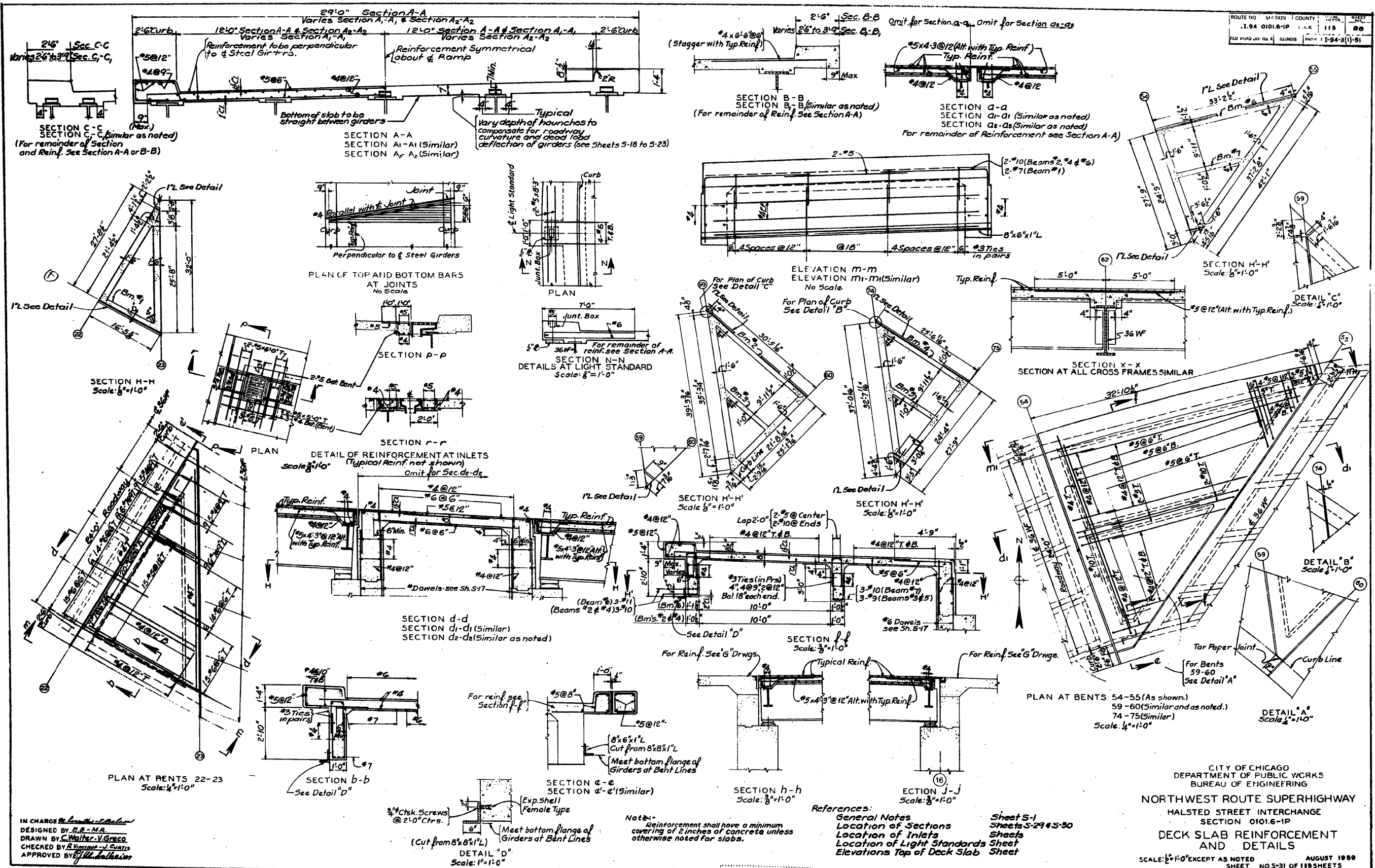
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS  
SN 016-2449 & SN 016-2451  
SCALE: NTS SHEET 35 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	505
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				

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ROUTE NO.	SECTION	COUNTY	DATE	SHEET NO.
1.94	0101.6-1P	ILLINOIS	115	88
FILED ROAD DIST. NO. 4				



IN CHARGE: *[Signature]*  
DESIGNED BY: E.B.M.A.  
DRAWN BY: C. Walter V. Greco  
CHECKED BY: J. J. Quinn  
APPROVED BY: *[Signature]*

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
NORTHWEST ROUTE SUPERHIGHWAY  
HALSTED STREET INTERCHANGE  
SECTION 0101.6-1P  
DECK SLAB REINFORCEMENT  
AND DETAILS  
SCALE: 1/2"=1'-0" EXCEPT AS NOTED  
AUGUST 1989  
SHEET NO. S-31 OF 119 SHEETS

FILE PATH = C:\Projects\114-0425 - 60W28 Structure\114-0425 - 60W28-AS-BUILT-36.dgn



D160W28-sht-AS-BUILT-36.dgn	DESIGNED -	REVISED -
USER NAME = auyeuongh	DRAWN -	REVISED -
PLOT SCALE = 1:80000 / in.	CHECKED -	REVISED -
PLOT DATE = 4/25/2014	DATE - 04/28/14	REVISED -

STATE OF ILLINOIS	EXISTING AS-BUILTS
DEPARTMENT OF TRANSPORTATION	SN 016-2449 & SN 016-2451

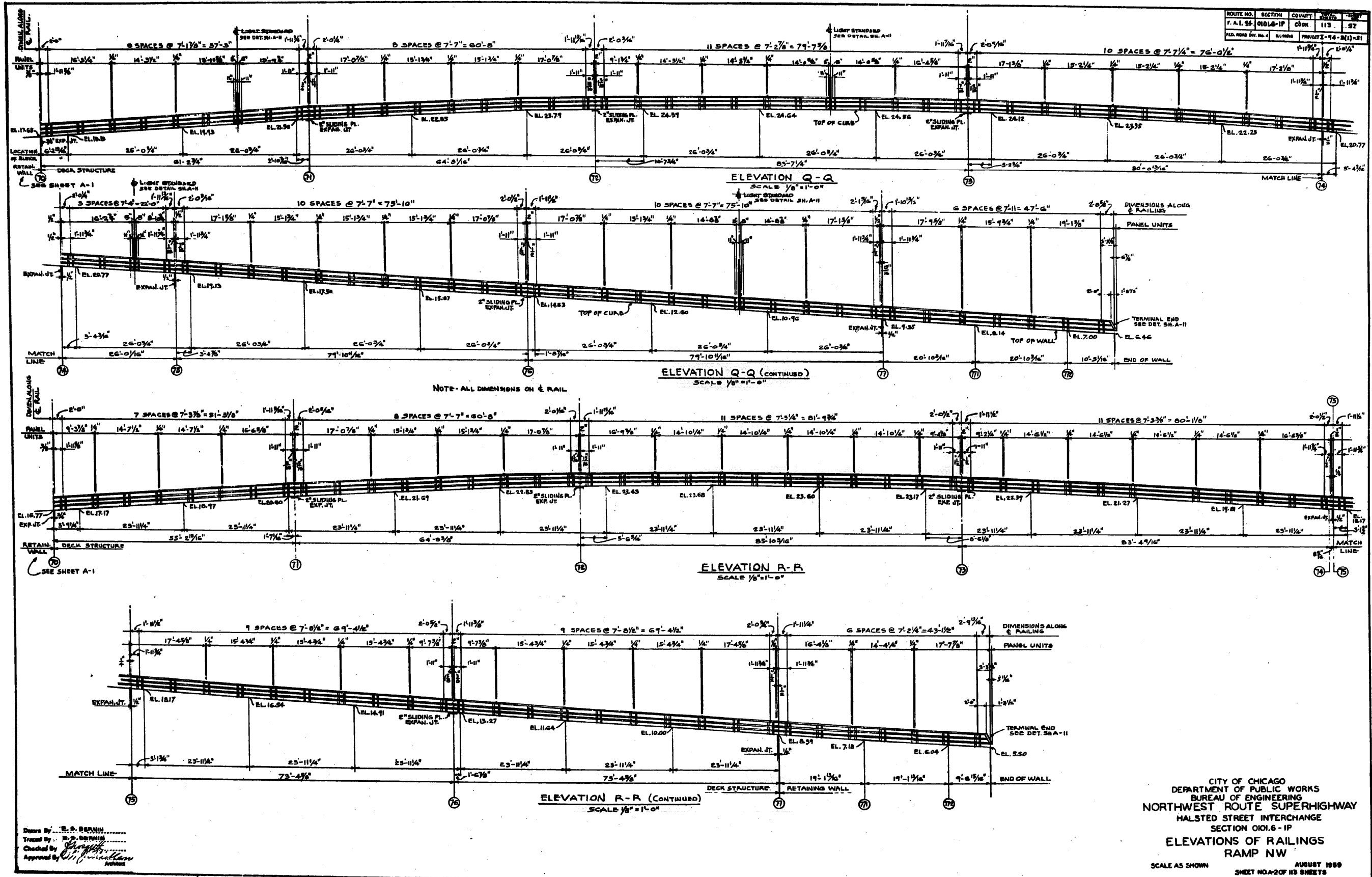
SCALE: NTS	SHEET 36 OF 48 SHEETS	STA. TO STA.
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	506
CONTRACT NO. 60W28				

ILLINOIS FED. AID PROJECT				
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 Traced By: E. S. BERNHARDT  
 Checked By: [Signature]  
 Approved By: [Signature]

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 NORTHWEST ROUTE SUPERHIGHWAY  
 HALSTED STREET INTERCHANGE  
 SECTION 0101.6-1P  
 ELEVATIONS OF RAILINGS  
 RAMP NW  
 SCALE AS SHOWN  
 AUGUST 1989  
 SHEET NO. 2 OF 3 SHEETS

FILE PATH = C:\Projects\14-0425 - 60W28 Structure\14-0425-60W28-struct-AS-BUILT-38.dgn



D160W28-struct-AS-BUILT-38.dgn  
 USER NAME = auyeeungh  
 PLOT SCALE = 1:8000 / 1" = 80'  
 PLOT DATE = 4/25/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS  
 SN 016-2449 & SN 016-2451

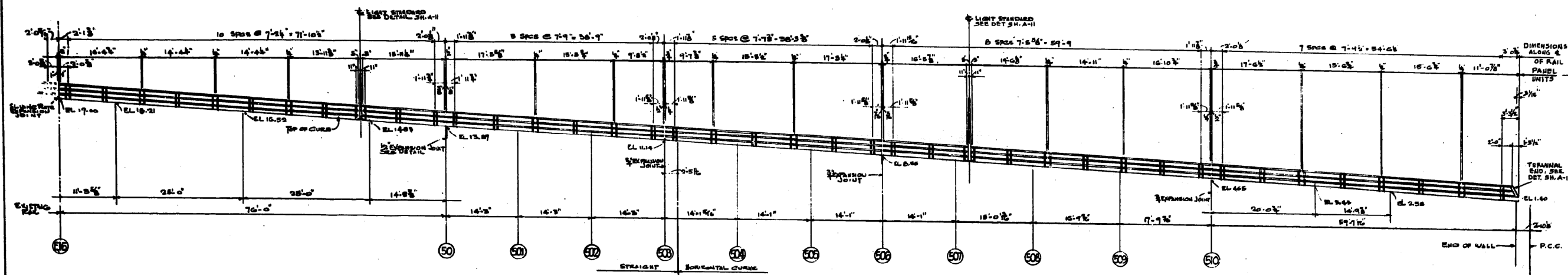
SCALE: NTS SHEET 38 OF 48 SHEETS STA. TO STA.

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 508
CONTRACT NO. 60W28				ILLINOIS FED. AID PROJECT



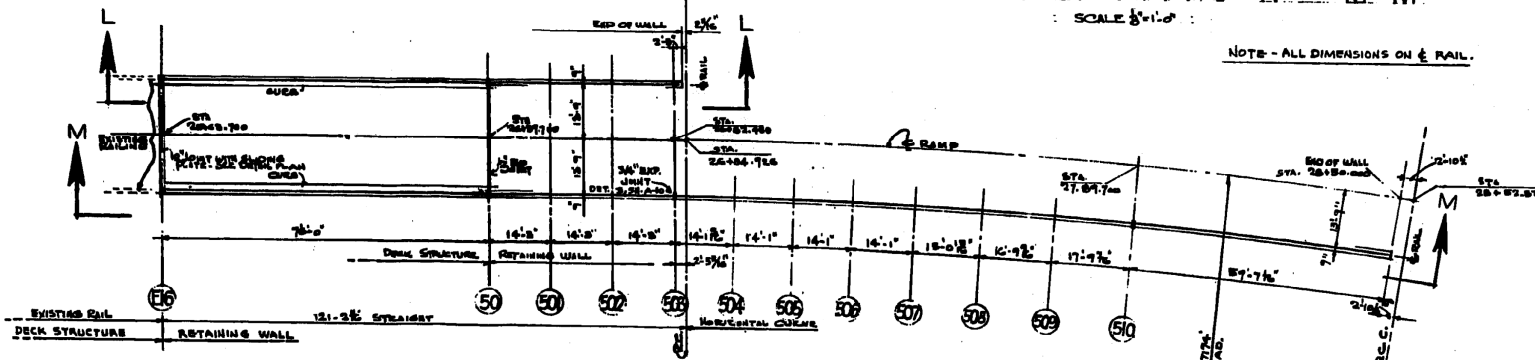
FOR INFORMATION ONLY

ROUTE NO.	SECTION	COUNTY	DATE	SHEET NO.
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PREPARED BY: J. LINDS PROJECT: 14-3(1)-31				

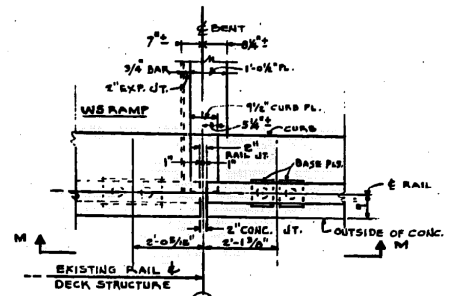


ELEVATION M-M  
SCALE 1/8"=1'-0"

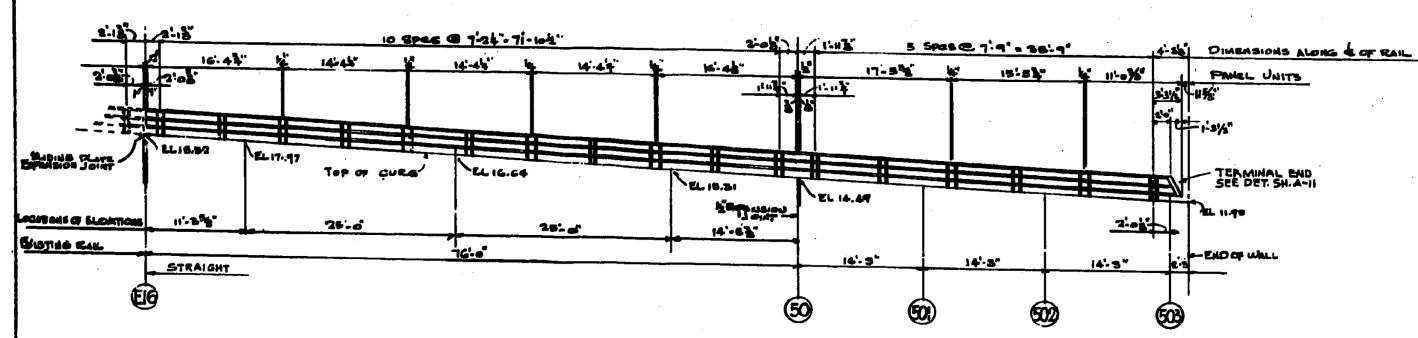
NOTE - ALL DIMENSIONS ON & RAIL.



PLAN OF WS RAMP

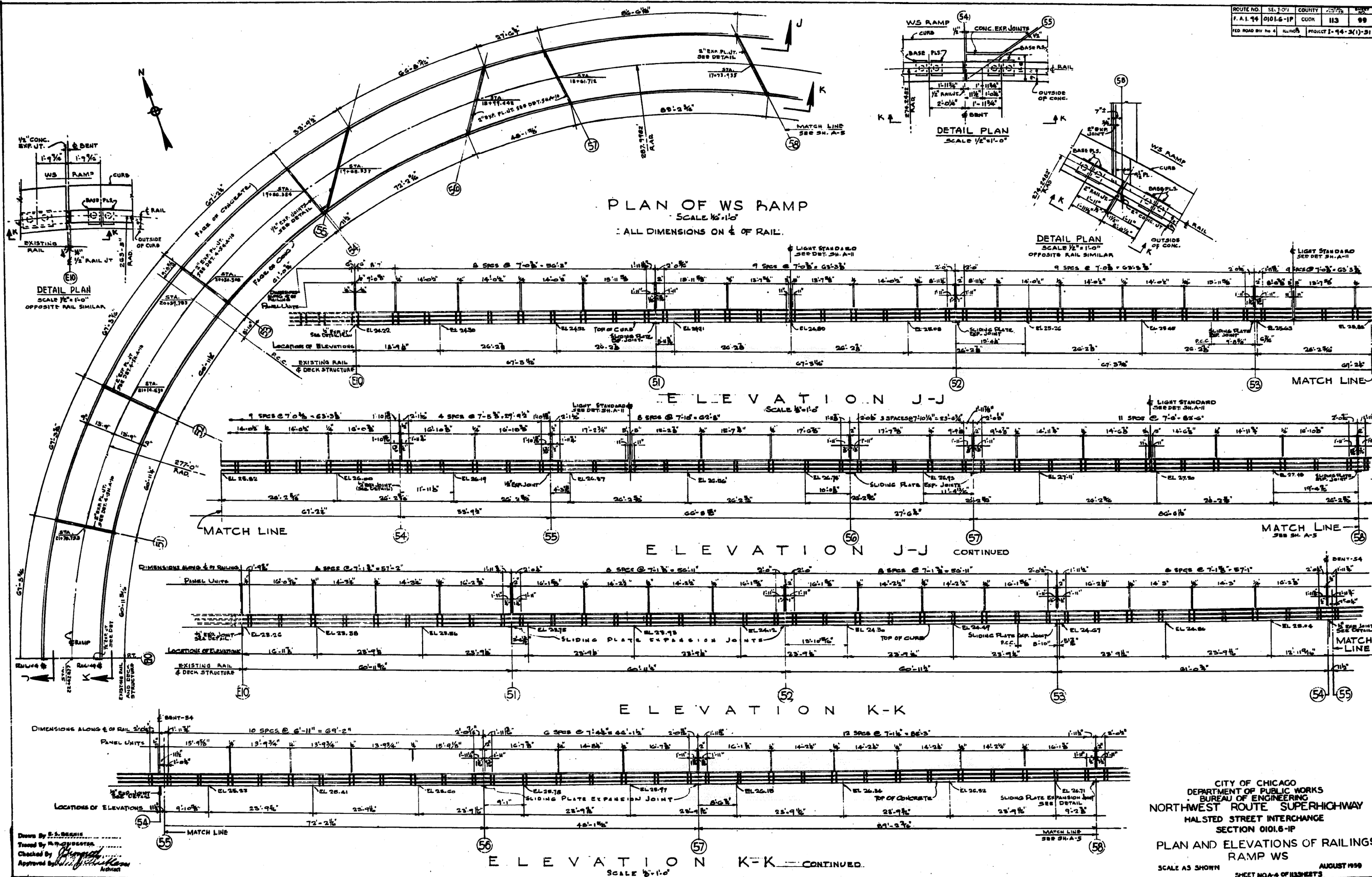


DETAIL PLAN (OPPOSITE RAIL SIMILAR)  
SCALE 1/2"=1'-0"



FOR INFORMATION ONLY

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 94	0101.6-1P	COOK	113	99
FED. ROAD BY No. 4		ILLINOIS	PROJECT 1-94-2(1)-31	



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 Approved by [Signature]

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 NORTHWEST ROUTE SUPERHIGHWAY  
 HALSTED STREET INTERCHANGE  
 SECTION 0101.6-1P  
 PLAN AND ELEVATIONS OF RAILINGS  
 RAMP WS  
 SCALE AS SHOWN  
 SHEET NO. 4 OF 113 SHEETS  
 AUGUST 1999

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D160W28-sht-AS-BUILT-40.dgn  
 USER NAME = auyeungh  
 PLOT SCALE = 1:8000 / 1/8"=1'-0"  
 PLOT DATE = 4/25/2014

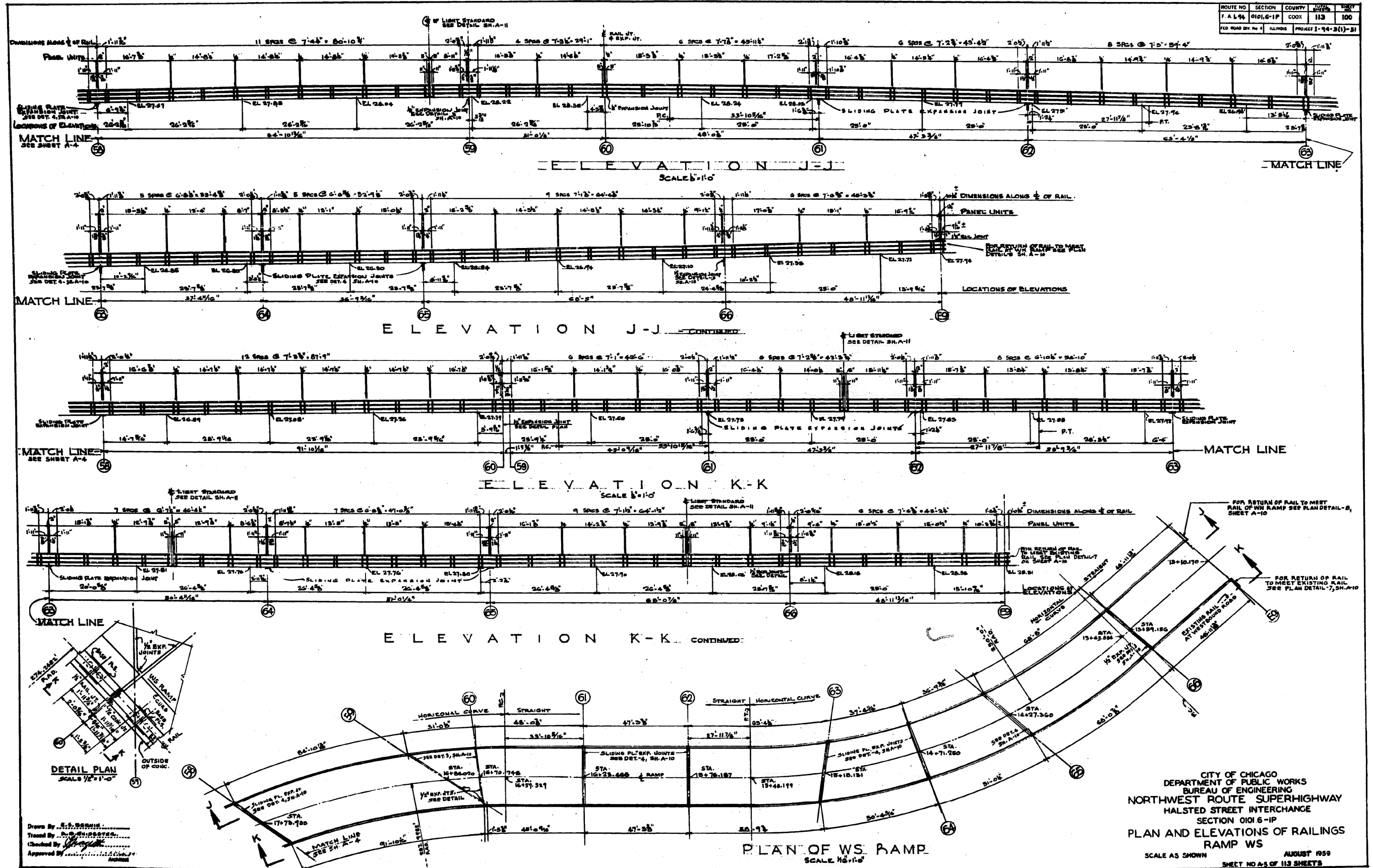
DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS  
 SN 016-2449 & SN 016-2451  
 SCALE: NTS  
 SHEET 40 OF 48 SHEETS  
 STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	510
CONTRACT NO. 60W28				ILLINOIS FED. AID PROJECT

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ROUTE NO.	SECTION	COUNTY	TOWN	SHEET
F. A. L. 94	0101-6-1P	COOK	113	100
FED. ROAD BY No. 4		ILLINOIS		PROJECT 1-94-3(1)-31

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
NORTHWEST ROUTE SUPERHIGHWAY  
HALSTED STREET INTERCHANGE  
SECTION 0101-6-1P  
PLAN AND ELEVATIONS OF RAILINGS  
RAMP WS  
SCALE AS SHOWN  
AUGUST 1959  
SHEET NO. 45 OF 113 SHEETS

Drawn By: S.S. BROWN  
Traced By: S.S. BROWN  
Checked By: S.S. BROWN  
Approved By: S.S. BROWN

FILE PATH = C:\Projects\14-0425 - 60W28 Structure\14-0425-sht-AS-BUILT-41.dgn



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USER NAME = ayejeungh  
PLOT SCALE = 1.0000 / in.  
PLOT DATE = 4/25/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

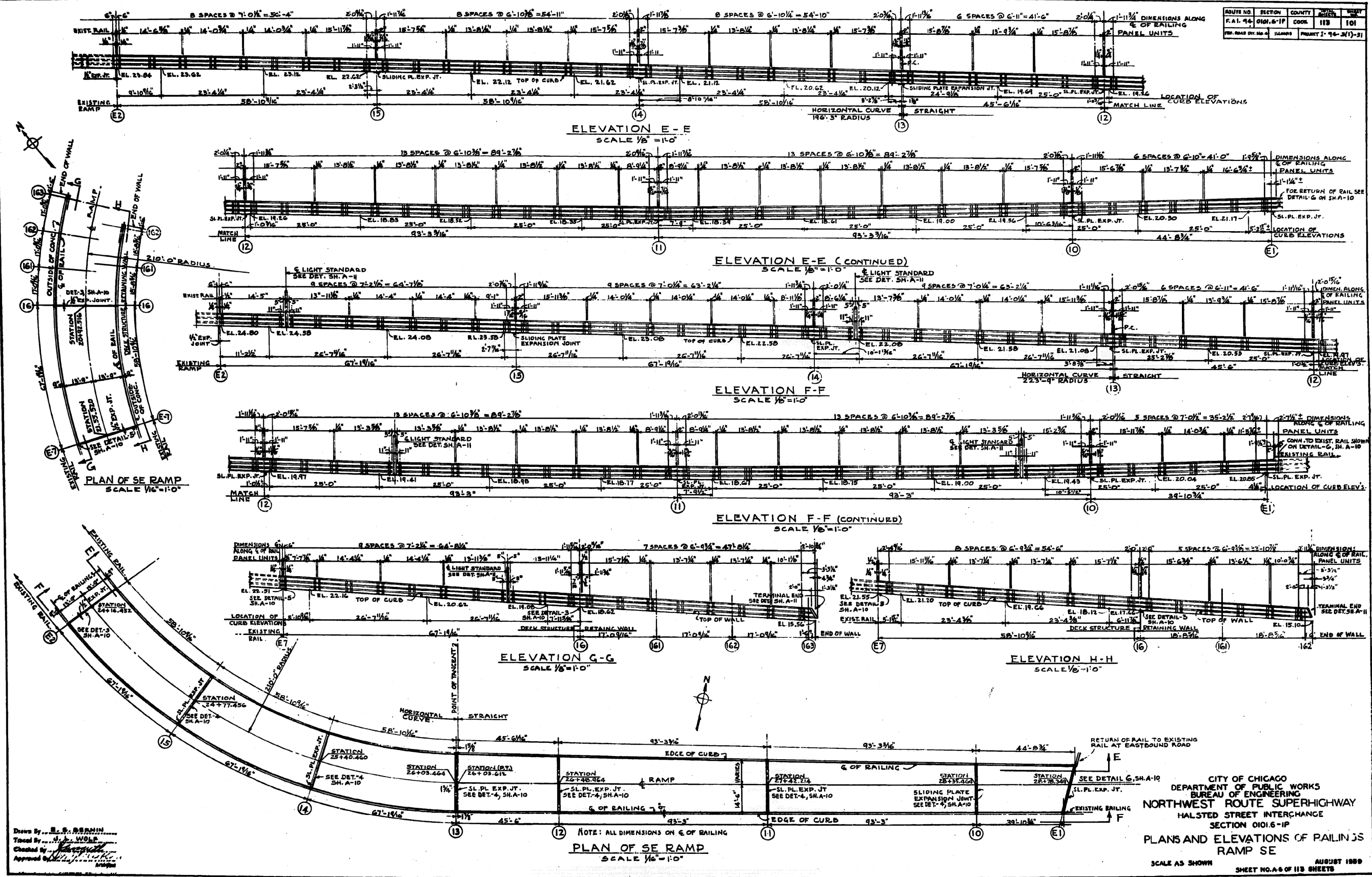
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS  
SN 016-2449 & SN 016-2451

SCALE: NTS SHEET 41 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	511
				CONTRACT NO. 60W28
ILLINOIS FED. AID PROJECT				

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Drawn By: E.S. BERNIN  
 Traced By: J. W. W. W.  
 Checked By: [Signature]  
 Approved By: [Signature]

NOTE: ALL DIMENSIONS ON  $\epsilon$  OF RAILING  
**PLAN OF SE RAMP**  
 SCALE 1/8" = 1'-0"

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 NORTHWEST ROUTE SUPERHIGHWAY  
 HALSTED STREET INTERCHANGE  
 SECTION 0101.6-1P  
**PLANS AND ELEVATIONS OF RAILINGS**  
 RAMP SE  
 SCALE AS SHOWN  
 AUGUST 1989  
 SHEET NO. 6 OF 118 SHEETS

FILE PATH = C:\Project\14-0425 - 60W28 Struct\Builts\DI60W28-sht-AS-BUILT-42.dgn



DI60W28-sht-AS-BUILT-42.dgn  
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 PLOT SCALE = 1:8000 / in.  
 PLOT DATE = 4/25/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

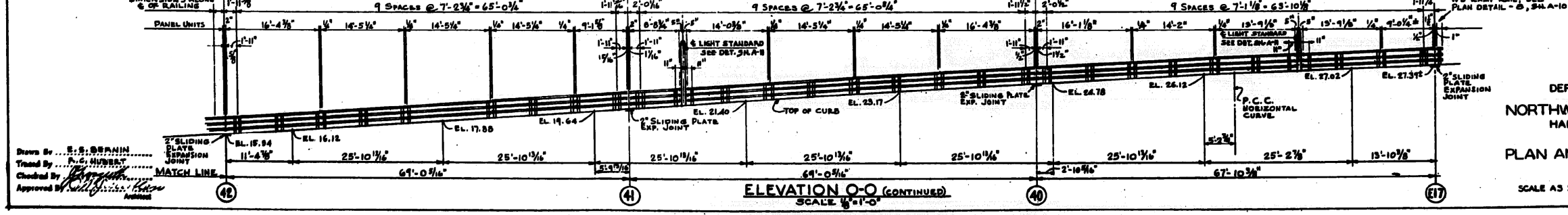
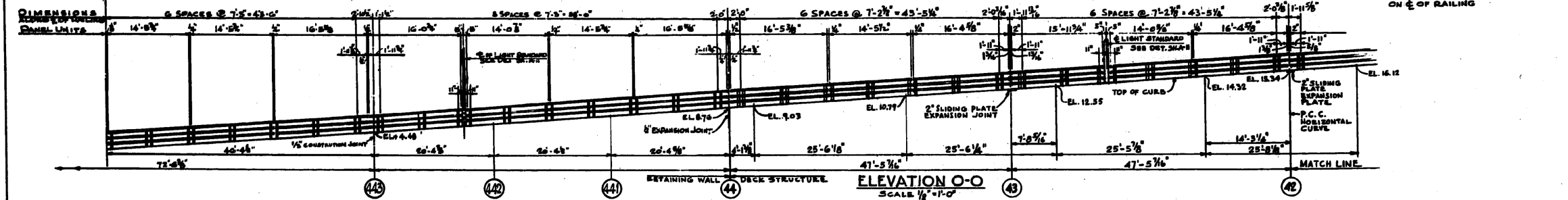
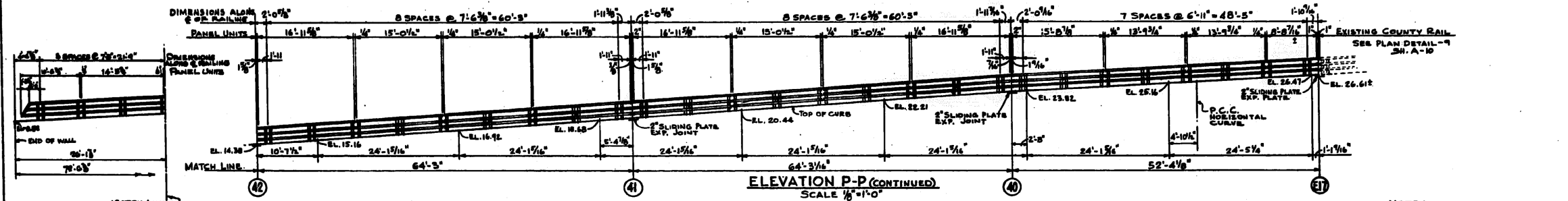
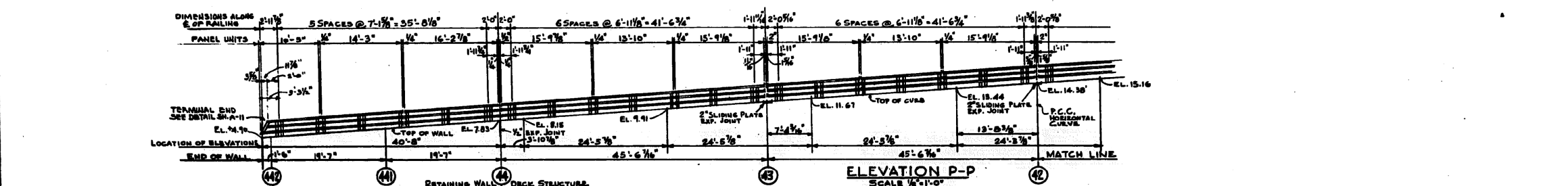
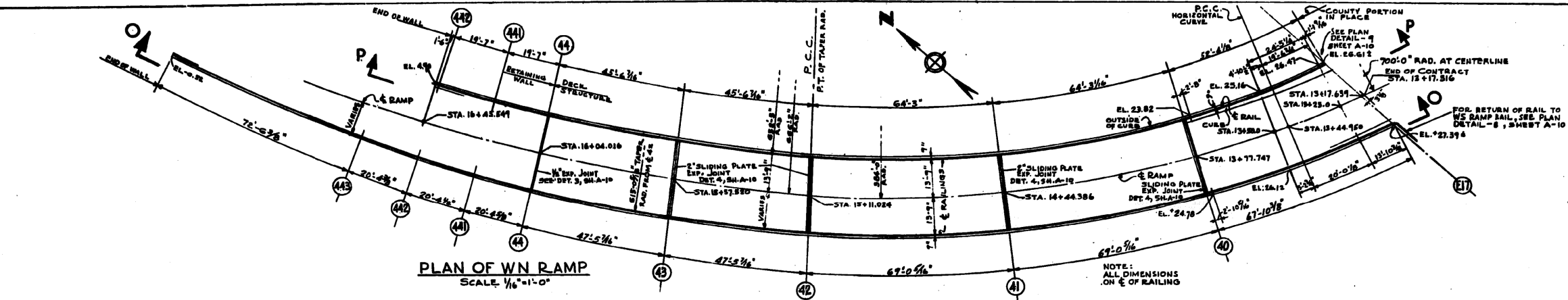
EXISTING AS-BUILTS  
 SN 016-2449 & SN 016-2451

SCALE: NTS SHEET 42 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	512
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	010.6-1P	COOK	113	108
FED. ROAD DIST. NO. 4	ILLINOIS	PROJECT I-94-3(1)-51		



Drawn By: E.S. BERLIN  
 Traced By: P.C. HUBERT  
 Checked By: [Signature]  
 Approved By: [Signature]

NOTE: ALL DIMENSIONS ON  $\bar{C}$  OF RAILING

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 NORTHWEST ROUTE SUPERHIGHWAY  
 HALSTED STREET INTERCHANGE  
 SECTION 010.6-1P  
**PLAN AND ELEVATIONS OF RAILINGS RAMP WN**

SCALE AS SHOWN  
 SHEET NO. 17 OF 113 SHEETS  
 AUGUST 1989

FILE PATH = C:\Projects\11-0425 - 60W28 Structure\11-0425-AS-BUILT-43.dgn



D160W28-sht-AS-BUILT-43.dgn  
 USER NAME = ayeungh  
 PLOT SCALE = 1:8000 / 1"  
 PLOT DATE = 4/25/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

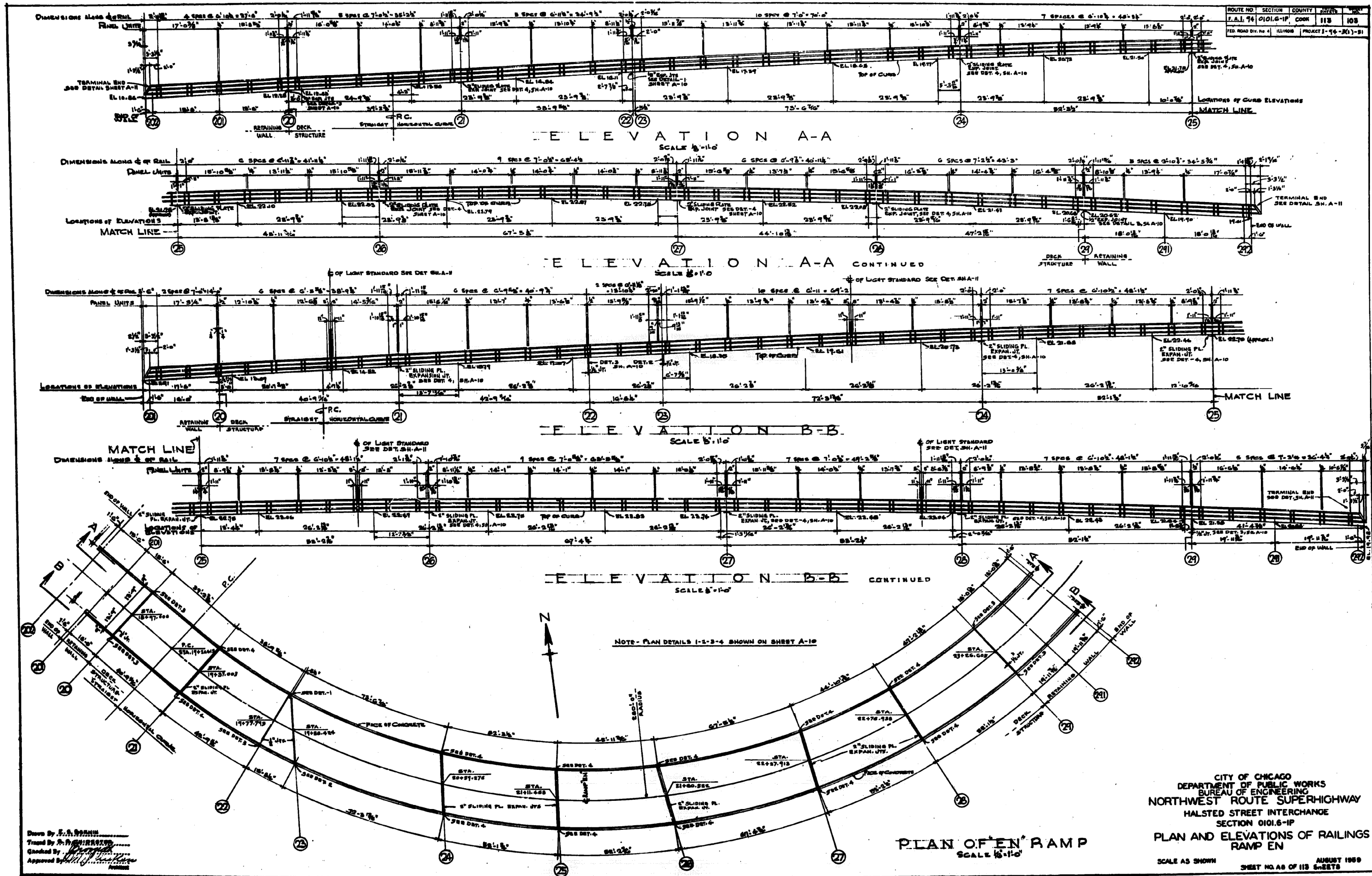
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS  
 SN 016-2449 & SN 016-2451

SCALE: NTS  
 SHEET 43 OF 48 SHEETS  
 STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	513
				CONTRACT NO. 60W28
ILLINOIS FED. AID PROJECT				

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Drawn By: F.S. STERN  
 Traced By: J. J. HARRIS  
 Checked By: J. J. HARRIS  
 Approved By: J. J. HARRIS

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 NORTHWEST ROUTE SUPERHIGHWAY  
 HALSTED STREET INTERCHANGE  
 SECTION 0101.6-1P  
**PLAN AND ELEVATIONS OF RAILINGS  
 RAMP EN**  
 SCALE AS SHOWN SHEET NO. 48 OF 118 SHEETS AUGUST 1989

FILE PATH = C:\Projects\14-0425 - 60W28-Structure\Builts\DI60W28-sht-AS-BUILT-44.dgn



DI60W28-sht-AS-BUILT-44.dgn  
 USER NAME = ayeungh  
 PLOT SCALE = 1.0000 / in.  
 PLOT DATE = 4/25/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

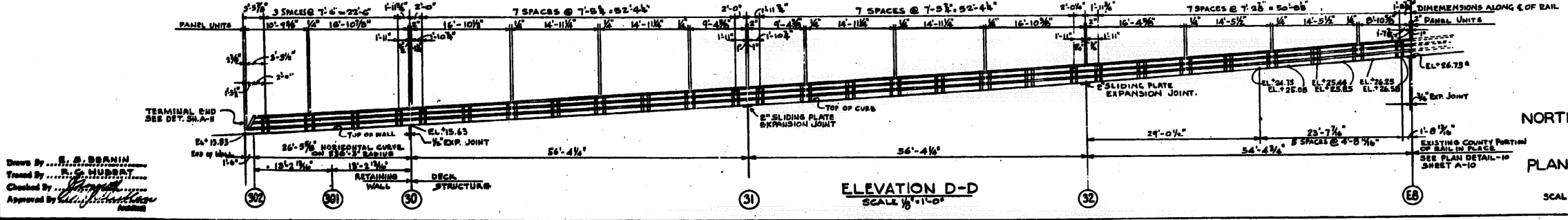
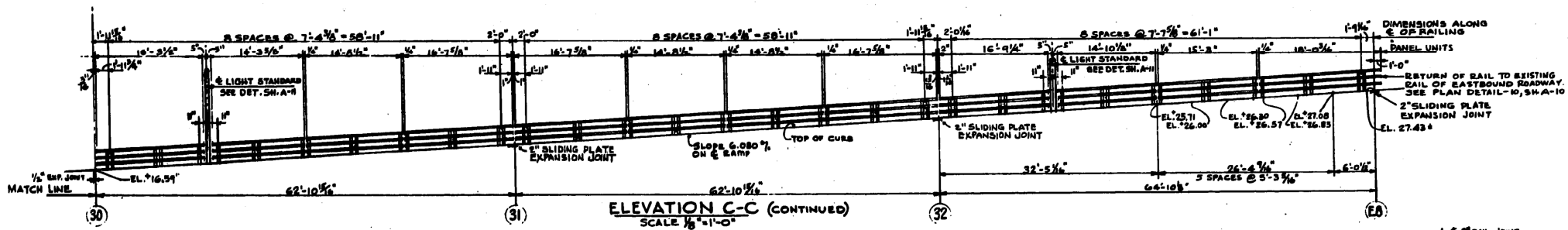
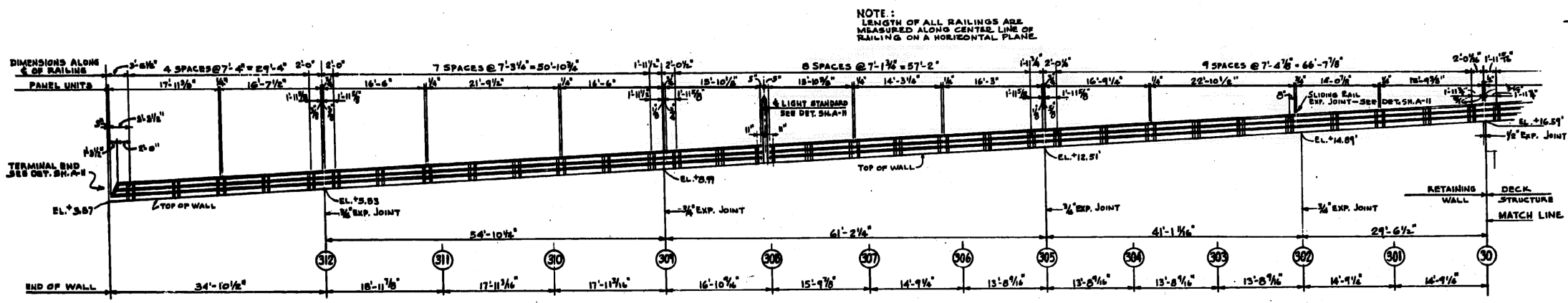
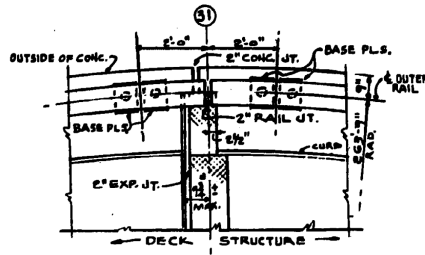
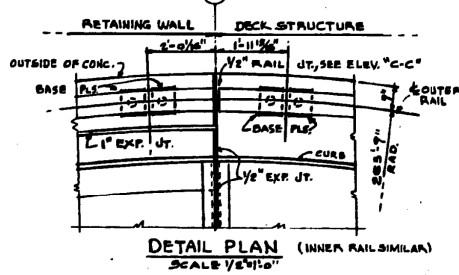
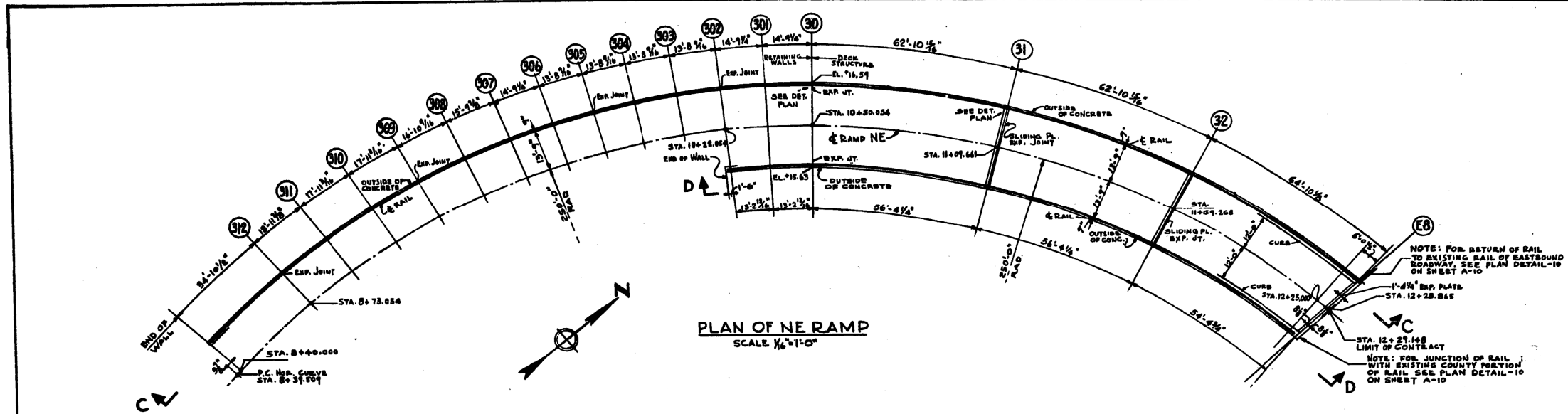
EXISTING AS-BUILTS  
 SN 016-2449 & SN 016-2451

SCALE: NTS SHEET 44 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	514
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY

ROUTE NO.	SECTION	COUNTY	DATE	NO.
F.A.I. 94	0101.6-1P	COOK	118	104
FED. ROAD DIST. No. 4		MAJOR PROJECT	I-94-2(1)-21	



CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
NORTHWEST ROUTE SUPERHIGHWAY  
HALSTED STREET INTERCHANGE  
SECTION 0101.6-1P  
PLAN AND ELEVATIONS OF RAILINGS  
RAMP NE  
SCALE AS SHOWN  
AUGUST 1999  
SHEET NO. A-9 OF 118 SHEETS

Drawn By: R. S. BEANIN  
Treed By: R. S. HUBBART  
Checked By: [Signature]  
Approved By: [Signature]

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PLOT DATE = 4/25/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

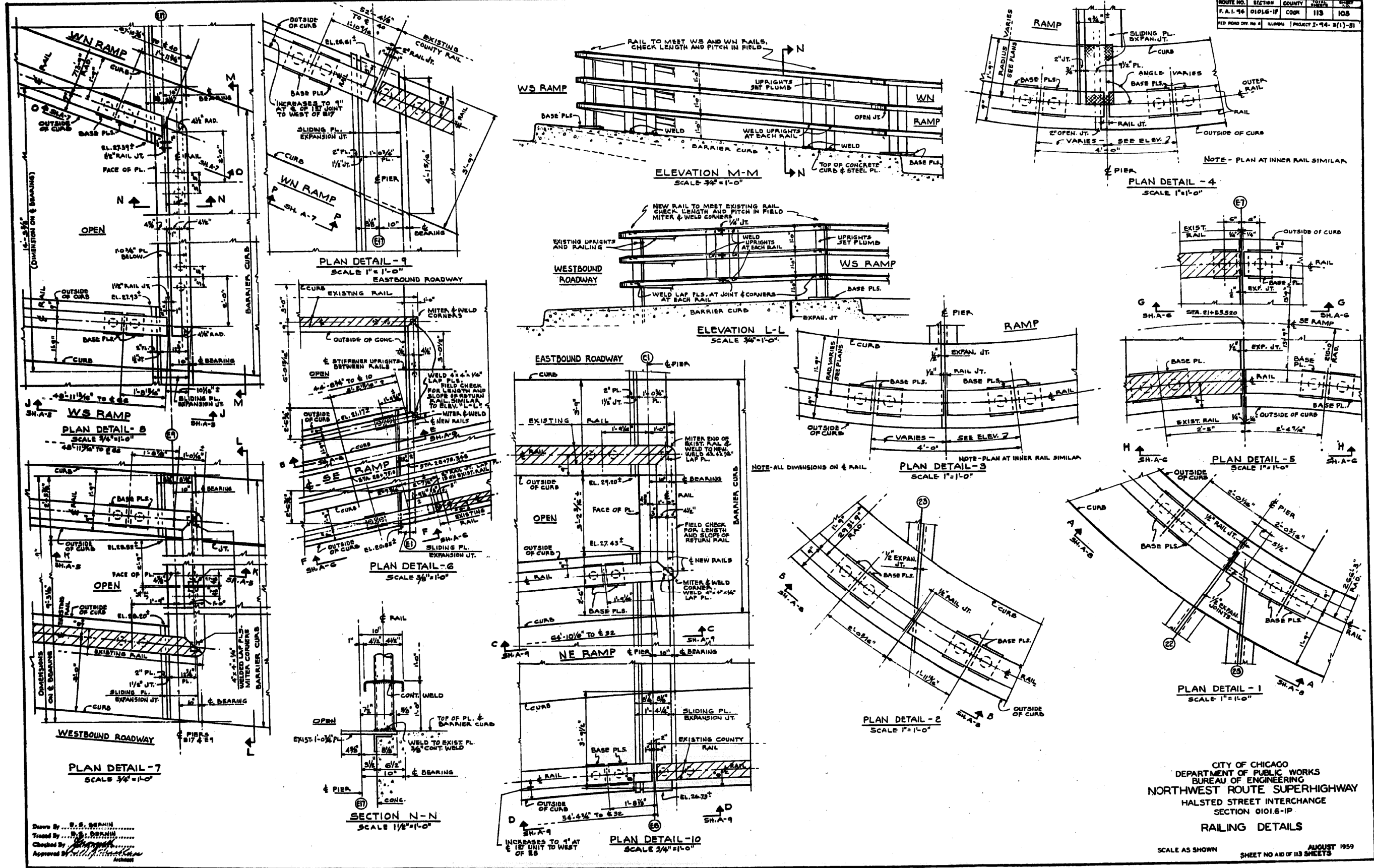
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS SN 016-2449 & SN 016-2451
SCALE: NTS
SHEET 45 OF 48 SHEETS
STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	515
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				

# FOR INFORMATION ONLY

ROUTE NO.	SECTION	COUNTY	SHEET	TOTAL
F.A.I. 94	0101.6-IP	COOK	113	108
FED ROAD DIST NO. 4	ILLINOIS	PROJECT I-94-S(1)-81		



Drawn By: S.S. BERANIN  
 Traced By: S.S. BERANIN  
 Checked By: S.S. BERANIN  
 Approved By: S.S. BERANIN

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 NORTHWEST ROUTE SUPERHIGHWAY  
 HALSTED STREET INTERCHANGE  
 SECTION 0101.6-IP  
**RAILING DETAILS**  
 SCALE AS SHOWN  
 AUGUST 1959  
 SHEET NO. 46 OF 48 SHEETS

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 PLOT DATE = 4/25/2014

DESIGNED	REVISED
DRAWN	REVISED
CHECKED	REVISED
DATE	REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

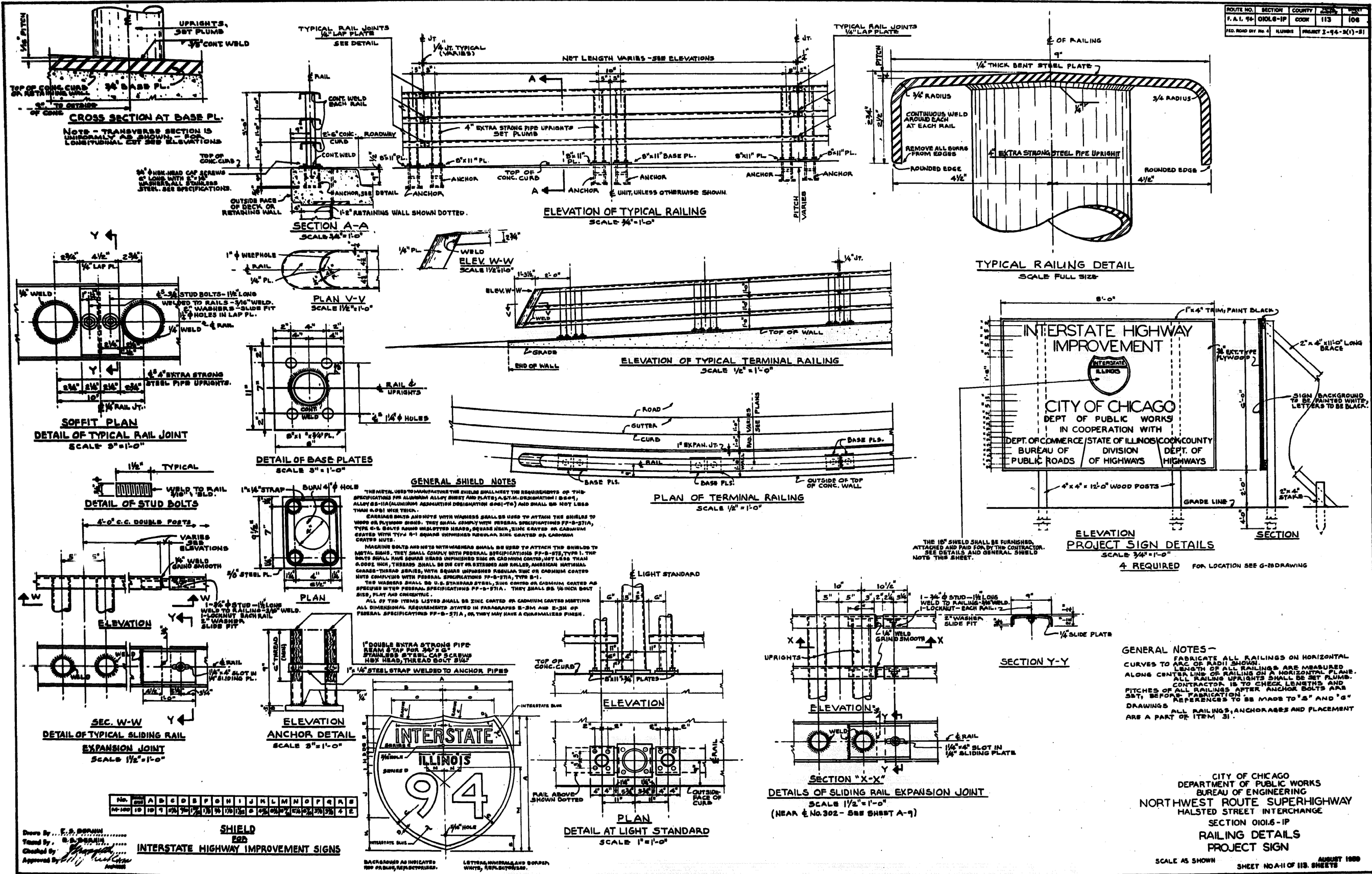
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 SN 016-2449 & SN 016-2451  
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 SHEET 46 OF 48 SHEETS  
 STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	516
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				



FOR INFORMATION ONLY

ROUTE NO.	SECTION	COUNTY	SHEET	TOTAL
F.A.I. 90-01016-1P	01016-1P	COOK	113	108
FED. ROAD DIST. NO. 4	NUMBER	PROJECT	3-94-3(1)-81	



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DESIGNED BY: F. S. BROWN  
DRAWN BY: S. J. BROWN  
CHECKED BY: S. J. BROWN  
APPROVED BY: S. J. BROWN

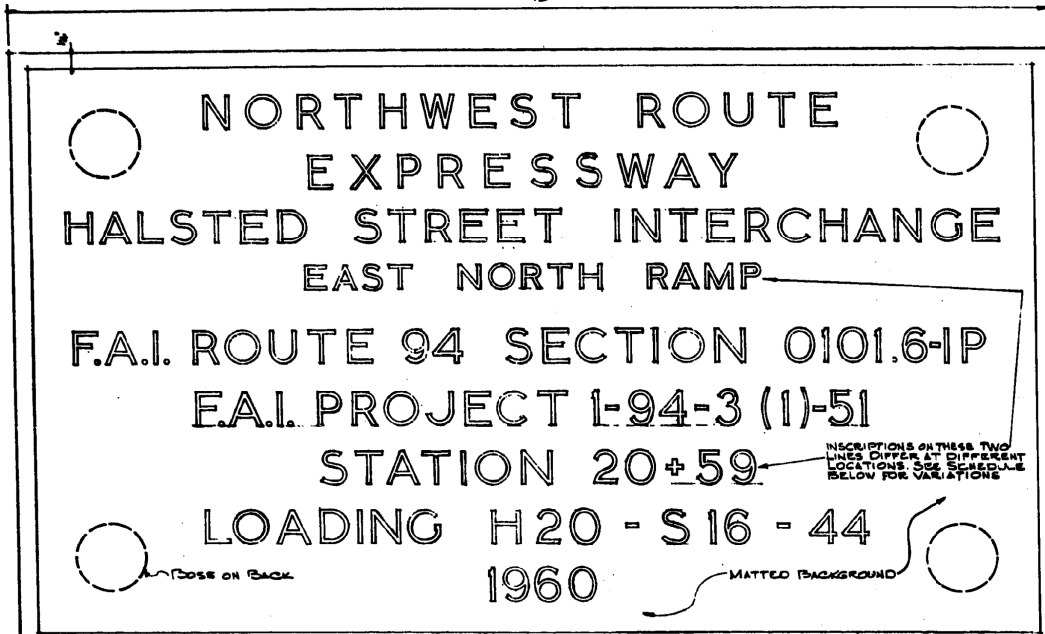
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DRAWN	REVISION	
CHECKED	REVISION	
DATE	REVISION	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS  
SN 016-2449 & SN 016-2451  
SCALE: NTS SHEET 47 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	517
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY



NAME PLATE N-1 18" 0 REQUIRED

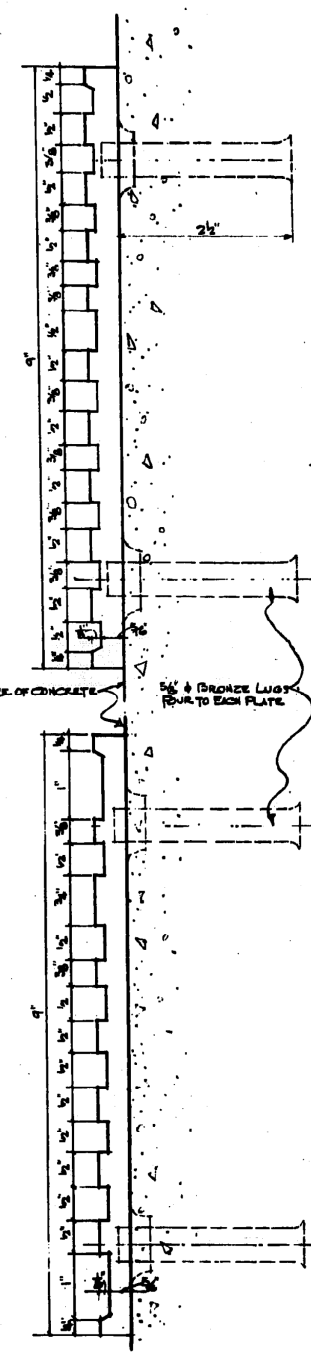


NAME PLATE N-2 FULL SCALE 0 REQUIRED

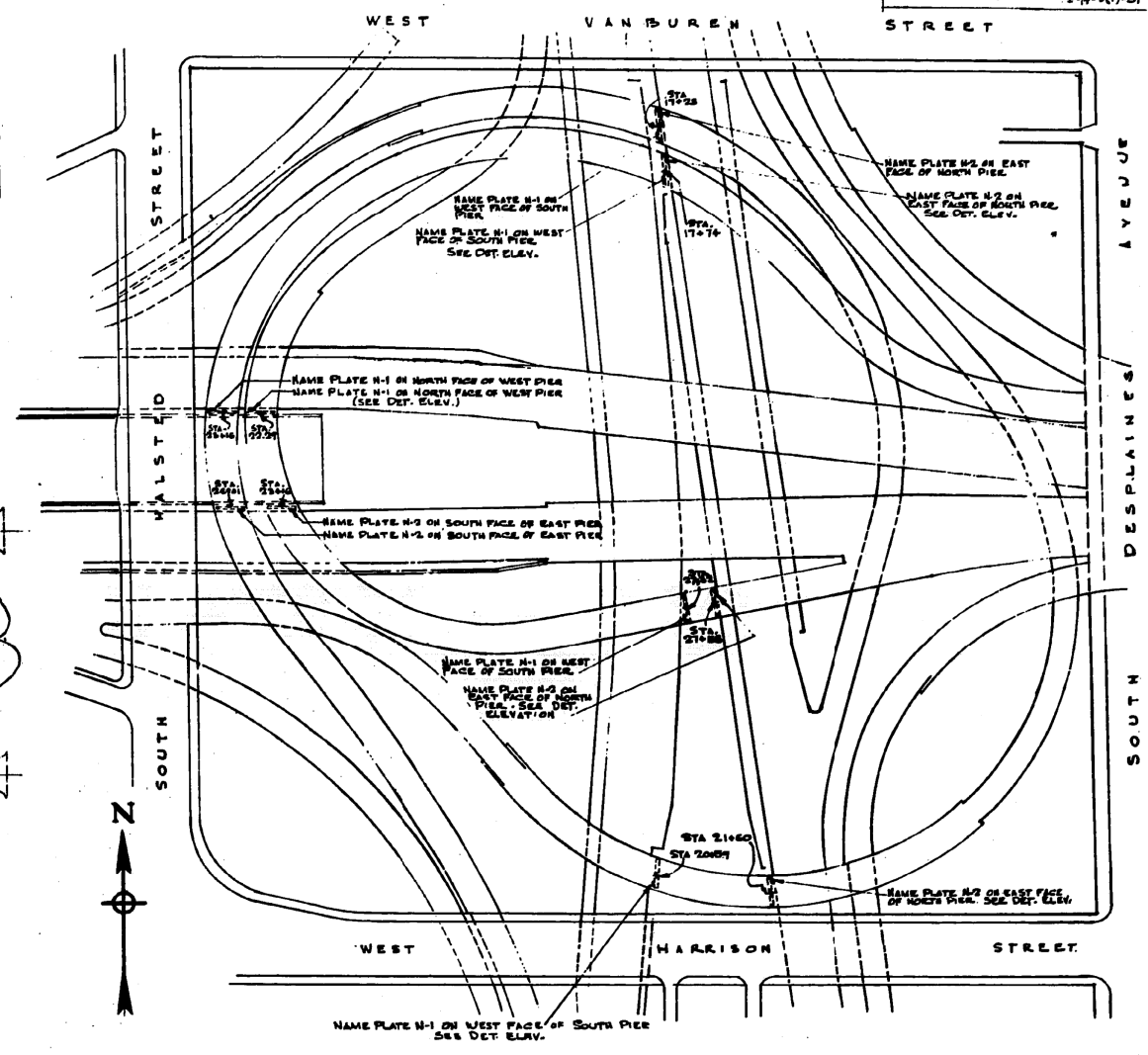
SCHEDULE OF INSCRIPTION VARIATIONS ON N-1 PLATES.

LOCATION (STA. OF BORN)	INSCRIPTION VARIATION TO BE -	ON RAMP
STA. 23+16	WEST SOUTH RAMP	W.S. RAMP
STA. 17+74	WEST SOUTH RAMP	W.S. RAMP
STA. 22+24	SOUTH EAST RAMP	S. E. RAMP
STA. 27+92	SOUTH EAST RAMP	S. E. RAMP
STA. 17+25	NORTH WEST RAMP	N.W. RAMP

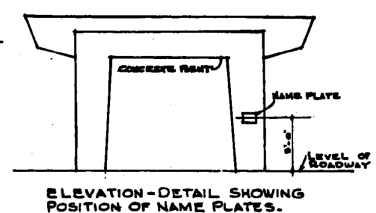
Drawn By: R. S. CHRISTENSEN  
 Traced By: M. J. ROBERTSON  
 Checked By: [Signature]  
 Approved By: [Signature]



SECTIONS



LOCATION PLAN FOR NAME PLATES



ELEVATION-DETAIL SHOWING POSITION OF NAME PLATES.

NOTES -  
 NAME PLATES SHALL BE BEST QUALITY BRASS OR BRONZE. BORDER, FIGURES AND LETTERS SHALL BE RAISED BY SQUARE CUT AND NOT TAPERED. POLISH TOP SURFACE TO A SATIN FINISH. BACKGROUND SHALL HAVE A MATTED FINISH, BLACK LACQUERED AND CLEAR LACQUERED OVERALL. CAST FOUR BRASS STUDS ON BACK OR SCREW FOUR ANCHOR BOLTS INTO BOLTS FOR MOUNTING. SEE SPEC. FOR METHOD OF MOUNTING. LOCATION AND INSCRIPTIONS OF ALL PLATES ARE NOT FINAL AND ARE SUBJECT TO CHANGES UNTIL SHOP DRAWINGS ARE APPROVED.  
 ALL WORK ON THIS SHEET IS A PART OF ITEM #2.

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 NORTHWEST ROUTE SUPERHIGHWAY  
 HALSTED STREET INTERCHANGE  
 SECTION 0101.6-1P  
 NAME PLATES

SCALE AS SHOWN AUGUST 1989 SHEET NO. A-48 OF 113 SHEETS

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 PLOT DATE = 4/25/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS  
 SN 016-2449 & SN 016-2451

SCALE: NTS SHEET 48 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	518
CONTRACT NO. 60W28				

ILLINOIS FED. AID PROJECT

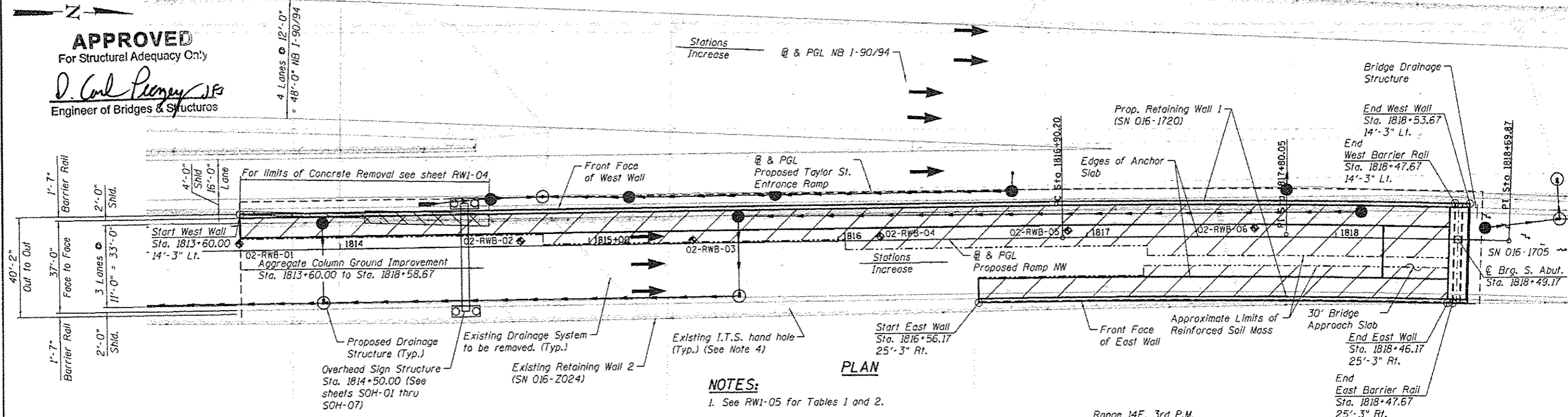
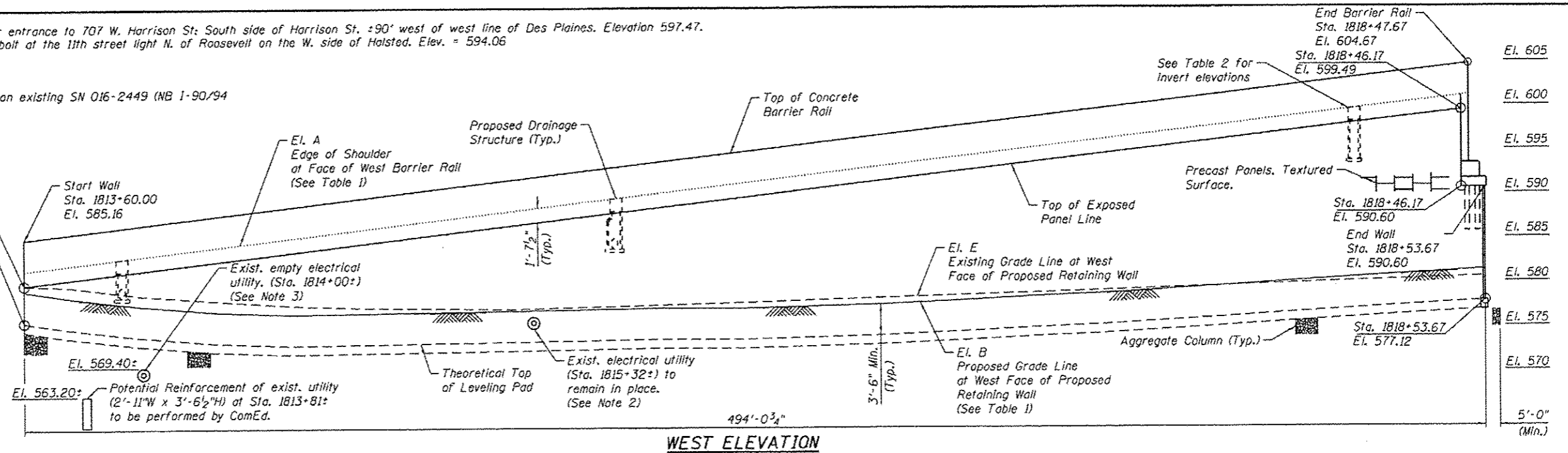
Bench Mark: Cut square at center of door entrance to 707 W. Harrison St; South side of Harrison St, ±90° west of west line of Des Plaines. Elevation 597.47.  
 A "1" cut in the SE anchor bolt at the 13th street light N. of Roosevelt on the W. side of Halsted. Elev. = 594.06

Existing Structure: None.

Traffic Control: Traffic to be maintained on existing SN 016-2449 (NB I-90/94 to WB I-290) during construction.



BRAD M. RADOVICH  
 LICENSE EXPIRES 11/30/2014  
 DATE 04/28/2014



**LEGEND:**

Combined Sewer	←←←←←	Gas Line	—G—	Limits of Soil Reinforcement	▨▨▨▨
Electric	—E—	Fire Hydrant	○	Limits of Ground Improvement	▨▨▨▨
Fiber Optic	—FO—	Light Pole	⊗	Limits of Concrete Removal	▨▨▨▨
Ex. Storm Sewer	→→→→→	Soil Boring Location	⊕		
Water Line	—W—	Prop. Storm Sewer	→→→→→		

**DESIGN STRESSES**

**FIELD UNITS**  
 $f'_c = 3,500$  psi (Cast-in-Place)  
 $f_y = 60,000$  psi (Reinforcement)

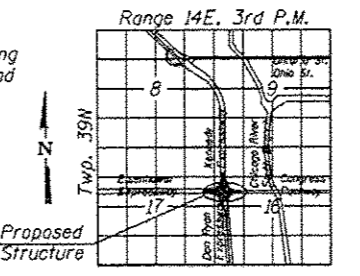
**PRECAST UNITS**  
 $f'_c = 4,500$  psi (Precast Panels)  
 $f_y = 60,000$  psi (Reinforcement)

**NOTES:**

- See RWI-05 for Tables 1 and 2.
- Contractor shall field verify location and elevation of existing utility. If utility passes through proposed MSE panels or leveling pad, wall supplier shall design break in wall and/or leveling pad to accommodate. See details, RWI-09.
- Existing 15" ComEd pipe is empty. Contractor shall coordinate removal with ComEd.
- Existing I.T.S. hand hole to be abandoned in place. See I.T.S. plans for details.

**DESIGN SPECIFICATIONS**

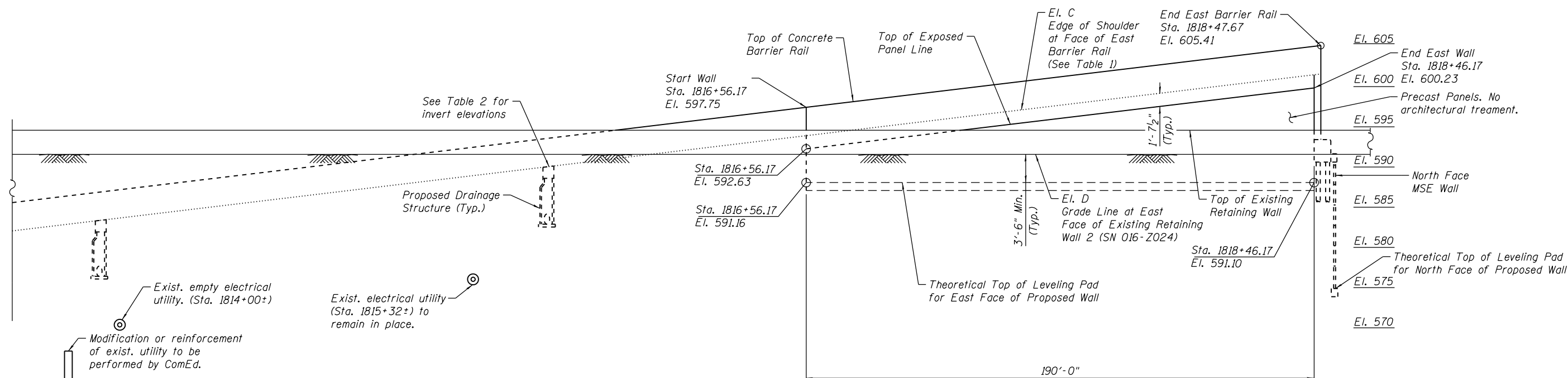
2012 AASHTO LRFD Bridge Design Specifications  
 6th Edition with 2013 Interim Revisions



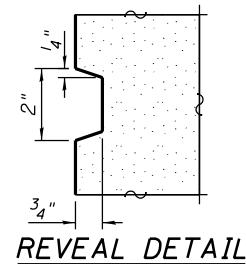
**GENERAL PLAN & ELEVATION**  
**RETAINING WALL 1**  
 F.A.I. RTE. 90/94/290 - SECTION 2013-010R  
 COOK COUNTY  
 STATION 1813+60.00 TO 1818+53.67  
 STRUCTURE NO. 016-1720

<b>AECOM</b>	USER NAME = dunkerleyb	DESIGNED - DEV	REVISED	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	SHEET NO. RWI-01 OF RWI-17 SHEETS
	PLAT SCALE = N.T.S.	CHECKED - ATB	REVISED		
	PLAT DATE = 4/28/2014	DRAWN - BRD	REVISED		
		CHECKED - EJD	REVISED		

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 519
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT NUMBER	

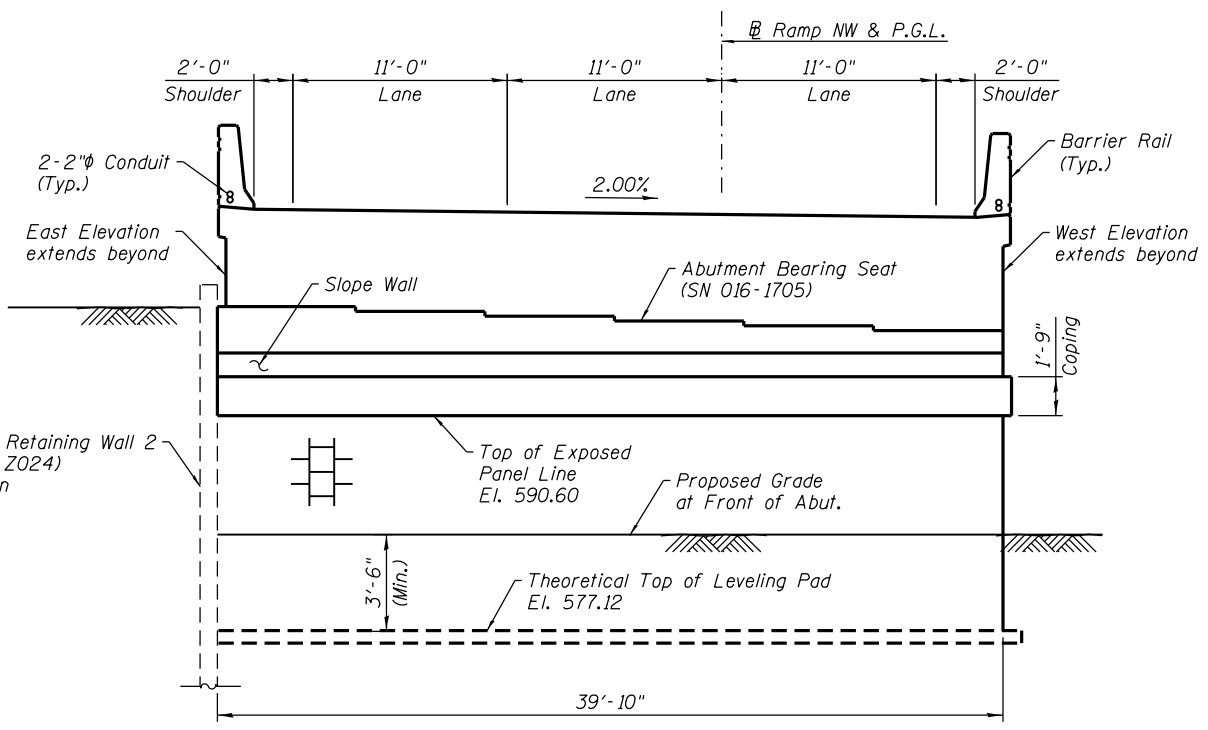


**EAST ELEVATION**

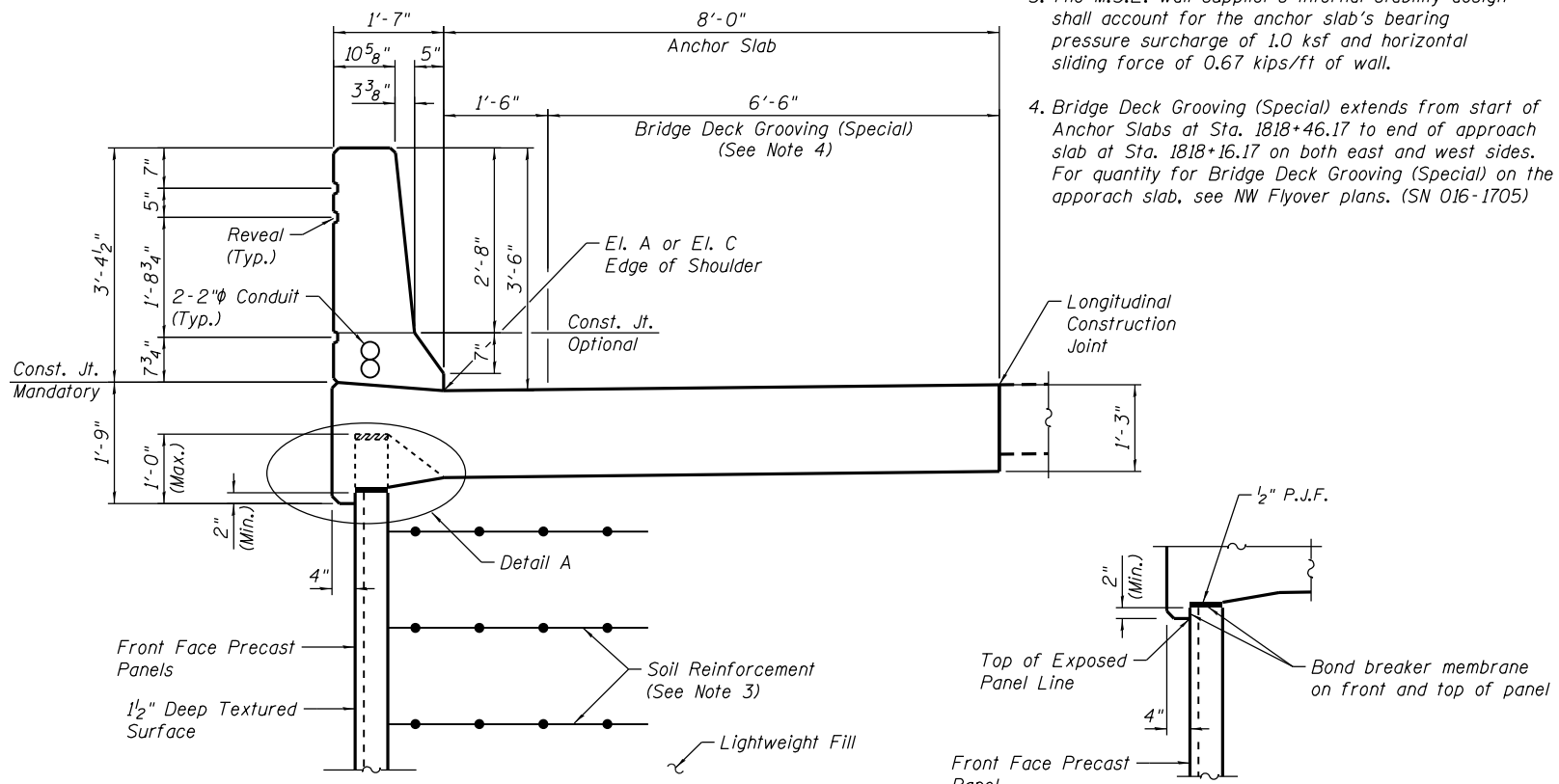


**REVEAL DETAIL**

- NOTES:**
1. See Sheet RW1-05 for Tables 1 & 2.
  2. Anchor Slabs on West and East sides of Ramp NW end at Sta. 1818+46.17 where they overlap the abutment backwall by 6". 30' Bridge Approach Slab lays between the anchor slabs.
  3. The M.S.E. wall supplier's internal stability design shall account for the anchor slab's bearing pressure surcharge of 1.0 ksf and horizontal sliding force of 0.67 kips/ft of wall.
  4. Bridge Deck Grooving (Special) extends from start of Anchor Slabs at Sta. 1818+46.17 to end of approach slab at Sta. 1818+16.17 on both east and west sides. For quantity for Bridge Deck Grooving (Special) on the approach slab, see NW Flyover plans. (SN 016-1705)



**NORTH FACE ELEVATION  
(Facing South)**



**TYPICAL MSE BARRIER RAIL SECTION**

**DETAIL A**

0161720-60W28-502-CenNote



USER NAME = dunkerleyb	DESIGNED - DEV	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - BRD	REVISED
PLOT DATE = 4/28/2014	CHECKED - EJO	REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**NORTH & EAST ELEVATIONS  
STRUCTURE NO. 016-1720**

F.A.I. R.T.E. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 520
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	

SHEET NO. RW1-02 OF RW1-17 SHEETS

**GENERAL NOTES:**

- Reinforcement bars designated (E) shall be epoxy coated.
- Slip forming of the barrier rails is not allowed.
- The Contractor shall exercise extreme caution during construction to make certain that construction activities, live load surcharge and other loads applied to the structures will not have detrimental effects on the adjacent building and retaining wall foundations. See Special Provision for Construction Vibration Monitoring.
- Protective Coat shall be applied to the designated areas of Anchor Slabs, Barrier Rails, and MSE Coping.
- Stations and Offsets are measured from the Baseline of Ramp NW to the Front Face of MSE wall panels.
- MSE Supplier to design load transfer systems within reinforced soil mass to accommodate drainage structures and abutment foundations.
- MSE Wall lengths measured along front face of precast panels unless noted otherwise.
- Contractor shall field verify location of existing footings and underground utilities and shall take all precautions to protect them during ground improvement, construction of the wall, and final condition of the ramp. Any damages to the existing structures shall be the responsibility of the Contractor.
- Quantity for Lightweight Cellular Concrete Fill includes reinforced soil mass and fill area beneath roadway. Type is specified as Class II Lightweight Fill.
- See Special Provision for Mechanically Stabilized Earth Retaining Wall, Special for design and construction requirements.
- Anchor Slabs and Barrier Rails shall be paid for as Concrete Superstructure.
- For drainage structure location, type, and size, see Drainage Sheets.
- Repairs to existing Retaining Wall 2 (SN 016-Z024) shall be completed prior to installation of MSE fill ramp.

**TOTAL BILL OF MATERIAL:**

DESCRIPTION	UNIT	TOTAL
CONCRETE REMOVAL	CU. YD.	53
STRUCTURE EXCAVATION	CU. YD.	1,108
CONCRETE SUPERSTRUCTURE	CU. YD.	402
BRIDGE DECK GROOVING (SPECIAL)	SQ. YD.	44
PROTECTIVE COAT	SQ. YD.	960
REINFORCEMENT BARS, EPOXY COATED	POUND	60,520
SLOPE WALL 4"	SQ. YD.	39
NAME PLATES	EACH	1
LIGHTWEIGHT CELLULAR CONCRETE FILL (CLASS II)	CU. YD.	9,460
AGGREGATE COLUMN GROUND IMPROVEMENT	L. SUM	0.58
MECHANICALLY STABILIZED EARTH RETAINING WALL, SPECIAL	SQ. FT.	8,279

**INDEX OF SHEETS:**

- RW1-01 General Plan and Elevation
- RW1-02 North and East Elevations
- RW1-03 Total Bill of Material, Index of Sheets and General Notes
- RW1-04 Existing Structural Removal
- RW1-05 Typical Sections
- RW1-06 West Barrier Rail and Anchor Slab
- RW1-07 East Barrier Rail and Anchor Slab
- RW1-08 MSE Wrap Around Details
- RW1-09 Details
- RW1-10 Architectural Details - I
- RW1-11 Architectural Details - II
- RW1-12 Aggregate Column Ground Improvement Details
- RW1-13 Boring Logs - I
- RW1-14 Boring Logs - II
- RW1-15 Boring Logs - III
- RW1-16 Boring Logs - IV
- RW1-17 Boring Logs - V

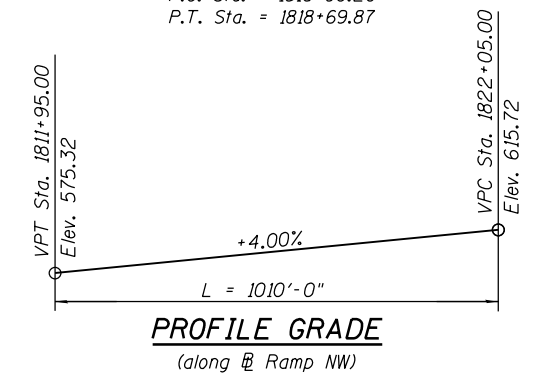
**SUGGESTED SEQUENCE OF CONSTRUCTION:**

- Modify existing Retaining Wall 2 (SN 016-Z024) foundation as directed.
- Install piles for South Abutment of NW Flyover (SN 016-1705).
- Repair front face of existing Retaining Wall 2 (SN 016-Z024) as required on plans.
- Excavate for construction of proposed Retaining Wall 1 (SN 016-1720).
- Remove portions of existing Taylor St. Exit Ramp wall as directed.
- Install Aggregate Column Ground Improvement.
- Begin installing and filling West and North Elevations of Retaining Wall 1 (SN 016-1720) up to elevation of leveling pad of East Elevation. Backfill and replace roadway of Taylor St. Exit Ramp.
- Complete South Abutment of NW Flyover (SN 016-1705).
- Complete West Elevation and install East Elevation of Retaining Wall 1 (SN 016-1720) simultaneously. Fill between wall faces.
- Install Anchor Slabs and Barrier Rails on West and East faces.
- Complete roadway on NW Flyover Ramp (SN 016-1705).

**CURVE DATA**

(Ramp NW)

Prop. Curve P-CIR-NW-4  
 P.I. Sta. 1817+80.05  
 $\Delta = 2^{\circ}30'39"$  (Rt.)  
 $D = 1^{\circ}23'51"$   
 $R = 4,100.00'$   
 $T = 89.85'$   
 $L = 179.68'$   
 $E = 0.98'$   
 $e = -2.00\%$   
 P.C. Sta. = 1816+90.20  
 P.T. Sta. = 1818+69.87



STATION 1813+60.00  
 BUILT BY  
 STATE OF ILLINOIS  
 F.A.I. RTE. 90/94/290-SEC. 2013-010R  
 LOADING HL-93  
 STRUCTURE NO. 016-1720

**NAME PLATE**  
See Std. 515001

0161720-60W28-503-CenNote



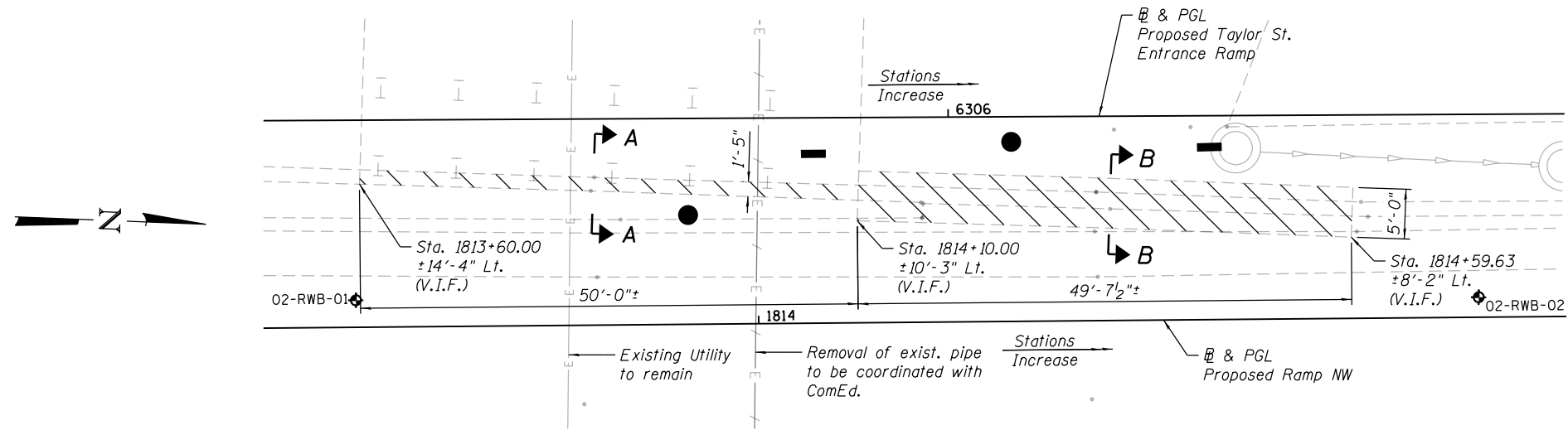
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PLOT DATE = 4/28/2014	CHECKED - EJO	REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

TOTAL BILL OF MATERIAL, INDEX OF SHEETS & GENERAL NOTES  
 STRUCTURE NO. 016-1720

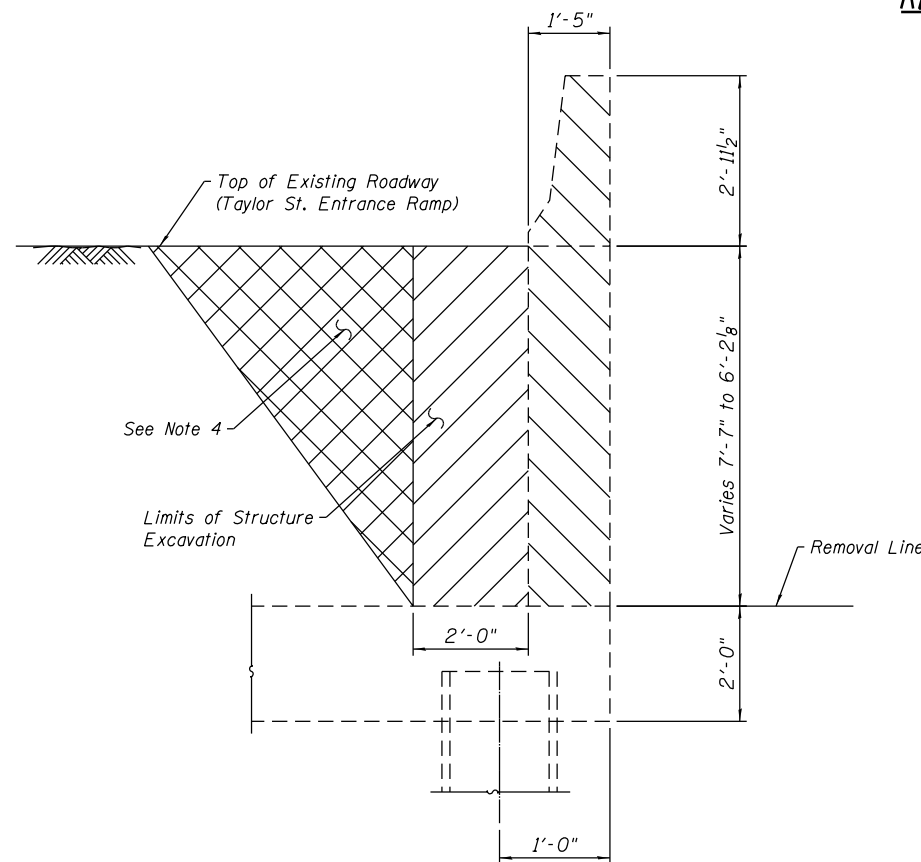
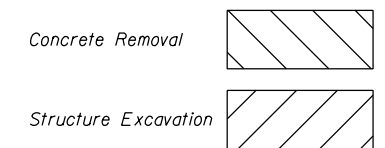
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F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 521
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT NUMBER-	

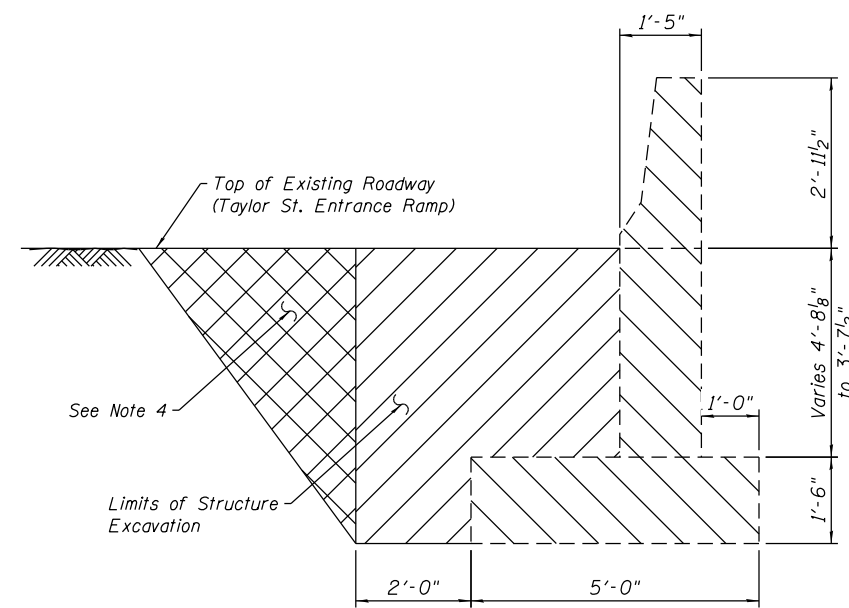


**REMOVAL PLAN**

**LEGEND:**



**SECTION A-A**  
Sta. 1813+60.00 to Sta. 1814+10.00  
(Facing North)



**SECTION B-B**  
Sta. 1814+10.00 to Sta. 1814+59.63  
(Facing North)

**NOTES:**

- Excavation area shall be backfilled to pre-excavation elevation upon installation of west face of proposed wall. Cost of backfill is included in cost of Structure Excavation.
- See civil plans for replacement of Taylor St. entrance ramp pavement.
- Stations and offsets are given with respect to baseline of Ramp NW.
- Overexcavation beyond limits of Structure Excavation not measured for payment.
- V.I.F. = "Verify in Field"

**BILL OF MATERIAL**

Item	Unit	Quantity
Concrete Removal	Cu. Yd.	53
Structure Excavation	Cu. Yd.	66

0161720-60W28-504-CenNote



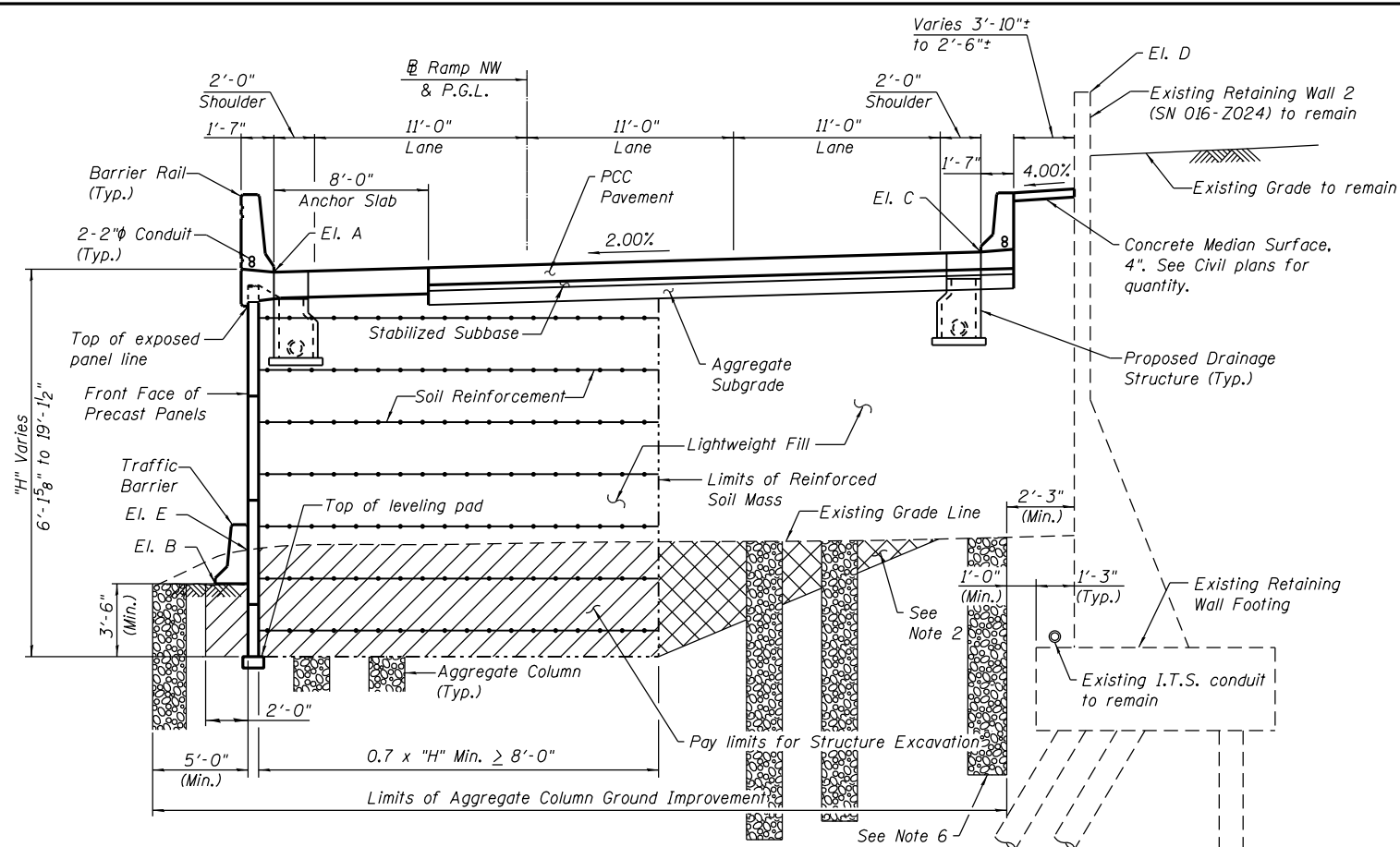
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

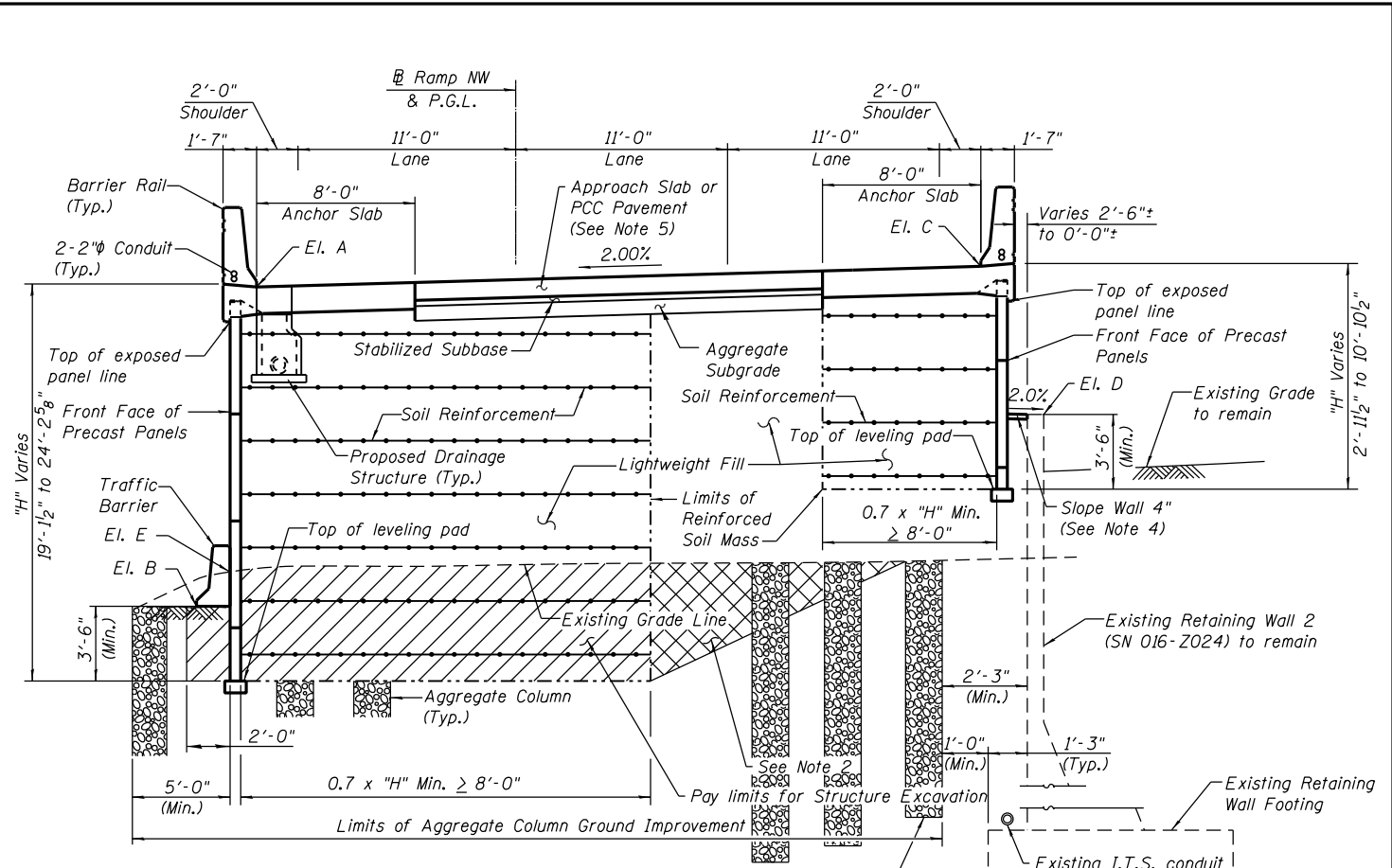
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STRUCTURE NO. 016-1720

SHEET NO. RW1-04 OF RW1-17 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 522
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	



**TYPICAL SECTION 1**  
Sta. 1813+60.00 to Sta. 1816+56.17  
(Facing North)



**TYPICAL SECTION 2**  
Sta. 1816+56.17 to Sta. 1818+46.17  
(Facing North)

**TABLE 1**

Station	Elevation A	Elevation B	Elevation C	Elevation D	Elevation E
1813+60.00	581.66	579.15	582.40	594.77	580.00
1813+75.00	582.26	578.40	583.00	594.77	579.49
1814+00.00	583.26	577.42	584.00	594.78	578.78
1814+25.00	584.26	576.78	585.00	594.78	578.19
1814+50.00	585.26	576.47	586.00	594.76	577.66
1814+75.00	586.26	576.49	587.00	594.72	577.36
1815+00.00	587.26	576.67	588.00	594.72	577.25
1815+25.00	588.26	576.80	589.00	594.75	577.18
1815+50.00	589.26	576.94	590.00	594.74	577.37
1815+75.00	590.26	577.09	591.00	594.72	577.59
1816+00.00	591.26	577.28	592.00	594.70	577.83
1816+25.00	592.26	577.49	593.00	594.68	578.10
1816+50.00	593.26	577.76	594.00	594.67	578.37
1816+56.17	593.51	577.82	594.25	594.66	578.44
1816+75.00	594.26	578.02	595.00	594.63	578.64
1817+00.00	595.26	578.42	596.00	594.64	578.90
1817+25.00	596.26	578.82	597.00	594.68	579.15
1817+50.00	597.26	579.33	598.00	594.69	579.45
1817+75.00	598.26	579.75	599.00	594.68	579.75
1818+00.00	599.26	580.03	600.00	594.63	580.03
1818+25.00	600.26	580.29	601.00	594.58	580.29
1818+46.17	601.11	580.52	601.85	594.60	580.52
1818+53.67	601.41	580.62	602.15	594.61	580.62

**NOTES:**

- Front of West Face of Wall is offset 14'-3" left (West) of baseline. Front of East Face of Wall is offset 25'-3" right (East) of baseline.
- Overexcavation beyond limits of Structure Excavation not measured for payment. Additional Lightweight Fill or Aggregate Column Ground Improvement in overexcavation area also not measured for payment.
- Contractor shall verify in field location of Existing Retaining Wall footing and existing utilities prior to placement of Aggregate Column Ground Improvement.
- Fill void between proposed wall and existing wall with Lightweight Fill. Cap with Slope Wall and Seal with 1/2" Preformed Joint Filler per Section 1051.09, cost included in Slope Wall 4" pay item. This applies to Typical Section 2 only.
- Approach Slab for NW Flyover (SN 016-1705) is between Anchor Slabs from Sta. 1818+16.17 to Sta. 1818+46.17. See bridge plans.
- Contractor's design of aggregate columns shall shorten columns and vary spacing and/or diameter to avoid conflict with existing wall's battered pile foundation. Piles shall not be damaged.

Elevation A - Edge of Shoulder at Face of West Barrier Rail  
 Elevation B - Proposed Grade Line at West Face of Proposed Retaining Wall  
 Elevation C - Edge of Shoulder at Face of East Barrier Rail  
 Elevation D - Top of Existing Retaining Wall  
 Elevation E - Existing Grade Line at West Face of Proposed Retaining Wall

**TABLE 2**

Station	Offset	Downstream Elevation
1813+93.00	13'-0" Lt.	577.02
1813+93.00	21'-6" Rt.	576.38
1815+60.00	13'-0" Lt.	583.70
1815+60.00	21'-6" Rt.	583.06
1818+10.00	13'-0" Lt.	593.70

**BILL OF MATERIAL**

Item	Unit	Quantity
Structure Excavation	Cu. Yd.	1,042
Bridge Deck Grooving (Special)	Sq. Yd.	44
Slope Wall 4"	Sq. Yd.	30
Lightweight Cellular Concrete Fill (Class II)	Cu. Yd.	9,460
Mechanically Stabilized Earth Retaining Wall, Special	Sq. Ft.	8,279

0161720-60W2B-505-CenNote



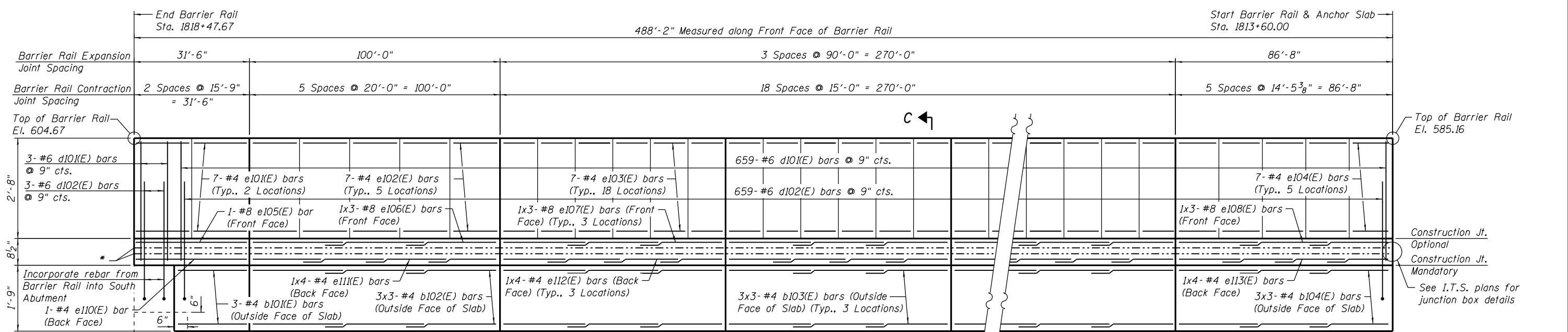
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	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - BRD	REVISED
PLOT DATE = 4/28/2014	CHECKED - EJO	REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS**  
**STRUCTURE NO. 016-1720**

SHEET NO. RW1-05 OF RW1-17 SHEETS

F.A.I. R.E. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 523
CONTRACT NO. 60W2B			ILLINOIS FED. AID PROJECT -NUMBER-	



End Barrier Rail Sta. 1818+47.67

488'-2" Measured along Front Face of Barrier Rail

Start Barrier Rail & Anchor Slab Sta. 1813+60.00

Barrier Rail Expansion Joint Spacing 31'-6"

Barrier Rail Contraction Joint Spacing 2 Spaces @ 15'-9" = 31'-6"

Top of Barrier Rail El. 604.67

Top of Barrier Rail El. 585.16

Construction Jt. Optional

Construction Jt. Mandatory

See I.T.S. plans for junction box details

End Anchor Slab Sta. 1818+46.17

Front Face S. Abut. backwall

Bk. S. Abut. backwall

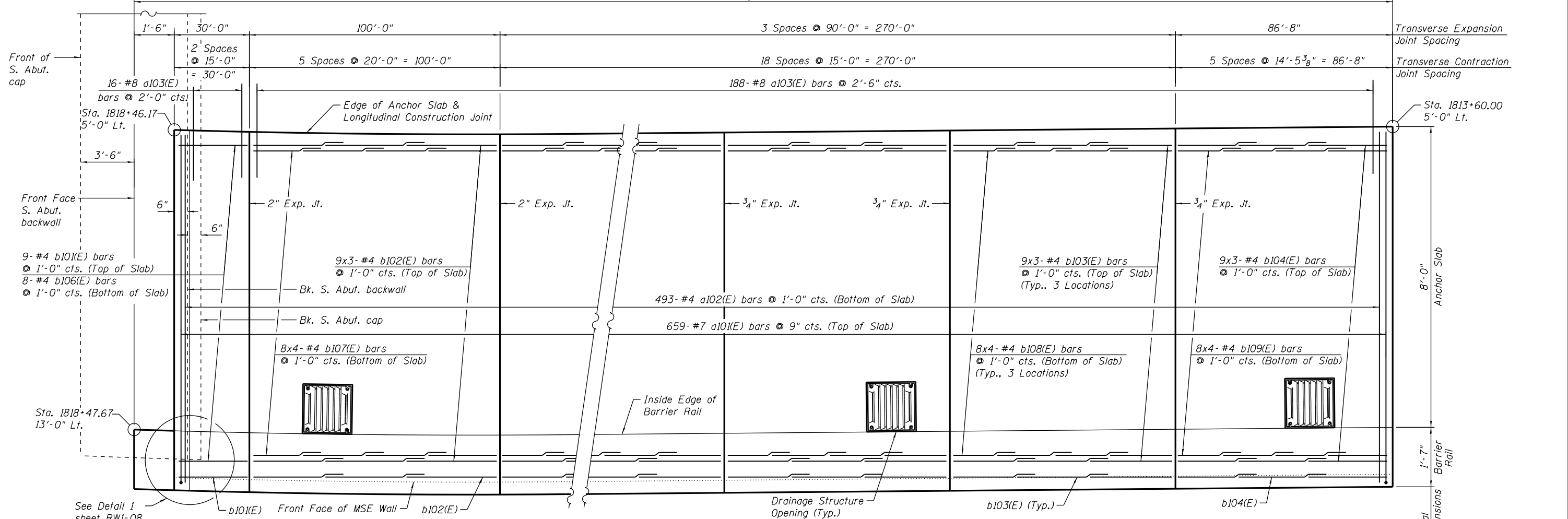
**NOTES:**

1. See sheet RW1-09 for Barrier Rail and Anchor Slab Joint Details.
2. Bars noted thus, 7x3-#4 indicates 7 lines of #4 bars with 3 lengths per line.
3. 2" min. clear cover typical unless noted otherwise.
4. See sheet RW1-09 for Drainage Structure Opening details.
5. See sheet RW1-09 for Section C-C.
6. Min. Lap Lengths:  
#4 bar = 2'-7"  
#8 bar = 6'-9"
7. 2" Expansion Joints in Anchor Slab shall align with joints in Bridge Approach Slab (Sta. 1818+16.17) and Roadway PCC Connector Pavement (Sta. 1817+16.17).
8. Barrier Rail Contraction Joints do not extend thru lower portion of Barrier Rail. Typical East and West sides.
9. See bridge plans (SN 016-1705) for South Abutment plans.

**NOTES (cont.):**

488'-2" Measured along Front Face of Barrier Rail

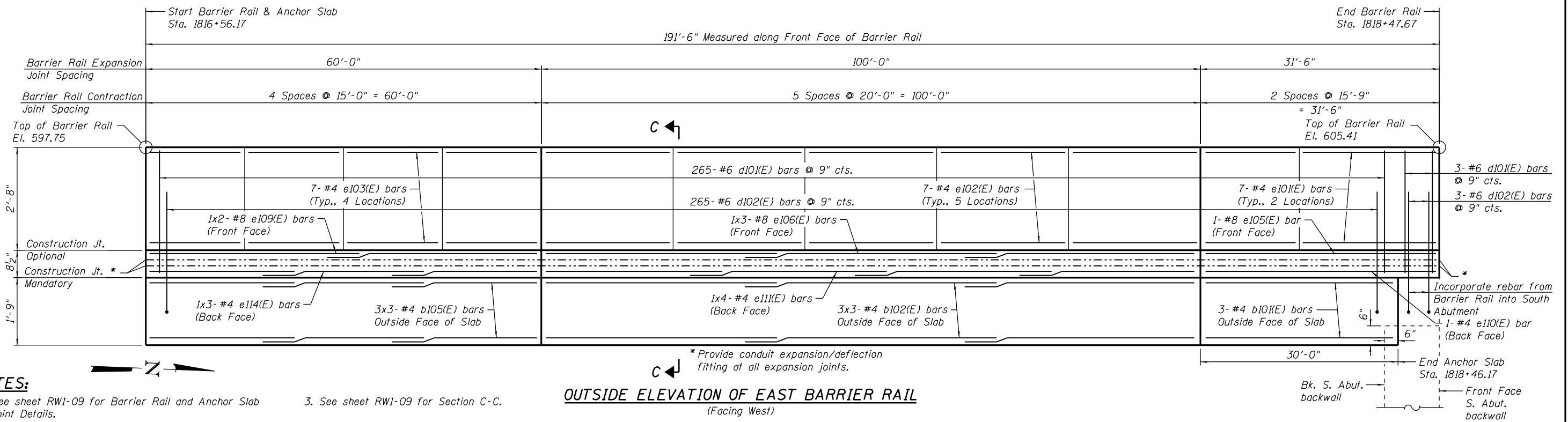
**OUTSIDE ELEVATION OF WEST BARRIER RAIL**  
(Facing East)



PLAN - BARRIER RAIL & ANCHOR SLAB

0161720-60W28-506-Parapet

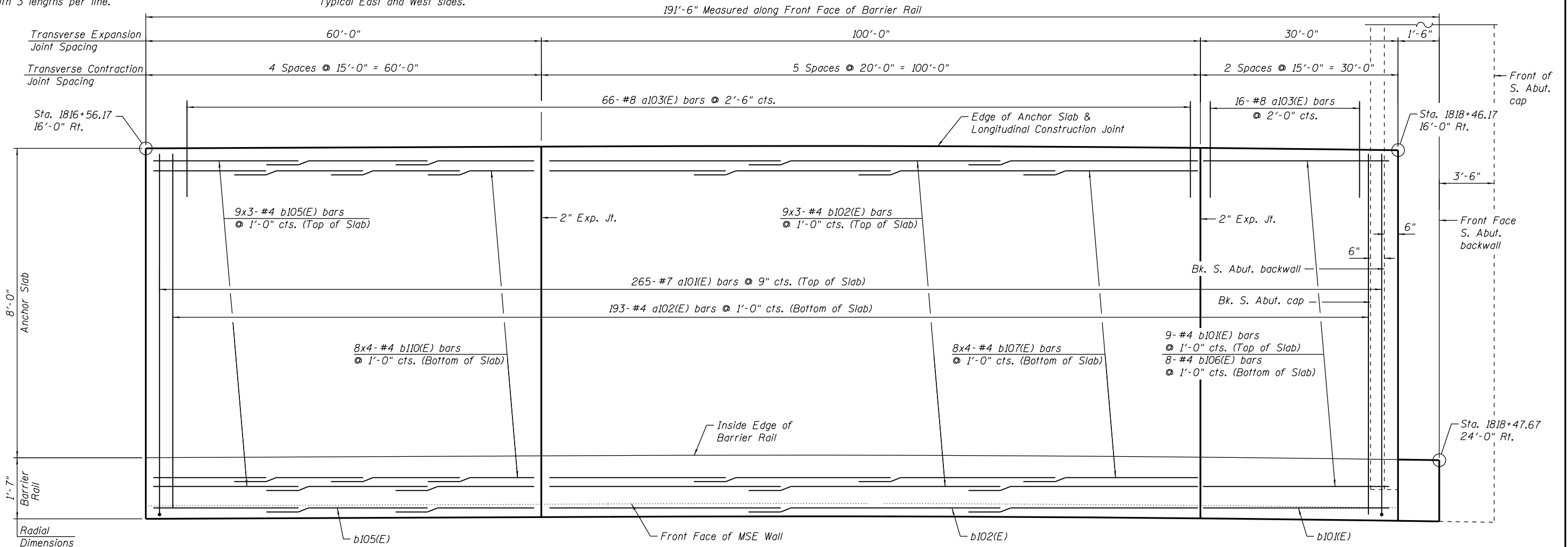




**NOTES:**

1. See sheet RW1-09 for Barrier Rail and Anchor Slab Joint Details.
2. Bars noted thus, 7x3-#4 indicates 7 lines of #4 bars with 3 lengths per line.
3. See sheet RW1-09 for Section C-C.
4. Expansion and Contraction Joints in Barrier Rail shall align with same in Anchor Slab. Typical East and West sides.

**OUTSIDE ELEVATION OF EAST BARRIER RAIL**  
(Facing West)



0161720-60W28-507-Parapet



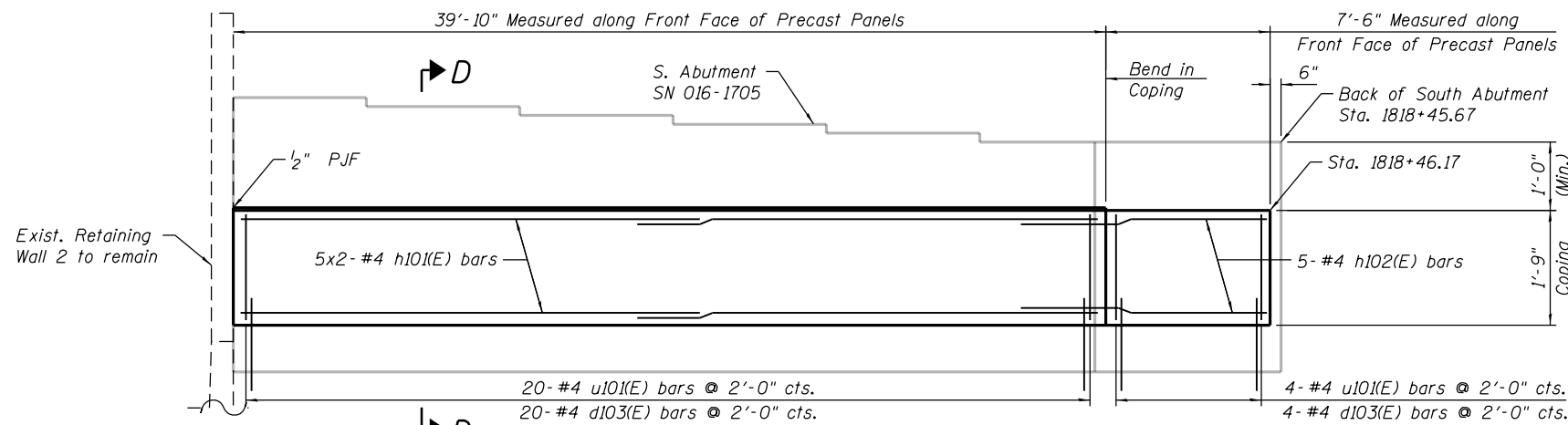
USER NAME = dunkerleyb	DESIGNED - DEV	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - BRD	REVISED
PLOT DATE = 4/28/2014	CHECKED - EJO	REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

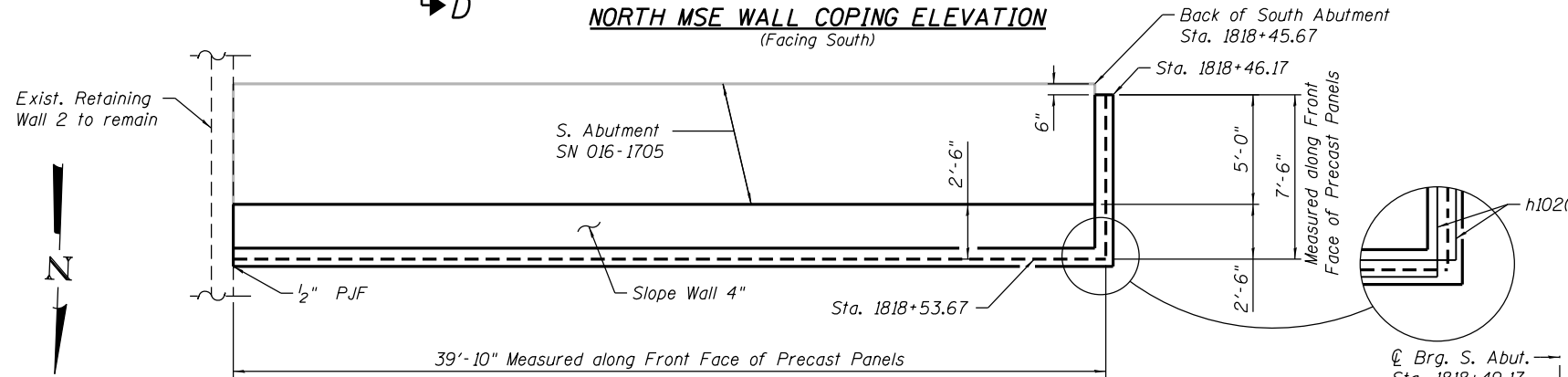
**EAST BARRIER RAIL AND ANCHOR SLAB**  
**STRUCTURE NO. 016-1720**

SHEET NO. RW1-07 OF RW1-17 SHEETS

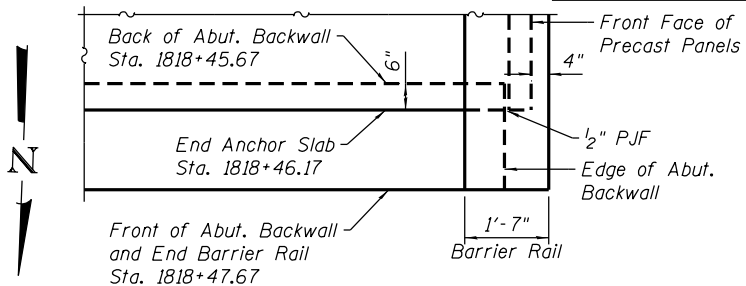
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CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	



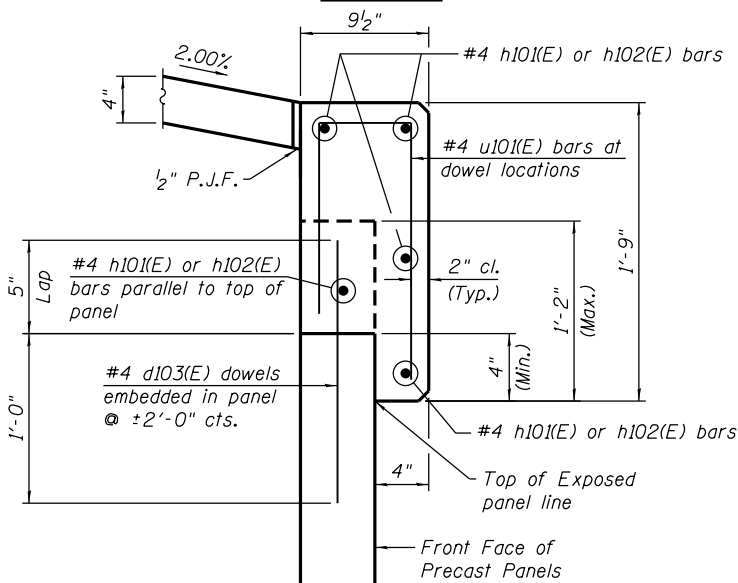
**NORTH MSE WALL COPING ELEVATION**  
(Facing South)



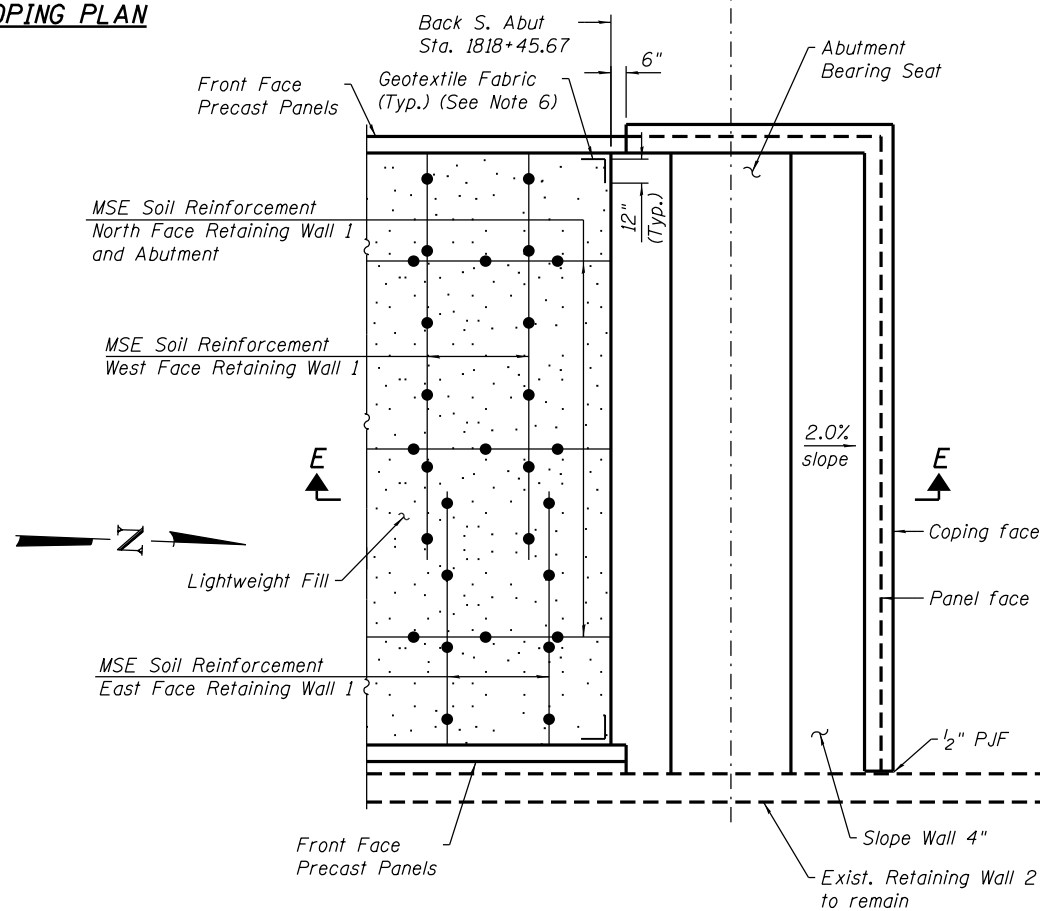
**NORTH MSE WALL COPING PLAN**



**DETAIL 1**



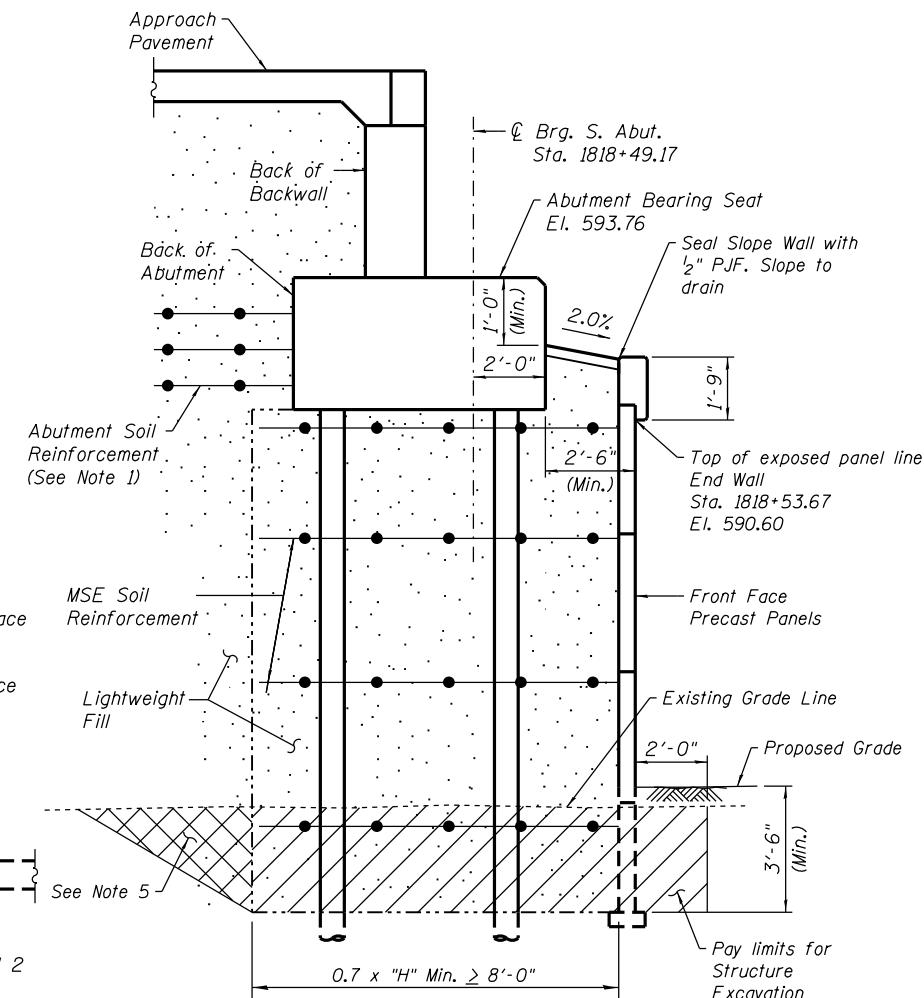
**MSE COPING SECTION D-D**



**PLAN DETAIL: MSE WRAP AROUND ABUTMENT**

**NOTES:**

1. The MSE wall supplier shall design the abutment soil reinforcement to resist a horizontal force of 4.6 k/ft of abutment. Cost included in cost of Mechanically Stabilized Earth Retaining Wall, Special.
2. Anchor Slabs end at Sta. 1818+46.17 where they overlap the abutment backwall by 6". Barrier Rails end at Sta. 1818+47.67 at front of abutment backwall. See Detail 1.
3. Bars noted thus, 7x3-#4 indicates 7 lines of #4 bars with 3 lengths per line.
4. See South Abutment sheets for abutment details.
5. Overexcavation beyond limits of Structure Excavation not measured for payment. Additional Lightweight Fill or Aggregate Column Ground Improvement in overexcavation area also not measured for payment.
6. Cost of Geotextile Fabric is included in cost of Mechanically Stabilized Earth Retaining Wall, Special.
7. 1/2" P.J.F. is installed by Standard 1051.09. Cost is included in Slope Wall 4".



**SECTION E-E**  
(Facing West)

0161720-60W28-508-Parapet



USER NAME = dunkerleyb	DESIGNED - DEV	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 4/28/2014	DRAWN - BRD	REVISED
	CHECKED - EJO	REVISED

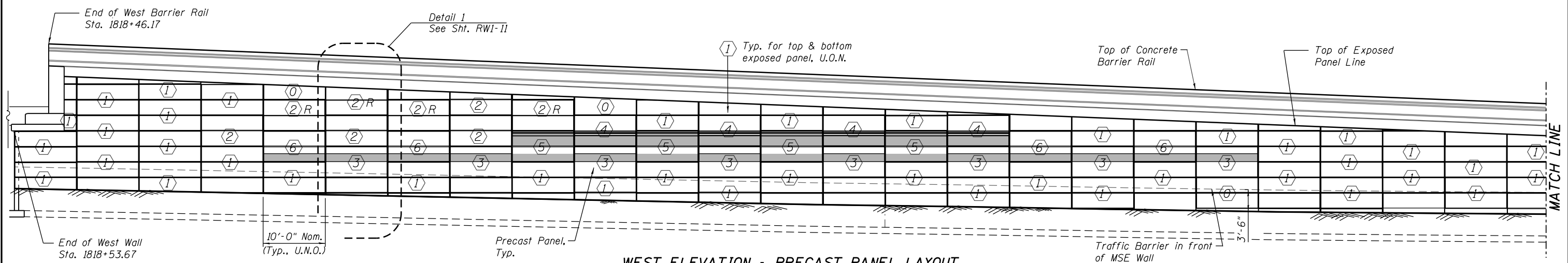
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

MSE WRAP AROUND DETAILS  
STRUCTURE NO. 016-1720

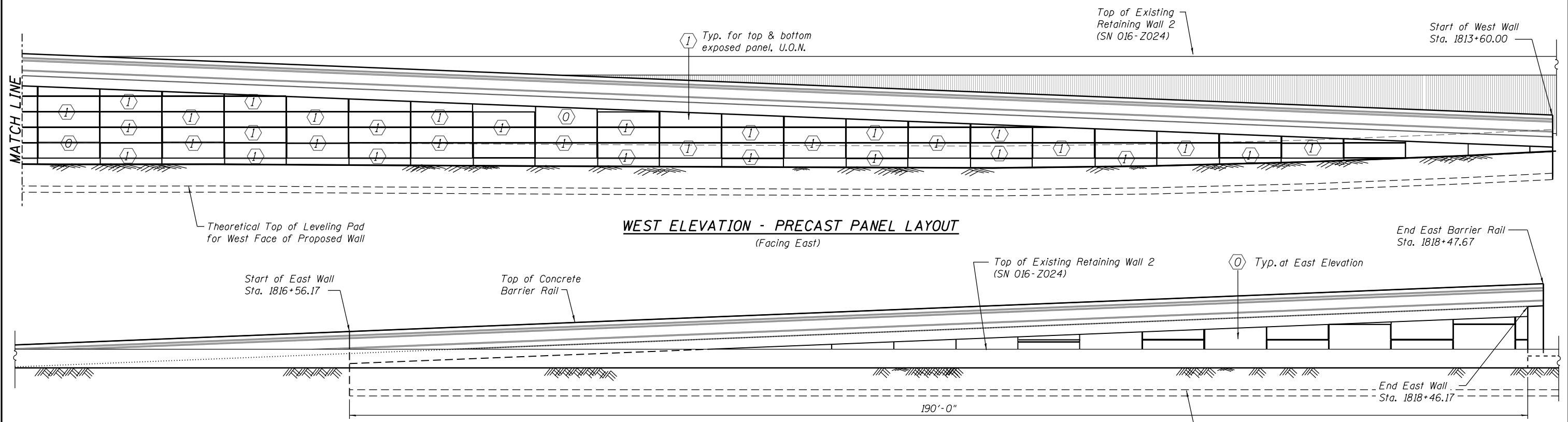
SHEET NO. RW1-08 OF RW1-17 SHEETS

F.A.I. R.E. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 526
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	



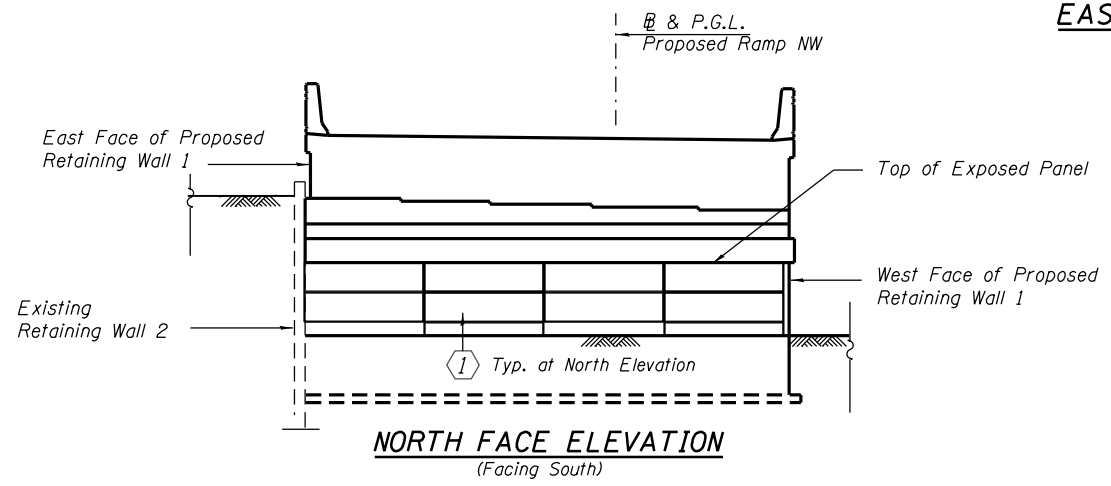


**WEST ELEVATION - PRECAST PANEL LAYOUT**  
(Facing East)



**WEST ELEVATION - PRECAST PANEL LAYOUT**  
(Facing East)

**EAST ELEVATION**  
(Facing West)



**NORTH FACE ELEVATION**  
(Facing South)

**NOTES:**

1. Reveals in concrete barrier will not be paid separately and will be included in the cost of the pay item "Concrete Superstructure"
2. Textured formliner for precast panels will not be paid separately and will be included in the cost of the pay item "Mechanically Stabilized Earth Retaining Wall, Special"
3. For formliner details for precast panels see sheet RW1-11.
4. Verify / coordinate all dimensions with bridge plans (SN 016-1705).
5. MSE Supplier to determine precast panel dimensions based on proprietary design. The suggested 10'-0" Nom. width shown here may change depending on supplier. If this is the case, it will be addressed by the engineer and coordinated with the supplier during the Shop Drawing submittal and review.

**LEGEND:**

① ② ②R ④ ⑤ ⑥ ⑧ Precast Panel Type Designation Based on Formliner Layout

0161720-60W28-510-SuperStruct

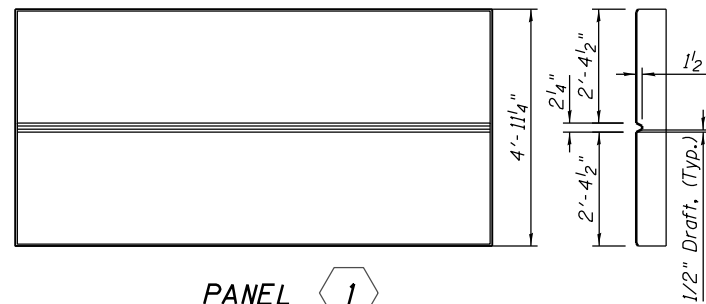


USER NAME = dunkerleyb	DESIGNED - MR	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - MR	REVISED
PLOT DATE = 4/28/2014	CHECKED - EJO	REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**ARCHITECTURAL DETAILS - I**  
**STRUCTURE NO. 016-1720**  
SHEET NO. RW1-10 OF RW1-17 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 528
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT NUMBER-	



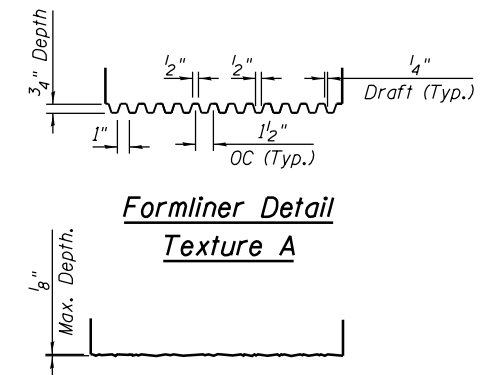
PANEL 1



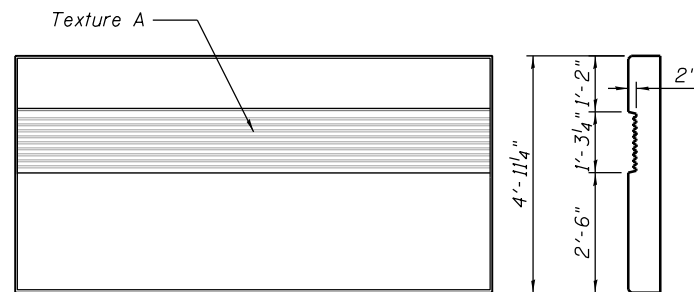
PANEL 2



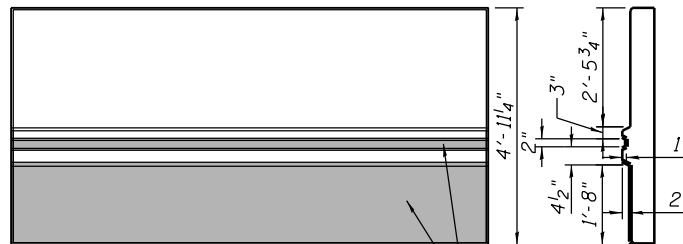
PANEL 2 R



Formliner Detail  
Texture A

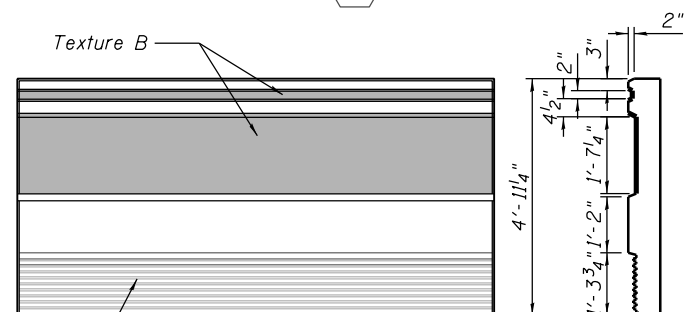


PANEL 3

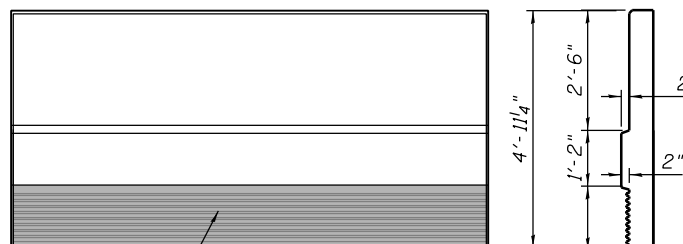


PANEL 4

Texture B



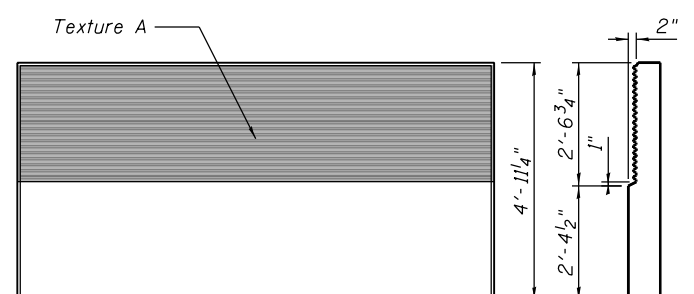
PANEL 5



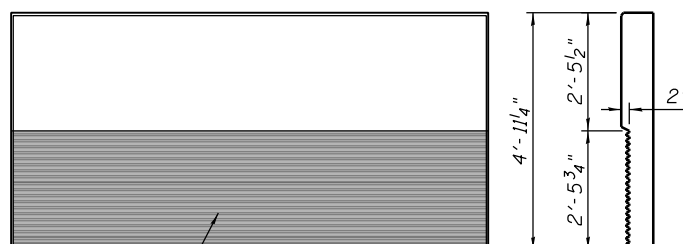
PANEL 6

Texture A

Texture A

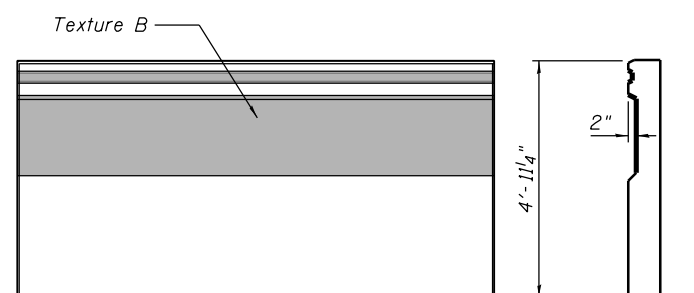


PANEL 7

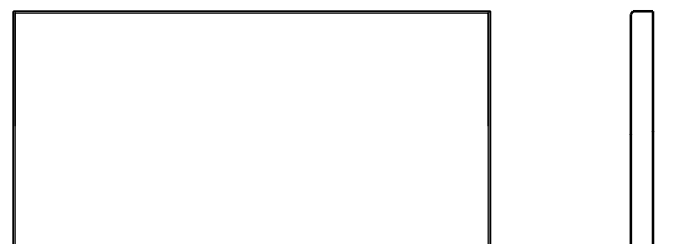


PANEL 7 R

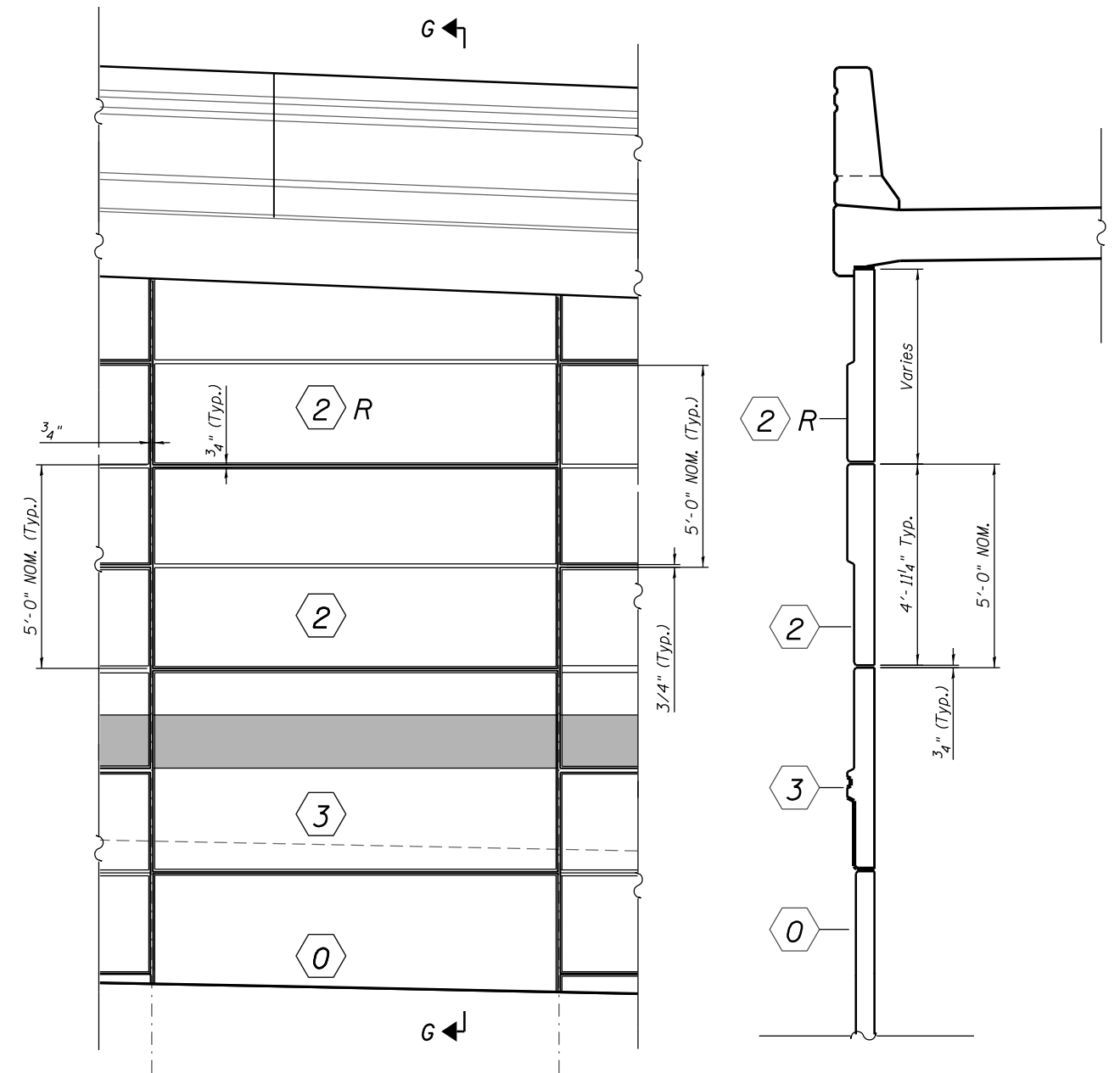
Texture A



PANEL 8



PANEL 0



DETAIL 1

SECTION G-G

NOTES:

1. Textured formliner for precast panels will not be paid separately and will be included in the cost of the pay item "Mechanically Stabilized Earth Retaining Wall, Special".

0161720-60W28-511-SuperStruct



USER NAME = dunkerleyb	DESIGNED - MR	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 4/28/2014	DRAWN - MR	REVISED
	CHECKED - EJO	REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ARCHITECTURAL DETAILS - II  
STRUCTURE NO. 016-1720

SHEET NO. RW1-11 OF RW1-17 SHEETS

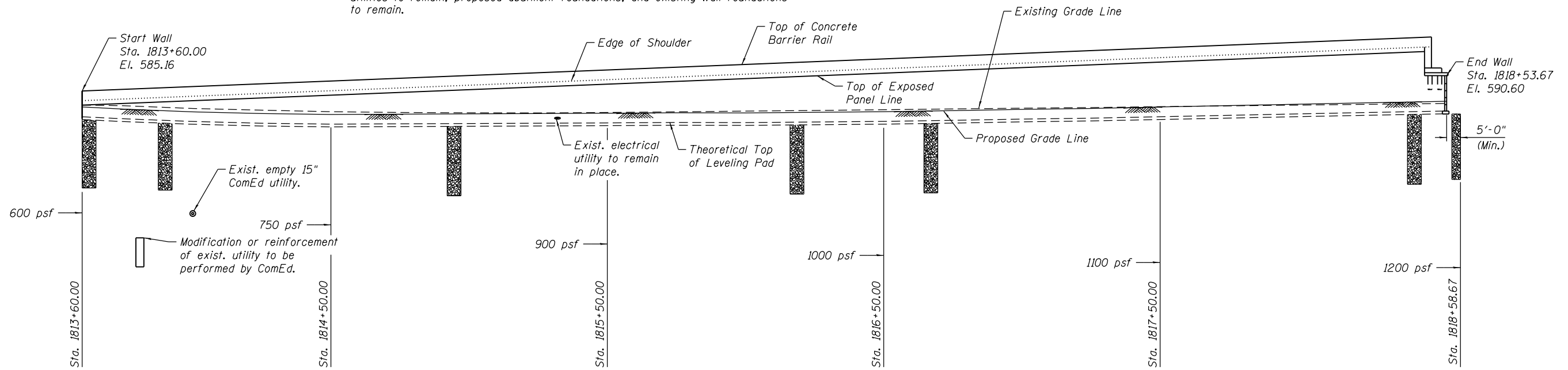
F.A.I. R.E. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 529
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	

**GROUND IMPROVEMENT PERFORMANCE REQUIREMENTS:**

Minimum factor of safety for global stability shall be 1.5.  
 Settlement during construction shall not exceed 3 inches, and settlement after completion of wall and pavement construction shall not exceed 1 inch.  
 Minimum factor of safety for Equivalent Uniform Service Bearing Pressure shall be 2.5.  
 Equivalent Uniform Service Bearing Pressure shall be interpolated between the values shown.

**NOTES:**

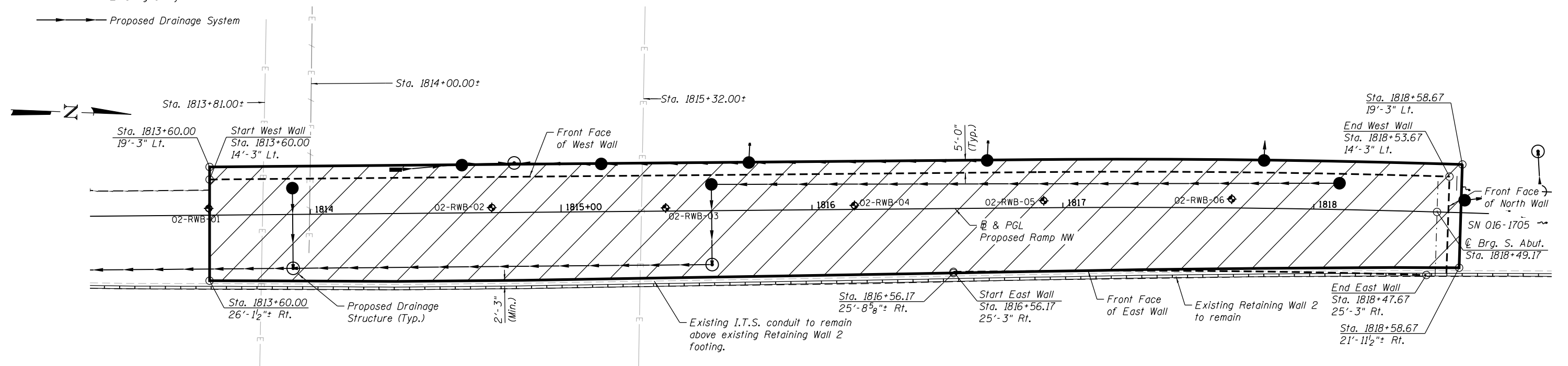
- Aggregate Column Ground Improvement shall be designed by the Contractor in accordance with special provision for Aggregate Column Ground Improvement.
- Aggregate Column Ground Improvement for Retaining Wall 1 (SN 016-1720) covers approximately 22,900 Sq. Ft.
- See sheet RW1-05 for section views of ground improvement.
- Aggregate columns shall be designed and spaced to avoid conflict with existing utilities to remain, proposed abutment foundations, and existing wall foundations to remain.
- Contractor shall field verify location of existing footings and underground utilities and shall take all precautions to protect them during ground improvement, construction of the wall, and final condition of the ramp. Any damages to the existing structures shall be the responsibility of the Contractor.
- Top of Aggregate Columns is equal to lowest excavation limit or existing grade line, whichever is lower.



**LEGEND:**

- Soil Boring Location
- Limits of Aggregate Column Ground Improvement
- Existing Utility
- Proposed Drainage System

**EQUIVALENT UNIFORM SERVICE BEARING PRESSURE**  
 (At top of ground improvement)



**PLAN**

**BILL OF MATERIAL**

Item	Unit	Total
Aggregate Column Ground Improvement	L. Sum	0.58

0161720-60W28-512-SubStruct



USER NAME = dunkerleyb	DESIGNED - DEV	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 4/28/2014	DRAWN - BRD	REVISED
	CHECKED - EJO	REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

AGGREGATE COLUMN GROUND IMPROVEMENT DETAILS  
 STRUCTURE NO. 016-1720

F.A.I. R.T.E. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 530
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	

SHEET NO. RW1-12 OF RW1-17 SHEETS





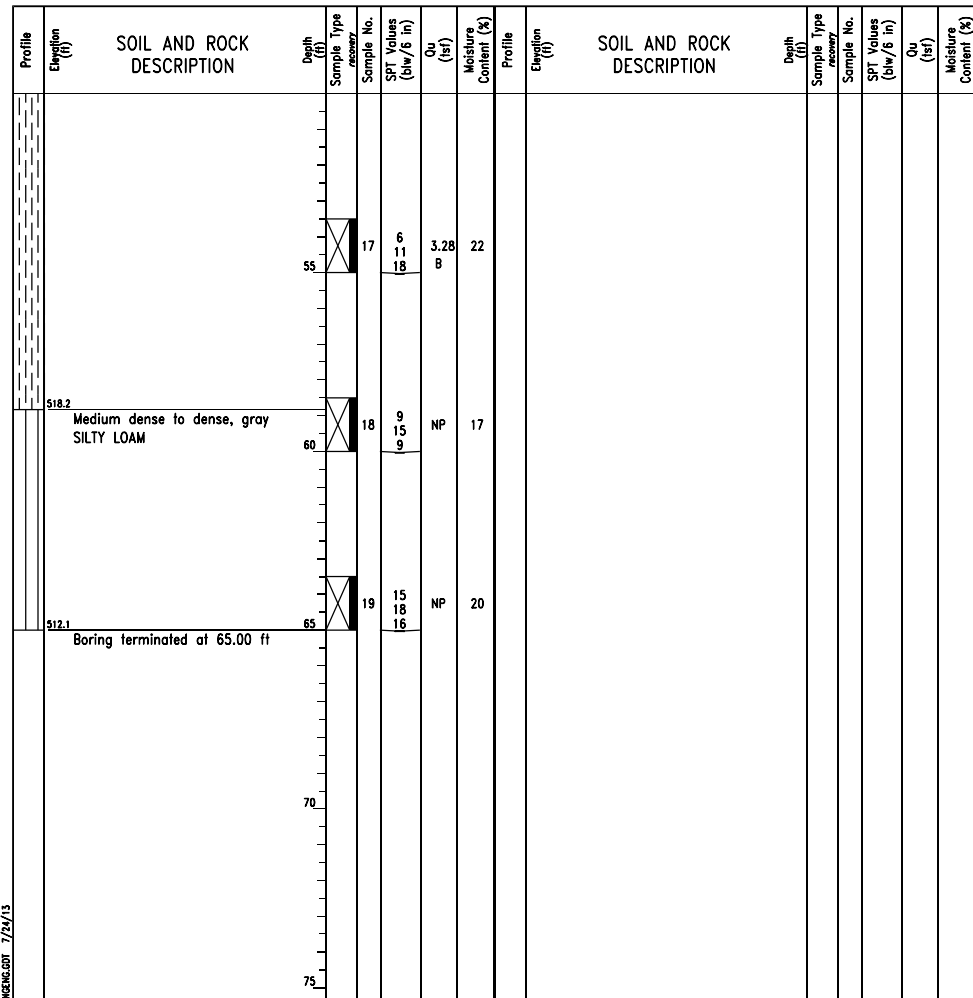
wangeng@wangeng.com  
1145 N Main Street  
Lombard, IL 60148  
Telephone: 630 953-9928  
Fax: 630 953-9938

### BORING LOG 02-RWB-02

WEI Job No.: 1100-04-01

Client: AECOM  
Project: Circle Interchange Reconstruction  
Location: Sections 16 and 17, T39N, R14E of 3rd PM

Datum: NGVD  
Elevation: 577.05 ft  
North: 1896502.39 ft  
East: 1171844.72 ft  
Station: 1814+72.73  
Offset: 6.3760 LT



#### GENERAL NOTES

Begin Drilling 06-04-2013 Complete Drilling 06-05-2013  
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR  
Driller R&J Logger D.Kolpacki Checked by C. Marin  
Drilling Method 2.25" HSA to 10', Mud Rotary 10' thereafter, boring backfilled upon completion

#### WATER LEVEL DATA

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



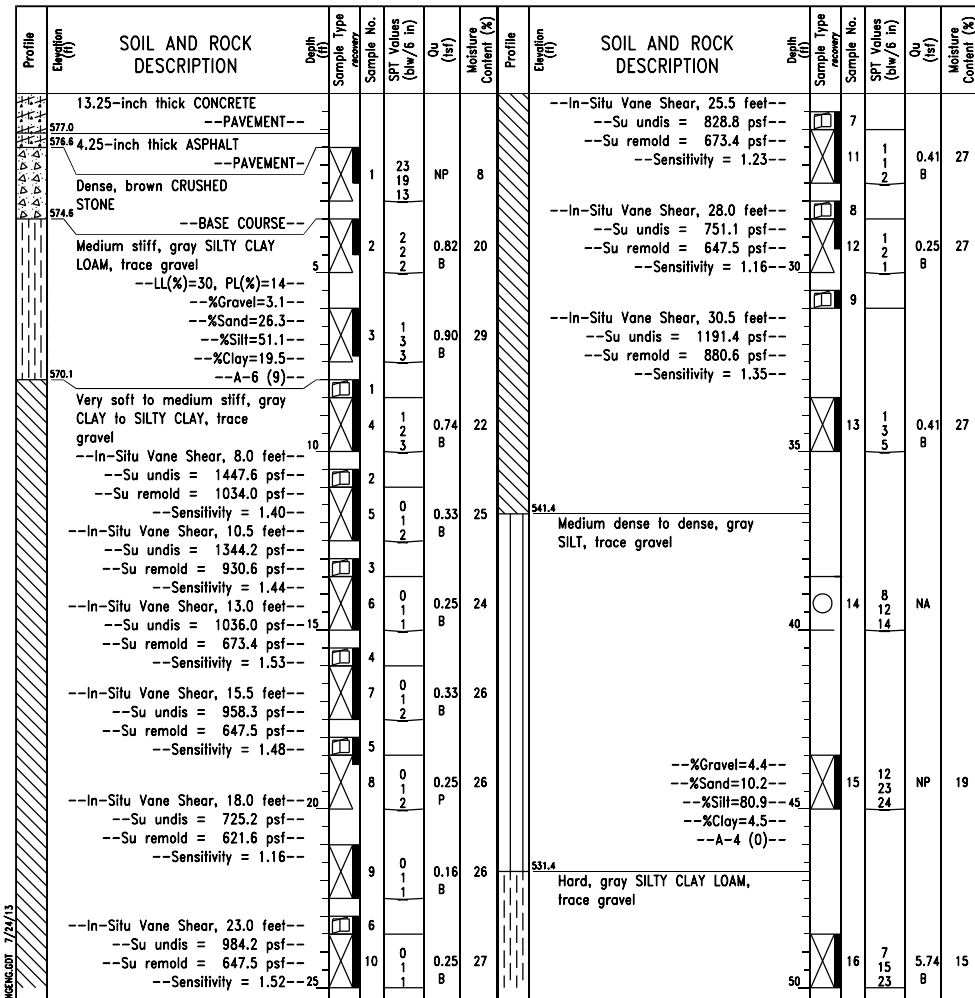
wangeng@wangeng.com  
1145 N Main Street  
Lombard, IL 60148  
Telephone: 630 953-9928  
Fax: 630 953-9938

### BORING LOG 02-RWB-03

WEI Job No.: 1100-04-01

Client: AECOM  
Project: Circle Interchange Reconstruction  
Location: Sections 16 and 17, T39N, R14E of 3rd PM

Datum: NGVD  
Elevation: 578.12 ft  
North: 1896571.20 ft  
East: 1171842.41 ft  
Station: 1815+41.58  
Offset: 4.7281 LT



#### GENERAL NOTES

Begin Drilling 06-06-2013 Complete Drilling 06-09-2013  
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR  
Driller R&J Logger D. Kolpacki Checked by C. Marin  
Drilling Method 2.25" HSA to 10', Mud Rotary 10' thereafter, boring backfilled upon completion

#### WATER LEVEL DATA

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



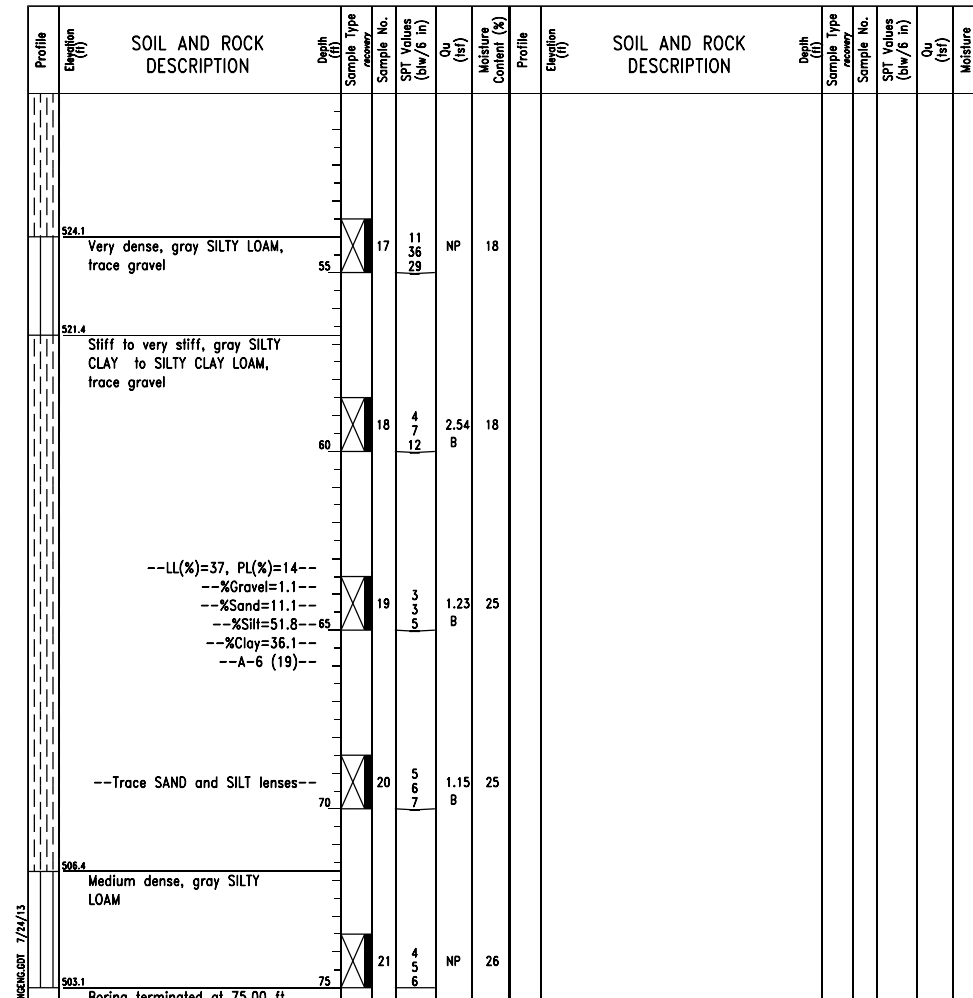
wangeng@wangeng.com  
1145 N Main Street  
Lombard, IL 60148  
Telephone: 630 953-9928  
Fax: 630 953-9938

### BORING LOG 02-RWB-03

WEI Job No.: 1100-04-01

Client: AECOM  
Project: Circle Interchange Reconstruction  
Location: Sections 16 and 17, T39N, R14E of 3rd PM

Datum: NGVD  
Elevation: 578.12 ft  
North: 1896571.20 ft  
East: 1171842.41 ft  
Station: 1815+41.58  
Offset: 4.7281 LT



#### GENERAL NOTES

Begin Drilling 06-06-2013 Complete Drilling 06-09-2013  
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR  
Driller R&J Logger D. Kolpacki Checked by C. Marin  
Drilling Method 2.25" HSA to 10', Mud Rotary 10' thereafter, boring backfilled upon completion

#### WATER LEVEL DATA

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



USER NAME = dunkerleyb  
PLOT SCALE = N.T.S.  
PLOT DATE = 4/28/2014

DESIGNED - DEV  
CHECKED - ATB  
DRAWN - BRD  
CHECKED - EJO

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REVISED  
REVISED  
REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BORING LOGS - II  
STRUCTURE NO. 016-1720

SHEET NO. RW1-14 OF RW1-17 SHEETS

F.A.I. R.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	532
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT NUMBER-				



Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample No. retested	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample No. retested	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)
578.3	13.5-inch thick CONCRETE --PAVEMENT--														
577.9	4-inch thick ASPHALT --PAVEMENT--														
576.4	Dense, brown CRUSHED STONE --FILL--														
573.9	Stiff, gray SILTY CLAY LOAM, trace gravel	1	15	17	23	NP									
		2	4	5	5	1.07	22								
		3	1	1	3	0.33	21								
		4	2	2	2	0.57	22								
		5	1	1	1	0.25	23								
		6	0	2	1	0.25	25								
		7	0	2	2	0.25	28								
		8	0	1	1	0.25	24								
		9	0	2	2	0.16	27								
		10	0	2	2	0.25	27								
		11	0	2	2	0.33	26								
		12	0	2	2	0.41	26								
		13	1	1	2	<	0.25	27							
		14	3	4	8	1.31	19								
		15	5	10	13	3.36	23								
		16	12	15	27	9.84	13								
		17	12	18	21	3.94	22								
		18	12	24	27	6.72	13								
		19	7	11	15	NP	23								
		20	5	10	13	4.50	14								
		21	1	1	1	0.25	23								
		22	1	1	1	0.25	25								
		23	0	2	2	0.25	28								
		24	0	1	1	0.25	24								
		25	0	2	2	0.25	27								
		26	0	2	2	0.16	27								
		27	0	2	2	0.25	27								
		28	0	2	2	0.25	28								
		29	0	2	2	0.25	25								
		30	0	2	2	0.41	26								
		31	0	2	2	0.33	26								
		32	0	2	2	0.33	21								
		33	0	2	2	0.25	23								
		34	0	2	2	0.25	25								
		35	0	2	2	0.25	25								
		36	0	2	2	0.25	25								
		37	0	2	2	0.25	25								
		38	0	2	2	0.25	25								
		39	0	2	2	0.25	25								
		40	0	2	2	0.25	25								
		41	0	2	2	0.25	25								
		42	0	2	2	0.25	25								
		43	0	2	2	0.25	25								
		44	0	2	2	0.25	25								
		45	0	2	2	0.25	25								
		46	0	2	2	0.25	25								
		47	0	2	2	0.25	25								
		48	0	2	2	0.25	25								
		49	0	2	2	0.25	25								
		50	0	2	2	0.25	25								

**GENERAL NOTES**  
 Begin Drilling 06-04-2013 Complete Drilling 06-04-2013  
 Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR  
 Driller R&J Logger D. Kolpacki Checked by C. Marin  
 Drilling Method 2.25" HSA to 10', Mud Rotary 10' thereafter, boring backfilled upon completion

**WATER LEVEL DATA**  
 While Drilling  NA  
 At Completion of Drilling  NA  
 Time After Drilling NA  
 Depth to Water  NA

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

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample No. retested	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample No. retested	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)
527.6	Very stiff, gray SILTY CLAY, trace gravel --LL(%)=31, PL(%)=15-- --%Gravel=1.0-- --%Sand=7.8-- --%Silt=58.9--55 --%Clay=32.3-- --A-6 (13)--														
522.6	Hard, gray SILTY LOAM, trace gravel														
517.6	Medium dense, gray SANDY LOAM														
512.6	Hard, gray SILTY LOAM, trace gravel														
510.6	Boring terminated at 68.75 ft														
		11	0	2	2	0.33	26								
		12	0	2	2	0.41	26								
		13	1	1	2	<	0.25	27							
		14	3	4	8	1.31	19								
		15	5	10	13	3.36	23								
		16	12	15	27	9.84	13								
		17	12	18	21	3.94	22								
		18	12	24	27	6.72	13								
		19	7	11	15	NP	23								
		20	5	10	13	4.50	14								
		21	1	1	1	0.25	23								
		22	1	1	1	0.25	25								
		23	0	2	2	0.25	28								
		24	0	1	1	0.25	24								
		25	0	2	2	0.25	27								
		26	0	2	2	0.25	25								
		27	0	2	2	0.25	25								
		28	0	2	2	0.25	25								
		29	0	2	2	0.25	25								
		30	0	2	2	0.25	25								
		31	0	2	2	0.25	25								
		32	0	2	2	0.25	25								
		33	0	2	2	0.25	25								
		34	0	2	2	0.25	25								
		35	0	2	2	0.25	25								
		36	0	2	2	0.25	25								
		37	0	2	2	0.25	25								
		38	0	2	2	0.25	25								
		39	0	2	2	0.25	25								
		40	0	2	2	0.25	25								
		41	0	2	2	0.25	25								
		42	0	2	2	0.25	25								
		43	0	2	2	0.25	25								
		44	0	2	2	0.25	25								
		45	0	2	2	0.25	25								
		46	0	2	2	0.25	25								
		47	0	2	2	0.25	25								
		48	0	2	2	0.25	25								
		49	0	2	2	0.25	25								
		50	0	2	2	0.25	25								

**GENERAL NOTES**  
 Begin Drilling 06-04-2013 Complete Drilling 06-04-2013  
 Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR  
 Driller R&J Logger D. Kolpacki Checked by C. Marin  
 Drilling Method 2.25" HSA to 10', Mud Rotary 10' thereafter, boring backfilled upon completion

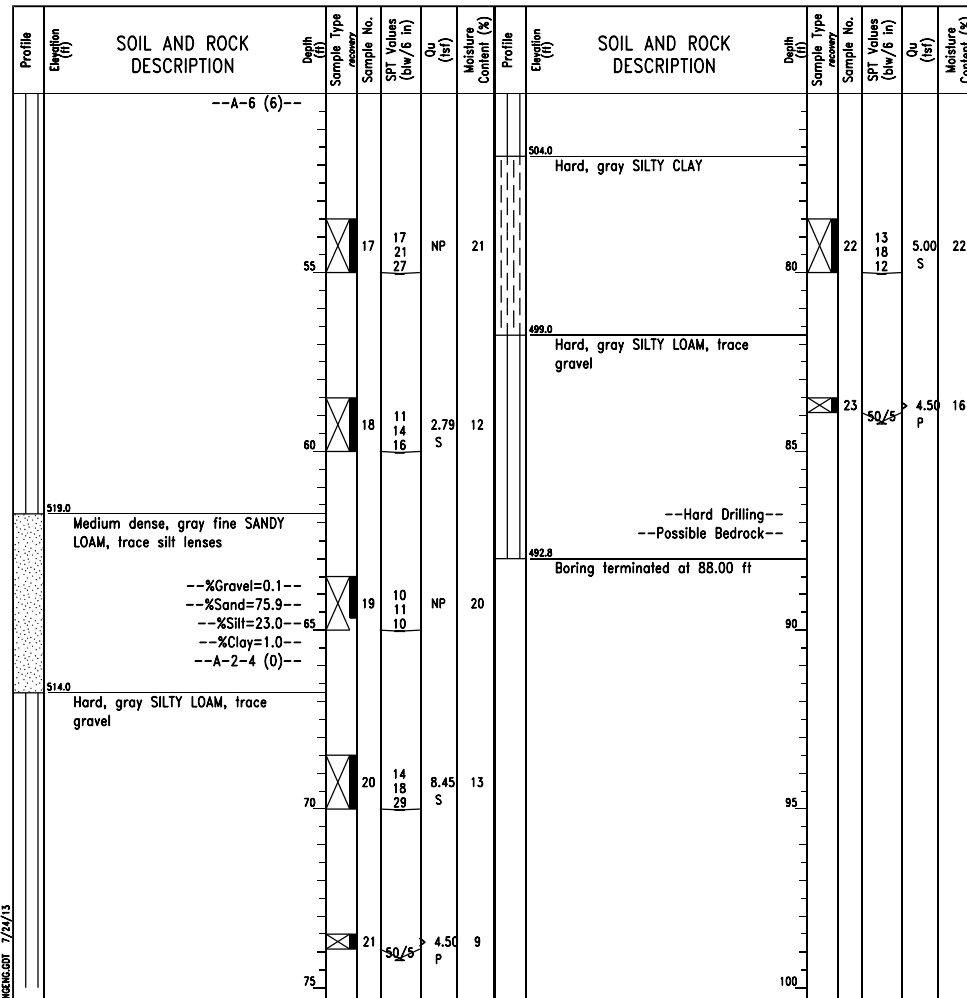
**WATER LEVEL DATA**  
 While Drilling  NA  
 At Completion of Drilling  NA  
 Time After Drilling NA  
 Depth to Water  NA

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

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample No. retested	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample No. re
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**BORING LOG 02-RWB-05**

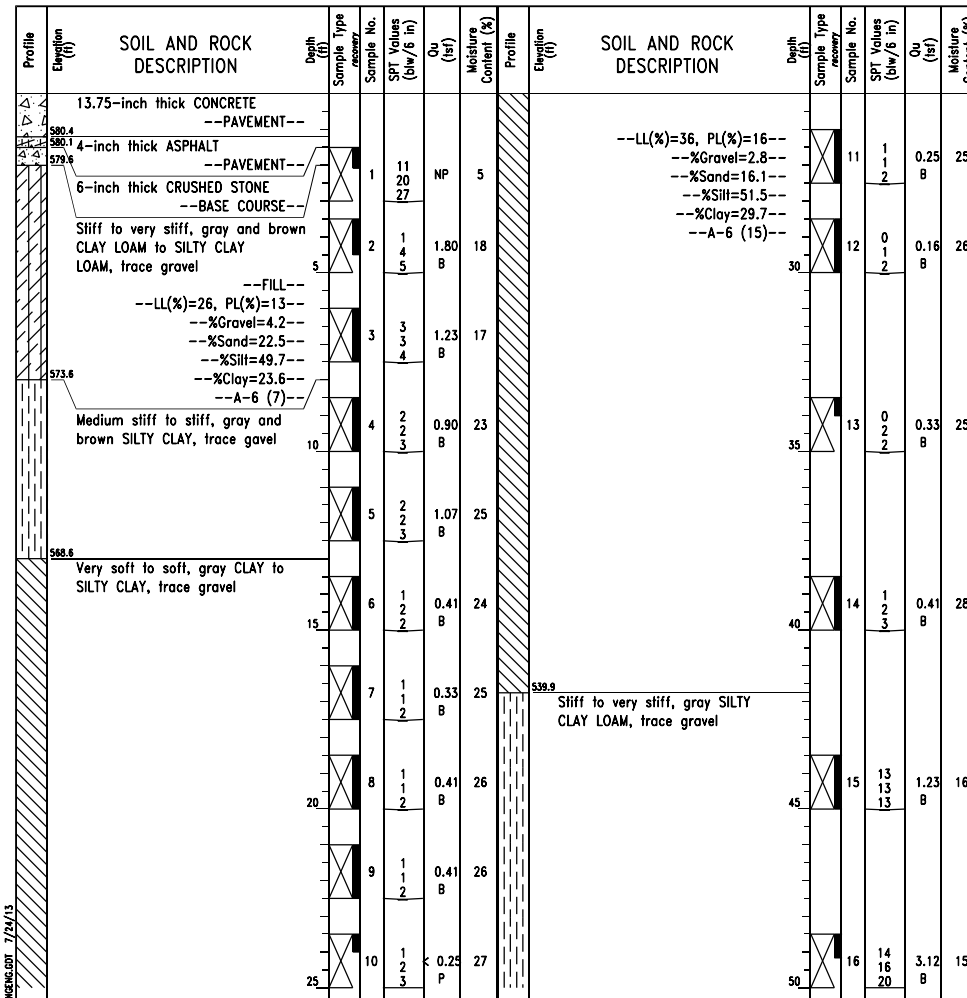
WEI Job No.: 1100-04-01  
 Client: AECOM  
 Project: Circle Interchange Reconstruction  
 Location: Sections 16 and 17, T39N, R14E of 3rd PM  
 Datum: NGVD  
 Elevation: 580.79 ft  
 North: 1896721.51 ft  
 East: 1171834.02 ft  
 Station: 1816+92.12  
 Offset: 4.4239 LT



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	06-09-2013	Complete Drilling	06-11-2013
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR
Driller	R&T	Logger	D. Kolpacki
Checked by	C. Marin	Drilling Method	2.25" HSA to 7.5', Mud Rotary 7.5' thereafter, boring backfilled upon completion
White Drilling	☑	DRY	
At Completion of Drilling	☑	NA	
Time After Drilling	NA	Depth to Water	☑ NA

**BORING LOG 02-RWB-06**

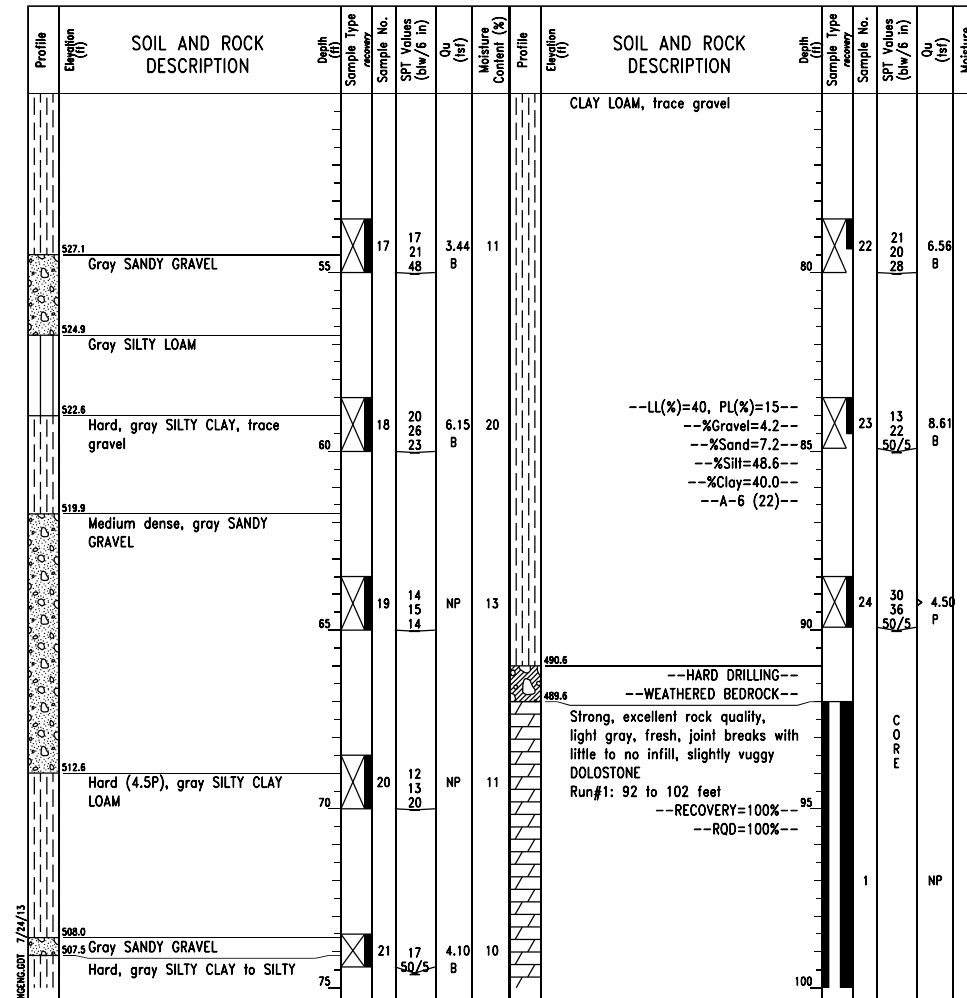
WEI Job No.: 1100-04-01  
 Client: AECOM  
 Project: Circle Interchange Reconstruction  
 Location: Sections 16 and 17, T39N, R14E of 3rd PM  
 Datum: NGVD  
 Elevation: 581.64 ft  
 North: 1896796.97 ft  
 East: 1171829.83 ft  
 Station: 1817+67.62  
 Offset: 4.8198 LT



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	06-16-2013	Complete Drilling	06-17-2013
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR
Driller	P&N	Logger	A. Happel
Checked by	C. Marin	Drilling Method	2.25" HSA to 10', Mud Rotary 10' thereafter, boring backfilled upon completion
White Drilling	☑	NA	
At Completion of Drilling	☑	NA	
Time After Drilling	NA	Depth to Water	☑ NA

**BORING LOG 02-RWB-06**

WEI Job No.: 1100-04-01  
 Client: AECOM  
 Project: Circle Interchange Reconstruction  
 Location: Sections 16 and 17, T39N, R14E of 3rd PM  
 Datum: NGVD  
 Elevation: 581.64 ft  
 North: 1896796.97 ft  
 East: 1171829.83 ft  
 Station: 1817+67.62  
 Offset: 4.8198 LT



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	06-16-2013	Complete Drilling	06-17-2013
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR
Driller	P&N	Logger	A. Happel
Checked by	C. Marin	Drilling Method	2.25" HSA to 10', Mud Rotary 10' thereafter, boring backfilled upon completion
White Drilling	☑	NA	
At Completion of Drilling	☑	NA	
Time After Drilling	NA	Depth to Water	☑ NA

WANGENR 11000401.DWG 7/24/13

WANGENR 11000401.DWG 7/24/13

WANGENR 11000401.DWG 7/24/13



USER NAME = dunkerleyb	DESIGNED - DEV	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 4/28/2014	DRAWN - BRD	REVISED
	CHECKED - EJO	REVISED

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**BORING LOGS - IV  
 STRUCTURE NO. 016-1720**

SHEET NO. RW1-16 OF RW1-17 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	532B
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT NUMBER-				

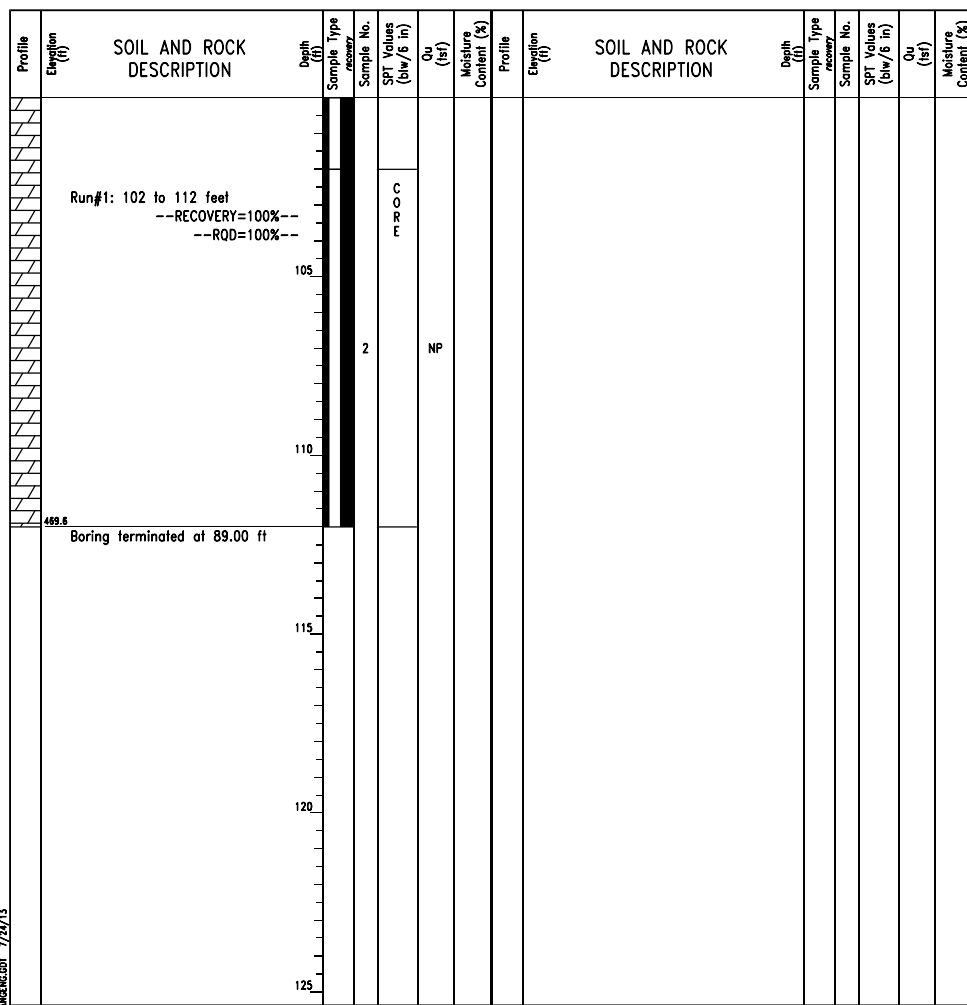
0161720-60W28-516-Bor-Ing

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

**BORING LOG 02-RWB-06**  
 WEI Job No.: 1100-04-01  
 Datum: NGVD  
 Elevation: 581.64 ft  
 North: 1896796.97 ft  
 East: 1171829.83 ft  
 Station: 1817+67.62  
 Offset: 4.8198 LT

Client: AECOM  
 Project: Circle Interchange Reconstruction  
 Location: Sections 16 and 17, T39N, R14E of 3rd PM

Page 3 of 3



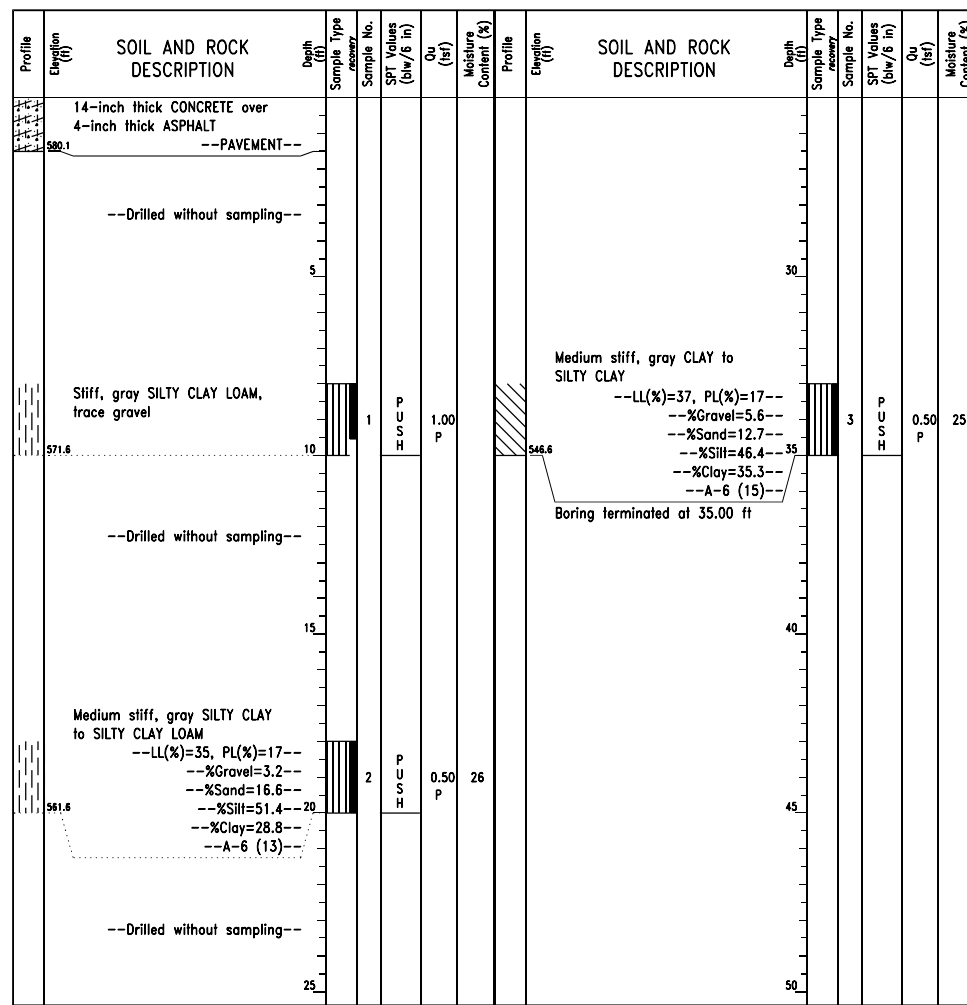
GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	06-16-2013	Complete Drilling	06-17-2013
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR
Driller	P&N	Logger	A. Happel
Checked by	C. Marin	Time After Drilling	NA
Drilling Method	2.25" HSA to 10', Mud Rotary 10' thereafter, boring backfilled upon completion	Depth to Water	NA

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

**BORING LOG 02-RWB-06ST**  
 WEI Job No.: 1100-04-01  
 Datum: NAVD 88  
 Elevation: 581.65 ft  
 North: 1896797.01 ft  
 East: 1171830.80 ft  
 Station: 1817+67.62  
 Offset: 3.8490 LT

Client: AECOM  
 Project: Circle Interchange Reconstruction  
 Location: Section 17, T39N, R14E of 3rd PM

Page 1 of 1



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	07-25-2013	Complete Drilling	07-25-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 TMR
Driller	R&N	Logger	A. Happel
Checked by	C. Marin	Time After Drilling	NA
Drilling Method	3.25" HSA, boring backfilled upon completion	Depth to Water	NA

0161720-60W28-517-Bor-Log



USER NAME = dunkerleyb	DESIGNED - DEV	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - BRD	REVISED
PLOT DATE = 4/28/2014	CHECKED - EJO	REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BORING LOGS - V  
 STRUCTURE NO. 016-1720

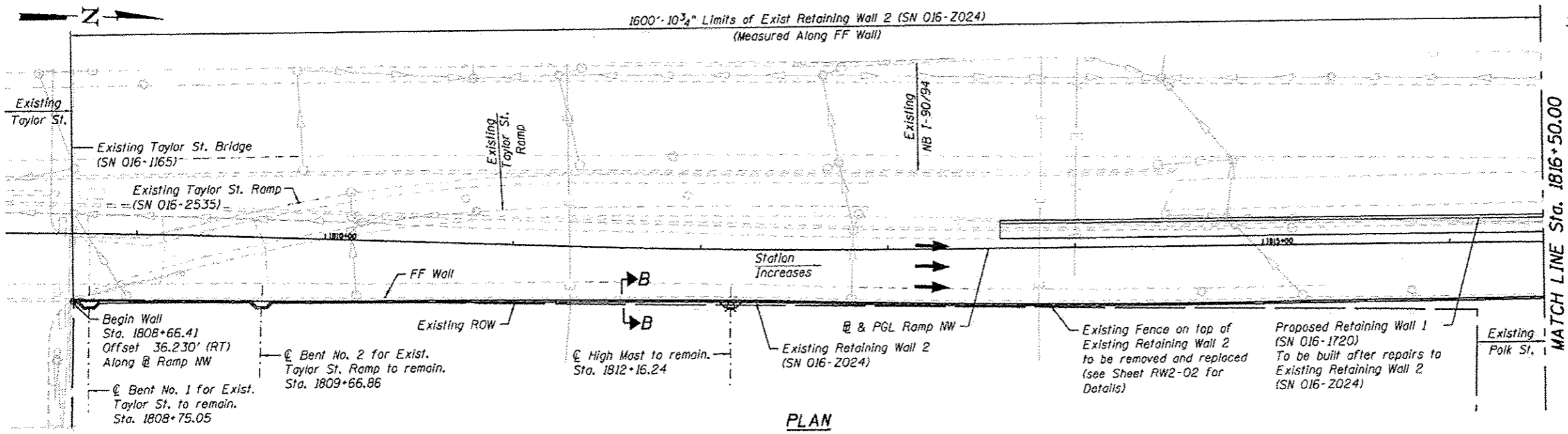
SHEET NO. RW1-17 OF RW1-17 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	532C
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT -NUMBER-				

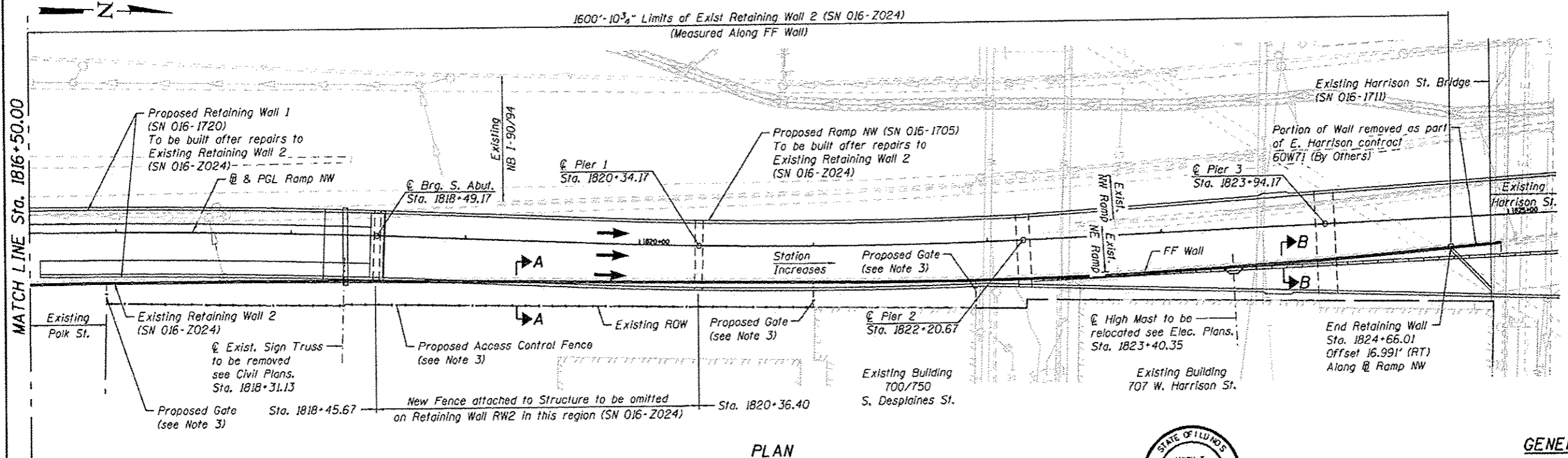
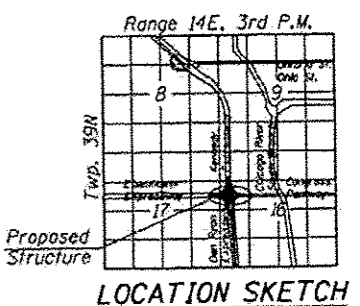
Existing Structure: Existing Retaining Wall 2 was constructed in 1988 under contract C-91-433-85 (FAI Route 90/94 Section 1985-080R). Existing Wall is comprised of a reinforced concrete cantilever wall on caissons and steel piles with attached steel fence and crashwall. The approximate length of wall is 1,600'-10<sup>3</sup>/<sub>4</sub>".

Traffic Control: Traffic to be maintained on existing NW Ramp SN 016-2449 (NB I-90/94 to WB I-290) during construction. Existing NE Ramp to be closed.

- NOTES:**
1. For Section A-A and B-B, see Sheet RW2-02.
  2. Repairs to existing Retaining Wall 2 shall be performed prior to construction of proposed Retaining Wall 1 (SN 016-1720) and proposed Ramp NW (SN 016-1705).
  3. See Civil Plans for Details.



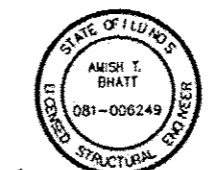
**SCOPE OF WORK**  
Structural repair of retaining wall.



**LEGEND:**

Combined Sewer	←←←←←	Water Line	— W —
Electric	—E—	Gas Line	— G —
Fiber Optic	—FO—	Fire Hydrant	⊙
Storm Sewer	→→→→→	Light Pole	⊗

**APPROVED**  
For Structural Adequacy Only  
*P. Carl Pappas*  
Engineer of Bridges & Structures



*Amish T. Bhatt* 4/28/14  
AMISH T. BHATT DATE  
LICENSE EXPIRES 11/30/2014

**GENERAL PLAN**  
**EXISTING RETAINING WALL 2**  
F.A.I. RTE. 90/94 - SECTION 2013-010R  
COOK COUNTY  
STATION 1808+66.41 TO 1824+66.01  
STRUCTURE NO. 016-2024

0162024-010R28-RW2-1.dgn



USER NAME	kritzm	DESIGNED	ATB	REVISED	
		CHECKED	EJO	REVISED	
PLOT SCALE	N.T.S.	DRAWN	MRK	REVISED	
PLOT DATE	4/28/2014	CHECKED	ATB	REVISED	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SHEET NO. RW2-01 OF RW2-09 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	533
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

**GENERAL NOTES:**

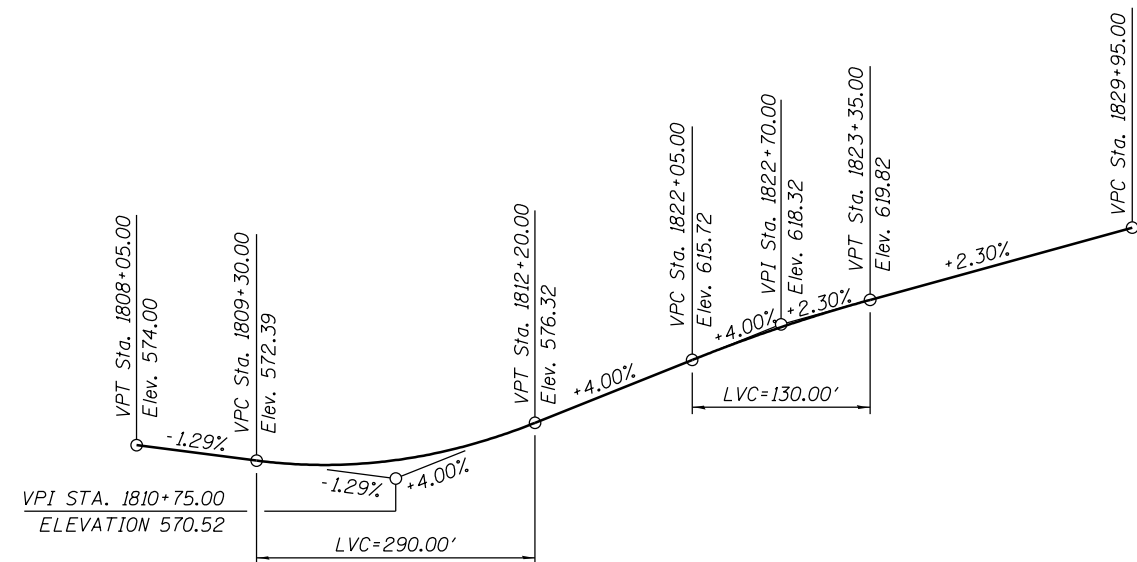
1. Wall repair locations are approximate and were determined from field inspection performed at the time of plan preparation. The necessary adjustments based on current field conditions will be made at time of construction. Such variations shall not be cause for additional compensation for a change in the scope of work. However, the Contractor will be paid for the actual quantity furnished at the unit price bid for the work.
2. Stations and offsets of Existing Retaining Wall 2 are referenced along proposed Ramp NW Baseline.
3. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
4. Existing reinforcing steel which is exposed by the concrete repair process, but is to remain embedded in the existing structure and reused, shall be cleaned to be free of existing concrete and rust, and straightened if necessary. Existing reinforcing steel which is cut, stretched or damaged by the Contractor during the concrete repair process shall be replaced by embedded reinforcing steel or anchorage, equal to or greater than the size of original reinforcing steel, at no cost to the Department. See Special Provisions for Structural repair of concrete.

**TOTAL BILL OF MATERIALS**

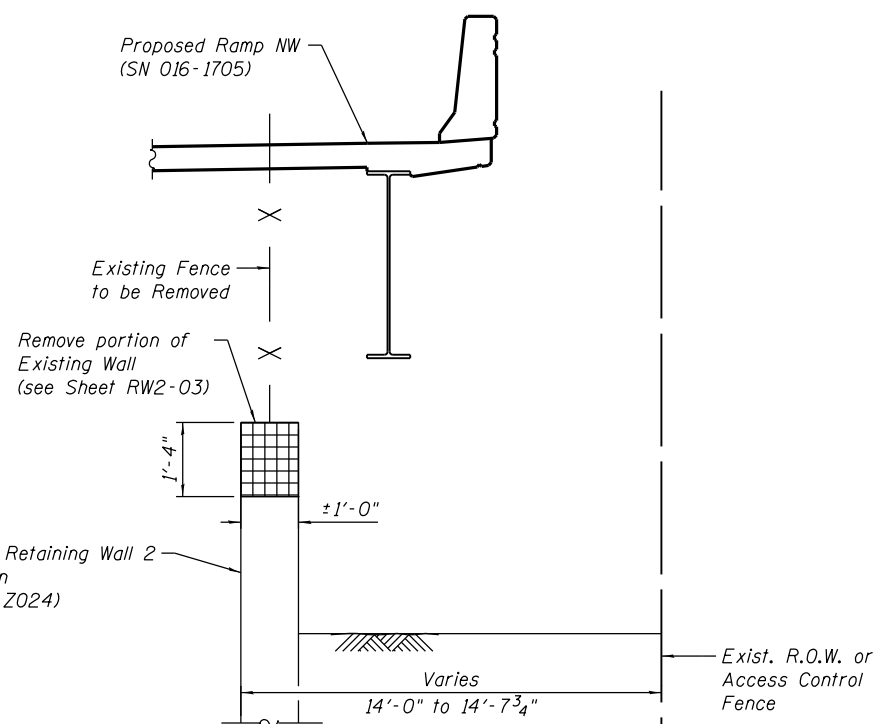
DESCRIPTION	UNIT	TOTAL
STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 IN.)	SQ. FT.	25
STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 IN.)	SQ. FT.	11
EPOXY CRACK INJECTION	FOOT	92
FENCE REMOVAL	FOOT	1,601
CONCRETE REMOVAL	CU.YD.	1
CHAIN LINK FENCE, 42" ATTACHED TO STRUCTURE (SPECIAL)	FOOT	1,601

**INDEX OF SHEETS**

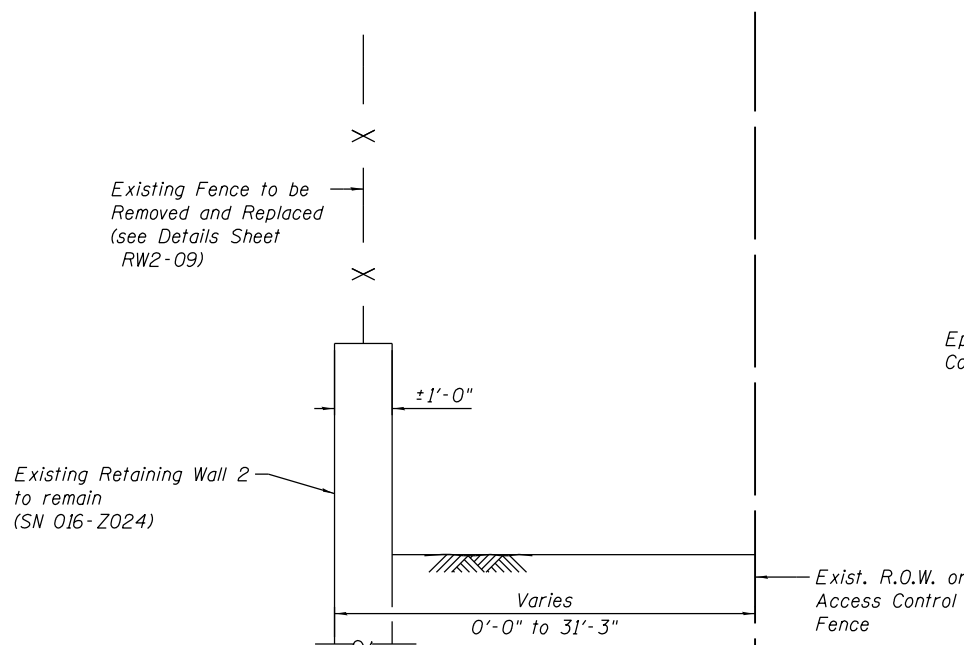
- RW2-01 General Plan
- RW2-02 Total Bill of Material, Index of Sheets & General Notes
- RW2-03 Front of Wall Elevations - I
- RW2-04 Front of Wall Elevations - II
- RW2-05 Front of Wall Elevations - III
- RW2-06 Back of Wall Elevations - I
- RW2-07 Back of Wall Elevations - II
- RW2-08 Back of Wall Elevations - III
- RW2-09 Fence Details



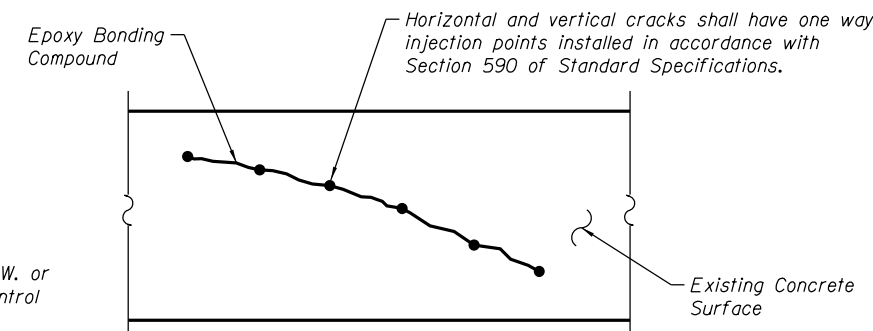
**PROFILE GRADE**  
(along Ramp NW)



**SECTION A-A**  
(From Sta. 1818+45.67 to 1820+36.40)



**SECTION B-B**  
(From Sta. 1808+66.41 to 1818+45.67  
Sta. 1820+36.40 to 1824+66.01)



**EPOXY CRACK INJECTION**

016Z024-60W28-RW2-2.dgn



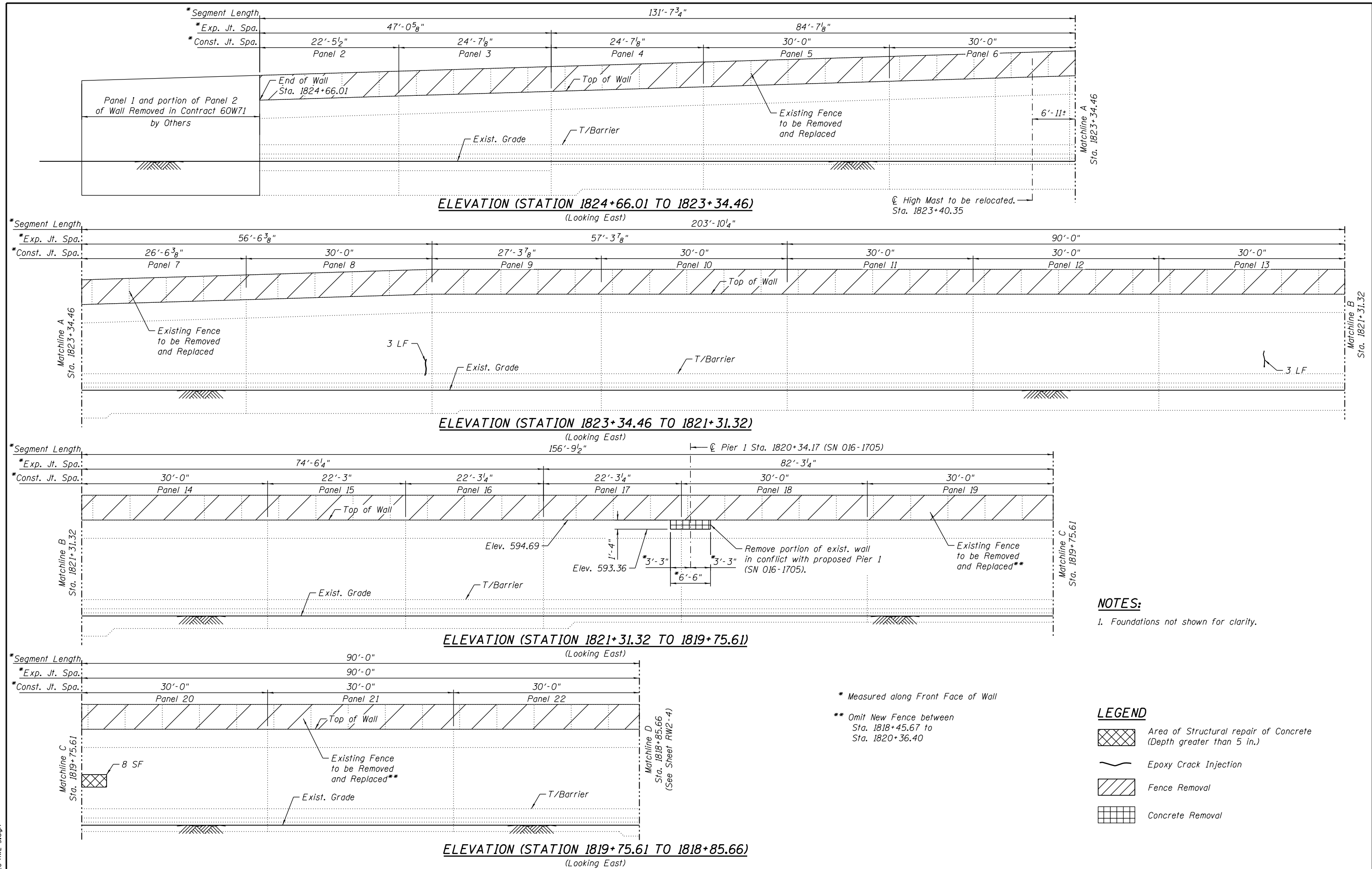
USER NAME = kritzm	DESIGNED - ATB	REVISED
PLOT SCALE = N.T.S.	CHECKED - EJO	REVISED
PLOT DATE = 4/28/2014	DRAWN - MRK	REVISED
	CHECKED - ATB	REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TOTAL BILL OF MATERIAL, INDEX OF SHEETS & GENERAL NOTES  
STRUCTURE NO. 016-Z024

SHEET NO. RW2-02 OF RW2-09 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 534
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	



**NOTES:**  
1. Foundations not shown for clarity.

- LEGEND**
- Area of Structural repair of Concrete (Depth greater than 5 in.)
  - Epoxy Crack Injection
  - Fence Removal
  - Concrete Removal

\* Measured along Front Face of Wall  
\*\* Omit New Fence between Sta. 1818+45.67 to Sta. 1820+36.40

016Z024-60W28-RW2-3.dgn

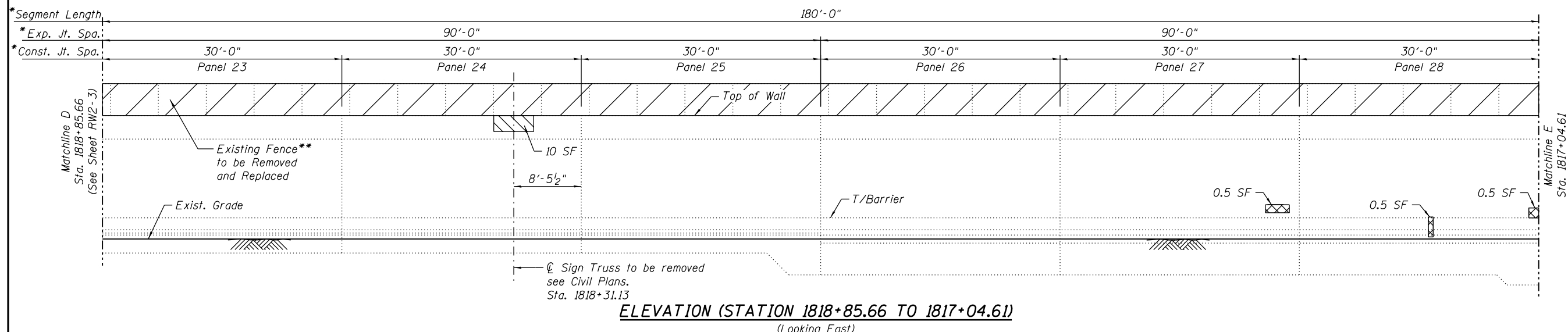


USER NAME = kritzm	DESIGNED - ATB	REVISED
	CHECKED - EJO	REVISED
PLOT SCALE = N.T.S.	DRAWN - MRK	REVISED
PLOT DATE = 4/28/2014	CHECKED - ATB	REVISED

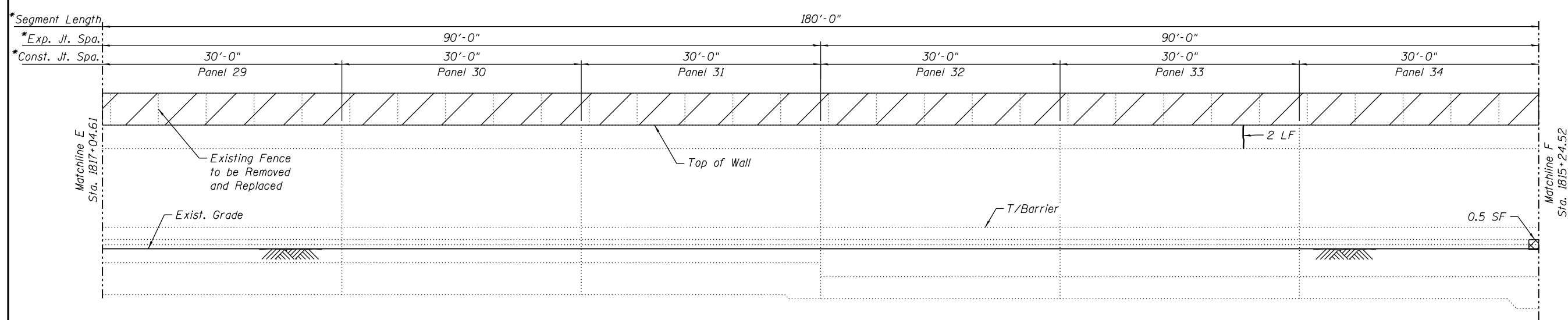
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

FRONT OF WALL ELEVATIONS - I  
STRUCTURE NO. 016-2024  
SHEET NO. RW2-03 OF RW2-09 SHEETS

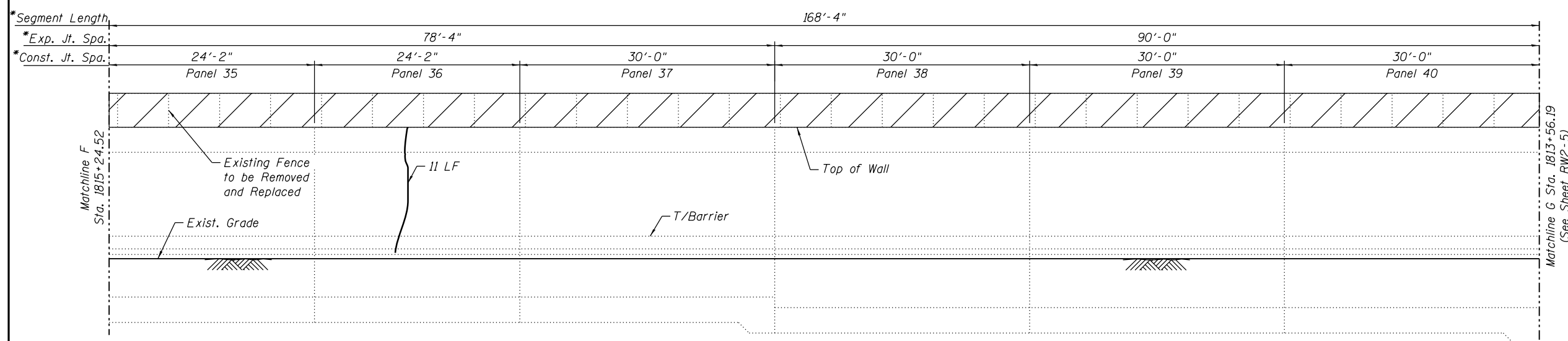
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	535
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	



**ELEVATION (STATION 1818+85.66 TO 1817+04.61)**  
(Looking East)



**ELEVATION (STATION 1817+04.61 TO 1815+24.52)**  
(Looking East)



**ELEVATION (STATION 1815+24.52 TO 1813+56.19)**  
(Looking East)

- \* Measured along Front Face of Wall
- \*\* Omit New Fence between Sta. 1818+45.67 to Sta. 1820+36.40

**NOTES:**  
1. Foundations not shown for clarity.

- LEGEND**
- Area of Structural repair of Concrete (Depth greater than 5 in.)
  - Area of Structural repair of Concrete (Depth equal to or less than 5 in.)
  - Epoxy Crack Injection
  - Fence Removal

016Z024-60W28-RW2-4.dgn



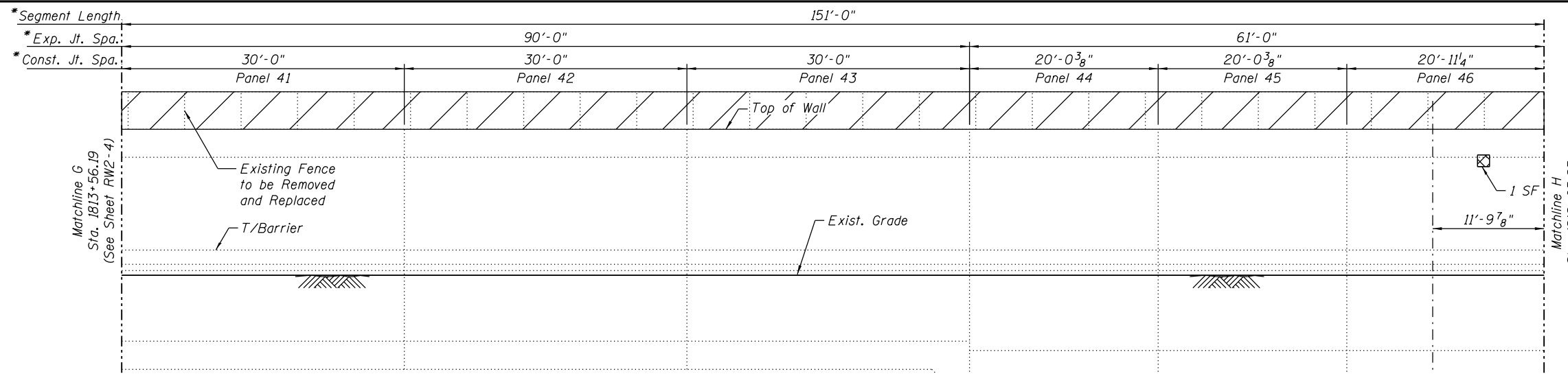
USER NAME = kritzm	DESIGNED - ATB	REVISED
PLOT SCALE = N.T.S.	CHECKED - EJO	REVISED
PLOT DATE = 4/28/2014	DRAWN - MRK	REVISED
	CHECKED - ATB	REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

FRONT OF WALL ELEVATIONS - II  
STRUCTURE NO. 016-2024

SHEET NO. RW2-04 OF RW2-09 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 536
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

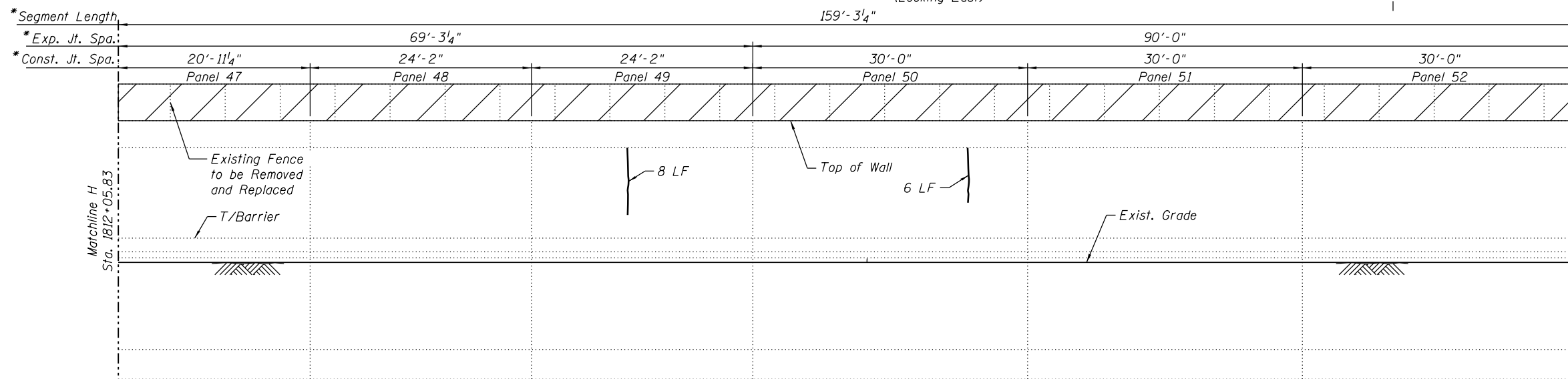


**ELEVATION (STATION 1813+56.19 TO 1812+05.83)**

(Looking East)

⊕ High Mast to remain.  
Sta. 1812+16.24

\*Measured along Front Face of Wall



**ELEVATION (STATION 1812+05.83 TO 1810+47.06)**

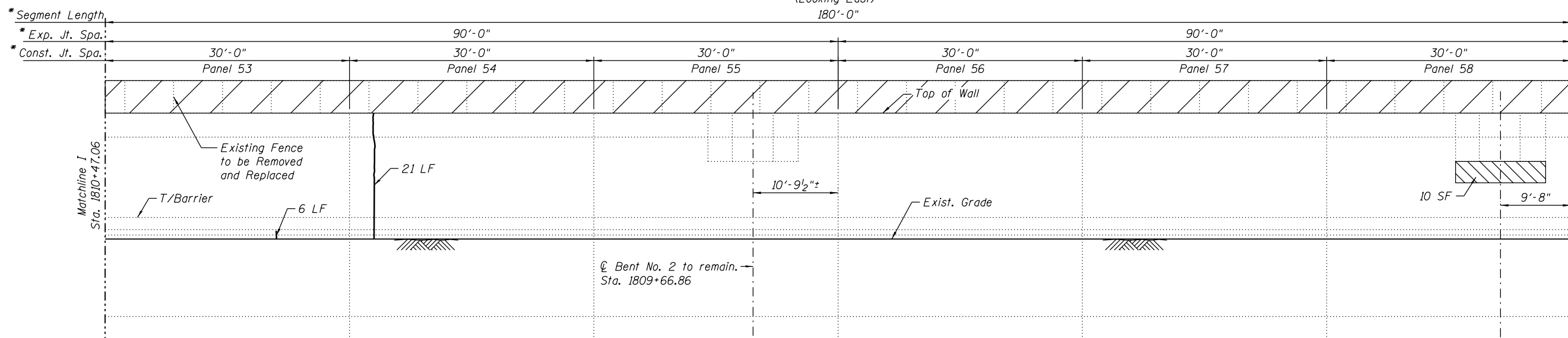
(Looking East)

**NOTES:**

1. Foundations not shown for clarity.

**LEGEND**

- Area of Structural repair of Concrete (Depth greater than 5 in.)
- Area of Structural repair of Concrete (Depth equal to or less than 5 in.)
- Epoxy Crack Injection
- Fence Removal



**ELEVATION (STATION 1810+47.06 TO 1808+66.41)**

(Looking East)

⊕ Bent No. 1 to remain.  
Sta. 1808+75.05

Begin Wall  
Sta. 1808+66.41

016Z024-60W28-RW2-5.dgn



USER NAME = kritzm	DESIGNED - ATB	REVISED
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PLOT DATE = 4/28/2014	DRAWN - MRK	REVISED
	CHECKED - ATB	REVISED

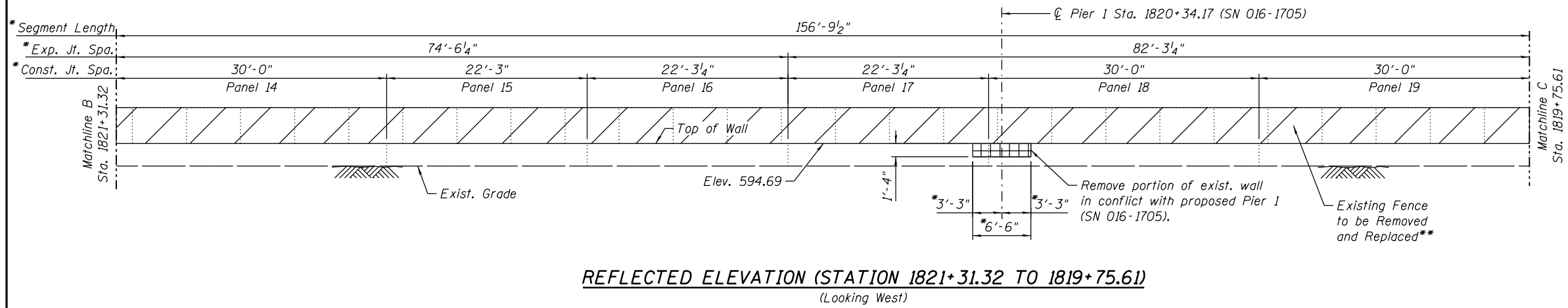
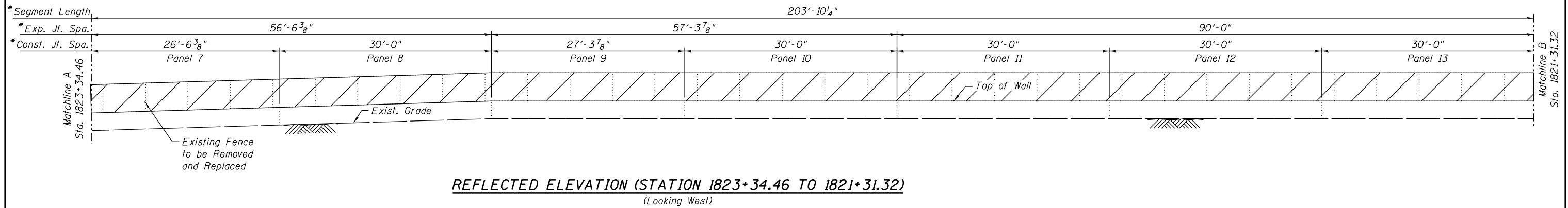
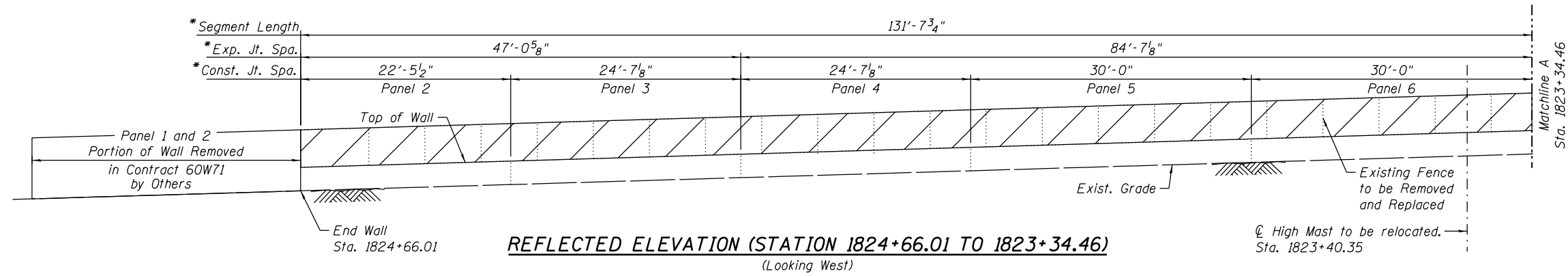
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**FRONT OF WALL ELEVATIONS - III  
STRUCTURE NO. 016-2024**

SHEET NO. RW2-05 OF RW2-09 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 537
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	





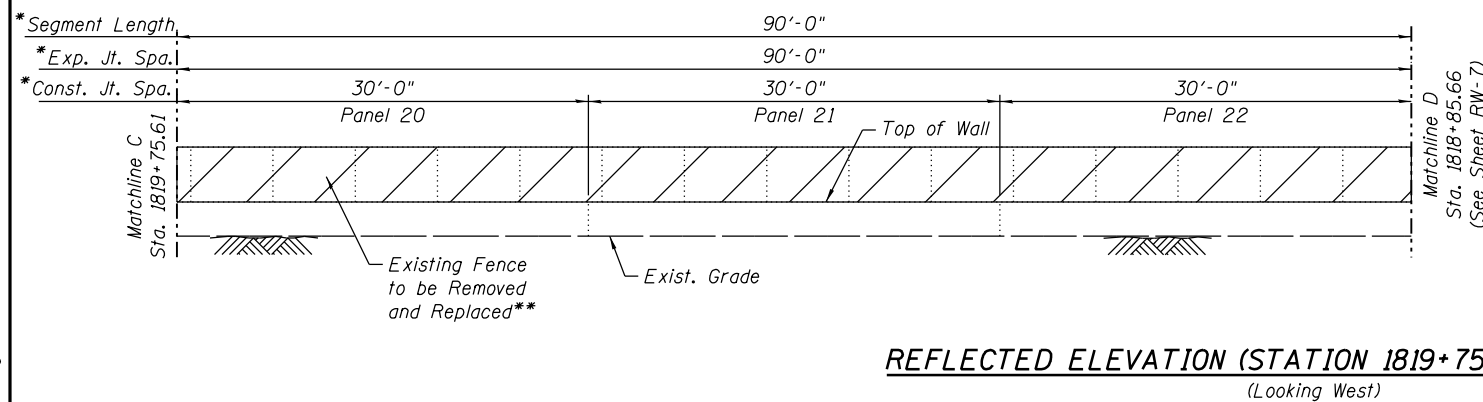
\* Measured along Back Face of Wall  
 \*\* Omit New Fence between Sta. 1818+45.67 to Sta. 1820+36.40

**NOTES:**

1. Foundations not shown for clarity.

**LEGEND**

- Fence Removal
- Concrete Removal



016Z024-60W28-RW2-6.dgn



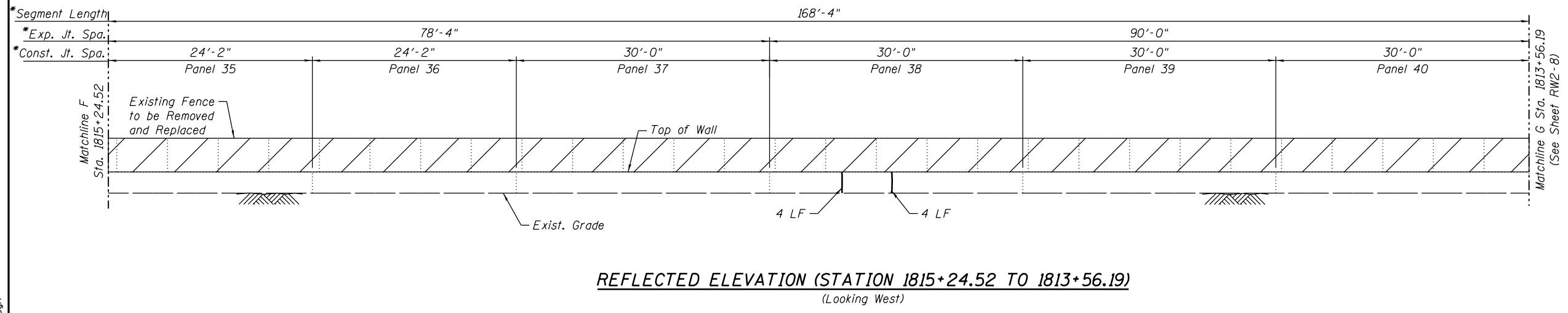
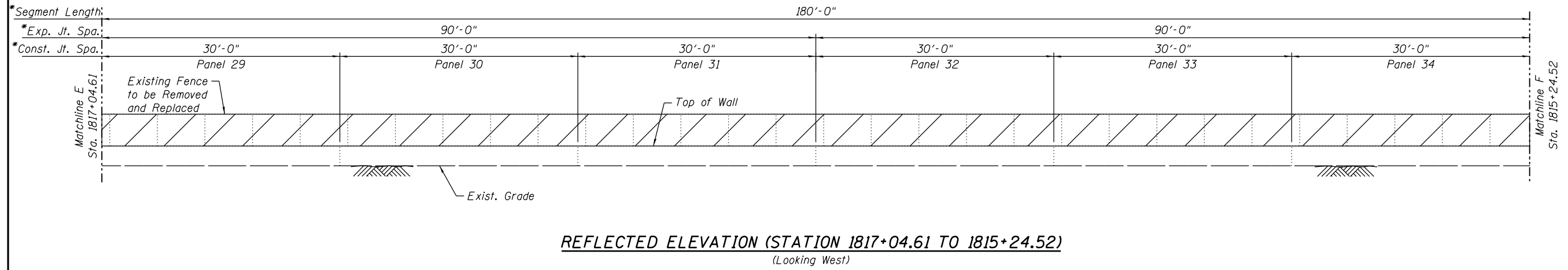
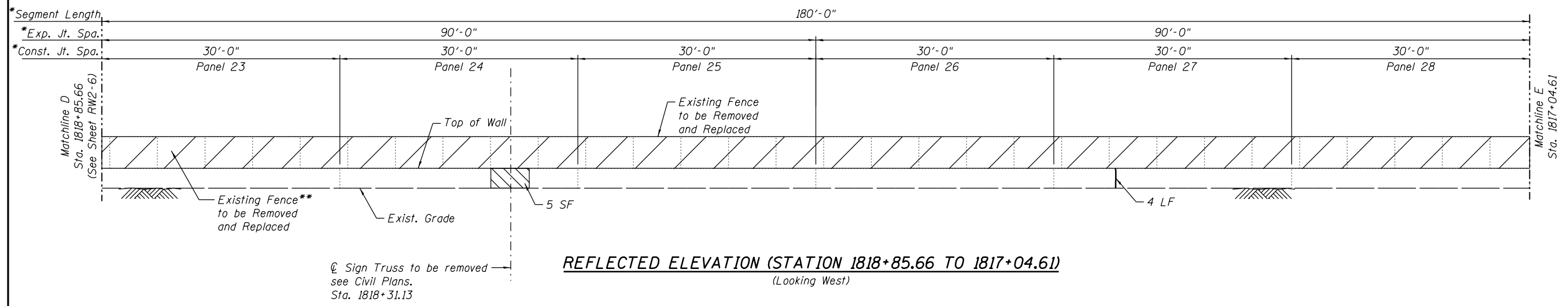
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PLOT DATE = 4/28/2014	CHECKED - ATB	REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BACK OF WALL ELEVATIONS - I  
STRUCTURE NO. 016-2024

SHEET NO. RW2-06 OF RW2-09 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	538
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				



\* Measured along Front Face of Wall

\*\* Omit New Fence between Sta. 1818+45.67 to Sta. 1820+36.40

**NOTES:**

1. Foundations not shown for clarity.

**LEGEND**

Area of Structural repair of Concrete (Depth equal to or less than 5 in.)

Epoxy Crack Injection

Fence Removal

016Z024-60W28-RW2-7.dgn



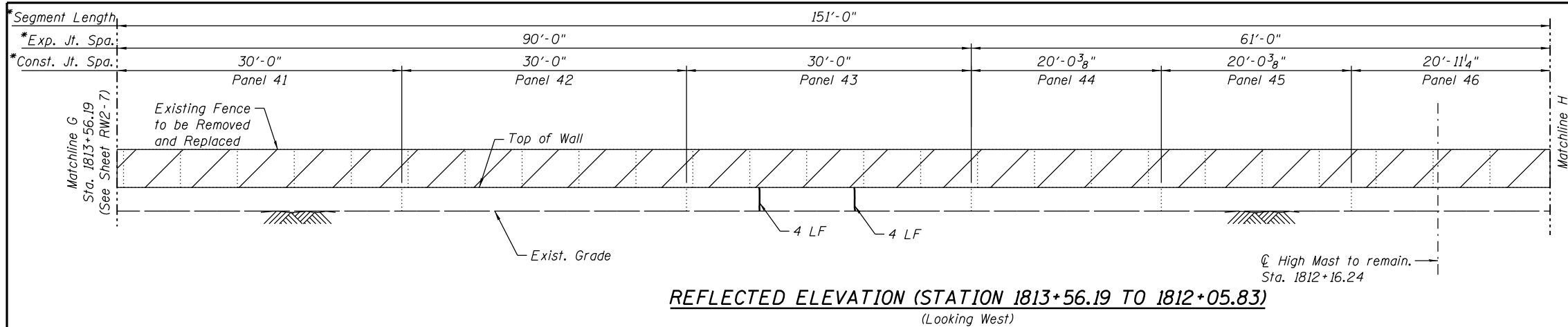
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PLOT SCALE = N.T.S.	DRAWN - MRK	REVISED
PLOT DATE = 4/28/2014	CHECKED - ATB	REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BACK OF WALL ELEVATIONS - II  
STRUCTURE NO. 016-2024

SHEET NO. RW2-07 OF RW2-09 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 539
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	



**REFLECTED ELEVATION (STATION 1813+56.19 TO 1812+05.83)**  
(Looking West)

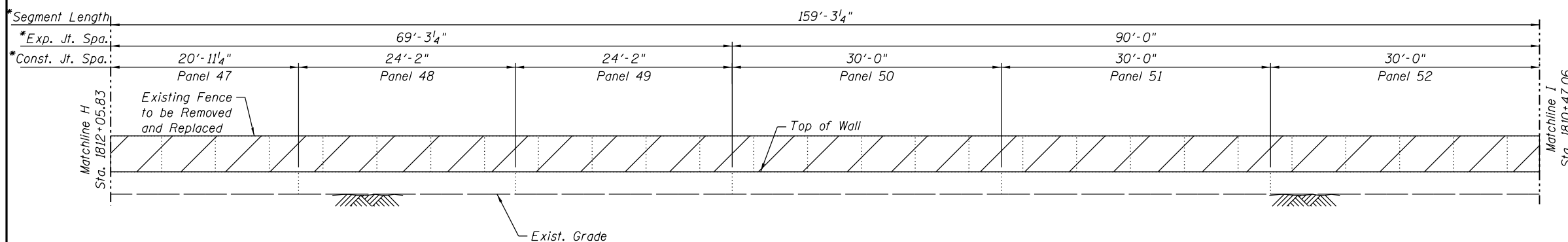
\*Measured along Back Face of Wall

**NOTES:**

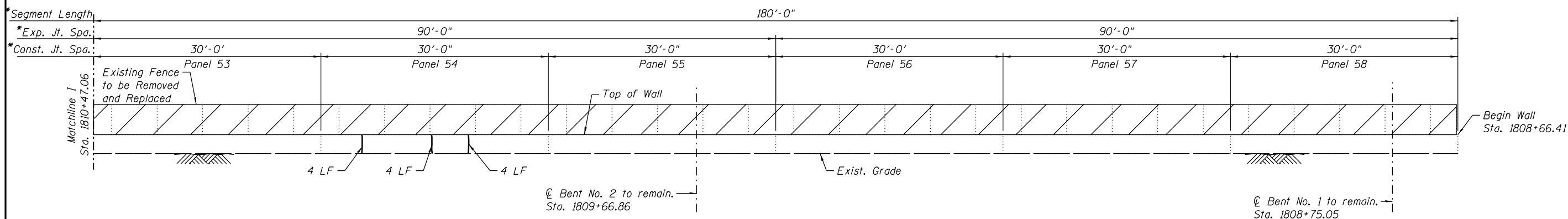
1. Foundations not shown for clarity.

**LEGEND**

- Epoxy Crack Injection
- Fence Removal



**REFLECTED ELEVATION (STATION 1812+05.83 TO 1810+47.06)**  
(Looking West)



**REFLECTED ELEVATION (STATION 1810+47.06 TO 1808+66.41)**  
(Looking West)

016Z024-60W28-RW2-8.dgn



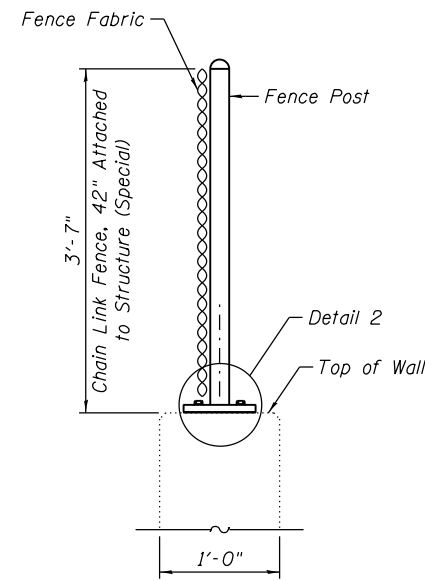
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	CHECKED - EJO	REVISED
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PLOT DATE = 4/28/2014	CHECKED - ATB	REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

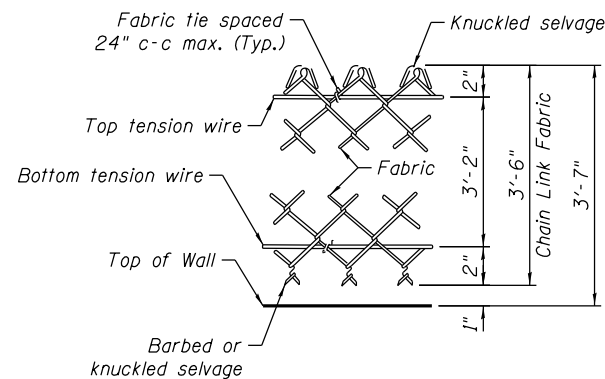
BACK OF WALL ELEVATIONS - III  
STRUCTURE NO. 016-2024

SHEET NO. RW2-08 OF RW2-09 SHEETS

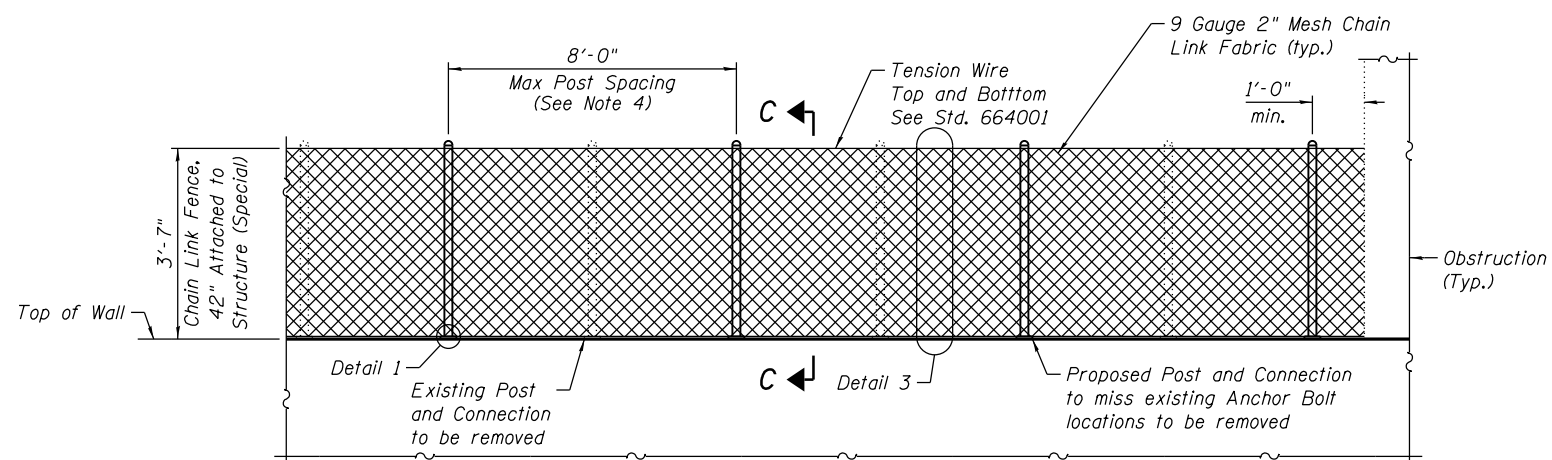
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90/94/290	2013-010R	COOK	747	540
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				



**SECTION C-C**

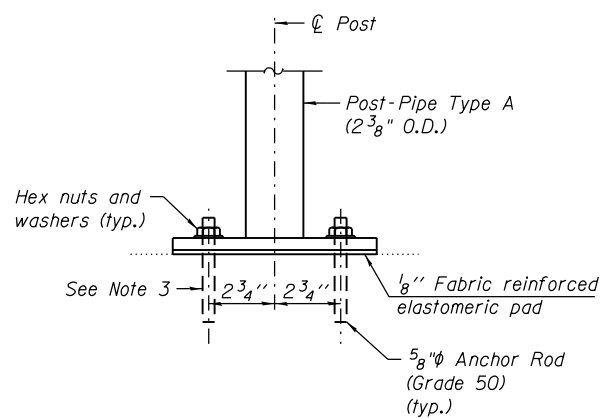


**DETAIL 3**

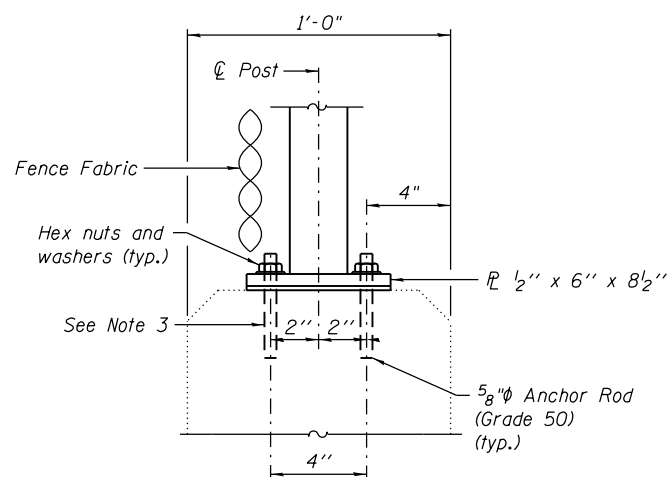


**TYPICAL FRONT FACE ELEVATION**

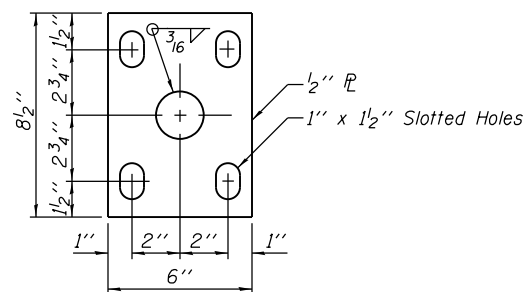
(From Sta. 1808+66.41 to 1818+45.67  
Sta. 1820+36.40 to 1824+66.01)



**DETAIL 1**



**DETAIL 2**



**BASE PL**

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Chain Link Fence 42" Attached to Structure (Special)	FOOT	1,409

**NOTES:**

- For additional chain link fence details, see Standard 664001.
- Base plate and anchor bolts shall be included with Chain Link Fence, 42" Attached to Structure (Special) pay item.
- The Contractor shall drill and set anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.
- Contractor shall field locate Existing Fence Post locations prior to Fence Removal. Contractor shall determine final post spacing to miss location of existing fence post anchor bolts and submit shop drawings to the Department for approval prior to fence construction.
- Anchor Rods shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade and diameter specified. The corresponding specified grade of AASHTO M314 Anchor Rods may be used in lieu of ASTM F1554.
- Base Plates shall be structural steel conforming to requirements of AASHTO M270.
- All Fence elements shall be coated according to the special provision for "Chain Link Fence, 42" Attached to Structure (Special)". See special provisions.

**ANCHOR BOLT DETAILS**



USER NAME = Kritzm	DESIGNED - ATB	REVISED
	CHECKED - EJO	REVISED
PLOT SCALE = N.T.S.	DRAWN - MRK	REVISED
PLOT DATE = 4/28/2014	CHECKED - ATB	REVISED

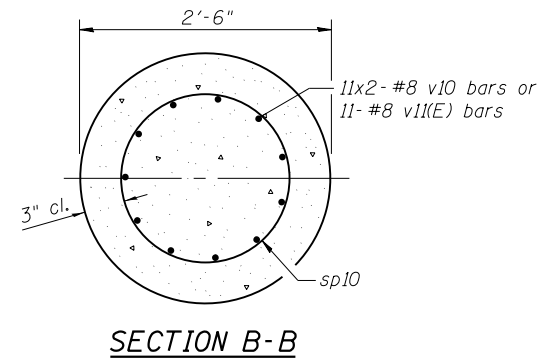
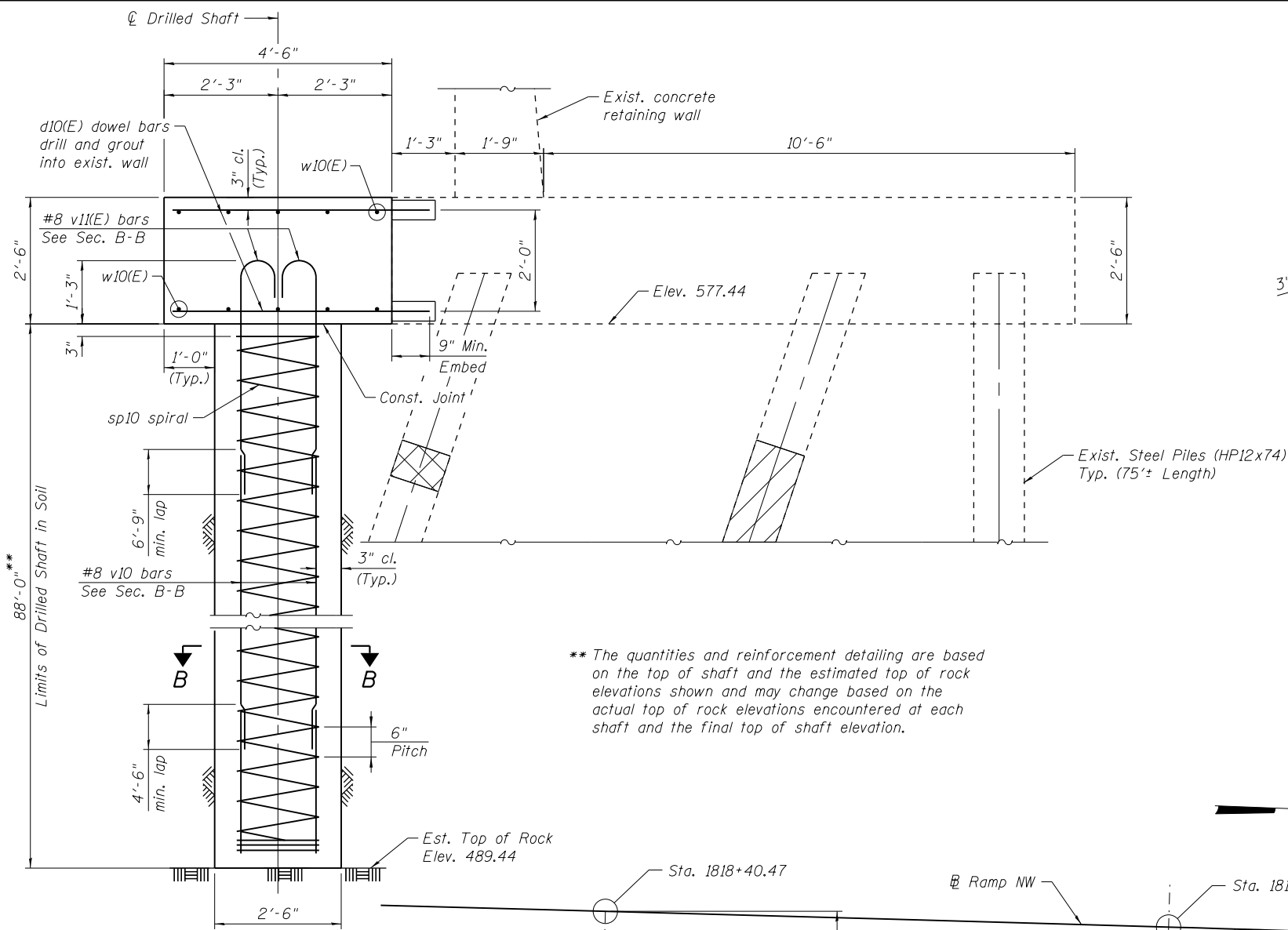
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**FENCE DETAILS  
STRUCTURE NO. 016-2024**

SHEET NO. RW2-09 OF RW2-09 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	541
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

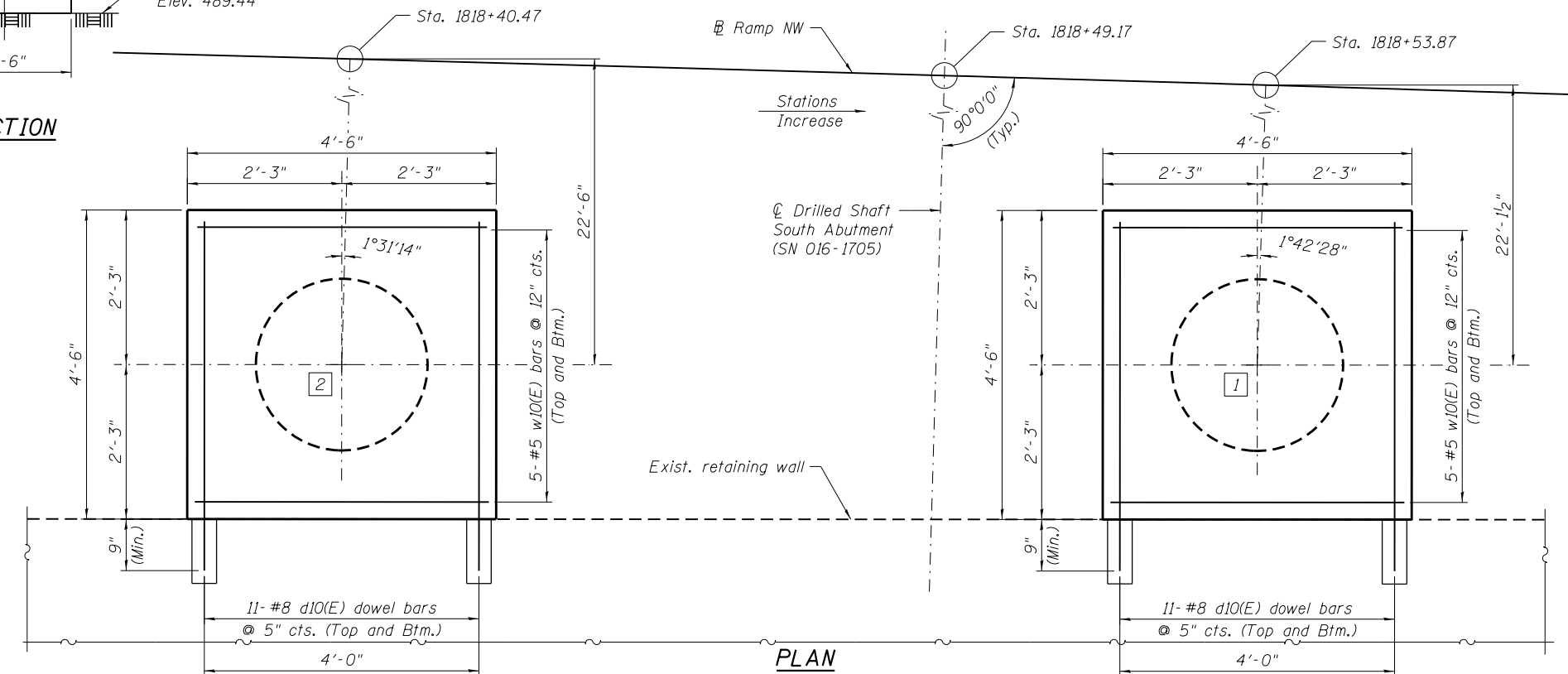
016Z024-60W28-RW2-9



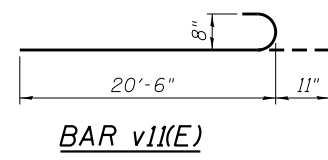
- NOTES:**
1. Drill and Grout d10(E) into the Concrete to 1/4" larger in dia. than the diameter of the bar used with a Minimum Depth of 9 Inches in accordance with Section 584 of the Standard Specifications. Cost included with Reinforcement Bars, Epoxy Coated pay item.
  2. Work this sheet with Sheet RW2-09.

- LEGEND:**
- Cut Existing Steel Pile
  - Drill thru Existing Steel Pile
  - Proposed Drilled Shaft number

**TYPICAL SECTION**



**PLAN**



**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape	
d10(E)	44	#8	5'-1"	—	
sp10	2	#4	87'-9"	~	
v10	44	#8	40'-0"	—	
v11(E)	22	#8	21'-5"	U	
w10(E)	20	#5	4'-2"	—	
Structure Excavation				Cu. Yd.	68
Concrete Structures				Cu. Yd.	4
Reinforcement Bars				Pound	6170
Reinforcement Bars, Epoxy Coated				Pound	1950
Drilled Shaft In Soil				Cu. Yd.	32

\* Length is height of spiral.

016Z024-60W28-RW2-10



USER NAME = dunkerleyb	DESIGNED - ATB	REVISED
PLOT SCALE = N.T.S.	CHECKED - EJO	REVISED
PLOT DATE = 3/20/2014	DRAWN - MRK	REVISED
	CHECKED - ATB	REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**FOUNDATION DETAILS - II  
STRUCTURE NO. 016-2024**

SHEET NO. RW2-100F RW2-12 SHEETS

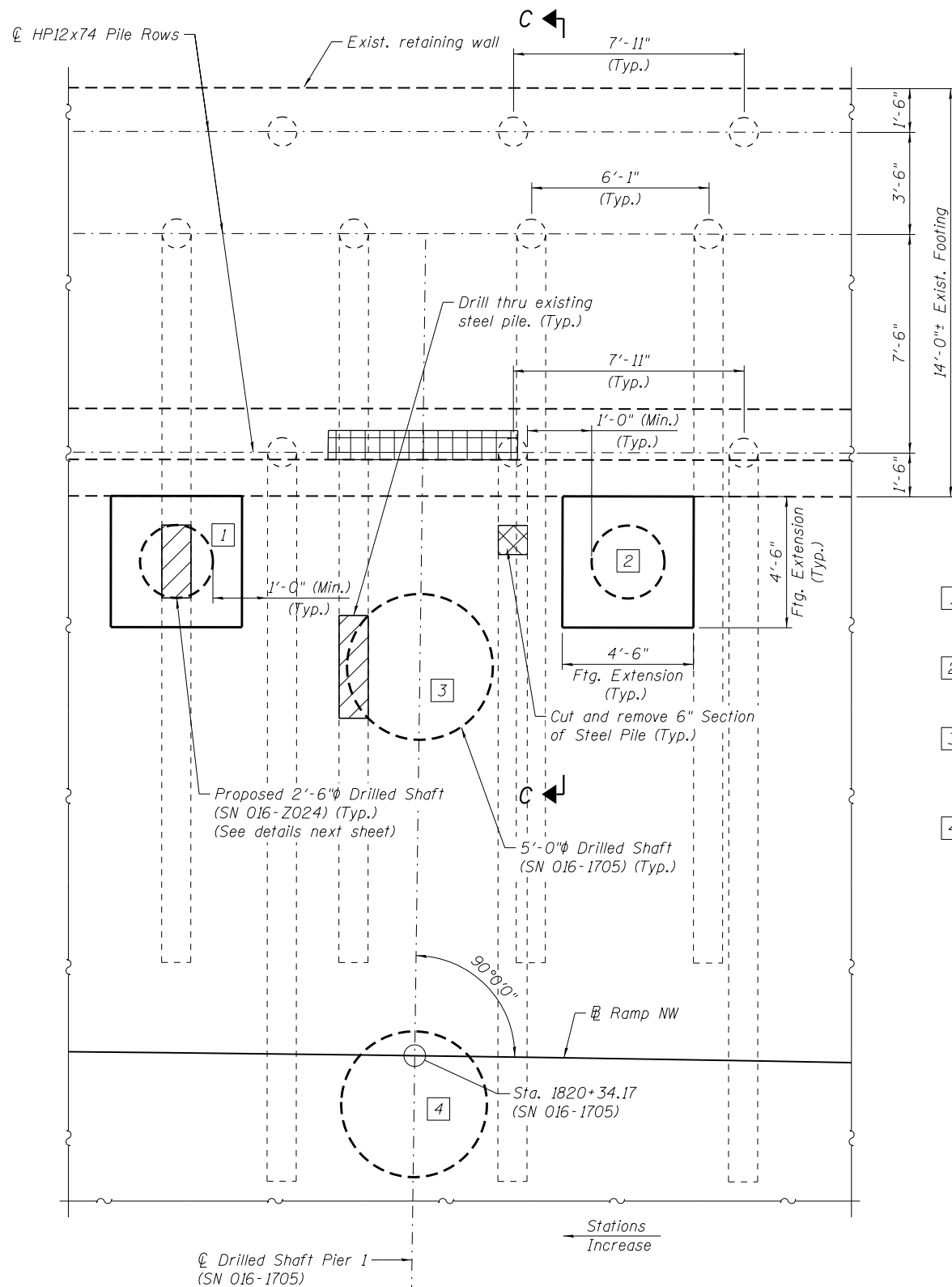
F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 542
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

**ANTICIPATED SEQUENCE OF CONSTRUCTION**

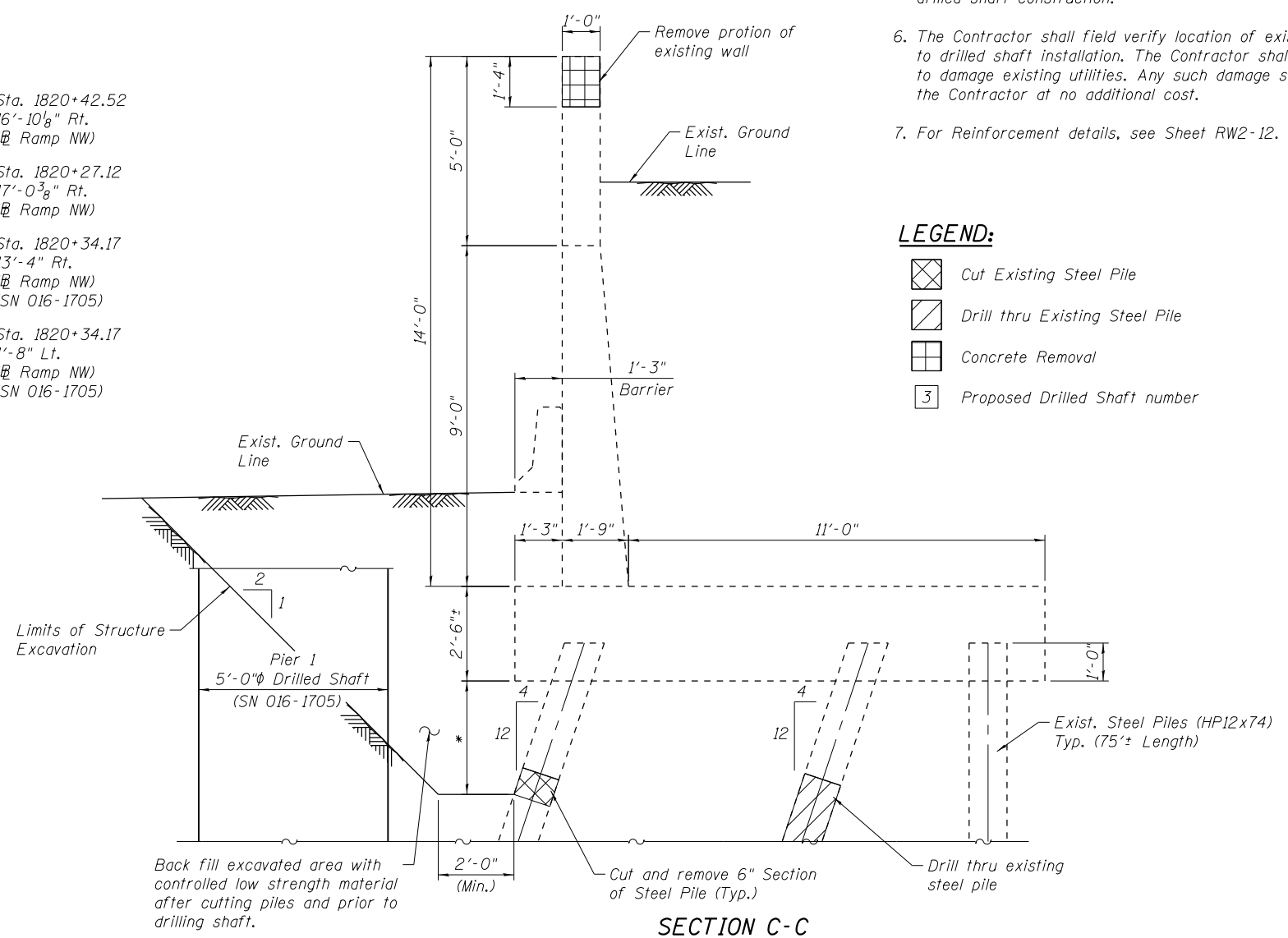
- Excavate to a maximum depth of 3'-0" below existing bottom of footing and expose front row of existing battered HP12x74 piles.
- Contractor to locate proposed 2'-6"φ Drilled Shafts [1] & [2] as close to plan dimension as possible providing a minimum 1'-0" clear zone to existing front row battered piles.
- Drill proposed 2'-6"φ Drilled Shaft [1] between existing front row battered piles. Contractor to drill directly thru existing middle row battered piles limiting conflict to a maximum 1 middle row pile.
- Place reinforcement and concrete in Drilled Shaft [1].
- Drill & epoxy grout dowel bars into existing footing. Place reinforcement and concrete in footing extension.
- Drill proposed 2'-6"φ Drilled Shaft [2] between existing front row battered piles. If required, Contractor to drill directly thru existing middle row battered piles limiting conflict to a maximum 1 middle row pile.
- Place reinforcement and concrete in Drilled Shaft [2].
- Drill & epoxy grout dowel bars into existing footing. Place reinforcement and concrete in footing extension.
- Cut a 6" section in length of the existing front row battered pile in conflict with proposed SN 016-1705 5'-0"φ Drilled Shafts [3] & [4] to separate the pile from the existing footing.
- Backfill excavated area with controlled low strength material.
- Drill and construct proposed SN 016-1705 Drilled Shafts [3] & [4].
- Remove portion of existing wall in conflict with SN 016-1705 Pier 1 construction.

**NOTES:**

- Cutting steel piles will not be paid for separately and will be included in cost of pay item Structure Excavation.
- Controlled low strength material (CLSM) will not be paid for separately and will be included in cost of pay item Structural Excavation. Backfill excavated area with CLSM in accordance with section 1019 of the Standard Specifications.
- Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- The Contractor shall take precautions to not to damage existing retaining wall during construction. The Contractor is responsible for the structural integrity and stability of the existing retaining wall. Any damage to the existing retaining wall shall be repaired by the contractor at no additional cost.
- Prior to cutting any existing piles, the Contractor shall layout proposed Pier 1 (SN 016-1705) drilled shaft in the field and determine existing retaining wall piles impacted by drilled shaft construction. The Contractor shall immediately notify the Engineer if more than six existing piles are impacted by the proposed Pier 1 drilled shaft construction.
- The Contractor shall field verify location of existing utilities prior to drilled shaft installation. The Contractor shall take precautions not to damage existing utilities. Any such damage shall be repaired by the Contractor at no additional cost.
- For Reinforcement details, see Sheet RW2-12.



- [1] Sta. 1820+42.52  
16'-10<sup>3</sup>/<sub>8</sub>" Rt.  
(Ramp NW)
- [2] Sta. 1820+27.12  
17'-0<sup>3</sup>/<sub>8</sub>" Rt.  
(Ramp NW)
- [3] Sta. 1820+34.17  
13'-4" Rt.  
(Ramp NW)  
(SN 016-1705)
- [4] Sta. 1820+34.17  
1'-8" Lt.  
(Ramp NW)  
(SN 016-1705)



**LEGEND:**

- Cut Existing Steel Pile
- Drill thru Existing Steel Pile
- Concrete Removal
- Proposed Drilled Shaft number



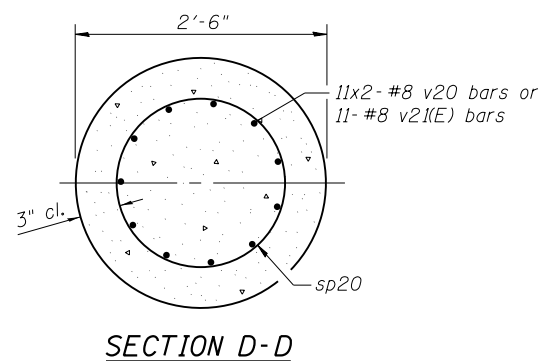
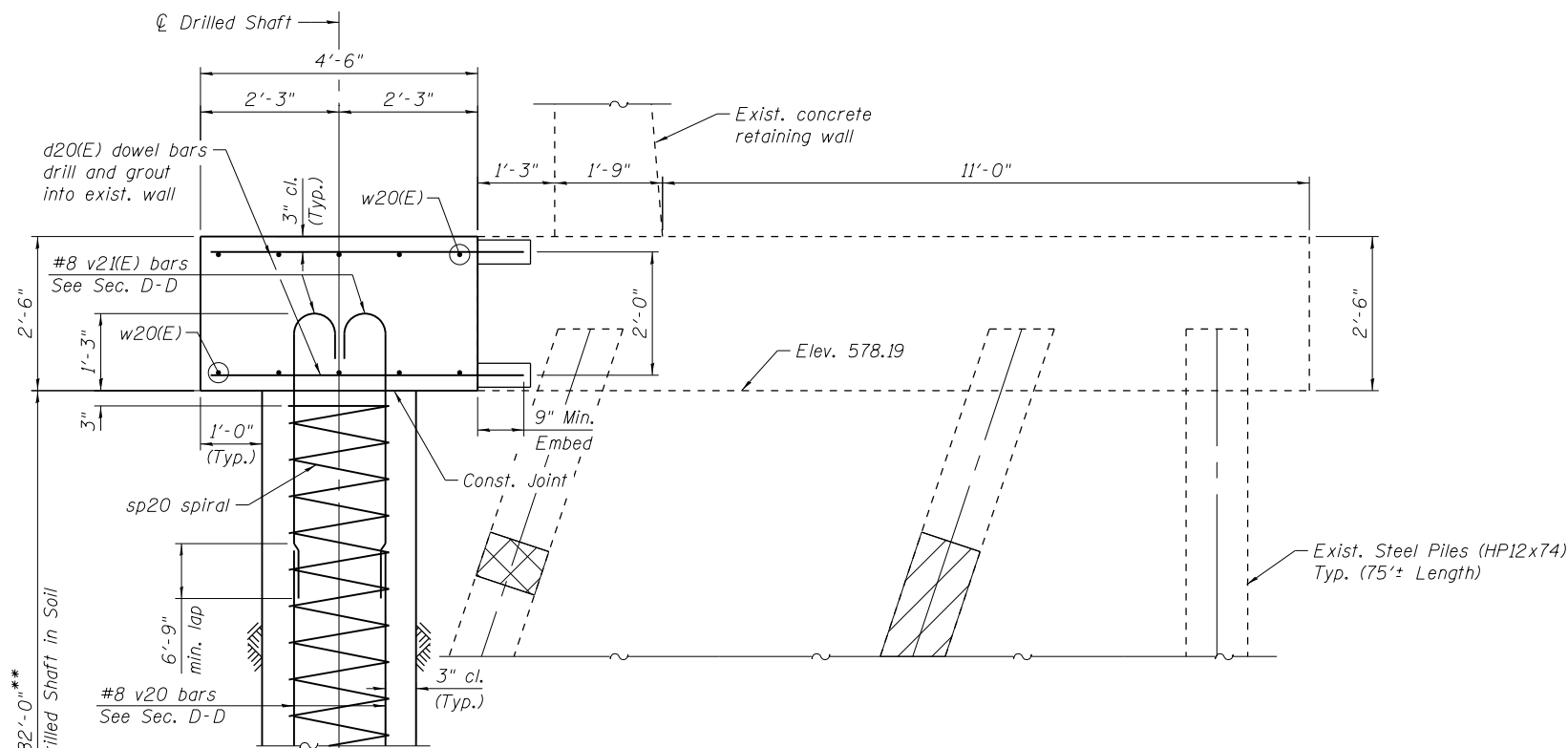
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PLOT SCALE = N.T.S.	CHECKED - EJO	REVISED
PLOT DATE = 3/20/2014	DRAWN - MRK	REVISED
	CHECKED - ATB	REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**FOUNDATION DETAILS - III  
STRUCTURE NO. 016-2024**

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 543
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

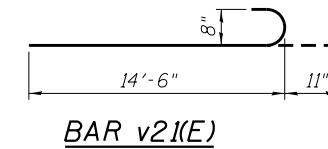
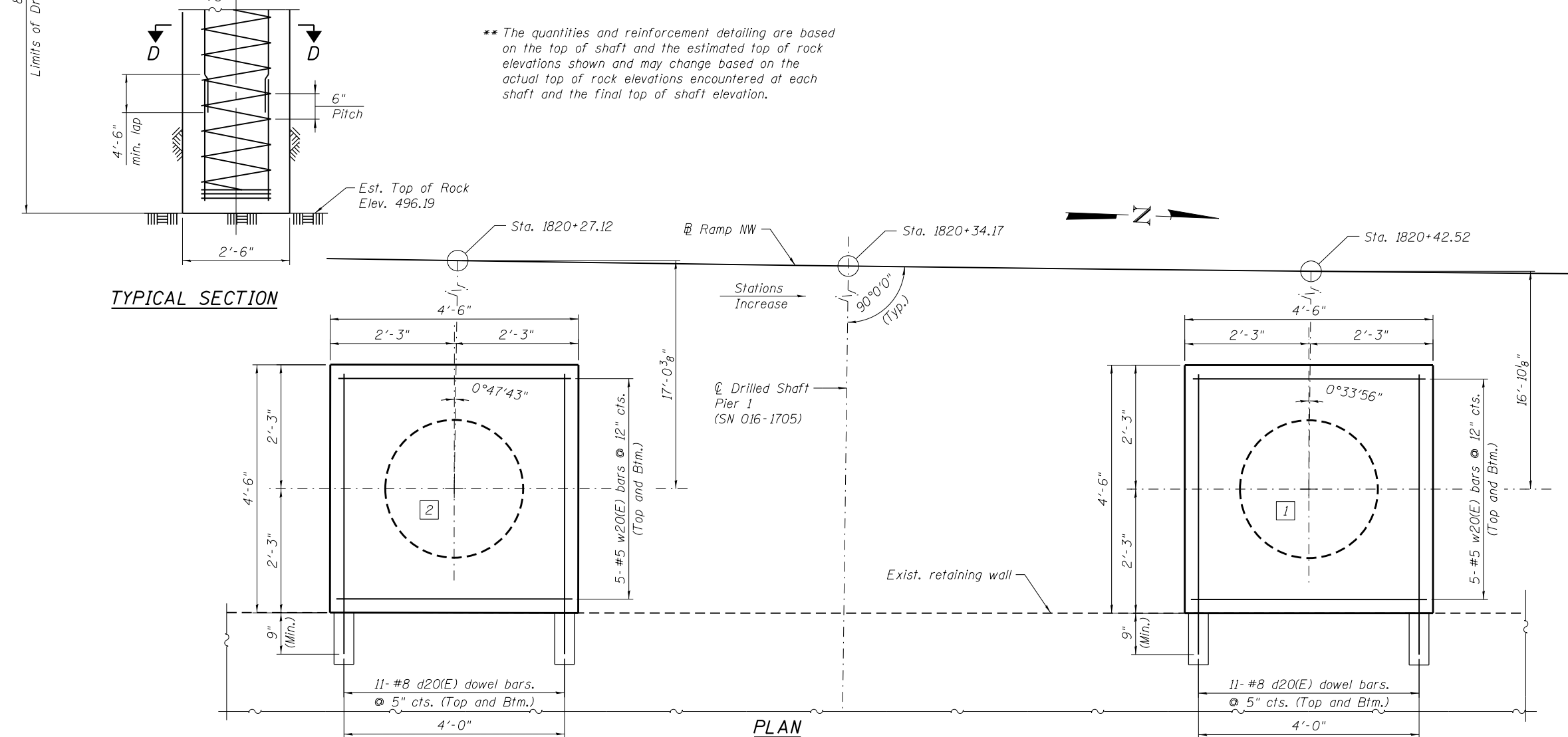
016Z024-60W28-RW2-11



- NOTES:**
1. Drill and Grout d20(E) into the Concrete to 1/4" larger in dia. than the diameter of the bar used with a Minimum Depth of 9 Inches in accordance with Section 584 of the Standard Specifications. Cost included with Reinforcement Bars. Epoxy Coated pay item.
  2. Work this sheet with Sheet RW2-11.

- LEGEND:**
- Cut Existing Steel Pile
  - Drill thru Existing Steel Pile
  - Proposed Drilled Shaft number

\*\* The quantities and reinforcement detailing are based on the top of shaft and the estimated top of rock elevations shown and may change based on the actual top of rock elevations encountered at each shaft and the final top of shaft elevation.



**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape	
d20(E)	44	#8	5'-1"	—	
sp20	2	#4	81'-9"	~	
v20	44	#8	40'-0"	—	
v21(E)	22	#8	15'-5"	—	
w20(E)	20	#5	4'-2"	—	
Structure Excavation				Cu. Yd.	68
Concrete Structures				Cu. Yd.	4
Reinforcement Bars				Pound	6080
Reinforcement Bars, Epoxy Coated				Pound	1590
Drilled Shaft In Soil				Cu. Yd.	30

\* Length is height of spiral.

016Z024-60W28-RW2-12



USER NAME = dunkerleyb	DESIGNED - ATB	REVISED
PLOT SCALE = N.T.S.	CHECKED - EJO	REVISED
PLOT DATE = 3/20/2014	DRAWN - MRK	REVISED
	CHECKED - ATB	REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**FOUNDATION DETAILS - IV  
STRUCTURE NO. 016-2024**

SHEET NO. RW2-12 OF RW2-12 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 544
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

Bench Mark: Chiseled "X" on S. flange bolt of F.H. on W. side of Peoria St. First F.H. S. of Van Buren St. Elev. = 594.37

Existing Structure: None.

Traffic Control: Traffic to be maintained on existing SN 016-2449 (NB I-90/94 to WB I-290) during construction.

**DESIGN SPECIFICATIONS**  
2012 AASHTO LRFD Bridge Design Specifications  
6th Edition with 2013 Interim Revisions

**DESIGN STRESSES**

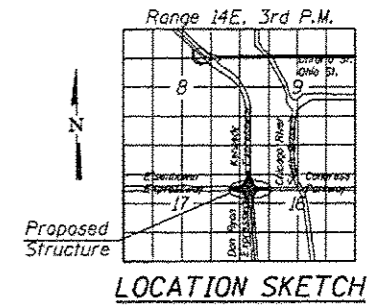
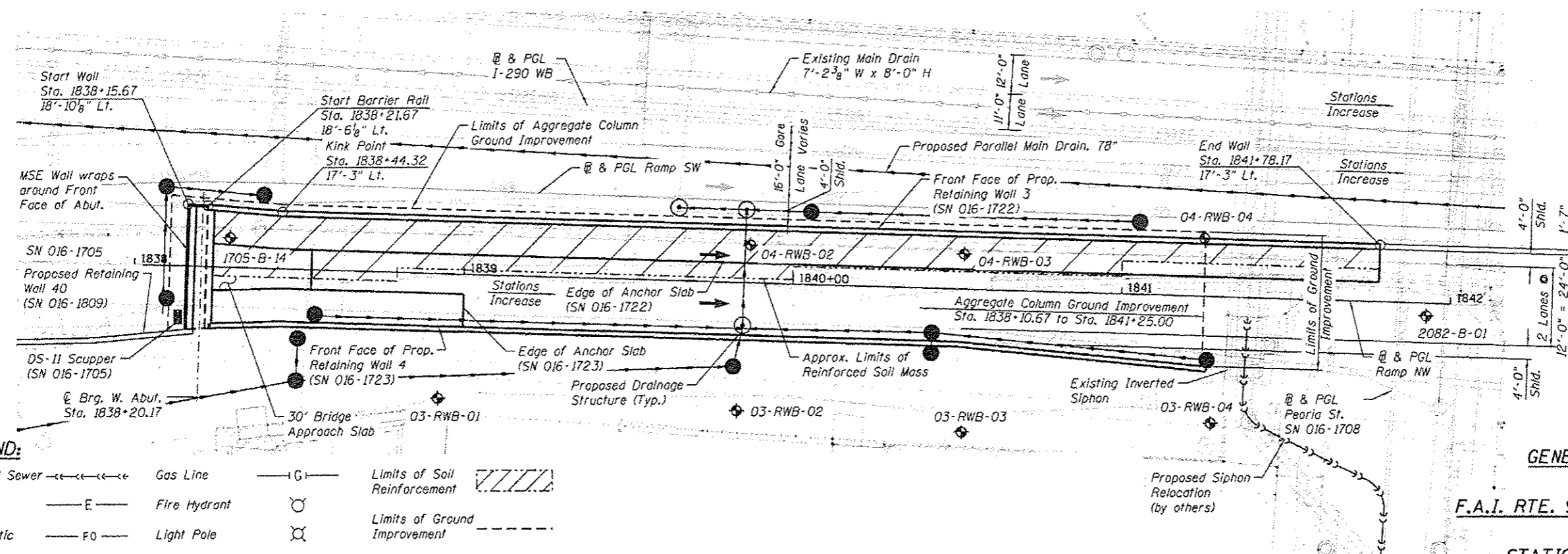
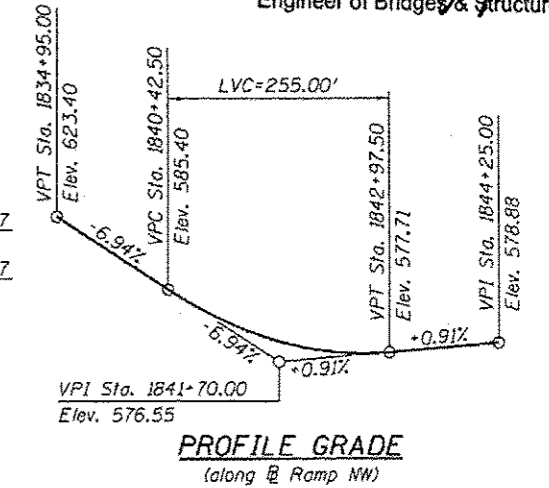
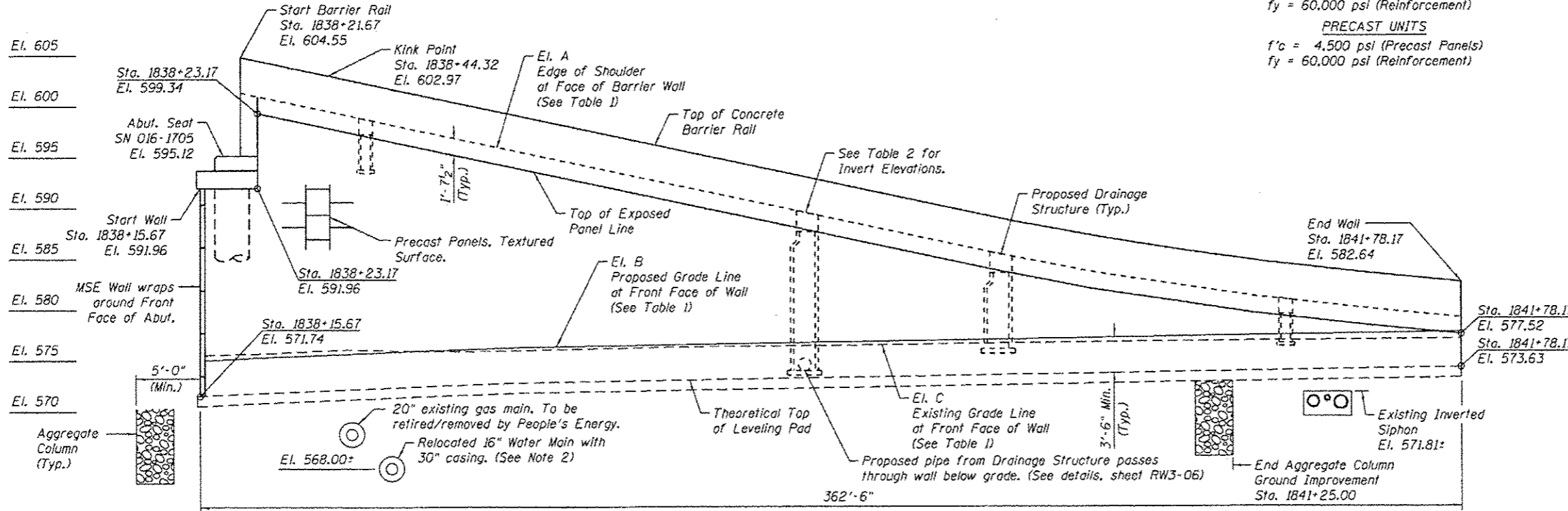
**FIELD UNITS**  
f'c = 3,500 psi (Cast-in-Place)  
fy = 60,000 psi (Reinforcement)

**PRECAST UNITS**  
f'c = 4,500 psi (Precast Panels)  
fy = 60,000 psi (Reinforcement)

**NOTES:**

- See sheet RW3-03 for Tables 1 and 2.
- Existing Water Main to be relocated in this contract prior to wall construction. See Water Main plans.

**APPROVED**  
For Structural Adequacy Only  
*P. Carl Loney*  
Engineer of Bridges & Structures



*Brad M. Radovich* 04/29/2014  
BRAD M. RADOVICH DATE  
LICENSE EXPIRES 11/30/2014

**GENERAL PLAN & ELEVATION**  
**RETAINING WALL 3**  
F.A.I. RTE. 90/94/290 - SECTION 2013-010R  
COOK COUNTY  
STATION 1838+15.67 TO 1841+78.17  
STRUCTURE NO. 016-1722

**LEGEND:**

- |                      |                      |                              |
|----------------------|----------------------|------------------------------|
| Combined Sewer       | Gas Line             | Limits of Soil Reinforcement |
| Electric             | Fire Hydrant         | Limits of Ground Improvement |
| Fiber Optic          | Light Pole           |                              |
| Existing Storm Sewer | Soil Boring Location |                              |
| Water Line           | Proposed Storm Sewer |                              |

<b>AECOM</b>	USER NAME : dunkerleyb	DESIGNED - DEV	REVISED	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 545
	PLAT SCALE : N.T.S.	CHECKED - ATB	REVISED					CONTRACT NO. 60W28	
	PLAT DATE : 4/28/2014	DRAWN - BRD	REVISED					ILLINOIS FED. AID PROJECT NUMBER	
		CHECKED - EJO	REVISED						

SHEET NO. RW3-01 OF RW3-12 SHEETS



**GENERAL NOTES:**

- Reinforcement bars designated (E) shall be epoxy coated.
- Slip forming of the barrier rails is not allowed.
- Protective Coat shall be applied to the designated areas of Anchor Slabs, Barrier Rails, and MSE Coping.
- Stations and Offsets are measured from the Baseline of Ramp NW to the Front Face of MSE wall panels.
- MSE Supplier to design load transfer systems within reinforced soil mass to accommodate drainage structures and abutment foundations.
- MSE Wall lengths measured along front face of precast panels unless noted otherwise.
- See special provision for Mechanically Stabilized Earth Retaining Wall, Special for design and construction requirements.
- Proposed Siphon reconstruction to occur prior to Ramp NW construction by others in Contract 60W29.
- Anchor Slab and Barrier Rail concrete shall be paid for as Concrete Superstructure.
- For Drainage Structure location, type, and size, see Drainage sheets.
- Quantity for Lightweight Cellular Concrete Fill includes reinforced soil mass for Retaining Wall 3 and fill area beneath roadway and beneath reinforced soil mass for Retaining Wall 4 (SN 016-1723). See Retaining Wall 4 plans for Lightweight Fill quantity for Retaining Wall 4 reinforced soil mass. Type is specified as Class II Lightweight Fill.
- The Contractor shall exercise extreme caution during construction to make certain that construction activities, live load surcharge and other loads applied to the structures will not have detrimental effects on the adjacent buildings and utilities. See Special Provision for Construction Vibration Monitoring.

**TOTAL BILL OF MATERIAL:**

DESCRIPTION	UNIT	TOTAL
STRUCTURE EXCAVATION	CU. YD.	870
CONCRETE SUPERSTRUCTURE	CU. YD.	245
BRIDGE DECK GROOVING (SPECIAL)	SQ. YD.	29
PROTECTIVE COAT	SQ. YD.	590
REINFORCEMENT BARS, EPOXY COATED	POUND	35,800
SLOPE WALL 4"	SQ. YD.	9
NAME PLATES	EACH	1
LIGHTWEIGHT CELLULAR CONCRETE FILL (CLASS II)	CU. YD.	5,902
AGGREGATE COLUMN GROUND IMPROVEMENT	L. SUM	0.32
MECHANICALLY STABILIZED EARTH RETAINING WALL, SPECIAL	SQ. FT.	6,512

**INDEX OF SHEETS:**

- RW3-01 General Plan and Elevation
- RW3-02 Total Bill of Material, Index of Sheets & General Notes
- RW3-03 Typical Sections
- RW3-04 Barrier Rail and Anchor Slab
- RW3-05 MSE Wrap Around Details
- RW3-06 Details
- RW3-07 Architectural Details
- RW3-08 Aggregate Column Ground Improvement Details
- RW3-09 Boring Logs - I
- RW3-10 Boring Logs - II
- RW3-11 Boring Logs - III
- RW3-12 Boring Logs - IV

**SUGGESTED SEQUENCE OF CONSTRUCTION:**

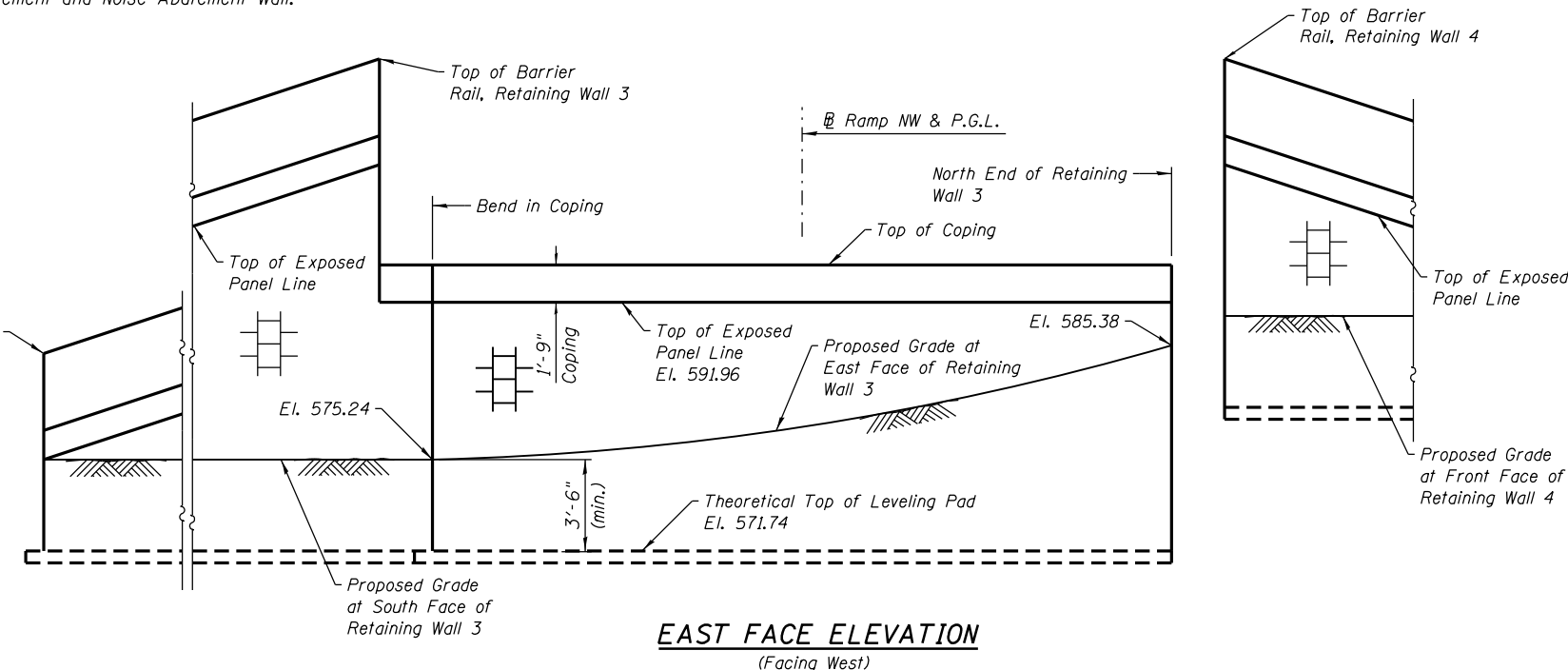
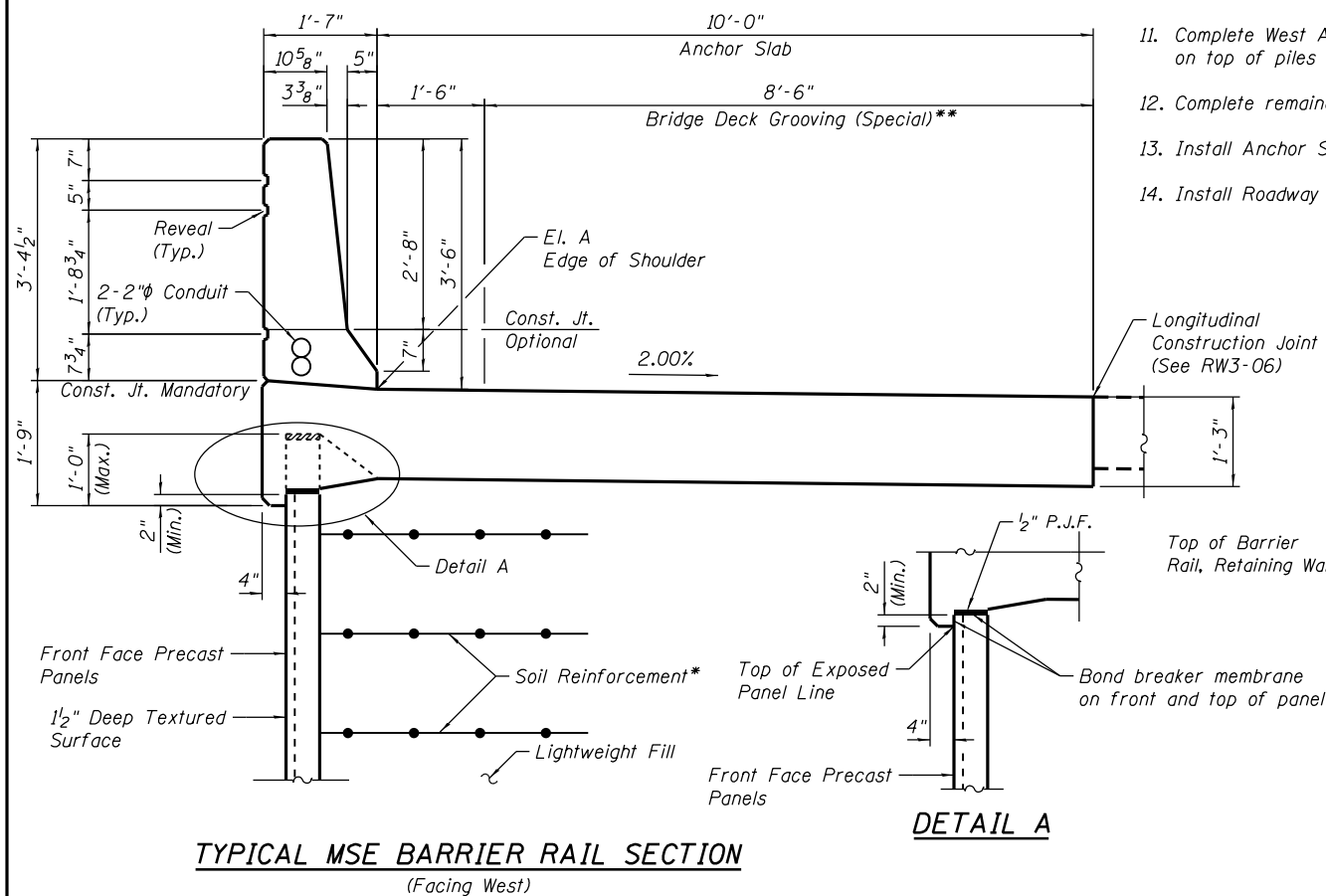
- Locate existing utilities that are to remain. Contractor to coordinate any required improvements to or removals of existing utilities with utility owner(s). See Utility Location Plans and ITS Plans.
- Locate and remove any abandoned CTA foundations that are in conflict with Retaining Walls 3, 4, 40, or Noise Abatement Wall.
- Install drilled soldier piles for Retaining Wall 4 soldier pile wall.
- Install drilled shafts for SN 016-1705 West Abutment.
- Install foundations for Noise Abatement Wall.
- Excavate for Retaining Walls 3, 4, and 40. Install temporary lagging between soldier piles of Retaining Wall 4 from top down as excavation proceeds if needed to retain existing soil.
- Install Aggregate Column Ground Improvement for Retaining Walls 3, 4, and 40.
- Construct Retaining Wall 40, placing MSE straps to avoid Noise Abatement Wall foundations.
- Begin placing lightweight fill and installing Retaining Wall 3 up to height of Retaining Wall 4 MSE leveling pad. Install Drainage System.
- Install Concrete Facing on soldier piles of Retaining Wall 4. Backfill north side of wall.
- Complete West Abutment of SN 016-1705. Install Retaining Wall 4 soldier pile cap and barrier on top of piles and concrete facing.
- Complete remainder of Retaining Wall 3 while installing MSE portion of Retaining Wall 4.
- Install Anchor Slabs and Barrier Rails for Retaining Walls 3 and 4.
- Install Roadway pavement and Noise Abatement Wall.

STATION 1838+23.17  
 BUILT BY  
 STATE OF ILLINOIS  
 F.A.I. RTE. 90/94/290-SEC. 2013-010R  
 LOADING HL-93  
 STRUCTURE NO. 016-1722

**NAME PLATE**  
 See Std. 515001

\* The M.S.E. wall supplier's internal stability design shall account for the anchor slab's bearing pressure surcharge of 1.0 ksf and horizontal sliding force of 0.83 kips/ft of wall.

\*\* Bridge Deck Grooving (Special) extends from start of Anchor Slab at Sta. 1838+23.17 to end of approach slab at Sta. 1838+53.17. For quantity of Bridge Deck Grooving (Special) on approach slab and North Anchor Slab, see structural plans for NW Flyover (SN 016-1705) and Retaining Wall 4 (SN 016-1723), respectively.



0161722-60W28-502-GenNote



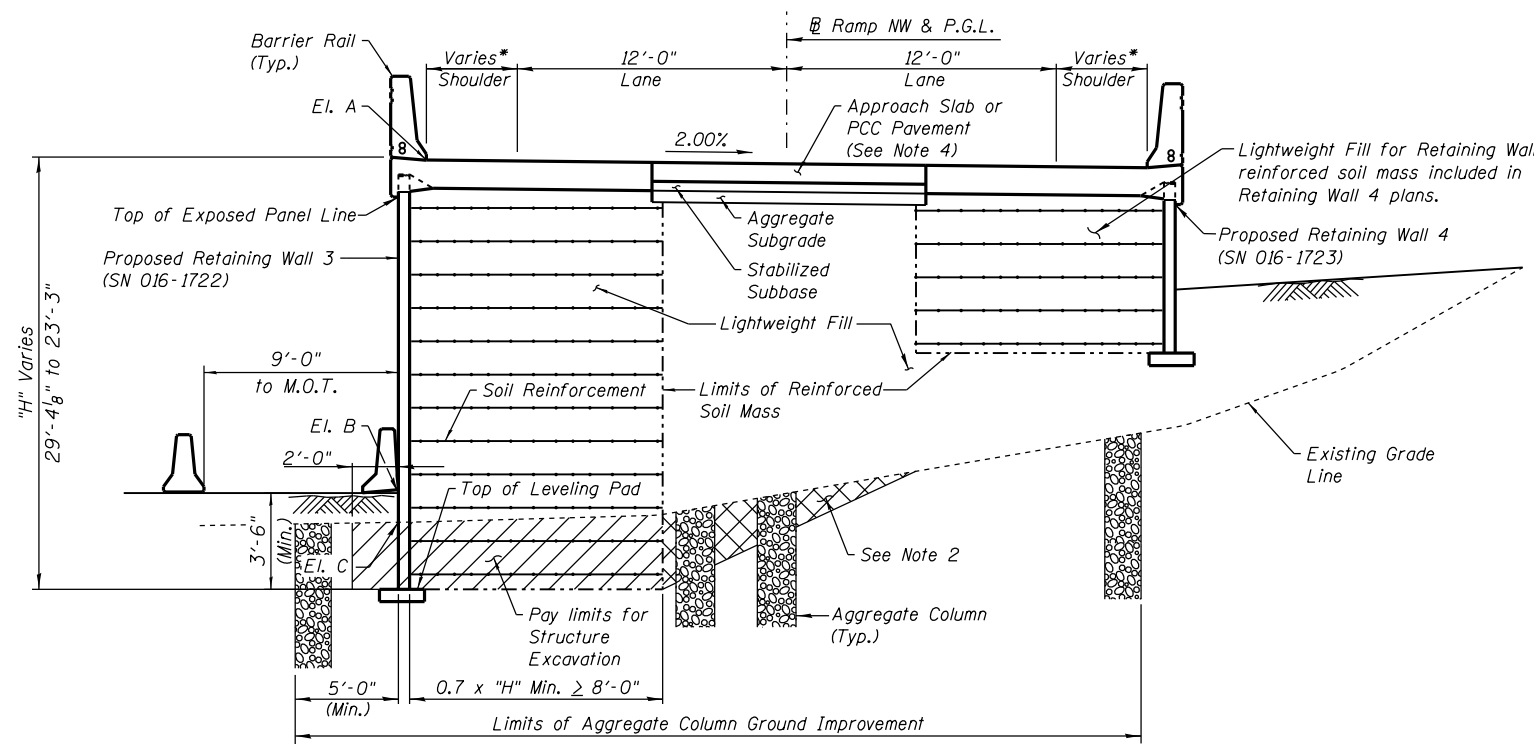
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PLOT SCALE = N.T.S.	DRAWN - BRD	REVISED
PLOT DATE = 4/28/2014	CHECKED - EJO	REVISED

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TOTAL BILL OF MATERIAL, INDEX OF SHEETS & GENERAL NOTES  
 STRUCTURE NO. 016-1722

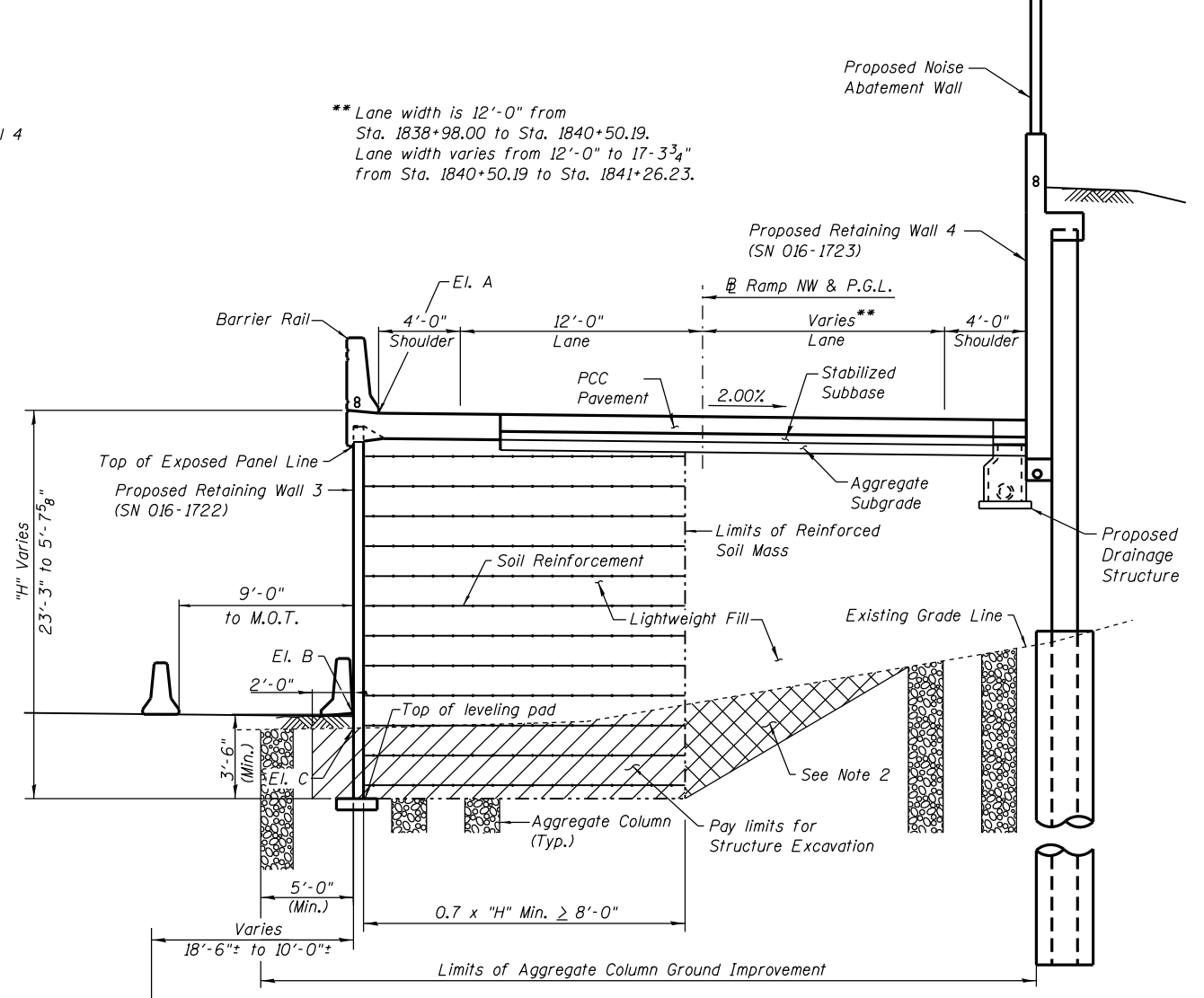
SHEET NO. RW3-020F RW3-12 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 546
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	

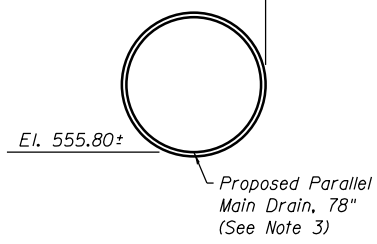


**TYPICAL SECTION 1**  
(Sta. 1838+23.17 to Sta. 1838+98.00)  
(Facing West)

\* Shoulder widths vary from 5'-2 1/8" at Sta. 1838+23.17 to 4'-0" at Sta. 1838+44.32



**TYPICAL SECTION 2**  
(Sta. 1838+98.00 to Sta. 1841+78.17)  
(Facing West)



**TABLE 2**

Station	Offset	Downstream Elevation
1838+55.00	16'-0" Rt.	589.56
1839+85.00	13'-0" Rt.	573.29
1840+42.69	16'-0" Rt.	574.58
1841+26.37	21'-4" Rt.	575.00

**TABLE 1**

Station	Offset	Elevation A	Elevation B	Elevation C
1838+23.17	18'-5 1/8" Lt.	600.96	575.24	575.67
1838+25.00	18'-4" Lt.	600.83	575.26	575.67
1838+44.32	17'-3" Lt.	599.47	575.44	576.04
1838+50.00	17'-3" Lt.	599.08	575.51	576.05
1838+75.00	17'-3" Lt.	597.34	575.81	576.13
1839+00.00	17'-3" Lt.	595.61	575.98	576.00
1839+25.00	17'-3" Lt.	593.87	576.14	576.15
1839+50.00	17'-3" Lt.	592.14	576.33	576.33
1839+75.00	17'-3" Lt.	590.40	576.39	576.40
1840+00.00	17'-3" Lt.	588.67	576.46	576.46
1840+25.00	17'-3" Lt.	586.93	576.57	576.58
1840+50.00	17'-3" Lt.	585.21	576.69	576.69
1840+75.00	17'-3" Lt.	583.63	576.77	576.78
1841+00.00	17'-3" Lt.	582.24	576.86	576.87
1841+25.00	17'-3" Lt.	581.04	576.93	576.93
1841+50.00	17'-3" Lt.	580.04	576.99	577.00
1841+75.00	17'-3" Lt.	579.23	577.11	577.13
1841+78.17	17'-3" Lt.	579.14	577.13	577.14

Elevation A - Edge of Shoulder at Face of Barrier Rail  
Elevation B - Proposed Grade Line at Front Face of Wall  
Elevation C - Existing Grade Line at Front Face of Wall

**NOTES:**

- Contractor shall coordinate construction of Retaining Wall 3 (SN 016-1722) with Retaining Wall 4 (SN 016-1723), Retaining Wall 40 (SN 016-1809), and abutment of Ramp NW (SN 016-1705).
- Overexcavation beyond limits of Structure Excavation will not be measured for payment. Additional Lightweight Fill or Aggregate Column Ground Improvement placed in the overexcavation area will not be measured for payment.
- Proposed 78" Main Drain to be jacked in place prior to Retaining Wall 3 construction. See Drainage Plans.
- Approach Slab for NW Flyover (SN 016-1705) is between Anchor Slabs from Sta. 1838+23.17 to Sta. 1838+53.17. See bridge plans.

**BILL OF MATERIAL**

Item	Unit	Quantity
Structure Excavation	Cu. Yd.	870
Lightweight Cellular Concrete Fill (Class II)	Cu. Yd.	5,902
Mechanically Stabilized Earth Retaining Wall, Special	Sq. Ft.	6,512

0161722-60W28-503-GenNote



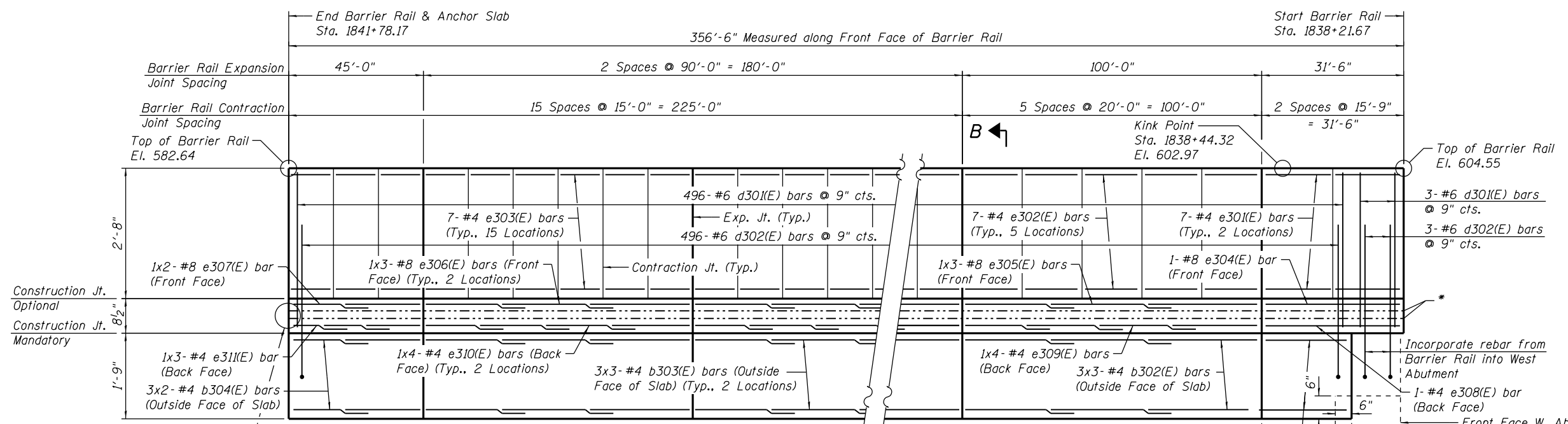
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PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
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	CHECKED - EJO	REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

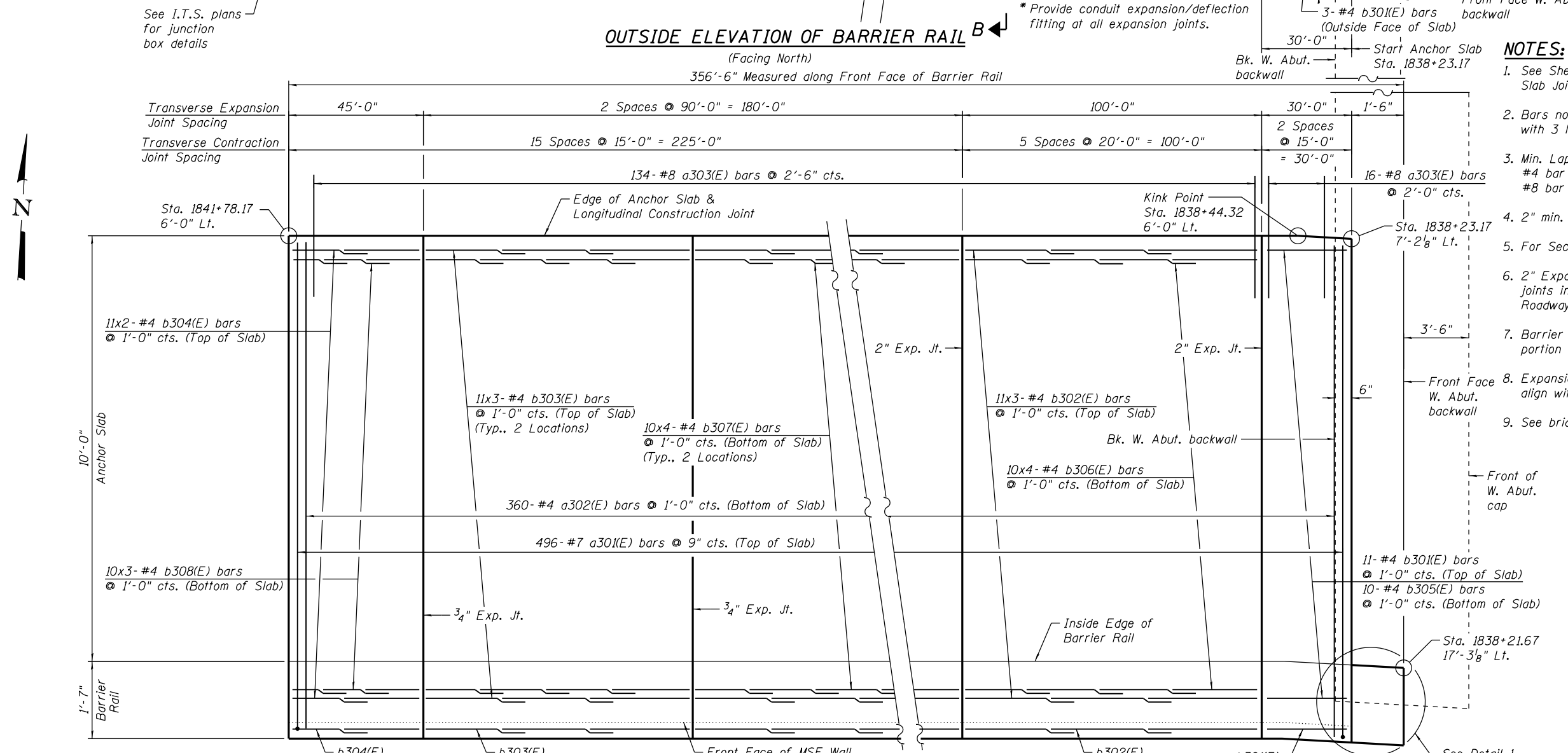
**TYPICAL SECTIONS  
STRUCTURE NO. 016-1722**

SHEET NO. RW3-030F RW3-12 SHEETS

F.A.I. R.E. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 547
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	



**OUTSIDE ELEVATION OF BARRIER RAIL B**  
(Facing North)



**PLAN - BARRIER RAIL & ANCHOR SLAB**

- NOTES:**
1. See Sheet RW3-06 for Barrier Rail and Anchor Slab Joint Details.
  2. Bars noted thus, 7x3-#4 indicates 7 lines of #4 bars with 3 lengths per line.
  3. Min. Lap Lengths:  
#4 bar = 2'-7"  
#8 bar = 6'-9"
  4. 2" min. clear cover typical unless noted otherwise.
  5. For Section B-B, see sheet RW3-06.
  6. 2" Expansion Joints in Anchor Slab shall align with joints in Bridge Approach Slab (Sta. 1838+53.17) and Roadway PCC Connector Pavement (Sta. 1839+53.17).
  7. Barrier Rail Contraction Joints do not extend thru lower portion of Barrier Rail.
  8. Expansion and Contraction Joints in Barrier Rail shall align with same in Anchor Slab.
  9. See bridge plans (SN 016-1705) for West Abutment details.



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PLOT DATE = 4/28/2014	CHECKED - EJO	REVISED

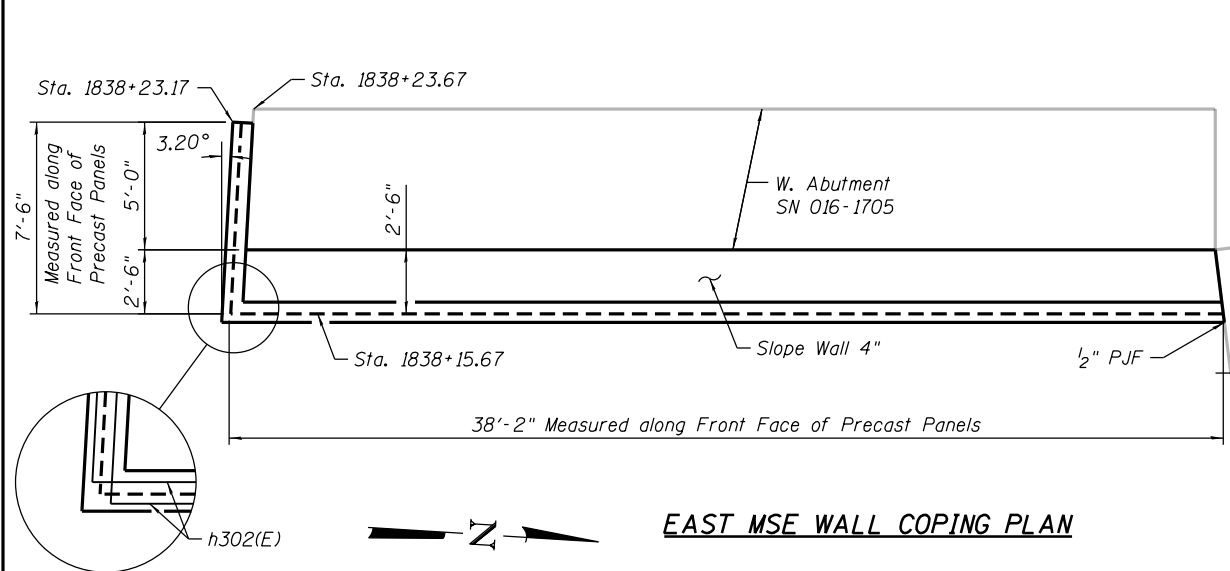
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BARRIER RAIL AND ANCHOR SLAB  
STRUCTURE NO. 016-1722

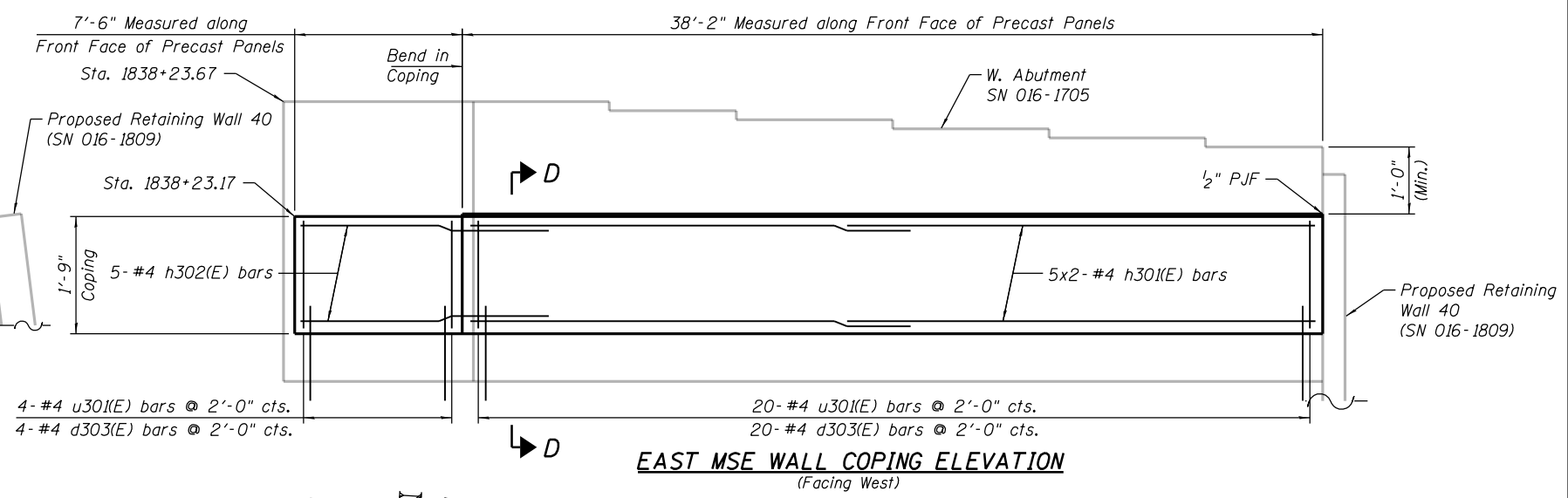
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CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	

SHEET NO. RW3-040F RW3-12 SHEETS

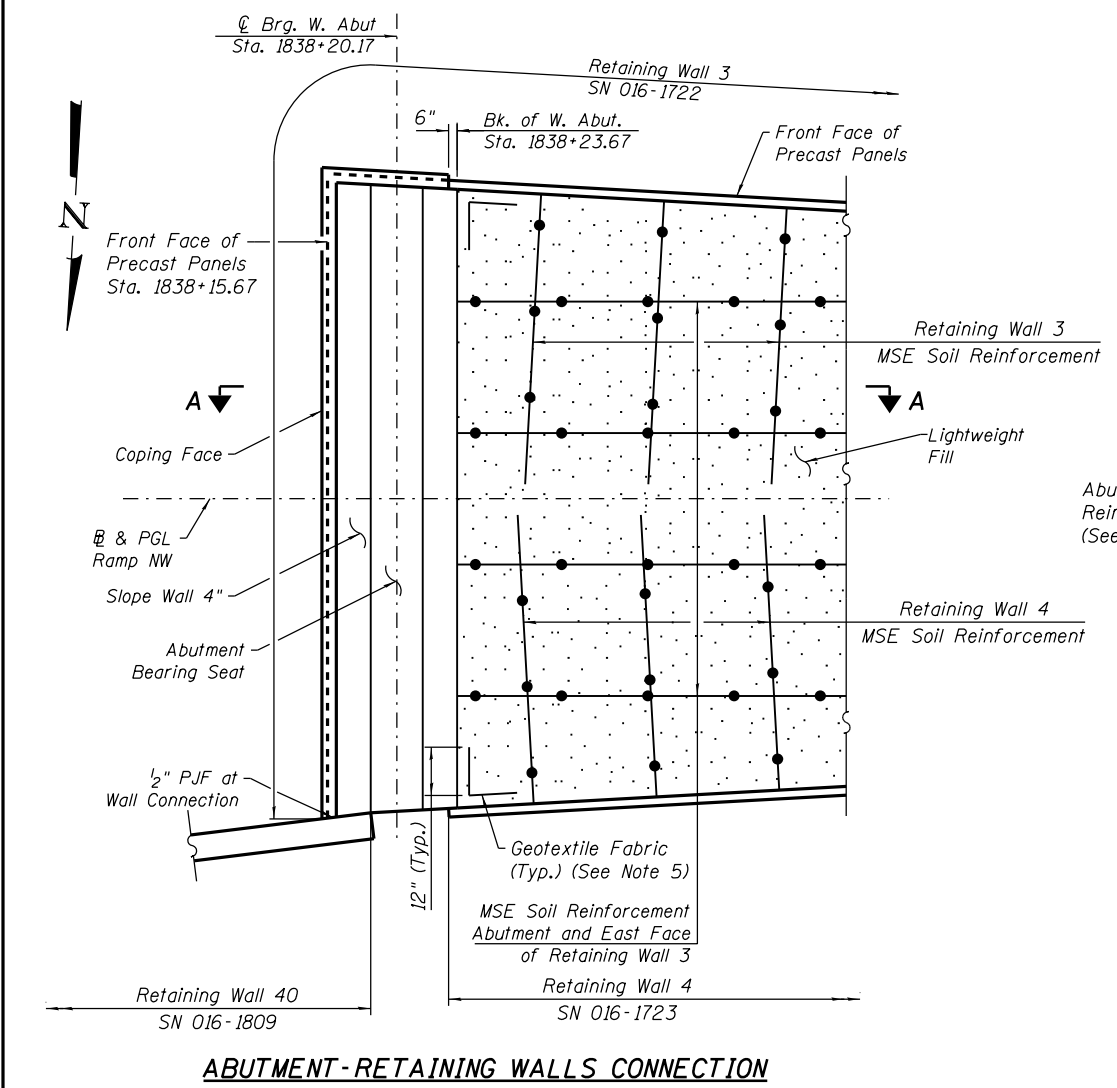
0161722-60W28-504-Parapet



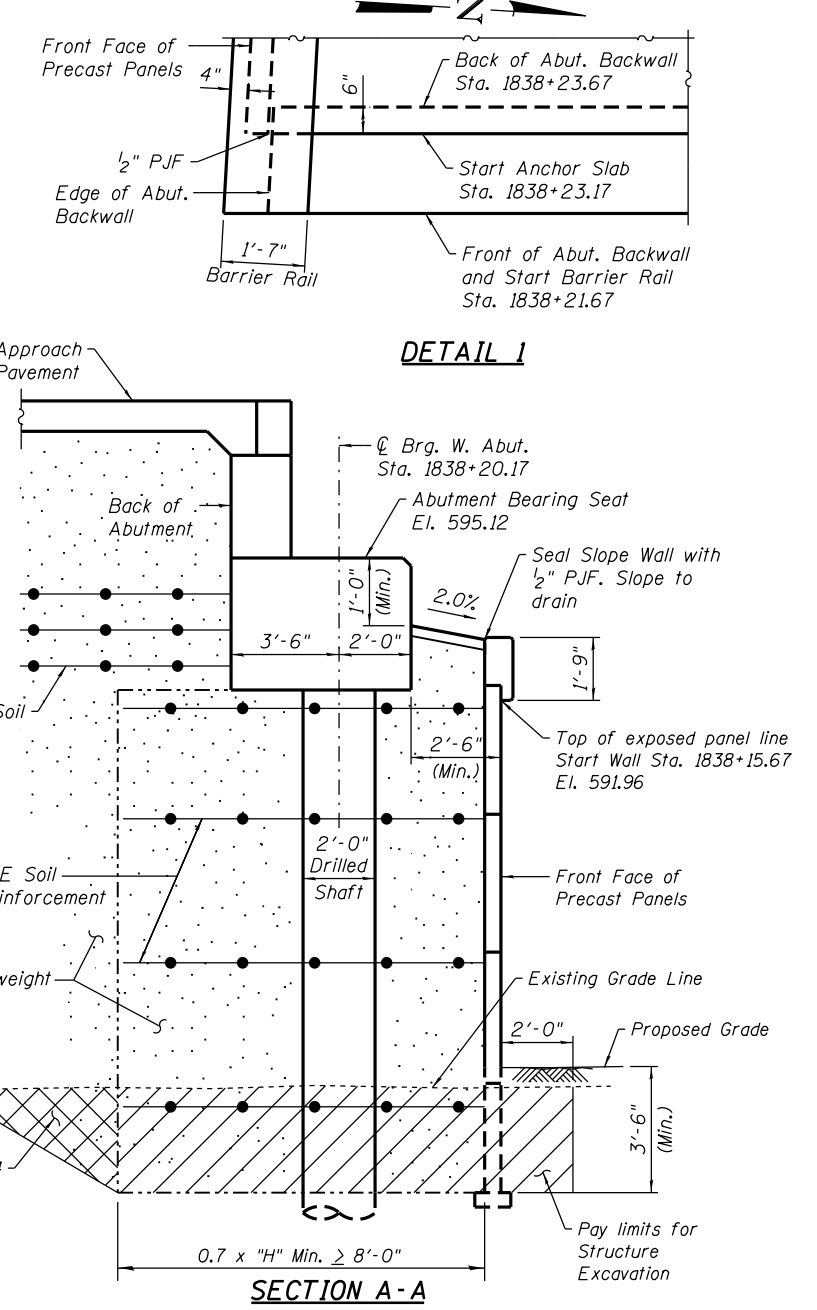
**EAST MSE WALL COPING PLAN**



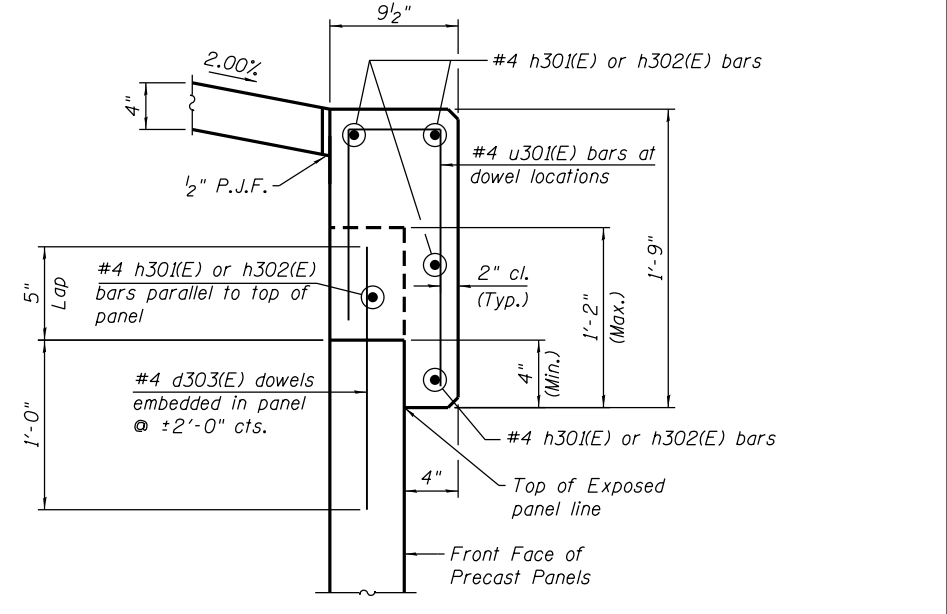
**EAST MSE WALL COPING ELEVATION**  
(Facing West)



**ABUTMENT-RETAINING WALLS CONNECTION**



**SECTION A-A**  
(Facing North)



**MSE COPING SECTION D-D**

- NOTES:**
- Anchor Slab ends at Sta. 1838+23.17 where it overlaps the abutment backwall by 6". Barrier Rail ends at Sta. 1838+21.67 at front of abutment backwall. See Detail 1.
  - The MSE wall supplier shall design the abutment cap soil reinforcement to resist a horizontal force of 2.7 k/ft of abutment. Cost included in cost of Mechanically Stabilized Earth Retaining Wall, Special.
  - See West Abutment sheets for abutment details.
  - Overexcavation beyond limits of Structure Excavation not measured for payment. Additional Lightweight Fill or Aggregate Column Ground Improvement in overexcavation area also not measured for payment.
  - Cost of Geotextile Fabric is included in cost of Mechanically Stabilized Earth Retaining Wall, Special.
  - 1/2" P.J.F. is installed by Standard 1051.09. Cost is included in Slope Wall 4".
  - Bars noted thus, 7x3-#4 indicates 7 lines of #4 bars with 3 lengths per line.

0161722-60W28-505-Parapet



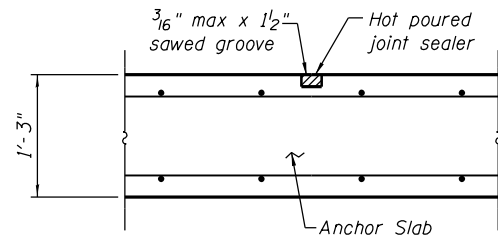
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PLOT DATE = 4/28/2014	CHECKED - EJO	REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**MSE WRAP AROUND DETAILS**  
**STRUCTURE NO. 016-1722**

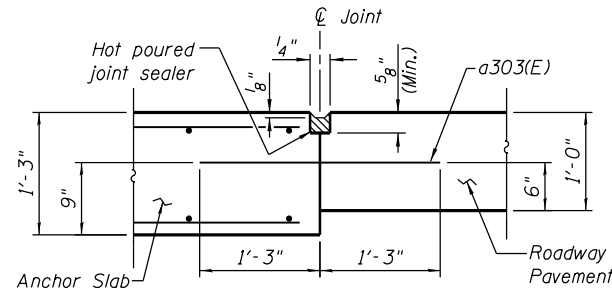
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CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	



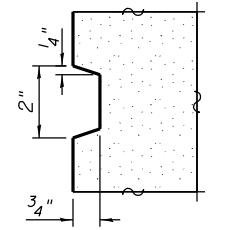
**TRANSVERSE CONTRACTION JOINT**

See Article 420.05 & 420.12 of the Standard Specifications

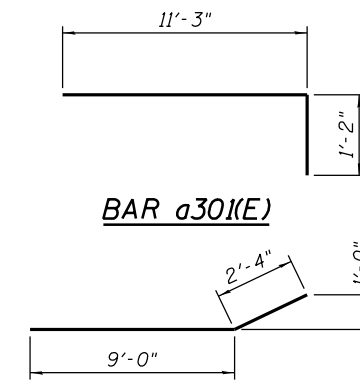


**LONGITUDINAL CONSTRUCTION JOINT**

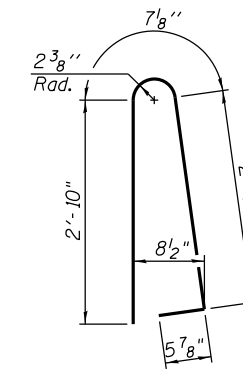
See Article 420.05 & 420.12 of the Standard Specifications



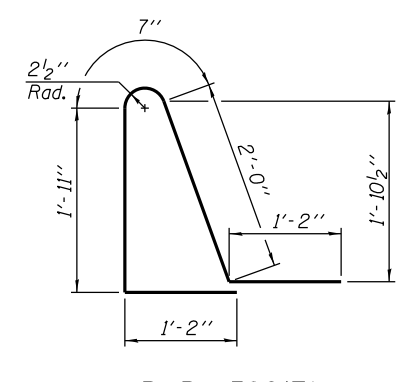
**REVEAL DETAIL**



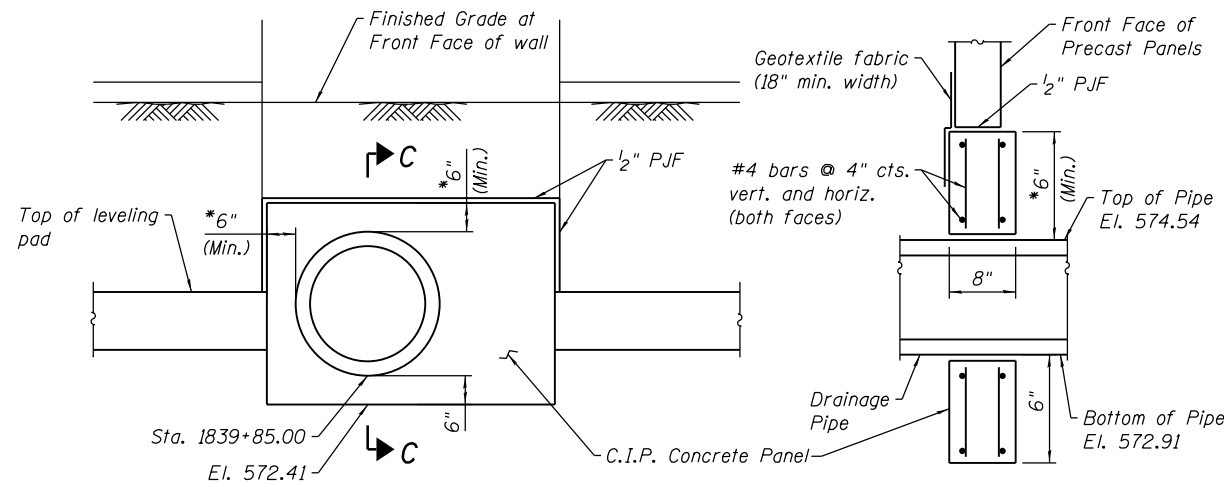
**BAR a301(E)**



**BAR d301(E)**



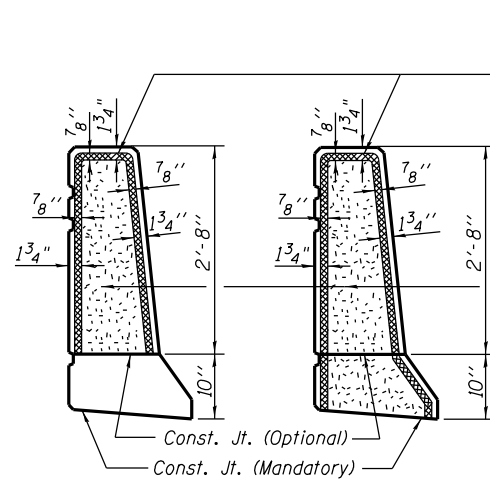
**BAR d302(E)**



**PIPE PASS THROUGH MSE WALL DETAIL**

\*Wall supplier to determine required dimensions and shall accommodate for wall settlement to prevent shearing of pipe.

**SECTION C-C**

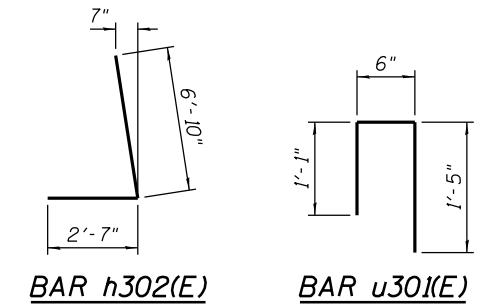


**CONTRACTION EXPANSION**

**BARRIER RAIL JOINT DETAILS**

Non-staining gray one component non-sag elastomeric gun grade polyurethane sealant meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25, Use T with a 5/8" backer rod.

1/2" Preformed Self-Expanding Cork Joint Filler according to Article 1051.07 of the Std. Spec. Cost included with Concrete Superstructure.

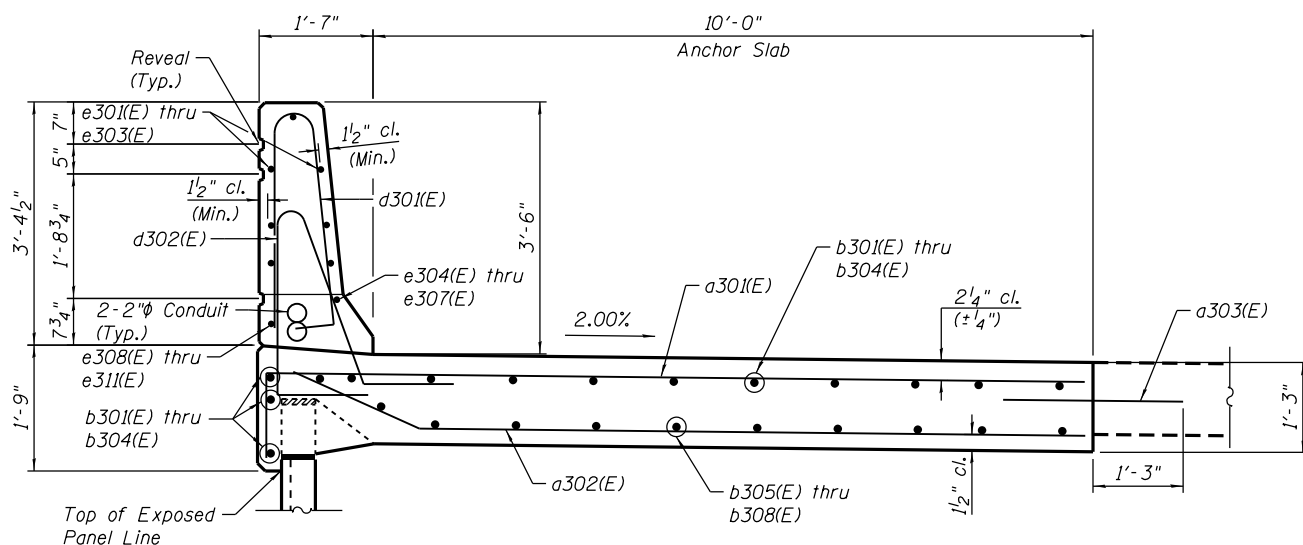


**BAR h302(E)**

**BAR u301(E)**

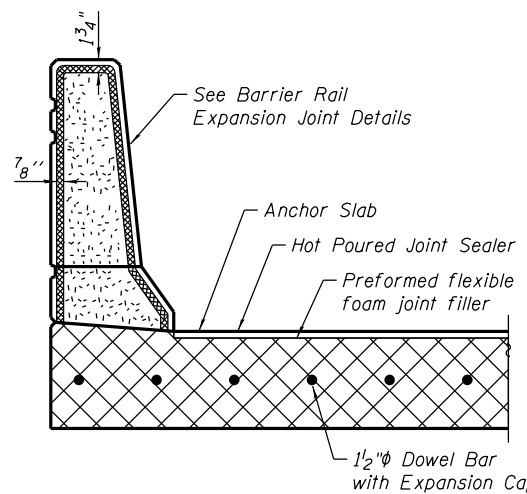
**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a301(E)	496	#7	12'-5"	┌
a302(E)	360	#4	11'-4"	┌
a303(E)	150	#8	2'-6"	┌
b301(E)	14	#4	29'-8"	┌
b302(E)	42	#4	35'-0"	┌
b303(E)	84	#4	31'-8"	┌
b304(E)	28	#4	23'-8"	┌
b305(E)	10	#4	29'-8"	┌
b306(E)	40	#4	26'-11"	┌
b307(E)	80	#4	24'-5"	┌
b308(E)	30	#4	16'-8"	┌
d301(E)	499	#6	6'-10"	┌
d302(E)	499	#6	6'-10"	┌
d303(E)	24	#4	1'-5"	┌
e301(E)	14	#4	15'-5"	┌
e302(E)	35	#4	19'-8"	┌
e303(E)	105	#4	14'-8"	┌
e304(E)	1	#8	31'-2"	┌
e305(E)	3	#8	37'-9"	┌
e306(E)	6	#8	34'-5"	┌
e307(E)	2	#8	25'-9"	┌
e308(E)	1	#4	31'-2"	┌
e309(E)	4	#4	26'-11"	┌
e310(E)	8	#4	24'-5"	┌
e311(E)	3	#4	16'-8"	┌
h301(E)	10	#4	20'-4"	┌
h302(E)	5	#4	9'-5"	┌
u301(E)	24	#4	3'-0"	┌
Protective Coat		Sq. Yd.	590	
Concrete Superstructure		Cu. Yd.	245	
Reinforcement Bars, Epoxy Coated		Pound	35,800	
Slope Wall 4"		Sq. Yd.	9	

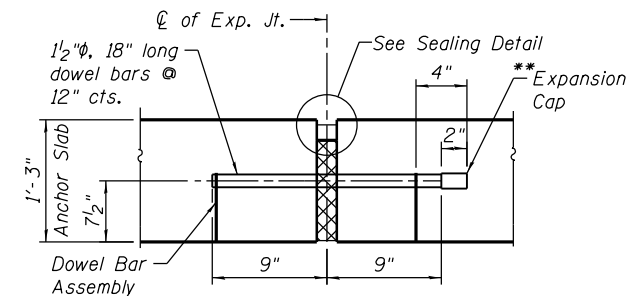


**SECTION B-B**

(Typical MSE Barrier Rail Section) (Facing West)



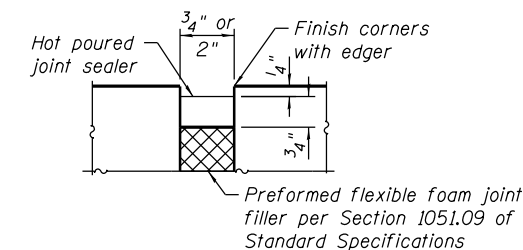
**TRANSVERSE EXPANSION JOINT SECTION**



**ANCHOR SLAB TO ANCHOR SLAB TRANSVERSE EXPANSION JOINT**

(Expansion Joint filler, sealer and Dowel Bars included in cost of Concrete Superstructure.)

\*\* Expansion caps shall be installed on the exposed end of each dowel bar once header has been removed and the joint filler material has been installed.



**SEALING DETAIL**

**NOTES:**

- See bridge plans (SN 016-1705) for approach slab details and civil plans for roadway details.
- Protective Coat is applied to top of Anchor Slab, inside vertical and top faces of barrier rail, and to exposed faces of MSE coping. Apply after Bridge Deck Grooving (Special) is complete.
- Cost of concrete, rebar, geotextile fabric, and joint filler for Pipe Pass Through are included in cost of Mechanically Stabilized Earth Retaining Wall, Special.



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	CHECKED - EJO	REVISED

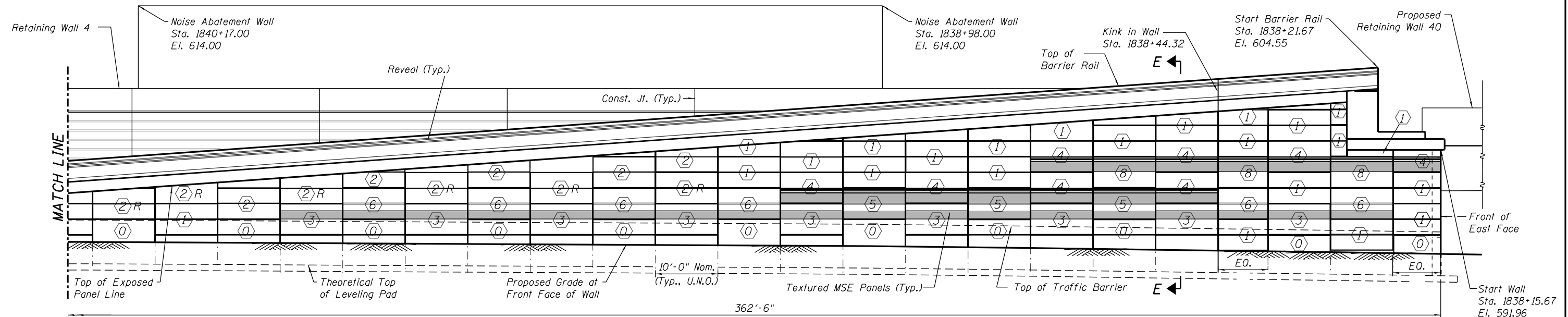
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

DETAILS  
STRUCTURE NO. 016-1722

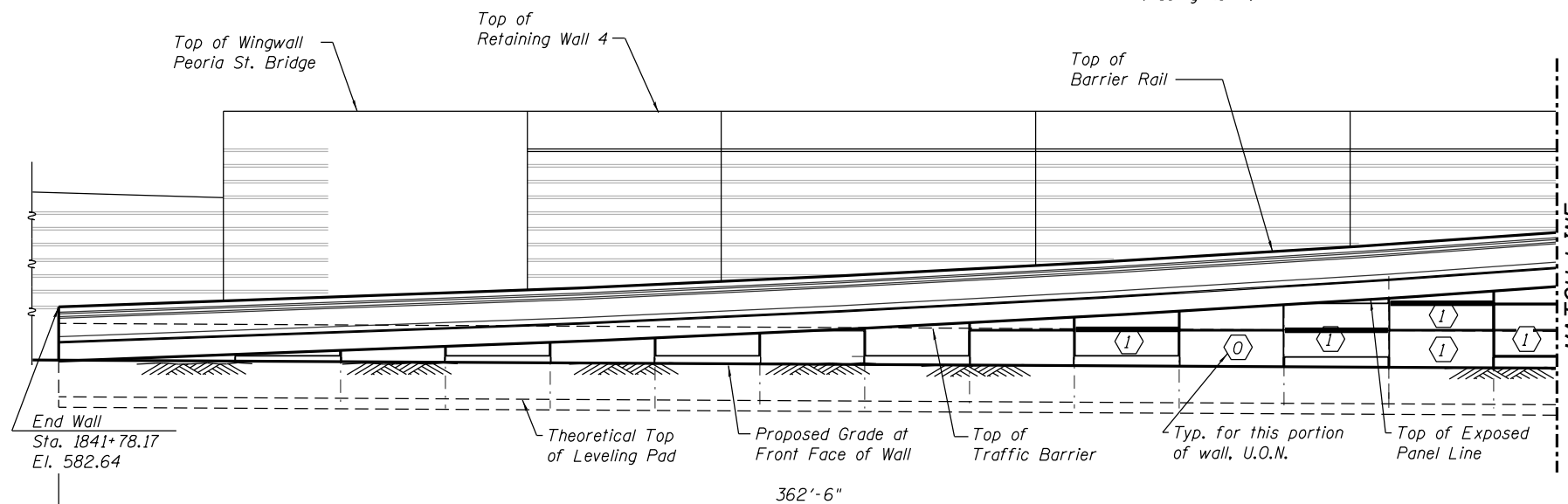
SHEET NO. RW3-060F RW3-12 SHEETS

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CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	

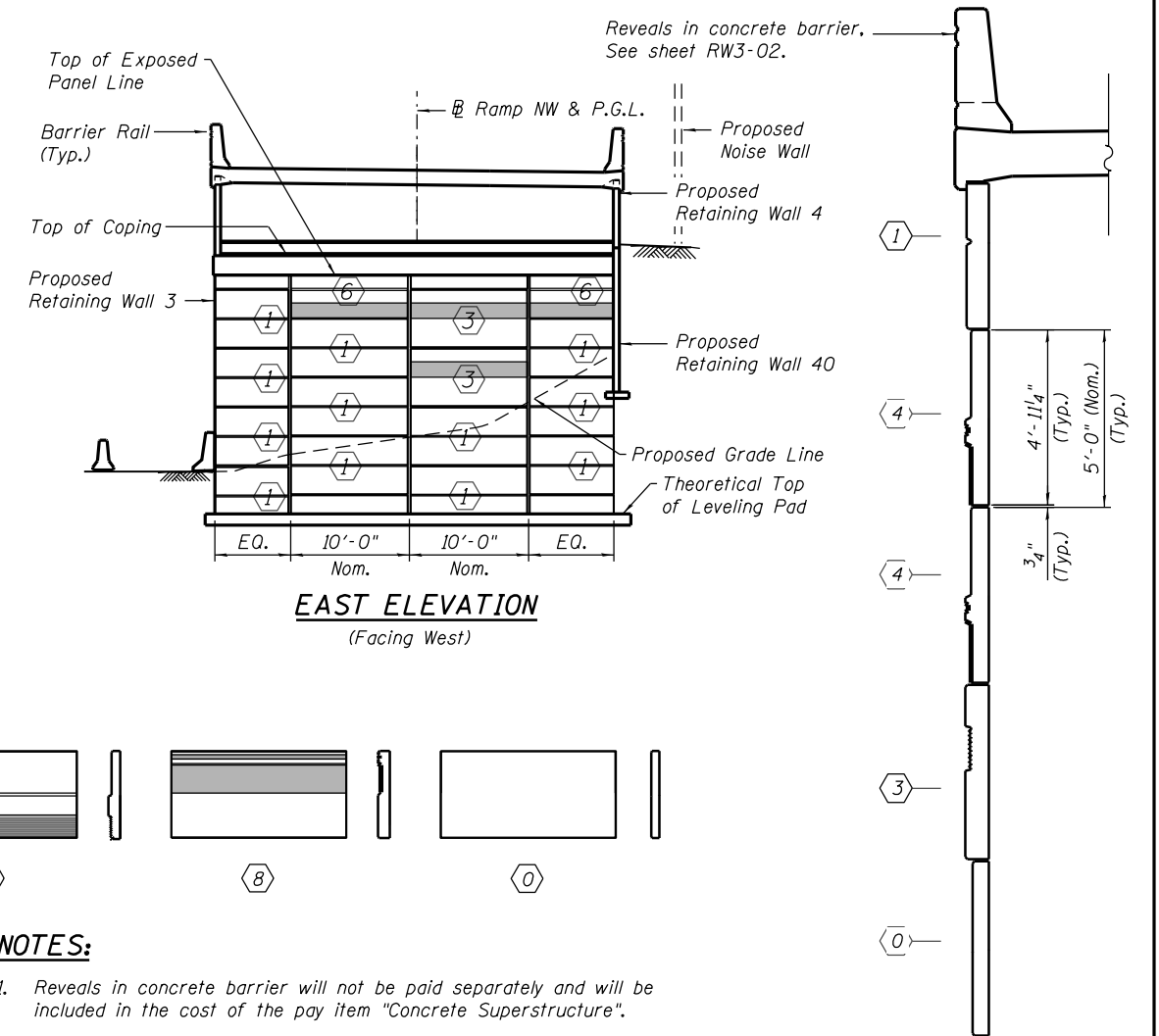
0161722-60W28-506-SuperStruct



**SOUTH ELEVATION**  
(Facing North)

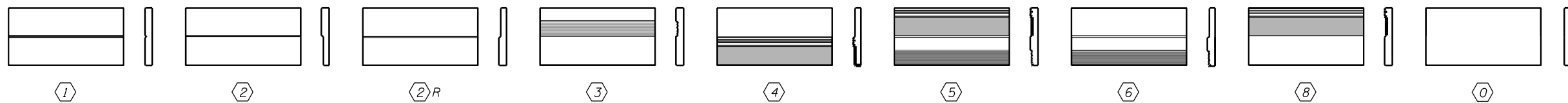


**SOUTH ELEVATION**  
(Facing North)



**EAST ELEVATION**  
(Facing West)

**SECTION E-E**



**PRECAST PANEL TYPES**

**NOTES:**

1. Reveals in concrete barrier will not be paid separately and will be included in the cost of the pay item "Concrete Superstructure".
2. Textured formliner for precast panels will not be paid separately and will be included in the cost of the pay item "Mechanically Stabilized Earth Retaining Wall, Special".
3. For formliner details for precast panels see sheet RW1-11 in Retaining Wall 1 (SN 016-1720) plans.
4. Verify / coordinate all dimensions with bridge plans (SN 016-1705).

0161722-60W28-507-SuperStruct.dgn



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PLOT DATE = 4/28/2014	CHECKED - EJO	REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**ARCHITECTURAL DETAILS**  
**STRUCTURE NO. 016-1722**

SHEET NO. RW3-07 OF RW3-12 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 551
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	

**GROUND IMPROVEMENT PERFORMANCE REQUIREMENTS:**

Minimum factor of safety for global stability shall be 1.5.

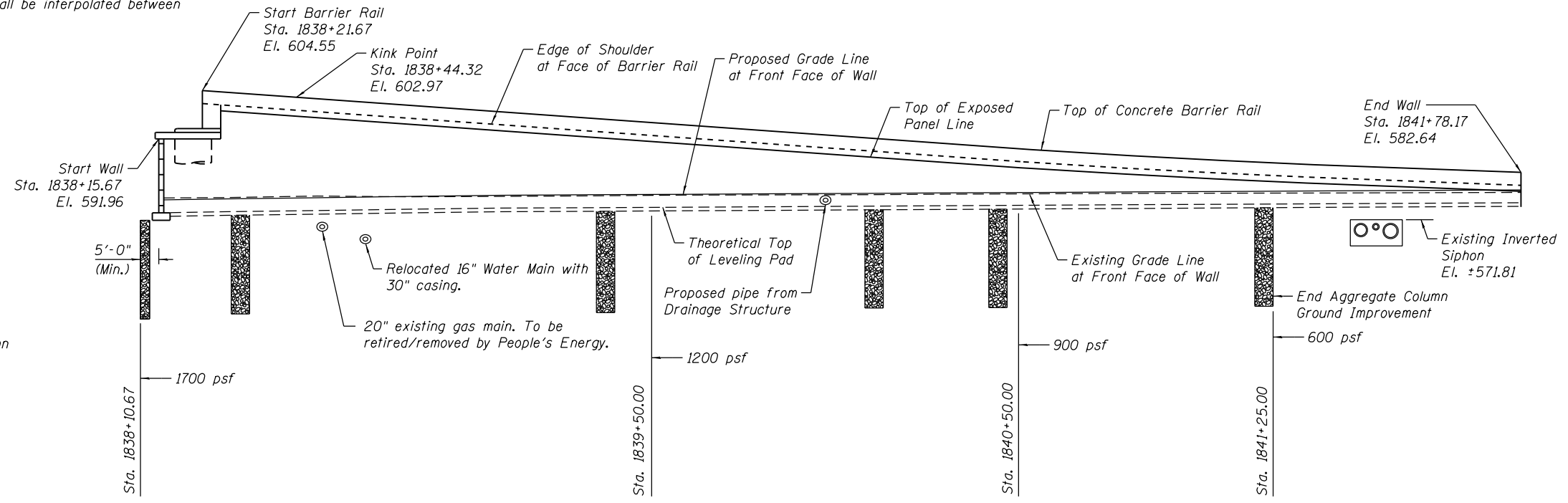
Settlement during construction shall not exceed 3 inches, and settlement after completion of wall and pavement construction shall not exceed 1 inch.

Minimum factor of safety for Equivalent Uniform Service Bearing Pressure shall be 2.5.

Equivalent Uniform Service Bearing Pressure shall be interpolated between the values shown.

**NOTES:**

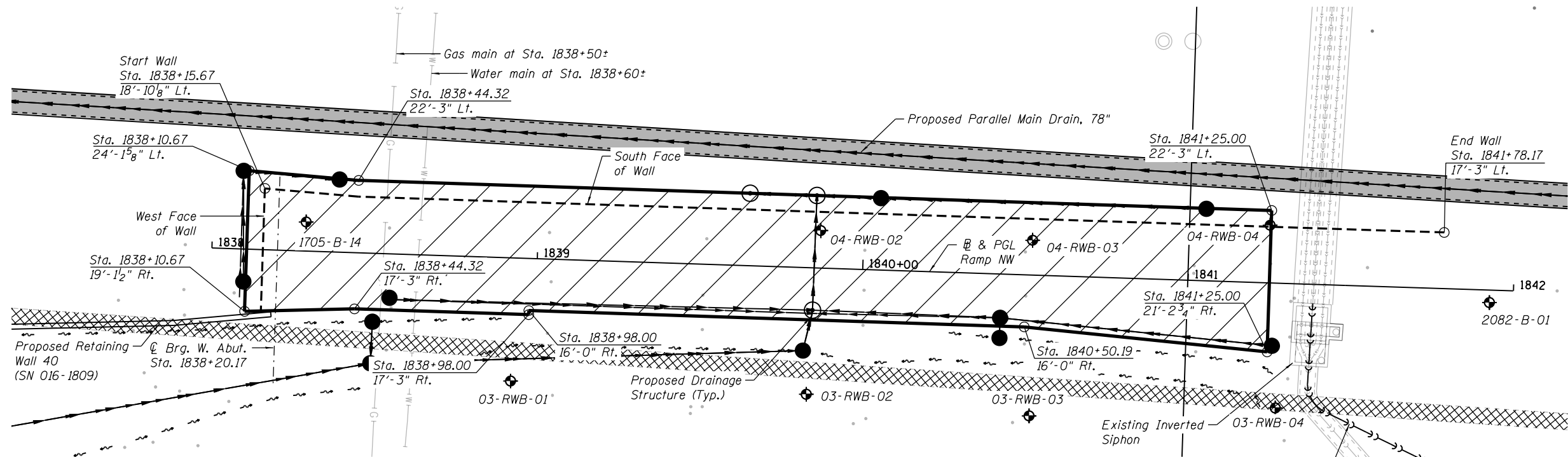
1. Aggregate Column Ground Improvement shall be designed by the Contractor in accordance with special provision for Aggregate Column Ground Improvement.
2. Aggregate Column Ground Improvement for Retaining Wall 3 (SN 016-1722) covers approximately 12,400 Sq. Ft.
3. See sheet RW3-03 for section views of ground improvement.
4. Aggregate columns shall be spaced to avoid conflict with existing utilities to remain and proposed abutment foundations.
5. Top of Aggregate Columns is equal to lowest excavation limit or existing grade line, whichever is lower.



**LEGEND:**

- Soil Boring Location
- Limits of Aggregate Column Ground Improvement
- Existing Tunnel to be Bulkheaded (by others)
- Existing Gas Main
- Existing Water Main
- Proposed Siphon (by others)
- Proposed Drainage System

**EQUIVALENT UNIFORM SERVICE BEARING PRESSURE**  
(At top of ground improvement)



**BILL OF MATERIAL**

Item	Unit	Total
Aggregate Column Ground Improvement	L. Sum	0.32

**PLAN**



USER NAME = dunkerleyb	DESIGNED - DEV	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - BRD	REVISED
PLOT DATE = 4/28/2014	CHECKED - EJO	REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

AGGREGATE COLUMN GROUND IMPROVEMENT DETAILS  
STRUCTURE NO. 016-1722

SHEET NO. RW3-080F RW3-12 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 552
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	

0161722-60W28-508-SubStructure

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)
578.1	1-inch thick brown SILTY LOAM --TOPSOIL-- Very loose to loose, brown and gray to gray LOAM, trace gravel --FILL--	1	4	NP	4		9		--In-Situ Vane Shear, 25.5 feet-- --Su undis = 1243.2 psf-- --Su remold = 725.2 psf-- --Sensitivity = 1.714--	11	1	2	0.57	25	
		2	2	NP	2		10		--LL(%)=35, PL(%)=17-- --%Gravel=2.6-- --%Sand=9.8-- --%Silt=46.6-- --%Clay=41.0-30 --A-6 (15)--	12	2	2	0.25	27	
570.2	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel	3	1	P	1	0.25	16		--In-Situ Vane Shear, 30.5 feet-- --Su undis = 2481.6 psf-- --Su remold = 1085.7 psf-- --Sensitivity = 2.29--	5	5				
		4	1	B	1	0.41	25		--In-Situ Vane Shear, 10.5 feet-- --Su undis = 673.4 psf-- --Su remold = 466.2 psf-- --Sensitivity = 1.44--	10	1	2			
		5	0	B	2	0.49	25		--In-Situ Vane Shear, 15.5 feet-- --Su undis = 621.6 psf-- --Su remold = 336.7 psf-- --Sensitivity = 1.849-- --LL(%)=32, PL(%)=16-- --%Gravel=4.1-- --%Sand=12.9-- --%Silt=50.9-- --%Clay=32.1-- --A-6 (12)--	13	2	3	0.33	21	
		6	1	B	1	0.49	23		--In-Situ Vane Shear, 35.5 feet-- --Su undis = 1964.6 psf-- --Su remold = 1344.2 psf-- --Sensitivity = 1.46--	35	1	2	7.80	13	
		7	0	B	1	0.16	27		Stiff to very stiff, gray SILTY CLAY, trace gravel	35.5	6				
		8	0	B	1	0.25	26			538.5	14	4	5	1.56	23
		9	1	B	2	0.41	23				19	13	20	7.79	13
		10	2	B	2	0.49	25				20	36	46	2.38	10
		25	2	B	2	0.49	25				21	55	6	NP	14

GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	08-13-2013	Complete Drilling	08-15-2013
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR
Driller	R&J	Logger	A. Tomaras
Checked by	C. Marin	Drilling Method	3.25" HSA, boring backfilled upon completion
White Drilling	73.50 ft	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)
524.0	Very dense, gray SILTY LOAM, trace gravel	17	29	NP	36		11		--%Silt=49.4-- --%Clay=46.4-- --A-6 (19)--	55	17	29	36	11	
519.0	Hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel	18	27	S	30	7.80	13		--LL(%)=29, PL(%)=16-- --%Gravel=1.9-- --%Sand=11.1--60 --%Silt=56.4-- --%Clay=30.6-- --A-6 (10)--	55	18	30	7.80	13	
492.2	WEATHERED BEDROCK	23	75/0	NR					Strong, good rock quality, light gray, fresh, mainly horizontal joints, joint breaks with little to no infill, horizontal stylolites, slightly vuggy, trace small cavities, horizontally bedded DOLOSTONE	492.2	23	75/0	NR		
490.2	Boring terminated at 95.50 ft	95							--Run 1-RECOVERY=82%-- --RQD =73%--90	490.2	95				
509.0	Very dense, gray SILTY LOAM, trace to some gravel	20	36	S	46	2.38	10		--LL(%)=19, PL(%)=13-- --%Gravel=8.7-- --%Sand=28.7--70 --%Silt=51.8-- --%Clay=10.7-- --A-4 (1)--	509.0	20	36	46	2.38	10
		21	55	NP	6		14		--Run 2-RECOVERY=95%-- --RQD =80%--	490.2	95				

GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	08-13-2013	Complete Drilling	08-15-2013
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR
Driller	R&J	Logger	A. Tomaras
Checked by	C. Marin	Drilling Method	3.25" HSA, boring backfilled upon completion
White Drilling	73.50 ft	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)
526.1	6-inch thick, black SILTY LOAM --TOPSOIL-- Very stiff, brown and gray, SILTY CLAY LOAM, trace gravel, sand seams	1	4	P	6	3.50	13		--In-Situ Vane Shear, 25.5 feet-- --Su undis = 1217.3 psf-- --Su remold = 777 psf-- --Sensitivity = 1.56--	5	1	2	0.49	26	
523.6	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel	2	2	B	2	0.41	22		--In-Situ Vane Shear, 5.5 feet-- --Su undis = 1320.9 psf-- --Su remold = 466.2 psf-- --Sensitivity = 2.83--	11	1	2	0.49	26	
		3	1	B	1	0.16	27		--In-Situ Vane Shear, 30.5 feet-- --Su undis = 1243.2 psf-- --Su remold = 569.8 psf-- --Sensitivity = 2.18--	12	2	3	0.49	26	
522.2	Saturated SAND	4	0	B	1	0.16	27		--In-Situ Vane Shear, 10.5 feet-- --Su undis = 828.8 psf-- --Su remold = 388.5 psf-- --Sensitivity = 2.13--	30	1	2	0.49	26	
		5	1	B	1	0.16	28		Stiff to very stiff, gray SILTY CLAY, trace gravel	35	3	4	0.57	20	
		6	1	B	1	0.16	27		--In-Situ Vane Shear, 15.5 feet-- --Su undis = 828.8 psf-- --Su remold = 440.3 psf-- --Sensitivity = 1.88--	541.1	13	4	6	1.64	22
		7	1	B	1	0.33	26		--In-Situ Vane Shear, 35.5 feet-- --Torque >600 lbs--	40	4	7	1.64	22	
		8	0	B	1	0.25	26			45	6	5	1.97	17	
		9	1	B	2	0.49	27			50	6	9	3.28	20	
		10	1	B	1	0.41	25								

GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	09-30-2013	Complete Drilling	10-01-2013
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR
Driller	R&J	Logger	F. Bozga
Checked by	C. Marin	Drilling Method	3.25" HSA, boring backfilled upon completion
White Drilling	8.00 ft	At Completion of Drilling	NA
Time After Drilling	24 hours	Depth to Water	37.00 ft

0161722-60W28-509-Boring





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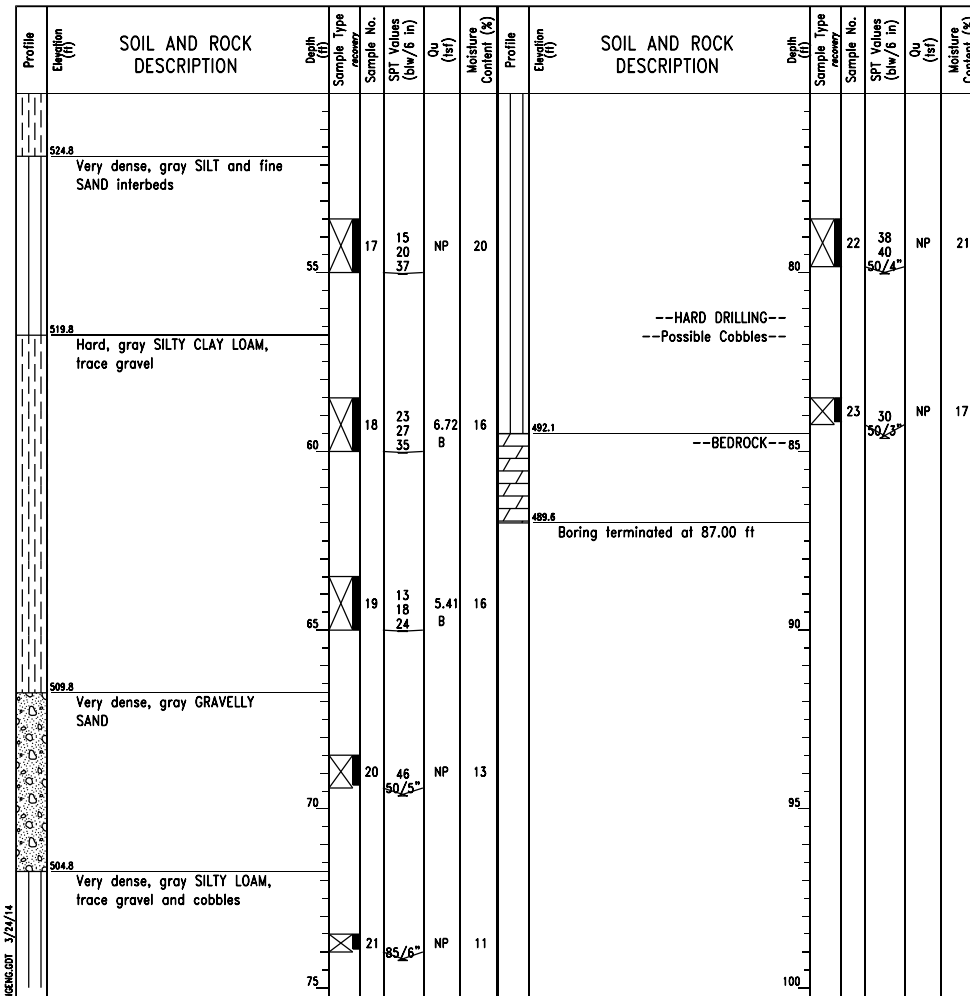
### BORING LOG 04-RWB-02

WEI Job No.: 1100-04-01

Client: AECOM  
Project: Circle Interchange Reconstruction  
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88  
Elevation: 576.56 ft  
North: 1898091.84 ft  
East: 1170680.70 ft  
Station: 1839+86.74  
Offset: 11.5192 LT

Page 2 of 2



#### GENERAL NOTES

Begin Drilling 09-30-2013 Complete Drilling 10-01-2013  
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR  
Driller R&J Logger F. Bozga Checked by C. Marin  
Drilling Method 3.25" HSA, boring backfilled upon completion

#### WATER LEVEL DATA

White Drilling 8.00 ft  
At Completion of Drilling NA  
Time After Drilling 24 hours  
Depth to Water 37.00 ft

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



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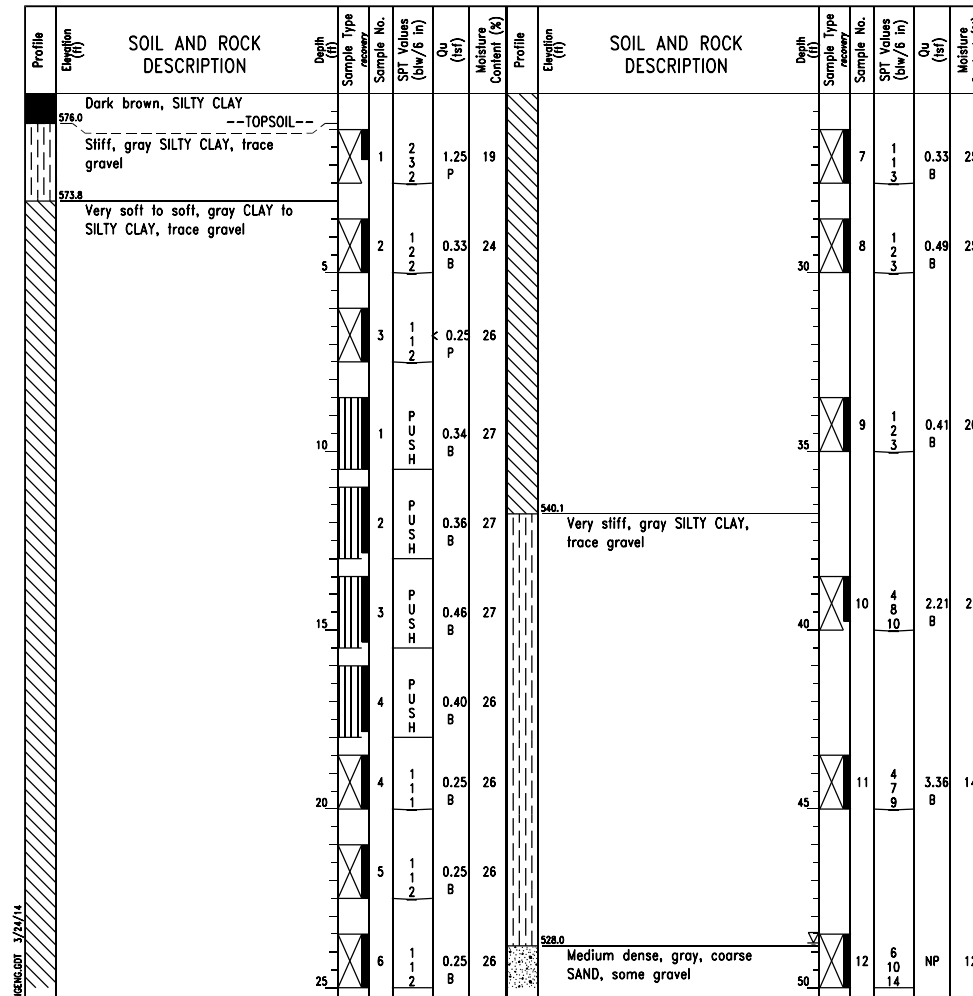
### BORING LOG 04-RWB-03

WEI Job No.: 1100-04-01

Client: AECOM  
Project: Circle Interchange Reconstruction  
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88  
Elevation: 576.83 ft  
North: 1898088.59 ft  
East: 1170615.62 ft  
Station: 1840+51.89  
Offset: 10.6827 LT

Page 1 of 2



#### GENERAL NOTES

Begin Drilling 09-18-2013 Complete Drilling 09-26-2013  
Drilling Contractor K&S Drill Rig D-120 TMR  
Driller R&E Logger B. Wilson Checked by C. Marin  
Drilling Method 4.25" HSA, boring backfilled upon completion

#### WATER LEVEL DATA

White Drilling 48.75 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.



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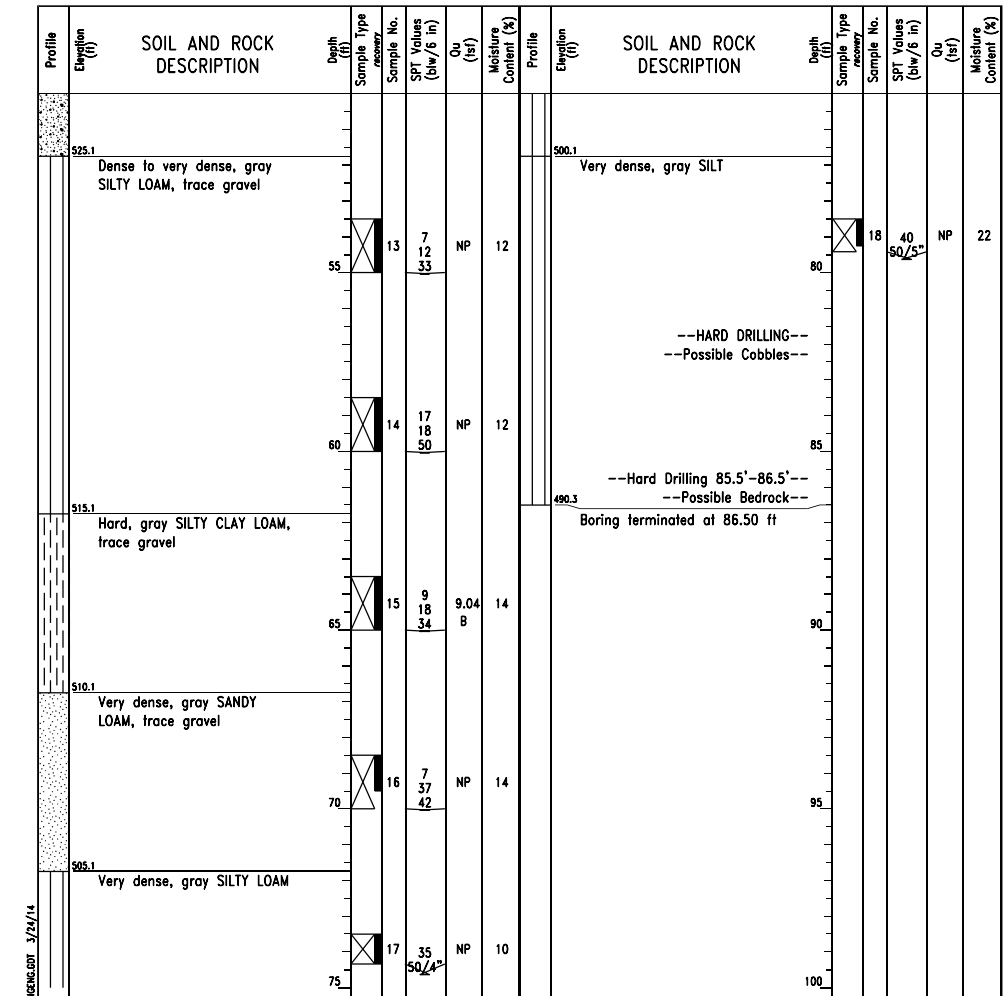
### BORING LOG 04-RWB-03

WEI Job No.: 1100-04-01

Client: AECOM  
Project: Circle Interchange Reconstruction  
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88  
Elevation: 576.83 ft  
North: 1898088.59 ft  
East: 1170615.62 ft  
Station: 1840+51.89  
Offset: 10.6827 LT

Page 2 of 2



#### GENERAL NOTES

Begin Drilling 09-18-2013 Complete Drilling 09-26-2013  
Drilling Contractor K&S Drill Rig D-120 TMR  
Driller R&E Logger B. Wilson Checked by C. Marin  
Drilling Method 4.25" HSA, boring backfilled upon completion

#### WATER LEVEL DATA

White Drilling 48.75 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.

0161722-60W28-510-Bor-Ing



USER NAME = dunkerleyb  
PLOT SCALE = N.T.S.  
PLOT DATE = 4/28/2014

DESIGNED - DEV  
CHECKED - ATB  
DRAWN - BRD  
CHECKED - EJO

REVISED  
REVISED  
REVISED  
REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BORING LOGS - II  
STRUCTURE NO. 016-1722

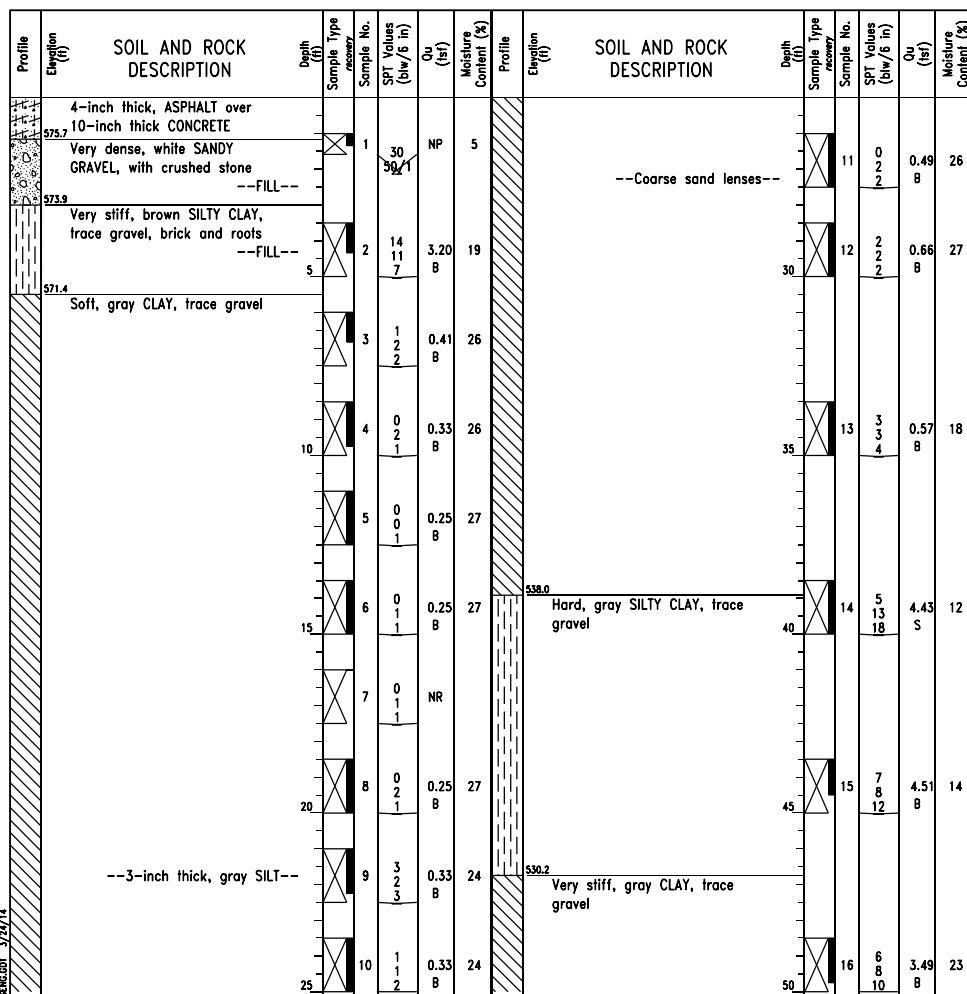
SHEET NO. RW3-100F RW3-12 SHEETS

F.A.I. R.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	554
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT -NUMBER-				

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**BORING LOG 04-RWB-04**  
WEI Job No.: 1100-04-01  
Client: **AECOM**  
Project: **Circle Interchange Reconstruction**  
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88  
Elevation: 576.90 ft  
North: 1898077.01 ft  
East: 1170543.46 ft  
Station: 1841+24.64  
Offset: 17.7160 LT

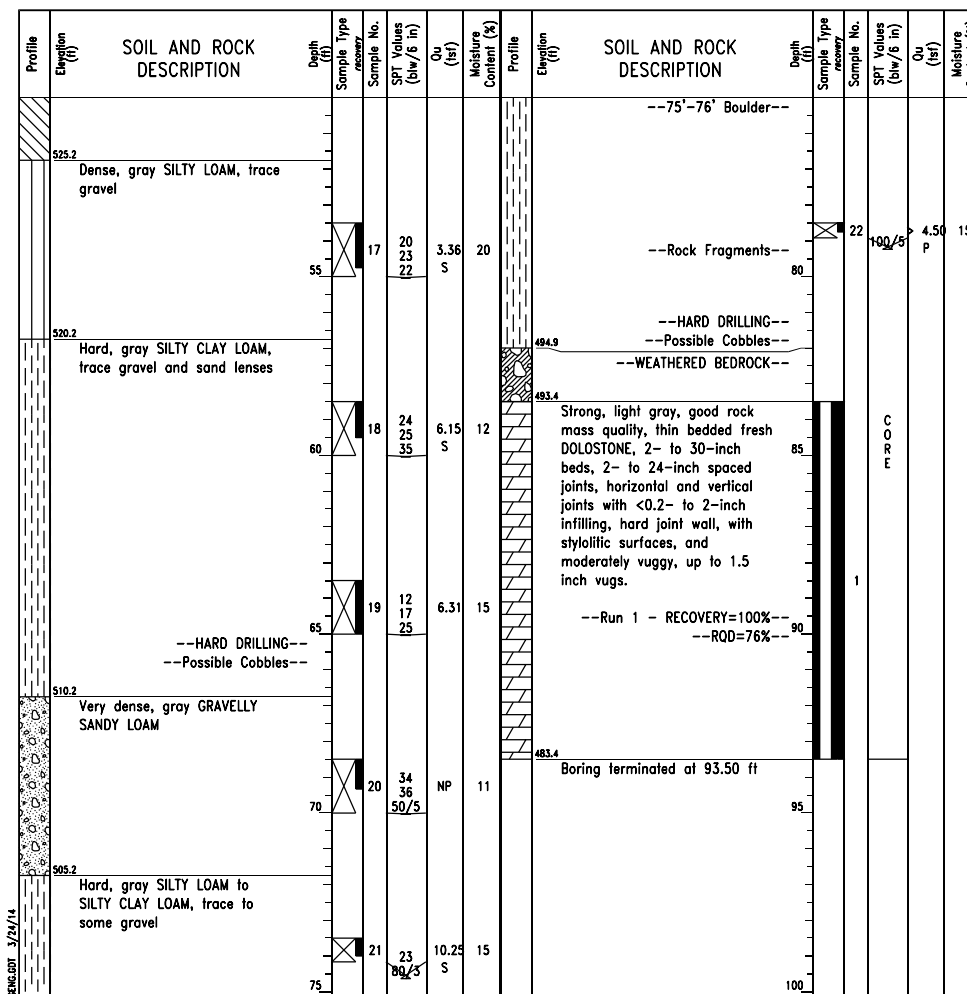


GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	09-26-2013	Complete Drilling	09-26-2013
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR
Driller	R&J	Logger	A. Tomaras
Checked by	C. Marin	Drilling Method	2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion
White Drilling	NA	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA

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**BORING LOG 04-RWB-04**  
WEI Job No.: 1100-04-01  
Client: **AECOM**  
Project: **Circle Interchange Reconstruction**  
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88  
Elevation: 576.90 ft  
North: 1898077.01 ft  
East: 1170543.46 ft  
Station: 1841+24.64  
Offset: 17.7160 LT

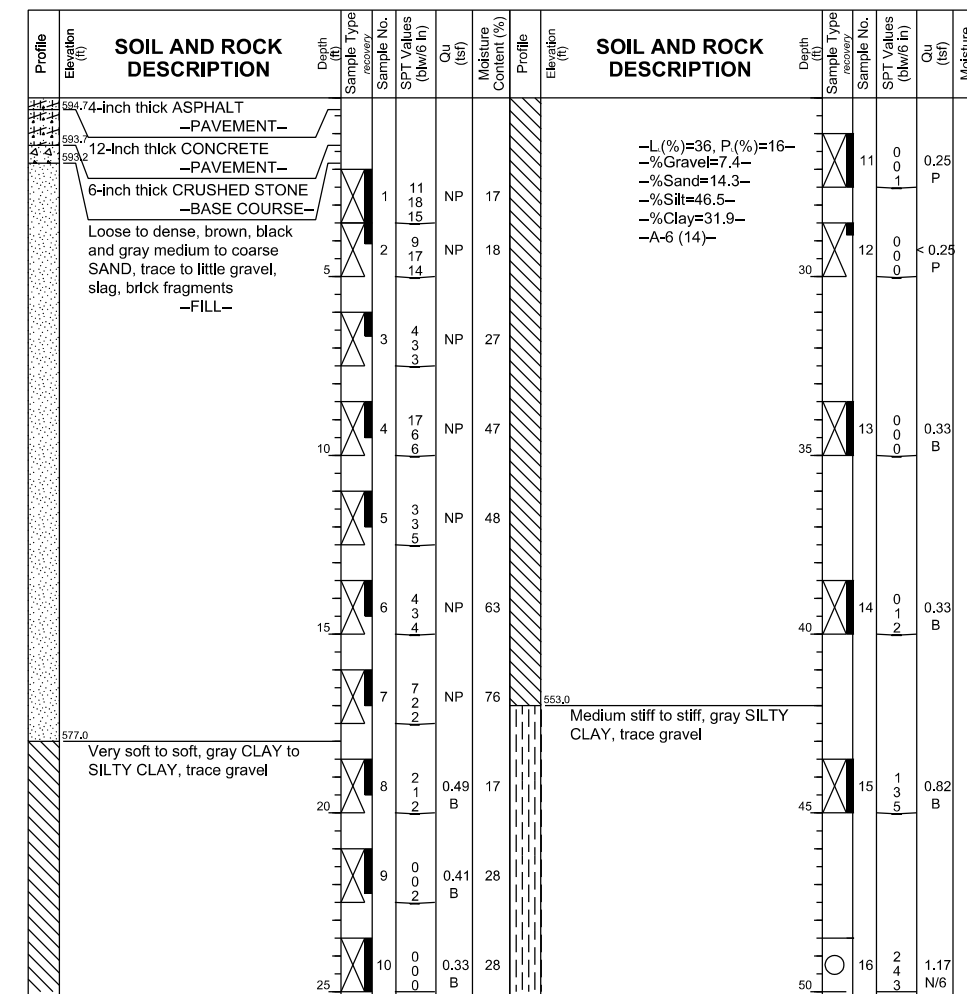


GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	09-26-2013	Complete Drilling	09-26-2013
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR
Driller	R&J	Logger	A. Tomaras
Checked by	C. Marin	Drilling Method	2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion
White Drilling	NA	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA

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**BORING LOG 2082-B-01**  
WEI Job No.: 1100-04-01  
Client: **AECOM**  
Project: **Circle Interchange Reconstruction**  
Location: **Sections 16 and 17, T39N, R14E of 3rd PM**

Datum: NAVD 88  
Elevation: 595.02 ft  
North: 1898094.24 ft  
East: 1170474.14 ft  
Station: 3705+04.48  
Offset: 07.77 LT



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	03-14-2013	Complete Drilling	03-14-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 TMR
Driller	R&N	Logger	A. Happel
Checked by	C. Marin	Drilling Method	2.25" SSA to 10', Mud Rotary 10' thereafter, boring backfilled upon completion
White Drilling	DRY	At Completion of Drilling	DRY
Time After Drilling	NA	Depth to Water	NA

**NOTE:**  
Boring 2082-B-01 corresponds to Sta. 1841+92.74 along B and PGL of Ramp NW.

0161722-60W28-511-Bor-Ing



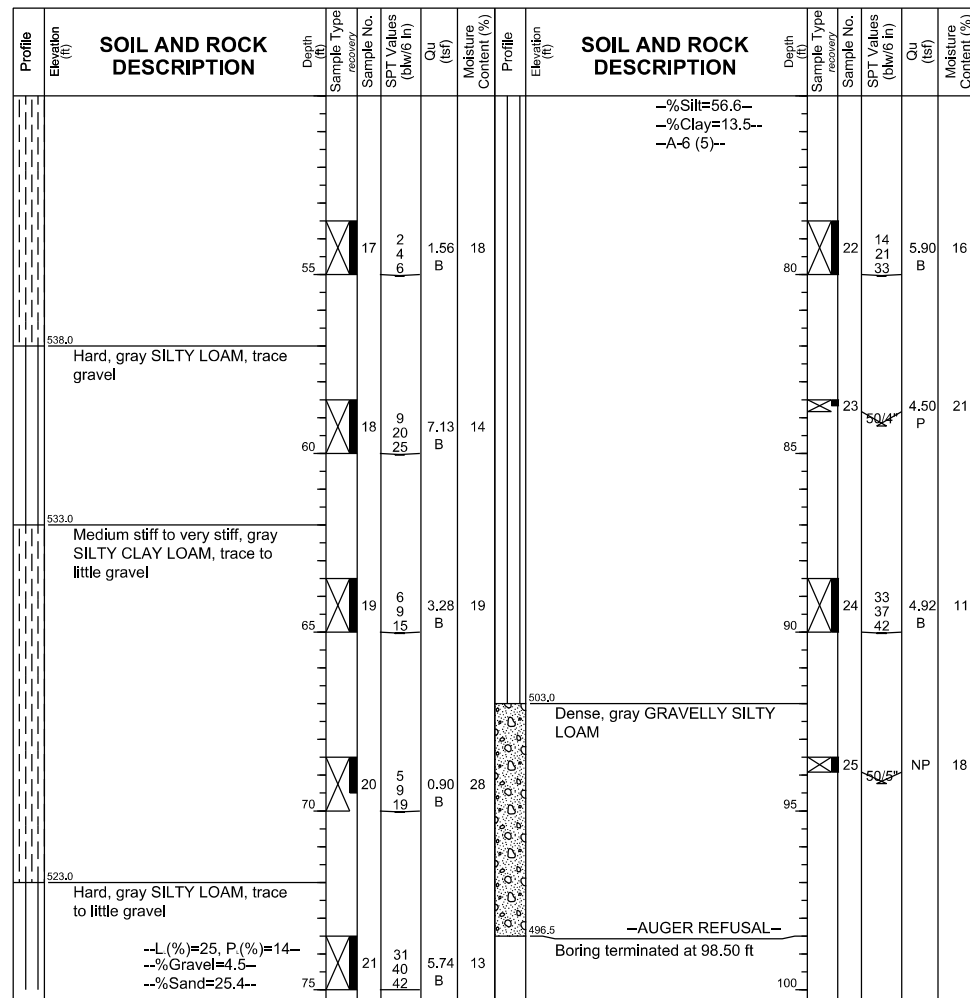
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### BORING LOG 2082-B-01

WEI Job No.: 1100-04-01

Client: **AECOM**  
Project: **Circle Interchange Reconstruction**  
Location: **Sections 16 and 17, T39N, R14E of 3rd PM**

Datum: NAVD 88  
Elevation: 595.02 ft  
North: 1898094.24 ft  
East: 1170474.14 ft  
Station: 3705+04.48  
Offset: 07.77 LT



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	03-14-2013	Complete Drilling	03-14-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 TMR
Driller	R&N	Logger	A. Happel
Checked by	C. Marin	Drilling Method	2.25" SSA to 10', Mud Rotary 10' thereafter, boring backfilled upon completion
While Drilling	DRY	At Completion of Drilling	DRY
Time After Drilling	NA	Depth to Water	NA

**NOTE:**  
Boring 2082-B-01 corresponds to Sta. 1841+92.74 along @ and PGL of Ramp NW.

0161722-60W28-512-Bor-Ing



USER NAME = dunkerleyb	DESIGNED - DEV	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 4/28/2014	DRAWN - BRD	REVISED
	CHECKED - EJO	REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BORING LOGS - IV  
STRUCTURE NO. 016-1722

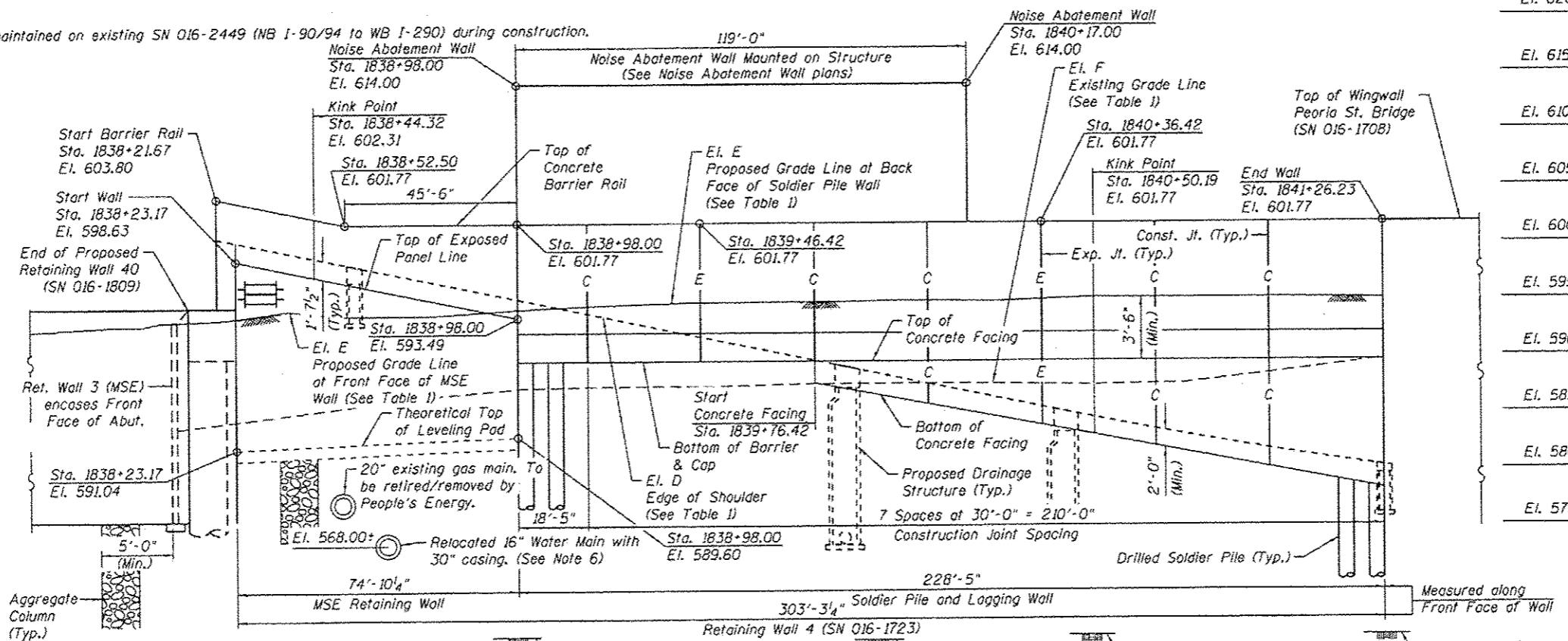
SHEET NO. RW3-12 OF RW3-12 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	554B
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT -NUMBER-				

Bench Mark: Chiseled "X" on S. flange bolt of F.H. on W. side of Peoria St. First F.H. S. of Van Buren St. Elev. = 594.37

Existing Structure: None.

Traffic Control: Traffic to be maintained on existing SN 016-2449 (NB I-90/94 to WB I-290) during construction.



- NOTES:**
1. See sheet RW4-02 for Table 1.
  2. See sheet RW3-08 for Limits of Aggregate Column Ground Improvement.
  3. See Noise Abatement Wall plans for Noise Abatement Wall details.
  4. See bridge plans (SN 016-1705) for approach slab details and civil plans for roadway details.
  5. See drainage plans for proposed 78" main drain location and details.
  6. Existing Water Main to be relocated in this contract prior to wall construction. See Water Main plans.

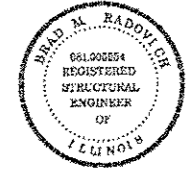
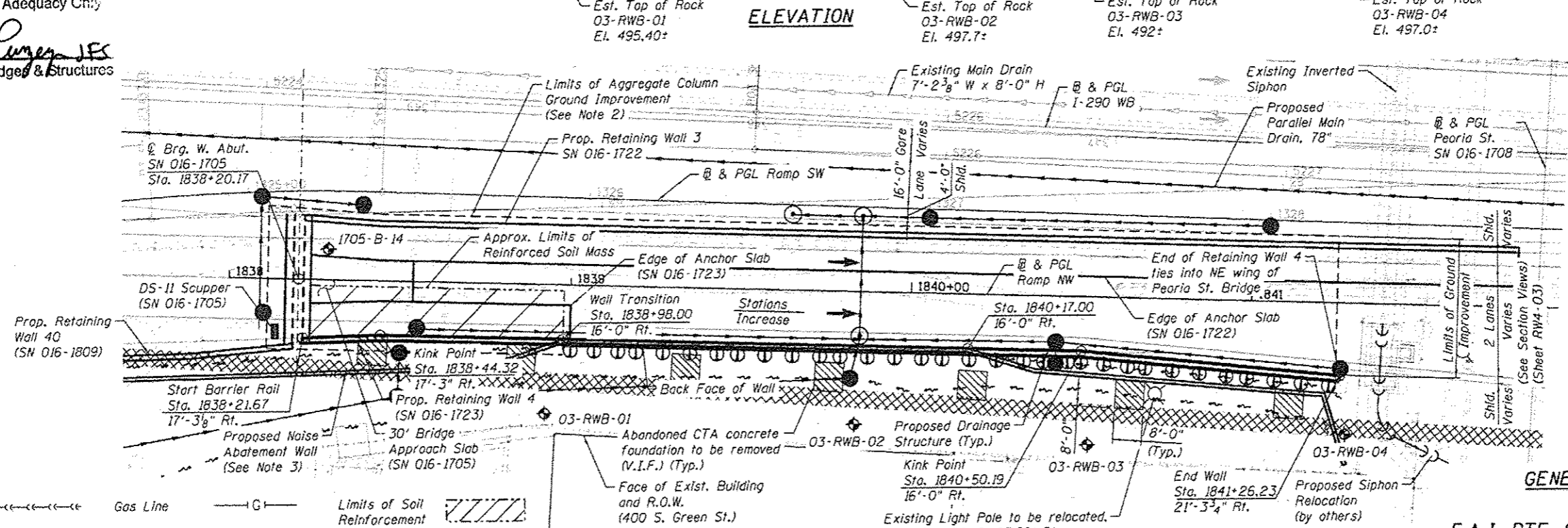
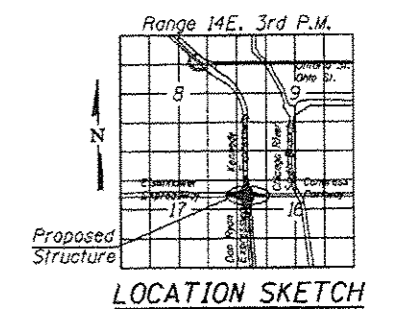
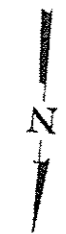
**DESIGN STRESSES**

**FIELD UNITS**  
 $f'_c = 3,500$  psi (Cast-in-Place)  
 $f_y = 60,000$  psi (Reinforcement)

**PRECAST UNITS**  
 $f'_c = 4,500$  psi (Precast Panels)  
 $f_y = 60,000$  psi (Reinforcement)

**SOLDIER PILES**  
 $f_y = 50,000$  psi (AASHTO M270 Gr. 50)

**APPROVED**  
 For Structural Adequacy Only  
 P. Carl Puzos, JES  
 Engineer of Bridges & Structures



BRAD M. RADDOVICH  
 LICENSE EXPIRES 11/30/2014  
 DATE 04/29/2014

- LEGEND:**
- Combined Sewer:
  - Electric:
  - Fiber Optic:
  - Existing Storm Sewer:
  - Water Line:
  - Gas Line:
  - Fire Hydrant:
  - Light Pole:
  - Soil Boring Location:
  - Proposed Storm Sewer:
  - Limits of Soil Reinforcement:
  - Limits of Ground Improvement:
  - Existing Abandoned CTA Water Tunnel - Filled by others. (Contract 60W26):
  - Existing Fence:
  - Foundation Removal:

**PLAN**

**DESIGN SPECIFICATIONS**  
 2012 AASHTO LRFD Bridge Design Specifications  
 6th Edition with 2013 Interim Revisions

**NOISE WALL WIND LOADING**  
 35 psf (Structure Mounted)

**GENERAL PLAN & ELEVATION**  
**RETAINING WALL 4**  
 F.A.I. RTE. 90/94/290 - SECTION 2013-01OR  
 COOK COUNTY  
 STATION 1838+23.17 TO 1841+26.23  
 STRUCTURE NO. 016-1723

0161723-60W28-S01-GPE



USER NAME: dunkerleyb	DESIGNED - DEV	REVISOR
PLDT SCALE: N.T.S.	CHECKED - ATB	REVISION
PLDT DATE: 4/28/2014	DRAWN - BRD	REVISION
	CHECKED - EJO	REVISION

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SHEET NO. RW4-01 OF RW4-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-01OR	COOK	747	555
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT NUMBER	

**GENERAL NOTES:**

- Reinforcement bars designated (E) shall be epoxy coated.
- Slip forming of the barrier rail is not allowed.
- Protective Coat shall be applied to the designated areas of Anchor Slabs and Barrier Rails.
- Stations and Offsets are measured from the Baseline of Ramp NW to the Front Face of Precast Panels for MSE Wall and to Front Face of Concrete Facing for Soldier Pile Wall.
- Existing abandoned 5' dia. brick CTA water tunnel to be located and filled by others in Contract 60W26 prior to construction. Soldier pile construction shall not start until tunnel filling is complete. Drilling operations must account for presence of debris, soil, tunnel, and other expected materials.
- Proposed Siphon reconstruction to occur prior to Ramp NW construction by others in Contract 60W29.
- Aggregate Column Ground Improvement is shown here for information only. Aggregate Column Ground Improvement pay item is included in Retaining Wall 3 (SN 016-1722) Bill of Material.
- See Special Provision for Mechanically Stabilized Earth Retaining Wall, Special for design and construction requirements.
- Anchor Slab and Barrier Rail concrete shall be paid for as Concrete Superstructure.
- For Drainage Structure location, type, and size, see Drainage Sheets.
- MSE supplier to design load transfer systems within reinforced soil mass to accommodate drainage structures and abutment foundations.
- Noise abatement wall, foundations, and connections are paid for under Noise Abatement Wall, Ground Mounted and Noise Abatement Wall, Structure Mounted pay items. See Noise Abatement Wall plans.
- The Contractor shall exercise extreme caution during construction to make certain that construction activities, live load surcharge and other loads applied to the structures will not have detrimental effects on the adjacent buildings and utilities. See Special Provision for Construction Vibration Monitoring.

**TABLE 1**

Wall Type	Station	Offset	Elevation D	Elevation E	Elevation F
MSE	1838+23.17	18'-5 1/8" Rt.	600.25	594.54	584.17
MSE	1838+25.00	18'-4" Rt.	600.16	594.50	584.22
MSE	1838+44.32	17'-3" Rt.	598.83	594.13	584.94
MSE	1838+50.00	17'-3" Rt.	598.44	594.02	585.25
MSE	1838+62.00	17'-3" Rt.	597.61	593.79	585.83
MSE	1838+75.00	17'-3" Rt.	596.71	593.54	586.17
Soldier Pile	1838+98.00	16'-0" Rt.	595.11	593.10	588.44
Soldier Pile	1839+00.00	16'-0" Rt.	594.97	593.10	588.49
Soldier Pile	1839+25.00	16'-0" Rt.	593.24	593.20	588.66
Soldier Pile	1839+50.00	16'-0" Rt.	591.50	593.29	588.63
Soldier Pile	1839+75.00	16'-0" Rt.	589.76	593.38	588.64
Soldier Pile	1840+00.00	16'-0" Rt.	588.03	593.48	588.61
Soldier Pile	1840+17.00	16'-0" Rt.	586.85	593.54	588.61
Soldier Pile	1840+25.00	16'-0" Rt.	586.29	593.57	588.61
Soldier Pile	1840+50.19	16'-0" Rt.	584.56	593.66	588.60
Soldier Pile	1840+75.00	17'-8 3/4" Rt.	582.96	593.75	589.51
Soldier Pile	1841+00.00	19'-5 3/4" Rt.	581.53	593.84	590.47
Soldier Pile	1841+25.00	21'-2 3/4" Rt.	580.30	593.93	591.52
Soldier Pile	1841+26.23	21'-3 3/4" Rt.	580.24	593.94	591.56

Elevation D - Edge of Shoulder at Face of Barrier Rail / Concrete Facing  
 Elevation E - Proposed Grade Line at Front Face of MSE Wall / Back Face of Soldier Pile Wall  
 Elevation F - Existing Grade Line at Front Face of MSE Wall / Back Face of Soldier Pile Wall

**TOTAL BILL OF MATERIAL:**

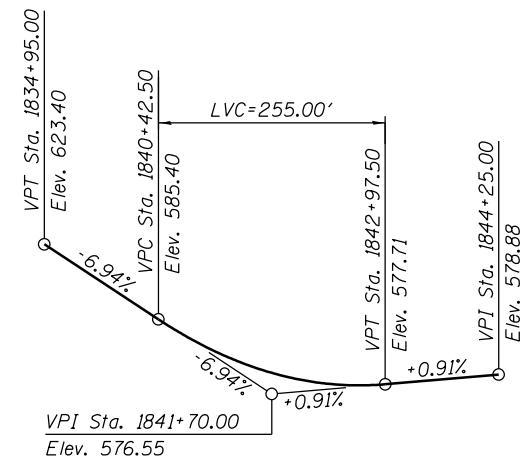
DESCRIPTION	UNIT	TOTAL
STRUCTURE EXCAVATION	CU. YD.	101
CONCRETE STRUCTURES	CU. YD.	211
CONCRETE SUPERSTRUCTURE	CU. YD.	55
BRIDGE DECK GROOVING (SPECIAL)	SQ. YD.	29
PROTECTIVE COAT	SQ. YD.	130
STUD SHEAR CONNECTORS	EACH	385
REINFORCEMENT BARS, EPOXY COATED	POUND	68,860
NAME PLATES	EACH	1
CONCRETE SEALER	SQ. FT.	6,422
GEOCOMPOSITE WALL DRAIN	SQ. YD.	73
DRILLING AND SETTING SOLDIER PILES (IN SOIL)	CU. FT.	25,533
LIGHTWEIGHT CELLULAR CONCRETE FILL (CLASS II)	CU. YD.	136
UNTREATED TIMBER LAGGING	SQ. FT.	1,000
FURNISHING SOLDIER PILES (W SECTION)	FOOT	2,016
MECHANICALLY STABILIZED EARTH RETAINING WALL, SPECIAL	SQ. FT.	430
PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	157
FOUNDATION REMOVAL	CU. YD.	63

**INDEX OF SHEETS:**

- RW4-01 General Plan and Elevation
- RW4-02 Total Bill of Materials, Index of Sheets & General Notes
- RW4-03 Typical Sections
- RW4-04 Barrier Rail and Anchor Slab - I
- RW4-05 Barrier Rail and Anchor Slab - II
- RW4-06 Barrier Rail and Anchor Slab Sections
- RW4-07 Concrete Facing Elevation & Details
- RW4-08 Soldier Pile Wall Sections & Details
- RW4-09 Soldier Pile Cap & Barrier
- RW4-10 Details
- RW4-11 Architectural Details
- RW4-12 Boring Logs - I
- RW4-13 Boring Logs - II
- RW4-14 Boring Logs - III
- RW4-15 Boring Logs - IV

**SUGGESTED SEQUENCE OF CONSTRUCTION:**

- Locate existing utilities that are to remain. Contractor to coordinate any required improvements to or removals of existing utilities with utility owner(s). See Utility Location Plans and ITS Plans.
- Locate and remove any abandoned CTA foundations that are in conflict with Retaining Walls 3, 4, 40, or Noise Abatement Wall.
- Install drilled soldier piles for Retaining Wall 4 soldier pile wall.
- Install drilled shafts for SN 016-1705 West Abutment.
- Install foundations for Noise Abatement Wall.
- Excavate for Retaining Walls 3, 4, and 40. Install temporary lagging between soldier piles of Retaining Wall 4 from top down as excavation proceeds if needed to retain existing soil.
- Install Aggregate Column Ground Improvement for Retaining Walls 3, 4, and 40.
- Construct Retaining Wall 40, placing MSE straps to avoid Noise Abatement Wall foundations.
- Begin placing lightweight fill and installing Retaining Wall 3 up to height of Retaining Wall 4 MSE leveling pad. Install Drainage System.
- Install Concrete Facing on soldier piles of Retaining Wall 4. Backfill north side of wall.
- Complete West Abutment of SN 016-1705. Install Retaining Wall 4 soldier pile cap and barrier on top of piles and concrete facing.
- Complete remainder of Retaining Wall 3 while installing MSE portion of Retaining Wall 4.
- Install Anchor Slabs and Barrier Rails for Retaining Walls 3 and 4.
- Install Roadway pavement and Noise Abatement Wall.



**PROFILE GRADE**  
(along Ramp NW)

STATION 1838+23.17  
 BUILT BY  
 STATE OF ILLINOIS  
 F.A.I. RTE. 90/94/290-SEC. 2013-010R  
 LOADING HL-93  
 STRUCTURE NO. 016-1723

**NAME PLATE**  
See Std. 515001

0161723-60W28-502-GenNote



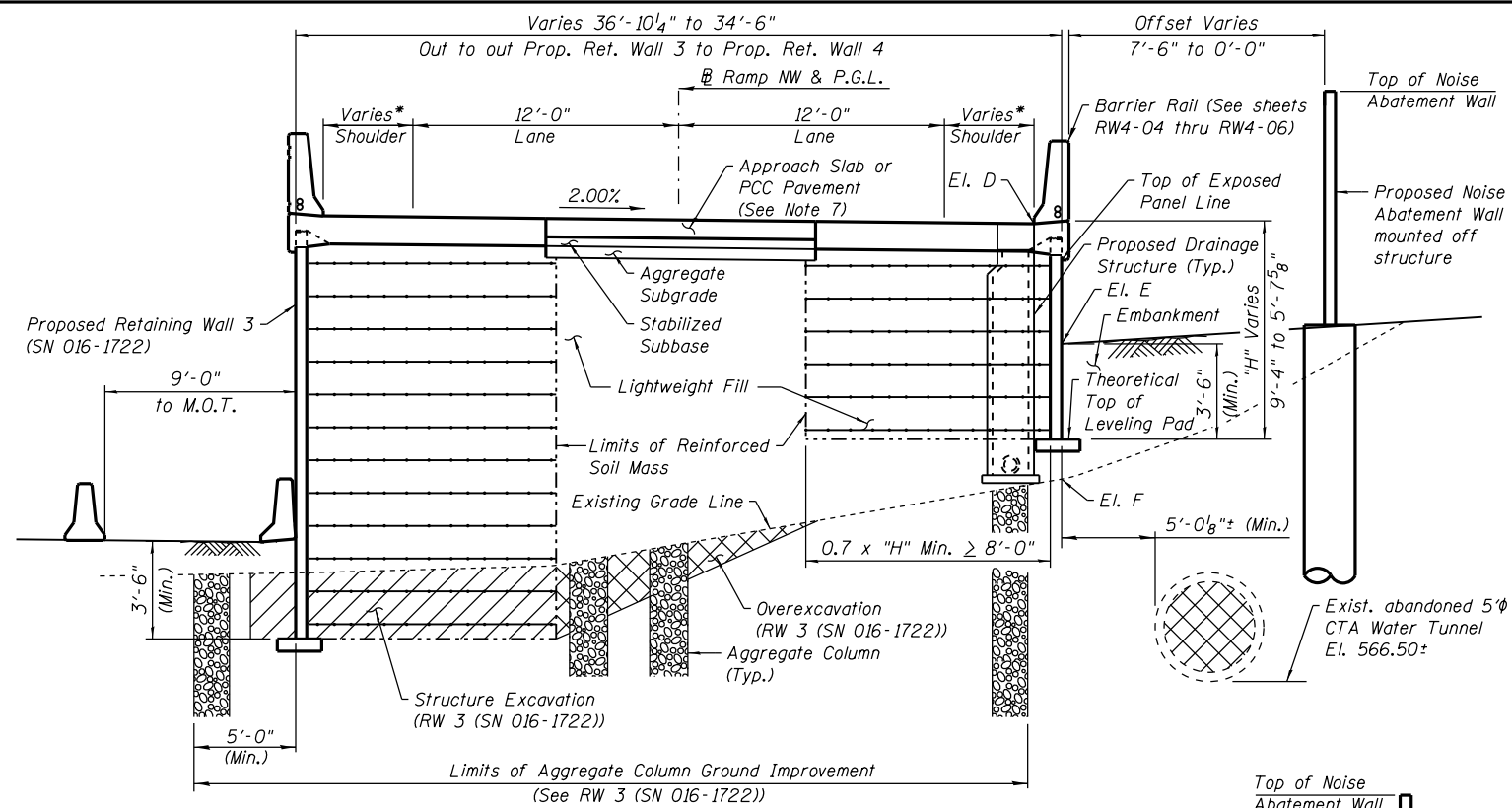
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	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - BRD	REVISED
PLOT DATE = 4/28/2014	CHECKED - EJO	REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

TOTAL BILL OF MATERIALS, INDEX OF SHEETS & GENERAL NOTES  
 STRUCTURE NO. 016-1723

SHEET NO. RW4-020F RW4-15 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 556
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	

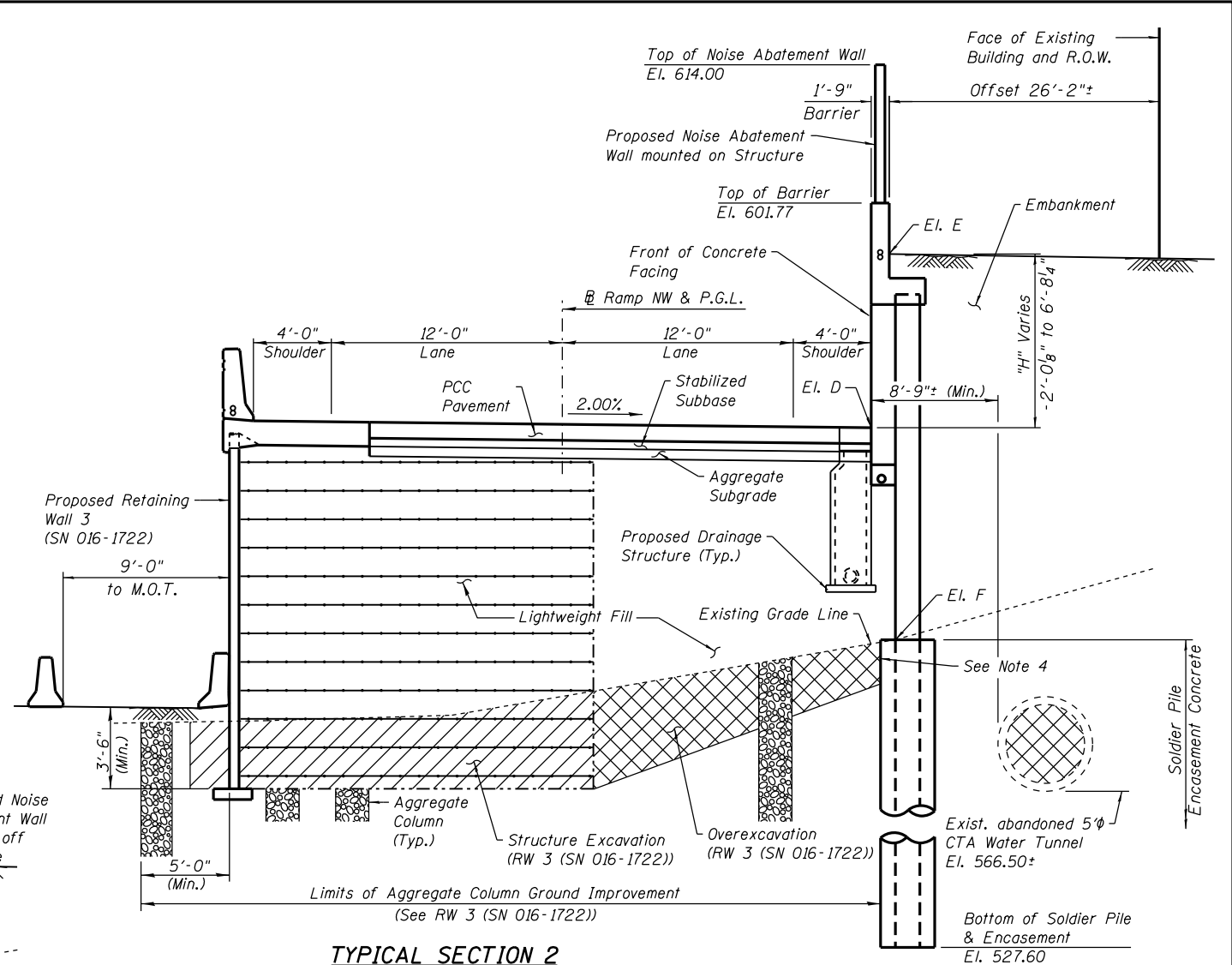


**TYPICAL SECTION 1**  
(Sta. 1838+23.17 to Sta. 1838+98.00)  
(Facing West)

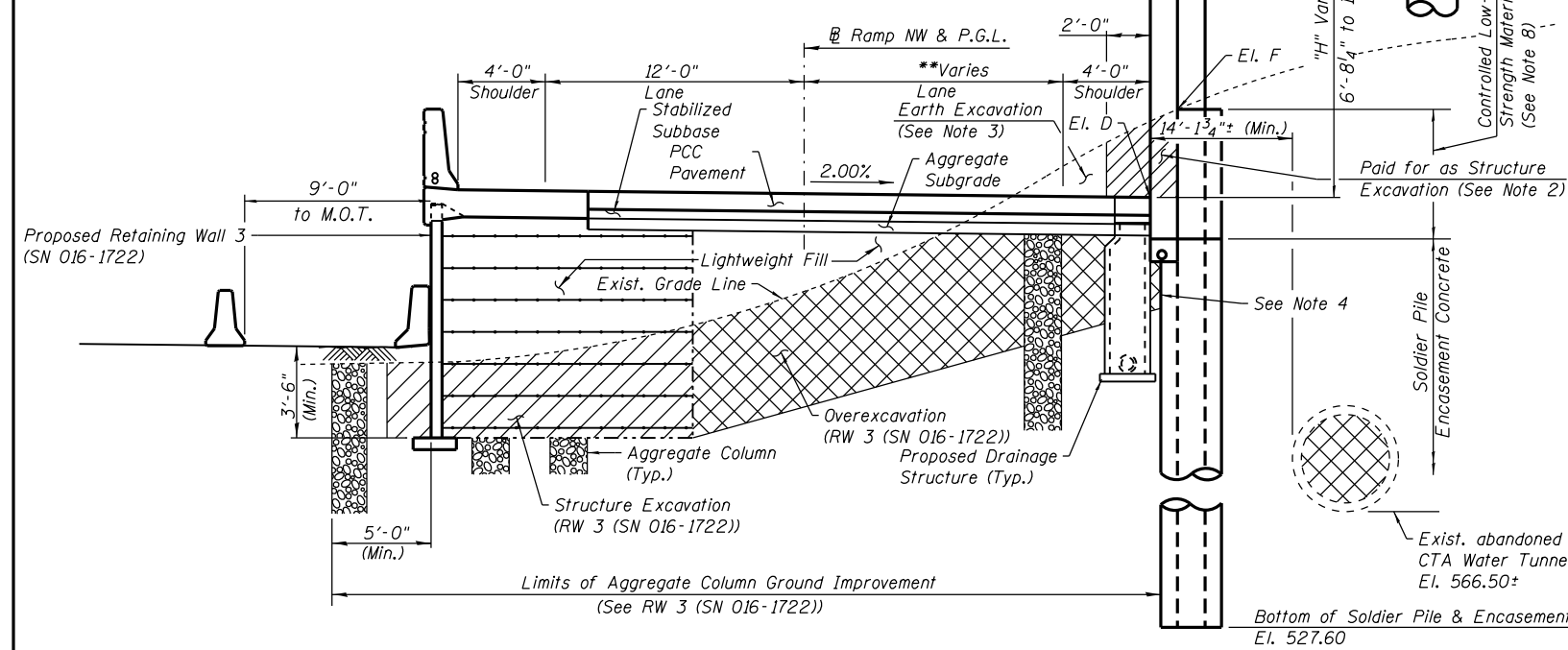
\* Shoulder widths vary from 5'-2 1/8" at Sta. 1838+23.17 to 4'-0" at Sta. 1838+44.32

**BILL OF MATERIAL**

Item	Unit	Quantity
Structure Excavation	Cu. Yd.	101
Lightweight Cellular Concrete Fill (Class II)	Cu. Yd.	136
Mechanically Stabilized Earth Retaining Wall, Special	Sq. Ft.	430

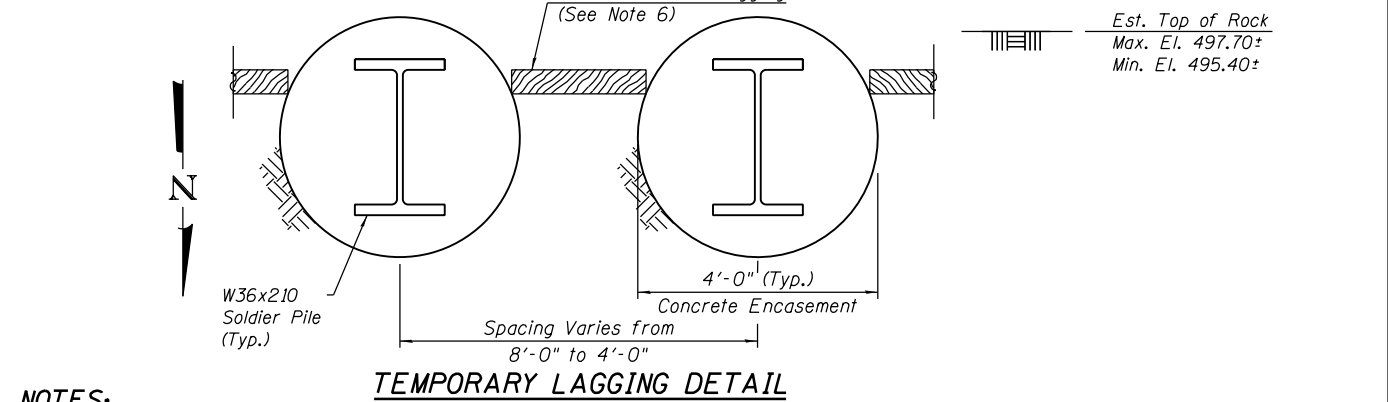


**TYPICAL SECTION 2**  
(Sta. 1838+98.00 to Sta. 1840+17.00)  
(Facing West)



**TYPICAL SECTION 3**  
(Sta. 1840+17.00 to Sta. 1841+26.23)  
(Facing West)

\*\* Lane width is 12'-0" from Sta. 1840+17.00 to Sta. 1840+50.19. Width varies 12'-0" to 17'-3 3/4" from Sta. 1840+50.19 to Sta. 1841+26.23.



**TEMPORARY LAGGING DETAIL**

- NOTES:**
- For Embankment quantity and pay item, see Civil plans.
  - Structure Excavation is measured 2'-0" from Front Face of wall to back of soldier pile timber lagging.
  - For additional Earth Excavation quantity and pay item, see Civil plans.
  - Contractor shall not excavate north of soldier piles. If overexcavation for Retaining Wall 3 projects north of soldier piles, Contractor may install temporary lagging between soldier piles to retain existing soil until fill is placed. Temporary lagging for overexcavation is not measured for payment.
  - For Elevations D, E, and F see Table 1 on sheet RW4-02.
  - The Contractor is responsible for the design and performance of the lagging system, using no less than a 3 in. nominal rough-sawn thickness and timber with a minimum allowable bending stress of 1000 psi. The Contractor shall submit design calculations and details prepared by an Illinois Licensed Structural Engineer for the attachment of the lagging to the concrete encasement for approval by the Engineer. Alternative equivalent systems may be submitted for approval by the Engineer.
  - Approach Slab for NW Flyover (SN 016-1705) is between Anchor Slabs from Sta. 1838+23.17 to Sta. 1838+53.17. See bridge plans.
  - Cost of controlled low-strength material is included in cost of Drilling and Setting Soldier Piles (in Soil) pay item.

0161723-60W28-503-GenNote



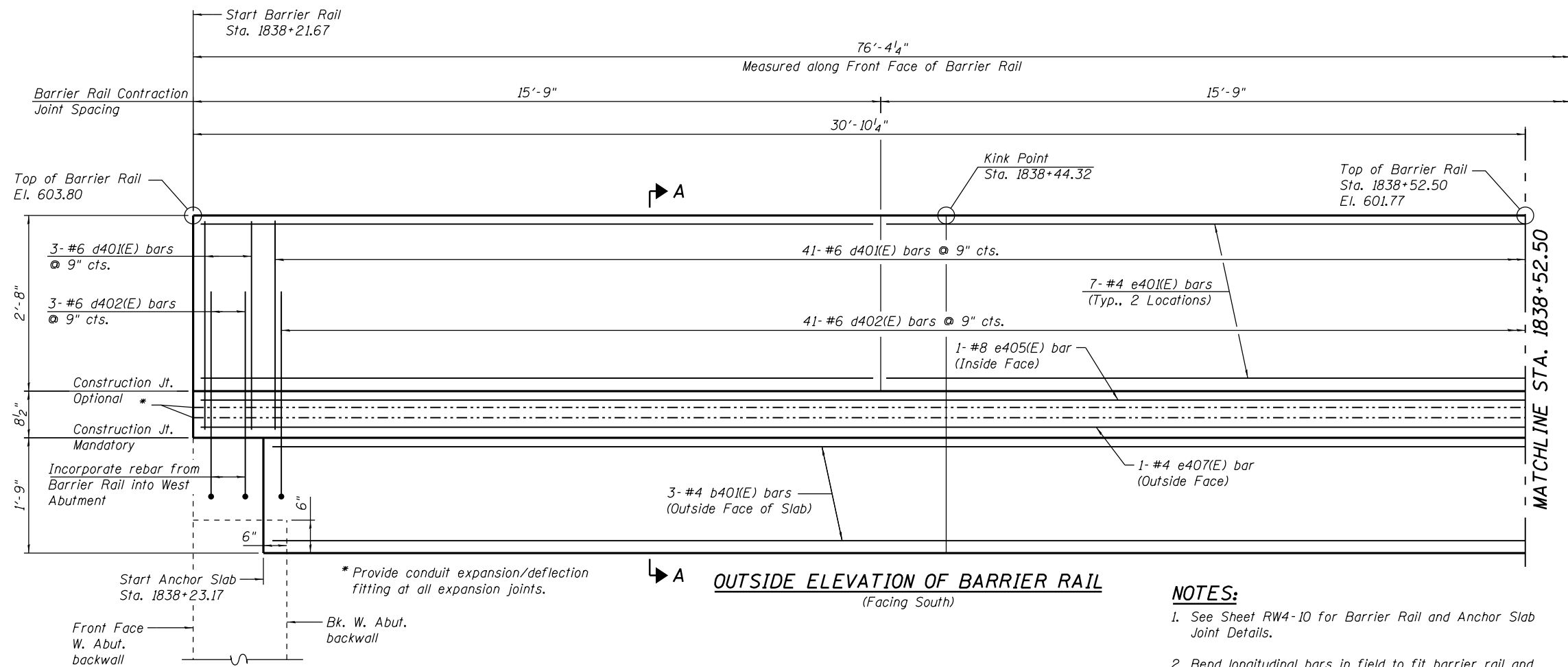
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PLOT DATE = 4/28/2014	DRAWN - BRD	REVISED
	CHECKED - EJO	REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS  
STRUCTURE NO. 016-1723**

SHEET NO. RW4-030F RW4-15 SHEETS

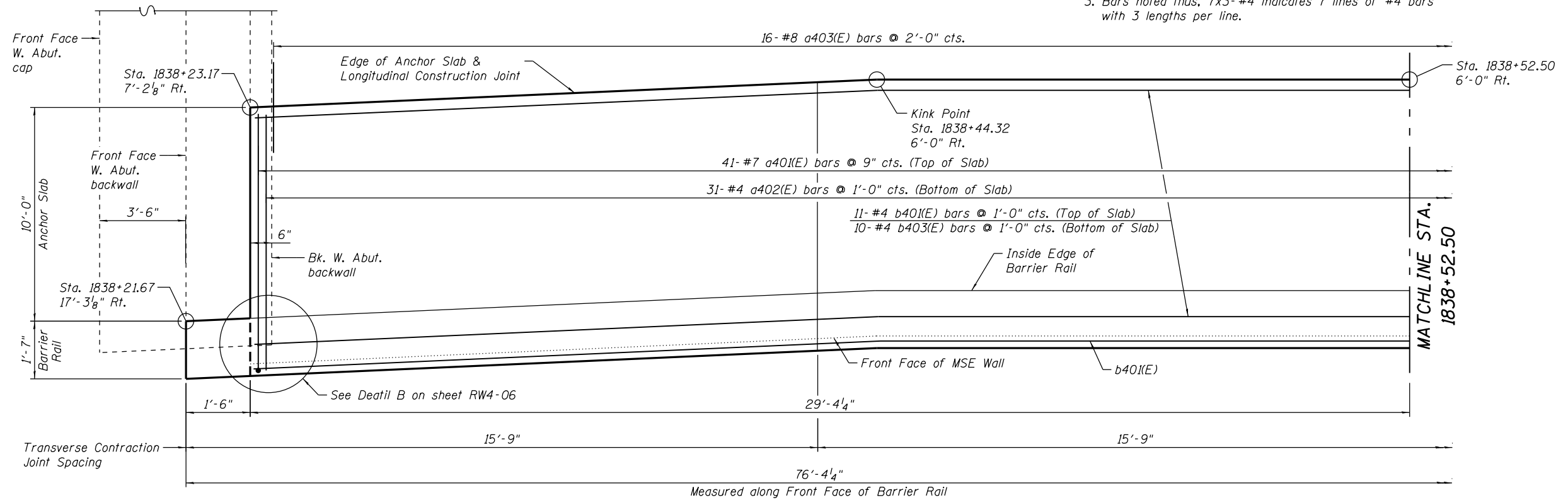
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90/94/290	2013-010R	COOK	747	557
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	



**OUTSIDE ELEVATION OF BARRIER RAIL**  
(Facing South)

**NOTES:**

1. See Sheet RW4-10 for Barrier Rail and Anchor Slab Joint Details.
2. Bend longitudinal bars in field to fit barrier rail and anchor slab.
3. Bars noted thus, 7x3-#4 indicates 7 lines of #4 bars with 3 lengths per line.
4. For Section A-A, see Sheet RW4-06.
5. For Reinforcement details, see Sheet RW4-10.
6. See bridge plans (SN 016-1705) for West Abutment details.



**PLAN - BARRIER RAIL & ANCHOR SLAB**



USER NAME = dunkerleyb	DESIGNED - DEV	REVISED
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PLOT DATE = 4/28/2014	CHECKED - EJO	REVISED

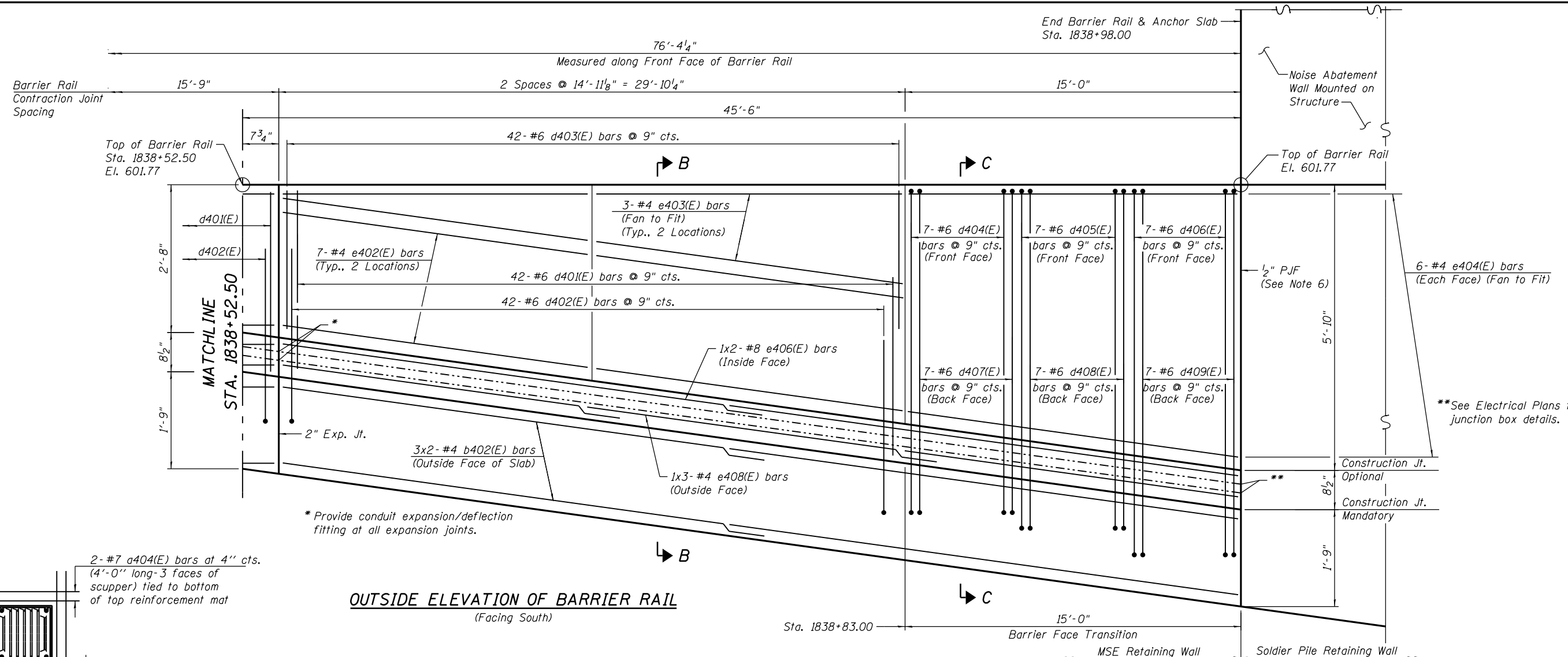
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BARRIER RAIL AND ANCHOR SLAB - I  
STRUCTURE NO. 016-1723

SHEET NO. RW4-040F RW4-15 SHEETS

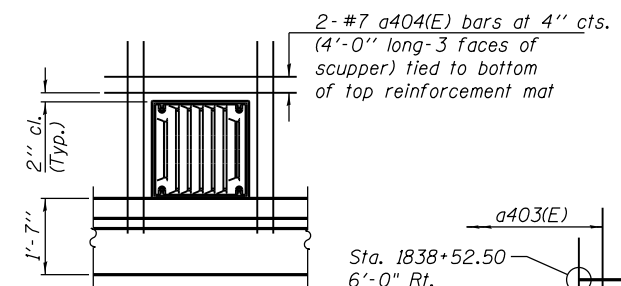
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CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	

0161723-60W28-S04-Parapet



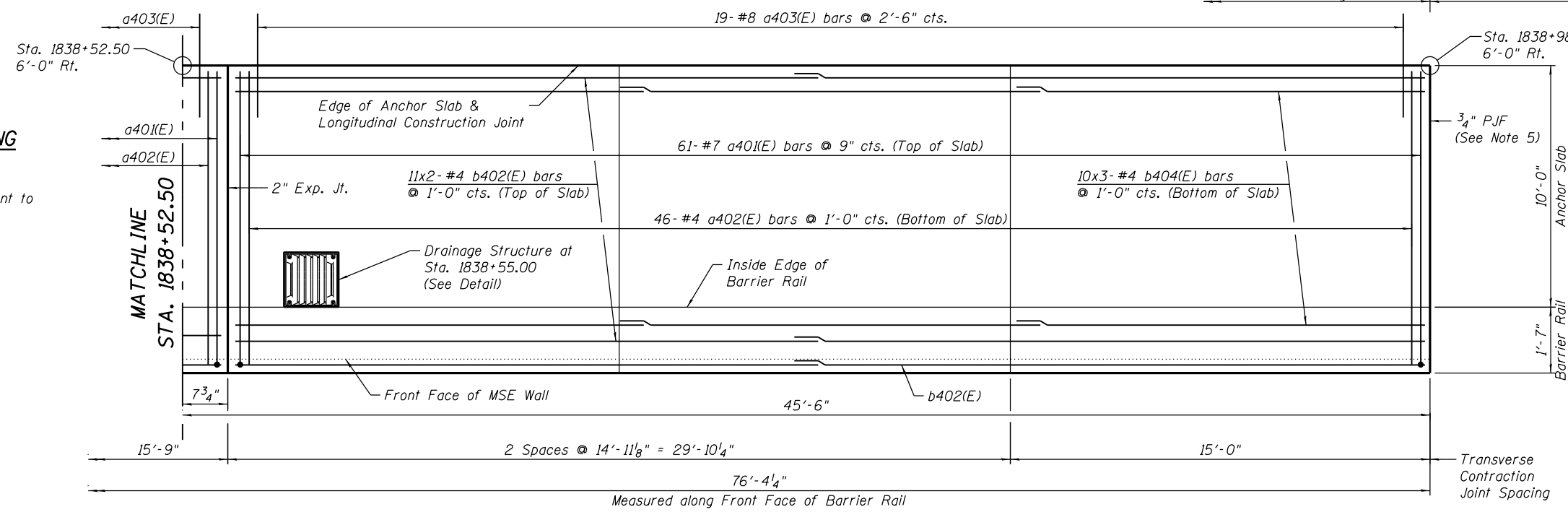
\* Provide conduit expansion/deflection fitting at all expansion joints.

\*\*See Electrical Plans for junction box details.



**DRAINAGE STRUCTURE OPENING**  
(1 Location)

Note:  
Cut longitudinal reinforcement to clear drainage structure.



**NOTES:**

- See Sheet RW4-10 for Barrier Rail and Anchor Slab Joint Details.
- Bars noted thus, 7x3-#4 indicates 7 lines of #4 bars with 3 lengths per line.
- For Sections B-B and C-C, see Sheet RW4-06.
- For Reinforcement details, see Sheet RW4-10.
- At junction between Anchor Slab and Soldier Pile Cap, expansion joint shall be 3/4" Preformed Flexible Foam Expansion Joint Filler per Section 1051.09. Cost included in cost of Concrete Superstructure.
- At junction between Barrier Rail and Soldier Pile Barrier, expansion joint shall be 1/2" Preformed Self-Expanding Cork Joint Filler per Section 1051.07. Cost included in cost of Concrete Superstructure.
- Min. Lap Lengths:  
#4 bar = 2'-7"  
#6 bar = 3'-10"  
#8 bar = 6'-9"

0161723-60W28-505-Parapet



USER NAME = dunkerleyb	DESIGNED - DEV	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - BRD	REVISED
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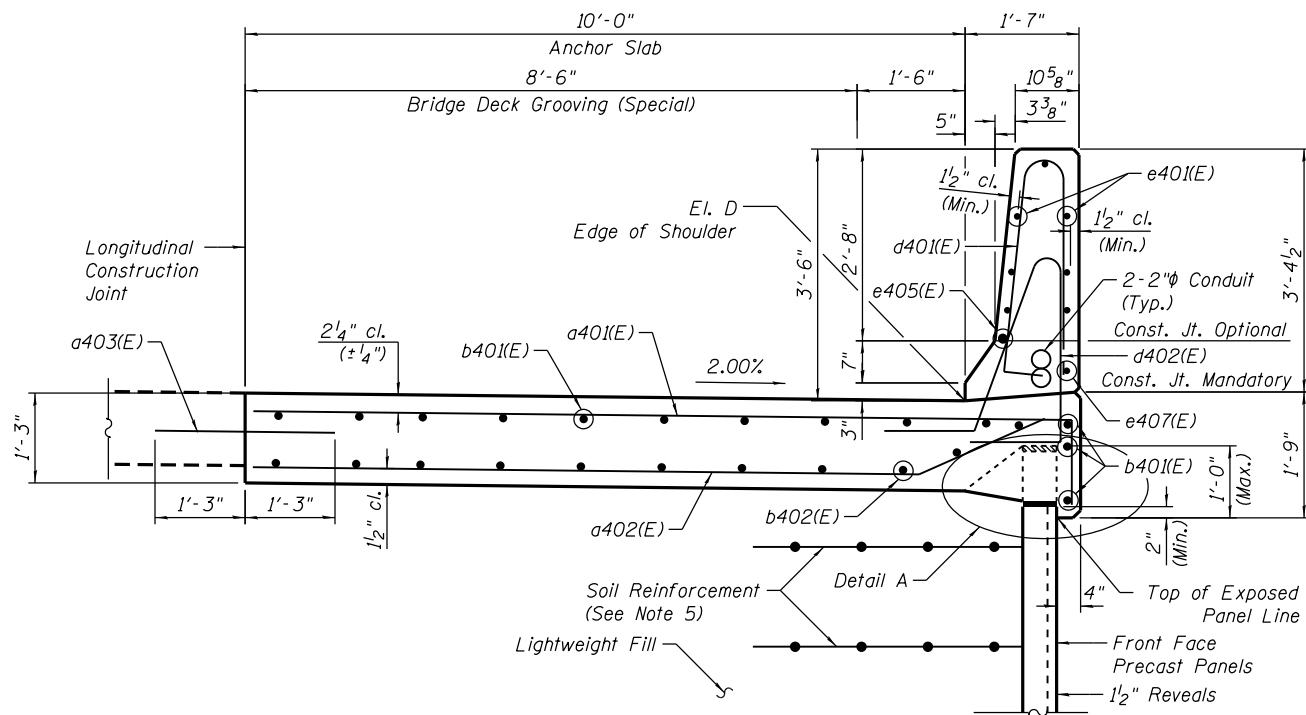
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BARRIER RAIL AND ANCHOR SLAB - II  
STRUCTURE NO. 016-1723

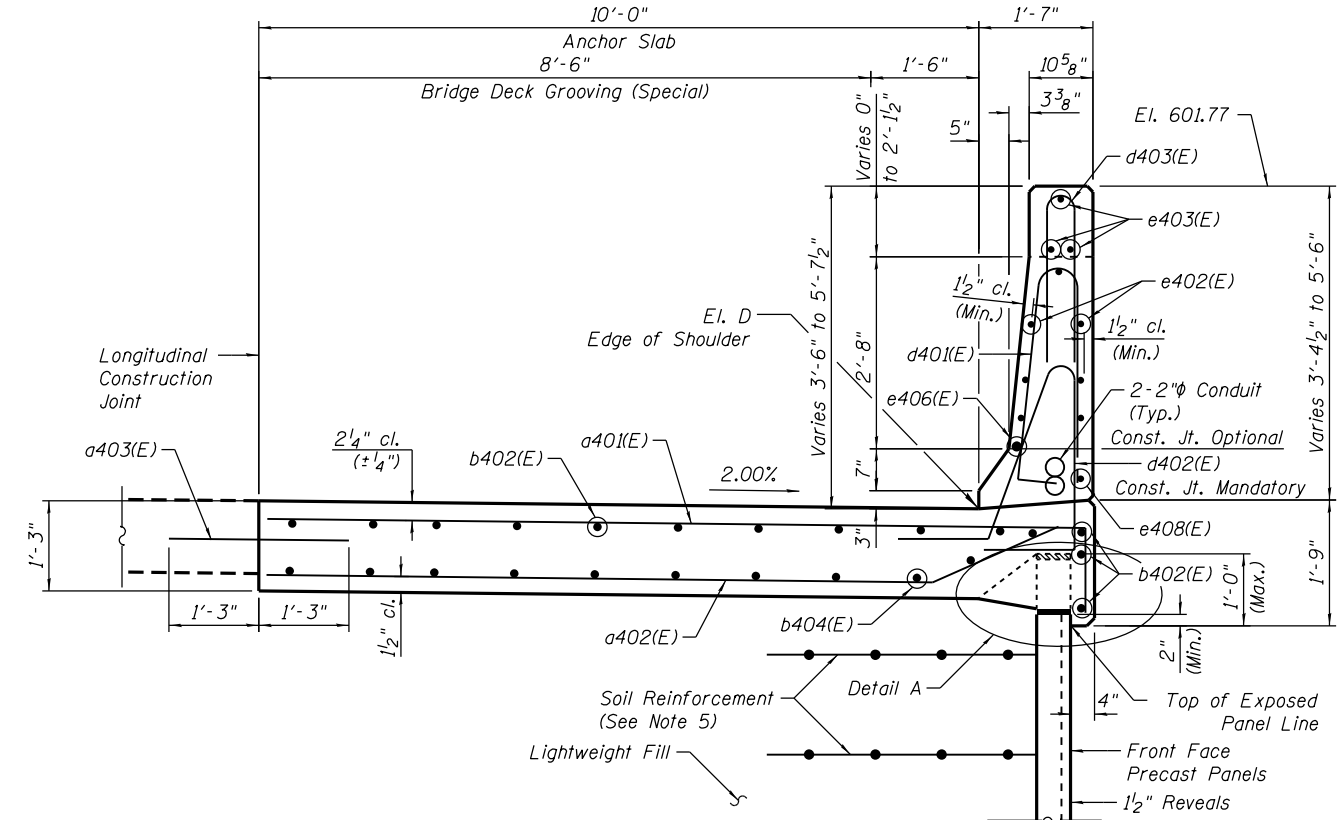
SHEET NO. RW4-050F RW4-15 SHEETS

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CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	

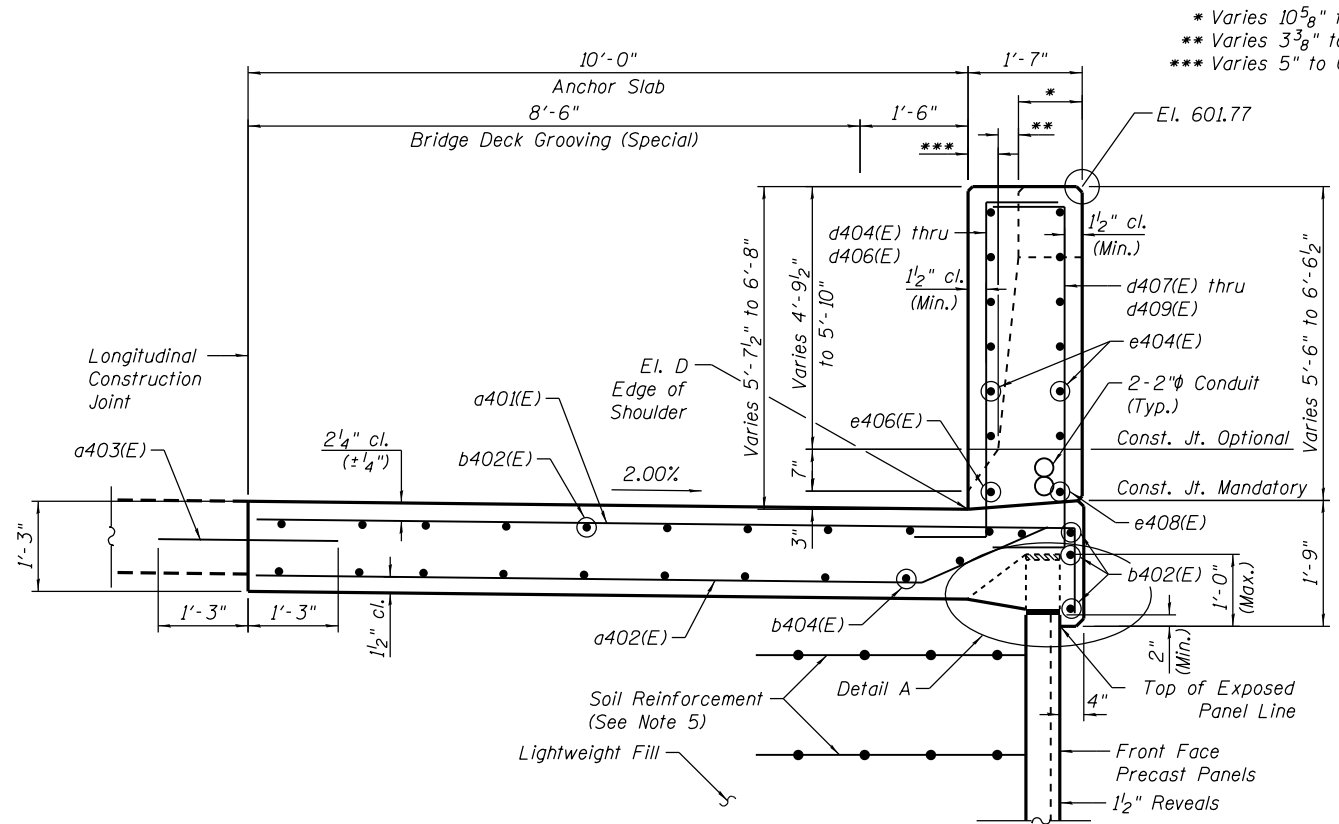




**SECTION A-A**  
(Sta. 1838+23.17 to Sta. 1838+52.50)  
(Facing West)

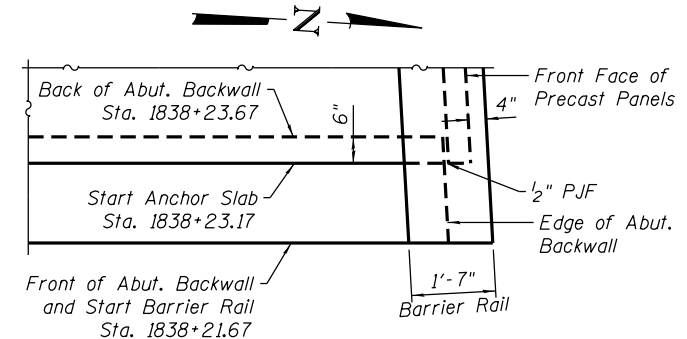


**SECTION B-B**  
(Sta. 1838+52.50 to Sta. 1838+83.00)  
(Facing West)

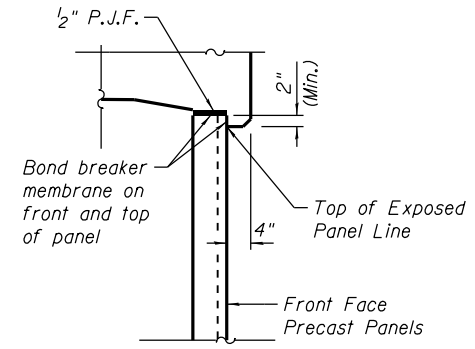


**SECTION C-C**  
(Sta. 1838+83.00 to Sta. 1838+98.00)  
(Facing West)

\* Varies 10<sup>5</sup>/<sub>8</sub>" to 1'-7"  
\*\* Varies 3<sup>3</sup>/<sub>8</sub>" to 0"  
\*\*\* Varies 5" to 0"



**DETAIL B**



**DETAIL A**

**NOTES:**

1. Bend longitudinal rebar in field to fit barrier rail shape transition.
2. Bridge Deck Grooving (Special) extends from start of Anchor Slab at Sta. 1838+23.17 to end of approach slab at Sta. 1838+53.17. For quantity of Bridge Deck Grooving (Special) on approach slab and South Anchor Slab, see structural plans for NW Flyover (SN 016-1705) and Retaining Wall 3 (SN 016-1722), respectively.
3. Protective Coat is applied to top of Anchor Slab and inside vertical and top faces of Barrier Rail. Apply after Bridge Deck Grooving (Special) is complete.
4. See RW4-11 for reveal layout.
5. The M.S.E. wall supplier's internal stability design shall account for the anchorage slab's bearing pressure discharge of 1.0 ksf and horizontal sliding force of 0.83 kips/ft of wall.
6. Anchor Slab ends at Sta. 1838+23.17 where it overlaps the abutment backwall by 6". Barrier Rail ends at Sta. 1838+21.67 at front of abutment backwall. See Detail B.

**BILL OF MATERIAL**

Item	Unit	Quantity
Protective Coat	Sq. Yd.	130
Concrete Superstructure	Cu. Yd.	55
Bridge Deck Grooving (Special)	Sq. Yd.	29

0161723-60W28-506-Parapet



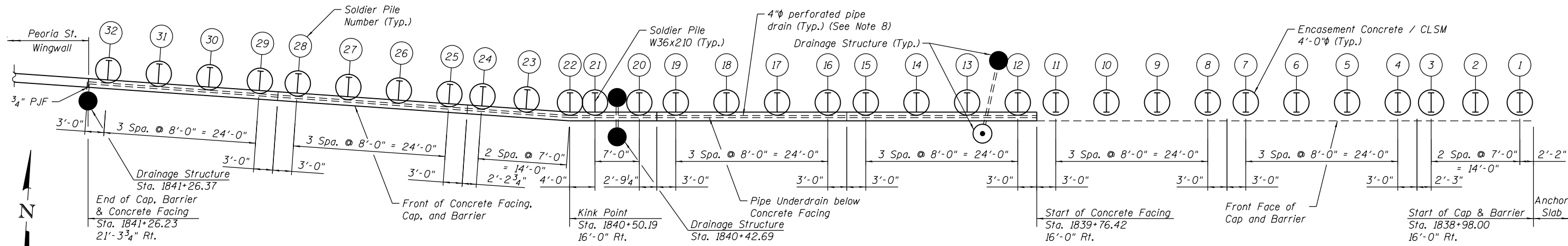
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

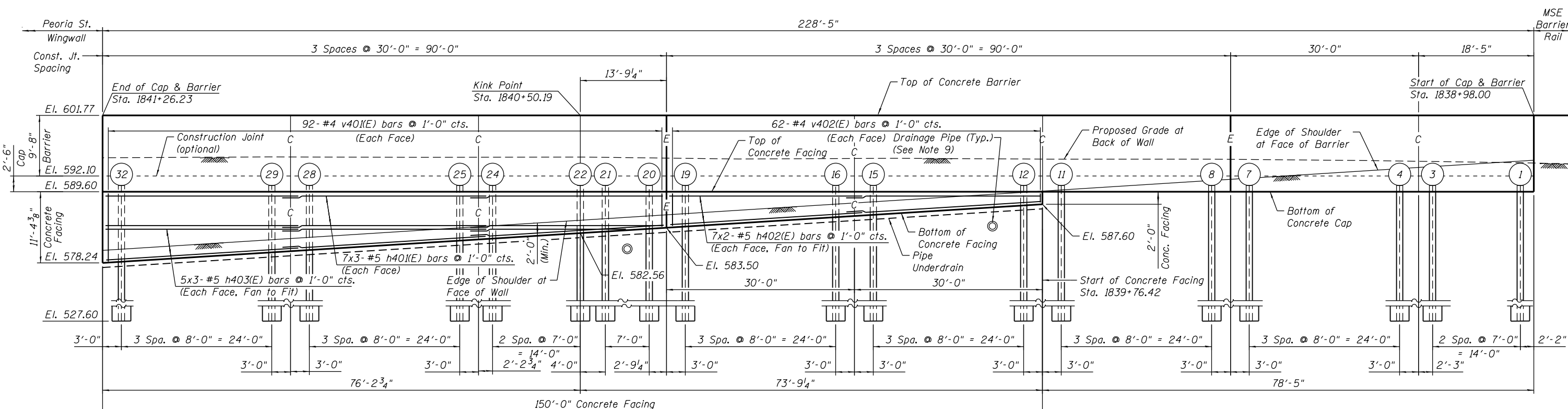
**BARRIER RAIL AND ANCHOR SLAB SECTIONS  
STRUCTURE NO. 016-1723**

SHEET NO. RW4-060F RW4-15 SHEETS

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CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	

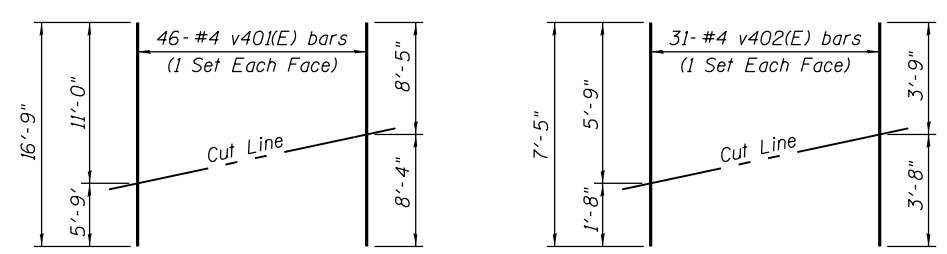


**SOLDIER PILE PLAN**

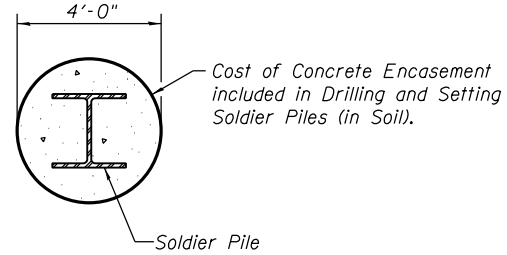


**CONCRETE FACING, CAP, AND BARRIER ELEVATION**  
(Facing North, at Soldier Pile and Lagging Wall)

E = Expansion Joint  
C = Construction Joint



**FIELD CUTTING DIAGRAMS**  
(Cut 2 sets of each bar, one for each face)  
Order bars full length. Cut as shown.



**TYPICAL SOLDIER PILE ENCASUREMENT DETAIL**

**NOTES:**

- Horizontal dimensions and offsets measured along front face of barrier.
- For cap and barrier details, see sheet RW4-09.
- Bars noted thus, 7x3-#4 indicates 7 lines of #4 bars with 3 lengths per line.
- For Typical Soldier Pile Wall Section, see sheet RW4-08.
- For reinforcement details, see sheet RW4-10.
- Min. Lap Lengths:  
#4 bar = 2'-7"  
#5 bar = 3'-3"  
#6 bar = 3'-10"
- Bend h40(E) and h403(E) bars in field to fit around kink in Concrete Facing.
- Pipe Underdrain beneath Concrete facing will discharge to drainage structures at Sta. 1840+42.69 and Sta. 1841+26.37. See Table 2 on RW3-03 of Retaining Wall 3 plans. Cost included in Pipe Underdrains for Structures 4.
- Drainage structures on North side of wall discharge to drainage structures at Sta. 1839+85.00 and Sta. 1840+42.69 below concrete facing as shown. See Drainage plans for details.

0161723-60W28-507-SuperStruct



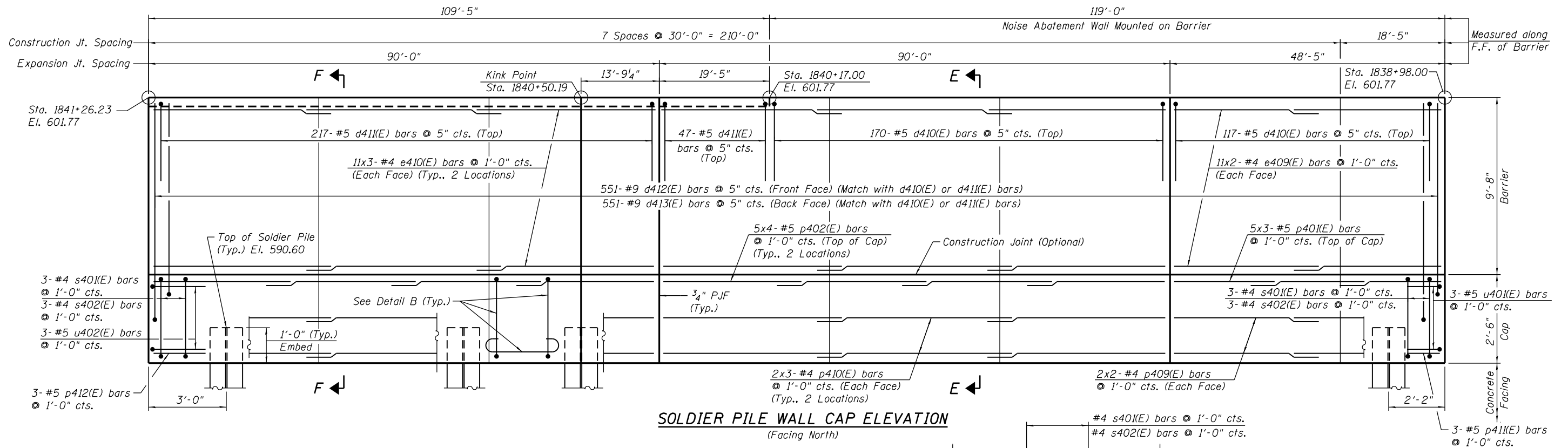
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

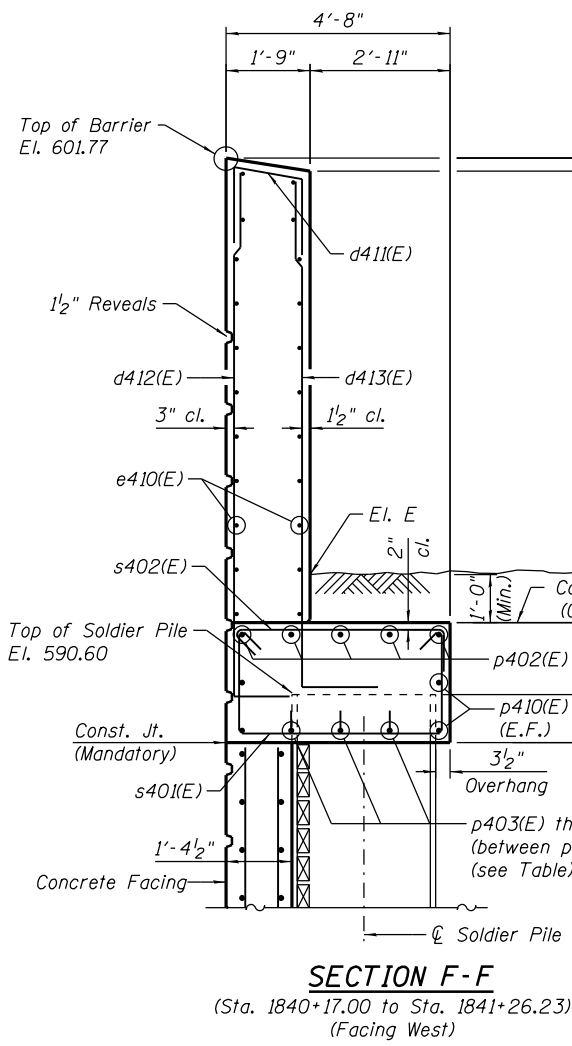
CONCRETE FACING ELEVATION & DETAILS  
STRUCTURE NO. 016-1723  
SHEET NO. RW4-07OF RW4-15 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 561
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	

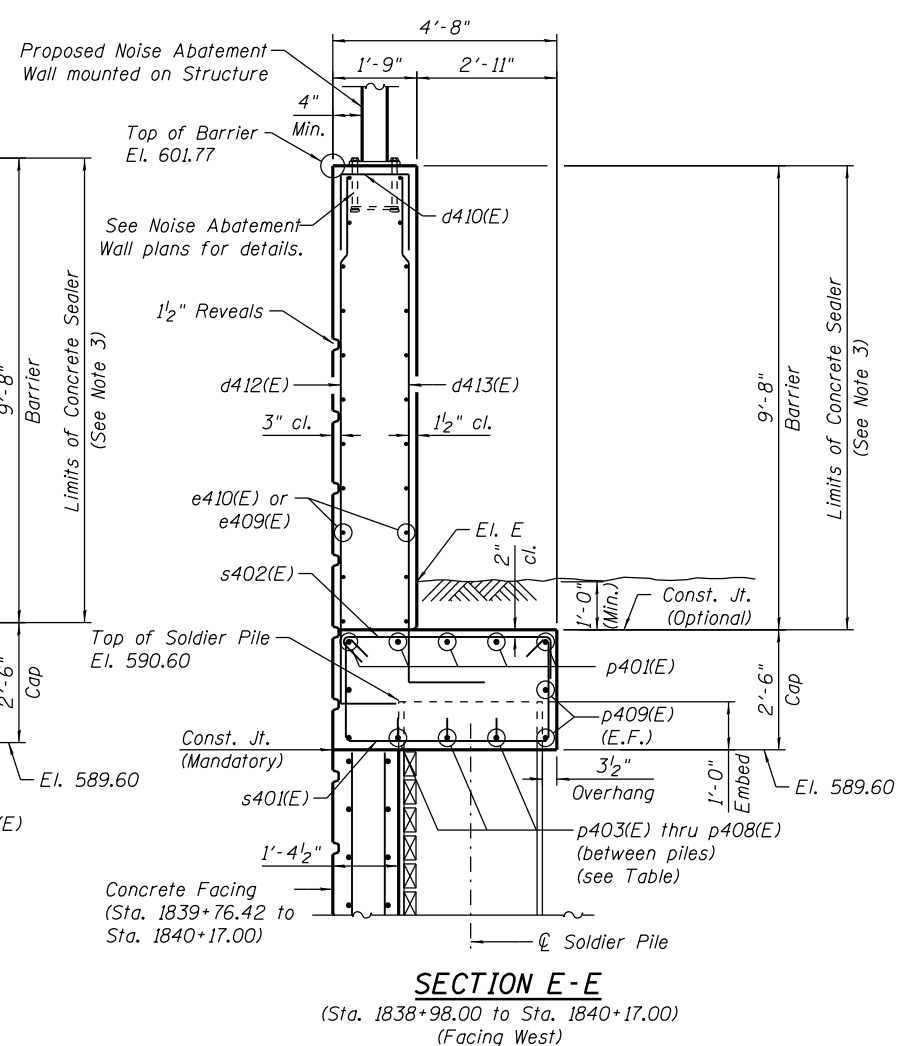




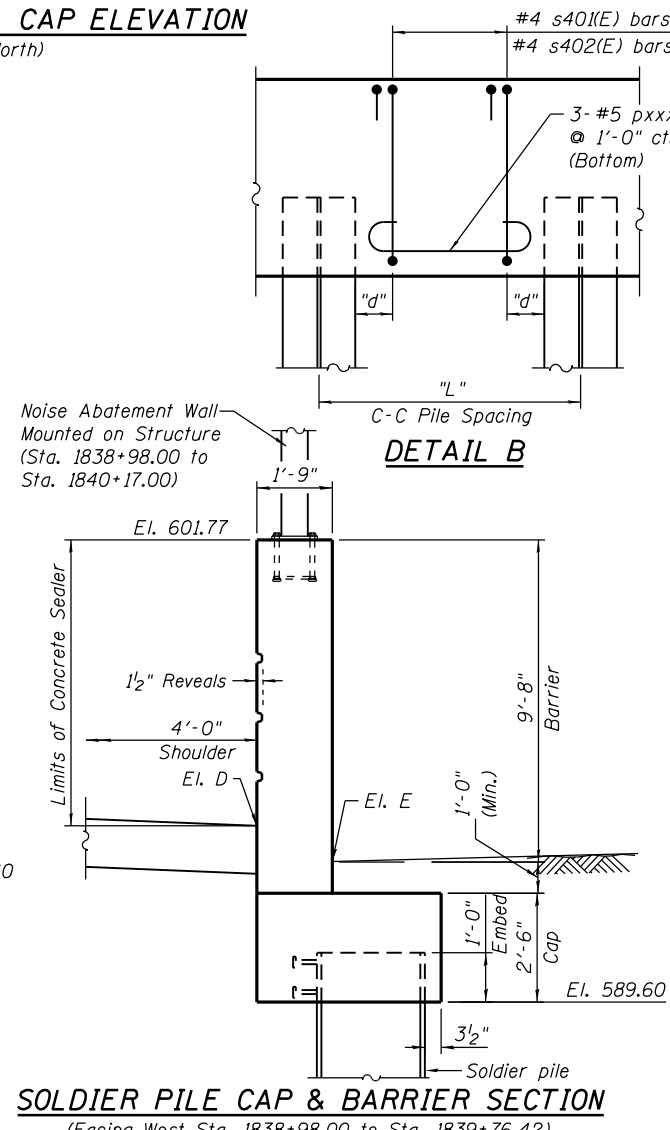
**SOLDIER PILE WALL CAP ELEVATION**  
(Facing North)



**SECTION F-F**  
(Sta. 1840+17.00 to Sta. 1841+26.23)  
(Facing West)



**SECTION E-E**  
(Sta. 1838+98.00 to Sta. 1840+17.00)  
(Facing West)



**SOLDIER PILE CAP & BARRIER SECTION**  
(Facing West Sta. 1838+98.00 to Sta. 1839+76.42)

"L"	"d"	No. Locations	Bottom Bars	No. s401(E) & s402(E) bars
8'-0"	6"	18	p403(E)	7
7'-0"	6"	5	p404(E)	6
6'-0"	6"	4	p405(E)	5
5'-9 1/4"	4 5/8"	1	p406(E)	5
5'-3"	7 1/2"	1	p407(E)	4
5'-2 3/4"	7 3/8"	1	p407(E)	4
4'-0"	6"	1	p408(E)	3

**SOLDIER PILE CAP REINFORCEMENT TABLE**

**NOTES:**

- See Sheets RW4-07 and RW4-08 for Pile Spacing and Concrete Facing details.
- Bars noted thus, 7x3-#4 indicates 7 lines of #4 bars with 3 lengths per line.
- Concrete Sealer is applied to front face of cap and front, top, and back faces of barrier.
- Min. Bar Lap:  
#4 bars = 2'-7"  
#5 bars = 3'-3"
- Bend e406(E), p402(E), and p410(E) bars in field to fit around kink in cap and barrier.
- See sheet RW4-11 for reveal layout and details.
- Expansion and Construction Joints in cap and barrier shall align with same in Concrete Facing. Cost of joint treatments is included in Concrete Structures pay item.
- For elevations D and E, see sheet RW4-02.

**BILL OF MATERIAL**

Item	Unit	Quantity
Concrete Structures	Cu. Yd.	158
Concrete Sealer	Sq. Ft.	5,387



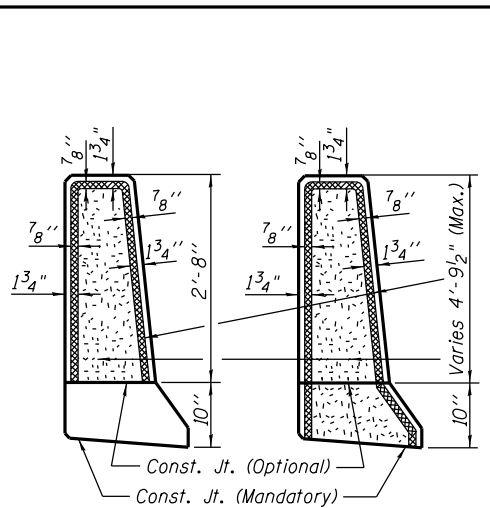
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STATE OF ILLINOIS  
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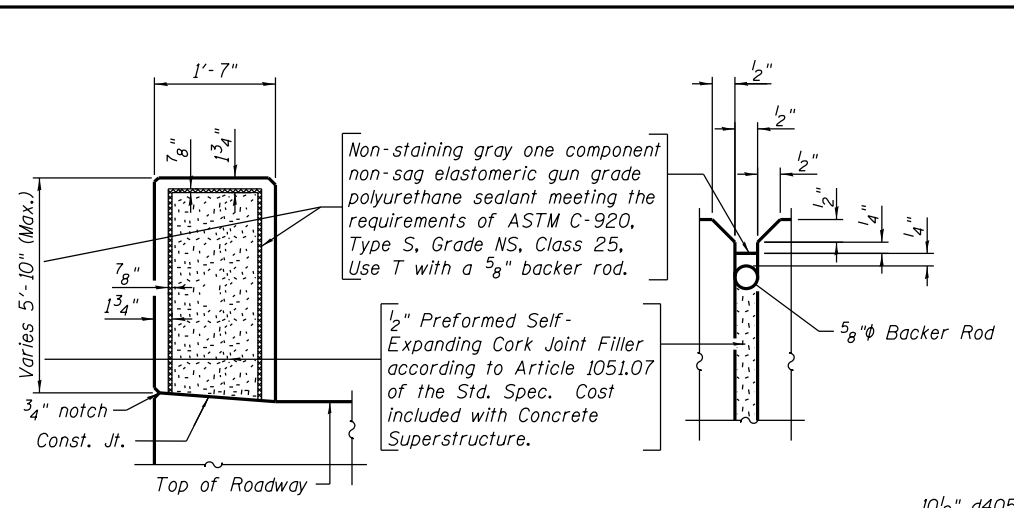
**SOLDIER PILE CAP & BARRIER**  
**STRUCTURE NO. 016-1723**

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT -NUMBER-				

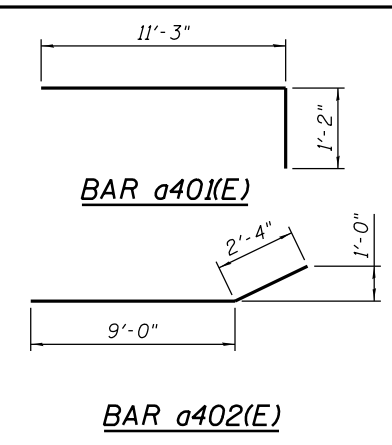
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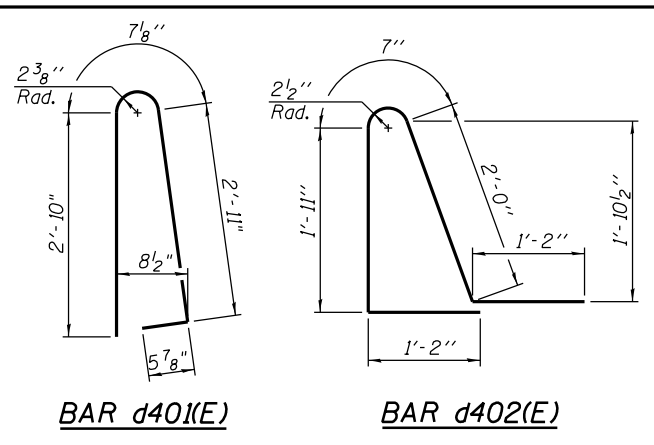
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**BARRIER RAIL JOINT DETAILS**



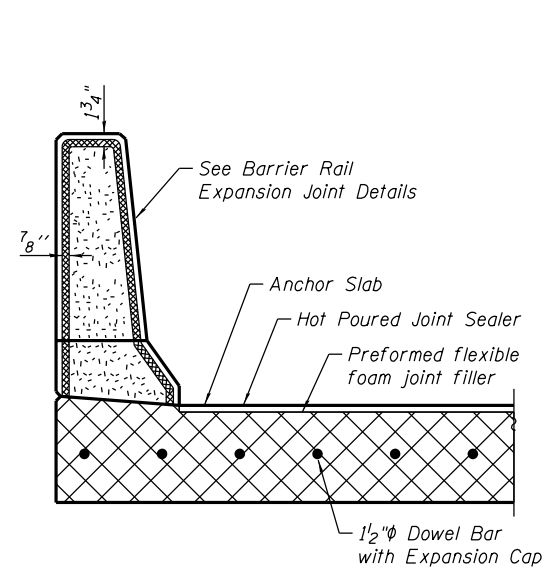
**BAR d401(E) BAR d402(E)**



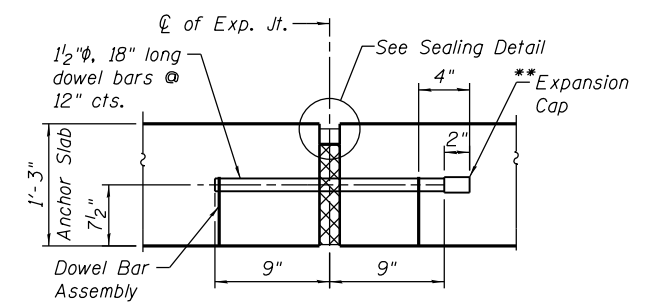
**BAR d403(E) BAR d404(E)**

**BILL OF MATERIAL**

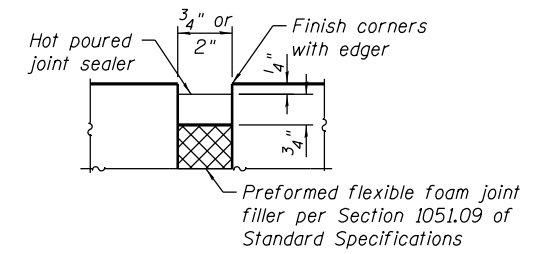
Bar	No.	Size	Length	Shape
a401(E)	102	#7	12'-5"	—
a402(E)	77	#4	11'-4"	—
a403(E)	35	#8	2'-6"	—
a404(E)	6	#7	4'-0"	—
b401(E)	14	#4	29'-8"	—
b402(E)	28	#4	23'-9"	—
b403(E)	10	#4	29'-8"	—
b404(E)	30	#4	16'-8"	—
d401(E)	86	#6	6'-10"	—
d402(E)	86	#6	6'-10"	—
d403(E)	42	#6	5'-3"	—
d404(E)	7	#6	9'-11"	—
d405(E)	7	#6	8'-6"	—
d406(E)	7	#6	9'-3"	—
d407(E)	7	#6	7'-9"	—
d408(E)	7	#6	8'-4"	—
d409(E)	7	#6	9'-1"	—
d410(E)	287	#5	4'-6"	—
d411(E)	264	#5	4'-6"	—
d412(E)	551	#9	12'-5"	—
d413(E)	551	#9	12'-2"	—
e401(E)	14	#4	15'-5"	—
e402(E)	14	#4	14'-7"	—
e403(E)	6	#4	14'-8"	—
e404(E)	12	#4	14'-8"	—
e405(E)	1	#8	31'-2"	—
e406(E)	2	#8	25'-10"	—
e407(E)	1	#4	31'-2"	—
e408(E)	3	#4	16'-8"	—
e409(E)	44	#4	25'-6"	—
e410(E)	132	#4	31'-8"	—
h401(E)	42	#5	32'-1"	—
h402(E)	28	#5	31'-5"	—
h403(E)	30	#5	32'-2"	—
p401(E)	15	#5	18'-4"	—
p402(E)	40	#5	24'-11"	—
p403(E)	54	#5	7'-10"	—
p404(E)	15	#5	6'-10"	—
p405(E)	12	#5	5'-10"	—
p406(E)	3	#5	5'-7"	—
p407(E)	6	#5	5'-0"	—
p408(E)	3	#5	3'-10"	—
p409(E)	8	#4	25'-6"	—
p410(E)	24	#4	31'-8"	—
p411(E)	3	#5	1'-4"	—
p412(E)	3	#5	2'-2"	—
s401(E)	198	#4	9'-4"	—
s402(E)	198	#4	5'-4"	—
u401(E)	3	#5	6'-11"	—
u402(E)	3	#5	8'-7"	—
v401(E)	92	#4	16'-9"	—
v402(E)	62	#4	7'-5"	—
Reinforcement Bars, Epoxy Coated		Pound	68,860	



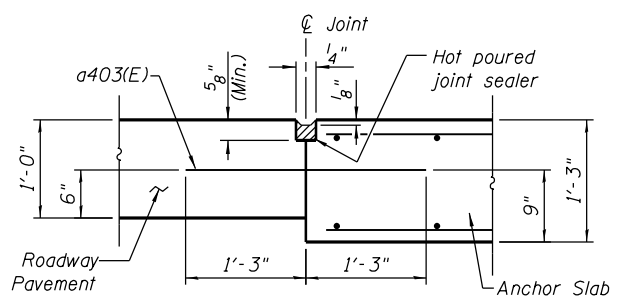
**TRANSVERSE EXPANSION JOINT SECTION**



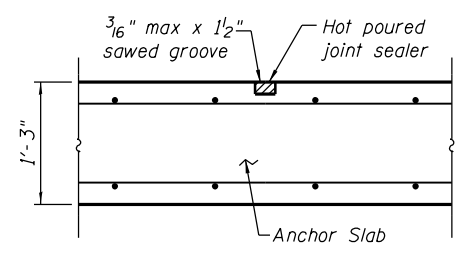
**ANCHOR SLAB TO ANCHOR SLAB TRANSVERSE EXPANSION JOINT**  
(Expansion Joint filler, sealer and Dowel Bars included in cost of Concrete Superstructure.)  
\*\*Expansion caps shall be installed on the exposed end of each dowel bar once header has been removed and the joint filler material has been installed.



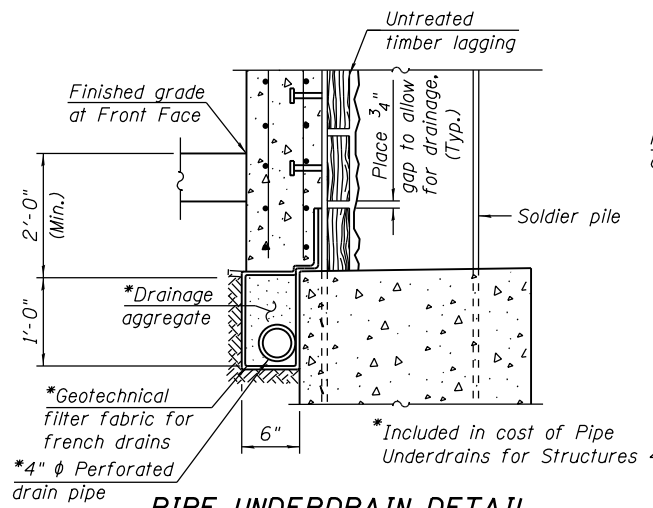
**SEALING DETAIL**



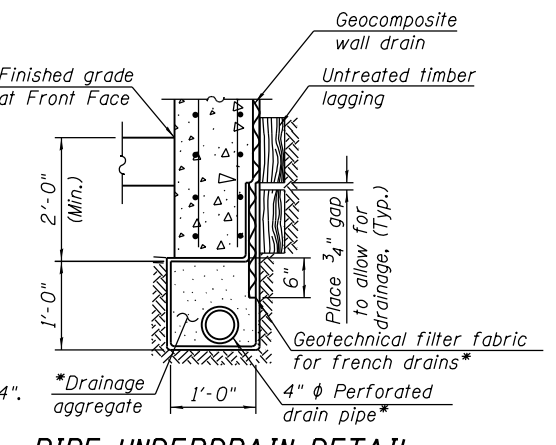
**LONGITUDINAL CONSTRUCTION JOINT**  
See Article 420.05 & 420.12 of the Standard Specifications



**TRANSVERSE CONTRACTION JOINT**  
See Article 420.05 & 420.12 of the Standard Specifications



**PIPE UNDERDRAIN DETAIL AT SOLDIER PILE**



**PIPE UNDERDRAIN DETAIL BETWEEN SOLDIER PILES**

0161723-60W28-510-SuperStruct

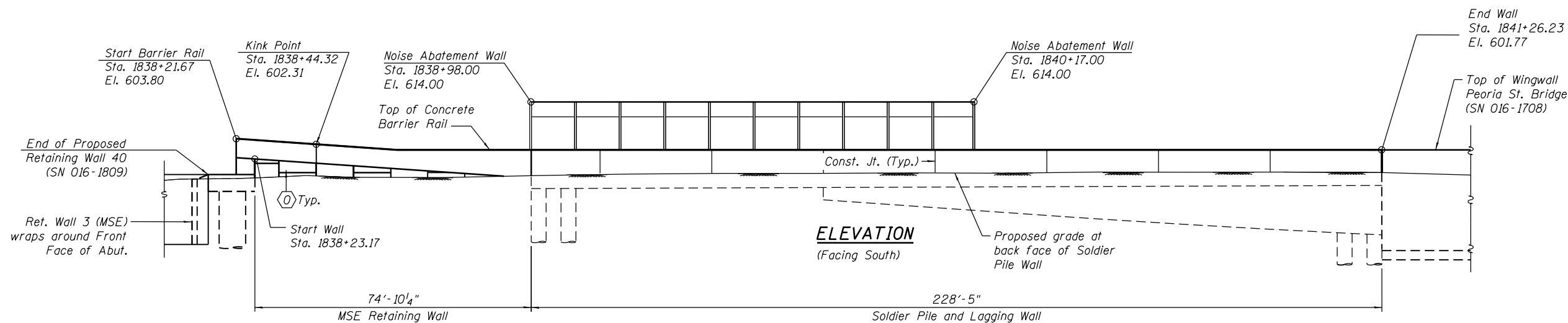
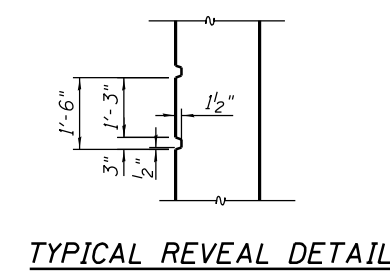
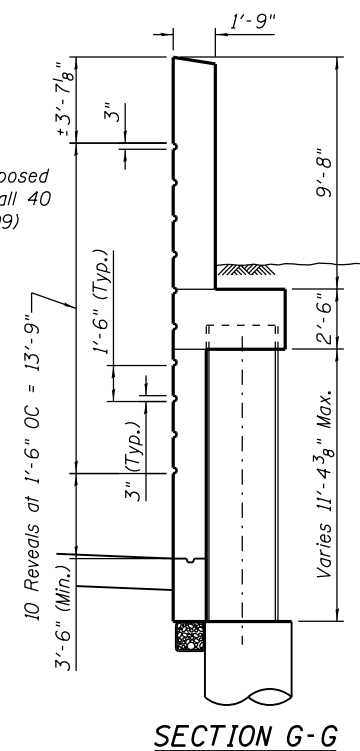
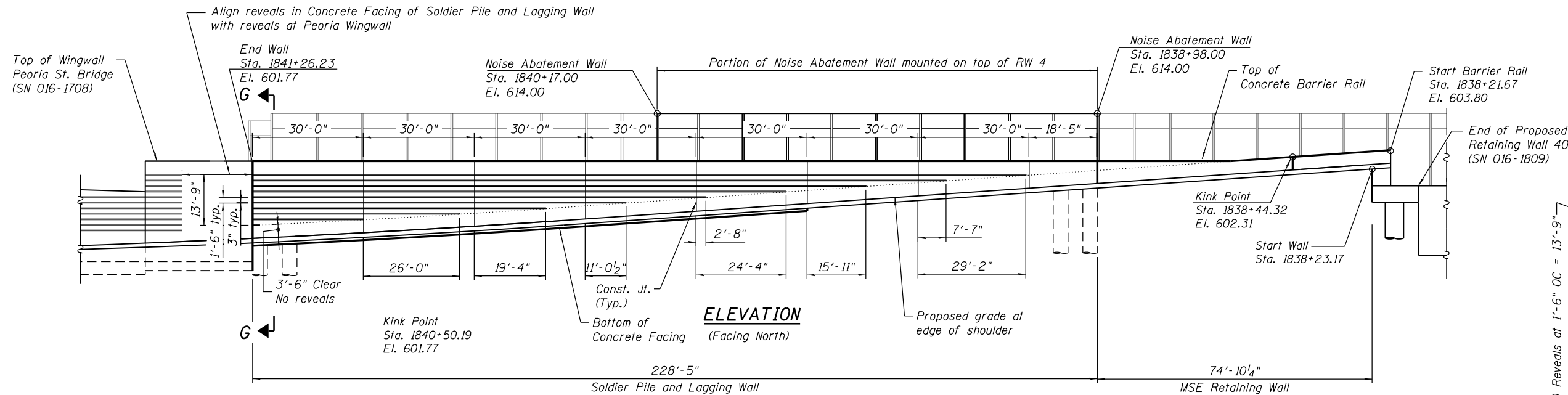


USER NAME = dunkerleyb	DESIGNED - DEV	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 4/28/2014	DRAWN - BRD	REVISED
	CHECKED - EJO	REVISED

**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

**DETAILS STRUCTURE NO. 016-1723**  
SHEET NO. RW4-100F RW4-15 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	564
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT -NUMBER-				



**NOTES:**

1. Reveals in Concrete Facing of Soldier Pile and Lagging Wall will not be paid separately and will be included in the cost of the pay item "Concrete Structures".
2. For precast MSE panels types, see Retaining Wall 1 (SN 016-1720) plans, sheet RW1-11.
3. Verify / coordinate all wall dimensions with bridge plans (SN 016-1705).

0161723-60W28-511-SuperStruct.dgn



USER NAME = dunkerleyb	DESIGNED - MR	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - MR	REVISED
PLOT DATE = 4/28/2014	CHECKED - EJO	REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**ARCHITECTURAL DETAILS  
STRUCTURE NO. 016-1723**

SHEET NO. RW4-11 OF RW4-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	565
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT -NUMBER-				

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)
578.1	1-inch thick brown SILTY LOAM --TOPSOIL-- Very loose to loose, brown and gray to gray LOAM, trace gravel --FILL--	1	4	NP	4		9	578.1	--In-Situ Vane Shear, 25.5 feet-- --Su undis = 1243.2 psf-- --Su remold = 725.2 psf-- --Sensitivity = 1.714--	1	4	NP	4		9
570.2	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel	2	2	NP	2		10	--LL(%)=35, PL(%)=17-- --%Gravel=2.6-- --%Sand=9.8-- --%Silt=46.6-- --%Clay=41.0-30-- --A-6 (15)--	2	2	NP	2		10	
		3	1	P	1	0.25	16	--In-Situ Vane Shear, 30.5 feet-- --Su undis = 2481.6 psf-- --Su remold = 1085.7 psf-- --Sensitivity = 2.29--	3	1	P	1	0.25	16	
		4	1	B	1	0.41	25	--In-Situ Vane Shear, 35.5 feet-- --Su undis = 1964.6 psf-- --Su remold = 1344.2 psf-- --Sensitivity = 1.46--	4	1	B	1	0.41	25	
		5	0	B	0	0.49	25	Siff to very stiff, gray SILTY CLAY, trace gravel	5	0	B	0	0.49	25	
		6	1	B	1	0.49	23		6	1	B	1	0.49	23	
		7	0	B	0	0.16	27		7	0	B	0	0.16	27	
		8	0	B	0	0.25	26		8	0	B	0	0.25	26	
		9	1	B	1	0.41	23		9	1	B	1	0.41	23	
		10	2	B	2	0.49	25		10	2	B	2	0.49	25	

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-13-2013	Complete Drilling	08-15-2013	White Drilling	▽	73.50 ft	
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR	At Completion of Drilling	▽	NA	
Driller	R&J	Logger	A. Tomaras	Checked by	C. Marin		
Drilling Method	3.25" HSA, boring backfilled upon completion			Depth to Water	▽	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)
524.0	Very dense, gray SILTY LOAM, trace gravel	11	1	B	1	0.57	25	524.0	--%Silt=49.4-- --%Clay=46.4-- --A-6 (19)--	11	1	B	1	0.57	25
		12	2	B	2	0.25	27		--LL(%)=35, PL(%)=17-- --%Gravel=2.6-- --%Sand=9.8-- --%Silt=46.6-- --%Clay=41.0-30-- --A-6 (15)--	12	2	B	2	0.25	27
		13	2	B	2	0.33	21		--In-Situ Vane Shear, 30.5 feet-- --Su undis = 2481.6 psf-- --Su remold = 1085.7 psf-- --Sensitivity = 2.29--	13	2	B	2	0.33	21
		14	4	B	4	1.56	23		--In-Situ Vane Shear, 35.5 feet-- --Su undis = 1964.6 psf-- --Su remold = 1344.2 psf-- --Sensitivity = 1.46--	14	4	B	4	1.56	23
		15	6	B	6	2.54	18		Siff to very stiff, gray SILTY CLAY, trace gravel	15	6	B	6	2.54	18
		16	5	B	5	2.62	22			16	5	B	5	2.62	22
		17	29	NP	29		11			17	29	NP	29		11
		18	27	S	27	7.80	13			18	27	S	27	7.80	13
		19	13	S	13	7.79	13			19	13	S	13	7.79	13
		20	36	S	36	2.38	10			20	36	S	36	2.38	10
		21	55	NP	55		14			21	55	NP	55		14
		22	54	NP	54		18			22	54	NP	54		18
		23	75	NR	75		0			23	75	NR	75		0
		24	1	CORE	1					24	1	CORE	1		
		25	2	CORE	2					25	2	CORE	2		

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-13-2013	Complete Drilling	08-15-2013	White Drilling	▽	73.50 ft	
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR	At Completion of Drilling	▽	NA	
Driller	R&J	Logger	A. Tomaras	Checked by	C. Marin		
Drilling Method	3.25" HSA, boring backfilled upon completion			Depth to Water	▽	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Values (blows/ft)	Qu (tsf)	Moisture Content (%)
583.1	4-inch thick, black SILTY LOAM --TOPSOIL-- Medium dense, brown, fine SAND --FILL--	1	4	NP	4		2	583.1	--LL(%)=35, PL(%)=17-- --%Gravel=4.4-- --%Sand=12.5-- --%Silt=51.1-- --%Clay=32.0-- --A-6 (14)--	1	4	NP	4		2
		2	10	NP	10		2			2	10	NP	10		2
		3	8	NP	8		3			3	8	NP	8		3
		4	4	B	4	3.85	17			4	4	B	4	3.85	17
		5	4	B	4	2.87	18			5	4	B	4	2.87	18
		6	3	B	3	1.07	19			6	3	B	3	1.07	19
		7	1	B	1	1.07	21			7	1	B	1	1.07	21
		8	1	B	1	0.90	19			8	1	B	1	0.90	19
		9	2	B	2	1.07	25			9	2	B	2	1.07	25
		10	2	B	2	0.49	26			10	2	B	2	0.49	26
		11	1	B	1	0.25	27			11	1	B	1	0.25	27
		12	1	B	1	0.33	26			12	1	B	1	0.33	26
		13	1	B	1	0.16	27			13	1	B	1	0.16	27
		14	1	B	1	0.33	24			14	1	B	1	0.33	24
		15	2	B	2	0.57	27			15	2	B	2	0.57	27
		16	2	P	2	0.25	19			16	2	P	2	0.25	19

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-26-2013	Complete Drilling	08-27-2013	White Drilling	▽	NA	
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV	At Completion of Drilling	▽	NA	
Driller	P&N	Logger	F. Bozga	Checked by	C. Marin		
Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring grouted upon completion			Depth to Water	▽	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

0161723-60W28-512-Bor-Ing

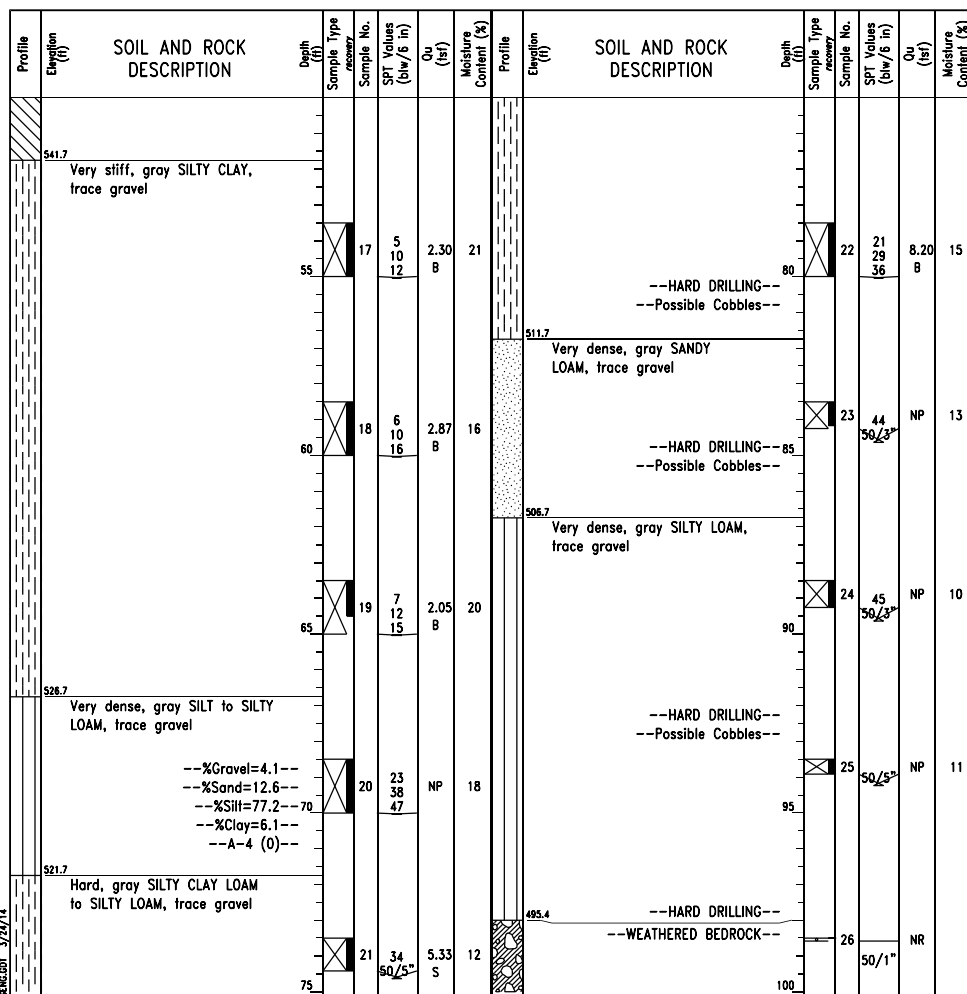


USER NAME = dunkerleyb	DESIGNED - DEV	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - BRD	REVISED
PLOT DATE = 4/28/2014	CHECKED - EJO	REVISED

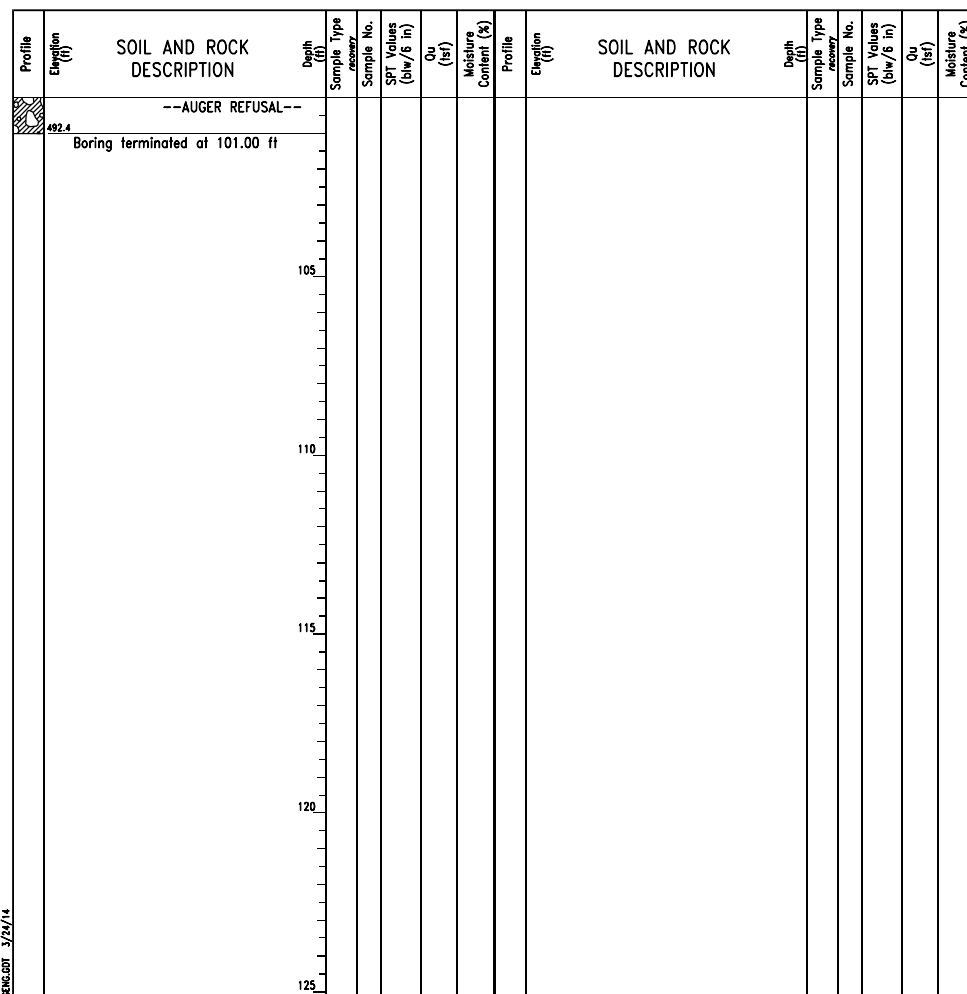
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BORING LOGS - I  
 STRUCTURE NO. 016-1723  
 SHEET NO. RW4-12 OF RW4-15 SHEETS

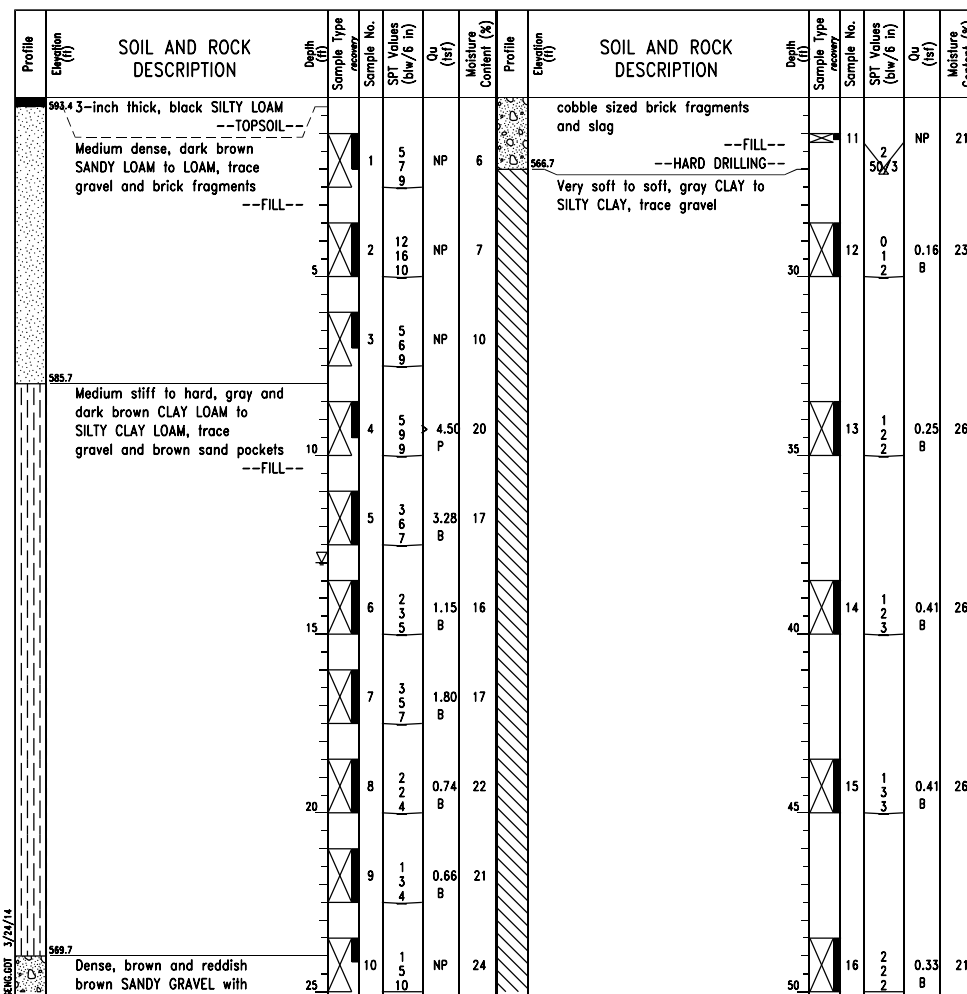
F.A.I. R.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	566
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT NUMBER-	



GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-26-2013	Complete Drilling	08-27-2013	White Drilling	∇	NA	
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV	At Completion of Drilling	∇	NA	
Driller	P&N	Logger	F. Bozga	Checked by	C. Marin		
Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring grouted upon completion			Depth to Water	∇	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							



GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-26-2013	Complete Drilling	08-27-2013	White Drilling	∇	NA	
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV	At Completion of Drilling	∇	NA	
Driller	P&N	Logger	F. Bozga	Checked by	C. Marin		
Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring grouted upon completion			Depth to Water	∇	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							



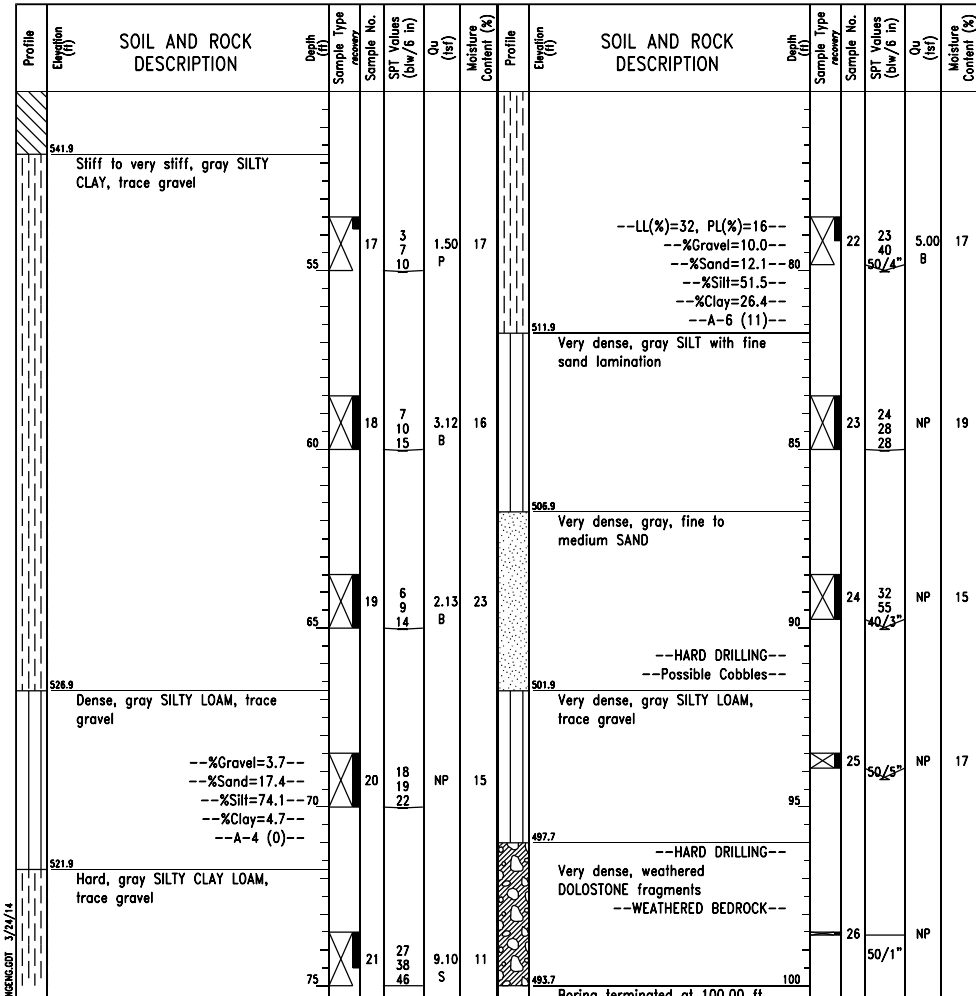
GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-22-2013	Complete Drilling	08-23-2013	White Drilling	∇	13.00 ft	
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV	At Completion of Drilling	∇	NA	
Driller	P&R	Logger	F. Bozga	Checked by	C. Marin		
Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring grouted upon completion			Depth to Water	∇	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

0161723-60W28-513-Bor-Ing



**BORING LOG 03-RWB-02**

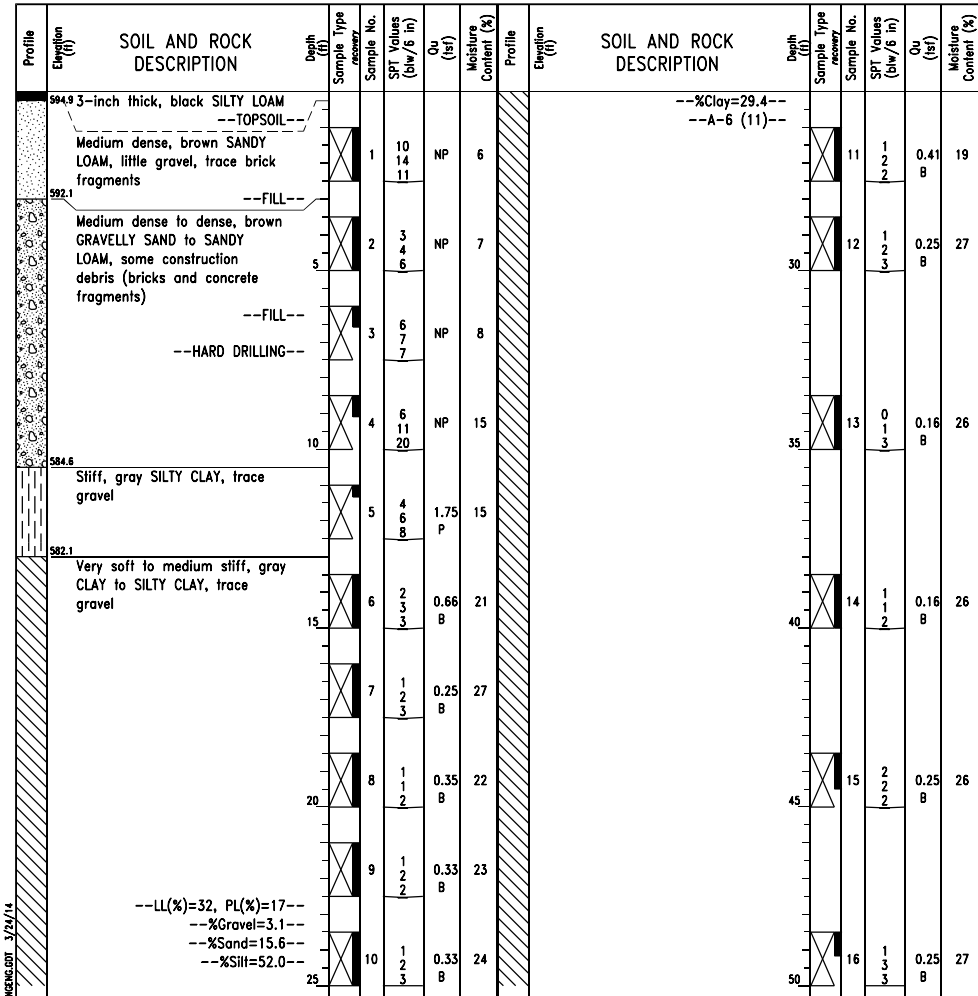
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 Client: AECOM  
 Project: Circle Interchange Reconstruction  
 Location: Section 17, T39N, R14E of 3rd PM  
 Datum: NAVD 88  
 Elevation: 593.70 ft  
 North: 1898142.33 ft  
 East: 1170680.34 ft  
 Station: 1839+83.93  
 Offset: 38.8940 RT



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	08-22-2013	Complete Drilling	08-23-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV
Driller	P&R	Logger	F. Bozga
Checked by	C. Marin	Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring grouted upon completion
White Drilling	13.00 ft	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA

**BORING LOG 03-RWB-03**

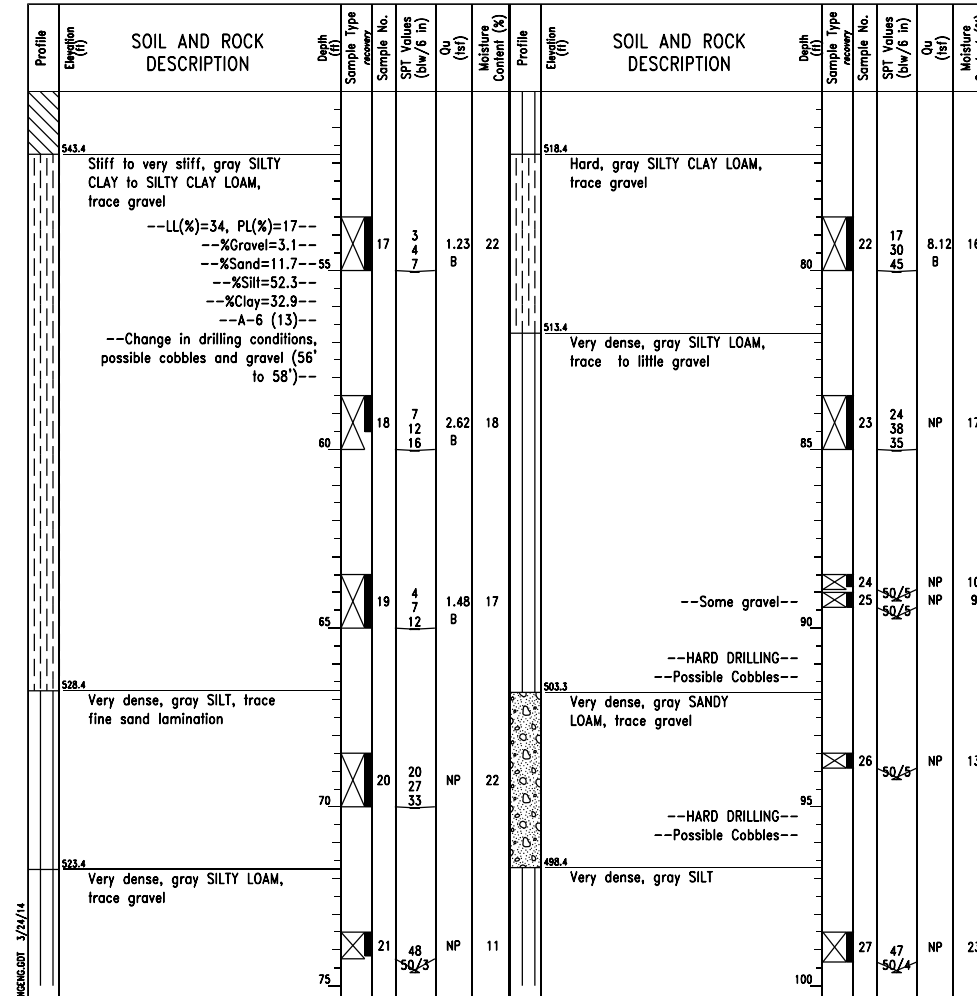
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 Client: AECOM  
 Project: Circle Interchange Reconstruction  
 Location: Section 17, T39N, R14E of 3rd PM  
 Datum: NAVD 88  
 Elevation: 595.15 ft  
 North: 1898142.41 ft  
 East: 1170611.57 ft  
 Station: 1840+52.56  
 Offset: 43.2853 RT



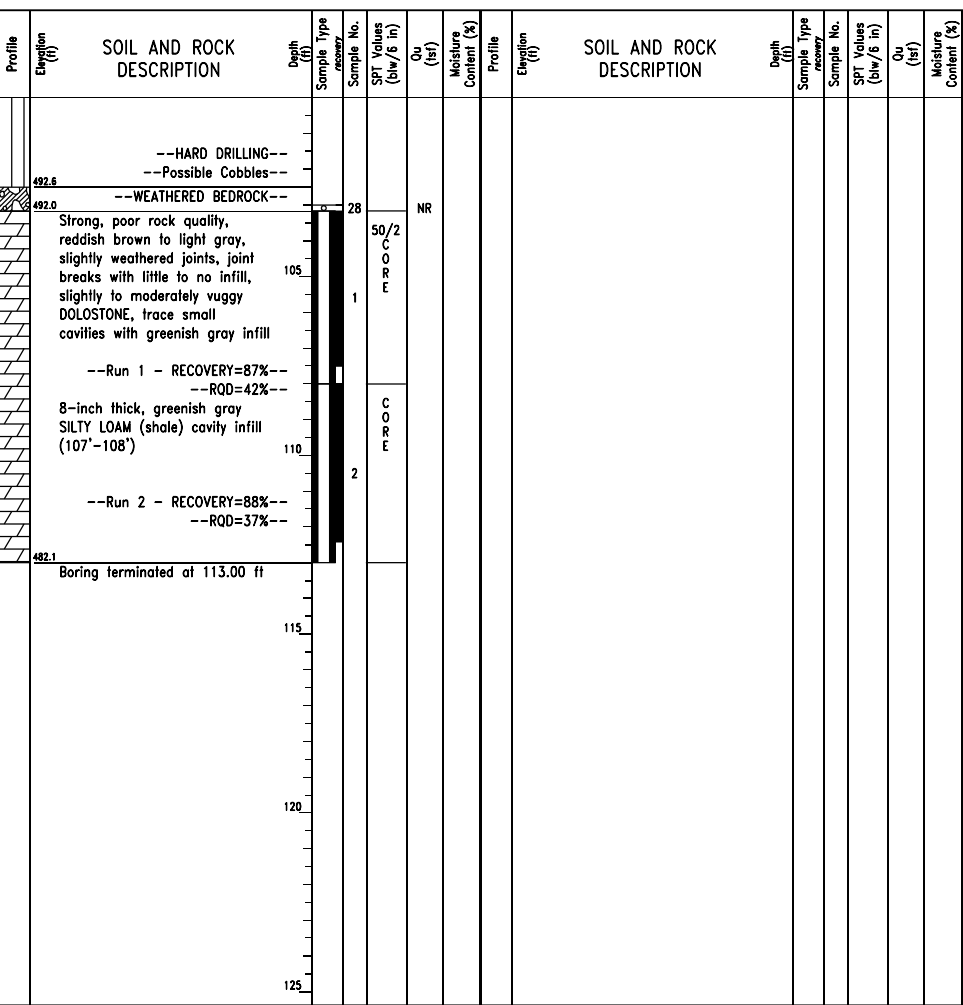
GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	08-19-2013	Complete Drilling	08-21-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV
Driller	P&N	Logger	F. Bozga
Checked by	C. Marin	Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring grouted upon completion
White Drilling	NA	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA

**BORING LOG 03-RWB-03**

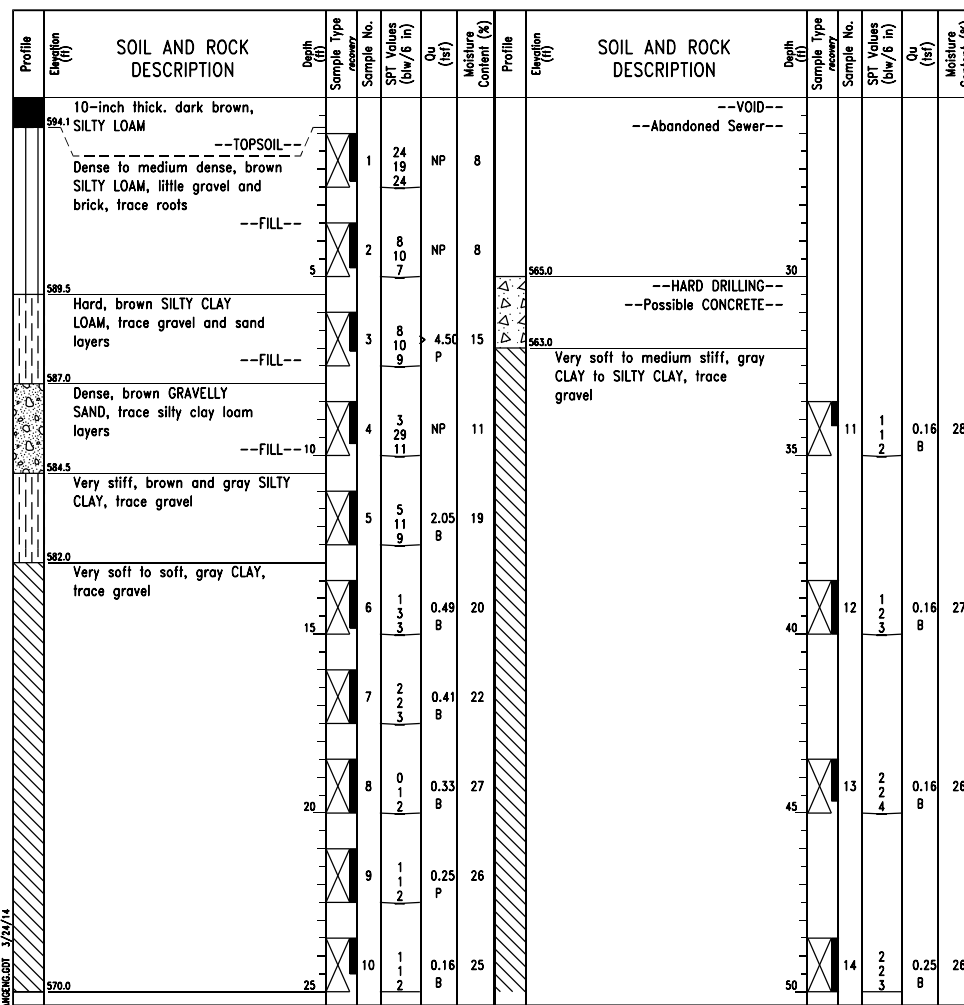
WEI Job No.: 1100-04-01  
 Client: AECOM  
 Project: Circle Interchange Reconstruction  
 Location: Section 17, T39N, R14E of 3rd PM  
 Datum: NAVD 88  
 Elevation: 595.15 ft  
 North: 1898142.41 ft  
 East: 1170611.57 ft  
 Station: 1840+52.56  
 Offset: 43.2853 RT



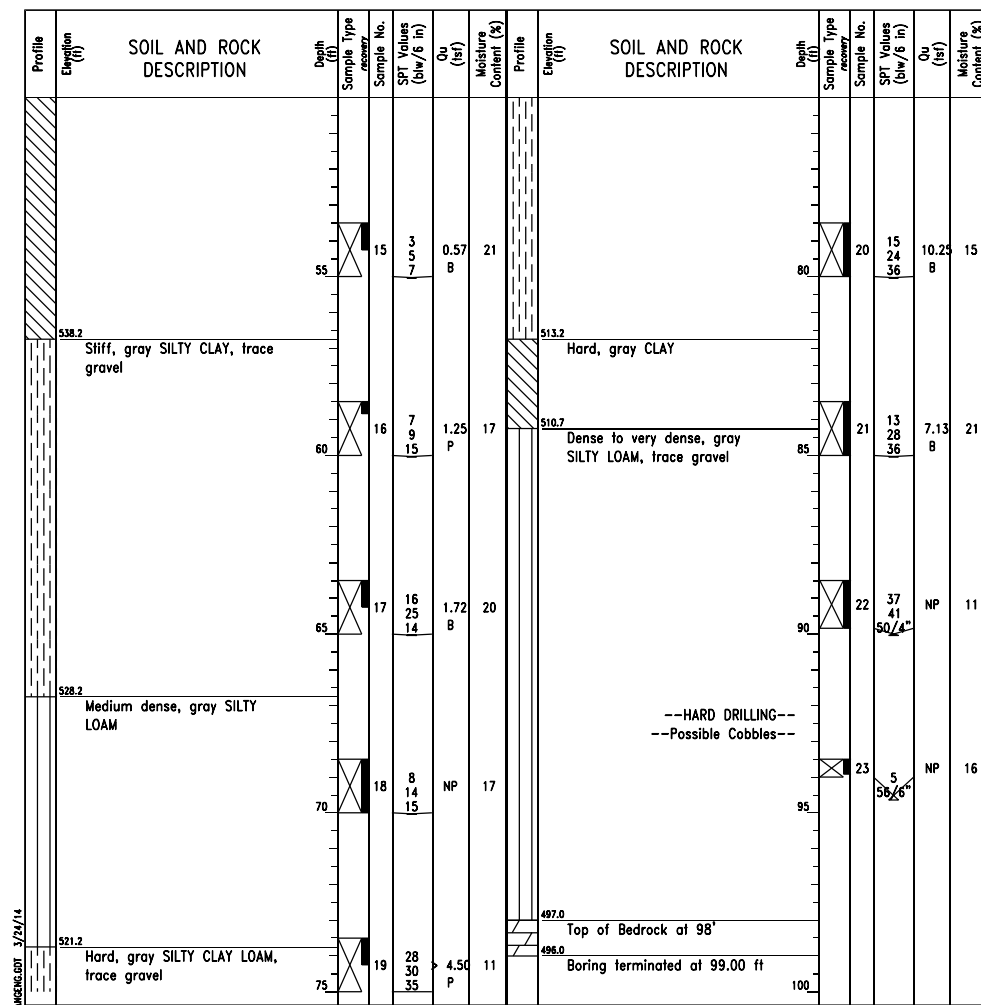
GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	08-19-2013	Complete Drilling	08-21-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV
Driller	P&N	Logger	F. Bozga
Checked by	C. Marin	Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring grouted upon completion
White Drilling	NA	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA



GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-19-2013	Complete Drilling	08-21-2013	White Drilling	☐	NA	
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV	At Completion of Drilling	☐	NA	
Driller	P&N	Logger	F. Bozga	Checked by	C. Marin		
Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring grouted upon completion			Depth to Water	☐	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							



GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-30-2013	Complete Drilling	09-30-2013	White Drilling	☐	DRY	
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV	At Completion of Drilling	☐	NA	
Driller	P&N	Logger	D. Kolpacki	Checked by	C. Marin		
Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion			Depth to Water	☐	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							



GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-30-2013	Complete Drilling	09-30-2013	White Drilling	☐	DRY	
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV	At Completion of Drilling	☐	NA	
Driller	P&N	Logger	D. Kolpacki	Checked by	C. Marin		
Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion			Depth to Water	☐	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

0161723-60W28-515-Bor-Ing



USER NAME = dunkerleyb	DESIGNED - DEV	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 4/28/2014	DRAWN - BRD	REVISED
	CHECKED - EJO	REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BORING LOGS - IV  
 STRUCTURE NO. 016-1723

SHEET NO. RW4-15 OF RW4-15 SHEETS

F.A.I. R.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	567B
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	

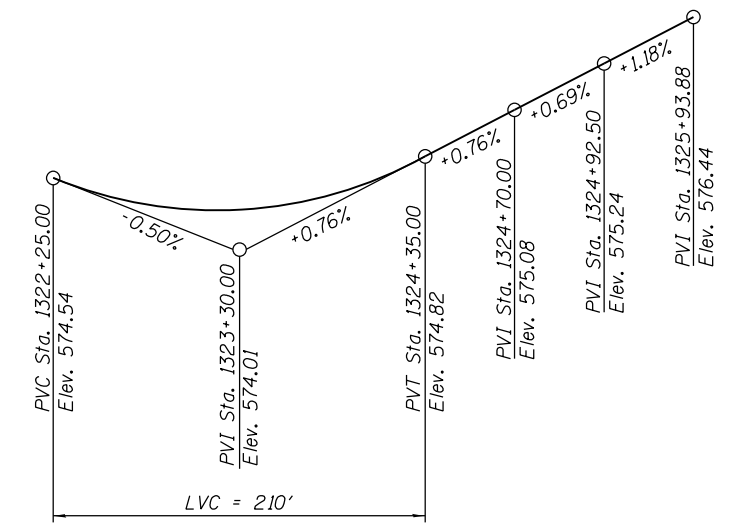


**GENERAL NOTES:**

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Plan dimensions and details relative to Halsted Street Bridge Plans (Contract No. 60W26) are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
3. The Contractor shall exercise extreme caution during construction to make certain that construction activities, live load surcharge and other loads applied to the structures will not have detrimental effects on the adjacent building foundations. Driving piles and temporary sheet piling is not allowed. See Special Provision for Construction Vibration Monitoring.
4. Slipforming of parapets is not allowed.
5. A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.
6. Abandoned 5' diameter CTA Water Tunnel will be filled in a previous contract. The Contractor shall verify with the Engineer that the tunnel has been filled prior to the start of MSE construction.
7. The wall supplier shall provide additional details for the soil reinforcement to avoid conflict with the proposed noise abatement wall. See Noise Abatement Wall plans for locations.
8. Protective Coat shall be applied to the designated areas of the Anchor Slab and Parapet.
9. Wall offsets are measured from the  $\mathcal{C}$  of F.A.I. Rte. 90/94 (Ramp SW) to the front face of precast panels.
10. Quantity for Lightweight Cellular Concrete Fill includes reinforced soil mass and fill. Type is specified as Class II Lightweight Fill.

**INDEX OF SHEETS**

- RW40-01 General Plan and Elevation
- RW40-02 General Data
- RW40-03 Parapet and Anchorage Slab Plan and Elevation
- RW40-04 MSE Cross Section and Details
- RW40-05 Architectural Details
- RW40-06 Aggregate Column Ground Improvement Details
- RW40-07 Boring Logs 1
- RW40-08 Boring Logs 2
- RW40-09 Boring Logs 3
- RW40-10 Boring Logs 4
- RW40-11 Boring Logs 5
- RW40-12 Boring Logs 6



**SUGGESTED SEQUENCE OF CONSTRUCTION**

1. Locate existing utilities that are to remain. Contractor to coordinate any required improvements to or removals of existing utilities with utility owner(s). See Utility Location Plans and ITS Plans.
2. Locate and remove any abandoned CTA foundations that are in conflict with Retaining Walls 3, 4, 40, or Noise Abatement Wall.
3. Install drilled soldier piles for Retaining Wall 4 soldier pile wall.
4. Install drilled shafts for SN 016-1705 West Abutment.
5. Install foundations for Noise Abatement Wall.
6. Excavate for Retaining Walls 3, 4, and 40. Install temporary lagging between soldier piles of Retaining Wall 4 from top down as excavation proceeds if needed to retain existing soil.
7. Install Aggregate Column Ground Improvement for Retaining Walls 3, 4, and 40.
8. Construct RW 40, placing MSE straps to avoid Noise Abatement Wall foundations.
9. Begin placing lightweight fill and installing Retaining Wall 3 up to height of Retaining Wall 4 MSE leveling pad. Install Drainage System.
10. Install Concrete Facing on soldier piles of Retaining Wall 4. Backfill north side of wall.
11. Complete West Abutment of SN 016-1705. Install Retaining Wall 4 soldier pile cap and barrier on top of piles and concrete facing.
12. Complete remainder of Retaining Wall 3 while installing MSE portion of Retaining Wall 4.
13. Install Anchor Slabs and Barrier Rails for Retaining Walls 3 and 4.
14. Install Roadway pavement and Noise Abatement Wall.

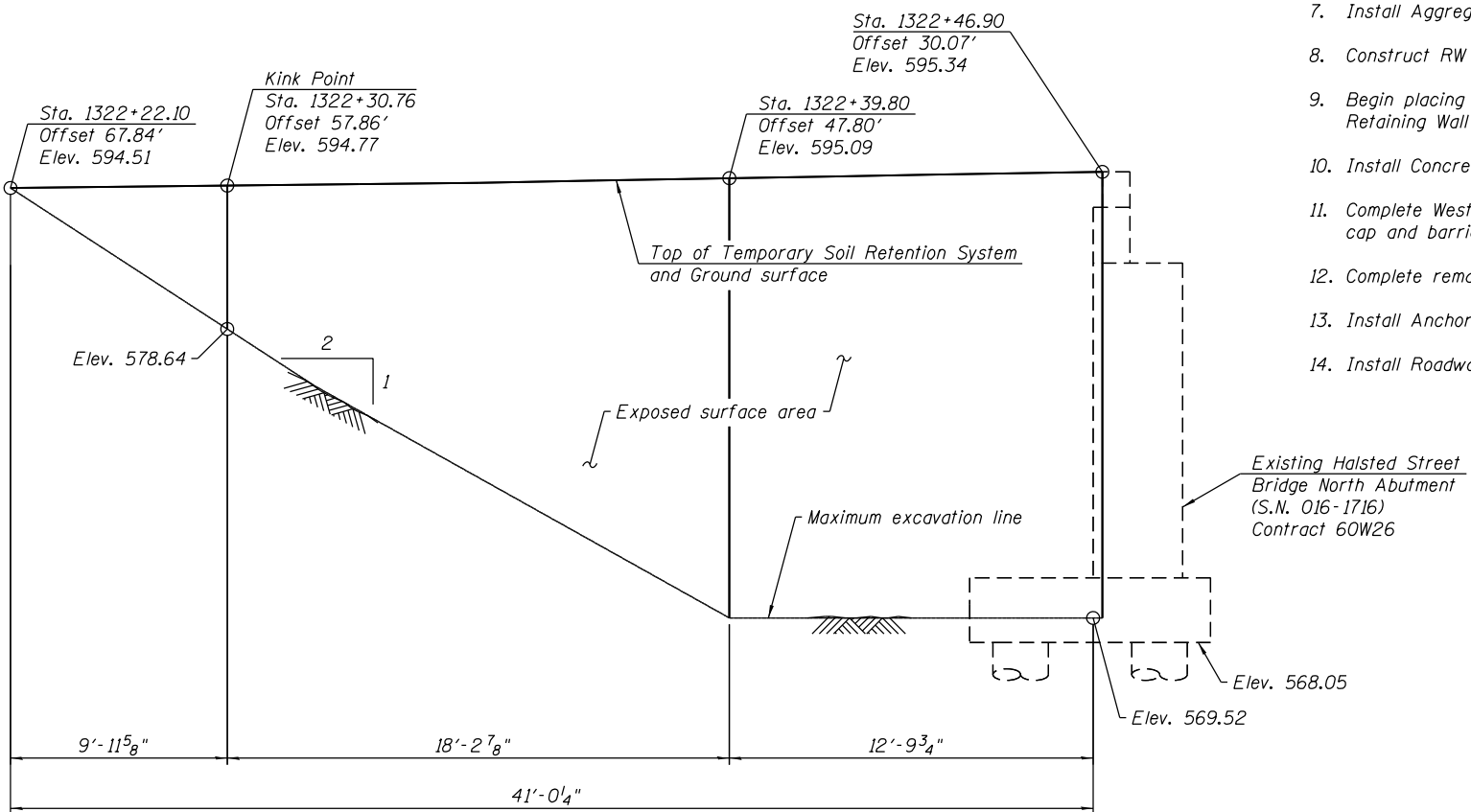
**PROFILE GRADE**  
(Along B Ramp SW)

**TABLE 1**

Station	Offset	Elevation A	Elevation B	Elevation C
1322+49.13	30.07 Lt.	595.38	574.02	574.05
1322+75.00	30.07 Lt.	595.30	574.47	574.05
1323+00.00	30.07 Lt.	594.66	575.03	574.05
1323+25.00	30.07 Lt.	594.63	576.97	574.05
1323+50.00	30.07 Lt.	594.43	577.32	574.05
1323+75.00	33.5 Lt.	594.52	578.29	574.05
1324+00.00	38.29 Lt.	594.63	579.55	574.05
1324+25.00	41.99 Lt.	594.63	580.81	574.05
1324+50.00	44.63 Lt.	594.63	582.13	574.05
1324+75.00	46.24 Lt.	594.56	583.69	574.05
1325+00.00	45.77 Lt.	594.48	585.42	574.05
1325+11.44	45.11 Lt.	594.54	585.41	574.05

STATION 1322+49.13  
BUILT 20-- BY  
STATE OF ILLINOIS  
F.A.I. RT. 90/94 SEC. 2013-010R  
STR. NO. 016-1809

**NAME PLATE**  
See Std. 515001



**TEMPORARY SOIL RETENTION SYSTEM**  
(Along Halsted Street Bridge S.N. 016-1716 Approach Slab)

**BILL OF MATERIAL**

Item	Unit	Total
Temporary Soil Retention System	Sq. Ft.	790

**TOTAL BILL OF MATERIAL**

Item	Unit	Total
Structure Excavation	Cu. Yd.	1012
Concrete Superstructure	Cu. Yd.	151.1
Protective Coat	Sq. Yd.	152
Reinforcement Bars, Epoxy Coated	Pound	16,720
Name Plates	Each	1
Aggregate Column Ground Improvement	L. Sum	0.1
Lightweight Cellular Concrete Fill (Class II)	Cu. Yd.	1943
Mechanically Stabilized Earth Retaining Wall, Special	Sq. Ft.	3748
Temporary Soil Retention System	Sq. Ft.	790
Removal of Temporary Soil Retention System	Sq. Ft.	555
Foundation Removal	Cu. Yd.	45
Stainless Steel Cable Plant Support System	L. Sum	0.38

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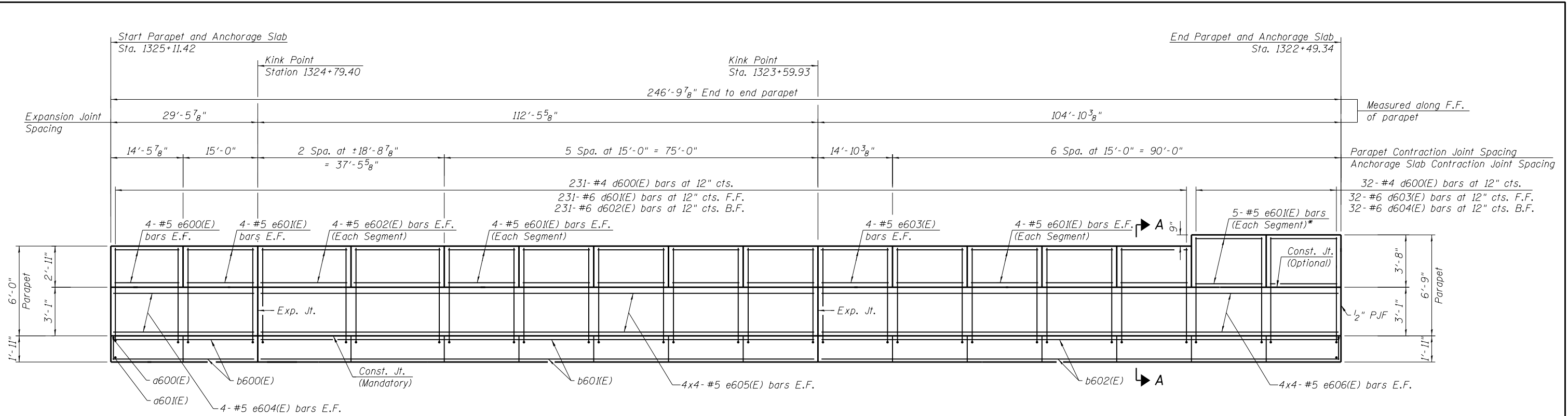
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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

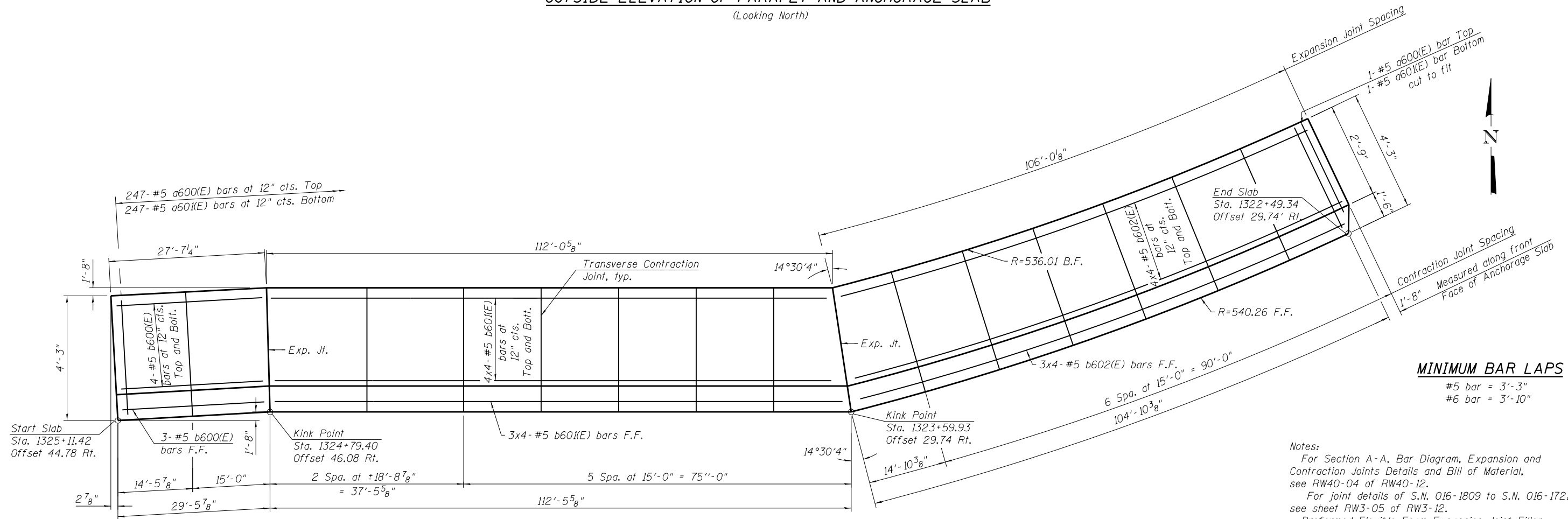
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**STRUCTURE NO. 016-1809**

F.A.I. RTE. 90/94	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 569
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

SHEET NO. RW40-02 OF RW40-12 SHEETS



**OUTSIDE ELEVATION OF PARAPET AND ANCHORAGE SLAB**  
(Looking North)



**PARAPET AND ANCHORAGE SLAB PLAN**

**MINIMUM BAR LAPS**

- #5 bar = 3'-3"
- #6 bar = 3'-10"

Notes:  
 For Section A-A, Bar Diagram, Expansion and Contraction Joints Details and Bill of Material, see RW40-04 of RW40-12.  
 For joint details of S.N. 016-1809 to S.N. 016-1722, see sheet RW3-05 of RW3-12.  
 Preformed Flexible Foam Expansion Joint Filler (called out as P.J.F. in plans) shall follow Article 1051.09 of IDOT Standard Specifications. Cost included in Concrete Superstructure.

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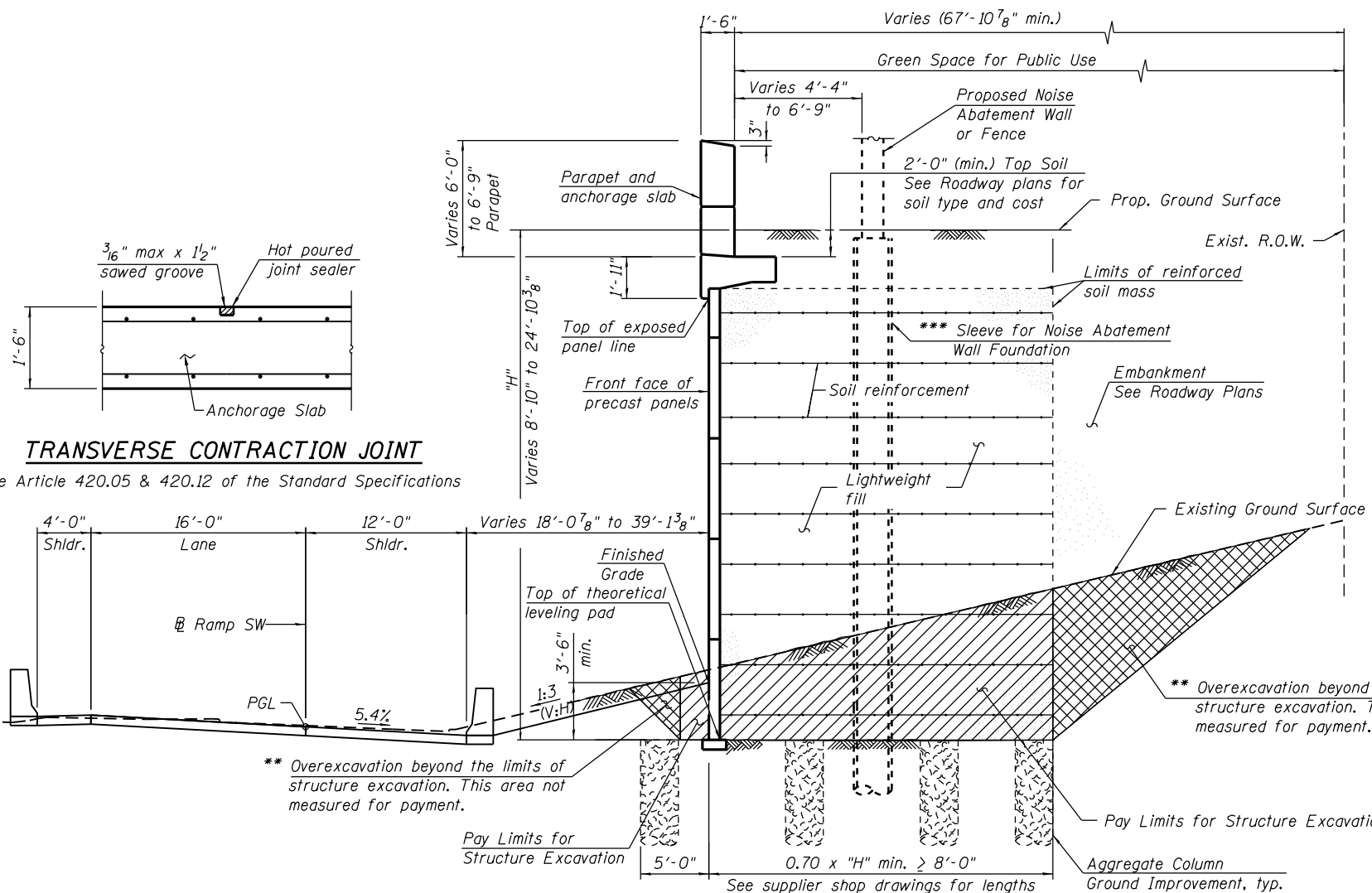
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PLOT DATE = 4/28/2014	DRAWN - KAH	REVISED -
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PARAPET AND ANCHORAGE SLAB PLAN AND ELEVATION  
STRUCTURE NO. 016-1809**

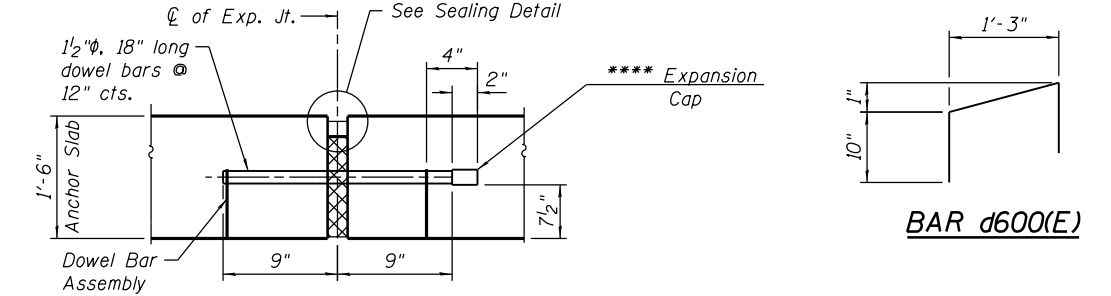
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F.A.I. RTE. 90/94	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 570
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	



**TYPICAL SECTION**  
(Looking upstasion)

\*\* Backfill overexcavation with granular backfill  
 \*\*\* Noise Abatement Wall Foundation type, diameter, depth, and spacing to be determined by Contractor.



**ANCHOR SLAB TO ANCHOR SLAB TRANSVERSE EXPANSION JOINT**

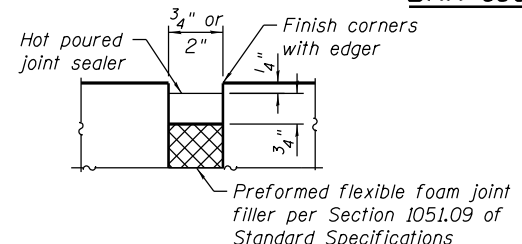
Expansion Joint Filler, Sealer and Dowel Bars included in cost of Concrete Superstructure.  
 \*\*\*\* Expansion caps shall be installed on the exposed end of each dowel bar once header has been removed and the joint filler material has been installed.

**BAR d600(E)**

**A & B DIMENSIONS**

Bar	A	B
d600(E)	3'-11"	1'-5"
d601(E)	6'-11"	1'-0"
d602(E)	7'-2"	1'-0"
d603(E)	7'-8"	1'-0"
d604(E)	7'-11"	1'-0"

**BAR d600(E), d601(E), d602(E), d603(E) and d604(E)**



**SEALER DETAIL**

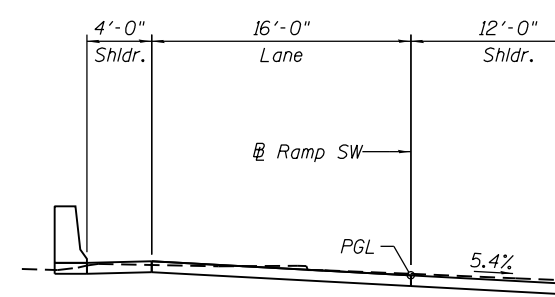
**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
d600(E)	248	#5	5'-4"	
d601(E)	248	#5	3'-11"	
b600(E)	11	#5	29'-3"	
b601(E)	44	#5	30'-7"	
b602(E)	44	#5	28'-7"	
d600(E)	263	#4	3'-0"	
d601(E)	231	#6	7'-11"	
d602(E)	231	#6	8'-2"	
d603(E)	32	#6	9'-8"	
d604(E)	32	#6	8'-11"	
e600(E)	8	#5	14'-1"	
e601(E)	100	#5	14'-9"	
e602(E)	16	#5	18'-4"	
e603(E)	8	#5	14'-6"	
e604(E)	8	#5	29'-1"	
e605(E)	32	#5	30'-7"	
e606(E)	32	#5	27'-7"	
Concrete Superstructure		Cu. Yd.		151.1
Protective Coat		Sq. Yd.		152
Reinforcement Bars, Epoxy Coated		Pound		16,720

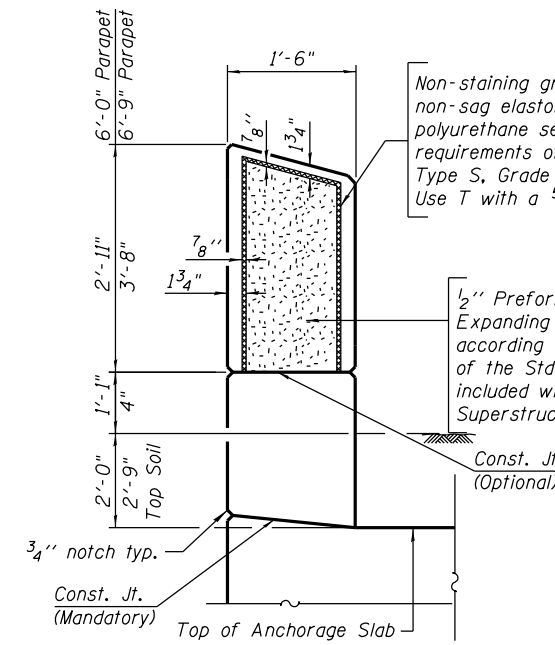
Notes:  
 All edges shall be chamfered 3/4 inches.  
 Protective coat shall be applied to the parapet top and interior vertical surface above ground line.  
 Bars indicated thus 3x4-#5 etc. indicates 3 lines of bars with 4 lengths per line.  
 See Sheet RW40-06 of RW40-12 for additional notes for MSE wall suppliers.  
 Aggregate columns shall be placed to avoid existing utilities, proposed utilities and proposed Noise Abatement Wall Foundations.

**TRANSVERSE CONTRACTION JOINT**

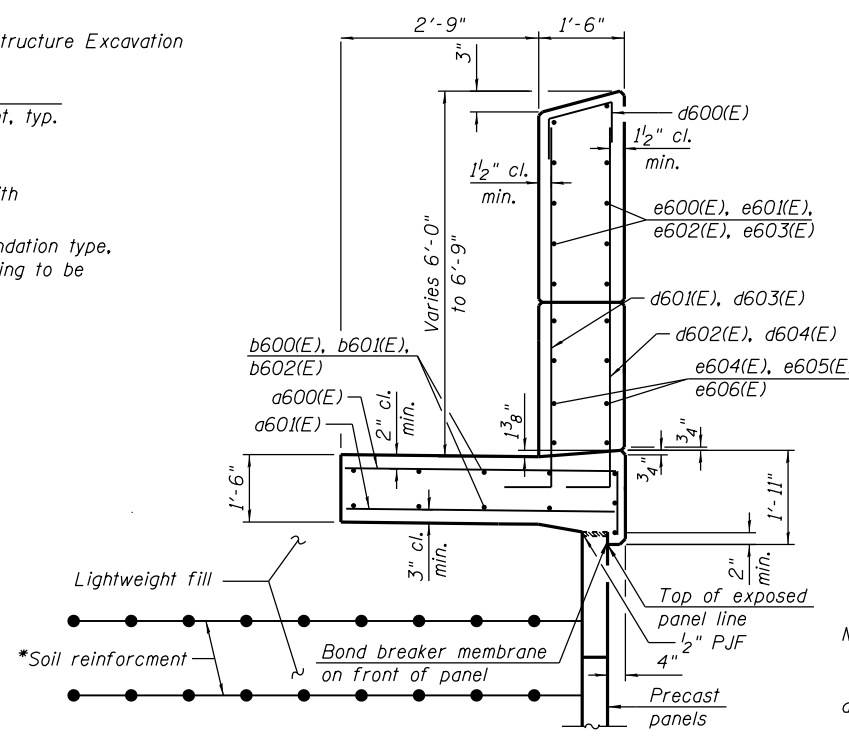
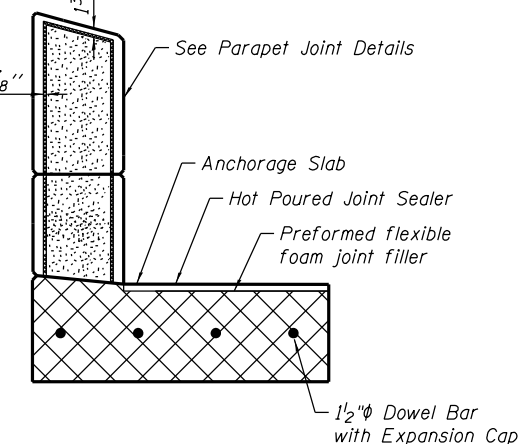
See Article 420.05 & 420.12 of the Standard Specifications



**PARAPET CONTRACTION JOINT DETAILS**



**TRANSVERSE EXPANSION JOINT SECTION**



**SECTION A-A**

\* The M.S.E. wall supplier's internal stability design shall account for the anchorage slab's bearing pressure surcharge of 0.6 ksf and horizontal sliding force of 0.4 kips/ft. of wall.

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 CHECKED - KAH  
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 PLOT DATE = 4/28/2014

DESIGNED - RAH  
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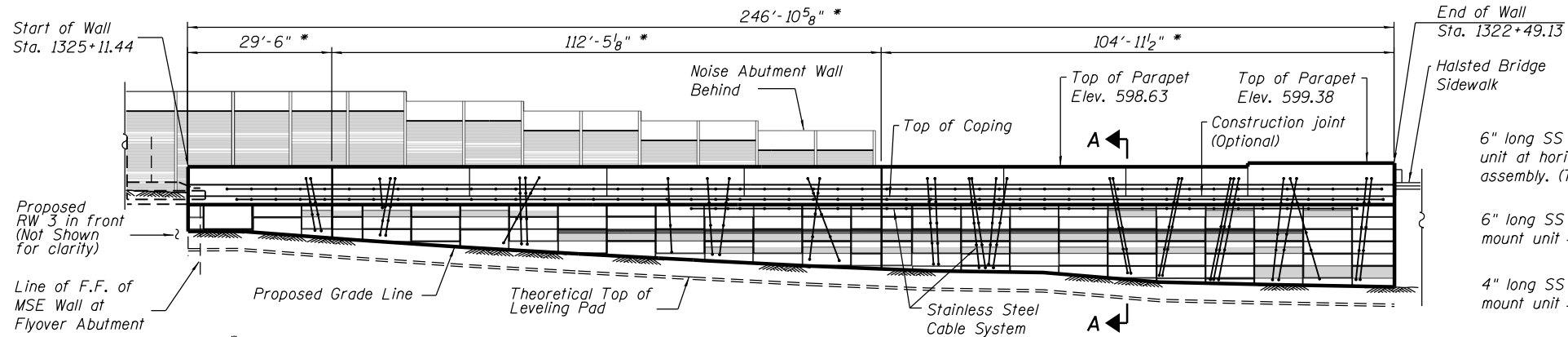
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

MSE CROSS SECTION AND DETAILS  
 STRUCTURE NO. 016-1809

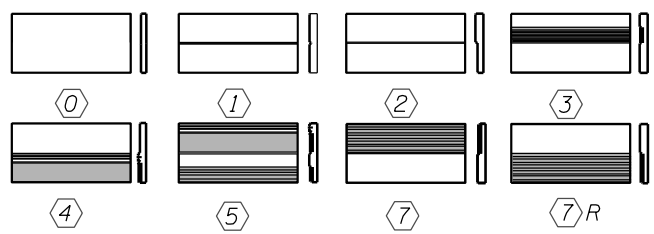
SHEET NO. RW40-04 OF RW40-12 SHEETS

F.A.I. RTÉ.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2013-010R	COOK	747	571

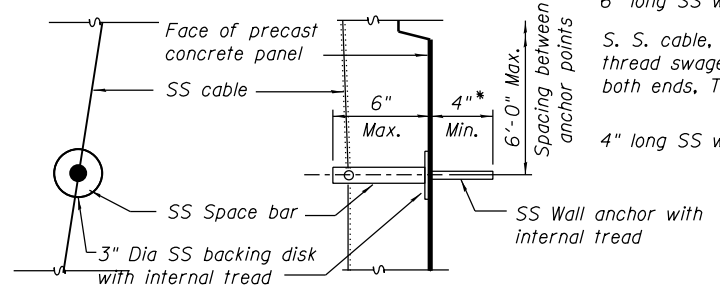
CONTRACT NO. 60W28  
 ILLINOIS FED. AID PROJECT



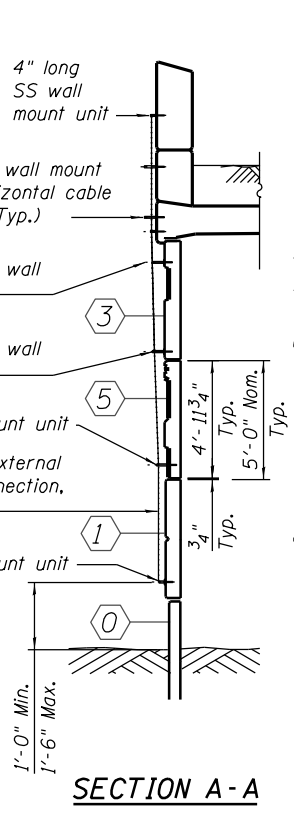
\* Measured along F.F. of precast panels. Verify all dimensions with bridge plans for S.N. 016-1809



**PRECAST PANEL TYPES**



**SS CABLE WALL MOUNT UNIT - TYPICAL DETAIL**



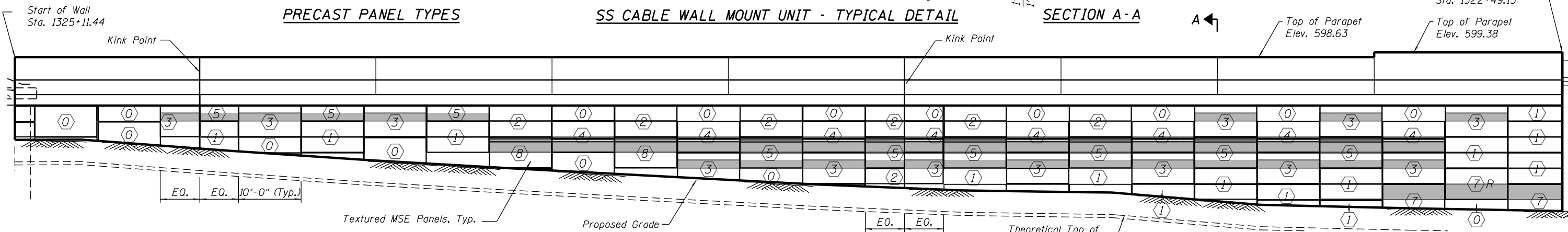
**SECTION A-A**

**Notes:**

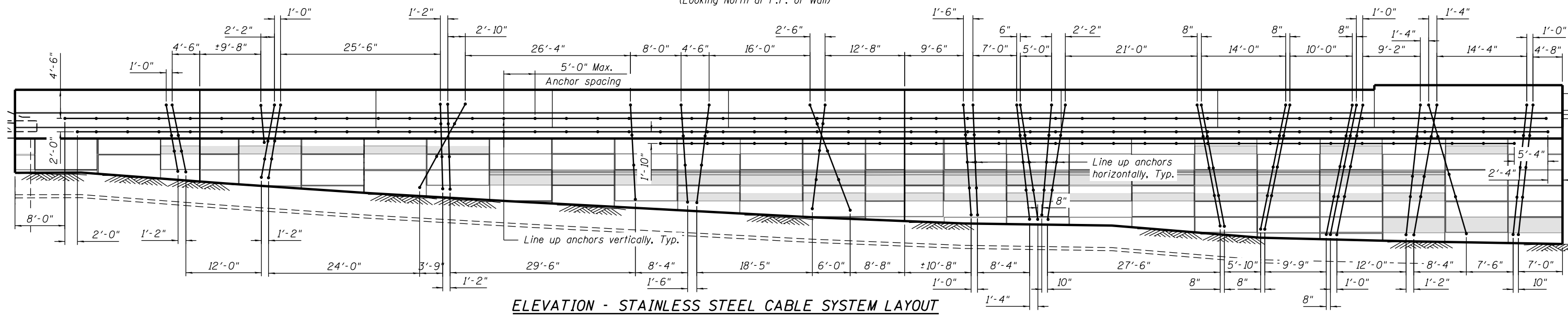
1. Textured formliner for precast panels will not be paid separately and will be included in the cost of the pay item "Mechanical Stabilized Earth Retaining Wall, Special"
2. For precast panel details and formliners see drawing RW1-11 of Retaining Wall 1 (S.N. 016-1720) plans.
3. Stainless steel cable system will be paid at a lump sum price for "Stainless Steel Cable Plant Support System" per wall.
4. Locate bottom anchor 1'-0" minimum to 1'-6" maximum above finished grade.
5. Line up anchors as shown on elevation where possible, maintaining 6'-0" maximum spacing between anchor points.
6. Use 4" and 6" long SS space bars. Alternate size depending on location, to maintain straight vertical cable as much as possible. At top precast panel use 6" long space bar, typ. At raised area of precast panel use 4" long space bar, unless it is top panel. At recessed area of precast panel use 6".
7. Drilled holes for trellis wall anchors to be at least 6" away from the tie strip that connects the MSE panel to the ground reinforcement. Coordinate with the MSE manufacturer for other requirements.
8. Coordinate / verify all dimensions with structural drawings.

**BILL OF MATERIAL**

Item	Unit	Total
Stainless Steel Cable Plant Support System	L. Sum	0.38



**ELEVATION - PRECAST PANEL LAYOUT**



**ELEVATION - STAINLESS STEEL CABLE SYSTEM LAYOUT**



USER NAME = kohastings	DESIGNED - KAH	REVISED -
PLOT SCALE = 2x @ 1" / Ft.	CHECKED - WJC	REVISED -
PLOT DATE = 4/28/2014	DRAWN - KAH	REVISED -
	CHECKED - WJC	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**ARCHITECTURAL DETAILS  
STRUCTURE NO. 016-1809**

SHEET NO. RW40-05 OF RW40-12 SHEETS

F.A.I. RTE. 90/94	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 572
ILLINOIS FED. AID PROJECT			CONTRACT NO. 60W28	

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**GROUND IMPROVEMENT PERFORMANCE REQUIREMENTS**

Equivalent Uniform Service Bearing Pressure shall be interpolated between the values shown.

The Shop Drawings and construction procedures submittal shall indicate the sequence of construction within the limits of Aggregate Column Ground Improvement. The aggregate column installation shall be coordinated with existing utilities, existing structural removals, and proposed utility installation.

Settlement during construction shall not exceed 3 inches, and settlement after completion of the wall and anchorage slab shall not exceed 1 inch.

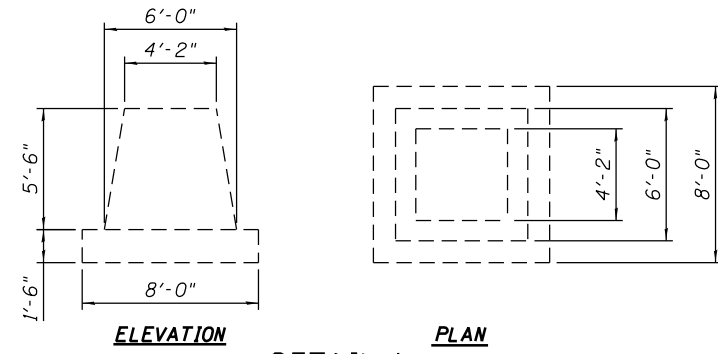
Minimum factor of safety for Equivalent Uniform Service Bearing Pressure shall be 2.5.

**Notes:**

Aggregate column ground improvement shall be designed and installed by the Contractor in accordance with special provision for Aggregate Column Ground Improvement.

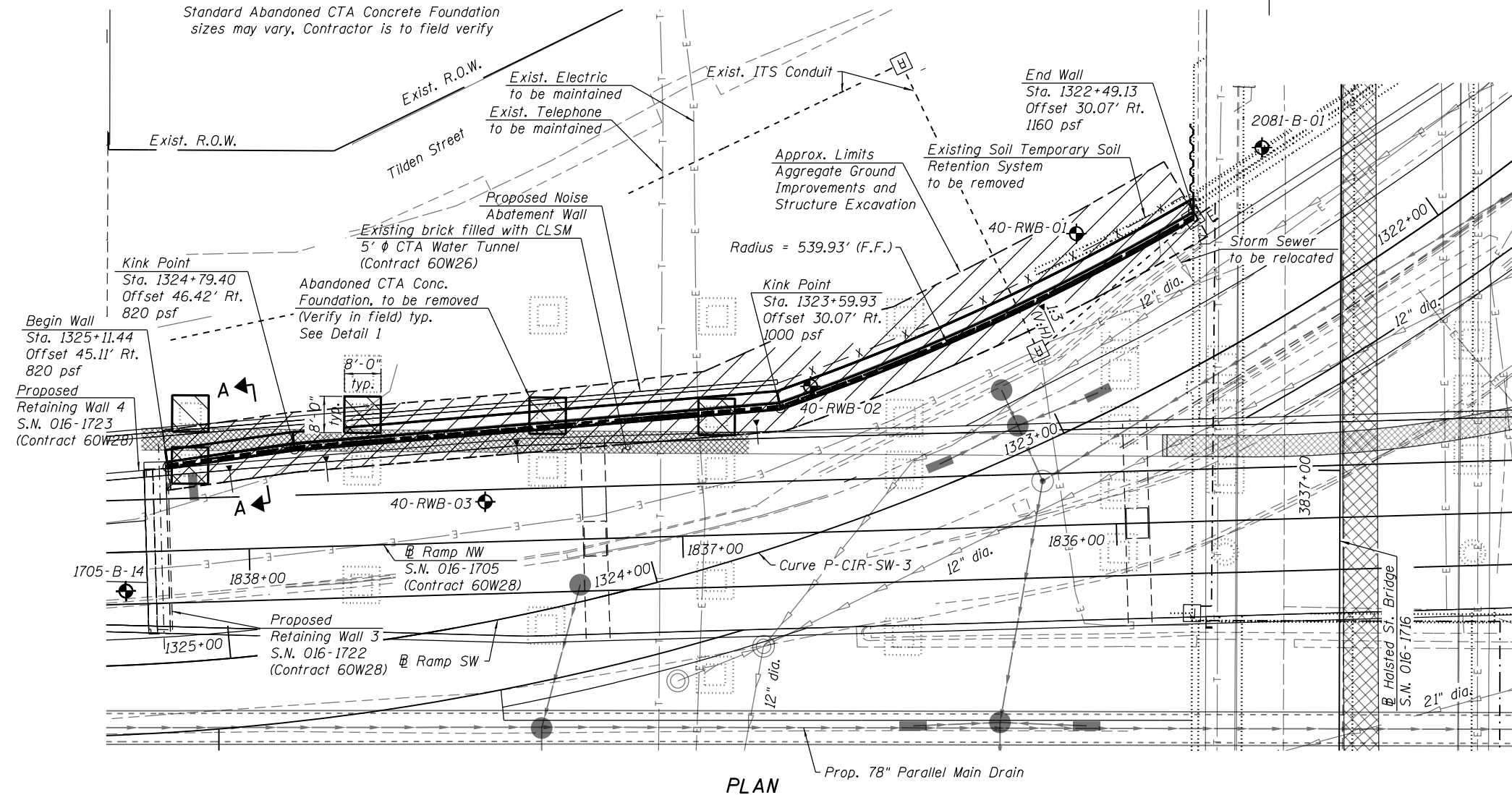
Within the Limits of Structure Excavation, depth of the aggregate column for Aggregate Column Ground Improvement will be measured from Top of Leveling Pad to Bottom of the Aggregate Column.

The Contractor shall field verify location of existing underground utilities. The Contractor shall take all precautions to protect existing utilities during construction of the wall. Any damages to the existing utilities shall be the responsibility of the Contractor.

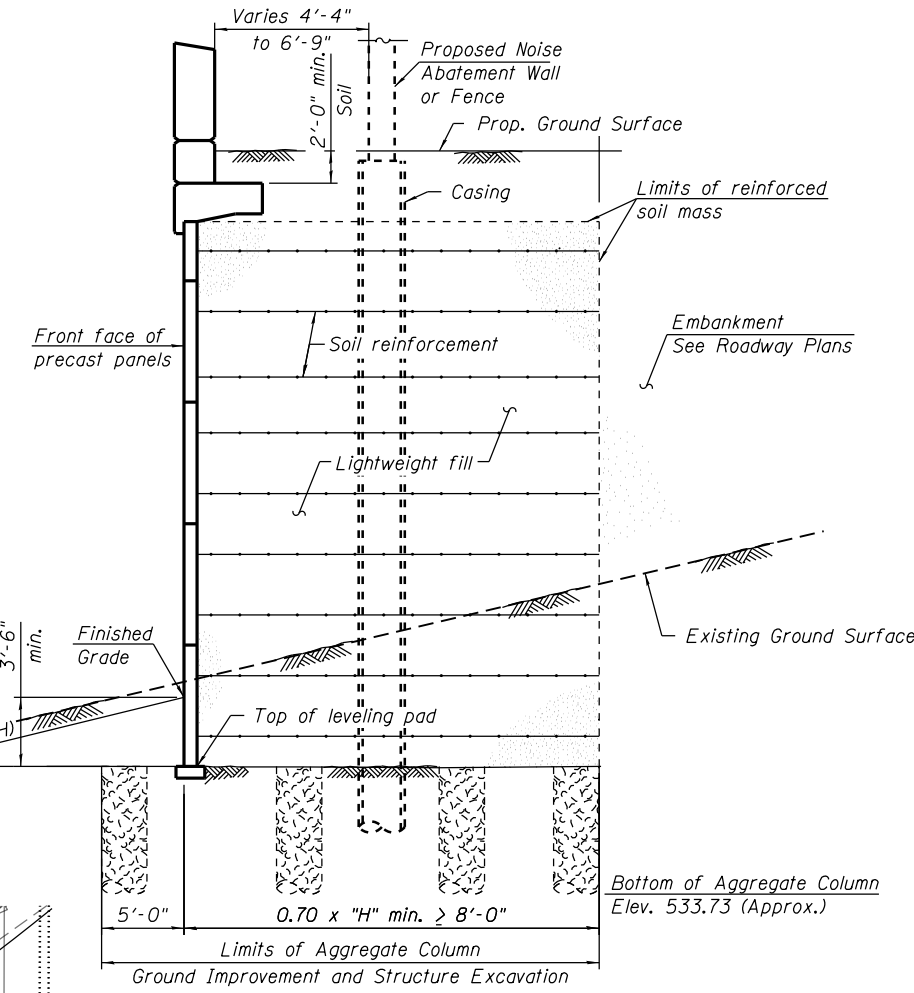


**DETAIL 1**  
ELEVATION PLAN

Standard Abandoned CTA Concrete Foundation sizes may vary, Contractor is to field verify



**PLAN**



**SECTION A-A**

**LEGEND**

- Boring
- Aggregate Column Ground Improvement
- Foundation Removal

**BILL OF MATERIAL**

Item	Unit	Total
Aggregate Column Ground Improvement	L. Sum	0.1
Foundation Removal	Cu. Yd.	45

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PLOT DATE = 4/28/2014	DRAWN - RLS	REVISED -
	CHECKED - DL	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**AGGREGATE COLUMN GROUND IMPROVEMENT DETAILS  
STRUCTURE NO. 016-1809**

SHEET NO. RW40-06 OF RW40-12 SHEETS

F.A.I. RTE. 90/94	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 573
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	





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

### BORING LOG 40-RWB-01

WEI Job No.: 1100-04-01

Client AECOM  
Project Circle Interchange Reconstruction  
Location Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88  
Elevation: 580.31 ft  
North: 1898194.11 ft  
East: 1171054.46 ft  
Station: 1322+76.17  
Offset: 39.9421 RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
580.1	3-inch thick, brown SILTY LOAM --TOPSOIL--														
	Hard, brown, SILTY CLAY LOAM, little gravel, trace roots --FILL--														
576.6	Stiff to very stiff, gray SILTY CLAY, trace gravel	5		2	5 4 6	2.38 B	17			30		12	2 2 2	NR	
				3	3 4 5	1.50 P	22								
572.3	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel	10		4	2 2 3	0.49 B	22			35		13	1 2 3	< 0.25 P	23
				5	1 2 3	0.49 B	25	543.6	Stiff to hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel						
				6	2 2 3	0.33 B	25			40		14	4 4 7	1.07 B	22
				7	1 2 2	0.25 B	21								
				8	1 2 2	0.16 B	23			45		15	5 9 13	2.05 B	16
				9	1 2 3	0.16 B	21								
				10	2 2 2	0.25 B	25			50		16	6 11 14	2.46 B	20

#### GENERAL NOTES

Begin Drilling 07-31-2013 Complete Drilling 08-05-2013  
Drilling Contractor Wang Testing Services Drill Rig D-25 ATV  
Driller P&N Logger D. Kolpacki Checked by C. Marin  
Drilling Method 2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion

#### WATER LEVEL DATA

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

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



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

### BORING LOG 40-RWB-01

WEI Job No.: 1100-04-01

Client AECOM  
Project Circle Interchange Reconstruction  
Location Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88  
Elevation: 580.31 ft  
North: 1898194.11 ft  
East: 1171054.46 ft  
Station: 1322+76.17  
Offset: 39.9421 RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
								503.6	Very dense, gray LOAM, some gravel						
	--LL(%)=36, PL(%)=18-- --%Gravel=0.9-- --%Sand=6.8--55 --%Silt=51.8-- --%Clay=40.5-- --A-6 (17)--			17	7 12 19	4.02 B	22			80		22	29 50/5	NP	12
523.6	Dense, gray SILT							498.6	Very dense, gray SILT						
				18	17 23 26	NP	21			85		23	43 50/4	NP	20
518.6	Hard, gray SILTY CLAY LOAM, trace gravel							493.6	Very dense, gray GRAVEL						
				19	20 50/6	4.50 P	11			90		24	50/2	NP	
				20	15 30 50/5	10.25 B	15			95		25	50/1	NR	
				21	50/5	NP	12			100					
508.6	Very dense, gray GRAVELLY SAND														
								487.3	DOLOSTONE --BEDROCK--						
								484.8	Boring terminated at 95.50 ft						

#### GENERAL NOTES

Begin Drilling 07-31-2013 Complete Drilling 08-05-2013  
Drilling Contractor Wang Testing Services Drill Rig D-25 ATV  
Driller P&N Logger D. Kolpacki Checked by C. Marin  
Drilling Method 2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion

#### WATER LEVEL DATA

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

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



USER NAME = kahostings  
DESIGNED - RTS  
CHECKED - KAH  
PLOT SCALE = 1/2" = 10' / ft.  
DRAWN - RTS  
PLOT DATE = 4/28/2014

DESIGNED - RTS  
CHECKED - KAH  
DRAWN - RTS  
CHECKED - KAH

REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BORING LOGS 1  
STRUCTURE NO. 016-1809

SHEET NO. RW40-07 OF RW40-12 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2013-010R	COOK	747	574
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

5:33:18 PM - c:\pwworking\wangeng\00\hostings\d0264557\016809-60W28-507-Bor-Log.dgn



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### BORING LOG 40-RWB-02

WEI Job No.: 1100-04-01

Client AECOM  
Project Circle Interchange Reconstruction  
Location Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88  
Elevation: 578.54 ft  
North: 1898156.86 ft  
East: 1170994.43 ft  
Station: 1323+51.23  
Offset: 32.4455 RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
578.4	1-inch thick, brown SILTY CLAY LOAM, trace gravel --FILL--		1	11 17 17	4.50	9		--In-Situ Vane Shear, 23.0 feet-- --Su undis = 647.5 psf-- --Su remold = 388.5 psf-- --Sensitivity = 1.67--		5			
	Hard, brown SILTY CLAY LOAM, trace gravel --FILL--		2	8 12 14	4.50	13		--In-Situ Vane Shear, 25.5 feet-- --Su undis = 984.2 psf-- --Su remold = 440.3 psf-- --Sensitivity = 2.24--		11	2 2 3	0.25	14
			3	8 7 9	3.12	19		--In-Situ Vane Shear, 28.0 feet-- --Su undis = 1346.8 psf-- --Su remold = 51.8 psf-- --Sensitivity = 26.0-- --LL%=34, PL%=18-- --%Gravel=2.5-- --%Sand=13.6-- --%Silt=51.3-- --%Clay=32.6-- --A-6 (12)--		12	2 2 3	0.41	26
572.0	Very stiff, gray SILTY CLAY, trace gravel		4	5 3 4	NA	19		--In-Situ Vane Shear, 30.5 feet-- --Su undis = 802.9 psf-- --Su remold = 492.1 psf-- --Sensitivity = 1.63--		13	2 3 3	0.16	20
			5	1 2 3	0.57	23	543.3	Very stiff to hard, gray SILTY CLAY LOAM, trace gravel --In-Situ Vane Shear, 35.5 feet-- --Maxed out wrench before shear--		14	4 9 19	2.00	19
568.0	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel		6	2 3 3	0.57	23				15	8 14 17	2.95	15
			7	2 2 2	0.33	25				16	11 14 23	4.59	12
	--In-Situ Vane Shear, 15.5 feet-- --Su undis = 1240.8 psf-- --Su remold = 672.1 psf-- --Sensitivity = 1.85--		8	1 2 2	0.25	27				17			
	--In-Situ Vane Shear, 17.5 feet-- --Su undis = 673.4 psf-- --Su remold = 362.6 psf-- --Sensitivity = 1.86-- --LL%=34, PL%=18-- --%Gravel=3.9-- --%Sand=14.1-- --%Silt=49.7-- --%Clay=32.3-- --A-6 (12)--		9	1 2 2	0.16	26				18	34 50/5"	4.50	11
	--In-Situ Vane Shear, 20.5 feet-- --Su undis = 751.1 psf-- --Su remold = 388.5 psf-- --Sensitivity = 1.93--		10	2 2 3	0.41	24				19	18 28 42	10.17	15

GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	08-16-2013	Complete Drilling	08-29-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV
Driller	P&N	Logger	D. Kolpacki
Checked by	C. Marin		
Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion		
While Drilling	DRY	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA



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### BORING LOG 40-RWB-02

WEI Job No.: 1100-04-01

Client AECOM  
Project Circle Interchange Reconstruction  
Location Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88  
Elevation: 578.54 ft  
North: 1898156.86 ft  
East: 1170994.43 ft  
Station: 1323+51.23  
Offset: 32.4455 RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
526.8	Medium dense, gray SILTY LOAM, trace gravel		17	11 13 15	NP	19		--HARD DRILLING-- --Possible Cobbles--		22	48 50/5"	NP	15
521.8	Hard, gray SILTY CLAY LOAM, trace gravel		18	34 50/5"	4.50	11		Very dense, GRAVEL, some cobbles (12") and dolostone fragments --HARD DRILLING-- --Cobbles--		23	50/1"		
			19	18 28 42	10.17	15		Strong, fair rock quality, light gray, moderately fractured, joint breaks with little to no infill, slightly vuggy DOLOSTONE --Run 1 - RECOVERY=78%-- --RQD=52%--		1			
	--LL%=29, PL%=17-- --%Gravel=3.7-- --%Sand=10.5-- --%Silt=63.0-- --%Clay=22.8-- --A-6 (9)--		20	22 31 40	5.00	20		--Run 2 - RECOVERY=100%-- --RQD=65%--		2			
506.8	Very dense, gray SILT to SILTY LOAM, trace gravel		21	40 50/5"	NP	12		--Run 3 - RECOVERY=100%-- --RQD=68%--		3			

GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	08-16-2013	Complete Drilling	08-29-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV
Driller	P&N	Logger	D. Kolpacki
Checked by	C. Marin		
Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion		
While Drilling	DRY	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA



USER NAME = kahostings	DESIGNED - RTS	REVISOR -
PLOT SCALE = 1/2" = 10' / ft.	CHECKED - KAH	REVISIONS -
PLOT DATE = 4/28/2014	DRAWN - RTS	REVISIONS -
	CHECKED - KAH	REVISIONS -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BORING LOGS 2  
STRUCTURE NO. 016-1809

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2013-010R	COOK	747	575
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

SHEET NO. RW40-08 OF RW40-12 SHEETS



# BORING LOG 40-RWB-02

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Fax: 630 953-9938

WEI Job No.: 1100-04-01

Client AECOM  
Project Circle Interchange Reconstruction  
Location Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88  
Elevation: 578.54 ft  
North: 1898156.86 ft  
East: 1170994.43 ft  
Station: 1323+51.23  
Offset: 32.4455 RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
477.5	Boring terminated at 73.50 ft														

### GENERAL NOTES

Begin Drilling 08-16-2013 Complete Drilling 08-29-2013  
 Drilling Contractor Wang Testing Services Drill Rig D-25 ATV  
 Driller P&N Logger D. Kolpacki Checked by C. Marin  
 Drilling Method 2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion

### WATER LEVEL DATA

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

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



# BORING LOG 40-RWB-03

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

WEI Job No.: 1100-04-01

Client AECOM  
Project Circle Interchange Reconstruction  
Location Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88  
Elevation: 577.49 ft  
North: 1898127.71 ft  
East: 1170920.36 ft  
Station: 1324+35.13  
Offset: 27.2546 RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
576.5	12-inch thick, brown SILTY LOAM														
574.5	Hard, brown SILTY CLAY LOAM, trace gravel														
569.5	Very soft to medium stiff, gray CLAY, trace gravel														
550.5	Gray SILTY LOAM														
549.5	Soft to medium stiff, gray CLAY, trace gravel														
540.7	Very stiff, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel														
530.7	Very dense, gray SILT														

### GENERAL NOTES

Begin Drilling 08-05-2013 Complete Drilling 08-09-2013  
 Drilling Contractor Wang Testing Services Drill Rig D-25 ATV  
 Driller P&N Logger D. Kolpacki Checked by C. Marin  
 Drilling Method 2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion

### WATER LEVEL DATA

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

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

5:33:28 PM - c:\pwworking\wangeng\00\hastings\d0264557\016809-60W28-509-Bor-Log.dgn

WANGENG\_11000401.GPJ WANGENG.GDT 3/24/14

WANGENG\_11000401.GPJ WANGENG.GDT 3/24/14



USER NAME = kahastings  
PLOT SCALE = 1/2" = 10' / ft.  
PLOT DATE = 4/28/2014

DESIGNED - RTS  
CHECKED - KAH  
DRAWN - RTS  
CHECKED - KAH

REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BORING LOGS 3  
STRUCTURE NO. 016-1809

SHEET NO. RW40-09 OF RW40-12 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2013-010R	COOK	747	576
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				



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### BORING LOG 40-RWB-03

WEI Job No.: 1100-04-01

Client: AECOM  
Project: Circle Interchange Reconstruction  
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88  
Elevation: 577.49 ft  
North: 1898127.71 ft  
East: 1170920.36 ft  
Station: 1324+35.13  
Offset: 27.2546 RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
500.7	Very dense, gray SILT to SILTY LOAM, trace gravel	55	17	15 20 41	NP	20	500.7	Very dense, gray SILT to SILTY LOAM, trace gravel	55	22	20 48 50/4	NP	16
520.5	Hard, gray SILTY CLAY LOAM, trace gravel	60	18	23 33 45	8.53 S	12	491.5	Very dense DOLOSTONE fragments	85	23	6 50/5	NP	12
510.7	Very dense to hard, gray SILTY LOAM, trace gravel	70	20	14 17 50/4	4.10 B	21	490.0	Boring terminated at 87.50 ft	90	24	0 50/2	NP	7
505.7	Very dense, gray SANDY GRAVEL	75	21	50/5	NP	6			95				

#### GENERAL NOTES

Begin Drilling 08-05-2013 Complete Drilling 08-09-2013  
Drilling Contractor Wang Testing Services Drill Rig D-25 ATV  
Driller P&N Logger D. Kolpacki Checked by C. Marin  
Drilling Method 2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion

#### WATER LEVEL DATA

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

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



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### BORING LOG 1705-B-14

WEI Job No.: 1100-04-01

Client: AECOM  
Project: Circle Interchange Reconstruction  
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88  
Elevation: 575.72 ft  
North: 1898104.31 ft  
East: 1170838.29 ft  
Station: 1325+23.39  
Offset: 17.10 RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
573.6	1-inch thick brown SILTY LOAM Very loose to loose, brown and gray to gray LOAM, trace gravel	1	4 4 3	NP	9		573.6	--In-Situ Vane Shear, 25.5 feet-- --Su unds = 1243.2 psf-- --Su remold = 725.2 psf-- --Sensitivity = 1.714--	4	11	1 2 3	0.57 B	25
570.2	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel	2	2 1 1	NP	10		570.2	--LL%=35, PL%=17-- --%Gravel=2.6-- --%Sand=9.8-- --%Silt=46.6-- --%Clay=41.0-- --A-6 (15)--	12	12	2 2 2	0.25 B	27
		3	1 1 1	0.25 P	16			--In-Situ Vane Shear, 30.5 feet-- --Su unds = 2481.6 psf-- --Su remold = 1085.7 psf-- --Sensitivity = 2.29--	5				
		4	1 1 2	0.41 B	25			--In-Situ Vane Shear, 10.5 feet-- --Su unds = 673.4 psf-- --Su remold = 466.2 psf-- --Sensitivity = 1.44--	10	13	2 3 2	0.33 B	21
		5	0 2 2	0.49 B	25			--In-Situ Vane Shear, 15.5 feet-- --Su unds = 621.6 psf-- --Su remold = 336.7 psf-- --Sensitivity = 1.849-- --LL%=32, PL%=16-- --%Gravel=4.1-- --%Sand=12.9-- --%Silt=50.9-- --%Clay=32.1-- --A-6 (12)--	15	6	4 5 5	1.56 B	23
		6	1 1 2	0.49 B	23			--In-Situ Vane Shear, 20.5 feet-- --Su unds = 802.9 psf-- --Su remold = 414.4 psf-- --Sensitivity = 1.938--	9	14	4 5 5	1.56 B	23
		7	0 1 2	0.16 B	27			Stiff to very stiff, gray SILTY CLAY, trace gravel	35	14	4 5 5	1.56 B	23
		8	0 1 1	0.25 B	26				40	15	6 6 13	2.54 B	18
		9	1 2 3	0.41 B	23				45	15	6 6 13	2.54 B	18
		10	2 2 2	0.49 B	25			Very stiff, gray CLAY, trace gravel	50	16	5 7 11	2.62 B	22

#### GENERAL NOTES

Begin Drilling 08-13-2013 Complete Drilling 08-15-2013  
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR  
Driller R&J Logger A. Tomaras Checked by C. Marin  
Drilling Method 3.25" HSA, boring backfilled upon completion

#### WATER LEVEL DATA

While Drilling  73.50 ft  
At Completion of Drilling  NA  
Time After Drilling NA  
Depth to Water  NA

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



USER NAME = kahastings  
PLOT SCALE = 384.00' / Ft.  
PLOT DATE = 4/28/2014

DESIGNED - RTS  
CHECKED - KAH  
DRAWN - RTS  
CHECKED - KAH

REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BORING LOGS 4  
STRUCTURE NO. 016-1809

SHEET NO. RW40-10 OF RW40-12 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2013-010R	COOK	747	577
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				



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### BORING LOG 1705-B-14

WEI Job No.: 1100-04-01

Client: AECOM  
Project: Circle Interchange Reconstruction  
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88  
Elevation: 575.72 ft  
North: 1898104.31 ft  
East: 1170838.29 ft  
Station: 1325+23.39  
Offset: 17.10 RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
524.0	--%Silt=49.4-- --%Clay=46.4-- --A-6 (19)-- Very dense, gray SILTY LOAM, trace gravel	55	X	17	29 36 36	NP	11	54.6		80	X	22	54/6	NP	18
519.0	Hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel --LL%=29, PL%=16-- --%Gravel=1.9-- --%Sand=11.1-- --%Silt=56.4-- --%Clay=30.6-- --A-6 (10)--	60	X	18	27 30 37	7.80 S	13	492.2	--WEATHERED BEDROCK--	85	X	23	75/0	NR	
		65	X	19	13 20 28	7.79 S	13	490.2	Strong, good rock quality, light gray, fresh, mainly horizontal joints, joint breaks with little to no infill, horizontal stylolites, slightly vuggy, trace small cavities, horizontally bedded DOLOSTONE --Run 1-RECOVERY=82%-- --RQD =73%--	90	X	1		CORE	
509.0	Very dense, gray SILTY LOAM, trace to some gravel --LL%=19, PL%=13-- --%Gravel=8.7-- --%Sand=28.7-- --%Silt=51.8-- --%Clay=10.7-- --A-4 (1)--	70	X	20	36 46 27	2.38 S	10		--Run 2-RECOVERY=95%-- --RQD =80%--	95	X	2		CORE	
		75	X	21	55/6	NP	14	480.2	Boring terminated at 95.50 ft	100					

#### GENERAL NOTES

Begin Drilling 08-13-2013 Complete Drilling 08-15-2013  
Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR  
Driller R&J Logger A. Tomaras Checked by C. Marin  
Drilling Method 3.25" HSA, boring backfilled upon completion

#### WATER LEVEL DATA

While Drilling 73.50 ft  
At Completion of Drilling NA  
Time After Drilling NA  
Depth to Water NA

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



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Fax: 630 953-9938

### BORING LOG 2081-B-01

WEI Job No.: 1100-04-01

Client: AECOM  
Project: Circle Interchange Reconstruction  
Location: Sections 16 and 17, T39N, R14E of 3rd PM

Datum: NAVD 88  
Elevation: 594.27 ft  
North: 1898215.40 ft  
East: 1171096.56 ft  
Station: 1322+25.83  
Offset: 35.65 RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
593.7	6.5-inch thick ASPHALT --PAVEMENT--														
592.9	10.5-inch thick CONCRETE --PAVEMENT--														
	Loose to medium dense, gray, GRAVELLY SAND --FILL--	5	X	1	7 8 6	NP	6		30	X	12	0 2 2	0.33 B	27	
		10	X	2	7 7 7	NP	7		40	X	14	0 0 3	0.16 B	27	
		15	X	3	4 4 4	NP	4		45	X	15	0 2 3	0.57 B	26	
		20	X	4	10 11 9	NP	6		50	X	16	0 0 3	0.41 B	28	
		25	X	5	5 4 3	NP	16								
		30	X	6	5 3 3	NP	15								
578.8	Medium stiff to stiff, black and gray SILTY CLAY, trace gravel	35	X	7	4 2 2	0.50 P	23								
		40	X	8	8 4 2	1.50 P	18								
573.8	Loose, gray, medium SAND	45	X	9	2 2 2	NP	22								
571.3	Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	50	X	10	2 2 2	0.41 B	22								

#### GENERAL NOTES

Begin Drilling 04-02-2013 Complete Drilling 04-02-2013  
Drilling Contractor Wang Testing Services Drill Rig B-57 TMR  
Driller R&T Logger D. Wind Checked by C. Marin  
Drilling Method 3.25" HSA to 11', Mud Rotary 11' thereafter, boring backfilled upon completion

#### WATER LEVEL DATA

While Drilling 11.00 ft  
At Completion of Drilling NA  
Time After Drilling NA  
Depth to Water NA

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

WANGENGINE 11000401.GPJ WANGENG.GDT 11/17/13

WANGENGINE 11000401.GPJ WANGENG.GDT 7/17/13



USER NAME = kshastings	DESIGNED - RTS	REVISED -
PLOT SCALE = 384.00' / ft.	CHECKED - KAH	REVISED -
PLOT DATE = 4/28/2014	DRAWN - RTS	REVISED -
	CHECKED - KAH	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BORING LOGS 5  
STRUCTURE NO. 016-1809  
SHEET NO. RW40-11 OF RW40-12 SHEETS

F.A.I. RTE. 90/94	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 578
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	



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 Lombard, IL 60148  
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 Fax: 630 953-9938

# BORING LOG 2081-B-01

WEI Job No.: 1100-04-01

Client: AECOM  
 Project: Circle Interchange Reconstruction  
 Location: Sections 16 and 17, T39N, R14E of 3rd PM

Datum: NAVD 88  
 Elevation: 594.27 ft  
 North: 1898215.40 ft  
 East: 1171096.56 ft  
 Station: 1322+25.83  
 Offset: 35.65 RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
537.5	Very stiff to hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel	55		17	0 3 3	0.98 B	22		Very dense, gray GRAVELLY SAND	80		22	12 14 21	10.25 B	14
60			18	5 6 10	3.28 B	16		85			23	10 17 17	3.28 S	18	
65			19	4 10 14	2.95 B	16		90			24	45 50/5	NP	21	
70			20	5 10 13	3.53 B	17		95			25	50/4	4.50 P	16	
75			21	18 22 50/4	7.79 B	14		100			26	40 37 50/5	3.69 S	22	
494.3								494.3							

Boring terminated at 100.00 ft

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	04-02-2013	Complete Drilling	04-02-2013	While Drilling	▽	11.00 ft	
Drilling Contractor	Wang Testing Services	Drill Rig	B-57 TMR	At Completion of Drilling	▽	NA	
Driller	R&T	Logger	D. Wind	Time After Drilling	NA		
Checked by	C. Marin			Depth to Water	▽	NA	
Drilling Method: 3.25" HSA to 11', Mud Rotary 11' thereafter, boring backfilled upon completion				The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

9:56:43 AM - c:\pwworking\king\_aecom\00\khastings\d0264557\0161809-60W28-512-Boring.dgn



USER NAME = khastings	DESIGNED - RTS	REVISED -
PLOT SCALE = 384.00' / ft.	CHECKED - KAH	REVISED -
PLOT DATE = 4/28/2014	DRAWN - RTS	REVISED -
	CHECKED - KAH	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BORING LOGS 6  
 STRUCTURE NO. 016-1809

SHEET NO. RW40-12 OF RW40-12 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2013-010R	COOK	747	578A
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

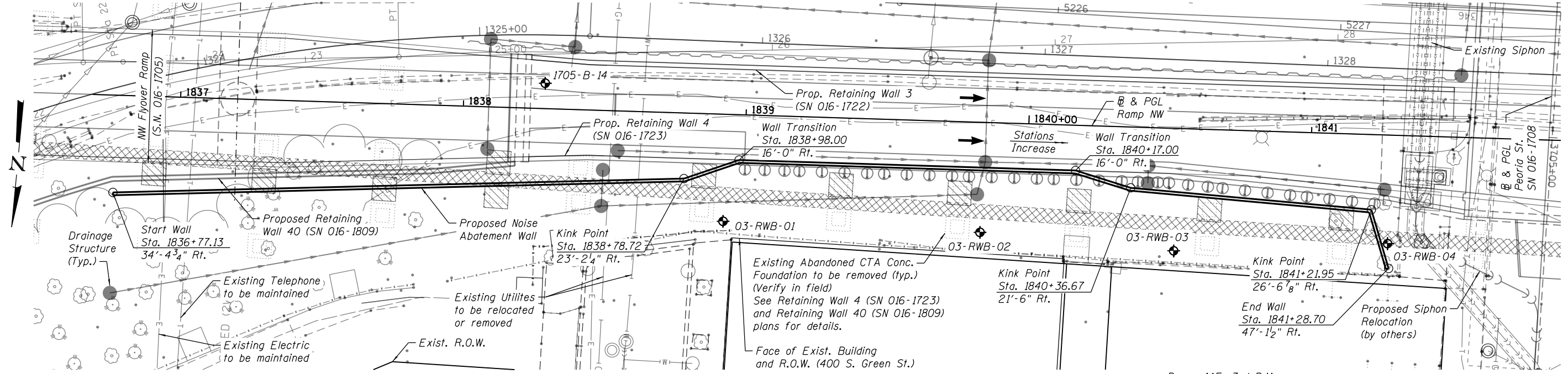
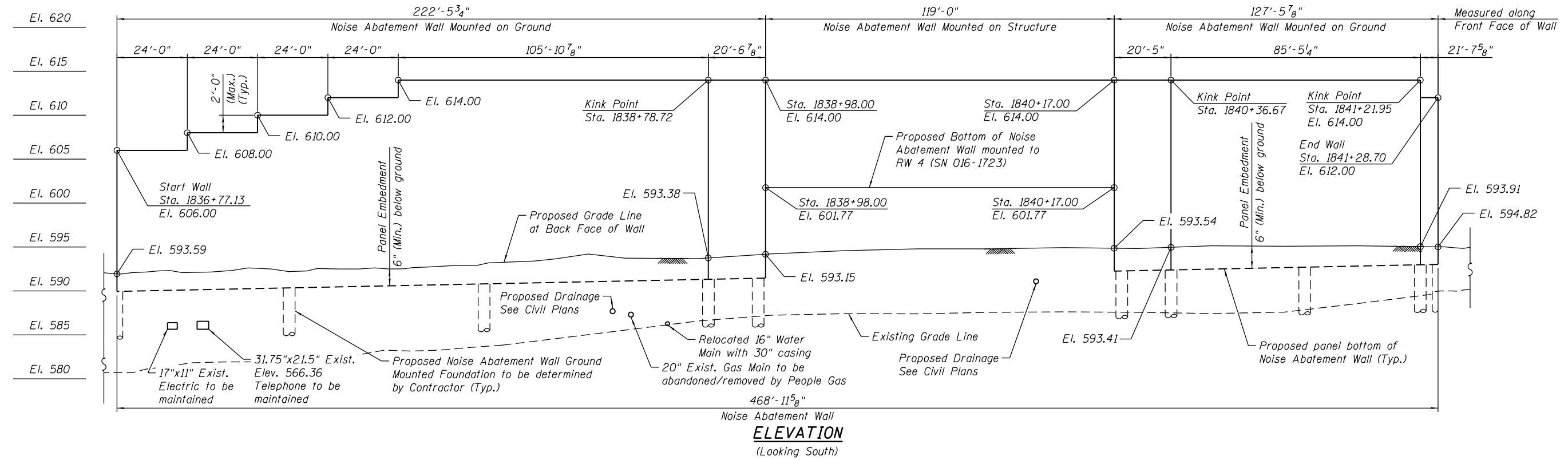
Bench Mark: Chiseled "X" on S. flange bolt of F.H. on W. side of Peoria St. First F.H. S. of Van Buren St. Elev. = 594.37

Existing Structure: None.

Traffic Control: Traffic to be maintained on existing SN 016-2449 (NB I-90/94 to WB I-290) during construction.

**NOTES:**

1. Stations and Offsets are measured from the Baseline of Ramp NW to the Front Face of Noise Abatement Wall.



**LEGEND:**

Combined Sewer	Gas Line	Existing Abandoned CTA Water Tunnel - Filled by others (Contract 60W26).
Electric	Fire Hydrant	Existing Fence
Fiber Optic	Light Pole	Telephone
Existing Storm Sewer	Soil Boring Location	Foundation Removal (See RW 4 & 40 for details)
Water Line	Proposed Storm Sewer	

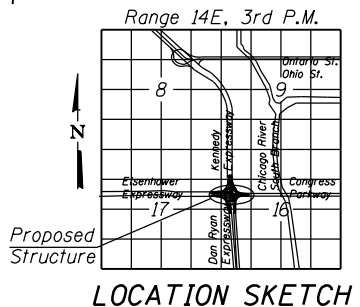
**PLAN**

**DESIGN SPECIFICATIONS**

2012 AASHTO LRFD Bridge Design Specifications  
6th Edition with 2013 Interim Revisions  
2002 Guide Specifications for Structural Design of Sound Barriers

**NOISE WALL WIND LOADING**

35 psf (Structure Mounted)  
25 psf (Ground Mounted)



**GENERAL PLAN & ELEVATION  
NOISE ABATEMENT WALL  
F.A.I. RTE. 90/94/290 - SECTION 2013-010R  
COOK COUNTY  
STATION 1836+77.13 TO 1841+28.70**

0161723-60W28-S01-0PE-NW-1



USER NAME = Krttzm	DESIGNED - DEV	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - BRD	REVISED
PLOT DATE = 4/28/2014	CHECKED - EJO	REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

SHEET NO. SDET01 OF SDET09 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 579
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT NUMBER	

**GENERAL NOTES**

- The Contractor shall exercise extreme caution during construction to make certain that construction activities and other loads applied to the structures will not have detrimental effects on the adjacent building and retaining wall foundations. See special provision for Construction Vibration Monitoring.
- The Contractor shall verify location of all existing utilities and structures and shall take all necessary precautions to perform the work in such a manner as to not damage existing utilities or structures, located near or beneath the noise abatement walls. Any damage to existing utilities or structures shall be repaired at no cost to IDOT.
- Construction of Noise Abatement Wall and foundations shall be coordinated with construction of Retaining Wall 40 (SN 016-1809), Retaining Wall 4 (SN 016-1723), and NW Flyover (SN 016-1705). See Sequence of Construction see Sheet RW4-02 (SN 016-1723).
- Contractor shall follow requirements of Special Provision "Performance Based Noise Abatement Wall, Precast Concrete" for material, design, fabrication, construction and erection requirements of the proposed Noise Abatement Wall.
- See Utilities and Drainage sheets for information related to removals of existing structures and location of proposed drainage.
- The proposed Noise Abatement Wall, Ground Mounted foundations are to be determined by the Contractor. Contractor shall verify location of existing abandoned CTA Water Tunnel and design the foundations to avoid the existing tunnel. If the Contractor elects to use drilled shaft foundations that are to be drilled thru the existing abandoned CTA Water tunnel, equipment, labor and material required to drill thru the existing tunnel shall not be measured separately and shall be included in the Noise Abatement Wall, Ground Mounted pay item. In addition, if the shafts are to be drilled through the existing abandoned CTA Water Tunnel, permanent casing may be required for the entire length of the shaft and will not be measured separately and shall be included in the Noise Abatement Wall, Ground Mounted pay item. See Special Provision for Noise Abatement Wall, Ground Mounted.

**TOTAL BILL OF MATERIAL**

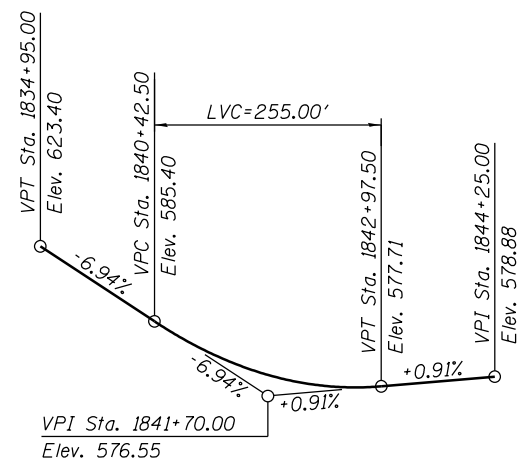
DESCRIPTION	UNIT	TOTAL
NOISE ABATEMENT WALL, GROUND MOUNTED	SQ.FT.	6,802
NOISE ABATEMENT WALL, STRUCTURE MOUNTED	SQ.FT.	1,456
STAINLESS STEEL CABLE PLANT SUPPORT SYSTEM	L.SUM	0.62

**INDEX OF SHEETS:**

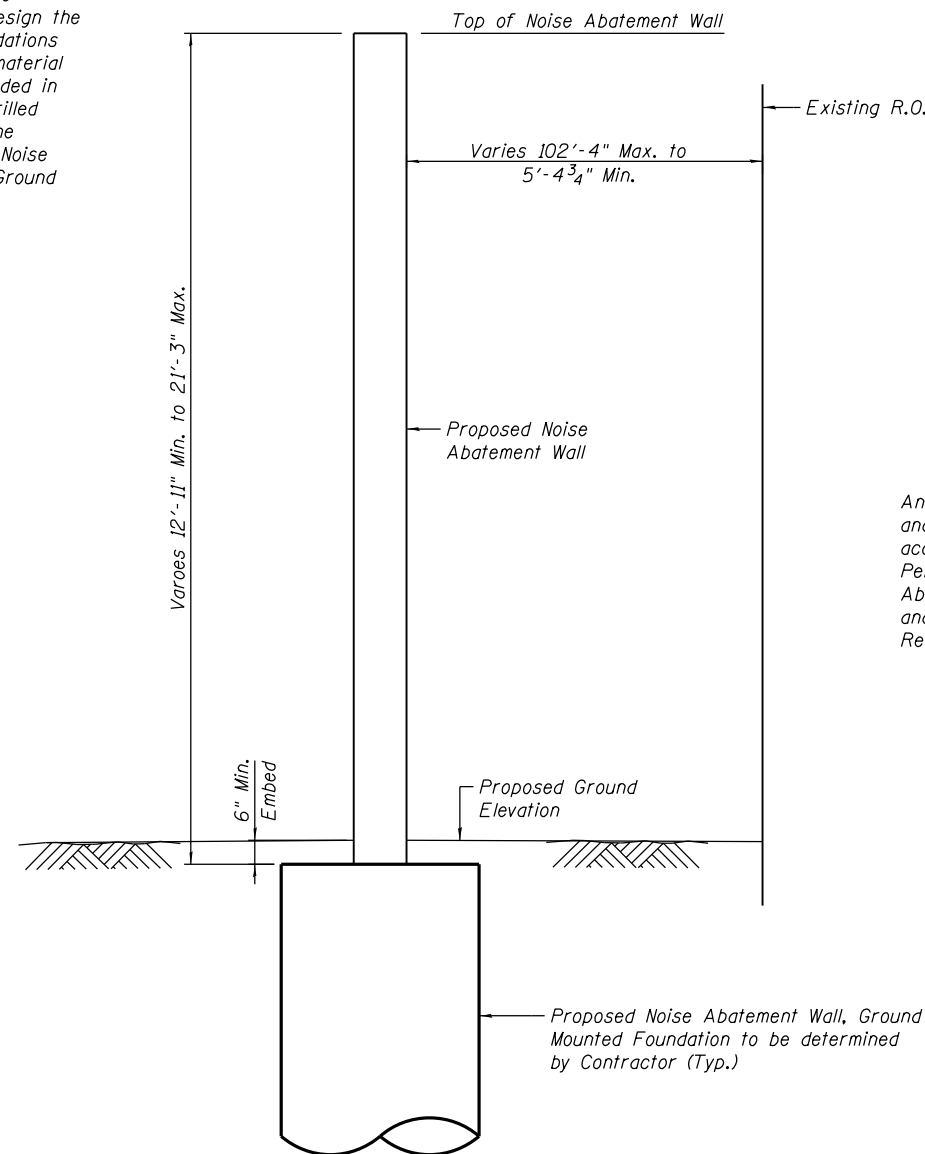
SDET01	General Plan and Elevation
SDET02	Total Bill of Material, Index of Sheets & General Notes
SDET03	Architectural Details - I
SDET04	Architectural Details - II
SDET05	Boring Logs - I
SDET06	Boring Logs - II
SDET07	Boring Logs - III
SDET08	Boring Logs - IV
SDET09	Boring Logs - V

**NOTE A:**

Back Face of Noise Abatement Wall shall not protrude beyond the Rear Face of Retaining Wall 4 (SN 016-1723).

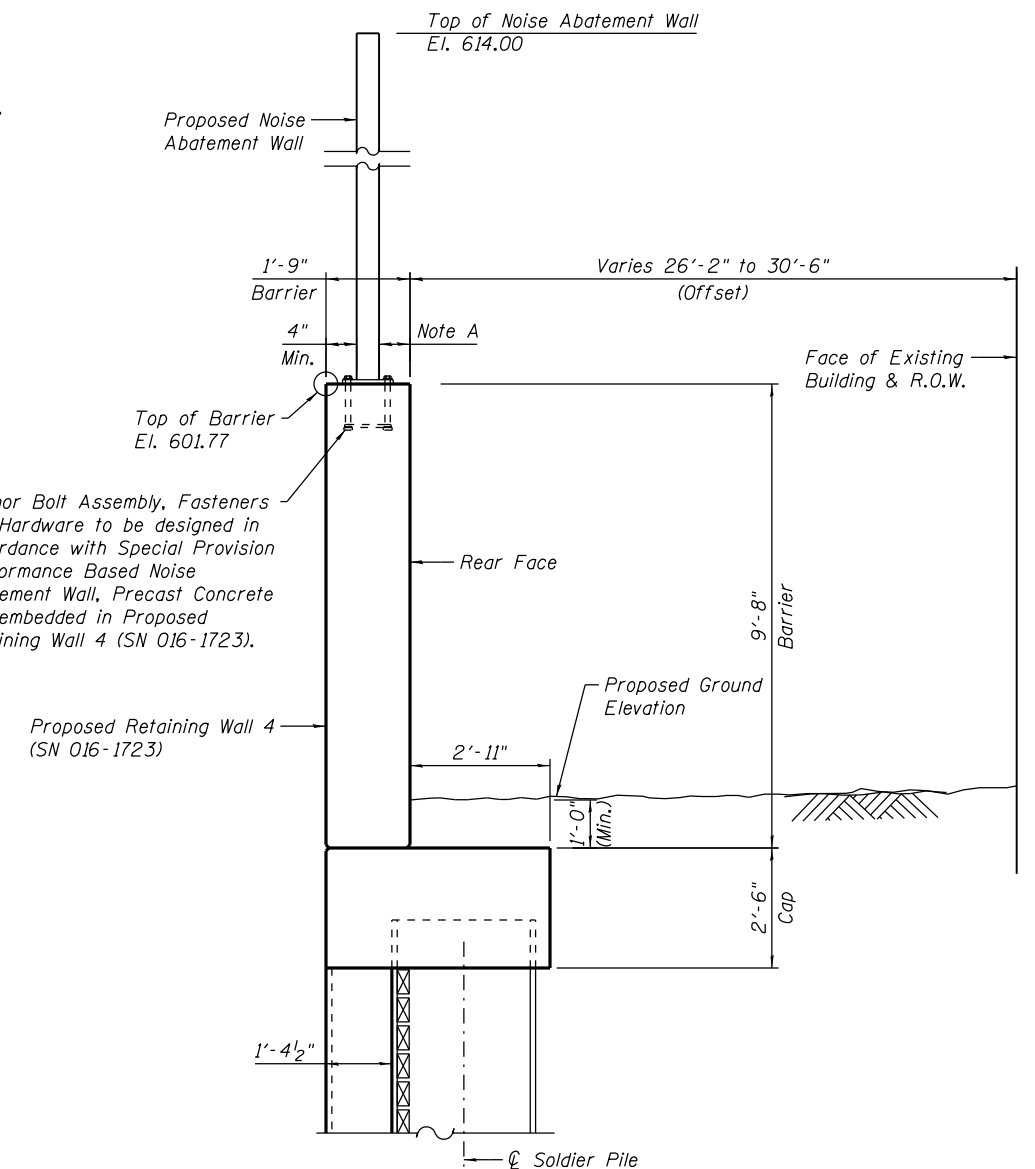


**PROFILE GRADE**  
(along Ramp NW)



**TYPICAL SECTION: GROUND MOUNTED**

(Facing West)  
(Sta. 1836+77.13 to Sta. 1838+98.00 and  
Sta. 1840+17.00 to 1841+28.70)



**TYPICAL SECTION: STRUCTURE MOUNTED**

(Facing West)  
(Sta. 1838+98.00 to Sta. 1840+17.00)

0161723-60W28-502-GenNote-NW-1



USER NAME =	Kritzm	DESIGNED -	DEV	REVISED
		CHECKED -	ATB	REVISED
PLOT SCALE =	N.T.S.	DRAWN -	BRD	REVISED
PLOT DATE =	4/28/2014	CHECKED -	EJO	REVISED

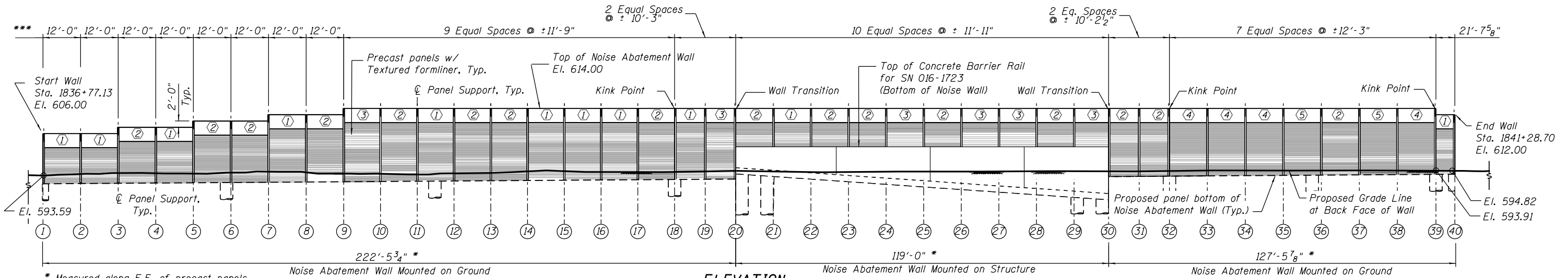
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TOTAL BILL OF MATERIAL, INDEX OF SHEETS & GENERAL NOTES  
NOISE ABATEMENT WALL**

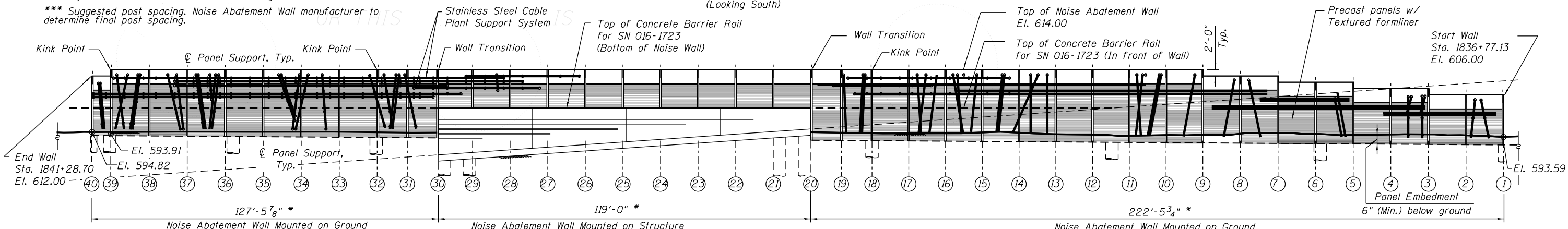
SHEET NO. SDET02 OF SDET09 SHEETS

F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	580
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT -NUMBER-				

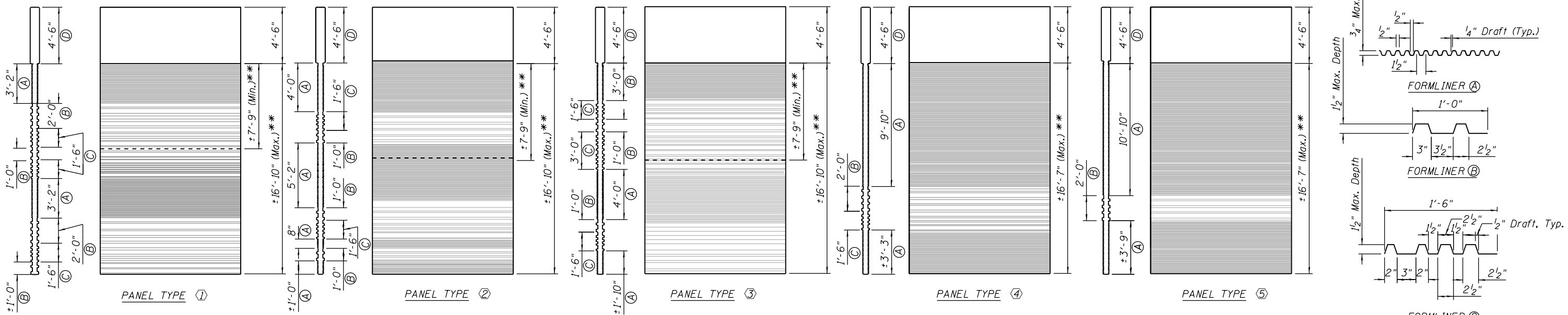




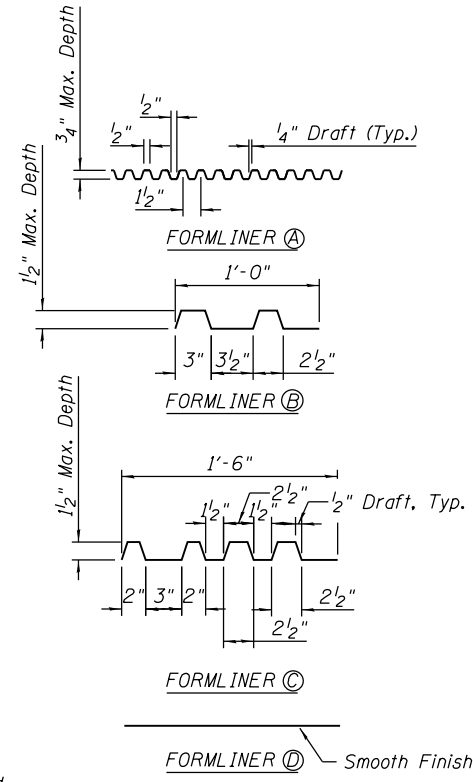
**ELEVATION**  
(Looking South)



**ELEVATION**  
(Looking North)



**PRECAST PANEL TYPE DETAILS**



**FORMLINER DETAILS**

\*\* Formliner layout is shown for the highest panel used. Height of panel varies per location.

**LEGEND:**

- ① ② ③ ④ ⑤ Precast Panel Type Designation Based on Formliner Layout
- Ⓐ Ⓑ Ⓒ Ⓓ Formliner Type Designation

**NOTES:**

1. Textured formliner for precast panels will not be paid separately and will be included in the cost of the pay item "Noise Abatement Wall, Ground Mounted" and "Noise Abatement Wall, Structure Mounted".
2. For Stainless Steel Cable Plant Support System details see drawing SDET 04.

0161723-60W28-503-SuperStruct-NW-1.dgn

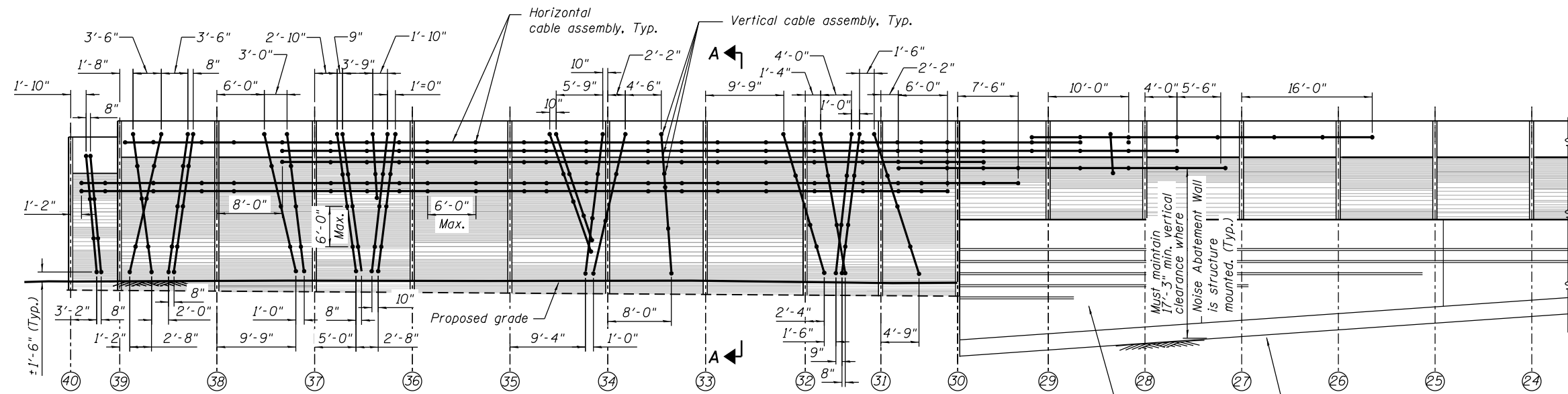


USER NAME = Kritzm	DESIGNED - MR	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 4/28/2014	DRAWN - MR	REVISED
	CHECKED - EJO	REVISED

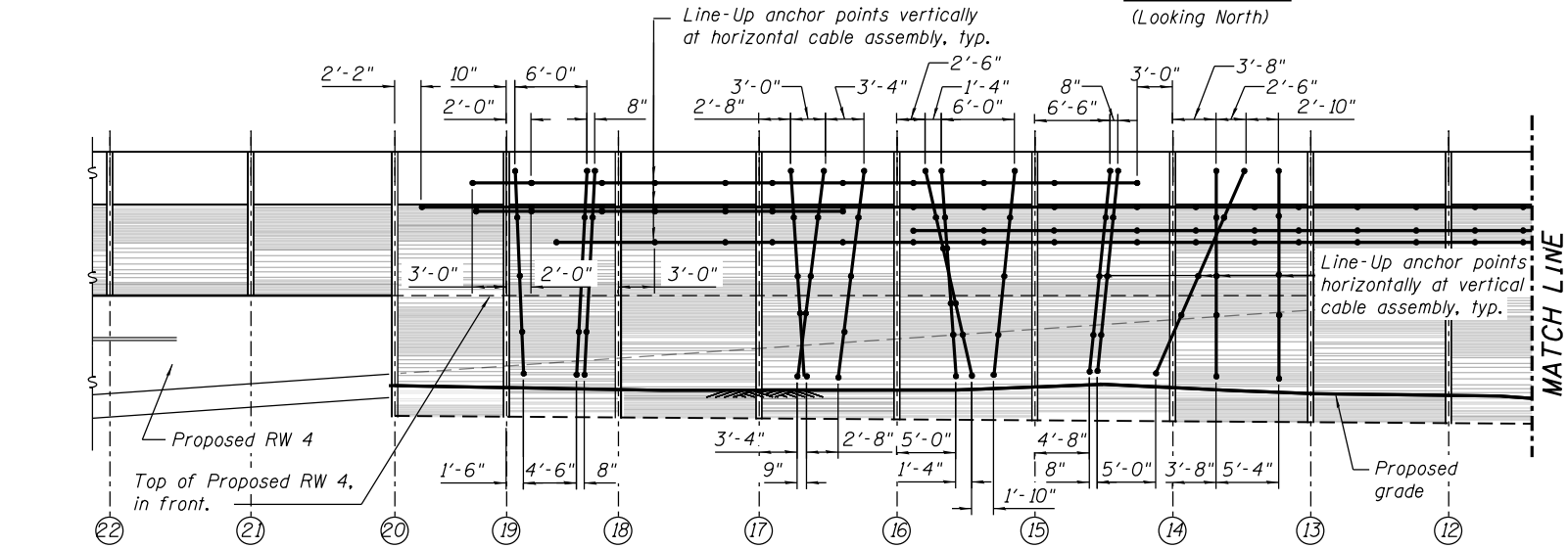
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**ARCHITECTURAL DETAILS - I**  
**NOISE ABATEMENT WALL**  
SHEET NO. SDET03 OF SDET09 SHEETS

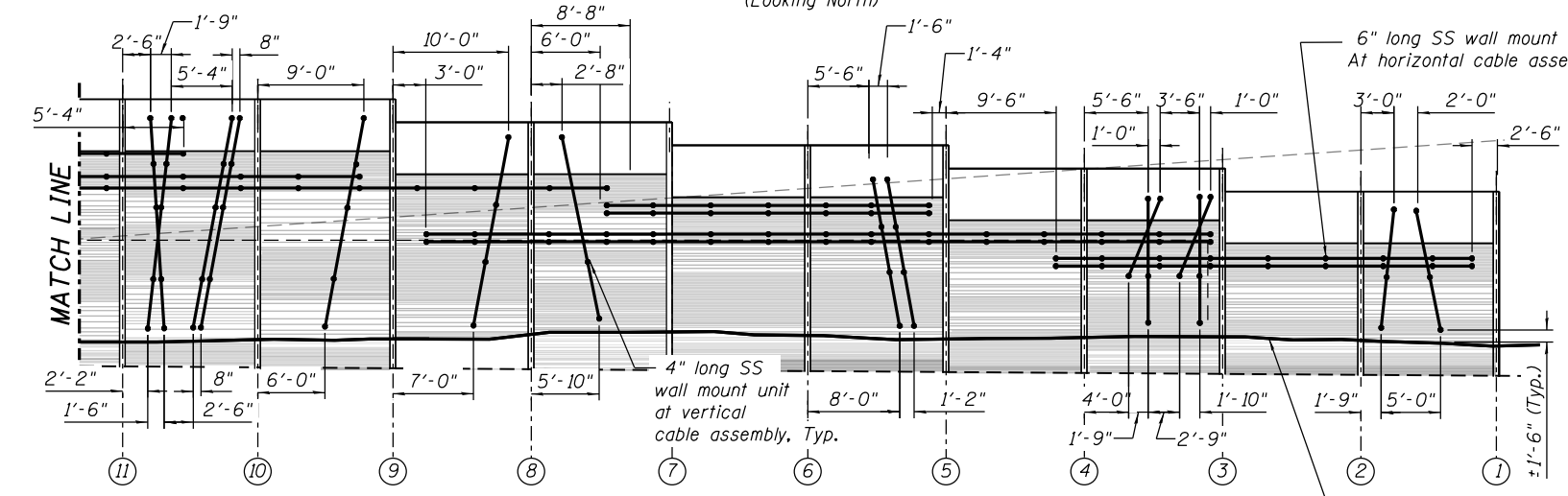
F.A.I. RE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 581
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	



**ELEVATION**  
(Looking North)



**ELEVATION - Continued**  
(Looking North)

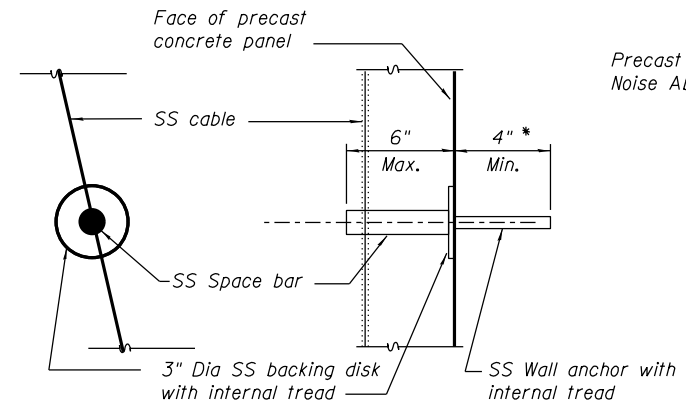


**ELEVATION - Continued**  
(Looking North)

4" long SS wall mount unit  
At vertical cable assembly, Typ.

6" long SS wall mount unit  
At horizontal cable assembly,  
Typ.

S. S. cable with  
external thread  
swaged connection,  
both ends, Typ.



\* For size and type of wall anchor follow  
Manufacturer's instructions and installation guide.

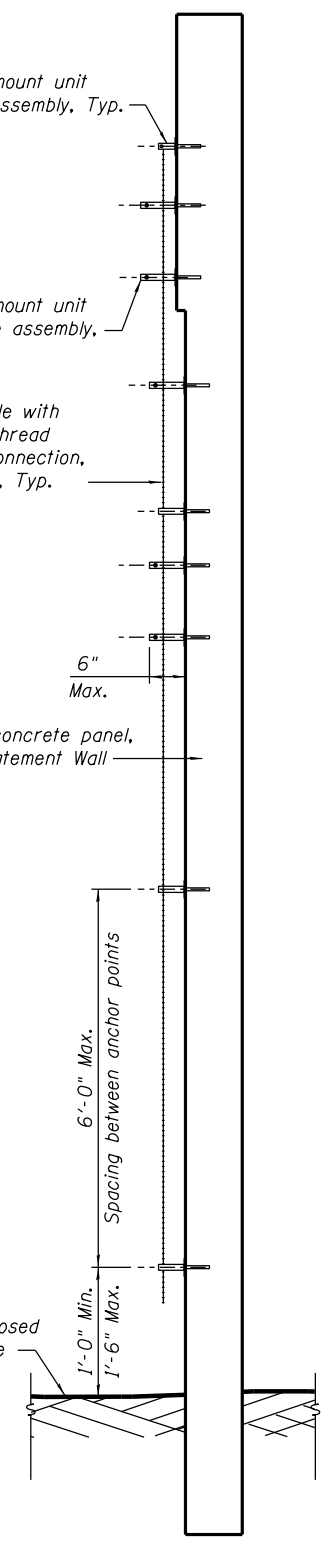
**SS CABLE WALL MOUNT UNIT  
TYPICAL DETAIL**

**NOTES:**

1. Stainless steel cable system will be paid at a lump sum price for "Stainless Steel Cable Plant Support System" per wall.
2. Locate bottom anchor 1'-0" minimum to 1'-6" maximum above finished grade.
3. Line up anchors as shown on elevation where possible, maintaining 6'-0" maximum spacing between anchor points.
4. The suggested post spacing for the Noise Abatement Wall may change during the final design of the wall, and the SS cable panels may need to be repositioned to fit the new spacing. If this will be the case, it will be addressed by the Engineer and coordinated with the supplier during the Shop Drawing submittal and review.
5. For precast panel details and formliners see drawing SDET 03.

**BILL OF MATERIAL**

Item	Unit	Total
Stainless Steel Cable Plant Support System	LS	0.62



**SECTION A-A**

0161723-60W28-S04-SuperStruct-NW-1



USER NAME = dunkerleyb	DESIGNED - MR	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 4/28/2014	DRAWN - MR	REVISED
	CHECKED - EJO	REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**ARCHITECTURAL DETAILS - II  
NOISE ABATEMENT WALL**  
SHEET NO. SDET04 OF SDET09 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 581A
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT -NUMBER-	

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample No. (b/w/6 in)	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample No. (b/w/6 in)	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
578.1	1-inch thick brown SILTY LOAM --TOPSOIL-- Very loose to loose, brown and gray to gray LOAM, trace gravel --FILL--	1	4	4	NP	9		578.1	--In-Situ Vane Shear, 25.5 feet-- --Su undis = 1243.2 psf-- --Su remold = 725.2 psf-- --Sensitivity = 1.714--	1	4	4	NP	9	
570.2	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel	2	2	1	NP	10		570.2	--LL(%)=35, PL(%)=17-- --%Gravel=2.6-- --%Sand=9.8-- --%Silt=46.6-- --%Clay=41.0--30 --A-6 (15)--	2	2	1	NP	10	
		3	1	1	P	16			--In-Situ Vane Shear, 30.5 feet-- --Su undis = 2481.6 psf-- --Su remold = 1085.7 psf-- --Sensitivity = 2.29--	3	1	1	P	16	
		4	1	2	B	25			--In-Situ Vane Shear, 10.5 feet-- --Su undis = 673.4 psf-- --Su remold = 466.2 psf-- --Sensitivity = 1.44--	4	1	2	B	25	
		5	0	2	B	25			--In-Situ Vane Shear, 35.5 feet-- --Su undis = 1964.6 psf-- --Su remold = 1344.2 psf-- --Sensitivity = 1.46--	5	0	2	B	25	
		6	1	2	B	23		538.5	Siff to very stiff, gray SILTY CLAY, trace gravel	6	1	2	B	23	
		7	0	1	B	27			--In-Situ Vane Shear, 15.5 feet-- --Su undis = 621.6 psf-- --Su remold = 336.7 psf-- --Sensitivity = 1.849-- --LL(%)=32, PL(%)=16-- --%Gravel=4.1-- --%Sand=12.9-- --%Silt=50.9-- --%Clay=32.1-- --A-6 (12)--	7	0	1	B	27	
		8	0	1	B	26			--In-Situ Vane Shear, 20.5 feet-- --Su undis = 802.9 psf-- --Su remold = 414.4 psf-- --Sensitivity = 1.938--	8	0	1	B	26	
		9	1	2	B	23		529.0	Very stiff, gray CLAY, trace gravel	9	1	2	B	23	
		10	2	2	B	25			--LL(%)=37, PL(%)=18-- --%Gravel=0.6-- --%Sand=3.6--50	10	2	2	B	25	

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-13-2013	Complete Drilling	08-15-2013	White Drilling	▽	73.50 ft	
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR	At Completion of Drilling	▽	NA	
Driller	R&J	Logger	A. Tomaras	Checked by	C. Marin		
Drilling Method	3.25" HSA, boring backfilled upon completion			Depth to Water	▽	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample No. (b/w/6 in)	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample No. (b/w/6 in)	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
524.0	Very dense, gray SILTY LOAM, trace gravel	11	1	2	B	25		524.0	--%Silt=49.4-- --%Clay=46.4-- --A-6 (19)--	11	1	2	B	25	
		12	2	2	B	27			--LL(%)=35, PL(%)=17-- --%Gravel=2.6-- --%Sand=9.8-- --%Silt=46.6-- --%Clay=41.0--30 --A-6 (15)--	12	2	2	B	27	
		13	2	3	B	21			--In-Situ Vane Shear, 30.5 feet-- --Su undis = 2481.6 psf-- --Su remold = 1085.7 psf-- --Sensitivity = 2.29--	13	2	3	B	21	
		14	4	5	B	23			--In-Situ Vane Shear, 35.5 feet-- --Su undis = 1964.6 psf-- --Su remold = 1344.2 psf-- --Sensitivity = 1.46--	14	4	5	B	23	
		15	6	13	B	18			Siff to very stiff, gray SILTY CLAY, trace gravel	15	6	13	B	18	
		16	5	7	B	22			--LL(%)=29, PL(%)=16-- --%Gravel=1.9-- --%Sand=11.1--60 --%Silt=56.4-- --%Clay=30.6-- --A-6 (10)--	16	5	7	B	22	
		17	29	36	NP	11		492.2	--WEATHERED BEDROCK--	17	29	36	NP	11	
		18	27	30	S	13		490.2	Strong, good rock quality, light gray, fresh, mainly horizontal joints, joint breaks with little to no infill, horizontal stylolites, slightly vuggy, trace small cavities, horizontally bedded DOLOSTONE	18	27	30	S	13	
		19	13	20	S	13			--Run 1-RECOVERY=82%-- --RQD =73%--90	19	13	20	S	13	
		20	36	46	S	10			--Run 2-RECOVERY=95%-- --RQD =80%--	20	36	46	S	10	
		21	55	6	NP	14		490.2	Boring terminated at 95.50 ft	21	55	6	NP	14	

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-13-2013	Complete Drilling	08-15-2013	White Drilling	▽	73.50 ft	
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR	At Completion of Drilling	▽	NA	
Driller	R&J	Logger	A. Tomaras	Checked by	C. Marin		
Drilling Method	3.25" HSA, boring backfilled upon completion			Depth to Water	▽	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample No. (b/w/6 in)	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample No. (b/w/6 in)	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
583.1	1/4-inch thick, black SILTY LOAM --TOPSOIL-- Medium dense, brown, fine SAND --FILL--	1	4	4	NP	2		583.1	--LL(%)=35, PL(%)=17-- --%Gravel=4.4-- --%Sand=12.5-- --%Silt=51.1-- --%Clay=32.0-- --A-6 (14)--	1	4	4	NP	2	
		2	10	8	NP	2			--LL(%)=34, PL(%)=17-- --%Gravel=9.2-- --%Sand=16.4--35 --%Silt=46.1-- --%Clay=28.3-- --A-6 (11)--	2	10	8	NP	2	
		3	8	10	NP	3			--LL(%)=34, PL(%)=17-- --%Gravel=9.2-- --%Sand=16.4--35 --%Silt=46.1-- --%Clay=28.3-- --A-6 (11)--	3	8	10	NP	3	
		4	4	7	B	17			--LL(%)=34, PL(%)=17-- --%Gravel=9.2-- --%Sand=16.4--35 --%Silt=46.1-- --%Clay=28.3-- --A-6 (11)--	4	4	7	B	17	
		5	4	6	B	18			--LL(%)=34, PL(%)=17-- --%Gravel=9.2-- --%Sand=16.4--35 --%Silt=46.1-- --%Clay=28.3-- --A-6 (11)--	5	4	6	B	18	
		6	3	3	B	19			--LL(%)=34, PL(%)=17-- --%Gravel=9.2-- --%Sand=16.4--35 --%Silt=46.1-- --%Clay=28.3-- --A-6 (11)--	6	3	3	B	19	
		7	1	3	B	21			--LL(%)=34, PL(%)=17-- --%Gravel=9.2-- --%Sand=16.4--35 --%Silt=46.1-- --%Clay=28.3-- --A-6 (11)--	7	1	3	B	21	
		8	1	3	B	19			--LL(%)=34, PL(%)=17-- --%Gravel=9.2-- --%Sand=16.4--35 --%Silt=46.1-- --%Clay=28.3-- --A-6 (11)--	8	1	3	B	19	
		9	2	3	B	25			--LL(%)=34, PL(%)=17-- --%Gravel=9.2-- --%Sand=16.4--35 --%Silt=46.1-- --%Clay=28.3-- --A-6 (11)--	9	2	3	B	25	
		10	2	2	B	26			--LL(%)=34, PL(%)=17-- --%Gravel=9.2-- --%Sand=16.4--35 --%Silt=46.1-- --%Clay=28.3-- --A-6 (11)--	10	2	2	B	26	

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-26-2013	Complete Drilling	08-27-2013	White Drilling	▽	NA	
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV	At Completion of Drilling	▽	NA	
Driller	P&N	Logger	F. Bozga	Checked by	C. Marin		
Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring grouted upon completion			Depth to Water	▽	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

0161723-60W28-505-BorLog-NW-1



USER NAME =	Kritzm	DESIGNED -	DEV	REVISED
		CHECKED -	ATB	REVISED
PLOT SCALE =	N.T.S.	DRAWN -	BRD	REVISED
PLOT DATE =	4/28/2014	CHECKED -	EJO	REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BORING LOGS - I  
 NOISE ABATEMENT WALL

F.A.I. R.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	582
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT NUMBER				

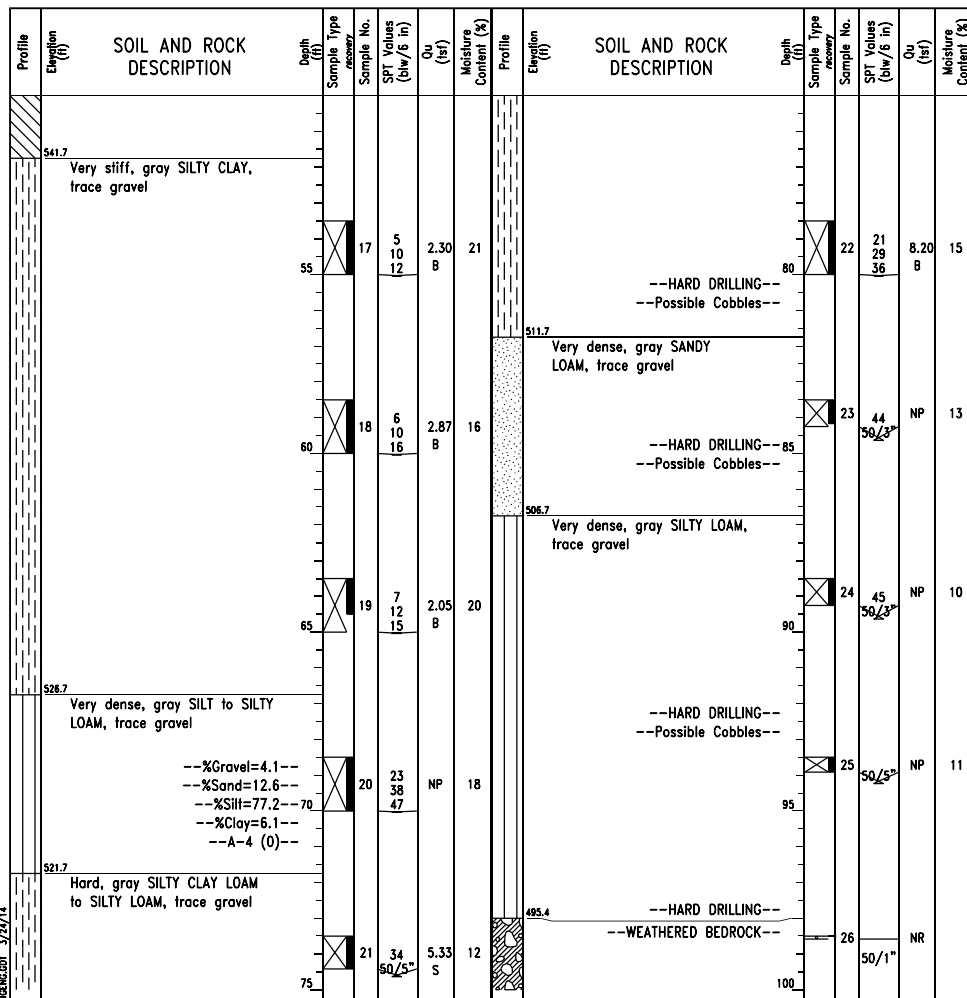
SHEET NO. SD205 OF SD209 SHEETS

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

**BORING LOG 03-RWB-01**  
WEI Job No.: 1100-04-01  
Client: AECOM  
Project: Circle Interchange Reconstruction  
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88  
Elevation: 593.44 ft  
North: 1898146.97 ft  
East: 1170771.14 ft  
Station: 1838+93.02  
Offset: 37.8323 RT

Page 2 of 3



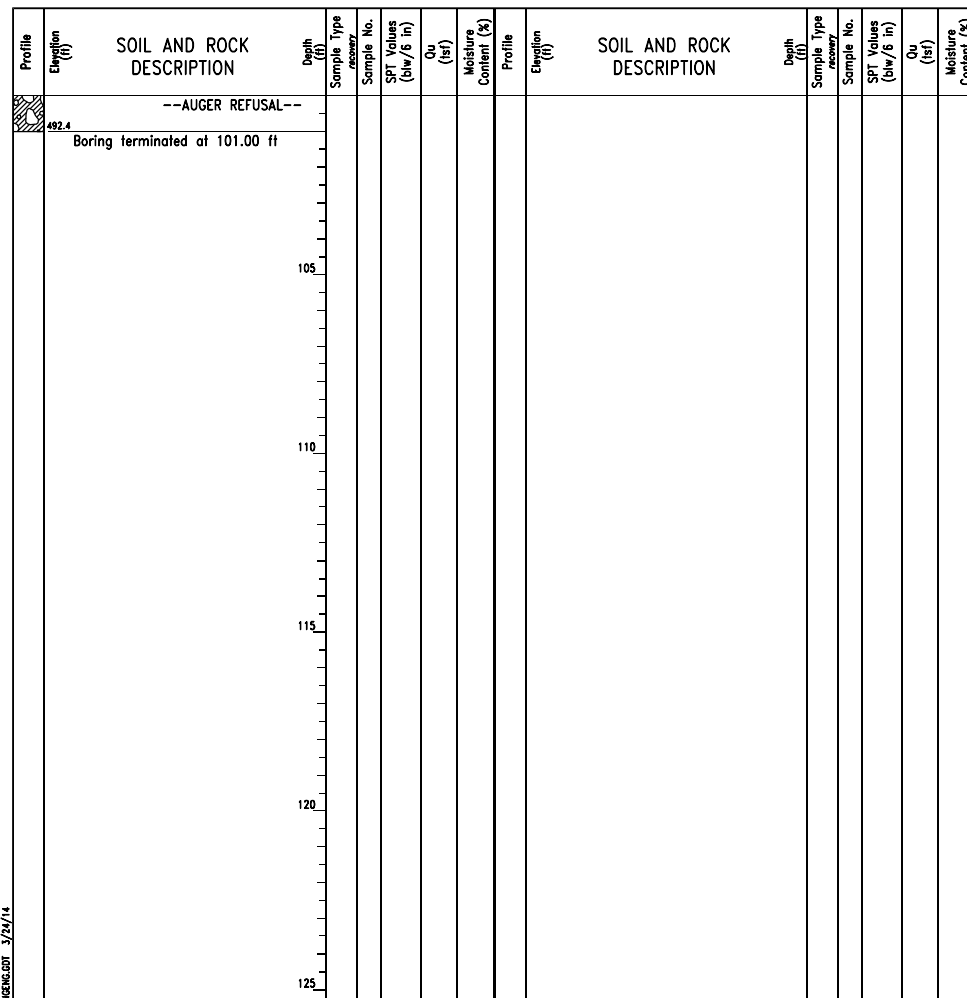
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Begin Drilling	08-26-2013	Complete Drilling	08-27-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV
Driller	P&N	Logger	F. Bozga
Checked by	C. Marin	Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring grouted upon completion
White Drilling	NA	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA

**Wang Engineering**  
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Lombard, IL 60148  
Telephone: 630 953-9928  
Fax: 630 953-9938

**BORING LOG 03-RWB-01**  
WEI Job No.: 1100-04-01  
Client: AECOM  
Project: Circle Interchange Reconstruction  
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88  
Elevation: 593.44 ft  
North: 1898146.97 ft  
East: 1170771.14 ft  
Station: 1838+93.02  
Offset: 37.8323 RT

Page 3 of 3



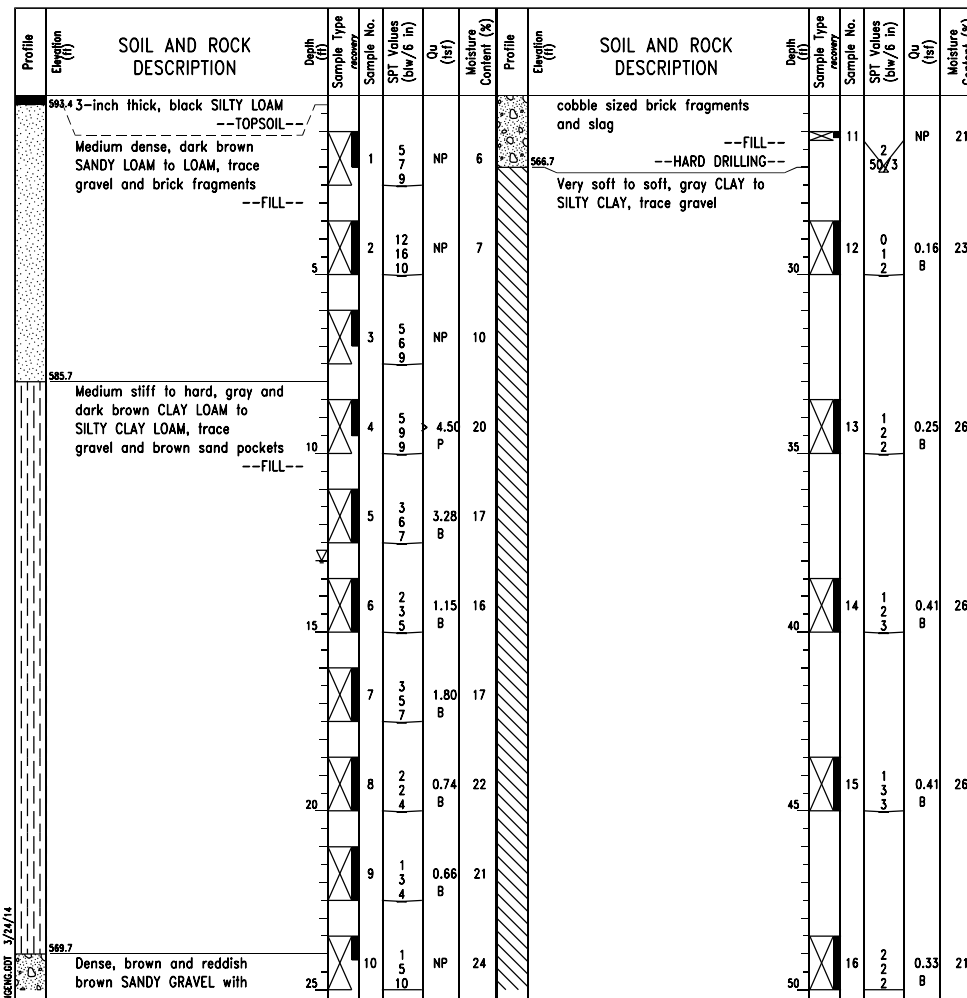
GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	08-26-2013	Complete Drilling	08-27-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV
Driller	P&N	Logger	F. Bozga
Checked by	C. Marin	Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring grouted upon completion
White Drilling	NA	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA

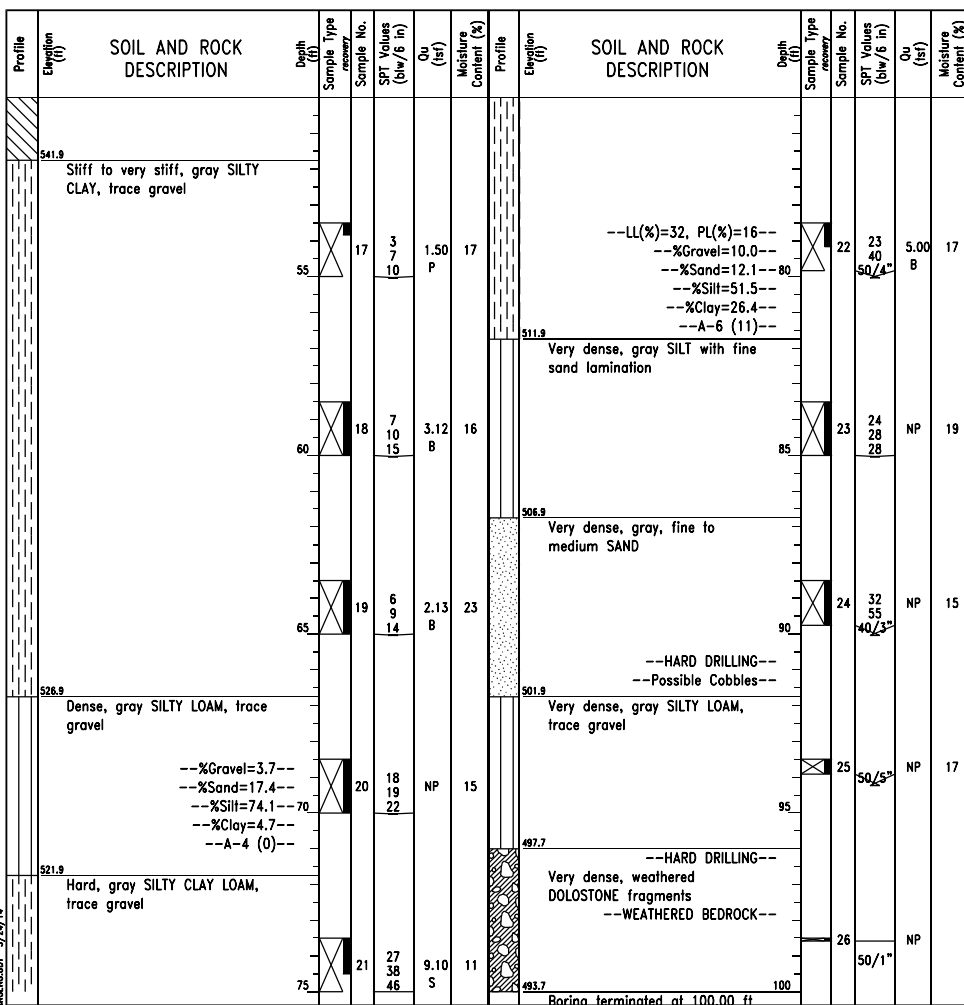
**Wang Engineering**  
wangeng@wangeng.com  
1145 N Main Street  
Lombard, IL 60148  
Telephone: 630 953-9928  
Fax: 630 953-9938

**BORING LOG 03-RWB-02**  
WEI Job No.: 1100-04-01  
Client: AECOM  
Project: Circle Interchange Reconstruction  
Location: Section 17, T39N, R14E of 3rd PM

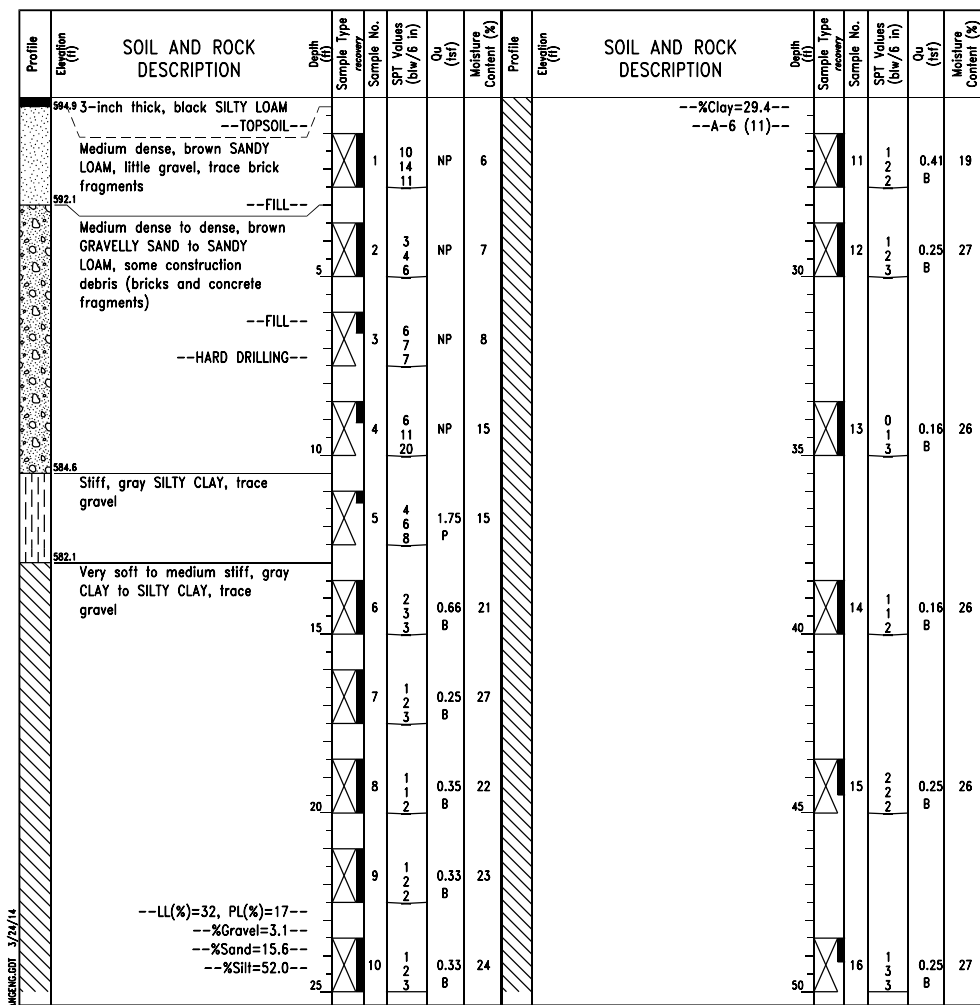
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Elevation: 593.70 ft  
North: 1898142.33 ft  
East: 1170680.34 ft  
Station: 1839+83.93  
Offset: 38.8940 RT

Page 1 of 2





GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	08-22-2013	Complete Drilling	08-23-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV
Driller	P&R	Logger	F. Bozga
Checked by	C. Marin	Time After Drilling	NA
Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring grouted upon completion	Depth to Water	NA
		While Drilling	13.00 ft
		At Completion of Drilling	NA



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	08-19-2013	Complete Drilling	08-21-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV
Driller	P&N	Logger	F. Bozga
Checked by	C. Marin	Time After Drilling	NA
Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring grouted upon completion	Depth to Water	NA
		While Drilling	NA
		At Completion of Drilling	NA

0161723-60W28-507-Boring-NW-1



USER NAME =	Kritzm	DESIGNED -	DEV	REVISED
CHECKED -	ATB	REVISED		
PLOT SCALE =	N.T.S.	DRAWN -	BRD	REVISED
PLOT DATE =	4/28/2014	CHECKED -	EJO	REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BORING LOGS - III  
 STRUCTURE NO. 016-1723

SHEET NO. SD207 OF SD209 SHEETS

F.A.I. R.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	584
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT -NUMBER-				

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
543.4	Stiff to very stiff, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel --LL%=34, PL%=17-- --%Gravel=3.1-- --%Sand=11.7-- --%Silt=52.3-- --%Clay=32.9-- --A-6 (13)-- --Change in drilling conditions, possible cobbles and gravel (56' to 58')--	58	17	3 4 7	1.23 B	22	518.4	Hard, gray SILTY CLAY LOAM, trace gravel	80	22	17 30 45	8.12 B	16
		60	18	7 12 16	2.62 B	18	513.4	Very dense, gray SILTY LOAM, trace to little gravel	85	23	24 38 35	NP	17
		65	19	4 7 12	1.48 B	17		--Some gravel--	90	24 25	50/5 50/5	NP NP	10 9
528.4	Very dense, gray SILT, trace fine sand lamination	70	20	20 27 33	NP	22	503.3	Very dense, gray SANDY LOAM, trace gravel	95	26	50/5	NP	13
523.4	Very dense, gray SILTY LOAM, trace gravel	75	21	48 50/3	NP	11	499.4	Very dense, gray SILT	100	27	47 50/4	NP	23

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-19-2013	Complete Drilling	08-21-2013	While Drilling	∇	NA	
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV	At Completion of Drilling	∇	NA	
Driller	P&N Logger F. Bozga	Checked by	C. Marin	Time After Drilling	NA		
Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring grouted upon completion			Depth to Water	∇	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
492.6	--HARD DRILLING-- --Possible Cobbles--	105					492.0	--WEATHERED BEDROCK--	105				
492.0	Strong, poor rock quality, reddish brown to light gray, slightly weathered joints, joint breaks with little to no infill, slightly to moderately vuggy DOLOSTONE, trace small cavities with greenish gray infill	110	1					--Run 1 - RECOVERY=87%-- --ROD=42%--	110				
		115	2					8-inch thick, greenish gray SILTY LOAM (shale) cavity infill (107'-108')	115				
		120						--Run 2 - RECOVERY=88%-- --ROD=37%--	120				
		125						Boring terminated at 113.00 ft	125				

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-19-2013	Complete Drilling	08-21-2013	While Drilling	∇	NA	
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV	At Completion of Drilling	∇	NA	
Driller	P&N Logger F. Bozga	Checked by	C. Marin	Time After Drilling	NA		
Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring grouted upon completion			Depth to Water	∇	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
584.1	10-inch thick, dark brown, SILTY LOAM --TOPSOIL-- Dense to medium dense, brown SILTY LOAM, little gravel and brick, trace roots	8	1	24 19 24	NP	8	--VOID-- --Abandoned Sewer--	30					
	--FILL--	8	2	8 10 7	NP	8		30					
589.5	Hard, brown SILTY CLAY LOAM, trace gravel and sand layers	15	3	8 10 9	4.50 P	15	--HARD DRILLING-- --Possible CONCRETE--	30					
587.0	Dense, brown GRAVELLY SAND, trace silty clay loam layers	11	4	3 29 11	NP	11	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	35	11	1 2	0.16 B	28	
584.5	Very stiff, brown and gray SILTY CLAY, trace gravel	19	5	5 11 9	2.05 B	19		40	12	1 2 3	0.16 B	27	
582.0	Very soft to soft, gray CLAY, trace gravel	20	6	1 3 3	0.49 B	20		45	13	2 2 4	0.16 B	26	
		22	7	2 2 3	0.41 B	22		50	14	2 2 3	0.25 B	26	
		27	8	0 1 2	0.33 B	27							
		26	9	1 1 2	0.25 P	26							
		25	10	1 1 2	0.16 B	25							

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-30-2013	Complete Drilling	09-30-2013	While Drilling	∇	DRY	
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV	At Completion of Drilling	∇	NA	
Driller	P&N Logger D. Kolpacki	Checked by	C. Marin	Time After Drilling	NA		
Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion			Depth to Water	∇	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

0161723-60W28-508-Boring-NW-1.dgn



USER NAME =	Kritzm	DESIGNED -	DEV	REVISED
		CHECKED -	ATB	REVISED
PLOT SCALE =	N.T.S.	DRAWN -	BRD	REVISED
PLOT DATE =	4/28/2014	CHECKED -	EJO	REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

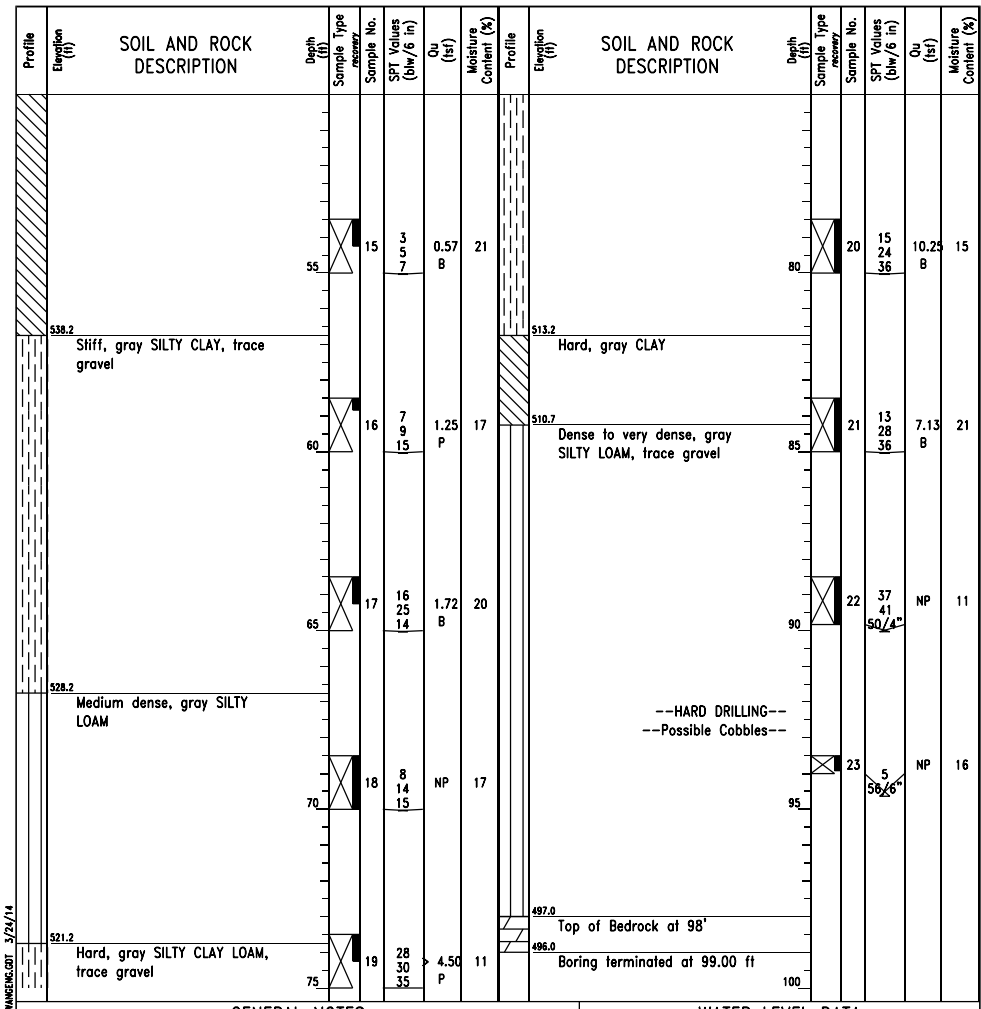
BORING LOGS - IV  
 NOISE ABATEMENT WALL

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	584A
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT -NUMBER-				

SHEET NO. SD208 OF SD209 SHEETS

Page 2 of 2

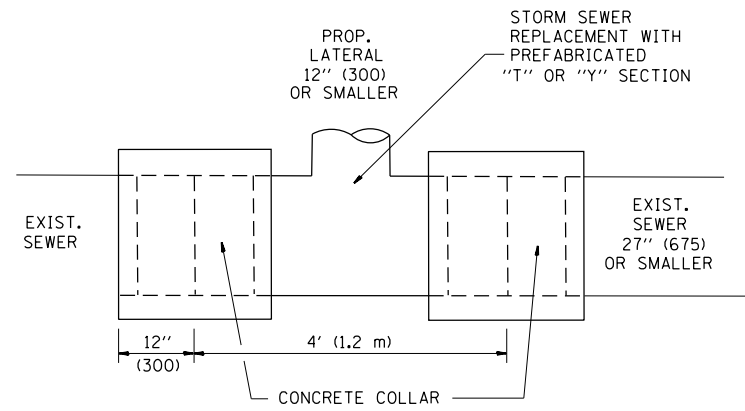
<b>Wang Engineering</b> wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	<b>BORING LOG 03-RWB-04</b> WEI Job No.: 1100-04-01 Client: AECOM Project: Circle Interchange Reconstruction Location: Section 17, T39N, R14E of 3rd PM	Datum: NAVD 88 Elevation: 594.96 ft North: 1898132.77 ft East: 1170536.53 ft Station: 1841+28.06 Offset: 38.3688 RT
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GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-30-2013	Complete Drilling	09-30-2013	While Drilling	∇	DRY	
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV	At Completion of Drilling	∇	NA	
Driller	P&N	Logger	D. Kolpacki	Checked by	C. Marin		
Drilling Method	2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion			Depth to Water	∇	NA	
				The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

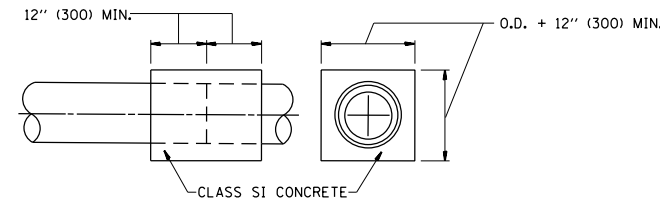
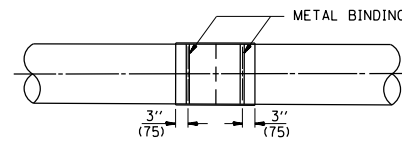
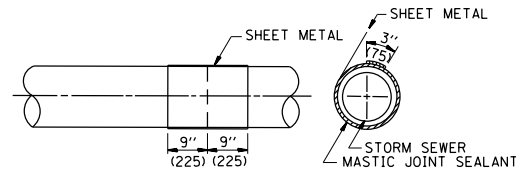
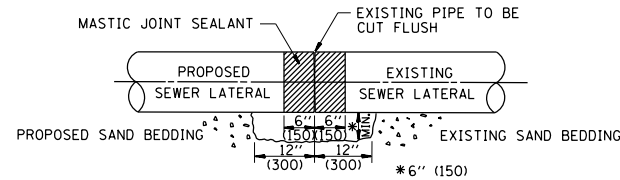
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	USER NAME = Kritzm	DESIGNED - DEV	REVISED	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>BORING LOGS - V NOISE ABATEMENT WALL</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED			90/94/290	2013-010R	COOK	747	584B
	PLOT DATE = 4/28/2014	DRAWN - BRD	REVISED	SHEET NO. SDET09 OF SDET09 SHEETS		CONTRACT NO. 60W28		ILLINOIS FED. AID PROJECT -NUMBER-		



**DETAIL "A"**

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



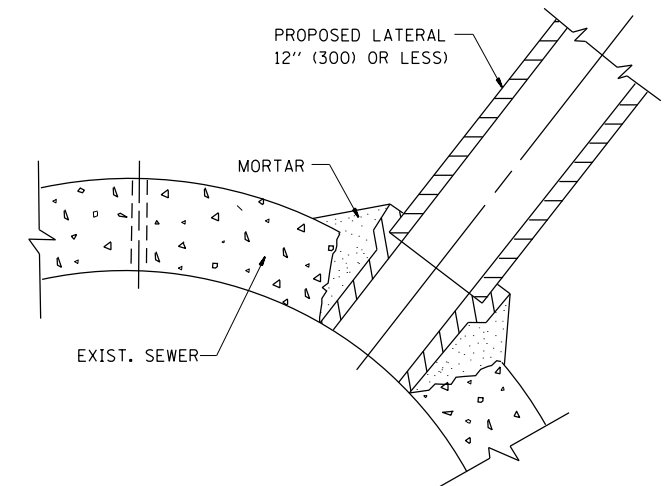
**DETAIL "B"**

CLASS SI CONCRETE COLLAR

**CONSTRUCTION SEQUENCE**

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

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



**DETAIL "C"**

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

**NOTES**

**MATERIAL**

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

**CONSTRUCTION METHODS**

- THIS WORK SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE APPLICABLE PORTIONS OF SECTION 550 OF THE STANDARD SPECIFICATIONS.
- CONNECTION TO AN EXISTING STORM SEWER SHALL BE BY EITHER OF THE FOLLOWING METHODS:
  - PROPOSED STORM SEWER CONNECTION TO EXISTING SEWER OF 27" (675) OR SMALLER SEE DETAIL "A" AND "B".
  - PROPOSED STORM SEWER CONNECTION TO EXISTING SEWER OF 30" (750) OR LARGER SEE DETAIL "C".

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

**GENERAL**

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

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

**BASIS OF PAYMENT**

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

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

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

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

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

DETAIL OF STORM SEWER  
CONNECTION TO EXISTING SEWER

SCALE: NONE SHEET 1 OF 40 SHEETS STA. TO STA.

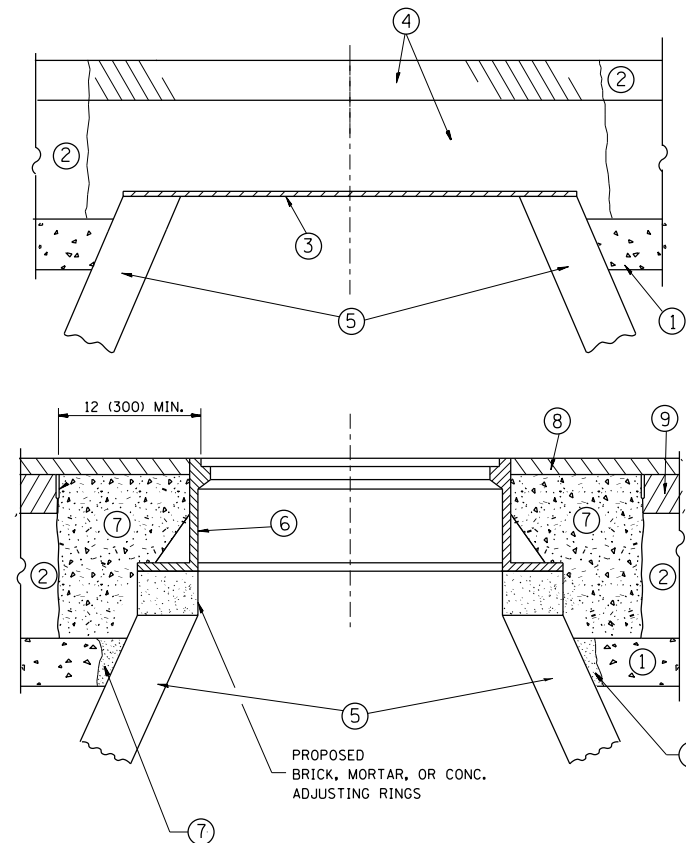
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	585
BD500-01 (BD-7)			CONTRACT NO. 60W28	
ILLINOIS FED. AID PROJECT				



D:\160\28-SHT-D1-Detail-(BD-7).dgn  
USER NAME = auyeungh  
PLOT SCALE = 50.000' / 1" =  
PLOT DATE = 3/24/2014

DESIGNED - M. DE YONG	REVISED-M. DE YONG 05-08-92
DRAWN -	REVISED-R. SHAH 09-09-94
CHECKED -	REVISED-R. SHAH 10-25-94
DATE - 07-25-90	REVISED-R. SHAH 06-12-96





**CONSTRUCTION PROCEDURES**

**STAGE 1 (BEFORE PAVEMENT MILLING)**

- A) REMOVE A MINIMUM OF 12 (300) OF THE PAVEMENT FROM AROUND THE STRUCTURE.
- B) REMOVE THE EXISTING FRAME AND LID FROM THE STRUCTURE.
- C) COVER THE STRUCTURE OPENING WITH A 36 (900) DIAMETER METAL PLATE.
- D) BACKFILL WITH CRUSHED STONE AND A MINIMUM 1/2 (40) THICK HMA SURFACE MIX APPROVED BY THE ENGINEER.

**STAGE 2 (AFTER PAVEMENT MILLING)**

- A) REMOVE THE HMA SURFACE MIX AND CRUSHED STONE.
- B) INSTALL THE FRAME AND LID; ADJUST THE FRAME TO ITS FINAL SURFACE ELEVATION.
- C) THE SURROUNDING SPACE SHALL BE FILLED WITH CLASS PP-1\* CONCRETE TO THE ELEVATION OF THE SURFACE OF THE EXISTING BASE COURSE OR THE BINDER COURSE.

\* UNLESS OTHERWISE SPECIFIED IN THE PLANS.

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

**LEGEND**

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

**LOCATION OF STRUCTURES:**

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

**BASIS OF PAYMENT:**

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

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

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

**NOTES:**

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

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

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

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

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

**DETAILS FOR FRAMES AND LIDS ADJUSTMENT WITH MILLING**

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

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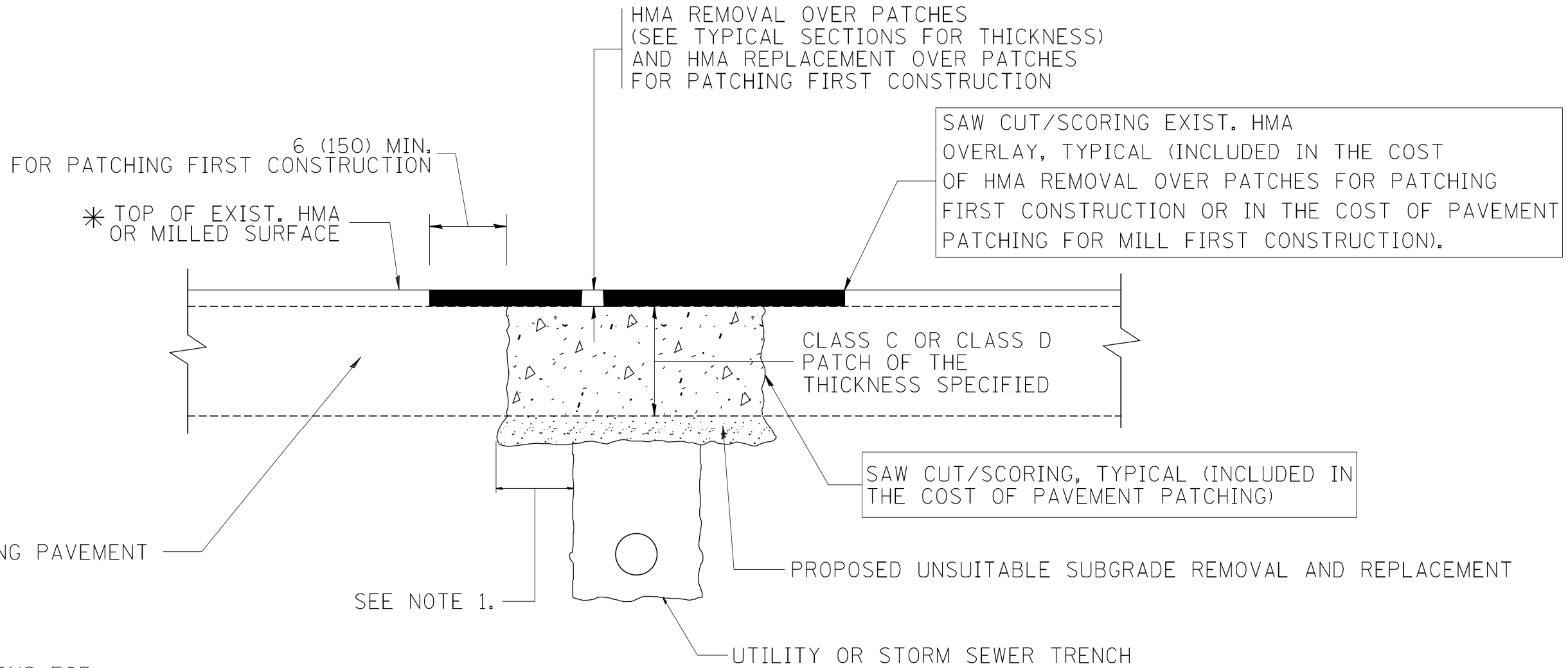
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USER NAME = auyeungh
PLOT SCALE = 50.0000' / in.
PLOT DATE = 3/24/2014

DESIGNED - R. SHAH	REVISED-R. WIEDEMAN 05-14-04
DRAWN -	REVISED-R. BORO 01-01-07
CHECKED -	REVISED-R. BORO 03-09-11
DATE - 10-25-94	REVISED-R. BORO 12-06-11

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

<b>DETAILS FOR FRAMES AND LIDS ADJUSTMENT WITH MILLING</b>			
SCALE:	SHEET 2 OF 40 SHEETS	STA.	TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	586
<b>BD600-03 (BD-8)</b>			<b>CONTRACT NO. 60W28</b>	
ILLINOIS FED. AID PROJECT				



\* SEE TYPICAL SECTIONS FOR THICKNESS AND MATERIALS

**NOTES:**

1. THE WIDTH OF THE FULL DEPTH PATCH OVER A TRENCH SHALL BE 12 (300) WIDER ON EACH SIDE OF THE TRENCH.
2. FOR METHOD OF MEASUREMENT AND BASIS OF PAYMENT, SEE RECURRING SPECIAL PROVISION "PATCHING WITH HOT-MIX ASPHALT OVERLAY REMOVAL".

SEQUENCE OF CONSTRUCTION (PATCHING FIRST)

1. REMOVE THE EXISTING HMA MATERIAL OVER THE AREA TO BE PATCHED.
2. REMOVE AND REPLACE WITH CLASS C OR D PATCH.
3. REPLACE HMA MATERIAL OVER THE AREA TO BE PATCHED.

SEQUENCE OF CONSTRUCTION (MILLING FIRST)

1. MILL HMA FIRST IF THERE IS AT LEAST 4 1/2 INCHES OR MORE OF HMA MATERIAL ON TOP OF THE EXISTING PAVEMENT OR IF THE PAVEMENT IS FULL DEPTH HMA. A MINIMUM OF 2 INCHES OF HMA MATERIAL SHALL BE IN PLACE AFTER MILLING.
2. REMOVE AND REPLACE WITH FULL DEPTH CLASS D PATCHES TO TOP OF MILLED SURFACE.

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

FILE PATH = C:\Project\60W28-SHT-01-Details\BD-22.dgn



D160W28-SHT-01-Details-180-221.dgn	DESIGNED - R. SHAH	REVISED A. ABBAS 04-27-98
USER NAME = auyeungh	DRAWN -	REVISED R. BORO 01-01-07
PLOT SCALE = 50.000' / in.	CHECKED -	REVISED R. BORO 09-04-07
PLOT DATE = 3/24/2014	DATE - 10-25-94	REVISED K. ENG 10-27-08

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT PATCHING FOR  
HMA SURFACED PAVEMENT**

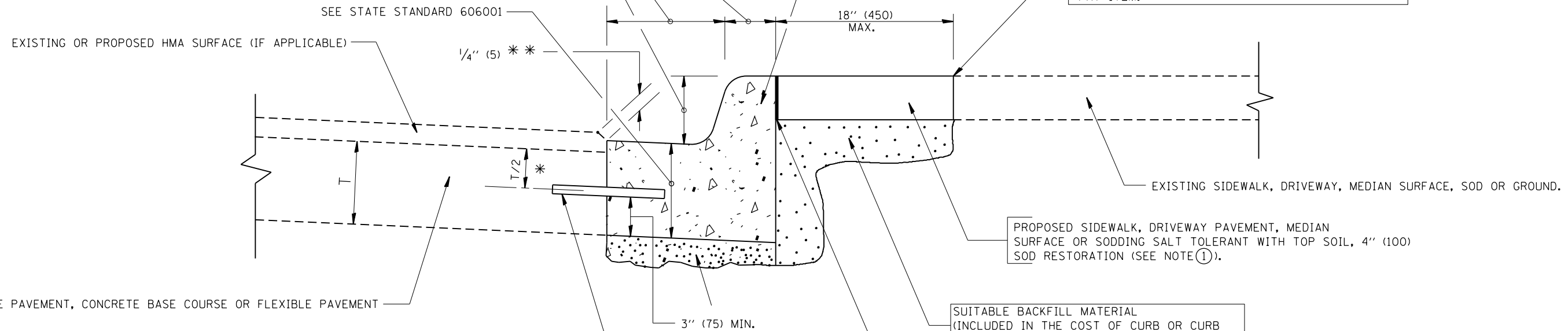
SCALE: SHEET 3 OF 40 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	587
<b>BD400-04 (BD-22)</b>			<b>CONTRACT NO. 60W28</b>	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

VARIABLE - TO MEET EXISTING DIMENSIONS AND FIELD CONDITIONS (SEE NOTE ②)

PROP. CONC. CURB OR CURB AND GUTTER REPLACEMENT IN ACCORDANCE WITH STATE STANDARD 606001. (SEE NOTE ②)

SAW CUT FULL DEPTH - INCLUDED IN THE COST OF SIDEWALK, DRIVEWAY OR MEDIAN SURFACE REMOVAL PAY ITEM.



EXISTING CONCRETE PAVEMENT, CONCRETE BASE COURSE OR FLEXIBLE PAVEMENT

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

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

NOTE: ① SIDEWALK, DRIVEWAY PAVEMENT OR MEDIAN SURFACE SHALL BE SIMILAR TO THE MATERIAL BEING REMOVED AND WILL BE PAID FOR SEPARATELY.

SODDING, SALT TOLERANT AND TOP SOIL, FURNISH AND PLACE 4" WILL BE PAID FOR SEPARATELY.

② FERTILIZER FOR THE PLACEMENT OF THE SOD IS NOT REQUIRED

③ CURB OR CURB AND GUTTER REPLACEMENT SHALL MATCH THE SHAPE OF THE EXISTING CURB OR CURB AND GUTTER UNLESS OTHERWISE SPECIFIED.

④ FOR CURB OR CURB AND GUTTER REMOVAL AND REPLACEMENT ADJACENT TO FLEXIBLE PAVEMENT DELETE EPOXY COATED TIE BARS.

⑤ LONGITUDINAL BARS, IF ENCOUNTERED IN THE EXISTING CURB OR CURB AND GUTTER, ARE NOT TO BE REPLACED. CUTTING AND REMOVING LONGITUDINAL BARS SHALL BE INCLUDED IN THE COST OF CURB OR CURB AND GUTTER REMOVAL AND REPLACEMENT.

⑥ THE COST OF HMA SURFACE REMOVAL IN THE EXISTING GUTTER FLAG SHALL BE INCLUDED IN THE COST OF THE CURB AND GUTTER REMOVAL AND REPLACEMENT.

⑦ THE REMOVAL AND REPLACEMENT OF THE EXISTING CURB OR CURB AND GUTTER SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF SECTION 440 AND 606 OF THE STANDARD SPECIFICATIONS.

⑧ THE LOCATIONS OF REMOVAL AND REPLACEMENT OF EXISTING CURB OR CURB AND GUTTER SHALL BE DETERMINED BY THE RESIDENT ENGINEER AT THE TIME OF CONSTRUCTION.

SUITABLE BACKFILL MATERIAL (INCLUDED IN THE COST OF CURB OR CURB AND GUTTER REMOVAL AND REPLACEMENT)

PROPOSED 3/4" (20) PREFORMED EXPANSION JOINT AT CONCRETE SIDEWALKS, DRIVEWAYS, AND MEDIANS. (INCLUDED IN THE COST OF CURB OR CURB AND GUTTER REMOVAL AND REPLACEMENT.)

UNSUITABLE SUB-BASE MATERIAL TO BE REMOVED, IF DIRECTED BY THE ENGINEER, SHALL BE REPLACED WITH EITHER SUB-BASE GRANULAR MATERIAL, TYPE B OR ADDITIONAL THICKNESS OF CONCRETE.

REMOVAL AND REPLACEMENT 4" (100) OR LESS IS INCLUDED IN THE COST OF CURB OR CURB AND GUTTER REMOVAL AND REPLACEMENT.

REMOVAL AND REPLACEMENT IN EXCESS OF 4" (100) WILL BE PAID FOR IN ACCORDANCE WITH ARTICLE 109.04 OF THE STANDARD SPECIFICATIONS.

PROPOSED #6 (20) EPOXY COATED TIE BARS 24" (600) LONG AT 24" (600) CENTERS WILL NOT BE PAID FOR SEPARATELY. DELETE EPOXY COATED TIE BARS IF EXISTING TIE BARS ARE USABLE AS DETERMINED BY THE ENGINEER. (SEE NOTE ③).

BASIS OF PAYMENT:  
THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER FOOT (METER) FOR "CURB REMOVAL AND REPLACEMENT" OR "COMBINATION CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT".

# CURB OR CURB AND GUTTER REMOVAL AND REPLACEMENT

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

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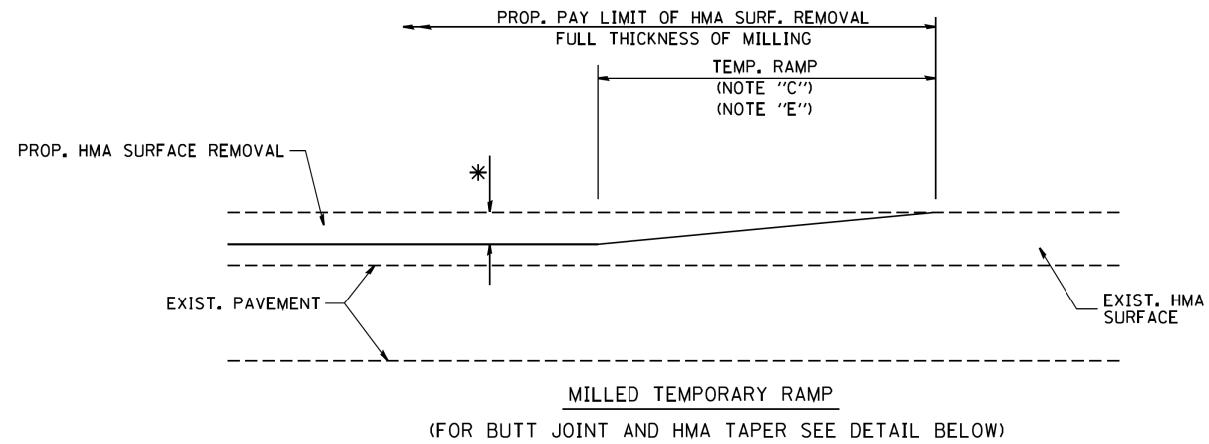
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USER NAME = auyeungh	DRAWN -	REVISED - A. ABBAS 03-21-97
PLOT SCALE = 50.000' / in.	CHECKED -	REVISED - M. GOMEZ 01-22-01
PLOT DATE = 3/24/2014	DATE - 03-11-94	REVISED - R. BORO 12-15-09

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

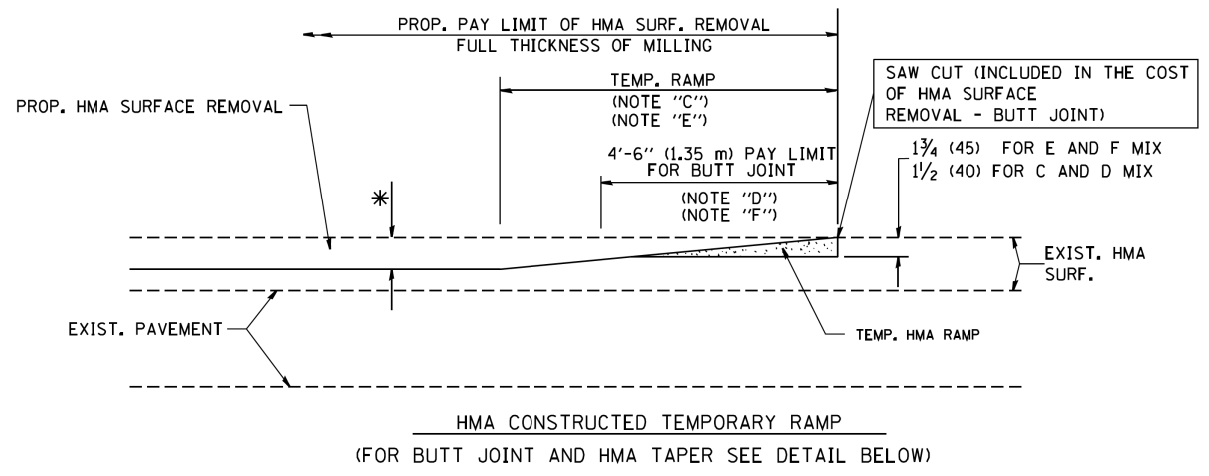
CURB OR CURB AND GUTTER REMOVAL AND REPLACEMENT			
SCALE:	SHEET 4 OF 40 SHEETS	STA.	TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	588
BD600-06 (BD-24)			CONTRACT NO. 60W28	
ILLINOIS FED. AID PROJECT				

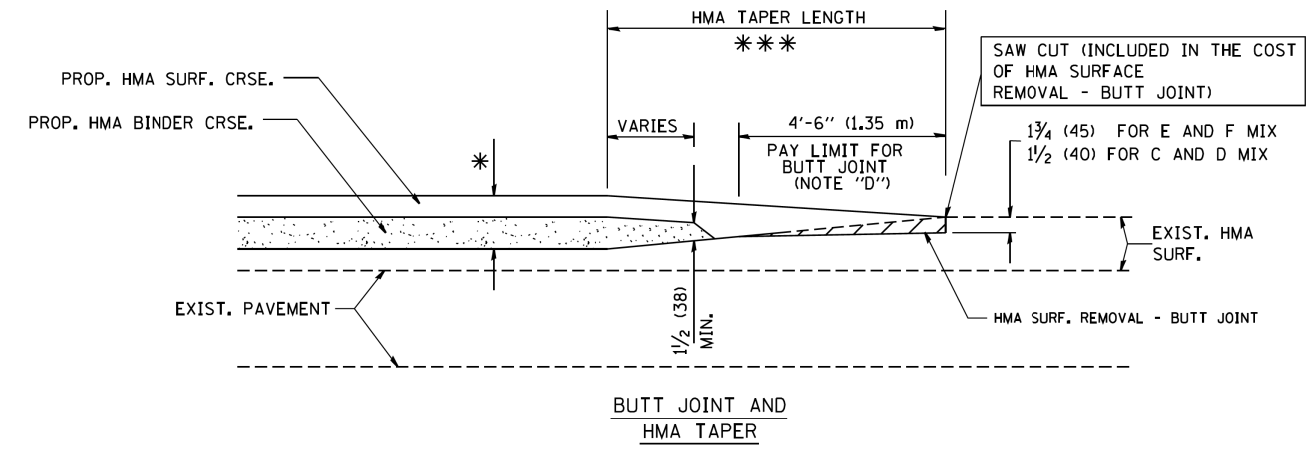




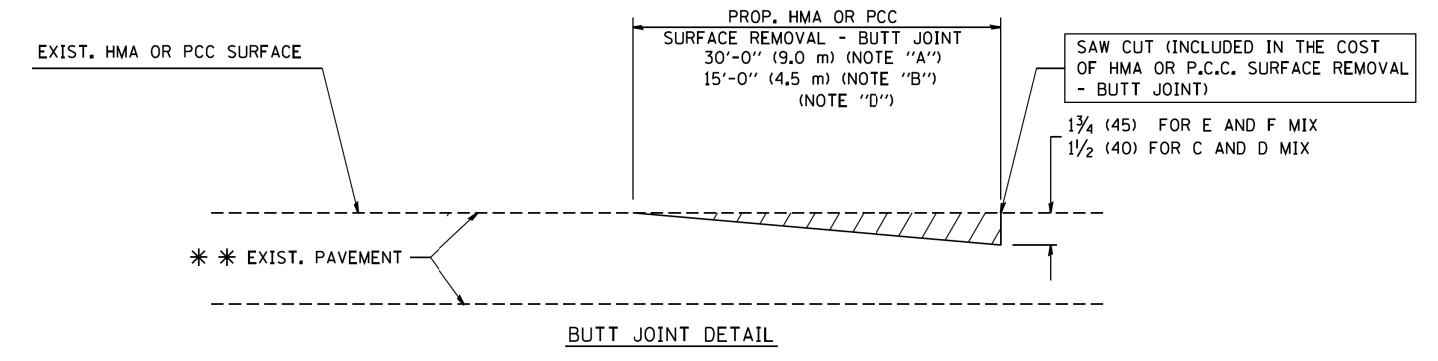
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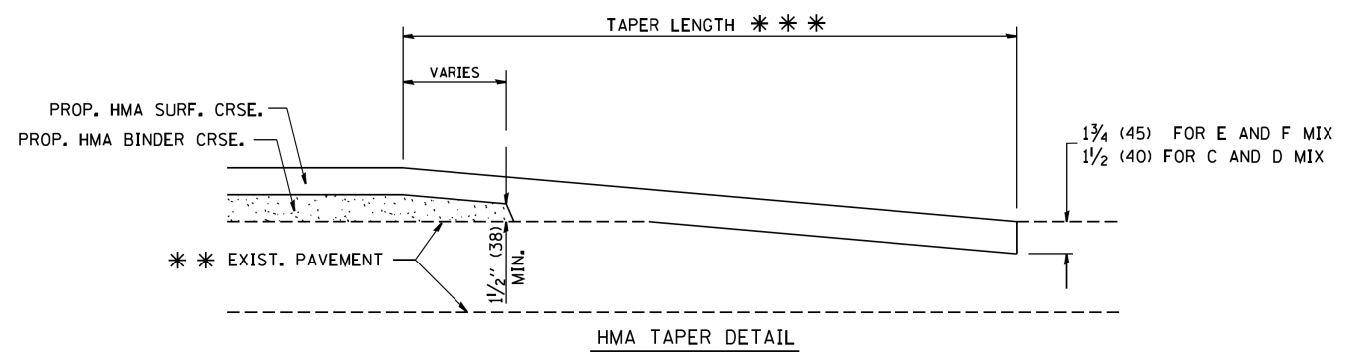
**OPTION 2**  
**TYPICAL TEMPORARY RAMP**



**TYPICAL BUTT JOINT AND HMA TAPER FOR MILLING AND RESURFACING**



**BUTT JOINT DETAIL**



**HMA TAPER DETAIL**

**TYPICAL BUTT JOINT AND HMA TAPER FOR RESURFACING ONLY**

\*\*\* PC CONCRETE, HMA OR HMA RESURFACED PAVEMENT.

**NOTES**

- A: MAINLINE ROADWAYS AND MAJOR SIDE ROADS.
  - B: MINOR SIDE ROADS.
  - C: THE TEMP. RAMP SHALL BE CONSTRUCTED IMMEDIATELY UPON REMOVAL OF THE EXISTING HMA SURFACE.
  - D: THE BUTT JOINT SHALL BE CONSTRUCTED IMMEDIATELY PRIOR TO PLACING THE PROPOSED HMA COURSES.
  - E: TAPER THE TEMP. RAMP AT A RATE OF 3'-0" (900 mm) PER 1 INCH (25 mm) OF MILLING THICKNESS.
  - F: INSTALLATION AND REMOVAL OF THE 4'-6" (1.35 m) TEMP. RAMP IS INCLUDED IN COST OF HMA SURFACE REMOVAL - BUTT JOINT
  - G: SEE ARTICLE 406.08 AND 406.14 OF THE STANDARD SPECIFICATIONS FOR "HMA AND/OR PCC SURFACE REMOVAL, BUTT JOINT".
- \* SEE TYPICAL SECTIONS FOR MILLING THICKNESS.
- \*\*\* 20'-0" (6.1 m) PER 1 (25) RESURFACING (NOTE "A")  
10'-0" (3.0 m) PER 1 (25) RESURFACING (NOTE "B")

**BASIS OF PAYMENT:**

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

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

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PLOT SCALE = 50.000' / in.  
PLOT DATE = 3/24/2014

DESIGNED - M. DE YONG  
DRAWN -  
CHECKED -  
DATE - 06-13-90

REVISED R. SHAH 10-25-94  
REVISED A. ABBAS 03-21-97  
REVISED M. GOMEZ 04-06-01  
REVISED R. BORO 01-01-07

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**BUTT JOINT AND  
HMA TAPER DETAILS**

SCALE: SHEET 5 OF 40 SHEETS STA. TO STA.

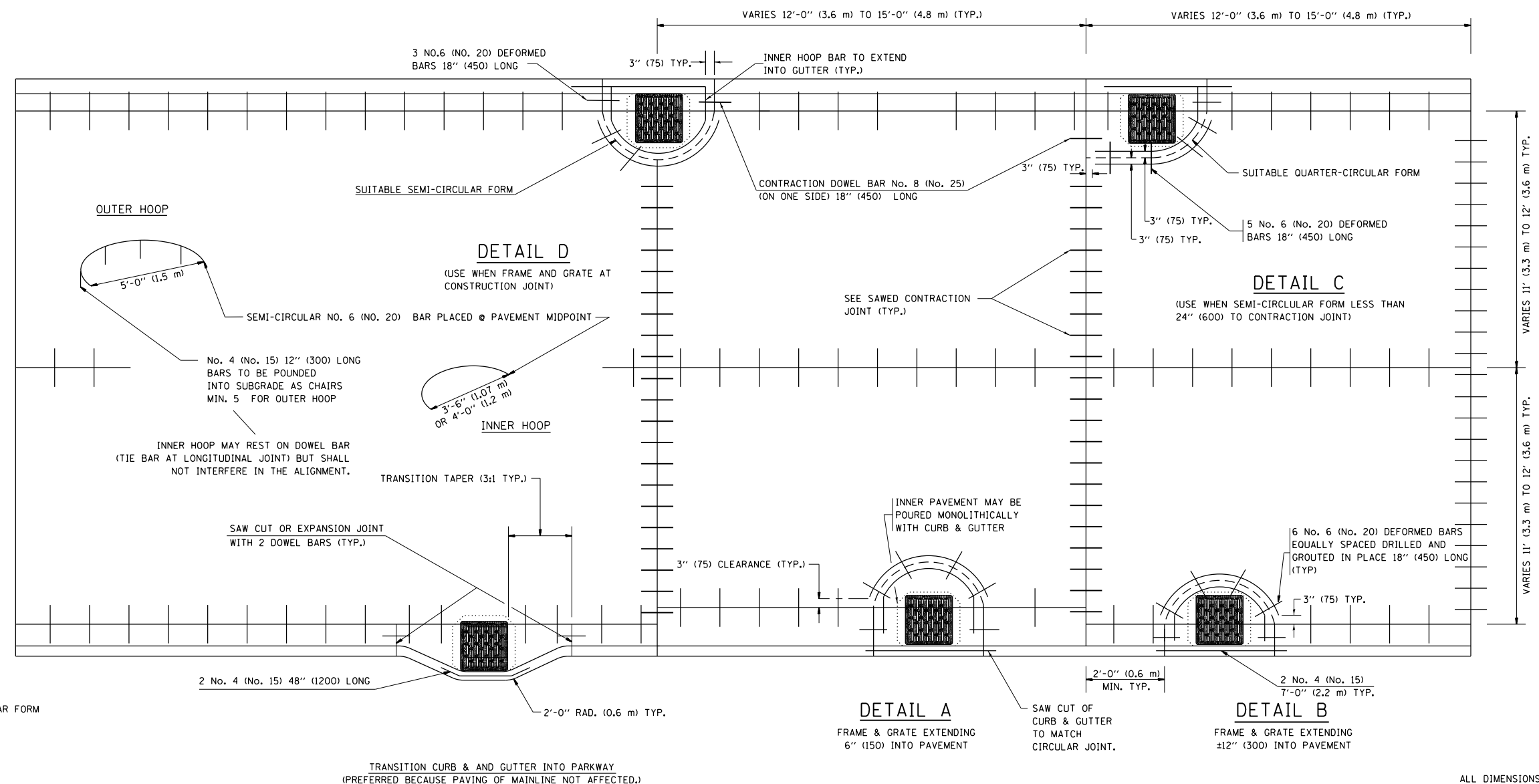
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90/94/290	2013-010R	COOK	747	589
BD400-05 (BD-32)			CONTRACT NO. 60W28	
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

FRAME EXTENSION INTO PAVEMENT	INNER HOOP REINFORCEMENT DIAMETER	SEMI CIRCULAR FORM DIAMETER	OUTER HOOP REINFORCEMENT DIAMETER
UP TO 8" (200)	3'-6" (1.1 m)	4'-0" (1.2 m)	5'-0" (1.5 m)
> 8" (200) TO 14" (360)	4'-0" (1.2 m)	4'-6" (1.4 m)	5'-0" (1.5 m)

DESIGNER NOTE:  
THIS DETAIL IS TO BE USED  
WHEN THE GUTTER FLAG IS  
LESS THAN 24"

NOTES :

1. THE ROUNDOUT AND ADDED REINFORCEMENT WILL NOT BE PAID SEPARATELY, BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE PAVEMENT.
2. TRANSVERSE JOINTS MAY BE MOVED TO ACCOMMODATE ROUNDOUT. EDGE OF CIRCULAR JOINT SHALL BE MINIMUM 12" (300) FROM TRANSVERSE JOINT. RELOCATED TRANSVERSE JOINT SHALL BE CONTINUOUS FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT.
3. SEMI-CIRCULAR FORM SHALL BE REMOVED PRIOR TO DRILL AND GROUT OF TIE BARS.
4. ALL REINFORCED BARS SHALL BE EPOXY COATED.
5. DRILL AND GROUT IS PREFERRED, HOWEVER TIE BARS CAN BE POURED IN PLACE IF CLEARANCE IS PROVIDED TO OUTER EDGE OF FRAME. MINIMUM 2" (50) CLEARANCE.
6. WOOD SHIMS SHALL BE USED TO ADJUST ALL FRAMES. AFTER ADJUSTING MORTAR HAS CURED, THE WOOD SHIMS SHALL BE REMOVED AND THE VOIDS UNDER THE FRAMES FILLED WITH NON SHRINK GROUT.
7. HOOP REINFORCEMENT SHALL BE ONE PIECE CONSTRUCTION.
8. CIRCULAR FRAMES AND GRATES MAY BE SUBSTITUTED.
9. CURB DOWELS MUST BE PLACED LEVEL & TRUE TO ALLOW CONTRACTION MOVEMENT.



LEGEND:  
..... CASTING  
- - - - - SUITABLE SEMI-CIRCULAR FORM

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE NOTED

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PLOT SCALE = 50.0000' / in.  
PLOT DATE = 3/24/2014

DESIGNED - A. ABBAS  
DRAWN - TOM MATOUSEK  
CHECKED - A. ABBAS  
DATE - 01-04-99

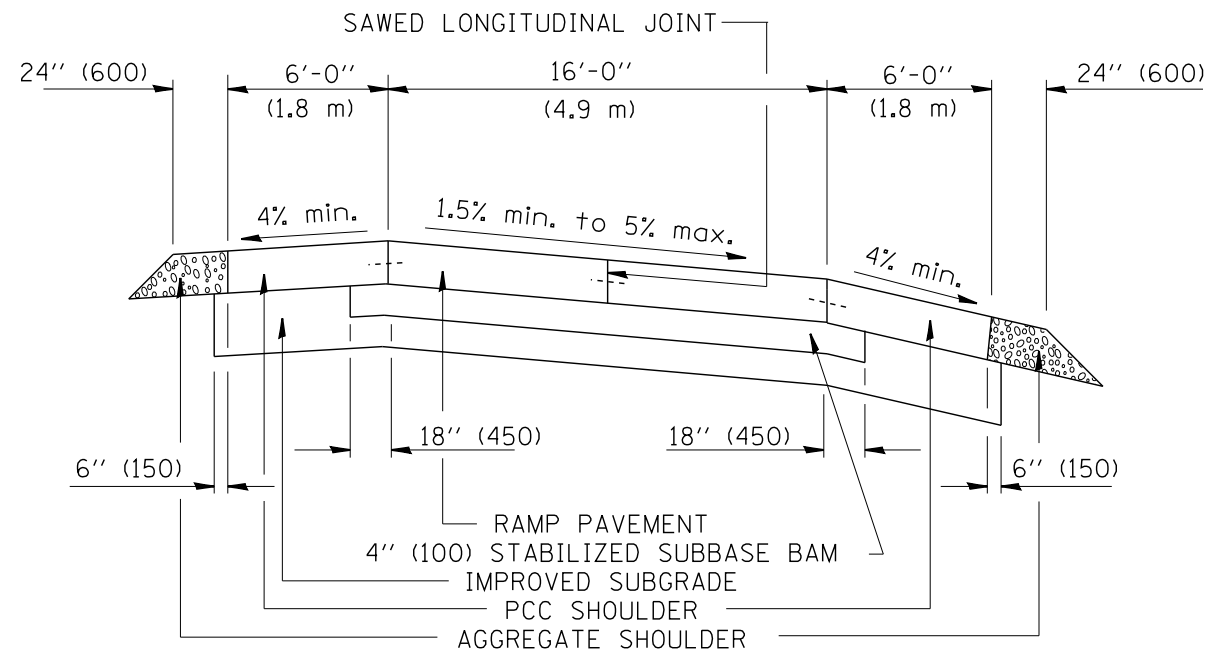
REVISED-T. MATOUSEK 08-28-00  
REVISED-T. MATOUSEK 10-02-00  
REVISED-T. MATOUSEK 04-25-02  
REVISED-P. LAFLEUR 08-27-02

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PCC PAVEMENT ROUNDOUTS AT  
CURB AND GUTTER

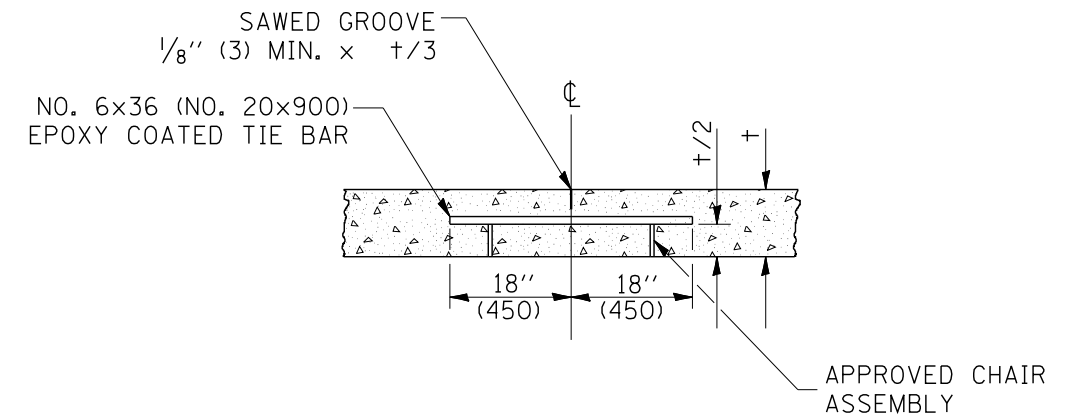
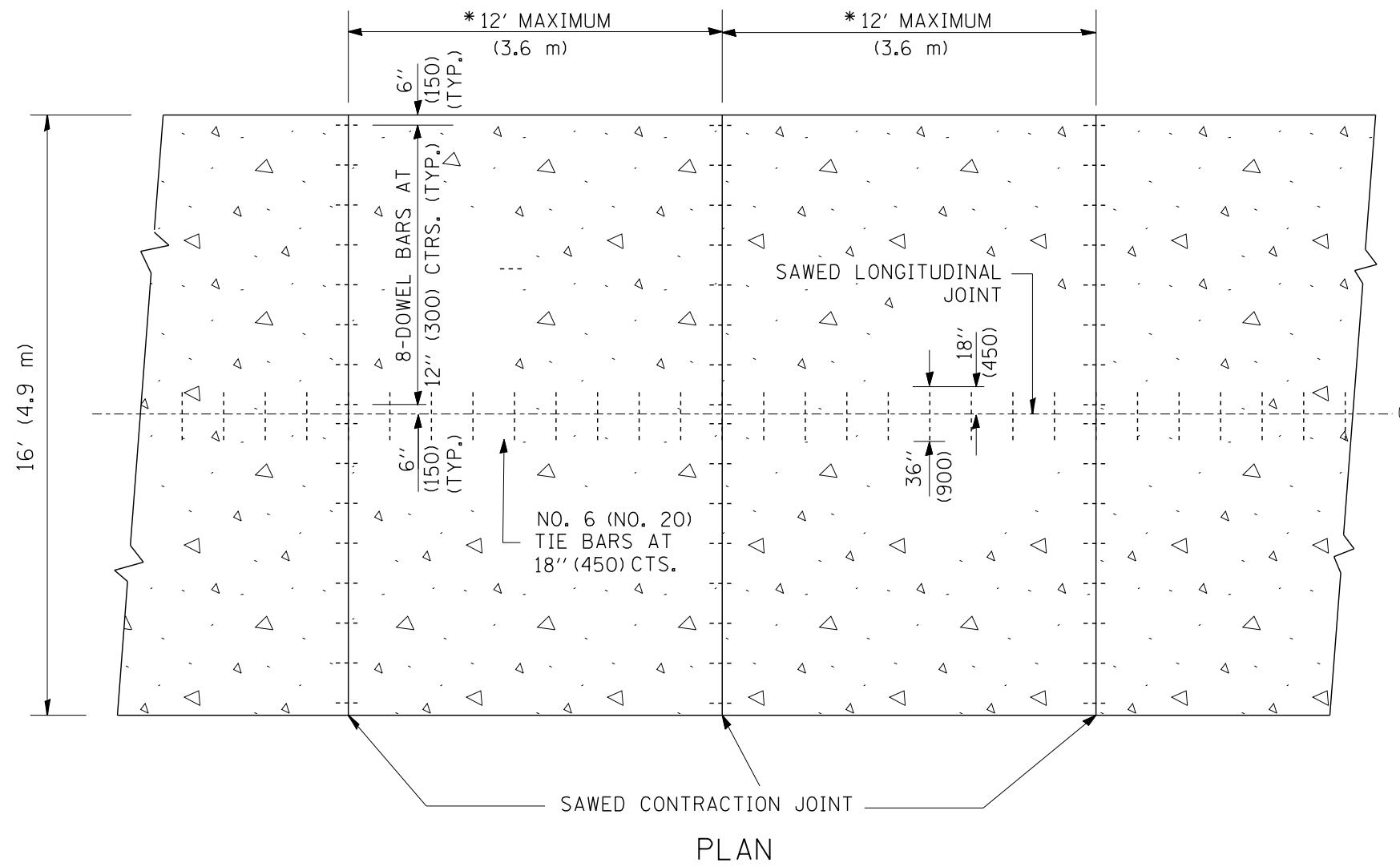
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	590
BD-48			CONTRACT NO. 60W28	
ILLINOIS FED. AID PROJECT				



**NOTES:**

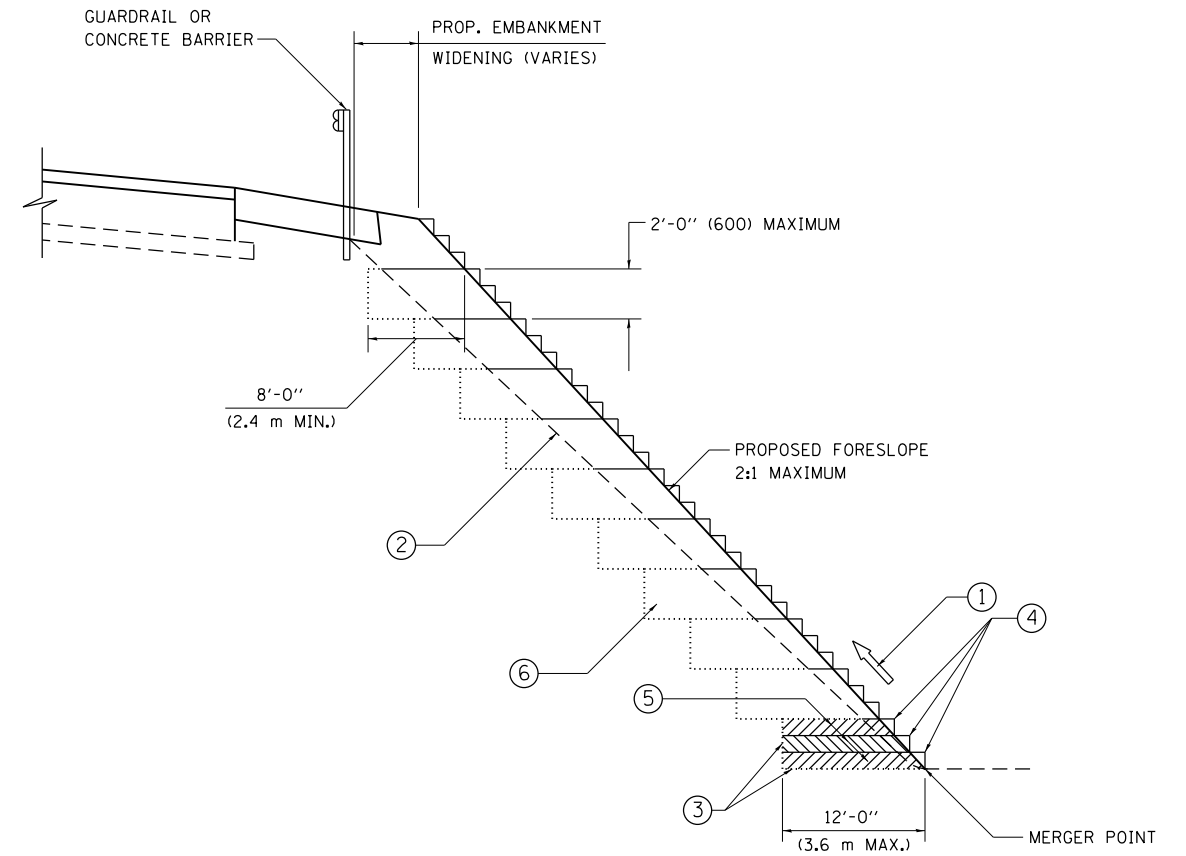
1. CENTERLINE JOINT REMAINS IN THE CENTER WHEN RAMP TRANSITIONS TO TWO (2) RAMPS AT 12' (3.6 m).
2. ALL BARS TO BE EPOXY COATED.



**SAWED LONGITUDINAL JOINT**

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE NOTED

FILE NAME = W:\diststd\22x34\bd49.dgn	USER NAME = geglionobt	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DETAIL FOR CENTERLINE SAW CUT 16' (4.9 m) AND VARIABLE JOINTED PCC PAVEMENT FOR RAMPS</b>			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - TOM MATOUSEK	REVISED -		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	<b>BD49</b>	CONTRACT NO.	747	590A
		CHECKED - A. ABBAS	REVISED -									
		DATE - 10-18-02	REVISED -									
		PLOT SCALE = 50.0000' / IN.										
		PLOT DATE = 1/4/2008										
								FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				



**TYPICAL BENCHING DETAIL  
FOR EMBANKMENT**

**NOTES:**

- ① CONSTRUCT SUCCEEDING BENCH CUTS AND EMBANKMENT PLACEMENT AND COMPACTION FROM BOTTOM TO TOP IN STAIRSTEP FASHION.
- ② EXISTING FORESLOPE PREPARED IN ACCORDANCE WITH ARTICLE 205.03 OF THE STANDARD SPECIFICATIONS.
- ③ BENCH CUT EXISTING SLOPE TYPICAL FOR EACH STEP.
- ④ TRIM TO FINAL SLOPE.
- ⑤ EQUAL 8-INCH (200) LIFTS OF EMBANKMENT COMPACTED IN ACCORDANCE WITH ARTICLE 205.05 OF THE STANDARD SPECIFICATIONS.
- ⑥ EXCAVATION OF BENCH CUTS WITHIN EXISTING EMBANKMENT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC METER OR CUBIC YARD FOR "EARTH EXCAVATION". THIS PRICE WILL INCLUDE ALL LABOR AND MATERIAL, NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- ⑦ SLOPES SHALL BE BENCHED ACCORDING TO THIS DETAIL WHEN THE SLOPE IS STEEPER THAN 4:1 AND THE HEIGHT IS GREATER THAN 5' (1.5 m).

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

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DESIGNED -  
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CHECKED - S.E.B.  
DATE - 06-16-04

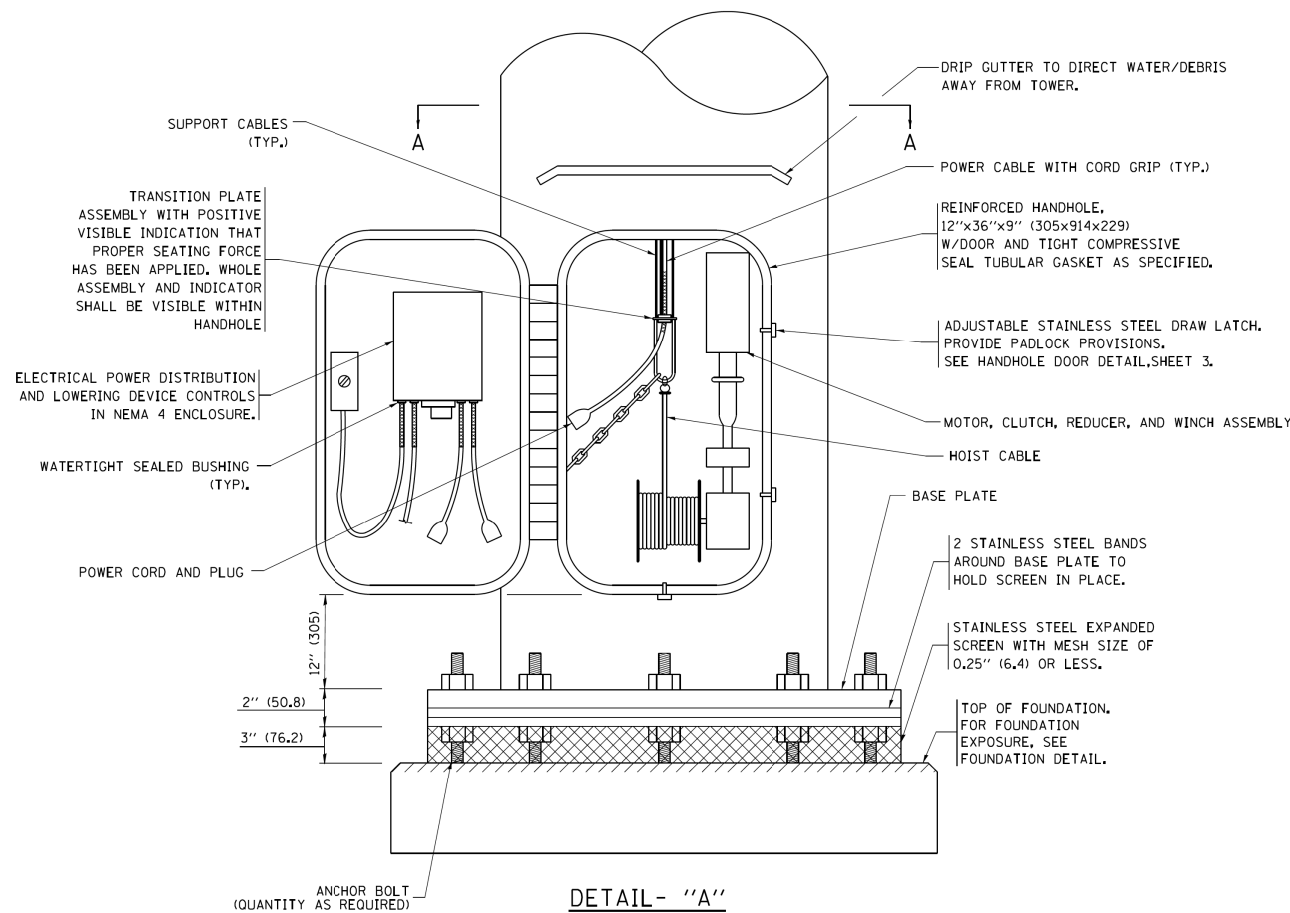
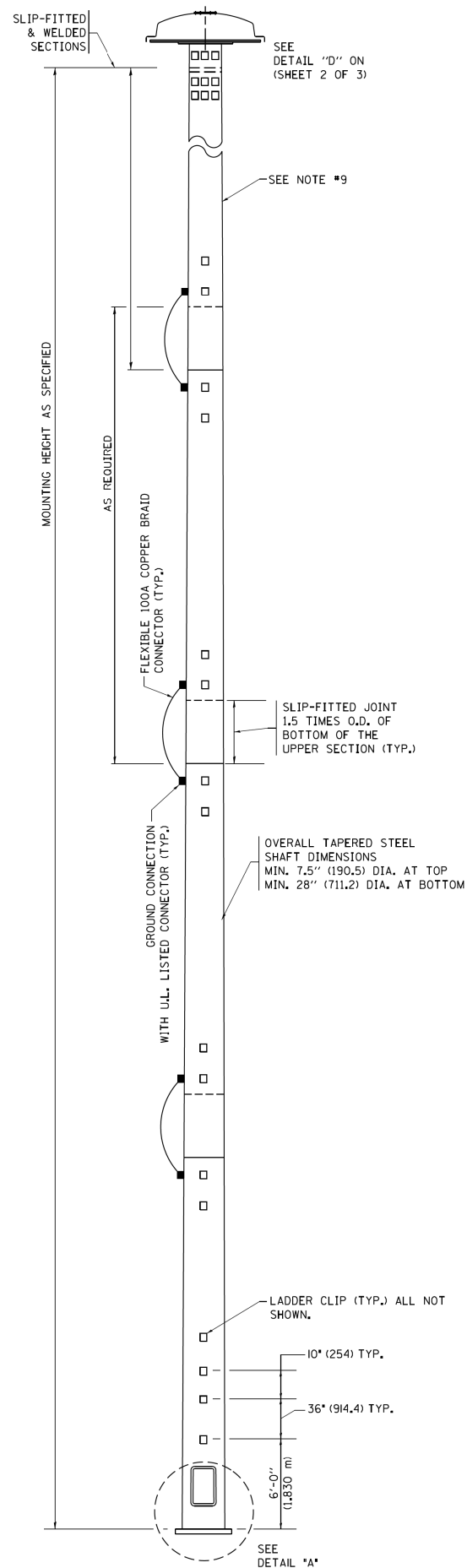
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REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**BENCHING DETAIL  
FOR EMBANKMENT WIDENING**  
SCALE: SHEET 7 OF 40 SHEETS STA. TO STA.

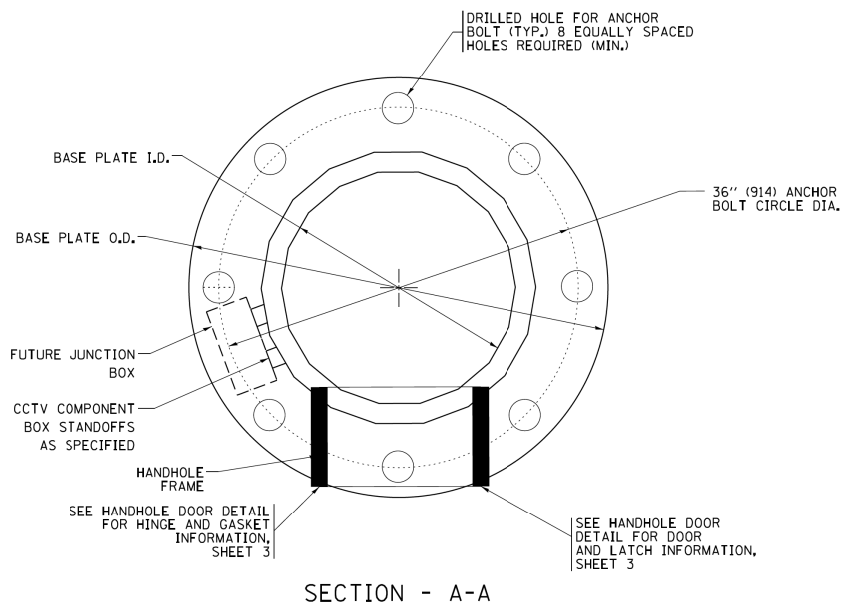
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90/94/290	2013-010R	COOK	747	591
<b>BD-51</b>			<b>CONTRACT NO. 60W28</b>	
ILLINOIS FED. AID PROJECT				





DETAIL - "A"

3 CABLE LOWERING & SUPPORT MECHANISM SHOWN.



NOTES:

- ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
- THE DESIGN SHALL BE BASED UPON AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" CURRENT AT THE TIME THE PROJECT IS ADVERTISED AND A TOTAL COMBINED LUMINAIRE WEIGHT OF 720 LBS. (326 kg) AND HAVING A TOTAL PROJECTED AREA OF 24 SQ. FT. (7.3 sq. m).
- ALL TOWER SHAFT COMPONENTS, INCLUDING, BUT NOT LIMITED TO THE SHAFT SECTIONS, BASE PLATE, LADDER CLIPS, HANDHOLE DOOR, HANDHOLE REINFORCING, RAIN GUTTER, AND BASE PLATE, SHALL BE FABRICATED FROM HIGH-STRENGTH, LOW ALLOY, STEEL WITH A MINIMUM YIELD STRENGTH OF 50,000 PSI (345 K PA) ACCORDING TO AASHTO M 223 (ASTM A 572 GR50)
- THE ELECTRIC MOTOR, MOTOR GEAR REDUCER, WINCH DRUM ASSEMBLY AND AUTOMATIC SHUTOFF SWITCH OF THE LOWERING DEVICE SHALL BE ACCESSIBLE FROM THE FRONT OF THE TOWER FOR EASY REMOVAL AND MAINTENANCE. ALL COMPONENTS SHALL BE REMOVABLE THROUGH THE HANDHOLE.
- THE LIGHT TOWER SHAFT SHALL HAVE LADDER CLIPS. CLIPS SHALL BEGIN 6 FT. (1.8 m) ABOVE THE BASE PLATE WITH ALTERNATE 1.8 m (900) AND 10 INCH (250) SPACING THEREAFTER, FOR THE ENTIRE LENGTH. THE TOP 10 FT. (3 m) OF THE POLE SHAFT SHALL HAVE 3 SETS OF CLIPS. EACH SET OF CLIPS SHALL BE 120 DEGREES APART. CLIPS SHALL BE 0.25 X 2 INCHES (6 X 50) WELDED TO THE SHAFT TO PRODUCE A SLOT 0.625 INCHES (15.9) DEEP AND 1.625 INCHES (41.3) LONG. THE TOP INSIDE EDGE SHALL BE CHAMFERED.
- A COPPER BONDING JUMPER SHALL BOND SLIP-FIT POLE SECTIONS TOGETHER WITH A FLAT COPPER MESH AND STAINLESS STEEL GROUND LUGS.
- ALL TOWER SHAFT HARDWARE, SUCH AS GROUND LUGS, JUNCTION BOXES, HARDWARE FOR THE HANDHOLE DOOR, INCLUDING THE HANDLE/LATCH MECHANISM, HINGE AND DOOR STOP, SHALL BE STAINLESS STEEL. ALL CONDUIT AND CONDUIT FITTINGS SHALL BE PVC COATED GALVANIZED STEEL.
- THE ENTIRE TOWER INCLUDING THE SHAFT, HANDHOLE, HANDHOLE DOOR, BASE PLATE AND ALL OTHER ELEMENTS WELDED TO THE SHAFT SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111 (ASTM A 123) AND THEN PAINTED AS SPECIFIED. THE LUMINAIRE RING SHALL BE PRIMED AND PAINTED AS SPECIFIED.
- THE FINISH COAT SHALL BE ANSI 70, SKY GREY COLOR SAMPLE TO BE SUBMITTED FOR APPROVAL.
- ALL MULTI-CONDUCTOR CABLES SHALL BE FITTED WITH A HEAT-SHRINK MULTI-LEG BOOT. THE BOOT SHALL MEET MILITARY SPECIFICATION MIL-I-81765/1.
- THE LIGHT TOWER SHALL BE STRAIGHT AND CENTERED ON ITS LONGITUDINAL AXIS, UNDER NO-WIND CONDITIONS, SO WHEN EXAMINED WITH A TRANSIT FROM ANY DIRECTION, THE DEVIATION FROM THE NORMAL SHALL NOT EXCEED 1/8 IN. IN 3 FT (2 mm IN 1 m) WITHIN ANY 5 FT (1.5 m) OF HEIGHT, WITH TOTAL DEVIATION NOT TO EXCEED 3 IN. (75) FROM THE VERTICAL AXIS THROUGH THE CENTER OF THE POLE BASE.
- PVC CONDUIT WILL NOT BE ALLOWED FOR ANY LIGHT TOWER COMPONENT.
- COUNTER WEIGHTS TO BE INCLUDED AS A PART OF THE LIGHT TOWER PAY ITEM.

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D160W28-SHT-D1-Detail-BE-505A.dgn  
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DESIGNED -  
 DRAWN -  
 CHECKED -  
 DATE -

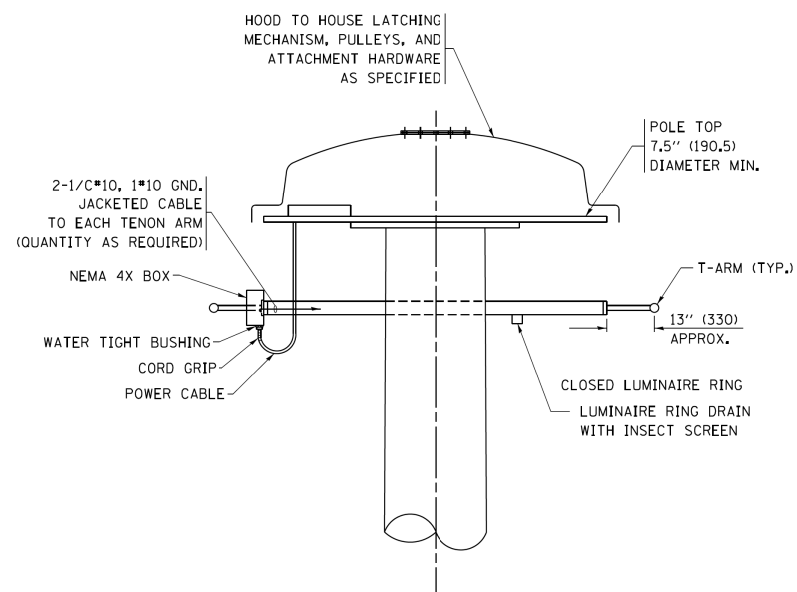
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STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

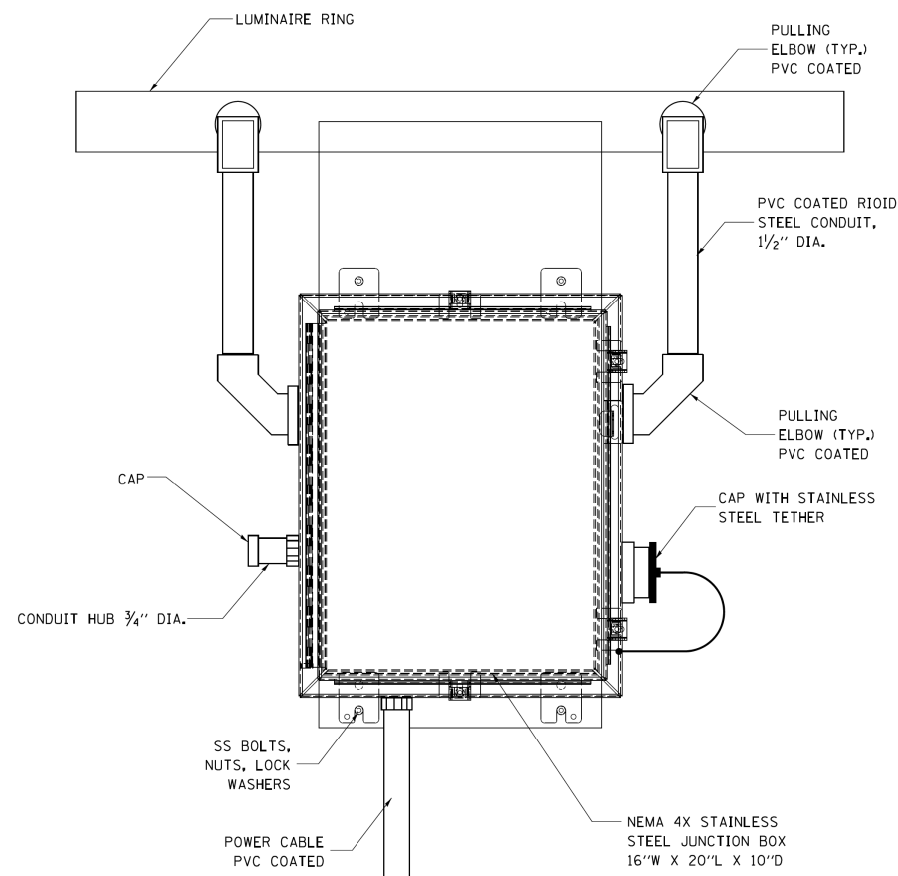
HIGH MAST LIGHT TOWER  
 120 FT TO 140 FT (36 m TO 43 m)

SCALE: SHEET 8 OF 40 SHEETS STA. TO STA.

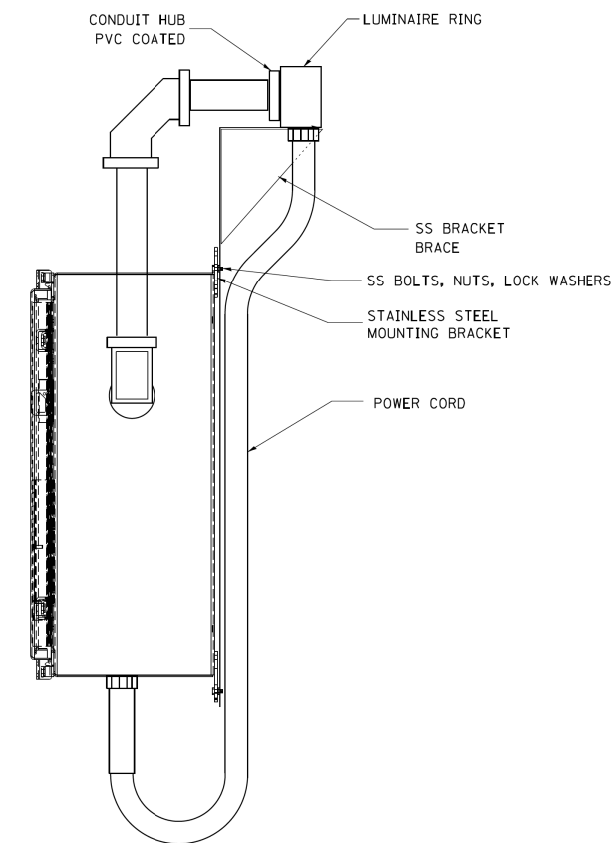
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ILLINOIS FED. AID PROJECT				



DETAIL--D--

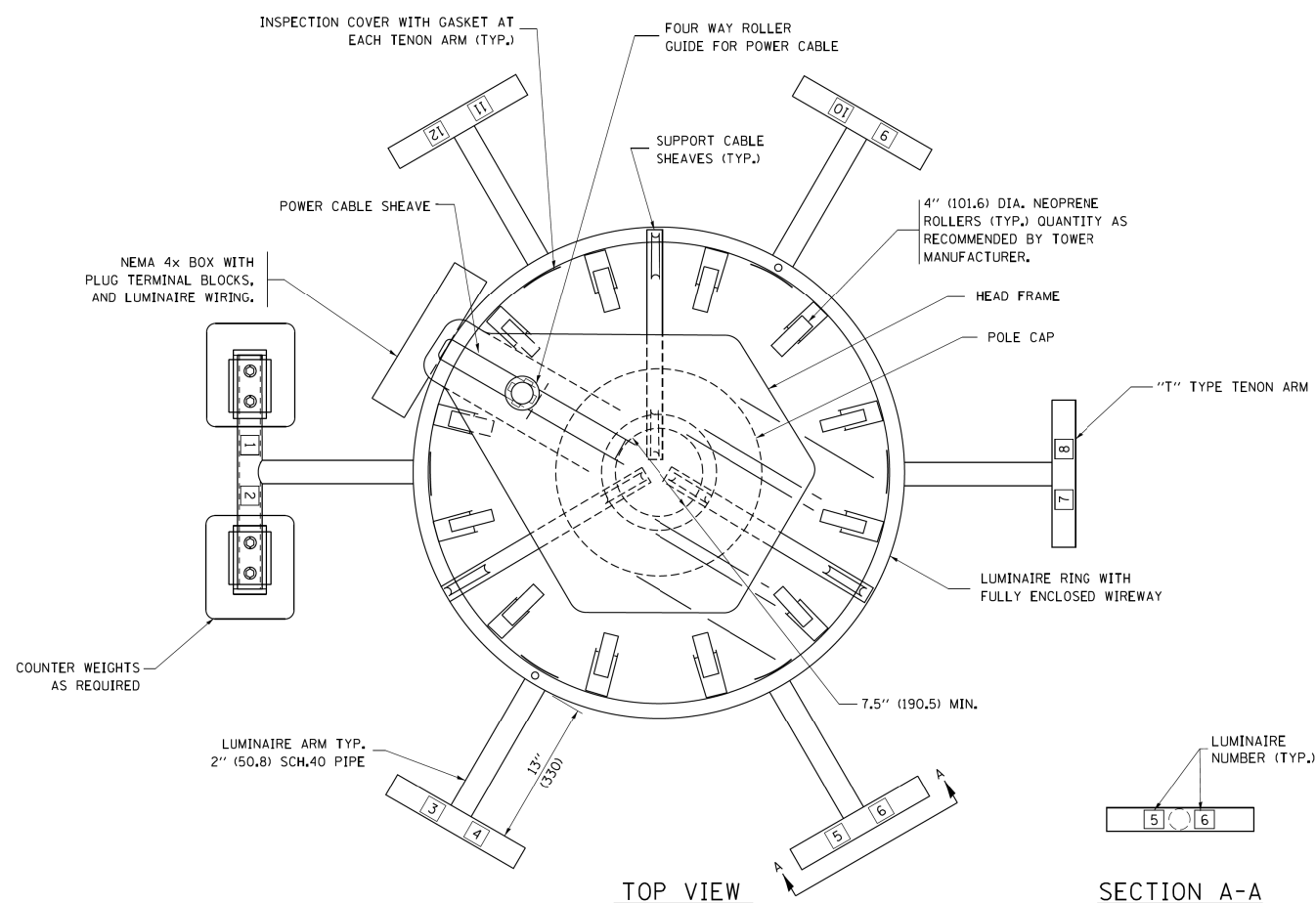


FRONT VIEW  
N.T.S.



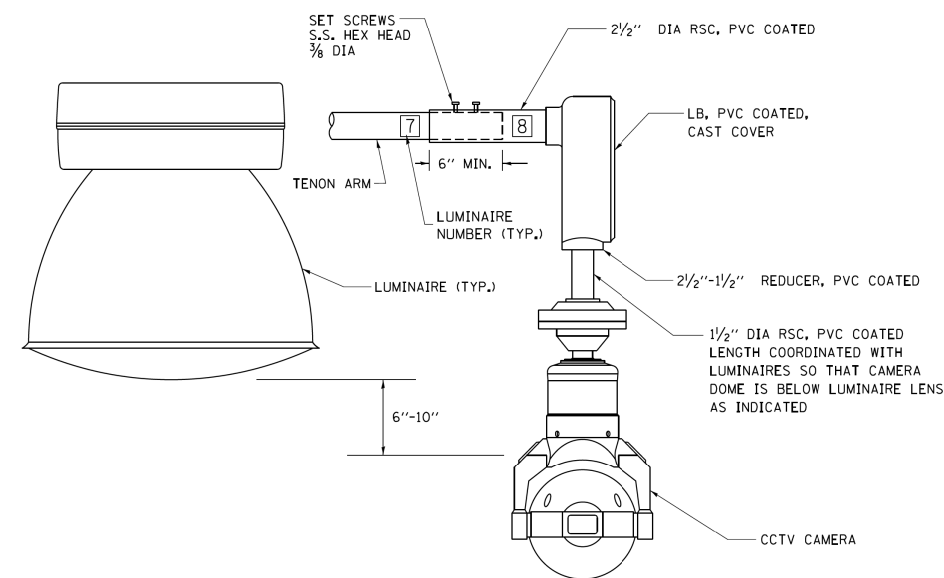
SIDE VIEW  
N.T.S.

LUMINAIRE RING TERMINAL BOX



TOP VIEW

SECTION A-A



CCTV CAMERA MOUNTING DETAIL

NOTES:

- LUMINAIRE WIRES SHALL EXTEND 24 INCHES (609 mm) LONGER THAN THEIR RESPECTIVE TENON ARM AND SHALL BE TRAINED BACK INTO THE ARM WHICH SHALL THEN BE CLOSED WITH A CAP AS SPECIFIED. ALL WIRES SHALL BE CAPPED WITH HEAT SHRINK INSULATING BOOTS, CRIMP CAPS ARE UNACCEPTABLE. ALL RING WIRES SHALL BE TAGGED WITH WIRE MARKERS AT BOTH ENDS. THE TENON ARMS SHALL ALSO BE TAGGED CORRESPONDING TO THE WIRING CONTAINED WITHIN.
- SPLICING WILL NOT BE ALLOWED WITHIN THE LUMINAIRE RING.
- ALL TOWER SHAFT HARDWARE, SUCH AS GROUND LUGS, JUNCTION BOXES, HARDWARE FOR THE HANDHOLE DOOR, INCLUDING THE HANDLE/LATCH MECHANISM, HINGE AND DOOR STOP, SHALL BE STAINLESS STEEL. ALL CONDUIT AND CONDUIT FITTINGS SHALL BE PVC COATED GALVANIZED STEEL.
- ALL MULTI-CONDUCTOR CABLES SHALL BE FITTED WITH A HEAT-SHRINK MULTI-LEG BOOT. THE BOOT SHALL MEET MILITARY SPECIFICATION MIL-I-81765/1.

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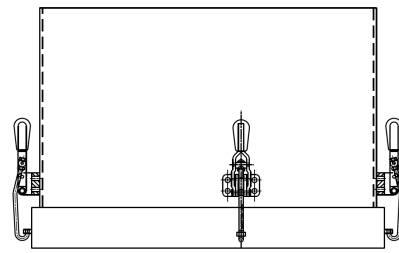
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 DRAWN - 03-22-10  
 CHECKED - 09-02-10  
 DATE - 02-27-13

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

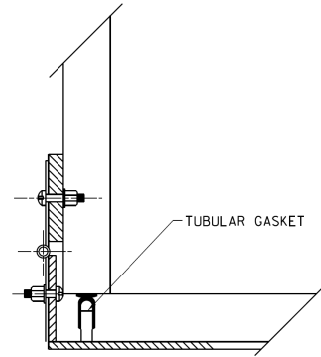
HIGH MAST LIGHT TOWER  
 120 FT TO 140 FT (36 m TO 43 m)

SCALE: SHEET 9 OF 40 SHEETS STA. TO STA.

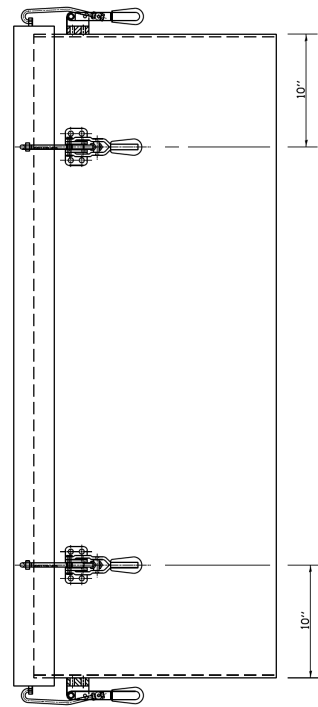
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BE-505b		CONTRACT NO. 60W28		
ILLINOIS FED. AID PROJECT				



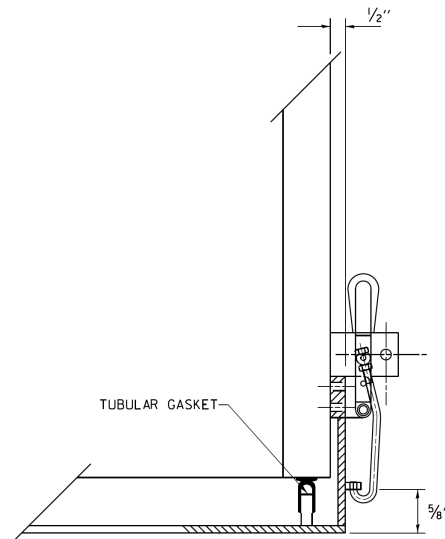
TOP VIEW



HINGE DETAIL

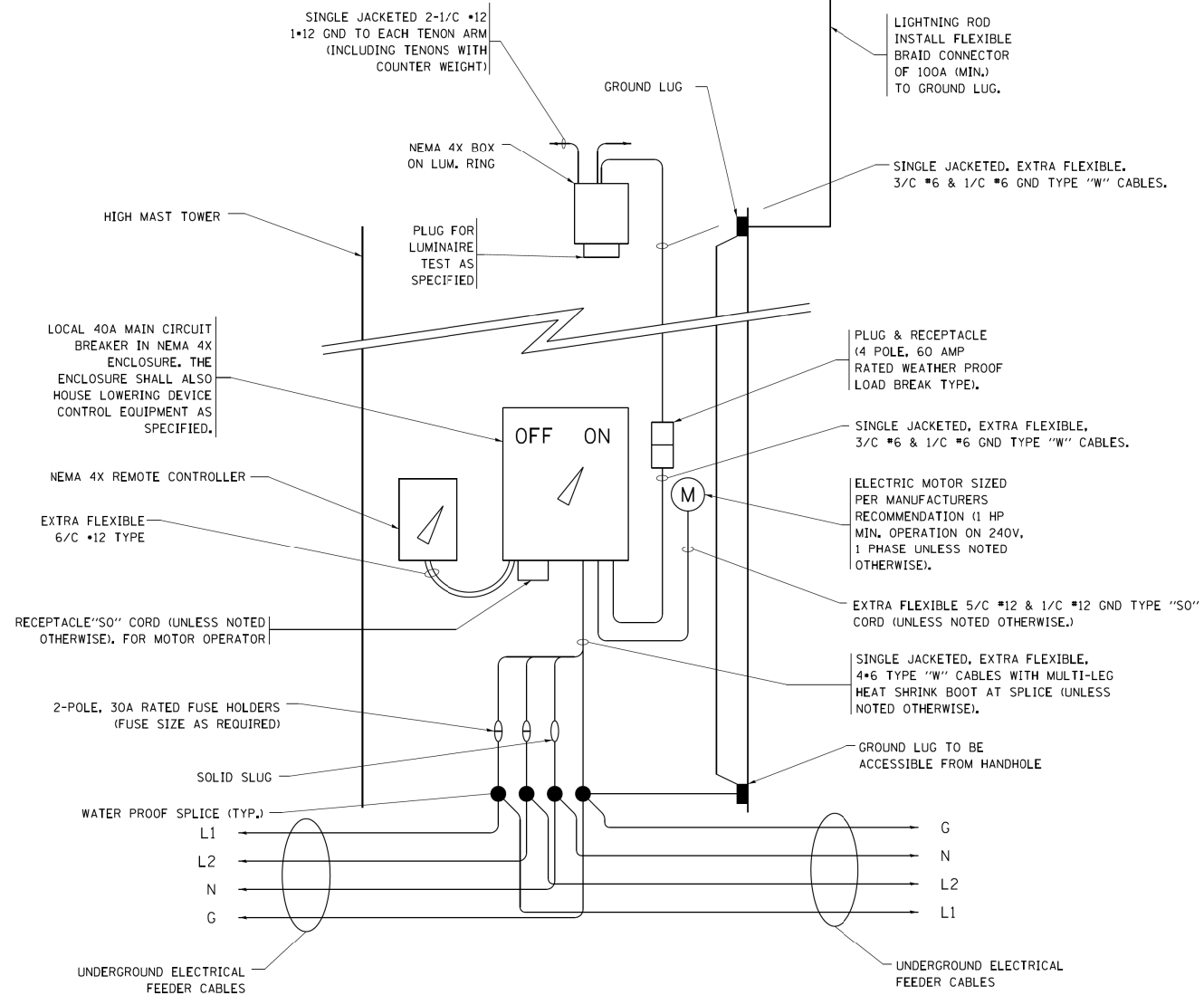


SIDE VIEW

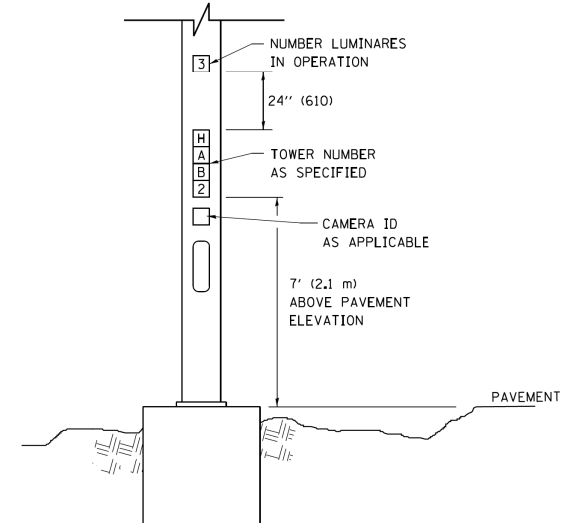


LATCH DETAIL

HANDHOLE DOOR DETAILS



HIGH MAST POLE WIRING DIAGRAM



LIGHT TOWER NUMBERING DETAIL

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 DRAWN -  
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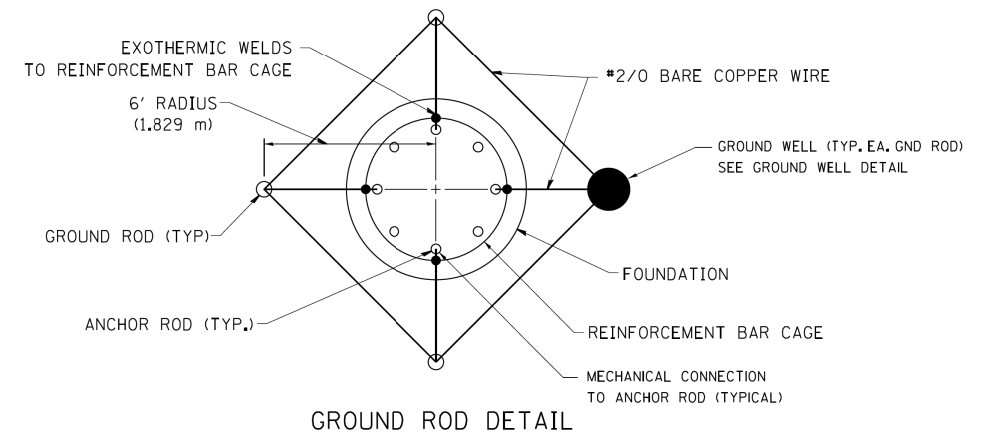
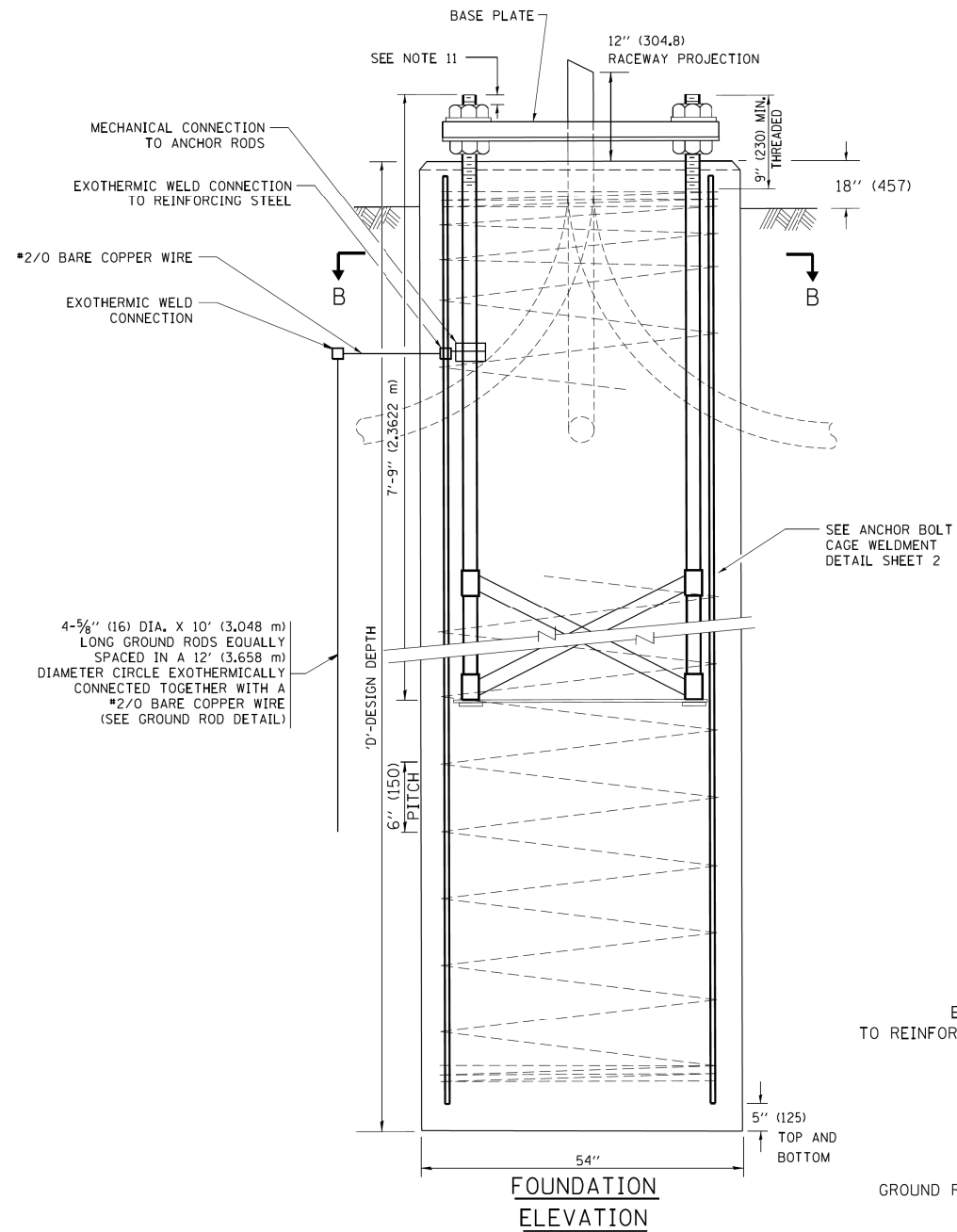
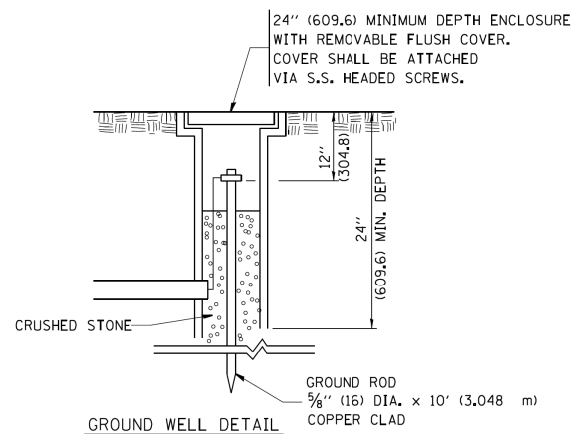
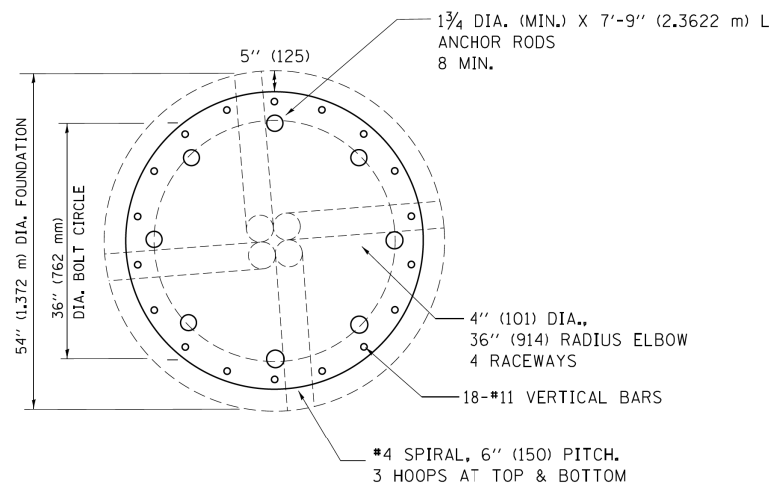
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

HIGH MAST LIGHT TOWER  
 120 FT TO 140 FT (36 m TO 43 m)

SCALE: SHEET 10 OF 40 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	594
BE-505c			CONTRACT NO. 60W28	
ILLINOIS FED. AID PROJECT				

SOIL CONSISTENCY		SHAFT LENGTH (D) TABLE			
		AVERAGE STRENGTH Q <sub>u</sub> In tsf (Q <sub>u</sub> In kPa)	LIGHT TOWER MOUNTING HEIGHT		
			120 FT. (37 m)	130 FT. (40 m)	140 FT. (43 m)
SOFT		<0.5 (<50)	25'-0" (7.6 m)	26'-6" (8.0 m)	27'-6" (8.3 m)
	MEDIUM	0.5 TO 1 (50 TO 100)	20'-6" (6.2 m)	21'-6" (6.4 m)	22'-0" (6.7 m)
COHESIVE	STIFF	1 TO 2 (100 TO 200)	17'-6" (5.2 m)	18'-0" (5.4 m)	18'-6" (5.5 m)
	VERY STIFF	2 TO 4 (200 TO 400)	15'-0" (4.5 m)	15'-6" (4.6 m)	16'-0" (4.7 m)
	HARD	>4 (>400)	13'-6" (4.0 m)	13'-6" (4.1 m)	14'-0" (4.2 m)
		N In BLOWS/FT. (N In BLOWS/0.3m)			
	VERY LOOSE	<5 (<5)	19'-0" (6.3 m)	20'-0" (6.0 m)	20'-6" (6.2 m)
	LOOSE	5 TO 10 (5 TO 10)	17'-6" (5.7 m)	18'-0" (5.5 m)	18'-6" (5.6 m)
GRANULAR	MEDIUM	10 TO 25 (10 TO 25)	16'-6" (5.5 m)	17'-0" (5.2 m)	17'-6" (5.3 m)
	DENSE	25 TO 50 (25 TO 50)	15'-6" (5.2 m)	16'-6" (4.9 m)	16'-6" (5.0 m)
	VERY DENSE	>50 (>50)	15'-0" (4.5 m)	15'-6" (4.7 m)	16'-0" (4.8 m)



### DESIGN NOTES

- (1) ALL DIMENSIONS IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN
- (2) THE ANCHOR RODS SHALL BE VERTICAL NO ADJUSTMENT SHALL BE ALLOWED AFTER THE FOUNDATION IS PLACED.
- (3) THE GAP BETWEEN THE FOUNDATION AND THE BASE PLATE SHALL BE ENCLOSED WITH A STAINLESS STEEL SCREEN FASTENED WITH A STAINLESS STEEL BAND.
- (4) THE TOP OF THE FOUNDATION TO 18" (450) BELOW GRADE SHALL BE FORMED.
- (5) SURFACE WATER WILL NOT BE PERMITTED TO ENTER THE HOLE AND ALL WATER WHICH MAY HAVE INFILTRATED INTO THE HOLE SHALL BE REMOVED BEFORE PLACING CONCRETE.
- (6) THE LIGHT TOWER SHALL NOT BE ERECTED UNTIL AFTER THE CONCRETE HAS BEEN CURED ACCORDING TO ARTICLE 1020.13.
- (7) ANCHOR RODS SHALL BE STRAIGHT AND SHALL BE ACCORDING TO AASHTO M 314 OR ASTM F1554, GRADE 725(GRADE 105) AND GALVANIZED ACCORDING TO ARTICLE 1006.9.
- (8) ANCHOR ROD INFORMATION SHALL BE SUBMITTED FOR APPROVAL AND SHALL BE FULLY COORDINATED FOR APPROVAL WITH TOWER MANUFACTURER REQUIREMENTS.
- (9) REINFORCEMENT BARS SHALL BE ACCORDING TO ARTICLE 1006.10
- (10) TWO ANCHOR RODS OPPOSITE EACH OTHER SHALL HAVE THE ANCHOR ROD THREADS PEENED AFTER NUTS ARE INSTALLED.
- (11) A MINIMUM OF THREE FULL THREADS SHALL REMAIN EXPOSED AFTER LIGHT TOWER IS INSTALLED.
- (12) ALL GROUNDING INDICATED IN THE PLANS SHALL BE INCLUDED IN THE COST OF THE LIGHT TOWER FOUNDATION AND SHALL NOT BE PAID FOR SEPARATELY.
- (13) CUT NUTS, OR JAM NUTS, ARE NOT ALLOWED
- (14) ANCHOR ROD QUANTITY, DIAMETER, AND LENGTH SHALL BE DETERMINED BY THE TOWER MANUFACTURER AND APPROVED BY THE ENGINEER. EACH FOUNDATION SHALL HAVE A MINIMUM OF 8 ANCHOR RODS.
- (15) COORDINATE THE ROD CIRCLE DIAMETER OF THE TOWER WITH THE DIAMETER OF THE ANCHOR ROD CAGE.
- (16) THE FOUNDATION SHALL BE POURED MONOLITHICALLY AND SHALL HAVE NO CONSTRUCTION JOINTS.

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DRAWN -  
CHECKED -  
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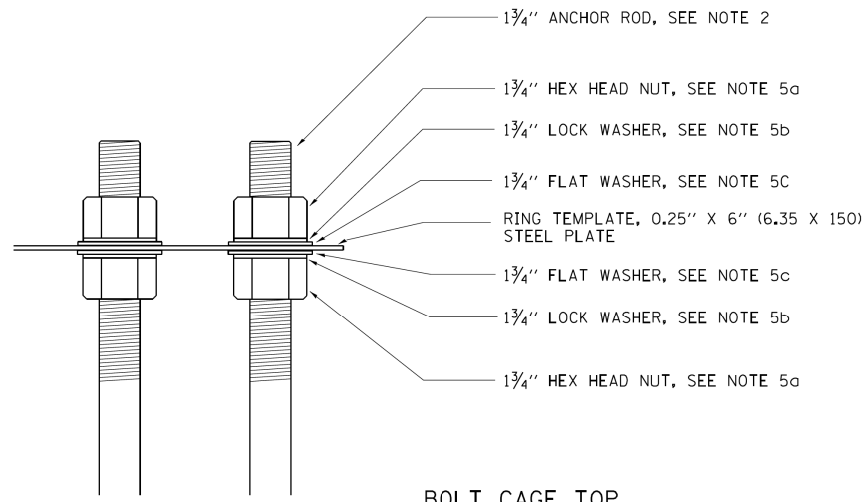
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

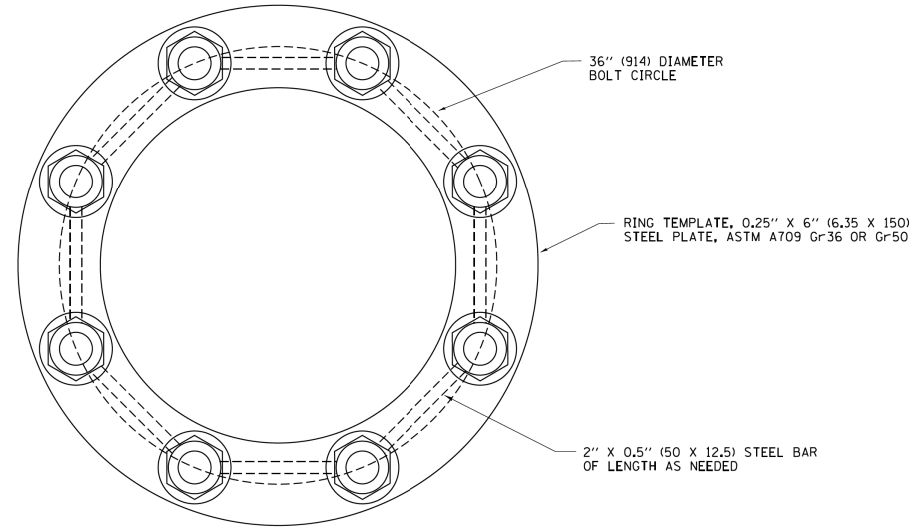
HIGH MAST LIGHT TOWER  
120 FT TO 140 FT FOUNDATION DETAIL

SCALE: SHEET 11 OF 40 SHEETS STA. TO STA.

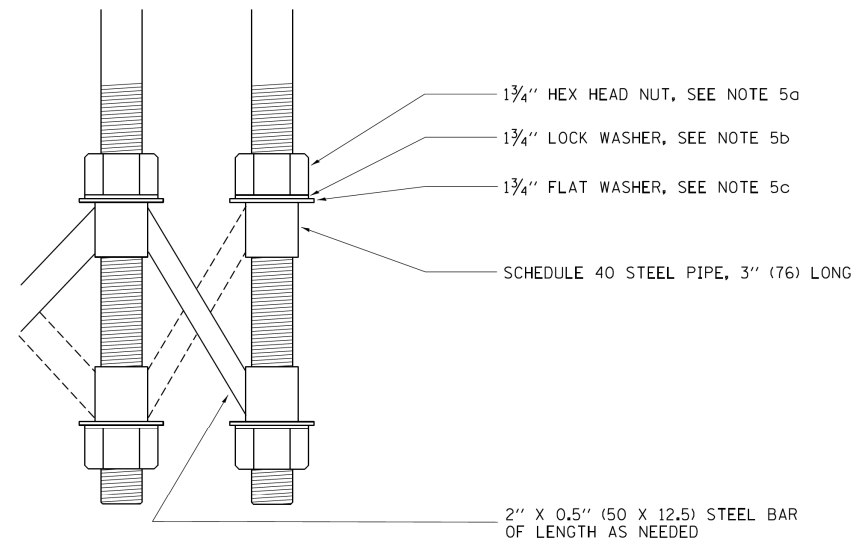
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90/94/290	2013-010R	COOK	747	595
BE-506a		CONTRACT NO. 60W28		
ILLINOIS FED. AID PROJECT				



BOLT CAGE TOP



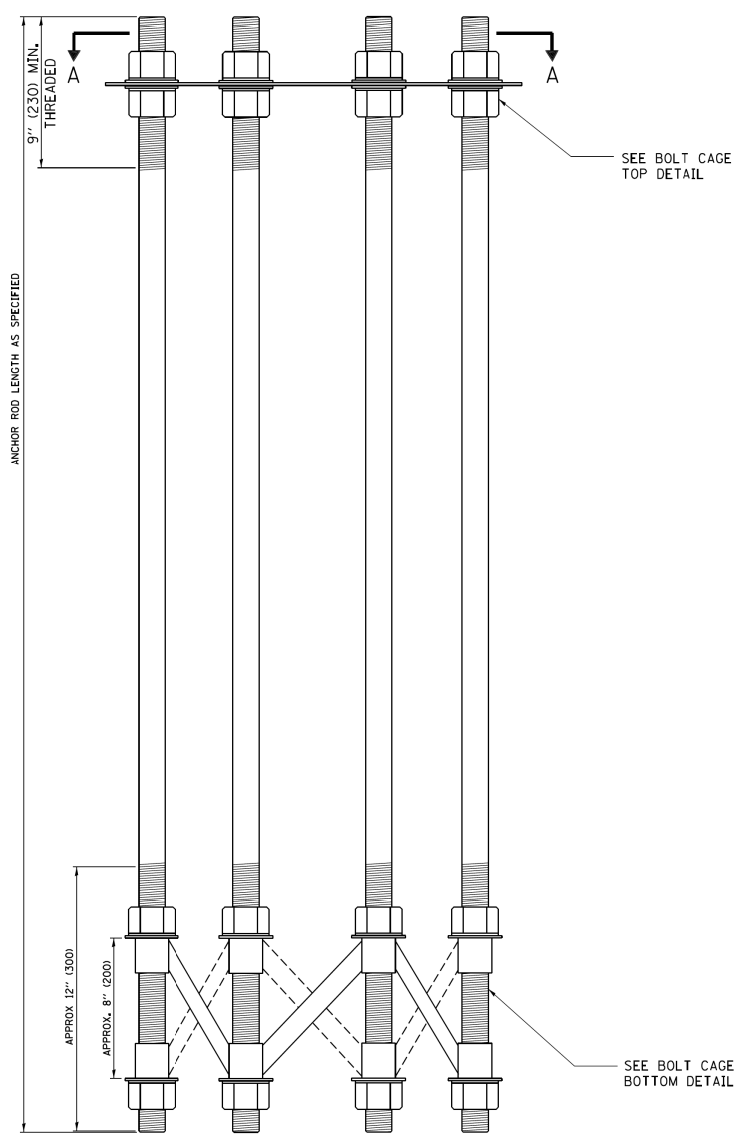
SECTION A-A



BOLT CAGE BOTTOM

**NOTES**

1. ALL DIMENSIONS IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN
2. ANCHOR RODS SHALL BE STRAIGHT AND SHALL BE ACCORDING TO AASHTO M 314 OR ASTM F1554, GRADE 725 (GRADE 105) AND GALVANIZED ACCORDING TO ARTICLE 1006.09.
3. ANCHOR ROD INFORMATION SHALL BE SUBMITTED FOR APPROVAL AND SHALL BE FULLY COORDINATED WITH TOWER MANUFACTURERS REQUIREMENTS.
4. CUT NUTS, OR JAM NUTS, ARE NOT ALLOWED
5. ANCHOR ROD CAGE HARDWARE SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
  - a) 1 3/4" HEX HEAD NUTS  
AASHTO M291, GRADE C, C3, D ,DH OR DH3  
HOT DIPPED GALVANIZED AASHTO M 232
  - b) 1 3/4" HELICAL LOCK WASHERS  
ANSI/ASME B18.21.1  
I.D. 1.758 - 1.778  
O.D. 2.596 MAX.  
WIDTH 0.383 MIN.  
THICKNESS 0.469 MIN.  
HARDNESS 26-45 ROCKWELL C  
HOT DIPPED GALVANIZED AASHTO M232
  - c) 1 3/4" FLAT WASHERS  
AASHTO M293  
O.D. 3.25  
I.D. 1.875  
THICKNESS 0.16 - 0.25  
HARDNESS 26-45 ROCKWELL C.  
HOT DIPPED GALVANIZED AASHTO M232
6. THE SHAFT LENGTHS SHALL BE BASED ON SOIL BORINGS IN THE PLANS AND OR A DETERMINATION OF SOIL CONDITIONS BY THE ENGINEER.
7. ALL FOUNDATION REINFORCEMENT STEEL SHALL BE EPOXY COATED.
8. THE FOUNDATION SHALL BE POURED MONOLITHICALLY AND SHALL HAVE NO CONSTRUCTION JOINTS.
9. ANCHOR RODS AND ALL ASSOCIATED HARDWARE ARE SHOWN AS MINIMUMS. SIZING SHALL BE DETERMINED BY THE TOWER MANUFACTURER AND APPROVED BY THE ENGINEER. EACH FOUNDATION SHALL HAVE A MINIMUM OF 8 ANCHOR RODS.



ANCHOR BOLT CAGE

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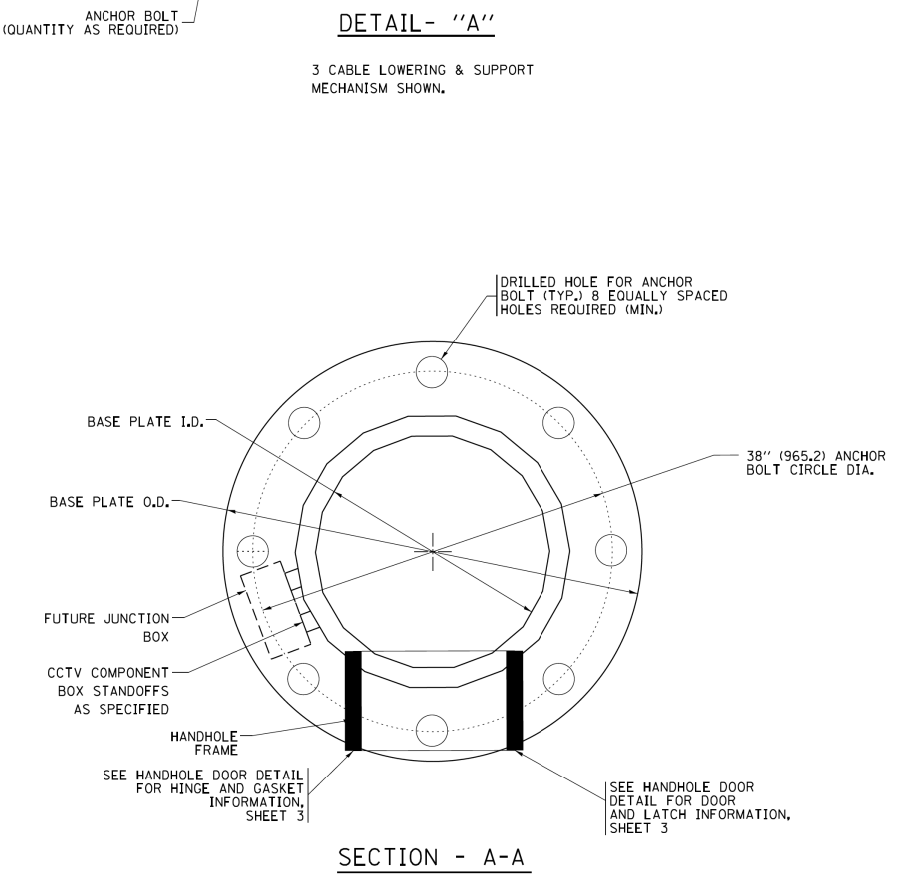
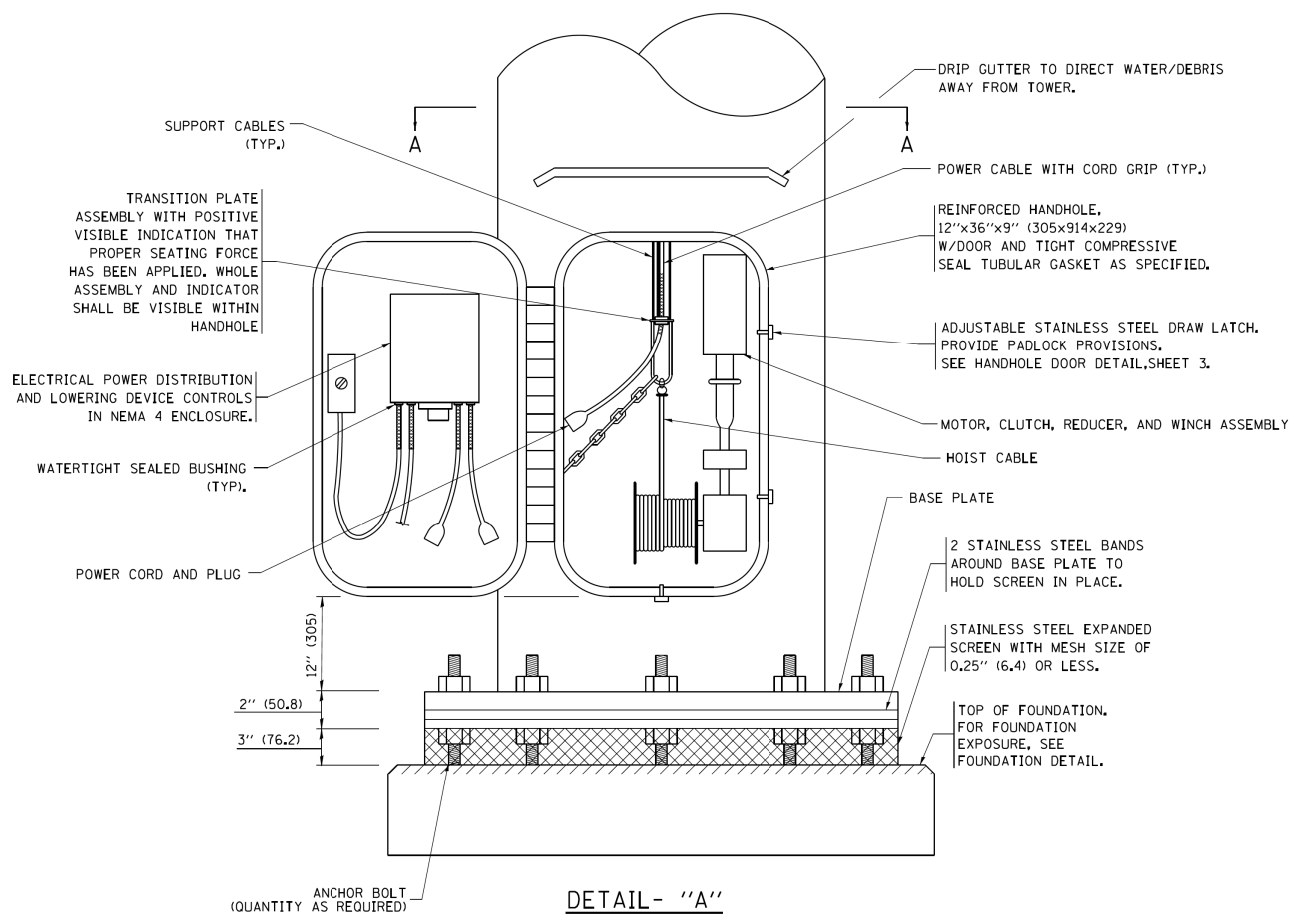
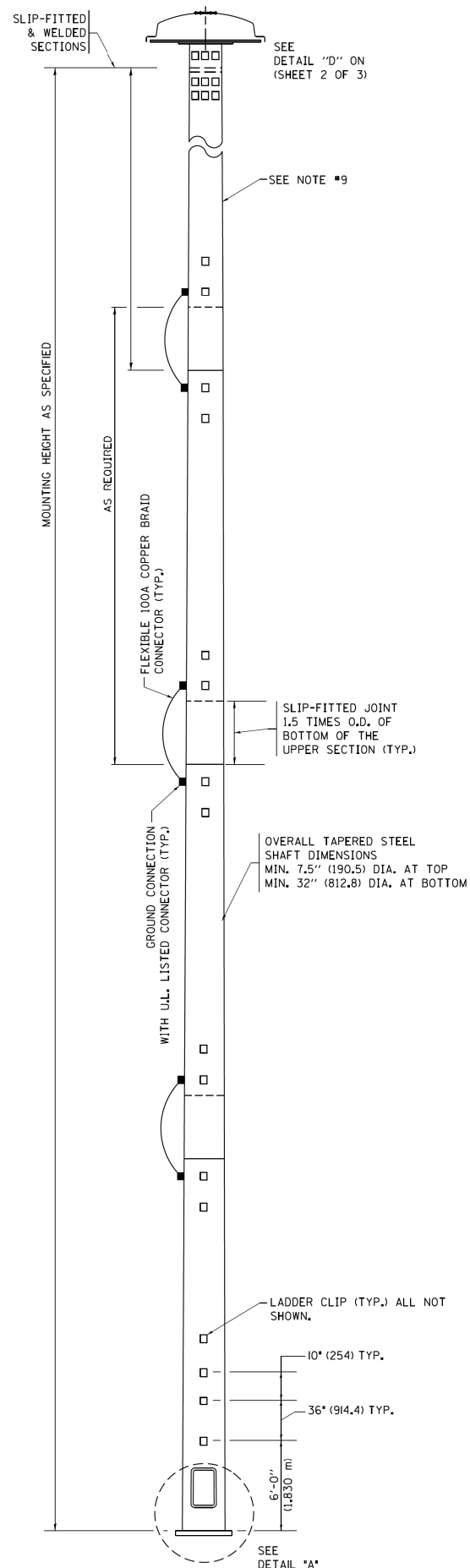
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DRAWN -	REVISED - 02-27-13
CHECKED -	REVISED -
DATE - 03-12-10	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

HIGH MAST LIGHT TOWER  
 120 FT TO 140 FT FOUNDATION DETAIL

SCALE: SHEET 12 OF 40 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	596
BE-506b			CONTRACT NO. 60W28	
ILLINOIS FED. AID PROJECT				



- NOTES:**
1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
  2. THE DESIGN SHALL BE BASED UPON AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" CURRENT AT THE TIME THE PROJECT IS ADVERTISED AND A TOTAL COMBINED LUMINAIRE WEIGHT OF 720 LBS. (326 kg) AND HAVING A TOTAL PROJECTED AREA OF 24 SQ. FT. (7.3 sq. m).
  3. ALL TOWER SHAFT COMPONENTS, INCLUDING, BUT NOT LIMITED TO THE SHAFT SECTIONS, BASE PLATE, LADDER CLIPS, HANDHOLE DOOR, HANDHOLE REINFORCING, RAIN GUTTER, AND BASE PLATE, SHALL BE FABRICATED FROM HIGH-STRENGTH, LOW ALLOY, STEEL WITH A MINIMUM YIELD STRENGTH OF 50,000 PSI (345 K PA) ACCORDING TO AASHTO M 223 (ASTM A 572 GR50)
  4. THE ELECTRIC MOTOR, MOTOR GEAR REDUCER, WINCH DRUM ASSEMBLY AND AUTOMATIC SHUTOFF SWITCH OF THE LOWERING DEVICE SHALL BE ACCESSIBLE FROM THE FRONT OF THE TOWER FOR EASY REMOVAL AND MAINTENANCE. ALL COMPONENTS SHALL BE REMOVABLE THROUGH THE HANDHOLE.
  5. THE LIGHT TOWER SHAFT SHALL HAVE LADDER CLIPS. CLIPS SHALL BEGIN 6 FT. (1.8 m) ABOVE THE BASE PLATE WITH ALTERNATE 1.8 m (900) AND 10 INCH (250) SPACING THEREAFTER, FOR THE ENTIRE LENGTH. THE TOP 10 FT. (3 m) OF THE POLE SHAFT SHALL HAVE 3 SETS OF CLIPS. EACH SET OF CLIPS SHALL BE 120 DEGREES APART. CLIPS SHALL BE 0.25 X 2 INCHES (6 X 50) WELDED TO THE SHAFT TO PRODUCE A SLOT 0.625 INCHES (15.9) DEEP AND 1.625 INCHES (41.3) LONG. THE TOP INSIDE EDGE SHALL BE CHAMFERED.
  6. A COPPER BONDING JUMPER SHALL BOND SLIP-FIT POLE SECTIONS TOGETHER WITH A FLAT COPPER MESH AND STAINLESS STEEL GROUND LUGS.
  7. ALL TOWER SHAFT HARDWARE, SUCH AS GROUND LUGS, JUNCTION BOXES, HARDWARE FOR THE HANDHOLE DOOR, INCLUDING THE HANDLE/LATCH MECHANISM, HINGE AND DOOR STOP, SHALL BE STAINLESS STEEL. ALL CONDUIT AND CONDUIT FITTINGS SHALL BE PVC COATED GALVANIZED STEEL.
  8. THE ENTIRE TOWER INCLUDING THE SHAFT, HANDHOLE, HANDHOLE DOOR, BASE PLATE AND ALL OTHER ELEMENTS WELDED TO THE SHAFT SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111 (ASTM A 123) AND THEN PAINTED AS SPECIFIED. THE LUMINAIRE RING SHALL BE PRIMED AND PAINTED AS SPECIFIED.
  9. THE FINISH COAT SHALL BE ANSI 70, SKY GREY COLOR SAMPLE TO BE SUBMITTED FOR APPROVAL, ON LIGHT TOWERS DESIGNATED FOR A CCTV CAMERA TO BE INSTALLED.
  10. ALL MULTI-CONDUCTOR CABLES SHALL BE FITTED WITH A HEAT-SHRINK MULTI-LEG BOOT. THE BOOT SHALL MEET MILITARY SPECIFICATION MIL-I-81765/1.
  11. THE LIGHT TOWER SHALL BE STRAIGHT AND CENTERED ON ITS LONGITUDINAL AXIS, UNDER NO-WIND CONDITIONS, SO WHEN EXAMINED WITH A TRANSIT FROM ANY DIRECTION, THE DEVIATION FROM THE NORMAL SHALL NOT EXCEED 1/8 IN. IN 3 FT (2 mm IN 1 m) WITHIN ANY 5 FT (1.5 m) OF HEIGHT, WITH TOTAL DEVIATION NOT TO EXCEED 3 IN. (75) FROM THE VERTICAL AXIS THROUGH THE CENTER OF THE POLE BASE.
  12. PVC CONDUIT WILL NOT BE ALLOWED FOR ANY LIGHT TOWER COMPONENT.
  13. COUNTER WEIGHTS TO BE INCLUDED AS A PART OF THE LIGHT TOWER PAY ITEM.

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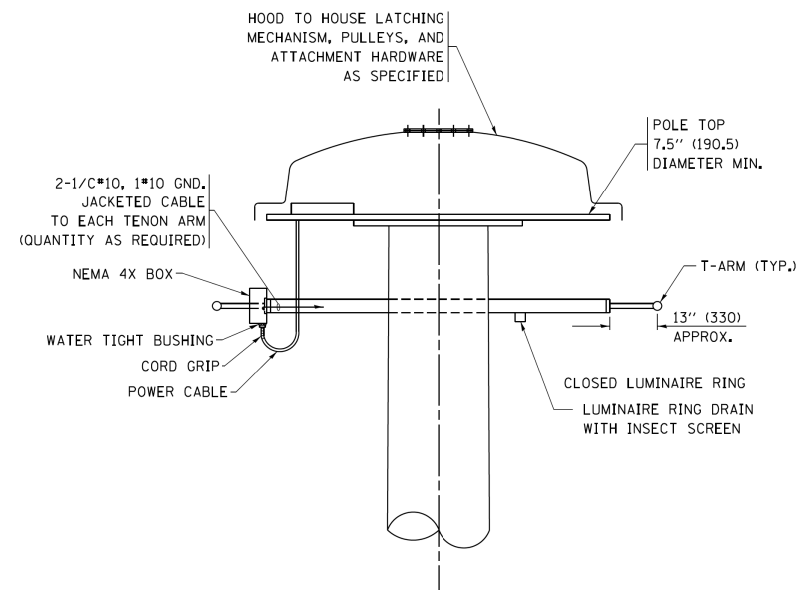
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**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

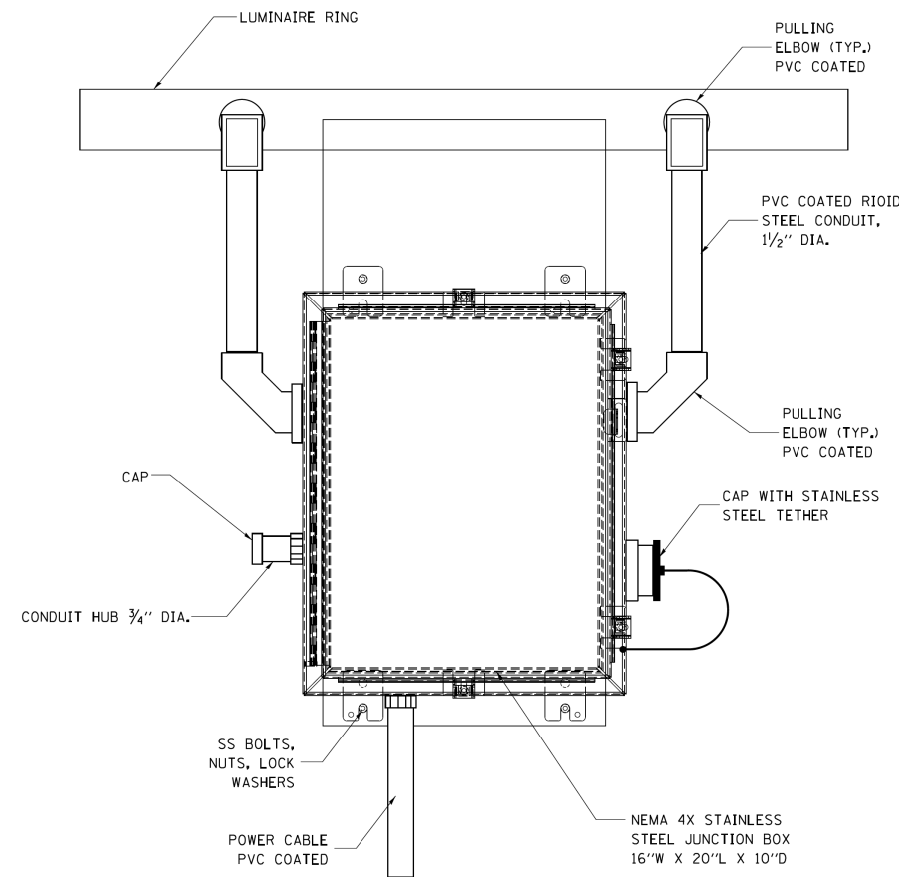
**HIGH MAST LIGHT TOWER**  
**150 FT TO 160 FT (46 m TO 49 m)**

SCALE: SHEET 13 OF 40 SHEETS STA. TO STA.

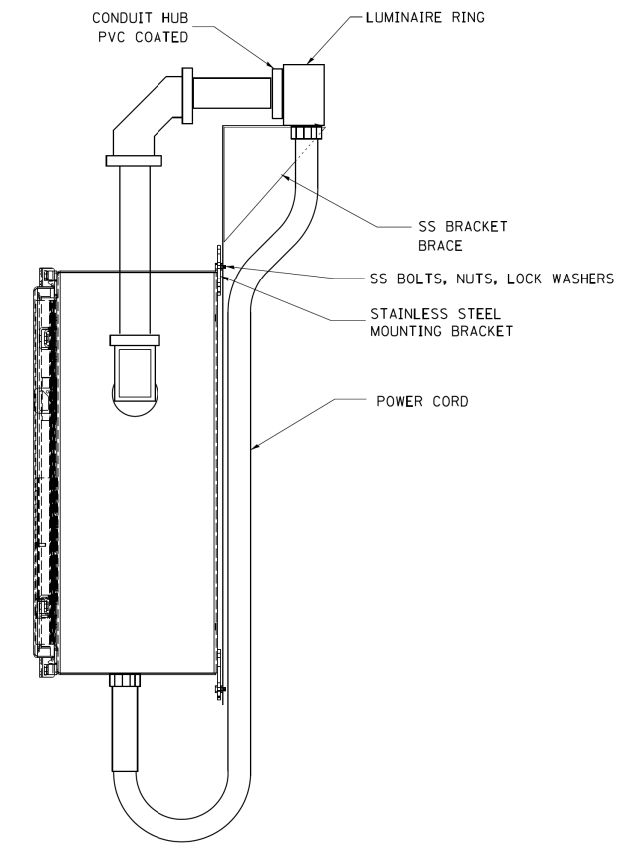
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90/94/290	2013-010R	COOK	747	597
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ILLINOIS FED. AID PROJECT				



DETAIL--'D'

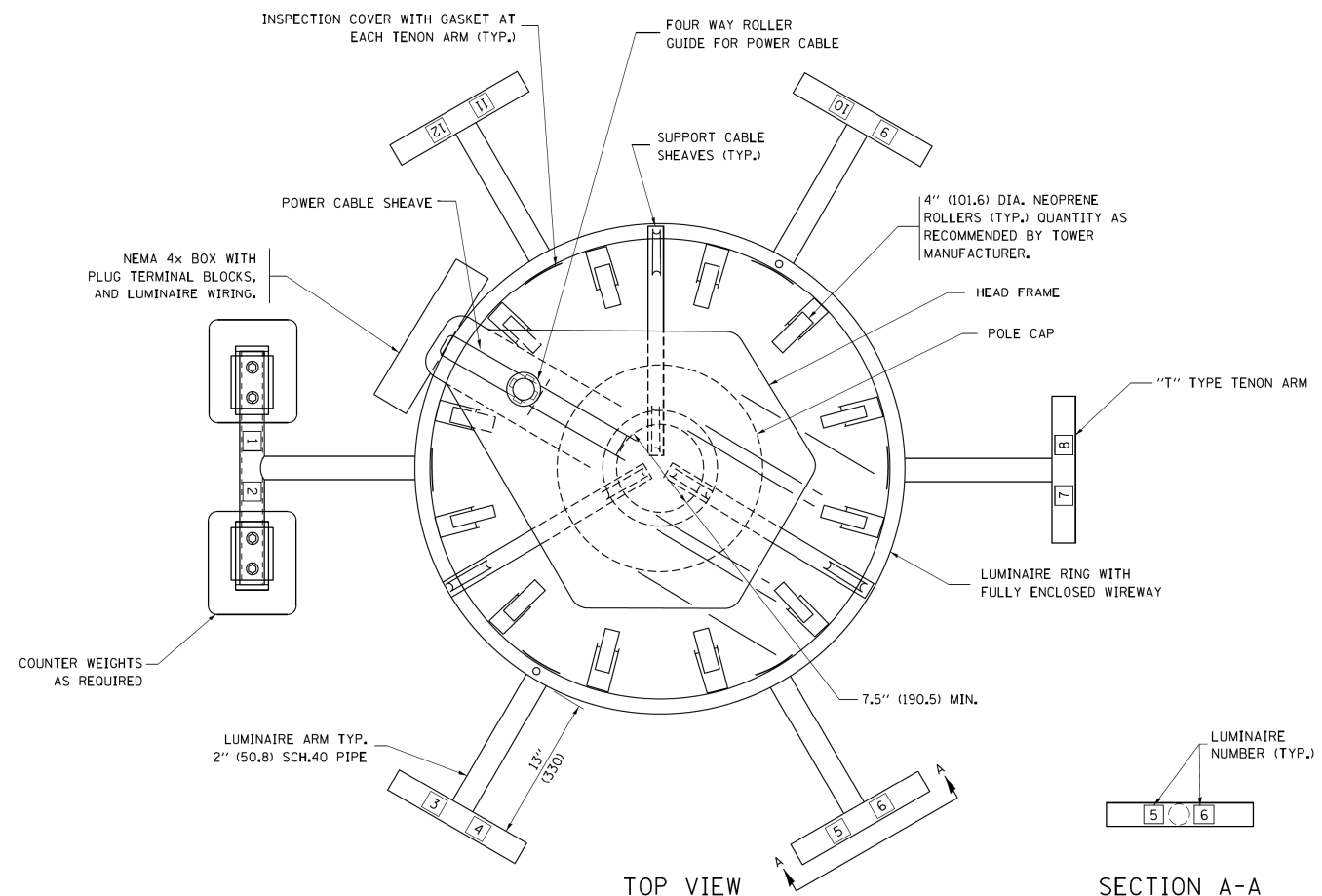


FRONT VIEW  
N.T.S.



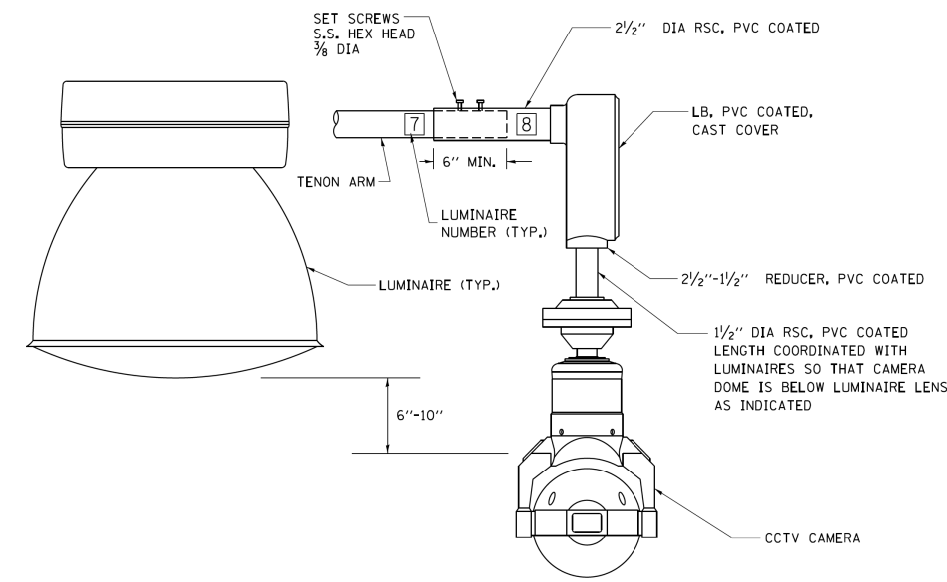
SIDE VIEW  
N.T.S.

LUMINAIRE RING TERMINAL BOX



TOP VIEW

SECTION A-A



CCTV CAMERA MOUNTING DETAIL

NOTES:

- LUMINAIRE WIRES SHALL EXTEND 24 INCHES (609 mm) LONGER THAN THEIR RESPECTIVE TENON ARM AND SHALL BE TRAINED BACK INTO THE ARM WHICH SHALL THEN BE CLOSED WITH A CAP AS SPECIFIED. ALL WIRES SHALL BE CAPPED WITH HEAT SHRINK INSULATING BOOTS, CRIMP CAPS ARE UNACCEPTABLE. ALL RING WIRES SHALL BE TAGGED WITH WIRE MARKERS AT BOTH ENDS. THE TENON ARMS SHALL ALSO BE TAGGED CORRESPONDING TO THE WIRING CONTAINED WITHIN.
- SPLICING WILL NOT BE ALLOWED WITHIN THE LUMINAIRE RING.
- ALL TOWER SHAFT HARDWARE, SUCH AS GROUND LUGS, JUNCTION BOXES, HARDWARE FOR THE HANDHOLE DOOR, INCLUDING THE HANDLE/LATCH MECHANISM, HINGE AND DOOR STOP, SHALL BE STAINLESS STEEL. ALL CONDUIT AND CONDUIT FITTINGS SHALL BE PVC COATED GALVANIZED STEEL.
- ALL MULTI-CONDUCTOR CABLES SHALL BE FITTED WITH A HEAT-SHRINK MULTI-LEG BOOT. THE BOOT SHALL MEET MILITARY SPECIFICATION MIL-I-81765/1.

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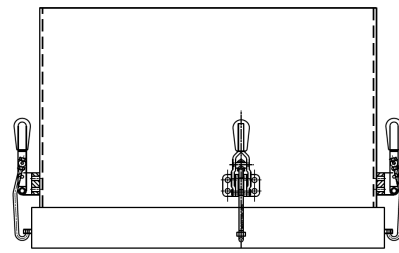
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STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

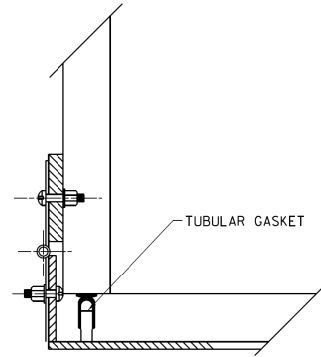
HIGH MAST LIGHT TOWER  
 150 FT TO 160 FT (46 m TO 49 m)

SCALE: SHEET 14 OF 40 SHEETS STA. TO STA.

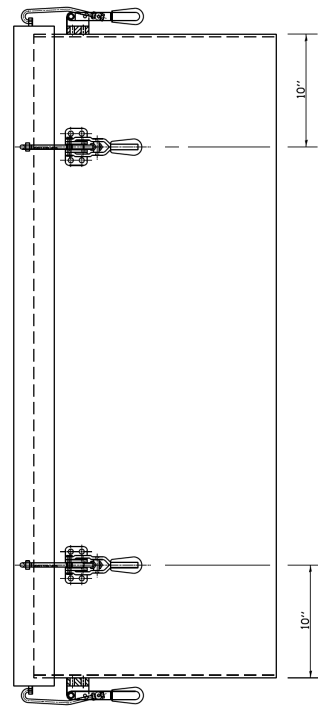
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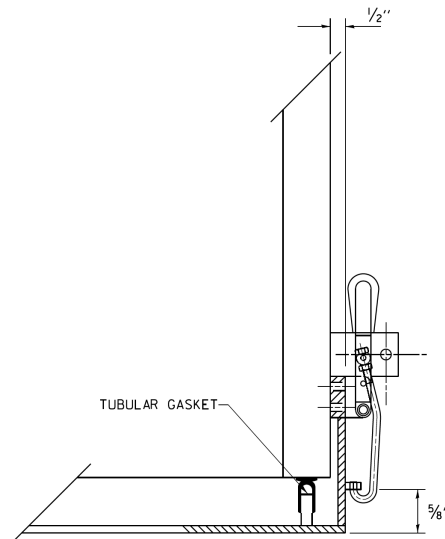
TOP VIEW



HINGE DETAIL

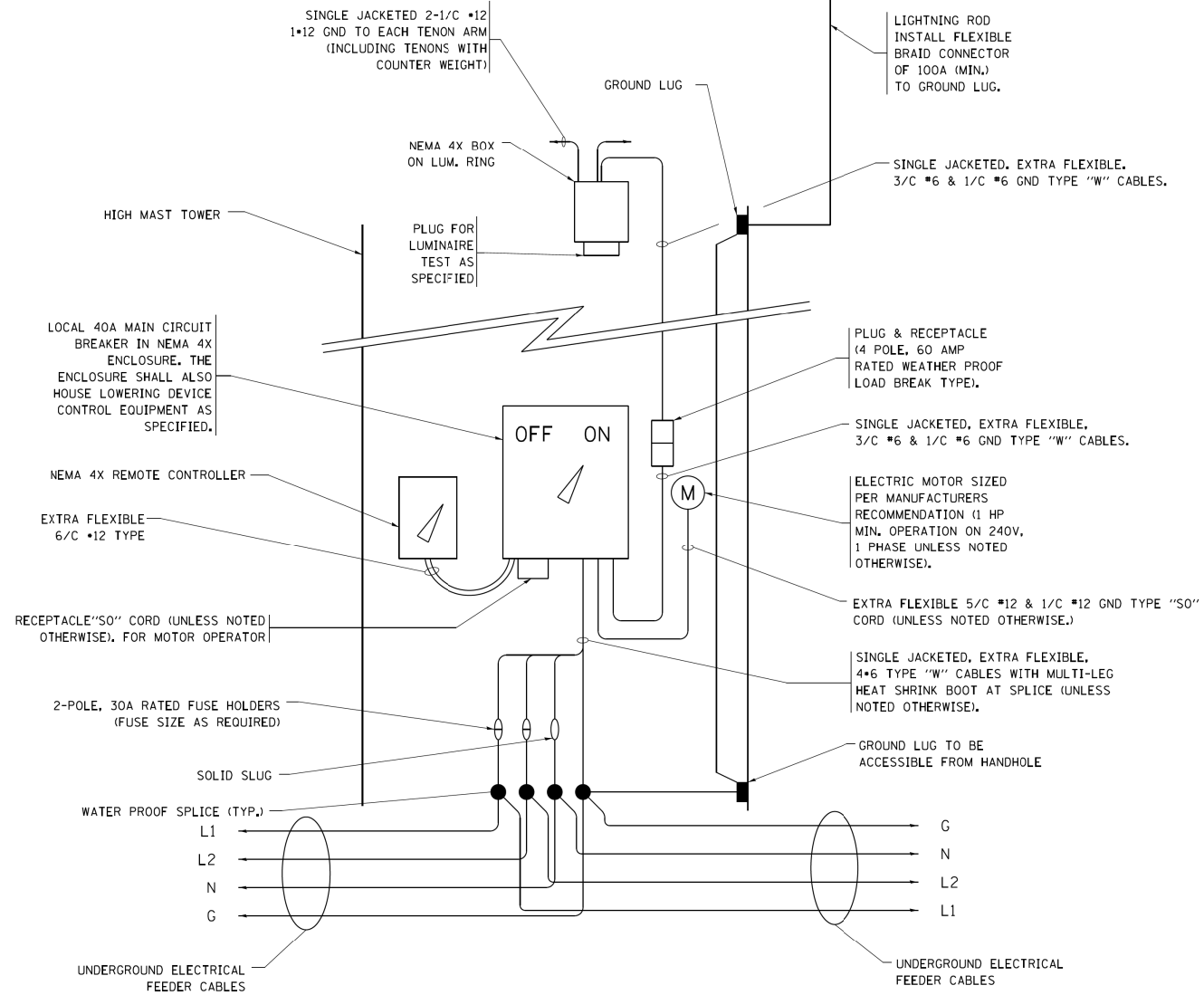


SIDE VIEW

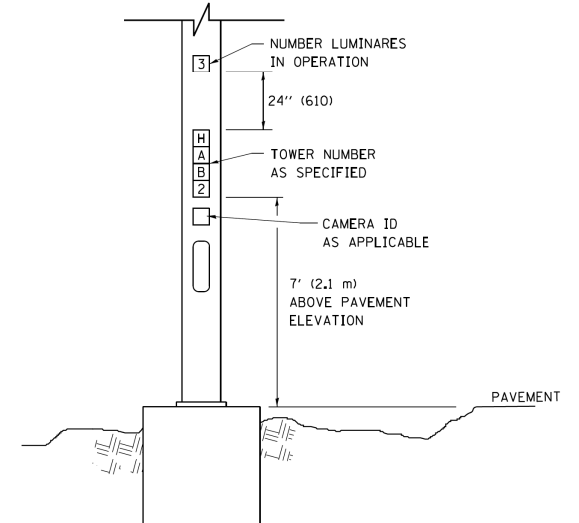


LATCH DETAIL

HANDHOLE DOOR DETAILS



HIGH MAST POLE WIRING DIAGRAM



LIGHT TOWER NUMBERING DETAIL

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REVISED - 09-02-10  
 REVISED - 02-27-13  
 REVISED -  
 REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

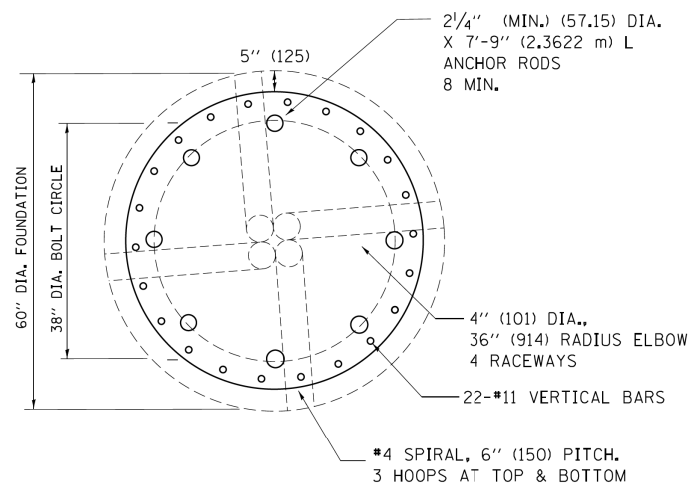
HIGH MAST LIGHT TOWER  
 150 FT TO 160 FT (46 m TO 49 m)

SCALE: SHEET 15 OF 40 SHEETS STA. TO STA.

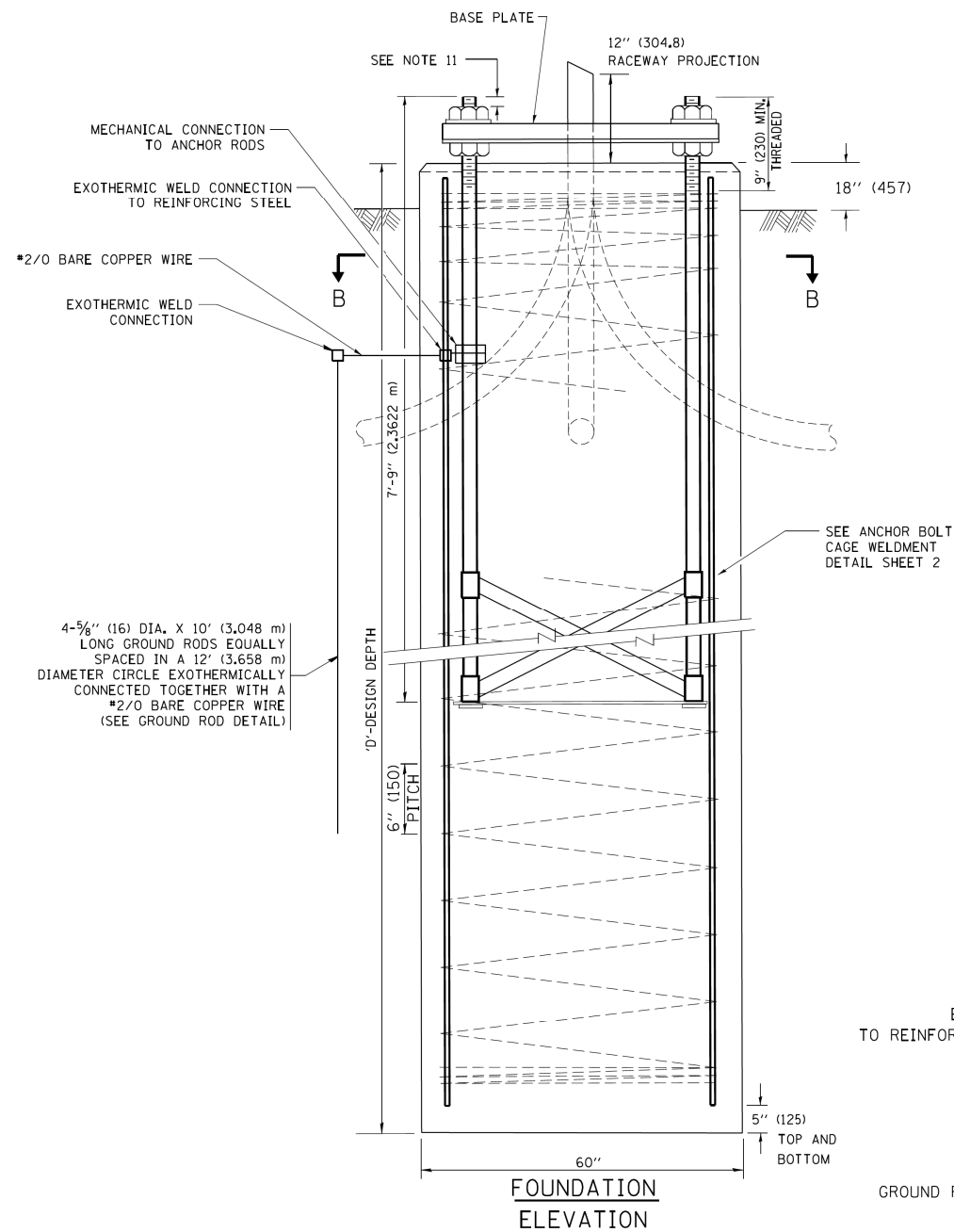
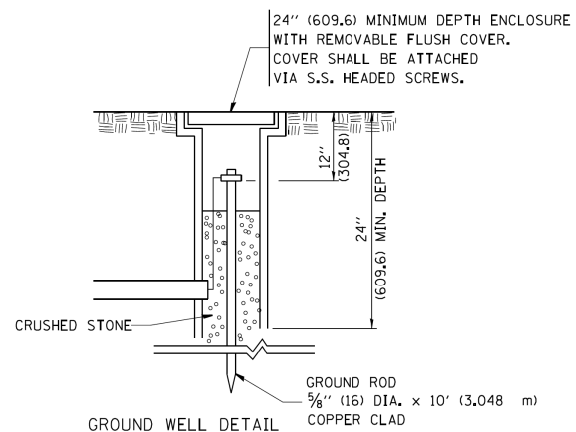
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	599
BE-510c			CONTRACT NO. 60W28	
ILLINOIS FED. AID PROJECT				



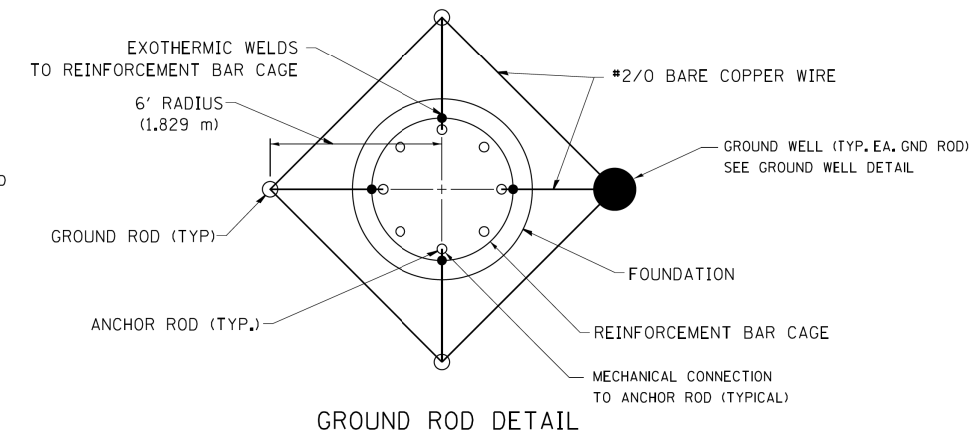
SHAFT LENGTH (D) TABLE				
SOIL CONSISTENCY		AVERAGE STRENGTH	LIGHT TOWER MOUNTING HEIGHT	
		Qu In tsf (Qu In kPa)	150 FT. (46 m)	160 FT. (48.8 m)
	SOFT	<0.5 (<50)	28'-6" (8.7 m)	30'-0" (9.1 m)
	MEDIUM	0.5 TO 1 (50 TO 100)	23'-6" (7.0 m)	24'-0" (7.3 m)
COHESIVE	STIFF	1 TO 2 (100 TO 200)	19'-6" (5.9 m)	20'-0" (6.1 m)
	VERY STIFF	2 TO 4 (200 TO 400)	17'-0" (5.1 m)	17'-6" (5.2 m)
	HARD	>4 (>400)	15'-6" (4.5 m)	15'-6" (4.5 m)
		N in BLOWS/FT. (N in BLOWS/0.3m)		
	VERY LOOSE	<5 (<5)	21'-0" (6.3 m)	21'-6" (6.5 m)
	LOOSE	5 TO 10 (5 TO 10)	19'-0" (5.7 m)	19'-6" (5.9 m)
GRANULAR	MEDIUM	10 TO 25 (10 TO 25)	18'-0" (5.5 m)	18'-6" (5.6 m)
	DENSE	25 TO 50 (25 TO 50)	17'-0" (5.2 m)	17'-6" (5.3 m)
	VERY DENSE	>50 (>50)	16'-6" (4.9 m)	17'-0" (5.1 m)



SECTION-B-B



FOUNDATION ELEVATION



GROUND ROD DETAIL

DESIGN NOTES

- ALL DIMENSIONS IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN
- THE ANCHOR RODS SHALL BE VERTICAL NO ADJUSTMENT SHALL BE ALLOWED AFTER THE FOUNDATION IS PLACED.
- THE GAP BETWEEN THE FOUNDATION AND THE BASE PLATE SHALL BE ENCLOSED WITH A STAINLESS STEEL SCREEN FASTENED WITH A STAINLESS STEEL BAND.
- THE TOP OF THE FOUNDATION TO 18" (450) BELOW GRADE SHALL BE FORMED.
- SURFACE WATER WILL NOT BE PERMITTED TO ENTER THE HOLE AND ALL WATER WHICH MAY HAVE INFILTRATED INTO THE HOLE SHALL BE REMOVED BEFORE PLACING CONCRETE.
- THE LIGHT TOWER SHALL NOT BE ERECTED UNTIL AFTER THE CONCRETE HAS BEEN CURED ACCORDING TO ARTICLE 1020.13.
- ANCHOR RODS SHALL BE STRAIGHT AND SHALL BE ACCORDING TO AASHTO M 314 OR ASTM F1554, GRADE 725(GRADE 105) AND GALVANIZED ACCORDING TO ARTICLE 1006.9.
- ANCHOR ROD INFORMATION SHALL BE SUBMITTED FOR APPROVAL AND SHALL BE FULLY COORDINATED FOR APPROVAL WITH TOWER MANUFACTURER REQUIREMENTS.
- REINFORCEMENT BARS SHALL BE ACCORDING TO ARTICLE 1006.10
- TWO ANCHOR RODS OPPOSITE EACH OTHER SHALL HAVE THE ANCHOR ROD THREADS PEENED AFTER NUTS ARE INSTALLED.
- A MINIMUM OF THREE FULL THREADS SHALL REMAIN EXPOSED AFTER LIGHT TOWER IS INSTALLED.
- ALL GROUNDING INDICATED IN THE PLANS SHALL BE INCLUDED IN THE COST OF THE LIGHT TOWER FOUNDATION AND SHALL NOT BE PAID FOR SEPARATELY.
- CUT NUTS, OR JAM NUTS, ARE NOT ALLOWED
- ANCHOR ROD QUANTITY, DIAMETER, AND LENGTH SHALL BE DETERMINED BY THE TOWER MANUFACTURER AND APPROVED BY THE ENGINEER. EACH FOUNDATION SHALL HAVE A MINIMUM OF 8 ANCHOR RODS.
- COORDINATE THE ROD CIRCLE DIAMETER OF THE TOWER WITH THE DIAMETER OF THE ANCHOR ROD CAGE.
- THE FOUNDATION SHALL BE POURED MONOLITHICALLY AND SHALL HAVE NO CONSTRUCTION JOINTS.

FILE PATH = CA\Project\14-0323 - W28 Final PDFs\0160W28-SHT-D1-Detail-1BE-511A.dgn



D160W28-SHT-D1-Detail-1BE-511A.dgn  
 USER NAME = auyeungh  
 PLOT SCALE = 50.0000' / in.  
 PLOT DATE = 3/24/2014

DESIGNED - R. TOMSONS  
 DRAWN -  
 CHECKED -  
 DATE - 03-12-10

REVISED - 02-27-13  
 REVISED -  
 REVISED -  
 REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

HIGH MAST LIGHT TOWER  
 150 FT TO 160 FT FOUNDATION DETAIL

SCALE: SHEET 16 OF 40 SHEETS STA. TO STA.

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	600
BE-511a			CONTRACT NO. 60W28	
ILLINOIS FED. AID PROJECT				