

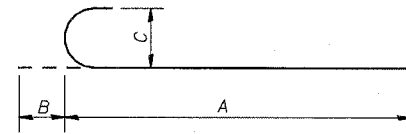
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008- 001VB	COOK	579	401
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT-		
CONTRACT NO. 60E10				

SHEET NO. 16
25 SHEETS

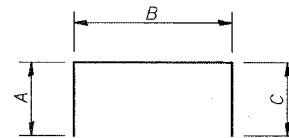
BILL OF MATERIAL - NORTH ABUTMENT

Bar	No.	Size	Length	Shape
h(E)	72	#5	23'-11"	—
h1(E)	6	#5	0'-11"	—
h2(E)	7	#5	5'-0"	—
h3(E)	7	#5	6'-8"	—
h4(E)	11	#5	20'-3"	—
h5(E)	10	#5	19'-11"	—
h6(E)	2	#5	23'-0"	—
h7(E)	28	#5	13'-11"	—
n1(E)	59	#5	6'-0"	—
n2(E)	21	#5	5'-0"	—
n3(E)	41	#7	6'-7"	—
n5(E)	265	#10	25'-11"	—
n6(E)	23	#7	7'-5"	—
n7(E)	93	#9	13'-2"	—
sp2	10	#5	21'-2"	
sp3	5	#5	22'-2"	
t(E)	62	#10	16'-2"	—
t1(E)	47	#6	16'-2"	—
t3(E)	18	#7	23'-1"	—
t4(E)	11	#5	23'-1"	—
u(E)	93	#5	8'-8"	—
u1(E)	2	#5	8'-9"	—
v(E)	44	#7	7'-4"	—
v1(E)	44	#5	6'-1"	—
v3(E)	12	#5	9'-7"	—
v4(E)	10	#5	18'-8"	—
v5(E)	20	#6	18'-0"	—
v6(E)	1	#5	15'-0"	—
v7(E)	1	#6	15'-0"	—
v8(E)	47	#5	8'-5"	—
v10(E)	14	#5	12'-9"	—
v11(E)	27	#7	12'-9"	—
v14(E)	2	#5	2'-3"	—
w(E)	72	#7	24'-8"	—
w1(E)	10	#5	19'-11"	—
w2(E)	10	#7	19'-11"	—
w3(E)	3	#5	20'-3"	—
w4(E)	3	#7	20'-3"	—
w5(E)	2	#5	20'-9"	—
Porous Granular Embankment		Cu. Yd.	341	
Concrete Structures		Cu. Yd.	264.5	
Reinforcement Bars		Lbs.	6,950	
Reinforcement Bars, Epoxy Coated		Lbs.	52,940	
Concrete Sealer		Sq. Ft.	169	
Braced Excavation		Cu. Yd.	237.9	
Non-Special Waste Disposal		Cu. Yd.	970.3	
Geocomposite Wall Drain		Sq. Yd.	77.6	
Structure Excavation		Cu. Yd.	601.6	
Drilled Shaft in Soil		Cu. Yd.	130.9	
Drilled Shaft in Rock		Cu. Yd.	16.7	
Permanent Steel Sheet Piling		Sq. Ft.	1,002	



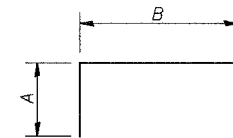
BARS nx(E)

Bar	A	B	C
n1(E)	5'-5"	7"	5"
n2(E)	4'-5"	7"	5"
n3(E)	5'-9"	10"	7"
n5(E)	24'-6"	1'-5"	1'-1 1/4"
n6(E)	6'-7"	10"	7"
n7(E)	11'-11"	1'-3"	11 3/4"



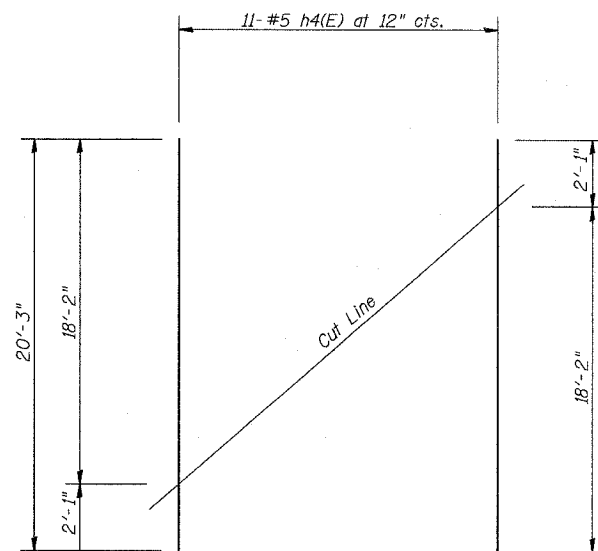
BARS u(E) & u1(E)

Bar	A	B	C
u(E)	2'-0"	4'-8"	2'-0"
u1(E)	4'-1"	7"	4'-1"



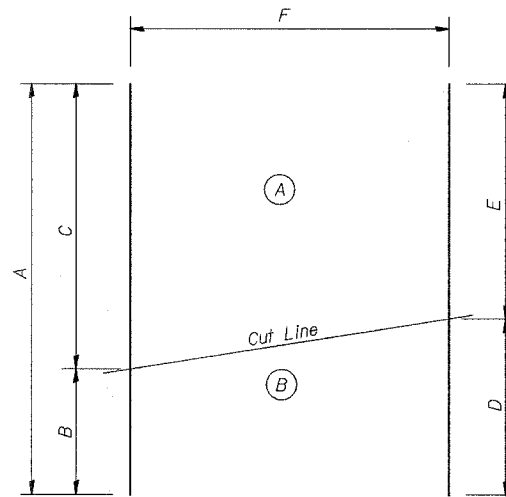
BARS h2(E) & h3(E)

Bar	A	B
h2(E)	1'-3"	3'-9"
h3(E)	2'-0"	4'-8"



FIELD CUTTING DIAGRAM #1

Order bars full length. Cut bars in field as shown. Use top half in F.F. and bottom half in B.F. for h4(E) bars.



FIELD CUTTING DIAGRAM #2

Order bars full length. Cut bars in field as shown. Place patterns (A) & (B) side by side as shown on sheet 15 for tx(E) bars, sheet 12 for vx(E) bars and sheet 15 for wx(E) bars.

Bar	A	B	C	D	E	F
t3(E)	23'-1"	8'-8"	14'-5"	11'-5 1/2"	11'-7 1/2"	18-#7 bars at 7" cts.
t4(E)	23'-1"	8'-8"	14'-5"	11'-5 1/2"	11'-7 1/2"	11-#5 bars at 12" cts.
v4(E)	18'-8"	3'-8"	15'-0"	9'-1"	9'-7"	10-#5 bars at 12" cts.
v5(E)	18'-8"	3'-8"	15'-0"	9'-2"	9'-6"	20-#6 bars at 6" cts.
w3(E)	20'-3"	1'-3"	19'-0"	8'-4"	11'-11"	3-#5 bars at 12" cts.
w4(E)	20'-3"	1'-3"	19'-0"	8'-4"	11'-11"	3-#7 bars at 12" cts.

Notes:

- Place backfill behind sidewalk retaining wall prior to backfilling behind abutment and abutment retaining wall.
- Bars designated (E) shall be epoxy coated.
- Length of Spiral given is Height of Spiral. Weight includes Weight of Spacers for Spiral.

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DESIGNED	AEU
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DRAWN	AEU
CHECKED	JPB

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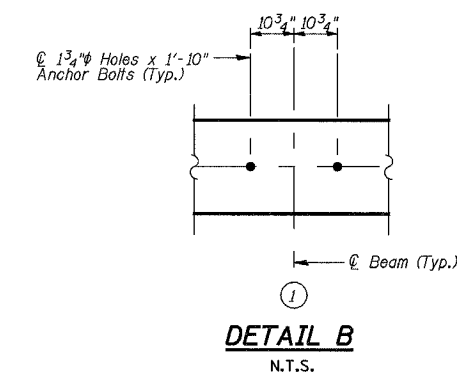
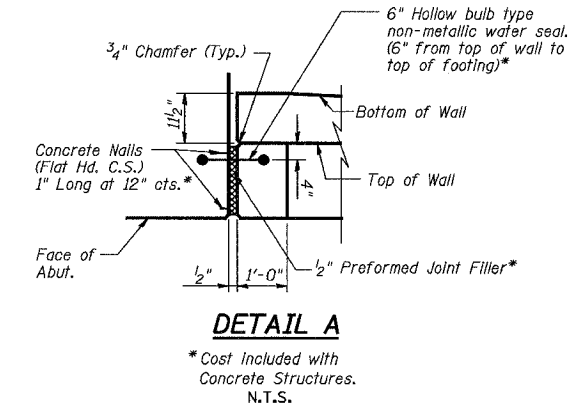
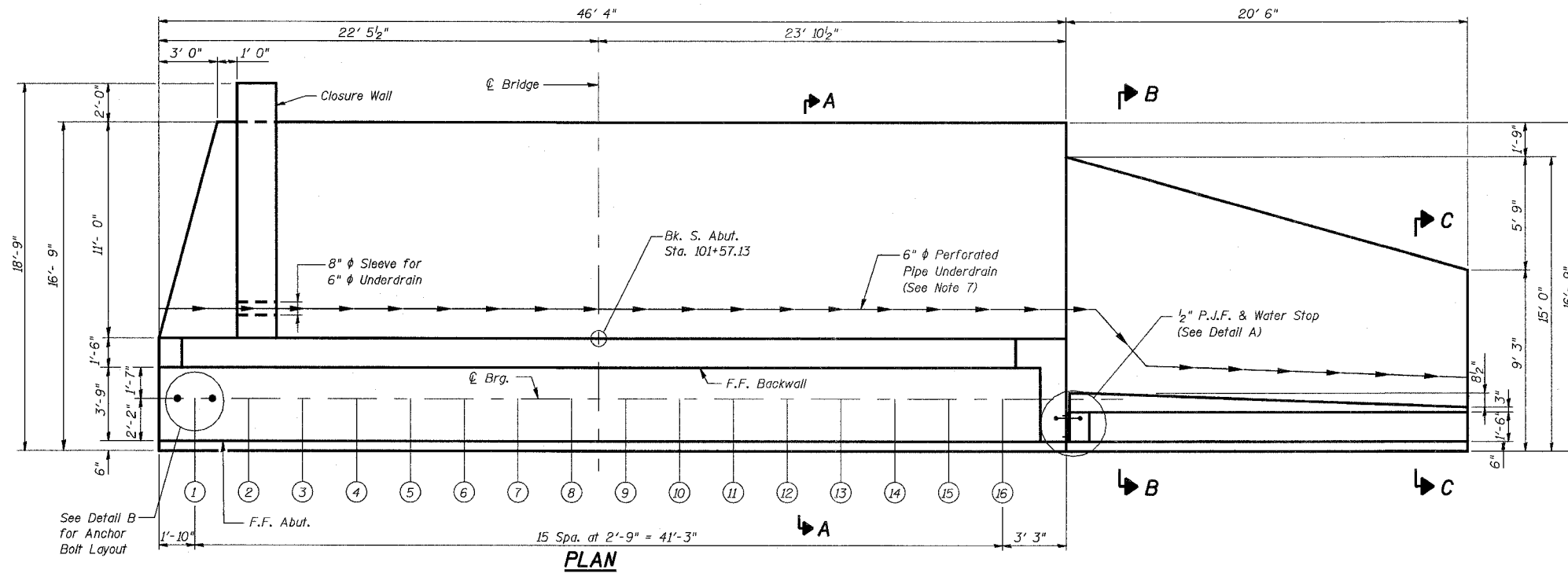
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
**NORTH ABUTMENT
DETAILS III**
CN GATEWAY LEAD TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 93+69.01 STRUCTURE NO. 016-2819
SCALE: N.T.S. DATE: 2/21/2008

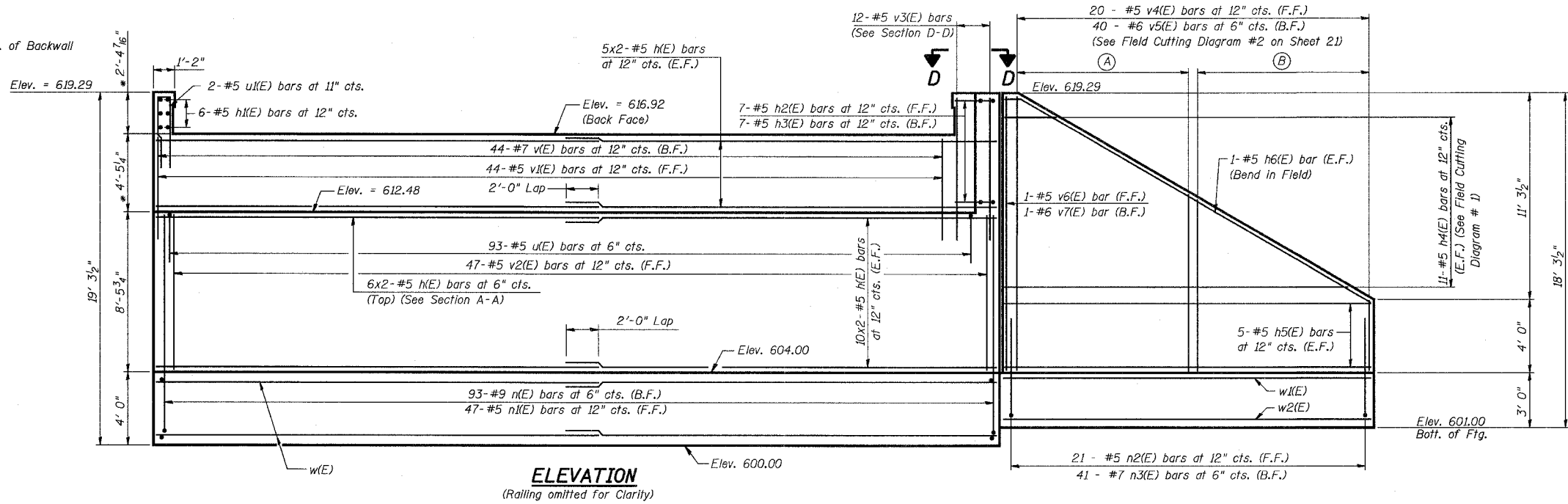
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	402
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-	CONTRACT NO. 60E10	

SHEET NO. 17
25 SHEETS



* at B.F. of Backwall



- NOTES:
1. Reinforcement bars designated (E) shall be epoxy coated.
 2. Work this sheet with Sheets 18 through 21.
 3. See Sheet 18 for Sections.
 4. Space reinforcement in seat to miss anchor bolts.
 5. See Sheet 21 for Bill of Materials.
 6. Cost of pipe sleeves is included with Concrete Structures.
 7. See Sheet 24 of U.S. 6 Mainline Retaining Walls Along 159th Street plans for Pipe Underdrain Layout and Quantities.
 8. See sheet 7 for Wingwall Railing Details.

LEGEND

F.F. - Front face
B.F. - Back face
E.F. - Each face

DESIGNED	AEU
CHECKED	JPB
DRAWN	AEU
CHECKED	JPB

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NAME	DATE

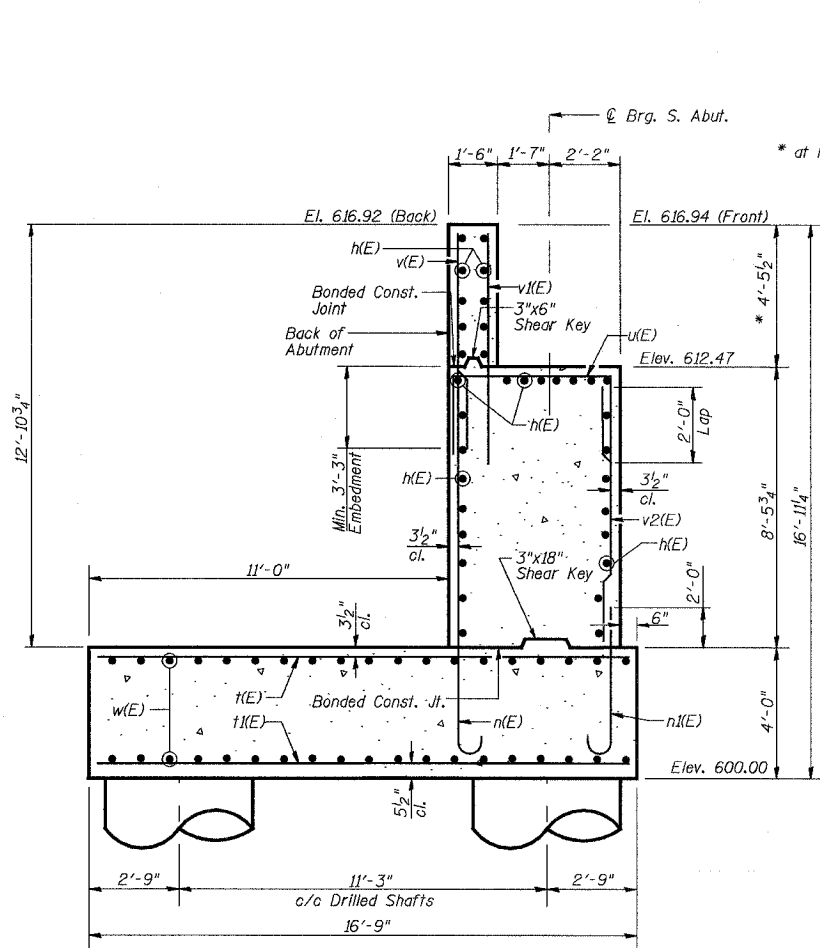
ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
**SOUTH ABUTMENT
PLAN & ELEVATION**
CN GATEWAY LEAD TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 93+69.01 STRUCTURE NO. 016-2819
SCALE: 1/4"=1'-0" DATE: 2/21/2008

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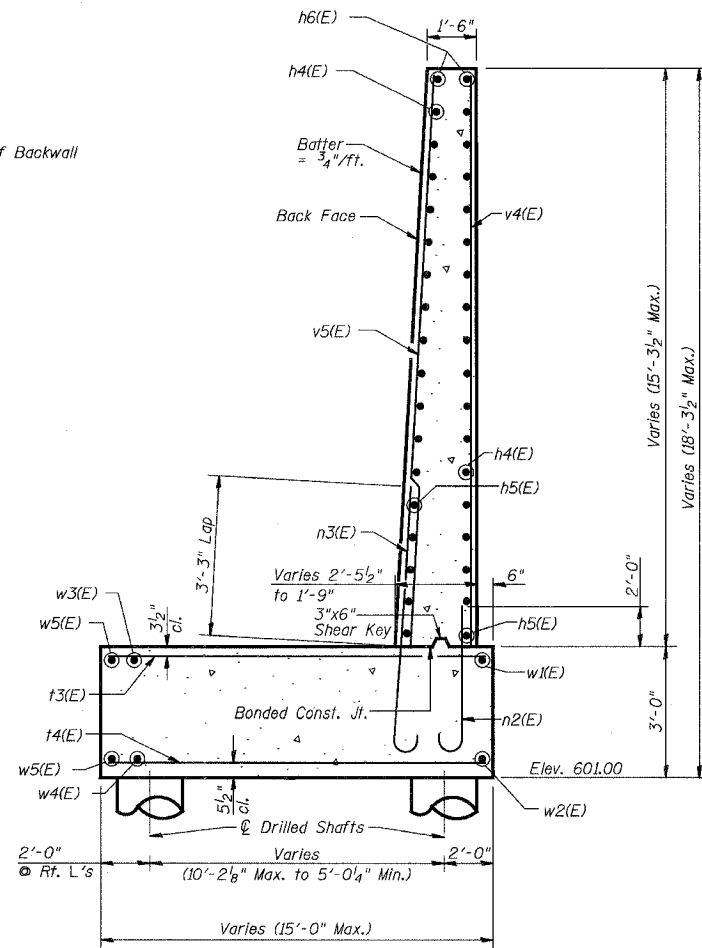
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-	CONTRACT NO. 60E10	

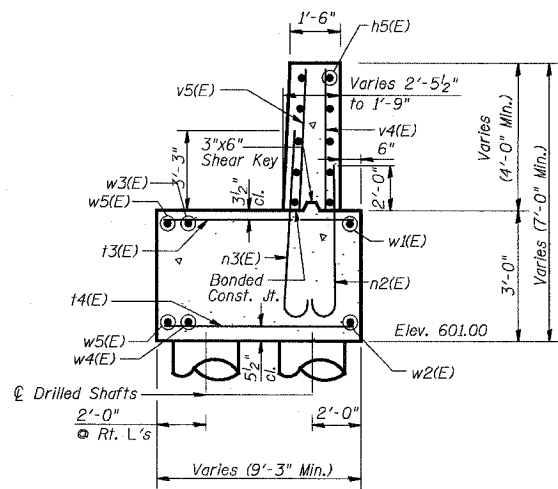
SHEET NO. 18
25 SHEETS



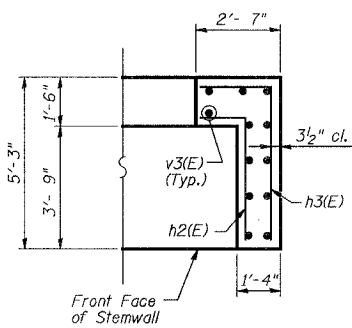
SECTION A-A
3/8"=1'-0"



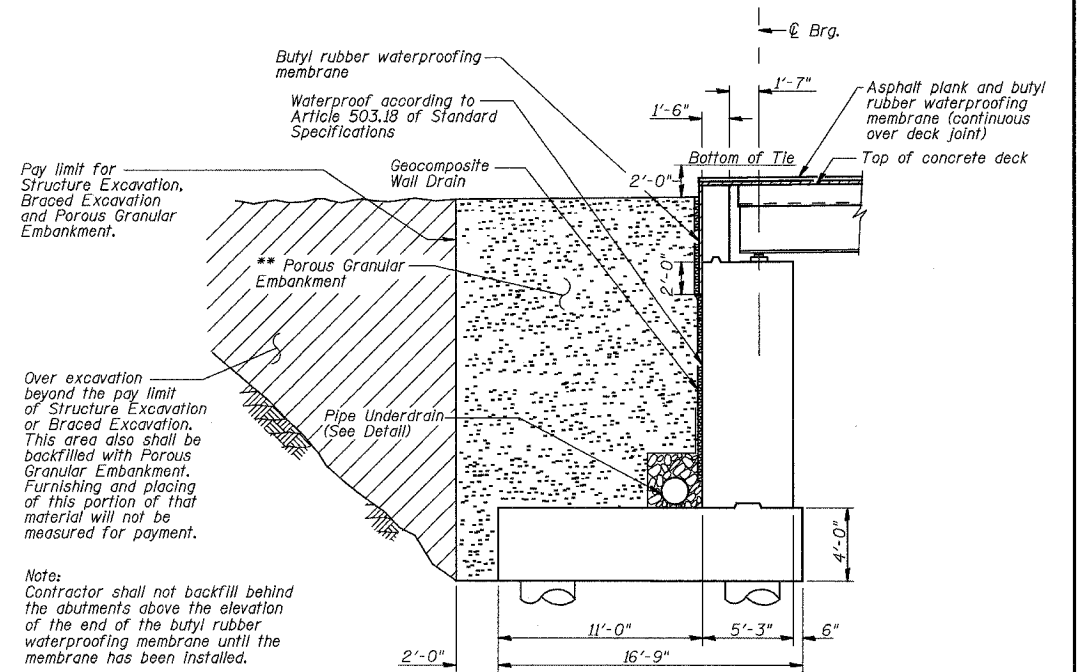
SECTION B-B
3/8"=1'-0"



SECTION C-C
N.T.S.

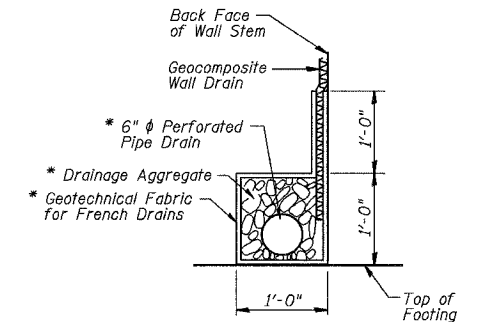


SECTION D-D
N.T.S.



DRAINAGE & BACKFILL DETAIL

N.T.S.
** Excavation for placing Porous Granular Embankment is included in cost of Braced Excavation & Structure Excavation
Porous Granular Embankment shall be compacted to 95% Modified Proctor Density and its coarse aggregate gradation shall be CA 18.



PIPE UNDERDRAIN DETAIL

* Included in cost of Pipe Underdrain For Structures 6"
N.T.S.

NOTES:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Work this sheet with Sheets 17 through 21.
3. Space reinforcement in seat to miss anchor bolts.
4. See Sheet 21 for Bill of Materials.
5. See U.S. 6 Mainline Retaining Walls Along I59th Street plans for Pipe Underdrain Layout and Quantities.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SOUTH ABUTMENT-DETAILS I

CN GATEWAY LEAD TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 93+69.01 STRUCTURE NO. 016-2819
SCALE: AS NOTED DATE: 2/21/2008

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100 South Wacker Drive,
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Chicago, IL 60606
(312) 939-1000

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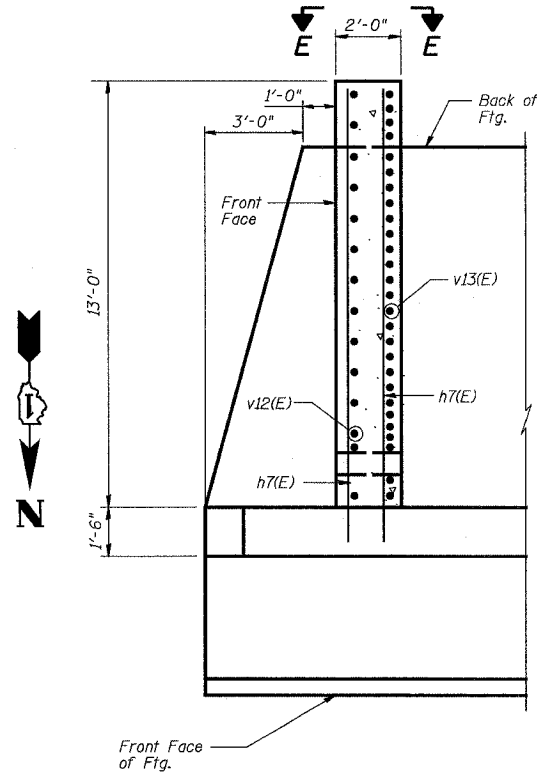
DESIGNED AEU
CHECKED JPB
DRAWN AEU
CHECKED JPB

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DEPARTMENT OF TRANSPORTATION

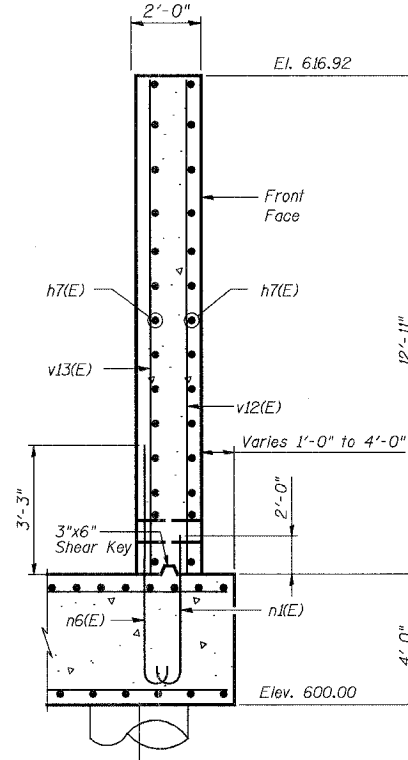
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	200B-001VB	COOK	579	404
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

CONTRACT NO. 60E10

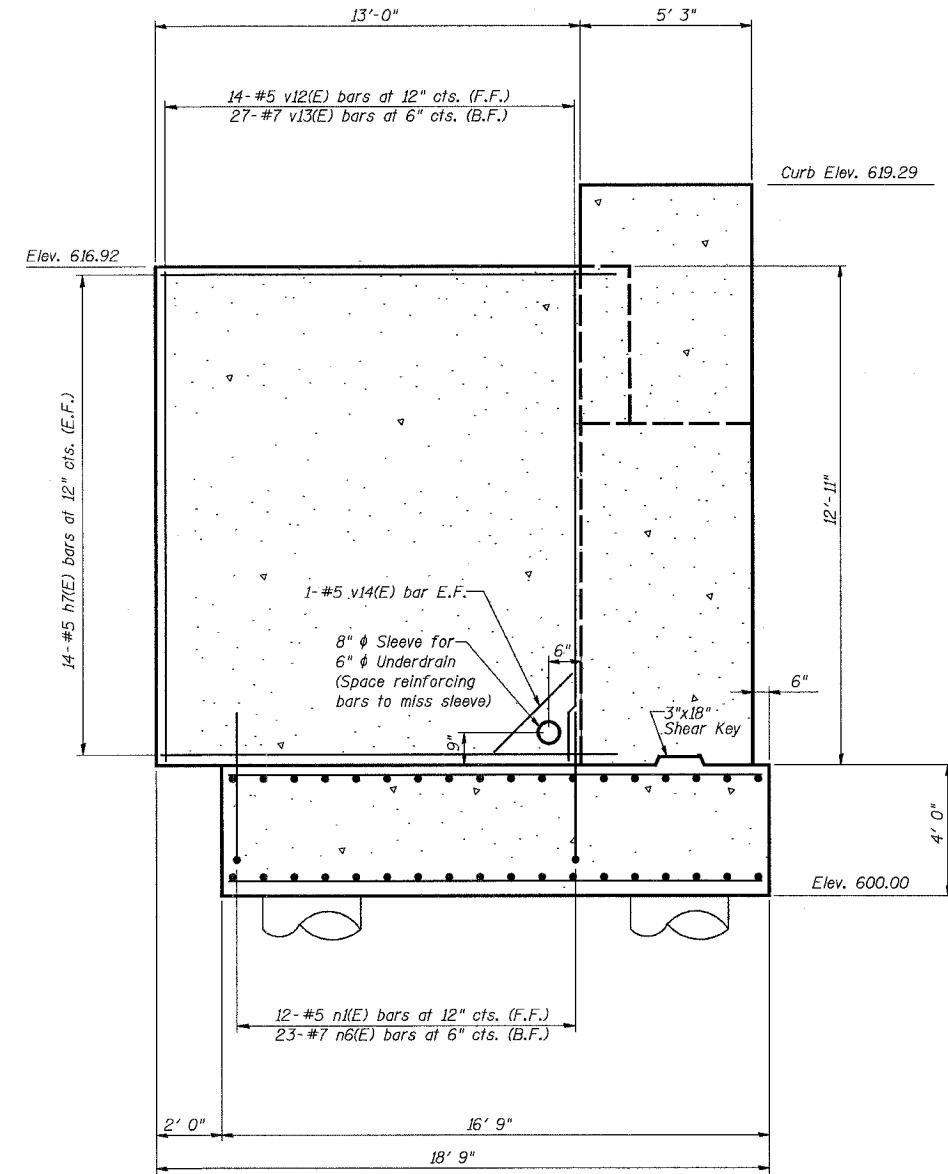
SHEET NO. 19
25 SHEETS



CLOSURE WALL PLAN



SECTION E-E
(Looking North)



CLOSURE WALL ELEVATION
(Looking West)

LEGEND

F.F. - Front Face
B.F. - Back Face
E.F. - Each Face

NOTES:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Work this sheet with Sheets 17 through 21.
3. See Sheet 21 For Bill of Materials.
4. Cost of pipe sleeve is included with Concrete Structures.

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DESIGNED	AEU
CHECKED	JPB
DRAWN	AEU
CHECKED	JPB

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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1

**SOUTH ABUTMENT
DETAILS II**

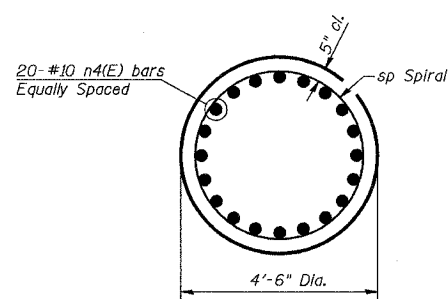
CN GATEWAY LEAD TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 93+69.01 STRUCTURE NO. 016-2819
SCALE: 3/8"=1'-0" DATE: 2/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

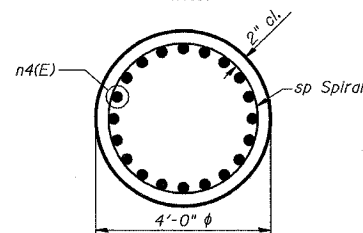
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008- 001VB	COOK	579	405
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 20
25 SHEETS

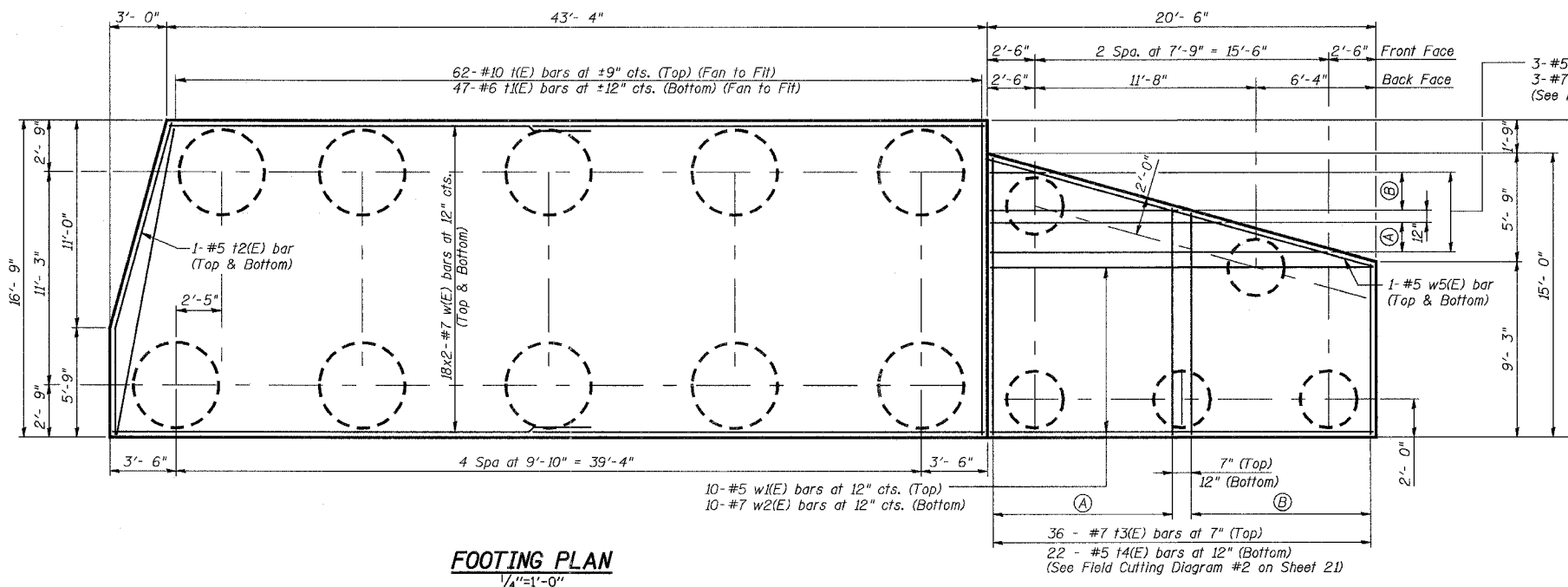
CONTRACT NO. 60E10



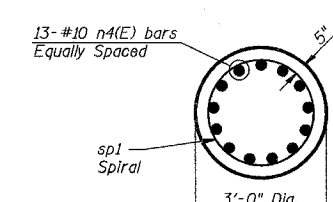
SECTION A-A
(10 Required)
N.T.S.



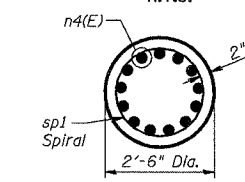
SECTION B-B
(10 Required)
N.T.S.



FOOTING PLAN
1/4"=1'-0"



SECTION C-C
(5 Required)
N.T.S.

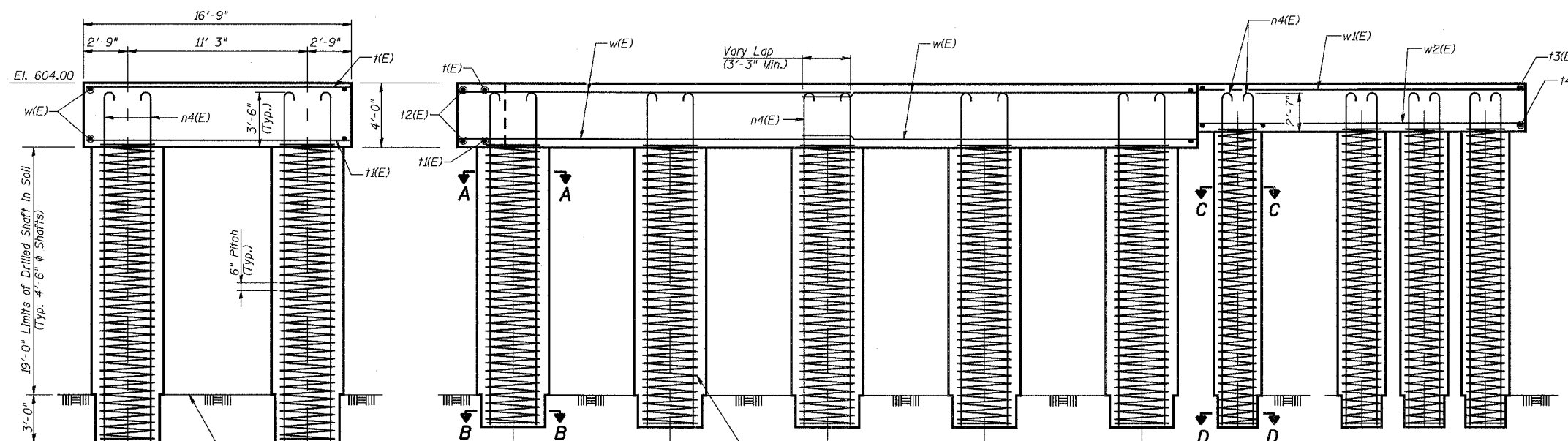


SECTION D-D
(5 Required)
N.T.S.

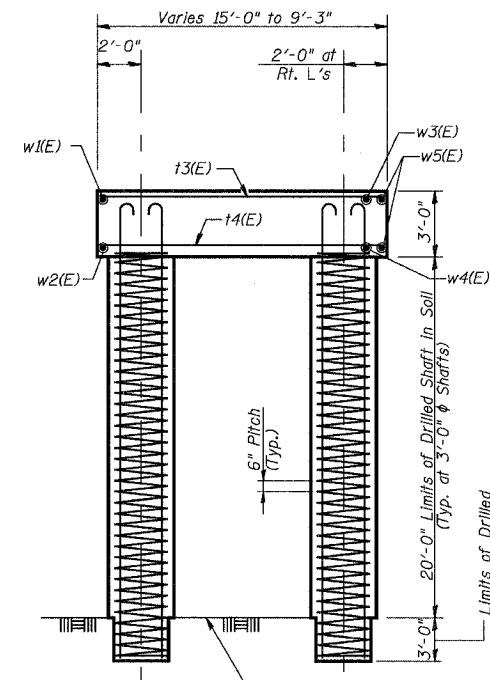


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ELEVATION
1/4"=1'-0"



END VIEW
1/4"=1'-0"

- NOTES:
1. Reinforcement designated (E) shall be epoxy coated.
 2. Work this sheet with Sheets 17 through 21.
 3. For Field Cutting Diagram #1 and #2 see Sheet 21.
 4. Drilled Shafts shall be drilled to Elevation 578.00. Quantities and Detailing are for the estimated Elevations shown on the Plans. The actual conditions encountered in each Shaft may differ and the Drilled Shaft and Reinforcement Quantities shall be adjusted accordingly as directed by the Engineer and paid for at the corresponding Unit Bid Price.
 5. Spiral sp outer diameter = 3'-8". Spiral sp1 outer diameter = 2'-2".

Min. Lap Splice
for Spiral = 2'-0"

DESIGNED	AEU
CHECKED	JPB
DRAWN	AEU
CHECKED	JPB

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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
**SOUTH ABUTMENT
FOOTING & DRILLED SHAFTS**
CN GATEWAY LEAD TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 93+69.01 STRUCTURE NO. 016-2819
SCALE: AS NOTED DATE: 2/21/2008

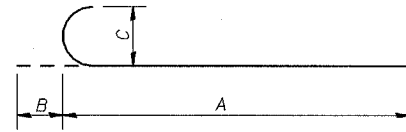
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	406
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-	CONTRACT NO. 60E10	

SHEET NO. 21
25 SHEETS

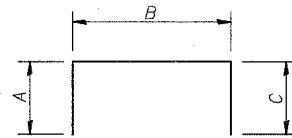
BILL OF MATERIAL - SOUTH ABUTMENT

Bar	No.	Size	Length	Shape
h(E)	72	#5	23'-11"	—
h1(E)	6	#5	0'-11"	—
h2(E)	7	#5	5'-0"	—
h3(E)	7	#5	6'-8"	—
h4(E)	11	#5	20'-3"	—
h5(E)	10	#5	19'-11"	—
h6(E)	2	#5	23'-0"	—
h7(E)	28	#5	13'-11"	—
n(E)	93	#9	13'-0"	—
n1(E)	59	#5	6'-0"	—
n2(E)	21	#5	5'-0"	—
n3(E)	41	#7	6'-7"	—
n4(E)	265	#10	26'-11"	—
n6(E)	23	#7	7'-5"	—
sp	10	#5	22'-2"	—
sp1	5	#5	23'-2"	—
t(E)	62	#10	16'-2"	—
t1(E)	47	#6	16'-2"	—
t2(E)	2	#5	16'-3"	—
t3(E)	18	#7	23'-1"	—
t4(E)	11	#5	23'-1"	—
u(E)	93	#5	8'-8"	—
u1(E)	2	#5	8'-9"	—
v(E)	44	#7	7'-4"	—
v1(E)	44	#5	6'-1"	—
v2(E)	47	#5	8'-3"	—
v3(E)	12	#5	9'-7"	—
v4(E)	10	#5	18'-8"	—
v5(E)	20	#6	18'-8"	—
v6(E)	1	#5	15'-0"	—
v7(E)	1	#6	15'-0"	—
v12(E)	14	#5	12'-8"	—
v13(E)	27	#7	12'-8"	—
v14(E)	2	#5	2'-3"	—
w(E)	72	#7	24'-8"	—
w1(E)	10	#5	19'-11"	—
w2(E)	10	#7	19'-11"	—
w3(E)	3	#5	20'-3"	—
w4(E)	3	#7	20'-3"	—
w5(E)	2	#5	20'-9"	—
Porous Granular Embankment		Cu. Yd.	341	
Concrete Structures		Cu. Yd.	256.1	
Reinforcement Bars		Lbs.	7,260	
Reinforcement Bars (Epoxy Coated)		Lbs.	54,050	
Concrete Sealer		Sq. Ft.	169	
Braced Excavation		Cu. Yd.	359.6	
Geocomposite Wall Drain		Sq. Yd.	77.6	
Structure Excavation		Cu. Yd.	524.4	
Drilled Shaft in Soil		Cu. Yd.	138.1	
Drilled Shaft in Rock		Cu. Yd.	16.7	



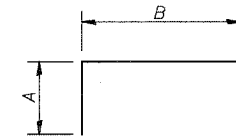
BARS nx(E)

Bar	A	B	C
n(E)	11'-9"	1'-3"	11 ³ / ₄ "
n1(E)	5'-5"	7"	5"
n2(E)	4'-5"	7"	5"
n3(E)	5'-9"	10"	7"
n4(E)	25'-6"	1'-5"	1'-1 ¹ / ₄ "
n6(E)	6'-7"	10"	7"



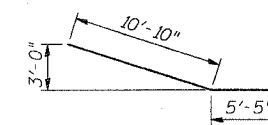
BARS u(E) & u1(E)

Bar	A	B	C
u(E)	2'-0"	4'-8"	2'-0"
u1(E)	4'-1"	7"	4'-1"

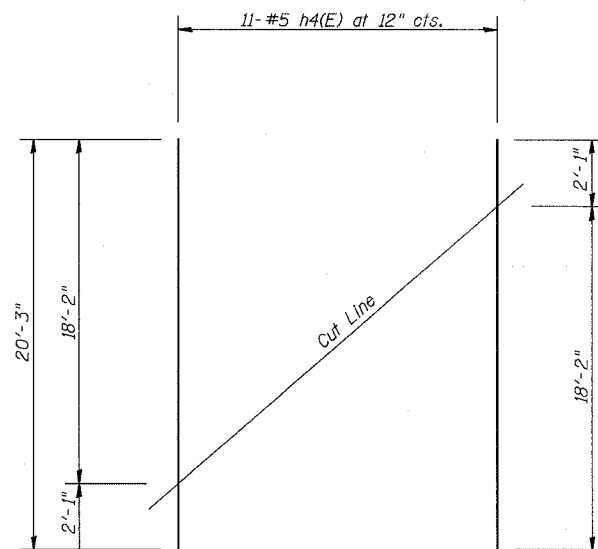


BARS h2(E) & h3(E)

Bar	A	B
h2(E)	1'-3"	3'-9"
h3(E)	2'-0"	4'-8"

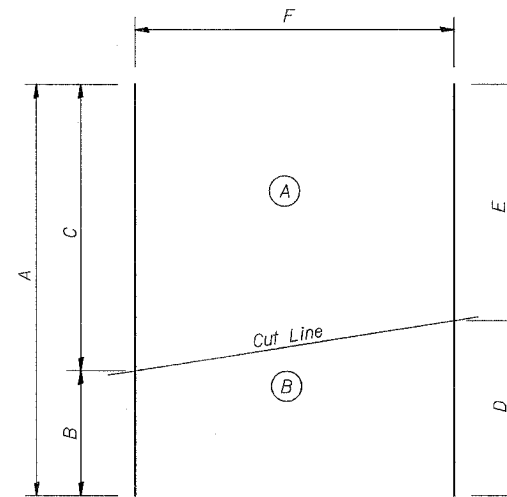


BAR t2(E)



FIELD CUTTING DIAGRAM #1

Order bars full length. Cut bars in field as shown. Use top half in F.F. and bottom half in B.F. for h4(E) bars.



FIELD CUTTING DIAGRAM #2

Order bars full length. Cut bars in field as shown. Place patterns (A) & (B) side by side as shown on sheet 20 for tx(E) bars, sheet 16 for vx(E) bars and sheet 20 for wx(E) bars.

Bar	A	B	C	D	E	F
t3(E)	23'-1"	8'-8"	14'-5"	11'-5 ¹ / ₂ "	11'-7 ¹ / ₂ "	18-#7 bars at 7" cts.
t4(E)	23'-1"	8'-8"	14'-5"	11'-5 ¹ / ₂ "	11'-7 ¹ / ₂ "	11-#5 bars at 12" cts.
v4(E)	18'-8"	3'-8"	15'-0"	9'-1"	9'-7"	10-#5 bars at 12" cts.
v5(E)	18'-8"	3'-8"	15'-0"	9'-2"	9'-6"	20-#6 bars at 6" cts.
w3(E)	20'-3"	1'-3"	19'-0"	8'-4"	11'-11"	3-#5 bars at 12" cts.
w4(E)	20'-3"	1'-3"	19'-0"	8'-4"	11'-11"	3-#7 bars at 12" cts.

Notes: Bars designated (E) shall be epoxy coated.
Length of Spiral given is Height of Spiral. Weight includes Weight of Spacers for Spiral.

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DESIGNED	AEU
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DRAWN	AEU
CHECKED	JPB

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100 South Wacker Drive,
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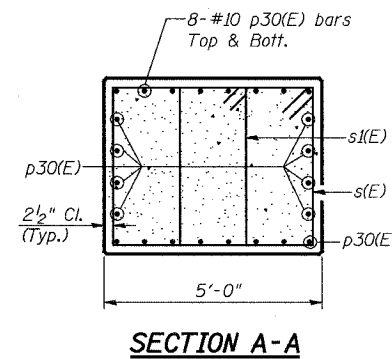
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
**SOUTH ABUTMENT
DETAILS III**
CN GATEWAY LEAD TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 93+69.01 STRUCTURE NO. 016-2819
SCALE: N.T.S. DATE: 2/21/2008

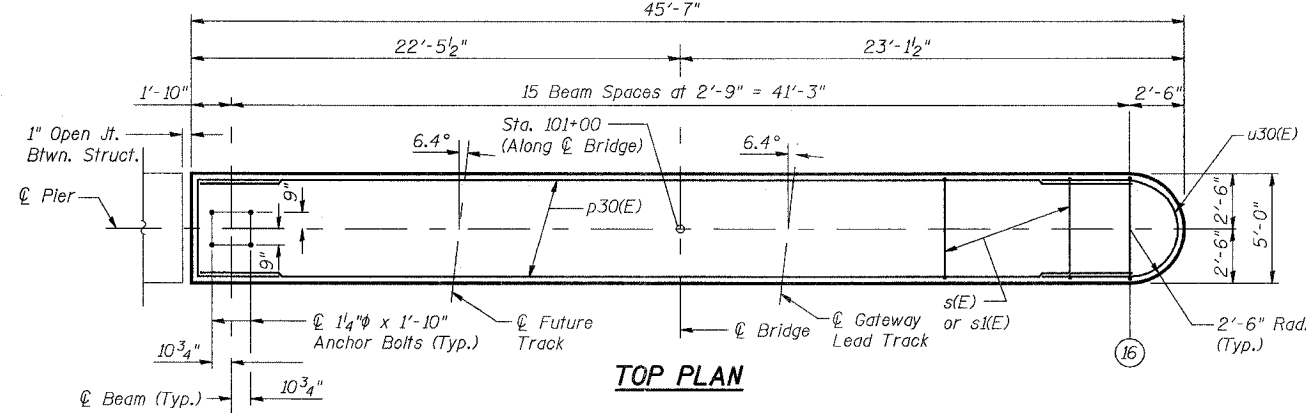
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	407
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

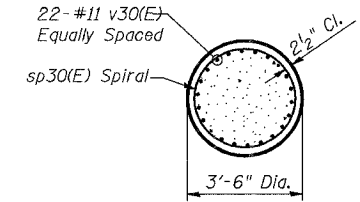
SHEET NO. 22
25 SHEETS



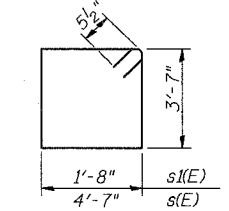
SECTION A-A



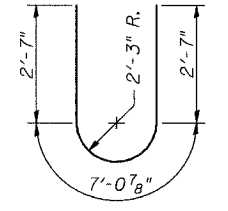
TOP PLAN



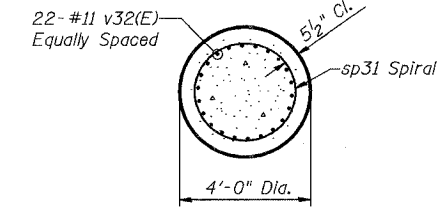
SECTION B-B



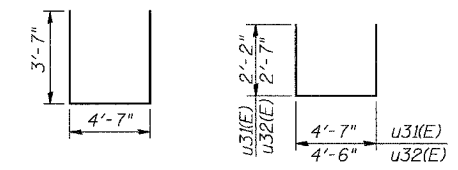
BAR s(E) & s1(E)



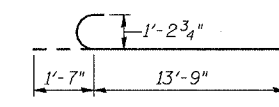
BAR u30(E)



SECTION C-C



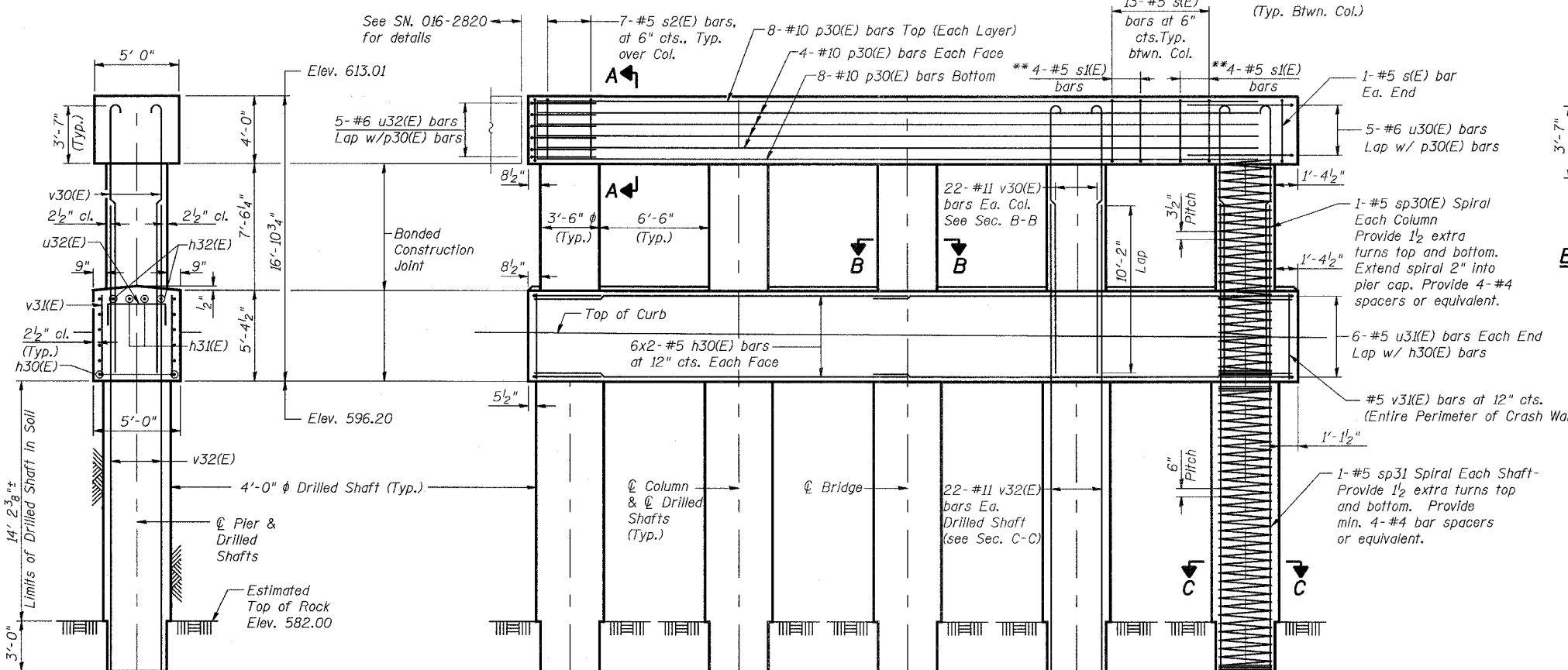
BAR s2(E) BAR u31(E) & u32(E)



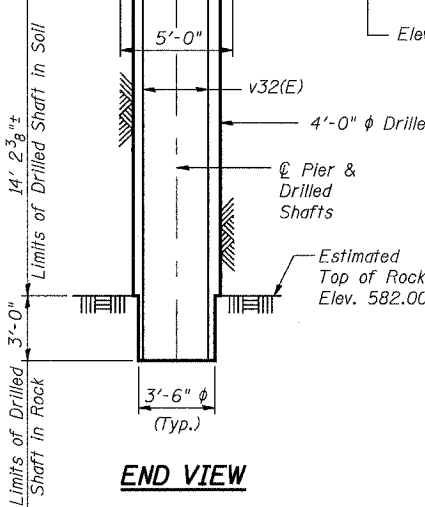
BAR v30(E)

PIER
BILL OF MATERIAL

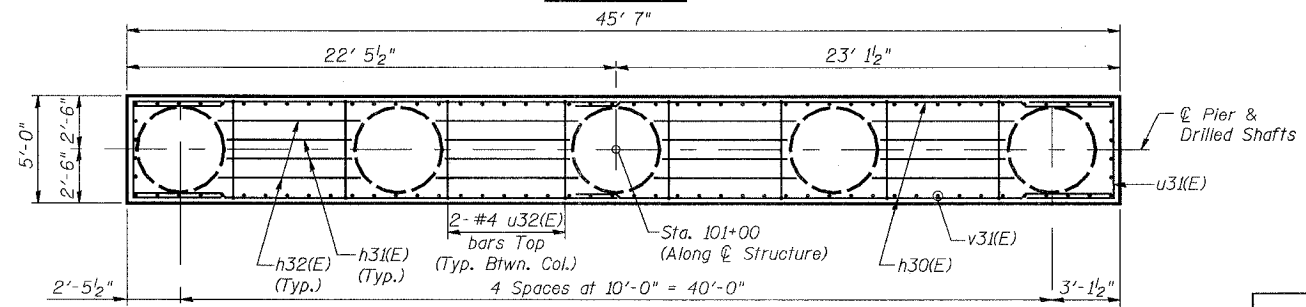
Bar	No.	Size	Length	Shape
h30(E)	24	#5	23'-8"	—
h31(E)	8	#5	6'-6"	—
h32(E)	8	#5	7'-7"	—
p30(E)	24	#10	42'-11"	—
s(E)	54	#5	17'-3"	□
s1(E)	32	#5	11'-5"	□
s2(E)	35	#5	11'-9"	□
sp30(E)	5	#5	12'-11"	⋈
sp31	5	#5	17'-2"	⋈
u30(E)	5	#6	12'-3"	—
u31(E)	12	#5	8'-11"	—
u32(E)	5	#6	9'-8"	—
v30(E)	110	#11	15'-4"	—
v31(E)	100	#5	4'-11"	—
v32(E)	110	#11	30'-1"	—
Structure Excavation			Cu. Yd.	75.7
Non-Special Waste Disposal			Cu. Yd.	108.7
Concrete Structures			Cu. Yd.	92.2
Reinforcement Bars			Pound	2,200
Reinforcement Bars, Epoxy Coated			Pound	36,830
Concrete Sealer			Sq. Ft.	225
Drilled Shaft in Soil			Cu. Yd.	33.0
Drilled Shaft in Rock			Cu. Yd.	5.3



ELEVATION



END VIEW



CRASH WALL PLAN

NOTES:
Reinforcement Bars designated (E) shall be epoxy coated.
Length of Spiral given is height of Spiral.
Weight includes weight of spacers for Spiral.
Drilled Shafts shall be drilled to Elevation 579.00.
Quantities and Detailing are for the estimated Elevations shown on the Plans.
The actual conditions encountered in each Shaft may differ and the Drilled Shaft and Reinforcement Quantities shall be adjusted accordingly as directed by the Engineer and paid for at the corresponding Unit Bid Price.
Space reinforcement in seat to miss anchor bolts.
Min. Lap Lengths: #9 bar = 6'-6"
Bars designated 6x2 - #5 ... etc. indicates 6 lines of bars with 2 lengths per line.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
PIER
CN GATEWAY LEAD TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 93+69.01 STRUCTURE NO. 016-2819
SCALE: 1/4"=1'-0" DATE: 2/21/2008

URS
100 South Wacker Drive,
Suite 500
Chicago, IL 60606
(312) 939-1000

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DESIGNED AEU
CHECKED JPB
DRAWN AEU
CHECKED JPB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	408
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

CONTRACT NO. 60E10

SHEET NO. 23
25 SHEETS

BORING NO. E-1

Everest Engineering Company
STRUCTURE BORING LOG
Page 1 of 2
Date 6/18/01

ROUTE U.S. 6 DESCRIPTION U.S. ROUTE 6 FROM I-294 TO ILLINOIS ROUTE 1
SECT. _____ STRUCT. NO. 016-2819 DRILLED BY PATRICK DRILLING
COUNTY COOK LOCATION BEHIND N. ABUTMENT, WEST END S. 17, TWP. 36 N, RNG. 12 E

Boring No. E-1 D B _____ Surface Water Elev. NA D B _____
Station 93+86.48 E L _____ Groundwater Elev.: _____ E L _____
Offset 49.00ft LT P O _____ when drilling _____ P O _____
at Completion _____ T W Qu W _____
after _____ H S tsf % _____

Surface Elev. _____ ft	D	B	Qu	W	Surface Water Elev. _____	D	B	Qu	W
	H	S	tsf	%		H	S	tsf	%
CRUSHED AGGREGATE 618.92									
MISCELLANEOUS FILL: topsoil, crushed aggregate, sand, gravel, slag, coal, and cinders									
	3			14				17	4.0
	4							34	S
	9							50	
	3			14				35	9
	4							506.5"	
	4								
FILL 613.50									
Medium Stiff to Very Stiff, Brown and Gray CLAY traces - sand, gravel, and wood									
	11	2.5		18					
	9	P							
	6								
	5	1.5		17				40	10
	5	B						502"	
	8								
	5	0.8		18					
	7	P							
	5								
	1	1.2		19					
	2	B							
	4								
FILL 603.50									
Very Stiff to Hard, Brown and Gray SILTY CLAY traces - sand and gravel									
	2	2.7		19					
	5	B							
	7								
	5	6.0		16					
	9	B							
	17								
FILL 598.50									
Very Dense to Extremely Dense, Gray SILTY LOAM traces - sand and gravel									
	9			11					
	50								
	503"								
	14	3.3		10					
	32	S							
	38								

FOR ROCK CORES SEE PAGE 2

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

BORING NO. E-1

Everest Engineering Company
STRUCTURE ROCK CORING LOG
Page 2 of 2
Date 6/18/01

ROUTE U.S. 6 DESCRIPTION U.S. ROUTE 6 FROM I-294 TO ILLINOIS ROUTE 1
SECT. _____ STRUCT. NO. 016-2819 DRILLED BY PATRICK DRILLING
COUNTY COOK

Boring No. E-1 Core Type NX
Station 93+86.48 Core Diameter 2 in
Offset 49.00ft LT Core Length 20 ft

Surface Elev. 619.00 ft

Top Elev. _____ ft	Coring Notes and Rock Description	Core Run (#)	R (%)	R (%)	CORE (Min/ft)	COMP. (tsf)
581.50	DOLomite (RACINE FORMATION): Gray, massive, hard, fine grained, thin to thick bedded, slightly fractured	1	92	60	3	1102.8
		2	98	98	3.5	1253.5
		3	95	95	3.5	
		4	100	93	4	
561.50	END OF BORING					

Color pictures of the cores _____ YES _____
Cores will be stored for examination until _____ DECEMBER, 2001 _____

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DESIGNED AEU
CHECKED JPB
DRAWN AEU
CHECKED JPB



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SOIL BORINGS

CN GATEWAY LEAD TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 93+69.01 STRUCTURE NO. 016-2819
SCALE: N.T.S. DATE: 2/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	409
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60E10				

SHEET NO. 24
25 SHEETS

BORING LOG E-6

Everest Engineering Company
STRUCTURE BORING LOG

Page 1 of 2
Date 6/29/01

ROUTE U.S. 6 DESCRIPTION U.S. ROUTE 6 FROM I-294 TO ILLINOIS ROUTE 1

SECT. _____ STRUCT. NO. 016-2819 DRILLED BY PATRICK DRILLING

COUNTY COOK LOCATION S. SIDEWALK WEST OF BRIDGE S. 17, TWP. 36 N., RNG. 12 E.

Boring No. <u>E-6</u>	D	B			Surface Water Elev. <u>NA</u>
Station <u>93+37.27</u>	E	L			Groundwater Elev. _____
Offset <u>26.00R RT</u>	P	O			when drilling _____
Surface Elev. <u>602.00</u> ft	T	W	Qu	W	at Completion _____
	H	S	tsf	%	after _____ Hrs. _____

CONCRETE	601.75				
CRUSHED AGGREGATE	601.00				
Stiff Brown and Gray SILTY CLAY		9	1.7	19	
traces - sand and gravel		8	B		
		11			
	598.25				
Very stiff to Hard, Gray SILTY CLAY LOAM		6	2.7	14	
traces - sand and gravel		10	B		
		15			
		8	4.5	10	
		30	P		
		22			
		9	5.0	12	
		16	B		
		22			
	591.50				
Extremely Dense, Gray SILTY LOAM		21		9	
traces - sand and gravel		35			
		46			
		26		9	
		50.5"			
	586.50				
Very Stiff, Gray SILTY CLAY LOAM		13	2.5	12	
traces - sand and gravel		15	S		
		14			
		17		7	
		50.8"			
	584.00				
Extremely Dense, Gray SILT with GRAVEL					
FOR ROCK CORES SEE PAGE 2	581.50				

SPT (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

BORING LOG E-6

Everest Engineering Company
STRUCTURE ROCK CORING LOG

Page 2 of 2
Date 6/29/01

ROUTE U.S. 6 DESCRIPTION U.S. ROUTE 6 FROM I-294 TO ILLINOIS ROUTE 1

SECT. _____ STRUCT. NO. 016-2819 DRILLED BY PATRICK DRILLING

COUNTY COOK

Boring No. E-6 Core Type NX

Station 93+37.27 Core Diameter 2 in

Offset 26.00R RT Core Length 20 ft

Surface Elev. 602.00 ft

Top Elev. ft	Coring Notes and Rock Description	Core Run (#)	RECOVERY (%)		CORE (Min/ft)	COMP. (tsf)
			(%)	(%)		
581.50	DOLOMITE (RACINE FORMATION): Gray, massive, hard, fine grained, thin to thick bedded, slightly fractured	1	100	96	4	1353.9
		2	100	100	4.5	
						1336.6
		3	100	100	4.5	
561.50	END OF BORING					

Color pictures of the cores YES

Cores will be stored for examination until DECEMBER, 2001

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DESIGNED	AEU
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100 South Wacker Drive,
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ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1

SOIL BORINGS

CN GATEWAY LEAD TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 93+69.01 STRUCTURE NO. 016-2819
SCALE: N.T.S. DATE: 2/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	410
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

CONTRACT NO. 60E10

SHEET NO. 25
25 SHEETS

BORING LOG E-8

Everest Engineering Company
STRUCTURE BORING LOG

Page 1 of 1
Date 6/18/01

ROUTE U.S. 6 DESCRIPTION U.S. ROUTE 6 FROM I-294 TO ILLINOIS ROUTE 1

SECT. _____ STRUCT. NO. 016-2819 DRILLED BY PATRICK DRILLING

COUNTY COOK LOCATION BEHIND S. ABUTMENT, WEST END S. 17 , TWP. 36 N , RNG. 12 E

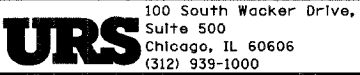
Boring No.	D	B	Qu	W	Surface Water Elev.	D	B	Qu	W
Station	E	L			Groundwater Elev.:	E	L		
Offset	P	O			when drilling	P	O		
Surface Elev.	T	W	tsf	%	at Completion	T	W	tsf	%
	H	S			after _____ Hrs.	H	S		
<u>E-8</u>					<u>NA</u>				
<u>93+56.96</u>									
<u>47.00ft RT</u>									
<u>619.00</u> ft									
CRUSHED AGGREGATE / 618.92									
MISCELLANEOUS FILL:									
sand, gravel, crushed aggregate, slag, coal, and glass		10	16			12	4.2	17	
		6				23	B		
		8				28			
		4	18		591.00				
		5			Extremely Dense, Gray SILTY LOAM	26		11	
		7			traces to little - sand and gravel	506"			
		3	18						
		3							
		3							
		4	25			16		16	
		3				504"			
		2							
FILL / 607.50									
Stiff to Very Stiff, Brown and Gray CLAY		4	1.0	23					
traces - sand and gravel		5	B						
		5							
		4	2.1	23	580.50				
		5	B		AUGER REFUSAL				
		7							
		4	1.0	18					
		6	B						
		11							
		6	1.2	17					
		11	B						
		14							
Stiff to Hard, Gray SILTY CLAY LOAM / 598.50									
traces - sand and gravel		10	1.7	8					
		14	S						
		33							
		11	4.5	10					
		28	P						
		39							

SPT (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

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REVISIONS	
NAME	DATE

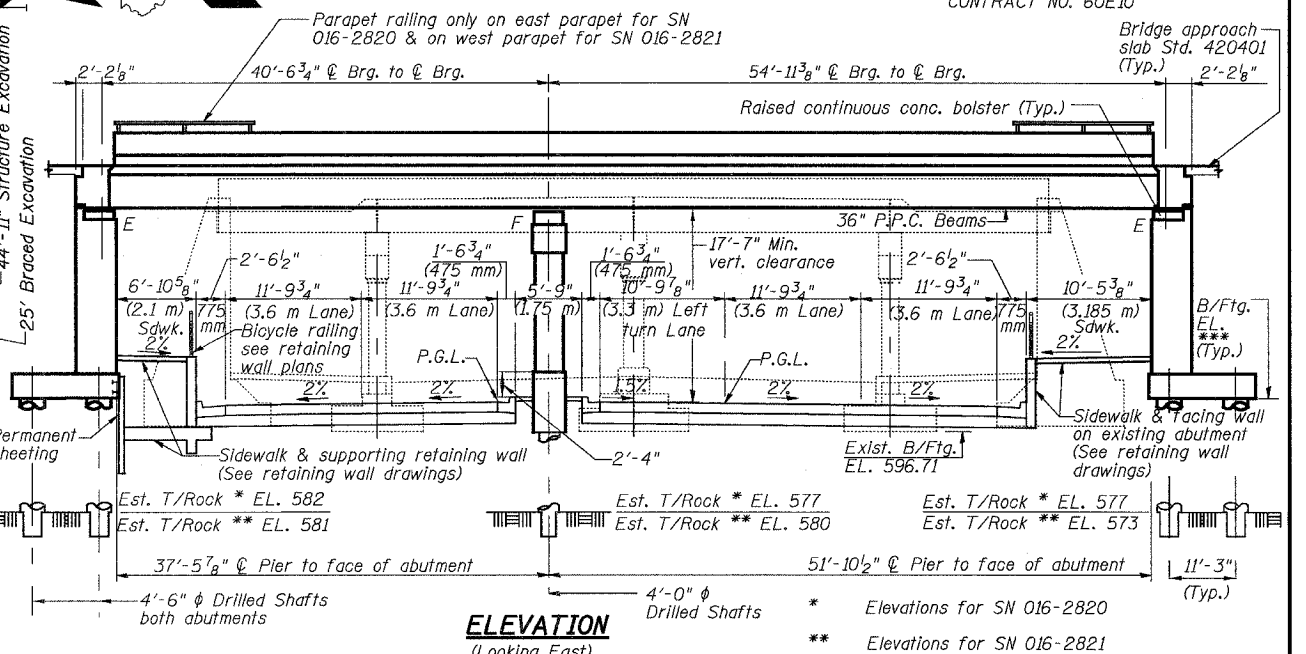
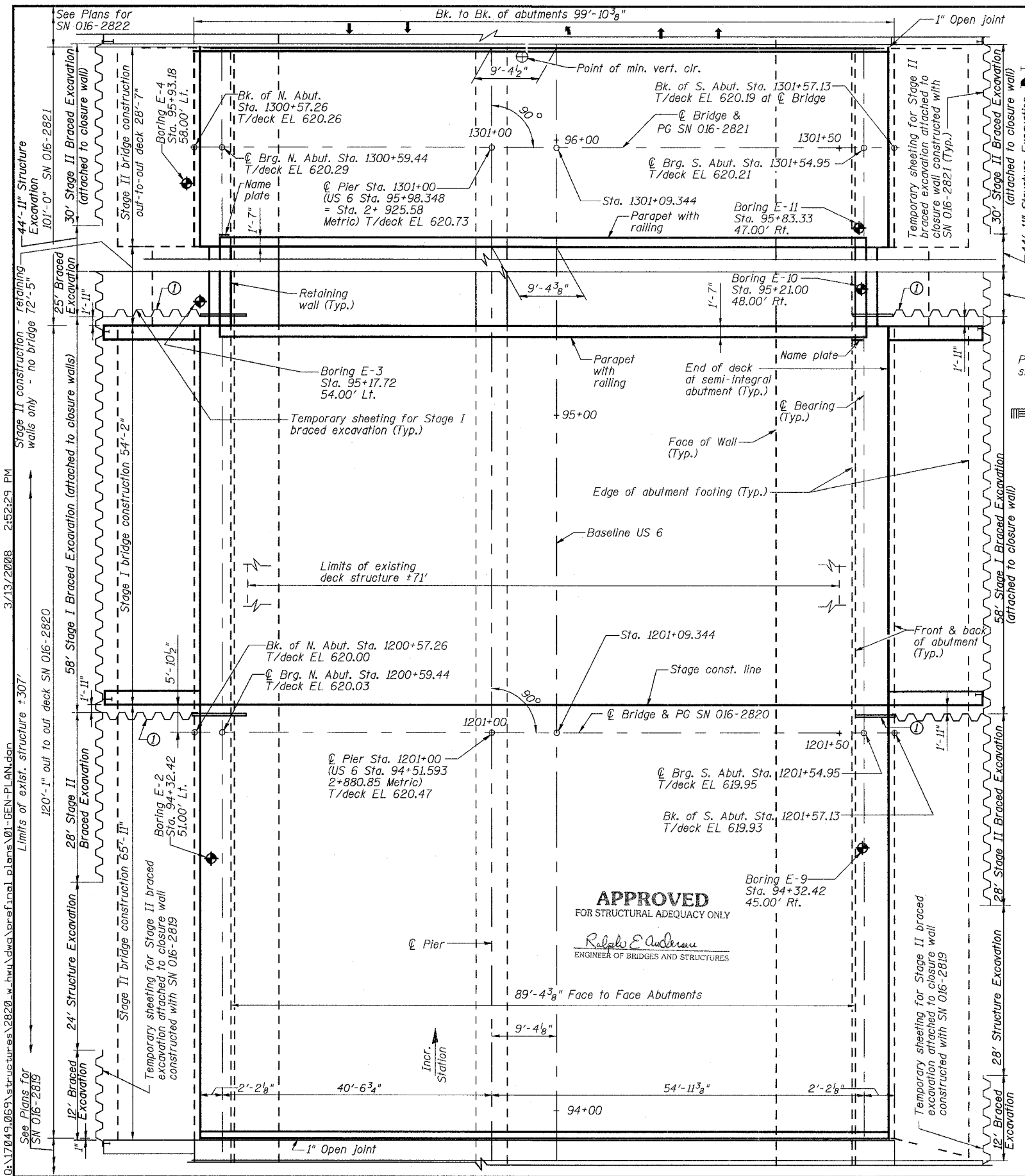
ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SOIL BORINGS

CN GATEWAY LEAD TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 93+69.01 STRUCTURE NO. 016-2819
SCALE: N.T.S. DATE: 2/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	411
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT-		CONTRACT NO. 60E10

BRIDGE APPROACH SLAB STA. 420401 (Typ.)



BENCH MARK:

"X" cut on the southeasterly corner of the R.R. bridge pier in the centerline of 159th Street at the east face of the bridge, approximately 98 feet west of Center Street Elevation. 603.25.

EXISTING STRUCTURE:

Existing structure is a 307'± wide combination railroad and intermodal yard grade separation structure over 159th Street (U.S. Rte. 6). The structure consists of 4 cast-in-place reinforced concrete slab spans supported by gravity abutments, and three reinforced concrete piers. This structure will be replaced by two separate railroad bridges and two bridges for intermodal truck traffic. The existing Structure No. is 016-0385, and was built in 1925.

Staged construction will be utilized to maintain rail and intermodal yard traffic. US 6 will be closed during construction. Limited portion of existing south abutment will be kept. Remainder of existing structure to be removed.

DESIGN STRESSES

FIELD UNITS
 $f'_c = 3,500$ p.s.i.
 $f_y = 60,000$ p.s.i. (Reinf.)

PRECAST PRESTRESSED UNITS
 $f'_c = 6,000$ p.s.i.
 $f'_{ci} = 5,000$ p.s.i.
 $f'_s = 270,000$ p.s.i. (1/2% low lax. strands)
 $f_{si} = 201,960$ p.s.i. (1/2% low lax. strands)

LOADING

HS-20-44 for Superstructure
 Substructure - Cooper E90 Live Loading without impact as stipulated by AREMA Service Load Design.
 Allow 50 #/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges.

American Railway Engineering & Maintenance-of-way association (AREMA) Manual for Railway Engineering, 2004.

Canadian National/Illinois Central Railroad Guidelines for Design of substructures.

SEISMIC DATA

Seismic Performance Category (SPC) = A
 Bedrock Acceleration Coefficient (A) = 0.04g
 Site Coefficient (S) = 1.0

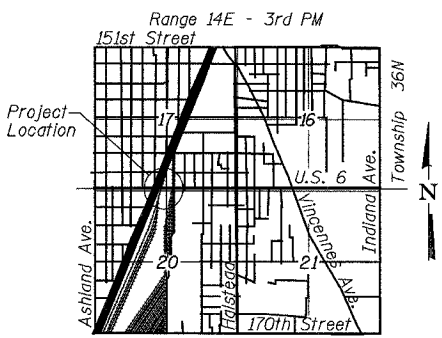


- * Elevations for SN 016-2820
- ** Elevations for SN 016-2821
- *** Bottom of footing Elevations; 600.00 from west end to stage joint and 601.00 from stage jt. to east end.

CN STATION 2+925.58 BUILT 2009 BY STATE OF ILLINOIS F.A.P. RT. 351 SEC. 3277R LOADING HS20-44 STR. NO. 016-2821	CN STATION 2+880.85 BUILT 2009 BY STATE OF ILLINOIS F.A.P. RT. 351 SEC. 3277R LOADING HS20-44 STR. NO. 016-2820
--	--

NAME PLATE
See Std. 515001
See Sheet 2 for vertical profile information.

① See Abutment removal details Drawing (Sheet 28 of 54) for General Configuration of sloped back of existing Abutments and Footing.

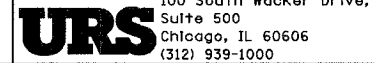


DESIGNED	EV	REVISIONS	
		NAME	DATE
CHECKED	NPP		
DRAWN	EV		
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ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
GENERAL PLAN & ELEVATION

STRUCTURES FOR CN INTERMODAL YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: DATE: 9/27/2007

PLAN



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 Limits of exist. structure ± 307'
 120'-1" out to out deck SN 016-2820
 101'-0" SN 016-2821
 44'-1" Structure Excavation
 30' Stage II Braced Excavation (attached to closure wall)
 25' Braced Excavation
 12' Braced Excavation
 28' Stage II Braced Excavation (attached to closure wall)
 58' Stage I Braced Excavation (attached to closure walls)
 28' Stage II Braced Excavation
 24' Structure Excavation
 12' Braced Excavation
 28' Stage II Braced Excavation (attached to closure wall)
 58' Stage I Braced Excavation (attached to closure walls)
 25' Braced Excavation
 44'-1" Structure Excavation
 30' Stage II Braced Excavation (attached to closure wall)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	412
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

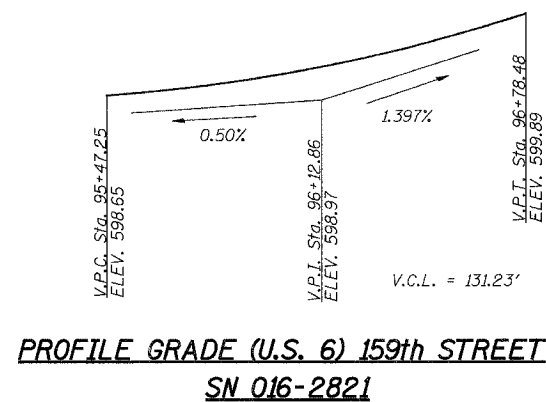
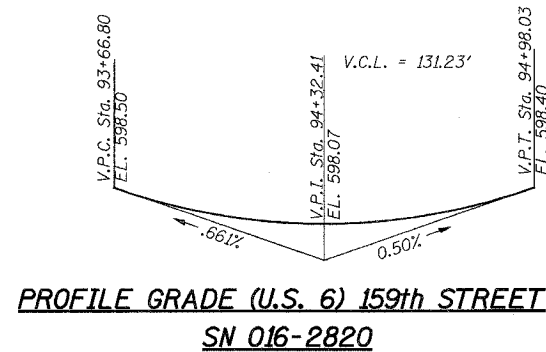
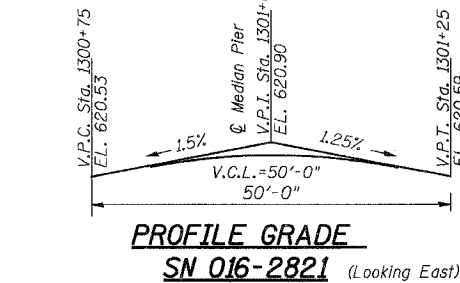
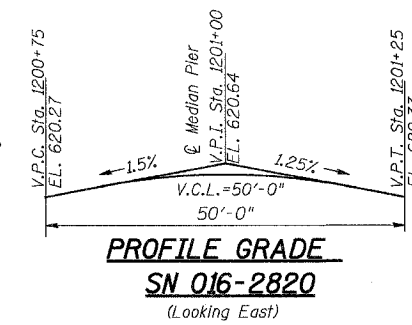
SHEET NO. 2
54 SHEETS

GENERAL NOTES

- Reinforcement bars shall conform to the requirements of AASHTO M-31, OR M-322 Grade 60.
- The back face of closed abutments, wingwalls and retaining walls shall be waterproofed according to 2003 AREMA Chapter 8 supplemented by Article 503.18 of the Standard Specifications.
- Reinforcement bars designated (E) shall be epoxy coated.
- All construction joints shall be bonded.
- Backfill shall be placed behind the abutment after the superstructure has been poured and the falsework removed. See Article 502.10 of the Standard Specifications.
- The organic zinc rich primer/epoxy/urethane paint system shall be used for painting of new parapet railings except where otherwise noted. The entire system shall be shop applied, with exception that masked off connection surfaces, field installed fasteners and damaged areas shall be touched up in the field. The color of the final finish coat for all steel surfaces shall be reddish brown, Munsell No. 2.5YR 3/4. Special Provision for "Cleaning and Painting New Metal Structures".
- Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field 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 the 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 provide all calculations required for Braced Excavation. See Special Provision for Braced Excavation

INDEX OF SHEETS

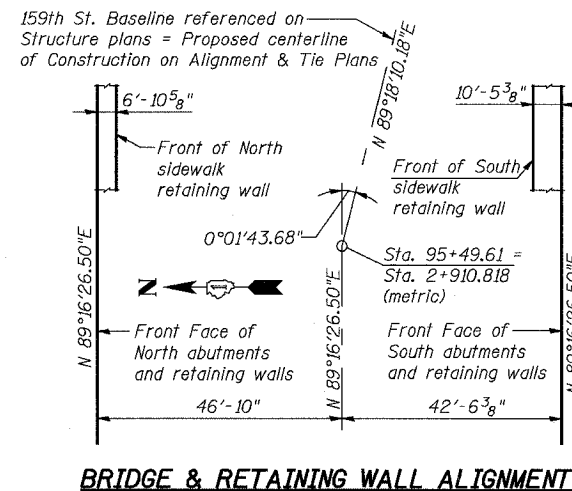
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| 1 GENERAL PLAN AND ELEVATION | 47 PARAPET RAILING |
| 2 GENERAL NOTES, INDEX OF SHEETS & TOTAL BILL OF MATERIALS | 48 TEMPORARY BRIDGE RAIL |
| 3 SUBSTRUCTURE LAYOUT | 49 TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION |
| 4 CONSTRUCTION STAGING | 50 SOIL BORINGS |
| 5 SUBSTRUCTURES REMOVAL DETAILS | 51 SOIL BORINGS |
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| 7 TOP OF SLAB ELEVATIONS SN 016-2821 | 53 SOIL BORINGS |
| 8 TOP OF SLAB ELEVATIONS SN 016-2821 | 54 SOIL BORINGS |
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| 22 BEARING DETAILS | |
| 23 NORTH ABUTMENT SN 016-2820 | |
| 24 NORTH ABUTMENT FOUNDATION SN 016-2820 | |
| 25 NORTH ABUTMENT DETAILS SN 016-2820 | |
| 26 NORTH ABUTMENT SN 016-2821 | |
| 27 NORTH ABUTMENT FOUNDATION SN 016-2821 | |
| 28 NORTH ABUTMENT DETAILS | |
| 29 SOUTH ABUTMENT SN 016-2820 | |
| 30 SOUTH ABUTMENT FOUNDATION SN 016-2820 | |
| 31 SOUTH ABUTMENT DETAILS SN 016-2820 | |
| 32 SOUTH ABUTMENT SN 016-2821 | |
| 33 SOUTH ABUTMENT FOUNDATION SN 016-2821 | |
| 34 SOUTH ABUTMENT DETAILS | |
| 35 NORTH RETAINING WALL SN 016-2821 | |
| 36 NORTH RETAINING WALL FOUNDATION SN 016-2821 | |
| 37 NORTH RETAINING WALL DETAILS SN 016-2821 | |
| 38 SOUTH RETAINING WALL SN 016-2821 | |
| 39 SOUTH RETAINING WALL FOUNDATION SN 016-2821 | |
| 40 SOUTH RETAINING WALL DETAILS SN 016-2821 | |
| 41 PIER SN 016-2820 | |
| 42 PIER DETAILS SN 016-2820 | |
| 43 PIER SN 016-2821 | |
| 44 PIER DETAILS SN 016-2821 | |
| 45 DRAINAGE AND BACKFILL DETAILS - RETAINING WALLS | |
| 46 BAR SPLICER ASSEMBLY DETAILS | |



TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER STRUCTURE	SUB STRUCTURE	TOTAL
Removal of Existing Structures No. 2	Each	-	-	1
Porous Granular Embankment	Cu. Yd.	-	3093	3093
Structure Excavation	Cu. Yd.	-	2114	2114
Concrete Structures	Cu. Yd.	-	1984.2	1984.2
Concrete Superstructure	Cu. Yd.	516	-	516
Furnishing and Erecting Precast Prestressed Concrete I-Beams, 36 In	Foot	2120.1	-	2120.1
Reinforcement Bars, Epoxy Coated	Pound	107,630	580,740	688,370
Reinforcement Bars	Pound	-	63,300	63,300
Braced Excavation	Cu. Yd.	-	4505	4505
Name Plates	Each	2	-	2
Anchor Bolts, 1"	Each	-	96	96
Geocomposite Wall Drain	Sq. Yd.	-	708	708
Bar Splicers	Each	609	210	819
Bridge Deck Grooving	Sq. Yd.	1,533	-	1,533
Protective Coat	Sq. Yd.	1,683	-	1,683
Elastomeric Bearing Assembly, Type 1	Each	44	-	44
Non-Special Waste Disposal	Cu. Yd.	-	3560.0	3560.0
Drilled Shaft In Rock	Cu. Yd.	-	140	140
Drilled Shaft In Soil	Cu. Yd.	-	1272	1272
Permanent Steel Sheet Piling	Sq. Ft.	-	3,325	3,325
Parapet Railing	Foot	185	145	330
Temporary Bridge Rail	Foot	72	-	72
Temporary Ballast Retainer System	Foot	72	-	72

Note:
Removal of Structures No. 2 also includes removal of all elements of the existing superstructure and substructures except for portions of the existing south abutment as shown in the plans that are to remain and be incorporated into the new construction. This work also includes removal and disposal of all existing materials on the deck except for ties, rails and other track material (OTM) above the ballast.



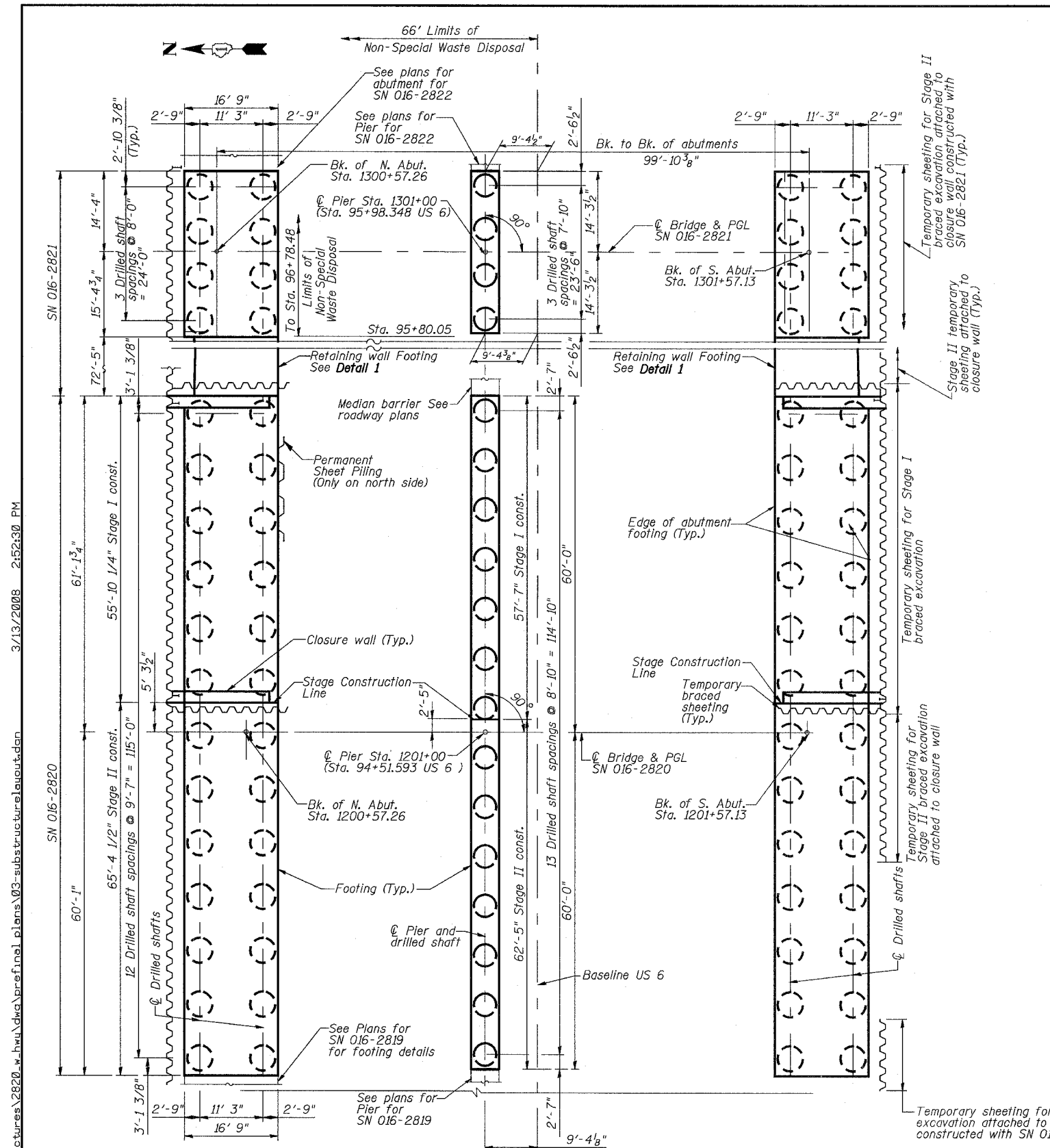
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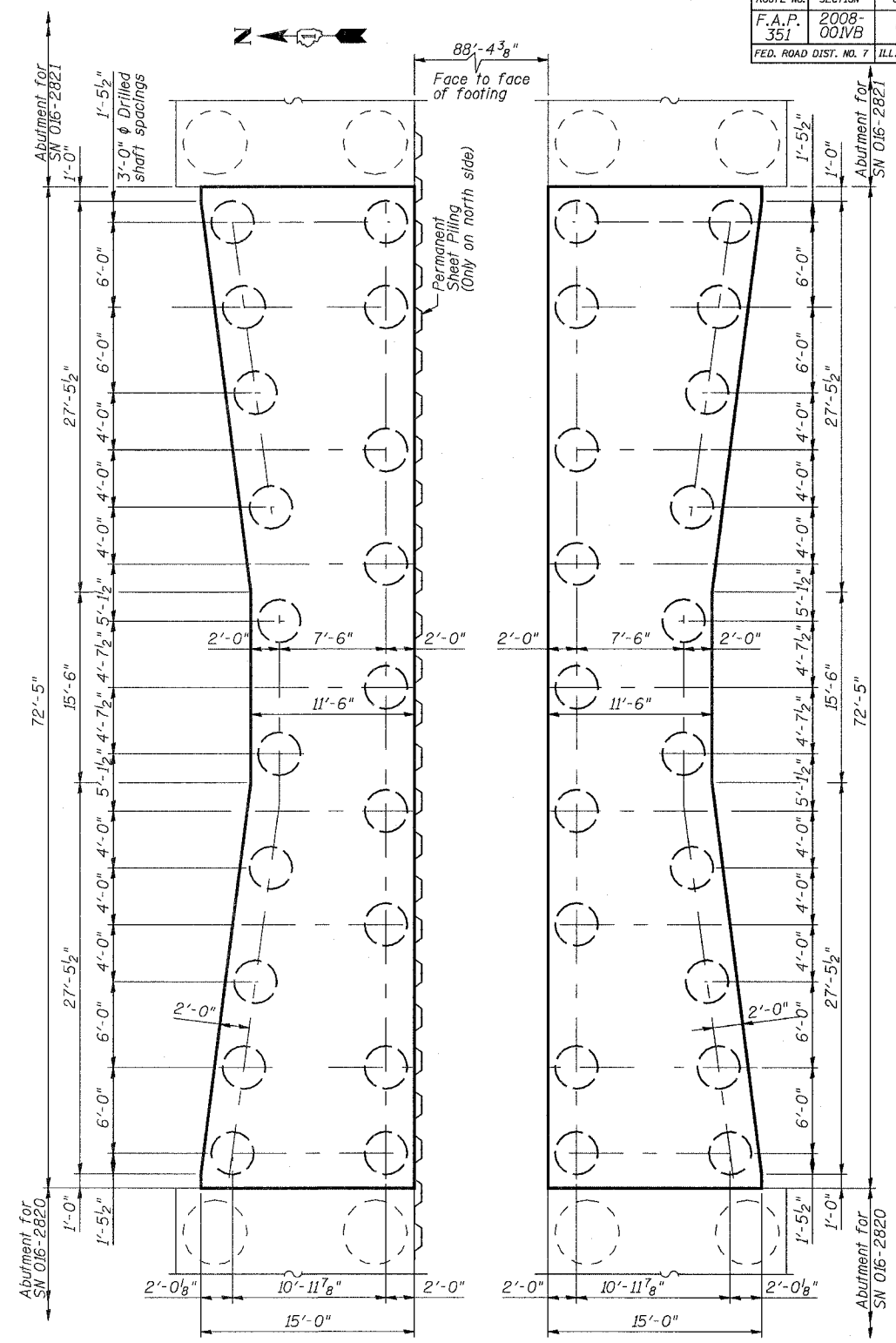
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
GEN. NOTES, INDEX OF SHTS. & TOTAL BILL OF MATERIAL
STRUCTURES FOR CN INTERMODAL YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: N.T.S. DATE: 2/21/2008

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PLAN
SCALE: 3/32" = 1'-0"



RETAINING WALL FOOTING DETAIL 1
SCALE: 3/32" = 1'-0"

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Tie backs will not be permitted for temporary sheeting

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ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SUBSTRUCTURE LAYOUT

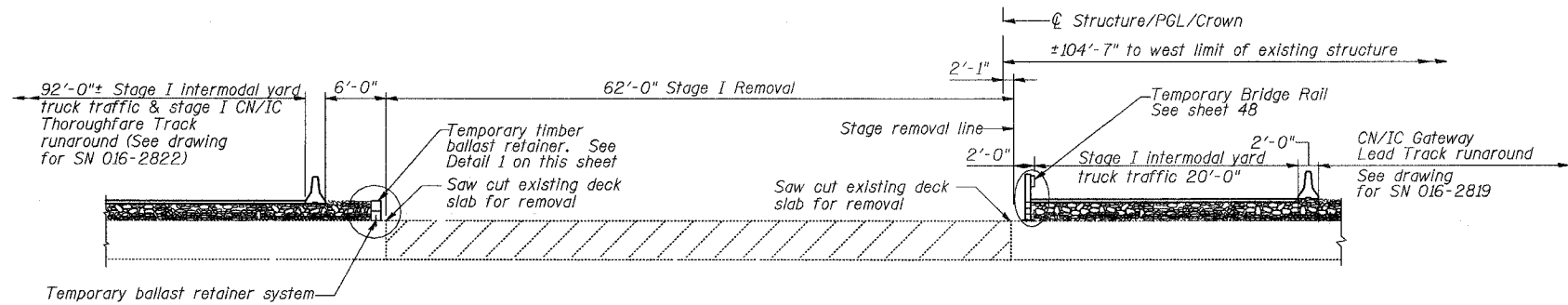
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
& 016-2821
SCALE: 3/32" = 1'-0" DATE: 2/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

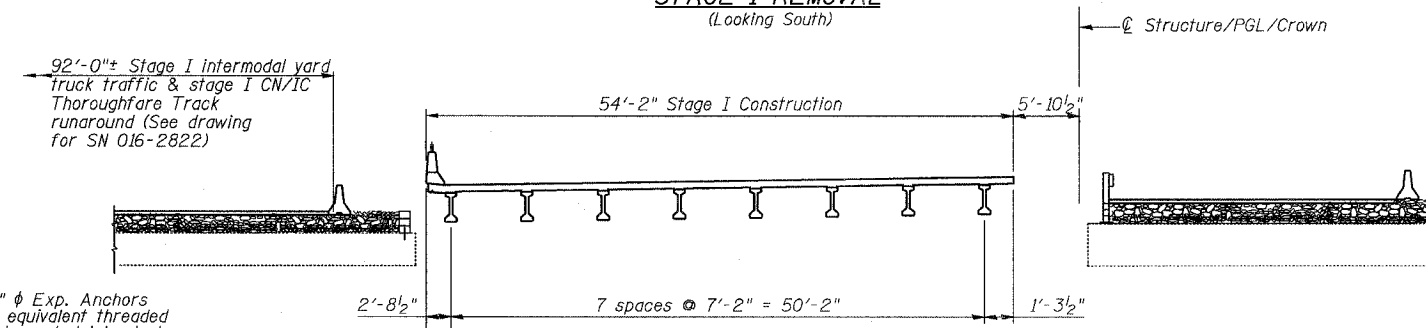
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	200B-001VB	COOK	579	414
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 4
54 SHEETS

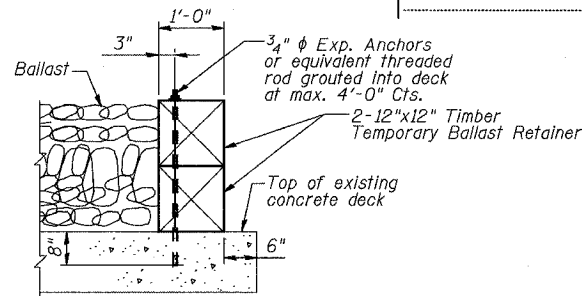
CONTRACT NO. 60E10



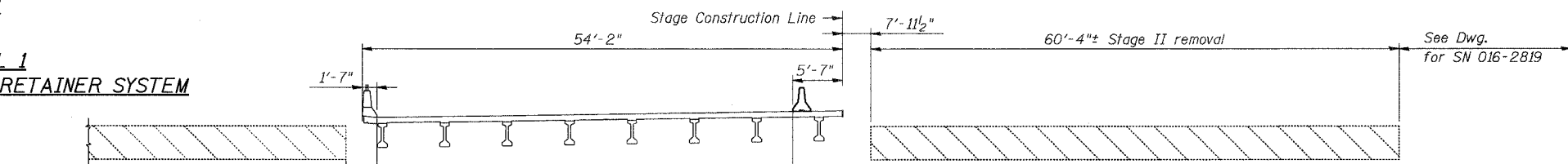
STAGE I REMOVAL
(Looking South)



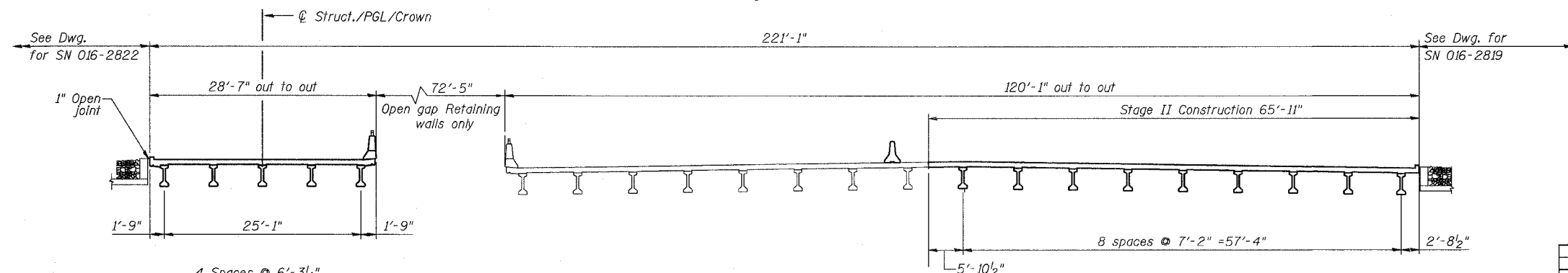
STAGE I CONSTRUCTION
(Looking South)



DETAIL 1
TEMPORARY BALLAST RETAINER SYSTEM



STAGE II REMOVAL
(Looking South)



STAGE II CONSTRUCTION
(Looking South)

Stage Construction Notes:

Stage I:

1. Install temporary traffic barrier and temporary bridge rail
2. Install braced sheeting required for Stage 1 abutment construction
3. Remove Stage 1 portion of existing deck and 3 piers.
4. Excavate behind existing abutments and install walers and struts to brace sheeting.
5. Construct Stage 1 portion of Pier and Abutments.
6. Remove Stage 1 portion of North Abutment and South Abutment (partial).
7. Erect Stage 1 beams and construct Stage 1 deck.

Stage II:

1. Remove remainder of existing deck and piers.
2. Install additional braced sheeting required for Stage 2 abutment construction
3. Construct remainder of substructures, erect Stage 2 beams, construct Stage 2 deck.
4. Construct retaining walls between abutments of two highway structures.
5. Remove remaining portions of abutments.

Note:

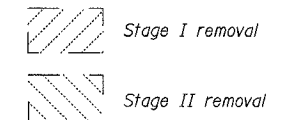
1. Removal of Existing Structures No. 2 includes removal of entire 306'± wide by 72'-0" long cast in place concrete deck. The removal work also includes bituminous pavement and gravel between the concrete deck and pavement.

Four full depth saw cuts 72'-0" long will be required as part of the work for the stage removal of the deck.

The existing structure has a 4-span reinforced concrete slab type deck. For the two 22'-3" long spans over the roadway the deck is approximately 3 feet thick. For the two 13'-9" long end spans, the deck is approximately 2 feet thick and transitions to approximately 3 foot thick at the pier.

2. Contractor is responsible for verification of existing structure location. Adjustment of removal width may be required.

Legend



BILL OF MATERIAL

Item	Unit	Total
Removal of Existing Structures No. 2	Each	1
Temporary Ballast Retainer System	Foot	72
Temporary Bridge Rail	Foot	72

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
CONSTRUCTION STAGING

STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
& 016-2821
SCALE: N.T.S. DATE: 9/21/2008

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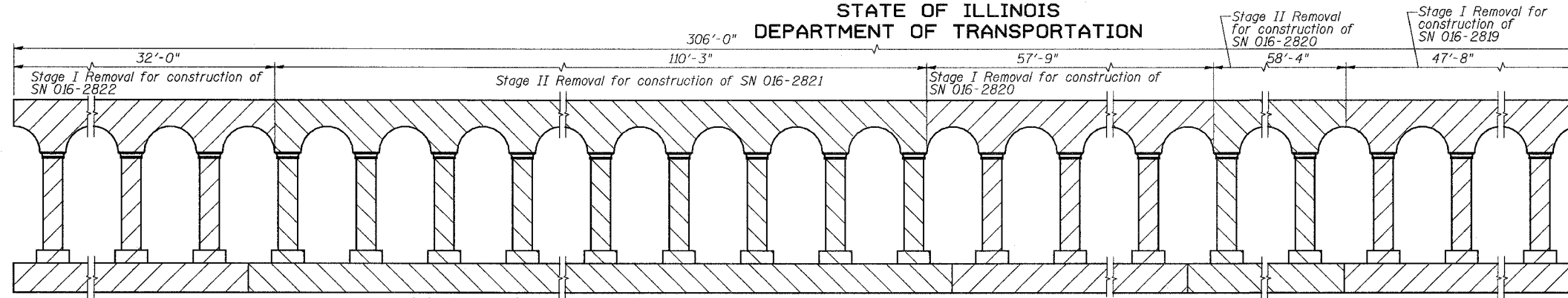
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

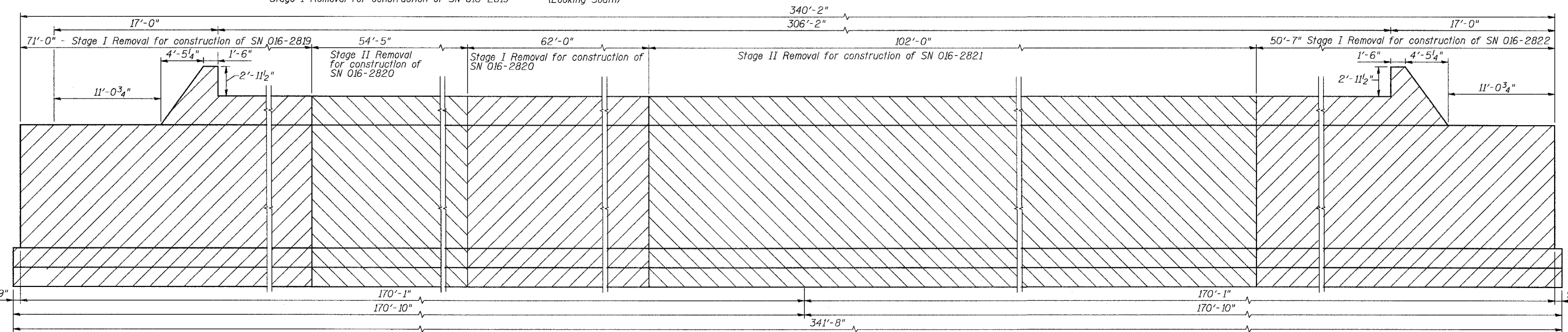
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F.A.P. 351	2008-001VB	COOK	579	415
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60E10				

SHEET NO. 5
54 SHEETS



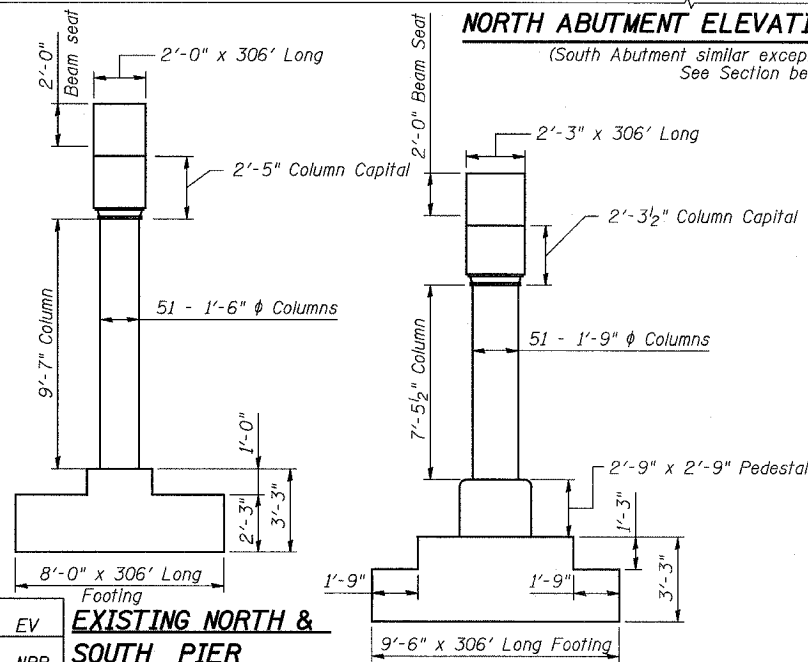
PIER ELEVATION (REMOVAL STAGING)

Stage I Removal for construction of SN 016-2819 (Looking South)



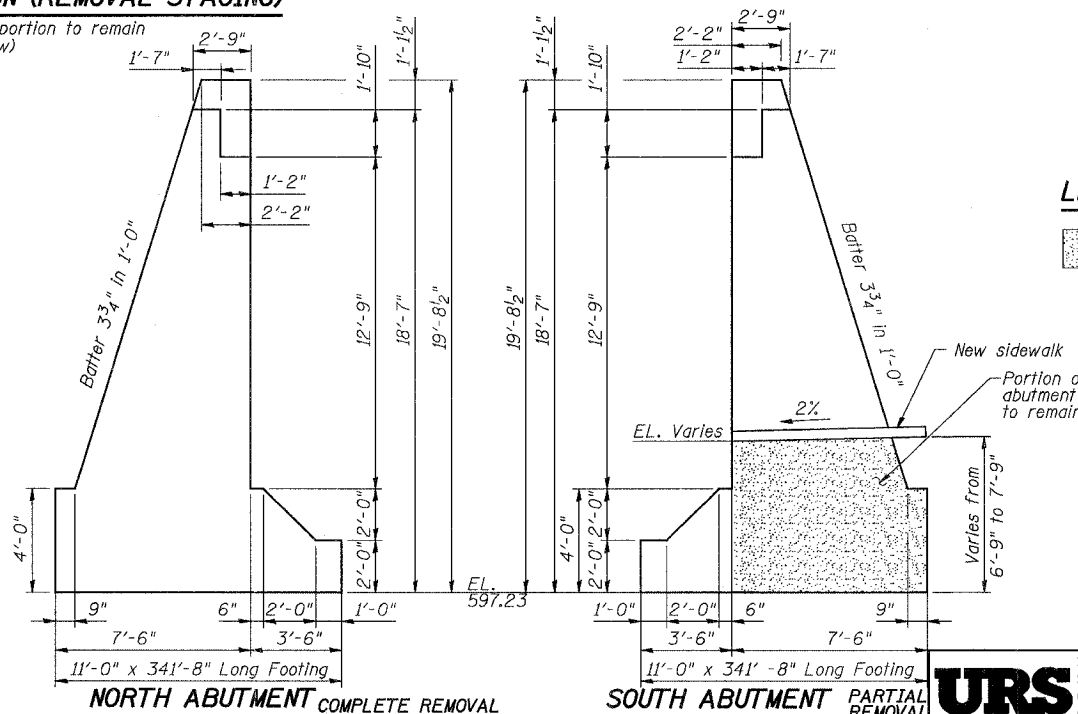
NORTH ABUTMENT ELEVATION (REMOVAL STAGING)

(South Abutment similar except portion to remain See Section below)



EXISTING NORTH & SOUTH PIER COMPLETE REMOVAL

EXISTING CENTER PIER COMPLETE REMOVAL



NORTH ABUTMENT COMPLETE REMOVAL

SOUTH ABUTMENT PARTIAL REMOVAL

LEGEND:

Portion to Remain

Notes:

- Substructure removal is shown for the entire existing intermodal yard structure. This structure will be replaced by four structures: SN 016-2819, SN-2820, SN-2821, and SN-2822. Pay item quantities associated with this removal work are included in the summary of quantities for SN016-2820 only.
- Additional substructure removal quantities are included in the plans for SN 016-2755 for the removal of the mainline structure that it replaces.
- "Removal of Existing Structures No. 2", paid for as each, consists of complete removal of the superstructure, north abutment and all three piers over their full length for existing bridge Structure S.N. 016-0385. It also includes partial removal of existing south abutment for it's full length.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SUBSTRUCTURE REM. DET.

STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: N.T.S. DATE: 2/21/2008

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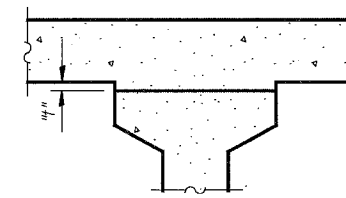
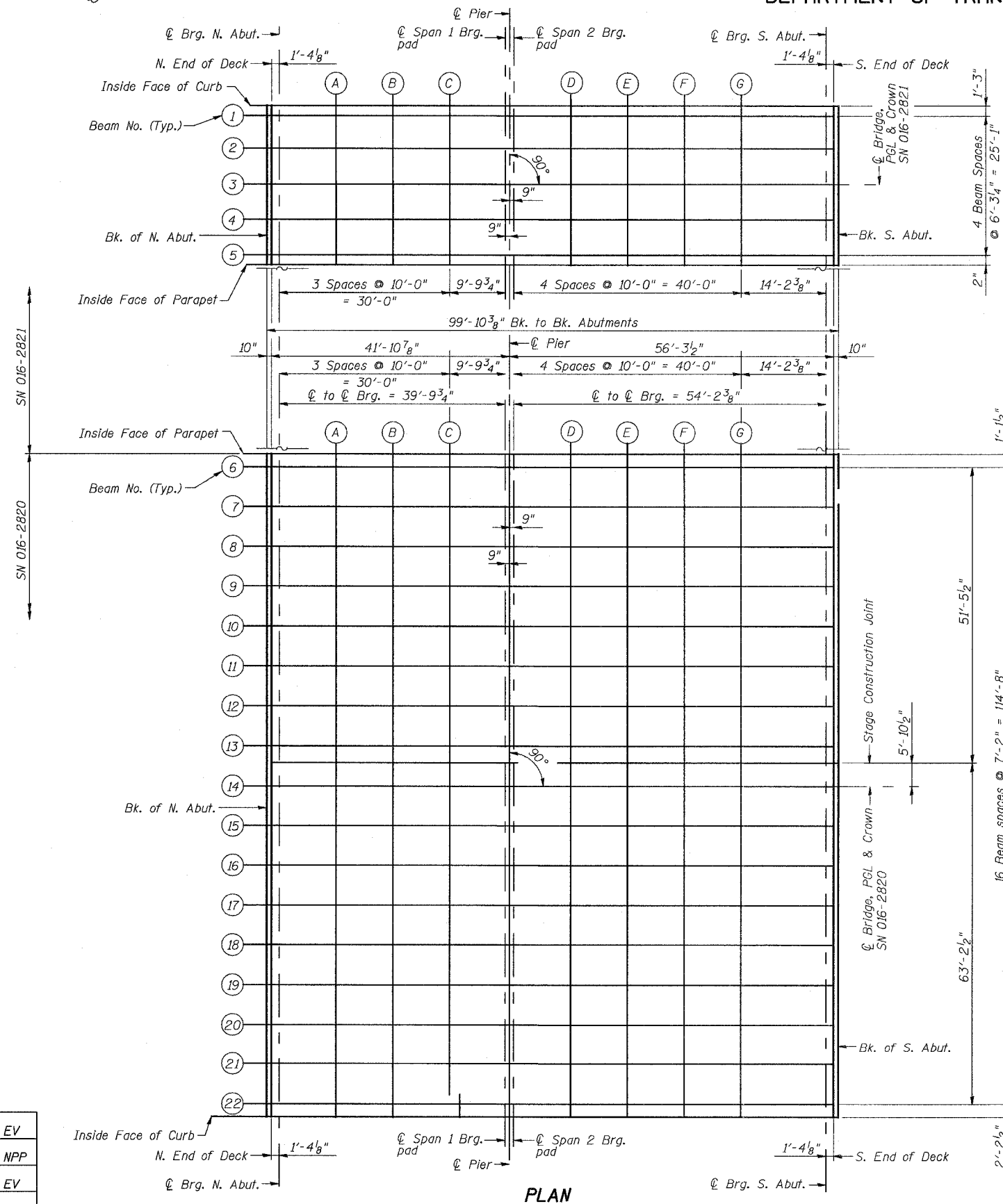
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

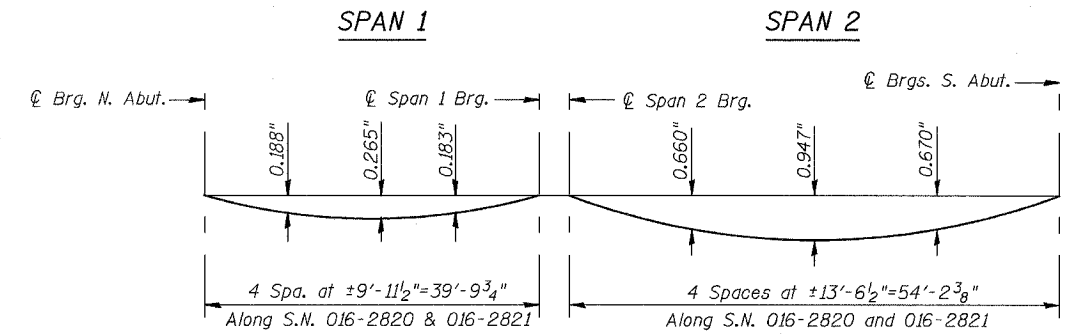
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	416
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

SHEET NO. 6
54 SHEETS



To determine "f": After all precast prestressed beams have been erected, elevations of the top flanges of the beams shall be taken at intervals shown on sheets 7 through 12. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflections" minus slab thickness, equals the fillet heights "f" above top flanges of beams.

FILLET HEIGHTS



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete, excluding beams)

Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheets 7 through 12.

Note:

1. Work this Sheet with sheets 7 through 12.

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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
TOP OF SLAB ELEVATIONS

STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: 3/8" = 1'-0" DATE: 2/21/2008

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PLAN

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	417
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

SHEET NO. 7
54 SHEETS

INSIDE FACE OF CURB (SN 016-2821)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	130057.260	-13.790	620.052	620.052
N.END OF DECK	130058.090	-13.790	620.064	620.064
☉ BRG. N. ABUT	130059.440	-13.790	620.085	620.085
A	130069.440	-13.790	620.235	620.250
B	130079.440	-13.790	620.379	620.401
C	130089.440	-13.790	620.477	620.492
☉ SPAN 1 BRG.	130099.250	-13.790	620.520	620.520
☉ PIER	130100.000	-13.790	620.521	620.521
☉ SPAN 2 BRG.	130100.750	-13.790	620.522	620.522
D	130110.750	-13.790	620.503	620.545
E	130120.750	-13.790	620.429	620.501
F	130130.750	-13.790	620.309	620.387
G	130140.750	-13.790	620.184	620.242
☉ BRG. S. ABUT	130154.950	-13.790	620.006	620.006
S.END OF DECK	130156.290	-13.790	619.989	619.989
BK. S. ABUT.	130157.130	-13.790	619.979	619.979

BEAM 1 (SN 016-2821)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	130057.260	-12.540	620.071	620.071
N.END OF DECK	130058.090	-12.540	620.083	620.083
☉ BRG. N. ABUT	130059.440	-12.540	620.103	620.103
A	130069.440	-12.540	620.253	620.269
B	130079.440	-12.540	620.398	620.420
C	130089.440	-12.540	620.496	620.511
☉ SPAN 1 BRG.	130099.250	-12.540	620.539	620.539
☉ PIER	130100.000	-12.540	620.540	620.540
☉ SPAN 2 BRG.	130100.750	-12.540	620.541	620.541
D	130110.750	-12.540	620.522	620.564
E	130120.750	-12.540	620.448	620.519
F	130130.750	-12.540	620.327	620.405
G	130140.750	-12.540	620.202	620.260
☉ BRG. S. ABUT	130154.950	-12.540	620.025	620.025
S.END OF DECK	130156.290	-12.540	620.008	620.008
BK. S. ABUT.	130157.130	-12.540	619.998	619.998

BEAM 2 (SN 016-2821)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	130057.260	-6.269	620.165	620.165
N.END OF DECK	130058.090	-6.269	620.177	620.177
☉ BRG. N. ABUT	130059.440	-6.269	620.198	620.198
A	130069.440	-6.269	620.348	620.363
B	130079.440	-6.269	620.492	620.514
C	130089.440	-6.269	620.590	620.605
☉ SPAN 1 BRG.	130099.250	-6.269	620.633	620.633
☉ PIER	130100.000	-6.269	620.634	620.634
☉ SPAN 2 BRG.	130100.750	-6.269	620.635	620.635
D	130110.750	-6.269	620.616	620.658
E	130120.750	-6.269	620.542	620.614
F	130130.750	-6.269	620.422	620.499
G	130140.750	-6.269	620.297	620.354
☉ BRG. S. ABUT	130154.950	-6.269	620.119	620.119
S.END OF DECK	130156.290	-6.269	620.102	620.102
BK. S. ABUT.	130157.130	-6.269	620.092	620.092

P.G.L. / CROWN / BEAM 3 (SN 016-2821)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	130057.260	0.000	620.259	620.259
N.END OF DECK	130058.090	0.000	620.271	620.271
☉ BRG. N. ABUT	130059.440	0.000	620.292	620.292
A	130069.440	0.000	620.442	620.457
B	130079.440	0.000	620.586	620.608
C	130089.440	0.000	620.684	620.699
☉ SPAN 1 BRG.	130099.250	0.000	620.727	620.727
☉ PIER	130100.000	0.000	620.728	620.728
☉ SPAN 2 BRG.	130100.750	0.000	620.729	620.729
D	130110.750	0.000	620.710	620.752
E	130120.750	0.000	620.636	620.708
F	130130.750	0.000	620.516	620.594
G	130140.750	0.000	620.391	620.449
☉ BRG. S. ABUT	130154.950	0.000	620.213	620.213
S.END OF DECK	130156.290	0.000	620.196	620.196
BK. S. ABUT.	130157.130	0.000	620.186	620.186

BEAM 4 (SN 016-2821)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	130057.260	6.269	620.165	620.165
N.END OF DECK	130058.090	6.269	620.177	620.177
☉ BRG. N. ABUT	130059.440	6.269	620.198	620.198
A	130069.440	6.269	620.348	620.363
B	130079.440	6.269	620.492	620.514
C	130089.440	6.269	620.590	620.605
☉ SPAN 1 BRG.	130099.250	6.269	620.633	620.633
☉ PIER	130100.000	6.269	620.634	620.634
☉ SPAN 2 BRG.	130100.750	6.269	620.635	620.635
D	130110.750	6.269	620.616	620.658
E	130120.750	6.269	620.542	620.614
F	130130.750	6.269	620.422	620.500
G	130140.750	6.269	620.297	620.355
☉ BRG. S. ABUT	130154.950	6.269	620.119	620.119
S.END OF DECK	130156.290	6.269	620.102	620.102
BK. S. ABUT.	130157.130	6.269	620.092	620.092

Note:
1. Work this sheet with Sheets 6, and 8 through 12.

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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
TOP OF SLAB ELEVATION
SN 016-2821
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: 1"=10' DATE: 2/21/2008

URS
100 South Wacker Drive,
Suite 500
Chicago, IL 60606
(312) 939-1000

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	200B-001VB	COOK	579	418
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 60E10

SHEET NO. 8
54 SHEETS

BEAM 5 (SN 016-2821)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	130057.260	12.540	620.071	620.071
N. END OF DECK	130058.090	12.540	620.083	620.083
☉ BRG. N. ABUT	130059.440	12.540	620.104	620.104
A	130069.440	12.540	620.254	620.269
B	130079.440	12.540	620.398	620.420
C	130089.440	12.540	620.496	620.511
☉ SPAN 1 BRG.	130099.250	12.540	620.539	620.539
☉ PIER	130100.000	12.540	620.540	620.540
☉ SPAN 2 BRG.	130100.750	12.540	620.541	620.541
D	130110.750	12.540	620.522	620.564
E	130120.750	12.540	620.448	620.520
F	130130.750	12.540	620.328	620.405
G	130140.750	12.540	620.203	620.260
☉ BRG. S. ABUT	130154.950	12.540	620.025	620.025
S. END OF DECK	130156.290	12.540	620.008	620.008
BK. S. ABUT.	130157.130	12.540	619.998	619.998

INSIDE FACE OF PARAPET (SN 016-2821)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	130057.260	12.710	620.068	620.068
N. END OF DECK	130058.090	12.710	620.081	620.081
☉ BRG. N. ABUT	130059.440	12.710	620.101	620.101
A	130069.440	12.710	620.251	620.267
B	130079.440	12.710	620.396	620.418
C	130089.440	12.710	620.494	620.509
☉ SPAN 1 BRG.	130099.250	12.710	620.536	620.536
☉ PIER	130100.000	12.710	620.537	620.537
☉ SPAN 2 BRG.	130100.750	12.710	620.538	620.538
D	130110.750	12.710	620.519	620.561
E	130120.750	12.710	620.445	620.517
F	130130.750	12.710	620.325	620.403
G	130140.750	12.710	620.200	620.258
☉ BRG. S. ABUT	130154.950	12.710	620.022	620.022
S. END OF DECK	130156.290	12.710	620.006	620.006
BK. S. ABUT.	130157.130	12.710	619.995	619.995

Note:

1. Work this sheet with Sheets 6, 7, and 9 through 12.

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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

URS
100 South Wacker Drive,
Suite 500
Chicago, IL 60606
(312) 939-1000

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
TOP OF SLAB ELEVATION
SN 016-2821
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
& 016-2821
SCALE: 1=1-0 DATE: 2/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	49
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-	CONTRACT NO. 60E10	

SHEET NO. 9
54 SHEETS

INSIDE FACE OF PARAPET (SN 016-2820)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	120057.260	-58.460	618.979	618.979
N. END OF DECK	120058.090	-58.460	618.991	618.991
☉ BRG. N. ABUT	120059.440	-58.460	619.011	619.011
A	120069.440	-58.460	619.161	619.177
B	120079.440	-58.460	619.306	619.328
C	120089.440	-58.460	619.404	619.419
☉ SPAN 1 BRG.	120099.250	-58.460	619.447	619.447
☉ PIER	120100.000	-58.460	619.448	619.448
☉ SPAN 2 BRG.	120100.750	-58.460	619.449	619.449
D	120110.750	-58.460	619.430	619.472
E	120120.750	-58.460	619.355	619.427
F	120130.750	-58.460	619.235	619.313
G	120140.750	-58.460	619.110	619.168
☉ BRG. S. ABUT	120154.950	-58.460	618.933	618.933
S. END OF DECK	120156.290	-58.460	618.916	618.916
BK. S. ABUT.	120157.130	-58.460	618.906	618.906

BEAM 6 (SN 016-2820)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	120057.260	-57.330	619.001	619.001
N. END OF DECK	120058.090	-57.330	619.014	619.014
☉ BRG. N. ABUT	120059.440	-57.330	619.034	619.034
A	120069.440	-57.330	619.184	619.200
B	120079.440	-57.330	619.329	619.351
C	120089.440	-57.330	619.427	619.442
☉ SPAN 1 BRG.	120099.250	-57.330	619.469	619.469
☉ PIER	120100.000	-57.330	619.471	619.471
☉ SPAN 2 BRG.	120100.750	-57.330	619.471	619.471
D	120110.750	-57.330	619.452	619.494
E	120120.750	-57.330	619.378	619.450
F	120130.750	-57.330	619.258	619.336
G	120140.750	-57.330	619.133	619.191
☉ BRG. S. ABUT	120154.950	-57.330	618.956	618.956
S. END OF DECK	120156.290	-57.330	618.939	618.939
BK. S. ABUT.	120157.130	-57.330	618.928	618.928

BEAM 7 (SN 016-2820)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	120057.260	-50.160	619.145	619.145
N. END OF DECK	120058.090	-50.160	619.157	619.157
☉ BRG. N. ABUT	120059.440	-50.160	619.177	619.177
A	120069.440	-50.160	619.327	619.343
B	120079.440	-50.160	619.472	619.493
C	120089.440	-50.160	619.570	619.585
☉ SPAN 1 BRG.	120099.250	-50.160	619.613	619.613
☉ PIER	120100.000	-50.160	619.614	619.614
☉ SPAN 2 BRG.	120100.750	-50.160	619.615	619.615
D	120110.750	-50.160	619.596	619.638
E	120120.750	-50.160	619.521	619.593
F	120130.750	-50.160	619.401	619.479
G	120140.750	-50.160	619.276	619.334
☉ BRG. S. ABUT	120154.950	-50.160	619.099	619.099
S. END OF DECK	120156.290	-50.160	619.082	619.082
BK. S. ABUT.	120157.130	-50.160	619.072	619.072

BEAM 8 (SN 016-2820)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	120057.260	-43.000	619.288	619.288
N. END OF DECK	120058.090	-43.000	619.300	619.300
☉ BRG. N. ABUT	120059.440	-43.000	619.321	619.321
A	120069.440	-43.000	619.471	619.486
B	120079.440	-43.000	619.615	619.637
C	120089.440	-43.000	619.713	619.728
☉ SPAN 1 BRG.	120099.250	-43.000	619.756	619.756
☉ PIER	120100.000	-43.000	619.757	619.757
☉ SPAN 2 BRG.	120100.750	-43.000	619.758	619.758
D	120110.750	-43.000	619.739	619.781
E	120120.750	-43.000	619.665	619.737
F	120130.750	-43.000	619.545	619.622
G	120140.750	-43.000	619.420	619.477
☉ BRG. S. ABUT	120154.950	-43.000	619.242	619.242
S. END OF DECK	120156.290	-43.000	619.225	619.225
BK. S. ABUT.	120157.130	-43.000	619.215	619.215

BEAM 9 (SN 016-2820)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	120057.260	-35.830	619.431	619.431
N. END OF DECK	120058.090	-35.830	619.444	619.444
☉ BRG. N. ABUT	120059.440	-35.830	619.464	619.464
A	120069.440	-35.830	619.614	619.630
B	120079.440	-35.830	619.758	619.782
C	120089.440	-35.830	619.857	619.871
☉ SPAN 1 BRG.	120099.250	-35.830	619.899	619.899
☉ PIER	120100.000	-35.830	619.900	619.900
☉ SPAN 2 BRG.	120100.750	-35.830	619.901	619.901
D	120110.750	-35.830	619.882	619.924
E	120120.750	-35.830	619.808	619.880
F	120130.750	-35.830	619.688	619.766
G	120140.750	-35.830	619.563	619.621
☉ BRG. S. ABUT	120154.950	-35.830	619.385	619.385
S. END OF DECK	120156.290	-35.830	619.369	619.369
BK. S. ABUT.	120157.130	-35.830	619.358	619.358

Note:

1. Work this Sheet with Sheets 6 through 8, and 10 through 12.

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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
TOP OF SLAB ELEVATION
SN 016-2820
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
& 016-2821
SCALE: 1=1'-0" DATE: 2/21/2008

URS
100 South Wacker Drive,
Suite 500
Chicago, IL 60606
(312) 939-1000

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008- 001VB	COOK	579	420
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

CONTRACT NO. 60E10

SHEET NO. 10
54 SHEETS

BEAM 10 (SN 016-2820)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	120057.260	-28.660	619.569	619.569
N. END OF DECK	120058.090	-28.660	619.581	619.581
☉ BRG. N. ABUT	120059.440	-28.660	619.602	619.602
A	120069.440	-28.660	619.752	619.767
B	120079.440	-28.660	619.896	619.918
C	120089.440	-28.660	619.994	620.009
☉ SPAN 1 BRG.	120099.250	-28.660	620.037	620.037
☉ PIER	120100.000	-28.660	620.038	620.038
☉ SPAN 2 BRG.	120100.750	-28.660	620.039	620.039
D	120110.750	-28.660	620.020	620.062
E	120120.750	-28.660	619.946	620.018
F	120130.750	-28.660	619.826	619.904
G	120140.750	-28.660	619.701	619.759
☉ BRG. S. ABUT	120154.950	-28.660	619.523	619.523
S. END OF DECK	120156.290	-28.660	619.506	619.506
BK. S. ABUT.	120157.130	-28.660	619.496	619.496

BEAM 11 (SN 016-2820)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	120057.260	-21.500	619.676	619.676
N. END OF DECK	120058.090	-21.500	619.689	619.689
☉ BRG. N. ABUT	120059.440	-21.500	619.709	619.709
A	120069.440	-21.500	619.859	619.875
B	120079.440	-21.500	620.004	620.026
C	120089.440	-21.500	620.102	620.117
☉ SPAN 1 BRG.	120099.250	-21.500	620.144	620.144
☉ PIER	120100.000	-21.500	620.146	620.146
☉ SPAN 2 BRG.	120100.750	-21.500	620.146	620.146
D	120110.750	-21.500	620.127	620.170
E	120120.750	-21.500	620.053	620.125
F	120130.750	-21.500	619.933	620.011
G	120140.750	-21.500	619.808	619.866
☉ BRG. S. ABUT	120154.950	-21.500	619.631	619.631
S. END OF DECK	120156.290	-21.500	619.614	619.614
BK. S. ABUT.	120157.130	-21.500	619.603	619.603

BEAM 12 (SN 016-2820)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	120057.260	-14.330	619.784	619.784
N. END OF DECK	120058.090	-14.330	619.796	619.796
☉ BRG. N. ABUT	120059.440	-14.330	619.817	619.817
A	120069.440	-14.330	619.967	619.982
B	120079.440	-14.330	620.111	620.133
C	120089.440	-14.330	620.209	620.224
☉ SPAN 1 BRG.	120099.250	-14.330	620.252	620.252
☉ PIER	120100.000	-14.330	620.253	620.253
☉ SPAN 2 BRG.	120100.750	-14.330	620.254	620.254
D	120110.750	-14.330	620.235	620.277
E	120120.750	-14.330	620.161	620.233
F	120130.750	-14.330	620.041	620.119
G	120140.750	-14.330	619.916	619.974
☉ BRG. S. ABUT	120154.950	-14.330	619.738	619.738
S. END OF DECK	120156.290	-14.330	619.721	619.721
BK. S. ABUT.	120157.130	-14.330	619.711	619.711

BEAM 13 (SN 016-2820)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	120057.260	-7.160	619.891	619.891
N. END OF DECK	120058.090	-7.160	619.904	619.904
☉ BRG. N. ABUT	120059.440	-7.160	619.924	619.924
A	120069.440	-7.160	620.074	620.090
B	120079.440	-7.160	620.219	620.241
C	120089.440	-7.160	620.317	620.332
☉ SPAN 1 BRG.	120099.250	-7.160	620.360	620.360
☉ PIER	120100.000	-7.160	620.361	620.361
☉ SPAN 2 BRG.	120100.750	-7.160	620.361	620.361
D	120110.750	-7.160	620.342	620.385
E	120120.750	-7.160	620.268	620.340
F	120130.750	-7.160	620.148	620.226
G	120140.750	-7.160	620.023	620.081
☉ BRG. S. ABUT	120154.950	-7.160	619.846	619.846
S. END OF DECK	120156.290	-7.160	619.829	619.829
BK. S. ABUT.	120157.130	-7.160	619.818	619.818

STAGE CONSTRUCTION JOINT (SN 016-2820)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	120057.260	-5.875	619.911	619.911
N. END OF DECK	120058.090	-5.875	619.923	619.923
☉ BRG. N. ABUT	120059.440	-5.875	619.943	619.943
A	120069.440	-5.875	620.093	620.109
B	120079.440	-5.875	620.238	620.260
C	120089.440	-5.875	620.336	620.351
☉ SPAN 1 BRG.	120099.250	-5.875	620.379	620.379
☉ PIER	120100.000	-5.875	620.380	620.380
☉ SPAN 2 BRG.	120100.750	-5.875	620.381	620.381
D	120110.750	-5.875	620.362	620.404
E	120120.750	-5.875	620.288	620.359
F	120130.750	-5.875	620.167	620.245
G	120140.750	-5.875	620.042	620.100
☉ BRG. S. ABUT	120154.950	-5.875	619.865	619.865
S. END OF DECK	120156.290	-5.875	619.848	619.848
BK. S. ABUT.	120157.130	-5.875	619.838	619.838

Note:
1. Work this sheet with Sheets 6 through 9, 11 and 12.

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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

URS
100 South Wacker Drive,
Suite 500
Chicago, IL 60606
(312) 939-1000

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
TOP OF SLAB ELEVATION
SN 016-2820
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
& 016-2821
SCALE: 1=1'-0" DATE: 2/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	421
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

SHEET NO. 11
54 SHEETS

CONTRACT NO. 60E10

P. G. L. / CROWN / BEAM 14 (SN 016-2820)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	120057.260	0.000	619.999	619.999
N. END OF DECK	120058.090	0.000	620.011	620.011
☉ BRG. N. ABUT	120059.440	0.000	620.032	620.032
A	120069.440	0.000	620.182	620.197
B	120079.440	0.000	620.326	620.348
C	120089.440	0.000	620.424	620.439
☉ SPAN 1 BRG.	120099.250	0.000	620.467	620.467
☉ PIER	120100.000	0.000	620.468	620.468
☉ SPAN 2 BRG.	120100.750	0.000	620.469	620.469
D	120110.750	0.000	620.450	620.492
E	120120.750	0.000	620.376	620.448
F	120130.750	0.000	620.256	620.334
G	120140.750	0.000	620.131	620.189
☉ BRG. S. ABUT	120154.950	0.000	619.953	619.953
S. END OF DECK	120156.290	0.000	619.936	619.936
BK. S. ABUT.	120157.130	0.000	619.926	619.926

BEAM 15 (SN 016-2820)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	120057.260	7.160	619.891	619.891
N. END OF DECK	120058.090	7.160	619.904	619.904
☉ BRG. N. ABUT	120059.440	7.160	619.924	619.924
A	120069.440	7.160	620.074	620.090
B	120079.440	7.160	620.219	620.241
C	120089.440	7.160	620.317	620.332
☉ SPAN 1 BRG.	120099.250	7.160	620.360	620.360
☉ PIER	120100.000	7.160	620.361	620.361
☉ SPAN 2 BRG.	120100.750	7.160	620.362	620.362
D	120110.750	7.160	620.342	620.385
E	120120.750	7.160	620.268	620.340
F	120130.750	7.160	620.148	620.226
G	120140.750	7.160	620.023	620.081
☉ BRG. S. ABUT	120154.950	7.160	619.846	619.846
S. END OF DECK	120156.290	7.160	619.829	619.829
BK. S. ABUT.	120157.130	7.160	619.818	619.818

BEAM 16 (SN 016-2820)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	120057.260	14.330	619.784	619.784
N. END OF DECK	120058.090	14.330	619.796	619.796
☉ BRG. N. ABUT	120059.440	14.330	619.817	619.817
A	120069.440	14.330	619.967	619.982
B	120079.440	14.330	620.111	620.133
C	120089.440	14.330	620.209	620.224
☉ SPAN 1 BRG.	120099.250	14.330	620.252	620.252
☉ PIER	120100.000	14.330	620.253	620.253
☉ SPAN 2 BRG.	120100.750	14.330	620.254	620.254
D	120110.750	14.330	620.235	620.277
E	120120.750	14.330	620.161	620.233
F	120130.750	14.330	620.041	620.119
G	120140.750	14.330	619.916	619.974
☉ BRG. S. ABUT	120154.950	14.330	619.738	619.738
S. END OF DECK	120156.290	14.330	619.721	619.721
BK. S. ABUT.	120157.130	14.330	619.711	619.711

BEAM 17 (SN 016-2820)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	120057.260	21.500	619.676	619.676
N. END OF DECK	120058.090	21.500	619.689	619.689
☉ BRG. N. ABUT	120059.440	21.500	619.709	619.709
A	120069.440	21.500	619.859	619.875
B	120079.440	21.500	620.004	620.026
C	120089.440	21.500	620.102	620.117
☉ SPAN 1 BRG.	120099.250	21.500	620.145	620.145
☉ PIER	120100.000	21.500	620.146	620.146
☉ SPAN 2 BRG.	120100.750	21.500	620.146	620.146
D	120110.750	21.500	620.127	620.170
E	120120.750	21.500	620.053	620.125
F	120130.750	21.500	619.933	620.011
G	120140.750	21.500	619.808	619.866
☉ BRG. S. ABUT	120154.950	21.500	619.631	619.631
S. END OF DECK	120156.290	21.500	619.614	619.614
BK. S. ABUT.	120157.130	21.500	619.603	619.603

BEAM 18 (SN 016-2820)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	120057.260	28.660	619.569	619.569
N. END OF DECK	120058.090	28.660	619.581	619.581
☉ BRG. N. ABUT	120059.440	28.660	619.602	619.602
A	120069.440	28.660	619.752	619.767
B	120079.440	28.660	619.896	619.918
C	120089.440	28.660	619.994	620.009
☉ SPAN 1 BRG.	120099.250	28.660	620.037	620.037
☉ PIER	120100.000	28.660	620.038	620.038
☉ SPAN 2 BRG.	120100.750	28.660	620.039	620.039
D	120110.750	28.660	620.020	620.062
E	120120.750	28.660	619.946	620.018
F	120130.750	28.660	619.826	619.904
G	120140.750	28.660	619.701	619.759
☉ BRG. S. ABUT	120154.950	28.660	619.523	619.523
S. END OF DECK	120156.290	28.660	619.506	619.506
BK. S. ABUT.	120157.130	28.660	619.496	619.496

Note:
1. Work this sheet with Sheets 6 through 10, and 12.

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DESIGNED	EV
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DRAWN	EV
CHECKED	NPP

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
TOP OF SLAB ELEVATION
SN 016-2820
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: 1=1-0 DATE: 2/21/2008



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	422

SHEET NO. 12
54 SHEETS

FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT- CONTRACT NO. 60E10

BEAM 19 (SN 016-2820)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	120057.260	35.830	619.431	619.431
N. END OF DECK	120058.090	35.830	619.444	619.444
☐ BRG. N. ABUT	120059.440	35.830	619.464	619.464
A	120069.440	35.830	619.614	619.630
B	120079.440	35.830	619.759	619.781
C	120089.440	35.830	619.857	619.872
☐ SPAN 1 BRG.	120099.250	35.830	619.899	619.899
☐ PIER	120100.000	35.830	619.900	619.900
☐ SPAN 2 BRG.	120100.750	35.830	619.901	619.901
D	120110.750	35.830	619.882	619.924
E	120120.750	35.830	619.808	619.880
F	120130.750	35.830	619.688	619.766
G	120140.750	35.830	619.563	619.621
☐ BRG. S. ABUT	120154.950	35.830	619.385	619.385
S. END OF DECK	120156.290	35.830	619.369	619.369
BK. S. ABUT.	120157.130	35.830	619.358	619.358

BEAM 20 (SN 016-2820)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	120057.260	43.000	619.288	619.288
N. END OF DECK	120058.090	43.000	619.300	619.300
☐ BRG. N. ABUT	120059.440	43.000	619.321	619.321
A	120069.440	43.000	619.471	619.486
B	120079.440	43.000	619.615	619.637
C	120089.440	43.000	619.713	619.728
☐ SPAN 1 BRG.	120099.250	43.000	619.756	619.756
☐ PIER	120100.000	43.000	619.757	619.757
☐ SPAN 2 BRG.	120100.750	43.000	619.758	619.758
D	120110.750	43.000	619.739	619.781
E	120120.750	43.000	619.665	619.737
F	120130.750	43.000	619.545	619.622
G	120140.750	43.000	619.420	619.477
☐ BRG. S. ABUT	120154.950	43.000	619.242	619.242
S. END OF DECK	120156.290	43.000	619.225	619.225
BK. S. ABUT.	120157.130	43.000	619.215	619.215

BEAM 21 (SN 016-2820)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	120057.260	50.160	619.145	619.145
N. END OF DECK	120058.090	50.160	619.157	619.157
☐ BRG. N. ABUT	120059.440	50.160	619.177	619.177
A	120069.440	50.160	619.327	619.343
B	120079.440	50.160	619.472	619.494
C	120089.440	50.160	619.570	619.585
☐ SPAN 1 BRG.	120099.250	50.160	619.613	619.613
☐ PIER	120100.000	50.160	619.614	619.614
☐ SPAN 2 BRG.	120100.750	50.160	619.615	619.615
D	120110.750	50.160	619.595	619.638
E	120120.750	50.160	619.521	619.593
F	120130.750	50.160	619.401	619.479
G	120140.750	50.160	619.276	619.334
☐ BRG. S. ABUT	120154.950	50.160	619.099	619.099
S. END OF DECK	120156.290	50.160	619.082	619.082
BK. S. ABUT.	120157.130	50.160	619.072	619.072

BEAM 22 (SN 016-2820)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	120057.260	57.330	619.001	619.001
N. END OF DECK	120058.090	57.330	619.014	619.014
☐ BRG. N. ABUT	120059.440	57.330	619.034	619.034
A	120069.440	57.330	619.184	619.200
B	120079.440	57.330	619.328	619.351
C	120089.440	57.330	619.427	619.442
☐ SPAN 1 BRG.	120099.250	57.330	619.469	619.469
☐ PIER	120100.000	57.330	619.470	619.470
☐ SPAN 2 BRG.	120100.750	57.330	619.471	619.471
D	120110.750	57.330	619.452	619.494
E	120120.750	57.330	619.378	619.450
F	120130.750	57.330	619.258	619.336
G	120140.750	57.330	619.133	619.191
☐ BRG. S. ABUT	120154.950	57.330	618.955	618.955
S. END OF DECK	120156.290	57.330	618.939	618.939
BK. S. ABUT.	120157.130	57.330	618.928	618.928

INSIDE FACE OF CURB (SN 016-2820)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. N. ABUT.	120057.260	59.540	618.957	618.957
N. END OF DECK	120058.090	59.540	618.969	618.969
☐ BRG. N. ABUT	120059.440	59.540	618.990	618.990
A	120069.440	59.540	619.140	619.155
B	120079.440	59.540	619.284	619.306
C	120089.440	59.540	619.382	619.397
☐ SPAN 1 BRG.	120099.250	59.540	619.425	619.425
☐ PIER	120100.000	59.540	619.426	619.426
☐ SPAN 2 BRG.	120100.750	59.540	619.427	619.427
D	120110.750	59.540	619.408	619.450
E	120120.750	59.540	619.334	619.406
F	120130.750	59.540	619.214	619.292
G	120140.750	59.540	619.089	619.147
☐ BRG. S. ABUT	120154.950	59.540	618.911	618.911
S. END OF DECK	120156.290	59.540	618.894	618.894
BK. S. ABUT.	120157.130	59.540	618.884	618.884

Note:
1. Work this sheet with sheets 6 through 11.

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DESIGNED	EV
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DRAWN	EV
CHECKED	NPP

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
TOP OF SLAB ELEVATION
SN 016-2820
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
& 016-2821
SCALE: 1=1'-0" DATE: 2/21/2008

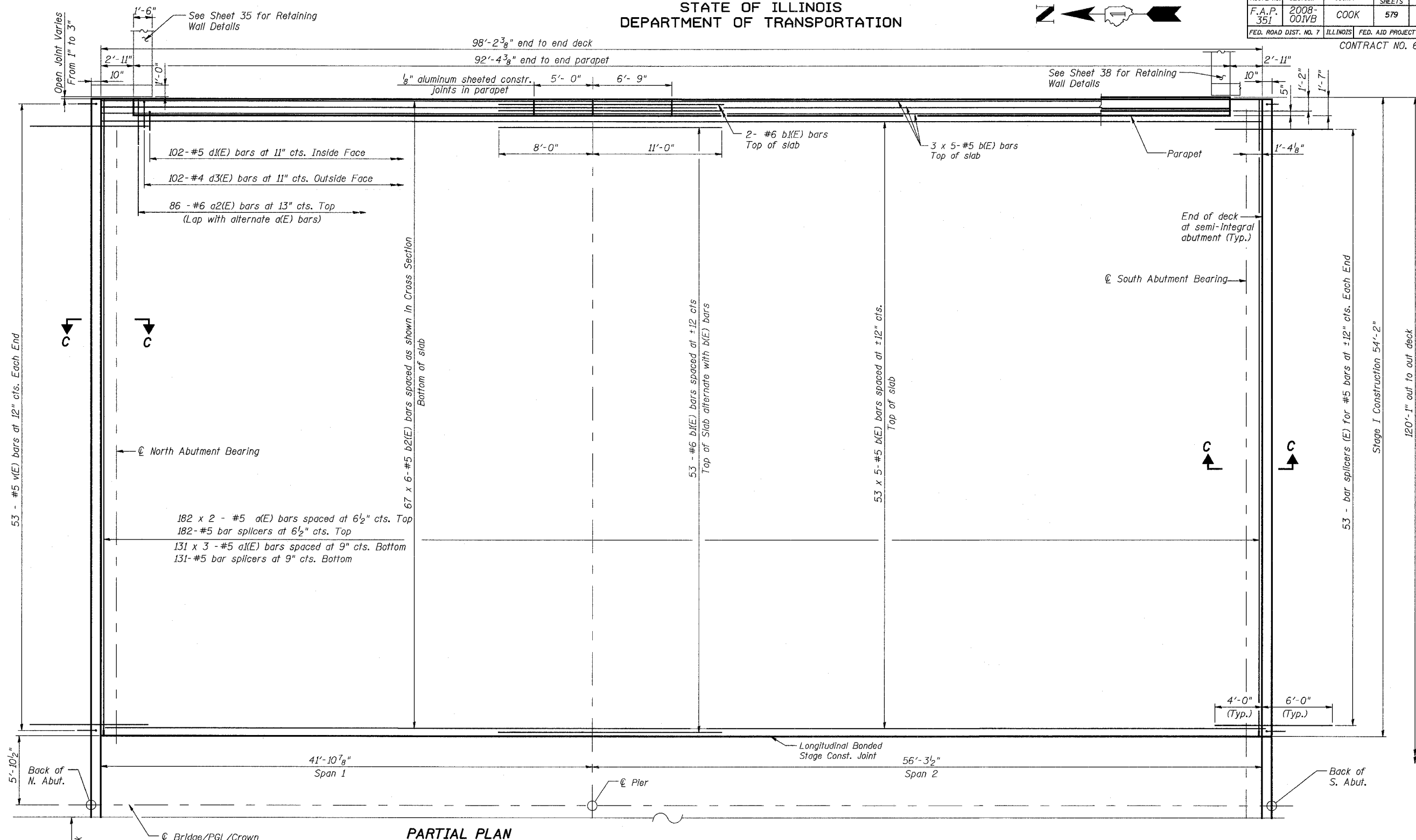
URS
100 South Wacker Drive,
Suite 500
Chicago, IL 60606
(312) 939-1000

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	423
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-	CONTRACT NO. 60E10	

SHEET NO. 13
54 SHEETS



PARTIAL PLAN
(SN 016-2820)
SCALE: 1/4"=1'-0"
(Parapet Railing not shown for clarity)

- Notes:
1. Work this Sheet with Sheets 14 through 16.
 2. See Sheet 21 for Section C-C and diaphragm details.
 3. Min. lap length for #4 bar is 1'-4", #5 bar is 1'-8" and #6 bar is 2'-0".
 4. See Sheet 16 for bridge cross section, superstructure details and Bill of Materials.
 5. Reinforcement bars designated (E) shall be epoxy coated.
 6. Bars indicated thus 20 x 3-#15 etc. indicates 20 lines of bars with 3 lengths per line.
 7. See Sheet 17 for parapet reinforcement.
 8. See Sheet 48 for bar splicer details.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SUPERSTRUCTURE 1
SN 016-2820
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: 1/4"=1'-0" DATE: 2/21/2008

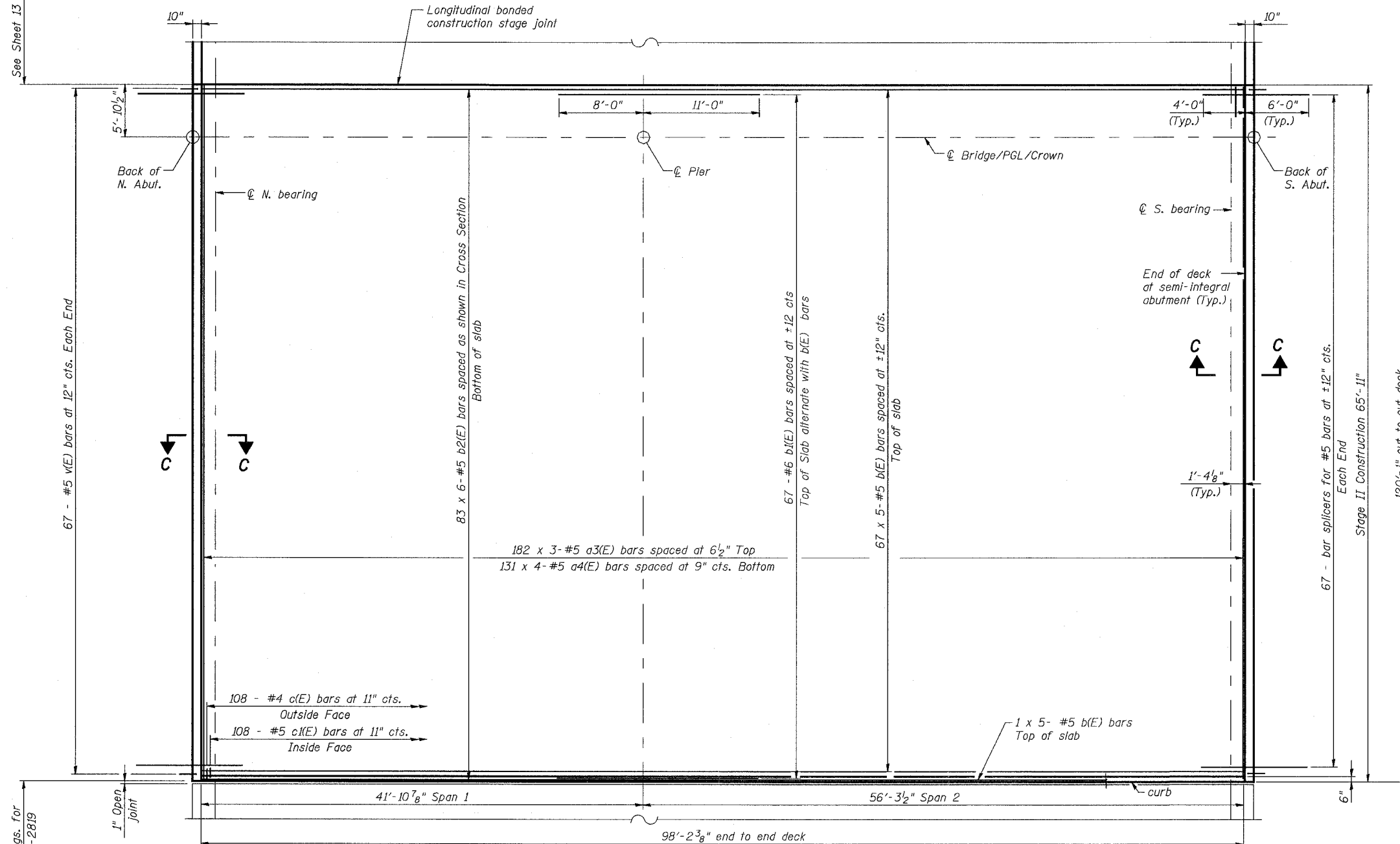
URS
100 South Wacker Drive,
Suite 500
Chicago, IL 60606
(312) 939-1000

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 DESIGNED EV
 CHECKED NPP
 DRAWN EV
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	424
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

SHEET NO. 14
54 SHEETS



PARTIAL PLAN
(SN 016-2820)
SCALE: 3/16"=1'-0"

Notes:

1. Work this Sheet with Sheets 13, 15, 16 and 21
2. See Sheet 21 for Section C-C and diaphragm details.
3. Min. lap length for #4 bar is 1'-4", #5 bar is 1'-8" and #6 bar is 2'-0".
4. See Sheet 16 for bridge cross section, superstructure details and bill of materials.
5. Reinforcement bars designated (E) shall be epoxy coated.
6. Bars indicated thus 20 x 3-#15 etc. indicates 20 lines of bars with 3 lengths per line.
7. See Sheet 17 for curb reinforcement.
8. See Sheet 48 for bar splicer details.

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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SUPERSTRUCTURE 2
SN 016-2820
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
& 016-2821
SCALE: 3/16"=1'-0" DATE: 2/21/2008

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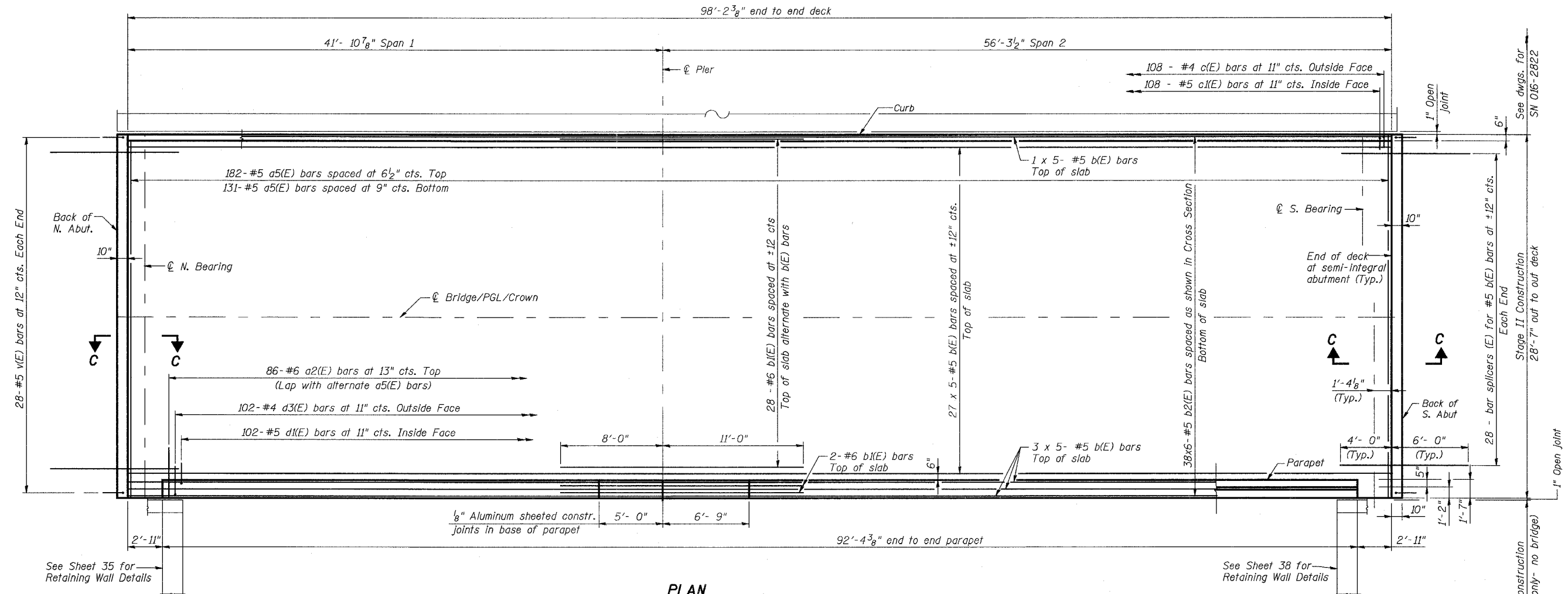
EV

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	425
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 60E10

SHEET NO. 15
54 SHEETS



PLAN
(SN 016-2821)
SCALE: 1/4" = 1'-0"
(Parapet Railing is not shown for clarity)

- Notes:
1. Work this Sheet with Sheets 13, 14 and 16.
 2. See Sheet 21 for Section C-C.
 3. Min. lap length for #4 bar is 1'-4", #5 bar is 1'-8" and #6 bar is 2'-0".
 4. See Sheet 16 for bridge cross section, superstructure details and bill of materials.
 5. Reinforcement bars designated (E) shall be epoxy coated.
 6. Bars indicated thus 20 x 3-#15 etc. Indicates 20 lines of bars with 3 lengths per line.
 7. See Sheet 17 for parapet and curb reinforcement.
 8. See Sheet 48 for details of splicer bars.

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100 South Wacker Drive,
Suite 500
Chicago, IL 60606
(312) 939-1000

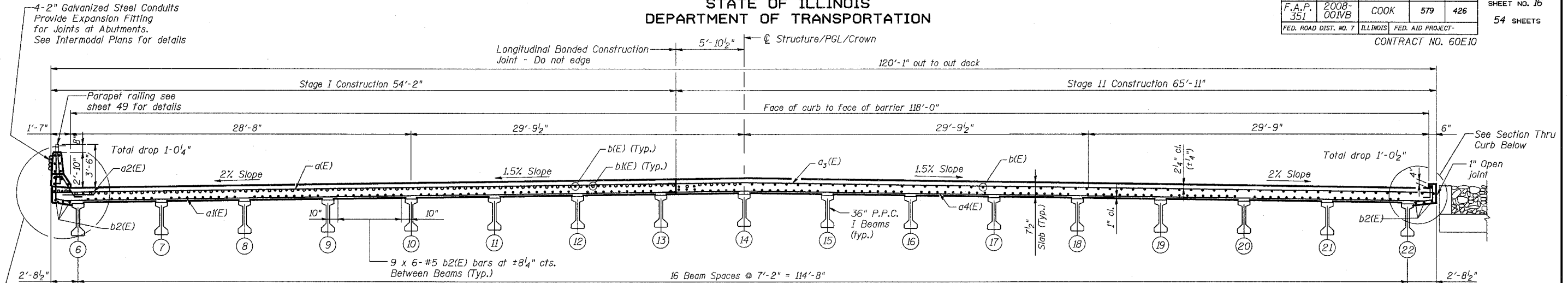
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SUPERSTRUCTURE
SN 016-2821
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
& 016-2821
SCALE: 1/4" = 1'-0" DATE: 2/21/2008

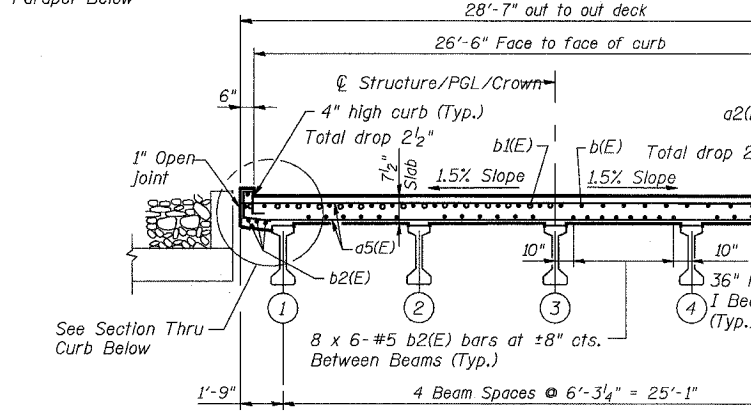
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	426
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT	CONTRACT NO. 60E10	

SHEET NO. 16
54 SHEETS

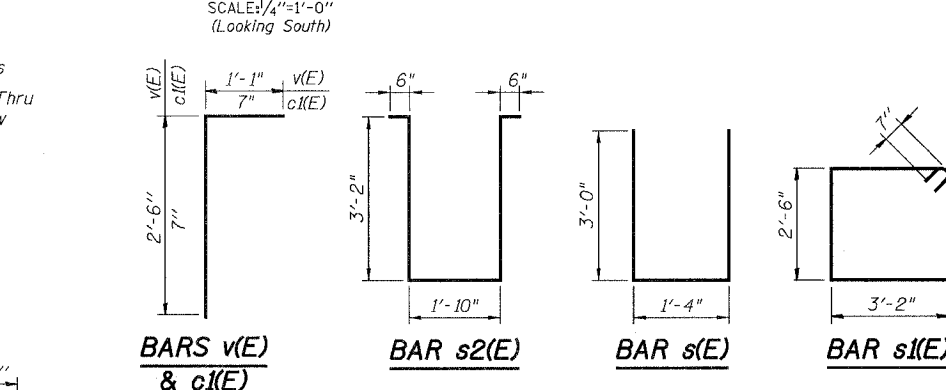


NEAR PIER



NEAR PIER

**CROSS SECTION
WEST STRUCTURE - SN 016-2820**



**BARS v(E)
& c1(E)**

BAR s2(E)

BAR s(E)

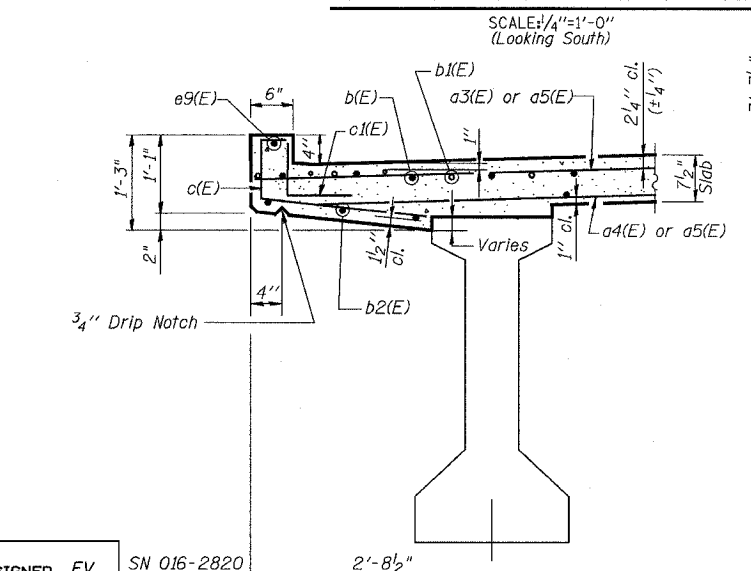
BAR s1(E)

**NEAR MIDSPAN
SUPERSTRUCTURE BILL OF MATERIAL
(FOR SN 016-2820 AND 016-2821)**

Bar No.	Size	Length	Shape
m(E)	96 #6	5'-5"	—
m1(E)	64 #4	6'-5"	—
m2(E)	22 #8	5'-6"	—
m3(E)	24 #6	4'-5"	—
m4(E)	16 #4	5'-6"	—
m5(E)	60 #6	26'-4"	—
m6(E)	12 #6	28'-4"	—
s(E)	128 #5	7'-4"	⊔
s1(E)	128 #4	12'-6"	□
s2(E)	116 #4	9'-2"	⊔
u(E)	150 #4	4'-3"	⊔
v(E)	296 #5	3'-7"	Γ
Bridge Deck Grooving Sq Yd 1,533			
Protective Coat Sq Yd 1,683			
Reinforcement Bars (Epoxy Coated) Lb 107,630			
Concrete Superstructure Cu Yd 516			
Bar Splicers Each 609			

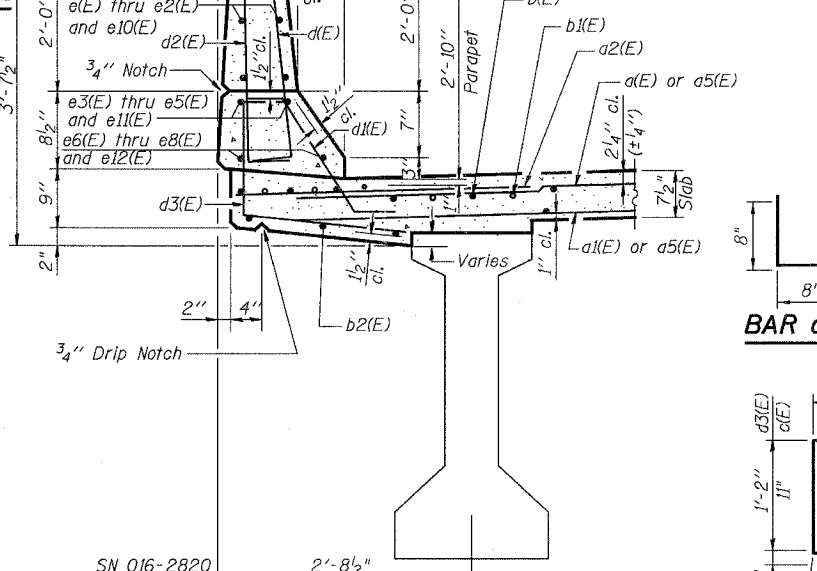
Bar No.	Size	Length	Shape
a(E)	364 #5	27'-3"	—
a1(E)	393 #5	19'-0"	—
a2(E)	172 #6	4'-6"	—
a3(E)	546 #5	23'-2"	—
a4(E)	524 #5	17'-9"	—
a5(E)	313 #5	28'-3"	—
b(E)	775 #5	21'-0"	—
b1(E)	152 #6	19'-0"	—
b2(E)	1128 #5	17'-9"	—
c(E)	216 #4	2'-1"	⊔
c1(E)	216 #5	1'-4"	L
d(E)	204 #5	3'-0"	—
d1(E)	204 #5	2'-5"	⊔
d2(E)	204 #4	3'-0"	⊔
d3(E)	204 #4	2'-7"	⊔
e(E)	24 #4	18'-7"	—
e1(E)	12 #4	6'-6"	—
e2(E)	24 #4	24'-1"	—
e3(E)	8 #8	18'-11"	—
e4(E)	4 #8	6'-6"	—
e5(E)	8 #8	25'-3"	—
e6(E)	8 #5	17'-11"	—
e7(E)	4 #5	6'-6"	—
e8(E)	8 #5	24'-3"	—
e9(E)	8 #5	25'-10"	—
e10(E)	12 #4	4'-9"	—
e11(E)	4 #8	4'-9"	—
e12(E)	4 #5	4'-9"	—
e13(E)	24 #4	14'-7"	—
e14(E)	6 #4	12'-2"	—

NEAR MIDSPAN



SECTION THRU CURB SN 016-2821

NEAR MIDSPAN

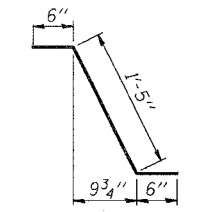


SECTION THRU PARAPET SN 016-2820

BARS d(E) & d2(E)

BAR u(E)

BAR c1(E)



**BARS c(E)
& d3(E)**

- Notes:
- Reinforcement bars designated (E) shall be epoxy coated.
 - Bars indicated thus 20 x 3- #15 etc. Indicates 20 lines of bars with 3 lengths per line.
 - Work this Sheet with Sheets 13 through 15 and 17.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SUPERSTRUCTURE DETAILS

STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
SCALE: AS NOTED DATE: 2/21/2008 & 016-2821

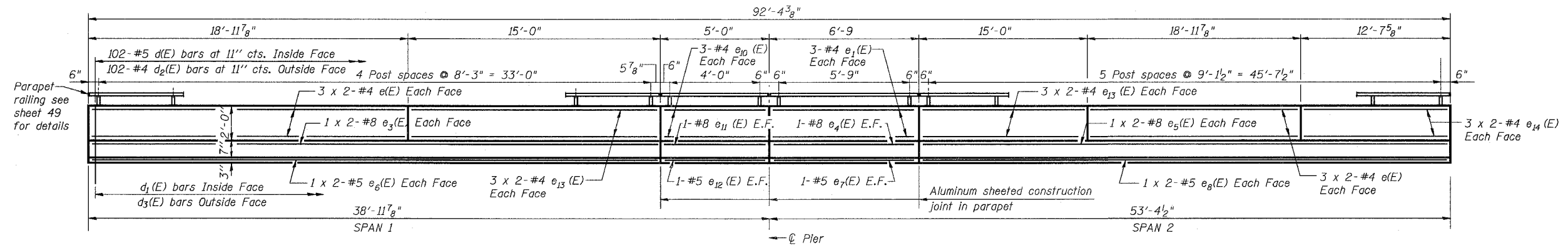
URS 100 South Wacker Drive,
Suite 500
Chicago, IL 60606
(312) 939-1000

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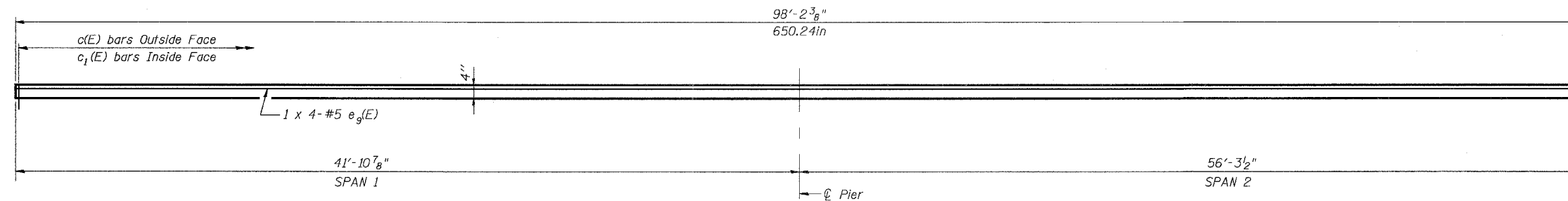
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	427
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

SHEET NO. 17
54 SHEETS



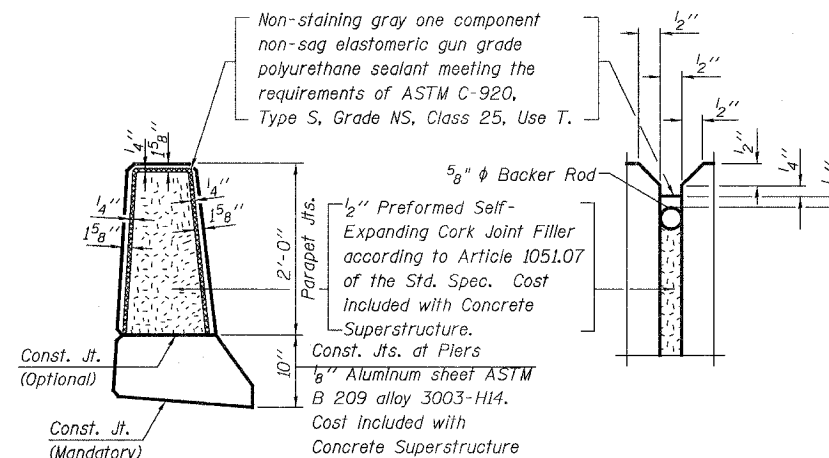
**INSIDE ELEVATION OF EAST PARAPET, SN 016-2820, LOOKING EAST
REFLECTED INSIDE ELEVATION OF WEST PARAPET, SN 016-2821**



**INSIDE ELEVATION OF EAST CURB, SN 016-2820, LOOKING EAST
INSIDE ELEVATION OF WEST CURB, SN 016-2821, LOOKING WEST**

Notes:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Bars indicated thus 1 x 2-#5 etc. indicates 1 line of bars with 2 lengths per line.
3. Min. lap length for #4 bar is 1'-4", #5 bar is 1'-8" and #8 bar is 3'-8".
4. Work this Sheet with Sheets 13 through 16.
5. For bar bending details and Bill of Materials see Sheet 16.
6. If the Contractor elects to use cast-in-place anchor device for Parapet Railing post, then the Contractor must coordinate fabrication of the Parapet Railing with respect to as-built locations of the cast-in-place anchors. The Contractor shall correct any errors in fabrication of the Parapet Railing with respect to as-built locations of cast-in-place anchors at his own expense.



PARAPET JOINT DETAILS

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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
PARAPET & CURB DETAILS

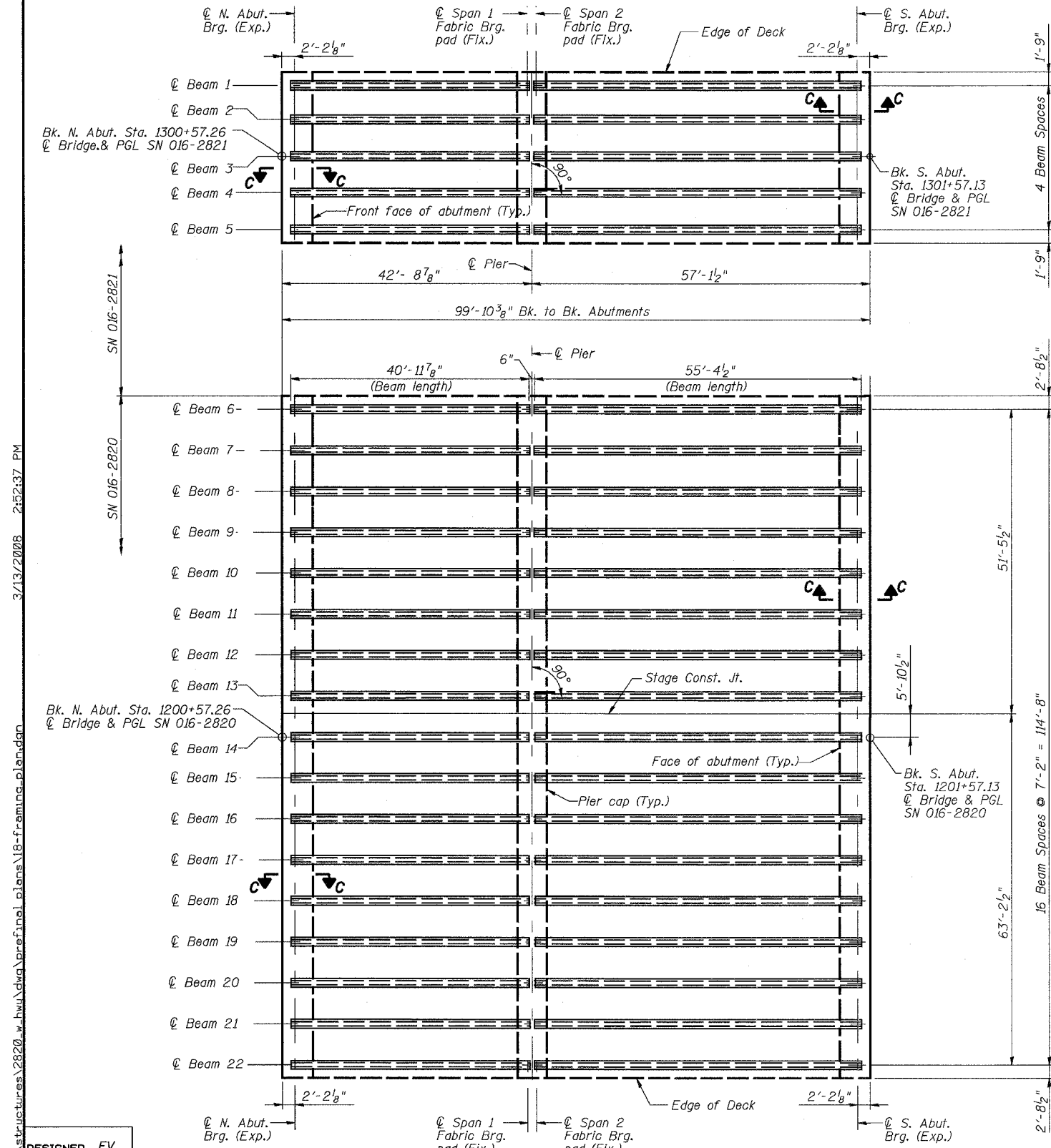
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
& 016-2821
SCALE: N.T.S. DATE: 2/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	428
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 60E10

SHEET NO. 18
54 SHEETS



	0.4 N. Span 1	Pier	0.6 S. Span 2
I (in ⁴)	48648		48648
I' (in ⁴)	173993		173993
S _b (in ³)	3165		3165
S _b ' (in ³)	5896		5896
S _t (in ³)	2358		2358
S _t ' (in ³)	26792		26792
D (k/')	1.06		1.06
M _D (k)	2.10		3.89
s _D (k/')	0.38	0.38	0.38
M _{sD} (k)	30	111	90
M _L (k)	235	235	342
M (Imp) (k)	71	71	102

	N. Abut.	N. Pier Brg.	S. Pier Brg.	S. Abut.
R _D (k)	21.1	21.1	28.7	28.7
R _{sD} (k)	4.8	10.4	12.3	8.2
R _L (k)	34.2	37.8	40.6	36.9
Imp. (k)	10.0	11.4	12.3	10.6
R (Total) (k)	70.1	80.7	93.9	84.4

I and I' are the moment of inertia and composite moment of inertia of the beam section.
 S_b and S_b' are the non-composite and composite section modulus for the bottom fiber of the prestressed beam.
 S_t and S_t' are the non-composite and composite section modulus for the top fiber of the prestressed beam.
 M_D - Moment due to dead loads on non-composite section.
 M_{sD} - Moment due to superimposed dead loads on composite section.
 M_L - Moment due to live load on composite section.
 M (Imp) - Moment due to live load impact on composite section.

- Notes:
- All beams are Precast Prestressed Concrete I Beam, 36".
 - See Sheet 21 for Section C-C.
 - See Sheet 16 for bridge cross section.
 - See Sheets 19 and 20 for beam details.
 - See Sheet 21 for diaphragm details.

DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
FRAMING PLAN

STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: 3/8" = 1'-0" DATE: 2/21/2008

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100 South Wacker Drive,
Suite 500
Chicago, IL 60606
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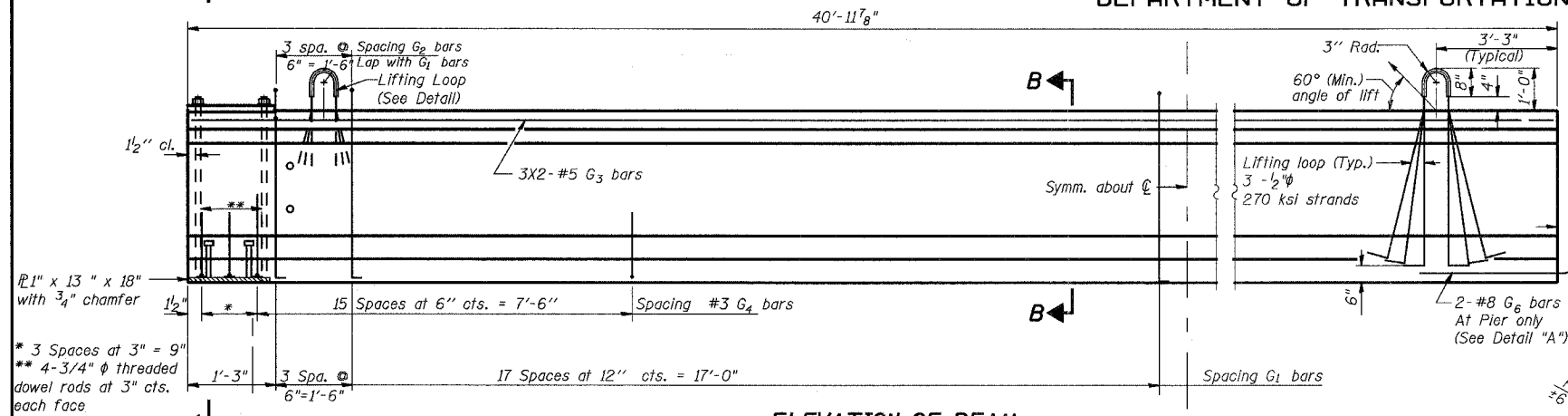
EV
EV

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	429
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

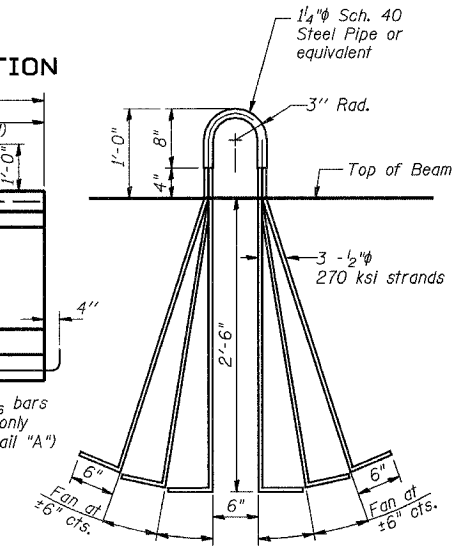
CONTRACT NO. 60E10

SHEET NO. 19
54 SHEETS



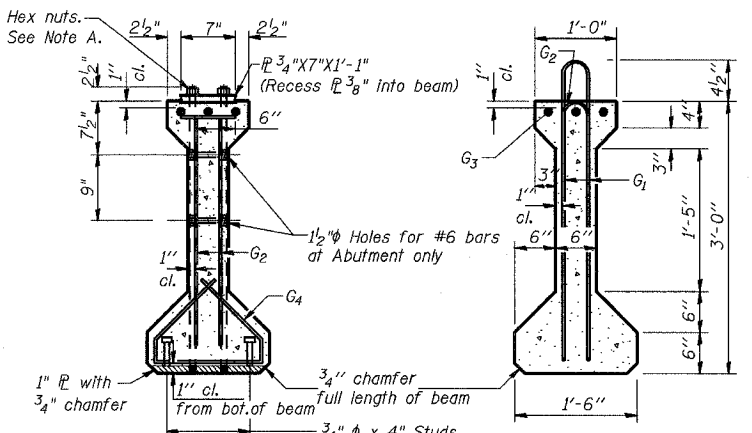
ELEVATION OF BEAM
(Showing Reinforcement & Dimensions)

Note A:
Hex nuts (top and bottom) with lock washers (top). Only tighten sufficiently to compress lock washers.



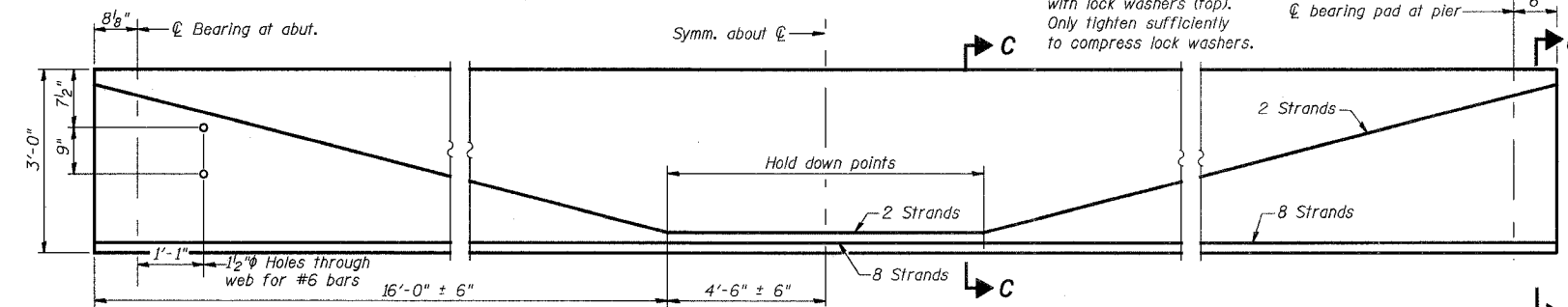
TYPICAL LIFTING LOOP

Lifting Weight of Beam = 15,371#/Beam

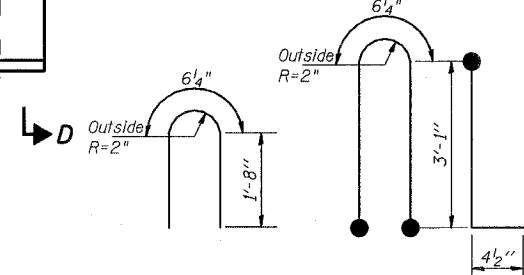


SECTION A-A

SECTION B-B

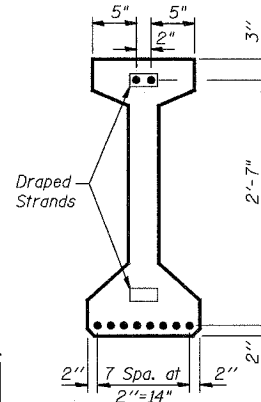


ELEVATION OF BEAM
(Showing Prestressing Steel)

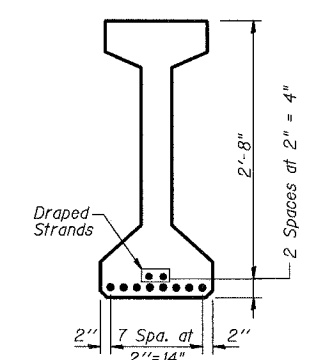


BAR G2

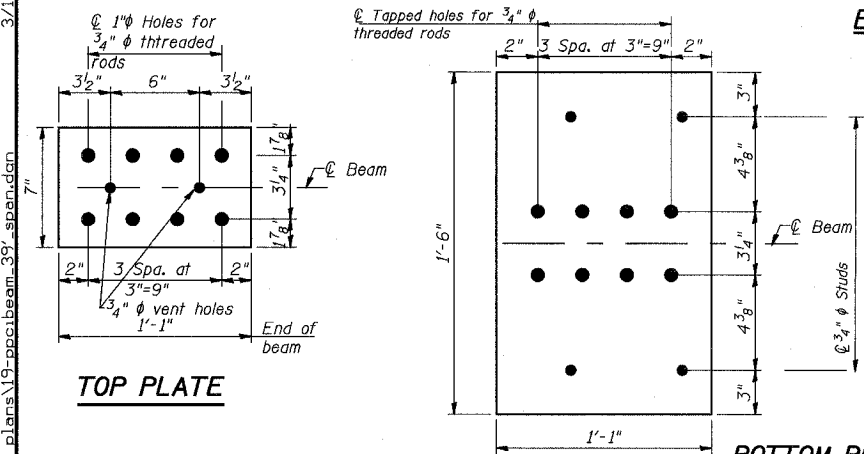
BAR G1



SECTION D-D
(At end of beam)

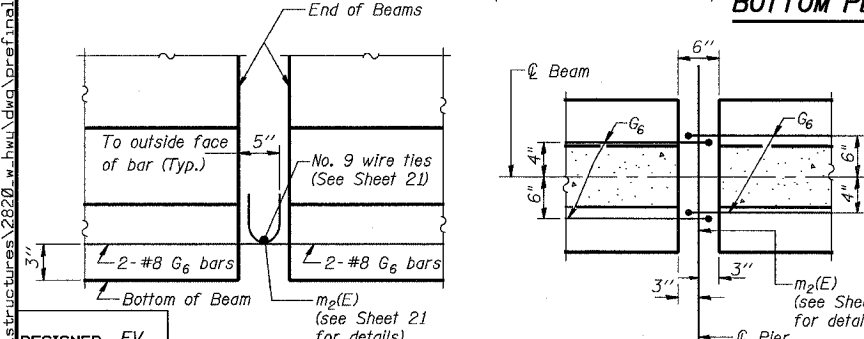


SECTION C-C
(Between hold down points)



TOP PLATE

BOTTOM PLATE



ELEVATION

PLAN

DETAIL "A"

- Notes:
1. Inserts for 3/4" φ threaded dowel rods shall be two strut, coil type for interior beams and single coil flared loop type for exterior beams.
 2. Work this Sheet with Sheets 18 and 21.
 3. All embedded plates, reinforcing and Prestressing Steel, and other items which are cast into the Precast Concrete I-Beams shall be included in the contract unit price per foot of "Furnishing and Erecting Precast Prestressed Concrete I-Beams, 36".
 4. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, grade 270.
 5. The nominal diameter shall be 1/2" and the nominal cross-section area shall be 0.153 sq. in..
 6. Non-prestressing steel shall conform to AASHTO Designation M 31 or M322, Grade 60.
 7. Reinforcement bars designated (E) shall be epoxy coated.
 8. Steel for lifting loops shall be 1/2" φ, Grade 270 ksi as shown.
 9. Required compressive strength f'c at 28 days shall be 6000 psi.
 10. Required release strength f'cl shall be 5000 psi.
 11. Min. lap length for #5 bar is 2'-2".
 12. Bars indicated thus 20 x 3- #15 etc. indicates 20 lines of bars with 3 lengths per line.
 13. A minimum 2 1/2" φ lifting pin shall be used to engage the lifting loops during handling.
 14. Cut G6 bars when necessary to maintain 1 1/2" clearance.
 15. The bottom plates and studs shall be galvanized according to AASHTO M111 and ASTM A385.
 16. Threaded rods shall be ASTM F 1554 Grade 55.
 17. The cut strands at each beam end shall be given two coats of zinc dust spray or paint meeting the requirements of ASTM A780. The zinc dust spray or paint shall be applied before corrosion appears and allowed to dry according to the manufacturer's specifications prior to another coat of zinc. A concrete sealer meeting the requirements of section 587 of the IDOT standard specifications shall be applied to all portions of the I-Beam except the top surface of the top flange and the bottom surface of the bottom flange, starting at each beam end and extending out a distance of 36 inches. The sealer shall be applied after visible crack growth has subsided. This work shall be performed by the producer and included with the cost of the "Furnishing and Erecting Precast Prestressed Concrete I-Beams, 36".
 18. Beams ends shall be sealed by the producer with an approved sealant. The ends of cut strands shall be treated with zinc dust paint compatible with sealant used for beam end treatment.

*** BAR LIST**

Bar	No.	Size	Length	Shape
G1	42	#5	7'-6"	U
G2	8	#6	3'-11"	I
G3	6	#5	21'-9"	I
G4	38	#3	4'-1"	U
G6	2	#8	3'-6"	U

* For one beam only.

BILL OF MATERIAL (SN 016-2820 & 2821)

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete I-Beams, 36 In	Ft.	901.8

DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

PI-4-36D 7-15-06

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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
PPC I-BEAM ELEVATION & DETAILS - SPAN 1
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: N.T.S. DATE: 9/21/2008

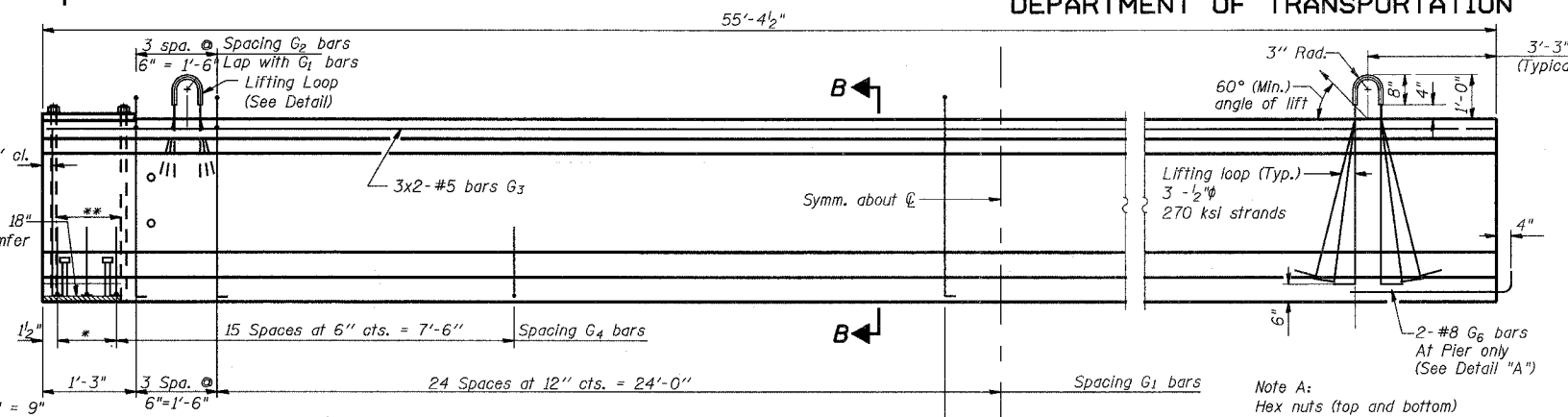
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

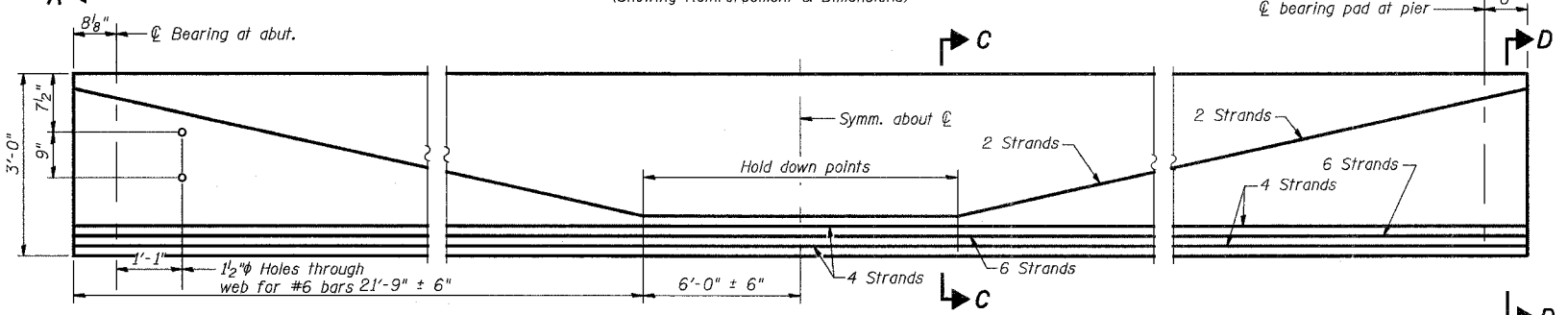
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	430
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 60E10

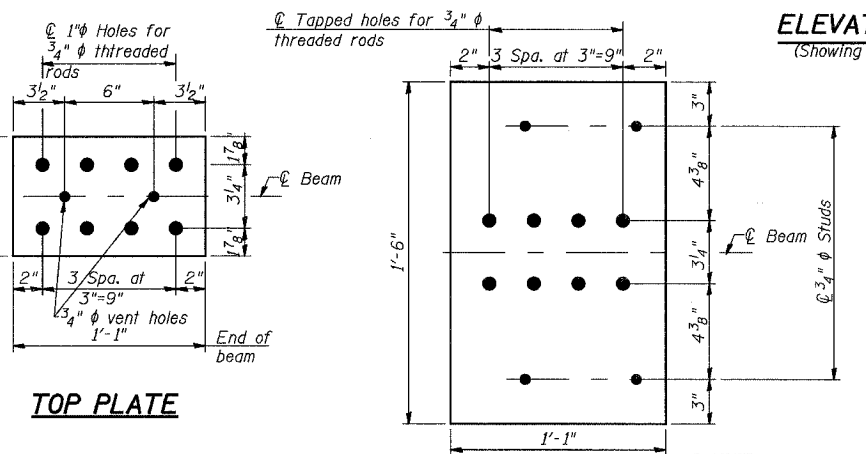
SHEET NO. 20
54 SHEETS



ELEVATION OF BEAM
(Showing Reinforcement & Dimensions)

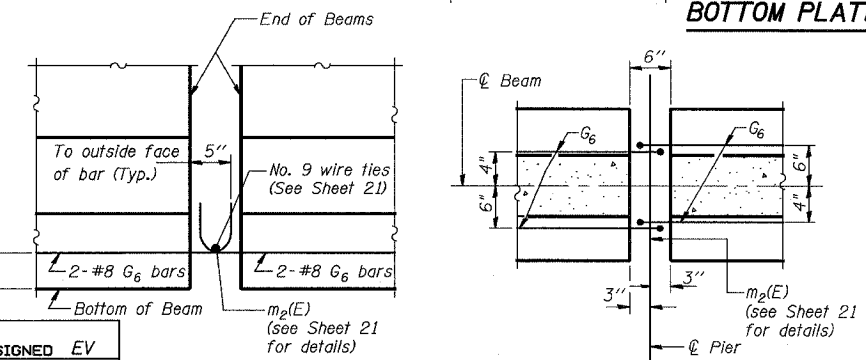


ELEVATION OF BEAM
(Showing Prestressing Steel)

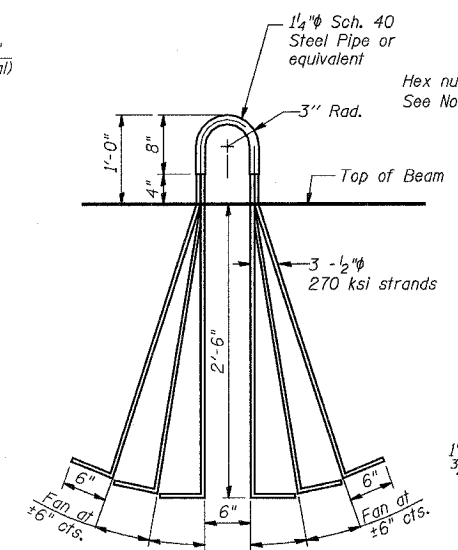


TOP PLATE

BOTTOM PLATE

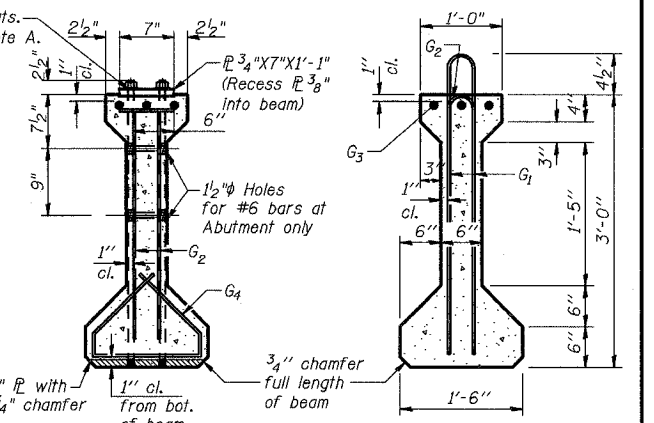


DETAIL "A"



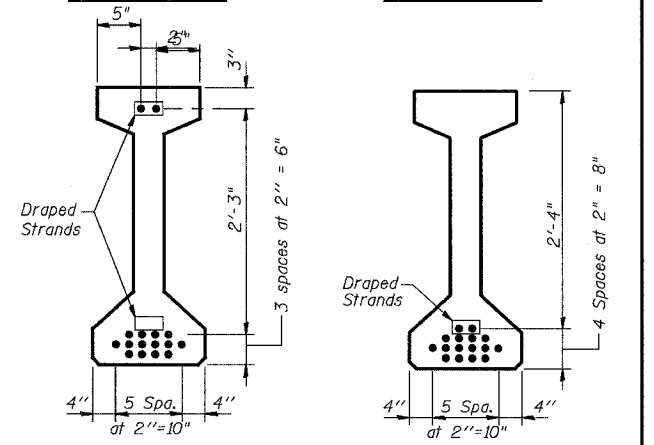
TYPICAL LIFTING LOOP

Lifting Weight of Beam = 20,766#/Beam



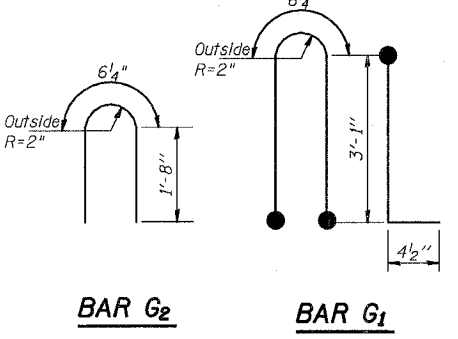
SECTION A-A

SECTION B-B



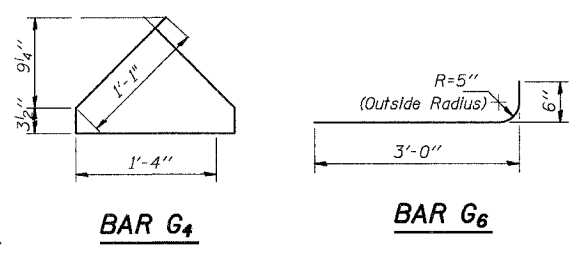
SECTION D-D
(At end of beam)

SECTION C-C
(Between hold down points)



BAR G2

BAR G1



BAR G4

BAR G6

*** BAR LIST**

Bar	No.	Size	Length	Shape
G1	56	#5	7'-6"	⌈
G2	8	#6	3'-11"	⌈
G3	6	#5	28'-9"	⌈
G4	38	#3	4'-1"	⌈
G6	2	#8	3'-6"	⌈

* For one beam only.

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete I-Beams, 36 In	Ft.	1,218.3

- Notes:
- Inserts for 3/4" φ threaded dowel rods shall be two strut, coil type for interior beams and single coil flared type for exterior beams.
 - Work this Sheet with Sheets 18 and 21.
 - All embedded plates, reinforcing and Prestressing Steel, and other items which are cast into the Precast Concrete I-Beams shall be included in the contract unit price per foot of "Furnishing and Erecting Precast Prestressed Concrete I-Beams, 36".
 - Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, grade 270.
 - The nominal diameter shall be 1/2" and the nominal cross-section area shall be 0.153 sq. in.
 - Non-prestressing steel shall conform to AASHTO Designation M 31 or M322, Grade 60.
 - Reinforcement bars designated (E) shall be epoxy coated.
 - Steel for lifting loops shall be 1/2" φ, Grade 270 ksi as shown.
 - Required compressive strength f'c at 28 days shall be 6000 psi.
 - Required release strength f'cl shall be 5000 psi.
 - Min. lap length for #5 bar is 2'-2".
 - Bars indicated thus 20 x 3- #15 etc. indicates 20 lines of bars with 3 lengths per line.
 - A minimum 2 1/2" φ lifting pin shall be used to engage the lifting loops during handling.
 - Cut G6 bars when necessary to maintain 1/2" clearance.
 - The bottom plates and studs shall be galvanized according to AASHTO M111 and ASTM A385.
 - Threaded rods shall be ASTM F 1554 Grade 55.
 - The cut strands at each beam end shall be given two coats of zinc dust spray or paint meeting the requirements of ASTM A780. The zinc dust spray or paint shall be applied before corrosion appears and allowed to dry according to the manufacturer's specifications prior to another coat of zinc. A concrete sealer meeting the requirements of section 587 of the IDOT standard specifications shall be applied to all portions of the I-Beam except the top surface of the top flange and the bottom surface of the bottom flange, starting at each beam end and extending out a distance of 36 inches. The sealer shall be applied after visible crack growth has subsided. This work shall be performed by the producer and included with the cost of the "Furnishing and Erecting Precast Prestressed Concrete I-Beams, 36".
 - Beams ends shall be sealed by the producer with an approved sealant. The ends of cut strands shall be treated with zinc dust paint compatible with sealant used for beam end treatment.

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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

ELEVATION
PI-4-36D 7-15-05

REVISIONS	
NAME	DATE

URS
100 South Wacker Drive,
Suite 500
Chicago, IL 60606
(312) 939-1000

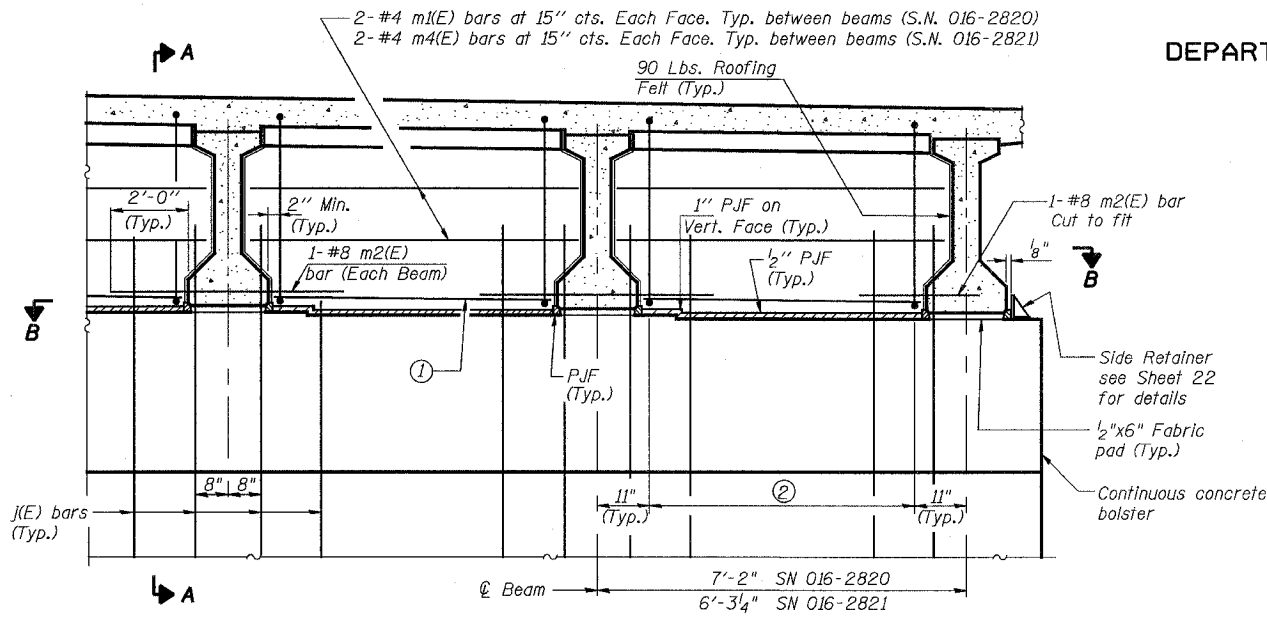
ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
PPC I-BEAM ELEVATION & DETAILS FOR - SPAN 2
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STRUCTURE NOS. 016-2820 & 016-2821
SCALE: N.T.S. DATE: 9/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	431
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT-		

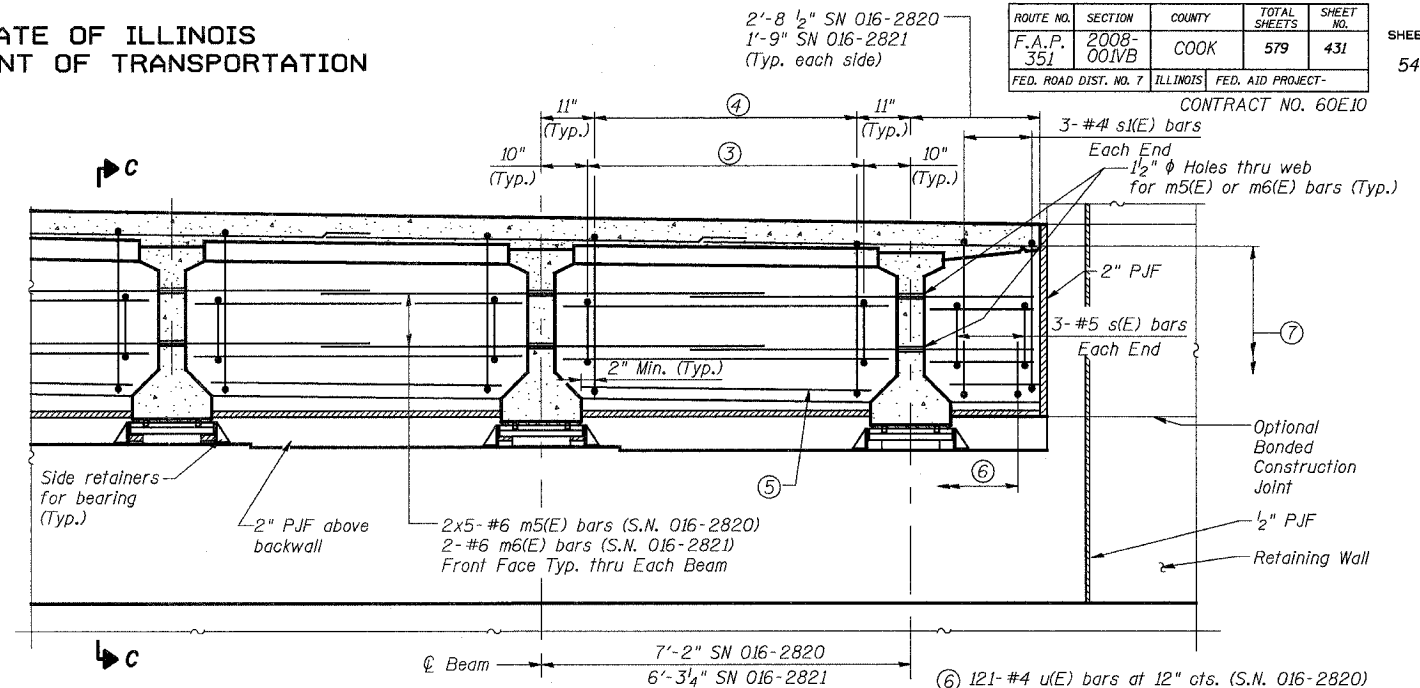
SHEET NO. 21
54 SHEETS

CONTRACT NO. 60E10



DIAPHRAGM AT PIER

- ① 1- #6 m(E) bar Each Face. Typ. between beams (16 locations S.N. 016-2820)
1- #6 m3(E) bar Each Face. Typ. between beams (4 locations S.N. 016-2821)
- ② 6- #4 s2(E) bars at 12" cts. Typ. between beams (16 locations S.N. 016-2820)
5- #4 s2(E) bars at 12" cts. Typ. between beams (4 locations S.N. 016-2821)



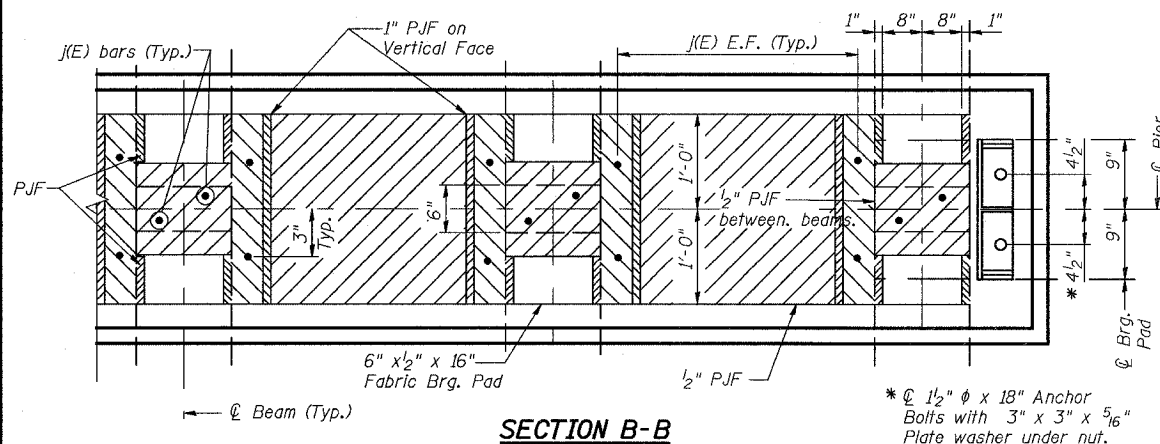
DIAPHRAGM AT ABUTMENT
(2 Required)

- ③ 6- #5 s(E) bars at 12" cts. Typ. between beams (16 locations S.N. 016-2820)
5- #5 s(E) bars at 12" cts. Typ. between beams (4 locations S.N. 016-2821)
- ④ 6- #4 s1(E) bars at 12" cts. Typ. between beams (16 locations S.N. 016-2820)
5- #4 s1(E) bars at 12" cts. Typ. between beams (4 locations S.N. 016-2821)
- ⑤ 2- #6 m(E) bars Front Face Typ. between beams (16 locations S.N. 016-2820)
2- #6 m3(E) bars Front Face Typ. between beams (4 locations S.N. 016-2821) (See Section C-C for spacing)

- ⑥ 121- #4 u(E) bars at 12" cts. (S.N. 016-2820)
29- #4 u(E) bars at 12" cts. (S.N. 016-2821)
- ⑦ 12x5- #6 m5(E) bars (S.N. 016-2820)
12- #6 m6(E) bars (S.N. 016-2821) (See Section C-C for spacing)

** v(E)
(see Sheets 13 through 15 for details)

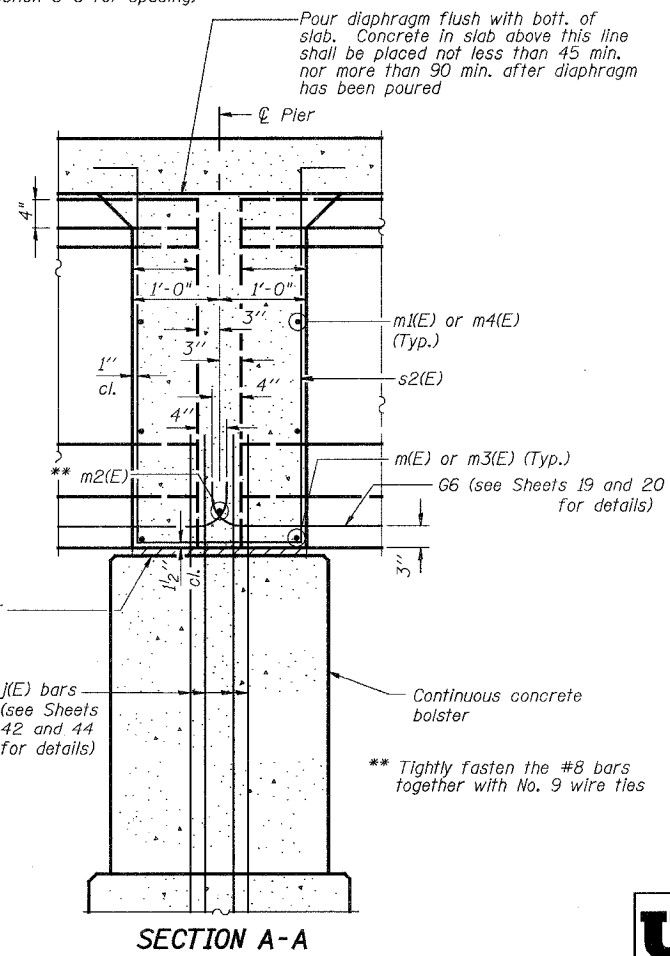
Bar Splicers (E) for #5 bars @ 12" cts.



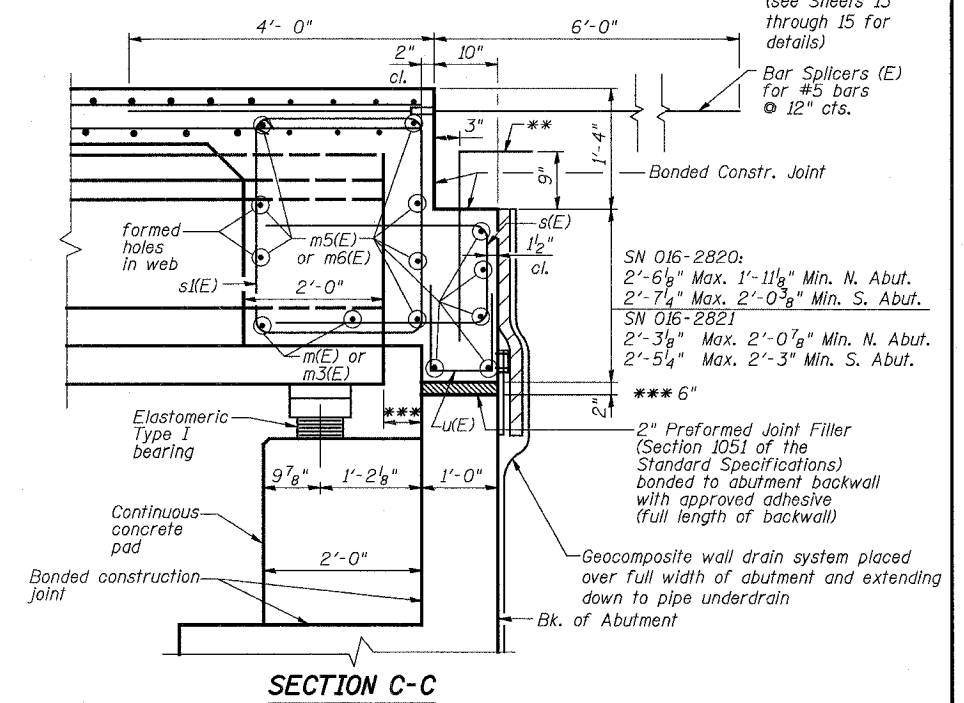
SECTION B-B

Notes:

1. Work this Sheet with Sheets 13 through 16, 19 and 20.
2. For bar bend details and Bill of Materials see Sheet 16.
3. See Sheets 34 for drainage detail behind backwall.
4. Reinforcement bars designated (E) shall be epoxy coated.
5. Bars indicated thus 2 x 5- #6 etc. indicates 2 lines of bars with 5 lengths per line.
6. Concrete in diaphragm is included with Concrete Superstructure.
7. The s(E), s1(E) and s2(E) bars shall be placed at right angles to the beams.
8. See Sheet 47 for anchor bolt details.
9. Min. Lap Length for #6 bar is 2'-9".
10. Cost of preformed joint fillers, fabric pad and 90 lb roofing felt is included in "Concrete Superstructure".



SECTION A-A



SECTION C-C

DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
DIAPHRAGM DETAILS

STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)

STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821

SCALE: N.T.S. DATE: 9/21/2008

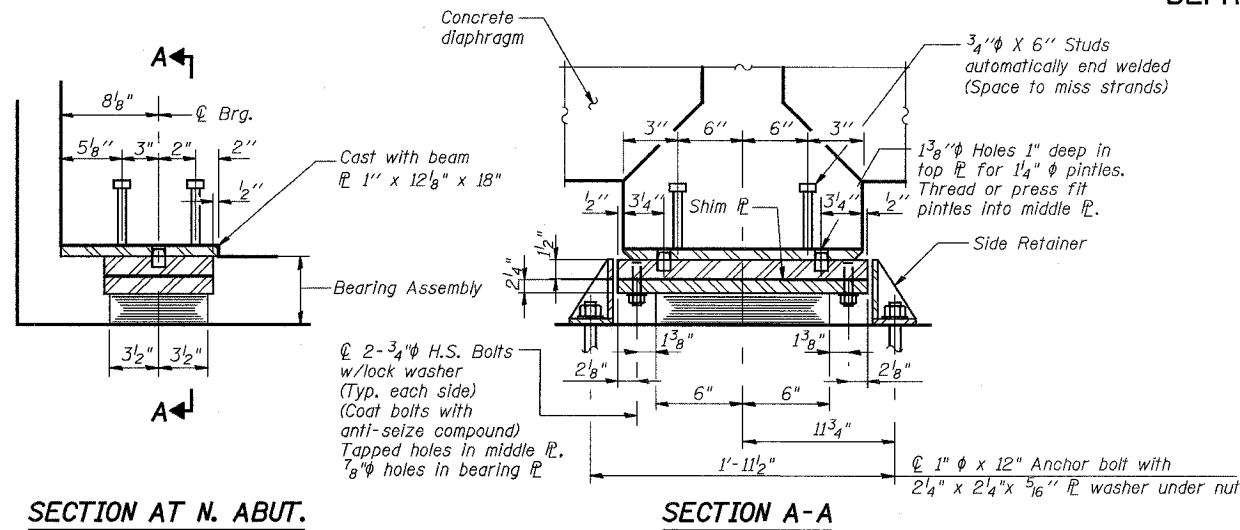
URS
100 South Wacker Drive,
Suite 500
Chicago, IL 60606
(312) 939-1000

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

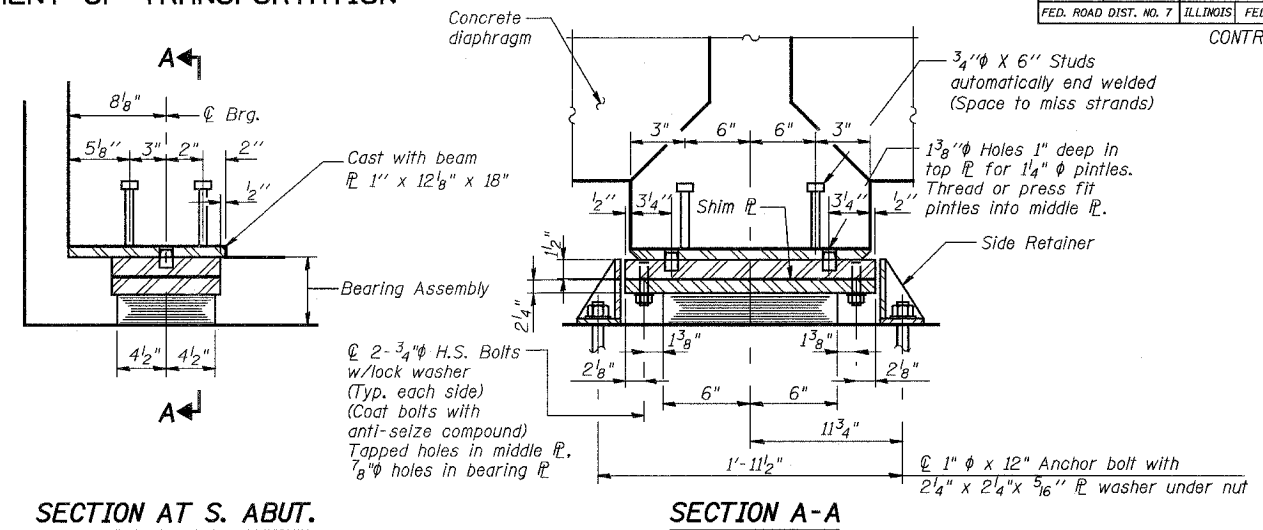
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	432
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

SHEET NO. 22
54 SHEETS



SECTION AT N. ABUT.

SECTION A-A



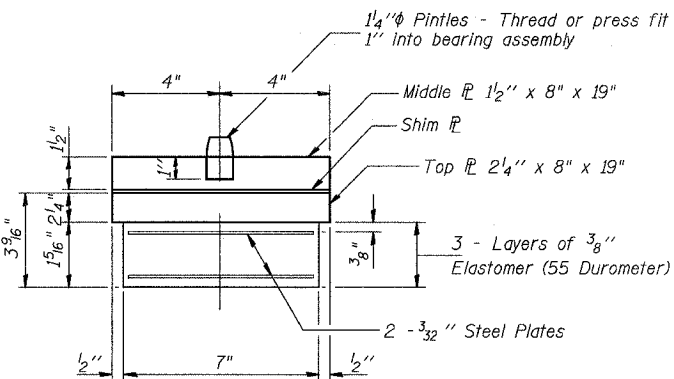
SECTION AT S. ABUT.

SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

(SPAN NO. 1)

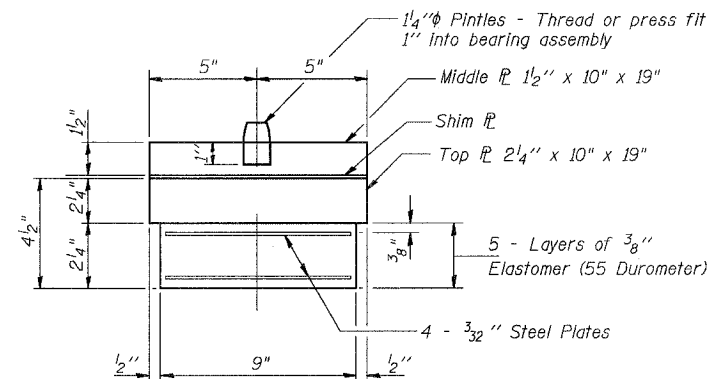
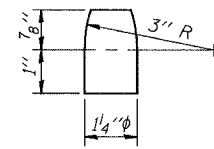
(17 Required for SNO16-2820
5 Required for SNO16-2821)



BEARING ASSEMBLY

(SPAN NO. 1)

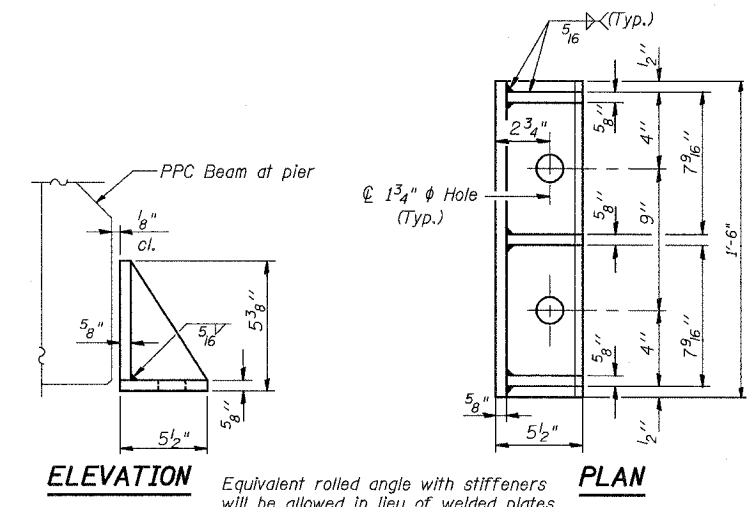
Note: Shim plates shall not be placed under Bearing Assembly.



BEARING ASSEMBLY

(SPAN NO. 2)

Note: Shim plates shall not be placed under Bearing Assembly.



SIDE RETAINER DETAIL AT PIER

(Fascia beams only)

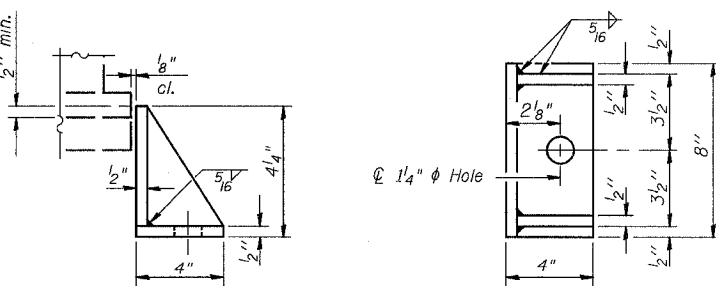
(2 Required for SNO16-2820
2 Required for SNO16-2821)

Notes:

- After beams have been erected holes at expansion bearings shall be drilled and anchor bolts grouted in place.
- See Sheet 47 for anchor bolt installation.
- Anchor bolts and side retainers shall be installed prior to forming and pouring the deck slab.
- The cost of side retainers is included in the cost of "Concrete Structures".
- The side retainer shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM 385.

BILL OF MATERIAL

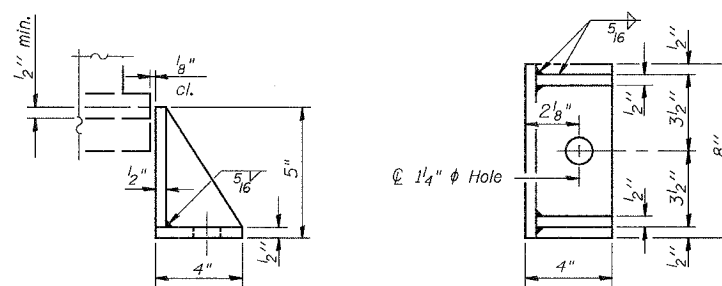
Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	44
Anchor Bolts, 1"	Each	96



SIDE RETAINER

(SPAN NO. 1)

(34 Required for SNO16-2820
10 Required for SNO16-2821)



SIDE RETAINER

(SPAN NO. 2)

(34 Required for SNO16-2820
10 Required for SNO16-2821)

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
BEARING DETAILS

STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
& 016-2821
SCALE: DATE: 2/21/2008

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DESIGNED EV
CHECKED NPP
DRAWN EV
CHECKED NPP

PI-2E-1

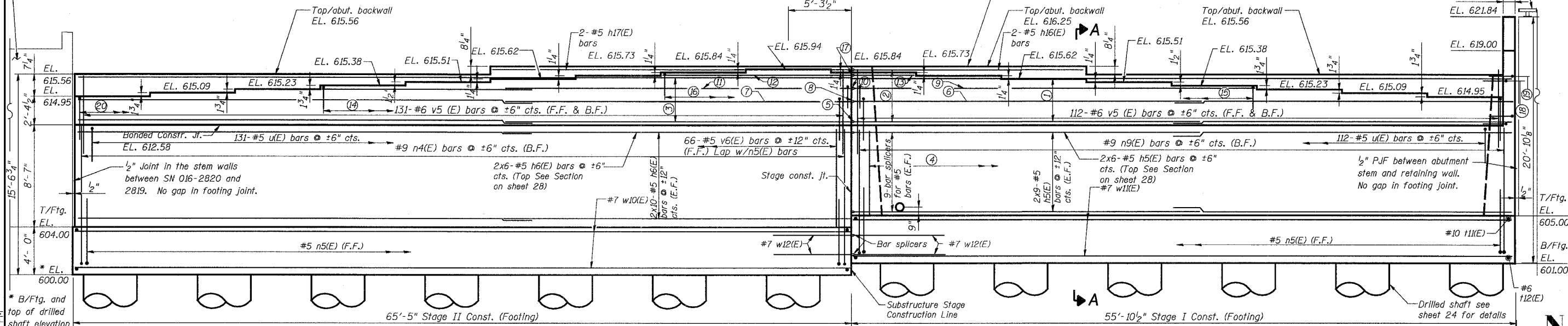
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	433
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

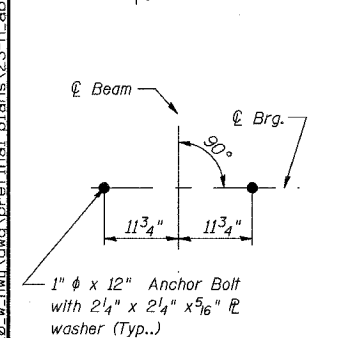
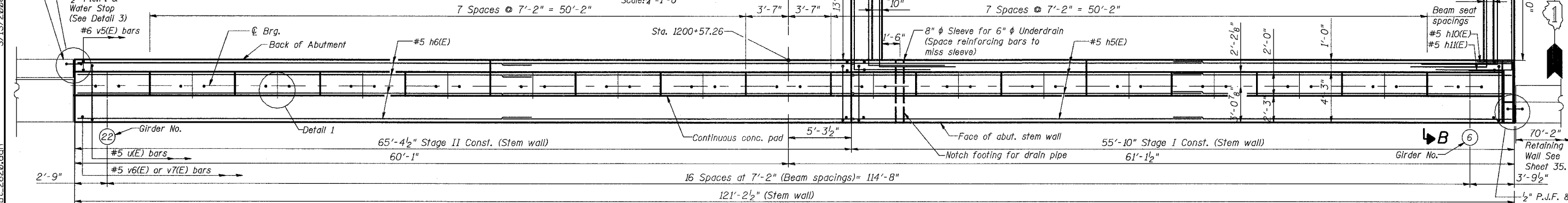
SHEET NO. 23
54 SHEETS

CONTRACT NO. 60E10

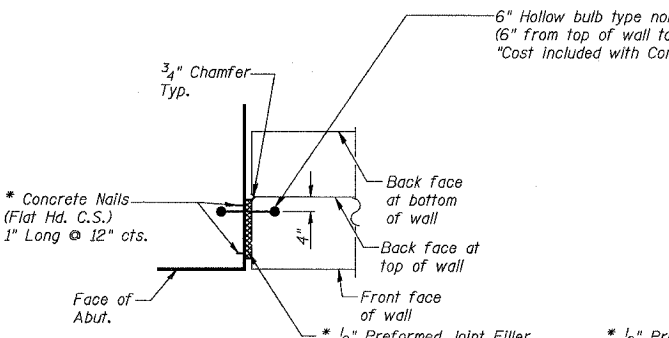
See drawing for N. Abutment S.N. 016-2819



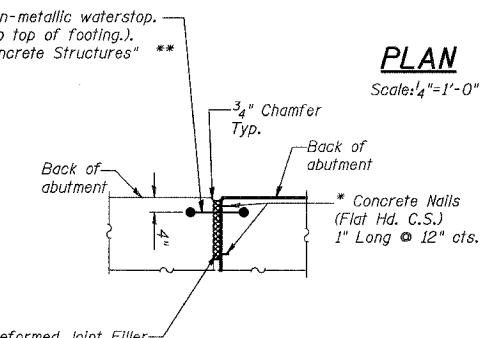
See Plans for SN 016-2819 for ballast retainer details



DETAIL 1
Scale: 1/2" = 1'-0"



DETAIL 2
Scale: 1/2" = 1'-0"



DETAIL 3
Scale: 1/2" = 1'-0"

PLAN
Scale: 1/4" = 1'-0"

- ① 4x2-#5 h5(E) bars @ ±12" cts. (E.F.)
- ② 5-Bar splicers for #5 bars (E.F.)
- ③ 4x2-#5 h6(E) bars @ ±12" cts. (E.F.)
- ④ 57-#5 v7(E) bars @ ±12" cts. (F.F.) Lap with n5(E) bars
- ⑤ 6-Bar splicers for #5 bars
- ⑥ 6x2-#5 h5(E) bars @ ±12" cts.
- ⑦ 6x2-#5 h6(E) bars @ ±12" cts.
- ⑧ 4-#5 h6(E) bars @ ±8" cts.
- ⑨ 4-Bar splicers for #5 bars
- ⑩ 4x2-#5 h7(E) bars @ ±8" cts.
- ⑪ 4-#5 h8(E) bars @ ±8" cts.
- ⑫ 4-#5 h9(E) bars @ ±8" cts.
- ⑬ 45-#5 u1(E) bars @ ±12" cts.
- ⑭ 35-#5 u1(E) bars @ ±12" cts.
- ⑮ 22-#5 u1(E) bars @ ±12" cts.
- ⑯ 4-Bar splicers for #5 bars
- ⑰ 11-#5 h10(E) bars @ ±6" cts.
- ⑱ 11-#5 u1(E) bars @ ±6" cts.
- ⑳ 122-#5 u2(E) bars @ ±12" cts.

NOTES:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Work this sheet with sheets 24 through 28.
3. See Sheet 28 for Section A-A, Section B-B.
4. Cast steps monolithically with cap.
5. Space reinforcement in seat to miss anchor bolts.
6. See sheet 25 for Bill of Materials.
7. Cost of pipe sleeve is included with Concrete Structures.
8. Min. lap length for #5 bar is 2'-2" and for #7 bar is 3'-10"
9. Bars indicated thus 5x2-#5 etc. indicates 5 lines of bars with 2 lengths per line
10. See Sheet 24 of U.S. 6 Mainline Retaining Walls Along 159th Street plans for Pipe Underdrain Layout and Quantities.

DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

* Cost Included with Concrete Structures.
** Contractor to provide protective cover for Water Seal subject to the approval of the Engineer.

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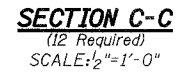
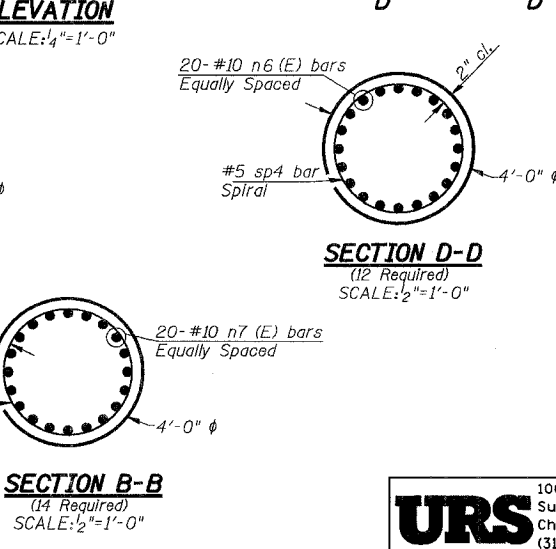
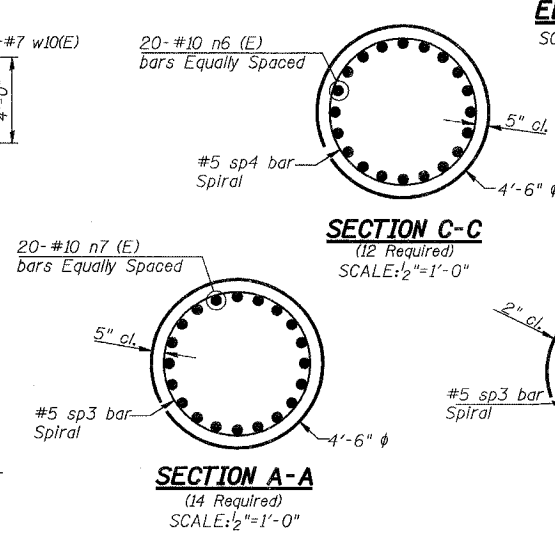
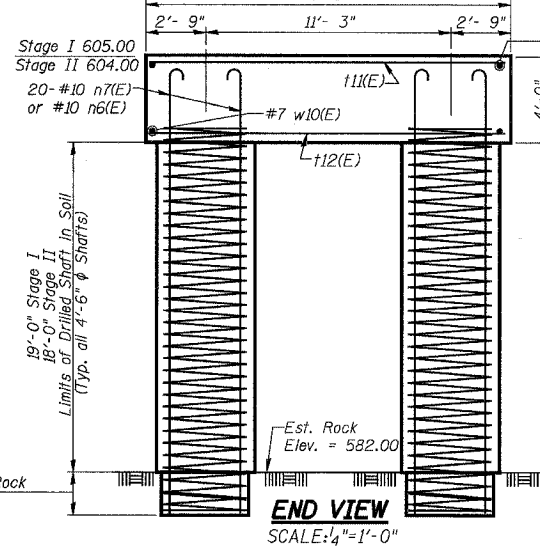
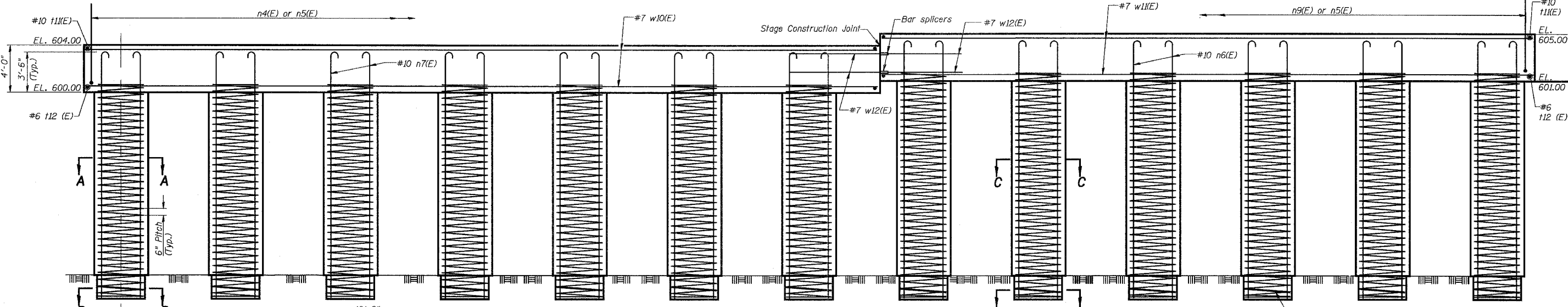
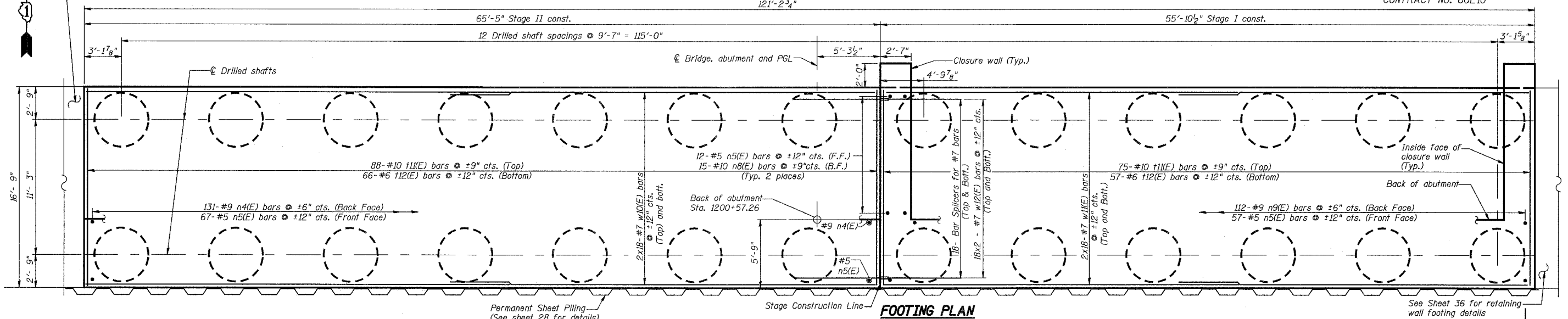
ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
NORTH ABUTMENT
SN 016-2820
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: AS NOTED DATE: 2/21/2008

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	434
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

SHEET NO. 24
54 SHEETS



Min. Lap Splice for Spiral = 2'-0"

- Notes:
- See sheet 25 for Bill of Materials.
 - Drilled Shafts shall be drilled to Elevation 582.00. Quantities and Detailing are for the estimated Elevations shown on the Plans. The actual conditions encountered in each Shaft may differ and the Drilled Shaft and Reinforcement Quantities shall be adjusted accordingly as directed by the Engineer and paid for at the corresponding Unit Bid Price.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
NORTH ABUT. FOUNDATION
SN 016-2820
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: AS NOTED DATE: 2/21/2008

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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

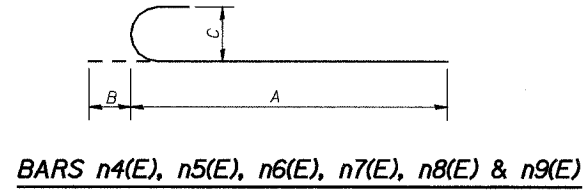
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

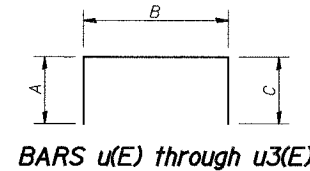
SHEET NO. 25
54 SHEETS

BILL OF MATERIAL - NORTH ABUTMENT

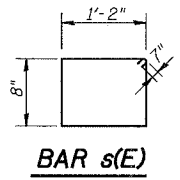
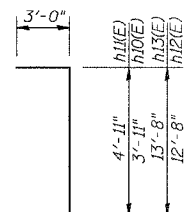
Bar	No.	Size	Length	Shape
h5(E)	70	#5	30'-0"	=====
h6(E)	78	#5	34'-0"	=====
h7(E)	8	#5	23'-6"	=====
h8(E)	4	#5	15'-9"	=====
h9(E)	4	#5	5'-3"	=====
h10(E)	7	#5	6'-11"	=====
h11(E)	7	#5	7'-11"	=====
h12(E)	24	#5	15'-8"	=====
h13(E)	24	#5	16'-8"	=====
h15(E)	8	#5	4'-11"	=====
h16(E)	2	#5	19'-6"	=====
h17(E)	2	#5	30'-0"	=====
n4(E)	131	#9	12'-10"	=====
n5(E)	148	#5	5'-1"	=====
n7(E)	280	#10	25'-11"	=====
n8(E)	30	#10	10'-5"	=====
n9(E)	112	#9	11'-10"	=====
n6(E)	240	#10	26'-11"	=====
11(E)	163	#10	16'-5"	=====
12(E)	123	#6	16'-5"	=====
s(E)	6	#5	4'-10"	=====
u(E)	243	#5	8'-8"	=====
u1(E)	102	#5	4'-8"	=====
u2(E)	122	#5	13'-2"	=====
u3(E)	2	#5	10'-2"	=====
v5(E)	486	#6	6'-3"	=====
v6(E)	66	#5	8'-5"	=====
v7(E)	57	#5	7'-5"	=====
v9(E)	28	#5	11'-1"	=====
v10(E)	36	#8	11'-1"	=====
v11(E)	12	#6	9'-0"	=====
v18(E)	2	#5	2'-3"	=====
w10(E)	72	#7	35'-0"	=====
w11(E)	72	#7	31'-0"	=====
w12(E)	72	#7	10'-0"	=====
sp3	14	#5	21'-2"	=====
sp4	12	#5	22'-2"	=====
Porous Granular Embankment		Cu. Yd.	812	
Concrete Structures		Cu. Yd.	459.3	
Reinforcement Bars		Pound	11,350	
Reinforcement Bars, Epoxy Coated		Pound	114,230	
Non-Special Waste Disposal		Cu. Yd.	1253.0	
Geocomposite Wall Drain		Sq. Yd.	181	
Braced Excavation		Cu. Yd.	1462	
Permanent Steel Sheet Piling		Sq. Ft.	1815	
Drilled Shaft in Soil		Cu. Yd.	283	
Drilled Shaft in Rock		Cu. Yd.	37	
Structure Excavation		Cu. Yd.	369	
Bar Splicers		Each	82	



Bar	A	B	C
n4(E)	11'-7"	1'-3"	11 3/4"
n5(E)	4'-6"	7"	5"
n7(E)	24'-6"	1'-5"	1'-1 1/4"
n8(E)	9'-0"	1'-5"	1'-1 1/4"
n9(E)	10'-7"	1'-3"	11 3/4"
n6(E)	25'-6"	1'-5"	1'-1 1/4"



Bar	A	B	C
u(E)	2'-0"	4'-8"	2'-0"
u1(E)	1'-6"	1'-8"	1'-6"
u2(E)	5'-9"	1'-8"	5'-9"
u3(E)	4'-6"	1'-2"	4'-6"



- NOTES:
1. Reinforcement bars designated (E) shall be epoxy coated.
 2. Work this Sheet with Sheets 23 and 24.
 3. See Sheet 1 for limits of Braced Excavation and Structure Excavation.
 4. See Sheet 24 of U.S. 6 Mainline Retaining Walls Along 159th Street plans for Pipe Underdrain Layout and Quantities.
 5. See Sheet 45 for details of Porous Granular Embankment and Pipe Underdrain for Structures 6".

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REVISIONS	
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ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
NORTH ABUTMENT DETAILS
SN 016-2820
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
& 016-2821
SCALE: N.T.S. DATE: 2/21/2008

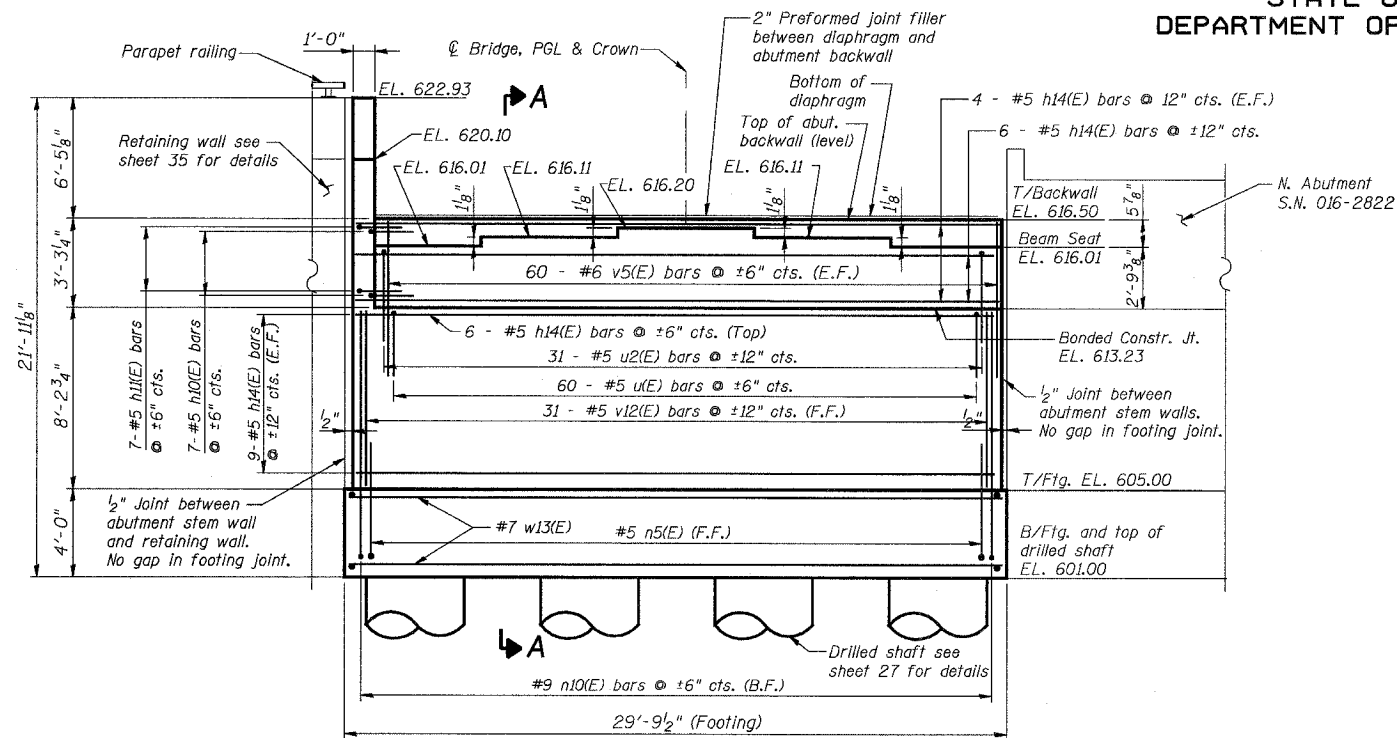
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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

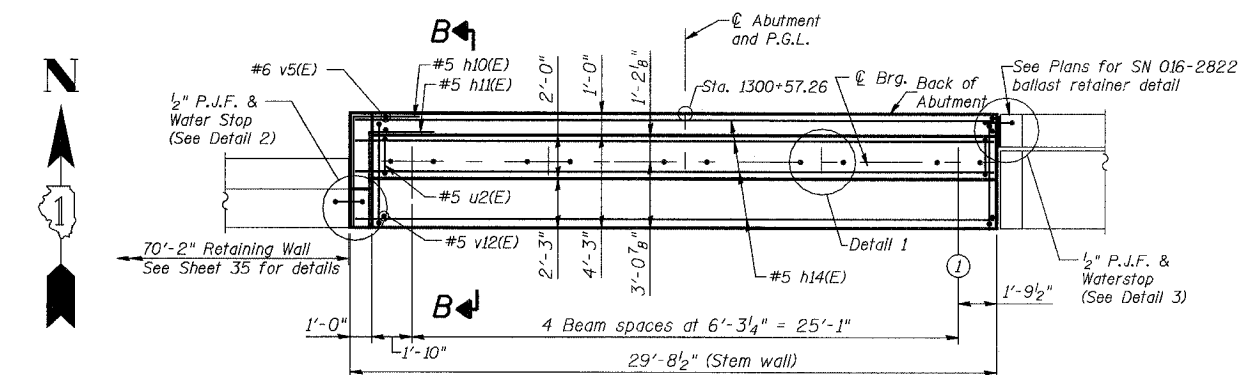
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	436
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

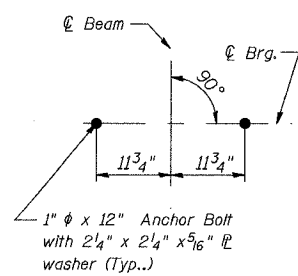
SHEET NO. 26
54 SHEETS



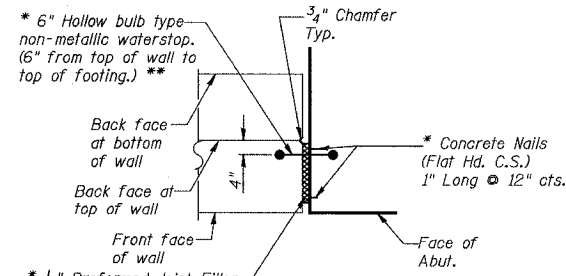
ELEVATION
(LOOKING NORTH)
SCALE: 1/4"=1'-0"



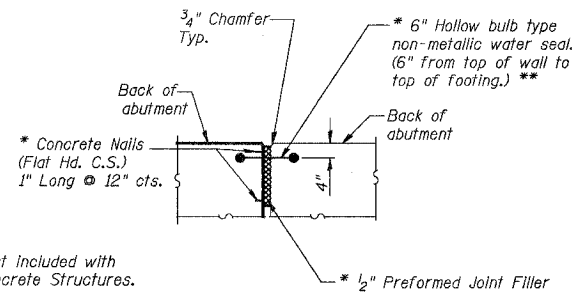
PLAN
SCALE: 1/4"=1'-0"



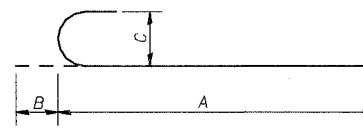
DETAIL 1



DETAIL 2

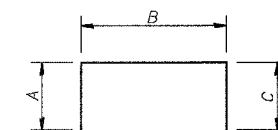


DETAIL 3



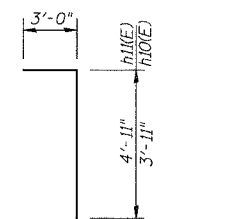
BARS n5(E), n11(E) & n10(E)

Bar	A	B	C
n5(E)	4'-6"	7"	5"
n11(E)	26'-6"	1'-5"	1'-1 1/4"
n10(E)	11'-3"	1'-3"	11 3/4"

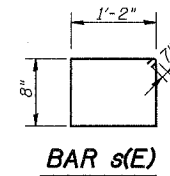


BARS u(E) through u3(E)

Bar	A	B	C
u(E)	2'-0"	4'-8"	2'-0"
u2(E)	5'-9"	1'-8"	5'-9"
u3(E)	4'-6"	1'-2"	4'-6"



BARS h10(E) & h11(E)



BAR s(E)

BILL OF MATERIAL - NORTH ABUTMENT

Bar	No.	Size	Length	Shape
h10(E)	7	#5	6'-11"	U
h11(E)	7	#5	7'-11"	U
h14(E)	38	#5	29'-4"	U
h15(E)	8	#5	4'-11"	U
n5(E)	31	#5	5'-1"	U
n11(E)	160	#10	27'-11"	U
n10(E)	60	#9	12'-6"	U
r11(E)	41	#10	16'-5"	U
r12(E)	31	#6	16'-5"	U
s(E)	6	#5	4'-10"	U
u(E)	60	#5	8'-8"	U
u2(E)	31	#5	13'-2"	U
u3(E)	2	#5	10'-2"	U
v5(E)	120	#6	6'-3"	U
v11(E)	12	#6	9'-0"	U
v12(E)	31	#5	8'-0"	U
w13(E)	36	#7	29'-5"	U
sp5	8	#5	23'-2"	WWWWW
Porous Granular Embankment			Cu. Yd.	207
Concrete Structures			Cu. Yd.	135.6
Reinforcement Bars			Pound	3,740
Reinforcement Bars, Epoxy Coated			Pound	31,640
Geocomposite Wall Drain			Sq. Yd.	40
Braced Excavation			Cu. Yd.	441
Permanent Steel Sheet Piling			Sq. Ft.	460
Non-Special Waste Disposal			Cu. Yd.	535.0
Drilled Shaft in Soil			Cu. Yd.	95
Drilled Shaft in Rock			Cu. Yd.	12

NOTES:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Work this sheet with Sheets 27 & 28.
3. Cast steps monolithically with cap.
4. Space reinforcement to miss anchor bolts.
5. See Sheet 28 for Section A-A, Section B-B.
6. See Sheet 1 for limits of Braced Excavation.
7. See Sheet 24 of U.S. 6 Mainline Retaining Walls Along 159th Street plans for Pipe Underdrain Layout and Quantities.
8. See Sheet 45 for details of Porous Granular Embankment and Pipe Underdrain for Structures 6".

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
NORTH ABUTMENT
SN 016-2821
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
& 016-2821
SCALE: DATE: 2/21/2008

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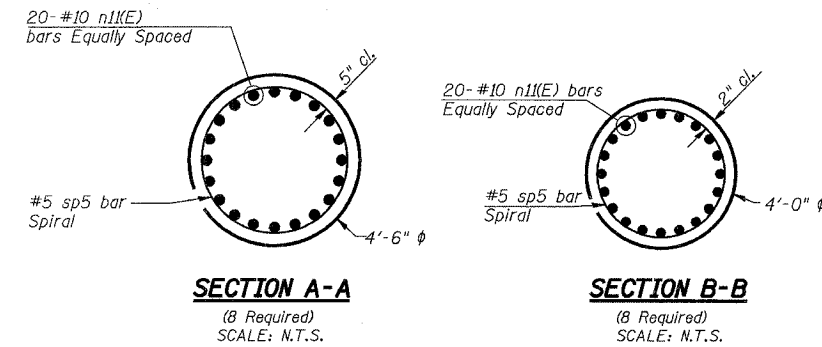
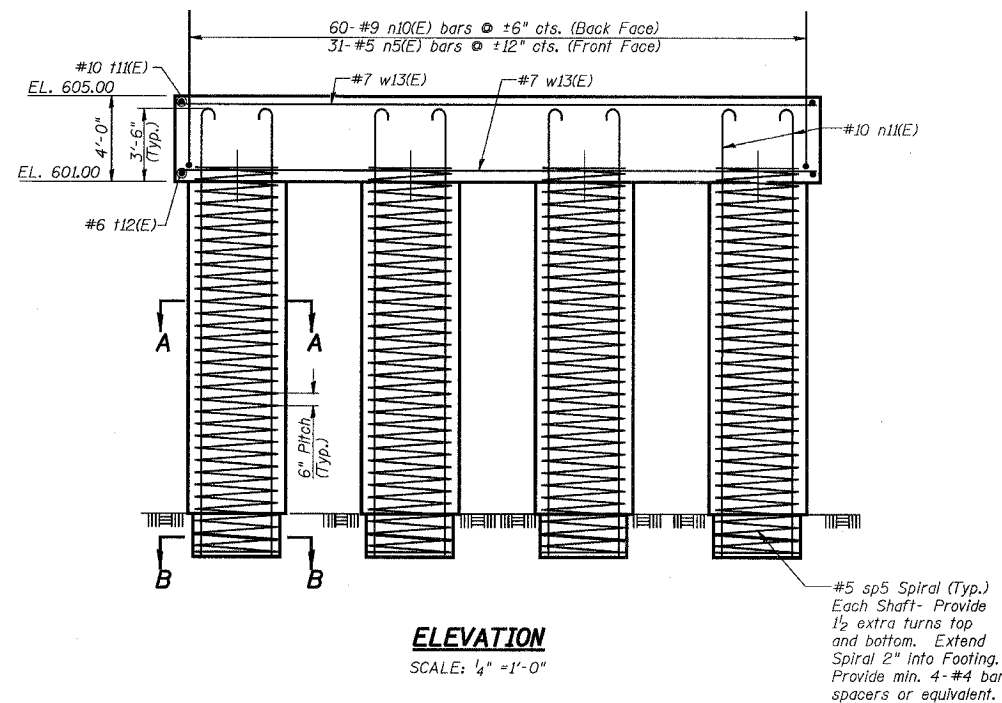
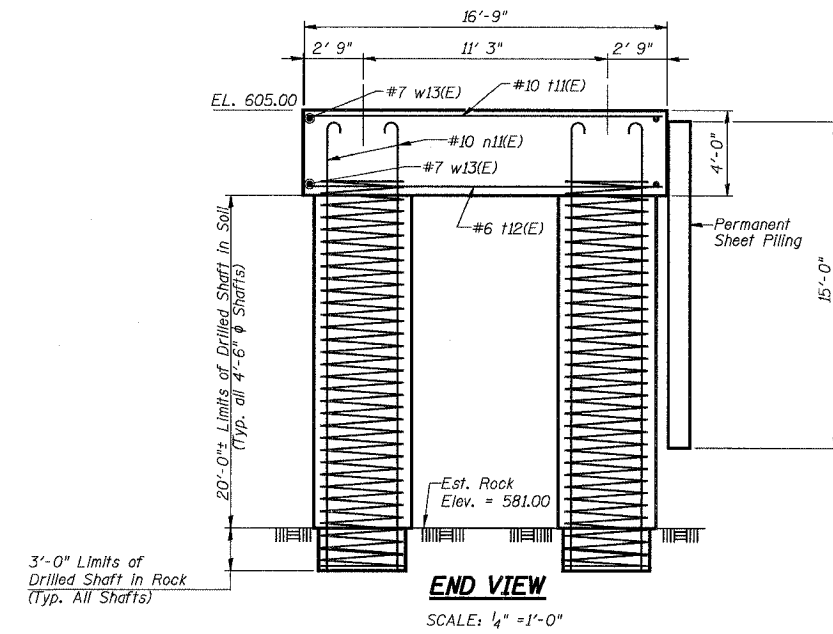
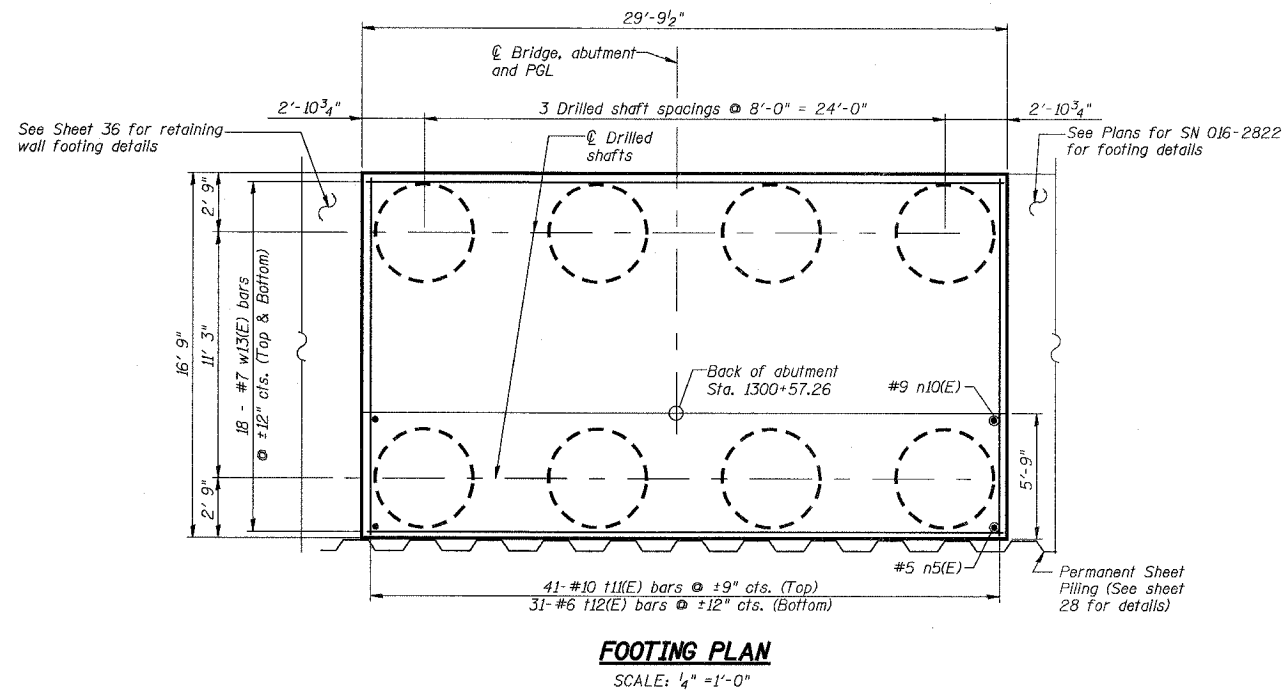
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DESIGNED EV
CHECKED NPP
DRAWN EV
CHECKED NPP

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	437
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-	CONTRACT NO. 60E10	

SHEET NO. 27
54 SHEETS



- Notes:
- See sheet 26 for Bill of Materials
 - Drilled Shafts shall be drilled to Elevation 581.00. Quantities and Detailing are for the estimated Elevations shown on the Plans. The actual conditions encountered in each Shaft may differ and the Drilled Shaft and Reinforcement Quantities shall be adjusted accordingly as directed by the Engineer and paid for at the corresponding Unit Bid Price.

Min. Lap Splice for Spiral = 2'-0"

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
NORTH ABUT. FOUNDATION
SN 016-2821
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
& 016-2821
SCALE: AS NOTED DATE: 2/21/2008

URS
100 South Wacker Drive,
Suite 500
Chicago, IL 60606
(312) 939-1000

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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

3'-0" ϕ
2'-6" ϕ

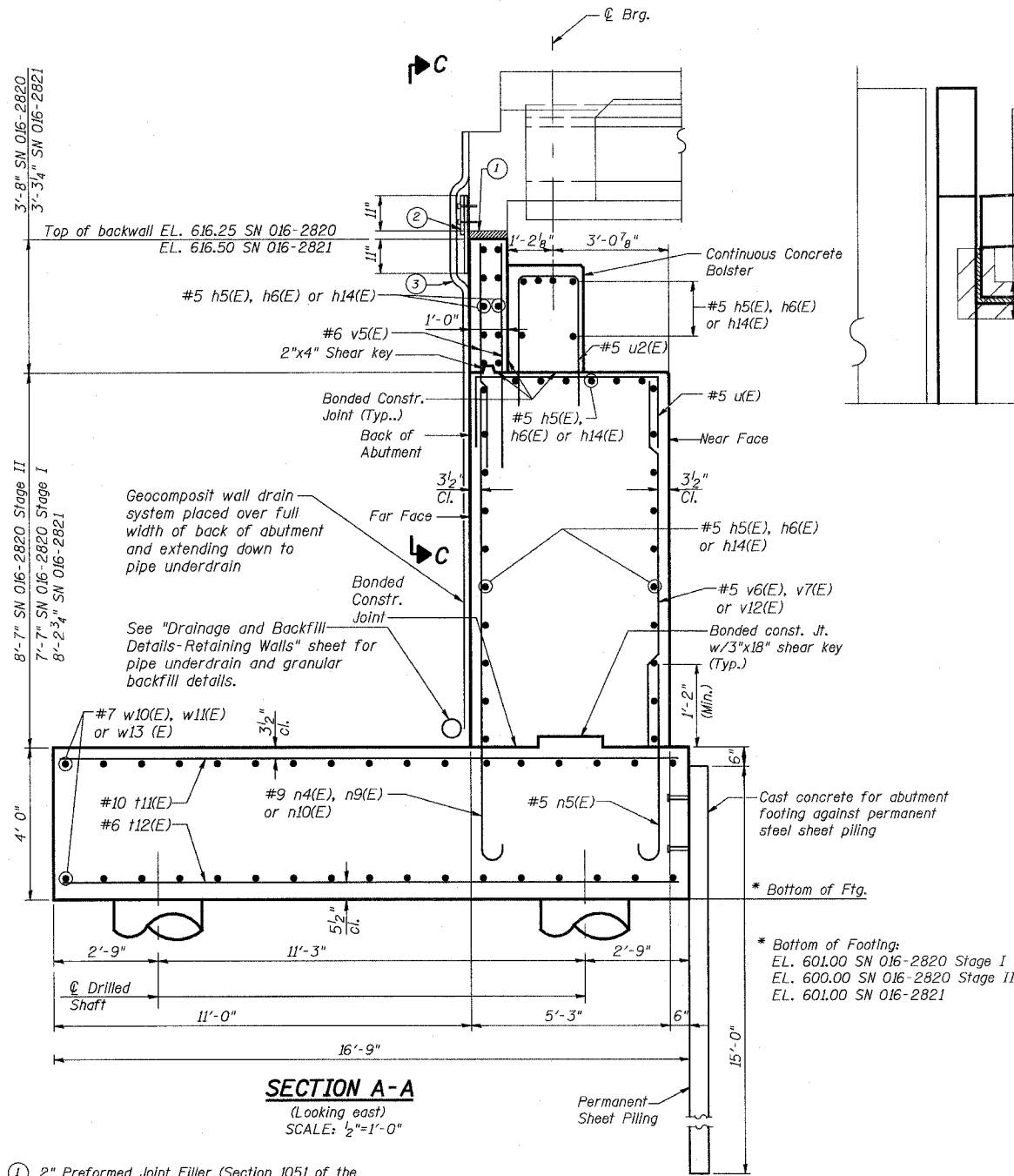
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT-				

SHEET NO. 28
54 SHEETS

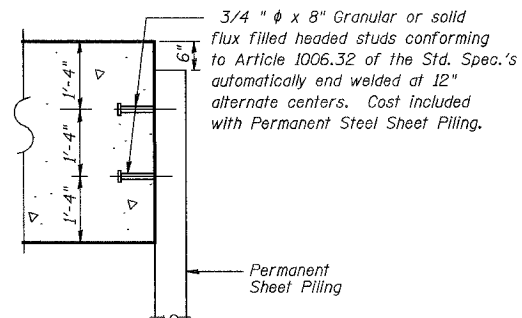
CONTRACT NO. 60E10

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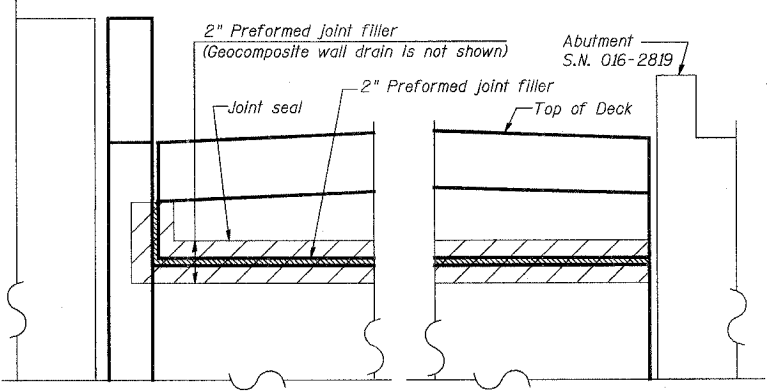


SECTION A-A
(Looking east)
SCALE: 1/2"=1'-0"

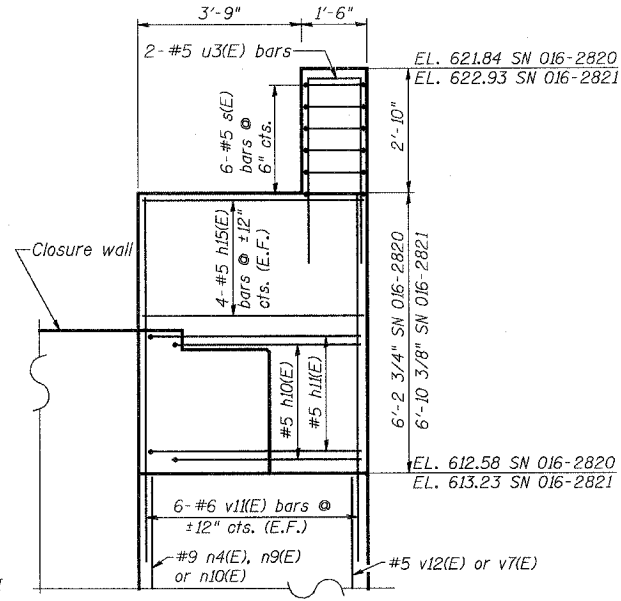
- 2" Preformed Joint Filler (Section 1051 of the Standard Specifications) bonded to abutment backwall with approved adhesive (full length of backwall)
- Fabric Reinforced Elastomeric Mat (See Special Provisions). Fabric mat shall be 24" wide and attached full length of diaphragm with a 3/8"x5" steel plate and 1/2" φ studs with nuts and washers at 12" cts.
- Geocomposite wall drain (Section 591 of the Standard Specifications) - Provide over full width of the back of abutment and extending down to pipe underdrain
- Cost of ①, ②, and ③ shall be included with Concrete Superstructure.



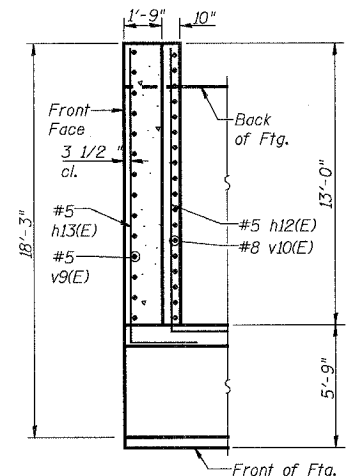
PERMANENT SHEET PILING ATTACHMENT TO FOOTING
SCALE: N.T.S.
Required Minimum Effective Section Modulus of Permanent Sheet Piling is 6.10 in.³/ft.



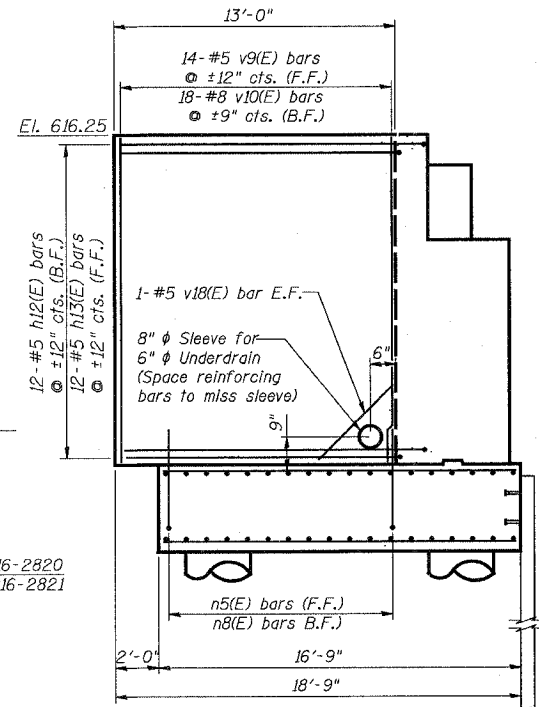
SECTION C-C
SCALE: N.T.S.



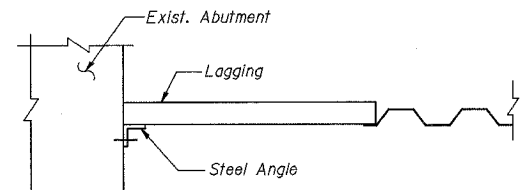
SECTION B-B
SCALE: N.T.S.
(SN 016-2820 as shown, SN 016-2821 opposite hand)



PLAN FOR CLOSURE WALL
SCALE: N.T.S.
(2 Req'd for SN 016-2820)
Shown for location near center line of bridge

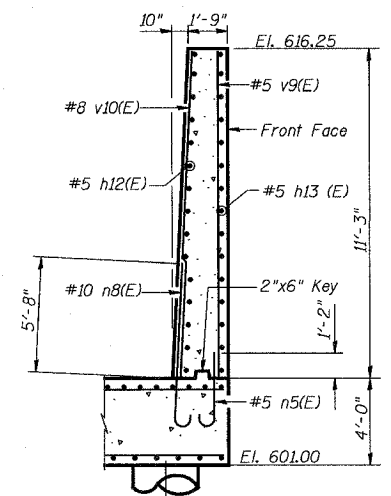


CLOSURE WALL ELEVATION
(2 Req'd for SN 016-2820)
Shown for location near center line of bridge
SCALE: N.T.S.

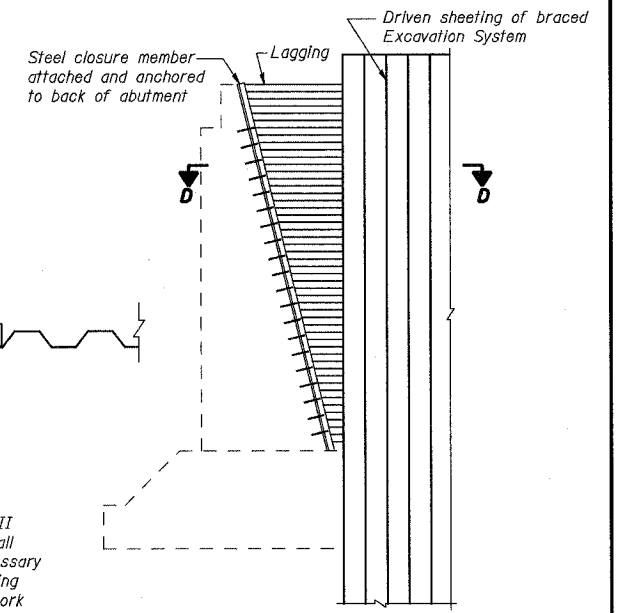


SECTION D-D

* Note:
Temporary sheeting for stage I and stage II braced excavation systems, shall include all materials hardware, labor & equipment necessary for its connection to the back of the existing abutments. All associated costs for this work will be considered included in the unit price for the Pay Item "Braced Excavation".



SECTION THROUGH TYPICAL CLOSURE WALL
(2 Req'd for SN 016-2820)
Looking north at east closure wall, looking south at location near center line of bridge



TYPICAL CLOSURE DETAIL FOR BRACED EXCAVATION SYSTEM AT BACK OF ABUTMENTS
(See Note *)

- Notes:
- See sheet 24 for locations of closure walls.
 - Bars designated (E) shall be epoxy coated.
 - Cost of PVC pipe sleeve is included with Concrete Structures.
 - Work this sheet with sheets 23 through 27.
 - See sheets 23 and 26 for location of sections A-A and B-B.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
NORTH ABUTMENT DETAILS

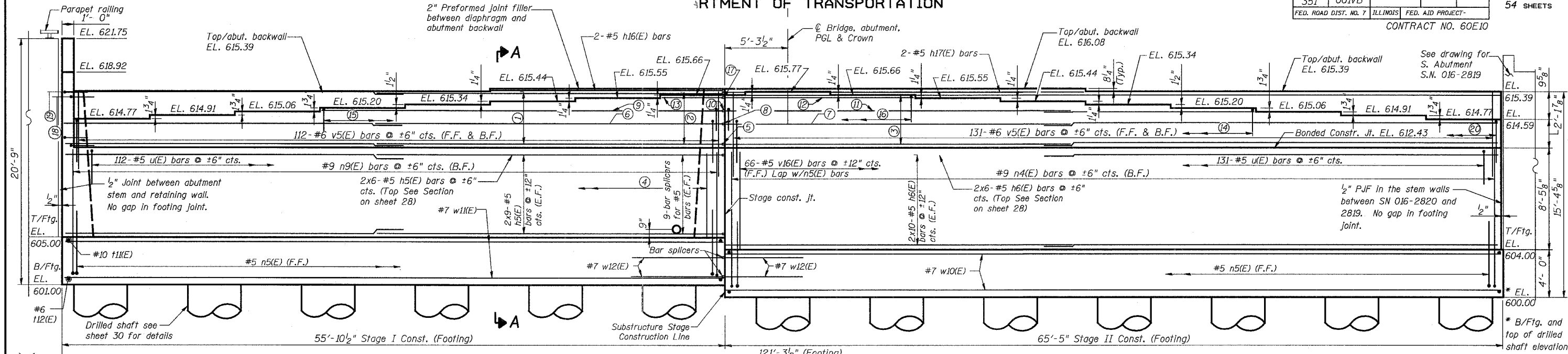
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STRUCTURE NOS. 016-2820 & 016-2821
SCALE: AS NOTED DATE: 9/21/2008

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Suite 500
Chicago, IL 60606
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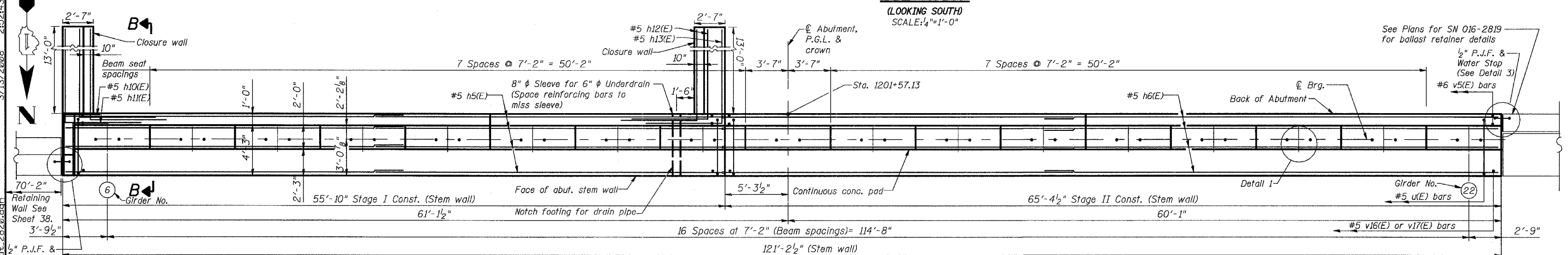
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	439
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

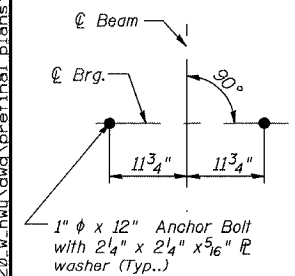
SHEET NO. 29
54 SHEETS



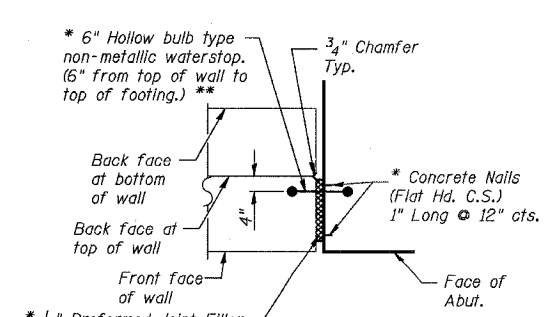
ELEVATION
(LOOKING SOUTH)
SCALE: 1/4"=1'-0"



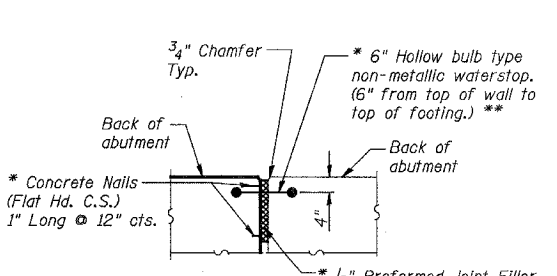
PLAN
SCALE: 1/4"=1'-0"



DETAIL 1
SCALE: N.T.S.



DETAIL 2
SCALE: N.T.S.



DETAIL 3
SCALE: N.T.S.

- ① 4x2-#5 h5(E) bars @ 12" cts. (E.F.)
- ② 5-Bar splicers for #5 bars (E.F.)
- ③ 4x2-#5 h6(E) bars @ 12" cts. (E.F.)
- ④ 57-#5 v17(E) bars @ 12" cts. (F.F.)
Lap with n5(E) bars
- ⑤ 6-Bar splicers for #5 bars
- ⑥ 6x2-#5 h5(E) bars @ 12" cts.
- ⑦ 6x2-#5 h6(E) bars @ 12" cts.
- ⑧ 4-Bar splicers for #5 bars
- ⑨ 4-#5 h6(E) bars @ 8" cts.
- ⑩ 4-Bar splicers for #5 bars
- ⑪ 4x2-#5 h7(E) bars @ 8" cts.
- ⑫ 4-#5 h8(E) bars @ 8" cts.
- ⑬ 4-#5 h9(E) bars @ 8" cts.
- ⑭ 45-#5 u1(E) bars @ 12" cts.
- ⑮ 35-#5 u1(E) bars @ 12" cts.
- ⑯ 22-#5 u1(E) bars @ 12" cts.
- ⑰ 4-Bar splicers for #5 bars
- ⑱ 11-#5 h10(E) bars @ 6" cts.
- ⑲ 11-#5 h11(E) bars @ 6" cts.
- ⑳ 122-#5 u2(E) bars @ 12" cts.

- NOTES:**
1. Reinforcement bars designated (E) shall be epoxy coated.
 2. Work this sheet with sheets 30 through 34.
 3. See Sheet 34 for Section A-A, Section B-B.
 4. Cast steps monolithically with cap.
 5. Space reinforcement in seat to miss anchor bolts.
 6. See sheet 31 for Bill of Materials.
 7. Cost of pipe sleeve is included with Concrete Structures.
 8. Min. lap length for #5 bar is 2'-2" and for #7 bar is 3'-10"
 9. Bars Indicated 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.
 10. See Sheet 24 of U.S. 6 Mainline Retaining Walls Along 159th Street plans for Pipe Underdrain Layout and Quantities.

DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

* Cost included with Concrete Structures.
** Contractor to provide protective cover for Water Seal subject to the approval of the Engineer.

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REVISIONS	
NAME	DATE

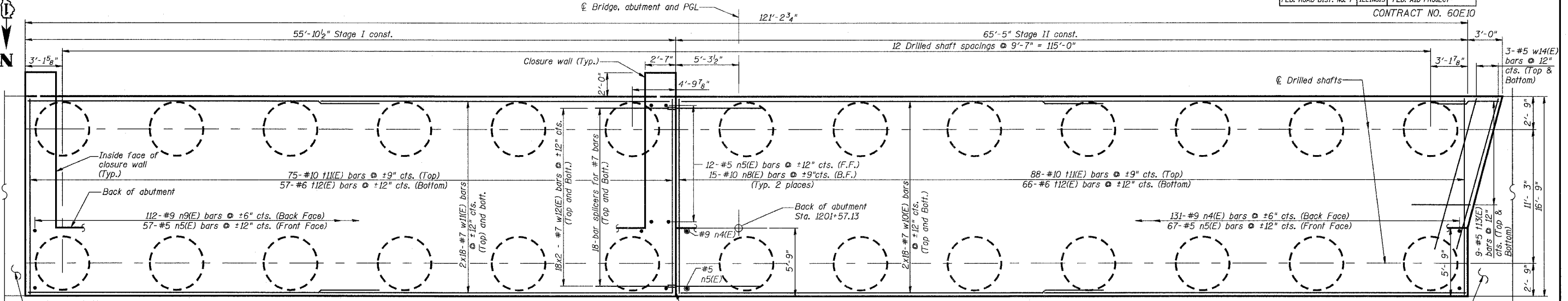
ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SOUTH ABUTMENT
SN 016-2820
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
& 016-2821
SCALE: AS NOTED DATE: 2/21/2008

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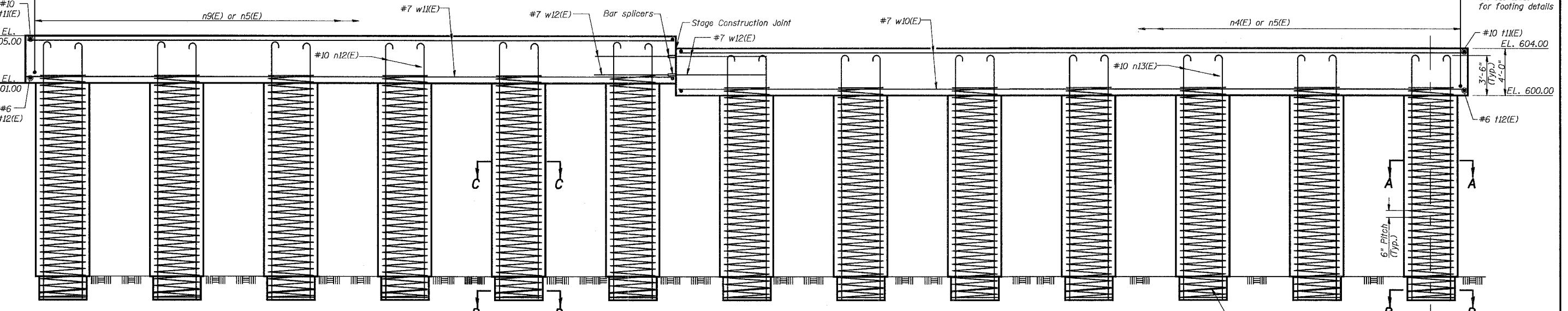
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	440
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT-		
CONTRACT NO. 60E10				

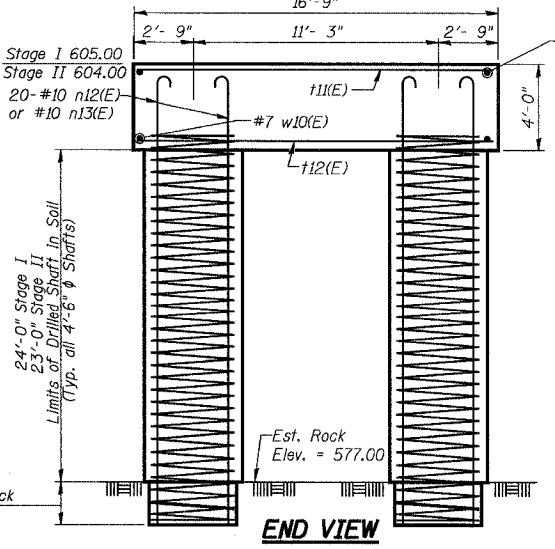
SHEET NO. 30
54 SHEETS



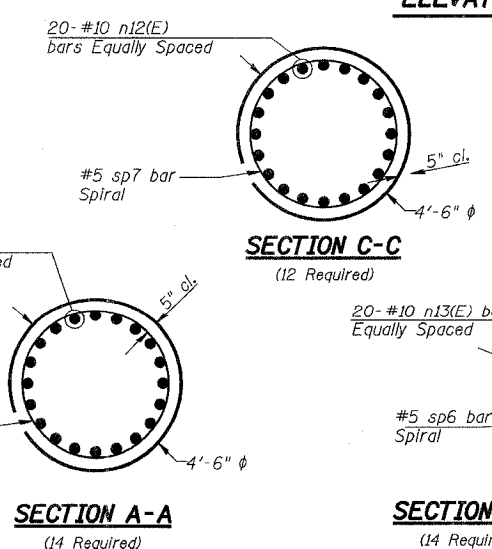
FOOTING PLAN



ELEVATION



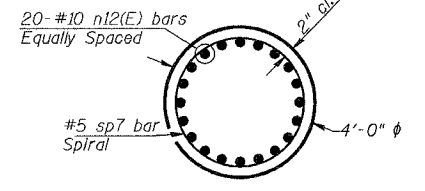
END VIEW



SECTION A-A
(14 Required)

SECTION C-C
(12 Required)

SECTION B-B
(14 Required)



SECTION D-D
(12 Required)

- Notes:
- See sheet 31 for Bill of Materials.
 - Drilled Shafts shall be drilled to elevation shown. Quantities and Detailing are for the estimated Elevations shown on the Plans. The actual conditions encountered in each Shaft may differ and the Drilled Shaft and Reinforcement Quantities shall be adjusted accordingly as directed by the Engineer and paid for at the corresponding Unit Bid Price.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SOUTH ABUT. FOUNDATION
SN 016-2820
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: DATE: 2/21/2008

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100 South Wacker Drive,
Suite 500
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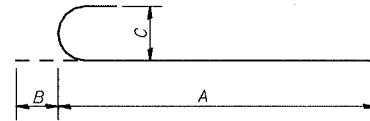
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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

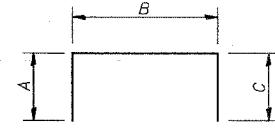
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CONTRACT NO. 60E10				

SHEET NO. 31
54 SHEETS



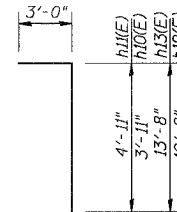
BARS n4(E), n5(E), n12(E), n13(E), n8(E) & n9(E)

Bar	A	B	C
n4(E)	11'-7"	1'-3"	11 ³ / ₄ "
n5(E)	4'-6"	7"	5"
n12(E)	30'-6"	1'-5"	1'-1 ¹ / ₄ "
n8(E)	9'-0"	1'-5"	1'-1 ¹ / ₄ "
n9(E)	10'-7"	1'-3"	11 ³ / ₄ "
n13(E)	29'-6"	1'-5"	1'-1 ¹ / ₄ "

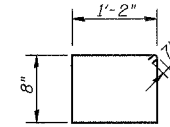


BARS u(E) through u3(E)

Bar	A	B	C
u(E)	2'-0"	4'-8"	2'-0"
u1(E)	1'-6"	1'-8"	1'-6"
u2(E)	5'-9"	1'-8"	5'-9"
u3(E)	4'-6"	1'-2"	4'-6"



BARS h10(E), h11(E),
h12(E) & h13(E)



BAR s(E)

BILL OF MATERIAL - SOUTH ABUTMENT

Bar	No.	Size	Length	Shape
h5(E)	70	#5	30'-0"	—
h6(E)	78	#5	34'-0"	—
h7(E)	8	#5	23'-6"	—
h8(E)	4	#5	15'-9"	—
h9(E)	4	#5	5'-3"	—
h10(E)	7	#5	6'-11"	—
h11(E)	7	#5	7'-11"	—
h12(E)	24	#5	15'-8"	—
h13(E)	24	#5	16'-8"	—
h15(E)	8	#5	4'-11"	—
h16(E)	2	#5	19'-6"	—
h17(E)	2	#5	30'-0"	—
n4(E)	131	#9	12'-10"	—
n5(E)	148	#5	5'-1"	—
n12(E)	240	#10	31'-11"	—
n8(E)	30	#10	10'-5"	—
n9(E)	112	#9	11'-10"	—
n13(E)	280	#10	30'-11"	—
h11(E)	163	#10	16'-5"	—
h12(E)	123	#6	16'-5"	—
h13(E)	18	#5	6'-0"	—
s(E)	6	#5	4'-10"	□
u(E)	243	#5	8'-8"	□
u1(E)	102	#5	4'-8"	□
u2(E)	122	#5	13'-2"	□
u3(E)	2	#5	10'-2"	□
v5(E)	486	#6	6'-3"	—
v11(E)	12	#6	9'-0"	—
v14(E)	28	#5	10'-9"	—
v15(E)	36	#8	10'-9"	—
v16(E)	66	#5	8'-3"	—
v17(E)	57	#5	7'-3"	—
v18(E)	2	#5	2'-3"	—
w10(E)	72	#7	35'-0"	—
w11(E)	72	#7	31'-0"	—
w12(E)	36	#7	10'-0"	—
w14(E)	6	#5	14'-0"	—
sp6	14	#5	26'-2"	WWWWW
sp7	12	#5	27'-2"	WWWWW
Porous Granular Embankment		Cu. Yd.	808	
Concrete Structures		Cu. Yd.	452.1	
Reinforcement Bars		Pound	13,970	
Reinforcement Bars, Epoxy Coated		Pound	125,560	
Geocomposite Wall Drain		Sq. Yd.	195	
Braced Excavation		Cu. Yd.	146.2	
Drilled Shaft in Soil		Cu. Yd.	360	
Drilled Shaft in Rock		Cu. Yd.	37	
Structure Excavation		Cu. Yd.	430	
Bar Splitters		Each	82	
Non-Special Waste Disposal		Cu. Yd.	469.0	

NOTES:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Work this sheet with sheets 29 and 30.
3. See sheet 1 for limits of Braced Excavation and Structure Excavation.
4. See Sheet 24 of U.S. 6 Mainline Retaining Walls Along 159th Street plans for Pipe Underdrain Layout and Quantities.
5. See Sheet 45 for details of Porous Granular Embankment and Pipe Underdrain for Structures 6".

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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

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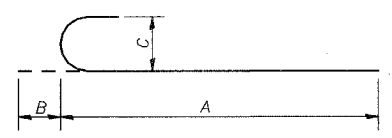
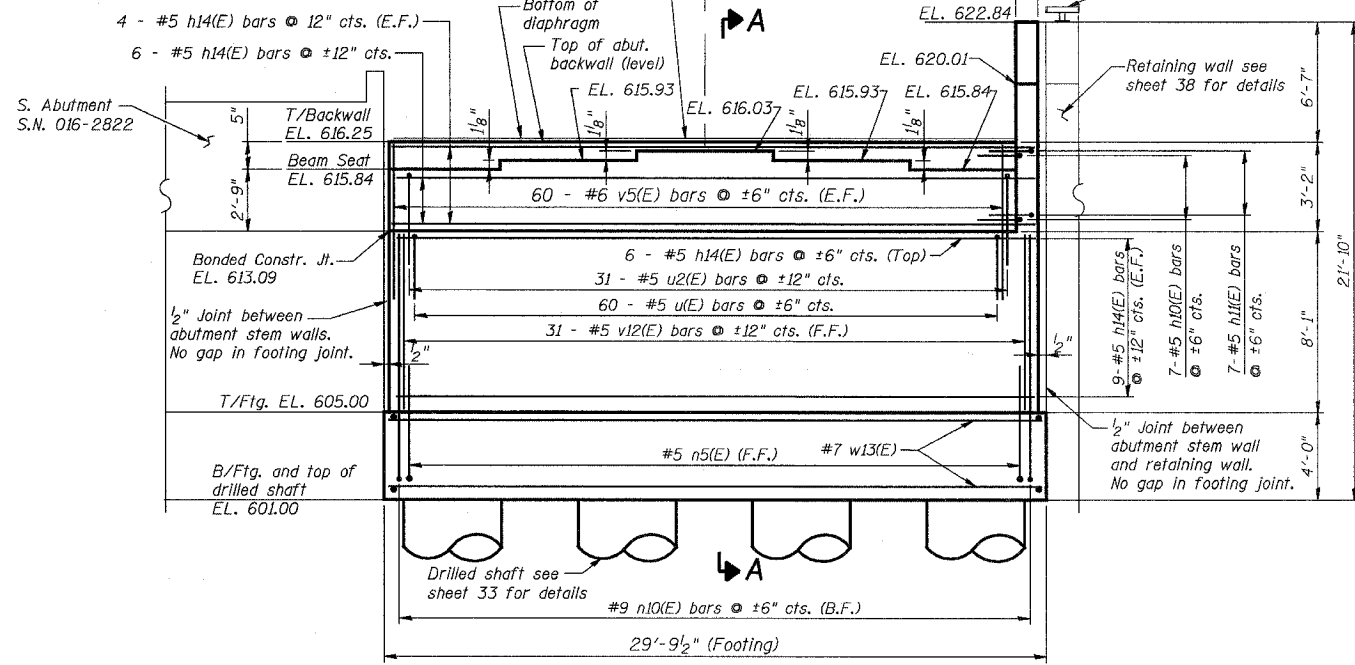
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SOUTH ABUT. DETAILS
SN 016-2820
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
SCALE: N.T.S. DATE: 2/21/2008 & 016-2821

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

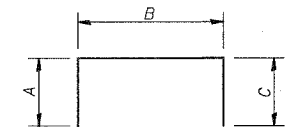
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	442
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60E10				

SHEET NO. 32
54 SHEETS



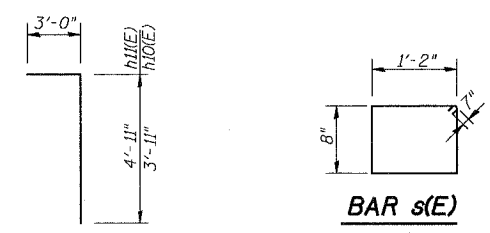
BARS n5(E), n7(E) & n10(E)

Bar	A	B	C
n5(E)	4'-6"	7"	5"
n7(E)	34'-6"	1'-5"	1'-1 1/4"
n10(E)	11'-3"	1'-3"	11 3/4"



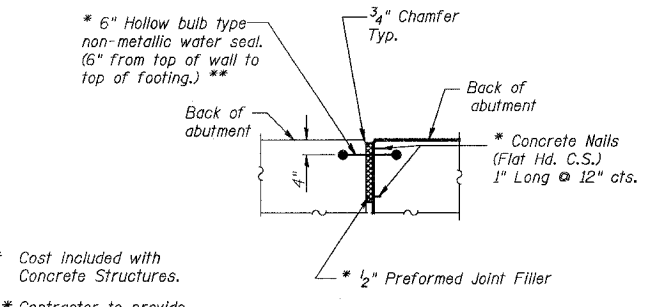
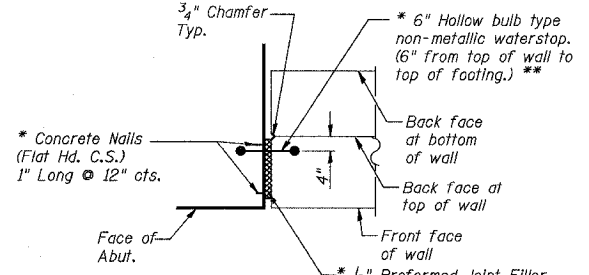
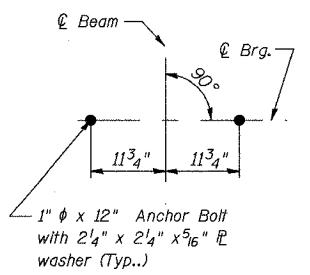
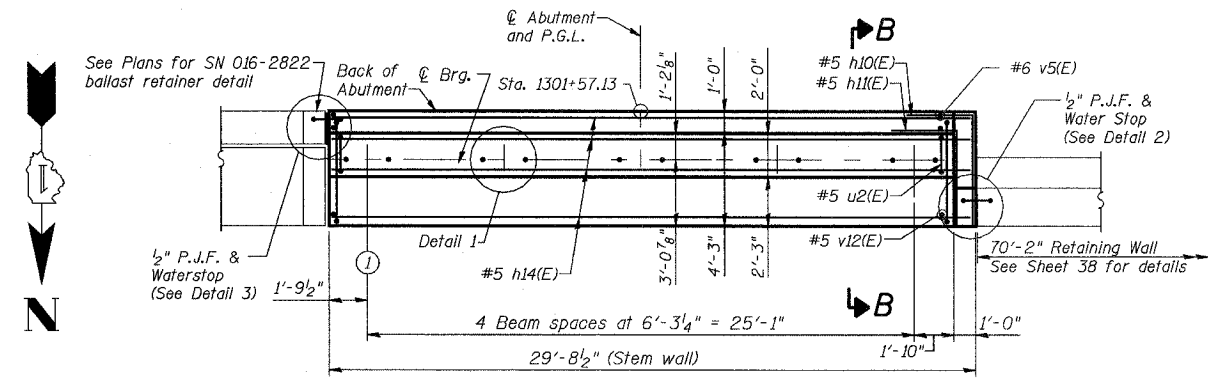
BARS u(E) through u3(E)

Bar	A	B	C
u(E)	2'-0"	4'-8"	2'-0"
u2(E)	5'-9"	1'-8"	5'-9"
u3(E)	4'-6"	1'-2"	4'-6"



BARS h10(E) & h11(E)

BAR s(E)



* Cast included with Concrete Structures.
** Contractor to provide protective cover for Water Seal subject to the approval of the Engineer.

BILL OF MATERIAL - SOUTH ABUTMENT

Bar	No.	Size	Length	Shape
h10(E)	7	#5	6'-11"	U
h11(E)	7	#5	7'-11"	U
h14(E)	38	#5	29'-4"	U
h15(E)	8	#5	4'-11"	U
n5(E)	31	#5	5'-1"	U
n14(E)	160	#10	35'-11"	U
n10(E)	60	#9	12'-6"	U
t11(E)	41	#10	16'-5"	U
t12(E)	31	#6	16'-5"	U
s(E)	6	#5	4'-10"	U
u(E)	60	#5	8'-8"	U
u2(E)	31	#5	13'-2"	U
u3(E)	2	#5	10'-2"	U
v5(E)	120	#6	6'-3"	U
v11(E)	12	#6	9'-0"	U
v12(E)	31	#5	8'-0"	U
w13(E)	36	#7	29'-5"	U
sp8	8	#5	31'-2"	WWWWW
Porous Granular Embankment			Cu. Yd.	206
Concrete Structures			Cu. Yd.	131.5
Reinforcement Bars			Pound	5,040
Reinforcement Bars, Epoxy Coated			Pound	37,150
Geocomposite Wall Drain			Sq. Yd.	41
Braced Excavation			Cu. Yd.	419
Drilled Shaft in Soil			Cu. Yd.	132
Drilled Shaft in Rock			Cu. Yd.	12

NOTES:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Work this sheet with Sheets 33 & 34.
3. Cast steps monolithically with cap.
4. Space reinforcement to miss anchor bolts.
5. See Sheet 34 for Section A-A, Section B-B.
6. See Sheet 1 for limits of Braced Excavation.
7. See Sheet 24 of U.S. 6 Mainline Retaining Walls Along 159th Street plans for Pipe Underdrain Layout and Quantities.
8. See Sheet 45 for details of Porous Granular Embankment and Pipe Underdrain for Structures 6".

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SOUTH ABUT. SN 016-2821

STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: AS NOTED DATE: 2/21/2008

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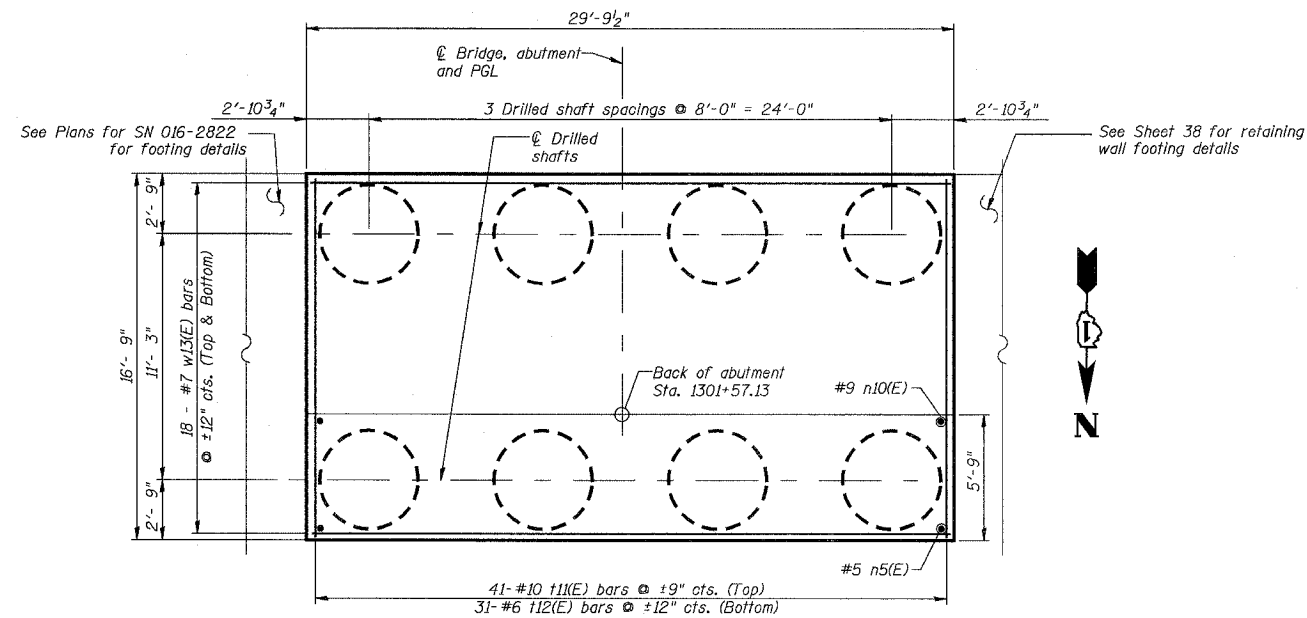
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CHECKED	NPP
DRAWN	EV
CHECKED	NPP

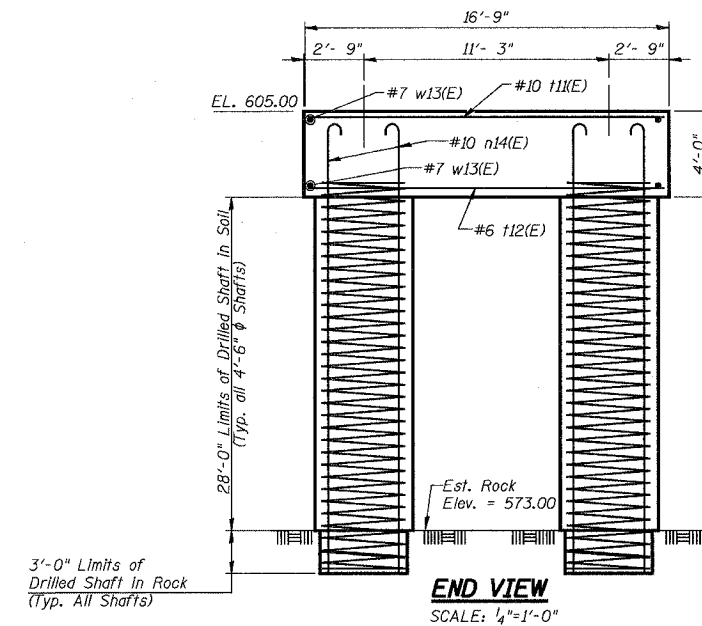
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	443
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60E10				

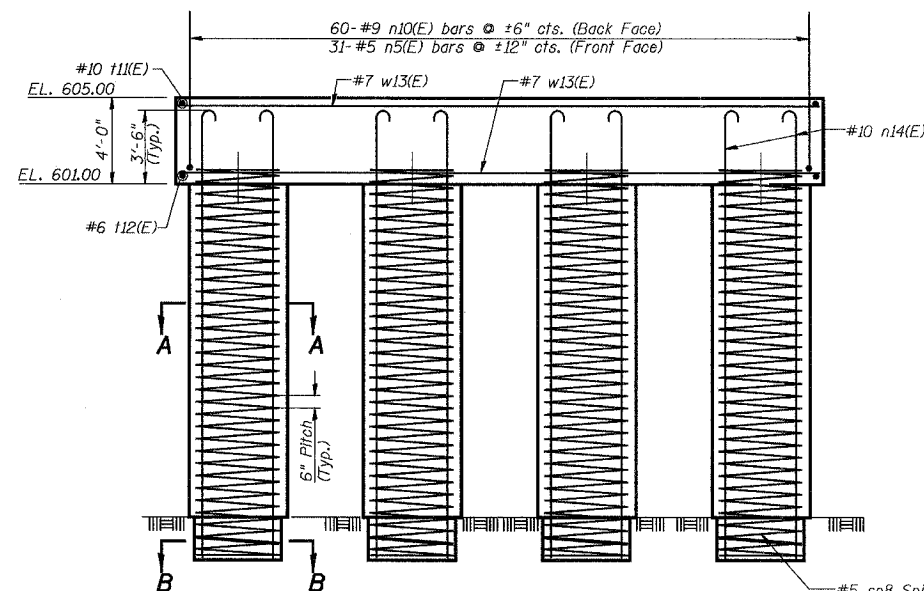
SHEET NO. 33
54 SHEETS



FOOTING PLAN
SCALE: 1/4"=1'-0"

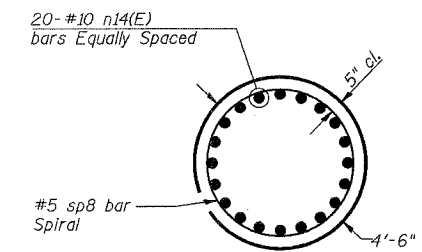


END VIEW
SCALE: 1/4"=1'-0"

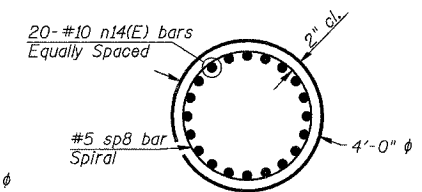


ELEVATION
SCALE: 1/4"=1'-0"

#5 sp8 Spiral (Typ.)
Each Shaft- Provide 1/2 extra turns top and bottom. Extend Spiral 2" into Footing. Provide min. 4- #4 bar spacers or equivalent.



SECTION A-A
(8 Required)
SCALE: N.T.S.



SECTION B-B
(8 Required)
SCALE: N.T.S.

Notes:

1. See sheet 32 for Bill of Materials

2. Drilled Shafts shall be drilled to elevation shown. Quantities and Detailing are for the estimated Elevations shown on the Plans. The actual conditions encountered in each Shaft may differ and the Drilled Shaft and Reinforcement Quantities shall be adjusted accordingly as directed by the Engineer and paid for at the corresponding Unit Bid Price.

Min. Lap Splice for Spiral = 2'-0"

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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

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NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SOUTH ABUT. FOUNDATION
SN 016-2821
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: AS NOTED DATE: 2/21/2008

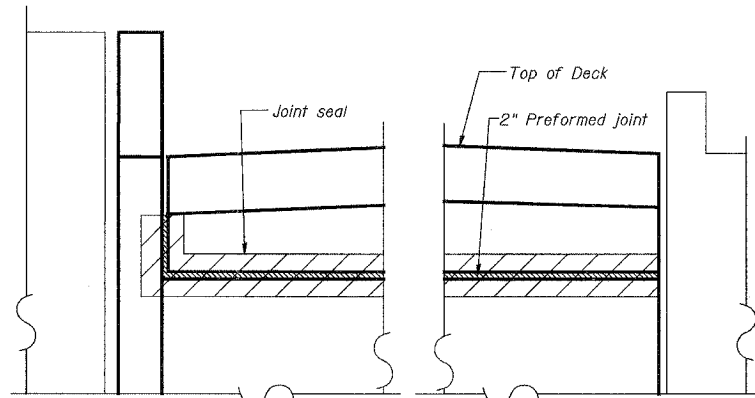
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

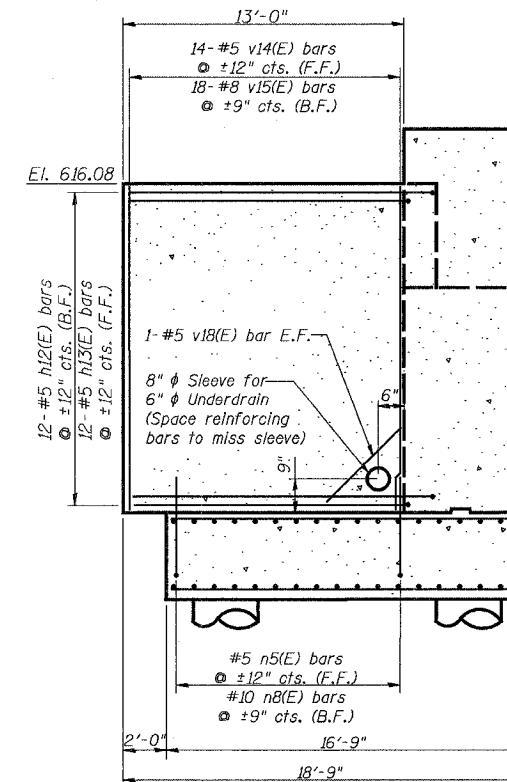
SHEET NO. 34
54 SHEETS

CONTRACT NO. 60E10

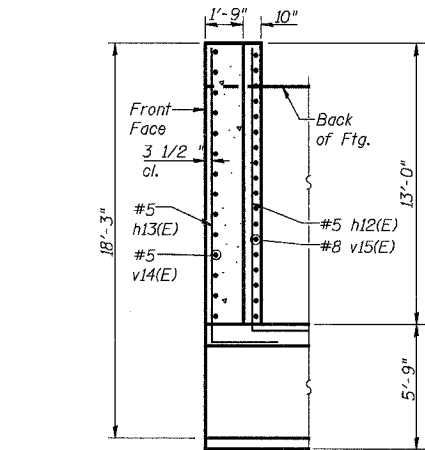
- 2" Preformed Joint Filler (Section 1051 of the Standard Specifications) bonded to abutment backwall with approved adhesive (full length of backwall)
- Fabric Reinforced Elastomeric Mat (See Special Provisions). Fabric mat shall be 24" wide and attached full length of diaphragm with a 3/8"x5" steel plate and 1/2" φ studs with nuts and washers at 12" cts.
- Geocomposite wall drain (Section 591 of the Standard Specifications) - Provide over full width of the back of abutment and extending down to pipe underdrain
- Cost of ①, ②, and ③ shall be included with Concrete Superstructure.



SECTION C-C

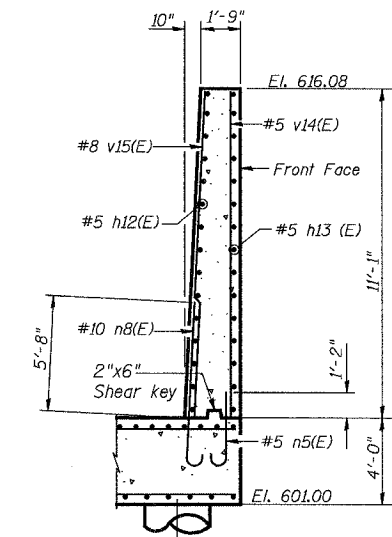


TYPICAL CLOSURE WALL ELEVATION



TYPICAL PLAN FOR CLOSURE WALL

(2 Req'd for SN 016-2820)
SCALE: 1/4"=1'-0"

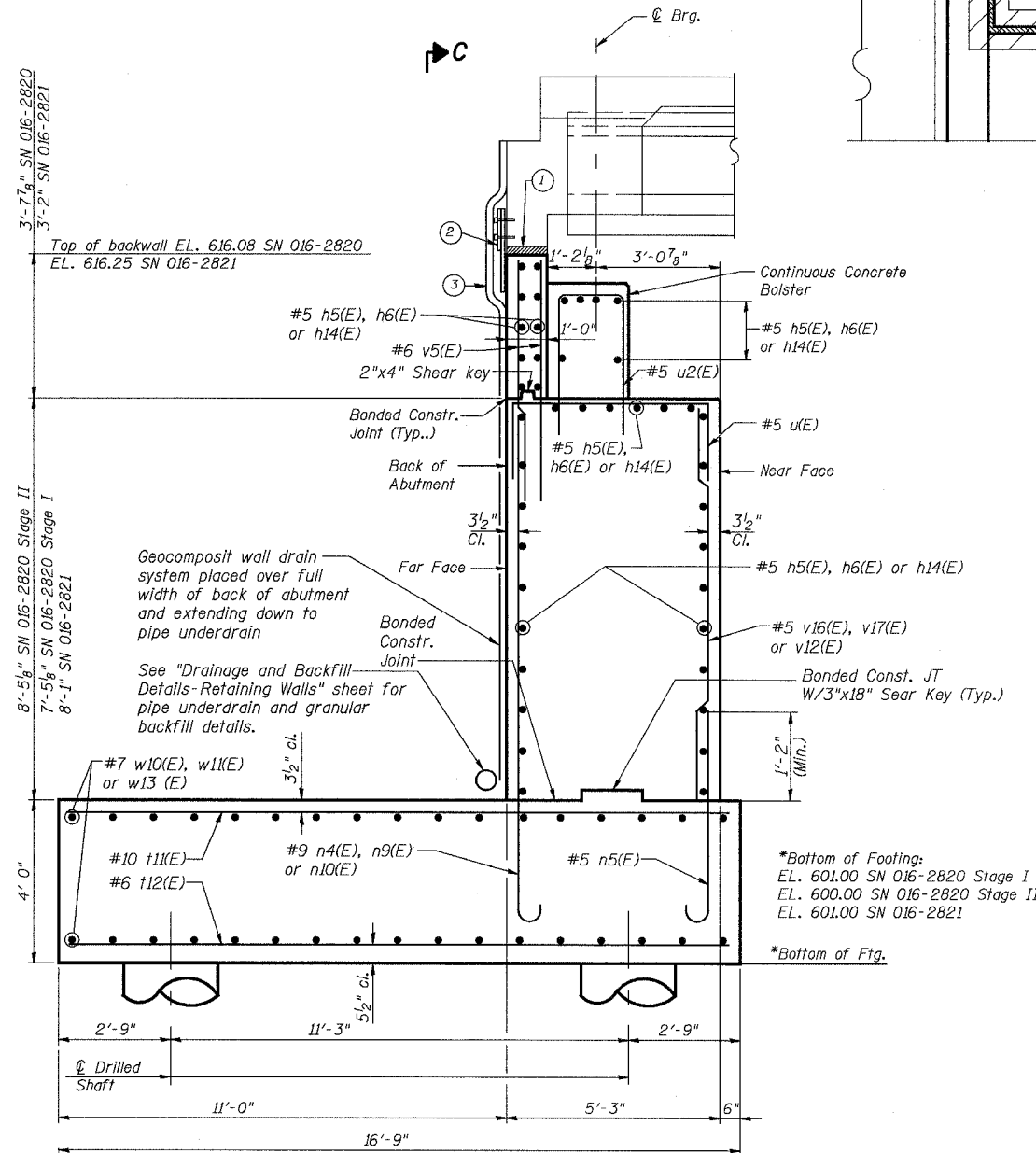


SECTION THROUGH TYPICAL CLOSURE WALL

(2 Req'd for SN 016-2820)
SCALE: 1/4"=1'-0"

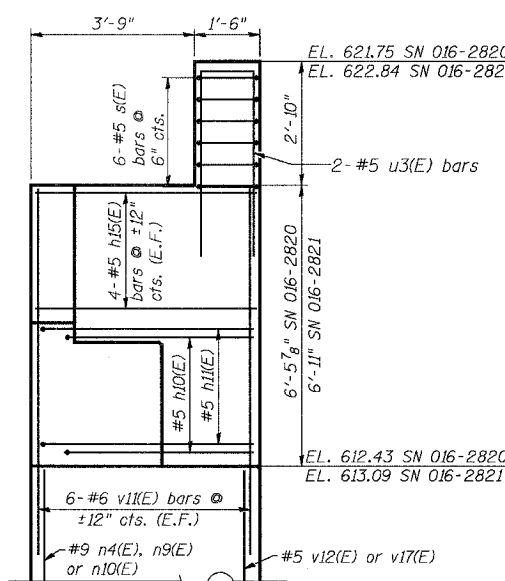
Notes:

- See sheet 29 for locations of closure walls.
- Bars designated (E) shall be epoxy coated.
- Cost of PVC pipe sleeve is included with Concrete Structures.
- See sheet 28 for Typical closure detail for braced excavation system at back of abutments.



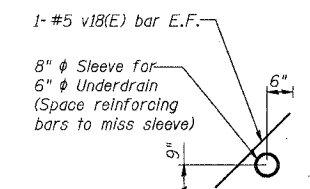
SECTION A-A

(Looking West)
SCALE: 1/2"=1'-0"



SECTION B-B

(SN 016-2820 opposite hand,
SN 016-2821 as shown)
SCALE: 1/2"=1'-0"



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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

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ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SOUTH ABUTMENT DETAILS

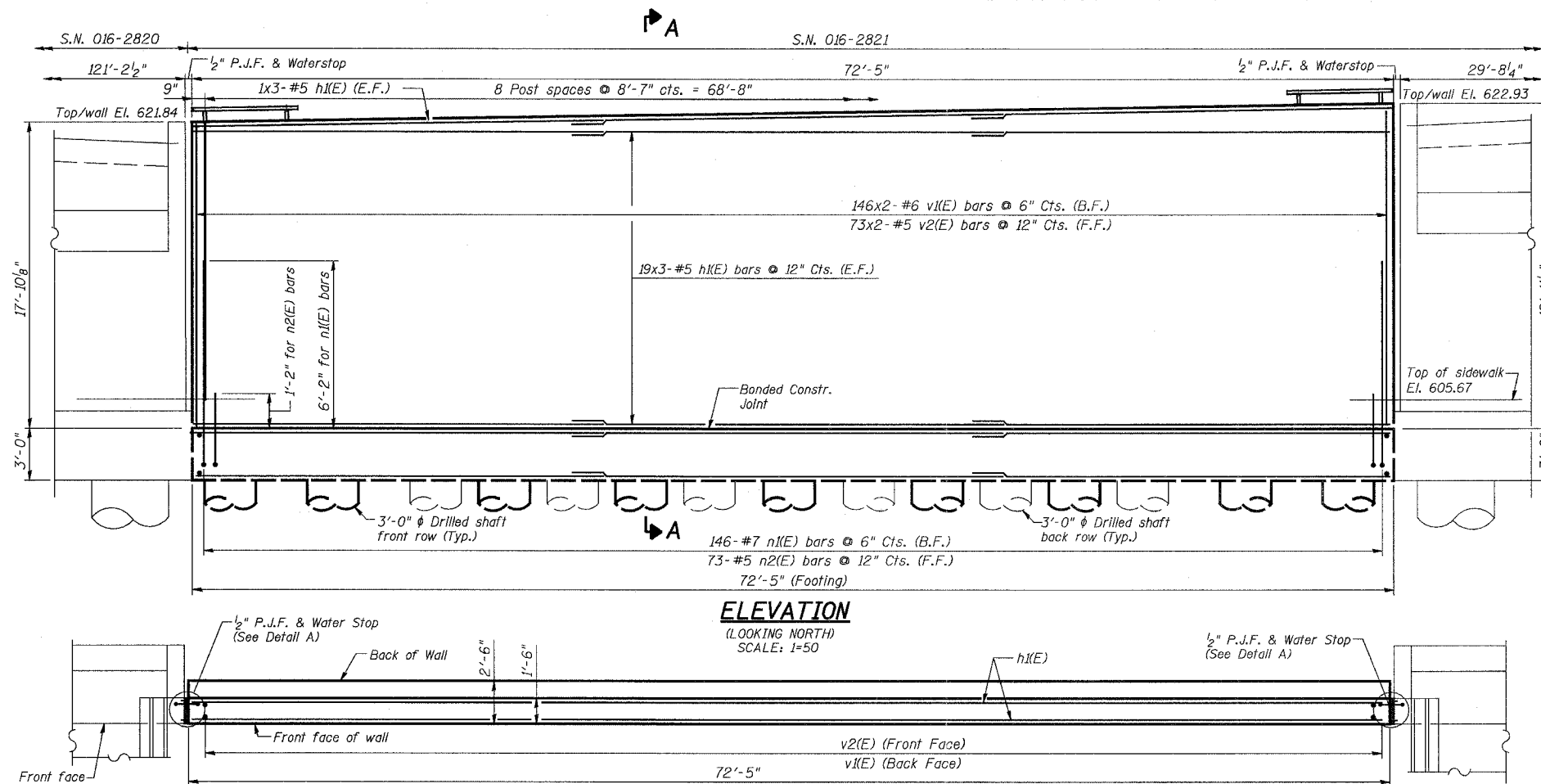
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: AS NOTED DATE: 9/21/2008

STATE OF ILLINOIS
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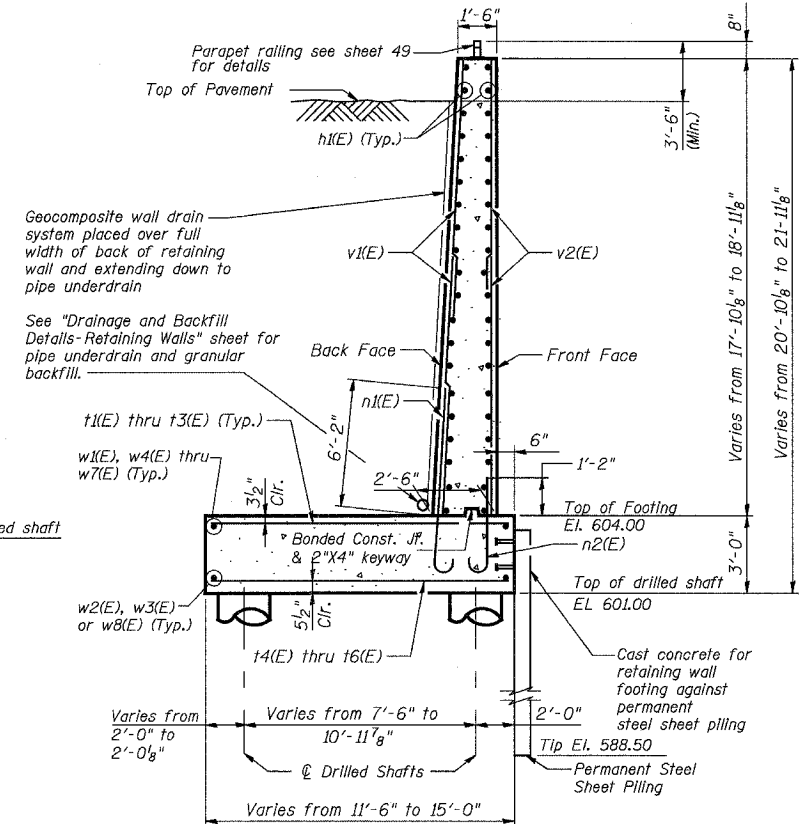
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	445
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 35
54 SHEETS

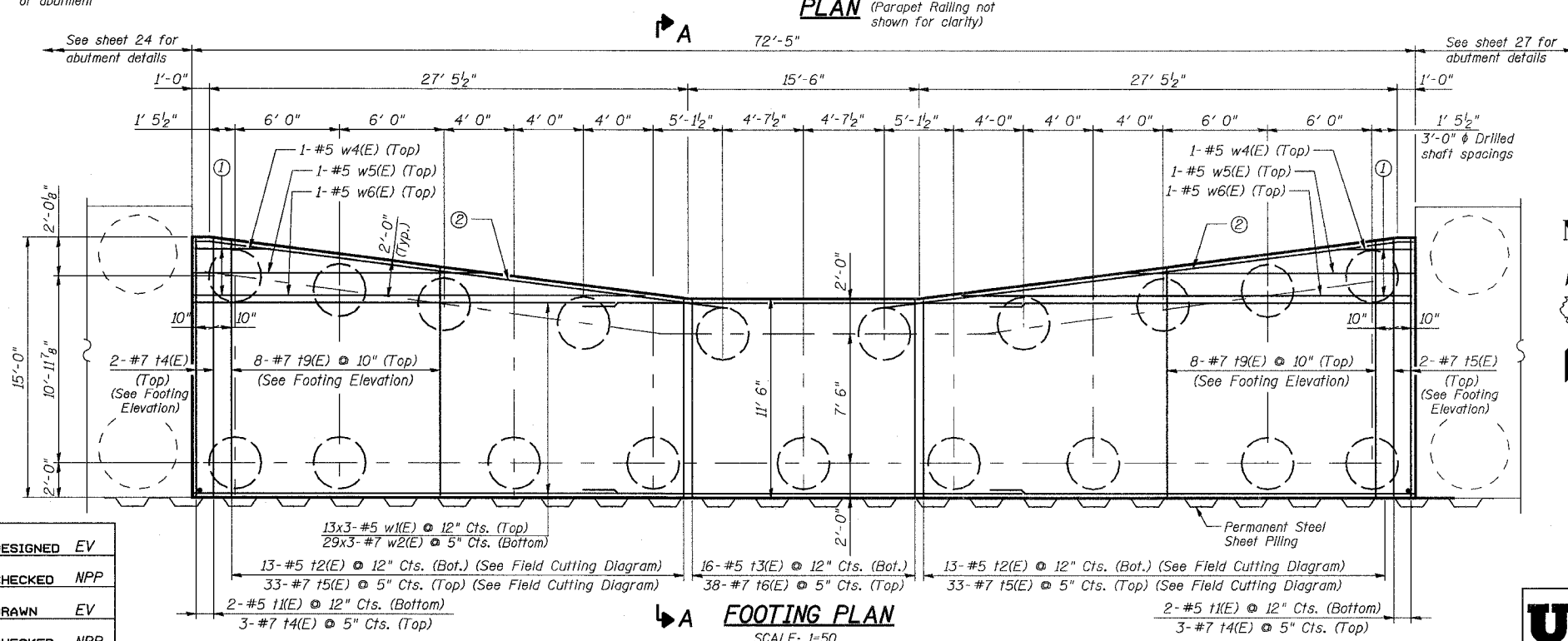
CONTRACT NO. 60E10



ELEVATION
(LOOKING NORTH)
SCALE: 1=50



SECTION A-A
SCALE: 1/4"=1'-0"



FOOTING PLAN
SCALE: 1=50

- ① 4- #7 w3(E) bars @ 5" Cts. (Bottom)
(See Field Cutting Diagram)
- ② 1- #5 w7(E) bar (Top) (Bend in Field)
1- #7 w8(E) bar (Bottom) (Bend in Field)

- Notes:
- Work this Sheet with Sheets 36 and 37.
 - Reinforcement bars designated (E) shall be epoxy coated.
 - For Bill of Materials and bar bend details see Sheet 37.
 - For Detail A, footing elevation, permanent steel sheet piling attachment details and drilled shaft details see Sheet 36.
 - Min. lap length for #5 bar is 2'-2", #6 bar is 2'-7" and #7 bar is 3'-10".
 - Bars indicated thus 20 x 3- #15 etc. indicates 20 lines of bars with 3 lengths per line.
 - If the Contractor elects to use cast-in-place anchors device for Parapet Railing post, then the Contractor must coordinate fabrication of the Parapet Railing with respect to as-built locations of the cast-in-place anchors. The Contractor shall correct any errors in fabrication of Parapet Railing with respect to as-built locations of cast-in-place anchors at his own expense.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
NORTH RETAINING WALL
SN 016-2821
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: AS NOTED DATE: 10/2/2007

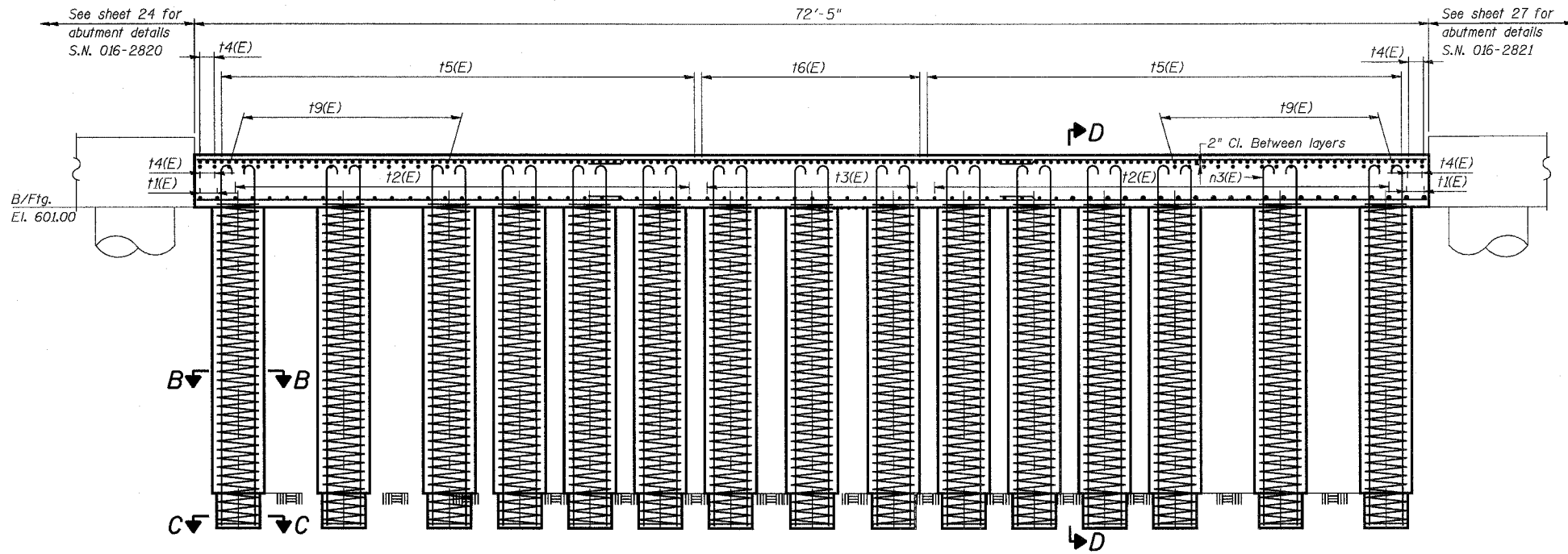
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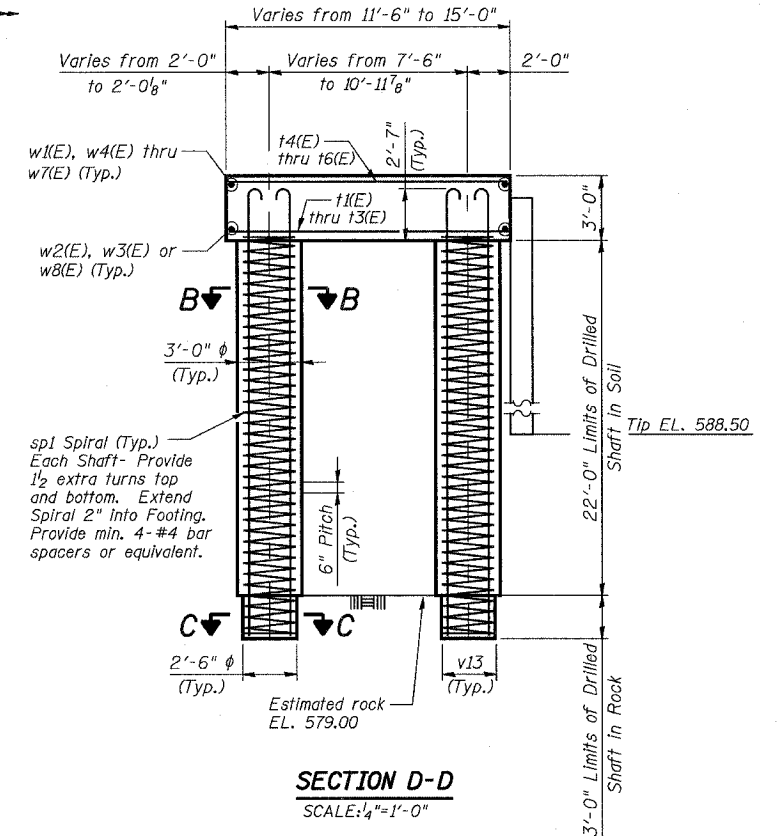
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	446
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-	CONTRACT NO. 60E10	

SHEET NO. 36
54 SHEETS



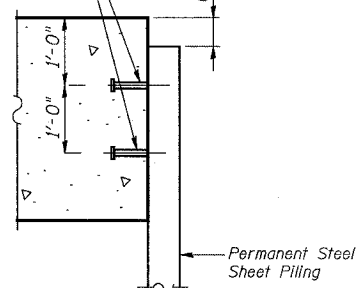
FOOTING ELEVATION
SCALE: 1/4"=1'-0"



SECTION D-D
SCALE: 1/4"=1'-0"

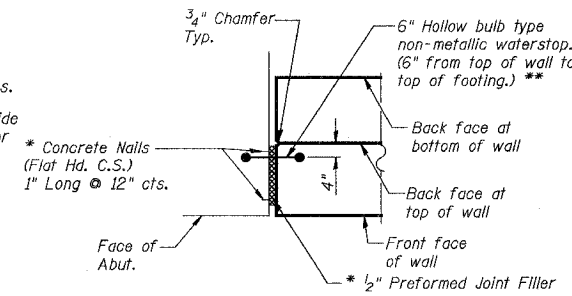
Drilled Shafts shall be drilled to Elevation shown. Quantities and Detailing are for the estimated Elevations shown on the Plans. The actual conditions encountered in each Shaft may differ and the Drilled Shaft and Reinforcement Quantities shall be adjusted accordingly as directed by the Engineer and paid for at the corresponding Unit Bid Price.

3/4" φ x 8" Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Spec.'s automatically end welded at 12" alternate centers. Cost included with Permanent Steel Sheet Piling.

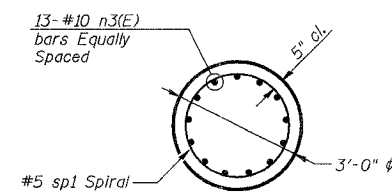


PERMANENT STEEL SHEET PILING ATTACHMENT TO FOOTING
Required Minimum Effective Section Modulus of Permanent Sheet Piling is 6.10 in.³/ft.
SCALE: 3/4"=1'-0"

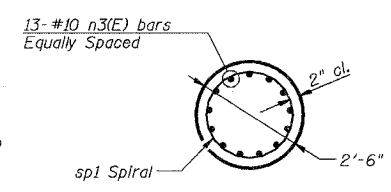
* Cost included with Concrete Structures.
** Contractor to provide protective cover for Water Seal subject to the approval of the Engineer.



DETAIL A
SCALE: N.T.S.



SECTION B-B
(19 Required)
SCALE: N.T.S.



SECTION C-C
(19 Required)
SCALE: N.T.S.

- Notes:
1. Work this Sheet with Sheets 35 and 37.
 2. Reinforcement bars designated (E) shall be epoxy coated.
 3. For Bill of Materials and bar bend details, see Sheet 37.
 4. See Sheet 35 for footing plan.

Min. Lap Splice
For Spiral = 2'-0"

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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

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NAME	DATE

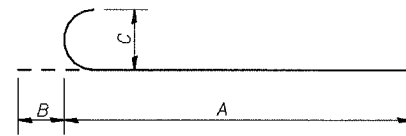
ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
NORTH RETAINING WALL
FOUNDATION SN 016-2821
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: AS NOTED DATE: 2/21/2008

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DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT-		

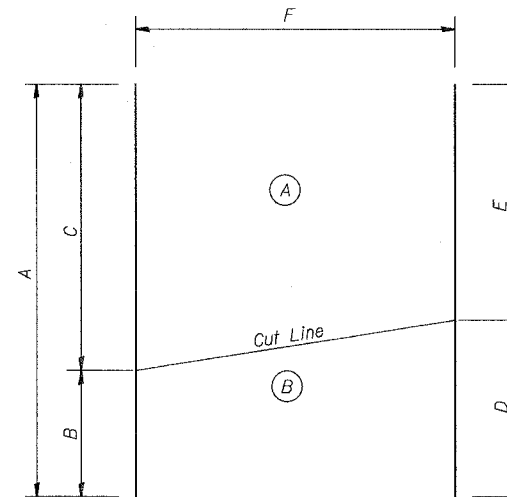
CONTRACT NO. 60E10

SHEET NO. 37
54 SHEETS



BARS $n_1(E)$, $n_2(E)$, & $n_3(E)$

Bar	A	B	C
$n_1(E)$	8'-7"	7"	5"
$n_2(E)$	3'-7"	10"	7"
$n_3(E)$	27'-7"	1'-5"	1'-1 1/4"



FIELD CUTTING DIAGRAM #2

Order bars full length. Cut bars in field as shown. Place patterns (A) & (B) side by side as shown on sheet 35 for $t_x(E)$ bars and $w_x(E)$ bars.

Bar	A	B	C	D	E	F
$t_2(E)$	26'-2"	11'-4"	14'-10"	13'-0"	13'-2"	13-#5 bars @ 12" cts.
$t_5(E)$	26'-2"	11'-4"	14'-10"	13'-0"	13'-2"	33-#7 bars @ 5" cts.
$t_9(E)$	27'-7"	14'-10"	12'-9"	13'-9"	13'-10"	8-#7 bars @ 10" cts.
$w_3(E)$	31'-7"	28'-4"	3'-3"	15'-10"	15'-9"	4-#7 bars @ 5" cts.

Repair epoxy coating at field cuts per IDOT Standard Specifications, Article 508.04

NORTH RETAINING BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h1(E)$	120	#5	25'-9"	—
$n1(E)$	146	#6	9'-5"	—
$n2(E)$	73	#5	4'-2"	—
$n3(E)$	247	#10	29'-0"	—
$sp1$	19	#5	25'-2"	
$t1(E)$	4	#5	14'-9"	—
$t2(E)$	26	#5	26'-2"	—
$t3(E)$	16	#5	11'-2"	—
$t4(E)$	10	#7	14'-9"	—
$t5(E)$	66	#7	26'-2"	—
$t6(E)$	38	#7	11'-2"	—
$t9(E)$	16	#7	27'-7"	—
$v1(E)$	292	#6	10'-10"	—
$v2(E)$	146	#5	10'-7"	—
$w1(E)$	39	#5	25'-9"	—
$w2(E)$	87	#7	26'-9"	—
$w3(E)$	8	#7	31'-7"	—
$w4(E)$	2	#5	8'-10"	—
$w5(E)$	2	#5	15'-8"	—
$w6(E)$	2	#5	22'-6"	—
$w7(E)$	2	#5	30'-5"	—
$w8(E)$	2	#7	24'-10"	—
Structure Excavation		Cu Yd	542	
Braced Excavation		Cu Yd	371	
Concrete Structures		Cu Yd	206	
Reinforcement Bars		Pound	9,650	
Reinforcement Bars, Epoxy Coated		Pound	55,940	
Non-Special Waste Disposal		Cu. Yd.	1022.0	
Drilled Shaft in Soil		Cu. Yd.	110	
Drilled Shaft in Rock		Cu. Yd.	11	
Geocomposite Wall Drain		Sq. Yd.	126	
Porous Granular Embankment		Cu Yd	481	
Permanent Steel Sheet Piling		Sq Ft	1050	

Notes:

- Work this Sheet with Sheets 35 and 36.
- Reinforcement bars designated (E) shall be epoxy coated.
- Min. lap length for # 5 bar is 2'-2" and # 6 bar is 2'-7".
- Bars indicated thus 20 x 3-#15 etc. indicates 20 lines of bars with 3 lengths per line.
- See Sheet 24 of U.S. 6 Mainline Retaining Walls Along 159th Street plans for Pipe Underdrain Layout and Quantities..
- See Sheet 45 for details of Porous Granular Embankment and Pipe Underdrain for Structures 6".
- IDOT Approved Mechanical Reinforcing Bar Splicer/Coupler (E) is allowed for the $n3(E)$ bars to allow hooks at top to be spliced on after shafts are poured. Cost included in Reinforcement Bars, Epoxy Coated.

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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

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NAME	DATE

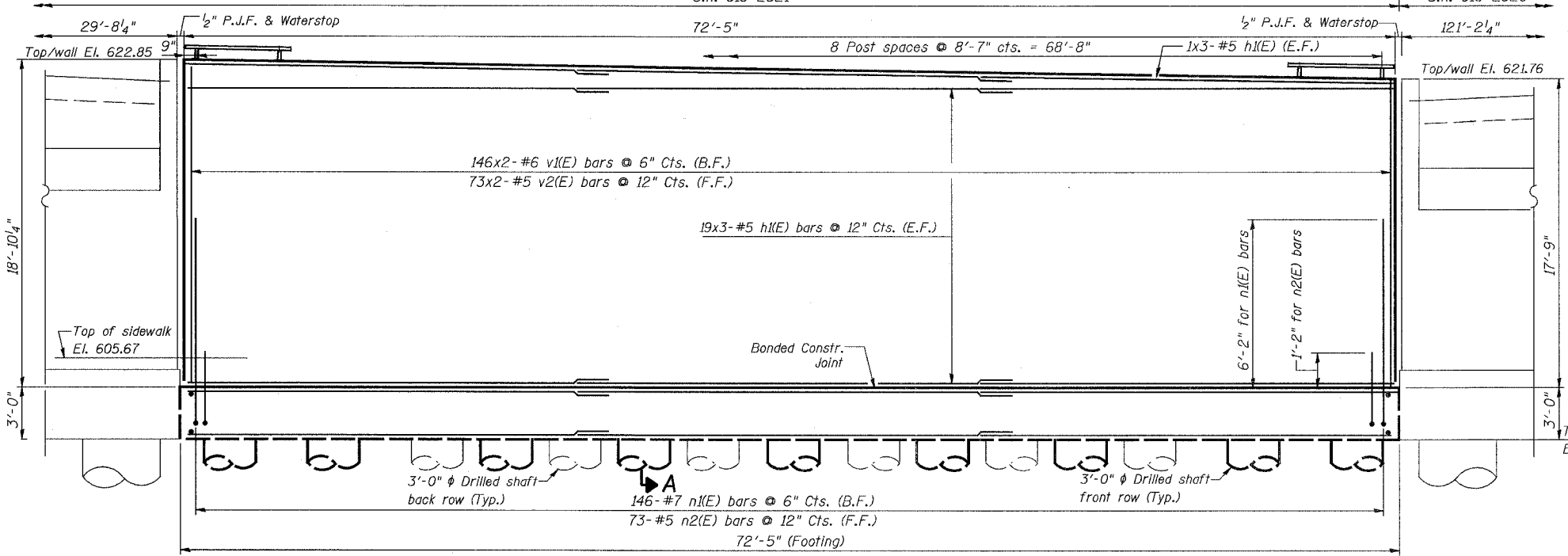
ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
NORTH RETAINING WALL
DETAILS SN 016-2821
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: N.T.S. DATE: 9/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

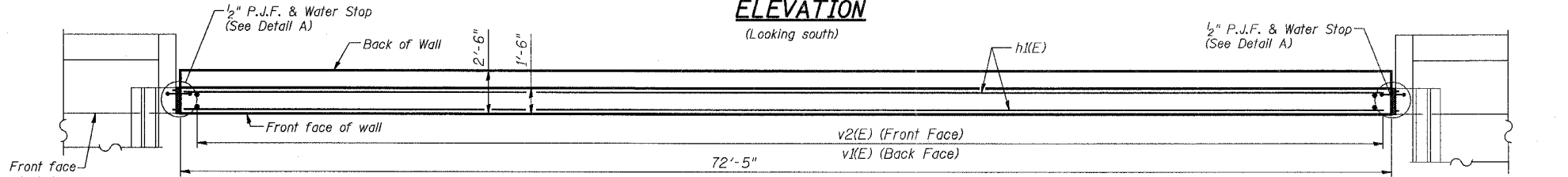
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FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 60E10

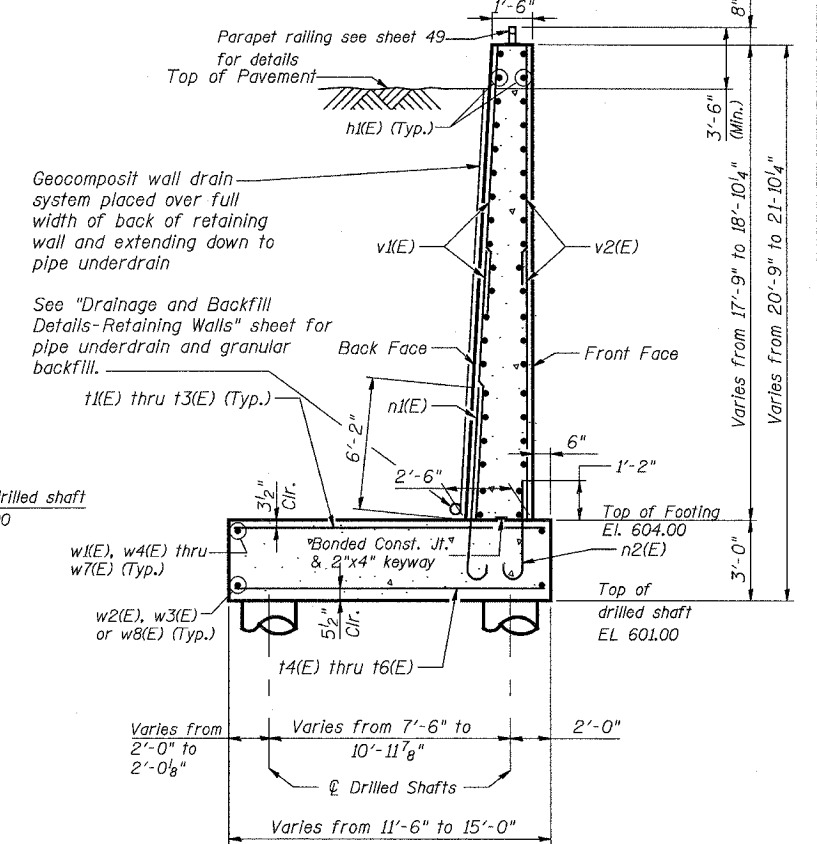
SHEET NO. 38
54 SHEETS



ELEVATION
(Looking south)



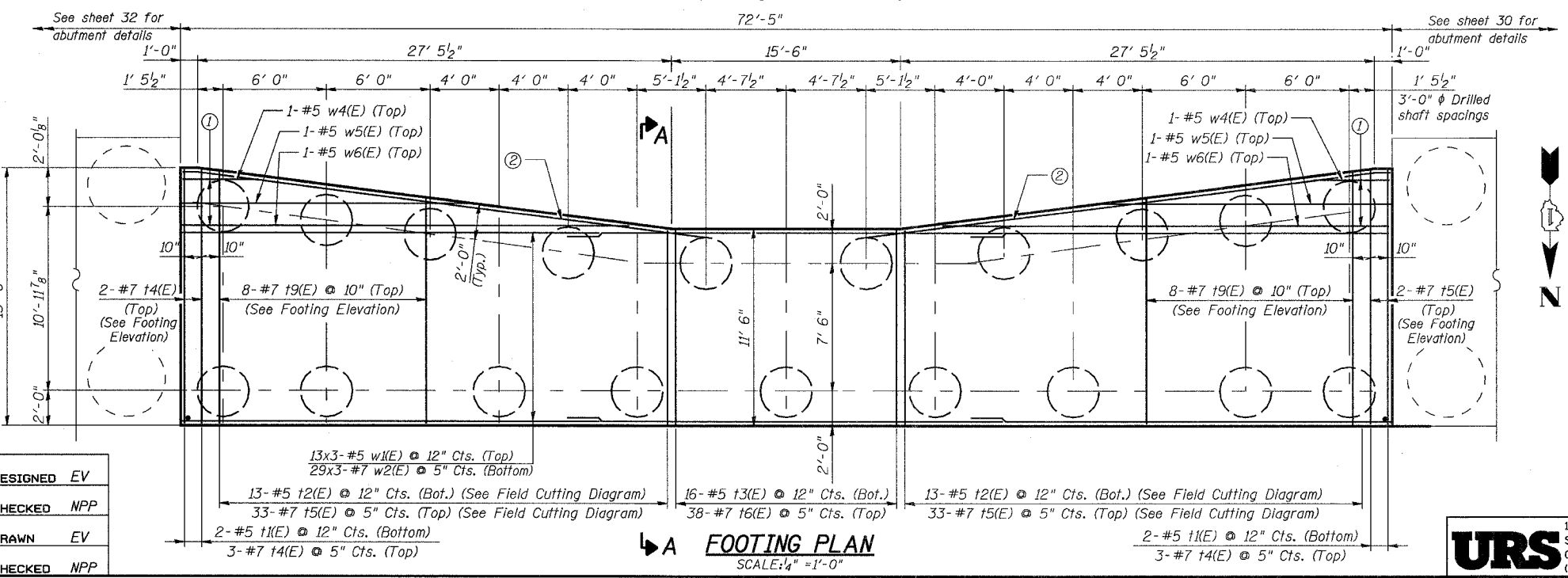
PLAN
SCALE: 1/4" = 1'-0"
(Parapet Railing not shown for clarity)



SECTION A-A

- ① 4-#7 w3(E) bars @ 5" Cts. (Bottom)
(See Field Cutting Diagram)
- ② 1-#5 w7(E) bar (Top) (Bend in Field)
1-#7 w8(E) bar (Bottom) (Bend in Field)

- Notes:
1. Work this Sheet with Sheets 39 and 40.
 2. Reinforcement bars designated (E) shall be epoxy coated.
 3. For Bill of Materials and bar bend details see Sheet 40.
 4. Min. lap length for #5 bar is 2'-2", #6 bar is 2'-7" and #7 bar is 3'-10".
 5. Bars indicated thus 20 x 3-#15 etc. indicates 20 lines of bars with 3 lengths per line.
 6. If the Contractor elects to use cast-in-place anchors device for Parapet Railing post, then the Contractor must coordinate fabrication of the Parapet Railing with respect to as-built locations of the cast-in-place anchors. The Contractor shall correct any errors in fabrication of Parapet Railing with respect to as-built locations of cast-in-place anchors at his own expense.



FOOTING PLAN
SCALE: 1/4" = 1'-0"

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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

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100 South Wacker Drive,
Suite 500
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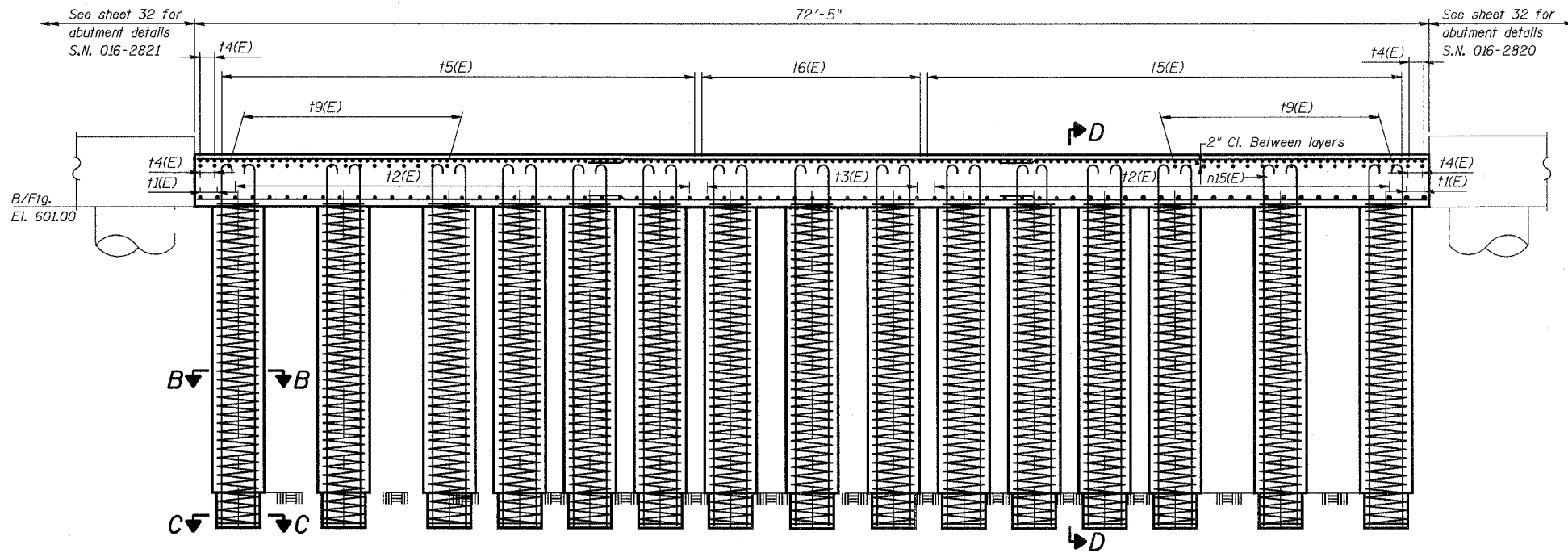
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SOUTH RETAINING WALL
SN 016-2821
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: 1/4" = 1'-0" DATE: 9/21/2008

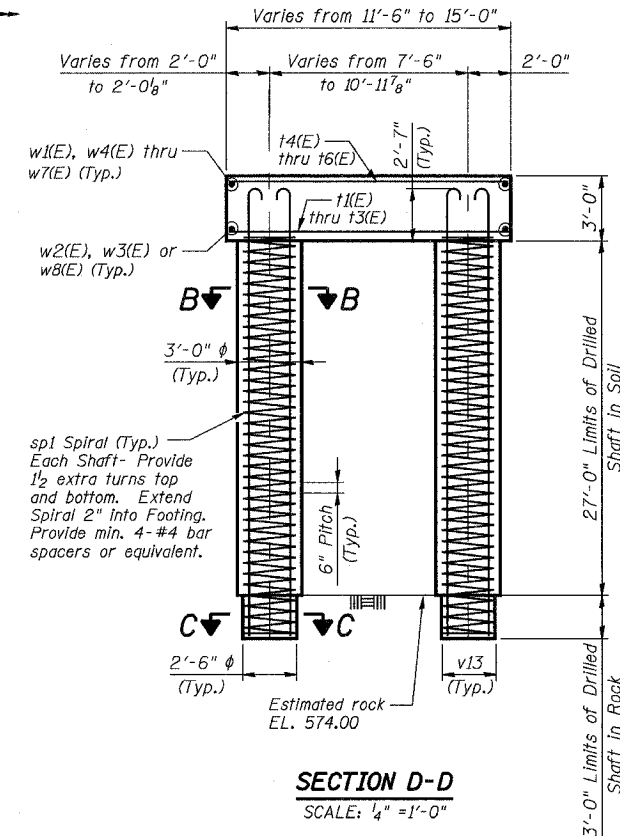
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	449
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT	CONTRACT NO. 60E10	

SHEET NO. 39
54 SHEETS

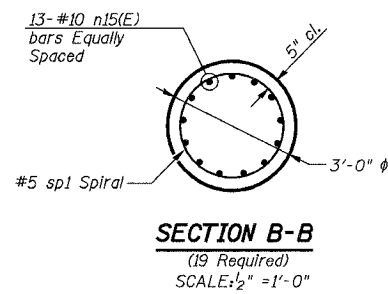


FOOTING ELEVATION
SCALE: 1/4" = 1'-0"

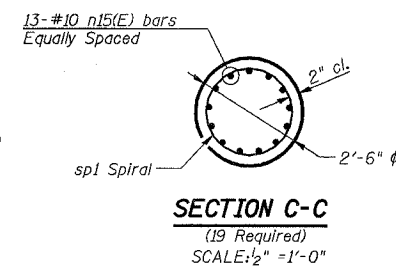


SECTION D-D
SCALE: 1/4" = 1'-0"

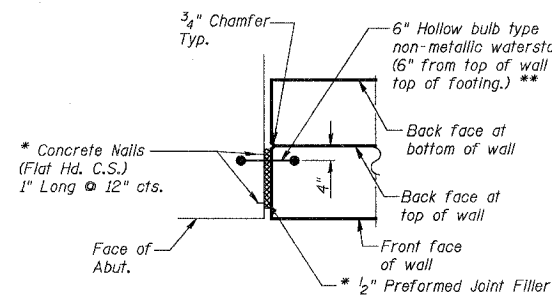
Drilled Shafts shall be drilled to Elevation shown. Quantities and Detailing are for the estimated Elevations shown on the Plans. The actual conditions encountered in each Shaft may differ and the Drilled Shaft and Reinforcement Quantities shall be adjusted accordingly as directed by the Engineer and paid for at the corresponding Unit Bid Price.



SECTION B-B
(19 Required)
SCALE: 1/2" = 1'-0"



SECTION C-C
(19 Required)
SCALE: 1/2" = 1'-0"



DETAIL A
SCALE: N.T.S.

* Cost Included with Concrete Structures.
** Contractor to provide protective cover for Water Seal subject to the approval of the Engineer.

Min. Lap Splice for Spiral = 2'-0"

Notes:

1. Work this Sheet with Sheets 38 and 40.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. For Bill of Materials and bar bend details, see Sheet 40.
4. See Sheet 38 for footing plan.

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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

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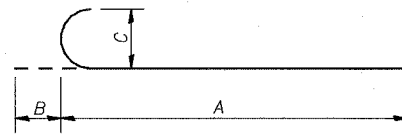
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SOUTH RETAINING WALL
FOUNDATION SN 016-2821
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: AS NOTED DATE: 2/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

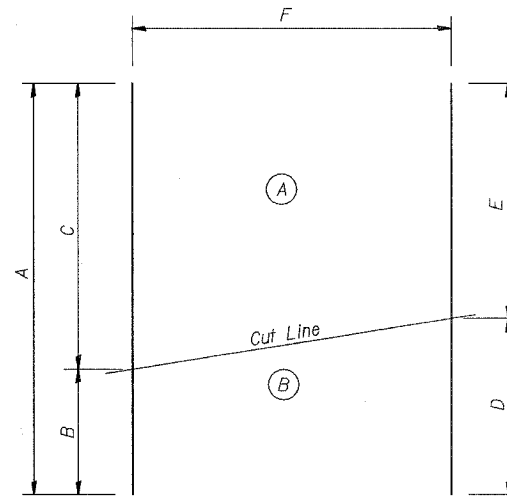
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F.A.P. 351	2008-001VB	COOK	579	450
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT-		
CONTRACT NO. 60E10				

SHEET NO. 40
54 SHEETS



BARS $n_1(E)$, $n_2(E)$, & $n_{15}(E)$

Bar	A	B	C
$n_1(E)$	8'-7"	7"	5"
$n_2(E)$	3'-7"	10"	7"
$n_{15}(E)$	32'-7"	1'-5"	1'-1 1/4"



FIELD CUTTING DIAGRAM #2

Order bars full length. Cut bars in field as shown. Place patterns (A) & (B) side by side as shown on sheet 35 for $t_x(E)$ bars and $w_x(E)$ bars.

Bar	A	B	C	D	E	F
$t_2(E)$	26'-2"	11'-4"	14'-10"	13'-0"	13'-2"	13-#5 bars @ 12" cts.
$t_5(E)$	26'-2"	11'-4"	14'-10"	13'-0"	13'-2"	33-#7 bars @ 5" cts.
$t_9(E)$	27'-7"	14'-10"	12'-9"	13'-9"	13'-10"	8-#7 bars @ 10" cts.
$w_3(E)$	31'-7"	28'-4"	3'-3"	15'-10"	15'-9"	4-#7 bars @ 5" cts.

Repair epoxy coating at field cuts per
IDOT Standard Specifications, Article 508.04

SOUTH RETAINING BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h1(E)$	120	#5	25'-9"	—
$n1(E)$	146	#6	9'-5"	—
$n2(E)$	73	#5	4'-2"	—
$n15(E)$	247	#10	34'-0"	—
$sp2$	19	#5	30'-2"	
$t1(E)$	4	#5	14'-9"	—
$t2(E)$	26	#5	26'-2"	—
$t3(E)$	16	#5	11'-2"	—
$t4(E)$	10	#7	14'-9"	—
$t5(E)$	66	#7	26'-2"	—
$t6(E)$	38	#7	11'-2"	—
$t9(E)$	16	#7	27'-7"	—
$v1(E)$	292	#6	10'-10"	—
$v2(E)$	146	#5	10'-7"	—
$w1(E)$	39	#5	25'-9"	—
$w2(E)$	87	#7	26'-9"	—
$w3(E)$	8	#7	31'-7"	—
$w4(E)$	2	#5	8'-10"	—
$w5(E)$	2	#5	15'-8"	—
$w6(E)$	2	#5	22'-6"	—
$w7(E)$	2	#5	30'-5"	—
$w8(E)$	2	#7	24'-10"	—
Structure Excavation			Cu Yd	515
Braced Excavation			Cu Yd	352
Concrete Structures			Cu Yd	202.1
Reinforcement Bars			Pound	11,570
Reinforcement Bars, Epoxy Coated			Pound	61,250
Drilled Shaft in Soil			Cu. Yd.	135
Drilled Shaft in Rock			Cu. Yd.	11
Geocomposite Wall Drain			Sq. Yd.	125
Porous Granular Embankment			Cu. Yd.	578

Notes:

- Work this Sheet with Sheets 38 and 39.
- Reinforcement bars designated (E) shall be epoxy coated.
- Min. lap length for # 5 bar is 2'-2" and # 6 bar is 2'-7".
- Bars indicated thus 20 x 3-#15 etc. indicates 20 lines of bars with 3 lengths per line.
- See Sheet 24 of U.S. 6 Mainline Retaining Walls Along 159th Street plans for Pipe Underdrain Layout and Quantities.
- See Sheet 45 for details of Porous Granular Embankment and Pipe Underdrain for Structures 6".
- IDOT Approved Mechanical Reinforcing Bar Splicer/Coupler (E) is allowed for the $n15(E)$ bars to allow hooks at top to be spliced on after shafts are poured. Cost included in Reinforcement Bars, Epoxy Coated.

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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

REVISIONS	
NAME	DATE

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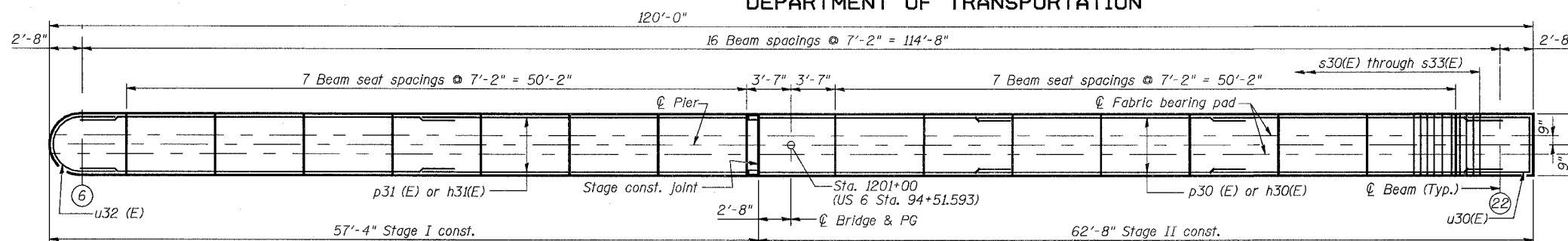
ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SOUTH RETAINING WALL
DETAILS SN 016-2821
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
& 016-2821
SCALE: N.T.S. DATE: 9/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

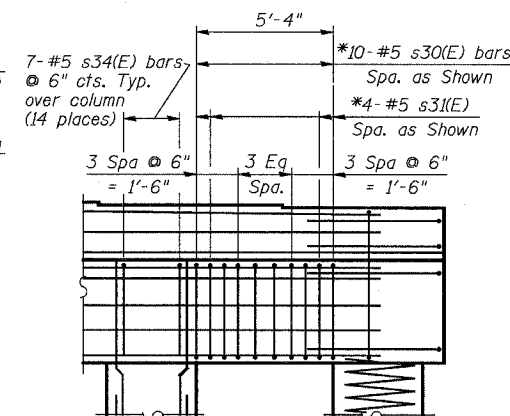
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	451
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT-		

SHEET NO. 41
54 SHEETS

CONTRACT NO. 60E10

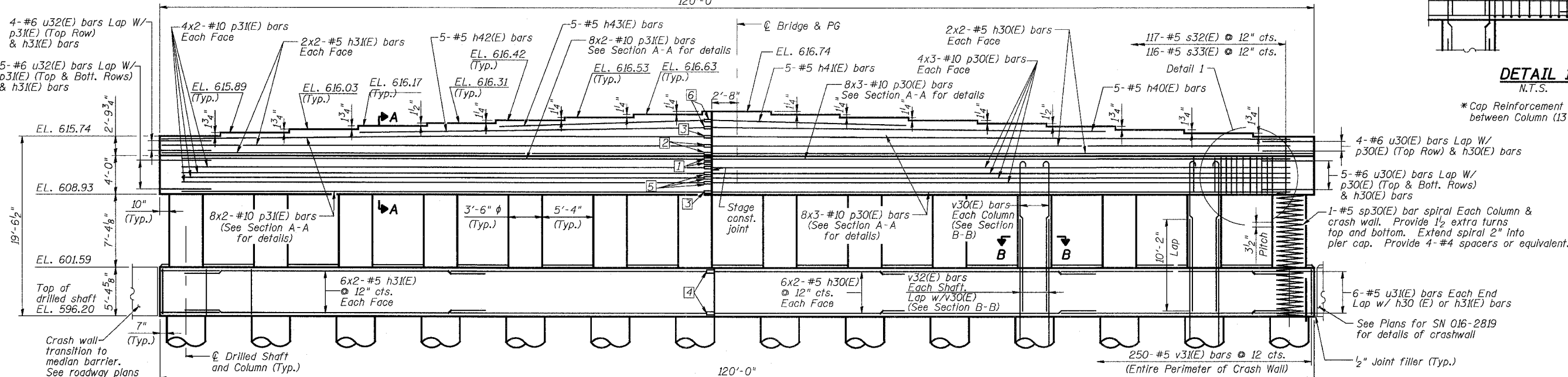


TOP PLAN SCALE: 3/16"=1'-0"
(Columns below not shown for clarity)

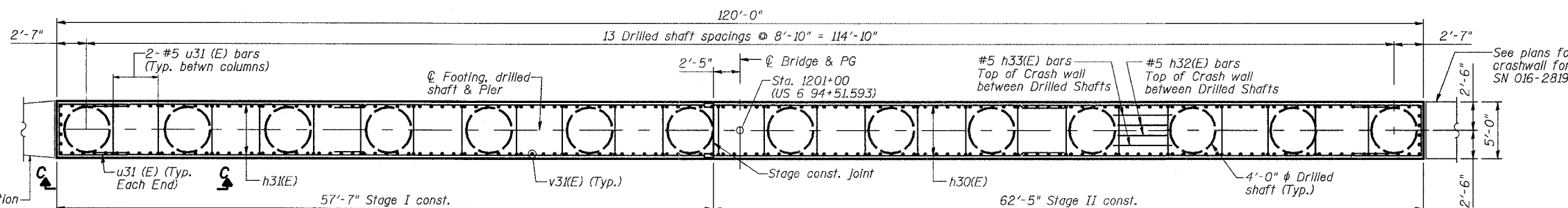


DETAIL 1
N.T.S.

* Cap Reinforcement Typical between Column (13 places)



ELEVATION SCALE: 3/16"=1'-0"
(Looking south)



CRASH WALL PLAN SCALE: 3/16"=1'-0"

- 1 4-Bar Splicer (E) for #10 bars See Sheet 27 of 30 for details.
- 2 2-Bar Splicer (E) for #5 bars Each Face See Sheet 27 for details.
- 3 8-Bar Splicer (E) for #10 bars See Sheet 27 for details.
- 4 6-Bar Splicer (E) for #5 bars Each Face See Sheet 27 for details.
- 5 4-Bar Splicer (E) for #10 bars Each Face See Sheet 27 for details.
- 6 5-Bar Splicer (E) for #5 bars Each Face

Notes:

1. Reinforcement Bars designated (E) shall be epoxy coated.
2. For Bill of Materials, bar bend details, End View, Drilled Shaft details, Sections A-A, B-B and C-C see Sheet 42.
3. The minimum Lap Length for #10 bars is 8'-2", for #5 is 2'-5".
4. Cast the steps monolithically with cap.
5. Bars indicated thus 4x3 - #10 etc. indicates 4 lines of bars with 3 lengths per line.
6. See Sheet 21 for locations of anchor bolts and Sheet 47 for details of anchor bolts.

DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
PIER SN 016-2820

STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: AS NOTED DATE: 2/21/2008

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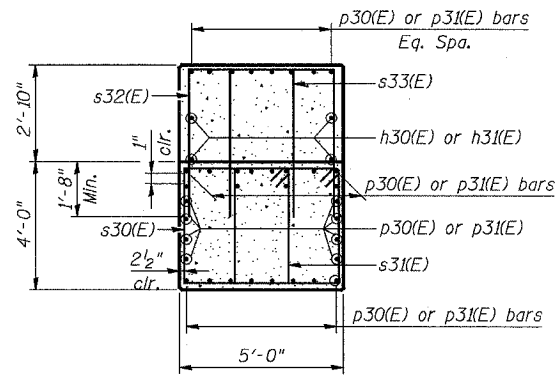
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

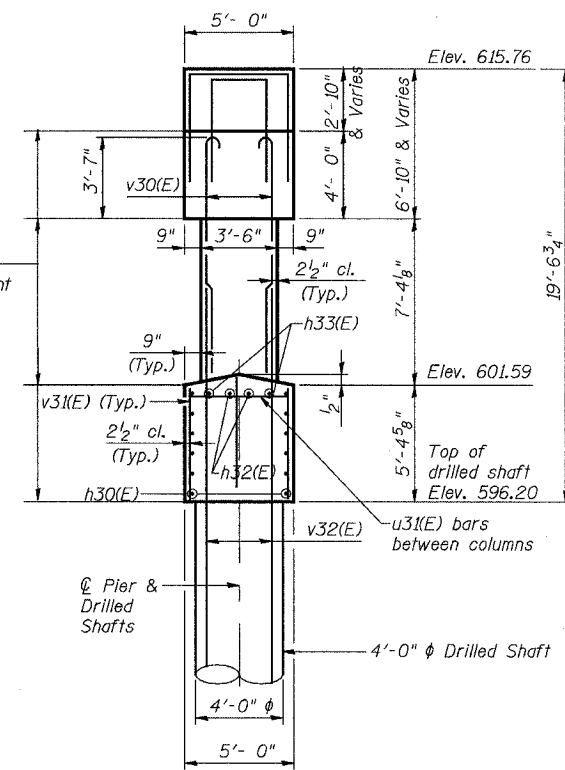
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 60E10

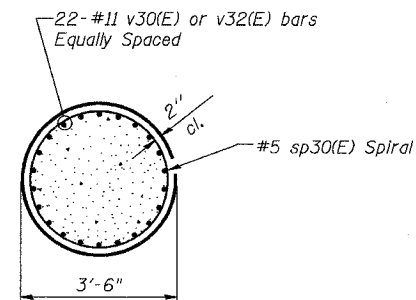
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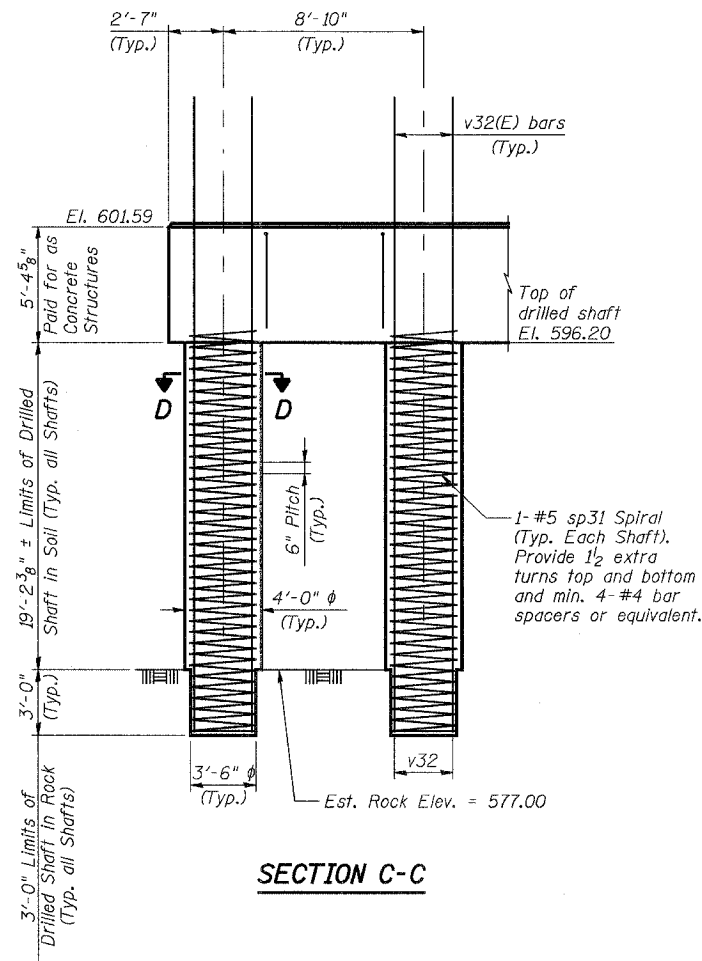
SECTION A-A



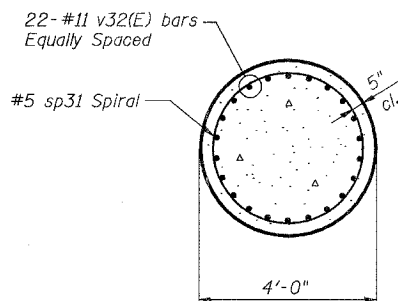
END VIEW



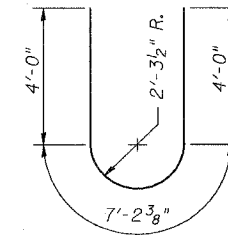
SECTION B-B



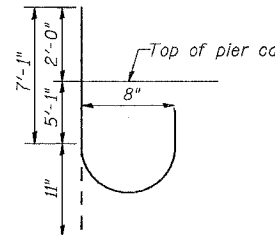
SECTION C-C



SECTION D-D
(14 Required)

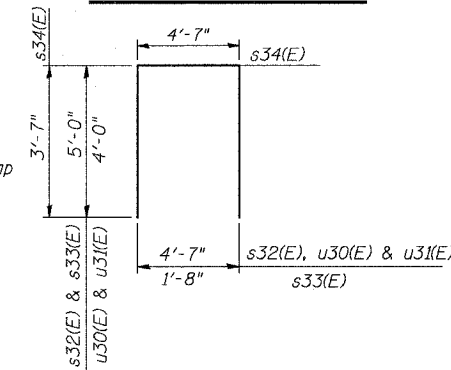


BAR u32(E)

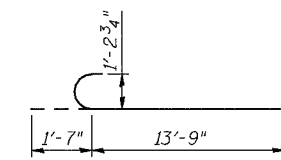


BAR j(E)

BARS s30(E) & s31(E)



BARS s32(E), s33(E), s34(E)
u30(E) & u31(E)



BAR v30(E)

PIER BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h30(E)	32	#5	32'-6"	—
h31(E)	32	#5	28'-10"	—
h32(E)	26	#5	4'-4"	—
h33(E)	26	#5	4'-8"	—
h40(E)	5	#5	40'-10"	—
h41(E)	5	#5	20'-2"	—
h42(E)	5	#5	36'-6"	—
h43(E)	5	#5	22'-2"	—
p30(E)	96	#10	26'-8"	—
p31(E)	64	#10	32'-0"	—
s30(E)	130	#5	17'-3"	□
s31(E)	52	#5	11'-5"	□
s32(E)	117	#5	14'-7"	□
s33(E)	116	#5	11'-8"	□
s34(E)	98	#5	11'-9"	□
sp30(E)	14	#5	13'-0"	
sp31	14	#5	22'-6"	
u30(E)	9	#6	12'-7"	—
u31(E)	38	#5	12'-7"	—
u32(E)	9	#6	15'-3"	—
v30(E)	308	#11	15'-4"	—
v31(E)	250	#5	5'-2"	—
v32(E)	308	#11	35'-0"	—
j(E)	124	#8	8'-0"	—
Bar Splicer		Each	46	
Structure Excavation		Cu Yd	212	
Concrete Structures		Cu Yd	318.9	
Reinforcement Bars		Pound	6,360	
Reinforcement Bars, Epoxy Coated		Pound	129,990	
Drilled Shaft in Soil		Cu. Yd.	125	
Drilled Shaft in Rock		Cu. Yd.	15	
Non-Special Waste Disposal		Cu. Yd.	204.0	

Notes:

1. Reinforcement Bars designated (E) shall be epoxy coated.
2. Length of Spiral given is height of Spiral. Weight includes weight of spacers for Spiral.
3. Drilled Shafts shall be drilled to Elevation shown. Quantities and Detailing are for the estimated Elevations shown on the Plans. The actual conditions encountered in each Shaft may differ and the Drilled Shaft and Reinforcement Quantities shall be adjusted accordingly as directed by the Engineer and paid for at the corresponding Unit Bid Price.
4. See Sheet 41 for location of Sections A-A, B-B and C-C.
5. Tops of the drilled shafts and their associated reinforcing steel shall be located in accordance with tolerances required for the construction of the pier columns above them.
6. See Sheet 21 for locations of j(E) bars.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
PIER DETAILS SN 016-2820

STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STRUCTURE NOS. 016-2820 & 016-2821
SCALE: N.T.S. DATE: 2/21/2008

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Suite 500
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(312) 939-1000

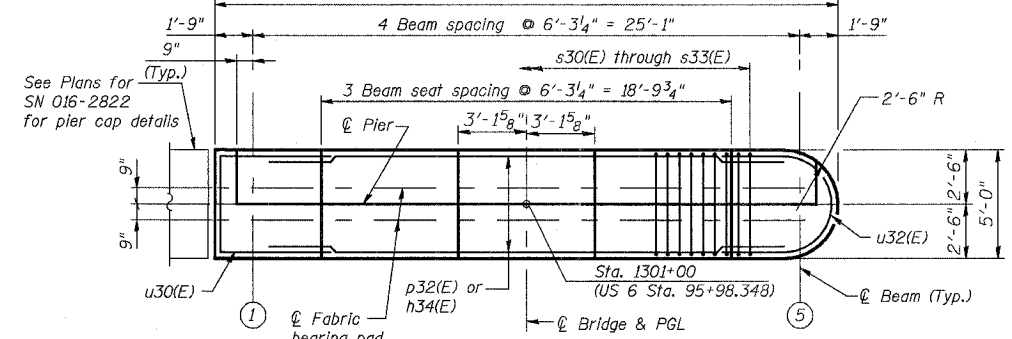
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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

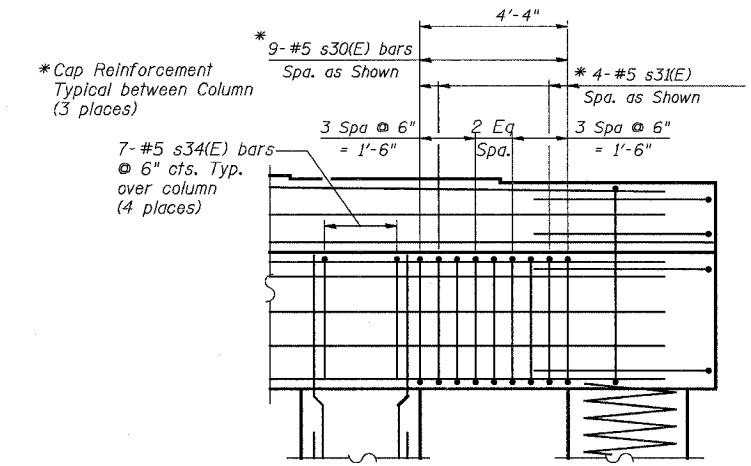
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	453
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT-		
CONTRACT NO. 60E10				

SHEET NO. 43
54 SHEETS



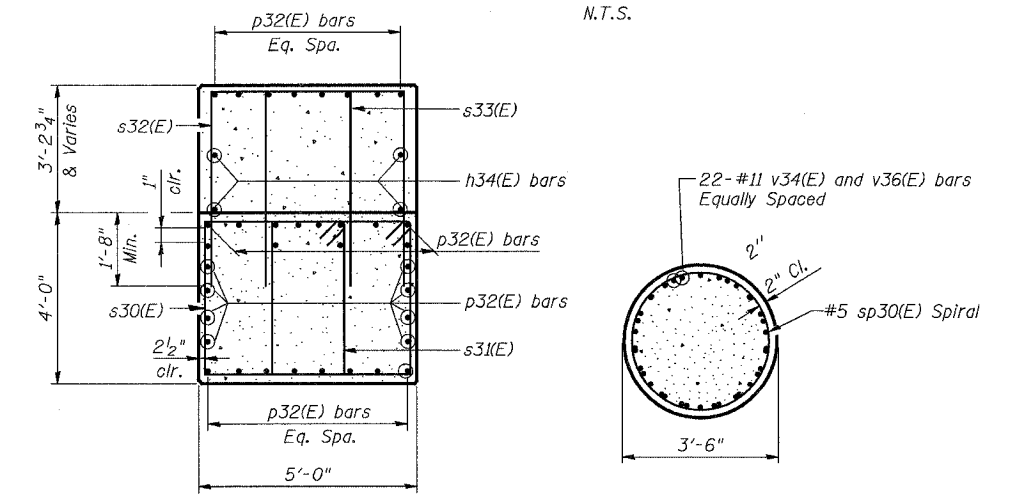
TOP PLAN

SCALE: 1/4"=1'-0"
(Columns below not shown for clarity)



DETAIL 1

N.T.S.



SECTION A-A

N.T.S.

SECTION B-B

SCALE: 1/2"=1'-0"

Notes:

1. Reinforcement Bars designated (E) shall be epoxy coated.
2. For Bill of Materials, bar bend details, Section C-C and drilled shaft details see Sheet 44.
3. Cast steps monolithically with cap.
4. See Sheet 21 for anchor bolt locations and Sheet 47 for anchor bolt details.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
PIER SN 016-2821

STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: AS NOTED DATE: 2/21/2008

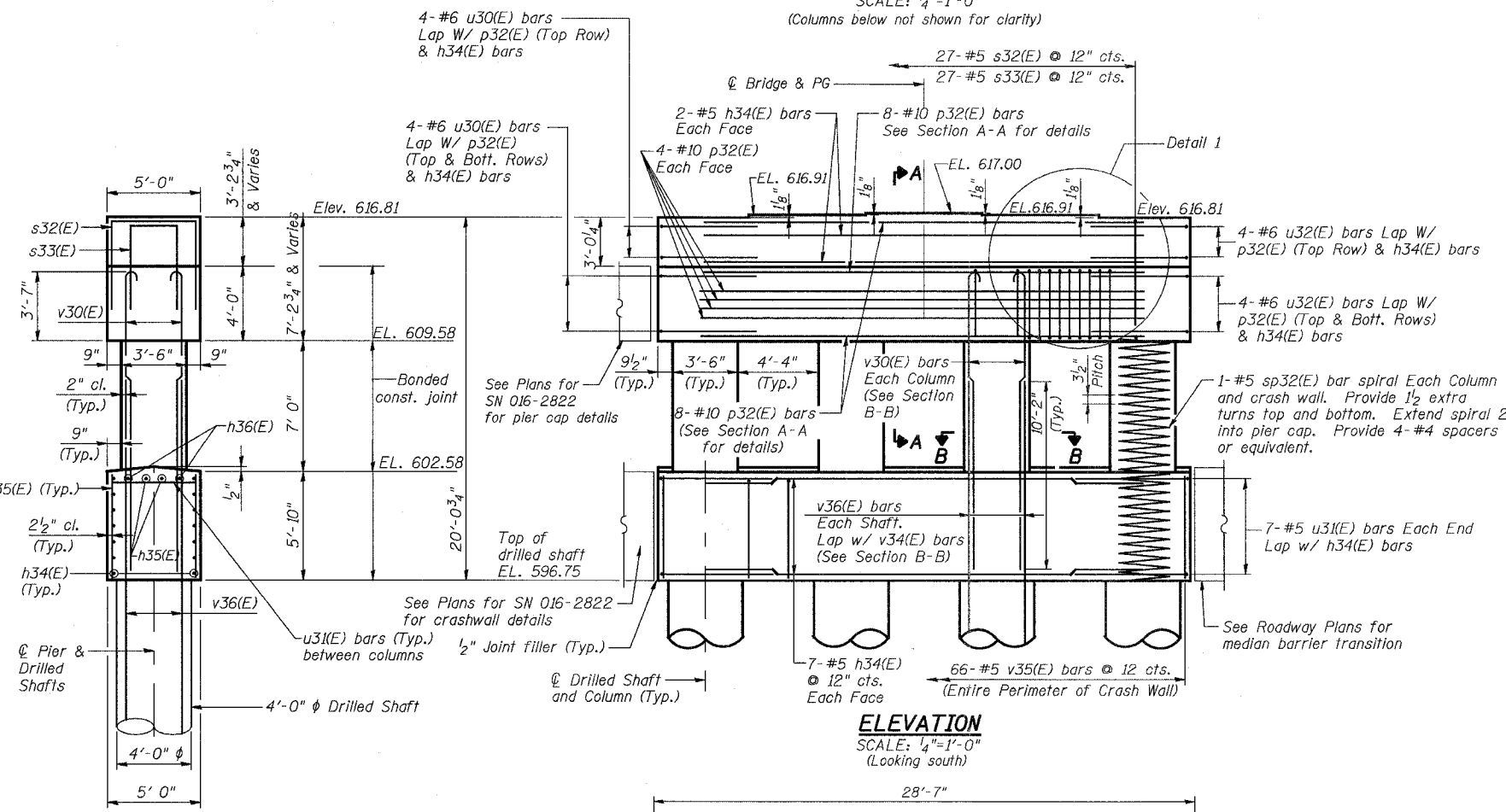
URS
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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

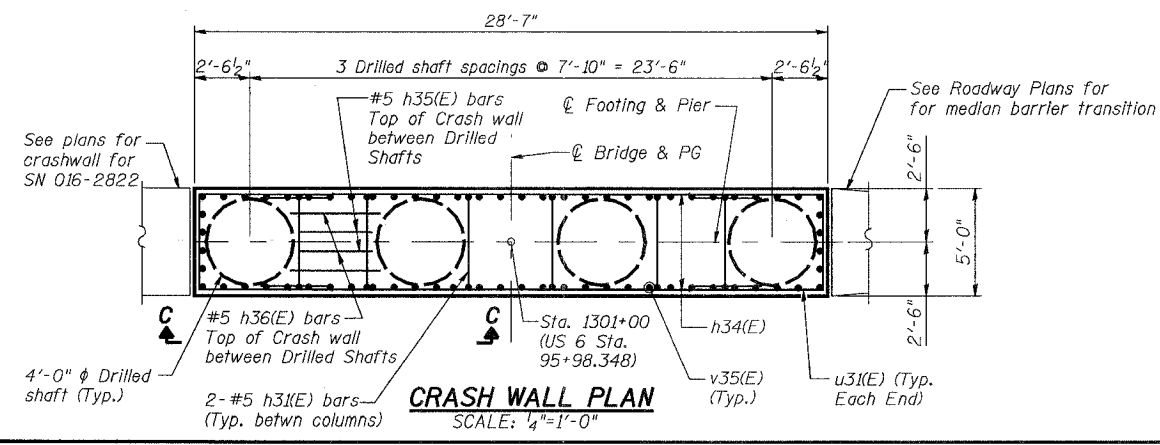


END VIEW
SCALE: 1/4"=1'-0"



ELEVATION

SCALE: 1/4"=1'-0"
(Looking south)



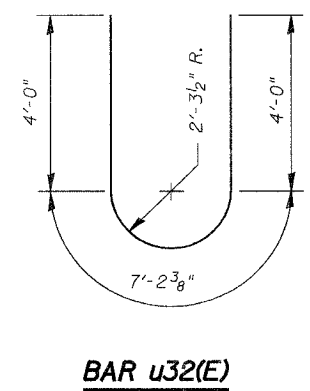
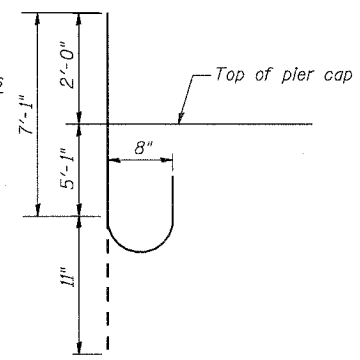
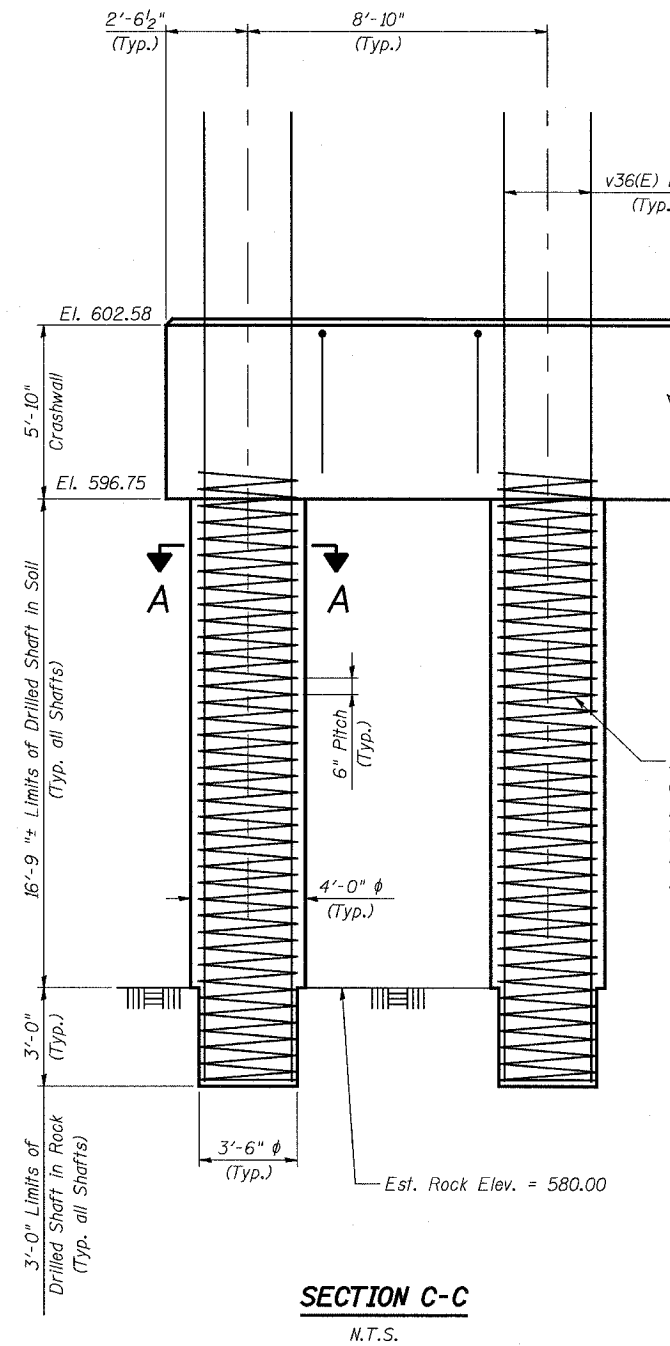
CRASH WALL PLAN

SCALE: 1/4"=1'-0"

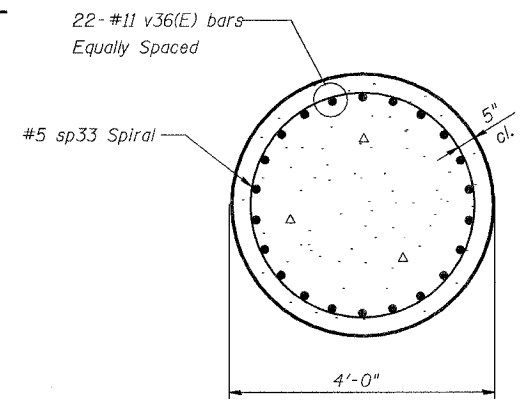
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	454
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

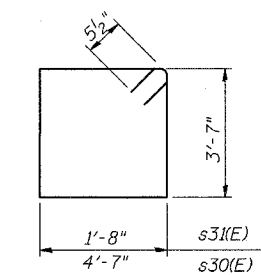
SHEET NO. 44
54 SHEETS



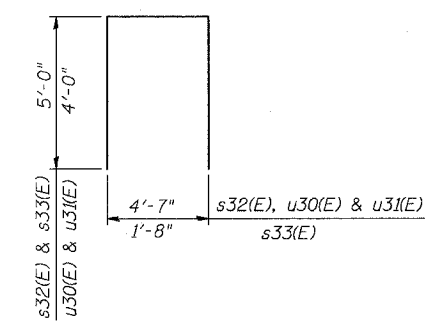
BAR j(E)



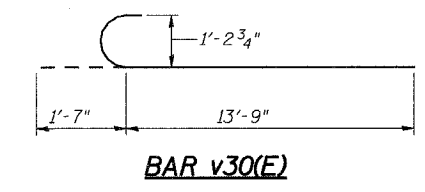
SECTION A-A
SCALE: 3/4"=1'-0"
(4 Required)



BARS s30(E) & s31(E)



**BARS s32(E), s33(E),
u30(E) & u31(E)**



BAR v30(E)

PIER BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h34(E)	18	#5	26'-0"	—
h35(E)	6	#5	3'-4"	—
h33(E)	6	#5	3'-8"	—
p32(E)	32	#10	26'-0"	—
s30(E)	27	#5	17'-3"	□
s31(E)	12	#5	11'-5"	□
s32(E)	27	#5	14'-7"	□
s33(E)	27	#5	11'-8"	□
s34(E)	28	#5	11'-9"	□
sp32(E)	4	#5	13'-3"	WWW
sp33	4	#5	20'-0"	WWW
u30(E)	9	#6	12'-7"	—
u31(E)	20	#5	12'-7"	—
u32(E)	9	#6	15'-3"	—
v30(E)	88	#11	15'-4"	U
v35(E)	66	#5	5'-5"	—
v36(E)	88	#11	33'-0"	—
j(E)	26	#8	8'-0"	U
Structure Excavation			Cu Yd	45
Concrete Structures			Cu Yd	78.9
Reinforcement Bars			Pound	1,620
Reinforcement Bars, Epoxy Coated			Pound	33,440
Non-Special Waste Disposal			Cu. Yd.	76.0
Drilled Shaft in Soil			Cu. Yd.	32
Drilled Shaft in Rock			Cu. Yd.	5

Notes:

1. Reinforcement Bars designated (E) shall be epoxy coated.
2. Length of Spiral given is height of Spiral. Weight includes weight of spacers for Spiral.
3. Drilled Shafts shall be drilled to Elevation shown. Quantities and Detailing are for the estimated Elevations shown on the Plans. The actual conditions encountered in each Shaft may differ and the Drilled Shaft and Reinforcement Quantities shall be adjusted accordingly as directed by the Engineer and paid for at the corresponding Unit Bid Price.
4. See Sheet 43 for location of Section C-C.
5. Tops of the drilled shafts and their associated reinforcing steel shall be located in accordance with tolerances required for the construction of the pier columns above them.
6. See Sheet 21 for locations of j(E) bars.

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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

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REVISIONS	
NAME	DATE

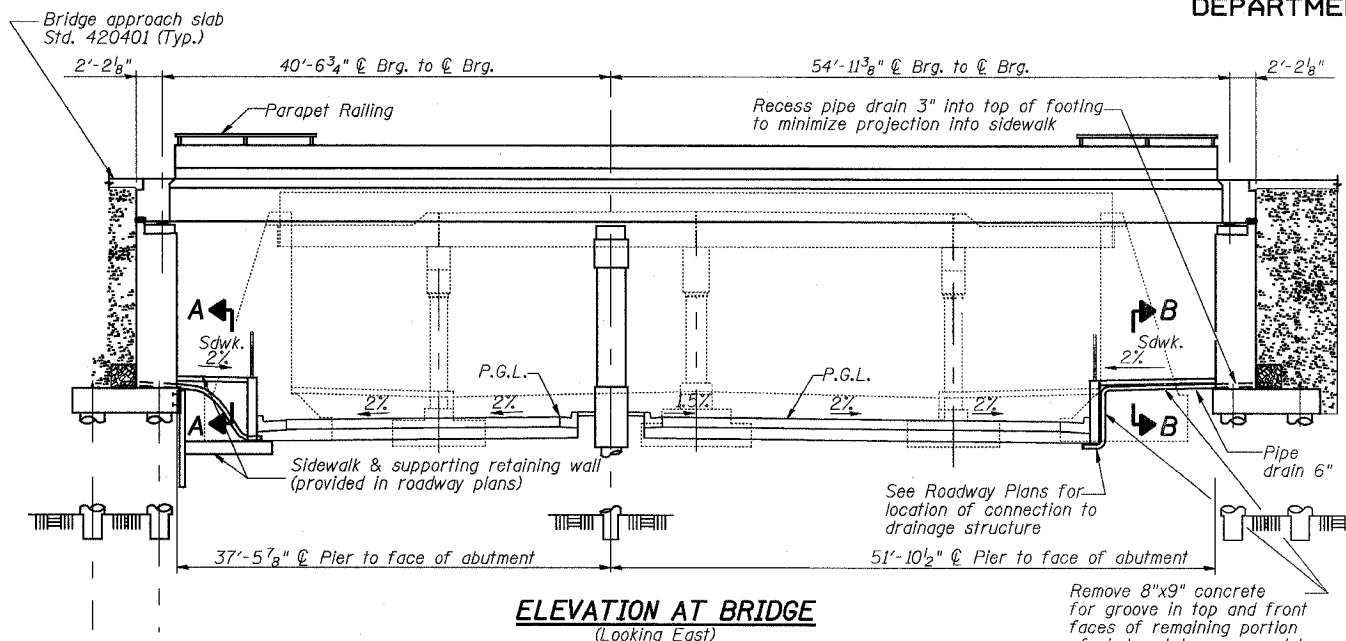
ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
PIER DETAILS SN 016-2821

STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: AS NOTED DATE: 2/21/2008

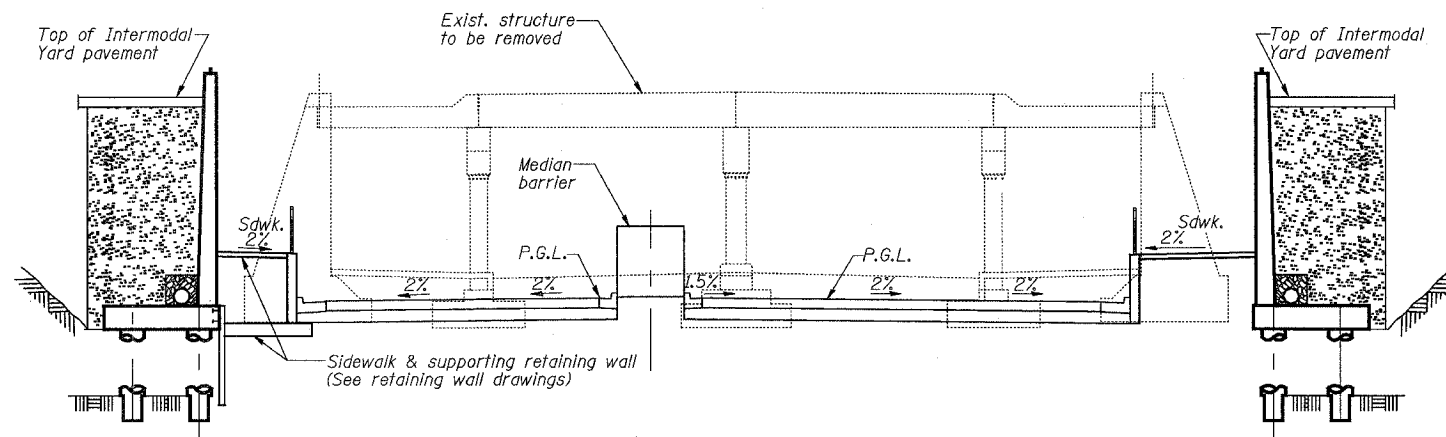
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008- 001VB	COOK	579	455
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60E10				

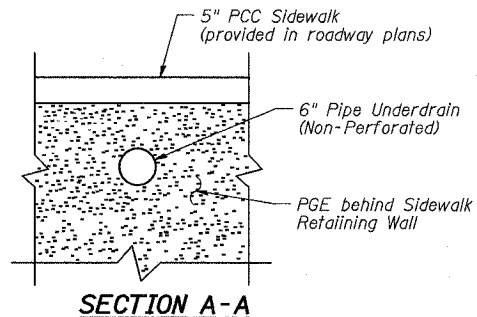
SHEET NO. 45
54 SHEETS



ELEVATION AT BRIDGE
(Looking East)



ELEVATION AT RETAINING WALLS
(Looking east)

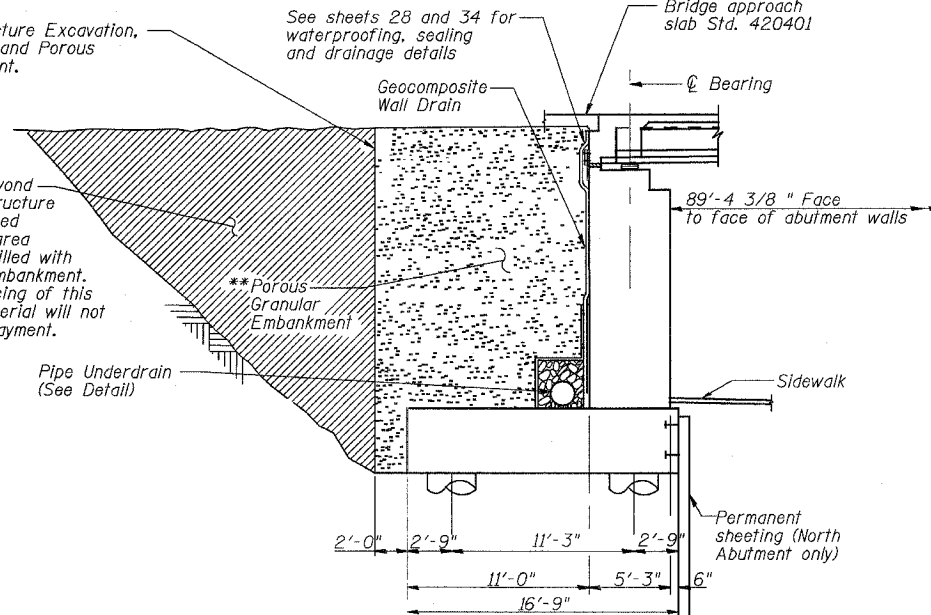


SECTION A-A

Pay Limit for Structure Excavation,
Braced Excavation and Porous
Granular Embankment.

Over excavation beyond
the pay limit of Structure
Excavation or Braced
Excavation. This area
also shall be backfilled with
Porous Granular Embankment.
Furnishing and placing of this
portion of that material will not
be measured for payment.

See sheets 28 and 34 for
waterproofing, sealing
and drainage details



TYPICAL SECTION THROUGH ABUTMENTS

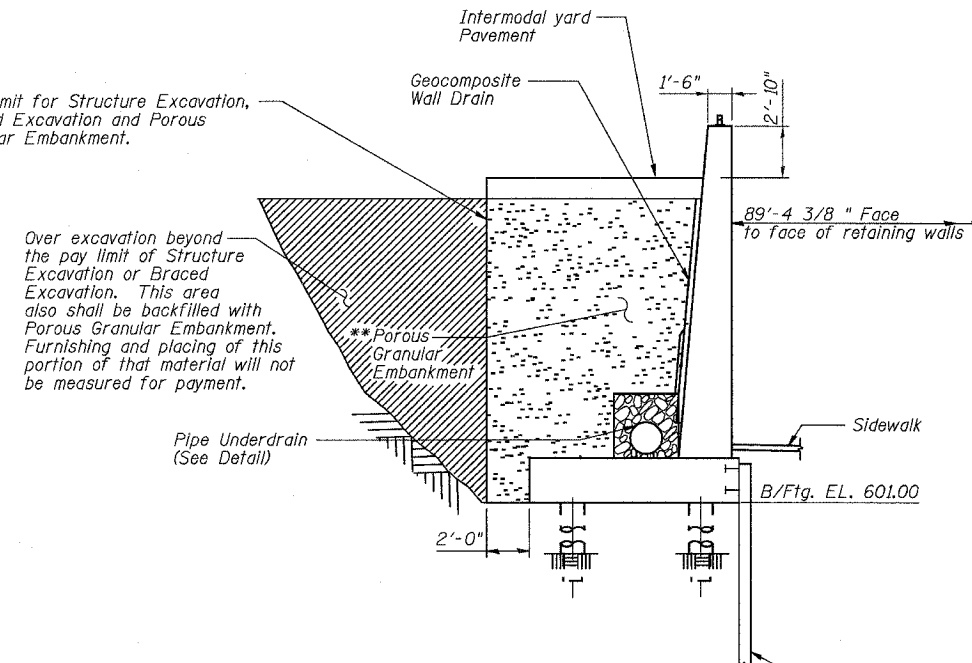
** Excavation for placing Porous Granular Embankment is
included in cost of Braced Excavation & Structure Excavation

Porous Granular Embankment shall be compacted to 95% Modified
Proctor Density and its coarse aggregate gradation shall be CA 18.

Notes:

- See Sheet 24 of U.S. 6 Mainline Retaining Walls Along 159th
Street plans for Pipe Underdrain Layout and Quantities.
- See Bill of Materials on sheets 25, 26, 31, and 32
for Quantities of Porous Granular Embankment.
- Non-perforated drain pipe from back face of
abutment to the outfalling drainage structure
including connection will be paid for as
Pipe Underdrain for Structures 6".
- See retaining wall drawings for details of drainage
behind the sidewalk supporting retaining walls.

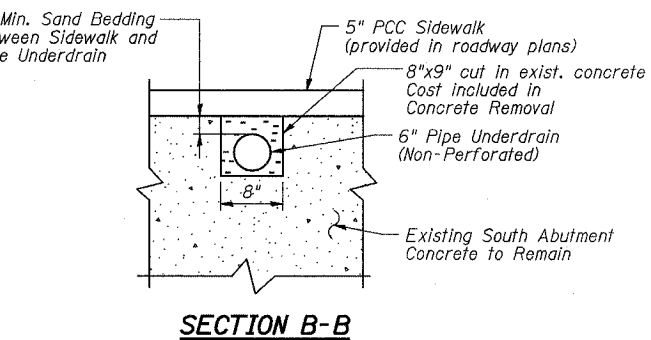
Pay Limit for Structure Excavation,
Braced Excavation and Porous
Granular Embankment.



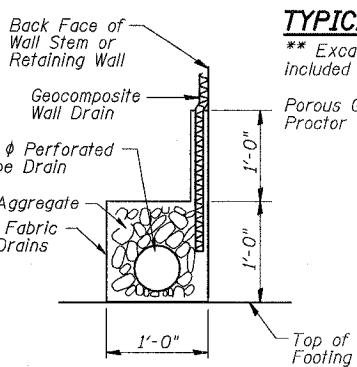
SECTION THROUGH RETAINING WALL

** Excavation for placing Porous Granular Embankment is
included in cost of Braced Excavation & Structure Excavation

Porous Granular Embankment shall be compacted to 95% Modified
Proctor Density and its coarse aggregate gradation shall be CA 18.



SECTION B-B



PIPE UNDERDRAIN DETAIL

* Included in cost of Pipe Underdrain For Structures 6"

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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
**DRAINAGE AND BACKFILL
DETAILS - RETAINING WALLS**
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
& 016-2821
SCALE: N.T.S. DATE: 8/21/2008

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

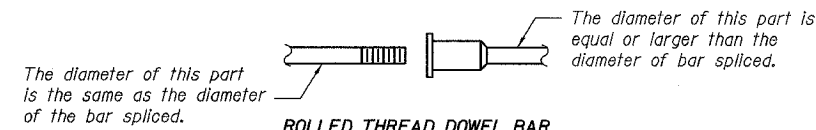
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	456
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-	CONTRACT NO. 60E10	

SHEET NO. 46
54 SHEETS

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or colled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- Minimum Capacity = $1.25 \times f_y \times A_t$
(Tension in kips)
 - Minimum *Pull-out Strength = $0.66 \times f_y \times A_t$
(Tension in kips)
- Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete



ROLLED THREAD DOWEL BAR



** ONE PIECE

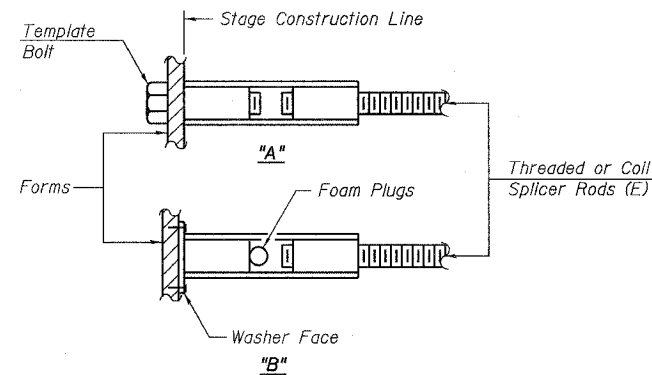
Wire Connector



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

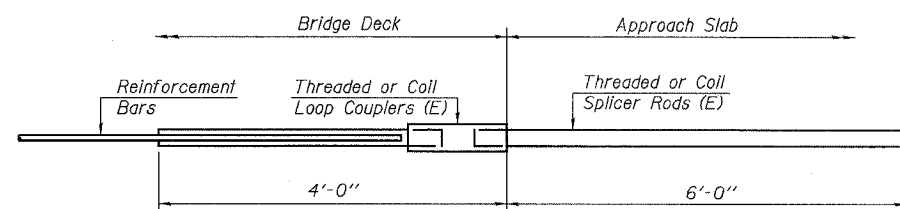
** Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



INSTALLATION AND SETTING METHODS

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

Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	7.9
#5	2'-0"	23.0	12.3
#6	2'-7"	33.1	17.4
#7	3'-5"	45.1	23.8
#8	4'-6"	58.9	31.3
#9	5'-9"	75.0	39.6
#10	7'-3"	95.0	50.3
#11	9'-0"	117.4	61.8



FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

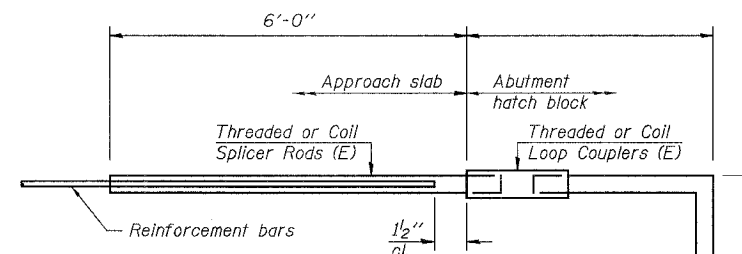
Bar Splicer for #5 bar		
Min. Capacity =	23.0 kips - tension	
Min. Pull-out Strength =	9.2 kips - tension	
No. Required =	240 SN 016-2820	
No. Required =	56 SN 016-2821	

SN 016-2820

Bar Size	No. Assemblies Required	Location
#5	240	Deck

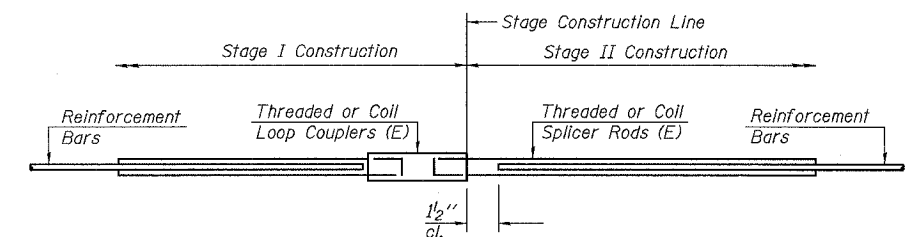
SN 016-2821

Bar Size	No. Assemblies Required	Location
#5	56	Deck



FOR STUB ABUTMENTS

Bar Splicer for #5 bar		
Min. Capacity =	23.0 kips - tension	
Min. Pull-out Strength =	9.2 kips - tension	
No. Required =		



SN 016-2820

Bar Size	No. Assemblies Required	Location
#10	30	Pier
#5	16	Pier
#7	18	North abutment footing
#5	64	North abutment
#7	18	South abutment footing
#5	64	South abutment

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
BAR SPLICER ASSEMBLY DETAILS
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: N.T.S. DATE: 2/21/2008

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DESIGNED EV
CHECKED NPP
DRAWN EV
CHECKED NPP

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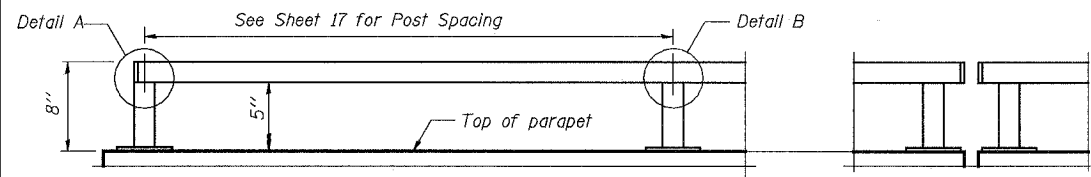
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	457
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT		
CONTRACT NO. 60E10				

SHEET NO. 47
54 SHEETS

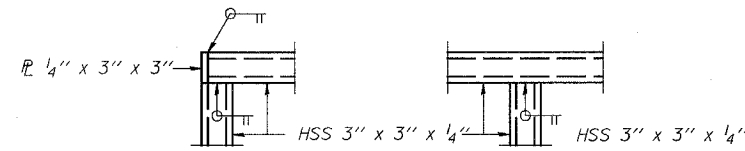
NOTES

Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the Contract Unit Price per Foot for Parapet Railing.
Hollow structural sections shall conform to the requirements of ASTM designation A 500, Grade B, structural steel tubing.
All other steel shapes and plates shall conform to the requirements of AASHTO M 270 Grade 36.
If the option of drilling and epoxy grouting the anchor rods is chosen, the Contractor shall use the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures. The capsule or the adhesive cartridge shall be sealed with pre-measured amounts of the adhesive chemical.
Space reinforcement to miss anchor rods.
Extend the railing beyond the last post such that the gap between railing on the bridge parapet and railing on retaining wall does not exceed 3 inches.



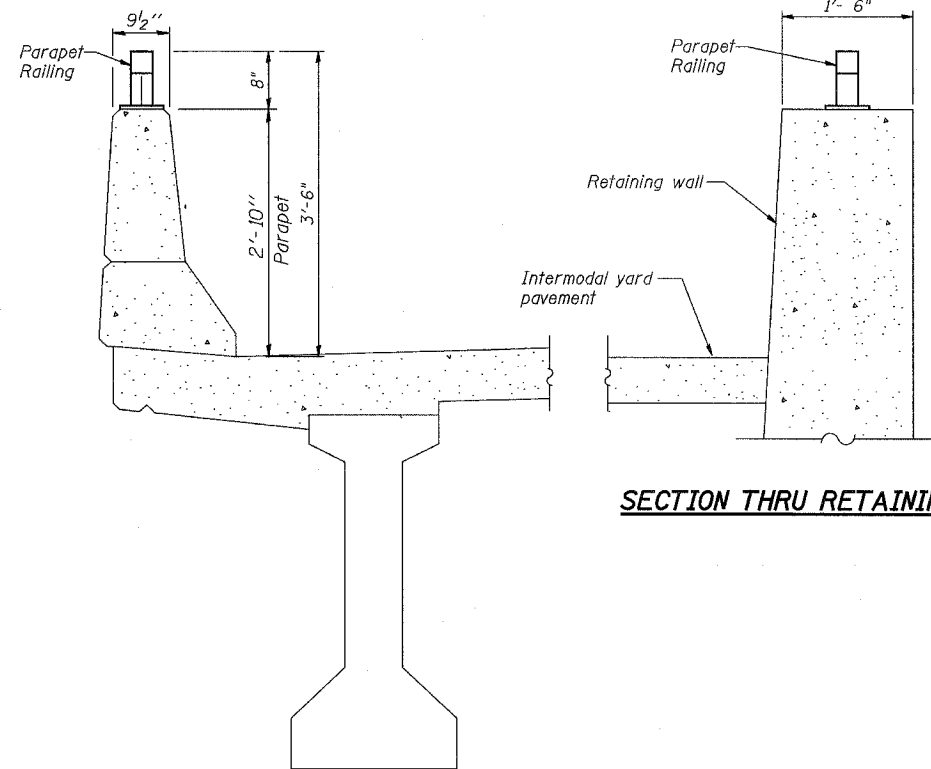
PARAPET RAILING ELEVATION
(Inside Face of Two Element Rail)

PARAPET RAILING ELEVATION AT EXPANSION JOINT



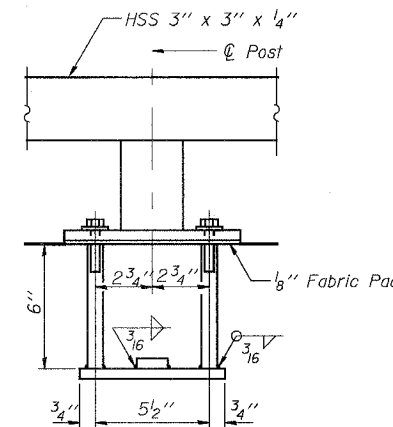
DETAIL A

DETAIL B



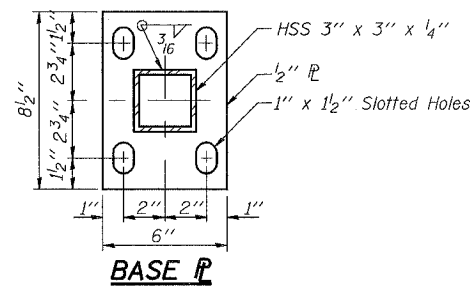
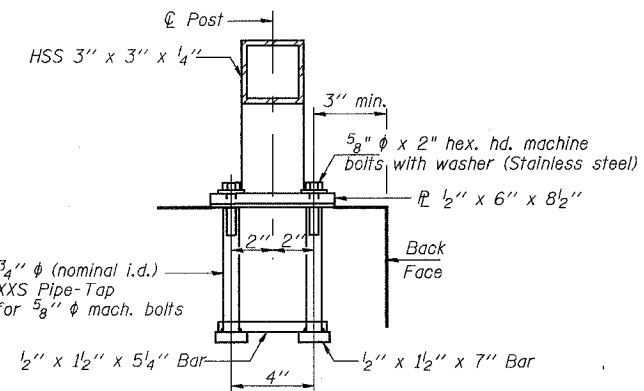
SECTION THRU RETAINING WALL

SECTION THRU DECK

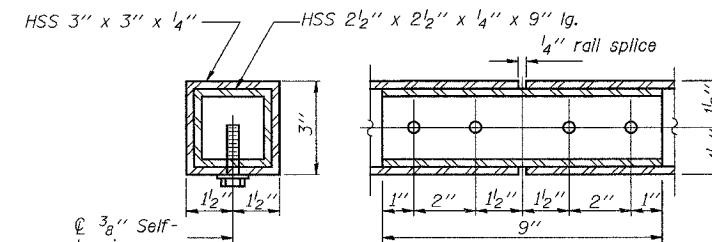


ANCHOR BOLT DETAILS

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and epoxy grouting 5/8 inch diameter anchor rods. Embedment shall be according to the manufacturer's specifications.



BASE PLATE



RAIL SPLICE

BILL OF MATERIAL

Item	Unit	Quantity
Parapet Railing	Foot	330

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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

(10'-0" Maximum Post Spacing)

REVISIONS	
NAME	DATE

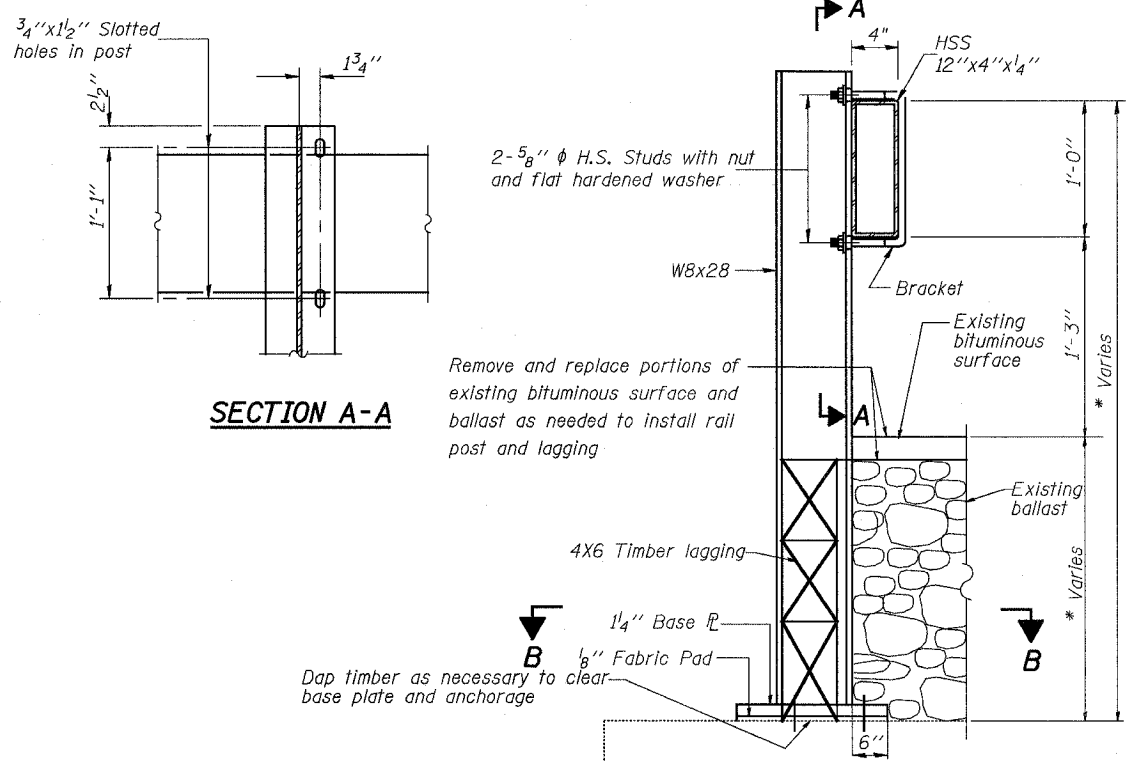
ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
PARAPET RAILING DETAILS

STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: N.T.S. DATE: 2/21/2008

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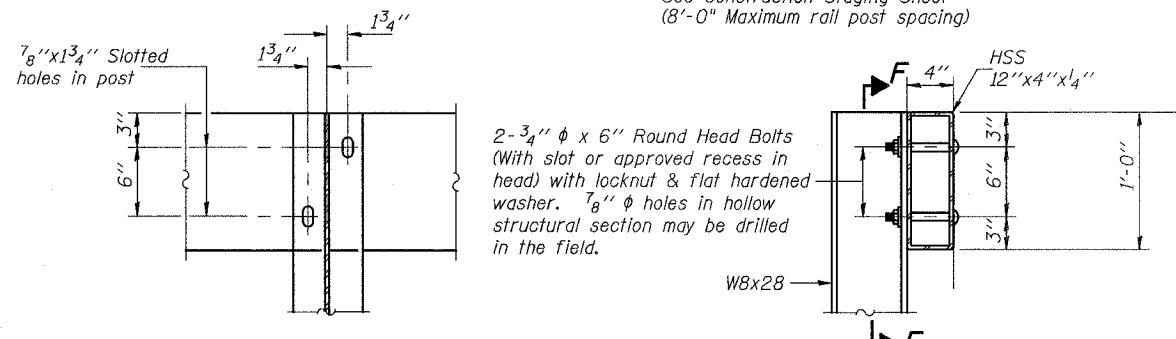
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	458
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

SHEET NO. 48
54 SHEETS

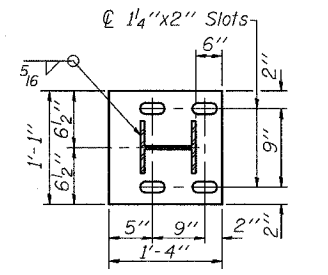


Remove and replace portions of existing bituminous surface and ballast as needed to install rail post and lagging.

DETAIL 2
SECTION AT RAIL POST
See Construction Staging Sheet (8'-0" Maximum rail post spacing)

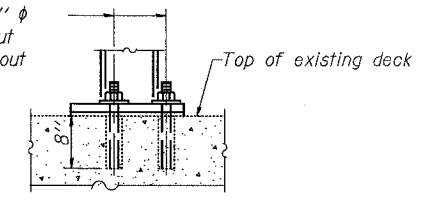


ALTERNATE RAIL ATTACHMENT DETAIL

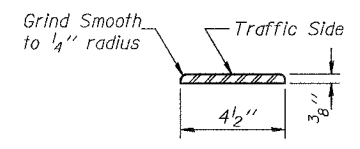


SECTION B-B

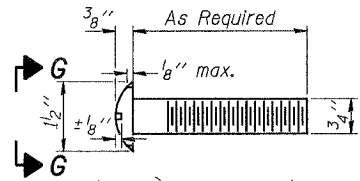
*Drill 4-1 1/4" ϕ holes for 1" ϕ threaded rods with hex nut & flat washer. Epoxy grout rods.



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

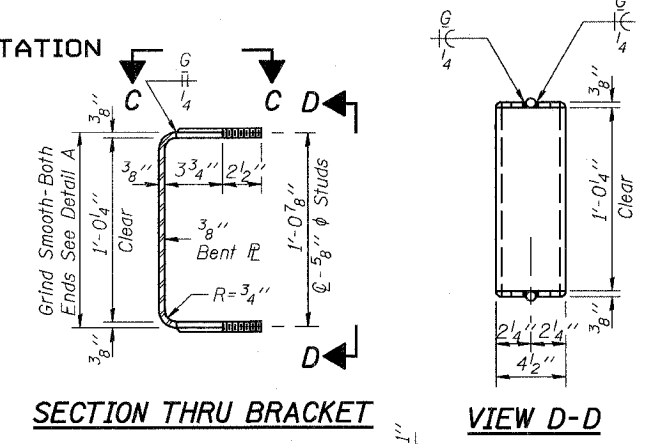


DETAIL A

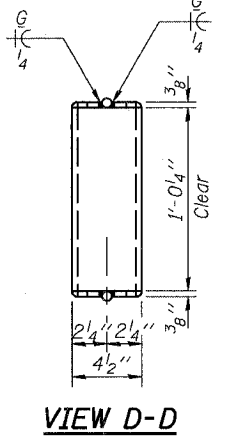


VIEW G-G
ROUND HEAD BOLT

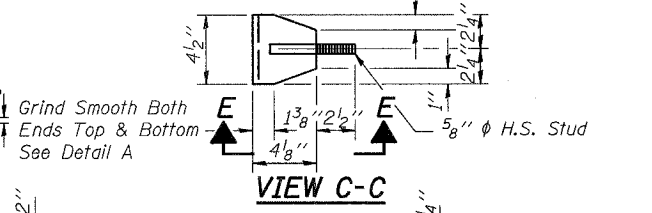
* Field verify depth of ballast below pavement surface before fabricating each rail post.



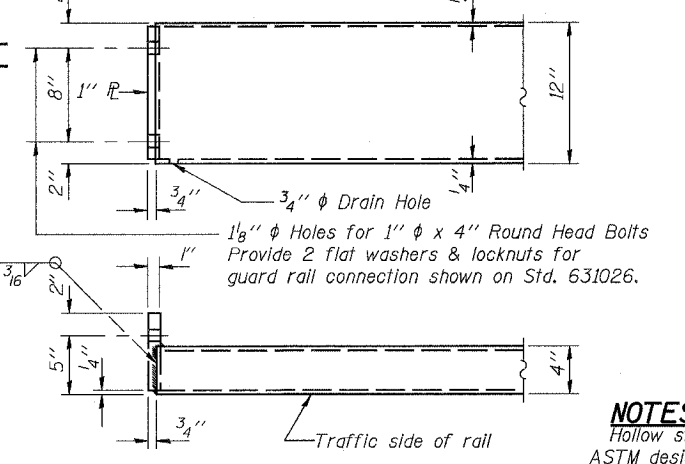
SECTION THRU BRACKET



VIEW D-D



VIEW C-C



END OF RAIL DETAILS

NOTES

Hollow structural sections shall conform to the requirements of ASTM designation A 500 Grade B Structural Steel Tubing.

All other steel shapes and plates shall conform to the requirements of AASHTO M 270 Grade 36 except posts and brackets shall conform to AASHTO M 270, Grade 50.

Bolts, cap screws, and nuts shall conform to the requirements of ASTM designation A 307 except for high strength bolts, threaded rods, studs, nuts and washers noted which shall conform to AASHTO M 164.

The bridge rail shall receive one shop coat of a steel prime paint.

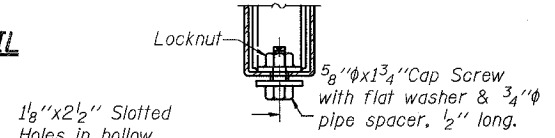
The 1" ϕ high strength bolts or threaded rods used to connect the railposts shall be ASTM A-108, 120 ksi high strength concrete anchors and shall be tightened according to Article 505.04(f)(2) of the Standard Specifications.

Temporary Bridge Rail shall be according to Section 514 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for Temporary Bridge Rail.

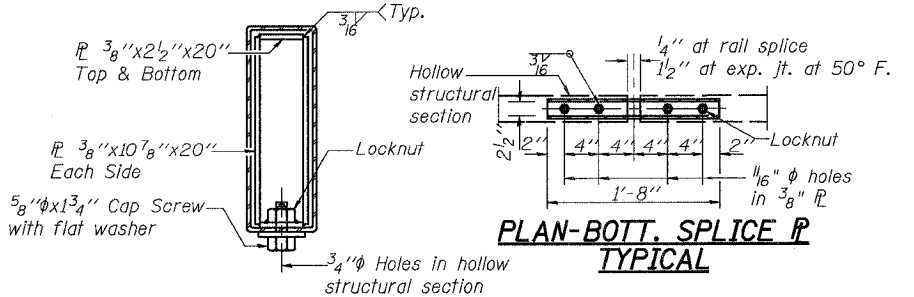
The contact surfaces between post flange, rail and inside face of bracket for Alternate 1 shall be free of all lubricants.

The nut for 5/8" ϕ high strength studs used in Alternate 1 to connect bracket to post shall be tightened to a snug fit and given an additional one half turn.

The cost of timber lagging between rail post will be considered as included in unit price for Temporary Bridge Rail.



RAIL SPLICE CONNECTION AT EXPANSION JT.



SECTION AT RAIL SPLICE

DESIGNED	EW
CHECKED	MAB
DRAWN	EW
CHECKED	MAB

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ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1

TEMPORARY BRIDGE RAIL

STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)

STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821

SCALE: DATE: 2/21/2008

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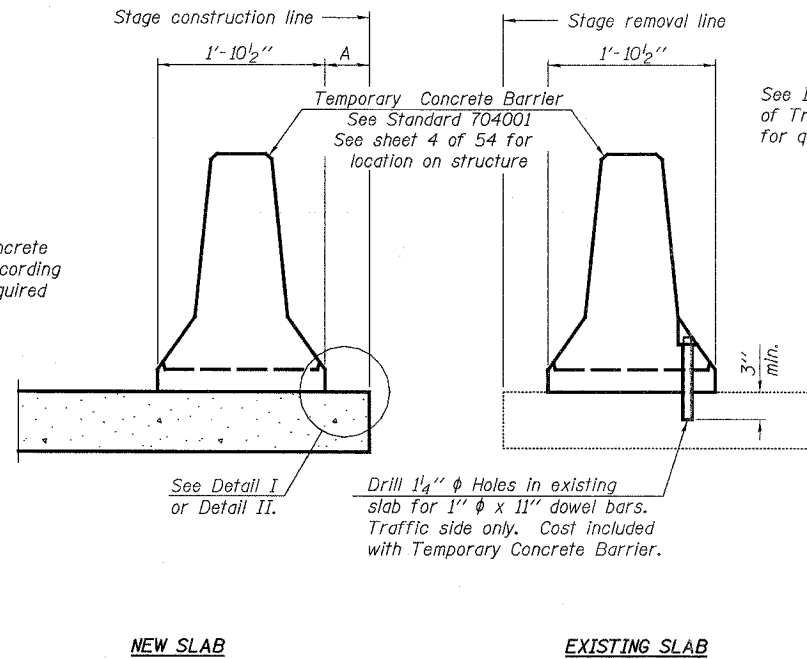
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	459
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

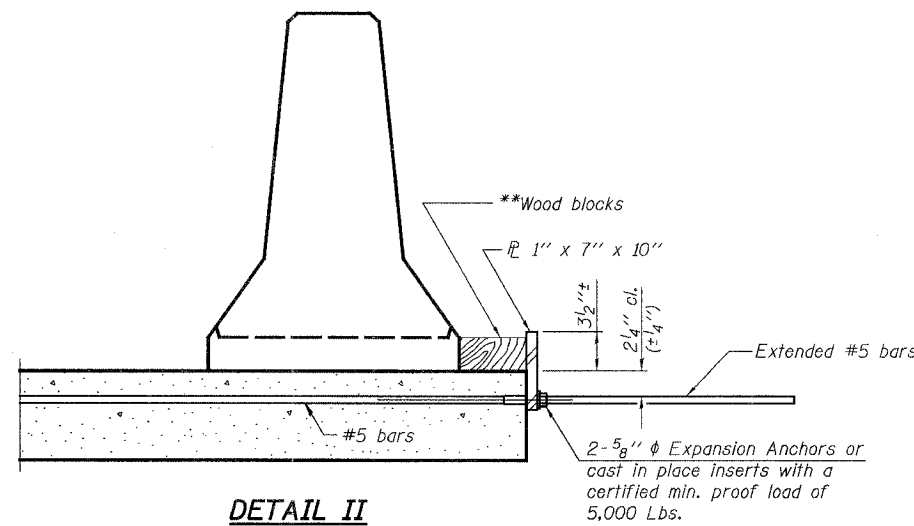
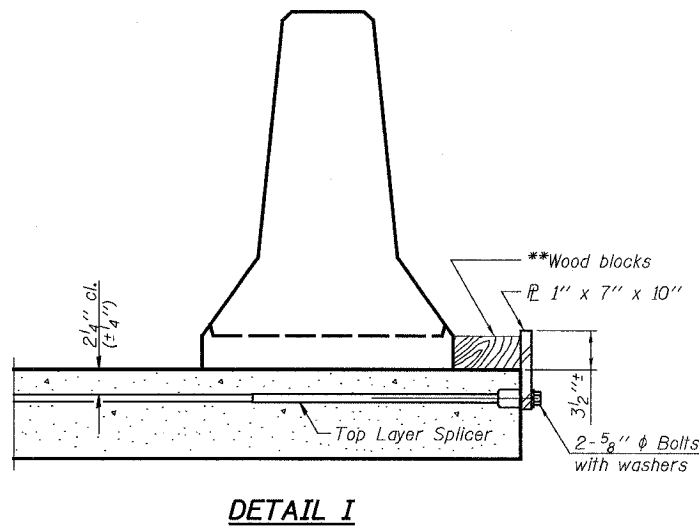
CONTRACT NO. 60E10

SHEET NO. 49
54 SHEETS

When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



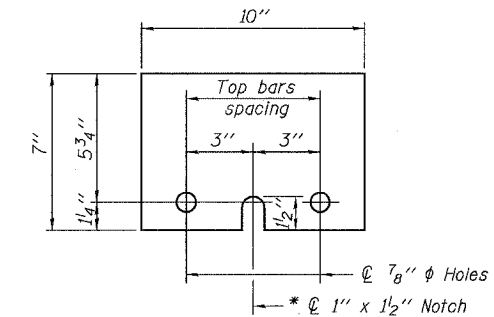
SECTIONS THRU SLAB



** Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

NOTES

- Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{P} to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.
- Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel \bar{P} to the concrete slab with 2-5/8" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{C} of each barrier panel.
- Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.



STEEL RETAINER \bar{P} 1" x 7" x 10"

* Required only with Detail II

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DESIGNED	EV
CHECKED	NPP
DRAWN	EV
CHECKED	NPP

R-27

11-1-06

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ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
& 016-2821
SCALE: DATE: 2/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	460
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT-		

SHEET NO. 50
54 SHEETS

CONTRACT NO. 60E10

Everest Engineering Company
STRUCTURE BORING LOG

Page 1 of 1
Date 6/15/01

ROUTE U.S. 6 DESCRIPTION U.S. ROUTE 6 FROM I-294 TO ILLINOIS ROUTE 1

SECT. _____ STRUCT. NO. 016-2820 DRILLED BY PATRICK DRILLING

COUNTY COOK LOCATION BEHIND NORTH ABUTMENT S. 17, TWP. 36 N, RNG. 12 E

Boring No.	D	B	Qu	W	Surface Water Elev.	D	B	Qu	W
Station	E	L	tsf	%	Groundwater Elev.:	E	L	tsf	%
Offset	P	O			when drilling	P	O		
Surface Elev.	T	W			at Completion	T	W		
	H	S			after	H	S		
<u>E-2</u>					<u>NA</u>				
<u>94+32.42</u>									
<u>51.00ft LT</u>									
<u>619.00</u> ft									
CRUSHED AGGREGATE									
618.00									
MISCELLANEOUS FILL: sand, gravel, slag, glass, wood, and cinders									
		12		10				37	9
		23						50.5"	
		17							
		14		6					
		32							
		43							
		5							
		33		7					
		28							
		20							
		7		11				17	4.5
		15						32	P
		17						50.8"	
		6		20					
		14							
		13							
FILL									
606.00									
Soft, Brown and Gray SILTY CLAY traces - sand, gravel, and topsoil									
		2	0.4	20					
		2		B					
		5							
FILL									
603.50									
Very Stiff, Gray SILTY CLAY traces - sand and gravel Rock pieces in spoon at 4.9 m									
		8							
		25							
		25							
		7	2.5	13					
		15		B					
		34							
		16		15					
		38							
		50							
		11		12					
		23							
		41							

589.25
Hard, Gray SILTY CLAY
LOAM
traces - sand and gravel

582.09
AUGER REFUSAL

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

Everest Engineering Company
STRUCTURE BORING LOG

Page 1 of 1
Date 6/22/01

ROUTE U.S. 6 DESCRIPTION U.S. ROUTE 6 FROM I-294 TO ILLINOIS ROUTE 1

SECT. _____ STRUCT. NO. 016-821 DRILLED BY PATRICK DRILLING

COUNTY COOK LOCATION BEHIND NORTH ABUTMENT S. 17, TWP. 36 N, RNG. 12 E

Boring No.	D	B	Qu	W	Surface Water Elev.	D	B	Qu	W
Station	E	L	tsf	%	Groundwater Elev.:	E	L	tsf	%
Offset	P	O			when drilling	P	O		
Surface Elev.	T	W			at Completion	T	W		
	H	S			after	H	S		
<u>E-4</u>					<u>NA</u>				
<u>95+93.18</u>									
<u>58.00ft LT</u>									
<u>621.00</u> ft									
ASPHALT									
620.75									
CRUSHED AGGREGATE									
620.20									
MISCELLANEOUS FILL: sand, gravel, slag, and cinders									
		8		15				11	7.0
		12						29	S
		10						23	
		13		10				13	7.4
		6						24	S
		14						25	
		4		12					
		2							
		4							
FILL									
613.00									
Stiff, Brown and Gray SILTY CLAY traces - sand and gravel									
		2	1.1	22				40	16
		2		B				36	
		5						32	
		2	1.5	23					
		4		B					
		5							
FILL									
607.00									
TOPSOIL									
605.50									
Very Stiff to Hard, Brown and Gray SILTY CLAY traces - sand and gravel									
		3	2.7	21				36	10
		4		B				50.5"	
		6							
		4	4.5	16					
		8		B					
		11							
		4	4.2	13					
		12		S					
		15							
		9	3.5	11					
		21		S					
		24							

589.00
Very Dense to Extremely
Dense, Gray SILTY LOAM
traces - sand and gravel

580.64
AUGER REFUSAL

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

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URS
100 South Wacker Drive,
Suite 500
Chicago, IL 60606
(312) 939-1000

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SOIL BORINGS

STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
& 016-2821
SCALE: N.T.S. DATE: 2/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	461
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 60E10

SHEET NO. 51
54 SHEETS

Everest Engineering Company
STRUCTURE BORING LOG
Page 1 of 2
Date 6/28/01

ROUTE U.S. 6 DESCRIPTION U.S. ROUTE 6 FROM I-294 TO ILLINOIS ROUTE 1
SECT. _____ STRUCT. NO. 016-2820 DRILLED BY PATRICK DRILLING
COUNTY COOK LOCATION BEHIND NORTH ABUTMENT S. 17 TWP. 36 N. R. 12 E

Boring No. E-3	D	B			Surface Water Elev. NA	D	B		
Station 95+17.72	E	L			Groundwater Elev.:	E	L		
Offset 54.00ft LT	P	O			when drilling	P	O		
Surface Elev. 621.00 ft	T	W	Qu	W	at Completion	T	W	Qu	W
	H	S	tsf	%	after Hrs.	H	S	tsf	%

ASPHALT	620.83				595.50				
CRUSHED AGGREGATE									
MISCELLANEOUS FILL: sand, gravel, slag, coal, cinders, and pieces of glass	619.50	11		7	Hard, Gray SILTY CLAY LOAM traces - sand and gravel	8	5.0	14	
		25				18	B		
		20				33			
		9		12		11	4.5	16	
		21				23	P		
		15				30			
FILL	615.50								
Medium Stiff, Brown and Gray, SILTY CLAY LOAM traces - sand and gravel		2	0.8	17					
		3	B						
		5							
		3	0.8	16	Extremely Dense, Gray SILTY LOAM traces - sand and gravel	15		13	
		3	B			50.5"			
		3							
		1	0.7	23					
		5	B						
		7							
FILL	608.00								
TOPSOIL									
Stiff, Gray and Black SILTY CLAY LOAM traces - sand, gravel, and topsoil	607.00	3	1.8	31		50.4"		11	
		4	B						
		8							
Very Stiff, Brown and Gray SILTY CLAY traces - sand and gravel	605.50	1	3.7	17	FOR ROCK CORES SEE PAGE 2				
		6	B						
		9							
		5	3.1	15					
		8	B						
		8							
Very Stiff, Gray SILTY CLAY LOAM traces - sand and gravel	600.50	6	2.9	13					
		11	B						
		14							
Dense, Gray SILTY LOAM traces - sand and gravel	598.00	10	2.9	11					
		16	B						
		20							

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

Everest Engineering Company
STRUCTURE ROCK CORING LOG
Page 2 of 2
Date 6/28/01

ROUTE U.S. 6 DESCRIPTION U.S. ROUTE 6 FROM I-294 TO ILLINOIS ROUTE 1
SECT. _____ STRUCT. NO. 016-2820 DRILLED BY PATRICK DRILLING
COUNTY COOK

Boring No. E-3 Core Type NX
Station 95+17.72 Core Diameter 2 in
Offset 54.00ft LT Core Length 20 ft

Surface Elev. 621.00 ft

Top Elev. ft	Coring Notes and Rock Description	Core Run (#)	R (%)	Q (%)	CORE (Min/ft)	COMP. (tsf)
579.17	DOLOMITE (RACINE FORMATION): Gray, massive, fine grained, hard, thick bedded	1	99	93	3.5	1175.4
						1368.1
		2	95	93	4	
		3	100	98	4	

558.50 END OF BORING

Color pictures of the cores YES
Cores will be stored for examination until DECEMBER, 2001

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CHECKED	NPP



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SOIL BORINGS
STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
& 016-2821
SCALE: DATE: 2/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	462
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

CONTRACT NO. 60E10

SHEET NO. 52
54 SHEETS

Everest Engineering Company
STRUCTURE BORING LOG
Page 1 of 2
Date 6/21/01

ROUTE U.S. 6 DESCRIPTION U.S. ROUTE 6 FROM I-294 TO ILLINOIS ROUTE 1
SECT. _____ STRUCT. NO. 016-2820 DRILLED BY PATRICK DRILLING
COUNTY COOK LOCATION BEHIND SOUTH ABUTMENT S. 17, TWP. 36 N, RNG. 12 E

Boring No. <u>E-9</u>	D	B			Surface Water Elev. <u>NA</u>	D	B		
Station <u>94+32.42</u>	E	L			Groundwater Elev.:	E	L		
Offset <u>45.00ft RT</u>	P	O			when drilling _____	P	O		
	T	W	Qu	W	at Completion _____	T	W	Qu	W
Surface Elev. <u>619.00</u> ft	H	S	tsf	%	after _____ Hrs.	H	S	tsf	%

CRUSHED AGGREGATE 618.67
MISCELLANEOUS FILL:
Black, Slag, Sand, Gravel,
and Cinders

Hard, Gray SILTY CLAY
LOAM
traces - sand and gravel

593.50

5 8
6
11

4 10
5
9

9 13
6
5

6 10
7
7

FILL 607.50
TOPSOIL 606.50

Stiff, Brown and Gray
SILTY CLAY
traces - sand and gravel

Extremely Dense, Gray,
SILTY LOAM
little - sand and gravel

3 1.7 27
4 B
11

3 1.2 26
3 B
2

FOR ROCK CORES SEE
PAGE 2

577.17

7 1.7 17
21 B
23

Dense to Very Dense,
Gray SILTY LOAM
traces - sand and gravel

598.50

17 10
28
18

15 8
28
27

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

Everest Engineering Company
STRUCTURE ROCK CORING LOG

ROUTE U.S. 6 DESCRIPTION U.S. ROUTE 6 FROM I-294 TO ILLINOIS ROUTE 1
SECT. _____ STRUCT. NO. 016-2820 DRILLED BY PATRICK DRILLING
COUNTY COOK

Boring No. E-9 Core Type NX
Station 94+32.42 Core Diameter 2 in
Offset 45.00ft RT Core Length 20 ft

Surface Elev. 619.00 ft

Top Elev. ft	Coring Notes and Rock Description	Core Run (#)	R (%)	Q (%)	CORE (Min/ft)	COMP. (tsf)
577.17	DOLOMITE (RACINE FORMATION): Light Gray to gray, massive, hard, fine grained, thin to thick bedded	1	97	48	4	1431.9
556.50	END OF BORING	2	100	100	4.5	1458.4

Color pictures of the cores YES
Cores will be stored for examination until DECEMBER, 2001

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DESIGNED	EV
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DRAWN	EV
CHECKED	NPP



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SOIL BORINGS

STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820
& 016-2821
SCALE: DATE: 2/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008- 001VB	COOK	579	463
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 53
54 SHEETS

CONTRACT NO. 60E10

Everest Engineering Company
STRUCTURE BORING LOG
Page 1 of 1
Date 6/27/01

ROUTE U.S. 6 DESCRIPTION U.S. ROUTE 6, FROM I-294 TO ILLINOIS ROUTE 1
 SECT. _____ STRUCT. NO. 016-2820 DRILLED BY PATRICK DRILLING
 COUNTY COOK LOCATION BEHIND SOUTH ABUTMENT S. 17, TWP. 36 N, RING. 12 E

Boring No. <u>E-10</u>	D	B		Surface Water Elev.	<u>NA</u>	D	B	
Station <u>95+21.00</u>	E	L		Groundwater Elev.:		E	L	
Offset <u>48.00ft RT</u>	P	O		when drilling		P	O	
	T	W	Qu	at Completion		T	W	Qu
Surface Elev. <u>620.00</u> ft	H	S	tsf	after	<u>Hrs.</u>	H	S	tsf
			W					W
			%					%

<u>ASPHALT</u> <u>CRUSHED AGGREGATE</u>	<u>619.83</u>			Hard, Gray SILTY CLAY LOAM				
	<u>618.50</u>	9		traces - sand and gravel		11	5.8	14
<u>MISCELLANEOUS FILL:</u> sand, gravel, slag, cinders, pieces of glass and wood		19				24	B	
		11				30		
				<u>592.00</u>				
		4	6	Very Dense to Extremely Dense, Gray SILTY LOAM				
		6		traces - sand and gravel		13		13
		9				22		
						504.5"		
		2	17					
		3						
		3						
		4	11					
		11				19		14
<u>FILL</u>	<u>609.50</u>	13				30		
Stiff, Brown, Gray and Black, SILTY CLAY		10				36		
traces - sand, gravel and topsoil								
<u>FILL</u>	<u>607.00</u>			<u>583.50</u>	Extremely Dense, Gray SANDY LOAM			
<u>TOPSOIL</u>		4	1.1	31	little - gravel			
Stiff to Very Stiff, Brown and Gray SILTY CLAY	<u>606.25</u>	3	B					
traces - sand and gravel		4						
		2	1.2	24				
		4	B			503"		15
		5						
		6	3.3	16				
		10	B					
		10						
					<u>577.50</u>			
		3	2.3	17	Extremely Dense, Gray SILTY LOAM			
		8	S		traces - sand and gravel			
		14				46		9
						502"		
	<u>599.50</u>				<u>574.74</u>			
Hard, Gray SILTY CLAY LOAM		5	4.0	11	AUGER REFUSAL			
traces - sand and gravel		13	S					
		21						
	<u>597.00</u>							
Extremely Dense, Gray SILTY LOAM		14		10				
traces - sand and gravel		39						
		50						
	<u>595.00</u>							

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
 Stations, Depths, Offset, and Elevations are in Feet

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DRAWN	EV
CHECKED	NPP

URS
 100 South Wacker Drive,
 Suite 500
 Chicago, IL 60606
 (312) 939-1000

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 US RTE 6 FROM I-294 TO IL RTE 1
SOIL BORINGS

STRUCTURES FOR CN INTERMODAL
 YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
 STATION 95+02.14 STRUCTURE NOS. 016-2820
 & 016-2821
 SCALE: DATE: 2/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	464
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT		

SHEET NO. 54
54 SHEETS
CONTRACT NO. 60E10

Everest Engineering Company
STRUCTURE BORING LOG

Page 1 of 2
Date 6/27/01

ROUTE U.S. 6 DESCRIPTION U.S. ROUTE 6 FROM I-294 TO ILLINOIS ROUTE 1

SECT. _____ STRUCT. NO. 016-2821 DRILLED BY PATRICK DRILLING

COUNTY COOK LOCATION BEHIND SOUTH ABUTMENT S. 17 TWP. 36 N , RNG. 12 E

Boring No. <u>E-11</u>	D	B			Surface Water Elev. <u>NA</u>	D	B		
Station <u>95+83.33</u>	E	L			Groundwater Elev.:	E	L		
Offset <u>47.00ft RT</u>	P	O			when drilling	P	O		
	T	W	Qu	W	at Completion	T	W	Qu	W
Surface Elev. <u>620.00</u> ft	H	S	tsf	%	after _____ Hrs.	H	S	tsf	%

ASPHALT	619.79								
CRUSHED AGGREGATE	619.25								
MISCELLANEOUS FILL: Sand, Gravel, Slag, Cinders, and Coal		12		6			9	6.0	15
		16					16	B	
		17					22		
		6		10			8	6.2	14
		8					15	B	
		13					26		
		16		11					
		503"							
						Extremely Dense, Gray SILTY LOAM			
		14		8		traces - sand and gravel			
		6					505"		
		5							
FILL	608.50	3	1.2	25					
Stiff, Brown and Gray CLAY		4	B						
traces - sand and gravel		7							
		2	1.3	24			502"		11
		4	B						
		7							
FILL	604.50								
TOPSOIL	603.50	4	3.0	18					
Very Stiff, Brown and Gray SILTY CLAY		8	S						
traces - sand and gravel		9							
		4	3.1	16			505"		11
		7	B						
		10							
Hard, Gray SILTY CLAY LOAM	599.50	5	4.7	13					
traces - sand and gravel		8	B						
		12				FOR ROCK CORES SEE PAGE 2			
		6	4.5	10					
		30	P						
		46							

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

Everest Engineering Company
STRUCTURE ROCK CORING LOG

Page 2 of 2
Date 6/27/01

ROUTE U.S. 6 DESCRIPTION U.S. ROUTE 6 FROM I-294 TO ILLINOIS ROUTE 1

SECT. _____ STRUCT. NO. 016-2821 DRILLED BY PATRICK DRILLING

COUNTY COOK

Boring No. E-11 Core Type NX

Station 95+83.33 Core Diameter 2 in

Offset 47.00ft RT Core Length 20 ft

Surface Elev. 620.00 ft

Top Elev. ft	Coring Notes and Rock Description	Core Run (#)	R R		CORE (Min/ft)	COMP. S T R R E G T H
			(%)	(%)		
573.26	DOLOMITE (RACINE FORMATION): Light gray to gray, massive, hard, fine grained, thick bedded	1	90	90	5	1353.5
-50.0						
-55.0		2	98	92	5	1538.1
-60.0						
-65.0		3	99	99	4.5	
552.50	END OF BORING					

Color pictures of the cores YES

Cores will be stored for examination until DECEMBER, 2001

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DESIGNED EV
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CHECKED NPP

URS 100 South Wacker Drive,
Suite 500
Chicago, IL 60606
(312) 939-1000

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SOIL BORINGS

STRUCTURES FOR CN INTERMODAL
YARD VEHICLES OVER U.S. RTE. 6 (159TH STREET)
STATION 95+02.14 STRUCTURE NOS. 016-2820 & 016-2821
SCALE: N.T.S. DATE: 2/21/2008

EXISTING STRUCTURE:

Existing structure is a 306'± wide combination railroad and intermodal yard grade separation structure over 159th Street (U.S. 6). The structure consists of 4 cast-in-place reinforced concrete slab spans supported by gravity abutments, and three reinforced concrete piers. This structure will be replaced by two separate railroad bridges and two bridges for intermodal truck traffic. The existing Structure No. is 016-0385 and was built in 1925.

Staged construction will be used to maintain rail traffic & utility service. The roadway below will be closed during construction.

Limited portion of existing south abutment will be kept. Remainder of existing structure to be removed.

BENCHMARK:

B.M. #53 - "X" cut on the Southeastery corner of the Railroad bridge pier in the centerline of 159th Street at the east face of the bridge approximately 98'-5" West of Center Street. Elev. 603.25.

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

CLASSIFICATION

CN on Bridge - Intermodal Yard Lead for Class I Railroad

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coeff. (A) = 0.04g
Site Coefficient (S) = 1.0

DESIGN SPECIFICATIONS

American Railway Engineering & Maintenance-of-Way Association (AREMA) Manual for Railway Engineering, 2004. CN Guidelines (June 2003)

LOADING

Superstructure-Cooper E80 Live Load plus Impact for equipment with hammer blow. Substructure-Cooper E-90 Loading without impact as stipulated by AREMA. Service Load Design

Allow for future addition of 12" ballast.

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 P.S.I. (For Substructure)
f'c = 5,000 P.S.I. (For Concrete Deck)
fy = 60,000 P.S.I. (Reinforcement)
fy = 50,000 P.S.I. (Struct.) (ASTM A709 Grade 50)
fy = 36,000 P.S.I. (Struct.) (ASTM A709 Grade 36)

CURVE DATA

(Temporary Run-around Track)

Curve 2
P.I. Sta. 799+00.49
Δ = 2° 10' 31" (LT)
D = 9° 00' 00"
T = 12.10'
R = 637.27'
L = 24.17'
E = 0.11'
S.E. = 1'5"
S.L. = 10'
T.S. Sta. 797+87.39
S.C. Sta. 798+88.39
C.S. Sta. 799+12.56
S.T. Sta. 800+13.56

APPROVED

FOR STRUCTURAL ADEQUACY ONLY

Robert E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

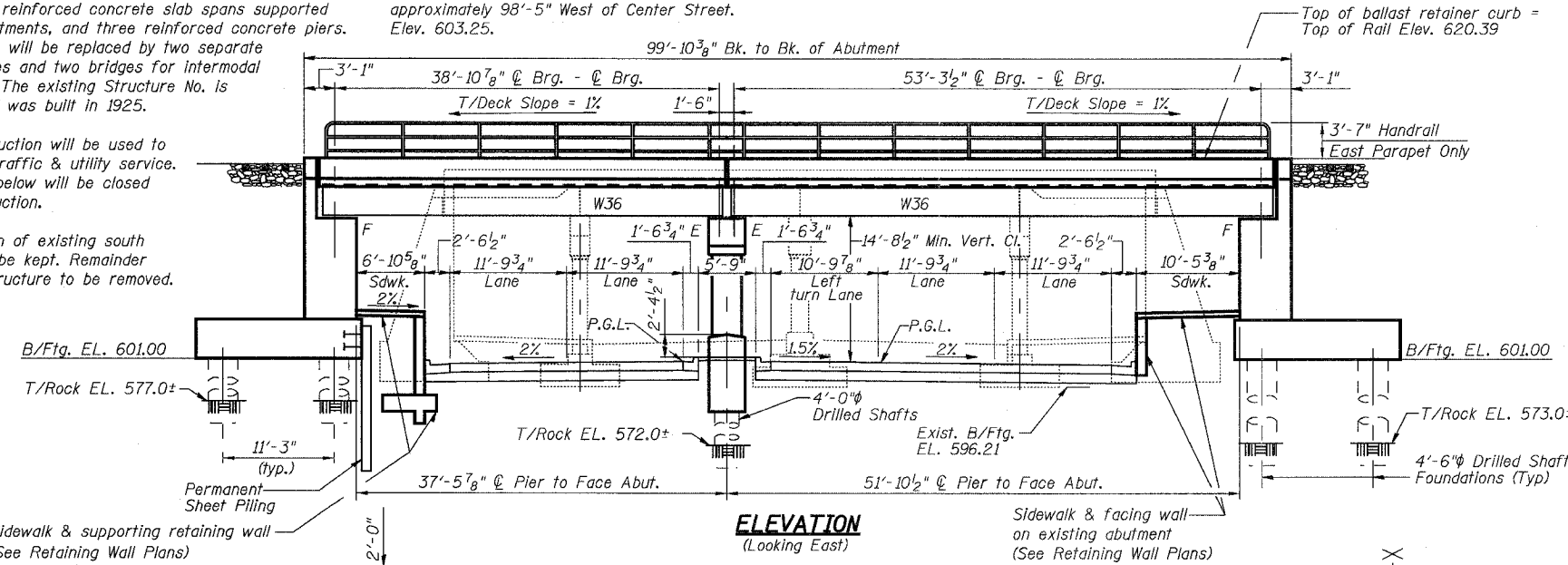


Jeffrey P. Bucholtz
JEFFREY P. BUCHOLTZ, SE
LICENSE NO. 081-005605
EXPIRES 11/30/2008
DATE: 03-14-2008

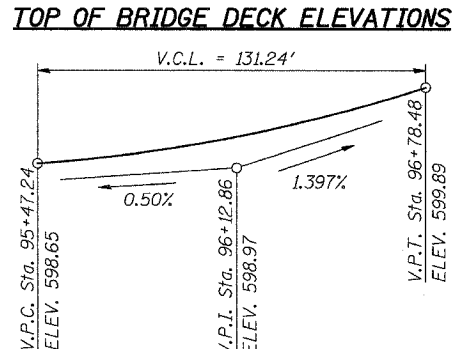
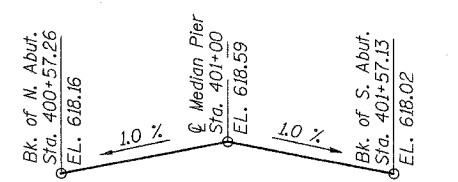
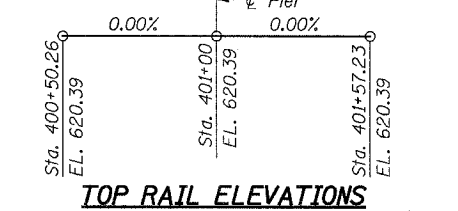
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	465

CONTRACT NO. 60E10

SHEET NO. 1
26 SHEETS



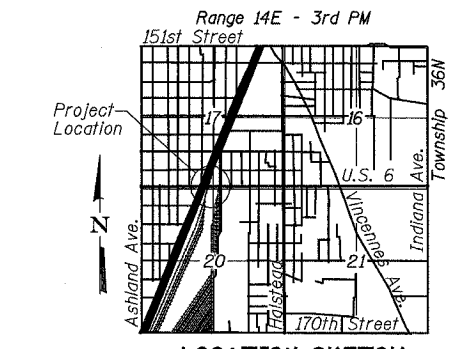
ELEVATION
(Looking East)



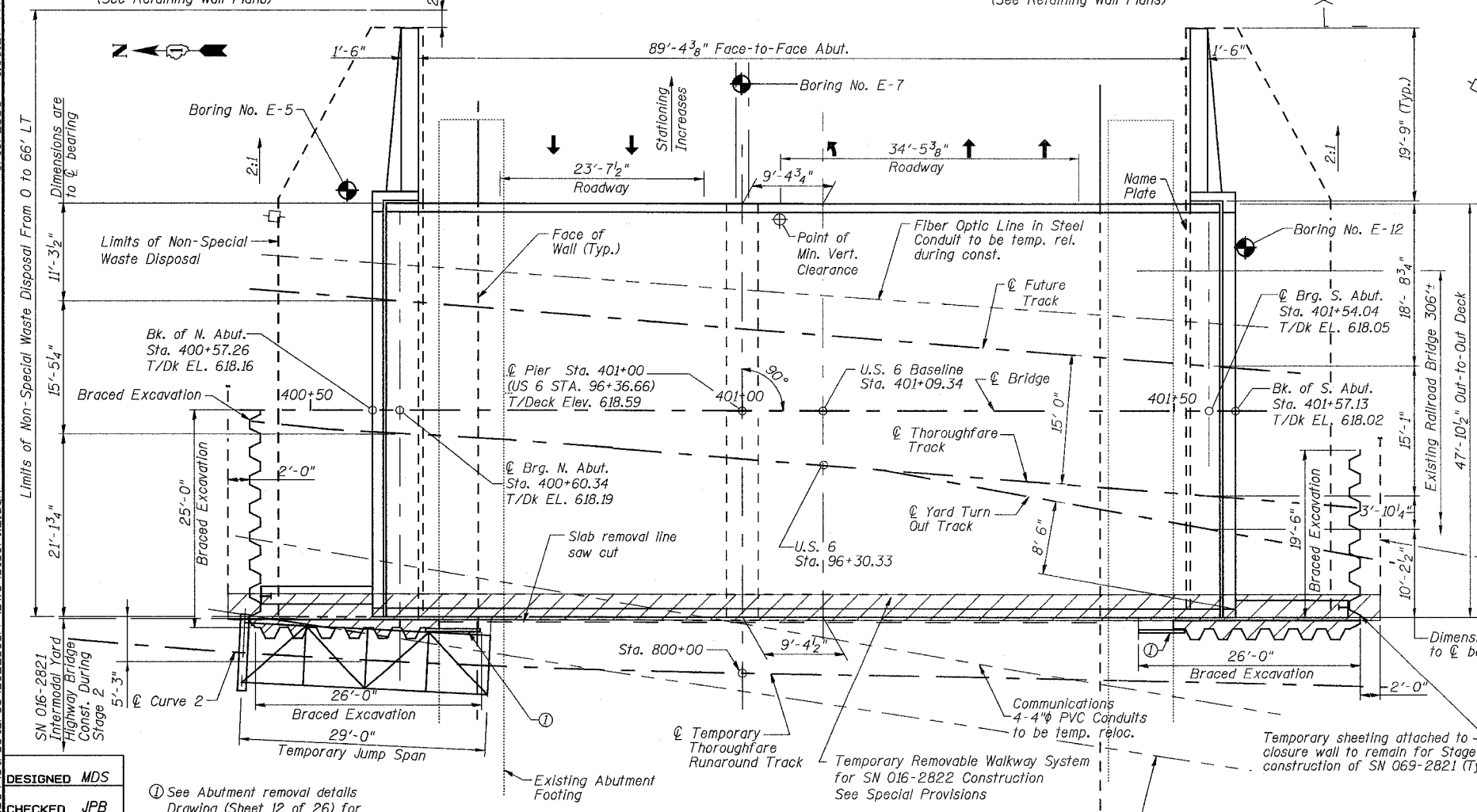
PROFILE GRADE U.S. RTE. 6
(Proposed)

CN
BUILT 2009 BY
STATE OF ILLINOIS
F.A.P. RT. 351 SEC. 327TR
STA. 96+36.66 LOADING COOPER E-90
STR. NO. 016-2822

NAME PLATE
(See Std. 515001)



LOCATION SKETCH



PLAN

DESIGNED MDS
CHECKED JPB
DRAWN MDS
CHECKED JPB

① See Abutment removal details Drawing (Sheet 12 of 26) for General Configuration of sloped back of existing Abutments and Footing.

Note: No deck drains will be permitted on the bridge, slope the 1/2" deck 1% from @ pier to abutments and drain behind backwall.

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ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
GENERAL PLAN & ELEVATION

CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 96+36.66 STRUCTURE NO. 016-2822
SCALE: 1/8"=1'-0" DATE: 2/21/2008

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008- 001VB	COOK	579	466
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

CONTRACT NO. 60E10

SHEET NO. 2
26 SHEETS

GENERAL NOTES

Fasteners shall be high strength bolts. Bolts $\frac{7}{8}$ " ϕ ,
open holes $\frac{5}{16}$ " ϕ , unless otherwise noted.

Calculated weight of M270 Gr. 36 (ASTM A709 Gr. 36) Structural Steel = 124,910 Pounds.

Calculated weight of M270 Gr. 50 (ASTM A709 Gr. 50) Structural Steel = 488,830 Pounds.

Field welding of construction accessories will not be permitted to beams or girders.

Anchor bolts shall be set before bolting diaphragms over supports.

The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the wide flange beams.

Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-322 Grade 60.

All Construction joints shall be bonded.

The back face of closed abutments and their wingwalls shall be waterproofed according to Article 503.1B of the Standard Specifications.

Concrete Sealer shall be applied to the seat area of the abutments and pier.

Reinforcement bars designated (E) shall be epoxy coated.

The organic zinc rich primer/epoxy/urethane paint system shall be used for painting of new structural steel except where otherwise noted. The entire system shall be shop applied, with exception that masked off connection surfaces, field installed fasteners and damaged areas shall be touched up in the field. The color of the final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be reddish brown, Munsell No. 2.5YR 3/4. See Special Provision for "Cleaning and Painting New Metal Structures".

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field 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 the 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 provide all calculations required for Braced Excavation. See Special Provision for BRACED EXCAVATION.

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	GENERAL PLAN AND ELEVATION
2	GENERAL NOTES, INDEX OF SHEETS & TOTAL BILL OF MATERIAL
3	TEMPORARY JUMP SPAN PLAN, ELEVATION & DETAILS
4	TEMPORARY JUMP SPAN DETAILS
5	SUBSTRUCTURE LAYOUT
6	SUPERSTRUCTURE
7	JOINT DETAILS
8	HANDRAIL DETAILS
9	FRAMING PLAN
10	BEAM DETAILS
11	BEARING DETAILS
12	CONCRETE DECK REMOVAL DETAILS
13-17	NORTH ABUTMENT
18-22	SOUTH ABUTMENT
23	PIER
24-26	SOIL BORINGS

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Cu. Yd.		756	756
Structure Excavation	Cu. Yd.		1171.9	1171.9
Concrete Structures	Cu. Yd.		647.2	647.2
Concrete Superstructure	Cu. Yd.	158.0		158.0
Furnishing and Erecting Structural Steel	L Sum	0.27		0.27
Reinforcement Bars	Pound	22,260		22,260
Reinforcement Bars, Epoxy Coated	Pound	23,420	169,070	192,490
Pipe Handrail, Special	Foot	142		142
Name Plates	Each		1	1
Anchor Bolts, 1 1/4"	Each		136	136
Membrane Waterproofing (Special)	Sq. Ft.	5,422		5,422
Concrete Sealer	Sq. Ft.		600	600
Geocomposite Wall Drain	Sq. Yd.		162.5	162.5
Non-Special Waste Disposal	Cu. Yd.		1954.4	1954.4
Braced Excavation	Cu. Yd.		814.2	814.2
Drilled Shaft in Soil	Cu. Yd.		435	435
Drilled Shaft in Rock	Cu. Yd.		39	39
Permanent Steel Sheet Piling	Sq. Ft.		1,036	1,036
Temporary Jump Span	L Sum	1		1
Bridge Deck Tie Support System	L Sum	1		1
Temporary Removable Walkway System for SN 016-2819 Construction	L Sum	1		1

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CHECKED	JPB

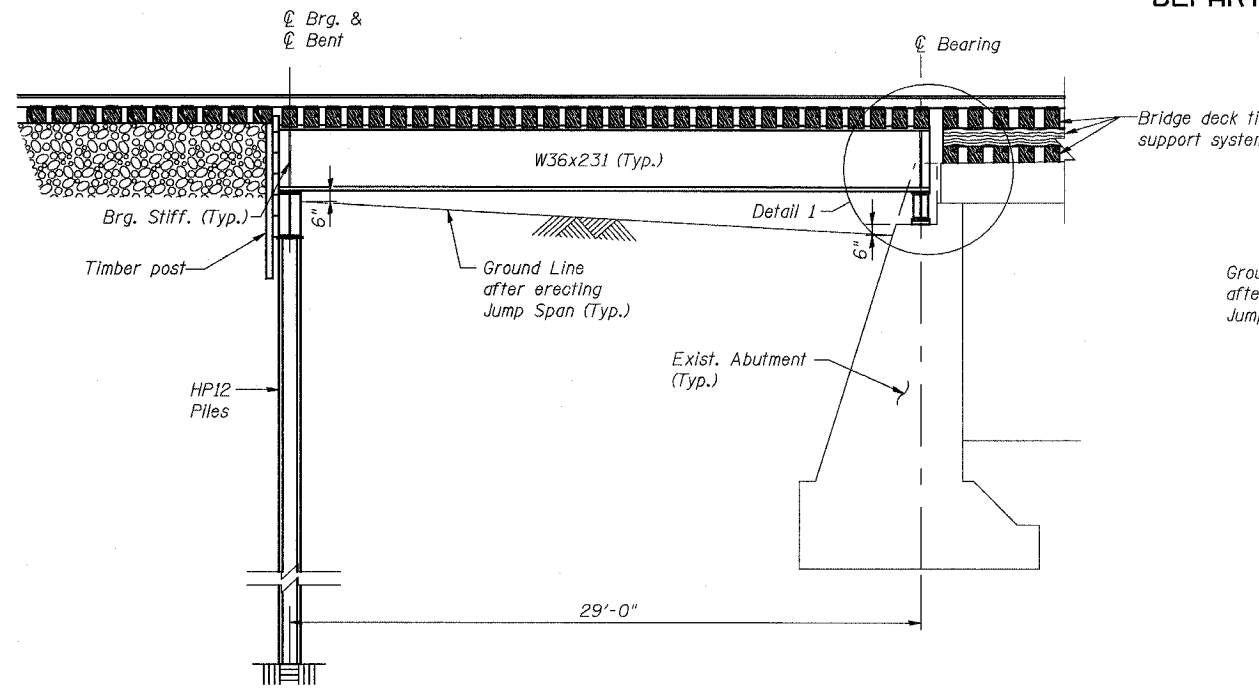
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NAME	DATE	



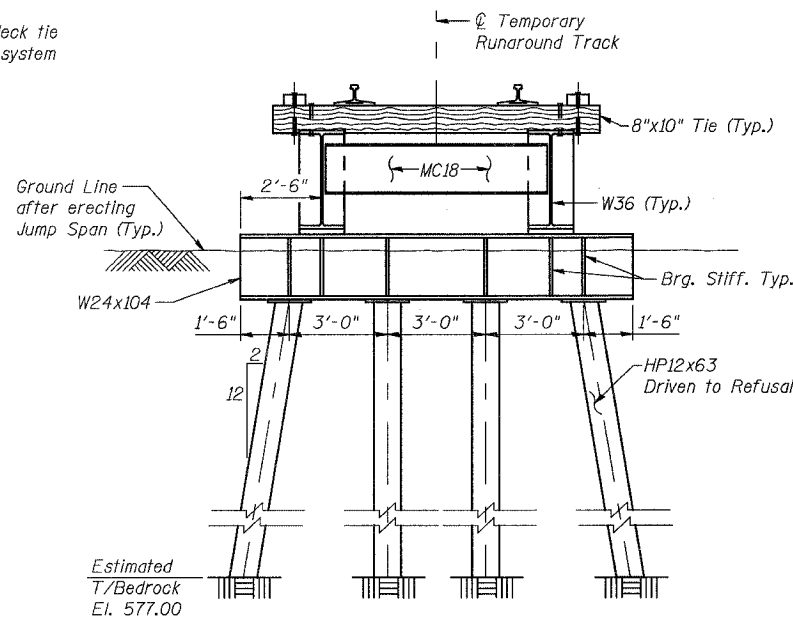
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	467
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60E10				

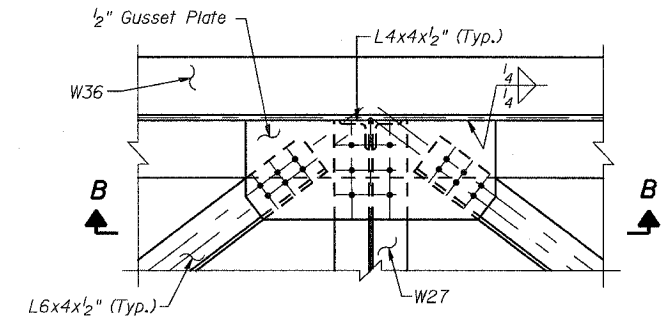
SHEET NO. 3
26 SHEETS



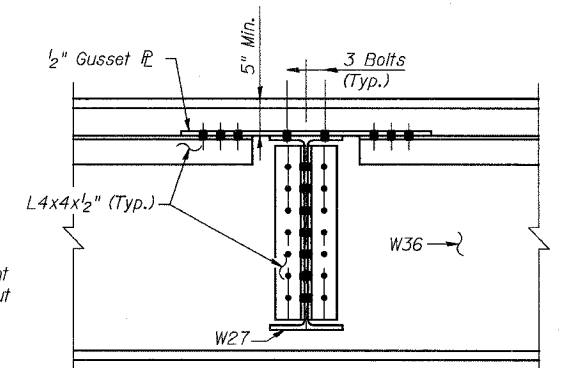
ELEVATION



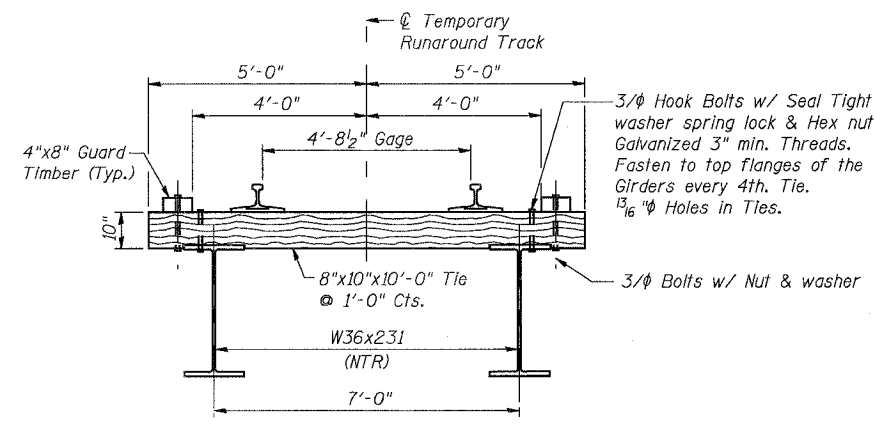
SECTION A-A



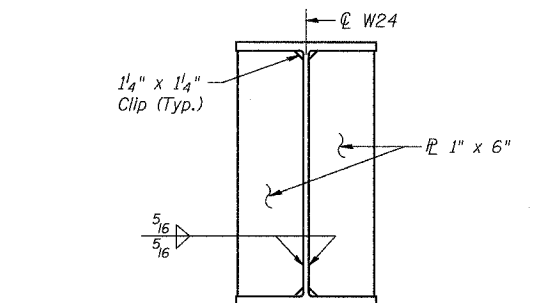
DETAIL 3
DETAIL 4 - SIMILAR
(Detail 4 - Omit Lateral Bracing and Gusset Pl.)



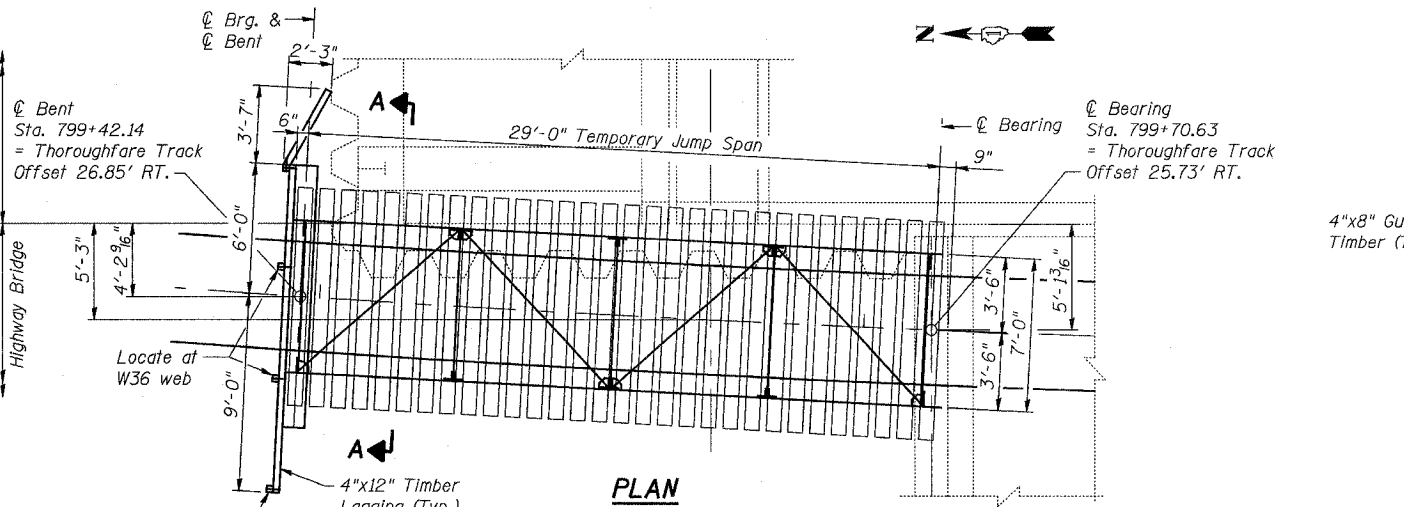
SECTION B-B



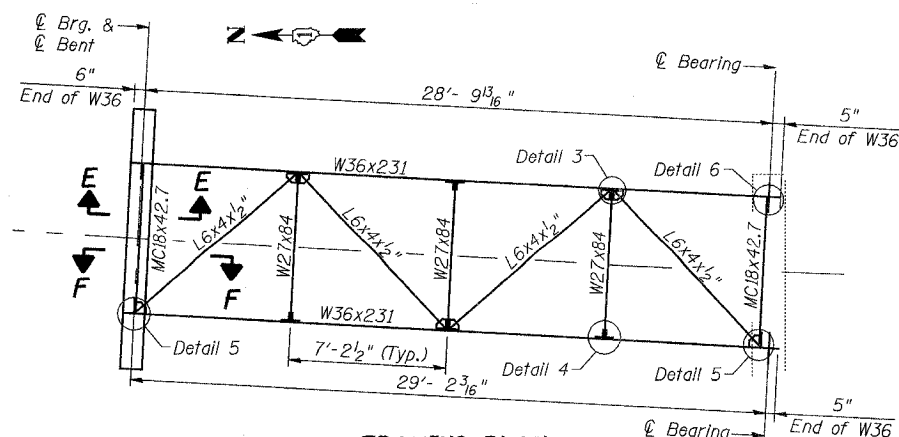
TYPICAL SECTION THRU
TEMPORARY JUMP SPAN
(Looking South)



BEARING STIFFENER DETAIL
(At W24)



PLAN



FRAMING PLAN

NOTES:

- For Sections E-E, F-F and Details 5 & 6, see Sheet 4.
- For Detail 1, see Sheet 4.
- Steel H Piles shall be according to AASHTO M270 Grade 50.
- All Steel shall be AASHTO M270 Grade 50.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
**TEMP. JUMP SPAN PLAN,
ELEVATION & DETAILS**
CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STRUCTURE NO. 016-2822
SCALE: N.T.S. DATE: 2/21/2008

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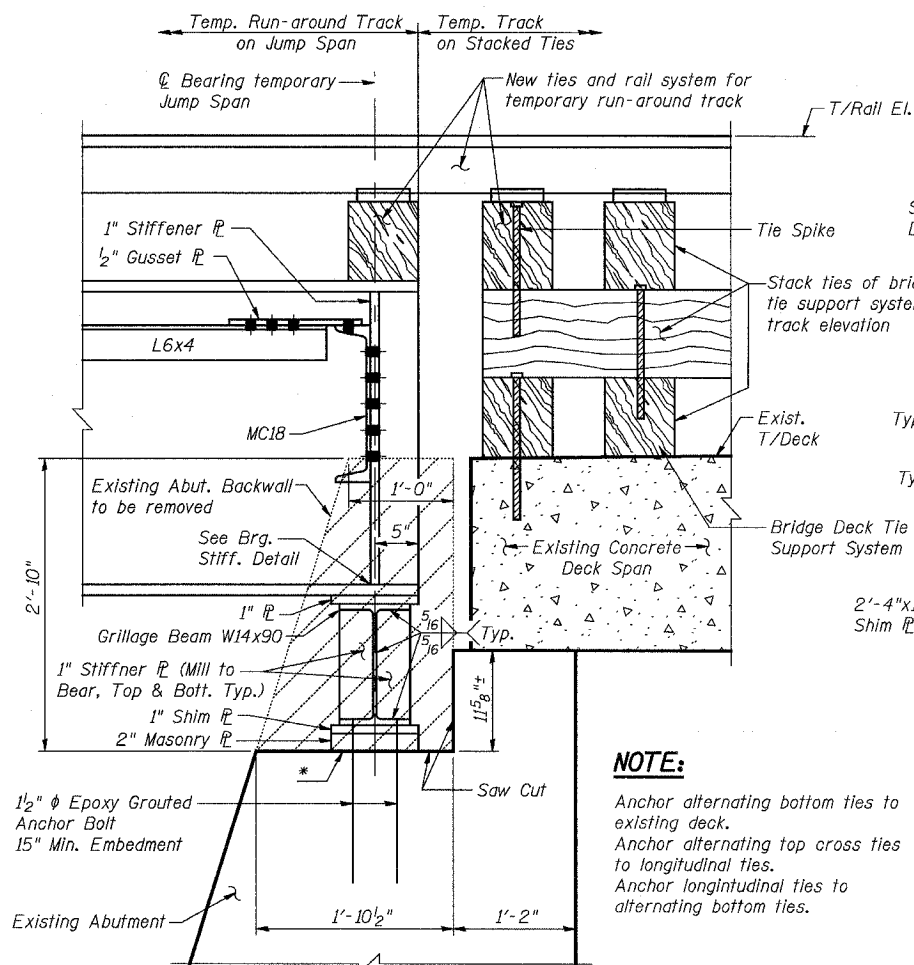
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-	CONTRACT NO. 60E10	

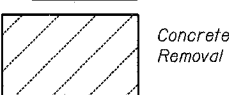
SHEET NO. 4
26 SHEETS



NOTE:

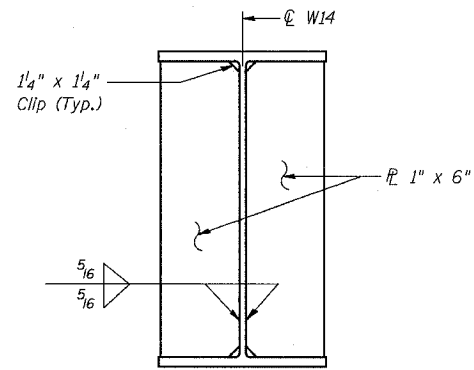
Anchor alternating bottom ties to existing deck.
Anchor alternating top cross ties to longitudinal ties.
Anchor longitudinal ties to alternating bottom ties.

LEGEND:

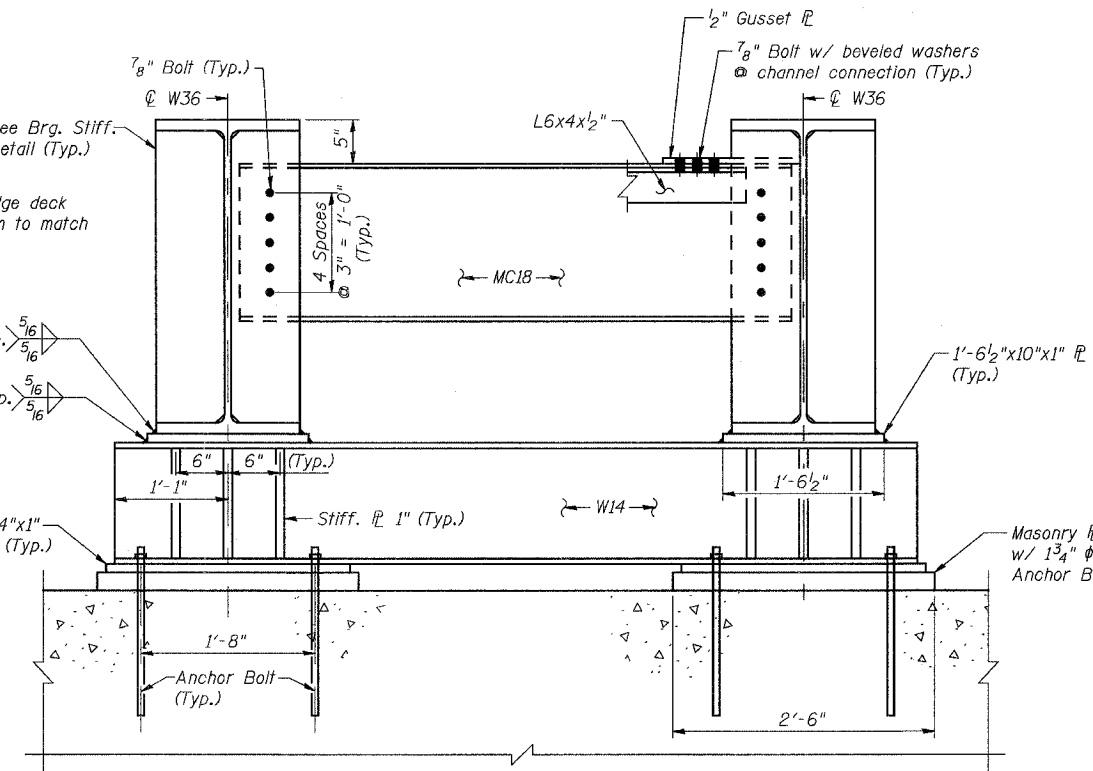


DETAIL 1 SECTION C-C

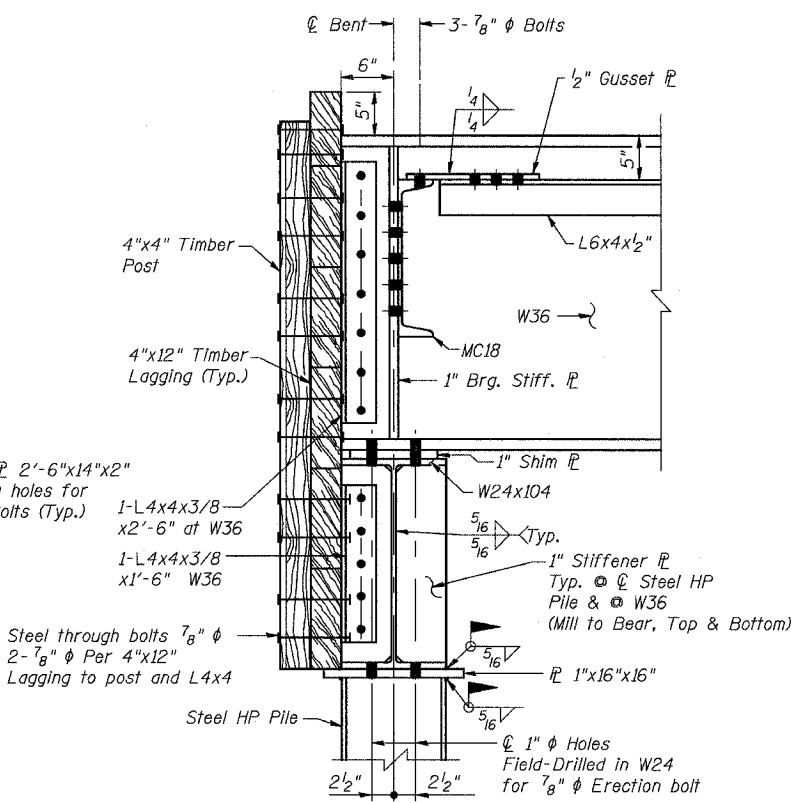
* Contractor to undercut 1/4" and provide a Grout leveling Pad.



BEARING STIFFENER DETAIL
(At W14)

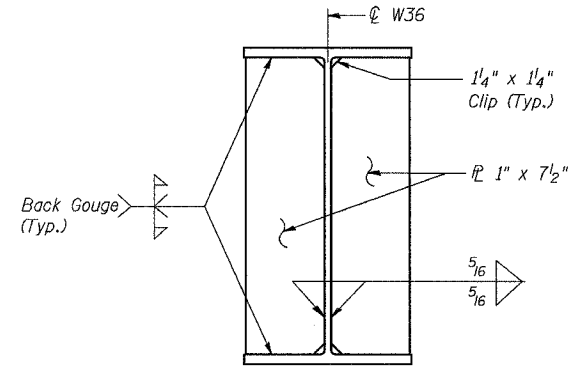


SECTION D-D

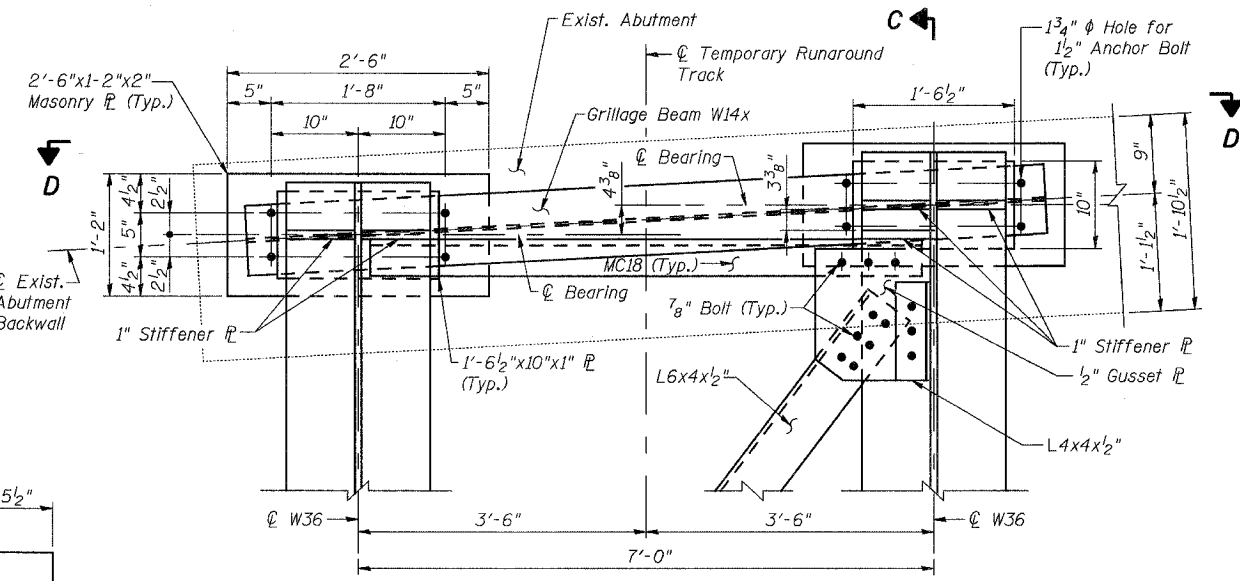


SECTION E-E

SECTION F-F SIMILAR AND OPP. HAND
(Section E-E - Omit Cross Bracing and Gusset PL)

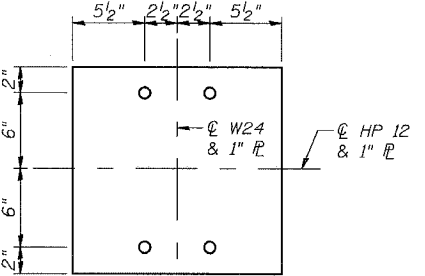


BEARING STIFFENER DETAIL
(At W36)



DETAIL 6

DETAIL 5



PILE CAP PLATE DETAIL

NOTES:

- For Sections E-E, F-F and Details 5 & 6, See Sheet 3.
- For Detail 1 location, see Sheet 3.



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
TEMP. JUMP SPAN DETAILS

CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STRUCTURE NO. 016-2822
SCALE: N.T.S. DATE: 2/21/2008

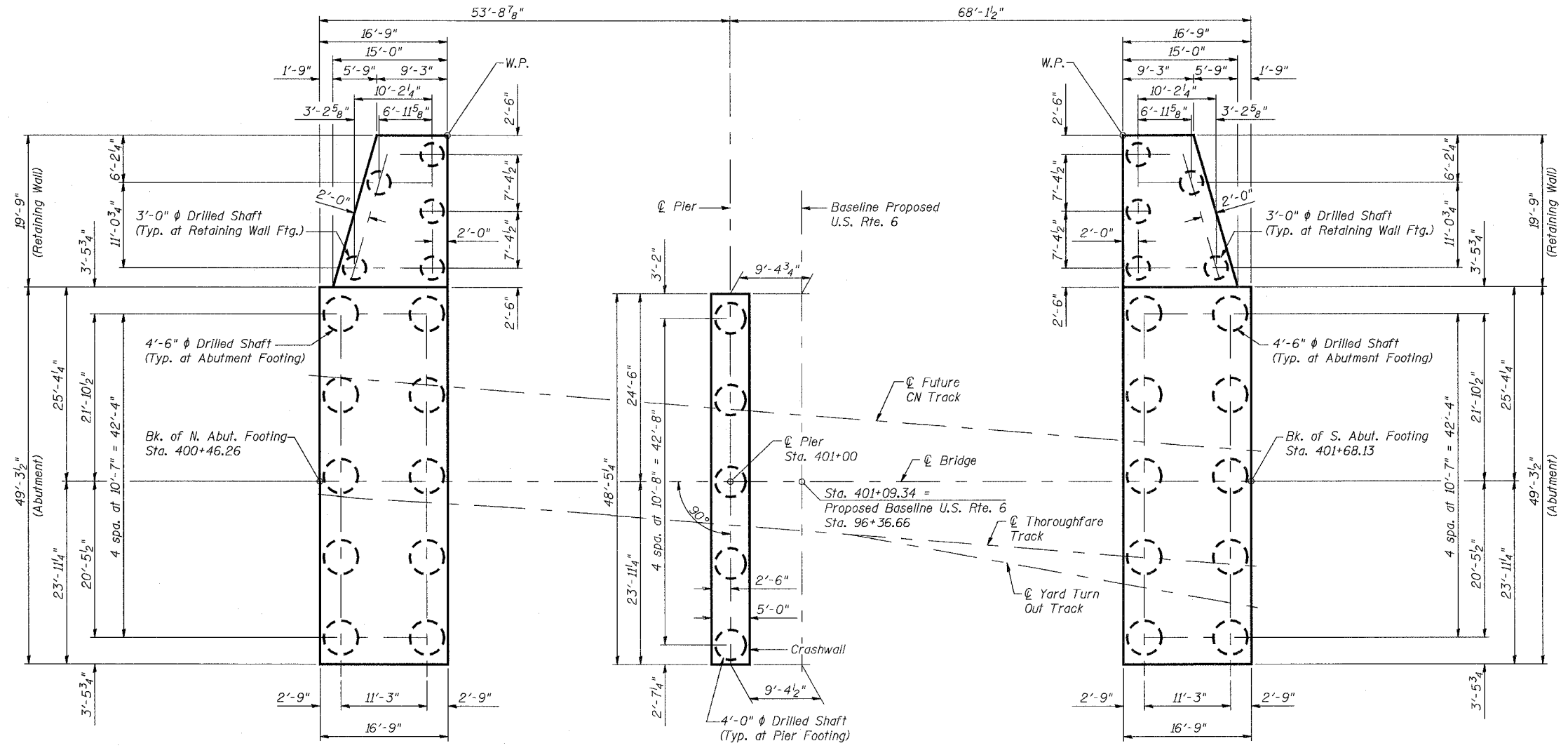
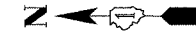
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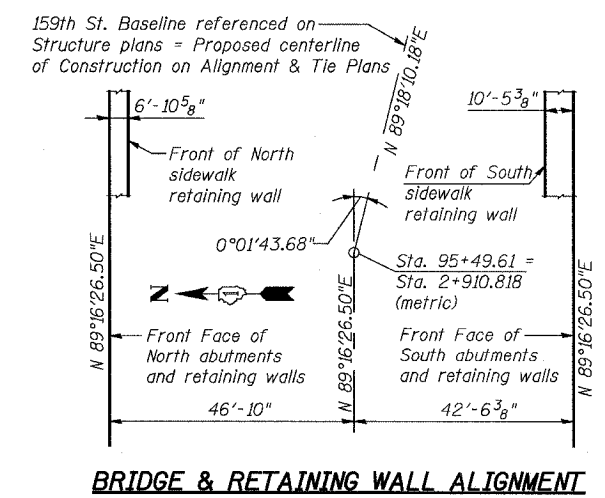
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	469
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

SHEET NO. 5
26 SHEETS



PLAN



BRIDGE & RETAINING WALL ALIGNMENT

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SUBSTRUCTURE LAYOUT

CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 96+36.66 STRUCTURE NO. 016-2822
SCALE: 1/8" = 1'-0" DATE: 2/21/2008

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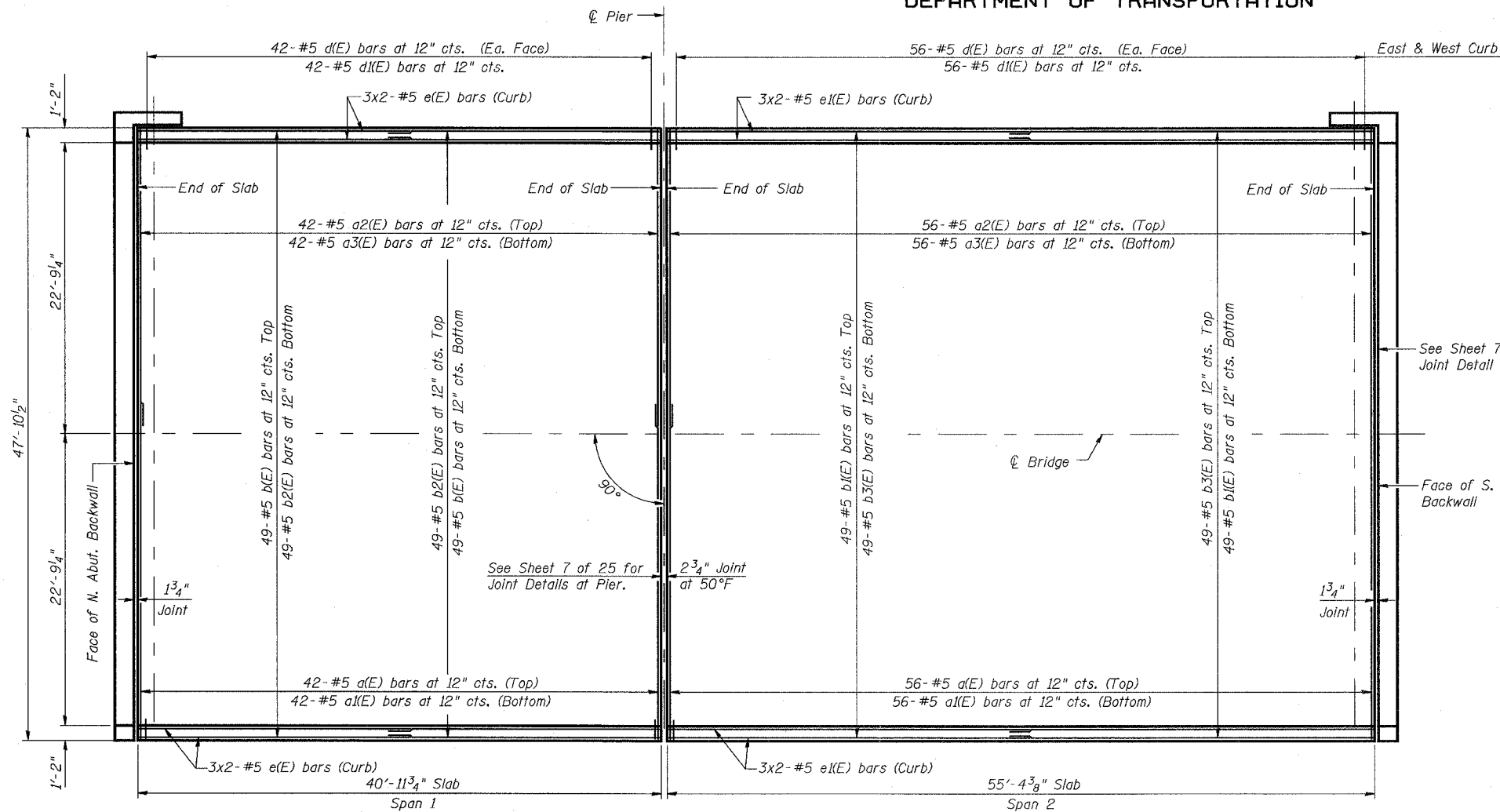
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

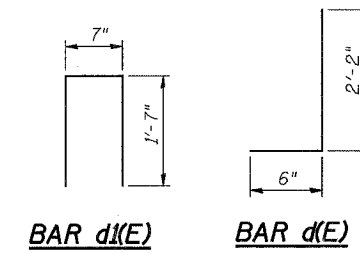
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	470
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

CONTRACT NO. 60E10

SHEET NO. 6
26 SHEETS



PLAN

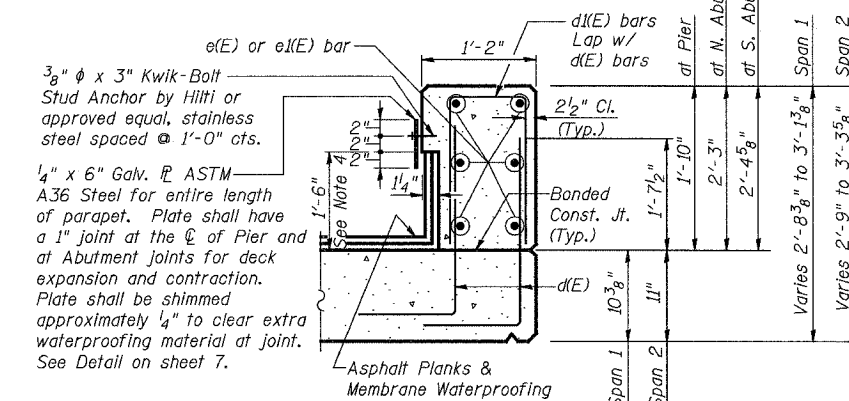


DETAIL 2

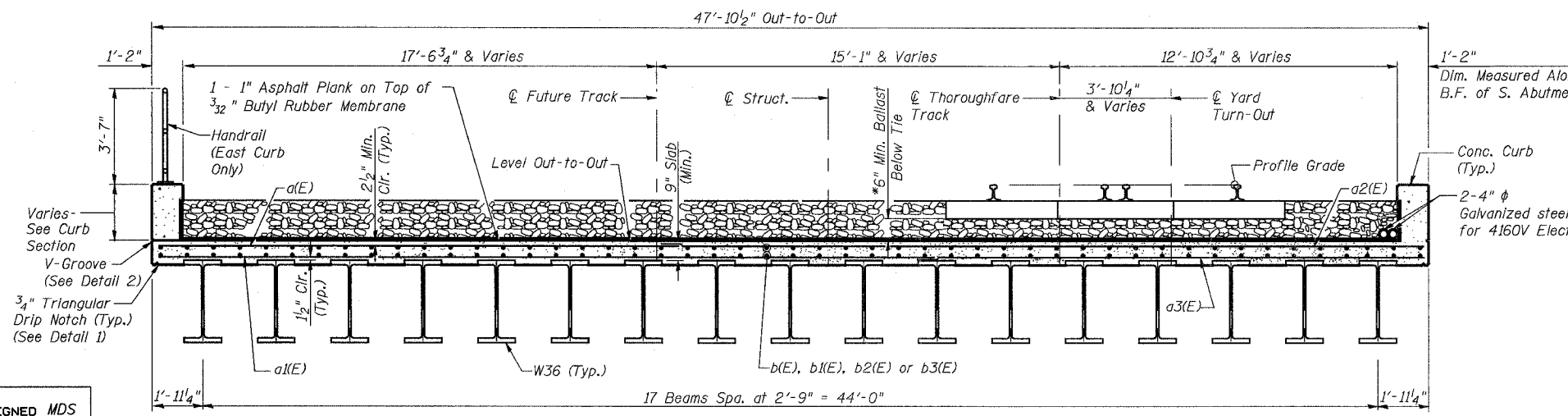
DETAIL 1

SUPERSTRUCTURE
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	98	#5	28'-11"	—
a1(E)	98	#5	19'-4"	—
a2(E)	98	#5	20'-8"	—
a3(E)	98	#5	30'-3"	—
b(E)	98	#5	15'-4"	—
b1(E)	98	#5	35'-0"	—
b2(E)	98	#5	27'-3"	—
b3(E)	98	#5	22'-0"	—
d(E)	392	#5	2'-8"	J
d1(E)	196	#5	3'-9"	□
e(E)	24	#5	21'-4"	—
e1(E)	24	#5	28'-6"	—
Concrete Superstructure			Cu. Yd.	158.0
Reinforcement Bars, Epoxy Coated			Pound	23,420
Membrane Waterproofing (Special)			Sq. Ft.	5,422



CURB SECTION



CROSS SECTION
(Looking South)

- Notes:
1. Reinforcement bars designated (E) shall be Epoxy Coated.
 2. Min. bar lap for a #5 bar shall be 2'-0".
 3. For Handrail Details see Sheet 8 of 25.
 4. Blockout for 3/32" Butyl Rubber Membrane and 2-1/2" Asphalt Planks.
 5. See Sheet 7 of 25 for Membrane Waterproofing Details at Joints.
 6. All exposed edges shall have 3/4" chamfer, except as noted.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SUPERSTRUCTURE
CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 96+36.66 STRUCTURE NO. 016-2822
SCALE: 3/16"=1'-0" DATE: 2/21/2008

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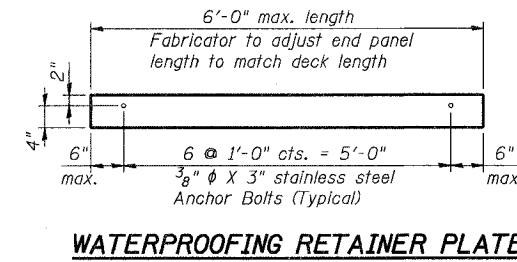
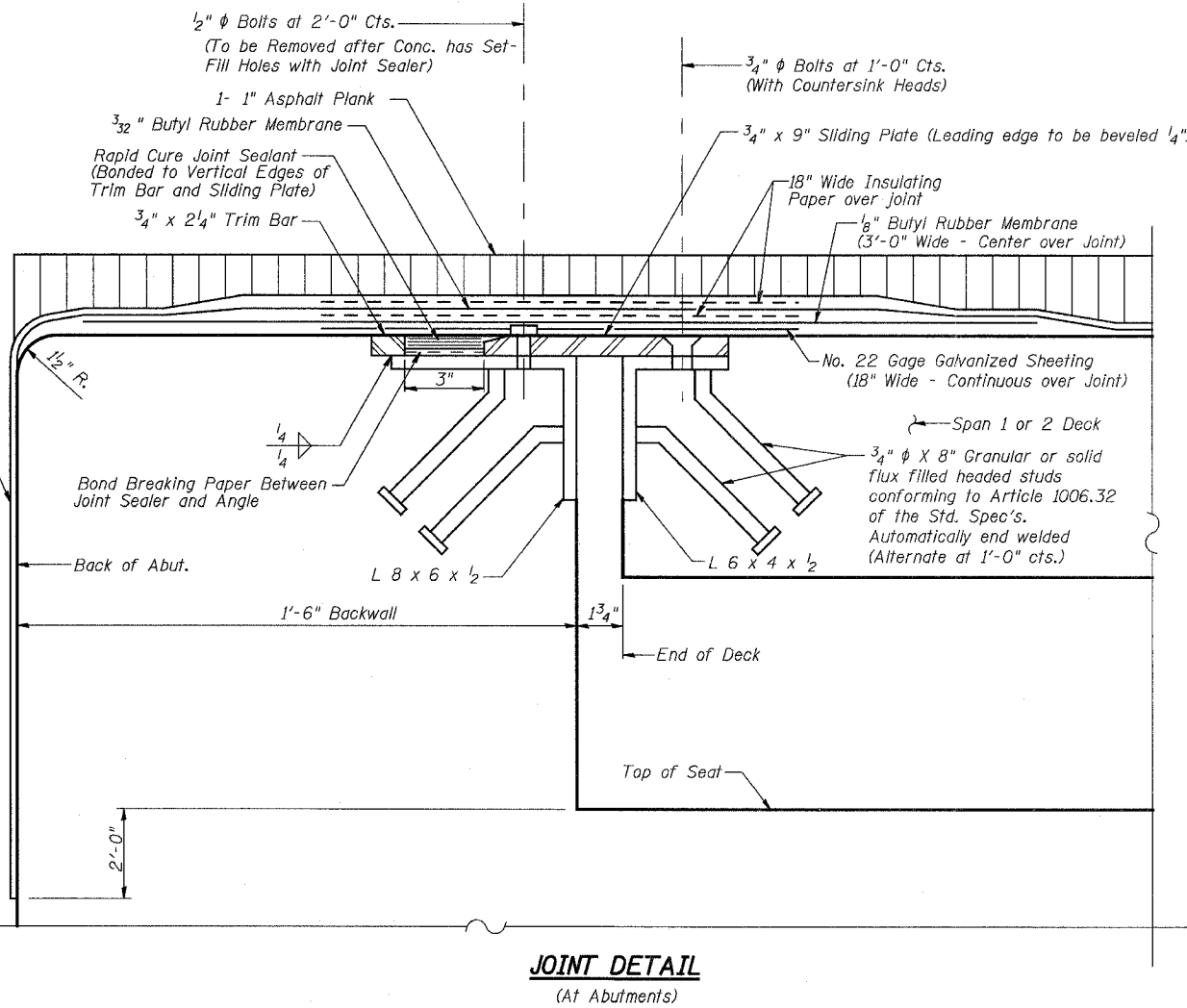
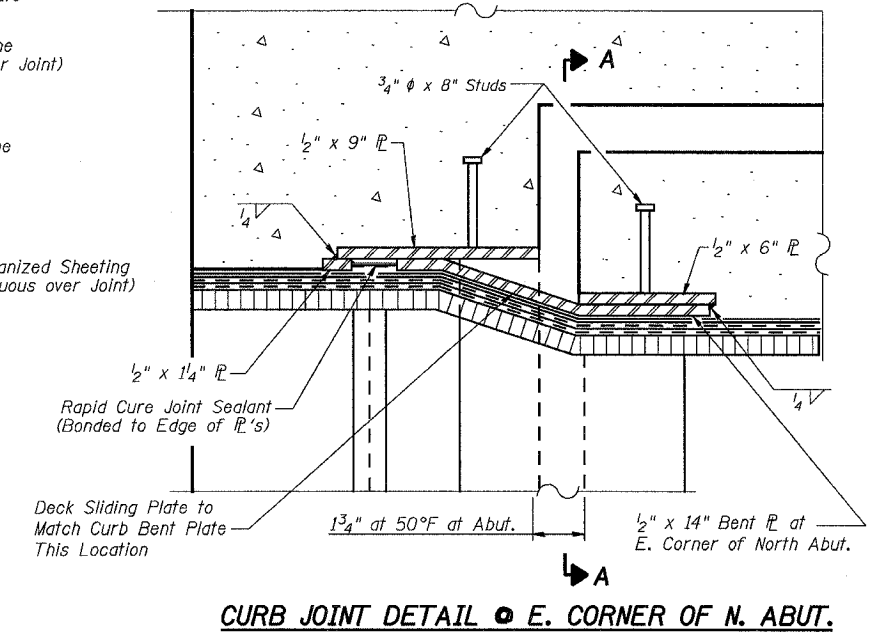
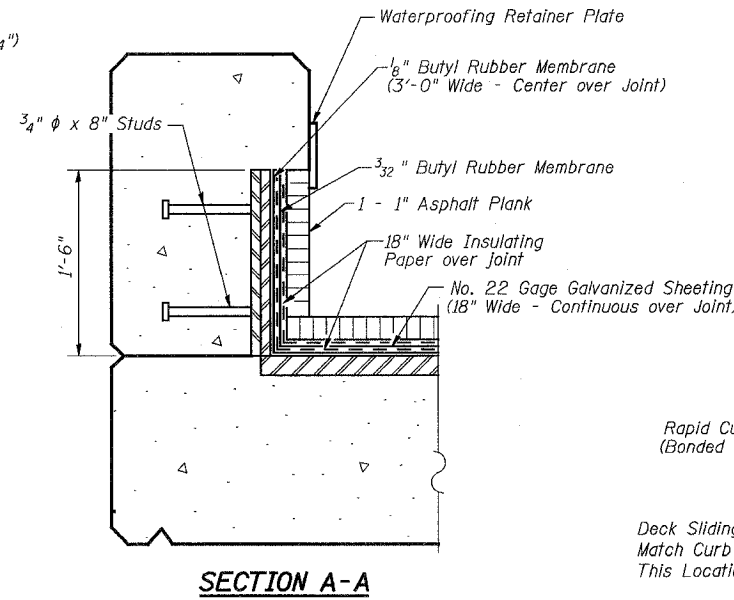
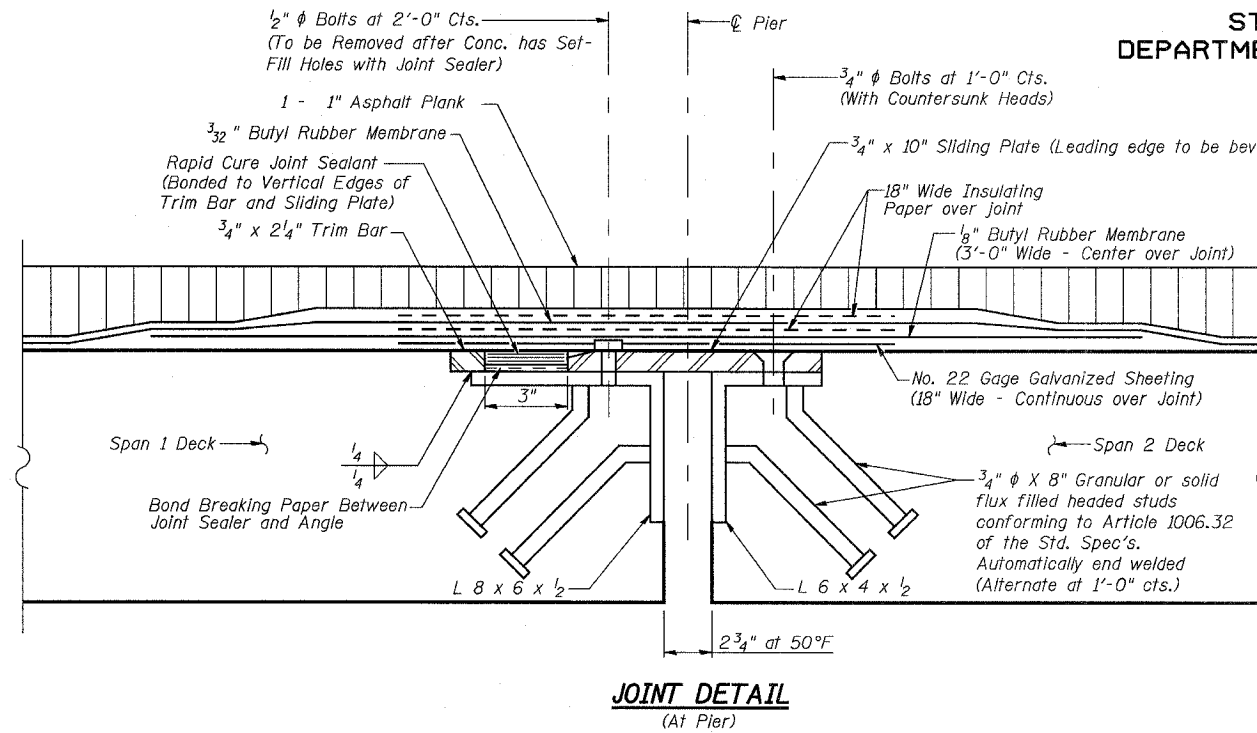
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DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	471
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

CONTRACT NO. 60E10

SHEET NO. 7
26 SHEETS



Notes:

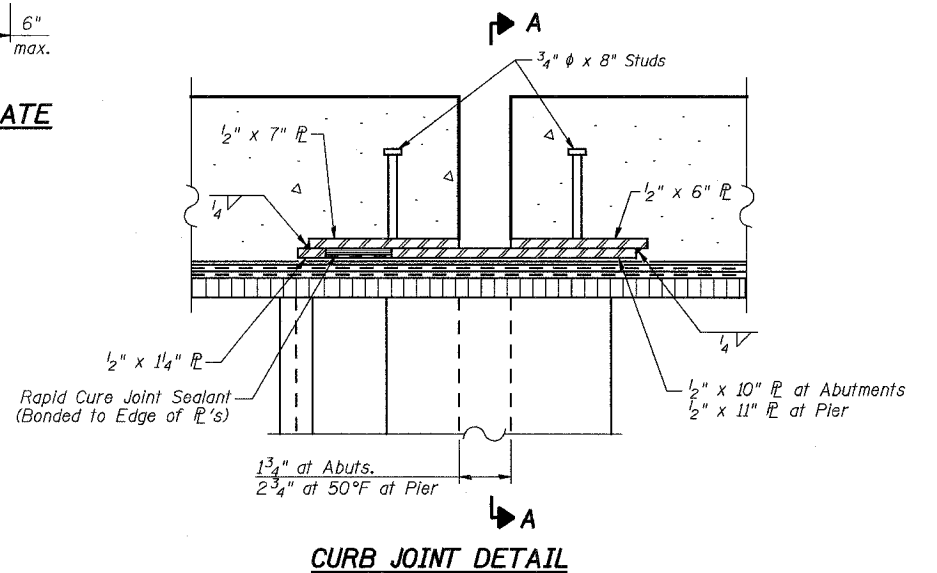
1. The Waterproofing material at the joints at the Abutments and Pier shall be applied in the following order:

1. Bond-Breaker Paper
2. Rapid Cure Joint Sealant
3. Galvanized Sheet
4. $\frac{1}{8}$ " Thick Butyl Rubber Membrane
5. Insulating Paper
6. $\frac{3}{32}$ " Thick Butyl Rubber Membrane
7. Insulating Paper
8. Asphalt Plank
9. Mop Coat of Hot Asphalt

Material shall be included in cost of Membrane Waterproofing (Special)

2. Plates, angles & studs included in cost of Furnishing & Erecting Structural Steel.

3. Steel Angles, Trim Bar, Studs and Sliding Plates shall be Hot Dip Galvanized after Fabrication per ASTM A123 (AASHTO M111). Countersunk Head Bolts shall be Galvanized per ASTM A153 (AASHTO M232).



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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
JOINT DETAILS

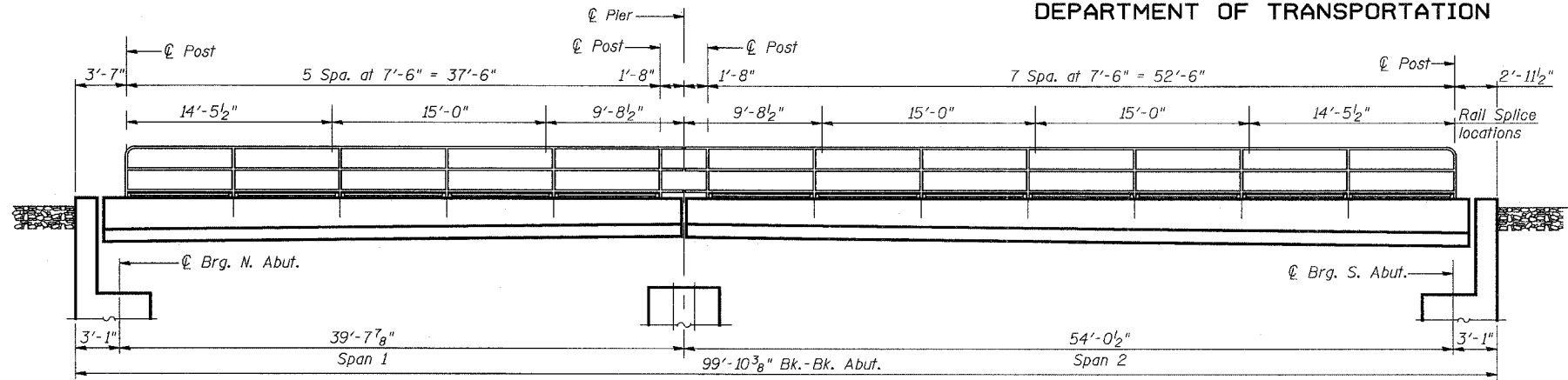
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BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 96+36.66 STRUCTURE NO. 016-2822
SCALE: N.T.S. DATE: 2/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

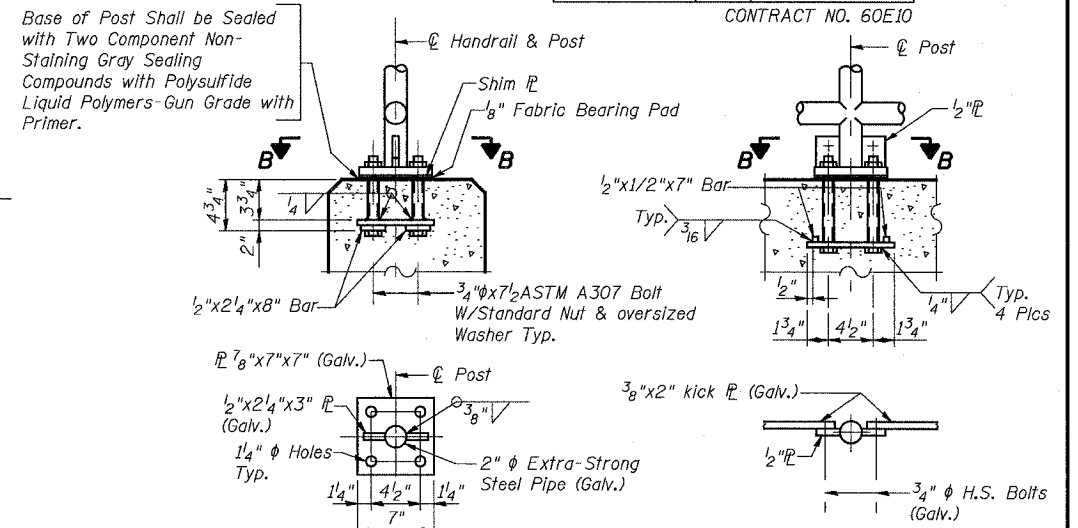
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FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT-		

CONTRACT NO. 60E10

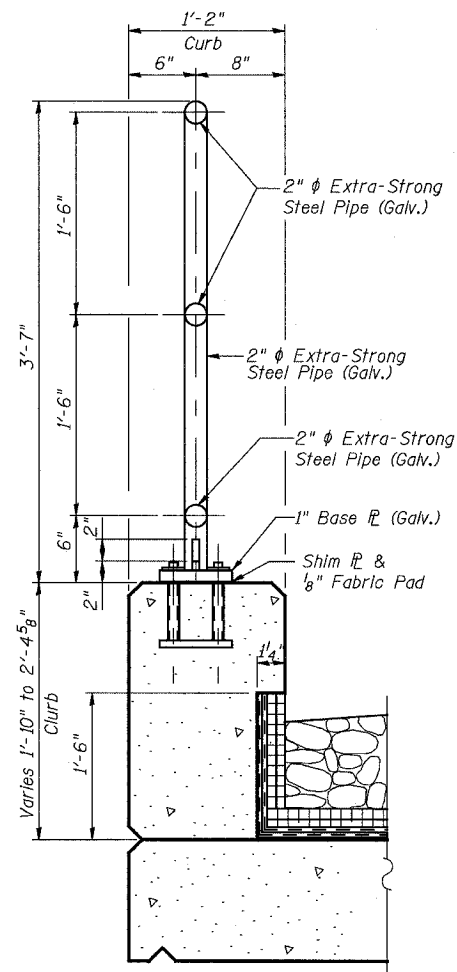
SHEET NO. 8
26 SHEETS



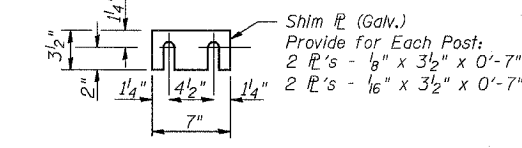
ELEVATION OF HANDRAIL ALONG BRIDGE
(Looking East)
(West Parapet Only)



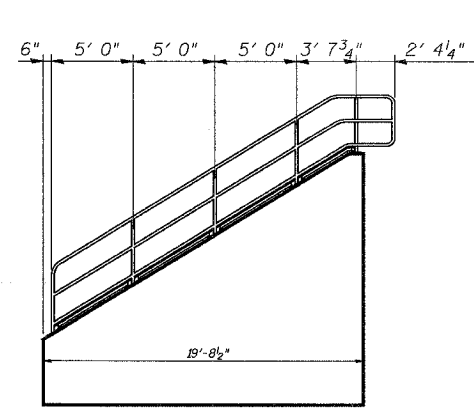
BASE PLATE DETAIL
SECTION B-B
ANCHOR BOLT DETAILS



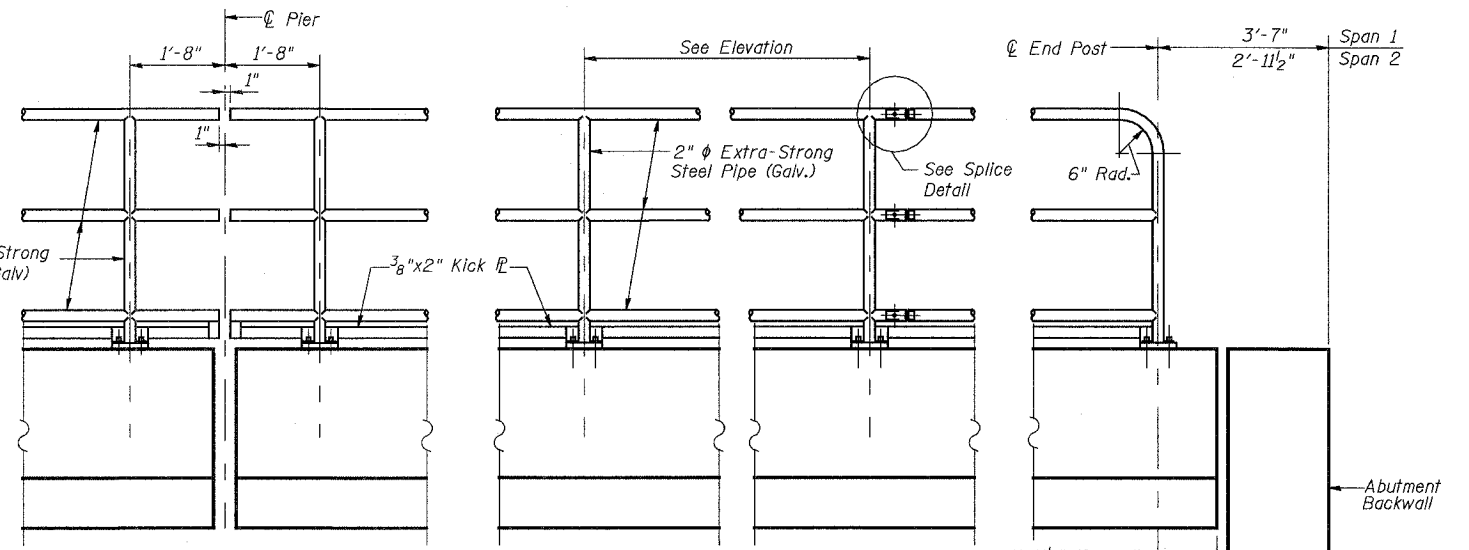
TYPICAL CURB SECTION ON DECK



SHIM PLATE



SOUTH EAST RAILING ON WINGWALL
NORTH EAST MIRROR IMAGE

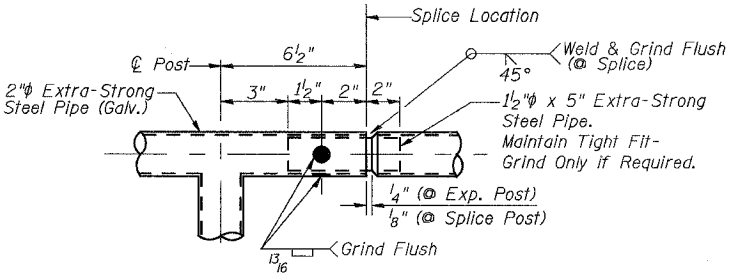


AT PIER
TYPICAL PANEL
END POST

BILL OF MATERIAL

Item	Unit	Quantity
Pipe Handrail, Special	Foot	142

Note:
All bolts, nuts & washers shall be galvanized according to AASHTO M 232
All post, pipe, pipe splices and base and shim plates shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. Galvanized pipe shall not be painted.



SPLICE DETAIL

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DESIGNED	MDS
CHECKED	JPB
DRAWN	MDS
CHECKED	JPB

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
HANDRAIL DETAILS

CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 96+36.66 STRUCTURE NO. 016-2822
SCALE: N.T.S. DATE: 2/21/2008

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(312) 939-1000

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	474
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

SHEET NO. 10
26 SHEETS

		0.5 Span 1	0.5 Span 2
I	(in ⁴)	13,200	25,700
S	(in ³)	719	1,350
Q	(k/ft.)	1.46	1.68
M _D	(k)	273.5	595.3
M _L	(k)	633.2	962.8
M _{Impact}	(k)	315.4	458
M _{Total}	(k)	1222	2016
f _b	(k.s.i.)	20.4	17.9
F _b	(k.s.i.)	27.5	27.5
(± +I) Deflection	(in.)	0.68	0.97
Allowable (± +I) Deflection	(in.)	0.73	1.00

		Span 1	Span 2
R _P	(k)	28.2	44.7
R _L	(k)	66.7	81.7
R _{Impact}	(k)	33.2	38.9
R _{Total}	(k)	128.0	165.3

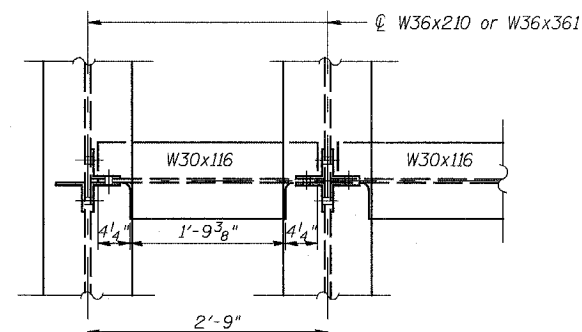
I and S are the moment of inertia and section modulus of the steel section used in computing bending stress, f_b.

M_L is the live load moment due to the Cooper E90 loading or the Alternate loading.

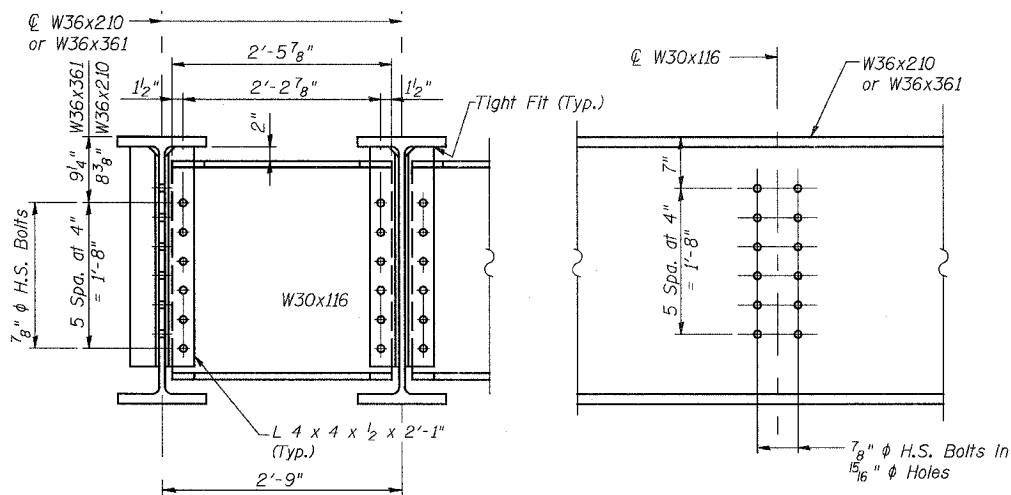
M_{Impact} is the impact moment due to equipment without hammer blow.

f_b is the total bending stress due to M_{Total}.

F_b is the maximum allowable bending stress computed according to AREMA.



PLAN

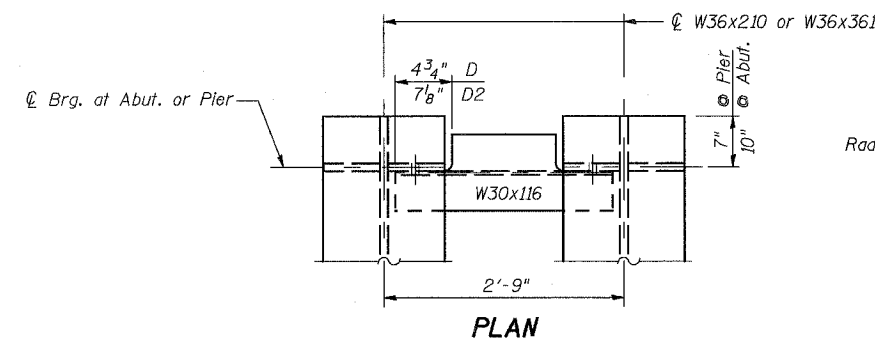


SECTION

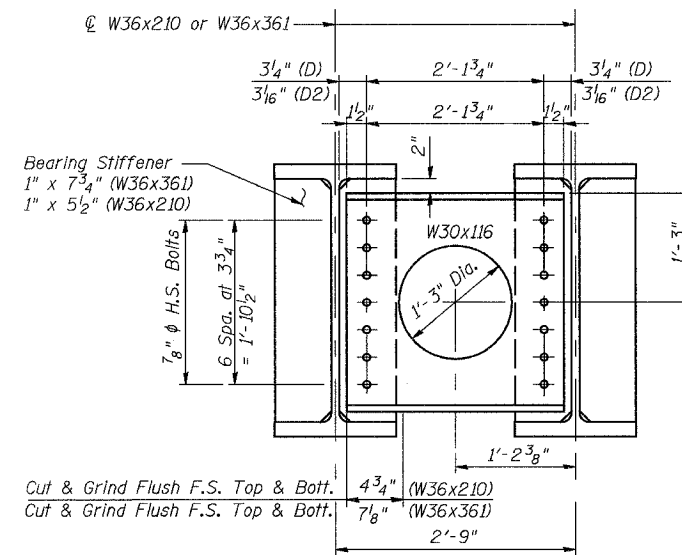
ELEVATION

DIAPHRAGM D1

160 Required
(Diaphragms: ASTM A709 Gr. 36)



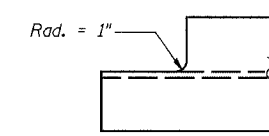
PLAN



SECTION

DIAPHRAGMS D & D2

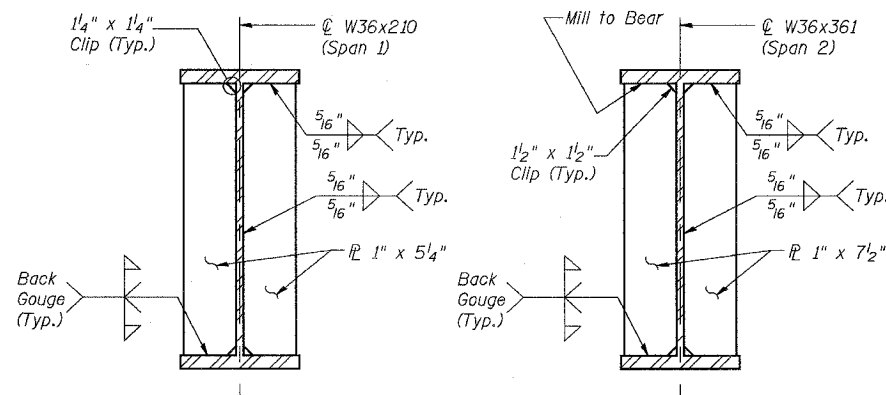
32 Ea. Required
(Diaphragms: ASTM A709 Gr. 36)



COPE DETAIL

Location	Beams 1 Thru 17
Q Brg. N. Abut.	617.44
Q N. Brg. Pier	617.83
Q S. Brg. Pier	617.83
Q Brg. S. Abut.	617.30

* For Fabrication only



BEARING STIFFENER DETAILS

Notes:
Work this Sheet with Sheet 9
Beams W36x210 or W36x361 are ASTM A709 Gr. 50.
F.S. = Far Side

NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1

BEAM DETAILS

CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 96+36.66 STRUCTURE NO. 016-2822
SCALE: 1"=1'-0" DATE: 2/21/2008

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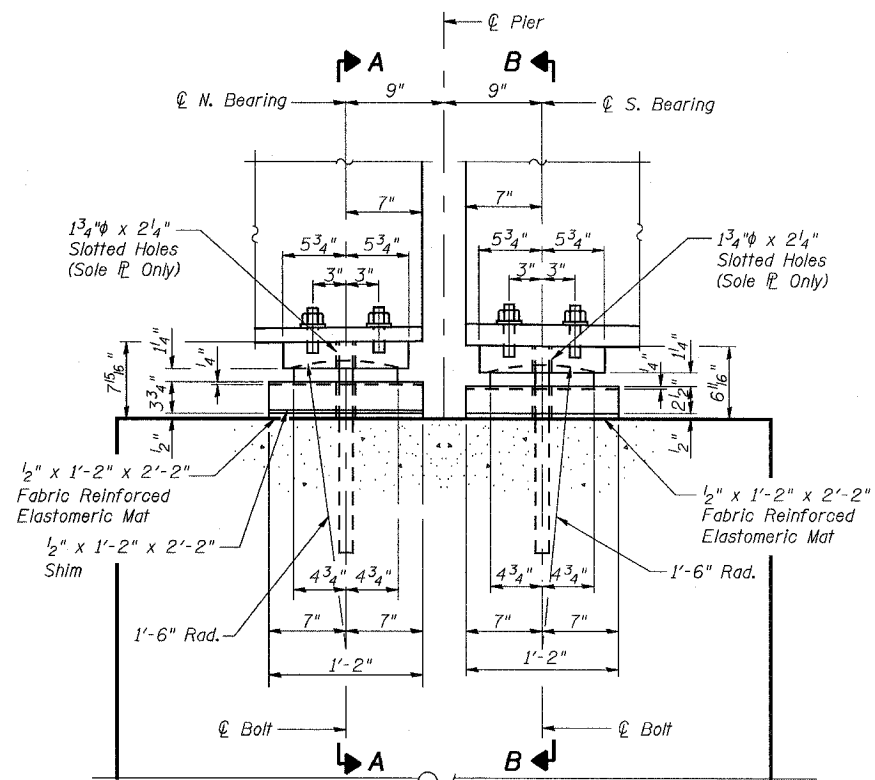
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CHECKED	JPB
DRAWN	MDS
CHECKED	JPB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	475
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

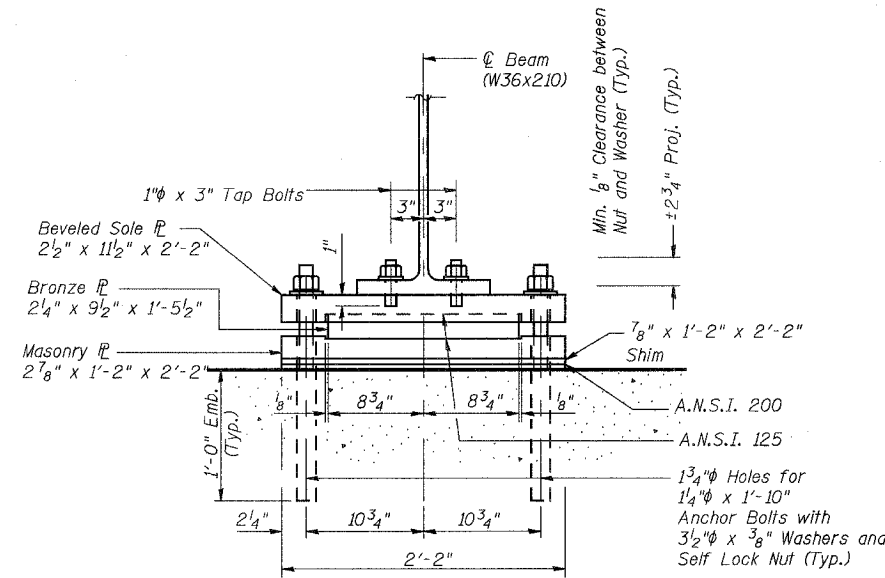
SHEET NO. 11
26 SHEETS

CONTRACT NO. 60E10

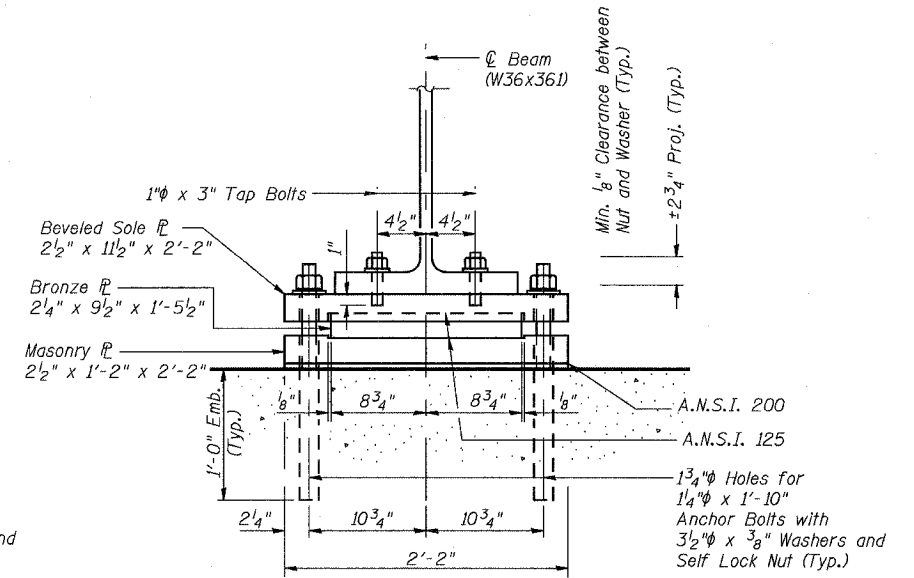


ELEVATION AT PIER - EXPANSION BEARINGS

(N. Bearing - 17 Required)
(S. Bearing - 17 Required)



SECTION A-A



SECTION B-B

Notes:

All material for Sole Plates and Masonry Plates shall conform to A.S.T.M. specification A36 Steel.

Bronze Bearing and Expansion Plates shall conform to A.S.T.M. B22, Alloy C91300 or C91100. Solid lubricant shall be in accordance with A.R.E.M.A. Chapter 15, Section 10.4.2.3. Cost included in Furnishing and Erecting Structural Steel.

All Structural Steel Bearing Plates shall be Flat Rolled Steel Plates with all surfaces smooth and free from warp and all edges smooth, straight and vertical.

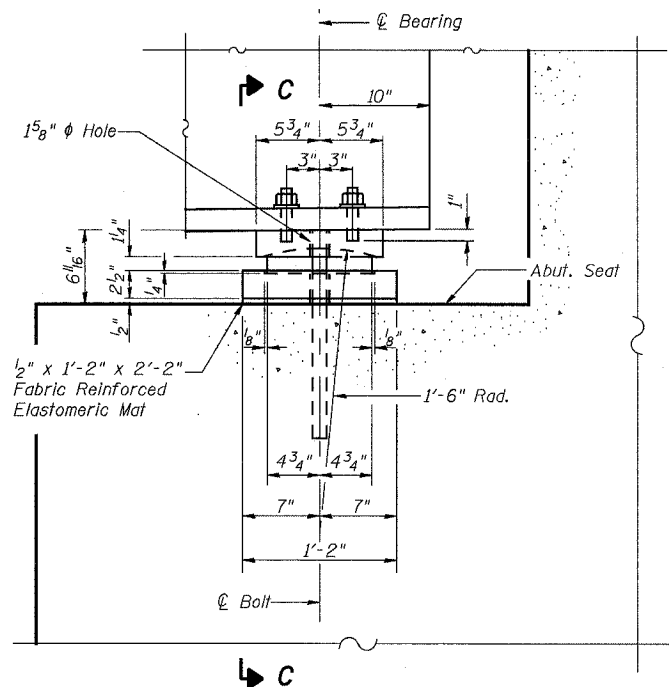
All Plate cuts shall be Machine or Machine Flame Cuts.

Anchor Bolts shall be high-strength carbon steel conforming to the requirements of ASTM F1554, Grade 105 and zinc plated (ASTM B633). Nuts shall meet the requirements of ASTM A563, Grade DH and washers shall meet the requirements of ASTM F436.

See Section 1028 for material requirements of Fabric Reinforced Elastomeric Pad. Cost of pad included in Concrete Structures.

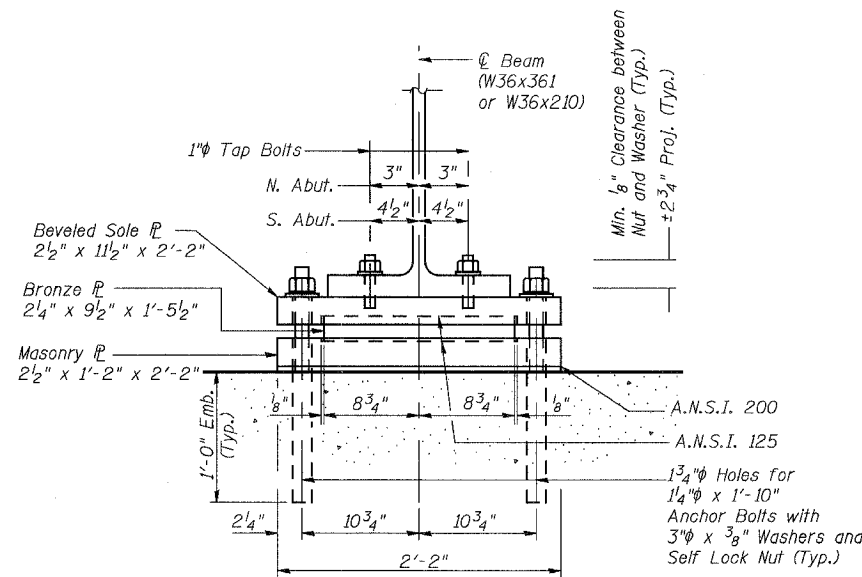
Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted.

Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming. Anchors shall not be disturbed until cure time has elapsed.

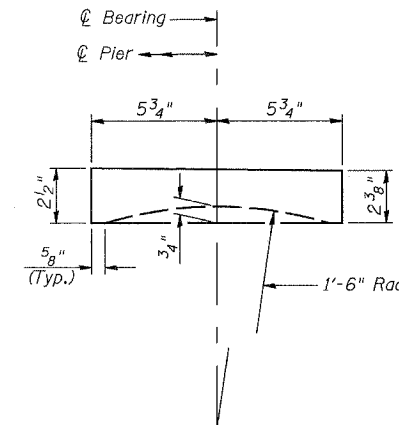


ELEVATION AT ABUTMENT - FIXED BEARINGS

(17 - Required N. Abutment)
(17 - Required S. Abutment)



SECTION C-C



BEVELED SOLE PLATE

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Anchor Bolts, 1 1/4"	Each	136

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1

BEARING DETAILS

CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STRUCTURE NO. 016-2822
SCALE: N.T.S. DATE: 2/21/2008

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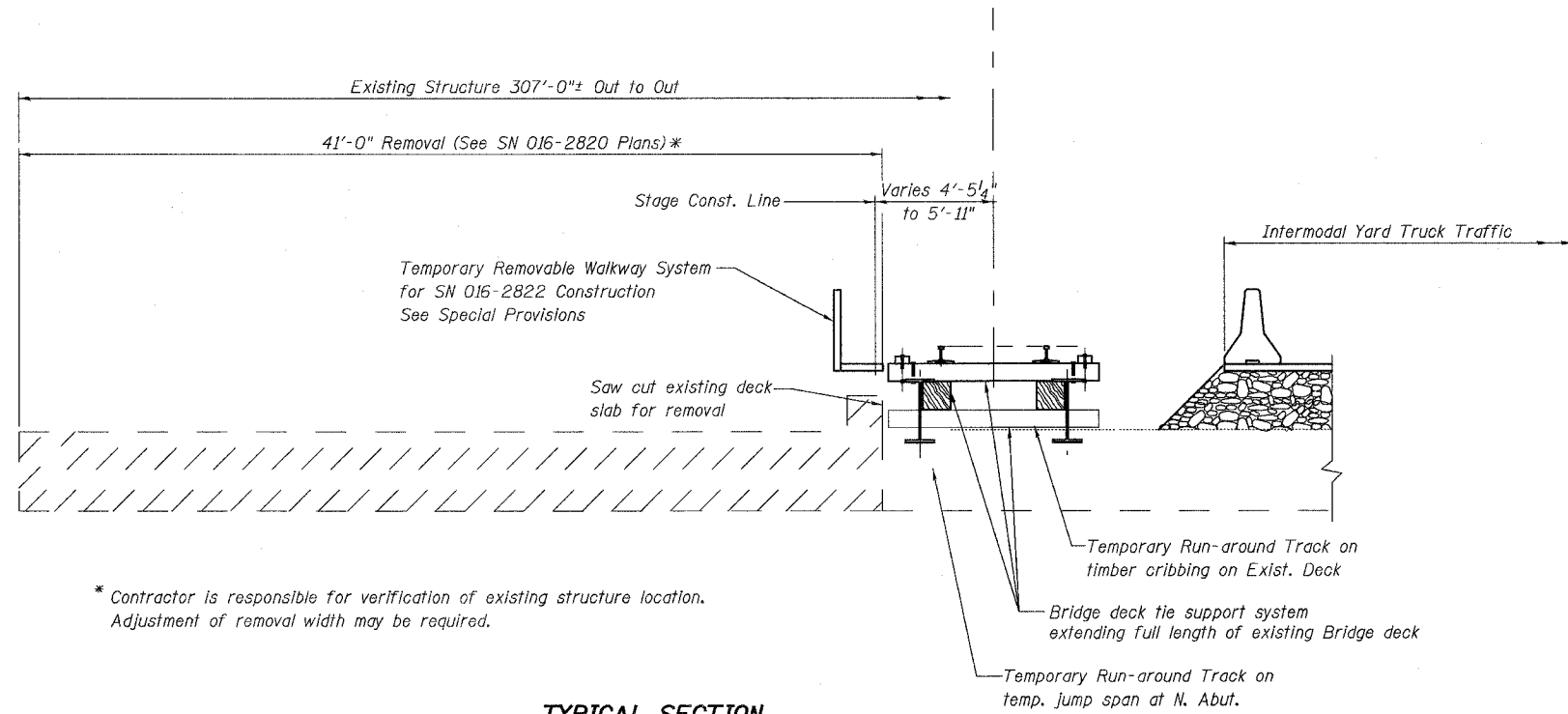
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DESIGNED	MDS
CHECKED	JPB
DRAWN	MDS
CHECKED	JPB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

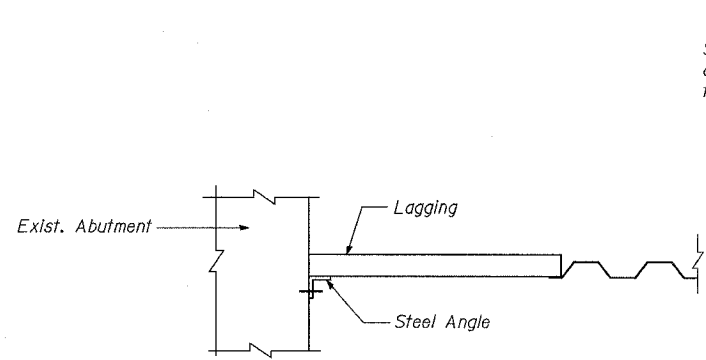
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	476
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-	CONTRACT NO. 60E10	

SHEET NO. 12
26 SHEETS



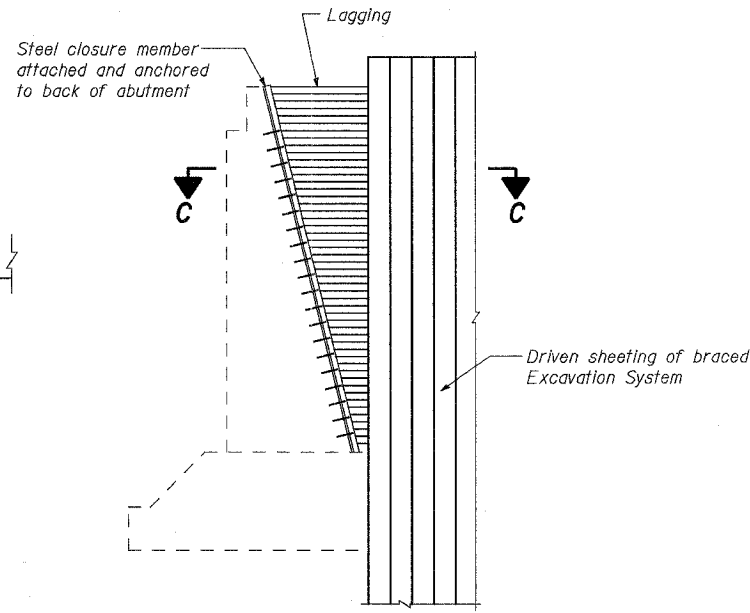
* Contractor is responsible for verification of existing structure location. Adjustment of removal width may be required.

TYPICAL SECTION
(Looking South)



SECTION C-C

Note:
Temporary sheeting for stage I and stage II braced excavation systems. shall included all materials hardware, labor & equipment necessary for its connection to the back of the existing abutments. All associated costs for this work will be considered included in the unit price for the Pay Item "Braced Excavation".



TYPICAL CLOSURE DETAIL FOR BRACED EXCAVATION SYSTEM AT BACK OF ABUTMENTS
(See Note)

- Notes:
1. For removal pay items and quantities see SN 016-2820 plans.
 2. For removal of existing substructure see Substructure Removal Details drawing in SN 016-2820 plans.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
CONCRETE DECK REMOVAL DETAILS
CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 96+36.66 STRUCTURE NO. 016-2822
SCALE: DATE: 2/21/2008

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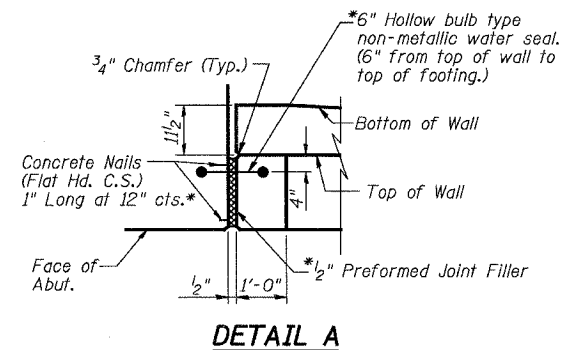
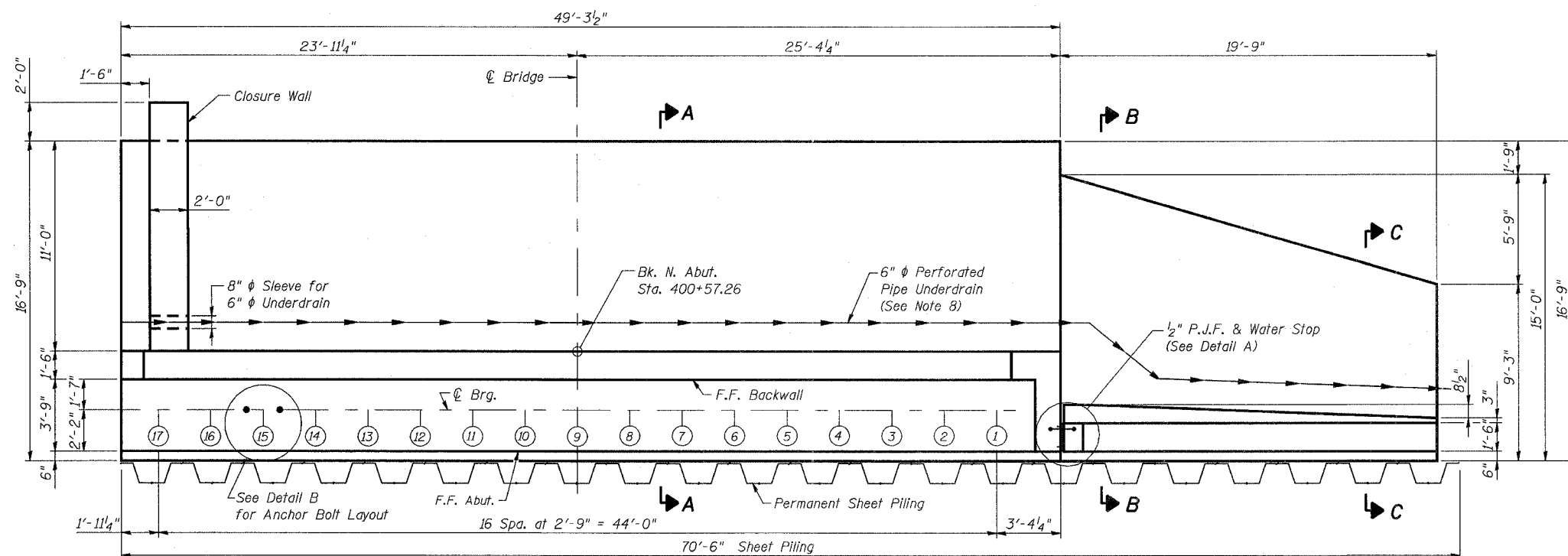
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DRAWN	MDS
CHECKED	JPB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

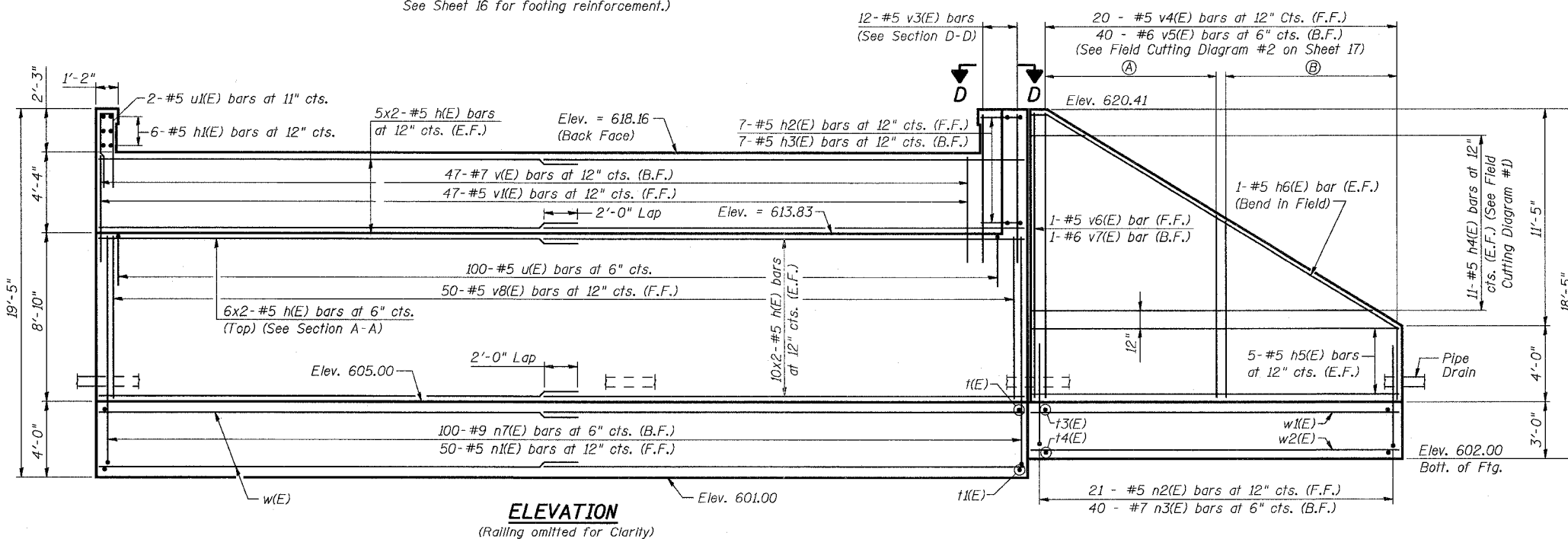
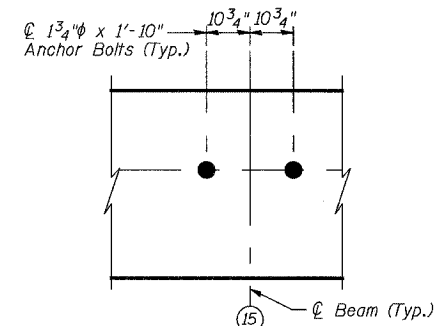
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	477
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 60E10

SHEET NO. 13
26 SHEETS



*Cost included with Concrete Structures.



NOTES:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Work this sheet with Sheets 14 through 17.
3. See Sheet 14 for Sections.
4. Space reinforcement in seat to miss anchor bolts.
5. See Sheet 17 for Bill of Materials.
6. Cost of pipe sleeves is included with Concrete Structures.
7. See Sheet 14 for Permanent Sheet Piling Detail.
8. See Sheet 24 of U.S. 6 Mainline Retaining Walls Along 159th Street plans for Pipe Underdrain Layout and Quantities. For Details See Sheet 14.
9. For Detail Railing on Wingwall See Sheet 08.

LEGEND

F.F. - Front Face
B.F. - Back Face
E.F. - Each Face

DESIGNED	MDS
CHECKED	JPB
DRAWN	MDS
CHECKED	JPB

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ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
**NORTH ABUTMENT
PLAN & ELEVATION**
CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 96+36.66 STRUCTURE NO. 016-2822
SCALE: 1/4"=1'-0" DATE: 2/21/2008

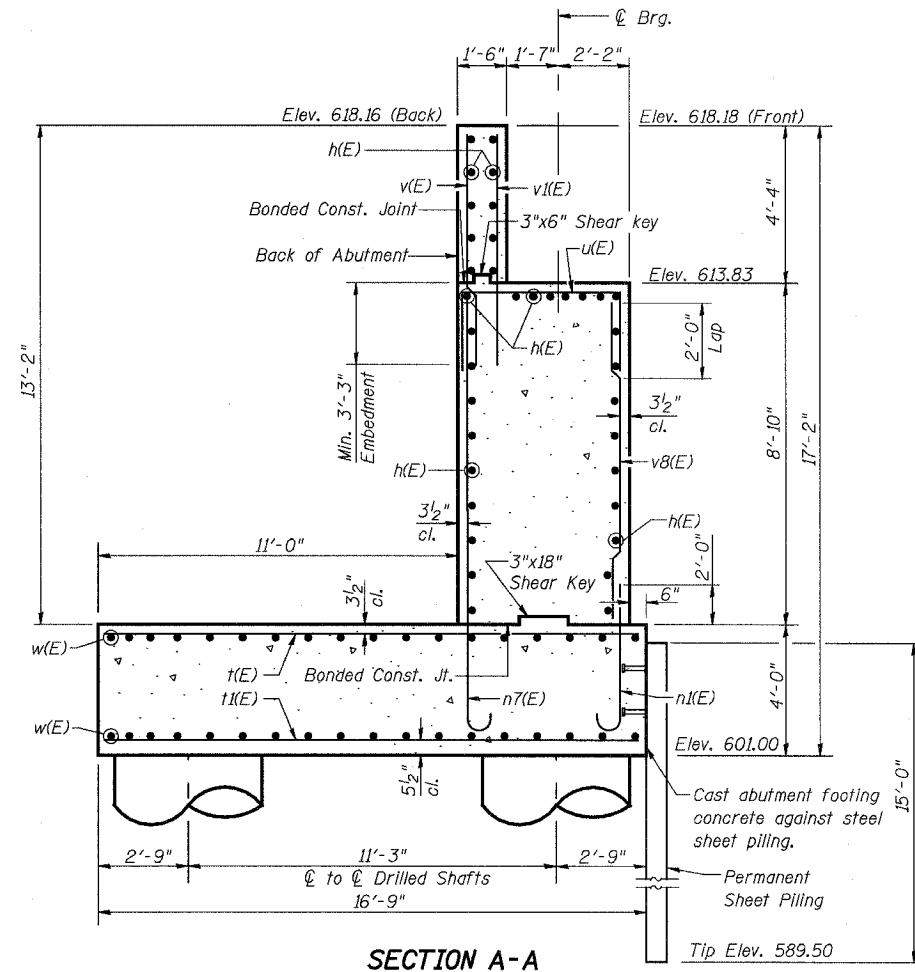
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

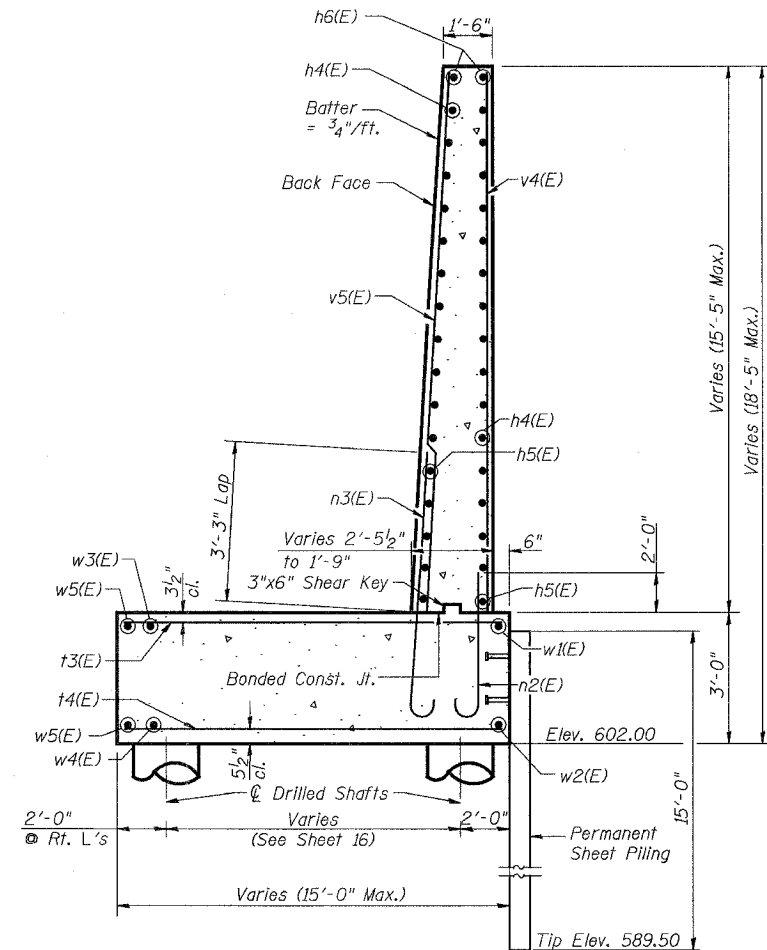
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	478
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 60E10

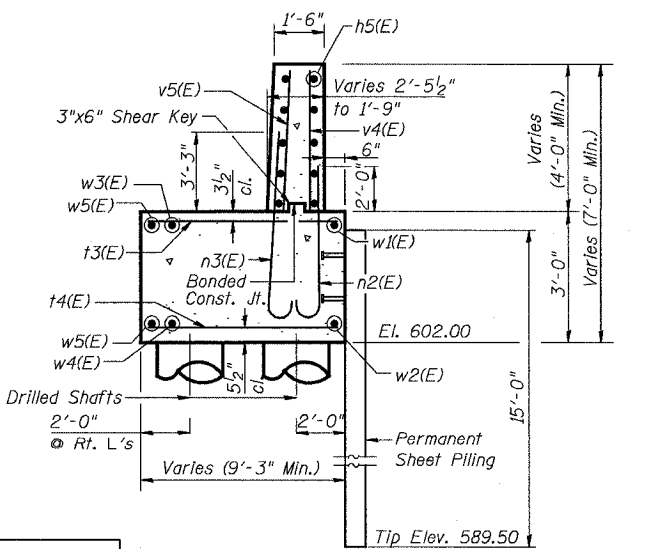
SHEET NO. 14
26 SHEETS



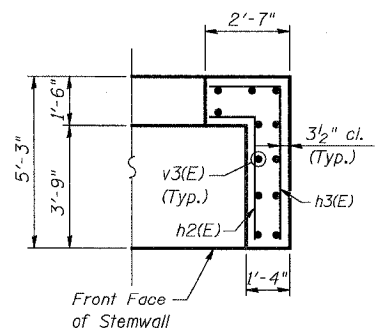
SECTION A-A



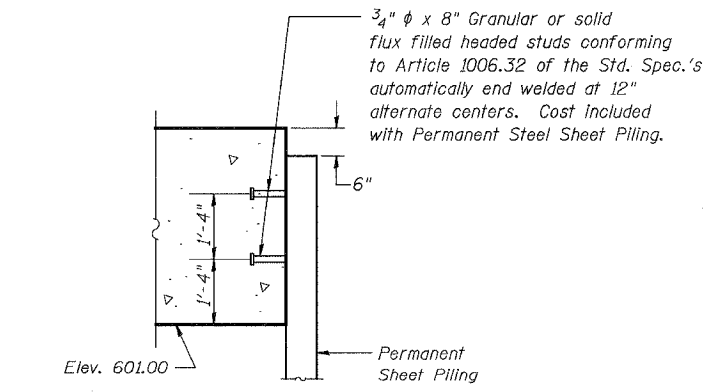
SECTION B-B



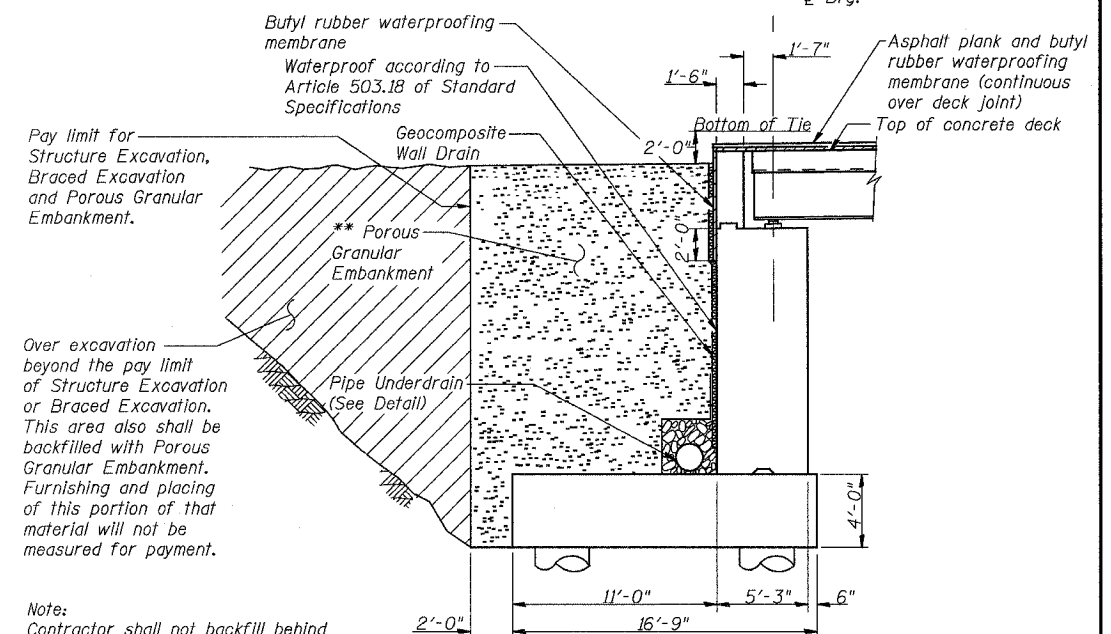
SECTION C-C



SECTION D-D

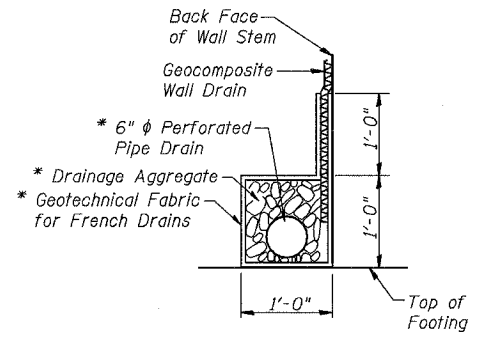


PERMANENT SHEET PILING ATTACHMENT TO FOOTING
Required Minimum Effective Section Modulus of Permanent Sheet Piling is 5.83 in.³/ft.



DRAINAGE & BACKFILL DETAIL

** Excavation for placing Porous Granular Embankment is included in cost of Braced Excavation & Structure Excavation
Porous Granular Embankment shall be compacted to 95% Modified Proctor Density and its coarse aggregate gradation shall be CA 18.



PIPE UNDERDRAIN DETAIL

* Included in cost of Pipe Underdrain For Structures 6"

Note:
Contractor shall not backfill behind the abutments above the elevation of the end of the butyl rubber waterproofing membrane until the membrane has been installed.

Pay limit for Structure Excavation, Braced Excavation and Porous Granular Embankment.
Over excavation beyond the pay limit of Structure Excavation or Braced Excavation. This area also shall be backfilled with Porous Granular Embankment. Furnishing and placing of this portion of that material will not be measured for payment.

NOTES:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Work this sheet with Sheets 13 & 15 through 17.
3. Space reinforcement in seat to miss anchor bolts.
4. See Sheet 17 for Bill of Materials.
5. See Sheet 24 of U.S. 6 Mainline Retaining Walls Along 159th Street plans for Pipe Underdrain Layout and Quantities.

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DESIGNED	MDS
CHECKED	JPB
DRAWN	MDS
CHECKED	JPB

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NAME	DATE

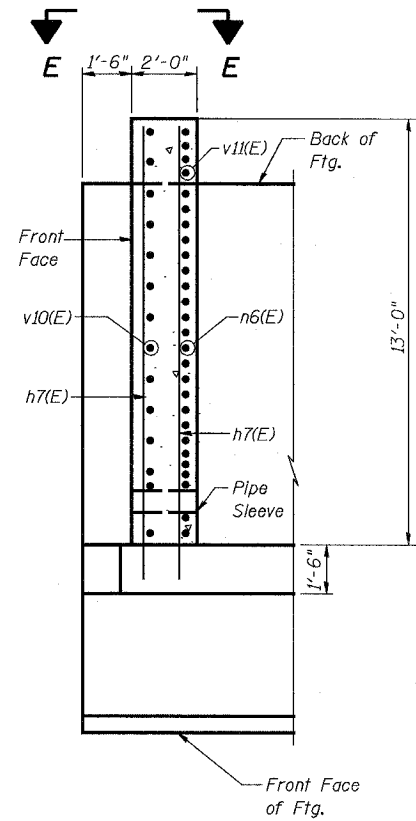
ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
NORTH ABUTMENT-DETAILS I
CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 96+36.66 STRUCTURE NO. 016-2822
SCALE: AS NOTED DATE: 2/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

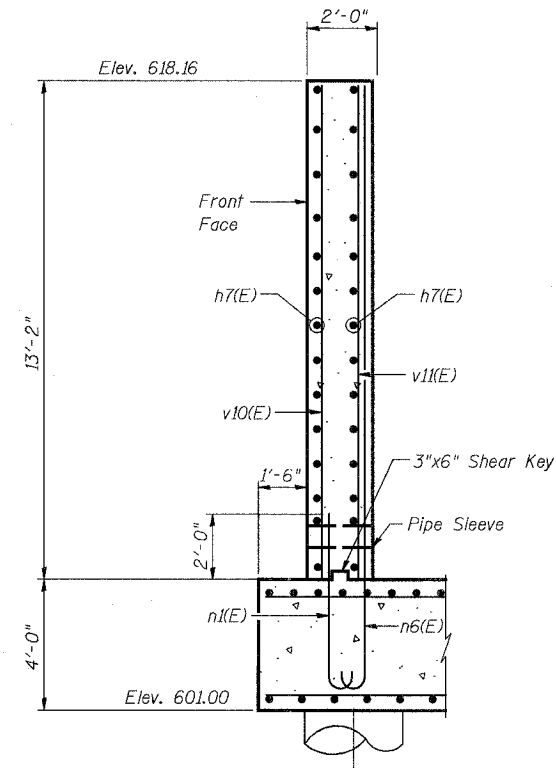
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	479
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

CONTRACT NO. 60E10

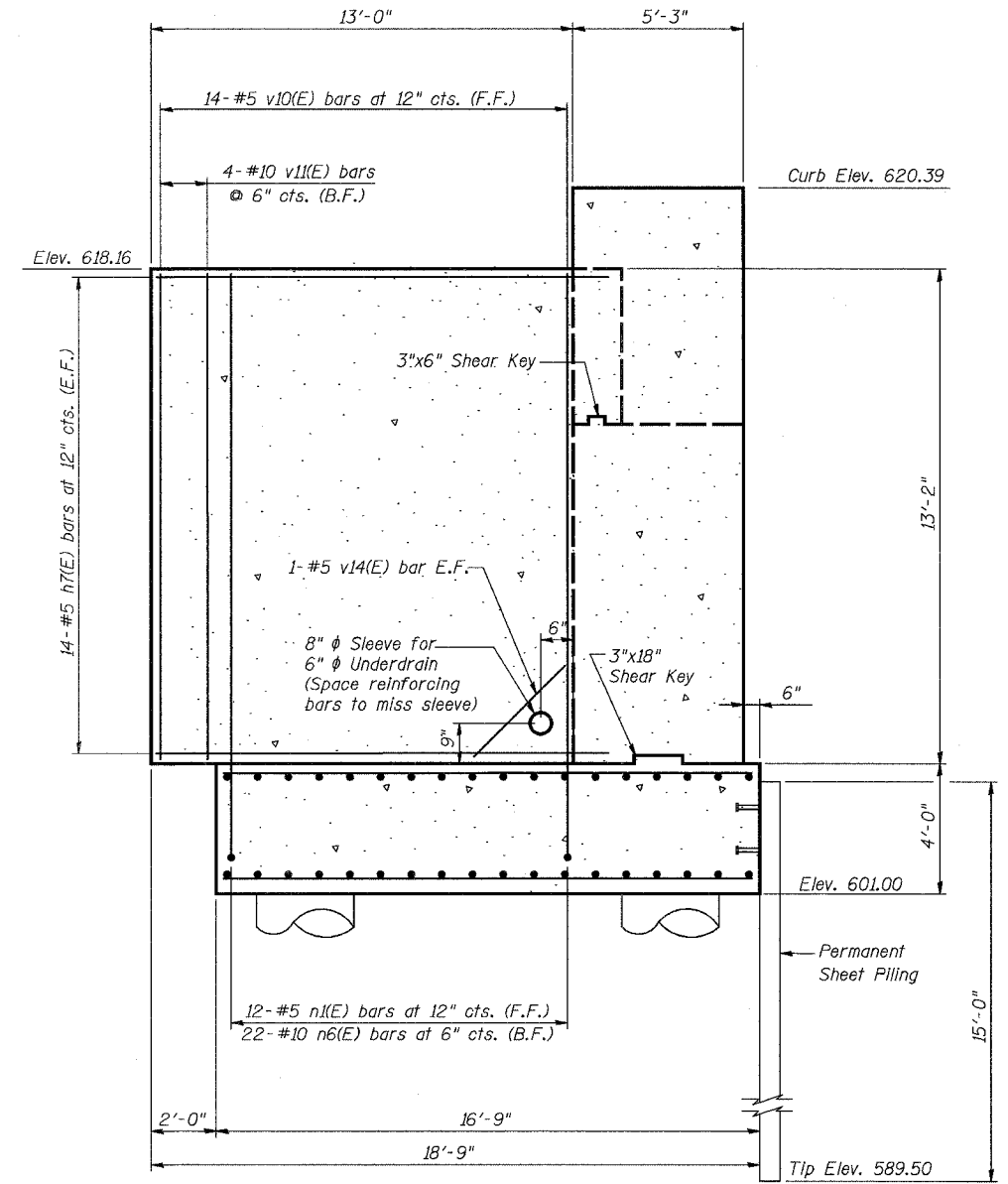
SHEET NO. 15
26 SHEETS



CLOSURE WALL PLAN



SECTION E-E
(Looking North)



CLOSURE WALL ELEVATION
(Looking East)

LEGEND

F.F. - Front Face
B.F. - Back Face
E.F. - Each Face

NOTES:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Work this sheet with Sheets 13 through 17.
3. See Sheet 17 for Bill of Materials.
4. Cost of pipe sleeve is included with Concrete Structures.

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DESIGNED	MDS
CHECKED	JPB
DRAWN	MDS
CHECKED	JPB

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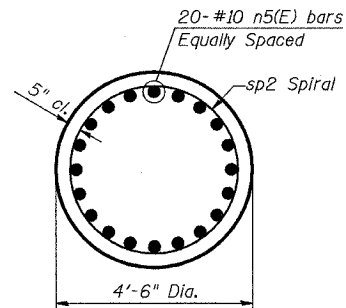
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
**NORTH ABUTMENT
DETAILS II**
CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 96+36.66 STRUCTURE NO. 016-2822
SCALE: 3/8"=1'-0" DATE: 2/21/2008

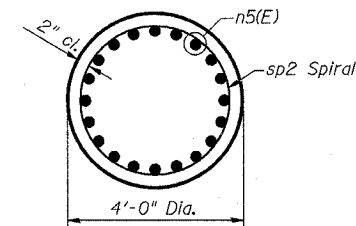
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	480
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

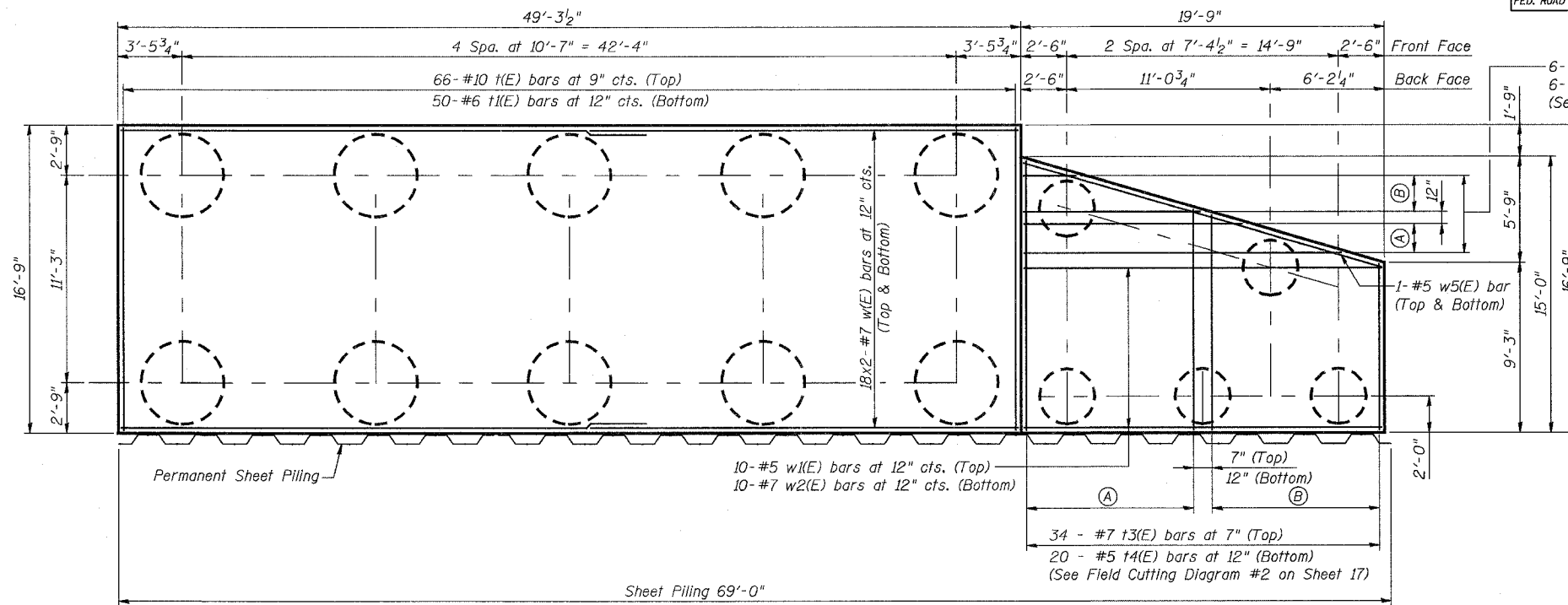
SHEET NO. 16
26 SHEETS



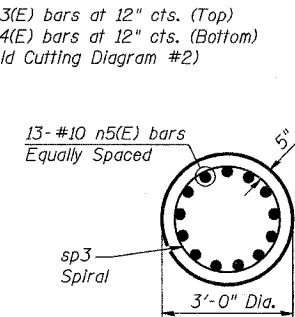
SECTION A-A
(10 Required)
N.T.S.



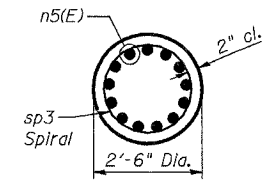
SECTION B-B
(10 Required)
N.T.S.



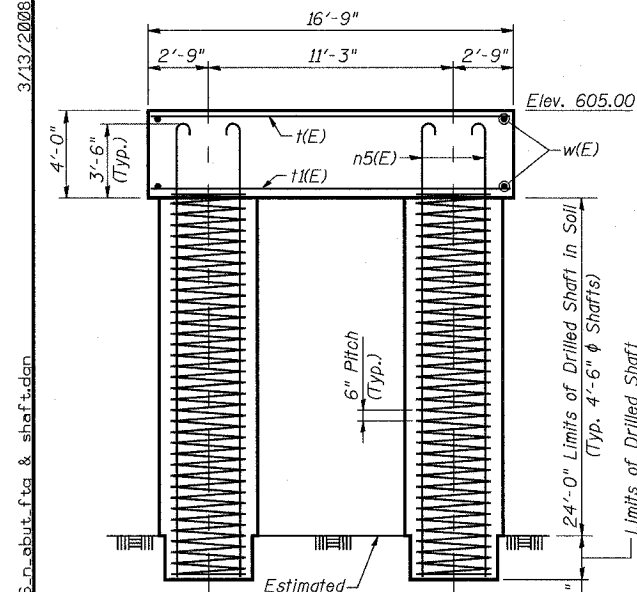
FOOTING PLAN
1/4"=1'-0"



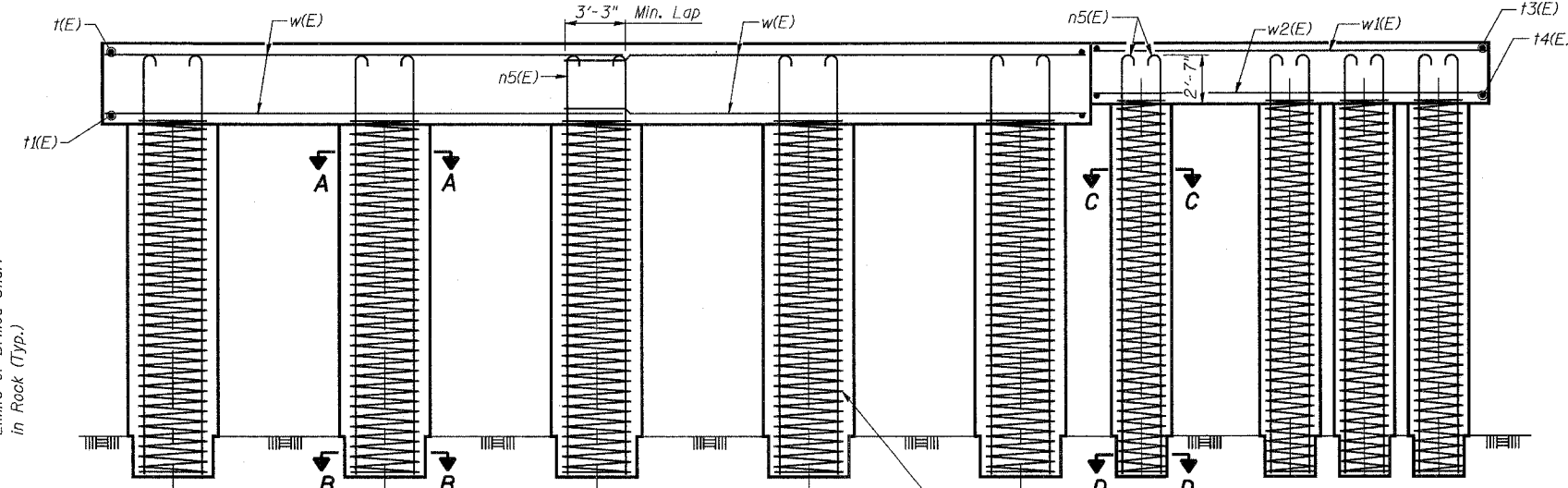
SECTION C-C
(5 Required)
N.T.S.



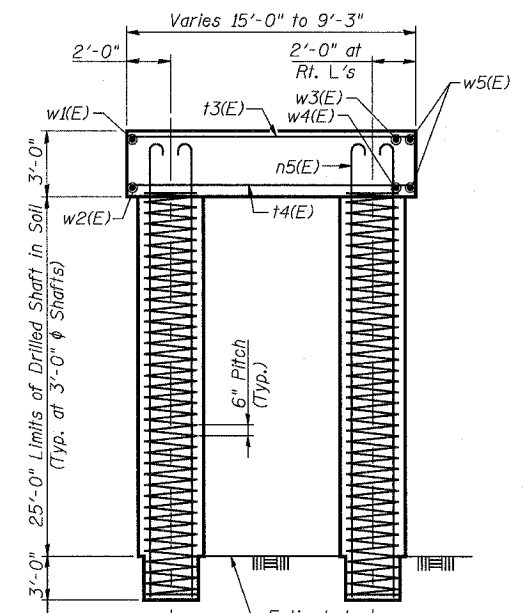
SECTION D-D
(5 Required)
N.T.S.



END VIEW
1/4"=1'-0"



ELEVATION
1/4"=1'-0"



END VIEW
1/4"=1'-0"

- NOTES:**
1. Reinforcement designated (E) shall be epoxy coated.
 2. Work this sheet with Sheets 13 through 17.
 3. For Field Cutting Diagram #1 and #2 see Sheet 17.
 4. Drilled Shafts shall be drilled to Elevation 574.00. Quantities and Detailing are for the estimated Elevations shown on the Plans. The actual conditions encountered in each Shaft may differ and the Drilled Shaft and Reinforcement Quantities shall be adjusted accordingly as directed by the Engineer and paid for at the corresponding Unit Bid Price.
 5. See Sheet 14 for Permanent Sheet Piling Detail.
 6. Spiral sp2 outer diameter = 3'-8".
Spiral sp3 outer diameter = 2'-2".

#5 sp2 or sp3 Spiral (Typ.)
Each Shaft- Provide 1/2 extra turns top and bottom. Extend Spiral 2" into Footing. Provide min. 4-#4 bar spacers or equivalent.

Min. Lap Splice for Spiral = 2'-0"

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DESIGNED	MDS
CHECKED	JPB
DRAWN	MDS
CHECKED	JPB

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100 South Wacker Drive,
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(312) 939-1000

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
**NORTH ABUTMENT
FOOTING & DRILLED SHAFTS**
CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 96+36.66 STRUCTURE NO. 016-2822
SCALE: AS NOTED DATE: 2/21/2008

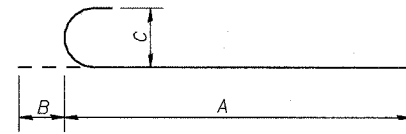
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	481
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-	CONTRACT NO. 60E10	

SHEET NO. 17
26 SHEETS

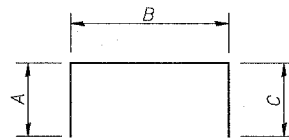
BILL OF MATERIAL - NORTH ABUTMENT

Bar	No.	Size	Length	Shape
h(E)	72	#5	25'-6"	—
h1(E)	6	#5	0'-11"	—
h2(E)	7	#5	5'-0"	—
h3(E)	7	#5	6'-8"	—
h4(E)	11	#5	19'-6"	—
h5(E)	10	#5	19'-2"	—
h6(E)	2	#5	22'-2"	—
h7(E)	28	#5	13'-11"	—
n1(E)	62	#5	6'-0"	—
n2(E)	21	#5	5'-0"	—
n3(E)	40	#7	6'-7"	—
n5(E)	265	#10	31'-11"	—
n6(E)	22	#10	17'-11"	—
n7(E)	100	#9	13'-3"	—
sp2	10	#5	27'-2"	
sp3	5	#5	28'-2"	
t(E)	66	#10	16'-2"	—
t1(E)	50	#6	16'-2"	—
t3(E)	17	#7	23'-1"	—
t4(E)	10	#5	23'-1"	—
u(E)	100	#5	8'-8"	—
u1(E)	2	#5	8'-9"	—
v(E)	47	#7	7'-4"	—
v1(E)	47	#5	6'-1"	—
v3(E)	12	#5	8'-7"	—
v4(E)	10	#5	19'-1"	—
v5(E)	20	#6	19'-1"	—
v6(E)	1	#5	15'-1"	—
v7(E)	1	#6	15'-1"	—
v8(E)	50	#5	8'-6"	—
v10(E)	14	#5	12'-10"	—
v11(E)	4	#10	12'-10"	—
v14(E)	2	#5	2'-3"	—
w(E)	72	#7	26'-2"	—
w1(E)	10	#5	19'-2"	—
w2(E)	10	#7	19'-2"	—
w3(E)	3	#5	19'-6"	—
w4(E)	3	#7	19'-6"	—
w5(E)	2	#5	20'-0"	—
Porous Granular Embankment		Cu. Yd.	378	
Concrete Structures		Cu. Yd.	277.6	
Reinforcement Bars		Lbs.	8,770	
Reinforcement Bars, Epoxy Coated		Lbs.	61,730	
Concrete Sealer		Sq. Ft.	180	
Braced Excavation		Cu. Yd.	457.4	
Non-Special Waste Disposal		Cu. Yd.	1102.7	
Geocomposite Wall Drain		Sq. Yd.	81.3	
Structure Excavation		Cu. Yd.	504.1	
Drilled Shaft in Soil		Cu. Yd.	174.0	
Drilled Shaft in Rock		Cu. Yd.	16.7	
Permanent Steel Sheet Piling		Sq. Ft.	1,036	



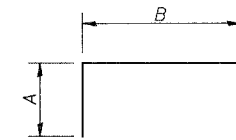
BARS nx(E)

Bar	A	B	C
n1(E)	5'-5"	7"	5"
n2(E)	4'-5"	7"	5"
n3(E)	5'-9"	10"	7"
n5(E)	30'-6"	1'-5"	1'-1 1/4"
n6(E)	16'-6"	1'-5"	1'-1 1/2"
n7(E)	12'-0"	1'-3"	11 3/4"



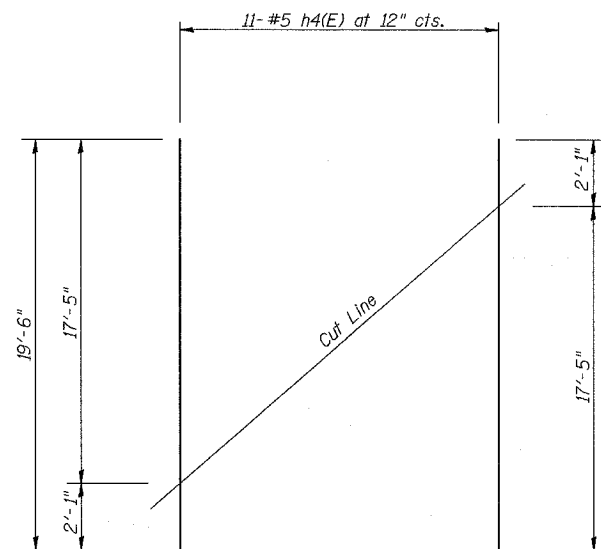
BARS u(E) & u1(E)

Bar	A	B	C
u(E)	2'-0"	4'-8"	2'-0"
u1(E)	4'-1"	7"	4'-1"



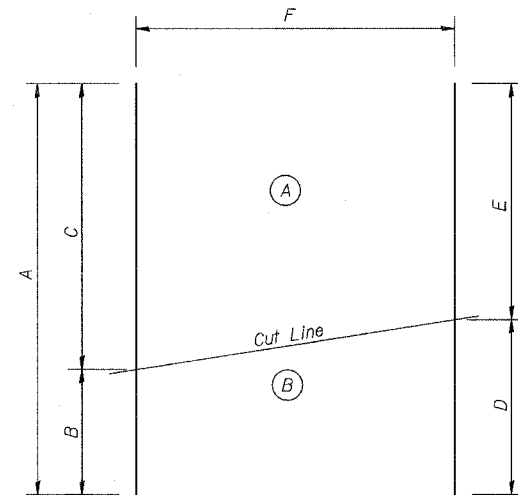
BARS h2(E) & h3(E)

Bar	A	B
h2(E)	1'-3"	3'-9"
h3(E)	2'-0"	4'-8"



FIELD CUTTING DIAGRAM #1

Order bars full length. Cut bars in field as shown. Use top half in F.F. and bottom half in B.F. for h4(E) bars.



FIELD CUTTING DIAGRAM #2

Order bars full length. Cut bars in field as shown. Place patterns (A) & (B) side by side as shown on sheet 16 for t1(E) bars, sheet 13 for vx(E) bars and sheet 16 for wx(E) bars.

Bar	A	B	C	D	E	F
t3(E)	23'-1"	8'-8"	14'-5"	11'-4"	11'-8"	17'-#7 bars at 7" cts.
t4(E)	23'-1"	8'-8"	14'-5"	11'-4"	11'-8"	10-#5 bars at 12" cts.
v4(E)	19'-1"	3'-10"	15'-3"	9'-3"	9'-10"	10-#5 bars at 12" cts.
v5(E)	19'-1"	3'-10"	15'-3"	9'-4"	9'-9"	20-#6 bars at 6" cts.
w3(E)	19'-6"	1'-3"	18'-3"	8'-0"	11'-6"	3-#5 bars at 12" cts.
w4(E)	19'-6"	1'-3"	18'-3"	8'-0"	11'-6"	3-#7 bars at 12" cts.

NOTES:

Place backfill behind sidewalk retaining wall prior to backfilling behind abutment and abutment retaining wall.

Bars designated (E) shall be epoxy coated.

Length of Spiral given is Height of Spiral. Weight includes Weight of Spacers for Spiral.

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DRAWN	MDS
CHECKED	JPB

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REVISIONS	
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ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1

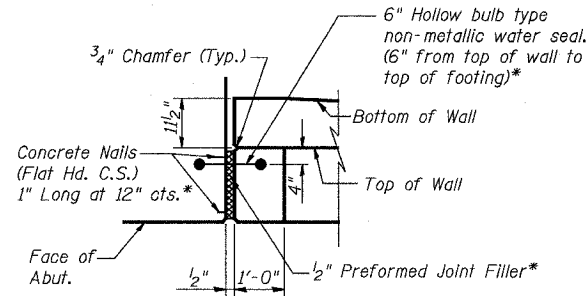
**NORTH ABUTMENT
DETAILS III**

CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 96+36.66 STRUCTURE NO. 016-2822
SCALE: N.T.S. DATE: 2/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

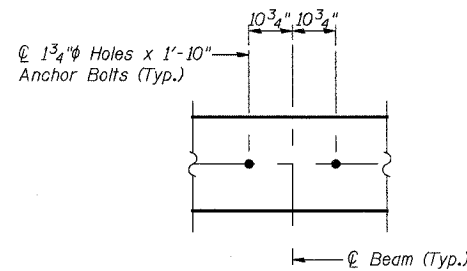
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	482
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-	CONTRACT NO. 60E10	

SHEET NO. 18
26 SHEETS



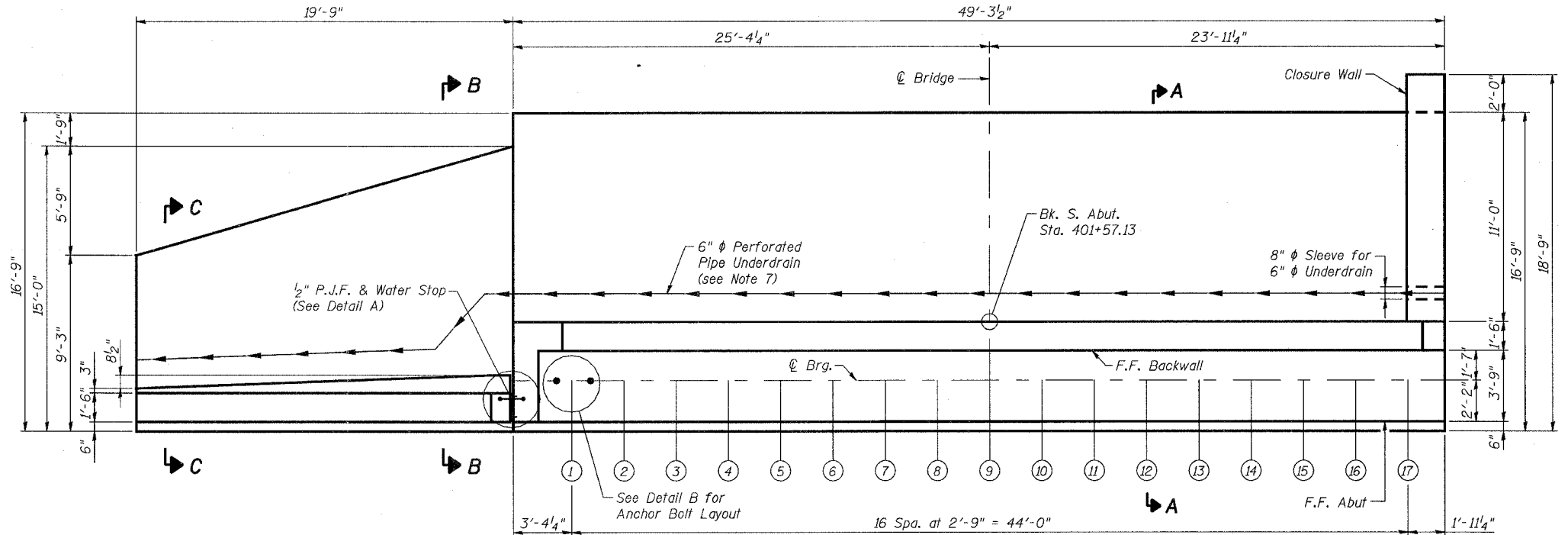
DETAIL A

* Cost included with Concrete Structures.
N.T.S.



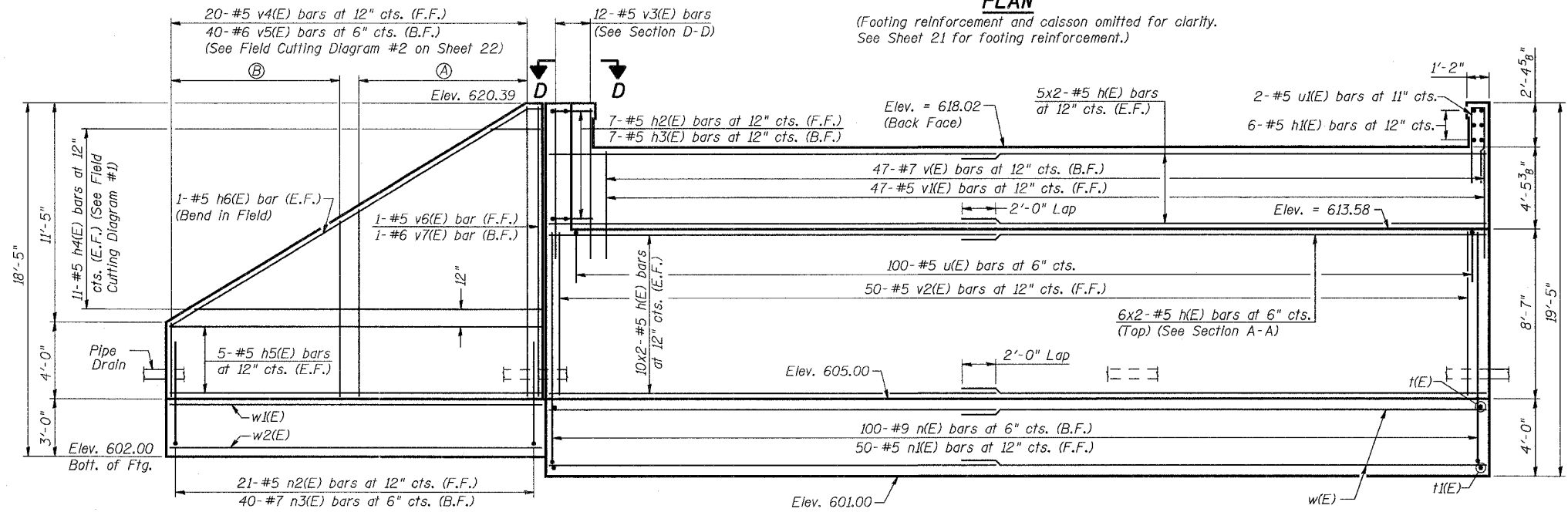
DETAIL B

N.T.S.



PLAN

(Footing reinforcement and caisson omitted for clarity.
See Sheet 21 for footing reinforcement.)



ELEVATION

(Railing Omitted for Clarity)

NOTES:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Work this sheet with Sheets 19 through 22.
3. See Sheet 19 for Sections.
4. Space reinforcement in seat to miss anchor bolts.
5. See Sheet 22 for Bill of Materials.
6. Cost of pipe sleeves is included with Concrete Structures.
7. See Sheet 24 of U.S. 6 Mainline Retaining Walls Along 159th Street plans for Pipe Underdrain Layout and Quantities. For Details See Sheet 19.
8. For Railing Detail on Wingwall See Sheet 08.

LEGEND

F.F. - Front face
B.F. - Back face
E.F. - Each face

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DRAWN	MDS
CHECKED	JPB

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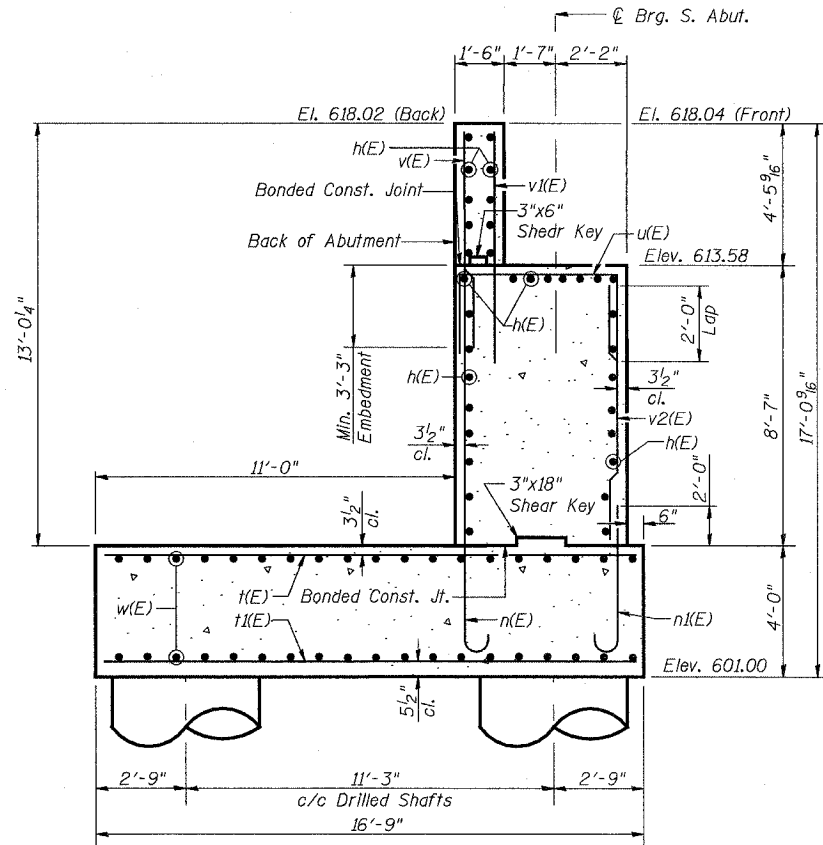
ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
**SOUTH ABUTMENT
PLAN & ELEVATION**
CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 96+36.66 STRUCTURE NO. 016-2822
SCALE: 1/4"=1'-0" DATE: 2/21/2008

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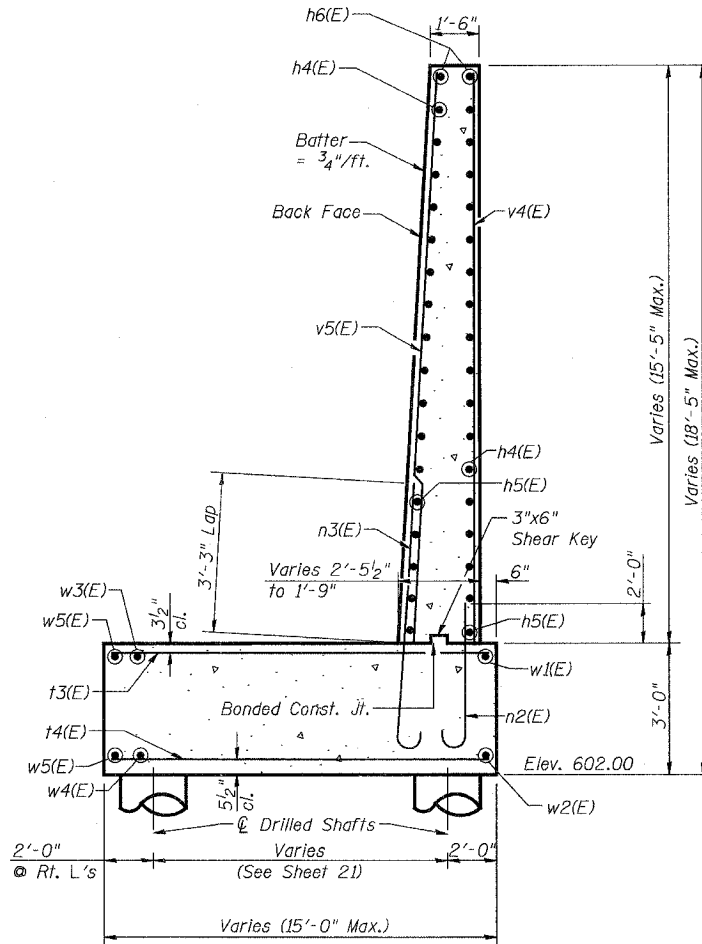
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

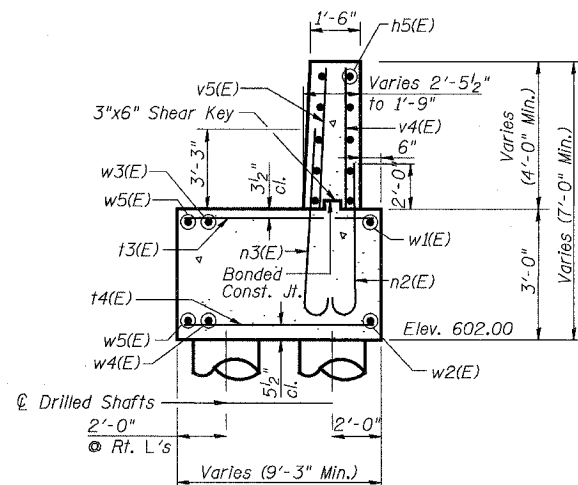
SHEET NO. 19
26 SHEETS



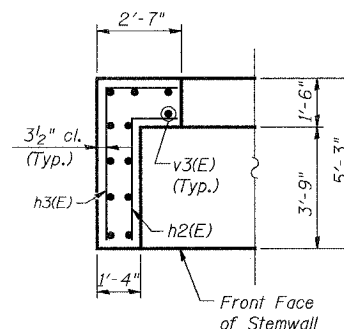
SECTION A-A
3/8"=1'-0"



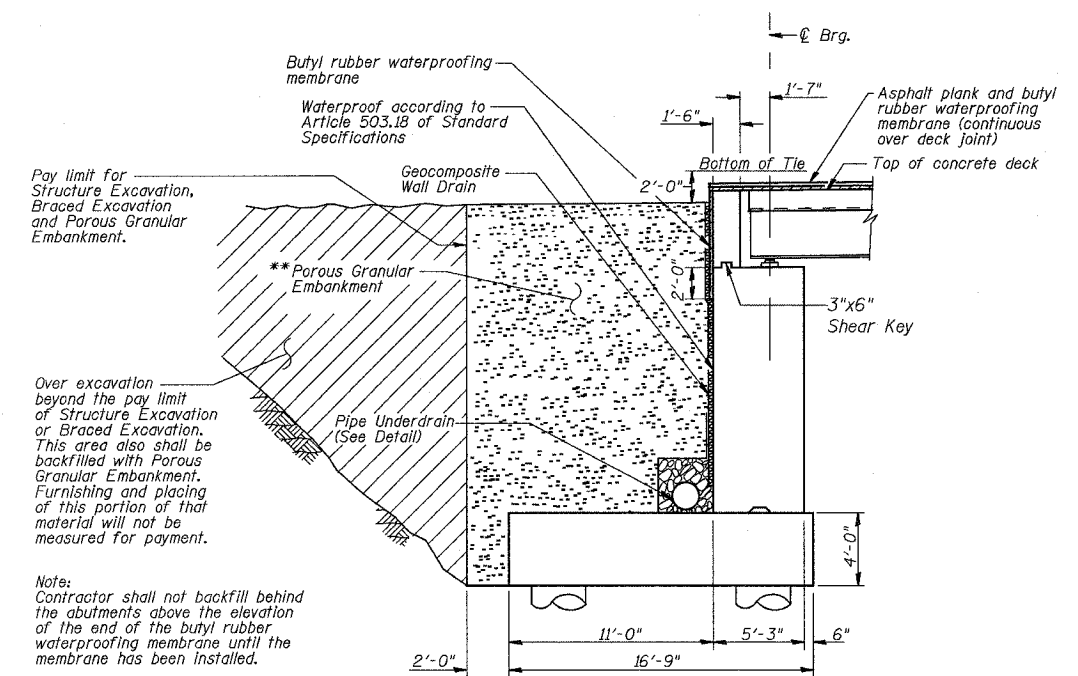
SECTION B-B
3/8"=1'-0"



SECTION C-C
N.T.S.

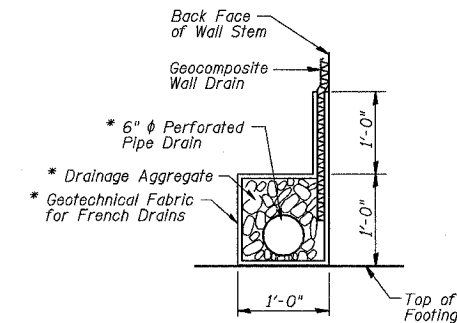


SECTION D-D
N.T.S.



DRAINAGE & BACKFILL DETAIL

** Excavation for placing Porous Granular Embankment is included in cost of Braced Excavation & Structure Excavation.
Porous Granular Embankment shall be compacted to 95% Modified Proctor Density and its coarse aggregate gradation shall be CA 1B.



PIPE UNDERDRAIN DETAIL

* Included in cost of Pipe Underdrain For Structures 6"

NOTES:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Work this sheet with Sheets 18 through 22.
3. Space reinforcement in seat to miss anchor bolts.
4. See Sheet 22 for Bill of Materials.
5. See Sheet 24 of U.S. 6 Mainline Retaining Walls Along 159th Street plans for Pipe Underdrain Layout and Quantities.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SOUTH ABUTMENT-DETAILS I
CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 96+36.66 STRUCTURE NO. 016-2822
SCALE: AS NOTED DATE: 2/21/2008

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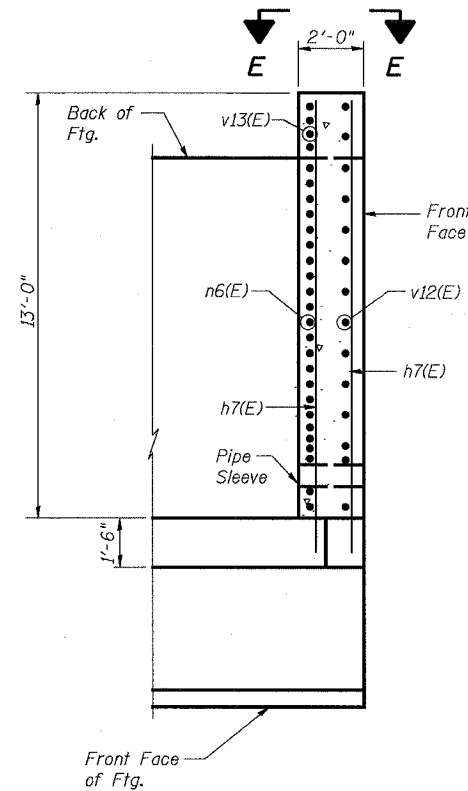
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DESIGNED	MDS
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DRAWN	MDS
CHECKED	JPB

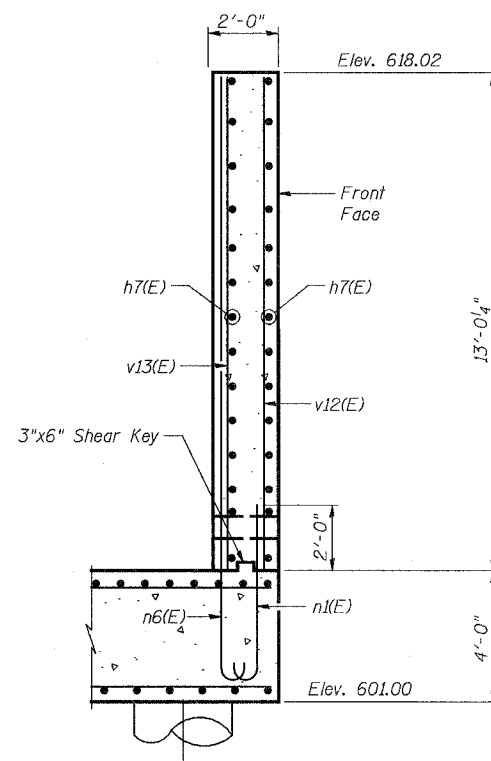
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	484
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-	CONTRACT NO. 60E10	

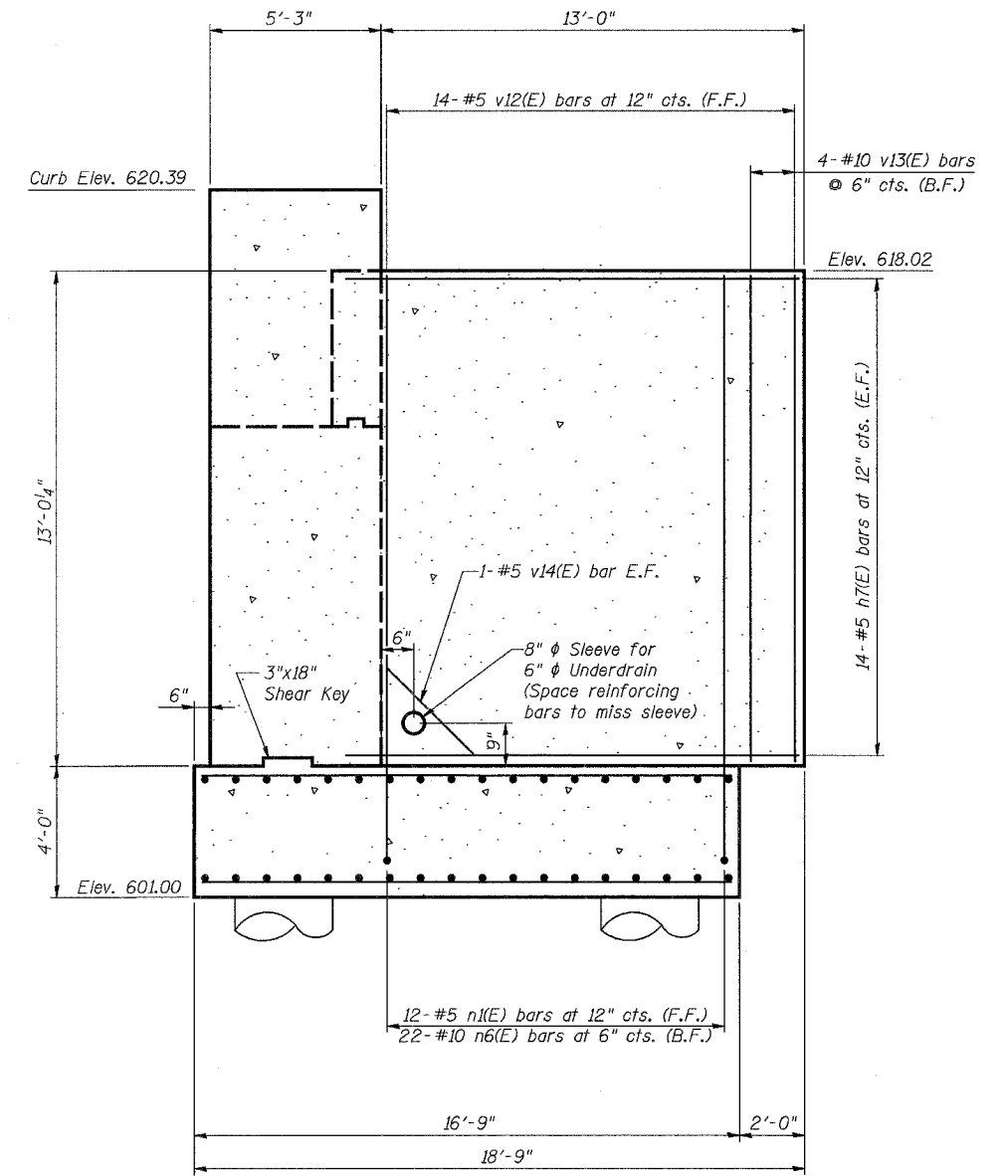
SHEET NO. 20
26 SHEETS



CLOSURE WALL PLAN



SECTION E-E
(Looking South)



CLOSURE WALL ELEVATION
(Looking East)

LEGEND

F.F. - Front Face
B.F. - Back Face
E.F. - Each Face

NOTES:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Work this sheet with Sheets 18 through 22.
3. See Sheet 22 for Bill of Materials.
4. Cost of pipe sleeve is included with Concrete Structures.

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DESIGNED	MDS
CHECKED	JPB
DRAWN	MDS
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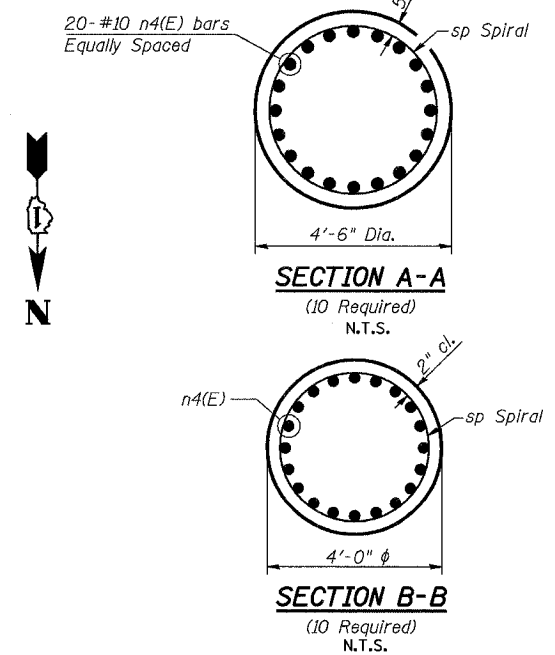
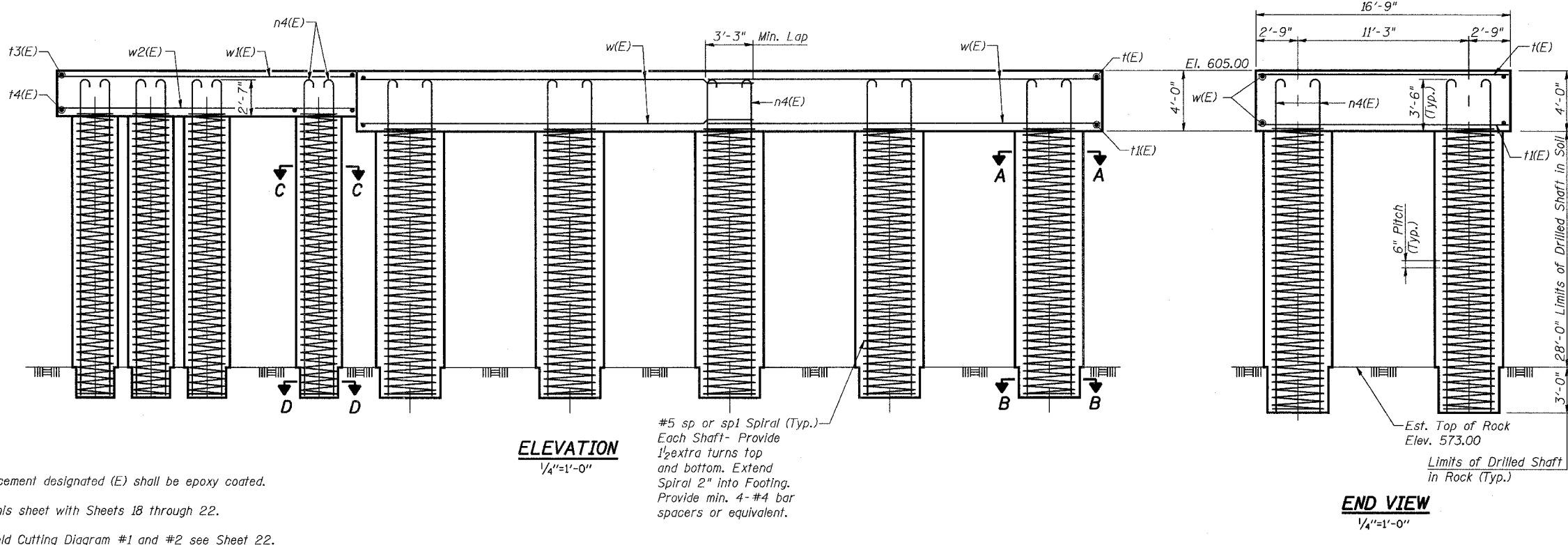
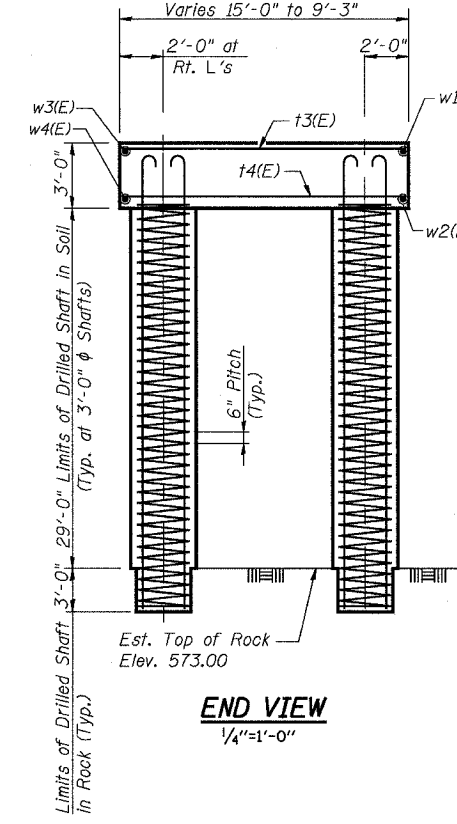
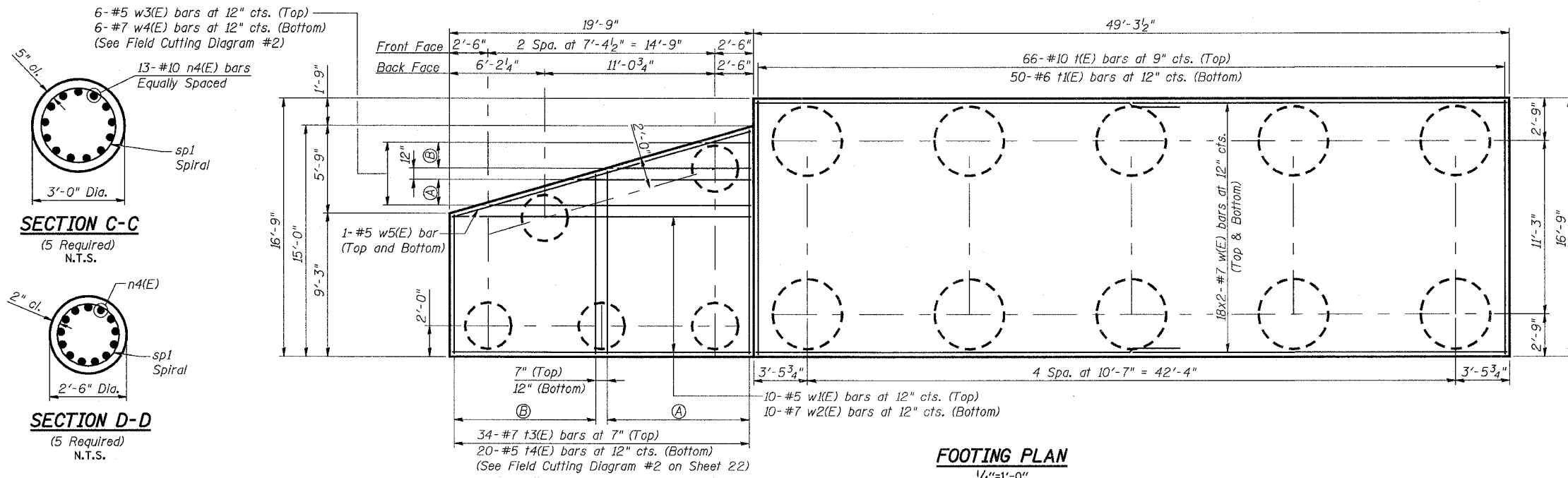
ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
**SOUTH ABUTMENT
DETAILS II**
CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 96+36.66 STRUCTURE NO. 016-2822
SCALE: 3/8"=1'-0" DATE: 2/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	200B-001VB	COOK	579	485
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT		

SHEET NO. 21
26 SHEETS

CONTRACT NO. 60E10



NOTES:

1. Reinforcement designated (E) shall be epoxy coated.
2. Work this sheet with Sheets 18 through 22.
3. For Field Cutting Diagram #1 and #2 see Sheet 22.
4. Drilled Shafts shall be drilled to Elevation 570.0. Quantities and Detailing are for the estimated Elevations shown on the Plans. The actual conditions encountered in each Shaft may differ and the Drilled Shaft and Reinforcement Quantities shall be adjusted accordingly as directed by the Engineer and paid for at the corresponding Unit Bid Price.
5. Spiral sp outer diameter = 3'-8".
Spiral sp1 outer diameter = 2'-2".

Min. Lap Splice
for Spiral = 2'-0"

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CHECKED	JPB
DRAWN	MDS
CHECKED	JPB

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ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
**SOUTH ABUTMENT
FOOTING & DRILLED SHAFTS**
CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 96+36.66 STRUCTURE NO. 016-2822
SCALE: AS NOTED DATE: 2/21/2008

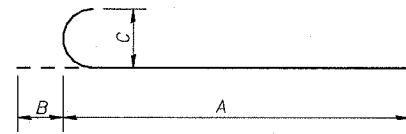
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	486
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60E10				

SHEET NO. 22
26 SHEETS

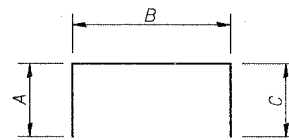
BILL OF MATERIAL - SOUTH ABUTMENT

Bar	No.	Size	Length	Shape
h(E)	72	#5	25'-6"	—
h1(E)	6	#5	0'-11"	—
h2(E)	7	#5	5'-0"	—
h3(E)	7	#5	6'-8"	—
h4(E)	11	#5	19'-6"	—
h5(E)	10	#5	19'-2"	—
h6(E)	2	#5	22'-2"	—
h7(E)	28	#5	13'-11"	—
n(E)	100	#9	13'-1"	—
n1(E)	62	#5	6'-0"	—
n2(E)	21	#5	5'-0"	—
n3(E)	40	#7	6'-7"	—
n4(E)	265	#10	35'-11"	—
n6(E)	22	#10	17'-9"	—
sp	10	#5	31'-2"	—
sp1	5	#5	32'-2"	—
t(E)	66	#10	16'-2"	—
t1(E)	50	#6	16'-2"	—
t3(E)	17	#7	23'-1"	—
t4(E)	10	#5	23'-1"	—
u(E)	100	#5	8'-8"	—
u1(E)	2	#5	8'-9"	—
v(E)	47	#7	7'-4"	—
v1(E)	47	#5	6'-1"	—
v2(E)	50	#5	8'-3"	—
v3(E)	12	#5	8'-7"	—
v4(E)	10	#5	19'-1"	—
v5(E)	20	#6	19'-1"	—
v6(E)	1	#5	15'-1"	—
v7(E)	1	#6	15'-1"	—
v12(E)	14	#5	12'-9"	—
v13(E)	4	#10	12'-8"	—
v14(E)	2	#5	2'-3"	—
w(E)	72	#7	26'-2"	—
w1(E)	10	#5	19'-2"	—
w2(E)	10	#7	19'-2"	—
w3(E)	3	#5	19'-6"	—
w4(E)	3	#7	19'-6"	—
w5(E)	2	#5	20'-0"	—
Porous Granular Embankment		Cu. Yd.	378	
Concrete Structures		Cu. Yd.	271.0	
Reinforcement Bars		Lbs.	9,990	
Reinforcement Bars (Epoxy Coated)		Lbs.	66,200	
Concrete Sealer		Sq. Ft.	180	
Braced Excavation		Cu. Yd.	356.8	
Non-Special Waste Disposal		Cu. Yd.	723.5	
Geocomposite Wall Drain		Sq. Yd.	81.3	
Structure Excavation		Cu. Yd.	584.4	
Drilled Shaft in Soil		Cu. Yd.	202.8	
Drilled Shaft in Rock		Cu. Yd.	16.7	



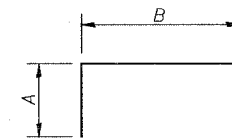
BARS nx(E)

Bar	A	B	C
n(E)	11'-10"	1'-3"	11 ³ / ₄ "
n1(E)	5'-5"	7"	5"
n2(E)	4'-5"	7"	5"
n3(E)	5'-9"	10"	7"
n4(E)	34'-6"	1'-5"	1'-1 ¹ / ₄ "
n6(E)	16'-4"	1'-5"	1'-1 ¹ / ₄ "



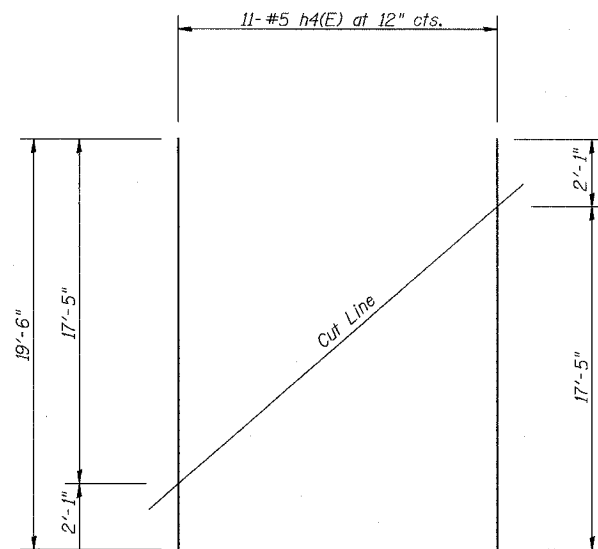
BARS u(E) & u1(E)

Bar	A	B	C
u(E)	2'-0"	4'-8"	2'-0"
u1(E)	4'-1"	7"	4'-1"



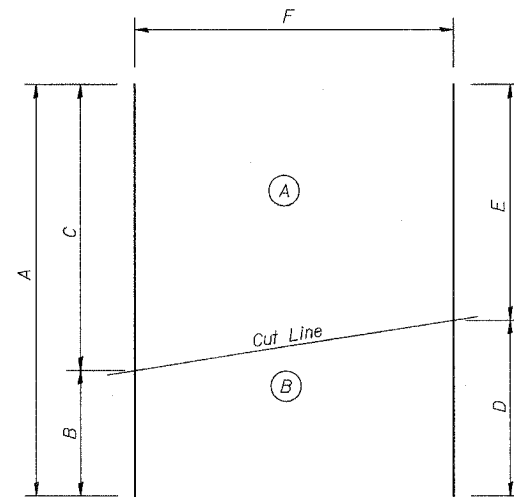
BARS h2(E) & h3(E)

Bar	A	B
h2(E)	1'-3"	3'-9"
h3(E)	2'-0"	4'-8"



FIELD CUTTING DIAGRAM #1

Order bars full length. Cut bars in field as shown. Use top half in F.F. and bottom half in B.F. for h4(E) bars.



FIELD CUTTING DIAGRAM #2

Order bars full length. Cut bars in field as shown. Place patterns (A) & (B) side by side as shown on sheet 21 for fx(E) bars, sheet 18 for vx(E) bars and sheet 21 for wx(E) bars.

Bar	A	B	C	D	E	F
t3(E)	23'-1"	8'-8"	14'-5"	11'-4"	11'-8"	17'-#7 bars at 7" cts.
t4(E)	23'-1"	8'-8"	14'-5"	11'-4"	11'-8"	10'-#5 bars at 12" cts.
v4(E)	19'-1"	3'-10"	15'-3"	9'-3"	9'-10"	10'-#5 bars at 12" cts.
v5(E)	19'-1"	3'-10"	15'-3"	9'-4"	9'-9"	20'-#6 bars at 6" cts.
w3(E)	19'-6"	1'-3"	18'-3"	8'-0"	11'-6"	3'-#5 bars at 12" cts.
w4(E)	19'-6"	1'-3"	18'-3"	8'-0"	11'-6"	3'-#7 bars at 12" cts.

NOTES:
Bars designated (E) shall be epoxy coated.
Length of Spiral given is Height of Spiral. Weight includes Weight of Spacers for Spiral.

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DESIGNED	MDS
CHECKED	JPB
DRAWN	MDS
CHECKED	JPB

URS 100 South Wacker Drive,
Suite 500
Chicago, IL 60606
(312) 939-1000

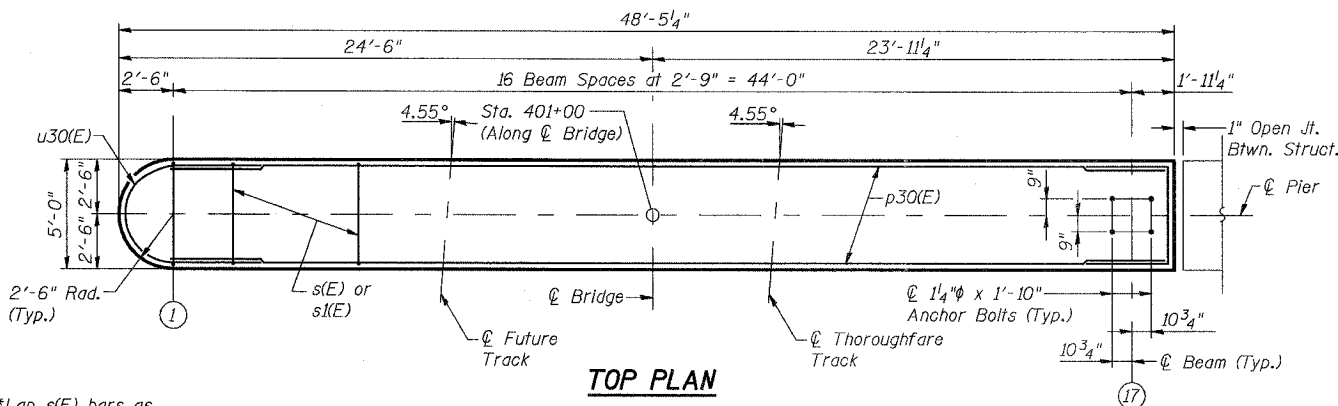
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
**SOUTH ABUTMENT
DETAILS III**
CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STRUCTURE NO. 016-2822
SCALE: N.T.S. DATE: 2/21/2008

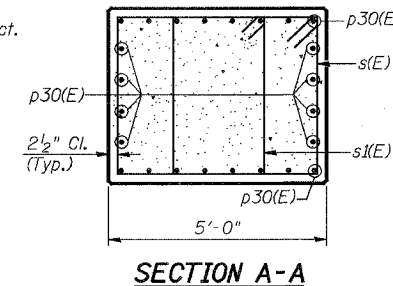
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	487
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

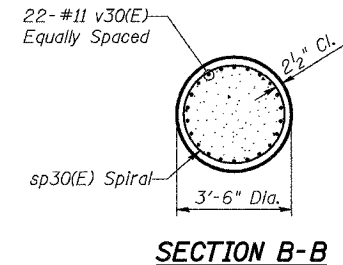
SHEET NO. 23
26 SHEETS



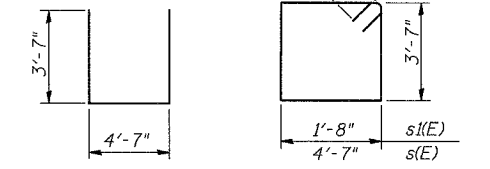
TOP PLAN



SECTION A-A

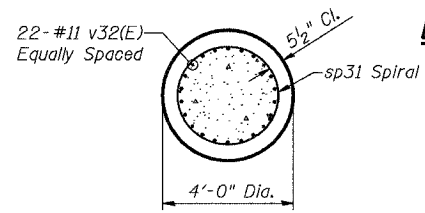


SECTION B-B



BAR s2(E)

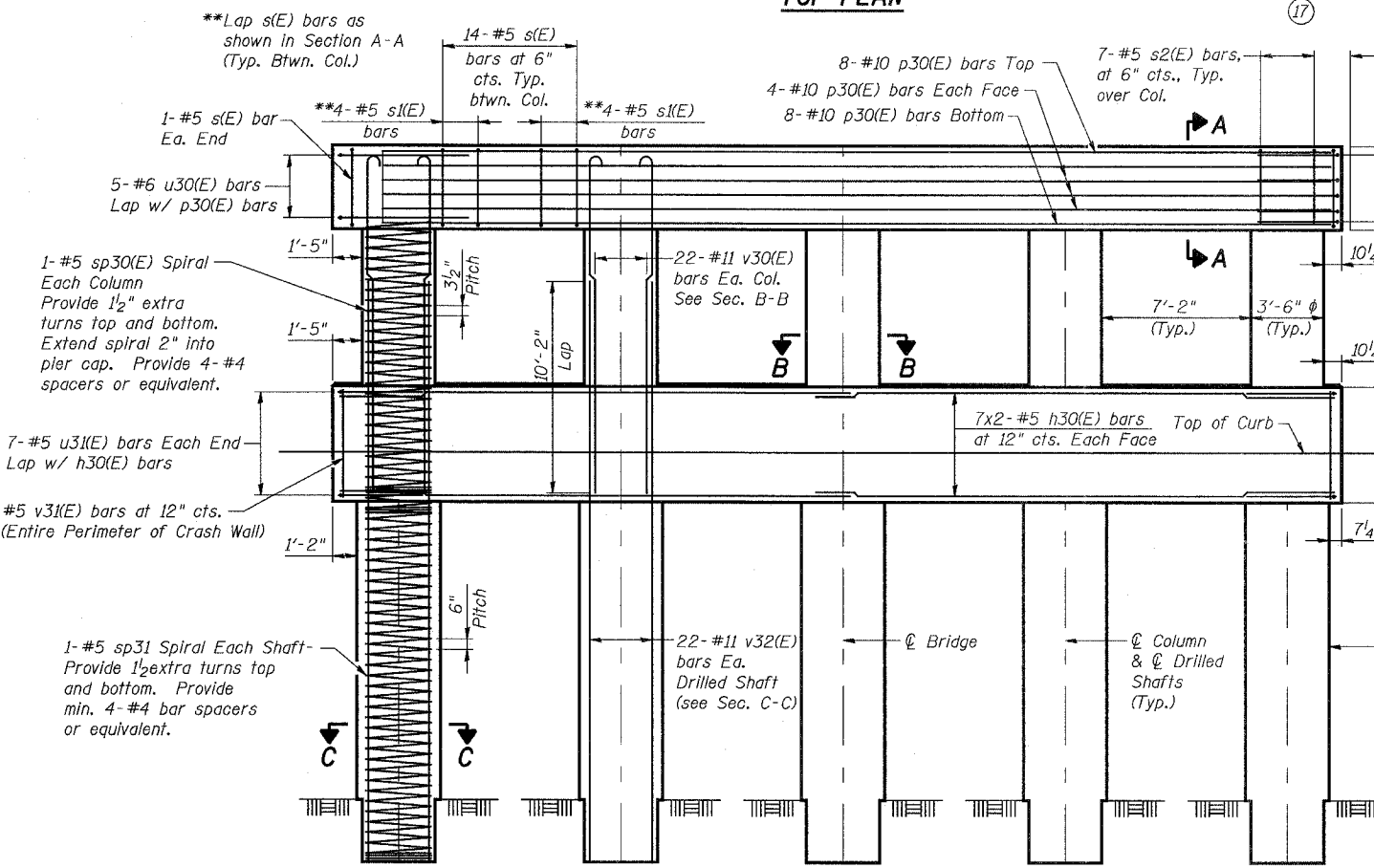
BAR s(E) & s1(E)



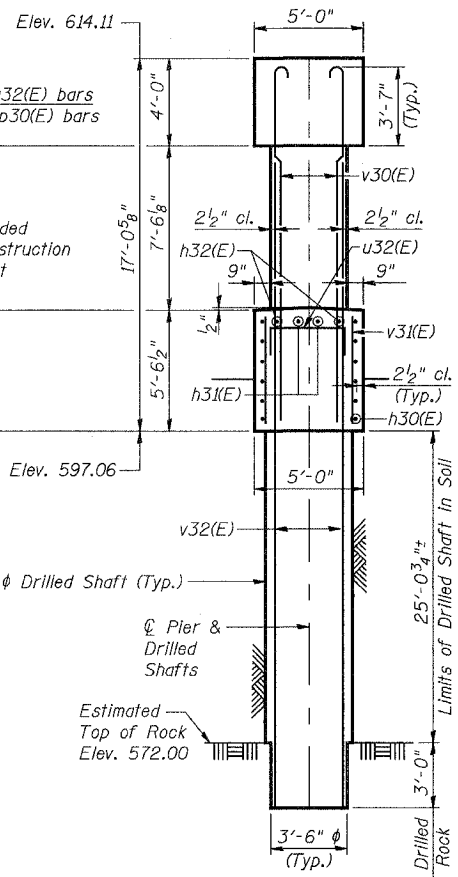
SECTION C-C

PIER
BILL OF MATERIAL

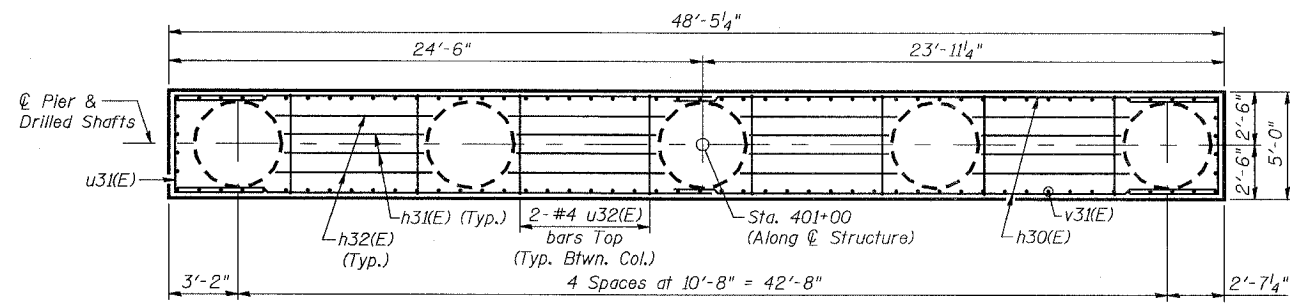
Bar	No.	Size	Length	Shape
h30(E)	28	#5	25'-1"	—
h31(E)	8	#5	7'-2"	—
h32(E)	8	#5	8'-3"	—
p30(E)	24	#10	45'-9"	—
s(E)	58	#5	17'-3"	□
s1(E)	32	#5	11'-5"	□
s2(E)	35	#5	11'-9"	□
sp30(E)	5	#5	13'-4"	
sp31	5	#5	28'-3"	
u30(E)	5	#6	12'-3"	—
u31(E)	14	#5	8'-11"	—
u32(E)	13	#6	9'-8"	—
v30(E)	110	#11	16'-5"	—
v31(E)	108	#5	5'-1"	—
v32(E)	110	#11	40'-2"	—
Structure Excavation		Cu. Yd.	83.4	
Concrete Structures		Cu. Yd.	98.7	
Reinforcement Bars		Pound	3,500	
Reinforcement Bars, Epoxy Coated		Pound	41,140	
Concrete Sealer		Sq. Ft.	240	
Drilled Shaft in Soil		Cu. Yd.	58.3	
Drilled Shaft in Rock		Cu. Yd.	5.4	
Non-Special Waste Disposal		Cu. Yd.	128.2	



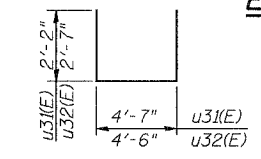
ELEVATION



END VIEW



CRASH WALL PLAN



BAR u31(E) & u32(E)

NOTES:
Reinforcement Bars designated (E) shall be epoxy coated.
Length of Spiral given is height of Spiral.
Weight includes weight of spacers for Spiral.
Drilled Shafts shall be drilled to Elevation 569.00.
Quantities and Detailing are for the estimated Elevations shown on the Plans.
The actual conditions encountered in each Shaft may differ and the Drilled Shaft and Reinforcement Quantities shall be adjusted accordingly as directed by the Engineer and paid for at the corresponding Unit Bid Price.
Space reinforcement in seat to miss anchor bolts.
Min. Lap Lengths: #9 bar = 6'-6"
Bars designated 6x2 - #5 ... etc. indicates 6 lines of bars with 2 lengths per line.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
PIER
CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 96+36.66 STRUCTURE NO. 016-2822
SCALE: 1/4"=1'-0" DATE: 2/21/2008



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DESIGNED	MDS
CHECKED	JPB
DRAWN	MDS
CHECKED	JPB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	2008-001VB	COOK	579	488
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

CONTRACT NO. 60E10

SHEET NO. 24
26 SHEETS

BORING NO. E-5

Everest Engineering Company
STRUCTURE BORING LOG
Page 1 of 2
Date 6/20/01

ROUTE U.S. 6 DESCRIPTION U.S. ROUTE 6 FROM I-294 TO ILLINOIS ROUTE 1
SECT. _____ STRUCT. NO. 016-2822 DRILLED BY PATRICK DRILLING
COUNTY COOK LOCATION BEHIND N. ABUTMENT, EAST END S. 17, TWP. 36 N, RNG. 12 E

Boring No. E-5 Station 96+62.07 Offset 55.00ft LT Surface Elev. 618.00 ft

D	B	Qu	W	Surface Water Elev.	D	B	Qu	W
H	S	tsf	%		H	S	tsf	%
				N/A				
	4	15		592.50	8	5.4	13	
	4				27	S		
	5				43			
				590.00				
	5	28			11		10	
	4				16			
	4				46			
	3	14						
	3							
	5							
				610.00				
	2	1.0	22		49		8	
	2		P		504"			
	5							
	2	1.2	27					
	3		B					
	3			581.50				
	3	1.9	21		504"		18	
	6		B					
	9							
	5	1.7	15					
	10		B					
	14			576.50				
	6	2.1	15					
	13		S					
	17							
	9		9					
	31							
	33							
	20		8					
	31							
	16							

MISCELLANEOUS FILL:
clay loam, sand, gravel,
slag, pieces of glass, coal,
and cinders

FILL
Stiff, Brown, Gray, and
Black SILTY CLAY LOAM
traces - sand, gravel, and
topsoil

FILL
Stiff, Brown and Gray
SILTY CLAY
traces - sand and gravel

FILL
Very Stiff, Gray SILTY
CLAY LOAM
traces - sand and gravel

Dense to Very Dense,
Gray SILTY LOAM
traces - sand and gravel

FOR ROCK CORES SEE
PAGE 2

Surface Water Elev. _____
Groundwater Elev.: _____
when drilling _____
at Completion _____
after _____ Hrs. _____

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

BORING NO. E-5

Everest Engineering Company
STRUCTURE ROCK CORING LOG
Page 2 of 2
Date 6/20/01

ROUTE U.S. 6 DESCRIPTION U.S. ROUTE 6 FROM I-294 TO ILLINOIS ROUTE 1
SECT. _____ STRUCT. NO. 016-2822 DRILLED BY PATRICK DRILLING
COUNTY COOK

Boring No. E-5 Core Type NX
Station 96+62.07 Core Diameter 2 in
Offset 55.00ft LT Core Length 20 ft

Surface Elev. 618.00 ft

Top Elev. ft	Coring Notes and Rock Description	Core Run (#)	R (%)	R (%)	CORE (Min/ft)	COMP. (tsf)
576.50	DOLOMITE (RACINE FORMATION): Gray, massive, hard, fine grained, thick bedded, slightly fractured	1	98	88	4	1212.2
						1401.2
		2	100	98	4	
		3	100	97	3.5	
		4	100	100	4	
556.50	END OF BORING					

Color pictures of the cores YES
Cores will be stored for examination until DECEMBER, 2001

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DESIGNED	MDS
CHECKED	JPB
DRAWN	MDS
CHECKED	JPB



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SOIL BORINGS
CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 96+36.66 STRUCTURE NO. 016-2822
SCALE: _____ DATE: 2/21/2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 351	200B-001VB	COOK	579	490
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	
CONTRACT NO. 60E10				

SHEET NO. 26
26 SHEETS

BORING NO. E-12

Everest Engineering Company
STRUCTURE BORING LOG

Page 1 of 1
Date 6/19/01

ROUTE U.S. 6 DESCRIPTION U.S. ROUTE 6 FROM I-294 TO ILLINOIS ROUTE 1

SECT. _____ STRUCT. NO. 016-2822 DRILLED BY PATRICK DRILLING

COUNTY COOK LOCATION BEHIND S. ABUTMENT, EAST END S. 17, TWP. 36 N, RNG. 12 E

Boring No.	D	B	Qu	W	Surface Water Elev.	D	B	Qu	W
Station	E	L			Groundwater Elev.:	E	L		
Offset	P	O			when drilling	P	O		
Surface Elev.	T	W	tsf	%	at Completion	T	W	tsf	%
	H	S			after _____ Hrs.	H	S		
MISCELLANEOUS FILL: crushed aggregate, sand, gravel, slag, cinders, coal, topsoil and pieces of glass		5		11			11		14
		4					19		
		5					505"		
		6		14			505"		16
		8							
		14					-30		
		2		16					
		2							
		2			586.00				
		2							
		2		18			13	4.5	15
		4					23	P	
		4					30		
FILL 607.50							-35		
TOPSOIL 606.50		3	1.0	35					
		4		P					
Stiff to Hard, Brown and Gray SILTY CLAY traces - sand and gravel		7			581.00				
		3	2.2	22					
		4		B			592"		6
		5					-40		
		12	6.2	14					
		24		B					
		22							
Very Stiff, Gray SILTY CLAY LOAM traces - sand and gravel		9	3.3	12			505"		12
		17		S					
		17					-45		
Very Dense to Extremely Dense, Gray SILTY LOAM traces - sand and gravel		505"			572.50				
		8		11					
		32							
		28					-50		

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

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DESIGNED	MDS
CHECKED	JPB
DRAWN	MDS
CHECKED	JPB



REVISIONS	
NAME	DATE

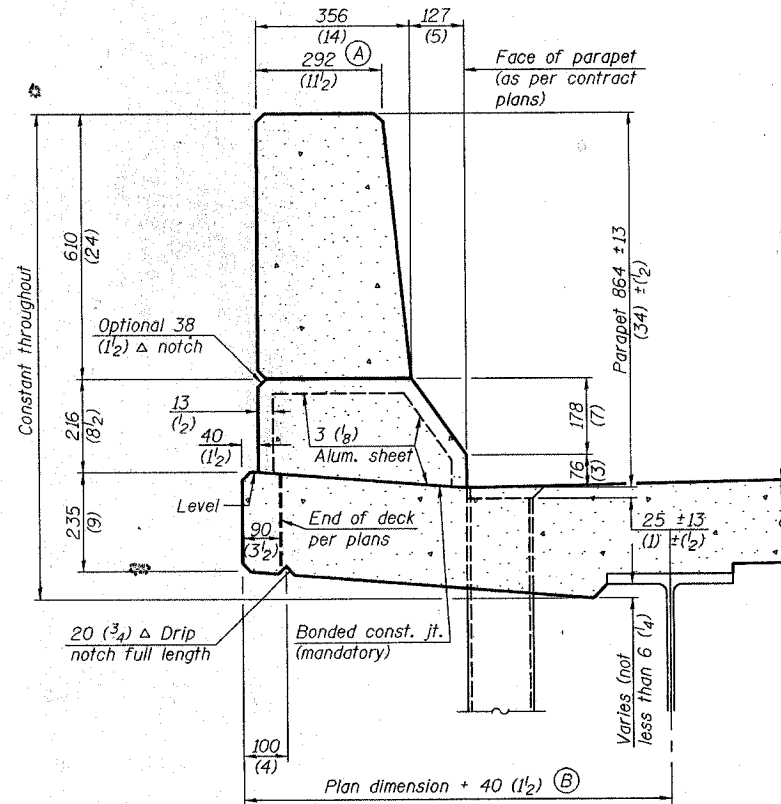
ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM I-294 TO IL RTE 1
SOIL BORINGS

CN THOROUGHFARE TRACK
BRIDGE 20.6E OVER U.S. RTE. 6 (159TH STREET)
STATION 96+36.66 STRUCTURE NO. 016-2822
SCALE: _____ DATE: 2/21/2008

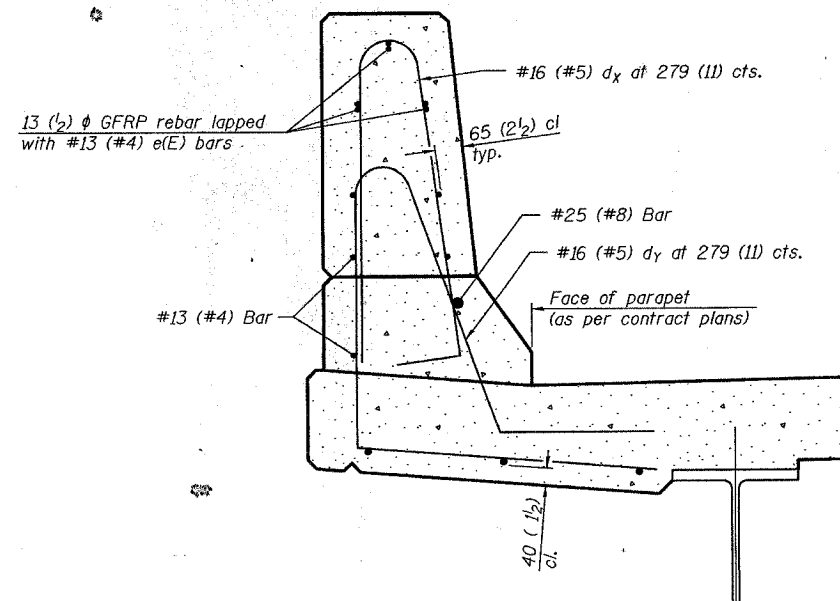
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
FAP 351	2008-001 V&B	COOK	579	490A
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

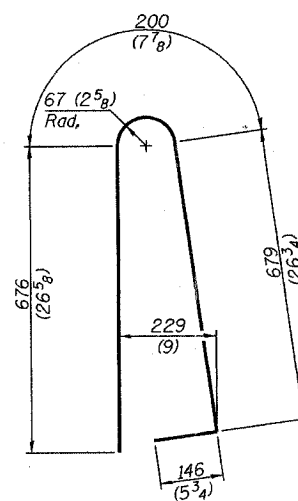
Contract # 60E10



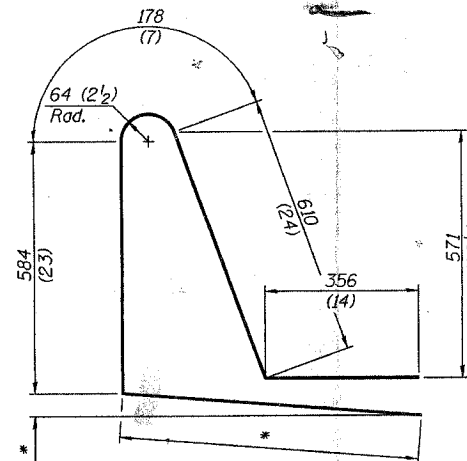
SECTION
(Showing dimensions)



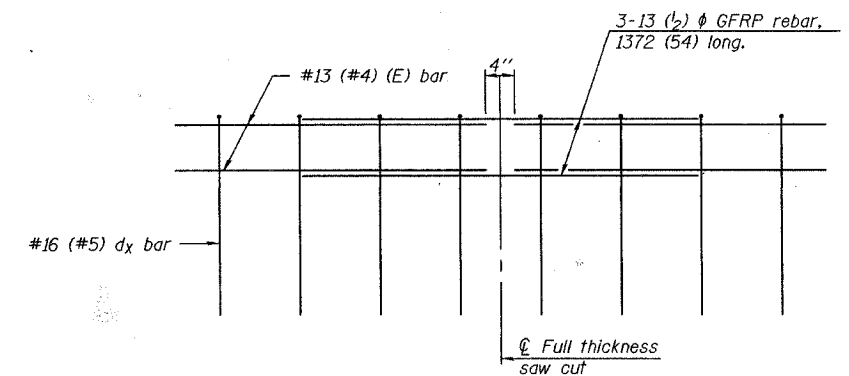
SECTION
(Showing required reinforcement)



BAR dx(e)



BAR dx(e)
* Per contract plans

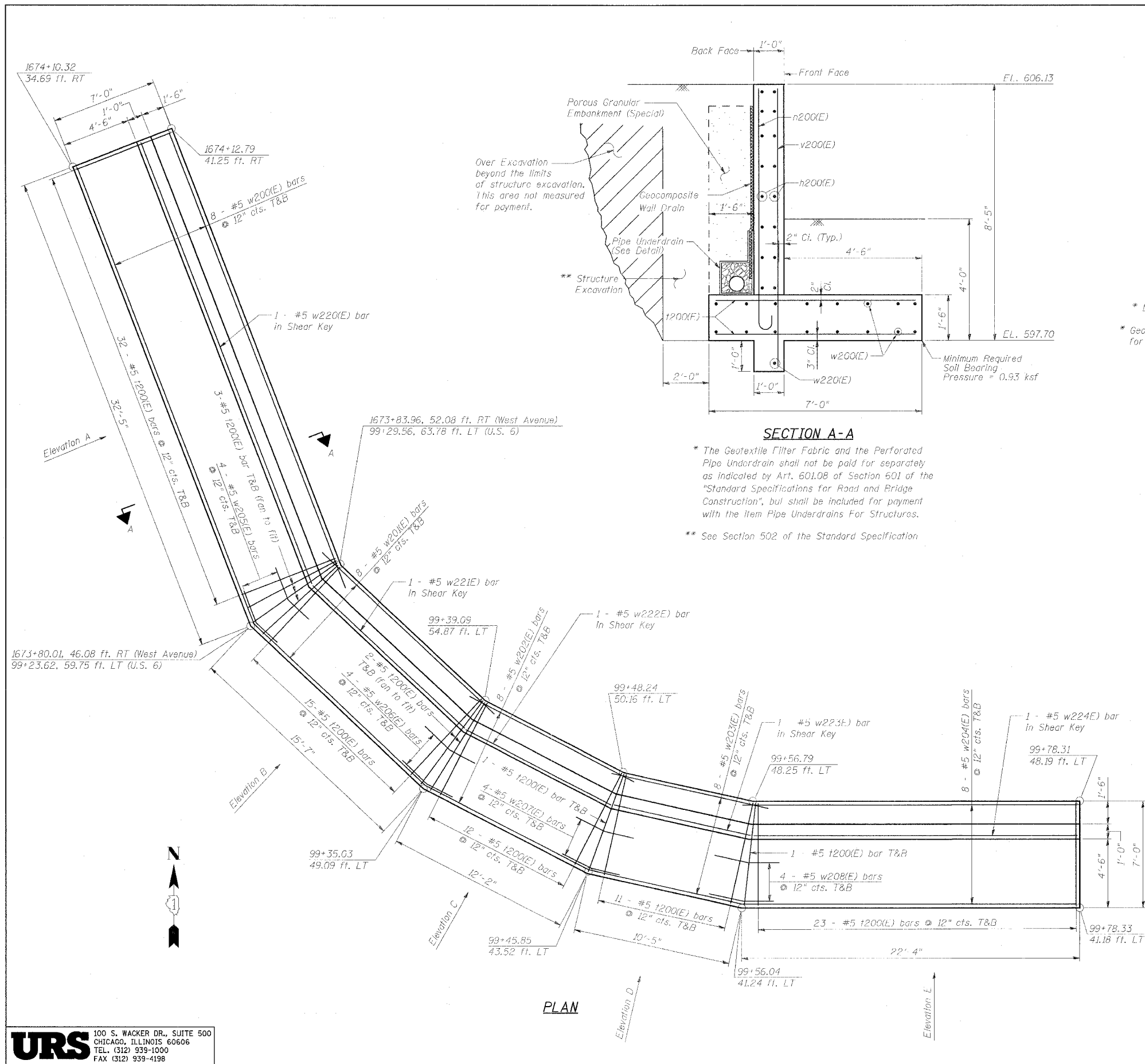


GFRP REBAR STIFFENING DETAIL
(Place as shown in parapet section)

GENERAL NOTES
All dimensions shall remain the same as shown on contract plans, except dimensions A and B which are to be revised as shown to provide additional clearance. Additional concrete needed to revise dimension A and B= 0.0422 m³/m (0.165 cu. yds./ft.) of parapet. Place aluminum sheet in curb portion at and near piers. Full thickness saw cut at all other locations. Adjust/add joint locations to maintain 3 to 6 meter (10 to 20 foot) spacing.

**CONCRETE PARAPET
SLIPFORMING OPTION**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2008-001VB	COOK	579	491
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
CONTRACT NO. 60E10				



LEGEND:
 F.F. = Front Face
 B.F. = Back Face
 E.F. = Each Face
 T&B = Top and Bottom

NOTES:

1. Work this Sheet with Sheets R2 & R3.
2. See Sheet R2 for Wall Plan and Sections B-B and C-C.
3. See Sheet R3 for Elevations and Bill of Materials.
4. Reinforcement bars designated (E) shall be epoxy coated.
5. Concrete clear cover shall be 2" minimum unless noted otherwise.
6. All edges shall have standard 3/4" chamfers except as noted.
7. Min. Lap for Bar #5 = 2'-2"

INDEX OF SHEETS:

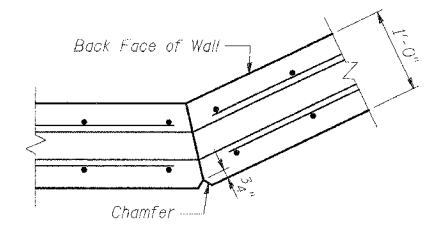
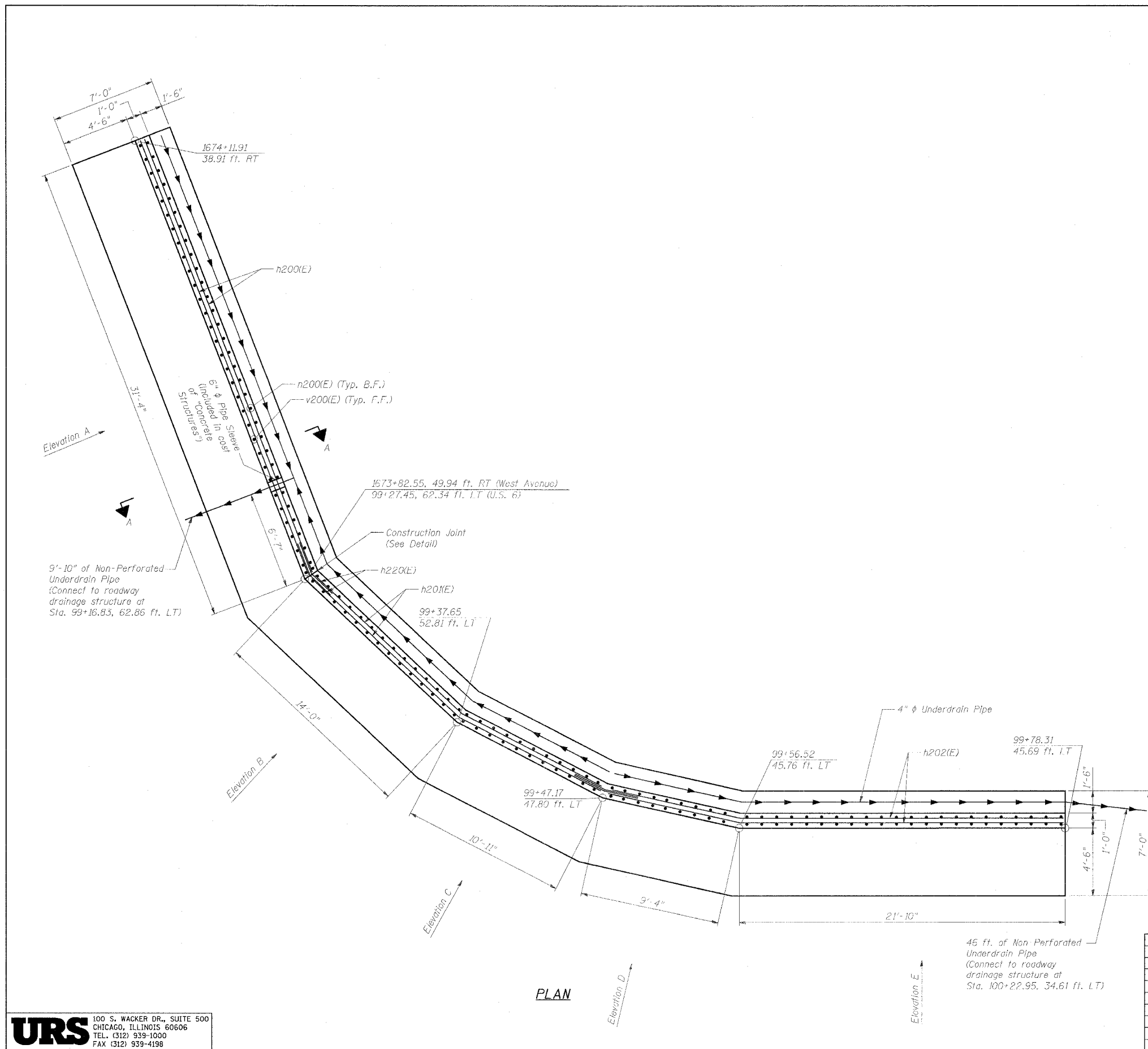
R1	West Ave. Retaining Wall - General Plan & Cross Sections
R2	West Ave. Retaining Wall - Wall Plan
R3	West Ave. Retaining Wall - Elevations & Bill of Materials
R4	Park Ave. Retaining Wall - Location Plan
R5	Park Ave. Retaining Wall - Sta. 1346+78.21 to Sta. 1347+30.70
R6	Park Ave. Retaining Wall - Sta. 1346+22.43 to Sta. 1346+78.21
R7	Park Ave. Retaining Wall - Sta. 1343+82.93 to Sta. 1344+48.55
R8	Park Ave. Retaining Wall - Sta. 1343+50.12 to Sta. 1343+82.93
R9	Park Ave. Retaining Wall - Sta. 1342+84.51 to Sta. 1343+50.12
R10	Park Ave. Retaining Wall - Railing Details
R11	US Rte 6 & Park Ave. NW Ret. Wall - Sheet 1 of 2
R12	US Rte 6 & Park Ave. NW Ret. Wall - Sheet 2 of 2

SHEET R1 OF R12

URS 100 S. WACKER DR., SUITE 500
 CHICAGO, ILLINOIS 60606
 TEL. (312) 939-1000
 FAX (312) 939-4196

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION US RTE 6 FROM LEXINGTON AVE TO FISK AVE
NAME	DATE	
		WEST AVENUE RETAINING WALL GENERAL PLAN & CROSS SECTIONS
		DRAWN BY MAD
		CHECKED BY JPB
		DATE 02/21/08

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2008-001VB	COOK	579	492
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 60E10				



CONSTRUCTION JOINT DETAIL

LEGEND:
 F.F. = Front Face
 B.F. = Back Face
 E.F. = Each Face
 T&B = Top and Bottom

- NOTES:**
1. Work this Sheet with Sheet R1 & R3.
 2. See Sheet R1 for Footing Reinforcement and Section A-A.
 3. See Sheet R3 for Elevation A, B, C, D, & E.
 4. Reinforcement bars designated (E) shall be epoxy coated.
 5. Concrete clear cover shall be 2" minimum unless noted otherwise.
 6. All edges shall have standard 3/4" chamfers except as noted.
 7. Min. Lap for Bar #5 = 2'-2".

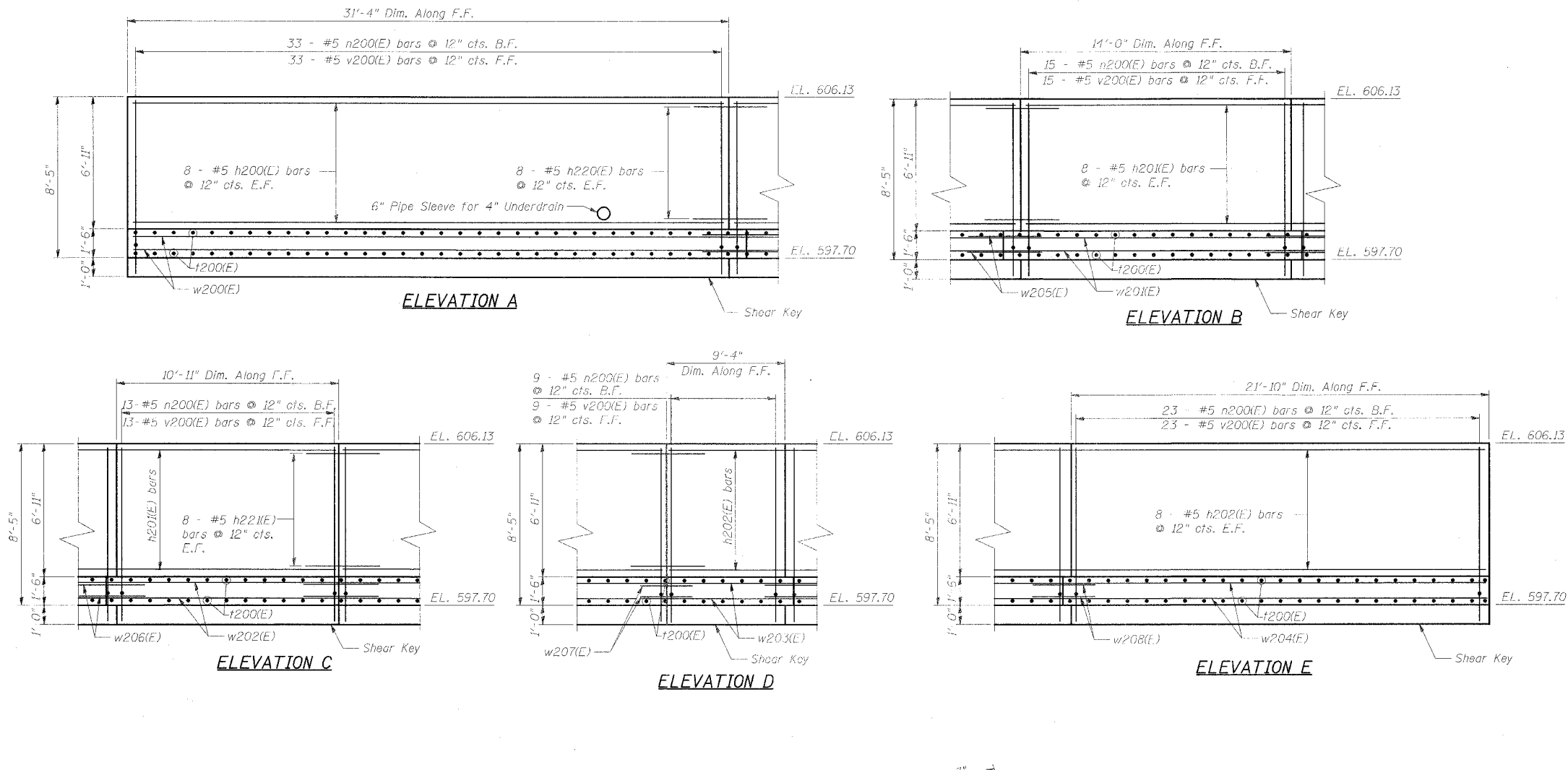
SHEET R2 OF R12

URS
 100 S. WACKER DR., SUITE 500
 CHICAGO, ILLINOIS 60606
 TEL. (312) 939-1000
 FAX (312) 939-4196

REVISIONS	
NAME	DATE

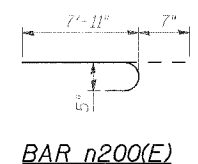
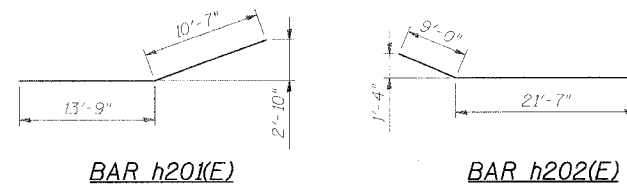
ILLINOIS DEPARTMENT OF TRANSPORTATION
 US RTE 6 FROM LEXINGTON AVE TO FISK AVE
 WEST AVENUE RETAINING WALL
 WALL PLAN
 DATE 02/21/08
 DRAWN BY MAD
 CHECKED BY JPB

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2008-001VB	COOK	579	493
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 60E10				



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h200(E)	16	#5	31'-0"	—
h200(E)	16	#5	24'-4"	—
h202(E)	16	#5	30'-7"	—
h220(E)	16	#5	4'-6"	—
h220(E)	16	#5	4'-6"	—
n200(E)	93	#5	8'-6"	—
1200(E)	200	#5	6'-8"	—
v200(E)	93	#5	9'-0"	—
w200(E)	16	#5	32'-0"	—
w200(E)	16	#5	15'-3"	—
w202(E)	16	#5	11'-10"	—
w203(E)	16	#5	10'-1"	—
w204(E)	16	#5	21'-11"	—
w205(E)	8	#5	4'-6"	—
w206(E)	8	#5	4'-6"	—
w207(E)	8	#5	4'-6"	—
w208(E)	8	#5	4'-6"	—
w220(E)	1	#5	31'-2"	—
w220(E)	1	#5	13'-11"	—
w222(E)	1	#5	10'-6"	—
w223(E)	1	#5	9'-1"	—
w224(E)	1	#5	21'-7"	—
Structure Excavation		Cu Yd	336.2	
Concrete Structures		Cu Yd	59.7	
Reinforcement Bars, Epoxy Coated		Pound	6440	
Pipe Underdrain for Structures 4"		Foot	141	
Porous Granular Embankment, Special		Cu Yd	28	
Geocomposite Wall Drain		Sq Yd	56	



Bar	A
h220(E)	12"
h220(E)	7"
w205(E)	12"
w206(E)	8"
w207(E)	7"
w208(E)	6"

BARS h220(E), h221(E) & w205(E) through w208(E)

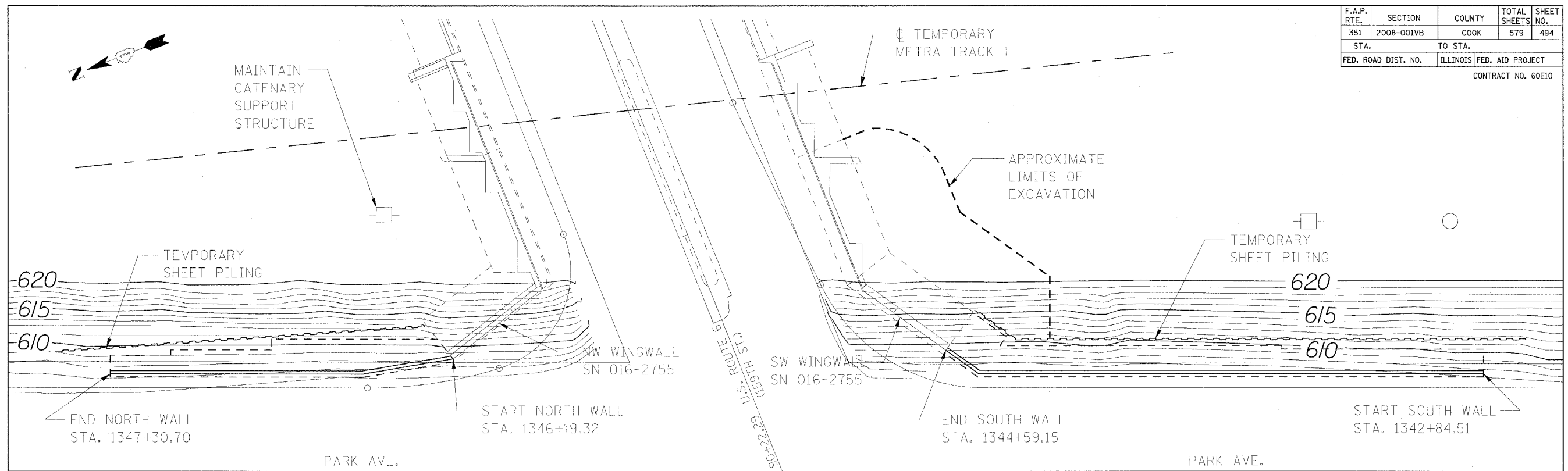
LEGEND:
 F.F. = Front Face
 B.F. = Back Face
 E.F. = Each Face
 T&B = Top and Bottom

- NOTES:**
1. Work this Sheet with Sheets R1 & R2.
 2. See Sheets R1 & R2 for Plan and Sections.
 3. Reinforcement bars designated (E) shall be epoxy coated.
 4. Concrete clear cover shall be 2" minimum unless noted otherwise.
 5. All edges shall have standard 3/4" chamfers except as noted.
 6. Min. Lap for Bar #5 = 2'-2".

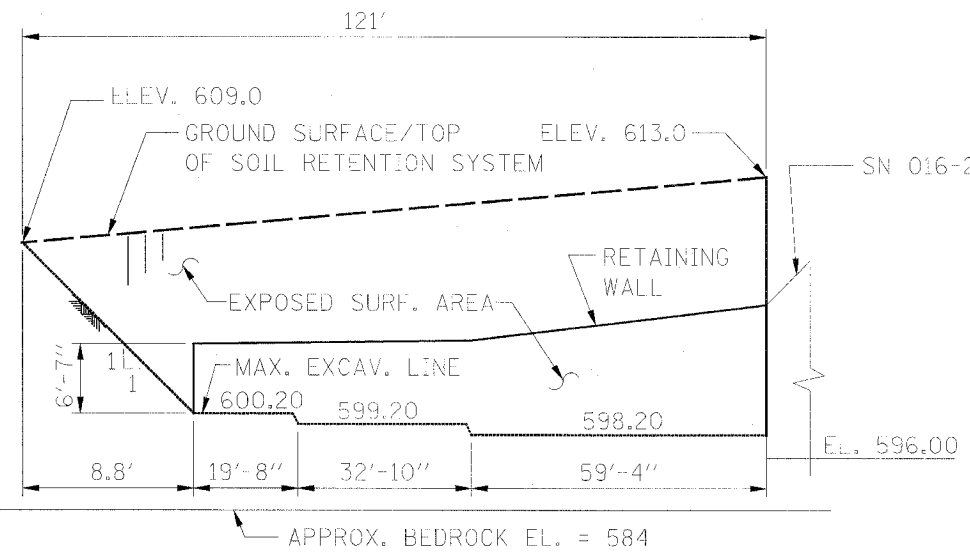
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 US RTE 6 FROM LEXINGTON AVE TO FISK AVE
 WEST AVENUE RETAINING WALL
 ELEVATIONS & BILL OF MATERIALS
 DATE 02/21/08
 DRAWN BY MAD
 CHECKED BY JPB

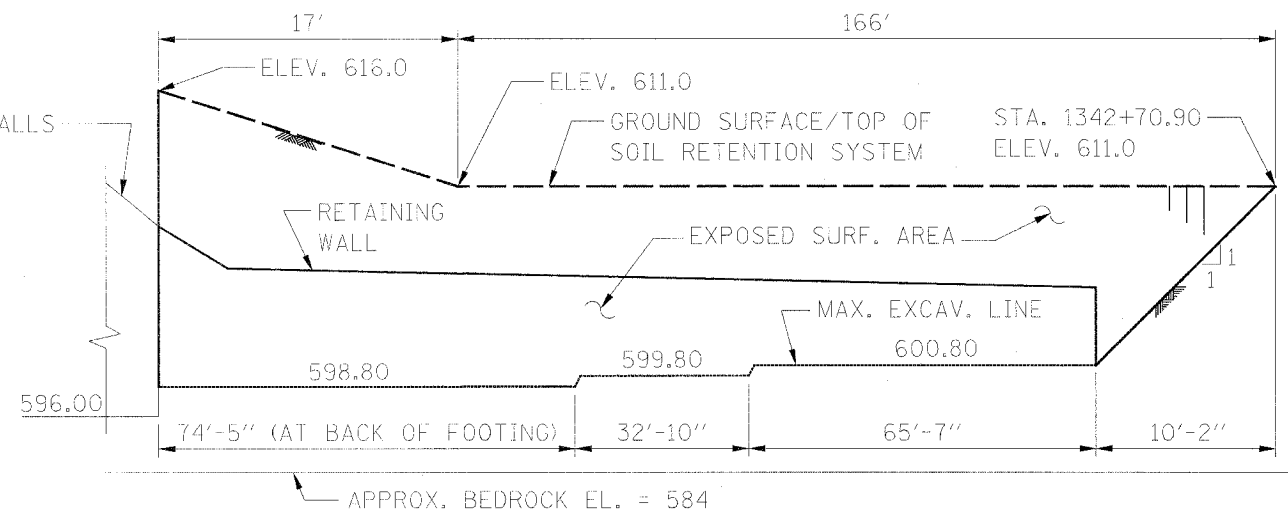
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2008-001VB	COOK	579	494
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 60E10				



PLAN



ELEVATION - NORTH WALL



ELEVATION - SOUTH WALL

BILL OF MATERIAL

ITEM	UNIT	QTY.
SOIL RETENTION SYSTEM	Sq. Ft.	3338

NOTES:

- Walls must only be built when Metra is operating on temporary rundound. Cutting into the embankment along Metra tracks will not be permitted when rail loading is present.
- 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.

SHEET R4 OF R12

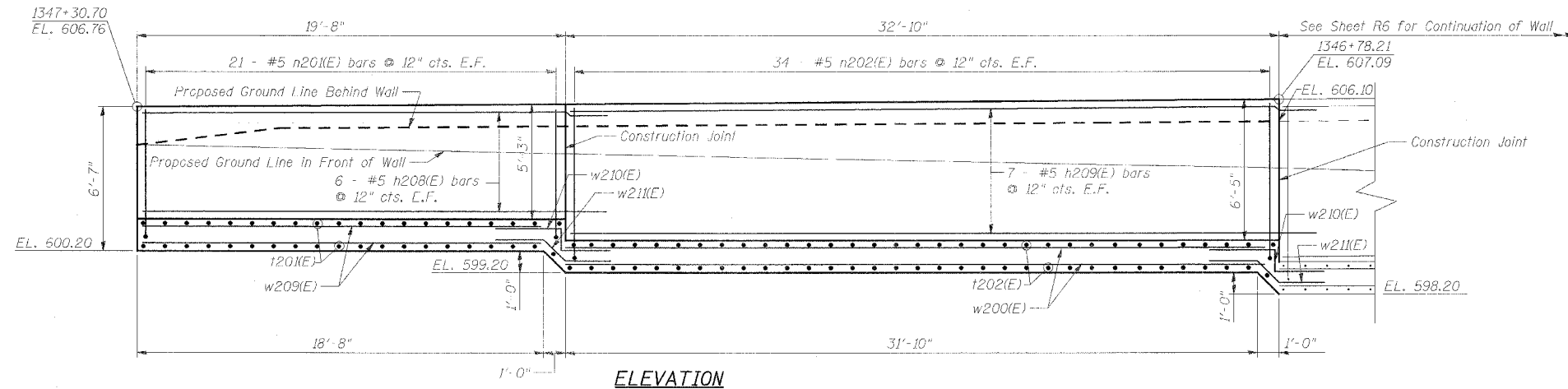
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 US RTE 6 FROM LEXINGTON AVE TO FISK AVE
 PARK AVE. RETAINING WALL
 LOCATION PLAN
 DRAWN BY MAD
 CHECKED BY DEY
 DATE 02/21/08

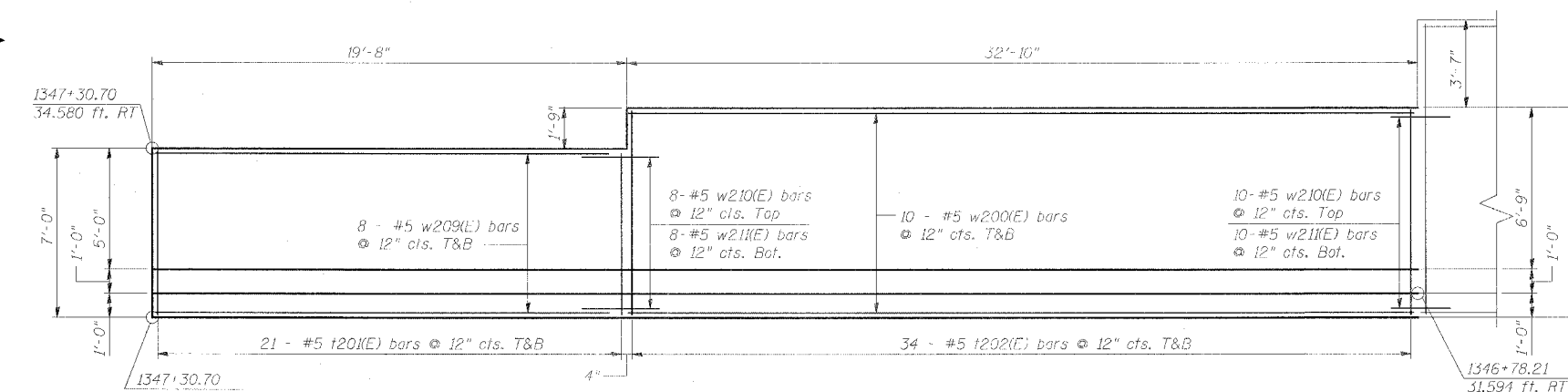
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2008-001VB	COOK	579	495
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
CONTRACT NO. 60E10				

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h208(E)	12	#5	21'-9"	—
h209(E)	14	#5	34'-11"	—
n201(E)	42	#5	6'-9"	U
n202(E)	68	#5	7'-11"	U
t201(E)	42	#5	6'-8"	—
t202(E)	68	#5	8'-4"	—
w200(E)	20	#5	32'-0"	—
w209(E)	16	#5	18'-4"	—
w210(E)	18	#5	6'-7"	—
w211(E)	18	#5	5'-11"	—
Structure Excavation	Cu Yd	171.6		
Concrete Structures	Cu Yd	34.8		
Pipe Underdrain for Structures 4"	Foot	53		
Reinforcement Bars, Epoxy Coated	Pound	3740		
Geocomposite Wall Drain	Sq Yd	22.8		
Porous Granular Embankment	Cu Yd	129.8		



ELEVATION



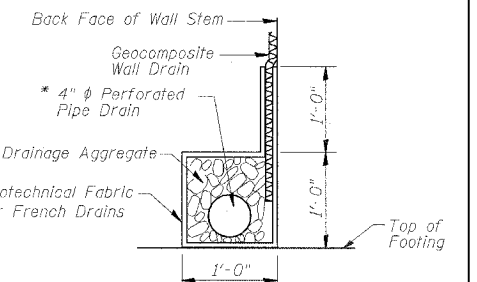
PLAN

(Wall reinforcement has been omitted for clarity)

LEGEND:
 F.F. = Front Face
 B.F. = Back Face
 E.F. = Each Face
 T&B = Top and Bottom

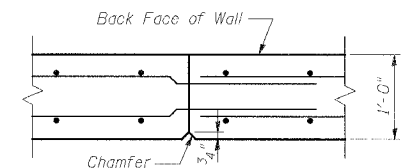
NOTES:

- Work this Sheet with Sheet R6.
- Reinforcement bars designated (E) shall be epoxy coated.
- Concrete clear cover shall be 2" minimum unless noted otherwise.
- All edges shall have standard 3/4" chamfers except as noted.
- Min. Lap for Bar #5 = 2'-2".
- Walls must only be built when Metra is operating on temporary shoo-flies. Cutting into the embankment along Metra tracks will not be permitted when rail loading is present.
- For railing, see Railing Details sheet.
- Excavation for placing Porous Granular Embankment is included in cost of Structure Excavation. Porous Granular Embankment shall be compacted to 95% Modified Proctor Density and its coarse aggregate gradation shall be CA 18. Any additional area excavated beyond pay limits for Structure Excavation shall also be backfilled with Porous Granular Embankment. Furnishing and placing of this portion of that material will not be measured for payment.
- Surface of embankment shall be covered with re-used or new granular surface material. See special provisions "Collect and Re-use Granular Surface Material" and "Granular Surface Material". For quantity of Granular Surface Material see Track Construction General Plan Permanent Alignment.

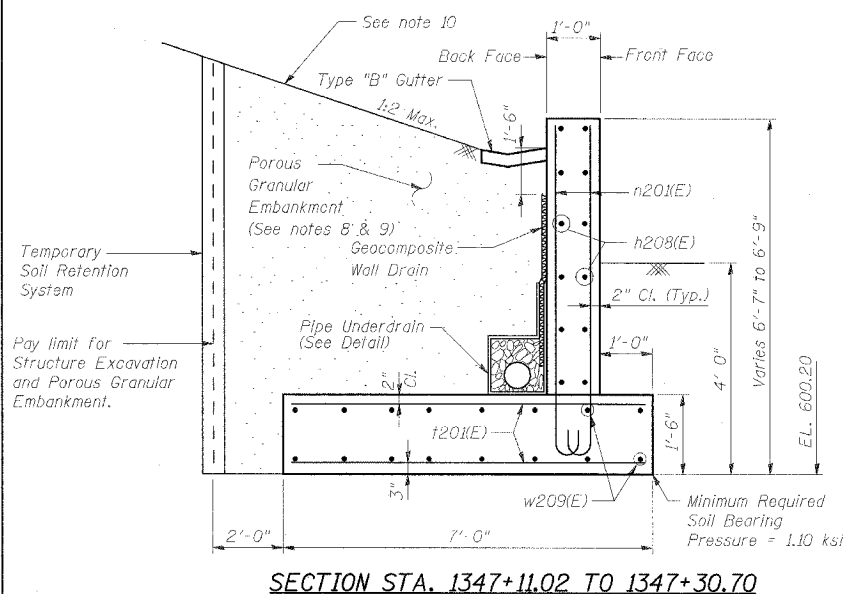


PIPE UNDERDRAIN DETAIL

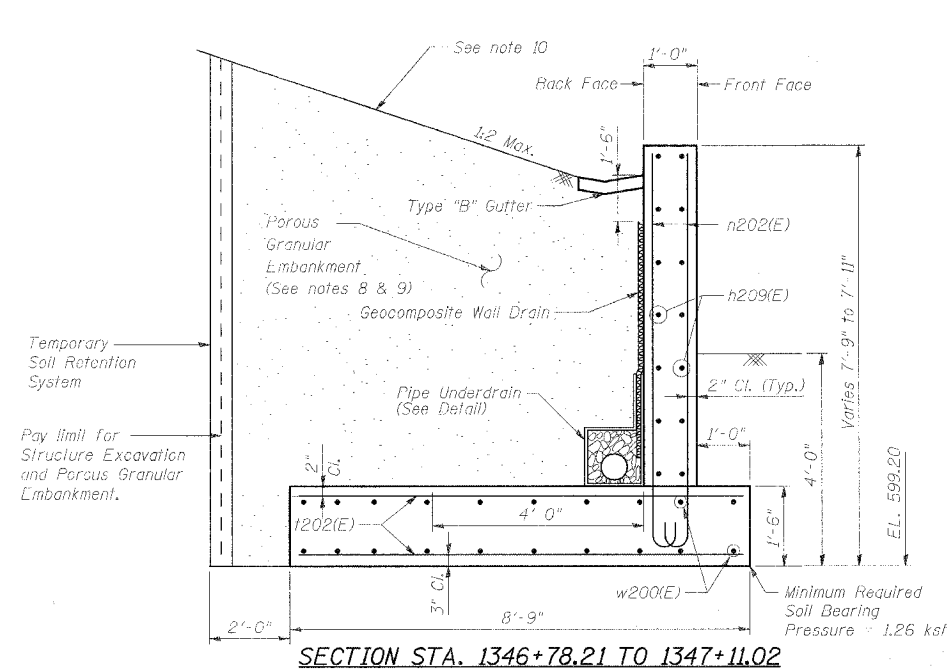
* Included in the cost of "Pipe Underdrain For Structures"



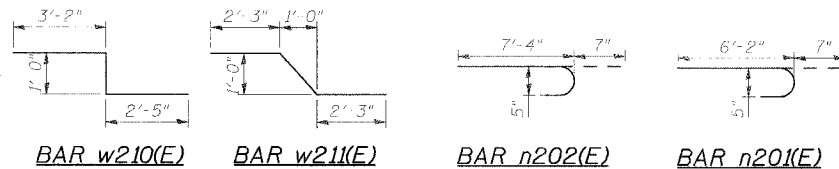
CONSTRUCTION JOINT DETAIL



SECTION STA. 1347+11.02 TO 1347+30.70



SECTION STA. 1346+78.21 TO 1347+11.02



BAR w210(E)

BAR w211(E)

BAR n202(E)

BAR n201(E)

URS 100 S. WACKER DR., SUITE 500
 CHICAGO, ILLINOIS 60606
 TEL. (312) 939-1000
 FAX (312) 939-4198

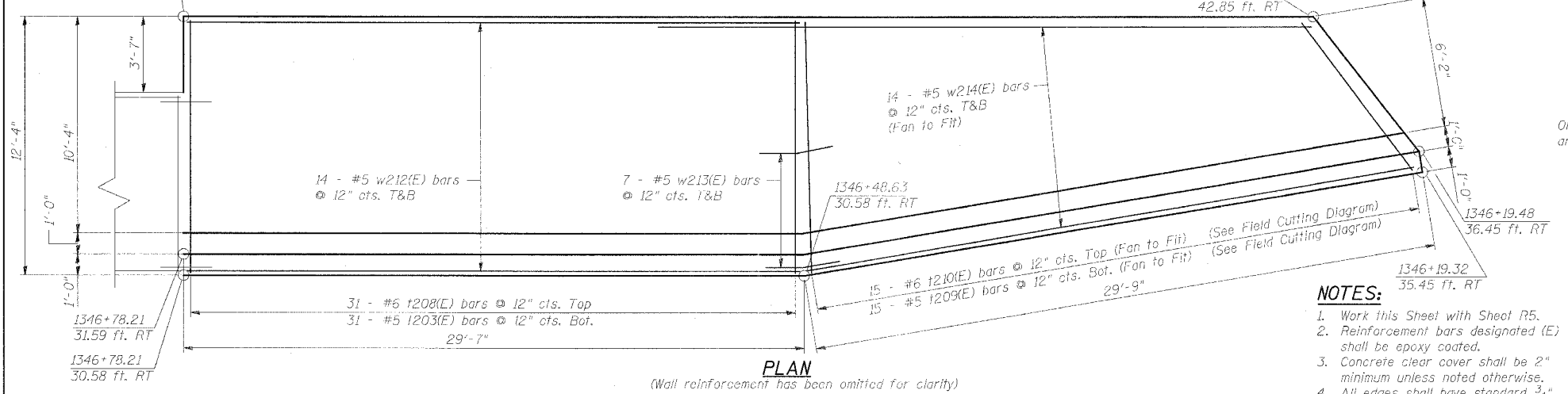
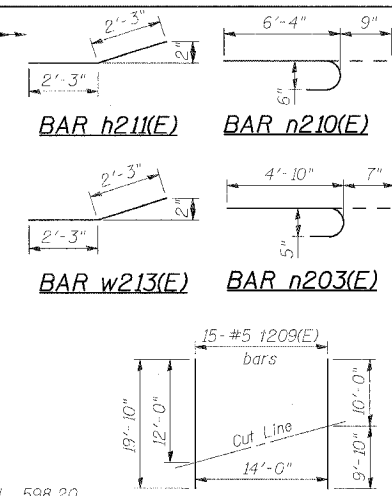
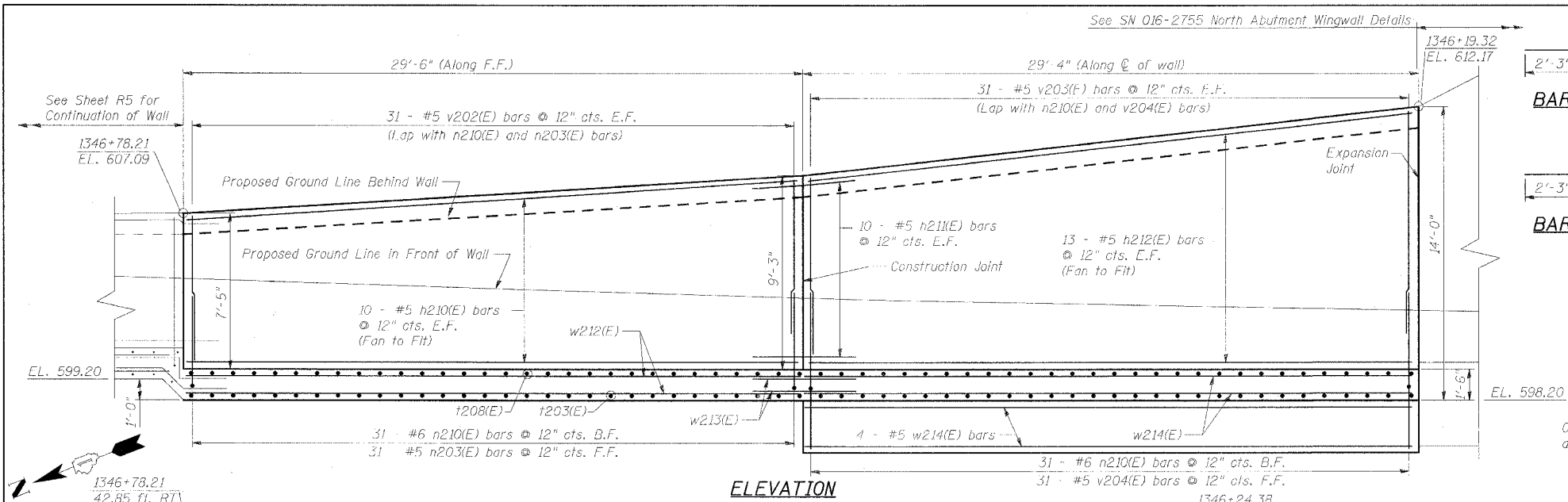
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 US RTE 6 FROM LEXINGTON AVE TO FISK AVE
 PARK AVE. RETAINING WALL
 STA. 1346+78.21 TO STA. 1347+30.70
 DATE 02/21/08
 DRAWN BY MAD
 CHECKED BY JPB

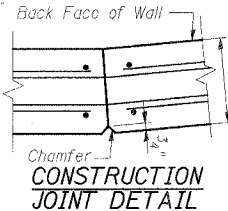
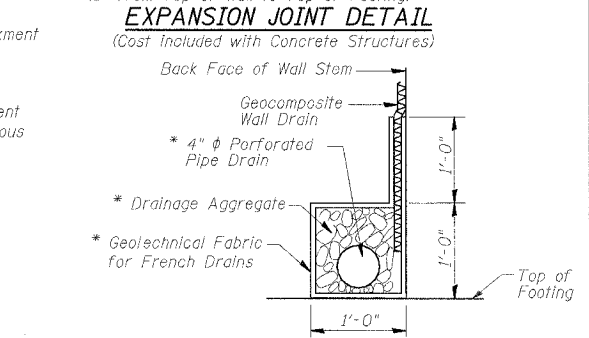
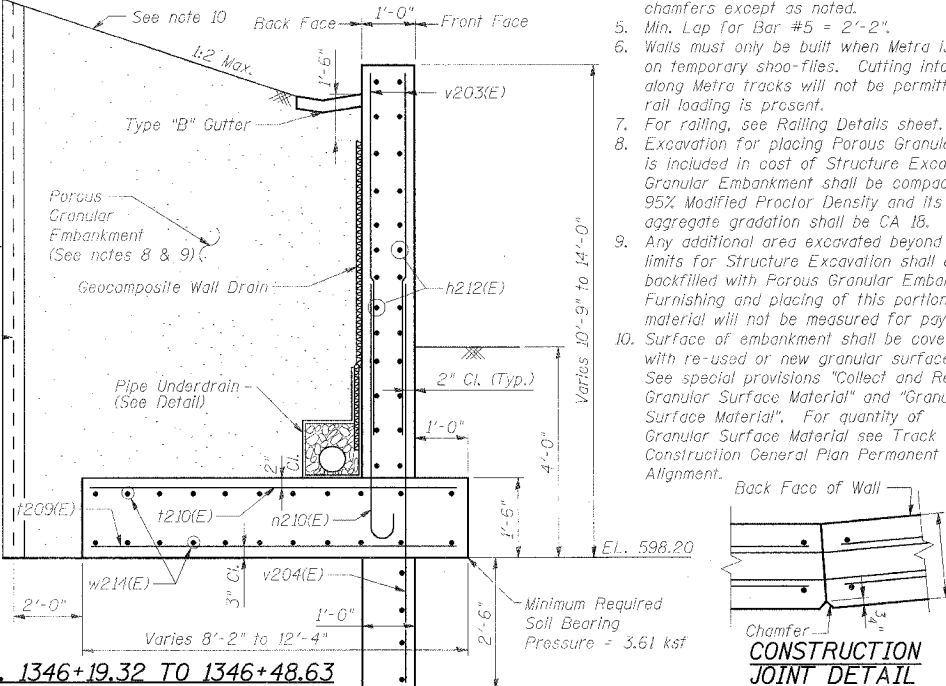
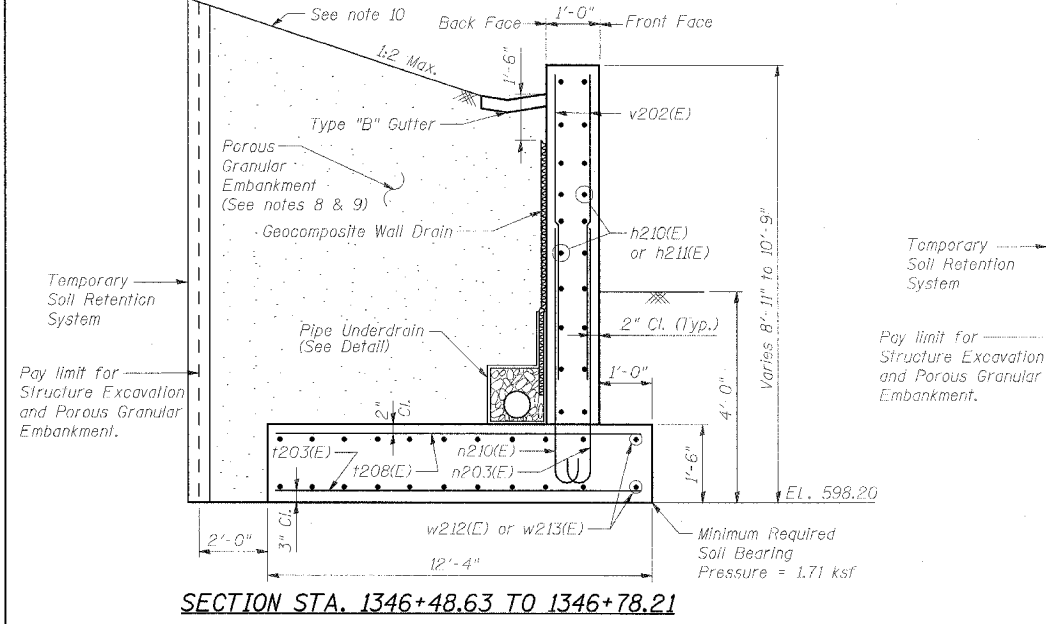
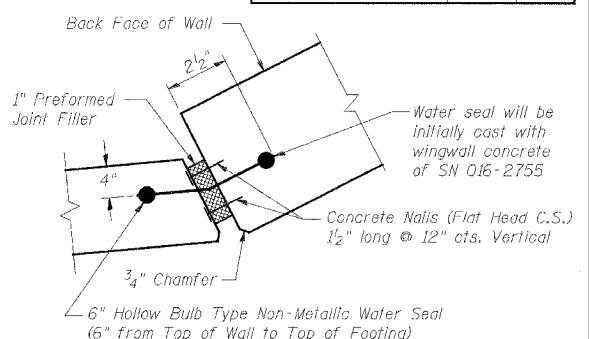
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2008-001VB	COOK	579	496
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	CONTRACT NO. 60E10	

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
n210(E)	20	#5	29'-2"	—
h211(E)	20	#5	4'-6"	—
h212(E)	26	#5	29'-4"	—
n203(E)	31	#5	5'-5"	—
n210(E)	62	#6	7'-1"	—
t203(E)	31	#5	12'-0"	—
t208(E)	31	#6	12'-0"	—
t209(E)	15	#5	19'-10"	—
t210(E)	15	#6	19'-10"	—
v202(E)	62	#5	7'-3"	—
v203(E)	62	#5	9'-1"	—
v204(E)	31	#5	9'-3"	—
w212(E)	28	#5	29'-2"	—
w213(E)	14	#5	4'-6"	—
w214(E)	32	#5	29'-4"	—
Structure Excavation	Cu Yd	298.9		
Concrete Structures	Cu Yd	60.9		
Pipe Underdrain for Structures 4"	Foot	59		
Reinforcement Bars	Pound	7290		
Epoxy Coated Geocomposite Wall Drain	Sq Yd	50.1		
Porous Granular Embankment	Cu Yd	310.4		



- NOTES:**
1. Work this Sheet with Sheet R5.
 2. Reinforcement bars designated (E) shall be epoxy coated.
 3. Concrete clear cover shall be 2" minimum unless noted otherwise.
 4. All edges shall have standard 3/4" chamfers except as noted.
 5. Min. Lap for Bar #5 = 2'-2".
 6. Walls must only be built when Metra is operating on temporary shoo-flies. Cutting into the embankment along Metra tracks will not be permitted when rail loading is present.
 7. For railing, see Railing Details sheet.
 8. Excavation for placing Porous Granular Embankment is included in cost of Structure Excavation. Porous Granular Embankment shall be compacted to 95% Modified Proctor Density and its coarse aggregate gradation shall be CA 18.
 9. Any additional area excavated beyond pay limits for Structure Excavation shall also be backfilled with Porous Granular Embankment. Furnishing and placing of this portion of that material will not be measured for payment.
 10. Surface of embankment shall be covered with re-used or new granular surface material. See special provisions "Collect and Re-use Granular Surface Material" and "Granular Surface Material". For quantity of Granular Surface Material see Track Construction General Plan Permanent Alignment.



REVISIONS	
NAME	DATE

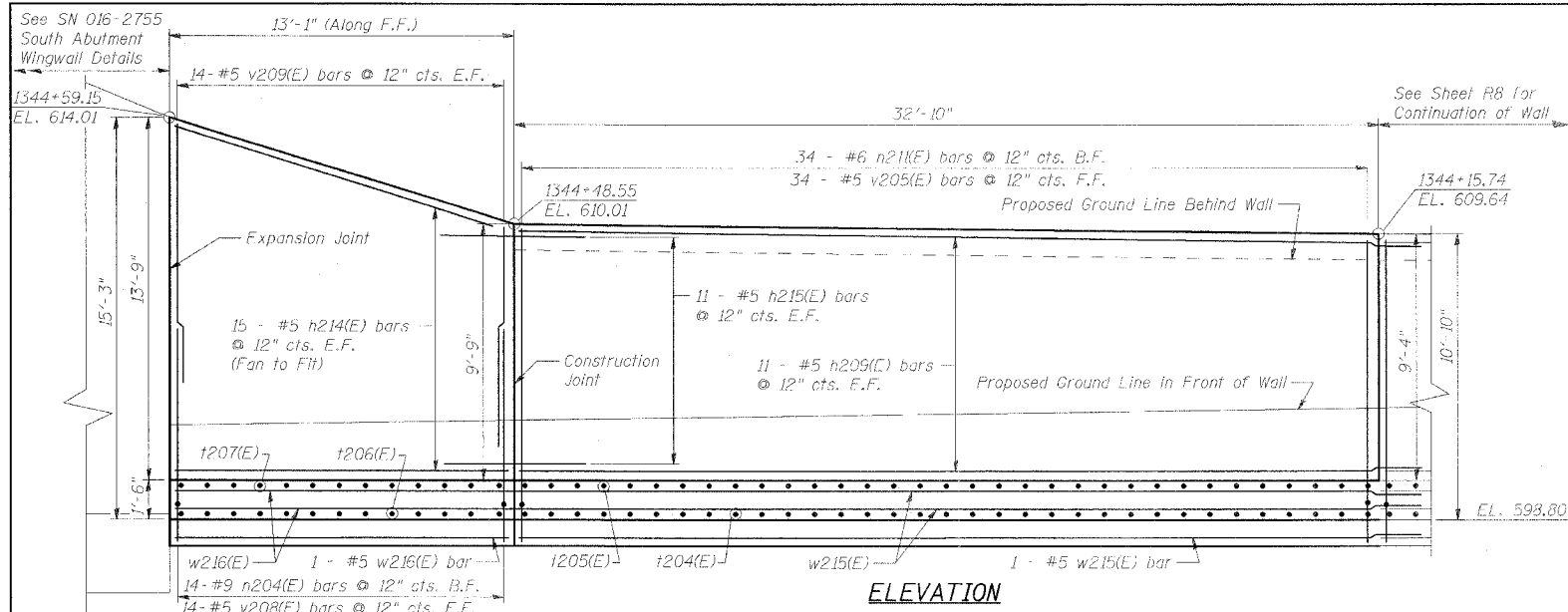
ILLINOIS DEPARTMENT OF TRANSPORTATION
 US RTE 6 FROM LEXINGTON AVE TO FISK AVE
 PARK AVE. RETAINING WALL
 STA. 1346+22.43 TO STA. 1346+78.21

DATE 02/21/08

DRAWN BY MAD
 CHECKED BY JPB

URS
 100 S. WACKER DR., SUITE 500
 CHICAGO, ILLINOIS 60606
 TEL. (312) 939-1000
 FAX (312) 939-4198

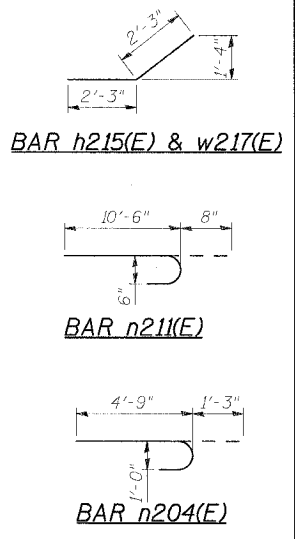
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS NO.	SHEET NO.
351	2008-001VB	COOK	579	497
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		CONTRACT NO. 60E10	



- NOTES:**
- Work this Sheet with Sheet R8.
 - Reinforcement bars designated (E) shall be epoxy coated.
 - Concrete clear cover shall be 2" minimum unless noted otherwise.
 - All edges shall have standard 3/4" chamfers except as noted.
 - Min. Lap for Bar #5 = 2'-2".
 - Walls must only be built when Metra is operating on temporary shoo-files. Cutting into the embankment along Metra tracks will not be permitted when rail loading is present.
 - For railing, see Railing Details sheet.
 - Excavation for placing Porous Granular Embankment is included in cost of Structure Excavation. Porous Granular Embankment shall be compacted to 95% Modified Proctor Density and its coarse aggregate gradation shall be CA 18.
 - Any additional area excavated beyond pay limits for Structure Excavation shall also be backfilled with Porous Granular Embankment. Furnishing and placing of this portion of that material will not be measured for payment.
 - Surface of embankment shall be covered with re-used or new granular surface material. See special provisions "Collect and Re-use Granular Surface Material" and "Granular Surface Material". For quantity of Granular Surface Material see Track Construction General Plan Permanent Alignment.

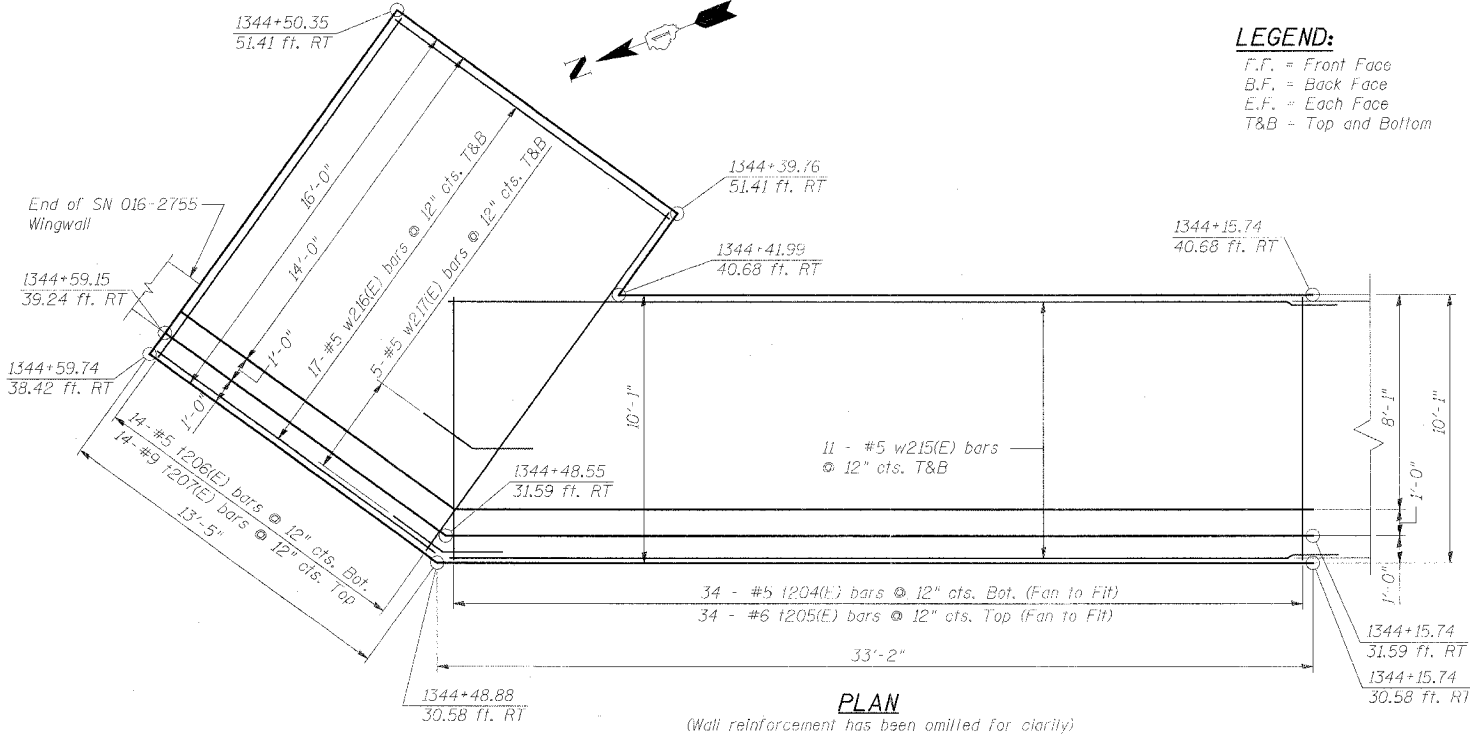
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h209(E)	22	#5	34'-11"	—
h214(E)	30	#5	12'-9"	—
h215(E)	22	#5	4'-6"	—
n204(E)	14	#9	6'-0"	U
n211(E)	34	#6	11'-2"	U
t204(E)	34	#5	9'-9"	—
t205(E)	34	#6	9'-9"	—
t206(E)	14	#5	15'-8"	—
t207(E)	14	#9	15'-8"	—
v205(E)	34	#5	11'-5"	—
v208(E)	14	#5	4'-9"	—
v209(E)	28	#5	10'-3"	—
w215(E)	23	#5	33'-8"	—
w216(E)	35	#5	13'-1"	—
w217(E)	10	#5	4'-6"	—
Structure Excavation	Cu Yd	256.4		
Concrete Structures	Cu Yd	48.9		
Pipe Underdrain for Structures 4"	Foot	46		
Reinforcement Bars, Epoxy Coated	Pound	6090		
Geocomposite Wall Drain	Sq Yd	41.7		
Porous Granular Embankment	Cu Yd	262.3		

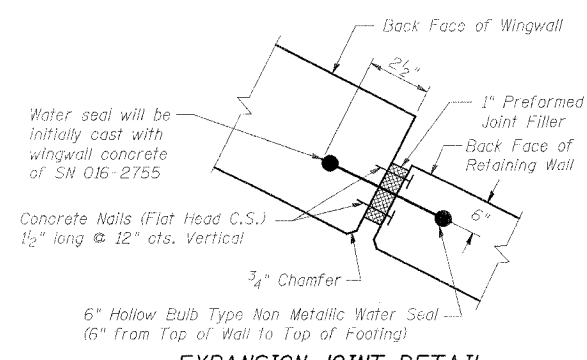
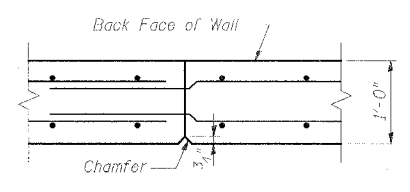
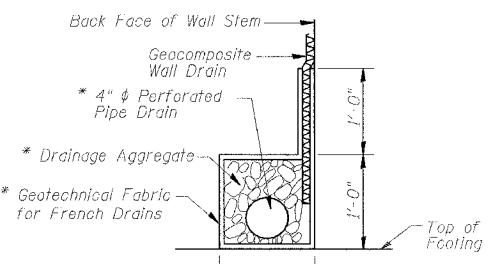
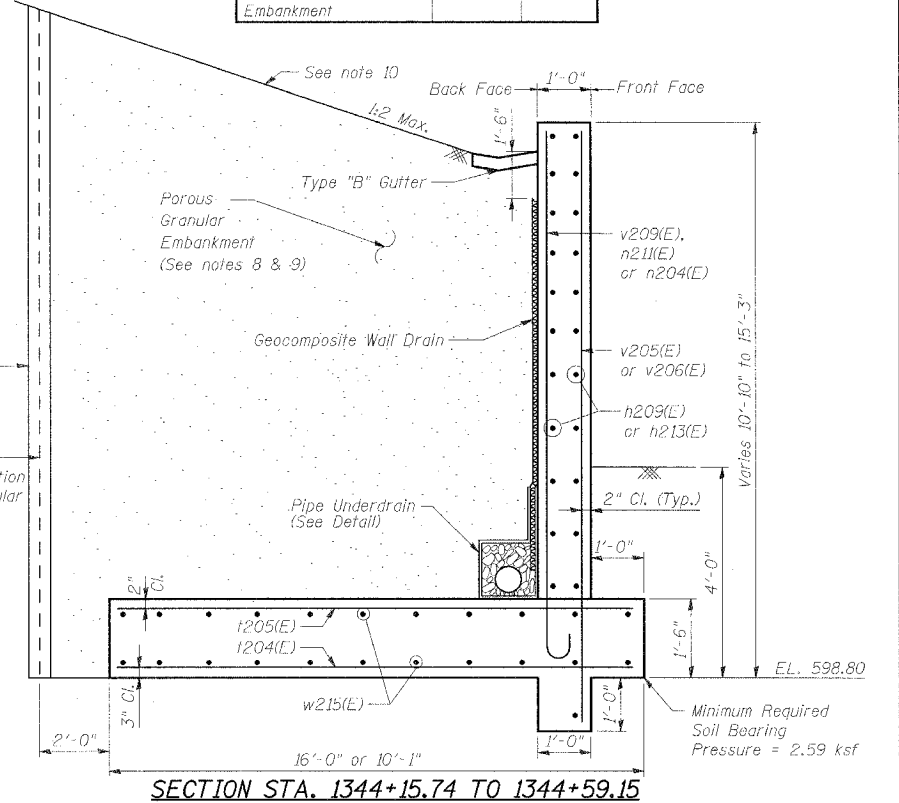


LEGEND:
 F.F. = Front Face
 B.F. = Back Face
 E.F. = Each Face
 T&B = Top and Bottom

Back Face of Wall Stem
 Top of Footing



Temporary Soil Retention System
 Pay limit for Structure Excavation and Porous Granular Embankment.



SHEET R7 OF R12

REVISIONS

NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 US RTE 6 FROM LEXINGTON AVE TO FISK AVE
 PARK AVE. RETAINING WALL
 STA. 1343+82.93 TO STA. 1344+48.55
 DATE 02/21/08
 DRAWN BY MAD
 CHECKED BY JPB

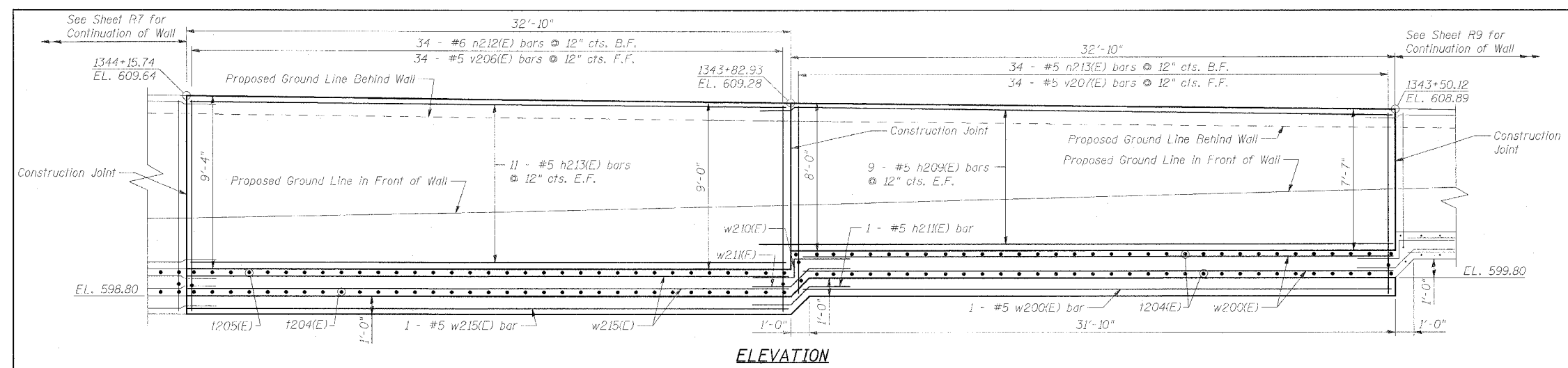
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2008-001VB	COOK	579	498
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 60E10				

BILL OF MATERIAL

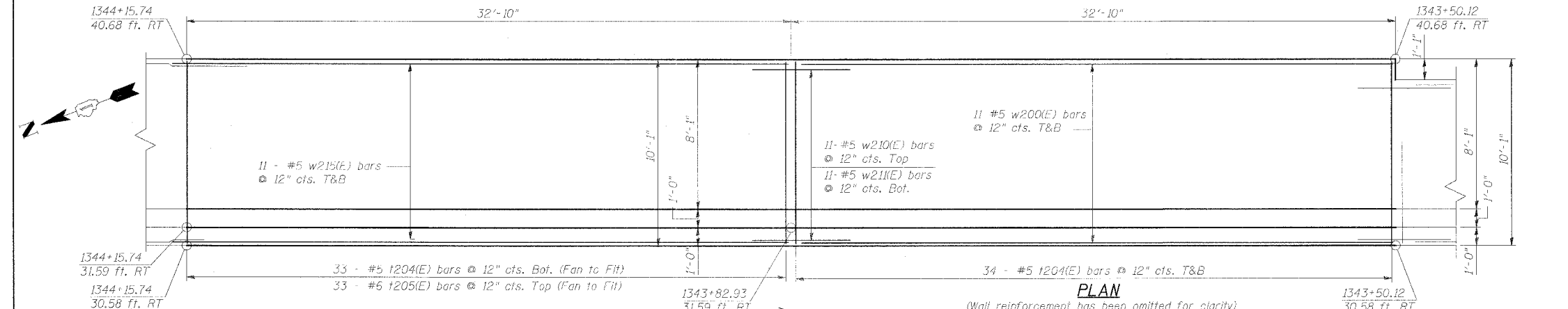
Bar	No.	Size	Length	Shape	
h209(E)	18	#5	34'-11"	—	
h213(E)	22	#5	32'-6"	—	
n212(E)	34	#6	10'-9"	U	
n213(E)	34	#5	9'-3"	U	
t204(E)	101	#5	9'-9"	—	
t205(E)	33	#6	9'-9"	—	
v206(E)	34	#5	11'-1"	—	
v207(E)	34	#5	9'-9"	—	
w200(E)	22	#5	32'-0"	—	
w210(E)	11	#5	6'-7"	—	
w211(E)	12	#5	5'-11"	—	
w215(E)	23	#5	33'-8"	—	
Structure Excavation				Cu Yd	275.5
Concrete Structures				Cu Yd	59.8
Pipe Underdrain				Foot	66
Reinforcement Bars				Pound	6220
Epoxy Coated					
Geocomposite Wall Drain				Sq Yd	47.6
Porous Granular Embankment				Cu Yd	274.4

NOTES:

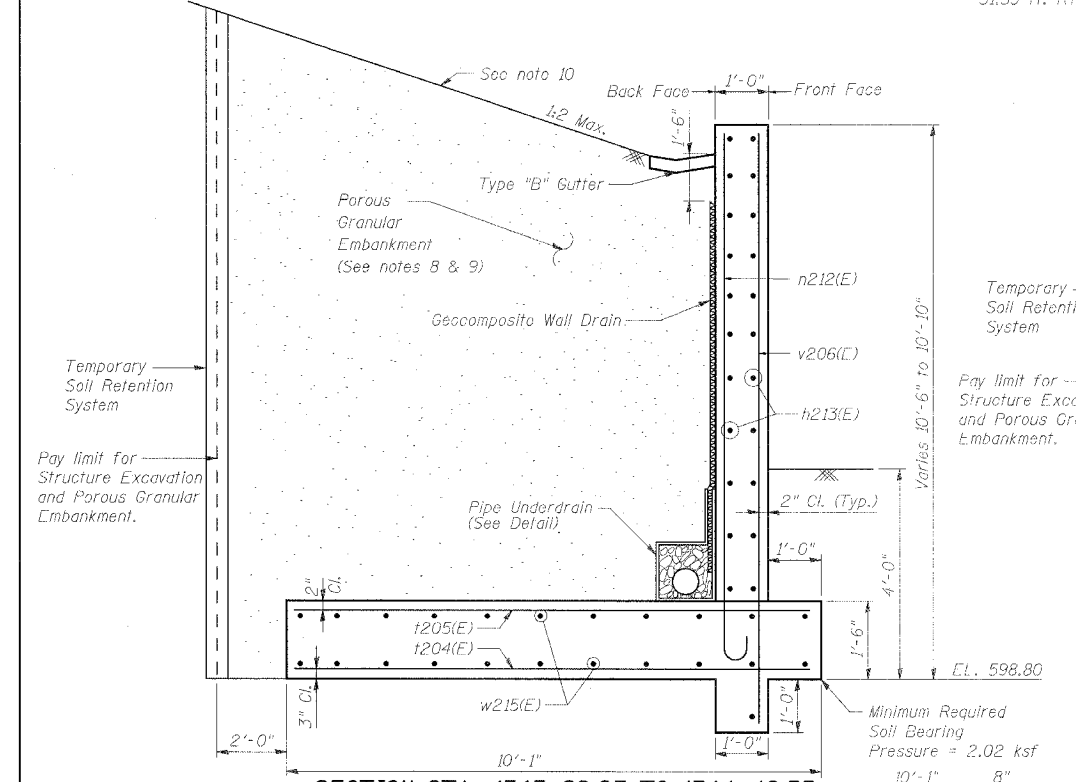
- Work this Sheet with Sheets R7 & R9.
- Reinforcement bars designated (E) shall be epoxy coated.
- Concrete clear cover shall be 2" minimum unless noted otherwise.
- All edges shall have standard 3/4" chamfers except as noted.
- Min. Lap for Bar #5 = 2'-2".
- Walls must only be built when Metra is operating on temporary shoo-flies. Cutting into the embankment along Metra tracks will not be permitted when rail loading is present.
- For railing, see Railing Details sheet.
- Excavation for placing Porous Granular Embankment is included in cost of Structure Excavation. Porous Granular Embankment shall be compacted to 95% Modified Proctor Density and its coarse aggregate gradation shall be CA 18.
- Any additional area excavated beyond pay limits for Structure Excavation shall also be backfilled with Porous Granular Embankment. Furnishing and placing of this portion of that material will not be measured for payment.
- Surface of embankment shall be covered with re-used or new granular surface material. See special provisions "Collect and Re-use Granular Surface Material" and "Granular Surface Material". For quantity of Granular Surface Material see Track Construction General Plan Permanent Alignment.



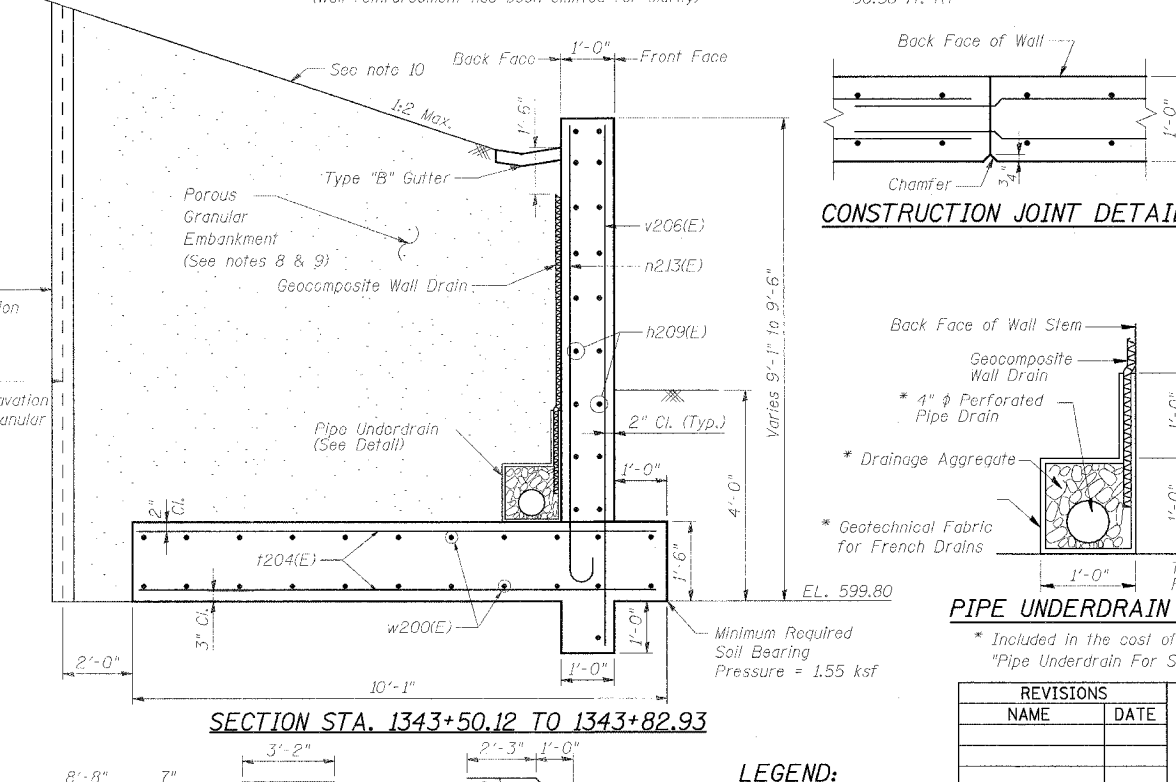
ELEVATION



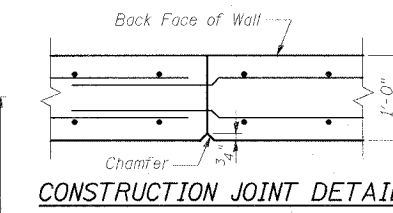
PLAN



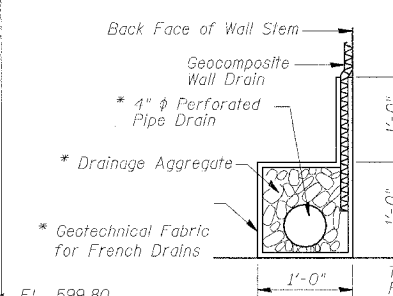
SECTION STA. 1343+82.93 TO 1344+48.55



SECTION STA. 1343+50.12 TO 1343+82.93



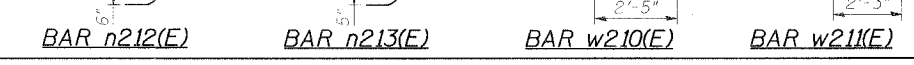
CONSTRUCTION JOINT DETAIL



PIPE UNDERDRAIN DETAIL

* Included in the cost of "Pipe Underdrain For Structures"

URS
100 S. WACKER DR., SUITE 500
CHICAGO, ILLINOIS 60606
TEL. (312) 939-1000
FAX (312) 939-4198



LEGEND:
F.F. = Front Face
B.F. = Back Face
E.F. = Each Face
T&B = Top and Bottom

REVISIONS	
NAME	DATE

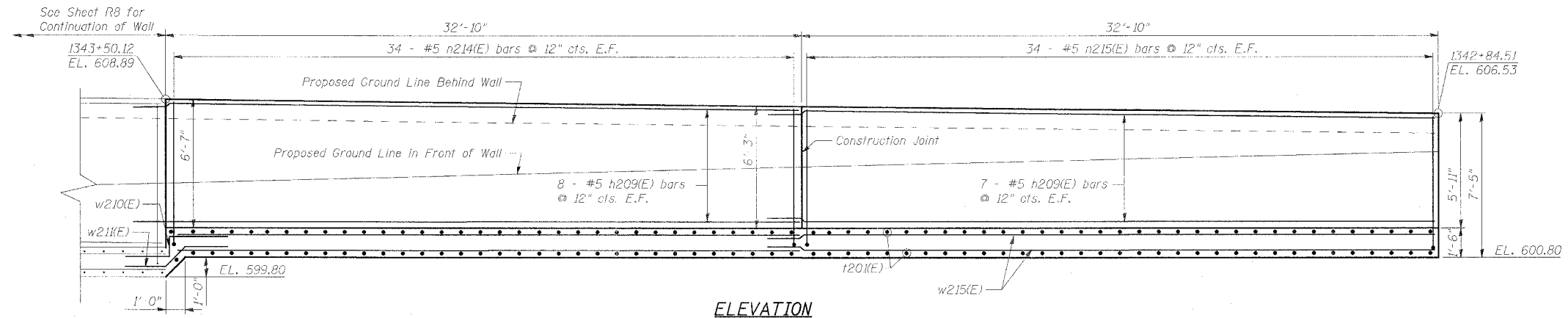
ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM LEXINGTON AVE TO FISK AVE

PARK AVE. RETAINING WALL
STA. 1343+50.12 TO STA. 1344+48.55

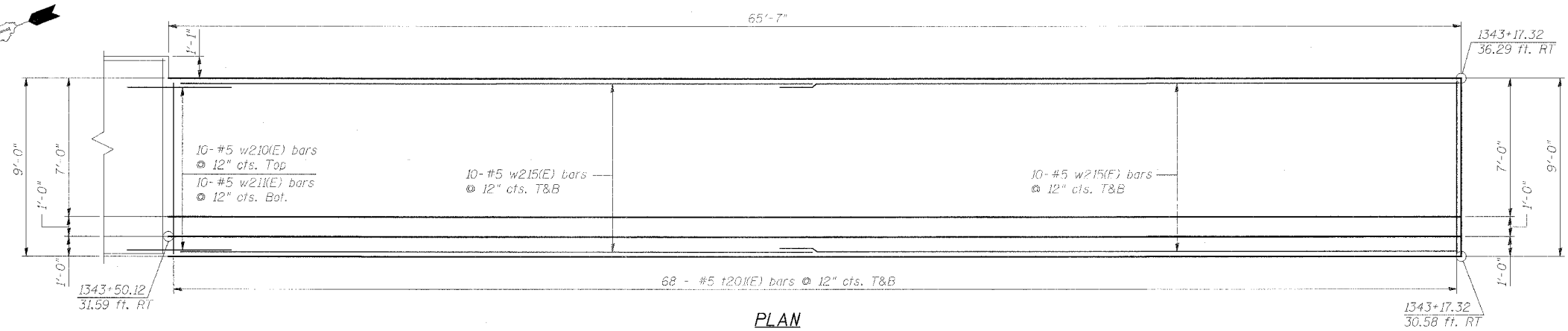
DATE 02/21/08
DRAWN BY MAD
CHECKED BY JPB

SHEET R8 OF R12

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2008-001VB	COOK	579	499
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
CONTRACT NO. 60E10				

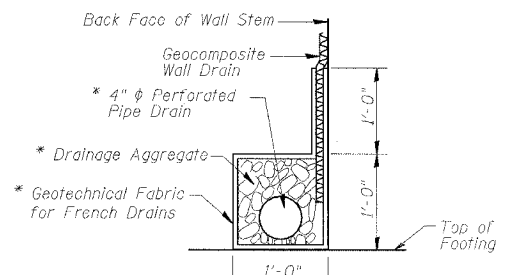


ELEVATION



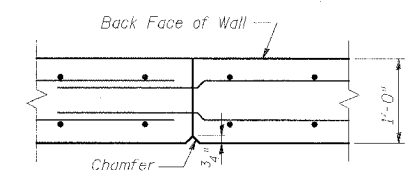
PLAN

(Wall reinforcement has been omitted for clarity)

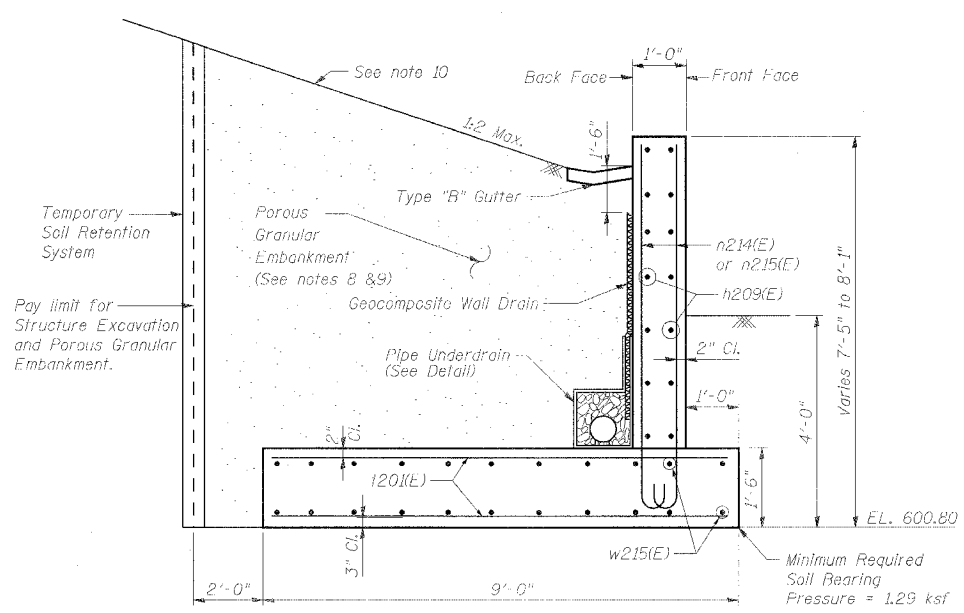


PIPE UNDERDRAIN DETAIL

* Included in the cost of "Pipe Underdrains For Structures"

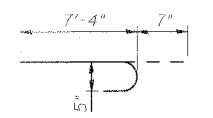


CONSTRUCTION JOINT DETAIL

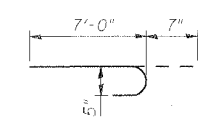


SECTION STA. 1342+84.51 TO 1343+50.12

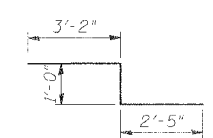
** See Section 502 of the Standard Specification



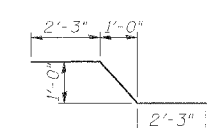
BAR n214(E)



BAR n215(E)



BAR w210(E)



BAR w211(E)

NOTES:

1. Work this Sheet with Sheet R8.
2. Reinforcement bars designated (C) shall be epoxy coated.
3. Concrete clear cover shall be 2" minimum unless noted otherwise.
4. All edges shall have standard 3/4" chamfers except as noted.
5. Min. Lap for Bar #5 = 2'-2".
6. Walls must only be built when Metra is operating on temporary shoo-fles. Cutting into the embankment along Metra tracks will not be permitted when rail loading is present.
7. For railing, see Railing Details sheet.
8. Excavation for placing Porous Granular Embankment is included in cost of Structure Excavation. Porous Granular Embankment shall be compacted to 95% Modified Proctor Density and its coarse aggregate gradation shall be CA 18.
9. Any additional area excavated beyond pay limits for Structure Excavation shall also be backfilled with Porous Granular Embankment. Furnishing and placing of this portion of that material will not be measured for payment.
10. Surface of embankment shall be covered with re-used or new granular surface material. See special provisions "Collect and Re-use Granular Surface Material" and "Granular Surface Material". For quantity of Granular Surface Material see Track Construction General Plan Permanent Alignment.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h209(E)	30	#5	34'-11"	—
n214(E)	68	#5	7'-11"	U
n215(E)	68	#5	7'-7"	U
t201(E)	136	#5	8'-8"	—
w210(E)	10	#5	6'-7"	—
w211(E)	10	#5	5'-11"	—
w215(E)	40	#5	33'-8"	—
Structure Excavation	Cu Yd		194.9	
Concrete Structures	Cu Yd		47.9	
Pipe Underdrain for Structures 4"	Foot		66	
Reinforcement Bars, Epoxy Coated	Pound		4960	
Geocomposite Wall Drain	Sq Yd		31.2	
Porous Granular Embankment	Cu Yd		190.9	

LEGEND:

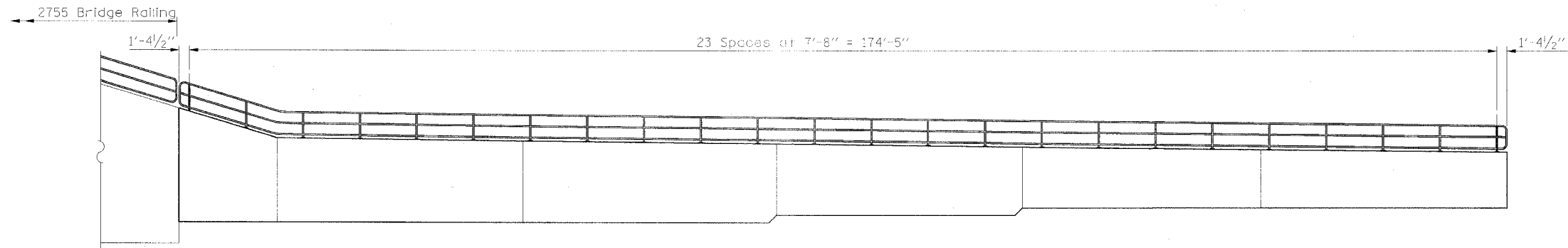
- F.F. = Front Face
- B.F. = Back Face
- E.F. = Each Face
- T&B = Top and Bottom

SHEET R9 OF R12

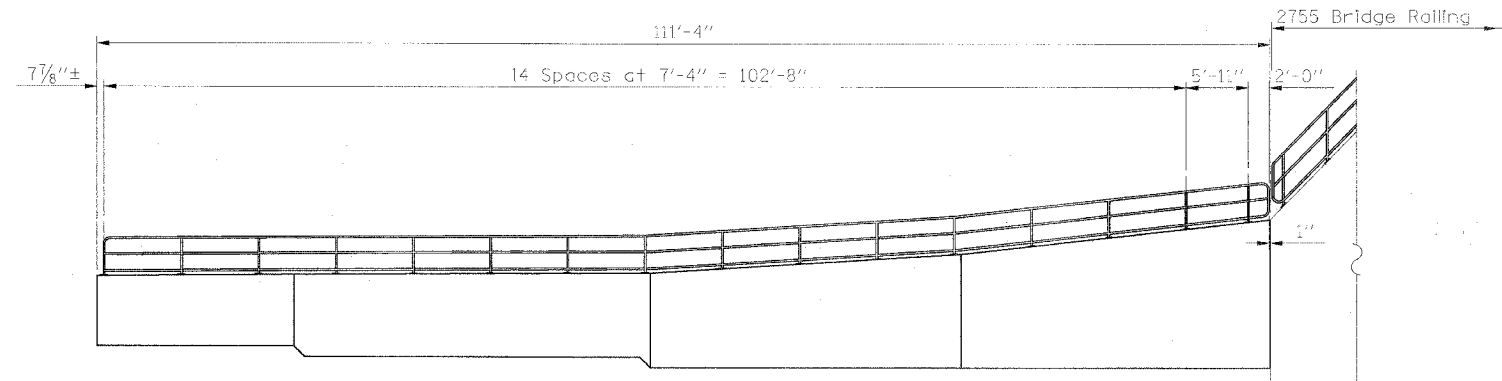
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 US RTE 6 FROM LEXINGTON AVE TO FISK AVE
 PARK AVE. RETAINING WALL
 STA. 1342+84.51 TO STA. 1343+50.12
 DATE 02/21/08
 DRAWN BY MAD
 CHECKED BY JPB

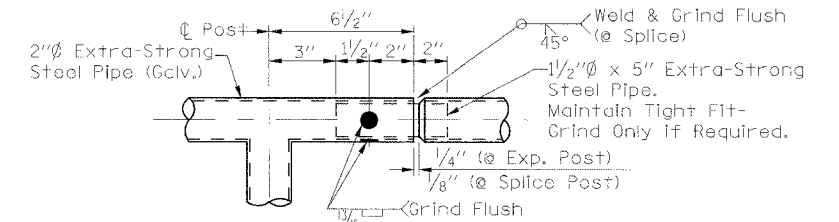
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2008-001VB	COOK	579	500
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
CONTRACT NO. 60E10				



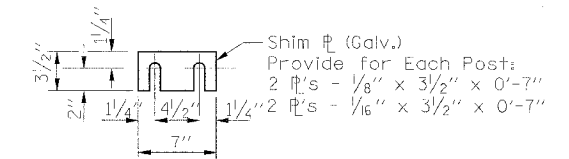
SOUTH WALL RAILING ELEVATION



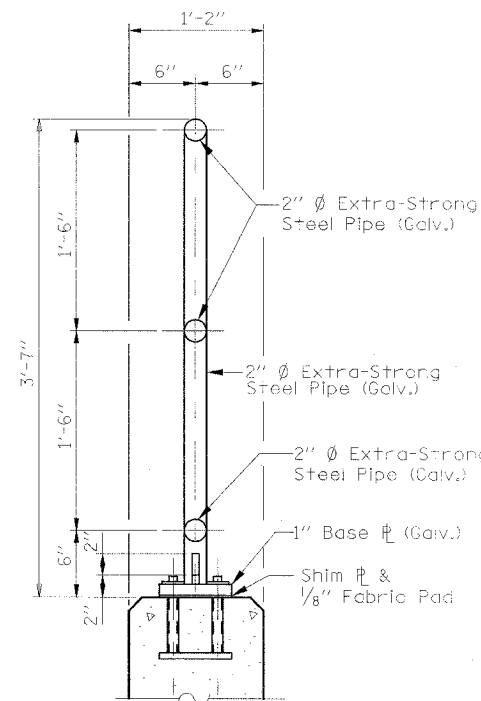
NORTH WALL RAILING ELEVATION



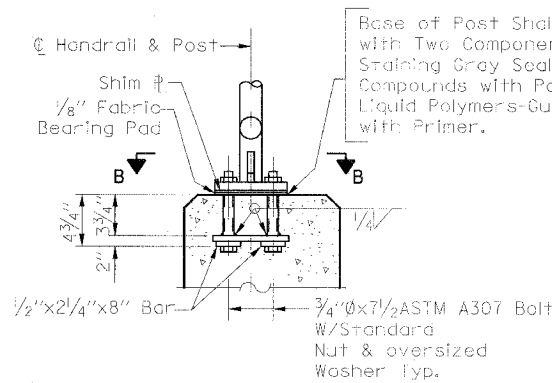
SPLICE DETAIL



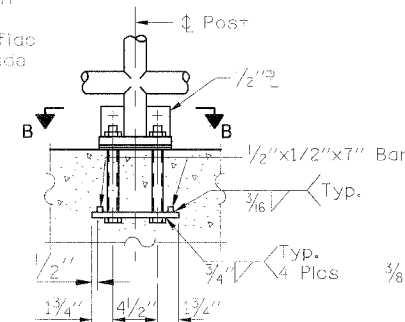
SHIM PLATE



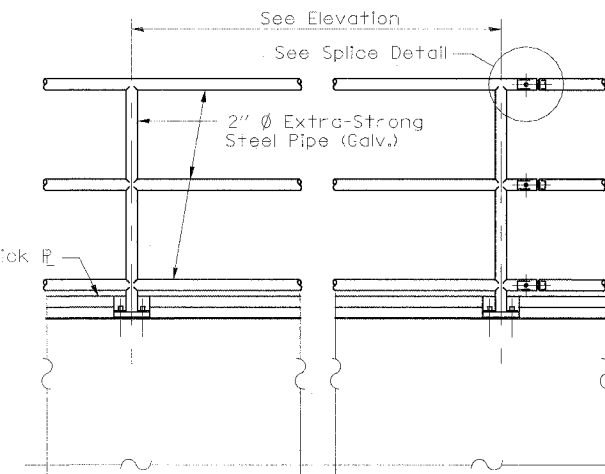
TYPICAL SECTION



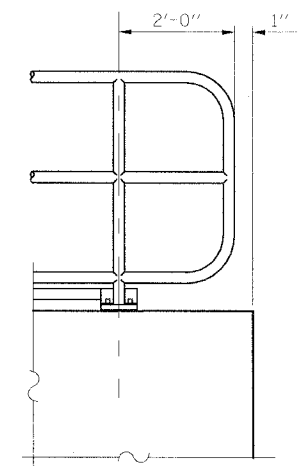
BASE PLATE DETAIL



SECTION B-B



TYPICAL PANEL



END POST

ANCHOR BOLT DETAILS

BILL OF MATERIAL

ITEM	UNIT	QTY.
PIPE HANDRAIL, SPECIAL	Foot	288

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
US RTE 6 FROM LEXINGTON AVE TO FISK AVE

PARK AVE. RETAINING WALL
RAILING DETAILS

DATE 02/21/08
DRAWN BY SOI
CHECKED BY DEY

SHEET R10 OF R12

URS
100 S. WACKER DR., SUITE 500
CHICAGO, ILLINOIS 60606
TEL. (312) 939-1000
FAX (312) 939-4198