

90% FED.  
10% STATE

CONSTRUCTION CODE

CODE NO.	ITEM	UNIT	URBAN TOTAL QUANTITY	CONSTRUCTION CODE			LIGHTING 0021 URBAN	TRAFFIC SIGNALS 0021 URBAN	UTILITY 0043 URBAN
				ROADWAY 0004 URBAN	BRIDGE 0011 016-1709	RETAINING WALL 0040 016-1724			
50800105	REINFORCEMENT BARS	POUND	390,156		351,016	45,080			2,060
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	401,200	620	362,430	38,150			
50800515	BAR SPLICERS	EACH	1031		1031				
51500100	NAME PLATES	EACH	1		1				
51602000	PERMANENT CASING	FOOT	1274		1274				
51603000	DRILLED SHAFT IN SOIL	CU YD	1729		1470	259			
* 51604000	DRILLED SHAFT IN ROCK	CU YD	42		42				
52000110	PREFORMED JOINT STRIP SEAL	FOOT	124		124				
52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	24		24				
52100020	ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	12		12				
52100510	ANCHOR BOLTS, 3/4"	EACH	41			25			16
52100520	ANCHOR BOLTS, 1"	EACH	72		72				
52100540	ANCHOR BOLTS, 1 1/2"	EACH	24		24				
550A0050	STORM SEWERS, CLASS A, TYPE 1 12"	FOOT	69	69					
550A0340	STORM SEWERS, CLASS A, TYPE 2 12"	FOOT	347	347					
<del>550A0360</del>	<del>STORM SEWERS, CLASS A, TYPE 2 15"</del>	<del>FOOT</del>	<del>160</del>	<del>160</del>					
55100500	STORM SEWER REMOVAL 12"	FOOT	86	86					

\* DENOTES SPECIALTY ITEM      \*\* DENOTES NON-PARTICIPATING ITEM

Rev. 7-30-13

Rev. 7-19-13

Rev.

FILE PATH: ... \3886939\_Punch\Personnel\Line\Jecali\PMAC\CD\083\Documents\01.dwg; User: jecali; Project: 60W25; Sheet: 500



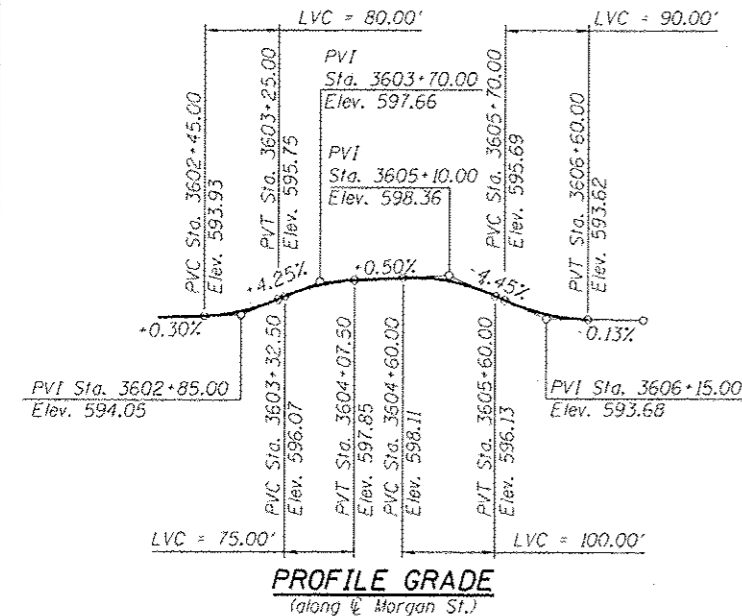
DIGW25-shr-500  
USER NAME: jecali  
PLOT SCALE: 1:8000  
PLOT DATE: 5/16/2013

DESIGNED - JWM  
DRAWN - JWM  
CHECKED - AC  
DATE - 5/14/2013

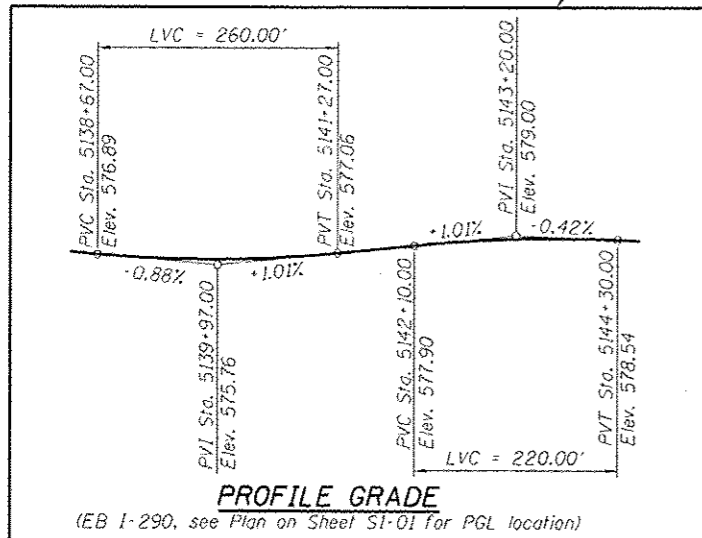
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES  
SCALE: SHEET 5 OF 21 SHEETS STA. TO STA.

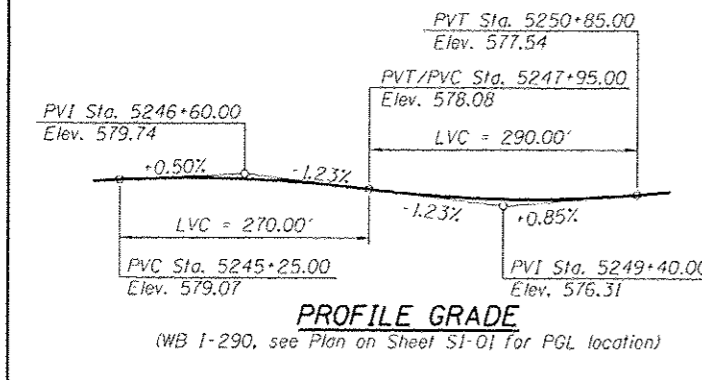
F.A.I. RTE. 90/94/290  
SECTION 2013-007R  
COUNTY COOK  
TOTAL SHEETS 317  
SHEET NO. 9  
CONTRACT NO. 60W25  
ILLINOIS FED. AID PROJECT



For information only  
Part of future contract



**"P-IKE-EB-3"**  
**CURVE DATA**  
(F.A.I. Rte. I-290 EB)  
P.I. Sta. = 5140+57.13  
 $\Delta = 5^\circ 07' 22''$  (LT)  
D = 1° 00' 19"  
R = 5,700.00'  
T = 254.99'  
L = 509.63'  
E = 5.70'  
 $\phi = RC$  (2.00%)  
T.R. = 96'  
S.E. Run = 96'  
P.C. Sta. = 5138+02.14  
P.T. Sta. = 5143+11.78



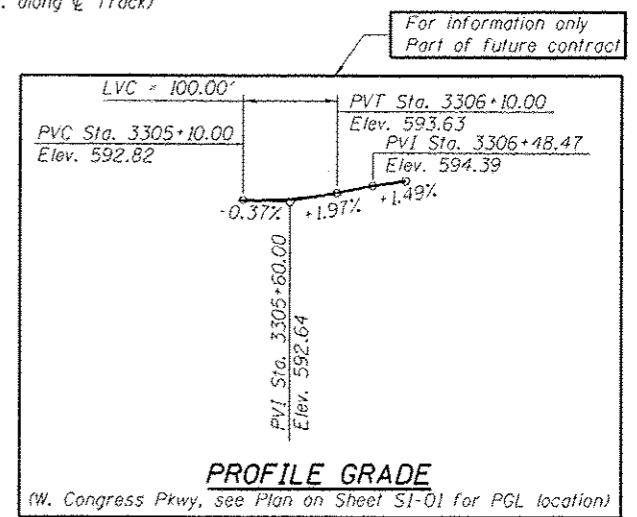
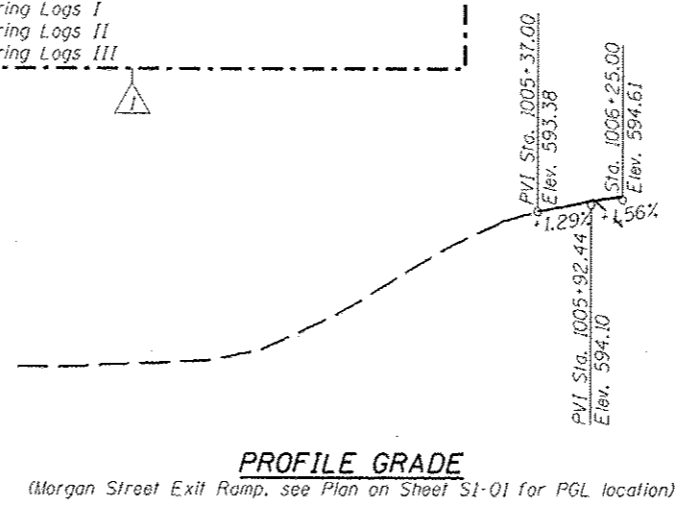
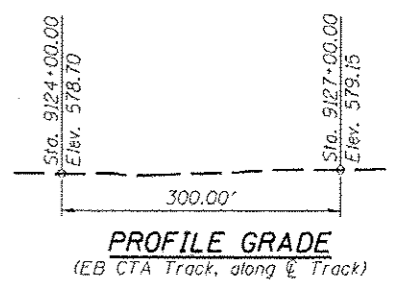
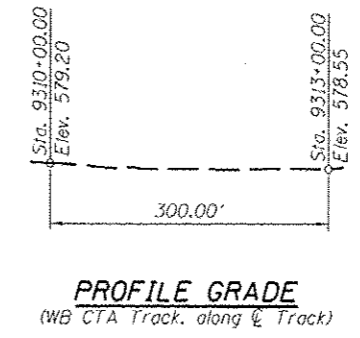
**"P-IKE-WB-3"**  
**CURVE DATA**  
(F.A.I. Rte. I-290 WB)  
P.I. Sta. = 5251+25.31  
 $\Delta = 9^\circ 58' 24''$  (RT)  
D = 0° 53' 03"  
R = 6,480.00'  
T = 565.40'  
L = 1,127.95'  
E = 24.62'  
 $\phi = RC$  (2.00%)  
T.R. = 72'  
S.E. Run = 72'  
P.C. Sta. = 5245+59.91  
P.T. Sta. = 5256+87.86

**INDEX OF SHEETS**

- S1-01 General Plan and Elevation
- S1-02 Index of Sheets, PGLs and Total Bill of Material
- S1-03 General Notes
- S1-04 Stages 1 and 2 Construction
- S1-04A Stages 3 and 4 Construction
- S1-05 Substructure Layout
- S1-06 Existing Structure Removal Plan and Elevation
- S1-07 Existing Structure Removal Details 1 of 2
- S1-08 Existing Structure Removal Details 2 of 2
- S1-09 Temporary Concrete Barrier
- S1-10 Top of Slab Elevation Locations
- S1-11 Top of Slab Elevations (Sheet 1 of 3)
- S1-12 Top of Slab Elevations (Sheet 2 of 3)
- S1-13 Top of Slab Elevations (Sheet 3 of 3)
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- S1-15 Top of North Approach Slab Elevations
- S1-16 Deck Plan and Cross Section
- S1-17 Parapet Elevations and Details
- S1-18 Deck Cross Sections, Details and Bill of Material
- S1-19 Preformed Joint Strip Seal
- S1-20 Decorative Railing Parapet Mounted Details
- S1-21 Bridge Fence Railing (Special) Elevations
- S1-21A Bridge Fence Railing (Special) Details
- S1-22 Framing Plan and Beam Elevation
- S1-23 Girder Moment and Reaction Tables
- S1-24 Structural Steel Details
- S1-25 Elastomeric Bearing Type I and Fixed Bearing
- S1-26 Elastomeric Bearing Type II
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- S1-28 South Abutment Footing Plan and Sections
- S1-29 South Abutment Sections and Details
- S1-30 South Abutment Wingwalls
- S1-31 South Abutment Architectural Details
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- S1-40 Pier 2 Plan and Elevation
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- S1-47 South and North Approach Pile Bent Support
- S1-48 Bar Splicer Assembly and Mechanical Splicer Details
- S1-49 Boring Logs I
- S1-50 Boring Logs II
- S1-51 Boring Logs III

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER.	SUB.	TOTAL QUANTITY
Removal of Existing Structures No. 1	EACH	1	-	1
Protective Shield	SO YD	1,439	-	1,439
Structure Excavation	CU YD	-	144	144
Concrete Structures	CU YD	-	853.7	853.7
Concrete Superstructure	CU YD	766.5	-	766.5
Bridge Deck Grooving	SO YD	1,287	-	1,287
Form Liner Textured Surface	SO FT	-	1,732	1,732
Protective Coat	SO YD	2,237	-	2,237
Furnishing and Erecting Structural Steel	L. SUM	1	-	1
Stud Shear Connectors	EACH	10,044	-	10,044
Reinforcement Bars	POUND	-	351,016	351,016
Reinforcement Bars, Epoxy Coated	POUND	167,950	194,480	362,430
Bar Splicers	EACH	789	242	1,031
Name Plates	EACH	1	-	1
Permanent Casing	FOOT	-	1,274	1,274
Drilled Shaft in Soil	CU YD	-	1,470	1,470
Drilled Shaft in Rock	CU YD	-	42	42
Preformed Joint Strip Seal	FOOT	124	-	124
Elastomeric Bearing Assembly, Type I	EACH	24	-	24
Elastomeric Bearing Assembly, Type II	EACH	12	-	12
Anchor Bolts, 1"	EACH	72	-	72
Anchor Bolts, 1/2"	EACH	24	-	24
Concrete Sealer	SO FT	-	8,728	8,728
Geocomposite Wall Drain	SO YD	-	391	391
Pile Extraction	EACH	-	27	27
Decorative Railing Parapet Mounted	FOOT	639	-	639
Braced Excavation	CU YD	-	2,906	2,906
Bridge Fence Railing (Special)	FOOT	140	-	140
Granular Backfill for Structures	CU YD	-	608	608
Pipe Underdrains For Structures 6"	FOOT	-	203	203



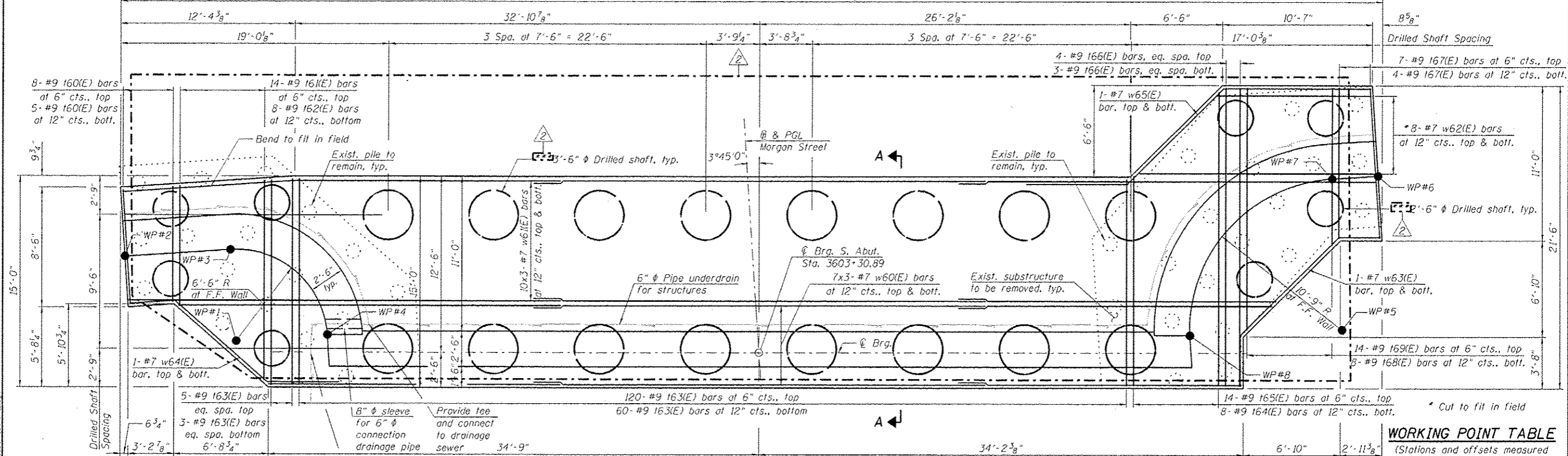
**HBM**  
HARRISON CONSULTING & DESIGN  
4415 WEST HARRISON ST.  
SUITE 201  
HILLSIDE, IL 60142  
PHONE: (708) 256-0900  
FAX: (708) 256-0901

DESIGNED - MI, JJS	REVISED - 07/19/2013 MI, LAB
DRAWN - JJS, LAB	REVISED - 07/30/2013 MI, LAB
CHECKED - MAI, MI, LAB	REVISED -
DATE - 6/17/2013	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

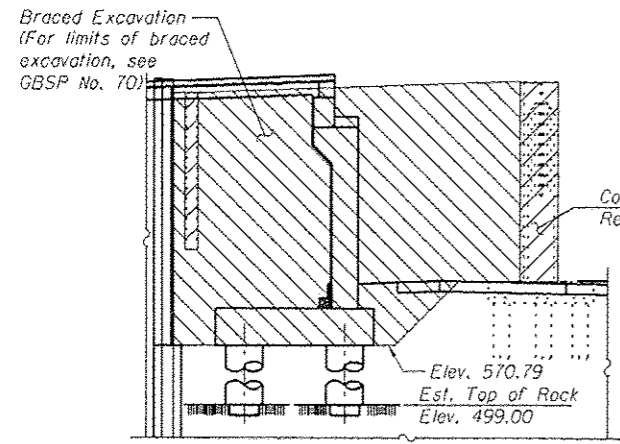
INDEX OF SHEETS, PGLS AND TOTAL BILL OF MATERIAL		F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
STRUCTURE NO. 016-1709		90/94/290	2013-007R	COOK	317	146
SCALE:	SHEET S1-02 OF 51 SHEETS	STA.	TO STA.	CONTRACT NO. 60W25		
[ILLINOIS] FED. AID PROJECT						

89'-3 1/8" Out-to-Out South Abutment Footing

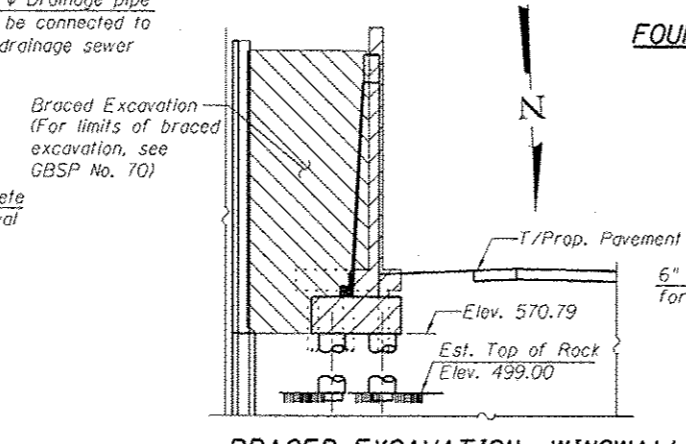


**WORKING POINT TABLE**  
(Stations and offsets measured from proposed @ E.B. 1-290)

W.P.	Station	Offset
1	5139+87.52	46.16' Rt.
2	5139+95.31	51.75' Rt.
3	5139+87.89	52.18' Rt.
4	5139+81.09	46.10' Rt.
5	5139+09.95	46.47' Rt.
6	5139+07.51	57.43' Rt.
7	5139+10.71	57.20' Rt.
8	5139+20.61	46.02' Rt.

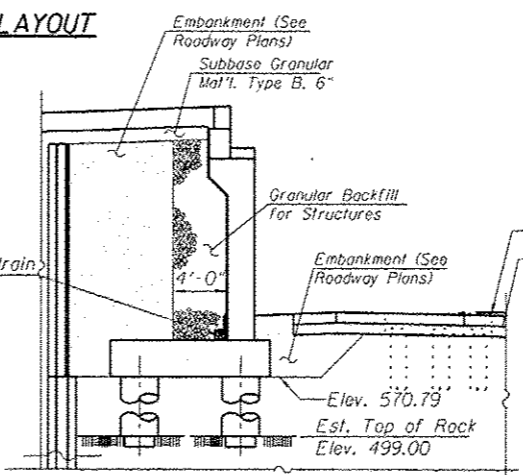


**BRACED EXCAVATION - ABUTMENT**

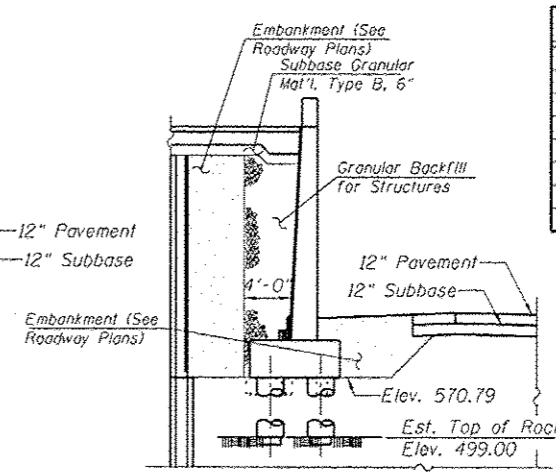


**BRACED EXCAVATION - WINGWALL**

**FOUNDATION LAYOUT**



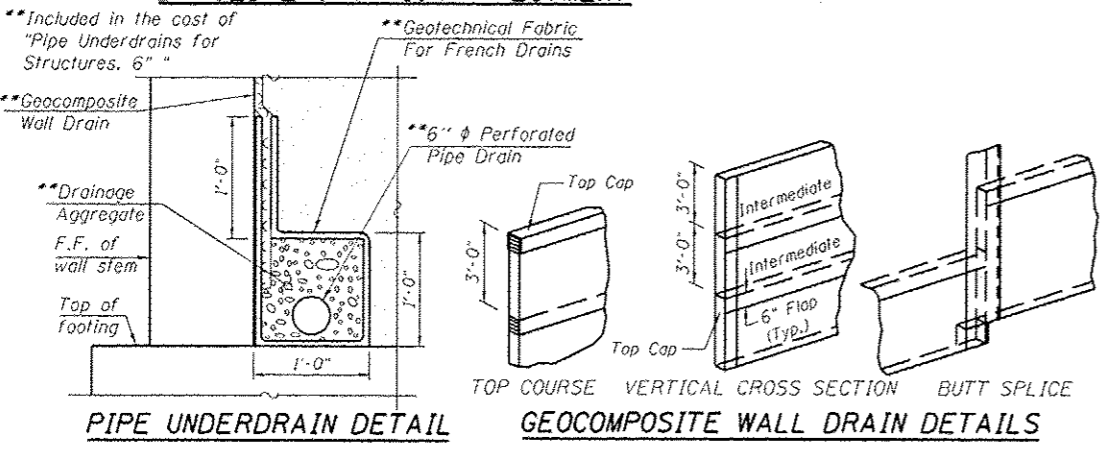
**BACKFILL - ABUTMENT**



**BACKFILL - WINGWALL**

**LEGEND:**

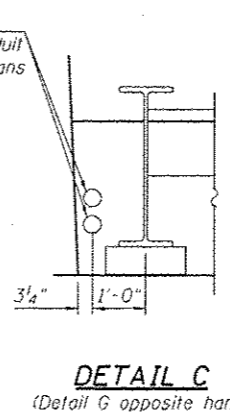
- Concrete Removal
- Braced Excavation
- Embankment
- Granular Backfill for Structures



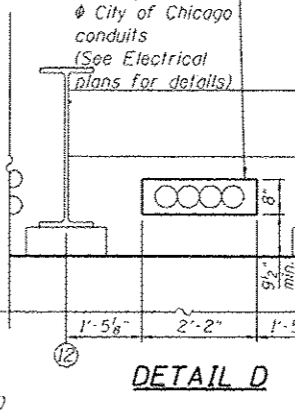
**PIPE UNDERDRAIN DETAIL**

**GEOCOMPOSITE WALL DRAIN DETAILS**

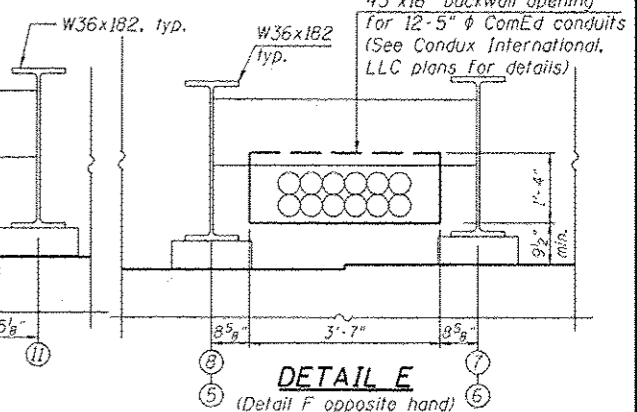
\*\*\* When Contractor's means and methods include initiating drilling for shafts at elevations higher than the final top of shaft elevation (e.g. Existing Ground Elevation), the costs for drilling, disposing of excavation, providing casing and backfilling of drilled shafts or other appurtenant work activities in the areas between the elevation where drilling is initiated and the proposed elevation of the top of shaft shall not be paid for separately but shall be included in the cost of Drilled Shaft in Soil.



**DETAIL C**  
(Detail G opposite hand)



**DETAIL D**



**DETAIL E**  
(Detail F opposite hand)

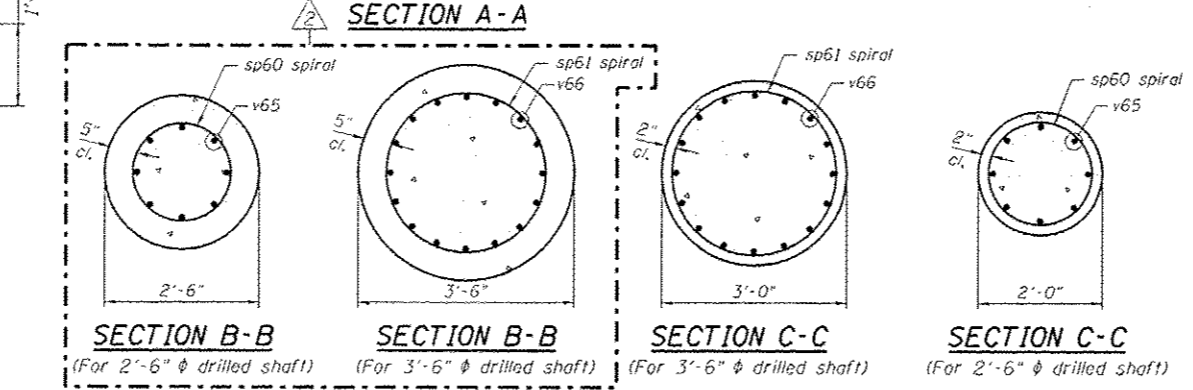
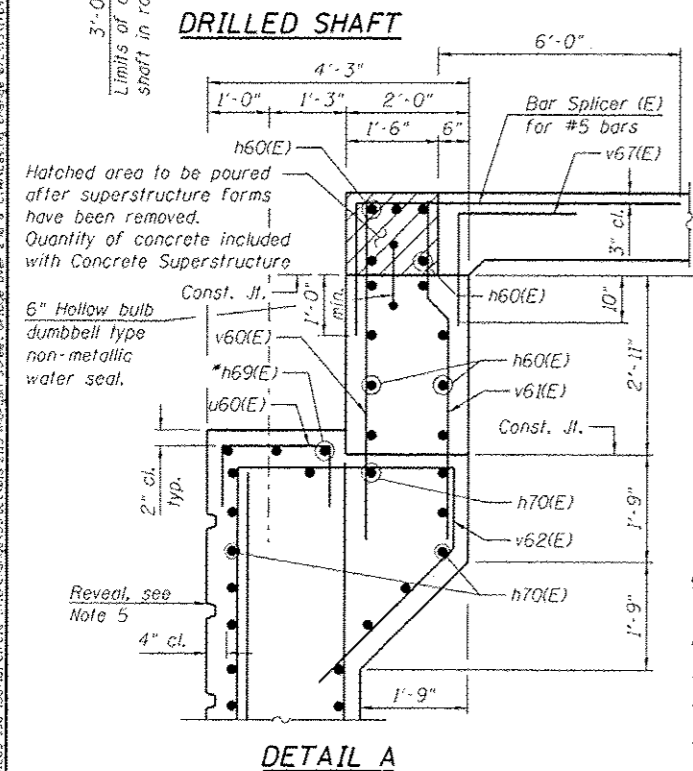
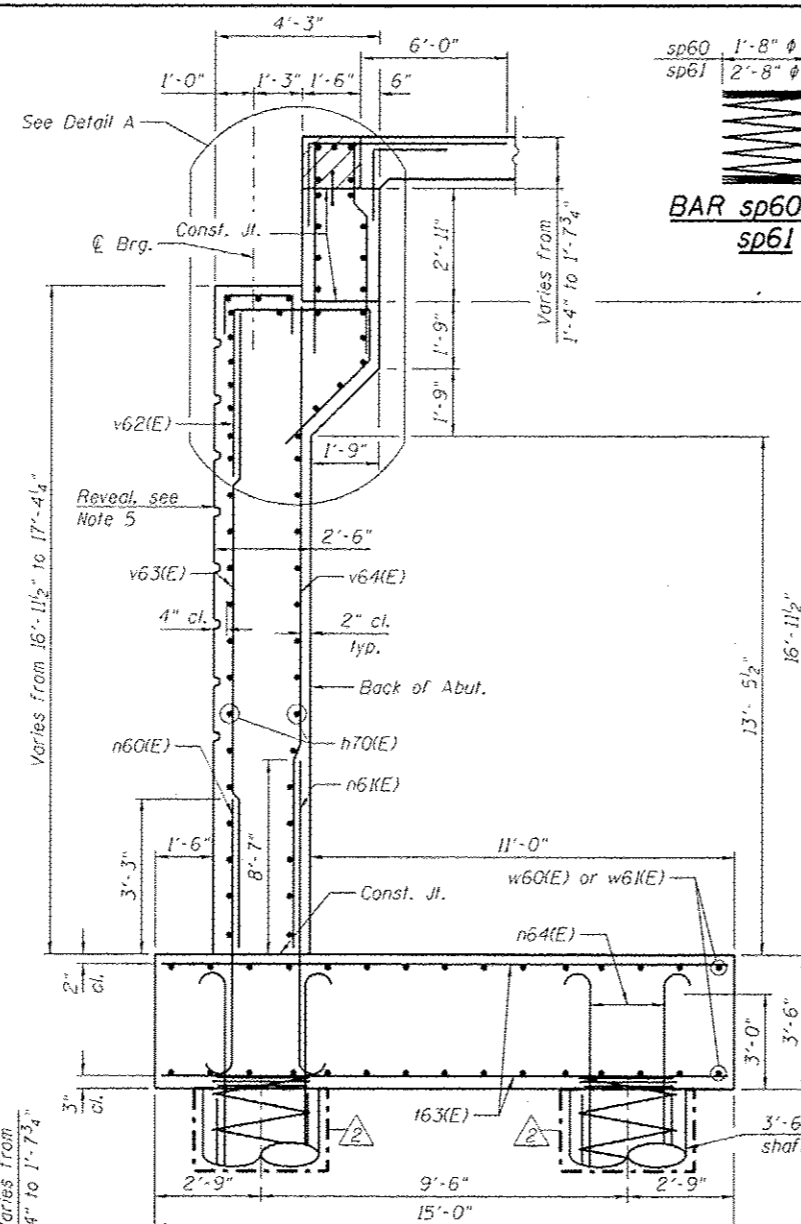
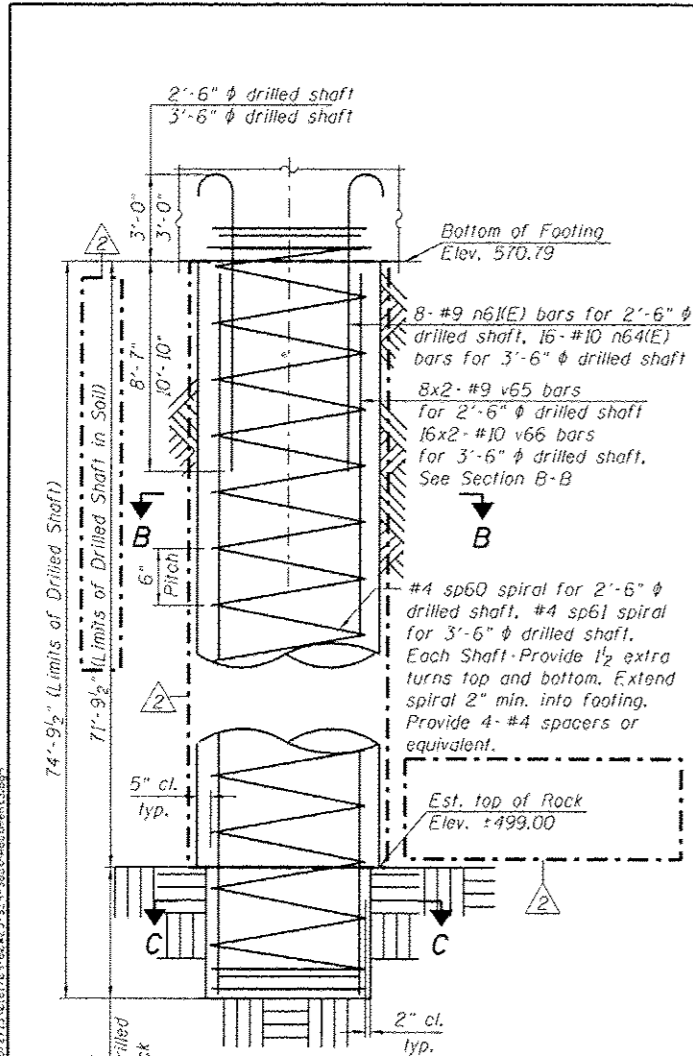
**HBM**  
4415 WEST HARRISON ST.  
SUITE 234  
MILLICAN, IL 60142  
PHONE: (708) 238-0900  
FAX: (708) 238-0901

DESIGNED - MI, MAF	REVISED - 07/19/2013 MI, WM
DRAWN - LAB, MAF	REVISED - 07/30/2013 MI, LAB
CHECKED - MAT, MI, JJS	REVISED -
DATE - 6/17/2013	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SOUTH ABUTMENT FOOTING PLAN AND SECTIONS  
STRUCTURE NO. 016-1709**

F.A.I. RTE. 90/94/290	SECTION 2013-00TR	COUNTY COOK	TOTAL SHEETS 317	SHEET NO. 172
CONTRACT NO. 60W25				ILLINOIS FED. AID PROJECT



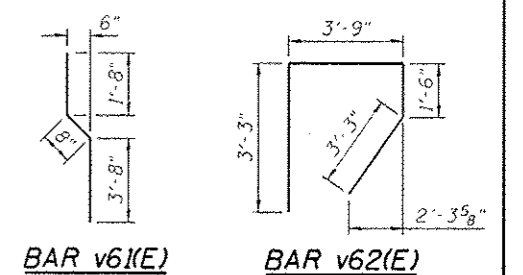
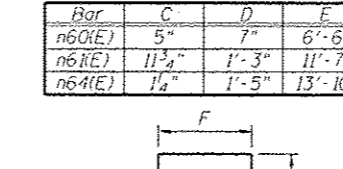
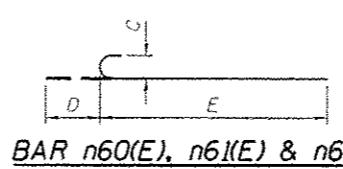
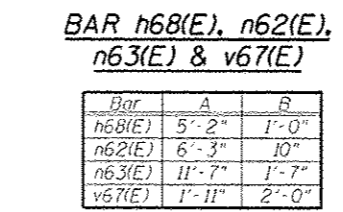
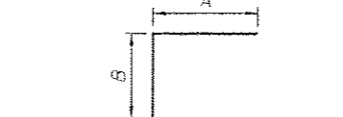
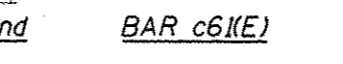
- NOTES:**
1. Reinforcement bars designated (E) shall be epoxy coated.
  2. Apply concrete sealer to all exposed concrete surfaces of the abutment.
  3. All edges shall have standard  $\frac{3}{4}$ " chamfer.
  4. For bar cutting diagram, see Sheet S1-30.
  5. For reveal details, see Sheet S1-31.
- \* Space h69(E) bars to miss anchor bolts.

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
b60(E)	22	#5	1'-2"	—
c60(E)	6	#5	9'-6"	—
c61(E)	6	#5	2'-4"	—
d60(E)	38	#5	5'-9"	—
d61(E)	46	#5	2'-7"	—
d62(E)	80	#7	7'-8"	—
d63(E)	8	#5	6'-10"	—
d64(E)	12	#7	8'-9"	—
e60(E)	4	#4	17'-4"	—
e61(E)	4	#4	20'-7"	—
e62(E)	4	#4	19'-6"	—
e63(E)	4	#4	22'-6"	—
e64(E)	8	#4	4'-2"	—
h60(E)	26	#5	30'-6"	—
h61(E)	24	#5	17'-4"	—
h62(E)	24	#5	21'-5"	—
h63(E)	24	#5	19'-6"	—
h64(E)	24	#5	23'-3"	—
h65(E)	16	#5	1'-11"	—
h66(E)	24	#5	9'-5"	—
h67(E)	12	#5	7'-9"	—
h68(E)	96	#5	6'-2"	—
h69(E)	3	#5	9'-8"	—
h70(E)	84	#5	32'-0"	—
n60(E)	62	#5	7'-1"	—
n61(E)	187	#9	12'-10"	—
n62(E)	40	#5	7'-1"	—
n63(E)	89	#9	13'-2"	—
n64(E)	256	#10	15'-3"	—
sp60	8	#4	75'-0"	—
sp61	16	#4	75'-0"	—
160(E)	13	#9	8'-2"	—
161(E)	7	#9	22'-8"	—
162(E)	4	#9	22'-8"	—
163(E)	188	#9	14'-6"	—
164(E)	4	#9	35'-10"	—
165(E)	7	#9	35'-10"	—
166(E)	7	#9	21'-2"	—
167(E)	11	#9	10'-8"	—
168(E)	4	#9	28'-2"	—
169(E)	7	#9	28'-2"	—

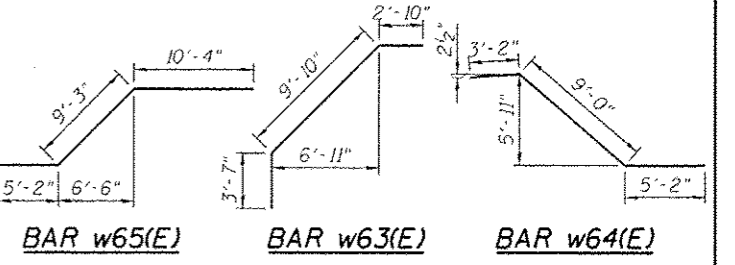
**BILL OF MATERIAL (CONT'D)**

Bar	No.	Size	Length	Shape
u60(E)	11	#4	3'-9"	—
v60(E)	59	#5	6'-2"	—
v61(E)	59	#5	6'-0"	—
v62(E)	59	#5	11'-9"	—
v63(E)	62	#5	16'-10"	—
v64(E)	123	#9	16'-10"	—
v65	128	#9	41'-7"	—
v66	512	#10	42'-8"	—
v67(E)	59	#5	3'-11"	—
v68(E)	40	#5	21'-9"	—
v69(E)	90	#9	21'-9"	—
v70(E)	12	#5	6'-1"	—
v71(E)	36	#5	4'-4"	—
w60(E)	42	#7	29'-4"	—
w61(E)	60	#7	33'-1"	—
w62(E)	16	#7	17'-2"	—
w63(E)	2	#7	16'-3"	—
w64(E)	2	#7	17'-4"	—
w65(E)	2	#7	24'-9"	—
Concrete Structures		Cu Yd	349.6	
Concrete Superstructure		Cu Yd	10.9	
Protective Coat		Sq Yd	18	
Reinforcement Bars		Pound	130,130	
Reinforcement Bars, Epoxy Coated		Pound	77,410	
Drilled Shaft in Soil		Cu Yd	515	
Drilled Shaft in Rock		Cu Yd	16	
Concrete Sealer		Sq Ft	2,483	
Geocomposite Wall Drain		Sq Yd	220	
Braced Excavation		Cu Yd	1,606	
Granular Backfill for Structures		Cu Yd	280	
Pipe Underdrains for Structures 6"		Foot	119	



Minimum Bar Laps

Bar	Lap
#4	2'-7"
#5	3'-3"
#6	3'-10"
#7	5'-2"
#8	6'-9"
#9	8'-7"
#10	10'-10"



**HBM**  
 HARRISON CONSULTING & DESIGN  
 6415 WEST HARRISON ST.  
 SUITE 331  
 WILSON, IL 60142  
 PHONE: (708) 236-0900  
 FAX: (708) 236-0901

0161701-60W25-524-SouthAbutment3.dgn  
 USER NAME: f.kaalkolmenyn  
 PLOT SCALE: 6410000 1/2" = 1'-0"  
 PLOT DATE: 7/30/2013

DESIGNED	LAB, MAF	REVISION	DATE
MAI, MAF	LAB, MAF	07/19/2013	MI, LAB
MAI, MI, JJS	MAI, MI, JJS	07/30/2013	MI, LAB
DATE	6/17/2013	REVISION	

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

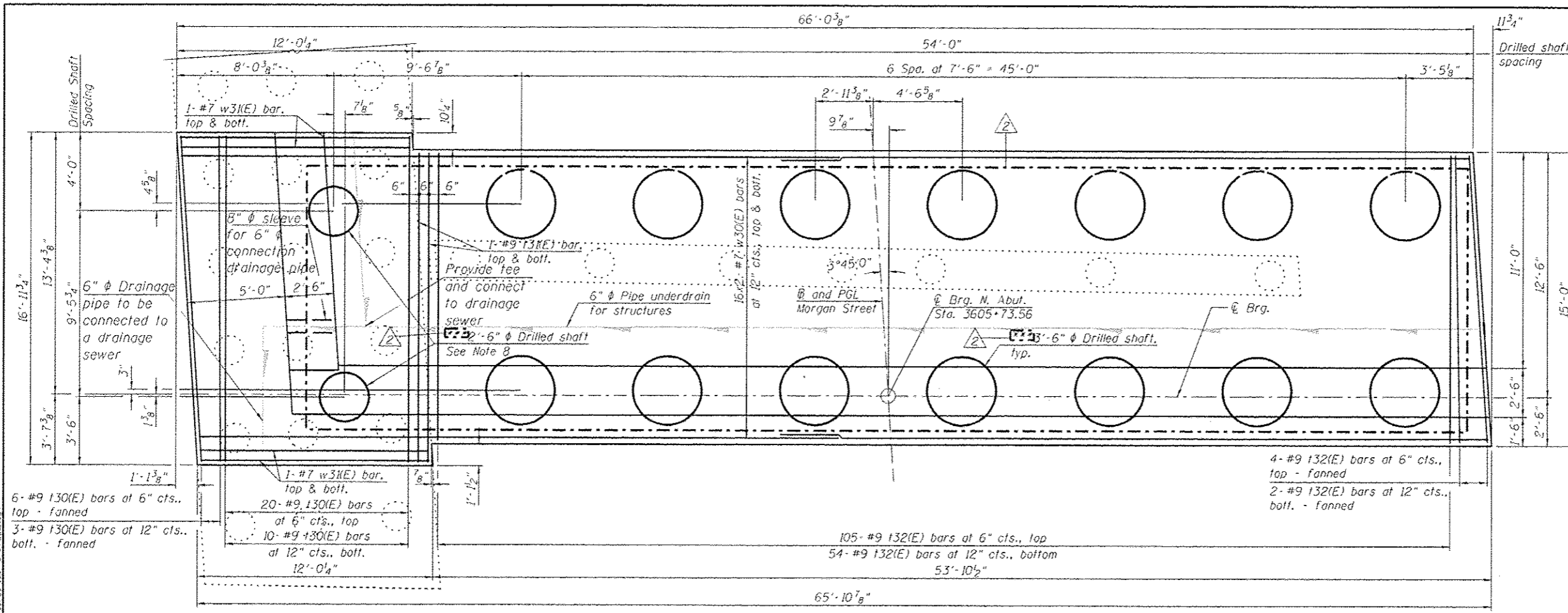
SOUTH ABUTMENT SECTIONS AND DETAILS  
 STRUCTURE NO. 016-1709

SCALE: SHEET S1-29 OF 51 SHEETS STA. TO STA.

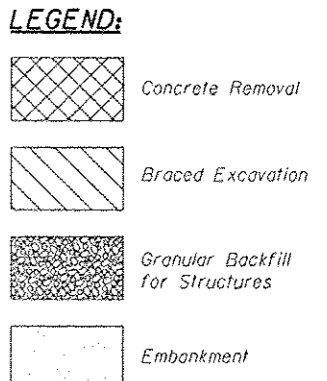
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-00TR	COOK	317	173

CONTRACT NO. 60W25  
 ILLINOIS FED. AID PROJECT



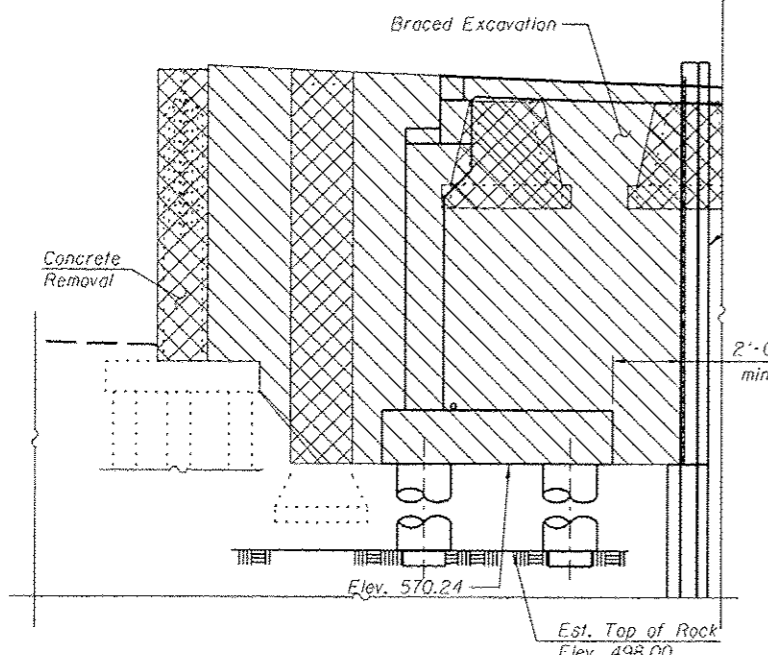


- NOTES:**
1. Reinforcement bars designated (E) shall be epoxy coated.
  2. Bars noted thus 3x2-#5 indicates 3 lines of bars with 2 bars per line.
  3. Driving piles and temporary sheet piling are not allowed.
  4. For Bill of Materials, see Sheet S1-34.
  5. For existing pile removal details, see Sheet S1-08.
  6. Space footing reinforcement to miss extended reinforcement from drilled shaft.
  7. For wingwall braced excavation and backfill details, see Sheet S1-35.
  8. Installation of drilled shaft may require coring through existing pile bells. Additional costs included in Drilled Shaft in Soil.

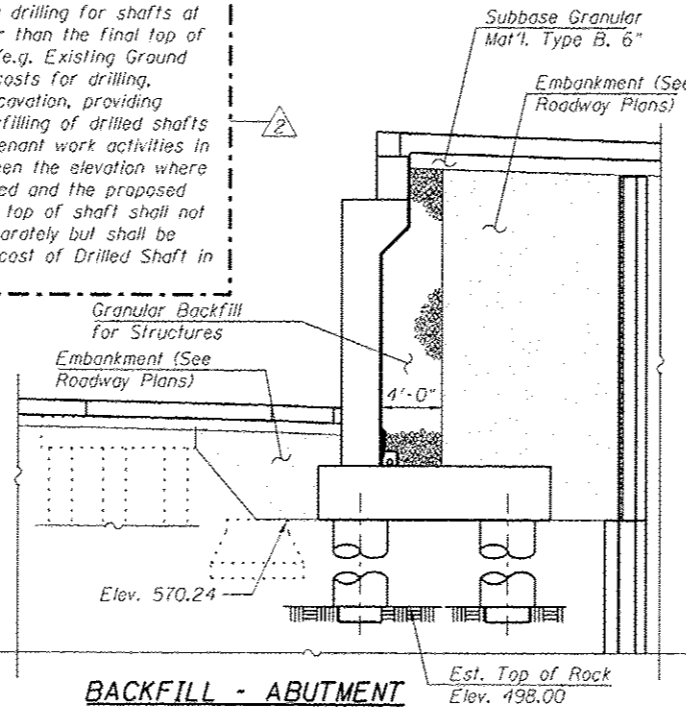


**FOOTING LAYOUT**

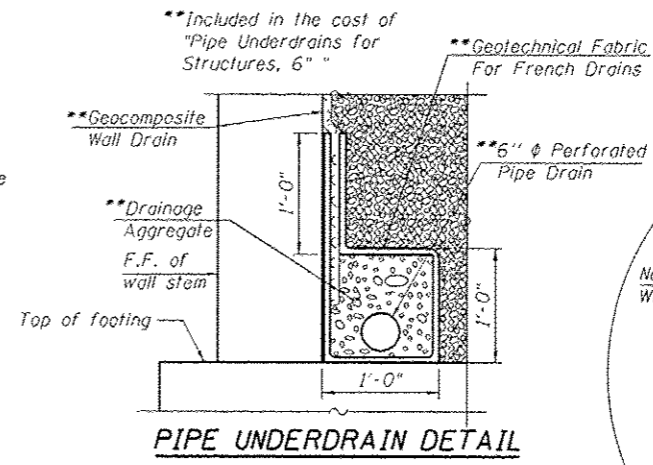
When Contractor's means and methods include initiating drilling for shafts at elevations higher than the final top of shaft elevation (e.g. Existing Ground Elevation), the costs for drilling, disposing of excavation, providing casing and backfilling of drilled shafts or other appurtenant work activities in the areas between the elevation where drilling is initiated and the proposed elevation of the top of shaft shall not be paid for separately but shall be included in the cost of Drilled Shaft in Soil.



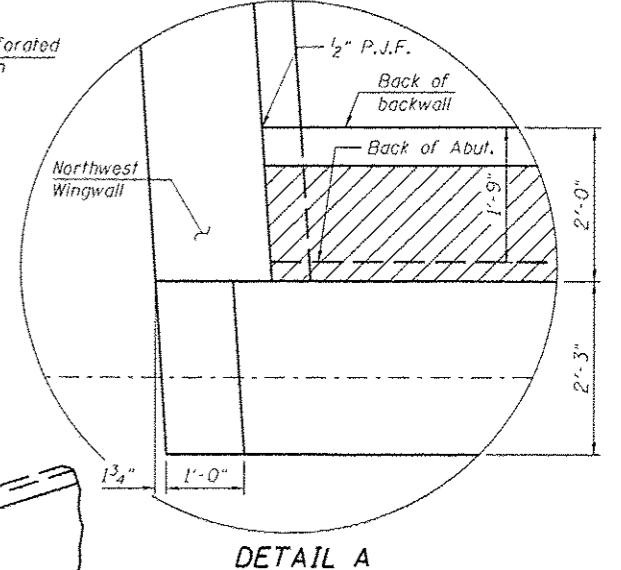
**BRACED EXCAVATION - ABUTMENT**



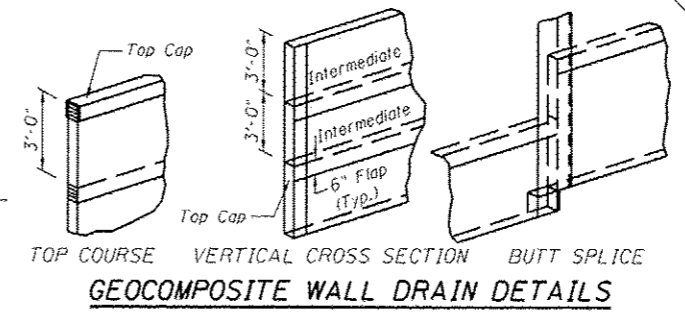
**BACKFILL - ABUTMENT**



**PIPE UNDERDRAIN DETAIL**



**DETAIL A**



**GEOCOMPOSITE WALL DRAIN DETAILS**

**HBM**  
 CONSULTING & DESIGN  
 4415 WEST HARRISON ST.  
 SUITE 231  
 HILLSTON, IL 60162  
 PHONE: (708) 236-0900  
 FAX: (708) 236-0901

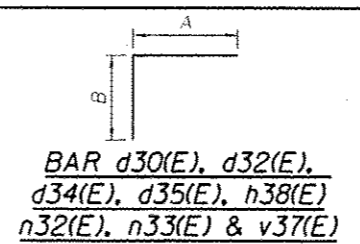
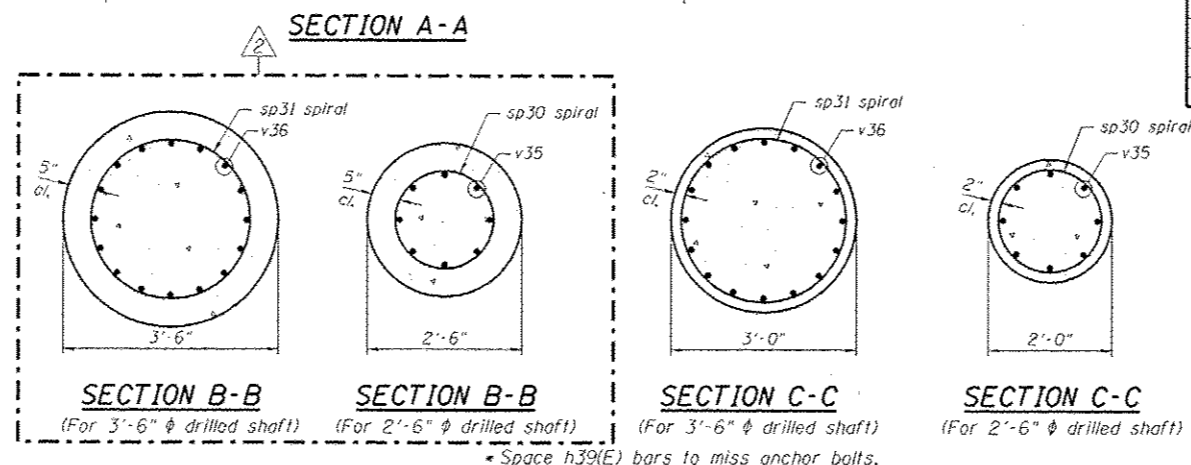
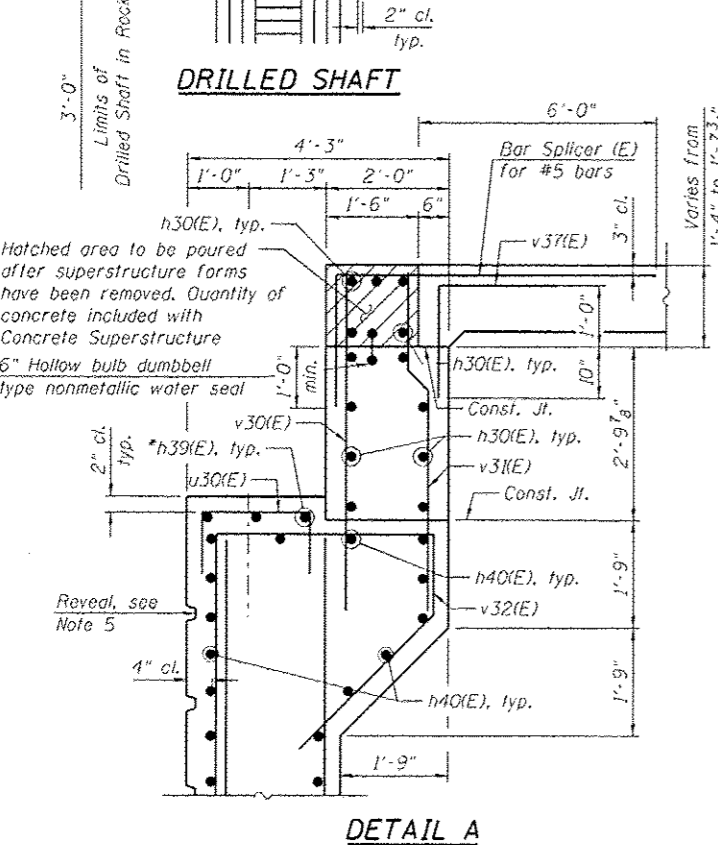
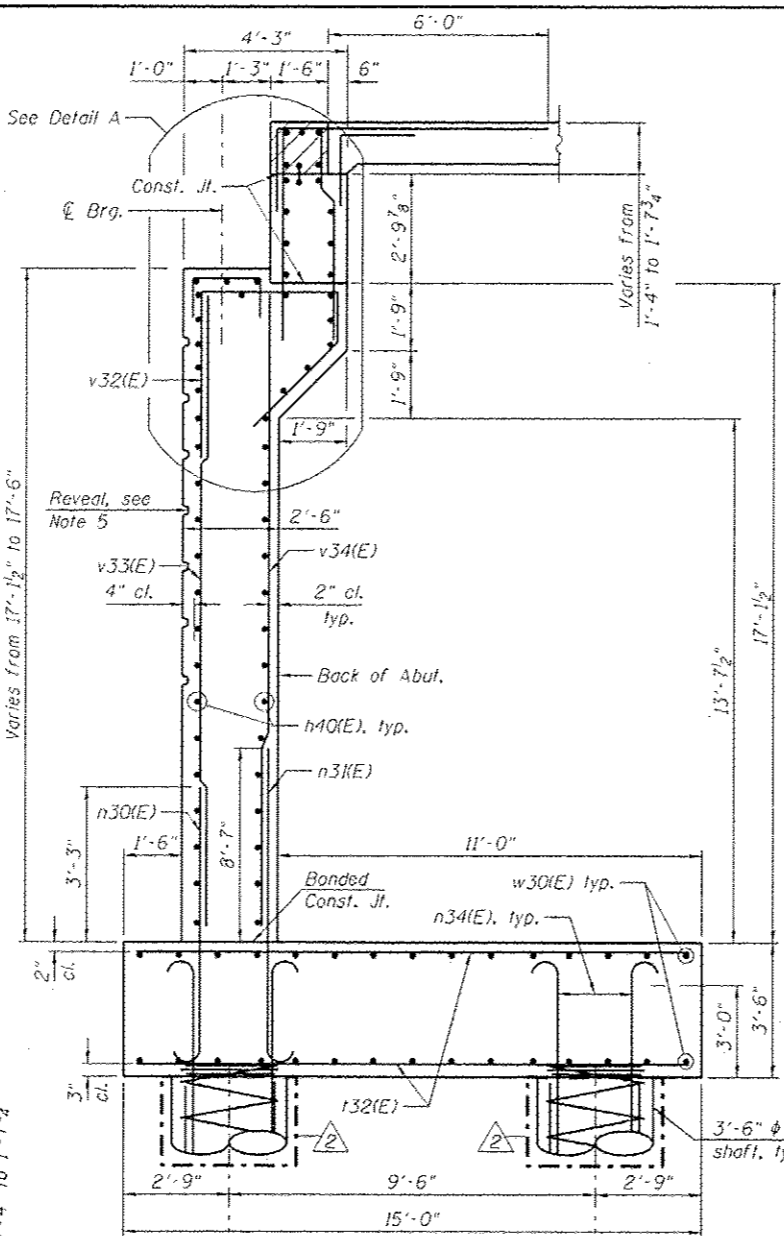
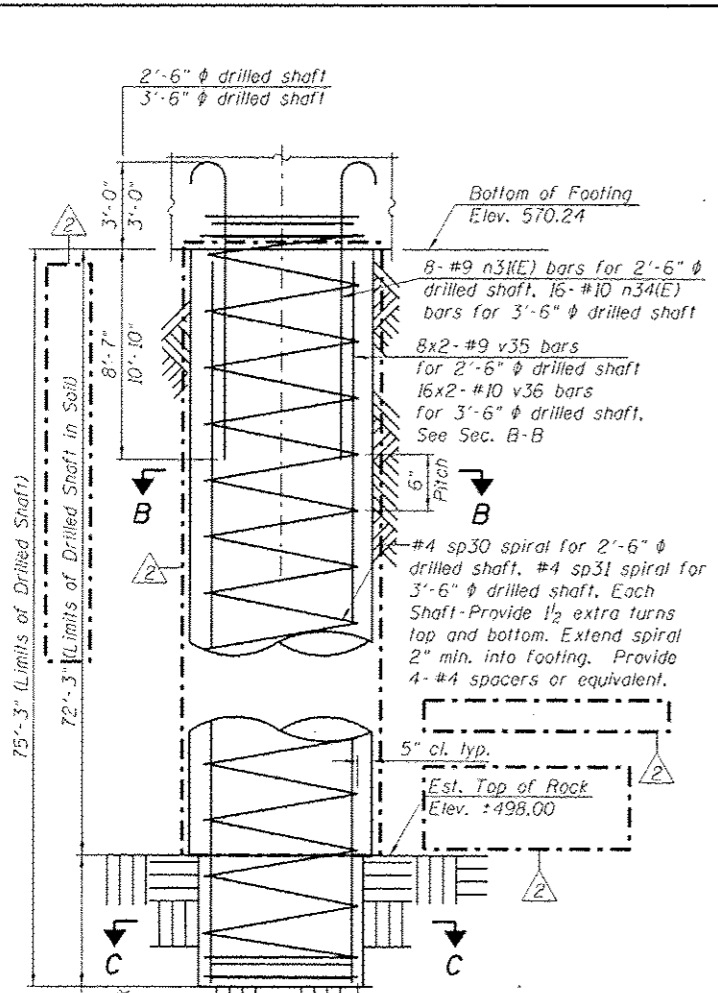
01017091-60#25-533-NorthAbut2.dgn  
 USER NAME: jlsakallemayn  
 PLOT SCALE: 6:8.0000 1/2" = 1'-0"  
 PLOT DATE: 7/30/2013

DESIGNED - MI, MAF	REVISED - 07/19/2013 MI, LAB
DRAWN - LAB, MAF	REVISED - 07/30/2013 MI, LAB
CHECKED - MAI, MI, WM	REVISED -
DATE - 6/17/2013	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

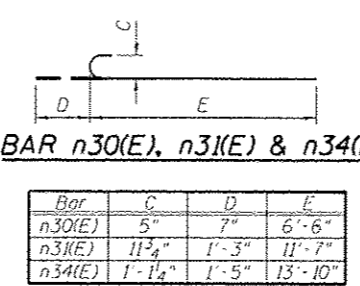
**NORTH ABUTMENT FOOTING PLAN AND SECTIONS**  
 STRUCTURE NO. 016-1709  
 SCALE: SHEET S1-33 OF 51 SHEETS STA. TO STA.

F.A.I. RTE. 90/94/290	SECTION 2013-00TR	COUNTY COOK	TOTAL SHEETS 317	SHEET NO. 177
CONTRACT NO. 60W25				
[ILLINOIS] FED. AID PROJECT				



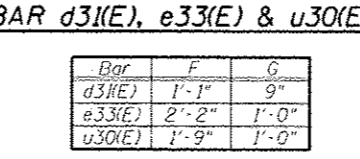
**BAR d30(E), d32(E), d34(E), d35(E), h38(E), n32(E), n33(E) & v37(E)**

Bar	A	B
d30(E)	4'-10"	6"
d32(E)	5'-10"	6"
d34(E)	4'-10"	6"
d35(E)	5'-10"	6"
h38(E)	4'-0"	1'-0"
n32(E)	6'-6"	10"
n33(E)	11'-10"	1'-7"
v37(E)	1'-11"	1'-10"



**BAR n30(E), n31(E) & n34(E)**

Bar	C	D	E
n30(E)	5"	7"	6'-6"
n31(E)	11'-2 1/2"	1'-3"	11'-7"
n34(E)	1'-1 1/4"	1'-5"	13'-10"



**BAR d31(E), e33(E) & u30(E)**

Bar	F	G
d31(E)	1'-1"	9"
e33(E)	2'-2"	1'-0"
u30(E)	1'-9"	1'-0"

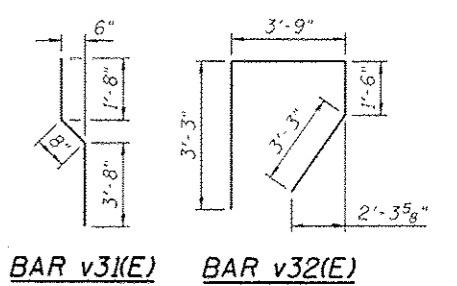
**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
b30(E)	11	#5	1'-2"	—
c30(E)	3	#5	9'-6"	—
c31(E)	3	#5	2'-4"	—
d30(E)	42	#5	5'-4"	—
d31(E)	60	#5	2'-7"	—
d32(E)	4	#5	6'-4"	—
d33(E)	14	#5	5'-9"	—
d34(E)	76	#7	5'-4"	—
d35(E)	6	#7	6'-4"	—
d36(E)	26	#7	7'-8"	—
e30(E)	8	#4	19'-11"	—
e31(E)	8	#4	21'-3"	—
e32(E)	8	#4	11'-10"	—
e33(E)	4	#4	4'-2"	—
h30(E)	26	#5	31'-3"	—
h31(E)	46	#5	11'-9"	—
h32(E)	2	#5	11'-10"	—
h33(E)	8	#5	20'-3"	—
h34(E)	8	#5	21'-6"	—
h35(E)	8	#5	1'-11"	—
h36(E)	24	#5	7'-7"	—
h37(E)	12	#5	6'-0"	—
h38(E)	48	#5	5'-0"	—
h39(E)	3	#5	9'-8"	—
h40(E)	84	#5	32'-2"	—
n30(E)	62	#5	7'-1"	—
n31(E)	139	#9	12'-10"	—
n32(E)	13	#5	7'-4"	—
n33(E)	25	#9	13'-5"	—
n34(E)	224	#10	15'-3"	—
sp30	2	#4	75'-5"	—
sp31	14	#4	75'-5"	—
l30(E)	39	#9	16'-8"	—
l31(E)	4	#9	15'-10"	—
l32(E)	165	#9	14'-8"	—

**BILL OF MATERIAL (CONT'D)**

Bar	No.	Size	Length	Shape
u30(E)	11	#4	3'-9"	—
v30(E)	61	#5	6'-1"	—
v31(E)	61	#5	6'-0"	—
v32(E)	61	#5	11'-9"	—
v33(E)	62	#5	16'-11"	—
v34(E)	123	#9	16'-11"	—
v35	32	#9	41'-9"	—
v36	448	#10	42'-11"	—
v37(E)	61	#5	3'-9"	—
v38(E)	13	#5	21'-9"	—
v39(E)	25	#9	21'-9"	—
v40(E)	6	#5	6'-1"	—
v41(E)	36	#5	4'-3"	—
w30(E)	64	#7	35'-5"	—
w31(E)	8	#7	11'-8"	—
Concrete Structures		Cu Yd	278.5	
Concrete Superstructure		Cu Yd	12.7	
Protective Coat		Sq Yd	25	
Reinforcement Bars		Pound	96,570	
Reinforcement Bars, Epoxy Coated		Pound	59,000	
Drilled Shaft in Soil		Cu Yd	388	
Drilled Shaft in Rock		Cu Yd	12	
Concrete Sealer		Sq Ft	1,953	
Geocomposite Wall Drain		Sq Yd	171	
Braced Excavation		Cu Yd	1,300	
Granular Backfill for Structures		Cu Yd	225	
Pipe Underdrains for Structures 6"		Foot	84	

Length is height of spiral



- NOTES:**
- Reinforcement bars designated (E) shall be epoxy coated.
  - Bars noted thus, 3x2-#5 indicates 3 lines of bars with 2 lengths of bars per line.
  - Apply concrete sealer to all exposed concrete surfaces of the abutment.
  - All edges shall have standard 3/4" chamfer.
  - For reveal details, see Sheet S1-36.

**Minimum Bar Laps**

Bar	Lap
#4	2'-7"
#5	3'-3"
#6	3'-10"
#7	5'-2"
#8	6'-9"
#9	8'-7"
#10	10'-10"

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**HBM** CONSULTING & DESIGN, INC.  
 445 WEST HARRISON ST., SUITE 231, HILLSDALE, IL 60142  
 PHONE: (708) 236-0900 FAX: (708) 236-0901

DESIGNED - MI, MAF	REVISED - 07/19/2013 MI, LAB
DRAWN - LAB, MAF	REVISED - 07/30/2013 MI, LAB
CHECKED - MAI, MI, WM	REVISED -
DATE - 6/17/2013	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT SECTIONS AND DETAILS  
 STRUCTURE NO. 016-1709  
 SCALE: SHEET S1-34 OF 51 SHEETS STA. TO STA.

F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-007R	COOK	317	178
CONTRACT NO. 60W25			ILLINOIS FED. AID PROJECT	

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h90(E)	4	#5	30'-9"	—
h91(E)	16	#6	24'-7"	—
h92(E)	10	#8	24'-7"	—
h93(E)	4	#5	29'-1"	—
h94(E)	16	#6	22'-11"	—
h95(E)	10	#8	22'-11"	—
h96(E)	2	#5	25'-9"	—
h97(E)	2	#5	27'-5"	—
n90(E)	112	#9	15'-5"	—
p90(E)	10	#9	30'-9"	—
p91(E)	5	#9	24'-3"	—
p92(E)	10	#9	16'-1"	—
p93(E)	4	#5	5'-8"	—
p94(E)	10	#9	29'-1"	—
p95(E)	5	#9	22'-3"	—
p96(E)	4	#5	4'-0"	—
sp90	190	#6	12'-2"	□
s91(E)	112	#6	6'-11"	□
s92(E)	64	#5	3'-8"	□
s93(E)	64	#5	5'-5"	□
s94(E)	64	#5	8'-0"	□
s95(E)	97	#6	24'-4"	□
sp90	8	#4	81'-7"	■
u90(E)	8	#6	9'-10"	□
u91(E)	12	#4	7'-4"	□
u92(E)	20	#6	10'-8"	□
v90(E)	56	#8	15'-11"	—
v91	336	#9	32'-9"	—

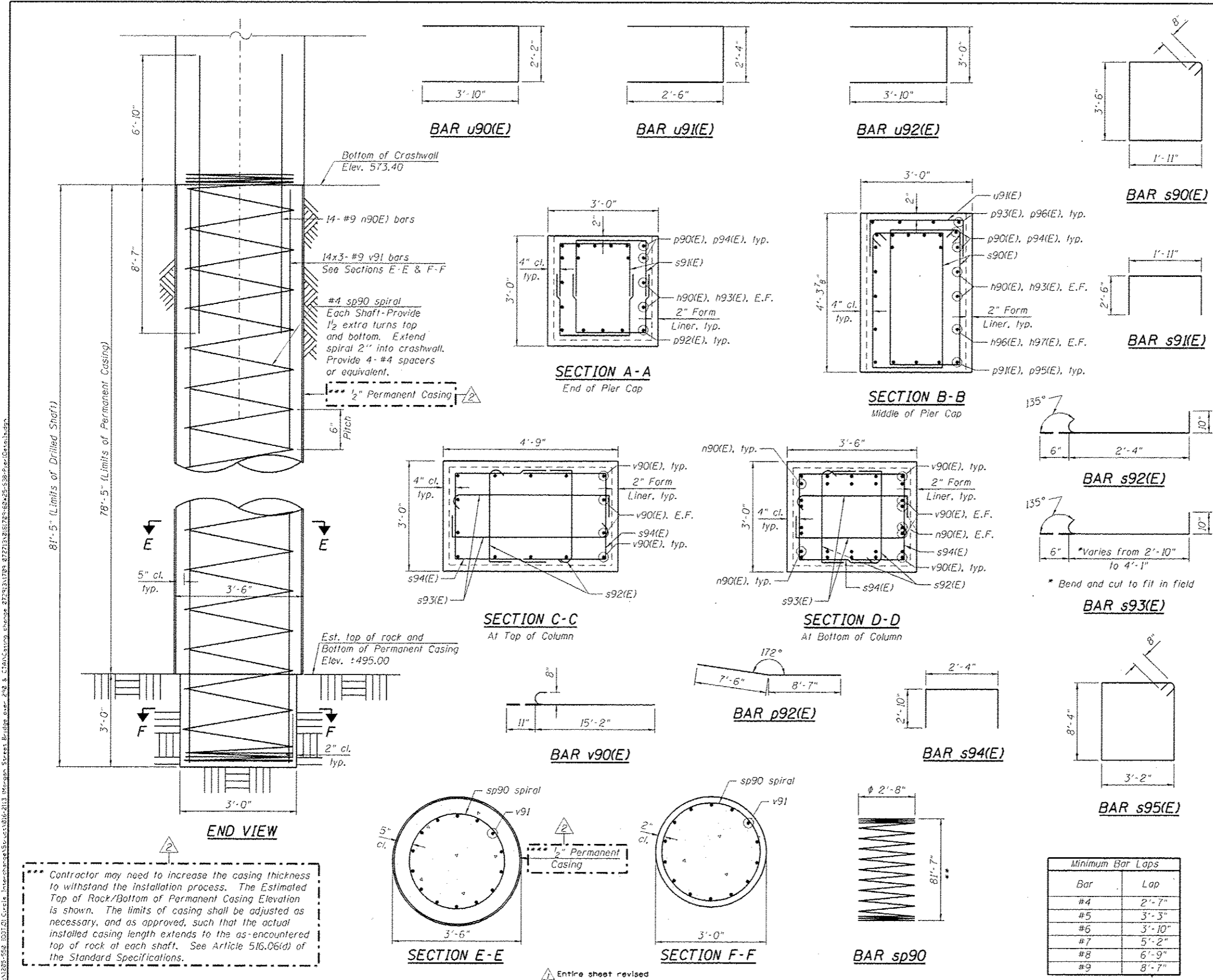
Structure Excavation	Cu Yd	28
Concrete Structures	Cu Yd	94.6
Reinforcement Bars	Pound	44,870
Reinforcement Bars, Epoxy Coated	Pound	24,260
Permanent Casing	Foot	628
Drilled Shaft in Soil	Cu Yd	224
Drilled Shaft in Rock	Cu Yd	7
Concrete Sealer	Sq Ft	2,247
Granular Backfill for Structures	Cu Yd	27

\*\*Length is height of spiral

**NOTES:**

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Bars noted thus, 14x3-#5 indicates 14 lines of bars with 3 lengths of bars per line.
3. Bars equally spaced, unless otherwise noted.
4. Apply concrete sealer to all exposed concrete surfaces of the pier.
5. All edges shall have standard 3/4" chamfer.
6. Spirals are measured vertically.

Bar	Lap
#4	2'-7"
#5	3'-3"
#6	3'-10"
#7	5'-2"
#8	6'-9"
#9	8'-7"



Contractor may need to increase the casing thickness to withstand the installation process. The Estimated Top of Rock/Bottom of Permanent Casing Elevation is shown. The limits of casing shall be adjusted as necessary, and as approved, such that the actual installed casing length extends to the as-encountered top of rock at each shaft. See Article 516.06(d) of the Standard Specifications.

Entire sheet revised

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 4415 WEST HARRISON ST.  
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DESIGNED - MI, MAF	REVISED - 07/19/2013 MI, WM
DRAWN - LAB, MAF	REVISED - 07/30/2013 MI, LAB
CHECKED - MAI, MI, MWM	REVISED -
DATE - 6/17/2013	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

PIER 1 SECTIONS AND DETAILS  
 STRUCTURE NO. 016-1709

SCALE:	SHEET 51-38 OF 51 SHEETS	STA.	TO STA.	F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
				90/94/290	2013-007R	COOK	317	182

CONTRACT NO. 60W25  
 ILLINOIS FED. AID PROJECT

**BILL OF MATERIAL**

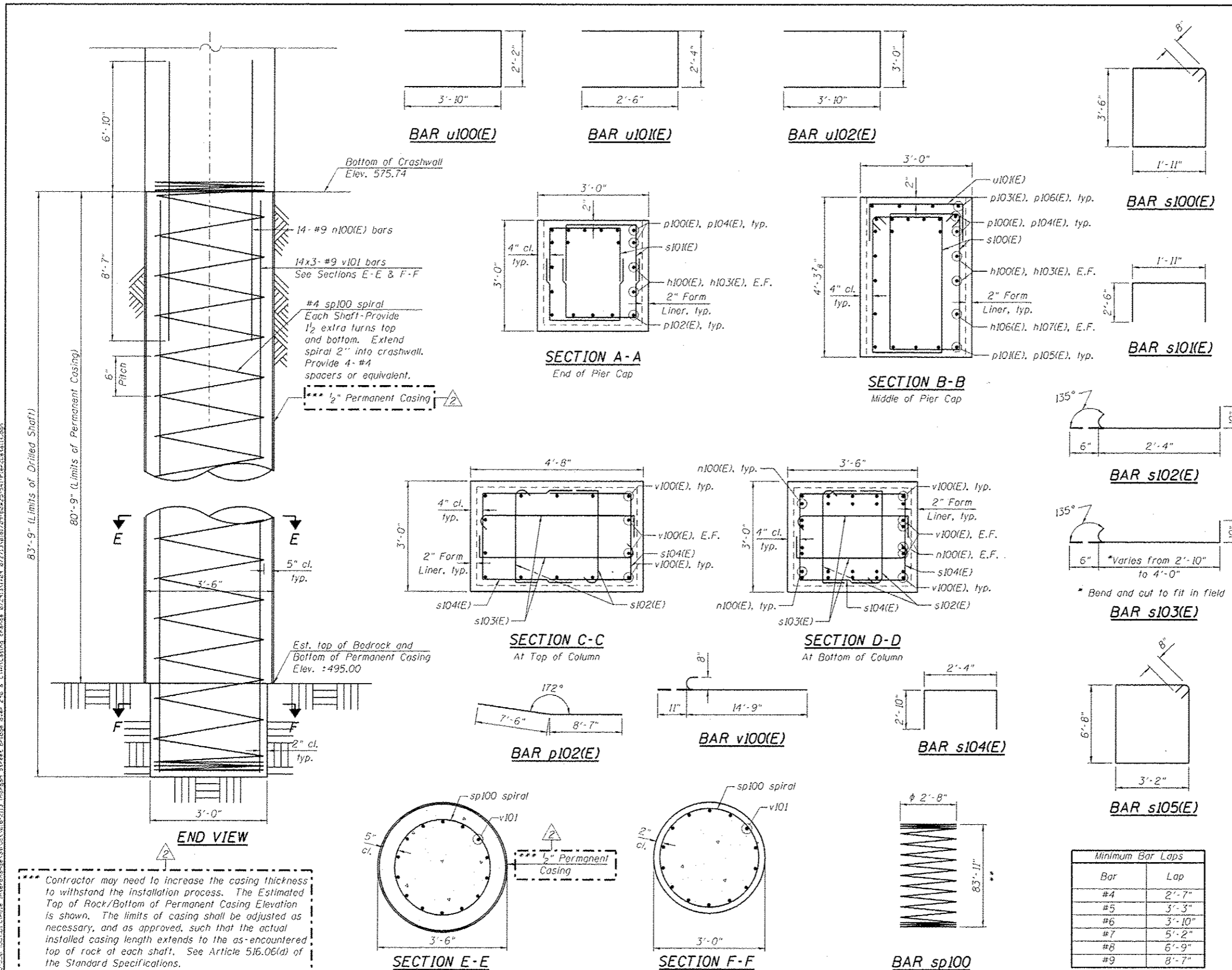
Bar	No.	Size	Length	Shape
h100(E)	4	#5	30'-9"	
h101(E)	12	#6	24'-7"	
h102(E)	10	#8	24'-7"	
h103(E)	4	#5	29'-1"	
h104(E)	12	#6	22'-11"	
h105(E)	10	#8	22'-11"	
h106(E)	2	#5	25'-9"	
h107(E)	2	#5	27'-5"	
n100(E)	112	#9	15'-5"	
p100(E)	10	#9	30'-9"	
p101(E)	5	#9	24'-3"	
p102(E)	10	#9	16'-1"	
p103(E)	4	#5	5'-8"	
p104(E)	10	#9	29'-1"	
p105(E)	5	#9	22'-3"	
p106(E)	4	#5	4'-0"	
s100(E)	190	#6	12'-2"	□
s101(E)	112	#6	6'-11"	□
s102(E)	64	#5	3'-8"	□
s103(E)	64	#5	5'-4"	□
s104(E)	64	#5	8'-0"	□
s105(E)	97	#6	21'-0"	□
sp100	8	#4	83'-11"	⋮
u100(E)	8	#6	9'-10"	□
u101(E)	12	#4	7'-4"	□
u102(E)	16	#6	10'-8"	□
v100(E)	56	#8	15'-8"	□
v101	336	#9	33'-6"	□
Structure Excavation	Cu Yd	51		
Concrete Structures	Cu Yd	83.0		
Reinforcement Bars	Pound	45,940		
Reinforcement Bars, Epoxy Coated	Pound	23,380		
Permanent Casing	Foot	646		
Drilled Shaft in Soil	Cu Yd	231		
Drilled Shaft in Rock	Cu Yd	7		
Concrete Sealer	Sq Ft	2,045		
Granular Backfill for Structures	Cu Yd	76		

\*\*Length is height of spiral

**NOTES:**

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Bars noted thus, 14x3-#5 indicates 14 lines of bars with 3 lengths of bars per line.
3. Bars equally spaced, unless otherwise noted.
4. Apply concrete sealer to all exposed concrete surfaces of the pier.
5. All edges shall have standard 3/4" chamfer.
6. Spirals are measured vertically.

Bar	Lap
#4	2'-7"
#5	3'-3"
#6	3'-10"
#7	5'-2"
#8	6'-9"
#9	8'-7"



Contractor may need to increase the casing thickness to withstand the installation process. The Estimated Top of Rock/Bottom of Permanent Casing Elevation is shown. The limits of casing shall be adjusted as necessary, and as approved, such that the actual installed casing length extends to the as-encountered top of rock at each shaft. See Article 516.06(d) of the Standard Specifications.

Entire sheet revised

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 HARRISON BROTHERS & COMPANY, INC.  
 CONSULTING & DESIGN  
 INSPECTION & TESTING  
 RESEARCH & TESTING  
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 FAX: (708) 256-0901

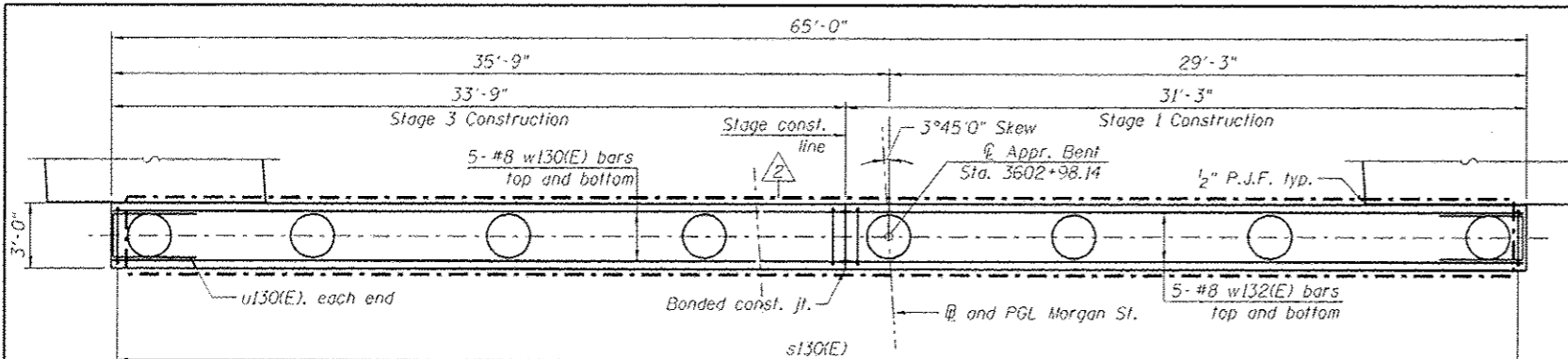
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DRAWN	LAB, MAF	REVISED	07/30/2013 MI, LAB
CHECKED	MAI, MI, MWM	REVISED	
DATE	6/17/2013	REVISED	

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

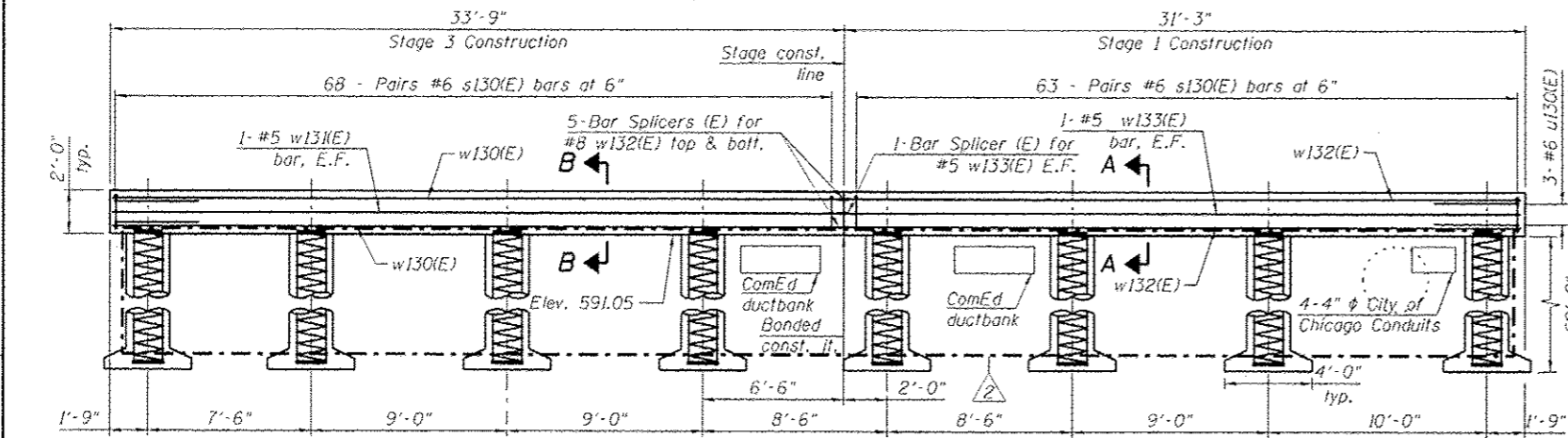
**PIER 2 SECTIONS AND DETAILS**  
**STRUCTURE NO. 016-1709**  
 SCALE: SHEET 51-41 OF 51 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-00TR	COOK	317	185
CONTRACT NO. 60W25			ILLINOIS FED. AID PROJECT	

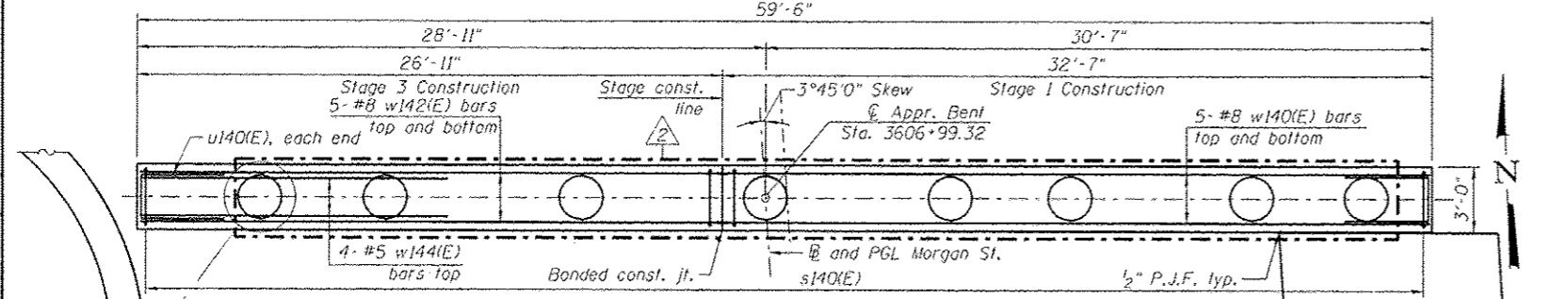




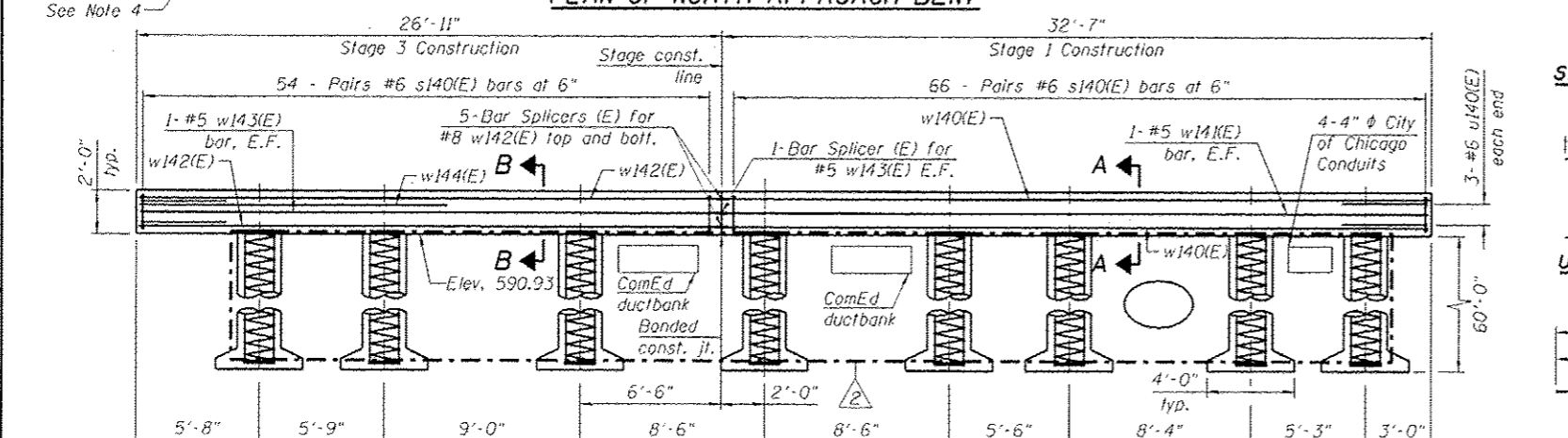
**PLAN OF SOUTH APPROACH BENT**



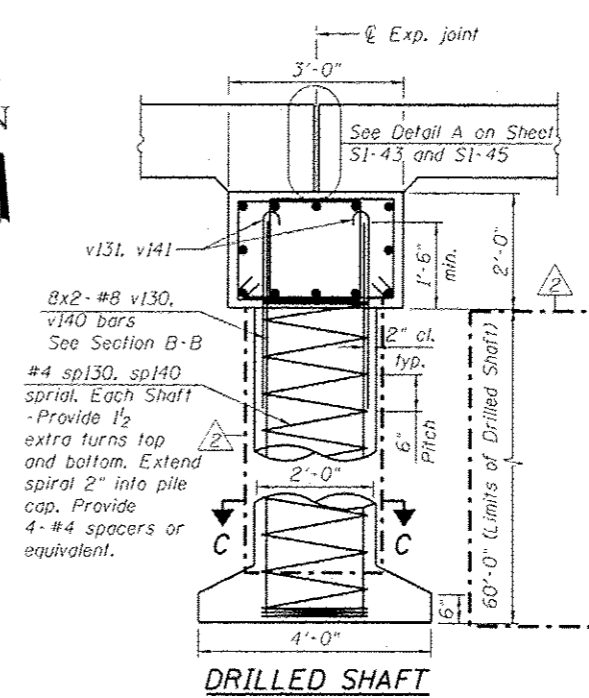
**ELEVATION (Looking North)**



**PLAN OF NORTH APPROACH BENT**



**ELEVATION (Looking North)**

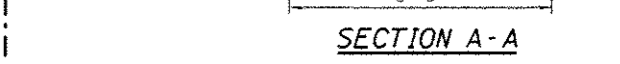


**DRILLED SHAFT**

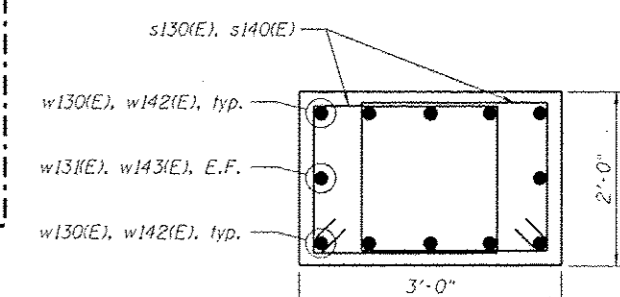
Minimum Bar Laps	
Bar	Lap
#4	2'-7"
#5	3'-3"
#6	3'-10"
#7	5'-2"
#8	6'-9"

**NOTES:**

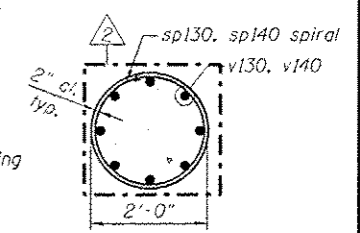
1. Reinforcement bars designated (E) shall be epoxy coated.
2. Bars indicated thus, 8x2-#5 etc., indicates 8 lines of bars with 2 lengths per line.
3. All edges shall have standard 3/4" chamfer.
4. Installation of drilled shaft requires coring through existing Northwest wingwall footing. Additional costs included in Drilled Shaft in Soil.
5. Spirals are measured vertically.



**SECTION A-A**



**SECTION B-B**



**SECTION C-C**

**BILL OF MATERIAL**

South Approach Bent

Bar	No.	Size	Length	Shape
w130(E)	10	#8	33'-6"	—
w131(E)	2	#5	33'-6"	—
w132(E)	10	#8	31'-0"	—
w133(E)	2	#5	31'-0"	—
s130(E)	262	#6	8'-8"	□
sp130	8	#4	60'-2"	—
u130(E)	6	#6	10'-3"	—
v130	128	#8	34'-2"	—
v131	64	#8	9'-5"	—
Structure Excavation		Cu Yd	34	
Concrete Structures		Cu Yd	14.4	
Reinforcement Bars		Pound	16,753	
Reinforcement Bars, Epoxy Coated		Pound	5,360	
Drilled Shaft in Soil		Cu Yd	56	

**BILL OF MATERIAL**

North Approach Bent

Bar	No.	Size	Length	Shape
w140(E)	10	#8	32'-4"	—
w141(E)	2	#5	32'-4"	—
w142(E)	10	#8	26'-8"	—
w143(E)	2	#5	26'-8"	—
w144(E)	4	#8	14'-0"	—
s140(E)	240	#6	8'-8"	□
sp140	8	#4	60'-2"	—
u140(E)	6	#6	10'-3"	—
v140	128	#8	34'-2"	—
v141	64	#8	9'-5"	—
Structure Excavation		Cu Yd	31	
Concrete Structures		Cu Yd	13.2	
Reinforcement Bars		Pound	16,753	
Reinforcement Bars, Epoxy Coated		Pound	5,070	
Drilled Shaft in Soil		Cu Yd	56	

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DESIGNED - MAF, MWM	REVISÉ - 07/19/2013 MI, WM
DRAWN - MWM, HH	REVISÉ - 07/30/2013 MI, LAB
CHECKED - MI, MAI	REVISÉ -
DATE - 6/17/2013	REVISÉ -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**SOUTH AND NORTH APPROACH PILE BENT SUPPORT  
 STRUCTURE NO. 016-1709**

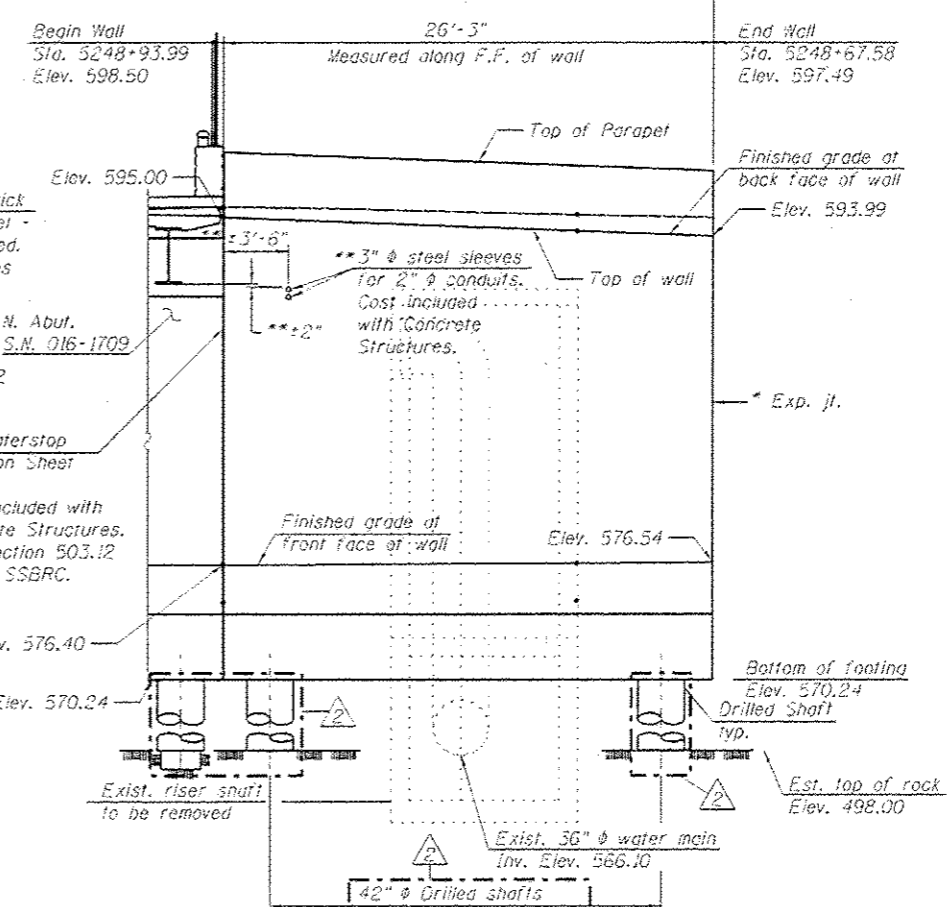
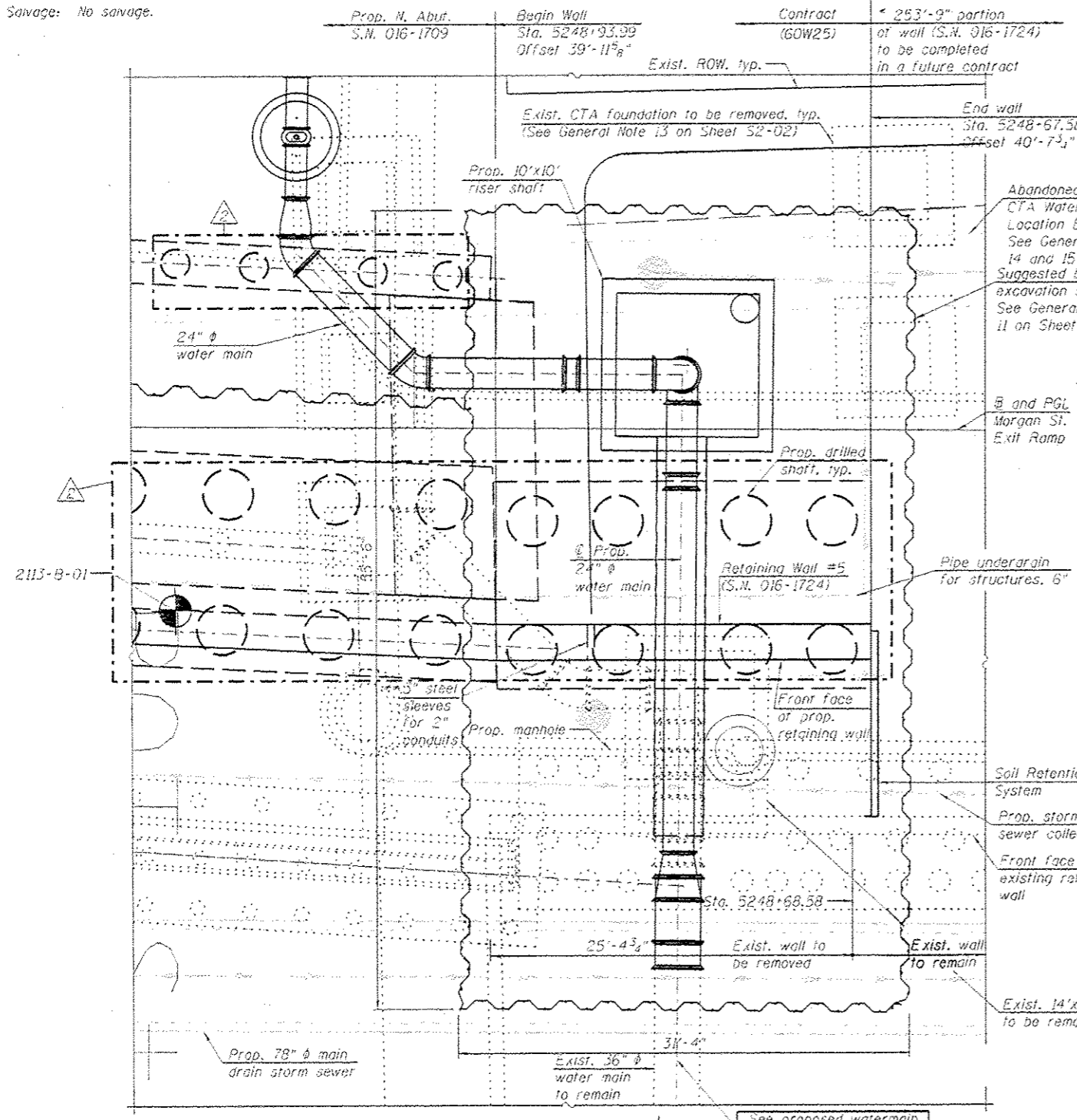
SCALE: SHEET S1-47 OF 51 SHEETS STA. TO STA.

F.A.I. RTE. 90/94/290	SECTION 2013-00TR	COUNTY COOK	TOTAL SHEETS 317	SHEET NO. 191
CONTRACT NO. 60W25			ILLINOIS FED. AID PROJECT	

Benchmark: Cut square on northwest corner of sign foundation at north side of Harrison Street, approximately 80' west of west line of Morgan Street. Elevation 593.07.  
 Cut square on east wall of Morgan Street at approximately centerline of I-290, near north entrance to CTA. Elevation 600.63.

Existing Structure: The retaining wall is comprised of reinforced concrete with attached guardrail above. The length of the retaining wall is 282'-6 1/2" and the total exposed height varies from approximately 18'-5" at the west end to 1'-11" at the east end (measured from grade at front face of wall). The retained height varies from 22'-8" at the west end to 9'-3 3/8" at the east end. There is a 2'-8" high crashwall in front of the retaining wall in Panels 1 through 3. Only 25'-4 3/4" wall length will be removed.

Savages: No savages.



**WALL ELEVATION**  
 (Looking at front face of wall)  
 (Reveal is not shown for clarity)

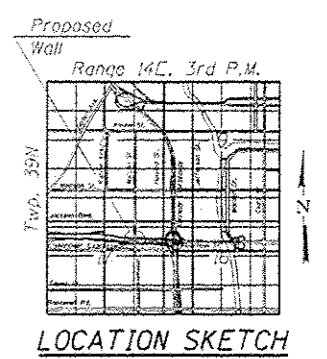
**NOTES:**  
 1. For General Notes, Index of Sheets, Profile Grade Lines and Total Bill of Material. See Sheet S2-02.

**DESIGN STRESSES**  
 FIELD UNITS  
 f'c = 3,500 psi  
 fy = 60,000 psi (Reinforcement)  
 fy = 36,000 psi (M270 Grade 36)

**DESIGN SPECIFICATIONS**  
 2012 AASHTO LRFD Bridge Design Specifications, 6th Edition

\* Expansion joint will be included in future contract  
 \*\* Location of the steel sleeves for ITS conduits shall be coordinated with the ITS plans and the Engineer.

- LEGEND:**
- Front Face F.F.
  - Back Face B.F.
  - Combined Sewer
  - Boring
  - Electric
  - Fiber Optic
  - Storm Sewer
  - Braced Excavation
  - Water Line
  - Fire Hydrant
  - Light Pole



**APPROVED**  
 For Structural Adequacy Only  
*D. Carl Purney* JFS  
 Engineer of Bridges & Structures



Signed Moussa A. Issa  
 Moussa A. Issa, HBM II, Lic. No. 081-005738  
 Expires 11-30-2014  
 Date 07/30/2013 For Sheets S2-01 Thru S2-11

**GENERAL PLAN**  
**RETAINING WALL 5 ALONG**  
**MORGAN ST. EXIT RAMP**  
**F.A.I. RTE. 290**  
**(EISENHOWER EXPRESSWAY)**  
**F.A.I. RTE. 290 - SECTION 2013-007R**  
**COOK COUNTY**  
**STA. 5248+93.99 TO STA. 5248+67.58**  
**STRUCTURE NO. 016-1724**



See proposed watermain alignment, Sheet No. 87, for additional information

Entire sheet revised

<b>HBM</b> HARRISON BRIDGE MANAGEMENT CONSULTING & DESIGN INSPECTION & TESTING RESEARCH & TESTING 4415 WEST HARRISON ST. SUITE 534 HILLSIDE, IL 60162 PHONE: (708) 238-0900 FAX: (708) 238-0901	0161724-60W25-501-CPE.dgn	DESIGNED - MI, MAF, JJS	REVISED - 07/19/2013 MI, WM	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN AND WALL ELEVATION		F.A.I. RTE. 90/94/290	SECTION 2013-007R	COUNTY COOK	TOTAL SHEETS 317	SHEET NO. 196	
	USER NAME: lisa.kellerman	DRAWN - JJS, MAF	REVISED - 07/30/2013 MI, LAB		RETAINING WALL (STRUCTURE NO. 016-1724) AND RISER SHAFT		TO STA.	ILLINOIS FED. AID PROJECT				
	PLOT SCALE: 1/8" = 1'-0"	CHECKED - MAT, MI, LAB	REVISED -		SCALE:							
	PLOT DATE: 7/30/2013	DATE: 6/17/2013	REVISED -									

**GENERAL NOTES:**

- Reinforcement bars designated (E) shall be epoxy coated.
- 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.
- Protective Coat shall be applied to exposed surfaces of the concrete wall, see limits of protection coat on sheet S2-06.
- Existing utilities in conflict with retaining wall construction shall be abandoned or relocated according to directions given on the roadway plans.
- All elevations shown are based on the Chicago City Datum of 0.00, which is 579.19 feet above mean tide New York. (NAVD 88)
- The proposed retaining walls/ drilled shafts location may require adjustment based upon the field location of the existing 36"  $\phi$  watermain and shall be determined by the Engineer.
- The contractor shall exercise extreme caution during construction to make certain that construction activities will not have detrimental effects on the adjacent building foundations.
- Driving piles and temporary sheet piling is not allowed.
- For proposed watermain alignment, see Sheet No. 87.
- Slipforming of the parapet is not allowed.
- The braced excavation support system for the riser shaft construction layout and details is a suggested option. The suggested construction sequence may enable the Contractor to construct the braced excavation support system for existing riser shaft removal, existing water main connection removal and new riser shaft and new wall construction. The Contractor shall design the braced excavation consisting of drilled soldier piles, wood lagging and structural steel sections (struts and wales) to meet the City of Chicago Office of Underground Coordination (OUC). The design shall be performed and sealed by a Structural Engineer, licensed and registered for the State of Illinois, and shall be approved by the Engineer.
- The suggested Braced Excavation and Construction Sequence are provided for information only.
- Existing CTA foundations were most likely removed or partially removed when the existing retaining wall was originally constructed. Any existing foundation that is within the proposed excavation for the new retaining wall and riser shaft construction shall be paid for as "Foundation Removal", see Special Provisions.
- Abandoned 5' Brick CTA Water Tunnel to be bulkheaded to the outside of the area of riser shaft construction (see civil sheets). In the area of the riser shaft construction, it will be necessary to remove any brick tunnel remnants. The removal of the existing tunnel is included as part of Structure Excavation or Braced Excavation as necessary, with proper disposal. See Sheet 90 for details.
- If the abandoned 5' Brick CTA water tunnel is encountered during drilling for the soldier piles for the braced excavation, concrete coring shall be used (if required). Cost shall be included in with Braced Excavation.

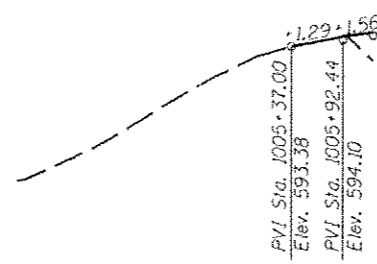
**INDEX OF SHEETS**

- S2-01 General Plan & Wall Elevation
- S2-02 General Notes, Index of Sheets & Bill of Material
- S2-03 Suggested Braced Excavation
- S2-04 Suggested Construction Sequence
- S2-05 Wall Plan & Elevation, Rem. Plan & Elevation, & Reveal Details
- S2-06 Wall Sections, Details & Bill of Material
- S2-07 Soil Retention System & Backfill
- S2-08 Riser Shaft Sections & Details (Sheet 1 of 3)
- S2-09 Riser Shaft Sections & Details (Sheet 2 of 3)
- S2-10 Riser Shaft Sections & Details (Sheet 3 of 3)
- S2-11 Permanent Thrust Restainers Plan, Sections & Details
- S2-12 Boring Log

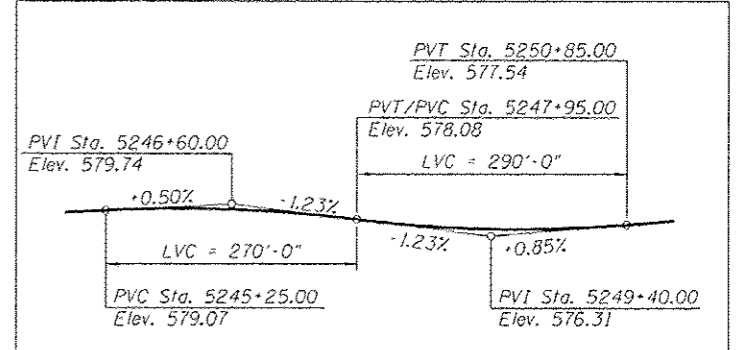
**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL QUANTITY
Trench Backfill	CU YD	1,124
Concrete Removal	CU YD	68
Concrete Structures	CU YD	158.9
Protective Coat	SQ YD	83
Finishing and Erecting Structural Steel	POUND	42,810
Reinforcement Bars	POUND	45,080
Reinforcement Bars, Epoxy Coated	POUND	38,150
Drilled Shaft in Soil	CU YD	259
Anchor Bolts, 3/4"	EACH	25
Geocomposite Wall Drain	SQ YD	57
Braced Excavation	CU YD	1,428
Granular Backfill for Structures	CU YD	78
Pipe Underdrains For Structures 6"	FOOT	29

For Information Only  
Part of Future Contract



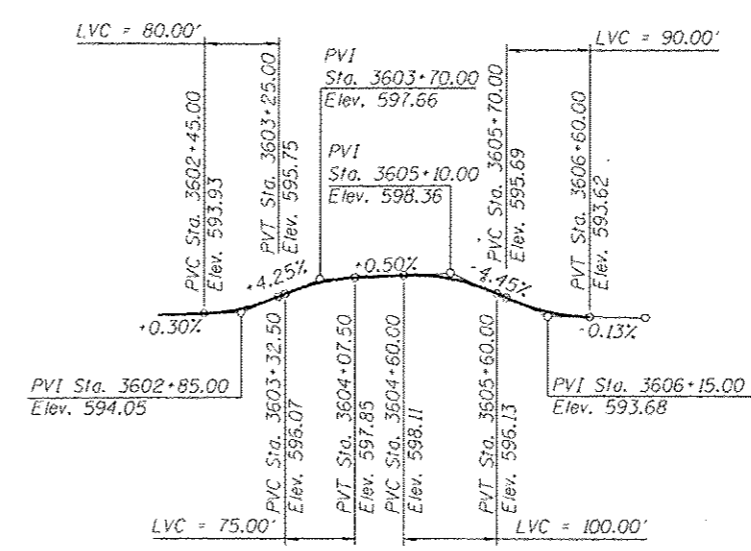
**PROFILE GRADE**  
(Morgan Street Exit Ramp)



**PROFILE GRADE**  
(WB I-290)

**CURVE DATA**

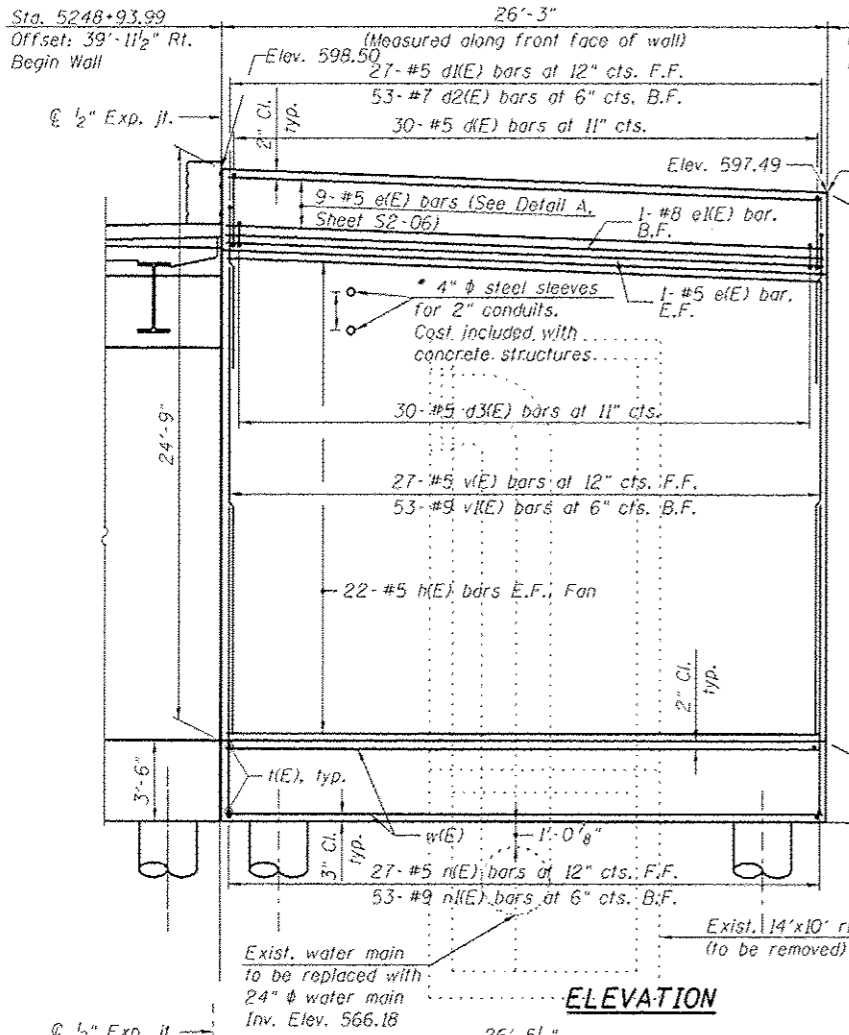
(F.A.I. Rte. I-290 WB)  
 P.I. Sta. = 5251+25.31  
 $\Delta = 9^\circ 58' 24''$  (RT)  
 $D = 0^\circ 53' 03''$   
 $R = 6,480.00'$   
 $T = 565.40'$   
 $L = 1,127.95'$   
 $E = 24.62'$   
 $e = 2.00\%$   
 $T.R. = 72$   
 $S.E. Run = 72$   
 $P.C. Sta. = 5245+59.91$   
 $P.T. Sta. = 5256+87.86$



**PROFILE GRADE**  
(along Morgan Street)

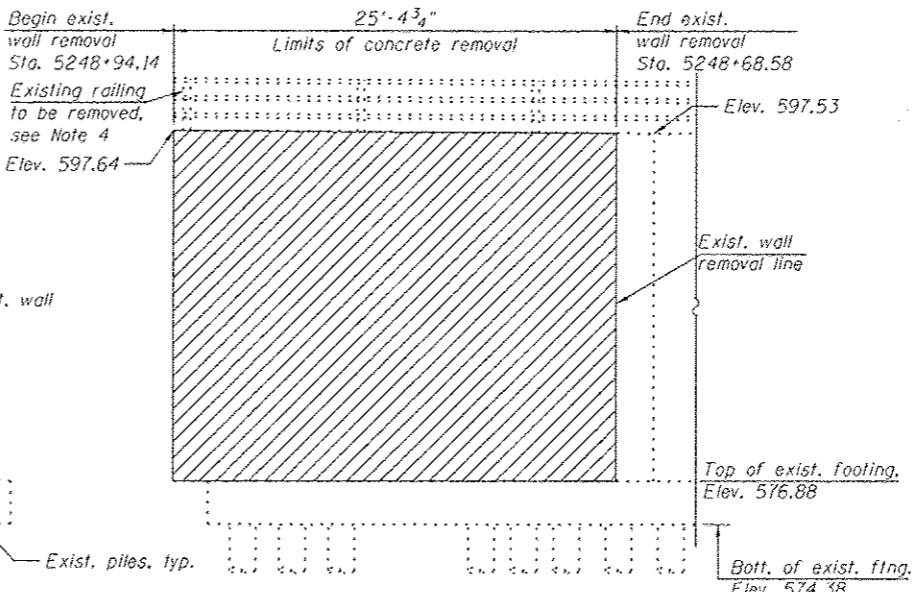
Entire sheet revised

<b>HBM</b> HARRISON GROUP, LLC CONSULTING & DESIGN INSPECTION & TESTING RESEARCH & TESTING 4415 WEST HARRISON ST. SUITE 231 HILLSDALE, IL 60162 PHONE: (708) 236-0900 FAX: (708) 236-0901	0161724-60W25-502-GandNotes.dgn USER NAME: hbaokellamyn PLOT SCALE: 240/8000 1" = 10' PLOT DATE: 7/30/2013	DESIGNED - MI. MAF, JJS DRAWN - MAF, JJS CHECKED - MAI, MI, LAB DATE - 6/17/2013	REVISED - 07/19/2013 MI, WM REVISED - 07/30/2013 MI, LAB REVISED - REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL NOTES, INDEX OF SHEETS AND BILL OF MATERIAL RETAINING WALL (STRUCTURE NO. 016-1724) AND RISER SHAFT SCALE: SHEET S2-02 OF 12 SHEETS STA. TO STA.	F.A.I. R.T.E. 90/94/290 SECTION 2013-00TR COUNTY COOK TOTAL SHEETS 317 SHEET NO. 197 CONTRACT NO. 60W25 ILLINOIS FED. AID PROJECT
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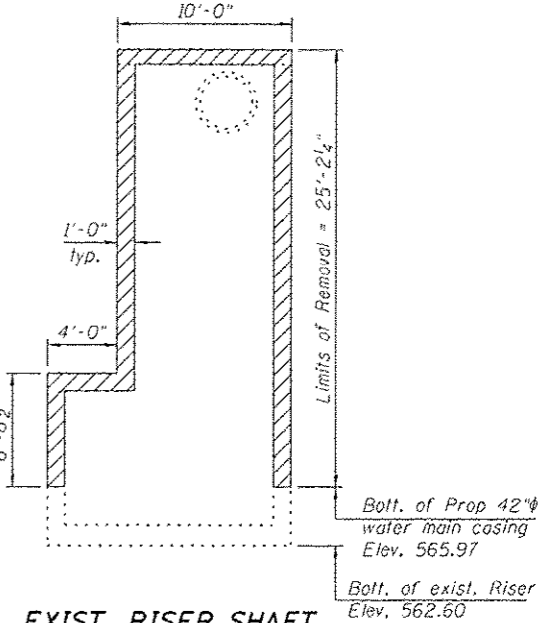


**ELEVATION**

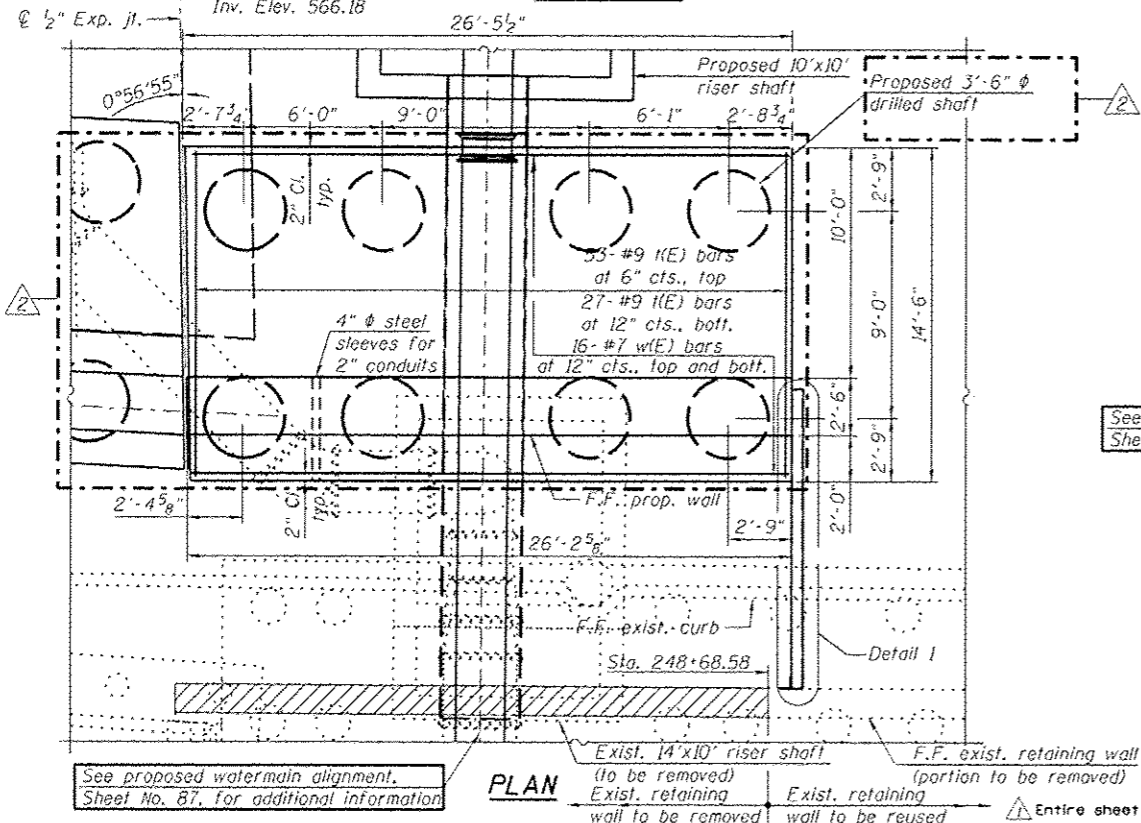
**TYPICAL REMOVAL SECTION**



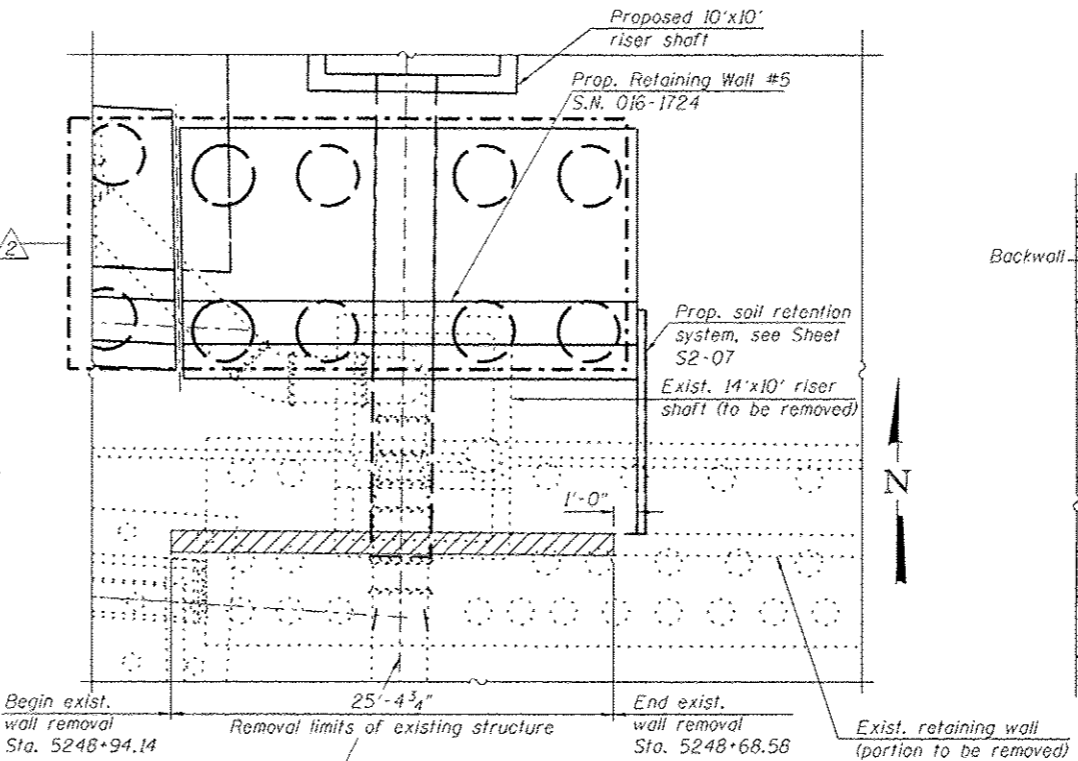
**REMOVAL ELEVATION**



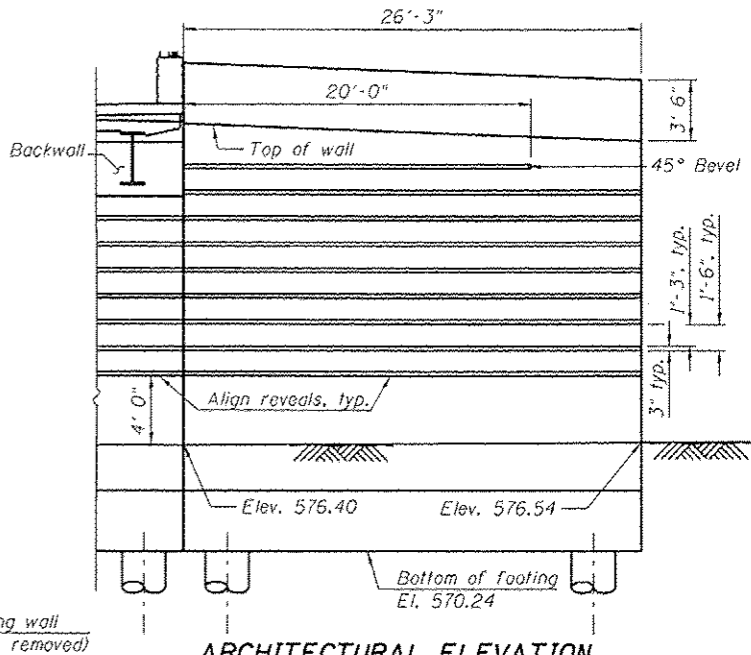
**EXIST. RISER SHAFT  
REMOVAL ELEVATION**



**PLAN**



**REMOVAL PLAN**



**ARCHITECTURAL ELEVATION**

See proposed watermain alignment, Sheet No. 87, for additional information

**SCOPE OF WORK FOR RETAINING WALL 5:**

**NOTES:**

1. For sections, details lap splices and bill of material, See Sheet S2-06.
2. All existing piles are 18"  $\phi$  concrete piles.
3. For Detail 1, Soil Retention System, see Sheet S2-07.
4. Cost for removal of existing railing shall be included with "Concrete Removal".
5. Existing footings and portions of existing piles to be removed in a future contract.

1. Remove portion of the wall stem interfering with the riser shaft construction as shown on the Removal Plan and Removal Elevation.
2. Construct the wall drilled shaft, footing stem and parapet.
3. Backfill as shown on Sheet S2-07.
4. Apply protection coat per limits shown on the Typical Wall Section on Sheet S2-06.
5. The remainder of the wall stem, footing and portion of piles interfering with the new future contracts construction will be included in a future contract.
6. The 3" x 1 3/4" reveal will not be paid separately and shall be included in the cost of the pay item "Concrete Structures".

**LEGEND:**

- B.F. - denotes Back Face
- E.F. - denotes Each Face
- F.F. - denotes Front Face
- Concrete Removal

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Concrete Removal	CU YD	68.0

**HBM**  
CONSULTING GROUP, INC.  
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1415 WEST HARRISON ST.  
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MILLVILLE, IL 60132  
PHONE: (708) 236-0900  
FAX: (708) 236-0901

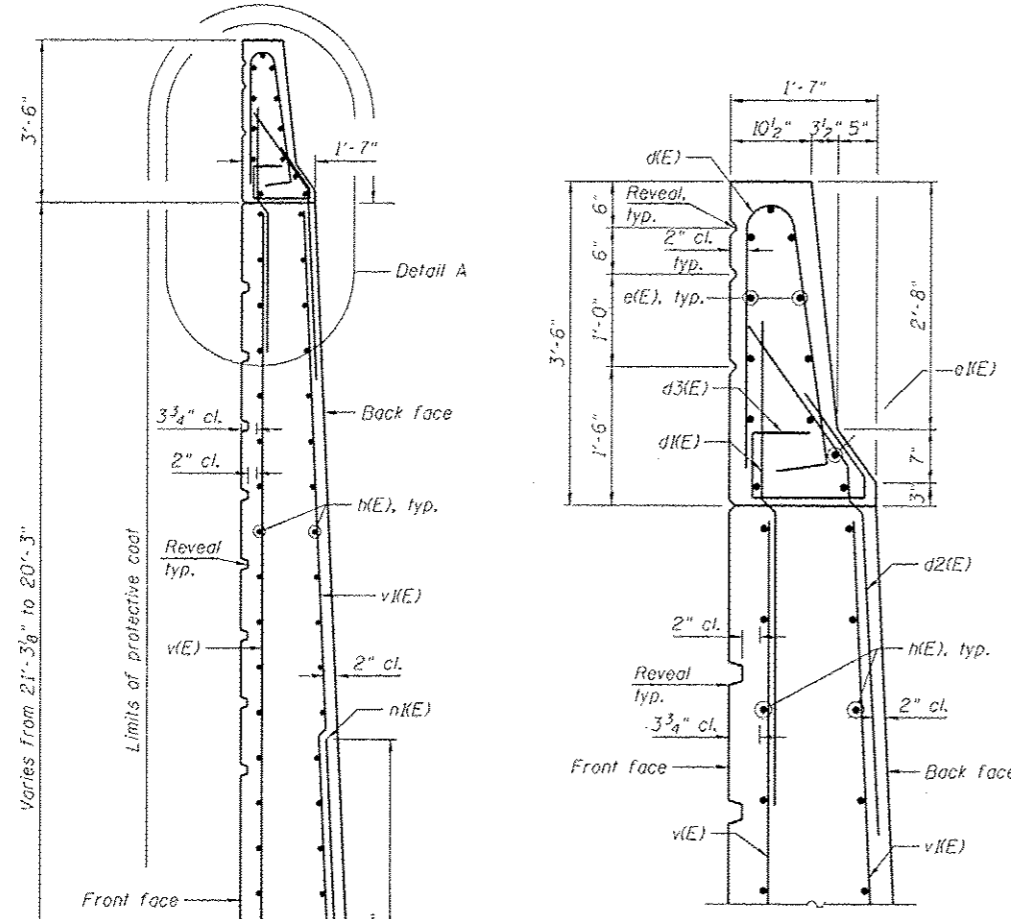
DESIGNED - MI, MAF, JJS	REVISD - 07/19/2013 MI, WM
DRAWN - JJS, MAF	REVISD - 07/30/2013 MI, LAB
CHECKED - MAI, MI, LAB	REVISD -
DATE - 6/17/2013	REVISD -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

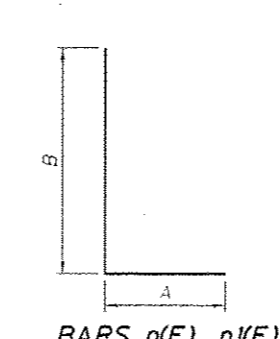
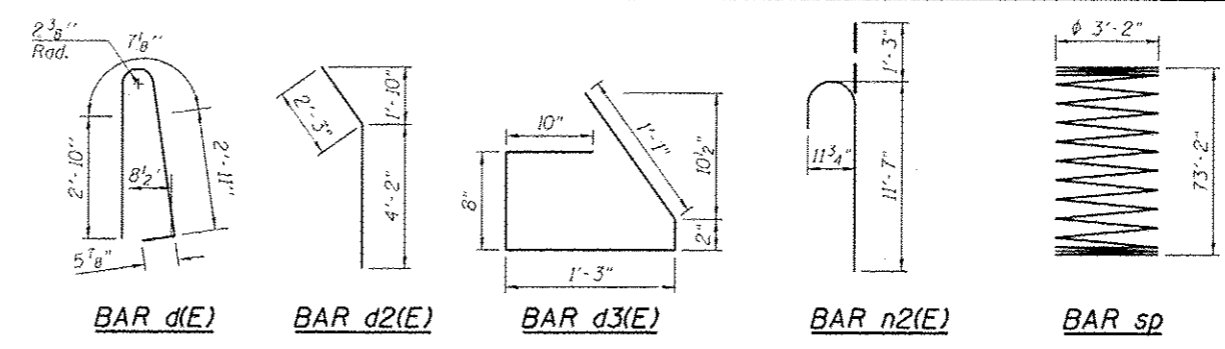
**WALL PLAN & ELEVATION, REM. PLAN & ELEVATION, & REVEAL DETAILS  
RETAINING WALL (STRUCTURE NO. 016-1724) AND RISER SHAFT**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-007R	COOK	317	200
CONTRACT NO. 60W25			ILLINOIS FED. AID PROJECT	

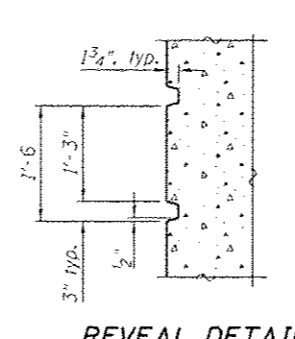




**DETAIL A**



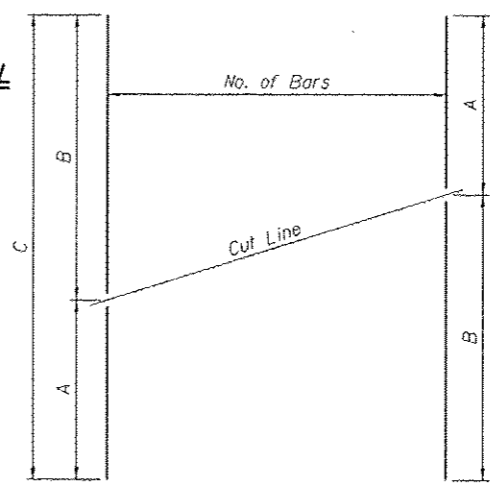
**BARS n(E), n2(E)**



**REVEAL DETAIL**

Minimum Bar Laps

Bar	Lap
#4	2'-7"
#5	3'-3"
#6	3'-10"
#7	5'-2"
#8	6'-9"
#9	8'-7"

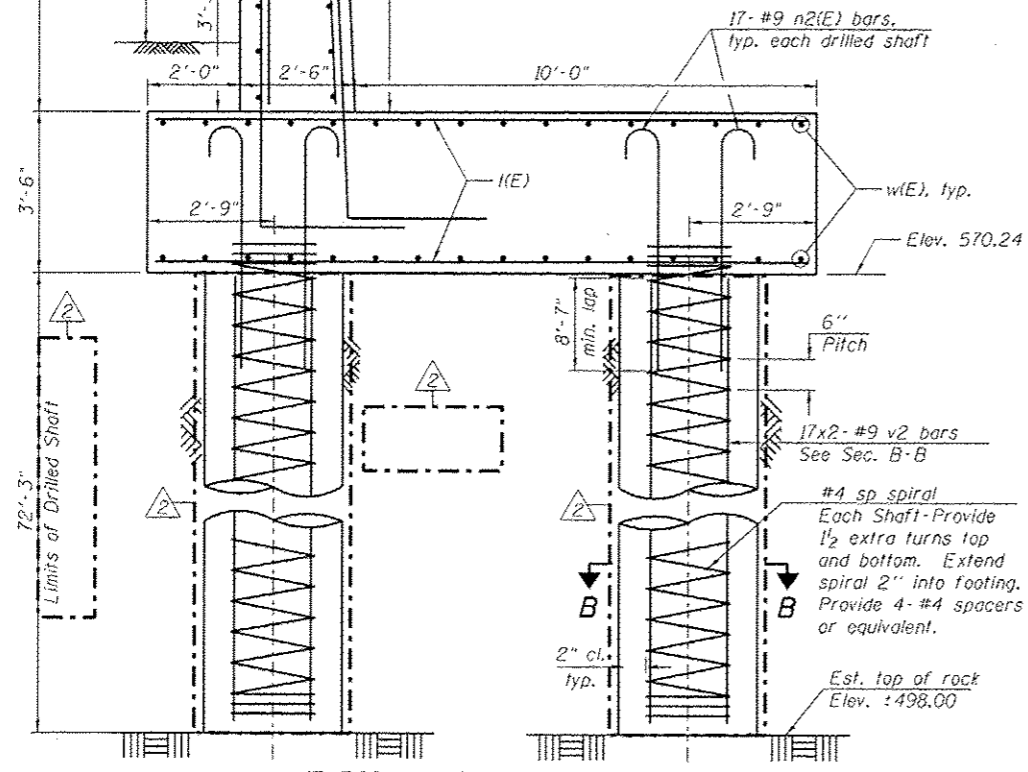


**BAR CUTTING DIAGRAM**

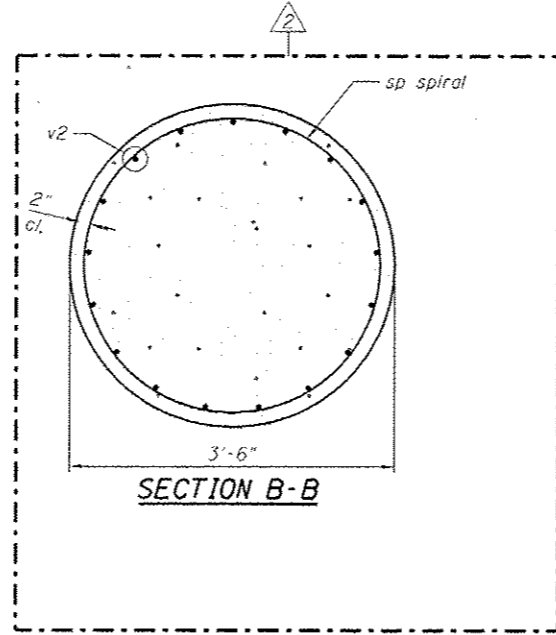
See table for dimensions. Make all cuts normal to bar axis

**BAR TABLE SCHEDULE**

Bar	No. of Sets Req'd	No. of Bars Per Set	A	B	C
v(E)	1	14	19'-9"	20'-11"	40'-8"
v2(E)	1	27	19'-9"	20'-11"	40'-8"



**TYPICAL CROSS SECTION**



**SECTION B-B**

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
d(E)	30	#5	6'-10"	I
d2(E)	27	#5	6'-6"	I
d3(E)	53	#7	6'-5"	I
d3(E)	30	#5	4'-0"	I
e(E)	11	#5	25'-11"	I
e2(E)	1	#8	25'-11"	I
k(E)	44	#5	25'-11"	I
n(E)	27	#5	7'-1"	I
n2(E)	53	#9	13'-2"	I
n2(E)	136	#9	12'-10"	I
sp	8	#4	78'-5"	IIIIII
k(E)	80	#9	14'-2"	I
v(E)	14	#5	40'-8"	I
v2(E)	27	#9	40'-8"	I
v2	272	#9	40'-3"	I
w(E)	32	#7	25'-11"	I
Concrete Structures			CU YD	93.9
Protective Coat			SO YD	83
Reinforcement Bars			POUND	45,080
Reinforcement Bars, Epoxy Coated			POUND	21,160
Drilled Shaft in Soil			CU YD	206.0

Reinforcement bars designated (E) shall be epoxy coated.

Entire sheet revised

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PHONE: (708) 236-0900  
FAX: (708) 236-0901

0161724-60W25-505-1 Wall Details.dgn  
USER NAME: lisa.kallamann  
PLOT SCALE: 1/8" = 1'-0"  
PLOT DATE: 7/30/2013

DESIGNED - MI, MAF, JJS  
DRAWN - JJS, MAF  
CHECKED - MAI, MI, LAB  
DATE - 6/17/2013  
REVISED - 07/19/2013 MI, WM  
REVISED - 07/30/2013 MI, LAB

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SECTIONS, DETAILS AND BILL OF MATERIAL  
RETAINING WALL (STRUCTURE NO. 016-1724) AND RISER SHAFT  
SCALE: SHEET 52-06 OF 12 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-007R	COOK	317	201

CONTRACT NO. 60W25  
ILLINOIS FED. AID PROJECT