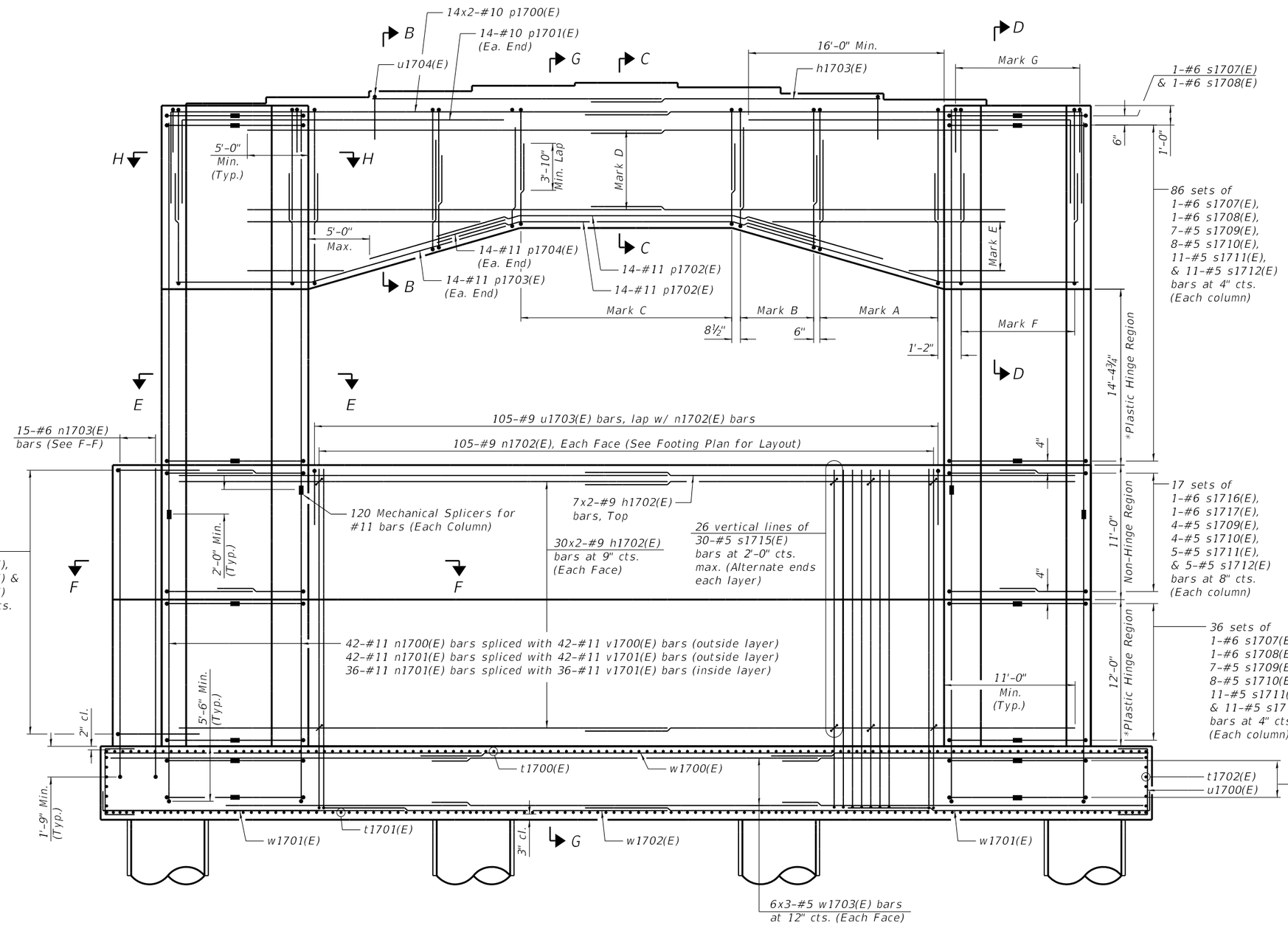


ELEVATION
(Looking East)

TABLE OF REINFORCEMENT BARS

Mark	Reinforcement	Notes
A	21-sets of: 2-#6 s1700(E), 8-#6 s1703(E), 7-#5 s1706(E). All bars at 6" cts.	
B	9-sets of: 2-#6 s1701(E), 4-#6 s1704(E), 5-#5 s1706(E). All bars at 9" cts.	
C	24-sets of: 2-#6 s1702(E), 4-#6 s1705(E), 4-#5 s1706(E). All bars at 9" cts.	
D	8x2-#9 h1700(E) bars at 12" cts., Each Face	
E	5-#9 h1701(E) bars at 12" cts., Each Face (See Field Cutting Diagram)	2
F	11-sets of: 2-#6 s1700(E), 8-#6 s1703(E) bars. All at ±12" cts.	
G	12-#6 u1705(E) bars at ±12" cts., Each Face	

Notes:
1. Adjust bar spacing to miss anchor bolts.
2. Cut bars according to cutting diagram on Sheet S-396 of 445 and use remainder of bars in opposite face.
3. Bars indicated thus 8x2-#9 etc. indicates 8 lines of bars with 2 lengths per line.
4. For bar list and Bill of Material, see Sheet S-396 of 445.
5. Alternate ends of s1709(E) thru s1712(E) bars each layer.

* Splicing of vertical reinforcement will not be allowed in this region.

MINIMUM BAR LAP

#5 bar = 3'-2"
#6 bar = 3'-10"
#9 bar = 6'-5"
#10 bar = 7'-8"
#11 bar = 8'-4"

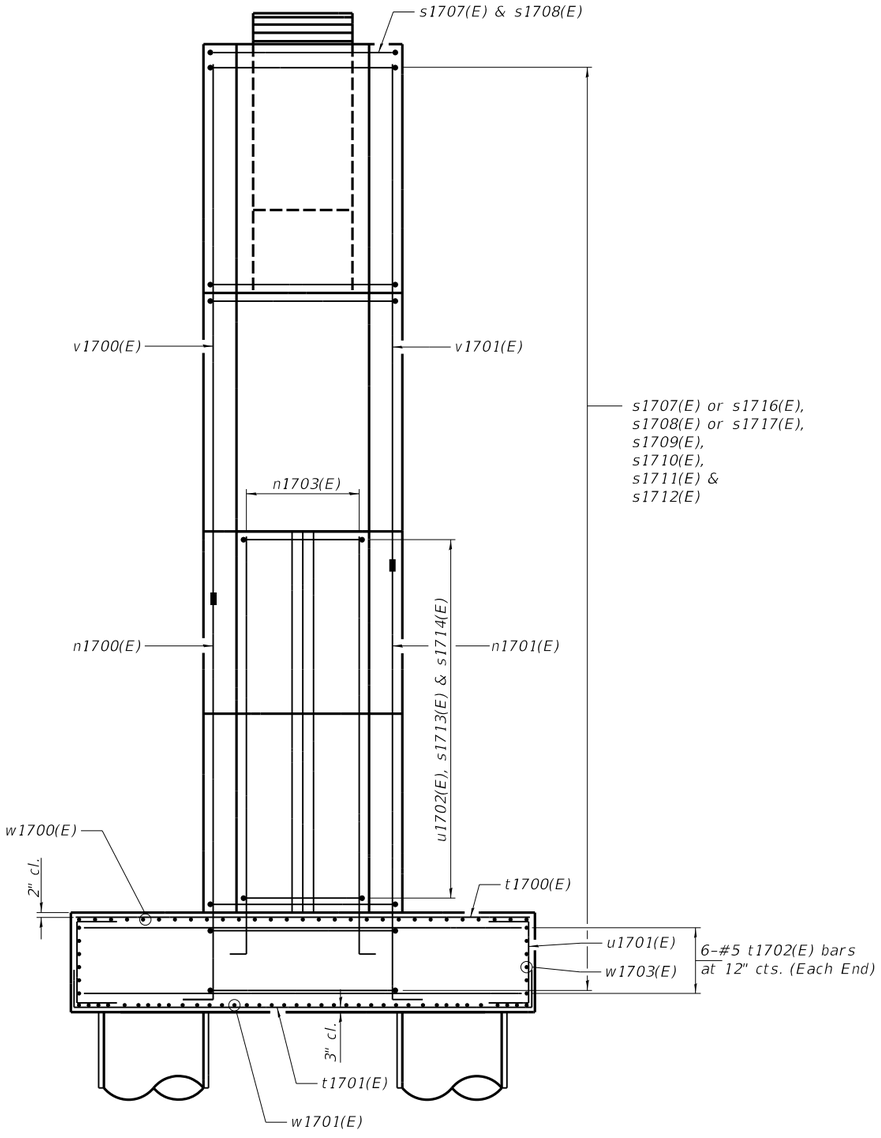
HANSON

USER NAME = johns00944	DESIGNED - JGT	REVISED -	
	CHECKED - TEH	REVISED -	
PLOT SCALE = 0:2.0000 ':' / in.	DRAWN - MGM	REVISED -	
PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

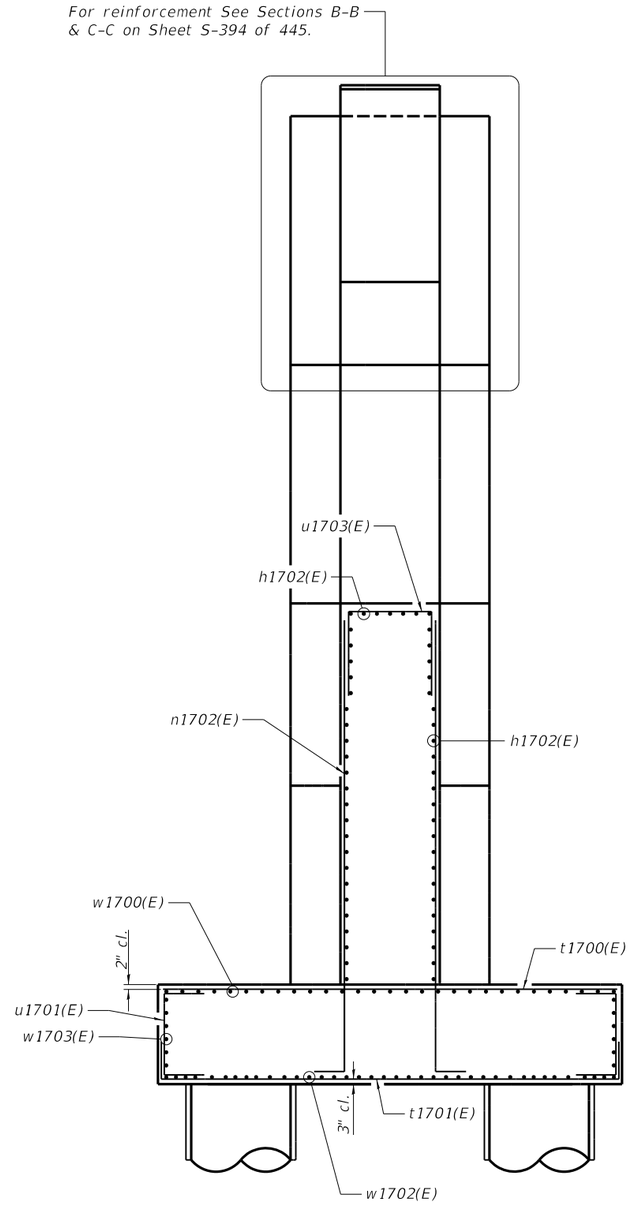
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 17 REINFORCEMENT, 1 OF 4
STRUCTURE NO. 090-0180
SHEET S-392 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1301
		CONTRACT NO. 68B46		
		ILLINOIS	FED. AID PROJECT	NHPP-YRP3(905)



END VIEW
(Looking South)



SECTION G-G

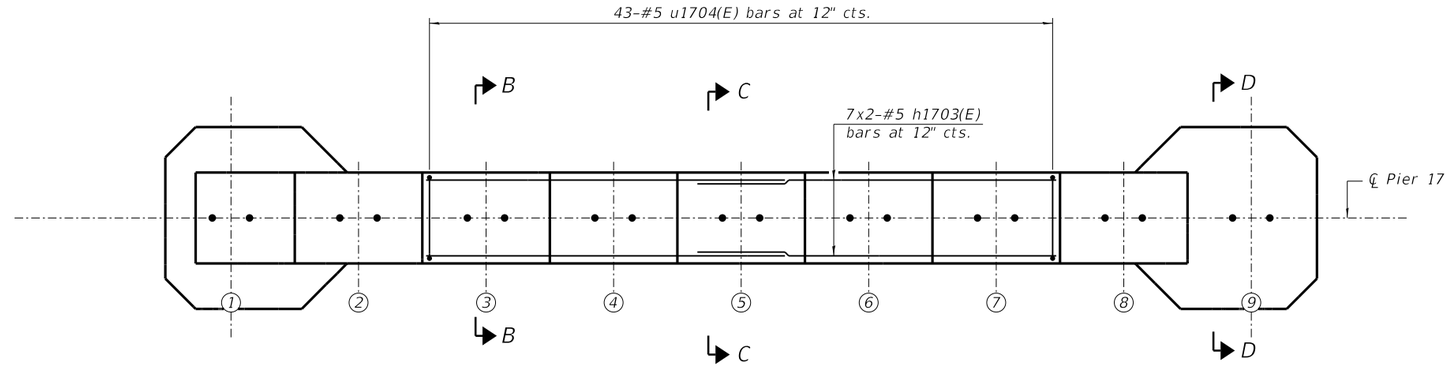
HANSON

USER NAME = johns00944	DESIGNED - JGT	REVISED -	
	CHECKED - TEH	REVISED -	
PLOT SCALE = 0:2.0000 ':" / in.	DRAWN - MGM	REVISED -	
PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

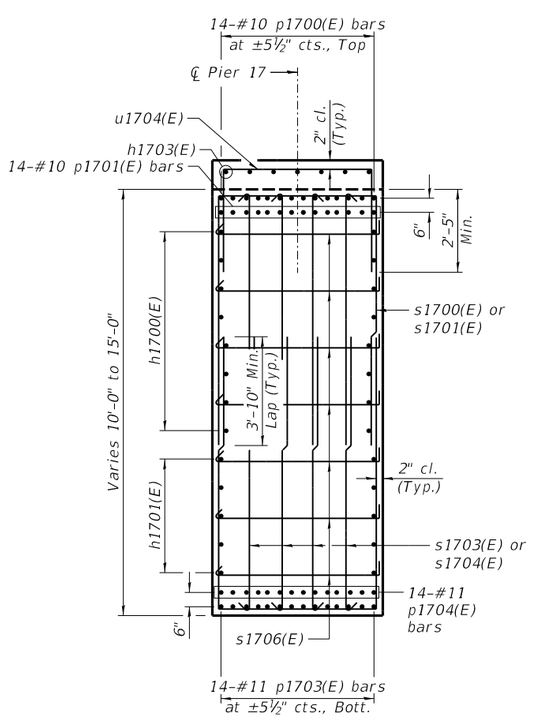
PIER 17 REINFORCEMENT, 2 OF 4
STRUCTURE NO. 090-0180
SHEET S-393 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1302
		CONTRACT NO. 68B46		
	ILLINOIS	FED. AID PROJECT	NHPP-YRP3(905)	

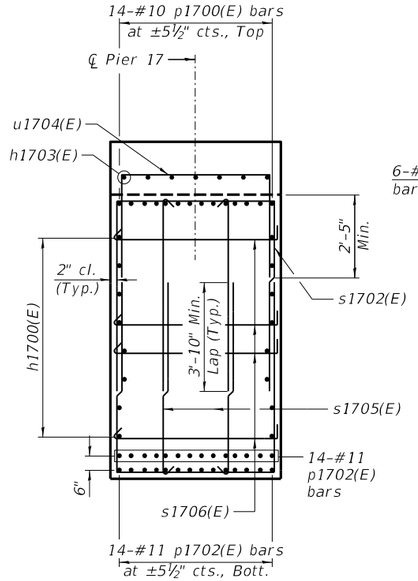


TOP PLAN

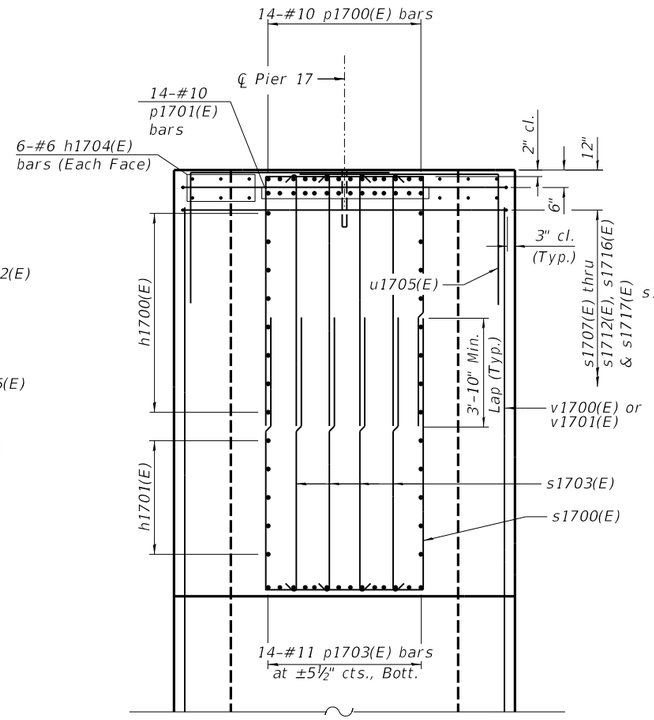
Notes:
1. Bars indicated thus 7x2-#5 etc. indicates 7 lines of bars with 2 lengths per line.
2. For bar list and Bill of Material, see Sheet S-396 of 445.
3. For anchor bolts and bearing details, see Sheet S-283 of 445.
4. Adjust bar spacing in pier cap to miss anchor bolts.



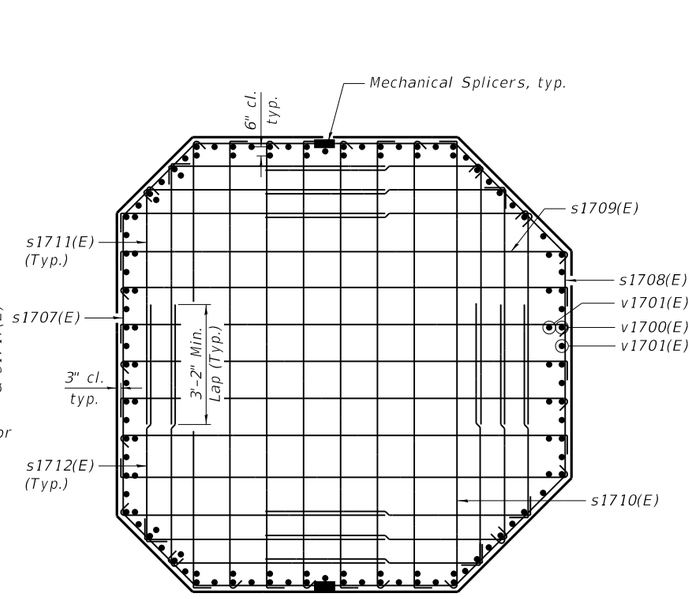
SECTION B-B
(Mark A shown, Mark B similar)



SECTION C-C



SECTION D-D



SECTION E-E

MINIMUM BAR LAP

#5 bar = 3'-2"
#6 bar = 3'-10"

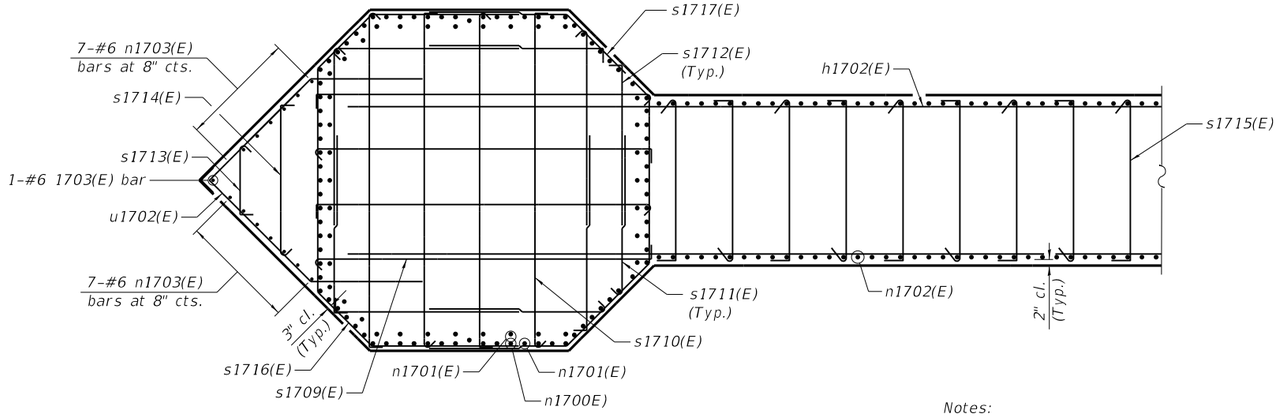
HANSON

USER NAME = johns00944	DESIGNED - JGT	REVISED -	
	CHECKED - TEH	REVISED -	
PLOT SCALE = 0:2.0000 ':' / in.	DRAWN - MGM	REVISED -	
PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

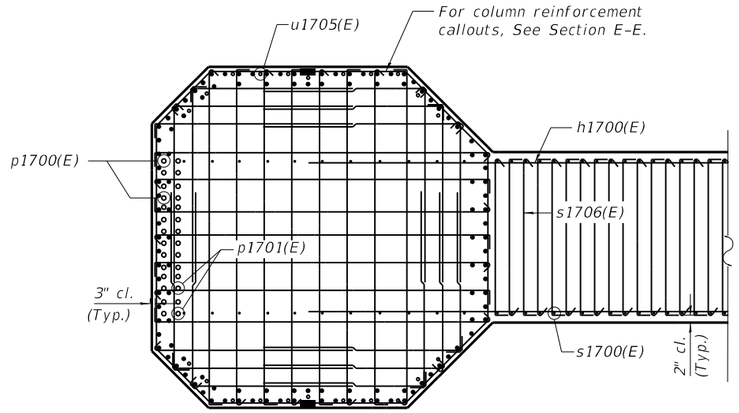
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 17 REINFORCEMENT, 3 OF 4
STRUCTURE NO. 090-0180
SHEETS-394 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1303
		CONTRACT NO. 68B46		
	ILLINOIS	FED. AID PROJECT NHPP-YRP3(905)		

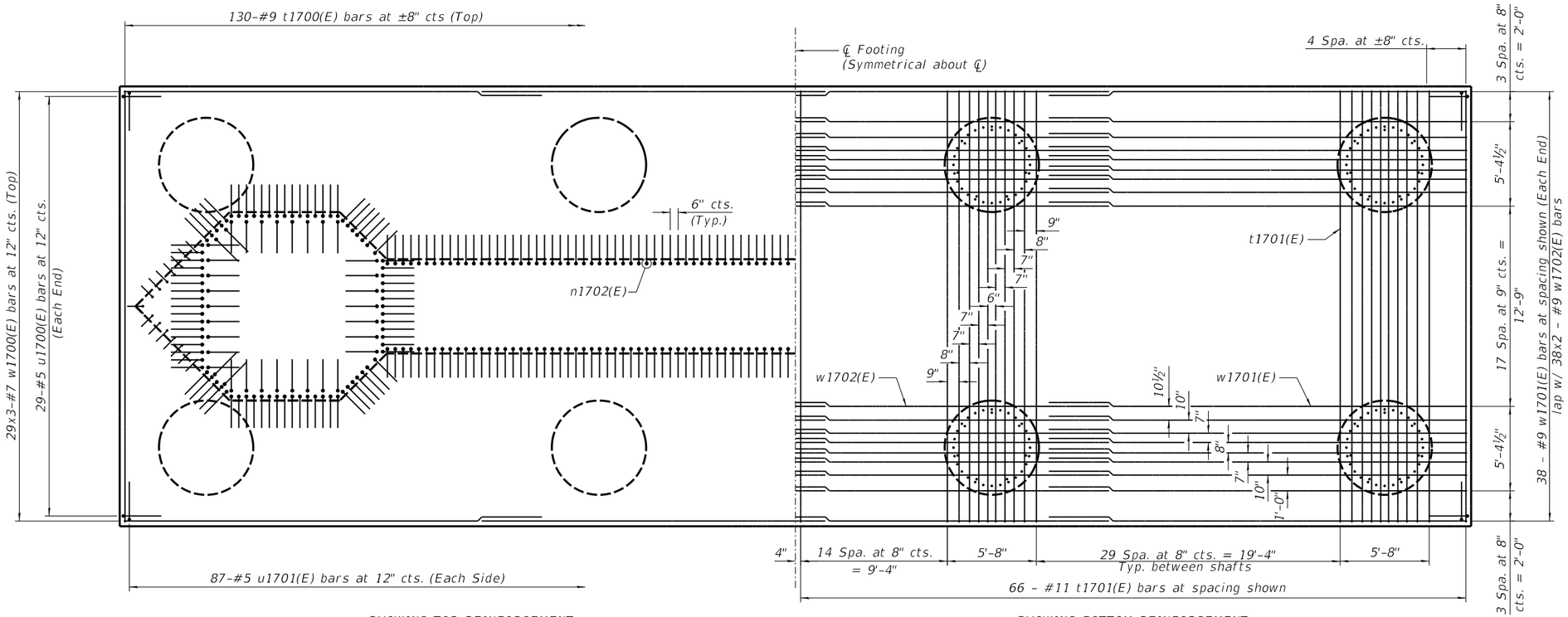


SECTION F-F



SECTION H-H

Notes:
1. For bar list and Bill of Material, see Sheet S-396 of 445.



SHOWING TOP REINFORCEMENT

SHOWING BOTTOM REINFORCEMENT

FOOTING PLAN

MINIMUM BAR LAP

#7 bar = 5'-0"
#9 bar = 5'-8"

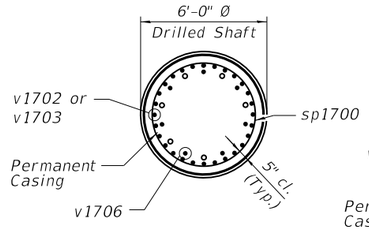
HANSON

USER NAME = johns00944	DESIGNED - JGT	REVISED -	
	CHECKED - TEH	REVISED -	
PLOT SCALE = 0:2.0000 ':' / in.	DRAWN - MGM	REVISED -	
PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

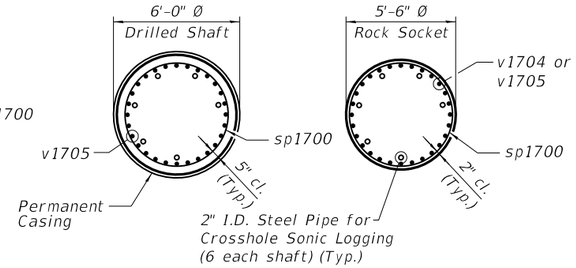
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 17 REINFORCEMENT, 4 OF 4
STRUCTURE NO. 090-0180
SHEET S-395 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1304
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			

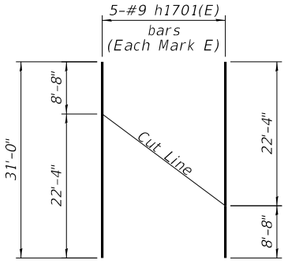


SECTION I-I



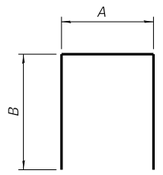
SECTION J-J

SECTION K-K



FIELD CUTTING DIAGRAM

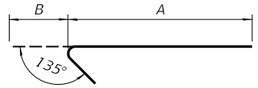
Order full length. Cut as shown and use remainder of bars in opposite face.



BARS s1700(E), s1701(E), s1702(E), u1700(E), u1701(E), u1703(E) & u1704(E)

A & B DIMENSIONS

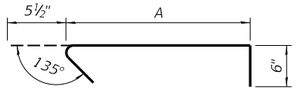
Bar	A	B
s1700(E)	5'-8"	9'-3"
s1701(E)	5'-8"	7'-10"
s1702(E)	5'-8"	6'-9"
u1700(E)	5'-4⅝"	2'-5"
u1701(E)	5'-7"	2'-5"
u1703(E)	5'-6¾"	5'-8"
u1704(E)	5'-8"	2'-9"



BARS s1703(E), s1704(E), s1705(E), & s1711(E)

A & B DIMENSIONS

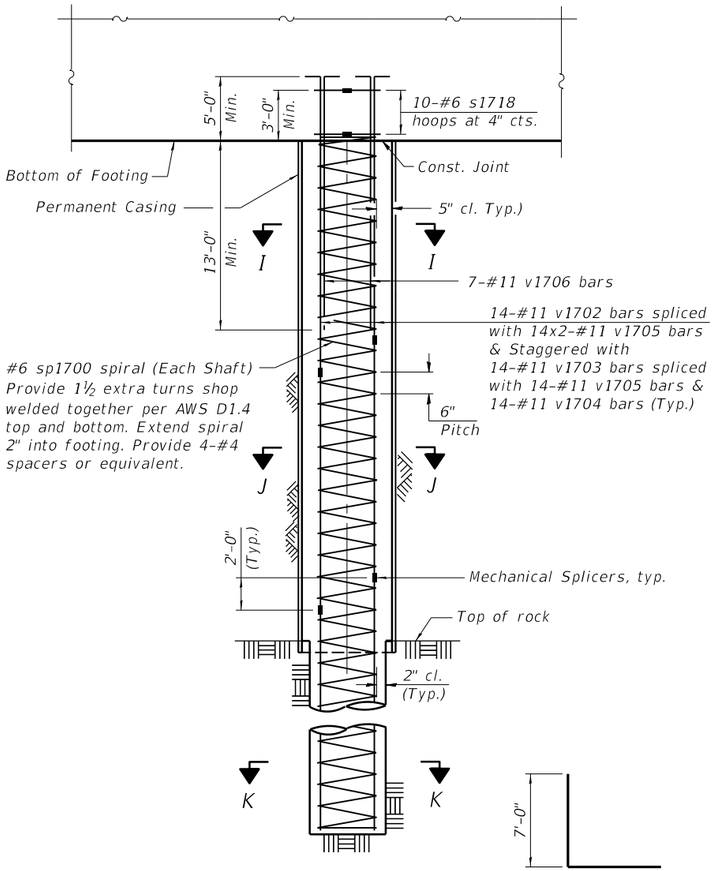
Bar	A	B
s1703(E)	9'-3"	8"
s1704(E)	7'-10"	8"
s1705(E)	6'-9"	8"
s1711(E)	6'-8"	5½"



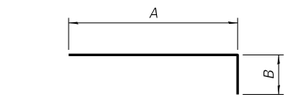
BARS s1706(E), s1709(E), s1710(E), s1713(E), s1714(E) & s1715(E)

A DIMENSIONS

Bar	A
s1706(E)	5'-8"
s1709(E)	11'-6"
s1710(E)	11'-6"
s1713(E)	2'-2"
s1714(E)	5'-2"
s1715(E)	5'-8"



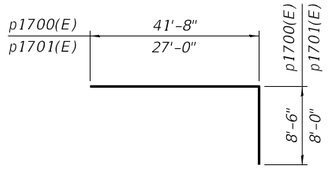
DRILLED SHAFT ELEVATION



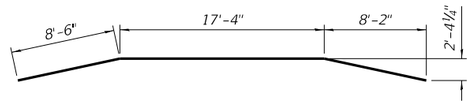
BARS n1700(E), n1701(E), n1702(E), n1703(E) & s1712(E)

A & B DIMENSIONS

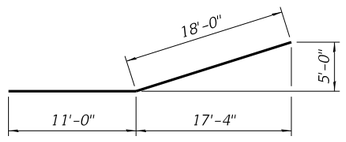
Bar	A	B
n1700(E)	24'-6"	2'-0"
n1701(E)	26'-6"	2'-0"
n1702(E)	28'-4"	1'-7"
n1703(E)	24'-9"	1'-0"
s1712(E)	6'-8"	6"
v1702	27'-2"	2'-0"
v1703	25'-2"	2'-0"
v1706	18'-0"	2'-0"



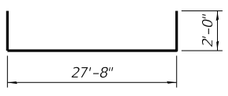
BARS p1700(E) & p1701(E)



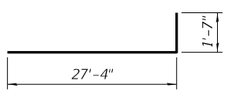
BAR p1702(E)



BAR p1703(E)

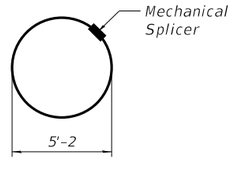


BAR t1701(E)

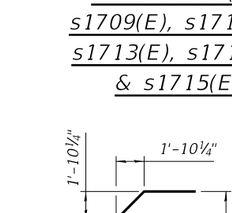


BAR w1701(E)

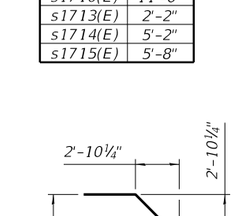
BAR u1705(E)



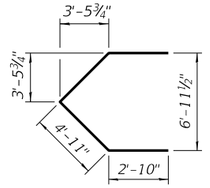
BAR s1718



BARS s1707(E) & s1716(E)



BARS s1708(E) & s1717(E)



BAR u1702(E)

* Actual bar segment lengths of mechanically spliced bars shall be determined by contractor for ease of install. When a mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacturers recommendations for installation and ease of construction, while meeting all requirements specified in the plans.

** Length is height of spiral. Minimum lap for spirals = 3'-0"

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h1700(E)	32	#9	34'-3"	
	h1701(E)	10	#9	31'-0"	
	h1702(E)	134	#9	40'-3"	
	h1703(E)	14	#5	22'-7"	
	h1704(E)	24	#6	8'-0"	
*	n1700(E)	84	#11	26'-6"	
*	n1701(E)	156	#11	28'-6"	
	n1702(E)	210	#9	29'-11"	
	n1703(E)	15	#6	25'-9"	
	p1700(E)	28	#10	50'-2"	
	p1701(E)	28	#10	35'-0"	
	p1702(E)	28	#11	34'-4"	
	p1703(E)	28	#11	29'-0"	
	p1704(E)	28	#11	13'-0"	
	s1700(E)	128	#6	24'-2"	
	s1701(E)	36	#6	21'-4"	
	s1702(E)	48	#6	19'-2"	
	s1703(E)	512	#6	9'-11"	
	s1704(E)	72	#6	8'-6"	
	s1705(E)	96	#6	7'-5"	
	s1706(E)	480	#5	6'-8"	
*	s1707(E)	276	#6	19'-10"	
*	s1708(E)	276	#6	20'-9"	
	s1709(E)	2054	#5	12'-6"	
	s1710(E)	2328	#5	12'-6"	
	s1711(E)	3184	#5	7'-2"	
	s1712(E)	3184	#5	7'-2"	
	s1713(E)	24	#5	3'-2"	
	s1714(E)	24	#5	6'-2"	
	s1715(E)	780	#5	6'-8"	
	s1716(E)	34	#6	23'-9"	
	s1717(E)	34	#6	24'-7"	
*	s1718	80	#6	16'-3"	
**	sp1700	8	#6	72'-6"	
	t1700(E)	130	#9	27'-8"	
	t1701(E)	132	#11	31'-8"	
	t1702(E)	12	#5	27'-8"	
	u1700(E)	58	#5	10'-3"	
	u1701(E)	174	#5	10'-5"	
	u1702(E)	24	#5	15'-6"	
	u1703(E)	105	#9	16'-11"	
	u1704(E)	43	#5	11'-2"	
	u1705(E)	48	#6	10'-9"	
*	v1700(E)	84	#11	32'-5"	
*	v1701(E)	156	#11	30'-5"	
*	v1702	112	#11	29'-2"	
*	v1703	112	#11	27'-2"	
*	v1704	112	#11	27'-2"	
*	v1705	336	#11	25'-2"	
	v1706	56	#11	20'-0"	
	w1700(E)	87	#7	32'-0"	
	w1701(E)	76	#9	28'-11"	
	w1702(E)	76	#9	24'-0"	
	w1703(E)	36	#5	30'-9"	

Cofferdam Excavation	Cu. Yd.	1707
Cofferdam (Type 2) (Location 17)	Each	1
Concrete Structures	Cu. Yd.	1463
Seal Coat Concrete	Cu. Yd.	960
Reinforcement Bars	Pound	133780
Reinforcement Bars, Epoxy Coated	Pound	357750
Permanent Casing	Foot	492
Drilled Shaft in Soil	Cu. Yd.	507
Drilled Shaft in Rock	Cu. Yd.	84
Crosshole Sonic Logging Access Ducts	Foot	3528
Crosshole Sonic Logging Testing	Each	1

HANSON

USER NAME = johns00944	DESIGNED - JGT	REVISED -	
	CHECKED - TEH	REVISED -	
PLOT SCALE = 0:2.0000 ':" / in.	DRAWN - MGM	REVISED -	
PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 17 DETAILS, BAR LIST AND BILL OF MATERIAL
STRUCTURE NO. 090-0180

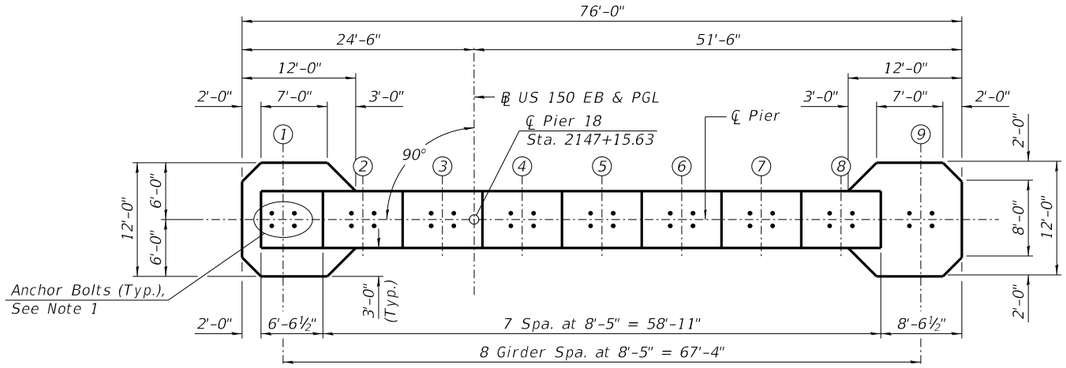
SHEET S-396 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR	PEO/TAZ	1361	1305
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			

Notes:
1. For anchor bolt details, see Bearing Details Drawing. For anchor bolt layout, see Sheet S-398 of 445.
2. EWSE denotes Estimated Water Surface Elevation. HWE denotes High Water Elevation. CDWE denotes Cofferdam Design Water Elevation.
3. See Sheet S-398 of 445 for Section A-A.
4. Cast steps monolithic with cap.

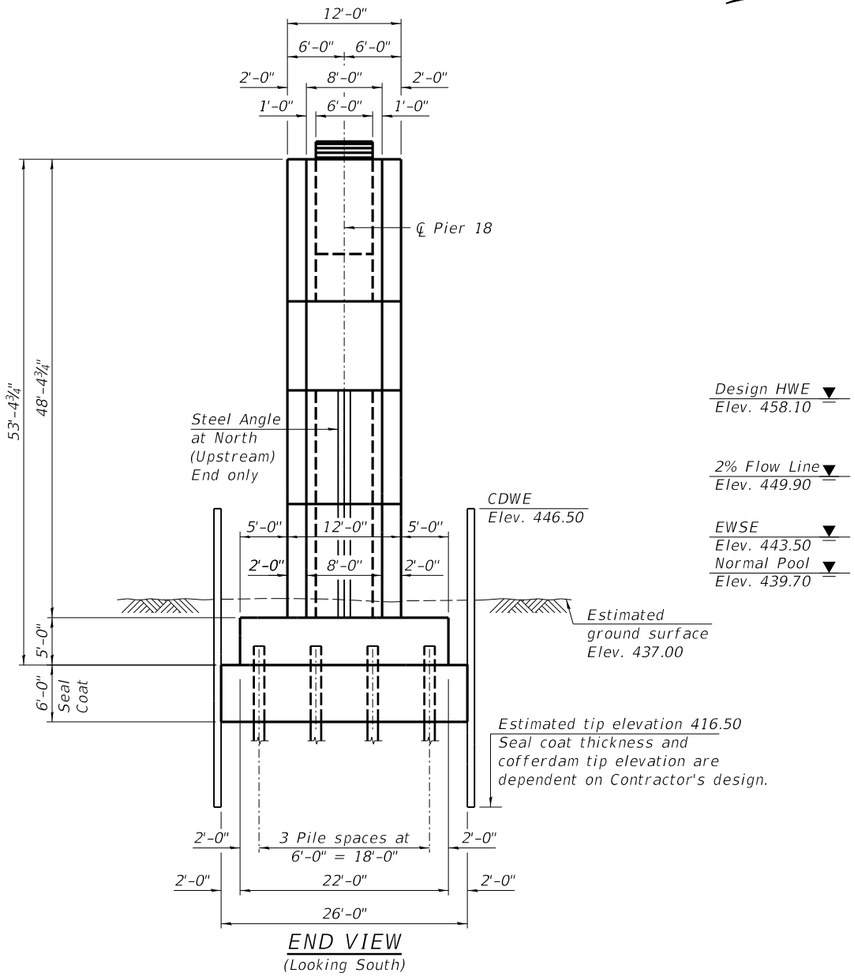
BEARING SEAT ELEVATIONS

Girder	Elevation
1	483.46
2	483.63
3	483.79
4	483.94
5	484.02
6	483.89
7	483.74
8	483.57
9	483.40

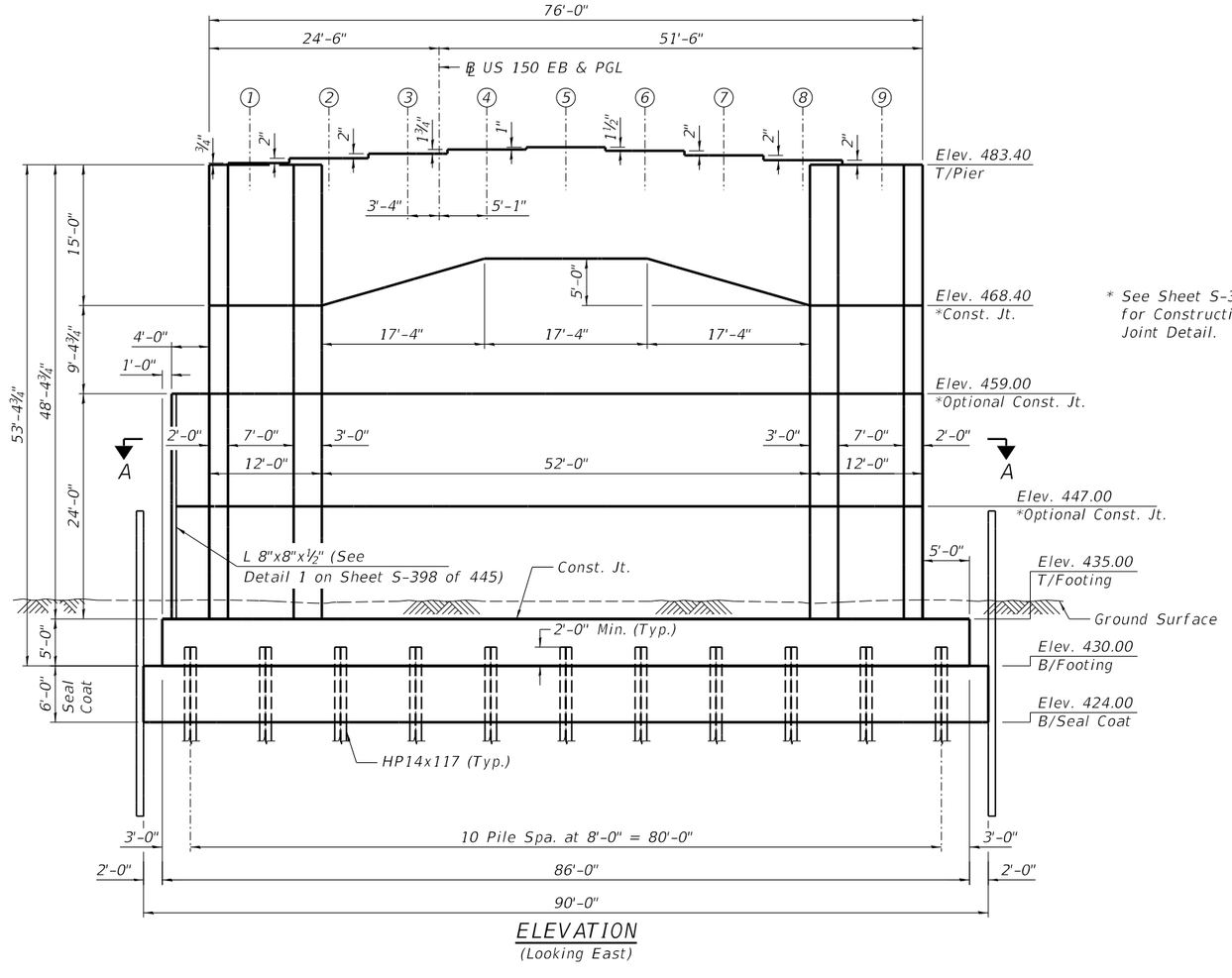


TOP PLAN

N



END VIEW
(Looking South)



ELEVATION
(Looking East)

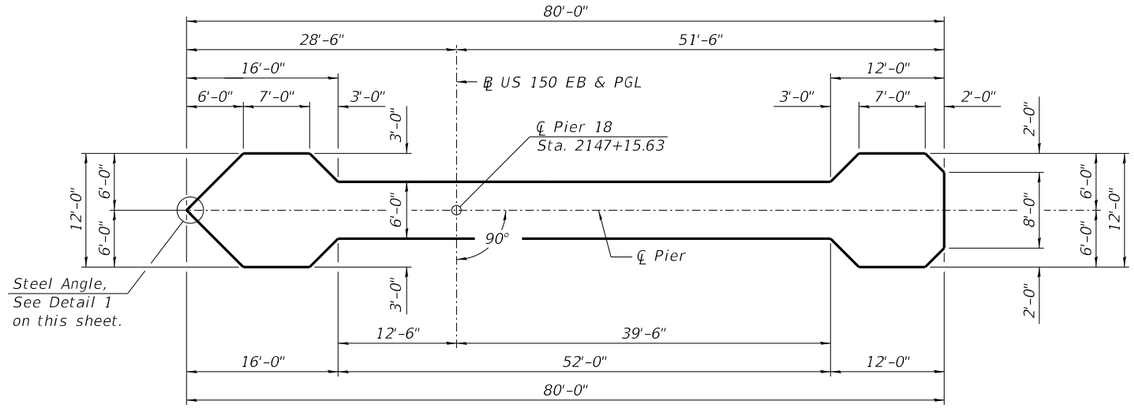
HANSON

USER NAME = johns00944	DESIGNED - JGT	REVISED -	
	CHECKED - MNM	REVISED -	
PLOT SCALE = 0:2.0000 ':" / in.	DRAWN - DAP	REVISED -	
PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

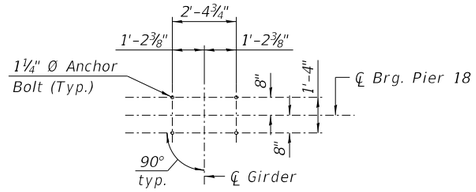
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 18 PLAN AND ELEVATION
STRUCTURE NO. 090-0180
SHEET S-397 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1306
		CONTRACT NO. 68B46		
		ILLINOIS FED. AID PROJECT NHPP-YRP3(905)		



SECTION A-A



ANCHOR BOLT LAYOUT

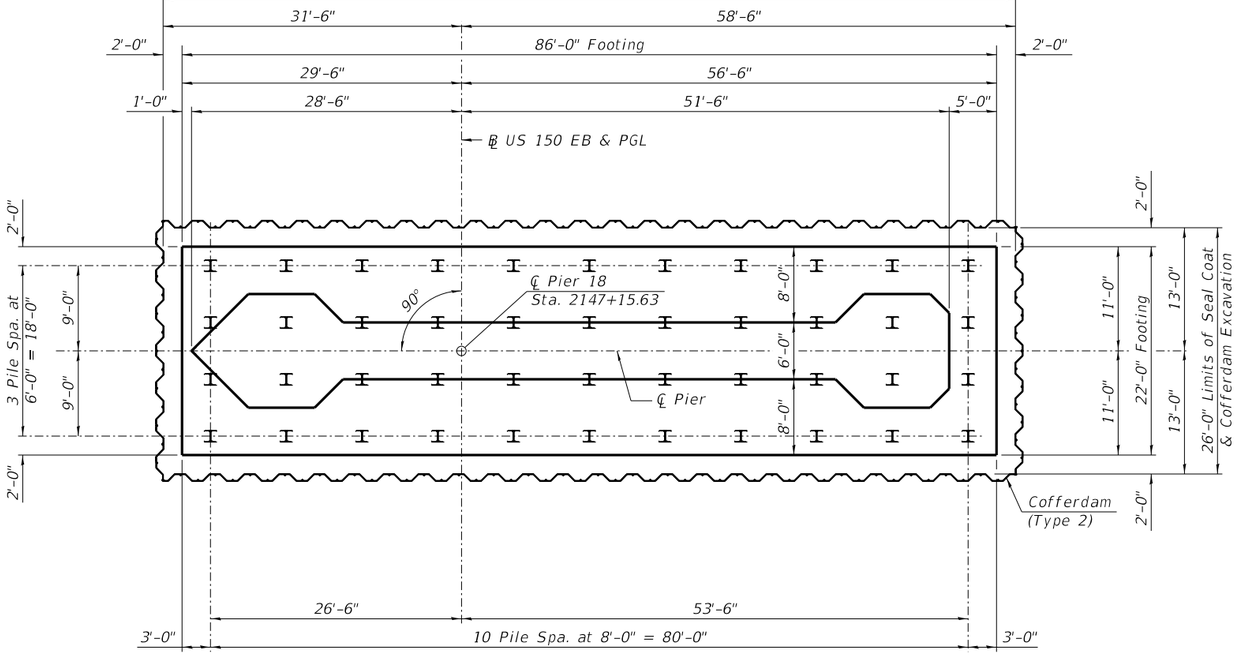
(Layout at Girders 1 thru 9)

VESSEL COLLISION FORCE

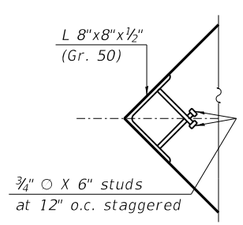
FOR EXTREME EVENT II LOAD COMBINATION

	100 Yr. Water Level	
	Case 1	Case 2
Static Load	620 kips	310 kips
Elevation	470.79	470.79
Direction	Parallel	Perpendicular

Note: Direction is with respect to Illinois River Flow.

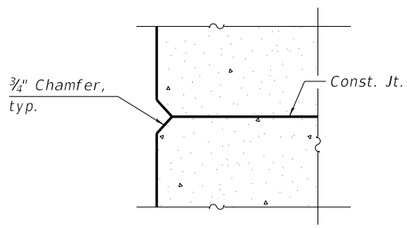


FOOTING PLAN



Note: The angle with studs shall be galvanized according to AASHTO M 111, and cost shall be included with Furnishing and Erecting Structural Steel.

DETAIL 1



CONSTRUCTION JOINT

HANSON

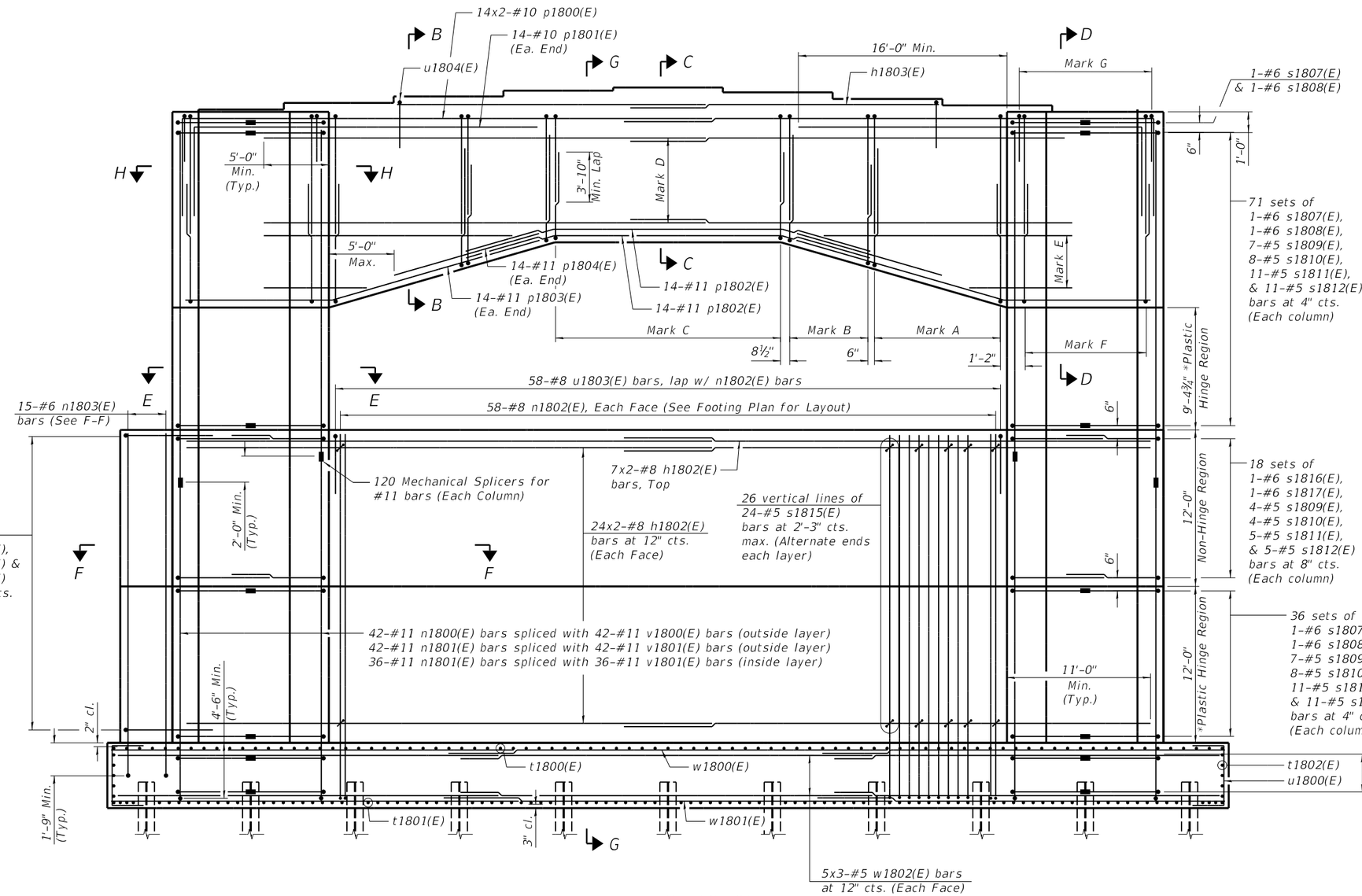
USER NAME = johns00944	DESIGNED - JGT	REVISED -	
	CHECKED - MNM	REVISED -	
PLOT SCALE = 0:2.0000 ':' / in.	DRAWN - DAP	REVISED -	
PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 18 FOOTING PLAN
STRUCTURE NO. 090-0180

SHEET S-398 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1307
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			



ELEVATION
(Looking East)

TABLE OF REINFORCEMENT BARS

Mark	Reinforcement	Notes
A	21-sets of: 2-#6 s1800(E), 8-#6 s1803(E), 7-#5 s1806(E). All bars at 6" cts.	
B	9-sets of: 2-#6 s1801(E), 4-#6 s1804(E), 5-#5 s1806(E). All bars at 9" cts.	
C	24-sets of: 2-#6 s1802(E), 4-#6 s1805(E), 4-#5 s1806(E). All bars at 9" cts.	
D	8x2-#9 h1800(E) bars at 12" cts., Each Face	
E	5-#9 h1801(E) bars at 12" cts., Each Face (See Field Cutting Diagram)	2
F	11-sets of: 2-#6 s1800(E), 8-#6 s1803(E) bars. All at ±12" cts.	
G	12-#6 u1805(E) bars at ±12" cts., Each Face	

Notes:
1. Adjust bar spacing to miss anchor bolts.
2. Cut bars according to cutting diagram on Sheet S-403 of 445 and use remainder of bars in opposite face.
3. Bars indicated thus 8x2-#9 etc. indicates 8 lines of bars with 2 lengths per line.
4. For bar list and Bill of Material, see Sheet S-403 of 445.
5. Alternate ends of s1809(E) thru s1812(E) bars each layer.

* Splicing of vertical reinforcement will not be allowed in this region.

MINIMUM BAR LAP

#5 bar = 3'-2"
#6 bar = 3'-10"
#8 bar = 5'-9"
#9 bar = 6'-5"
#10 bar = 7'-8"
#11 bar = 8'-4"

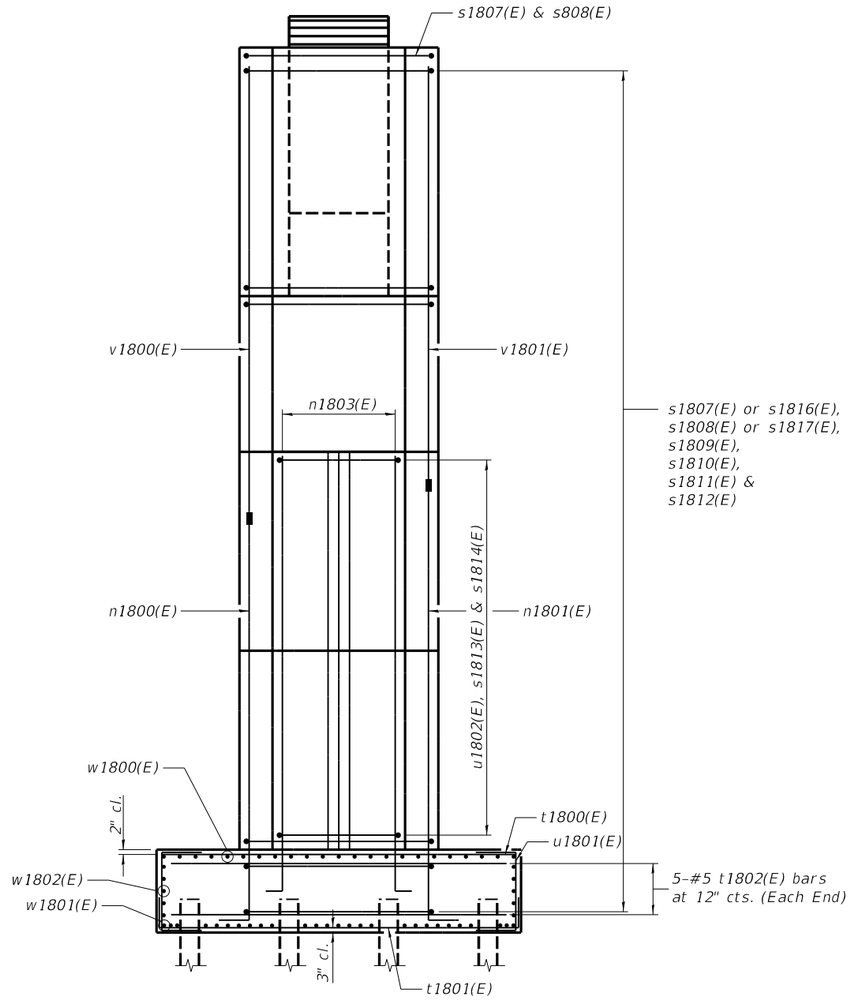
HANSON

USER NAME = johns00944	DESIGNED - JGT	REVISED -	
	CHECKED - TEH	REVISED -	
PLOT SCALE = 0:2.0000 ':" / in.	DRAWN - DAP	REVISED -	
PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

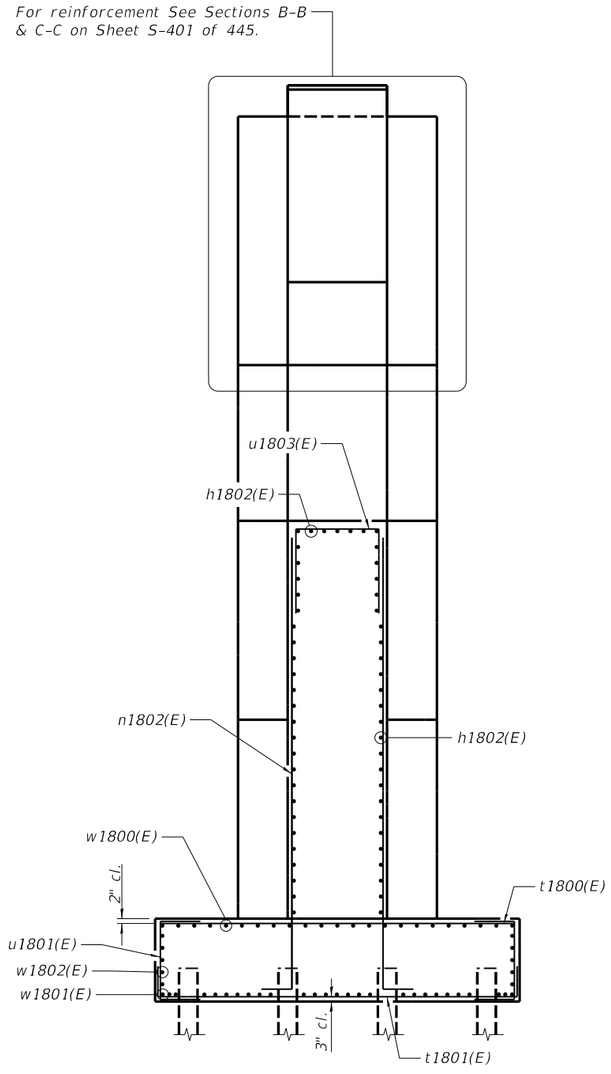
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 18 REINFORCEMENT, 1 OF 4
STRUCTURE NO. 090-0180
SHEET S-399 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1308
		CONTRACT NO. 68846		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			



END VIEW
(Looking South)



SECTION G-G

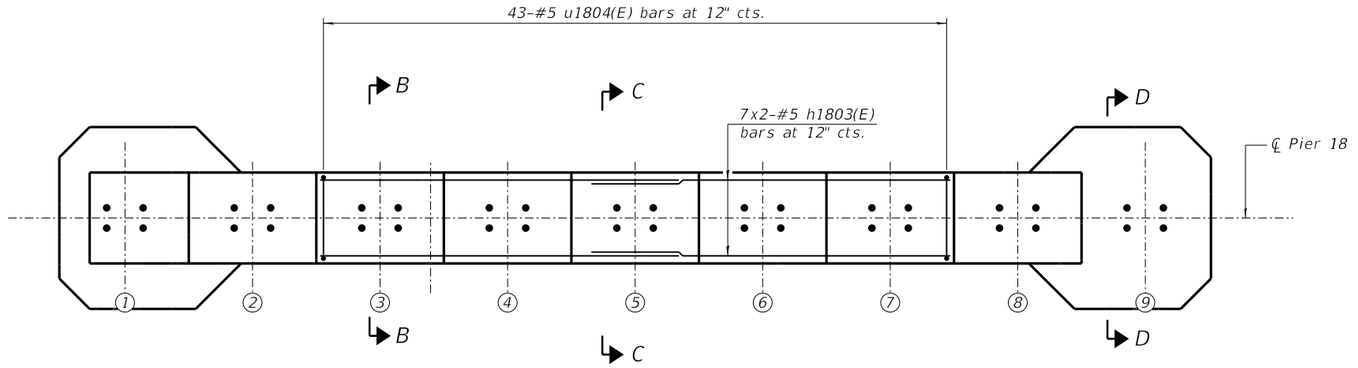
HANSON

USER NAME = johns00944	DESIGNED - JGT	REVISED -	
	CHECKED - TEH	REVISED -	
PLOT SCALE = 0:2.0000 ':" / in.	DRAWN - DAP	REVISED -	
PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 18 REINFORCEMENT, 2 OF 4
STRUCTURE NO. 090-0180
SHEET S-400 OF 445 SHEETS

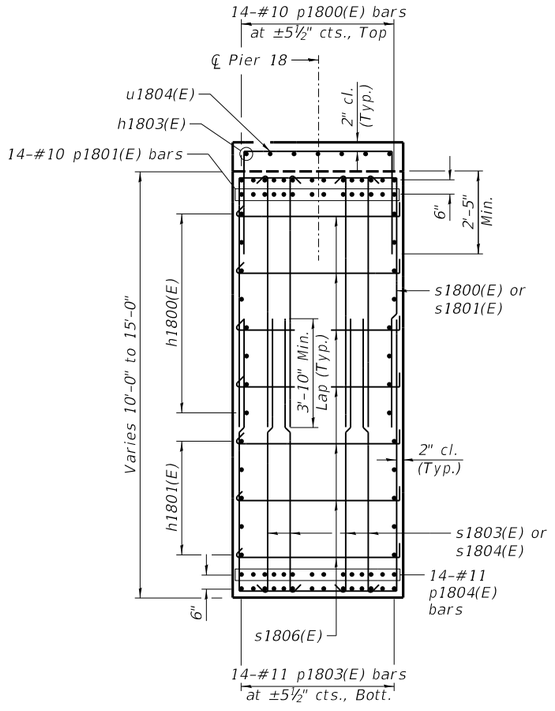
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR	PEO/TAZ	1361	1309
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			



N

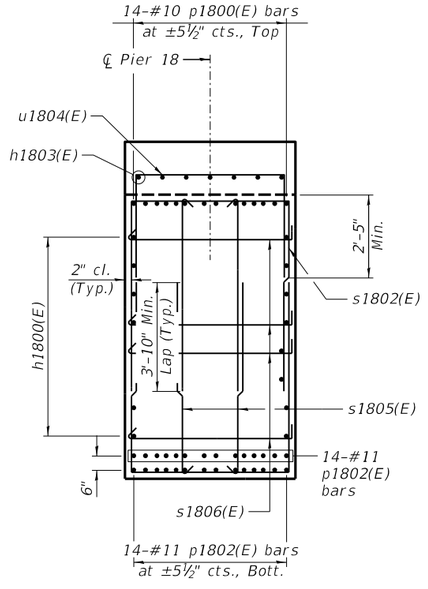
TOP PLAN

Notes:
1. Bars indicated thus 7x2-#5 etc. indicates 7 lines of bars with 2 lengths per line.
2. For bar list and Bill of Material, see Sheet S-403 of 445.
3. For anchor bolts and bearing details, see Sheets S-281 & S-282 of 445.
4. Adjust bar spacing in pier cap to miss anchor bolts.

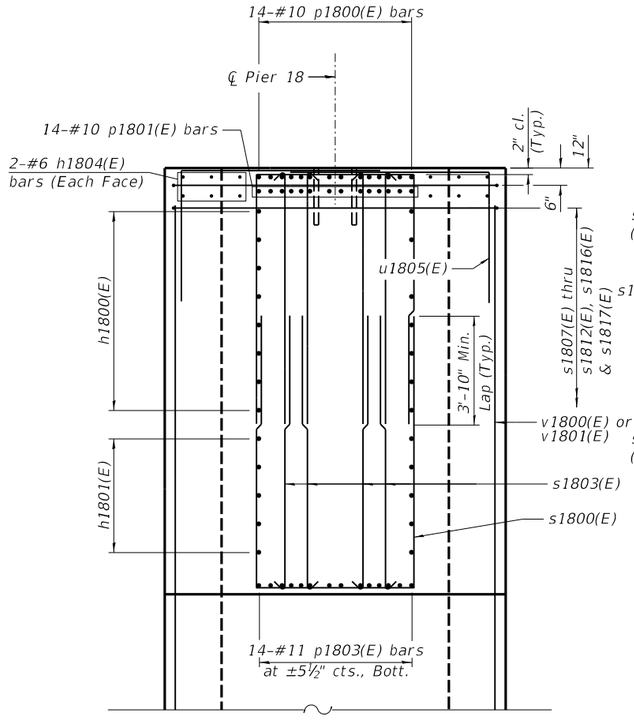


SECTION B-B

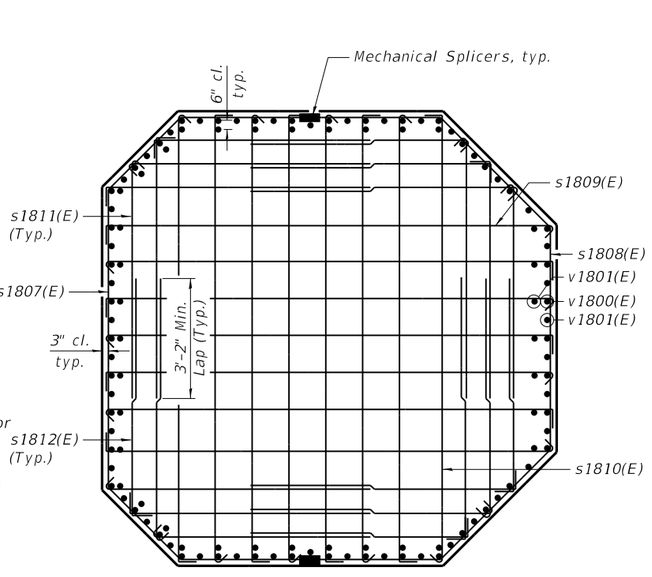
(Mark A shown, Mark B similar)



SECTION C-C



SECTION D-D



SECTION E-E

MINIMUM BAR LAP

#5 bar = 3'-2"
#6 bar = 3'-10"

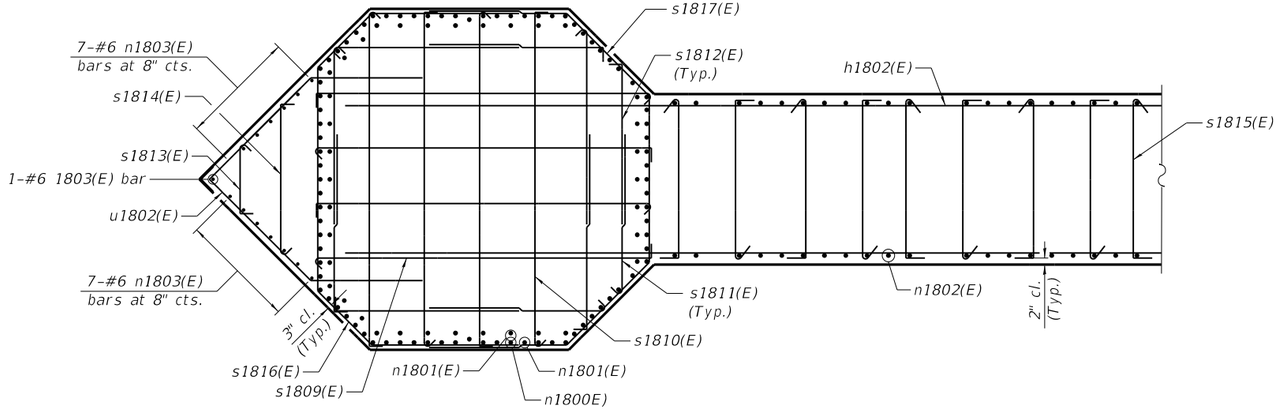
HANSON

USER NAME = johns00944	DESIGNED - JGT	REVISED -	
	CHECKED - TEH	REVISED -	
PLOT SCALE = 0:2.0000 ':" / in.	DRAWN - DAP	REVISED -	
PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 18 REINFORCEMENT, 3 OF 4
STRUCTURE NO. 090-0180
SHEETS 401 OF 445 SHEETS

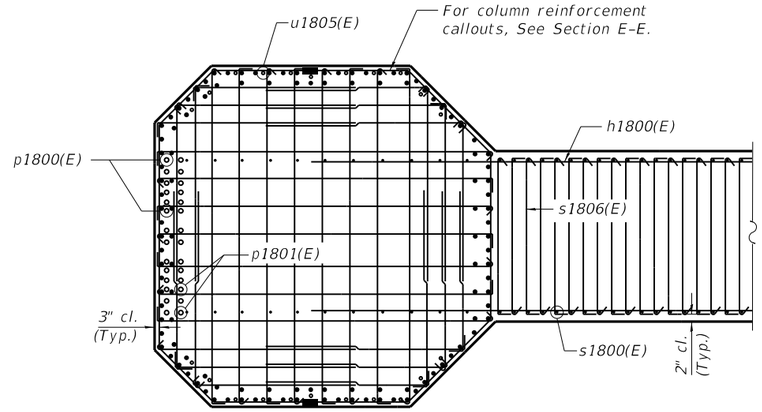
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1310
		CONTRACT NO. 68B46		
	ILLINOIS	FED. AID PROJECT NHPP-YRP3(905)		



SECTION F-F

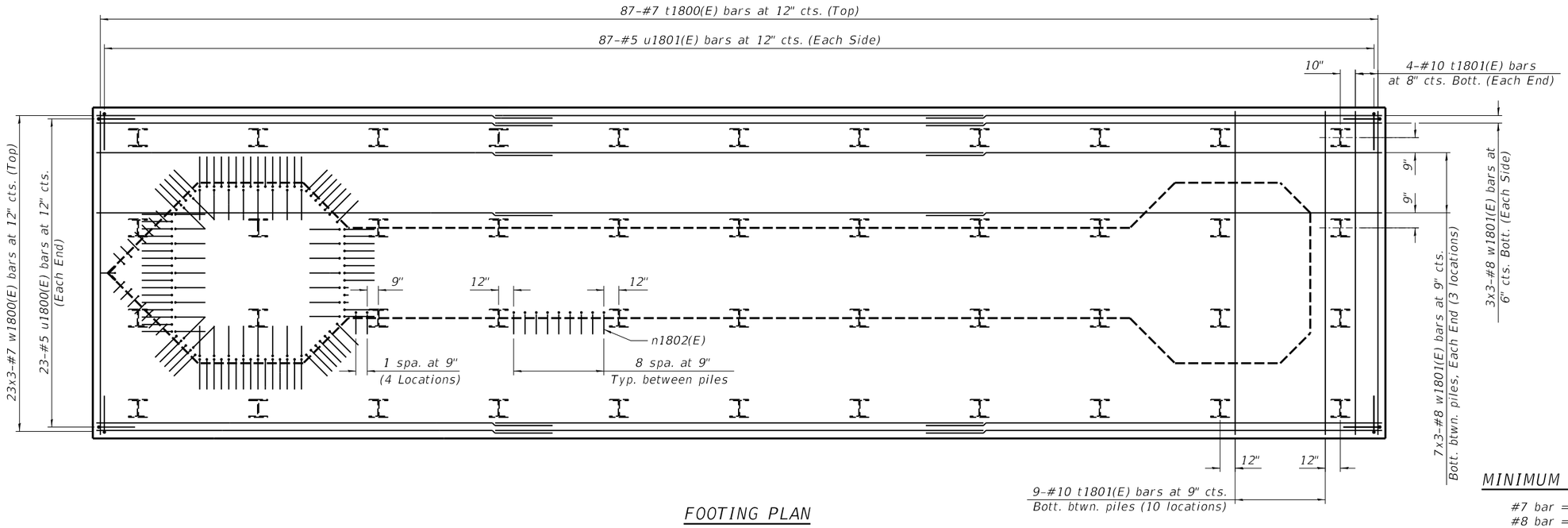
PILE DATA

Type:	HP14x117
Nominal Required Bearing:	929 kips
Factored Resistance Available:	511 kips
Est. Length:	63 feet
No. Production Piles:	43
No. Test Piles:	1



SECTION H-H

Notes:
1. Bars indicated thus 7x3-#8 etc. indicates 7 lines of bars with 3 lenghts per line.
2. For bar list and Bill of Material, see Sheet S-403 of 445.
3. Turn leg of "n" bars as required to miss piles.



FOOTING PLAN

MINIMUM BAR LAP

#7 bar = 5'-0"
#8 bar = 5'-1"

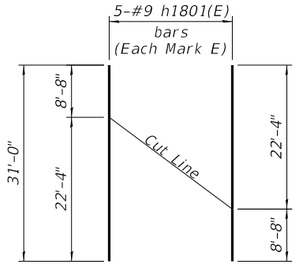
HANSON

USER NAME = johns00944	DESIGNED - JGT	REVISED -	
	CHECKED - TEH	REVISED -	
PLOT SCALE = 0:2.0000 ':" / in.	DRAWN - DAP	REVISED -	
PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

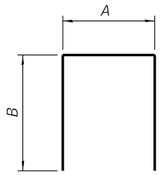
PIER 18 REINFORCEMENT, 4 OF 4
STRUCTURE NO. 090-0180
SHEET S-402 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1311
		CONTRACT NO. 68B46		
	ILLINOIS	FED. AID PROJECT	NHPP-YRP3(905)	



FIELD CUTTING DIAGRAM

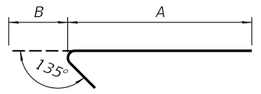
Order full length. Cut as shown and use remainder of bars in opposite face.



A & B DIMENSIONS

Bar	A	B
s1800(E)	5'-8"	9'-3"
s1801(E)	5'-8"	7'-10"
s1802(E)	5'-8"	6'-9"
u1800(E)	4'-5"	2'-5"
u1801(E)	4'-7"	2'-5"
u1803(E)	5'-6¾"	5'-1"
u1804(E)	5'-8"	2'-9"

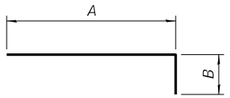
BARS s1800(E), s1801(E), s1802(E), u1800(E), u1801(E), u1803(E) & u1804(E)



A & B DIMENSIONS

Bar	A	B
s1803(E)	9'-3"	8"
s1804(E)	7'-10"	8"
s1805(E)	6'-9"	8"
s1811(E)	6'-8"	5½"

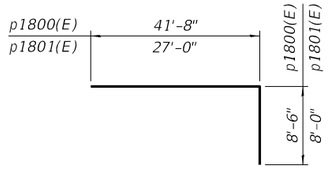
BARS s1803(E), s1804(E), s1805(E) & s1811(E)



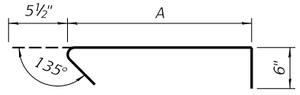
A & B DIMENSIONS

Bar	A	B
n1800(E)	20'-6"	2'-0"
n1801(E)	22'-6"	2'-0"
n1802(E)	28'-4"	1'-4"
n1803(E)	25'-9"	1'-0"
s1812(E)	6'-8"	6"

BARS n1800(E), n1801(E), n1802(E), n1803(E) & s1812(E)



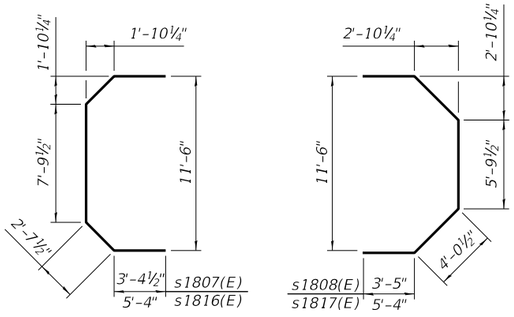
BARS p1800(E) & p1801(E)



A DIMENSIONS

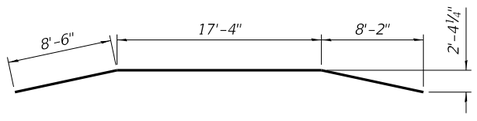
Bar	A
s1806(E)	5'-8"
s1809(E)	11'-6"
s1810(E)	11'-6"
s1813(E)	2'-2"
s1814(E)	5'-2"
s1815(E)	5'-8"

BARS s1806(E), s1809(E), s1810(E), s1813(E), s1814(E) & s1815(E)

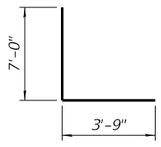


BARS s1807(E) & s1816(E)

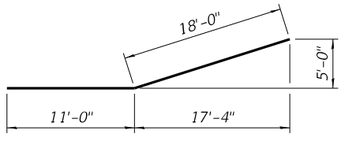
BARS s1808(E) & s1817(E)



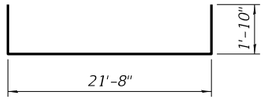
BAR p1802(E)



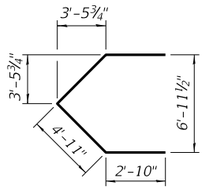
BAR u1805(E)



BAR p1803(E)



BAR t1801(E)



BAR u1802(E)

* Actual bar segment lengths of mechanically spliced bars shall be determined by contractor for ease of install. When a mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacturers recommendations for installation and ease of construction, while meeting all requirements specified in the plans.

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h1800(E)	32	#9	34'-3"	
	h1801(E)	10	#9	31'-0"	
	h1802(E)	110	#8	40'-3"	
	h1803(E)	14	#5	22'-7"	
	h1804(E)	24	#6	8'-0"	
*	n1800(E)	84	#11	22'-6"	
*	n1801(E)	156	#11	24'-6"	
	n1802(E)	116	#8	29'-8"	
	n1803(E)	15	#6	26'-9"	
	p1800(E)	28	#10	50'-2"	
	p1801(E)	28	#10	35'-0"	
	p1802(E)	28	#11	34'-4"	
	p1803(E)	28	#11	29'-0"	
	p1804(E)	28	#11	13'-0"	
	s1800(E)	128	#6	24'-2"	
	s1801(E)	36	#6	21'-4"	
	s1802(E)	48	#6	19'-2"	
	s1803(E)	512	#6	9'-11"	
	s1804(E)	72	#6	8'-6"	
	s1805(E)	96	#6	7'-5"	
	s1806(E)	480	#5	6'-8"	
*	s1807(E)	240	#6	19'-10"	
*	s1808(E)	240	#6	20'-9"	
	s1809(E)	1810	#5	12'-6"	
	s1810(E)	2048	#5	12'-6"	
	s1811(E)	2798	#5	7'-2"	
	s1812(E)	2798	#5	7'-2"	
	s1813(E)	25	#5	3'-2"	
	s1814(E)	25	#5	6'-2"	
	s1815(E)	624	#5	6'-8"	
	s1816(E)	36	#6	23'-9"	
	s1817(E)	36	#6	24'-7"	
	t1800(E)	87	#7	21'-8"	
	t1801(E)	98	#10	25'-4"	
	t1802(E)	10	#5	21'-8"	
	u1800(E)	46	#5	9'-3"	
	u1801(E)	174	#5	9'-5"	
	u1802(E)	25	#5	15'-6"	
	u1803(E)	58	#8	15'-9"	
	u1804(E)	43	#5	11'-2"	
	u1805(E)	48	#6	10'-9"	
*	v1800(E)	84	#11	31'-5"	
*	v1801(E)	156	#11	29'-5"	
	w1800(E)	69	#7	32'-0"	
	w1801(E)	81	#8	32'-1"	
	w1802(E)	30	#5	30'-9"	

Cofferdam Excavation	Cu. Yd.	1127
Cofferdam (Type 2) (Location 18)	Each	1
Concrete Structures	Cu. Yd.	1251.7
Seal Coat Concrete	Cu. Yd.	520
Reinforcement Bars, Epoxy Coated	Pound	284910
Furnishing Steel Piles HP14x117	Foot	2709
Driving Piles	Foot	2709
Test Pile Steel HP14x117	Each	1

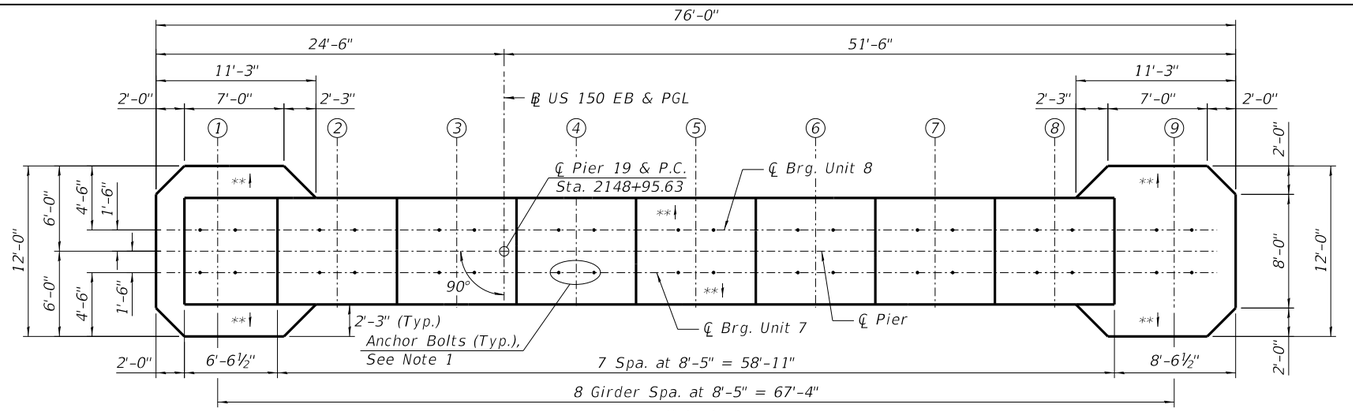
USER NAME = johns00944	DESIGNED - JGT	REVISED -	
	CHECKED - TEH	REVISED -	
PLOT SCALE = 0:2.0000 ':" / in.	DRAWN - DAP	REVISED -	
PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

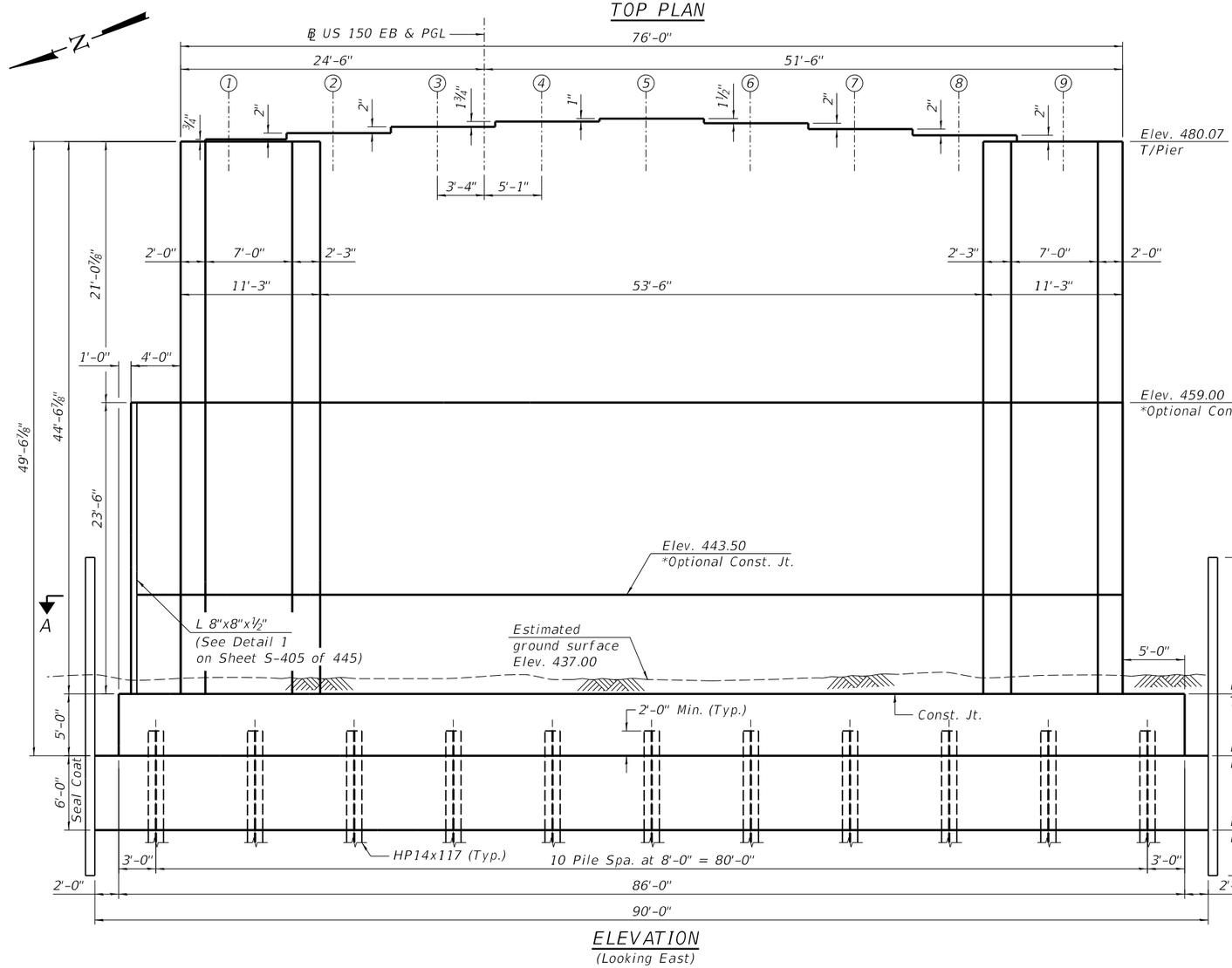
PIER 18 DETAILS, BAR LIST AND BILL OF MATERIAL
STRUCTURE NO. 090-0180
SHEET S-403 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1312
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			

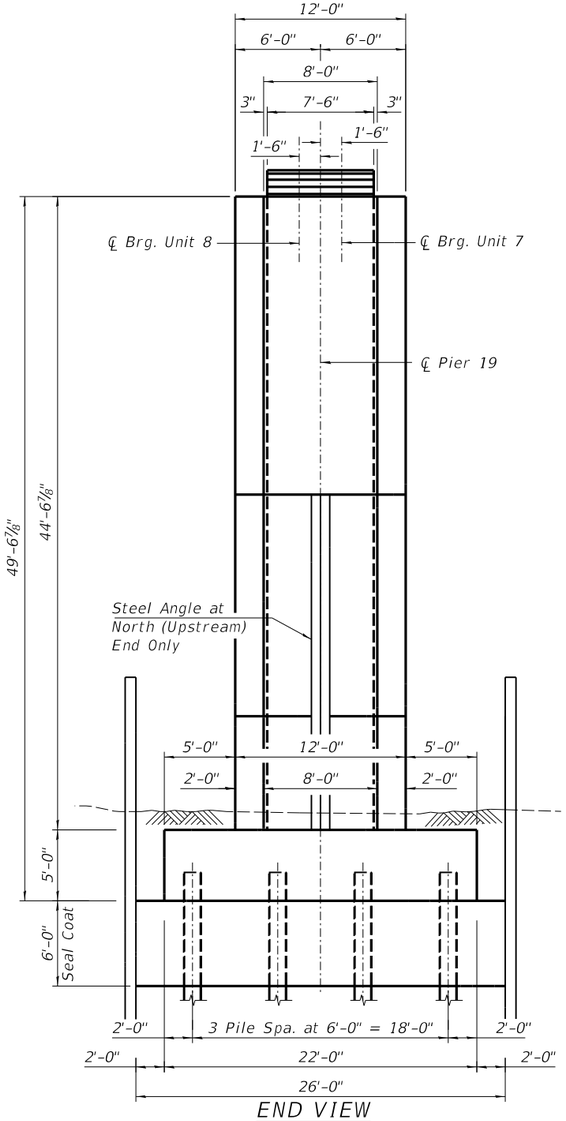
Notes:
1. For anchor bolt details, see Bearing Details Drawing. For anchor bolt layout, see Sheet S-405 of 445.
2. EWSE denotes Estimated Water Surface Elevation. HWE denotes High Water Elevation. CDWE denotes Cofferdam Design Water Elevation.
3. See Sheet S-405 of 445 for Section A-A.
4. Cast steps monolithic with wall.
5. Pier shall have exposed surfaces of cap, seats, columns, and wall treated with Concrete Sealer.



TOP PLAN



ELEVATION
(Looking East)



END VIEW
(Looking South)

UNIT 7 BEARING SEAT ELEVATIONS

Girder	Elevation
1	480.21
2	480.38
3	480.55
4	480.69
5	480.78
6	480.65
7	480.49
8	480.32
9	480.15

UNIT 8 BEARING SEAT ELEVATIONS

Girder	Elevation
1	480.13
2	480.30
3	480.47
4	480.61
5	480.69
6	480.56
7	480.41
8	480.24
9	480.07

* See Sheet S-405 of 445 for Construction Joint Detail.

** Bearing seats are to be constructed level. Slope away from bearing seats at ⅛" per ft. to drain, Typ.

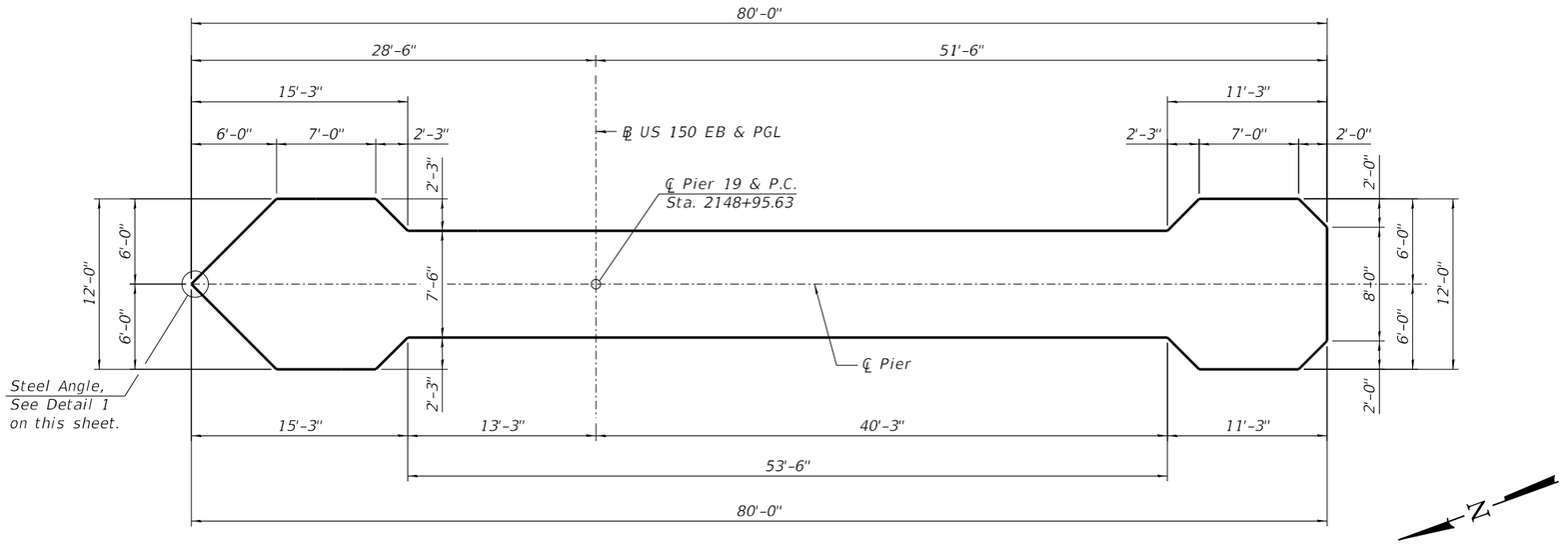
HANSON

USER NAME = Johns00944	DESIGNED - JGT	REVISED -	
	CHECKED - MNM	REVISED -	
PLOT SCALE = 0:2.0000 ':' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

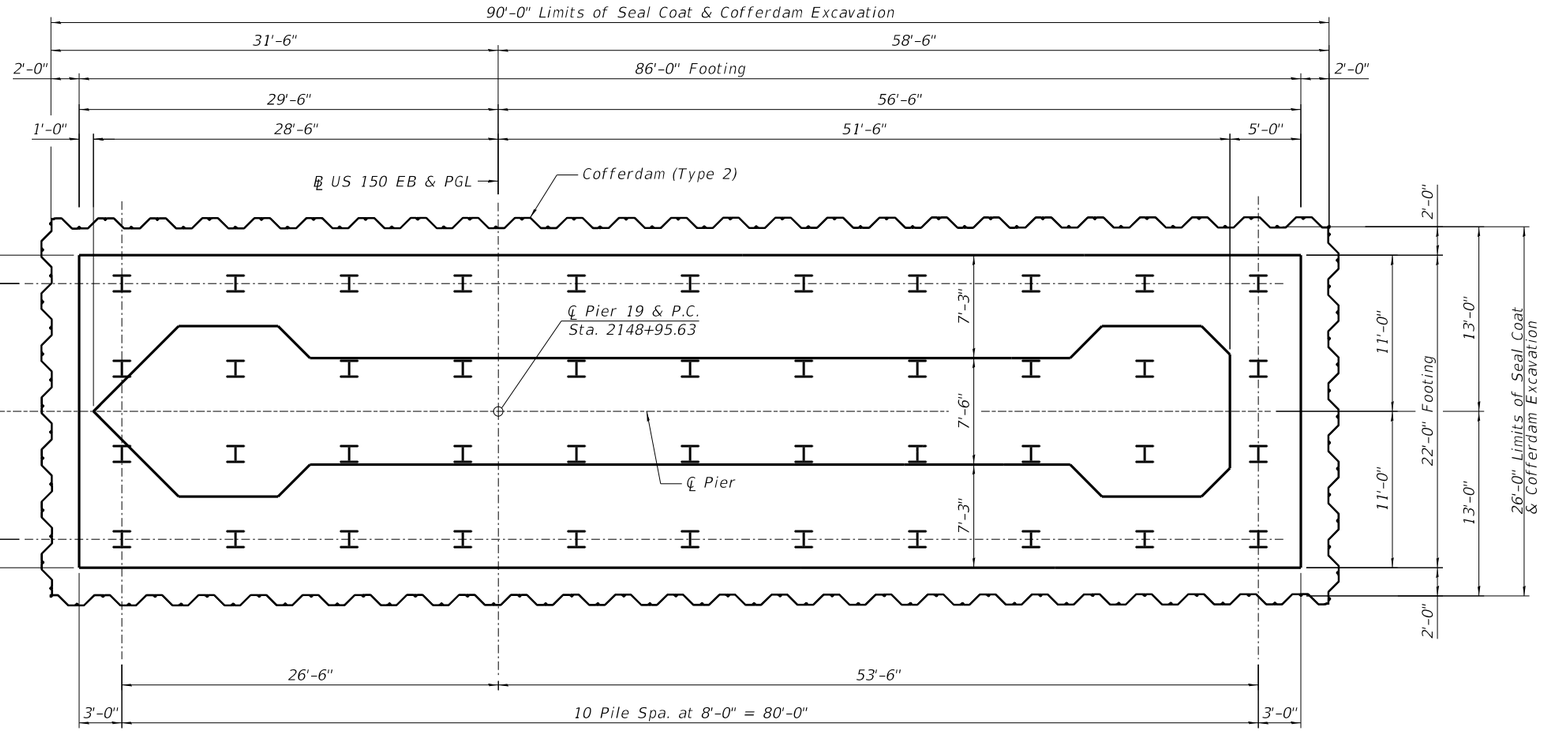
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 19 PLAN AND ELEVATION
STRUCTURE NO. 090-0180
SHEET S-404 OF 445 SHEETS

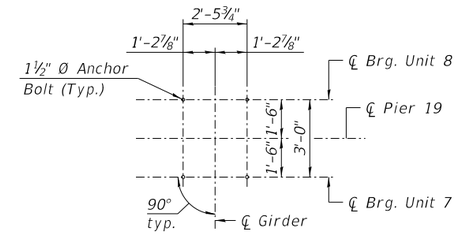
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR	PEO/TAZ	1361	1313
		CONTRACT NO. 68B46		
		ILLINOIS FED. AID PROJECT	NHPP-YRP3(905)	



SECTION A-A



FOOTING PLAN



ANCHOR BOLT LAYOUT

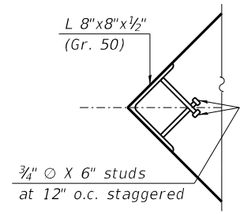
(Layout at Girders 1 thru 9)

VESSEL COLLISION FORCE

FOR EXTREME EVENT II LOAD COMBINATION

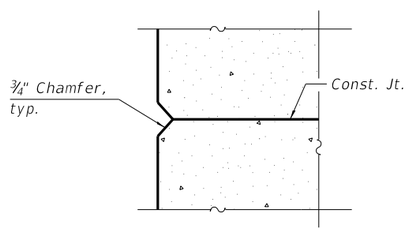
	100 Yr. Water Level	
	Case 1	Case 2
Static Load	620 kips	310 kips
Elevation	470.79	470.79
Direction	Parallel	Perpendicular

Note: Direction is with respect to Illinois River Flow.



Note: The angle with studs shall be galvanized according to AASHTO M 111, and cost shall be included with Furnishing and Erecting Structural Steel.

DETAIL 1



CONSTRUCTION JOINT

HANSON

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	CHECKED - MNM	REVISED -	
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PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

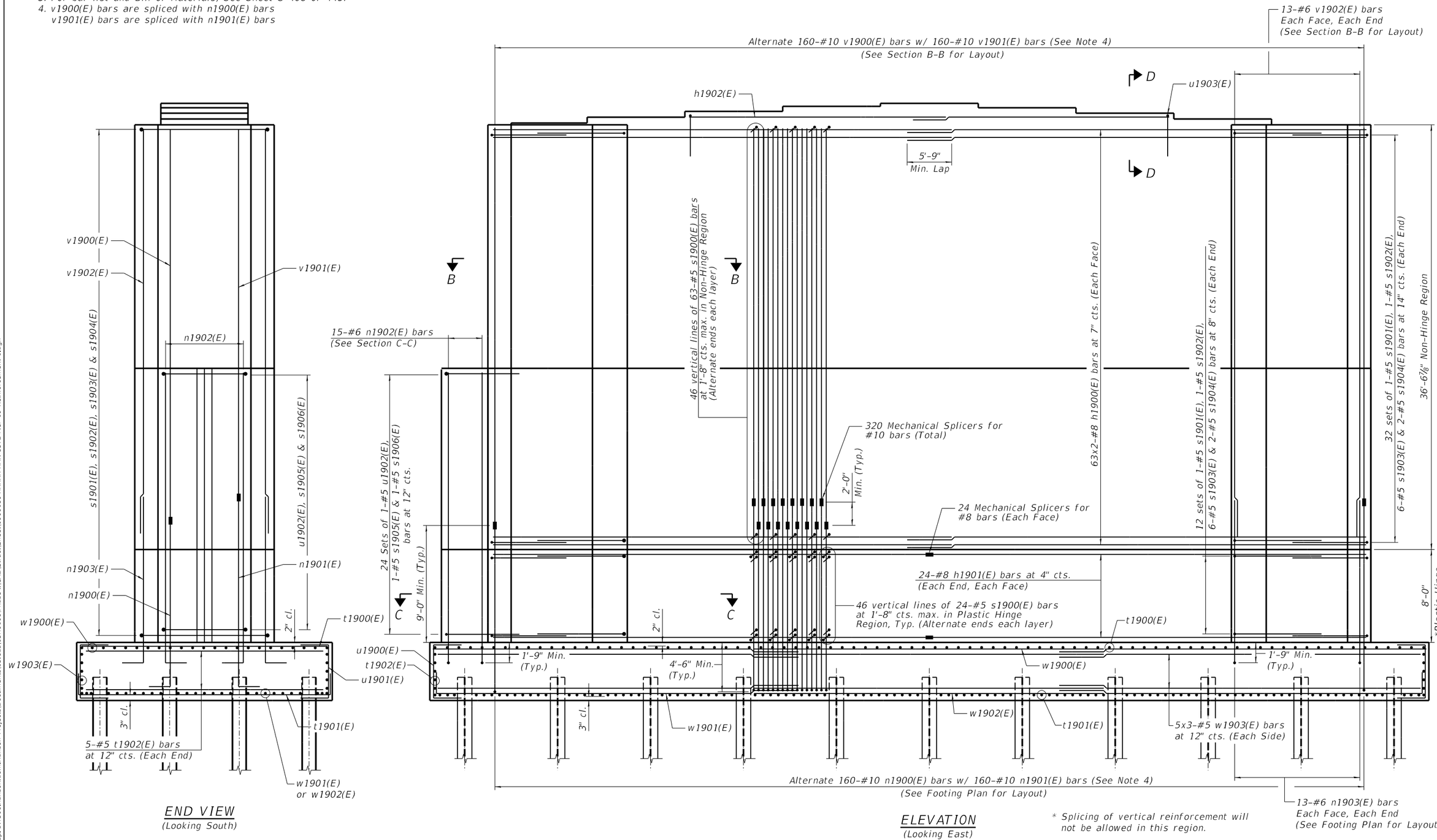
PIER 19 FOOTING PLAN
STRUCTURE NO. 090-0180
SHEET S-405 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1314
		CONTRACT NO. 68B46		
		ILLINOIS	FED. AID PROJECT	NHPP-YRP3(905)

Notes:
1. Adjust bar spacing to miss anchor bolts.
2. Bars indicated thus 63x2-#8 etc. indicates 63 lines of bars with 2 lengths per line.
3. For bar list and Bill of Materials, See Sheet S-408 of 445.
4. v1900(E) bars are spliced with n1900(E) bars
   v1901(E) bars are spliced with n1901(E) bars

MINIMUM BAR LAP

#5 bar = 3'-2"
#6 bar = 3'-10"
#8 bar = 5'-9"



END VIEW
(Looking South)

ELEVATION
(Looking East)

* Splicing of vertical reinforcement will not be allowed in this region.

HANSON

USER NAME = johns00944	DESIGNED - JGT	REVISED -	
	CHECKED - EWN	REVISED -	
PLOT SCALE = 0:2.0000 ':" / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 19 REINFORCEMENT, 1 OF 2
STRUCTURE NO. 090-0180
SHEET S-406 OF 445 SHEETS

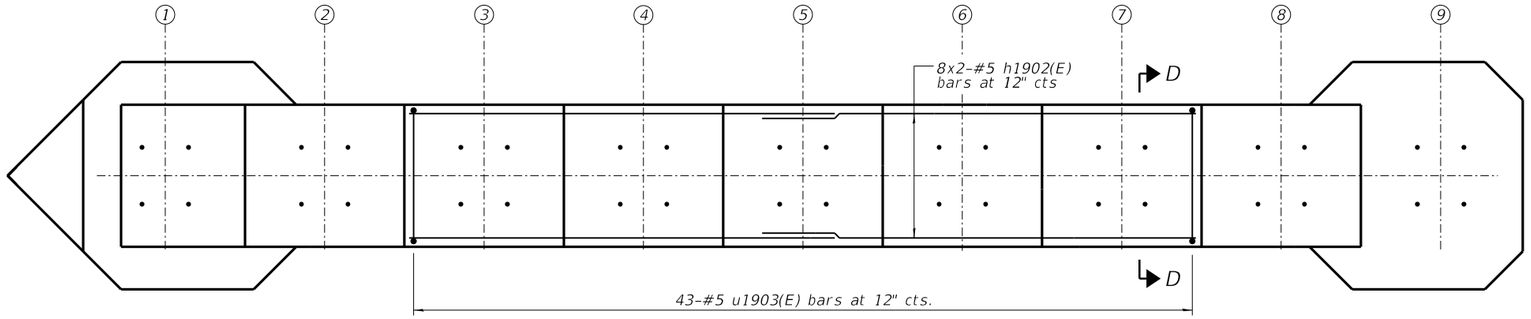
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1315
		CONTRACT NO. 68B46		
	ILLINOIS	FED. AID PROJECT	NHPP-YRP3(905)	

Notes:

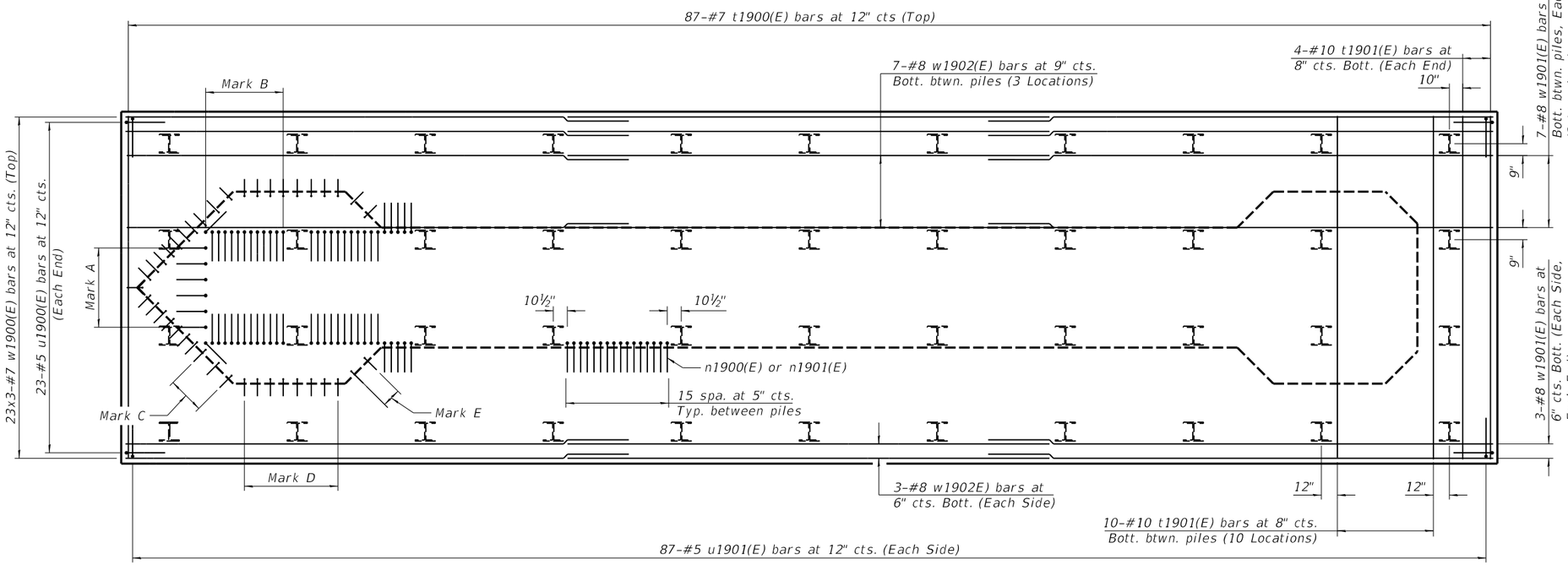
1. Adjust bar spacing in bearing seats and top of pier to miss anchor bolts.
2. Bars indicated thus 8x2-#5 etc. indicates 8 lines of bars with 2 lengths per line.
3. For bar list and Bill of Materials, see Sheet S-408 of 445.
4. For anchor bolts and bearing details see Sheet S-284 of 445.
5. Turn leg of "n" bars as required to miss piles.

MINIMUM BAR LAP

#5 bar = 3'-2"
#7 bar = 5'-0"
#8 bar = 5'-1"



TOP PLAN



FOOTING PLAN

TABLE OF REINFORCEMENT BARS

Mark	Reinforcement
A	6-#10 n1900(E) or n1901(E) bars at ±12" cts.
B	13-#10 n1900(E) or n1901(E) bars at ±5" cts. (Typ)
C	3-#6 n1903(E) at ±14" cts. (Typ)
D	8-#6 n1903(E) at 10" cts. (Typ)
E	2-#6 n1903(E) at ±14" cts. (Typ)

PILE DATA

Type:	HP14x117
Nominal Required Bearing:	929 kips
Factored Resistance Avalible:	511 kips
Est. Length:	58 Feet
No. Production Piles:	43
No. Test Piles:	1

USER NAME = Johns00944	DESIGNED - JGT	REVISED -	
	CHECKED - EWN	REVISED -	
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 19 REINFORCEMENT, 2 OF 2
STRUCTURE NO. 090-0180
SHEET S-407 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1316
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			

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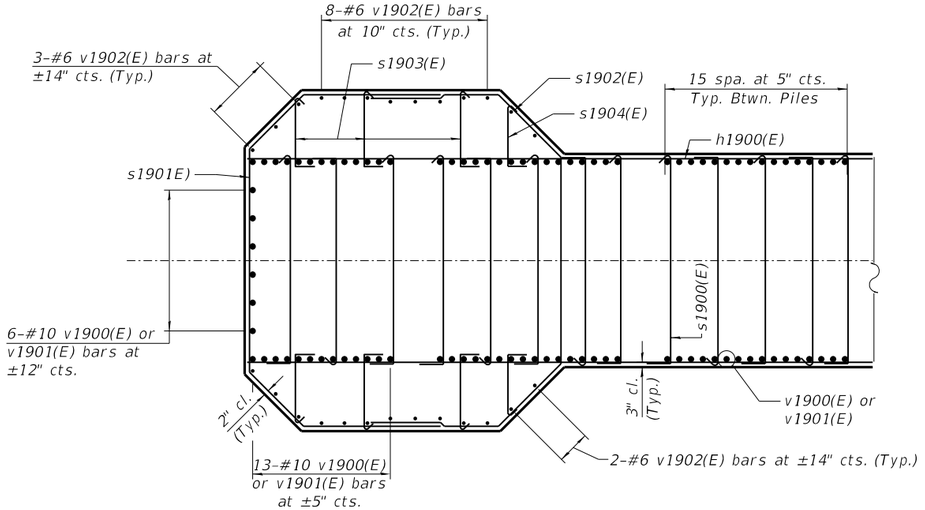
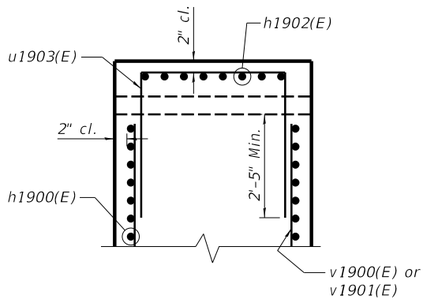
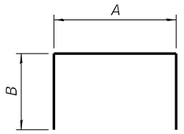


SECTION B-B



SECTION D-D



BARS u1900(E), u1901(E) & u1903(E)

DIMENSIONS

Bar	A	B
u1900(E)	4'-5"	2'-5"
u1901(E)	4'-7"	2'-5"
u1903(E)	7'-0"	2'-9"

BAR t1901(E)

BARS n1900(E), n1901(E), n1902(E) & n1903(E)

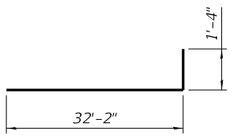
DIMENSIONS

Bar	A	B
n1900(E)	13'-6"	1'-10"
n1901(E)	15'-6"	1'-10"
n1902(E)	25'-3"	1'-0"
n1903(E)	14'-7"	1'-0"

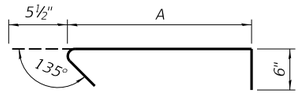
BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h1900(E)	252	#8	40'-11"	
*	h1901(E)	96	#8	37'-10"	
	h1902(E)	16	#5	22'-7"	
*	n1900(E)	160	#10	15'-4"	
*	n1901(E)	160	#10	17'-4"	
	n1902(E)	15	#6	26'-3"	
	n1903(E)	52	#6	15'-7"	
	s1900(E)	4002	#5	8'-0"	
	s1901(E)	88	#5	23'-5"	
	s1902(E)	88	#5	23'-8"	
	s1903(E)	528	#5	3'-5"	
	s1904(E)	176	#5	2'-7"	
	s1905(E)	24	#5	3'-2"	
	s1906(E)	24	#5	6'-2"	
	t1900(E)	87	#7	21'-8"	
	t1901(E)	108	#10	25'-4"	
	t1902(E)	10	#5	21'-8"	
	u1900(E)	46	#5	9'-3"	
	u1901(E)	174	#5	9'-5"	
	u1902(E)	24	#5	15'-6"	
	u1903(E)	43	#5	12'-6"	
*	v1900(E)	160	#10	35'-5"	
*	v1901(E)	160	#10	33'-5"	
	v1902(E)	52	#6	35'-6"	
	w1900(E)	69	#7	32'-0"	
	w1901(E)	54	#8	33'-6"	
	w1902(E)	27	#8	32'-2"	
	w1903(E)	30	#5	30'-9"	
	Cofferdam Excavation		Cu. Yd.	1083	
	Cofferdam (Type 2) (Location 19)		Each	1	
	Concrete Structures		Cu. Yd.	1449.1	
	Seal Coat Concrete		Cu. Yd.	520	
	Reinforcement Bars, Epoxy Coated		Pound	183950	
	Furnishing Steel Piles HP14x117		Foot	2494	
	Driving Piles		Foot	2494	
	Test Pile Steel HP14x117		Each	1	
	Concrete Sealer		Sq. Ft.	7854	

* Actual bar segment lengths of mechanically spliced bars shall be determined by contractor for ease of install. When a mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacturers recommendations for installation and ease of construction, while meeting all requirements specified in the plans.



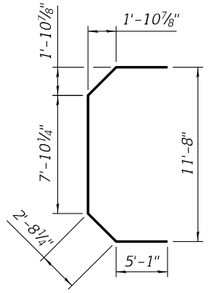
BAR w1901(E)



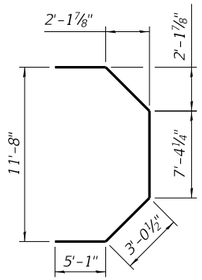
BARS s1900(E), s1903(E), s1904(E), s1905(E) & s1906(E)

A DIMENSIONS

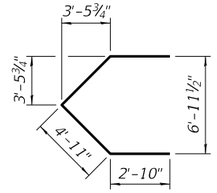
Bar	A
s1900(E)	7'-0"
s1903(E)	2'-5"
s1904(E)	1'-7"
s1905(E)	2'-2"
s1906(E)	5'-2"



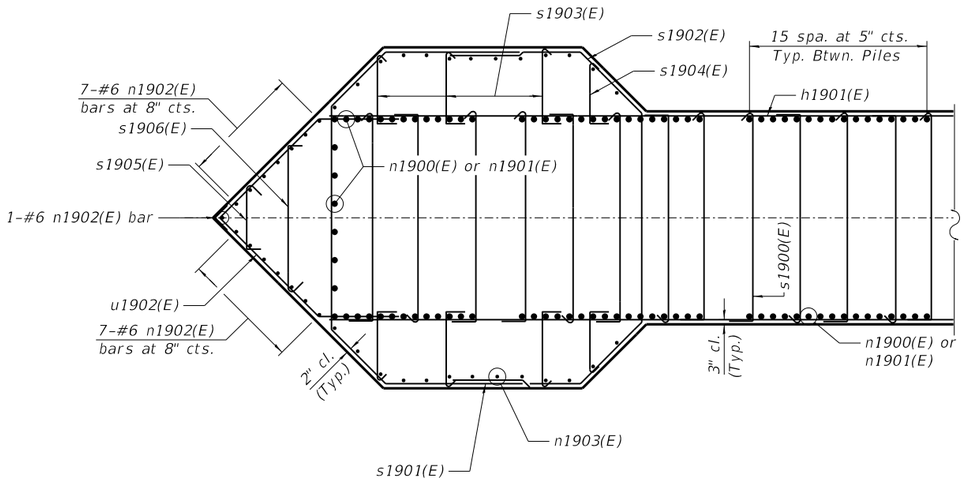
BAR s1901(E)



BAR s1902(E)



BAR u1902(E)



SECTION C-C

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 19 DETAILS, BAR LIST AND BILL OF MATERIAL
STRUCTURE NO. 090-0180
SHEET S-408 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1317
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			

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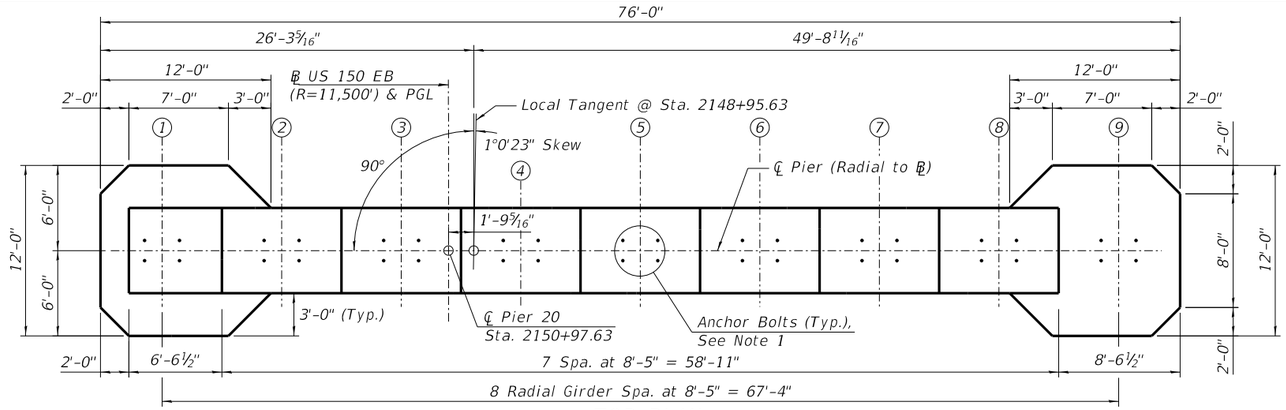
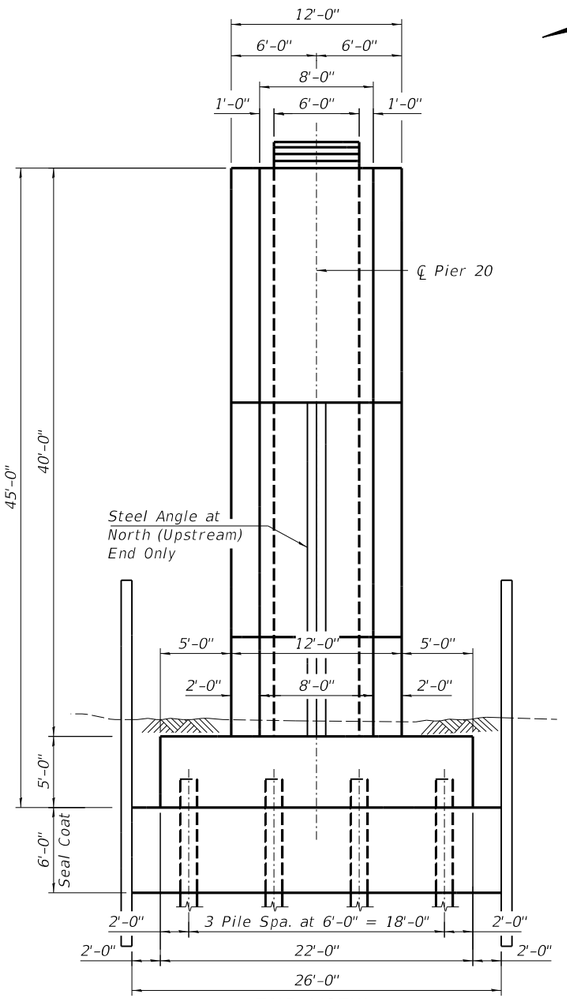
Notes:
1. For anchor bolt details, see Bearing Details Drawing. For anchor bolt layout, see Sheet S-410 of 445.
2. EWSE denotes Estimated Water Surface Elevation. HWE denotes High Water Elevation. CDWE denotes Cofferdam Design Water Elevation.
3. See Sheet S-410 of 445 for Section A-A.
4. Cast steps monolithic with wall.



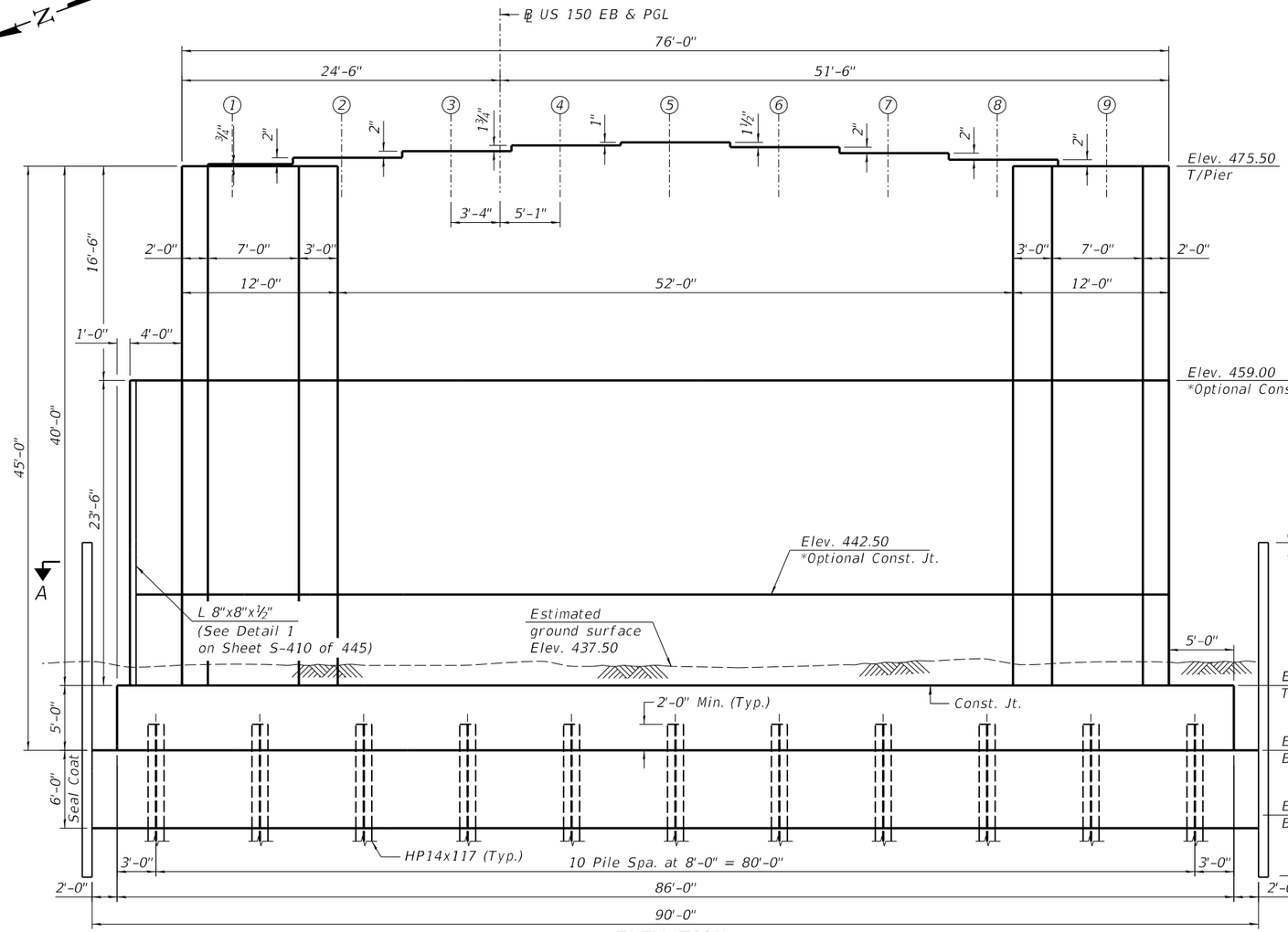
TOP PLAN

BEARING SEAT ELEVATIONS

Girder	Elevation
1	475.56
2	475.73
3	475.90
4	476.04
5	476.12
6	476.00
7	475.84
8	475.67
9	475.50



END VIEW
(Looking South)



ELEVATION
(Looking East)

* See Sheet S-410 of 445 for Construction Joint Detail.

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HANSON

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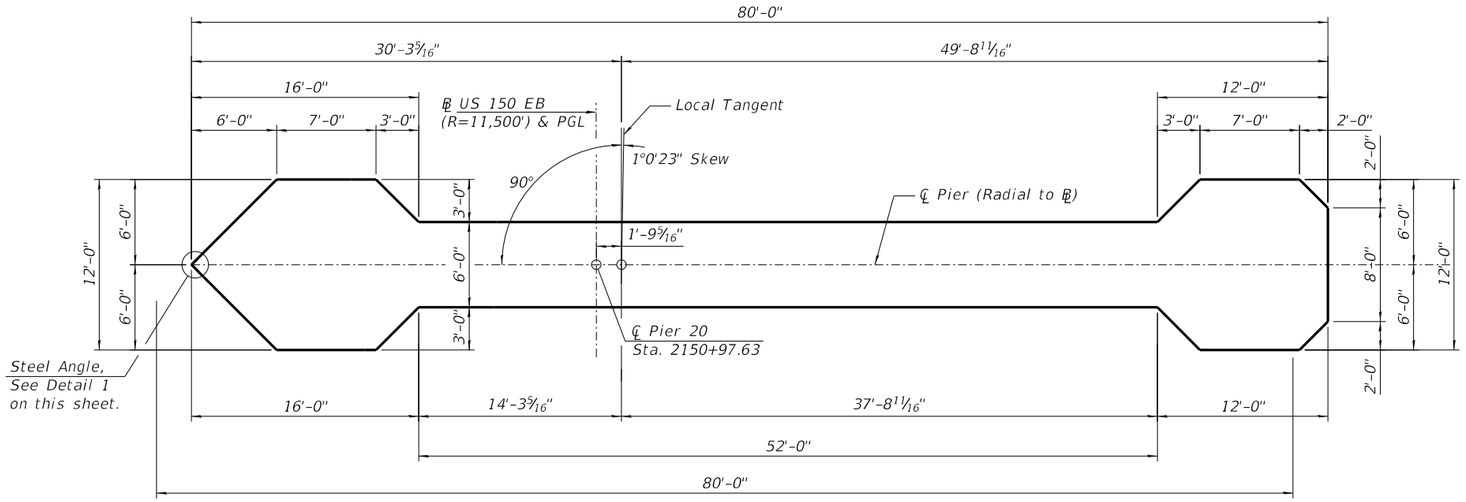
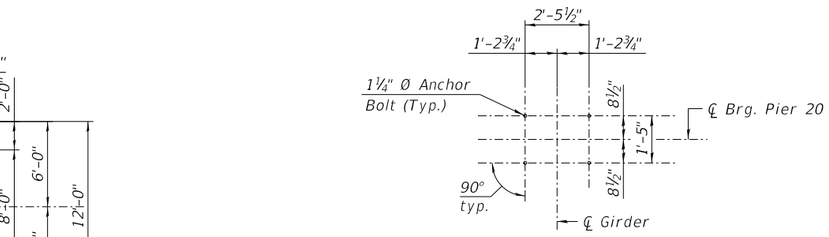
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 20 PLAN AND ELEVATION
STRUCTURE NO. 090-0180
SHEET S-409 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR/BR	PEO/TAZ	1361	1318
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			



SECTION A-A



ANCHOR BOLT LAYOUT

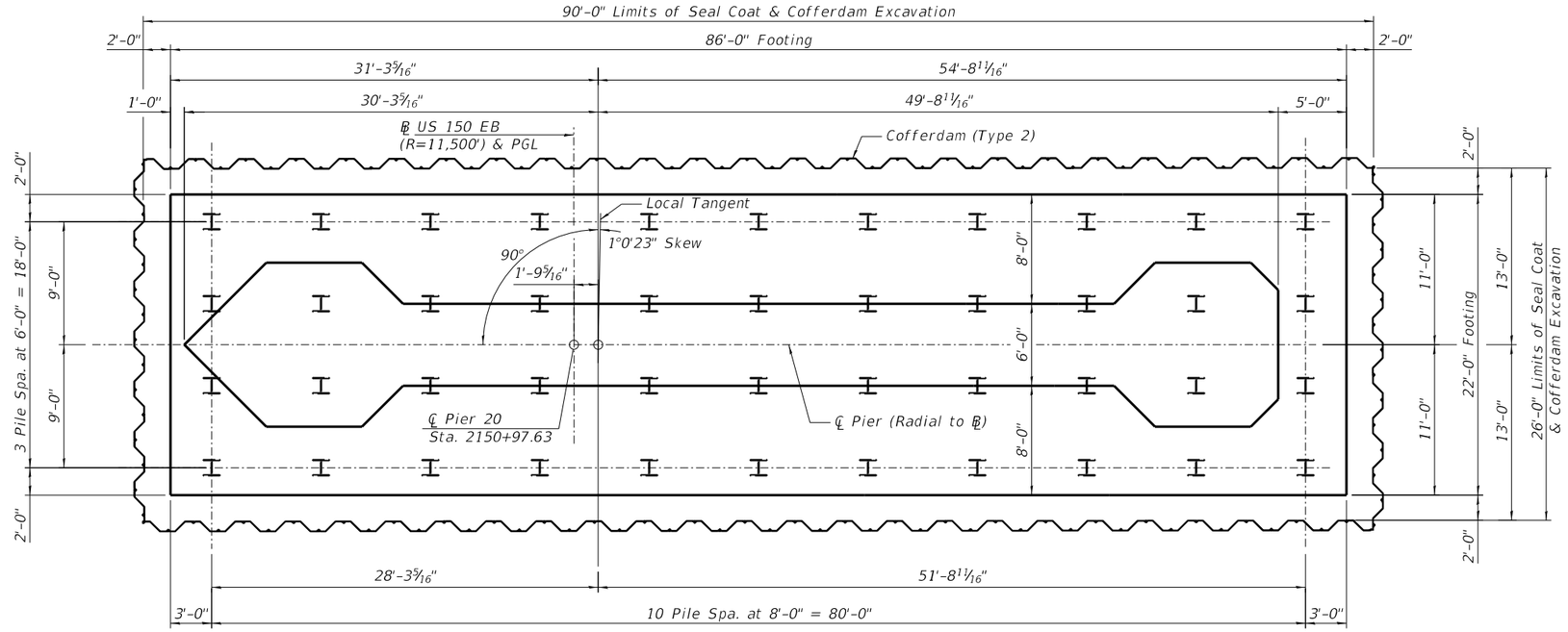
(Layout at Girders 1 thru 9)

VESSEL COLLISION FORCE

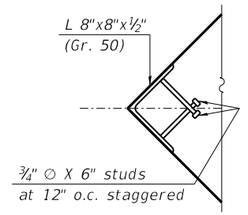
FOR EXTREME EVENT II LOAD COMBINATION

	100 Yr. Water Level	
	Case 1	Case 2
Static Load	620 kips	310 kips
Elevation	470.79	470.79
Direction	Parallel	Perpendicular

Note: Direction is with respect to Illinois River Flow.

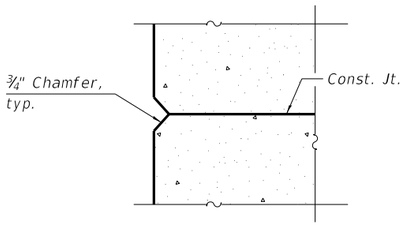


FOOTING PLAN



Note: The angle with studs shall be galvanized according to AASHTO M 111, and cost shall be included with Furnishing and Erecting Structural Steel.

DETAIL 1



CONSTRUCTION JOINT

HANSON

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PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

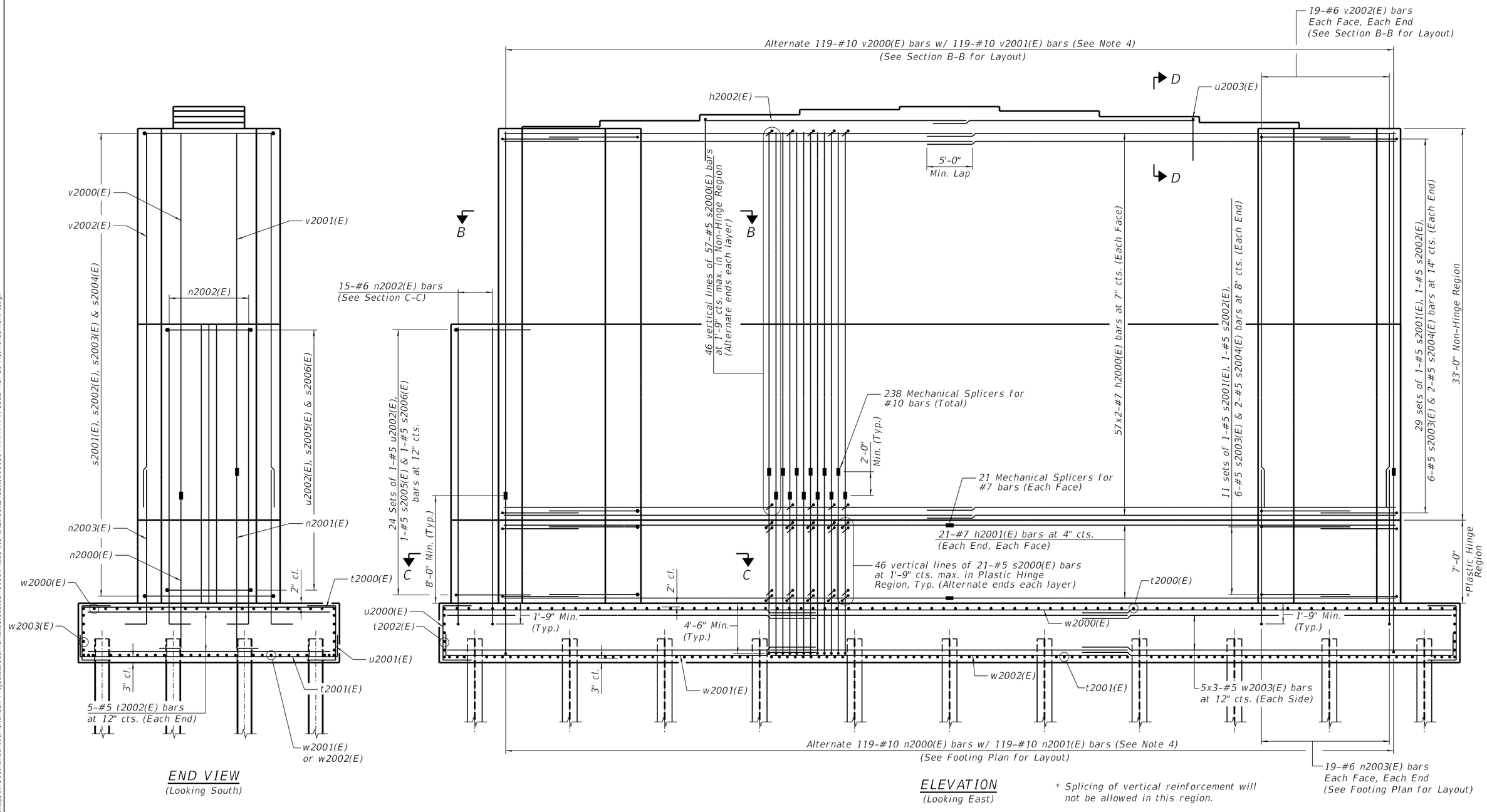
PIER 20 FOOTING PLAN
STRUCTURE NO. 090-0180
SHEET S-410 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1319
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			

Notes:
1. Adjust bar spacing to miss anchor bolts.
2. Bars indicated thus 57x2-#7 etc. indicates 57 lines of bars with 2 lengths per line.
3. For bar list and Bill of Materials, See Sheet S-413 of 445.
4. v2000(E) bars are spliced with n2000(E) bars
   v2001(E) bars are spliced with n2001(E) bars

MINIMUM BAR LAP

#5 bar = 3'-2"
#6 bar = 3'-10"
#7 bar = 5'-0"



END VIEW
(Looking South)

ELEVATION
(Looking East)

* Splicing of vertical reinforcement will not be allowed in this region.

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HANSON

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	CHECKED - EWN	REVISED -	
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PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

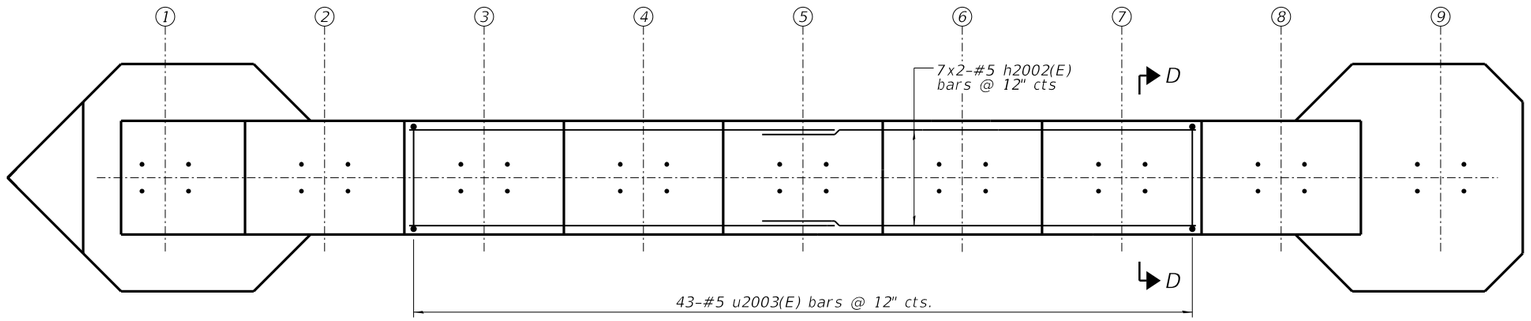
PIER 20 REINFORCEMENT, 1 OF 2
STRUCTURE NO. 090-0180
SHEET S-411 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR	PEO/TAZ	1361	1320
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			

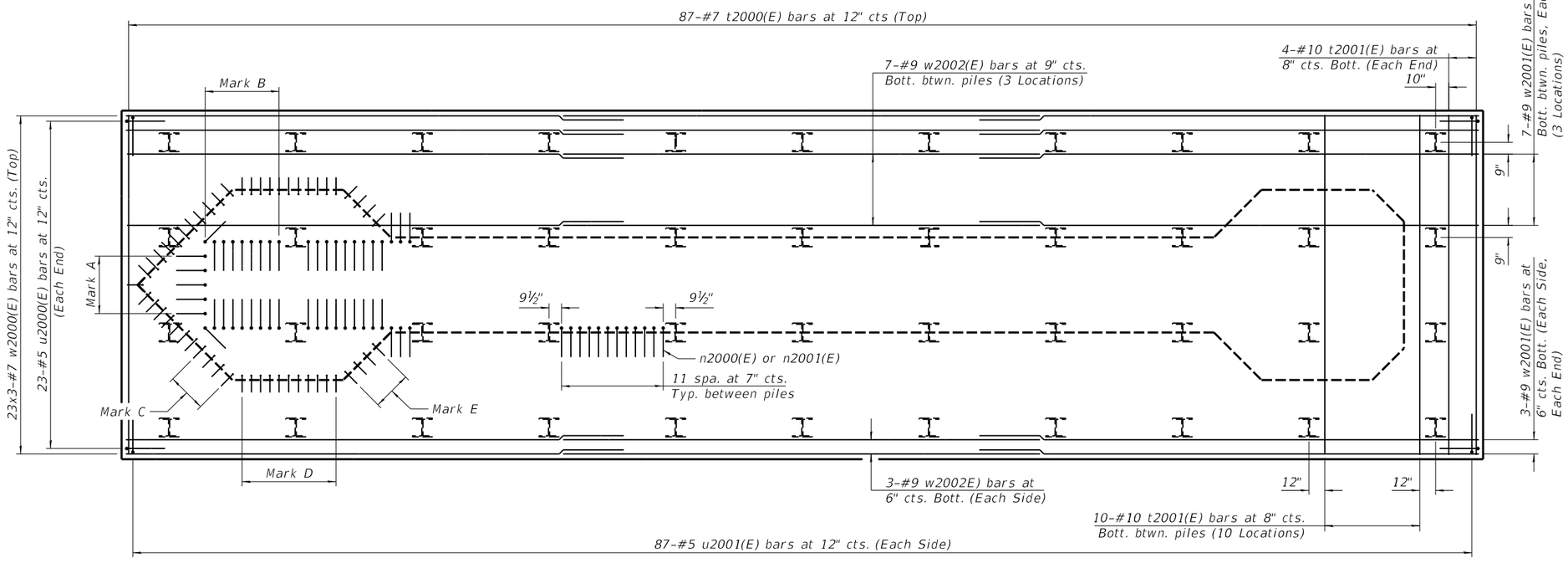
Notes:
1. Adjust bar spacing in bearing seats and top of pier to miss anchor bolts.
2. Bars indicated thus 7x2-#5 etc. indicates 7 lines of bars with 2 lengths per line.
3. For bar list and Bill of Materials, see Sheet S-413 of 445.
4. For anchor bolts and bearing details see Sheets S-281 & S-282 of 445.
5. Turn leg of "n" bars as required to miss piles.

MINIMUM BAR LAP

#5 bar = 3'-2"
#7 bar = 5'-0"
#9 bar = 5'-8"



TOP PLAN



FOOTING PLAN

TABLE OF REINFORCEMENT BARS

Mark	Reinforcement
A	5-#10 n2000(E) or n2001(E) bars at ±11" cts.
B	9-#10 n2000(E) or n2001(E) bars at 7" cts. (Typ)
C	4-#6 n2003(E) at ±10" cts. (Typ)
D	11-#6 n2003(E) at 7" cts. (Typ)
E	4-#6 n2003(E) at ±10" cts. (Typ)

PILE DATA

Type:	HP14x117
Nominal Required Bearing:	929 kips
Factored Resistance Avalible:	511 kips
Est. Length:	55 Feet
No. Production Piles:	43
No. Test Piles:	1

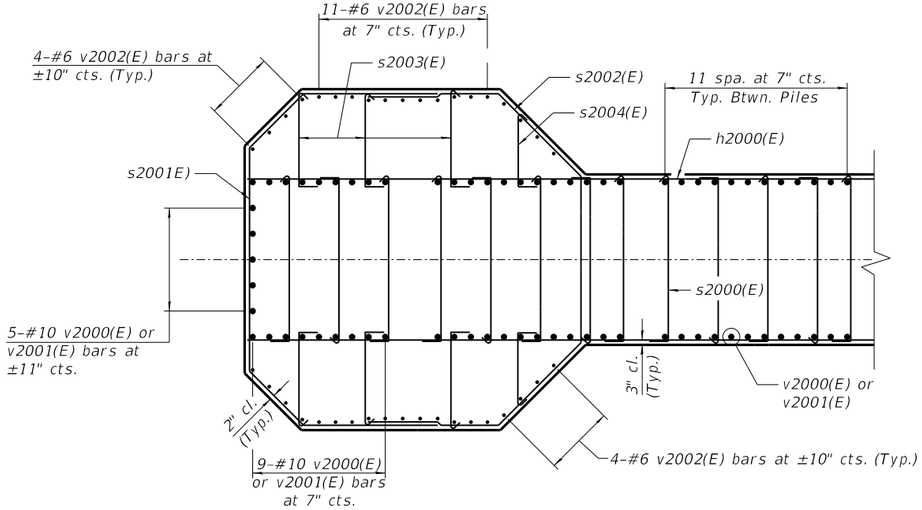
HANSON

USER NAME = Johns00944	DESIGNED - JGT	REVISED -	
	CHECKED - EWN	REVISED -	
PLOT SCALE = 0:2.0000 '' / in.	DRAWN - RSJ	REVISED -	
PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 20 REINFORCEMENT, 2 OF 2
STRUCTURE NO. 090-0180
SHEET S-412 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1321
		CONTRACT NO. 68B46		
	ILLINOIS	FED. AID PROJECT	NHPP-YRP3(905)	



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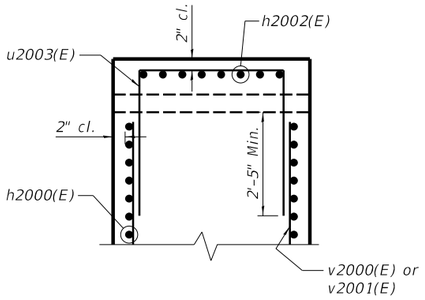

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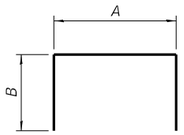
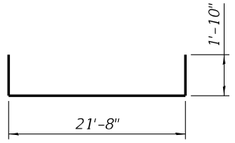


BARS u2000(E), u2001(E) & u2003(E)

DIMENSIONS

Bar	A	B
u2000(E)	4'-5"	2'-5"
u2001(E)	4'-7"	2'-5"
u2003(E)	5'-6"	2'-9"

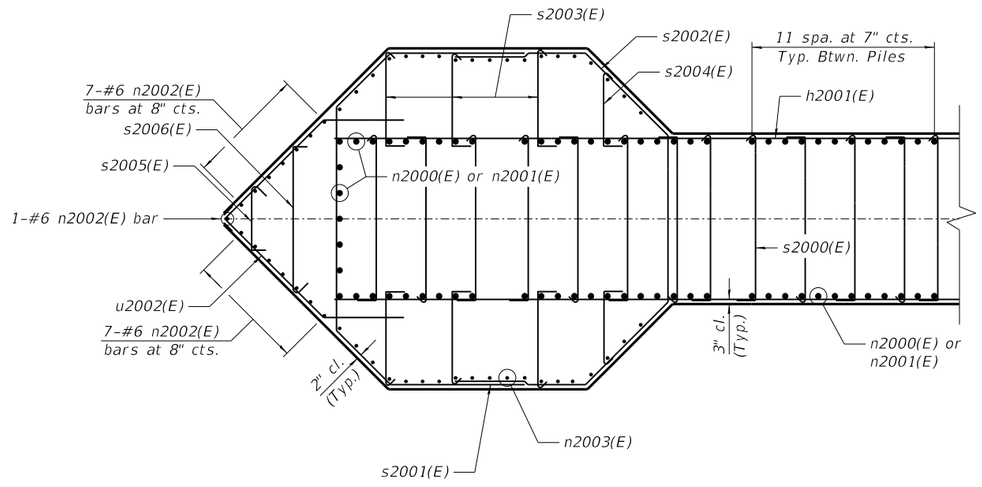


BAR t2001(E)

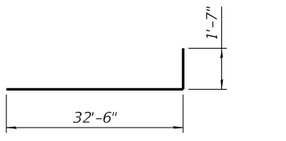
BARS n2000(E), n2001(E), n2002(E) & n2003(E)

DIMENSIONS

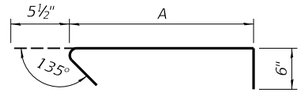
Bar	A	B
n2000(E)	12'-6"	1'-10"
n2001(E)	14'-6"	1'-10"
n2002(E)	25'-3"	1'-0"
n2003(E)	13'-7"	1'-0"



SECTION C-C



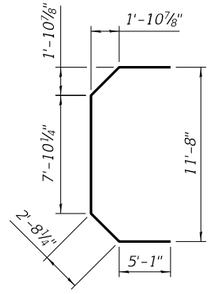
BAR w2001(E)



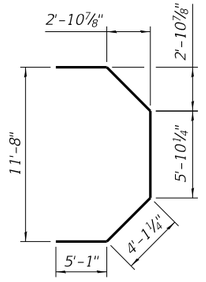
BARS s2000(E), s2003(E), s2004(E), s2005(E) & s2006(E)

A DIMENSIONS

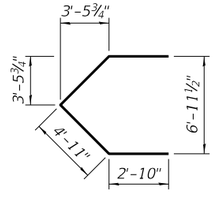
Bar	A
s2000(E)	5'-6"
s2003(E)	3'-2"
s2004(E)	2'-4"
s2005(E)	2'-2"
s2006(E)	5'-2"



BAR s2001(E)



BAR s2002(E)



BAR u2002(E)

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h2000(E)	228	#7	40'-6"	
*	h2001(E)	84	#7	37'-10"	
	h2002(E)	14	#5	22'-7"	
*	n2000(E)	119	#10	14'-4"	
*	n2001(E)	119	#10	16'-4"	
	n2002(E)	15	#6	26'-3"	
	n2003(E)	76	#6	14'-7"	
	s2000(E)	3588	#5	6'-6"	
	s2001(E)	80	#5	23'-5"	
	s2002(E)	80	#5	24'-3"	
	s2003(E)	480	#5	4'-2"	
	s2004(E)	160	#5	3'-4"	
	s2005(E)	24	#5	3'-2"	
	s2006(E)	24	#5	6'-2"	
	t2000(E)	87	#7	21'-8"	
	t2001(E)	108	#10	25'-4"	
	t2002(E)	10	#5	21'-8"	
	u2000(E)	46	#5	9'-3"	
	u2001(E)	174	#5	9'-5"	
	u2002(E)	24	#5	15'-6"	
	u2003(E)	43	#5	11'-0"	
*	v2000(E)	119	#10	31'-10"	
*	v2001(E)	119	#10	29'-10"	
	v2002(E)	76	#6	32'-0"	
	w2000(E)	69	#7	32'-0"	
	w2001(E)	54	#9	34'-1"	
	w2002(E)	27	#9	32'-6"	
	w2003(E)	30	#5	30'-9"	
	Cofferdam Excavation			Cu. Yd.	1127
	Cofferdam (Type 2) (Location 20)			Each	1
	Concrete Structures			Cu. Yd.	1220.0
	Seal Coat Concrete			Cu. Yd.	520
	Reinforcement Bars, Epoxy Coated			Pound	143670
	Furnishing Steel Piles HP14x117			Foot	2365
	Driving Piles			Foot	2365
	Test Pile Steel HP14x117			Each	1

* Actual bar segment lengths of mechanically spliced bars shall be determined by contractor for ease of install. When a mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacturers recommendations for installation and ease of construction, while meeting all requirements specified in the plans.

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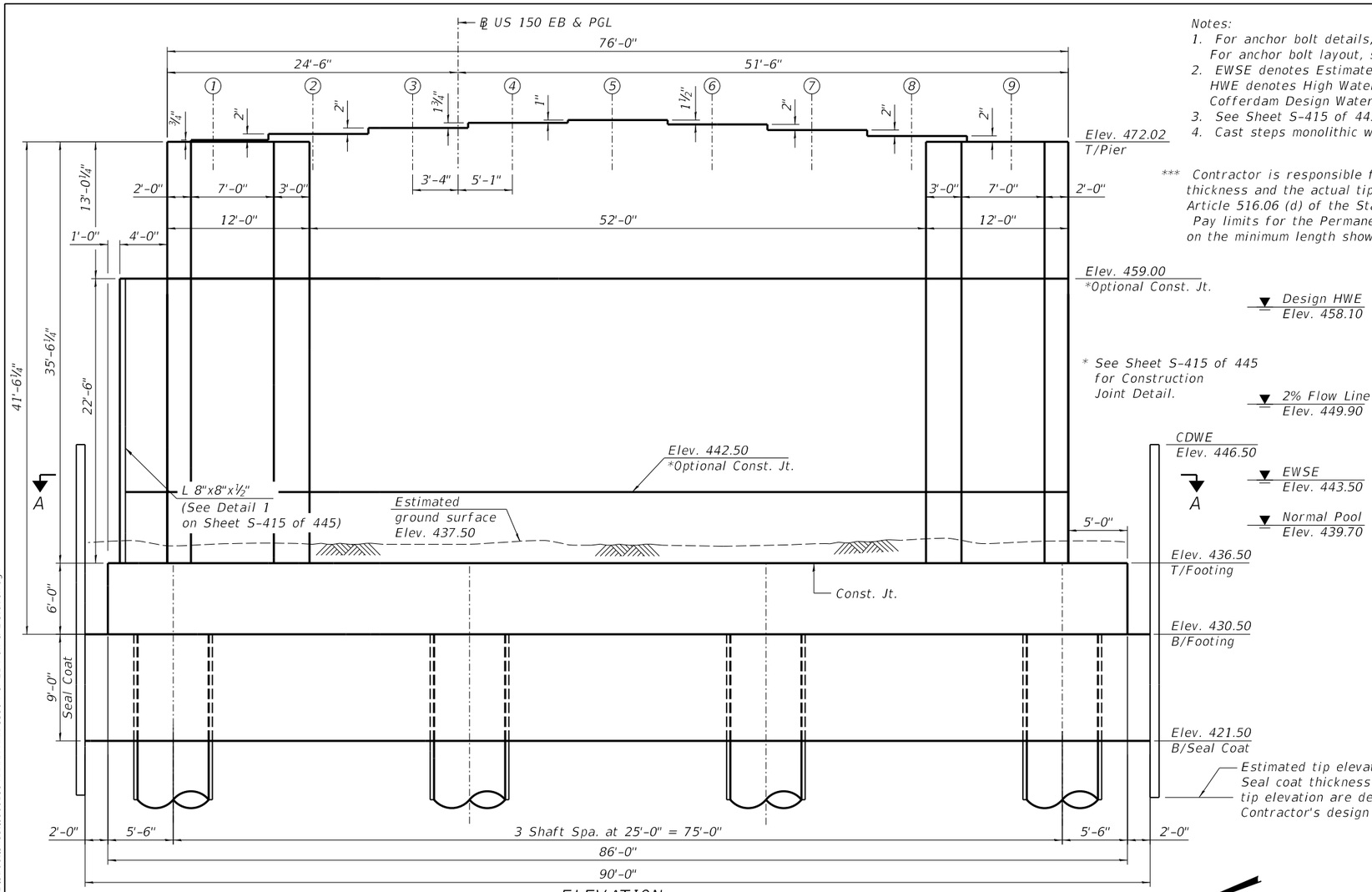
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 20 DETAILS, BAR LIST AND BILL OF MATERIAL
STRUCTURE NO. 090-0180
SHEET S-413 OF 445 SHEETS

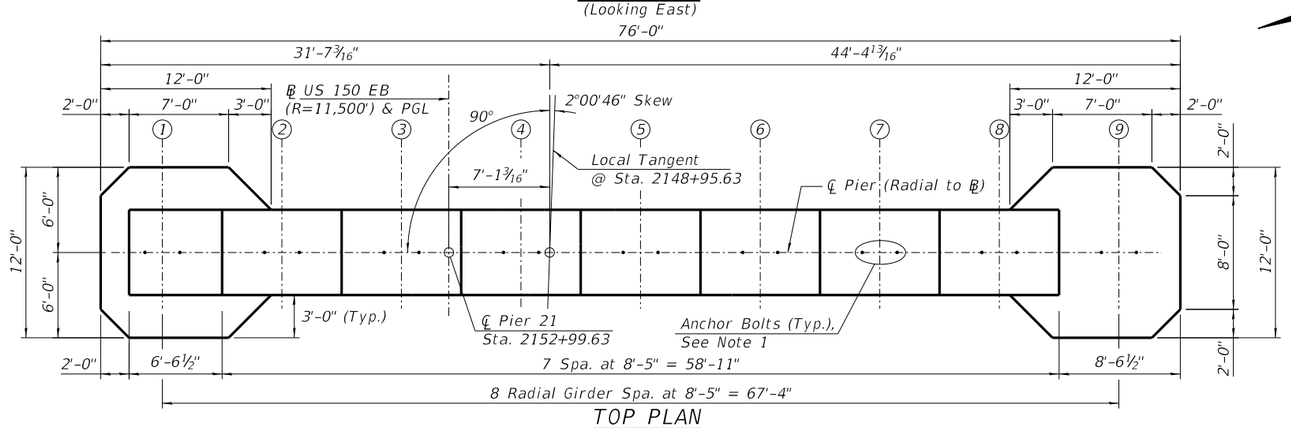
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR	PEO/TAZ	1361	1322
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			

Notes:
1. For anchor bolt details, see Bearing Details Drawing. For anchor bolt layout, see Sheet S-415 of 445.
2. EWSE denotes Estimated Water Surface Elevation. HWE denotes High Water Elevation. CDWE denotes Cofferdam Design Water Elevation.
3. See Sheet S-415 of 445 for Section A-A.
4. Cast steps monolithic with wall.

*** Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06 (d) of the Standard Specifications. Pay limits for the Permanent Casing shall be based on the minimum length shown.



ELEVATION
(Looking East)

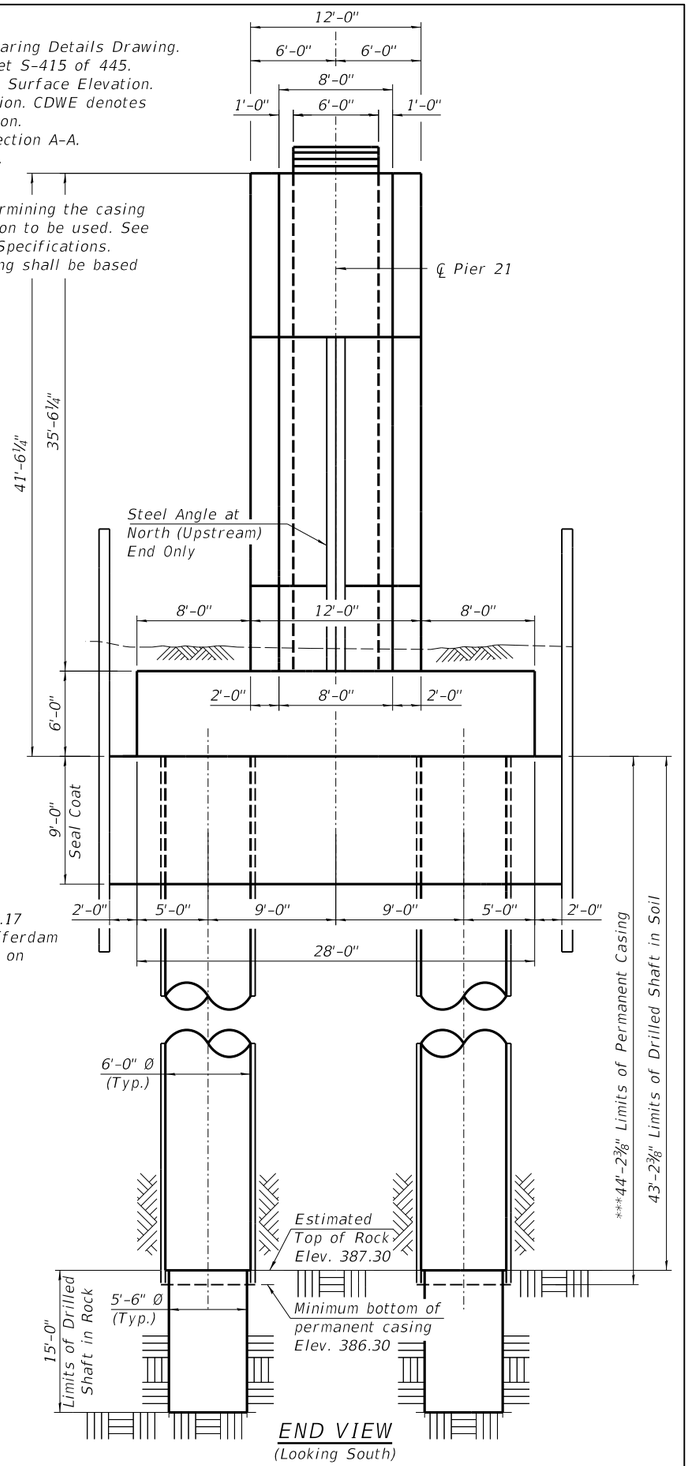


TOP PLAN

N

BEARING SEAT ELEVATIONS

Girder	Elevation
1	472.08
2	472.25
3	472.42
4	472.56
5	472.64
6	472.51
7	472.36
8	472.19
9	472.02



END VIEW
(Looking South)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 21 PLAN AND ELEVATION
STRUCTURE NO. 090-0180

SHEET S-414 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR	PEO/TAZ	1361	1323
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT	NHPP-YRP3(905)		

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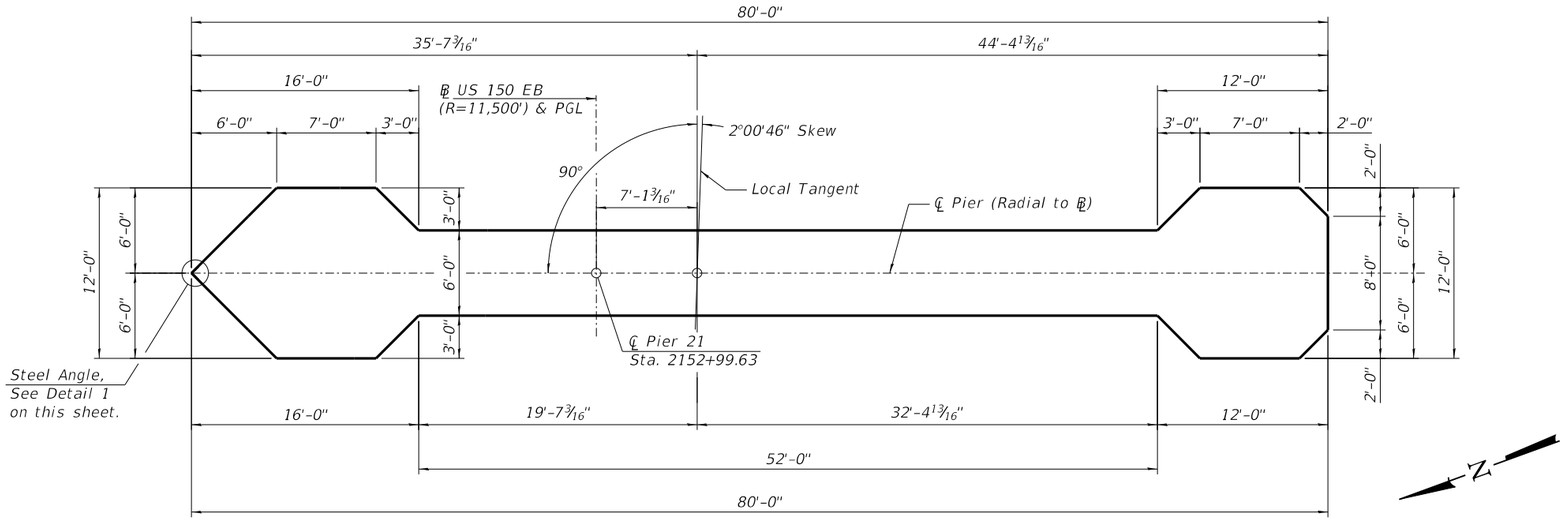
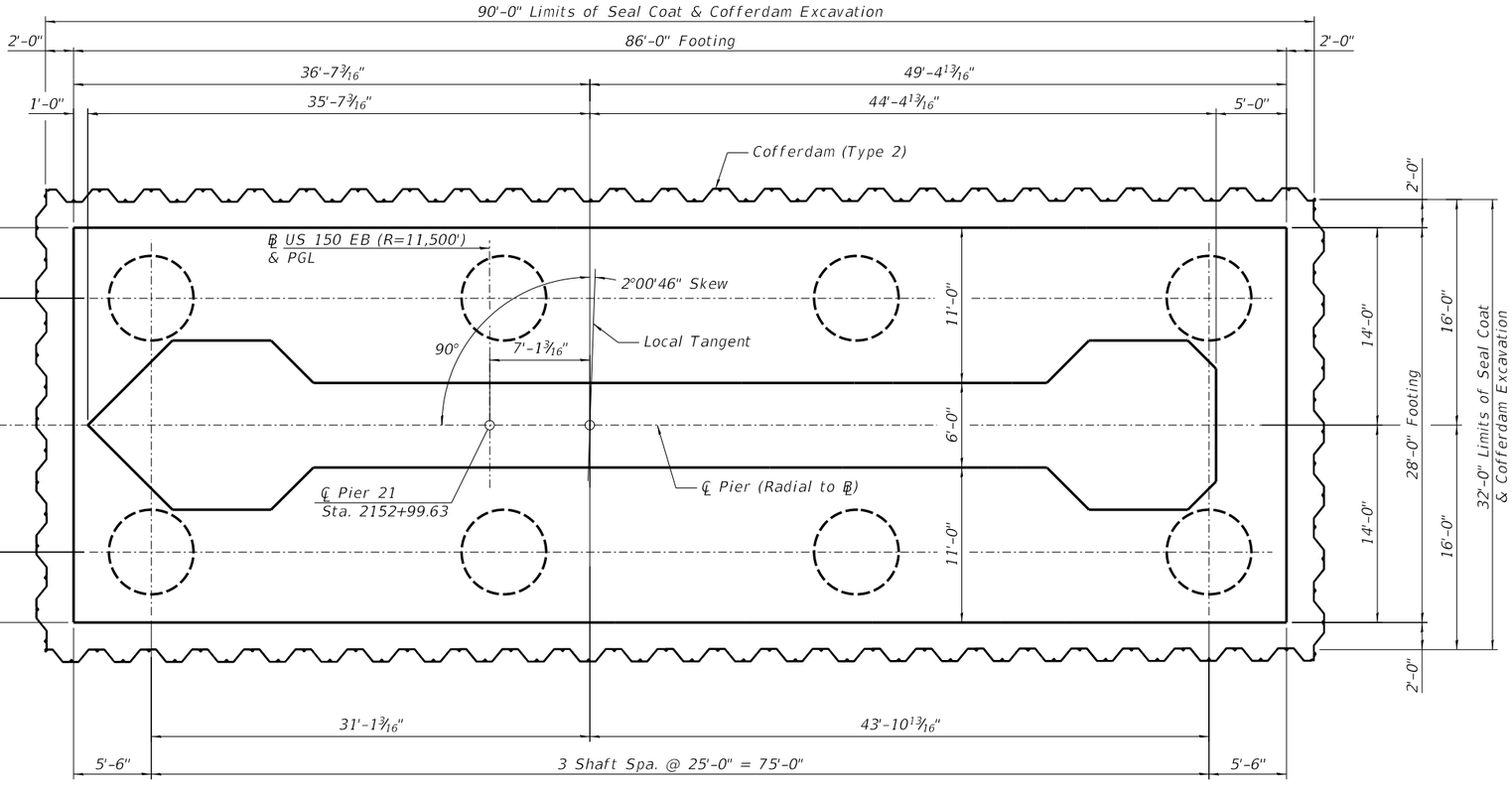
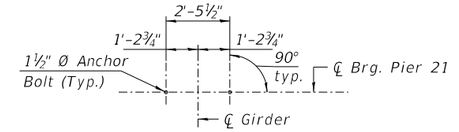


SECTION A-A



FOOTING PLAN



ANCHOR BOLT LAYOUT

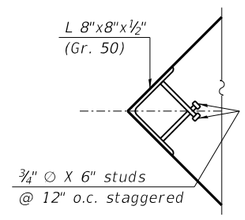
(Layout at Girders 1 thru 9)

VESSEL COLLISION FORCE

FOR EXTREME EVENT II LOAD COMBINATION

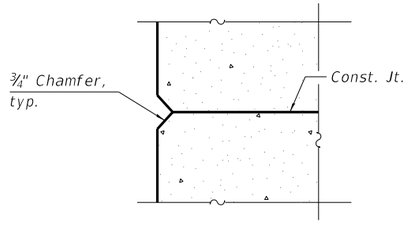
	100 Yr. Water Level	
	Case 1	Case 2
Static Load	620 kips	310 kips
Elevation	470.79	470.79
Direction	Parallel	Perpendicular

Note: Direction is with respect to Illinois River Flow.



Note: The angle with studs shall be galvanized according to AASHTO M 111, and cost shall be included with Furnishing and Erecting Structural Steel.

DETAIL 1



CONSTRUCTION JOINT

HANSON

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

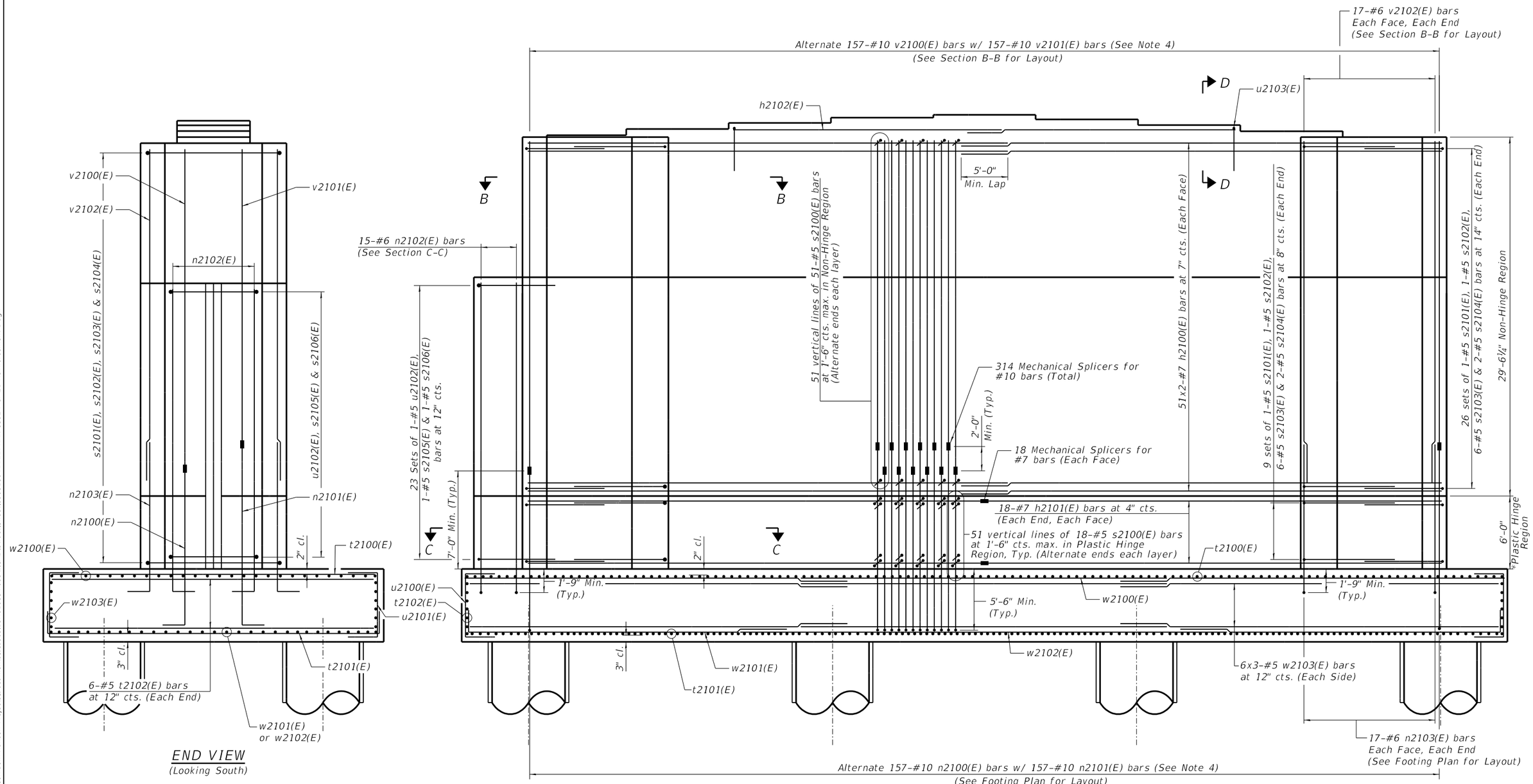
PIER 21 FOOTING PLAN
STRUCTURE NO. 090-0180
SHEET S-415 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR	PEO/TAZ	1361	1324
		CONTRACT NO. 68B46		
	ILLINOIS	FED. AID PROJECT	NHPP-YRP3(905)	

Notes:
1. Adjust bar spacing to miss anchor bolts.
2. Bars indicated thus 57x2-#7 etc. indicates 57 lines of bars with 2 lengths per line.
3. For bar list and Bill of Materials, See Sheet S-418 of 445.
4. v2100(E) bars are spliced with n2100(E) bars
   v2101(E) bars are spliced with n2101(E) bars

MINIMUM BAR LAP

#5 bar = 3'-2"
#6 bar = 3'-10"
#7 bar = 5'-0"



ELEVATION
(Looking East)

END VIEW
(Looking South)

* Splicing of vertical reinforcement will not be allowed in this region.

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HANSON

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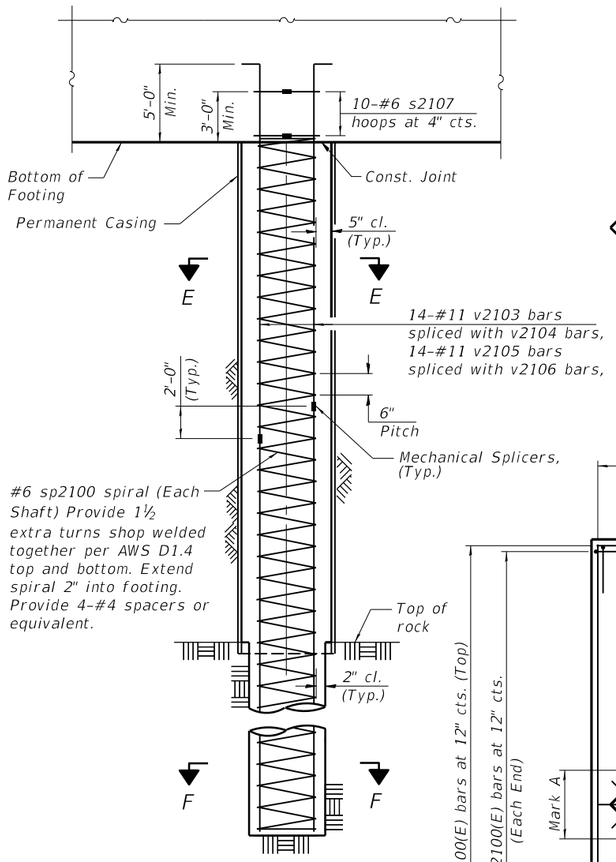
PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 21 REINFORCEMENT, 1 OF 2
STRUCTURE NO. 090-0180
SHEET S-416 OF 445 SHEETS

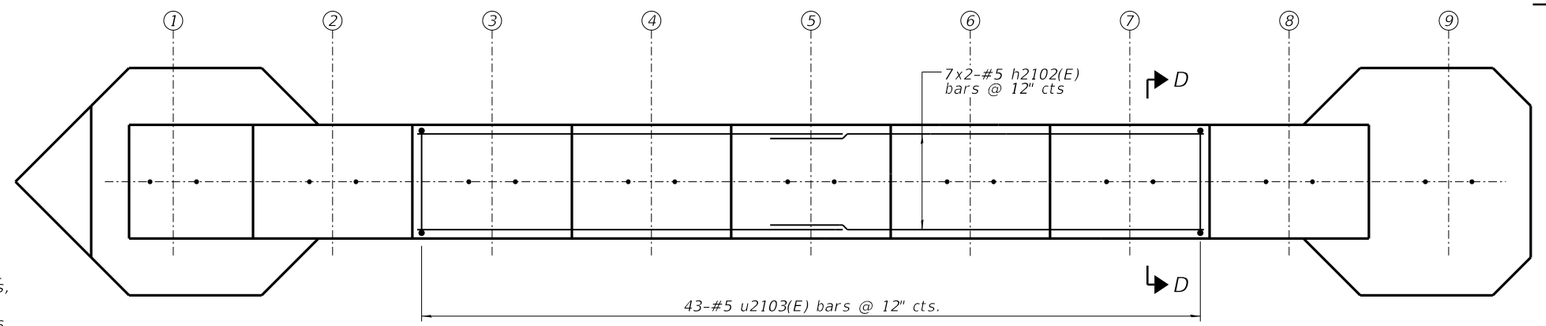
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1325
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			



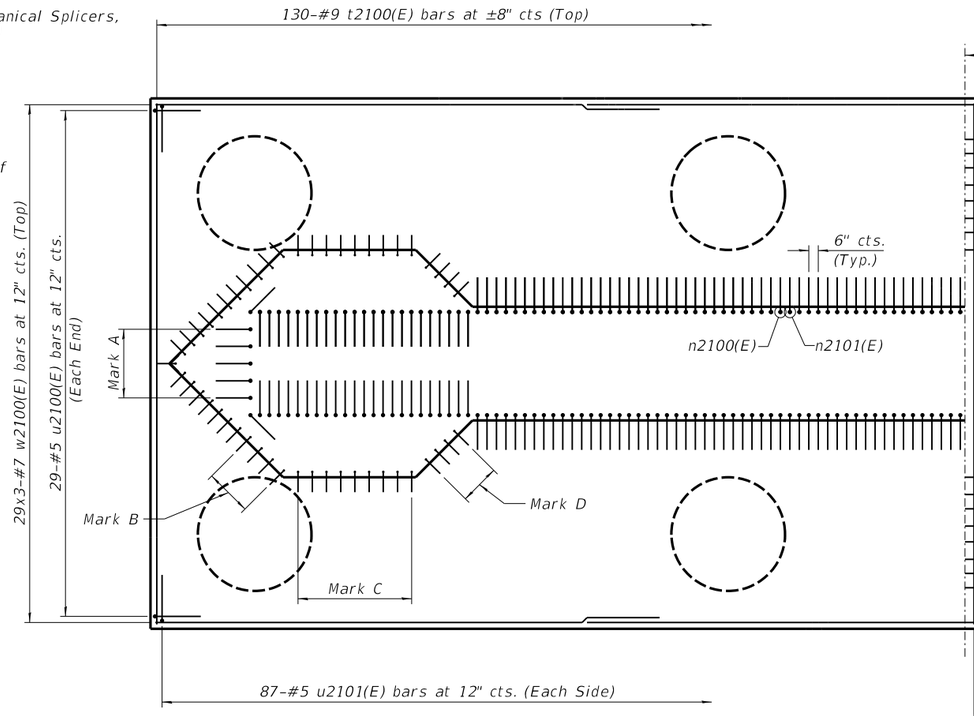
DRILLED SHAFT ELEVATION

MINIMUM BAR LAP

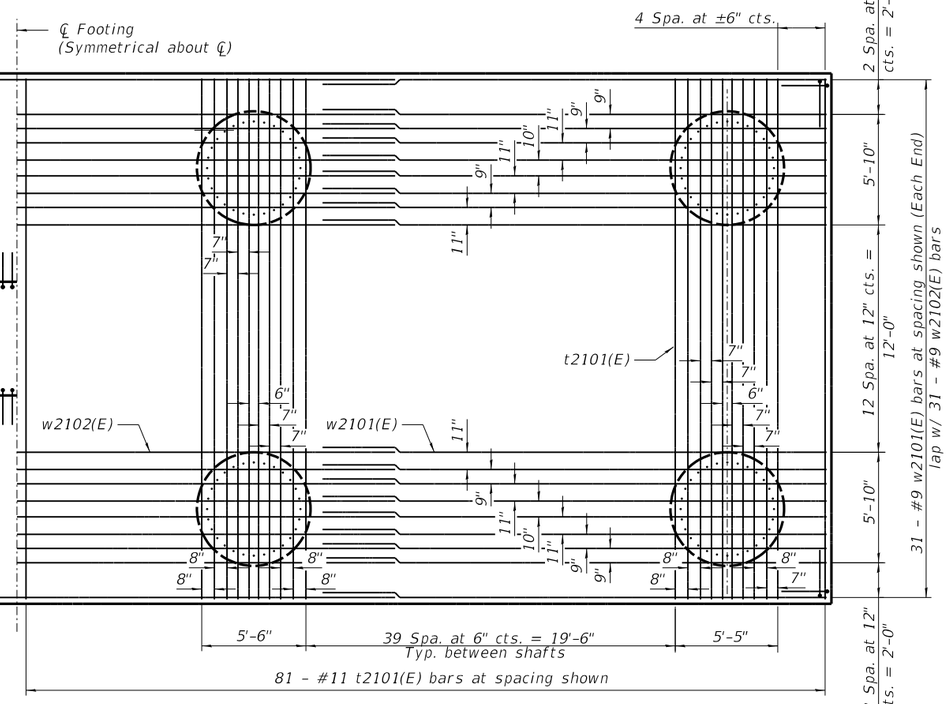
#5 bar = 3'-2"
#7 bar = 5'-0"
#9 bar = 5'-8"
#11 bar = 8'-4"



TOP PLAN



SHOWING TOP REINFORCEMENT



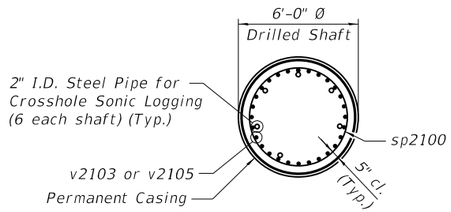
SHOWING BOTTOM REINFORCEMENT

TABLE OF REINFORCEMENT BARS

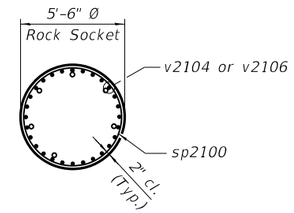
Mark	Reinforcement
A	5-#10 n2100(E) or n2101(E) bars at ±11" cts.
B	4-#6 n2103(E) at ±10" cts. (Typ)
C	9-#6 n2103(E) at 9" cts. (Typ)
D	4-#6 n2103(E) at ±8" cts. (Typ)

FOOTING PLAN

Notes:
1. Adjust bar spacing in bearing seats and top of pier to miss anchor bolts.
2. Bars indicated thus 7x2-#5 etc. indicates 7 lines of bars with 2 lengths per line.
3. For bar list and Bill of Materials, see Sheet S-418 of 445.
4. For anchor bolts and bearing details see Sheet S-283 of 445.



SECTION E-E



SECTION F-F

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PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 21 REINFORCEMENT, 2 OF 2
STRUCTURE NO. 090-0180
SHEET S-417 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR	PEO/TAZ	1361	1326
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			

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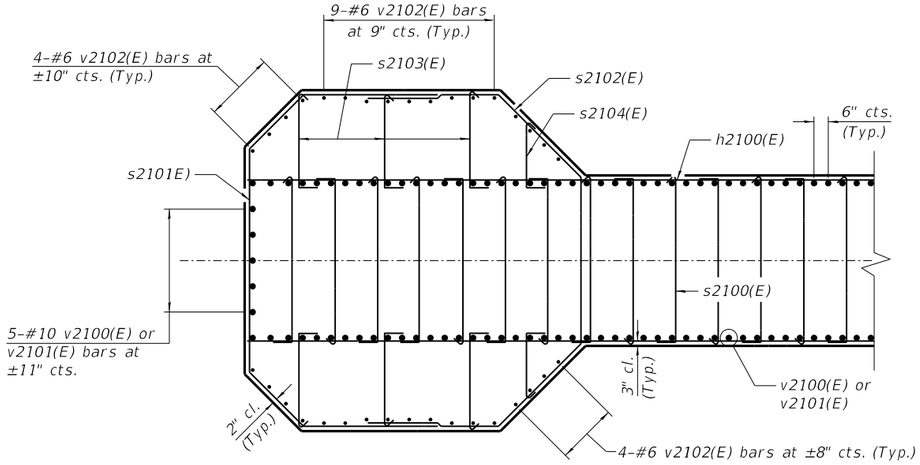
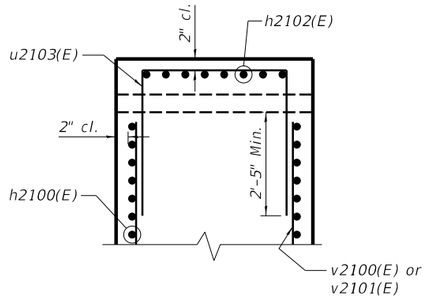


SECTION B-B



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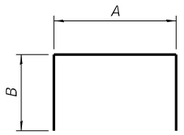
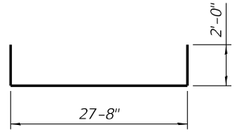


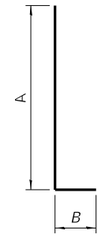
BARS u2100(E), u2101(E) & u2103(E)

DIMENSIONS

Bar	A	B
u2100(E)	5'-4½"	2'-5"
u2101(E)	5'-7"	2'-5"
u2103(E)	5'-6"	2'-9"



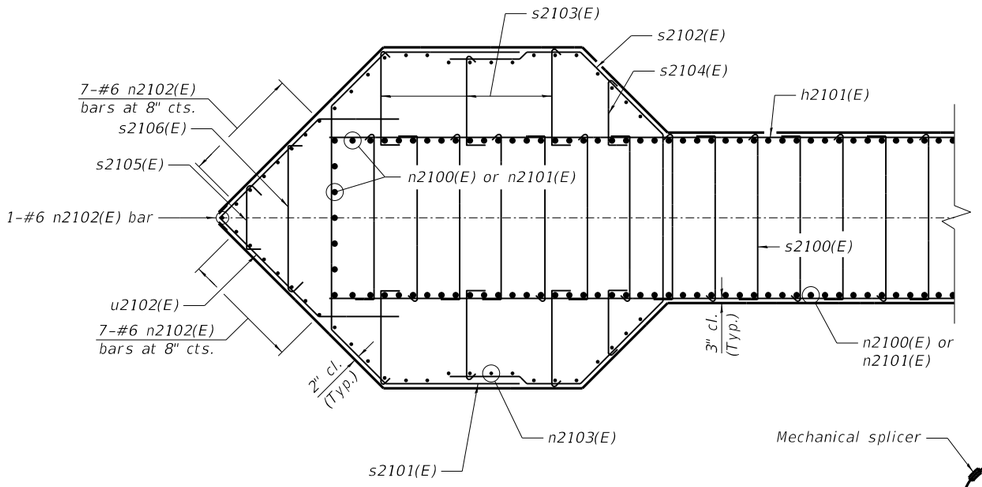
BAR t2101(E)



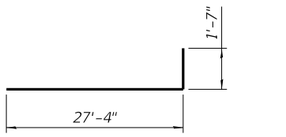
BARS n2100(E), n2101(E), n2102(E), n2103(E), v2103(E) & v2105(E)

DIMENSIONS

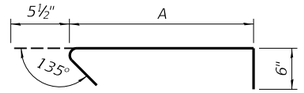
Bar	A	B
n2100(E)	12'-6"	1'-10"
n2101(E)	14'-6"	1'-10"
n2102(E)	24'-3"	1'-0"
n2103(E)	12'-7"	1'-0"
v2103(E)	30'-9"	2'-0"
v2105(E)	32'-9"	2'-0"



SECTION C-C



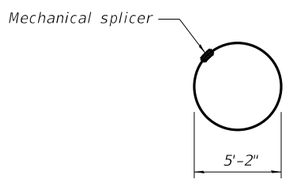
BAR w2101(E)



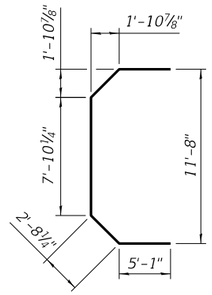
BARS s2100(E), s2103(E), s2104(E), s2105(E) & s2106(E)

A DIMENSIONS

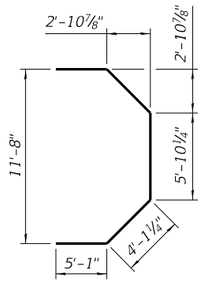
Bar	A
s2100(E)	5'-6"
s2103(E)	3'-2"
s2104(E)	2'-4"
s2105(E)	2'-2"
s2106(E)	5'-2"



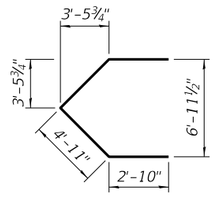
BAR s2107



BAR s2101(E)



BAR s2102(E)



BAR u2102(E)

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h2100(E)	204	#7	40'-6"	
*	h2101(E)	72	#7	37'-10	
	h2102(E)	14	#5	22'-7"	
*	n2100(E)	157	#10	14'-4"	
*	n2101(E)	157	#10	16'-4"	
	n2102(E)	15	#6	25'-3"	
	n2103(E)	68	#6	13'-7"	
	s2100(E)	3519	#5	6'-6"	
	s2101(E)	70	#5	23'-5"	
	s2102(E)	70	#5	24'-3"	
	s2103(E)	420	#5	4'-2"	
	s2104(E)	140	#5	3'-4"	
	s2105(E)	23	#5	3'-2"	
	s2106(E)	23	#5	6'-2"	
*	s2107	80	#6	16'-3"	
	t2100(E)	130	#9	27-8"	
	t2101(E)	162	#11	31'-8"	
	t2102(E)	12	#5	27'-8"	
	u2100(E)	58	#5	10'-3"	
	u2101(E)	174	#5	10'-5"	
	u2102(E)	23	#5	15'-6"	
	u2103(E)	43	#5	11'-0"	
*	v2100(E)	157	#10	28'-5"	
*	v2101(E)	157	#10	26'-5"	
	v2102(E)	68	#6	28'-6"	
*	v2103	112	#11	32'-9"	
*	v2104	112	#11	32'-3"	
*	v2105	112	#11	34'-9"	
*	v2106	112	#11	30'-3"	
	w2100(E)	87	#7	32'-0"	
	w2101(E)	62	#9	28'-11"	
	w2102(E)	31	#9	47'-8"	
	w2103(E)	36	#5	30'-9"	
**	sp2100	8	#6	58'-2"	

Cofferdam Excavation	Cu. Yd.	1707
Cofferdam (Type 2) (Location 21)	Each	1
Concrete Structures	Cu. Yd.	1309.3
Seal Coat Concrete	Cu. Yd.	960
Reinforcement Bars	Pound	104510
Reinforcement Bars, Epoxy Coated	Pound	176460
Permanent Casing	Foot	354
Drilled Shaft in Soil	Cu. Yd.	362
Drilled Shaft in Rock	Cu. Yd.	106
Crosshole Sonic Logging Access Ducts	Foot	2794
Crosshole Sonic Logging Testing	Each	1

* Actual bar segment lengths of mechanically spliced bars shall be determined by contractor for ease of install. When a mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacturers recommendations for installation and ease of construction, while meeting all requirements specified in the plans.

Maximum lap for spirals = 3'-0"

** Length is height of spiral

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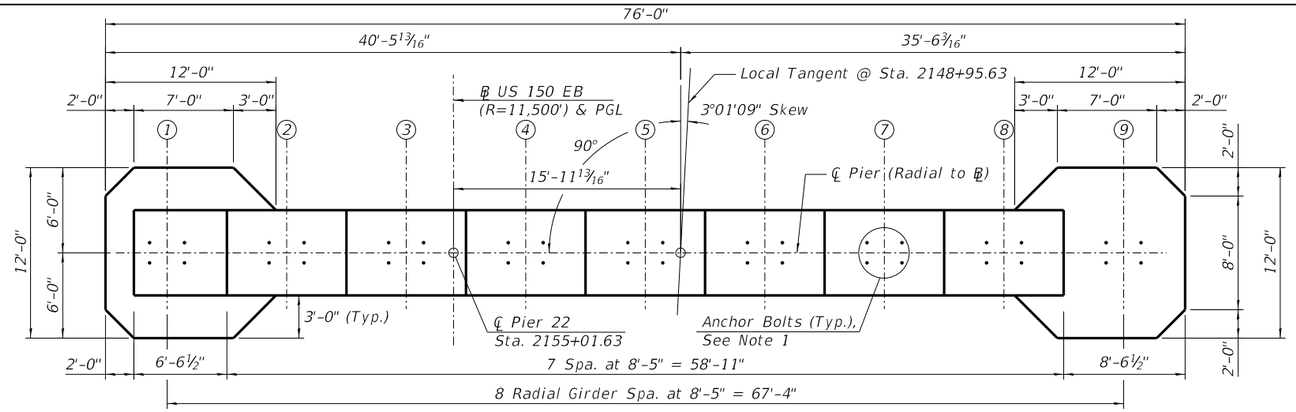
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 21 DETAILS, BAR LIST AND BILL OF MATERIAL
STRUCTURE NO. 090-0180

SHEET S-418 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1327
		CONTRACT NO. 68B46		
		ILLINOIS FED. AID PROJECT	NHPP-YRP3(905)	

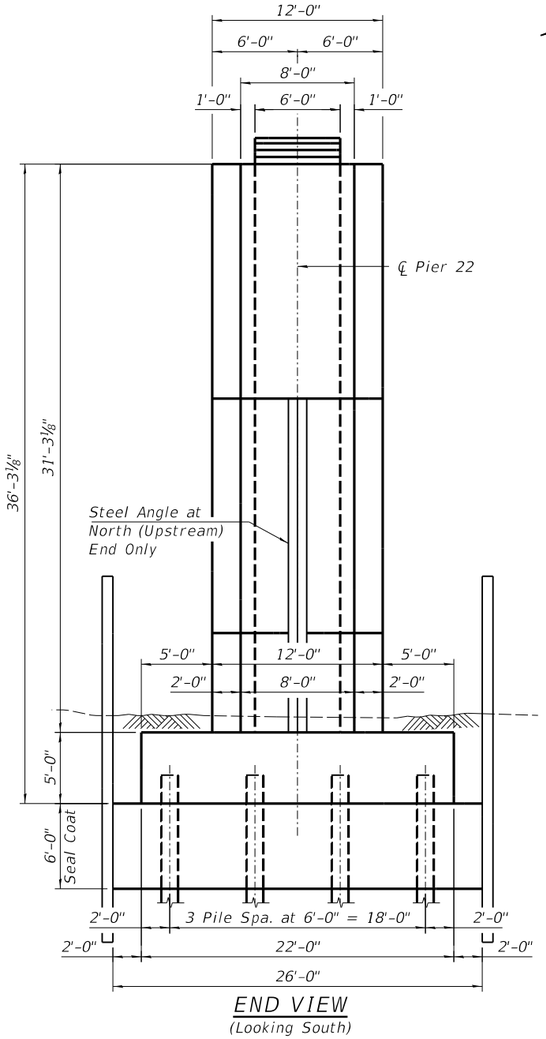
Notes:
1. For anchor bolt details, see Bearing Details Drawing. For anchor bolt layout, see Sheet S-420 of 445.
2. EWSE denotes Estimated Water Surface Elevation. HWE denotes High Water Elevation. CDWE denotes Cofferdam Design Water Elevation.
3. See Sheet S-420 of 445 for Section A-A.
4. Cast steps monolithic with wall.



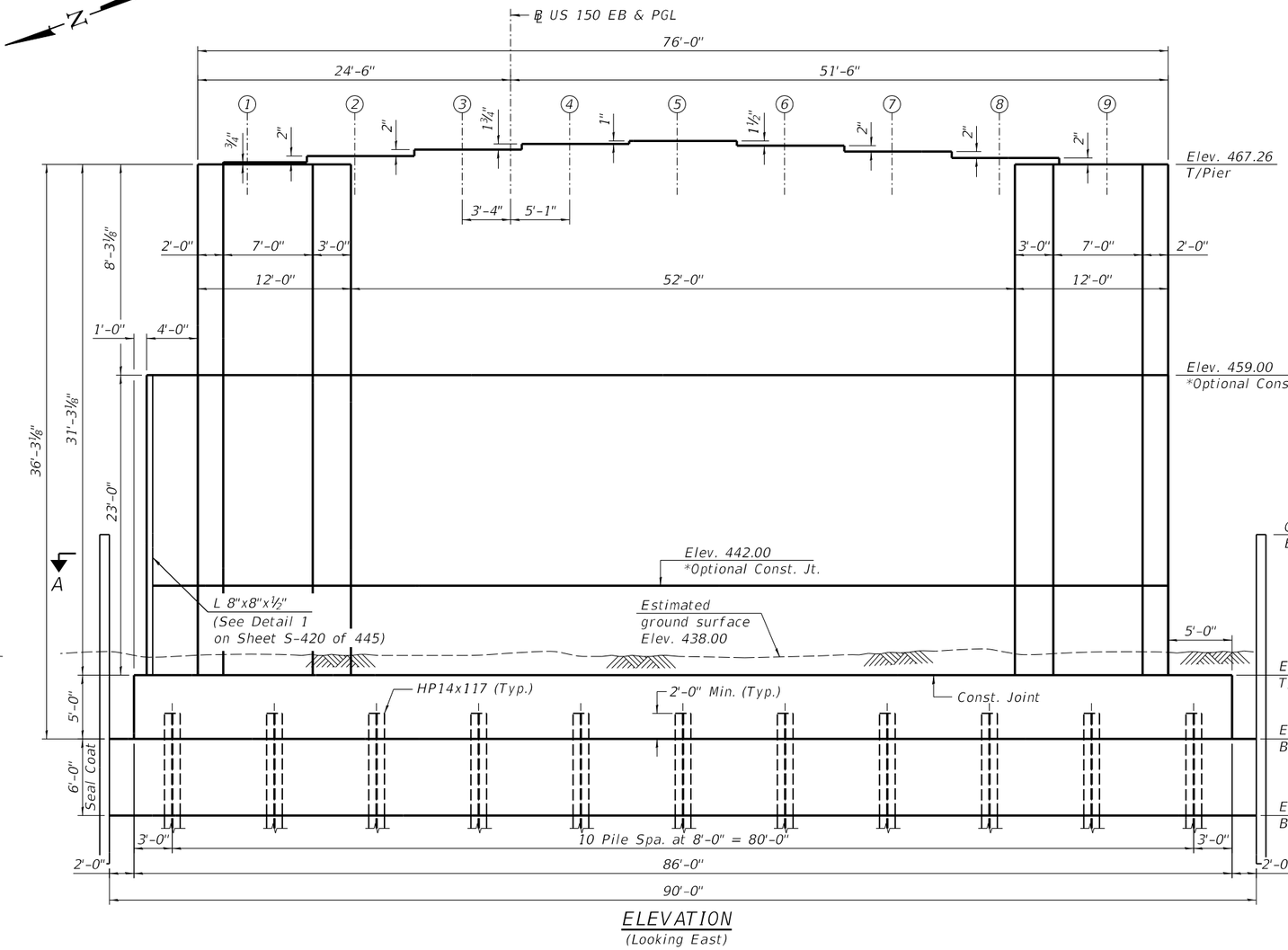
TOP PLAN

BEARING SEAT ELEVATIONS

Girder	Elevation
1	467.32
2	467.49
3	467.66
4	467.80
5	467.88
6	467.76
7	467.60
8	467.43
9	467.26



END VIEW
(Looking South)



ELEVATION
(Looking East)

* See Sheet S-420 of 445 for Construction Joint Detail.

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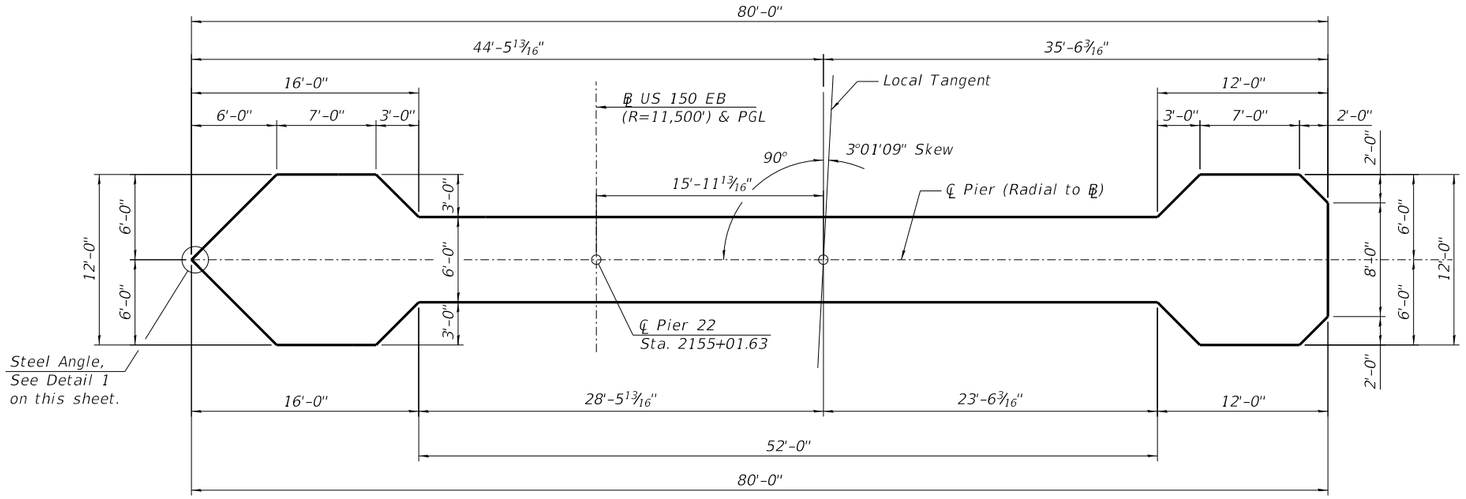
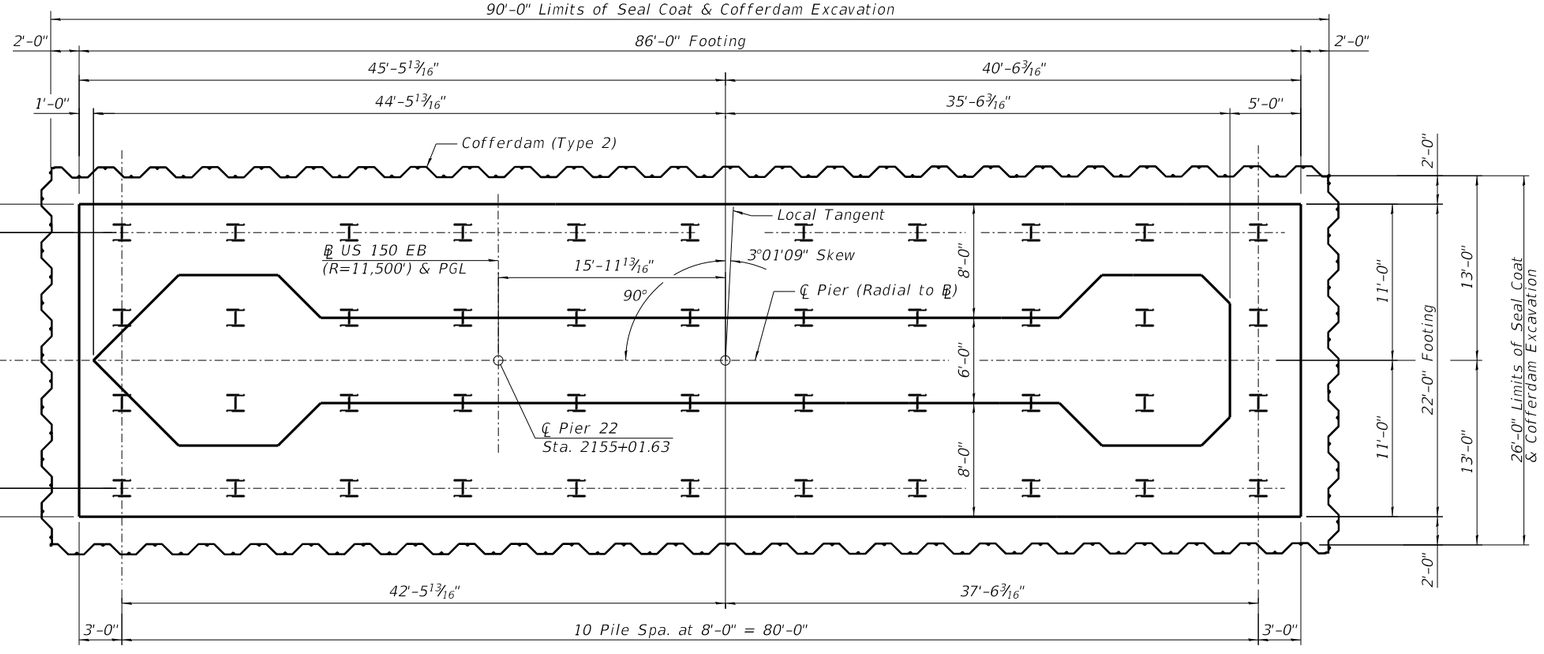
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 22 PLAN AND ELEVATION
STRUCTURE NO. 090-0180
SHEET S-419 OF 445 SHEETS

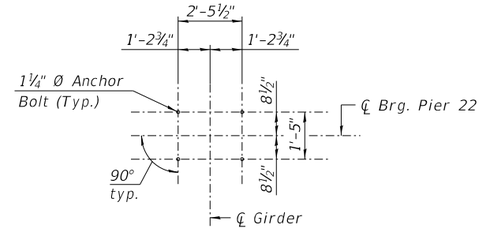
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR	PEO/TAZ	1361	1328
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			



SECTION A-A



FOOTING PLAN



ANCHOR BOLT LAYOUT

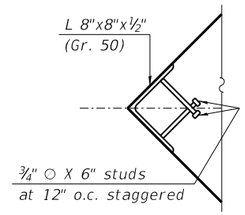
(Layout at Girders 1 thru 9)

VESSEL COLLISION FORCE

FOR EXTREME EVENT II LOAD COMBINATION

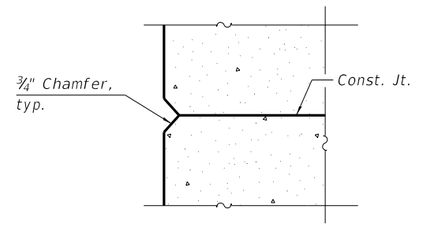
	100 Yr. Water Level	
	Case 1	Case 2
Static Load	620 kips	310 kips
Elevation	470.79	470.79
Direction	Parallel	Perpendicular

Note: Direction is with respect to Illinois River Flow.



Note: The angle with studs shall be galvanized according to AASHTO M 111, and cost shall be included with Furnishing and Erecting Structural Steel.

DETAIL 1



CONSTRUCTION JOINT

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

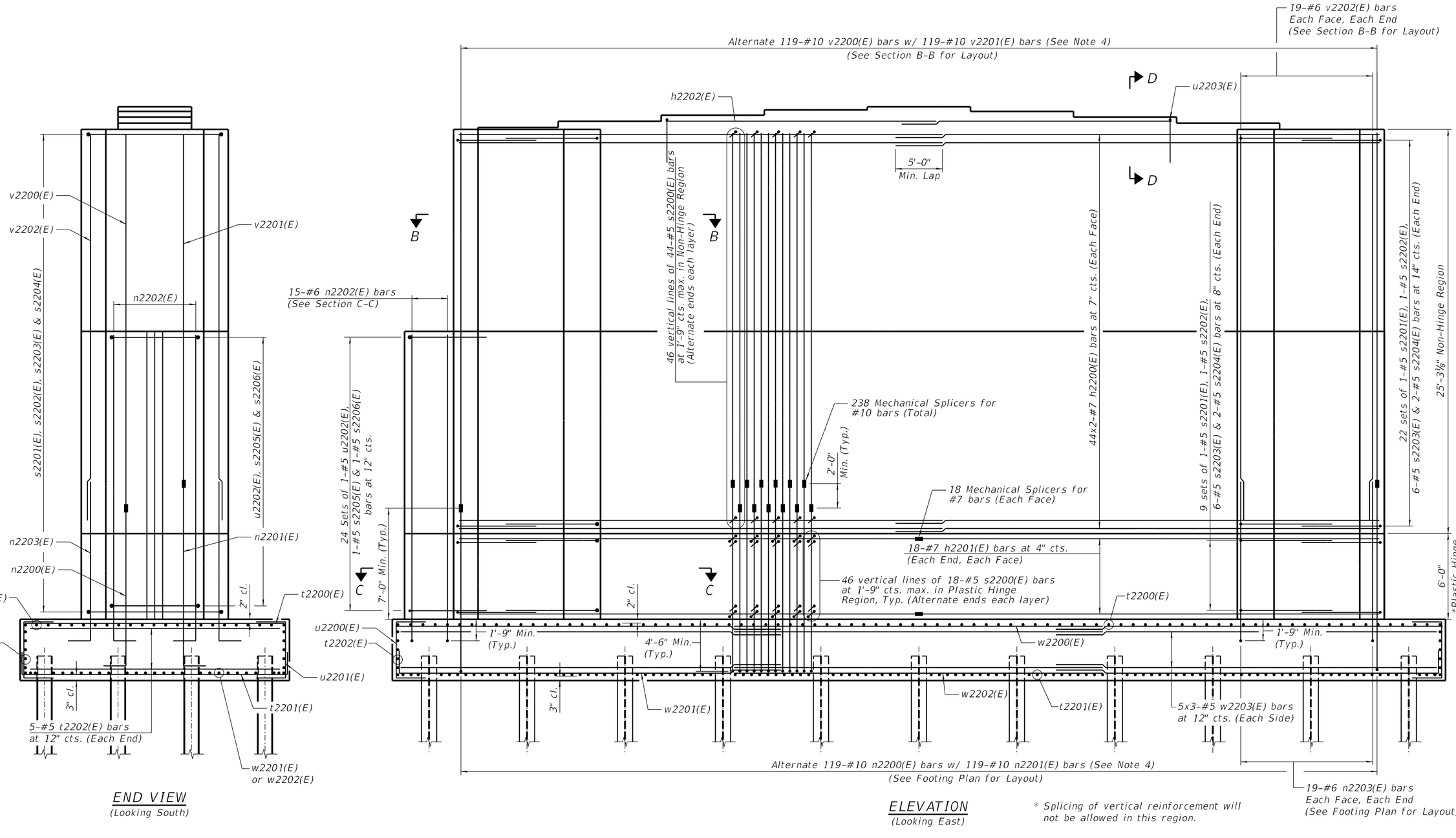
PIER 22 FOOTING PLAN
STRUCTURE NO. 090-0180
SHEET S-420 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1329
		CONTRACT NO. 68B46		
		ILLINOIS	FED. AID PROJECT	NHPP-YRP3(905)

Notes:
1. Adjust bar spacing to miss anchor bolts.
2. Bars indicated thus 44x2-#7 etc. indicates 44 lines of bars with 2 lengths per line.
3. For bar list and Bill of Materials, See Sheet S-423 of 445.
4. v2200(E) bars are slpiced with n2200(E) bars
   v2201(E) bars are slpiced with n2201(E) bars

MINIMUM BAR LAP

#5 bar = 3'-2"
#6 bar = 3'-10"
#7 bar = 5'-0"



END VIEW
(Looking South)

ELEVATION
(Looking East)

* Splicing of vertical reinforcement will not be allowed in this region.

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	PLOT SCALE = 0:2.0000 ':" / in.	DRAWN - CGP	REVISED -		
	PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -		

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1330
		CONTRACT NO. 68B46		
	ILLINOIS	FED. AID PROJECT	NHPP-YRP3(905)	

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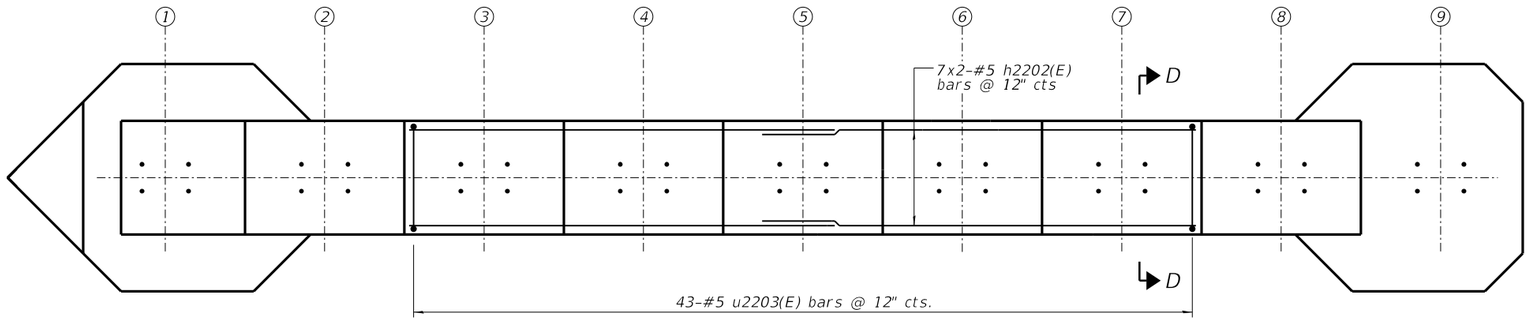
Notes:

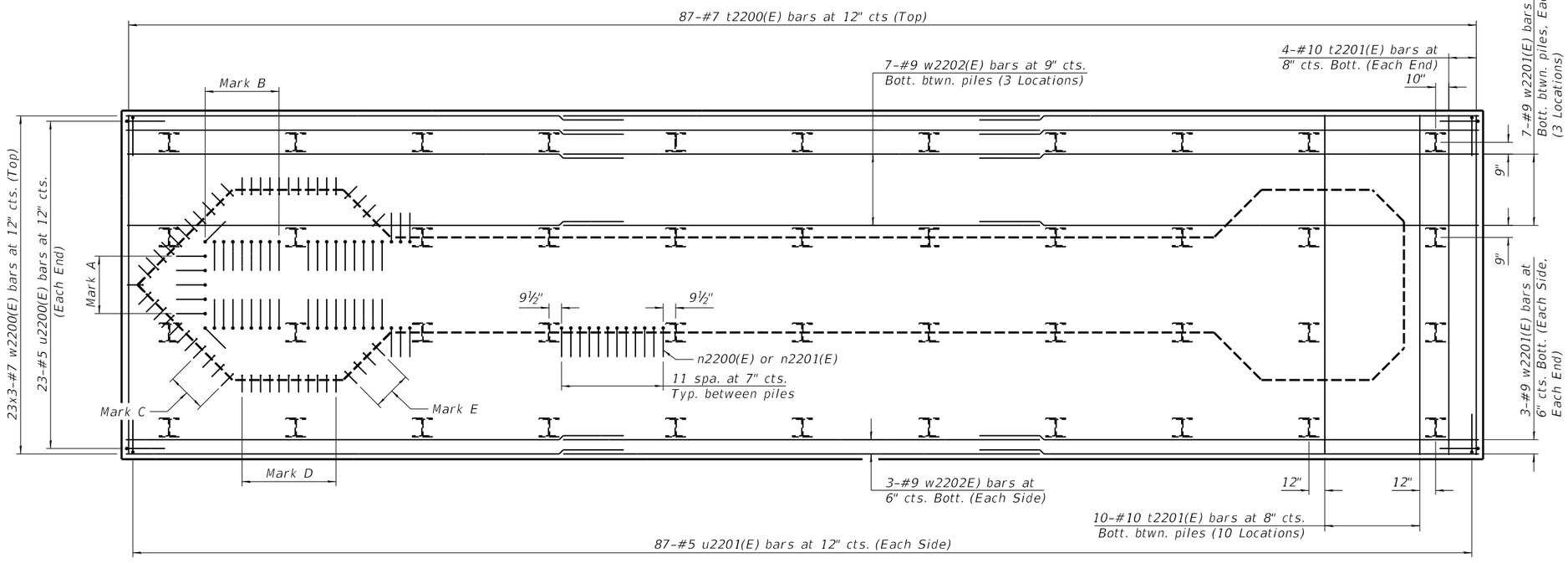
1. Adjust bar spacing in bearing seats and top of pier to miss anchor bolts.
2. Bars indicated thus 7X2-#5 etc. indicates 7 lines of bars with 2 lenghts per line.
3. For bar list and Bill of Materials, see Sheet S-423 of 445.
4. For anchor bolts and bearing details see Sheets S-281 & S-282 of 445.
5. Turn leg of "n" bars as required to miss piles.

MINIMUM BAR LAP

#5 bar = 3'-2"
#7 bar = 5'-0"
#9 bar = 5'-8"



TOP PLAN



FOOTING PLAN

TABLE OF REINFORCEMENT BARS

Mark	Reinforcement
A	5-#10 n2200(E) or n2201(E) bars at ±11" cts.
B	9-#10 n2200(E) or n2201(E) bars at 7" cts. (Typ)
C	4-#6 n2203(E) at ±10" cts. (Typ)
D	11-#6 n2203(E) at 7" cts. (Typ)
E	4-#6 n2203(E) at ±10" cts. (Typ)

PILE DATA

Type:	HP14x117
Nominal Required Bearing:	929 kips
Factored Resistance Avalible:	511 kips
Est. Length:	58 Feet
No. Production Piles:	43
No. Test Piles:	1

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 22 REINFORCEMENT, 2 OF 2
STRUCTURE NO. 090-0180
SHEET S-422 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1331
		CONTRACT NO. 68B46		
	ILLINOIS	FED. AID PROJECT	NHPP-YRP3(905)	

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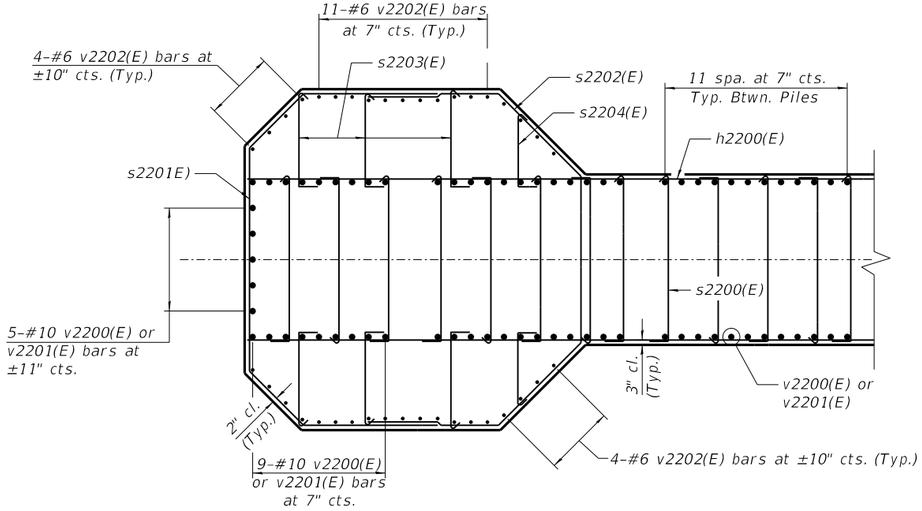
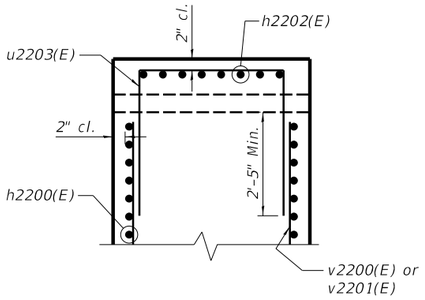
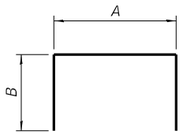


SECTION B-B



SECTION D-D



DIMENSIONS

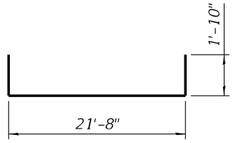
Bar	A	B
u2200(E)	4'-5"	2'-5"
u2201(E)	4'-7"	2'-5"
u2203(E)	5'-6"	2'-9"

BARS u2200(E), u2201(E) & u2203(E)

DIMENSIONS

Bar	A	B
n2200(E)	11'-6"	1'-10"
n2201(E)	13'-6"	1'-10"
n2202(E)	24'-9"	1'-0"
n2203(E)	12'-7"	1'-0"

BARS n2200(E), n2201(E), n2202(E) & n2203(E)

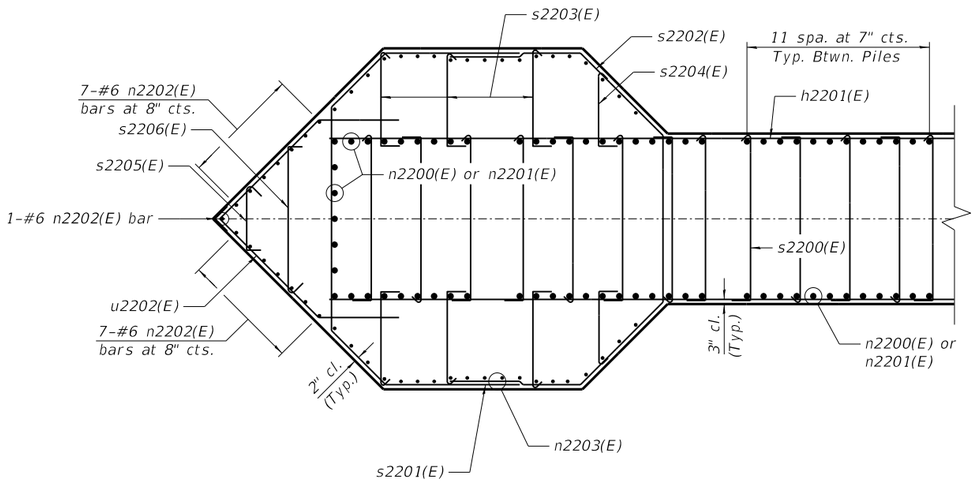


BAR t2201(E)

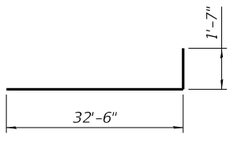
BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h2200(E)	176	#7	40'-6"	
*	h2201(E)	72	#7	37'-10"	
	h2202(E)	14	#5	22'-7"	
*	n2200(E)	119	#10	13'-4"	
*	n2201(E)	119	#10	15'-4"	
	n2202(E)	15	#6	25'-9"	
	n2203(E)	76	#6	13'-7"	
	s2200(E)	2852	#5	6'-6"	
	s2201(E)	62	#5	23'-5"	
	s2002(E)	62	#5	24'-3"	
	s2203(E)	372	#5	4'-2"	
	s2204(E)	124	#5	3'-4"	
	s2205(E)	24	#5	3'-2"	
	s2206(E)	24	#5	6'-2"	
	t2200(E)	87	#7	21'-8"	
	t2201(E)	108	#10	25'-4"	
	t2202(E)	10	#5	21'-8"	
	u2200(E)	46	#5	9'-3"	
	u2201(E)	174	#5	9'-5"	
	u2202(E)	24	#5	15'-6"	
	u2203(E)	43	#5	11'-0"	
*	v2200(E)	119	#10	24'-1"	
*	v2201(E)	119	#10	22'-1"	
	v2202(E)	76	#6	24'-3"	
	w2200(E)	69	#7	32'-0"	
	w2201(E)	54	#9	34'-1"	
	w2202(E)	27	#9	32'-6"	
	w2203(E)	30	#5	30'-9"	
	Cofferdam Excavation			Cu. Yd.	1127
	Cofferdam (Type 2) (Location 22)			Each	1
	Concrete Structures			Cu. Yd.	1033.9
	Seal Coat Concrete			Cu. Yd.	520
	Reinforcement Bars, Epoxy Coated			Pound	121990
	Furnishing Steel Piles HP14x117			Foot	2494
	Driving Piles			Foot	2494
	Test Pile Steel HP14x117			Each	1

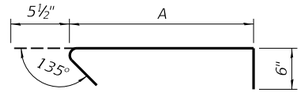
* Actual bar segment lengths of mechanically spliced bars shall be determined by contractor for ease of install. When a mechanical bar splice is used, the actual bar segment length will be determined by the contractor to accommodate manufacturers recommendations for installation and ease of construction, while meeting all requirements specified in the plans.



SECTION C-C



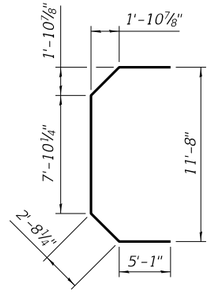
BAR w2201(E)



A DIMENSIONS

Bar	A
s2200(E)	5'-6"
s2203(E)	3'-2"
s2204(E)	2'-4"
s2205(E)	2'-2"
s2206(E)	5'-2"

BARS s2200(E), s2203(E), s2204(E), s2205(E) & s2206(E)



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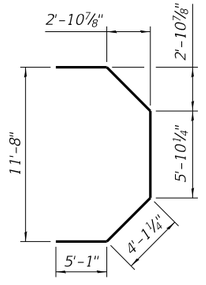
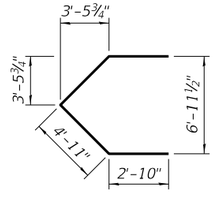


BAR s2202(E)



BAR u2202(E)

HANSON

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	CHECKED - EWN	REVISED -	
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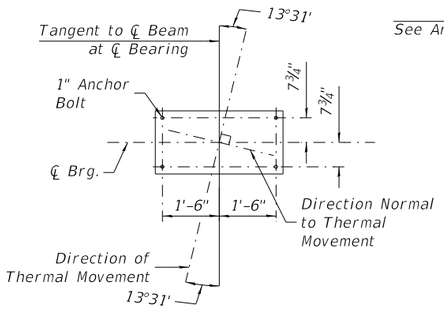
PLOT DATE = 12/11/2018	CHECKED - JGT	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

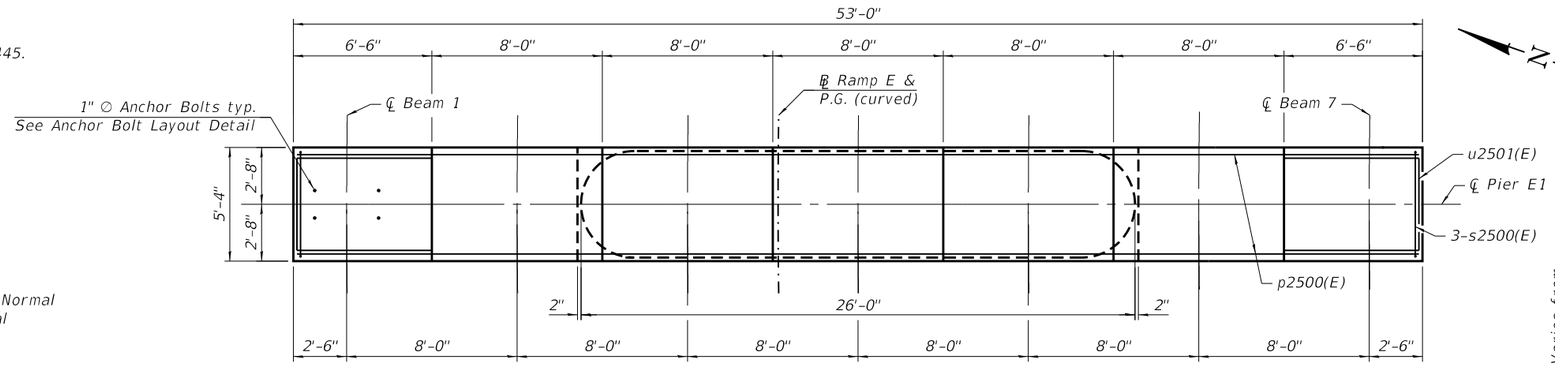
PIER 22 DETAILS, BAR LIST AND BILL OF MATERIAL
STRUCTURE NO. 090-0180
SHEET S-423 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR	PEO/TAZ	1361	1332
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			

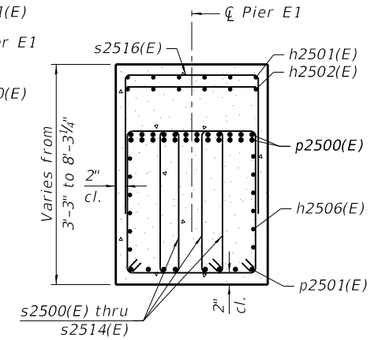
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet S-430 of 445.
For details of Mechanical Splices, see sheet S-434 of 445.



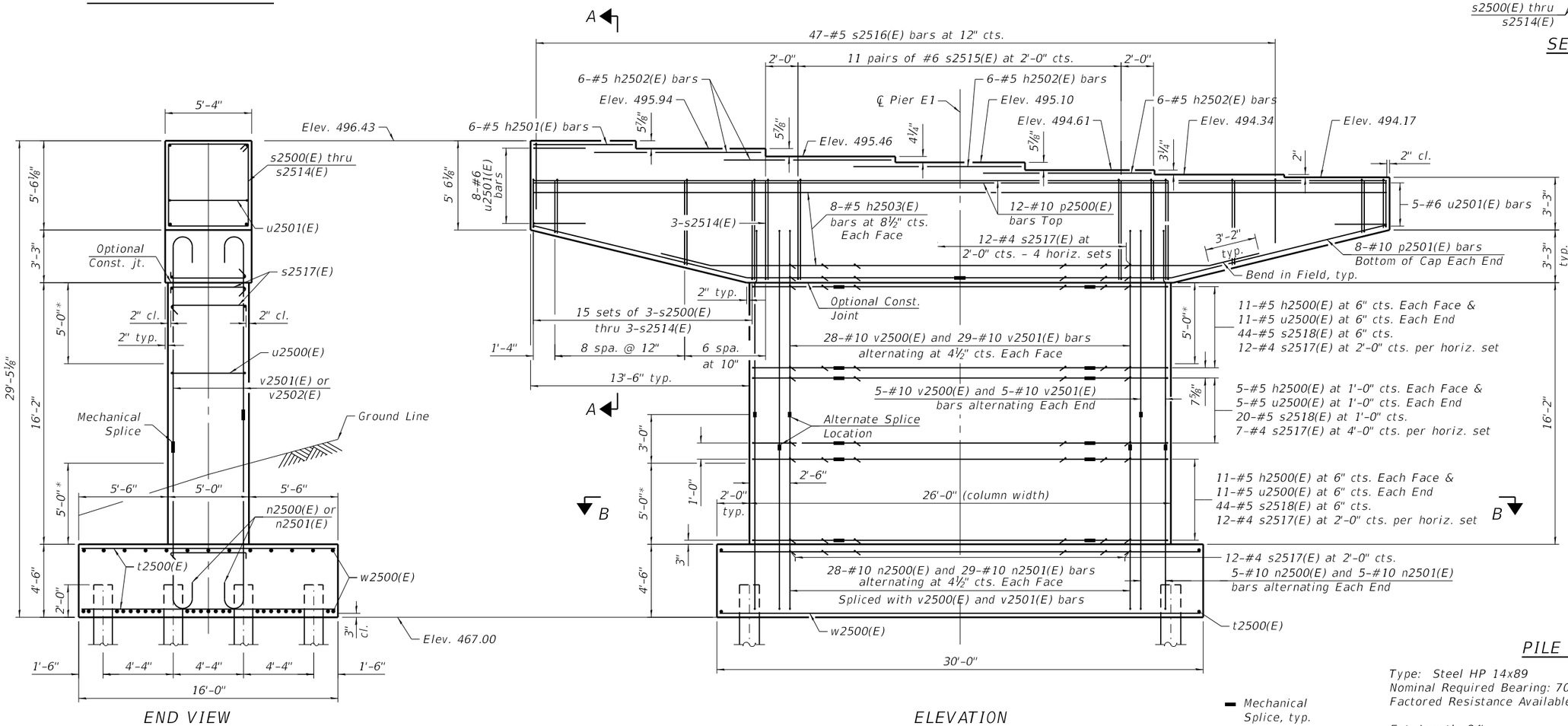
ANCHOR BOLT LAYOUT



TOP PLAN



SECTION A-A



END VIEW

ELEVATION
(Looking Ahead)
* Limits of plastic hinge region. No lap splices allowed.

▬ Mechanical Splice, typ.

PILE DATA

Type: Steel HP 14x89
Nominal Required Bearing: 705 kip
Factored Resistance Available: 388 kip (Strength),
705 kip (Extreme Event I)
Est. Length: 84'
No. Production Piles: 27
No. Test Piles: 1

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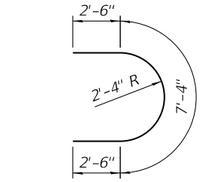
EFK • Moen, LLC Civil Engineering Design	USER NAME = ABenz	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE = 0:2 ':" / in.	DRAWN -	REVISED -
	PLOT DATE = 12/11/2018	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

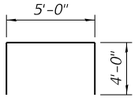
PIER E1
STRUCTURE NO. 090-0180
SHEET S-424 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1333
		CONTRACT NO. 68B46		
		ILLINOIS FED. AID PROJECT NHPP-YRP3(905)		

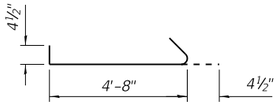
12/11/2018 1:01:12 PM



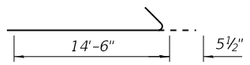
BAR u2500(E)



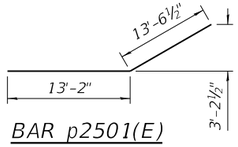
BAR s2516(E)



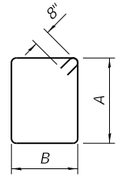
BAR s2517(E)



BAR s2518(E)

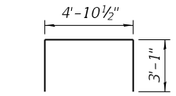


BAR p2501(E)

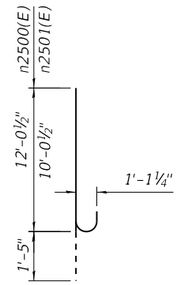


BARS s2500(E) – s2515(E)
A & B DIMENSIONS

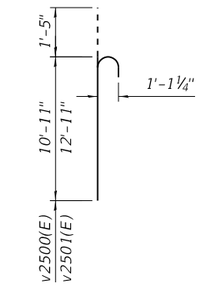
Bar	A	B
s2500(E)	2'-11½"	2'-3"
s2501(E)	3'-3⅜"	2'-3"
s2502(E)	3'-6¼"	2'-3"
s2503(E)	3'-9⅛"	2'-3"
s2504(E)	4'-0"	2'-3"
s2505(E)	4'-2⅞"	2'-3"
s2506(E)	4'-5¾"	2'-3"
s2507(E)	4'-8¾"	2'-3"
s2508(E)	4'-11⅝"	2'-3"
s2509(E)	5'-2½"	2'-3"
s2510(E)	5'-4⅞"	2'-3"
s2511(E)	5'-7¼"	2'-3"
s2512(E)	5'-9¾"	2'-3"
s2513(E)	6'-0⅛"	2'-3"
s2514(E)	6'-2"	2'-3"
s2515(E)	6'-2"	3'-6"



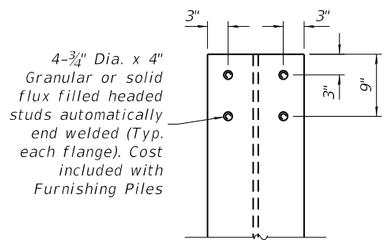
BAR u2501(E)



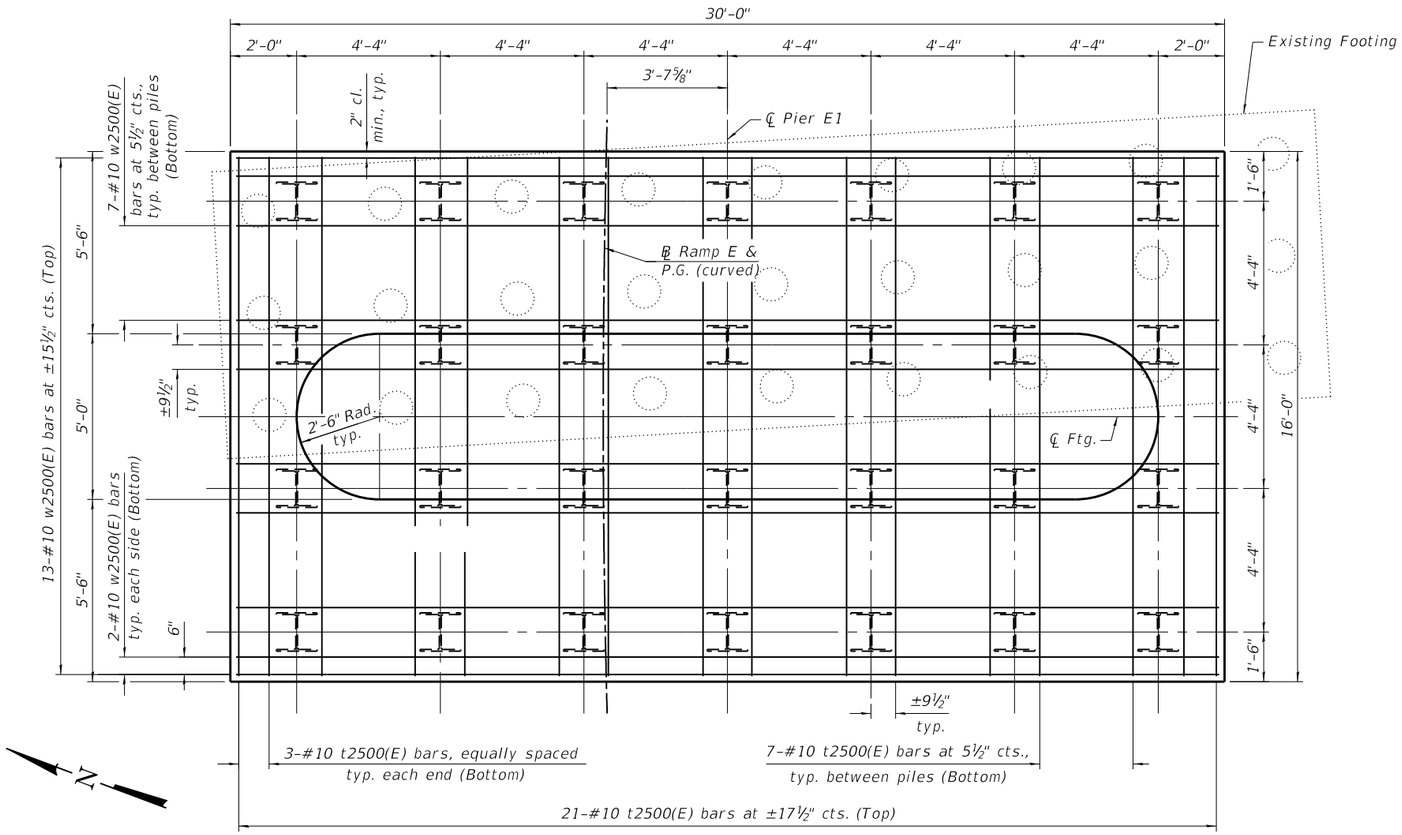
BAR n2500(E)
& n2501(E)



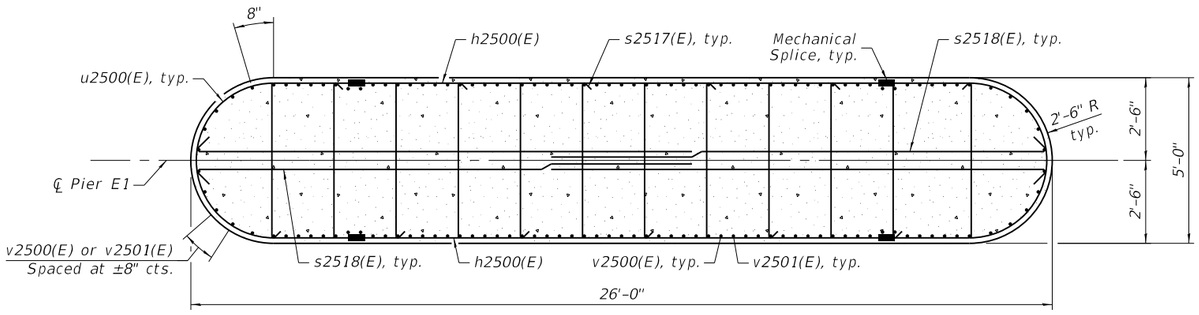
BAR v2500(E)
& v2501(E)



END OF PILE DETAIL



FOOTING PLAN



SECTION B-B

PIER E1
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h2500(E)	54	#5	16'-0"	
h2501(E)	6	#5	6'-2"	
h2502(E)	24	#5	10'-5"	
h2503(E)	16	#5	52'-8"	
n2500(E)	67	#10	13'-6"	
n2501(E)	67	#10	11'-6"	
p2500(E)	24	#10	52'-8"	
p2501(E)	16	#10	26'-9"	
s2500(E)	6	#6	11'-9"	
s2501(E)	6	#6	12'-5"	
s2502(E)	6	#6	12'-11"	
s2503(E)	6	#6	13'-4"	
s2504(E)	6	#6	13'-10"	
s2505(E)	6	#6	14'-4"	
s2506(E)	6	#6	14'-10"	
s2507(E)	6	#6	15'-4"	
s2508(E)	6	#6	15'-9"	
s2509(E)	6	#6	16'-2"	
s2510(E)	6	#6	16'-8"	
s2511(E)	6	#6	17'-1"	
s2512(E)	6	#6	17'-6"	
s2513(E)	6	#6	17'-10"	
s2514(E)	12	#6	18'-2"	
s2515(E)	22	#6	20'-8"	
s2516(E)	47	#5	13'-0"	
s2517(E)	359	#4	5'-5"	
s2518(E)	108	#5	15'-0"	
t2500(E)	69	#10	15'-8"	
u2500(E)	54	#5	12'-4"	
u2501(E)	13	#6	11'-1"	
v2500(E)	67	#10	12'-4"	
v2501(E)	67	#10	14-4"	
w2500(E)	38	#10	29'-8"	

Structure Excavation	Cu. Yd.	309
Concrete Structures	Cu. Yd.	224.2
Reinforcement Bars, Epoxy Coated	Pound	41,190
Furnishing Steel Piles HP14x89	Foot	2,268
Driving Piles	Foot	2,268
Test Pile HP14x89	Each	1

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EFK • Moen, LLC
Civil Engineering Design

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	CHECKED -	REVISED -	
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PLOT DATE = 12/11/2018	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

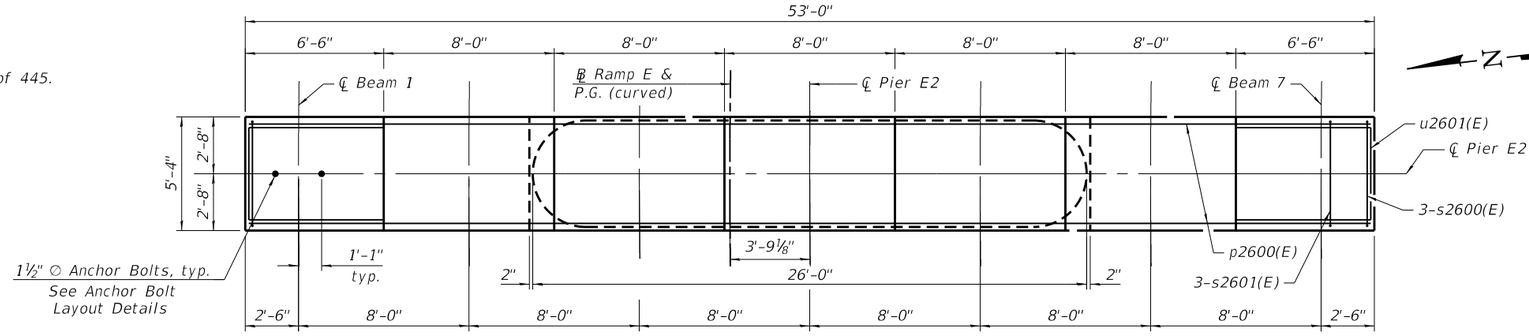
PIER E1 DETAILS
STRUCTURE NO. 090-0180
SHEET S-425 OF 445 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1334
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			

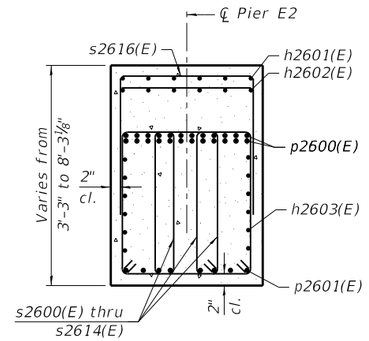
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet S-430 of 445.
For details of Mechanical Splices, see sheet S-434 of 445.

PILE DATA

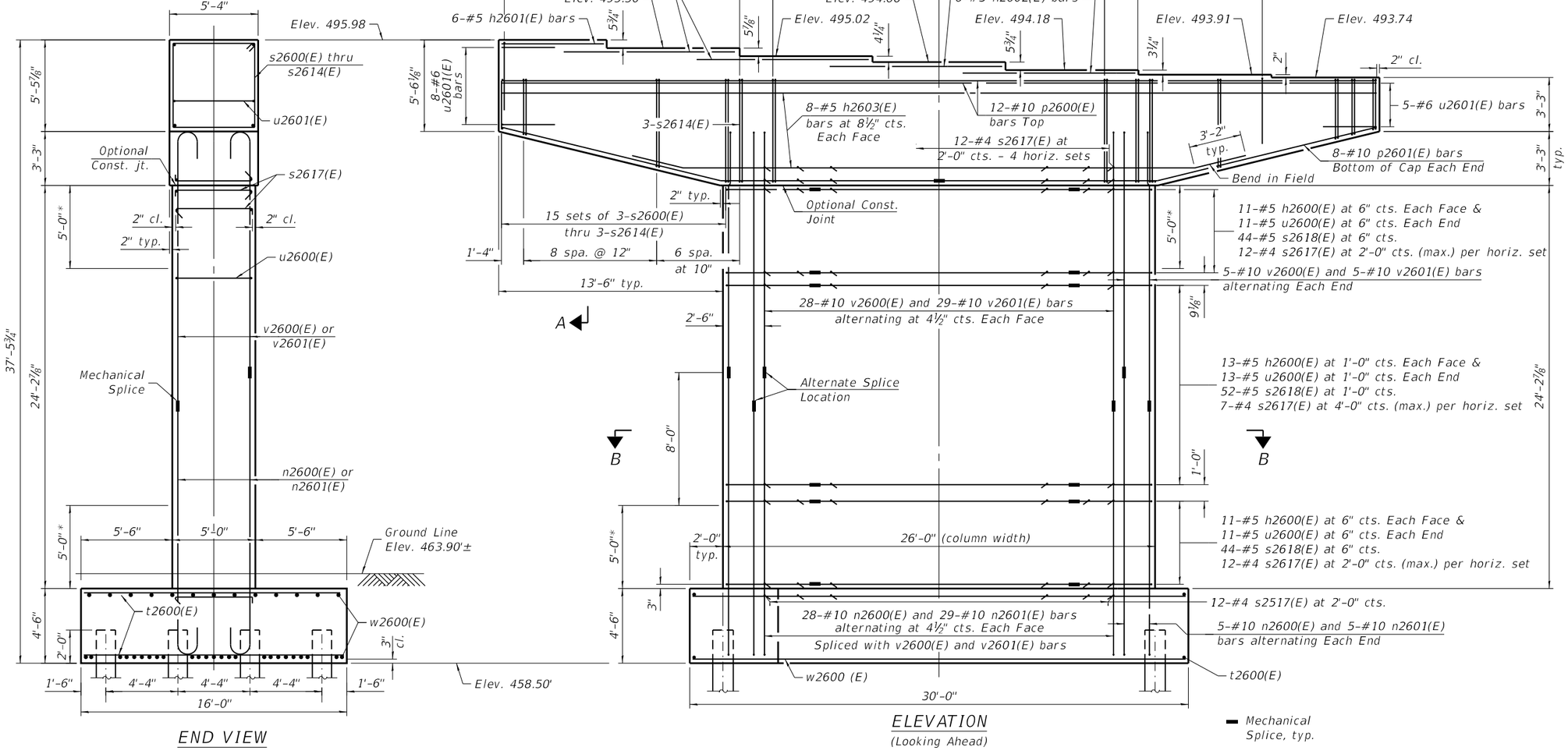
Type: Steel Piles - HP 14x89
Nominal Required Bearing: 705 kip
Factored Resistance Available: 388 kip (Strength),
705 kip (Extreme Event I)
Est. Length: 69'
No. Production Piles: 27
No. Test Piles: 1



TOP PLAN



SECTION A-A



END VIEW

ELEVATION
(Looking Ahead)

Mechanical Splice, typ.

* Limits of plastic hinge region. No lap splices allowed.

P-10 2-17-2017

EFK Moen, LLC Civil Engineering Design	USER NAME = ABenz	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PIER E2 STRUCTURE NO. 090-0180	F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED -	REVISED -			317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1335
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	PLOT DATE = 12/11/2018	CHECKED -	REVISED -		SHEET S-426 OF 445 SHEETS		ILLINOIS	FED. AID PROJECT	NHPP-YRP3(905)	

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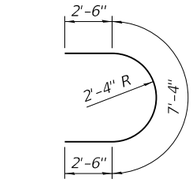
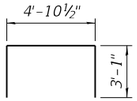
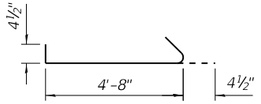


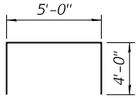
BAR u2600(E)



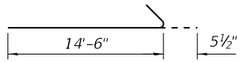
BAR u2601(E)



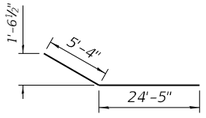
BAR s2617(E)



BAR s2616(E)



BAR s2618(E)



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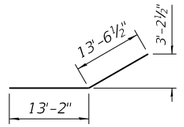
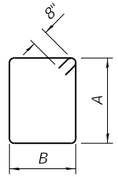
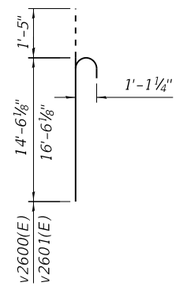


BAR p2601(E)

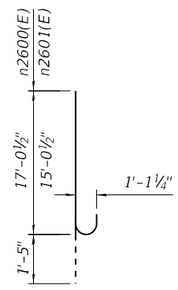


BARS s2600(E) – s2615(E)
A & B DIMENSIONS

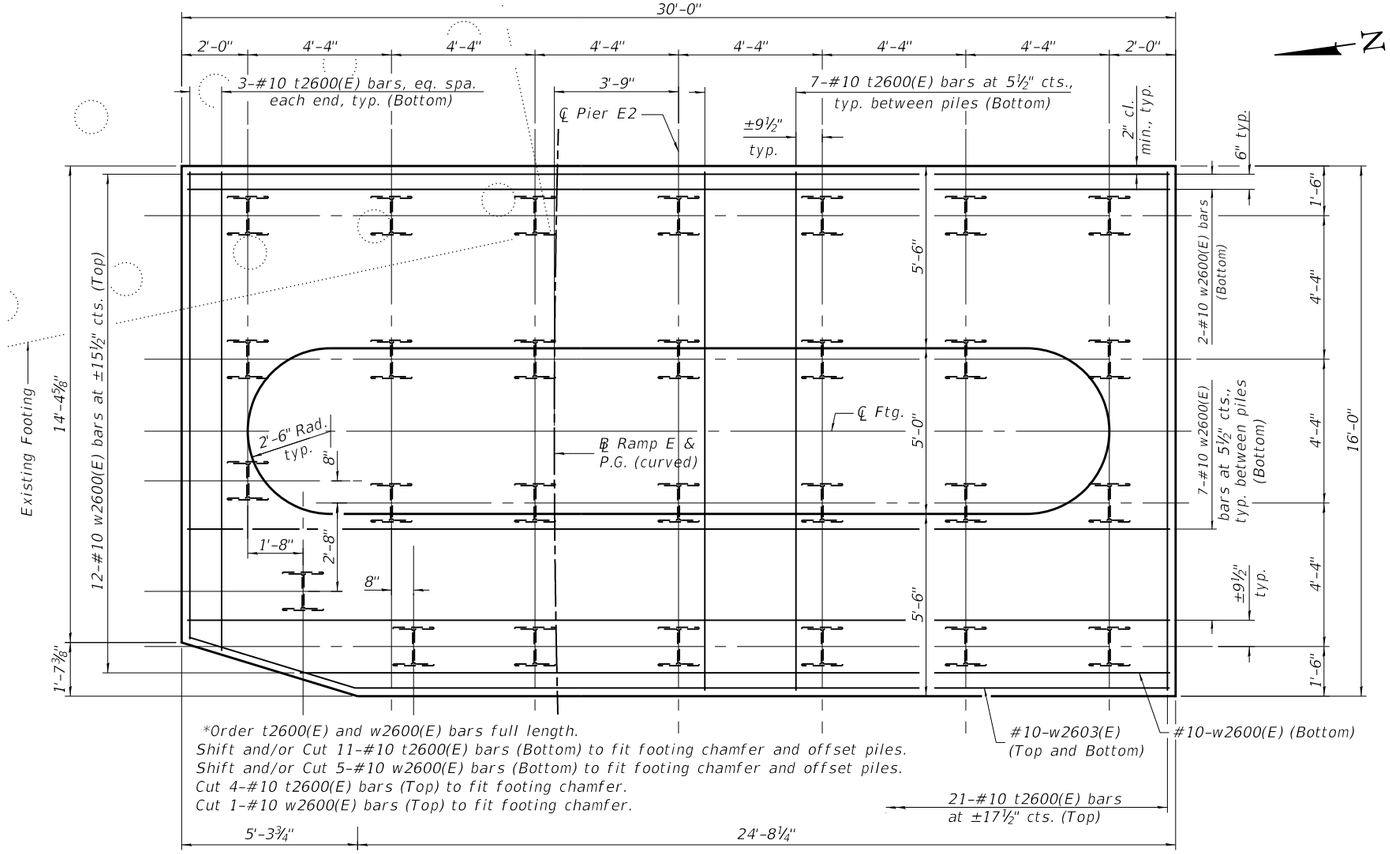
Bar	A	B
s2600(E)	2'-11½"	2'-3"
s2601(E)	3'-3⅜"	2'-3"
s2602(E)	3'-6¼"	2'-3"
s2603(E)	3'-9⅛"	2'-3"
s2604(E)	4'-0"	2'-3"
s2605(E)	4'-2⅛"	2'-3"
s2606(E)	4'-5¾"	2'-3"
s2607(E)	4'-8¾"	2'-3"
s2608(E)	4'-11⅝"	2'-3"
s2609(E)	5'-2½"	2'-3"
s2610(E)	5'-4⅞"	2'-3"
s2611(E)	5'-7¼"	2'-3"
s2612(E)	5'-9¾"	2'-3"
s2613(E)	6'-0⅛"	2'-3"
s2614(E)	6'-2"	2'-3"
s2615(E)	6'-2"	3'-6"



BAR v2600(E)
& v2601(E)



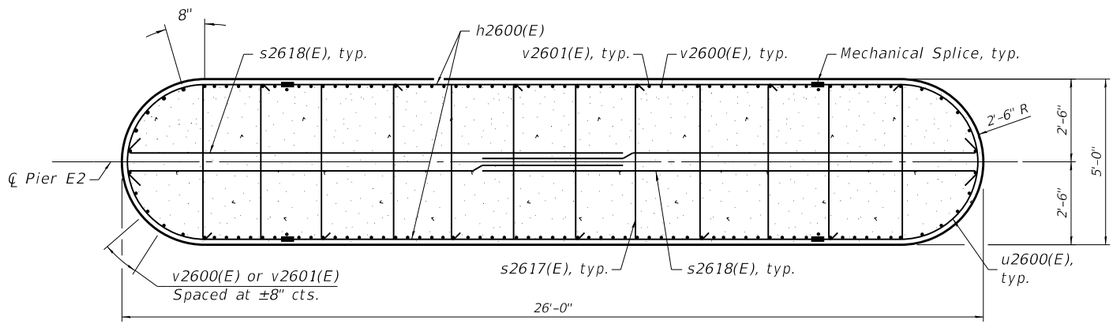
BAR n2600(E)
& n2601(E)



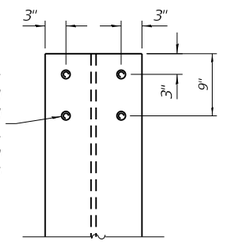
*Order t2600(E) and w2600(E) bars full length.
Shift and/or Cut 11-#10 t2600(E) bars (Bottom) to fit footing chamfer and offset piles.
Shift and/or Cut 5-#10 w2600(E) bars (Bottom) to fit footing chamfer and offset piles.
Cut 4-#10 t2600(E) bars (Top) to fit footing chamfer.
Cut 1-#10 w2600(E) bars (Top) to fit footing chamfer.

FOOTING PLAN

*Shift or cut bars as necessary to maintain 1⅞" cl. at piles. Use remainder of bars to infill bottom mat around offset piles, discard remnants.



SECTION B-B



4-¾" Dia. x 4" Granular or solid flux filled headed studs automatically end welded (Typ. each flange). Cost included with Furnishing Piles

END OF PILE DETAIL

PIER E2
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h2600(E)	70	#5	16'-0"	
h2601(E)	6	#5	6'-2"	
h2602(E)	24	#5	10'-5"	
h2603(E)	16	#5	52'-8"	
n2600(E)	67	#10	18'-6"	
n2601(E)	67	#10	16'-6"	
p2600(E)	24	#10	52'-8"	
p2601(E)	16	#10	26'-9"	
s2600(E)	6	#6	11'-9"	
s2601(E)	6	#6	12'-5"	
s2602(E)	6	#6	12'-11"	
s2603(E)	6	#6	13'-4"	
s2604(E)	6	#6	13'-10"	
s2605(E)	6	#6	14'-4"	
s2606(E)	6	#6	14'-10"	
s2607(E)	6	#6	15'-4"	
s2608(E)	6	#6	15'-9"	
s2609(E)	6	#6	16'-2"	
s2610(E)	6	#6	16'-8"	
s2611(E)	6	#6	17'-1"	
s2612(E)	6	#6	17'-6"	
s2613(E)	6	#6	17'-10"	
s2614(E)	12	#6	18'-2"	
s2615(E)	22	#6	20'-8"	
s2616(E)	47	#5	13'-0"	
s2617(E)	415	#4	5'-5"	
s2618(E)	140	#5	15'-0"	
t2600(E)	69	#10	15'-8"	
u2600(E)	70	#5	12'-4"	
u2601(E)	13	#6	11'-1"	
v2600(E)	67	#10	15'-11"	
v2601(E)	67	#10	17'-11"	
w2600(E)	36	#10	29'-8"	
w2603(E)	2	#10	29'-9"	

Structure Excavation	Cu. Yd.	173.0
Concrete Structures	Cu. Yd.	260.8
Reinforcement Bars, Epoxy Coated	Pound	47,310
Furnishing Steel Piles HP 14x89	Foot	1,863
Driving Piles	Foot	1,863
Test Pile HP 14x89	Each	1

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EFK • Moen, LLC
Civil Engineering Design

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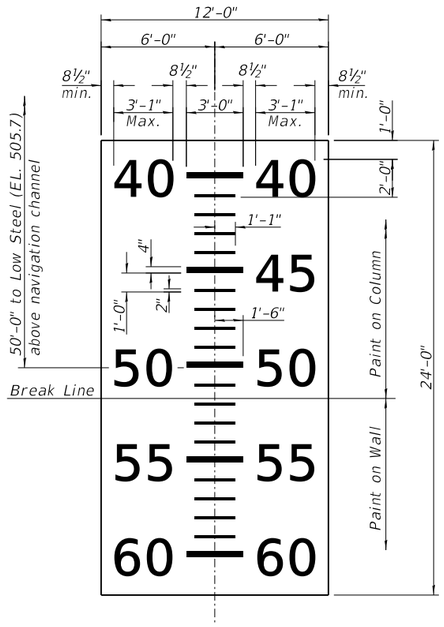
	CHECKED -	REVISED -	
PLOT SCALE = 0.1667 ' / in.	DRAWN -	REVISED -	
PLOT DATE = 12/11/2018	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

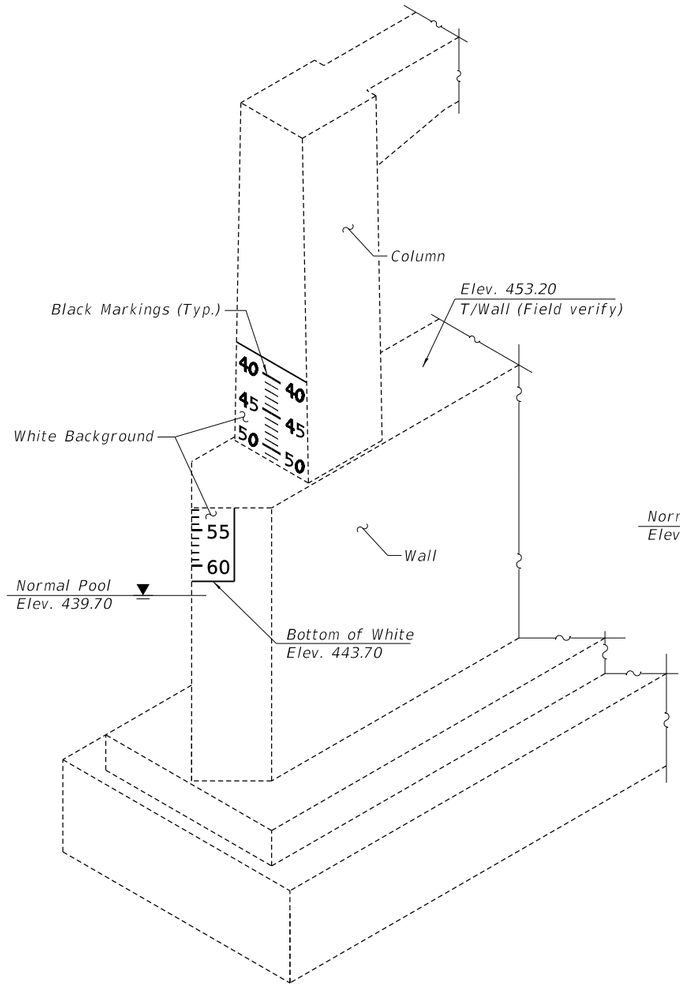
PIER E2 DETAILS
STRUCTURE NO. 090-0180
SHEET S-427 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1336
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			



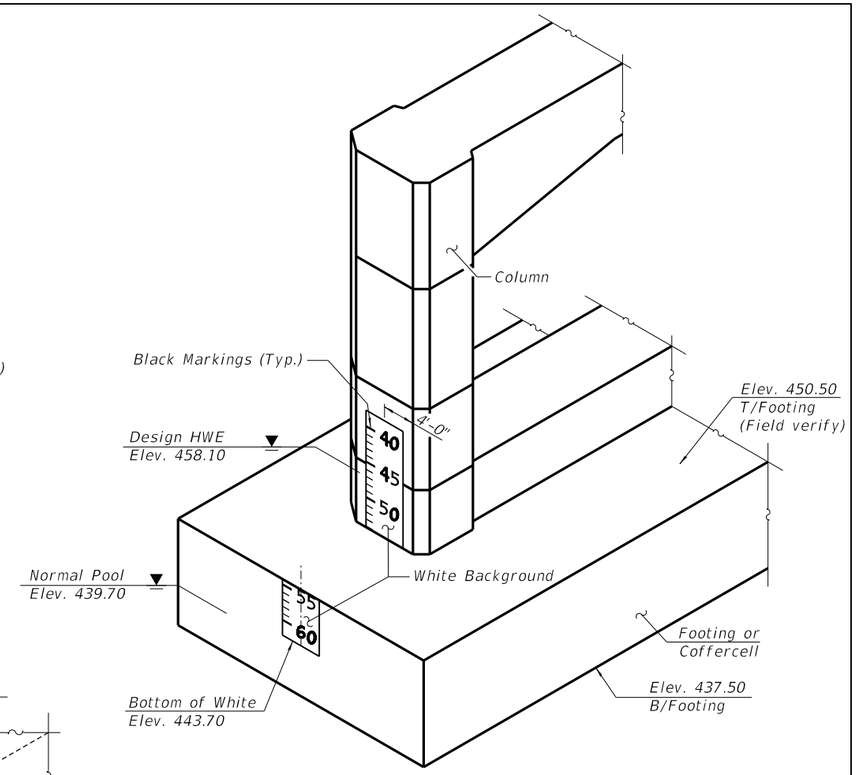
EXIST. PIER 11 GAUGE DETAIL

(Existing Structure No. 090-0115)
(45 Foot number not shown for clarity)



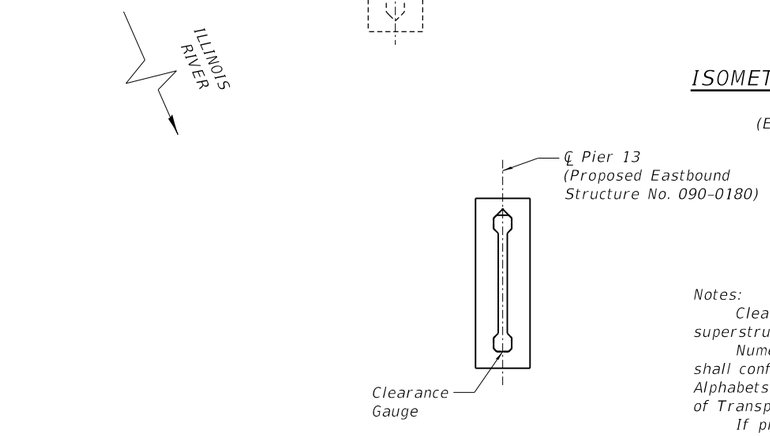
ISOMETRIC END VIEW - EXIST. PIER 11

(Looking Southeast)
(Existing Structure No. 090-0115)



ISOMETRIC END VIEW - PIER 13

(Looking Northwest)
(Proposed Structure No. 090-0180)



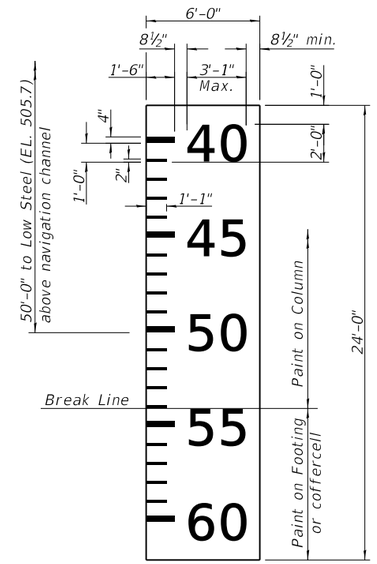
CLEARANCE GAUGE LOCATION SKETCH

Notes:

Clearance Gauges shall be in place prior to erecting any superstructure steel in Span 13.

Numerals shall be Series D 2000, 24 inches and spacing shall conform to the requirements specified in the "Standard Alphabets for Highway Signs" published by the US Department of Transportation.

If precast concrete coffercell is utilized and left in place paint marks shall be on the exposed outside surface of the coffercell.



PIER 13 GAUGE DETAIL

(Proposed Structure No. 090-0180)

HANSON

USER NAME = johns00944	DESIGNED - JGT	REVISED -	
	CHECKED - MNM	REVISED -	
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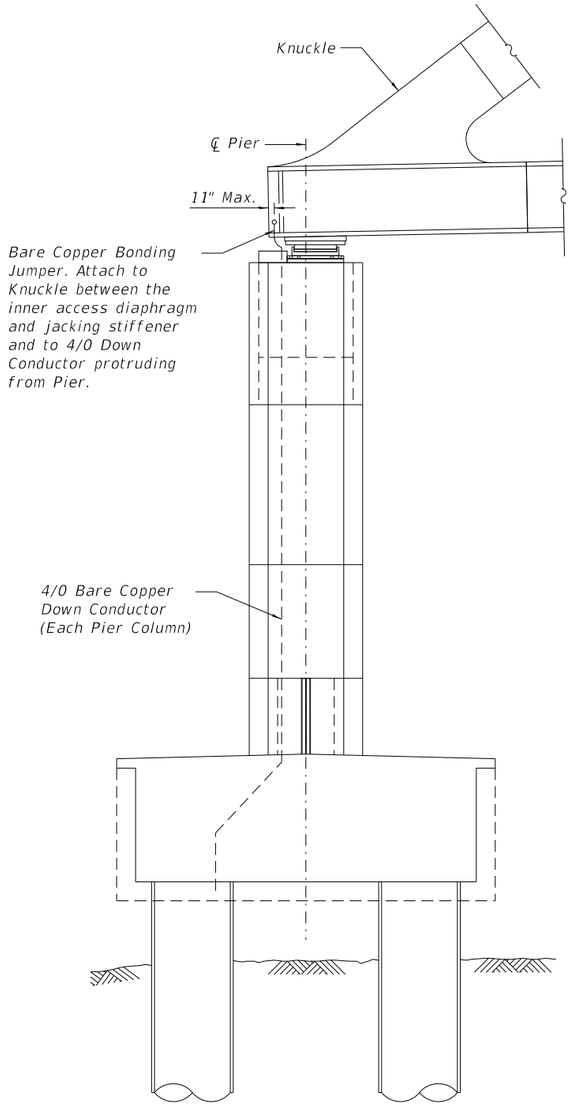
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NAVIGATION CLEARANCE GAUGES
STRUCTURE NO. 090-0180

SHEET S-428 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1337
		CONTRACT NO. 68B46		
	ILLINOIS	FED. AID PROJECT NHPP-YRP3(905)		



ARCH GROUNDING LAYOUT

(Pier 13 shown looking south)
(Pier 12 Similar)

Notes:

Furnishing, installing and testing the Arch Grounding components shall be included in the cost of Concrete Structures.

All Arch Grounding components and work shall be in full compliance with specifications and details of Underwriters Laboratories, Inc. (UL), National Fire Protection Association (NFPA), National Electric Code (NEC) and other regulatory agencies as applicable.

All grounding components shall be UL listed, provide Class 2 Lighting Protection and be submitted to the Engineer for approval.

All Arch Grounding circuitry shall be field tested for electrical continuity at multiple stages of construction to ensure connectivity as directed by the Engineer. A ground resistant tester shall be used to verify ground resistance in accordance with the National Electric Code.

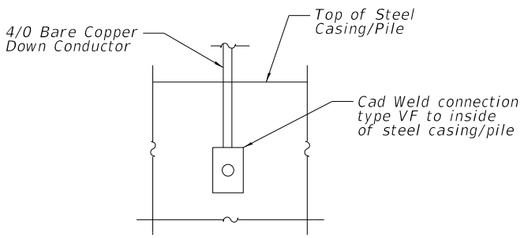
Each Knuckle of the Tied Arch shall be grounded (4 total)

Grounding attachment at Knuckle shall allow for expansion, contraction and rotation of the Tied Arch Superstructure.

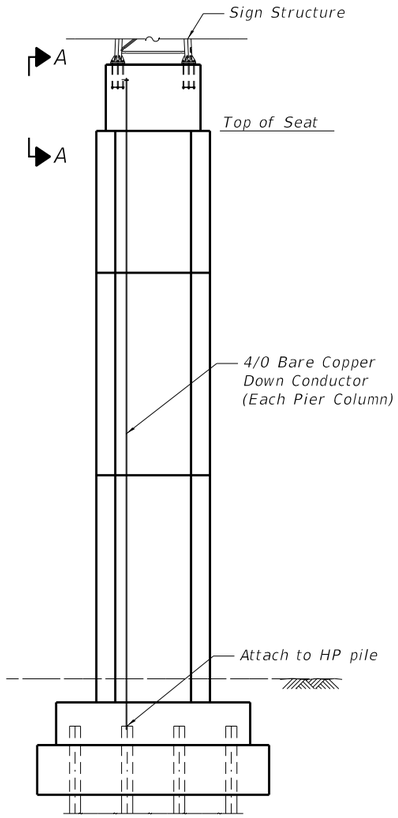
4 /0 Down Conductor bends shall be smooth curves with 3 ft. minimum radius.

All Down Conductors placed in the concrete shall be attached to adjacent reinforcing bars to prevent translation during concrete pours. The maximum spacing of the attachments shall not exceed 5 ft. The attachments shall insulate the Down Conductor from the reinforcing steel.

CAD welds shall be Erico Company or approved equivalent.



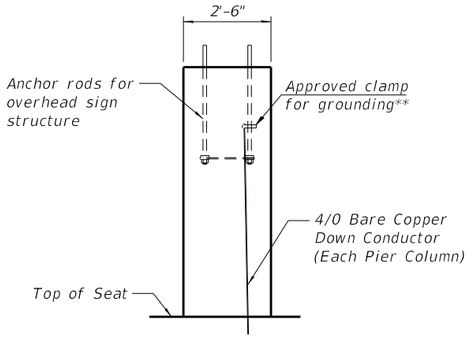
GROUND CONNECTION AT
STEEL CASING AND STEEL PILE



PIER 10 GROUNDING LAYOUT

(Applies both columns)

** Anchor rod shall be ground or filed to bright metal at clamp and cable connection location.



SECTION A-A

TYLIN INTERNATIONAL
200 S. WACKER DR.
SUITE 1400
CHICAGO, IL 60606
TEL: 312-777-2900

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	CHECKED -	REVISED -	
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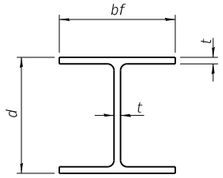
PLOT DATE = 1/28/2019	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ARCH AND PIER 10 GROUNDING DETAILS
STRUCTURE NO. 090-0180

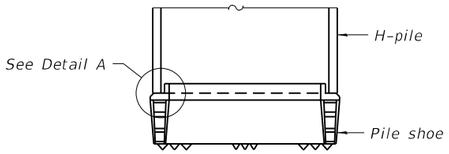
SHEET S-429 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1338
		CONTRACT NO. 68B46		
	ILLINOIS	FED. AID PROJECT NHPP-YRP3(905)		



STEEL PILE TABLE

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



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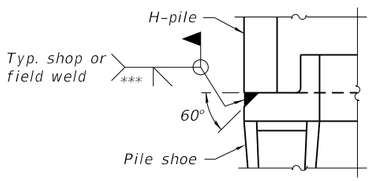
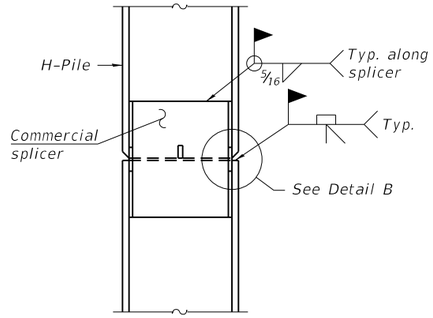


DETAIL A

SHOE ATTACHMENT

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



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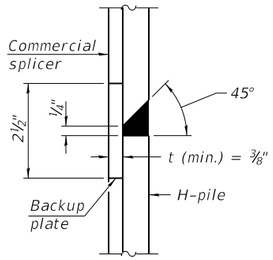
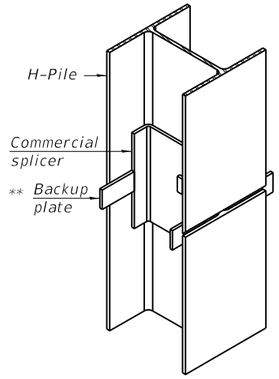
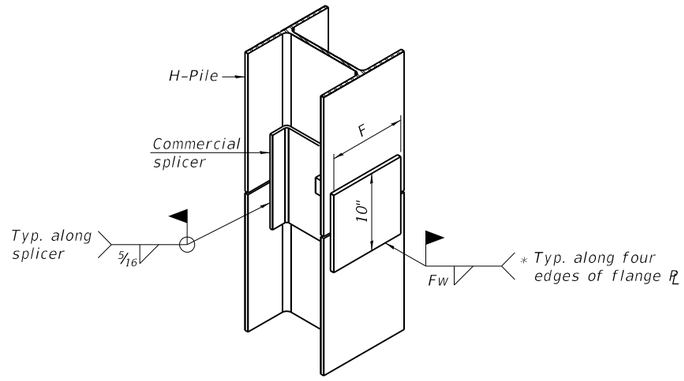


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



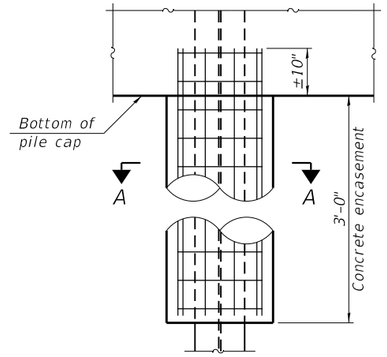
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

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

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

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



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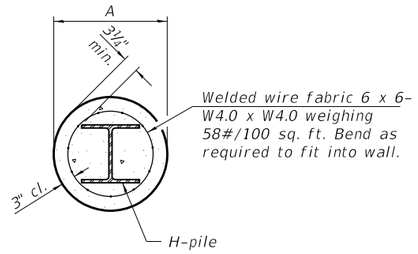
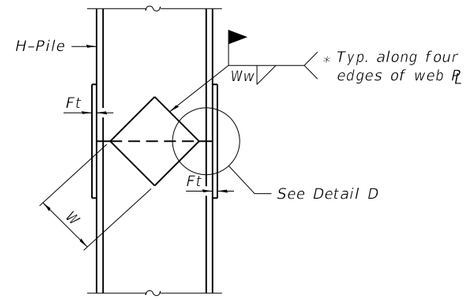


SECTION A-A

INDIVIDUAL PILE CONCRETE ENCASEMENT

(Forms for encasement may be omitted when soil conditions permit).



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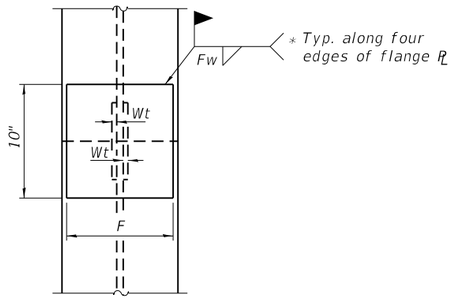
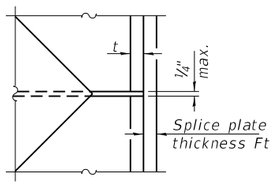


END VIEW



DETAIL D

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	11/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	3/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

WELDED PLATE FIELD SPLICE

F-HP 8-11-2017

TYLIN INTERNATIONAL
200 S. WACKER DR.
SUITE 1400
CHICAGO, IL 60606
TEL: 312-777-2900

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NO. 090-0180
SHEET S-430 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1339
		CONTRACT NO. 68B46		
		ILLINOIS FED. AID PROJECT NHPP-YRP3(905)		

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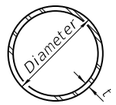
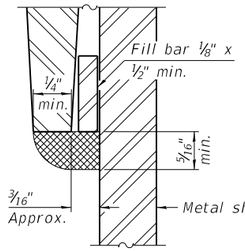
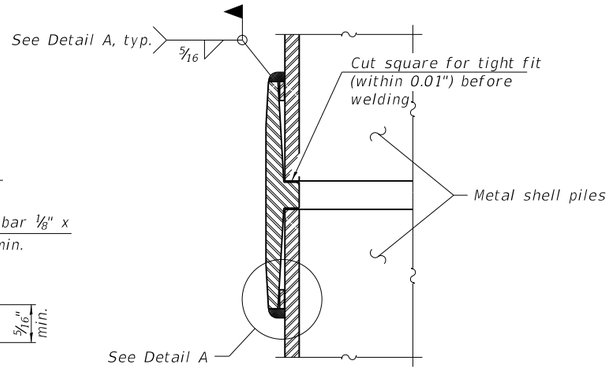


METAL SHELL PILE TABLE

Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd.³/ft.)
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361
PP16	0.312"	52.32	0.0478
PP16	0.375"	62.64	0.0470

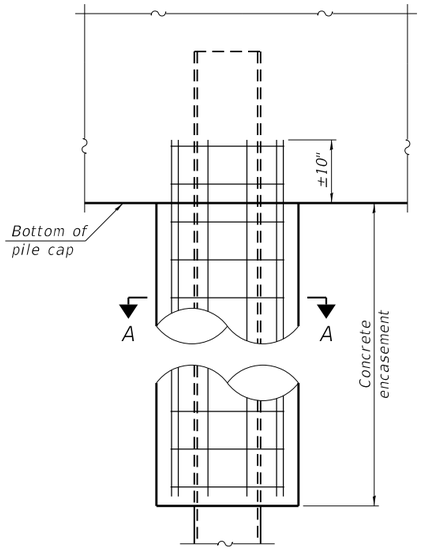


DETAIL A



WELDED COMMERCIAL SPLICE

Notes:
The ⅛" x ½" min. fill bar may be constructed of 2 bars with a ⅛" max. gap between them.
Pile segments shall be driven to solid contact with splicer before welding.



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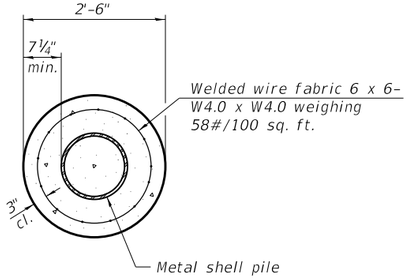
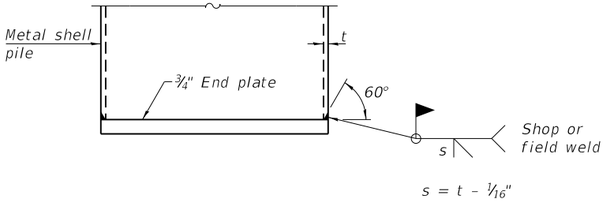


SECTION A–A

INDIVIDUAL PILE CONCRETE ENCASEMENT AT PIERS



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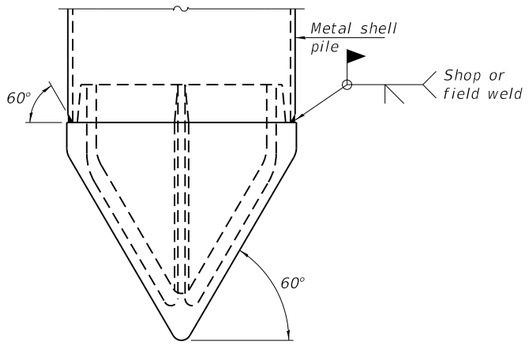
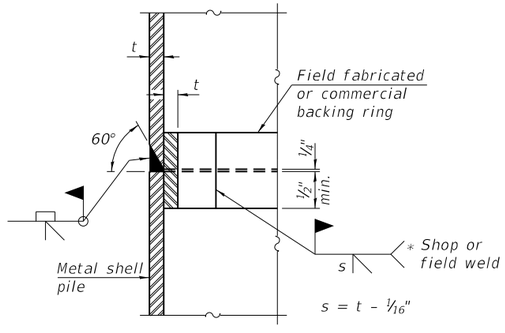
END PLATE ATTACHMENT



PILE SHOE ATTACHMENT

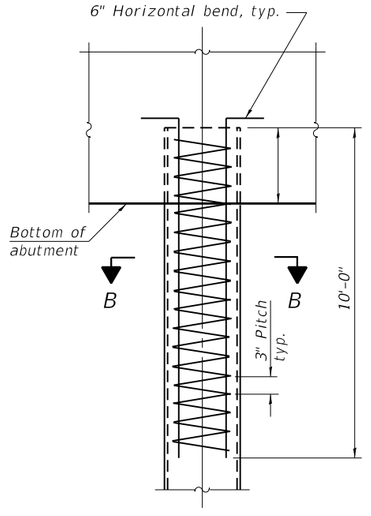
(When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90-60 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld).



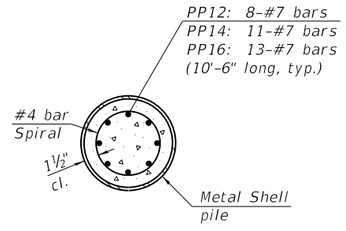
$s = t - \frac{1}{16}"$

COMPLETE PENETRATION WELD SPLICE

* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



ELEVATION



SECTION B-B

REINFORCEMENT AT ABUTMENTS

Note:
The metal shell piles shall be according to Article 1006.05 of the Standard Specifications.

F-MS 8-11-2017

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CHICAGO, IL 60606
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PLOT DATE = 12/12/2018	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

METAL SHELL PILE DETAILS
STRUCTURE NO. 090-0180
SHEET S-431 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	(15B;(102-1),(14HB))BR)BR	PEO/TAZ	1361	1340
		CONTRACT NO. 68B46		
	ILLINOIS	FED. AID PROJECT NHPP-YRP3(905)		

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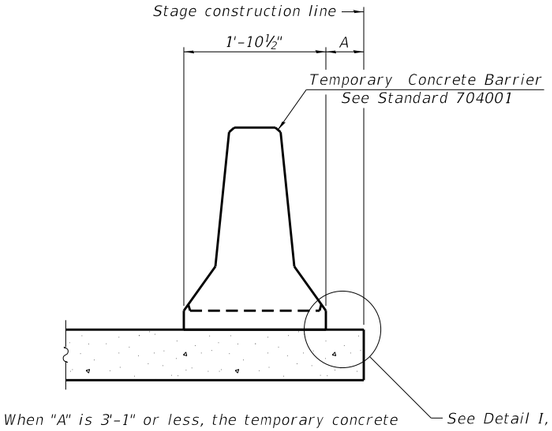
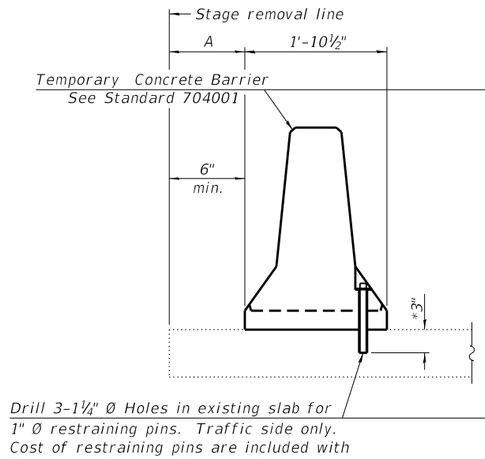


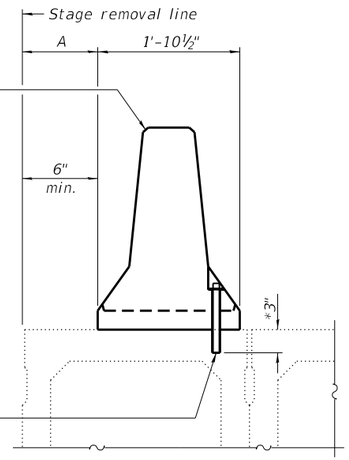
When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM



Drill 3-1¼" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

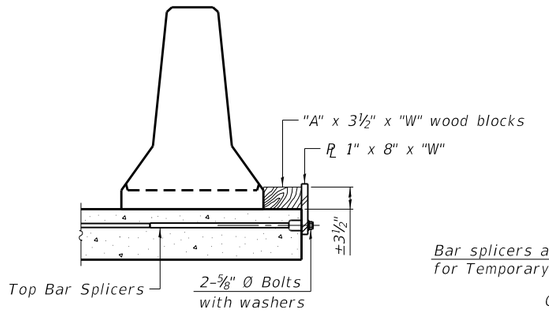
EXISTING SLAB



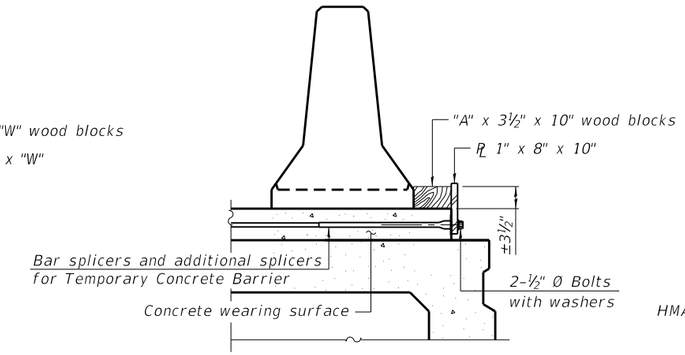
* When hot-mix asphalt wearng surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

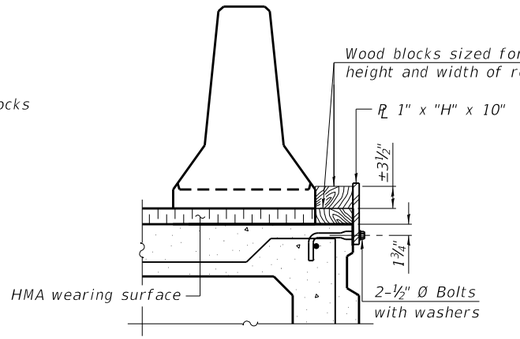
SECTIONS THRU SLAB OR DECK BEAM



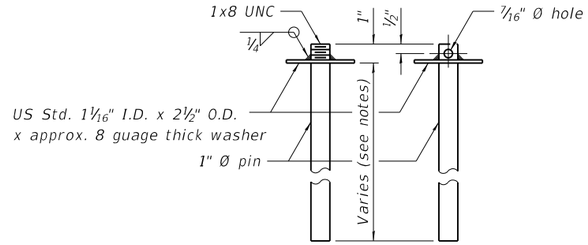
DETAIL I



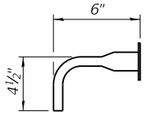
DETAIL II



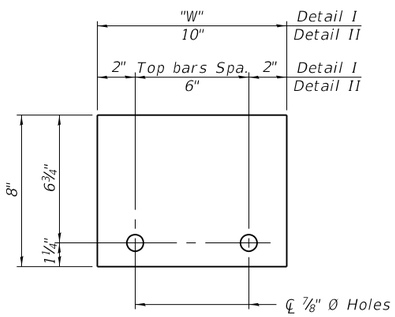
DETAIL III



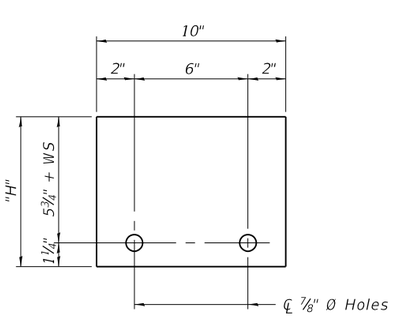
RESTRAINING PIN



BAR SPLICER FOR #4 BAR - DETAIL III



STEEL RETAINER ℄ 1" x 8" x "W"
(Detail I and II)



STEEL RETAINER ℄ 1" x "H" x 10"
(Detail III)

Notes:

Cost of retainer assembly is included with Temporary Concrete Barrier.

A retainer assembly shall be located at the approximate ℄ of each temporary concrete barrier.

The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.

When the 'A' dimension is less than 1½", the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

Detail I - Installation for a new bridge deck or bridge slab.

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

Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present. The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the side of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6" apart, shall be placed at 6'-0" centers along the length of the beam. The cost of the bar splicers is included with the deck beam.

R-27

8-11-2017

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMP. CONCRETE BARRIER FOR STAGE CONSTRUCTION
STRUCTURE NO. 090-0180

SHEET S-432 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR	PEO/TAZ	1361	1341
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			

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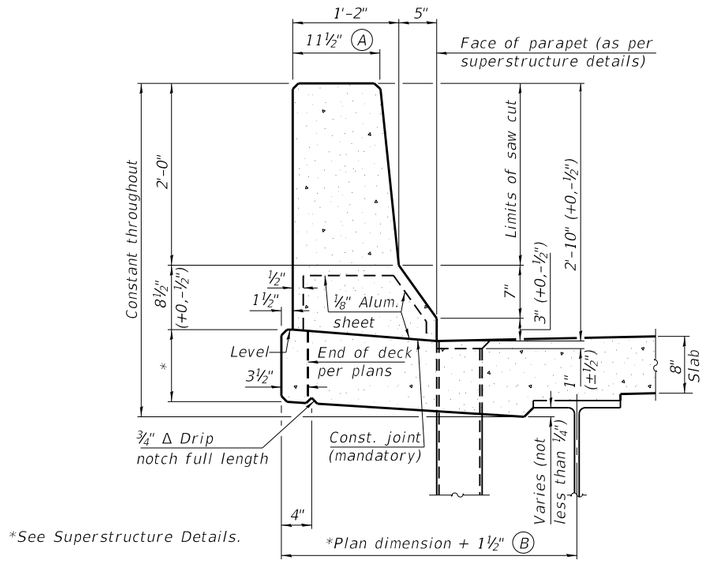
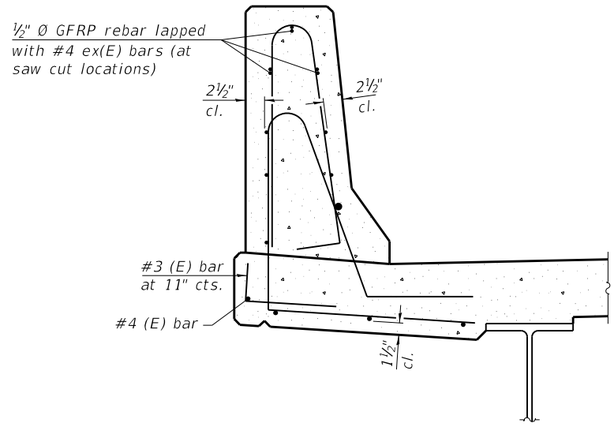


*See Superstructure Details.

34" F SHAPE PARAPET SECTION

(Showing dimensions)



SECTION

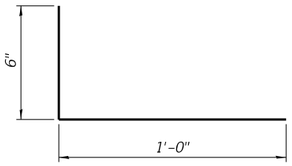
(34" parapet shown – 42" parapet similar)
(Showing reinforcement clearances for slip forming and additional reinforcement bars)

GENERAL NOTES

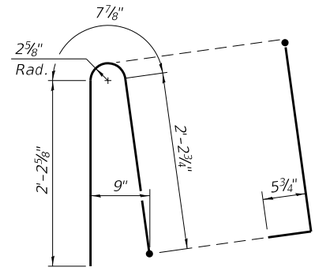
All dimensions shall remain the same as shown on superstructure details, except dimensions A and B which are to be revised as shown to provide additional clearance. Additional concrete needed to revise dimension A and B = 0.0165 cu. yds./ft. for 34" parapet or = 0.0223 cu. yds./ft. for 42" parapet.

Place aluminum sheet in curb portion at and near piers. Full thickness saw cut at all joint locations in lieu of cork joint filler.

Steel superstructure shown. Other superstructure types similar.



#3 (E) BAR

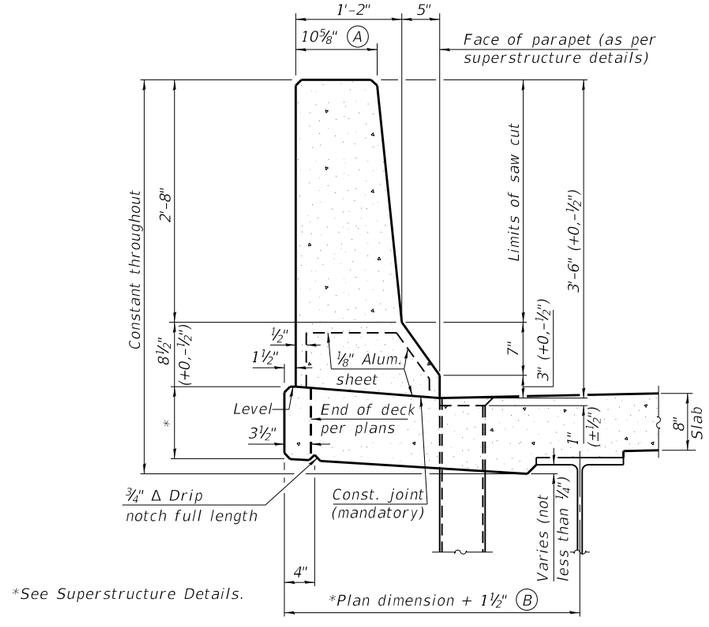


ALTERNATE BAR d(E)

(For 34" parapet when conduit is present)

ALTERNATE BAR d(E)

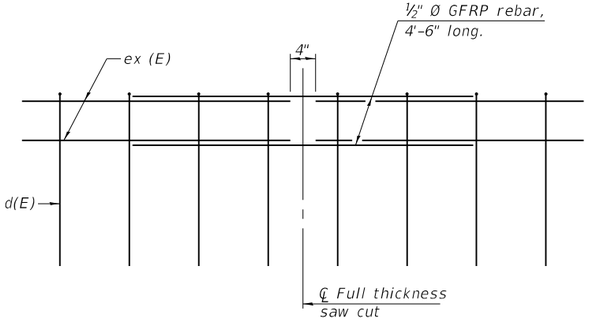
(For 42" parapet when conduit is present)



*See Superstructure Details.

42" F SHAPE PARAPET SECTION

(Showing dimensions)



GFRP REBAR STIFFENING DETAIL

(Place as shown in parapet section at each parapet joint location.)

THIS SHEET TO BE REPLACED WITH PENDING BASE SHEET FOR CONSTANT-SLOPE PARAPET

SFP 34-42 2-17-2017

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	PLOT DATE = 12/12/2018	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONCRETE PARAPET SLIPFORMING OPTION
STRUCTURE NO. 090-0180
SHEET S-433 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1342
		CONTRACT NO. 68B46		
		ILLINOIS	FED. AID PROJECT	NHPP-YRP3(905)

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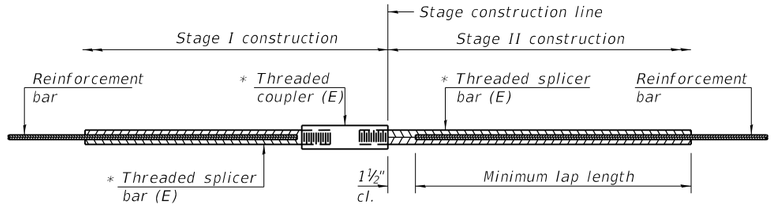
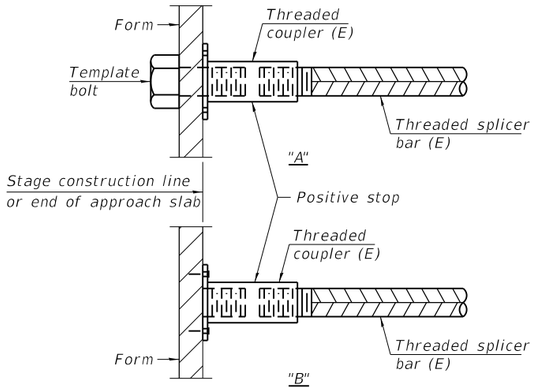


STANDARD BAR SPLICER ASSEMBLY

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

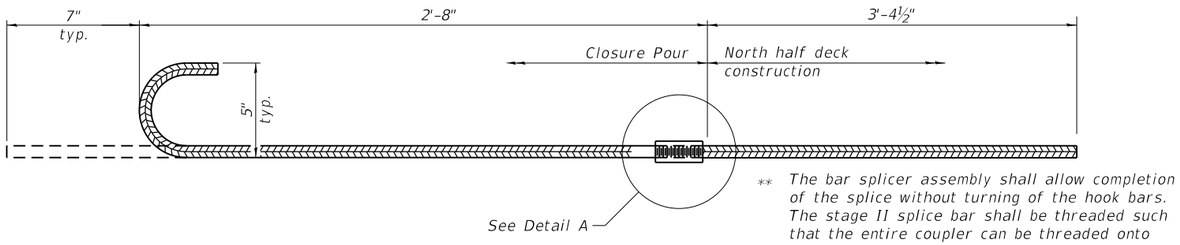
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
West Approach Slab Footing	#5	56	3'-4"
West Approach Slab	#5	46	3'-4"
West Approach Slab	#8	60	4'-9"
Belvedere – Unit 5	#5	349	3'-6"



INSTALLATION AND SETTING METHODS

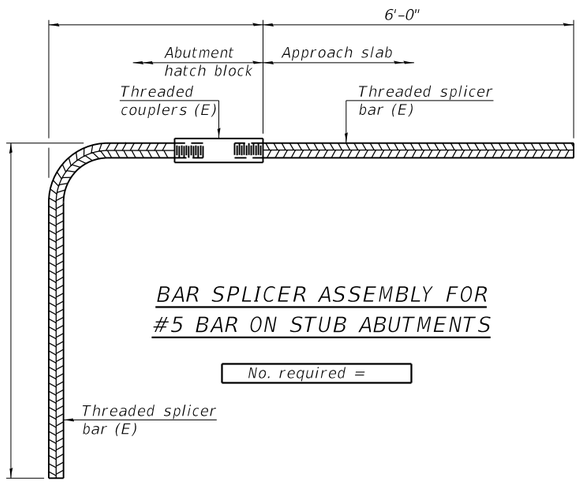
"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.



** The bar splicer assembly shall allow completion of the splice without turning of the hook bars. The stage II splice bar shall be threaded such that the entire coupler can be threaded onto the splice bar.

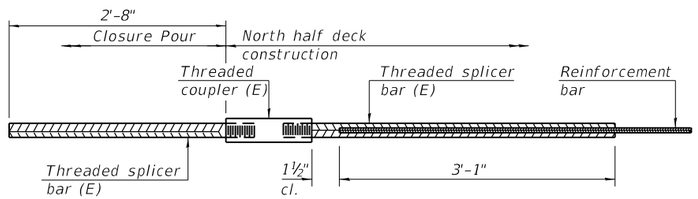
BAR SPLICER ASSEMBLY FOR #5 BOTTOM BAR @ CLOSURE POUR UNIT 2

No. required = 1001



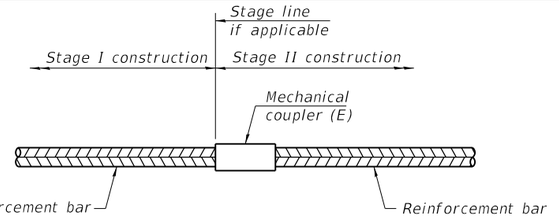
BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =



BAR SPLICER ASSEMBLY FOR #5 TOP BAR @ CLOSURE POUR UNIT 2

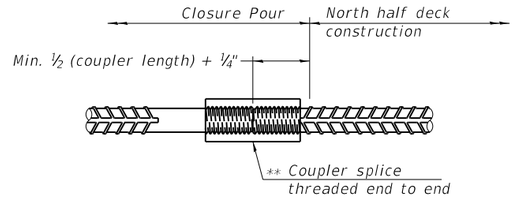
No. required = 1548



STANDARD MECHANICAL SPLICER

Pier	Location	Bar size	No. assemblies required
E1	Cap	#10	8
	Stem	#10	134
	Stem	#5	108
E2	Cap	#10	8
	Stem	#10	134
	Stem	#5	140
1	Stem	#5	116
	Stem	#11	126
2	Columns	#6	618
	Columns	#11	318
3	Columns	#6	696
	Columns	#11	322
4	Columns	#6	816
	Columns	#11	322
	Shafts	#11	336
5	Columns	#6	750
	Columns	#11	322
6	Columns	#6	768
	Columns	#11	318
7	Columns	#6	834
	Columns	#11	322
8	Columns	#6	804
	Columns	#11	322
	Shafts	#11	280
9	Columns	#6	528
	Columns	#11	252
10	Columns	#6	528
	Columns	#11	248
11	Columns	#6	568
	Columns	#11	248
	Shafts	#11	280

Pier	Location	Bar size	No. assemblies required
12	Columns	#6	764
	Shafts	#6	130
	Columns	#11	228
	Shafts	#11	920
13	Columns	#6	764
	Shafts	#6	130
	Columns	#11	228
	Shafts	#11	920
14	Columns	#6	732
	Shafts	#6	104
	Columns	#11	240
	Shafts	#11	736
15	Columns	#6	672
	Shafts	#6	104
	Columns	#11	240
	Shafts	#11	736
16	Columns	#6	584
	Columns	#11	232
17	Columns	#6	552
	Shafts	#6	80
	Columns	#11	240
	Shafts	#11	448
18	Columns	#6	480
	Columns	#11	240
19	Wall	#8	48
	Wall	#10	320
20	Wall	#7	42
	Wall	#10	238
21	Wall	#7	36
	Wall	#10	314
	Shafts	#6	80
	Shafts	#11	224
22	Wall	#7	36
	Wall	#10	238



DETAIL A

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

All reinforcement shall be lapped and tied to the splicer bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1

2-17-2017

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY & MECHANICAL SPLICER DETAILS
STRUCTURE NO. 090-0180

SHEET S-434 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1343
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			

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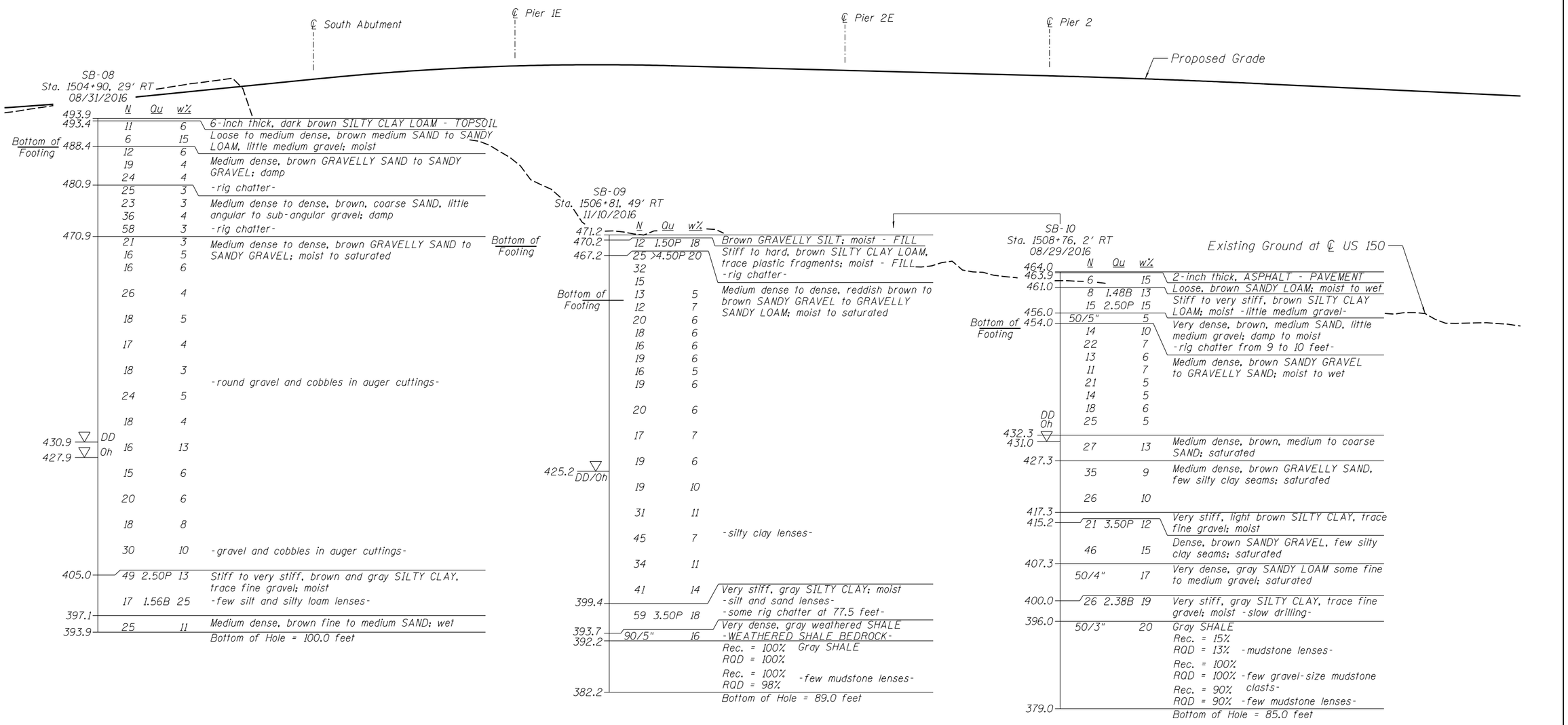

LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD ▽ 432.28	Water Surface Elevation Encountered in Boring DD = during drilling 0h = at completion 24h = 24 hours after completion
233M	Modified SPT

HANSON

USER NAME = johns00944	DESIGNED - RGC	REVISED -	
	CHECKED - MNM	REVISED -	
PLOT SCALE = 0:2.0000 ':" / in.	DRAWN - DAP	REVISED -	
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STATE OF ILLINOIS
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SUBSURFACE DATA PROFILE, 1 OF 11
STRUCTURE NO. 090-0180
SHEET S-435 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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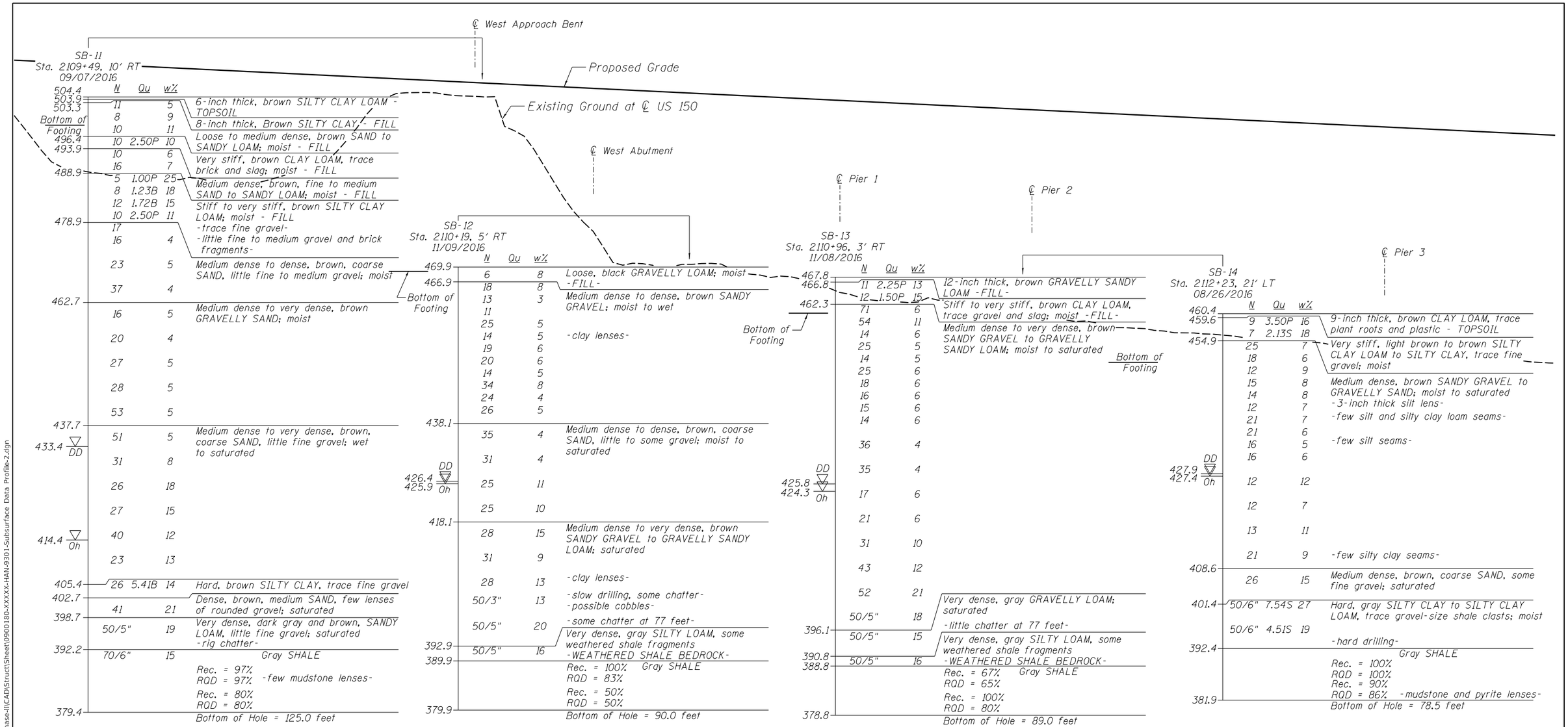

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Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD ▽ 432.28	Water Surface Elevation Encountered in Boring DD = during drilling Oh = at completion 24h = 24 hours after completion
233M	Modified SPT

HANSON

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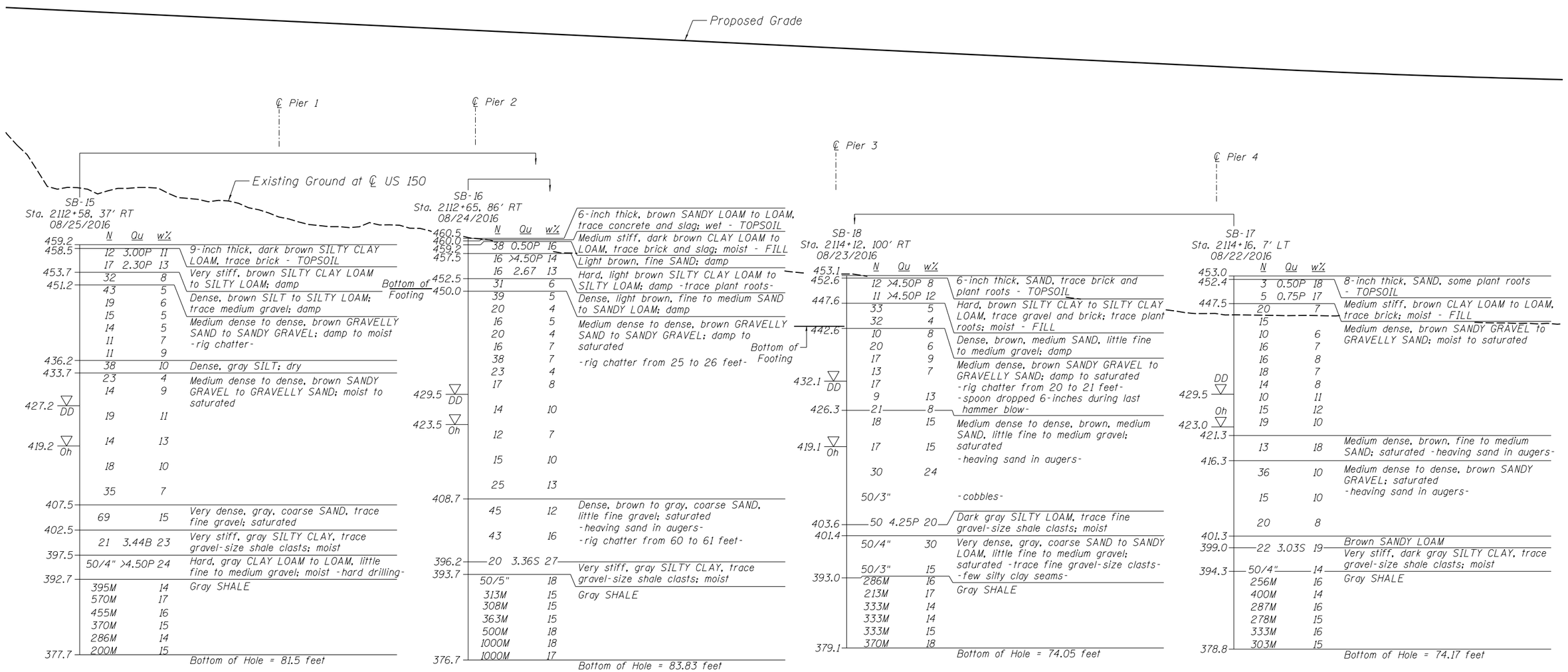
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE, 2 OF 11
STRUCTURE NO. 090-0180
SHEET S-436 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR	PEO/TAZ	1361	1345
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			



LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD ▽ 432.28	Water Surface Elevation Encountered in Boring DD = during drilling Oh = at completion 24h = 24 hours after completion
233M	Modified SPT

HANSON

USER NAME = johns00944	DESIGNED - RGC	REVISED -	
	CHECKED - MNM	REVISED -	
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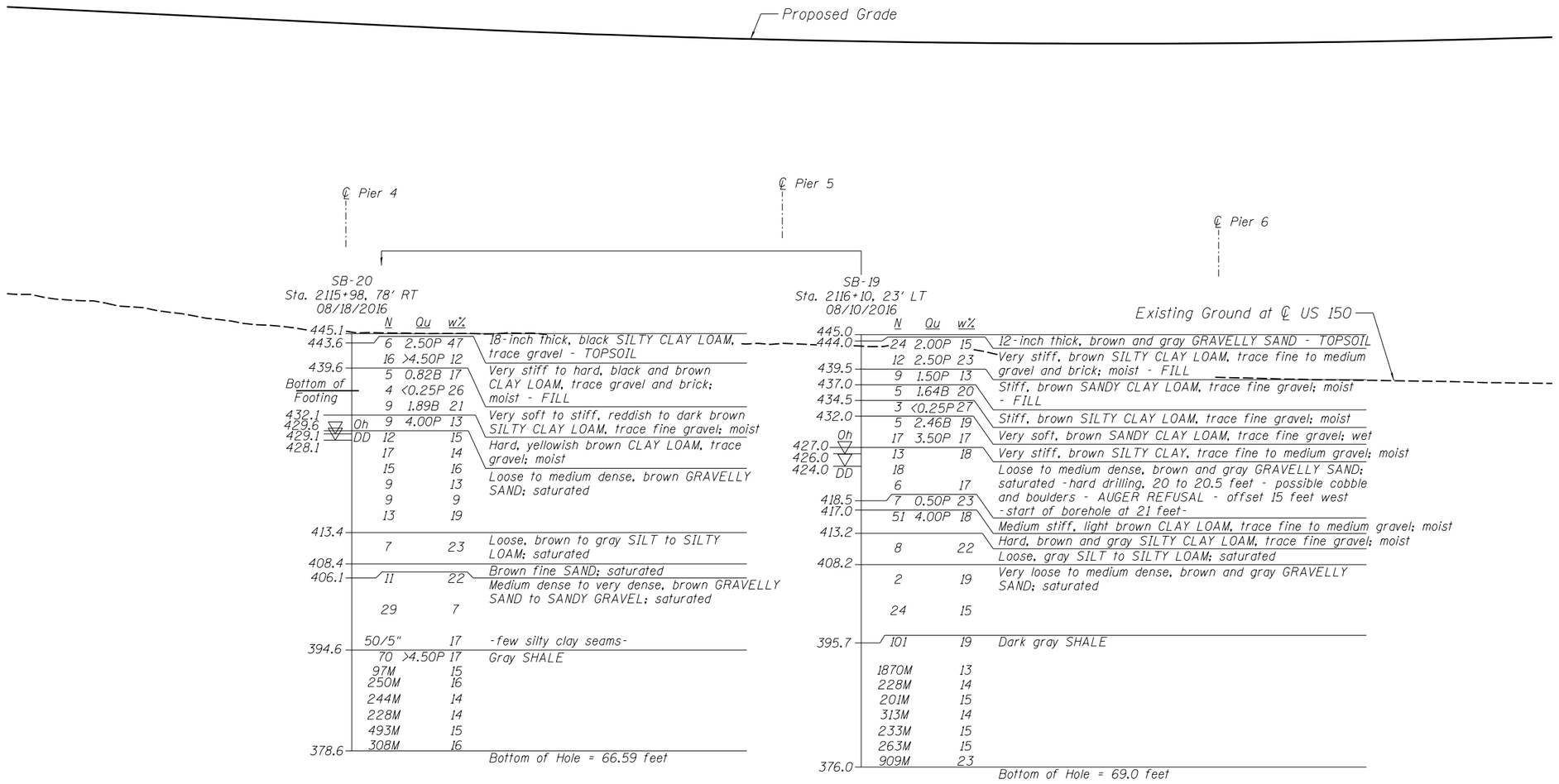
PLOT DATE = 12/11/2018	CHECKED - 02-16-2018	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE, 3 OF 11
STRUCTURE NO. 090-0180
SHEET S-437 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1346
		CONTRACT NO. 68B46		
	ILLINOIS	FED. AID PROJECT NHPP-YRP3(905)		



LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD ▽ 432.28	Water Surface Elevation Encountered in Boring DD = during drilling Oh = at completion 24h = 24 hours after completion
233M	Modified SPT

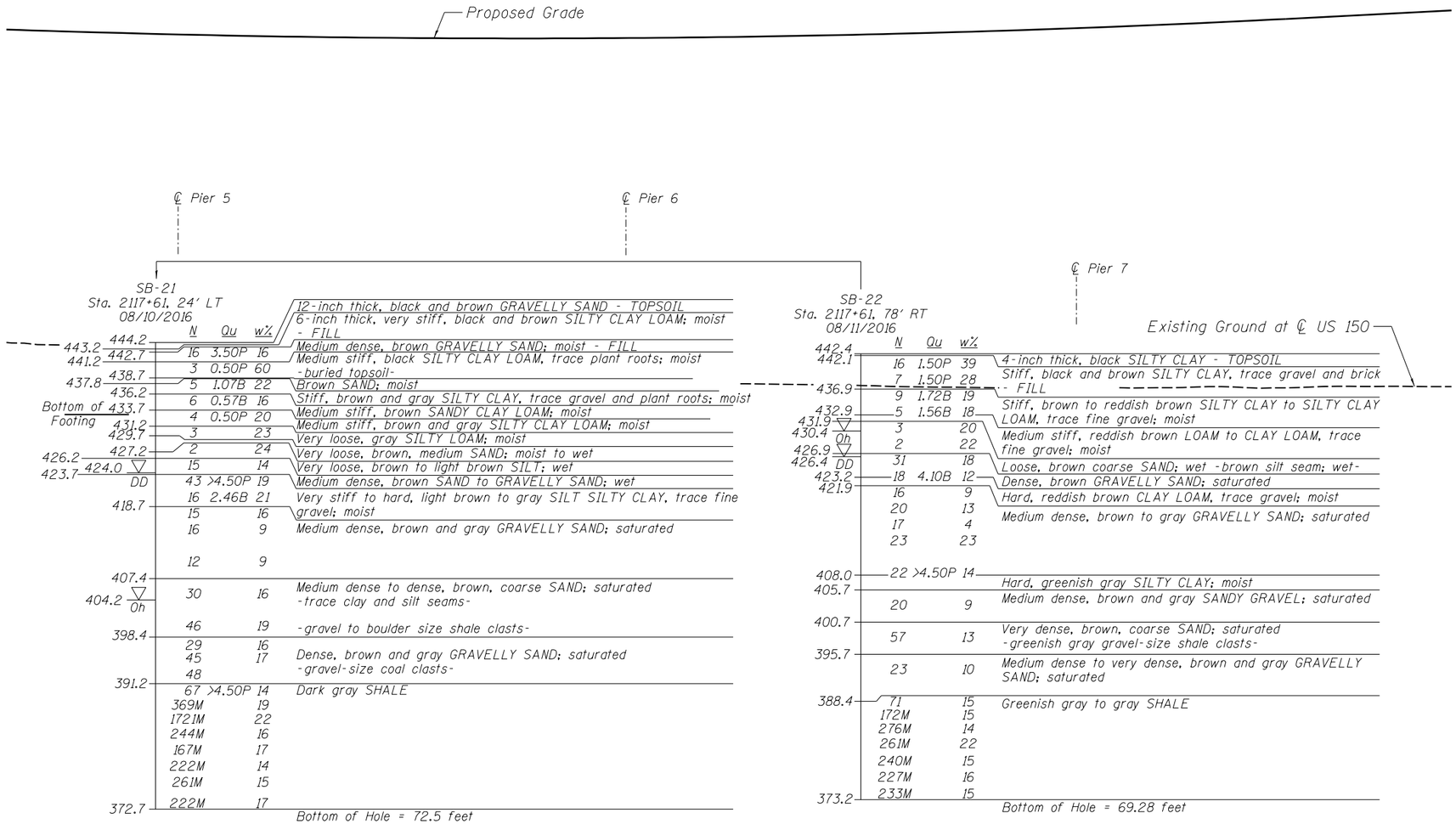
HANSON

USER NAME = johns00944	DESIGNED - RGC	REVISED -	
	CHECKED - MNM	REVISED -	
PLOT SCALE = 0:2.0000 ':" / in.	DRAWN - DAP	REVISED -	
PLOT DATE = 12/11/2018	CHECKED - 02-16-2018	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE, 4 OF 11
STRUCTURE NO. 090-0180
SHEET S-438 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR	PEO/TAZ	1361	1347
		CONTRACT NO. 68B46		
	ILLINOIS	FED. AID PROJECT NHPP-YRP3(905)		



LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD ▽ 432.28	Water Surface Elevation Encountered in Boring DD = during drilling Oh = at completion 24h = 24 hours after completion
233M	Modified SPT

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HANSON

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PLOT DATE = 12/11/2018	CHECKED - 02-16-2018	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE, 5 OF 11
STRUCTURE NO. 090-0180
SHEET S-439 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1348
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			

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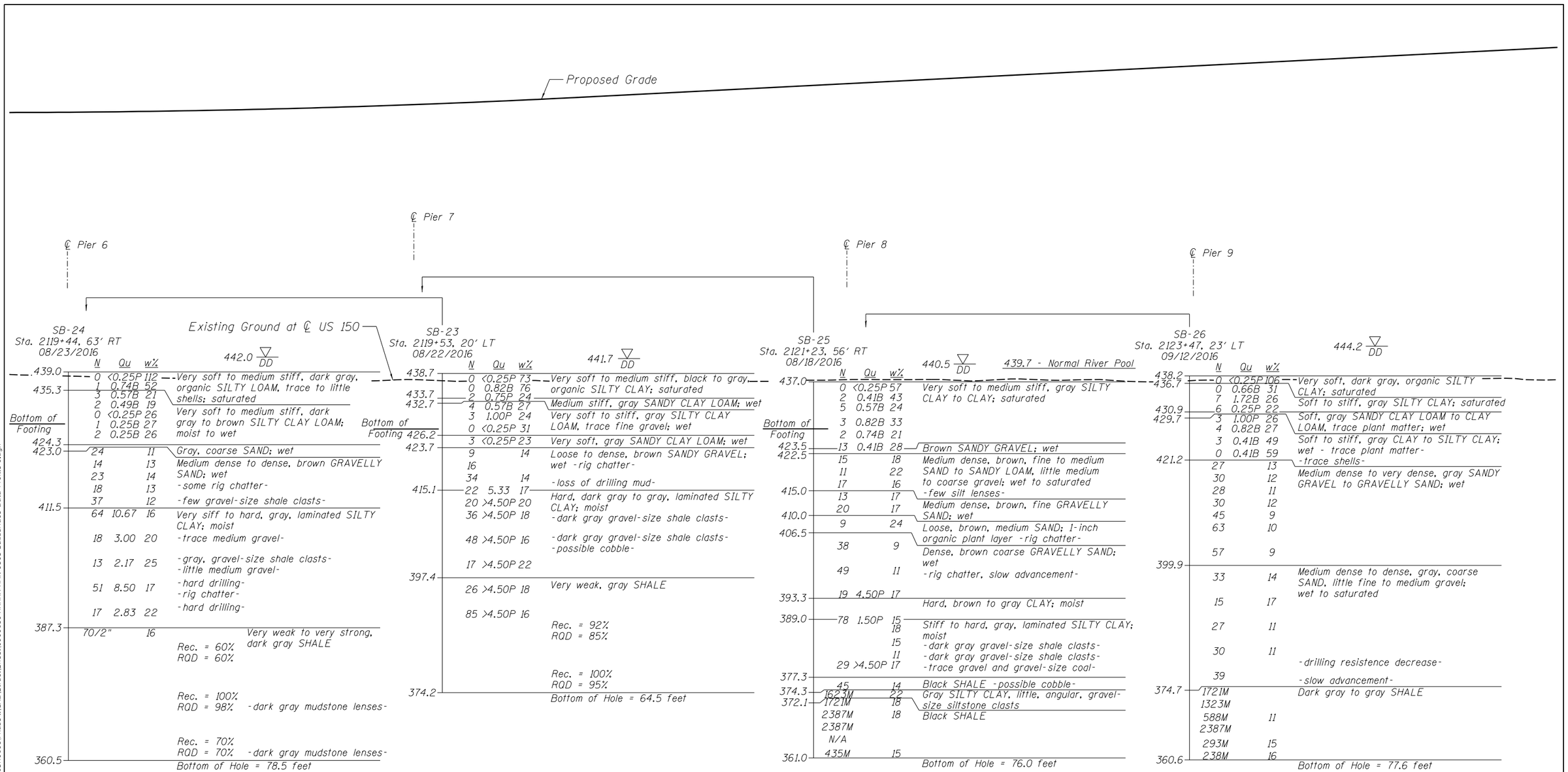

LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD ▽ 432.28	Water Surface Elevation Encountered in Boring DD = during drilling Oh = at completion 24h = 24 hours after completion
233M	Modified SPT

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HANSON

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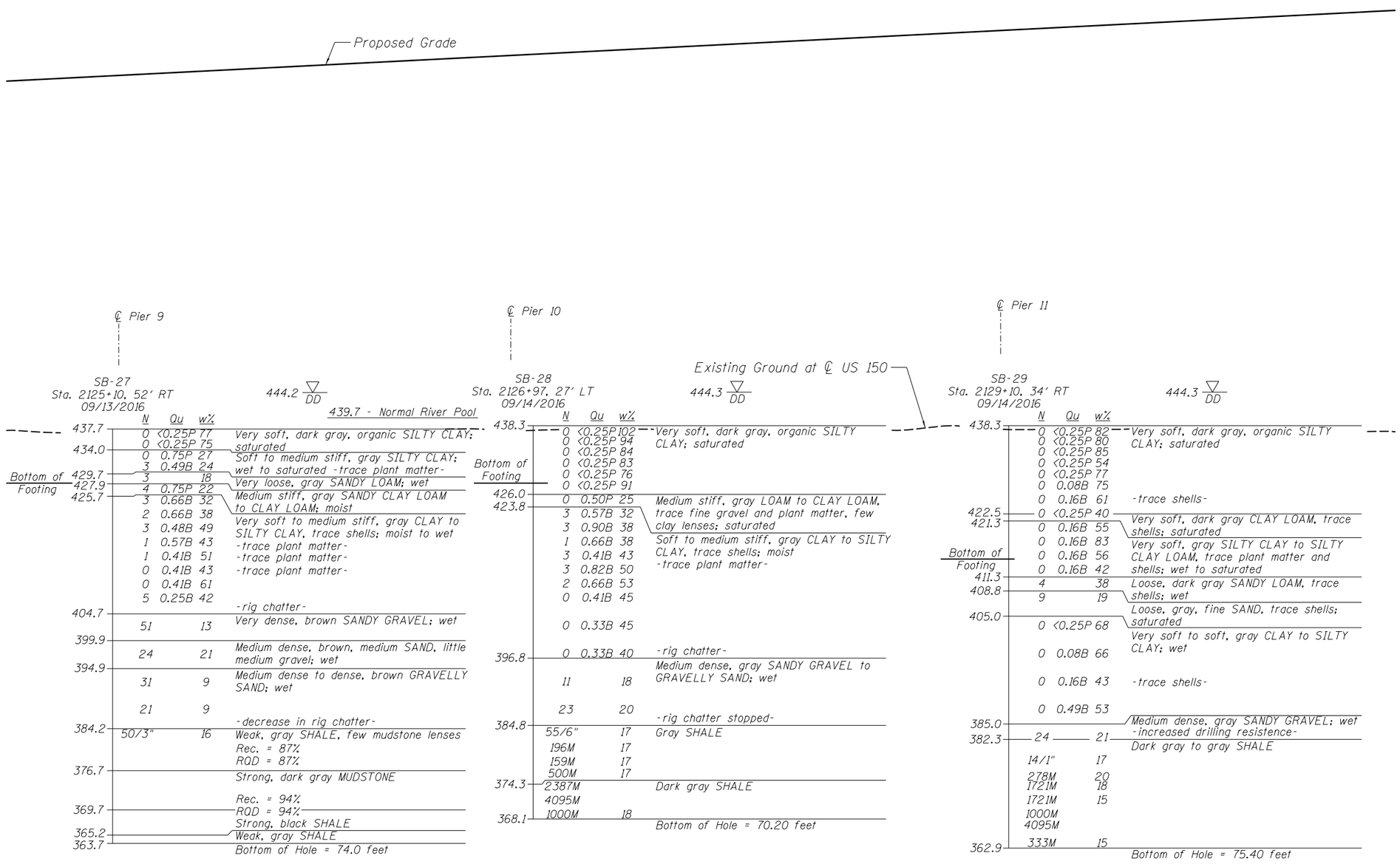
PLOT DATE = 12/11/2018	CHECKED - 02-16-2018	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE, 6 OF 11
STRUCTURE NO. 090-0180
SHEET S-440 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR	PEO/TAZ	1361	1349
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			



LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD 432.28 ▽	Water Surface Elevation Encountered in Boring DD = during drilling Oh = at completion 24h = 24 hours after completion
233M	Modified SPT

HANSON

USER NAME = johns00944	DESIGNED - RGC	REVISED -	
	CHECKED - MNM	REVISED -	
PLOT SCALE = 0:2.0000 ':' / in.	DRAWN - DAP	REVISED -	
PLOT DATE = 12/11/2018	CHECKED - 02-16-2018	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE, 7 OF 11
STRUCTURE NO. 090-0180
SHEET S-441 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR	PEO/TAZ	1361	1350
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT	NHPP-YRP3(905)		

Proposed Grade

LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD ▽ 432.28	Water Surface Elevation Encountered in Boring DD = during drilling Oh = at completion 24h = 24 hours after completion
233M	Modified SPT

℄ Pier 12

SB-30
Sta. 2130+55, 10' LT
09/19/2016

443.5 ▽ DD

439.7 - Normal River Pool

	N	Qu	w%	
437.5	0	<0.25P	83	Very soft, dark gray, organic SILTY CLAY; saturated
	0	<0.25P	82	
	0	<0.25P	73	
	0	<0.25P	78	
	0	<0.25P	62	
428.0	0	<0.25P	59	Very soft to soft, dark gray SILTY CLAY LOAM, trace shells and plant matter; saturated
	0	<0.25P	32	
	0	0.41B	71	
	3	0.25B	54	
	1	0.25P	37	
	0	0.41B	42	
	1	0.25B	43	
Bottom of Footing	1			
	0	0.41B	30	
404.3	6		20	Loose, dark gray, course SAND, little fine gravel; saturated -trace shells-
399.3	0	0.25B	42	Very soft to soft, gray CLAY to SILTY CLAY; wet -trace shells-
	0			
	0	<0.25P	88	
381.5	4	<0.25P	20	Very soft, gray LOAM to CLAY LOAM; wet -rig chatter-
378.0	43			Possibly GRAVELLY SAND -decreased rig chatter-
373.5	75/1"		18	Interbedded, strong, gray MUSDTONE and weak, highly weathered SHALE Rec. = 100% RQD = 95%
				Rec. = 100% RQD = 100%
352.5				Bottom of Hole = 85.0 feet

SB-31
Sta. 2130+99, 50' RT
09/15/2016

444.0 ▽ DD

	N	Qu	w%	
437.5	0	<0.25P	88	Very soft, dark gray SILTY CLAY to SILTY CLAY LOAM, trace organic matter; saturated
	0	<0.25P	56	
	0	<0.25P	68	
	0	<0.25P	64	
	0	<0.25P	67	
	0	<0.25P	67	
	0	<0.25P	81	
	0	0.16B	77	
	2	0.08B	53	-trace shells-
	0		98	
	1	0.25B	51	-trace shells-
	0	0.16B	48	-trace shells-
	0	0.25B	53	
	3	0.16B	27	
404.8	9		19	Loose, gray, GRAVELLY SAND; saturated
399.8	0	0.16B	62	
	0	0.57B	62	
	0	0.57B	52	
382.0	1	0.57B	27	Medium stiff, gray SANDY CLAY LOAM; wet
376.8	20	0.50P	32	Gray SANDY GRAVEL; wet -rig chatter-
373.0	100/3"		17	-decreased rig chatter-
	1323M		12	Dark gray SHALE
	4095M			
	830M		23	
	1721M		22	
362.8	683M		17	Gray SHALE
358.5	455M		17	Bottom of Hole = 79.0 feet

Existing Ground at ℄ US 150

439.7 - Normal River Pool

442.5 ▽ DD

SB-32
Sta. 2137+15, 15' LT
09/20/2016

	N	Qu	w%	
428.0	0		25	Very loose, dark gray, medium to coarse SAND to SANDY LOAM, little fine gravel, trace shells; saturated
	0		33	
	0		48	
	0		19	
419.5	4		26	Very loose to loose, gray GRAVELLY SAND; saturated
	3		20	Very soft, gray SANDY CLAY LOAM to SANDY LOAM; saturated
	3		23	
	3		23	
409.5	2	<0.25P	27	Very soft, gray SILTY CLAY, trace fine gravel, trace shells; wet
407.0	3	<0.25P	46	Gray, coarse SAND; saturated
405.5	0	0.16B	49	Very soft to soft, gray SILTY CLAY to CLAY, trace plant matter and shells; wet
404.5	0	0.16B	59	
	0	0.25B	58	
397.0	5		21	Loose, gray, medium SAND; wet
393.3	0	0.08B	46	Very soft, gray CLAY to SILTY CLAY; wet -trace shells-
	0	<0.25P	43	
	0	0.08B	46	
	0	<0.25P	42	-rig chatter-
372.5	38		7	Dense, gray SANDY GRAVEL; wet -decrease in rig chatter-
368.5	100/1"		23	Strong, black SHALE
364.5				Rec. = 83% RQD = 80% Weak, gray SHALE
				Rec. = 57% RQD = 57%
				Rec. = 15% RQD = 15%
				Rec. = 77% RQD = 77%
339.8				Black COAL
337.0				Bottom of Hole = 91.0 feet

℄ Pier 13

SB-33
Sta. 2137+55, 45' RT
08/10/2016

440.1 ▽ DD

	N	Qu	w%	
430.1	0		24	Very loose to loose, gray to dark gray, fine SAND to SANDY LOAM, trace fine gravel; saturated
	0		25	
	0			
	0		27	
	2		44	
	6		31	
	5		21	
	5		25	
Bottom of Footing	6		26	
409.6	5	<0.25P	25	Very soft, dark gray SANDY CLAY LOAM; saturated
407.1	0	0.16B	43	Very soft to soft, dark gray SILTY CLAY to CLAY, trace organic matter; wet
	0	0.33B	49	
	0	0.25B	60	
398.3	2	0.16B	31	Soft, dark gray CLAY LOAM; wet
393.3	0	0.16B	43	Very soft, dark gray to gray CLAY; wet
	0	0.25B	46	
	0	0.25B	45	
	0	0.33B	39	-hard drilling-
373.1	63		10	Very dense, gray GRAVELLY SAND; wet
369.6	1000M		12	Dark gray SHALE
	2387M		14	
	1000M			
	833M		15	
	500M		17	
355.1	500M		16	Bottom of Hole = 75.0 feet

HANSON

USER NAME = johns00944	DESIGNED - RGC	REVISED -	
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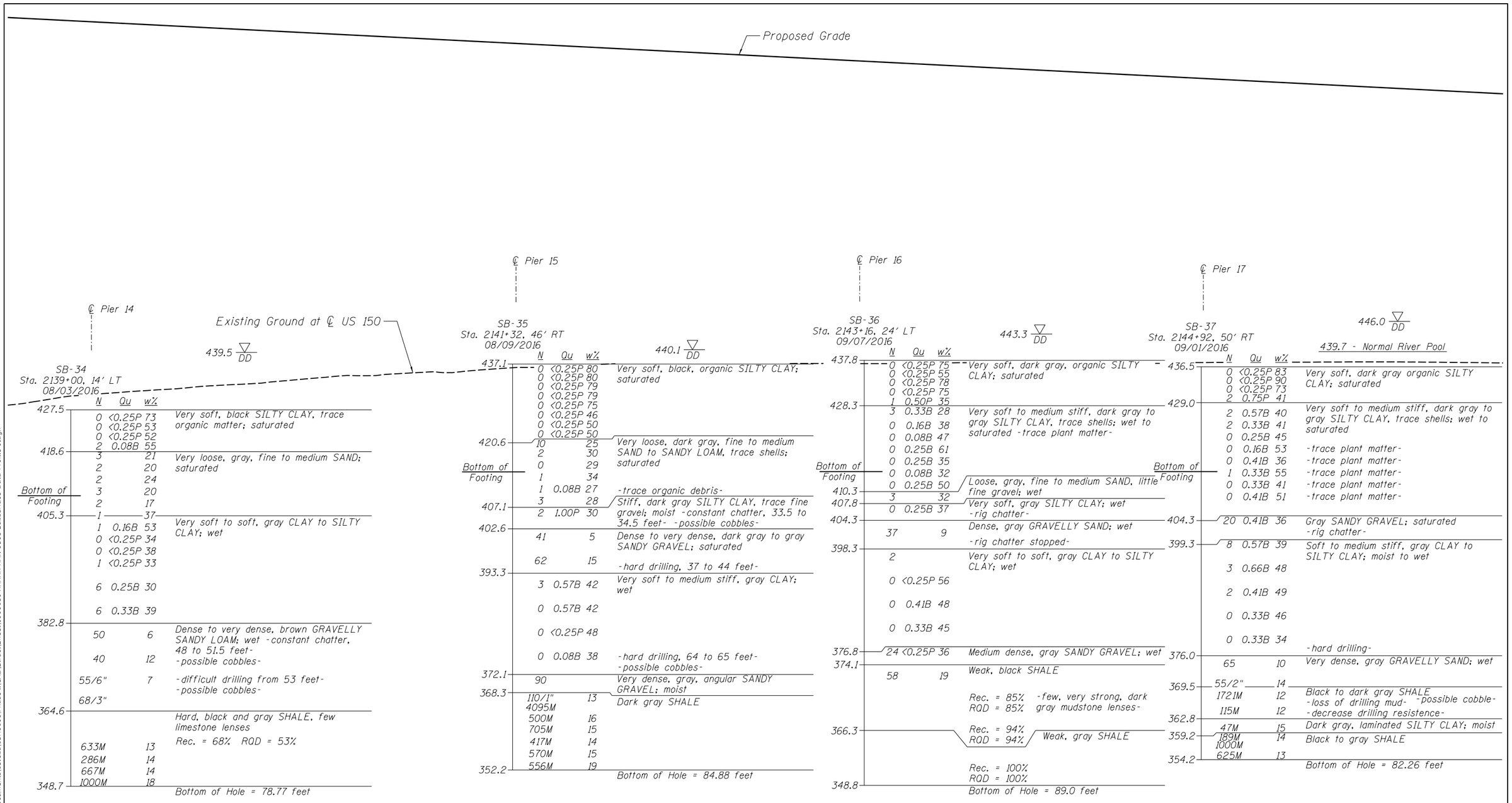
PLOT DATE = 12/11/2018	CHECKED - 02-16-2018	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE, 8 OF 11
STRUCTURE NO. 090-0180
SHEET S-442 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR,BR	PEO/TAZ	1361	1351
		CONTRACT NO. 68B46		
		ILLINOIS FED. AID PROJECT	NHPP-YRP3(905)	



LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD 432.28 ▽	Water Surface Elevation Encountered in Boring DD = during drilling Oh = at completion 24h = 24 hours after completion
233M	Modified SPT

HANSON

USER NAME = johns00944	DESIGNED - RGC	REVISED -	
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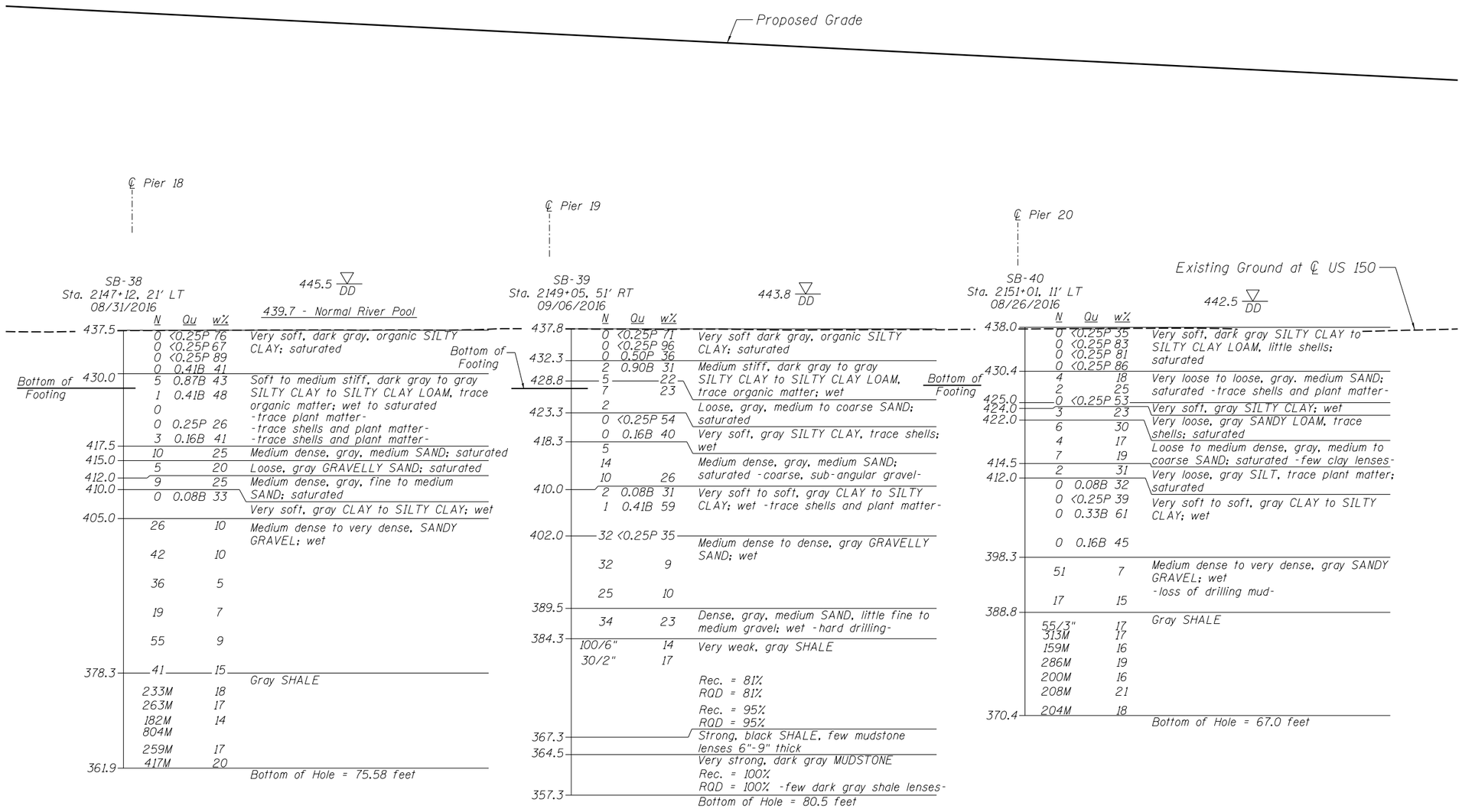
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE, 9 OF 11
STRUCTURE NO. 090-0180
SHEET S-443 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1352
		CONTRACT NO. 68B46		
	ILLINOIS	FED. AID PROJECT	NHPP-YRP3(905)	



LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD ▽ 432.28	Water Surface Elevation Encountered in Boring DD = during drilling Oh = at completion 24h = 24 hours after completion
233M	Modified SPT

HANSON

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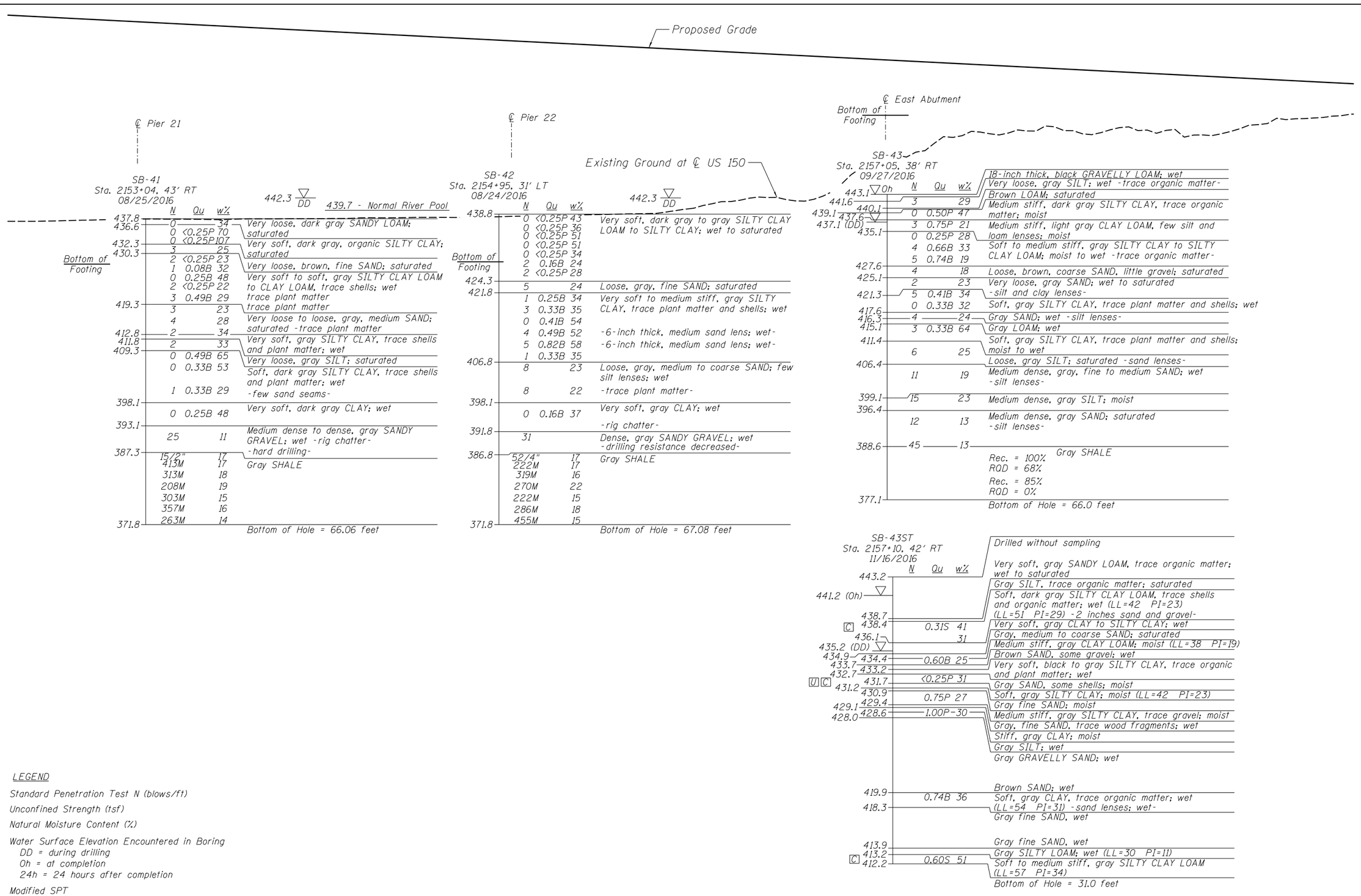
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILE, 10 OF 11
STRUCTURE NO. 090-0180
SHEET S-444 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR)BR	PEO/TAZ	1361	1353
		CONTRACT NO. 68B46		
	ILLINOIS	FED. AID PROJECT	NHPP-YRP3(905)	



LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
DD ▽ 432.28	Water Surface Elevation Encountered in Boring DD = during drilling Oh = at completion 24h = 24 hours after completion
233M	Modified SPT
C	Consolidation Test
U	Unonsolidated Undrained Triaxial Test

HANSON

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

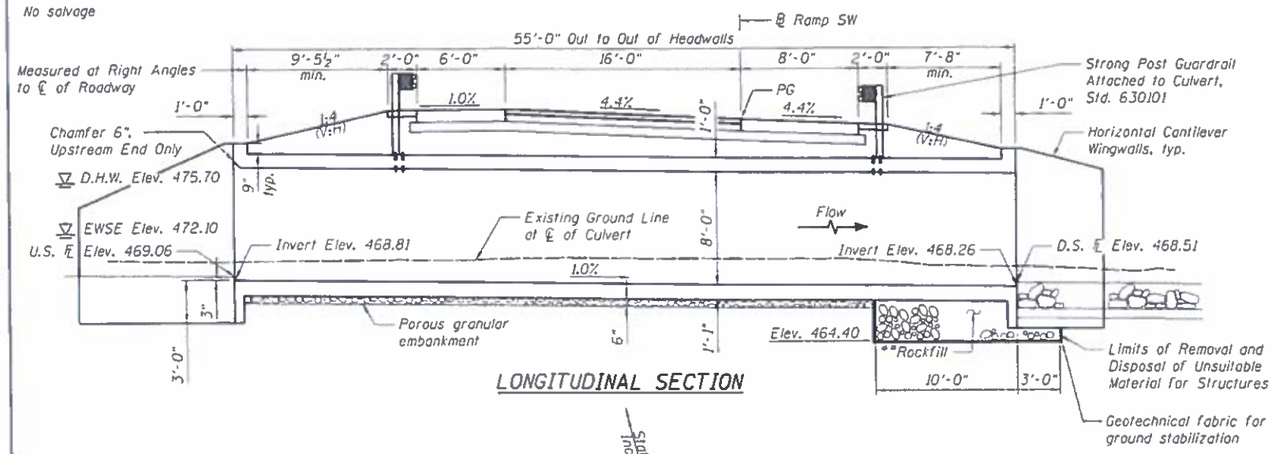
SUBSURFACE DATA PROFILE, 11 OF 11
STRUCTURE NO. 090-0180
SHEET S-445 OF 445 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	[15B;(102-1),(14HB)]BR	PEO/TAZ	1361	1354
		CONTRACT NO. 68B46		
	ILLINOIS	FED. AID PROJECT NHPP-YRP3(905)		

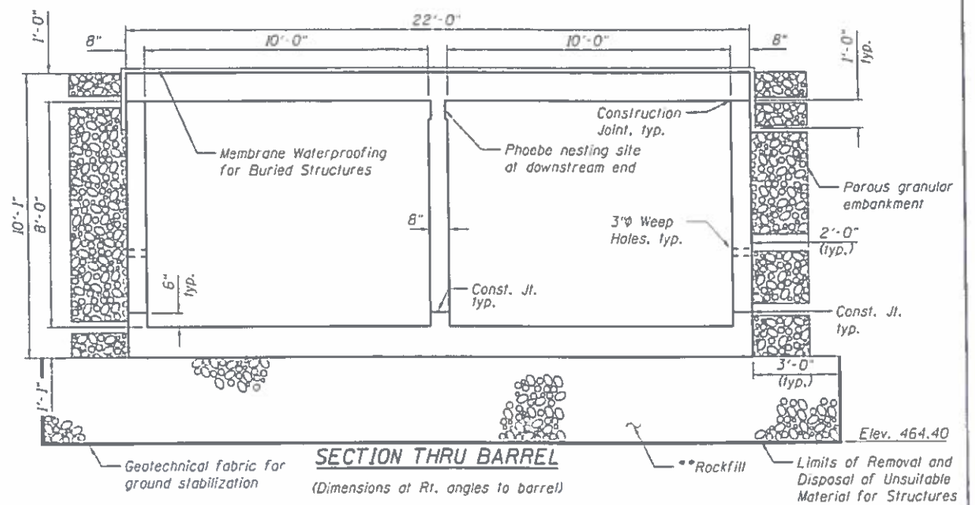
Bench Mark: BM6257 - Chiseled cross on top of center anchor bolt westerly side of northerly concrete pier for westerly supports of overhead traffic sign northbound N Main Street (IL 116) at ramp to eastbound US 24 (Washington). Elev. 473.99

Existing Structure: SN. 090-2013 built in 1993 as double 10'x6' R.C. box culvert with Culvert length of 80'-7¼".
Traffic to be maintained on existing ramp.

No salvage



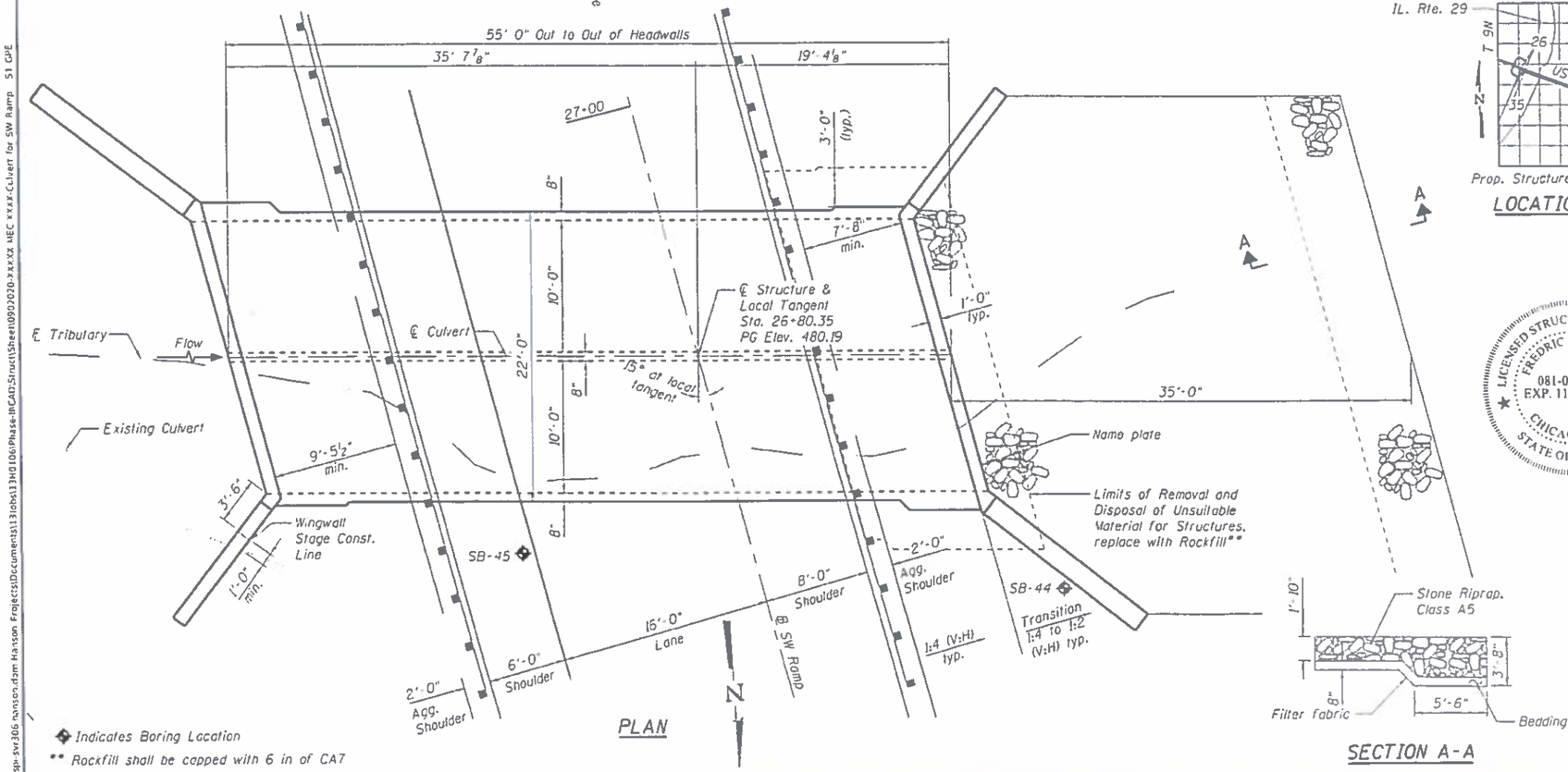
LONGITUDINAL SECTION



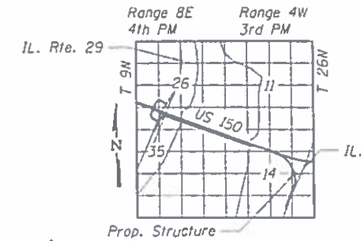
SECTION THRU BARREL

(Dimensions at Rt. angles to barrel)

Stationing Increase



PLAN



LOCATION SKETCH

DESIGN STRESSES

FIELD UNITS

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

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS

2017 AASHTO LRFD Bridge Design Specifications, 8th Edition

2/4/2019
Signature Date

November 30, 2020
Expires

APPROVED
FOR STRUCTURAL ADEQUACY ONLY

ENGINEER OF BRIDGES AND STRUCTURES

SECTION A-A

GENERAL PLAN & ELEVATION
RAMP SW OVER IL RIVER TRIBUTARY
F.A.P. 317-SECTION (15B;[(102-I),(14HB)]BR)BR
TAZEWELL COUNTY
STATION 26+80.35
STRUCTURE NO. 090-2020

MODEL Default
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PLOT DATE = 2/4/2019	CHECKED - LAS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
STRUCTURE NO. 090-2020
SHEET S-1 OF S-7 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	(15B;[(102-I)(14HB)]BR)BR	Tazewell	1361	1355
		CONTRACT NO 68846		
		ILLINOIS FED. AID PROJECT	NHPP-RPS1903	

WATERWAY INFORMATION

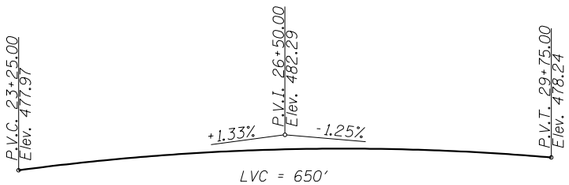
Drainage Area = 0.96 Sq.Mi.

Existing Low Grade Elev. 480.71 @ Sta. 28+00.00
Proposed Low Grade Elev. 480.77 @ Sta. 28+00.00

Flood	Freq. Yr.	Q C.F.S. Exist.	Q C.F.S. Prop.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	660	660	77	110	474.6	1.0	0.5	475.6	475.1
Design	50	1,170	1,170	100	133	475.7	3.3	1.6	479.0	477.3
Base	100	1,420	1,420	109	142	476.2	4.8	2.5	481.0	478.7
Ex. Overtop.	150	1,575	N/A	114	N/A	476.4	4.6	N/A	481.0	N/A
Prop. Overtop.	290	N/A	1,800	N/A	153	476.7	N/A	4.0	N/A	480.7

10-Year Velocity throught Existing Structure = 8.6 fps

10-Year Velocity throught Proposed Structure = 6.0 fps



PROFILE GRADE

(along ℄ Ramp SW)

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Removal and Disposal of Unsuitable Material For Structures	Cu Yd	31
Porous Granular Embankment	Cu Yd	103
Geotechnical Fabric for Ground Stablilization	Sq Yd	59
Stone Riprap, Class A5	Sq Yd	143
Filter Fabric	Sq Yd	143
Removal of Existing Structures No. 4	Each	1
Reinforcement Bars, Epoxy Coated	Pound	36,380
Membrane Waterproofing for Buried Structures	Sq Yd	153
Mechanical Splicers	Each	15
Name Plates	Each	1
Concrete Box Culverts	Cu Yd	152
Rock Fill	Cu Yd	31

STATION 26+80.35
BUILT 20__ BY
STATE OF ILLINOIS
F.A.P. RT. 317 SEC. (15B;[(102-1),(14HB)]BR)BR
LOADING HL-93
STRUCTURE NO. 090-2020

NAME PLATE

(See Std. 515001)

CURVE DATA

P.I. Sta. = 23+52.44
Δ = 41°49'02.25" RT
D = 3°38'16.18"
R = 1,575.00'
T = 601.71'
L = 1,149.51'
E = 111.02'
e = 4.4%
T.R. = NONE
S.E. Run = 47.4'
P.C. Sta. = 17+50.74
P.T. Sta. = 29+00.25

INDEX OF SHEETS

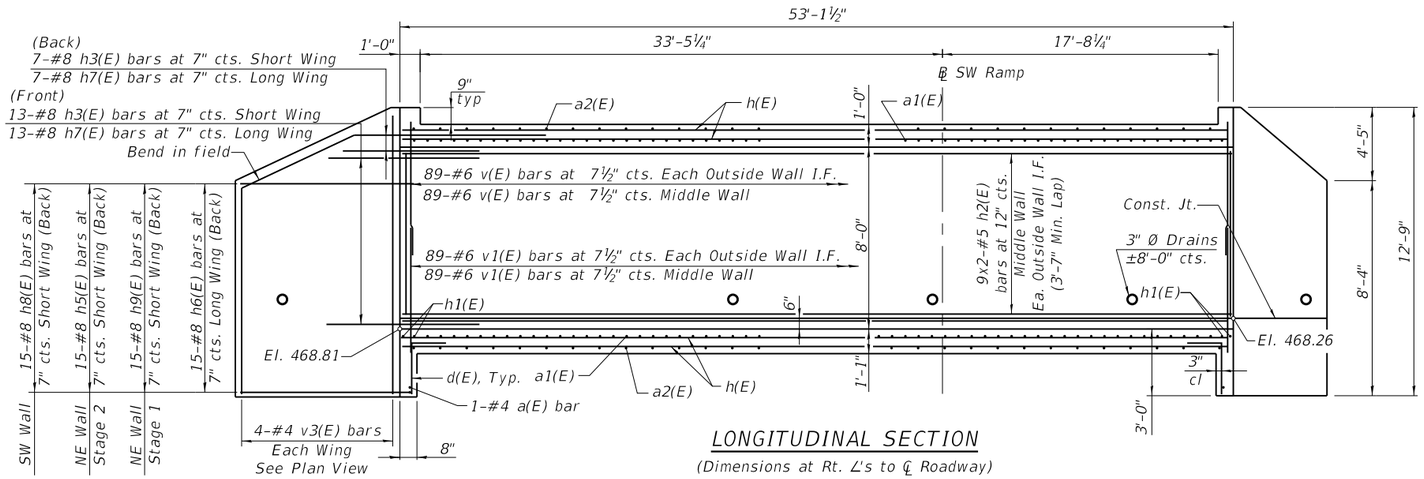
GENERAL NOTES

1. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
2. Precast alternative is not allowed.
3. The limits and quantities of removal and replacement shown are based on the boring data and may be modified by the District Geotechnical and Field Engineers for variable subsurface conditions encountered in the field.
4. The Rockfill shall be capped with 6 in. of CA7 and satisfy the Standard Specifications unless otherwise indicated in the Special Provisions. The cost of the capping material shall be included in the pay item for Rockfill.
5. Porous granular embankment shall be placed in accordance with section 207 of the standard specifications.
6. If no undercut is required, a 6" minimum layer of porous granular embankment shall be placed below the elevation of the bottom of box culvert.
7. Reinforcement bars designated (E) shall be epoxy coated.

MILHOUSE	USER NAME = tsledge	DESIGNED - VPS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		CHECKED - LAS	REVISED -	
	PLOT SCALE = 0:2.0000 ':" / in.	DRAWN - TCS	REVISED -	
	PLOT DATE = 2/5/2019	CHECKED - LAS	REVISED -	

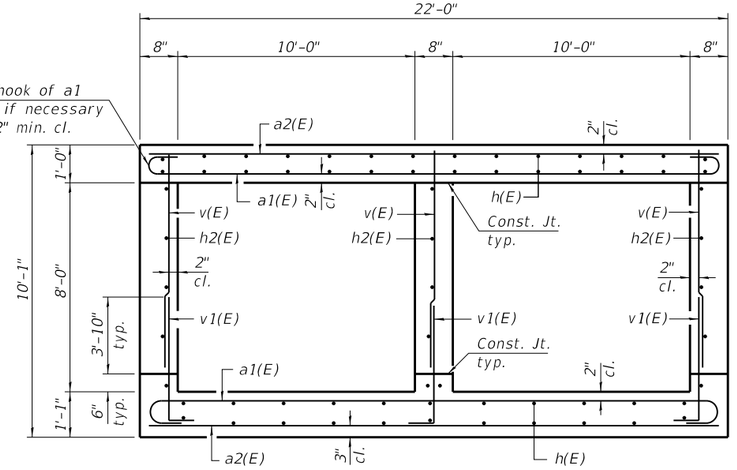
GENERAL DATA
STRUCTURE NO. 090-2020
SHEET S-2 OF S-7 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	15B(BR)	Tazewell	1361	1356
			CONTRACT NO. 68B46	
	ILLINOIS	FED. AID PROJECT	NHPP-YRP3(905)	

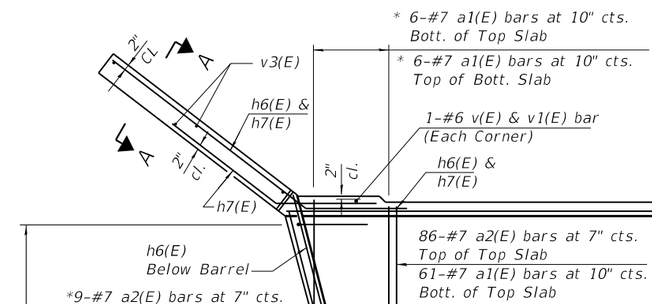


LONGITUDINAL SECTION

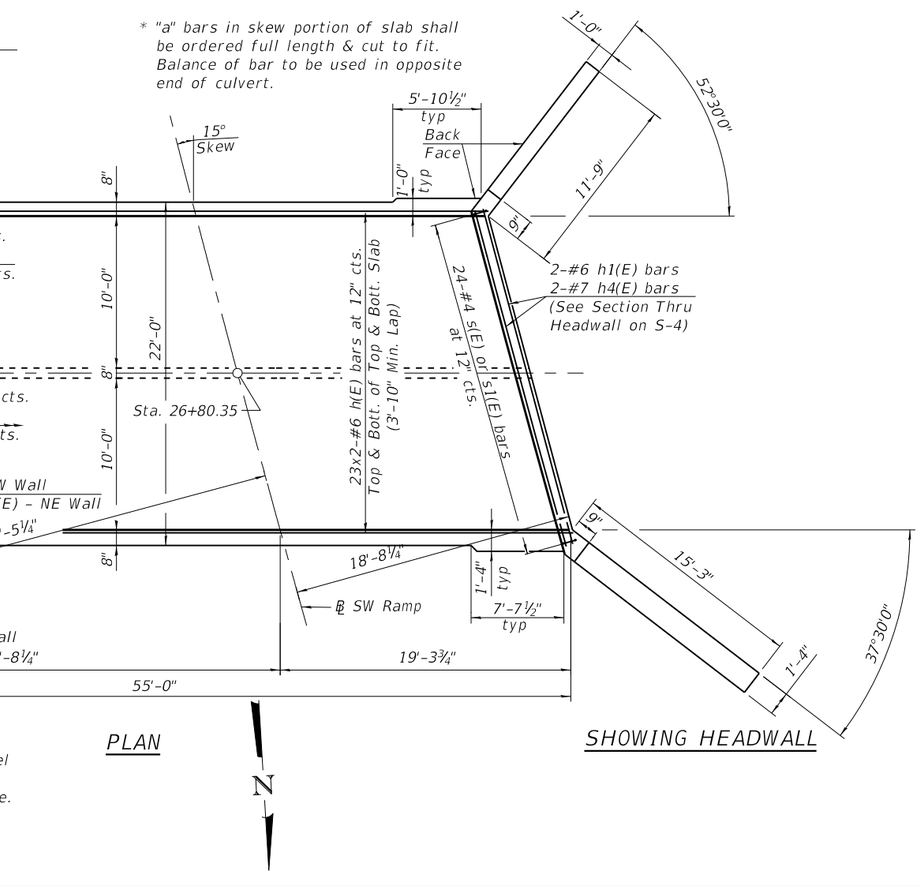
(Dimensions at Rt. ∠'s to ℄ Roadway)



SECTION THRU BARREL

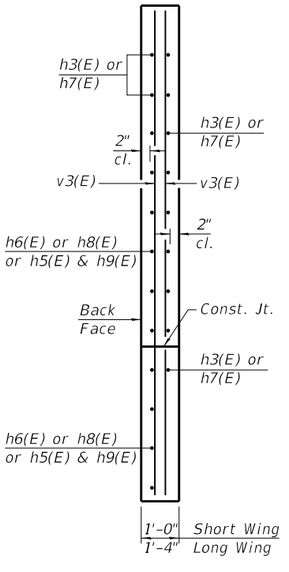


SHOWING TOEWALL



PLAN

SHOWING HEADWALL



SECTION A-A

Notes:

A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.

Bars indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line. At the Contractor's option, a longer v1 bar may be ordered to replace the v bar. No reduction in quantities shall be made for this substitution.

For Bill of Materials and bar details see Sheet S-4.

I.F., O.F. and E.F. for inside, outside and each face respectively.

MILHOUSE

USER NAME = tsledge	DESIGNED - VPS	REVISED -
	CHECKED - LAS	REVISED -
PLOT SCALE = 0.1667 ' / in.	DRAWN - TCS	REVISED -
PLOT DATE = 2/5/2019	CHECKED - LAS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT PLAN & SECTION
STRUCTURE NO. 090-2020
SHEET S-3 OF S-7 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	15B(BR)	Tazewell	1361	1357
		CONTRACT NO. 68B46		
	ILLINOIS	FED. AID PROJECT NHPP-YRP3(905)		

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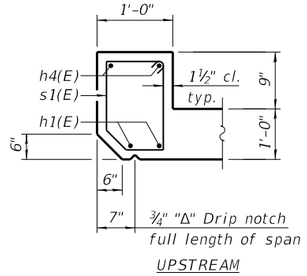
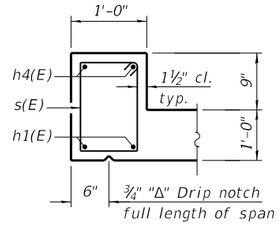
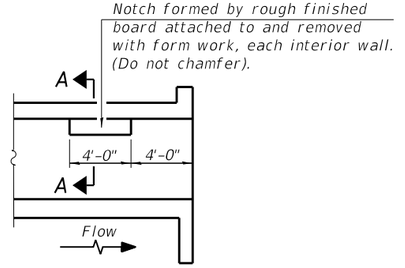


UPSTREAM

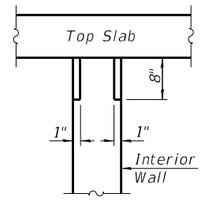


DOWNSTREAM

SECTION THRU HEADWALL



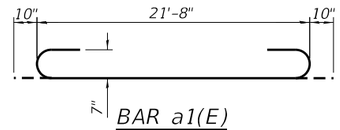
LONGITUDINAL SECTION



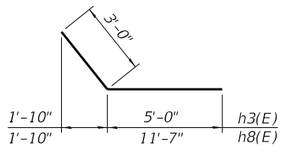
SECTION A-A

PHOEBE NESTING SITE DETAILS

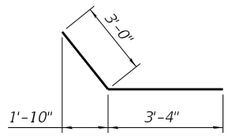
(Downstream End Only)



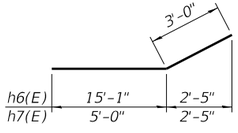
BAR a1(E)



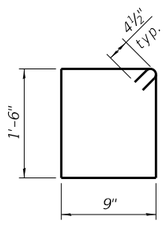
BARS h3(E) & h8(E)



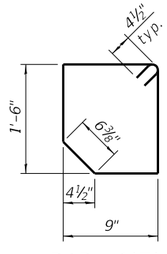
BAR h9(E)



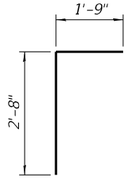
BARS h6(E) & h7(E)



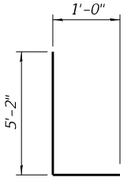
BAR s(E)



BAR s1(E)



BAR d(E)



BAR v1(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	2	#4	22'-5"	
a1(E)	134	#7	23'-4"	
a2(E)	190	#7	21'-8"	
d(E)	46	#4	4'-5"	
h(E)	184	#6	29'-11"	
h1(E)	8	#6	22'-5"	
h2(E)	72	#5	29'-7"	
h3(E)	40	#8	8'-0"	
h4(E)	4	#7	22'-5"	
h5(E)	15	#8	7'-11"	
h6(E)	30	#8	18'-1"	
h7(E)	40	#8	8'-0"	
h8(E)	15	#8	14'-7"	
h9(E)	15	#8	6'-4"	
s(E)	24	#4	5'-3"	
s1(E)	24	#4	4'-6"	
v(E)	267	#6	8'-2"	
v1(E)	267	#6	6'-2"	
v3(E)	16	#4	12'-5"	
Concrete Box Culverts			Cu. Yd.	152
Reinforcement Bars, Epoxy Coated			Pound	36,380

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		CHECKED - LAS	REVISED -	
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	PLOT DATE = 2/5/2019	CHECKED - LAS	REVISED -	

CULVERT DETAILS
STRUCTURE NO. 090-2020
SHEET S-4 OF S-7 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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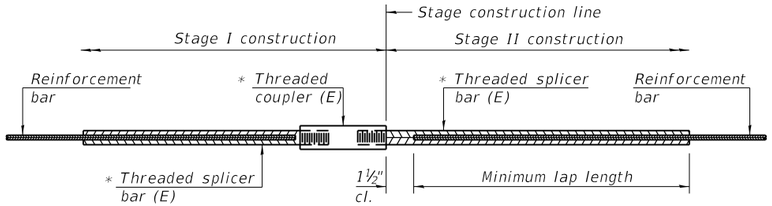
		CONTRACT NO. 68B46		
	ILLINOIS	FED. AID PROJECT	NHPP-YRP3(905)	

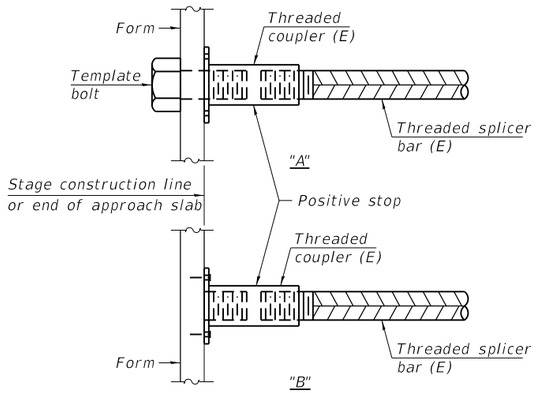


STANDARD BAR SPLICER ASSEMBLY

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

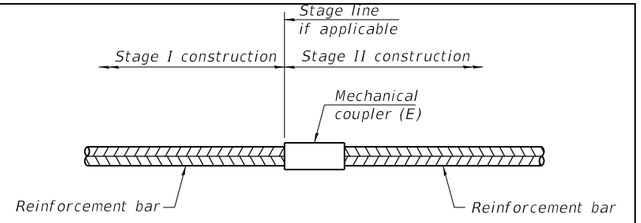
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length



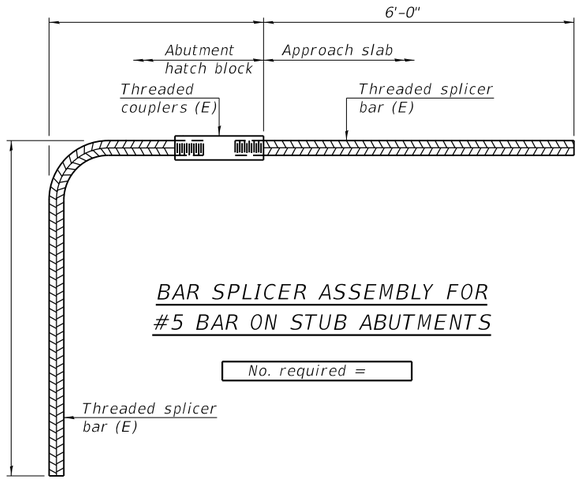
INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
NE Wing Wall	#8	15



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

All reinforcement shall be lapped and tied to the splicer bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1 2-17-2017

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	CHECKED - LAS	REVISED -	
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PLOT DATE = 2/4/2019	CHECKED - LAS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 090-2020
SHEET S-5 OF S-7 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	(15B:[(102-1),(14HB)]BR)BR	Tazewell	1361	1359
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			

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

BORING LOG SB-44

WEI Job No.: 414-09-01

Client: TYLin/Hanson
Project: US 150 over Illinois River - McClugage
Location: Peoria and Tazewell Counties, IL

Datum: NAVD 88
Elevation: 472.38 ft
North: 1474477.74 ft
East: 2472726.90 ft
Station: 26+56
Offset: 22.0 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	471.7	8-inch thick, brown SILTY LOAM --TOPSOIL--						
		Soft to stiff, brown CLAY LOAM, trace gravel; trace organic debris; moist to wet --RDR 2--			1	3 2 4	1.25 P	15
			5		2	2 1 2	0.75 P	16
	465.6				3	2 2 2	0.33 B	17
	464.4	Very soft, brown SANDY LOAM; saturated --RDR 2--						
		Medium stiff, brown SILTY CLAY; moist --RDR 2--	10		4	2 2 2	0.90 B	21
	461.9	Soft, brown CLAY LOAM to LOAM; wet --RDR 2--			5	1 1 2	0.25 B	20
	459.4	Medium stiff to stiff, brown to gray SILTY CLAY to SILTY CLAY LOAM; moist --RDR 2 to 3--	15		6	2 2 2	0.75 B	21
		--sand lenses; wet--			7	2 2 3	0.98 B	26
		--silt lenses; moist--	20		8	3 2 4	1.23 B	24
		--trace plant debris--			9	2 2 3	1.07 B	30
			25		10	3 3 3	1.15 B	31
		--sand lenses; wet--			11	3 3 4	0.82 B	26
	444.4	Medium dense, gray SILTY LOAM to SILT; wet --RDR 3--	30		12	4 4 10	NP	25
	440.6	Medium dense, brown, medium SAND, little gravel; saturated --RDR 3--	35		13	7 4 8	NP	22
			40		14	3 4 10	NP	23

GENERAL NOTES

Begin Drilling: 09-23-2016 Complete Drilling: 09-23-2016
Drilling Contractor: Wang Testing Service Drill Rig: D50 ATV [88%]
Driller: K&N Logger: J. Foote Checked by: C. Marin
Drilling Method: 3.25" IDA HSA; boring backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ 7.00 ft
At Completion of Drilling: ▼ 29.00 ft
Time After Drilling: NA
Depth to Water: ▼ NA

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

WANGENGINC 4140901.GPJ WANGENG.GDT 4/3/17

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

BORING LOG SB-44

WEI Job No.: 414-09-01

Client: TYLin/Hanson
Project: US 150 over Illinois River - McClugage
Location: Peoria and Tazewell Counties, IL

Datum: NAVD 88
Elevation: 472.38 ft
North: 1474477.74 ft
East: 2472726.90 ft
Station: 26+56
Offset: 22.0 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			45		15	3 4 9	NP	16
	422.4	Boring terminated at 50.00 ft	50		16	3 4 6	NP	21
			55					
			60					

GENERAL NOTES

Begin Drilling: 09-23-2016 Complete Drilling: 09-23-2016
Drilling Contractor: Wang Testing Service Drill Rig: D50 ATV [88%]
Driller: K&N Logger: J. Foote Checked by: C. Marin
Drilling Method: 3.25" IDA HSA; boring backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ 7.00 ft
At Completion of Drilling: ▼ 29.00 ft
Time After Drilling: NA
Depth to Water: ▼ NA

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

WANGENGINC 4140901.GPJ WANGENG.GDT 4/3/17

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2/4/2019 12:19:43 PM

MILHOUSE

USER NAME = tsledge	DESIGNED - VPS	REVISED -	
	CHECKED - LAS	REVISED -	
PLOT SCALE = 0.1667 ' / in.	DRAWN - TCS	REVISED -	
PLOT DATE = 2/4/2019	CHECKED - LAS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS 1
STRUCTURE NO. 090-2020
SHEET S-6 OF S-7 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
317	(15B;[(102-1),(14HB)]BR)BR	Tazewell	1361	1360
		CONTRACT NO. 68B46		
	ILLINOIS FED. AID PROJECT NHPP-YRP3(905)			

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

BORING LOG SB-45

WEI Job No.: 414-09-01

Client: TYLin/Hanson
Project: US 150 over Illinois River - McClugage
Location: Peoria and Tazewell Counties, IL

Datum: NAVD 88
Elevation: 471.85 ft
North: 1474472.52 ft
East: 2472768.00 ft
Station: 26+70
Offset: 17.0 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	471.2	8-inch thick, brown SILTY LOAM --TOPSOIL--						
		Medium dense, brown SANDY LOAM; moist --FILL-- --RDR 4--			1	2 6 6	NP	15
	468.9	Very stiff, gray SILTY CLAY, little gravel; moist --FILL-- --RDR 4--	5		2	4 7 8	2.00 P	10
	466.4	Medium dense, brown GRAVELLY SAND; moist --RDR 4--			3	10 8 8	NP	6
	463.9	Very loose, brown SILTY LOAM to LOAM; wet to saturated --RDR 2--	10		4	0 0 1	NP	19
	461.4	Soft to very stiff, brown to gray SILTY CLAY to SILTY CLAY LOAM; moist --RDR 3--			5	2 3 3	1.07 B	17
			15		6	1 1 2	0.33 B	28
		--trace plant debris-- --silt lenses; moist--			7	3 2 4	1.48 B	25
			20		8	3 3 3	2.71 B	24
		--silt and sand lenses; moist--			9	2 3 3	1.39 B	25
		--trace plant debris--	25		10	2 3 4	1.31 B	36
	446.4	Soft to medium stiff, gray SILTY LOAM; moist --RDR 3-- --silt lenses; wet--			11	5 5 6	0.74 B	20
			30		12	2 5 5	0.41 B	22
	438.9	Medium dense, gray and brown, fine SAND; saturated --RDR 3--			13	2 5 5	NP	29
		--heaving sand--	35		14	3 4 7	NP	16

GENERAL NOTES

Begin Drilling: 09-22-2016 Complete Drilling: 09-22-2016
Drilling Contractor: Wang Testing Service Drill Rig: D50 ATV [88%]
Driller: K&N Logger: J. Foote Checked by: C. Marin
Drilling Method: 3.25" IDA HSA; boring backfilled upon completion

WATER LEVEL DATA

While Drilling: 8.50 ft
At Completion of Drilling: 35.00 ft
Time After Drilling: NA
Depth to Water: NA

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

WANGENGINC 4140901.GPJ WANGENG.GDT 4/3/17

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

BORING LOG SB-45

WEI Job No.: 414-09-01

Client: TYLin/Hanson
Project: US 150 over Illinois River - McClugage
Location: Peoria and Tazewell Counties, IL

Datum: NAVD 88
Elevation: 471.85 ft
North: 1474472.52 ft
East: 2472768.00 ft
Station: 26+70
Offset: 17.0 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--light rig chatter-- --possible gravel--						
			45		15	7 8 9	NP	18
	421.9	Boring terminated at 50.00 ft	50		16	3 5 7	NP	23
			55					
			60					

GENERAL NOTES

Begin Drilling: 09-22-2016 Complete Drilling: 09-22-2016
Drilling Contractor: Wang Testing Service Drill Rig: D50 ATV [88%]
Driller: K&N Logger: J. Foote Checked by: C. Marin
Drilling Method: 3.25" IDA HSA; boring backfilled upon completion

WATER LEVEL DATA

While Drilling: 8.50 ft
At Completion of Drilling: 35.00 ft
Time After Drilling: NA
Depth to Water: NA

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

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