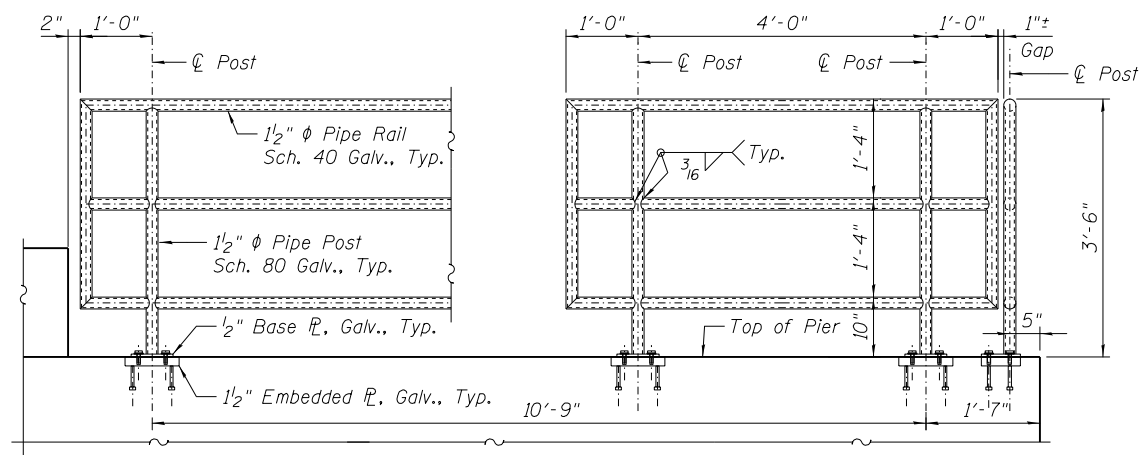
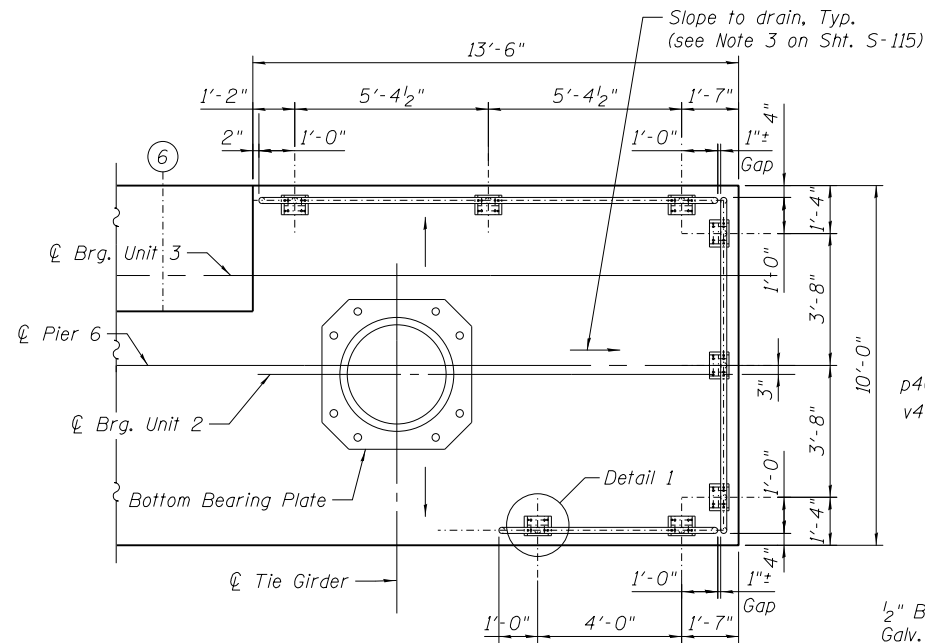


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 DATE - 8/5/2014, CHECKED - RSN, REVISED -
 PLOT SCALE = DRAWN - FD, REVISED -
 PLOT DATE = CHECKED - SGC, REVISED -



PIPE HANDRAIL ELEVATION

Looking East

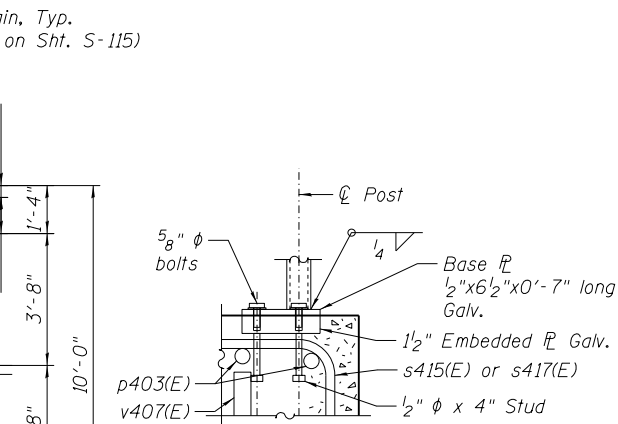


PIPE HANDRAIL PLAN

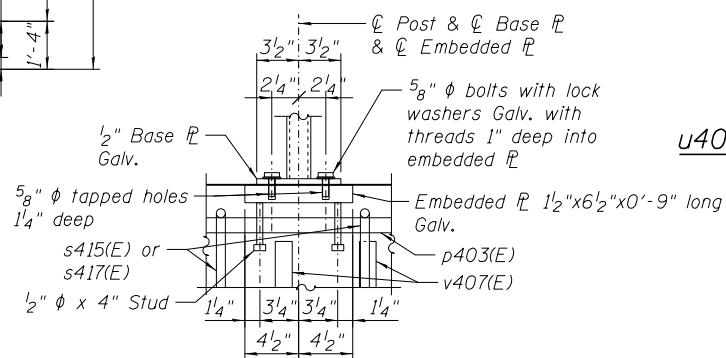
Pipe Handrail at South end of Pier 6 shown, Pipe Handrail at North end of Pier 6 opposite hand.

Note:

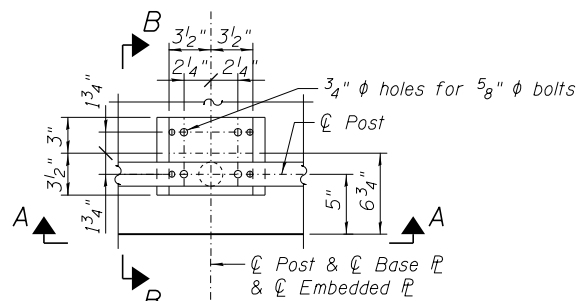
Pipe Handrails shall be hot-dip galvanized. Cost for galvanizing and Mounting Accessories is included with Pipe Handrail.



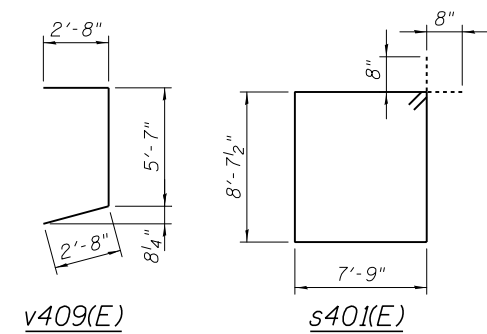
SECTION B-B



ELEVATION A-A

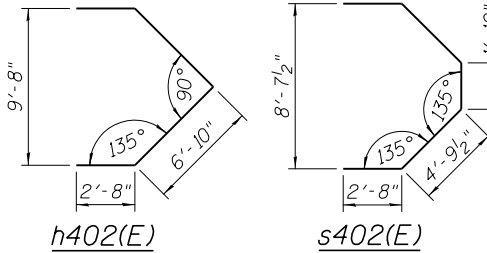


PLAN DETAIL 1



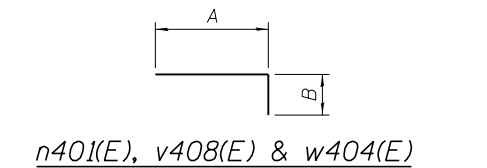
v409(E)

s401(E)

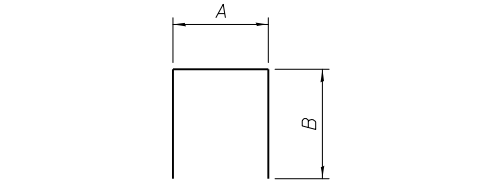


h402(E)

s402(E)



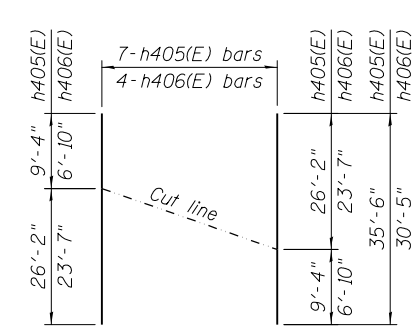
n401(E), v408(E) & w404(E)



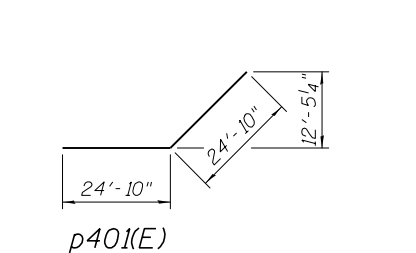
h407(E), h409(E), s406(E), s407(E), s409(E), s411(E), s413(E), s415(E), s417(E), u401(E), u402(E), u403(E) & u404(E)

A & B DIMENSIONS

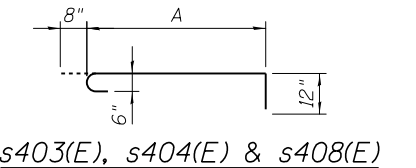
Bar	A	B
h407(E)	9'-6"	3'-0"
h409(E)	3'-0"	2'-11"
n401(E)	18'-3"	2'-0"
s406(E)	5'-6"	4'-5"
s407(E)	2'-2"	6'-0 1/2"
s409(E)	9'-8"	9'-3"
s411(E)	9'-8"	8'-3"
s413(E)	9'-8"	7'-3"
s415(E)	9'-8"	6'-3"
s417(E)	9'-8"	5'-3"
u401(E)	7'-7"	1'-0"
u402(E)	7'-4 1/2"	1'-0"
u403(E)	9'-5 1/2"	2'-6"
u404(E)	3'-2"	4'-1"
v408(E)	26'-3"	8'-2"
w404(E)	3'-0"	3'-0"



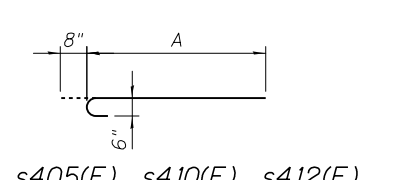
h405(E) & h406(E)



p401(E)



s403(E), s404(E) & s408(E)



s405(E), s410(E), s412(E), s414(E), s416(E) & s418(E)

A DIMENSIONS

Bar	A
s403(E)	8'-7 1/2"
s404(E)	7'-9"
s405(E)	3'-0"
s408(E)	9'-8"
s410(E)	9'-3"
s412(E)	8'-3"
s414(E)	7'-3"
s416(E)	6'-3"
s418(E)	5'-3"

BILL OF MATERIAL

Item	Unit	Total
Concrete Structures	Cu. Yd.	2516.3
Reinforcement Bars, Epoxy Coated	Pound	324180
Pipe Handrail	Foot	57
Cofferdam (Type 2)(Location 3)	Each	1
Cofferdam Excavation	Cu. Yd.	3142
Seal Coat Concrete	Cu. Yd.	1560.0
Furnishing Steel Piles HP 14x117	Foot	8120
Driving Piles	Foot	8120
Test Pile Steel HP 14x117	Each	2
Pile Shoes	Each	147
Concrete Sealer	Sq. Ft.	5983

BAR LIST

Bar	No.	Size	Length	Shape
h401(E)	321	#9	25'-8"	—
h402(E)	70	#6	19'-0"	∩
h403(E)	28	#9	38'-10"	—
h404(E)	16	#9	28'-6"	—
h405(E)	14	#9	35'-6"	—
h406(E)	4	#9	30'-5"	—
h407(E)	14	#6	15'-6"	—
h408(E)	6	#6	44'-8"	—
h409(E)	4	#6	8'-10"	∩
n401(E)	312	#11	20'-3"	└
p401(E)	27	#10	49'-8"	∩
p402(E)	36	#10	19'-0"	—
p403(E)	36	#10	39'-8"	—
s401(E)	190	#6	34'-1"	∩
s402(E)	164	#6	16'-9"	∩
s403(E)	268	#6	10'-4"	∩
s404(E)	268	#6	9'-5"	∩
s405(E)	1072	#6	3'-8"	∩
s406(E)	134	#6	14'-4"	∩
s407(E)	134	#6	14'-3"	∩
s408(E)	304	#6	11'-4"	∩
s409(E)	38	#6	28'-2"	∩
s410(E)	152	#6	9'-11"	∩
s411(E)	40	#6	26'-2"	∩
s412(E)	160	#6	8'-11"	∩
s413(E)	56	#6	24'-2"	∩
s414(E)	224	#6	7'-11"	∩
s415(E)	56	#6	22'-2"	∩
s416(E)	224	#6	6'-11"	∩
s417(E)	28	#6	20'-2"	∩
s418(E)	112	#6	5'-11"	∩
t401(E)	144	#11	33'-8"	—
t402(E)	118	#7	33'-8"	—
u401(E)	208	#6	9'-7"	∩
u402(E)	68	#6	9'-5"	∩
u403(E)	65	#6	14'-6"	∩
u404(E)	46	#6	11'-4"	∩
v401(E)	138	#10	28'-8"	—
v402(E)	174	#11	30'-8"	—
v403(E)	70	#10	14'-10"	—
v404(E)	174	#11	14'-10"	—
v405(E)	112	#11	45'-8"	—
v406(E)	28	#11	37'-0"	—
v407(E)	112	#11	26'-2"	—
v408(E)	28	#11	34'-5"	└
v409(E)	36	#6	10'-11"	∩
w401(E)	92	#11	56'-0"	—
w402(E)	48	#11	20'-0"	—
w403(E)	144	#7	37'-0"	—
w404(E)	28	#6	6'-0"	└

PIER 6 DETAILS BAR LIST & BILL OF MATERIAL

SHEET NO. S-121 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	502
SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				

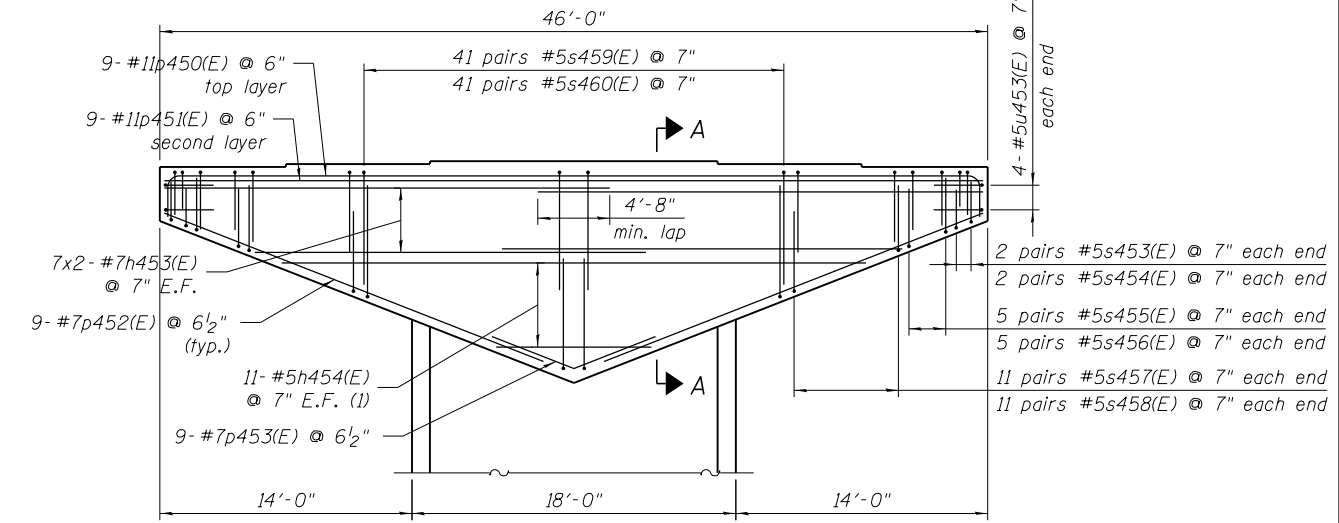
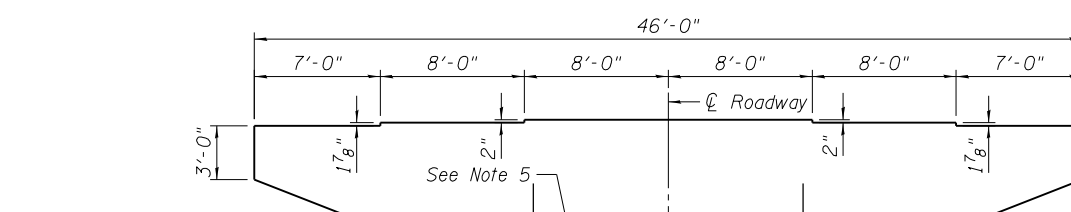
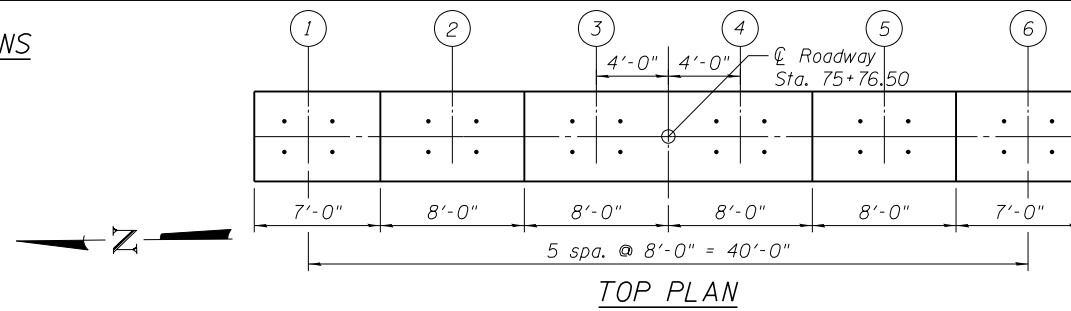
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
	DATE - 8/5/2014	CHECKED - RSN	REVISED -
	PLOT SCALE =	DRAWN - FD	REVISED -
	PLOT DATE =	CHECKED - SGC	REVISED -

exp. U.S. Services Inc.
Chicago, IL
BUILDINGS-EARTH & ENVIRONMENT-ENERGY
INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY

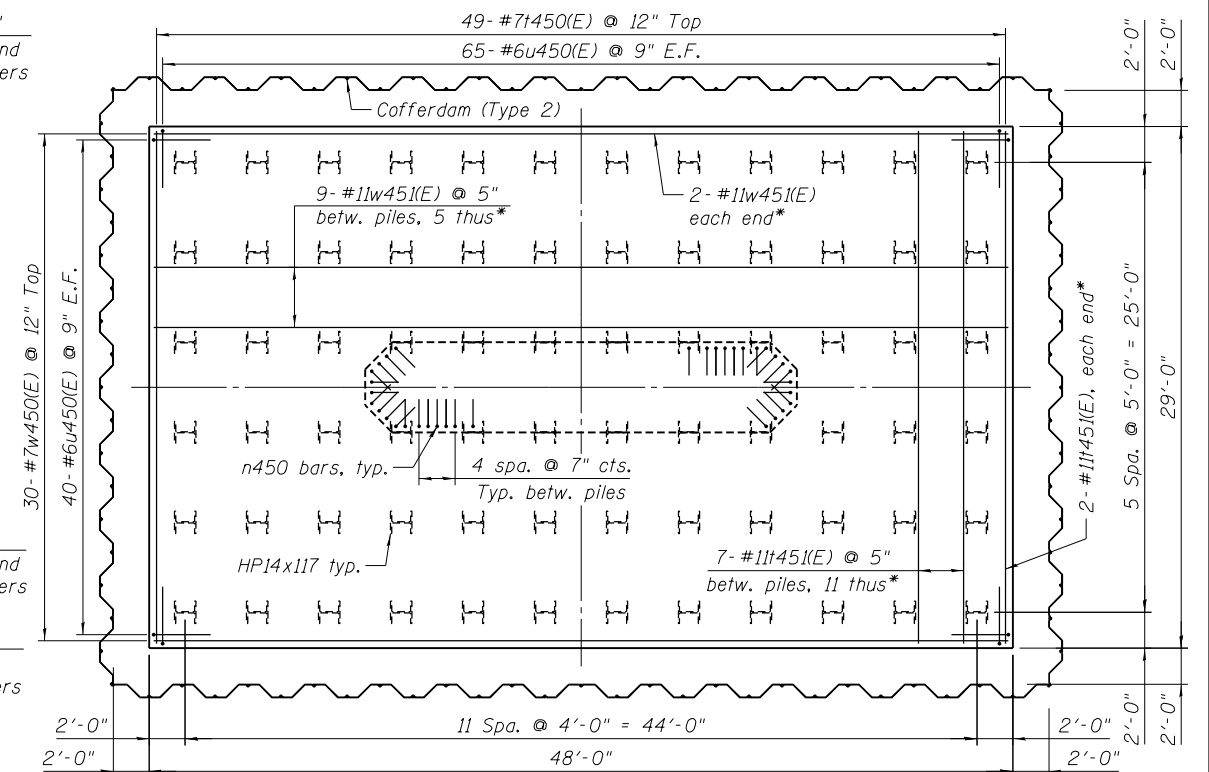
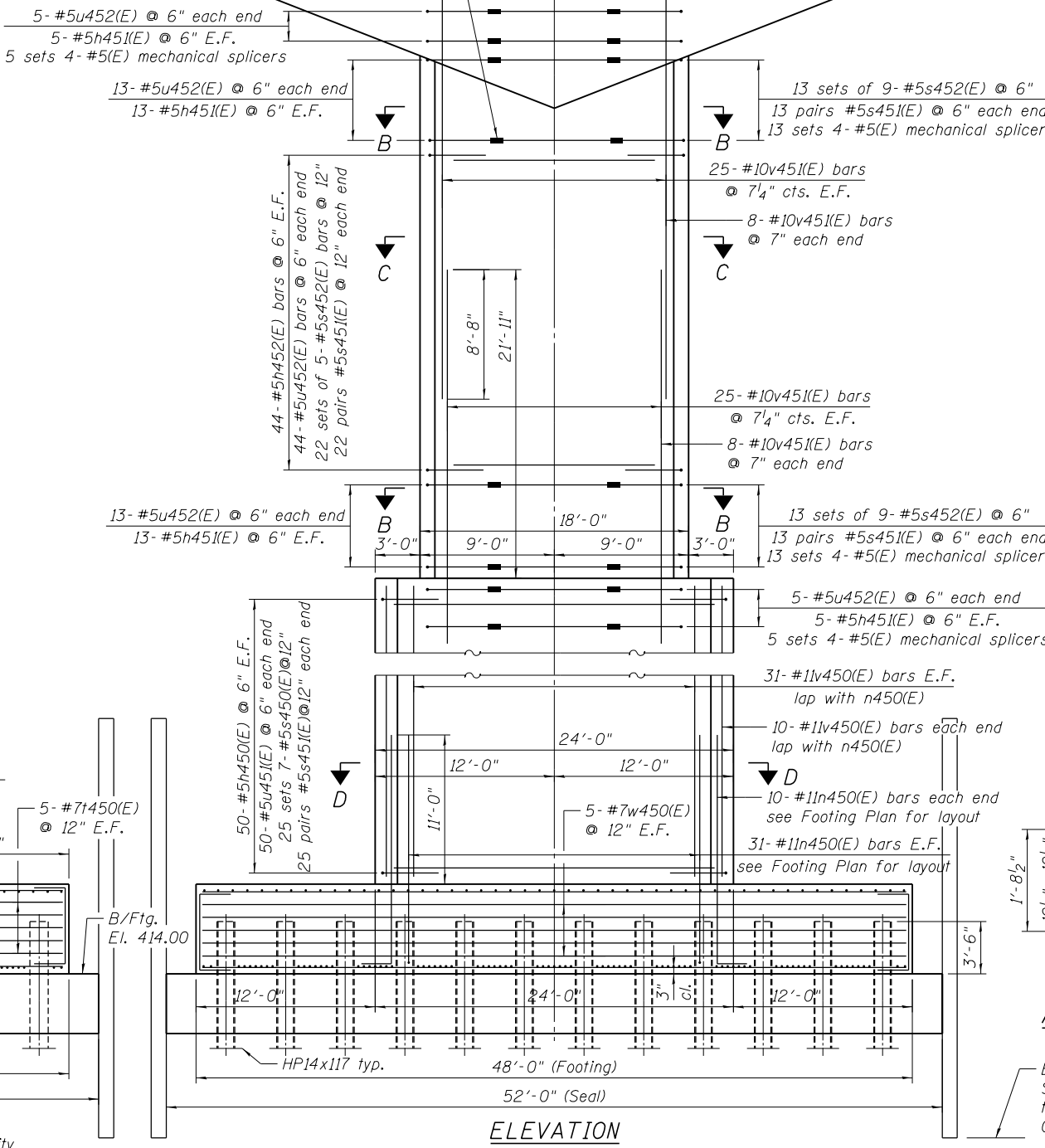
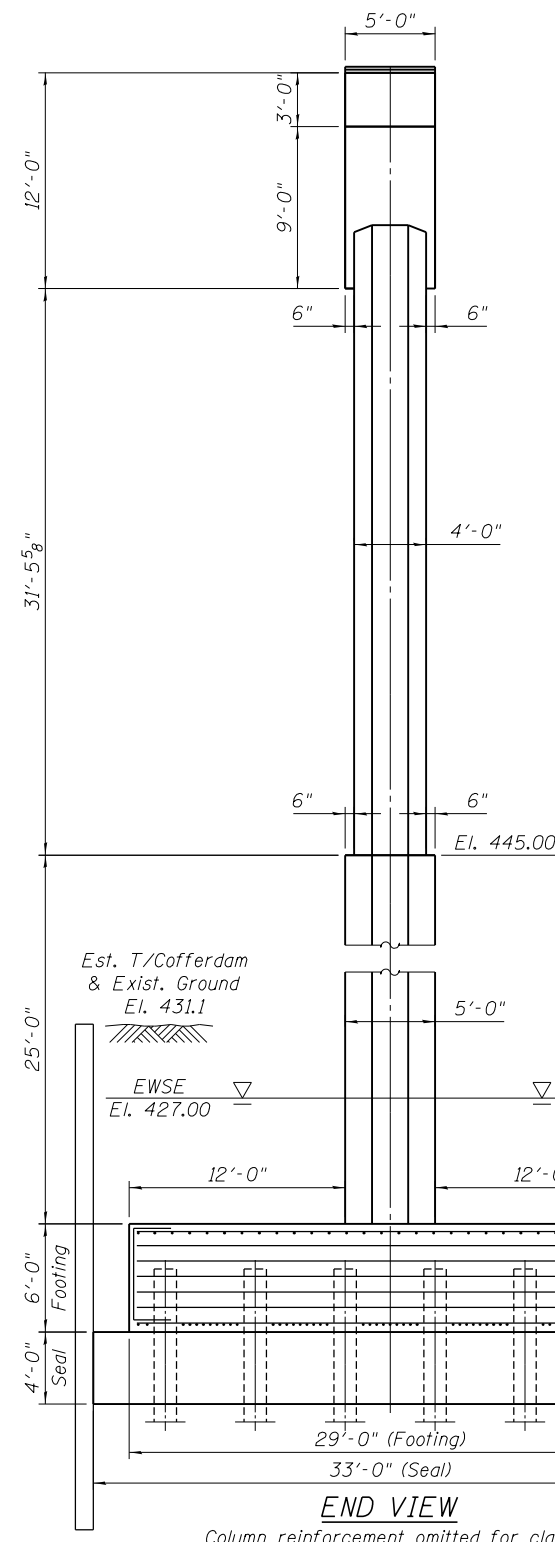
BEARING SEAT ELEVATIONS

Girder	Brg. Seat Elevation
1	488.47
2	488.63
3	488.79
4	488.79
5	488.63
6	488.47



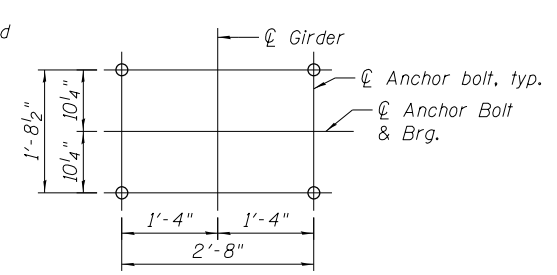
PIER CAP REINFORCEMENT

(1) Cut h454(E) bars according to cutting diagram, see Sheet S-123.



FOOTING PLAN

* indicates bottom mat reinforcement



ANCHOR BOLT LAYOUT

Estimated elevation 403.00
Seal coat thickness and cofferdam tip elevation are dependant on Contractor's design

PILE DATA

Parameter	Value
Pile Type and Size:	Steel-HP14x117 with pile shoe
Nominal Required Bearing:	929 kips
Factored Resistance Available:	500 kips
Estimated Pile Length:	72 ft.
Number of Production Piles:	71
Number of Test Piles:	1
Estimated Top of Rock Elevation:	346.10

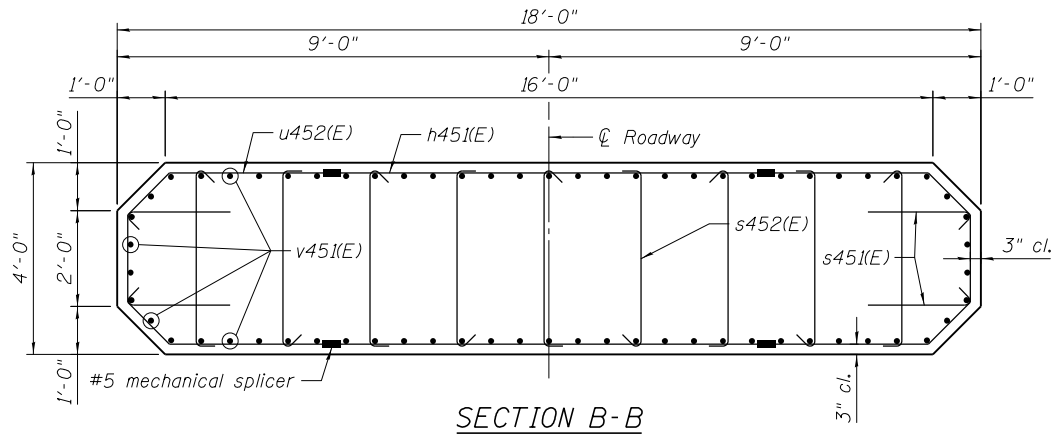
Notes:

1. Bars indicated thus 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.
2. Pour steps monolithically with cap.
3. Space reinforcement in cap to miss anchor bolts.
4. E.F. indicates each face
5. See Sht. S-128 for aesthetic reveals on pier shaft.

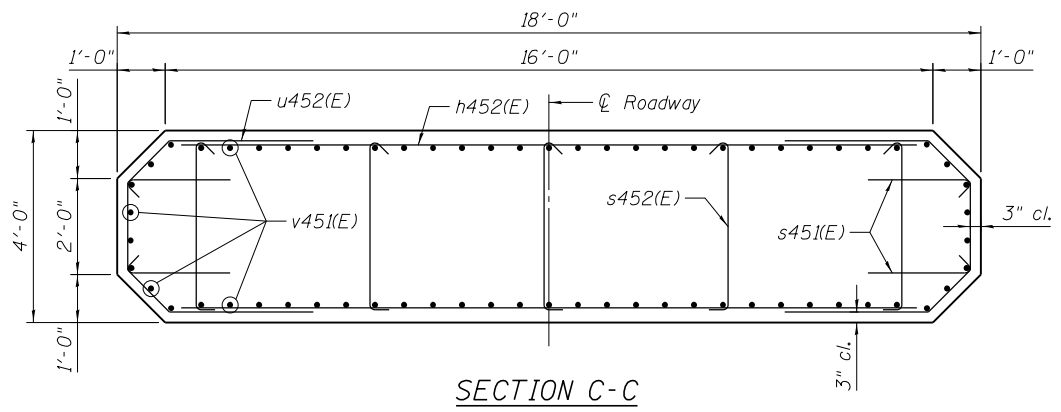
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 8-05-2014, 15:22:11

FILE NAME =	USER NAME =	DESIGNED - HVP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PIER 7 PLAN & ELEVATION	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
DATE - 8/5/2014	CHECKED - JLR	REVISED -	745			123B-2	MORGAN	782	503	
PLOT SCALE =	DRAWN - HVP	REVISED -	SN 069-0525			CONTRACT NO. 72B58				
PLOT DATE	CHECKED - VCP	REVISED -	ILLINOIS FED. AID PROJECT							

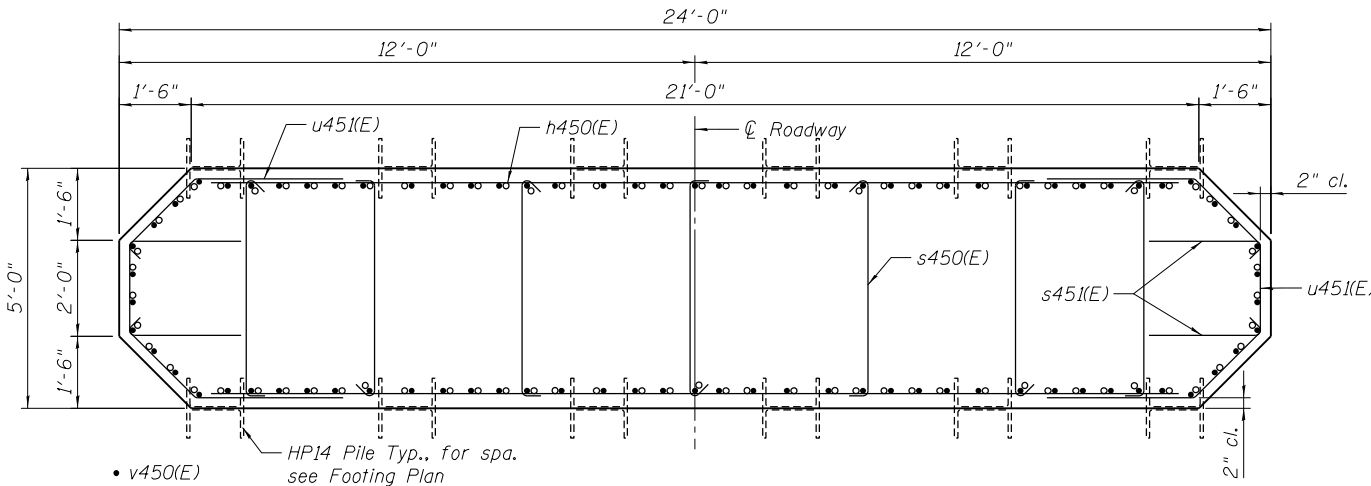
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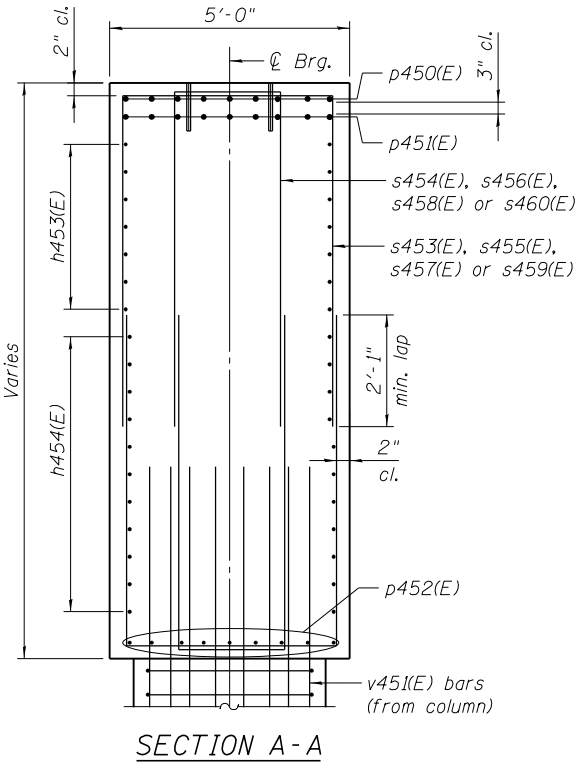
SECTION B-B



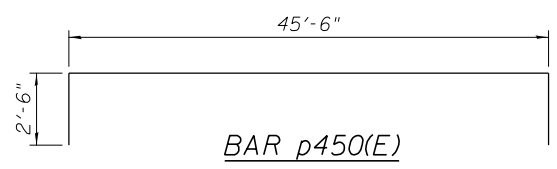
SECTION C-C



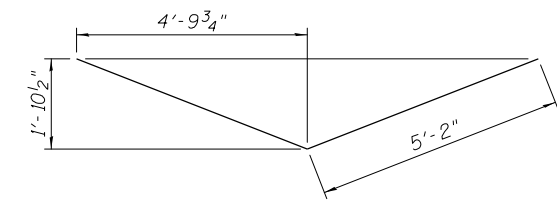
SECTION D-D



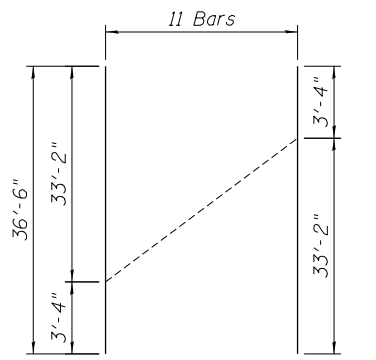
SECTION A-A



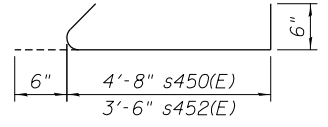
BAR p450(E)



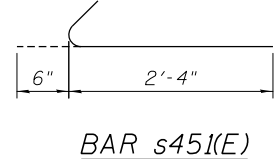
BAR p453(E)



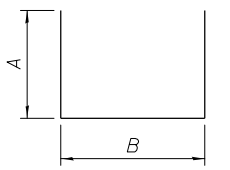
BAR CUTTING DIAGRAM FOR h454(E)



BARS s450(E), s452(E)

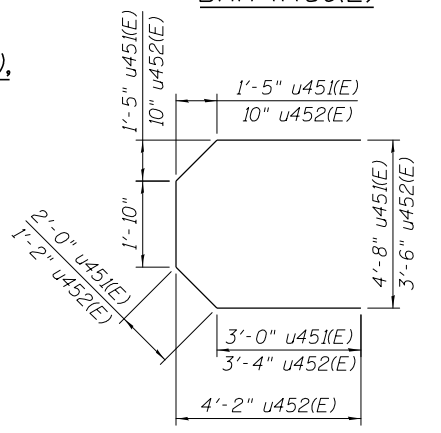


BAR s451(E)



BARS s453(E) thru s460(E), u450(E), u453(E)

Bar	A	B
s453(E)	2'-8"	4'-8"
s454(E)	2'-8"	2'-4"
s455(E)	3'-2"	4'-8"
s456(E)	3'-2"	2'-4"
s457(E)	4'-6"	4'-8"
s458(E)	4'-6"	2'-4"
s459(E)	6'-11"	4'-8"
s460(E)	6'-11"	2'-4"
u450(E)	2'-1"	5'-5"
u453(E)	2'-9"	4'-6"



BARS u451(E), u452(E)

BAR LIST

Bar	No.	Size	Length	Shape
h450(E)	100	#5	20'-8"	—
h451(E)	72	#5	9'-2"*	—
h452(E)	88	#5	15'-8"	—
h453(E)	28	#7	25'-2"	—
h454(E)	11	#5	36'-6"	—
n450(E)	82	#11	18'-6"	—
p450(E)	9	#11	50'-6"	—
p451(E)	9	#11	45'-0"	—
p452(E)	18	#7	23'-6"	—
p453(E)	9	#7	10'-4"	—
s450(E)	175	#5	5'-8"	—
s451(E)	292	#5	2'-10"	—
s452(E)	344	#5	4'-6"	—
s453(E)	8	#5	10'-0"	—
s454(E)	8	#5	7'-8"	—
s455(E)	20	#5	11'-0"	—
s456(E)	20	#5	8'-8"	—
s457(E)	44	#5	13'-8"	—
s458(E)	44	#5	11'-4"	—
s459(E)	82	#5	18'-6"	—
s460(E)	82	#5	16'-2"	—
t450(E)	59	#7	28'-6"	—
t451(E)	81	#11	28'-6"	—
u450(E)	210	#7	9'-7"	—
u451(E)	100	#5	11'-10"	—
u452(E)	160	#5	10'-10"	—
u453(E)	8	#5	10'-0"	—
v450(E)	82	#11	24'-8"	—
v451(E)	132	#10	27'-1"	—
w450(E)	40	#7	47'-6"	—
w451(E)	49	#11	47'-6"	—

* The bar length is to the center of mechanical splicer. The Contractor shall adjust the length as required for the selected mechanical splicer.

BILL OF MATERIAL

Item	Unit	Total
Concrete Structures	Cu. Yd.	567.4
Reinforcement Bars, Epoxy Coated	Pound	93320
Furnishing Steel Piles HP14x117	Foot	5112
Driving Piles	Foot	5112
Test Pile HP14x117	Each	1
Pile Shoes	Each	72
Mechanical Splicers	Each	144
Cofferdam (Type 2) (Location 4)	Each	1
Cofferdam Excavation	Cu. Yd.	1342
Seal Coat Concrete	Cu. Yd.	255.0

FILE NAME =	USER NAME =	DESIGNED - HVP	REVISED -
	DATE - 8/5/2014	CHECKED - JLR	REVISED -
	PLOT SCALE =	DRAWN - HVP	REVISED -
	PLOT DATE	CHECKED - VCP	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 7
SECTIONS & DETAILS

SHEET NO. S-123 OF 146 SHEETS

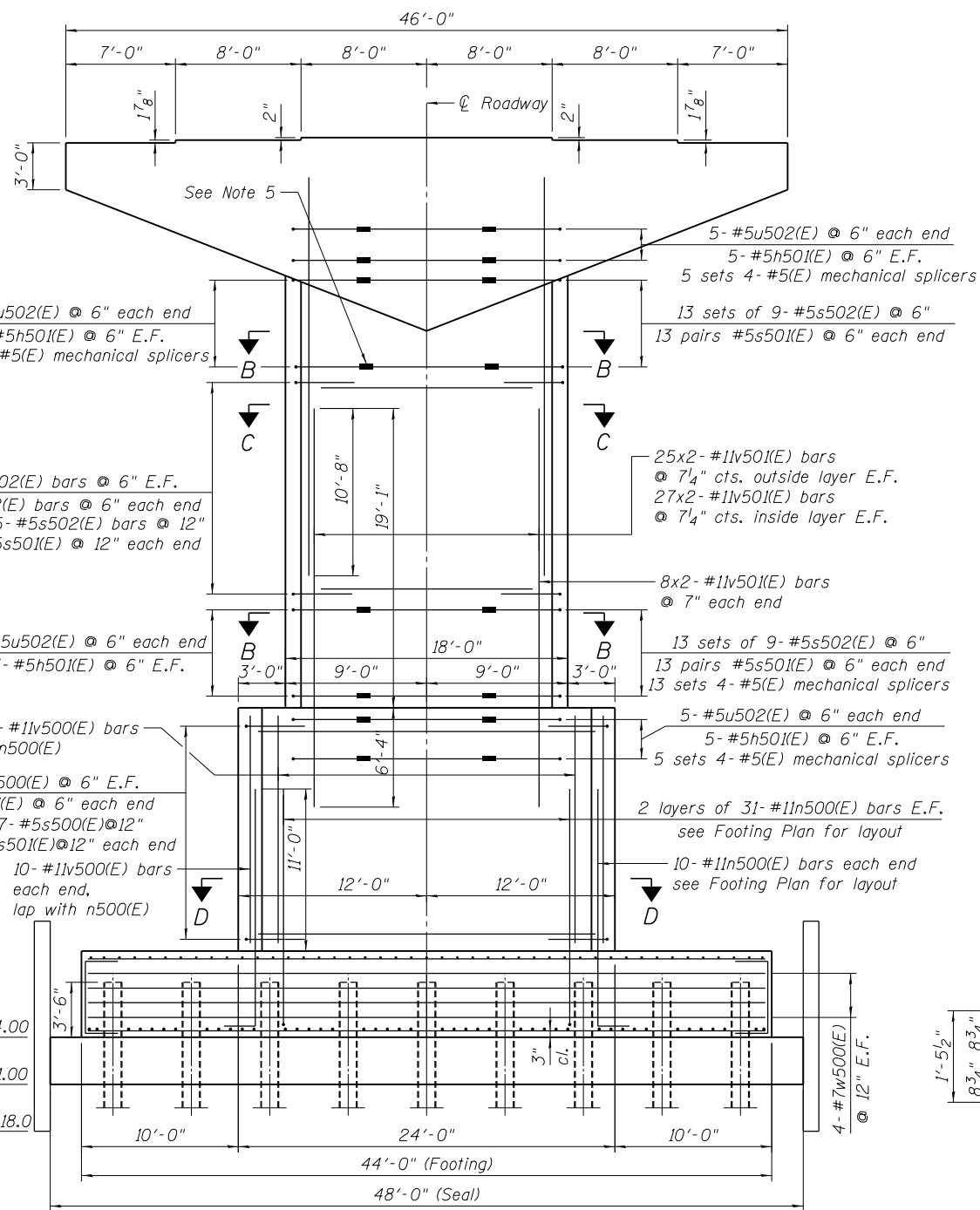
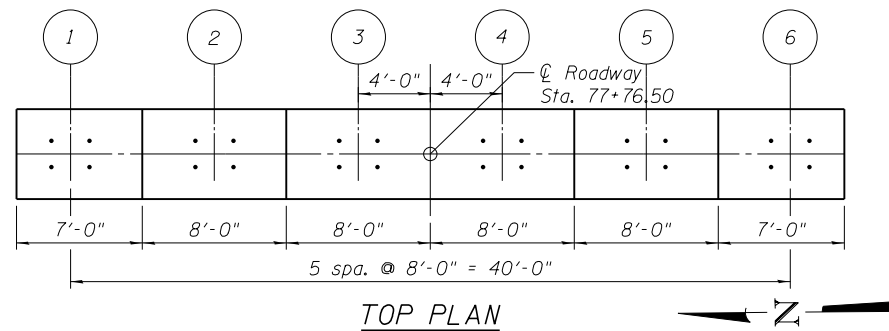
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	504
SN 069-0525		CONTRACT NO. 72B58		

ILLINOIS FED. AID PROJECT



BEARING SEAT ELEVATIONS

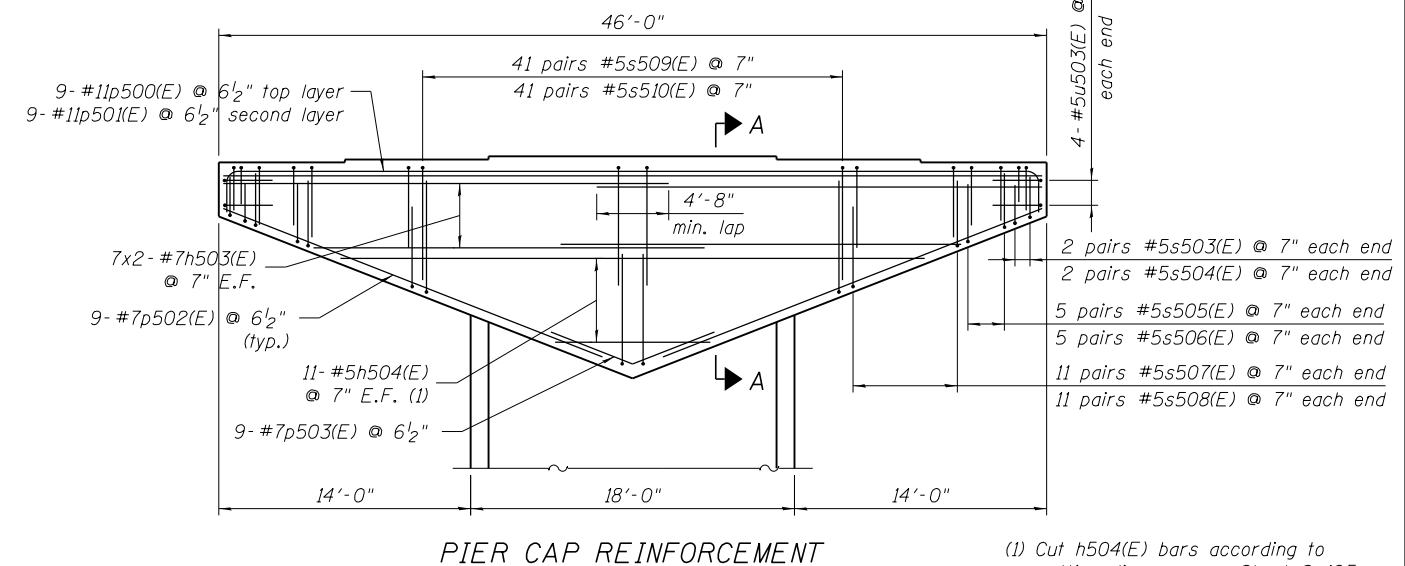
Girder	Brg. Seat Elevation
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2	481.16
3	481.32
4	481.32
5	481.16
6	481.00



END VIEW
Column reinforcement omitted for clarity

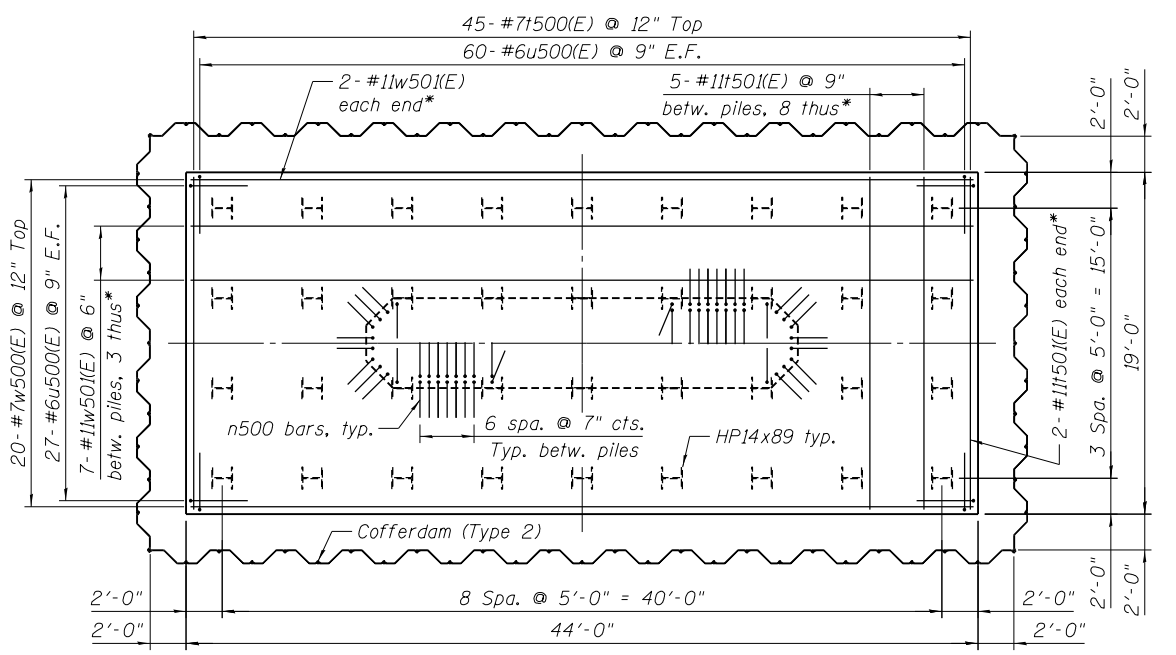
ELEVATION

Estimated elevation; seal coat thickness and cofferdam tip elevation are dependant on Contractor's design



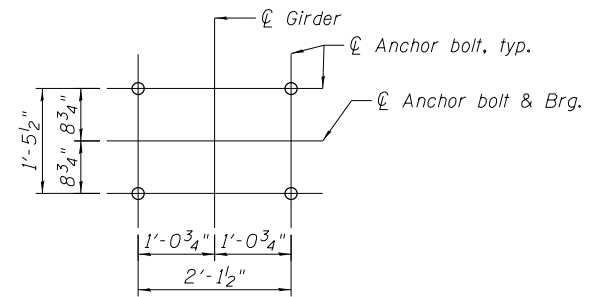
PIER CAP REINFORCEMENT

(1) Cut h504(E) bars according to cutting diagram, see Sheet S-125



FOOTING PLAN

* indicates bottom mat reinforcement



ANCHOR BOLT LAYOUT

Notes:

1. Bars indicated thus 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.
2. Pour steps monolithically with cap.
3. Space reinforcement in cap to miss anchor bolts.
4. E.F. indicates each face
5. See Sht. S-128 for aesthetic reveals on pier shaft.

PILE DATA

Pile Type and Size:	Steel-HP14x89 with pile shoe
Nominal Required Bearing:	455 kips
Factored Resistance Available:	250 kips
Estimated Pile Length:	78
Number of Production Piles:	35
Number of Test Piles:	1
Estimated Top of Rock Elevation:	346.20

FILE NAME = ... USER NAME = ... DESIGNED - HVP ... REVISIONS ...
 exp U.S. Services Inc. Chicago, IL
 BUILDINGS-EARTH & ENVIRONMENT-ENERGY
 INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY

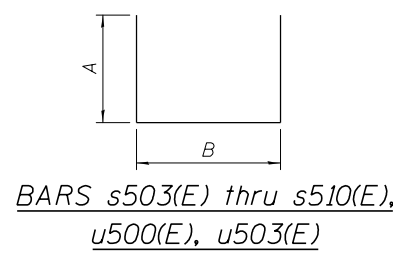
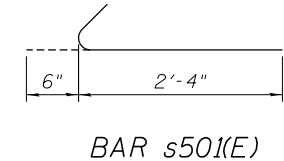
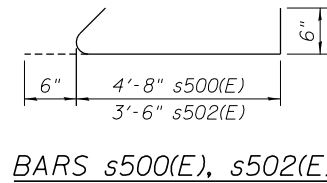
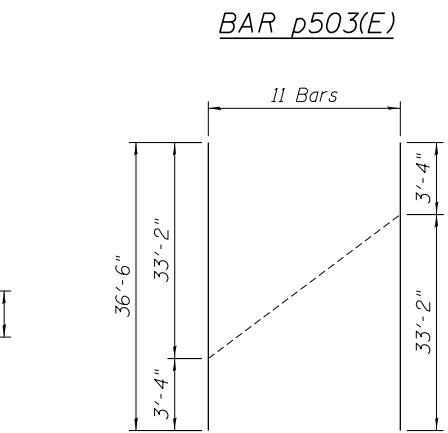
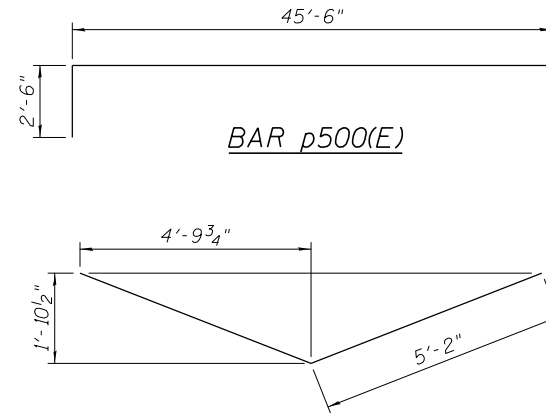
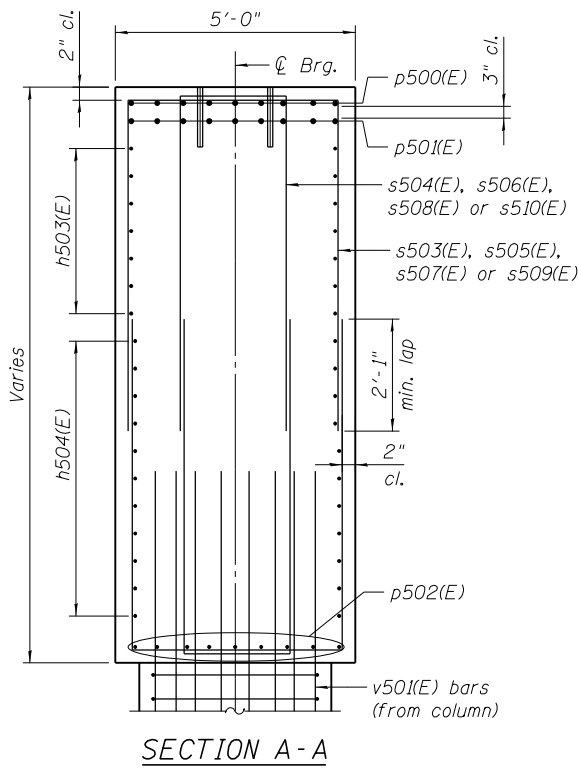
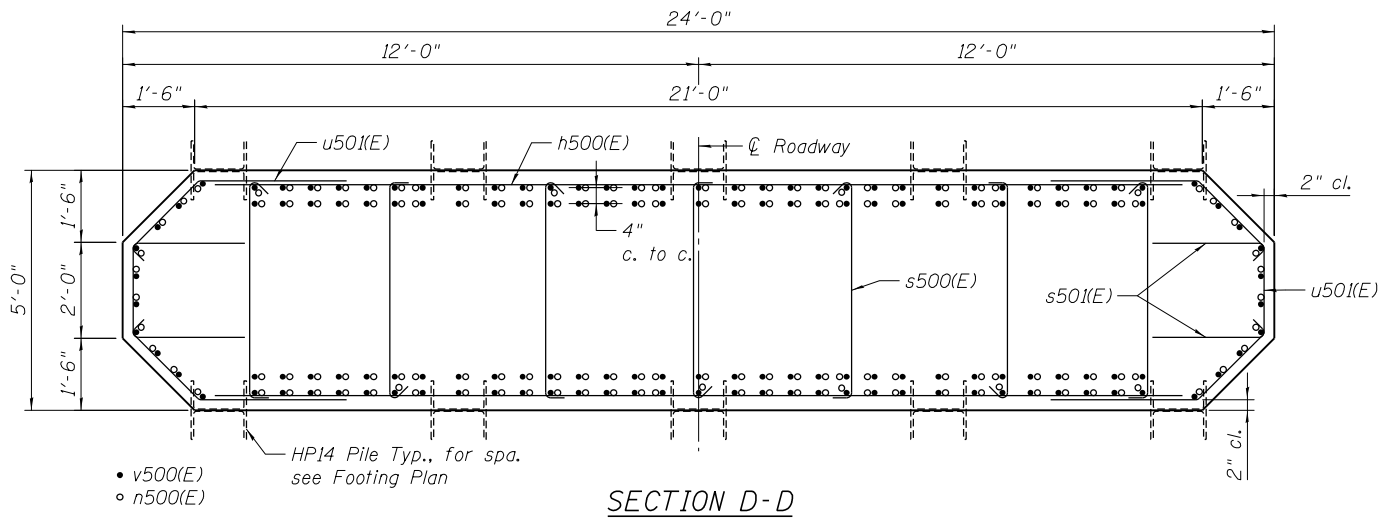
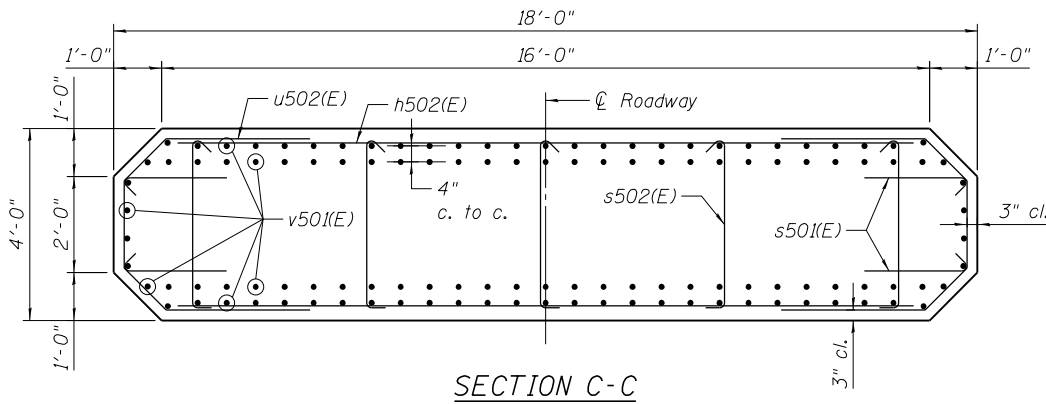
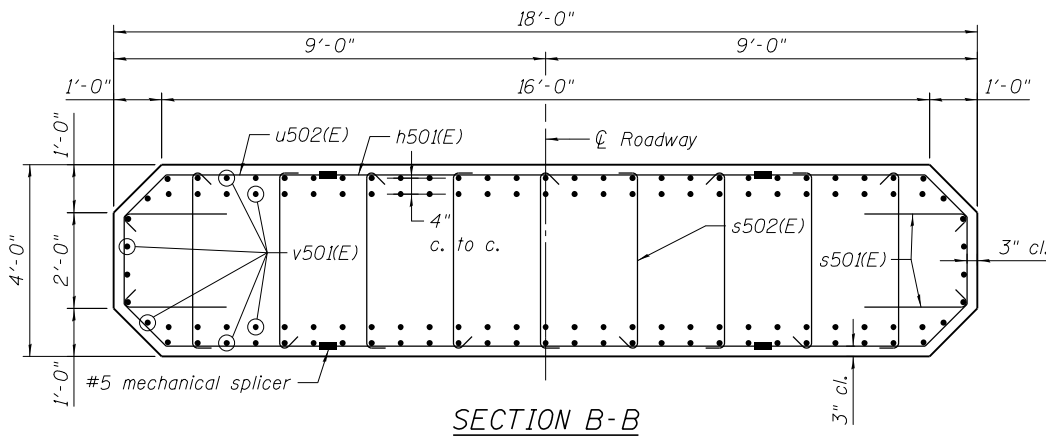
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PIER 8
PLAN & ELEVATION**

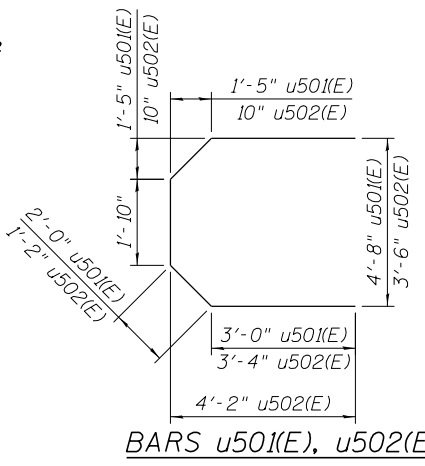
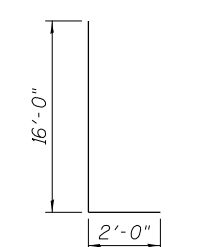
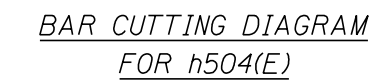
SHEET NO. S-124 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	505
SN 069-0525		CONTRACT NO. 72B58		

ILLINOIS FED. AID PROJECT



Bar	A	B
s503(E)	2'-8"	4'-8"
s504(E)	2'-8"	2'-4"
s505(E)	3'-2"	4'-8"
s506(E)	3'-2"	2'-4"
s507(E)	4'-6"	4'-8"
s508(E)	4'-6"	2'-4"
s509(E)	6'-11"	4'-8"
s510(E)	6'-11"	2'-4"
u500(E)	2'-1"	4'-11"
u503(E)	2'-9"	4'-6"



BAR LIST

Bar	No.	Size	Length	Shape
h500(E)	62	#5	20'-8"	—
h501(E)	72	#5	9'-2"*	—
h502(E)	58	#5	15'-8"	—
h503(E)	28	#7	25'-2"	—
h504(E)	11	#5	36'-6"	—
n500(E)	144	#11	18'-0"	—
p500(E)	9	#11	50'-6"	—
p501(E)	9	#11	45'-0"	—
p502(E)	18	#7	23'-6"	—
p503(E)	9	#7	10'-4"	—
s500(E)	112	#5	5'-8"	—
s501(E)	228	#5	2'-10"	—
s502(E)	309	#5	4'-6"	—
s503(E)	8	#5	10'-0"	—
s504(E)	8	#5	7'-8"	—
s505(E)	20	#5	11'-0"	—
s506(E)	20	#5	8'-8"	—
s507(E)	44	#5	13'-8"	—
s508(E)	44	#5	11'-4"	—
s509(E)	82	#5	18'-6"	—
s510(E)	82	#5	16'-2"	—
t500(E)	53	#7	18'-6"	—
t501(E)	44	#11	18'-6"	—
u500(E)	174	#6	9'-1"	—
u501(E)	62	#5	11'-10"	—
u502(E)	130	#5	10'-10"	—
u503(E)	8	#5	10'-0"	—
v500(E)	144	#11	15'-2"	—
v501(E)	240	#11	25'-5"	—
w500(E)	28	#7	43'-6"	—
w501(E)	25	#11	43'-6"	—

* The bar length is to the center of mechanical splicer. The Contractor shall adjust the length as required for the selected mechanical splicer.

BILL OF MATERIAL

Item	Unit	Total
Concrete Structures	Cu. Yd.	368.0
Reinforcement Bars, Epoxy Coated	Pound	94980
Furnishing Steel Piles HP14x89	Foot	2730
Driving Piles	Foot	2730
Test Pile HP14x89	Each	1
Pile Shoes	Each	36
Mechanical Splicers	Each	144
Cofferdam (Type 2) (Location 5)	Each	1
Cofferdam Excavation	Cu. Yd.	426
Seal Coat Concrete	Cu. Yd.	123.0

FILE NAME = USER NAME = DESIGNED - HVP REVISED -
 DATE - 8/5/2014 CHECKED - JLR REVISED -
 PLOT SCALE = DRAWN - HVP REVISED -
 PLOT DATE CHECKED - VCP REVISED -

exp U.S. Services Inc.
 Chicago, IL
 BUILDINGS-EARTH & ENVIRONMENT-ENERGY
 INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

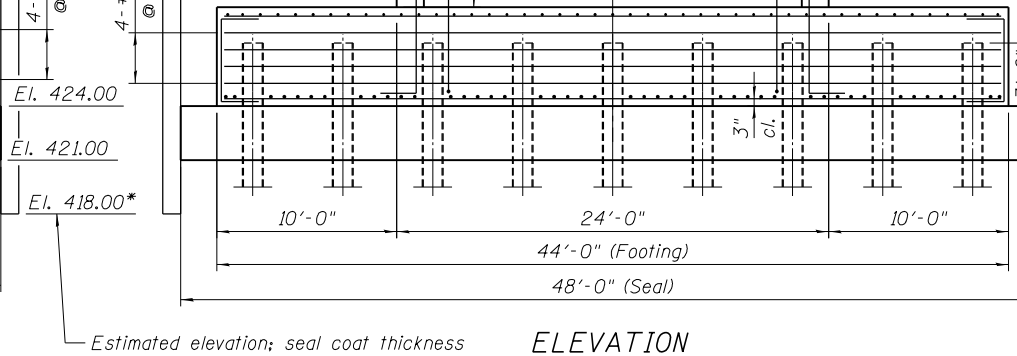
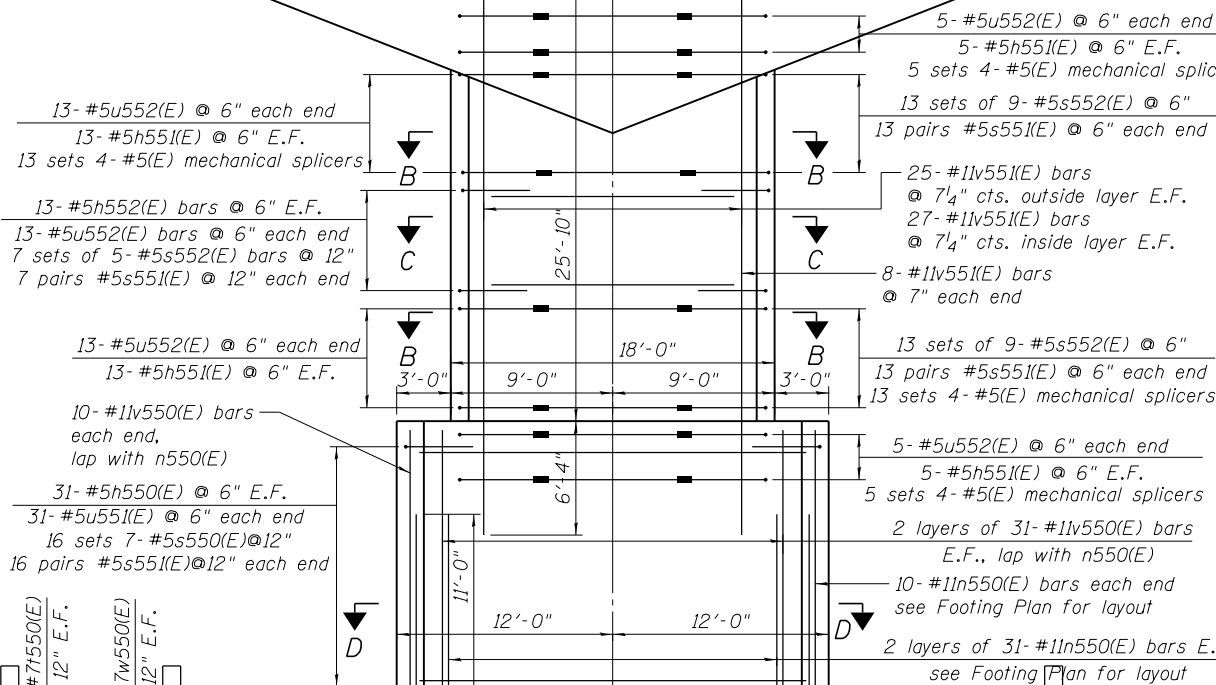
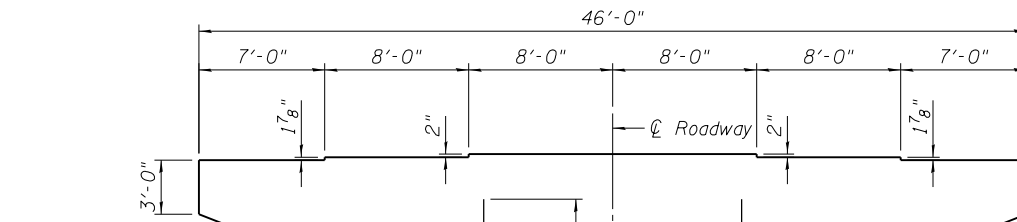
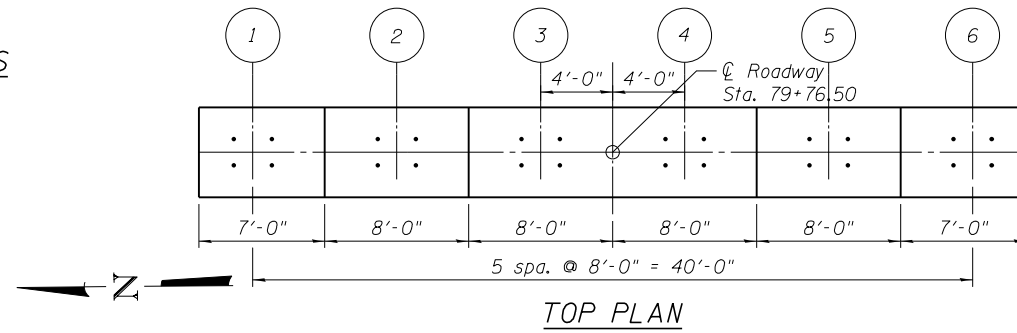
PIER 8
 SECTIONS & DETAILS

SHEET NO. S-125 OF 146 SHEETS

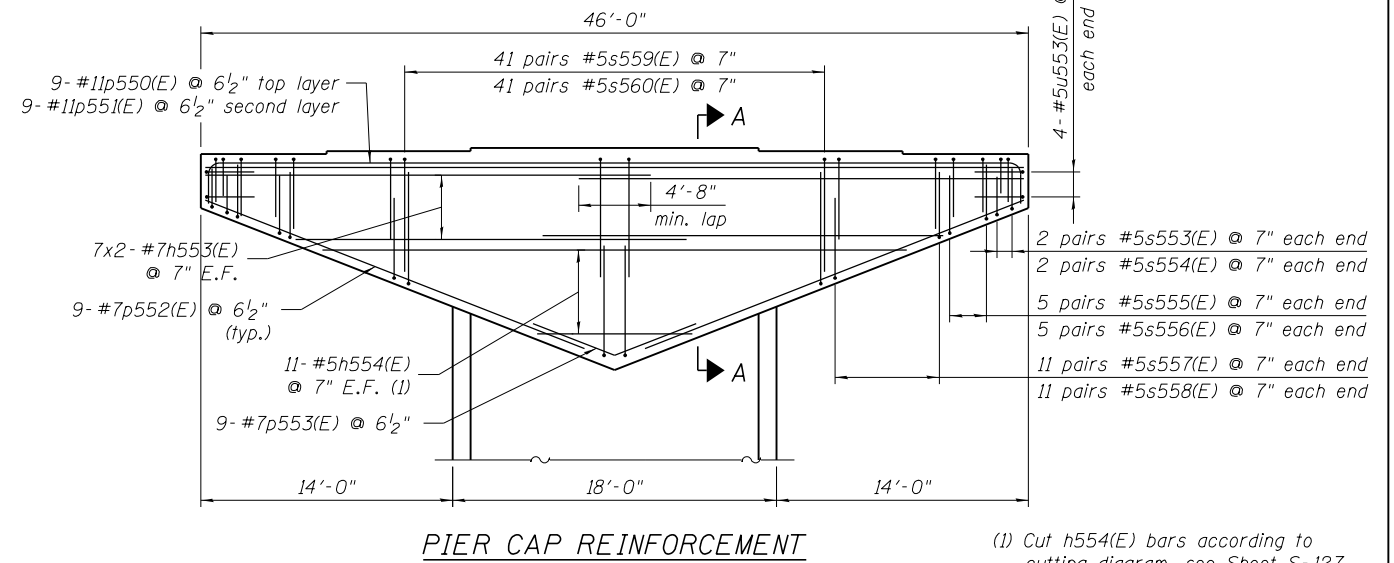
F.A.P. SECTION COUNTY TOTAL SHEETS SHEET NO.
 RTE. 123B-2 MORGAN 782 506
 SN 069-0525 CONTRACT NO. 72B58
 ILLINOIS FED. AID PROJECT

BEARING SEAT ELEVATIONS

Girder	Brg. Seat Elevation
1	473.01
2	473.17
3	473.33
4	473.33
5	473.17
6	473.01

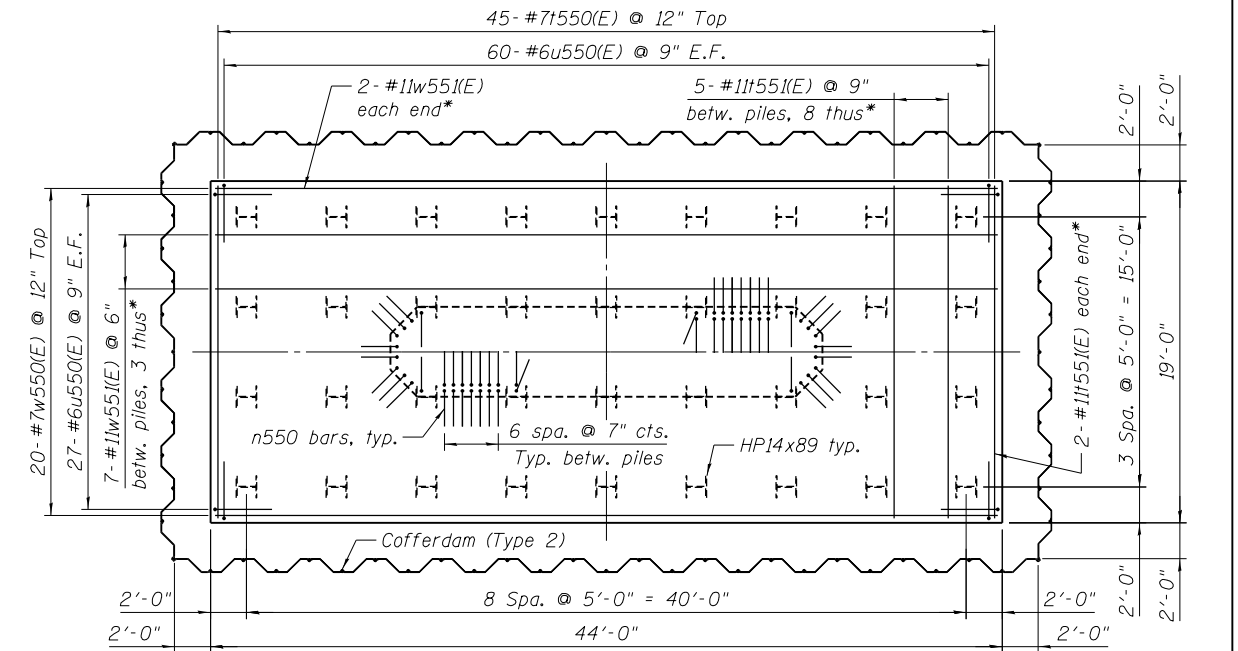


Estimated elevation; seal coat thickness and cofferdam tip elevation are dependant on Contractor's design



PIER CAP REINFORCEMENT

(1) Cut h554(E) bars according to cutting diagram, see Sheet S-127

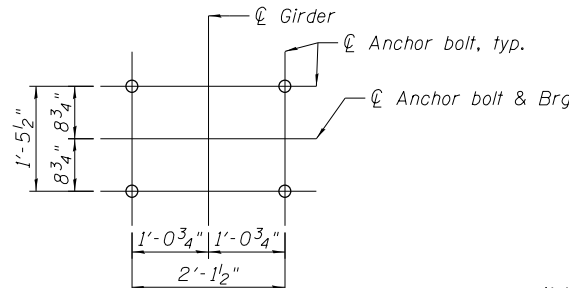


FOOTING PLAN

* indicates bottom mat reinforcement

PILE DATA

Pile Type and Size:	Steel-HP14x89 with pile shoe
Nominal Required Bearing:	455 kips
Factored Resistance Available:	250 kips
Estimated Pile Length:	72 ft.
Number of Production Piles:	35
Number of Test Piles:	1
Estimated Top of Rock Elevation:	346.70



ANCHOR BOLT LAYOUT

Notes:

1. Bars indicated thus 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.
2. Pour steps monolithically with cap.
3. Space reinforcement in cap to miss anchor bolts.
4. E.F. indicates each face
5. See Sht. S-128 for aesthetic reveals on pier shaft.

FILE NAME = \\exp\0690525-72B58-004-PIER.DGN, USER NAME = HVP, DESIGNED - HVP, REVISED - JLR, CHECKED - JLR, REVISED - HVP, DRAWN - HVP, REVISED - VCP, CHECKED - VCP, REVISED -
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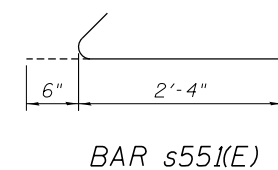
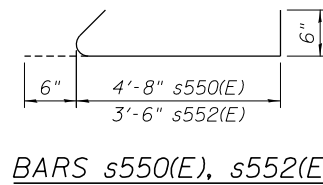
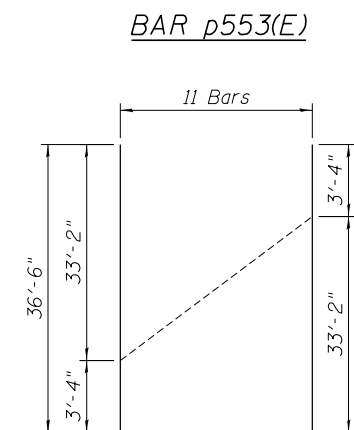
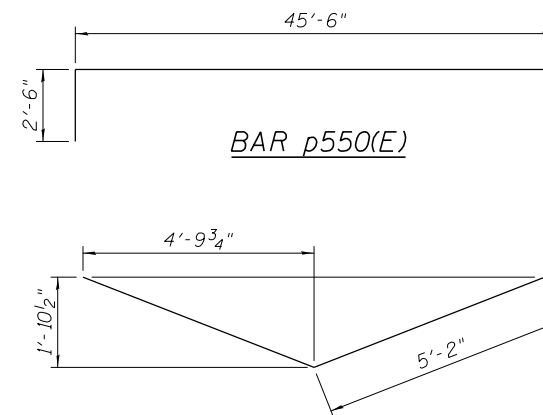
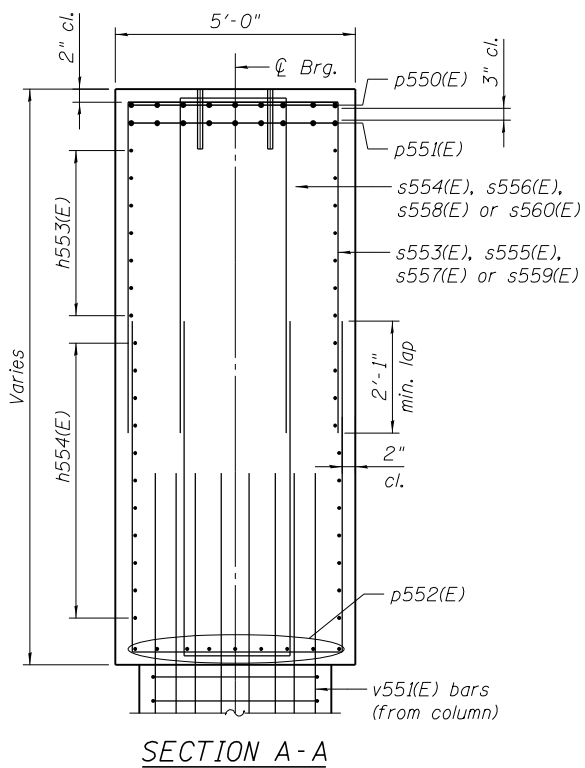
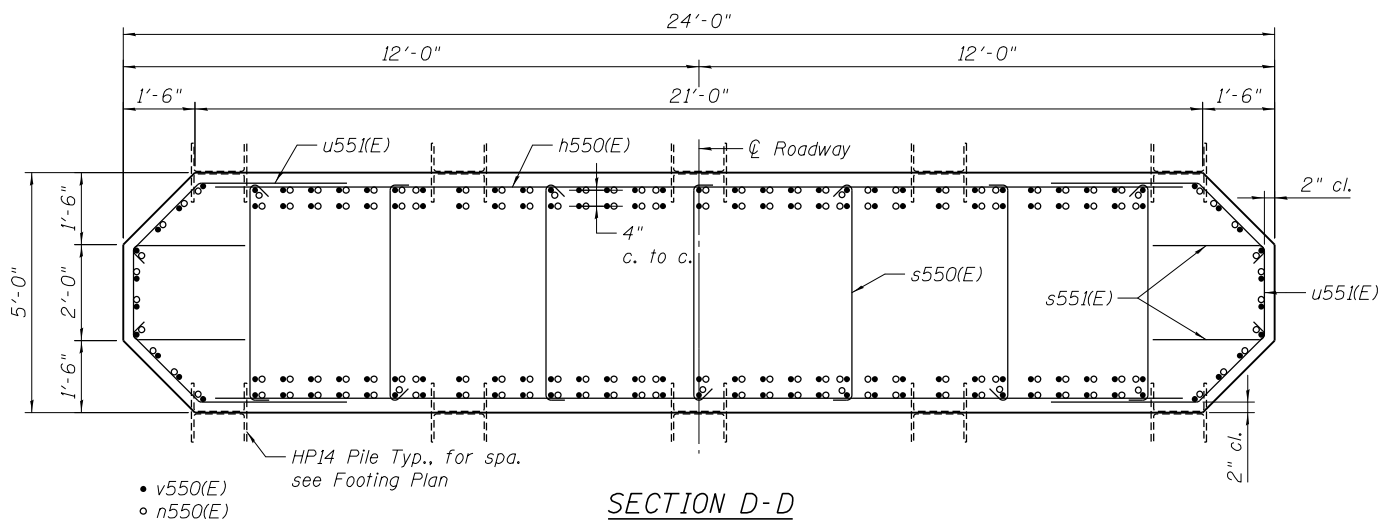
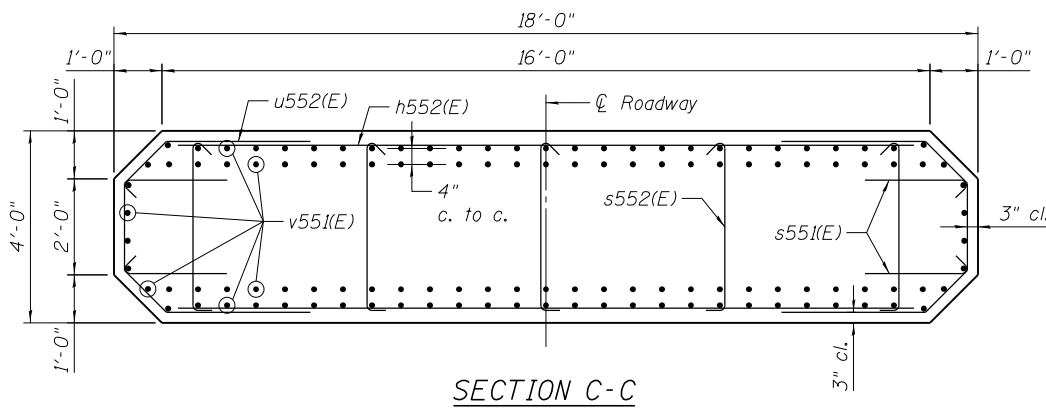
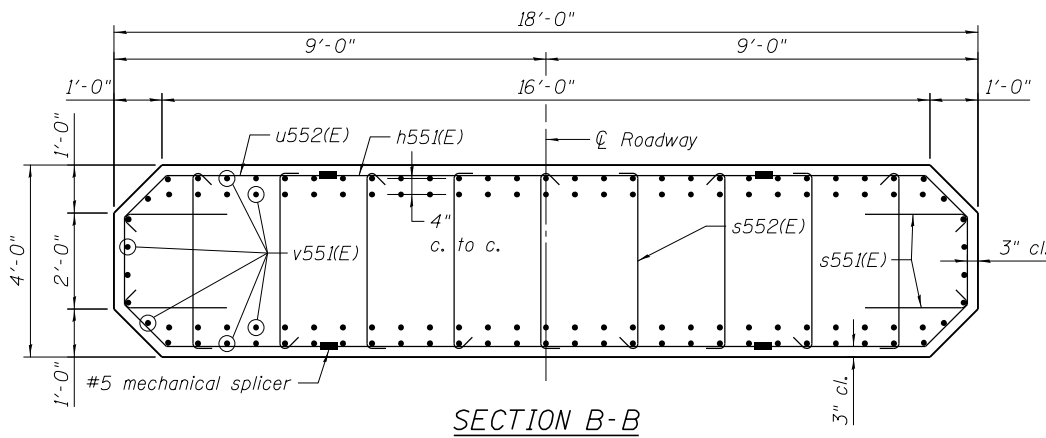
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8-05-2014, 15:22:17	HVP	HVP	JLR
exp U.S. Services Inc.	DATE =	CHECKED -	REVISED -
CHICAGO, IL	8/5/2014	JLR	HVP
BUILDINGS-EARTH & ENVIRONMENT-ENERGY	PLOT SCALE =	DRAWN -	REVISED -
INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY		HVP	VCP
	PLOT DATE	CHECKED -	REVISED -
		VCP	

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PIER 9
PLAN & ELEVATION**

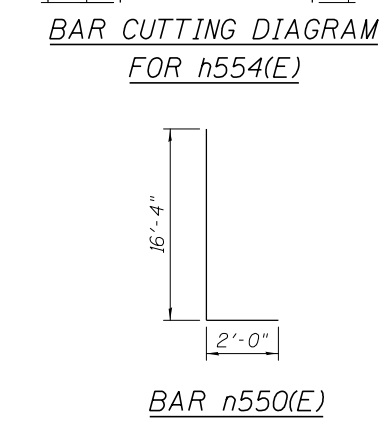
SHEET NO. S-126 OF 146 SHEETS

F.A.P. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				

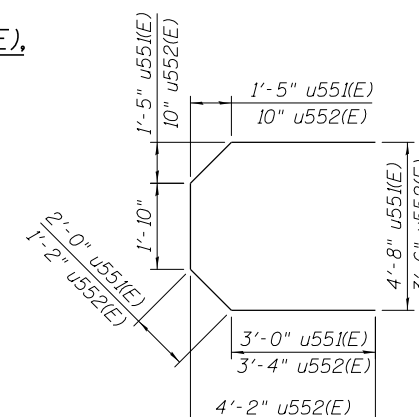


BARS s553(E) thru s560(E), u550(E), u553(E)

Bar	A	B
s553(E)	2'-8"	4'-8"
s554(E)	2'-8"	2'-4"
s555(E)	3'-2"	4'-8"
s556(E)	3'-2"	2'-4"
s557(E)	4'-6"	4'-8"
s558(E)	4'-6"	2'-4"
s559(E)	6'-11"	4'-8"
s560(E)	6'-11"	2'-4"
u550(E)	2'-1"	4'-11"
u553(E)	2'-9"	4'-6"



BAR n550(E)



BARS u551(E), u552(E)

BAR LIST

Bar	No.	Size	Length	Shape
h550(E)	62	#5	20'-8"	—
h551(E)	72	#5	9'-2"*	—
h552(E)	26	#5	15'-8"	—
h553(E)	28	#7	25'-2"	—
h554(E)	11	#5	36'-6"	—
n550(E)	144	#11	18'-0"	—
p550(E)	9	#11	50'-6"	—
p551(E)	9	#11	45'-0"	—
p552(E)	18	#7	23'-6"	—
p553(E)	9	#7	10'-4"	—
s550(E)	112	#5	5'-8"	—
s551(E)	196	#5	2'-10"	—
s552(E)	269	#5	4'-6"	—
s553(E)	8	#5	10'-0"	—
s554(E)	8	#5	7'-8"	—
s555(E)	20	#5	11'-0"	—
s556(E)	20	#5	8'-8"	—
s557(E)	44	#5	13'-8"	—
s558(E)	44	#5	11'-4"	—
s559(E)	82	#5	18'-6"	—
s560(E)	82	#5	16'-2"	—
t550(E)	53	#7	18'-6"	—
t551(E)	44	#11	18'-6"	—
u550(E)	174	#6	9'-1"	—
u551(E)	62	#5	11'-10"	—
u552(E)	98	#5	10'-10"	—
u553(E)	8	#5	10'-0"	—
v550(E)	144	#11	15'-2"	—
v551(E)	120	#11	32'-2"	—
w550(E)	28	#7	43'-6"	—
w551(E)	25	#11	43'-6"	—

* The bar length is to the center of mechanical splicer. The Contractor shall adjust the length as required for the selected mechanical splicer.

BILL OF MATERIAL

Item	Unit	Total
Concrete Structures	Cu. Yd.	347.5
Reinforcement Bars, Epoxy Coated	Pound	81910
Furnishing Steel Piles HP14x89	Foot	2520
Driving Piles	Foot	2520
Test Pile HP14x89	Each	1
Pile Shoes	Each	36
Mechanical Splicers	Each	144
Cofferdam (Type 2) (Location 6)	Each	1
Cofferdam Excavation	Cu. Yd.	422
Seal Coat Concrete	Cu. Yd.	123.0

FILE NAME = USER NAME = DESIGNED - HVP REVISED -
 DATE - 8/5/2014 CHECKED - JLR REVISED -
 PLOT SCALE = DRAWN - HVP REVISED -
 PLOT DATE CHECKED - VCP REVISED -

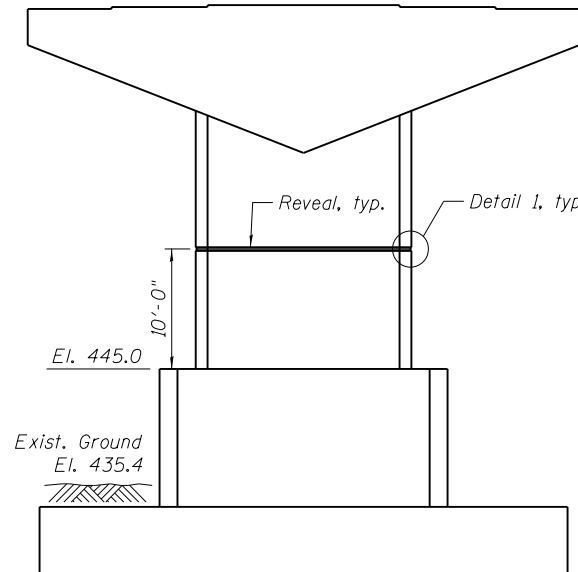
exp U.S. Services Inc. Chicago, IL BUILDINGS-EARTH & ENVIRONMENT-ENERGY INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

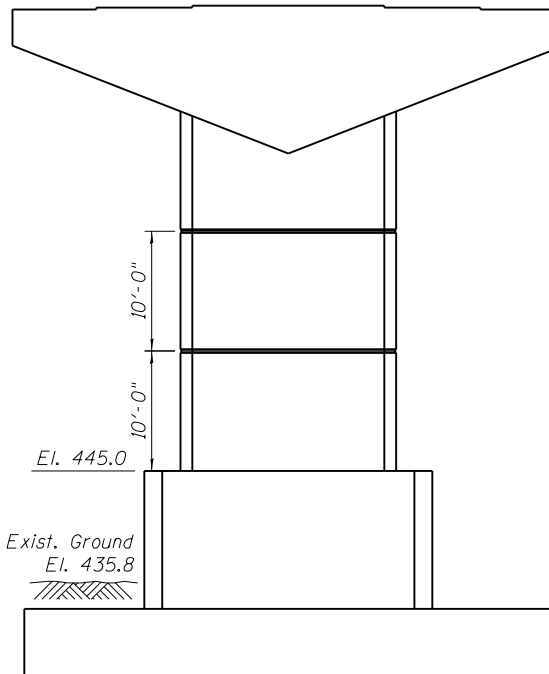
PIER 9
SECTIONS & DETAILS

SHEET NO. S-127 OF 146 SHEETS

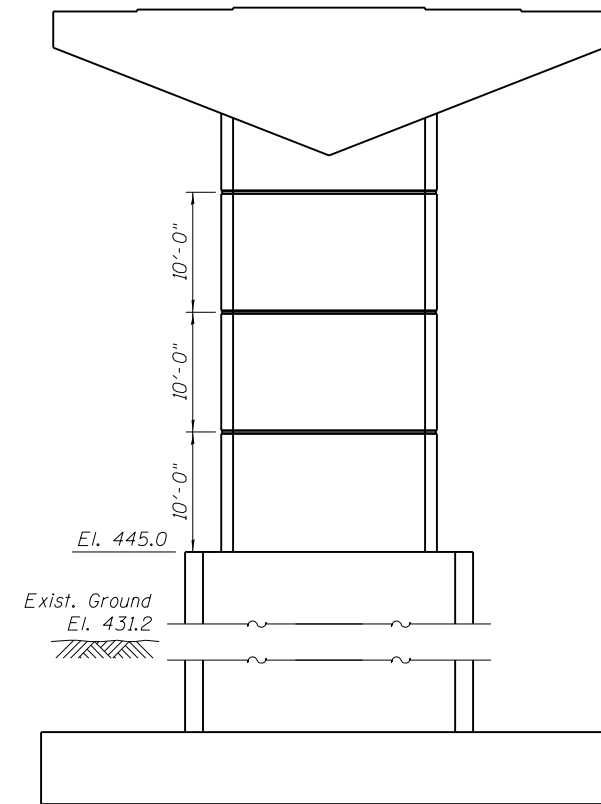
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SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				



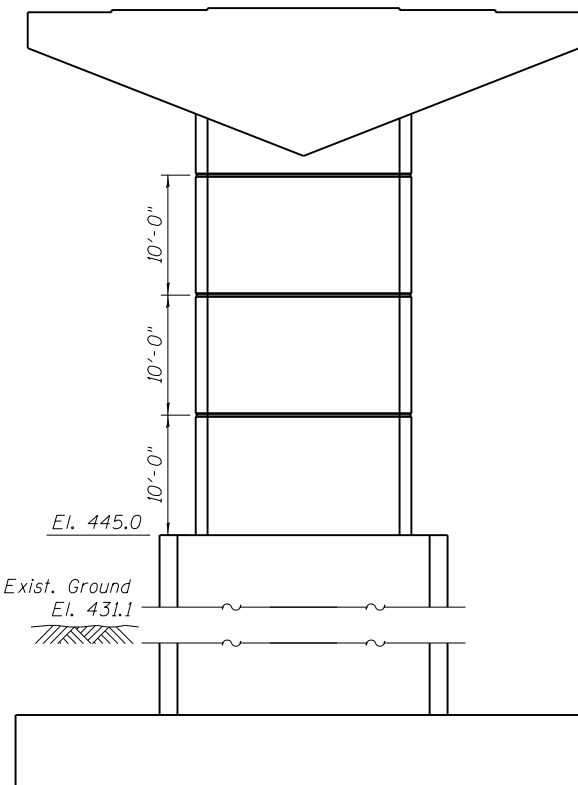
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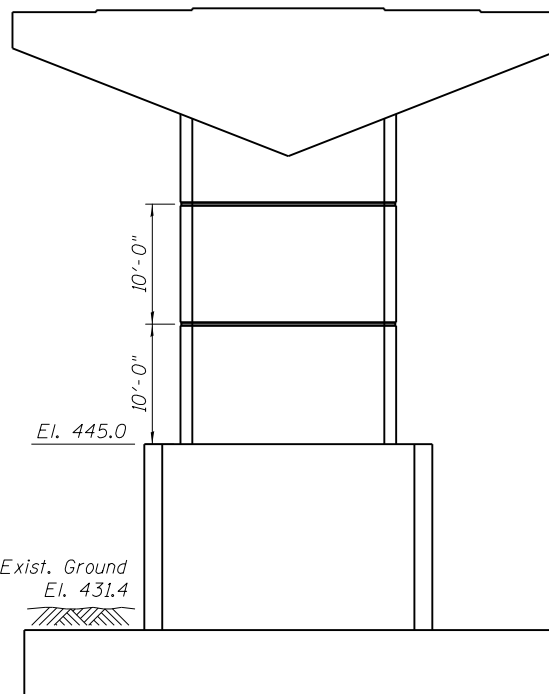
PIER 3



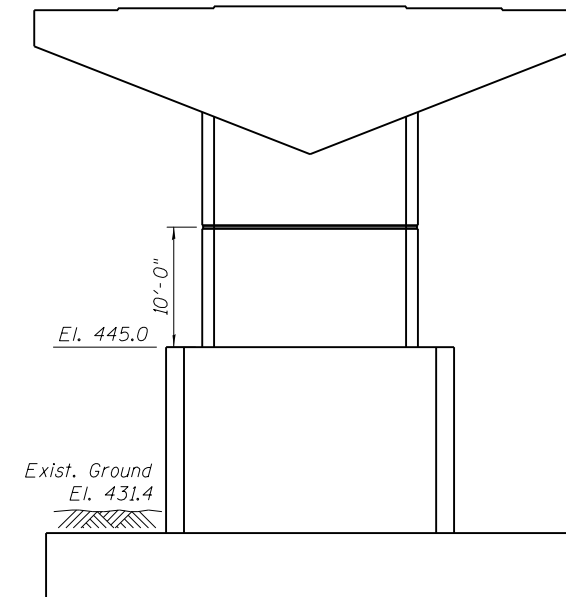
PIER 4



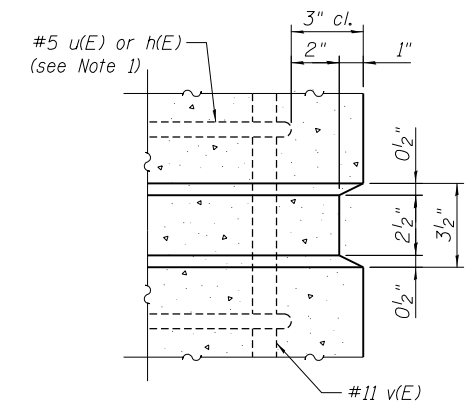
PIER 7



PIER 8



PIER 9



DETAIL 1

Notes:

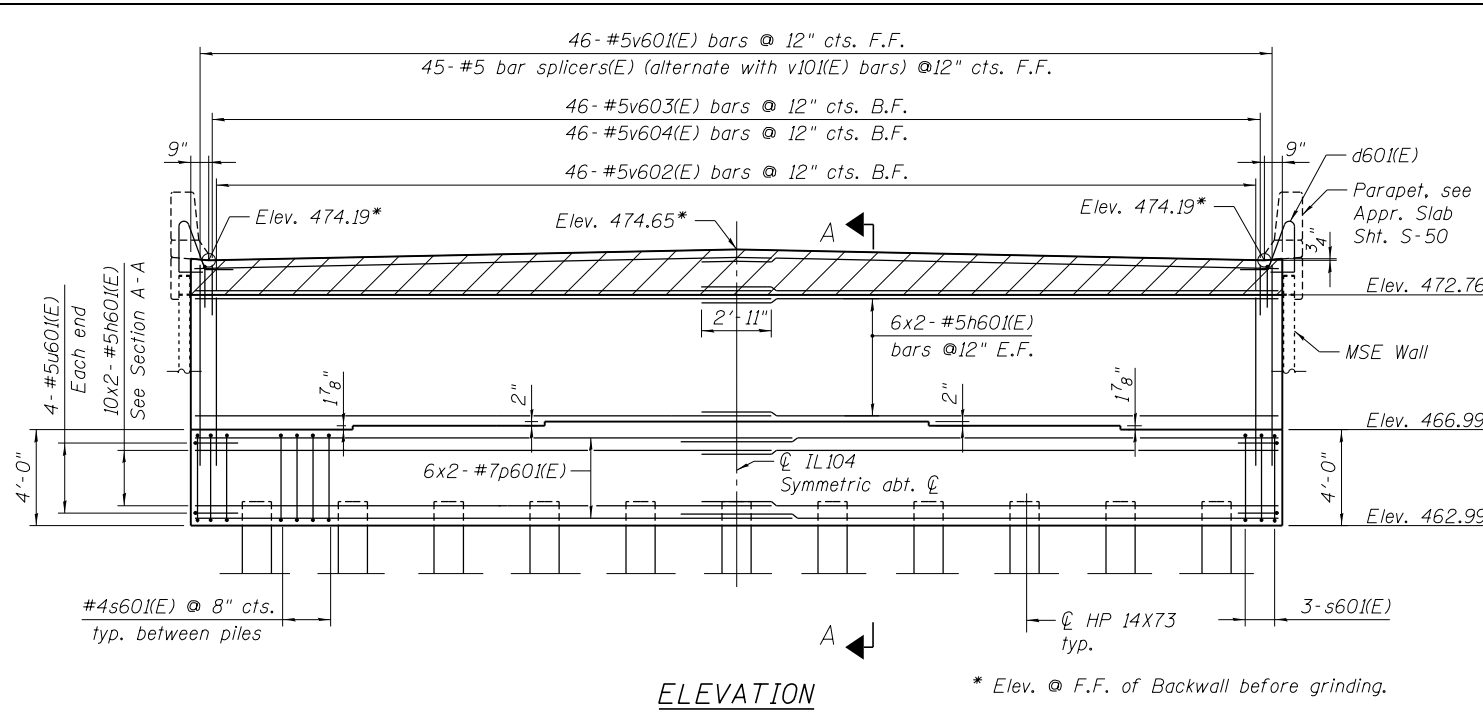
1. Where bar splicers and connecting horizontal bars in pier shaft conflict with position of reveals, space bars splicers and connecting bars to miss reveals.
2. Reveals shall be continuous along the entire perimeter of pier shaft.

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 8-05-2014, 15:22:19
 NEWMANMO \\F:\069\0525-72B58-004\AM\VAL\LD-TRANS_07\FRDC\1\02012341-02\STRUCT\CAD\72B58\06\0525\SHEET_06\0525-72B58-100-PIER_SHT.DGN

FILE NAME =	USER NAME =	DESIGNED - HVP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ARCHITECTURAL DETAILS FOR APPROACH PIERS	F.A.P. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DATE - 8/5/2014	CHECKED - JLR	REVISED -			745	123B-2	MORGAN	782	509
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					ILLINOIS FED. AID PROJECT					

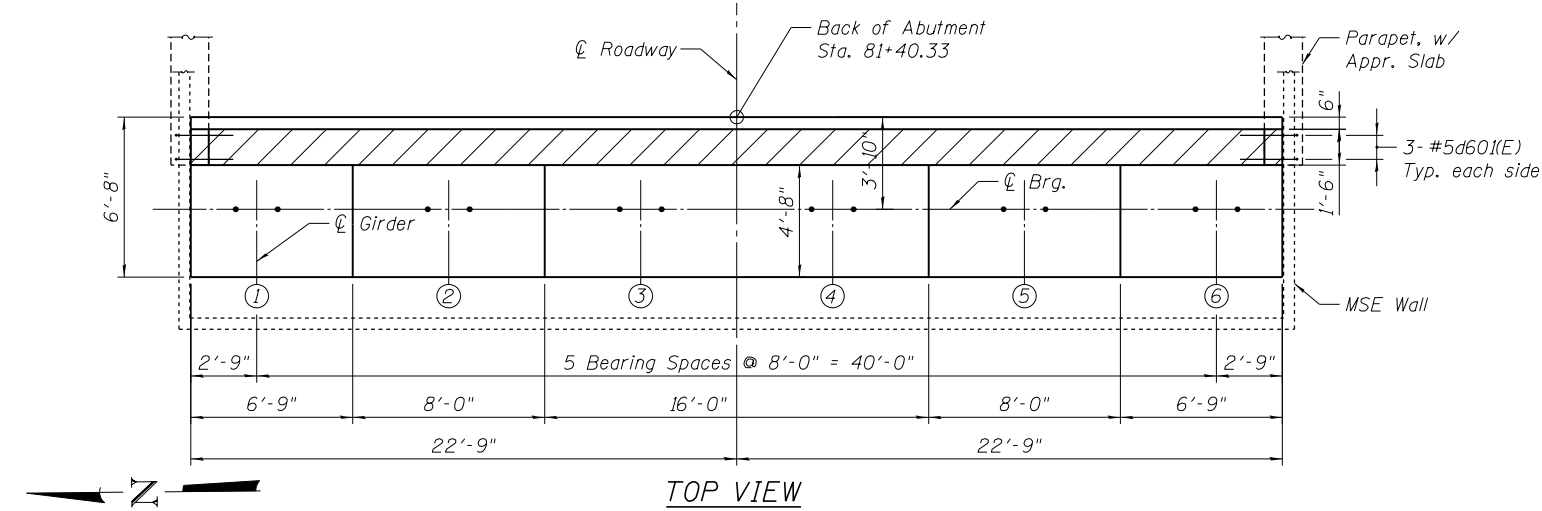
exp U.S. Services Inc.
 Chicago, IL
 BUILDINGS-EARTH & ENVIRONMENT-ENERGY
 INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY

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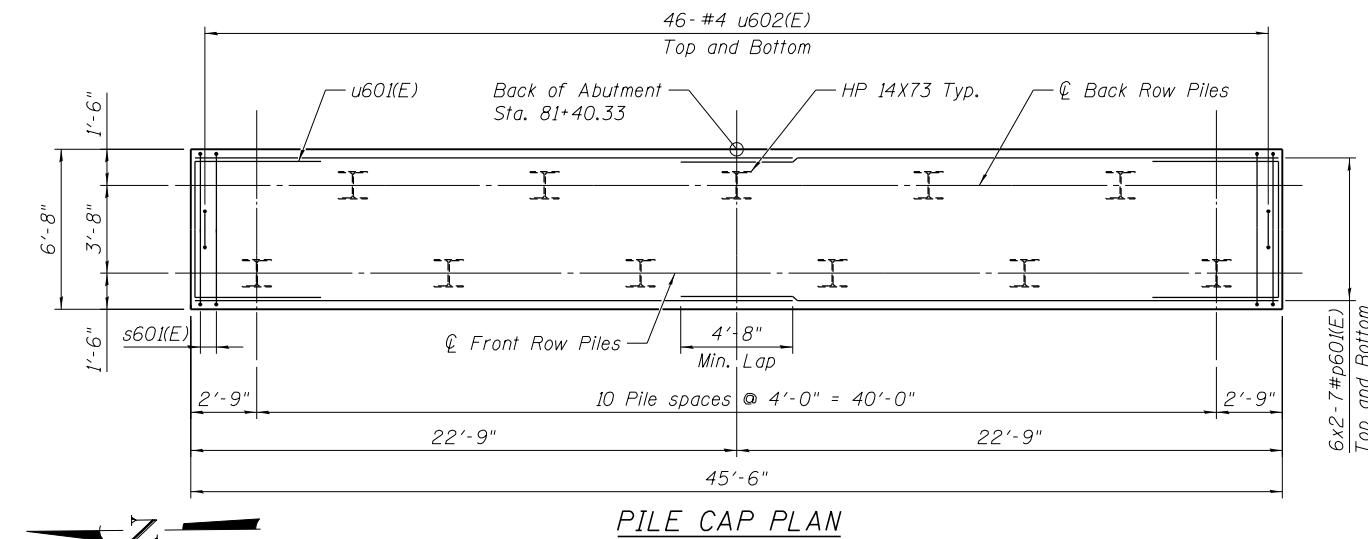


ELEVATION

* Elev. @ F.F. of Backwall before grinding.

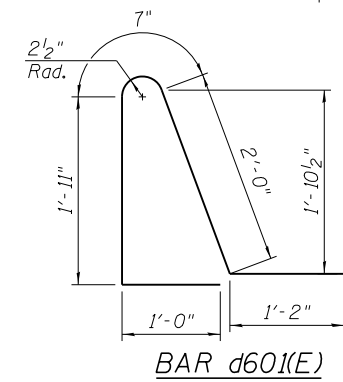


TOP VIEW

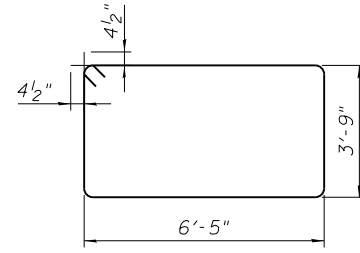


PILE CAP PLAN

BEARING SEAT ELEVATION	
Girder	E. Abut.
1	466.99
2	467.15
3	467.31
4	467.31
5	467.15
6	466.99

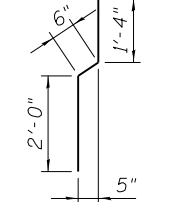


BAR d601(E)



BAR s601(E)

BAR u601(E) & u602(E)



BAR v604(E)

BAR v603(E)

BAR LIST				
Bar	No.	Size	Length	Shape
d601(E)	6	#5	6'-8"	∟
h601(E)	44	#5	24'-2"	—
p601(E)	24	#7	25'-0"	—
s601(E)	46	#4	21'-1"	□
u601(E)	8	#5	12'-2"	—
u602(E)	92	#4	7'-4"	—
v601(E)	46	#5	8'-10"	—
v602(E)	46	#5	7'-4"	—
v603(E)	46	#5	3'-10"	—
v604(E)	46	#5	5'-0"	—

BILL OF MATERIAL

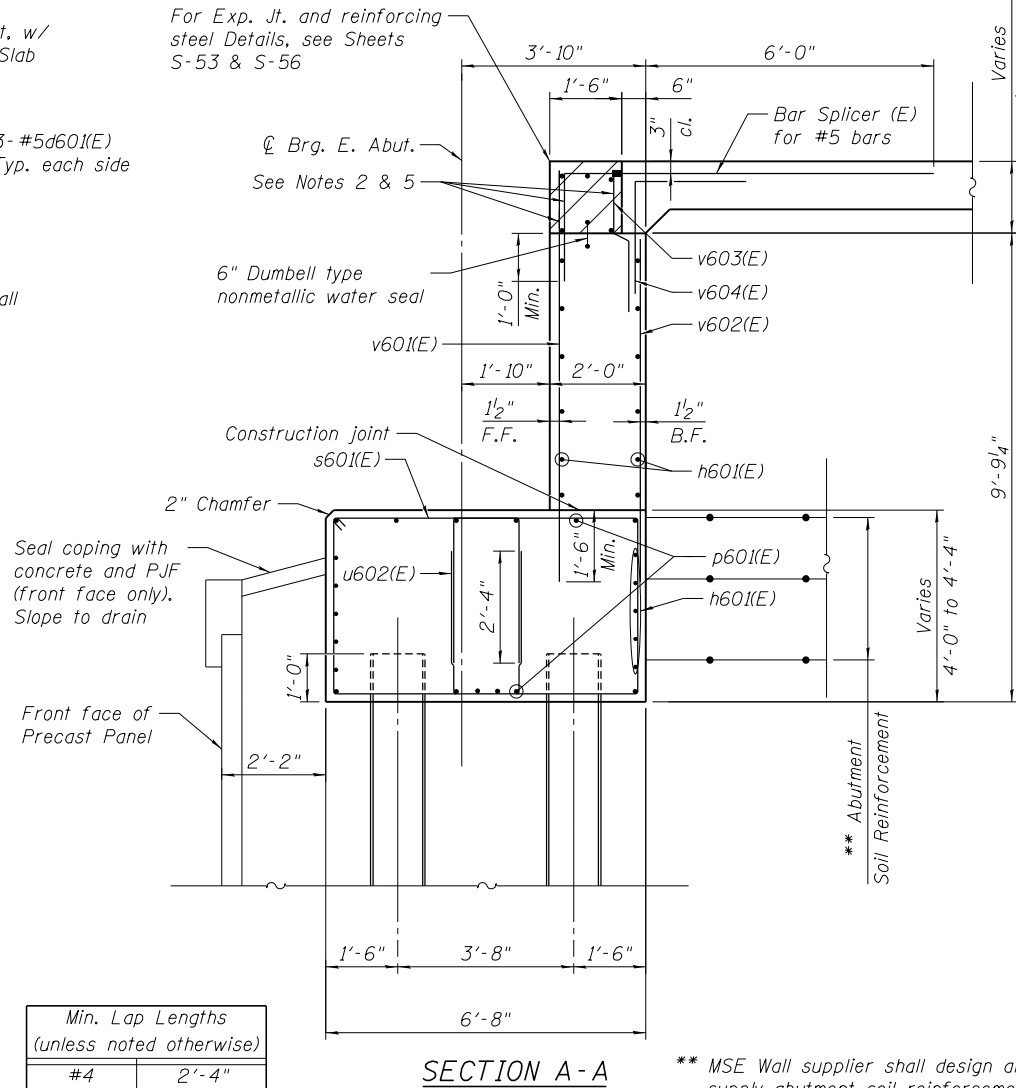
Item	Unit	Total
Concrete Structures	Cu Yd	65.7
Reinforcement Bars, Epoxy Coated	Pound	4780
Furnishing Steel Piles HP14X73	Foot	1180
Driving Piles	Foot	1180
Test Pile Steel HP14X73	Each	1
Pile Shoes	Each	11
Bar Splicers	Each	45
Concrete Sealer	Sq Ft	544

PILE DATA (E. ABUT.)

Pile type and size: HP 14 X 73
 Nominal Required Bearing: 487 kips
 Factored Resistance Available: 250 kips
 Estimated Pile Length: 118 feet
 Number of Production Piles: 10
 Number of Test Piles: 1
 Est. Top/Rock Elev. 349.9

Notes:

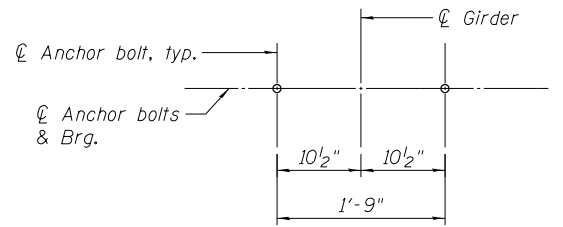
- Space Reinforcement in cap to miss Anchor bolts
- Hatched area of abutment back wall to be poured after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure
- F.F. indicates Front Face
B.F. indicates Back Face
E.F. indicates Each Face
- Abutment shall have all exposed surfaces of backwalls, bridge seats, and front faces of pile caps treated with Concrete Sealer
- Locate reinforcing steel bars in coordination with the selected modular expansion joint. Make necessary adjustments as approved in writing by the Engineer.



SECTION A-A

** MSE Wall supplier shall design and supply abutment soil reinforcement to resist 4 kip/ft of horizontal force

Min. Lap Lengths (unless noted otherwise)	
#4	2'-4"
#5	2'-11"
#7	4'-8"



ANCHOR BOLT LAYOUT

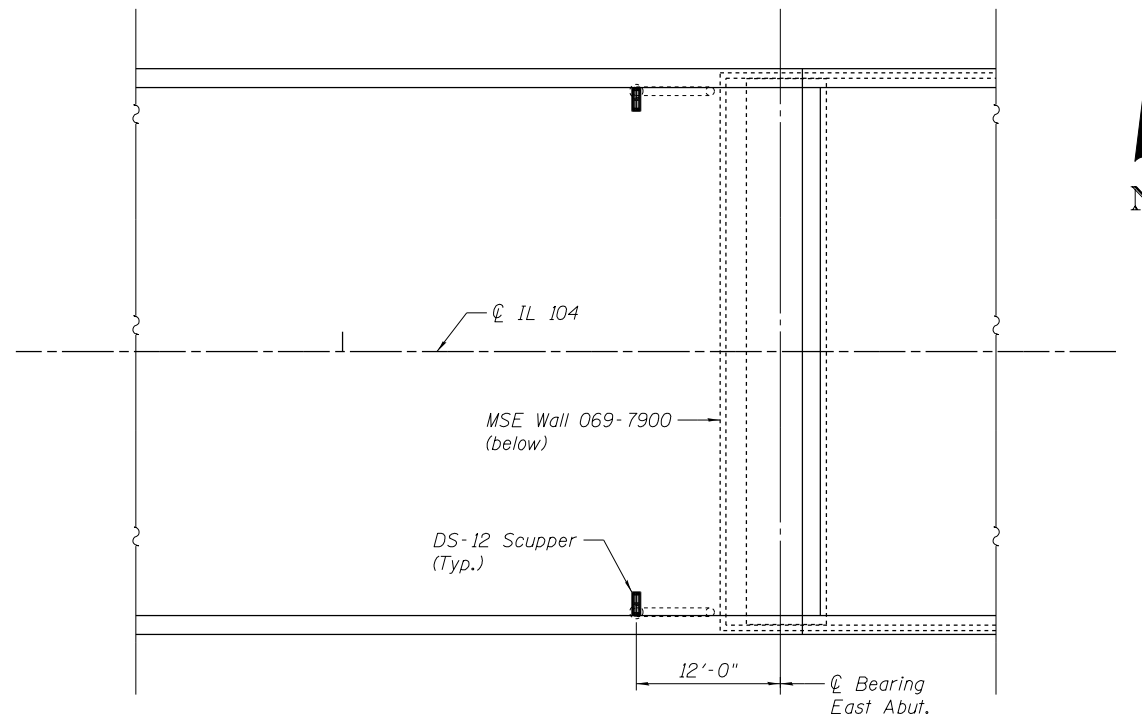
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT PLAN

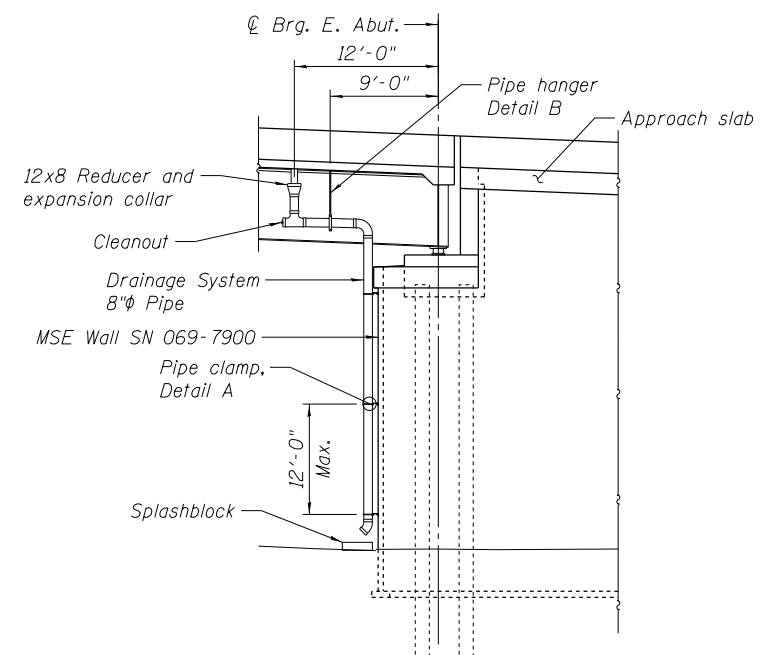
SHEET NO. S-129 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	510
SN 069-0525		CONTRACT NO. 72B58		

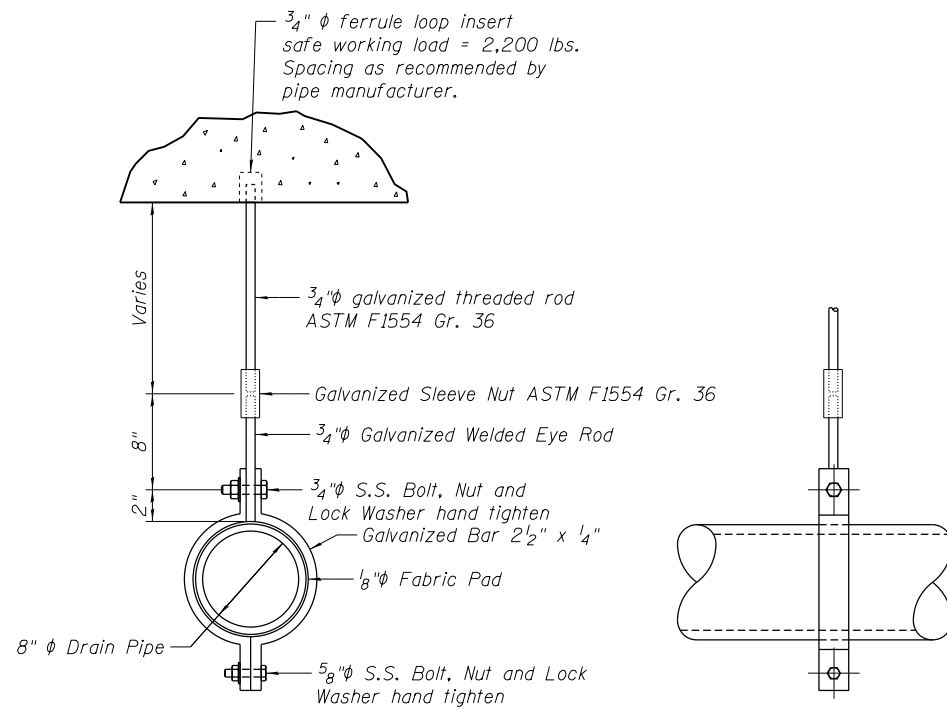
ILLINOIS FED. AID PROJECT



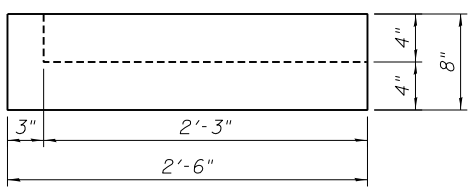
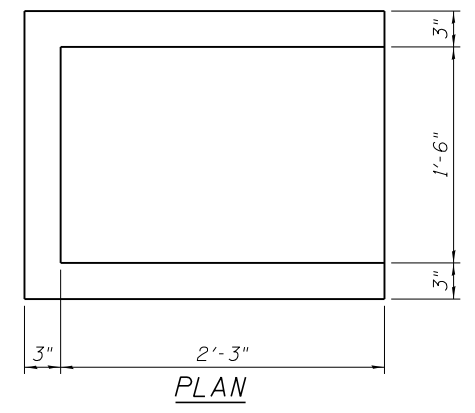
PLAN - EAST ABUTMENT



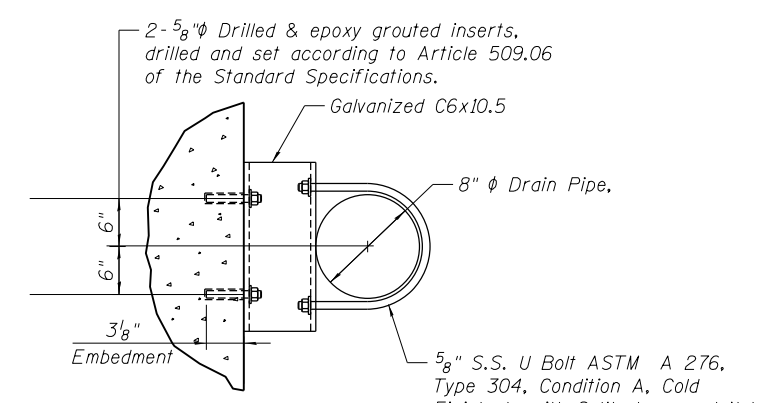
ELEVATION EAST ABUTMENT
(2 required)



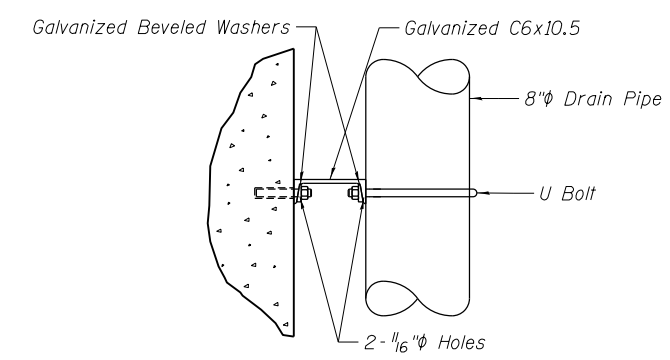
TYPICAL SECTION
ELEVATION
DETAIL B - PIPE HANGER DETAILS



PLAN
ELEVATION
SPLASH BLOCK DETAIL
(2 required)

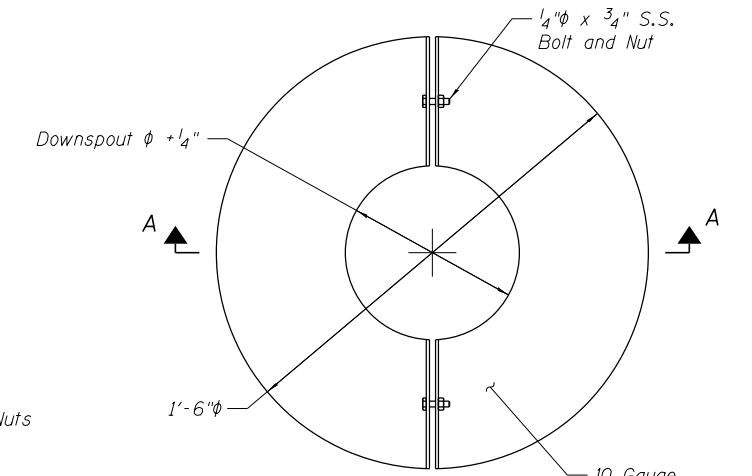


PLAN

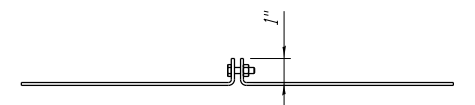


ELEVATION

DETAIL A - PIPE CLAMP DETAIL
(Use to support vertical pipe runs along face of MSE Wall)



PLAN



SECTION A-A
EXPANSION COLLAR DETAIL

Notes:

- All pipe hangers, supports and hardware shall be hot-dipped galvanized in accordance with AASHTO M232 (ASTM A153) unless otherwise noted. All bolts, nuts and washers shall be stainless steel. Stainless steel bolts shall conform to the requirements of ASTM A 193M (A193), Class 1, ASTM F593, TYPE 304 Grade B8. Stainless steel nuts shall conform to the requirements of AASHTO M 292, ASTM F594, TYPE 304 Grade 8 or 8F, and the washers shall conform to ASTM A 240, Type 302 or 304.
- The pipes, fittings, hangers, clamps, splashblocks, and expansion collars shown on this sheet are included with the lump sum cost of Drainage System.

FILE NAME = \\FS-0044\AM\VALU\LD-TRANS\87\TRDCH\02012341-92\STRUCT\CAO\72B58\0690525\SHEET_0690525-72B58-001-DRAINAGE_SHT.DGN
 USER NAME = JLR
 DATE = 8/5/2014
 CHECKED = VCP
 REVISIONS:
 1. DESIGNED - JLR
 2. CHECKED - VCP
 3. DRAWN - JLR
 4. CHECKED - RSN

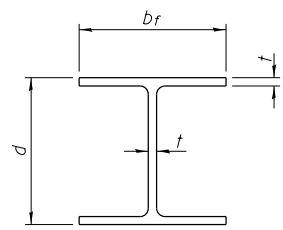
exp U.S. Services Inc.
 Chicago, IL
 BUILDINGS-EARTH & ENVIRONMENT-ENERGY
 INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE SYSTEM

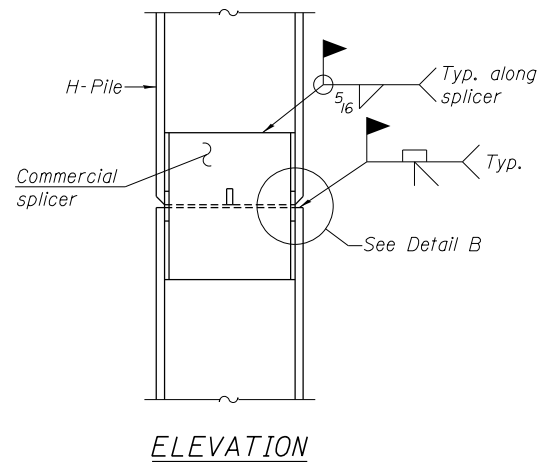
SHEET NO. S-130 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	511
SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				

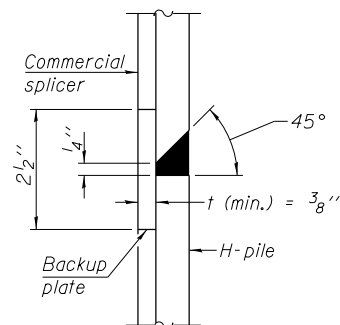


STEEL PILE TABLE

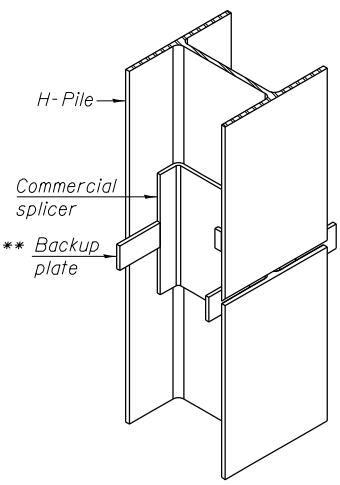
Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53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



ELEVATION

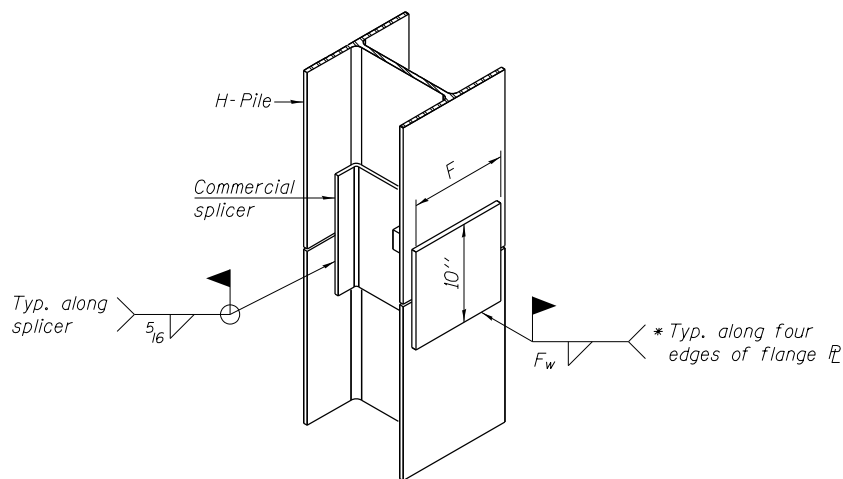


DETAIL "B"



ISOMETRIC VIEW

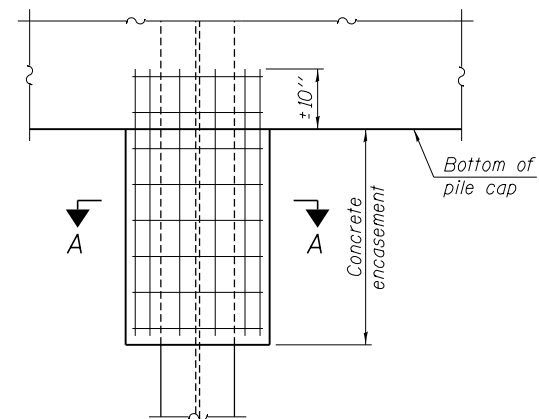
WELDED COMMERCIAL SPLICE



ISOMETRIC VIEW

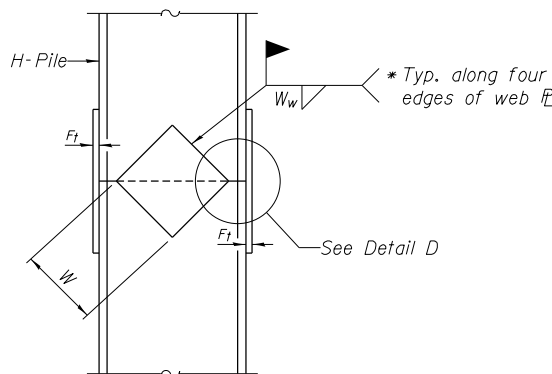
WELDED COMMERCIAL SPLICE ALTERNATE

- * 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.).

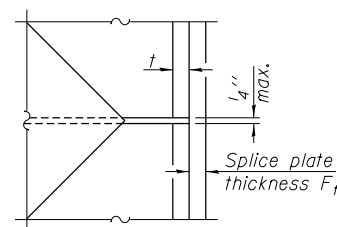


ELEVATION

PILE ENCASEMENT

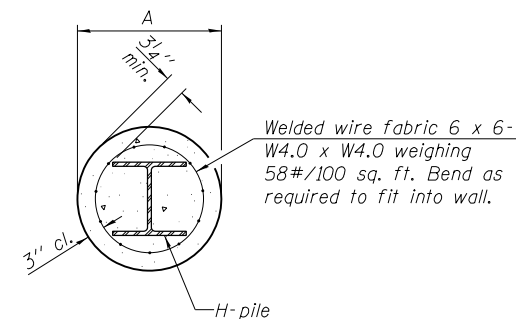


ELEVATION



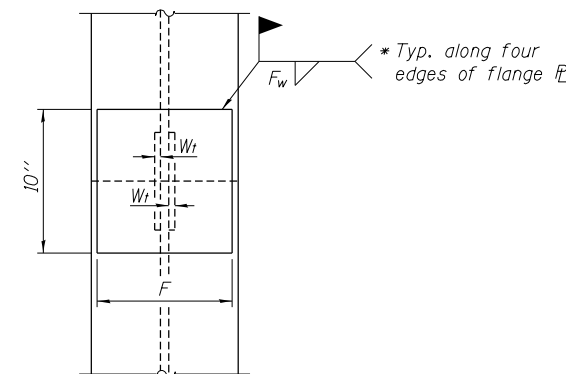
DETAIL D

WELDED PLATE FIELD SPLICE



SECTION A-A

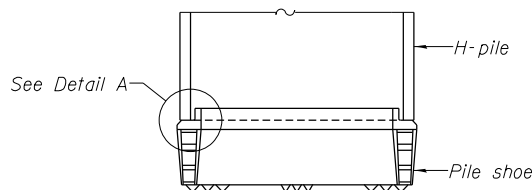
Note:
Forms for encasement may be omitted when soil conditions permit.



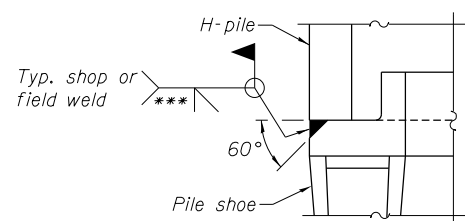
END VIEW

Designation	F	F _t	F _w	W	W _t	W _w
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"	1/16"	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"	1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	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"

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



ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT

F-HP 1-27-12

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
exp U.S. Services Inc. Chicago, IL	8/5/2014	CHECKED -	REVISED -
BUILDINGS-EARTH & ENVIRONMENT-ENERGY INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

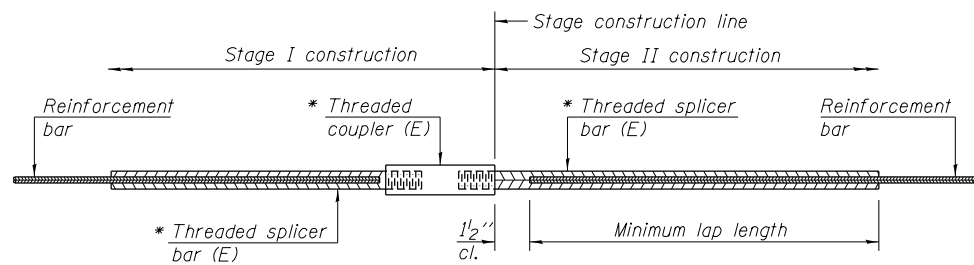
HP PILE DETAILS

SHEET NO. S-131 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	512
SN 069-0525		CONTRACT NO. 72B58		

ILLINOIS FED. AID PROJECT

\\FS-004\AM\VALU\T.D.-TRANS.07\TRDCHI\02012341-02\STRUCT\CA0\72B58\06\0525\SHSHEET_0690525-SHEET_091-MISCDETAIL_SHT.DGN
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STANDARD BAR SPLICER ASSEMBLY

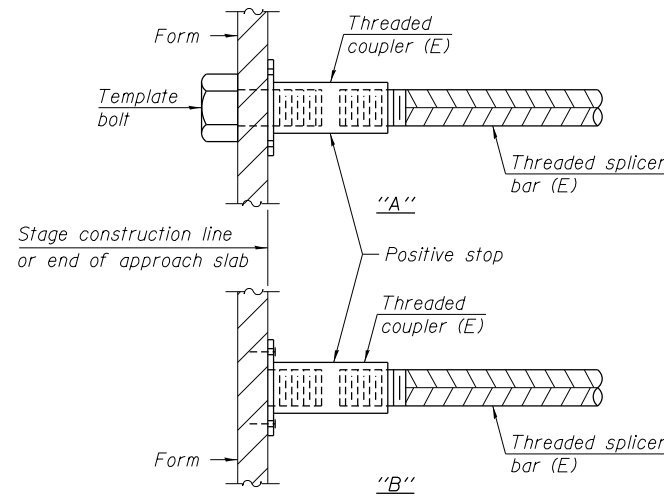
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"	6'-5"	6'-10"	7'-9"	8'-7"	9'-8"

- Table 1: Black bar, 0.8 Class C
- Table 2: Black bar, Top bar lap, 0.8 Class C
- Table 3: Epoxy bar, 0.8 Class C
- Table 4: Epoxy bar, Top bar lap, 0.8 Class C
- Table 5: Epoxy bar, Class C
- Table 6: Epoxy bar, Top bar top, Class C

Threaded splicer bar length = min. lap length + 1 1/2" + thread length

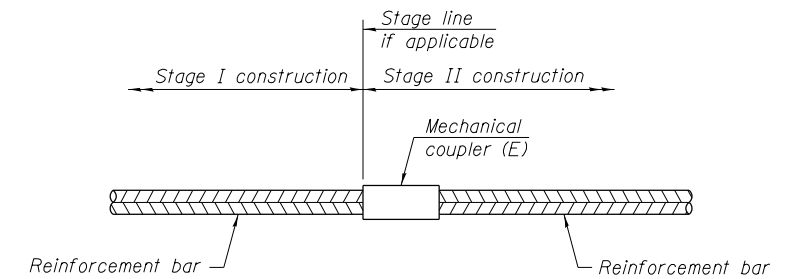
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
West Abutment	5	45	6
East Abutment	5	46	6



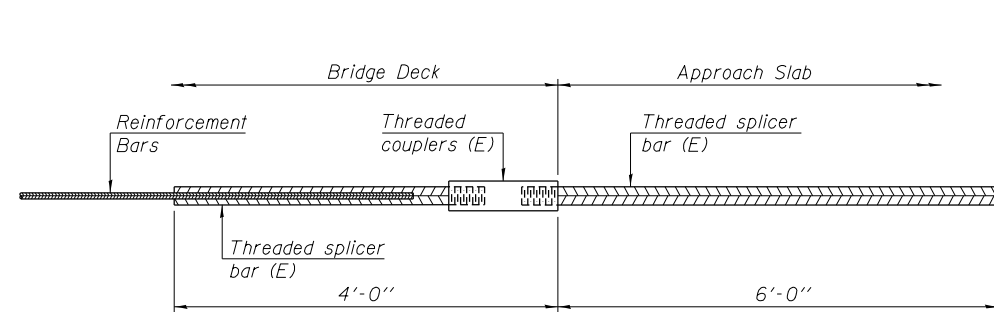
INSTALLATION AND SETTING METHODS

"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.



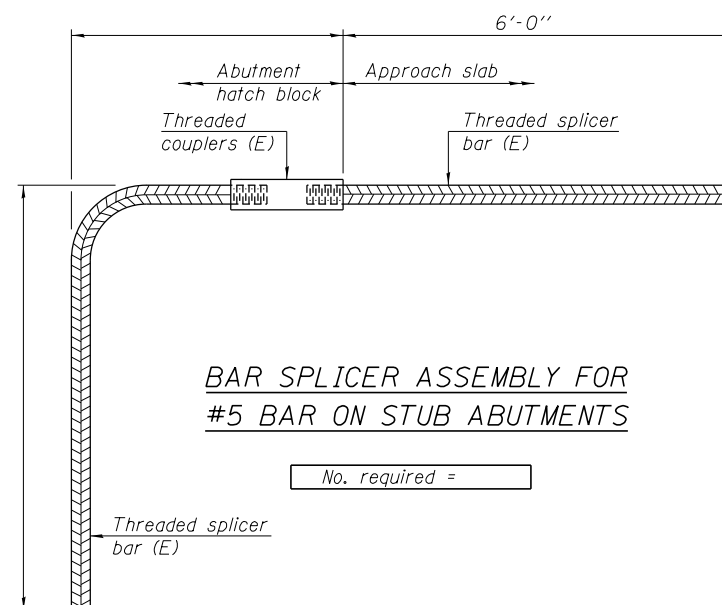
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
Pier 1	5	148
Pier 2	5	144
Pier 3	5	144
Pier 4	5	144
Pier 7	5	144
Pier 8	5	144
Pier 9	5	144



BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



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.

\VAL\SNUM-72B58-001-BORDER.DGN
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 exp U.S. Services Inc. Chicago, IL
 BUILDINGS-EARTH & ENVIRONMENT-ENERGY
 INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY

BSD-1

1-27-12

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
	DATE = 8/5/2014	CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**BAR SPLICER ASSEMBLY
& MECHANICAL SPLICER DETAILS**

SHEET NO. S-132 OF 146 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	513
SN 069-0525		CONTRACT NO. 72B58		

ILLINOIS FED. AID PROJECT

BORING LOG P01-1 Page 1 of 2

wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties	Datum: NAVD88 Elevation: 433.65 ft North: 1152702.86 ft East: 2183508.25 ft Station: 61+51.87 Offset: 18.98 RT
--	---	---

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)
	432.7	12-inch thick, dark brown SILTY CLAY ---TOPSOIL---													
		Very stiff, brown SILTY CLAY	1	3	2.50	21					11	0	0.16	33	
	430.7	Medium dense, brown, coarse SAND, trace gravel and shell fragments	5	3	NP						12	0	0.25	35	
			10	8							13	0	0.25	34	
			15	11	NP						14	0	NP		
	423.2	Soft to medium stiff, brown and gray SILTY CLAY	20	5	NP				396.7	Medium dense, gray, coarse SAND, little gravel	40	7	NP		
			25	11							14	8	NP		
			30	2	0.49	29					15	12	NP		
			35	2	0.82	27					16	16	NP		
			40	2	0.49	30			391.7	Medium dense to very dense, gray to pinkish gray GRAVELLY SAND	45	12	NP		
			45	1	0.41	28					16	27	NP		
	413.2	Very loose, gray SILT, trace plant material	50	1	NP						17	13	NP		
	410.7	Very soft to soft, gray SILTY CLAY, trace silt and sand seams	55	1	NP						18	13	NP		
			60	0	0.16	33					19	15	NP		

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	09-28-2012	Complete Drilling	10-02-2012	While Drilling	▽	8.50 ft	
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 TMR	At Completion of Drilling	▽	NA	
Driller	R&N	Logger	B. Wilson	Time After Drilling	NA		
Drilling Method	2.25 SSA, Mud Rotary from 10 feet; Boring backfilled upon completion			Depth to Water	▽	NA	
				The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

BORING LOG P01-1 Page 2 of 2

wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties	Datum: NAVD88 Elevation: 433.65 ft North: 1152702.86 ft East: 2183508.25 ft Station: 61+51.87 Offset: 18.98 RT
--	---	---

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)
	396.7	---HARD DRILLING--- ---WEATHERED BEDROCK---	80	22	16	40	33				85	1			
	351.2	Strong, very poor quality, light gray, thin horizontally bedded, cherty LIMESTONE with shale partings; Drill core quality RQD relative rating 3 to 8; Spacing of joints relative rating 5 to 10; Condition of joints relative rating 0 to 6; Run #1, 82.5' to 88.5' RECOVERY = 92% RQD = 20% Run #2, 89.5' to 94.5' RECOVERY = 93% RQD = 15%	85	1							90	2			
	339.2	Boring terminated at 94.50 ft	95								100				

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	09-28-2012	Complete Drilling	10-02-2012	While Drilling	▽	8.50 ft	
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 TMR	At Completion of Drilling	▽	NA	
Driller	R&N	Logger	B. Wilson	Time After Drilling	NA		
Drilling Method	2.25 SSA, Mud Rotary from 10 feet; Boring backfilled upon completion			Depth to Water	▽	NA	
				The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

FILE NAME = \\S:\SUNUM-72B58-001-BORDER.DGN, USER NAME = wangeng, DESIGNED - wangeng, REVISIONS - wangeng, DATE - 8/5/2014, PLOT SCALE = 1"=20', PLOT DATE = 8/5/2014, SHEET NO. = 782, SECTION = 123B-2, COUNTY = MORGAN, TOTAL SHEETS = 782, SHEET NO. = 515, CONTRACT NO. = SN 069-0525, PROJECT = ILLINOIS FED. AID PROJECT

BORING LOG P02-1 Page 1 of 2

wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties	Datum: NAVD88 Elevation: 435.37 ft North: 1152740.82 ft East: 2183688.37 ft Station: 63 + 31.63 Offset: 20.56 LT
--	---	---

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)
	434.9	6-inch thick, brown SANDY LOAM Loose to medium dense, brown, medium SAND, trace shell fragments	1	X	1	3 7 7	NP			408.4	Very loose to loose, gray SANDY LOAM, trace shell fragments and clay laminations	11	X	11	0 2 1	0.25	32
			2	X	2	2 2 4	NP					12	X	12	1 1 2	NP	
	439.9	Medium stiff, gray SILTY CLAY	3	X	3	2 2 4	0.82 B	28		398.4	Soft, gray SILTY CLAY	35	X	13	3 4 4	NP	
			4	X	4	2 2 3	0.90 S	27				40	X	14	0 1 1	0.33 B	41
			5	X	5	0 2 2	0.82 B	25		388.4	Soft, gray SILTY CLAY	45	X	15	5 6 5	NP	
	419.9	Soft to medium stiff, brown and gray CLAY LOAM, trace sand seams	6	X	6	0 1 2	0.50 P	30		383.4	Medium dense to dense, gray to pinkish gray, coarse SAND	50	X	16	11 15 17	NP	
			7	X	7	0 2 2	0.74 B	24					X				
			8	X	8	0 1 1	0.25 B	28					X				
	414.9	Very loose, gray SILTY LOAM	9	X	9	1 1 1	NP	33					X				
	411.7	Soft, gray CLAY LOAM	10	X	10	1 1 1	0.41 B	36					X				

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	10-02-2012	Complete Drilling	10-03-2012	While Drilling	▽	27.00 ft	
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 TMR	At Completion of Drilling	▽	NA	
Driller	R&N	Logger	B. Wilson	Time After Drilling	NA		
Drilling Method	2.25 SSA, Mud Rotary from 10 feet; Boring backfilled upon completion			Depth to Water	▽	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

BORING LOG P02-1 Page 2 of 2

wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties	Datum: NAVD88 Elevation: 435.37 ft North: 1152740.82 ft East: 2183688.37 ft Station: 63 + 31.63 Offset: 20.56 LT
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Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)
	383.4	Dense to very dense, pinkish gray GRAVELLY SAND	17	X	17	15 24 28	NP			383.4	Strong, very poor quality, light gray, horizontally bedded, cherty LIMESTONE with shale partings; Drill core quality RQD relative rating 3 to 8; Spacing of joints relative rating 5 to 10; Condition of joints relative rating 0 to 6; Run #1, 84' to 94' RECOVERY = 95% RQD = 23% Qu = 8,690 psi	80	X	22	12 9 12	NP	
			18	X	18	15 17 17	NP			351.4	Drill core	85	X	23		NP	
	373.4	Medium dense, pinkish gray, coarse SAND, trace gravel	19	X	19	7 9 10	NP					90	X	1			
			20	X	20	7 5 5	NP			341.4	Boring terminated at 94.00 ft	95	X				
	363.4	Medium dense to very dense pinkish gray GRAVELLY SAND	21	X	21	11 7 9	NP					100	X				

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	10-02-2012	Complete Drilling	10-03-2012	While Drilling	▽	27.00 ft	
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 TMR	At Completion of Drilling	▽	NA	
Driller	R&N	Logger	B. Wilson	Time After Drilling	NA		
Drilling Method	2.25 SSA, Mud Rotary from 10 feet; Boring backfilled upon completion			Depth to Water	▽	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

FILE NAME = \\S:\SUNUM-72B58-001-BORDER.DGN, USER NAME = wangeng, DESIGNED - wangeng, REVISIONS - wangeng, DATE - 8/5/2014, PLOT SCALE = 1"=20', PLOT DATE = 8/5/2014, SHEET NO. 3 OF 14, PROJECT NO. SN 069-0525, CONTRACT NO. 72B58

BORING LOG P03-1 Page 1 of 2

wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties	Datum: NAVD88 Elevation: 435.98 ft North: 1152701.45 ft East: 2183860.15 ft Station: 65 + 06.76 Offset: 6.10 RT
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Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)
	435.0	12-inch thick, brown, medium SAND, trace shell fragments	1	X	1	2 6 6	NP			410.5	Soft, gray SILTY CLAY	11	X	11	0 0 1	0.41 B	29
	432.0	Medium dense, brown, medium SAND, trace shell fragments	2	X	2	3 5 5	0.50 P	22		408.0	Very loose, gray SILTY LOAM, with clay seams	12	X	12	0 1 1	NP	
	430.5	Medium stiff, brown CLAY LOAM	3	X	3	8 5 8	NP	15		403.5	Loose, gray, coarse, SANDY LOAM, trace shell fragments	13	X	13	2 2 6	NP	
	428.0	Medium dense, brown SANDY LOAM, trace shell fragments	4	X	4	11 7 7	NP	11		399.0	Soft, gray SILTY CLAY	14	X	14	0 0 1	0.33 B	34
	425.5	Very soft to medium stiff, brown to gray SILTY CLAY	5	X	5	2 2 2	0.74 B	25		394.0	Medium dense to very dense, gray to pinkish gray, coarse SAND, some gravel	15	X	15	12 14 17	NP	
			6	X	6	0 1 2	0.49 B	26					X	16	9 12 11	NP	
			7	X	7	0 2 2	0.66 B	27					X	17			
			8	X	8	2 1 1	0.16 B	26					X	18			
			9	X	9	0 1 2	0.25 B	33					X	19			
	413.0	Very loose, gray SILTY LOAM	10	X	10	0 1 1	NP						X	20	10 10 12	NP	
				X									X	21	10 9 6	NP	

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	10-03-2012	Complete Drilling	10-03-2012	While Drilling	▽	32.50 ft	
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 TMR	At Completion of Drilling	▽	25.00 ft	
Driller	R&N	Logger	B. Wilson	Time After Drilling		NA	
Drilling Method	2.25 SSA, Mud Rotary from 7.5 feet; Boring backfilled upon completion			Depth to Water	▽	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

BORING LOG P03-1 Page 2 of 2

wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties	Datum: NAVD88 Elevation: 435.98 ft North: 1152701.45 ft East: 2183860.15 ft Station: 65 + 06.76 Offset: 6.10 RT
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Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)
		-HARD DRILLING-								383.0	Strong, fair quality, light gray, cherty LIMESTONE with shale partings; Drill core quality RQD relative rating 3 to 13; Spacing of joints relative rating 5 to 20; Condition of joints relative rating 6 to 12; Run #1, 83' to 93' RECOVERY = 88% RQD = 51%	85	X	22	10 12 13	NP	
										340.0	Boring terminated at 93.00 ft	95	X	23			

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	10-03-2012	Complete Drilling	10-03-2012	While Drilling	▽	32.50 ft	
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 TMR	At Completion of Drilling	▽	25.00 ft	
Driller	R&N	Logger	B. Wilson	Time After Drilling		NA	
Drilling Method	2.25 SSA, Mud Rotary from 7.5 feet; Boring backfilled upon completion			Depth to Water	▽	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

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BORING LOG P04-1 Page 1 of 2

wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties	Datum: NAVD88 Elevation: 434.81 ft North: 1152748.86 ft East: 2184031.97 ft Station: 66 + 70.48 Offset: 41.51 LT
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Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)
	433.8	12-inch thick, dark brown LOAM, trace roots								409.3	Loose to medium dense, gray, medium SAND						
		Loose, brown LOAM, trace roots			1	2 2 5	NP							11	3 2 4	NP	
	431.8	Loose, brown, fine SAND, trace shell fragments			2	2 2 2	NP							12	3 4 5	NP	
	429.3	Loose, brown SILTY LOAM, trace roots			3	3 3 4	NP	15									
	426.8	Medium dense, brown SANDY LOAM, trace shell fragments			4	16 16 8	NP	18						13	5 6 9	NP	
	424.3	Very loose, brown SILT			5	1 1 1	NP	23									
	421.8	Soft, brown and gray SILTY CLAY, trace silt seams			6	0 1 1	0.41 B	28						14	11 17 19	NP	
	416.8	Very loose, gray SANDY LOAM, trace clay laminations			7	0 0 0	0.25 B	34									
	414.3	Very loose, gray LOAM, trace shell fragments			8	0 0 2	NP							15	9 10 15	NP	
	411.8	Very loose, gray SANDY LOAM			9	1 0 1	NP										
					10	1 1 2	NP							16	12 15 25	NP	

GENERAL NOTES	WATER LEVEL DATA
Begin Drilling: 09-24-2012	While Drilling: 18.00 ft
Complete Drilling: 09-25-2012	At Completion of Drilling: NA
Drilling Contractor: Wang Testing Service	Drill Rig: D-50 TMR
Driller: R&N	Time After Drilling: NA
Logger: B. Wilson	Checked by: M. Snider
Drilling Method: 2.25 SSA, Mud Rotary from 10 feet; Boring backfilled upon completion	Depth to Water: NA
	The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

BORING LOG P04-1 Page 2 of 2

wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties	Datum: NAVD88 Elevation: 434.81 ft North: 1152748.86 ft East: 2184031.97 ft Station: 66 + 70.48 Offset: 41.51 LT
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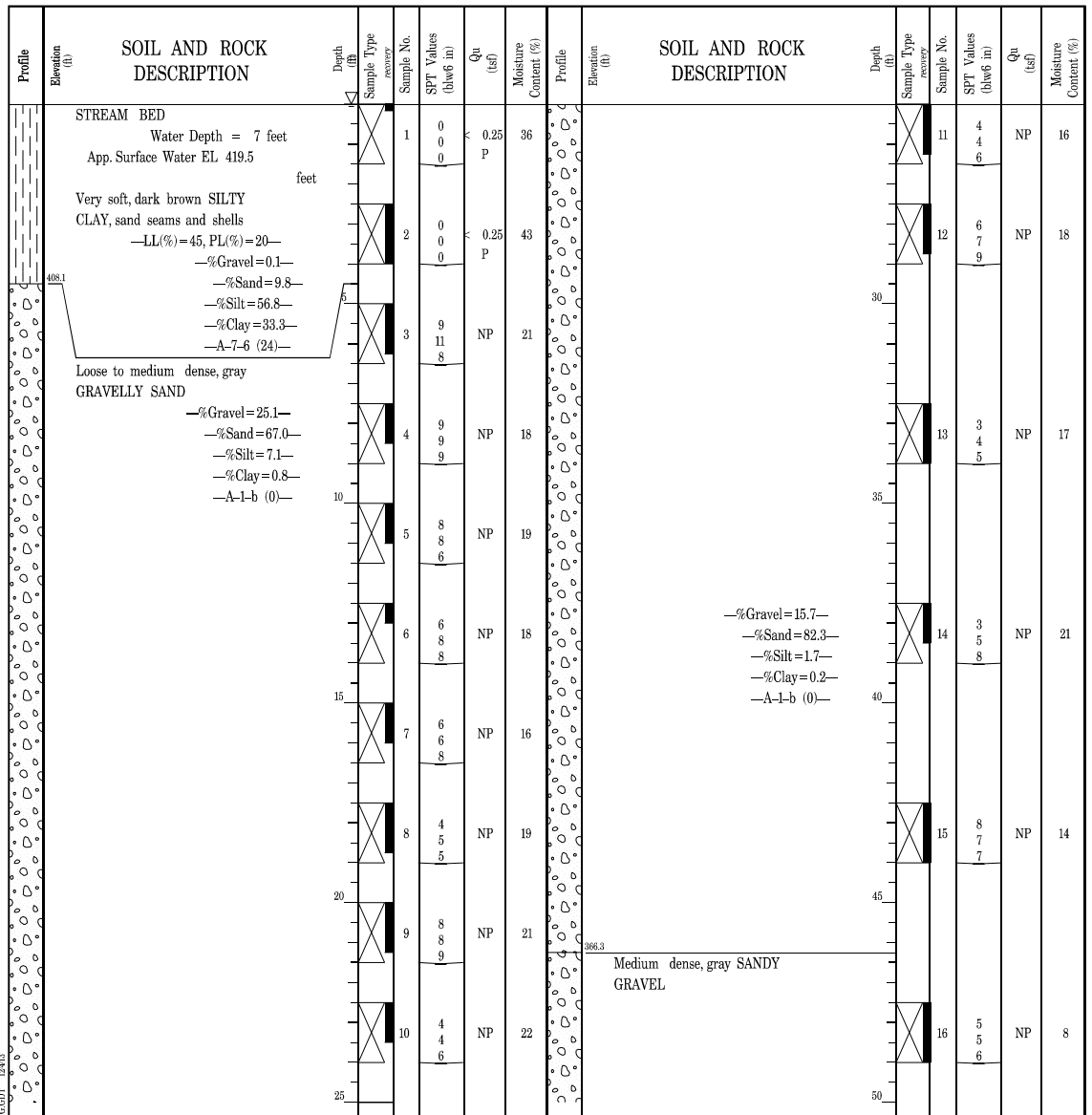
Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)
	382.8	Medium dense, pinkish gray, coarse SAND, little to coarse gravel								253.8	—HARD DRILLING— —WEATHERED BEDROCK—						
					17	12 14 15	NP							22	10 9 9	NP	
					18	9 10 12	NP			249.3	Run #1, 84' to 85.5' RECOVERY = 100% RQD = 0% Strong, very poor quality, light gray, fresh, horizontally bedded, horizontal shale partings, cherty LIMESTONE; Drill core quality RQD relative rating 3; Spacing of joints relative rating 5; Condition of joints relative rating 0; Run #2, 85.5' to 95.5' RECOVERY = 100% RQD = 24%			1			
					19	12 11 8	NP							2			
					20	13 12 13	NP										
					21	17 17 19	NP			339.3	Boring terminated at 95.50 ft						

GENERAL NOTES	WATER LEVEL DATA
Begin Drilling: 09-24-2012	While Drilling: 18.00 ft
Complete Drilling: 09-25-2012	At Completion of Drilling: NA
Drilling Contractor: Wang Testing Service	Drill Rig: D-50 TMR
Driller: R&N	Time After Drilling: NA
Logger: B. Wilson	Checked by: M. Snider
Drilling Method: 2.25 SSA, Mud Rotary from 10 feet; Boring backfilled upon completion	Depth to Water: NA
	The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

FILE NAME = \\S:\SUNUM-72B58-001-BORDER.DGN, USER NAME = wangeng, DESIGNED - wangeng, REVISIONS - wangeng, DATE - 8/5/2014, PLOT SCALE = 1"=20', DRAWN - wangeng, CHECKED - wangeng, PLOT DATE = 8/5/2014, SHEET NO. 5 OF 14, PROJECT NO. SN 069-0525, CONTRACT NO. 72B58

BORING LOG P05-1 Page 1 of 2

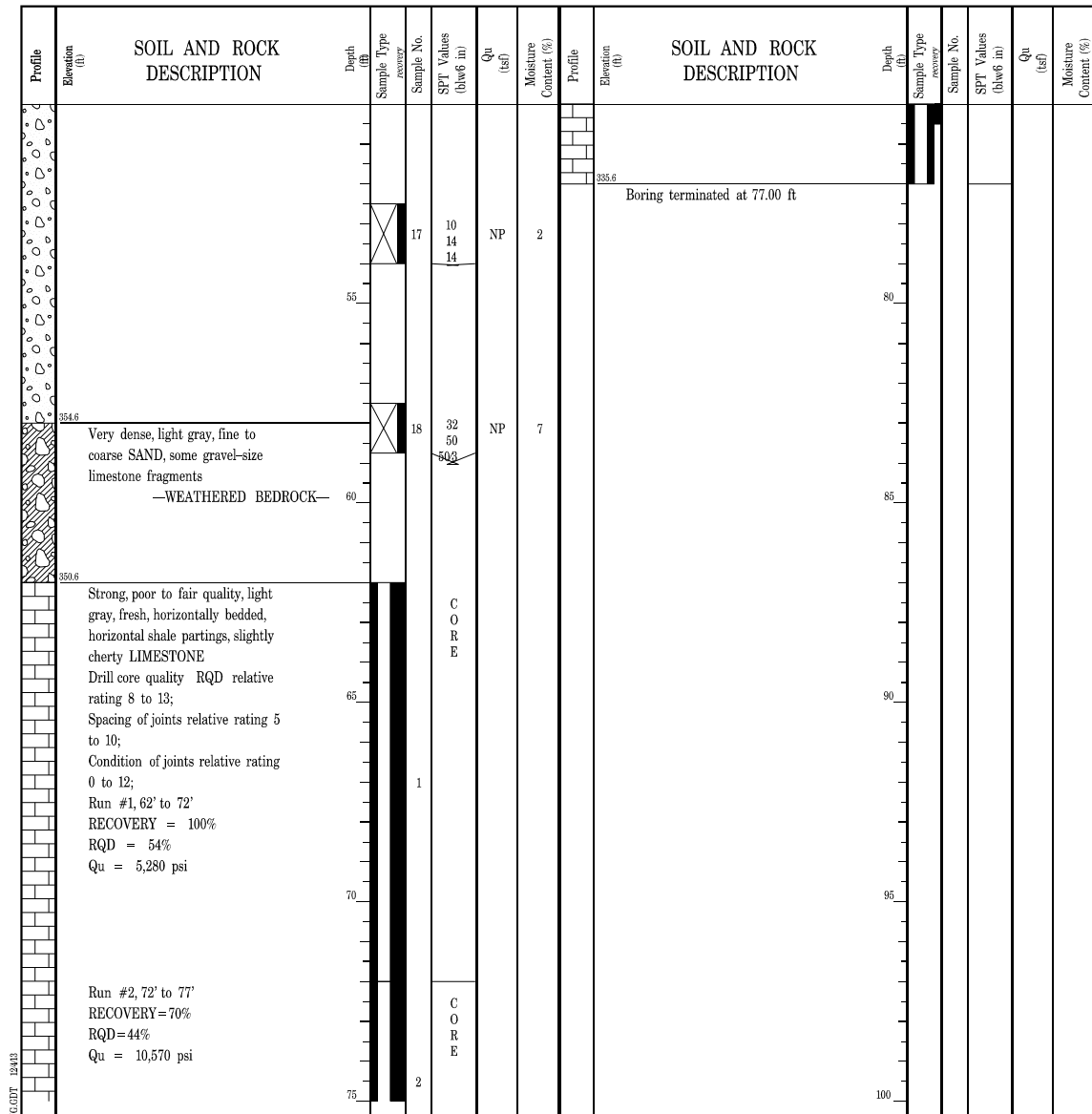
wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties	Datum: NAVD88 Elevation: 412.56 ft North: 1152680.50 ft East: 2184179.82 ft Station: 68 + 34.30 Offset: 36.01 LT
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GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-22-2012	Complete Drilling	08-23-2012	While Drilling	▽	0.00 ft	
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 ATV/Barge	At Completion of Drilling	▽	NA	
Driller	K&K	Logger	B. Wilson	Checked by	M. Snider		
Drilling Method	3.25 IDA HSA; Boring backfilled upon completion			Time After Drilling	NA		
		Depth to Water	▽	NA			
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

BORING LOG P05-1 Page 2 of 2

wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties	Datum: NAVD88 Elevation: 412.56 ft North: 1152680.50 ft East: 2184179.82 ft Station: 68 + 34.30 Offset: 36.01 LT
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GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-22-2012	Complete Drilling	08-23-2012	While Drilling	▽	0.00 ft	
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 ATV/Barge	At Completion of Drilling	▽	NA	
Driller	K&K	Logger	B. Wilson	Checked by	M. Snider		
Drilling Method	3.25 IDA HSA; Boring backfilled upon completion			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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 DESIGNED - wangeng
 CHECKED - wangeng
 DATE - 8/5/2014
 PLOT SCALE = 1"=20'
 PLOT DATE = 8/5/2014
 DRAWN - wangeng
 CHECKED - wangeng
 REVISIONS -
 STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
 SOIL BORING LOGS 6 OF 14
 SHEET NO. S-138 OF 146 SHEETS
 F.A.P. R.T.E. SECTION COUNTY TOTAL SHEETS SHEET NO.
 745 123B-2 MORGAN 782 519
 SN 069-0525 CONTRACT NO. 72B58
 ILLINOIS FED. AID PROJECT

BORING LOG P05-2

Page 1 of 1

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

Client: exp US Services, Inc.
Project: IL 104 over the Illinois River at Meredosia
Location: Morgan & Pike Counties

Datum: NAVD88
Elevation: 410.81 ft
North: 1152751.86 ft
East: 2184191.13 ft
Station: 68 + 23.61
Offset: 35.42 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/in)	Qu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/in)	Qu (tsf)	Moisture Content (%)
		STREAMBED App. Surface Water EL 419.5	0		1	0 0 0	0.25 P	44				0		11	6 3 9	NP	18
	408.8	Very soft, dark gray SILTY CLAY, sand seams, and plant material	1		2	5 5 7	NP	18				1		12	7 8 9	NP	14
		Medium dense, gray, medium SAND, trace to some gravel	2		3	5 6 6	NP	21				2		13	5 5 9	NP	18
	403.8	Medium dense, gray, coarse SAND, trace to some gravel	3		4	5 7 8	NP	23		379.3	Boring terminated at 31.50 ft	3					
		—%Gravel = 13.7— —%Sand = 81.9— —%Silt = 4.1— —%Clay = 0.2— —A-1-b (0)—	4		5	6 8 10	NP	18				4					
			5		6	5 6 8	NP	18				5					
			6		7	7 7 8	NP	26				6					
			7		8	6 5 6	NP	19				7					
			8		9	9 12 12	NP	12				8					
			9		10	9 8 7	NP	15				9					
			10									10					

GENERAL NOTES

WATER LEVEL DATA

Begin Drilling	08-22-2012	Complete Drilling	08-22-2012	While Drilling	0.00 ft
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 ATV/Barge	At Completion of Drilling	NA
Driller	K&K	Logger	B. Wilson	Checked by	M. Snider
Drilling Method	3.25 IDA HSA; Boring backfilled upon completion			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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	PLOT DATE =	CHECKED -	REVISED -

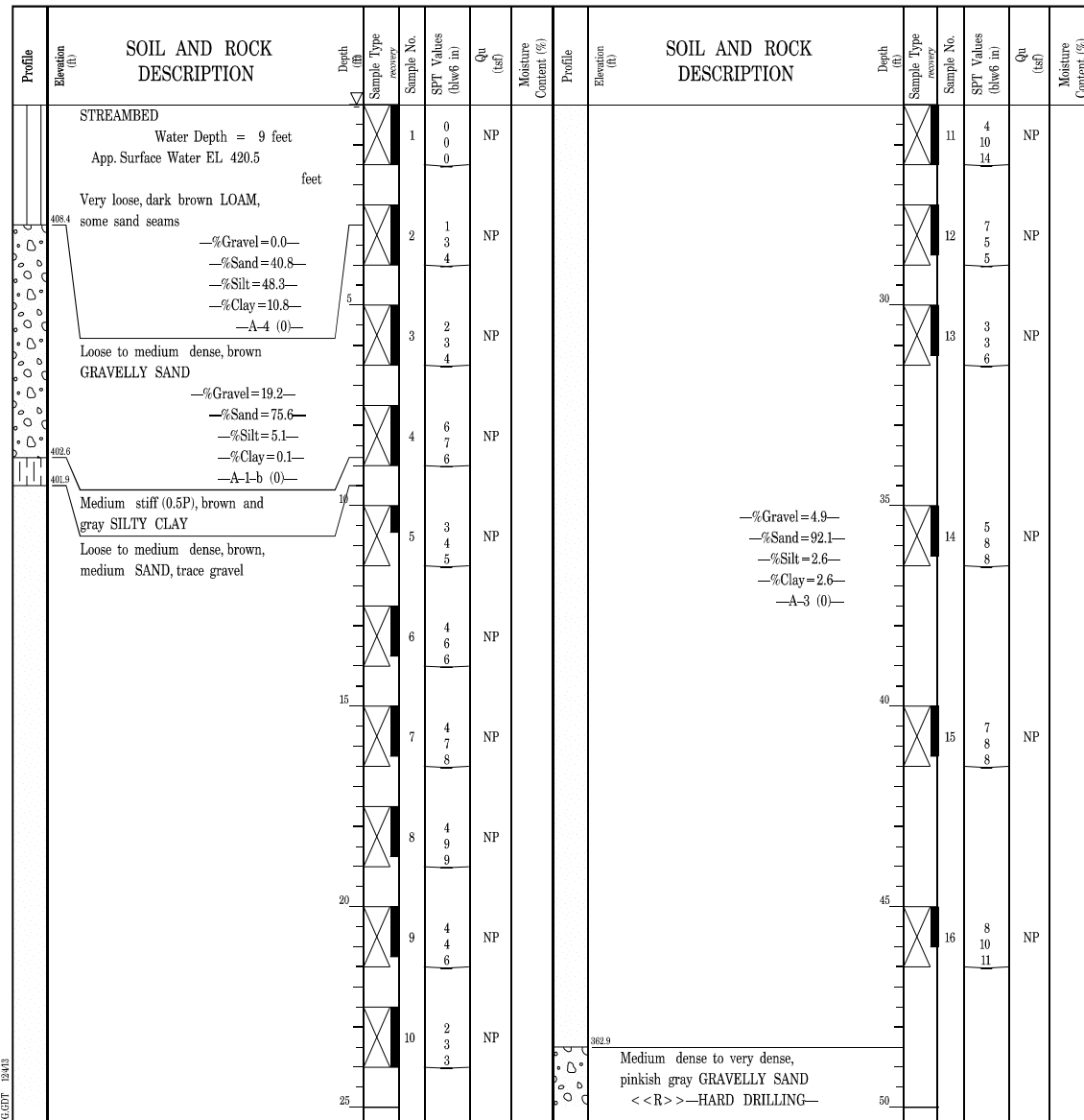
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION			
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SOIL BORING LOGS 7 OF 14			
SHEET NO. S-139 OF 146 SHEETS			

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	520
SN 069-0525		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				

BORING LOG P06-1 Page 1 of 2

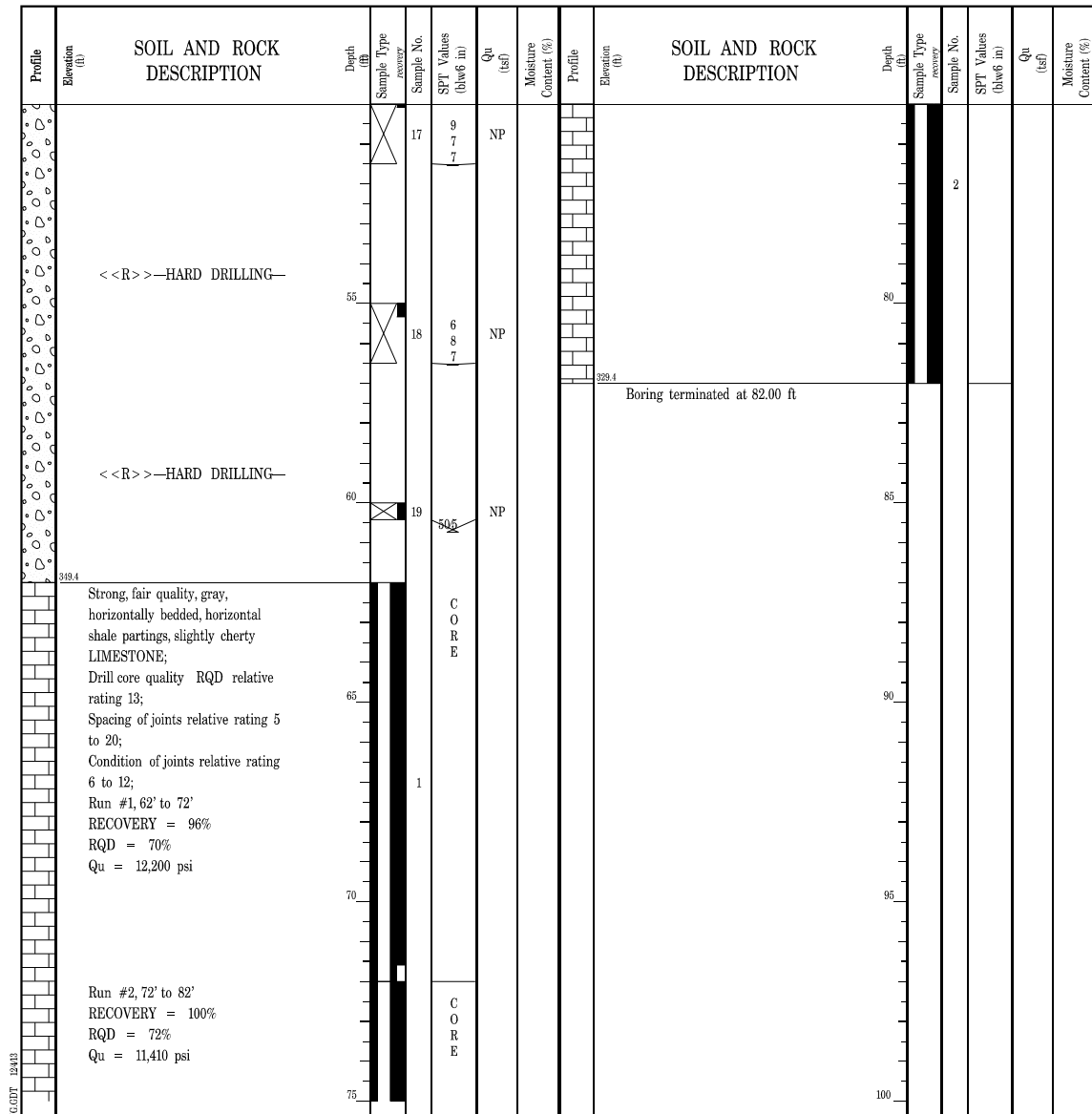
wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties	Datum: NAVD88 Elevation: 411.41 ft North: 1152677.30 ft East: 2184777.94 ft Station: 74+14.76 Offset: 35.46 RT
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GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-28-2012	Complete Drilling	08-29-2012	While Drilling	▽	0.00 ft	
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 ATV/Barge	At Completion of Drilling	▽	NA	
Driller	K&K	Logger	B. Wilson	Checked by	M. Snider		
Drilling Method	3.25 IDA HSA; Boring backfilled upon completion			Time After Drilling	NA		
		Depth to Water	▽	NA			
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

BORING LOG P06-1 Page 2 of 2

wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties	Datum: NAVD88 Elevation: 411.41 ft North: 1152677.30 ft East: 2184777.94 ft Station: 74+14.76 Offset: 35.46 RT
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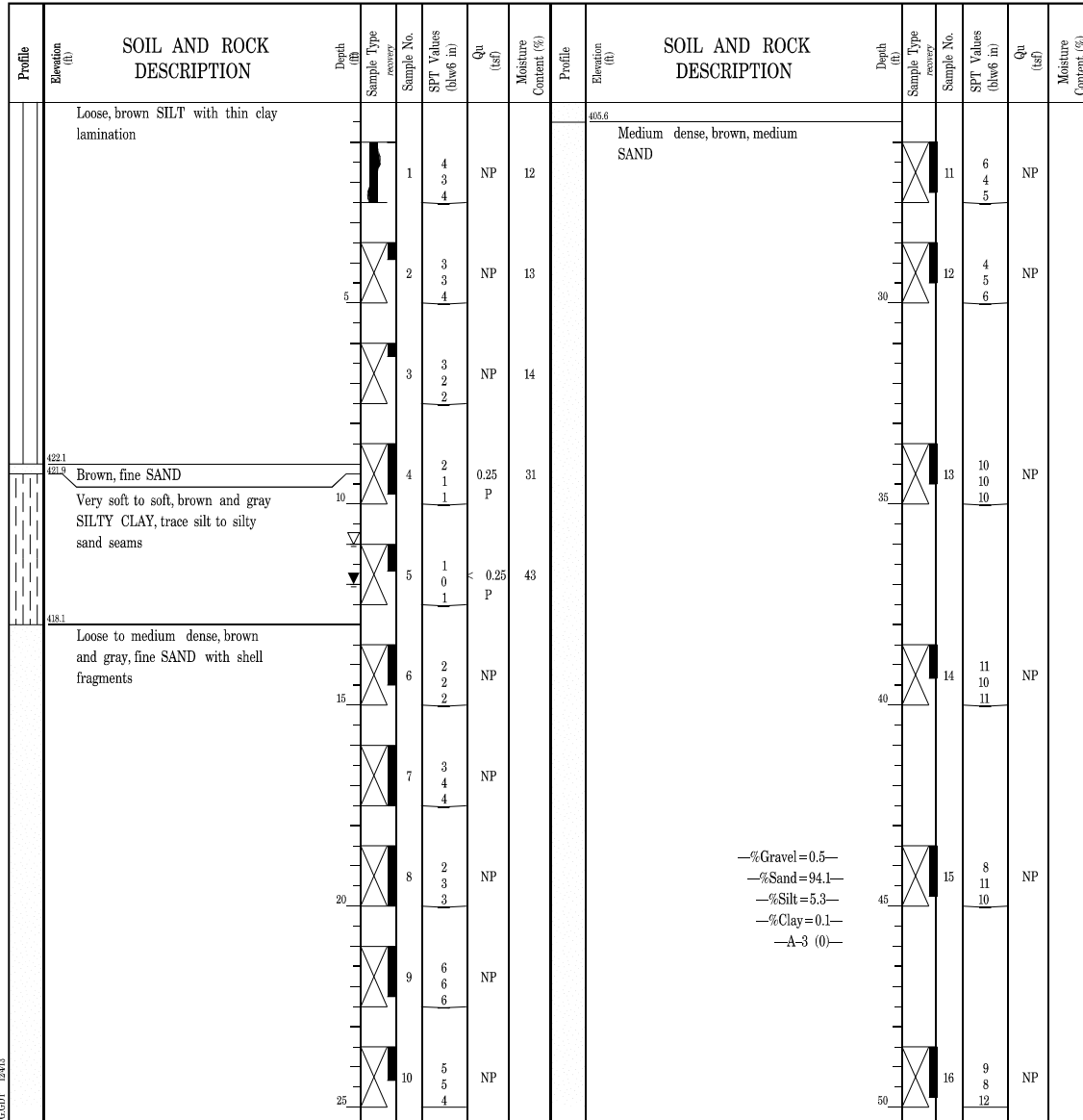


GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-28-2012	Complete Drilling	08-29-2012	While Drilling	▽	0.00 ft	
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 ATV/Barge	At Completion of Drilling	▽	NA	
Driller	K&K	Logger	B. Wilson	Checked by	M. Snider		
Drilling Method	3.25 IDA HSA; Boring backfilled upon completion			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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 DESIGNED - wangeng
 CHECKED - wangeng
 DATE - 8/5/2014
 PLOT SCALE = 1"=20'
 PLOT DATE = 8/5/2014

BORING LOG P07-1 Page 1 of 2

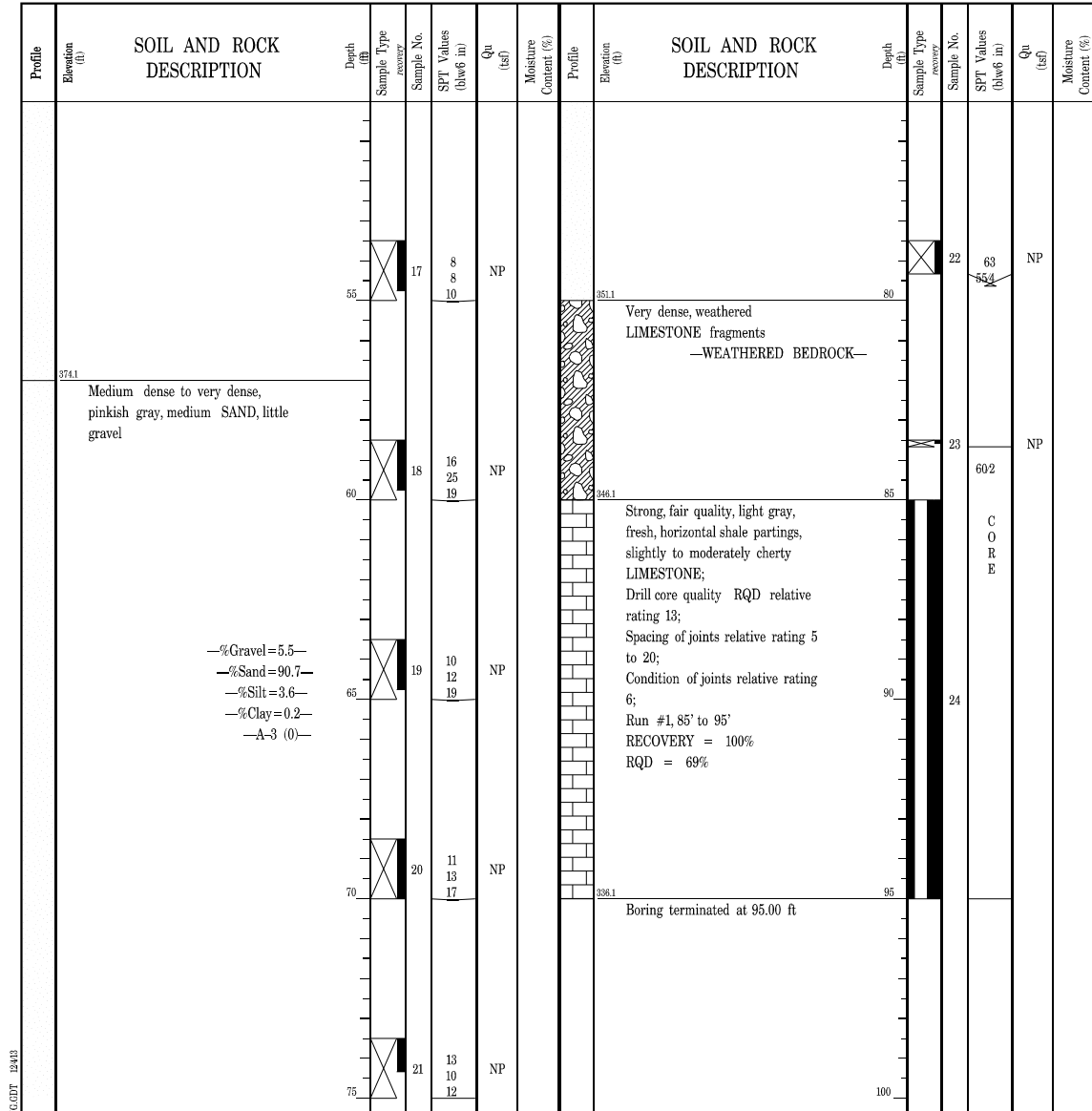
wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties	Datum: NAVD88 Elevation: 431.14 ft North: 1152737.88 ft East: 2184932.65 ft Station: 75 + 65.03 Offset: 4.32 LT
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GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-31-2012	Complete Drilling	09-05-2012	While Drilling	▽	11.00 ft	
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 ATV	At Completion of Drilling	▽	12.00 ft	
Driller	K&K	Logger	B.Wilson	Time After Drilling		NA	
Checked by	M. Snider	Drilling Method	3.25 IDA HSA; mud-rotary from 20 feet	Depth to Water	▽	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

BORING LOG P07-1 Page 2 of 2

wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties	Datum: NAVD88 Elevation: 431.14 ft North: 1152737.88 ft East: 2184932.65 ft Station: 75 + 65.03 Offset: 4.32 LT
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GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-31-2012	Complete Drilling	09-05-2012	While Drilling	▽	11.00 ft	
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 ATV	At Completion of Drilling	▽	12.00 ft	
Driller	K&K	Logger	B.Wilson	Time After Drilling		NA	
Checked by	M. Snider	Drilling Method	3.25 IDA HSA; mud-rotary from 20 feet	Depth to Water	▽	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

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BORING LOG P08-1 Page 1 of 2

wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties	Datum: NAVD88 Elevation: 431.70 ft North: 1152695.61 ft East: 2185135.94 ft Station: 77+81.84 Offset: 33.80 RT
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Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)
	430.7	12-inch thick SILTY LOAM —TOPSOIL—								—%Gravel=17.0— —%Sand=77.3— —%Silt=5.6— —%Clay=0.1— —A-1-b (0)—					
	428.7	Medium stiff, brown SILTY CLAY, trace silt seams	1	1	2 3 4	0.50	25				11	5 5 5	NP		
		Loose, brown SILT with clay seams	2	2	4 4 5	NP	18				12	8 7 7	NP		
	426.2	Medium stiff to stiff, brown SILTY CLAY, trace silt and sand seams	3	3	2 3 4	0.50	26				13	8 6 7	NP		
			4	4	3 3 2	1.25	17				14	9 10 15	NP		
	421.2	Very loose, brown LOAM, trace shell fragments	5	5	1 1 2	NP	27				15	6 6 6	NP		
			6	6	1 1 2	NP					16	9 10 18	NP		
	416.2	Medium dense, brown GRAVELLY SAND	7	7	7 5 5	NP					17	5 5 3	NP		
			8	8	5 6 6	NP					18	5 5 3	NP		
			9	9	5 5 6	NP					19	5 5 6	NP		
			10	10	5 5 3	NP					20	5 5 3	NP		

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	09-06-2012	Complete Drilling	09-11-2012	While Drilling	▽	10.50 ft	
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 ATV	At Completion of Drilling	▽	13.00 ft	
Driller	K&K	Logger	B.Wilson	Time After Drilling	NA		
Checked by	M. Snider	Drilling Method	3.25 IDA HSA; mud-rotary from 20 feet	Depth to Water	▽	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

BORING LOG P08-1 Page 2 of 2

wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties	Datum: NAVD88 Elevation: 431.70 ft North: 1152695.61 ft East: 2185135.94 ft Station: 77+81.84 Offset: 33.80 RT
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Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)
	373.7	Dense, pinkish gray GRAVELLY SAND													
			17	17	23 18 13	NP					80	22	14 48 64	NP	
	371.7	Medium dense to dense, pinkish gray, medium SAND													
			18	18	17 14 16	NP					85	1		CORE	
			19	19	10 9 11	NP					90	2		CORE	
	365.7	Dense, pinkish gray GRAVELLY SAND													
		—%Gravel=31.8— —%Sand=64.6— —%Silt=3.5— —%Clay=0.2— —A-1-b (0)—	20	20	10 14 21	NP					95				
			21	21	14 24 20	NP					100				
	336.2	Boring terminated at 95.50 ft													

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	09-06-2012	Complete Drilling	09-11-2012	While Drilling	▽	10.50 ft	
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 ATV	At Completion of Drilling	▽	13.00 ft	
Driller	K&K	Logger	B.Wilson	Time After Drilling	NA		
Checked by	M. Snider	Drilling Method	3.25 IDA HSA; mud-rotary from 20 feet	Depth to Water	▽	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

FILE NAME = \\S:\SUNUM-72B58-001-BORDER.DGN, USER NAME = wangeng, DESIGNED - wangeng, REVISIONS - wangeng, DATE - 8/5/2014, CHECKED - wangeng, PLOT SCALE = 1"=20', DRAWN - wangeng, PLOT DATE = 8/5/2014, CHECKED - wangeng, STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION, SHEET NO. 11 OF 14, SHEET NO. 72B58

BORING LOG P09-1 Page 1 of 2

wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties	Datum: NAVD88 Elevation: 432.16 ft North: 1152702.72 ft East: 2185331.08 ft Station: 79+98.10 Offset: 1.40 RT
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Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)
		Loose, brown SILTY LOAM, trace roots			1	3 4 5	NP	24						11	3 5 8	NP	
	429.2	Medium dense, brown SILT, trace CLAY laminations			2	4 5 6	NP	16						12	7 9 8	NP	
	426.7	Very stiff, brown SILTY CLAY, trace SILT seams			3	4 5 5	3.00 P	26						13	8 12 12	NP	
	421.7	Very soft to soft, gray SILTY CLAY, trace decayed plants			4	5 4 4	2.13 S	19						14	5 6 7	NP	
					5	0 0 1	0.25 P	39						15	8 12 12	NP	
					6	0 0 0	0.16 B	49						16	10 19 15	NP	
					7	0 1 3	0.25 B	48									
	414.3	Medium dense to dense, brown, fine to coarse SAND, trace to little gravel			8	5 8 9	NP							17	13 17 19	NP	
					9	4 4 4	NP							18	14 50 50	NP	
					10	3 4 5	NP							19			

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	09-17-2012	Complete Drilling	09-18-2012	While Drilling	▽	18.00 ft	
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 TMR	At Completion of Drilling	▽	23.00 ft	
Driller	R&N	Logger	B. Wilson	Checked by	M. Snider		
Drilling Method	3.25 IDA HSA; Boring backfilled upon completion			Time After Drilling	NA		
				Depth to Water	▽	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

BORING LOG P09-1 Page 2 of 2

wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties	Datum: NAVD88 Elevation: 432.16 ft North: 1152702.72 ft East: 2185331.08 ft Station: 79+98.10 Offset: 1.40 RT
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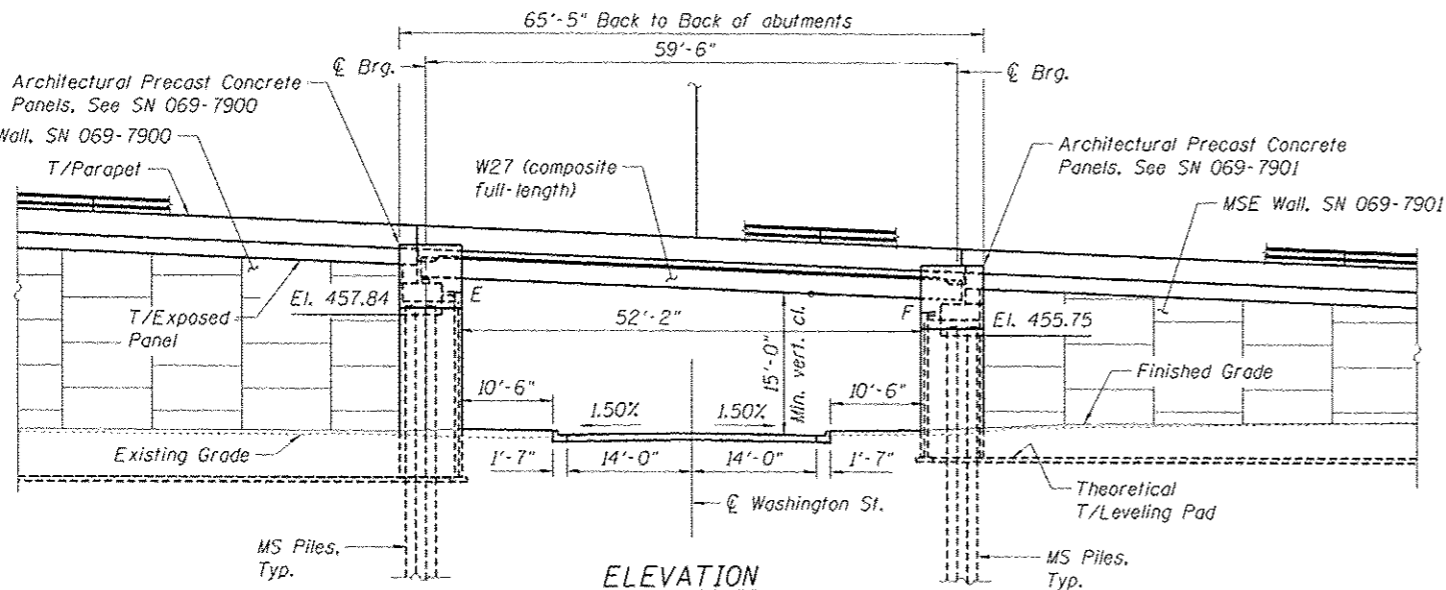
Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw6 in)	Qu (tsf)	Moisture Content (%)
	350.2	Dense to very dense, pinkish gray GRAVELLY SAND			17	5 16 21	NP			353.2	Dense, gray, medium SAND, little gravel			22	13 17 26	NP	
					18	15 15 16	NP			348.7	Strong, very poor rock quality, gray and brown, vuggy, highly fragmented, weathered LIMESTONE fragments --WEATHERED BEDROCK-- Run #1, 83.5' to 85.5' RECOVERY = 83% RQD = 0%			1			
					19	11 16 18	NP			346.7	Strong, poor quality, gray, horizontally bedded, horizontal shale partings, slightly cherty, occasionally vuggy LIMESTONE; Drill core quality RQD relative rating 8; Spacing of joints relative rating 5 to 10; Condition of joints relative rating 0 to 6; Run #2, 85.5' to 94.5' RECOVERY = 96% RQD = 48% Boring terminated at 94.50 ft			2			
					20	13 17 19	NP			337.7							
					21	14 50 50	NP										

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	09-17-2012	Complete Drilling	09-18-2012	While Drilling	▽	18.00 ft	
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 TMR	At Completion of Drilling	▽	23.00 ft	
Driller	R&N	Logger	B. Wilson	Checked by	M. Snider		
Drilling Method	3.25 IDA HSA; Boring backfilled upon completion			Time After Drilling	NA		
				Depth to Water	▽	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

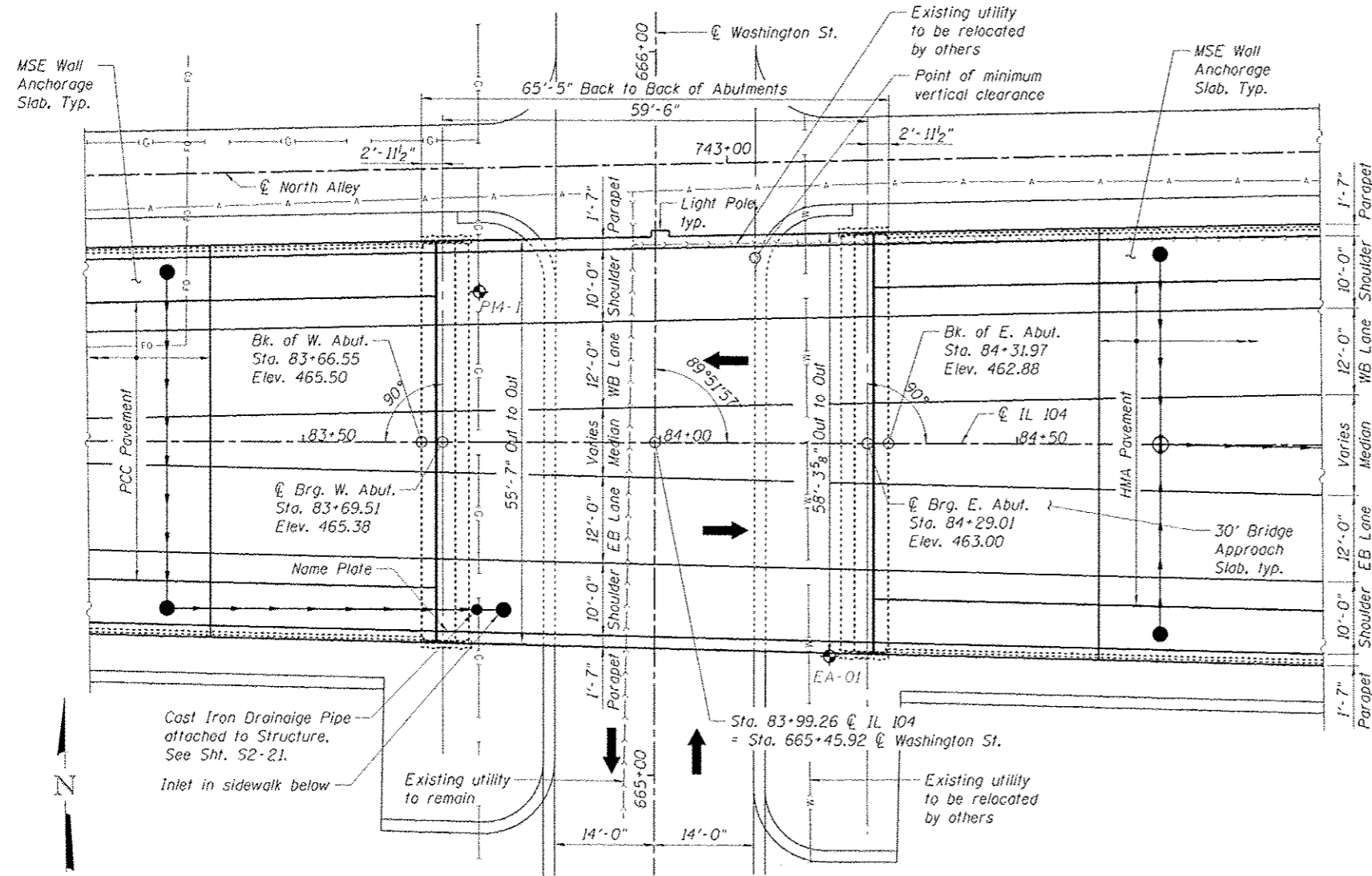
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Benchmark: WW-5, Chiseled "□" top of curb in SE quadrant of junction of IL 104 and Washington Street. Sta. 84+22.20, 306.90' Rt., El. 443.67.

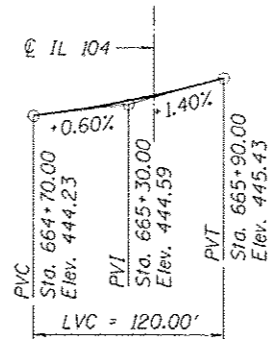
Existing Structure: None
Traffic Control: None
Salvage: None



ELEVATION

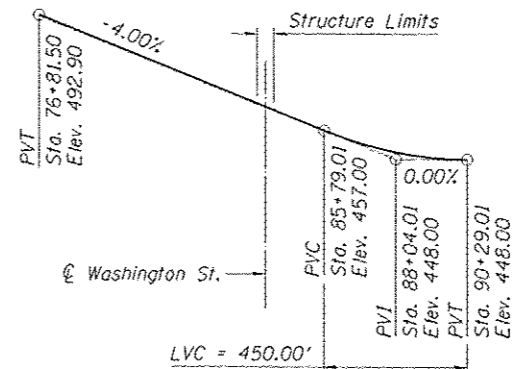


PLAN



PROFILE GRADE WASHINGTON ST.

(along Centerline Roadway)



PROFILE GRADE IL 104

(along Centerline Roadway)

DESIGN SPECIFICATIONS

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

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

LOADING HL-93

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

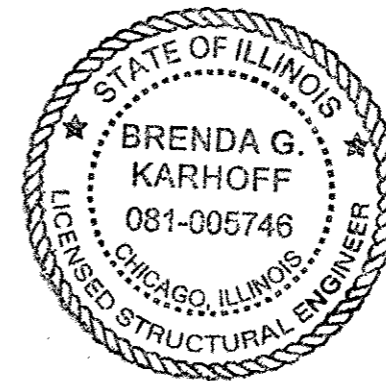
SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.196
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.353
Soil Site Class = E

LEGEND

- ◆ Boring Location
- (C)— Existing Underground Gas Line*
- (W)— Existing Underground Water Line
- (S)— Existing Underground Sanitary Sewer
- (FO)— Existing Fiber Optic Line*
- (A)— Existing Aerial Line*
- Proposed Storm Sewer
- Proposed Catch Basin/Inlet
- ⊙ Proposed Manhole

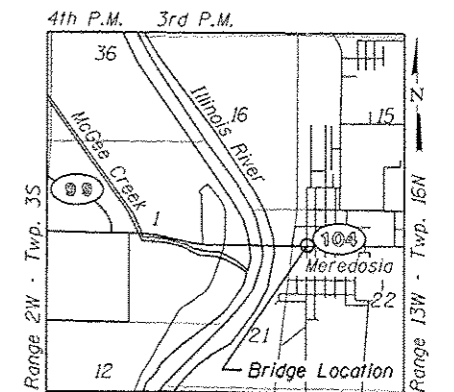
* Existing utilities to be removed or relocated. See Special Provision for Status of Utilities.



Brenda G. Karhoff
Date: 8/1/2014

Expires: 11/30/2014

APPROVED
For Structural Adequacy Only
D. Carl Porges
Engineer of Bridges & Structures



LOCATION SKETCH

GENERAL PLAN & ELEVATION
ILLINOIS ROUTE 104 OVER
WASHINGTON STREET
F.A.P. RTE. 745 - SEC. 123B-2
MORGAN COUNTY
STATION 83+99.26
STRUCTURE NO. 069-0522

GKE GARZA KARHOFF ENGINEERING, LLC Structural Engineers Chicago, IL	USER NAME: CPB DATE: 8/5/2014 PLOT SCALE: AS SHOWN PLOT DATE:	DESIGNED: CPB CHECKED: BCK DRAWN: CPB CHECKED: BCK	REVISED: - REVISED: - REVISED: - REVISED: -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN & ELEVATION SHEET NO. 52-1 OF 28 SHEETS	F.A.P. RTE.: 745 SECTION: 123B-2 COUNTY: MORGAN TOTAL SHEETS: 782 SHEET NO.: 528 SN 069-0522 CONTRACT NO. 72B58
	ILLINOIS FED. AID PROJECT					

GENERAL NOTES

1. Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 7/8 in. ϕ , holes 15/16 in. ϕ , unless otherwise noted.
2. Calculated weight of Structural Steel = 88,390 lbs.
AASHTO M 270 Grade 50= 80,730 lbs.
AASHTO M 270 Grade 36= 7,660 lbs.
3. No field welding is permitted except as specified in the contract documents.
4. Reinforcement bars designated (E) shall be epoxy coated.
5. If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations. See Special Provision "Bridge Deck Construction" for additional requirements.
6. Concrete Sealer shall be applied to the designated areas of the Abutments.
7. The Organic Zinc Rich Primer / Epoxy / Urethane Paint System shall be used for painting of new structural steel except where otherwise noted. The entire system shall be shop applied, with the exception of the exterior surface and the bottom of the bottom flange of fascia beams, masked off connection surfaces, field installed fasteners and damaged areas shall be touched up in the field. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Blue, Munsell No. 10B 3/6.
8. Slipforming of parapets is not allowed.
9. The finishing machine rails shall be placed on the top of the top flange of the exterior beams within the deck pour. Beam blocks shall be placed between beams at all tie locations in each bay for the full width of the deck pour.

INDEX OF SHEETS

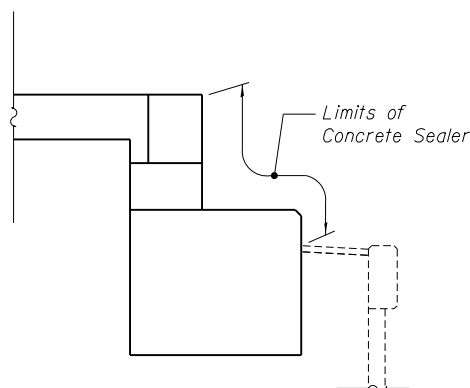
- S2-1 General Plan & Elevation
- S2-2 General Data, Index of Sheets & Bill of Material
- S2-3 Top of Deck Elevation Plan
- S2-4 Top of Deck Elevations
- S2-5 Top of Approach Slab Elevations, West Approach
- S2-6 Top of Approach Slab Elevations, East Approach
- S2-7 Deck Plan
- S2-8 Deck Cross Sections & Details
- S2-9 Parapet Elevation & Light Pole Details
- S2-10 West Approach Slab Plan
- S2-11 West Approach Slab Sections & Details
- S2-12 East Approach Slab Plan
- S2-13 East Approach Slab Sections & Details
- S2-14 Parapet Railing
- S2-15 Preformed Joint Strip Seal Details
- S2-16 Framing Plan
- S2-17 Beam Elevation
- S2-18 Steel Details
- S2-19 Bearing Details
- S2-20 West Abutment Plan & Elevation
- S2-21 West Abutment Sections & Details
- S2-22 East Abutment Plan & Elevation
- S2-23 East Abutment Sections & Details
- S2-24 Metal Shell Pile Details
- S2-25 Bar Splicer Details
- S2-26 Cantilever Forming Brackets
- S2-27 Soil Boring Logs, 1 of 2
- S2-28 Soil Boring Logs, 2 of 2

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Concrete Structures	Cu Yd	34.2	89.2	123.4
Concrete Superstructure	Cu Yd	292.5		292.5
Bridge Deck Grooving	Sq Yd	716		716
Protective Coat	Sq Yd	851		851
Furnishing and Erecting Structural Steel	L Sum	0.012		0.012
Stud Shear Connectors	Each	2,889		2,889
Reinforcement Bars, Epoxy Coated	Pound	74,430	10,970	85,400
Bar Splicers	Each		116	116
Parapet Railing	Foot	249		249
Furnishing Metal Shell Piles 14"x0.312"	Foot		1,368	1,368
Driving Piles	Foot		1,368	1,368
Test Pile Metal Shells	Each		2	2
Name Plates	Each	1		1
Preformed Joint Strip Seal	Foot		112	112
Elastomeric Bearing Assembly, Type I	Each	9		9
Anchor Bolts, 1"	Each		36	36
Concrete Sealer	Sq Ft		803	803

STATION 83+99.26
BUILT 20__ BY
STATE OF ILLINOIS
F.A.P. RTE. 745- SEC. 123B-2
LOADING HL-93
STRUCTURE NO. 069-0522

NAME PLATE
See Std. 515001



LIMITS OF CONCRETE SEALER AT ABUTMENTS

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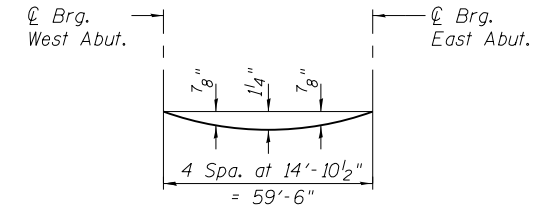
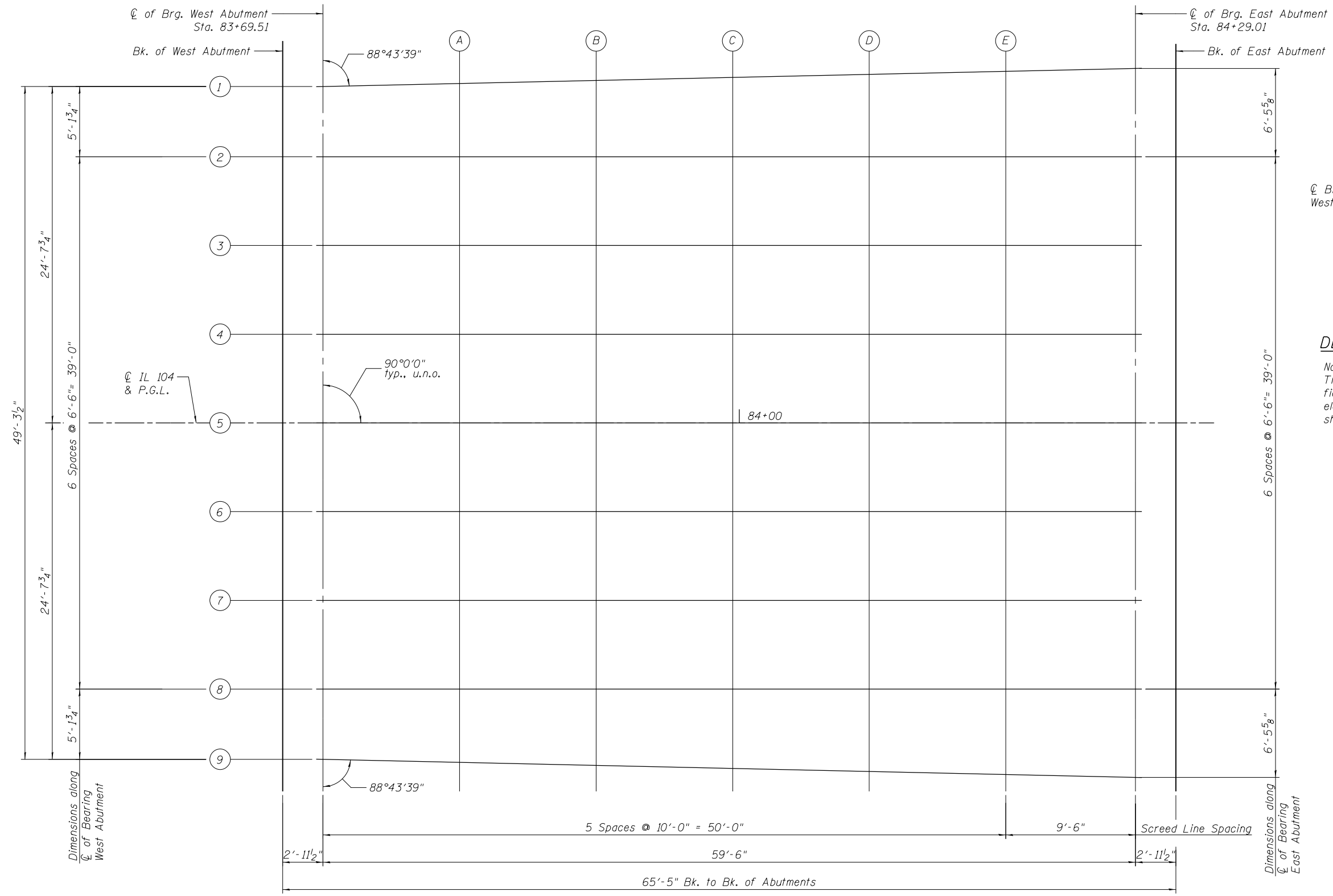
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	PLOT DATE =	CHECKED - BCK	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL DATA, INDEX OF SHEETS
& BILL OF MATERIAL**

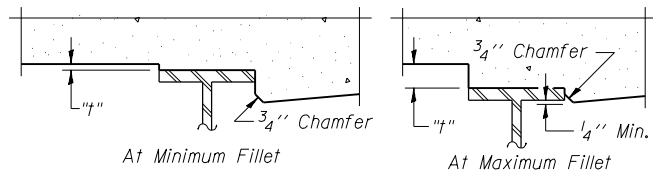
SHEET NO. S2-2 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	529
SN 069-0522		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				



DEAD LOAD DEFLECTION DIAGRAM

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sht. S2-4.



METHOD OF DETERMINING FILLET HEIGHTS "t"

To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on Sht. S2-4. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on Sht. S2-4, minus slab thickness, equals the fillet heights "t" above top flange of beams.

DECK ELEVATION PLAN



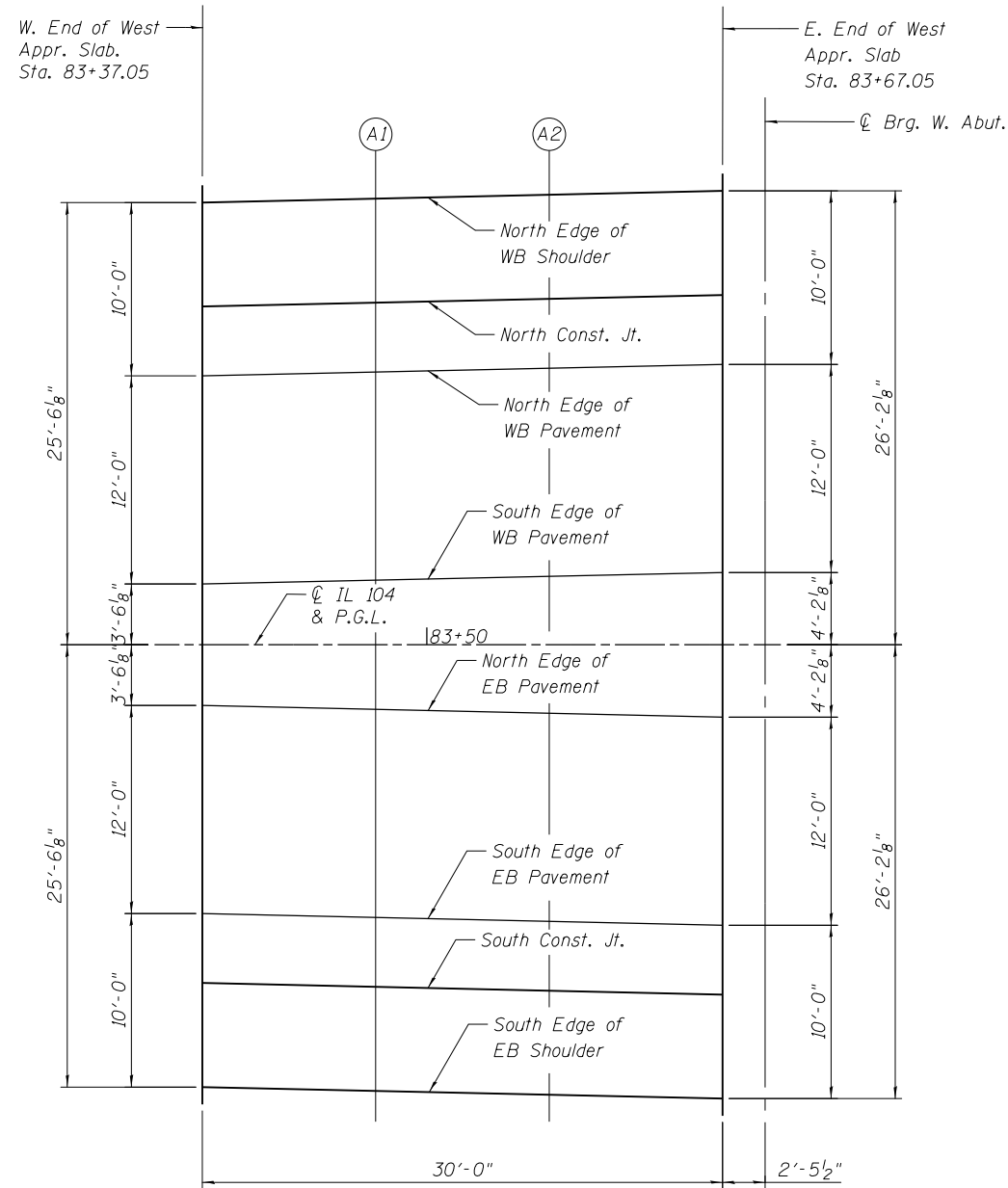
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	PLOT SCALE =	DRAWN - CPB	REVISED -			SN 069-0522		CONTRACT NO. 72B58		
	PLOT DATE =	CHECKED - BCK	REVISED -			SHEET NO. S2-3 OF 28 SHEETS				

GKE GARZA KARHOFF ENGINEERING, LLC
Structural Engineers
Chicago, IL

ILLINOIS FED. AID PROJECT

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 NEWMANMO



PLAN



NORTH EDGE OF WB SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End of West Appr. Slab	83+37.05	-25.51	466.15
A1	83+47.05	-25.73	465.74
A2	83+57.05	-25.95	465.34
E. End of West Appr. Slab	83+67.05	-26.17	464.93

NORTH CONST. JT.

Location	Station	Offset	Theoretical Grade Elevations
W. End of West Appr. Slab	83+37.05	-19.51	466.27
A1	83+47.05	-19.73	465.87
A2	83+57.05	-19.95	465.46
E. End of West Appr. Slab	83+67.05	-20.17	465.06

NORTH EDGE OF WB PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End of West Appr. Slab	83+37.05	-15.51	466.35
A1	83+47.05	-15.73	465.95
A2	83+57.05	-15.95	465.55
E. End of West Appr. Slab	83+67.05	-16.17	465.14

SOUTH EDGE OF WB PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End of West Appr. Slab	83+37.05	-3.51	466.60
A1	83+47.05	-3.73	466.20
A2	83+57.05	-3.95	465.80
E. End of West Appr. Slab	83+67.05	-4.17	465.39

C IL 104 & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations
W. End of West Appr. Slab	83+37.05	0.00	466.68
A1	83+47.05	0.00	466.28
A2	83+57.05	0.00	465.88
E. End of West Appr. Slab	83+67.05	0.00	465.48

NORTH EDGE OF EB PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End of West Appr. Slab	83+37.05	3.51	466.60
A1	83+47.05	3.73	466.20
A2	83+57.05	3.95	465.80
E. End of West Appr. Slab	83+67.05	4.17	465.39

SOUTH EDGE OF EB PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End of West Appr. Slab	83+37.05	15.51	466.35
A1	83+47.05	15.73	465.95
A2	83+57.05	15.95	465.55
E. End of West Appr. Slab	83+67.05	16.17	465.14

SOUTH CONST. JT.

Location	Station	Offset	Theoretical Grade Elevations
W. End of West Appr. Slab	83+37.05	19.51	466.27
A1	83+47.05	19.73	465.87
A2	83+57.05	19.95	465.46
E. End of West Appr. Slab	83+67.05	20.17	465.06

SOUTH EDGE OF EB SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End of West Appr. Slab	83+37.05	25.51	466.15
A1	83+47.05	25.73	465.74
A2	83+57.05	25.95	465.34
E. End of West Appr. Slab	83+67.05	26.17	464.93

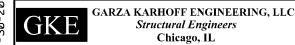
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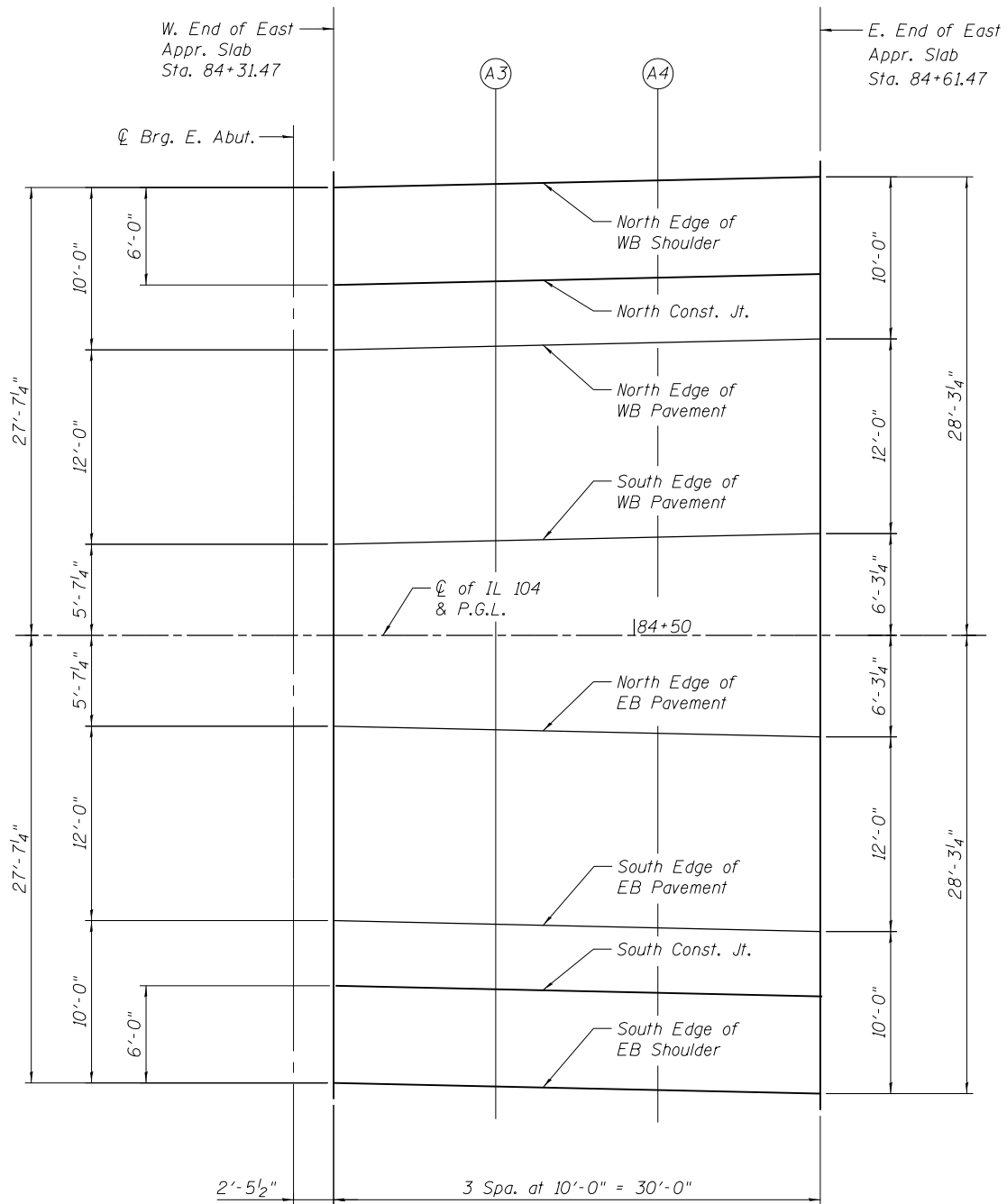
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF APPROACH SLAB ELEVATIONS
WEST APPROACH

SHEET NO. S2-5 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	532
SN 069-0522		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				





PLAN



NORTH EDGE OF WB SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End of East Appr. Slab	84+31.47	-27.61	462.33
A3	84+41.47	-27.83	461.92
A4	84+51.47	-28.05	461.52
E. End of East Appr. Slab	84+61.47	-28.27	461.11

NORTH CONST. JT.

Location	Station	Offset	Theoretical Grade Elevations
W. End of East Appr. Slab	84+31.47	-21.61	462.45
A3	84+41.47	-21.83	462.05
A4	84+51.47	-22.05	461.64
E. End of East Appr. Slab	84+61.47	-22.27	461.24

NORTH EDGE OF WB PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End of East Appr. Slab	84+31.47	-17.60	462.53
A3	84+41.47	-17.83	462.13
A4	84+51.47	-18.05	461.72
E. End of East Appr. Slab	84+61.47	-18.27	461.32

SOUTH EDGE OF WB PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End of East Appr. Slab	84+31.47	-5.60	462.78
A3	84+41.47	-5.83	462.38
A4	84+51.47	-6.05	461.97
E. End of East Appr. Slab	84+61.47	-6.27	461.57

CL IL 104 & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations
W. End of East Appr. Slab	84+31.47	0.00	462.90
A3	84+41.47	0.00	462.50
A4	84+51.47	0.00	462.10
E. End of East Appr. Slab	84+61.47	0.00	461.70

NORTH EDGE OF EB PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End of East Appr. Slab	84+31.47	5.60	462.78
A3	84+41.47	5.83	462.38
A4	84+51.47	6.05	461.97
E. End of East Appr. Slab	84+61.47	6.27	461.57

SOUTH EDGE OF EB PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End of East Appr. Slab	84+31.47	17.60	462.53
A3	84+41.47	17.83	462.13
A4	84+51.47	18.05	461.72
E. End of East Appr. Slab	84+61.47	18.27	461.32

SOUTH CONST. JT.

Location	Station	Offset	Theoretical Grade Elevations
W. End of East Appr. Slab	84+31.47	21.61	462.45
A3	84+41.47	21.83	462.05
A4	84+51.47	22.05	461.64
E. End of East Appr. Slab	84+61.47	22.27	461.24

SOUTH EDGE OF EB SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End of East Appr. Slab	84+31.47	27.61	462.33
A3	84+41.47	27.83	461.92
A4	84+51.47	28.05	461.52
E. End of East Appr. Slab	84+61.47	28.27	461.11

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 DATE = 8/5/2014
 PLOT SCALE =
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 REVISED -

GKE GARZA KARHOFF ENGINEERING, LLC
Structural Engineers
Chicago, IL

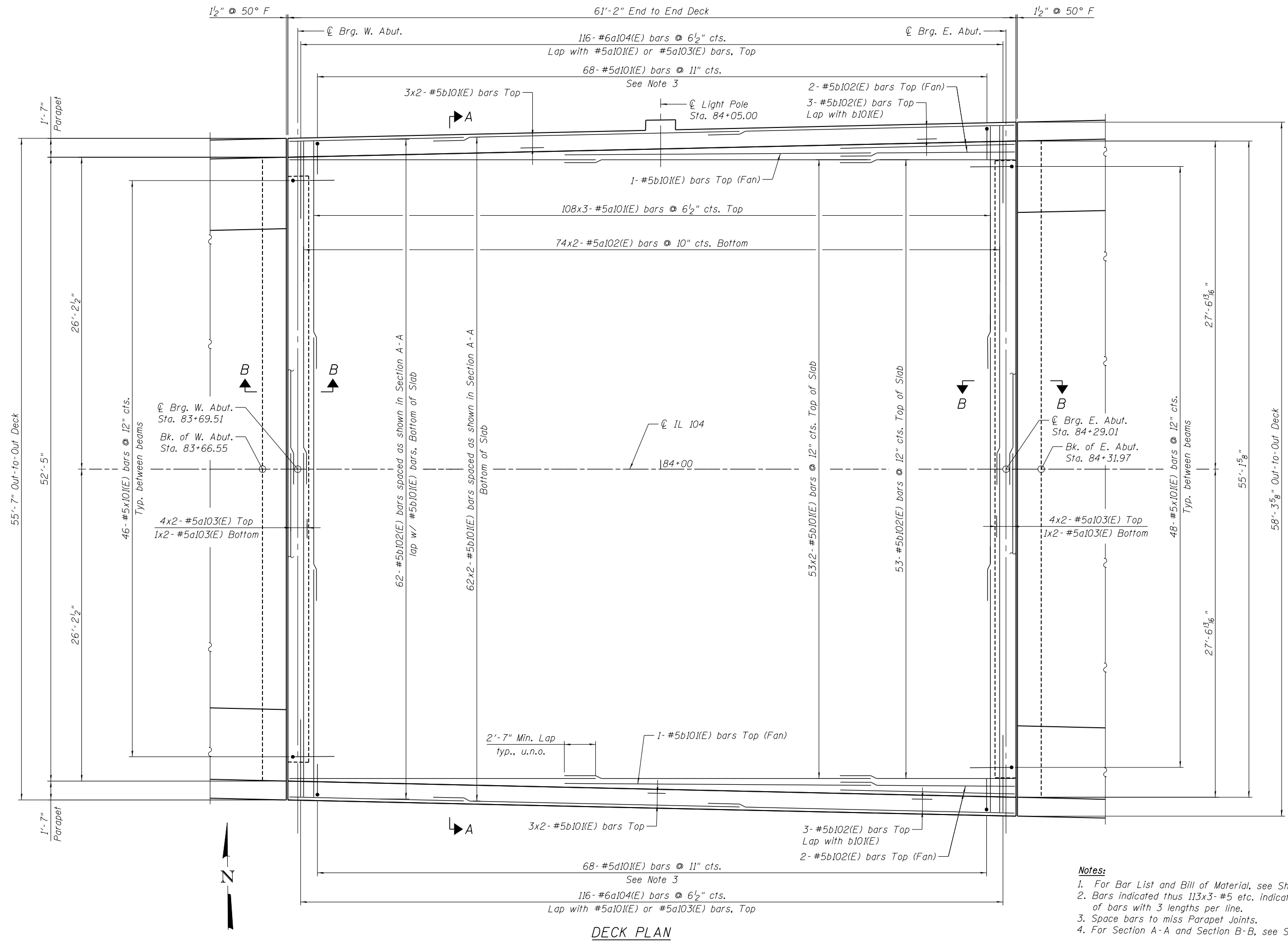
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF APPROACH SLAB ELEVATIONS
EAST APPROACH

SHEET NO. S2-6 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	533
SN 069-0522			CONTRACT NO. 72B58	
ILLINOIS FED. AID PROJECT				

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- Notes:**
1. For Bar List and Bill of Material, see Sht. S2-9.
 2. Bars indicated thus 113x3-#5 etc. indicates 113 lines of bars with 3 lengths per line.
 3. Space bars to miss Parapet Joints.
 4. For Section A-A and Section B-B, see Sht. S2-8.

DECK PLAN

FILE NAME =	USER NAME =	DESIGNED - MET	REVISED -
	DATE - 8/5/2014	CHECKED - BCK	REVISED -
	PLOT SCALE =	DRAWN - MET	REVISED -
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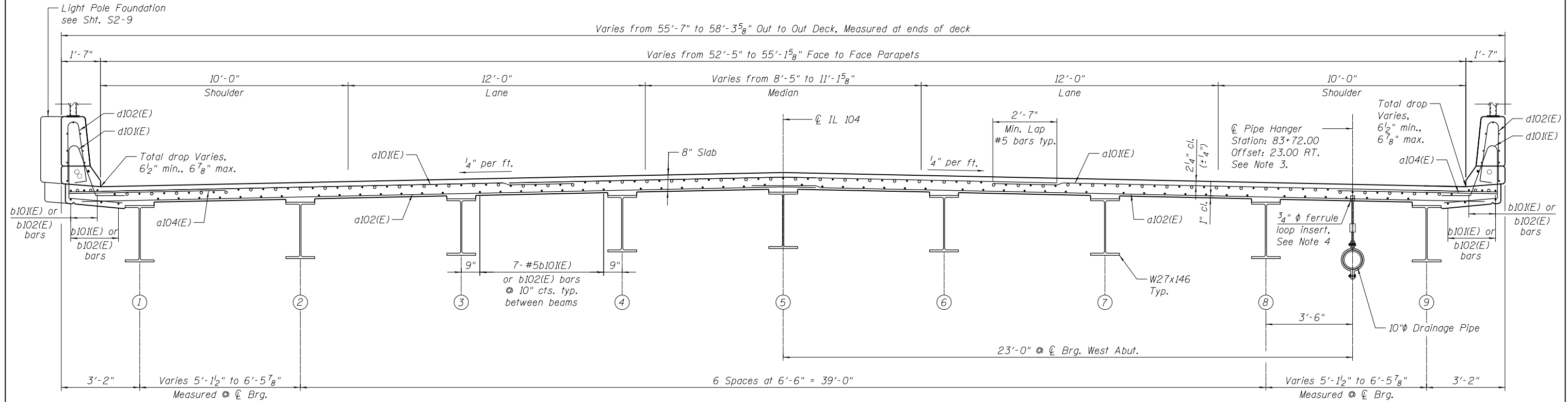
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

DECK PLAN	
F.A.P. RTE.	SECTION
745	123B-2
SN 069-0522	

COUNTY	TOTAL SHEETS	SHEET NO.
MORGAN	782	534
CONTRACT NO. 72B58		

SHEET NO. S2-7 OF 28 SHEETS

ILLINOIS FED. AID PROJECT



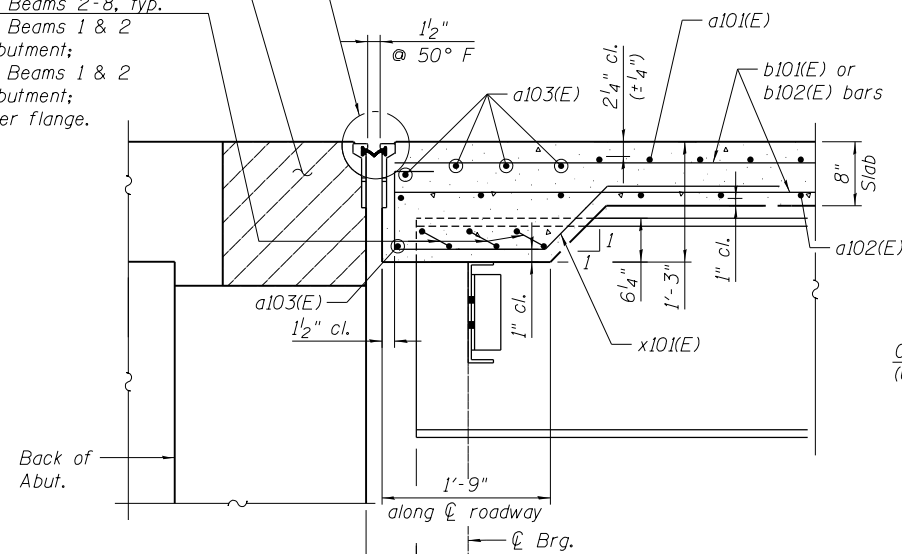
SECTION A-A

Looking East

For details of expansion joint, see sheet S2-15.

Hatched area to be poured after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure.

3- #5a105(E) between Beams 2-8, typ.
3- #5a106(E) between Beams 1 & 2 and 8 & 9 @ West Abutment;
3- #5a107(E) between Beams 1 & 2 and 8 & 9 @ East Abutment;
Tilt hook to miss girder flange.



E. Abut. 6 1/4" @ 50°
W. Abut. 5 1/4" @ 50°

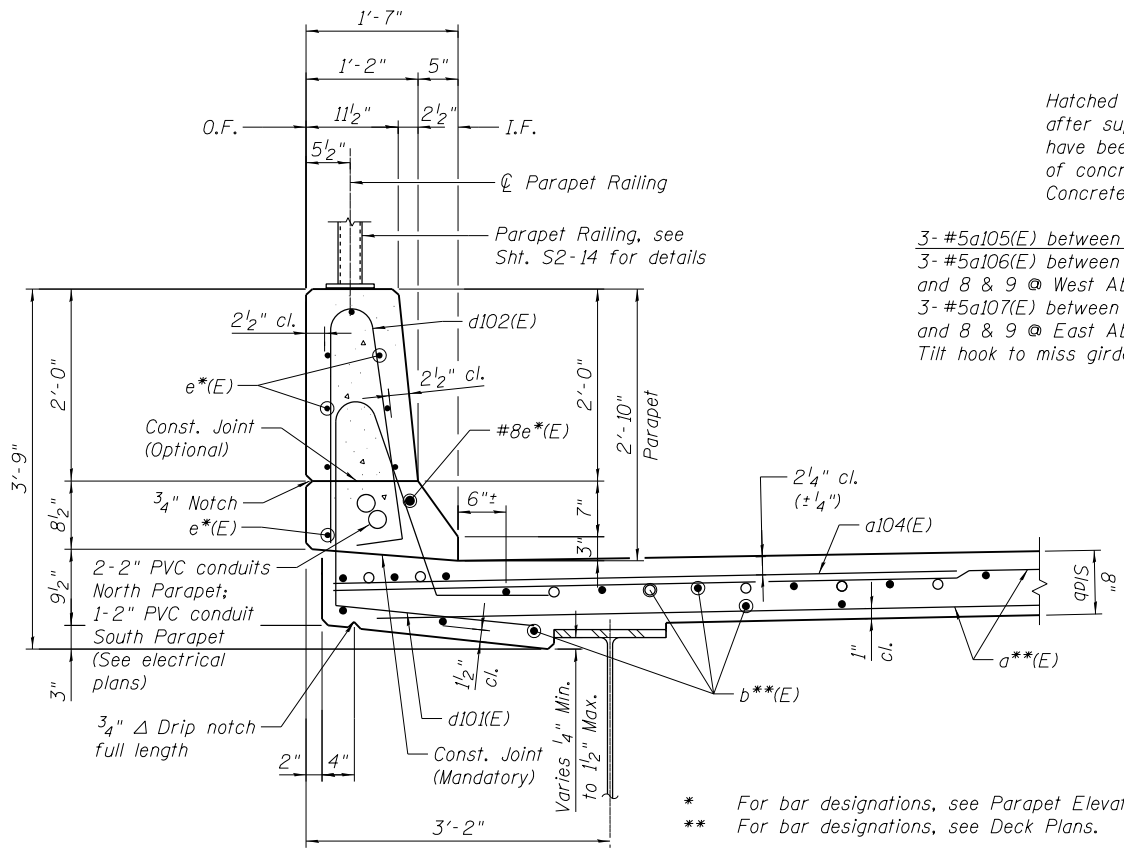
6 1/2" @ C Brg.
5 1/2" @ C Brg.

PARAPET JOINT DETAILS

Notes:

- For Bar List and Bill of Materials, see Sht. S2-9.
- For section A-A and B-B locations, see Sheet S2-7.
- For Pipe Hanger Details, see Sheet S2-21.
- The loop insert shall be furnished as part of the drainage pay item; installation of the insert in the deck shall be included in Concrete Superstructure.

SECTION THRU PARAPET



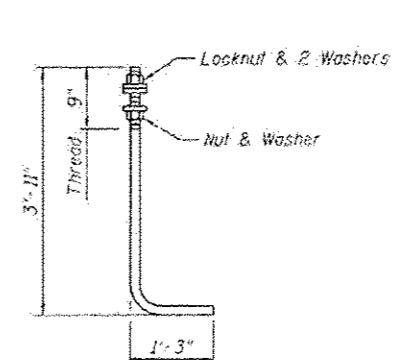
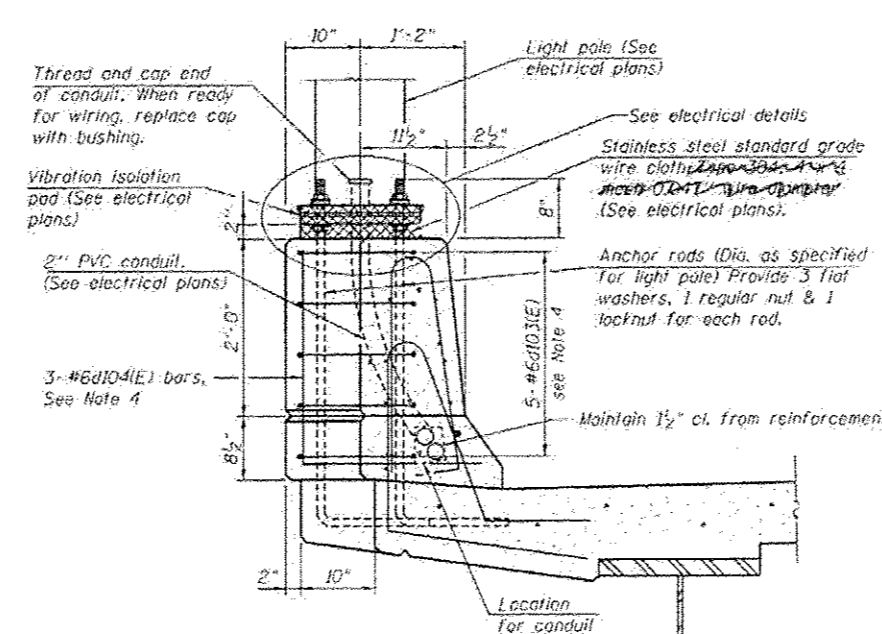
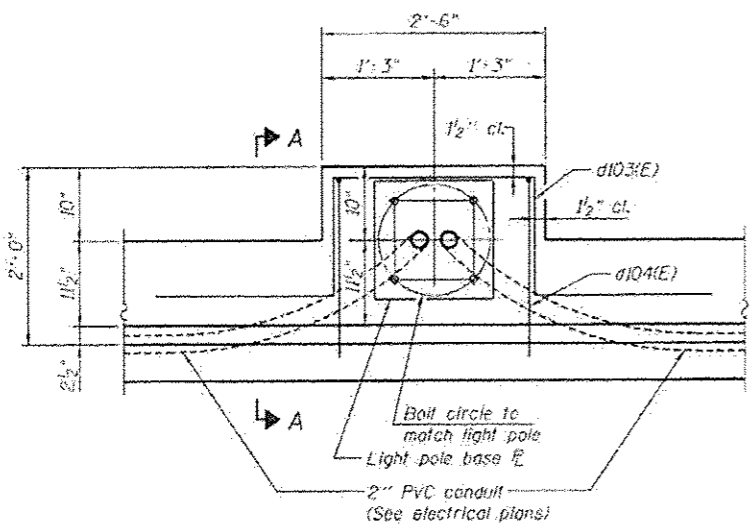
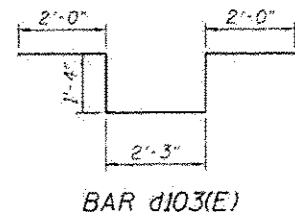
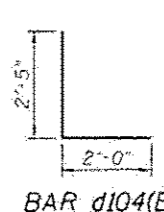
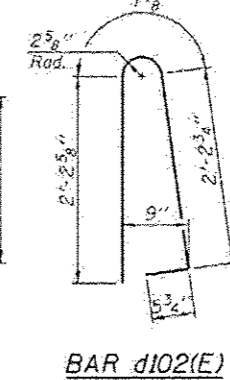
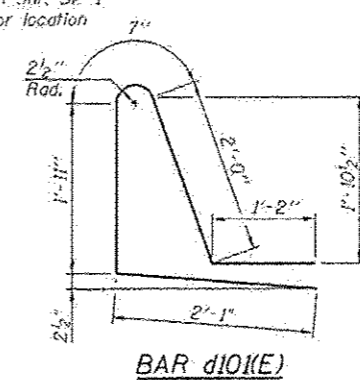
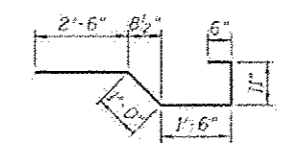
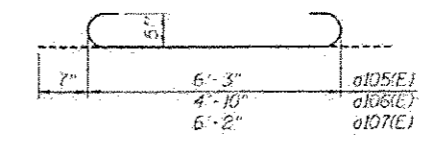
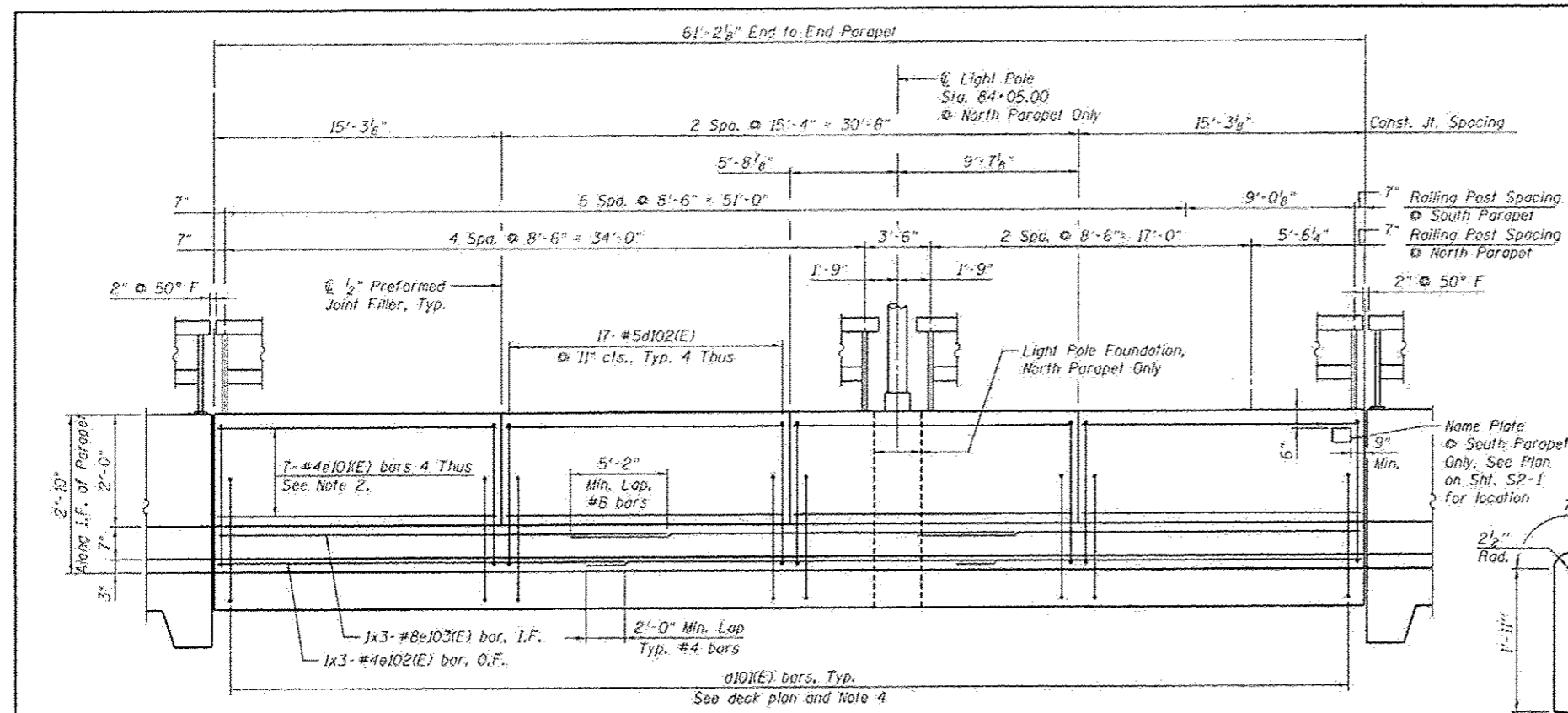
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 USER NAME =
 DATE = 8/5/2014
 CHECKED = BCK
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 REVISED =
 CHECKED = BCK
 REVISED =
 STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
 DECK CROSS SECTIONS & DETAILS
 SHEET NO. S2-8 OF 28 SHEETS
 F.A.P. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.
 745 123B-2 MORGAN 782 535
 SN 069-0522 CONTRACT NO. 72B58
 ILLINOIS FED. AID PROJECT

BAR LIST

Bar	No.	Size	Length	Shape
a101(E)	324	#5	21'-0"	—
a102(E)	148	#5	29'-9"	—
a103(E)	20	#5	27'-1"	—
a104(E)	232	#6	6'-6"	—
a105(E)	36	#5	7'-5"	—
a106(E)	6	#5	6'-0"	—
a107(E)	6	#5	7'-4"	—
b101(E)	244	#5	25'-9"	—
b102(E)	125	#5	14'-8"	—
d101(E)	136	#5	7'-9"	L
d102(E)	136	#5	5'-7"	D
d103(E)	5	#6	8'-11"	L
d104(E)	3	#6	4'-5"	L
e101(E)	56	#4	15'-0"	—
e102(E)	6	#4	21'-8"	—
e103(E)	6	#8	23'-10"	—
x101(E)	94	#5	6'-5"	—

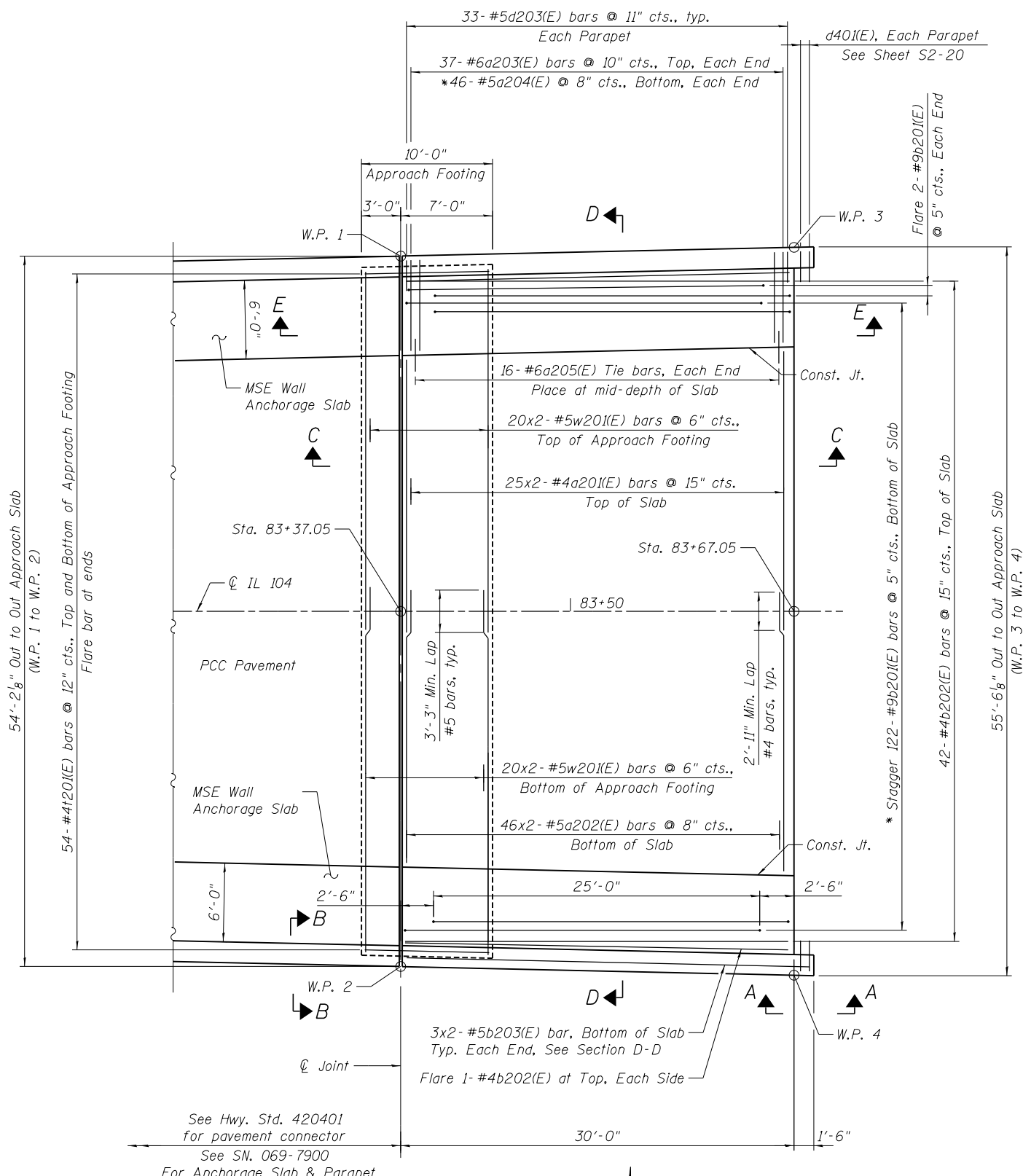
BILL OF MATERIAL

Item	Unit	Total
Reinforcement Bars, Epoxy Coated	Pound	26,980
Concrete Superstructure	Cu. Yds.	119.1
Bridge Deck Grooving	Sq. Yd.	353
Protective Coat	Sq. Yd.	419
Name Plates	Each	1



ANCHOR ROD
 Diameter as specified for light poles, (ASTM F 1554 Grade 105) Hot Dip Galvanized Full Length
 4- Anchor Rods per pole foundation.
 Cost of anchor rods is included with Concrete Superstructure.

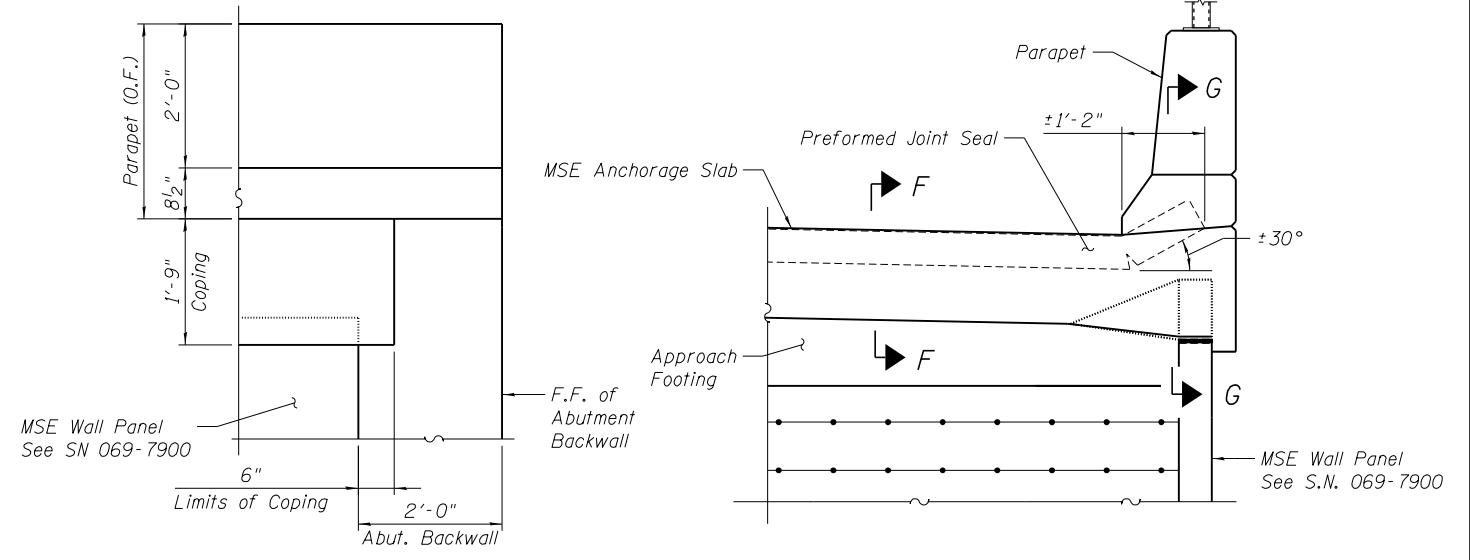
- Notes:**
1. See Sheet S2-B for Parapet details.
 2. Reinforcement shall be spaced as shown in Section Thru Parapet on Sht. S2-B.
 3. I.F. denotes inside face. O.F. denotes outside face.
 4. Bars indicated thus: 20x3-#5 etc. indicates 20 lines of bars with 3-lengths per line.



PLAN



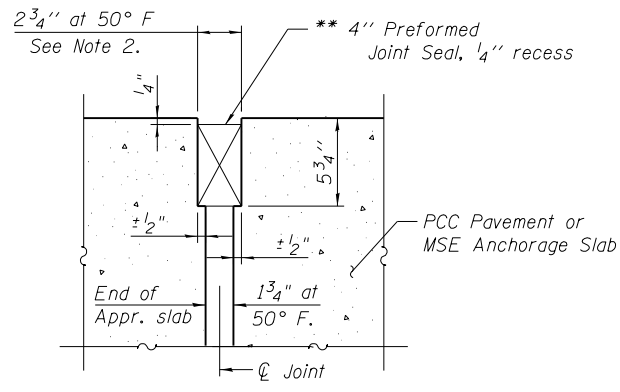
* Tilt #9b20(E), #5a204(E) bars as required to maintain clearance.



ELEVATION A-A

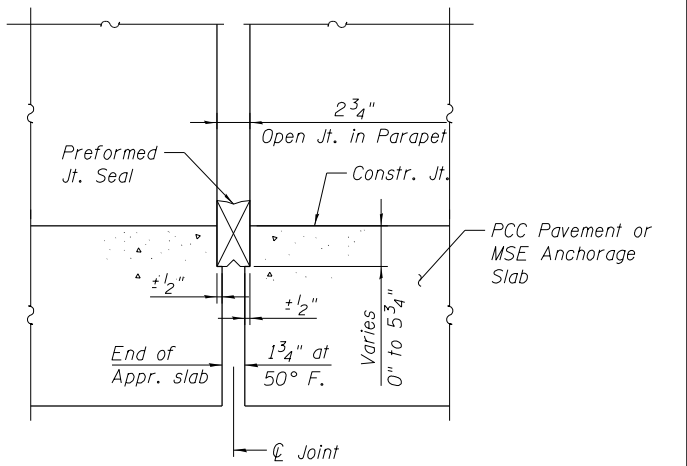
Precast panel not shown for clarity. See SN 069-7900 for precast panel at abutment details.

SECTION B-B

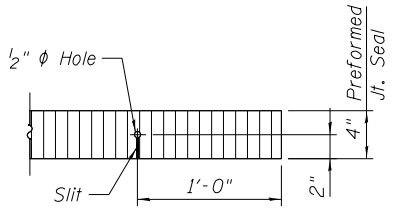


SECTION F-F

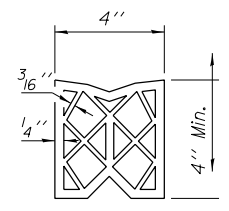
** Cost included with Concrete Superstructure.



SECTION G-G



END OF SEAL CUT-OUT



PREFORMED JOINT SEAL

WORKPOINTS TABLE

	Station	Offset
W.P. 1	83+37.05	-27.09
W.P. 2	83+37.05	27.09
W.P. 3	83+67.05	-27.76
W.P. 4	83+67.05	27.76

- Notes:**
- See sheet S2-11 for Sections C-C & D-D and E-E.
 - The joint opening shall be determined per Article 520.04. The minimum dimension shall be 1/2" for installation purposes.

FILE NAME = GARZA KARHOFF ENGINEERING, LLC
 USER NAME = CPB
 DATE = 8/5/2014
 CHECKED = BCK
 DESIGNED = CPB
 DRAWN = CPB
 PLOT SCALE =
 PLOT DATE =

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

WEST APPROACH SLAB PLAN

SHEET NO. S2-10 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	537
SN 069-0522		CONTRACT NO. 72B58		

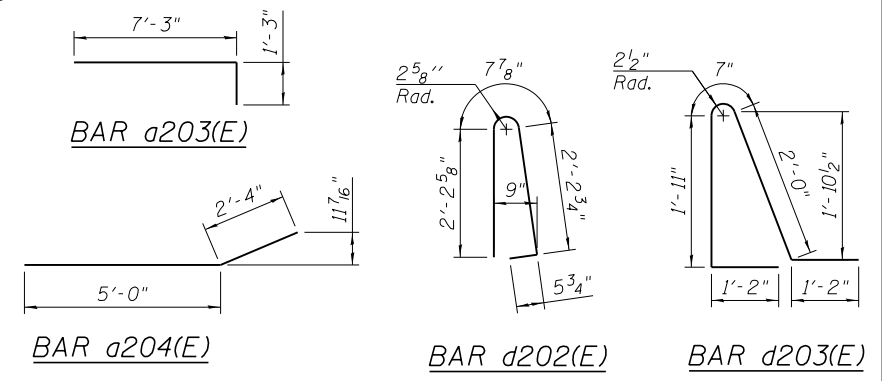
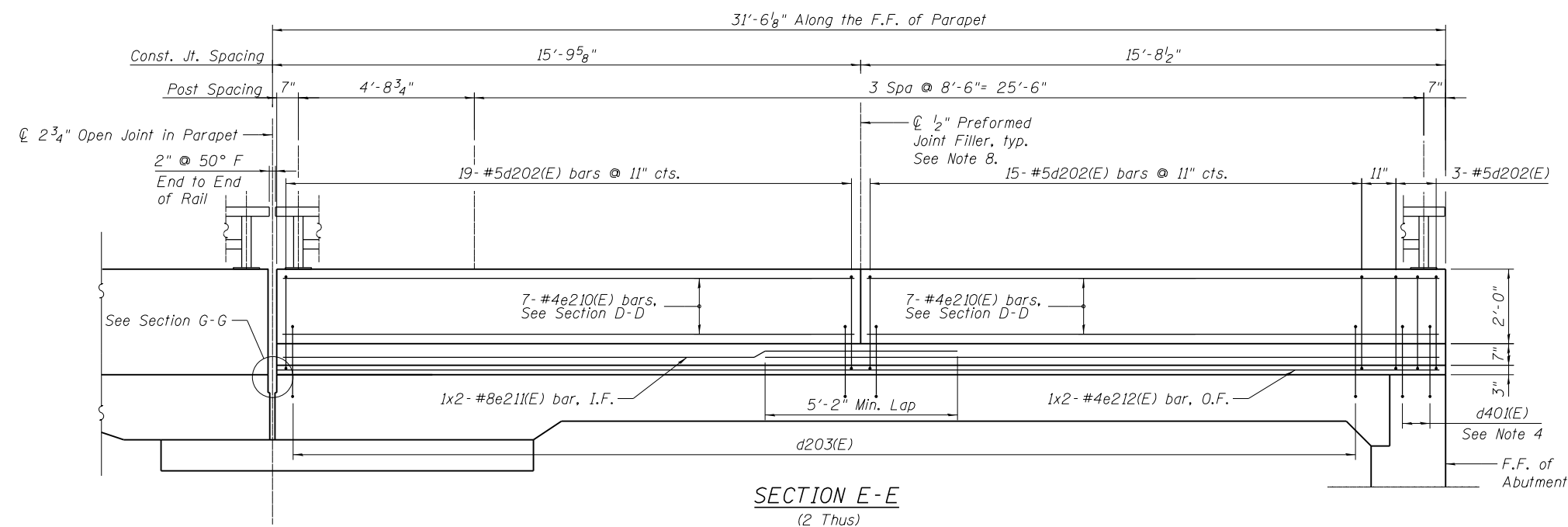
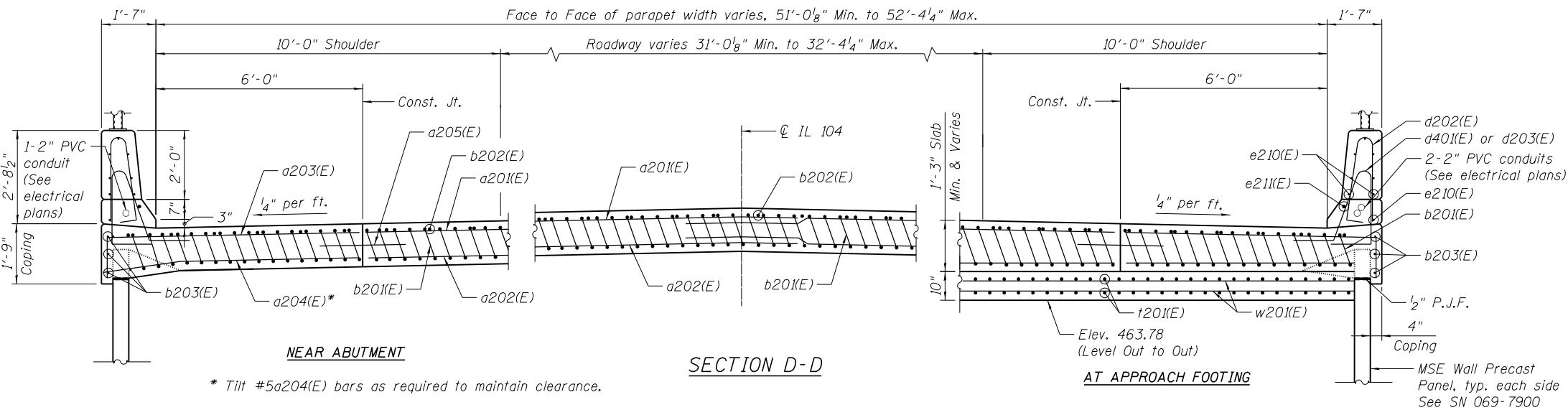
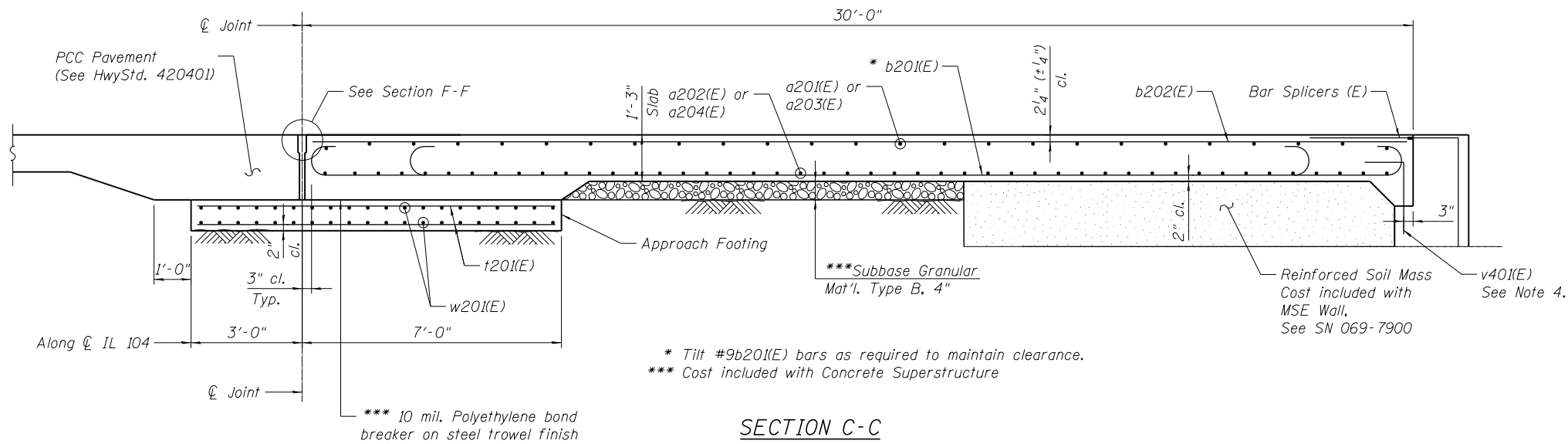
ILLINOIS FED. AID PROJECT

BAR LIST

Bar	No.	Size	Length	Shape
a201(E)	50	#4	21'-6"	—
a202(E)	92	#5	21'-8"	—
a203(E)	74	#6	8'-6"	—
a204(E)	92	#5	7'-4"	—
a205(E)	32	#6	2'-6"	—
b201(E)	126	#9	29'-9"	—
b202(E)	44	#4	29'-8"	—
b203(E)	12	#5	17'-3"	—
d202(E)	74	#5	5'-7"	—
d203(E)	66	#5	6'-10"	—
e210(E)	28	#4	15'-4"	—
e211(E)	4	#8	18'-2"	—
e212(E)	4	#4	17'-1"	—
t201(E)	108	#4	9'-8"	—
w201(E)	80	#5	27'-11"	—

BILL OF MATERIAL

Item	Unit	Total
Concrete Superstructure	Cu. Yd.	83.8
Concrete Structures	Cu. Yd.	16.3
Reinforcement Bars, Epoxy Coated	Pound	22,850
Bridge Deck Grooving	Sq. Yd.	174
Protective Coat	Sq. Yd.	209

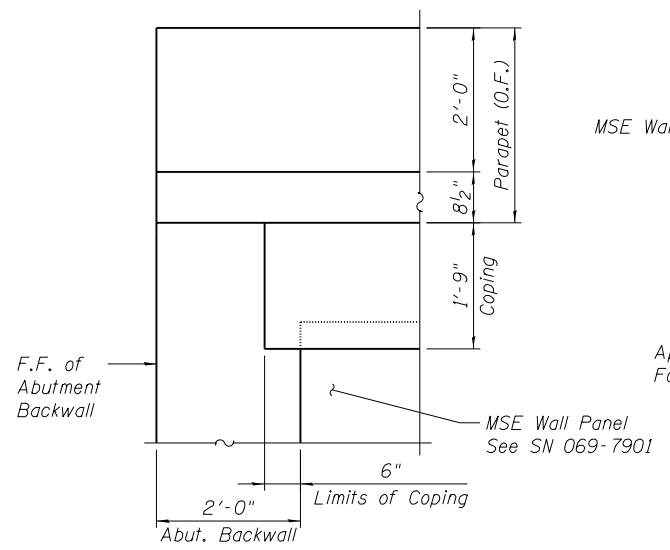
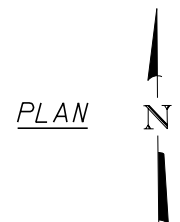
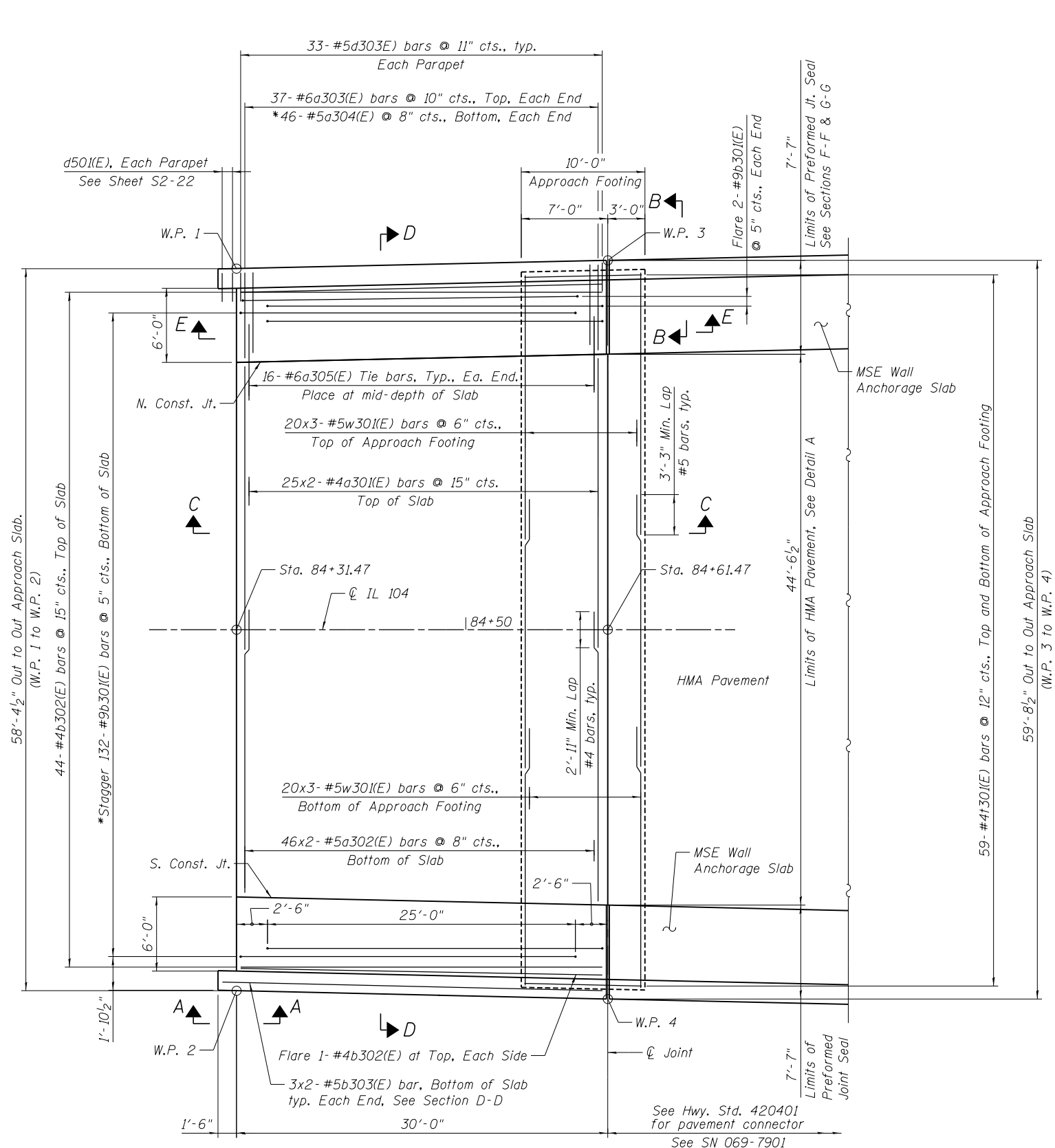


Notes:

- See sheet S2-10 for Section F-F & Section G-G.
- Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
- Approach footing concrete shall be paid for as Concrete Structures.
- For bars d401(E) and v401(E), see sheet S2-20 & S2-21.
- The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
- For bar splicer details, see sheet S2-25.
- Cost of excavation for approach footing included with Concrete Structures.
- For parapet joint details, see sheet S2-8.
- I.F. denotes inside face, O.F. denotes outside face.

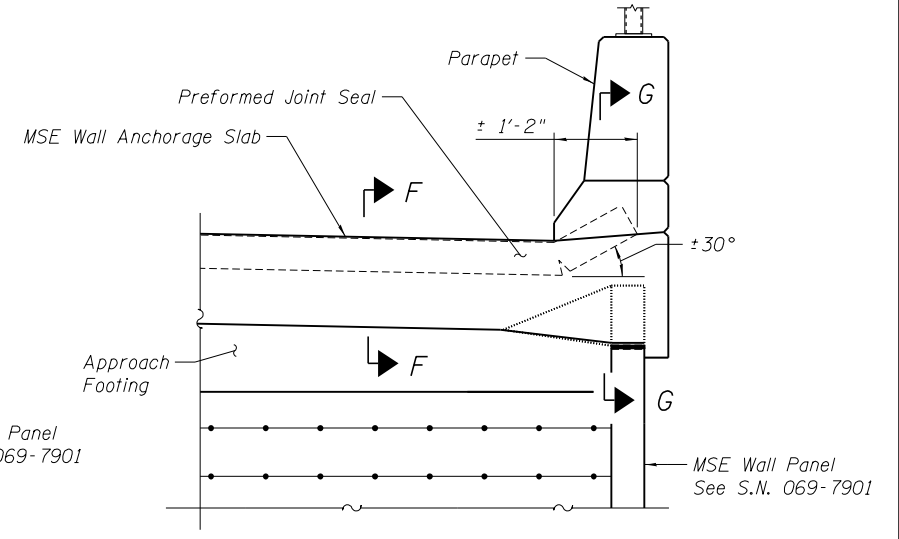
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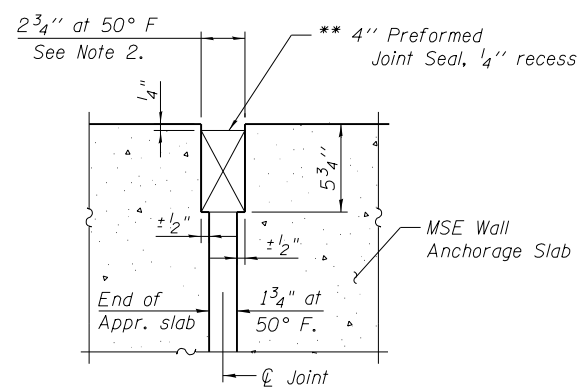


ELEVATION A-A

Precast panel not shown for clarity. See SN 069-7901 for precast panel at abutment details.

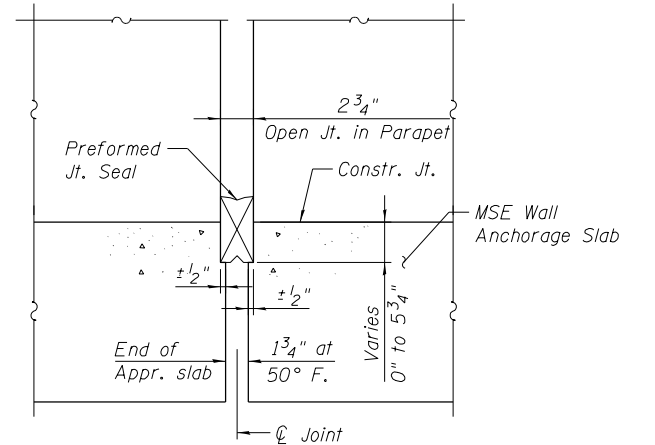


SECTION B-B

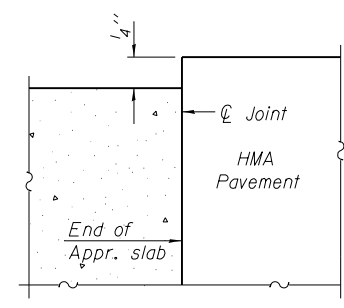


SECTION F-F

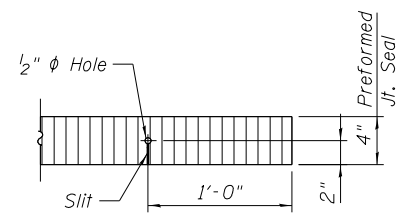
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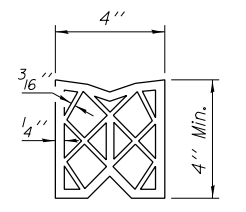
SECTION G-G



DETAIL A



END OF SEAL CUT-OUT



PREFORMED JOINT SEAL

WORKPOINTS TABLE

	Station	Offset
W.P. 1	84+31.47	-29.19
W.P. 2	84+31.47	-29.19
W.P. 3	84+61.47	-29.86
W.P. 4	84+61.47	29.86

Notes:

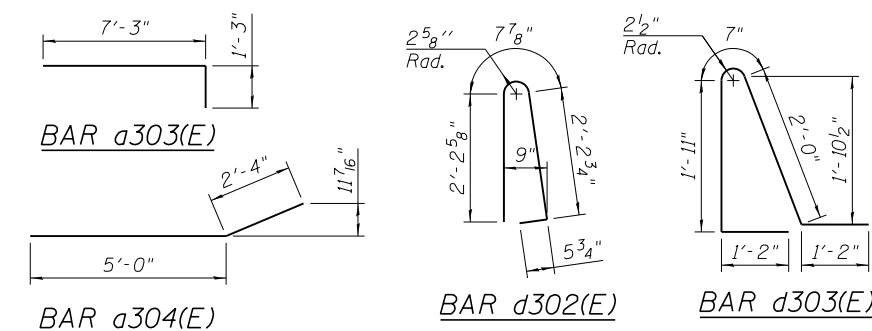
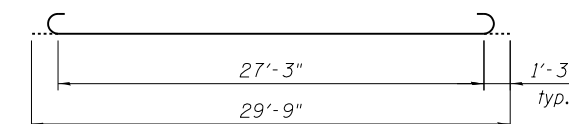
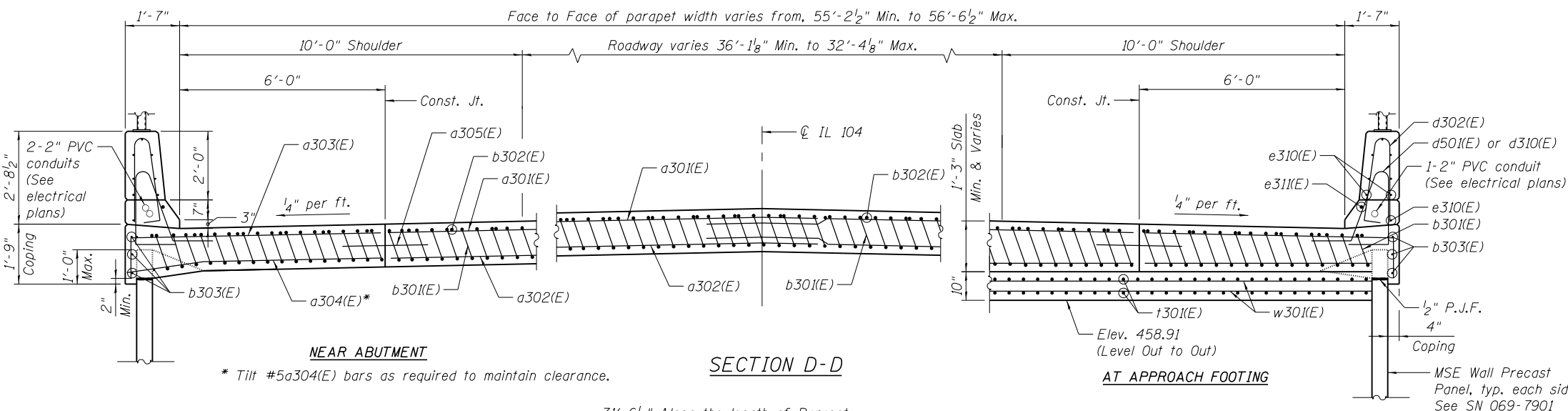
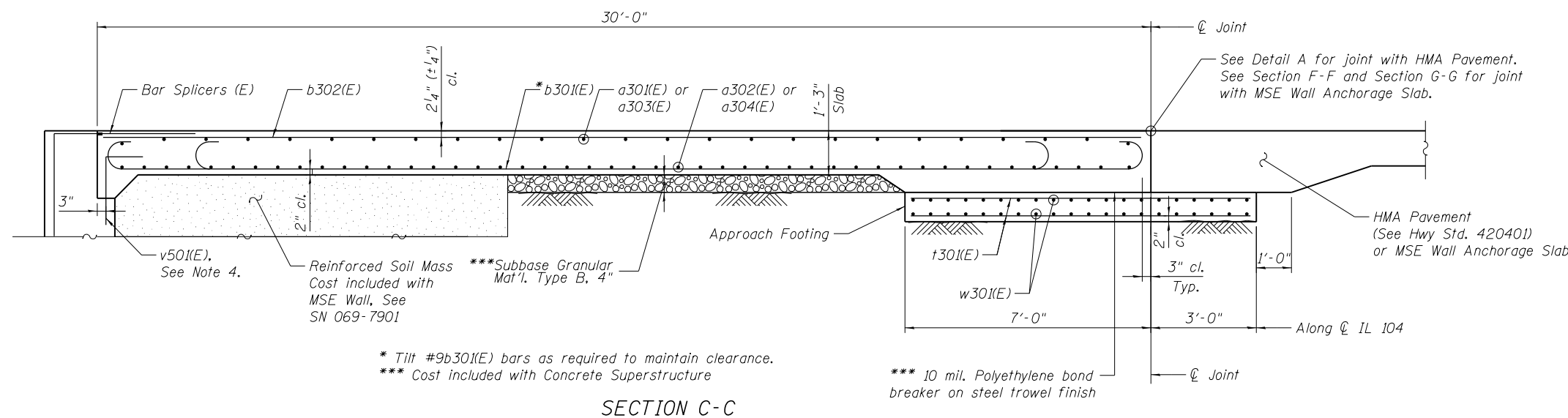
- See sheet S2-13 for Sections C-C & D-D and E-E.
- The joint opening shall be determined per Article 520.04. The minimum dimension shall be 1/2" for installation purposes.

BAR LIST

Bar	No.	Size	Length	Shape
a301(E)	50	#4	23'-7"	—
a302(E)	92	#5	23'-9"	—
a303(E)	74	#6	8'-6"	—
a304(E)	92	#5	7'-4"	—
a305(E)	32	#6	2'-6"	—
b301(E)	136	#9	29'-9"	—
b302(E)	46	#4	29'-8"	—
b303(E)	12	#5	17'-3"	—
d302(E)	74	#5	5'-7"	—
d303(E)	66	#5	6'-10"	—
e310(E)	28	#4	15'-4"	—
e311(E)	4	#8	18'-2"	—
e312(E)	4	#4	17'-1"	—
t301(E)	118	#4	9'-8"	—
w301(E)	120	#5	21'-6"	—

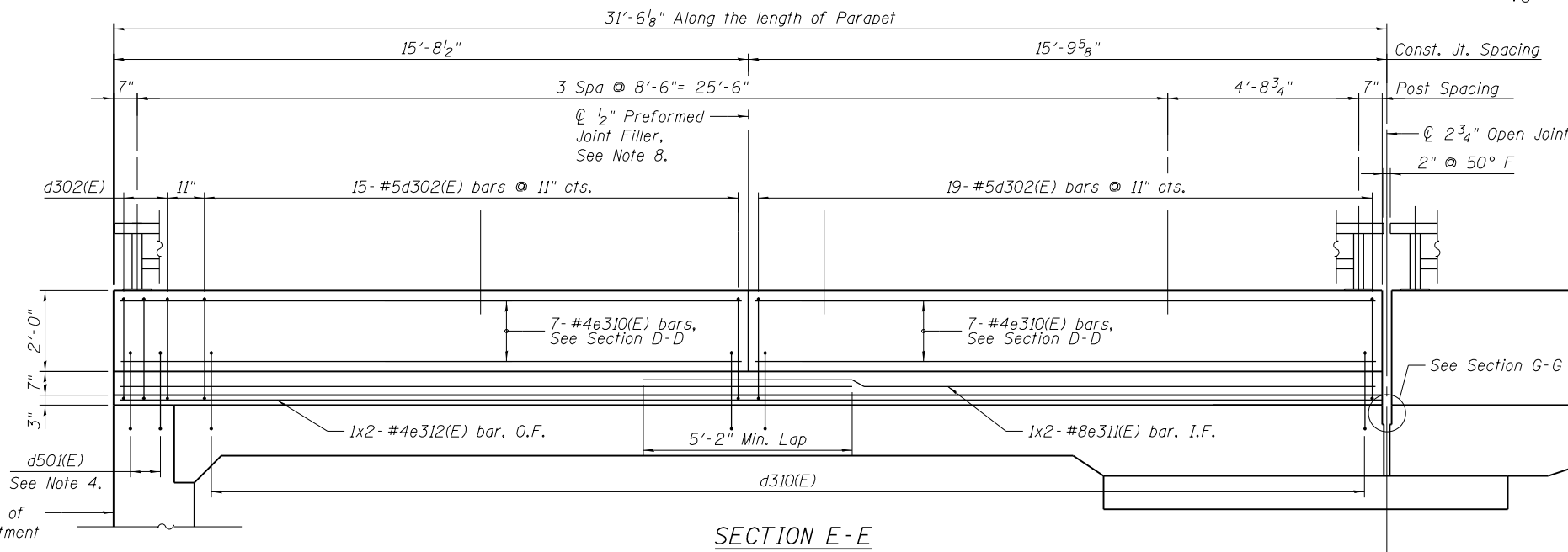
BILL OF MATERIAL

Item	Unit	Total
Concrete Superstructure	Cu. Yd.	89.6
Concrete Structures	Cu. Yd.	17.9
Reinforcement Bars, Epoxy Coated	Pound	24,600
Bridge Deck Grooving	Sq. Yd.	189
Protective Coat	Sq. Yd.	223

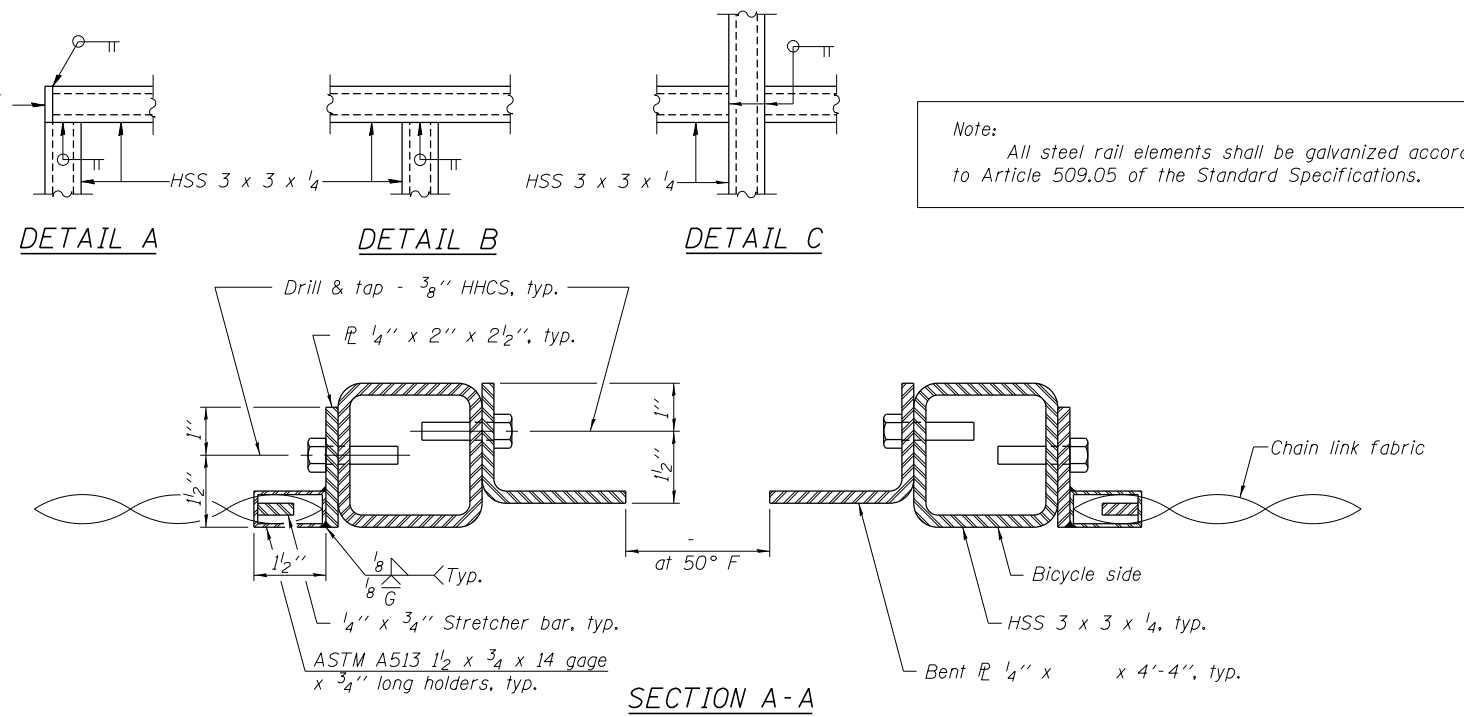
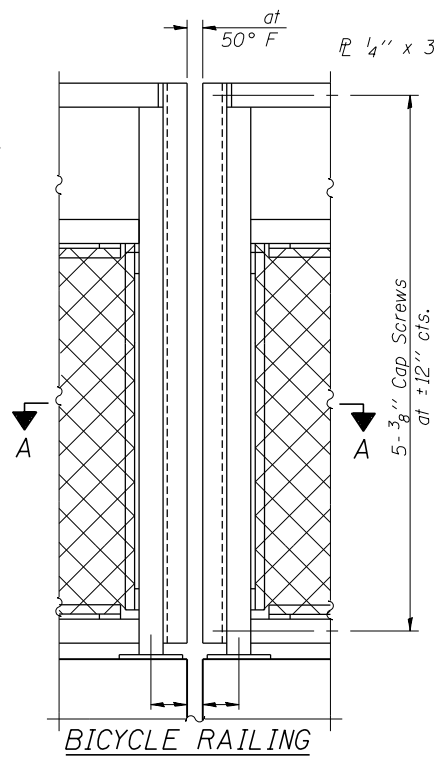
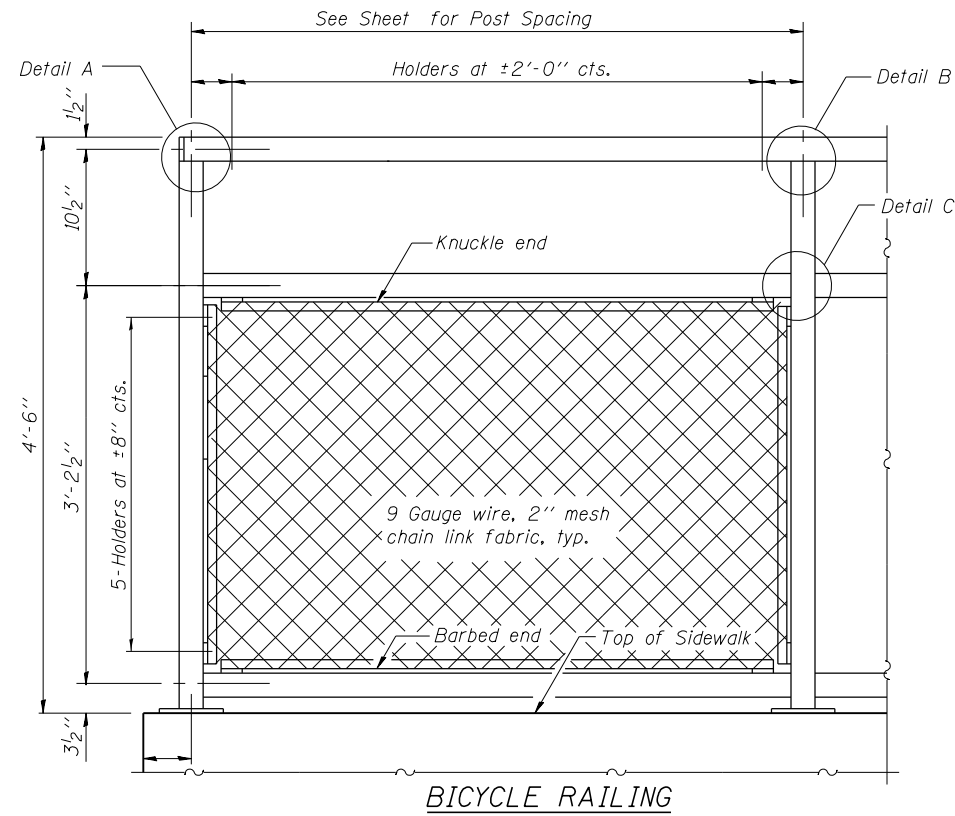


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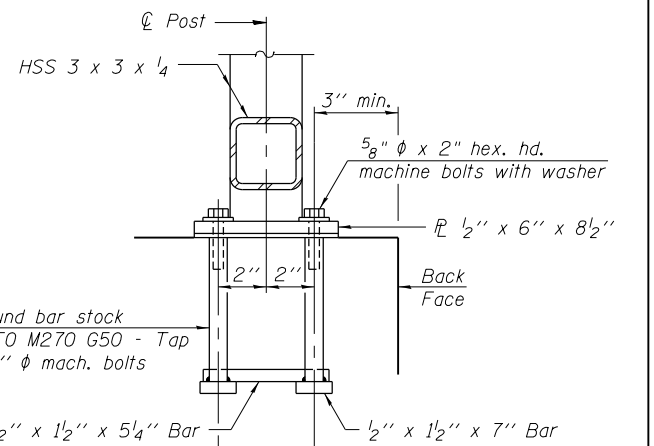
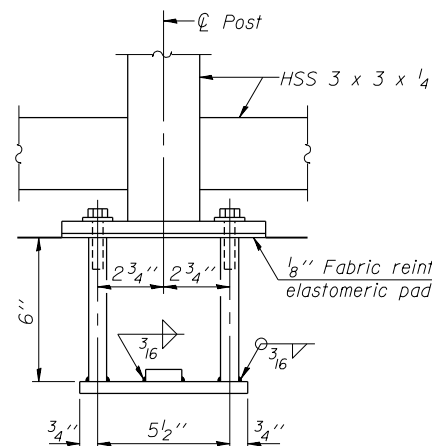
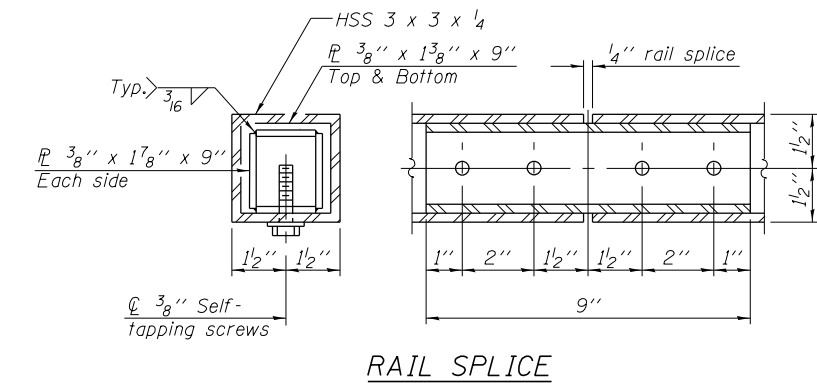
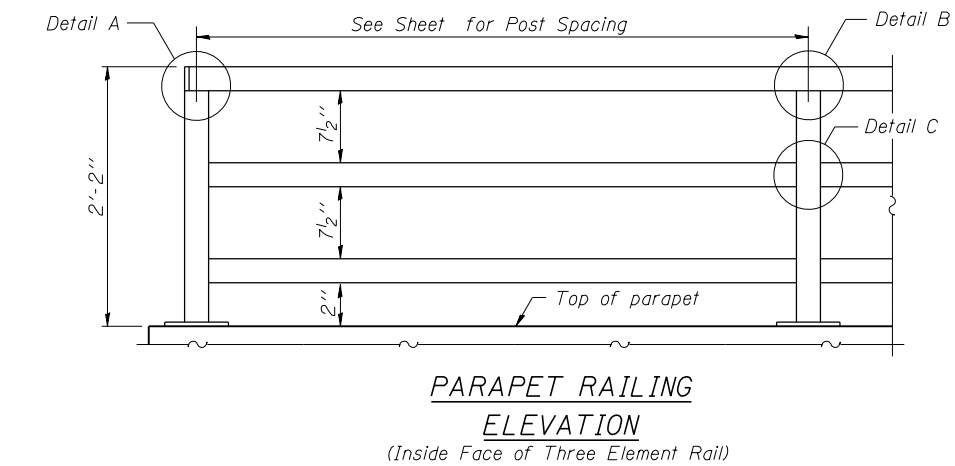
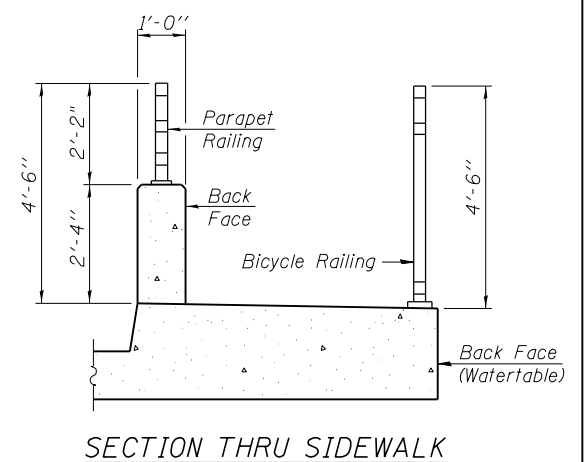
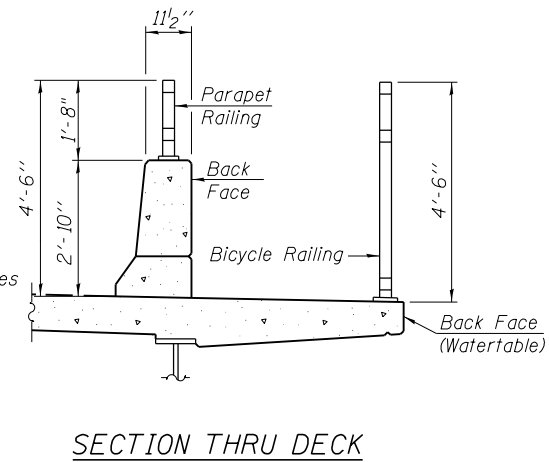
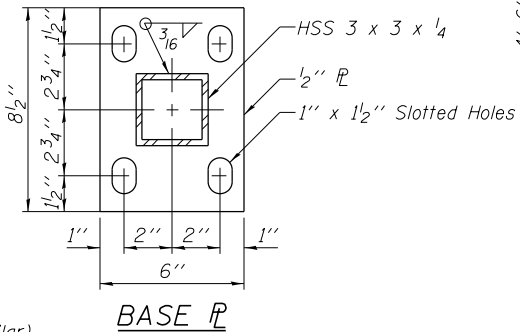
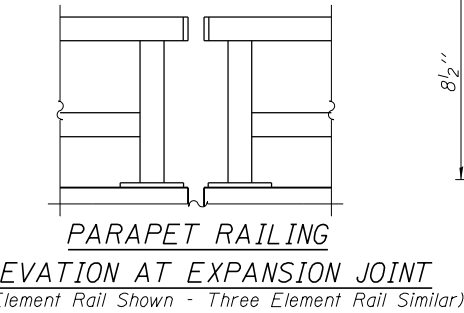
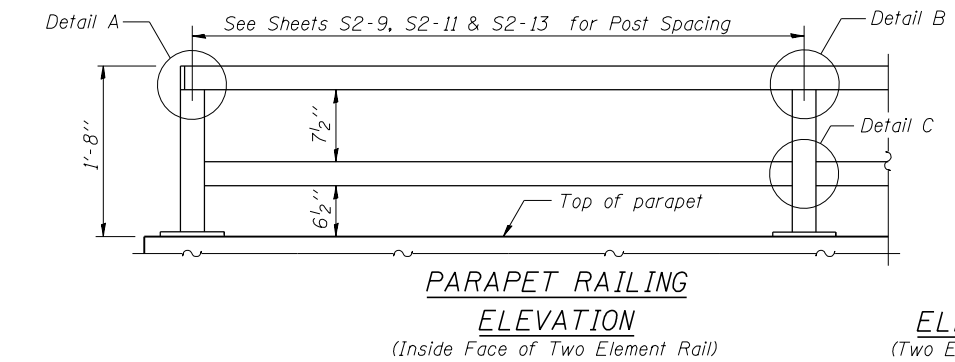
1. See sheet S2-12 for Detail A, Section F-F & Section G-G.
2. Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
3. Approach footing concrete shall be paid for as Concrete Structures.
4. For bars d501(E) and v501(E), see sheet S2-22 & S2-23.
5. The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
6. For bar splicer details, see sheet S2-25.
7. Cost of excavation for approach footing included with Concrete Structures.
8. For parapet joint details, see sheet S2-8.
9. I.F. denotes inside face., O.F. denotes outside face.



FILE NAME = GARZA KARHOFF ENGINEERING, LLC
 USER NAME = CPB
 DATE = 10/3/2014
 DESIGNED - CPB
 CHECKED - BCK
 DRAWN - CPB
 CHECKED - BCK
 REVISED -
 REVISED -
 REVISED -
 REVISED -
 STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 EAST APPROACH SLAB SECTIONS & DETAILS
 SHEET NO. S2-13 OF 28 SHEETS
 COUNTY = MORGAN
 CONTRACT NO. 72B58
 TOTAL SHEETS = 782
 SHEET NO. = 540
 ILLINOIS FED. AID PROJECT



Note:
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.



In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8" phi anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

BILL OF MATERIAL

Item	Unit	Quantity
Bicycle Railing	Foot	—
Parapet Railing	Foot	249

FILE NAME = R-29
 USER NAME =
 DATE = 8/5/2014
 PLOT SCALE =
 PLOT DATE =
 DESIGNED -
 CHECKED -
 DRAWN -
 CHECKED -
 REVISED -
 REVISED -
 REVISED -
 REVISED -

R-29 1-27-12 (10'-0" Maximum Post Spacing)

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
DATE = 8/5/2014		CHECKED -	REVISED -
PLOT SCALE =		DRAWN -	REVISED -
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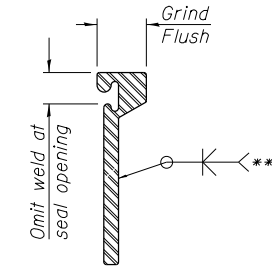
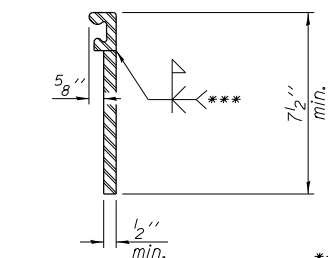
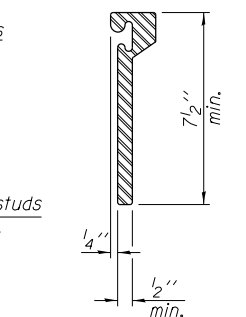
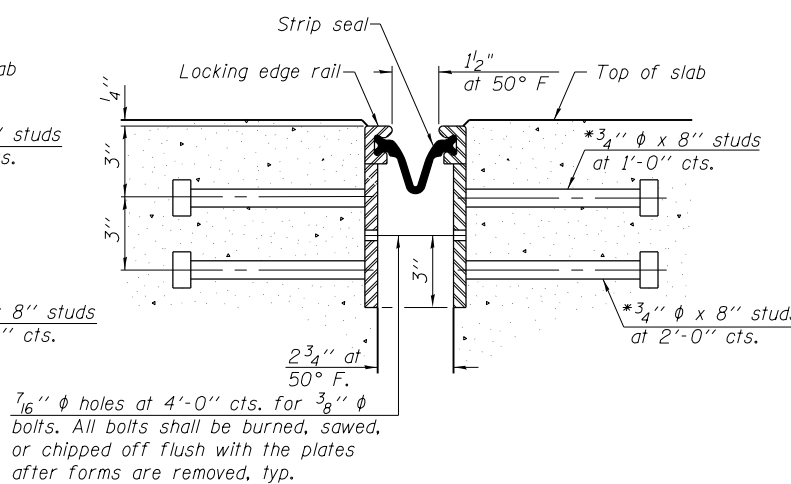
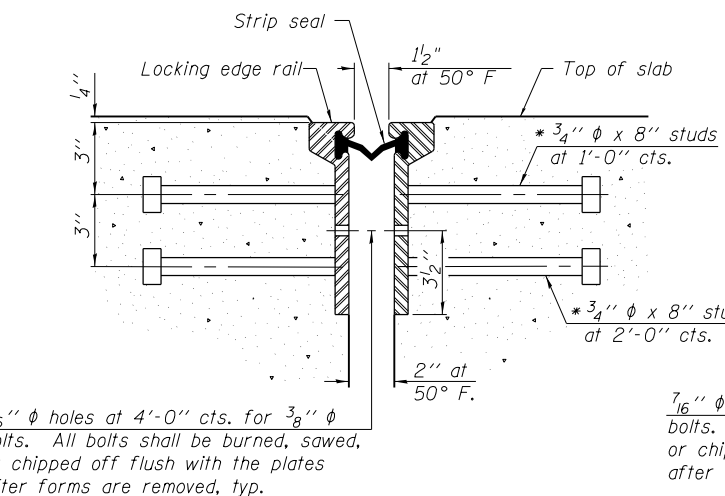
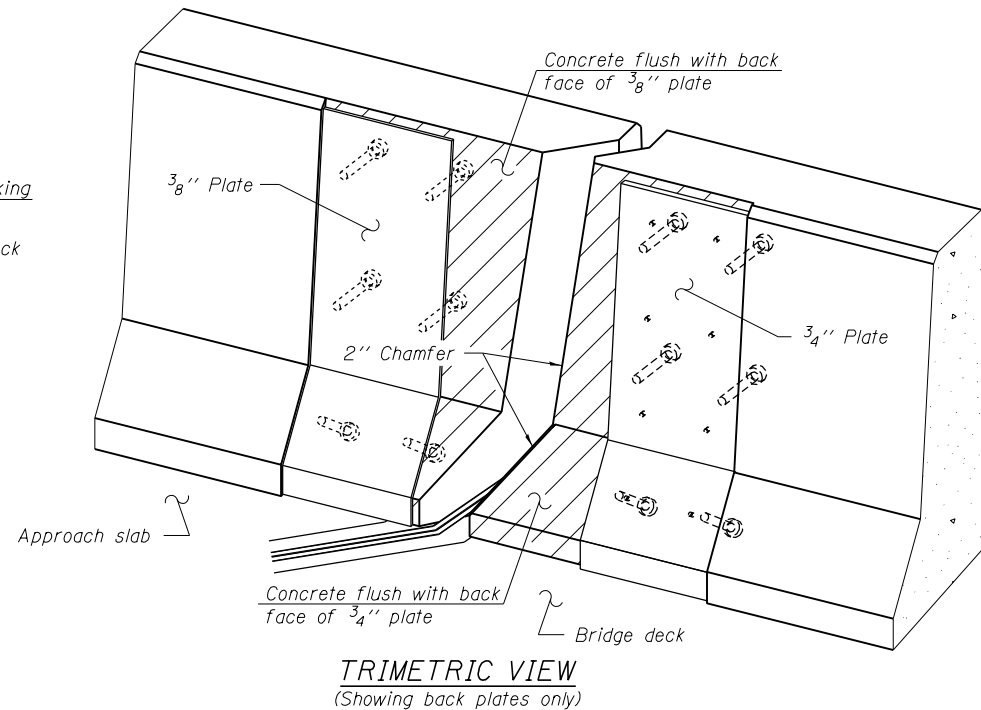
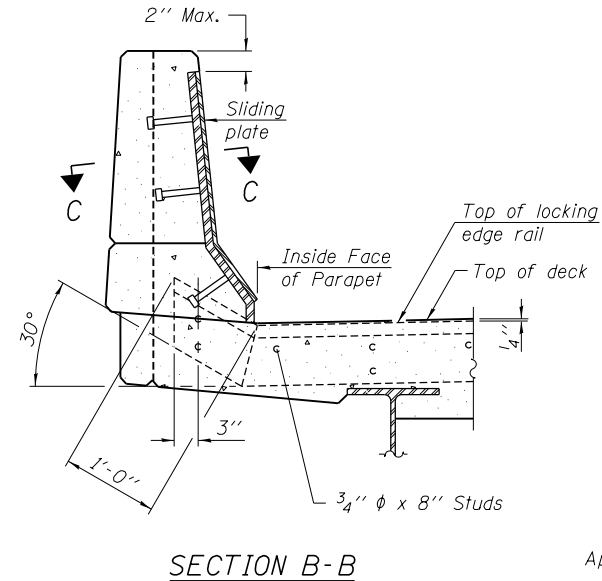
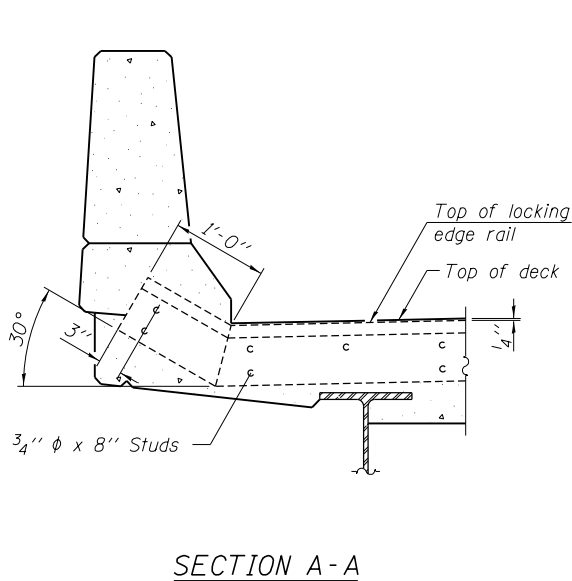
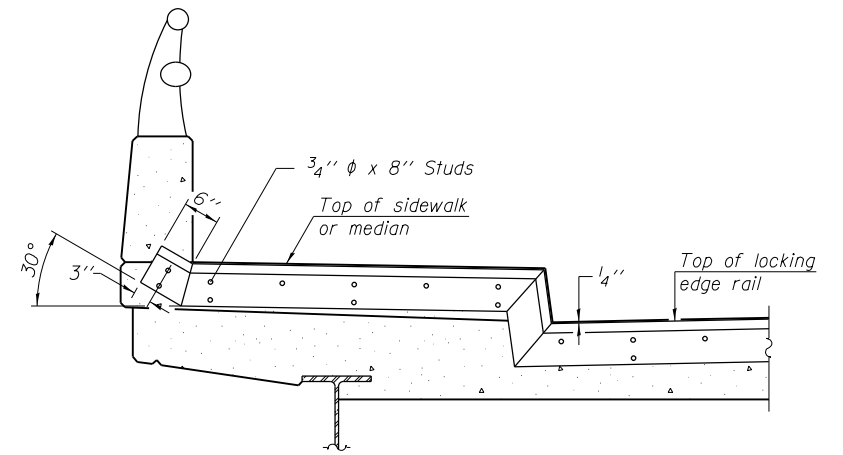
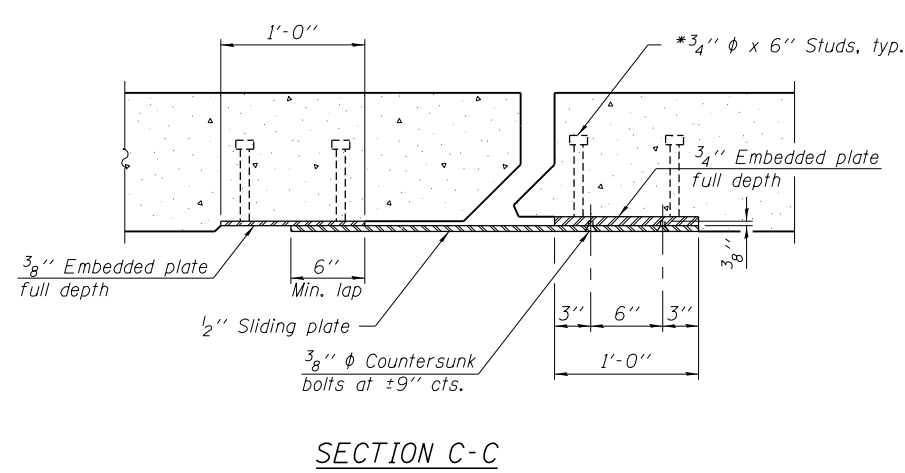
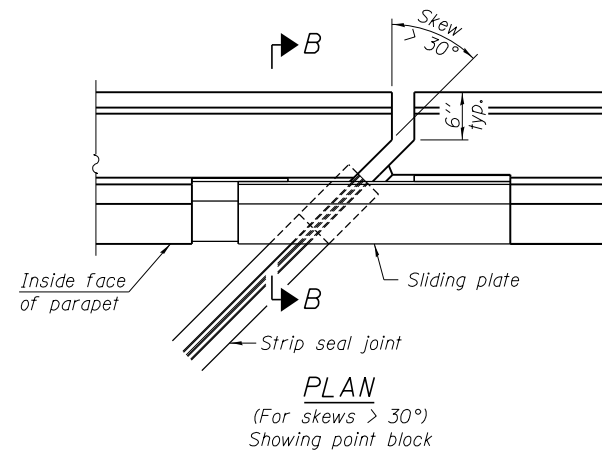
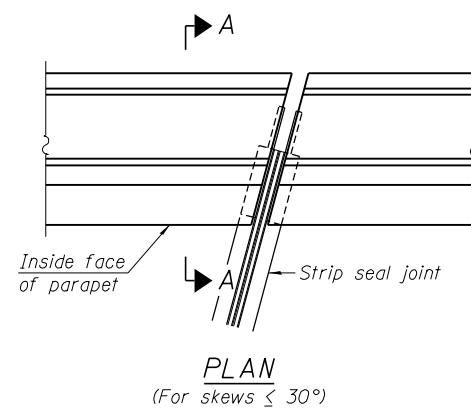
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PARAPET RAILING

SHEET NO. S2-14 OF 28 SHEETS

F.A.P. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	541
SN 069-0522		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				

GKE GARZA KARHOFF ENGINEERING, LLC
Structural Engineers
Chicago, IL



SECTION THRU ROLLED RAIL JOINT

SECTION THRU WELDED RAIL JOINT

ROLLED EXTRUDED RAIL

WELDED RAIL

LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.
Rolled rail shown, welded rail similar.

EJ-SSJ 1-27-12

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

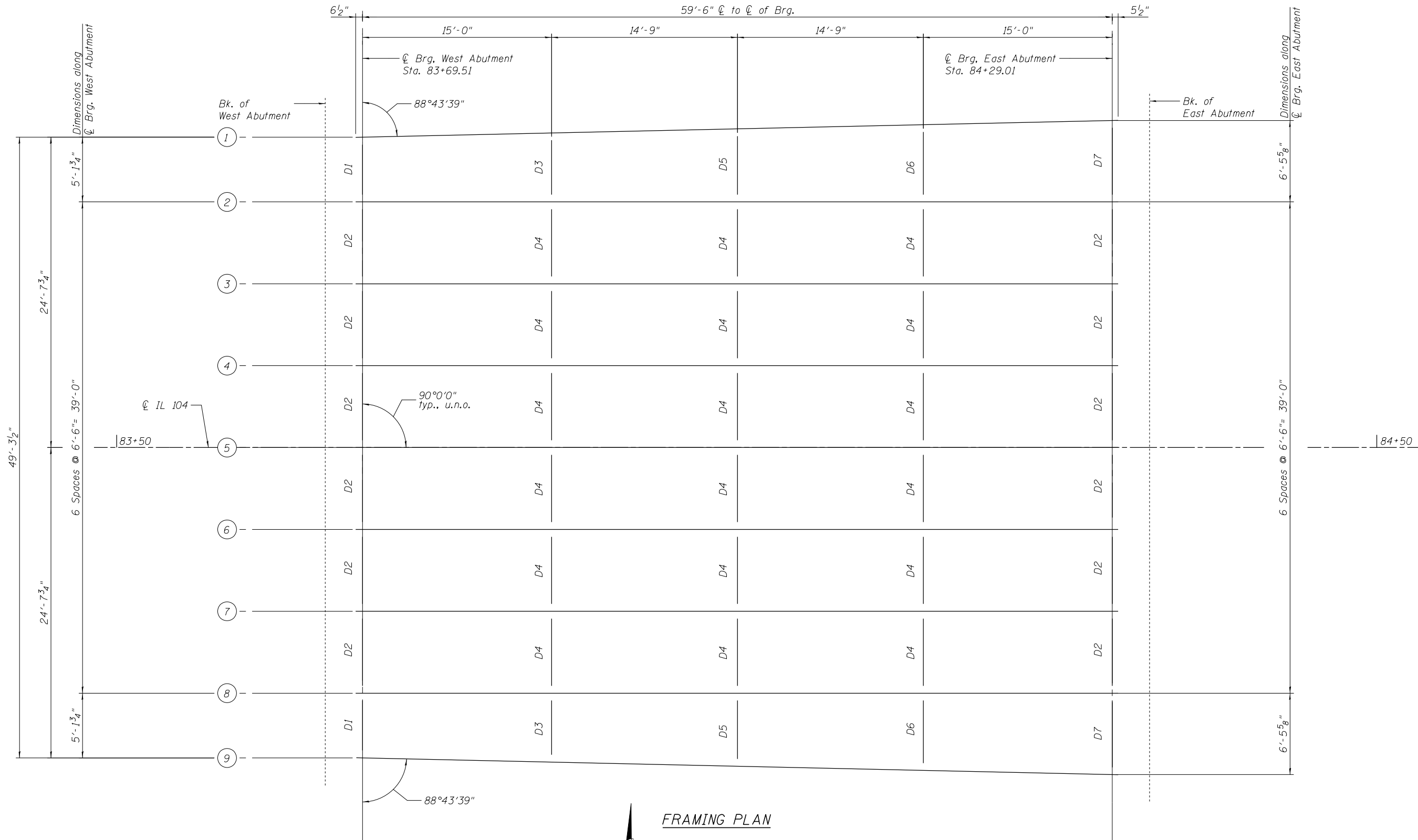
LOCKING EDGE RAILS

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	112

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 USER NAME =
 DATE = 8/5/2014
 PLOT SCALE =
 PLOT DATE =
 DESIGNED -
 CHECKED -
 DRAWN -
 CHECKED -
 REVISED -
 REVISED -
 REVISED -
 REVISED -
 STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
 PREFORMED JOINT STRIP SEAL DETAILS
 SHEET NO. S2-15 OF 28 SHEETS
 F.A.P. RTE. 745 SECTION 123B-2 COUNTY MORGAN TOTAL SHEETS 782 SHEET NO. 542
 SN 069-0522 CONTRACT NO. 72B58
 ILLINOIS FED. AID PROJECT

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FRAMING PLAN

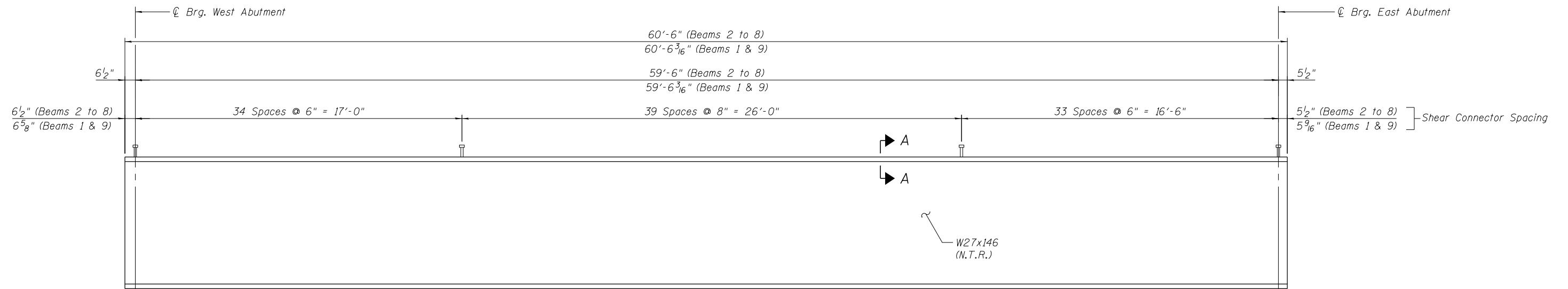
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PLOT DATE =	DRAWN - CPB
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DESIGNED - CPB	REVISED -
CHECKED - BCK	REVISED -
DRAWN - CPB	REVISED -
CHECKED - BCK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN			
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS
745	123B-2	MORGAN	782
SN 069-0522		CONTRACT NO. 72B58	

SHEET NO. S2-16 OF 28 SHEETS	
ILLINOIS FED. AID PROJECT	



BEAM ELEVATION: 1-9

(Note: All dimensions are along \bar{C} Beam)

- I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing \bar{I}_s (Total-Strength I, and Service II) due to non-composite dead loads (in^4 and in^3).
- $I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing \bar{I}_s (Total-Strength I, and Service II) due to short-term composite live loads (in^4 and in^3).
- $I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing \bar{I}_s (Total-Strength I, and Service II) due to long-term composite (superimposed) dead loads (in^4 and in^3).
- DC1: Un-factored non-composite dead load (kips/ft.).
- MDC1: Un-factored moment due to non-composite dead load (kip-ft.).
- DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
- MDC2: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
- DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
- MDW: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
- $M_L + IM$: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
- M_u (Strength I): Factored design moment (kip-ft.).
 $1.25(M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_L + IM$
- $\phi_r M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft.).
- f_s DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).
 M_{DC1} / S_c
- f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
 $M_{DC2} / S_c(3n)$ or $M_{DC2} / S_c(cr)$ as applicable.
- f_s DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).
 $M_{DW} / S_c(3n)$ or $M_{DW} / S_c(cr)$ as applicable.
- f_s ($L+IM$): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live plus impact loads as calculated below (ksi).
 $M_L + IM / S_c(n)$ or $M_L + IM / S_c(cr)$ as applicable.
- f_s (Service II): Sum of stresses as computed below (ksi).
 $f_{SDC1} + f_{SDC2} + f_{SDW} + 1.3 f_{sL+IM}$
- $0.95R_n F_y f$: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).
- V_r : Maximum factored shear range in composite portion of span computed according to Article 6.10.10.

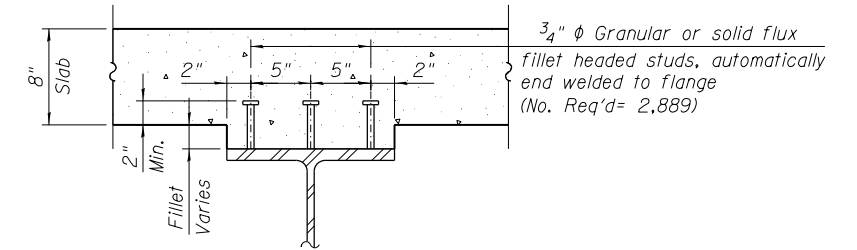
INTERIOR BEAM MOMENT TABLE

		0.5 Span
I_s	(in^4)	5,660
$I_c(n)$	(in^4)	15,044
$I_c(3n)$	(in^4)	10,958
S_s	(in^3)	414
$S_c(n)$	(in^3)	597.83
$S_c(3n)$	(in^3)	540.12
DC1	(k/')	0.81
MDC1	(k)	357
DC2	(k/')	0.11
MDC2	(k)	50
DW	(k/')	0.33
MDW	(k)	144
$M_L + IM$	(k)	733
M_u (Strength I)	(k)	2,007.39
$\phi_r M_n$	(k)	2,819.20
f_s DC1	(ksi)	10.35
f_s DC2	(ksi)	1.11
f_s DW	(ksi)	3.20
f_s ($L+IM$)	(ksi)	14.71
f_s (Service II)	(ksi)	33.78
$0.95R_n F_y f$	(ksi)	47.50
V_r	(k)	41.58

TOP OF BEAM ELEVATIONS

For Fabrication Only

Girder	\bar{C} Brg. W. Abut.	\bar{C} Brg. E. Abut.
1	464.14	461.73
2	464.24	461.86
3	464.38	462.00
4	464.51	462.13
5	464.65	462.27
6	464.51	462.13
7	464.38	462.00
8	464.24	461.86
9	464.14	461.73



SECTION A-A

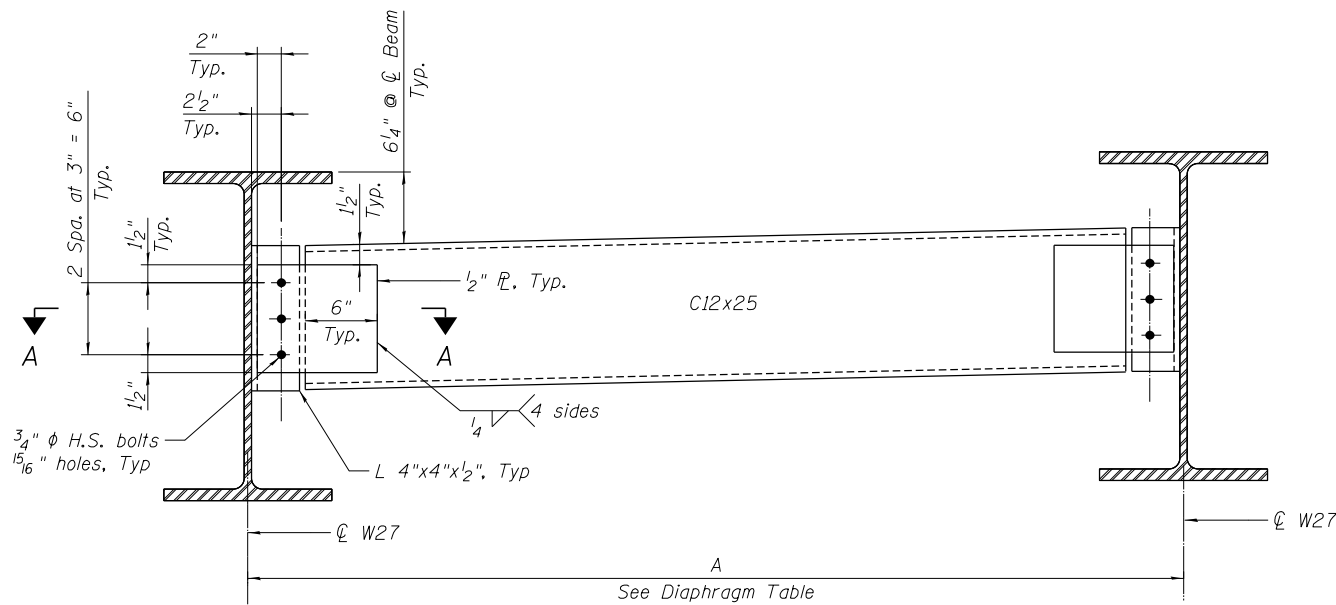
INTERIOR BEAM REACTION TABLE

		Abutment
R_{DC1}	(k)	24.78
R_{DC2}	(k)	3.36
R_{DW}	(k)	9.67
R_{L+IM}	(k)	70.56
R_{Total}	(k)	108.37

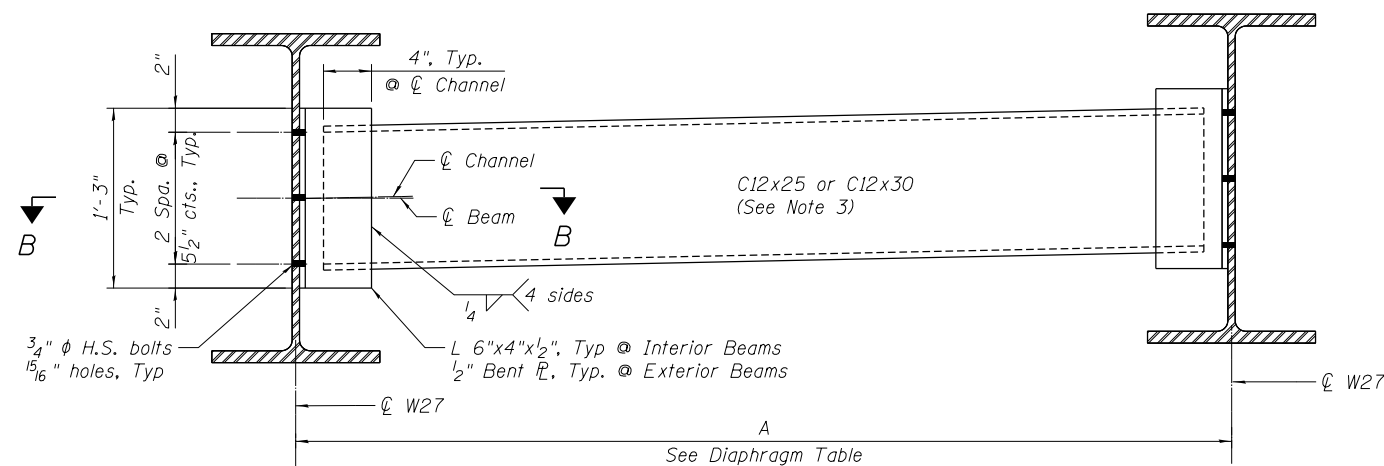
Notes:

- All primary structural steel shall be AASHTO M270 Grade 50 except diaphragms, connecting plates and angles shall be AASHTO M270 Grade 36.
- Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

\\\G0690522-72B58-001-GIRDERELEV.DGN, \\S:\ALL\SNM\72B58-001-BORDER.DGN, \\S:\0690522-72B58-001-GIRDERELEV.DGN, \\S:\0690522-72B58-001-GIRDERELEV.SHT.DGN
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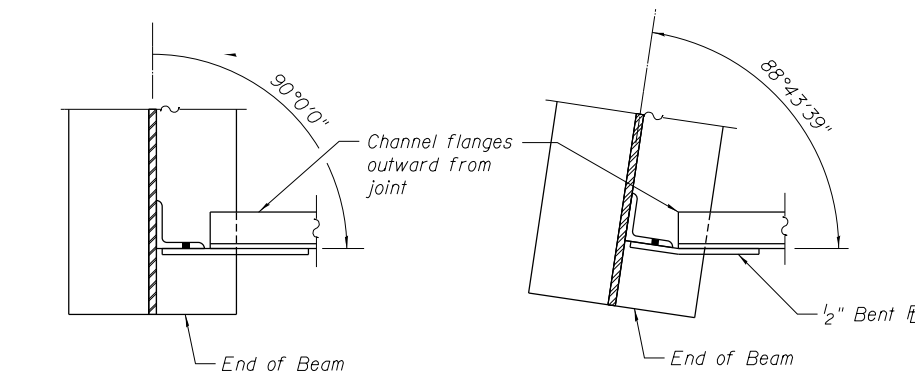
DIAPHRAGMS D1, D2, & D7
(See Diaphragm Table for total no. of Diaphragms)



DIAPHRAGMS D3 TO D6
(See Diaphragm Table for total no. of Diaphragms)

DIAPHRAGM TABLE

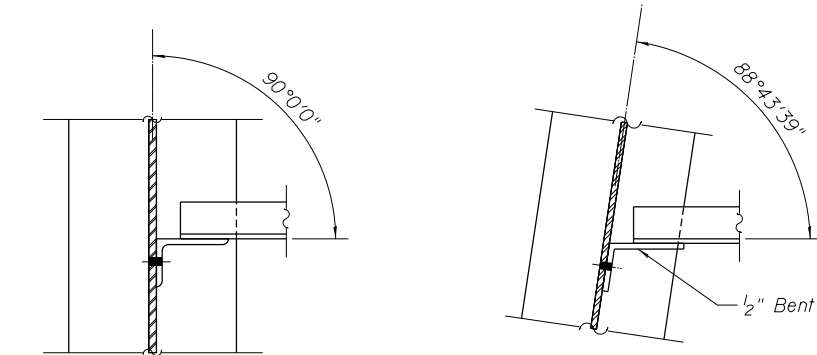
Diaphragm	A	No.
D1	5'-1 ³ / ₄ "	2
D2	6'-6"	12
D3	5'-5 ³ / ₄ "	2
D4	6'-6"	18
D5	5'-9 ¹ / ₁₆ "	2
D6	6'-1 ³ / ₈ "	2
D7	6'-5 ⁹ / ₈ "	2



DETAIL AT INTERIOR BEAMS

DETAIL AT EXTERIOR BEAMS
(Not to scale)

SECTION A-A



DETAIL AT INTERIOR BEAMS

DETAIL AT EXTERIOR BEAMS
(Not to scale)

SECTION B-B

Notes:

- Two hardened washers required for each set of oversized holes.
- Alternate channels are permitted to facilitate material acquisition.
- Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no additional cost to the department.
- All crossframes or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
- All primary structural steel shall be AASHTO M270 Grade 50 except diaphragms, connecting plates and angles shall be AASHTO M270 Grade 36.

FILE NAME = \\S:\S\2014\1459\03\069052-72B58-001-STEELDETAIL.SHT.DGN
 USER NAME = GARZA KARHOFF ENGINEERING, LLC
 DATE = 8/5/2014
 CHECKED = BCK
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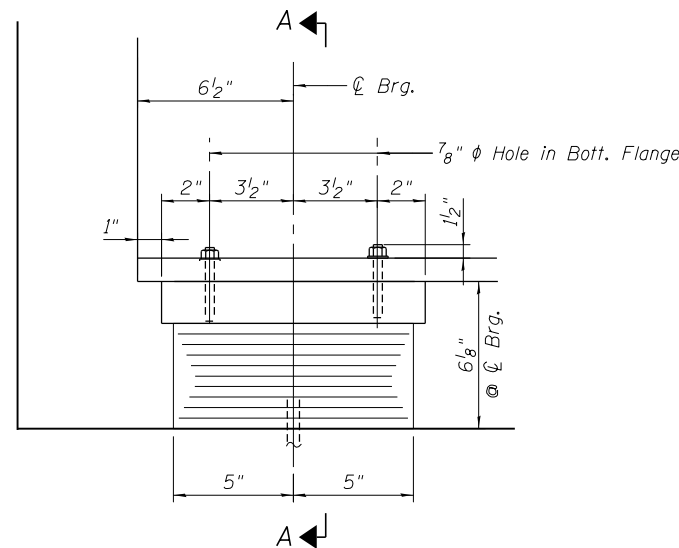
GKE GARZA KARHOFF ENGINEERING, LLC
Structural Engineers
Chicago, IL

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

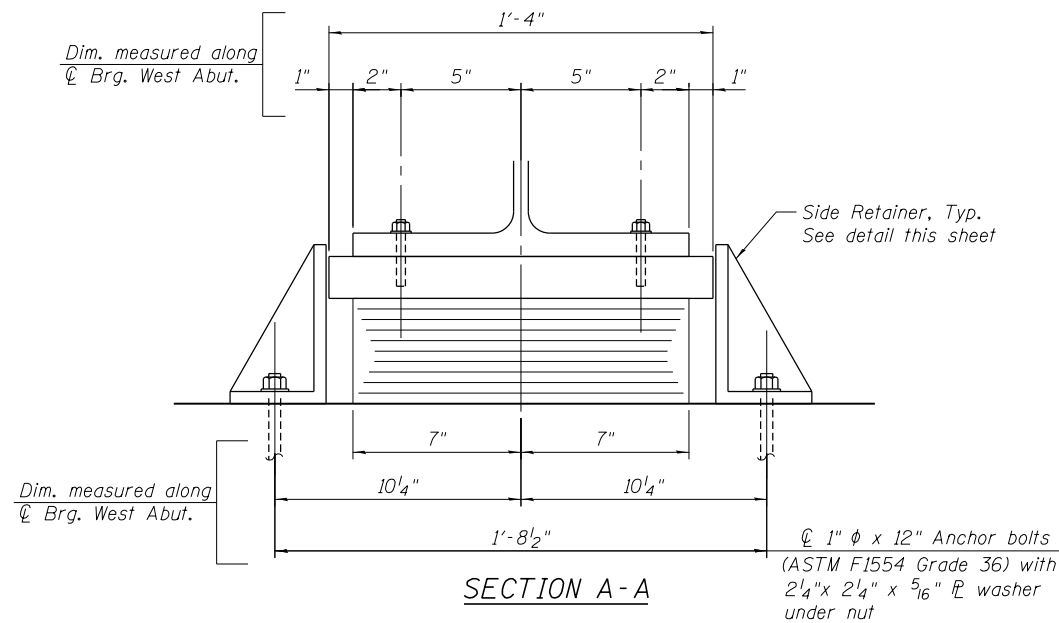
STEEL DETAILS

SHEET NO. S2-18 OF 28 SHEETS

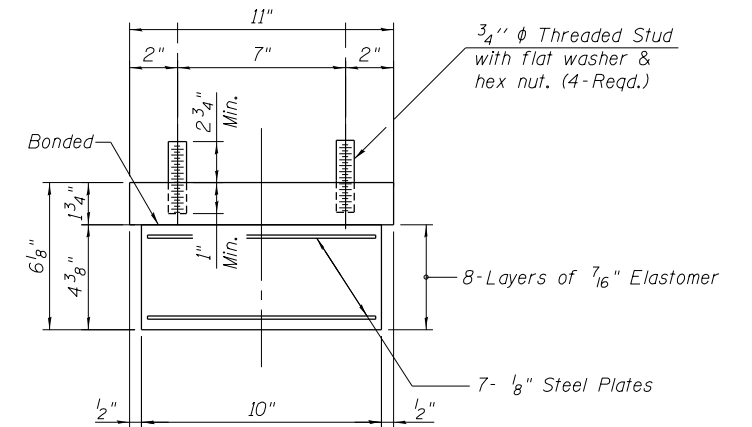
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	545
SN 069-0522		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				



ELAST. BEARING AT WEST ABUTMENT
(9 thus)

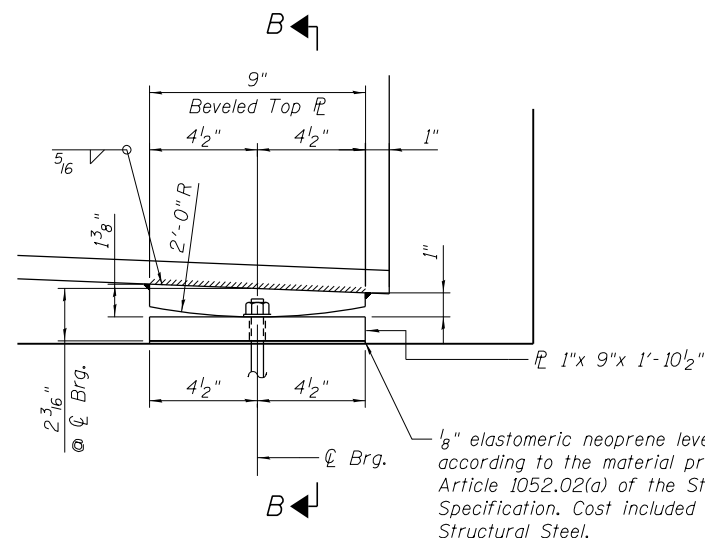


SECTION A-A

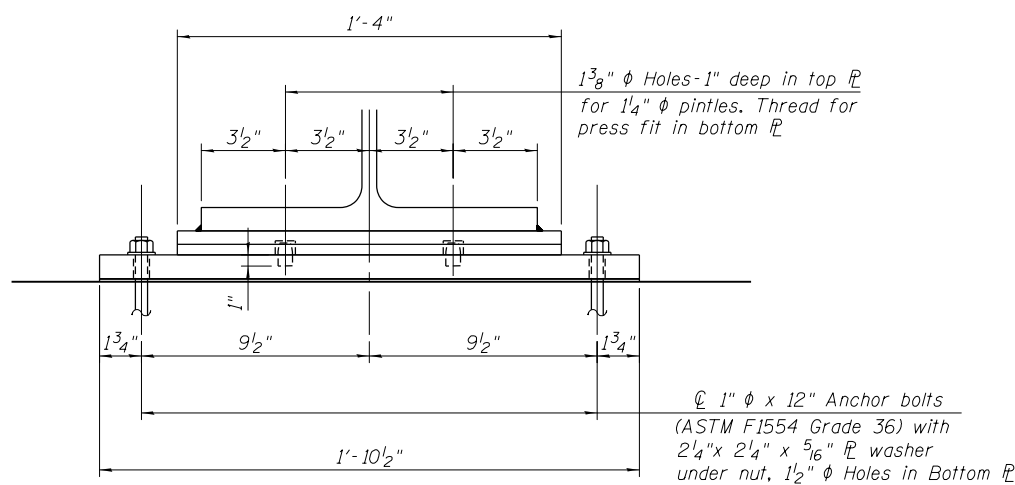


BEARING ASSEMBLY

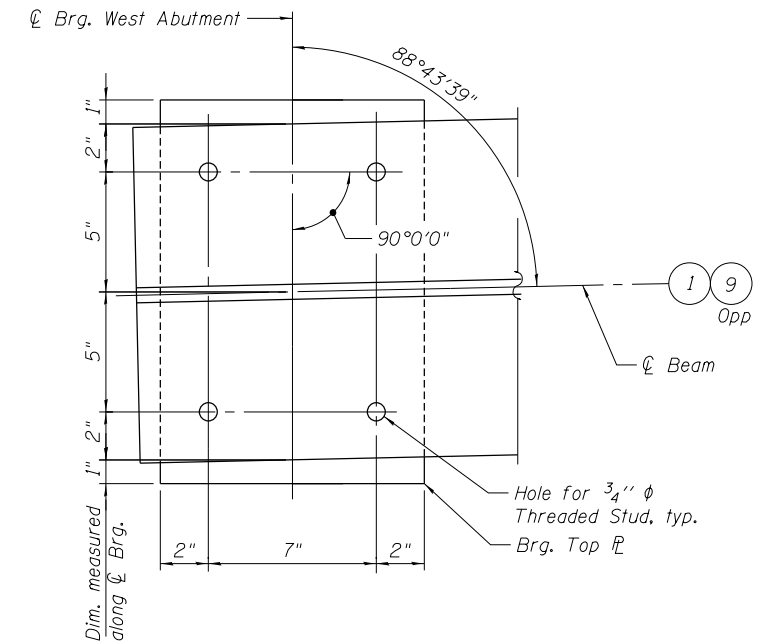
Note:
Shim plates shall not be placed under Bearing Assembly.



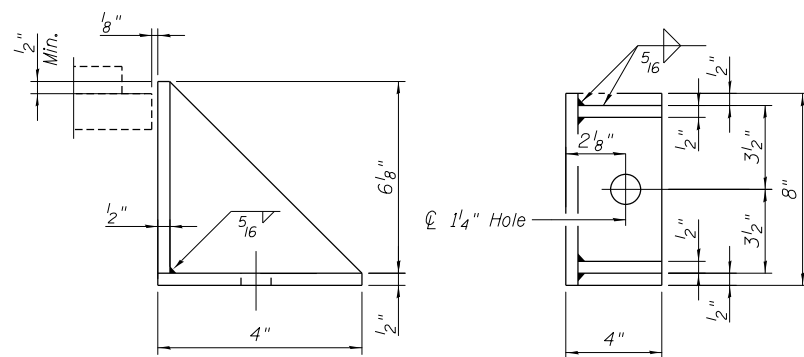
FIXED BEARING AT EAST ABUTMENT
(9 thus)



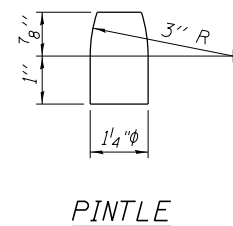
SECTION B-B



TOP BEARING AT WEST ABUTMENT
Beams 1 & 9 Only



SIDE RETAINER
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



PINTLE

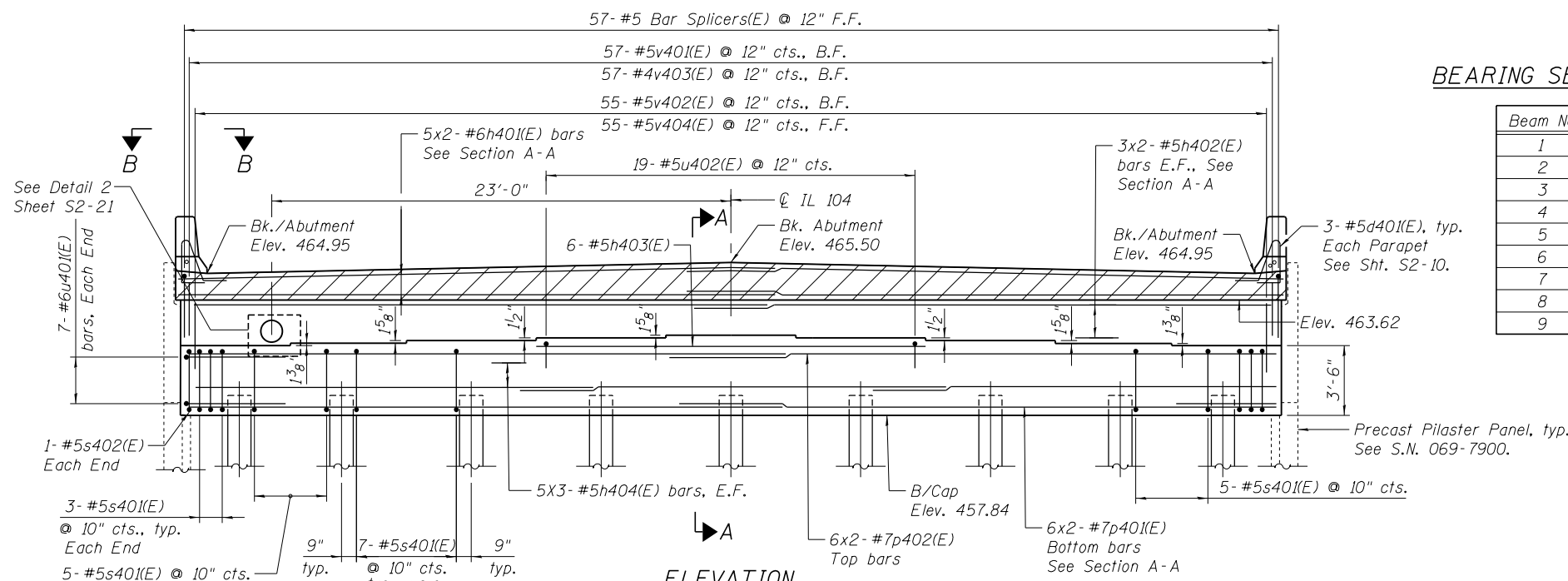
Notes:

- Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
- Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.
- Anchor bolts for side retainers may be cast in place or installed in holes drilled before or after members are in place.
- Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
- Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.
- The structural steel plates of the elastomeric bearing assembly including the side retainers and the structural steel plates of the fixed bearings at the east abutment shall conform to the requirements of AASHTO M 270 Grade 50.
- Fixed Bearing Assemblies including pintles, shim plates and elastomeric neoprene leveling pads shall be included in the cost of Furnishing and Erection Structural Steel.
- The anchor bolt sizes and grades shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.

BILL OF MATERIAL

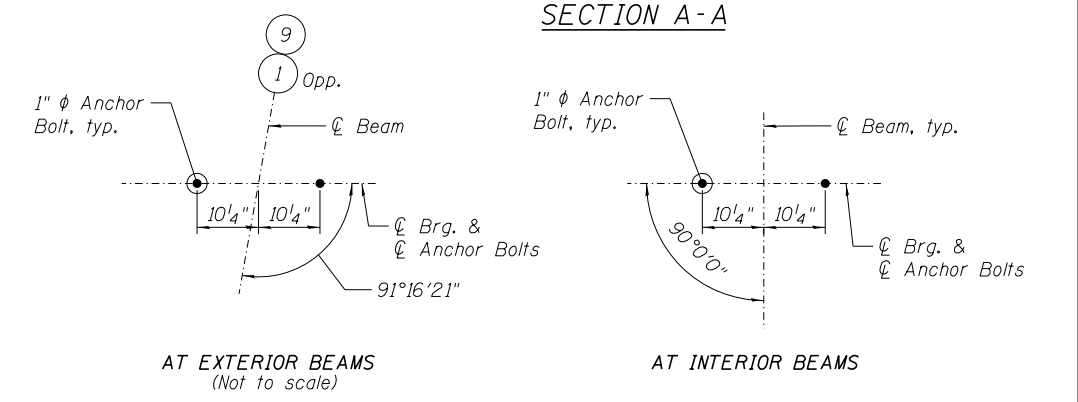
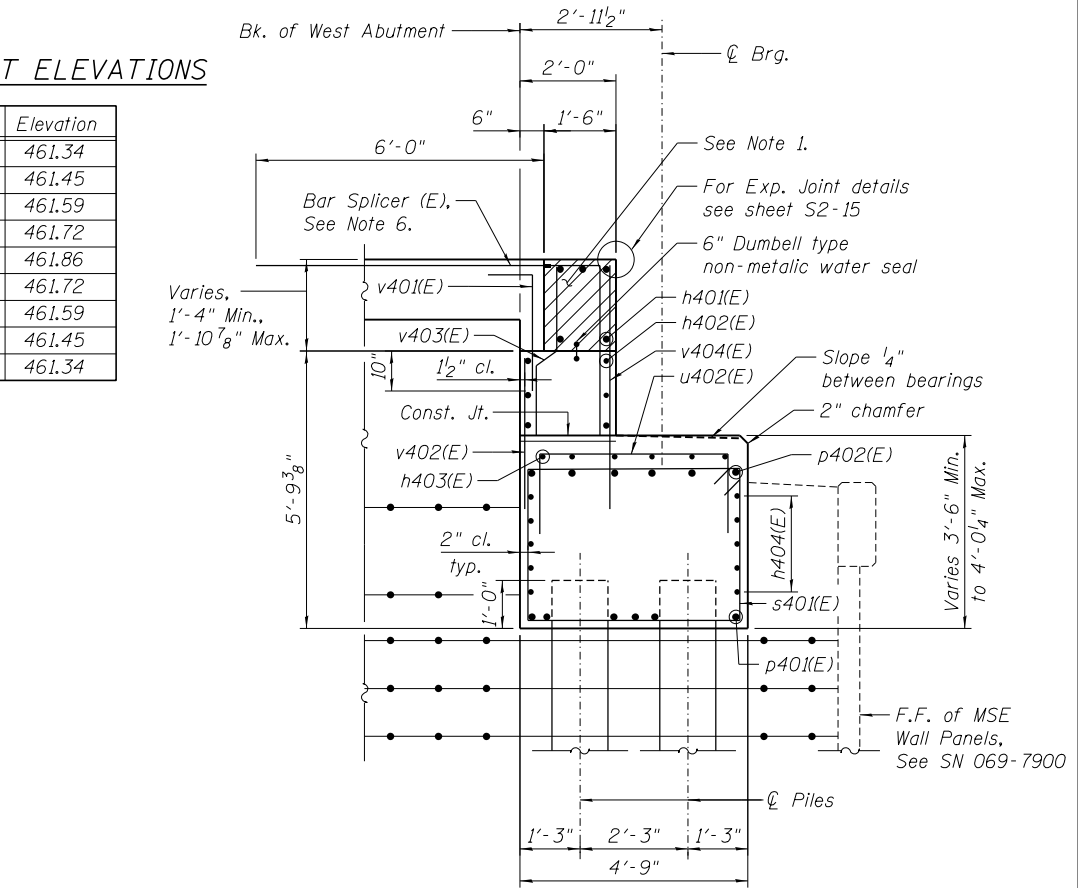
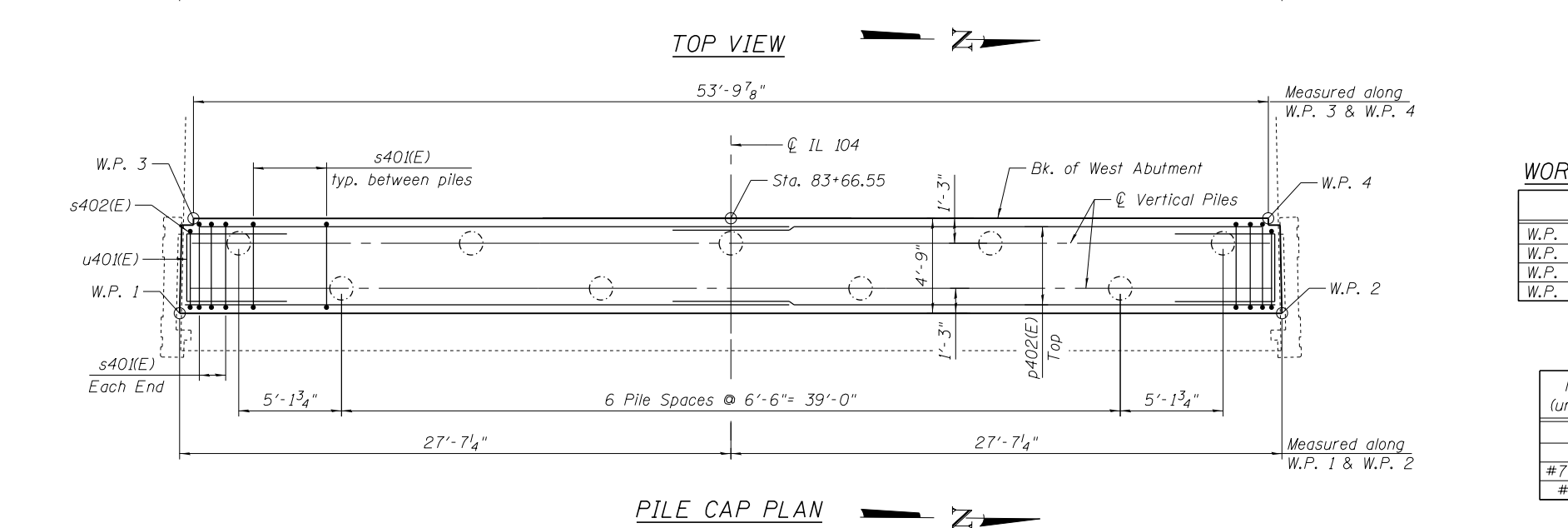
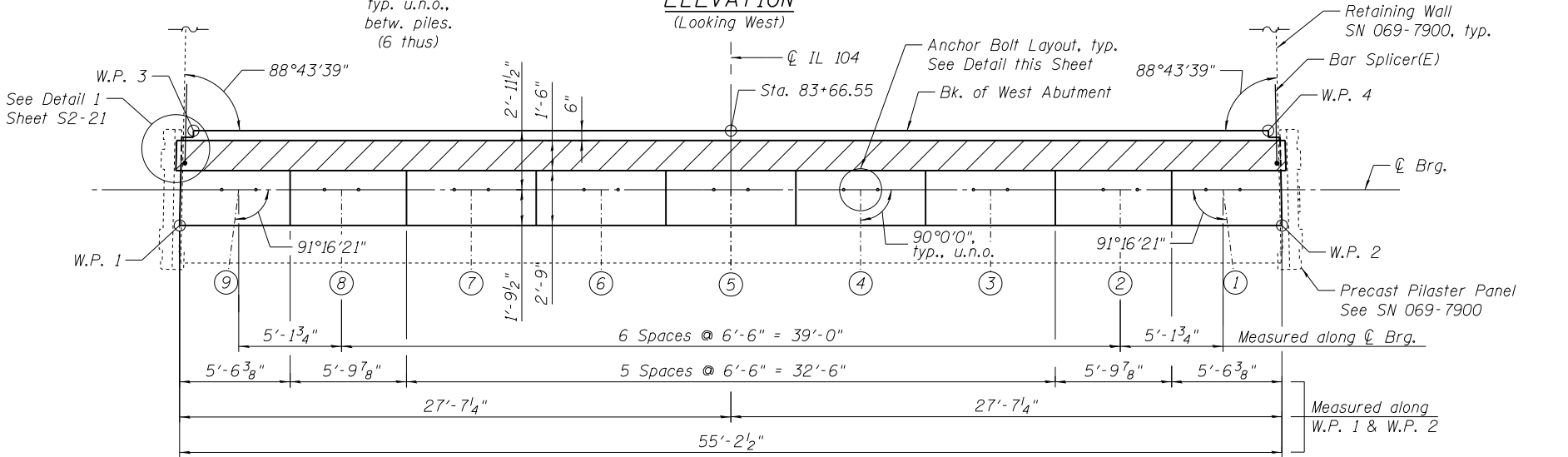
Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	9
Anchor Bolts, 1"	Each	36

FILE NAME = ... BEARING.DGN ... USER NAME = ... DESIGNED - CPB ... REVISIONS ... DATE - 10/3/2014 ... CHECKED - BCK ... REVISED - ... PLOT SCALE = ... DRAWN - CPB ... REVISED - ... PLOT DATE ... CHECKED - BCK ... REVISED - ...



BEARING SEAT ELEVATIONS

Beam No.	Elevation
1	461.34
2	461.45
3	461.59
4	461.72
5	461.86
6	461.72
7	461.59
8	461.45
9	461.34



WORKPOINTS TABLE

	Station	Offset
W.P. 1	83+71.30	27.60
W.P. 2	83+71.30	-27.60
W.P. 3	83+66.55	26.91
W.P. 4	83+66.55	-26.91

MIN. LAP LENGTHS (unless noted otherwise)

#5	3'-8"
#6	4'-5"
#7 (Bottom)	5'-2"
#7 (Top)	5'-10"

ANCHOR BOLT LAYOUT

PILE DATA

Pile Type and Size: Metal Shell MS 14"φ x 0.312" walls
 Nominal Required Bearing: 482 kips
 Factored Resistance Available: 158 kips
 Estimated Pile Length: 77 ft.
 Number of Production Piles: 8
 Number of Test Piles: 1

Notes:

- Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure.
- Space reinforcement in cap to miss anchor bolts.
- Pour steps monolithically with cap.
- MSE Wall supplier shall design the abutment soil reinforcement to resist a horizontal force of 2.0 k/ft of abutment.
- For Metal Shell Pile Details, see sheet S2-24.
- Bar Splicers to align parallel to approach slab reinforcement.

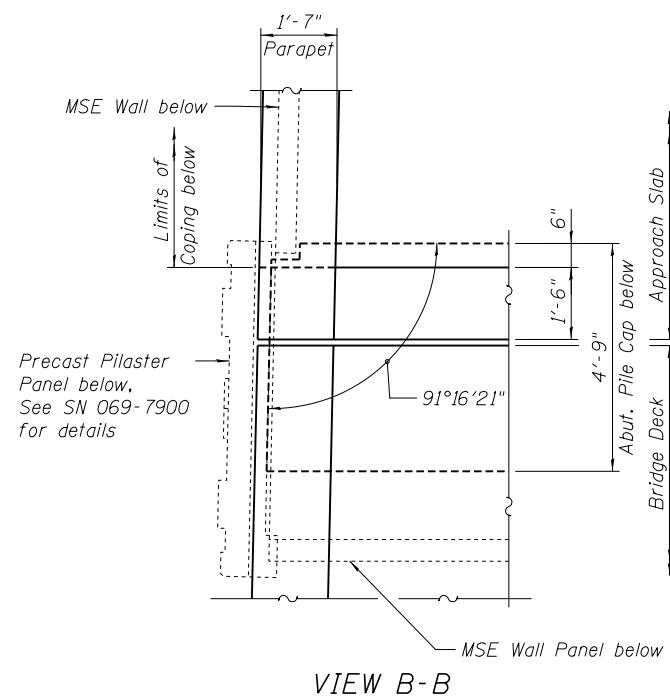
FILE NAME = GARZA KARHOFF ENGINEERING, LLC
 USER NAME = CPB
 DATE = 8/5/2014
 DESIGNED - CPB
 CHECKED - BCK
 DRAWN - CPB
 PLOT SCALE =
 PLOT DATE =
 REVISED -
 REVISED -
 REVISED -
 REVISED -
 STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 WEST ABUTMENT PLAN & ELEVATION
 SHEET NO. S2-20 OF 28 SHEETS
 F.A.P. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.
 745 123B-2 MORGAN 782 547
 SN 069-0522 CONTRACT NO. 72B58
 ILLINOIS FED. AID PROJECT

BAR LIST

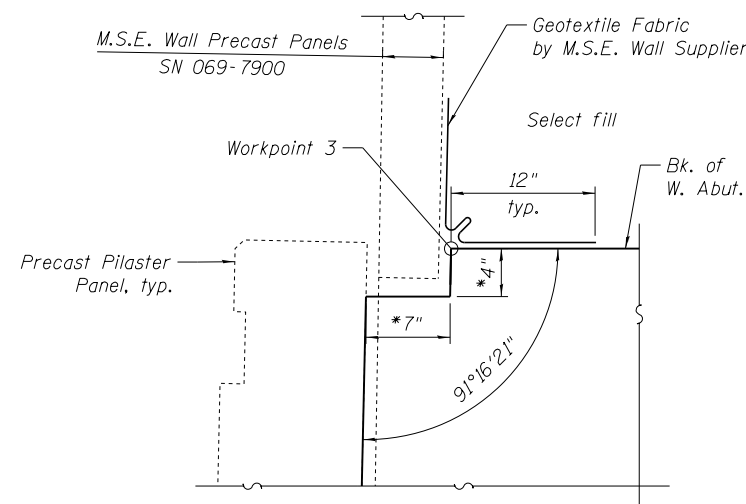
Bar	No.	Size	Length	Shape
d40(E)	6	#5	7'-9"	L
h401(E)	10	#6	29'-10"	—
h402(E)	12	#5	29'-3"	—
h403(E)	6	#5	19'-2"	—
h404(E)	30	#5	20'-9"	—
h405(E)	2	#4	4'-2"	—
h406(E)	2	#4	4'-2"	—
p401(E)	12	#7	30'-1"	—
p402(E)	12	#7	30'-6"	—
s401(E)	58	#5	16'-1"	□
s402(E)	2	#5	15'-5"	□
u401(E)	14	#6	12'-9"	□
u402(E)	19	#5	9'-0"	□
v401(E)	57	#5	3'-11"	┘
v402(E)	55	#5	3'-4"	—
v403(E)	57	#4	3'-0"	—
v404(E)	55	#5	5'-2"	—
v405(E)	4	#4	3'-3"	—

BILL OF MATERIAL

Item	Unit	Total
Concrete Structures	Cu. Yd.	44.6
Reinforcement Bars, Epoxy Coated	Pound	5,420
Furnishing Metal Shell Piles MS 14" X 0.312"	Foot	616
Driving Piles	Foot	616
Test Pile Metal Shells	Each	1



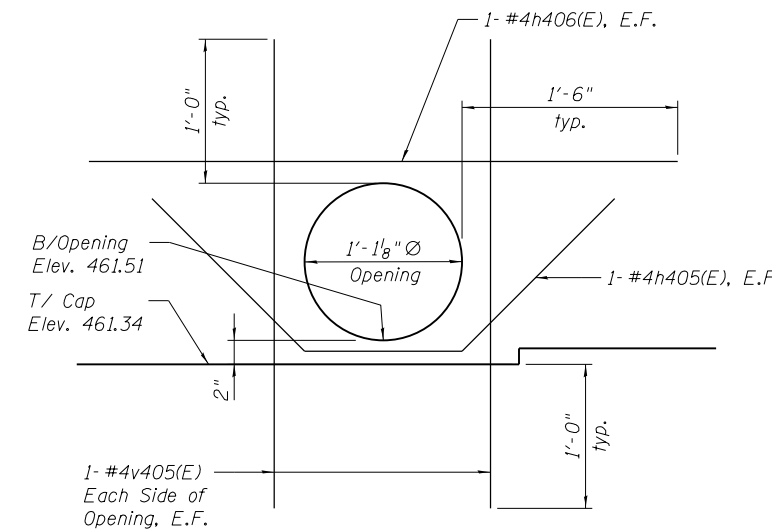
VIEW B-B



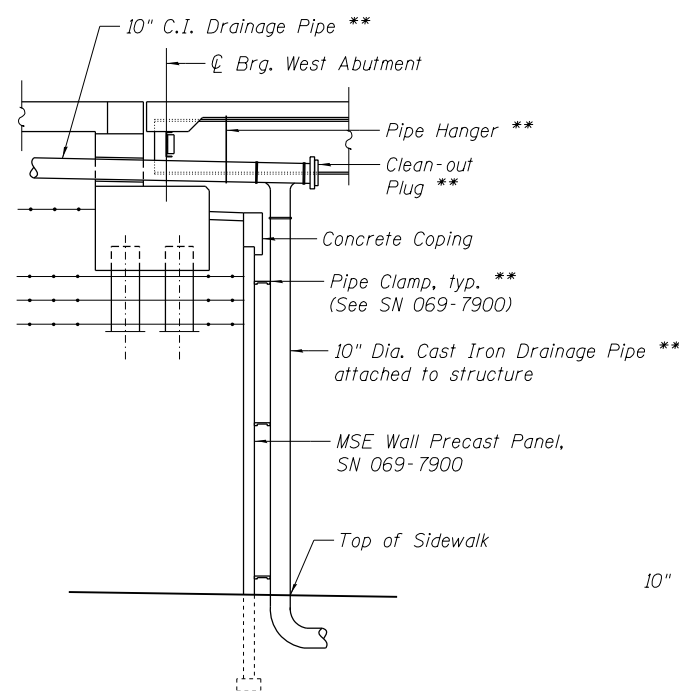
DETAIL 1

(Workpoint 4 Opposite Hand)

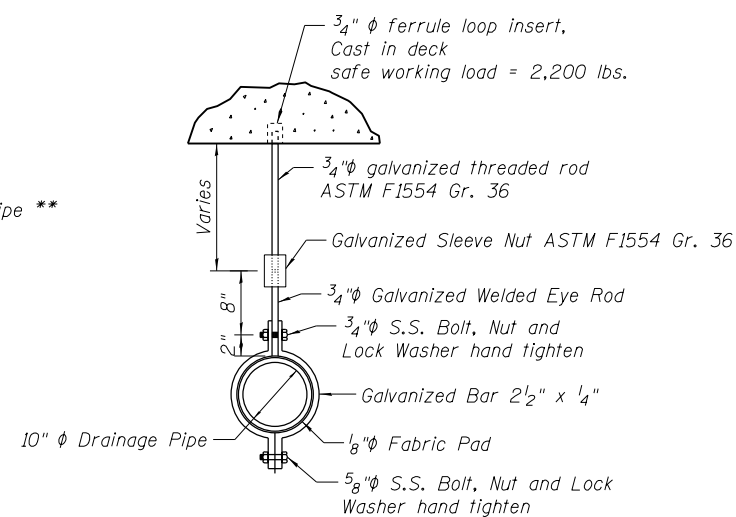
* Contractor to coordinate notch dimensions with M.S.E. Wall Supplier



DETAIL 2



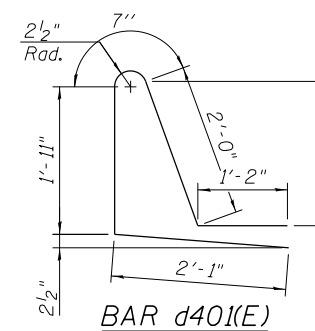
SECTION AT WEST ABUTMENT
(Looking North)



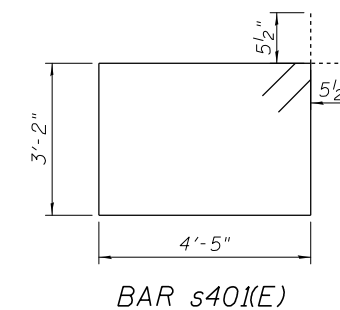
PIPE HANGER DETAIL

DRAINAGE AT WEST ABUTMENT

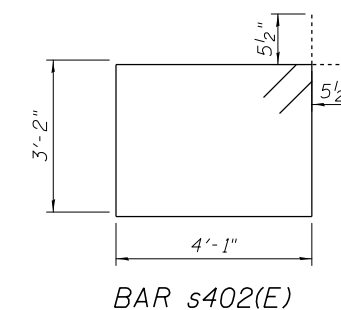
** For Information Only. Refer to Drainage plans for pay items and quantities for piping, hanger and pipe clamps



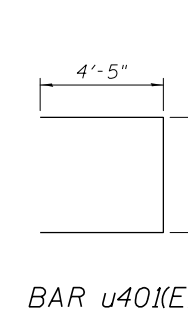
BAR d40(E)



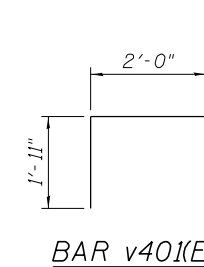
BAR s401(E)



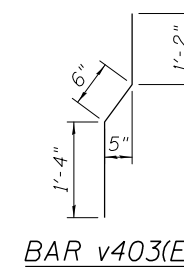
BAR s402(E)



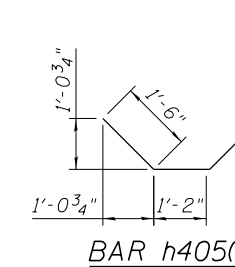
BAR u401(E)



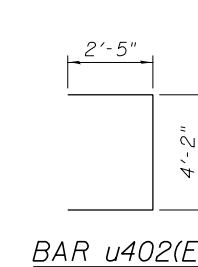
BAR v401(E)



BAR v403(E)



BAR h405(E)



BAR u402(E)

Notes:

- I.F. denotes Inside Face, O.F. denotes Outside Face, F.F. denotes Front Face
- Coordinate notch dimensions with MSE Wall Supplier.

FILE NAME = ... USER NAME = ... DESIGNED - CPB ... REVISIONS ... DATE 8/5/2014 ... CHECKED - BCK ... REVISED - ... DRAWN - CPB ... REVISED - ... CHECKED - BCK ... REVISED - ...

GKE GARZA KARHOFF ENGINEERING, LLC
Structural Engineers
Chicago, IL

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

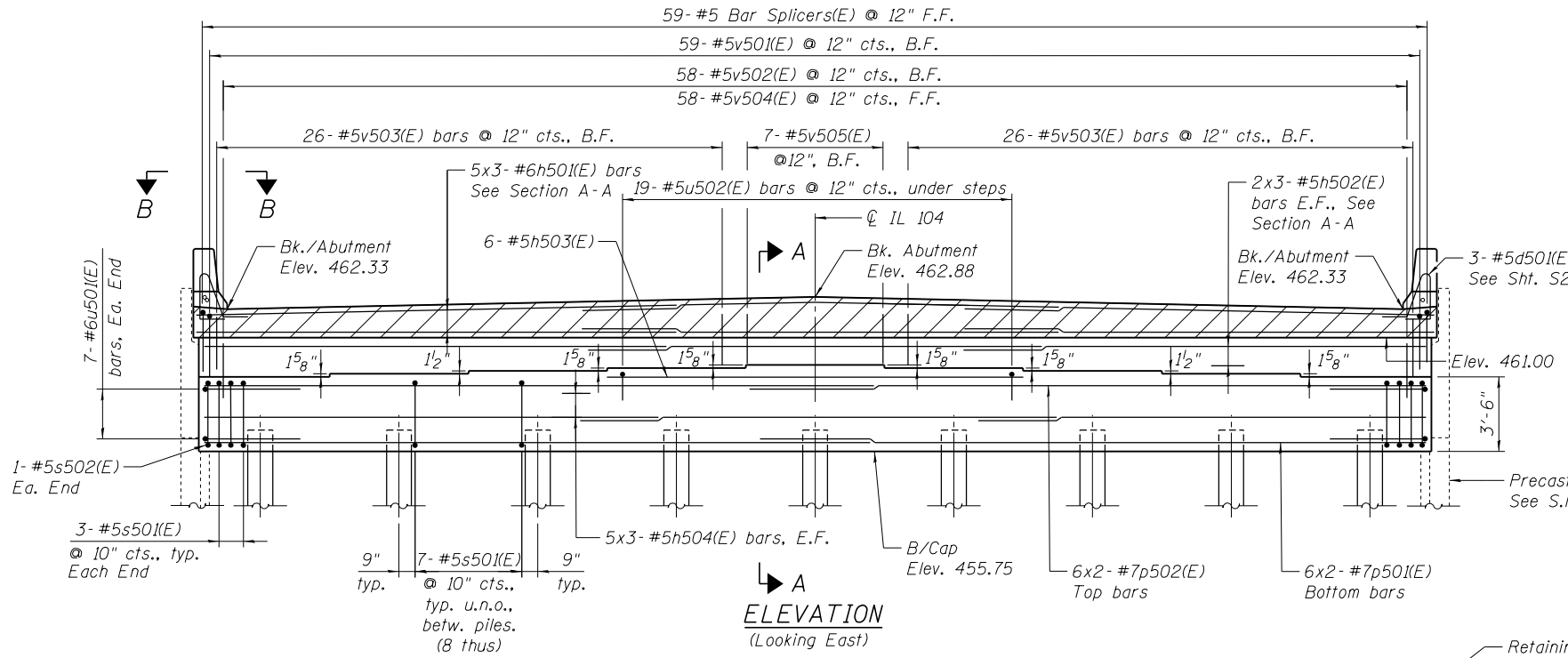
WEST ABUTMENT SECTIONS & DETAILS

SHEET NO. S2-21 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	548
SN 069-0522		CONTRACT NO. 72B58		

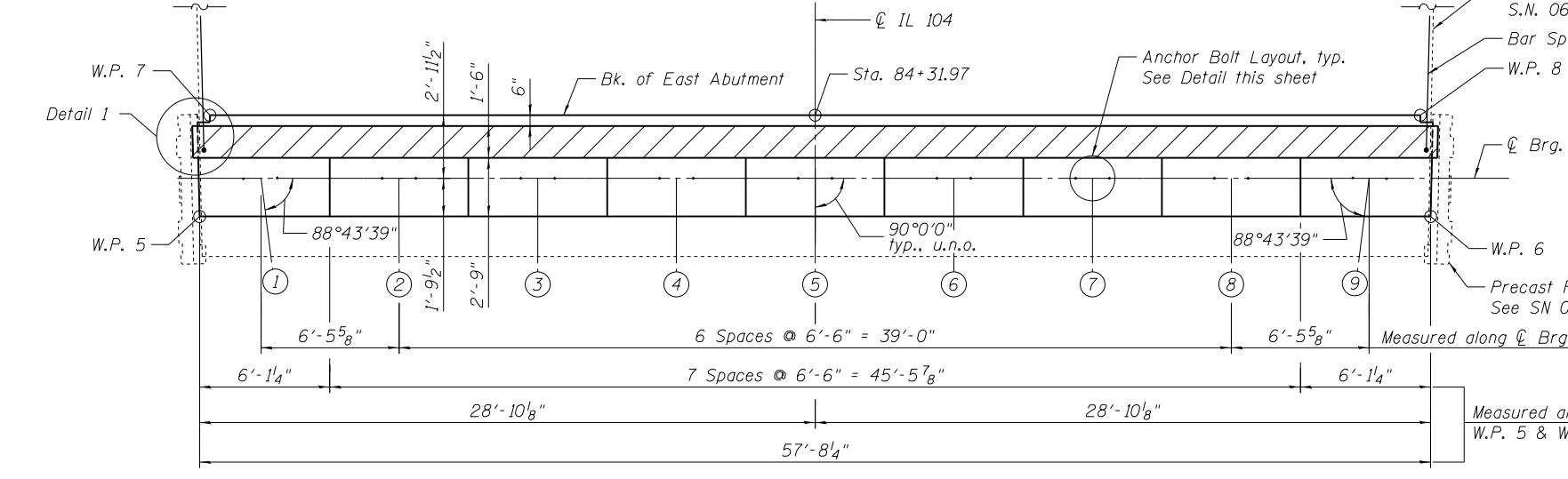
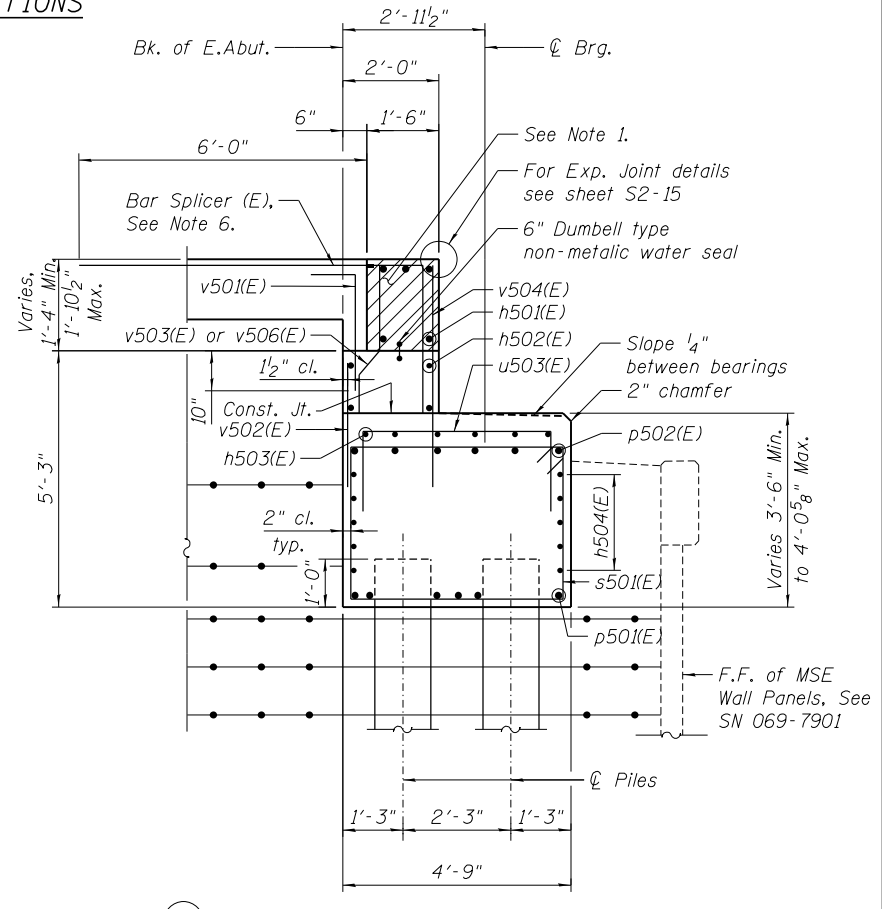
ILLINOIS FED. AID PROJECT

FILE NAME = GARZA KARHOFF ENGINEERING, LLC
 USER NAME = CPB
 DESIGNED - CPB
 CHECKED - BCK
 REVISED -
 DATE - 8/5/2014
 PLOT SCALE =
 DRAWN - CPB
 CHECKED - BCK
 PLOT DATE =
 REVISED -
 REVISED -
 REVISED -
 REVISED -
 STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 SHEET NO. S2-22 OF 28 SHEETS

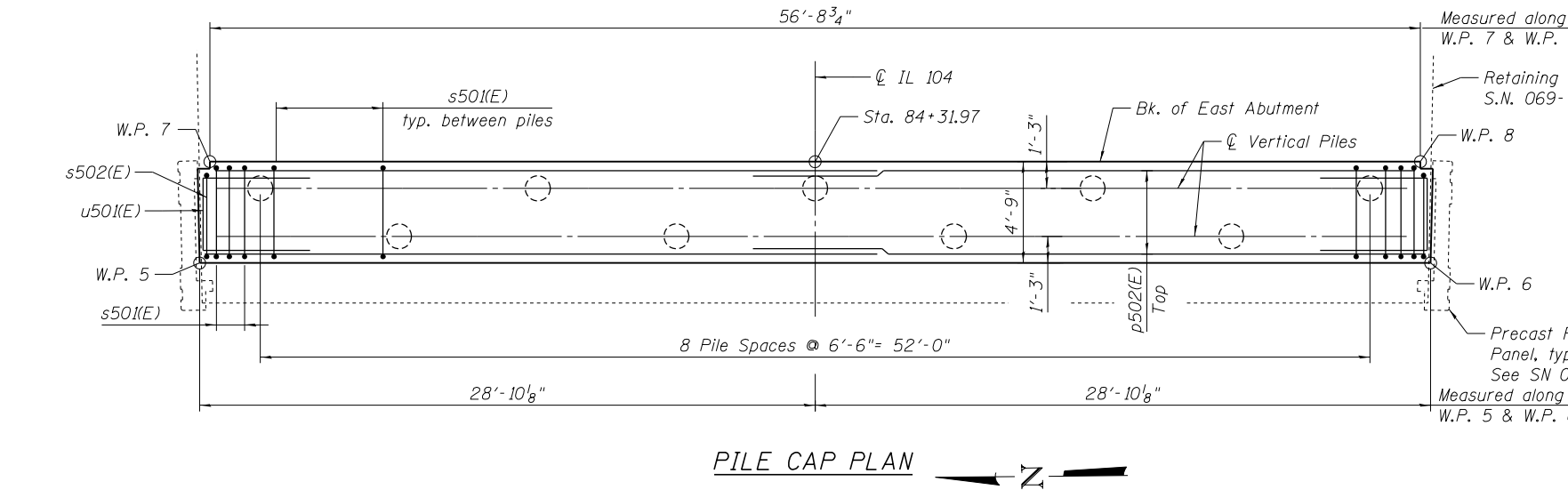


BEARING SEAT ELEVATIONS

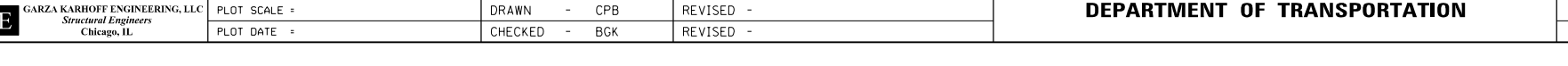
Beam No.	Elevation
1	459.25
2	459.39
3	459.52
4	459.66
5	459.80
6	459.66
7	459.52
8	459.39
9	459.25



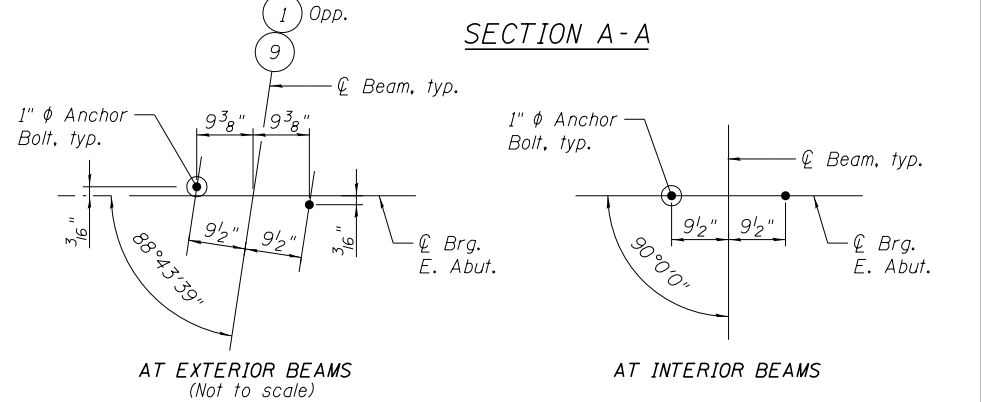
ELEVATION (Looking East)



TOP VIEW



PILE CAP PLAN



ANCHOR BOLT LAYOUT

WORKPOINTS TABLE

Workpoint	Station	Offset
W.P. 5	84+27.22	-28.84
W.P. 6	84+27.22	28.84
W.P. 7	84+31.97	-28.37
W.P. 8	84+31.97	28.37

PILE DATA

Pile Type and Size: Metal Shell MS 14 x 0.312" walls
 Nominal Required Bearing: 424 kips
 Factored Resistance Available: 158 kips
 Estimated Pile Length: 94 ft.
 Number of Production Piles: 8
 Number of Test Piles: 1

MIN. LAP LENGTHS (unless noted otherwise)

#5	3'-8"
#6	4'-5"
#7 (Bottom)	5'-2"
#7 (Top)	5'-10"

Notes:

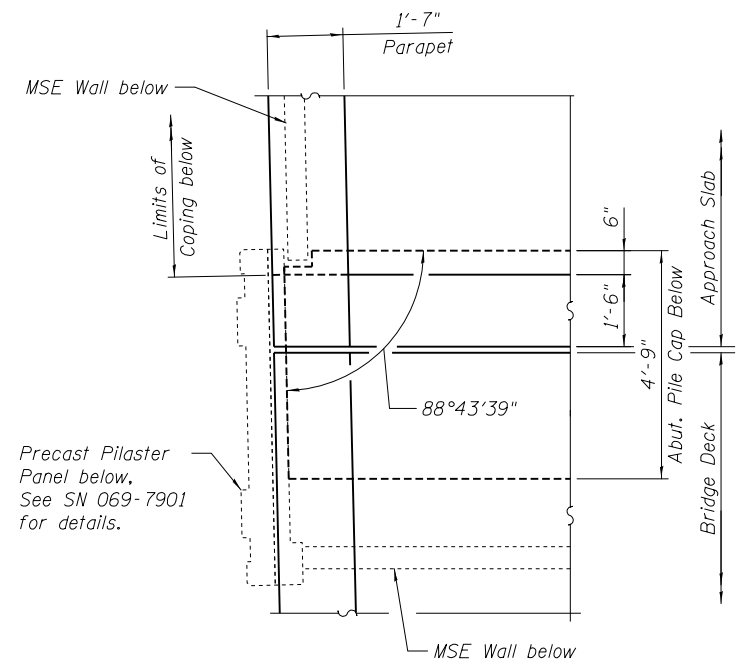
- Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure.
- Space reinforcement in cap to miss anchor bolts.
- Four steps monolithically with cap.
- MSE Wall supplier shall design the abutment soil reinforcement to resist a horizontal force of 2.1 k/ft of abutment.
- For Metal Shell Pile Details, see sheet S2-24.
- Bar Splicers to align parallel to approach slab reinforcement.

EAST ABUTMENT PLAN & ELEVATION

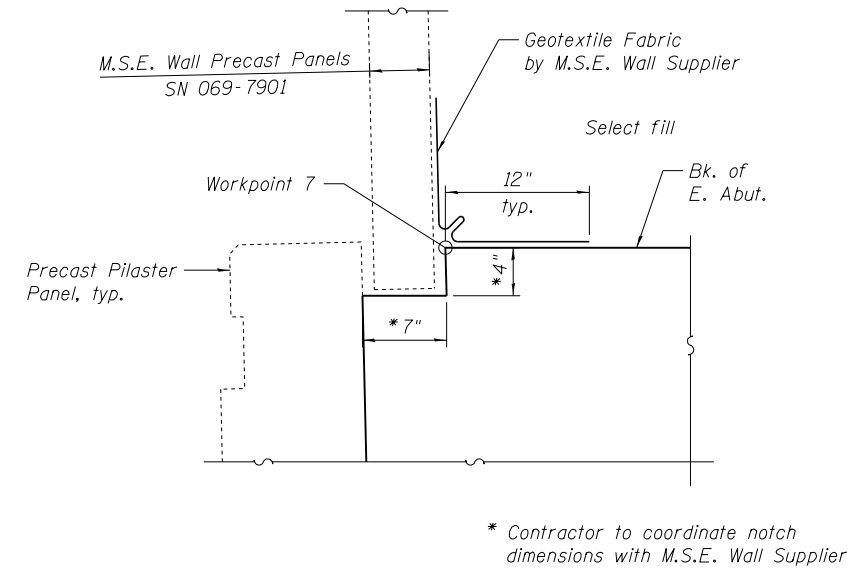
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	549
SN 069-0522		CONTRACT NO. 72B58		

BAR LIST

Bar	No.	Size	Length	Shape
d501(E)	6	#5	7'-9"	L
h501(E)	15	#6	22'-4"	—
h502(E)	12	#5	21'-8"	—
h503(E)	6	#5	19'-2"	—
h504(E)	30	#5	21'-7"	—
p501(E)	12	#7	31'-5"	—
p502(E)	12	#7	31'-9"	—
s501(E)	62	#5	16'-1"	□
s502(E)	2	#5	15'-5"	□
u501(E)	14	#6	13'-9"	□
u502(E)	19	#5	9'-0"	□
v501(E)	59	#5	4'-5"	L
v502(E)	58	#5	2'-9"	—
v503(E)	52	#4	3'-0"	L
v504(E)	58	#5	4'-7"	—
v505(E)	7	#5	3'-1"	L



VIEW B-B

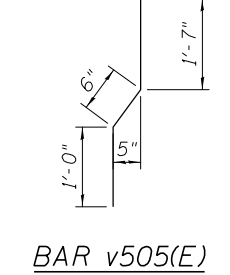
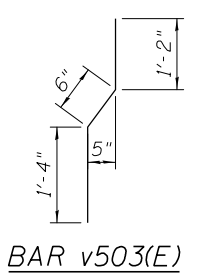
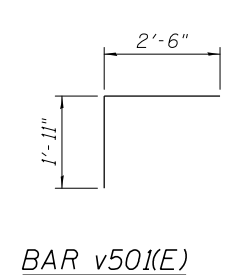
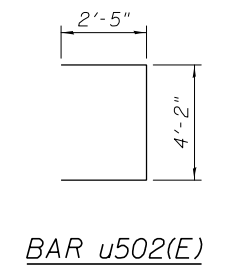
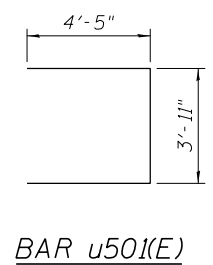
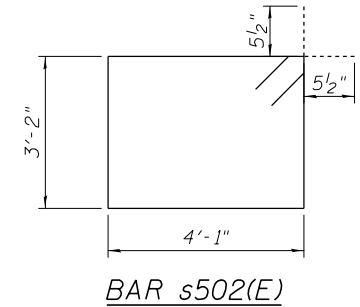
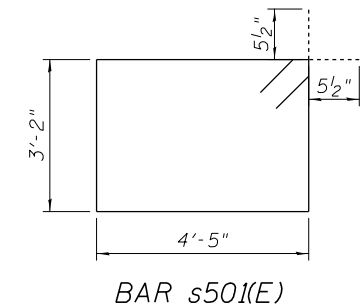
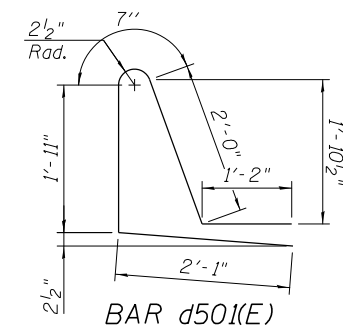


DETAIL 1

(Workpoint 8 Opposite Hand)

BILL OF MATERIAL

Item	Unit	Total
Concrete Structures	Cu. Yd.	44.6
Reinforcement Bars, Epoxy Coated	Pound	5,550
Furnishing Metal Shell Piles MS 14" X 0.312"	Foot	752
Driving Piles	Foot	752
Test Pile Metal Shells	Each	1



Notes:

1. I.F. denotes Inside Face, O.F. denotes Outside Face.
2. Coordinate notch dimensions with MSE Wall supplier.

FILE NAME = \\F:\069-0522-ABUTMENT.DGN, USER NAME = CPB, DESIGNED - CPB, REVISED - , DATE = 8/5/2014, CHECKED - BCK, REVISED - , PLOT SCALE = , DRAWN - CPB, REVISED - , PLOT DATE = , CHECKED - BCK, REVISED -

FILE NAME =	USER NAME =	DESIGNED - CPB	REVISED -
	DATE = 8/5/2014	CHECKED - BCK	REVISED -
	PLOT SCALE =	DRAWN - CPB	REVISED -
	PLOT DATE =	CHECKED - BCK	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

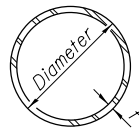
EAST ABUTMENT SECTIONS & DETAILS

SHEET NO. S2-23 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	123B-2	MORGAN	782	550
SN 069-0522		CONTRACT NO. 72B58		

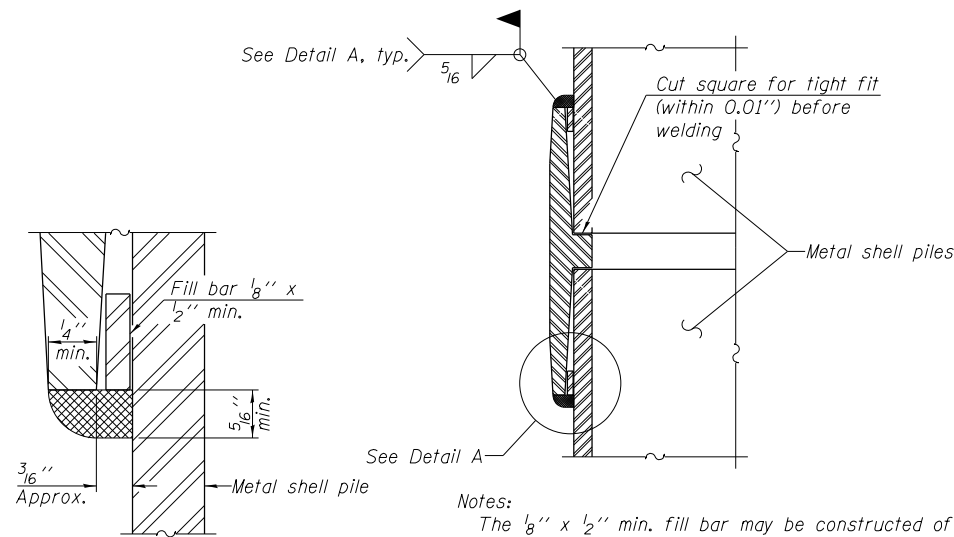
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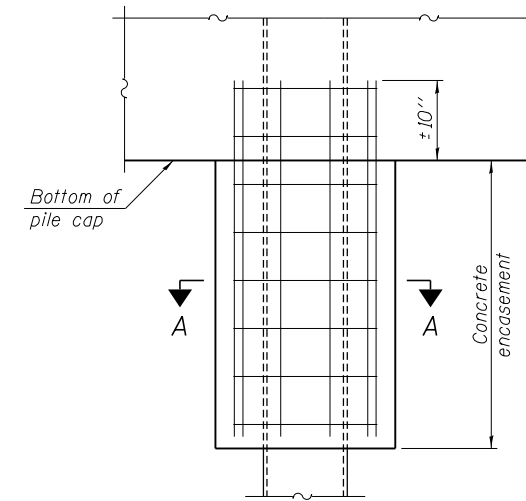
METAL SHELL PILE TABLE

Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. ³ /ft.)
PP12	0.179"	22.60	0.0274
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361

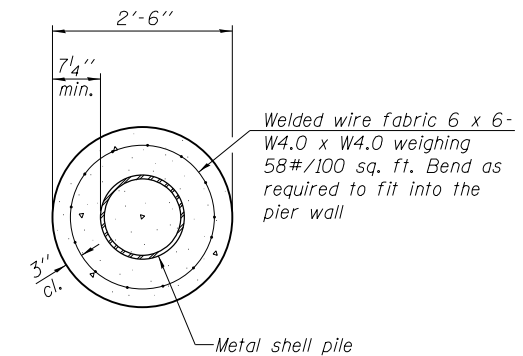


Notes:
 The $\frac{1}{8}$ " x $\frac{1}{2}$ " min. fill bar may be constructed of 2 bars with a $\frac{1}{8}$ " max. gap between them.
 Pile segments shall be driven to solid contact with splicer before welding.

WELDED COMMERCIAL SPLICE



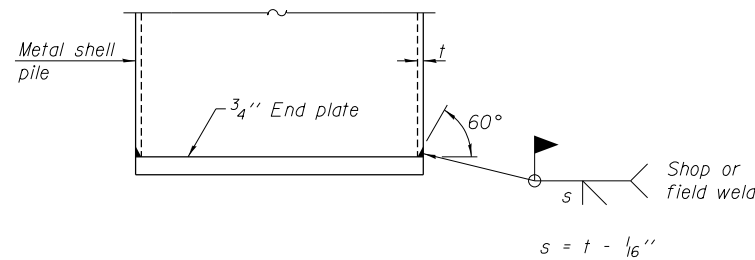
ELEVATION



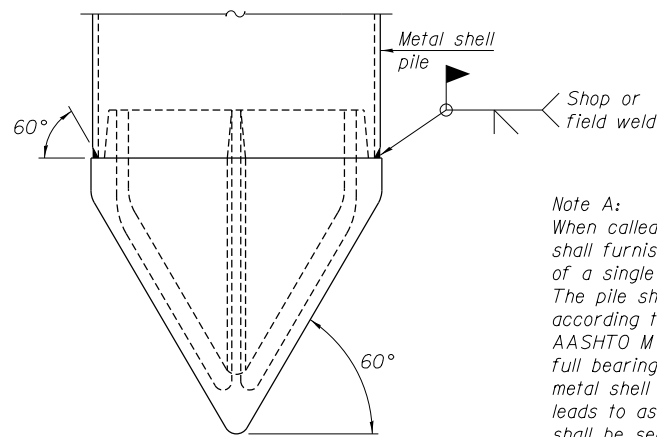
SECTION A-A

Note:
 Forms for encasement may be omitted when soil conditions permit.

CONCRETE ENCASEMENT AT PIERS



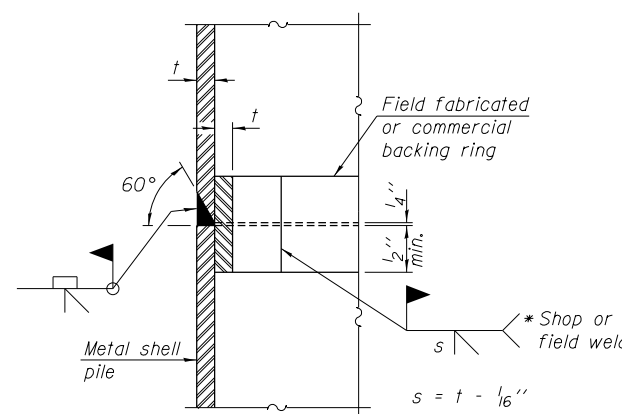
END PLATE ATTACHMENT



Note A:
 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.

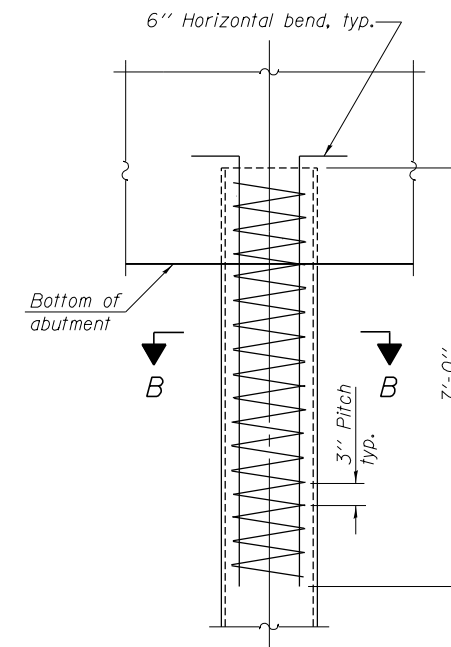
METAL SHELL PILE SHOE ATTACHMENT

(See Note A)

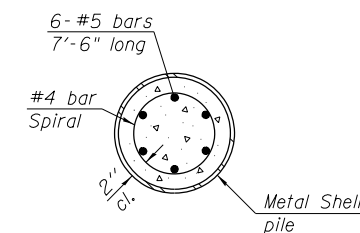


COMPLETE PENETRATION WELD SPLICE

* 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

METAL SHELL REINFORCEMENT AT ABUTMENTS

Note:
 The metal shell piles shall be according to ASTM A 252 Grade 3.

F-MS 1-27-12

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
	DATE - 8/5/2014	CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

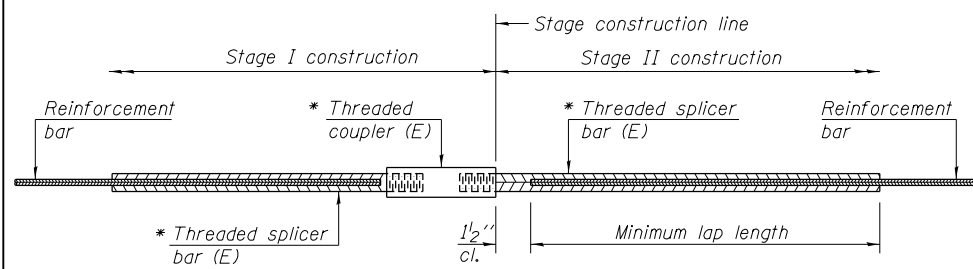
METAL SHELL PILE DETAILS

SHEET NO. S2-24 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	551
SN 069-0522		CONTRACT NO. 72B58		

ILLINOIS FED. AID PROJECT

\\FS-0044\AKM\VALU\T.D.-TRANS.07\TRDCHI\02012341-02\STRUCT\CAD\72B58\06\0522\ASHEET_06\0522-72B58-002-MISCDETAIL_SHT.DGN
 \\FS-0044\AKM\VALU\T.D.-TRANS.07\TRDCHI\02012341-02\STRUCT\CAD\72B58\06\0522\ASHEET_06\0522-72B58-002-MISCDETAIL_SHT.DGN
 \\FS-0044\AKM\VALU\T.D.-TRANS.07\TRDCHI\02012341-02\STRUCT\CAD\72B58\06\0522\ASHEET_06\0522-72B58-002-MISCDETAIL_SHT.DGN



STANDARD BAR SPLICER ASSEMBLY

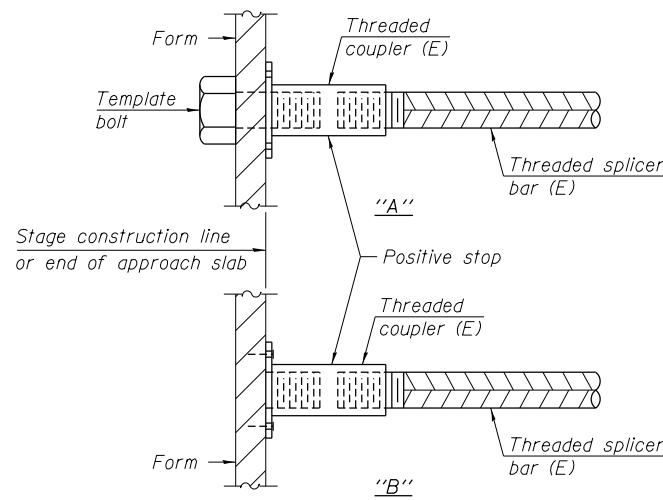
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"	6'-5"	6'-10"	7'-9"	8'-7"	9'-8"

- Table 1: Black bar, 0.8 Class C
- Table 2: Black bar, Top bar lap, 0.8 Class C
- Table 3: Epoxy bar, 0.8 Class C
- Table 4: Epoxy bar, Top bar lap, 0.8 Class C
- Table 5: Epoxy bar, Class C
- Table 6: Epoxy bar, Top bar top, Class C

Threaded splicer bar length = min. lap length + 1 1/2" + thread length

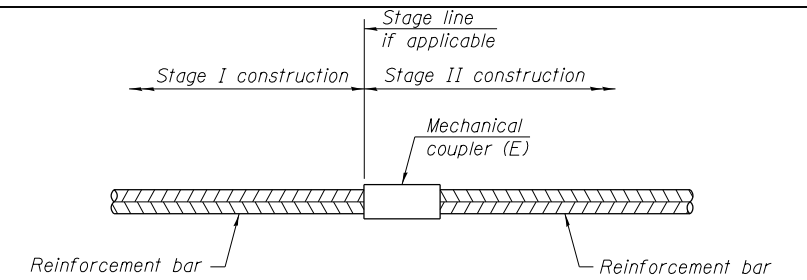
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length



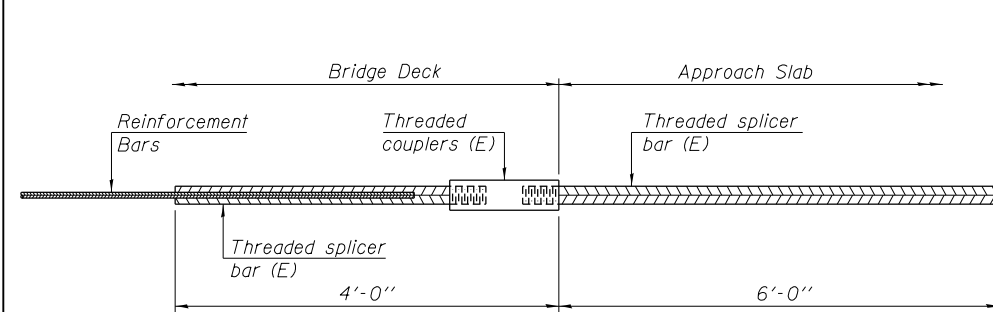
INSTALLATION AND SETTING METHODS

"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.



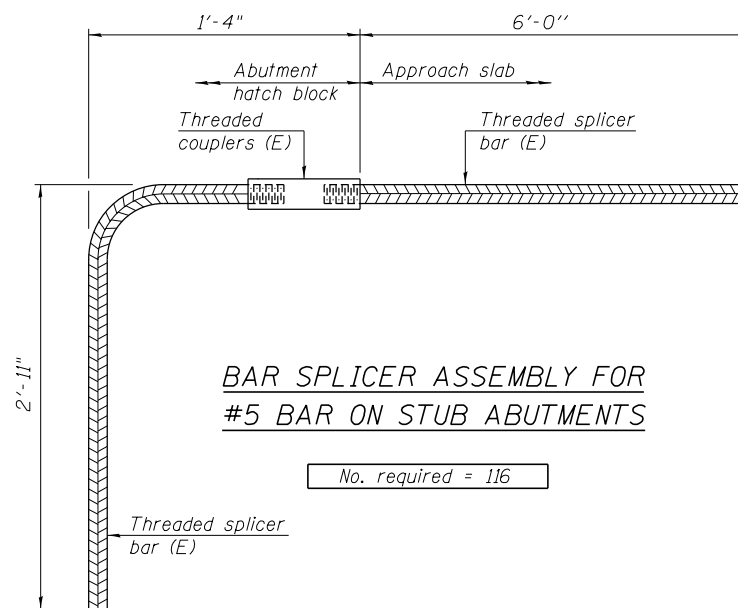
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required = 116

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.

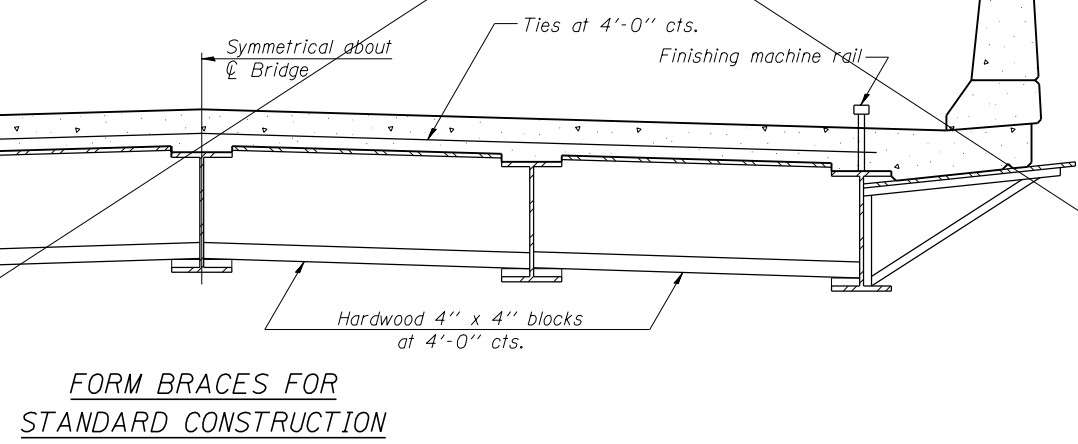
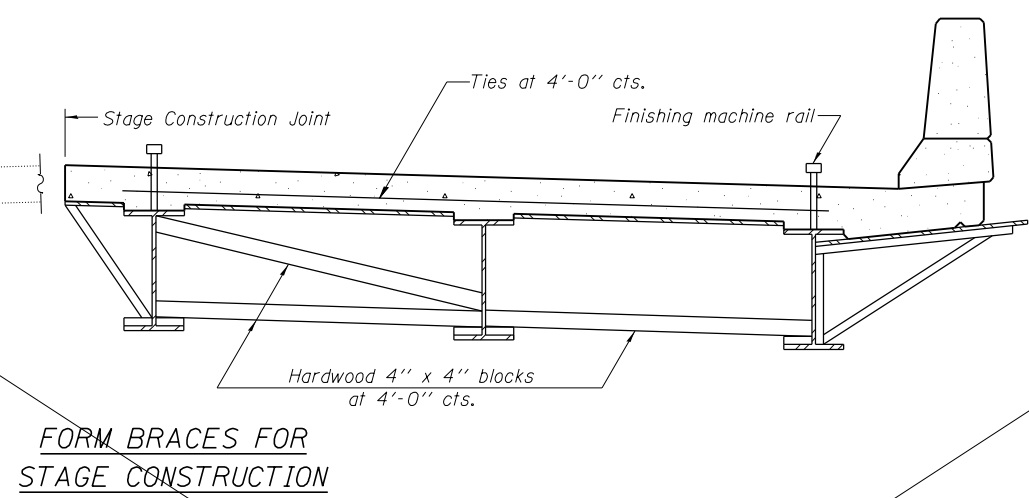
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 GKE GARZA KARHOFF ENGINEERING, LLC
 Structural Engineers
 Chicago, IL

BSD-1 1-27-12

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BAR SPLICER DETAILS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DATE = 8/5/2014	CHECKED -	REVISED -			745	123B-2	MORGAN	782	552
	PLOT SCALE =	DRAWN -	REVISED -			SN 069-0522		CONTRACT NO. 72B58		
	PLOT DATE =	CHECKED -	REVISED -			SHEET NO. S2-25 OF 28 SHEETS				

ILLINOIS FED. AID PROJECT

When cantilever forming brackets are used, the work shall be done according to Article 503.06(b) of the Standard Specifications, except as modified below and in the details shown on this sheet.
 The finishing machine rails shall be placed on the top flange of the exterior beams.
 The beams or girders, supporting cantilever forming brackets, shall be tied together at 4 foot intervals.
 For Standard construction, or Stage Construction the Hardwood bracing materials shall be placed as shown between webs of beams in each bay.



SB-1 7-1-10

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FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CANTILEVER FORMING BRACKETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DATE - 10/3/2014	CHECKED -	REVISED -			745	123B-2	MORGAN	782	553
GKE GARZA KARHOFF ENGINEERING, LLC Structural Engineers Chicago, IL	PLOT SCALE =	DRAWN -	REVISED -			SN 069-0522		CONTRACT NO. 72B58		
	PLOT DATE =	CHECKED -	REVISED -			SHEET NO. S2-26 OF 28 SHEETS		ILLINOIS FED. AID PROJECT		

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 WANGEN\3406LOPE\WANGENG.DPT 12413

BORING LOG P14-1		Page 1 of 2
wangeng@wangeng.com	WEI Job No.: 341-05-01	Datum: NAVD88
1145 N Main Street	Client: exp US Services, Inc.	Elevation: 444.60 ft
Lombard, IL 60148	Project: IL 104 over the Illinois River at Meredosia	North: 1152723.15 ft
Telephone: 630 953-9928	Location: Morgan & Pike Counties	East: 2185731.31 ft
Fax: 630 953-9938		Station: 83 + 74.65
		Offset: 20.82 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/in)	Qu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/in)	Qu (tsf)	Moisture Content (%)
	445.6	12-inch thick, black SANDY LOAM															
		-----TOPSOIL-----															
		Loose, black and brown, fine SAND	1	X	1	3	NP					11	X	11	5	NP	
	441.1	Very stiff, brown SANDY CLAY LOAM	5	X	2	2	2.00 P	11				30	X	12	7	NP	
	439.1	Loose, brown, medium SAND	10	X	3	4	NP					35	X	13	7	NP	
			15	X	4	4	NP					40	X	14	7	NP	
			20	X	5	3	NP					45	X	15	11	NP	
			25	X	6	4	NP					50	X	16	11	NP	
				X	7	3	NP			402.6	Medium dense to dense, brown, coarse SAND, trace to little gravel						
				X	8	3	NP						X	17	11	NP	
				X	9	4	NP						X	18	9	NP	
				X	10	5	NP						X	19	8	NP	
				X	11	6	NP						X	20	19	NP	
				X	12	6	NP						X	21	10	NP	

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	06-21-2012	Complete Drilling	06-21-2012	While Drilling	▽	20.00 ft	
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 TMR	At Completion of Drilling	▽	NA	
Driller	R&N	Logger	N. Boddy	Checked by	M. Snider	NA	
Drilling Method	2.25 SSA, Mud Rotary from 10 feet; Boring backfilled upon completion			Depth to Water	▽	NA	
				The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

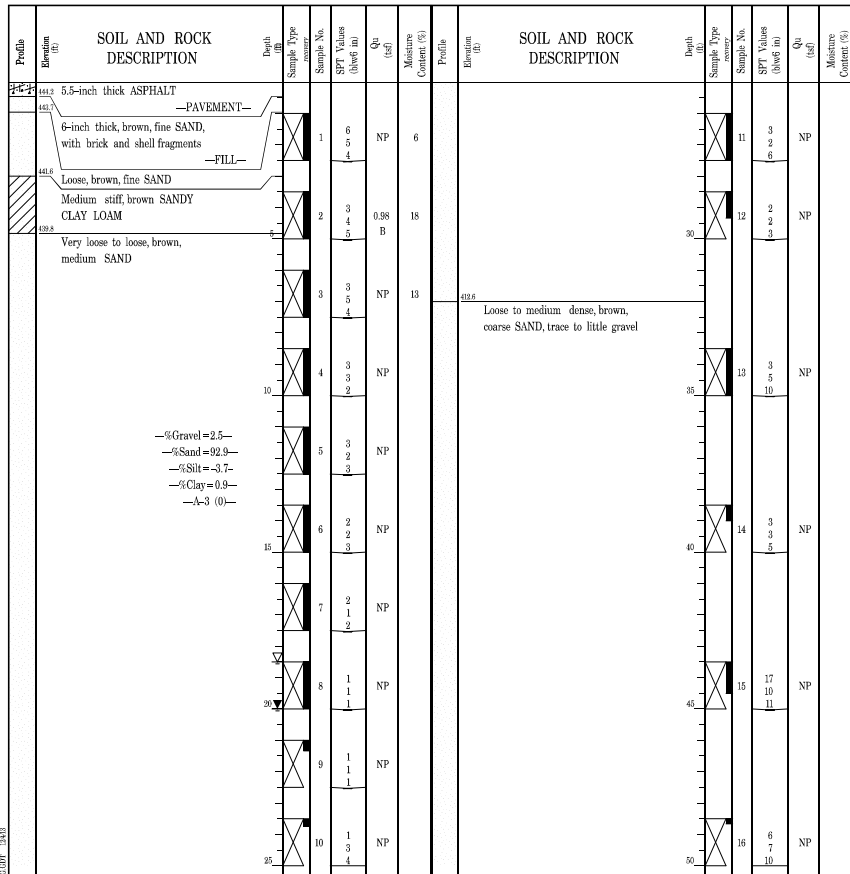
BORING LOG P14-1		Page 2 of 2
wangeng@wangeng.com	WEI Job No.: 341-05-01	Datum: NAVD88
1145 N Main Street	Client: exp US Services, Inc.	Elevation: 444.60 ft
Lombard, IL 60148	Project: IL 104 over the Illinois River at Meredosia	North: 1152723.15 ft
Telephone: 630 953-9928	Location: Morgan & Pike Counties	East: 2185731.31 ft
Fax: 630 953-9938		Station: 83 + 74.65
		Offset: 20.82 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/in)	Qu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/in)	Qu (tsf)	Moisture Content (%)
	387.6	Medium dense, brown, coarse SAND, trace gravel	55	X	17	11	NP					80	X	22	10	NP	
			60	X	18	8	NP					85	X	23	12	NP	
			65	X	19	9	NP					90	X	24	21	NP	
			70	X	20	19	NP					95	X	25	20	NP	
	377.6	Dense, brown, fine SAND															
				X	21	10	NP						X	26	31	NP	
	368.1	-----WEATHERED BEDROCK-----															
	367.6	-----BEDROCK-----															
	366.6	Boring terminated at 98.00 ft															

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	06-21-2012	Complete Drilling	06-21-2012	While Drilling	▽	20.00 ft	
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 TMR	At Completion of Drilling	▽	NA	
Driller	R&N	Logger	N. Boddy	Checked by	M. Snider	NA	
Drilling Method	2.25 SSA, Mud Rotary from 10 feet; Boring backfilled upon completion			Depth to Water	▽	NA	
				The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

BORING LOG EA-01 Page 1 of 3

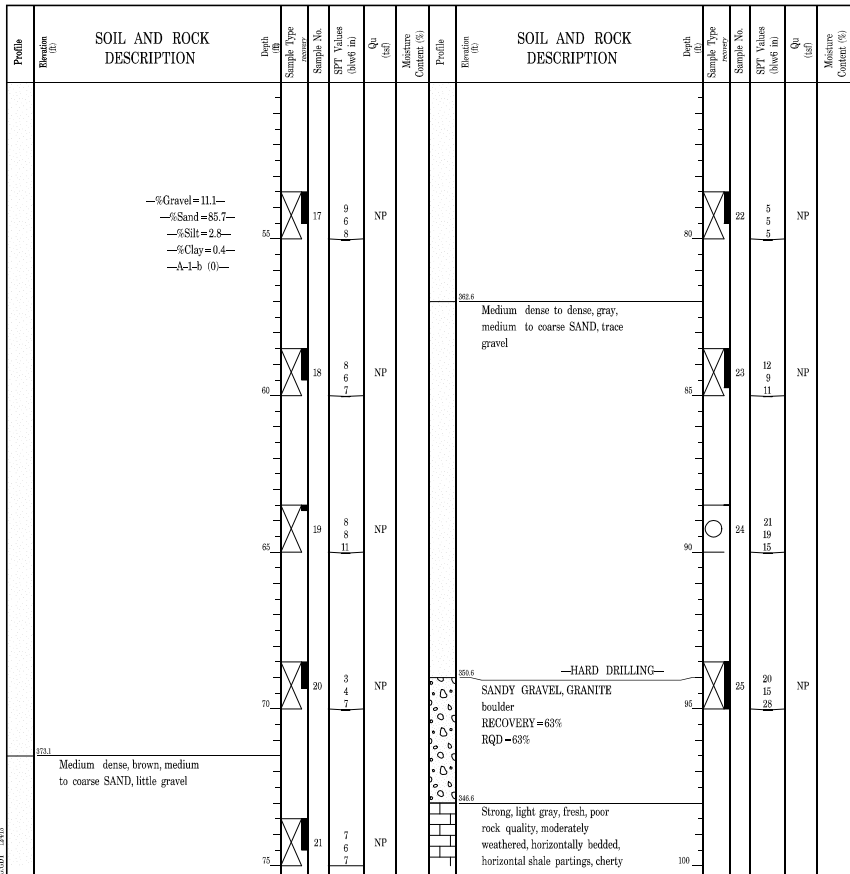
wangeng@wangeng.com WEI Job No.: 341-05-01 Datum: NAVD88
 1145 N Main Street Elevation: 444.61 ft
 Lombard, IL 60148 Client: exp US Services, Inc. North: 1152672.46 ft
 Telephone: 630 953-8928 Project: IL 104 over the Illinois River at Meredosia East: 2185779.99 ft
 Fax: 630 953-8938 Location: Morgan & Pike Counties Station: 84 + 23.79
 Offset: 29.45 RT



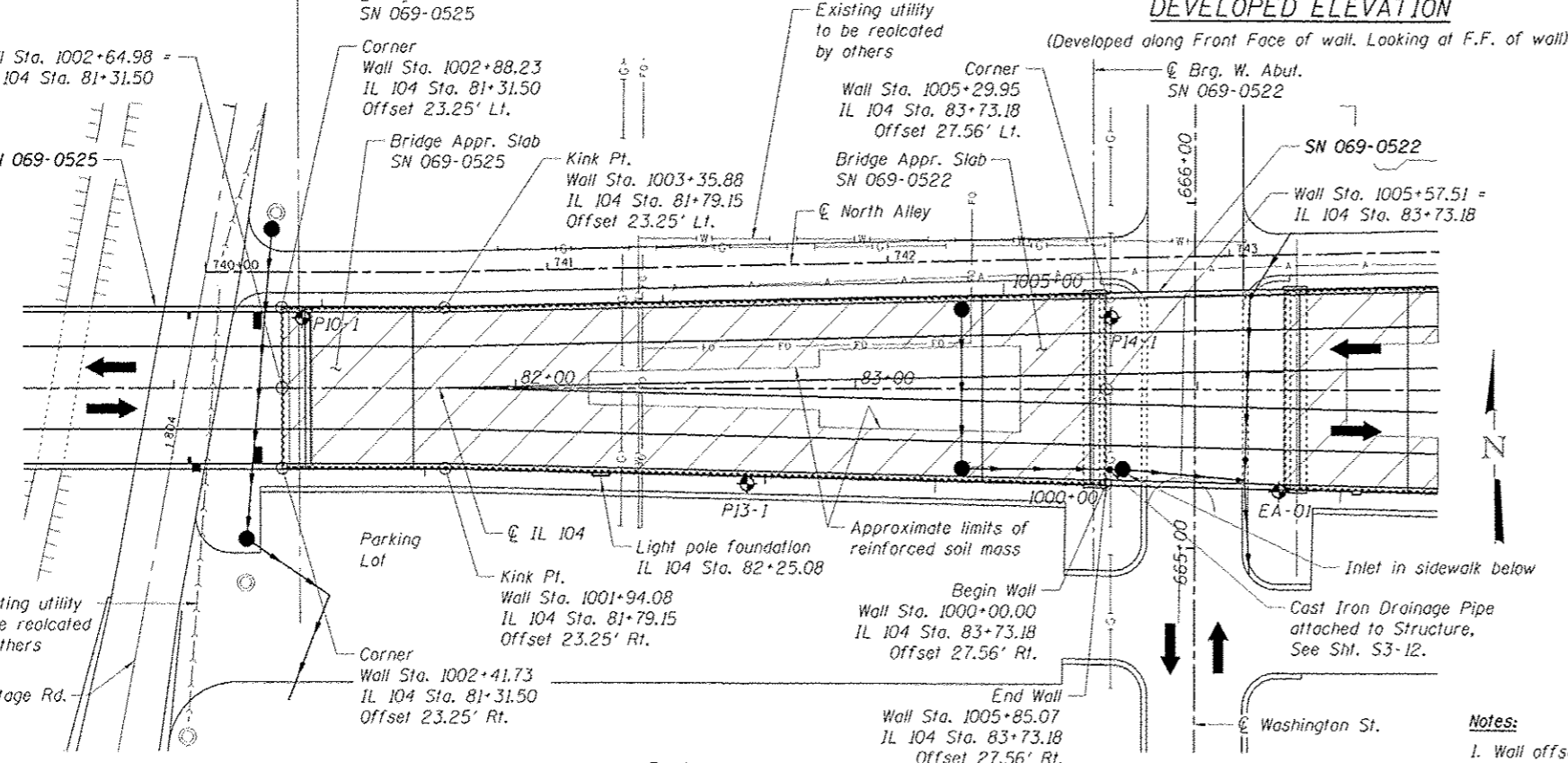
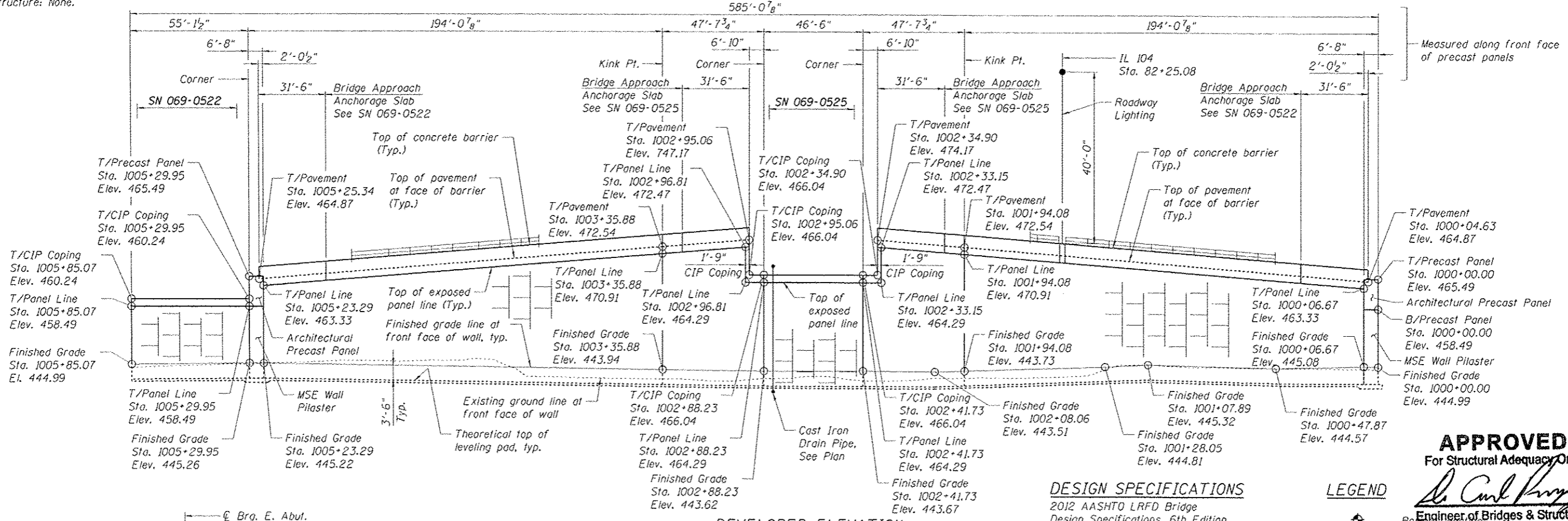
GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	05-30-2012	Complete Drilling	09-27-2012
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 TMR
Driller	R&N	Logger	B. Wilson
Checked by	M. Snider	Drilling Method	3.25 IDA HSA; Boring backfilled upon completion.
Depth to Water	18.50 ft	At Completion of Drilling	20.00 ft
Time After Drilling	NA	Time After Drilling	NA
Depth to Water	NA	Depth to Water	NA

BORING LOG EA-01 Page 2 of 3

wangeng@wangeng.com WEI Job No.: 341-05-01 Datum: NAVD88
 1145 N Main Street Elevation: 444.61 ft
 Lombard, IL 60148 Client: exp US Services, Inc. North: 1152672.46 ft
 Telephone: 630 953-8928 Project: IL 104 over the Illinois River at Meredosia East: 2185779.99 ft
 Fax: 630 953-8938 Location: Morgan & Pike Counties Station: 84 + 23.79
 Offset: 29.45 RT



Benchmark: WW-5, Chiseled "□" top of curb in SE quadrant of junction of IL 104 and Washington Street, Sta. 84+22.20, 306.90' Rt., El. 443.67.
 Existing Structure: None.



DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition

DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)

PRECAST UNITS

$f'_c = 4,500$ psi (Precast Panels)

LEGEND

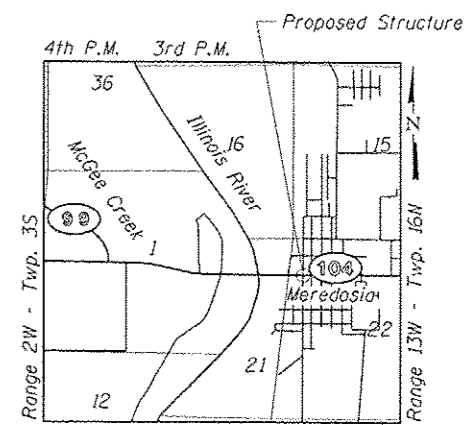
- Existing Location
 - Proposed Catch Basin / Inlet
 - W— Existing underground Water Line
 - G— Existing underground Gas Line*
 - S— Existing underground Sanitary Sewer
 - P— Proposed Storm Sewer
 - FO— Existing Fiber Optic Line*
 - A— Existing Aerial Line*
- * See Note 3

APPROVED
 For Structural Adequacy Only

De Carl Perry
 Engineer of Bridges & Structures



Brently
 Date: 8/1/2014
 Expires: 11/30/2014



LOCATION SKETCH

GENERAL PLAN & ELEVATION
IL 104 RETAINING WALL
 F.A.P. RTE. 745 - SEC. 123B-2
 MORGAN COUNTY
 STA. 81+31.50 TO STA. 83+73.18
 STRUCTURE NO. 069-7900

- Notes:**
- Wall offsets are measured from \odot IL 104 to the front face of precast panel, unless noted otherwise.
 - Top of Pavement elevations are given to the inside face of parapet.
 - Existing utilities to be removed or relocated. See Special Provision for Status of Utilities.

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	556
SN 069-7900		CONTRACT NO. 72B58		

SHEET NO. S3-1 OF 15 SHEETS

GKE GARZA KARTHOFF ENGINEERING, LLC
 Structural Engineers
 Chicago, IL

DESIGNED - CPB	REVISED -
CHECKED - BCK	REVISED -
DRAWN - MET	REVISED -
CHECKED - BCK	REVISED -

FILE NAME: \\s01-004\lan\user\l... DATE: 8/5/2014 PLOT SCALE: PLOT DATE:

GENERAL NOTES

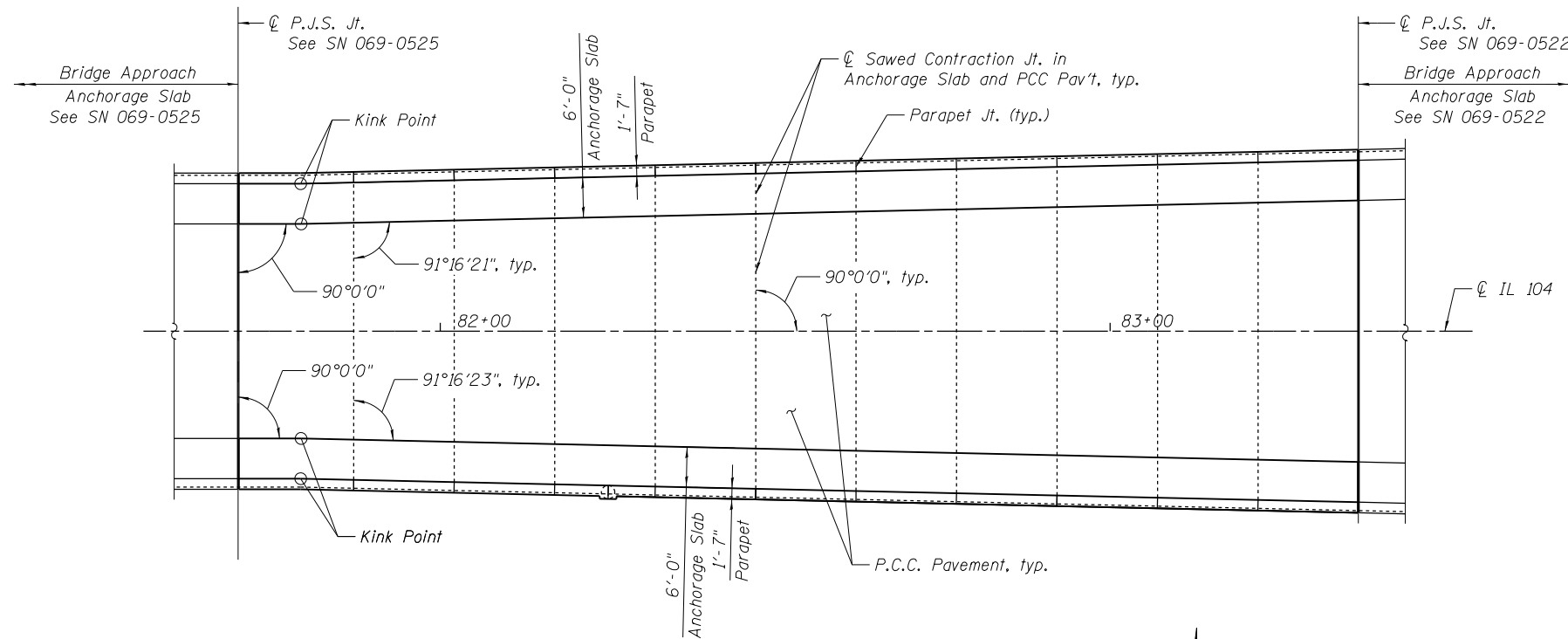
1. Reinforcement bars designated (E) shall be epoxy coated.
2. Dimensions are measured along front face of Wall Panels, unless noted otherwise.
3. For locations of Catch Basins & Inlets, see Drainage Plans.

INDEX OF SHEETS

- S3-1 General Plan & Elevation
- S3-2 General Data, Index of Sheets & Bill of Material
- S3-3 Typical Sections & Details
- S3-4 Anchorage Slab, Plan & Elevation, 1 of 2
- S3-5 Anchorage Slab, Plan & Elevation, 2 of 2
- S3-6 Coping Details, East Abutment of SN 069-0525
- S3-7 Coping Details, West Abutment of SN 069-0522
- S3-8 Anchorage Slab Details, 1 of 2
- S3-9 Anchorage Slab Details, 2 of 2
- S3-10 Precast Pilaster Details
- S3-11 Parapet Railing
- S3-12 Drainage System Details
- S3-13 Soil Boring Logs, 1 of 3
- S3-14 Soil Boring Logs, 2 of 3
- S3-15 Soil Boring Logs, 3 of 3

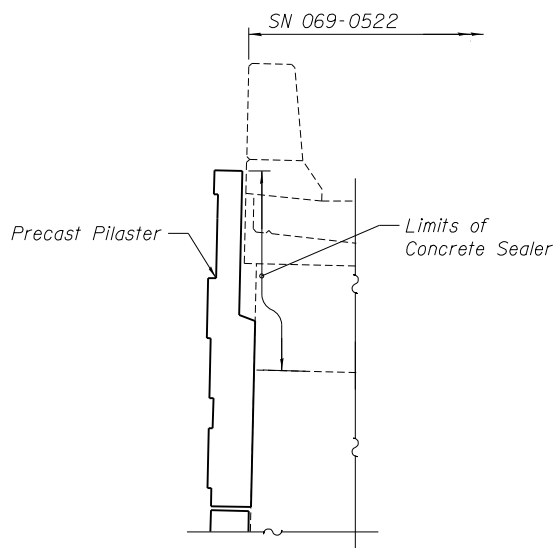
TOTAL BILL OF MATERIAL

Item	Unit	Total
Structure Excavation	Cu. Yd.	841
Concrete Superstructure	Cu. Yd.	168.8
Protective Coat	Sq. Yd.	370
Reinforcement Bars, Epoxy Coated	Pound	23,720
Parapet Railing	Foot	335
Concrete Sealer	Sq. Ft.	67.7
Mechanically Stabilized Earth Retaining Wall	Sq. Ft.	14,922
Architectural Precast Concrete Panel	Each	2

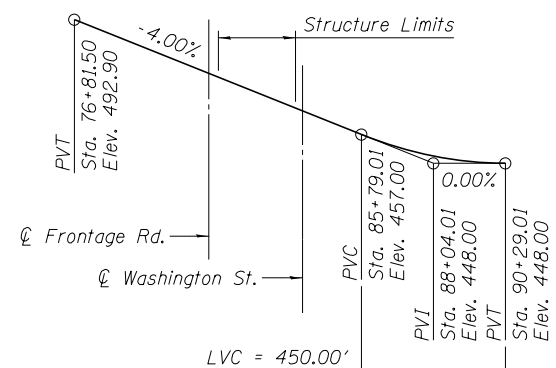


PAVEMENT AND ANCHORAGE SLAB JOINTING PLAN

Note: Align sawed joints with joints in parapets.
See Anchorage Slab plans for parapet jt. spacing.

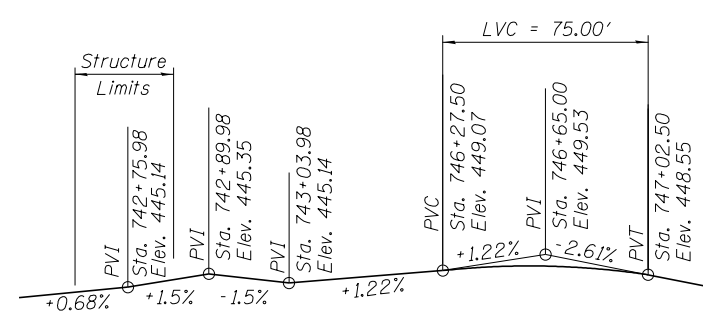


LIMITS OF CONCRETE SEALER



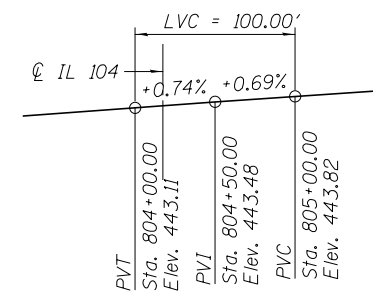
PROFILE GRADE IL 104

(along CL Alley)



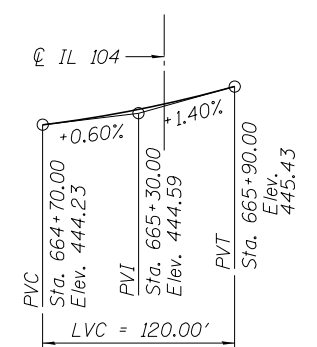
PROFILE GRADE NORTH ALLEY

(along CL Alley)



PROFILE GRADE FRONTAGE RD.

(along CL Roadway)



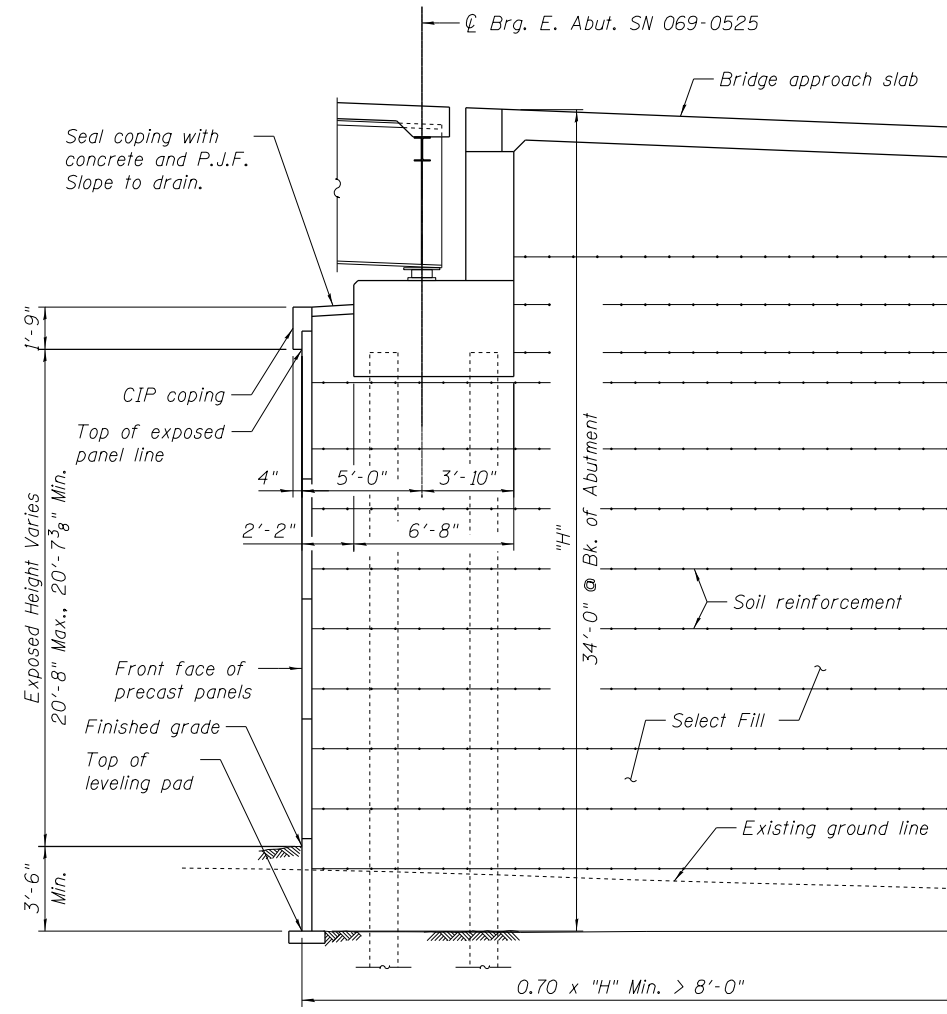
PROFILE GRADE WASHINGTON ST.

(along CL Roadway)

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 DATE = 10/3/2014
 PLOT SCALE =
 PLOT DATE =
 DESIGNED - CPB
 CHECKED - BCK
 DRAWN - MET
 CHECKED - BCK
 REVISED -
 REVISED -
 REVISED -
 REVISED -
 STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 GENERAL DATA, INDEX OF SHEETS
 & BILL OF MATERIAL
 SHEET NO. S3-2 OF 15 SHEETS
 F.A.P. R.T.E. = 745
 SECTION = 123B-2
 COUNTY = MORGAN
 TOTAL SHEETS = 782
 SHEET NO. = 557
 CONTRACT NO. = 72B58
 ILLINOIS FED. AID PROJECT

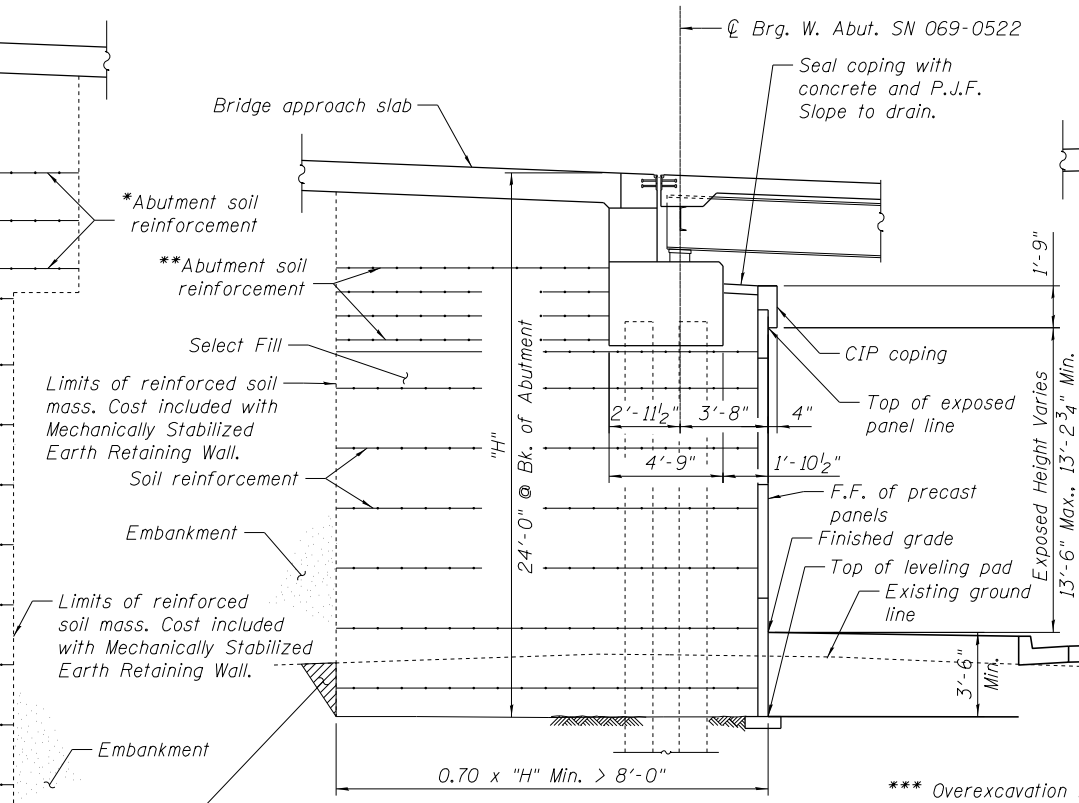
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	PLOT SCALE =	DRAWN - MET	REVISED -			SN 069-7900		CONTRACT NO. 72B58			
	PLOT DATE =	CHECKED - BCK	REVISED -			ILLINOIS FED. AID PROJECT					

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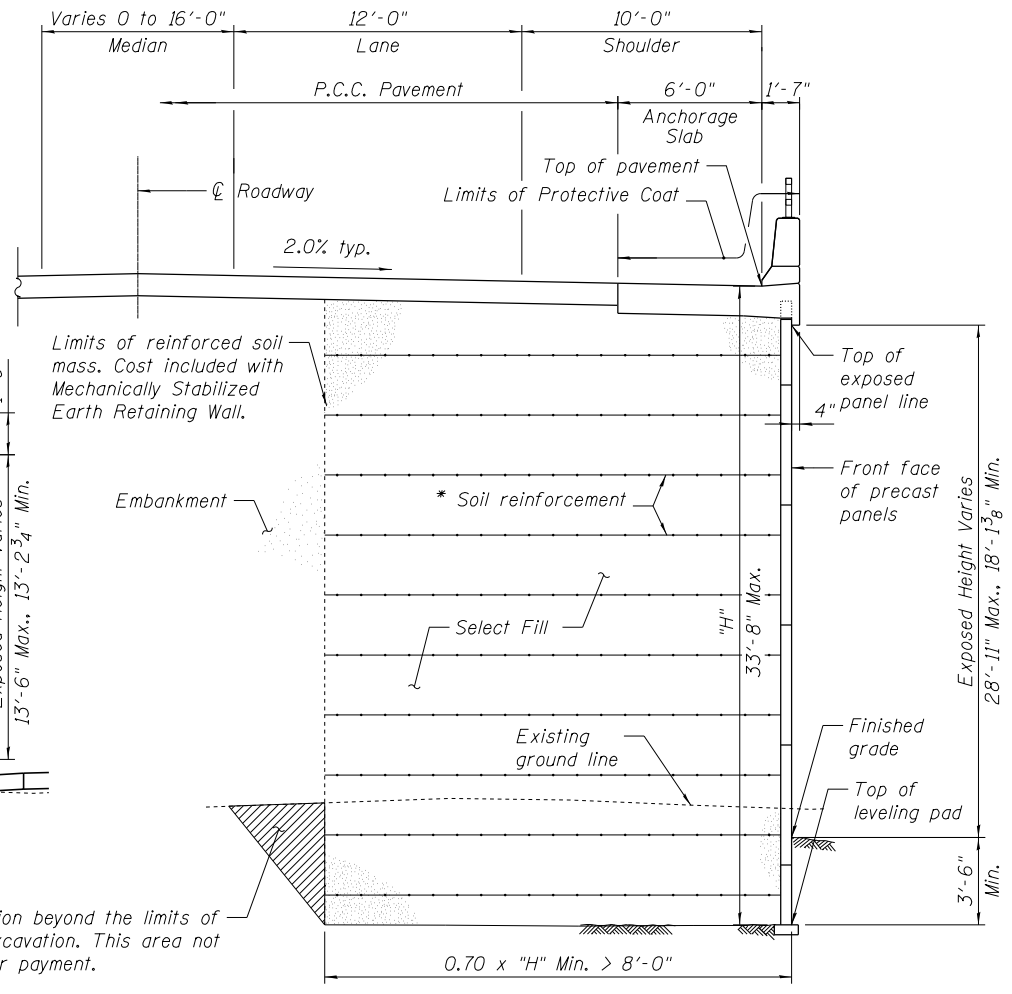
**SECTION THRU ABUTMENT
AT FRONTAGE ROAD**
(Looking North)

* The M.S.E. wall supplier shall design the abutment soil reinforcement to resist a horizontal force of 4.0 kips/ft. of abutment.



**SECTION THRU ABUTMENT
AT WASHINGTON STREET**
(Looking North)

** The M.S.E. wall supplier shall design the abutment soil reinforcement to resist a horizontal force of 2.0 kips/ft. of abutment.



TYPICAL WALL SECTION

* The M.S.E. wall supplier's internal stability design shall account for the anchorage slab's bearing pressure surcharge of 1.0 ksf and horizontal sliding force of 0.5 kips/ft. of wall.

*** Backfill overexcavation with same material as used for select fill. Cost included with Mechanically Stabilized Earth Retaining Wall.

FILE NAME =	USER NAME =	DESIGNED - CPB	REVISED -
	DATE - 8/5/2014	CHECKED - BCK	REVISED -
	PLOT SCALE =	DRAWN - MET	REVISED -
	PLOT DATE =	CHECKED - BCK	REVISED -

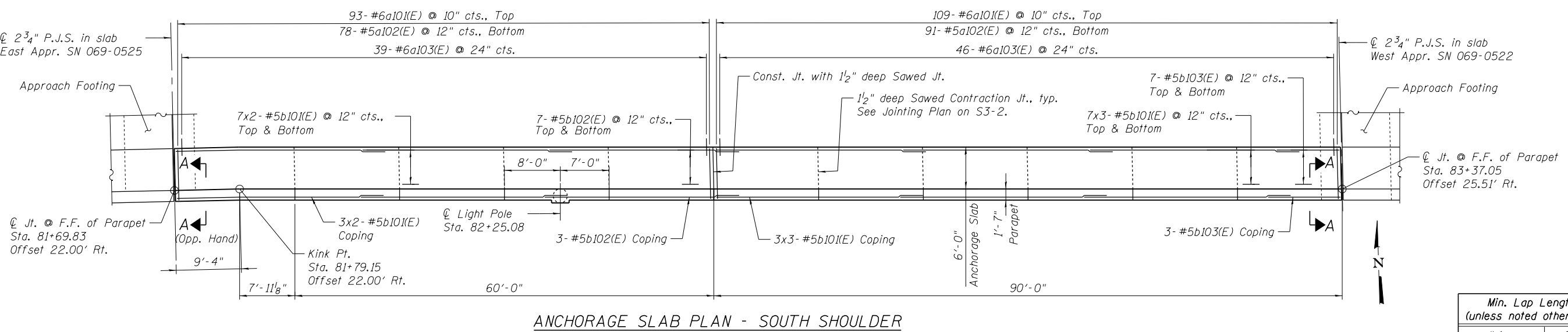
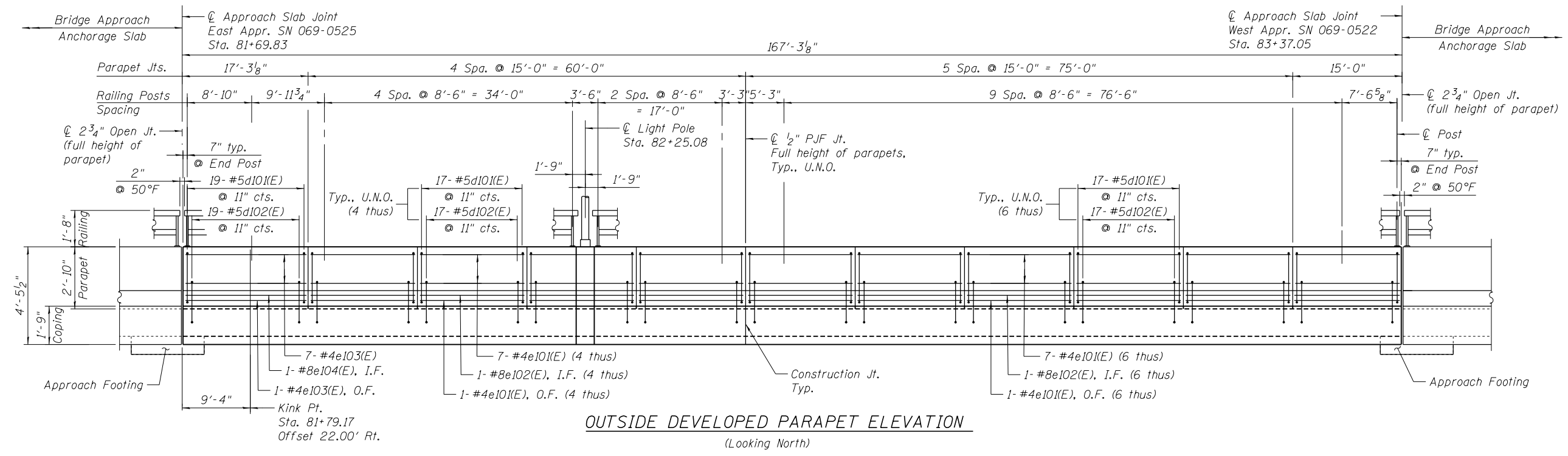
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

TYPICAL SECTIONS & DETAILS

SHEET NO. S3-3 OF 15 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	558
SN 069-7900		CONTRACT NO. 72B58		

ILLINOIS FED. AID PROJECT



Min. Lap Length (unless noted otherwise)	
#4	2'-0"
#5	3'-3"
#8	5'-2"

- Notes:**
1. Stations and offsets are given to the inside face of parapet and are measured from CL IL 104 .
 2. Dimensions are along inside face of parapet.
 3. Bars indicated thus 8x2-#5 etc. indicates 8 lines of bars with 2 lengths per line.
 4. Reinforcement shall be spaced as shown in Typical Section thru Anchorage Slab on Sht. S3-8.
 5. For Light Pole details, Bar list and Bill of Material, see Sht. S3-9.
 6. For Section A-A and slab & parapet jt. details see Sht. S3-8

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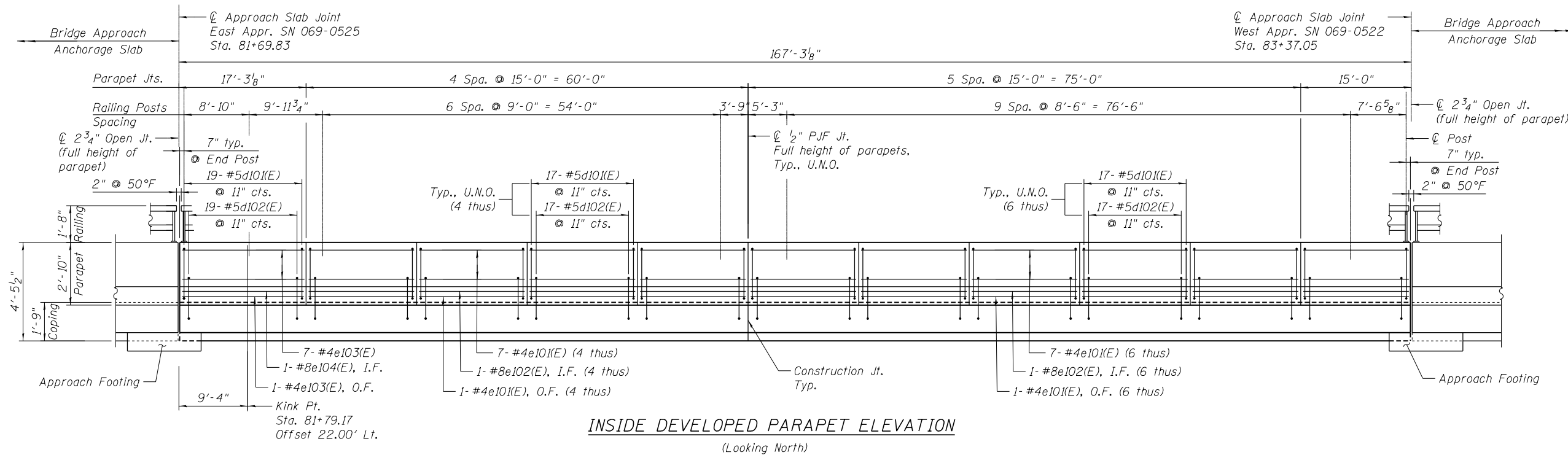
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ANCHORAGE SLAB
PLAN & ELEVATION
1 OF 2

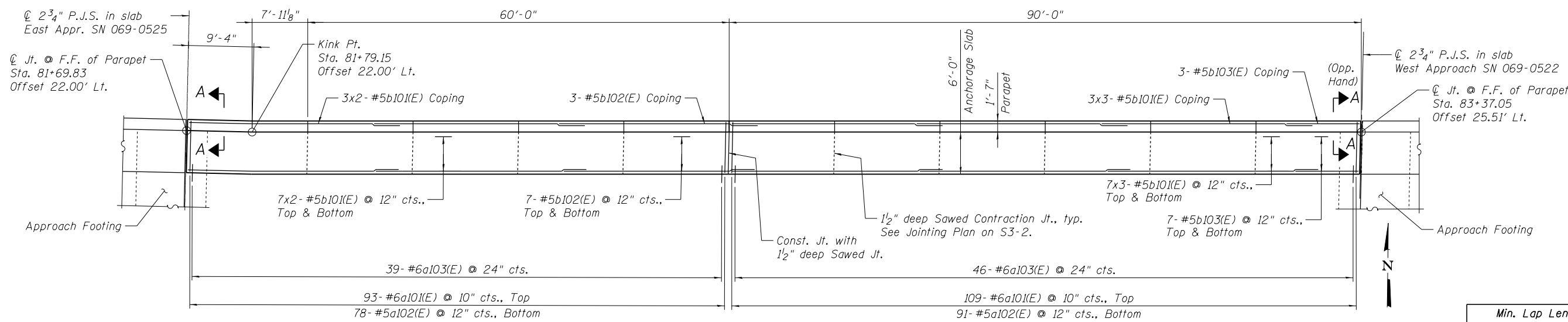
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	559
SN 069-7900		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				



SHEET NO. S3-4 OF 15 SHEETS



INSIDE DEVELOPED PARAPET ELEVATION
(Looking North)



ANCHORAGE SLAB PLAN - NORTH SHOULDER

Min. Lap Length (unless noted otherwise)	
#4	2'-0"
#5	3'-3"
#8	5'-2"

- Notes:**
1. Stations and offsets are given to the inside face of parapet and are measured from CL IL 104 .
 2. Dimensions are along inside face of parapet.
 3. Bars indicated thus 8x2- #5 etc. indicates 8 lines of bars with 2 lengths per line.
 4. Reinforcement shall be spaced as shown in Typical Section thru Anchorage Slab on Sht. S3-8.
 5. For Bar list and Bill of Material, see Sht. S3-9.
 6. For Section A-A & slab & parapet jt. details see Sht. S3-8.

FILE NAME = ... USER NAME = ... DESIGNED - CPB ... REVISIONS ... DATE - 10/3/2014 ... CHECKED - BCK ... REVISED - ... DRAWN - MET ... REVISED - ... CHECKED - BCK ... REVISED - ...

GKE GARZA KARHOFF ENGINEERING, LLC
Structural Engineers
Chicago, IL

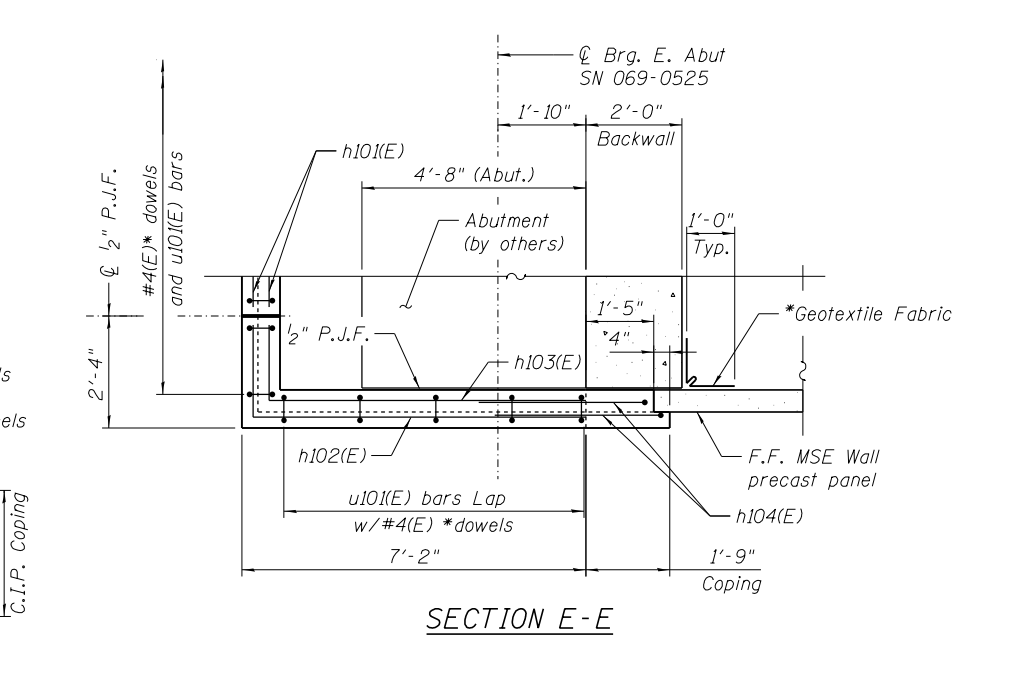
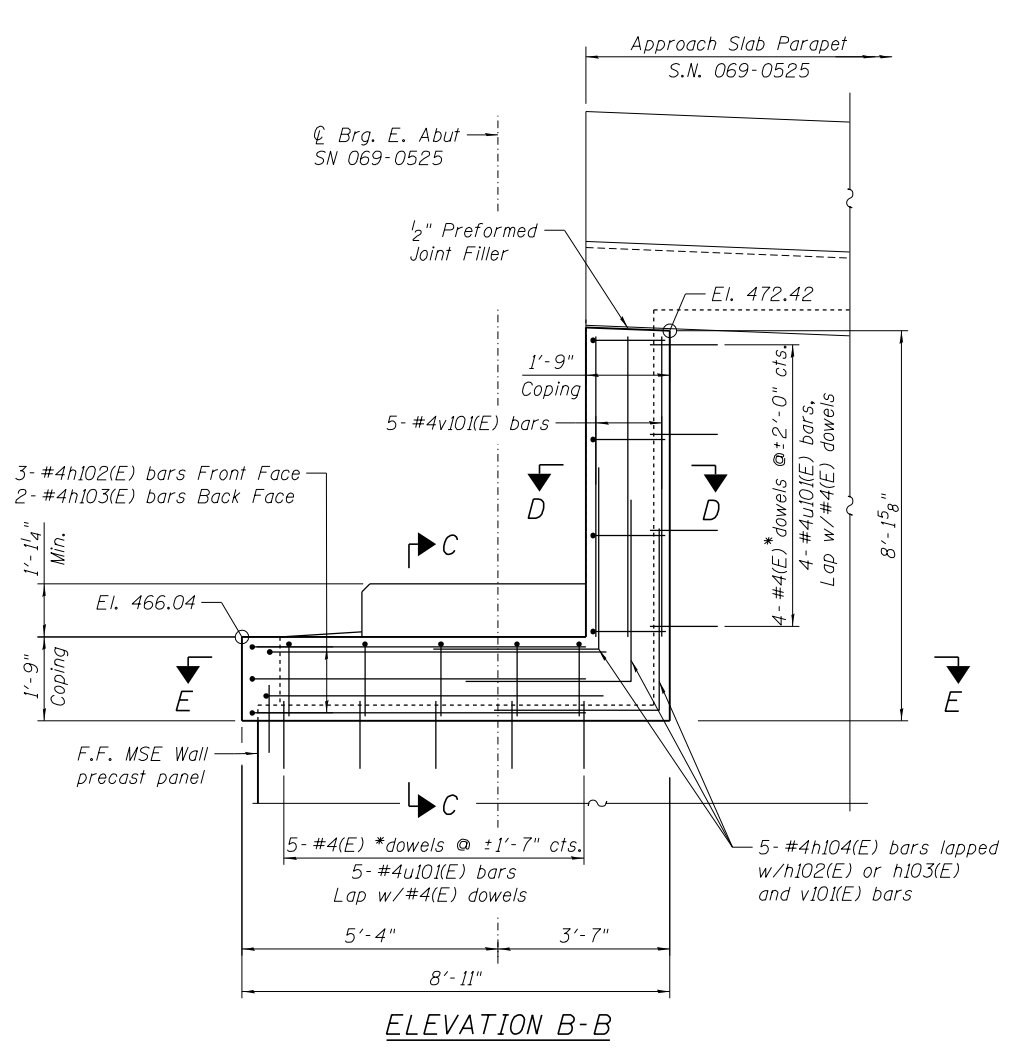
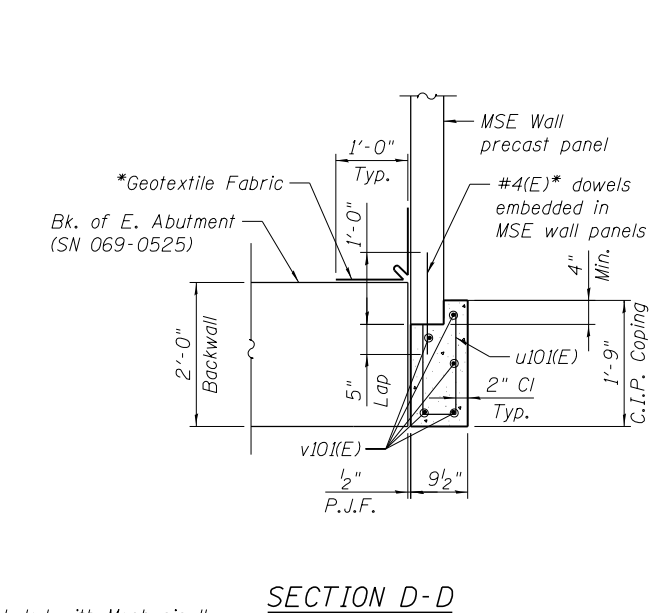
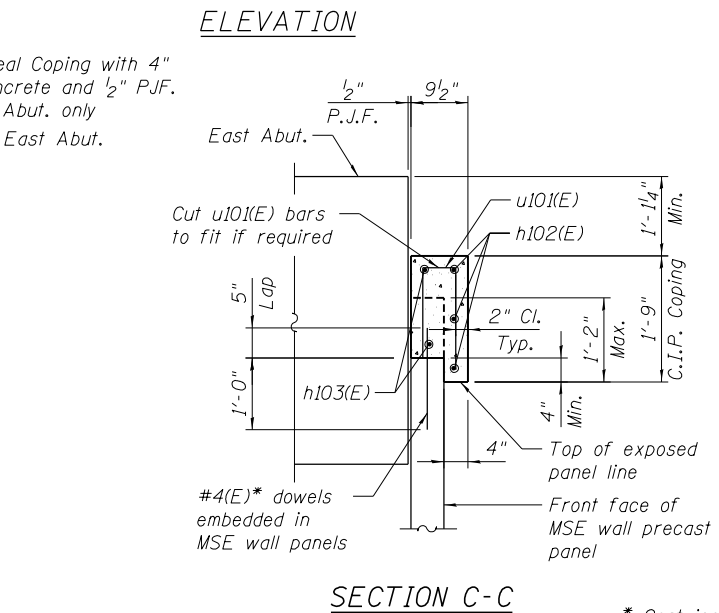
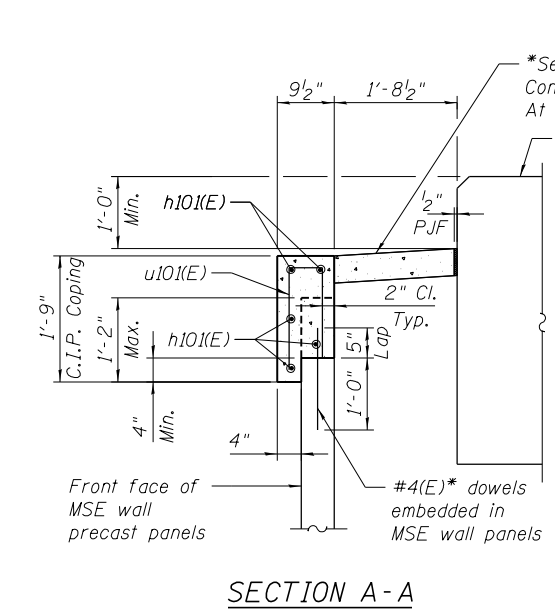
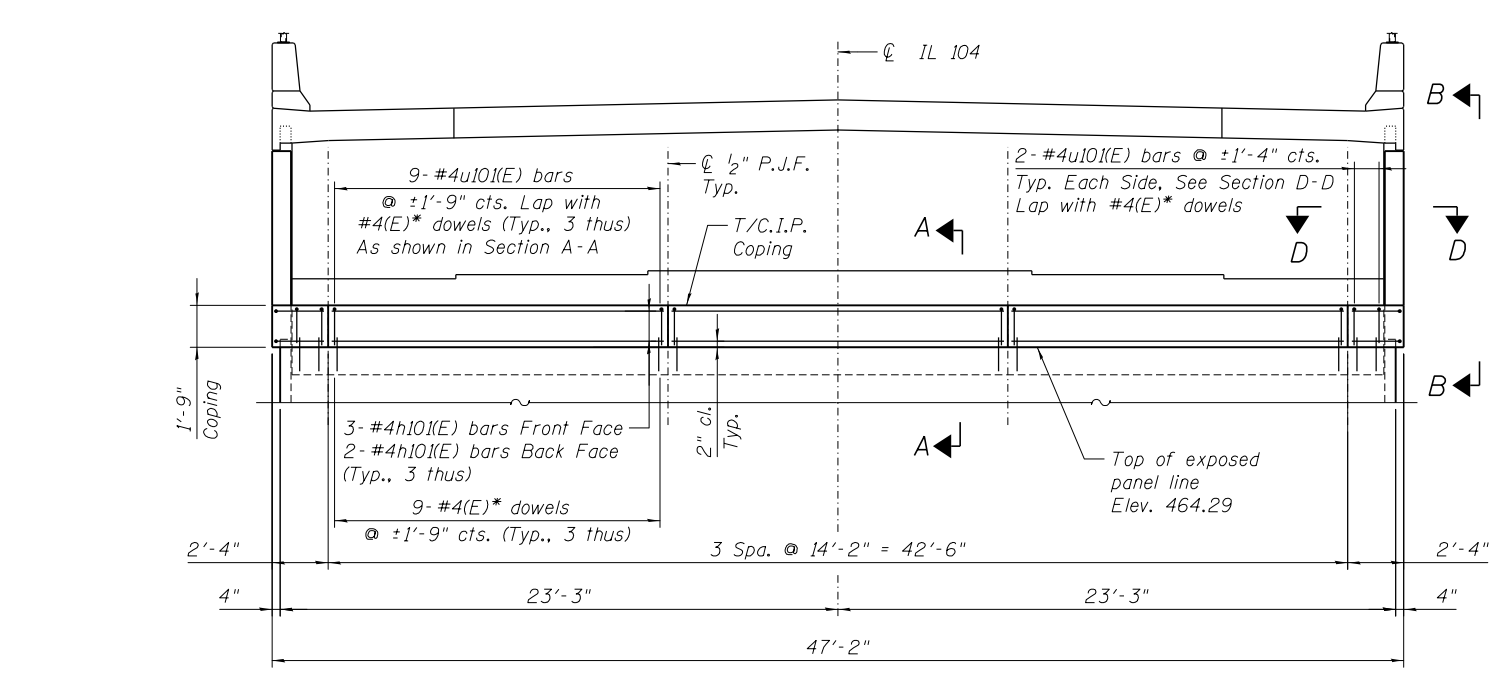
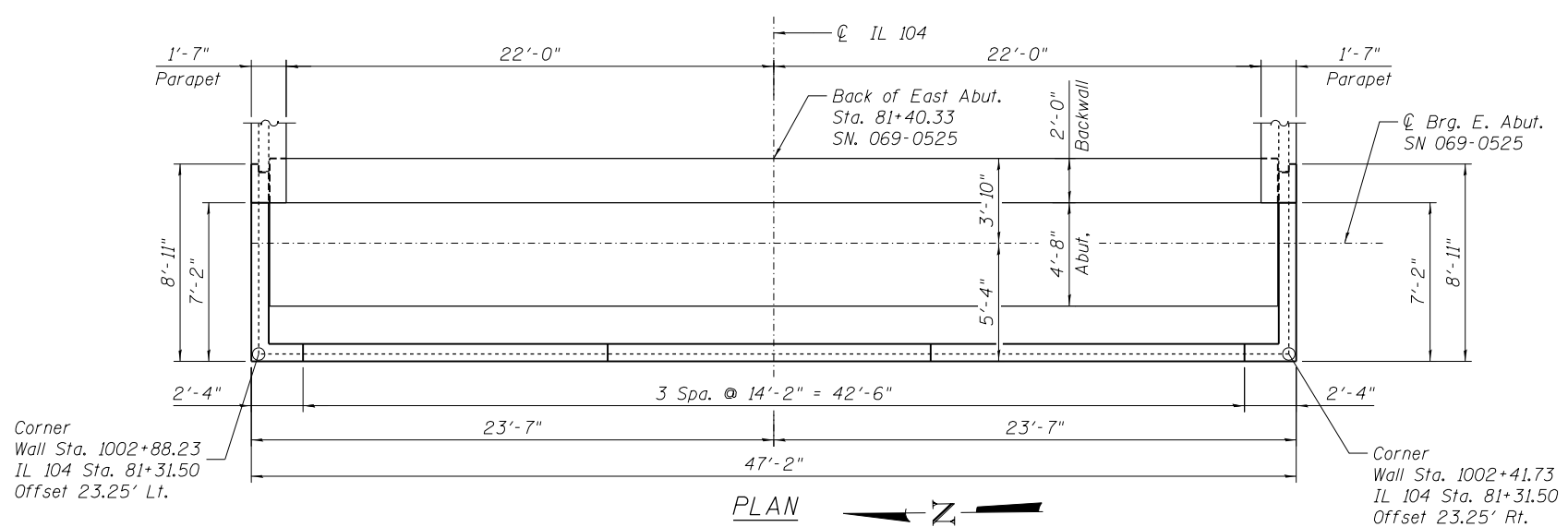
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**ANCHORAGE SLAB
PLAN & ELEVATION
2 OF 2**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	560
SN 069-7900		CONTRACT NO. 72B58		

SHEET NO. S3-5 OF 15 SHEETS

ILLINOIS FED. AID PROJECT

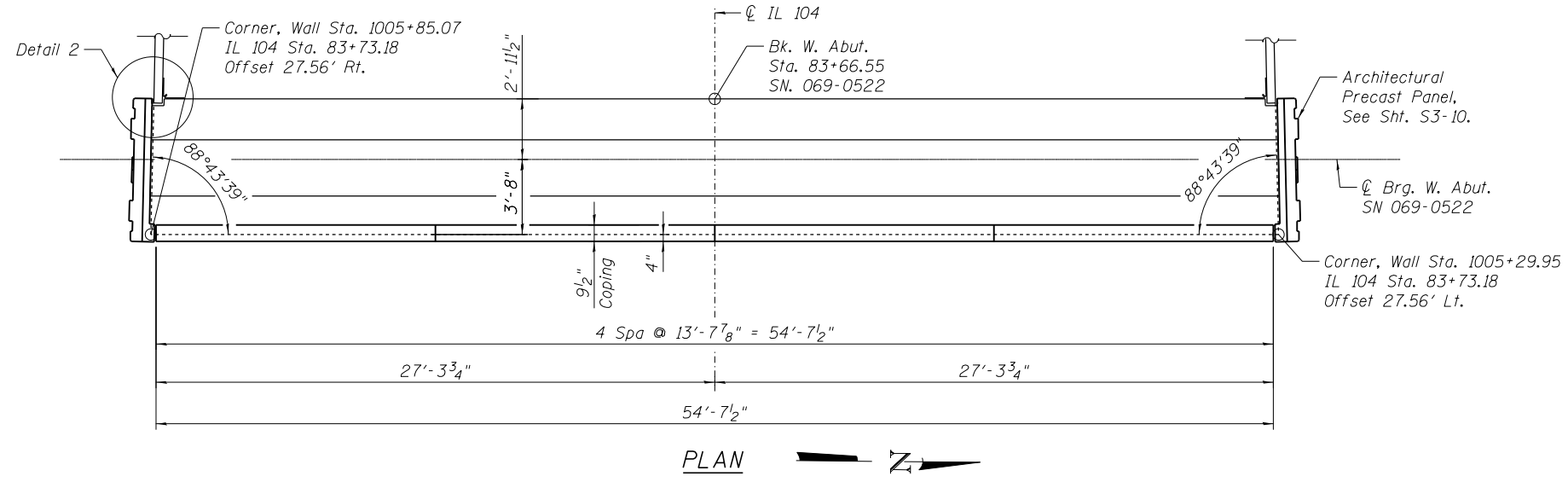


- Notes:**
- For Bar List and Bill of Material, see Sht. S3-9.
 - All edges shall have a 3/4" chamfer unless noted otherwise.

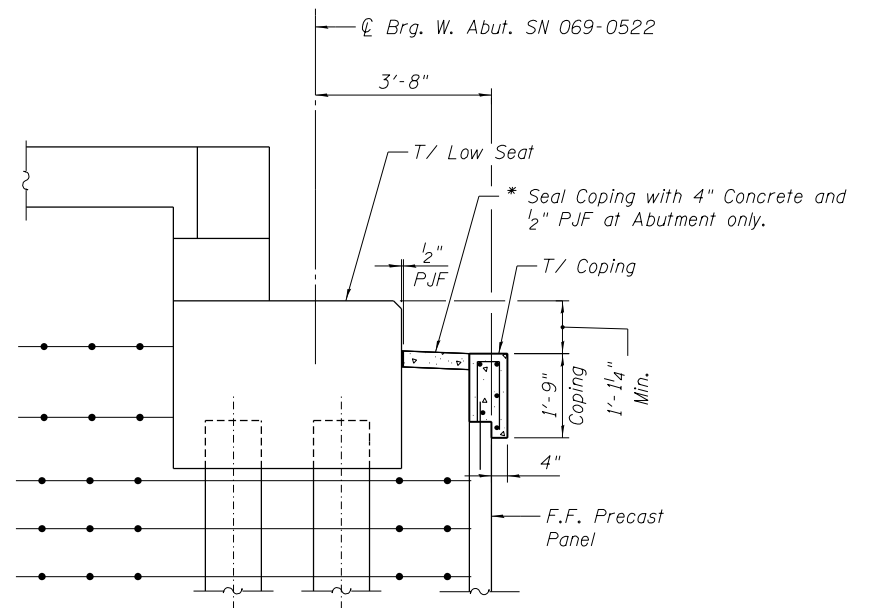
* Cost included with Mechanically Stabilized Earth Retaining Wall

FILE NAME = ... USER NAME = ... DESIGNED - CPB ... REVISED - ...
 DATE - 8/5/2014 ... CHECKED - BCK ... REVISED - ...
 PLOT SCALE = ... DRAWN - MET ... REVISED - ...
 PLOT DATE = ... CHECKED - BCK ... REVISED - ...

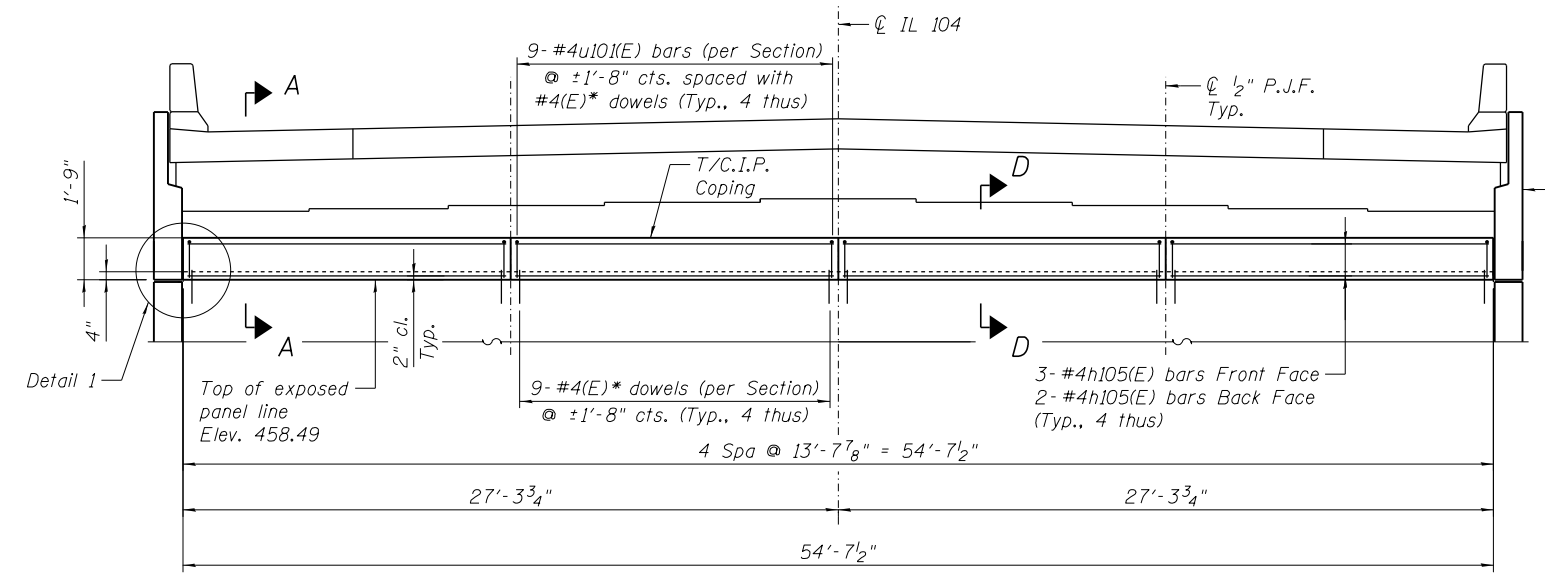
GKE GARZA KARHOFF ENGINEERING, LLC Structural Engineers Chicago, IL	USER NAME = DATE = 8/5/2014 PLOT SCALE = PLOT DATE =	DESIGNED - CPB CHECKED - BCK DRAWN - MET CHECKED - BCK	REVISED - REVISED - REVISED - REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	COPING DETAILS EAST ABUTMENT OF SN 069-0525	F.A.P. R.T.E. = 745 SECTION = 123B-2 COUNTY = MORGAN TOTAL SHEETS = 782 SHEET NO. = 561	CONTRACT NO. 72B58
	SHEET NO. S3-6 OF 15 SHEETS					ILLINOIS FED. AID PROJECT	



PLAN

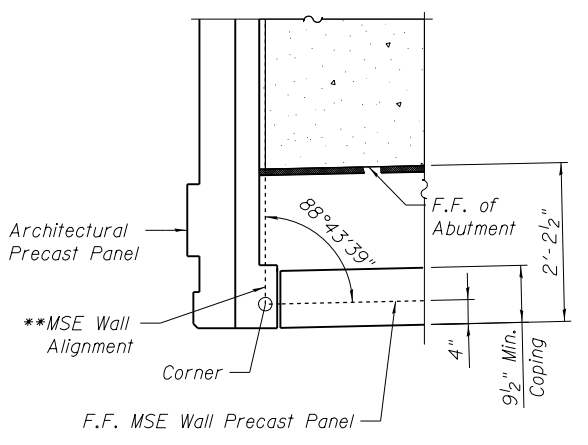


SECTION A-A

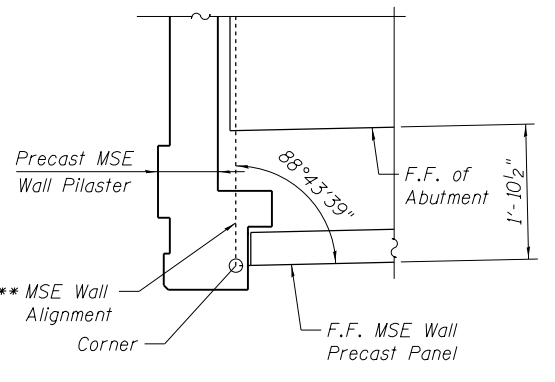


ELEVATION

* Cost included with Mechanically Stabilized Earth Retaining Wall

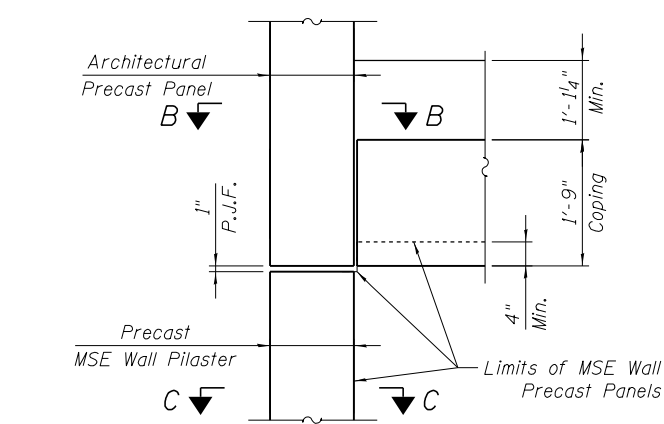


SECTION B-B

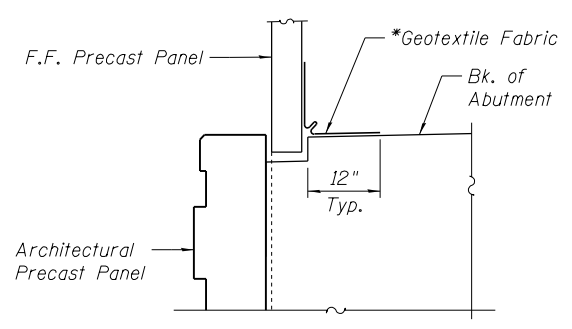


SECTION C-C

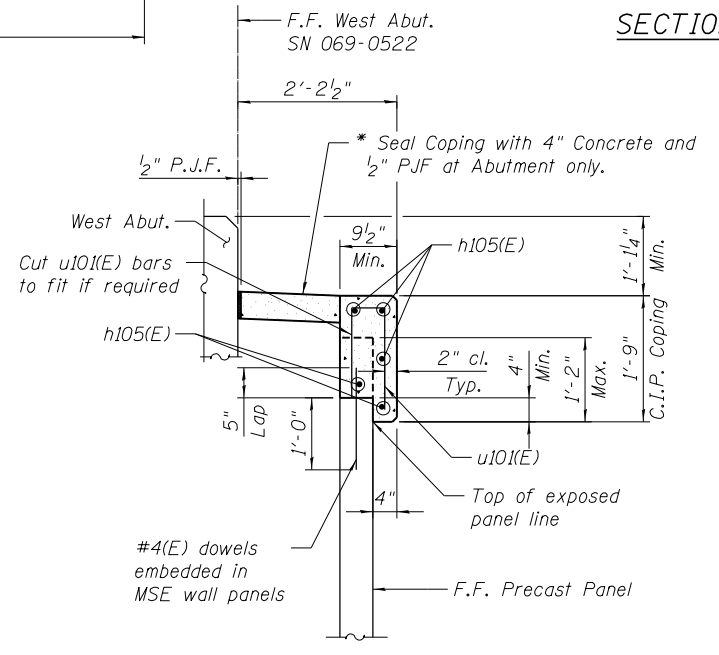
** F.F. of MSE Wall Precast Panels beyond pilaster.



DETAIL 1



DETAIL 2

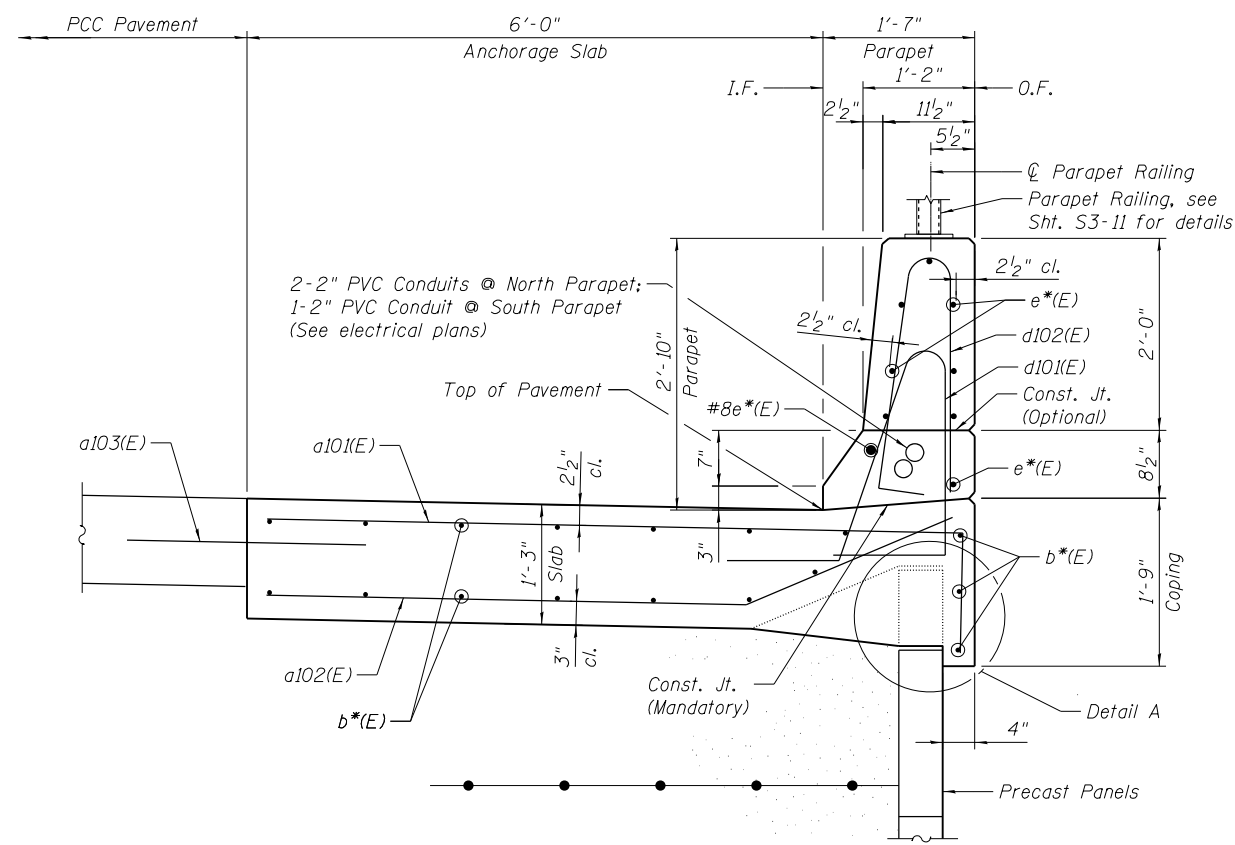


SECTION D-D

- Notes:
1. For Bar List and Bill of Material, see Sht. S3-9.
 2. All edges shall have a 3/4" chamfer unless noted otherwise.

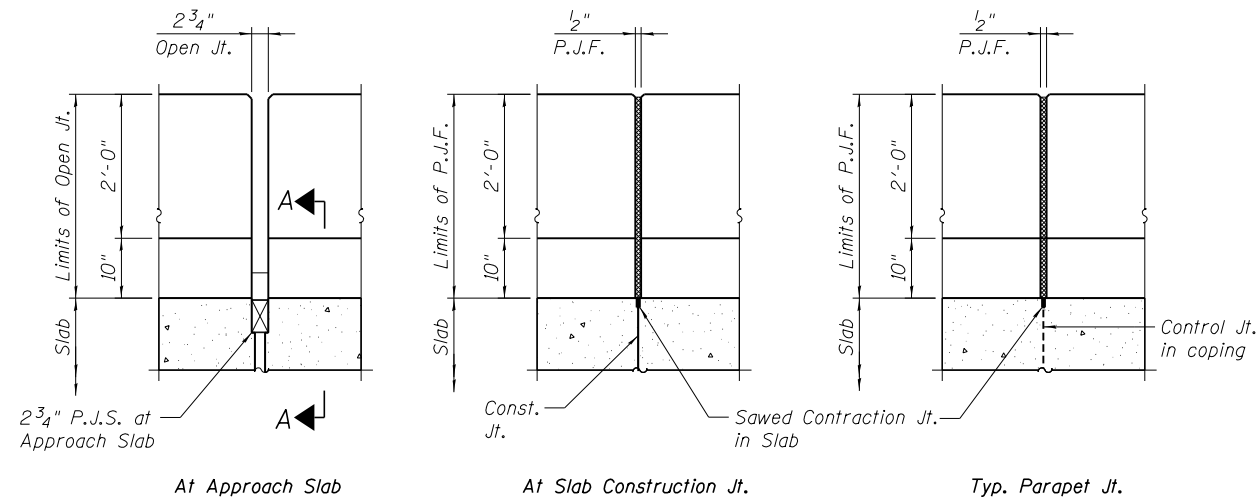
FILE NAME = \\F:\0697900-72B58-003-RET WALL.DGN, USER NAME = CPB, DESIGNED - CPB, REVISED - , DATE = 8/5/2014, CHECKED - BCK, REVISED - , PLOT SCALE = , DRAWN - MET, REVISED - , PLOT DATE = , CHECKED - BCK, REVISED - , SHEET NO. 72B58-005-SHEET 0697900-72B58-005-RET WALL-SHT.DGN, GARZA KARHOFF ENGINEERING, LLC, Structural Engineers, Chicago, IL, STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION, WEST ABUTMENT OF SN 069-0522, SECTION 123B-2, COUNTY MORGAN, TOTAL SHEETS 782, SHEET NO. 562, SN 069-7900, CONTRACT NO. 72B58, ILLINOIS FED. AID PROJECT

FILE NAME =	USER NAME =	DESIGNED - CPB	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	COPING DETAILS WEST ABUTMENT OF SN 069-0522	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DATE = 8/5/2014	CHECKED - BCK	REVISED -			745	123B-2	MORGAN	782	562
	PLOT SCALE =	DRAWN - MET	REVISED -			SN 069-7900		CONTRACT NO. 72B58		
	PLOT DATE =	CHECKED - BCK	REVISED -			SHEET NO. S3-7 OF 15 SHEETS				

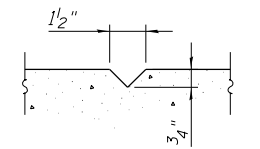


TYPICAL SECTION THRU ANCHORAGE SLAB

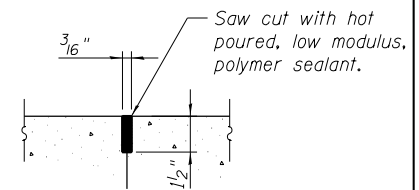
* For bar designations, see Shoulder Plans.



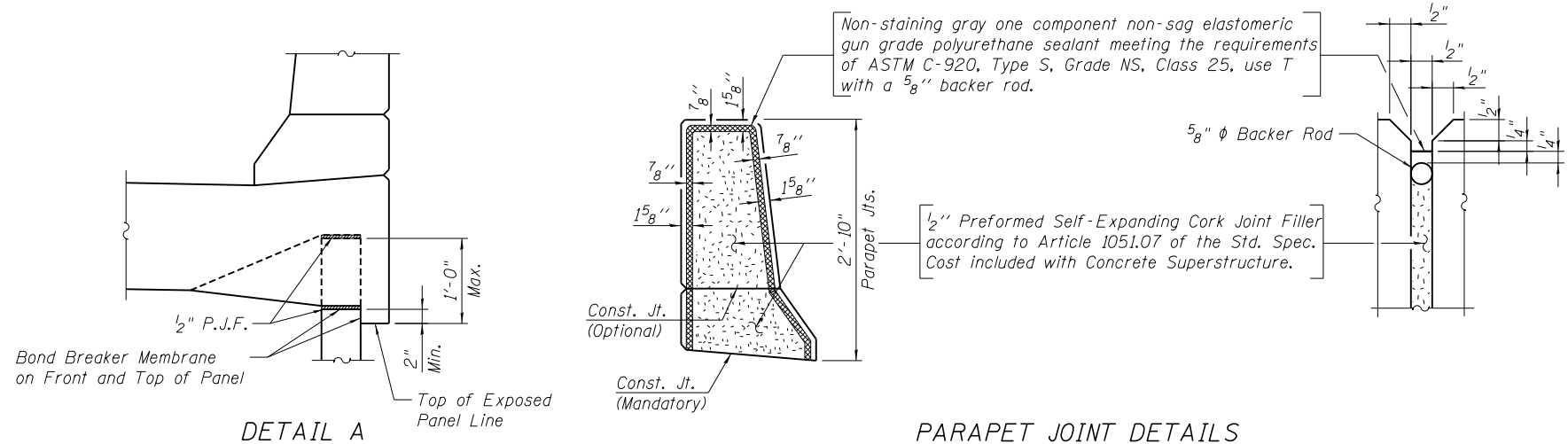
ELEVATION OF JOINTS IN PARAPET AND SLAB



CONTROL JOINT IN COPING

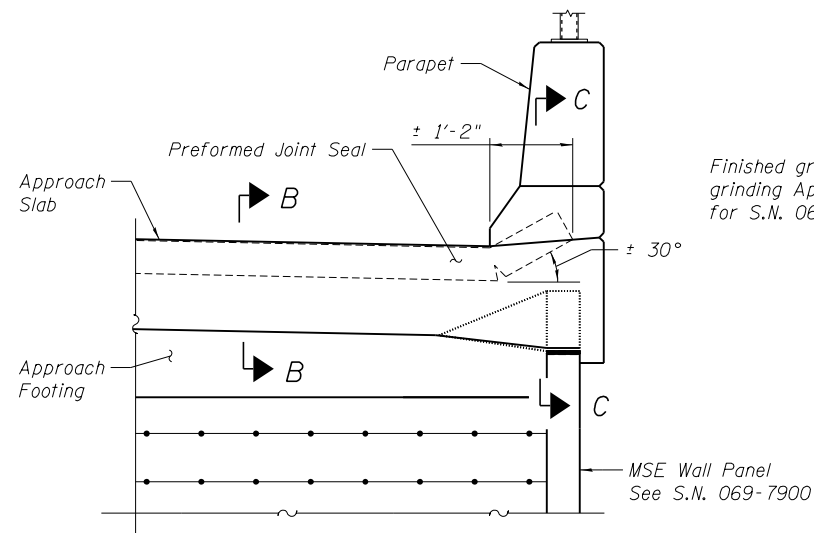


SAWED CONTRACTION JT. IN SLAB

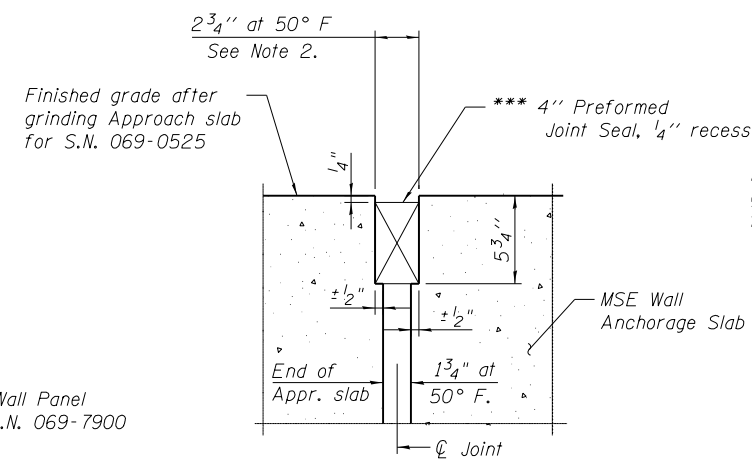


DETAIL A

PARAPET JOINT DETAILS

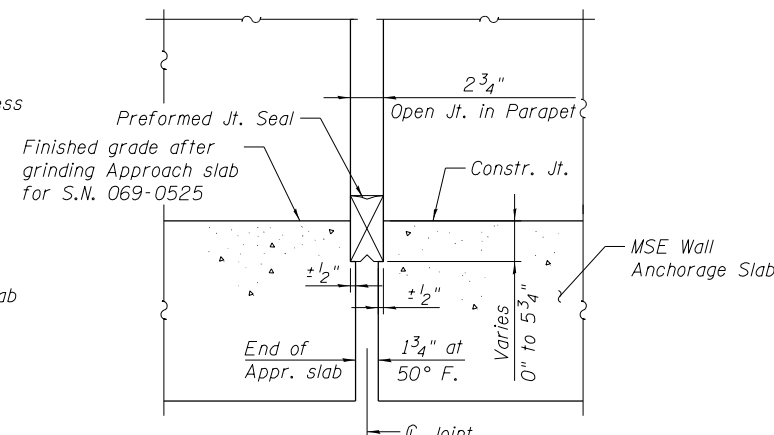


SECTION A-A



SECTION B-B

*** Cost included with Concrete Superstructure.



SECTION C-C

Notes:

1. For Bar List and Bill of Materials, see Sht. S3-9.
2. Reinforcement shall be spaced as shown in details on Shts. S3-4 and S3-5.
3. I.F. denotes inside face
O.F. denotes outside face

FILE NAME = ... USER NAME = ... DESIGNED - CPB ... REVISIONS ... DATE - 10/3/2014 ... CHECKED - BCK ... REVISED - ... DRAWN - MET ... REVISED - ... CHECKED - BCK ... REVISED - ...

FILE NAME =	USER NAME =	DESIGNED - CPB	REVISIONS -
DATE - 10/3/2014	CHECKED - BCK	REVISED -	
PLOT SCALE =	DRAWN - MET	REVISED -	
PLOT DATE =	CHECKED - BCK	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ANCHORAGE SLAB DETAILS
1 OF 2

SHEET NO. S3-8 OF 15 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	563
SN 069-7900		CONTRACT NO. 72B58		

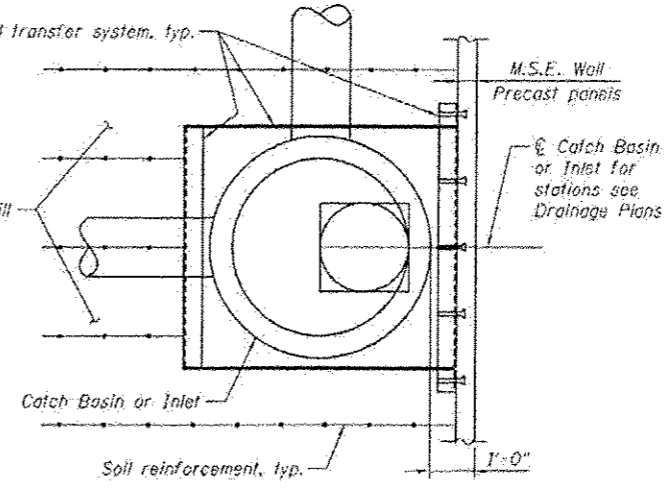
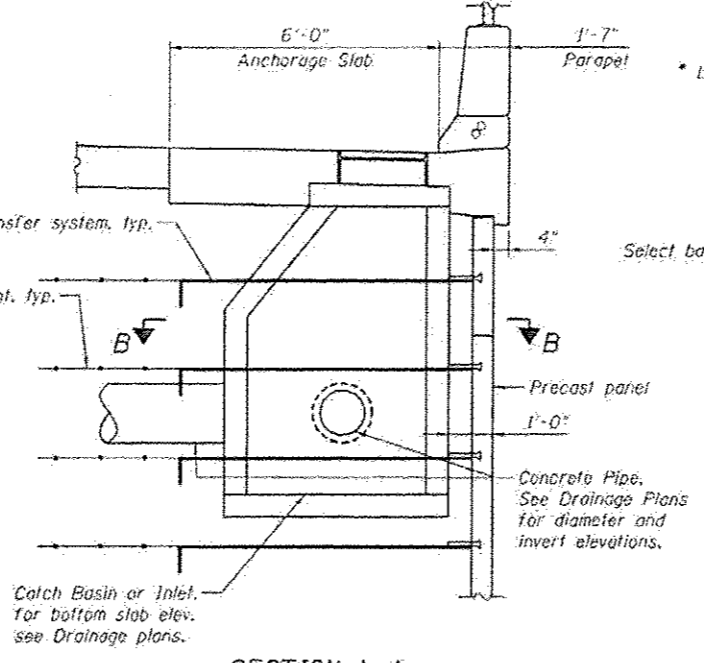
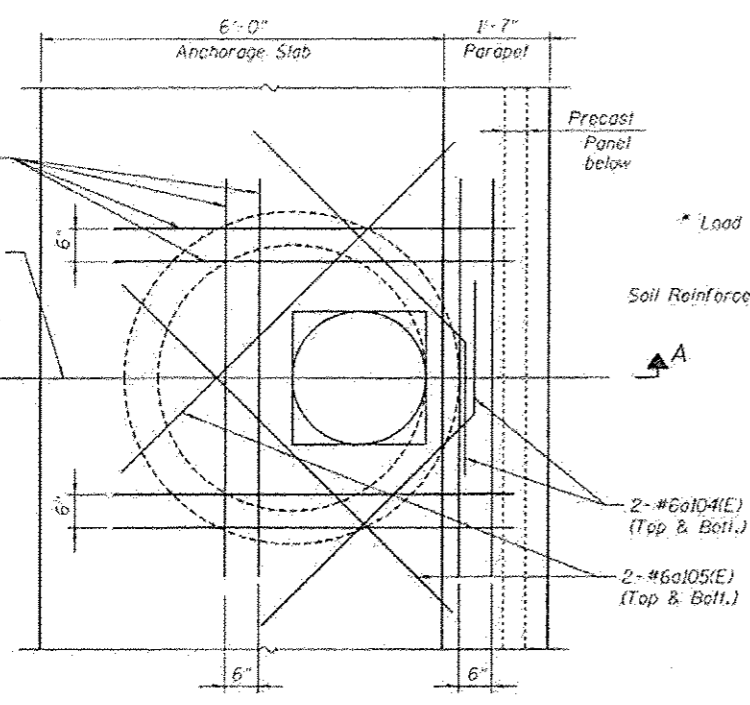
ILLINOIS FED. AID PROJECT

BAR LIST

Bar	No.	Size	Length	Shape
a101(E)	404	#6	8'-6"	
a102(E)	338	#5	7'-4"	
a103(E)	170	#6	2'-6"	
a104(E)	8	#6	6'-6"	
a105(E)	8	#6	7'-0"	
a106(E)	32	#6	6'-0"	
b101(E)	170	#5	30'-0"	
b102(E)	34	#5	26'-11"	
b103(E)	34	#5	9'-5"	
d101(E)	378	#5	6'-10"	
d102(E)	378	#5	5'-7"	
d103(E)	5	#6	8'-11"	
d104(E)	3	#6	4'-5"	
d105(E)	3	#4	8'-1"	
d106(E)	3	#4	4'-11"	
e101(E)	140	#4	11'-8"	
e102(E)	6	#4	26'-11"	
e103(E)	6	#8	29'-0"	
e104(E)	8	#4	23'-11"	
e105(E)	8	#8	26'-3"	
u106(E)	14	#4	16'-9"	
h101(E)	15	#4	13'-10"	
h102(E)	6	#4	10'-5"	
h103(E)	4	#4	9'-4"	
h104(E)	10	#4	7'-8"	
h105(E)	20	#4	13'-3"	
v101(E)	85	#4	3'-2"	
v101(E)	10	#4	6'-4"	

BILL OF MATERIAL

Item	Unit	Total
Concrete Superstructure	Cu. Yd.	168.8
Reinforcement Bars, Epoxy Coated	Pound	23,890



SECTION B-B

* M.S.E. supplier to design load transfer system to accommodate pipe and catch basin and inlets.

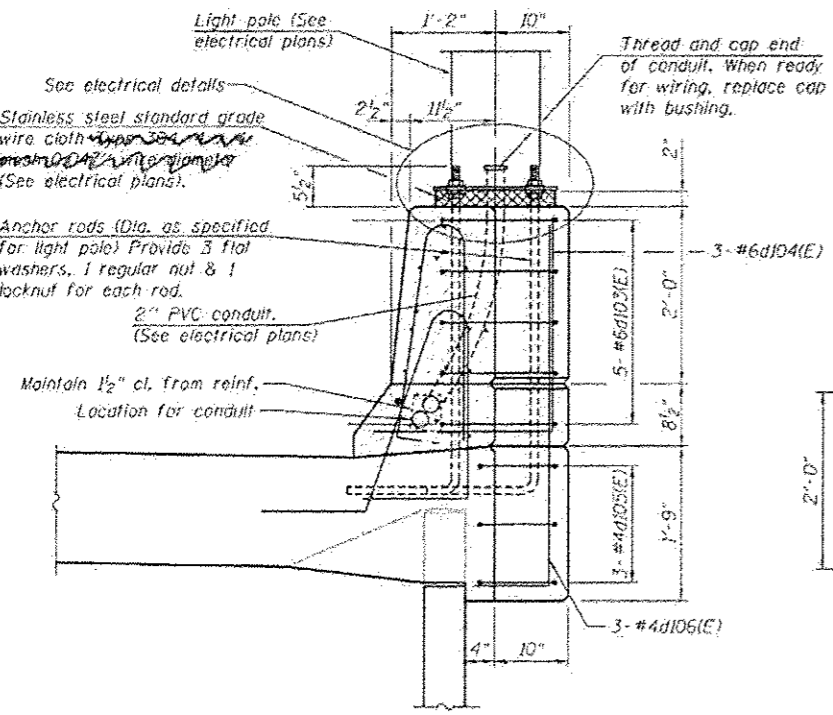
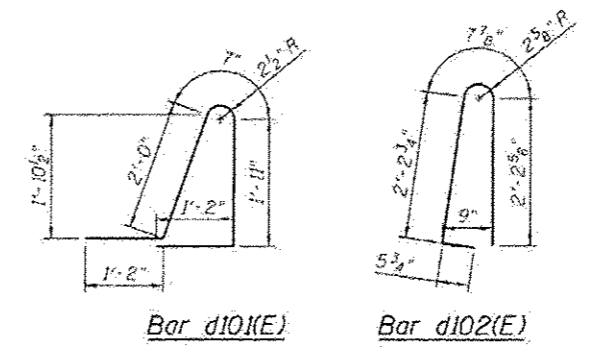
ANCHORAGE SLAB AT CATCH BASIN/INLET
(2. Thus)

SECTION A-A

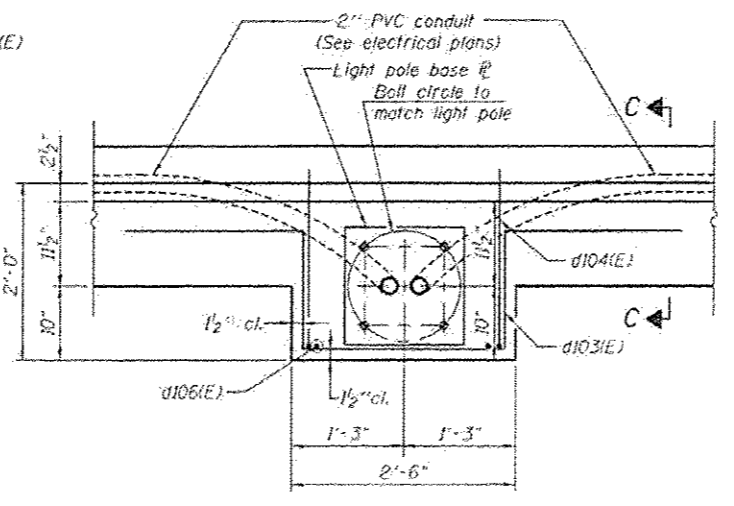
* M.S.E. supplier to design load transfer system to accommodate pipe and catch basin and inlets.

Bar	A	B
a101(E)	7'-3"	1'-3"
d104(E)	2'-0"	2'-5"
d106(E)	10"	4'-1"
h102(E)	8'-6"	1'-11"
h103(E)	7'-10"	1'-6"
h104(E)	3'-10"	3'-10"

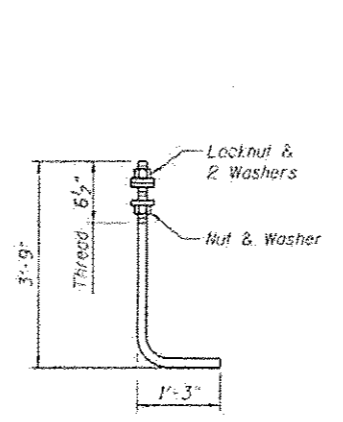
Bars a101(E), d104(E), d106(E) & h102(E) thru h104(E)



SECTION C-C

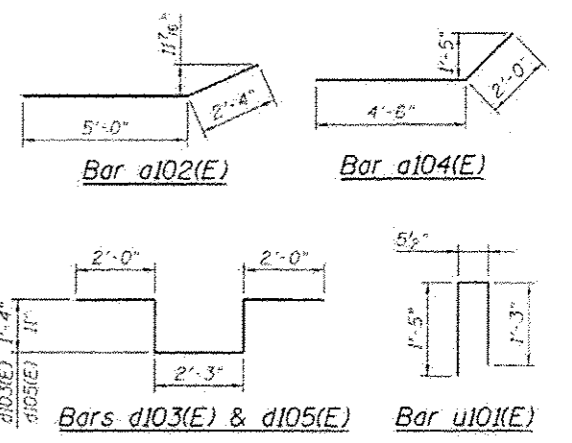


LIGHT POLE PLAN



ANCHOR ROD

Diameter as specified for light poles. (ASTM F 1554 Grade 105) Full length hot dipped galvanized. 4 Anchor Rods per pole foundation. Cost of anchor rods is included with Concrete Superstructure.



Bar a102(E)

Bar a104(E)

Bars d103(E) & d105(E)

Bar u101(E)

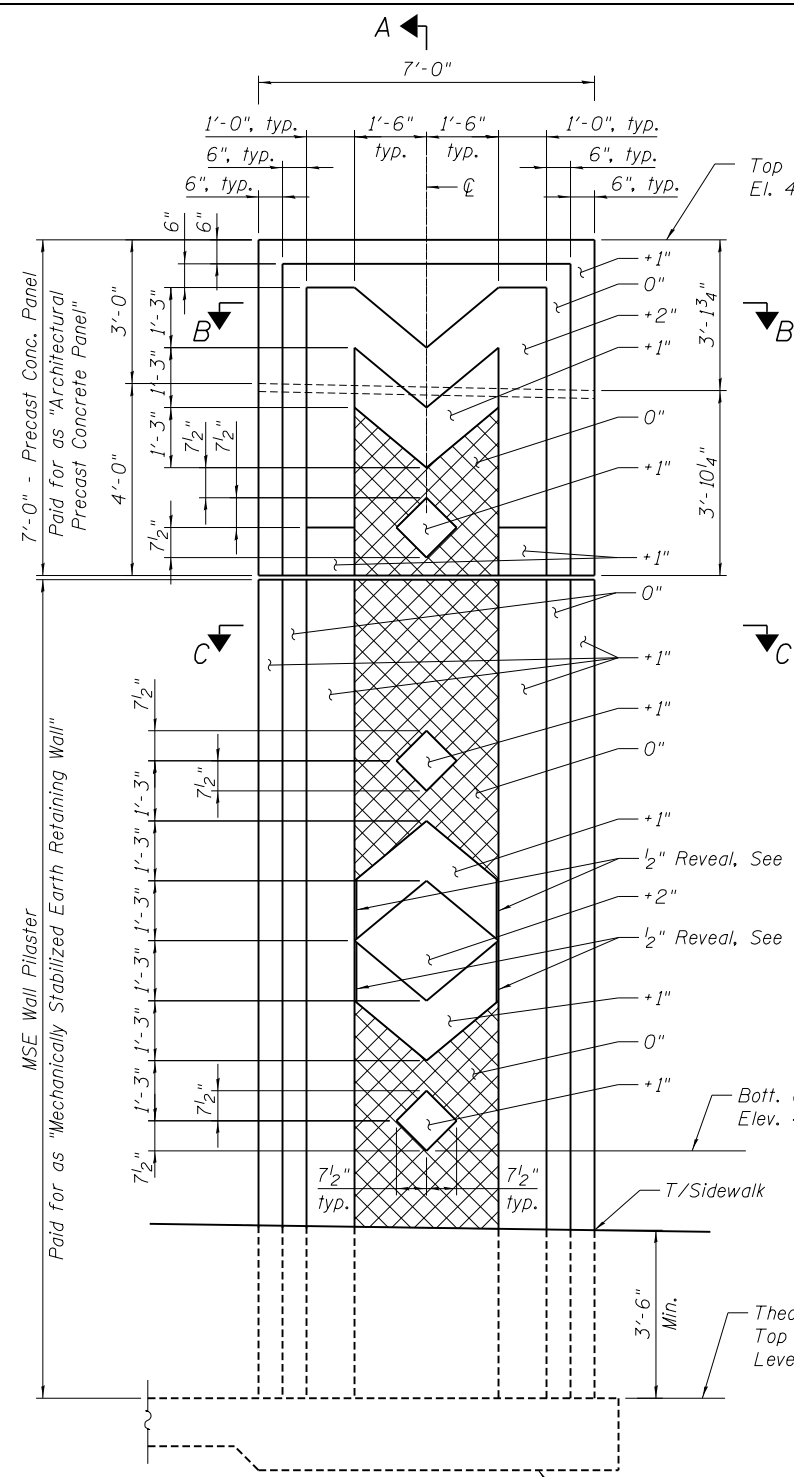
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION PROJECT NO. 069-7900 SHEET NO. 2 OF 2

FILE NAME	USER NAME	DESIGNED	REVISIONS
GKB	CBR	CBR	REVISED -
	BSK	BSK	REVISED -
	NET	NET	REVISED -
	BOZ	BOZ	REVISED -

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

ANCHORAGE SLAB DETAILS
2 OF 2

P.A.P. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B 2	MORGAN	702	567
	SN 069-7900		CONTRACT NO.	72858

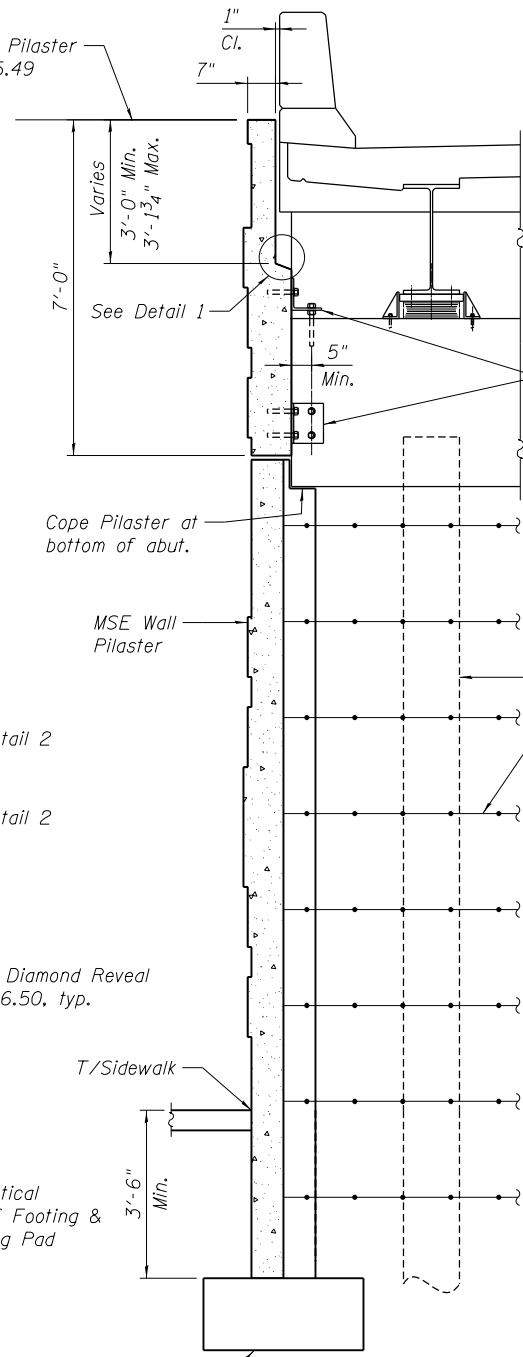


TYPICAL PILASTER ELEVATION
 South Pilaster Elevation Shown
 North Pilaster Elevation - Opposite hand

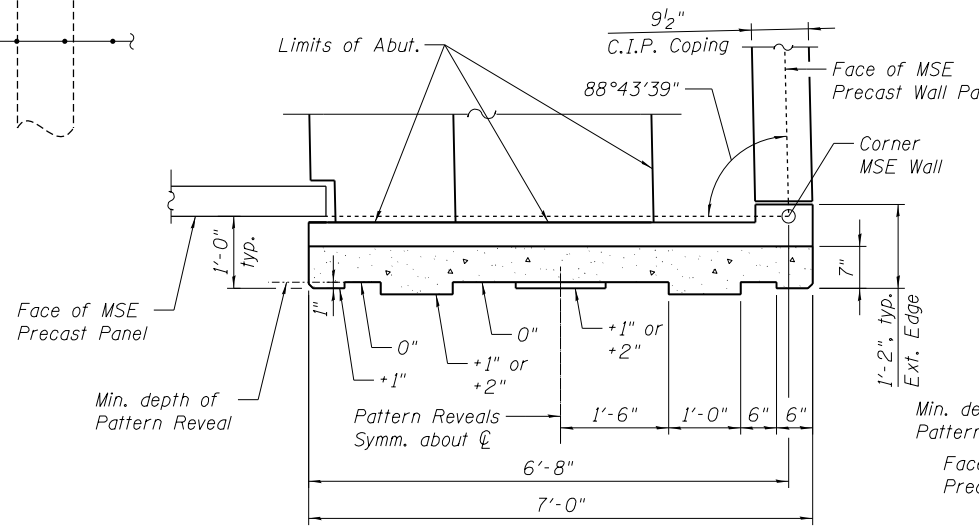
LEGEND



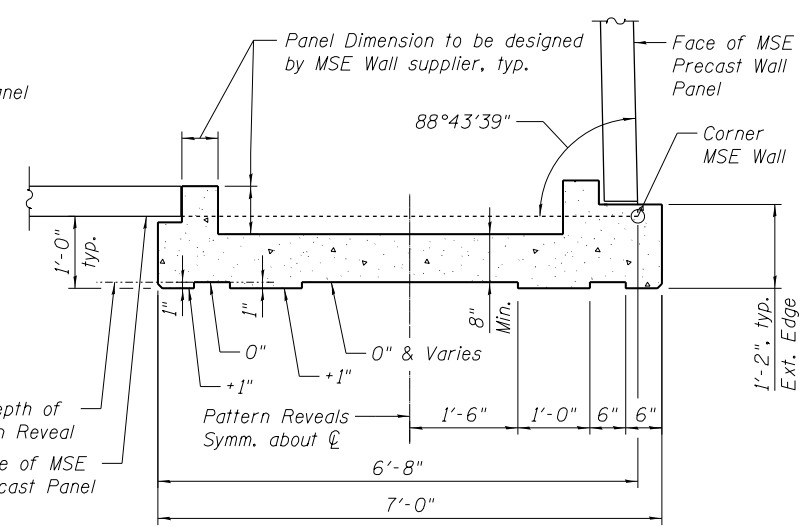
Surface to be painted to match color of exterior steel beam of SN 069-0522. See Note 1.



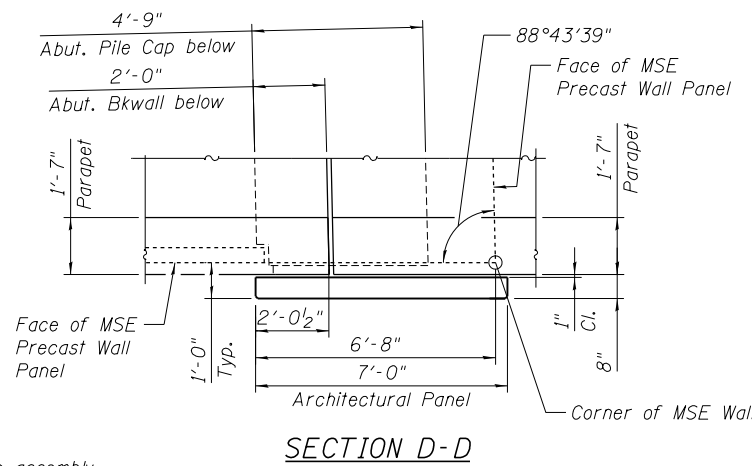
SECTION A-A



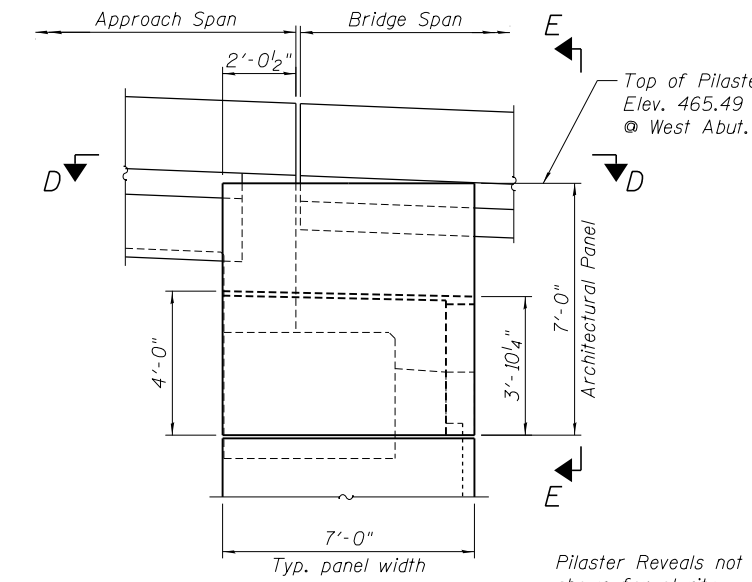
SECTION B-B



SECTION C-C

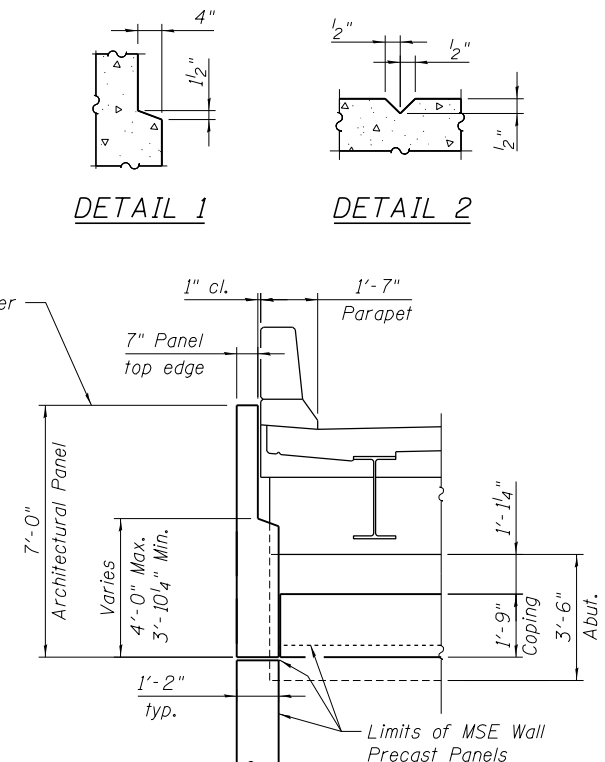


SECTION D-D



ELEVATION DETAIL AT ABUTMENT

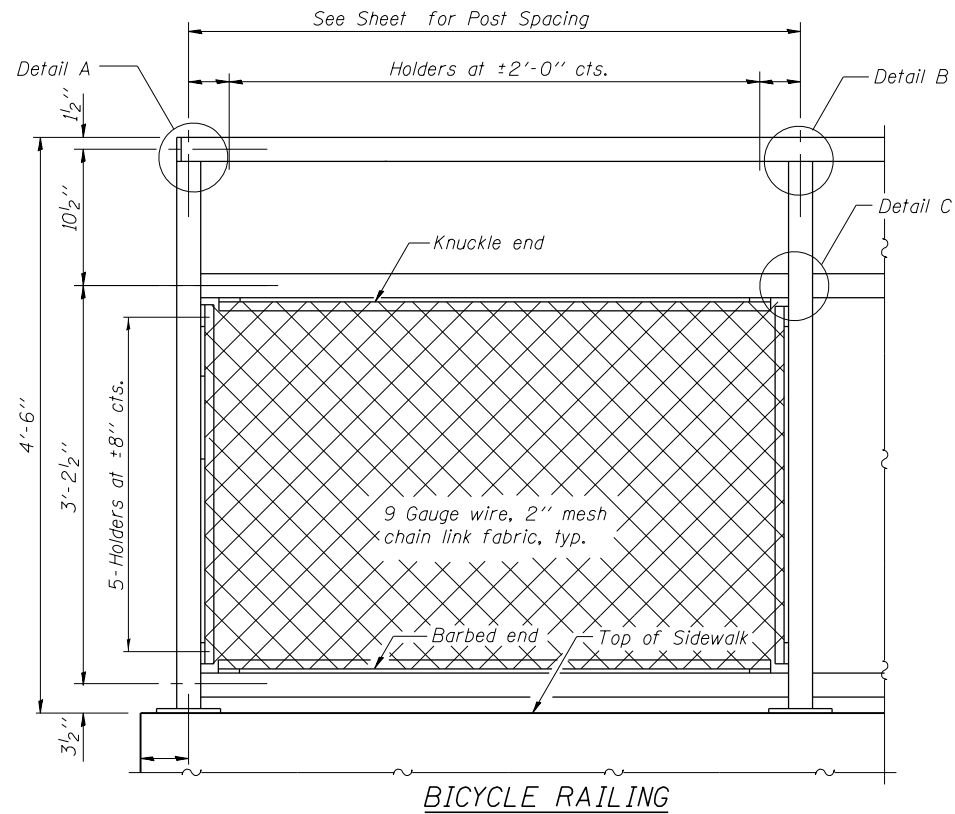
South Pilaster Elevation Shown
 North Pilaster Elevation - Opposite hand



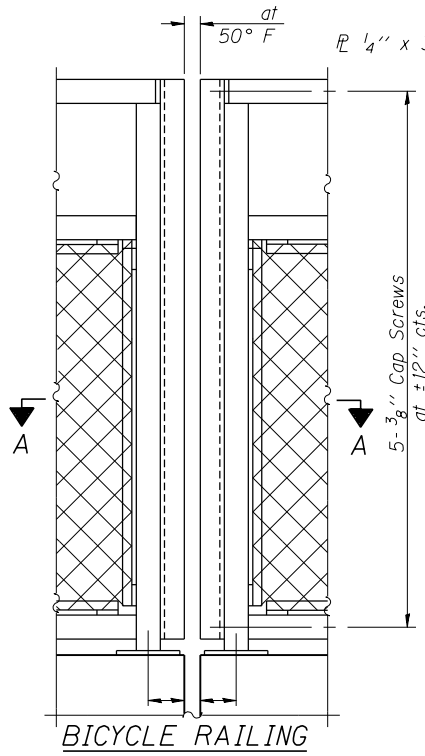
ELEVATION E-E

- Notes:**
1. See Special Provision "Aesthetic Treatments" for the requirements of the Architectural Precast Concrete Panels and the MSE Wall Pilaster.
 2. Panel thickness as required per Special Provision for "Mechanically Stabilized Earth Retaining Wall".
 3. Precast Panels shall be attached to the abutment only. Anchor bolts to miss abutment reinforcement. The panels cannot be attached to the bridge superstructure including the deck, parapet and structural steel.

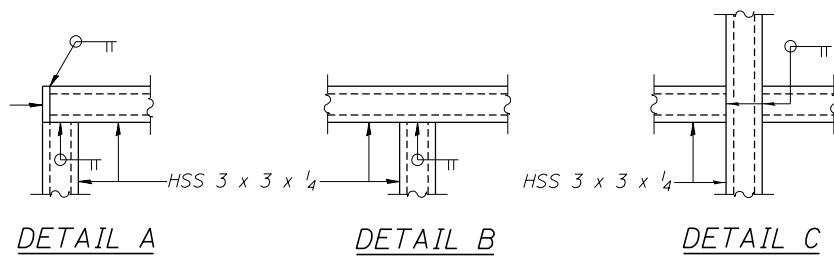
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 USER NAME = GARZA KARHOFF ENGINEERING, LLC
 DATE = 8/5/2014
 DESIGNED - CPB
 CHECKED - BCK
 REVISIONS -
 DRAWN - MET
 CHECKED - BCK
 REVISIONS -
 PLOT SCALE =
 PLOT DATE =
 GKE
 GARZA KARHOFF ENGINEERING, LLC
 Structural Engineers
 Chicago, IL
 STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 PRECAST PILASTER DETAILS
 SHEET NO. S3-10 OF 15 SHEETS
 F.A.P. RT. SECTION COUNTY TOTAL SHEETS SHEET NO.
 745 123B-2 MORGAN 782 565
 SN 069-7900 CONTRACT NO. 72B58
 ILLINOIS FED. AID PROJECT



BICYCLE RAILING

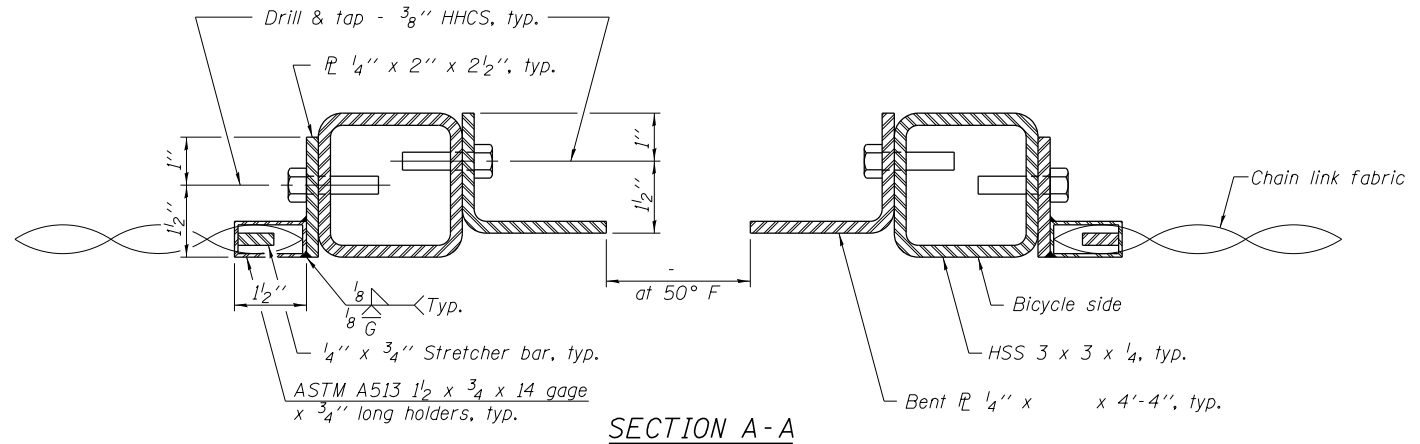


BICYCLE RAILING

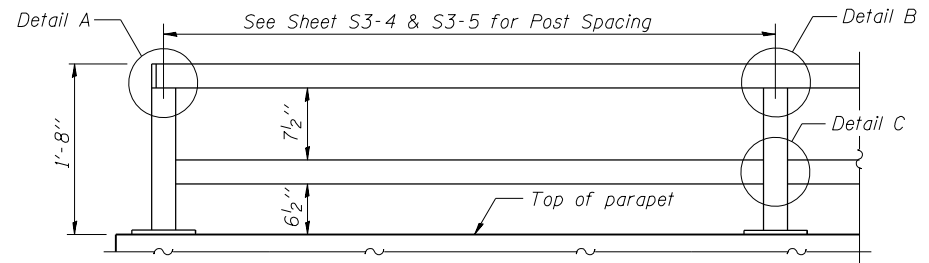


DETAIL A DETAIL B DETAIL C

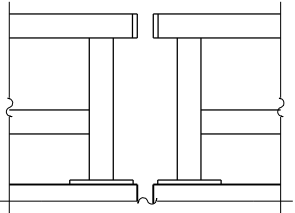
Note:
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.



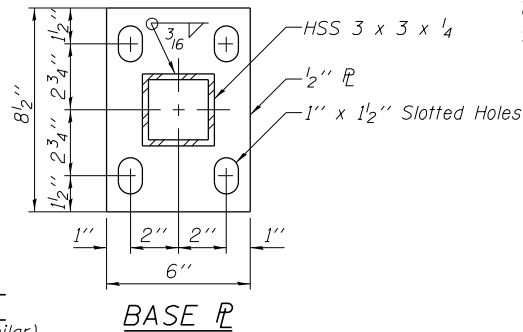
SECTION A - A



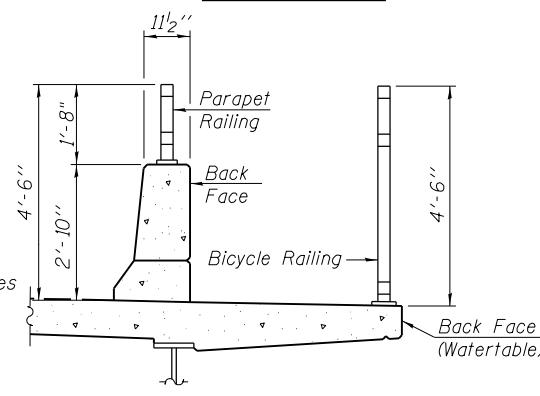
**PARAPET RAILING
ELEVATION
(Inside Face of Two Element Rail)**



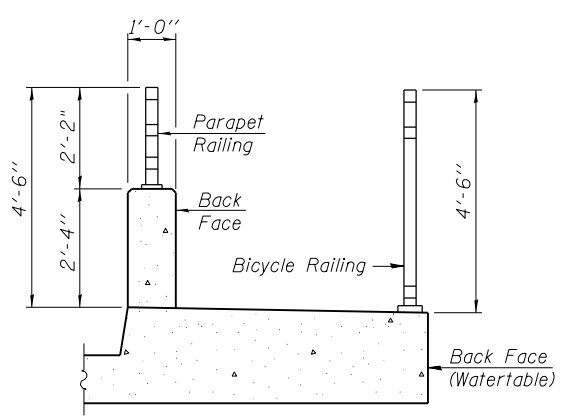
**PARAPET RAILING
ELEVATION AT EXPANSION JOINT
(Two Element Rail Shown - Three Element Rail Similar)**



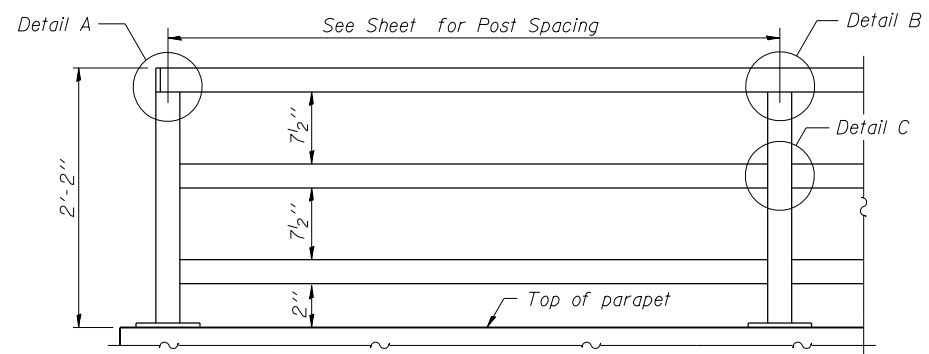
BASE PL



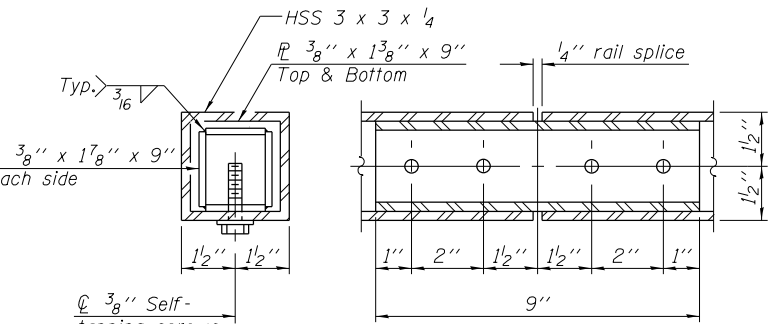
SECTION THRU DECK



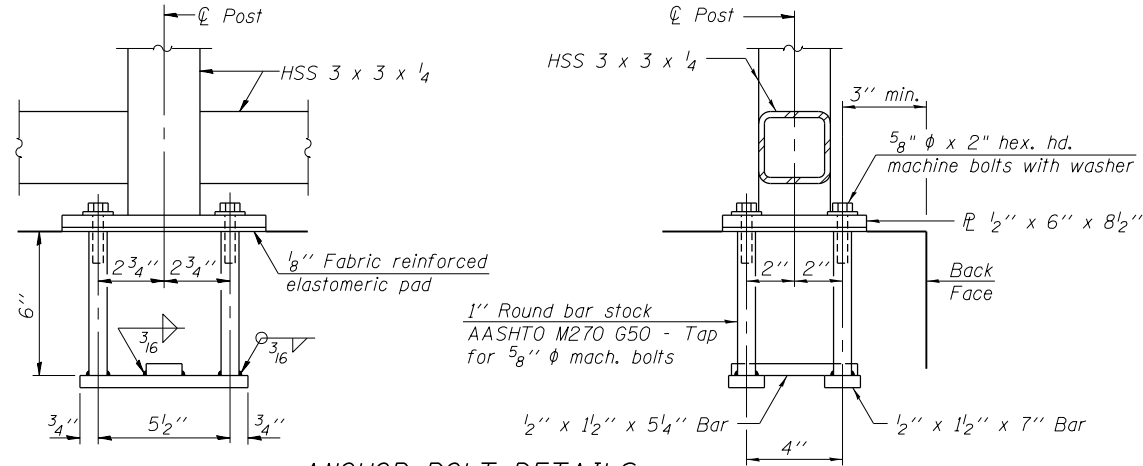
SECTION THRU SIDEWALK



**PARAPET RAILING
ELEVATION
(Inside Face of Three Element Rail)**



RAIL SPLICE



ANCHOR BOLT DETAILS

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8 inch diameter anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

BILL OF MATERIAL

Item	Unit	Quantity
Parapet Railing	Foot	335

R-29 1-27-12 (10'-0" Maximum Post Spacing)

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
	DATE - 8/5/2014	CHECKED -	REVISED -
GKE GARZA KARHOFF ENGINEERING, LLC Structural Engineers Chicago, IL	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE	CHECKED -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

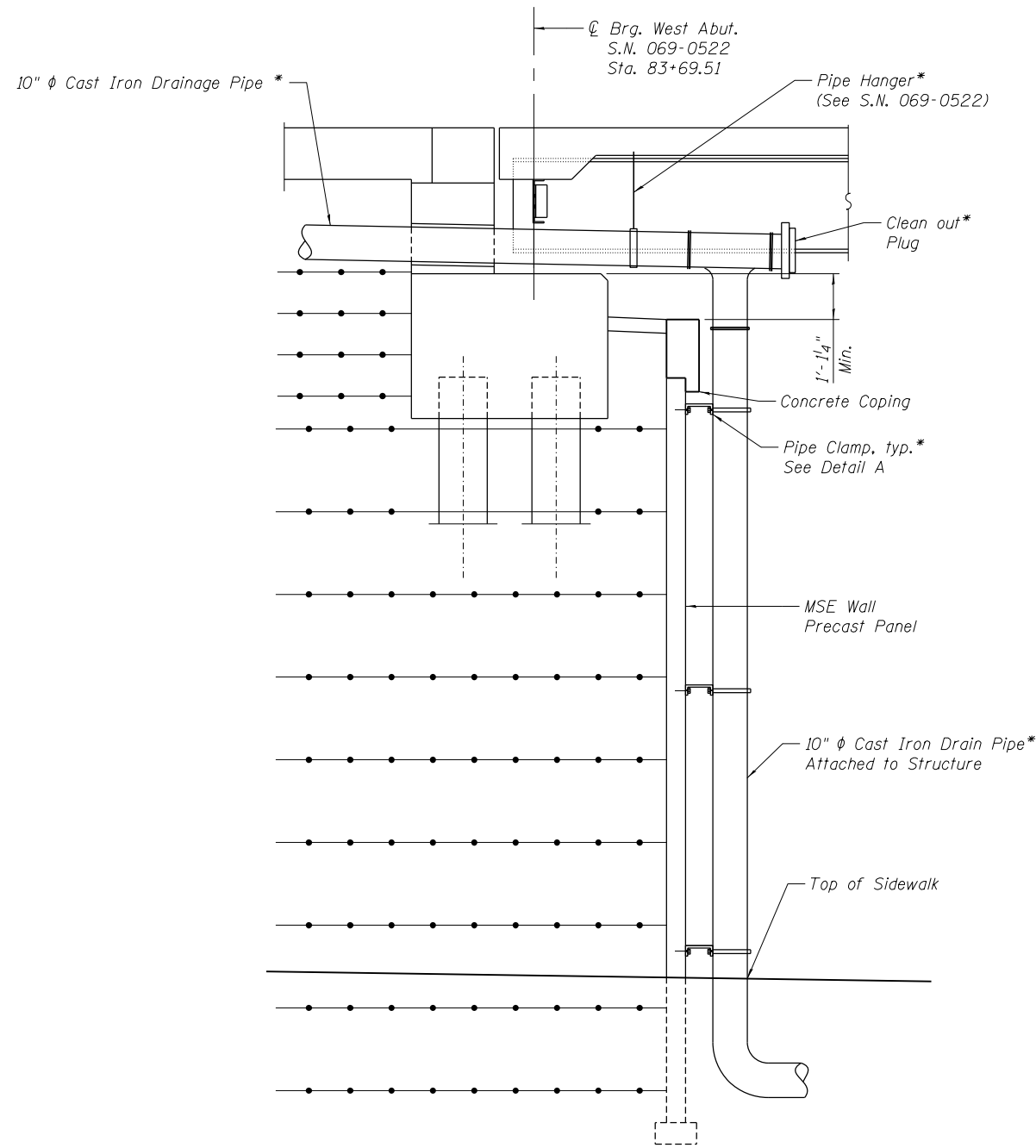
PARAPET RAILING

SHEET NO. S3-11 OF 15 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	566
SN 069-7900		CONTRACT NO. 72B58		

ILLINOIS FED. AID PROJECT

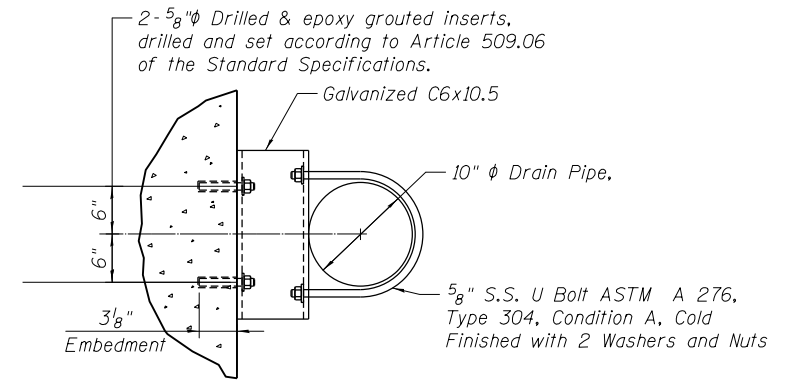
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 NEWMANMO



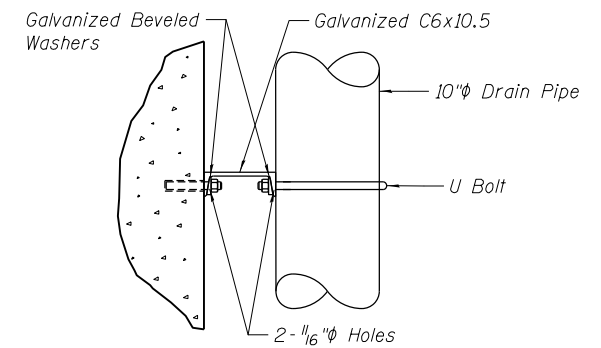
SECTION THRU WEST ABUTMENT OF S.N. 069-0522

(Looking North)

*For Information Only. Refer to Drainage plans for pay items and quantities for piping, hanger and pipe clamps.



PLAN



ELEVATION

DETAIL A- PIPE CLAMP DETAIL *
(Use to support vertical pipe runs along face of MSE Wall)

\\FS-064\AM\VALU.L.D - TRANS. 07\TRDCHI\02012341-02\STRUCT\CA072B5B\0697900\SHEET_0697900-72B5B-002-MISCDETAIL_SHT.DGN
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FILE NAME =	USER NAME =	DESIGNED - CPB	REVISED -
	DATE - 8/5/2014	CHECKED - BCK	REVISED -
	PLOT SCALE =	DRAWN - MET	REVISED -
	PLOT DATE =	CHECKED - BCK	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

DRAINAGE SYSTEM DETAILS

SHEET NO. S3-12 OF 15 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	567
SN 069-7900		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				

GKE GARZA KARHOFF ENGINEERING, LLC
Structural Engineers
Chicago, IL

I:\VALSNUM-72858-001-SOIL BORING.DGN, ...ALLSNUM-72858-001-BORDER.DGN
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 WANGENG: 8/5/12 13:11

BORING LOG P10-1 wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-8928 Fax: 630 953-8938		WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties		Datum: NAVD88 Elevation: 441.22 ft North: 1182724.71 ft East: 2185484.21 ft Station: 81+41.55 Offset: 20.11 LT	
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Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/in)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/in)	Moisture Content (%)
442.7	6-inch thick, brown SILTY LOAM Loose to medium dense, brown, fine SAND	0	1	3 6 7	NP	442.7		0	11		NP
442.5		2	2	3 5 4	NP	442.5	Dark brown LOAM	30	12	10 11 11	NP
442.1	Loose to medium dense, brown, fine SAND	3	3	3 3 3	NP	442.1		35	13	10 10 15	NP
		4	4	7 5 5	NP			40	14	14 13 17	NP
		5	5	3 6 6	NP			45	15	18 21 17	NP
	Very loose to dense, brown, fine to medium SAND, trace to little gravel	6	6	3 4 5	NP			50	16	9 11 12	NP
		7	7	3 3 6	NP						
		8	8	2 1 2	NP						
		9	9	2 3 4	NP						
		10	10	7 8 10	NP						

GENERAL NOTES Begin Drilling: 09-19-2012 Complete Drilling: 09-20-2012 Drilling Contractor: Wang Testing Service Drill Rig: D-50 TMR Driller: R&N Logger: B. Wilson Checked by: M. Snider Drilling Method: 3.25 IDA HSA; Boring backfilled upon completion.		WATER LEVEL DATA While Drilling: 13.00 ft At Completion of Drilling: NA Time After Drilling: NA Depth to Water: NA	
--	--	---	--

BORING LOG P10-1 wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-8928 Fax: 630 953-8938		WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties		Datum: NAVD88 Elevation: 441.22 ft North: 1182724.71 ft East: 2185484.21 ft Station: 81+41.55 Offset: 20.11 LT	
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Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/in)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/in)	Moisture Content (%)
442.8		0				442.8	Dense to very dense, pinkish gray GRAVELLY SAND	0	17	10 11 11	NP
		5						55	17	10 11 11	NP
		10						60	18	10 10 15	NP
		15						65	19	9 18 18	NP
		20						70	20	18 21 17	NP
		25						75	21	20 16 18	NP
		30									
		35									
		40									
		45									
		50									
		55									
		60									
		65									
		70									
		75									
		80									
		85									
		90									
		95									
		100									
		105									
		110									
		115									
		120									
		125									
		130									
		135									

GENERAL NOTES Begin Drilling: 09-19-2012 Complete Drilling: 09-20-2012 Drilling Contractor: Wang Testing Service Drill Rig: D-50 TMR Driller: R&N Logger: B. Wilson Checked by: M. Snider Drilling Method: 3.25 IDA HSA; Boring backfilled upon completion.		WATER LEVEL DATA While Drilling: 13.00 ft At Completion of Drilling: NA Time After Drilling: NA Depth to Water: NA	
--	--	---	--

BORING LOG P10-1 wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-8928 Fax: 630 953-8938		WEI Job No.: 341-05-01 Client: exp US Services, Inc. Project: IL 104 over the Illinois River at Meredosia Location: Morgan & Pike Counties		Datum: NAVD88 Elevation: 441.22 ft North: 1182724.71 ft East: 2185484.21 ft Station: 81+41.55 Offset: 20.11 LT	
---	--	---	--	---	--

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/in)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/in)	Moisture Content (%)
442.8	RQD = 45%	0				442.8		0			
		103.5					Boring terminated at 103.50 ft	103.5			

GENERAL NOTES Begin Drilling: 09-19-2012 Complete Drilling: 09-20-2012 Drilling Contractor: Wang Testing Service Drill Rig: D-50 TMR Driller: R&N Logger: B. Wilson Checked by: M. Snider Drilling Method: 3.25 IDA HSA; Boring backfilled upon completion.		WATER LEVEL DATA While Drilling: 13.00 ft At Completion of Drilling: NA Time After Drilling: NA Depth to Water: NA	
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BORING LOG P13-1 Page 1 of 3

WEI Job No.: 341-05-01 Datum: NAVD88

wangeng@wangeng.com Elevation: 444.89 ft
 1145 N Main Street North: 1153675.66 ft
 Lombard, IL 60148 East: 2185624.11 ft
 Telephone: 630 953-8928 Station: 82+67.88
 Fax: 630 953-8938 Offset: 27.82 RT

Client: exp US Services, Inc.

Project: IL 104 over the Illinois River at Meredosia

Location: Morgan & Pike Counties

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Value (blows/in)	Moisture Content (%)	Q _u (tsf)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Value (blows/in)	Moisture Content (%)	Q _u (tsf)
449.9	Loose, brown SANDY LOAM ---TOPSOIL---	1	4	NP	8								
448.9	Loose, brown, fine SAND	2	2	NP	9								
448.1 447.4	Stiff, brown SANDY CLAY LOAM	3	3	NP	10								
	Loose to dense, brown to gray, medium SAND, trace to little gravel	4	4	NP	8								
		5	4	NP	21								
		6	4	NP	21								
		7	4	NP	21								
		8	2	NP	21								
		9	3	NP	17								
		10	2	NP	24								
		15	2	NP									
		16	2	NP									
		17	2	NP									
		20	10	NP									
		21	10	NP									
		22	8	NP									
		23	8	NP									
		24	8	NP									
		25	8	NP									

---%Gravel = 0.5---
 ---%Sand = 94.6---
 ---%Silt = 4.6---
 ---%Clay = 0.3---
 ---A-3 (0)---

GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	05-31-2012	Complete Drilling	05-31-2012
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 TMR
Driller	R&N	Logger	B. Wilson
Checked by	M. Snider	Time After Drilling	NA
Drilling Method	2.25 SSA Mud Rotary from 10 feet; Boring backfilled upon completion		

BORING LOG P13-1 Page 2 of 3

WEI Job No.: 341-05-01 Datum: NAVD88

wangeng@wangeng.com Elevation: 444.89 ft
 1145 N Main Street North: 1153675.66 ft
 Lombard, IL 60148 East: 2185624.11 ft
 Telephone: 630 953-8928 Station: 82+67.88
 Fax: 630 953-8938 Offset: 27.82 RT

Client: exp US Services, Inc.

Project: IL 104 over the Illinois River at Meredosia

Location: Morgan & Pike Counties

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Value (blows/in)	Moisture Content (%)	Q _u (tsf)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Value (blows/in)	Moisture Content (%)	Q _u (tsf)
		25	11	NP									
		26	11	NP									
		30	12	NP									
		35	13	NP									
		36	13	NP									
		40	14	NP									
		45	15	NP									
		50	16	NP									
		55	17	NP									
		60	18	NP									
		65	19	NP									
		70	20	NP									
		75	21	NP									
		80	22	NP									
		85	23	NP									
		90	24	NP									
		95	25	NP									
		100	26	NP									
		105	27	NP									
		110	28	NP									
		115	29	NP									
		120	30	NP									
		125	31	NP									
		130	32	NP									
		135	33	NP									
		140	34	NP									
		145	35	NP									
		150	36	NP									
		155	37	NP									
		160	38	NP									
		165	39	NP									
		170	40	NP									
		175	41	NP									
		180	42	NP									
		185	43	NP									
		190	44	NP									
		195	45	NP									
		200	46	NP									
		205	47	NP									
		210	48	NP									
		215	49	NP									
		220	50	NP									
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		495	105	NP									
		500	106	NP									
		505	107	NP									
		510	108	NP									
		515	109	NP									
		520	110	NP									
		525	111	NP									
		530	112	NP									
		535	113	NP									
		540	114										

BORING LOG P14-1

wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	Client exp US Services, Inc. Project IL 104 over the Illinois River at Meredosia Location Morgan & Pike Counties	Datum: NAVD88 Elevation: 444.60 ft North: 1152723.15 ft East: 2185731.31 ft Station: 83 + 74.65 Offset: 20.82 LT
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Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blow/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blow/6 in)	Qu (tsf)	Moisture Content (%)
443.6	12-inch thick, black SANDY LOAM ---TOPSOIL---	0-1	X	1	3 2 3	NP				0-1	X	11	5 6 7	NP	
441.1	Loose, black and brown, fine SAND	1-5	X	2	2 2 5	2.00 P	11			1-5	X	12	7 7 7	NP	
439.1	Very stiff, brown SANDY CLAY LOAM	5-10	X	3	4 4 4	NP				5-10	X	13	7 6 7	NP	
	Loose, brown, medium SAND	10-15	X	4	3 3 3	NP				10-15	X	14	7 9 10	NP	
		15-20	X	5	3 3 3	NP				15-20	X	15	11 12 10	NP	
		20-25	X	6	2 4 4	NP				20-25	X	16	11 12 10	NP	
		25-30	X	7	3 3 4	NP		402.5	Medium dense to dense, brown, coarse SAND, trace to little gravel	30-35	X	17	19 21 17	NP	
		30-35	X	8	3 4 5	NP				35-40	X	18	8 9 12	NP	
		35-40	X	9	4 5 6	NP				40-45	X	19	10 12 10	NP	
		40-45	X	10	4 6 5	NP				45-50	X	20	10 16 20	NP	
		45-50	X	11						50-55	X	21			

--%Gravel=0.4--
 --%Sand=95.3--
 --%Silt=3.9--
 --%Clay=0.4--
 --A-3 (0)--

GENERAL NOTES			WATER LEVEL DATA		
Begin Drilling	06-21-2012	Complete Drilling	06-21-2012	While Drilling	20.00 ft
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 TMR	At Completion of Drilling	NA
Driller	R&N	Logger	N. Boddy	Checked by	M. Snider
Drilling Method	2.25 SSA, Mud Rotary from 10 feet; Boring backfilled upon completion		Time After Drilling	NA	
			Depth to Water	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.					

BORING LOG P14-1

wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	Client exp US Services, Inc. Project IL 104 over the Illinois River at Meredosia Location Morgan & Pike Counties	Datum: NAVD88 Elevation: 444.60 ft North: 1152723.15 ft East: 2185731.31 ft Station: 83 + 74.65 Offset: 20.82 LT
--	--	---

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blow/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blow/6 in)	Qu (tsf)	Moisture Content (%)
387.6	Medium dense, brown, coarse SAND, trace gravel	55-80	X	17	11 15 16	NP		387.6		80-85	X	22	10 11 14	NP	
		80-85	X	18	8 9 10	NP				85-90	X	23	12 14 14	NP	
		90-95	X	19	8 9 12	NP				95-100	X	24	21 25 39	NP	
		100-105	X	20	19 21 17	NP				105-110	X	25	20 31 44	NP	
377.6	Dense, brown, fine SAND	110-115	X	21	10 16 20	NP		348.1	---WEATHERED BEDROCK---	115-120					
		115-120						347.6	---BEDROCK---	120-125					
		125-130						346.6	Boring terminated at 98.00 ft	130-135					

GENERAL NOTES			WATER LEVEL DATA		
Begin Drilling	06-21-2012	Complete Drilling	06-21-2012	While Drilling	20.00 ft
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 TMR	At Completion of Drilling	NA
Driller	R&N	Logger	N. Boddy	Checked by	M. Snider
Drilling Method	2.25 SSA, Mud Rotary from 10 feet; Boring backfilled upon completion		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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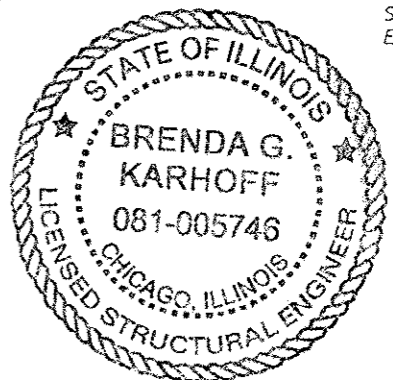
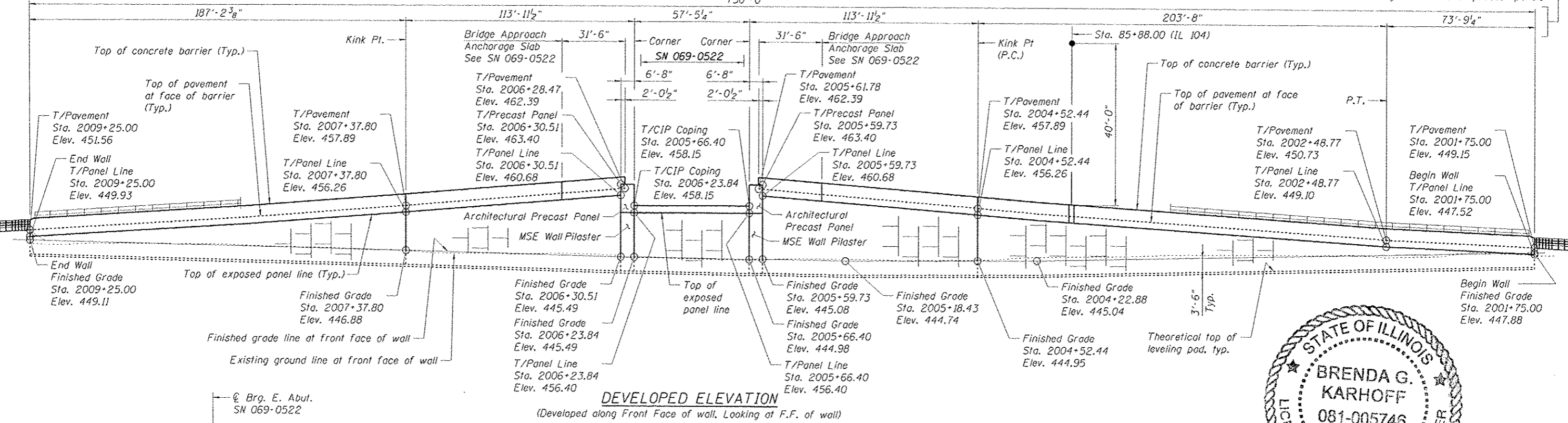
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	DATE - 8/5/2014	CHECKED -	REVISED -
GKE GARZA KARHOFF ENGINEERING, LLC Structural Engineers Chicago, IL	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

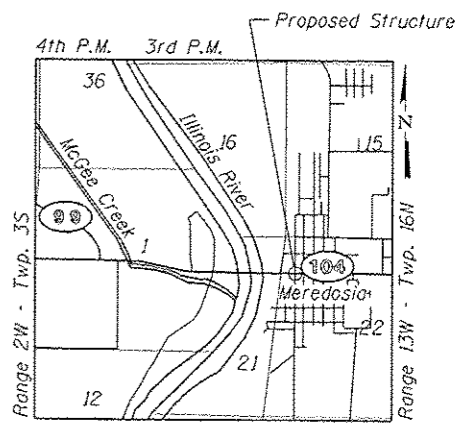
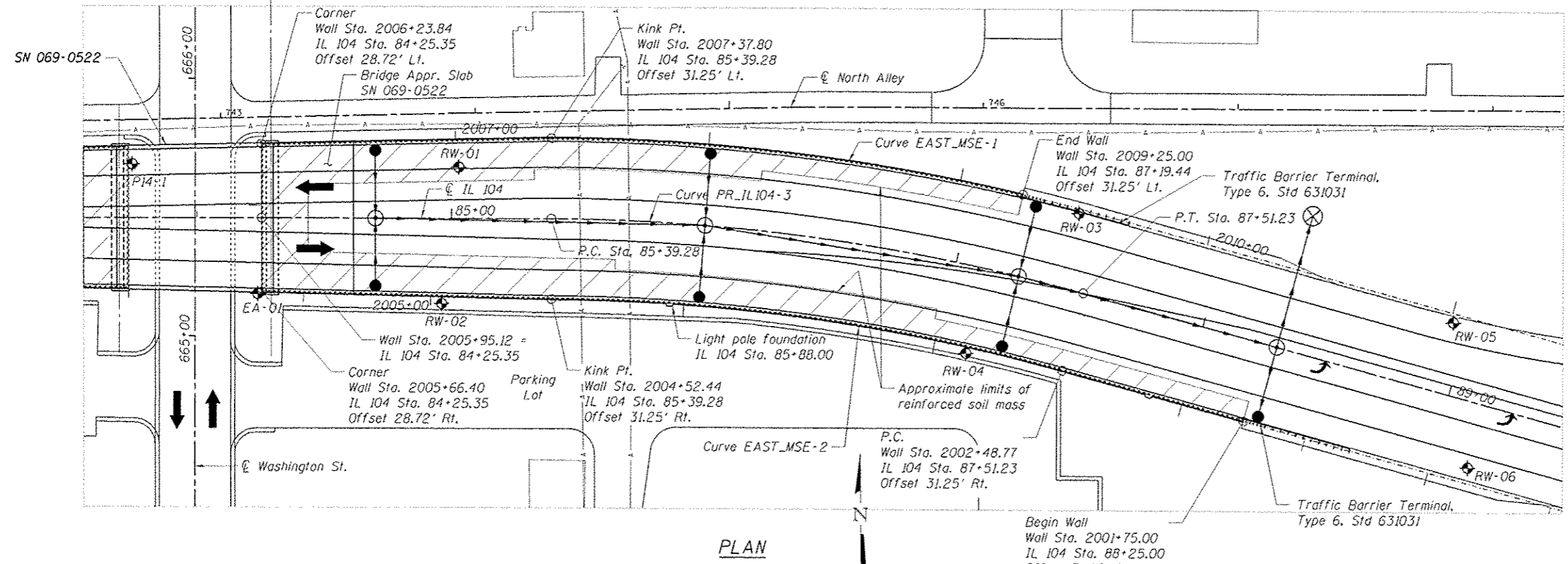
SOIL BORING LOGS
3 OF 3
 SHEET NO. S3-15 OF 15 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	570
SN 069-7900		CONTRACT NO. 72B58		

Bench mark: WW-5, Chiseled "□" top of curb in SE quadrant of junction of IL 104 and Washington Street. Sta. 84+22.20, 306.90' Rt., El. 443.67.
Existing Structure: None.



Brenda G. Karhoff
Date: 8/1/2014
Expires: 11/30/2014



- Notes:**
- Wall offsets are measured from \hat{C} IL 104 to the front face of precast panels.
 - Top of Pavement elevations are given to the inside face of parapet.
 - Existing utilities to be removed or relocated. See Special Provision For Status of Utilities.

- LEGEND**
- Soil Boring
 - Proposed Catch Basin/Inlet
 - Proposed Manhole
 - - - Existing Aerial Line*
 - - - Proposed Storm Sewer
- * See Note 3

- DESIGN STRESSES**
- FIELD UNITS**
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
- PRECAST UNITS**
f'c = 4,500 psi (Precast Panels)

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

APPROVED
For Structural Adequacy Only
De Carl Pappas
Engineer of Bridges & Structures

GENERAL PLAN & ELEVATION
IL 104 RETAINING WALL
F.A.P. RTE. 745 - SEC. 123B-2
MORGAN COUNTY
STA. 84+25.35 TO STA. 88+25.00
STRUCTURE NO. 069-7901

FILE NAME: GKE	USER NAME: GANZA KARHOFF ENGINEERING, LLC	DESIGNED: CPB	REVISIONS:	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN & ELEVATION	F.A.P. RTE.:	SECTION:	COUNTY:	TOTAL SHEETS:	SHEET NO.:
	DATE: 8/5/2014	CHECKED: BGK	REVISIONS:			745	123B-2	MORGAN	782	571
	PILOT SCALE:	DRAWN: CPB	REVISIONS:	SHEET NO. 54-1 OF 13 SHEETS		SN 069-7901		CONTRACT NO. 72B58		
	PILOT DATE:	CHECKED: BGK	REVISIONS:			ILLINOIS FED. AID PROJECT				

GENERAL NOTES

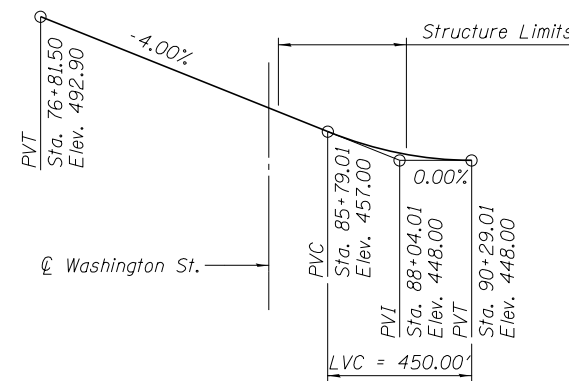
1. Reinforcement bars designated (E) shall be epoxy coated.
2. Dimensions are measured along front face of wall panels, unless noted otherwise.
3. For locations of Catch Basins & Inlets, see Drainage Plans.

INDEX OF SHEETS

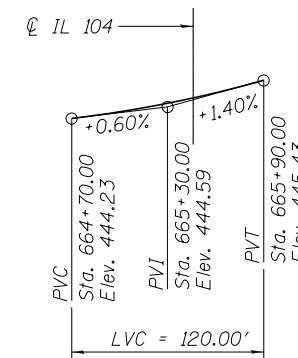
- S4-1 General Plan & Elevation
- S4-2 General Data, Index of Sheets & Bill of Material
- S4-3 Typical Sections & Details
- S4-4 Anchorage Slab, Plan & Elevation, 1 of 2
- S4-5 Anchorage Slab, Plan & Elevation, 2 of 2
- S4-6 Coping Details, East Abutment of SN 069-0522
- S4-7 Anchorage Slab Details, 1 of 2
- S4-8 Anchorage Slab Details, 2 of 2
- S4-9 Precast Pilaster Details
- S4-10 Parapet Railing
- S4-11 Soil Boring Logs, 1 of 3
- S4-12 Soil Boring Logs, 2 of 3
- S4-13 Soil Boring Logs, 3 of 3

TOTAL BILL OF MATERIAL

Item	Unit	Total
Structure Excavation	Cu. Yd.	1,170
Concrete Superstructure	Cu. Yd.	304.3
Protective Coat	Sq. Yd.	685
Reinforcement Bars, Epoxy Coated	Pound	42,430
Parapet Railing	Foot	617
Concrete Sealer	Sq. Ft.	67.9
Mechanically Stabilized Earth Retaining Wall	Sq. Ft.	8,559
Architectural Precast Concrete Panel	Each	2



PROFILE GRADE IL 104
(along Centerline Roadway)



PROFILE GRADE WASHINGTON ST.
(along Centerline Roadway)

WALL CURVE EAST_MSE-1

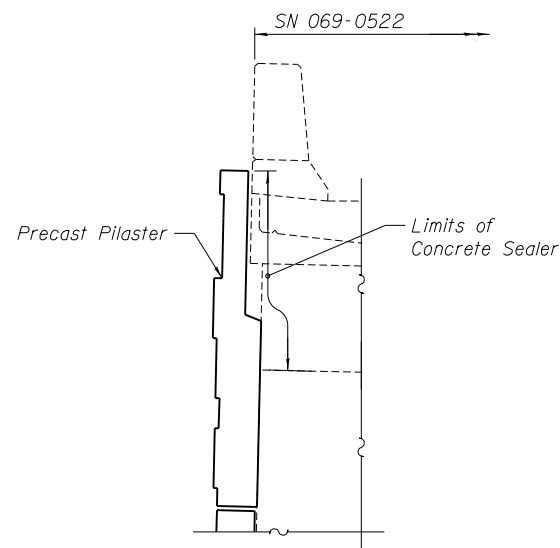
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 $\Delta = 15^{\circ}10'47''$ Lt.
 D = $7^{\circ}27'11''$
 R = 768.75'
 T = 102.43'
 L = 203.67'
 E = 6.79'
 S.E. = N/A
 P.C. Sta. 2002+48.77
 P.T. Sta. 2004+52.44

WALL CURVE EAST_MSE-2

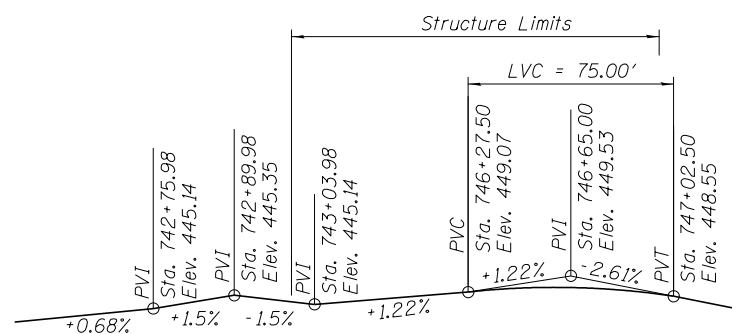
P.I. Sta. 2008+48.56
 $\Delta = 15^{\circ}10'47''$ Rt.
 D = $6^{\circ}53'34''$
 R = 831.25'
 T = 110.76'
 L = 220.23'
 E = 7.35'
 S.E. = N/A
 P.C. Sta. 2007+37.80
 P.T. Sta. 2009+58.03

IL 104 CURVE PR IL104-3

P.I. Sta. 86+45.88
 $\Delta = 15^{\circ}10'47''$ Rt.
 D = $7^{\circ}09'43''$
 R = 800.00'
 T = 106.60'
 L = 211.95'
 E = 7.07'
 S.E. = N/A
 P.C. Sta. 85+39.28
 P.T. Sta. 87+51.23



LIMITS OF CONCRETE SEALER



PROFILE GRADE NORTH ALLEY
(along Centerline Roadway)

FILE NAME = \\\u00697901-GPE.DGN, \\\u00697901-TSL.DGN, \\\u00697901-BORDER.DGN, \\\u00697901-INDEX_SHT.DGN, \\\u00697901-INDEX_SHT.DGN
 USER NAME = GARZA KARHOFF ENGINEERING, LLC
 Structural Engineers
 Chicago, IL

DESIGNED	- CPB	REVISED	-
CHECKED	- BCK	REVISED	-
DRAWN	- CPB	REVISED	-
CHECKED	- BCK	REVISED	-

DATE - 10/3/2014
 PLOT SCALE =
 PLOT DATE =

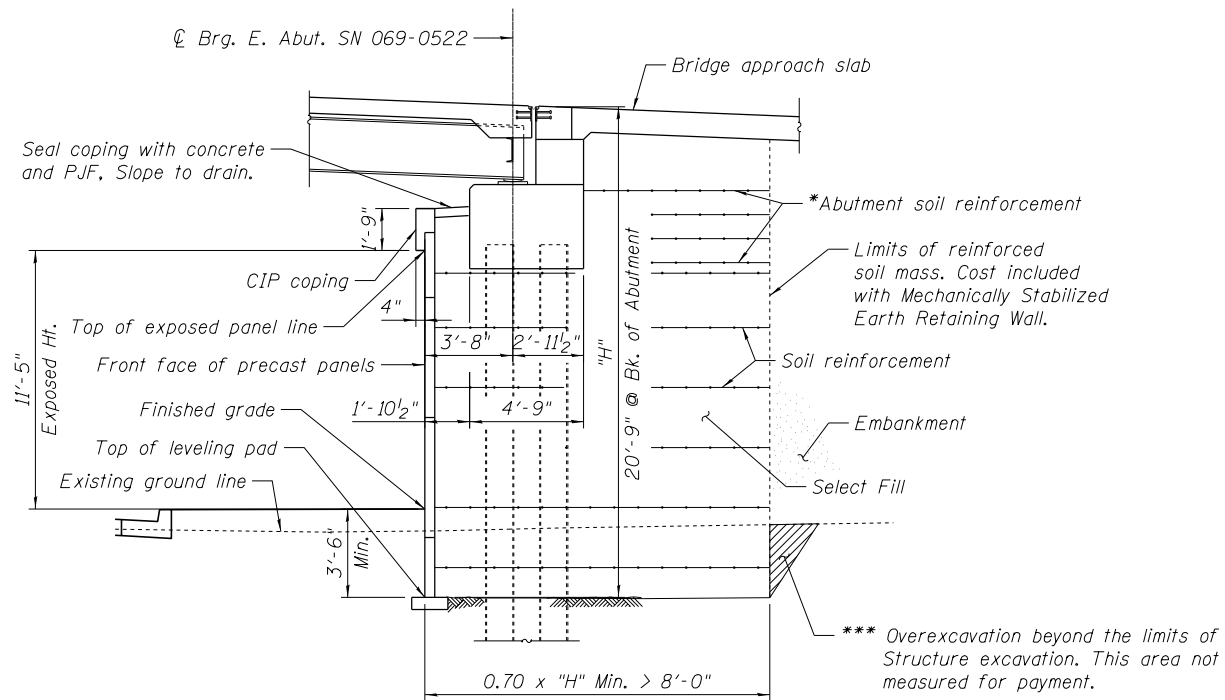
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

GENERAL DATA, INDEX OF SHEETS
 & BILL OF MATERIAL
 SHEET NO. S4-2 OF 13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	572
SN 069-7901			CONTRACT NO. 72B58	

ILLINOIS FED. AID PROJECT

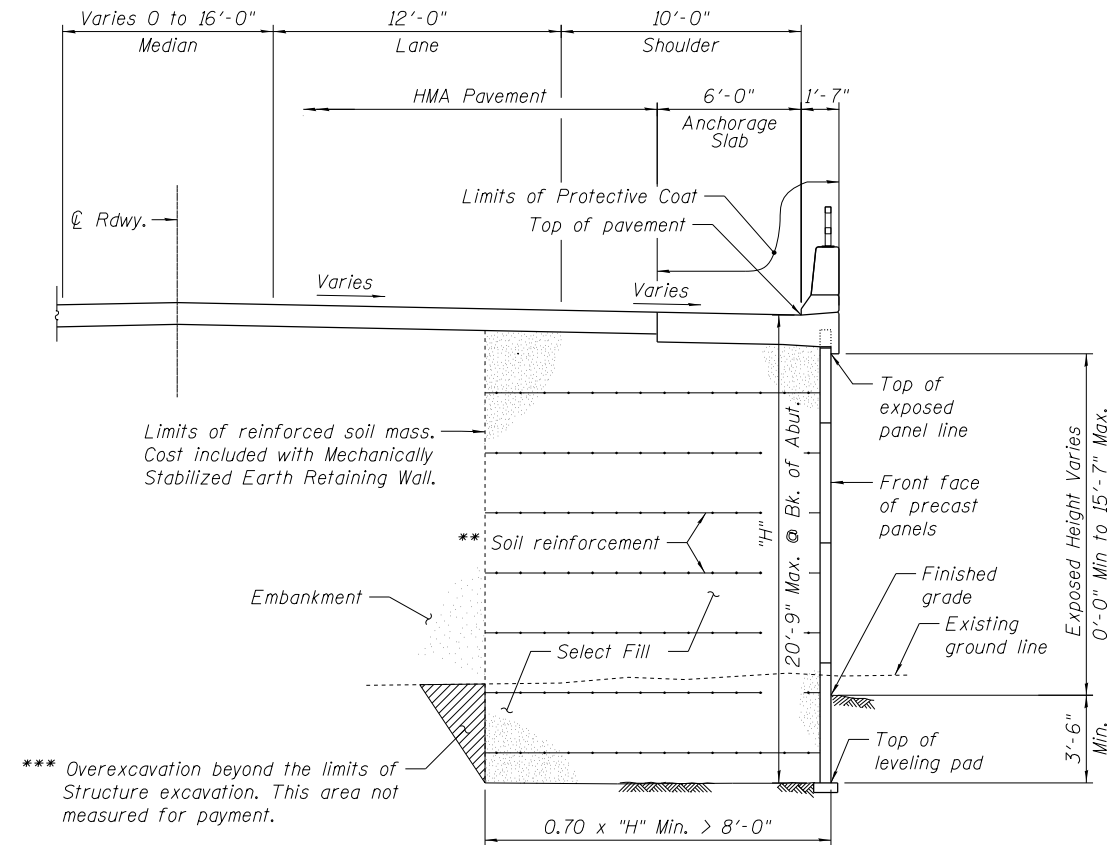
\\FS-004\AM\VALU\LD-TRANS\07\FRDC\1\02012341-92\STRUCT\CA0\72B58\0697901\INDEX_SHT.DGN



* The M.S.E. wall supplier shall design the abutment soil reinforcement to resist a horizontal force of 2.1 kips/ft. of abutment.

SECTION THRU ABUTMENT
(Looking North)

*** Backfill overexcavation with same material as used for select fill.
Cost included with Mechanically Stabilized Earth Retaining Wall.



** The M.S.E. wall supplier's internal stability design shall account for the anchorage slab's bearing pressure surcharge of 1.0 ksf and horizontal sliding force of 0.5 kips/ft. of wall.

TYPICAL WALL SECTION

Sta. 81+40.83 to Sta. 84+75.00 = 2.0% Cross Slope (Median, Lane & Shoulder)
Sta. 84+75.00 to Sta. 85+00.00 = Cross Slope Transition, Varies
Sta. 85+00.00 to Sta. 87+51.23 = 1.50% (Median & Lane), 4.0% (Shoulder)

\0697901-72B58-001-GPE.DGN, \ALLSNUM-72B58-001-BORDER.DGN
 7-30-2014, 14:59:57
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FILE NAME =	USER NAME =	DESIGNED - CPB	REVISED -
	DATE - 8/5/2014	CHECKED - BCK	REVISED -
GKE GARZA KARHOFF ENGINEERING, LLC Structural Engineers Chicago, IL	PLOT SCALE =	DRAWN - CPB	REVISED -
	PLOT DATE =	CHECKED - BCK	REVISED -

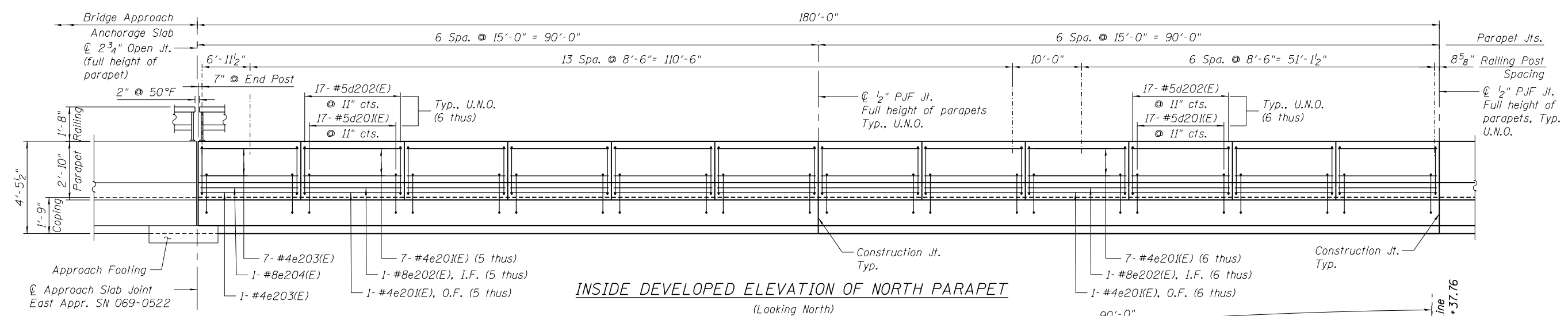
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS & DETAILS

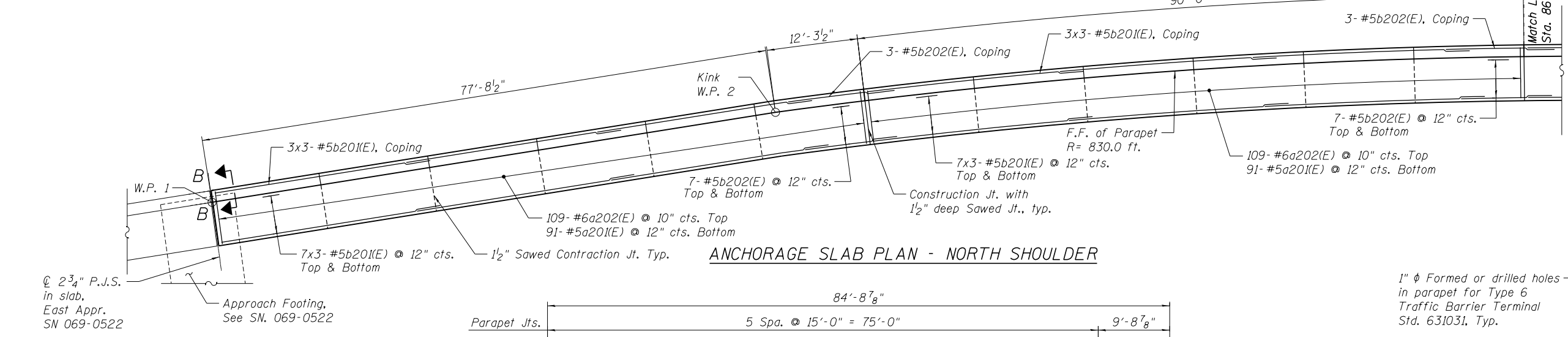
SHEET NO. S4-3 OF 13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	573
SN 069-7901		CONTRACT NO. 72B58		
ILLINOIS FED. AID PROJECT				

FILE NAME = \\FS-004\AM\VAL\I.D - TRANS. 071\FRCH\02012341-02\STRUCT\CAD\72B58\0697901\0697901-72B58-002-RET\MALL.DGN
 USER NAME = GARZA KARHOFF ENGINEERING, LLC
 DESIGNED - CPB
 CHECKED - BCK
 DATE - 10/3/2014
 PLOT SCALE =
 DRAWN - CPB
 CHECKED - BCK
 PLOT DATE =
 REVISED -
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 REVISED -
 REVISED -
 REVISED -
 STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 ANCHORAGE SLAB PLAN & ELEVATION
 1 OF 2
 SHEET NO. S4-4 OF 13 SHEETS
 F.A.P. RTE. 745 SECTION 123B-2 COUNTY MORGAN TOTAL SHEETS 782 SHEET NO. 574 CONTRACT NO. 72B58 ILLINOIS FED. AID PROJECT



INSIDE DEVELOPED ELEVATION OF NORTH PARAPET
(Looking North)

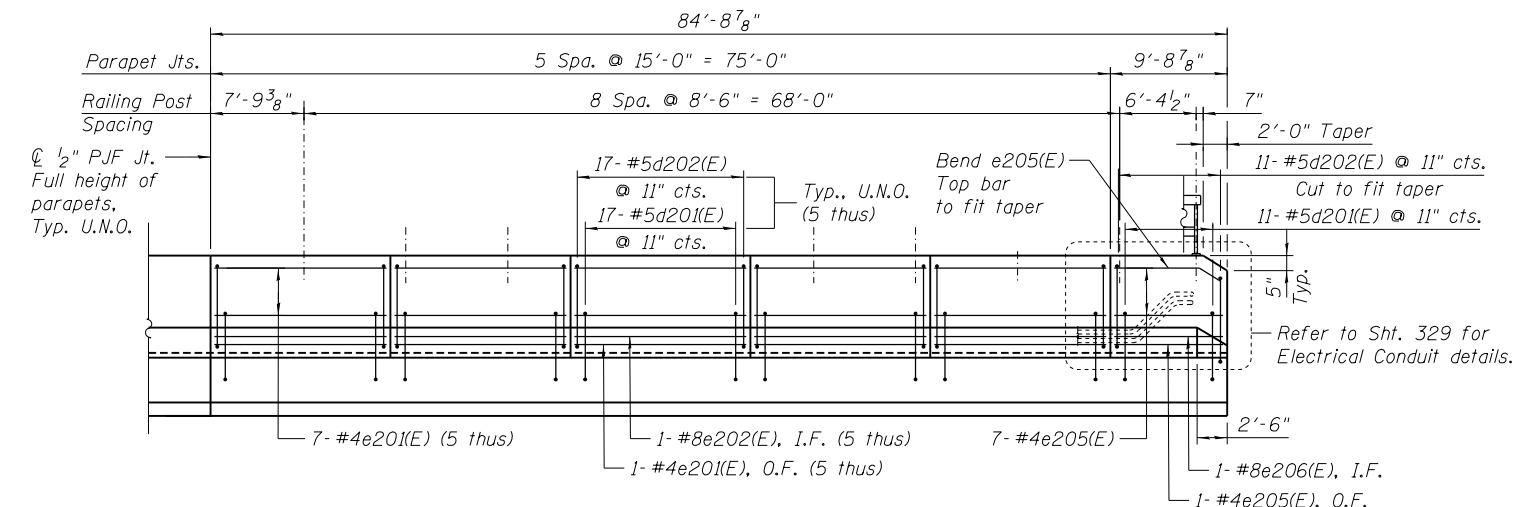


ANCHORAGE SLAB PLAN - NORTH SHOULDER

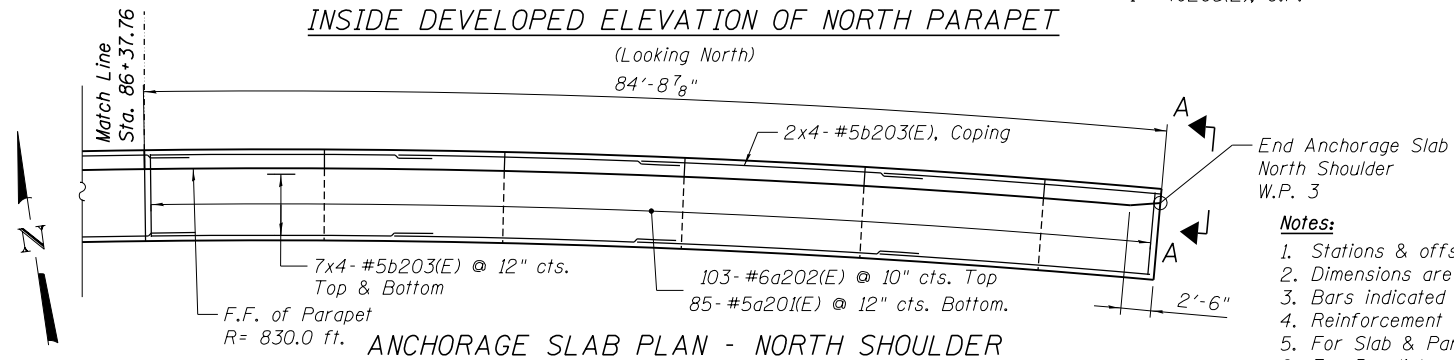
WORKPOINTS TABLE

	Station	Offset
W.P. 1	84+61.47	-28.27
W.P. 2	85+39.16	-30.00
W.P. 3	87+19.44	-30.42

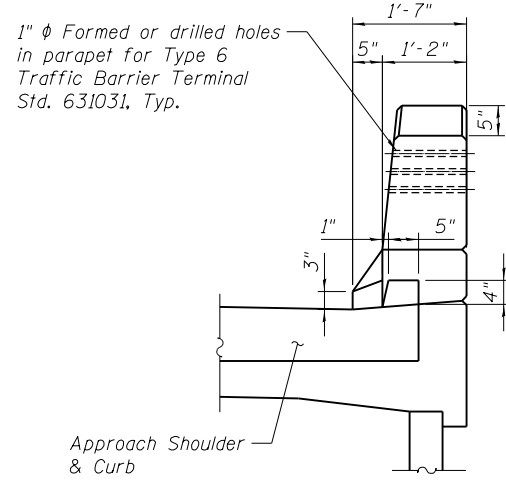
Min. Lap Length (unless noted otherwise)	
#4	2'-0"
#5	3'-3"
#8	5'-2"



INSIDE DEVELOPED ELEVATION OF NORTH PARAPET
(Looking North)



ANCHORAGE SLAB PLAN - NORTH SHOULDER



VIEW A-A
(North Parapet shown,
South Parapet opposite)

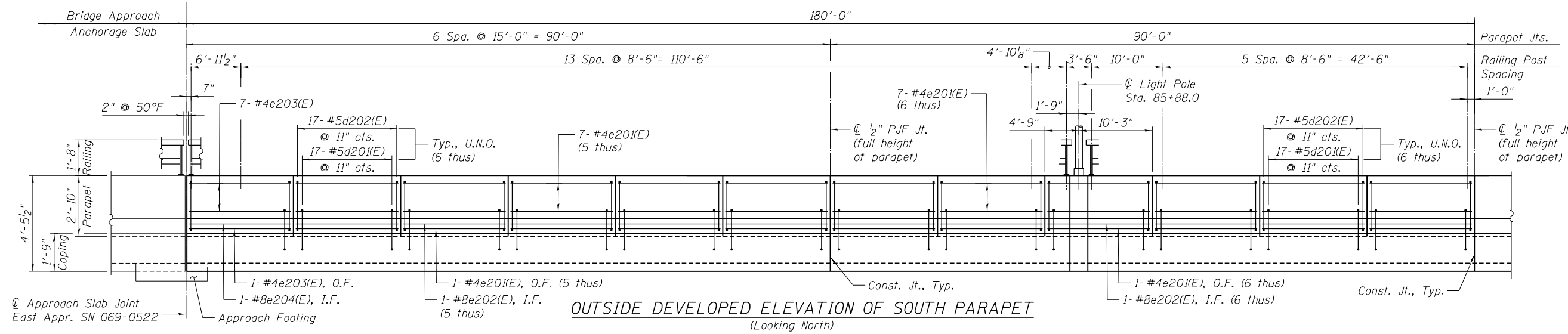
Notes:

1. Stations & offsets are given to the inside face of parapet and are measured from ϕ IL 104.
2. Dimensions are measured along the inside face of Parapet.
3. Bars indicated thus 7x3-#5 etc. indicates 7 lines of bars with 3 lengths per line.
4. Reinforcement shall be spaced as shown in Typical Section thru Anchorage Slab on Sht. S4-7.
5. For Slab & Parapet Joint details and Section B-B, See Sht. S4-7.
6. For Bar list and Bill of Material, see Sht. S4-8.

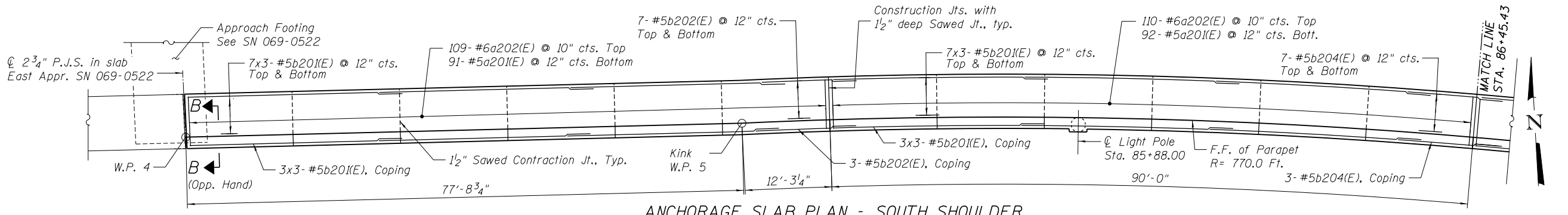
WORKPOINTS TABLE

	Station	Offset
W.P. 4	84+61.47	28.27
W.P. 5	85+39.18	30.00
W.P. 6	87+51.23	30.00
W.P. 7	88+25.00	30.42

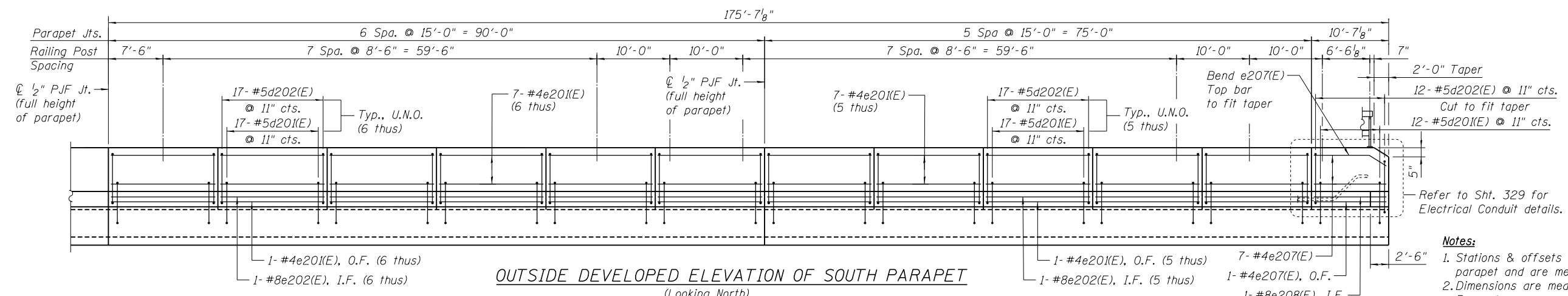
Min. Lap Length (unless noted otherwise)	
#4	2'-0"
#5	3'-3"
#8	5'-2"



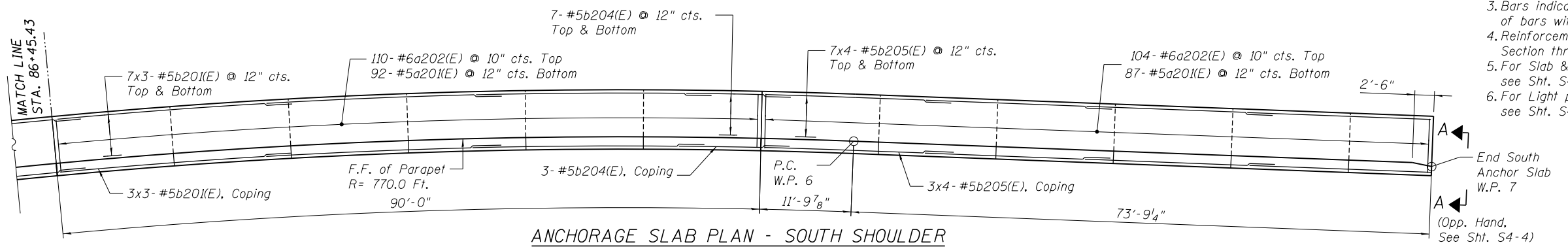
OUTSIDE DEVELOPED ELEVATION OF SOUTH PARAPET
(Looking North)



ANCHORAGE SLAB PLAN - SOUTH SHOULDER



OUTSIDE DEVELOPED ELEVATION OF SOUTH PARAPET
(Looking North)



ANCHORAGE SLAB PLAN - SOUTH SHOULDER

- Notes:**
1. Stations & offsets are given to the inside face of parapet and are measured from ϕ IL 104.
 2. Dimensions are measured along the inside face of Parapet.
 3. Bars indicated thus 7x3- #5 etc. indicates 7 lines of bars with 3 lengths per line.
 4. Reinforcement shall be spaced as shown in Typical Section thru Parapet on Sht. S4-7.
 5. For Slab & Parapet Joint and Section B-B, see Sht. S4-7.
 6. For Light pole details, Bar list and Bill of Material, see Sht. S4-8.

FILE NAME = ... USER NAME = ... DESIGNED - CPB ... REVISIONS ... DATE - 10/3/2014 ... CHECKED - BCK ... REVISED - ... DRAWN - CPB ... REVISED - ... CHECKED - BCK ... REVISED - ...
 GKE GARZA KARHOFF ENGINEERING, LLC
 Structural Engineers
 Chicago, IL

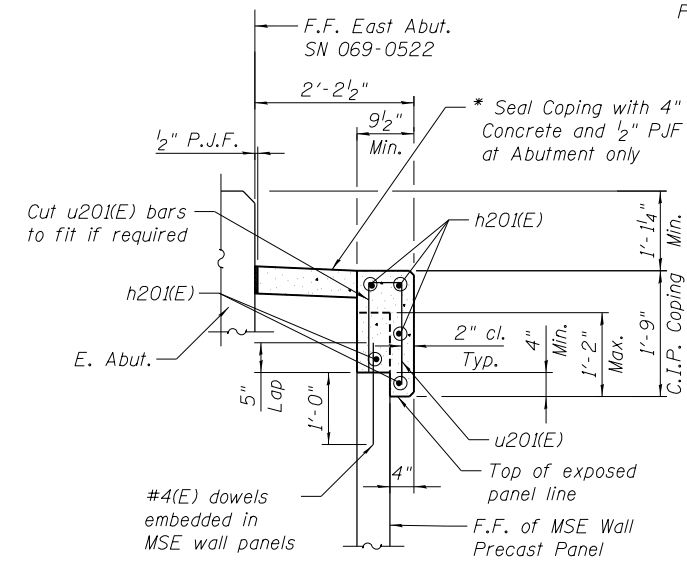
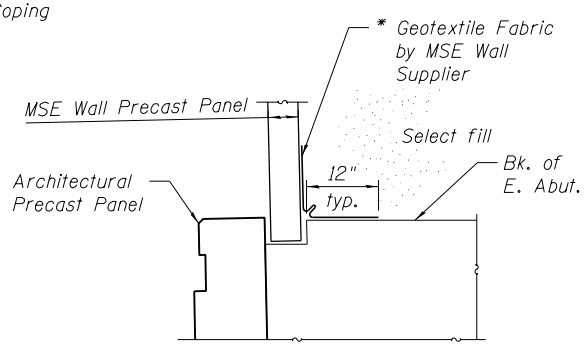
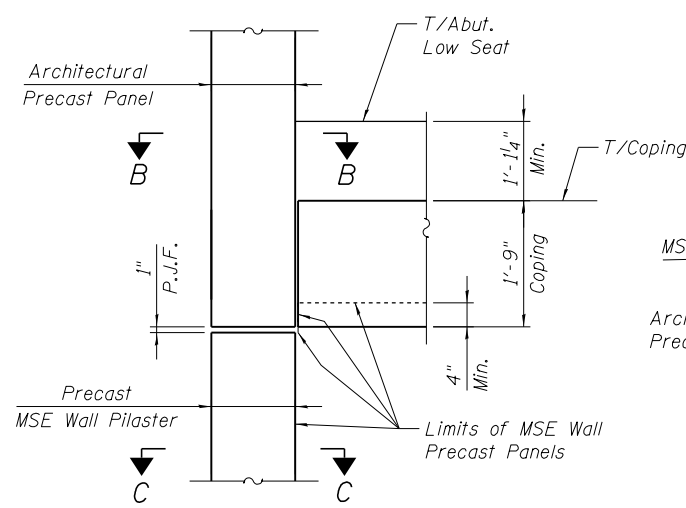
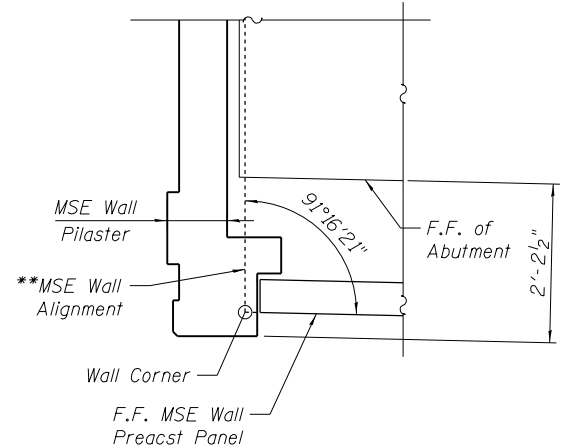
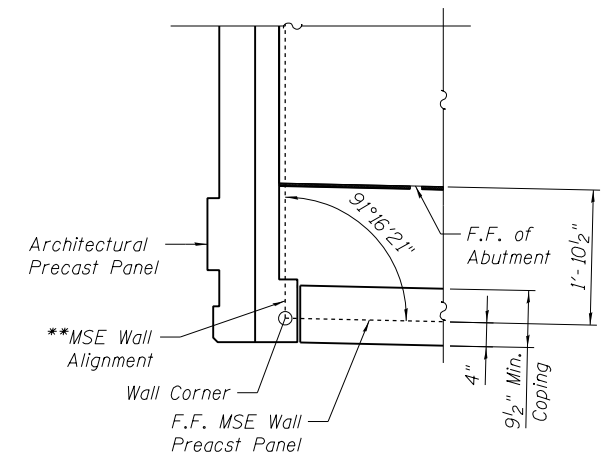
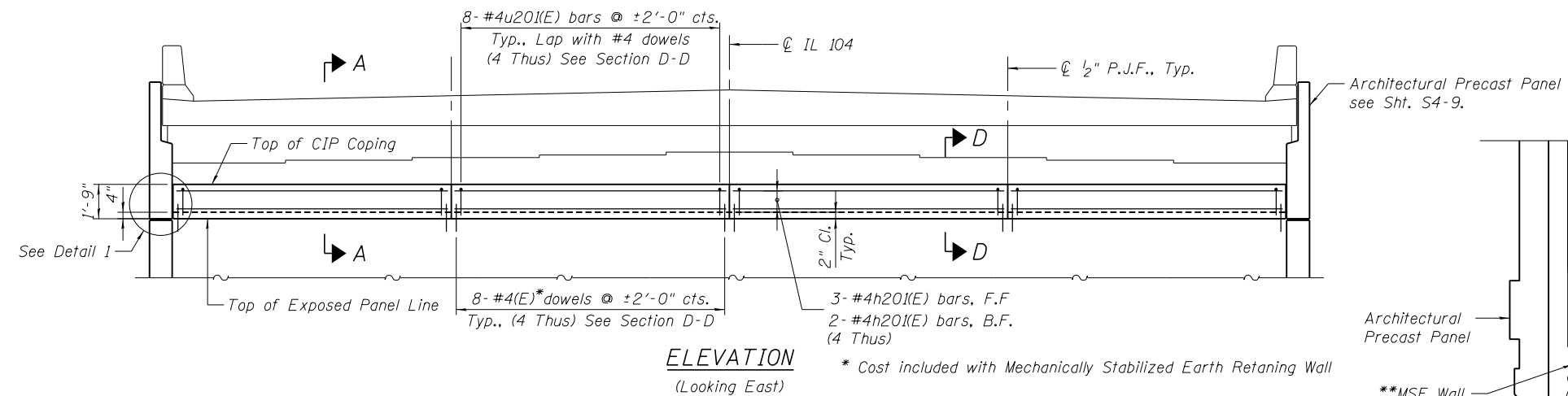
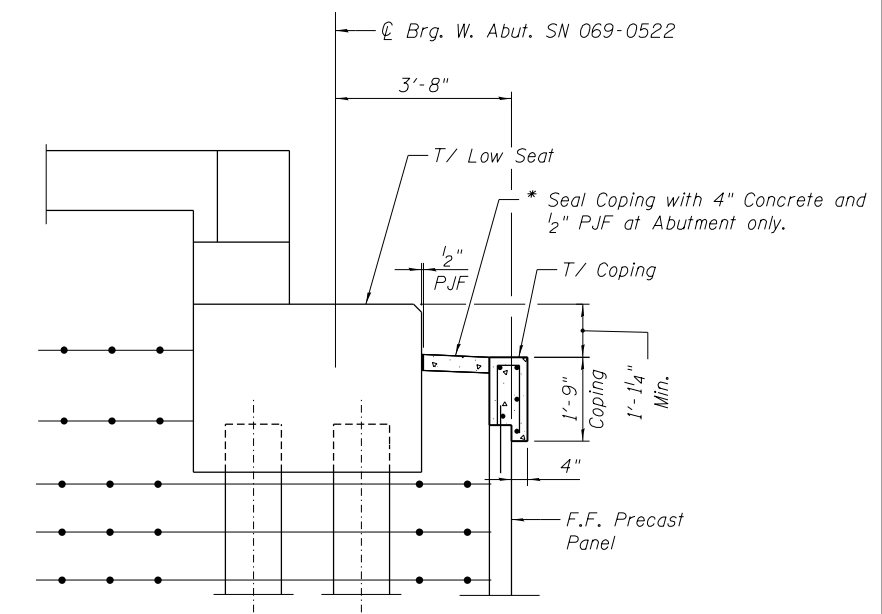
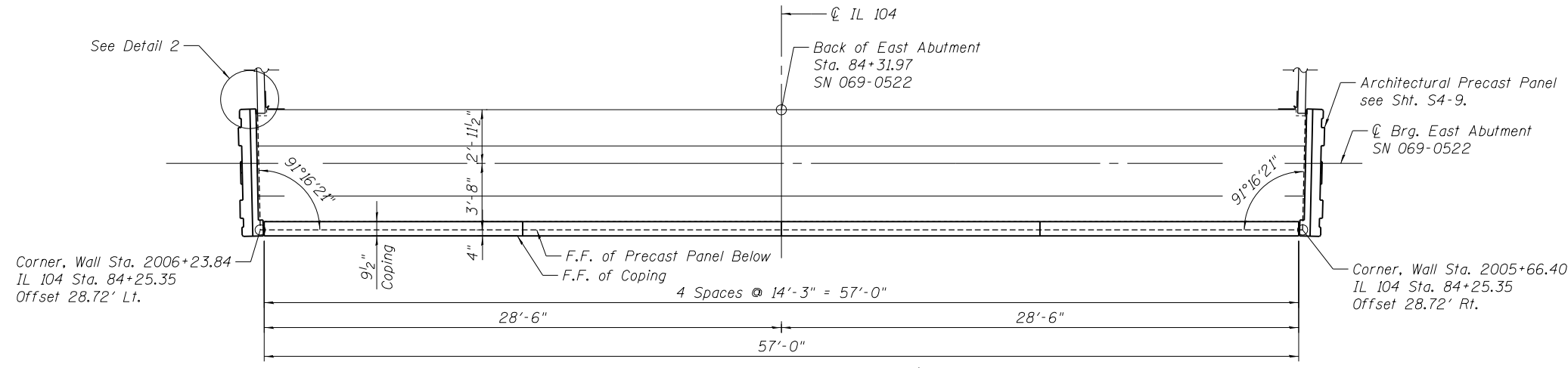
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**ANCHORAGE SLAB
PLAN & ELEVATION
2 OF 2**

F.A.P. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	575
SN 069-7901		CONTRACT NO. 72B58		

SHEET NO. S4-5 OF 13 SHEETS

ILLINOIS FED. AID PROJECT



Notes:

1. For Bar List and Bill of Material, see Sht. S4-8.

2. All edges shall have a 3/4" chamfer, unless noted otherwise.

8888-ref:1111-nome8888
 7-30-2014, 15:00:03
 NE W44444
 \\FS-0044\AM\VALU\T.D. TRANS. 071\FRCH\1\02012341-02\STRUCT\CAD\72B58\069-0522\069-0522-RET.WALL.SHT.DGN

FILE NAME =	USER NAME =	DESIGNED - CPB	REVISED -
	DATE - 8/5/2014	CHECKED - BCK	REVISED -
	PLOT SCALE =	DRAWN - CPB	REVISED -
	PLOT DATE =	CHECKED - BCK	REVISED -

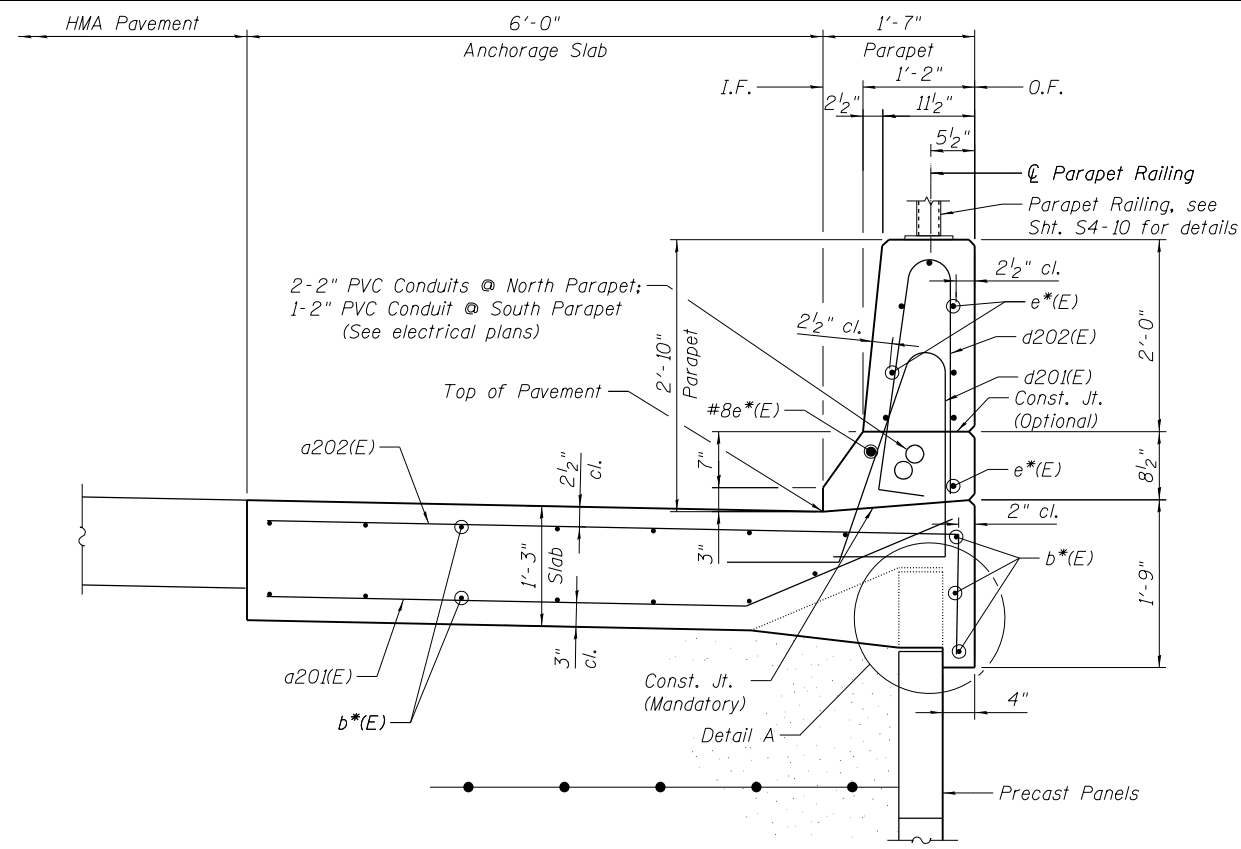
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

COPING DETAILS
AT EAST ABUTMENT OF SN 069-0522

SHEET NO. S4-6 OF 13 SHEETS

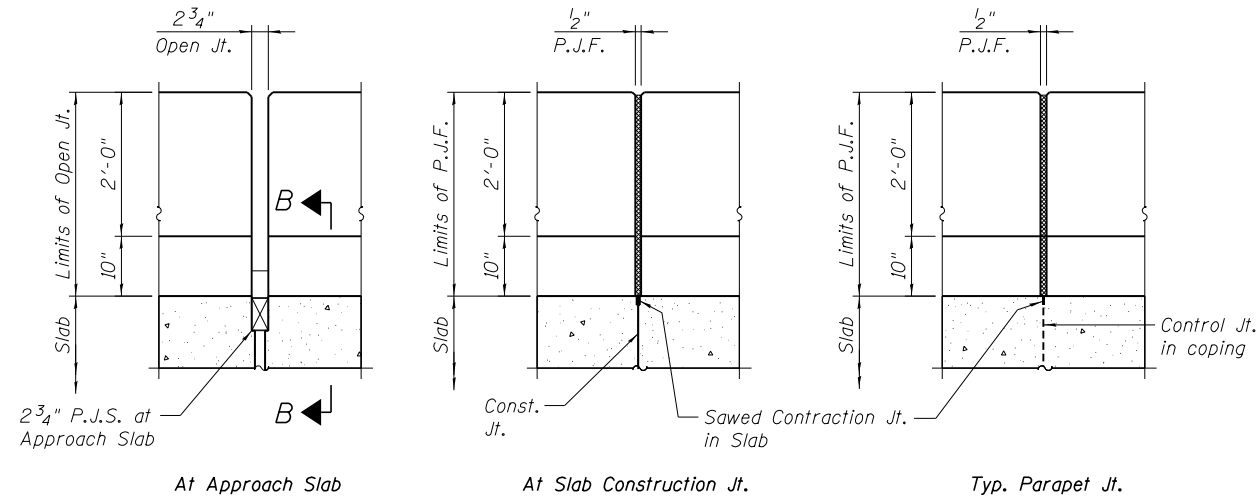
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	576
SN 069-7901		CONTRACT NO. 72B58		

ILLINOIS FED. AID PROJECT

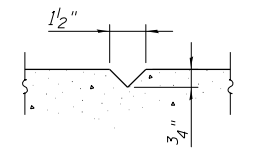


TYPICAL SECTION THRU ANCHORAGE SLAB

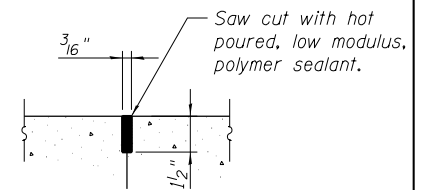
* For bar designations, see Anchorage Slab Plans.



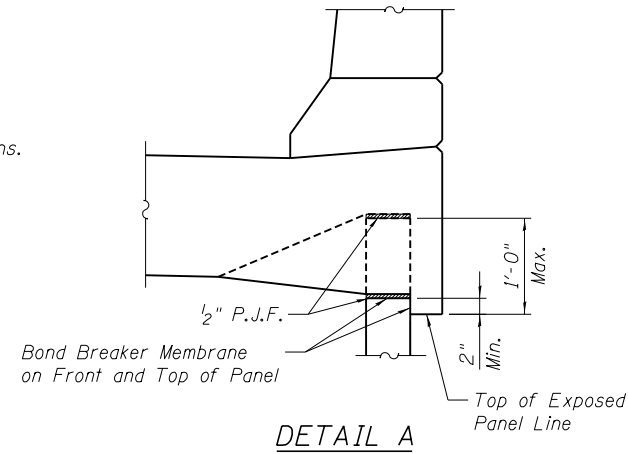
ELEVATION OF JOINTS IN PARAPET AND SLAB



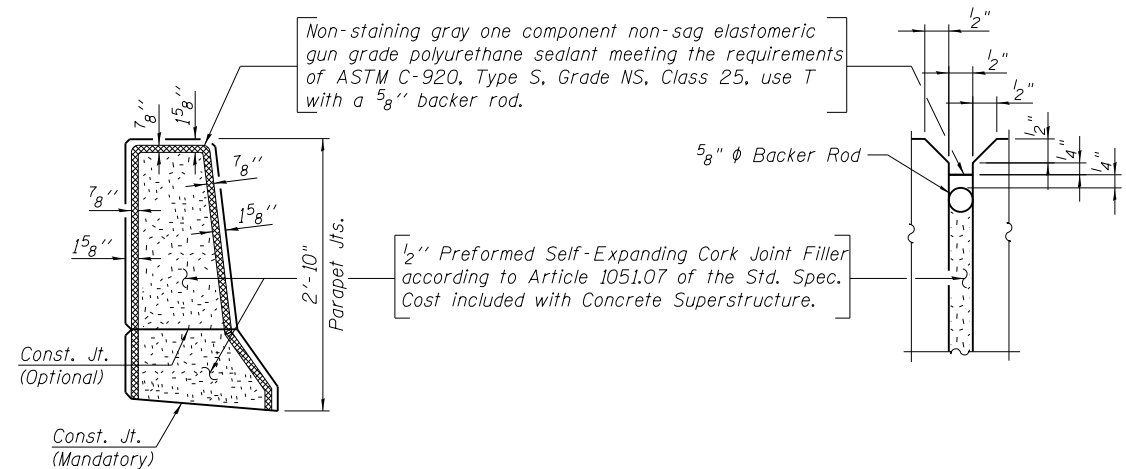
CONTROL JOINT IN COPING



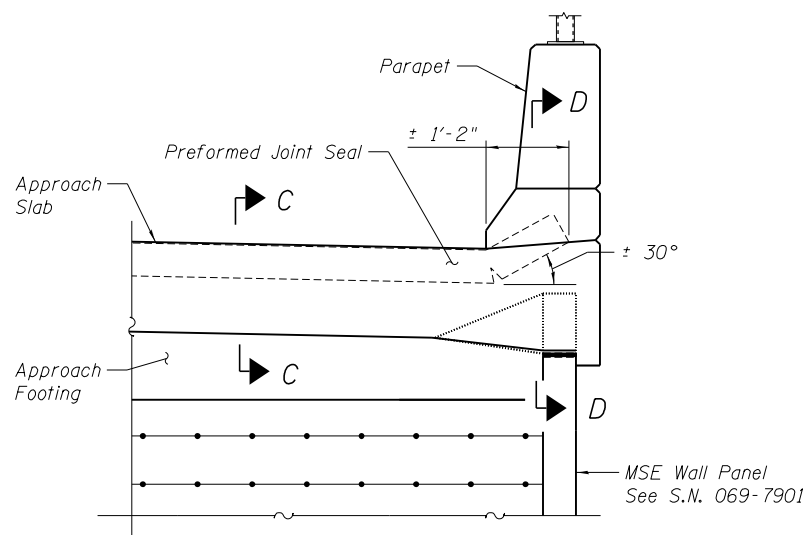
SAWED CONTRACTION JT. IN SLAB



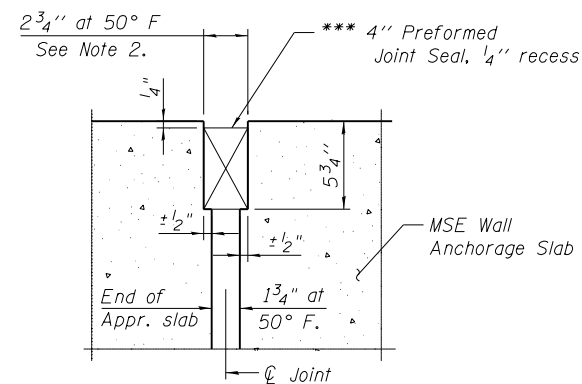
DETAIL A



PARAPET JOINT DETAILS

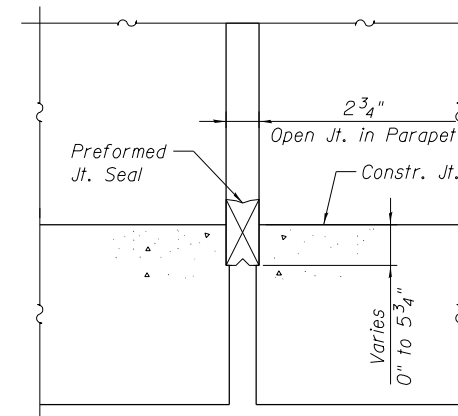


SECTION B-B



SECTION C-C

*** Cost included with Concrete Superstructure.

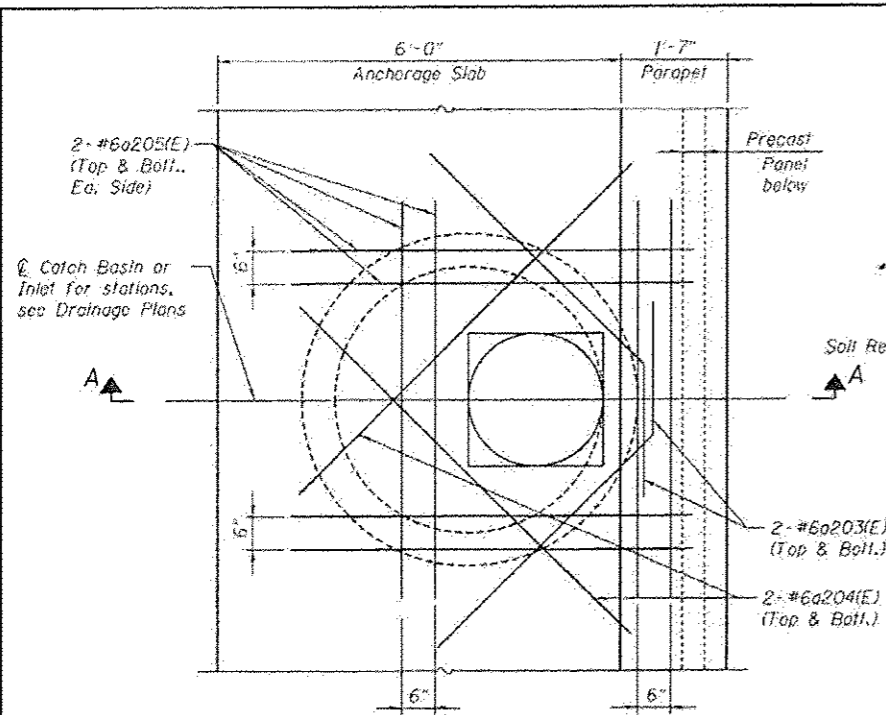


SECTION D-D

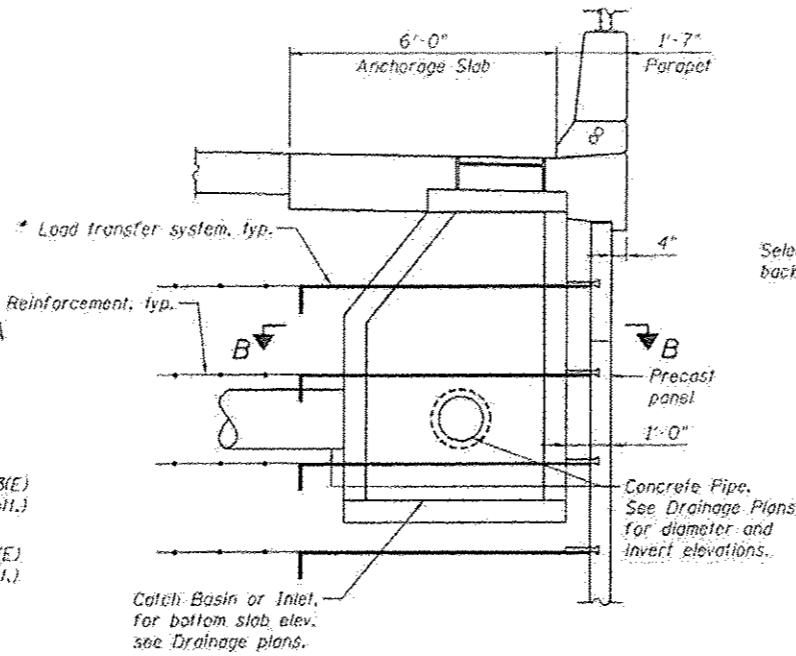
Notes:

1. For Bar List and Bill of Materials, see Sht. S4-8.
2. I.F. denotes inside face
O.F. denotes outside face

FILE NAME = \\FS-0044\AM\VALU\T.D-TRANS-07\FRCH\02012341-02\STRUCT\CAD\72B58\0697901\SHEET.0697901-72B58-007-RET\MALL-SHT.DGN
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 DATE = 10/3/2014
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 REVISED -
 REVISED -
 PLOT SCALE =
 PLOT DATE =
 GARZA KARHOFF ENGINEERING, LLC
 Structural Engineers
 Chicago, IL
 STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 ANCHORAGE SLAB DETAILS
 1 OF 2
 SHEET NO. S4-7 OF 13 SHEETS
 F.A.P. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.
 745 123B-2 MORGAN 782 577
 SN 069-7901 CONTRACT NO. 72B58
 ILLINOIS FED. AID PROJECT

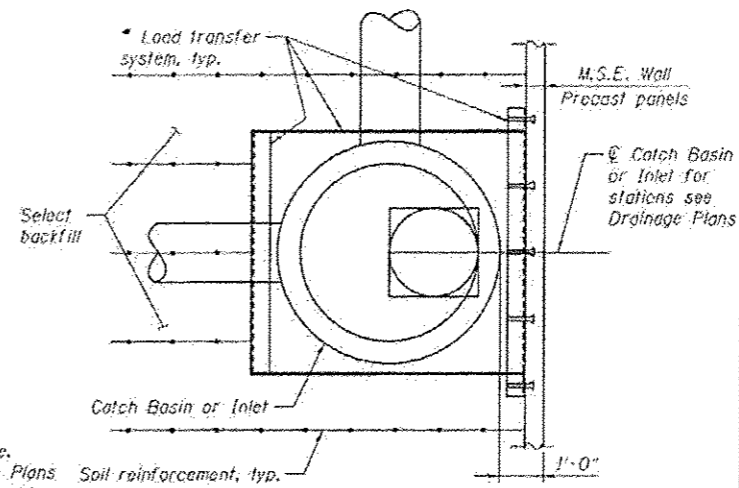


ANCHORAGE SLAB AT CATCH BASIN
(5 Thus)



SECTION A-A

* M.S.E. supplier to design load transfer system to accommodate pipe and catch basin and inlets.



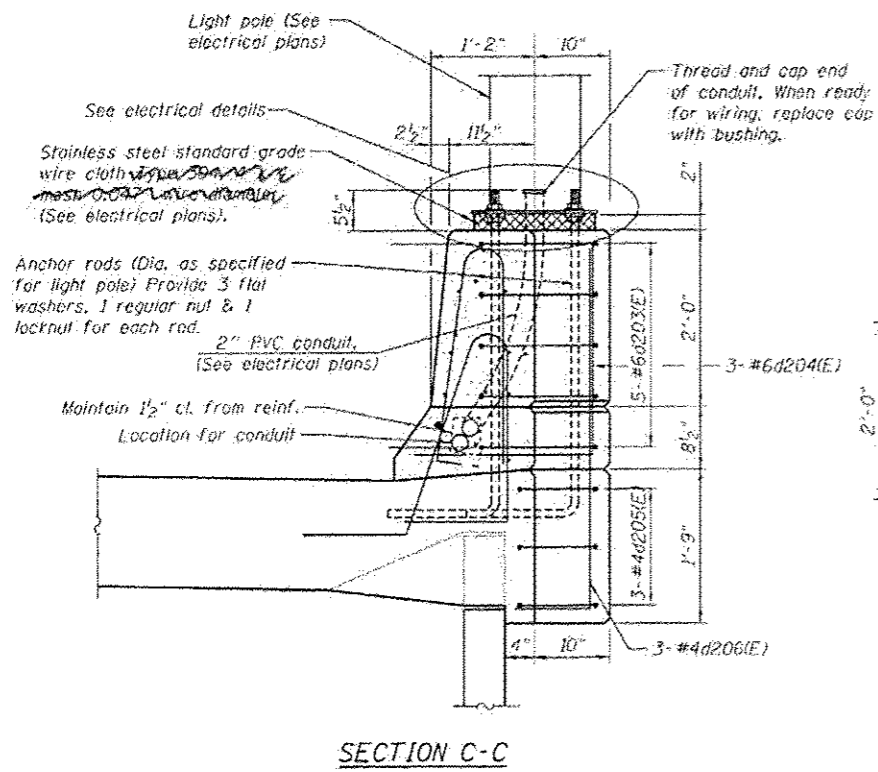
SECTION B-B

* M.S.E. supplier to design load transfer system to accommodate pipe and catch basin and inlets.

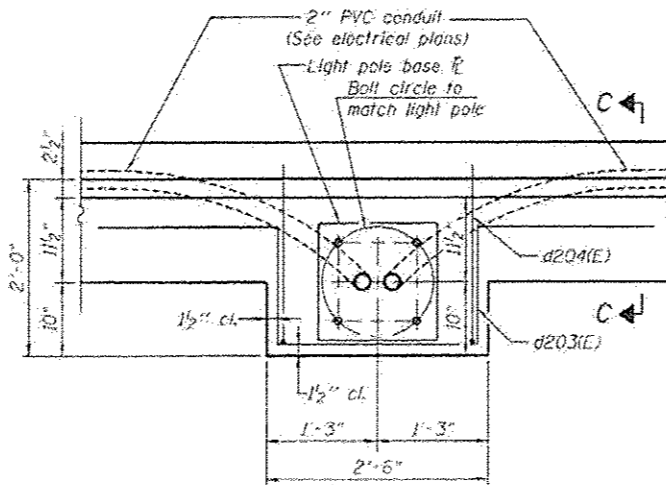
BAR LIST				
Bar	No.	Size	Length	Shape
a201(E)	629	#5	7'-4"	—
a202(E)	754	#6	8'-6"	—
a203(E)	20	#6	6'-6"	—
a204(E)	20	#6	7'-0"	—
a205(E)	80	#6	6'-0"	—
b201(E)	255	#5	30'-0"	—
b202(E)	51	#5	13'-0"	—
b203(E)	64	#5	23'-7"	—
b204(E)	34	#5	13'-9"	—
b205(E)	68	#5	23'-9"	—
d201(E)	703	#5	8'-2"	J
d202(E)	703	#5	4'-5"	A
d203(E)	5	#6	8'-11"	—
d204(E)	3	#6	4'-5"	L
d205(E)	3	#4	8'-1"	—
d206(E)	3	#4	4'-11"	L
e201(E)	266	#4	14'-8"	—
e202(E)	12	#4	21'-1"	—
e203(E)	12	#8	26'-4"	—
e204(E)	14	#4	14'-7"	—
e205(E)	4	#4	22'-8"	—
e206(E)	4	#8	25'-1"	—
e207(E)	7	#4	9'-5"	—
e212(E)	6	#4	24'-2"	—
e213(E)	8	#8	26'-6"	—
e214(E)	4	#4	22'-10"	—
e215(E)	4	#4	25'-3"	—
e216(E)	7	#4	10'-3"	—
h201(E)	20	#4	13'-11"	—
u201(E)	32	#4	3'-2"	I

BILL OF MATERIAL

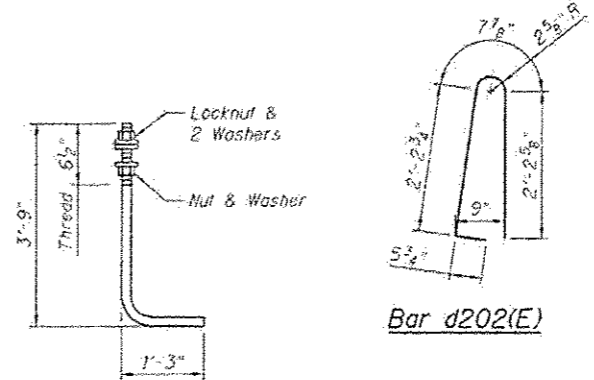
Item	Unit	Total
Concrete Superstructure	Cu. Yd.	304.3
Reinforcement Bars, Epoxy Coated	Pound	42,570



SECTION C-C



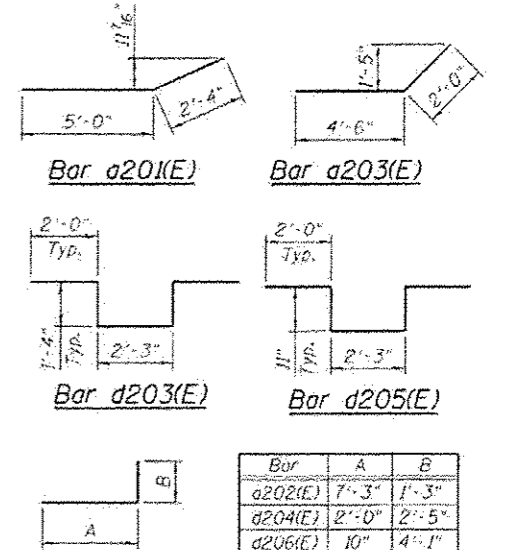
LIGHT POLE PLAN



ANCHOR ROD

Diameter as specified for light poles. (ASTM F 1554 Grade 105) Full length hot dip galvanized. 4-Anchor Rods per pole foundation. Cost of anchor rods is included with Concrete Superstructure.

Galvanized Bar u201(E)

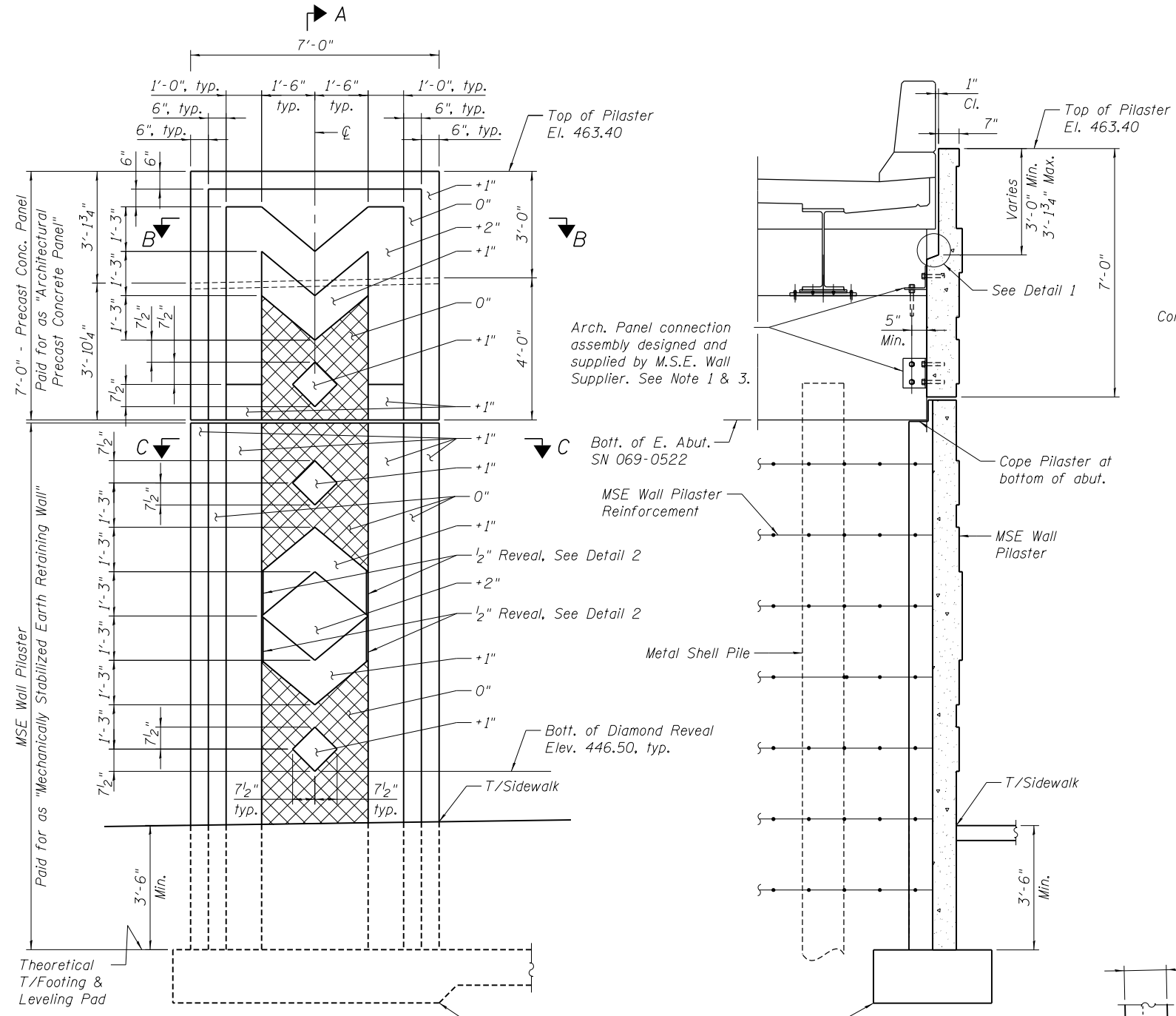


Bar	A	B
a202(E)	7'-3"	1'-3"
d204(E)	2'-0"	2'-5"
d206(E)	10"	4'-1"

Bars a202(E), d204(E) & d206(E)

FILE NAME: \\S:\Projects\2014\12345\Drawings\ANCHORAGE SLAB AT CATCH BASIN.dwg
 USER: CARLA KARROFF
 DATE: 8/5/2014
 PLOT SCALE: 1/8"=1'-0"
 PLOT DATE: 8/5/2014

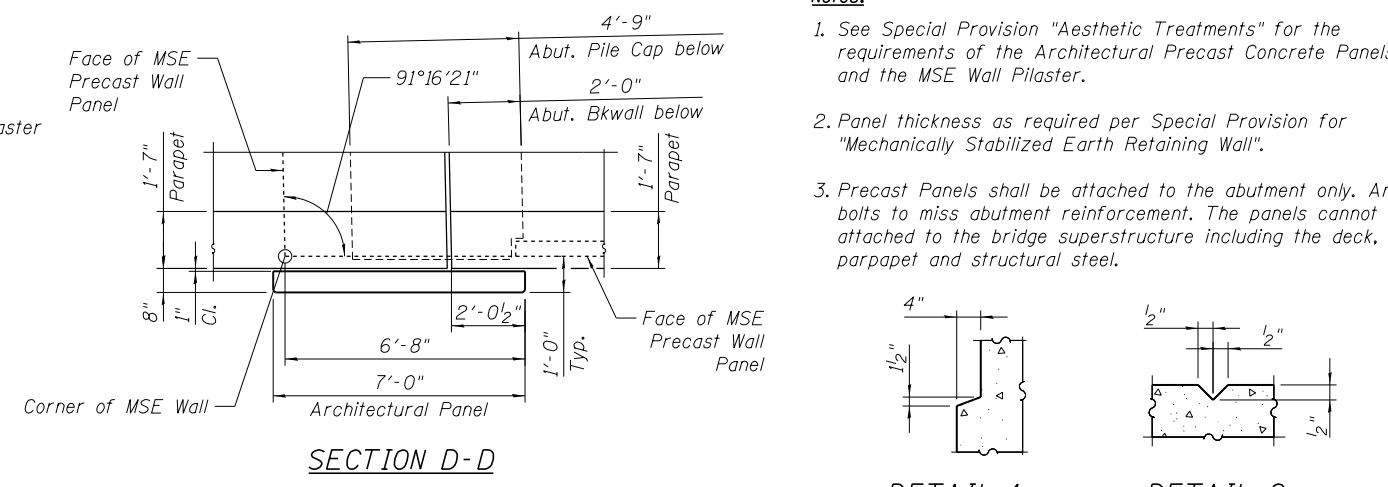
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 7-30-2014, 15:06:08 ... GARZA KARHOFF ENGINEERING, LLC ...
 CHICAGO, IL



TYPICAL PILASTER ELEVATION
 South Pilaster Elevation Shown
 North Pilaster Elevation - Opposite hand

LEGEND

Surface to be painted to match color of exterior steel beam of SN 069-0522. See Note 1.



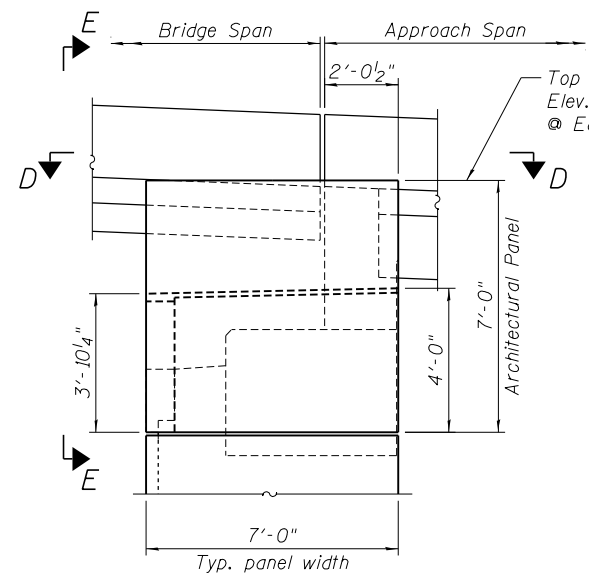
SECTION D-D

DETAIL 1

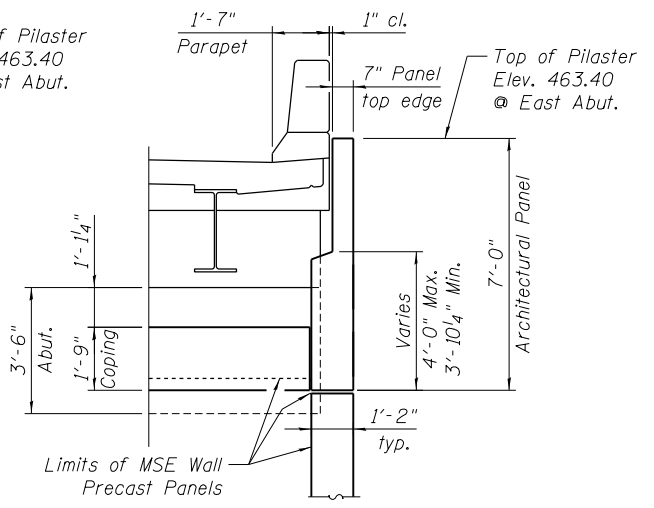
DETAIL 2

Notes:

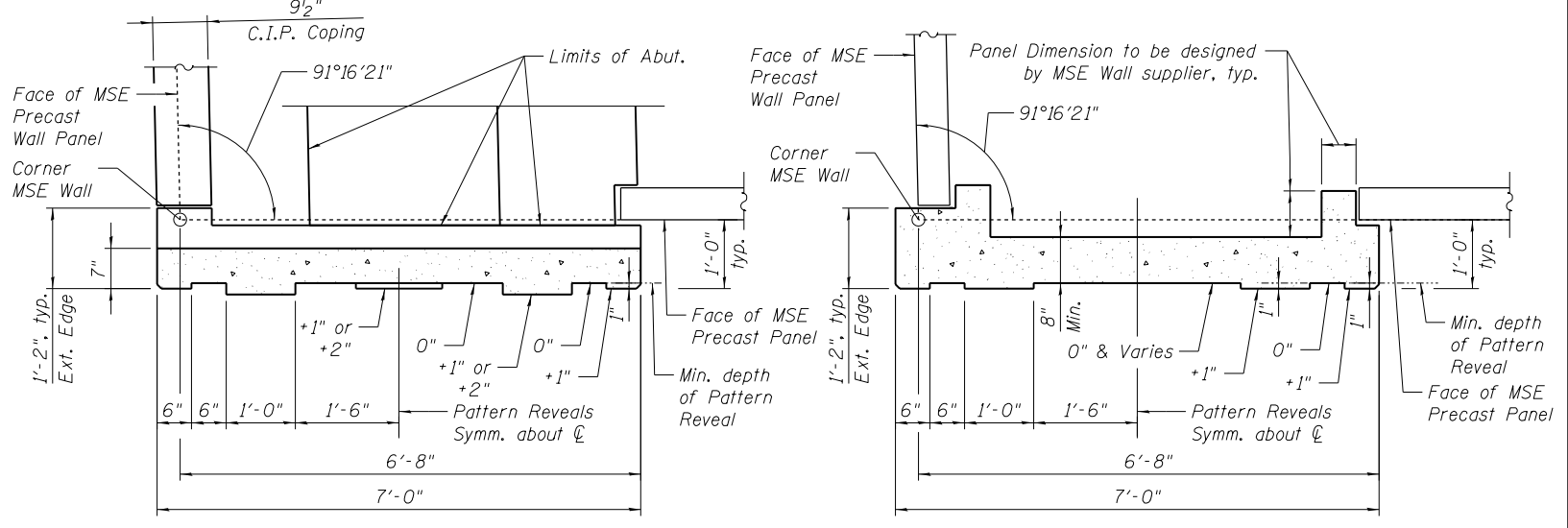
1. See Special Provision "Aesthetic Treatments" for the requirements of the Architectural Precast Concrete Panels and the MSE Wall Pilaster.
2. Panel thickness as required per Special Provision for "Mechanically Stabilized Earth Retaining Wall".
3. Precast Panels shall be attached to the abutment only. Anchor bolts to miss abutment reinforcement. The panels cannot be attached to the bridge superstructure including the deck, parapet and structural steel.



ELEVATION DETAIL AT ABUTMENT
 South Pilaster Elevation Shown
 North Pilaster Elevation - Opposite hand



ELEVATION E-E



SECTION B-B

SECTION C-C

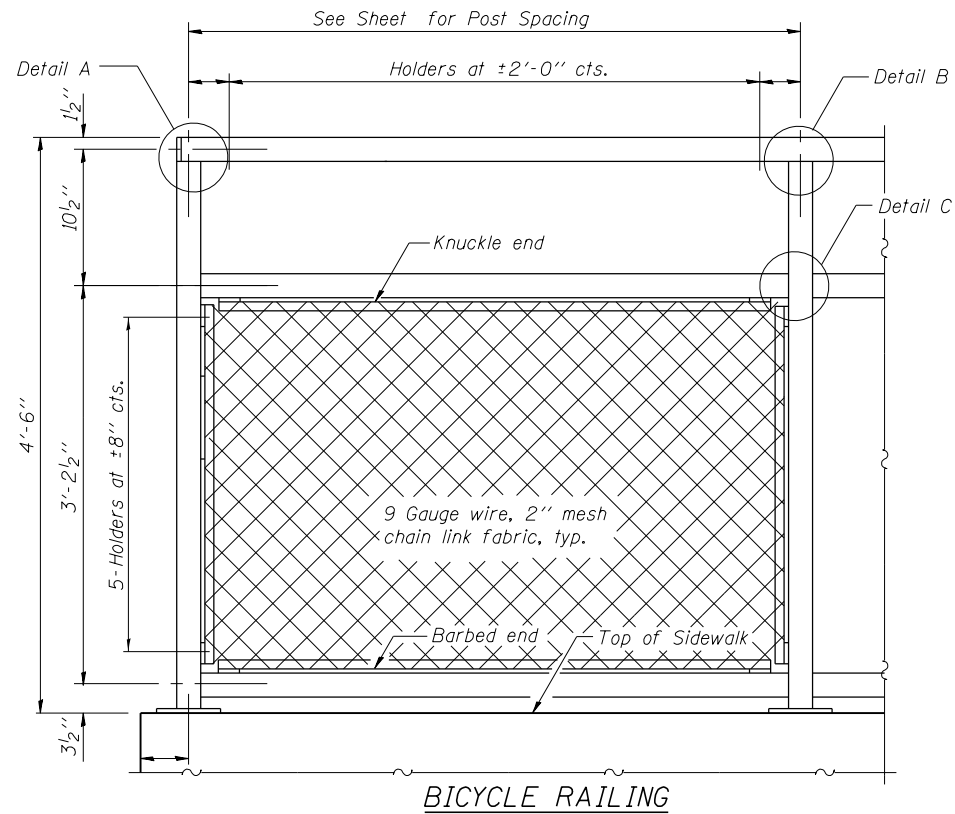
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

PRECAST PILASTER DETAILS

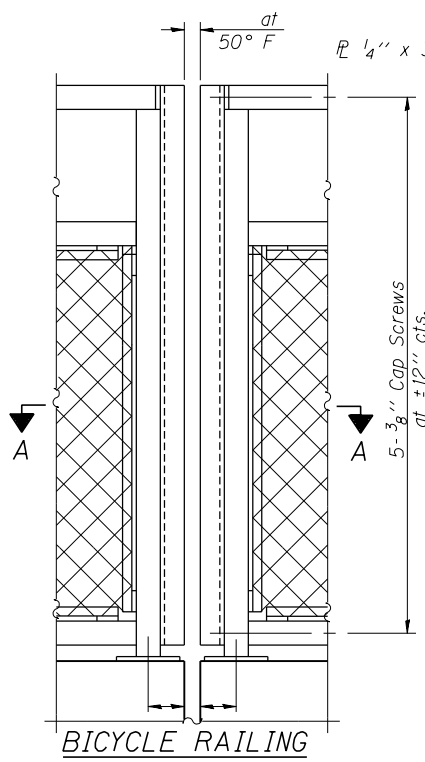
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	579
SN 069-7901		CONTRACT NO. 72B58		

SHEET NO. S4-9 OF 13 SHEETS

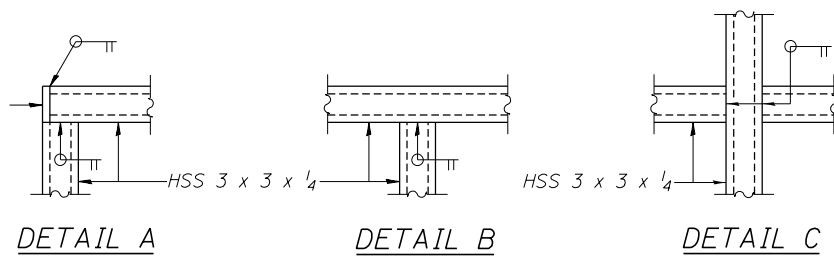
ILLINOIS FED. AID PROJECT



BICYCLE RAILING

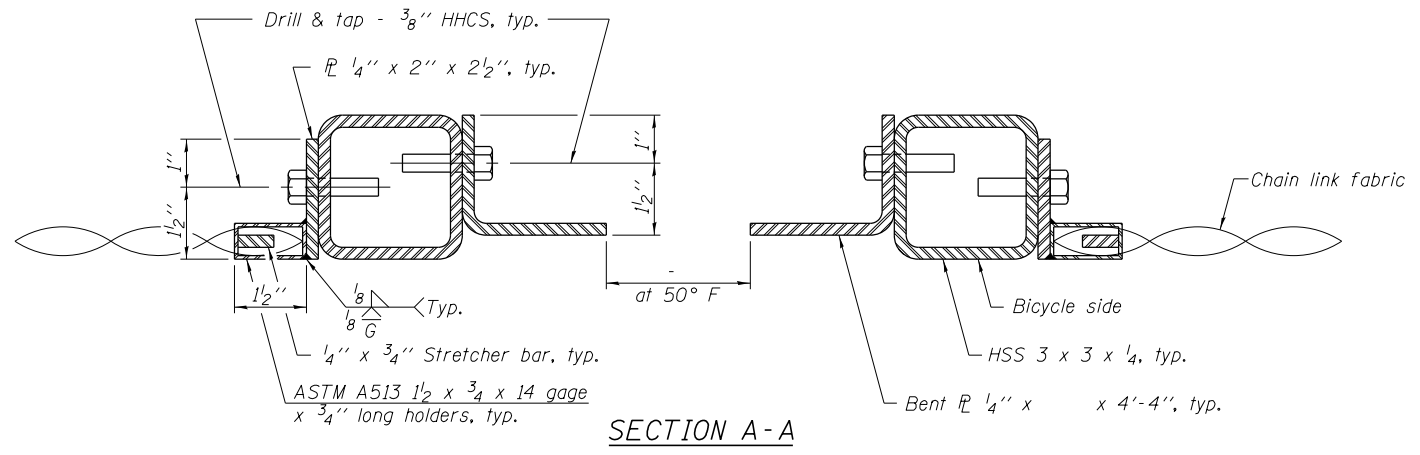


BICYCLE RAILING

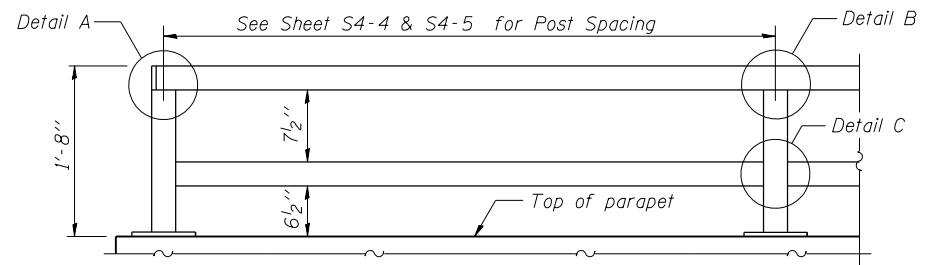


DETAIL A DETAIL B DETAIL C

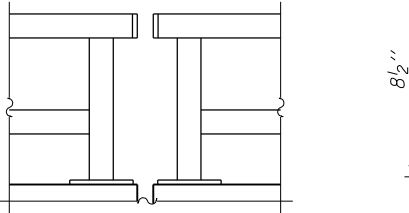
Note: All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.



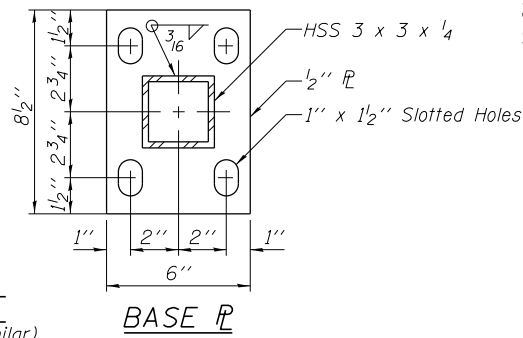
SECTION A - A



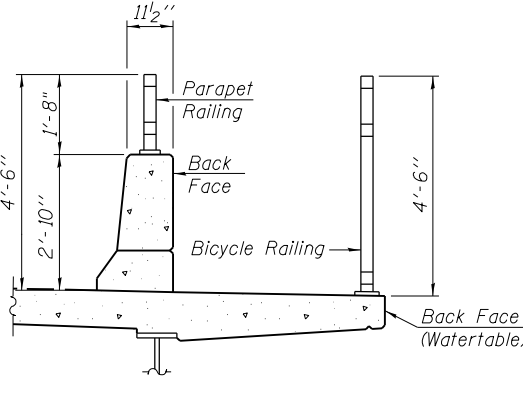
**PARAPET RAILING
ELEVATION
(Inside Face of Two Element Rail)**



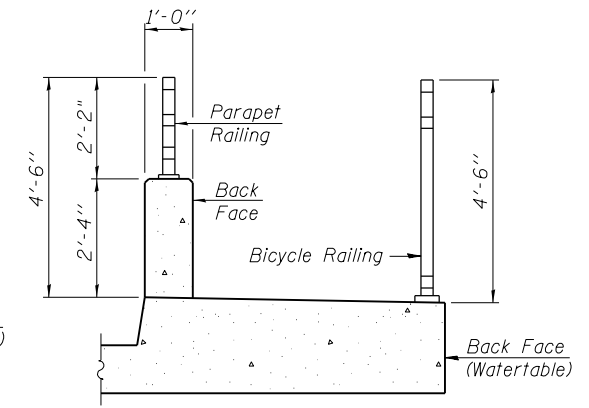
**PARAPET RAILING
ELEVATION AT EXPANSION JOINT
(Two Element Rail Shown - Three Element Rail Similar)**



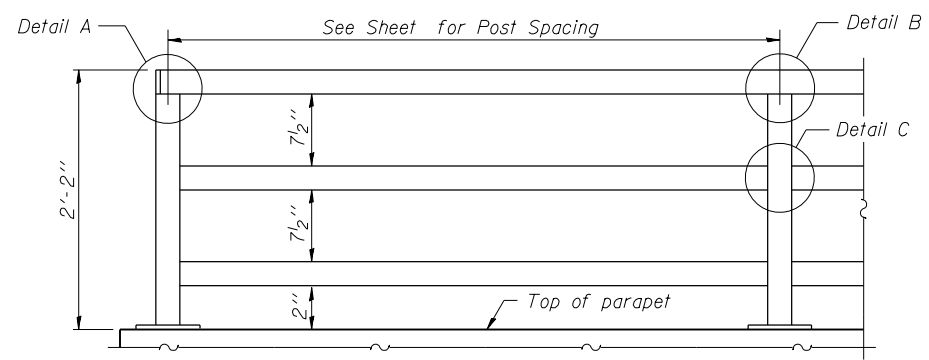
BASE PL



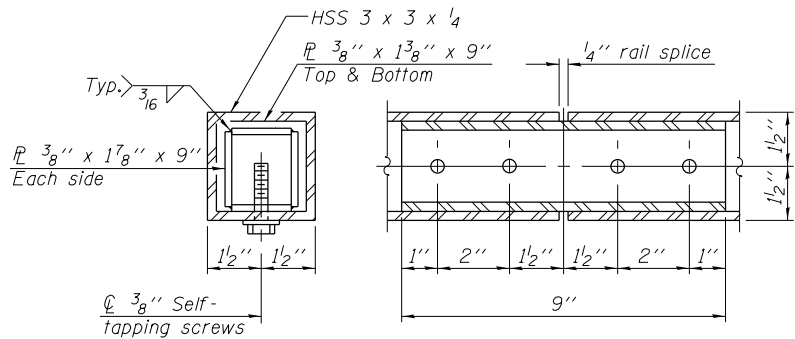
SECTION THRU DECK



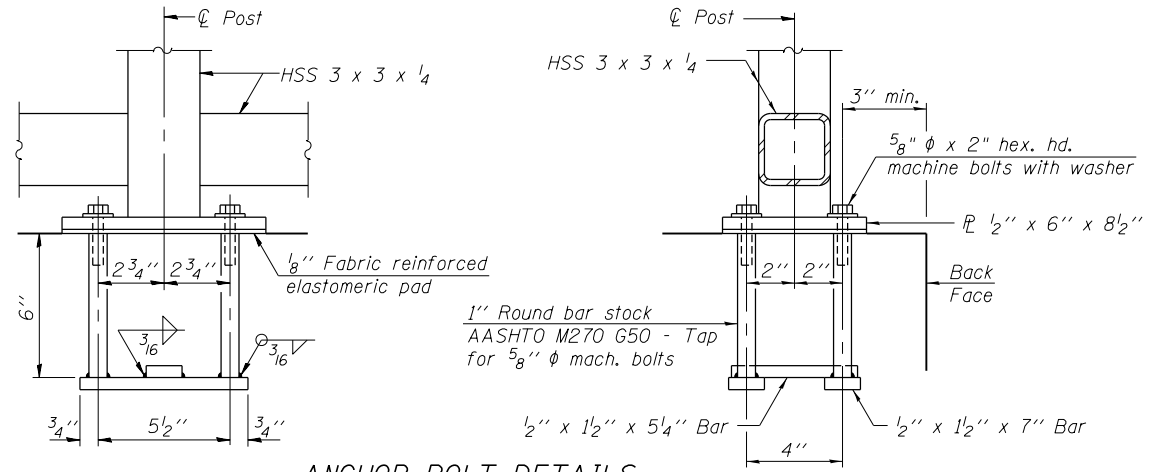
SECTION THRU SIDEWALK



**PARAPET RAILING
ELEVATION
(Inside Face of Three Element Rail)**



RAIL SPLICE



ANCHOR BOLT DETAILS

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8 inch diameter anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

BILL OF MATERIAL

Item	Unit	Quantity
Bicycle Railing	Foot	-
Parapet Railing	Foot	617

FILE NAME = GARZA KARHOFF ENGINEERING, LLC
 USER NAME =
 DATE = 8/5/2014
 DESIGNED -
 CHECKED -
 REVISED -
 PLOT SCALE =
 DRAWN -
 REVISED -
 PLOT DATE =
 CHECKED -
 REVISED -
 STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 SHEET NO. S4-10 OF 13 SHEETS
 SECTION 123B-2
 COUNTY MORGAN
 TOTAL SHEETS 782
 SHEET NO. 580
 CONTRACT NO. 72B58
 ILLINOIS FED. AID PROJECT

R-29 1-27-12 (10'-0" Maximum Post Spacing)

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
	DATE = 8/5/2014	CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

PARAPET RAILING

SHEET NO. S4-10 OF 13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	580
SN 069-7901		CONTRACT NO. 72B58		

SHEET NO.	TITLE
--	INDEX OF SHEETS AND B.O.M.
C1	PUMP STATION SITE PLAN
C2	PUMP STATION GRADING PLAN
C3	PUMP STATION AND DISCHARGE PIPE PROFILE
C4	SITE DETAILS, 1 OF 2
C5	SITE DETAILS, 2 OF 2
C6	UNDERGROUND STORAGE CHAMBER DETAILS, 1 OF 3
C7	UNDERGROUND STORAGE CHAMBER DETAILS, 2 OF 3
C8	UNDERGROUND STORAGE CHAMBER DETAILS, 3 OF 3
A1	GROUND & WET WELL LEVEL PLANS
A2	ROOF AND REFLECTED CEILING PLANS
A3	EXTERIOR ELEVATIONS, 1 OF 2
A4	EXTERIOR ELEVATIONS, 2 OF 2
A5	BUILDING CROSS SECTIONS, 1 OF 2
A6	BUILDING CROSS SECTIONS, 2 OF 2
A7	BUILDING SECTIONS AND DETAILS
A8	BUILDING DETAILS AND SCHEDULES
A9	MASONRY DETAILS
A10	MASONRY DETAILS AND SCHEDULES
S-1	GENERAL NOTES
S-2	STRUCTURAL PLAN-WET WELL FLOOR
S-3	STRUCTURAL PLAN-GROUND FLOOR
S-4	STRUCTURAL SECTIONS, 1 OF 4
S-5	STRUCTURAL SECTIONS, 2 OF 4
S-6	STRUCTURAL SECTIONS, 3 OF 4
S-7	STRUCTURAL SECTIONS, 4 OF 4
S-8	REINFORCEMENT DETAILS-KEY PLAN
S-9	REINFORCEMENT DETAILS-WET WELL FLOOR SLAB
S-10	REINFORCEMENT DETAILS-GROUND FLOOR SLAB
S-11	REINFORCEMENT DETAILS-SECTIONS, 1 OF 4
S-12	REINFORCEMENT DETAILS-SECTIONS, 2 OF 4
S-13	REINFORCEMENT DETAILS-SECTIONS, 3 OF 4
S-14	REINFORCEMENT DETAILS-SECTIONS, 4 OF 4
S-15	REINFORCEMENT DETAILS-ELEVATIONS, 1 OF 5
S-16	REINFORCEMENT DETAILS-ELEVATIONS, 2 OF 5
S-17	REINFORCEMENT DETAILS-ELEVATIONS, 3 OF 5
S-18	REINFORCEMENT DETAILS-ELEVATIONS, 4 OF 5
S-19	REINFORCEMENT DETAILS-ELEVATIONS, 5 OF 5
S-20	STRUCTURAL DETAILS
S-21	STRUCTURAL STEEL DETAILS
S-22	SOIL BORING LOG

SHEET NO.	TITLE
M-1	MECHANICAL PLANS
M-2	MECHANICAL SECTIONS
M-3	MECHANICAL DETAILS AND SCHEDULES
M-4	MECHANICAL INSTRUMENTATION & CONTROL DETAILS
HV-1	HVAC PLANS AND SCHEDULES
E-1	ELECTRICAL SYMBOL LIST
E-2	ELECTRICAL SITE PLAN AND DETAILS
E-3	ELECTRICAL SYSTEM ONE LINE DIAGRAM
E-4	MCC AND MISC PANEL ELEVATIONS
E-5	MAIN PUMP CONTROL SCHEMATIC
E-6	LOW FLOW PUMP CONTROL SCHEMATIC
E-7	CONTROL PANEL AND MISC SCHEMATICS
E-8	CONTROL PANEL WIRING DIAGRAM
E-9	PLC I/O WIRING, SHEET 1 OF 2
E-10	PLC I/O WIRING, SHEET 2 OF 2
E-11	LIGHTING PLAN AND SCHEDULES
E-12	POWER PLAN
E-13	CONTROL PANEL LAYOUT AND DETAILS
E-14	CONTROL PANEL INTERCONNECTION DIAGRAM
E-15	ELECTRICAL INSTRUMENTATION & CONTROL DETAILS
E-16	ELECTRICAL DETAILS, SHEET 1 OF 3
E-17	ELECTRICAL DETAILS, SHEET 2 OF 3
E-18	ELECTRICAL DETAILS, SHEET 3 OF 3

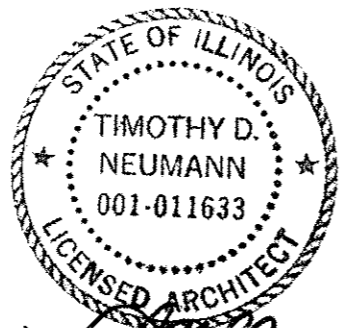
TOTAL BILL OF MATERIALS

ITEM	UNIT	TOTAL
TRENCH BACKFILL	CU YD	65
STONE RIPRAP CLASS A4	SQ YD	112
STONE RIPRAP CLASS A5	SQ YD	106
FILTER FABRIC	SQ YD	218
STORM SEWER, DUCTILE IRON PIPE, CLASS 52 8"	FOOT	88
STORM SEWER, DUCTILE IRON PIPE, CLASS 52 18"	FOOT	264
CHAIN LINK FENCE, 6'	FOOT	117
CHAIN LINK GATES, 6' X 16' DOUBLE	EACH	1
AGGREGATE SURFACE COURSE, TYPE A 6"	SQ YD	80
PC CONC SIDEWALK 4	SQ FT	51.0
CONCRETE STRUCTURES	CU YD	176.8
REINFORCEMENT BARS, EPOXY COATED	POUND	51700
BRACED EXCAVATION (SPECIAL)	CU YD	463
SEAL COAT CONCRETE	CU YD	103.0
UNDERGROUND STORAGE CHAMBER	EACH	1
PUMP STATION GENERAL WORK	L SUM	1
PUMP STATION MECHANICAL WORK	L SUM	1
PUMP STATION ELECTRICAL WORK	L SUM	1
ELECTRIC UTILITY SERVICE CONNECTION	L SUM	1
GAS UTILITY SERVICE CONNECTION	L SUM	1

APPROVED
For Structural Adequacy Only
[Signature]
Engineer of Bridges & Structures



[Signature]
DATE: 8/1/2014
EXPIRES: 11/30/2015
SHEETS: C1 TO C8



[Signature]
DATE: 8/1/2014
EXPIRES: 11/30/2014
SHEETS: A1 TO A10



[Signature]
DATE: 8/1/2014
EXPIRES: 11/30/2014
SHEETS: S1 TO S22

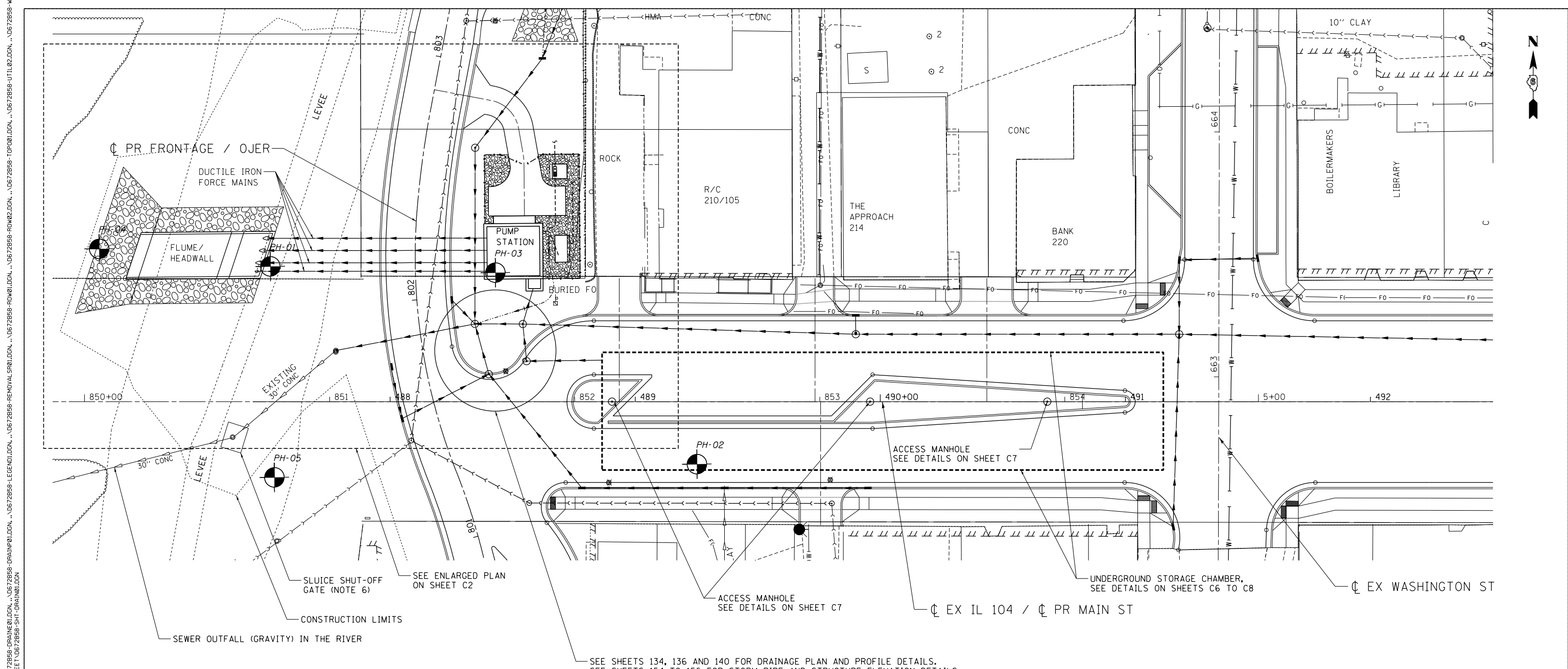


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DATE: 8/1/2014
EXPIRES: 11/30/2015
SHEETS: M-1 TO M-4 & HV-1



[Signature]
DATE: 8/1/2014
EXPIRES: 11/30/2015
SHEETS: E1 TO E18

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 EXP:U.S. Services Inc. CHICAGO, IL
 BUILDINGS-EARTH & ENVIRONMENT-ENERGY
 INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY



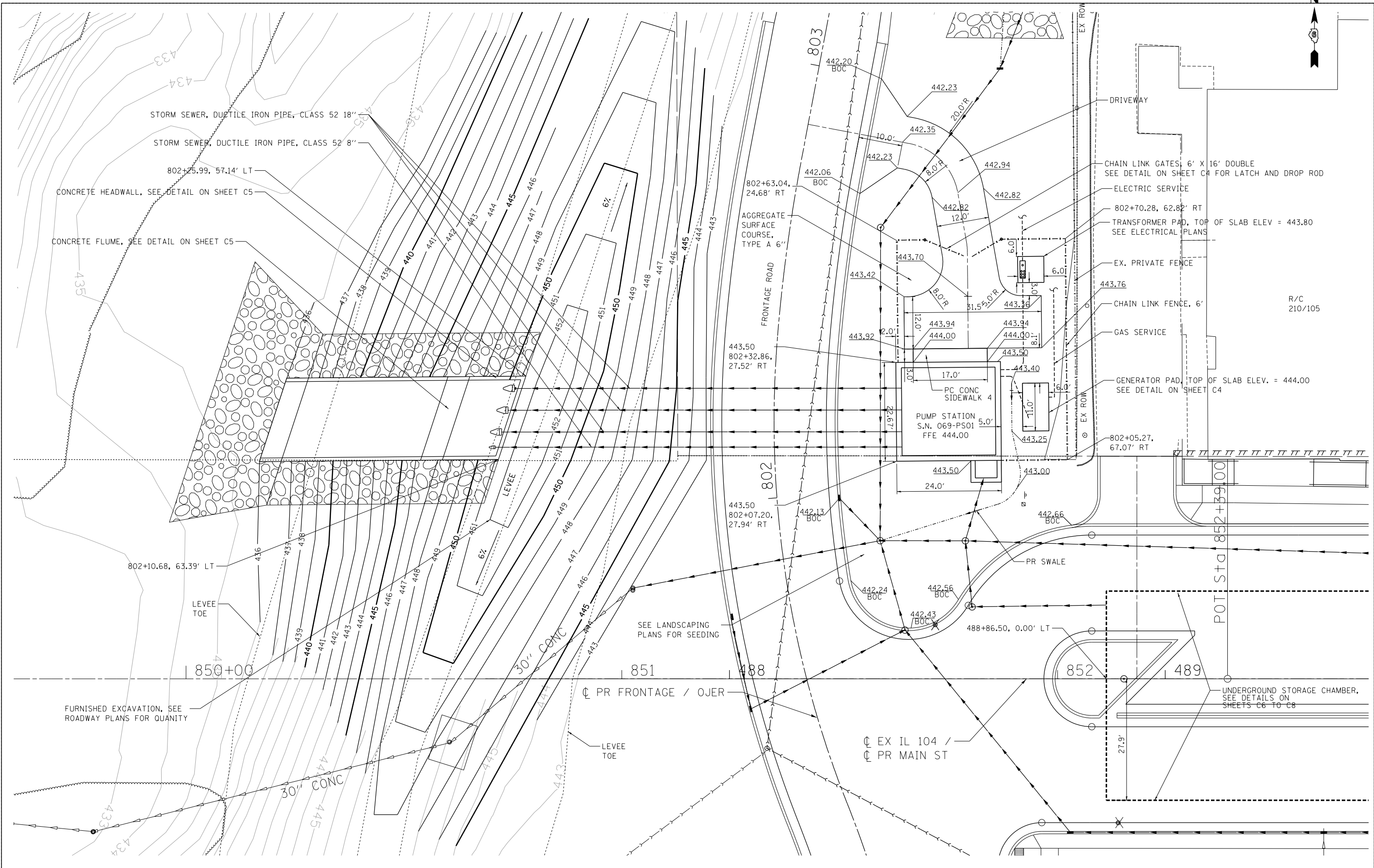
BILL OF MATERIALS (C-SHEETS ONLY)

DESCRIPTION	UNIT	QUANTITY
TRENCH BACKFILL	CU YD	65
STONE RIPRAP CLASS A4	SQ YD	112
STONE RIPRAP CLASS A5	SQ YD	106
FILTER FABRIC	SQ YD	218
STORM SEWER, DUCTILE IRON PIPE, CLASS 52 8"	LF	88
STORM SEWER, DUCTILE IRON PIPE, CLASS 52 18"	LF	264
CHAIN LINK FENCE, 6'	LF	117
CHAIN LINK GATES, 6' X 16' DOUBLE	EACH	1
AGGREGATE SURFACE COURSE, TYPE A 6"	SQ YD	80
PC CONC SIDEWALK 4	SQ FT	51.0
CONCRETE STRUCTURES	CU YD	51.7
REINFORCEMENT BARS, EPOXY COATED	POUND	8920
UNDERGROUND STORAGE CHAMBER	EACH	1

SEE SHEETS 134, 136 AND 140 FOR DRAINAGE PLAN AND PROFILE DETAILS.
SEE SHEETS 154 TO 156 FOR STORM PIPE AND STRUCTURE ELEVATION DETAILS.

LEGEND:
 PH-01 - SOIL BORING, SEE NOTE 7

- NOTES:
1. THE DRIVEWAY DETAILS, PAY ITEMS AND QUANTITIES ARE INCLUDED IN ROADWAY PLANS.
 2. THE DRAINAGE ITEMS, EXCEPT THE DUCTILE IRON FORCE MAINS, ARE INCLUDED IN ROADWAY PLANS.
 3. THE LEVEE EARTHWORK IS INCLUDED IN ROADWAY PLANS.
 4. THE TRANSFORMER PAD IS INCLUDED IN PUMP STATION ELECTRICAL WORK.
 5. THE GENERATOR PAD IS INCLUDED IN PUMP STATION MECHANICAL WORK.
 6. THE SEWER WILL GRAVITY FLOW IN TO THE RIVER UNDER NORMAL CONDITIONS. THE PUMP STATION WILL RECEIVE FLOW ONLY WHEN THE RIVER LEVEL RISES TO EL. 434.00' AND THE VILLAGE SHUTS OFF THE SLUICE GATE.
 7. THE SOIL BORING DATA IS INCLUDED IN STRUCTURE GEOTECHNICAL REPORT FOR IL-104 PUMP STATION AND ASSOCIATED IMPROVEMENTS (DATED AUGUST 5, 2013), WHICH IS AVAILABLE FROM IDOT DISTRICT 6.



FILE NAME =
 *FILEL#
 exp U.S. Services Inc.
 Chicago, IL
 BUILDINGS-EARTH & ENVIRONMENT-ENERGY
 INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY

USER NAME = *USER*
 PLOT SCALE = *SCALE*
 PLOT DATE = *DATE*

DESIGNED - RJS
 DRAWN - MDN
 CHECKED - JB
 DATE - 9/12/2014

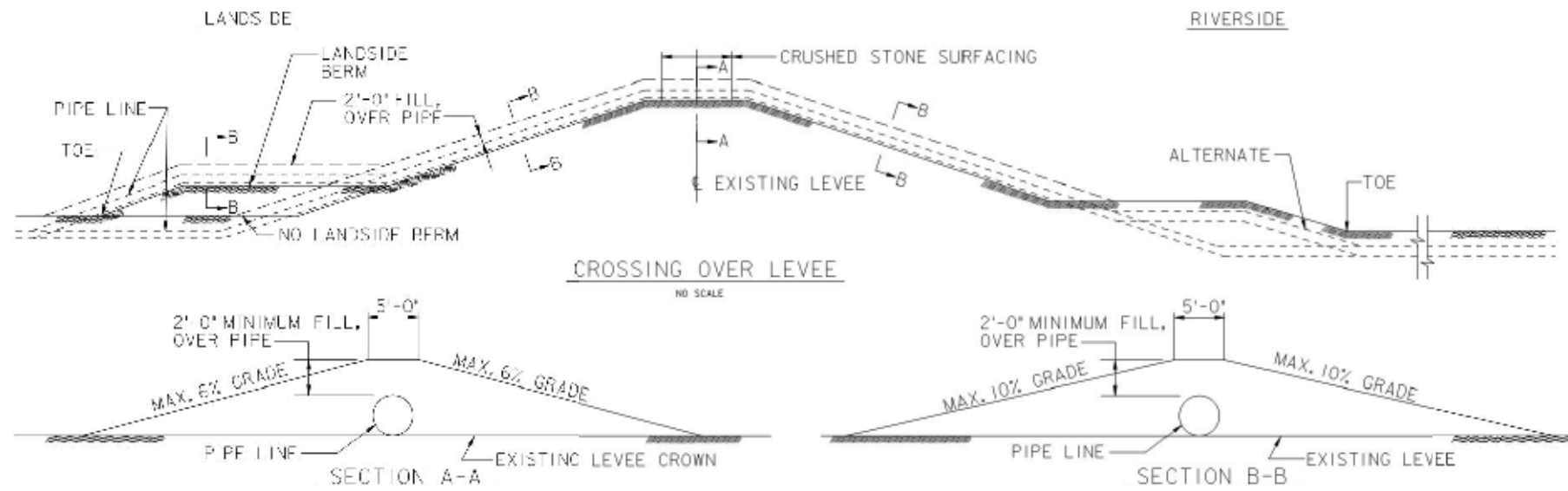
REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
 FAP ROUTE 745 / IL ROUTE 104

IL-104 PUMP STATION
PUMP STATION GRADING PLAN
 SCALE: 1"=10'
 SHEET C2 OF 8 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	109RS-6, 123RS-3, *	MORGAN/PIKE	782	586
	* 123B-2, 124RS-8	CONTRACT NO. 72B58		

ILLINOIS FED. AID PROJECT



4. **COMPACTION:** EACH LAYER SHALL BE COMPACTED BY ANY OF THE FOLLOWING METHODS AT SUBJECT TO ENGINEER APPROVAL.
- A. **TAMPER-TYPE ROLLER:** FOUR COMPLETE PASSES OVER EACH WILL BE REQUIRED. IF TAMPING ROLLERS ARE USED IN TANDEM NOT MORE THAN TWO ROWS WILL BE PERMITTED. AND SUCH CASE, ONE TRIP OF THE TANDEM ROLLERS ARE USED IN TANDEM, THE TAMPER FOOT SPACING SHALL BE OFFSET SO THAT THE CIRCUMFERENTIAL ROWS ON THE REAR DRUMS ARE IN LINE WITH THE MIDPOINT OF THE CIRCUMFERENTIAL ROWS OF THE FORWARD DRUMS. EACH PASS OF THE TAMPING ROLLER SHALL OVERLAP THE PRECEDING OR ADJACENT PASS BY NOT LESS THAN ONE FOOT.
 - B. **RUBBER-TIRED ROLLER:** TWO COMPLETE PASSES OVER EACH LAYER WILL BE REQUIRED.
 - C. **CRAWLER-TYPE TRACTOR:** THREE COMPLETE PASSES OVER EACH LAYER WILL BE REQUIRED.

NOTES:

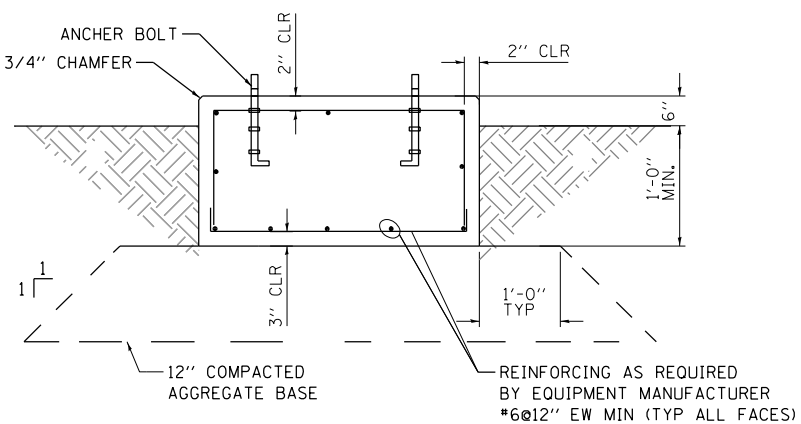
1. IF THE EXISTING LEVEE IS SURFACED, THIS SURFACING SHALL BE REPLACED WITH SIMILAR SURFACING, AFTER CONSTRUCTION. NEW FILL, OR OTHER AREAS DAMAGED BY CONSTRUCTION, SHALL BE FERTILIZED, SEEDED AND MULCHED OR SODDED.
2. **EMBANKMENT MATERIALS:** THE EMBANKMENT SHALL BE CONSTRUCTIONED OF EARTH OBTAINED FROM BORROW AREAS AS APPROVED BY THE ENGINEER. THE EMBANKMENT SHALL BE CONSTRUCTED OF EARTH THAT IS FREE FROM OBJECTIONABLE MATTER. IN LEVEE CONSTRUCTION, MATERIAL CLASSIFIED AS SAND SHALL NOT BE USED UNLESS SUITABLY BLENDED WITH LESS PERVIOUS MATERIAL. FOR THIS PURPOSE SAND SHALL BE DEFINED AS COARSE-GRAINED SOIL THAT CONTAINS LESS THAN 20 PERCENT OF MATERIAL PASSING THE NO. 200 SIEVE AND WHICH HAS AT LEAST 50 PERCENT OF ITS COARSE FRACTION PASSING THE NO. 4 SIEVE, WHERE IN THE COARSE FRACTION IS DEFINED AS THE MATERIAL LARGER THAN THE NO. 200 SEIVE. UNDER NO CIRCUMSTANCE SHALL FROZEN EARTH, SNOW, OR ICE BE PLACED IN THE EMBANKMENT.

3. **EMBANKMENT CONSTRUCTION:** SEMICOMPACTED FILL, MATERIAL PLACED WITH HAULING OR CASTING EQUIPMENT, SHALL BE PLACED OR SPREAD IN LAYERS, THE FIRST LAYER NOT MORE THAN 6 INCHES IN THICKNESS AND THE SUCCEEDING LAYERS NOT MORE THAN 12 INCHES IN THICKNESS PRIOR TO COMPACTION. LAYERS SHALL BE CARRIED SUBSTANTIALLY HORIZONTAL WITH SUFFICIENT CROWN OR SLOPE TO PROVIDE SATISFACTORY DRAINAGE DURING CONSTRUCTION. WHEN THE SURFACE OF ANY COMPACTED LAYER IS TOO SMOOTH TO BOND PROPERLY WITH THE SUCCEEDING LAYER, IT SHALL BE ADEQUATELY SCARIFIED BEFORE THE SUCCEEDING LAYER IS PLACED THEREON. THE EMBANKMENT SHALL NOT BE PLACED IN WATER.

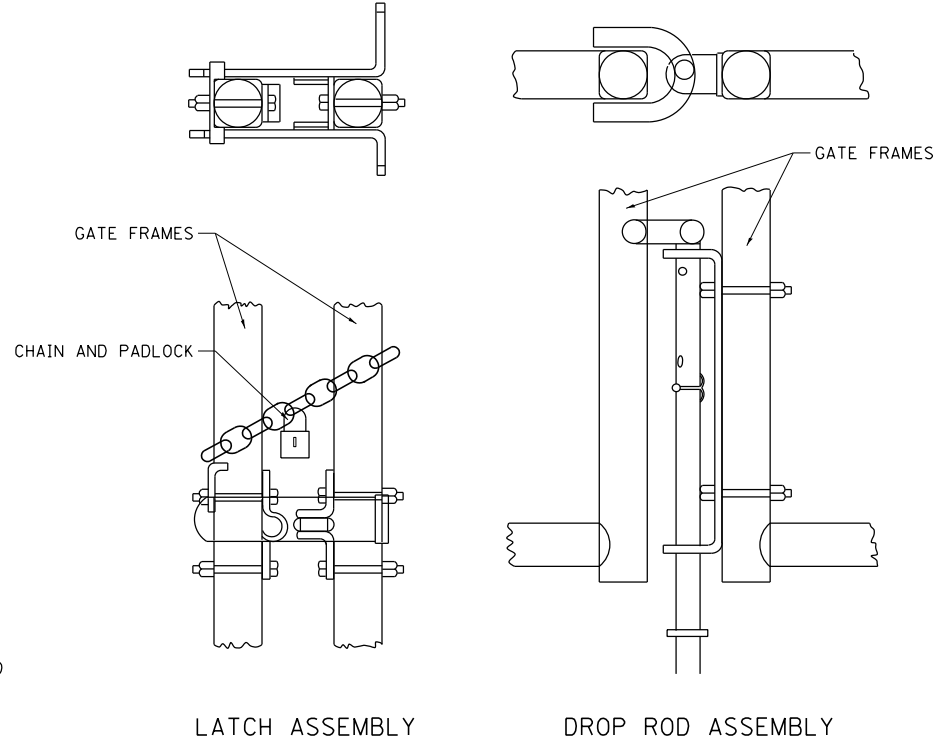
1 TYPICAL PIPE LINE CROSSING (BASED ON USACOE STANDARDS)

GENERATOR PAD NOTES:

1. CONCRETE BASE AS REQUIRED BY EQUIPMENT MANUFACTURER. MINIMUM OF 2 TIMES THE MASS OF EQUIPMENT SUPPORTED OR 10 TIMES THE MASS OF MOVING PARTS, WHICHEVER IS GREATER. THE PAD SHALL EXTEND A MINIMUM OF 3" OUT IN EACH DIRECTION BEYOND THE EQUIPMENT.
2. THE CONTRACTOR SHALL VERIFY THE SIZE, LOCATION AND ORIENTATION OF THE PADS AND OTHER REQUIREMENTS SUCH AS OPENINGS, CONDUITS AND ANCHOR BOLTS IN WRITING WITH THE UTILITY COMPANY OR THE EQUIPMENT MANUFACTURER.
3. THE PAD DESIGN IS BASED ON NET ALLOWABLE BEARING CAPACITY OF 2,500 PSF.
4. THE SUBGRADE FOR PADS SHALL BE INSPECTED, PRIOR TO PLACEMENT OF AGGREGATE SUB-BASE, BY THE DEPARTMENTS SOILS ENGINEER TO VERIFY BEARING CAPACITY AS SPECIFIED. THE SOILS ENGINEER SHALL CERTIFY IN WRITING THAT THE PADS WERE PLACED ON SOIL WITH THE BEARING CAPACITY AS SPECIFIED.
5. THE AGGREGATE SUB-BASE SHALL BE PLACED ACCORDING TO SECTION 311 OF THE STANDARD SPECIFICATIONS. IT SHALL BE PLACED IN LAYERS NOT TO EXCEED 8" IN LOOSE THICKNESS AND COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY OBTAINED ACCORDING TO ASTM D698 STANDARD PROCTOR METHOD.
6. CONCRETE SHALL BE CLASS SI ACCORDING TO ARTICLE 1020.04 OF THE STANDARD SPECIFICATIONS.
7. REINFORCING BARS SHALL CONFORM TO ASTM A706, GRADE 60 ACCORDING TO ARTICLE 1006.10 OF THE STANDARD SPECIFICATIONS.
8. THE PADS SHALL BE CONSTRUCTED ACCORDING TO SECTIONS 503 AND 508 OF THE STANDARD SPECIFICATIONS.
9. THE COST OF PADS, INCLUDING EXCAVATION, SUBGRADE PREPARATION, SUB-BASE, REINFORCING BARS AND CONCRETE, SHALL BE INCLUDED WITH THE UNIT COST OF PUMP STATION ELECTRICAL WORK.



2 GENERATOR PAD



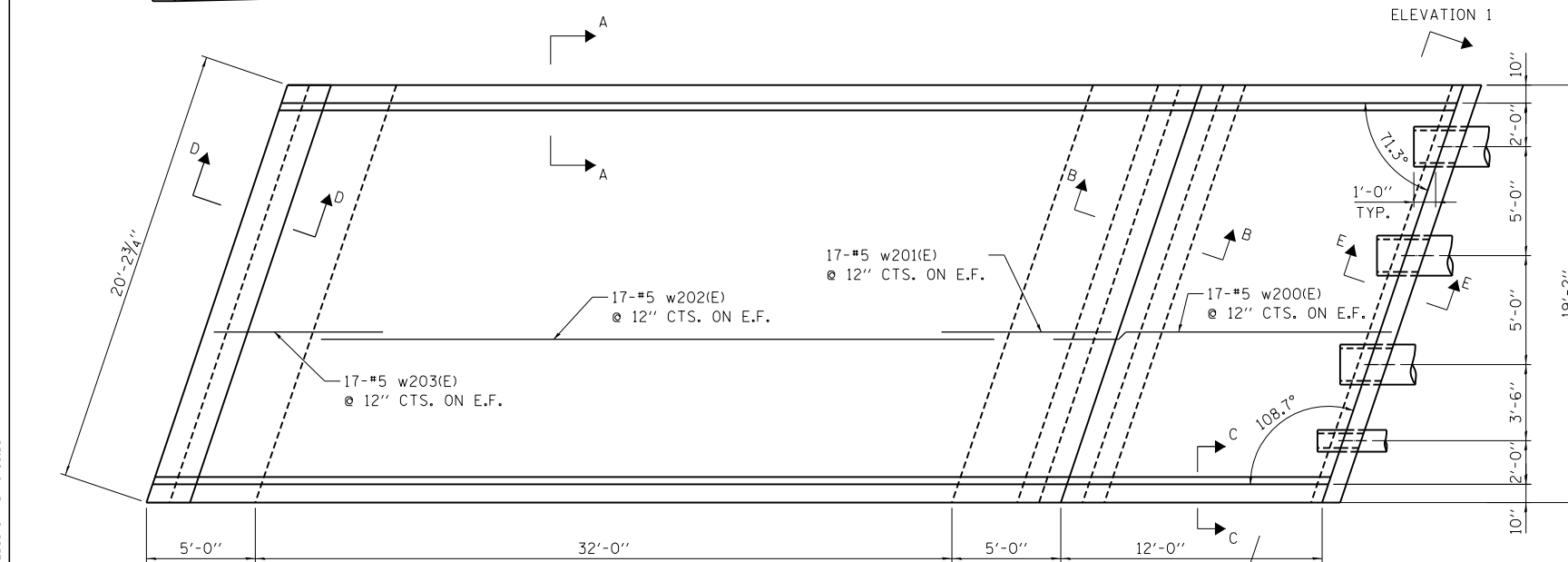
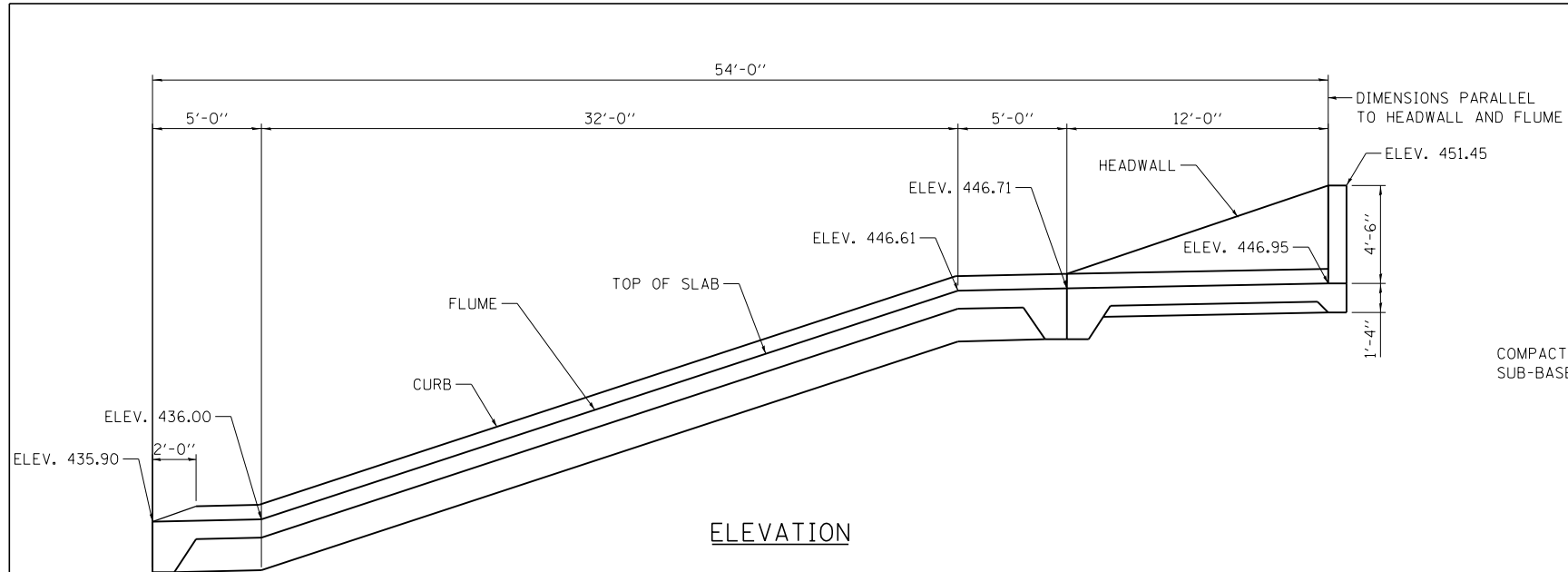
THE LATCH, DROP ROD, CHAIN AND PADLOCK SHALL BE INCLUDED IN THE COST OF THE CHAIN LINK GATE. THE CONTRACTOR SHALL PROVIDE LOCKS AND KEYS TO THE ENGINEER.

3 LATCH AND DROP ROD

\\\FS-0044\AM\VAULT.D-TRANS.071\FRDC\1\02012341-02\CTVIL\CAD\72B58\SHEET\0672B58-SHT-01R\N04.DGN
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exp U.S. Services Inc. Chicago, IL BUILDINGS-EARTH & ENVIRONMENT-ENERGY INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY	PLOT SCALE = *SCALE*	DRAWN - KS	REVISED -			745	109RS-6, 123RS-3, *	MORGAN/PIKE	782	588
PLOT DATE = *DATE*	DATE - 8/5/2014	CHECKED - SLH	REVISED -			* 123B-2, 124RS-8		CONTRACT NO. 72B58		ILLINOIS FED. AID PROJECT

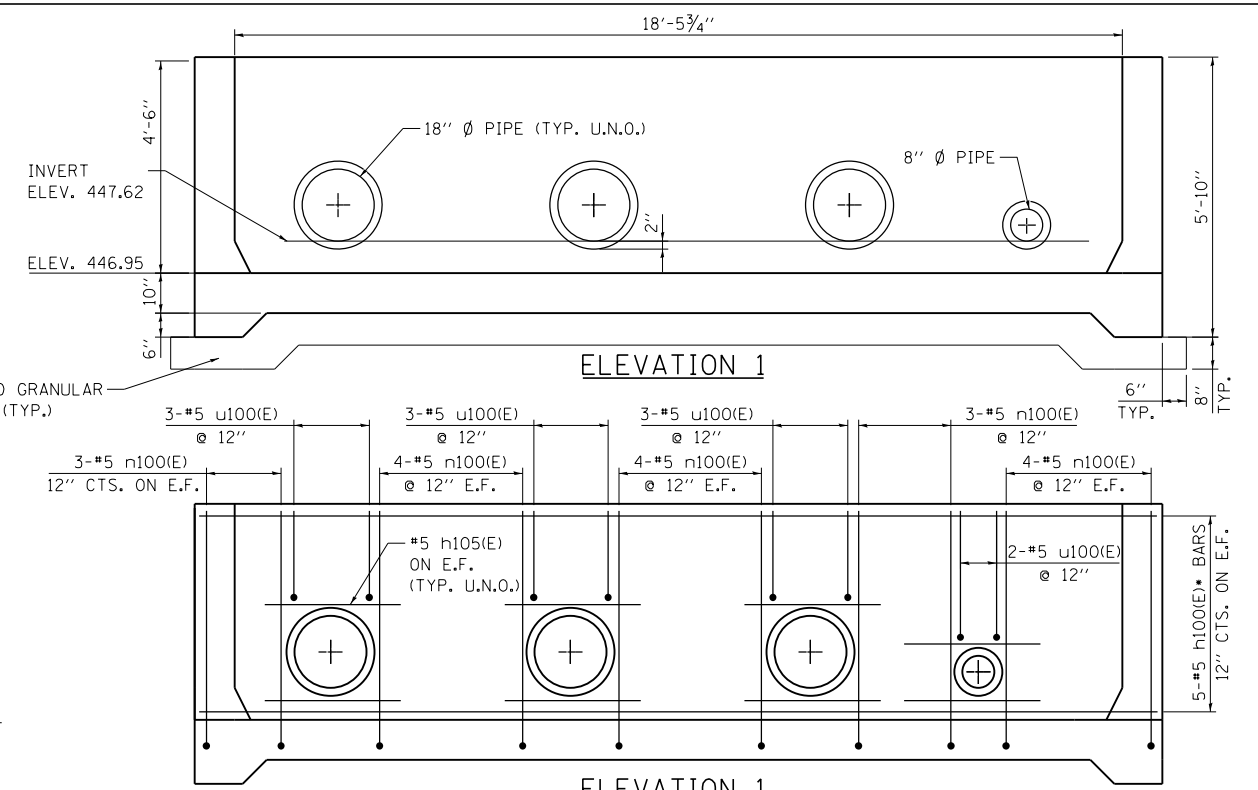
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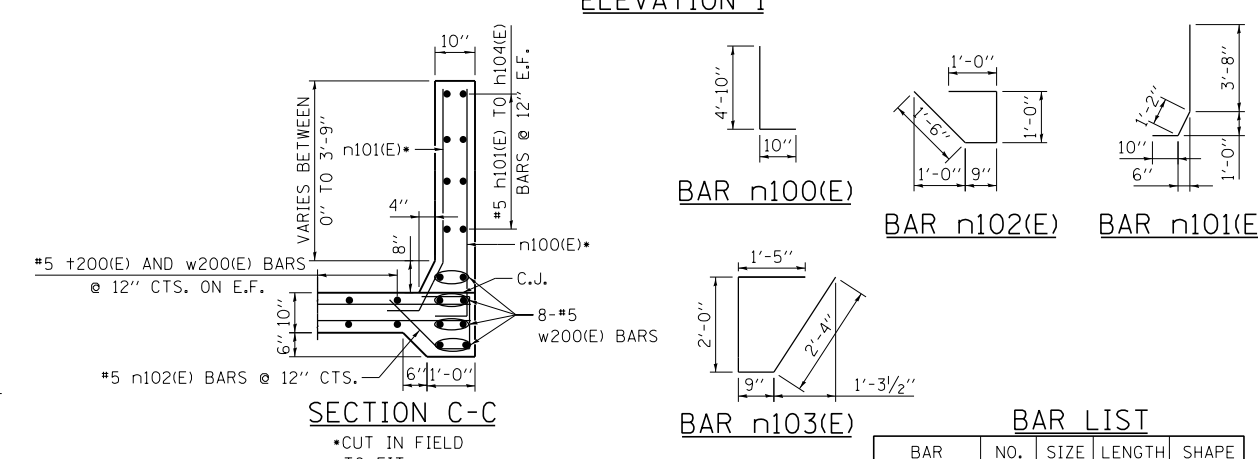
PLAN

ABBREVIATIONS

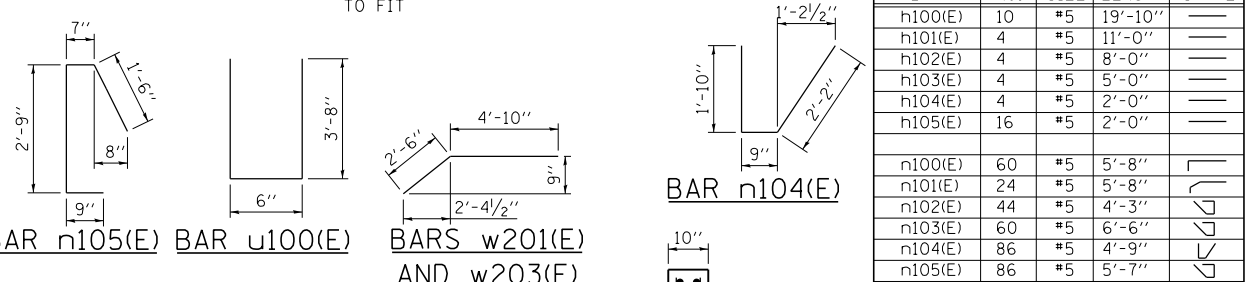
- C.J. = CONSTRUCTION JOINT
- CTS. = CENTERS
- E.F. = EACH FACE
- ELEV. = ELEVATION
- TYP. = TYPICAL
- U.N.O. = UNLESS NOTED OTHERWISE



ELEVATION 1



SECTION C-C

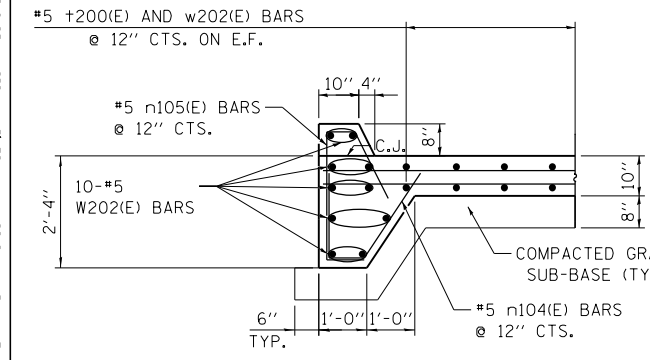


BAR LIST

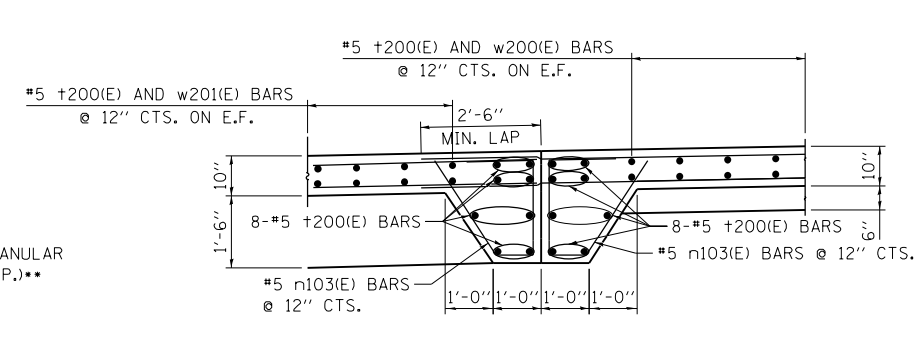
BAR	NO.	SIZE	LENGTH	SHAPE
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h101(E)	4	#5	11'-0"	U
h102(E)	4	#5	8'-0"	U
h103(E)	4	#5	5'-0"	U
h104(E)	4	#5	2'-0"	U
h105(E)	16	#5	2'-0"	U
n100(E)	60	#5	5'-8"	U
n101(E)	24	#5	5'-8"	U
n102(E)	44	#5	4'-3"	U
n103(E)	60	#5	6'-6"	U
n104(E)	86	#5	4'-9"	U
n105(E)	86	#5	5'-7"	U
+200(E)	136	#5	19'-10"	U
u100(E)	11	#5	7'-10"	U
w200(E)	52	#5	15'-2"	U
w201(E)	56	#5	7'-4"	U
w202(E)	56	#5	33'-8"	U
w203(E)	56	#5	7'-4"	U

BILL OF MATERIAL

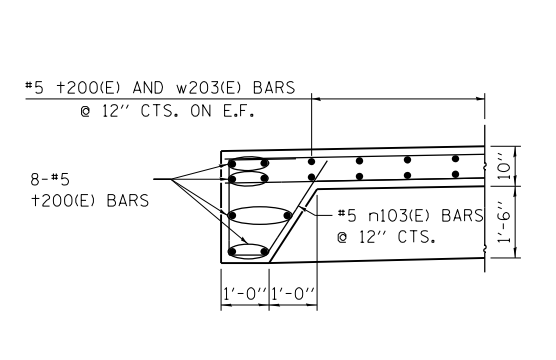
ITEM	UNIT	TOTAL
CONCRETE STRUCTURES	CU. YD.	51.7
REINFORCEMENT BARS, EPOXY COATED	POUND	8920



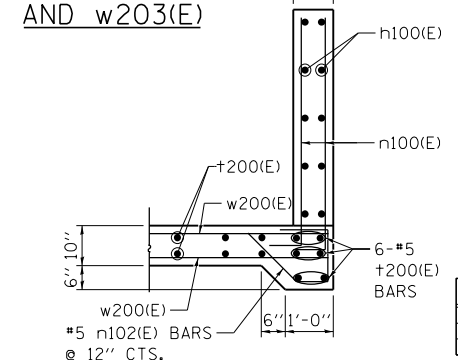
SECTION A-A



SECTION B-B



SECTION D-D



SECTION E-E

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Chicago, IL	PLOT DATE = #DATE#	DATE - 8/5/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
FAP ROUTE 745 / IL ROUTE 104

SCALE: N.T.S.		SHEET C5 OF 8 SHEETS STA. TO STA.	
SITE DETAILS - 2 OF 2			

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	109RS-6, 123RS-3, *	MORGAN/PIKE	782	589
	* 123B-2, 124RS-8	CONTRACT NO. 72B58		

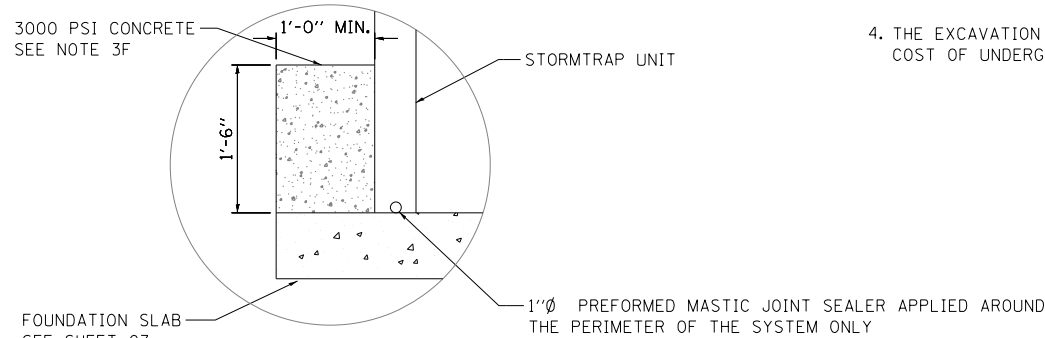
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STORMWATER STORAGE CHAMBER SPECIFICATIONS

1. STORMWATER STORAGE CHAMBER SHALL BE CONSTRUCTED ACCORDING TO SPECIAL PROVISION FOR STORMWATER STORAGE CHAMBER AND THESE PLAN DETAILS.
2. STORMTRAP MODULES SHALL BE MANUFACTURED ACCORDING TO SHOP DRAWINGS APPROVED BY ENGINEER. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ACCESS OPENINGS AND INLET/ OUTLET PIPE OPENINGS.
3. STORMTRAP SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C891-09, STANDARD PRACTICE FOR INSTALLATION OF UNDERGROUND PRE-CAST CONCRETE UTILITY STRUCTURES. THE FOLLOWING ADDITIONS AND/OR EXCEPTIONS SHALL APPLY:
 - A. SPECIFICATIONS ON THE CONTRACT DRAWINGS SHALL TAKE PRECEDENCE.
 - B. STORMTRAP MODULES SHALL BE PLACED ON LEVEL FOUNDATION SLAB (SEE SHEET C7) WITH A 1'-0" OVERHANG ON ALL SIDES.
 - C. THE STORMTRAP MODULES SHALL BE PLACED SUCH THAT THE MAXIMUM SPACE BETWEEN ADJACENT MODULES DOES NOT EXCEED 3/4". IF THE SPACE EXCEEDS 3/4", THE MODULES SHALL BE RESET WITH APPROPRIATE ADJUSTMENT MADE TO LINE AND GRADE TO BRING THE SPACE INTO SPECIFICATION.
 - D. THE PERIMETER HORIZONTAL JOINT OF THE STORMTRAP MODULES SHALL BE SEALED TO THE FOUNDATION SLAB WITH PREFORMED MASTIC JOINT SEALER ACCORDING TO ASTM C891-09 8.8 AND 8.12.

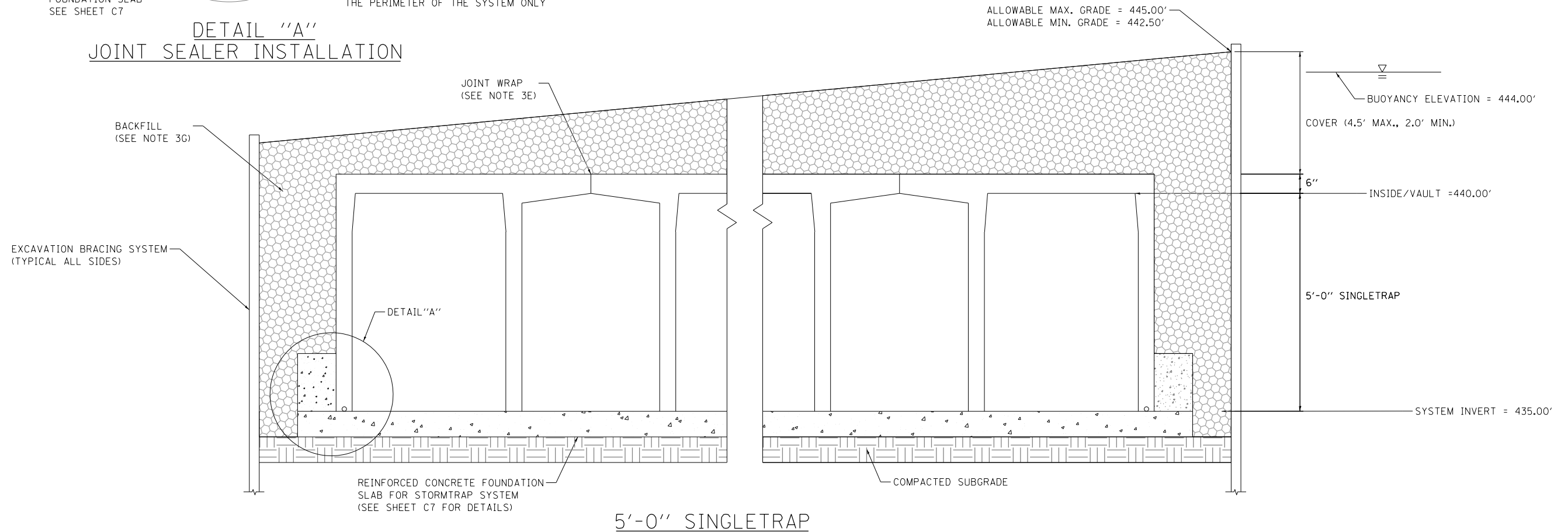
- E. ALL EXTERIOR JOINTS BETWEEN ADJACENT STORMTRAP MODULES SHALL BE SEALED WITH PRE-FORMED, COLD-APPLIED, SELF-ADHERING ELASTOMERIC RESIN BONDED TO A WOVEN HIGHLY PUNCTURE RESISTANT POLYMER WRAP CONFORMING TO ASTM C891-09 AND SHALL BE 0'-8" INTEGRATED PRIMER SEALANT AS APPROVED BY STORMTRAP. THE ADHESIVE EXTERIOR JOINT WRAP SHALL BE INSTALLED ACCORDING TO THE FOLLOWING INSTALLATION INSTRUCTIONS:
 1. USE A BRUSH OR WET CLOTH TO THOROUGHLY CLEAN THE OUTSIDE SURFACE AT THE POINT WHERE THE JOINT WRAP IS TO BE APPLIED.
 2. A RELEASE PAPER PROTECTS THE ADHESIVE SIDE OF THE JOINT WRAP. PLACE THE ADHESIVE TAPE (BUTYL SIDE DOWN) AROUND THE STRUCTURE, REMOVING THE RELEASE PAPER AS YOU GO. PRESS THE JOINT WRAP FIRMLY AGAINST THE STORMTRAP MODULE SURFACE WHEN APPLYING.
- F. THE STORMTRAP SYSTEM SHALL BE BACKFILLED WITH 3000 PSI CONCRETE 1'-6" ABOVE THE HORIZONTAL JOINT WHERE THE STORMTRAP UNIT MEETS THE POURED FOUNDATION SLAB. THIS FILL MUST BE 1'-0" WIDE AROUND THE PERIMETER OF THE ENTIRE SYSTEM (SEE DETAIL "A" ON THIS SHEET).
- G. THE BACKFILL PLACED AROUND THE STORMTRAP UNITS MUST BE DEPOSITED ON BOTH SIDES AT THE SAME TIME AND TO APPROXIMATELY THE SAME ELEVATION. AT NO TIME SHALL THE FILL BEHIND ONE SIDE WALL BE MORE THAN 2'-0" HIGHER THAN THE FILL ON THE OPPOSITE SIDE. BACKFILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY OR OTHERWISE SPECIFIED BY ENGINEER. CARE SHALL BE TAKEN TO PREVENT ANY WEDGING ACTION AGAINST THE STRUCTURE. (REFERENCE ARTICLE 502.10 I.D.O.T. STANDARD SPECIFICATIONS) CARE SHALL ALSO BE TAKEN TO NOT DISRUPT THE JOINT WRAP FROM THE JOINT DURING THE BACKFILL PROCESS.

4. THE EXCAVATION BRACING SYSTEM, EXCAVATION AND BACKFILL SHALL BE INCLUDED IN THE COST OF UNDERGROUND STORAGE CHAMBER.



**DETAIL "A"
JOINT SEALER INSTALLATION**

NOTE: DETAILS SHOWN ARE SPECIFIC TO THE STORMTRAP SYSTEM. EQUIVALENT STORMWATER STORAGE SYSTEMS AS LISTED IN THE SPECIFICATIONS OR APPROVED BY THE ENGINEER MAY ALSO BE USED.



5'-0" SINGLETRAP

DESIGN SPECIFICATIONS

1. TOTAL COVER: MIN. 2.00', MAX. 4.50'.
2. CONCRETE CHAMBER DESIGNED FOR AASHTO HS-20 HIGHWAY LOADING. MIN. SOIL PRESSURE 4000 PSF.
3. ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY ARE TO BE VERIFIED BY CONTRACTOR IN THE FIELD PRIOR TO STORMTRAP INSTALLATION.
4. FOR STRUCTURAL CALCULATIONS THE GROUND WATER TABLE IS ASSUMED TO BE BELOW THE SYSTEMS INVERT. IF WATER TABLE IS DIFFERENT THAN ASSUMED, CONTACT STORMTRAP. FOR FLOATATION CALCULATIONS THE GROUND WATER TABLE IS AS SHOWN.

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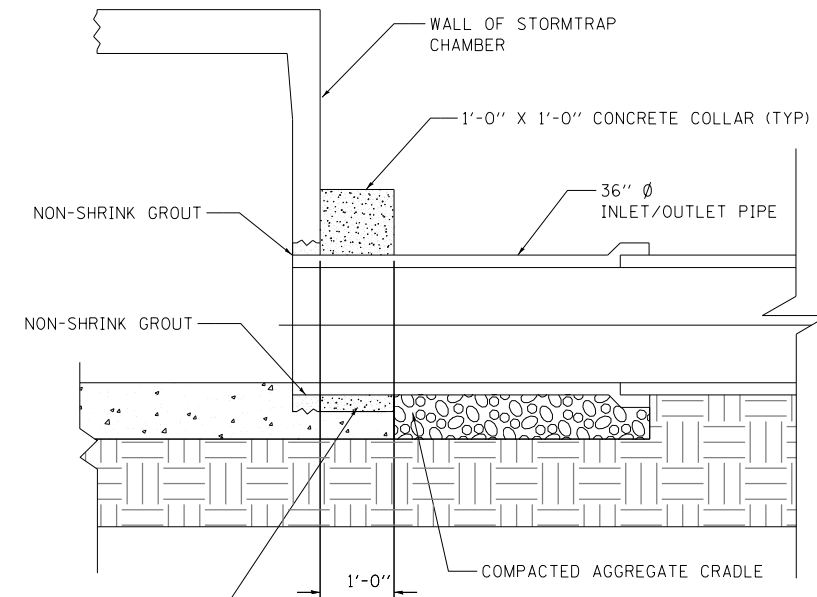
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exp U.S. Services Inc. Chicago, IL BUILDINGS-EARTH & ENVIRONMENT-ENERGY INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY	PLOT SCALE = *SCALE\$	DRAWN - KS	REVISED -			745	109RS-6, 123RS-3, *	MORGAN/PIKE	782	590
PLOT DATE = *DATE\$	DATE - 8/5/2014	CHECKED - SH	REVISED -			* 123B-2, 124RS-8		CONTRACT NO. 72B58		
						SCALE: N.T.S.	SHEET C6 OF 8	SHEETS STA.	TO STA.	
ILLINOIS FED. AID PROJECT										

RECOMMENDED ACCESS MANHOLE SPECIFICATION

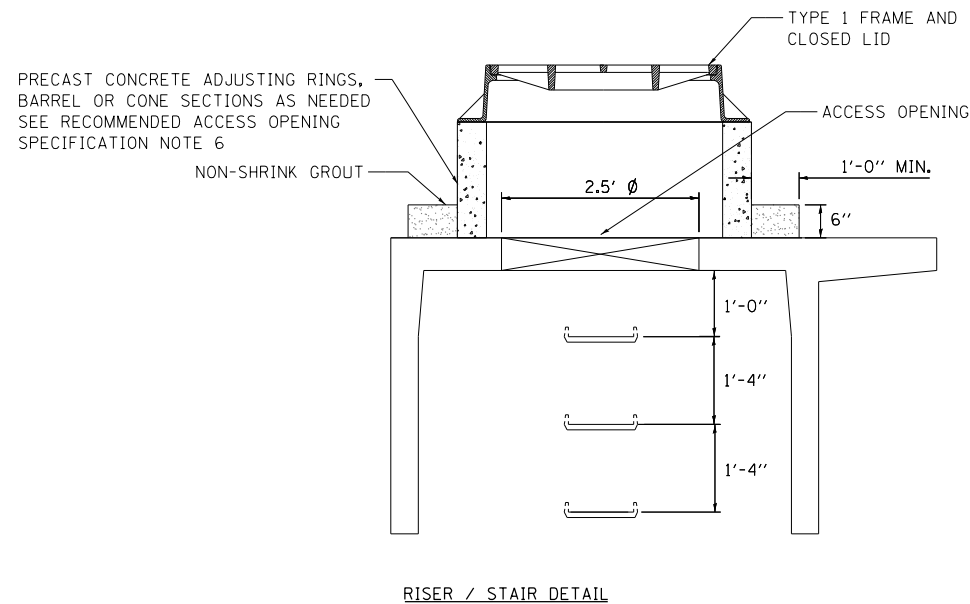
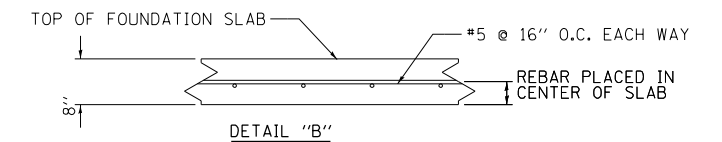
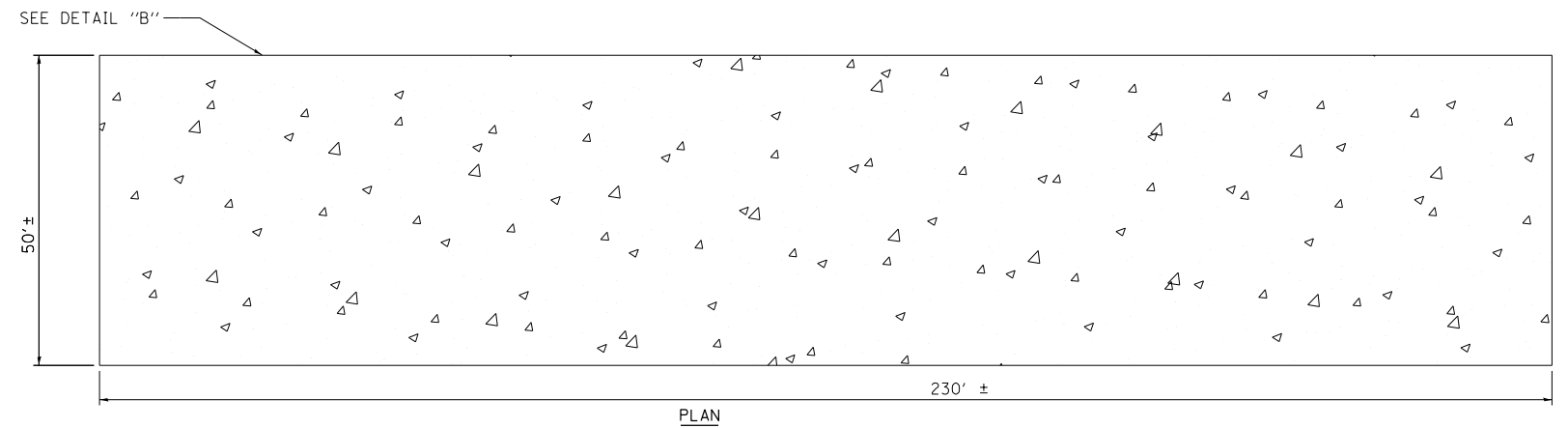
1. ACCESS MANHOLES SHOULD BE PROVIDED IN ORDER TO MEET THE APPROPRIATE MUNICIPAL REQUIREMENTS. PROVIDE THREE (3) ACCESS MANHOLES AS LOCATED ON SHEET C1 FOR INSPECTION AND CLEANUP.
2. A TYPICAL ACCESS MANHOLE FOR THE STORMTRAP SYSTEM RANGES FROM 2'-0" TO 3'-0" IN DIAMETER. ACCESS MANHOLE LARGER THAN 3'-0" IN DIAMETER NEED TO BE APPROVED BY STORMTRAP. ALL OPENINGS MUST RETAIN AT LEAST 1'-0" OF CLEARANCE IN ALL DIRECTIONS FROM THE EDGE OF THE STORMTRAP UNITS.
3. PLASTIC COATED STEEL STEPS PRODUCED BY M.A. INDUSTRIES PART #PS3-PFC (SEE DETAIL TO THE RIGHT) ARE PROVIDED INSIDE ANY UNIT WHERE DEEMED NECESSARY. THE HIGHEST STEP IN THE UNIT IS TO BE PLACED A DISTANCE OF 1'-0" FROM THE INSIDE EDGE OF THE STORMTRAP UNITS. ALL ENSUING STEPS SHALL BE PLACED WITH A MAXIMUM DISTANCE OF 1'-4" BETWEEN THEM. STEPS MAY BE MOVED OR ALTERED TO AVOID OPENING OR OTHER IRREGULARITIES IN THE UNIT.
4. STORMTRAP LIFTING INSERTS MAY BE RELOCATED TO COINCIDE WITH THE ACCESS OPENING OR THE CENTER OF GRAVITY OF THE UNIT AS NEEDED.
5. STORMTRAP ACCESS OPENINGS MAY BE RELOCATED TO AVOID INTERFERENCE WITH INLET AND/OR OUTLET PIPE OPENINGS SO PLACEMENT OF STEPS IS ATTAINABLE.
6. USE PRECAST ADJUSTING RINGS AS NEEDED TO MEET GRADE. STORMTRAP RECOMMENDS FOR COVER OVER 2' TO USE PRECAST BARREL OR CONE SECTIONS.

RECOMMENDED PIPE CONNECTION SPECIFICATION

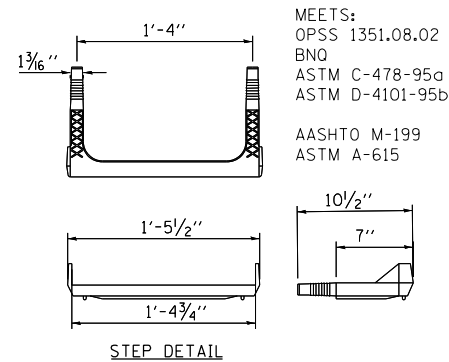
1. MINIMUM EDGE DISTANCE FOR AN OPENING ON THE OUTSIDE WALL SHALL BE NO LESS THAN 1'-0".
2. MAXIMUM OPENING SIZE TO BE DETERMINED BY UNIT HEIGHT. PREFERRED OPENING SIZE 36" Ø OR LESS. ANY OPENING NEEDED THAT DOES NOT FIT THIS CRITERIA SHALL BE BROUGHT TO THE ATTENTION OF STORMTRAP FOR REVIEW.
3. CONNECTING PIPES SHALL BE INSTALLED WITH A 1'-0" CONCRETE COLLAR, AND A AGGREGATE CRADLE FOR AT LEAST ONE PIPE LENGTH, AS SHOWN. A STRUCTURAL GRADE CONCRETE OR GROUT WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI SHALL BE USED.
4. CLEAN AND LIGHTLY LUBRICATE ALL OF PIPE TO BE INSERTED INTO STORMTRAP.
5. IF PIPE IS CUT, CARE SHOULD BE TAKEN TO ALLOW NO SHARP EDGES. BEVEL AND LUBRICATE LEAD END OF PIPE.
6. ALIGN CENTER OF PIPE TO CORRECT ELEVATION AND INSERT INTO OPENING.
7. THE ANNULAR SPACE BETWEEN THE PIPE AND THE HOLE SHALL BE FILLED WITH NON-SHRINK GROUT.



FOUNDATION PIPE CONNECTION
NOTCH IN FOUNDATION SLAB TO ALLOW INVERT OF PIPE TO MEET THE INVERT OF THE CHAMBER



RISER / STAIR DETAIL



STEP DETAIL

MEETS:
OPSS 1351.08.02
BNO
ASTM C-478-95a
ASTM D-4101-95b

AASHTO M-199
ASTM A-615

NOTES:

1. CONCRETE STRENGTH 3500 PSI @ 14 DAYS, 5%-8% ENTRAINED AIR, 4" MAX. SLUMP.
2. NET ALLOWABLE SOIL PRESSURE GREATER THAN OR EQUAL TO 4000 PSF.
3. SOIL CONDITIONS TO BE VERIFIED ON SITE BY OTHERS.
4. 1'-0" OVERHANG AROUND OUTSIDE OF SYSTEM.
5. REBAR: ASTM A-615 GRADE 60. BLACK BAR.
6. DIMENSION OF FOUNDATION MUST HAVE 1'-0" OVERHANG BEYOND EXTERNAL FACE OF UNITS.
7. DIMENSION OF STORMTRAP SYSTEM ALLOW FOR A 3/4" GAP BETWEEN EACH UNIT.
8. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD BY OTHERS.
9. SEE SHEET C6 FOR INSTALLATION SPECIFICATIONS.
10. THE CONTROL JOINTS CAN BE 16'-0" TO 24'-0" MAX APART.

ACCESS MANHOLE

PROVIDE MINIMUM 3 ACCESS MANHOLES. SEE LOCATIONS ON SHEET C1

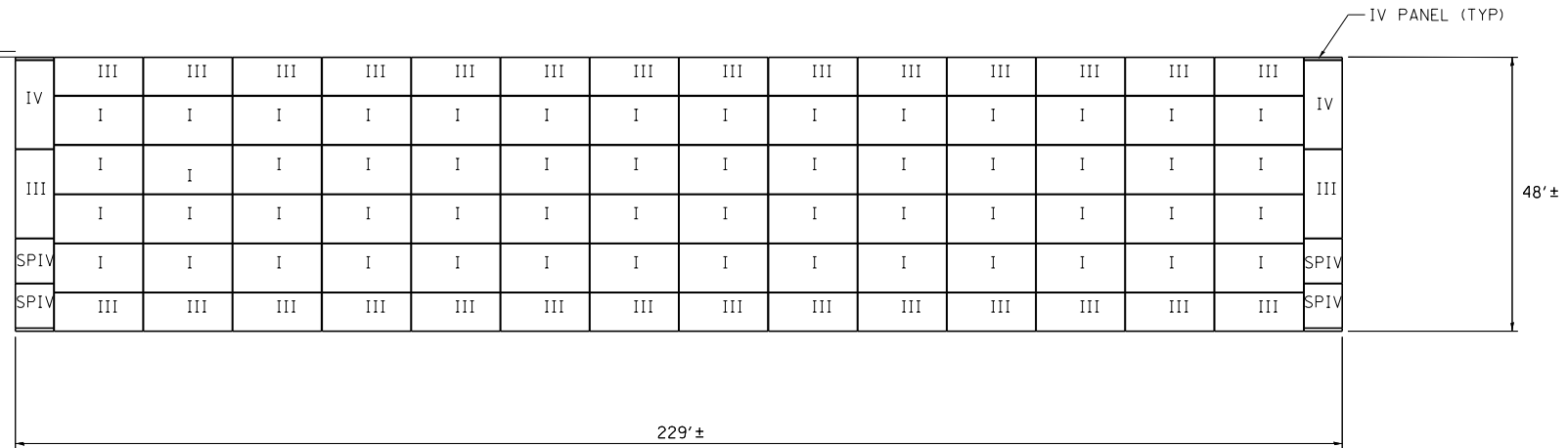
CONCRETE FOUNDATION SLAB

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PLOT DATE = #DATE#	DATE - 8/5/2014	REVISED -				* 123B-2, 124RS-8	CONTRACT NO. 72B58			
						ILLINOIS FED. AID PROJECT				
SCALE: N.T.S.		SHEET C7 OF 8 SHEETS		STA.	TO STA.					

BILL OF MATERIALS			
QTY.	UNIT TYPE	DESCRIPTION	WEIGHT(LBS.)
56	I	5'-0" SINGLETRAP	15493
0	II	5'-0" SINGLETRAP	17968
30	III	5'-0" SINGLETRAP	15407
2	IV	5'-0" SINGLETRAP	16644
0	VII	5'-0" SINGLETRAP	15324
4	SPIV	5'-0" SINGLETRAP	VARIES
4	IV PANEL	6" THICK WALL PANELS	2733
16	JOINTWRAP	150' PER ROLL	
42	JOINTTAPE	14.5 PER ROLL	

FOUNDATION SLAB
DETAILS SEE
SHEET C7



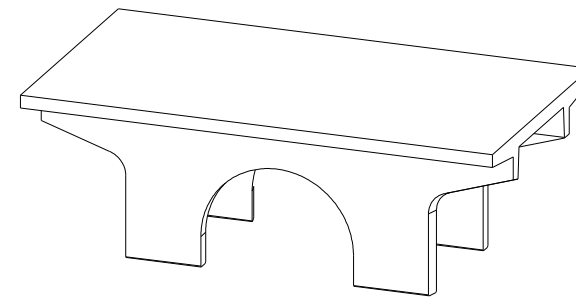
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DESIGN CRITERIA

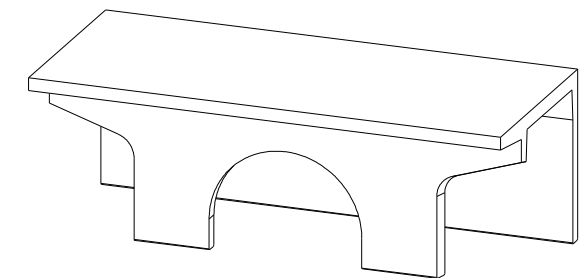
ALLOWABLE MAX GRADE = 445.00'
ALLOWABLE MIN GRADE = 442.50'
INSIDE HEIGHT ELEVATION = 440.00'
SYSTEM INVERT = 435.00'
STORAGE VOLUME = 49,438 C.F. / 1.13 A.F.

NOTES:

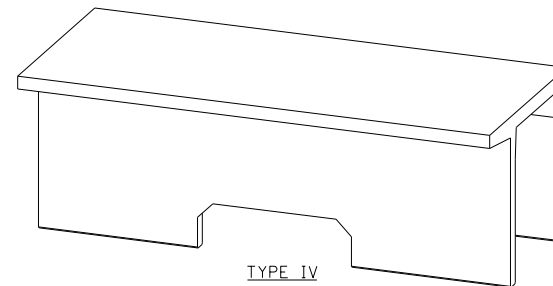
1. DIMENSION OF STORMTRAP SYSTEM ALLOW FOR A 3/4" GAP BETWEEN EACH UNIT.
2. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD.
3. SEE SHEET C6 FOR INSTALLATION SPECIFICATIONS.
4. SP - INDICATES A UNIT WITH MODIFICATIONS.
5. OPENING LOCATIONS VARY ON UNIT HEIGHT AND LENGTHS.



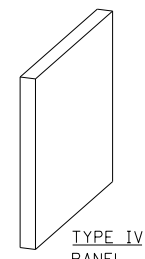
TYPE I



TYPE III



TYPE IV



TYPE IV
PANEL

UNIT TYPE

STORMTRAP UNIT LAYOUT

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Chicago, IL
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INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY

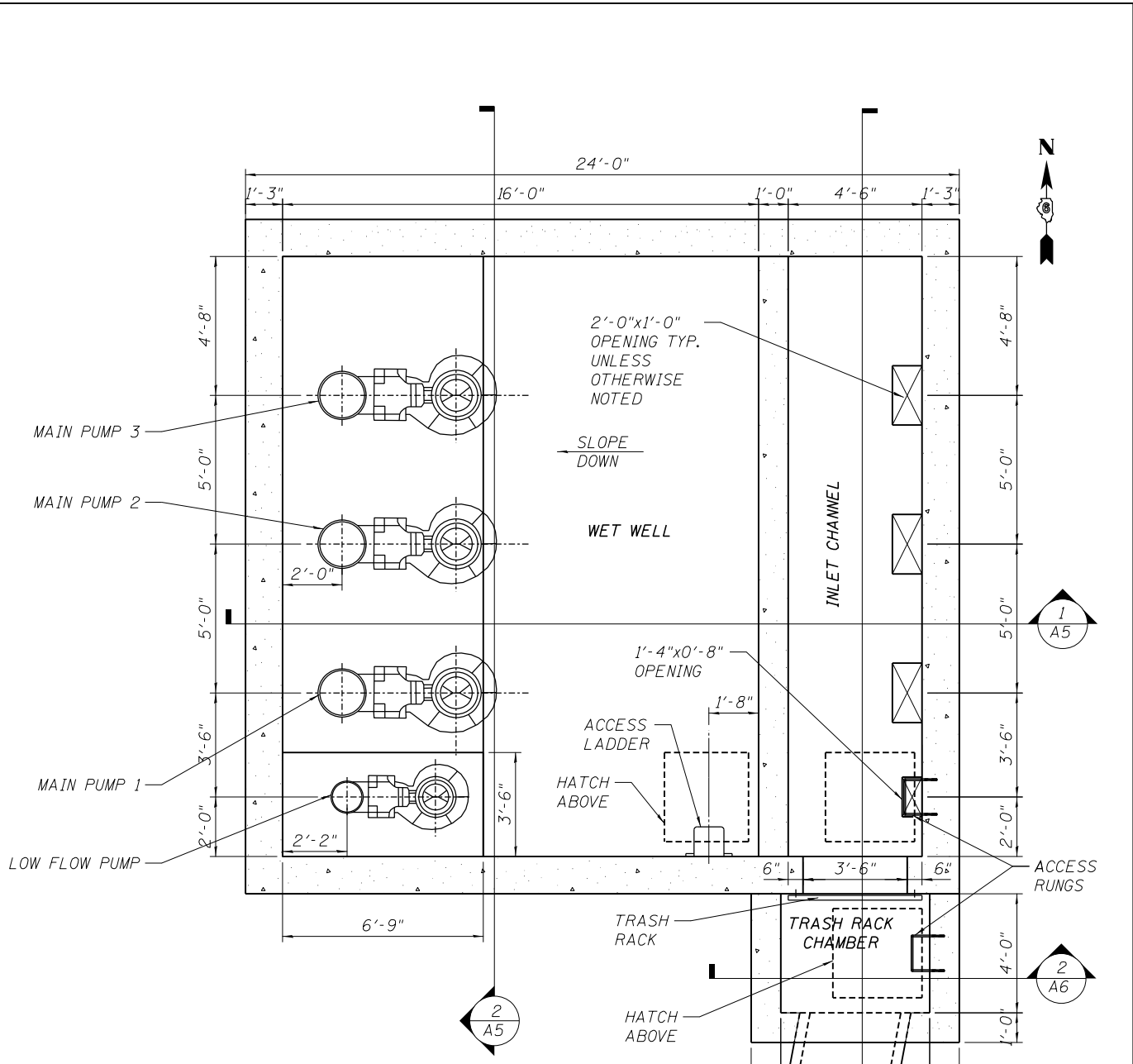
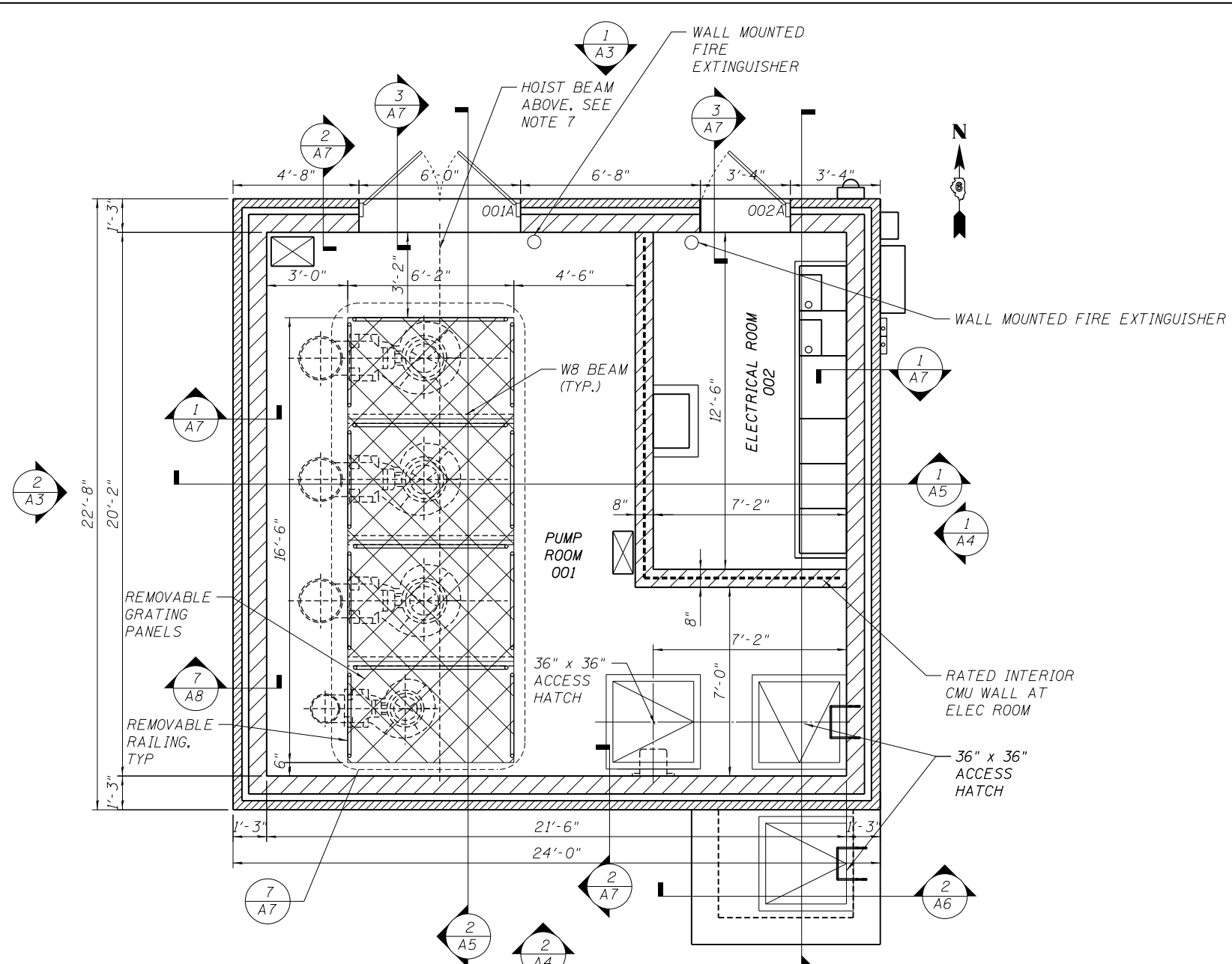
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
FAP ROUTE 745 / IL ROUTE 104

IL-104 PUMP STATION
UNDERGROUND STORAGE CHAMBER
DETAILS - 3 OF 3

SCALE: N.T.S. SHEET C8 OF 8 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	109RS-6, 123RS-3, * * 123B-2, 124RS-8	MORGAN/PIKE	782	592
ILLINOIS FED. AID PROJECT			CONTRACT NO. 72B58	



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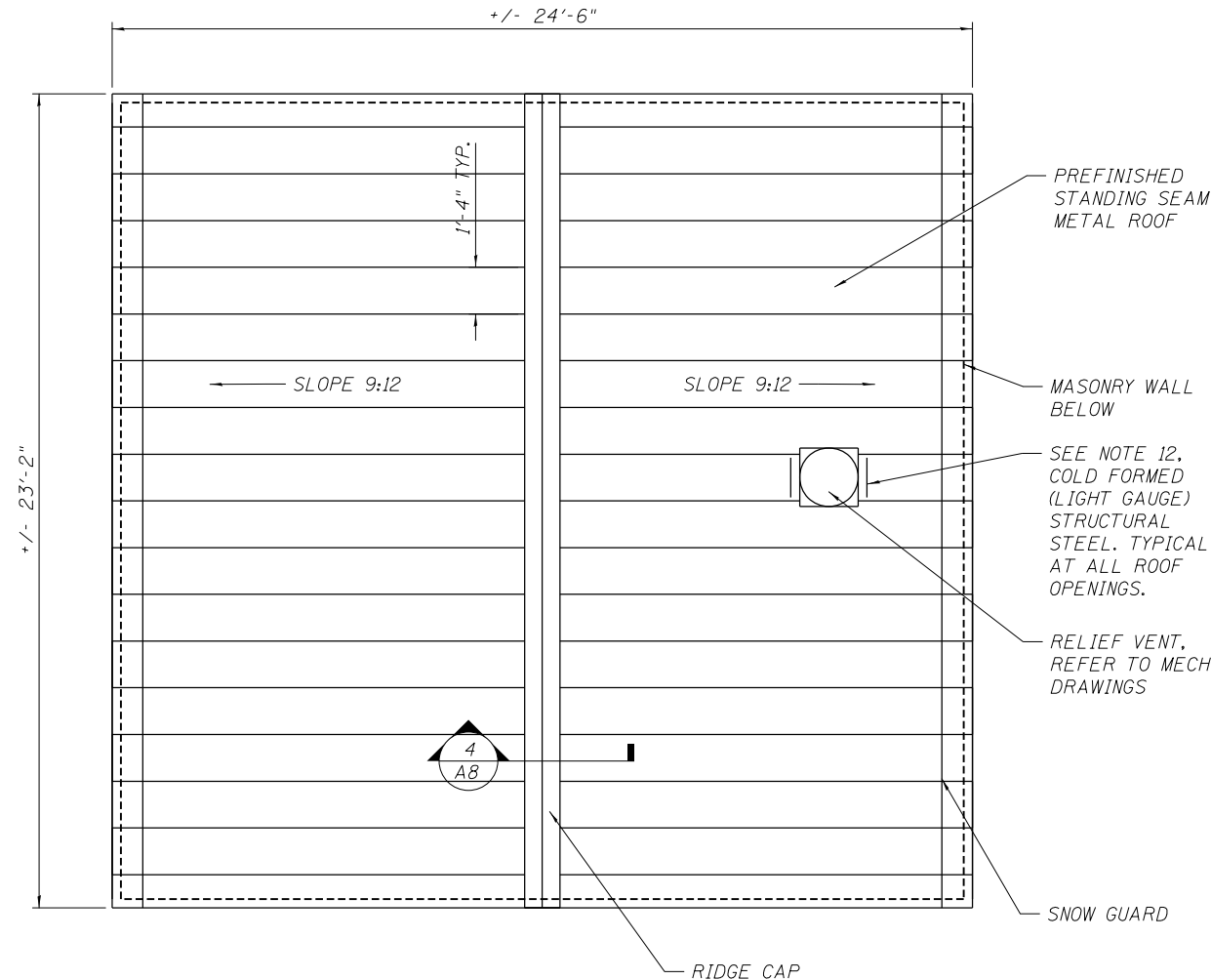
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**IL-104 PUMP STATION
GROUND AND WET WELL LEVEL PLANS**

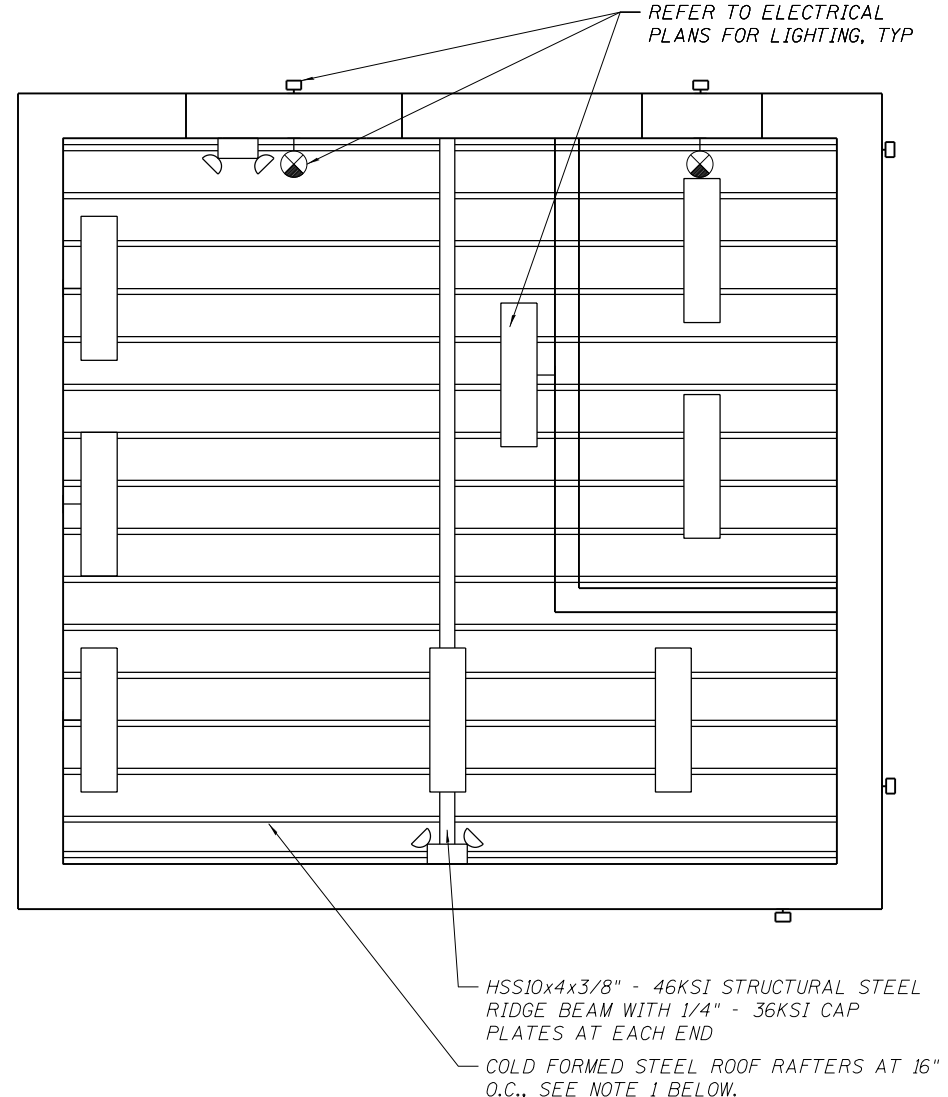
SHEET NO. A1 OF 10 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	593
CONTRACT NO. 72B58				
ILLINOIS FED. AID PROJECT				

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1 **ROOF PLAN**
SCALE: 3/8" = 1'-0"



2 **REFLECTED CEILING PLAN**
SCALE: 3/8" = 1'-0"

- ROOF FRAMING NOTES:**
- PROVIDE 800S200-54 [50 KSI] ROOF RAFTERS AT 16" O.C. (MAX.) PROVIDE BRIDGING PER MFR'S RECOMMENDATION. PROVIDE FACE MOUNT HANGER AT RIDGE BEAM.
 - DESIGN LOAD FOR RAFTERS:
DEAD LOAD = 20 PSF
LIVE LOAD = 20 PSF
NET WIND LOAD UPLIFT = 15 PSF
SNOW LOAD = 26 PSF
DOWNWARD WIND LOAD = 19 PSF

GENERAL NOTES:

- COLD FORMED (LIGHT GAUGE) STRUCTURAL STEEL:**
- CONFORM TO AISI "SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS", 2007 EDITION.
 - FORM ALL STRUCTURAL MEMBERS FROM CORROSION-RESISTANT STEEL, CORRESPONDING TO ASTM A653-94. YIELD STRENGTH:
33 KSI FOR ALL MEMBERS 18 GAUGE AND LIGHTER;
50 KSI FOR ALL MEMBERS 16 GAUGE AND HEAVIER.
 - ZINC COAT ALL STRUCTURAL MEMBERS PER ASTM A924. TOUCH UP ALL WELDS WITH ZINC RICH PAINT.
 - THE CONTRACTOR SHALL SUBMIT DETAILED, ENGINEERED, COORDINATED AND CHECKED SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS SHALL BE ACCOMPANIED BY CALCULATIONS SIGNED AND SEALED BY A STRUCTURAL ENGINEER LISCENSED IN THE STATE OF ILLINOIS.
 - ALL JOISTS AND JOIST CONNECTIONS SHALL BE DESIGNED BY THE MANUFACTURER TO MEET THE DESIGN REQUIREMENTS AND LOADS INDICATED ON THESE DRAWINGS. JOISTS SHALL BE A MINIMUM OF 16 GAUGE - PROVIDE HEAVIER GAUGE AS REQUIRED.
 - PROVIDE HORIZONTAL BLOCKING OR BRACING FOR ROOF JOISTS, PER MFR. RECOMMENDATIONS AND/OR REQUIREMENTS OF THE ENGINEERING CALCULATIONS.
 - ANY COMPONENT SIZE OR CONNECTION DETAIL SHOWN IN THE DRAWINGS SHALL BE CONSIDERED MINIMUM AND MUST BE VERIFIED BY THE LIGHT GAUGE FABRICATOR'S STRUCTURAL ENGINEER.
 - ALL FRAMING COMPONENTS MUST BE CUT SQUARELY FOR ATTACHMENT TO PERPENDICULAR MEMBERS OR AS REQUIRED FOR AN ANGULAR FIT AGAINST ABUTTING MEMBERS. ALL MEMBERS SHALL BE HELD POSITIVELY IN PLACE UNTIL PROPERLY FASTENED.
 - FASTENING OF COMPONENTS SHALL BE WITH SELF-DRILLING SCREWS OR BY WELDING AS INDICATED. DO NOT WIRE TIE COMPONENTS.
 - ALL WELDING WORK SHALL CONFORM TO A.W.S. D.1.3 "STRUCTURAL WELDING CODE - SHEET STEEL", LATEST EDITION. ALL WELDING SHALL BE PERFORMED BY A.W.S. CERTIFIED WELDERS QUALIFIED IN ACCORDANCE WITH SECTION 6 OF THE A.W.S. D.1.3.
 - PROVIDE TEMPORARY BRACING UNTIL ERECTION IS COMPLETE.
 - FRAME ALL ROOF OPENINGS WITH 600S137-43 [33 KSI] COLD FORM STEEL MEMBERS THAT RUN PERPENDICULAR TO COLD FORM STEEL ROOF RAFTERS.

PLYWOOD SHEATHING:

- ROOF SHEATHING: 3/4" (NOMINAL) C-DX APA EXPOSURE 1, 32/16 WITH 1/8" CLEAR BETWEEN PANELS TO ALLOW FOR EXPANSION. PROVIDE ONE PANEL EDGE CLIP PER SPAN.
- FASTEN ALL PLYWOOD SHEATHING WITH #10 HILTI KWIK-FLEX (OR APPROVED EQUAL) FLUSH HEAD SELF DRILLING SCREWS WITH WINGED REAMERS @ 6" O.C. AT PANEL EDGES AND 12" O.C. @ INTERMEDIATE SUPPORTS. (UNLESS NOTED OTHERWISE)

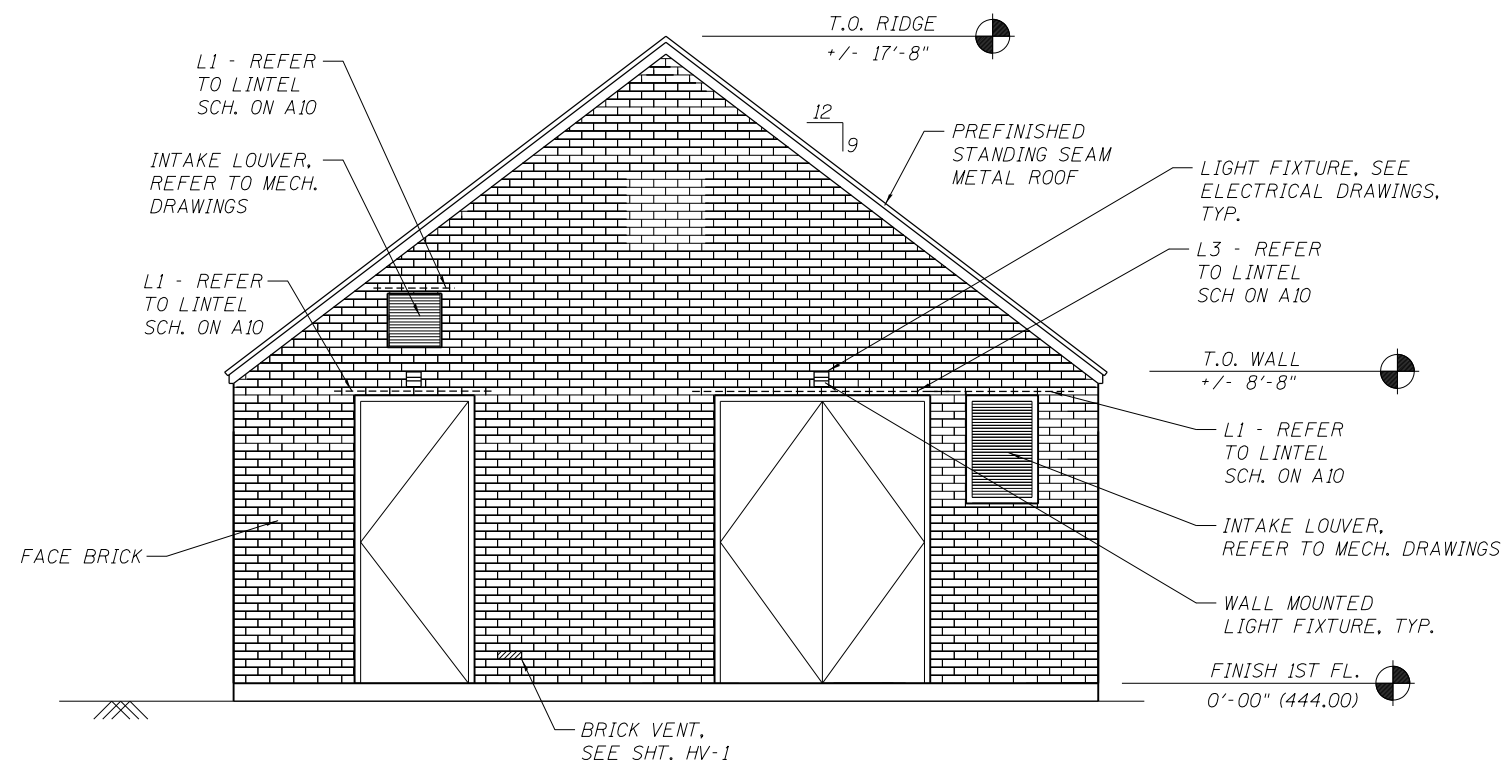


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	DATE = 8/5/2014	CHECKED - JS	REVISED -			745	123B-2	MORGAN	782	594	
exp U.S. Services Inc. Chicago, IL BUILDINGS-EARTH & ENVIRONMENT-ENERGY INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY	PLOT SCALE =	DRAWN - KMF	REVISED -			CONTRACT NO. 72B58					
	PLOT DATE =	CHECKED - TH	REVISED -			ILLINOIS FED. AID PROJECT					
						SHEET NO. A2 OF 10 SHEETS					

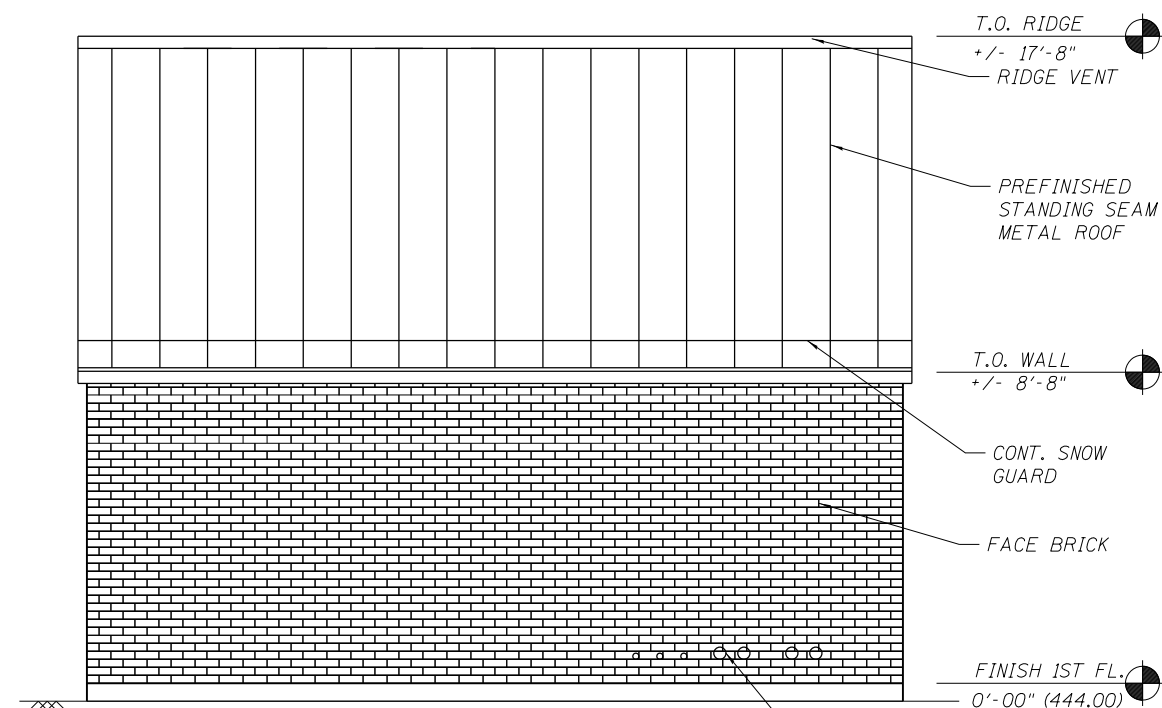
GENERAL NOTES:

CONCRETE MASONRY:

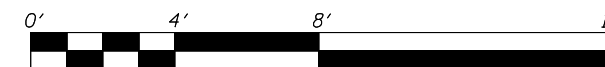
1. CONFORM TO ACI "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" (ACI 530-08/ASCE 5-08/TMS 402-08) AND SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530.1-08/ASCE 6-08/TMS 602-08).
2. ALL MASONRY CONSTRUCTION MUST BE INSPECTED PER ACI "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" ACI 530/ASCE 5/TMS 402 (SEC 1.14) AND "SPECIFICATIONS FOR MASONRY STRUCTURES" ACI/530.1/ASCE 6/TMS 602 (SEC 1.6).
3. MASONRY: MEDIUM WEIGHT HOLLOW LOAD BEARING CONCRETE BLOCK; ASTM C-90; COMPRESSIVE STRENGTH AS REQUIRED (MIN. 2800 psi) TO ACHIEVE SPECIFIED $f'm$ = 2000 psi.
4. MORTAR: ASTM C-270, TYPE S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 1800 psi.
5. CEMENT:
 - PORTLAND CEMENT: ASTM C150 TYPE 1
 - MORTAR CEMENT AND MASONRY CEMENT: NOT ACCEPTABLE
6. HYDRATED LIME: ASTM C207 TYPE S
7. GROUT: ASTM C-476 MINIMUM COMPRESSIVE STRENGTH 3000 psi
8. SAND AGGREGATE: ASTM C144.
9. WATER: POTABLE
10. REINFORCEMENT: BAR REINFORCEMENT: ASTM A615, GRADE 60. JOINT REINFORCEMENT: ASTM A82 GALVANIZED. MIN. (2) 8 GAUGE SIDE RODS W/ 8 GAUGE CROSS RODS AT 16" O.C. VERT.
11. DO NOT INCLUDE CALCIUM CHLORIDE IN THE MORTAR OR GROUT MIX.
12. AIR ENTRAINING ADMIXTURES SHALL NOT BE USED.
13. DO NOT PLACE MASONRY WHEN THE OUTSIDE AIR TEMPERATURE IS LESS THAN 40 DEGREES F. UNLESS GUIDELINES FOR COLD WEATHER CONSTRUCTION OUTLINED IN ACI 530.1, "SPECIFICATION FOR MASONRY STRUCTURES" ARE FOLLOWED.
14. BRACE MASONRY WALLS TO WITHSTAND A MINIMUM HORIZONTAL WIND PRESSURE OF 25psf DURING THEIR ERECTION, AND UNTIL THEIR DESIGN SUPPORTS ARE IN PLACE.
15. MORTAR SHALL BE TESTED BY AN APPROVED TESTING LABORATORY IN ACCORDANCE WITH ASTM C-780.
16. MORTAR FULLHEAD AND BED JOINTS OF ALL UNIT MASONRY.
17. MEASUREMENTS OF SAND BY SHOVEL NOT BE PERMITTED - EXACT MEASUREMENT METHOD MUST BE USED.



1 NORTH ELEVATION
SCALE: 3/8" = 1'-0"



2 WEST ELEVATION
SCALE: 3/8" = 1'-0"



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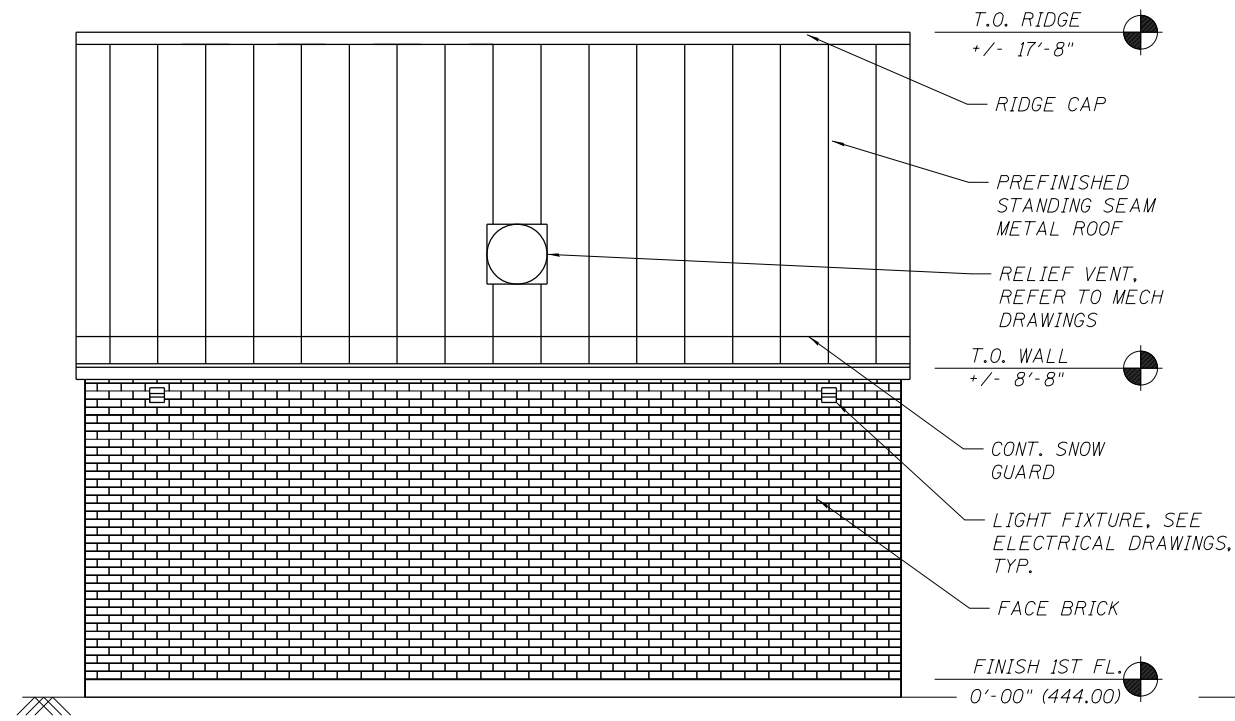
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL-104 PUMP STATION
EXTERIOR ELEVATIONS
1 OF 2

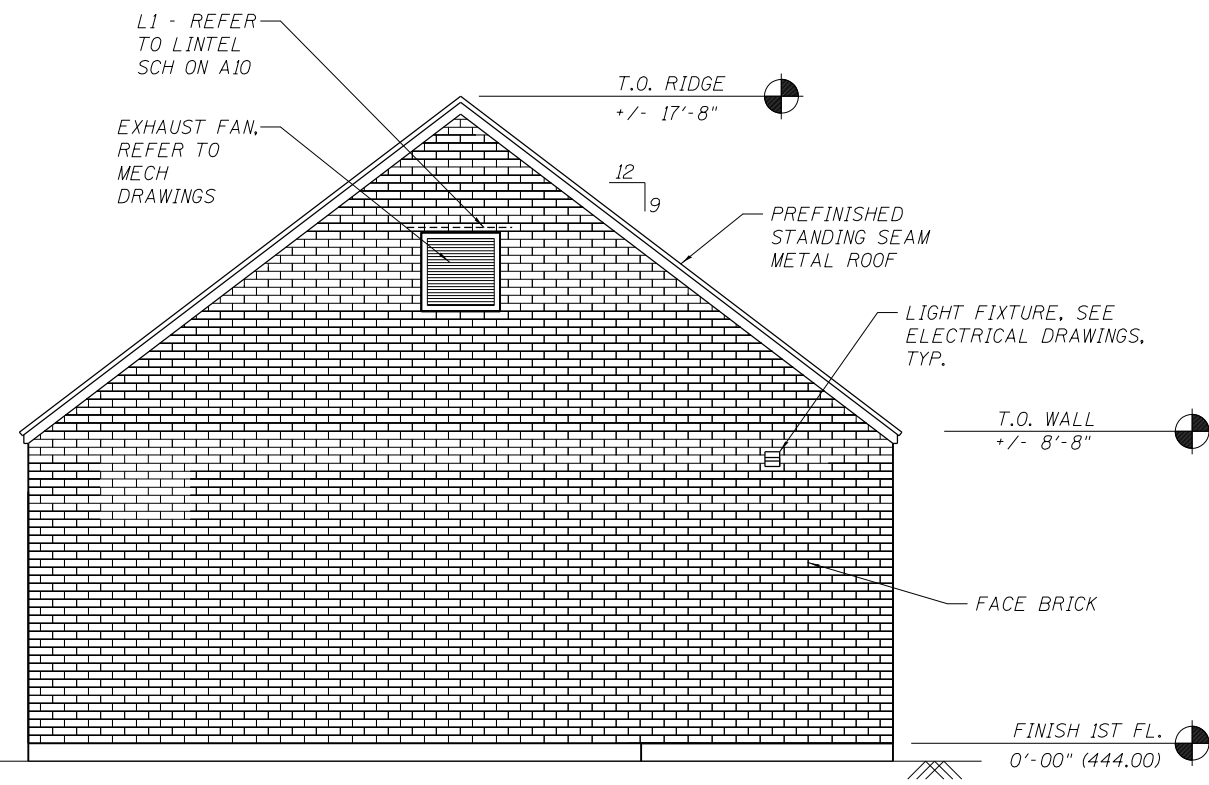
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	595
CONTRACT NO. 72B58				
ILLINOIS FED. AID PROJECT				

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1 EAST ELEVATION
SCALE: 3/8" = 1'-0"



2 SOUTH ELEVATION
SCALE: 3/8" = 1'-0"



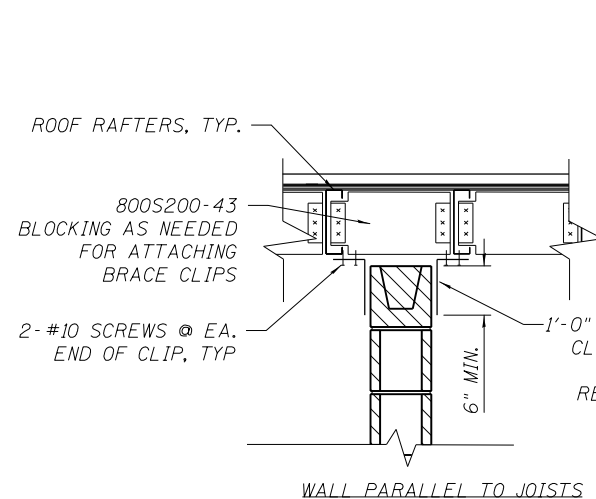
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

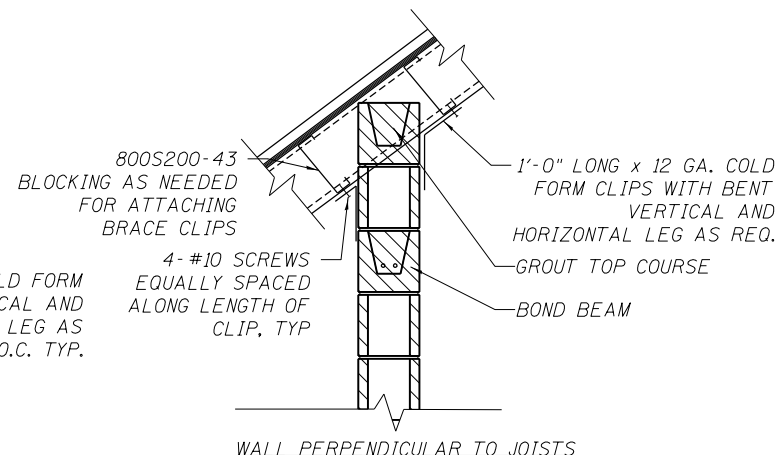
**IL-104 PUMP STATION
EXTERIOR ELEVATIONS
2 OF 2**

SHEET NO. A4 OF 10 SHEETS

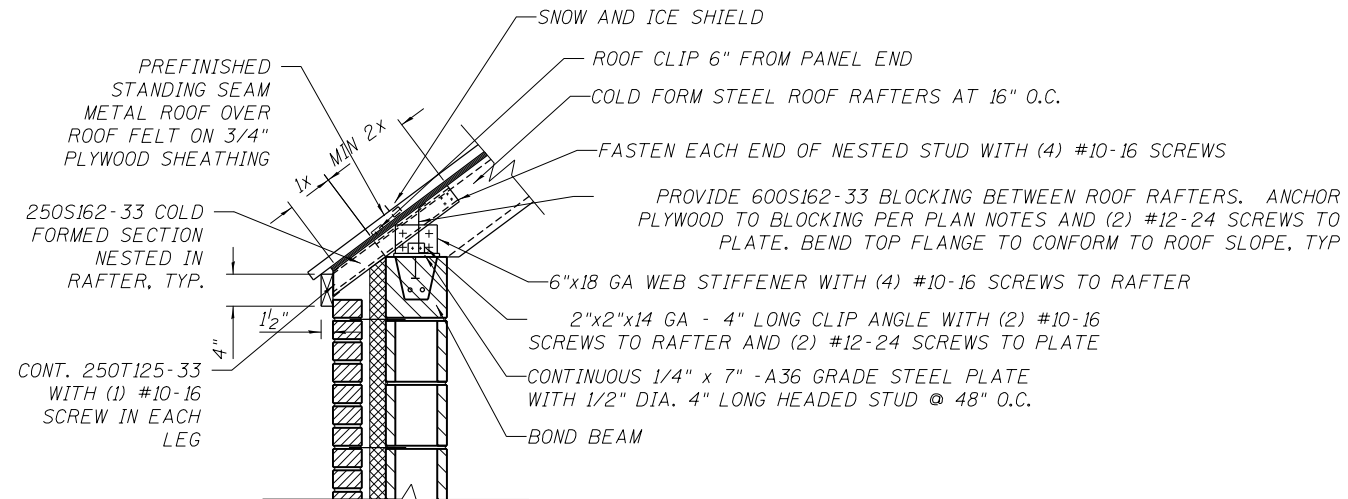
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	596
CONTRACT NO. 72B58				
ILLINOIS FED. AID PROJECT				



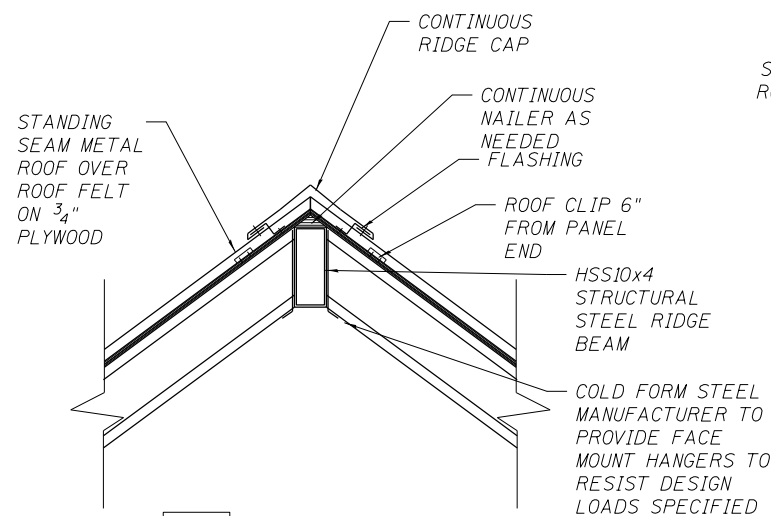
1 TOP OF MASONRY WALL PARTITION BRACE DETAILS
SCALE: 1" = 1'-0"



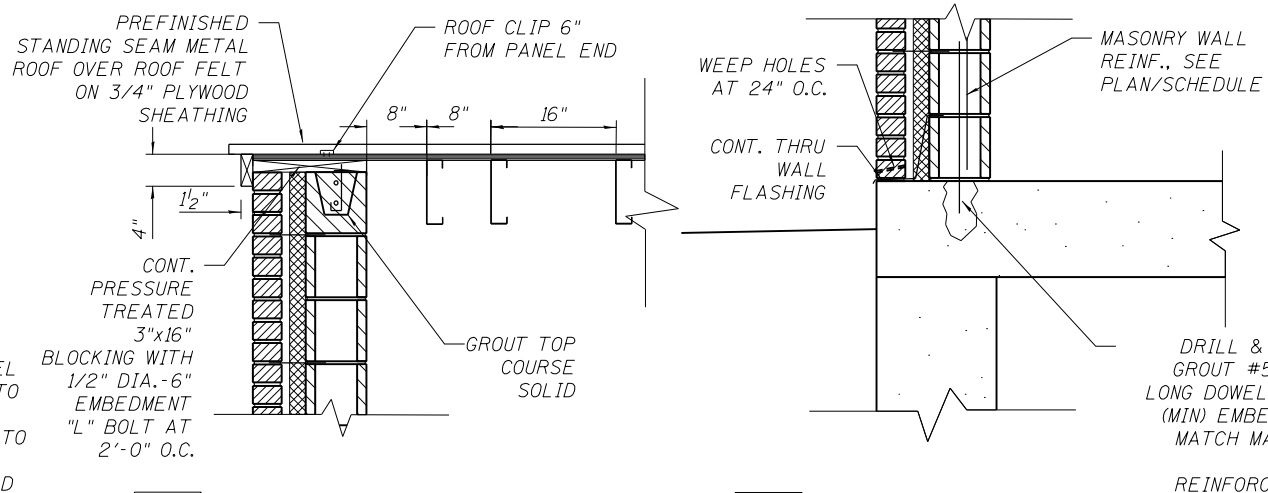
2 TOP OF MASONRY WALL PARTITION BRACE DETAILS
SCALE: 1" = 1'-0"



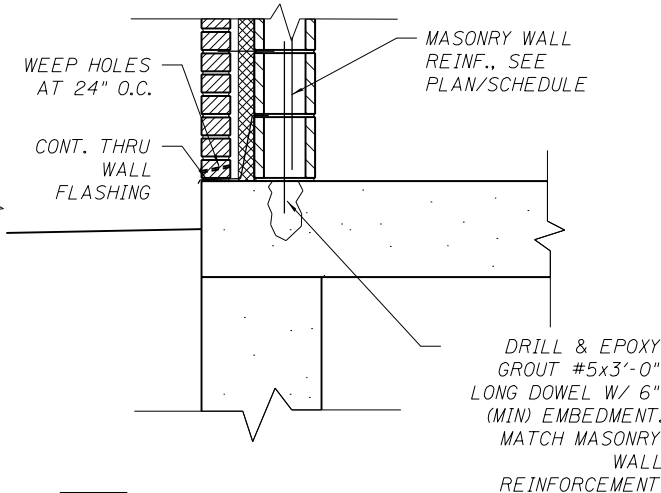
3 WALL DETAIL
SCALE: 1" = 1'-0"



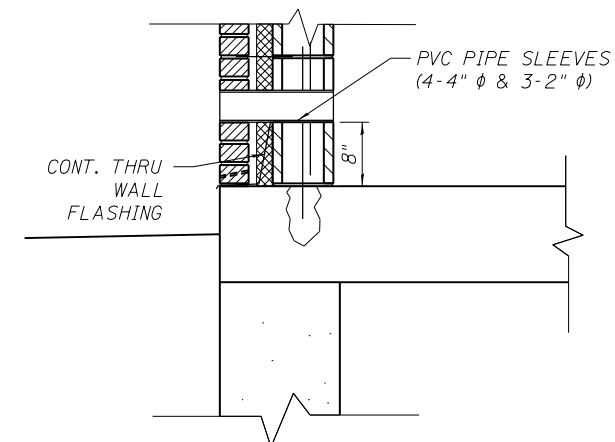
4 RIDGE DETAIL
SCALE: 1" = 1'-0"



5 WALL DETAIL
SCALE: 1" = 1'-0"

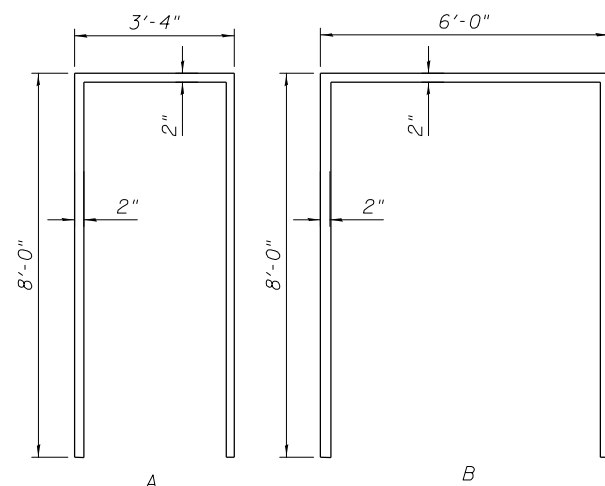


6 WALL DETAIL
SCALE: 1" = 1'-0"



- NOTES:
1. GROUT AROUND EACH SLEEVE AT CMU BACKUP CONSTRUCTION
 2. PROVIDE SELF-ADHERED RUBBERIZED FLASHING AROUND EACH SLEEVE AT THE CAVITY FACE OF THE CMU WALL

7 WALL SLEEVE DETAIL
SCALE: 1" = 1'-0"



8 DOOR AND FRAME TYPE
SCALE: NOT TO SCALE

DOOR SCHEDULE				
DOOR NO:	DOOR SIZE:	MATERIAL:	HARDWARE:	TYPE:
001A	2 @ 2'-10"x7'-10"x1 ³ / ₄	ST. STEEL	SEE SPEC	B
002A	3'-0"x7'-10"x1 ³ / ₄	ST. STEEL	SEE SPEC	A

ROOM FINISH SCHEDULE					
ROOM NO:	ROOM NAME:	FLOOR:	WALLS:	CEILING:	NOTES:
001	PUMP ROOM	CONC.	NO FINISH	-	-
002	ELECTRICAL ROOM	CONC.	NO FINISH	-	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL-104 PUMP STATION
BUILDING DETAILS AND SCHEDULES

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
745	123B-2	MORGAN	782	600
CONTRACT NO. 72B58				

SHEET NO. A8 OF 10 SHEETS

ILLINOIS FED. AID PROJECT

FILE NAME = \\FS-0044\AM\VALU.L.D.-TRANS.07\FRCH\02012341-02\STRUCT\CAD\72B58\VP\STAI\SHEET\VP\STAI-72B58-00B-DRAINAGE_SHT.DGN
 USER NAME =
 DATE = 8/5/2014
 PLOT SCALE =
 PLOT DATE
 DESIGNED - KMF
 CHECKED - JS
 DRAWN - KMF
 CHECKED - TH
 REVISED -
 REVISED -
 REVISED -
 REVISED -
 exp U.S. Services Inc. Chicago, IL
 BUILDINGS-EARTH & ENVIRONMENT-ENERGY
 INDUSTRIAL-INFRASTRUCTURE-SUSTAINABILITY