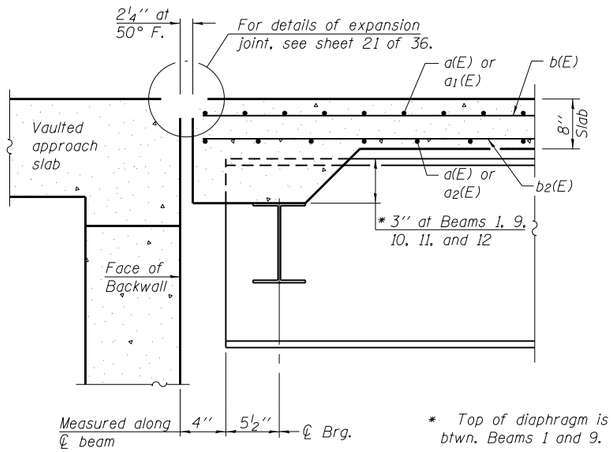
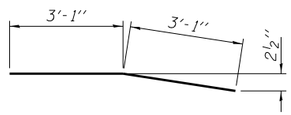
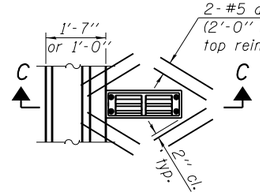


* Top of diaphragm is level btwn. Beams 1 and 9.

SECTION A-A

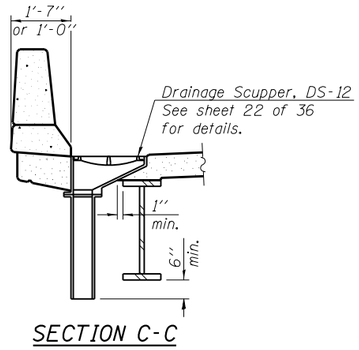


BAR a3(E)

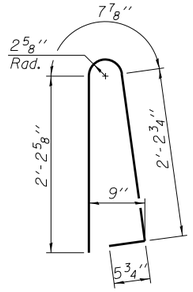


PLAN

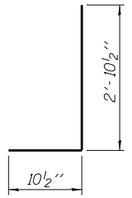
Note:
Cut longitudinal reinforcement to clear drainage scuppers. See Sheet 1 of 36 for scupper locations.



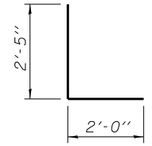
SECTION C-C



BAR d(E)



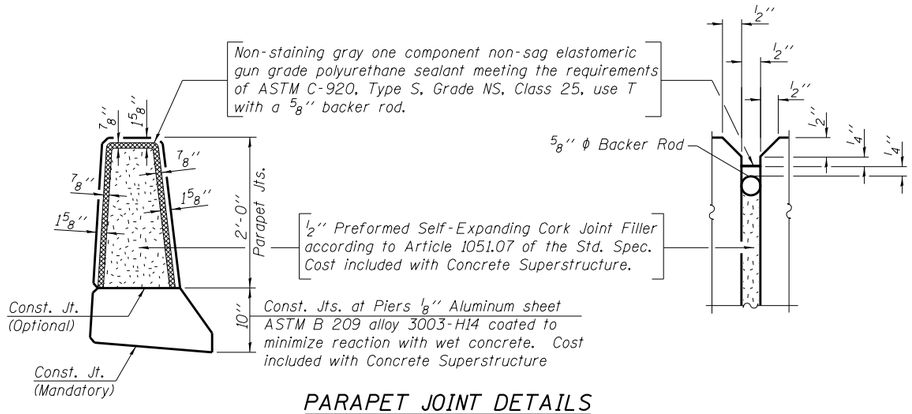
BAR d3(E)



BAR d6(E)

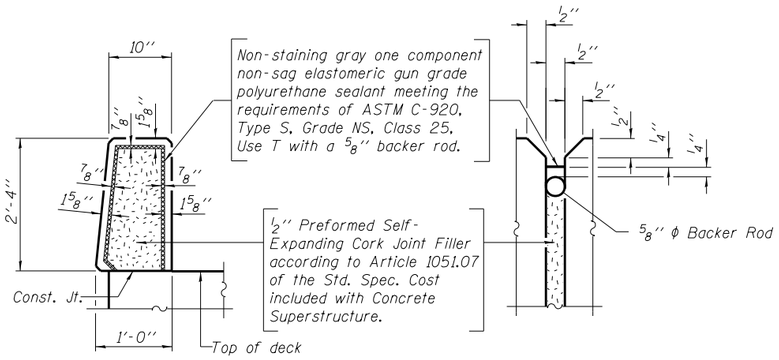
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	669	#5	28'-10''	——
a1(E)	752	#5	28'-6''	——
a2(E)	879	#5	19'-11''	——
a3(E)	669	#5	6'-2''	——
a4(E)	188	#6	6'-6''	——
a13(E)	152	#5	2'-0''	——
a14(E)	188	#6	20'-6''	——
b(E)	712	#5	29'-8''	——
b1(E)	258	#6	25'-11''	——
b2(E)	648	#5	26'-8''	——
b3(E)	40	#5	29'-8''	——
c(E)	220	#5	3'-6''	——
c1(E)	440	#5	1'-4''	⌐
d(E)	480	#5	5'-7''	▯
d1(E)	240	#5	8'-3''	⌐
d2(E)	240	#5	4'-8''	⌐
d3(E)	220	#6	3'-9''	L
d4(E)	220	#4	5'-0''	L
d5(E)	50	#4	2'-0''	⊓
d6(E)	3	#6	4'-5''	L
d7(E)	5	#6	8'-11''	⊔
e(E)	198	#4	17'-8''	——
e1(E)	22	#4	16'-8''	——
e2(E)	44	#4	19'-8''	——
e3(E)	12	#8	33'-6''	——
e4(E)	4	#8	19'-8''	——
e5(E)	16	#4	24'-1''	——
e6(E)	4	#4	19'-8''	——
Reinforcement Bars, Epoxy Coated		Pound	138640	
Concrete Superstructure		Cu. Yd.	599.0	



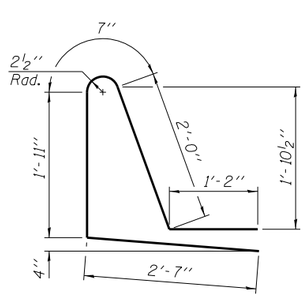
PARAPET JOINT DETAILS

(West and Interior Parapet)

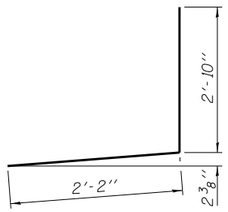


PARAPET JOINT DETAILS

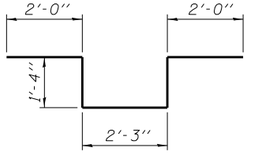
(East Parapet)



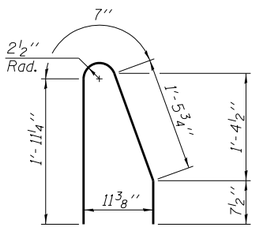
BAR d1(E)



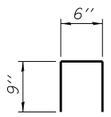
BAR d4(E)



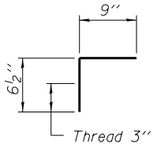
BAR d7(E)



BAR d2(E)



BAR d5(E)



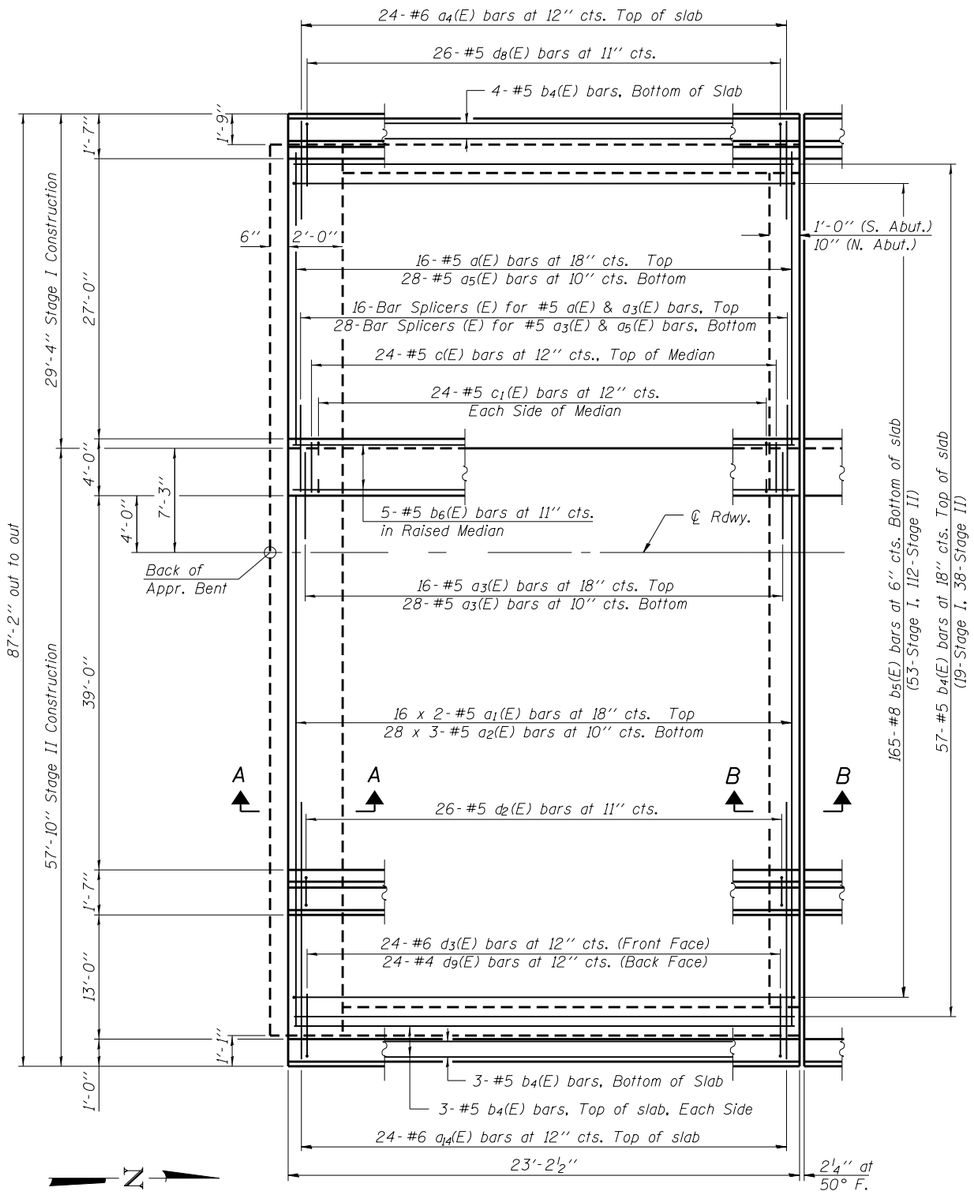
BAR c1(E)

FILE NAME = 0720146-68683-014-Superstructure Details.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

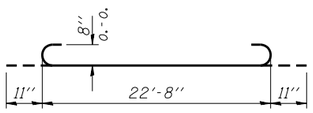
SUPERSTRUCTURE DETAILS
STRUCTURE NO. 072-0146
SHEET NO. 14 OF 36 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HB)BY	PEORIA	487	301
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

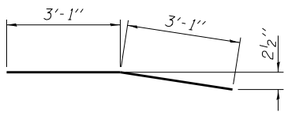


PLAN

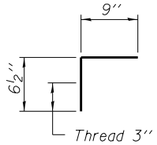
(South Approach shown, North Approach opposite)



BAR b5(E)



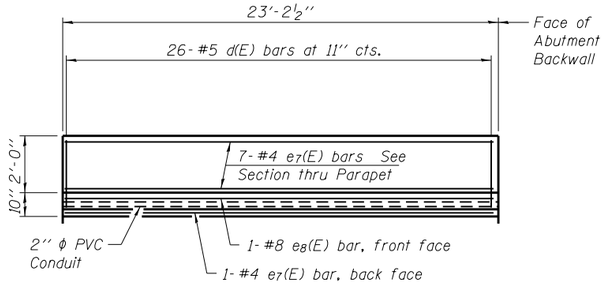
BAR a3(E)



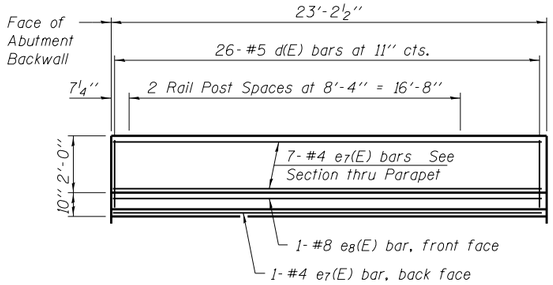
BAR c1(E)

MINIMUM BAR LAP

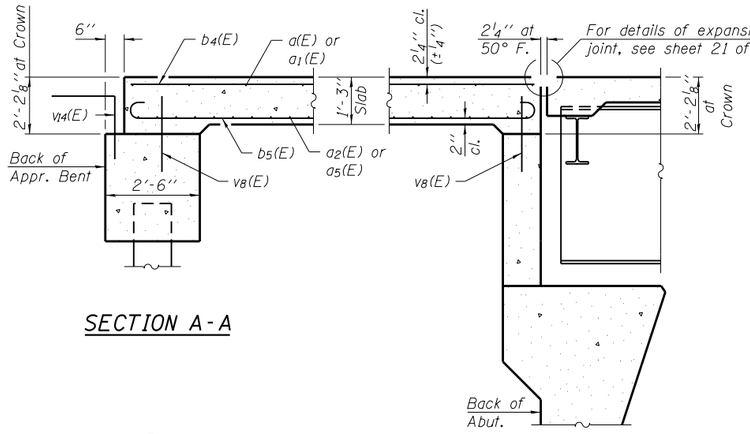
#5 bar = 2'-7"



INSIDE ELEVATION OF WEST PARAPET

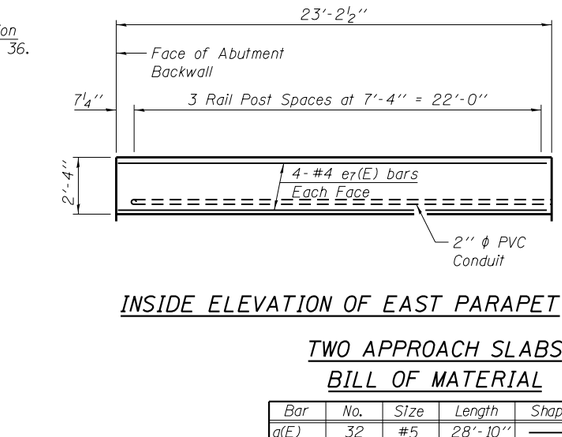


INSIDE ELEVATION OF INTERIOR PARAPET

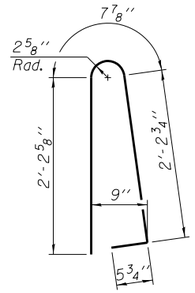


SECTION A-A

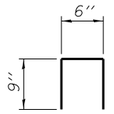
SECTION B-B



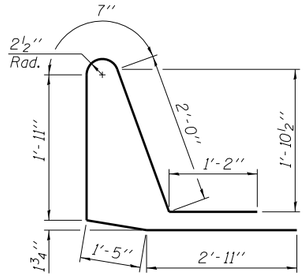
INSIDE ELEVATION OF EAST PARAPET



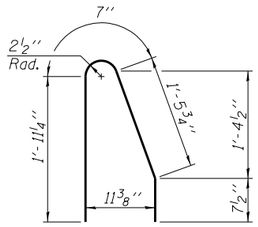
BAR d(E)



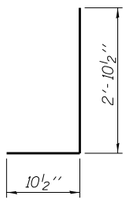
BAR d5(E)



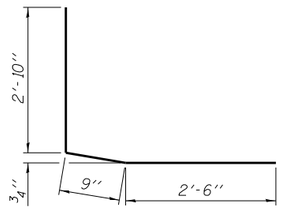
BAR d8(E)



BAR d2(E)



BAR d3(E)



BAR d9(E)

TWO APPROACH SLABS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	32	#5	28'-10"	
a1(E)	64	#5	28'-6"	
a2(E)	168	#5	19'-11"	
a3(E)	88	#5	6'-2"	
a4(E)	48	#6	6'-6"	
a5(E)	56	#5	26'-3"	
a14(E)	48	#6	20'-6"	
b4(E)	140	#5	22'-11"	
b5(E)	330	#8	24'-6"	
b6(E)	10	#5	22'-11"	
c(E)	48	#5	3'-6"	
c1(E)	96	#5	1'-4"	
d(E)	104	#5	5'-7"	
d2(E)	52	#5	4'-8"	
d3(E)	48	#6	3'-9"	
d5(E)	16	#4	2'-0"	
d8(E)	52	#5	10'-0"	
d9(E)	48	#4	6'-1"	
e7(E)	48	#4	22'-11"	
e8(E)	4	#8	22'-11"	
Reinforcement Bars, Epoxy Coated			Pound	38750
Concrete Superstructure			Cu. Yd.	210.6

Notes:

See Sheet 16 of 36 for cross section and details of parapets and median.

See Sheet 35 of 36 for details of Bar Splicers.

Bars indicated thus 16 x 2-#5 etc. indicates 16 lines of bars with 2 lengths per line.

(Sheet 1 of 2)

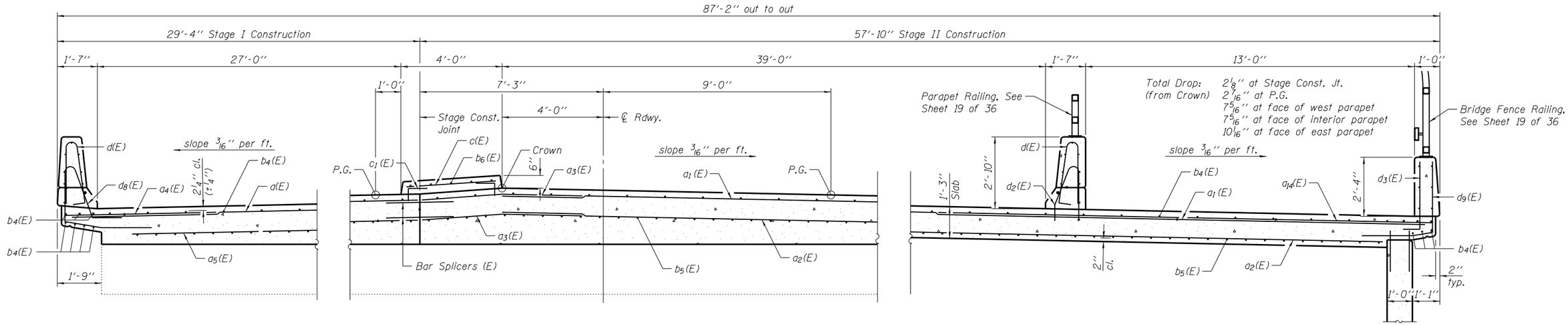
FILE NAME = 0720146-68683-015-Appr Span.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VAULTED ABUTMENT APPROACH SPAN
STRUCTURE NO. 072-0146

SHEET NO. 15 OF 36 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HB)BY	PEORIA	487	302
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



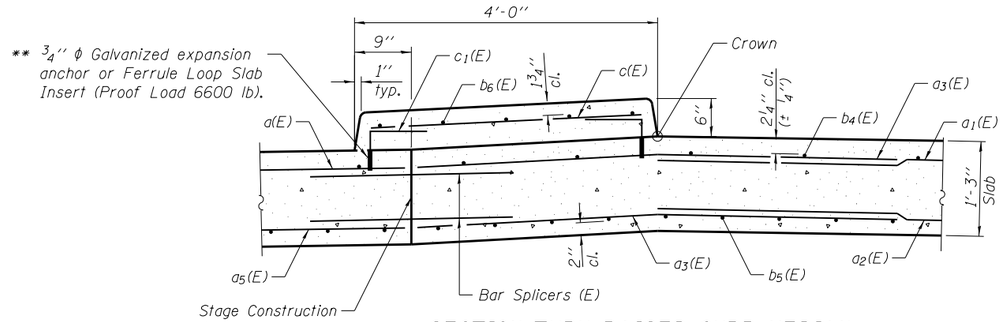
AT APPR. BENT

NEAR ABUTMENT

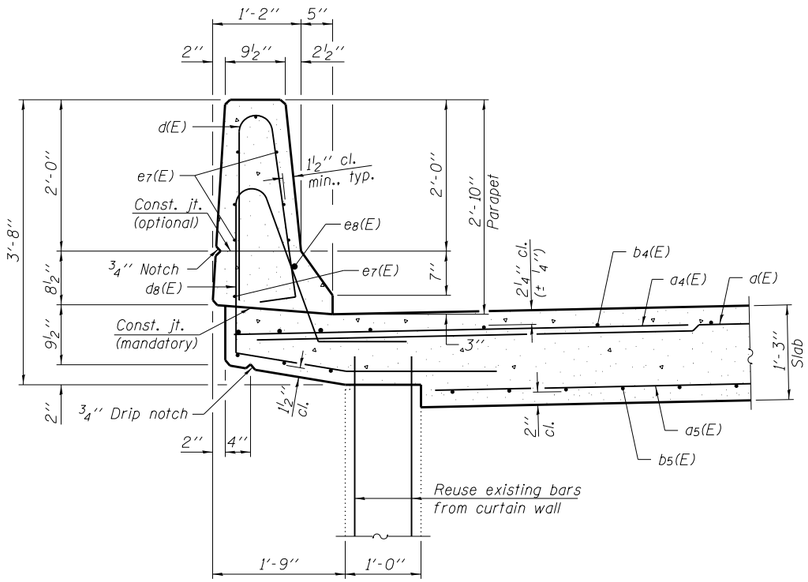
CROSS SECTION
(Looking North)

* Drill and set #5 $d_2(E)$ bar according to Article 509.06 of the Standard Specifications. Drilled holes shall be roughened or scored per manufacturer's recommendations. Maximum depth of hole shall not exceed 6".

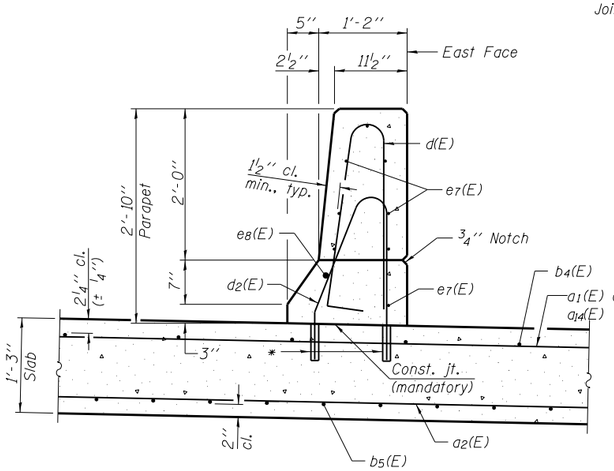
** Cost included with Reinforcement Bars, Epoxy Coated.



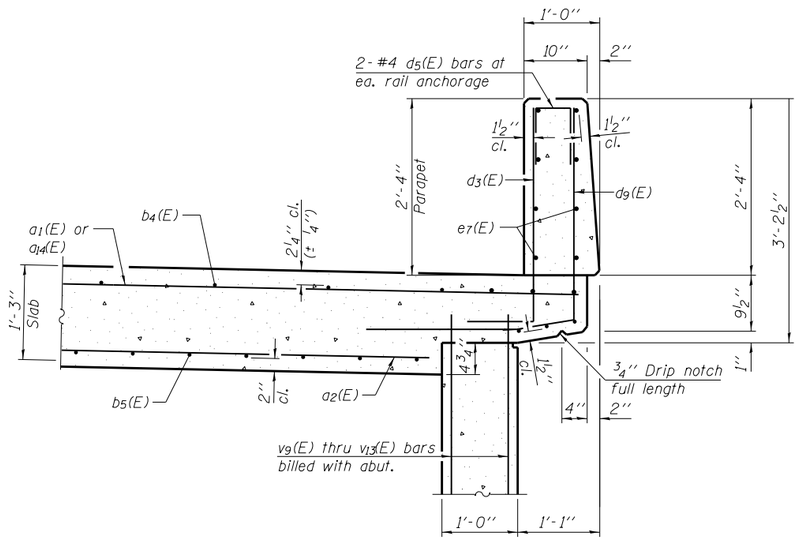
SECTION THRU RAISED CURB MEDIAN



SECTION THRU WEST PARAPET



SECTION THRU INTERIOR PARAPET



SECTION THRU EAST PARAPET

FILE NAME = 0720146-68683-016-Appr Span.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

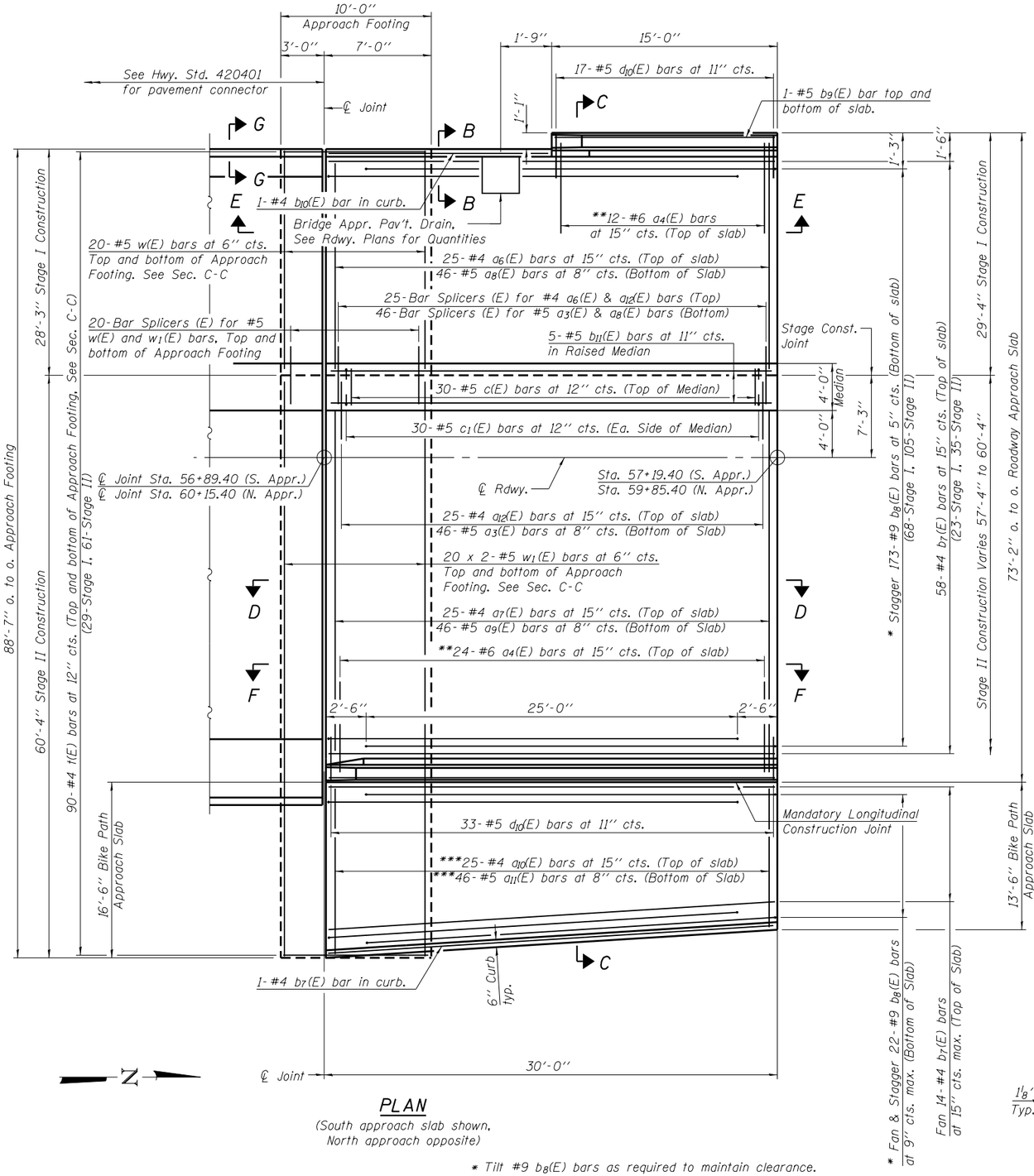
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VAULTED ABUTMENT APPROACH SPAN
STRUCTURE NO. 072-0146
SHEET NO. 16 OF 36 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HB)BY	PEORIA	487	303
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

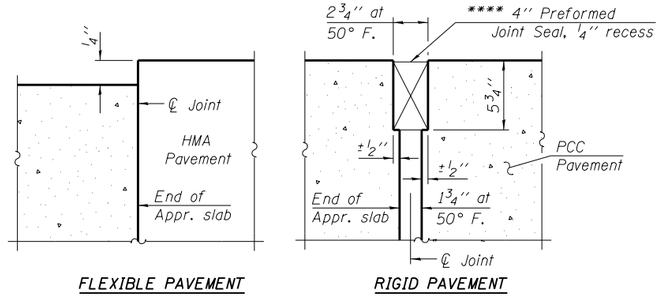
Notes:
See Sheet 18 of 36 for Sections C-C & D-D and Views E-E & F-F.
Cut bars as needed to fit around the Bridge Approach Pavement Drain. See Std. 609006 for details.
See Sheet 35 of 36 for details of Bar Splicers.
Bars indicated thus 20 x 2-#5 etc. indicates 20 lines of bars with 2 lengths per line.

**** Cost included with Concrete Superstructure.



PLAN
(South approach slab shown, North approach opposite)

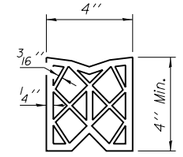
* Tilt #9 b8(E) bars as required to maintain clearance.
** Space between a6(E) or a7(E) bars.
*** Cut bars to fit, use remainder in opposite approach.



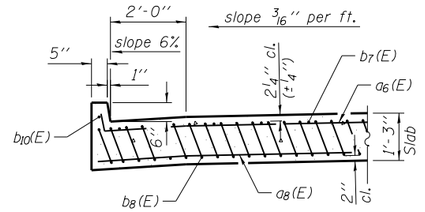
FLEXIBLE PAVEMENT

RIGID PAVEMENT

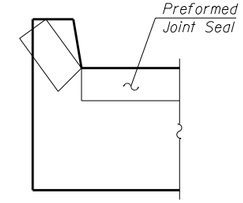
DETAIL A



PREFORMED JOINT SEAL

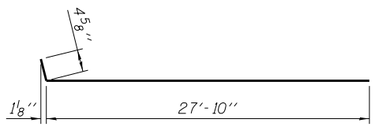


SECTION B-B

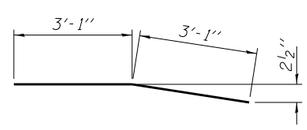


VIEW G-G

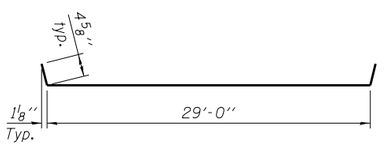
Angle Preformed Joint Seal (PJS) at 45° at curbs. Continue PJS at top of slab across median.



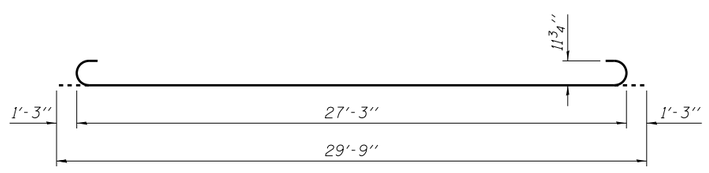
BAR a6(E)



BAR a3(E) and a12(E)



BAR a10(E)



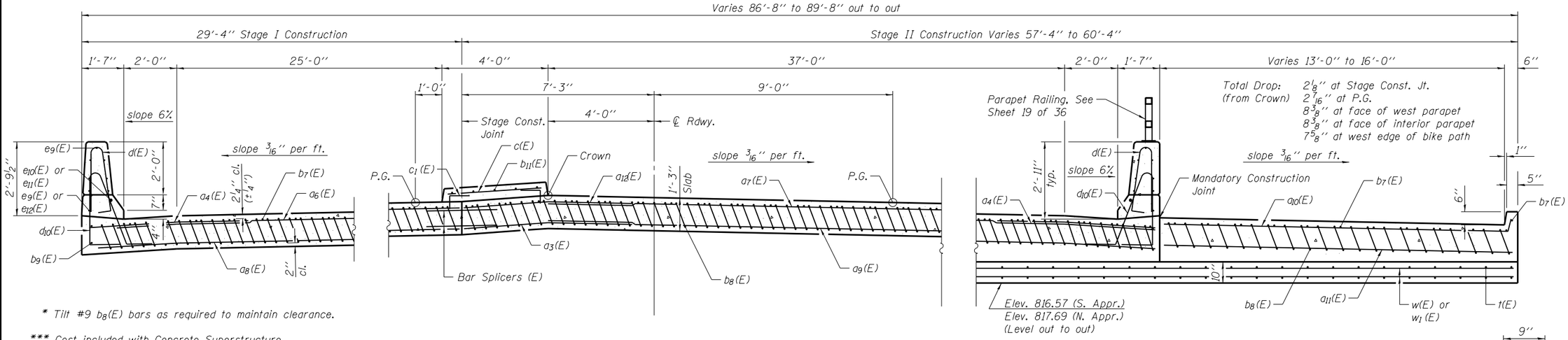
BAR b8(E)

FILE NAME = 0720146-68683-017-Appr Slab.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 072-0146
SHEET NO. 17 OF 36 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HB)BY	PEORIA	487	304
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



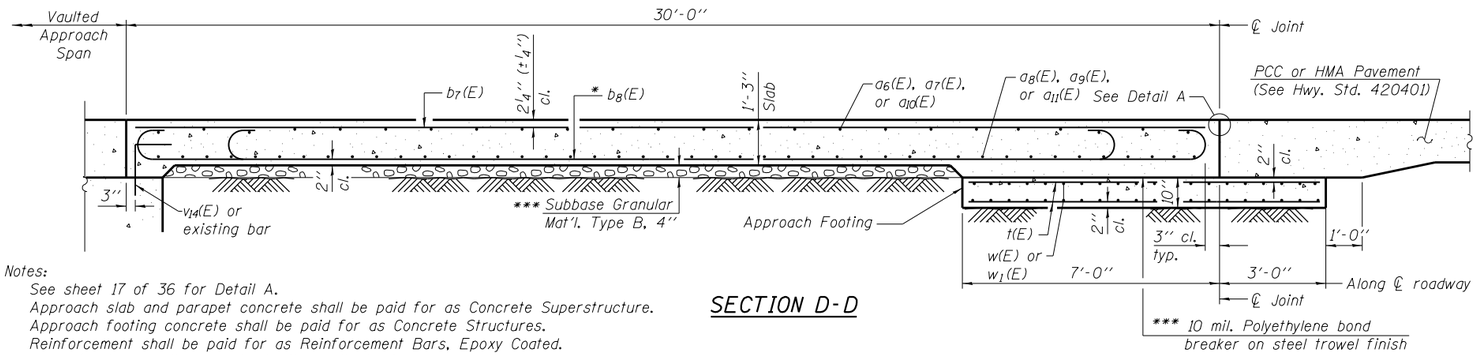
* Tilt #9 $b_8(E)$ bars as required to maintain clearance.

*** Cost included with Concrete Superstructure.

NEAR APPR. BENT

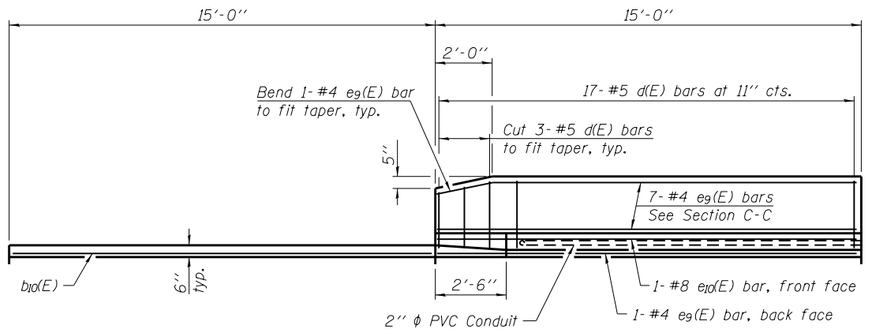
AT APPROACH FOOTING

SECTION C-C
(Looking North)

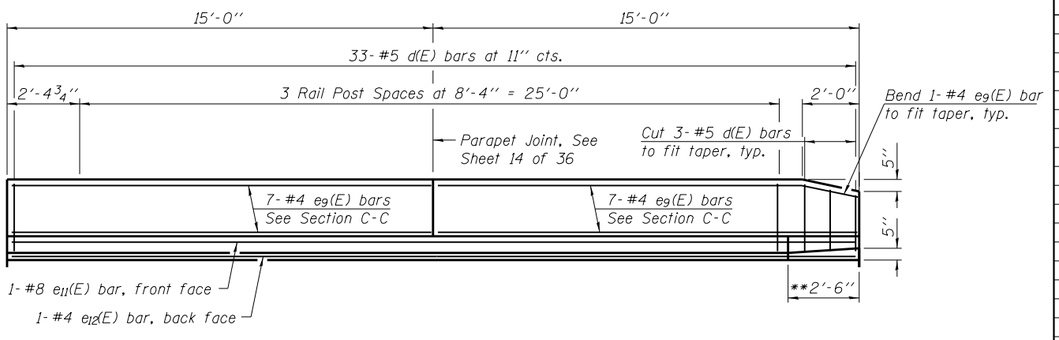


SECTION D-D

Notes:
- See sheet 17 of 36 for Detail A.
- Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
- Approach footing concrete shall be paid for as Concrete Structures.
- Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
- For $v_{14}(E)$ bar details, see sheet 30 or 32 of 36.
- The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
- For bar splicer details, see sheet 35 of 36.
- Cost of excavation for approach footing included with Concrete Structures.
- For additional parapet and median details, see sheet 16 of 36.

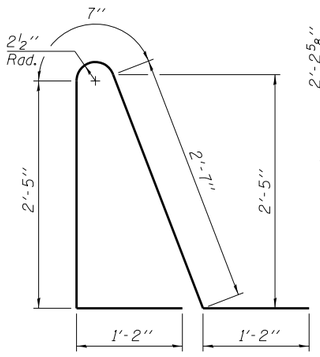


VIEW E-E

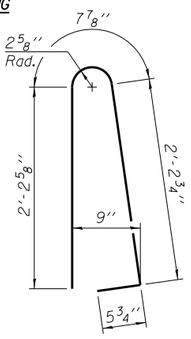


VIEW F-F

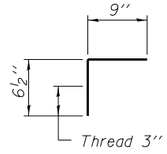
** Match B-6.24 curb at end of North Approach.



BAR d10(E)



BAR d(E)



BAR c1(E)

TWO APPROACHES BILL OF MATERIAL

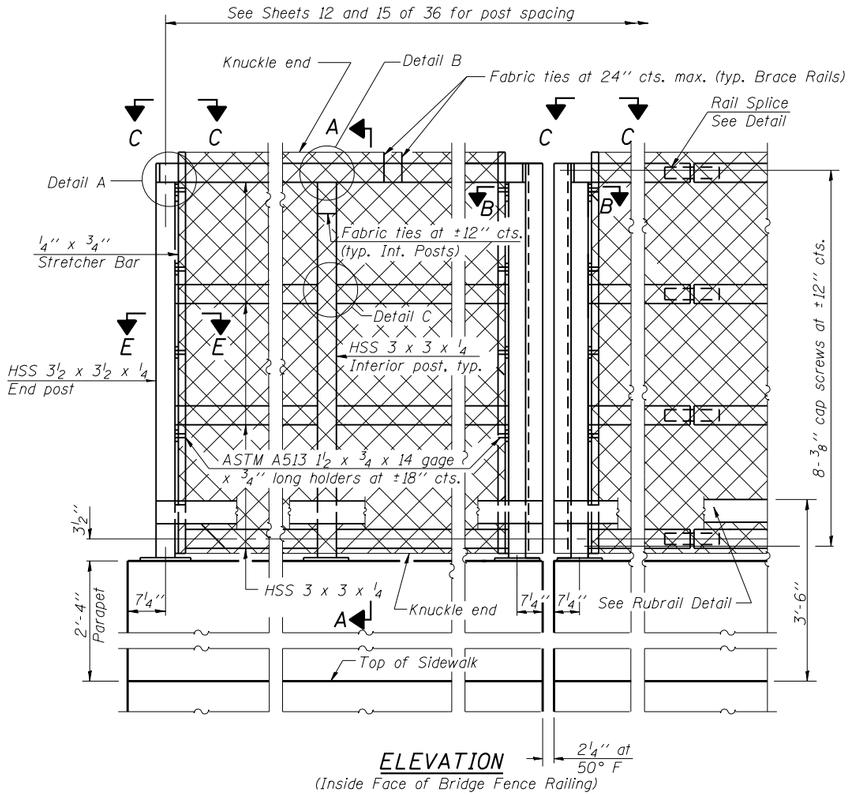
Bar	No.	Size	Length	Shape
$a_3(E)$	92	#5	6'-2"	
$a_4(E)$	72	#6	6'-6"	
$a_6(E)$	50	#4	28'-3"	
$a_7(E)$	50	#4	40'-5"	
$a_8(E)$	92	#5	27'-11"	
$a_9(E)$	92	#5	40'-5"	
$a_{10}(E)$	25	#4	29'-10"	
$a_{11}(E)$	46	#5	29'-4"	
$a_{12}(E)$	50	#4	6'-2"	
$b_7(E)$	146	#4	29'-8"	
$b_8(E)$	390	#9	29'-9"	
$b_9(E)$	4	#5	14'-8"	
$b_{10}(E)$	2	#4	14'-8"	
$b_{11}(E)$	10	#5	29'-8"	
$c(E)$	60	#5	3'-6"	
$c_1(E)$	120	#5	1'-4"	
$d(E)$	100	#5	5'-7"	
$d_{10}(E)$	100	#5	7'-11"	
$e_9(E)$	44	#4	14'-8"	
$e_{10}(E)$	2	#8	14'-8"	
$e_{11}(E)$	2	#8	29'-8"	
$e_{12}(E)$	2	#4	29'-8"	
$t(E)$	360	#4	9'-8"	
$w(E)$	80	#5	27'-11"	
$w_1(E)$	160	#5	31'-6"	
Concrete Superstructure			Cu. Yd.	285.4
Concrete Structures			Cu. Yd.	54.7
Reinforcement Bars, Epoxy Coated			Pound	67400

FILE NAME = 0720146-68683-018-Appr Slab.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

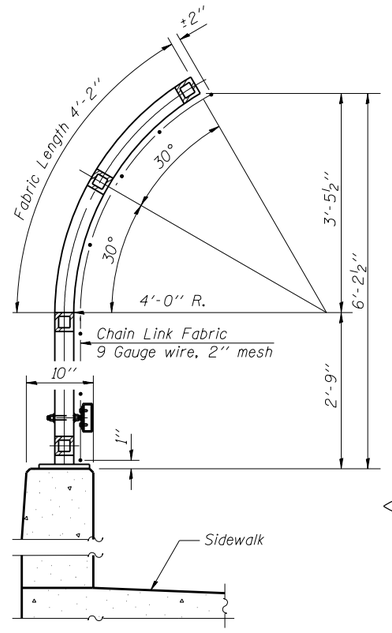
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 072-0146
SHEET NO. 18 OF 36 SHEETS

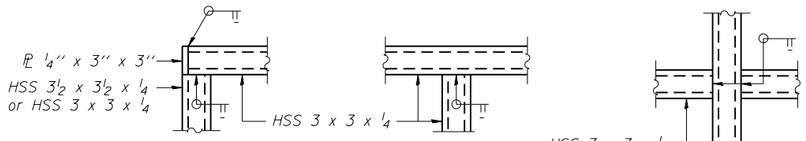
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HB)BY	PEORIA	487	305
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



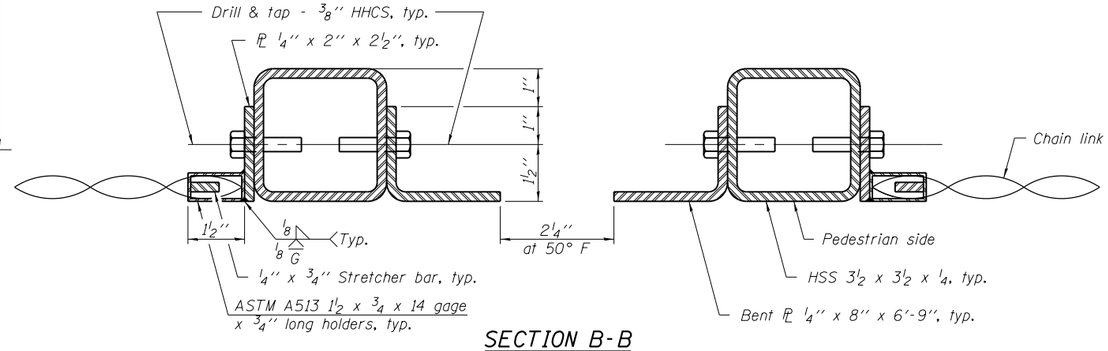
ELEVATION
(Inside Face of Bridge Fence Railing)



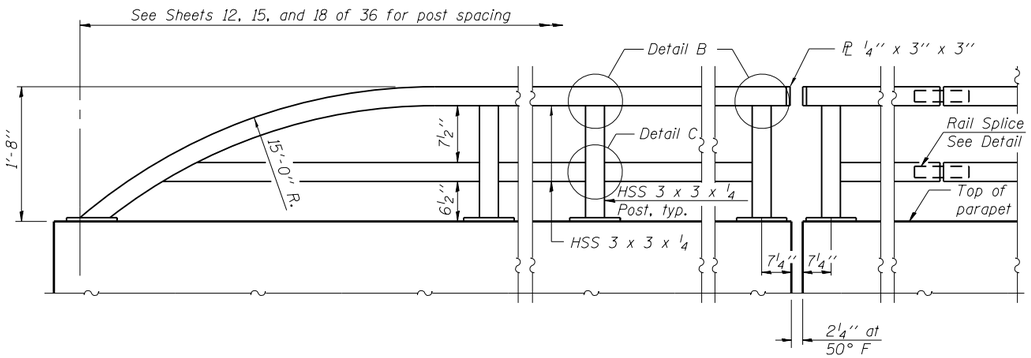
SECTION A-A



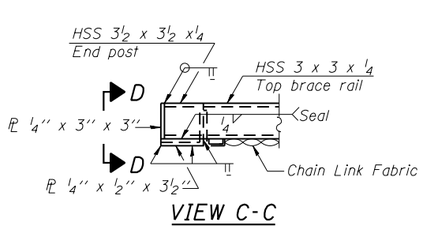
DETAIL A DETAIL B DETAIL C



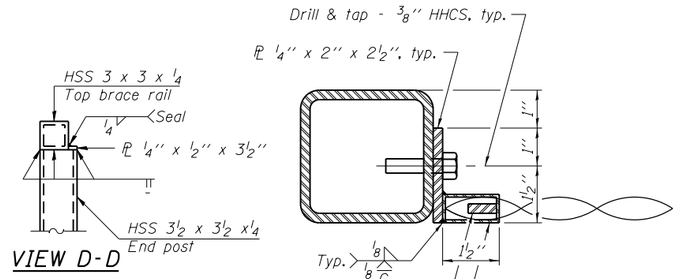
SECTION B-B
(At Expansion Joint)



ELEVATION
(Inside Face of Parapet Railing)



VIEW C-C



VIEW D-D

SECTION E-E

Notes:
All steel rail elements including chain link fabric shall be galvanized according to Article 509.05 of the Standard Specifications.
See Sheet 20 of 36 for Anchor Bolt, Base Plate, Handrail, and Rail Splice Details.

BILL OF MATERIAL

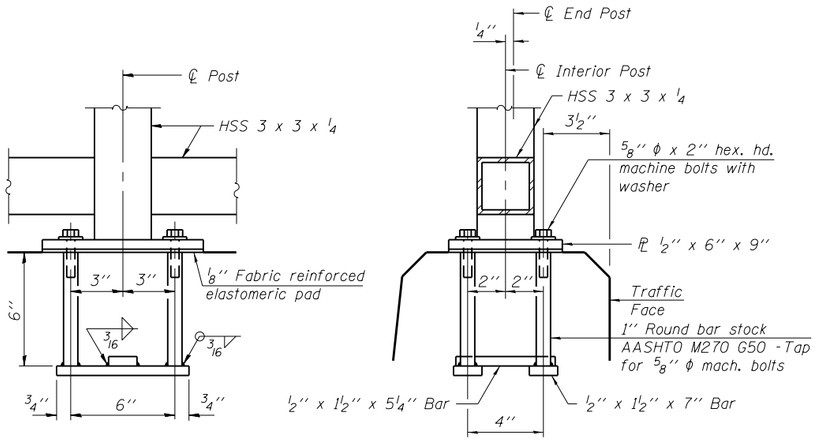
Item	Unit	Quantity
Bridge Fence Railing	Foot	265
Parapet Railing	Foot	321

FILE NAME = Ø720146-68683-Ø19-Railing.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

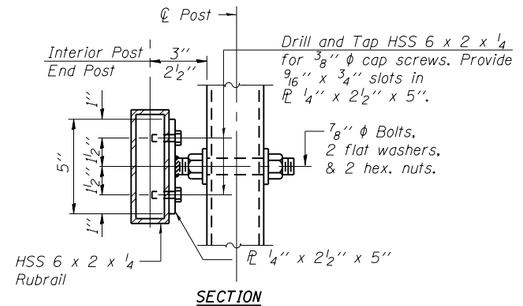
RAILING DETAILS
STRUCTURE NO. 072-0146
SHEET NO. 19 OF 36 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HBJBY	PEORIA	487	306
		CONTRACT NO. 68683		
		ILLINOIS FED. AID PROJECT		

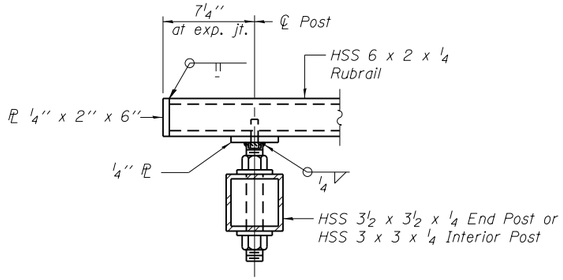


ANCHOR BOLT DETAILS

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting ⅝" ϕ anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

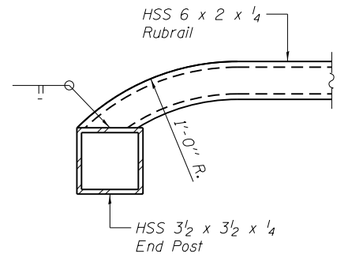


SECTION



TOP VIEW

RUBRAIL DETAIL

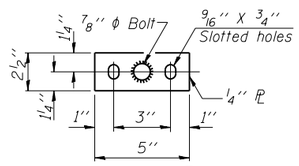


TOP VIEW

RUBRAIL TERMINATION

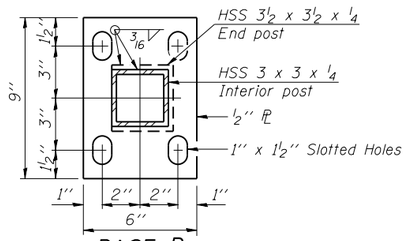
RAIL SPLICE

RUBRAIL SPLICE



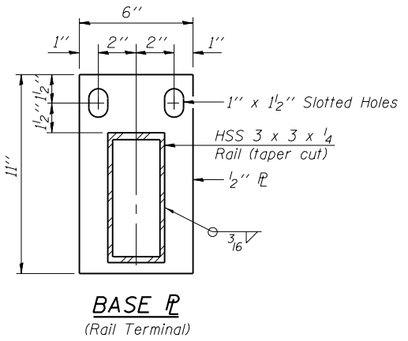
ANCHOR PL

(Rubrail)



BASE PL

(Post)



BASE PL

(Rail Terminal)

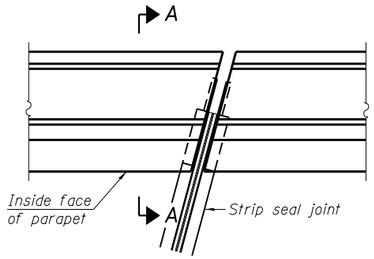
(Sheet 2 of 2)

FILE NAME = 0720146-68683-020-Railing.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

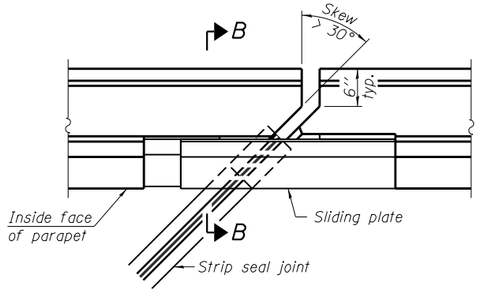
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAILING DETAILS
STRUCTURE NO. 072-0146
SHEET NO. 20 OF 36 SHEETS

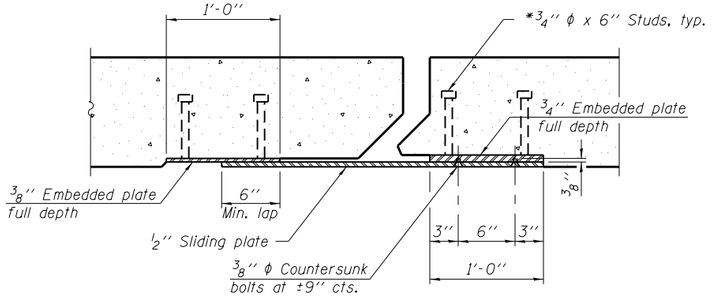
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HB)BY	PEORIA	487	307
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



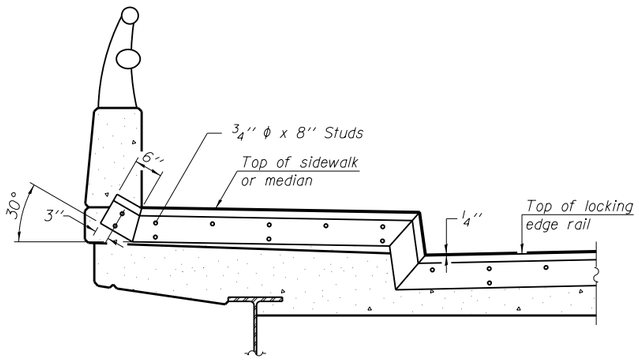
PLAN
(For skews ≤ 30°)



PLAN
(For skews > 30°)
Showing point block

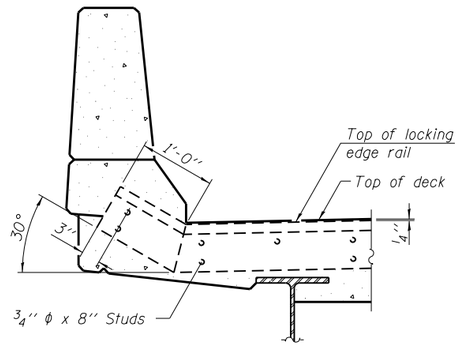


SECTION C-C

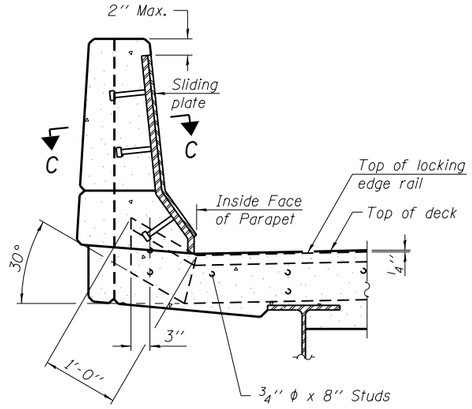


TYPICAL END TREATMENT AT SIDEWALK OR MEDIAN

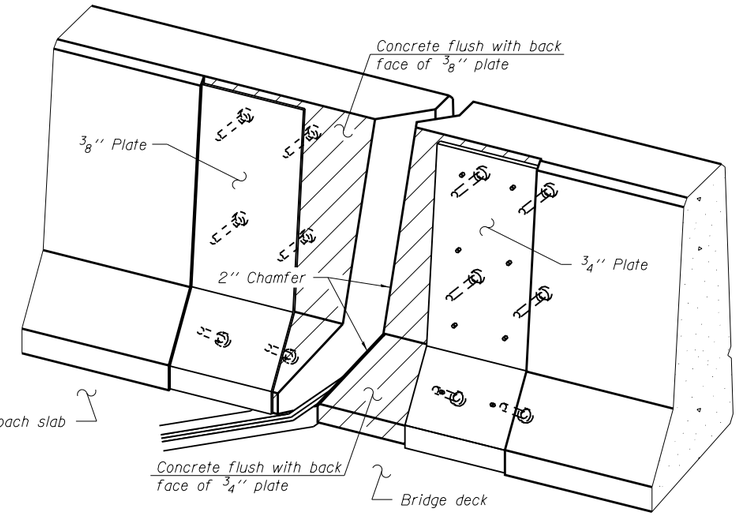
Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.



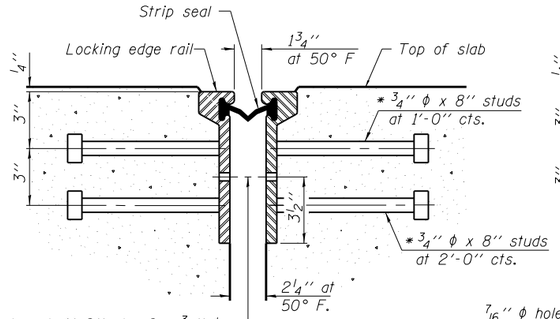
SECTION A-A



SECTION B-B

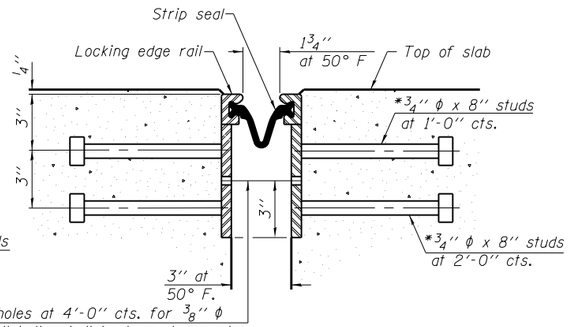


TRIMETRIC VIEW
(Showing back plates only)



7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

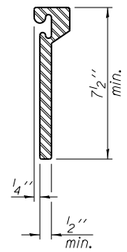
SECTION THRU ROLLED RAIL JOINT



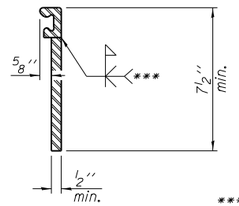
7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU WELDED RAIL JOINT

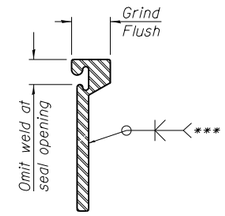
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



ROLLED EXTRUDED RAIL



WELDED RAIL



*** Back gouge not required if complete joint penetration is verified by mock-up.

LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.

Rolled rail shown, welded rail similar.

LOCKING EDGE RAILS

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.

The manufacturer's recommended installation methods shall be followed.

The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

Maximum space between rail segments shall be 3/16", sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.

Parapet plates and anchorage studs for skews > 30° included in the cost of Preformed Joint Strip Seal.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	174

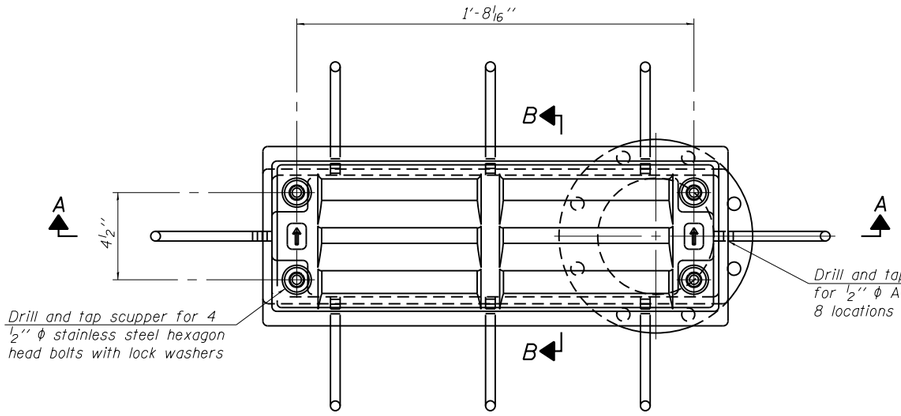
EJ-SSJ 1-27-12

FILE NAME = 0720146-68683-021-Strip Seal.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

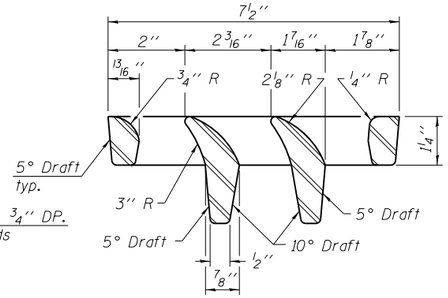
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 072-0146
SHEET NO. 21 OF 36 SHEETS

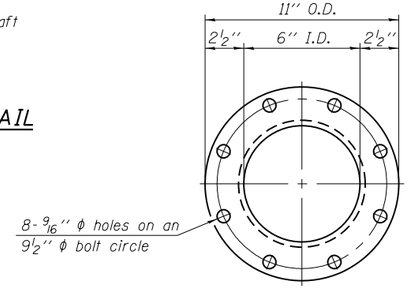
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HB)BY	PEORIA	487	308
			CONTRACT NO. 68683	
	ILLINOIS FED. AID PROJECT			

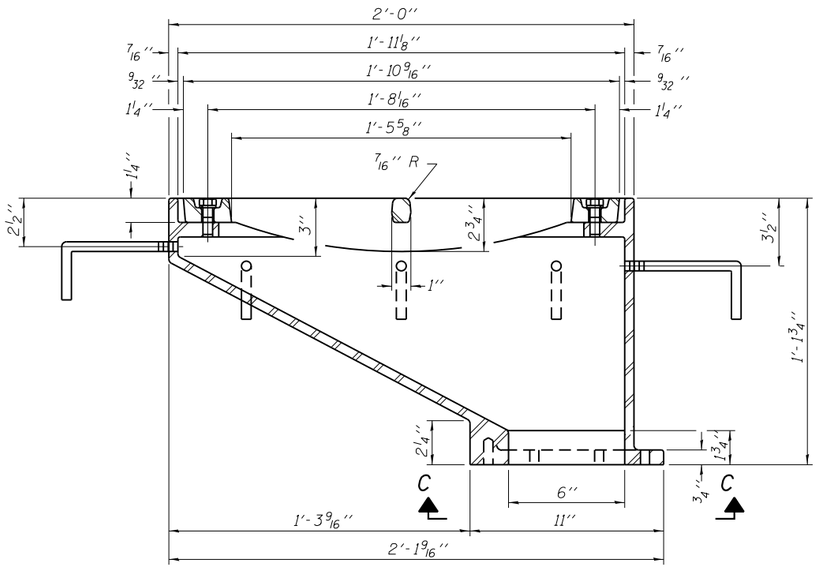


PLAN



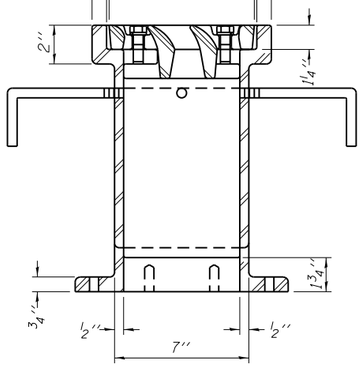
VANE GRATE DETAIL



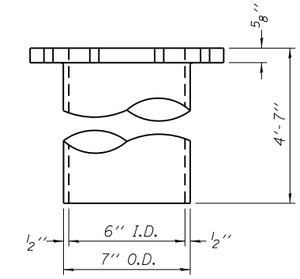


SECTION A-A

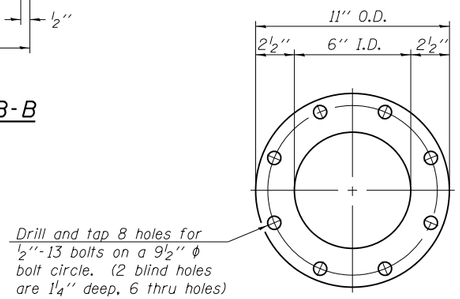
See sheet 14 of 36 for scupper location relative to parapet.



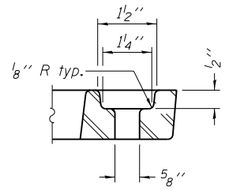
SECTION B-B



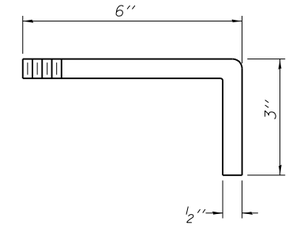
DOWNSPOUT



VIEW C-C



BOLT HOLE DETAIL



ANCHOR STUD DETAIL

Notes:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.

Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.

Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.

As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.

The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.

Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scuppers, DS-12.

Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.

BILL OF MATERIAL

Item	Unit	Quantity
Drainage Scuppers, DS-12	Each	19

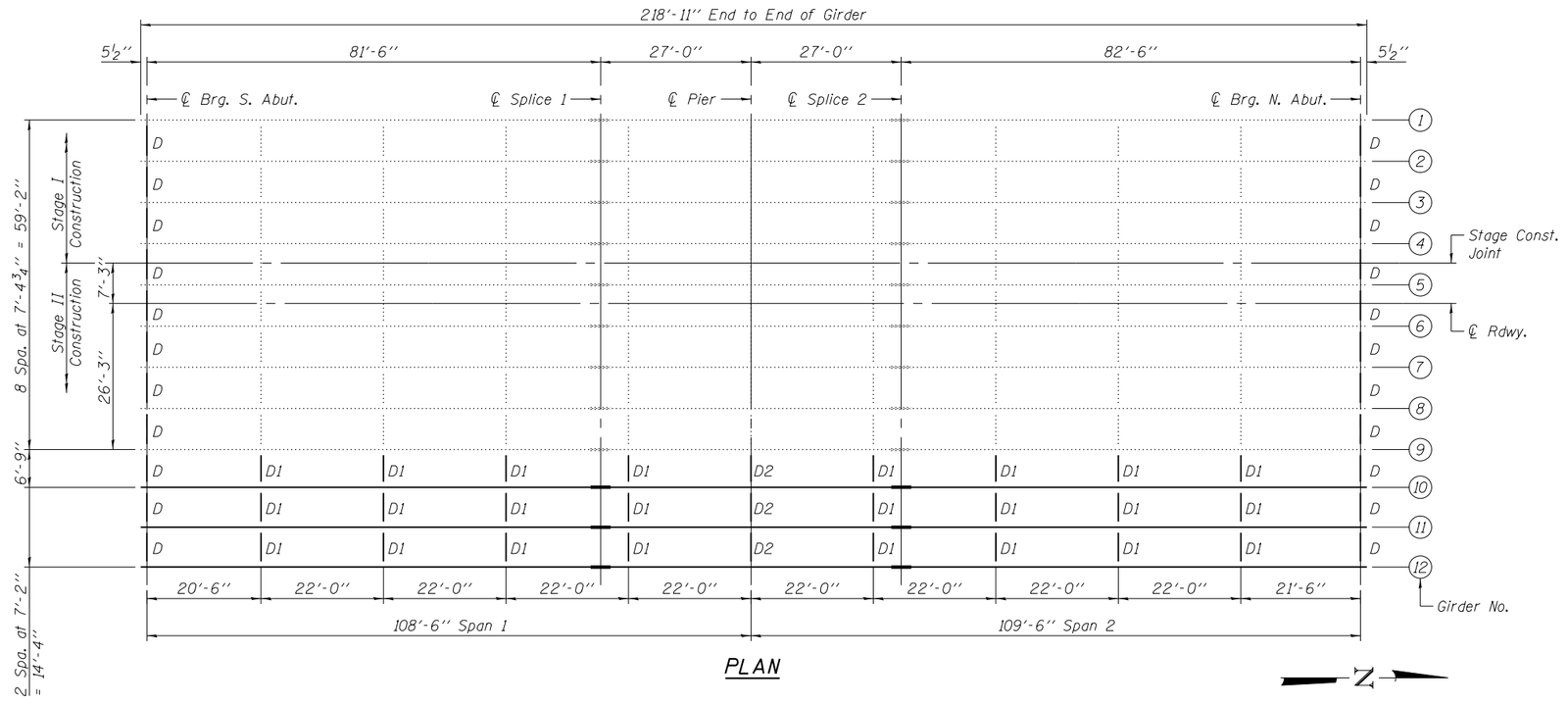
DS-12 7-1-10

FILE NAME = Ø720146-68683-022-Scupper.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

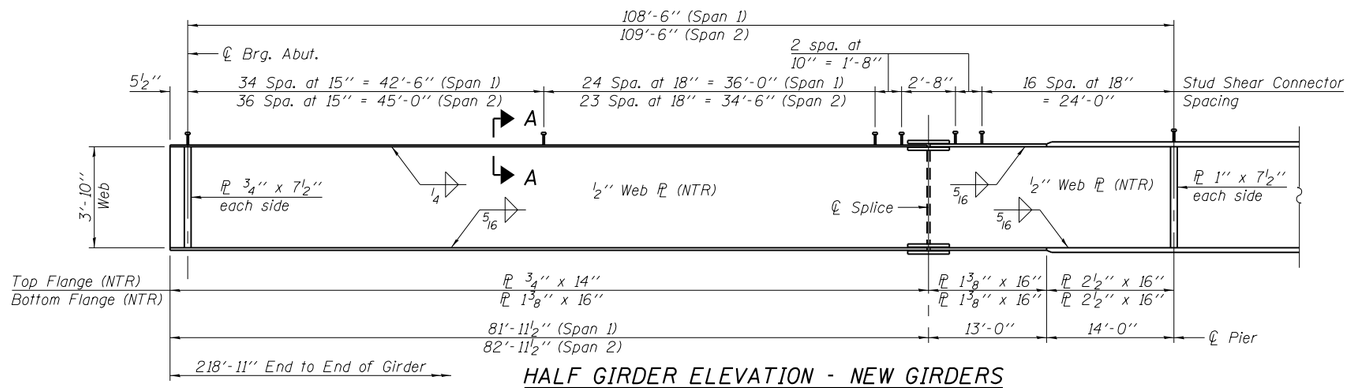
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER, DS-12
STRUCTURE NO. 072-0146
SHEET NO. 22 OF 36 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HBJBY	PEORIA	487	309
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

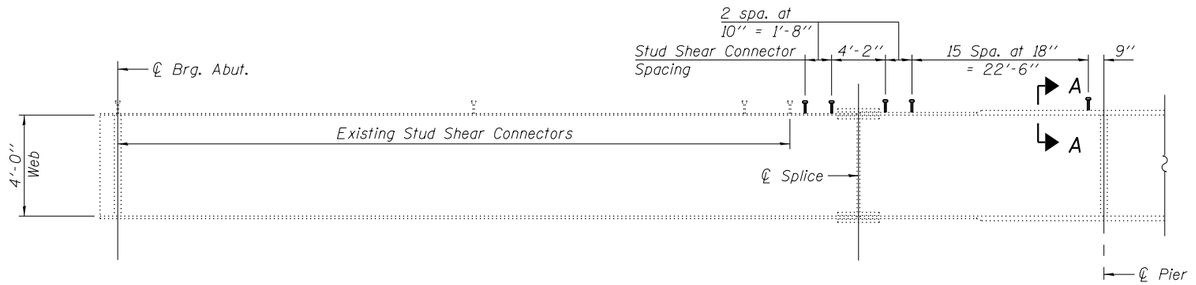


PLAN



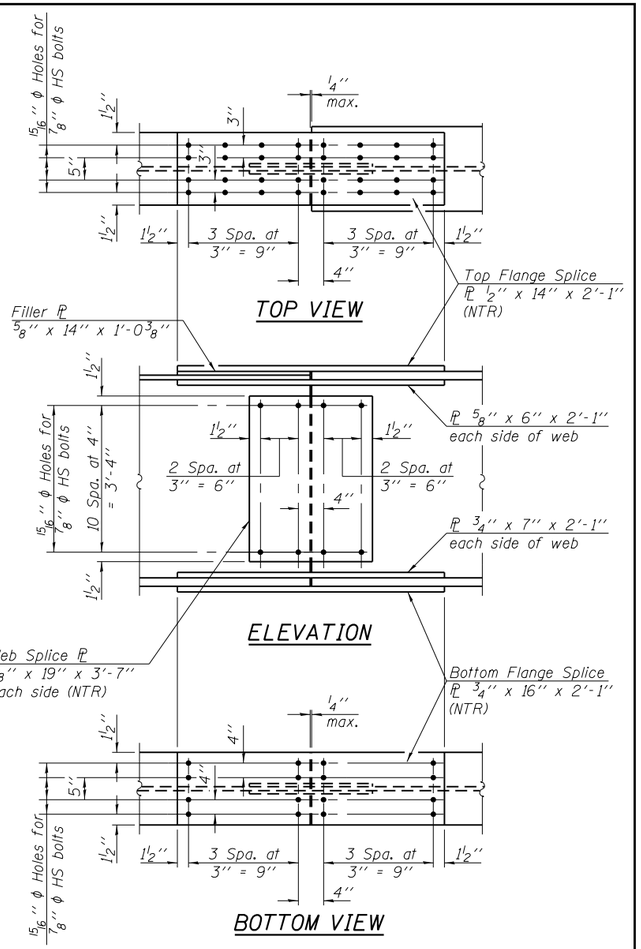
HALF GIRDER ELEVATION - NEW GIRDERS

(Girders 10 thru 12)



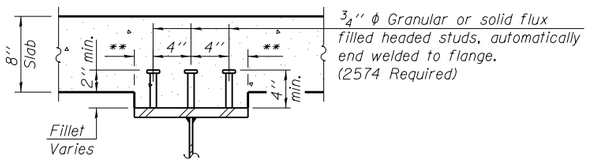
HALF GIRDER ELEVATION - EXISTING GIRDERS

(Girders 1 thru 9)



SPLICE DETAIL

(6 Required)



¾" ϕ Granular or solid flux filled headed studs, automatically end welded to flange. (2574 Required)

SECTION A-A

Notes:

Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

All cross frames 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.

See Sheet 24 of 36 for diaphragm and bearing stiffener details.

See Sheet 25 of 36 for details of bearing assemblies.

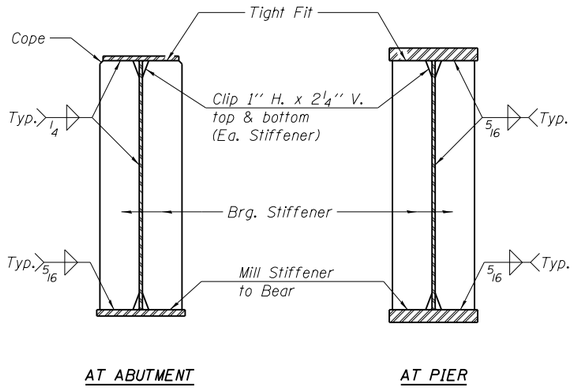
** *Varies according to top flange width:*
2" for 12" flange
3" for 14" flange
4" for 16" flange

FILE NAME = 0720146-68683-023-Str Steel.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL
STRUCTURE NO. 072-0146
SHEET NO. 23 OF 36 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HB)BY	PEORIA	487	310
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



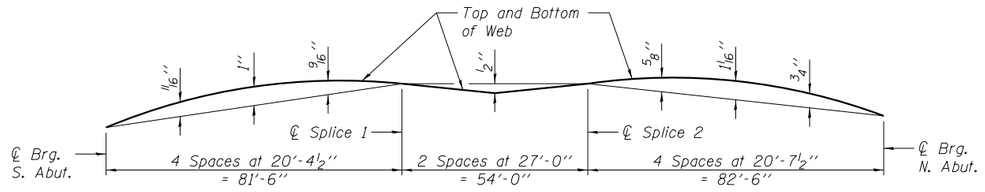
AT ABUTMENT AT PIER

BEARING STIFFENER DETAIL

TOP OF WEB ELEVATIONS

(For Fabrication Only)

	℄ Brg. S. Abut.	℄ Splice 1	℄ Pier	℄ Splice 2	℄ Brg. N. Abut.
Girder 10	818.70	819.23	819.28	819.42	819.45
Girder 11	818.60	819.13	819.18	819.32	819.35
Girder 12	818.49	819.02	819.07	819.21	819.24



CAMBER DIAGRAM

**** INTERIOR GIRDER MOMENT TABLE			
		0.4 Sp. 1 or 0.6 Sp. 2	Pier
I_s	(in^4)	20770	51140
$I_c(n)$	(in^4)	55600	--
$I_c(3n)$	(in^4)	39600	--
$I_c(cr)$	(in^4)	--	56980
S_s	(in^3)	1070	2006
$S_c(n)$	(in^3)	1449	--
$S_c(3n)$	(in^3)	1333	--
$S_c(cr)$	(in^3)	--	2078
ℓ	(k/')	0.978	1.143
$M\ell$	('k)	694	-1810
$s\ell$	(k/')	0.466	0.466
$M_s\ell$	('k)	397	-791
M_L	('k)	870	-967
M_I	('k)	186	-207
$\frac{5}{3}[M_L + I]$	('k)	1760	-1957
M_a	('k)	3706	-5925
* M_u	('k)	4348	--
f_s ℓ non-comp	(ksi)	7.8	10.8
f_s ℓ (comp)	(ksi)	3.6	4.6
f_s $\frac{5}{3}[M_L + M_I]$	(ksi)	14.6	11.3
f_s (Overload)	(ksi)	26.0	26.7
** f_s (Total)	(ksi)	--	34.7
VR	(k)	68.5	66.5

* Compact section
** Braced non-compact and partially braced section

**** INTERIOR GIRDER REACTION TABLE			
		Abut.	Pier
$R\ell$	(k)	56.5	211.0
R_L	(k)	46.6	79.0
R_I	(k)	10.0	16.9
R_{Total}	(k)	113.1	306.9

**** Girder 11 governs the design of the new girders (Girders 10 thru 12)

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) 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 f_s (Total and Overload) 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 f_s (Total and Overload) due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).

$I_c(cr)$, $S_c(cr)$: Composite moment of inertia and section modulus of the steel and deck reinforcement, used for computing f_s (Total and Overload) due to long-term composite (superimposed) dead loads and short term composite live loads ($in.^4$ and $in.^3$).

ℓ: Un-factored non-composite dead load (kips/ft.).

$M\ell$: Un-factored moment due to non-composite dead load (kip-ft.).

$s\ell$: Un-factored long-term composite (superimposed) dead load (kips/ft.)

$M_s\ell$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

M_L: Un-factored live load moment (kip-ft.).

M_I: Un-factored moment due to impact (kip-ft.).

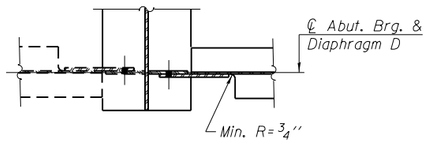
M_a: Factored design moment (kip-ft.).
$1.3\ [\ M\ell + M_s\ell + \frac{5}{3}\ (M_L + M_I)]$

M_u: Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).

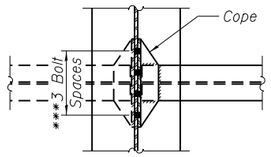
f_s (Overload): Sum of stresses as computed from the moments below (ksi).
$M\ell + M_s\ell + \frac{5}{3}\ (M_L + M_I)$

f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
$1.3\ [M\ell + M_s\ell + \frac{5}{3}\ (M_L + M_I)]$

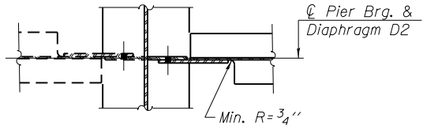
VR: Maximum L + impact shear range within the composite portion of the span for stud shear connector design (kips).



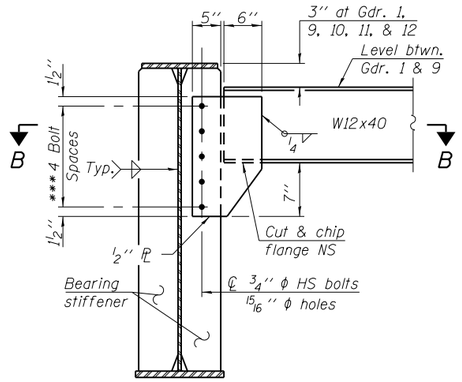
SECTION B-B



SECTION C-C

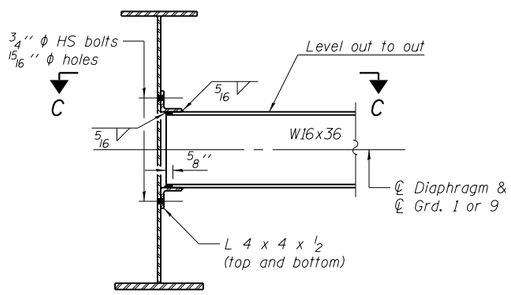


SECTION D-D



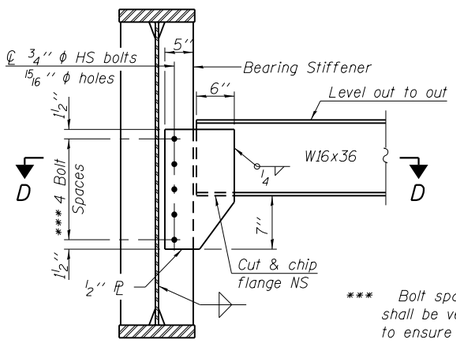
END DIAPHRAGM D

(22 Required)



INTERIOR DIAPHRAGM D1

(24 Required)



INTERIOR DIAPHRAGM D2

(3 Required)

Notes:
Two hardened washers required for each set of oversized holes.
Disconnect interior diaphragms between Girders 4 and 5 prior to each deck pour. Reconnect with new bolts upon completion of the deck pour.
End diaphragms and plates shall be hot dip galvanized according to Article 520.03 of the Standard Specifications.

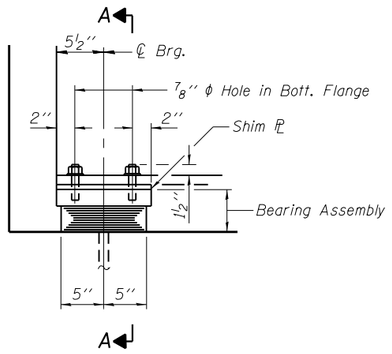
*** Bolt spacing and plate dimensions of existing diaphragms shall be verified in field prior to fabrication of new diaphragms to ensure fit when attaching to existing members. Holes in new connector plates may be field-drilled to match existing.

FILE NAME = 0720146-68683-024-Steel Details.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

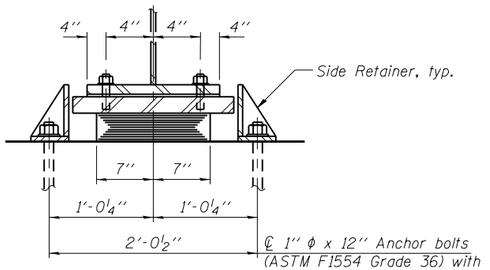
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS
STRUCTURE NO. 072-0146
SHEET NO. 24 OF 36 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HB)BY	PEORIA	487	311
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



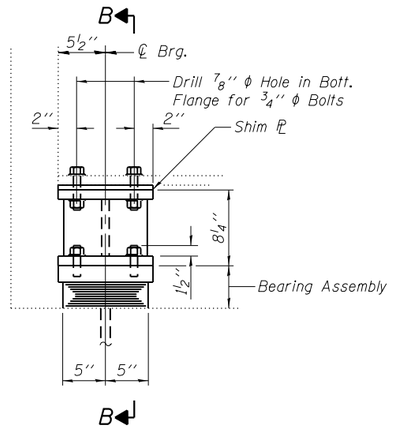
ELEVATION AT ABUT.



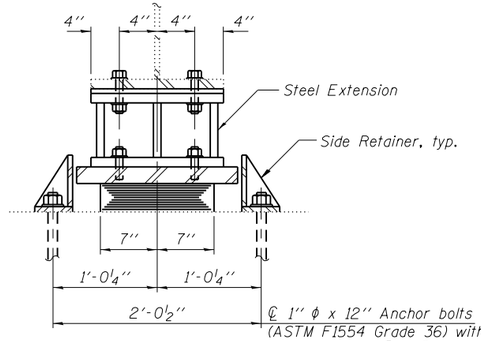
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

(Beams 10 thru 12)
(6 Required)



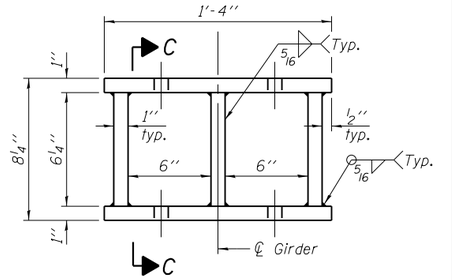
ELEVATION AT ABUT.



SECTION B-B

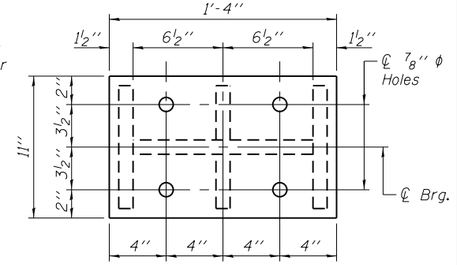
TYPE I ELASTOMERIC EXP. BRG.

(Beams 1 thru 9)
(18 Required)

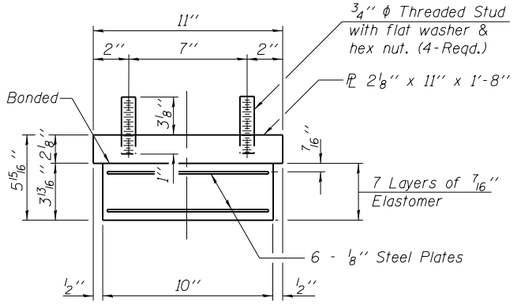


STEEL EXTENSION DETAIL

Cost included with Furnishing and Erecting Structural Steel
(18 Required)

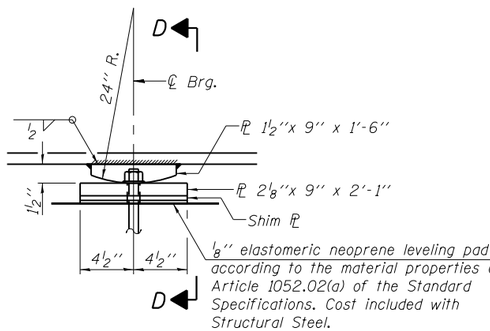


PLAN - TOP AND BOTTOM PLATE

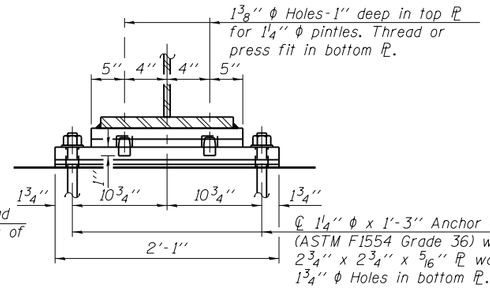


BEARING ASSEMBLY

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



ELEVATION AT PIER



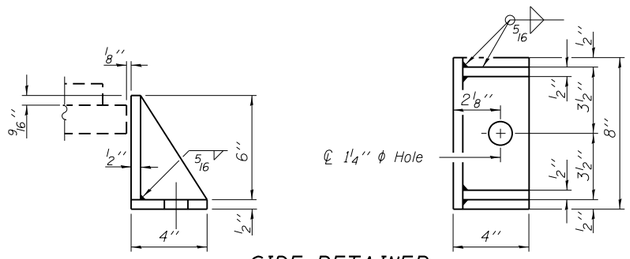
SECTION D-D

FIXED BEARING

(Beams 10 thru 12)
(3 Required)

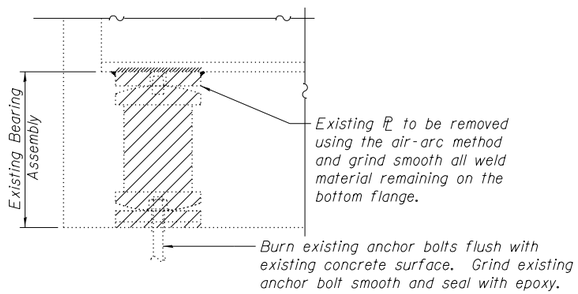
SECTION C-C

PINTLE



SIDE RETAINER

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



EXISTING BEARING REMOVAL DETAIL

Cost included with Jack and Remove Existing Bearings
(18 Required)

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 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.

Two ⅛ in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

Anchor bolts, side retainers, steel extensions, and other steel members required for the elastomeric bearing assemblies shall be hot dip galvanized according to Article 520.03 of the Standard Specifications.

Existing top bearing plate at abutments welded to the existing beam must be removed. Contractor must exercise caution as to not damage the bottom flange.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	24
Anchor Bolts, 1''	Each	48
Anchor Bolts, 1¼''	Each	6
Jack and Remove Existing Bearings	Each	18

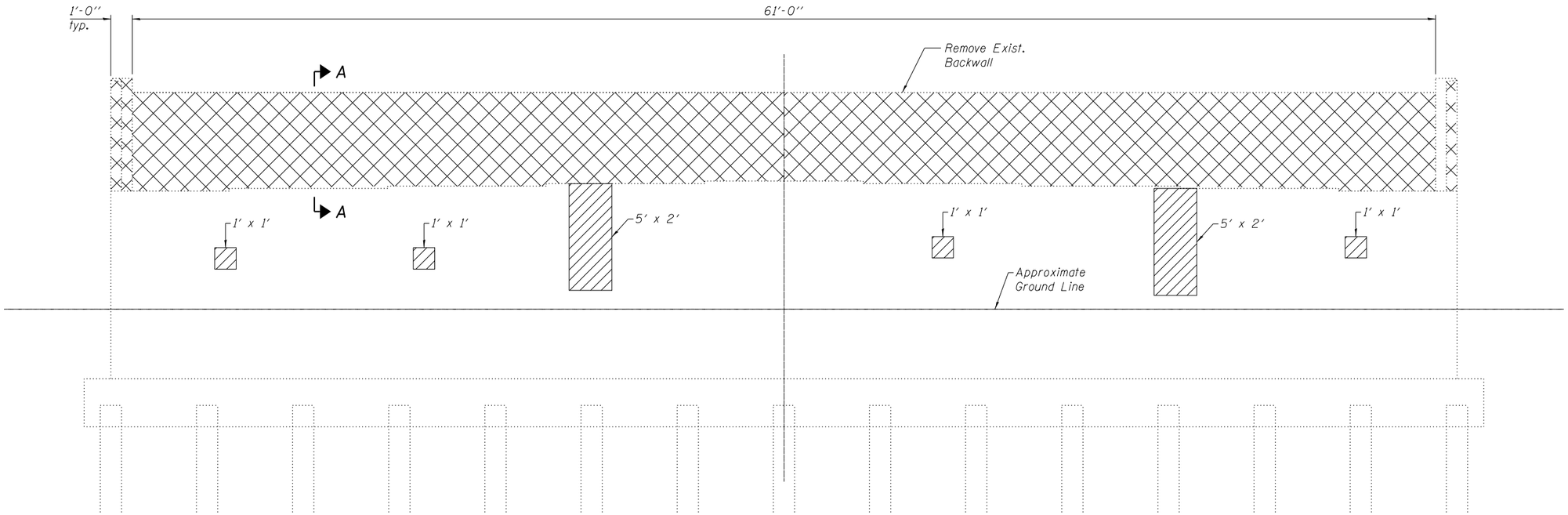
FILE NAME = 0720146-68683-025-Bearing.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

MAURER-STUTZ ENGINEERS SURVEYORS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

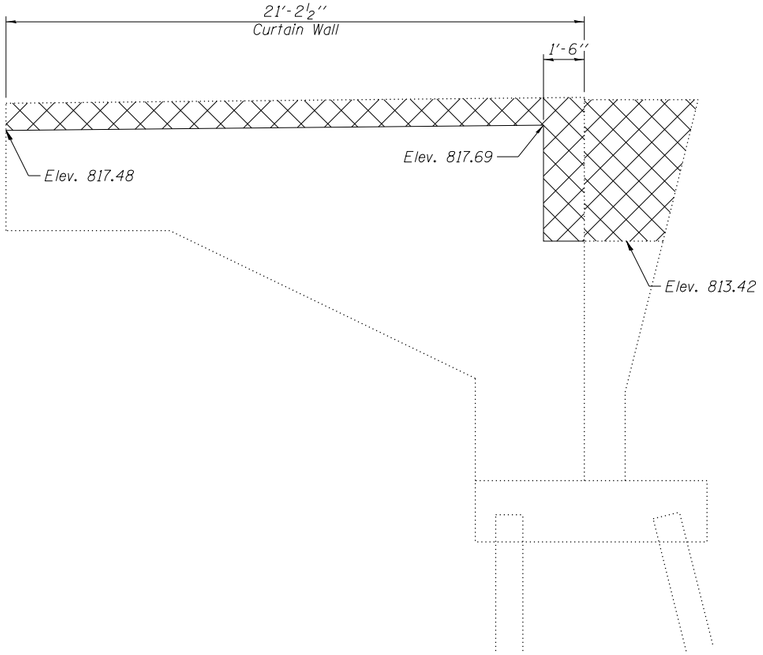
BEARING DETAILS
STRUCTURE NO. 072-0146
SHEET NO. 25 OF 36 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HB)BY	PEORIA	487	312
		CONTRACT NO. 68683		
		ILLINOIS FED. AID PROJECT		



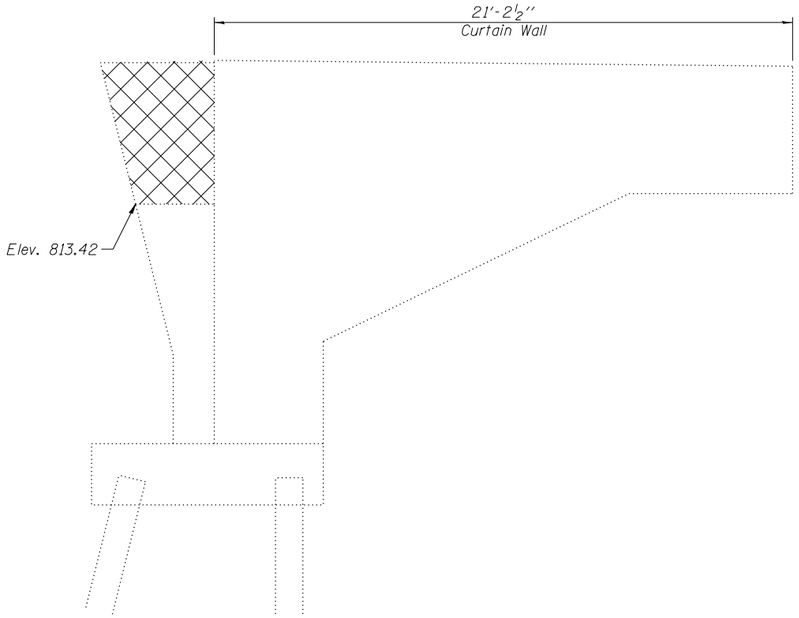
SOUTH ABUTMENT ELEVATION

(Looking South)



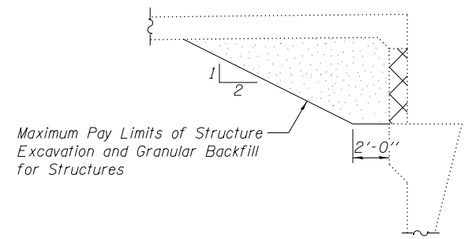
SOUTHEAST CURTAIN WALL ELEVATION

(Looking West)



SOUTHWEST CURTAIN WALL ELEVATION

(Looking East)



SECTION A-A

BILL OF MATERIAL

	Item	Unit	Total
▨	Concrete Removal	Cu. Yd.	11.6
▨	Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq. Ft.	24

Notes:

Existing reinforcement bars to be reused shall be cleaned and incorporated in the new construction. These include the bars in the back face of the backwall, the bars from the west curtain wall into the approach slab, and the bars extending from the top of the approach bent. Cost included with Concrete Removal.

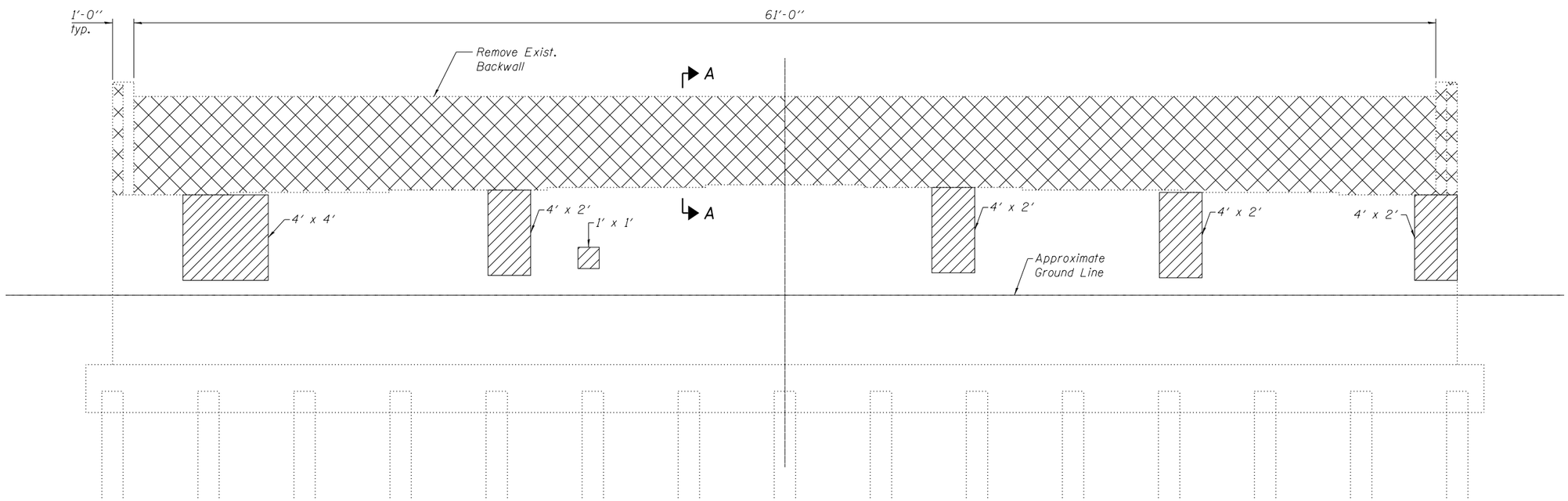
Removal of sand backfill necessary for removal of the existing backwall shall be paid for as Structure Excavation. Replace with Granular Backfill for Structures after completion of new backwall. These quantities are included with the abutment on Sheet 30 of 36.

FILE NAME = 0720146-68683-026-South Abut Repair.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

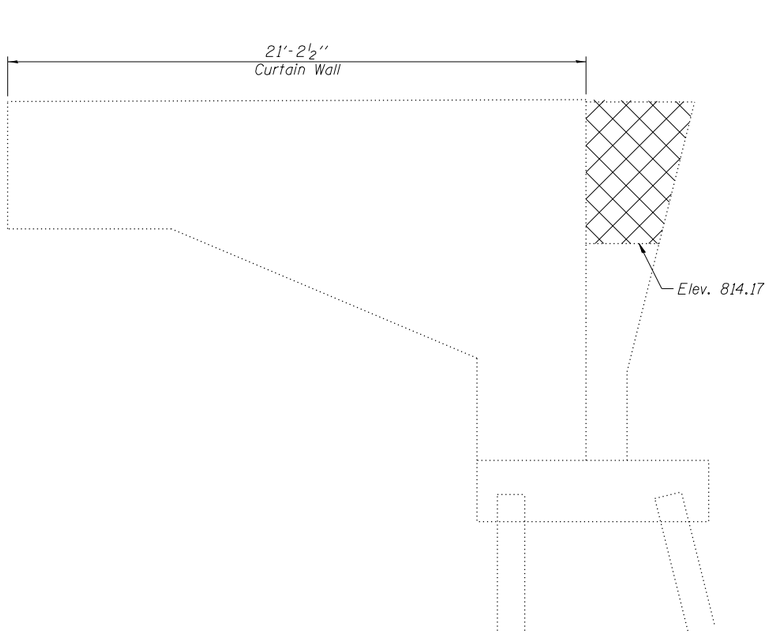
SOUTH ABUTMENT REPAIR
STRUCTURE NO. 072-0146
SHEET NO. 26 OF 36 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HB)BY	PEORIA	487	313
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



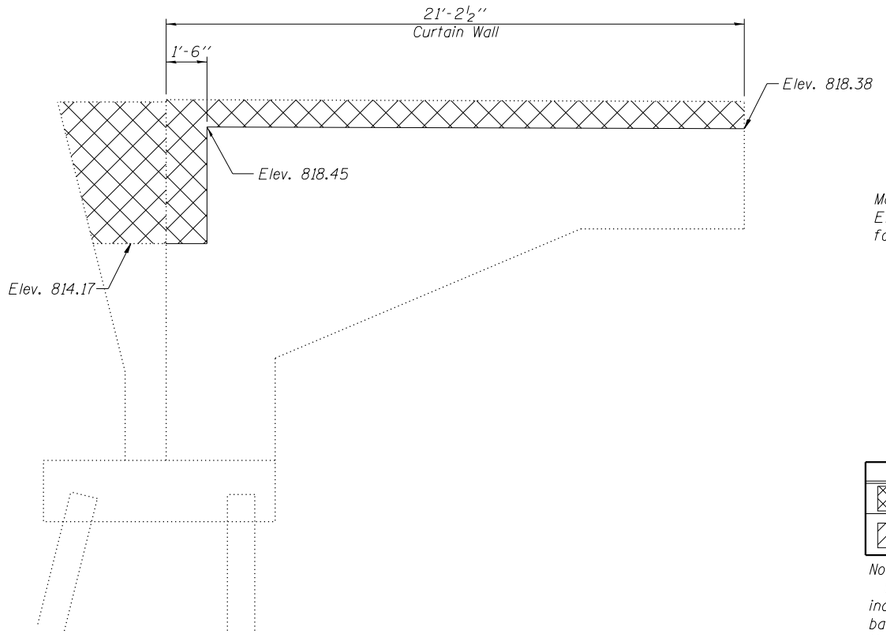
NORTH ABUTMENT ELEVATION

(Looking North)



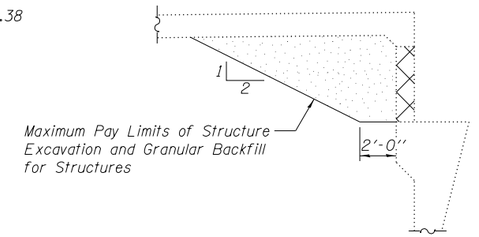
NORTHWEST CURTAIN WALL ELEVATION

(Looking East)



NORTHEAST CURTAIN WALL ELEVATION

(Looking West)



SECTION A-A

BILL OF MATERIAL

	Item	Unit	Total
⊠	Concrete Removal	Cu. Yd.	11.6
▨	Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq. Ft.	49

Notes:

Existing reinforcement bars to be reused shall be cleaned and incorporated in the new construction. These include the bars in the back face of the backwall, the bars from the west curtain wall into the approach slab, and the bars extending from the top of the approach bent. Cost included with Concrete Removal.

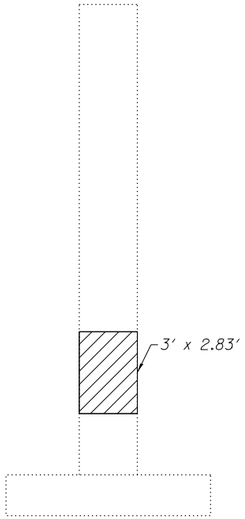
Removal of sand backfill necessary for removal of the existing backwall shall be paid for as Structure Excavation. Replace with Granular Backfill for Structures after completion of new backwall. These quantities are included with the abutment on Sheet 32 of 36.

FILE NAME = 0720146-68683-027-North Abut Repair.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

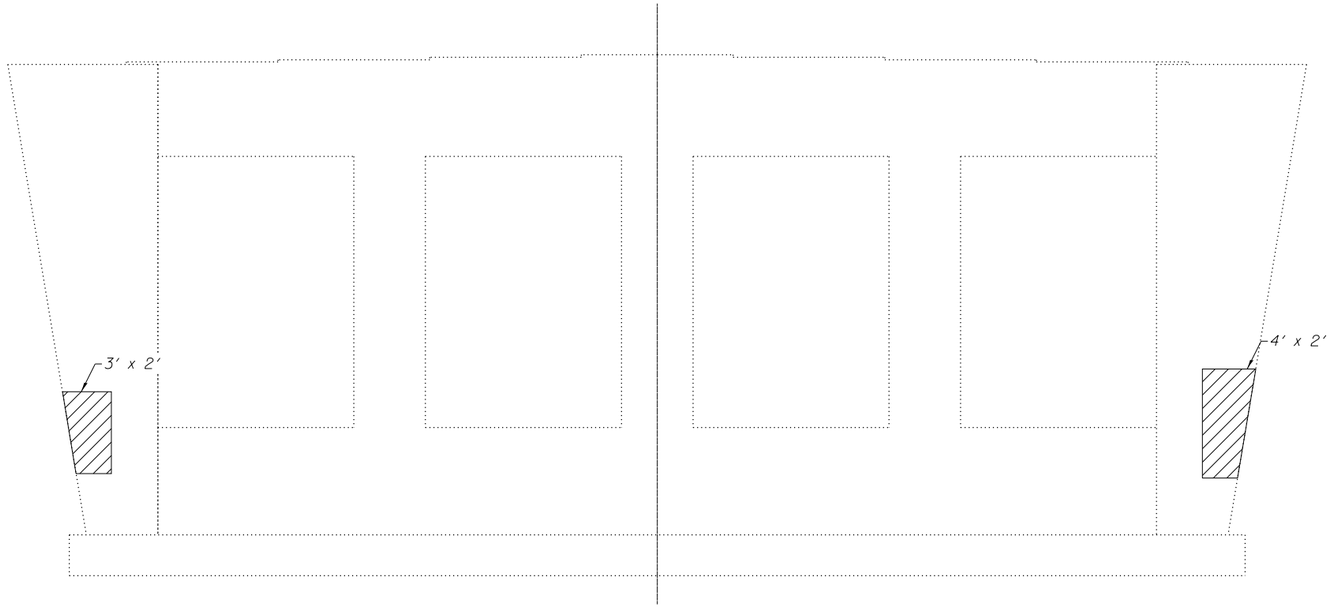
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT REPAIR
STRUCTURE NO. 072-0146
SHEET NO. 27 OF 36 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HB)BY	PEORIA	487	314
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

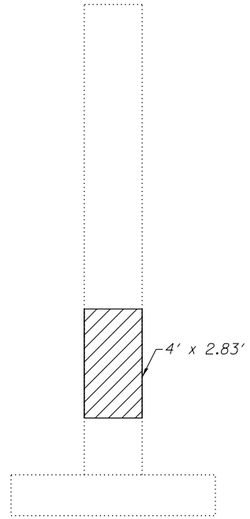


WEST END

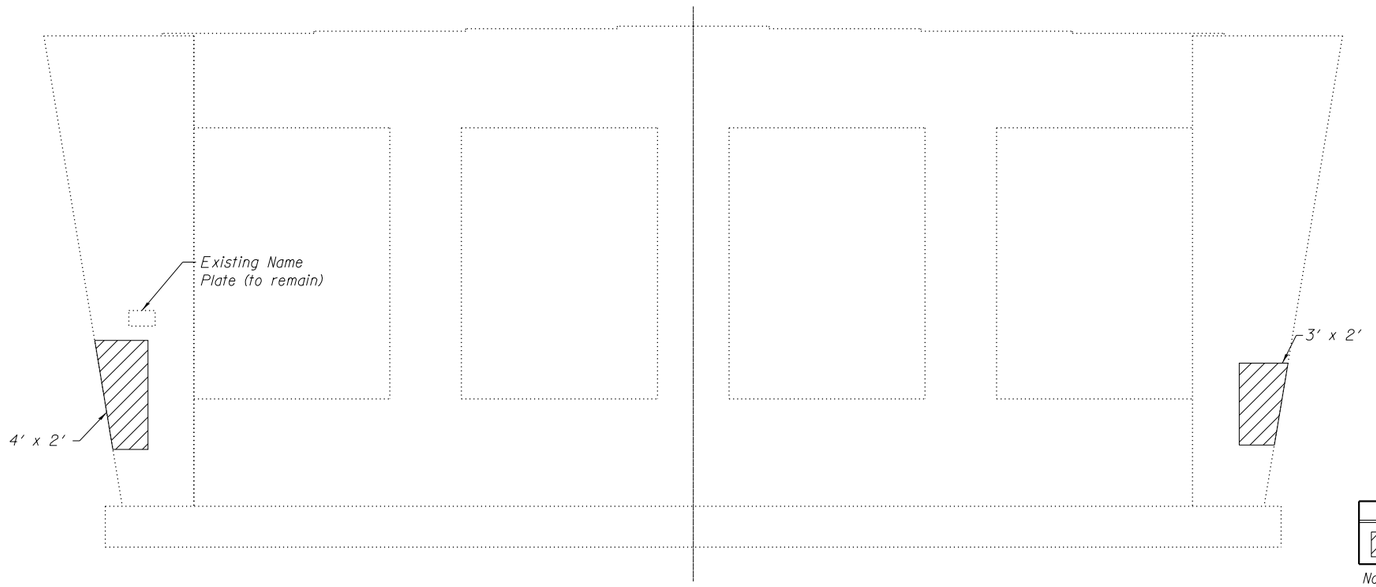


SOUTH FACE OF PIER

(Looking North)



EAST END



NORTH FACE OF PIER

(Looking South)

BILL OF MATERIAL

	Item	Unit	Total
▨	Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq. Ft.	48

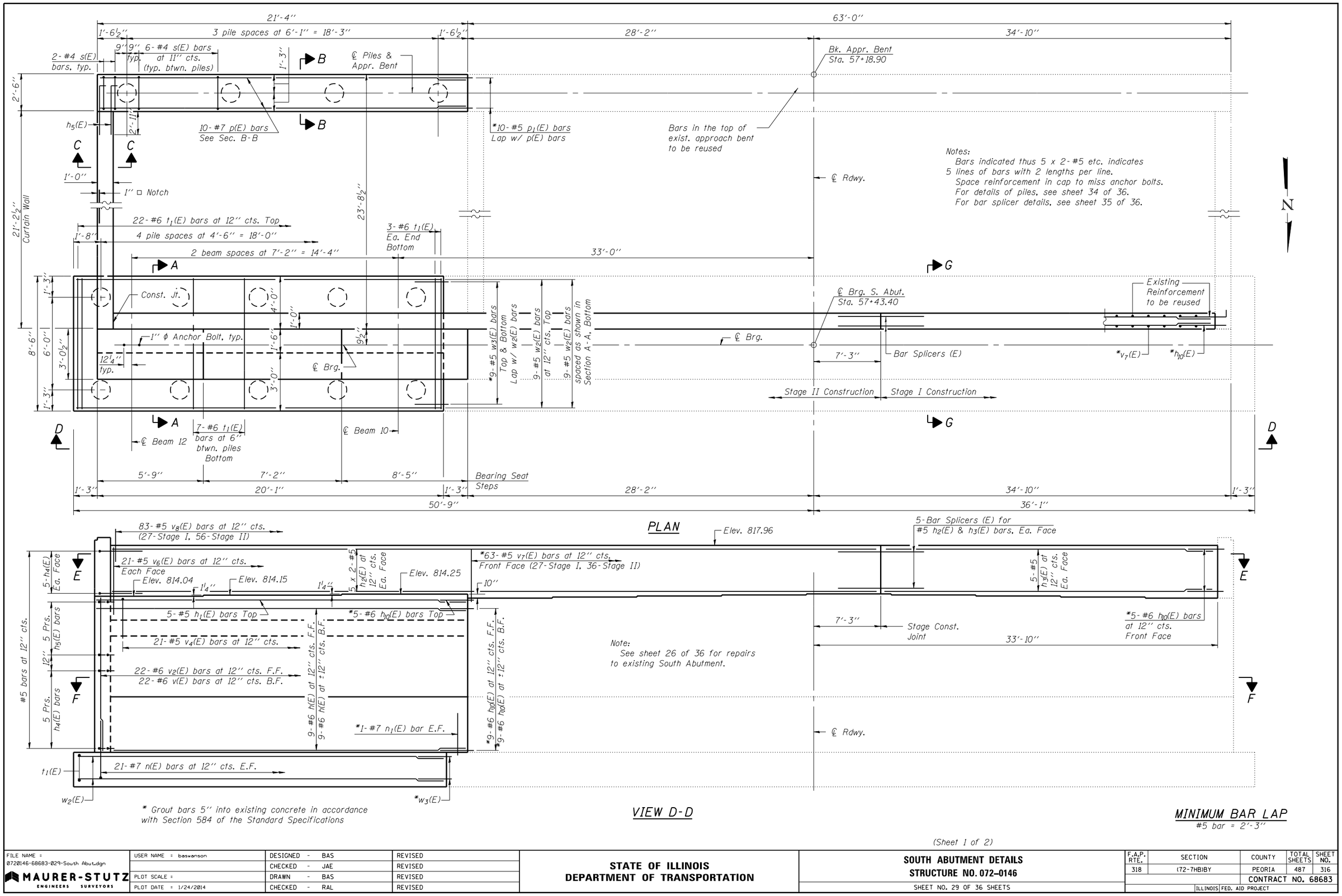
Note:
Patched area on the west face of pier shall be patterned and sandblasted to match the appearance of the remainder of this face. Cost included with Structural Repair of Concrete (Depth equal to or less than 5 inches).

FILE NAME = 0720146-68683-028-Pier Repair.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER REPAIR
STRUCTURE NO. 072-0146
SHEET NO. 28 OF 36 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HBJBY	PEORIA	487	315
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



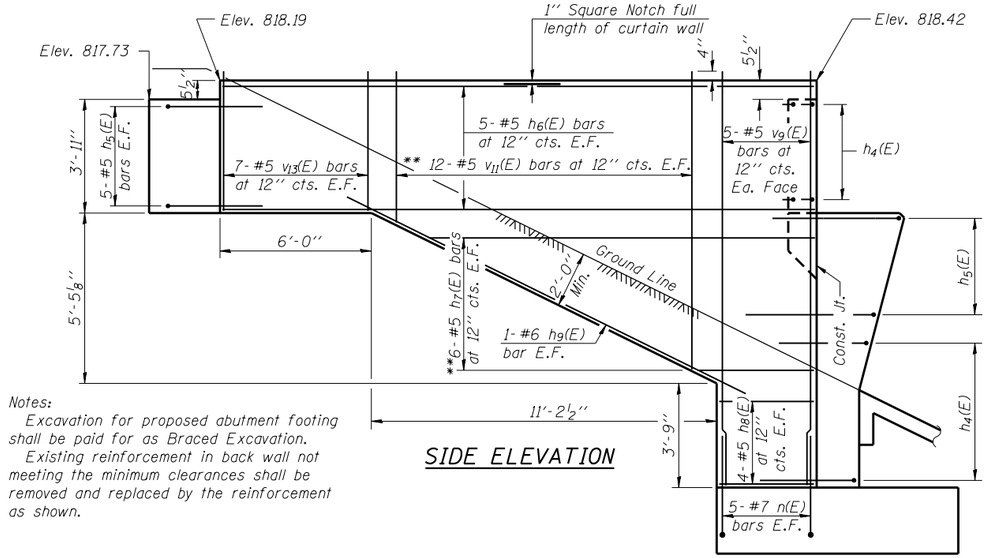
(Sheet 1 of 2)

FILE NAME = 0720146-68683-029-South Abut.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT DETAILS
STRUCTURE NO. 072-0146
SHEET NO. 29 OF 36 SHEETS

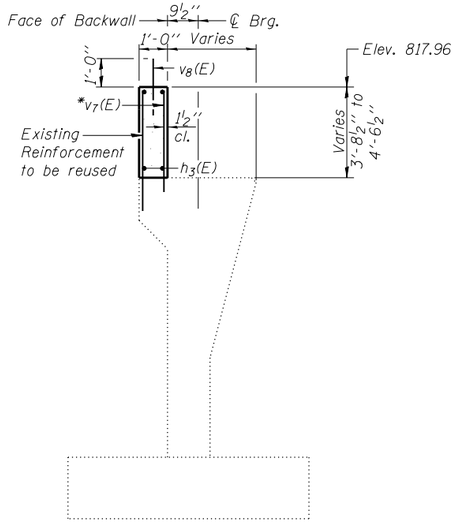
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HB)BY	PEORIA	487	316
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



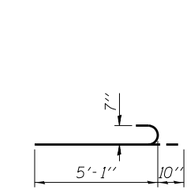
Notes:
Excavation for proposed abutment footing shall be paid for as Braced Excavation.
Existing reinforcement in back wall not meeting the minimum clearances shall be removed and replaced by the reinforcement as shown.

SIDE ELEVATION

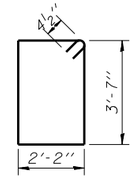
* Grout bars 5" into existing concrete in accordance with Section 584 of the Standard Specifications



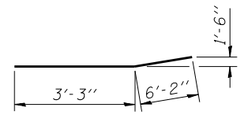
SECTION G-G



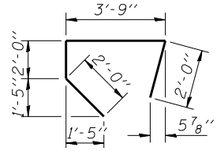
BAR n(E)



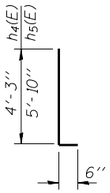
BAR s(E)



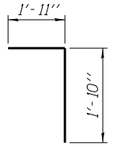
BAR v2(E)



BAR v4(E)



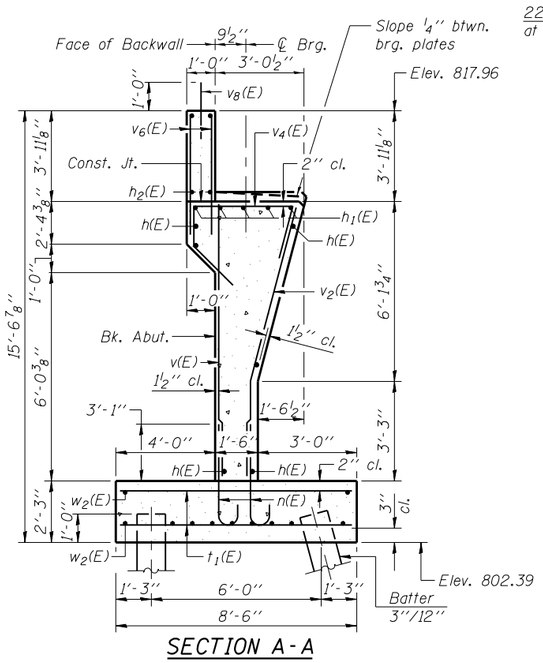
BARS h4(E) and h5(E)



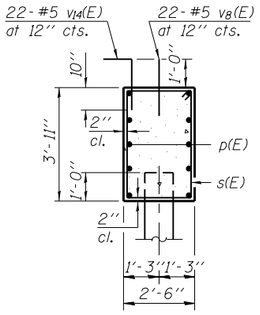
BAR v14(E)

BILL OF MATERIAL

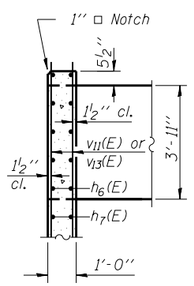
Bar	No.	Size	Length	Shape
h(E)	18	#6	21'-0"	—
h1(E)	5	#5	21'-0"	—
h2(E)	20	#5	29'-0"	—
h3(E)	10	#5	26'-3"	—
h4(E)	20	#5	4'-9"	L
h5(E)	20	#5	6'-4"	L
h6(E)	10	#5	20'-11"	—
h7(E)	6	#5	18'-7"	—
h8(E)	8	#5	3'-8"	—
h9(E)	2	#6	15'-6"	—
h10(E)	28	#6	3'-1"	—
n(E)	52	#7	5'-11"	⊃
n1(E)	2	#7	3'-6"	—
p(E)	10	#7	21'-0"	—
p1(E)	10	#5	2'-8"	—
s(E)	22	#4	12'-3"	□
t1(E)	56	#6	8'-2"	—
v(E)	22	#6	9'-2"	—
v2(E)	22	#6	9'-5"	—
v4(E)	21	#5	9'-9"	⌐
v6(E)	42	#5	5'-9"	—
v7(E)	63	#5	4'-10"	—
v8(E)	105	#5	3'-0"	—
v9(E)	10	#5	14'-1"	—
v11(E)	12	#5	14'-9"	—
v13(E)	14	#5	4'-7"	—
v14(E)	22	#5	3'-9"	⌐
w2(E)	18	#5	21'-0"	—
w3(E)	18	#5	2'-8"	—
Structure Excavation		Cu. Yd.	86	
Concrete Structures		Cu. Yd.	58.6	
Reinforcement Bars, Epoxy Coated		Pound	6950	
Furnishing Metal Shell Piles 12" x 0.250"		Foot	467	
Driving Piles		Foot	467	
Test Pile Metal Shells		Each	1	
Granular Backfill for Structures		Cu. Yd.	174	
Concrete Sealer		Sq. Ft.	621	
Braced Excavation		Cu. Yd.	67	



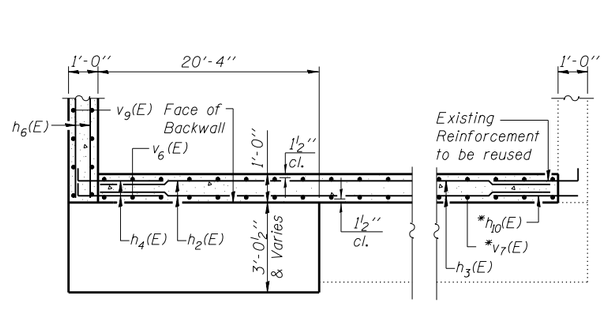
SECTION A-A



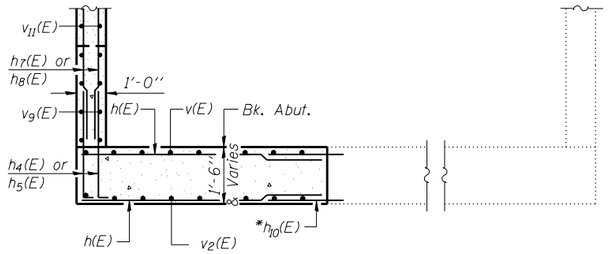
SECTION B-B



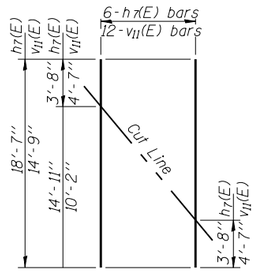
SECTION C-C



SECTION E-E



SECTION F-F



FIELD CUTTING DIAGRAM

**Order h7(E) & v11(E) bars full length. Cut to fit as shown and use remainder of bars in other face.

APPR. BENT-PILE DATA

Type: Metal Shell - 12 in. dia. x 0.250 in. walls
Nominal Required Bearing: 198 kips
Allowable Resistance Available: 66 kips
Est. Length: 29 feet
No. Production Piles: 4
No. Test Piles: 0

ABUT.- PILE DATA

Type: Metal Shell - 12 in. dia. x 0.250 in. walls
Nominal Required Bearing: 273 kips
Allowable Resistance Available: 91 kips
Est. Length: 39 feet
No. Production Piles: 9
No. Test Piles: 1

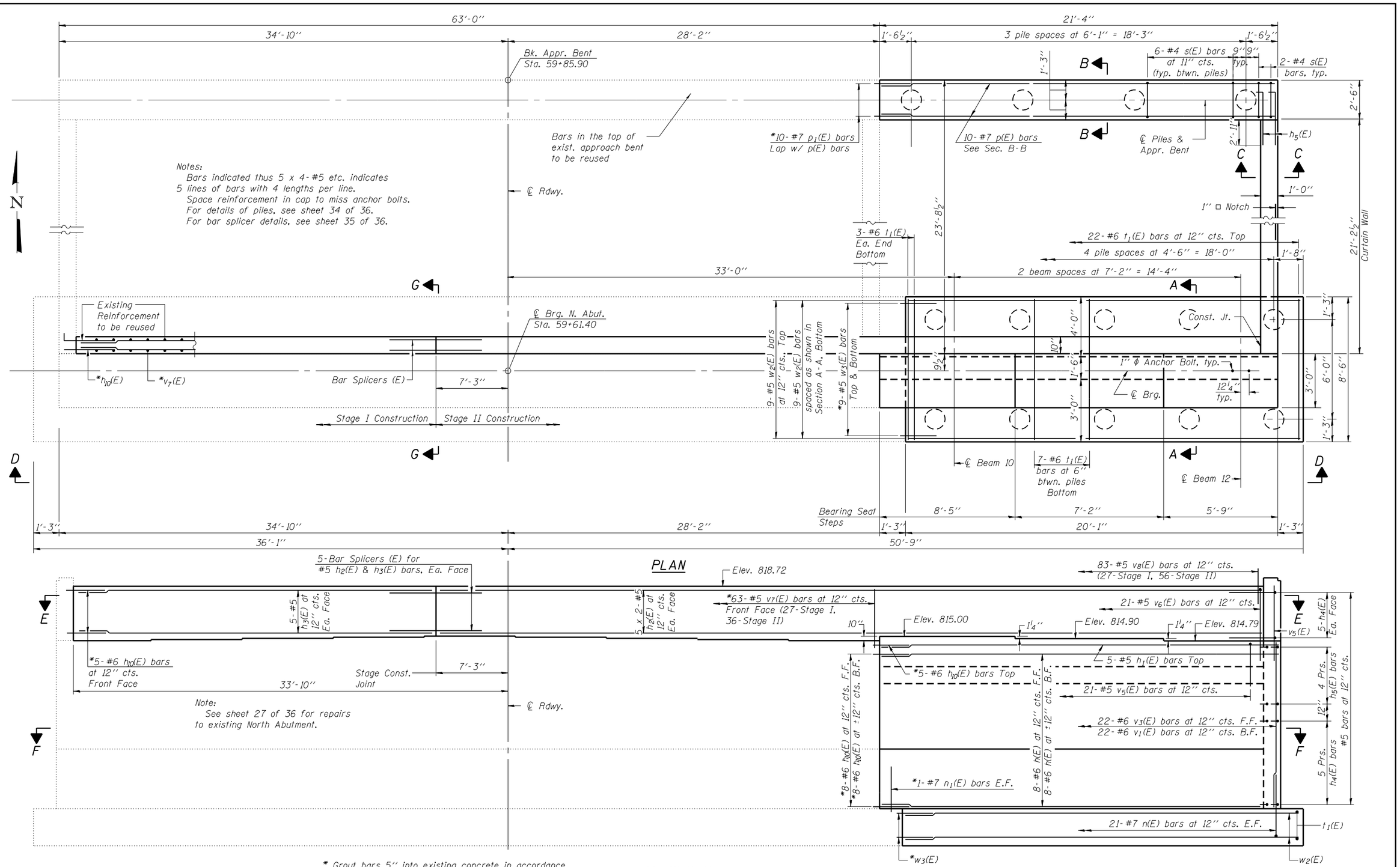
FILE NAME = 0720146-68683-030-South Abut.dgn
USER NAME = baswanson | DESIGNED - BAS | REVISED
PLOT SCALE = | DRAWN - BAS | REVISED
PLOT DATE = 1/24/2014 | CHECKED - RAL | REVISED
CHECKED - JAE | REVISED

MAURER-STUTZ ENGINEERS SURVEYORS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT DETAILS
STRUCTURE NO. 072-0146
SHEET NO. 30 OF 36 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HB)BY	PEORIA	487	317
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



MINIMUM BAR LAP
#5 bar = 2'-3"

* Grout bars 5" into existing concrete in accordance with Section 584 of the Standard Specifications

VIEW D-D

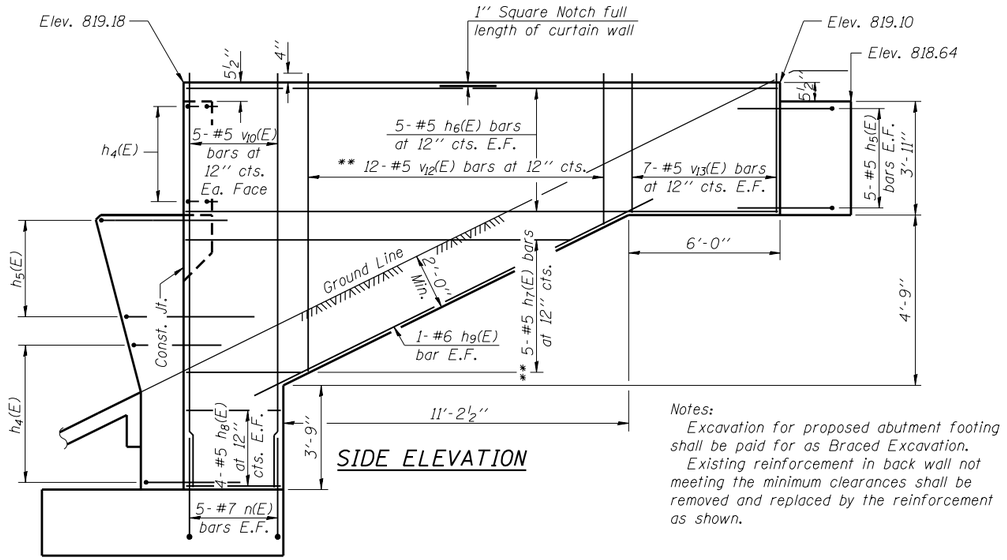
(Sheet 1 of 2)

FILE NAME = 0720146-68683-031-North Abut.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

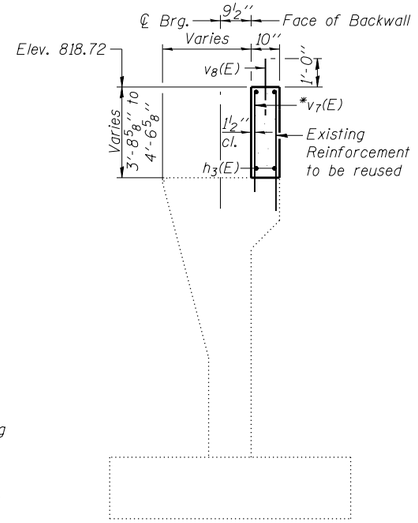
NORTH ABUTMENT DETAILS
STRUCTURE NO. 072-0146
SHEET NO. 31 OF 36 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HB)BY	PEORIA	487	318
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

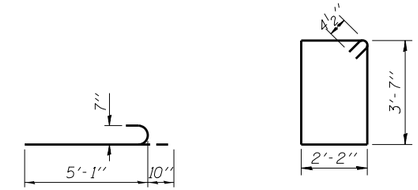


SIDE ELEVATION

Notes:
Excavation for proposed abutment footing shall be paid for as Braced Excavation.
Existing reinforcement in back wall not meeting the minimum clearances shall be removed and replaced by the reinforcement as shown.



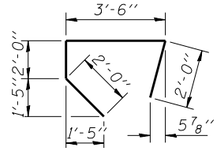
SECTION G-G



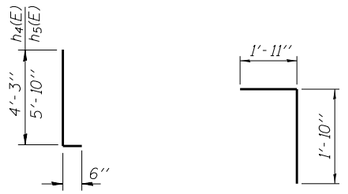
BAR n(E)

BAR s(E)

BAR v3(E)



BAR v5(E)



BARS h4(E) and h5(E)

BAR v14(E)

* Grout bars 5" into existing concrete in accordance with Section 584 of the Standard Specifications

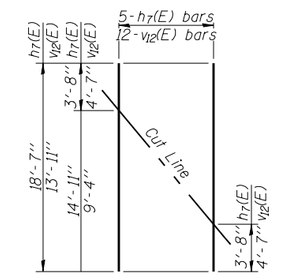
SECTION A-A

SECTION B-B

SECTION E-E

SECTION C-C

SECTION F-F



FIELD CUTTING DIAGRAM

**Order h7(E) & v12(E) bars full length. Cut to fit as shown and use remainder of bars in other face.

APPR. BENT-PILE DATA

Type: Metal Shell - 12 in. dia. x 0.250 in. walls
Nominal Required Bearing: 198 kips
Allowable Resistance Available: 66 kips
Est. Length: 28 feet
No. Production Piles: 4
No. Test Piles: 0

ABUT.- PILE DATA

Type: Metal Shell - 12 in. dia. x 0.250 in. walls
Nominal Required Bearing: 273 kips
Allowable Resistance Available: 91 kips
Est. Length: 39 feet
No. Production Piles: 10
No. Test Piles: 0

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	16	#6	21'-0"	—
h1(E)	5	#5	21'-0"	—
h2(E)	20	#5	29'-0"	—
h3(E)	10	#5	26'-3"	—
h4(E)	20	#5	4'-9"	L
h5(E)	18	#5	6'-4"	L
h6(E)	10	#5	20'-11"	—
h7(E)	5	#5	18'-7"	—
h8(E)	8	#5	3'-8"	—
h9(E)	2	#6	15'-6"	—
h10(E)	26	#6	3'-1"	—
n(E)	52	#7	5'-11"	⊃
n1(E)	2	#7	3'-6"	—
p(E)	10	#7	21'-0"	—
p1(E)	10	#5	2'-8"	—
s(E)	22	#4	12'-3"	□
t1(E)	56	#6	8'-2"	—
v1(E)	22	#6	8'-4"	—
v3(E)	22	#6	8'-7"	—
v5(E)	21	#5	9'-6"	⌐
v6(E)	42	#5	5'-9"	—
v7(E)	63	#5	4'-10"	—
v8(E)	105	#5	3'-0"	—
v10(E)	10	#5	13'-4"	—
v12(E)	12	#5	13'-11"	—
v13(E)	14	#5	4'-7"	—
v14(E)	22	#5	3'-9"	⌐
w2(E)	18	#5	21'-0"	—
w3(E)	18	#5	2'-8"	—
Structure Excavation		Cu. Yd.	94	
Concrete Structures		Cu. Yd.	54.3	
Reinforcement Bars, Epoxy Coated		Pound	6770	
Furnishing Metal Shell Piles 12" x 0.250"		Foot	502	
Driving Piles		Foot	502	
Granular Backfill for Structures		Cu. Yd.	161	
Concrete Sealer		Sq. Ft.	602	
Braced Excavation		Cu. Yd.	52	

FILE NAME = 0720146-68683-032-North Abut.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/27/2014	CHECKED - RAL	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

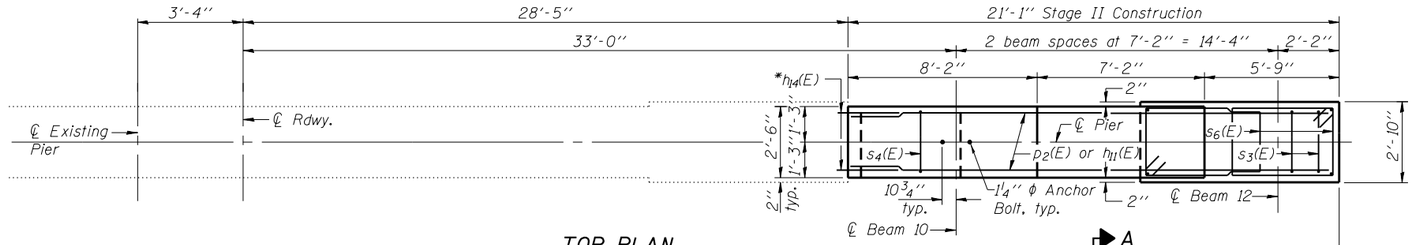
NORTH ABUTMENT DETAILS
STRUCTURE NO. 072-0146
SHEET NO. 32 OF 36 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HB)BY	PEORIA	487	319
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

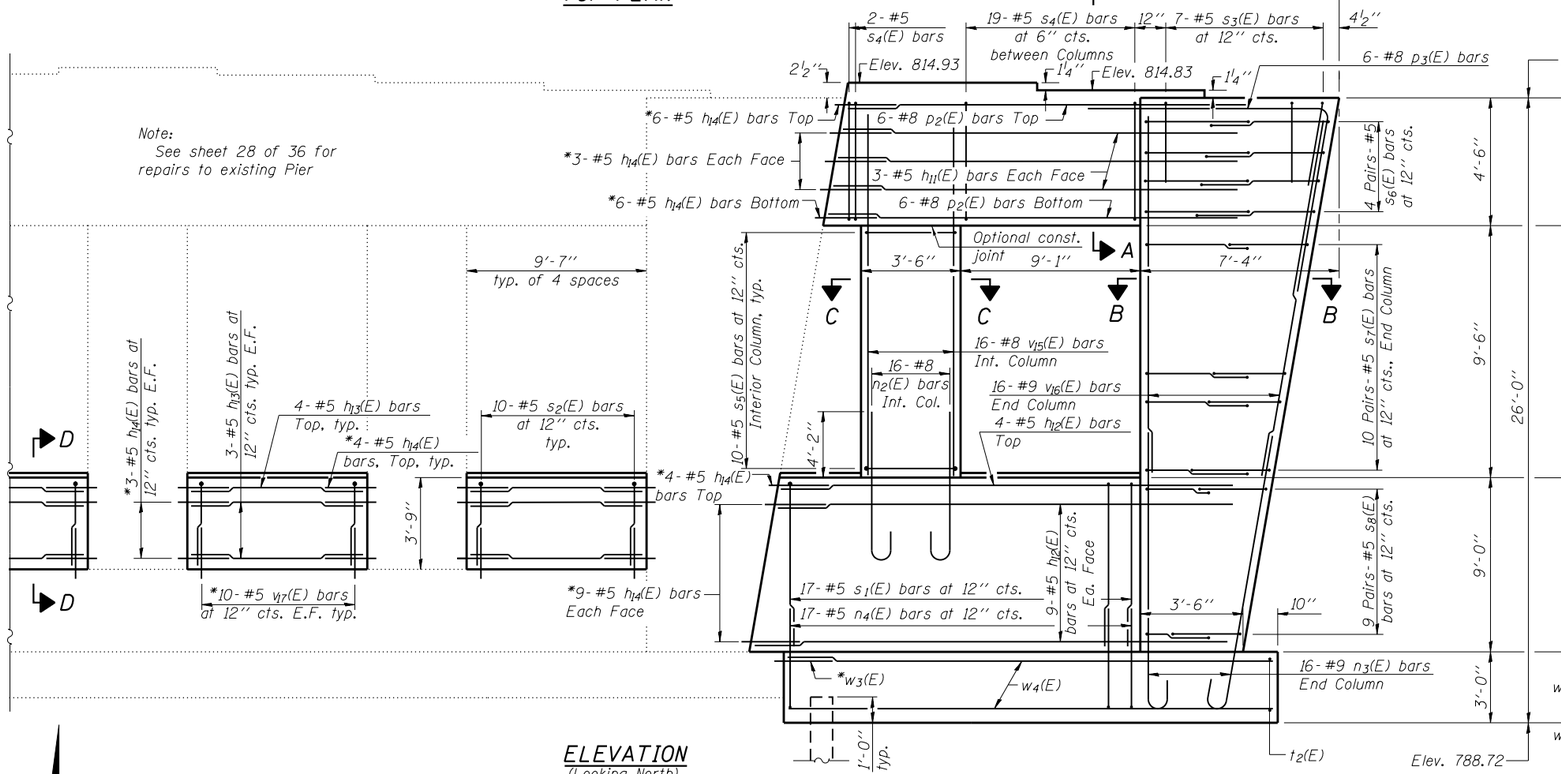
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 34 of 36.

PILE DATA

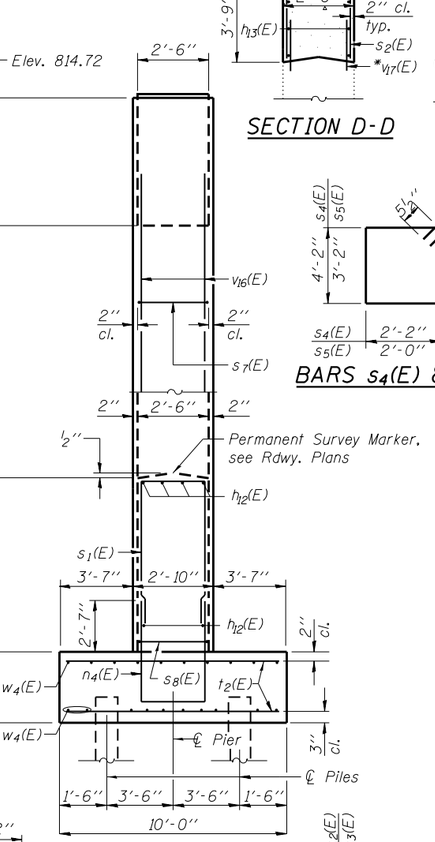
Type: Metal Shell - 14 in. dia. x 0.312 in. walls
Nominal Required Bearing: 468 kips
Allowable Resistance Available: 156 kips
Est. Length: 63 feet
No. Production Piles: 7
No. Test Piles: 1



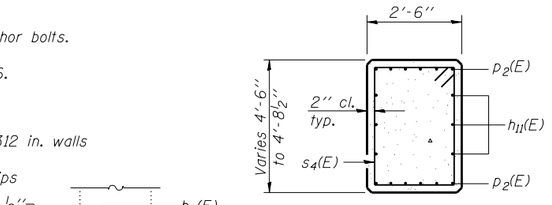
TOP PLAN



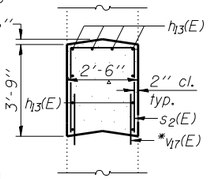
ELEVATION
(Looking North)



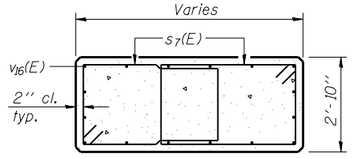
END VIEW



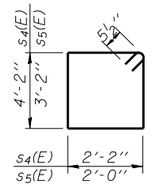
SECTION A-A



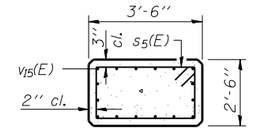
SECTION D-D



SECTION B-B



BARS s4(E) & s5(E)

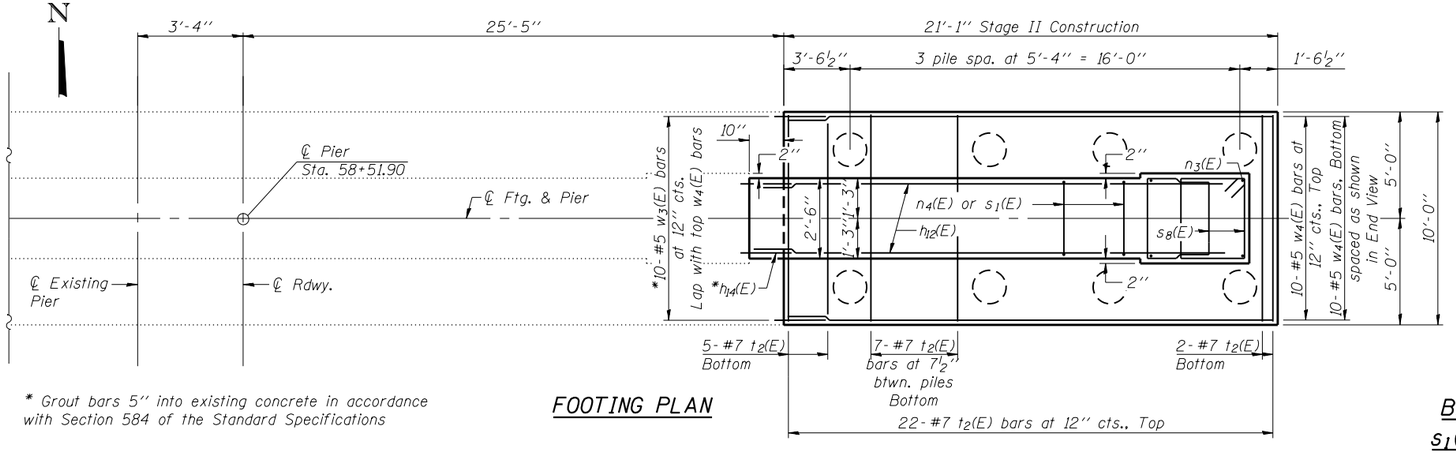


SECTION C-C

BILL OF MATERIAL

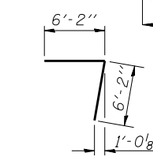
Bar	No.	Size	Length	Shape
h11(E)	6	#5	16'-9"	
h12(E)	22	#5	20'-9"	
h13(E)	40	#5	9'-3"	
h14(E)	120	#5	2'-8"	
n2(E)	16	#8	6'-7"	
n3(E)	16	#9	18'-3"	
n4(E)	17	#5	12'-10"	
p2(E)	12	#8	20'-9"	
p3(E)	6	#8	12'-4"	
s1(E)	17	#5	19'-10"	
s2(E)	40	#5	9'-4"	
s3(E)	7	#5	9'-5"	
s4(E)	21	#5	13'-7"	
s5(E)	10	#5	11'-3"	
s6(E)	8	#5	13'-11"	
s7(E)	20	#5	13'-1"	
s8(E)	18	#5	11'-7"	
t2(E)	50	#7	9'-8"	
v15(E)	16	#8	13'-8"	
v16(E)	16	#9	13'-10"	
v17(E)	80	#5	2'-5"	
w3(E)	10	#5	2'-8"	
w4(E)	20	#5	20'-9"	

Structure Excavation	Cu. Yd.	88
Concrete Structures	Cu. Yd.	72.7
Reinforcement Bars, Epoxy Coated	Pound	8480
Furnishing Metal Shell Piles 14" x 0.312"	Foot	441
Driving Piles	Foot	441
Test Pile Metal Shells	Each	1

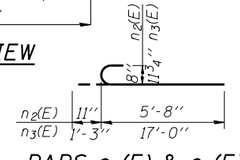


FOOTING PLAN

* Grout bars 5" into existing concrete in accordance with Section 584 of the Standard Specifications



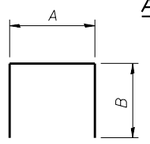
BAR p3(E)



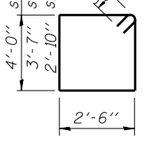
BARS n2(E) & n3(E)

A & B DIMENSIONS

Bar	A	B
n4(E)	2'-2"	5'-4"
s1(E)	2'-2"	8'-10"
s2(E)	2'-2"	3'-7"
s3(E)	2'-5"	3'-6"



BARS n4(E) & s1(E) thru s3(E)



BARS s6(E) thru s8(E)

FILE NAME = 0720146-68683-033-Pier.dgn	USER NAME = baswanson	DESIGNED - BAS / REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE / REVISED
	PLOT SCALE =	DRAWN - BAS / REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL / REVISED

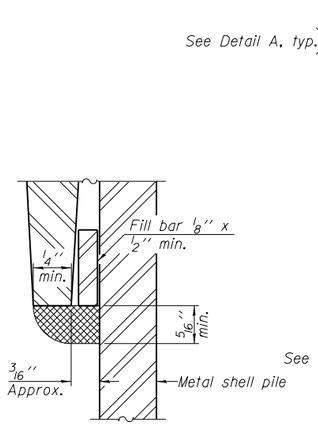
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER
STRUCTURE NO. 072-0146
SHEET NO. 33 OF 36 SHEETS

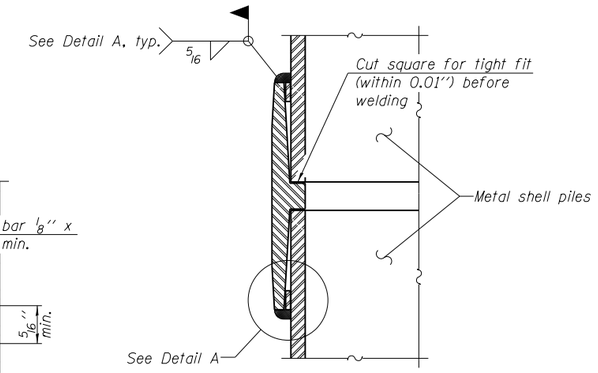
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HB)BY	PEORIA	487	320
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

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

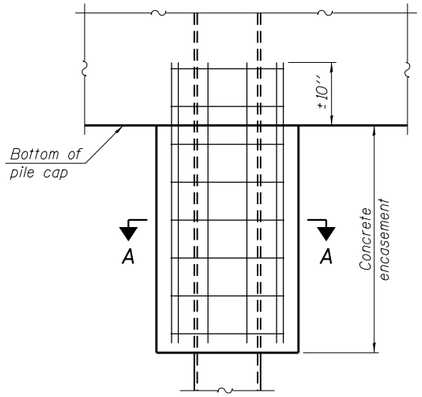


DETAIL A

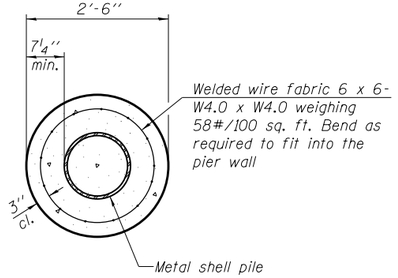


Notes:
The 1/8″ x 1/2″ min. fill bar may be constructed of 2 bars with a 1/8″ max. gap between them.
Pile segments shall be driven to solid contact with splicer before welding.

WELDED COMMERCIAL SPLICE



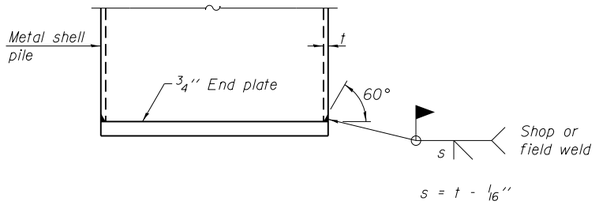
ELEVATION



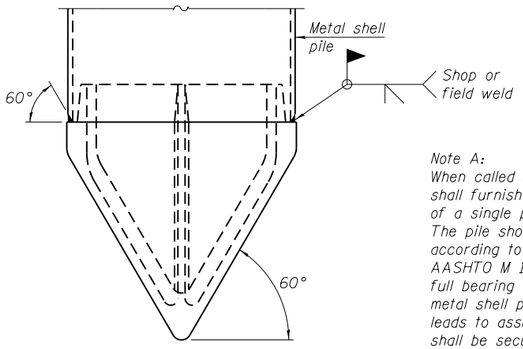
SECTION A-A

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

CONCRETE ENCASEMENT AT PIERS



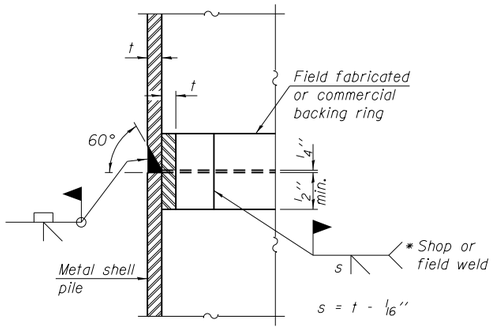
END PLATE ATTACHMENT



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.

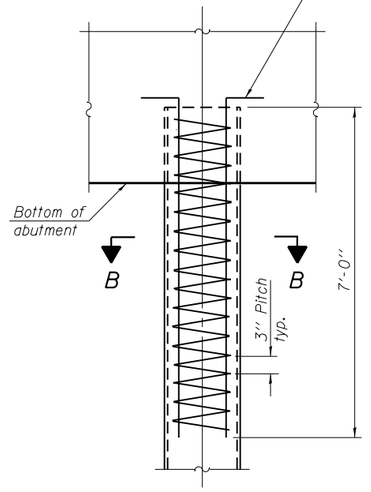
METAL SHELL PILE SHOE ATTACHMENT

(See Note A)

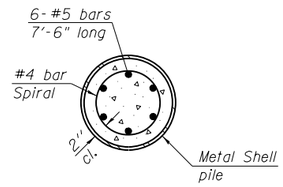


COMPLETE PENETRATION WELD SPLICE

* 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.

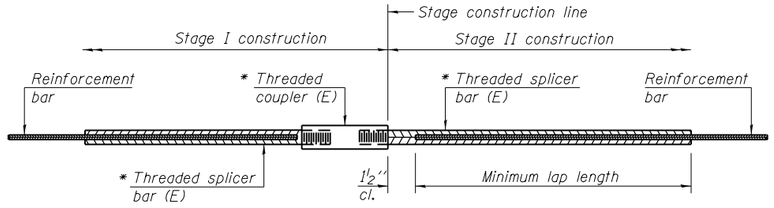
F-MS 1-27-12

FILE NAME = 0720146-68683-034-MS Pile.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

METAL SHELL PILE DETAILS
STRUCTURE NO. 072-0146
SHEET NO. 34 OF 36 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HB)BY	PEORIA	487	321
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



STANDARD BAR SPLICER ASSEMBLY

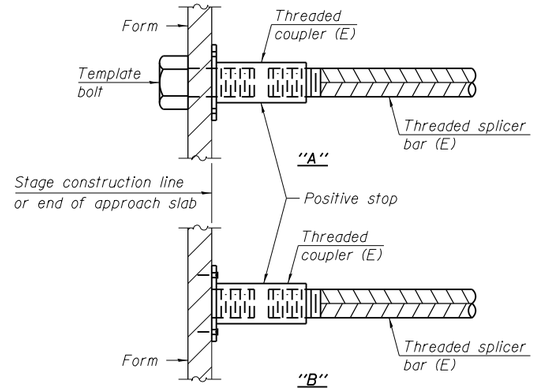
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"	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 + 1½" + thread length

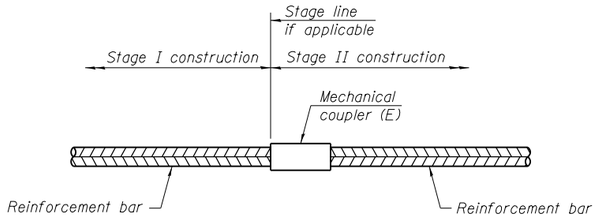
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Bridge Deck	#5	669	3
Vaulted Approach Slab	#5	88	3
Bridge Approach Slab	#4	50	3
Bridge Approach Slab	#5	92	3
Approach Slab Footing	#5	80	3
South Abutment Backwall	#5	10	4
North Abutment Backwall	#5	10	4



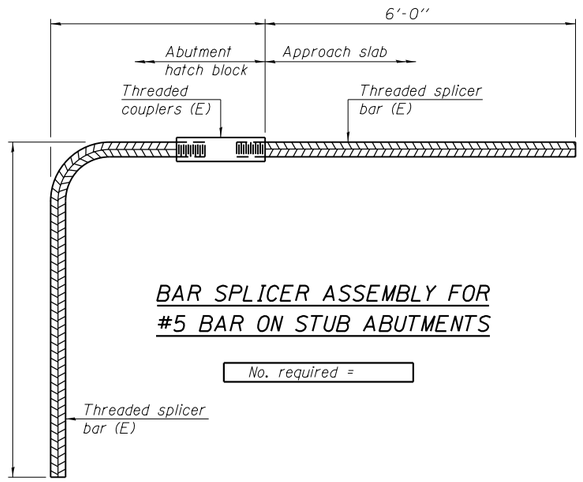
INSTALLATION AND SETTING METHODS

"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 STUB ABUTMENTS

No. required =

NOTES

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

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

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

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

BSD-1 8-31-12

FILE NAME = 072O146-68683-035-Splicer.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

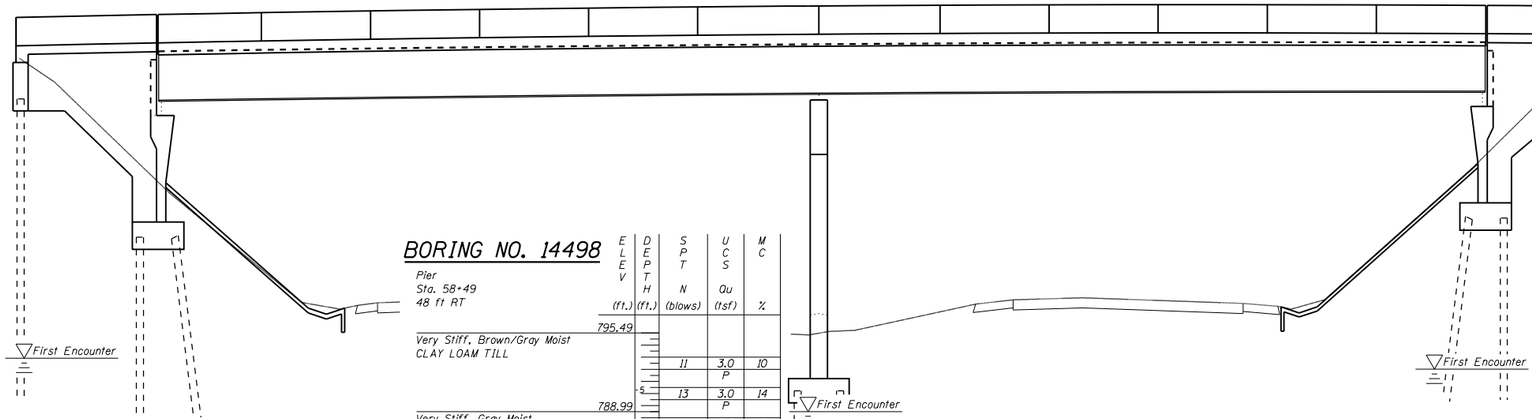
BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 072-0146
SHEET NO. 35 OF 36 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HBJBY	PEORIA	487	322
		CONTRACT NO. 68683		
	ILLINOIS	FED. AID PROJECT		

BORING NO. 14651

South Abutment
Sta. 56+96
36 ft RT

ELEV (ft.)	DEPTH (ft.)	SPT N (blows)	UCS Qu (tsf)	MC %
818.69				
Stiff, Dk. Brown Moist SILTY CLAY LOAM		4	1.3 B	26
814.69				
Medium Stiff, Brown/Gray Moist CLAY LOAM	5	6	1.5 B	30
		5	0.7 B	24
809.69				
Stiff to Very Stiff, Brown Moist CLAY LOAM	10	6	3.3 B	14
		7	1.8 B	16
804.69				
Stiff to Hard, Brown Moist CLAY LOAM TILL	15	15	7.6 B	14
		14	1.7 B	13
799.69				
Very Stiff, Gray Moist CLAY LOAM TILL	20	10	2.1 B	13
		12	2.9 B	13
	25	11	1.9 B	13
		13	2.9 B	13
	30	10	2.3 B	14
		13	3.1 B	13
	35	13	3.3 B	11
782.19				
Very Stiff, Gray Moist SILTY LOAM		21	3.5 S	14
779.69				
Stiff, Gray Moist SANDY CLAY LOAM TILL	40	20	1.5 P	14
		19	1.3 S	14
	45	23	1.3 S	13
772.19				
Very Stiff, Gray Moist CLAY LOAM TILL		16	3.1 B	13
	50	20	2.9 B	11
763.94			3.5	
Medium Dense, Gray Medium Coarse SAND & GRAVEL	55	17	P	14
759.69				
Very Stiff to Hard, Gray Moist CLAY LOAM TILL	60	21	4.5 B	12
	65	15	1.9 B	13
	70	19	2.7 B	12
743.19	75	22	2.5 B	13
(End of Boring)				



BORING NO. 14498

Pier
Sta. 58+49
48 ft RT

ELEV (ft.)	DEPTH (ft.)	SPT N (blows)	UCS Qu (tsf)	MC %
795.49				
Very Stiff, Brown/Gray Moist CLAY LOAM TILL		11	3.0 P	10
	5	13	3.0 P	14
788.99				
Very Stiff, Gray Moist SILTY CLAY LOAM		14	2.5 P	19
786.49				
Very Stiff, Gray Moist SILTY LOAM	10	11	2.1 S	19
783.99				
Very Stiff, Gray/Brown Moist CLAY LOAM TILL		10	3.5 B	13
	15	8	2.5 B	13
		9	2.5 B	13
776.49				
Stiff to Very Stiff, Brown Moist CLAY LOAM TILL	20	7	1.9 B	14
		9	1.7 B	13
	25	11		14
		10	2.1 B	14
	30	11	2.0 B	14
	35	15	2.1 B	13
	40	14	2.9 B	13
	45	14	2.5 B	13
746.49				
Very Stiff to Hard, Gray Moist CLAY LOAM TILL	50	14	2.5 B	13
	55	14	2.5 B	12
	60	17	2.5 B	12
	65	18	2.5 B	12
	70	13	2.1 B	12
	75	14	5.0 B	15
	80	22	2.9 B	11

BORING NO. 14498 (CONT.)

ELEV (ft.)	DEPTH (ft.)	SPT N (blows)	UCS Qu (tsf)	MC %
Very Stiff to Hard, Gray Moist CLAY LOAM TILL (continued)	85	23	2.7 B	11
	90	33	3.9 B	12
	95	38	7.2 B	10
	100	29	6.6 B	12
	105	17	1.5 B	10
	110	34	7.4 B	23
681.49				
Dense Gray Fine-Medium SAND 680.29	115	36	3.5 P	16
Very Stiff to Hard, Gray Moist SILTY LOAM				
674.99	120	100+		17
Very Stiff, Gray Moist CLAY LOAM TILL				
669.99	125	39	3.1 B	12
(End of Boring)				

BORING NO. 14333

North Abutment
Sta. 60+14
44 ft RT

ELEV (ft.)	DEPTH (ft.)	SPT N (blows)	UCS Qu (tsf)	MC %
819.48				
Stiff to Very Stiff, Brown Moist SILTY CLAY LOAM		14	3.0 P	12
812.98	5	7	1.5 P	26
Stiff to Very Stiff, Brown Moist CLAY LOAM		7	1.3 P	22
	10	8	3.3 B	13
		10	3.1 B	13
	15	13	1.3 P	15
802.98				
Very Stiff, Brown Moist CLAY LOAM TILL		12	3.9 B	15
	20	11	2.0 B	13
		10	2.3 B	13
795.48				
Very Stiff, Gray Moist CLAY LOAM TILL	25	10	3.9 B	14
		12	2.3 B	13
	30	11	3.1 B	14
		12	2.3 B	14
	35	11	3.3 B	12
		14	2.6 S	14
	40	14	3.3 B	13
	45	15	3.3 B	13
		14	3.5 B	13
	50	11	2.1 B	14
	55	16	2.0 B	22
	60	14	1.9 B	13
	65	15	2.5 B	13
	70	15	3.3 B	13
743.98	75	16	3.5 B	12
(End of Boring)				

Boring Notes:
Soil borings were taken on Oct. 16 to Oct. 25, 2007.
SPT - Standard Penetrometer Test
UCS - Unconfined Compressive Strength
MC - Moisture Content
Unconfined Compressive Strength Failure Mode:
B = Bulge Failure
S = Shear Failure
P = Penetrometer Reading

FILE NAME = 0720146-68683-036-Boring Profile.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING PROFILE
STRUCTURE NO. 072-0146
SHEET NO. 36 OF 36 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HB)BY	PEORIA	487	323
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

Benchmark: MSI Control Point A103 - Sta. 87+53.72, 28.0' RT. Set ½" rebar 40' north of 2nd power pole north of Allen Road/Alta Lane intersection and 30' east of existing centerline of Allen Road. Elev. 753.22

Existing Structure: None.

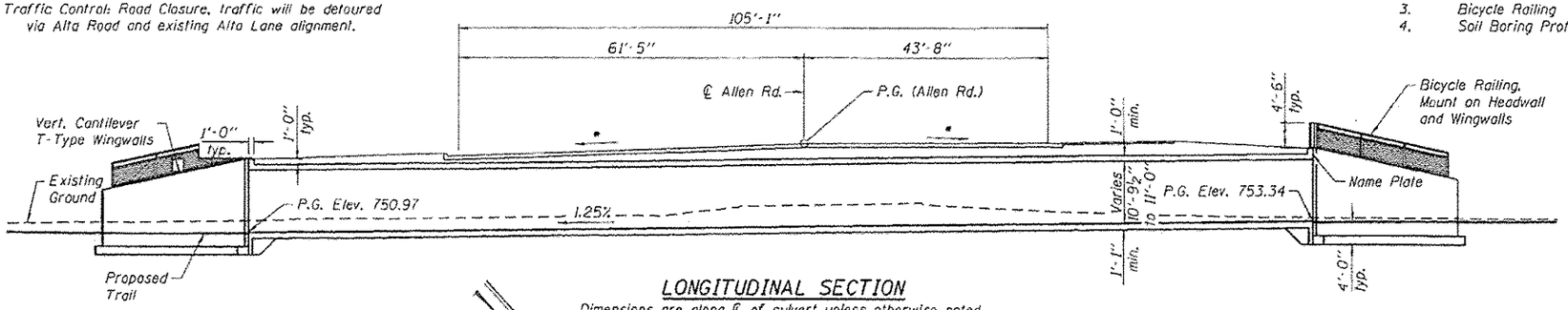
Traffic Control: Road Closure, traffic will be detoured via Alta Road and existing Alta Lane alignment.

* Cross slope varies per intersection geometry.

INDEX OF SHEETS

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Porous Granular Embankment	Cu. Yd.	562
Structure Excavation	Cu. Yd.	854
Concrete Structures	Cu. Yd.	120.3
Reinforcement Bars, Epoxy Coated	Pound	95720
Bicycle Railing	Foot	138
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	400.3
Membrane Waterproofing for Culverts	Sq. Yd.	419
Geocomposite Wall Drain	Sq. Yd.	604
Pipe Underdrains for Structures 4"	Foot	544



LONGITUDINAL SECTION

Dimensions are along ℄ of culvert unless otherwise noted
Note: Precast Alternate is not allowed

CURVE DATA

(Alta Ln.)

Δ = 41° 51' 45" (LT)
D = 16° 36' 27"
T = 131.96'
L = 252.07'
E = 24.38'
R = 345.00'
S.E. = N/A
P.C. = Sta. 116+13.59
P.T. = Sta. 118+65.66
P.I. = Sta. 117+45.55

DESIGN SPECIFICATIONS

2012 LRFD Bridge Design Specifications w/2013 Interims

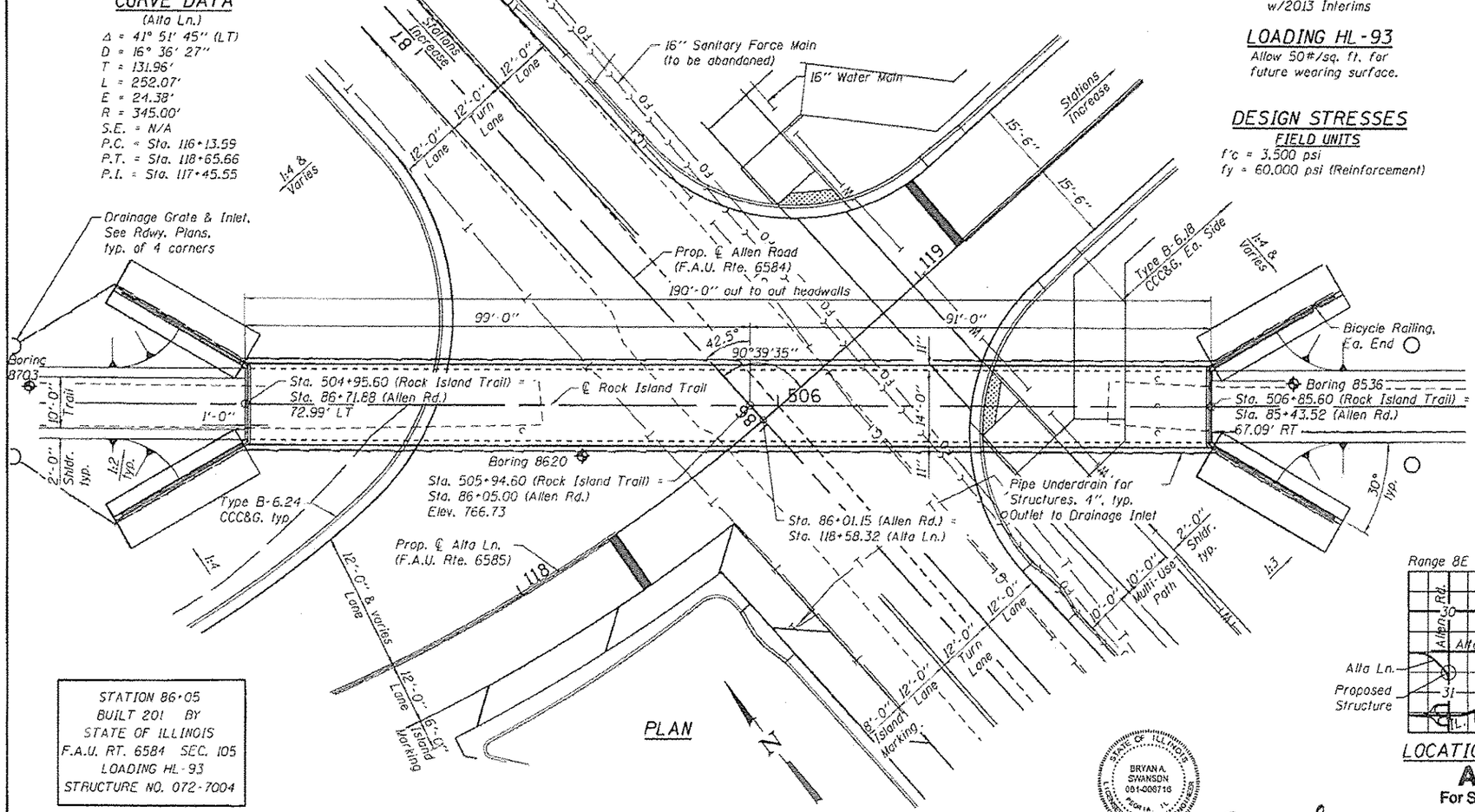
LOADING HL-93

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

DESIGN STRESSES

FIELD UNITS

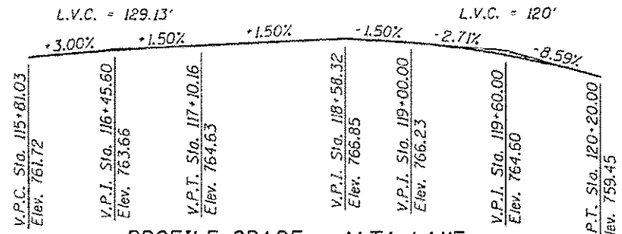
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)



PLAN

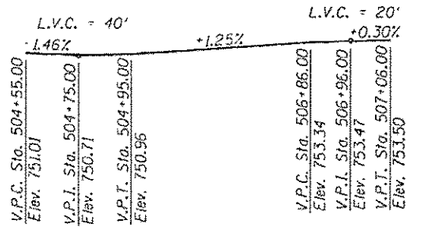
PROFILE GRADE - ALTA LANE

(along ℄ roadway)



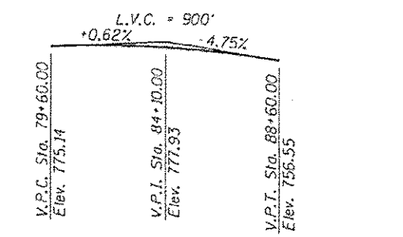
PROFILE GRADE - ROCK ISLAND TRAIL

(along ℄ Rock Island Trail)



PROFILE GRADE - ALLEN ROAD

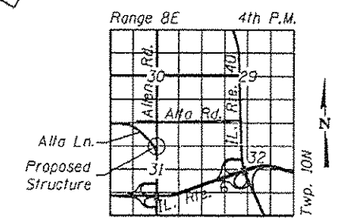
(along ℄ roadway)



STATION 86+05
BUILT 201 BY
STATE OF ILLINOIS
F.A.U. RT. 6584 SEC. 105
LOADING HL-93
STRUCTURE NO. 072-7004

NAME PLATE

See Std. 515001



LOCATION SKETCH

BRYAN A. SWANSON 001-006716 LICENSED STRUCTURAL ENGINEER PEORIA, IL STATE OF ILLINOIS

Bryan Swanson
Date Signed: 11/24/2014
Exp. Date: 11/30/2014

APPROVED
For Structural Adequacy Only

Engineer of Bridges & Structures

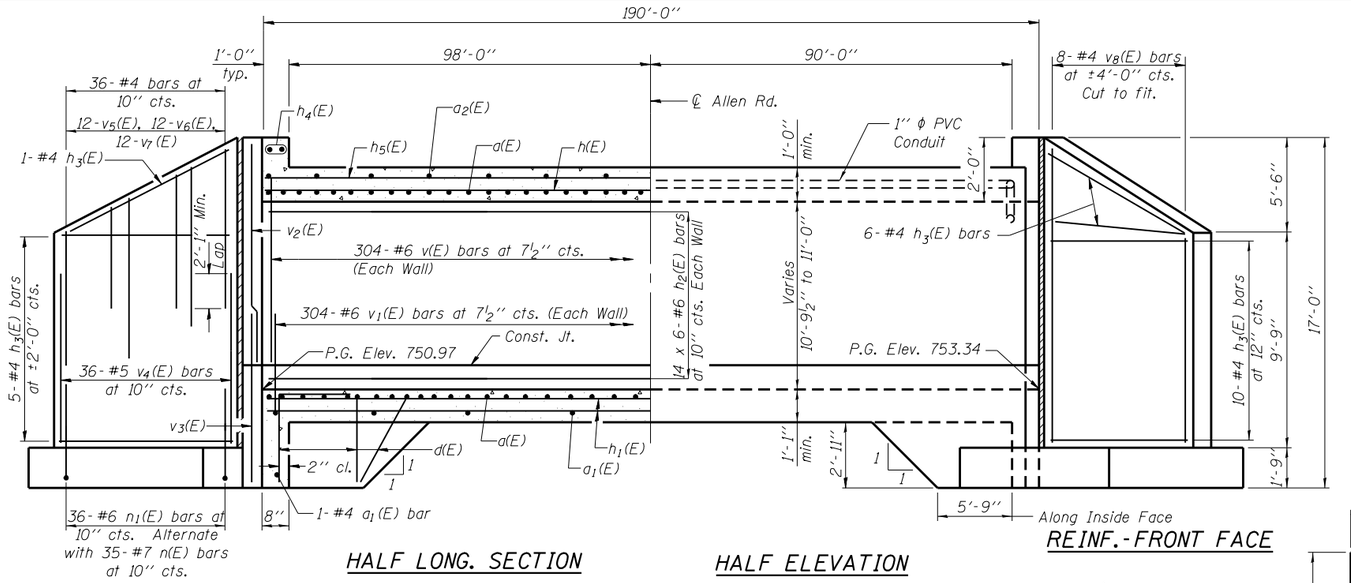
GENERAL PLAN
ALLEN ROAD OVER ROCK ISLAND TRAIL
F.A.U. 6584/6585 - SECTION 105
PEORIA COUNTY
STATION 86+05
STRUCTURE NO. 072-7004

FILE NAME = 9727604-68683-001-Gen Plan.dgn	USER NAME = bswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS	PLOT SCALE =	CHECKED - CMB	REVISED
	PLOT DATE = 2/26/2014	DRAWN - SGM	REVISED
		CHECKED - BAS	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 4 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584/6585	105	PEORIA	487	324
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

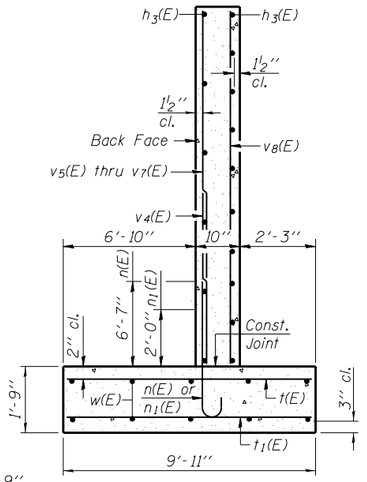


HALF LONG. SECTION

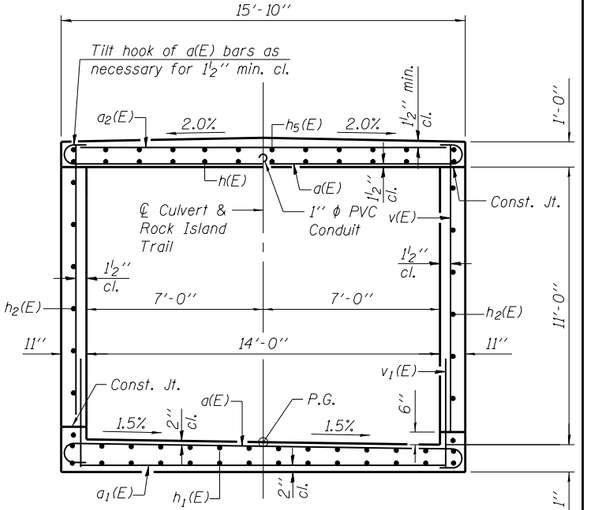
HALF ELEVATION

REINF.-FRONT FACE

REINF.-BACK FACE



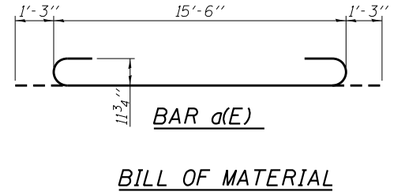
SECTION A-A



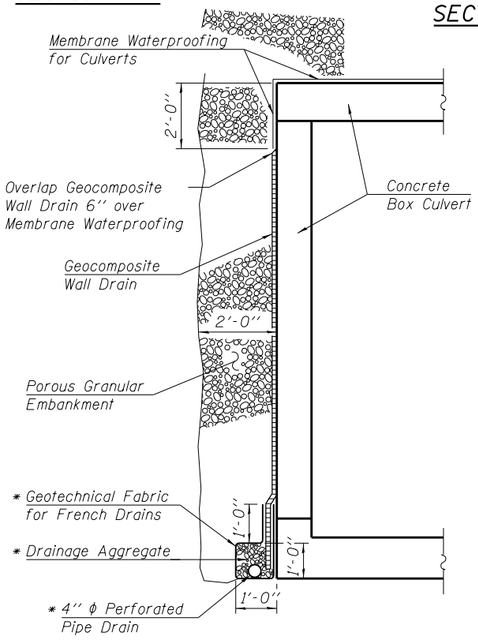
SECTION THRU BARREL

(Looking Southeast)

BAR d(E)



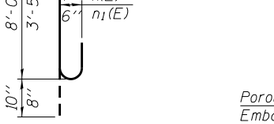
BAR d(E)



BACKFILL DETAIL

* Included in the cost of Pipe Underdrains for Structures 4".

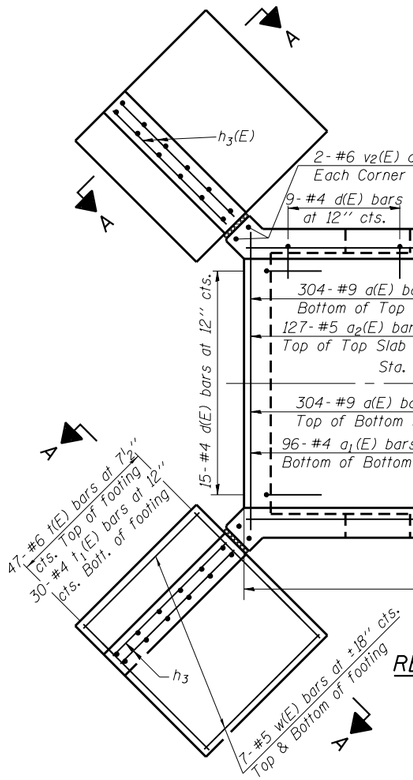
** Cost included with Concrete Box Culverts.



BARS n(E) and n1(E)

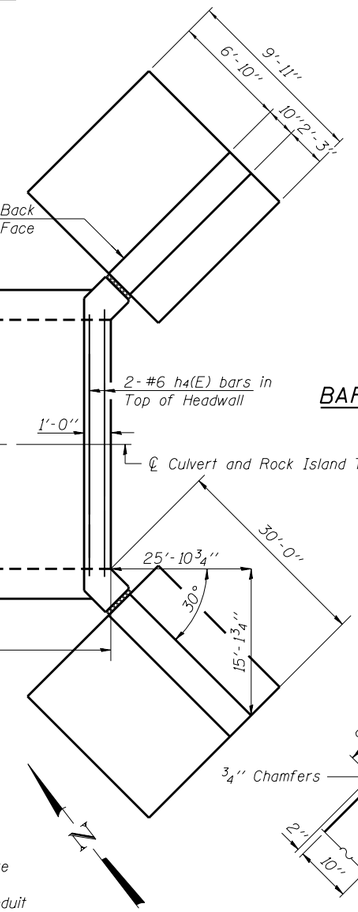
MIN. BAR LAP

#4 bar = 2'-1"
#5 bar = 2'-7"
#6 bar = 3'-6"
#8 bar = 5'-5"

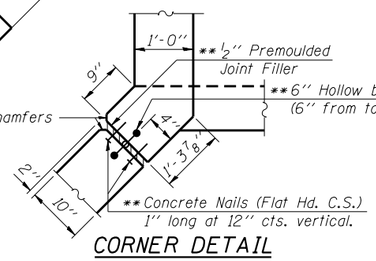


SHOWING REINFORCEMENT

PLAN



SHOWING OUTLINES



CORNER DETAIL

NOTES

Bars indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.

Reinforcement bars designated (E) shall be epoxy coated.

Wingwall and footing concrete shall be paid for as Concrete Structures.

See Lighting Plans for fixture locations and details of conduit junction boxes.

Note:

All drainage system components shall extend to 2'-0" from the end of each wingwall. The pipe drain shall slope to the northwest wingwalls, where an outlet pipe shall extend beyond the end of the wingwall into the drainage inlets. The outlet pipe shall be paid for as Pipe Underdrains for Structures 4".

BILL OF MATERIAL

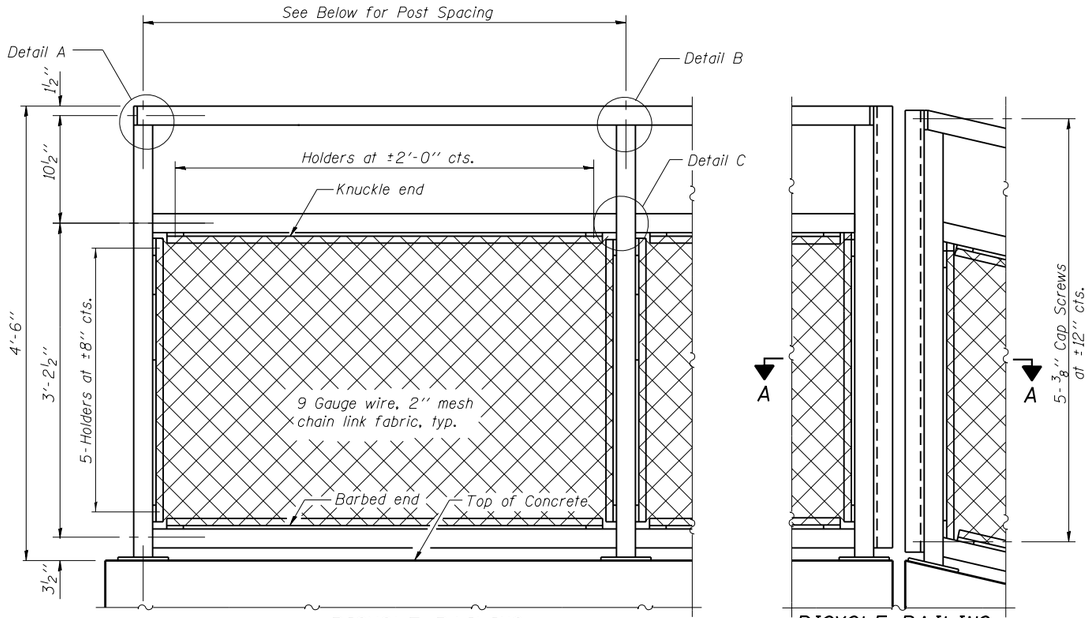
Bar	No.	Size	Length	Shape
d(E)	608	#9	18'-0"	
a1(E)	98	#4	15'-6"	
a2(E)	127	#5	15'-6"	
d(E)	66	#4	5'-6"	
h(E)	112	#8	31'-9"	
h1(E)	252	#5	29'-4"	
h2(E)	168	#6	34'-7"	
h3(E)	88	#4	28'-11"	
h4(E)	4	#6	15'-6"	
h5(E)	112	#4	28'-11"	
n(E)	140	#7	8'-10"	
n1(E)	144	#6	4'-1"	
t(E)	188	#6	9'-7"	
t1(E)	120	#4	9'-7"	
v(E)	608	#6	11'-3"	
v1(E)	608	#6	4'-5"	
v2(E)	8	#6	12'-3"	
v3(E)	8	#6	7'-4"	
v4(E)	144	#5	7'-5"	
v5(E)	48	#4	9'-9"	
v6(E)	48	#4	7'-11"	
v7(E)	48	#4	6'-1"	
v8(E)	32	#4	14'-11"	
w(E)	56	#5	28'-11"	
Concrete Box Culverts			Cu. Yd.	400.3
Concrete Structures			Cu. Yd.	120.3
Reinforcement Bars, Epoxy Coated			Pound	95720

FILE NAME = 0727004-68683-002-Culvert Details.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - CMB	REVISED
	PLOT SCALE =	DRAWN - SGM	REVISED
	PLOT DATE = 3/11/2014	CHECKED - BAS	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

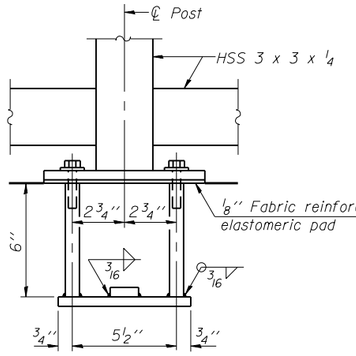
BOX CULVERT DETAILS
STRUCTURE NO. 072-7004
SHEET NO. 2 OF 4 SHEETS

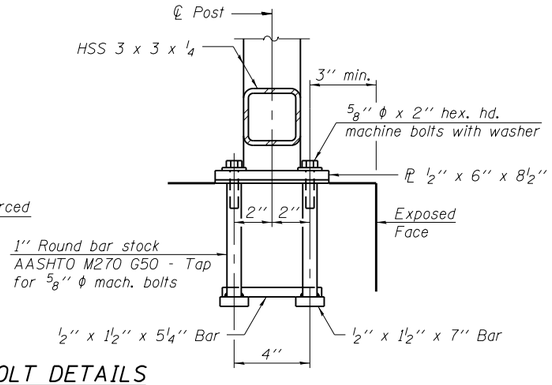
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584/6585	105	PEORIA	487	325
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



BICYCLE RAILING

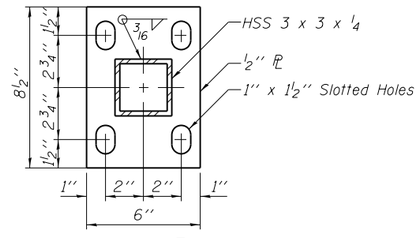
BICYCLE RAILING
AT WINGWALL JOINT



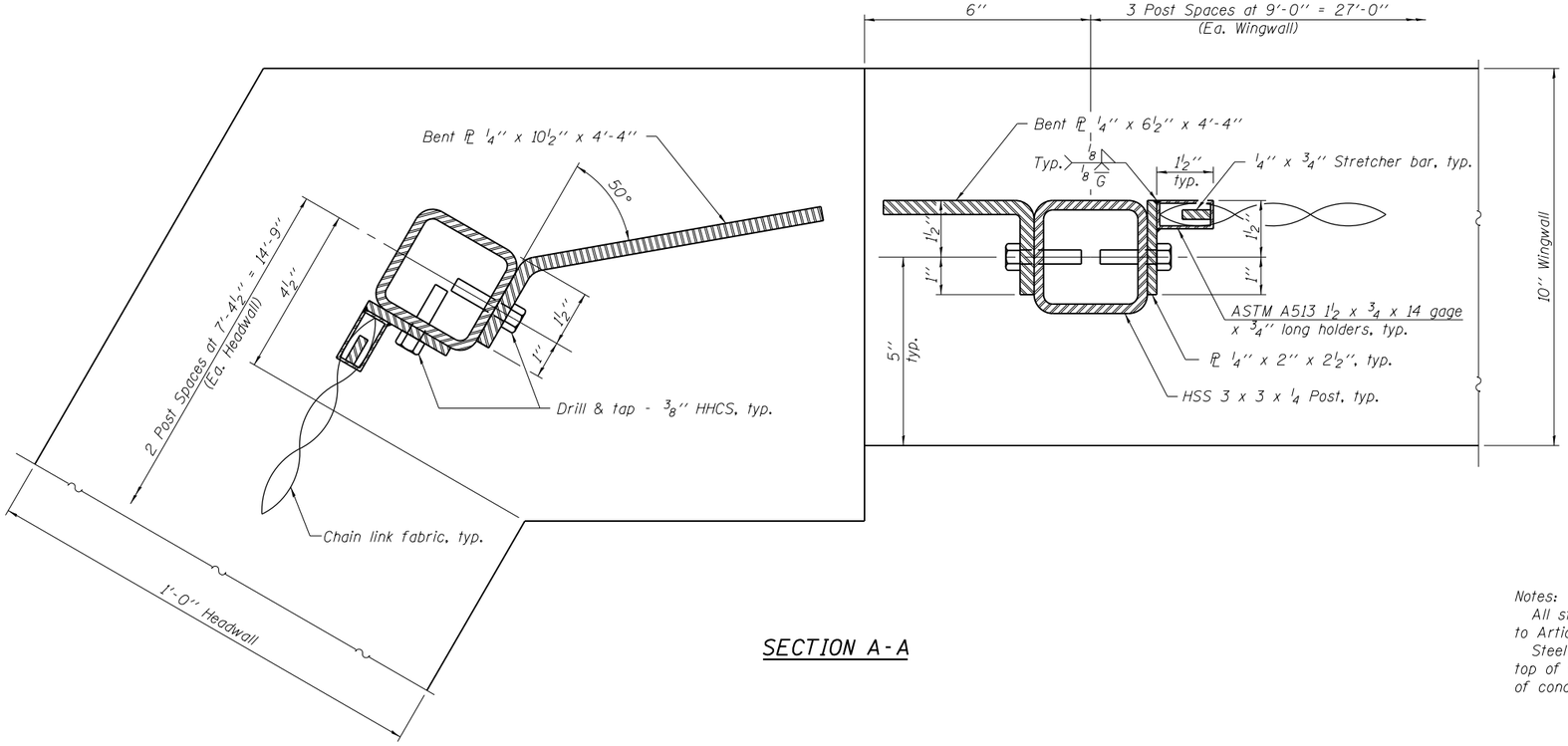


ANCHOR BOLT DETAILS

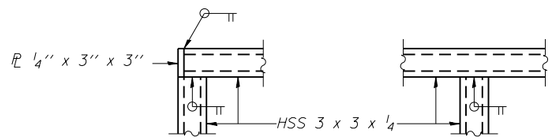
In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting ⅝'' ϕ anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.



BASE ℄

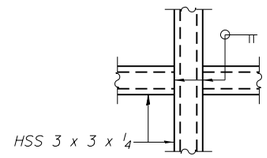


SECTION A-A



DETAIL A

DETAIL B



DETAIL C

Notes:

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

Steel posts shall be installed vertical on the sloped top of wingwalls. Rails shall run parallel to the top of concrete.

BILL OF MATERIAL

Item	Unit	Quantity
Bicycle Railing	Foot	138

FILE NAME = 0727004-68683-003-Bicycle Railing.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - CMB	REVISED
	PLOT SCALE =	DRAWN - SGM	REVISED
	PLOT DATE = 1/24/2014	CHECKED - BAS	REVISED

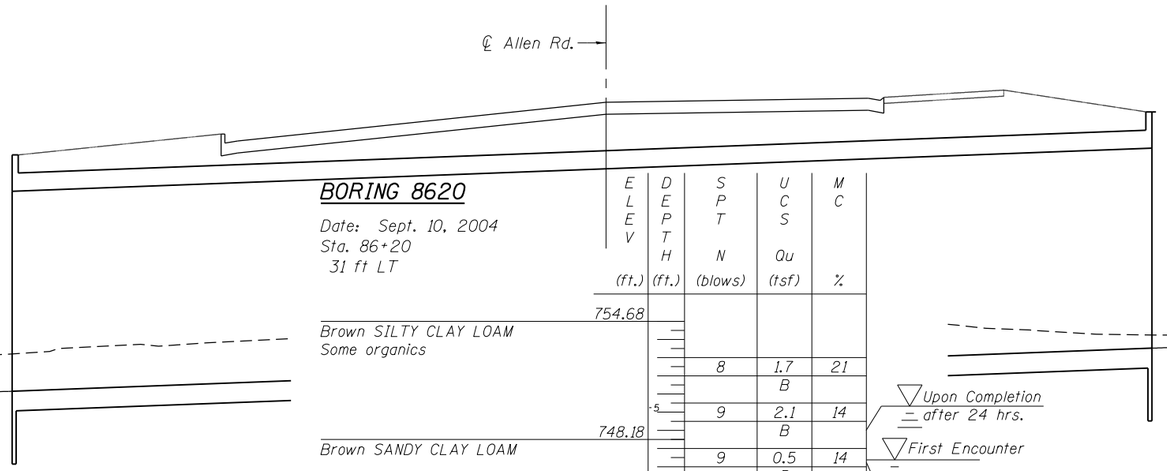
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BICYCLE RAILING
STRUCTURE NO. 072-7004
SHEET NO. 3 OF 4 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584/ 6585	105	PEORIA	487	326
		CONTRACT NO. 68683		
ILLINOIS FED. AID PROJECT				

Notes:
Borings were performed by IDOT District 4 personnel.
Stations and offsets shown are relative to the proposed alignment of Allen Road.

Legend:
Type of Failure:
(B) = Bulge Failure
(S) = Shear Failure
(P) = Penetration Test
S.P.T. - Standard Penetrometer Test
U.C.S. - Unconfined Compressive Strength
M.C. - Moisture Content



BORING 8703

Date: Sept. 10, 2004
Sta. 87+03
102 ft LT

ELEV (ft.)	DEPTH (ft.)	SPT N (blows)	UCS Qu (tsf)	MC %
752.63				
Brown SILTY LOAM				
		9	3.3	12
			P	
	5	12	3.3	12
			B	
		16	2.1	13
743.63			S	
Brown, Gray SANDY LOAM w/ trace of gravel	10	15	2.0	11
741.13			P	
Gray CLAY LOAM TILL		10	2.5	13
1'' Sand Seam @ 11.7 ft			B	
	15	9	1.8	14
			B	
▽ Upon Completion = after 24 hrs.		9	2.1	14
			B	
	20	15	2.1	
▽ Upon Completion =			B	
		14	2.1	12
			B	
	25	20	3.1	13
			B	
		20	2.0	13
			P	
0.25'' Sand Seam @ 32 ft	30	15	3.5	11
			P	
		12	2.9	12
3'' wet sand seam @ 34 ft			B	
▽ First Encounter =	35	9	0.9	14
716.13			B	
Gray SANDY CLAY LOAM		10	2.5	21
			P	
	40	9	1.0	18
711.13			P	
Gray CLAY LOAM TILL		20	4.0	9
			P	
707.13	45	16	3.9	12
(End of Boring)			P	

BORING 8620

Date: Sept. 10, 2004
Sta. 86+20
31 ft LT

ELEV (ft.)	DEPTH (ft.)	SPT N (blows)	UCS Qu (tsf)	MC %
754.68				
Brown SILTY CLAY LOAM				
Some organics		8	1.7	21
			B	
▽ Upon Completion = after 24 hrs.	5	9	2.1	14
748.18			B	
Brown SANDY CLAY LOAM		9	0.5	14
▽ First Encounter =			P	
Water and some Gravel @ 7.8 ft	10	10	2.1	15
▽ Upon Completion =			B	
		10	2.1	13
			B	
	15	9	2.1	14
			B	
		14	3.5	13
			B	
	20	11	2.0	13
			B	
		9	1.7	14
			B	
	25	12	2.1	13
			B	
		16	6.2	11
			B	
	30	9	1.2	13
wet sand seam @ 31.5 ft			B	
		13	2.5	13
			B	
	35	14	2.1	13
			B	
		10	1.1	17
W/ Sand @ 39 ft to 40.5 ft			B	
	40	31	3.5	11
			P	
711.68		16	3.9	12
(End of Boring)			B	

BORING 8536

Date: Sept. 15, 2004
Sta. 85+36
82 ft RT

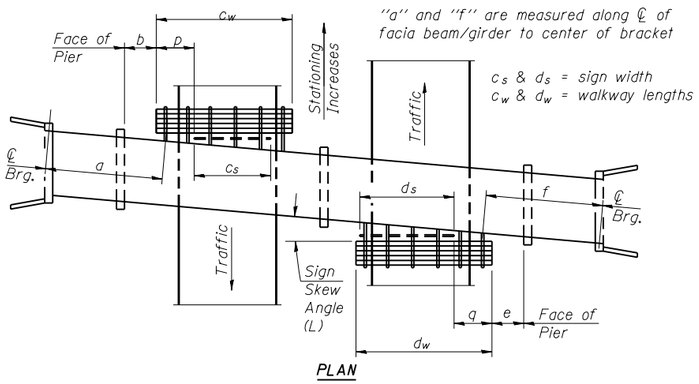
ELEV (ft.)	DEPTH (ft.)	SPT N (blows)	UCS Qu (tsf)	MC %
754.18				
Brown SILTY LOAM				
3" Traces of coal @ 1.5 ft		15	<4.5	13
			P	
	5	16	4.7	12
			S	
		17	3.7	13
745.18			B	
Brown, Gray CLAY LOAM TILL	10	12	1.8	13
			B	
		12	2.7	13
			B	
	15	12	2.1	13
			B	
0.25'' Sand seam @ 16.7 ft		10	1.6	13
			B	
	20	9	0.8	13
			B	
		15	2.9	11
Trace of Water ▽ First Encounter =			B	
	25	13	2.1	13
727.18			B	
Dark Brown Medium SAND & GRAVEL			2.0	15
Water @ 27 ft 725.18		8	P	12
Gray SANDY CLAY LOAM	30	13	0.8	15
			P	
		15	1.0	14
720.18			P	
Gray GRAVEL & coarse SAND w/ trace of clay	35	15		9
717.68				
Gray SANDY CLAY LOAM		28	1.5	17
715.18			P	
Gray CLAY LOAM TILL	40	26	4.7	17
			S	
		24	3.3	12
			B	
708.68	45	40	3.3	19
(End of Boring)			S	

FILE NAME = 0727004-68683-004-Boring Profile.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - CMB	REVISED
	PLOT SCALE =	DRAWN - SGM	REVISED
	PLOT DATE = 1/24/2014	CHECKED - BAS	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING PROFILE
STRUCTURE NO. 072-7004
SHEET NO. 4 OF 4 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584/6585	105	PEORIA	487	327
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

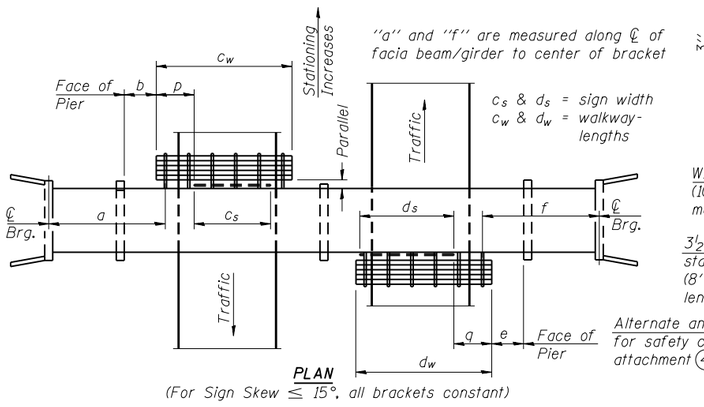


PLAN

(Left Sign Skew > 15°)

WALKWAY AND HANDRAIL SKETCH

(Road plan beneath structure varies.)

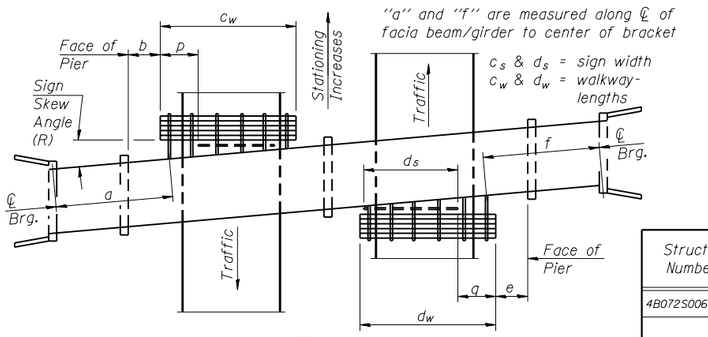


PLAN

(For Sign Skew ≤ 15°, all brackets constant)

WALKWAY AND HANDRAIL SKETCH

(Road plan beneath structure varies.)

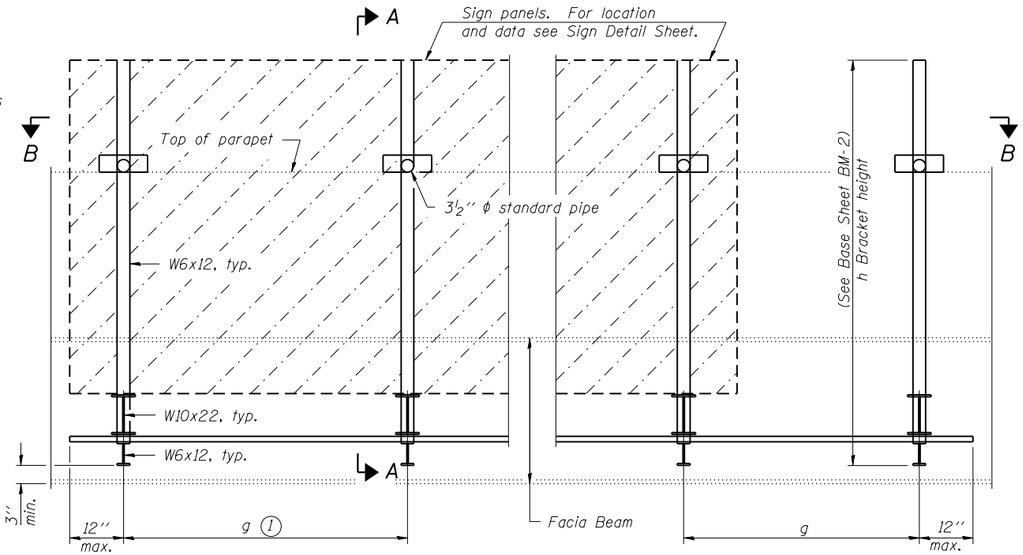


PLAN

(Right Sign Skew > 15°)

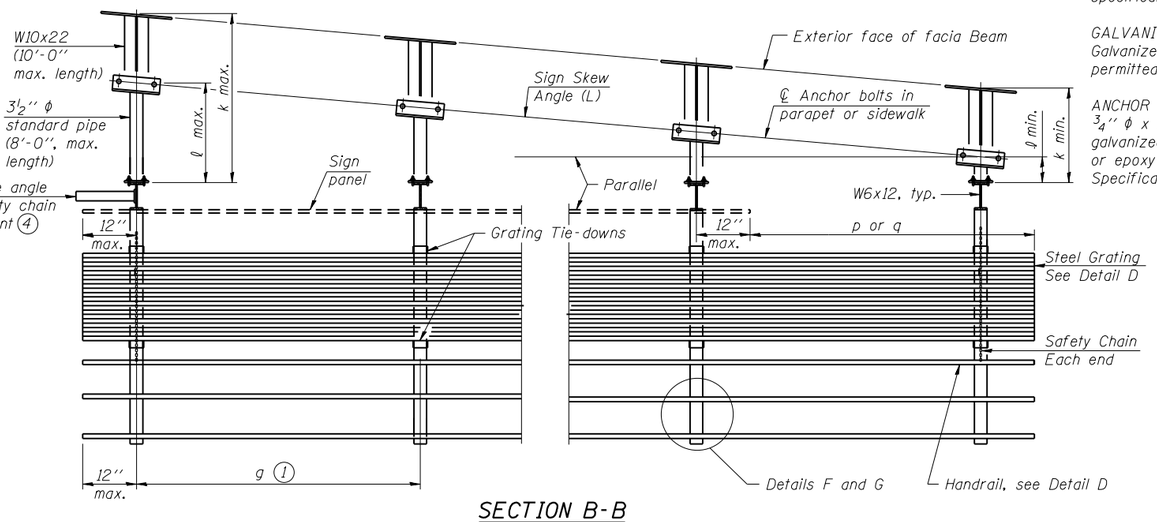
WALKWAY AND HANDRAIL SKETCH

(Road plan beneath structure varies.)



TYPICAL FRONT ELEVATION

(With lights, safety chain and handrail omitted for clarity.)



SECTION B-B

(Shown: Left Sign Skew > 15°)

Structure Number	Sign Skew Angle (L) or (R)	Bridge Station	Bridge Structure Number	Contract Route Designation	a	b	c_s	c_w	d_s	d_w	e	f	g	No. of Brackets (Total)	p	q	Total Grating/ Hndrl. Lengths (c_w + d_w)
4B072S006L005.54	0°	929+03.18	072-0146	F.A.P. 318					15'-0"	15'-0"		37'-10"	4'-4"	4			15'-0"

Dimensions a, b, e, f & g may vary as approved by the Engineer, see (1).
When $c_w < c_s$ and/or $d_w < d_s$, use alternate brackets without walkway supports where applicable, see (3).

GENERAL NOTES

SPECIFICATIONS:

DESIGN: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications") (2)

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. ("Standard Specifications")

LOADING: 90 M.P.H. WIND VELOCITY

WALKWAY LOADING: Dead load plus 500 lbs. concentrated live load.

MINIMUM CLEARANCE: 3" greater than bridge members at all locations. (All Obstructions)

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 Structural Welding Code (Steel) and the Standard Specificiations.

MATERIALS: All Structural Steel Pipe shall be ASTM A53 Grade B with a minimum yield of 35,000 p.s.i., or A500 Grade B or C with a minimum yield of 46,000 p.s.i. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53.
All Structural Steel Plates and Shapes shall conform to AASHTO M270 Gr. 36, Gr. 50 (M183, M223 Gr. 50,).

HIGH STRENGTH BOLTS: All bolts, washers, nuts and locknuts shall satisfy the requirements of ASTM designation A307 unless noted as "H.S." which shall require AASHTO M164 (A325), ASTM A449, or approved alternate. All fasteners shall be hot dip galvanized per AASHTO M232 unless otherwise specified.

GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after fabrication in accordance with AASHTO M111. Painting is not permitted.

ANCHOR RODS: All-threaded rod shall conform to ASTM F1554 Grade 105, $\frac{3}{4}$" ϕ x 12" long, each with one plate washer and locknut and be hot dip galvanized per AASHTO M232. They shall be either cast into the concrete or epoxy grouted in accordance with Section 584 of the Standard Specifications. Minimum embedment in concrete shall be 9".

(1) Bracket spacing g ≤ 6'-0", max. Spacing shall be uniform if possible but may vary ±6" to miss existing obstruction (rail post, light poles, web stiffeners, splice plates, etc.). Adjust bracket lengths accordingly on skewed structures.

(2) Any design modifications shall be based on the current version of applicable specifications and submitted for the Engineer's approval.

(3) Unit price includes grating, handrail, brackets, supports, anchor bolts, fasteners, fabrication, delivery, erection, field drilling and other necessary items. Limits of payment are based on grating length (cw, dw) unless otherwise specified. For Safety Chain Details and Details D, F and G, see Base Sheet BM-4.

(4) If walkway bracket at safety chain location is behind sign, add angle to bracket. See detail on Base Sheet BM-4.

TOTAL BILL OF MATERIAL

(3) OVERHEAD SIGN STRUCTURE-BRIDGE MOUNTED	Foot	15.0

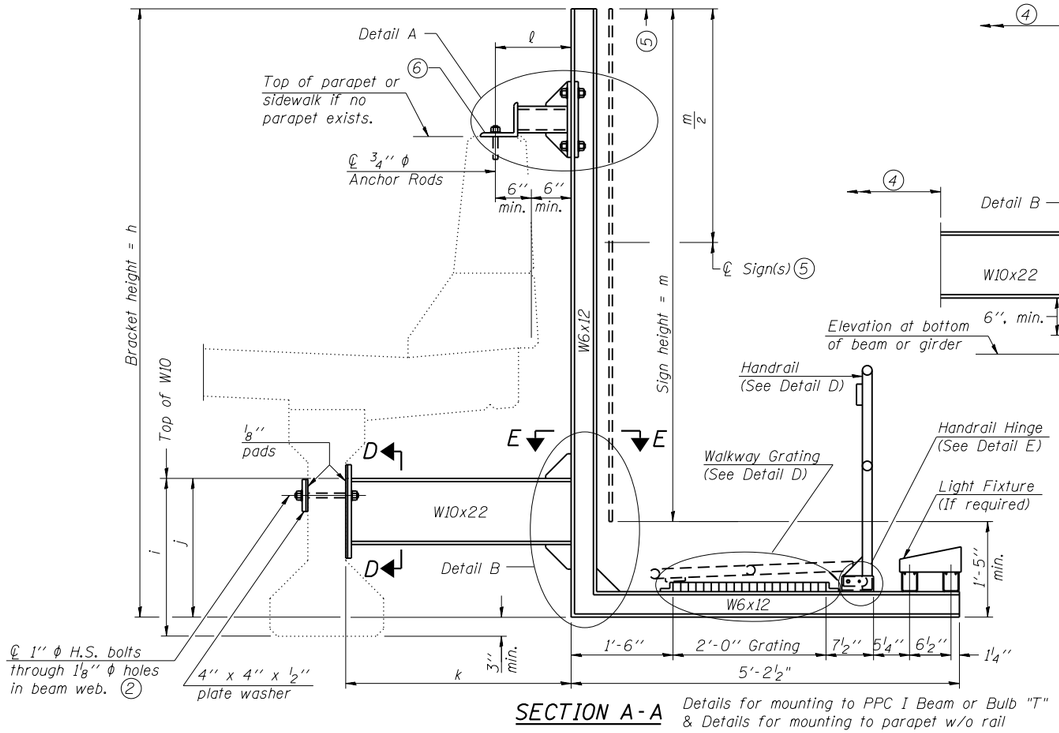
BM-1 6-1-12

FILE NAME = D468683-sht-BM sign str.dgn	USER NAME = wllewis	DESIGNED -	REVISED -
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE = 1/24/2014	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

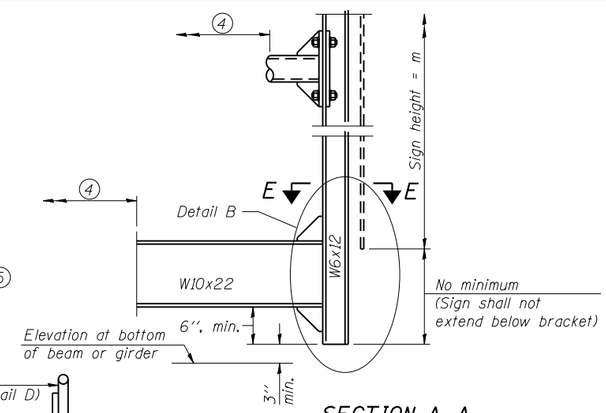
BRIDGE MOUNT SIGN STRUCTURES
GENERAL PLAN AND ELEVATION
SHEET NO. 1 OF 4 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	328
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



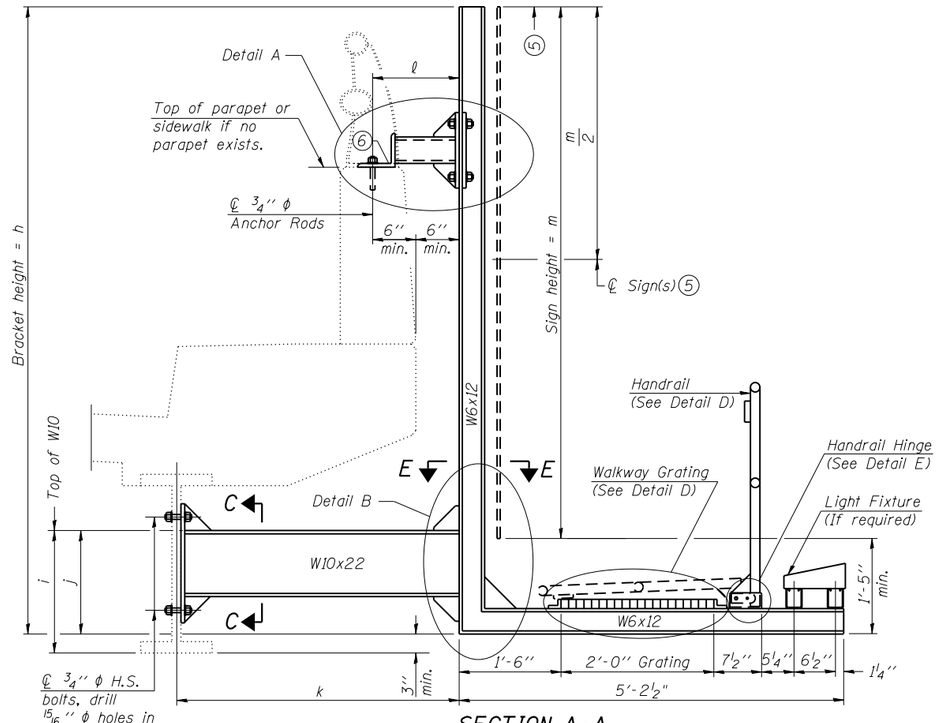
SECTION A-A

Details for mounting to PPC I Beam or Bulb "T" & Details for mounting to parapet w/o rail



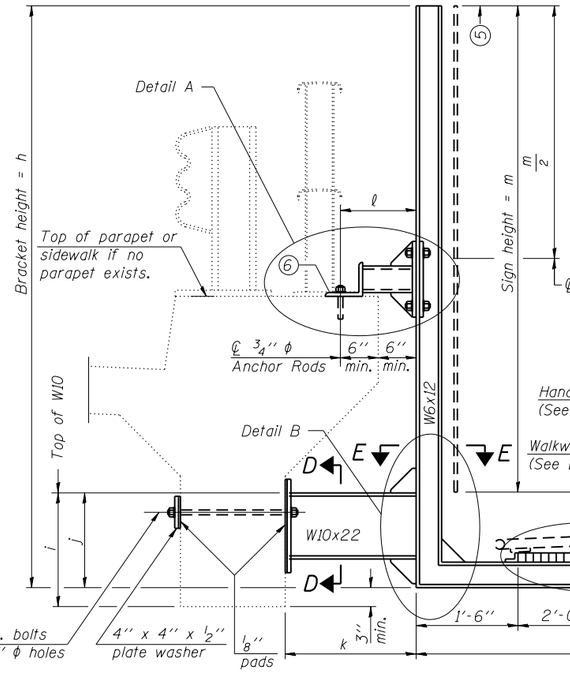
SECTION A-A

Alternate with no lights or walkways



SECTION A-A

Details for mounting to steel beam or girder & Details for mounting with existing parapet mounted rail



SECTION A-A

Details for mounting to integral reinforced concrete girder & Details for mounting on safety curb with surface-mount bridge rail

Notes:

Installations not within dimensional limits shown require special analysis for all components and must be submitted to the Bureau of Bridges and Structures for approval.

Contractor shall field check all pertinent existing bridge dimensions shown on plans before submitting shop drawings.

All holes in bridge beams or girders should be located in the middle half of the member. There shall be no holes drilled in the lower quarter of the member's depth. (For R.C. girder, depth = bottom of deck to bottom of the girder.) Proposed exceptions must be approved by the Bureau of Bridges and Structures.

The Engineer may adjust dimension "i" to meet the above condition and to keep the sign level.

(1) *Holes in new steel members may be drilled in the fabrication shop or in the field. Field drill existing members.*

(2) *For new PPC I beams, holes shall be formed during casting. For existing PPC I beams, prestressing strand locations shall be determined and spaced to miss strands by 6", min. Minimize spalling during field drilling of existing beams.*

(3) *For new construction, form holes. For existing RC beams, locate primary reinforcement and space holes to miss by 6", min. Minimize spalling and concrete fracturing/damage during field drilling of existing concrete. Spalls over 1/4" deep or beyond the coverage of the 4x4 plate washer shall be repaired with epoxy mortar before installing washer.*

(4) *For attachment details of 3 1/2" pipe and W10x22, see other sections as applicable.*

(5) *Sign shall not extend more than 6" above top of bracket, and this dimension may vary to keep sign level if bridge is on grade or vertical curve. Multiple signs of various heights shall share a common horizontal centerline and use equal bracket heights. If no sign is attached to a W6x12 vertical (bracket only supporting walkway), dimension h shall be the same as an adjacent bracket with a sign attached, unless Engineer specifically directs shorter brackets due to locational restraints on future uses. (See Detail A for minimum bracket height.)*

(6) *For bridge mounted sign structures installed on new bridges with railing, during design, bracket spacing must be coordinated with railing post spacing and the Contractor must install upper brackets prior to railing installation. For bridge mounted sign structures installed on existing bridges with railing, during design, brackets spacing must be coordinated with railing post spacing and the Contractor must temporarily remove sections of railing to facilitate upper bracket installation. If it is determined during design that existing railings can't be removed, alternate upper connection details must be developed for the contract plans and approved by the Bureau of Bridges and Structures.*

Structure Number	Station	h	i	j	k max. (10'-0" max.)	ℓ max. (8'-0" max.)	m (15'-0" max.)
4B072S006L005.54	929+03.18	11'-5"	2'-5"	2'-2"	3'-9"	1'-0"	10'-0"

For Details A & B, Sections C-C, D-D and E-E, see Base Sheet BM-3.
For Details D & E, see Base Sheet BM-4.

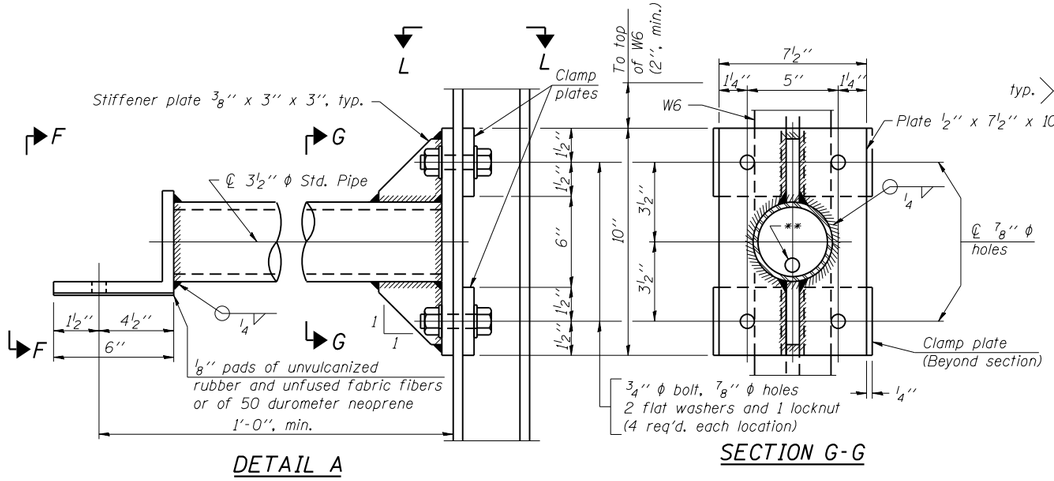
BM-2 6-1-12

FILE NAME = D468683-sht-BM sign str.dgn
MAURER-STUTZ ENGINEERS SURVEYORS
USER NAME = wllewis | DESIGNED - | REVISED -
PLOT SCALE = | DRAWN - | REVISED -
PLOT DATE = 1/24/2014 | CHECKED - | REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

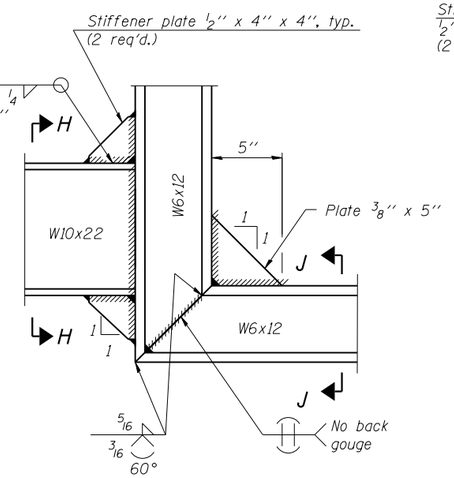
BRIDGE MOUNT SIGN STRUCTURES
WALKWAY AND CONNECTION DETAILS
SHEET NO. 2 OF 4 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	329
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

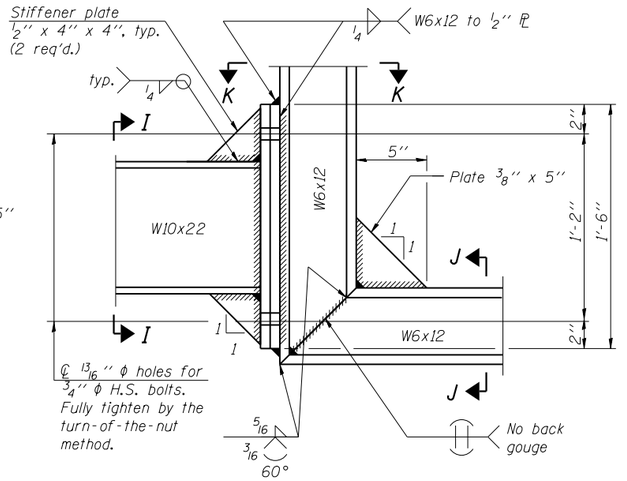


DETAIL A

SECTION G-G

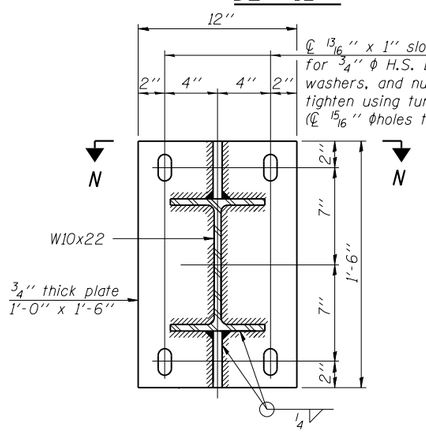


DETAIL B - WELDED W10x22 TO W6x12 CONNECTION



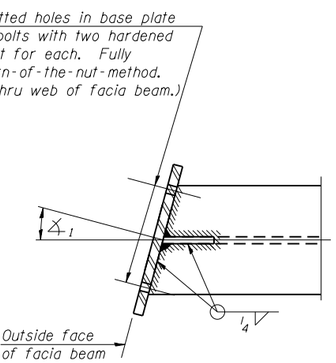
DETAIL B - ALTERNATE BOLTED W10x22 TO W6x12 CONNECTION

Alternate may be substituted by contractor to facilitate construction or galvanizing, especially on long struts for skewed bridges.



SECTION C-C

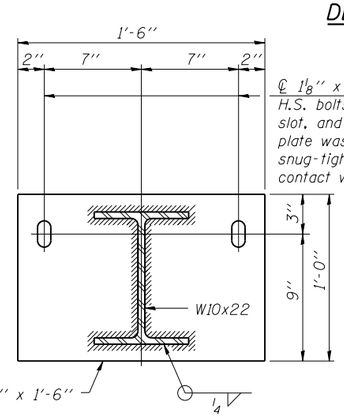
Steel beam or girder connection plate details



SECTION N-N

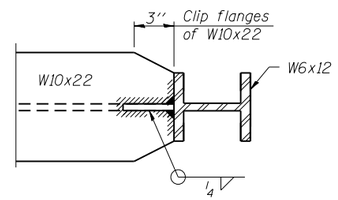
Skewed connection detail for W10x22 to facia beam.

Plate 1" x 12" x 1'-6"

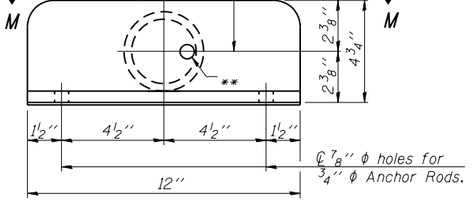


SECTION D-D

Concrete beam or girder connection plate details.

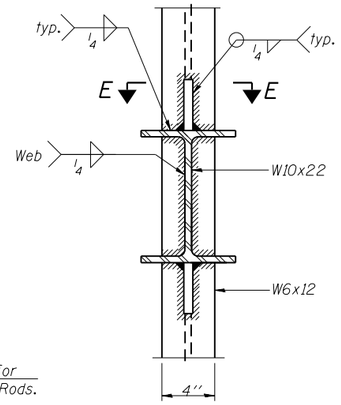


SECTION E-E

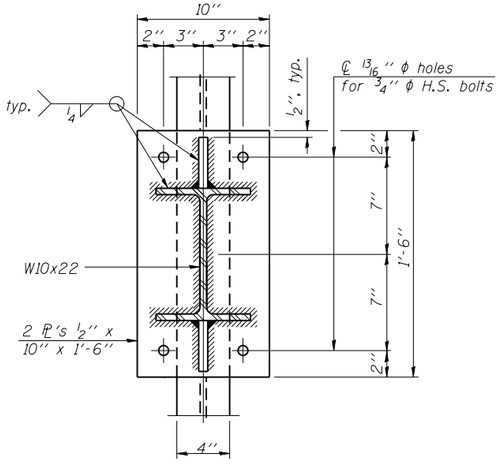


VIEW F-F

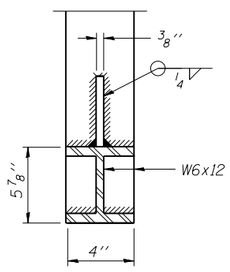
** 13/16" ϕ holes for galvanizing. After galvanizing, install 7/8" ϕ A307 hot-dip galvanized bolt to close hole in angle. (No bolt required in 1/2" plate.)



SECTION H-H

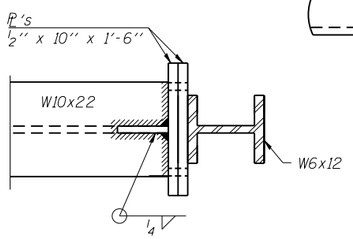


SECTION I-I

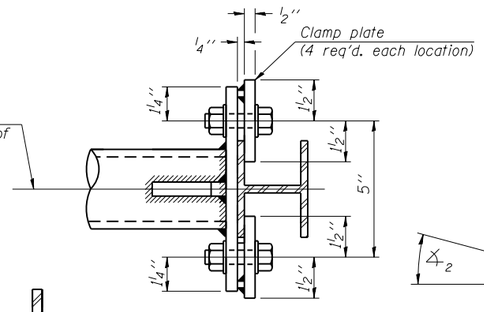


SECTION J-J

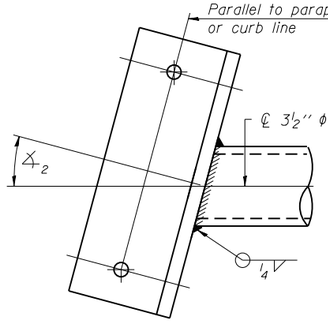
Note: For constant slab overhang at facia beam, $\measuredangle_1 = \measuredangle_2$ = sign angle. For flared beams or other special cases where $\measuredangle_1 \neq \measuredangle_2$, $\measuredangle_1$ = sign angle.



SECTION K-K

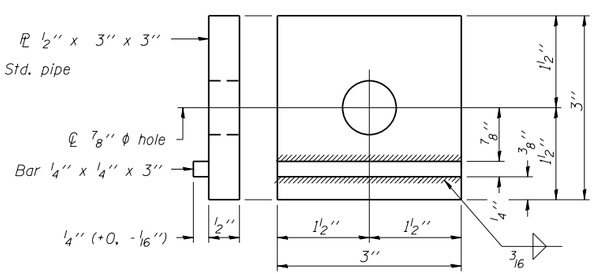


SECTION L-L



SECTION M-M

Skewed connection detail for 3 1/2" ϕ pipe to parapet.



CLAMP PLATE DETAILS

BM-3

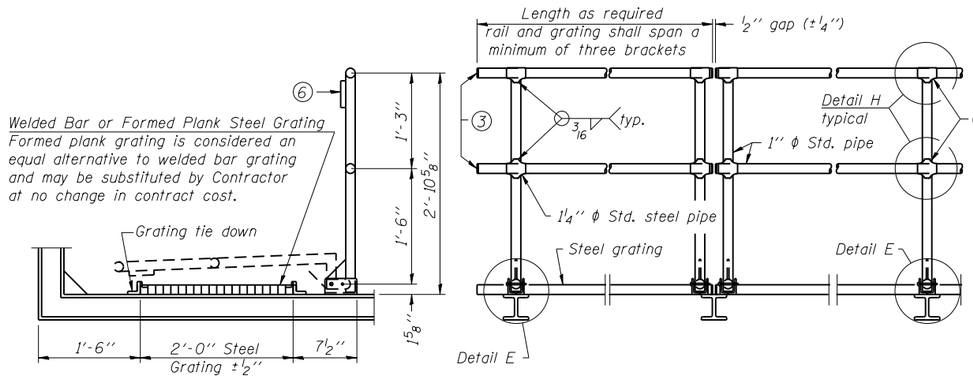
6-1-12

FILE NAME = D468683-sht-BM sign str.dgn	USER NAME = wllewis	DESIGNED -	REVISED -
		CHECKED -	REVISED -
MAURER-STUTZ ENGINEERS SURVEYORS	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE = 1/24/2014	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE MOUNT SIGN STRUCTURES
CONNECTION DETAILS
SHEET NO. 3 OF 4 SHEETS

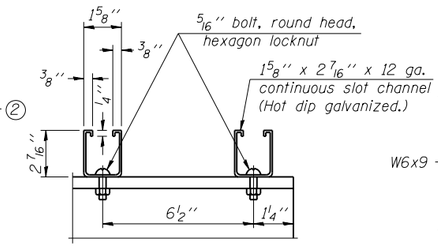
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	330
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



SIDE ELEVATION

DETAIL D HANDRAIL

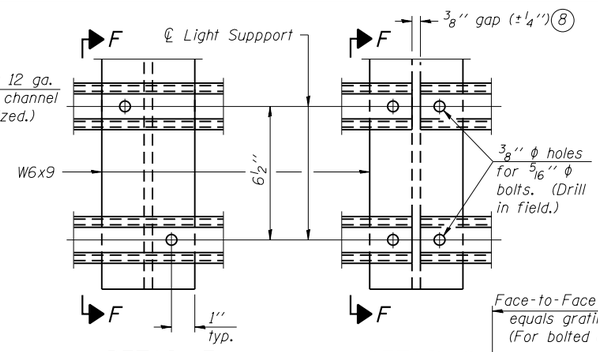
FRONT ELEVATION



SECTION F-F

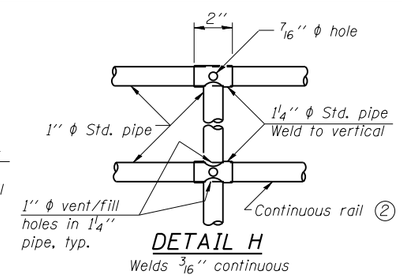
LIGHTING FIXTURE MOUNTS

(If required)



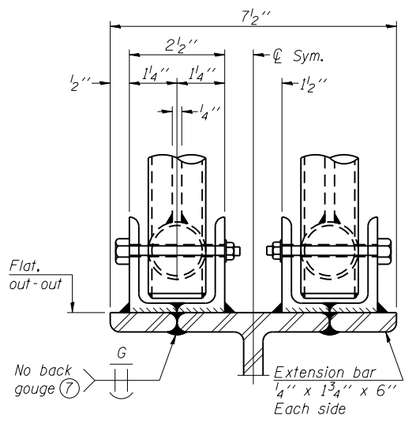
DETAIL F

DETAIL G



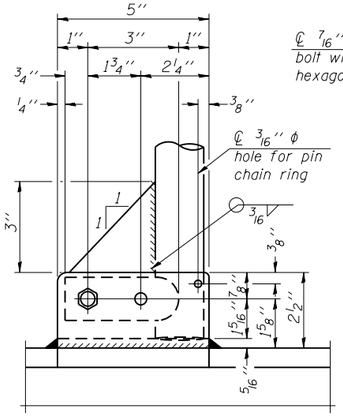
DETAIL H

Welds 3/16" continuous

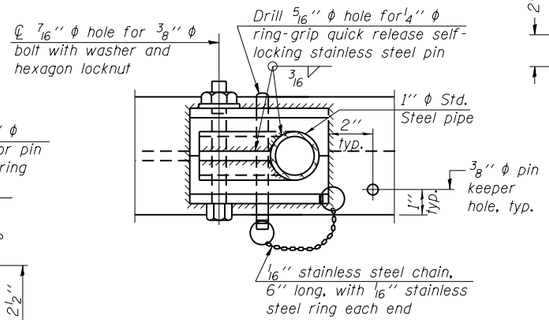


ELEVATION AT HANDRAIL JOINT

(Details not shown same as "FRONT ELEVATION")

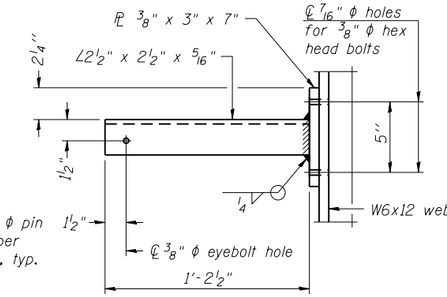


SIDE ELEVATION

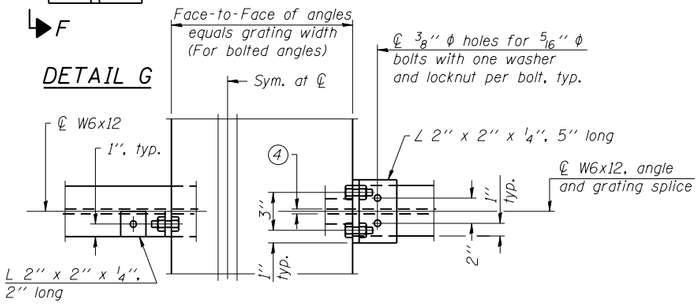


PLAN AT SINGLE HANDRAIL HINGE

DETAIL E

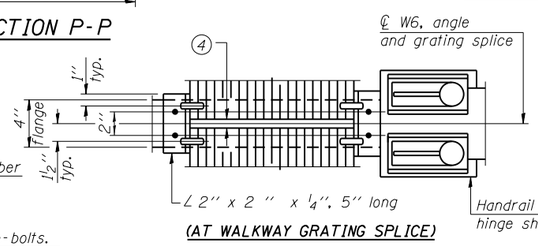


SECTION P-P

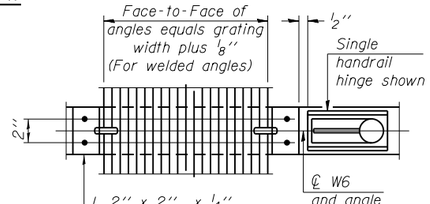


GRATING CONTINUOUS AT GRATING SPLICE

VIEW W-W

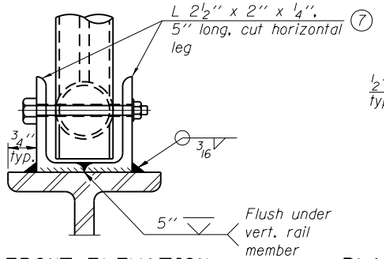


(AT WALKWAY GRATING SPLICE)



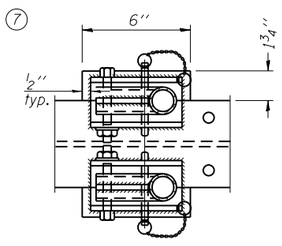
(WALKWAY GRATING CONTINUOUS)

PLAN



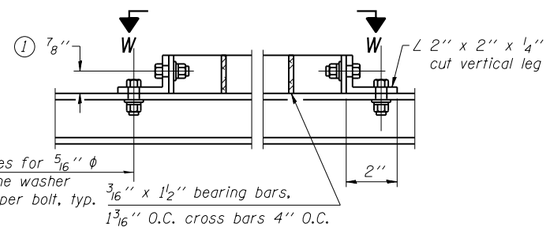
FRONT ELEVATION

(See above Elevations for dimensions.)

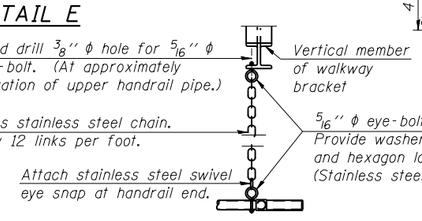


PLAN AT HANDRAIL JOINT

(For Details, see Elevations.)



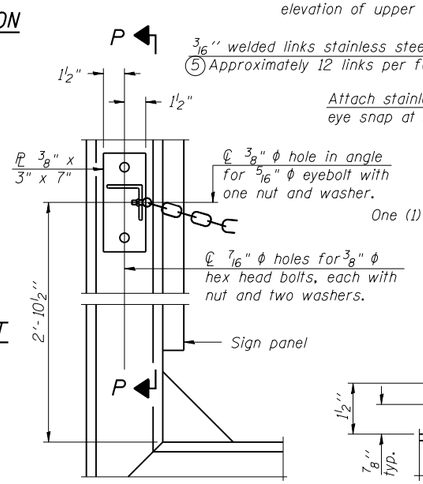
WELDED BAR GRATING DETAILS



No Sign at Bracket

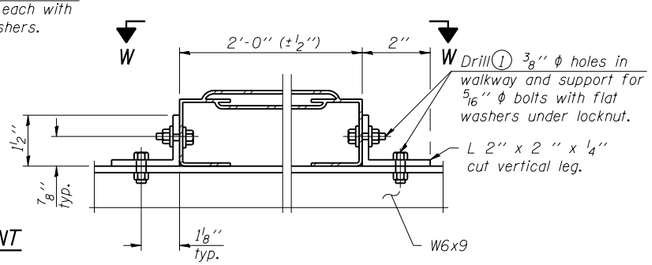
SAFETY CHAIN

One (1) required for each end of each walkway.



SAFETY CHAIN ATTACHMENT

(With Sign Present)
Items not shown same as "SIDE ELEVATION" and "SAFETY CHAIN"



ALTERNATE FORMED PLANK GRATING DETAILS

Plank Grating: nominal depth = 2 1/2" (±1/2"); perforated or expanded steel sheet with a non-skid surface (non-serrated) concentrated load capacity = 500 lbs. with 6'-0" clear span.

NOTES

(1) Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment. Field drilled holes must be touched up with galvanized paint.

(2) Horizontal rail member shall be continuous thru 1 1/4" ϕ pipe. Provide 7/16" ϕ hole in 1 1/4"ϕ pipe for 3/8" ϕ bolt. Field drill 7/16" ϕ hole in horizontal rail member. Provide washer and locknut for bolt. (Use 5/16" eyebolts in 7/16" ϕ holes on top rail at ends only.)

(3) Install standard force-fit end caps or weld 1/8" end plates with 1/8" c.f.w. and grind smooth. (All rail ends.)

(4) 3/8" (±1/4") gap between grating panels at splice.

(5) Chain to be type 304L stainless steel suitable for prolonged exterior exposure. Approximately 3'-6" long chain per location. Maximum sag with handrail erected = 4".

(6) PL 1/8" x 1/2" x 2" welded to handrail posts to protect locations that contact grating.

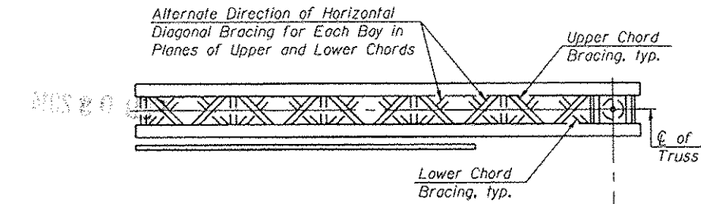
(7) Extrusions may be used in lieu of details shown, with approval by Engineer.

(8) Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.

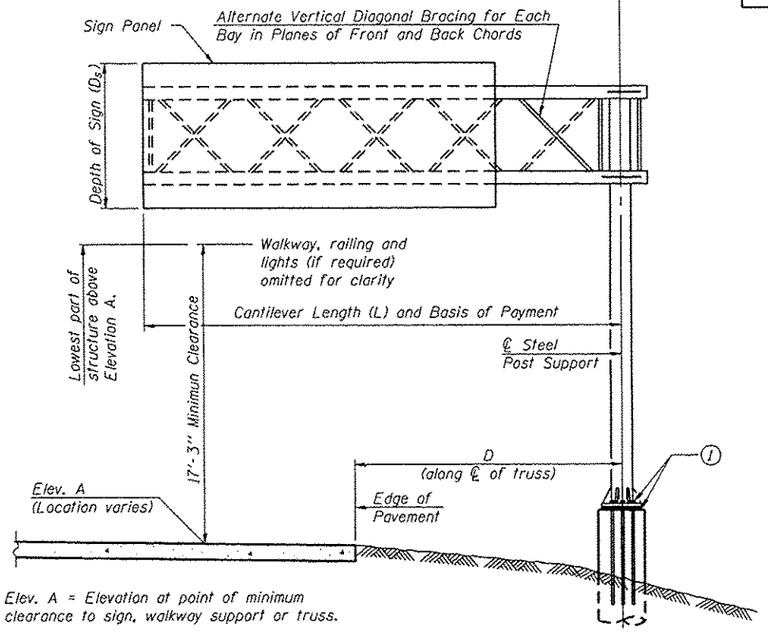
BM-4

6-1-12

FILE NAME = D468683-sht-BM sign str.dgn	USER NAME = wllewis	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE MOUNT SIGN STRUCTURES WALKWAY DETAILS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED -	REVISED -			6584	105: (72-7HB)BY	PEORIA	487	331
	PLOT SCALE =	DRAWN -	REVISED -		SHEET NO. 4 OF 4 SHEETS	6585		CONTRACT NO. 68683		
	PLOT DATE = 1/24/2014	CHECKED -	REVISED -				ILLINOIS FED. AID PROJECT			



TYPICAL PLAN
(Walkway not shown)



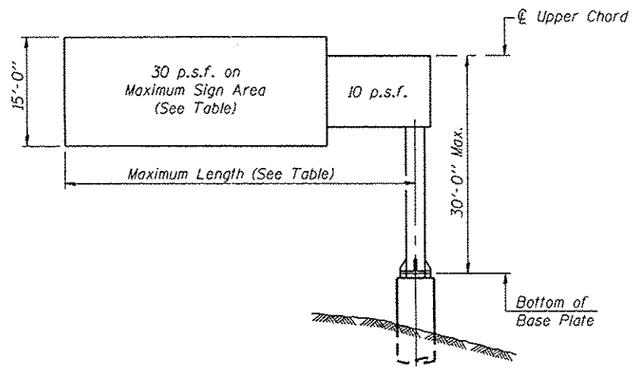
Elev. A = Elevation at point of minimum clearance to sign, walkway support or truss.

TYPICAL ELEVATION
Looking in Direction of Traffic

Sign support structures may be subject to damaging vibrations and oscillations when sign panels are not in place during erection or maintenance of the structure. To avoid these vibrations and oscillations, consideration should be given to attaching temporary blank sign panels to the structure.

Structure Number	Station	Design Truss Type	Cantilever Length (L)	Elev. A	Dim. D	D_s	Total Sign Area
4C072S5006L005.53	61+01.00	I-C-A	18'-0"	820.01	4'-5"	12'-0"	150

Truss Type	Maximum Sign Area	Maximum Length
I-C-A	170 Sq. Ft.	25 Ft.
II-C-A	340 Sq. Ft.	30 Ft.
III-C-A	400 Sq. Ft.	40 Ft.



DESIGN WIND LOADING DIAGRAM
Parameters shown are basis for I.D.O.T. Standards Installations not within dimensional limits shown require special analysis for all components.

Note:
Trusses shall be shipped individually with adequate provision to prevent detrimental motion during transport. This may require ropes between horizontals and diagonals or energy dissipating (elastic) ties to the vehicle. The contractor is responsible for maintaining the configuration and protection of the trusses.

(1) After adjustments to level truss and insure adequate vertical clearance, all top and leveling nuts shall be tightened against the base plate with a minimum torque of 200 lb.-ft. Stainless steel mesh shall then be placed around the perimeter of the base plate. Secure to base plate with stainless steel banding.

* If M270 Gr. 50W (M222) steel is proposed, chemistry for plate to be used shall first be approved by the Engineer as suitable for galvanizing and welding.

GENERAL NOTES

DESIGN: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications")

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. ("Standard Specifications")

LOADING: 90 M.P.H. WIND VELOCITY

WALKWAY LOADING: Dead load plus 500 lbs. concentrated live load.

DESIGN STRESSES:
Field Units
f'_c = 3,500 p.s.i.
fy = 60,000 p.s.i. (reinforcement)

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 and D1.2 Structural Welding Codes (Steel and Aluminum) and the Standard Specificiations.

MATERIALS: Aluminum Alloys as shown throughout plans. All Structural Steel Pipe shall be ASTM A53 Grade B or A500 Grade B or C. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53.
All Structural Steel Plates and Shapes shall conform to AASHTO M270 Gr. 36, Gr. 50 or Gr. 50W*. Stainless steel for shims, sleeves and handhole covers shall be ASTM A240, Type 302 or 304, or another alloy suitable for exterior exposure and acceptable to the Engineer.
The steel pipe and stiffening ribs at the base plate for the column shall have a minimum longitudinal Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F. (Zone 2) before galvanizing.

FASTENERS FOR ALUMINUM TRUSSES: All bolts noted as "high strength" must satisfy the requirements of AASHTO M164 (ASTM A325), or approved alternate, and must have matching lock nuts. Threaded studs for splices (if Members interfere) must satisfy the requirements of ASTM A449, ASTM A193, Grade B7, or approved alternate, and must have matching lock nuts. Bolts and lock nuts not required to be high strength must satisfy the requirements of ASTM A307. All bolts and lock nuts must be hot dip galvanized per AASHTO M232. The lock nuts must have nylon or steel inserts. A stainless steel flat washer conforming to ASTM A240 Type 302 or 304, is required under both head and nut or under both nuts where threaded studs are used. High strength bolt installation shall conform to Article 505.04 (f) (2)d of the IDOT Standard Specifications for Road and Bridge Construction. Rotational capacity ("ROCAP") testing of bolts will not be required.

U-BOLTS AND EYEBOLTS: U-Bolts and Eyebolts must be produced from ASTM A276 Type 304, 304L, 316 or 316L, Condition A, cold finished stainless steel, or an equivalent material acceptable to the Engineer. All nuts for U-Bolts and Eyebolts must be lock nuts equivalent to ASTM A307 with nylon or steel inserts and hot dip galvanized per AASHTO M232. A stainless steel flat washer conforming to ASTM A240, Type 302 or 304, is required under each U-Bolt and Eyebolt lock nut.

GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after fabrication in accordance with AASHTO M111. Painting is not permitted.

ANCHOR RODS: Shall conform to ASTM F1554 Gr. 105.

CONCRETE SURFACES: All concrete surfaces above an elevation 6" below the lowest final ground line at each foundation shall be cleaned and coated with Concrete Sealer in accordance with the Standard Specifications.

REINFORCEMENT BARS: Reinforcement Bars designated (E) shall be epoxy coated in accordance with the Standard Specifications.

FOUNDATIONS: The contract unit price for Drilled Shaft Concrete Foundations shall include reinforcement bars complete in place.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE I-C-A	Foot	18.0
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE II-C-A	Foot	
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE III-C-A	Foot	
OVERHEAD SIGN STRUCTURE WALKWAY, TYPE A	Foot	17.0
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds.	4.7

STATE OF ILLINOIS
ROBERT A. LEE
081-005746
CHICAGO, IL
LICENSED STRUCTURAL ENGINEER

Robert A. Lee

Date Signed: 1/24/2014
Exp. Date: 11/30/2014

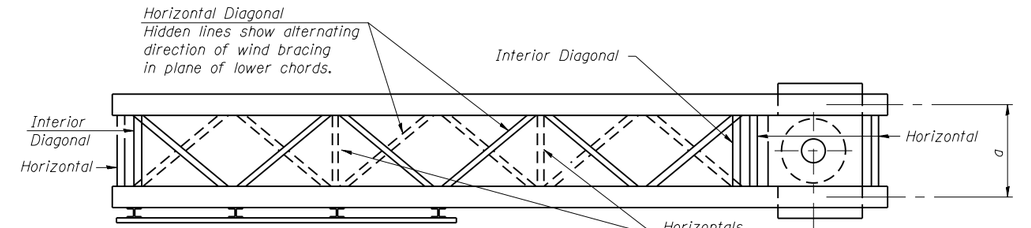
OSC-A-1 8-21-13

FILE NAME = D468683-OSC-A-1.dgn	USER NAME = RALEE	DESIGNED - RAL	REVISED
FUHRMANN ENGINEERING INC. CIVIL ENGINEERS/LAND SURVEYORS		CHECKED - JAF	REVISED
	PLOT SCALE =	DRAWN - RAL	REVISED
	PLOT DATE = 01/24/2014	CHECKED - JAF	REVISED

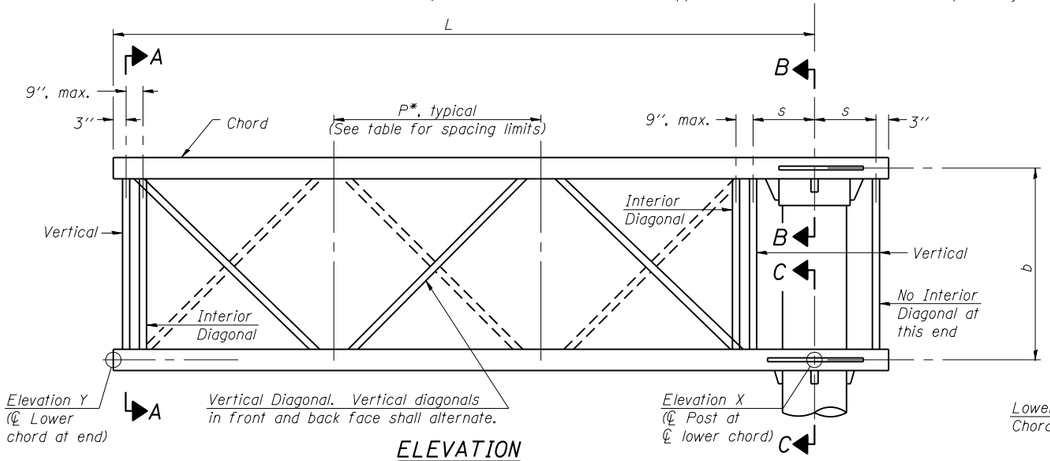
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURES – GENERAL PLAN & ELEVATION
ALUMINUM TRUSS & STEEL POST
SHEET NO. 1 OF 9 SHEETS

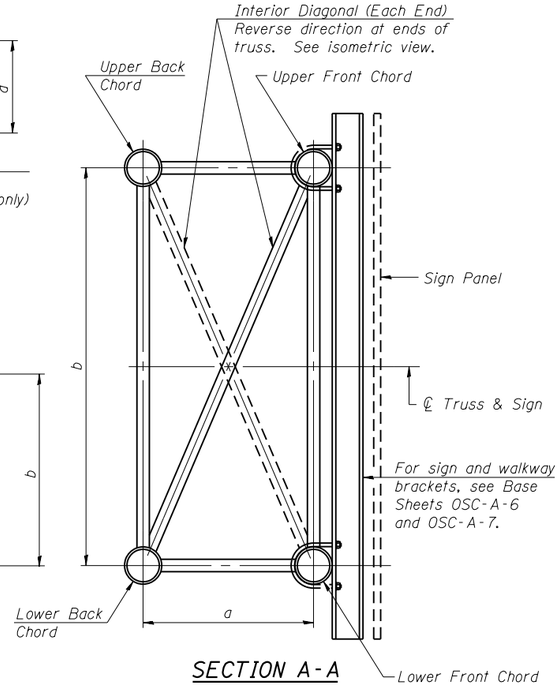
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	332
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



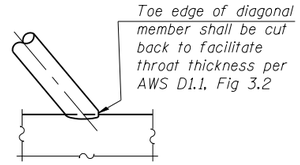
PLAN
(Walkway not shown)



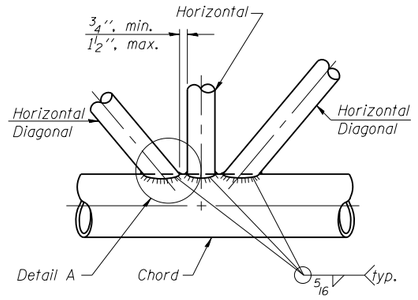
ELEVATION
(Sign and walkway omitted for clarity)



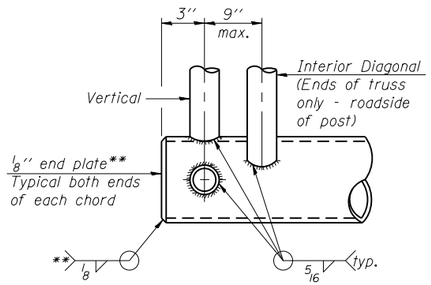
SECTION A-A



DETAIL A

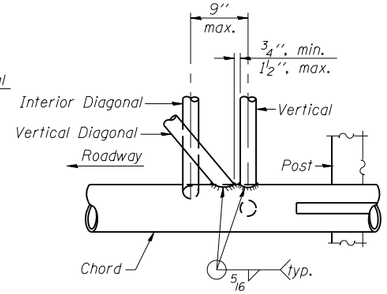


TRUSS INTERIOR JOIN DETAIL



CANTILEVER END JOINT DETAIL

** Contractor may alternatively use standard aluminum drive-fit cap to close ends. 1/2" ϕ Drain hole in end plate / drive-fit cap.



POST END JOINT DETAIL

TYPICAL TRUSS UNIT
For Section B-B and Section C-C, see Base Sheet OSC-A-3.

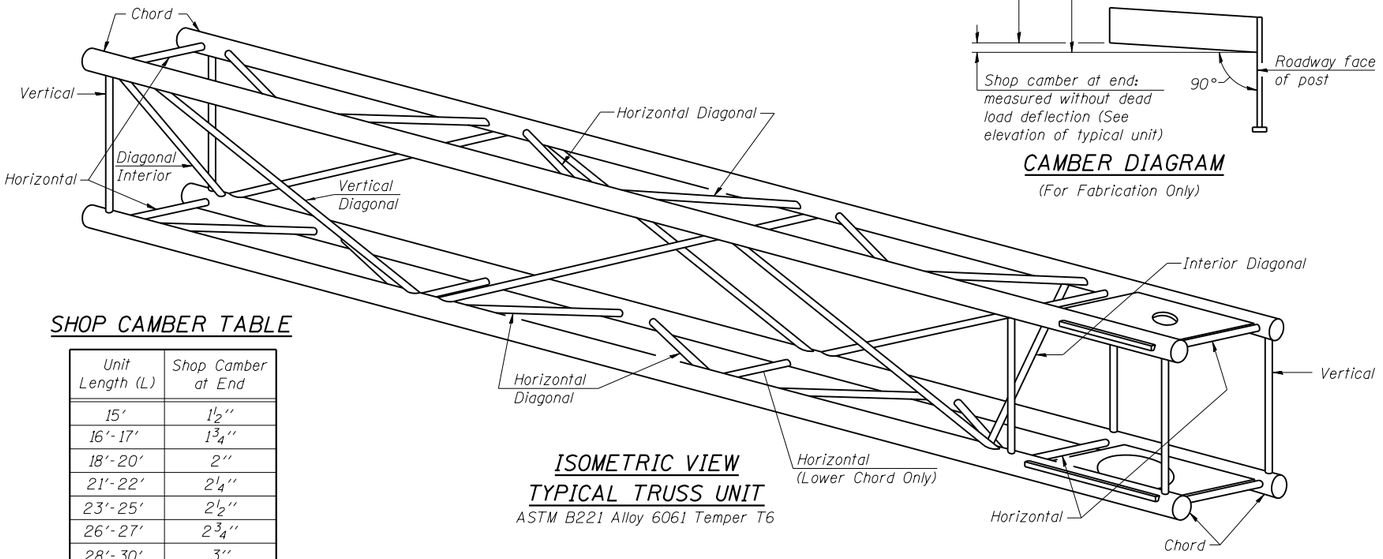
Note:
There are twice as many horizontal diagonals as there are vertical diagonals.

TRUSS UNIT TABLE

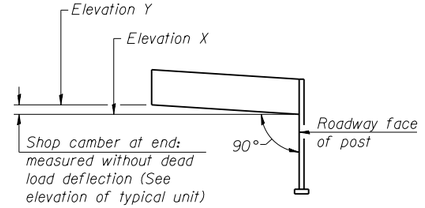
Truss Type	Dimension "a"	Dimension "b"	Dimension "s"	Limits for Panel Spacing (P)*	Up. & Low. Chord		Verticals; Horizontals; Vertical, Horizontal, and Interior Diagonals	
					O.D.	Wall	O.D.	Wall
I-C-A	24"	54"	16"	36" min. to 48" max.	5"	5/16"	2 1/2"	5/16"
II-C-A	36"	66"	21"	42" min. to 54" max.	6 1/2"	5/16"	3 1/4"	5/16"
III-C-A (35' Max.)	36"	84"	21"	48" min. to 66" max.	7"	3/8"	3 1/2"	3/8"
III-C-A (>35' to 40')	36"	84"	21"	48" min. to 66" max.	8"	3/8"	3 1/2"	3/8"

$$*P = \frac{L - s - 3''}{\#\ Panels}$$

Structure Number	Station	Truss Type	Design Length (L)	Number of Panels Per Unit	Panel Length (P)*
4C072S5006L005.53	61+01.00	I-C-A	18'-0"	5	39"



ISOMETRIC VIEW
TYPICAL TRUSS UNIT
ASTM B221 Alloy 6061 Temper T6

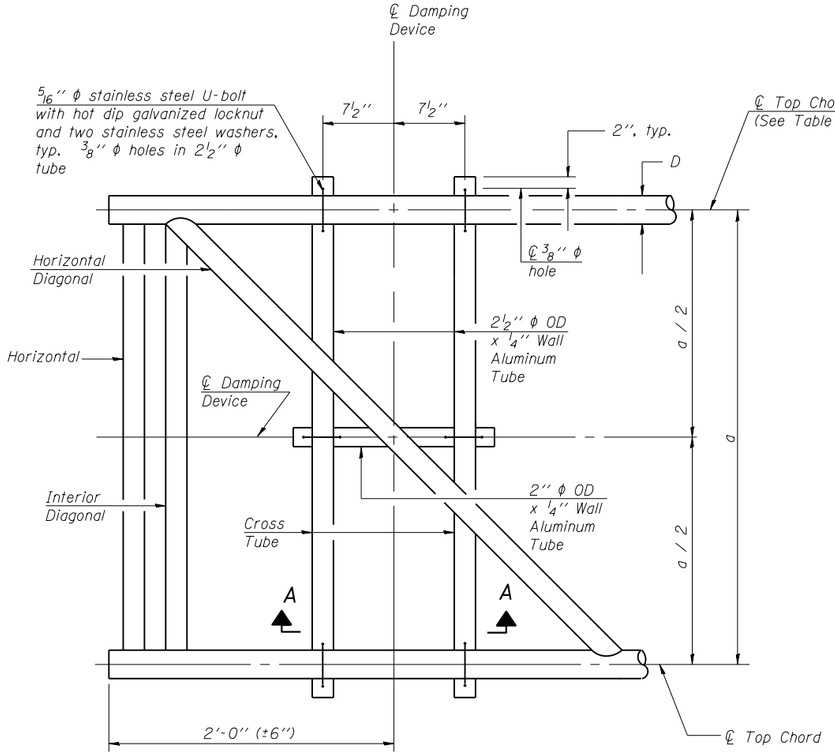


CAMBER DIAGRAM
(For Fabrication Only)

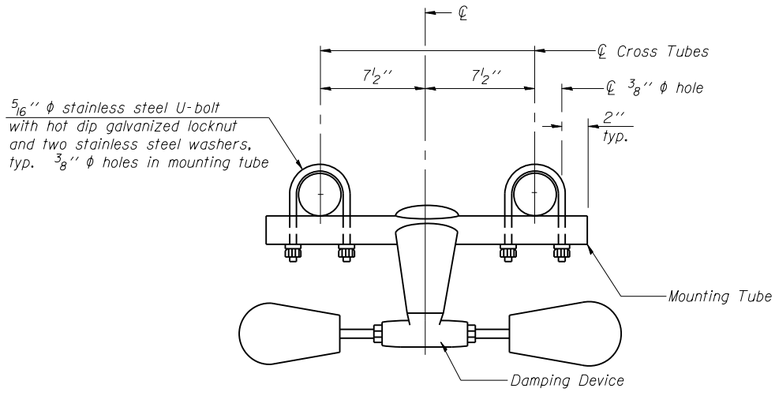
SHOP CAMBER TABLE

Unit Length (L)	Shop Camber at End
15'	1 1/2"
16'-17'	1 3/4"
18'-20'	2"
21'-22'	2 1/4"
23'-25'	2 1/2"
26'-27'	2 3/4"
28'-30'	3"
31'-32'	3 1/4"
33'-35'	3 1/2"
36'-37'	4"
38'-40'	4 1/2"

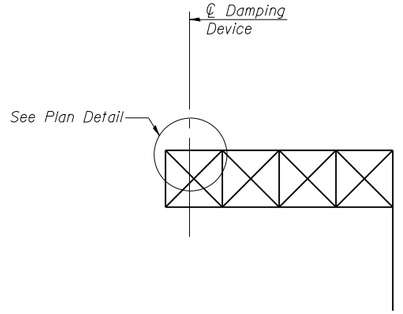
OSC-A-2 6-1-12



PLAN DETAIL



TRUSS DAMPING DEVICE CONNECTION DETAIL



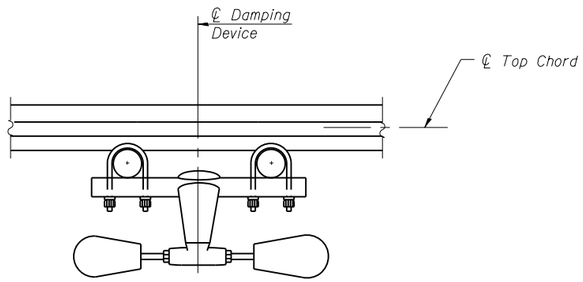
ELEVATION

Aluminum Cantilever Sign Structure

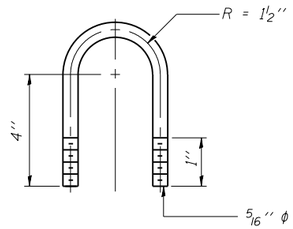
GENERAL NOTES

Damper: One damper per truss. (31 lbs. Stockbridge-Type Aluminum- 29'' minimum between ends of weights)

Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6

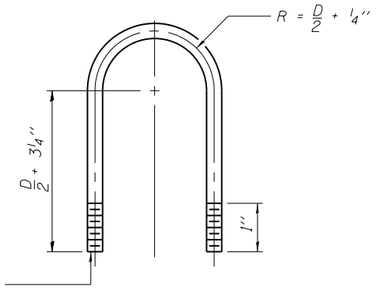


SECTION A-A



DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL

(Typical)



TOP CHORD TO CROSS TUBE U-BOLT DETAIL

(Typical)

OSC-A-D 6-1-12

FILE NAME = D468683-OSC-A-D.dgn	USER NAME = RALEE	DESIGNED - RAL	REVISED
		CHECKED - JAF	REVISED
	PLOT SCALE =	DRAWN - RAL	REVISED
	PLOT DATE = 01/24/2014	CHECKED - JAF	REVISED

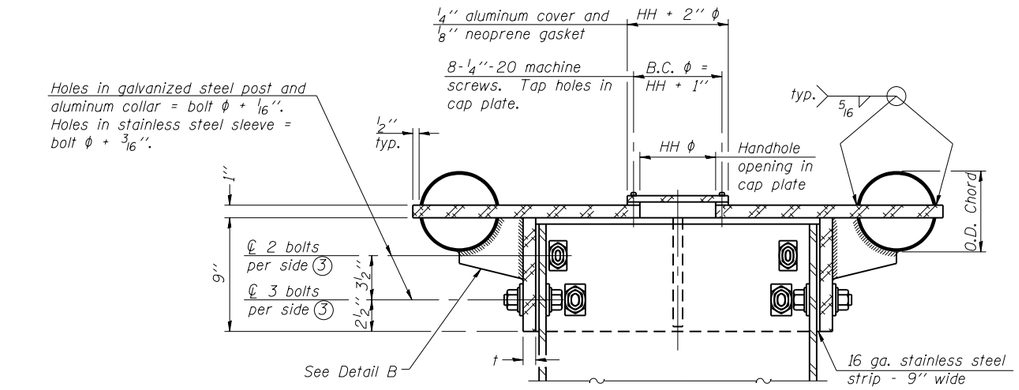
FUHRMANN ENGINEERING INC. CIVIL ENGINEERS/LAND SURVEYORS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURE
DAMPING DEVICE

SHEET NO. 3 OF 9 SHEETS

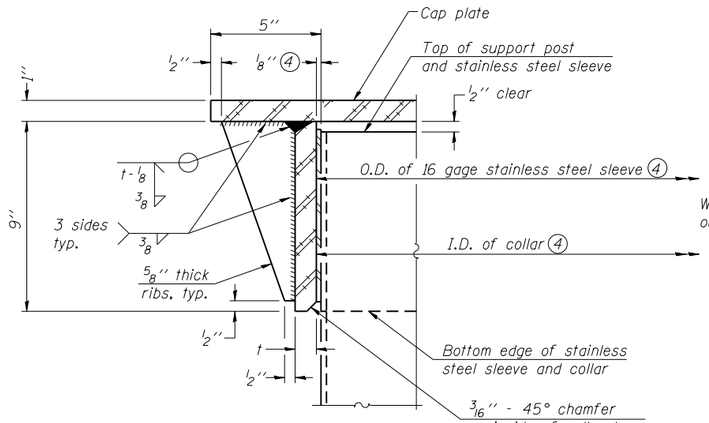
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	334
6585		CONTRACT NO. 68683		
		ILLINOIS FED. AID PROJECT		



SECTION B-B

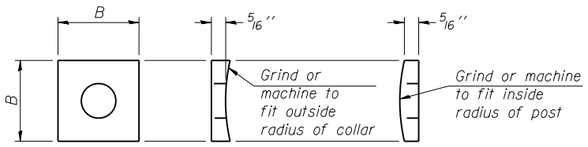
Bolts, washers (including contoured washers), and locknuts shall be stainless steel.

④ Collar I.D. shall be manufactured to correspond to O.D. of actual galvanized post and stainless steel sleeve plus 1/8'' (±1/16''). Maximum gap between post and collar at any location equals 1/8'' before tightening bolts.



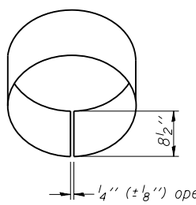
DETAIL A

(Two locations)



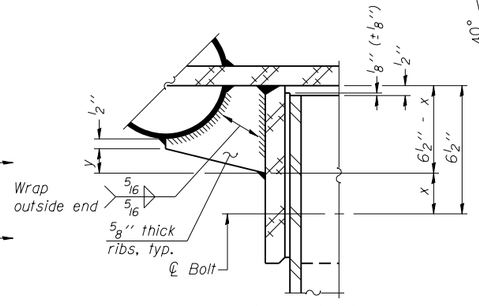
CONTOURED WASHERS

Bolt Size	Contoured Washers	
	Hole Dia.	B
7/8''	1''	2 1/2''
1''	1 1/8''	3''
1 1/4''	1 3/8''	3 1/4''



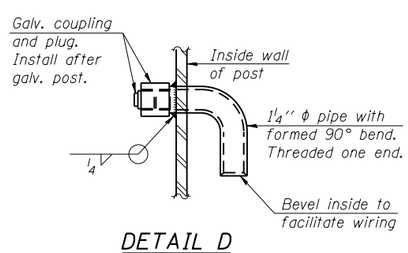
DETAIL OF STAINLESS STEEL SLEEVE

Weld to post after galvanizing. (Prepare post surface to insure tight, uniform fit and allow welding.) Welds to be 1 1/2'' long at 6'' cts. along top edge and at 1/4'' opening.

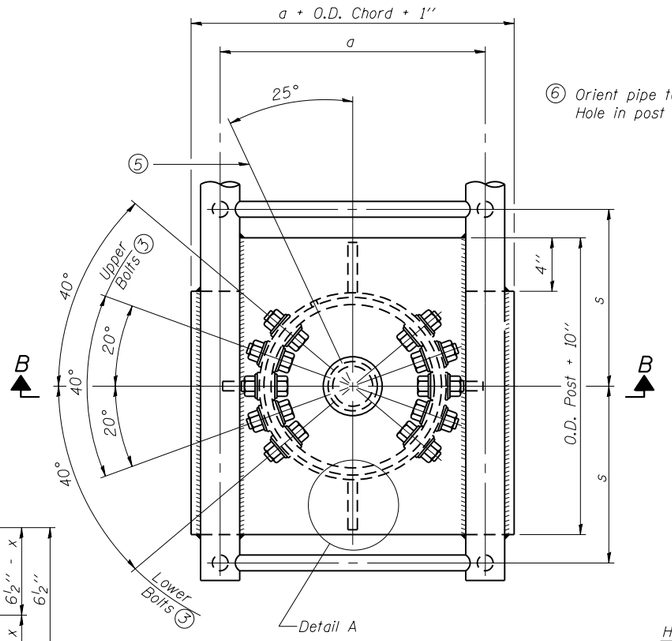


DETAIL B

Two locations
(For details not shown, see Detail C)



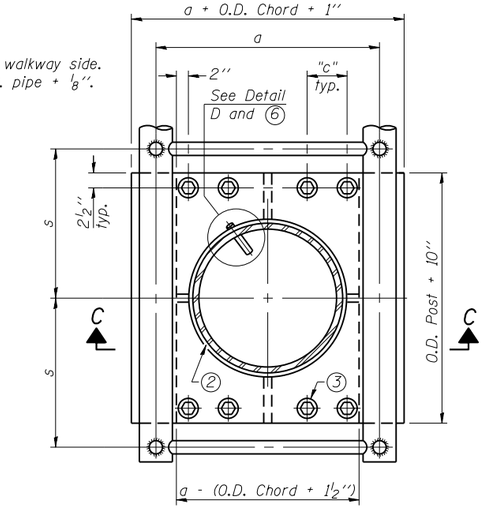
DETAIL D



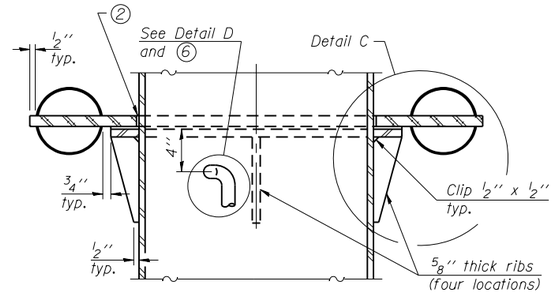
PLAN VIEW - TOP OF COLUMN

⑤ Optional full penetration weld in collar. (Two locations maximum....(180° apart)....X-ray or UT 100%)

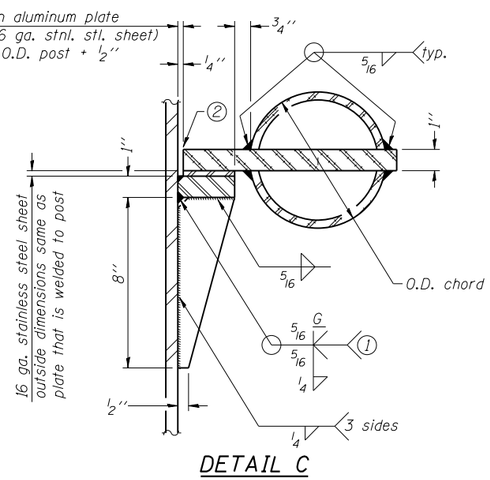
⑥ Orient pipe toward walkway side. Hole in post = O.D. pipe + 1/8''.



SECTION THRU POST ABOVE LOWER CHORDS



SECTION C-C



DETAIL C

Truss Type	Post Size	Upper & Lower Connection Bolt Diameter (3)	Lower Juncture Bolt Spacing Dimension "c" (3)	Opening in Cap Plate "HH"	Collar Thickness (t)	Side Ribs	
						x	y
I-C-A	16'' ϕ (83#/')	7/8''	3 1/4''	8''	5/8''	1 3/4''	2 1/4''
II-C-A	24'' ϕ (125#/')	1''	3 1/2''	12''	7/8''	2''	1 1/4''
III-C-A (35' max.)	24'' ϕ (125#/')	1 1/4''	3 1/2''	12''	7/8''	2''	1''
III-C-A (>35' to 40')	24'' ϕ (171#/')	1 1/4''	3 1/2''	12''	7/8''	2''	1''

① Grind top if required to fully seat aluminum plate and stainless steel sheet.

② After tightening lower connection bolts, fill gap with non-hardening, silicone caulk suitable for exterior exposure and acceptable to the Engineer. Cost is included in Overhead Sign Structure Cantilever.

③ Upper and lower connection bolts in collar and bolts at lower chord connection shall be high strength with matching locknuts. Connection bolts shall have 2 stainless steel flat washers each.

OSC-A-3 6-1-12

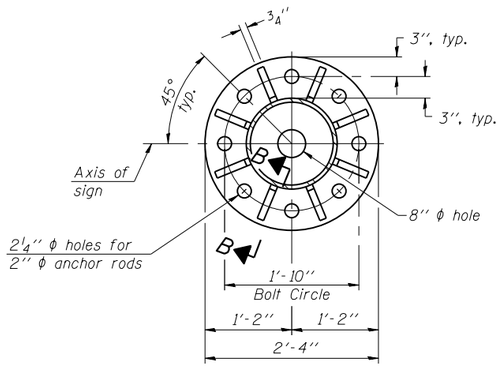
FILE NAME = D468683-OSC-A-3.dgn	USER NAME = RALEE	DESIGNED - RAL	REVISED
		CHECKED - JAF	REVISED
	PLOT SCALE =	DRAWN - RAL	REVISED
	PLOT DATE = 01/24/2014	CHECKED - JAF	REVISED

FUHRMANN ENGINEERING INC. CIVIL ENGINEERS / LAND SURVEYORS

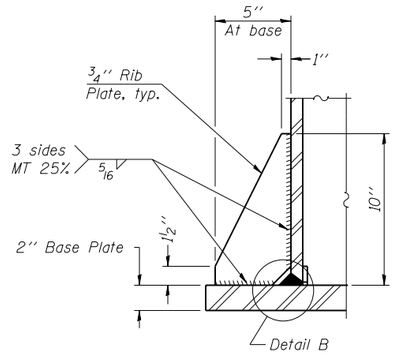
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURES – JUNCTURE DETAILS
ALUMINUM TRUSS & STEEL POST
SHEET NO. 4 OF 9 SHEETS

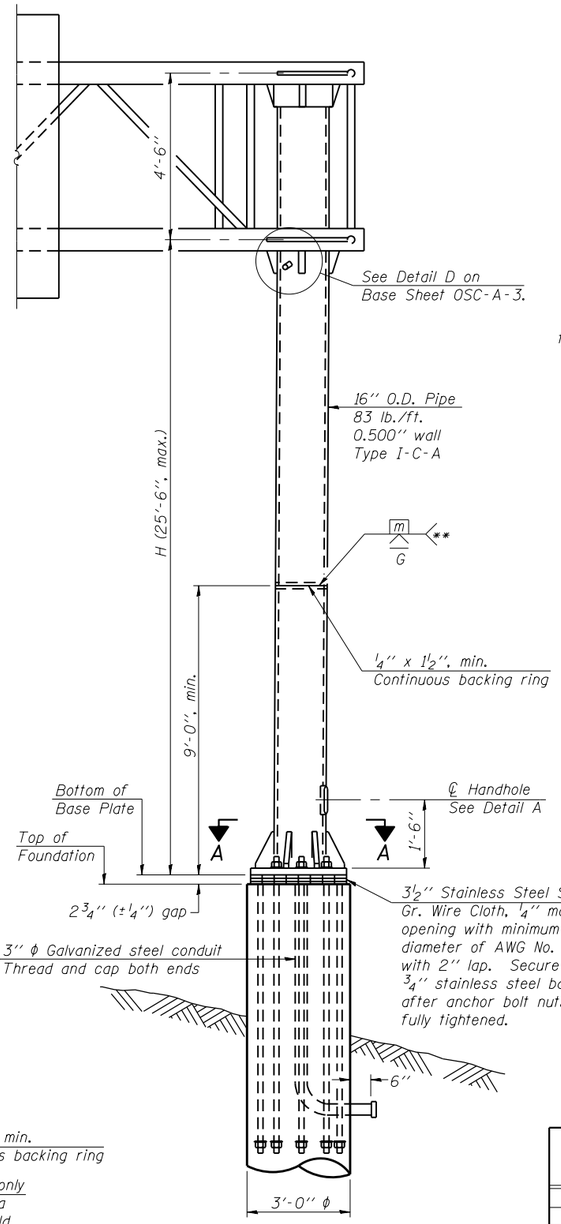
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	335
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



SECTION A-A

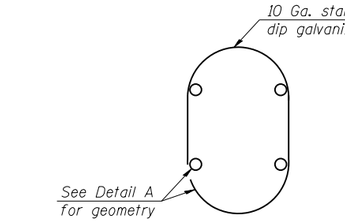


SECTION B-B

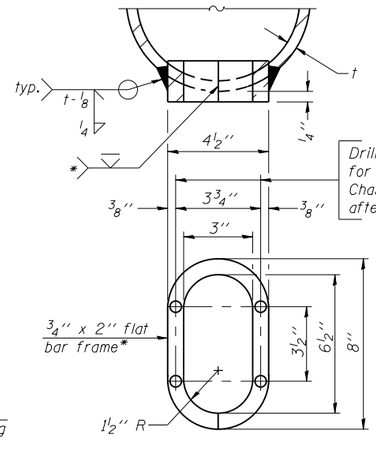


FRONT ELEVATION

For Foundation Details see Base Sheet OSC-A-9.



HANDHOLE COVER

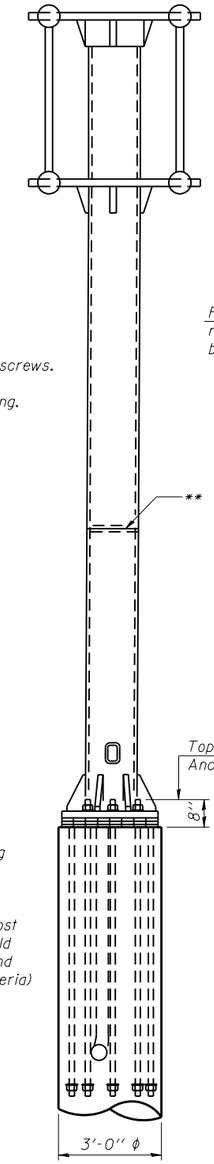


Provide 8'' x 4 1/2'' cover. Outside corners = 2 1/4'' radius. Provide 4- 5/16'' ϕ holes in cover for 1/4'' - 20 round head hot dip galvanized or stainless steel machine screws. (See cover details.)

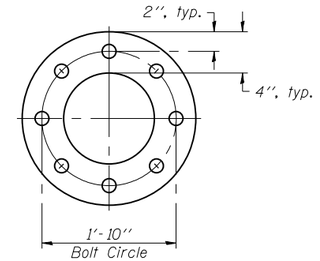
DETAIL A

* Bent bars may be butt welded top and bottom or bottom only. In lieu of fabricated handhole frame as shown, may cut from 2'' plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500 μin or less.

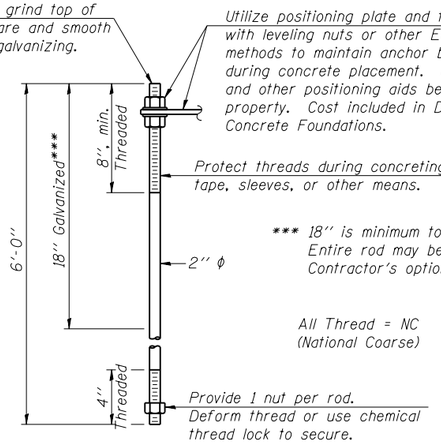
** Butt welded joint in post is only allowed for post heights (H) over 20 ft. in length. If used, weld procedure must be preapproved by Engineer and joint shall receive 100% RT or UT (tension criteria) at Contractor's expense.



SIDE ELEVATION

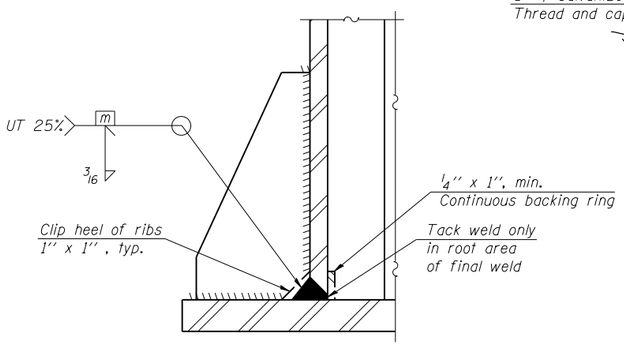


SUGGESTED POSITIONING PLATE



ANCHOR ROD DETAIL

Anchor rods shall conform to ASTM F1554 Grade 105. Galvanize the upper 18'' (minimum***) and associated AASHTO M291, Grade A, C or DH heavy hex nuts and hardened washers per AASHTO M232. No welding shall be permitted on rods. Provide a nut at bottom, a hexagon locknut and washer above base plate and a leveling nut and washer below base plate. Nuts shall each be tightened with 200 lb.-ft. minimum torque against base plate. Before or after threading, but before galvanizing, each anchor rod shall be ultrasonically tested (UT) by a Level II or III inspector, qualified in accord with ANSI guidelines, to insure no rejectable flaws exist in the upper 18'' (tension criteria). Cost of testing included in Drilled Shaft Concrete Foundations.



DETAIL B

(Typical rib)

Structure Number	Station	H
4C072S5006L005.53	61+01.00	21'-0"

Note: "H" based on 15'-0'' or actual sign height, whichever is greater.

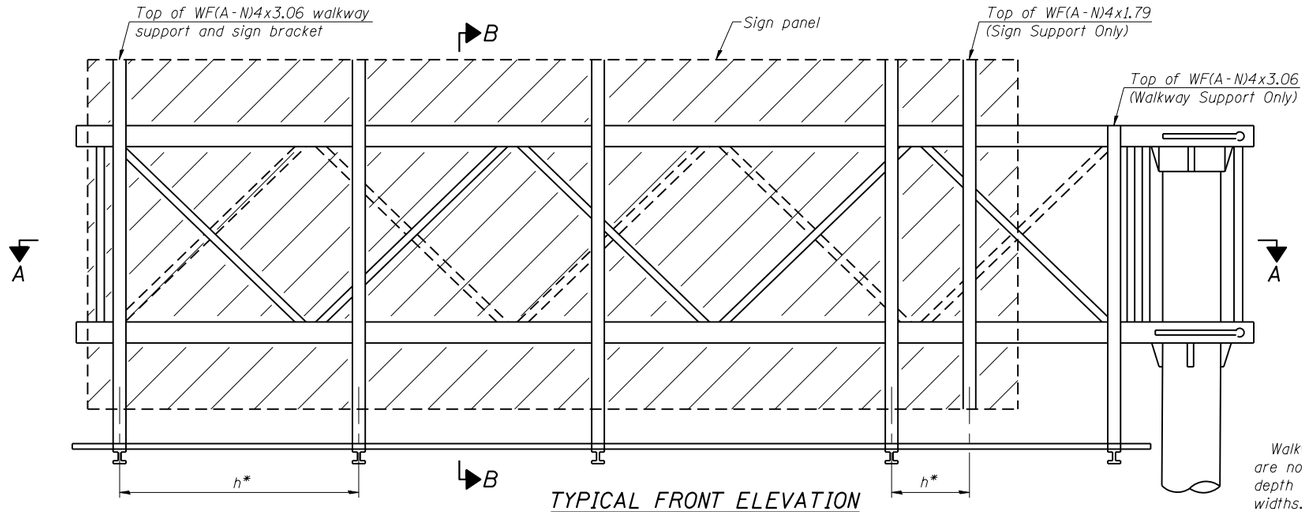
OSC-A-4 6-1-12

FILE NAME = D468683-OSC-A-4.dgn	USER NAME = RALEE	DESIGNED - RAL	REVISED
FUHRMANN ENGINEERING INC. CIVIL ENGINEERS/LAND SURVEYORS		CHECKED - JAF	REVISED
	PLOT SCALE =	DRAWN - RAL	REVISED
	PLOT DATE = 01/24/2014	CHECKED - JAF	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURES – TYPE I-C-A TRUSS
SUPPORT POST – ALUMINUM TRUSS & STEEL POST
SHEET NO. 5 OF 9 SHEETS

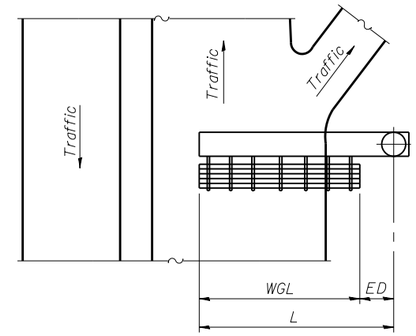
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	336
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



TYPICAL FRONT ELEVATION

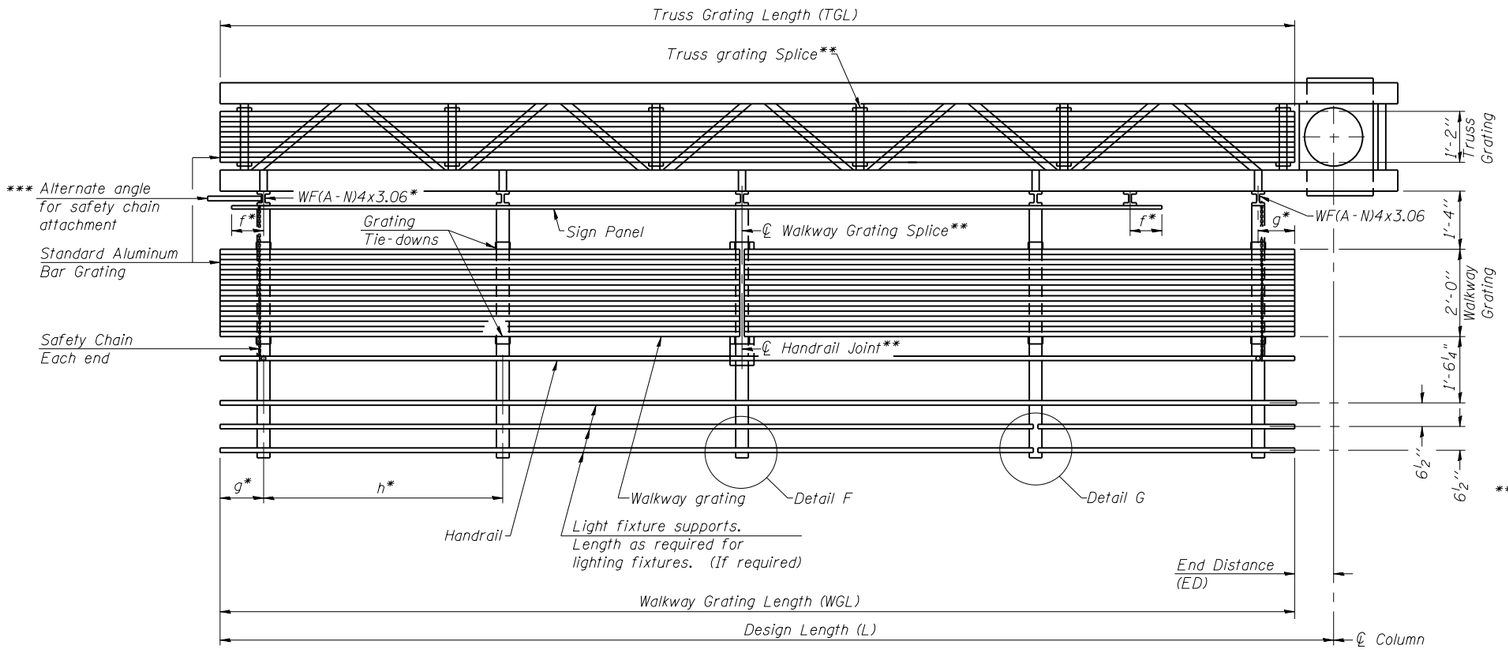
With lights and handrail omitted for clarity.

Walkway and truss grating dimensions are nominal and may vary (width ±½", depth ±½") based on available standard widths.



PLAN
WALKWAY AND HANDRAIL SKETCH

(Road plan beneath truss varies)



SECTION A-A

Truss grating to facilitate inspection shall run full length of cantilevers. Cost of truss grating is included in Overhead Sign Structure Cantilever.

Handrail and walkway grating shall span a minimum of three brackets between splices.

** Use and location of handrail joints or grating splices are optional, based on lengths needed and material availability.

$$TGL = L - \left(\frac{\text{Post O.D.}}{2} + 6''\right)$$

Structure Number	Station	WGL	ED	TGL
4C072S5006L005.53	61+01.00	16'-10"	1'-2"	16'-10"

Notes:

* Space walkway brackets WF(A-N)4x3.06 and sign brackets WF(A-N)4x1.79 for efficiency and within limits shown:

f = 12" maximum, 4" minimum (End of sign to ℄ of nearest bracket)
g = 12" maximum, 4" minimum (End of walkway to ℄ of nearest bracket)
h = 6'-0" maximum (℄ to ℄ sign and/or walkway support brackets, WF(A-N)4x1.79 or WF(A-N)4x3.06)

*** If walkway bracket at safety chain location is behind sign, add angle to bracket. See alternate safety chain attachment on base sheet OSC-A-8

For details of sign placement, sign/walkway brackets, truss and walkway gratings, grating splices and Section B-B, see Base Sheet OSC-A-7.

For details of handrail, handrail joint, safety chain and Details F and G, see Base Sheet OSC-A-8.

BRACKET TABLE

WF(A-N)4x1.79 or WF(A-N)4x3.06
ASTM B308, Alloy 6061-T6

Sign Width		Number Brackets Required
Greater Than	Less Than or Equal To	
	8'-0"	2
8'-0"	14'-0"	3
14'-0"	20'-0"	4
20'-0"	26'-0"	5
26'-0"	32'-0"	6

OSC-A-6 6-1-12

FILE NAME = D468683-OSC-A-6.dgn
USER NAME = RALEE
PLOT SCALE =
PLOT DATE = 01/24/2014

DESIGNED - RAL	REVISED	
CHECKED - JAF	REVISED	
DRAWN - RAL	REVISED	
CHECKED - JAF	REVISED	

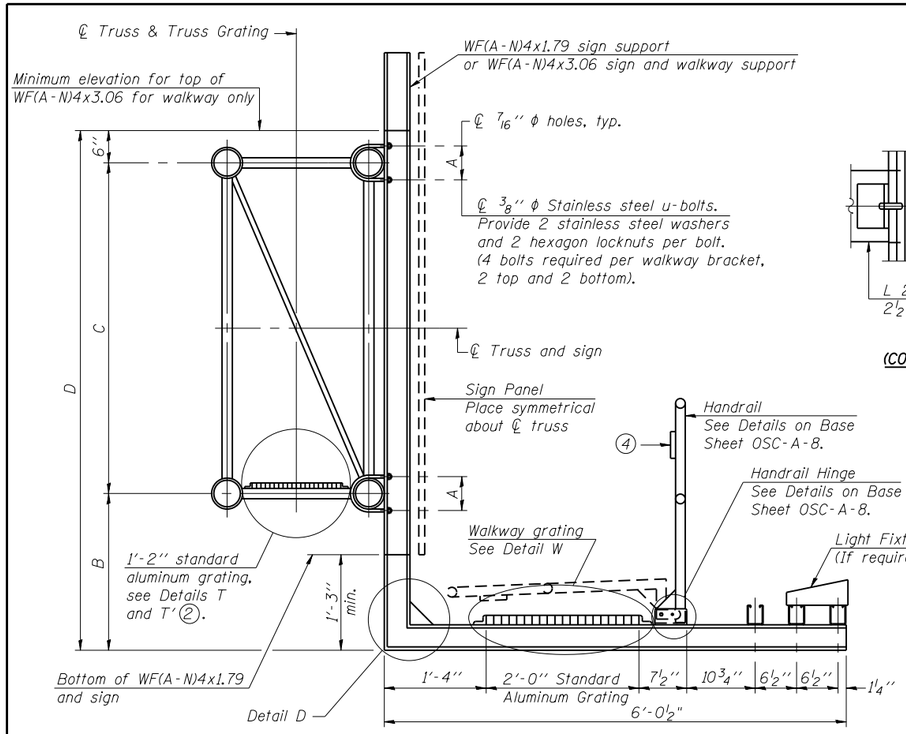
FUHRMANN ENGINEERING INC. CIVIL ENGINEERS/LAND SURVEYORS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURES – ALUMINUM WALKWAY
DETAILS – ALUMINUM TRUSS & STEEL POST

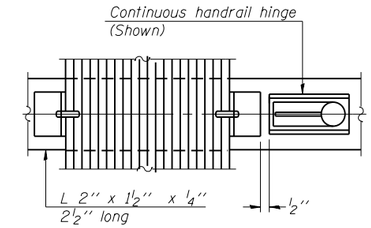
SHEET NO. 6 OF 9 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	337
6585		CONTRACT NO. 68683		
		ILLINOIS FED. AID PROJECT		

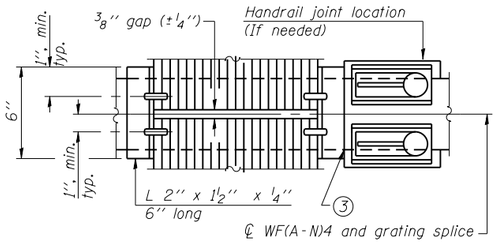


SECTION B-B

Sign shall be even with the top of the bracket, but it may extend no more than 6" above the top of the bracket for field adjustments.

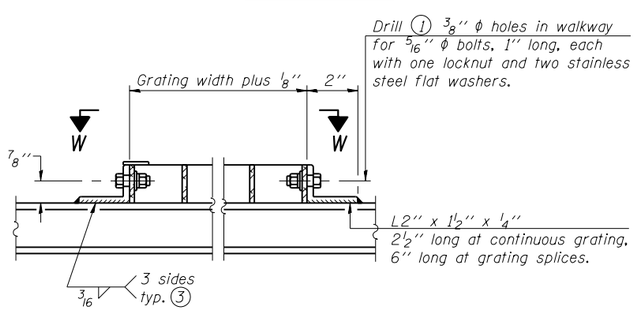


(CONTINUOUS WALKWAY GRATING)



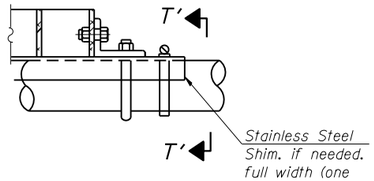
(AT WALKWAY GRATING SPLICE)

SECTION W-W



DETAIL W

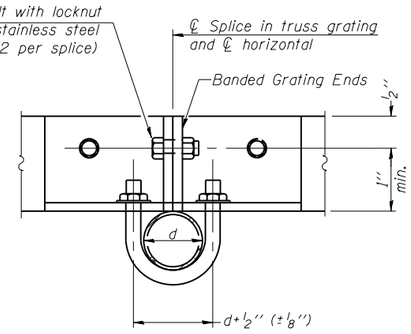
(Walkway grating)



DETAIL T'

(Truss grating splice)

Details not shown same as Detail T. Alternate materials may be used subject to the Engineer's review and approval.



SECTION T'-T'

SPECIFICATIONS FOR STANDARD ALUMINUM GRATING

Main Bearing Bars (MBB) shall be 3/16" x 1 1/2" on 1 3/16" centers and conform to ASTM B211 Alloy 6061-T6.

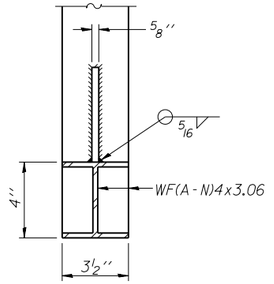
Cross bars (CB) shall be 3/16" x 1 1/2" on 4" centers and conform to ASTM B221 Alloy 6063-T5 or 6061-T6.

OR

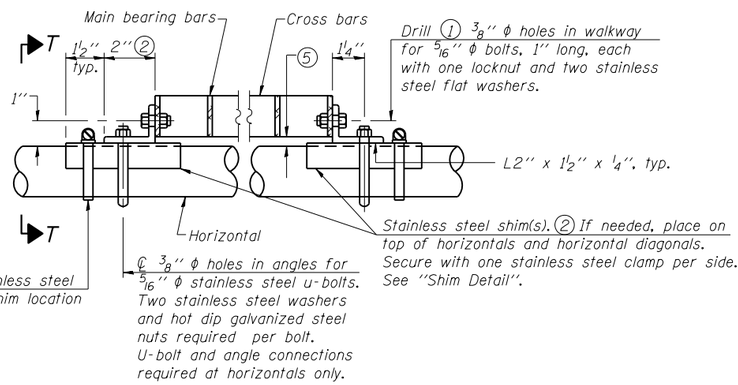
Aluminum Grating with modified "T" sections for main bearing bars shall meet the following requirements:

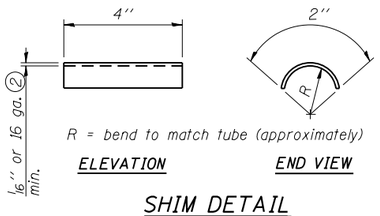
Main bars shall conform to ASTM B221 Alloy 6061-T6 and have a minimum section modulus equal to 0.0705 in.³ per bar, a depth of 1 1/2", spaced on 1 3/16" centers.

Cross bars shall conform to ASTM B221 Alloy 6063-T5 or T-42 and spaced on 4" centers.

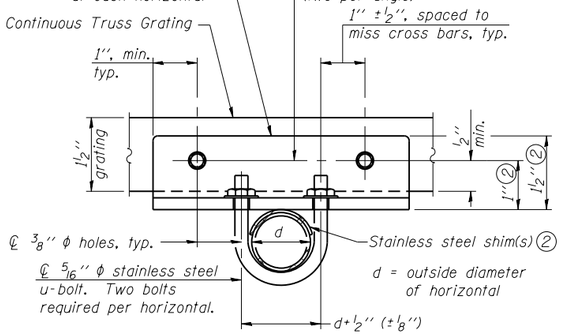


SECTION D-D

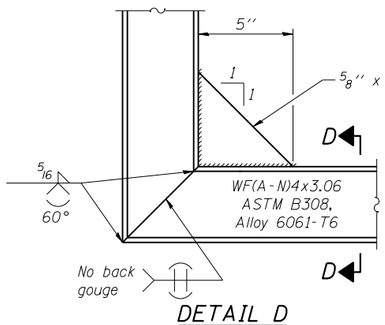




SHIM DETAIL



SECTION T-T



DETAIL D

DETAIL T

(Continuous Truss grating)

Structure Number	Station	A	(6) B	C	(6) D
4C072S5006L005.53	61+01.00	5 3/8"	5'-0"	54"	10'-0"

(1) Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.

(2) Stainless steel shims shall be placed as shown in Detail T if needed to compensate for alignment variations between horizontal and diagonal pipes beyond adjustment provided by angles. Thicker shims may be used subject to shims performing properly.

(3) If Handrail Joint present, weld angle to WF(A-N)4 and 1/4" extension bars. (See Base Sheet OSC-A-8.)

(4) ℄ 1/8" x 1/2" x 2" welded to handrail posts to protect locations that contact grating.

(5) Tube to grating gap may vary from 0 to 1/2", max. to align walkway, allow for camber, etc.

(6) Based on actual sign height, D_S, given on OSC-A-1.

OSC-A-7 6-1-12

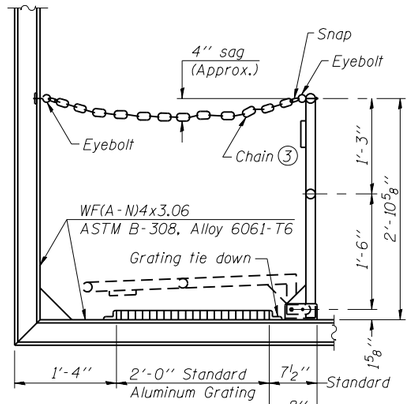
FILE NAME = D468683-OSC-A-7.dgn	USER NAME = RALEE	DESIGNED - RAL	REVISED
		CHECKED - JAF	REVISED
	PLOT SCALE =	DRAWN - RAL	REVISED
	PLOT DATE = 01/24/2014	CHECKED - JAF	REVISED

FUHRMANN ENGINEERING INC. CIVIL ENGINEERS/LAND SURVEYORS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

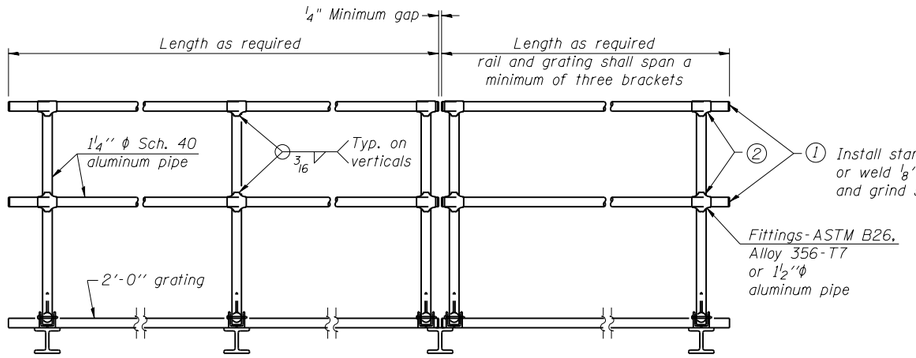
CANTILEVER SIGN STRUCTURES – WALKWAY DETAILS
ALUMINUM TRUSS & STEEL POST
SHEET NO. 7 OF 9 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	338
6585		CONTRACT NO. 68683		
		ILLINOIS FED. AID PROJECT		

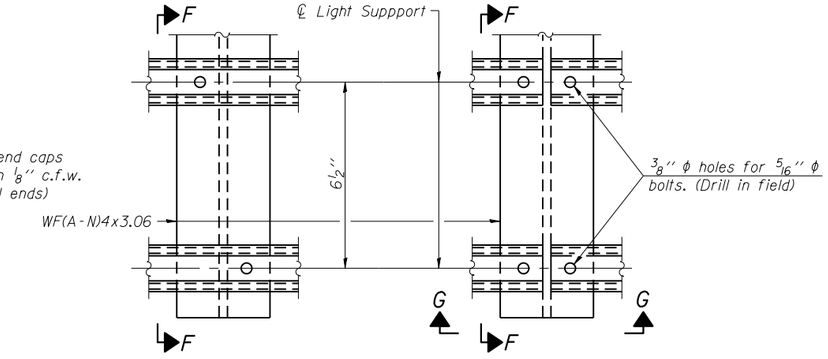


SIDE ELEVATION

(Showing Safety Chain W/O Sign)



FRONT ELEVATION



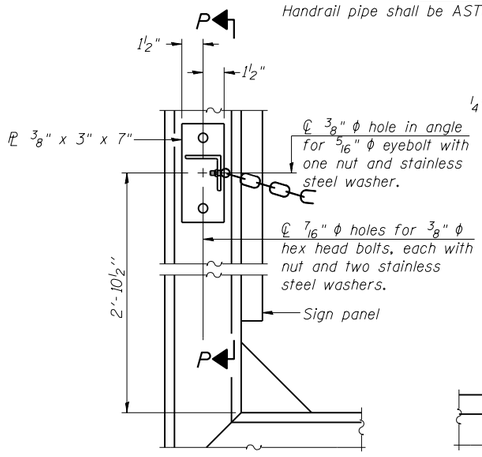
DETAIL F

DETAIL G

HANDRAIL DETAILS

Handrail pipe shall be ASTM B241 or B429, Alloy 6063-T6 or Alloy 6061-T6.

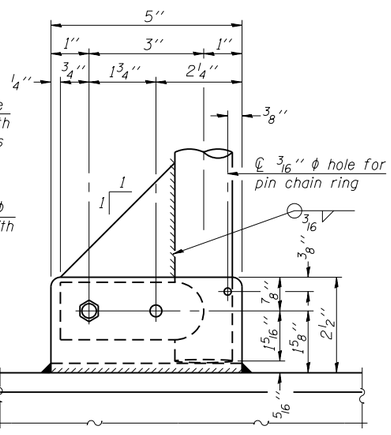
(2) Horizontal handrail member shall be continuous thru fitting. Provide 7/16'' ϕ hole in fitting for 3/8'' ϕ bolt. Field drill 7/16'' ϕ hole in horizontal rail member. Provide locknut and two stainless steel washers for bolt. (Use 5/16'' eyebolts in 7/16'' ϕ holes on top rail at ends only.)



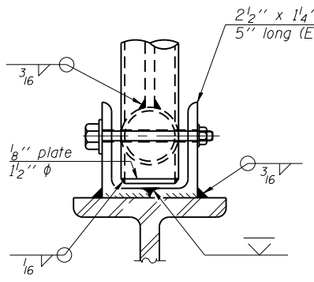
ALTERNATE SAFETY CHAIN ATTACHMENT

(With Sign Present)

Items not shown same as "Side Elevation" of "Handrail Details"

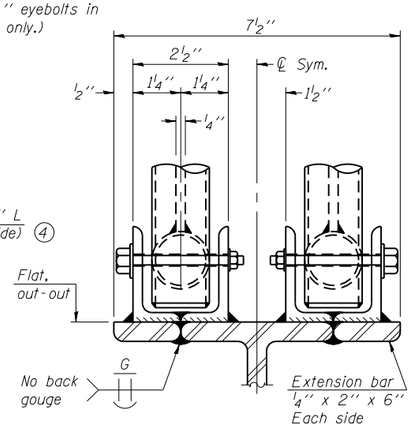


SIDE ELEVATION



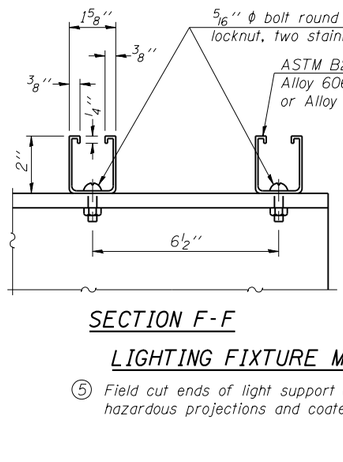
FRONT ELEVATION

Details not shown same as "ELEVATION" at right.

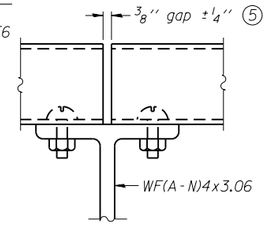


ELEVATION AT HANDRAIL JOINT (4)

Details not shown same as "FRONT ELEVATION"



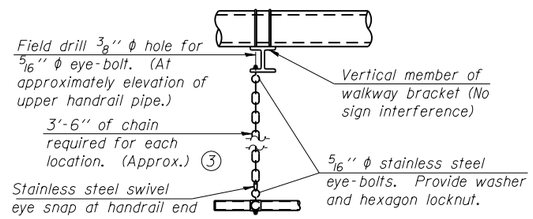
SECTION F-F



SECTION G-G

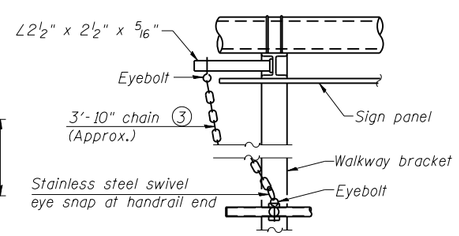
LIGHTING FIXTURE MOUNTS (IF REQUIRED)

(5) Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.



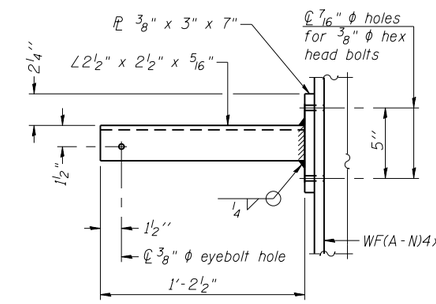
SAFETY CHAIN

One required for each end of each walkway.

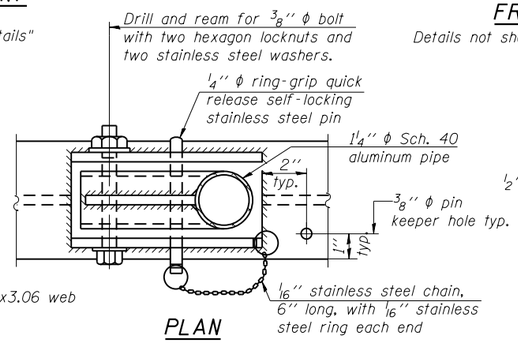


ALTERNATE SAFETY CHAIN ATTACHMENT

Details not shown similar to "Safety Chain" Details
(Walkway omitted for clarity)

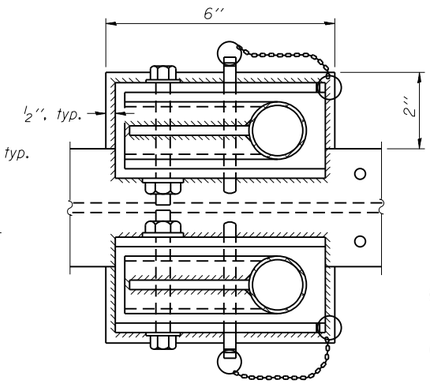


SECTION P-P



PLAN

DETAIL E HANDRAIL HINGE



PLAN AT HANDRAIL JOINT

Details not shown same as "PLAN"

(3) 3/16'' Type 304L stainless steel chain, approximately 12 links per foot.

(4) Extrusions may be used in lieu of the details shown, with approval of the Engineer.

OSC-A-8 6-1-12

FILE NAME = D468683-OSC-A-8.dgn	USER NAME = RALEE	DESIGNED - RAL	REVISED
		CHECKED - JAF	REVISED
	PLOT SCALE =	DRAWN - RAL	REVISED
	PLOT DATE = 01/24/2014	CHECKED - JAF	REVISED

FUHRMANN ENGINEERING INC. CIVIL ENGINEERS/LAND SURVEYORS

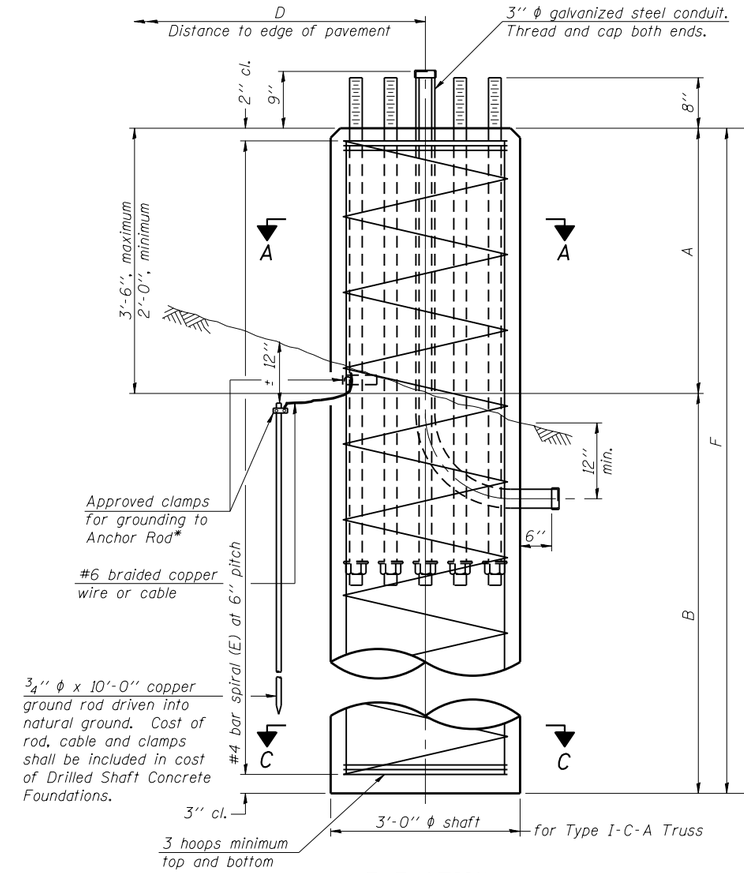
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CANTILEVER SIGN STRUCTURES – HANDRAIL DETAILS
ALUMINUM TRUSS & STEEL POST

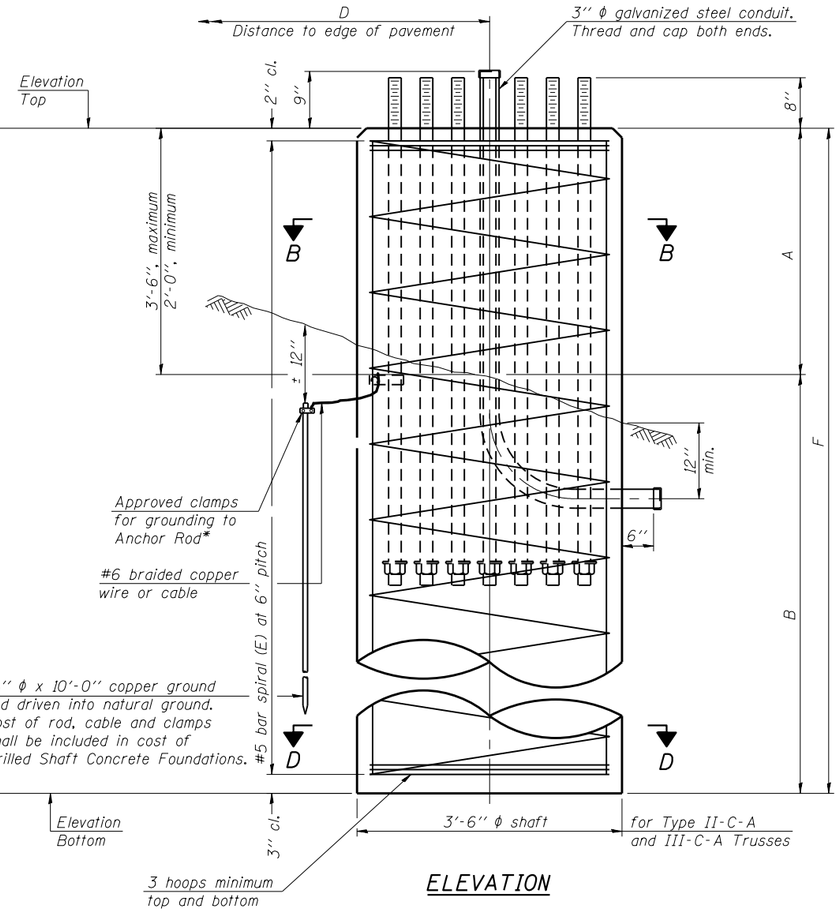
SHEET NO. 8 OF 9 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	339
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

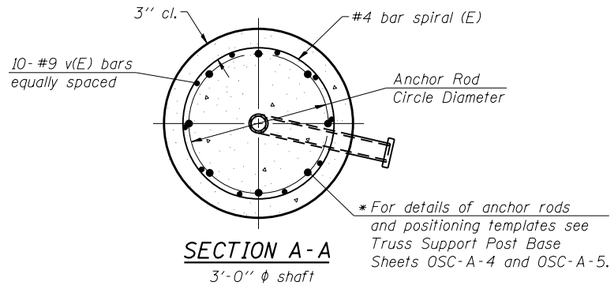
* Grind anchor rod to bright finish at ground clamp location before installing clamp.



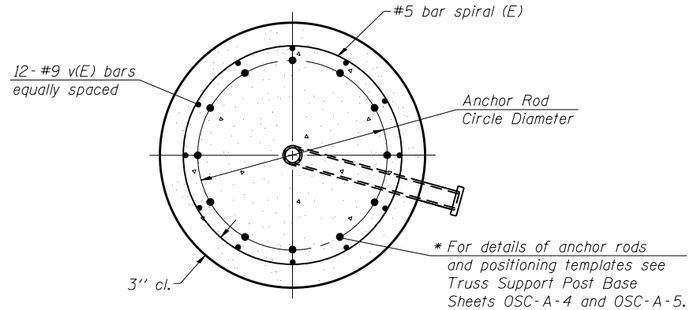
ELEVATION



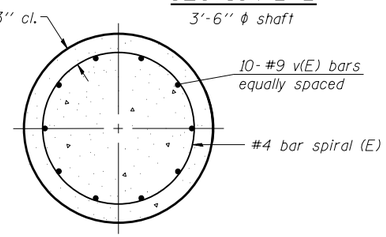
ELEVATION



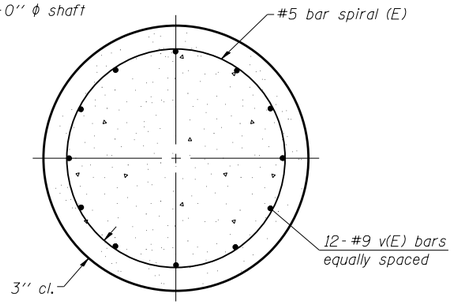
SECTION A-A
3'-0'' ϕ shaft



SECTION B-B
3'-6'' ϕ shaft



SECTION C-C
3'-0'' ϕ shaft



SECTION D-D
3'-6'' ϕ shaft

NOTES:

The foundation dimensions shown in the Foundation Design Table are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 1.25 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown in the Foundation Data Table will be the result of site specific designs.

If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

No sonotubes or decomposable forms shall be used below the lower conduit entrance. Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

Concrete shall be placed monolithically, without construction joints.

Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.

A normal surface finish followed by a Concrete Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in "Drilled Shaft Concrete Foundation".

FOUNDATION DESIGN TABLE

Truss Type	Post Base Sheet	Maximum CantileverLength (ft)	Maximum Total Sign Area (sq ft)	Shaft Diameter (in)	"B" Depth (ft)	Anchor Rods		Anchor Rod Circle Diameter (in)
						No.	Diameter (in)	
I-C-A	OSC-A-4	25	170	3.0	16.0	8	2	22
II-C-A	OSC-A-5	30	170	3.5	17.0	12	2	30
II-C-A	OSC-A-5	30	340	3.5	21.5	12	2	30
III-C-A	OSC-A-5	35	170	3.5	19.0	12	2	30
III-C-A	OSC-A-5	35	250	3.5	22.5	12	2	30
III-C-A	OSC-A-5	35	400	3.5	26.5	12	2	30
III-C-A	OSC-A-5	40	400	3.5	32.0	12	2	30

FOUNDATION DATA TABLE

Structure Number	Station	Truss Type	Shaft Diameter	Elevation Top	Elevation Bottom	Qu	A	B	F	Class DS Concrete Cubic Yards
4C072S5006L005.53	61+01.00	I-C-A	3'-0"	822.46	804.46	1.30 tsf	2'-0"	16'-0"	18'-0"	4.7

OSC-A-9 8-21-13

FILE NAME = D468683-OSC-A-9.dgn	USER NAME = RALEE	DESIGNED - RAL	REVISED
		CHECKED - JAF	REVISED
	PLOT SCALE =	DRAWN - RAL	REVISED
	PLOT DATE = 01/24/2014	CHECKED - JAF	REVISED

FUHRMANN ENGINEERING INC. CIVIL ENGINEERS/LAND SURVEYORS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

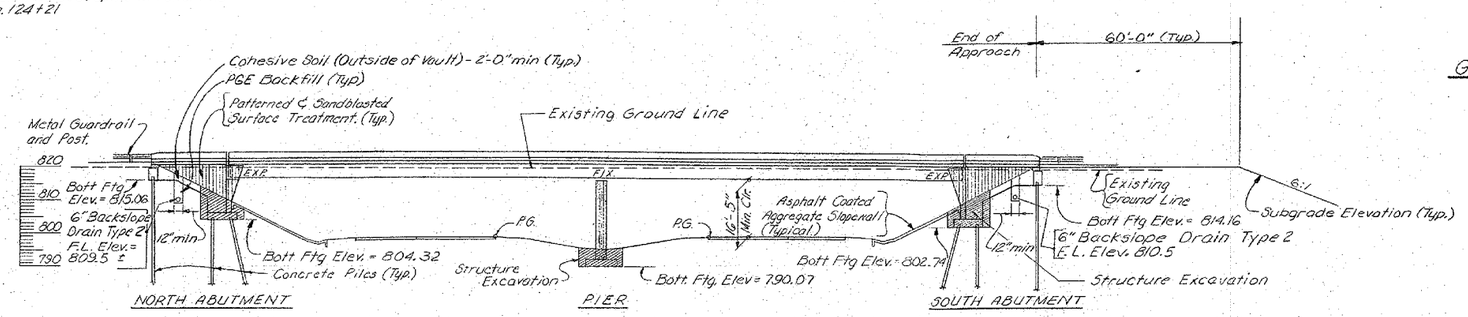
CANTILEVER SIGN STRUCTURES – DRILLED SHAFT
ALUMINUM TRUSS & STEEL POST
SHEET NO. 9 OF 9 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	340
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

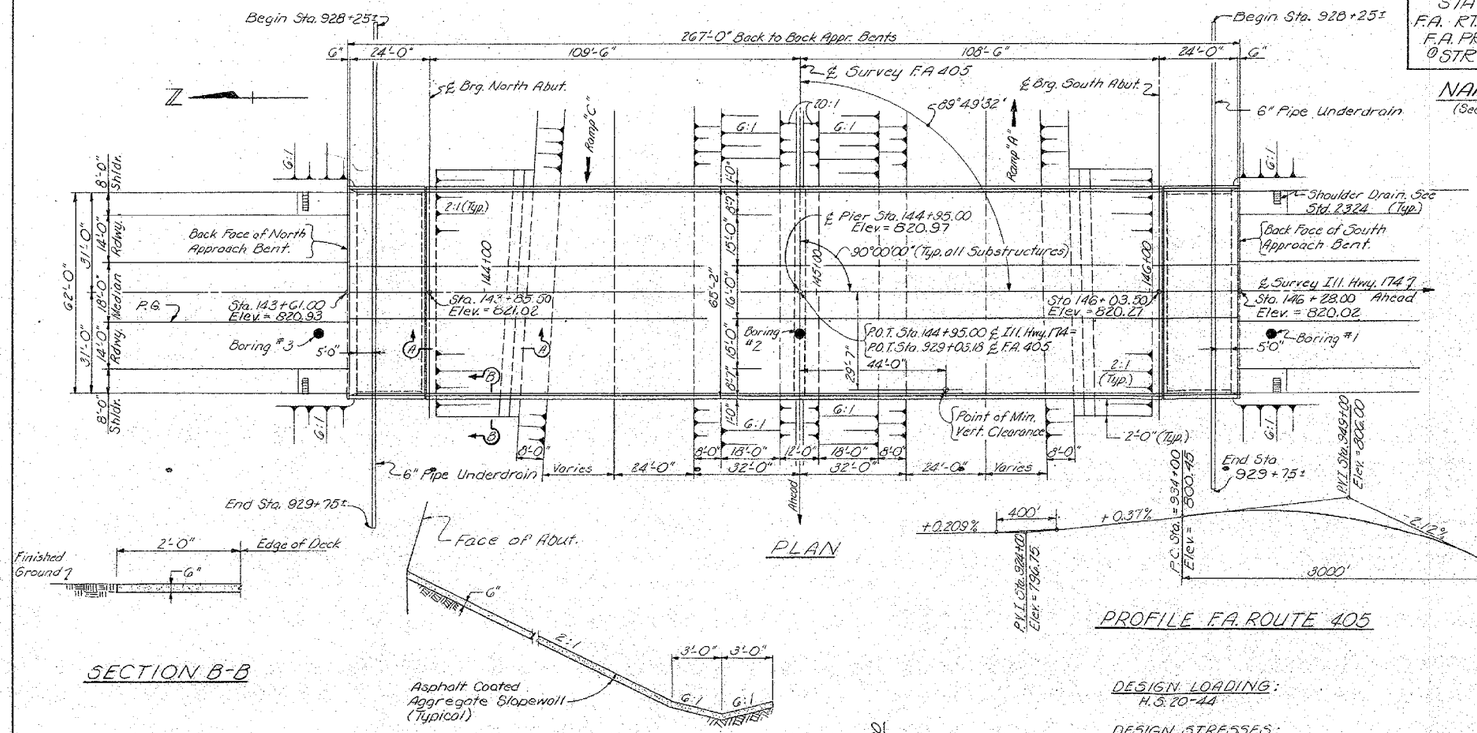
Bench Mark: No 174 A Elev. 735.853, Spike in Power Pole
34' Lt. Sta. 124+21
No Existing Structure.

Sheet 1 of 14

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA 405	72-7HB	PEORIA	12	38
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJ.		



ELEVATION

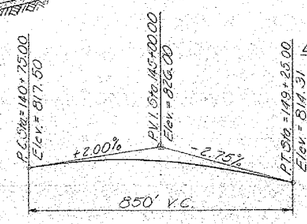


PLAN

PROFILE F.A. ROUTE 405

SECTION B-B

SECTION A-A



PROFILE ILL. 174

STATION 929+03.18
BUILT 197 BY
STATE OF ILLINOIS
F.A. RT. 405 SEC. 72-7HB
F.A. PROJ. FFD-405-1(18)
℄ STR. NO. 072-0146

NAME PLATE
(See Sta. 211.3)

GENERAL NOTES:

Fasteners shall be high strength bolts. Bolts 7/8" ϕ, open holes 15/16" ϕ unless otherwise noted.

Calculated weight of Structural Steel = 470,000 lbs.

The basic lead silico chromate paint system shall be used for shop and field painting of Structural Steel.

Field welding of construction accessories will not be permitted to the bottom flange of beams or girders nor to the top flange for a distance equal to one-fourth the span length each way from the pier supports. Field welding in other areas will be permitted only when approved by the Engineer.

The contractor shall drive two concrete test piles in a permanent location at North and South Abutments as directed by the Engineer before ordering the remainder of piles.

The concrete rail section above the mandatory construction joint at the top of the slab shall be constructed of Class "X" concrete, except the aggregates shall conform to the requirements of Handrail Concrete.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch. Adjustments shall be made either by grinding the surface or by shimming the bearing. Two 1/8" adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims.

The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These Components are the tension flanges, webs and all, all splice plate material of the steel girders or wide flange beams.

Reinforcement bars shall conform to AASHTO M31 Grade 60 or M53 Grade 60.

The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.

TOTAL BILL OF MATERIAL

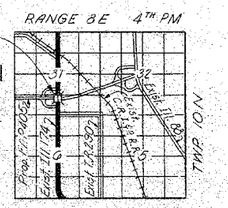
ITEM	UNIT	SUPER STRUCT	SUB STRUCT	TOTAL
Structure Excavation	Cu. Yds.	—	715	715
Protective Coat	Sq. Yds.	1712	—	1712
Class "X" Concrete	Cu. Yds.	626.6	396.2	1022.8
Structural Steel	Lump Sum	1	—	1
Reinforcement Bars	Lbs.	62,370	48,170	110,540
Reinforcement Bars - Epoxy Coated	Lbs.	80,650	—	80,650
Concrete Piles	Lin. Ft.	—	2690	2690
Test Piles Concrete	Each	—	2	2
Preformed Joint Sealer (4")	Lin. Ft.	134	—	134
Name Plates	Each	—	1	1
Slope Wall	Sq. Yds.	—	472	472
Stud Shear Connectors	Each	4023	—	4023
Sand Backfill	Cu. Yds.	—	390	390
4" Backslope Drain Type 2	Lin. Ft.	—	300	300
Porous Granular Backfill (Incidental)	Cu. Yds.	—	65	65

DESIGN LOADING:
H.S. 20-44

DESIGN STRESSES:
Load Factor Design
f'c = 3500 p.s.i.
fy = 60,000 p.s.i. Reinf.
Vcu = 118 p.s.i.
fs = 20,000 p.s.i. Structural
n = 9

DESIGN SPECIFICATIONS:
A.A.S.H.T.O. 1977

Allow 25 lb/ft² for future wearing surface.



LOCATION MAP

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
GENERAL PLAN & ELEVATION
PROJECT FFD-405-1(17)
ILL. HWY. 174 OVER F.A. ROUTE 405
F.A. 405 SECTION 72-7HB
PEORIA COUNTY
STA. 929+03.18

Designed	R.B.Q.
Checked	L.R.W.
Drawn	Rohrer
Checked	

APPROVED FOR STRUCTURAL ADEQUACY ONLY

81-4147 REGISTERED STRUCTURAL ENGINEER — ROBERT B. QUISENBERRY — STATE OF ILLINOIS

Robert B. Quisenberry

Rev. 9-18-79

FOR INFORMATION ONLY

MAURER-STUTZ ENGINEERS SURVEYORS

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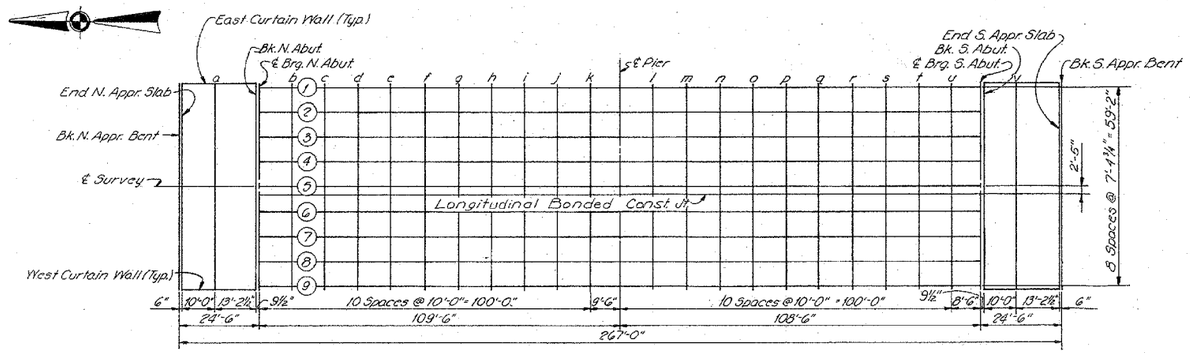
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
EXISTING BRIDGE PLANS

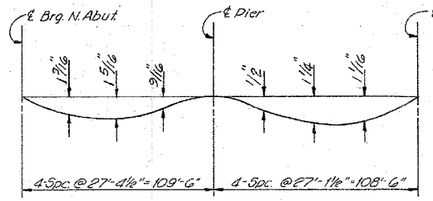
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	341
6585		CONTRACT NO. 68683		
	ILLINOIS	FED. AID PROJECT		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA 405	72-7HB	PEORIA	180	39
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJ.		



PLAN



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only)

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 below.

NOTES:

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

Offsets are from ℄ ILL. 174, Negative Values to the left and Positive Values to the right.

GIRDER 1

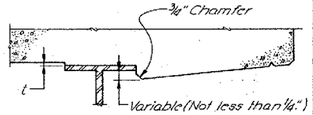
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	DEFLECTION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. N. Appr. Bent	143+61.00	-29.58	820.473	0.000	820.473
End N. Appr. Slab	143+61.50	-29.58	820.475	0.000	820.475
a	143+71.50	-29.58	820.512	0.000	820.512
Bk. N. Abut.	143+84.71	-29.58	820.552	0.000	820.552
℄ Brg. N. Abut.	143+85.50	-29.58	820.554	0.000	820.554
b	143+95.50	-29.58	820.578	0.042	820.620
c	144+05.50	-29.58	820.596	0.079	820.675
d	144+15.50	-29.58	820.609	0.103	820.712
e	144+25.50	-29.58	820.616	0.116	820.732
f	144+35.50	-29.58	820.617	0.114	820.731
g	144+45.50	-29.58	820.613	0.101	820.714
h	144+55.50	-29.58	820.603	0.077	820.680
i	144+65.50	-29.58	820.587	0.050	820.637
j	144+75.50	-29.58	820.566	0.025	820.591
k	144+85.50	-29.58	820.540	0.007	820.547
℄ Pier	144+95.00	-29.58	820.509	0.000	820.509
l	145+05.00	-29.58	820.472	0.005	820.477
m	145+15.00	-29.58	820.429	0.023	820.452
n	145+25.00	-29.58	820.380	0.047	820.427
o	145+35.00	-29.58	820.326	0.073	820.399
p	145+45.00	-29.58	820.266	0.095	820.361
q	145+55.00	-29.58	820.200	0.107	820.307
r	145+65.00	-29.58	820.129	0.107	820.236
s	145+75.00	-29.58	820.053	0.094	820.147
t	145+85.00	-29.58	819.971	0.069	820.040
u	145+95.00	-29.58	819.883	0.034	819.917
℄ Brg. S. Abut	146+03.50	-29.58	819.804	0.000	819.804
Bk. S. Abut	146+04.29	-29.58	819.796	0.000	819.796
v	146+14.29	-29.58	819.698	0.000	819.698
End S. Appr. Slab	146+27.50	-29.58	819.559	0.000	819.559
Bk. S. Appr. Bent	146+28.00	-29.58	819.553	0.000	819.553

E. LONGITUDINAL JOINT

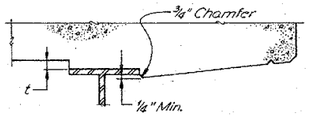
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	DEFLECTION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. N. Appr. Bent					
End N. Appr. Slab					
a					
Bk. N. Abut.					
℄ Brg. N. Abut.	143+85.50	2.42	820.979	0.000	820.979
b	143+95.50	2.42	821.002	0.042	821.044
c	144+05.50	2.42	821.020	0.079	821.099
d	144+15.50	2.42	821.032	0.103	821.135
e	144+25.50	2.42	821.039	0.116	821.155
f	144+35.50	2.42	821.041	0.114	821.155
g	144+45.50	2.42	821.037	0.101	821.138
h	144+55.50	2.42	821.027	0.077	821.104
i	144+65.50	2.42	821.011	0.050	821.061
j	144+75.50	2.42	820.990	0.025	821.015
k	144+85.50	2.42	820.964	0.007	820.971
℄ Pier	144+95.00	2.42	820.933	0.000	820.933
l	145+05.00	2.42	820.896	0.005	820.901
m	145+15.00	2.42	820.853	0.023	820.876
n	145+25.00	2.42	820.804	0.047	820.851
o	145+35.00	2.42	820.750	0.073	820.823
p	145+45.00	2.42	820.690	0.095	820.785
q	145+55.00	2.42	820.624	0.107	820.731
r	145+65.00	2.42	820.553	0.107	820.660
s	145+75.00	2.42	820.477	0.094	820.571
t	145+85.00	2.42	820.394	0.069	820.463
u	145+95.00	2.42	819.307	0.034	820.341
℄ Brg. S. Abut	146+03.50	2.42	819.228	0.000	819.288
Bk. S. Abut					
v					
End S. Appr. Slab					
Bk. S. Appr. Bent					

GIRDER 2

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	DEFLECTION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. N. Appr. Bent	143+61.00	-22.13	820.588	0.000	820.588
End N. Appr. Slab	143+61.50	-22.13	820.590	0.000	820.590
a	143+71.50	-22.13	820.627	0.000	820.627
Bk. N. Abut.	143+84.71	-22.13	820.668	0.000	820.668
℄ Brg. N. Abut.	143+85.50	-22.13	820.670	0.000	820.670
b	143+95.50	-22.13	820.653	0.042	820.735
c	144+05.50	-22.13	820.712	0.079	820.791
d	144+15.50	-22.13	820.724	0.103	820.827
e	144+25.50	-22.13	820.731	0.116	820.847
f	144+35.50	-22.13	820.732	0.114	820.847
g	144+45.50	-22.13	820.728	0.101	820.829
h	144+55.50	-22.13	820.718	0.077	820.795
i	144+65.50	-22.13	820.703	0.050	820.753
j	144+75.50	-22.13	820.682	0.025	820.707
k	144+85.50	-22.13	820.655	0.007	820.662
℄ Pier	144+95.00	-22.13	820.623	0.000	820.623
l	145+05.00	-22.13	820.587	0.005	820.592
m	145+15.00	-22.13	820.544	0.023	820.567
n	145+25.00	-22.13	820.496	0.047	820.543
o	145+35.00	-22.13	820.441	0.073	820.514
p	145+45.00	-22.13	820.381	0.095	820.476
q	145+55.00	-22.13	820.316	0.107	820.423
r	145+65.00	-22.13	820.245	0.107	820.352
s	145+75.00	-22.13	820.168	0.094	820.262
t	145+85.00	-22.13	820.086	0.069	820.155
u	145+95.00	-22.13	819.998	0.034	820.032
℄ Brg. S. Abut.	146+03.50	-22.13	819.919	0.000	819.919
Bk. S. Abut.	146+04.29	-22.13	819.912	0.000	819.912
v	146+14.29	-22.13	819.813	0.000	819.813
End S. Appr. Slab	146+27.50	-22.13	819.674	0.000	819.674
Bk. S. Appr. Bent	146+28.00	-22.13	819.669	0.000	819.669



AT MINIMUM FILLET



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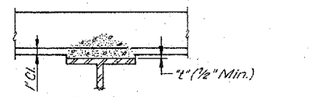

INTERIOR BEAM

FILLET HEIGHTS

NOTE: Elevations are at top of concrete.

Designed	LRW
Checked	DED
Drawn	R.P. Warnock
Checked	LRW

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
TOP OF SLAB ELEVATIONS
PROJECT: F.A. 405
ILL. HWY. 174 OVER F.A. ROUTE 405
F.A. 405 SECTION 72-7HB
PEORIA COUNTY
STA. 929+03.18

FOR INFORMATION ONLY

MAURER-STUTZ ENGINEERS SURVEYORS

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	PLOT DATE = 1/24/2014 3:18:42 PM	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
EXISTING BRIDGE PLANS

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	342
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA405	72-7HB	PEORIA	180	40
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJ.		

GIRDER 3

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	DEFLECTION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. N. Appr. Bent	143+61.00	-14.79	820.704	0.000	820.704
End N. Appr. Slab	143+61.50	-14.79	820.706	0.000	820.706
a	143+71.50	-14.79	820.743	0.000	820.743
Bk. N. Abut.	143+84.71	-14.79	820.783	0.000	820.783
℄ Brg. N. Abut	143+85.50	-14.79	820.785	0.000	820.785
b	143+95.50	-14.79	820.803	0.042	820.851
c	144+05.50	-14.79	820.827	0.079	820.906
d	144+15.50	-14.79	820.840	0.103	820.943
e	144+25.50	-14.79	820.846	0.116	820.962
f	144+35.50	-14.79	820.849	0.114	820.963
g	144+45.50	-14.79	820.844	0.101	820.945
h	144+55.50	-14.79	820.834	0.077	820.911
i	144+65.50	-14.79	820.818	0.050	820.868
j	144+75.50	-14.79	820.797	0.025	820.822
k	144+85.50	-14.79	820.771	0.007	820.778
℄ Pier	144+95.00	-14.79	820.740	0.000	820.740
l	145+05.00	-14.79	820.703	0.005	820.708
m	145+15.00	-14.79	820.660	0.023	820.683
n	145+25.00	-14.79	820.611	0.047	820.658
o	145+35.00	-14.79	820.537	0.073	820.610
p	145+45.00	-14.79	820.497	0.095	820.592
q	145+55.00	-14.79	820.431	0.107	820.538
r	145+65.00	-14.79	820.360	0.107	820.467
s	145+75.00	-14.79	820.284	0.094	820.378
t	145+85.00	-14.79	820.202	0.069	820.271
u	145+95.00	-14.79	820.114	0.034	820.148
℄ Brg. S. Abut	146+03.50	-14.79	820.035	0.000	820.035
Bk. S. Abut	146+04.29	-14.79	820.027	0.000	820.027
v	146+14.29	-14.79	819.929	0.000	819.929
End S. Appr. Slab	146+27.50	-14.79	819.790	0.000	819.790
Bk. S. Appr. Bent	146+28.00	-14.79	819.784	0.000	819.784

GIRDER 4

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	DEFLECTION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. N. Appr. Bent	143+61.00	-7.40	820.819	0.000	820.819
End N. Appr. Slab	143+61.50	-7.40	820.821	0.000	820.821
a	143+71.50	-7.40	820.858	0.000	820.858
Bk. N. Abut.	143+84.71	-7.40	820.899	0.000	820.899
℄ Brg. N. Abut	143+85.50	-7.40	820.901	0.000	820.901
b	143+95.50	-7.40	820.924	0.042	820.966
c	144+05.50	-7.40	820.943	0.079	821.022
d	144+15.50	-7.40	820.955	0.103	821.058
e	144+25.50	-7.40	820.962	0.116	821.078
f	144+35.50	-7.40	820.963	0.114	821.077
g	144+45.50	-7.40	820.959	0.101	821.060
h	144+55.50	-7.40	820.913	0.025	820.938
i	144+65.50	-7.40	820.934	0.050	820.984
j	144+75.50	-7.40	820.913	0.025	820.938
k	144+85.50	-7.40	820.886	0.007	820.893
℄ Pier	144+95.00	-7.40	820.836	0.000	820.836
l	145+05.00	-7.40	820.818	0.005	820.823
m	145+15.00	-7.40	820.775	0.023	820.798
n	145+25.00	-7.40	820.726	0.047	820.773
o	145+35.00	-7.40	820.672	0.073	820.745
p	145+45.00	-7.40	820.612	0.095	820.707
q	145+55.00	-7.40	820.547	0.107	820.654
r	145+65.00	-7.40	820.476	0.107	820.583
s	145+75.00	-7.40	820.399	0.094	820.493
t	145+85.00	-7.40	820.317	0.069	820.386
u	145+95.00	-7.40	820.229	0.034	820.263
℄ Brg. S. Abut	146+03.50	-7.40	820.150	0.000	820.150
Bk. S. Abut	146+04.29	-7.40	820.143	0.000	820.143
v	146+14.29	-7.40	820.044	0.000	820.044
End S. Appr. Slab	146+27.50	-7.40	819.905	0.000	819.905
Bk. S. Appr. Bent	146+28.00	-7.40	819.900	0.000	819.900

GIRDER 5

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	DEFLECTION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. N. Appr. Bent	143+61.00	0.00	820.935	0.000	820.935
End N. Appr. Slab	143+61.50	0.00	820.937	0.000	820.937
a	143+71.50	0.00	820.974	0.000	820.974
Bk. N. Abut.	143+84.71	0.00	821.014	0.000	821.014
℄ Brg. N. Abut	143+85.50	0.00	821.016	0.000	821.016
b	143+95.50	0.00	821.040	0.042	821.082
c	144+05.50	0.00	821.058	0.079	821.137
d	144+15.50	0.00	821.070	0.103	821.173
e	144+25.50	0.00	821.077	0.116	821.193
f	144+35.50	0.00	821.079	0.114	821.193
g	144+45.50	0.00	821.073	0.101	821.176
h	144+55.50	0.00	821.063	0.077	821.142
i	144+65.50	0.00	821.049	0.050	821.099
j	144+75.50	0.00	821.028	0.025	821.053
k	144+85.50	0.00	821.002	0.007	821.009
℄ Pier	144+95.00	0.00	820.971	0.000	820.971
l	145+05.00	0.00	820.934	0.005	820.939
m	145+15.00	0.00	820.891	0.023	820.914
n	145+25.00	0.00	820.842	0.047	820.889
o	145+35.00	0.00	820.788	0.073	820.861
p	145+45.00	0.00	820.728	0.095	820.823
q	145+55.00	0.00	820.662	0.107	820.769
r	145+65.00	0.00	820.591	0.107	820.698
s	145+75.00	0.00	820.515	0.094	820.609
t	145+85.00	0.00	820.432	0.069	820.501
u	145+95.00	0.00	820.345	0.034	820.379
℄ Brg. S. Abut	146+03.50	0.00	820.266	0.000	820.266
Bk. S. Abut	146+04.29	0.00	820.258	0.000	820.258
v	146+14.29	0.00	820.160	0.000	820.160
End S. Appr. Slab	146+27.50	0.00	820.021	0.000	820.021
Bk. S. Appr. Bent	146+28.00	0.00	820.015	0.000	820.015

GIRDER 6

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	DEFLECTION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. N. Appr. Bent	143+61.00	7.40	820.819	0.000	820.819
End N. Appr. Slab	143+61.50	7.40	820.821	0.000	820.821
a	143+71.50	7.40	820.858	0.000	820.858
Bk. N. Abut.	143+84.71	7.40	820.899	0.000	820.899
℄ Brg. N. Abut	143+85.50	7.40	820.901	0.000	820.901
b	143+95.50	7.40	820.924	0.042	820.966
c	144+05.50	7.40	820.943	0.079	821.022
d	144+15.50	7.40	820.955	0.103	821.058
e	144+25.50	7.40	820.962	0.116	821.078
f	144+35.50	7.40	820.963	0.114	821.077
g	144+45.50	7.40	820.959	0.101	821.060
h	144+55.50	7.40	820.949	0.077	821.026
i	144+65.50	7.40	820.934	0.060	820.994
j	144+75.50	7.40	820.913	0.025	820.938
k	144+85.50	7.40	820.886	0.007	820.893
℄ Pier	144+95.00	7.40	820.836	0.000	820.836
l	145+05.00	7.40	820.818	0.005	820.823
m	145+15.00	7.40	820.775	0.023	820.798
n	145+25.00	7.40	820.726	0.047	820.773
o	145+35.00	7.40	820.672	0.073	820.745
p	145+45.00	7.40	820.612	0.095	820.707
q	145+55.00	7.40	820.547	0.107	820.654
r	145+65.00	7.40	820.476	0.107	820.583
s	145+75.00	7.40	820.399	0.094	820.493
t	145+85.00	7.40	820.317	0.069	820.386
u	145+95.00	7.40	820.229	0.034	820.263
℄ Brg. S. Abut	146+03.50	7.40	820.150	0.000	820.150
Bk. S. Abut	146+04.29	7.40	820.143	0.000	820.143
v	146+14.29	7.40	820.044	0.000	820.044
End S. Appr. Slab	146+27.50	7.40	819.905	0.000	819.905
Bk. S. Appr. Bent	146+28.00	7.40	819.900	0.000	819.900

GIRDER 7

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	DEFLECTION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. N. Appr. Bent	143+61.00	14.79	820.704	0.000	820.704
End N. Appr. Slab	143+61.50	14.79	820.706	0.000	820.706
a	143+71.50	14.79	820.743	0.000	820.743
Bk. N. Abut.	143+84.71	14.79	820.783	0.000	820.783
℄ Brg. N. Abut	143+85.50	14.79	820.785	0.000	820.785
b	143+95.50	14.79	820.803	0.042	820.851
c	144+05.50	14.79	820.827	0.079	820.906
d	144+15.50	14.79	820.840	0.103	820.943
e	144+25.50	14.79	820.846	0.116	820.962
f	144+35.50	14.79	820.849	0.114	820.963
g	144+45.50	14.79	820.844	0.101	820.945
h	144+55.50	14.79	820.834	0.077	820.911
i	144+65.50	14.79	820.818	0.050	820.868
j	144+75.50	14.79	820.797	0.025	820.822
k	144+85.50	14.79	820.771	0.007	820.778
℄ Pier	144+95.00	14.79	820.740	0.000	820.740
l	145+05.00	14.79	820.703	0.005	820.708
m	145+15.00	14.79	820.660	0.023	820.683
n	145+25.00	14.79	820.611	0.047	820.658
o	145+35.00	14.79	820.557	0.073	820.630
p	145+45.00	14.79	820.497	0.095	820.592
q	145+55.00	14.79	820.431	0.107	820.538
r	145+65.00	14.79	820.360	0.107	820.467
s	145+75.00	14.79	820.284	0.094	820.378
t	145+85.00	14.79	820.202	0.069	820.271
u	145+95.00	14.79	820.114	0.034	820.148
℄ Brg. S. Abut	146+03.50	14.79	820.035	0.000	820.035
Bk. S. Abut	146+04.29	14.79	820.027	0.000	820.027
v	146+14.29	14.79	819.929	0.000	819.929
End S. Appr. Slab	146+27.50	14.79	819.790	0.000	819.790
Bk. S. Appr. Bent	146+28.00	14.79	819.784	0.000	819.784

GIRDER 8

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	DEFLECTION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. N. Appr. Bent	143+61.00	22.19	820.588	0.000	820.588
End N. Appr. Slab	143+61.50	22.19	820.590	0.000	820.590
a	143+71.50	22.19	820.627	0.000	820.627
Bk. N. Abut.	143+84.71	22.19	820.668	0.000	820.668
℄ Brg. N. Abut	143+85.50	22.19	820.670	0.000	820.670
b	143+95.50	22.19	820.693	0.042	820.735
c	144+05.50	22.19	820.712	0.079	820.791
d	144+15.50	22.19	820.724	0.103	820.827
e	144+25.50	22.19	820.731	0.116	820.847
f	144+35.50	22.19	820.732	0.114	820.846
g	144+45.50	22.19	820.728	0.101	820.829
h	144+55.50	22.19	820.718	0.077	820.795
i	144+65.50	22.19	820.703	0.050	820.753
j	144+75.50	22.19	820.682	0.025	820.707
k	144+85.50	22.19	820.655	0.007	820.662
℄ Pier	144+95.00	22.19	820.625	0.000	820.625
l	145+05.00	22.19	820.587	0.005	820.592
m	145+15.00	22.19	820.544	0.023	820.567
n	145+25.00	22.19	820.496	0.047	820.543
o	145+35.00	22.19	820.441	0.073	820.514
p	145+45.00	22.19	820.381	0.095	820.476
q	145+55.00	22.19	820.316	0.107	820.423
r	145+65.00	22.19	820.245	0.107	820.352
s	145+75.00	22.19	820.168	0.094	820.262
t	145+85.00	22.19	820.086	0.069	820.155
u	145+95.00	22.19	819.998	0.034	820.032
℄ Brg. S. Abut	146+03.50	22.19	819.919	0.000	819.919
Bk. S. Abut	146+04.29	22.19	819.912	0.000	819.912
v	146+14.29	22.19	819.813	0.000	819.813
End S. Appr. Slab	146+27.50	22.19	819.674	0.000	819.674
Bk. S. Appr. Bent	146+28.00	22.19	819.669	0.000	819.669

NOTE: Elevations are at top of concrete.

Designed	LRW
Checked	DEB
Drawn	RP Warnock
Checked	LRW

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
TOP OF SLAB ELEVATIONS
PROJECT: F.A. 405
ILL. HWY. 174 OVER F.A. ROUTE 405
F.A. 405 SECTION 72-7HB
PEORIA COUNTY
STA. 928+03.18

FOR INFORMATION ONLY

MAURER-STUTZ ENGINEERS SURVEYORS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
EXISTING BRIDGE PLANS

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	343
6585		CONTRACT NO. 68683		
	ILLINOIS	FED. AID PROJECT		

			SHEETS	NO.
FA405	72-7HB	PEORIA	180	41
FED ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJ.		

GIRDER 3

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	DEFLECTION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. N. Appr. Bent	143+61.00	29.58	820.473	0.000	820.473
End N. Appr. Slab	143+61.50	29.58	820.475	0.000	820.475
a	143+71.50	29.58	820.512	0.000	820.512
Bk. N. Abut.	143+84.71	29.58	820.552	0.000	820.552
℄ Brg. N. Abut.	143+85.50	29.58	820.554	0.000	820.554
b	143+93.50	29.58	820.578	0.042	820.620
c	144+05.50	29.58	820.596	0.079	820.675
d	144+15.50	29.58	820.609	0.103	820.712
e	144+25.50	29.58	820.616	0.116	820.732
f	144+35.50	29.58	820.617	0.114	820.731
g	144+45.50	29.58	820.613	0.101	820.714
h	144+53.50	29.58	820.603	0.077	820.680
i	144+63.50	29.58	820.587	0.050	820.637
j	144+73.50	29.58	820.566	0.025	820.591
k	144+83.50	29.58	820.540	0.007	820.547
℄ Pier	144+95.00	29.58	820.509	0.000	820.509
l	145+03.00	29.58	820.472	0.005	820.477
m	145+13.00	29.58	820.423	0.029	820.452
n	145+23.00	29.58	820.380	0.047	820.427
o	145+33.00	29.58	820.326	0.073	820.399
p	145+43.00	29.58	820.266	0.095	820.361
q	145+53.00	29.58	820.200	0.107	820.307
r	145+63.00	29.58	820.129	0.107	820.236
s	145+73.00	29.58	820.053	0.094	820.147
t	145+83.00	29.58	819.971	0.069	820.040
u	145+93.00	29.58	819.883	0.034	819.917
℄ Brg. S. Abut.	146+03.50	29.58	819.804	0.000	819.804
Bk. S. Abut.	146+04.29	29.58	819.796	0.000	819.796
v	146+14.23	29.58	819.698	0.000	819.698
End S. Appr. Slab	146+27.80	29.58	819.559	0.000	819.559
Bk. S. Appr. Bent	146+28.00	29.58	819.553	0.000	819.553

NOTE: Elevations are at top of concrete.

DESIGNED	LRW
CHECKED	DEB
DRAWN	M.C.K.
CHECKED	LRW

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
TOP OF SLAB ELEVATIONS
PROJECT: F.A. 405
ILL. HWY. 174 OVER F.A. ROUTE 405
F.A.405 SECTION 72-7HB
PEORIA COUNTY
STA. 929+03.18

FOR INFORMATION ONLY

MAURER-STUTZ ENGINEERS SURVEYORS

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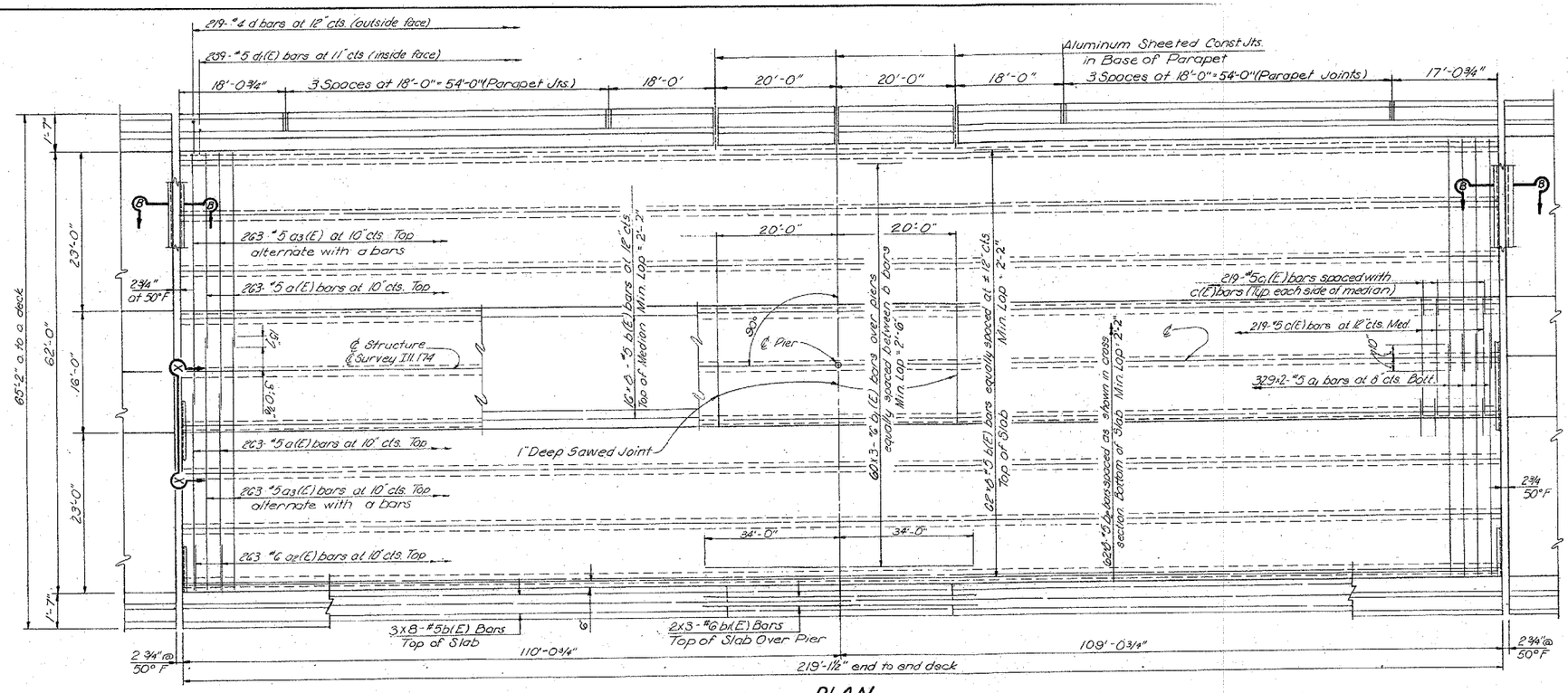
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
EXISTING BRIDGE PLANS

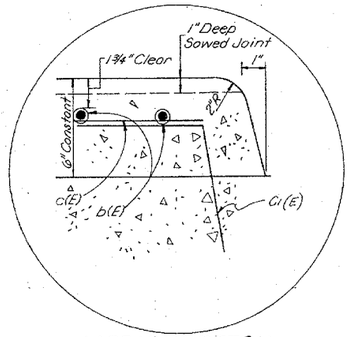
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	344
6585		CONTRACT NO. 68683		
		ILLINOIS	FED. AID PROJECT	

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA405	72-7HB	PEORIA	180	42
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJ.		

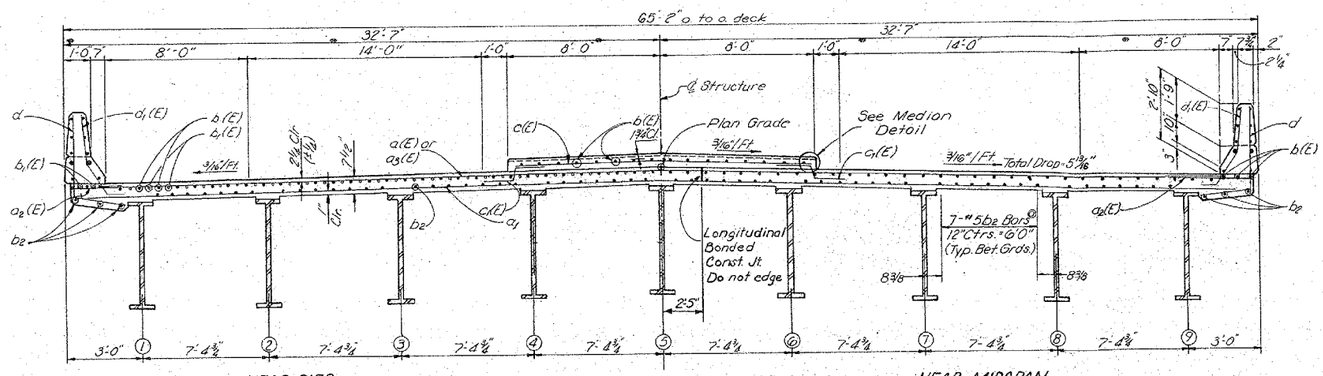


PLAN

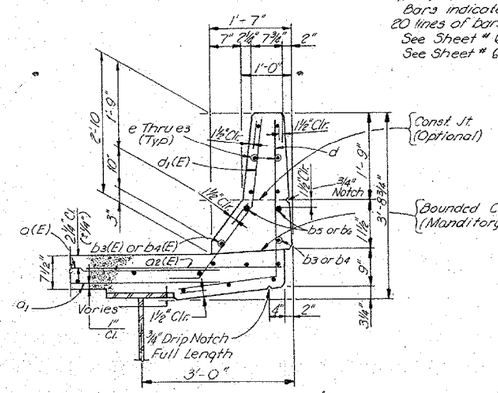


MEDIAN DETAIL

Notes:
See Sheet # 6 for Bill of Material and Parapet Details.
Reinforcement bars designated (E) shall be epoxy coated See special provisions.
Bars indicated thus 20 x 3 - #5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet # 6 for Sections B-B and X-X.
See Sheet # 6 for Bar Details



NEAR PIER — CROSS SECTION Looking South — NEAR MIDSPAN



Designed	LRW
Checked	DEB
Drawn	RPW & JLK
Checked	DEB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE
PROJECT: F.A.405
ILL. HWY. 174 OVER F.A. ROUTE 405
F.A. 405 SECTION 72-7HB
PEORIA COUNTY
STA. 929+03.18

FOR INFORMATION ONLY

MAURER-STUTZ ENGINEERS SURVEYORS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

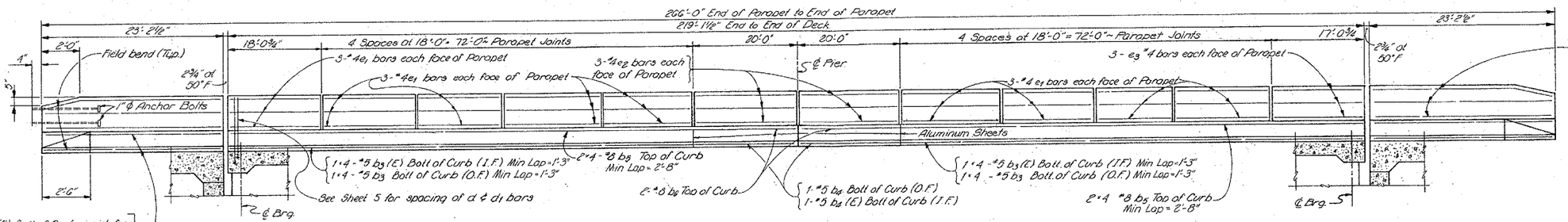
ALLEN ROAD IMPROVEMENTS
EXISTING BRIDGE PLANS

SCALE: | SHEET OF SHEETS | STA. | TO STA.

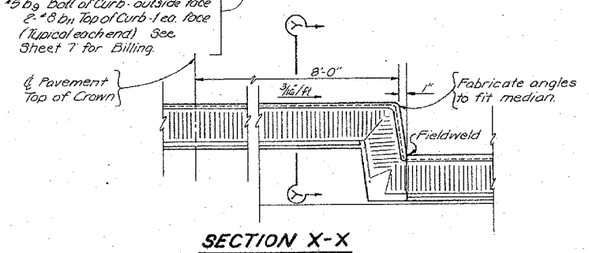
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	345
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

Sheet 6 of 14

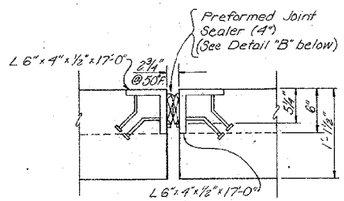
			SHEETS	NO.
FAA05	72-7HB	PEORIA	180	43
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJ.		



1'-#5 b3(E) Bolt of Curb - inside face
1'-#5 b5 Bolt of Curb - outside face
2'-#8 b6 Top of Curb - 1 ea. face
(Typical each end) See Sheet 7 for Billing.



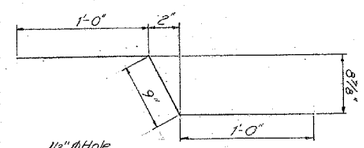
SECTION X-X
(See Sheet 5)



SECTION Y-Y

EAST PARAPET
(Looking East)

Note: East Parapet is shown in elevation view West Parapet is similar.



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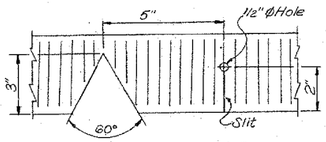
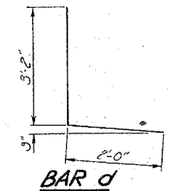
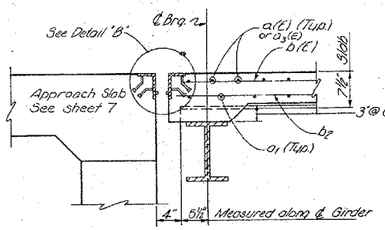


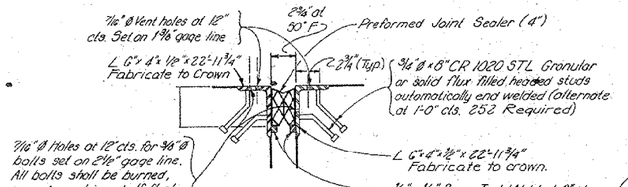
SEALER CUT-OUT



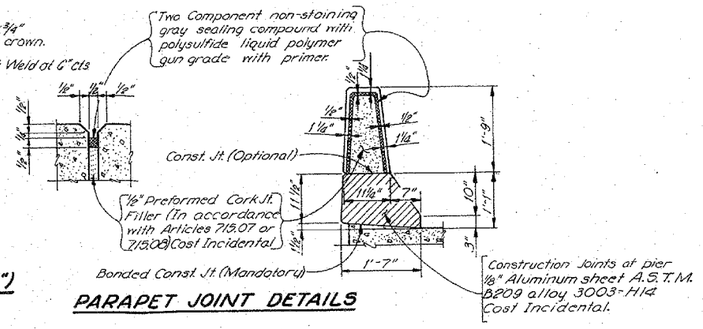
BAR d



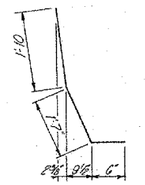
SECTION B-B
(See Sheet 5)



DETAIL B



PARAPET JOINT DETAILS



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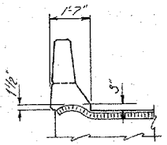
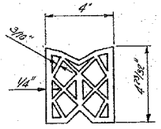


END OF SEALER TREATMENT



PREFORMED JOINT SEALER (4")

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No	Size	Length	Shape
a(E)	526	#5	20'-6"	
a1	658	#5	32'-5"	
a2(E)	526	#6	4'-0"	
a3(E)	526	#5	35'-11"	
b1(E)	672	#5	29'-4"	
b1(E)	192	#6	29'-4"	
b2	496	#5	29'-4"	
b3(E)	16	#5	23'-5"	
b3	16	#5	23'-5"	
b4(E)	4	#5	19'-8"	
b4	4	#5	19'-8"	
b5	32	#8	24'-5"	
b6	8	#8	19'-8"	
c(E)	219	#5	15'-8"	
c1(E)	438	#5	2'-9"	
d	438	#4	5'-2"	
d1(E)	478	#5	3'-11"	
e1	108	#4	17'-8"	
e2	24	#4	19'-8"	
e3	12	#4	16'-8"	
Reinforcement Bars		lbs.	43,640	
Reinforcement Bars (Epoxy Coated)		lbs.	73,340	
Class 'X' Concrete		Yds³	461.5	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE DETAILS
PROJECT: F.A. 405
ILL. HWY. 174 OVER F.A. ROUTE 405
F.A. 405 SECTION 72-7HB
PEORIA COUNTY
STA. 929+03.18

DESIGNED	LRW
CHECKED	DEB
DRAWN	R.P.Warnock
CHECKED	DEB

MAURER-STUTZ ENGINEERS SURVEYORS

FOR INFORMATION ONLY

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

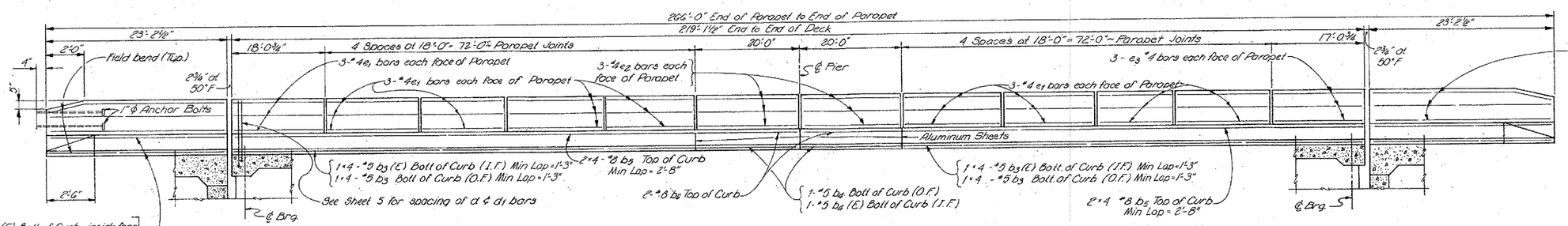
ALLEN ROAD IMPROVEMENTS
EXISTING BRIDGE PLANS

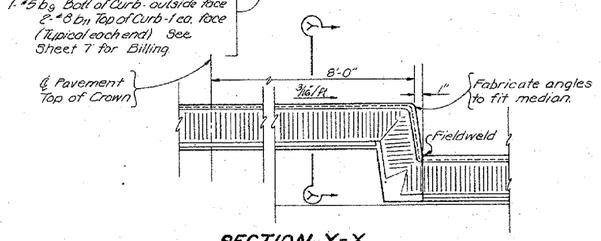
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	346
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

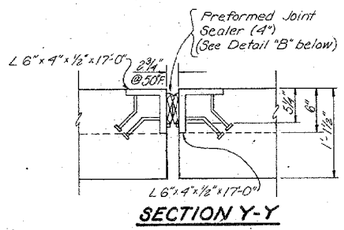
Sheet 6 of 14

			SHEETS	NO.
FAP 405	72-7HB	PEORIA	180	43
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJ.		





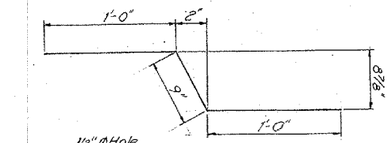
SECTION X-X
(See Sheet 5)



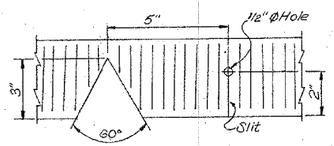
SECTION Y-Y

EAST PARAPET
(Looking East)

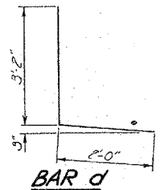
Note: East Parapet is shown in elevation view West Parapet is similar.



BAR c1(E)



SEALER CUT-OUT



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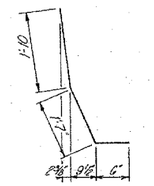

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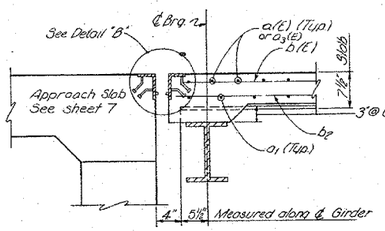
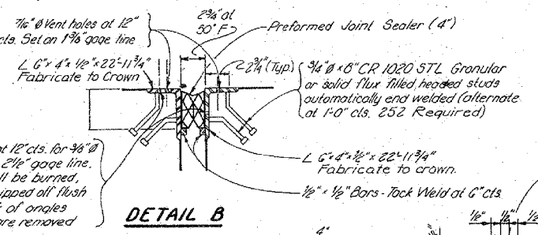
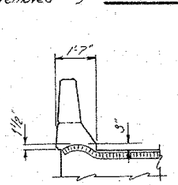


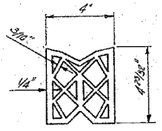
SECTION B-B
(See Sheet 5)



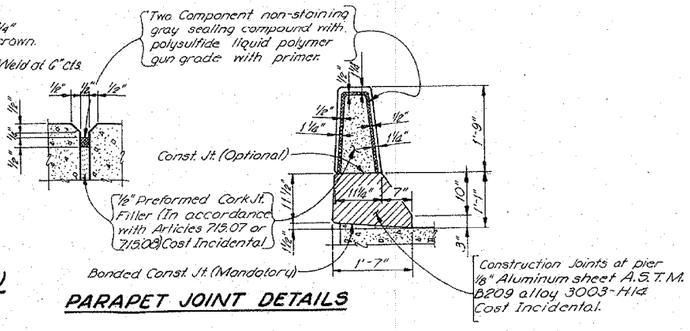
DETAIL B



END OF SEALER TREATMENT



PREFORMED JOINT SEALER (4")



PARAPET JOINT DETAILS

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No	Size	Length	Shape
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b3(E)	16	#5	23'-5"	
b3	16	#5	23'-5"	
b4(E)	4	#5	19'-8"	
b4	4	#5	19'-8"	
b5	32	#8	24'-5"	
b6	8	#8	19'-8"	
c1(E)	219	#5	15'-8"	
c4(E)	438	#5	2'-9"	L
d	438	#4	5'-2"	
d1(E)	478	#5	3'-11"	L
e1	108	#4	17'-8"	
e2	24	#4	19'-8"	
e3	12	#4	16'-8"	
Reinforcement Bars		lbs.	43,640	
Reinforcement Bars (Epoxy Coated)		lbs.	73,340	
Class 'X' Concrete		Yds³	461.5	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE DETAILS
PROJECT: F.A. 405
ILL. HWY. 174 OVER F.A. ROUTE 405
F.A. 405 SECTION 72-7HB
PEORIA COUNTY
STA. 929+03.18

DESIGNED	LRW
CHECKED	DEB
DRAWN	R.P. Warnock
CHECKED	DEB

MAURER-STUTZ ENGINEERS SURVEYORS

FOR INFORMATION ONLY

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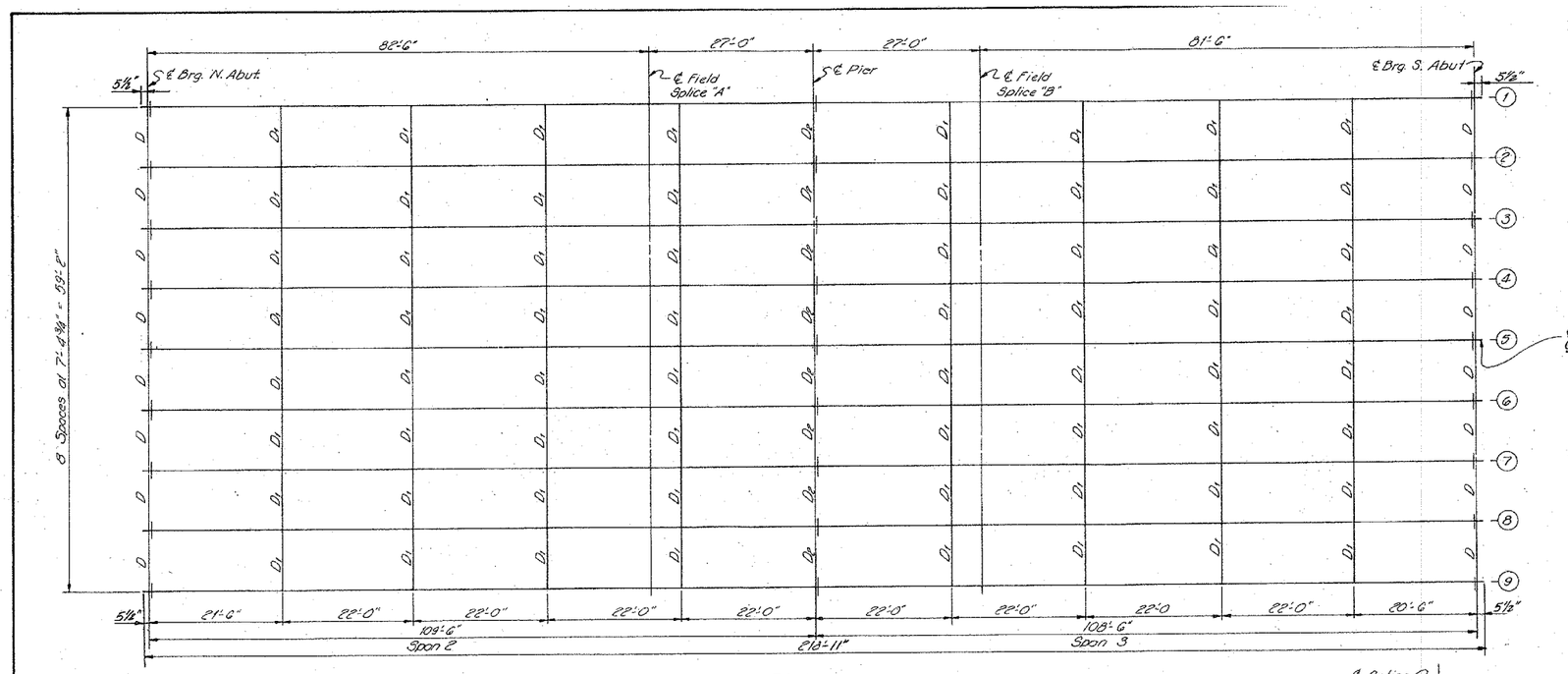
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
EXISTING BRIDGE PLANS
SCALE: | SHEET OF SHEETS | STA. | TO STA.

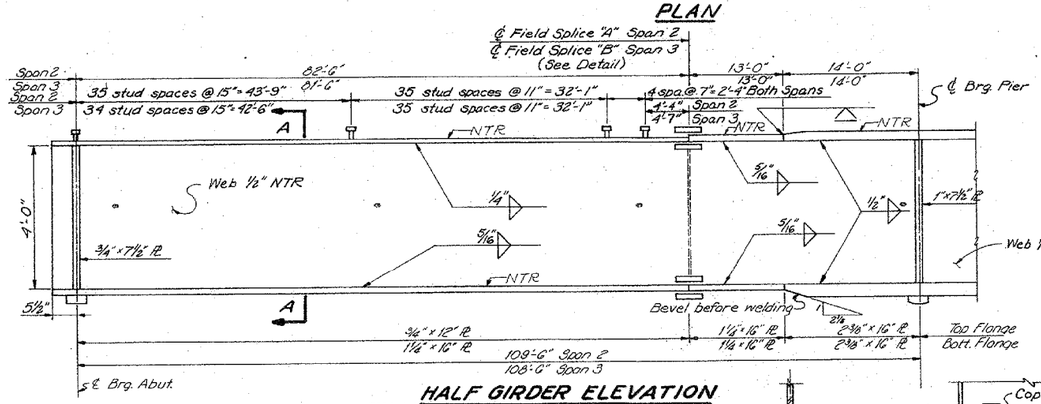
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	347
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

Sheet 8 of 14

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.405	72-7HB	PEORIA	180	45
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJ.		

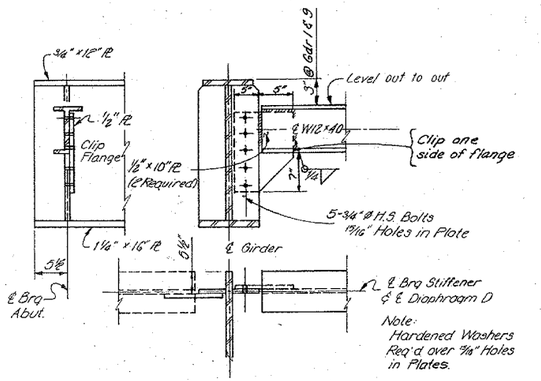


PLAN



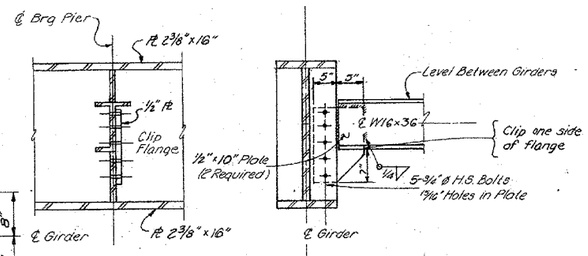
HALF GIRDER ELEVATION

Note:
NTR denotes Notch Toughness Requirements
See General Notes Sheet #1 for details.



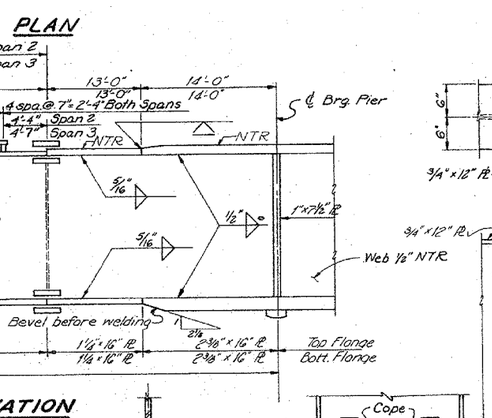
DIAPHRAGM D

16 Required

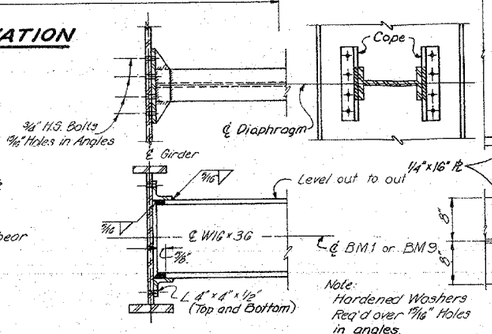


DIAPHRAGM Dz

8 Required

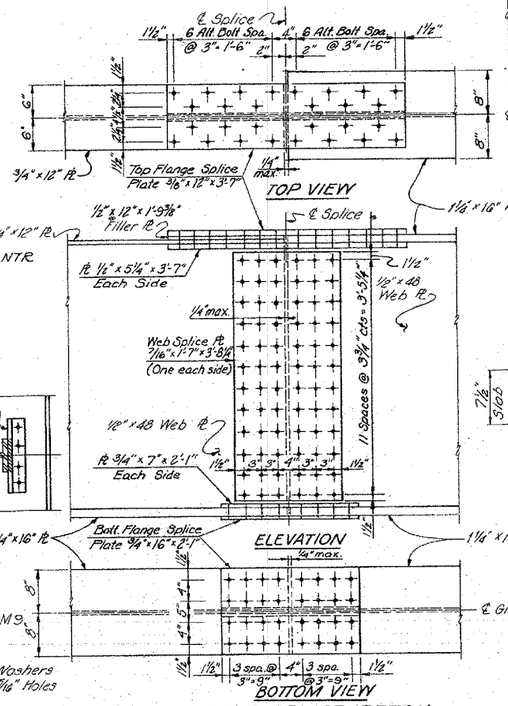


BEARING STIFFENER DETAIL



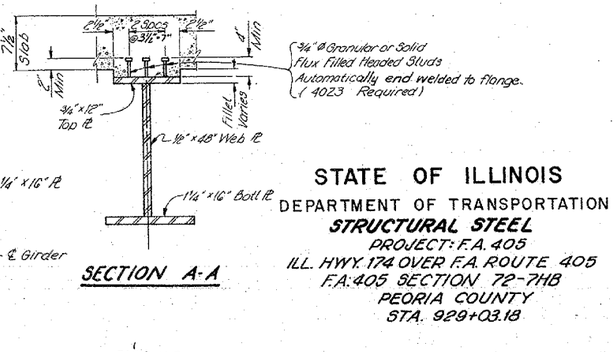
DIAPHRAGM D1

64 Required



FIELD SPLICE DETAIL

All Splice Bolts are 7/8" ø H.S.



SECTION A-A

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
STRUCTURAL STEEL
PROJECT: F.A. 405
ILL. HWY. 174 OVER F.A. ROUTE 405
F.A. 405 SECTION 72-7HB
PEORIA COUNTY
STA. 929+03.18

Designed	DEB
Checked	LRW
Drawn	R.R. Warnock
Checked	DEB

MAURER-STUTZ ENGINEERS SURVEYORS

FOR INFORMATION ONLY

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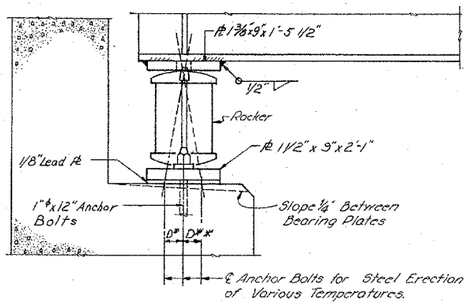
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
EXISTING BRIDGE PLANS

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	348
6585		CONTRACT NO. 68683		
		ILLINOIS	FED. AID PROJECT	

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA 405	72-7HB	PEORIA	180	46
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJ.		



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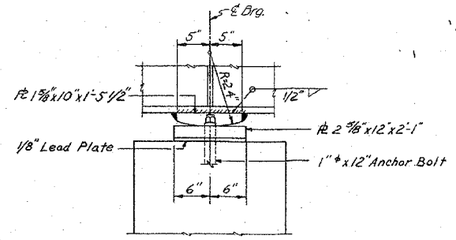
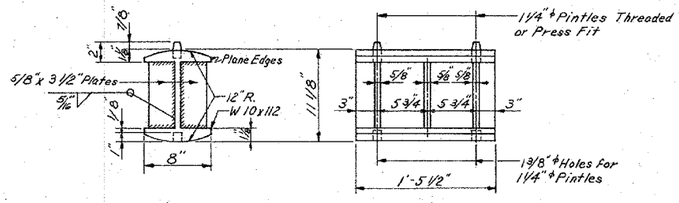
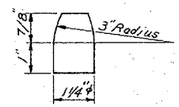


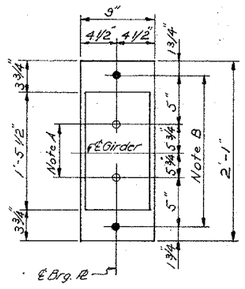
ELEVATION



ROCKER



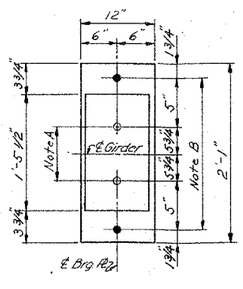
PINTLE



PLAN AT ABUTMENTS

NOTE A
1 3/8" ϕ Holes - 1" Deep in Top Pl for Pintles. Thread or Press Fit Pintles into Bottom Pl

NOTE B
1 1/2" ϕ Holes for 1" ϕ Anchor Bolts 5/16" x 2 1/2" x 2 1/2" Pl Washers Under Nut



PLAN AT PIER

* TOP OF WEB ELEVATIONS

Girder No.	N. Abut.	Splice 1	Pier	Splice 2	S. Abut.
1	819.80	819.77	819.63	819.58	819.05
2	819.92	819.89	819.75	819.69	819.17
3	820.04	820.00	819.87	819.81	819.29
4	820.15	820.12	819.98	819.92	819.40
5	820.27	820.23	820.10	820.04	819.52
6	820.15	820.12	819.98	819.92	819.40
7	820.04	820.00	819.87	819.81	819.29
8	819.92	819.89	819.75	819.69	819.17
9	819.80	819.77	819.63	819.58	819.05

* For Fabrication Only

INTERIOR GIRDER REACTION TABLE

Reactions	N. Abutment	Pier	S. Abutment
R ℄ (K)	50.1	185.9	49.3
R ℄ (K)	48.3	75.4	47.7
Impact (K)	10.3	16.1	10.2
R (Total) (K)	108.7	277.4	107.2

STRESS TABLE

(Composite at Positive Moment Regions only)

INTERIOR GIRDER MOMENT TABLE

Properties		At 0.4 Span 2	At Pier	At 0.4 Span 3
Is	(in⁴)	206 79	52853	206 79
Ic	(in⁴)	54569	———	54569
Ss	(in³)	1029	2004	1029
Sc	(in³)	1406	———	1406
℄	(K/')	0.930	1.114	0.930
M ℄	('K)	660	1750	636
Fs ℄	(Ksi)	7.70	10.48	7.42
S ℄	(K/)	0.352	0.352	0.352
MS ℄	('K)	305.3	502.6	296.1
M ℄	('K)	937	855.5	916
M (Imp)	('K)	200	182.7	196
Total	('K)	1442.3	1540.8	1408.1
fs ℄	(Ksi)	12.30	9.23	12.02
fs (Total)	(Ksi)	20.00	19.71	19.49
VR	(K)	57.9	———	58.1

Is & Ss are the Moment of Inertia and Section Modulus of the Steel Section.
Ic & Sc are the moment of Inertia and Section Modulus of the composite Section used in computing fs.
VR is the maximum ℄ + Impact shear range in span

NOTES ON SETTING OF ANCHOR BOLTS AT EXP. BRG.

a) D* (Side of brg. away from fixed brg.)
D* = 1/8" per each 100' of expansion for every 15° fall below the normal temp. of 50° F.
D** (Side of brg. toward fixed brg.)
D** = 1/8" per each 100' of expansion for every 15° rise above the normal temp. of 50° F.

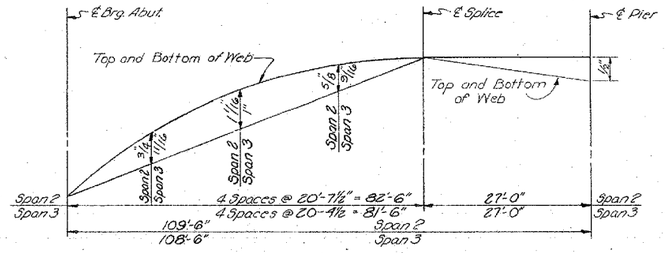
b) After beams have been erected and dimensions D* & D** determined, holes shall be drilled and anchor bolts shall be grouted in place. All fixed anchor bolts may be built into the masonry.

BEARING ASSEMBLY DETAILS

* SEAT ELEVATIONS

Girder No	N. Abut	Pier	S. Abut
1	814.52	815.07	813.77
2	814.64	815.19	813.89
3	814.75	815.30	814.00
4	814.87	815.42	814.12
5	814.99	815.53	814.24
6	814.87	815.42	814.12
7	814.75	815.30	814.00
8	814.64	815.19	813.89
9	814.52	815.07	813.77

* For Girder Bearings



CAMBER DIAGRAM

(Showing Top of Girder Web)

Designed	D.E.B.
Checked	L.R.W.
Drawn	R.P.W., J.L.K, M.C.K. & J.G.
Checked	D.E.B.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
STRUCTURAL STEEL DETAILS
PROJECT: F.A. 405
ILL. HWY. 174 OVER F.A. ROUTE 405
F.A. 405 SECTION 72-7HB
PEORIA COUNTY
STA. 929+03.18

FOR INFORMATION ONLY

MAURER-STUTZ ENGINEERS SURVEYORS

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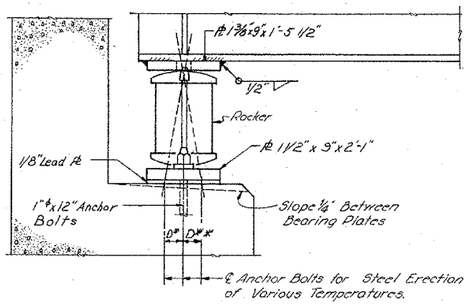
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
EXISTING BRIDGE PLANS

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	349
6585		CONTRACT NO. 68683		
		ILLINOIS	FED. AID PROJECT	

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA 405	72-7HB	PEORIA	180	46
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJ.		



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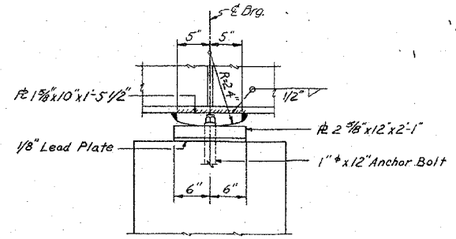
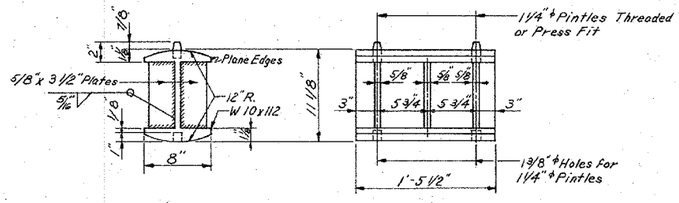
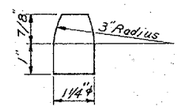


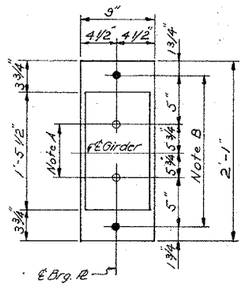
ELEVATION



ROCKER



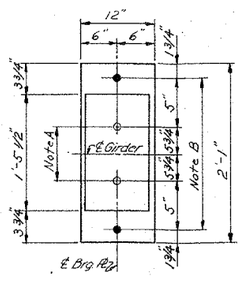
PINTLE



PLAN AT ABUTMENTS

NOTE A
13/8" ϕ Holes - 1" Deep in Top Pl for Pintles. Thread or Press Fit Pintles into Bottom Pl

NOTE B
1 1/2" ϕ Holes for 1" ϕ Anchor Bolts 5/16"x 2 1/2"x 2 1/2" Pl Washers Under Nut



PLAN AT PIER

* TOP OF WEB ELEVATIONS

Girder No.	N. Abut.	Splice 1	Pier	Splice 2	S. Abut.
1	819.80	819.77	819.63	819.58	819.05
2	819.92	819.89	819.75	819.69	819.17
3	820.04	820.00	819.87	819.81	819.29
4	820.15	820.12	819.98	819.92	819.40
5	820.27	820.23	820.10	820.04	819.52
6	820.15	820.12	819.98	819.92	819.40
7	820.04	820.00	819.87	819.81	819.29
8	819.92	819.89	819.75	819.69	819.17
9	819.80	819.77	819.63	819.58	819.05

* For Fabrication Only

INTERIOR GIRDER REACTION TABLE

Reactions	N. Abutment	Pier	S. Abutment
R ℄ (K)	50.1	185.9	49.3
R ℄ (K)	48.3	75.4	47.7
Impact (K)	10.3	16.1	10.2
R (Total) (K)	108.7	277.4	107.2

STRESS TABLE

(Composite at Positive Moment Regions only)

INTERIOR GIRDER MOMENT TABLE

Properties		At 0.4 Span 2	At Pier	At 0.4 Span 3
Is	(in4)	206 79	52853	206 79
Ic	(in4)	54569	———	54569
Ss	(in3)	1029	2004	1029
Sc	(in3)	1406	———	1406
℄	(K/')	0.930	1.114	0.930
M ℄	('K)	660	1750	636
Fs ℄	(Ksi)	7.70	10.48	7.42
S ℄	(K/A)	0.352	0.352	0.352
MS ℄	('K)	305.3	502.6	296.1
M ℄	('K)	937	855.5	916
M(Imp)	('K)	200	182.7	196
Total	('K)	1442.3	1540.8	1408.1
fs ℄	(Ksi)	12.30	9.23	12.02
fs(Total)	(Ksi)	20.00	19.71	19.44
VR	(K)	57.9	———	58.1

Is & Ss are the Moment of Inertia and Section Modulus of the Steel Section.
Ic & Sc are the moment of Inertia and Section Modulus of the composite Section used in computing fs.
VR is the maximum ℄ + Impact shear range in span

NOTES ON SETTING OF ANCHOR BOLTS AT EXP. BRG.

a) D* (Side of brg. away from fixed brg.)
D* = 1/8" per each 100' of expansion for every 15° fall below the normal temp. of 50° F.
D** (Side of brg. toward fixed brg.)
D** = 1/8" per each 100' of expansion for every 15° rise above the normal temp. of 50° F.

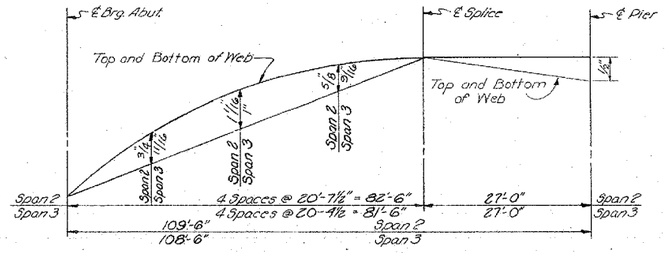
b) After beams have been erected and dimensions D* & D** determined, holes shall be drilled and anchor bolts shall be grouted in place. All fixed anchor bolts may be built into the masonry.

BEARING ASSEMBLY DETAILS

* SEAT ELEVATIONS

Girder No	N. Abut	Pier	S. Abut
1	814.52	815.07	813.77
2	814.64	815.19	813.89
3	814.75	815.30	814.00
4	814.87	815.42	814.12
5	814.99	815.53	814.24
6	814.87	815.42	814.12
7	814.75	815.30	814.00
8	814.64	815.19	813.89
9	814.52	815.07	813.77

* For Girder Bearings



CAMBER DIAGRAM

(Showing Top of Girder Web)

Designed	D.E.B.
Checked	L.R.W.
Drawn	R.P.W., J.L.K, M.C.K. & J.G.
Checked	D.E.B.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
STRUCTURAL STEEL DETAILS
PROJECT: F.A. 405
ILL. HWY. 174 OVER F.A. ROUTE 405
F.A. 405 SECTION 72-7HB
PEORIA COUNTY
STA. 929+03.18

FOR INFORMATION ONLY

MAURER-STUTZ ENGINEERS SURVEYORS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

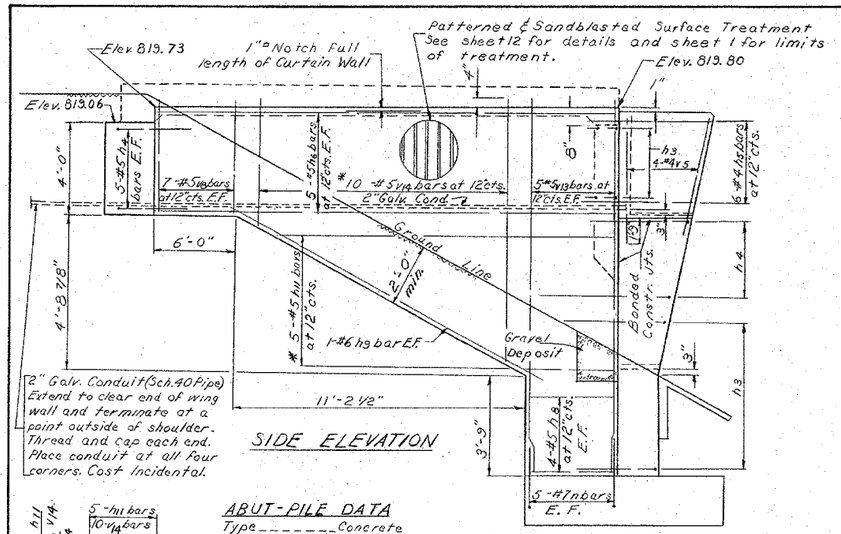
ALLEN ROAD IMPROVEMENTS
EXISTING BRIDGE PLANS

SCALE: | SHEET OF SHEETS | STA. | TO STA.

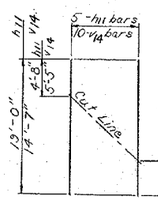
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	350
6585		CONTRACT NO. 68683		
		ILLINOIS	FED. AID PROJECT	

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA405	72-7HB	PEORIA	180	48
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJ.		

Sheet 11 of 14



SIDE ELEVATION



FIELD CUTTING DIAGRAM

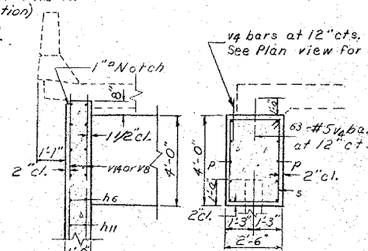
*Order h11 & v14 bars full length. Cut to fit as shown and use remainder of bars in other face.

ABUT-PILE DATA

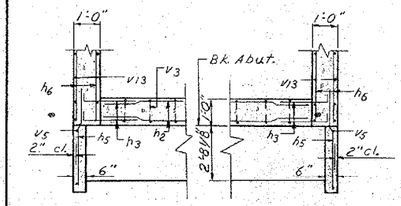
Type _____ Concrete
Capacity _____ 33 Tons
Est. Length _____ 35 Ft.
No. Req'd. _____ 29 (Plus One Test Pile in Permanent Location)

APPR. BENT-PILE DATA

Type _____ Concrete
Capacity _____ 25 Tons
Est. Length _____ 30 Ft.
No. Req'd. _____ 12



SECTION C-C SECTION B-B



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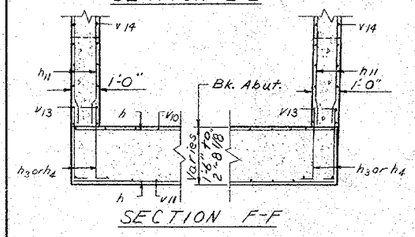

SECTION F-F

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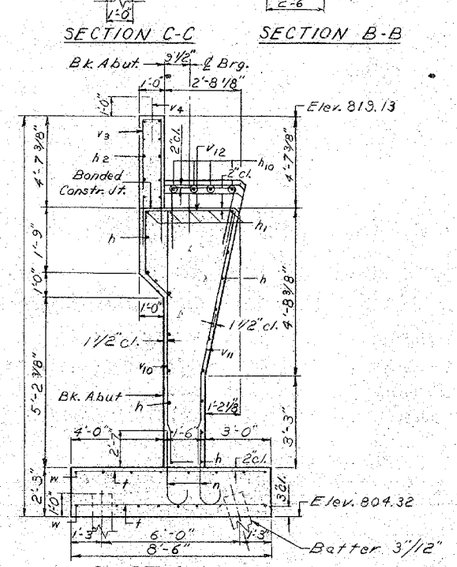
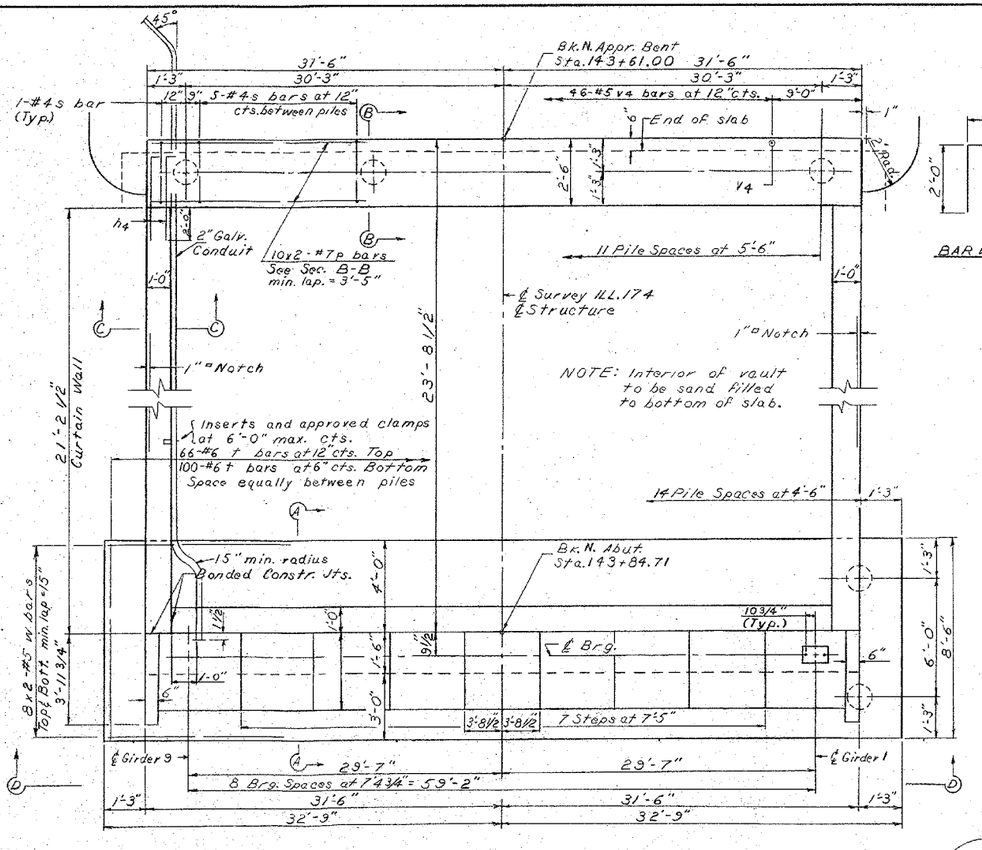
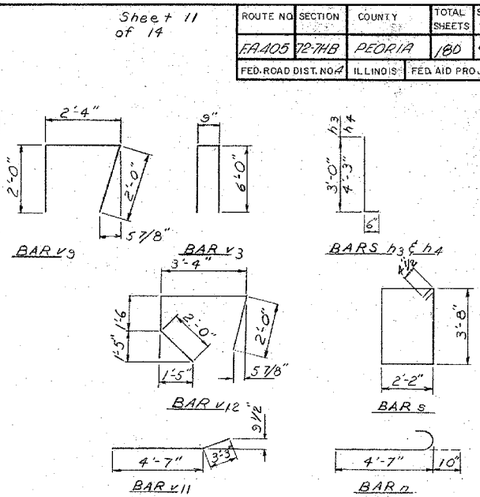
CHECKED	D.E.B.
DRAWN	M.C.K.
CHECKED	D.E.B.



SECTION A-A

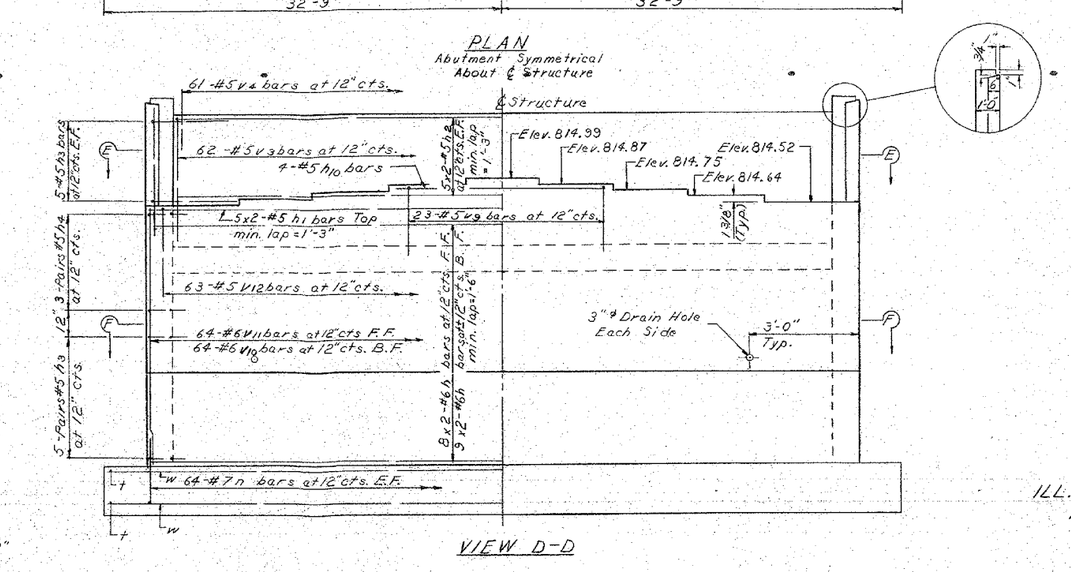




BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	34	#6	32'-1"	
h1	10	#5	32'-0"	
h2	20	#5	31'-0"	
h3	40	#5	3'-6"	L
h4	32	#5	4'-9"	L
h5	12	#4	5'-0"	
h6	20	#5	20'-10"	
h11	10	#5	19'-0"	
h8	16	#5	3'-8"	
h9	4	#6	14'-5"	
h10	4	#5	21'-11"	
n	148	#7	5'-5"	⊐
p	20	#7	33'-1"	
s	57	#4	12'-5"	Z
t	166	#6	8'-2"	
v10	64	#6	7'-9"	
v11	64	#6	7'-10"	
v12	63	#5	8'-10"	⊏
v3	62	#5	12'-9"	Π
v4	170	#5	2'-3"	
v5	8	#4	6'-10"	
v13	20	#5	13'-6"	
v14	20	#5	14'-7"	
v8	28	#5	4'-11"	
v9	23	#5	6'-4"	⊏
w	32	#5	33'-2"	

Reinforcement Bars	Lbs.	14,670
Class X Concrete	Cu. Yds.	1297
Concrete Piles	Lin. Ft.	1375
Test Pile Concrete	Each	1
Sand Back Fill	Cu. Yds.	185



VIEW D-D

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT
PROJECT F.A.405
ILL. HWY. 174 OVER F.A. HWY. 405
F.A.405 SECTION 72-7HB
PEORIA COUNTY
STA. 929+03.18

FOR INFORMATION ONLY

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
EXISTING BRIDGE PLANS

SCALE: | SHEET OF SHEETS | STA. | TO STA.

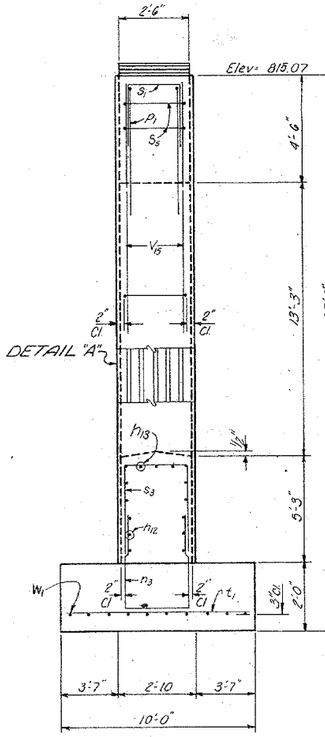
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	351
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

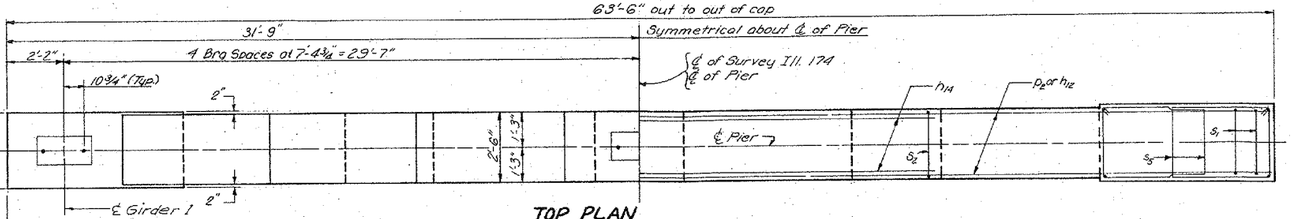
ROUTE	NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA405	72-7HB		PEORIA	180	49
FED. ROAD DIST. NO. 4		ILLINOIS	FED. AID PROJ.		

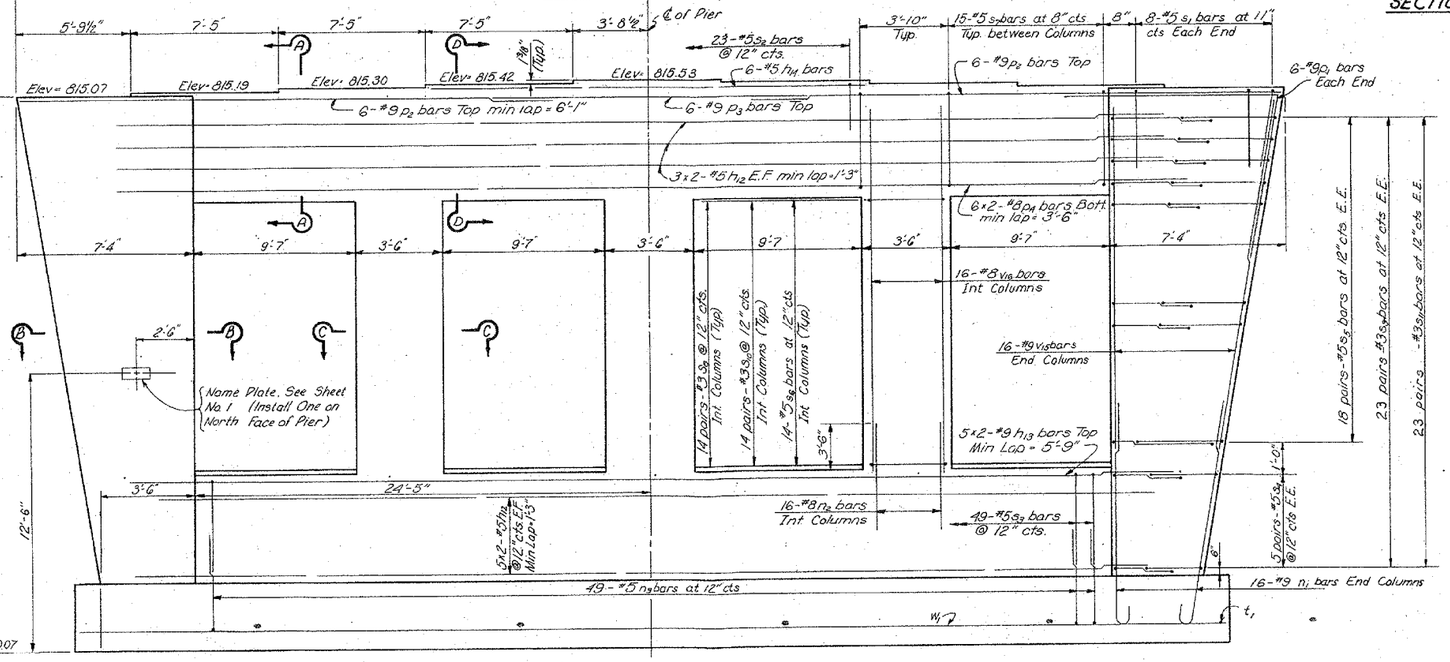
Notes:
Space Reinforcement in cap to miss anchor bolts.
All edges shall have standard 3/4" chamfers except as noted.
Pour steps monolithically with cap.

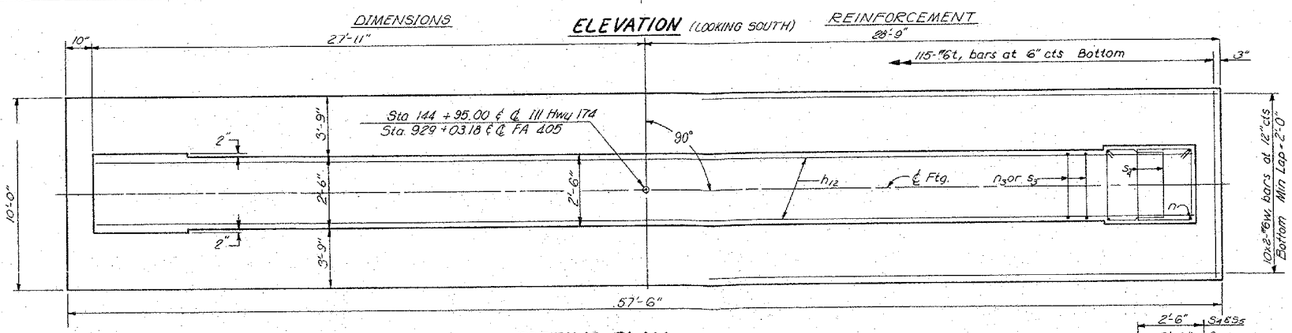
Patterned and Sandblasted Surface Treatment on end surface of exterior columns

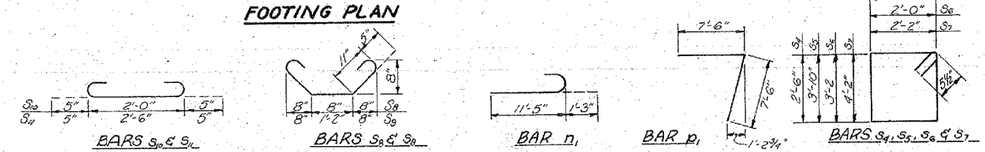
DETAIL "A"

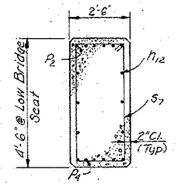


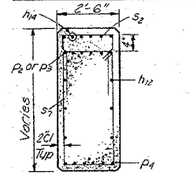


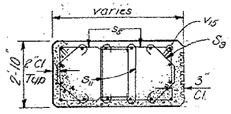


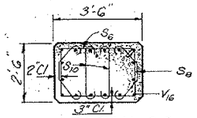


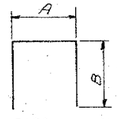












A & B DIMENSIONS

BAR	A	B
n3	2'-2"	4'-5"
s1	2'-2"	3'-6"
s2	2'-2"	1'-6"
s3	2'-2"	4'-5"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h12	32	#5	26'-4"	
h13	10	#9	30'-8"	
h14	6	#5	21'-11"	
n1	32	#9	12'-8"	
n2	48	#8	6'-6"	
n3	49	#5	11'-0"	
p1	12	#9	15'-0"	
p2	12	#9	28'-1"	
p3	6	#9	19'-2"	
p4	12	#8	28'-10"	
s1	16	#5	9'-2"	
s2	23	#5	5'-2"	
s3	49	#5	11'-0"	
s4	20	#5	10'-11"	
s5	72	#5	13'-7"	
s6	42	#5	11'-3"	
s7	60	#5	13'-7"	
s8	84	#3	3'-4"	
s9	92	#3	3'-10"	
s10	84	#3	2'-10"	
s11	92	#3	3'-4"	
t1	115	#6	9'-8"	
v15	32	#9	17'-3"	
v16	48	#8	17'-3"	
w1	20	#6	29'-7"	
Class "X" Concrete		Cu Yds	127.0	
Reinforcement Bars		Lbs	18,420	

DESIGNED	LRW
CHECKED	DEB
DRAWN	JG
CHECKED	DEB

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER
PROJECT: F.A. 405
ILL. HWY. 174 OVER F.A. ROUTE 405
F.A. 405 SECTION 72-7HB
PEORIA COUNTY
STA. 929+03.18

Rev. 9-18-99

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STATE OF ILLINOIS
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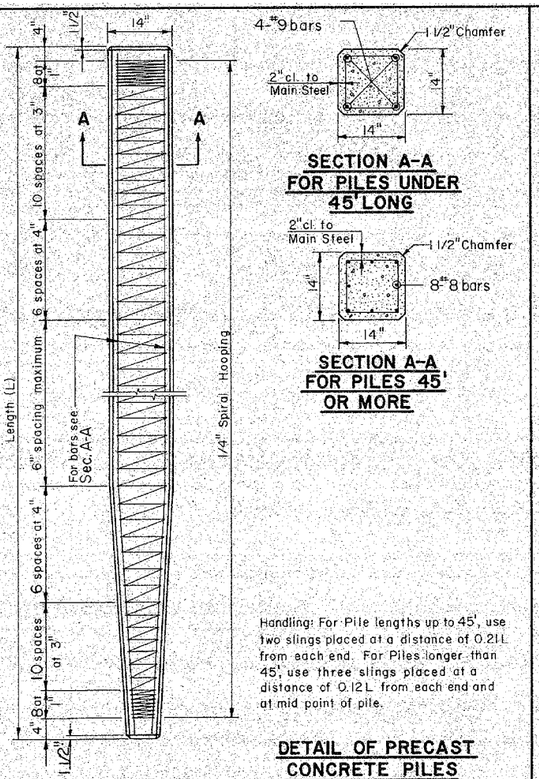
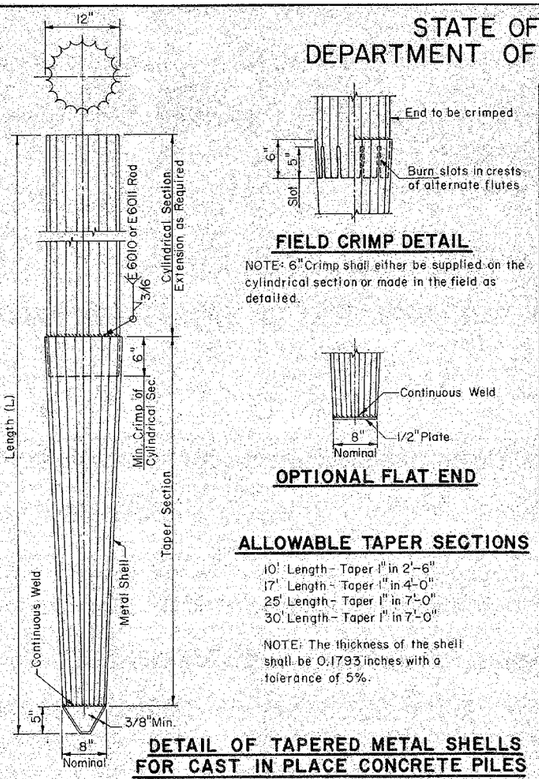
	ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



Handling: For Pile lengths up to 45', use two slings placed at a distance of 0.21L from each end. For Piles longer than 45', use three slings placed at a distance of 0.12L from each end and at mid point of pile.

DETAIL OF PRECAST CONCRETE PILES



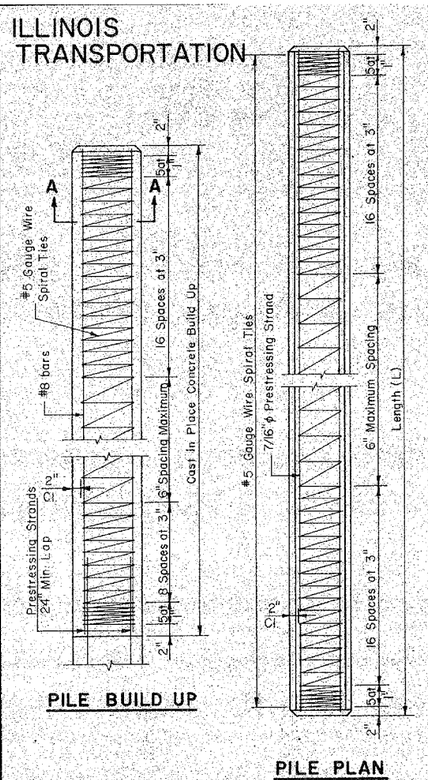
NOTE: 6" Crimp shall either be supplied on the cylindrical section or made in the field as detailed.

ALLOWABLE TAPER SECTIONS

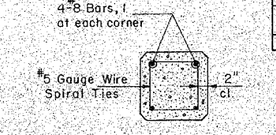
10' Length - Taper 1" in 2'-6"
17' Length - Taper 1" in 4'-0"
25' Length - Taper 1" in 7'-0"
30' Length - Taper 1" in 7'-0"

NOTE: The thickness of the shell shall be 0.1793 inches with a tolerance of 5%.

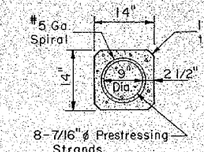
DETAIL OF TAPERED METAL SHELLS FOR CAST IN PLACE CONCRETE PILES



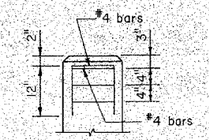
PILE PLAN



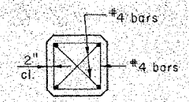
SECTION A-A



SECTION THRU PILE



ELEVATION
(End Reinforcement)



PLAN
(End Reinforcement)

DESIGN STRESSES

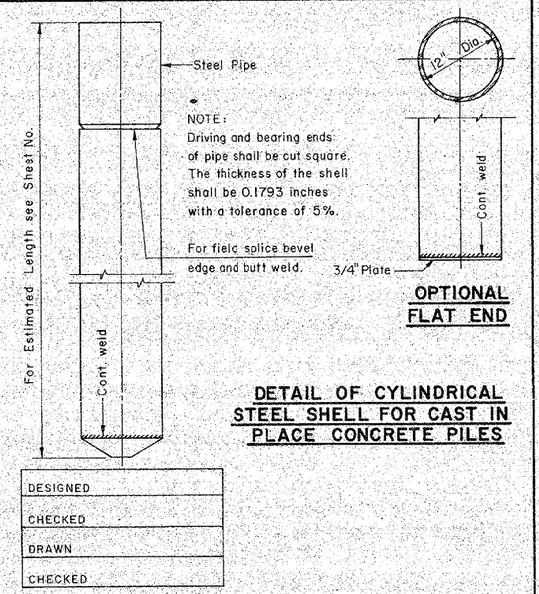
fc' = 5,000 psi
fc'i = 4,000 psi
fs' = 270,000 psi (31,000 lbs.)
fs'i = 189,000 psi (21,700 lbs - 7/16 ϕ or 28,900 lbs - 1/2 ϕ)

NOTES

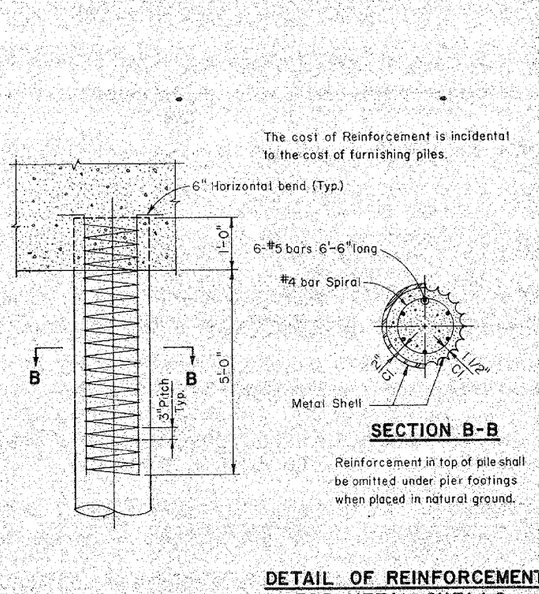
Prestressing steel shall be non-galvanized extra high strength stress-relieved 7-wire strand. The nominal diameter shall be 7/16" and the minimum nominal cross-sectional area shall be 0.1155 sq. in. or the equivalent 6-1/2" ϕ strands with a cross sectional area of 0.153 sq. in. may be used.

For Pile lengths up to 65', use two slings placed at a distance of 0.21 L* from each end. For Piles longer than 65', use three slings placed at a distance of 0.12 L* from each end and at mid-point of pile. * L = Over all length of pile to be handled.

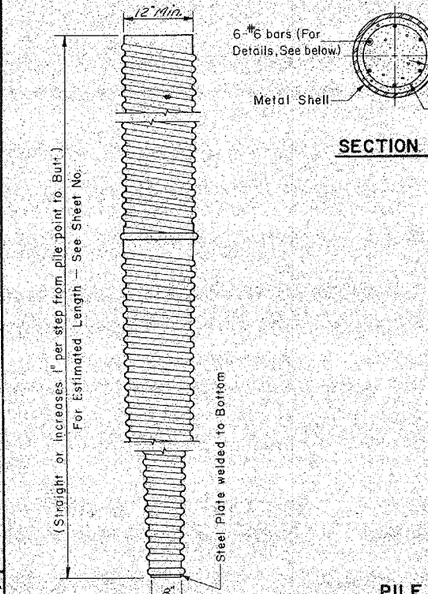
PRECAST PRESTRESSED CONCRETE PILE



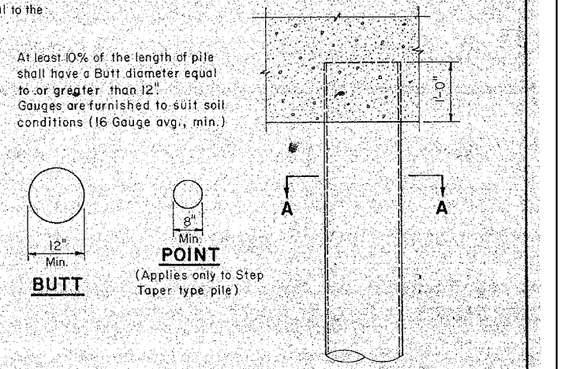
DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES



DETAIL OF REINFORCEMENT FOR METAL SHELLS



At least 10% of the length of pile shall have a Butt diameter equal to or greater than 12". Gauges are furnished to suit soil conditions (16 Gauge avg., min.)



DETAIL OF MANDREL DRIVEN STRAIGHT OR STEP-TAPER PILES FOR CAST IN PLACE CONCRETE PILES

PILE DETAILS
PROJECT: F.A. 405
ILL. HWY. 174 OVER F.A. ROUTE 405
F.A. 405 SECTION 72-7HB
PEORIA COUNTY
STA. 929+03.18

FOR INFORMATION ONLY

MAURER-STUTZ ENGINEERS SURVEYORS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
EXISTING BRIDGE PLANS

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	353
6585		CONTRACT NO. 68683		
	ILLINOIS	FED. AID PROJECT		

F.A.405	72-7HB	PEORIA	180	51
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJ.		

Boring No. 1
Station 143+51
Offset 11' Lt. ℄

DESCRIPTION	Elevation	N	Qu. t/s.f.	w (%)
Ground Surface	818.7	0		
BROWN MOIST SILTY CLAY	814.7	14	2.1 S	29
BROWN WET SILTY CLAY LOAM	809.7	7	0.4 B	28
		5	0.8 B	25
BROWN MOIST CLAY LOAM	802.2	14	3.3 B	14
		16	3.3 E	-
		19	3.5 B	14
GRAY MOIST CLAY LOAM TILL		24	3.3 B	14
		22	3.9 B	14
		16	1.9 B	14
		19	2.0 E	-
		23	2.9 B	15
		20	2.5 B	14
		19	2.7 B	14
	748.2	16	2.7 E	-
END OF BORING				

Surface Water El. ____
Groundwater El. at Completion 810.2
After 24 Hours ____

Elevation	N	Qu. t/s.f.	w (%)
	22	2.1 B	14
-40	18	1.9 B	15
	23	1.9 B	14
-45	24	2.5 E	-
	29	2.7 B	15
-50	32	2.7 B	13
	43	1.9	14
-55	43	2.0 E	15
	30	1.6 B	14
-60	38	2.3 B	14
	43	3.3 B	12
-70			

Boring No. 2
Station 144+95
Offset 13' Rt. ℄

DESCRIPTION	Elevation	N	Qu. t/s.f	w (%)
Ground Surface	819.4	0		
BROWN MOIST SILTY CLAY	815.4	14	2.3 B	-
MOTTLED WET SILTY CLAY LOAM	812.9	9	0.4 B	-
BROWN MOIST CLAY LOAM	807.9	13	2.5 E	-
		23	2.9 S	-
BROWN WET SAND AND GRAVEL	804.9	28	3.1 B	-
BROWN MOIST CLAY LOAM	800.4	13	4.1 B	-
		16	-	-
GRAY MOIST CLAY LOAM TILL		20	2.3 B	-
		22	2.3 B	-
		19	2.7 B	-
		24	3.7 B	-
		22	3.5 E	-
		22	3.5 B	-
		20	2.3 B	-
		22	2.5 B	-
	738.9	22	2.3 B	-
END OF BORING				

Surface Water El. ____
Groundwater El. at Completion 809.9
After 24 Hours ____

Elevation	N	Qu. t/sf	w (%)
	-	-	-
774.9			
-45	38	-	-
GRAY WET SANDY LOAM			
770.4			
GRAY MOIST CLAY LOAM TILL	43	4.8 B	-
-50			
765.4			
GRAY MOIST SILTY CLAY LOAM	36	1.9 B	-
-55			
760.4			
GRAY MOIST CLAY LOAM TILL	42	3.1 B	-
-60			
-65	34	2.1 B	-
-70	40	2.5 B	-
-75	53	2.7 B	13
-80	53	2.3 B	12

Boring No. 3
Station 146+43
Offset 11' Lt ℄

DESCRIPTION	Elevation	N	Qu. t/sf	w (%)
Ground Surface	819.8	0		
DARK BROWN MOIST SILTY CLAY LOAM	815.8	10	1.1 S	29
MOTTLED MOIST SILTY CLAY	813.3	9	1.2 S	26
MOTTLED WET SILTY CLAY LOAM	808.3	3	0.4 B	28
		6	1.0 B	25
BROWN MOIST CLAY LOAM	803.3	23	2.9 B	16
		20	2.0 E	-
GRAY MOIST CLAY LOAM TILL		13	1.9 B	14
		17	2.5 B	14
		18	3.3 B	13
		20	3.7 B	12
		26	3.0 E	-
		20	2.3 B	15
	754.3	20	2.3 B	13
END OF BORING				

Surface Water El. ____
Groundwater El. at Completion 809.3
After 24 Hours 816.6

Elevation	N	Qu. t/sf	w (%)
-35	20	3.5 B	13
	23	3.3 B	14
-40	21	2.9 B	15
	21	2.7 B	13
-45	26	3.1 B	14
	28	3.1 B	13
-50	32	5.2 S	13
	30	3.3 B	12
-55	35	5.8 B	14
	28	4.3 B	12
-60	33	3.5 S	13
	35	3.3 B	14
-65	45	4.6 B	13

N– Standard Penetration Test– Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with 140# hammer falling 30".

Qu– Uncofined Compressive Strength-t./s.f.

W – Water Content-percentage of oven dry weight-%

Type Failure:
B-Bulge Failure
S-Shear Failure
E-Estimated Value

DESIGNED	
CHECKED	
DRAWN: Steele	
CHECKED: D.E.B.	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
BORINGS
PROJECT: F.A. 405
ILL. HWY. 174 OVER F.A. ROUTE 40
F.A. 405 SECTION 72-7HB
PEORIA COUNTY
STA. 929+03.18

00-00015

FOR INFORMATION ONLY

MAURER-STUTZ ENGINEERS SURVEYORS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
EXISTING BRIDGE PLANS

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	354
6585		CONTRACT NO. 68683		
	ILLINOIS	FED. AID PROJECT		

WATER MAIN GENERAL NOTES

GENERAL
1. THE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS ACCOMPANYING THESE PLANS AND THE FOLLOWING SPECIFICATIONS: (A) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", BY THE ILLINOIS DEPT. OF TRANSPORTATION, LATEST EDITION, (B) "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS", BY THE ILLINOIS DEPT. OF TRANSPORTATION, LATEST EDITION, (C) "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS", LATEST EDITION. (D) ILLINOIS-AMERICAN ILAW WATER COMPANY STANDARD PIPELINE SPECIFICATIONS.
2. ALL PROPOSED WATER MAINS SHALL MEET MINIMUM SEPARATION OR ENCASEMENT REQUIREMENTS PER THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION.
3. WATER SERVICE SHUT-OFFS, MAIN CLOSURES, STREET AND PRIVATE DRIVEWAY CLOSURES WILL REQUIRE A MINIMUM OF 48 HOURS ADVANCE NOTICE TO THE CITY OF PEORIA, THE ILLINOIS DEPARTMENT OF TRANSPORTATION, AND THE PUBLIC, AS APPLICABLE.
4. A PRE-CONSTRUCTION VIDEO RECORD OF THE JOB SITE WILL BE REQUIRED TO ENSURE OWNER THAT CONTRACTOR RESTORES AREAS DISTURBED BY CONSTRUCTION ACTIVITIES TO THEIR ORIGINAL CONDITION. A MINIMUM OF TWO (2) DVD FORMAT VIDEOS WILL BE REQUIRED IN ALL AREAS OF PROPOSED WORK AND SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO THE START OF CONSTRUCTION. COSTS FOR PRE-CONSTRUCTION VIDEO RECORD SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
5. ALL CONSTRUCTION OPERATIONS SHALL BE IN ACCORDANCE WITH THE APPLICABLE REGULATIONS OF THE UNITED STATES OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (O.S.H.A.) AND SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
6. THE LOCATION OF EXISTING UNDERGROUND UTILITIES, AS SHOWN ON THESE PLANS, IS BASED UPON FIELD INVESTIGATION, UTILITY MAPS, AND JULIE LOCATES, BUT THE LOCATIONS ARE NOT GUARANTEED. UNLESS OTHER INFORMATION WAS AVAILABLE, ALL EXISTING WATER MAINS HAVE BEEN SHOWN WITH APPROXIMATELY 3.5' OF COVER; HOWEVER, THE ACTUAL DEPTH OF THE MAINS MAY VARY. CONTRACTOR SHALL BE RESPONSIBLE TO DETERMINE ALL CRITICAL LOCATIONS AND ELEVATIONS PRIOR TO CONSTRUCTION.

INSTALLATION
1. REFER TO THE SPECIFICATIONS AND STANDARD DETAILS ON THE DRAWINGS FOR BACKFILL AND CRADLE MATERIAL SPECIFICATIONS, INSTALLATION PROCEDURES AND COMPACTION REQUIREMENTS.
2. THE PIPE SHALL BE LAID WITH A COVER OF AT LEAST 42 INCHES AND NO MORE THAN 54 INCHES AS MEASURED FROM THE TOP OF THE PIPE TO FINISHED GRADE OF THE GROUND, UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR NOTED ON THE CONSTRUCTION DRAWINGS.
3. THE CONTRACTOR IS RESPONSIBLE FOR DUST AND MUD CONTROL.
4. WATER MAINS INSTALLED UNDER SEWERS, WHICH ARE NOT CONSTRUCTED WITH WATER MAIN QUALITY PIPE, SHALL BE CONSTRUCTED PER DETAIL 10B ON ILAW STANDARD DETAILS. CASING PIPE SHALL BE C900 PVC. ENDS SHALL BE SEALED WATER TIGHT.

RESTORATION
1. CONTRACTOR SHALL REMOVE AND REPLACE ANY CONCRETE SIDEWALKS AND DRIVEWAYS PARTIALLY DAMAGED DURING CONSTRUCTION IN FULL SECTIONS (FROM JOINT TO JOINT), IF REQUIRED SOLEY FOR CONSTRUCTION OF THE WATER MAIN.
2. ALL GRASSED AREAS DISTURBED DURING CONSTRUCTION SHALL BE FERTILIZED AND SEEDED IN ACCORDANCE WITH SECTION 21 OF THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOISG. MULCHING SHALL BE CONDUCTED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 251 OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ADOPTED JANUARY 1, 2007 AND THE APPLICABLE PROVISIONS OF THE LATEST EDITION OF THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS. DISTURBED AREAS LOCATED WITHIN PUBLIC RIGHT-OF-WAY SHALL BE FERTILIZED AND SEEDED WITH A CLASS 2A MIXTURE AND MULCHED ACCORDING TO METHOD 2, PROCEDURE 2. DISTURBED AREAS LOCATED OUTSIDE THE PUBLIC RIGHT- OF-WAY SHALL BE FERTILIZED AND SEEDED WITH A CLASS 1 MIXTURE AND ALSO MULCHED ACCORDING TO METHOD 2, PROCEDURE 2, UNLESS OTHERWISE NOTED IN THESE PLANS.
3. WHERE TOPSOIL IS PRESENT THE ACTUAL DEPTH OF THE TOPSOIL SHALL FIRST BE STRIPPED FROM THE AREA TO BE EXCAVATED FOR A WATER LINE TRENCH, ALL BORE PITS, AND OTHER AREAS OF EXCAVATION. TOPSOIL SHALL BE STOCKPILED ON SITE SEPARATE FROM OTHER SOILS FROM THE EXCAVATION. ALL SUBSOIL MATERIAL WHICH IS REMOVED FROM THE TRENCH SHALL BE PLACED IN A SECOND STOCKPILE THAT IS SEPARATE FROM THE TOPSOIL STOCKPILE. RESTORATION OF ALL SURFACES SHALL BE IN ACCORDANCE WITH SECTION 21 OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION.
4. IN BACKFILLING THE TRENCH AND OTHER EXCAVATED AREAS, THE STOCKPILED SUBSOIL MATERIAL WILL BE PLACED BACK INTO THE TRENCH FIRST. THE TOPSOIL WILL BE REPLACED LAST SO THAT IT REMAINS THE TOP LAYER OF SOIL.
5. THE TOPSOIL AND SUBSOIL MUST BE REPLACED WITHIN THE TRENCH AND OTHER EXCAVATED AREAS SO THAT AFTER SETTLING OCCURS, THE LAND'S ORIGINAL CONTOUR (WITH AN ALLOWANCE FOR SETTLING) WILL BE ACHIEVED.
6. ALL EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE IDOT STANDARD SPECIFICATIONS AND THE IEPA/USDA NRCS ILLINOIS URBAN MANUAL, 1995 (FROM THE ILLINOIS DEPARTMENT OF AG. SOIL CONSERVATION SERVICE).
7. WHERE APPLICABLE, THE CONTRACTOR SHALL PROVIDE EROSION CONTROL AS REQUIRED TO PREVENT SOIL EROSION. EROSION CONTROL METHODS SHALL BE PROVIDED AS SPECIFIED IN "ILLINOIS URBAN MANUAL", LATEST EDITION.
8. OIL AND CHIP STREETS SHALL BE REPLACED WITH 3" OF ASPHALT (MINIMUM THICKNESS).

MATERIAL REQUIREMENTS
1. WATER MAIN MATERIAL SHALL BE DUCTILE IRON PRESSURE CLASS 300 (MINIMUM) WITH THE PIPE ADHERING TO ANSI/AWWA C151/ANSI A21.51 AND THE JOINTS ADHERING TO ANSI/AWWA C110/A21.10. PIPING SHALL BE POLYETHYLENE WRAPPED. PIPE SHALL BE INSTALLED BY OPEN EXCAVATION, UNLESS ALTERNATIVE METHODS ARE APPROVED BY ILLINOIS-AMERICAN WATER COMPANY.
2. GATE VALVES, BUTTERFLY VALVES, AND VALVE BOXES SHALL BE IN ACCORDANCE WITH THE ILLINOIS-AMERICAN WATER COMPANY STANDARD PIPELINE SPECIFICATIONS.
3. PROVIDE APPROPRIATE JOINT RESTRAINT FOR ALL WATER MAINS AND FITTINGS IN ACCORDANCE WITH THE DRAWINGS AND SECTION 41-2.09 OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION. ALL ASPECTS OF JOINT RESTRAINT INSTALLATION SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO THE UNIT PRICE FOR THE ASSOCIATED SIZED "FITTING" INVOLVED.
4. TRACER WIRE AND WARNING TAPE SHALL BE INSTALLED PER THE PROJECT SPECIFICATIONS.
5. CONTRACTOR SHALL MAINTAIN A MINIMUM 2' SPOOL PIECE LENGTH.

UTILITIES
1. PROTECTION OF WATER MAINS AND WATER SERVICES (INCLUDING HORIZONTAL AND VERTICAL SEPARATION OF WATER MAINS AND SERVICES FROM STORM AND SANITARY SEWERS) SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF SECTION 41-2.01 OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION AND THE PROVISIONS OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY "ILLINOIS RECOMMENDED STANDARDS FOR SEWAGE WORKS", SECTION 370.350. ANY COSTS FOR THIS WORK INCLUDING CASINGS, FITTINGS, THRUST BLOCKS, ETC. SHALL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE PROPOSED WORK.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL UTILITY LOCATIONS AND ELEVATIONS PRIOR TO CONSTRUCTION.

COORDINATION WITH IDOT
1. ALL WORK ADJACENT TO IL ROUTE 6 SHALL BE PERFORMED IN COMPLIANCE WITH IDOT'S REQUIREMENTS AND ANY APPLICABLE IDOT UTILITY PERMIT FOR THIS PROJECT.

PROJECT CLOSEOUT
1. CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING AND SUBMITTING ALL RECORD DRAWINGS TO THE OWNER AND ENGINEER WITHIN 30 DAYS OF SUBSTANTIAL COMPLETION. THE CONTRACTOR SHALL KEEP ONE SET OF PLANS UPON WHICH ALL "REVISIONS" OR "VARIATIONS" ARE NOTED IN RED PENCIL. THIS SET SHALL BE TURNED OVER TO THE ENGINEER AT THE END OF THE PROJECT, AS A CONDITION PRECEDENT TO ISSUANCE OF FINAL CERTIFICATE FOR PAYMENT.
2. ALL NEW WATER MAINS SHALL BE PRESSURE TESTED, DISINFECTED AND FLUSHED PRIOR TO PLACING THE MAINS IN SERVICE. THIS WORK SHALL CONFORM TO THE PROJECT SPECIFICATIONS.
3. CONTRACTOR SHALL SATISFACTORILY DISINFECT ALL WATER MAINS PRIOR TO USE. IN ACCORDANCE WITH REQUIREMENTS OF AWWA C651-99, AT LEAST ONE SET OF SAMPLES SHALL BE COLLECTED FROM EVERY 1,200 FEET OF NEW WATER MAIN, PLUS ONE SET FROM THE END OF THE LINE AND AT LEAST ONE SET FROM EACH BRANCH. SATISFACTORY DISINFECTION SHALL BE DEMONSTRATED IN ACCORDANCE WITH THE REQUIREMENTS OF 35 IL ADM. CODE 652-203. CONTRACTOR SHALL FURNISH AND INSTALL CORPORATION STOPS AT REQUIRED SAMPLING LENGTHS.
4. FLUSHING OF THE 16H MAIN SHALL BE ACCOMPLISHED BY INSTALLING A TEMPORARY 6H VALVE & HYDRANT (SUPPLIED BY ILAW) AT APPROPRIATE LOCATIONS. UPON COMPLETION OF FLUSHING WORK THE HYDRANT AND VALVE SHALL BE REMOVED AND THE 6H CONNECTION SHALL BE CAPPED AT THE MAIN. THIS WORK, INCLUDING ANY FITTINGS AND APPURTENANCES, SHALL BE CONSIDERED INCIDENTAL TO THE WATER MAIN INSTALLATION.

ILLINOIS-AMERICAN WATER COMPANY (ILAWC)
1. CONTRACTOR SHALL FURNISH ALL WATER MAIN PIPE, FITTINGS, VALVES AND APPURTENANCES AS REQUIRED FOR THE PROJECT AND SHALL PERFORM ALL INSTALLATION WORK.
2. ILAWC WILL OPERATE ALL VALVES AND ILAW REQUIRES A 24 HOUR ADVANCE NOTICE FROM THE CONTRACTOR FOR OPERATION OF ANY VALVES..
3. THE CONTRACTOR SHALL PERFORM ALL HOT TAPS AND CUT IN CONNECTIONS. SCHEDULE WORK 48 HOURS IN ADVANCE WITH ILAW.
4. PROPOSED VALVES SHALL BE INSTALLED PER THE ILAW STANDARD.
5. TRACER WIRE SHALL BE THREADED UP THE OUTSIDE OF VALVE BOXES. THE CONTRACTOR SHALL NOTCH THE LIP WITH A SAW AND LAY THE WIRE INTO THE BOX (SEE DETAIL 22 ON ILAW STANDARD DETAILS FOR MORE INFORMATION ON TRACER WIRE INSTALLATION).
6. EXISTING WATERLINES SHALL BE DECOMMISSIONED BY THE CONTRACTOR ONCE THE INTERCONNECTS HAVE BEEN SUCCESSFULLY COMPLETED.

BILL OF MATERIALS

Item	Unit	Total Quantity	C.O.P. Quantity	IDOT Quantity
TRENCH BACKFILL	CY	50	21	29
CLASS B PATCHES, TYPE II, 10 INCH	SY	30	30	0
DOWEL BARS 1 1/2"	EA	84	84	0
SAW CUTS	LF	144	144	0
DUCTILE IRON WATER MAIN 8"	LF	439	29	410
DUCTILE IRON WATER MAIN 12"	LF	29	29	0
DUCTILE IRON WATER MAIN 16"	LF	3230	1910	1320
WATER VALVES 8"	EA	5	2	3
WATER VALVES 12"	EA	1	1	0
BUTTERFLY VALVES 16"	EA	1	0	1
TAPPING VALVES AND SLEEVES 16"	EA	3	2	1
CONNECTION TO EXISTING WATER MAIN 8"	EA	4	1	3
CONNECTION TO EXISTING WATER MAIN 12"	EA	1	1	0
CONNECTION TO EXISTING WATER MAIN 16"	EA	3	1	2
CUT AND CAP EXISTING 8" WATER MAIN	EA	5	2	3
CUT AND CAP EXISTING 12" WATER MAIN	EA	1	1	0
CUT AND CAP EXISTING 16" WATER MAIN	EA	9	5	4
STEEL CASINGS 30"	LF	40	0	40
8" D.I. FITTING	EA	20	6	14
12" D.I. FITTING	EA	4	4	0
16" D.I. FITTING	EA	19	7	12

MAURER-STUTZ ENGINEERS SURVEYORS

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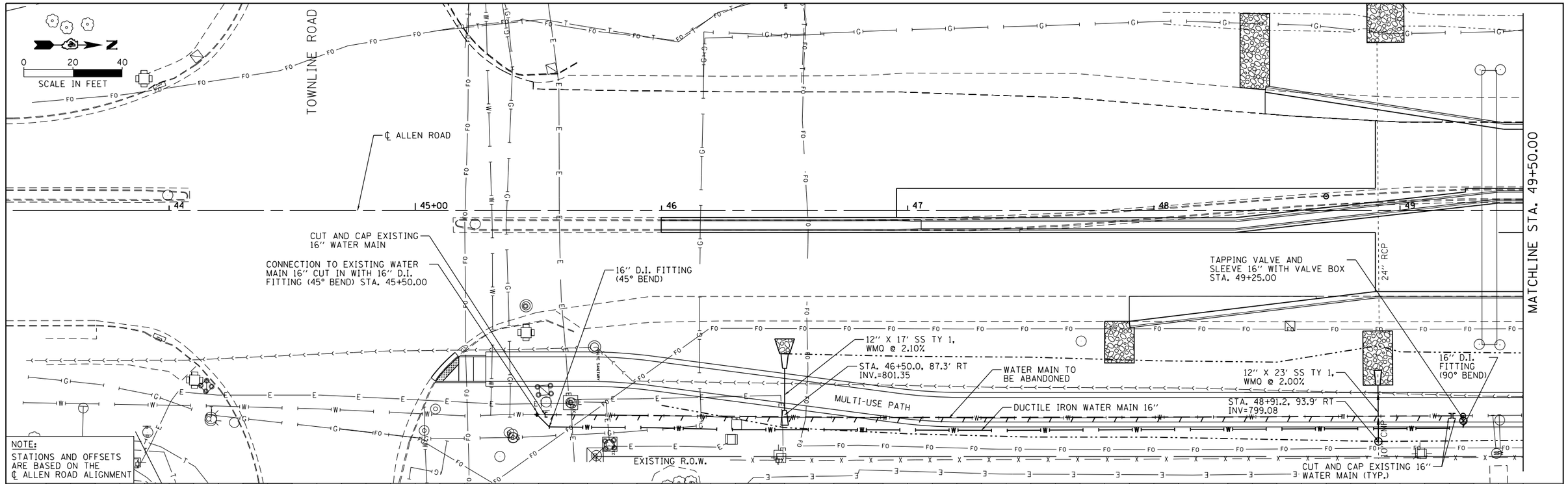
	PLOT DATE = 1/28/2014 10:24:47 AM	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
WATER MAIN RELOCATION – GENERAL NOTES

SCALE: | SHEET 1 OF 17 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	355
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



PLAN — SURVEYED; PLOTTED; ALIGNMENT CHECKED; RT. OF WAY CHECKED; CADD FILE NAME; NOTE BOOK; NO.; BY; DATE

PROFILE — SURVEYED; PLOTTED; PROFILES CHECKED; BM. NOTED; STRUCTURE NOTATNS CHKD; NOTE BOOK; NO.; BY; DATE

MAURER-STUTZ ENGINEERS SURVEYORS

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		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
WATER MAIN RELOCATION – ALLEN ROAD

SCALE: | SHEET 2 OF 17 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	356
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

MATCHLINE STA. 49+50.00

℄ RAMP B

℄ RAMP A

PC Sta 52+27.34

PC Sta 52+27.34

PI Sta 53+33.51

PRC Sta 54+39.55

PRC Sta 54+39.68

PI Sta 55+48.23

MATCHLINE STA. 55+50.00

POT Sta 24+84.15

POT Sta 24+84.15

℄ ALLEN ROAD

50+00 | 51 | 52+00 | 53 | 54 | 55+00

PC Sta 52+27.43

PI Sta 53+33.47

PRC Sta 54+39.51

PI Sta 55+48.20

MULTI-USE PATH

EXISTING R.O.W.

0 20 40
SCALE IN FEET

NOTE:
STATIONS AND OFFSETS ARE BASED ON THE ℄ ALLEN ROAD ALIGNMENT

NO WATER MAIN RELOCATION ON THIS SHEET

820 815 810 805 800 795 790 785 780

EXISTING GRADE

PROPOSED GRADE

EXISTING 16" WATER MAIN

	804.08	EXIST.	804.37	804.73	805.22	805.53	806.35	807.52	809.30	811.17	813.18	814.99	816.46	816.92
	804.10	PROP.	804.80	805.50	806.00	806.80	807.90	809.10	810.50	811.70	813.00	813.50	815.60	816.20
	49+50		50+00	50+50	51+00	51+50	52+00	52+50	53+00	53+50	54+00	54+50	55+00	55+50

PROFILE
SURVEYED
PLOTTED
ALIGNMENT CHECKED
R.O.W. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

MAURER-STUTZ ENGINEERS SURVEYORS

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Default	PLOT DATE = 1/28/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
WATER MAIN RELOCATION – ALLEN ROAD

SCALE: | SHEET 3 OF 17 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	357
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

NOTE:
STATIONS AND OFFSETS ARE BASED ON THE ℄ ALLEN ROAD ALIGNMENT

PLAN
NOTE BOOK NO. ____
SURVEYED
PLOTTED
ALIGNMENT CHECKED
R.T. OF WAY CHECKED
CADD FILE NAME
BY
DATE

PROFILE
NOTE BOOK NO. ____
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTAT'NS CHK'D
BY
DATE

MAURER-STUTZ
ENGINEERS SURVEYORS

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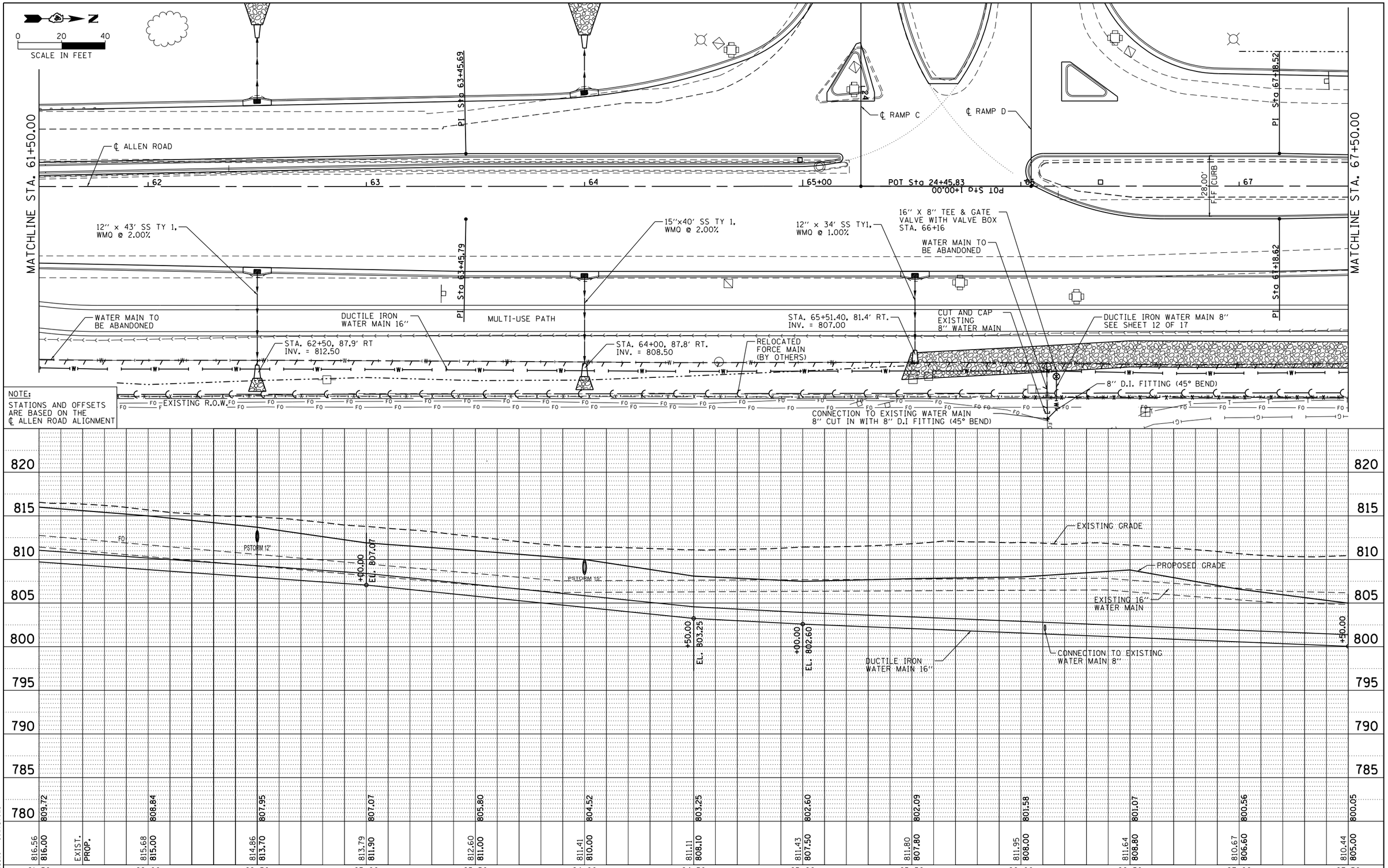
		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
WATER MAIN RELOCATION - ALLEN ROAD

SCALE: | SHEET 4 OF 17 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	358
6585		CONTRACT NO. 68683		
		ILLINOIS FED. AID PROJECT		



PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
BM. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

MAURER-STUTZ ENGINEERS SURVEYORS

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Default	PLOT DATE = 1/28/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
WATER MAIN RELOCATION – ALLEN ROAD

SCALE: | SHEET 5 OF 17 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	359
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

NOTE:
STATIONS AND OFFSETS
ARE BASED ON THE
℄ ALLEN ROAD ALIGNMENT

PLAN NOTE BOOK NO. SURVEYED PLOTTED ALIGNMENT CHECKED RT. OF WAY CHECKED CADD FILE NAME BY DATE

PROFILE NOTE BOOK NO. SURVEYED PLOTTED GRADES CHECKED BM. NOTED STRUCTURE NOTAT'NS CH'KD BY DATE

MAURER-STUTZ ENGINEERS SURVEYORS

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Default	PLOT DATE = 1/28/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
WATER MAIN RELOCATION – ALLEN ROAD

SCALE: SHEET 6 OF 17 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	360
6585		CONTRACT NO. 68683		
	ILLINOIS	FED. AID PROJECT		

PLAN
NOTE BOOK
NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
R.O.F. OF WAY CHECKED
CADD FILE NAME
BY
DATE

PROFILE
NOTE BOOK
NO.
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTAT'NS CH'KD
BY
DATE

MAURER-STUTZ
ENGINEERS SURVEYORS

FILE NAME =
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USER NAME = jeandrews	DESIGNED -	REVISED -
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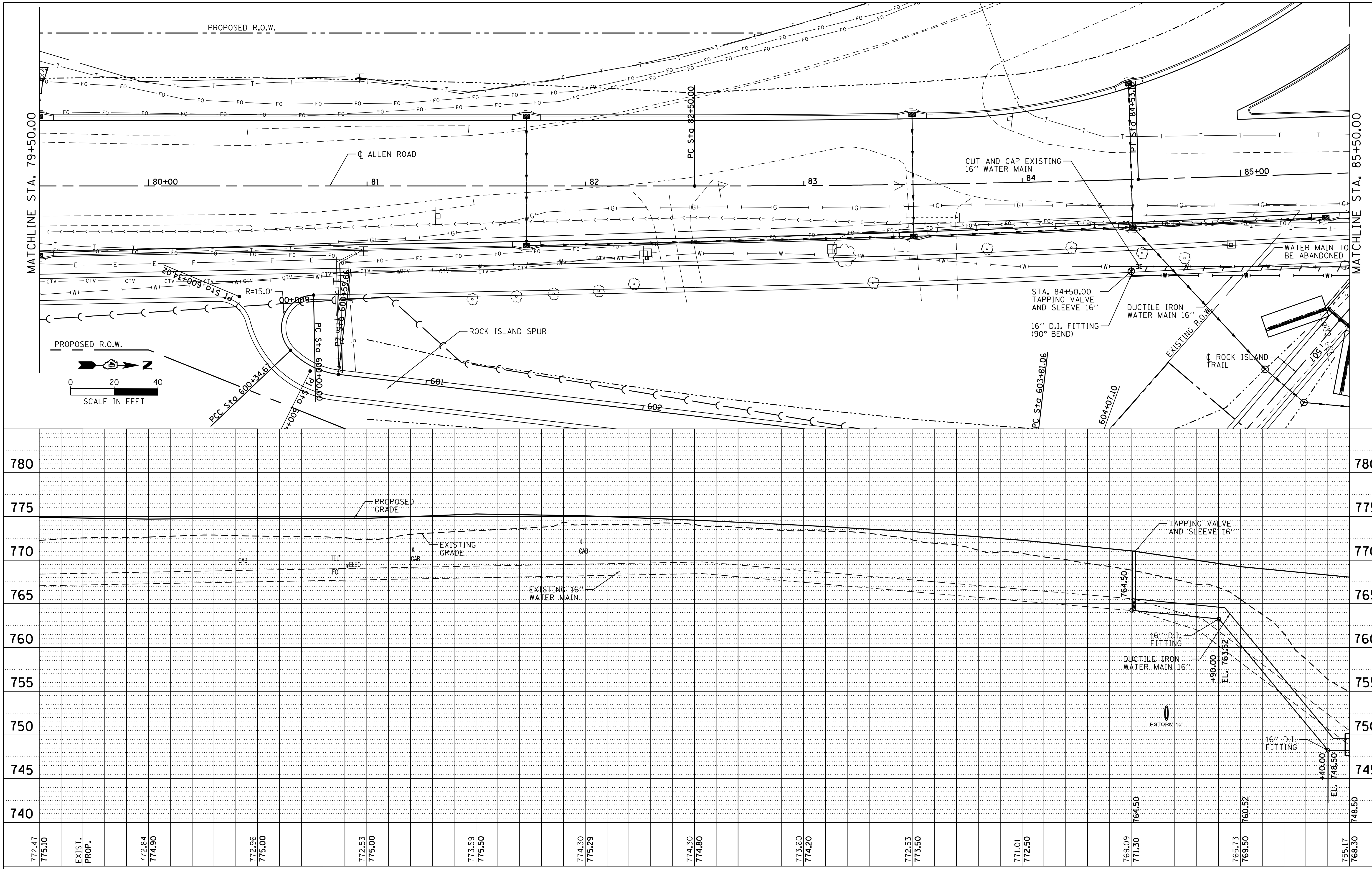
	CHECKED -	REVISED -
PLOT DATE = 1/28/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
WATER MAIN RELOCATION – ALLEN ROAD

SCALE: SHEET 7 OF 17 SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	361
6585		CONTRACT NO. 68683		
	ILLINOIS	FED. AID PROJECT		



PROPOSED R.O.W.
MATCHLINE STA. 79+50.00
MATCHLINE STA. 85+50.00
℄ ALLEN ROAD
80+00
81
82
83
84
85+00
PC Sta 82+50.00
PT Sta 84+53.16
CUT AND CAP EXISTING 16'' WATER MAIN
WATER MAIN TO BE ABANDONED
STA. 84+50.00 TAPPING VALVE AND SLEEVE 16''
DUCTILE IRON WATER MAIN 16''
16'' D.I. FITTING (90° BEND)
EXISTING R.O.W.
℄ ROCK ISLAND TRAIL
ROCK ISLAND SPUR
R=15.0'
PI Sta 600+34.02
PCC Sta 600+34.67
PC Sta 600+00.00
PI Sta 600+59.66
PC Sta 603+81.06
604+07.10
601
602
SCALE IN FEET
0
20
40
PROPOSED GRADE
EXISTING GRADE
EXISTING 16'' WATER MAIN
TAPPING VALVE AND SLEEVE 16''
16'' D.I. FITTING
DUCTILE IRON WATER MAIN 16''
764.50
+90.00
EL. 763.52
+40.00
EL. 748.50
STORM 16''
CAB
ELEC
780
775
770
765
760
755
750
745
740
EXIST.
PROP.
772.47 775.10
772.84 774.90
772.96 775.00
772.53 775.00
773.59 775.50
774.30 775.29
774.30 774.80
773.60 774.20
772.53 773.50
771.01 772.50
769.09 771.30
764.50
765.73 769.50
760.52
755.17 768.30
748.50
79+50
80+00
80+50
81+00
81+50
82+00
82+50
83+00
83+50
84+00
84+50
85+00
85+50
PLAN
PROFILE

MAURER-STUTZ ENGINEERS SURVEYORS

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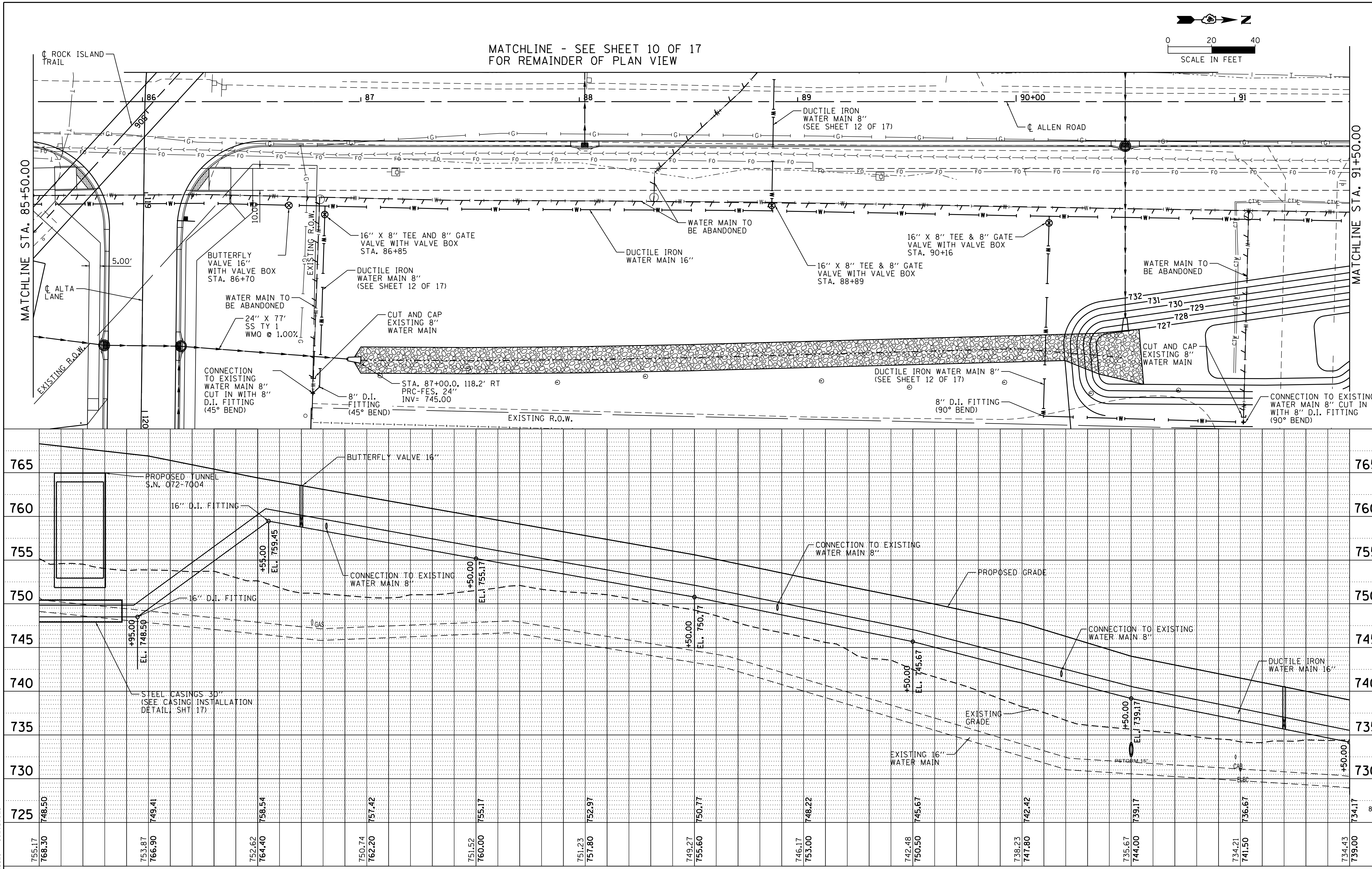
Default Default	PLOT DATE = 1/28/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
WATER MAIN RELOCATION - ALLEN ROAD

SCALE: | SHEET 8 OF 17 SHEETS | STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	362
6585		CONTRACT NO. 68683		
		ILLINOIS FED. AID PROJECT		


MATCHLINE - SEE SHEET 10 OF 17
FOR REMAINDER OF PLAN VIEW
SCALE IN FEET
0 20 40
℄ ROCK ISLAND TRAIL
℄ ALLEN ROAD
℄ ALTA LANE
MATCHLINE STA. 85+50.00
MATCHLINE STA. 91+50.00
DUCTILE IRON WATER MAIN 8" (SEE SHEET 12 OF 17)
16" X 8" TEE AND 8" GATE VALVE WITH VALVE BOX STA. 86+85
BUTTERFLY VALVE 16" WITH VALVE BOX STA. 86+70
WATER MAIN TO BE ABANDONED
24" X 77' SS TY 1 WMO @ 1.00%
CUT AND CAP EXISTING 8" WATER MAIN
CONNECTION TO EXISTING WATER MAIN 8" CUT IN WITH 8" D.I. FITTING (45° BEND)
8" D.I. FITTING (45° BEND)
STA. 87+00.0, 118.2' RT PRC-FES, 24" INV= 745.00
DUCTILE IRON WATER MAIN 16"
16" X 8" TEE & 8" GATE VALVE WITH VALVE BOX STA. 88+89
16" X 8" TEE & 8" GATE VALVE WITH VALVE BOX STA. 90+16
DUCTILE IRON WATER MAIN 8" (SEE SHEET 12 OF 17)
8" D.I. FITTING (90° BEND)
CONNECTION TO EXISTING WATER MAIN 8" CUT IN WITH 8" D.I. FITTING (90° BEND)
EXISTING R.O.W.
5.00'
BUTTERFLY VALVE 16"
PROPOSED TUNNEL S.N. 072-7004
16" D.I. FITTING
CONNECTION TO EXISTING WATER MAIN 8"
PROPOSED GRADE
EXISTING GRADE
EXISTING 16" WATER MAIN
STEEL CASINGS 30" (SEE CASING INSTALLATION DETAIL, SHT 17)
DUCTILE IRON WATER MAIN 16"
+95.00 EL. 748.50
+55.00 EL. 759.45
+50.00 EL. 755.17
+50.00 EL. 750.77
+50.00 EL. 745.67
+50.00 EL. 739.17
765 760 755 750 745 740 735 730 725
85+50 86+00 86+50 87+00 87+50 88+00 88+50 89+00 89+50 90+00 90+50 91+00 91+50

FILE NAME =	USER NAME = jeandrews	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ALLEN ROAD IMPROVEMENTS WATER MAIN RELOCATION - ALLEN ROAD	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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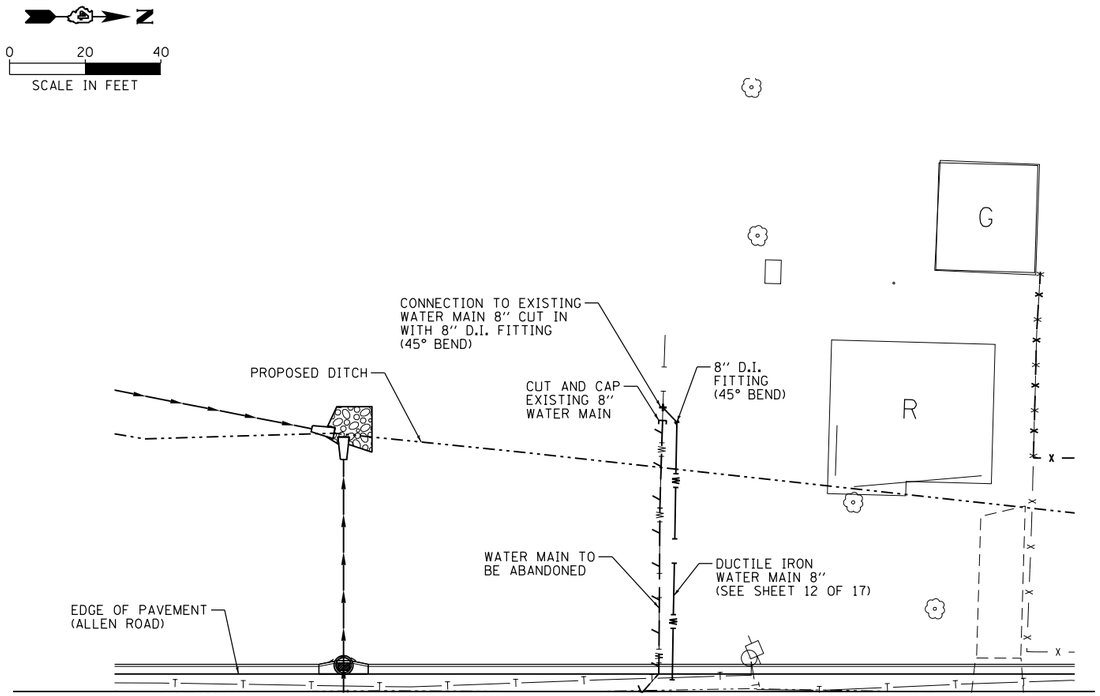
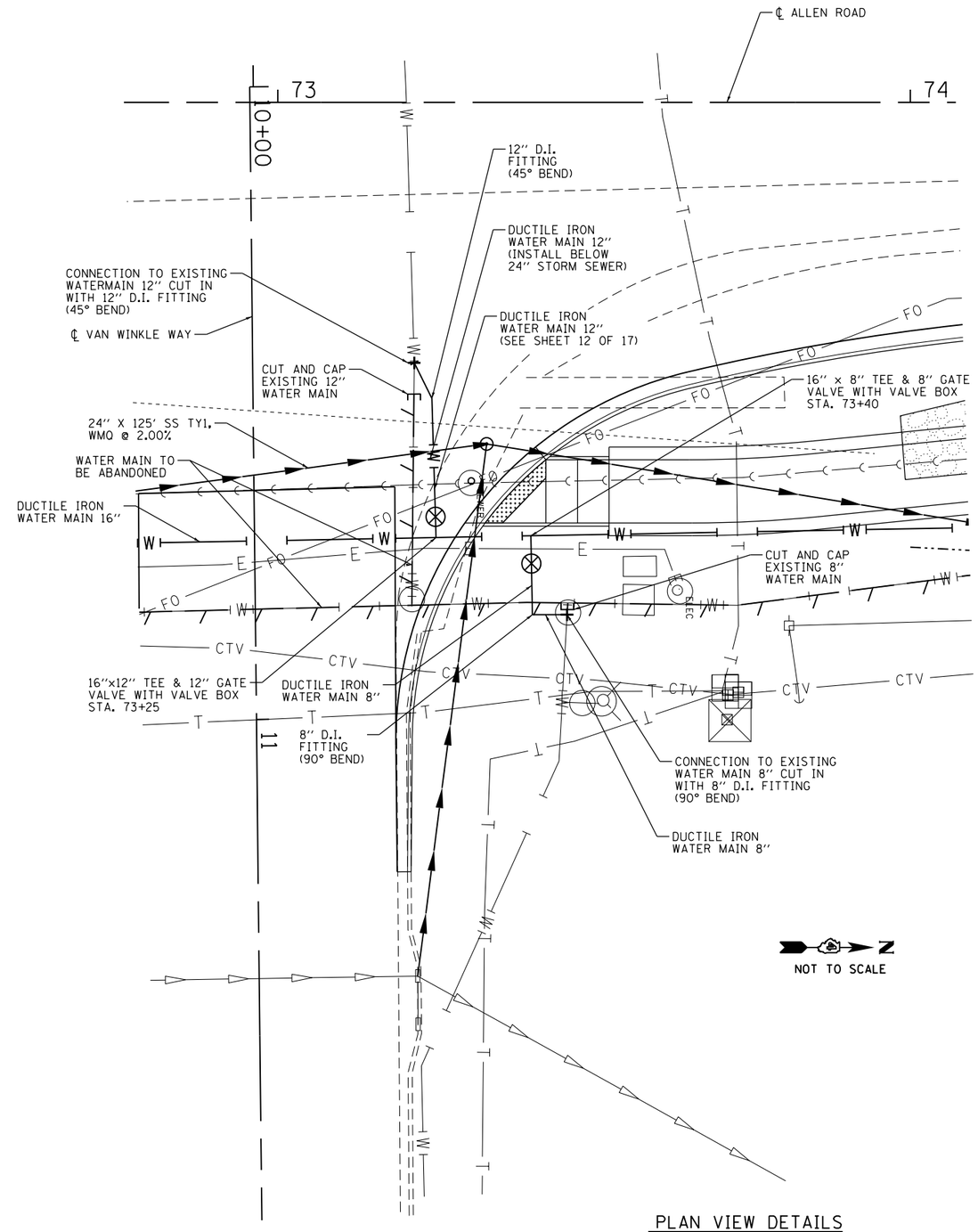
Default	PLOT DATE = 1/28/2014	CHECKED -	REVISED -		SCALE: SHEET 9 OF 17 SHEETS STA. TO STA.	6585		CONTRACT NO. 68683		
		DATE -	REVISED -				ILLINOIS FED. AID PROJECT			

MAURER-STUTZ ENGINEERS SURVEYORS



MATCHLINE - SEE SHEET 9 OF 17 FOR REMAINDER OF PLAN VIEW



NOTE:
CONTRACTOR TO FIELD VERIFY (AS NEEDED) ELEVATIONS OF EXISTING 8" AND 12" WATER MAINS AT PROPOSED CONNECTIONS PRIOR TO INSTALLATION OF MAINS.

PLAN VIEW DETAILS
VAN WINKLE WAY

MAURER-STUTZ ENGINEERS SURVEYORS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
WATER MAIN RELOCATION – ALLEN ROAD

SCALE: | SHEET 10 OF 17 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	364
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

PLAN

BY	DATE
SURVEYED	
PLOTTED	
ADJUSTMENT CHECKED	
RT. OF WAY CHECKED	
CADD FILE NAME	
NOTE BOOK	
NO.	

MATCHLINE STA. 91+50.00

MATCHLINE STA. 804+15.33

24" X 138' PIPE CULVERT CL A, TY 2, WMQ @ 1.60%

PC Sta 94+67.75

1ST STREET

PT Sta 97+00.08

℄ ALLEN ROAD

15" X 58' SS TY1, WMQ @ 10.00%

92 93 94 95+00 96 97

ENCASE WATER MAIN

STA. 93+24.4, 81.0' RT INV.=722.10

CUT AND CAP EXISTING 16" WATER MAIN

STA. 96+00 CONNECTION TO EXISTING WATERMAIN 16" WITH 16" D.I. FITTING (45° BEND)

18" X 52' SS TY 1, WMQ @ 0.50%

16" D.I. FITTING (45° BEND)

WATER MAIN TO BE ABANDONED

DUCTILE IRON WATER MAIN 16"

STA. 95+50.00, 87.2' RT INV.=717.41

STA. 93+00.00, 84.4' RT INV.=722.00

732 731 730 729 728 727 726 725 724 723 724

0 20 40

SCALE IN FEET

PROFILE

BY	DATE
SURVEYED	
PLOTTED	
ADJUSTMENT CHECKED	
BM. NOTED	
STRUCTURE NOTATNS CHKD	
NOTE BOOK	
NO.	

740 735 730 725 720 715 710 705 700

EXISTING GRADE

DUCTILE IRON WATER MAIN 16"

+00.00 EL. 726.77

EL. 734.17 PI

+50.00 EL. 729.37

PROPOSED GRADE

EXISTING 16" WATER MAIN

PSTORM 15"

PSTORM 24"

+00.00 EL. 723.37

+00.00 EL. 720.97

+50.00 EL. 720.17

PSTORM 18"

ENCASE WATER MAIN 10' BEYOND EACH SIDE OF STORM SEWER -SEAL ENDS (SEE ILAW STD. DETAIL 10B)

	91+50	92+00	92+50	93+00	93+50	94+00	94+50	95+00	95+50	96+00	96+50	97+00	97+50
	734.43	732.65	731.60	727.69	724.32	723.19	722.36	721.49	719.10	718.75	717.97	716.44	715.54
EXIST.	739.00	736.70	734.20	731.60	730.20	728.20	726.70	725.80	725.00	718.80	717.90	716.50	715.50
LT. DITCH	734.17	731.77	729.37	726.77	725.07	723.37	722.17	720.97	720.17	714.50			
PROP.													

MAURER-STUTZ ENGINEERS SURVEYORS

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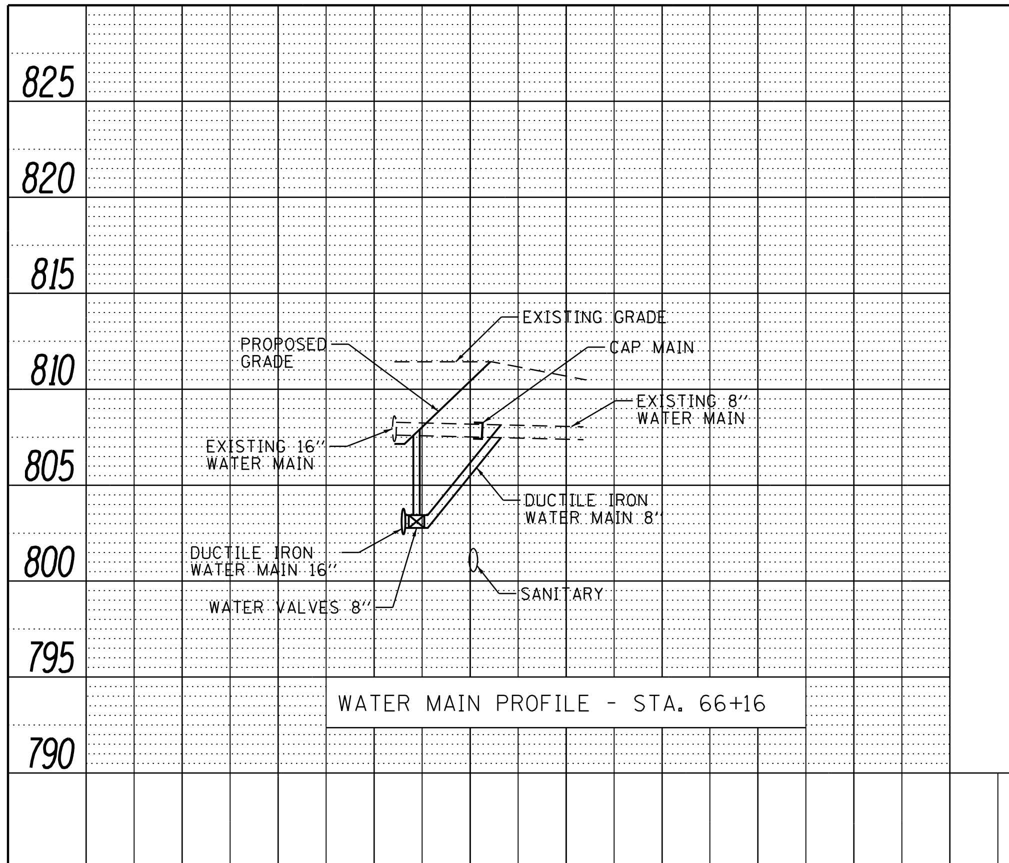
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
WATER MAIN RELOCATION - ALLEN ROAD

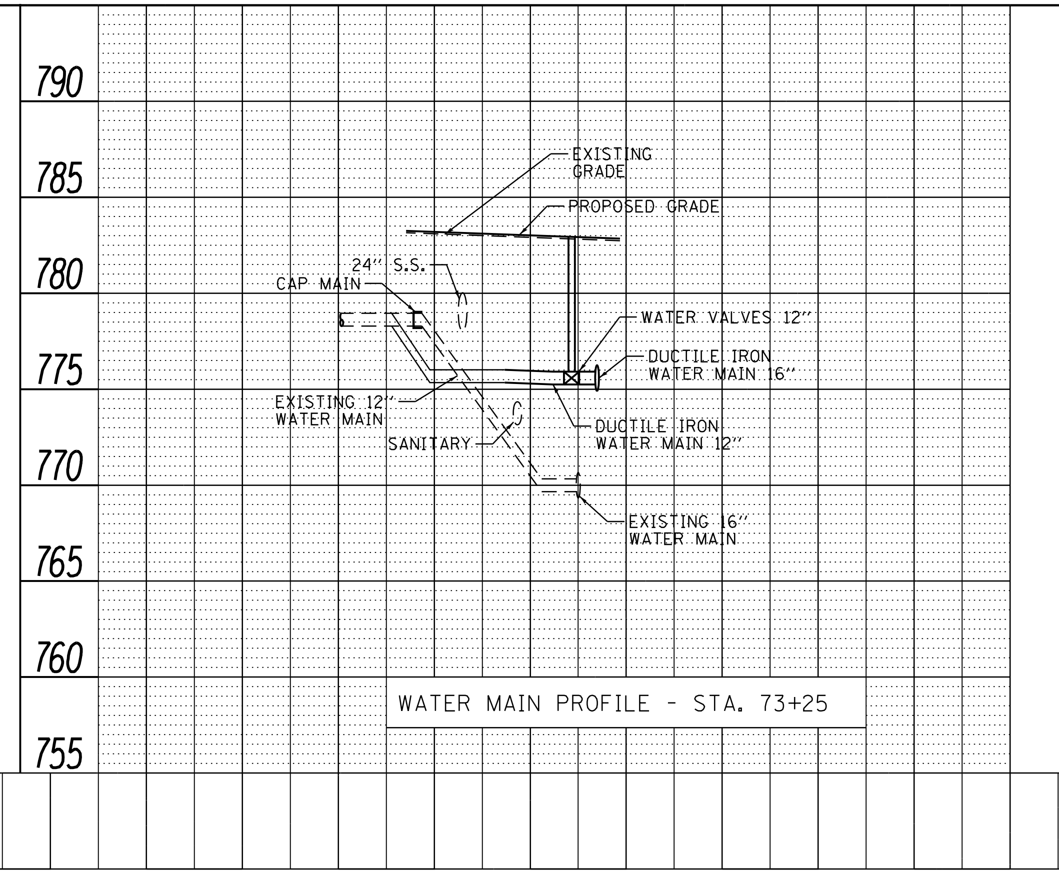
SCALE: | SHEET 11 OF 17 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	365
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

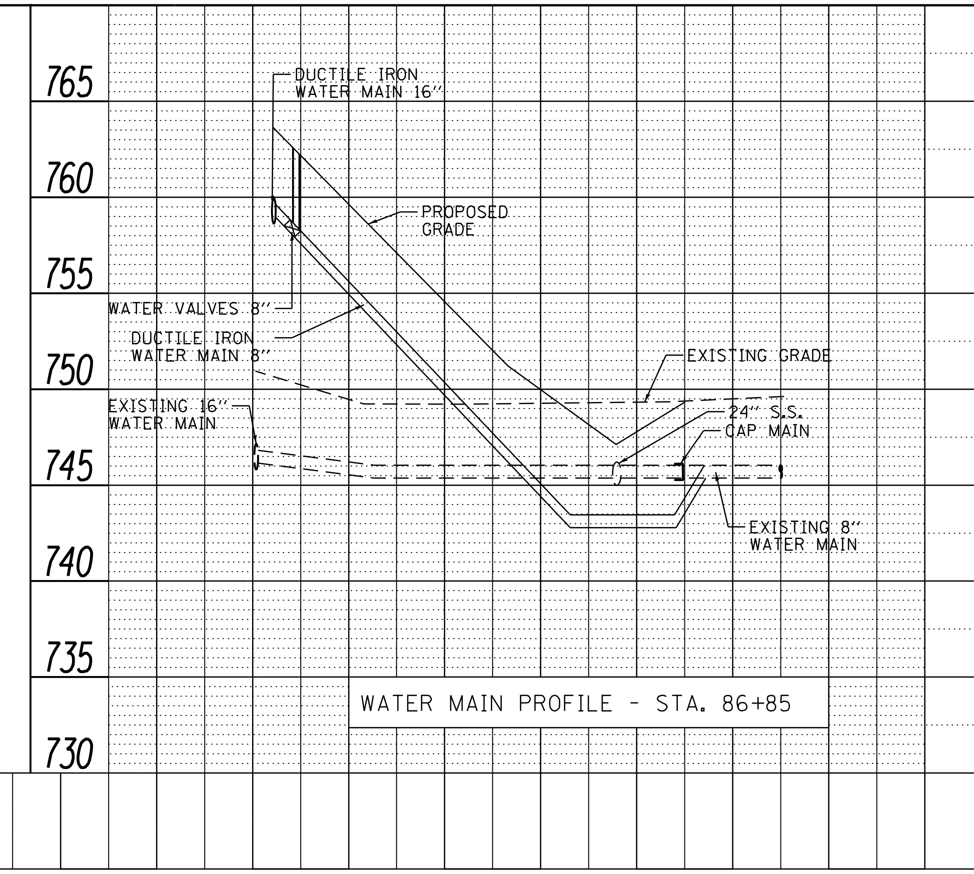
PLAN | NOTE BOOK | NO. | SURVEYED | PLOTTED | ALIGNMENT CHECKED | R.T. OF WAY CHECKED | CADD FILE NAME | BY | DATE



WATER MAIN PROFILE - STA. 66+16

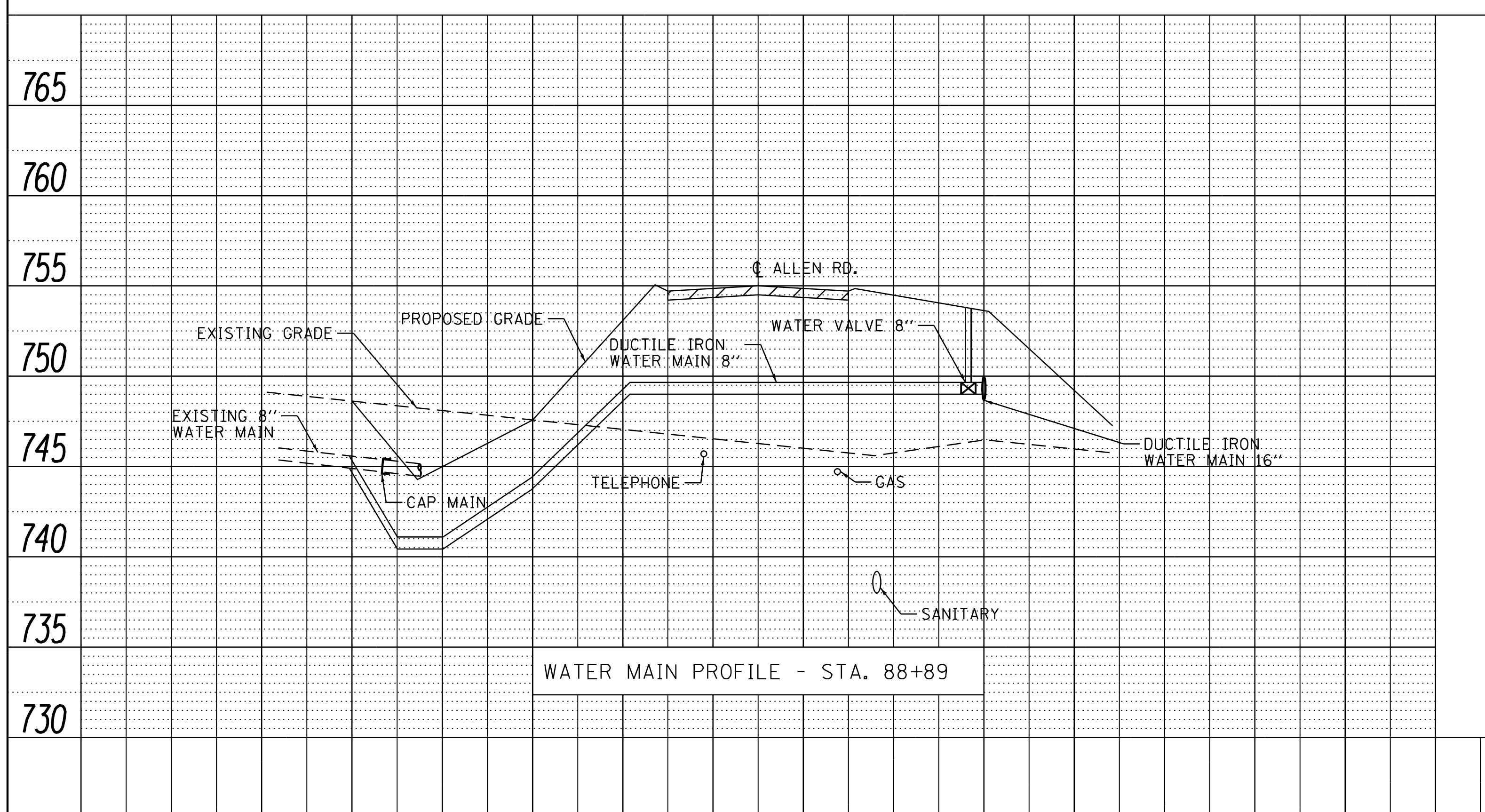


WATER MAIN PROFILE - STA. 73+25

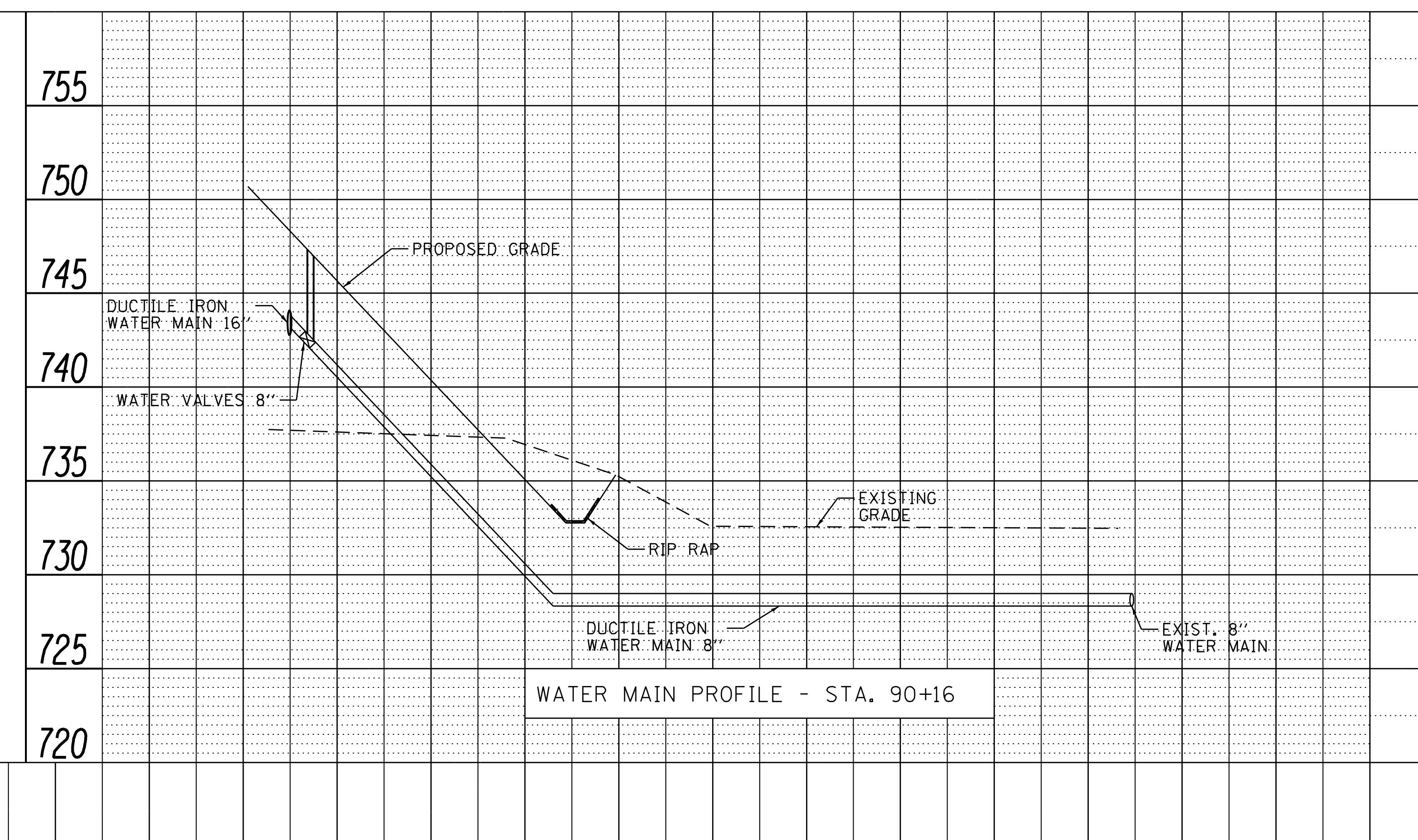


WATER MAIN PROFILE - STA. 86+85

PROFILE | NOTE BOOK | NO. | SURVEYED | PLOTTED | GRADES CHECKED | B.M. NOTED | STRUCTURE NOTATIONS CHK'D | BY | DATE



WATER MAIN PROFILE - STA. 88+89



WATER MAIN PROFILE - STA. 90+16

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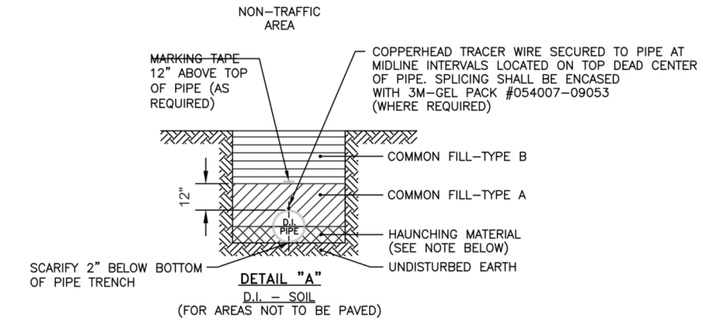
Default	PLOT DATE = 1/28/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
WATER MAIN PROFILE – ALLEN ROAD

SCALE: | SHEET 12 OF 17 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	366
6585		CONTRACT NO. 68683		
		ILLINOIS FED. AID PROJECT		



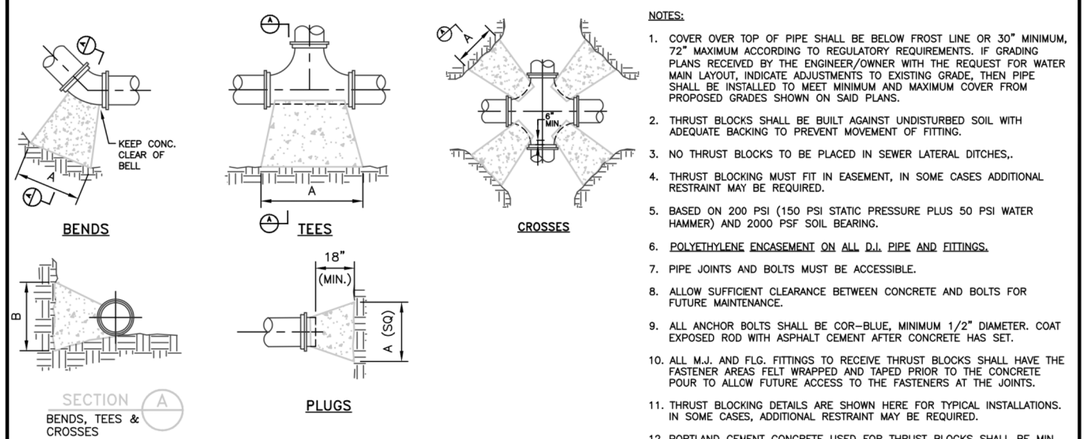
NOTE: SEE SPECIFICATION SECTION 02210 FOR DESCRIPTION OF BACKFILL AND BEDDING MATERIAL.

NOTES:

1. CAUTION MUST BE EXERCISED TO ENSURE PROPER PLACEMENT OF EMBEDMENT MATERIAL UNDER THE HAUNCHES OF THE PIPE. NATIVE SOIL IS ACCEPTABLE UNLESS DIRECTED BY COMPANY.
2. POLYETHYLENE ENCASING ON ALL D.I. PIPE, FITTINGS, VALVES & APPURTENANCES IN CORROSIVE SOILS.

REVISIONS	AMERICAN WATER STANDARD CIVIL TRENCH – D.I. PIPE IN SOIL DETAIL
06–22–09 TEXT TERM "OPTIONAL" REMOVED AND TEXT 5'–0" REPLACED WITH TEXT MIDLINE.	AMERICAN WATER VOORHEES, NJ 08043
	AMERICAN WATER ENG. CENTER, 213 CARRIAGE LANE, DELRAN, NJ 08075 — AMERICAN WATER
	DRAWN BY RJB; PROJECT ENG'R APPROVED; DATE 10–03–07; PROJECT IP; USE DIMENSIONS ONLY SCALE N.T.S.
	USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES — 0201–0601–SD55

SHT. 2



NOTES:

1. COVER OVER TOP OF PIPE SHALL BE BELOW FROST LINE OR 30" MINIMUM, 72" MAXIMUM ACCORDING TO REGULATORY REQUIREMENTS. IF GRADING PLANS RECEIVED BY THE ENGINEER/OWNER WITH THE REQUEST FOR WATER MAIN LAYOUT, INDICATE ADJUSTMENTS TO EXISTING GRADE, THEN PIPE SHALL BE INSTALLED TO MEET MINIMUM AND MAXIMUM COVER FROM PROPOSED GRADES SHOWN ON SAID PLANS.
2. THRUST BLOCKS SHALL BE BUILT AGAINST UNDISTURBED SOIL WITH ADEQUATE BACKING TO PREVENT MOVEMENT OF FITTING.
3. NO THRUST BLOCKS TO BE PLACED IN SEWER LATERAL DITCHES,.
4. THRUST BLOCKING MUST FIT IN EASEMENT, IN SOME CASES ADDITIONAL RESTRAINT MAY BE REQUIRED.
5. BASED ON 200 PSI (150 PSI STATIC PRESSURE PLUS 50 PSI WATER HAMMER) AND 2000 PSF SOIL BEARING.
6. POLYETHYLENE ENCASEMENT ON ALL D.I. PIPE AND FITTINGS.
7. PIPE JOINTS AND BOLTS MUST BE ACCESSIBLE.
8. ALLOW SUFFICIENT CLEARANCE BETWEEN CONCRETE AND BOLTS FOR FUTURE MAINTENANCE.
9. ALL ANCHOR BOLTS SHALL BE COR–BLUE, MINIMUM 1/2" DIAMETER. COAT EXPOSED ROD WITH ASPHALT CEMENT AFTER CONCRETE HAS SET.
10. ALL M.J. AND FLG. FITTINGS TO RECEIVE THRUST BLOCKS SHALL HAVE THE FASTENER AREAS FELT WRAPPED AND TAPED PRIOR TO THE CONCRETE POUR TO ALLOW FUTURE ACCESS TO THE FASTENERS AT THE JOINTS.
11. THRUST BLOCKING DETAILS ARE SHOWN HERE FOR TYPICAL INSTALLATIONS. IN SOME CASES, ADDITIONAL RESTRAINT MAY BE REQUIRED.
12. PORTLAND CEMENT CONCRETE USED FOR THRUST BLOCKS SHALL BE MIN 3000 PSI CONCRETE.
13. FOR UNSTABLE SOIL CONDITIONS, CHECK WITH ENGINEER FOR THRUST BLOCK DIMENSIONS.
14. FOR MAIN SIZES GREATER THAN 16", SEE ENGINEER FOR THRUST BLOCK DIMENSIONS.

REQUIRED BEARING AREA ON UNDISTURBED SOIL AND TYPICAL DIMENSIONS

PIPE SIZE	90 DEGREE BENDS			45 DEGREE BENDS			11.25 DEGREE BENDS			22.5 DEGREE BENDS			TEES/PLUGS		
	AREA (sq ft)	"A"	"B"	AREA (sq ft)	"A"	"B"	AREA (sq ft)	"A"	"B"	AREA (sq ft)	"A"	"B"	AREA (sq ft)	"A"	"B"
6	5.3	43"	18"	2.9	23"	18"	0.7	6"	18"	1.5	12"	18"	3.7	30"	18"
8	9.2	55"	24"	5.0	30"	24"	1.3	8"	24"	2.5	15"	24"	6.4	39"	24"
10	13.8	66"	30"	7.5	36"	30"	1.9	9"	30"	3.8	18"	30"	9.7	46"	30"
12	19.4	78"	36"	10.6	42"	36"	2.7	11"	36"	5.3	21"	36"	13.8	55"	36"
14	26.0	89"	42"	14.0	48"	42"	3.6	12"	42"	7.2	25"	42"	18.5	63"	42"
16	33.7	101"	48"	18.3	55"	48"	4.7	14"	48"	9.4	28"	48"	23.9	72"	48"

Area in square feet "A" and "B" in inches
Bearing table area is based on 200 psi maximum with soil bearing capacity of 2000 lbs/square foot.
For higher water pressures or lower soil pressures, consult Engineer for adjustments.
Bearing table area does not include a safety factor.
A safety factor and additional bearing area may be required as directed by the Engineer.

AMERICAN WATER STANDARD CIVIL THRUST BLOCK DETAILS	
AMERICAN WATER VOORHEES, NJ 08043	
AMERICAN WATER ENGINEERING, 3606 CHURCH ROAD, MOUNT LAUREL, NJ 08054 — AMERICAN WATER	
DRAWN BY RJB; PROJECT ENG'R APPROVED; DATE 10–23–07; PROJECT IP; USE DIMENSIONS ONLY SCALE N.T.S.	
USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES	0201–0601–SD6
FOR COMMENTS	SHT. 3

MAURER-STUTZ ENGINEERS SURVEYORS

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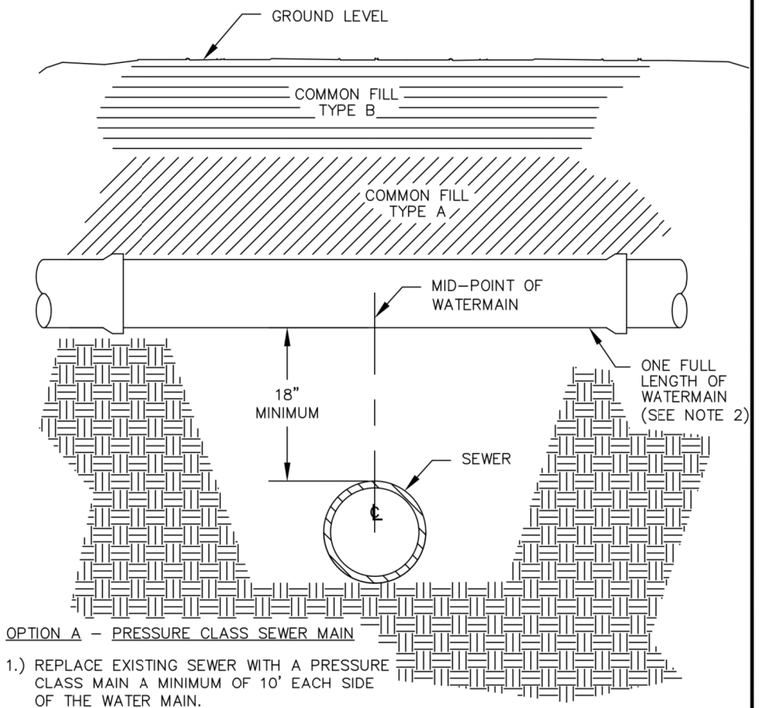
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
WATER MAIN RELOCATION – DETAIL SHEETS

SCALE: | SHEET 13 OF 17 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	367
6585		CONTRACT NO. 68683		
		ILLINOIS FED. AID PROJECT		

WATER MAIN CROSSING OVER SEWER



OPTION A – PRESSURE CLASS SEWER MAIN

1.) REPLACE EXISTING SEWER WITH A PRESSURE CLASS MAIN A MINIMUM OF 10' EACH SIDE OF THE WATER MAIN.

OPTION B – WATER MAIN INSTALLATION

1.) MID-POINT OF ONE FULL LENGTH OF WATER MAIN IS TO BE CENTERED ABOVE SEWER LINE.

2.) PROVIDE ADEQUATE SUPPORT FOR THE WATER MAIN TO PREVENT DAMAGE DUE TO SETTLEMENT.

NOTES:

1.) FOLLOW TRENCH MATERIAL DETAIL WHEN BACK-FILLING WATER MAIN.

2.) THE SELECTED OPTION MUST BE APPROVED BY AN IL-AWC REPRESENTATIVE.

AMERICAN WATER STANDARD CIVIL WATER MAIN CROSSING OVER SEWER DETAIL	
AMERICAN WATER BELLEVILLE, IL 62223	
AMERICAN WATER ENG. CENTER 100 NORTH WATER WORKS DR. BELLEVILLE, IL 62223	AMERICAN WATER
DRAWN BY JWM PROJECT ENG'R APPROVED	DATE 01-05-01 PROJECT IP
USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES	USE DIMENSIONS ONLY SCALE N.T.S.
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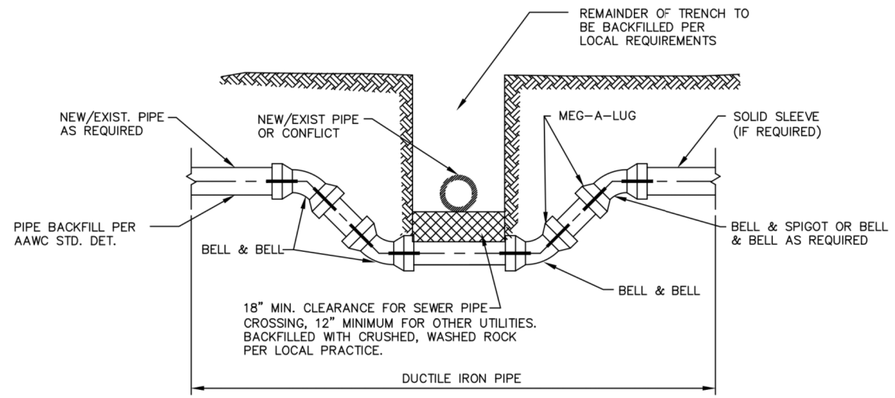

NOTES:

1. ALL PIPE TO BE JOINT RESTRAINED.
2. PIPE IS TO BE DUCTILE IRON, MINIMUM PRESSURE CLASS 350.
3. ALL DUCTILE IRON PIPE SHALL BE POLYETHYLENE WRAPPED FOR THE ENTIRE LENGTH.
4. BEGIN/END RESTRAINED JOINT STATIONING TO BE SHOWN ON THE APPROVED CONSTRUCTION DRAWINGS. ALL BENDS & FITTINGS SHALL HAVE STATIONING AND ELEVATION SHOWN ON THE APPROVED CONSTRUCTION DRAWINGS. THE BOTTOM ELEVATION OF THE CONFLICT AND THE TOP ELEVATION OF THE DUCTILE IRON PIPE AT THE CENTERLINE OF THE CONFLICT SHALL BE SHOWN ON THE APPROVED CONSTRUCTION DRAWINGS.
5. SEPARATION REQUIREMENTS SHALL BE FOLLOWED WITH REGARD TO CONFLICT PIPE.

LEGEND:

RESTRAINED JOINT

REVISIONS	AMERICAN WATER STANDARD CIVIL VERTICAL REALIGNMENT OF WATER MAINS DETAIL
06-22-09 ADDED NOTE 5.	AMERICAN WATER VOORHEES, NJ 08043
	AMERICAN WATER ENGINEERING 3906 CHURCH ROAD MOUNT LAUREL, NJ 08054 — AMERICAN WATER
	DRAWN BY RJB PROJECT ENG'R APPROVED — DATE 06-05-08 PROJECT IP — USE DIMENSIONS ONLY SCALE N.T.S.
	USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES — 0201-0601-SD42
FOR COMMENTS	SHT. 9

MAURER-STUTZ ENGINEERS SURVEYORS

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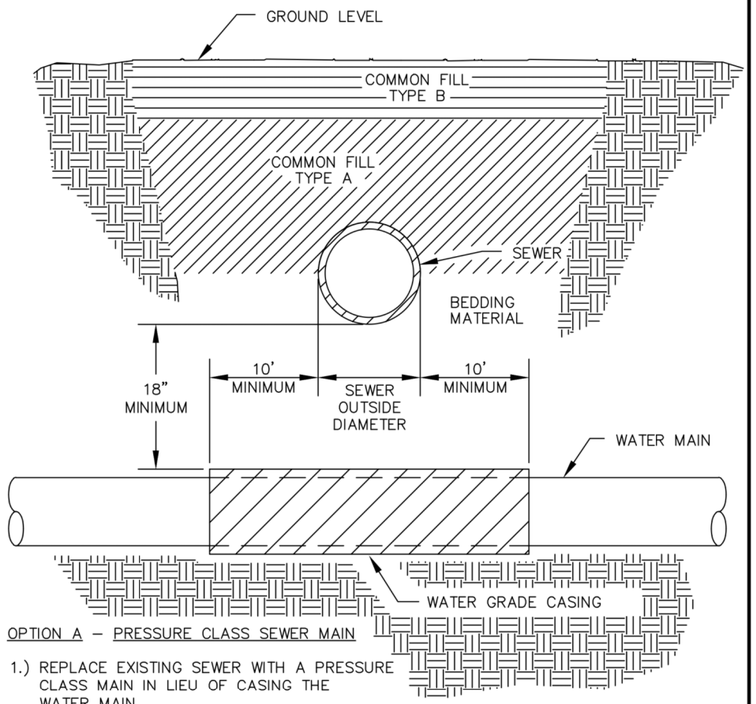
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
WATER MAIN RELOCATION – DETAIL SHEETS

SCALE: | SHEET 14 OF 17 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	368
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

WATER MAIN CROSSING UNDER SEWER



OPTION A – PRESSURE CLASS SEWER MAIN

1.) REPLACE EXISTING SEWER WITH A PRESSURE CLASS MAIN IN LIEU OF CASING THE WATER MAIN.

2.) THE SEWER SHALL BE REPLACED A MINIMUM OF 10' EACH SIDE OF THE WATERMAIN.

OPTION B – WATER MAIN CASING INSTALLATION

1.) PROVIDE ADEQUATE SUPPORT FOR THE EXISTING SEWER TO PREVENT DAMAGE DUE TO SETTLEMENT.

NOTES:

1.) FOLLOW TRENCH MATERIAL DETAIL WHEN BACK–FILLING WATER MAIN.

2.) THE SELECTED OPTION MUST BE APPROVED BY AN IL–AWC REPRESENTATIVE.

AMERICAN WATER STANDARD CIVIL
WATER MAIN CROSSING UNDER SEWER DETAIL

AMERICAN WATER
BELLEVILLE, IL 62223

AMERICAN WATER ENG. CENTER
100 NORTH WATER WORKS DR.
BELLEVILLE, IL 62223

AMERICAN WATER

DRAWN BY JWW | DATE 01-25-01 | USE DIMENSIONS ONLY
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APPROVED

USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES

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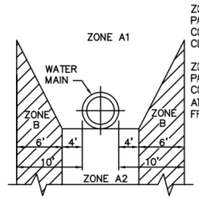
SHT. 10B

SPECIAL CONSTRUCTION REQUIREMENTS

WHERE REQUIRED WATER MAIN SEPARATION FROM SEWER CANNOT BE MAINTAINED

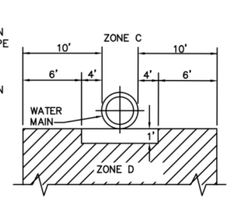
PARALLEL CONSTRUCTION



ZONE A PARALLEL CONSTRUCTION CLOSE TO PIPE

ZONE B PARALLEL CONSTRUCTION AT LEAST 4' FROM PIPE

PERPENDICULAR CONSTRUCTION



ZONE C PERPENDICULAR ABOVE OR EVEN HORIZONTAL

ZONE D PERPENDICULAR BELOW HORIZONTAL IF AN EXISTING SEWER IS LOCATED WITHIN THESE LIMITS. THE CONDITIONS REQUIREMENTS MAY APPLY (CONFIRM WITH REGULATOR)

IF AN EXISTING SEWER IS LOCATED WITHIN ZONES A1, A2, B, C, OR D OF A PROPOSED WATER MAIN, THE FOLLOWING SPECIAL REQUIREMENTS APPLY:

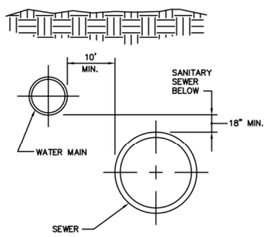
ZONE

A. NO WATER MAINS SHALL BE CONSTRUCTED WITHOUT SPECIAL PERMISSION FROM THE APPROPRIATE HEALTH OR ENVIRONMENTAL REGULATOR.

B. IF THE SEWER DOES NOT MEET ZONE B REQUIREMENTS, THE WATER MAIN SHALL BE OF PRESSURE CLASS 200 PIPE FOR PVC AND CLASS 350 FO D.I. PIPE. SEWER SHALL BE CONSTRUCTED EQUAL TO WATER PIPE AND TESTED FOR WATER TIGHTNESS.

C. NO WATER MAINS SHALL BE CONSTRUCTED WITHOUT SPECIAL PERMISSION FROM THE HEALTH REGULATOR. IF PERMISSION IS GRANTED, THE SEWER PIPE SHALL BE ENCASED AND/OR REPLACED WITH WATER MAIN GRADE PIPE AND THE WATER MAIN SHALL BE OF CLASS 200 PIPE OR EQUIVALENT.

PARALLEL CONSTRUCTION



REQUIRED SEPARATION BETWEEN WATER MAINS AND SANITARY SEWERS

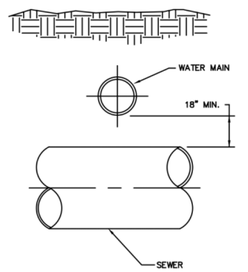
BASIC SEPARATION REQUIREMENTS:

WATER MAINS AND SEWERS SHOULD BE SEPARATED AS FAR AS IS REASONABLE IN BOTH THE HORIZONTAL AND VERTICAL DIRECTIONS WITH SEWERS LOWER THAN WATER MAINS.

PARALLEL CONSTRUCTION: THE HORIZONTAL DISTANCE BETWEEN PRESSURE WATER MAINS AND SEWERS SHALL BE AT LEAST 10 FEET

PERPENDICULAR CONSTRUCTION (CROSSING): PRESSURE WATER MAINS SHALL BE AT LEAST 18" ABOVE SANITARY SEWERS WHERE THESE LINES MUST CROSS.

PERPENDICULAR CONSTRUCTION



REVISIONS

06-22-09
REVISED NOTE C.
REMOVED NOTE D.
REMOVED #4 REBAR AND CONCRETE DETAIL

AMERICAN WATER STANDARD CIVIL
SPECIAL REQUIREMENTS FOR WATER MAIN – DETAIL

AMERICAN WATER
VOORHEES, NJ 08043

AMERICAN WATER ENGINEERING
3908 CHURCH ROAD
MOUNT LAUREL, NJ 08054

AMERICAN WATER

DRAWN BY RJB | DATE 08-05-08 | USE DIMENSIONS ONLY
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APPROVED

USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES

0201-0601-SD43

FOR COMMENTS

SHT. 10C

MAURER-STUTZ ENGINEERS SURVEYORS

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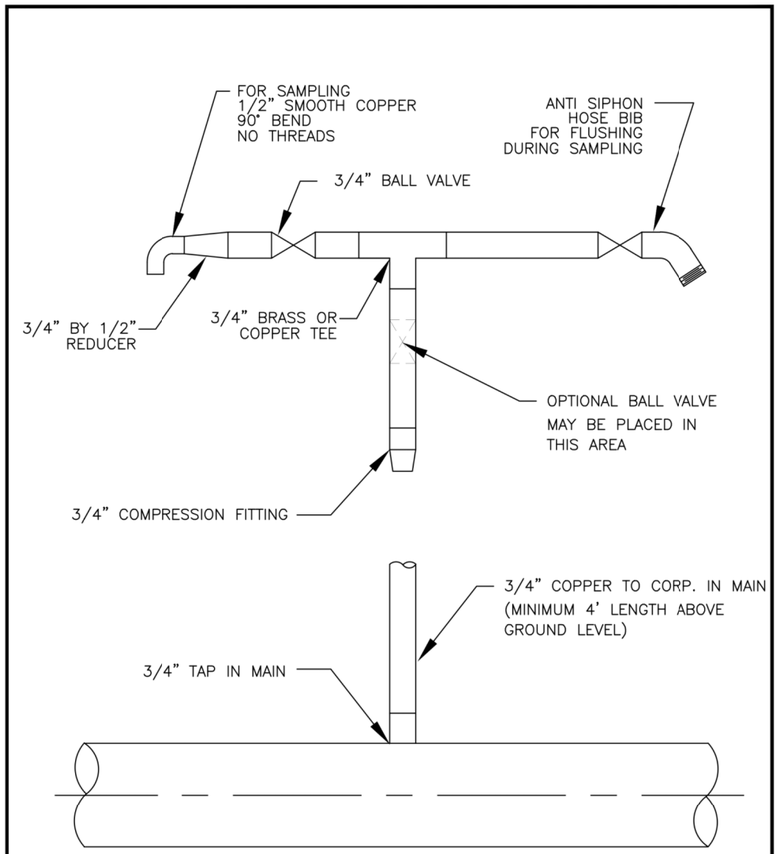
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
WATER MAIN RELOCATION – DETAIL SHEETS

SCALE: | SHEET 15 OF 17 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	369
6585		CONTRACT NO. 68683		
		ILLINOIS FED. AID PROJECT		



NOTES:

1.) PREFERRED SAMPLE DEVICE FOR NEW MAINS. LOCAL OFFICE MAY ALLOW AN APPROVED ALTERNATIVE.

AMERICAN WATER STANDARD
CIVIL
WATER QUALITY SAMPLING DEVICE
DETAIL

AMERICAN WATER
BELLEVILLE, IL 62223

AMERICAN WATER ENG. CENTER
100 NORTH WATER WORKS DR.
BELLEVILLE, IL 62223

AMERICAN WATER

DRAWN BY JWM
PROJECT ENG'R
APPROVED
DATE 01-05-01
PROJECT IP
USE DIMENSIONS ONLY
SCALE N.T.S.

USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES

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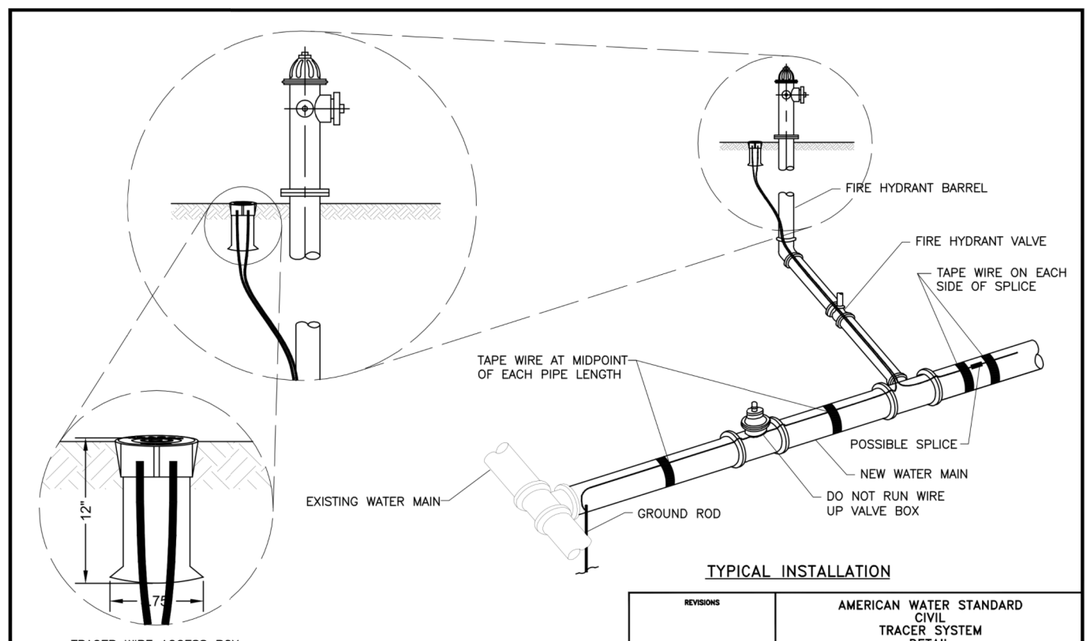
SHT. 21



TYPICAL INSTALLATION

NOTES:

1. EXTEND TRACER WIRE UP FIRE HYDRANT BARREL TO INTERNAL TERMINALS OF TRACER WIRE STATION AND BACK DOWN.
2. CLAMP TRACER WIRE TO GROUND ROD AT SYSTEM TERMINATION POINTS.

REVISIONS

AMERICAN WATER STANDARD
CIVIL
TRACER SYSTEM
DETAIL

AMERICAN WATER
VOORHEES, NJ 08043

AMERICAN WATER ENG. CENTER
213 CARRIAGE LANE
DELRAN, NJ 08075

AMERICAN WATER

DRAWN BY RJB
PROJECT ENG'R
APPROVED
DATE 08-01-03
PROJECT IP
USE DIMENSIONS ONLY
SCALE N.T.S.

USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES

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FOR COMMENTS

SHT. 22

MAURER-STUTZ
ENGINEERS SURVEYORS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

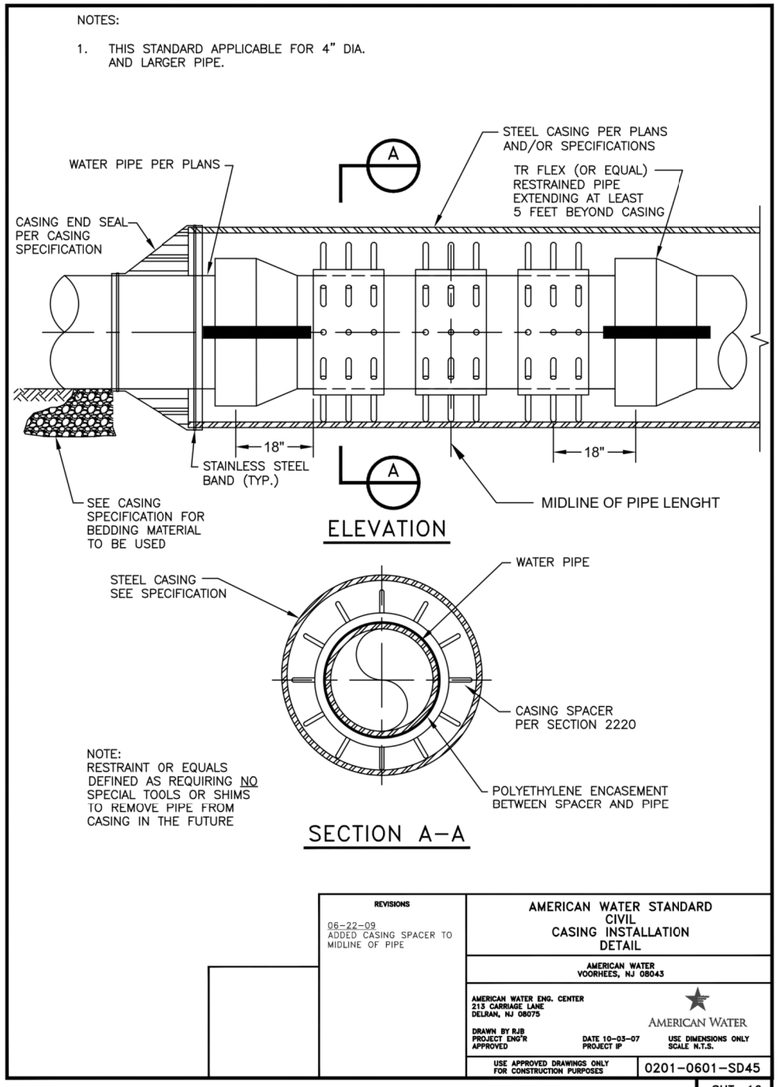
ALLEN ROAD IMPROVEMENTS
WATER MAIN RELOCATION – DETAIL SHEETS

SCALE: | SHEET 16 OF 17 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	370
6585		CONTRACT NO. 68683		
		ILLINOIS FED. AID PROJECT		

NOTES:

1. THIS STANDARD APPLICABLE FOR 4" DIA. AND LARGER PIPE.



ELEVATION

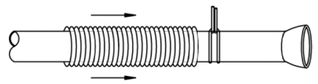
NOTE:
RESTRAINT OR EQUALS DEFINED AS REQUIRING NO SPECIAL TOOLS OR SHIMS TO REMOVE PIPE FROM CASING IN THE FUTURE

SECTION A–A

REVISIONS	AMERICAN WATER STANDARD CIVIL CASING INSTALLATION DETAIL
06-22-09 ADDED CASING SPACER TO MIDLINE OF PIPE	AMERICAN WATER VOORHEES, NJ 08043
	AMERICAN WATER ENG. CENTER 213 CARRIAGE LANE DELRAN, NJ 08075 — AMERICAN WATER
	DRAWN BY RJB · PROJECT ENG'R · APPROVED · DATE 10-03-07 · PROJECT IP · USE DIMENSIONS ONLY SCALE N.T.S.
	USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES — 0201-0601-SD45

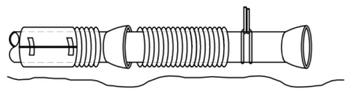
SHT. 16

INSTALLATION OF POLYWRAP



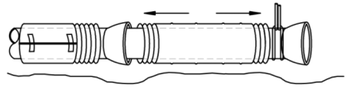
STEP–1

CLEAN ALL DIRT, CINDERS, ETC., FROM THE SURFACE OF THE PIPE. CUT POLYETHYLENE TWO (2) FEET LONGER THAN THE PIPE. SLIP POLYETHYLENE OVER SPIGOT END AND BUNCH AS AS SHOWN ABOVE.



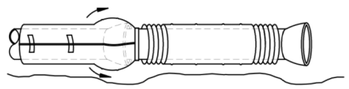
STEP–2

DIG BELL HOLES AT JOINT LOCATIONS, LOWER PIPE INTO TRENCH AND MAKE UP JOINT.



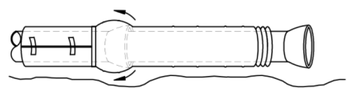
STEP–3

MOVE CABLE HOIST TO BELL END OF PIPE AND LIFT ENOUGH TO SLIP POLYETHYLENE ALONG PIPE AS SHOWN ABOVE.



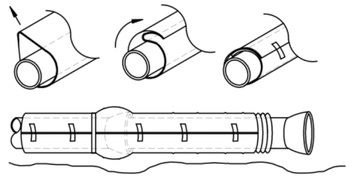
STEP–4

PULL POLYETHYLENE FORWARD FROM PREVIOUS JOINT OVER THE BELL AND SECURE IN PLACE AS SHOWN.



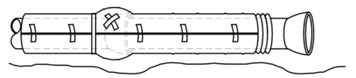
STEP–5

PULL POLYETHYLENE FORWARD FROM PREVIOUS JOINT OVER THE BELL AND SECURE IN PLACE AS SHOWN.



STEP–6

TAKE UP SLACK IN THE TUBE ALONG THE PIPE BARREL, MAKING A SNUG BUT NOT TIGHT FIT. FOLD OVER ON TOP OF PIPE AND SECURE IN PLACE ABOUT EVERY THREE (3) FEET AS SHOWN.



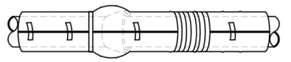
STEP–7

MAKE SURE ANY TEARS IN THE POLYETHYLENE ARE REPAIRED WITH TAPE OR ANOTHER PIECE OF POLY–ETHYLENE SECURED OVER THE DAMAGED AREA.

STEP–8

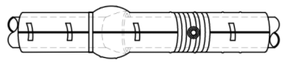
BACKFILL THE TRENCH ACCORDING TO SPECIFICATIONS, BEING CAREFUL NOT TO DAMAGE THE POLYETHYLENE WHILE TAMPING AROUND PIPE. BACKFILL SHOULD NOT CONTAIN MATERIAL THAT MIGHT DAMAGE THE POLYETHYLENE.

TAPPING POLYWRAPPED PIPE



STEP–1

WRAP TWO OR THREE LAYERS OF TAPE COMPLETELY AROUND THE PIPE WHERE THE TAPPING MACHINE WILL BE PLACED.



STEP–2

MOUNT THE TAPPING MACHINE ON THE TAPED AREA AND MAKE THE TAP DIRECTLY THROUGH THE TAPE AND POLYWRAP. INSTALL CORPORATION STOP.

STEP–3

INSPECT THE ENTIRE AREA FOR DAMAGE AND REPAIR IF NECESSARY.

STEP–4

WRAP ANY CONNECTED COPPER SERVICE LINE WITHIN THREE (3) FEET OF THE PIPE WITH POLYETHYLENE.

STEP–5

BACKFILL THE TRENCH ACCORDING TO SPECIFICATIONS, BEING CAREFUL NOT TO DAMAGE THE POLYETHYLENE WHILE TAMPING AROUND PIPE. BACKFILL SHOULD NOT CONTAIN MATERIAL THAT MIGHT DAMAGE THE POLYETHYLENE.

AMERICAN WATER STANDARD CIVIL POLYWRAP INSTALLATION AND TAPPING – DETAIL	
AMERICAN WATER VOORHEES, NJ 08043	
AMERICAN WATER ENGINEERING 3908 CHURCH ROAD MOUNT LAUREL, NJ 08054 — AMERICAN WATER	
DRAWN BY RJB · PROJECT ENG'R · APPROVED · DATE 06-05-08 · PROJECT IP · USE DIMENSIONS ONLY SCALE N.T.S.	
USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES	XXXX–XXXX–SDXX
FOR COMMENTS	SHT. 23

MAURER-STUTZ ENGINEERS SURVEYORS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
WATER MAIN RELOCATION – DETAIL SHEETS

SCALE: | SHEET 17 OF 17 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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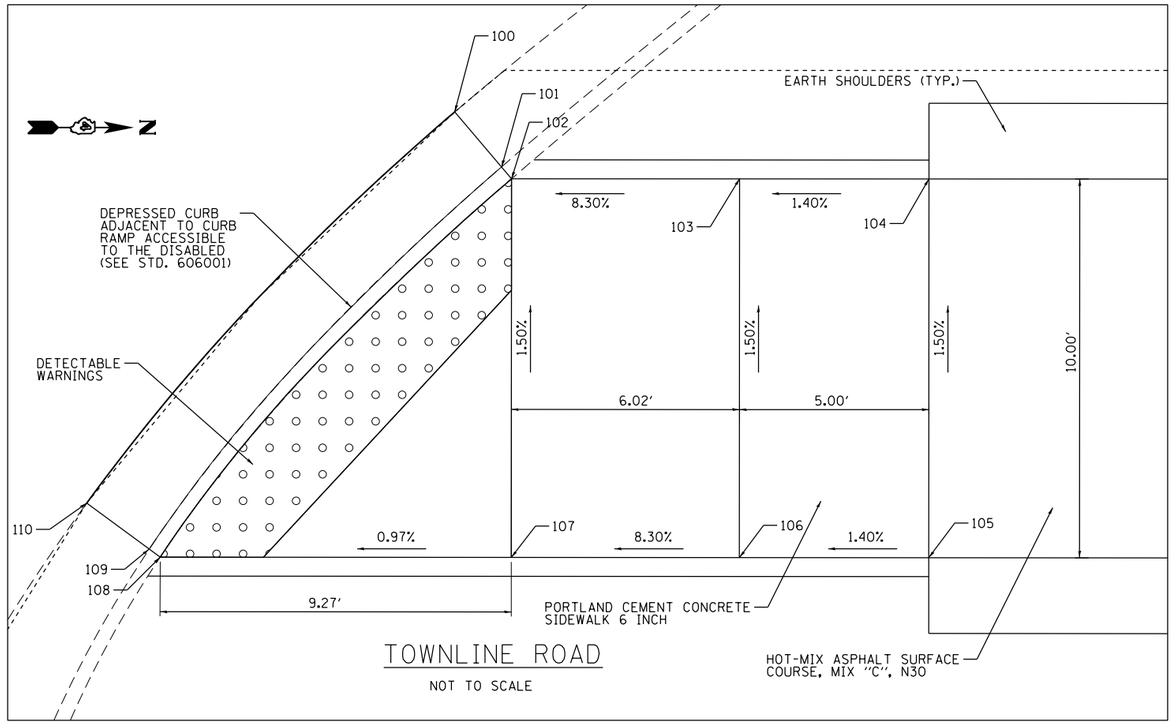
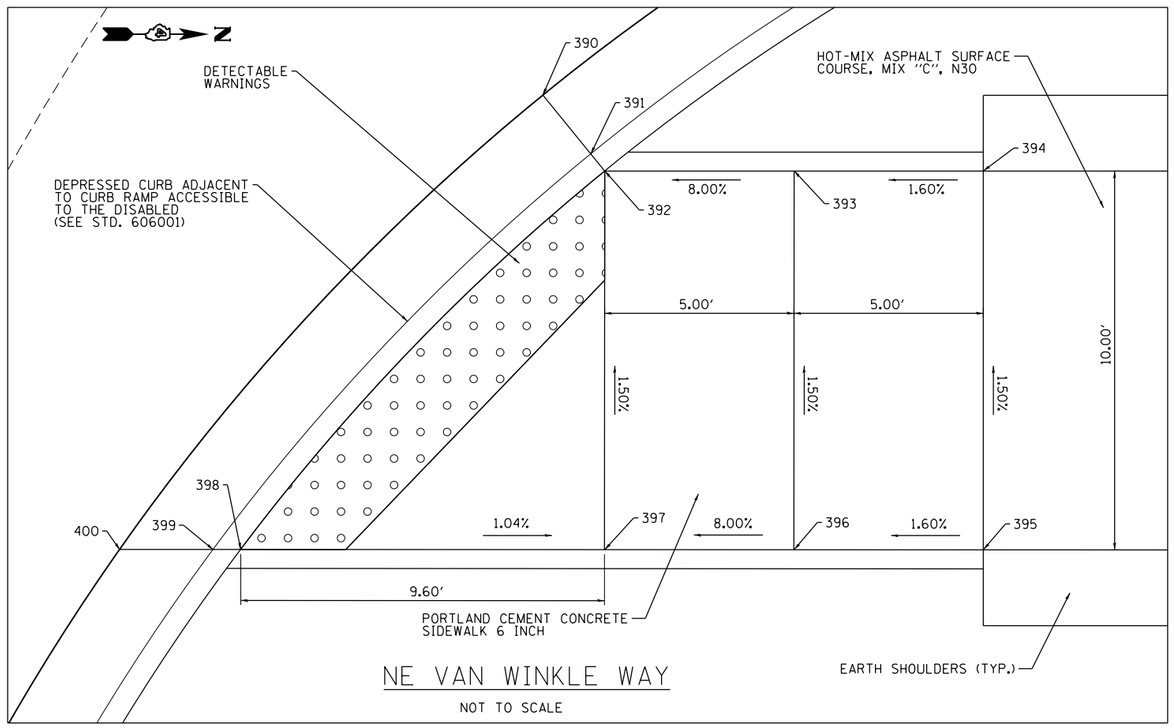
6585		CONTRACT NO. 68683		
		ILLINOIS	FED. AID PROJECT	



TOWNLINE ROAD

NOT TO SCALE



NE VAN WINKLE WAY

NOT TO SCALE

ALTA LANE SE CURB RAMP DESIGN					
POINT NO.	STATION	OFFSET	SIDE	ELEV.	ROAD
200	119+32.08	15.50'	RT	765.01	ALTA LN
201	119+32.08	17.58'	RT	765.42	ALTA LN
202	119+32.08	19.58'	RT	765.50	ALTA LN
203	119+32.08	24.58'	RT	765.58	ALTA LN
204	119+30.59	26.25'	RT	765.76	ALTA LN
205	119+26.97	19.58'	RT	765.75	ALTA LN
206	119+26.97	15.58'	RT	765.67	ALTA LN
207	119+26.97	15.50'	RT	765.26	ALTA LN
208	119+23.14	19.58'	RT	765.91	ALTA LN
209	119+16.97	15.50'	RT	765.69	ALTA LN
210	85+80.51	39.78'	RT	766.76	ALLEN RD
211	85+78.27	39.82'	RT	766.65	ALLEN RD
212	85+77.89	40.33'	RT	767.20	ALLEN RD
213	85+77.62	39.93'	RT	766.70	ALLEN RD
214	85+73.39	29.92'	RT	766.97	ALLEN RD
215	85+70.57	29.97'	RT	766.83	ALLEN RD
216	85+69.71	29.99'	RT	766.91	ALLEN RD
217	85+69.15	29.50'	RT	767.33	ALLEN RD
218	85+69.91	39.99'	RT	766.76	ALLEN RD
219	85+60.02	45.59'	RT	767.32	ALLEN RD
220	85+59.93	40.69'	RT	768.09	ALLEN RD
221	85+59.92	40.19'	RT	767.59	ALLEN RD
222	85+59.72	30.19'	RT	767.74	ALLEN RD
223	85+59.71	29.69'	RT	768.24	ALLEN RD
224	85+49.68	28.39'	RT	767.81	ALLEN RD
225	85+49.72	30.39'	RT	767.89	ALLEN RD
226	85+44.92	18.00'	RT	768.29	ALLEN RD
227	85+44.94	20.00'	RT	768.17	ALLEN RD
228	85+44.95	20.58'	RT	768.67	ALLEN RD
229	85+45.05	28.48'	RT	768.04	ALLEN RD
230	85+45.08	30.50'	RT	768.12	ALLEN RD
231	85+45.20	40.48'	RT	767.97	ALLEN RD
232	85+45.22	42.48'	RT	767.89	ALLEN RD
233	85+49.92	40.39'	RT	787.74	ALLEN RD
234	85+49.96	42.39	RT	767.66	ALLEN RD
235	85+50.03	45.79'	RT	767.47	ALLEN RD
236	85+50.11	50.07'	RT	767.53	ALLEN RD
237	85+53.27	52.97'	RT	767.47	ALLEN RD

ALTA LANE NE CURB RAMP DESIGN					
POINT NO.	STATION	OFFSET	SIDE	ELEV.	ROAD
250	119+30.69	15.50'	LT	764.80	ALTA LN
251	119+30.69	17.00'	LT	764.71	ALTA LN
252	119+30.69	17.58'	LT	765.21	ALTA LN
253	119+30.69	19.58'	LT	765.29	ALTA LN
254	119+30.69	24.58'	LT	765.36	ALTA LN
255	119+29.27	26.19'	LT	765.42	ALTA LN
256	119+29.27	19.58'	LT	765.32	ALTA LN
257	119+21.77	19.58'	LT	765.42	ALTA LN
258	119+25.69	17.58'	LT	765.44	ALTA LN
259	119+25.69	17.00'	LT	764.94	ALTA LN
260	119+25.69	15.50'	LT	765.03	ALTA LN
261	86+19.90	40.58'	RT	765.27	ALLEN RD
262	86+22.14	40.58'	RT	765.17	ALLEN RD
263	86+22.80	40.58'	RT	765.21	ALLEN RD
264	86+22.54	41.08'	RT	765.71	ALLEN RD
265	86+30.45	40.58'	RT	765.29	ALLEN RD
266	86+40.45	40.58'	RT	765.97	ALLEN RD
267	86+39.95	41.08'	RT	766.47	ALLEN RD
268	86+39.95	43.00'	RT	766.44	ALLEN RD
269	86+39.95	46.00'	RT	765.89	ALLEN RD
270	86+40.45	46.00'	RT	765.89	ALLEN RD
271	86+46.97	53.58'	RT	766.04	ALLEN RD
272	86+50.45	50.58'	RT	765.97	ALLEN RD
273	86+50.45	46.00'	RT	766.04	ALLEN RD
274	86+50.45	40.58'	RT	766.12	ALLEN RD
275	86+50.45	30.58'	RT	766.27	ALLEN RD
276	86+40.45	30.58'	RT	766.12	ALLEN RD
277	86+40.45	30.08'	RT	766.12	ALLEN RD
278	86+37.45	30.08'	RT	766.37	ALLEN RD
279	86+31.00	30.08'	RT	765.79	ALLEN RD
280	86+30.45	30.58'	RT	765.29	ALLEN RD
281	86+29.60	30.58'	RT	765.25	ALLEN RD
282	86+26.79	30.58'	RT	765.35	ALLEN RD
283	86+26.79	18.00'	RT	765.73	ALLEN RD
284	86+55.91	18.00'	RT	764.73	ALLEN RD
285	86+55.91	20.00'	RT	764.61	ALLEN RD
286	86+55.91	20.58'	RT	765.11	ALLEN RD

TOWNLINE ROAD CURB RAMP DESIGN					
POINT NO.	STATION	OFFSET	SIDE	ELEV.	ROAD
100	45+16.13	57.74'	RT	801.35	ALLEN RD
101	45+17.37	59.19'	RT	801.25	ALLEN RD
102	45+17.63	59.50'	RT	801.38	ALLEN RD
103	45+23.66	59.50'	RT	801.88	ALLEN RD
104	45+28.66	59.50'	RT	801.95	ALLEN RD
105	45+28.66	69.50'	RT	802.10	ALLEN RD
106	45+23.66	69.50'	RT	802.03	ALLEN RD
107	45+17.63	69.50'	RT	801.53	ALLEN RD
108	45+08.36	69.50'	RT	801.44	ALLEN RD
109	45+08.07	69.29'	RT	801.32	ALLEN RD
110	45+06.42	68.07'	RT	801.42	ALLEN RD

VAN WINKLE WAY NW CURB RAMP DESIGN					
POINT NO.	STATION	OFFSET	SIDE	ELEV.	ROAD
300	16+88.66	42.71'	LT	782.23	VAN WINKLE WAY
301	16+87.64	44.43'	LT	782.13	VAN WINKLE WAY
302	16+87.35	44.93'	LT	782.17	VAN WINKLE WAY
303	16+84.63	49.13'	LT	782.57	VAN WINKLE WAY
304	16+81.91	53.32'	LT	782.64	VAN WINKLE WAY
305	16+86.10	56.04'	LT	782.56	VAN WINKLE WAY
306	16+88.82	51.85'	LT	782.49	VAN WINKLE WAY
307	16+91.54	47.65'	LT	782.09	VAN WINKLE WAY
308	16+91.88	47.18'	LT	782.05	VAN WINKLE WAY
309	16+93.04	45.54'	LT	782.15	VAN WINKLE WAY

VAN WINKLE WAY SE CURB RAMP DESIGN					
POINT NO.	STATION	OFFSET	SIDE	ELEV.	ROAD
350	72+06.12	45.00'	RT	787.28	ALLEN RD
351	72+06.12	47.00'	RT	787.16	ALLEN RD
352	72+06.12	47.58'	RT	787.66	ALLEN RD
353	72+12.87	45.38'	RT	786.87	ALLEN RD
354	72+12.65	47.37'	RT	786.75	ALLEN RD
355	72+12.58	47.95'	RT	787.25	ALLEN RD
356	10+58.36	54.74'	RT	785.01	VAN WINKLE WAY
357	10+58.33	58.25'	RT	784.91	VAN WINKLE WAY
358	10+58.31	59.33'	RT	784.95	VAN WINKLE WAY
359	10+68.47	44.15'	RT	784.75	VAN WINKLE WAY
360	10+68.44	46.79'	RT	784.65	VAN WINKLE WAY
361	10+68.43	47.57'	RT	784.69	VAN WINKLE WAY
362	10+68.94	47.13'	RT	785.19	VAN WINKLE WAY
363	10+90.57	32.72'	RT	783.03	VAN WINKLE WAY
364	10+91.11	34.64'	RT	782.91	VAN WINKLE WAY
365	10+91.26	35.21'	RT	783.41	VAN WINKLE WAY
366	10+97.95	46.72'	RT	783.25	VAN WINKLE WAY
367	72+36.85	71.49'	RT	784.56	ALLEN RD
368	72+37.35	71.49'	RT	784.56	ALLEN RD
369	72+37.34	68.49'	RT	785.20	ALLEN RD
370	72+37.34	66.99'	RT	785.30	ALLEN RD
371	72+36.84	66.49'	RT	784.80	ALLEN RD
372	72+36.04	56.00'	RT	785.45	ALLEN RD
373	72+26.84	56.00'	RT	785.60	ALLEN RD
374	72+26.84	56.50'	RT	785.10	ALLEN RD
375	72+14.84	56.00'	RT	786.60	ALLEN RD
376	72+11.84	56.50'	RT	786.35	ALLEN RD
377	72+11.84	56.00'	RT	786.37	ALLEN RD
378	72+11.84	54.50'	RT	786.43	ALLEN RD
379	71+50.00	54.50'	RT	789.52	ALLEN RD
380	71+50.00	56.50'	RT	789.44	ALLEN RD
381	71+50.00	66.50'	RT	789.29	ALLEN RD
382	71+50.00	68.50'	RT	789.21	ALLEN RD
383	72+11.84	68.50'	RT	786.12	ALLEN RD
384	72+11.84	66.50'	RT	786.20	ALLEN RD
385	72+26.85	66.50'	RT	784.95	ALLEN RD
386	72+26.85	71.49'	RT	784.72	ALLEN RD
387	72+26.85	76.15'	RT	784.72	ALLEN RD
388	72+27.27	76.90'	RT	784.72	ALLEN RD
389	11+02.86	55.78'	RT	783.39	VAN WINKLE WAY

VAN WINKLE WAY NE CURB RAMP DESIGN					
POINT NO.	STATION	OFFSET	SIDE	ELEV.	ROAD
390	10+57.43	44.58'	LT	782.30	VAN WINKLE WAY
391	10+58.99	45.83'	LT	782.20	VAN WINKLE WAY
392	10+59.45	46.20'	LT	782.24	VAN WINKLE WAY
393	10+59.50	51.20'	LT	782.64	VAN WINKLE WAY
394	10+59.56	56.20'	LT	782.72	VAN WINKLE WAY
395	10+69.56	56.09'	LT	782.87	VAN WINKLE WAY
396	10+69.50	51.09'	LT	782.79	VAN WINKLE WAY
397	10+69.45	46.09'	LT	782.39	VAN WINKLE WAY
398	10+69.35	36.48'	LT	782.49	VAN WINKLE WAY
399	10+69.34	35.75'	LT	782.45	VAN WINKLE WAY
400	10+69.31	33.28'	LT	782.55	VAN WINKLE WAY

MAURER-STUTZ ENGINEERS SURVEYORS

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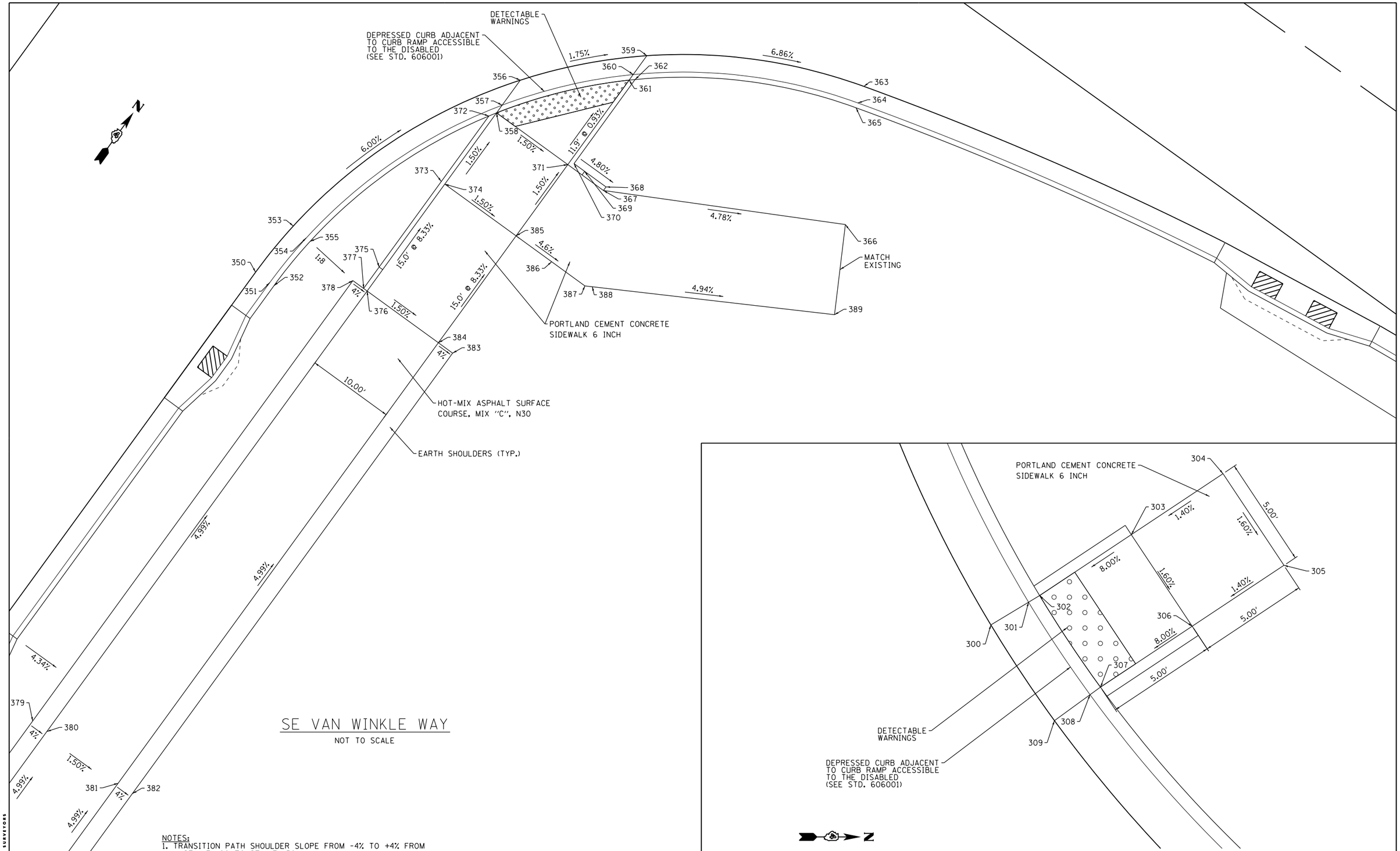
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
CURB RAMP DETAILS – TOWNLINE

SCALE: | SHEET 1 OF 3 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	372
6585		CONTRACT NO. 68683		
		ILLINOIS FED. AID PROJECT		



SE VAN WINKLE WAY

NOT TO SCALE

NW VAN WINKLE WAY

NOT TO SCALE

NOTES:
1. TRANSITION PATH SHOULDER SLOPE FROM -4% TO +4% FROM STA. 71+00 TO STA. 71+50.
2. START 4.99% PATH PROFILE GRADE SLOPE AT STA. 71+00.00.

MAURER-STUTZ ENGINEERS SURVEYORS

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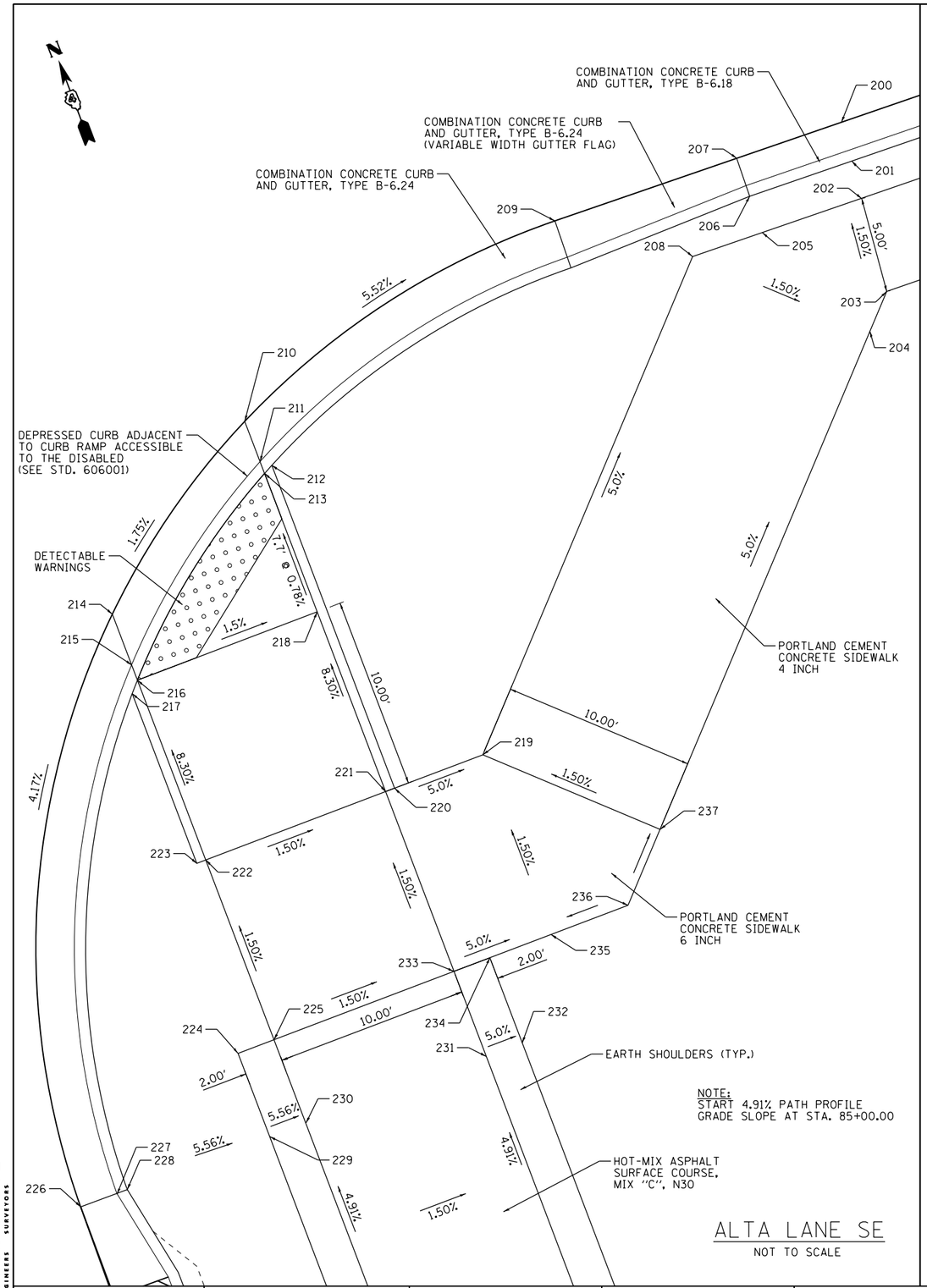
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
CURB RAMP DETAILS – VAN WINKLE WAY

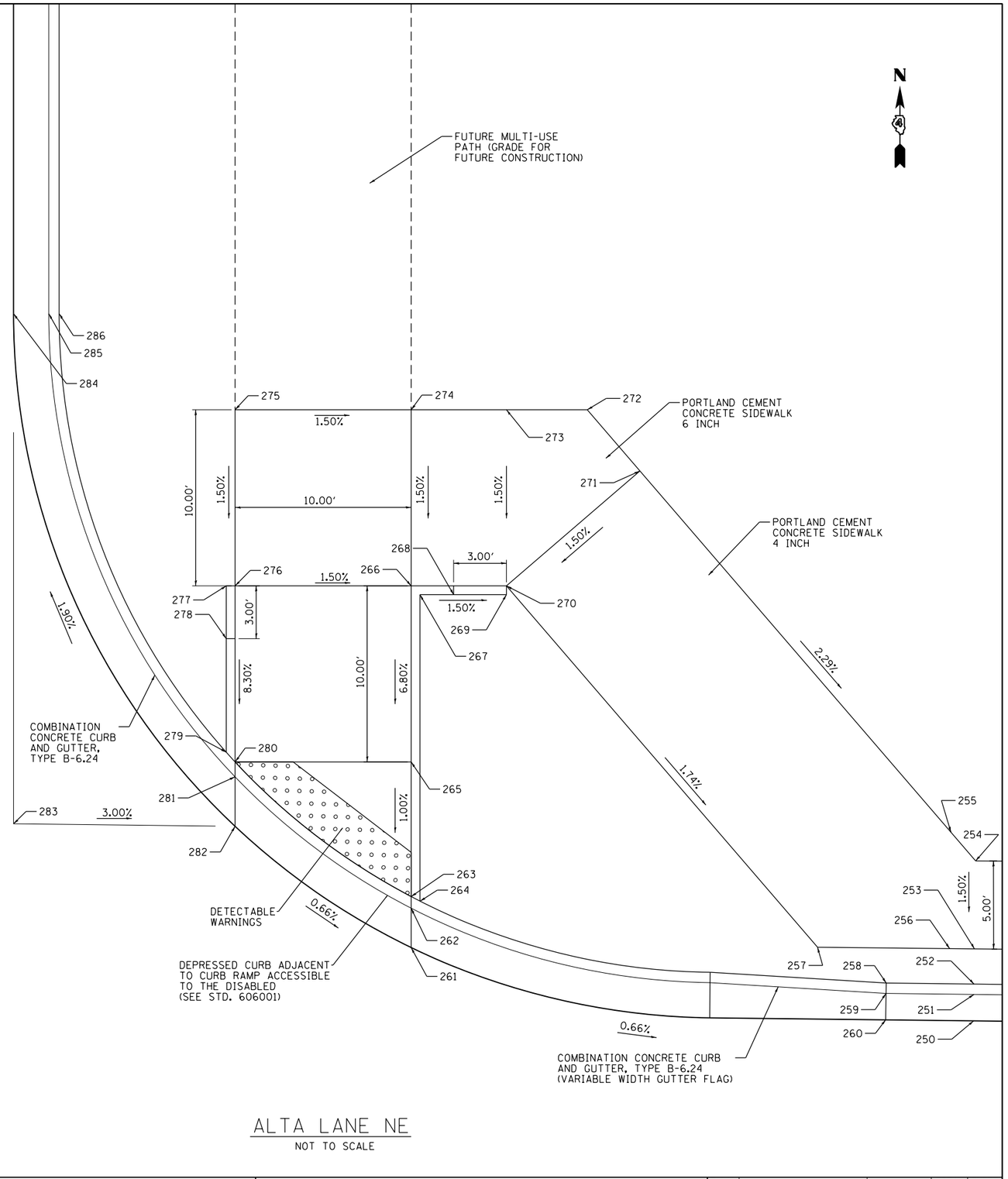
SCALE: | SHEET 2 OF 3 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	373
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



NOTE:
START 4.91% PATH PROFILE GRADE SLOPE AT STA. 85+00.00

ALTA LANE SE
NOT TO SCALE



ALTA LANE NE
NOT TO SCALE

MAURER-STUTZ ENGINEERS SURVEYORS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
CURB RAMP DETAILS – ALTA LANE

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

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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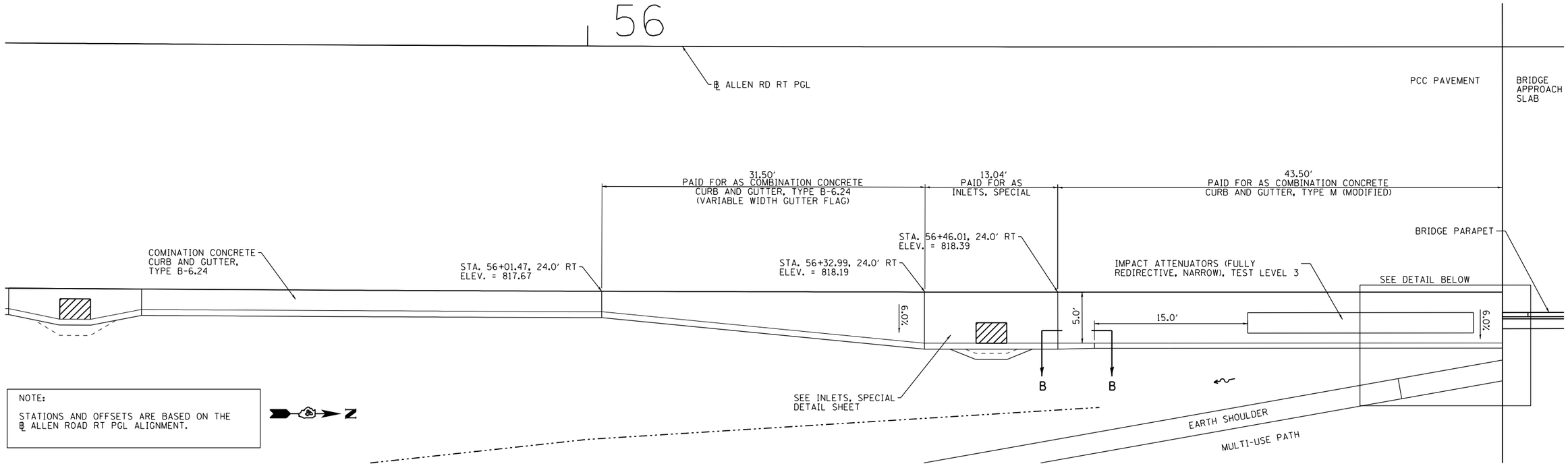
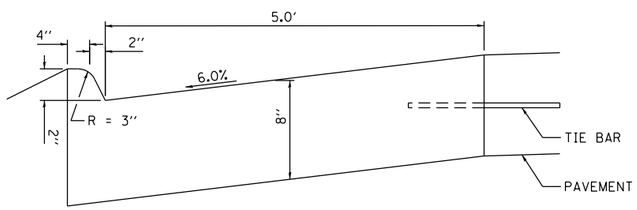
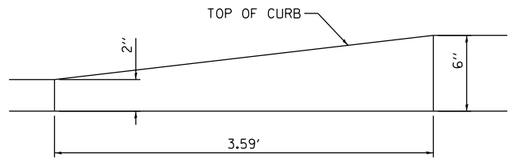
6585		CONTRACT NO. 68683		
		ILLINOIS FED. AID PROJECT		

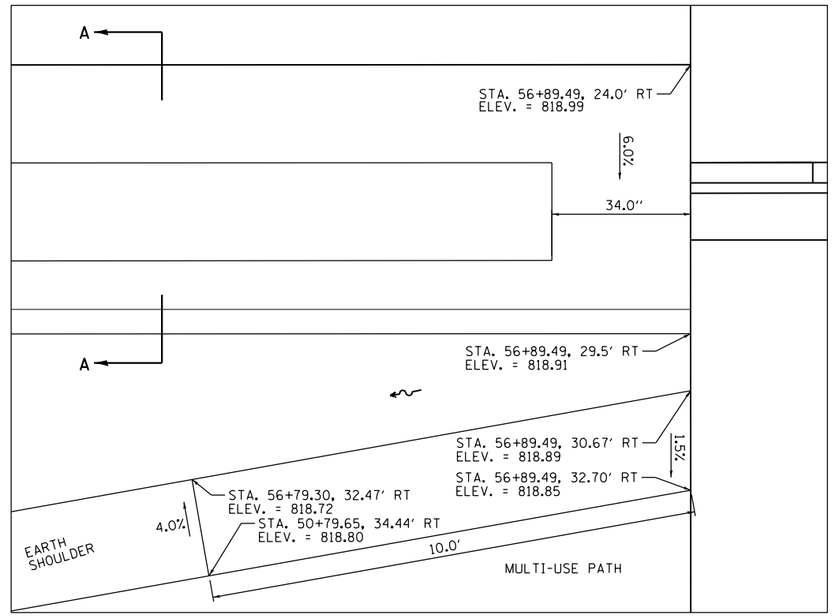




SECTION A-A



SECTION B-B
CURB TRANSITION DETAIL



BRIDGE TRANSITION DETAIL

MAURER-STUTZ ENGINEERS SURVEYORS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
BRIDGE PARAPET IMPACT ATTENUATOR DETAIL

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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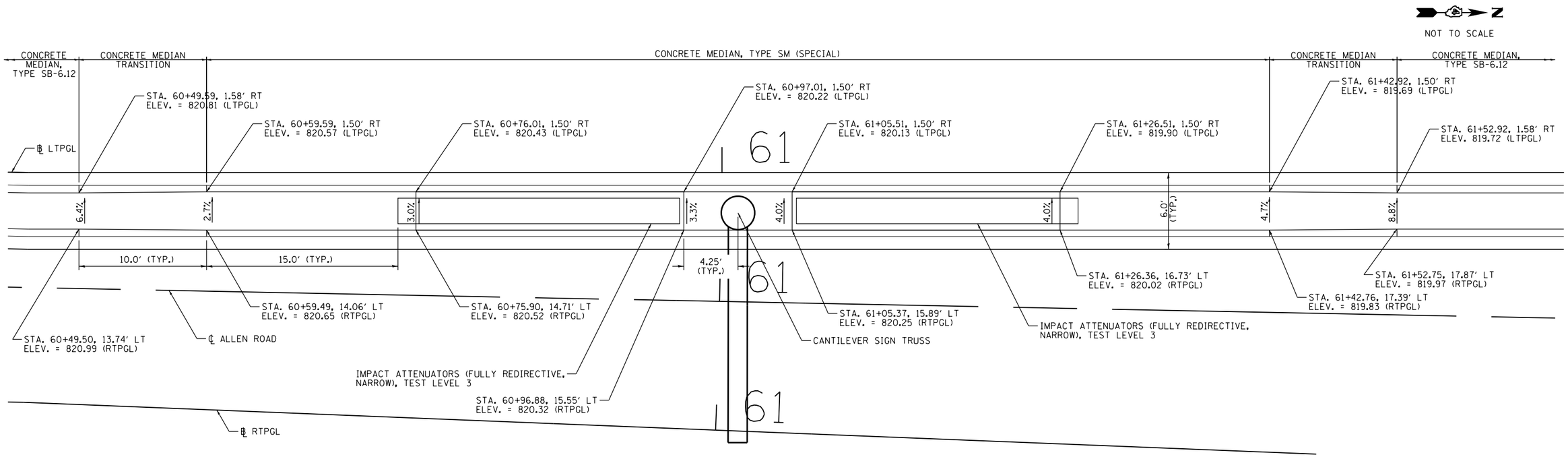
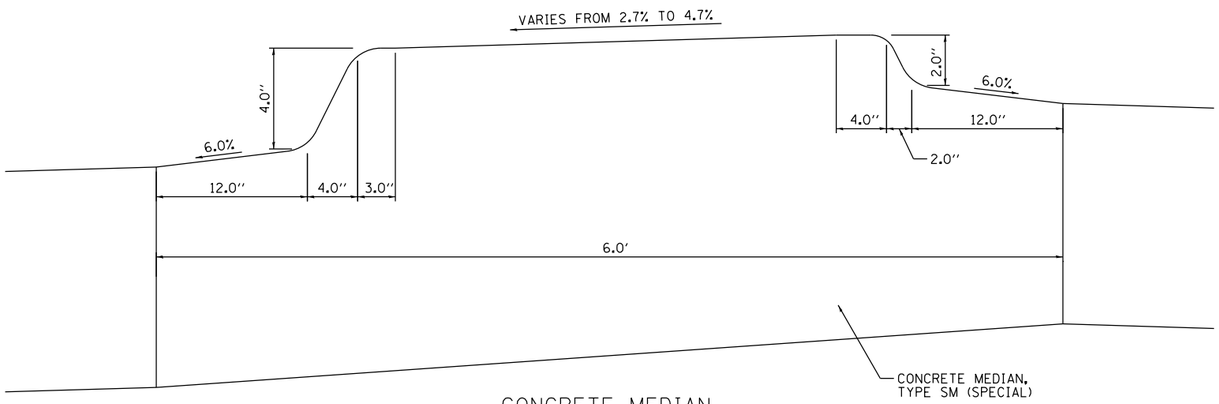
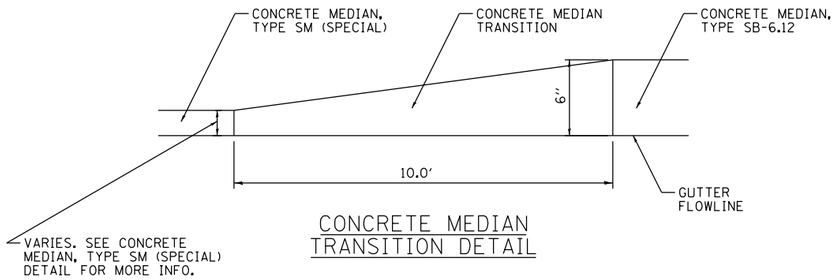
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			





CONCRETE MEDIAN, TYPE SM (SPECIAL) DETAIL



CONCRETE MEDIAN TRANSITION DETAIL

NOTE:

DETAILS NOT TO SCALE

MAURER-STUTZ ENGINEERS SURVEYORS

FILE NAME = S:\237\2013\2371309\09.00\AllenRdPhII\CADD\CADD Sheets\D468683-sht-details-2-cant truss.dgn	USER NAME = baswanson	DESIGNED -	REVISED - CCM 1/16/2014	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**ALLEN ROAD IMPROVEMENTS CANTILEVER SIGN TRUSS IMPACT ATTENUATOR DETAIL**
		DRAWN -	REVISED -		
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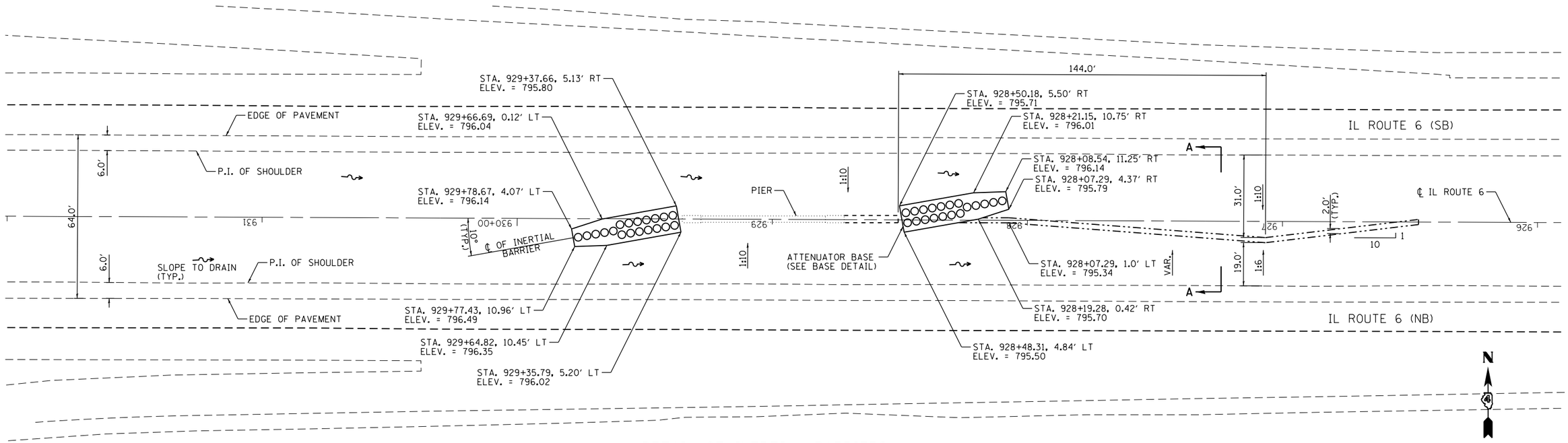
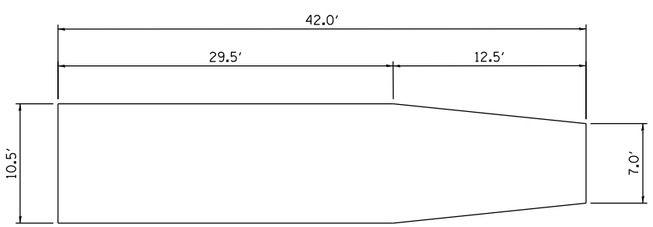
Default	PLOT DATE = 1/24/2014 5:21:13 PM	DATE -	REVISED -		

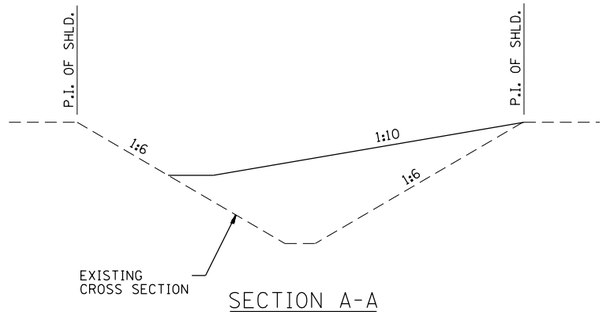
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	376
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



DETAIL OF INERTIAL BARRIERS
(70 MPH DESIGN - 64' MEDIAN)



BASE DETAIL



SECTION A-A

GENERAL NOTES

ALL 1:10 SLOPES SHOWN ON THIS DETAIL SHALL BE CONSTRUCTED 1:10 OR FLATTER.

THE SLOPES AS SHOWN ON THIS DETAIL SHALL APPLY TO BOTH ENDS OF THE BRIDGE PIERS.

ATTENUATOR BASE AND BARREL ARRAY SHALL BE INSTALLED IN ACCORDANCE WITH STATE STANDARD 643001 AND MANUFACTURER'S SPECIFICATIONS.

ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).

MAURER-STUTZ ENGINEERS SURVEYORS

FILE NAME = S:\237\2013\23713009.00\AllenRdPhII\CADD\CADD Sheets\D468683-sht-details-sand mod.dgn	USER NAME = baswanson	DESIGNED -	REVISED -
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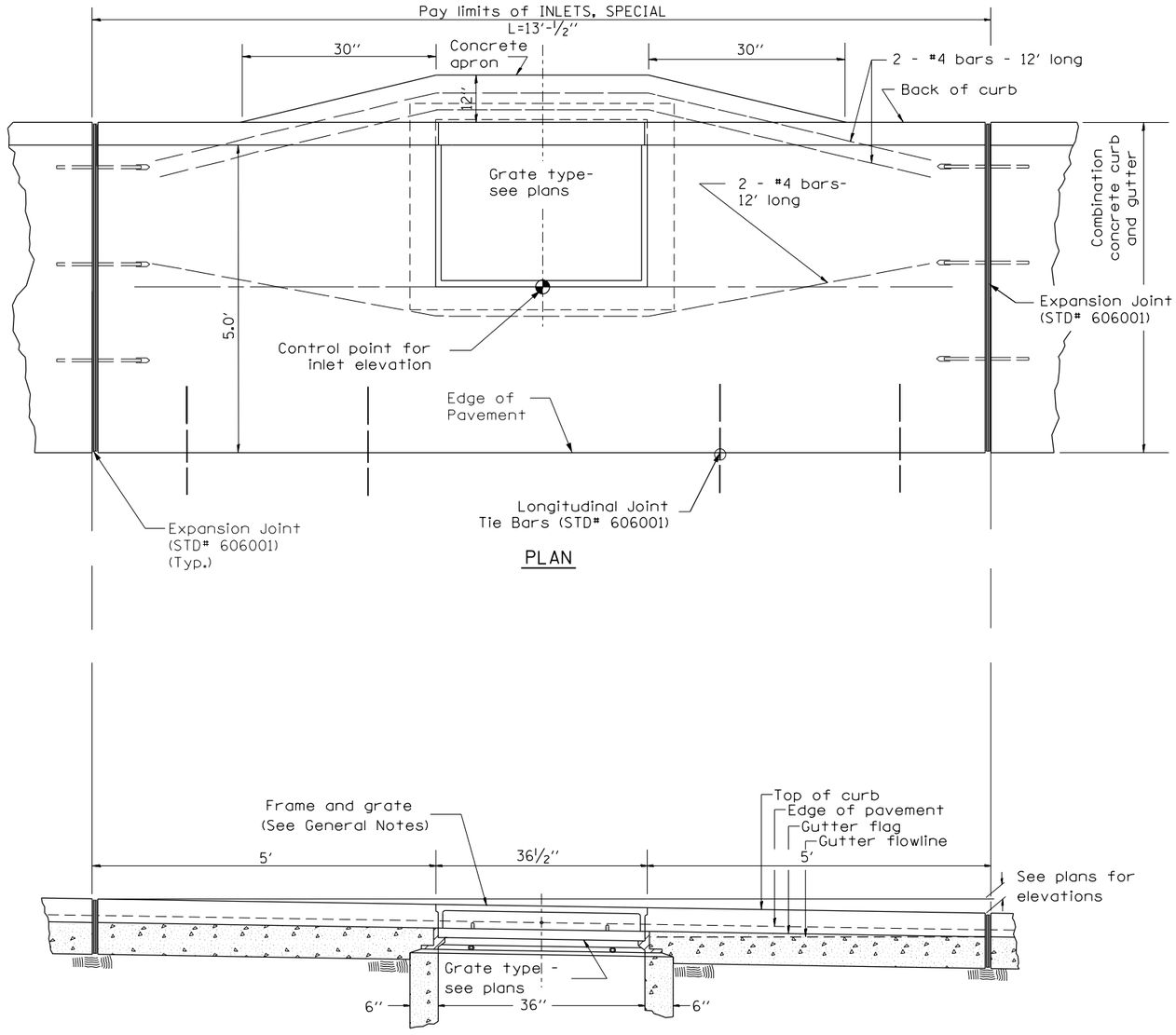
Default	PLOT DATE = 1/24/2014 5:21:14 PM	DATE -	REVISED -

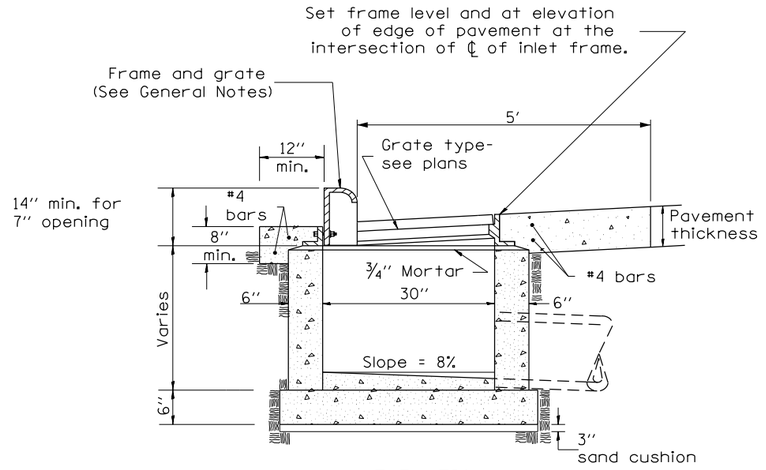
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALLEN ROAD IMPROVEMENTS
IL 6 SAND MODULE ATTENUATOR DETAIL

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	377
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			





GENERAL NOTES

1. Inlet construction shall be in accordance with Section 602 of the Standard Specifications.
2. Combination Concrete Curb & Gutter shall be constructed in accordance with Section 606 of the Standard Specifications.
3. See District CADD Standard 604001-D4 for frame and grates.

MAURER-STUTZ ENGINEERS SURVEYORS

FILE NAME = S:\237\2013\2371300\9.00\AllenRdPhII\CADD\CADD Sheets\D468683-sht-details-inlets special	USER NAME = jdspiller	DESIGNED -	REVISED -
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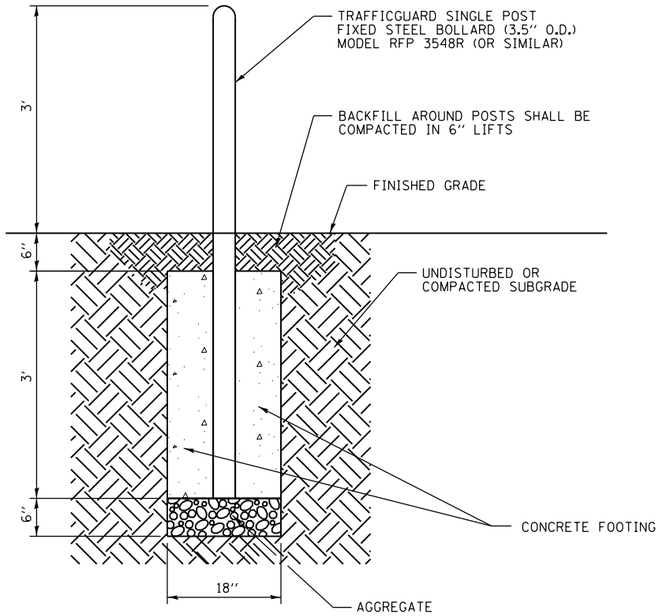
Default	PLOT DATE = 1/31/2014 10:15:14 AM	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

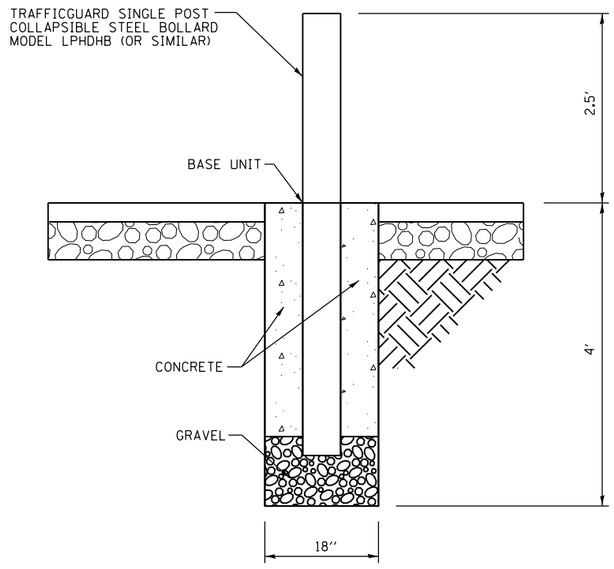
ALLEN ROAD IMPROVEMENTS
INLETS, SPECIAL DETAIL

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	378
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

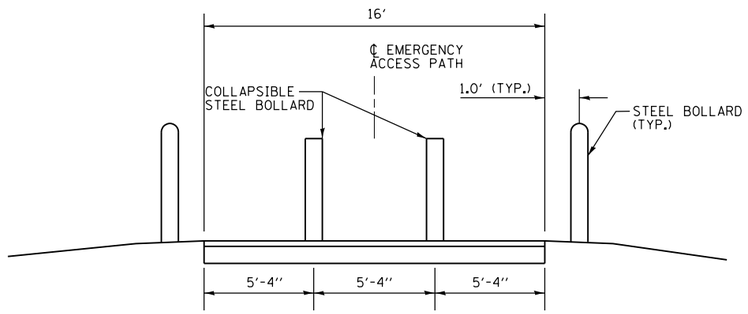


1 STEEL BOLLARD DETAIL
NOT TO SCALE

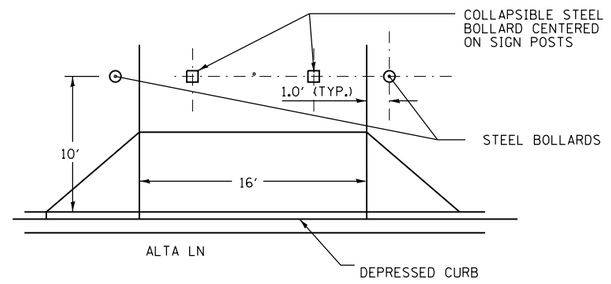


NOTE:
COLLAPSIBLE BOLLARD MUST BE INSTALLED SO ENTIRE LENGTH RESTS ON PAVEMENT WHEN COLLAPSED. SEE MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION OF COLLAPSIBLE STEEL BOLLARD.

2 COLLAPSIBLE STEEL BOLLARD DETAIL
NOT TO SCALE



3 BOLLARD / LAYOUT (ELEVATION VIEW AT EMERGENCY ACCESS RD)
NOT TO SCALE



4 BOLLARD LAYOUT (PLAN VIEW AT EMERGENCY ACCESS RD)
NOT TO SCALE

MAURER-STUTZ ENGINEERS SURVEYORS

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		DRAWN -	REVISED -
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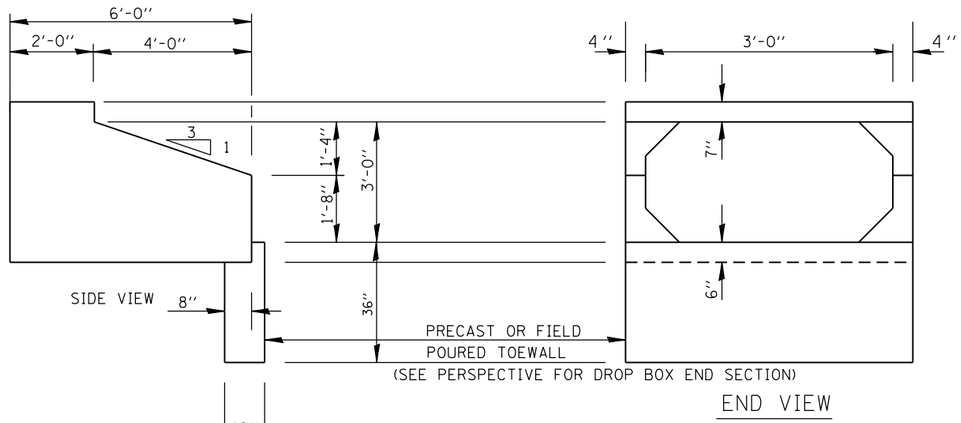
Default	PLOT DATE = 1/24/2014 5:21:15 PM	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

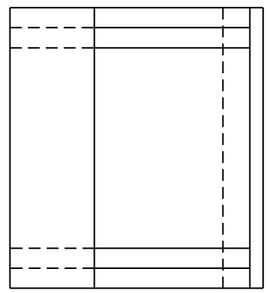
ALLEN ROAD IMPROVEMENTS
VEHICLE CONTROL BOLLARD DETAIL

SCALE: | SHEET OF SHEETS | STA. | TO STA.

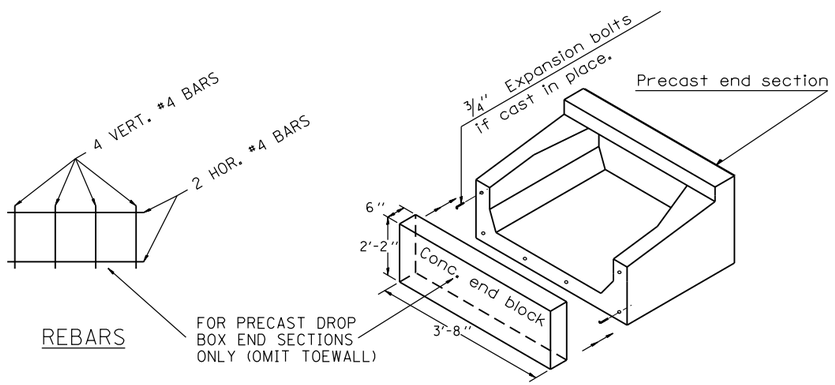
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	379
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



END VIEW



PLAN



REBARS

PERSPECTIVE

GENERAL NOTES:

1. The Box Culvert Sections shall conform to ASTM C1577.
2. The External Sealing Band shall conform to ASTM C 877. The appropriate portions of Articles 550.02(I) and 1057.01 of the Standard Specifications shall apply.
3. Shop plans for the Precast Reinforced Box Culvert Sections, End Sections and Drop Box End Sections shall be submitted in accordance with Article 540.06 of the Standard Specifications.
4. All dimensions shall be verified with the Supplier.
5. Add grating per District 4 CADD STD. 540301-D4.
6. Add concrete end block at upstream end to create drop box.

MAURER-STUTZ ENGINEERS SURVEYORS

FILE NAME = S:\237\2013\23713009.00\AllenRdPhII\CADD\CADD Sheets\D468683-sht-details-3x3 box culv DRAWING.dgn	USER NAME = baswanson	DESIGNED -	REVISED -
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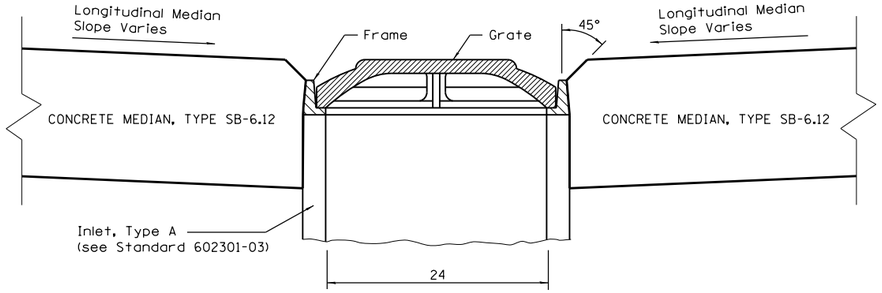
Default	PLOT DATE = 1/24/2014 5:21:16 PM	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

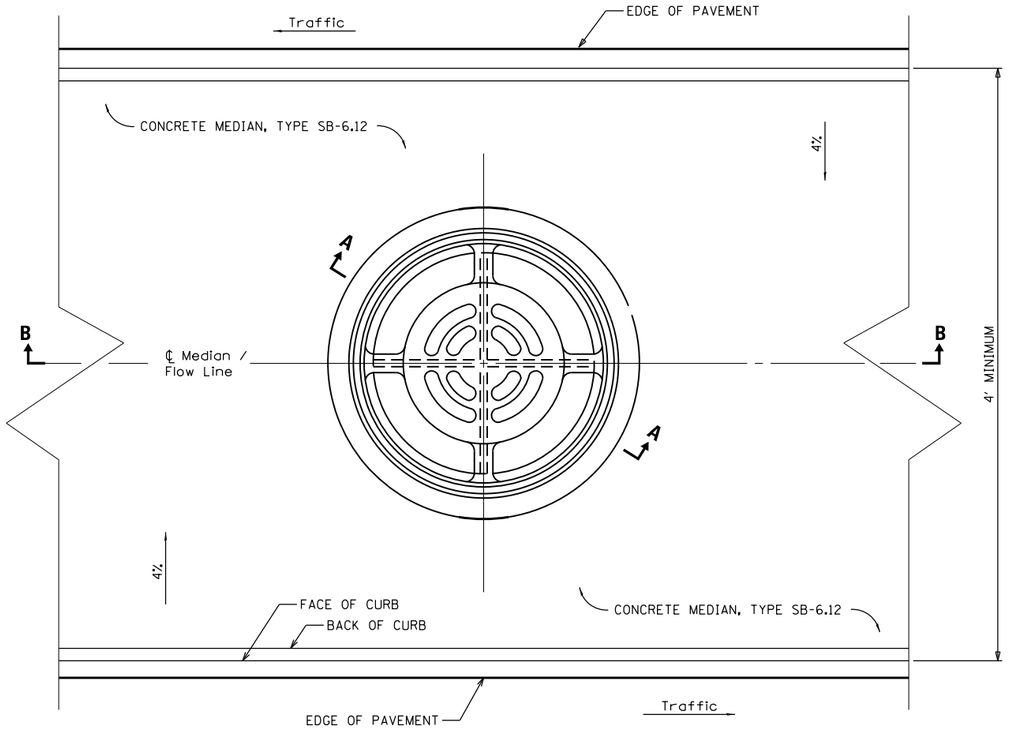
ALLEN ROAD IMPROVEMENTS
3' X 3' BOX CULVRET END SECTION DETAIL

SCALE: | SHEET OF SHEETS | STA. | TO STA.

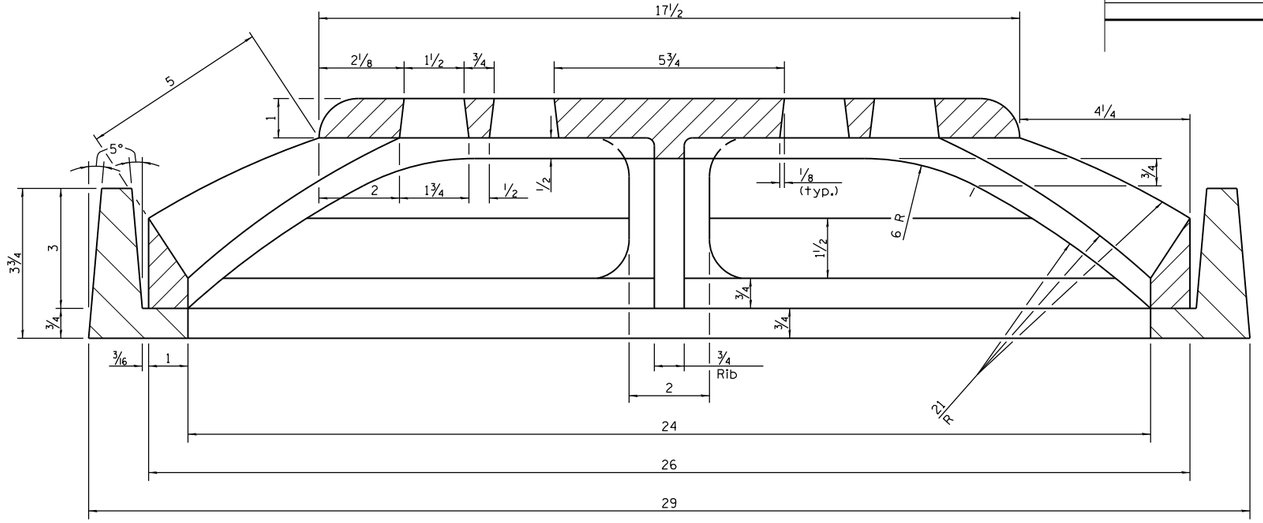
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105: (72-7HB)BY	PEORIA	487	380
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			



SECTION B–B



LOCATION SKETCH – PLAN



SECTION A–A

GENERAL NOTES

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

All dimensions are in inches unless otherwise shown.

MAURER-STUTZ ENGINEERS SURVEYORS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

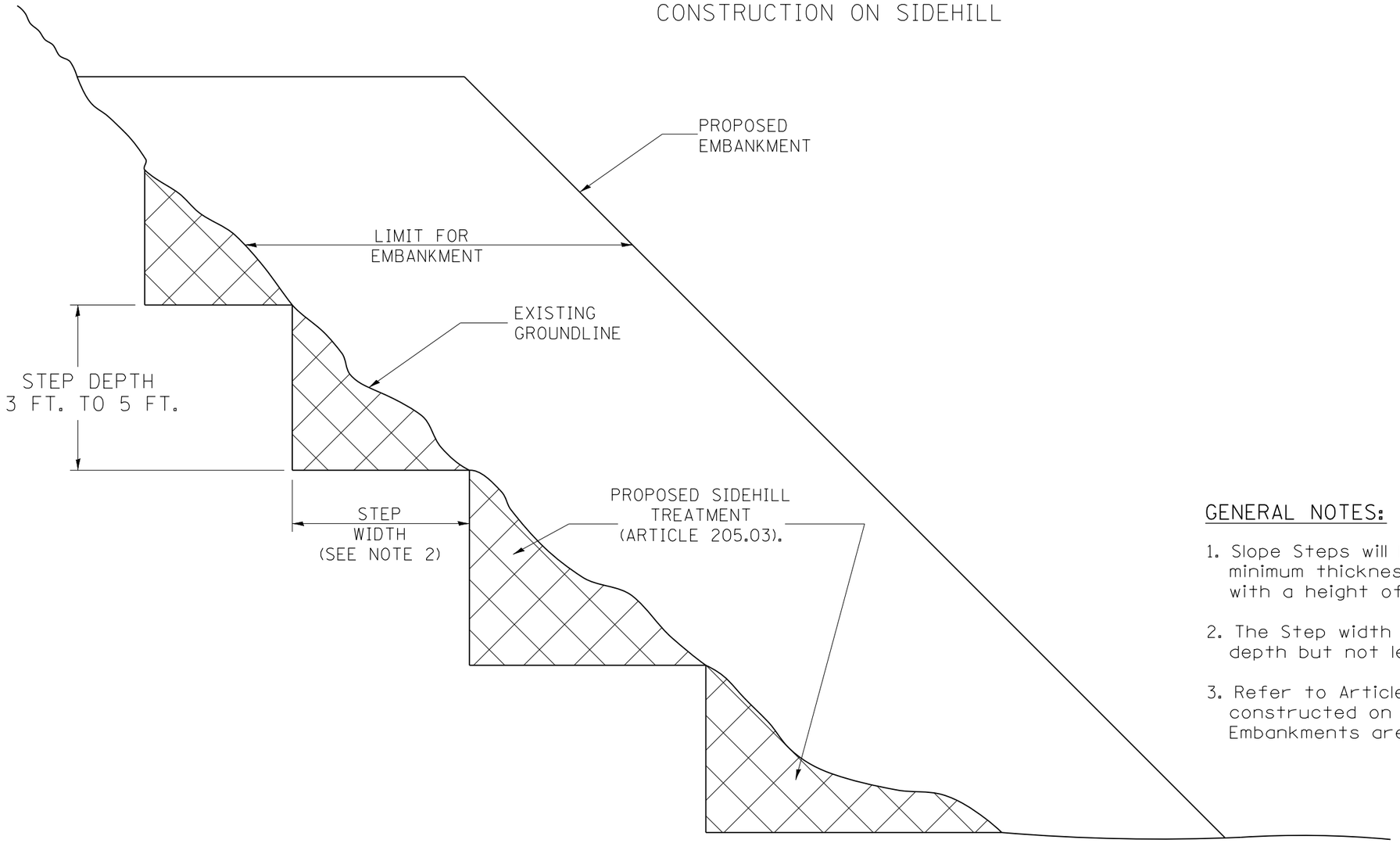
ALLEN ROAD IMPROVEMENTS
INLETS, TYPE A WITH MEDIAN INLET, SPECIAL DETAIL

SCALE: | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6584	105; (72-7HB)BY	PEORIA	487	381
6585		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			

SLOPE STEPS DETAIL

TYPICAL CROSS-SECTION EMBANKMENT
CONSTRUCTION ON SIDEHILL



GENERAL NOTES:

1. Slope Steps will be required for all 12(300) minimum thickness "silver fills" and on a fills with a height of 10'(3.0m).

2. The Step width shall be twice the Step depth but not less than 6 feet.

3. Refer to Article 205.03 for Embankment to be constructed on Hillside or Slopes, or if existing Embankments are to be widened.

REPLACEMENT MATERIAL:

STANDARD EMBANKMENT
(IN ACCORDANCE WITH
205 OF THE STANDARD SPECIFACATION).

All dimensions are in inches (millimeters) unless otherwise noted.

1-1-97	RENUM. L-5.03, NEW REVISION BOX, REVISED TITLE	T.P.									
	BOX, REVISED GENERAL NOTES.										
10-16-06	REVISED TO 2007 SPEC.	M.A.									

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

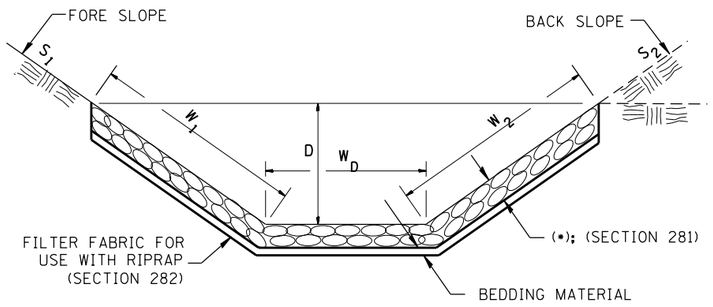
SLOPE STEPS DETAIL

NOT TO SCALE

CADD STD. 205001-D4

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			487	382
		CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

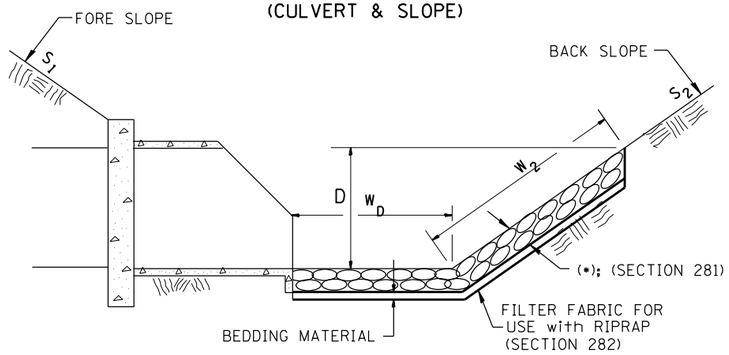
CASE 1
(DITCH)



(*)				
LOCATION	WIDTH (1)	LENGTH	RIPRAP	FABRIC
STA TO STA	lin ft (m)	lin ft (m)	tons (m tons)	sq yds (m^2)
TOTAL				

(1) WIDTH = $W_1 + W_2 + W_D$

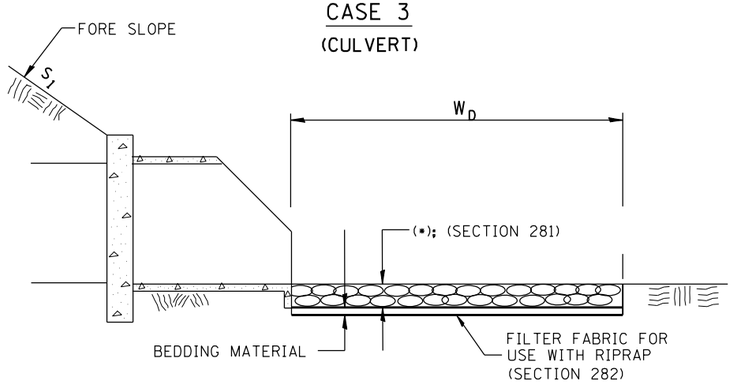
CASE 2
(CULVERT & SLOPE)



(*)				
LOCATION	WIDTH (1)	LENGTH	RIPRAP	FABRIC
STA TO STA	lin ft (m)	lin ft (m)	tons (m tons)	sq yds (m^2)
TOTAL				

(1) WIDTH = $W_2 + W_D$

CASE 3
(CULVERT)



(*)				
LOCATION	WIDTH (1)	LENGTH	RIPRAP	FABRIC
STA TO STA	lin ft (m)	lin ft (m)	tons (m tons)	sq yds (m^2)
TOTAL				

(1) WIDTH = W_D

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

All dimensions are in inches (millimeters) unless otherwise noted.

1-1-97	RENUM. A-12.02, NEW REVISION BOX	T.P.
12-1-97	CORRECT FILTER FABRIC LEADER ARROW	J.A.
10-16-06	REVISED TO 2007 SPEC.	M.A.
9-6-12	REMOVED A DESIGNER NOTE AND MADE MINOR CHANGES	R.D.

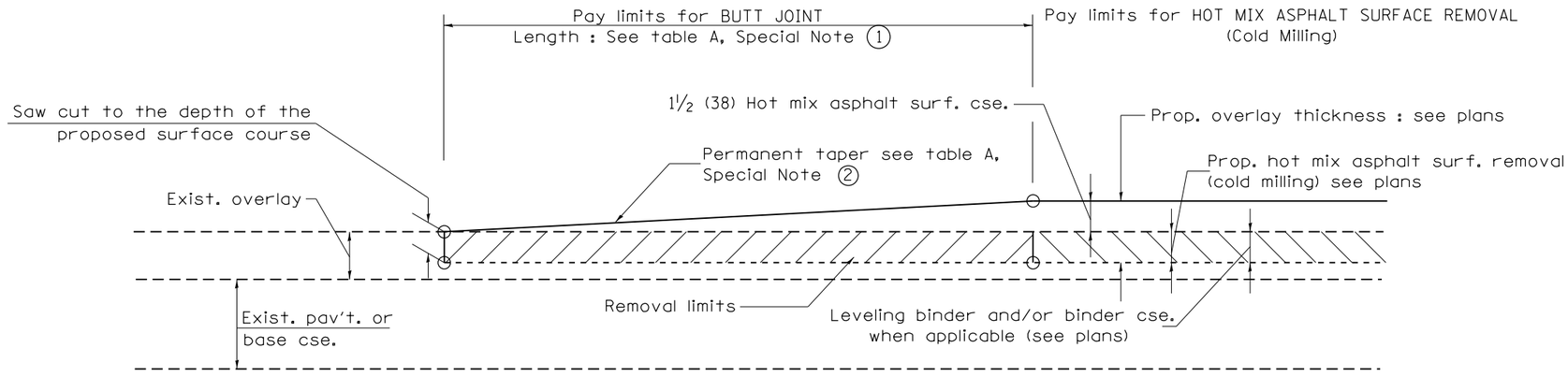
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RIPRAP DITCH FOR EROSION PROTECTION

NOT TO SCALE

CADD STD. 281001-D4

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			487	383
		CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



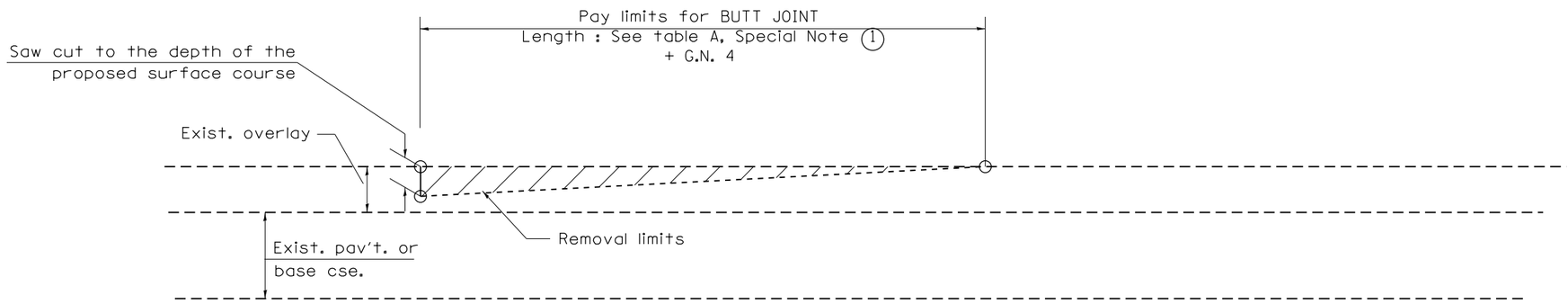
CASE 1 : WITH HOT MIX ASPHALT SURFACE REMOVAL (COLD MILLING)

TABLE A
TAPER RATES

SPECIAL NOTE NUMBER	ELEMENT	MAINLINE INTERSTATES & 4-LANE EXPRESSWAYS	ALL OTHERS
(1)	BUTT JOINT TAPER RATE	1:480	1:240
(2)	TEMPORARY RAMP TAPER RATE	1:80	1:40

GENERAL NOTES

1. The work shall be done in accordance with Article 406.08 and the Special Provision for Butt Joints.
2. The pavement surface to be removed may be either bituminous or P.C. concrete. The work shall be performed in accordance with Article 440.04 and the Special Provisions for Butt Joints.
3. The saw cut joints shall be primed just prior to the placing of bituminous material. The work will be in accordance with the applicable portions of Article 406.05.
4. The length of butt joint is based on the taper rate times change in cold miling depth within the butt joint pay limits, unless otherwise indicated.



CASE 2 : NO HOT MIX ASPHALT SURFACE REMOVAL (COLD MILLING)

All dimensions are in inches (millimeters) unless otherwise noted.

01-01-97	RENUM. C-23.01, NEW REVISION BOX	T.P.	08-21-13	MAJOR MODIFICATIONS	R.D.	
04-01-97	CORRECTION TO DEPTH	J.A.				
09-15-05	REVISED DESIGNER NOTE	M.M.A.				
10-16-06	REVISED TO 2007 SPEC.	M.A.				

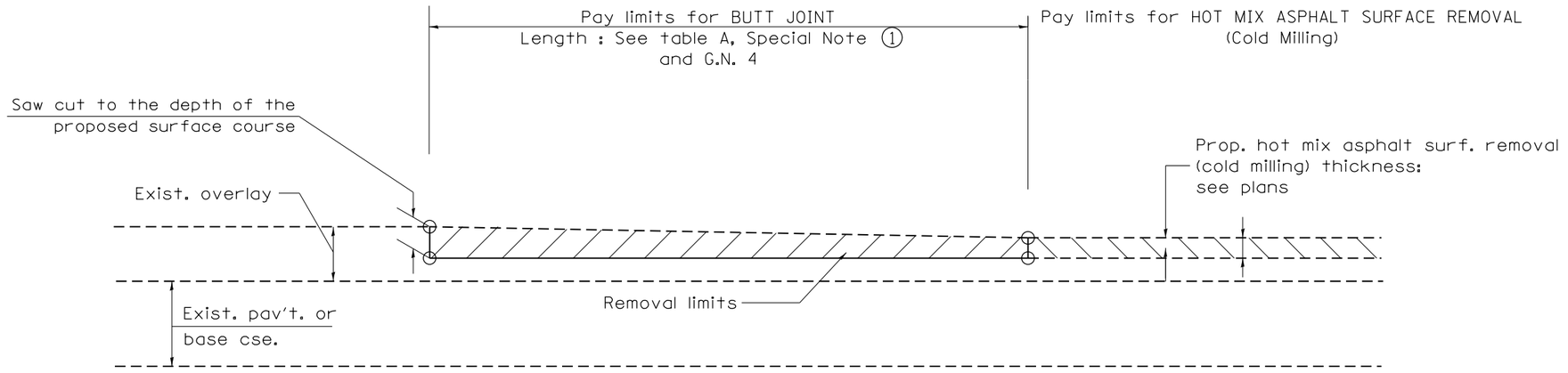
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BUTT JOINTS

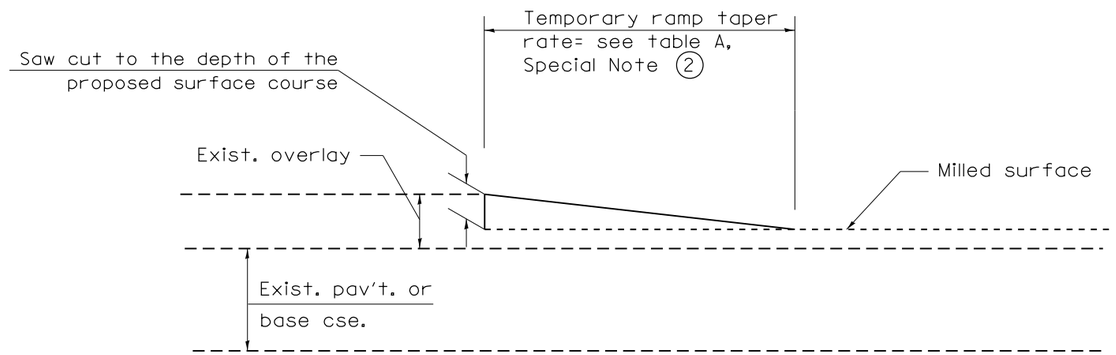
NOT TO SCALE

SHT. 1 OF 3
CADD STD. 406101-D4

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			487	384
		CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



CASE 4 : NO HOT MIX ASPHALT SURFACE REMOVAL (COLD MILLING)
TIE-IN TO EXISTING BITUMINOUS TAPER



DETAIL TEMPORARY RAMP

All dimensions are in inches (millimeters) unless otherwise noted.

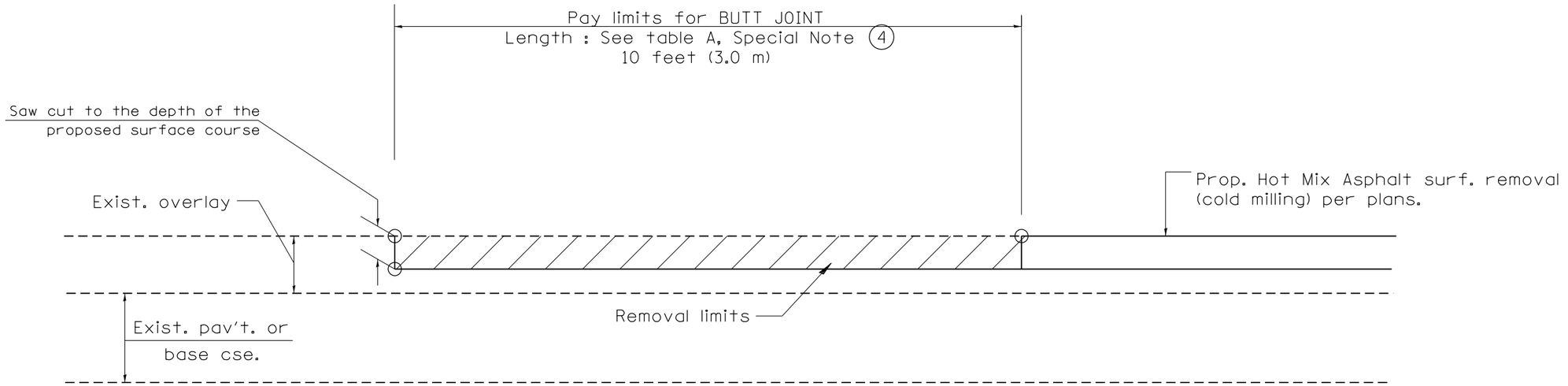
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BUTT JOINTS

NOT TO SCALE

SHT. 2 OF 3
CADD STD. 406101-D4

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			487	385
		CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



CASE 4 : SINGLE LIFT OVERLAY WITH EQUIVALENT DEPTH
HOT MIX ASPHALT SURFACE REMOVAL (COLD MILLING)
TIE-IN TO EXISTING BITUMINOUS TAPER

All dimensions are in inches (millimeters)
unless otherwise noted.

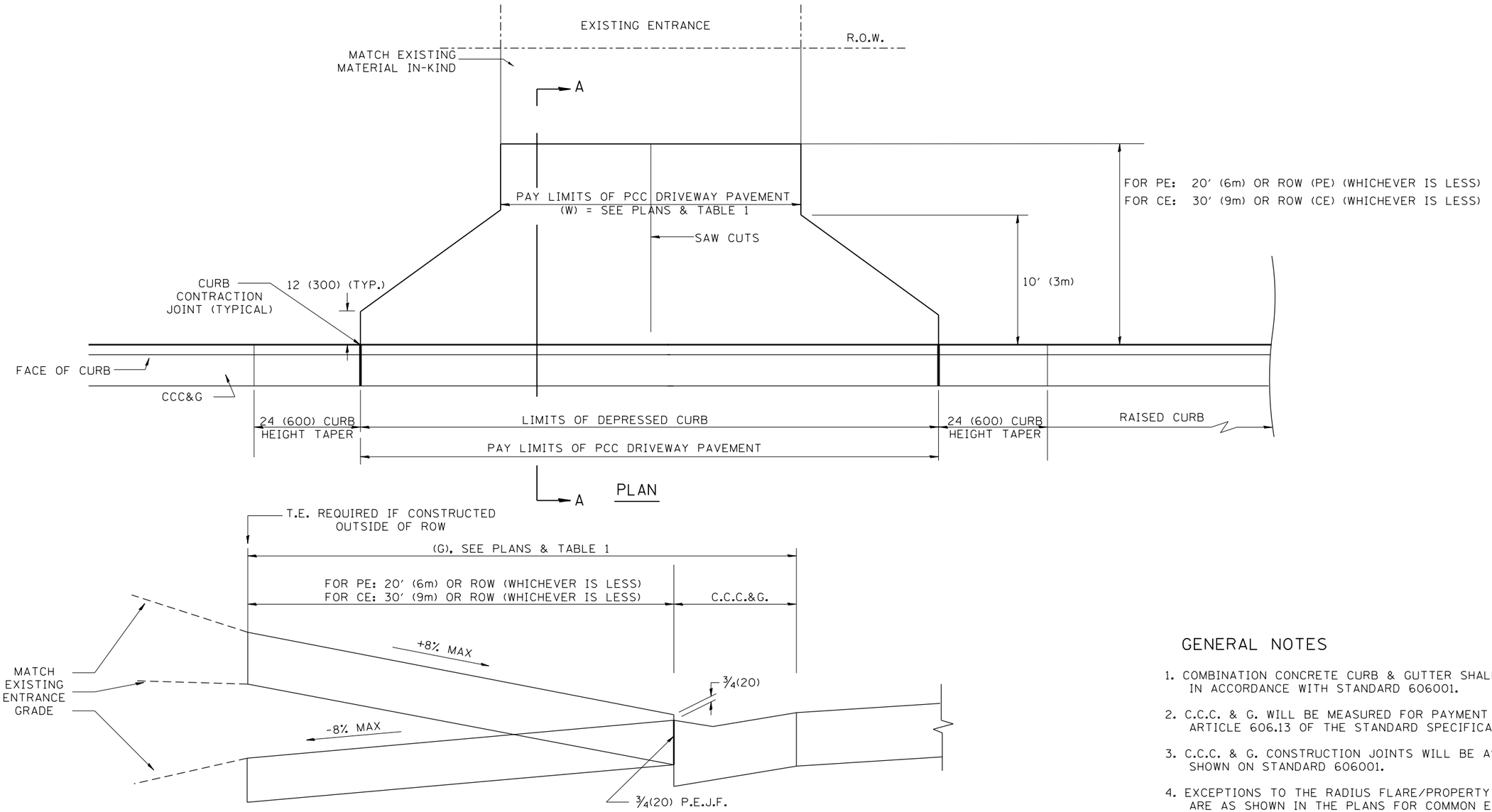
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NOT TO SCALE

BUTT JOINTS

SHT. 3 OF 3
CADD STD. 406101-D4

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			487	386
		CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



SECTION A-A

TABLE 1

URBAN ENTRANCE DESIGN CONTROLS

ELEMENT	NON-COMMERCIAL		COMMERCIAL			
			1-WAY OPERATION		2-WAY OPERATION	
WIDTH (W)	12' (3.6m)MIN.	24' (7.2m)MAX.	14' (4.3m)MIN.	24' (7.2m)MAX.	24' (7.2m)MIN.	35' (10.7m)MAX.
RADIUS EQUIVALENT 1:1 FLARE (F)	5' (1.5m)MIN.	25' (7.6m)MAX.	15' (4.6m)MIN.	40' (12.0m)MAX.	15' (4.6m)MIN.	40' (12.0m)MAX.
MAX. GRADE (G)	8%		6%			

GENERAL NOTES

1. COMBINATION CONCRETE CURB & GUTTER SHALL BE DEPRESSED IN ACCORDANCE WITH STANDARD 606001.
2. C.C.C. & G. WILL BE MEASURED FOR PAYMENT AS SPECIFIED IN ARTICLE 606.13 OF THE STANDARD SPECIFICATIONS.
3. C.C.C. & G. CONSTRUCTION JOINTS WILL BE AS SHOWN ON STANDARD 606001.
4. EXCEPTIONS TO THE RADIUS FLARE/PROPERTY LINE RELATIONSHIP ARE AS SHOWN IN THE PLANS FOR COMMON ENTRANCES, WITH JOINTLY EXECUTED ACCESS PERMITS.

All dimensions are in inches (millimeters) unless otherwise noted.

0-15-05	NEW DETAIL	M.M.A.
10-16-06	REVISED TO 2007 SPEC.	M.A.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

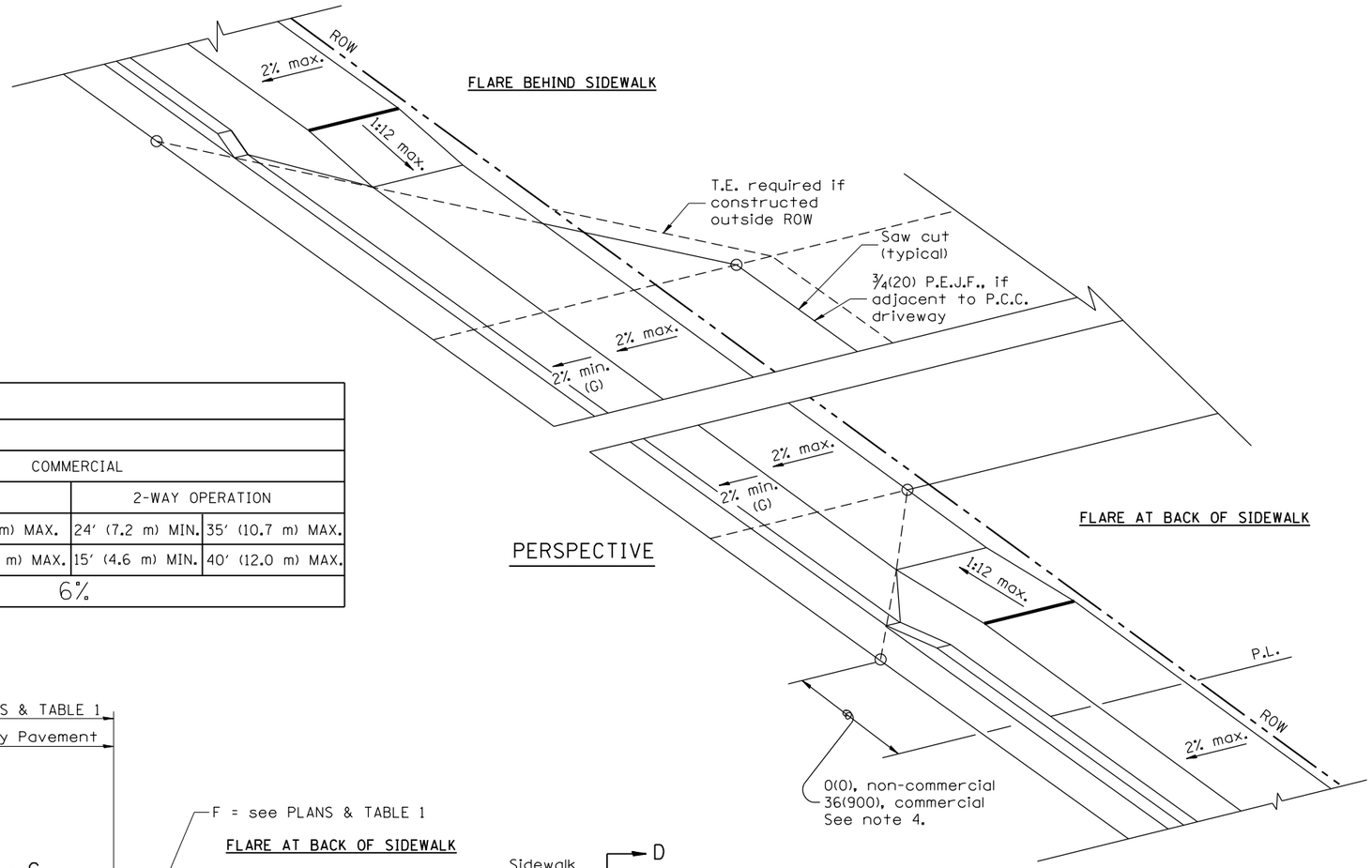
URBAN ENTRANCES WITHOUT SIDEWALKS

NOT TO SCALE

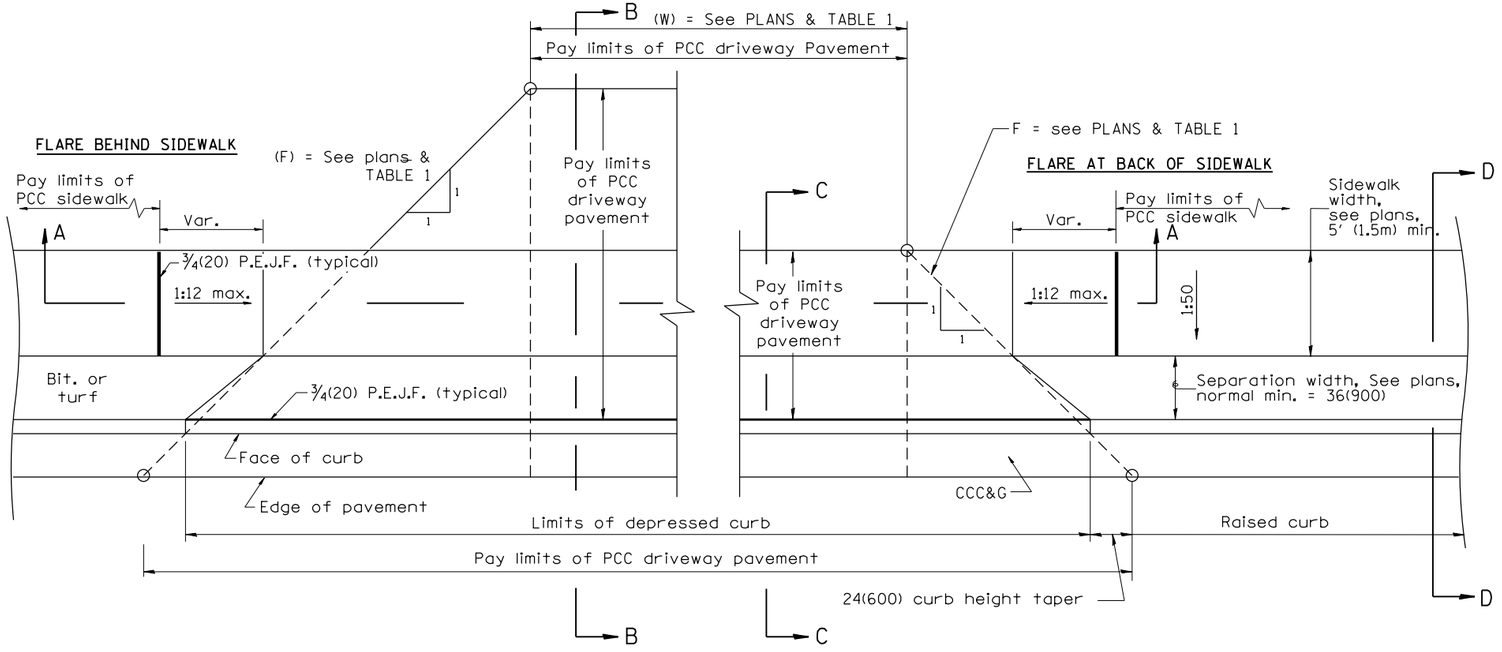
CADD STD. 423002-D4

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			487	387
		CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

TABLE 1						
URBAN ENTRANCE DESIGN CONTROLS						
ELEMENT	NON-COMMERCIAL		COMMERCIAL			
			1-WAY OPERATION		2-WAY OPERATION	
WIDTH (W)	12' (3.6 m) MIN.	24' (7.2 m) MAX.	14' (4.3 m) MIN.	24' (7.2 m) MAX.	24' (7.2 m) MIN.	35' (10.7 m) MAX.
RADIUS EQUIVALENT 1:1 FLARE (F)	5' (1.5 m) MIN.	25' (7.6 m) MAX.	15' (4.6 m) MIN.	40' (12.0 m) MAX.	15' (4.6 m) MIN.	40' (12.0 m) MAX.
MAX. GRADE (G)	8%		6%			



PERSPECTIVE



PLAN

GENERAL NOTES

1. The sidewalk area located within the pay limits of P.C.C. Driveway Pavement will be of the same thickness and construction as the P.C.C. Driveway Pavement.
2. Combination Concrete Curb & Gutter shall be depressed in accordance with Standard 606001.
3. Exceptions to the radius flare/property line relationship are as shown in the plans for common entrances, with jointly executed access permits.
4. Refer to State Standard 424026 for detectable warnings at busy commercial entrances.

All dimensions are in inches (millimeters) unless otherwise noted.

01-01-97	RENUM. C-103.01, NEW REVISION BOX	T.P.	03-15-12	REMOVED HATCHING ON RAMPS	R.D.
01-17-03	REMOVE CURB CONTRACTION	JATR			
09-15-05	JOINT	M.M.A.			
10-16-06	REVISED TO 2007 SPEC.	M.A.			

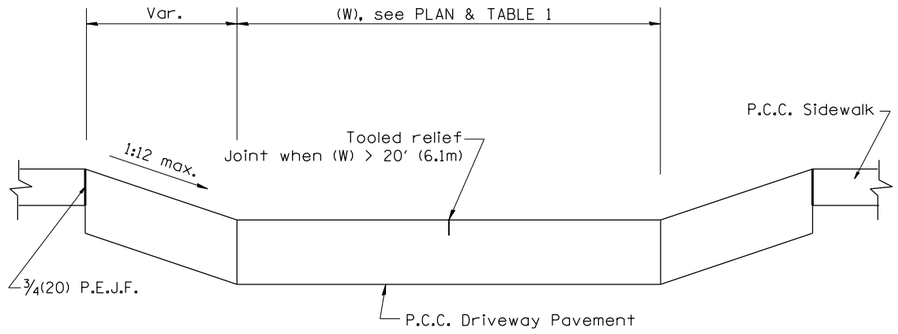
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

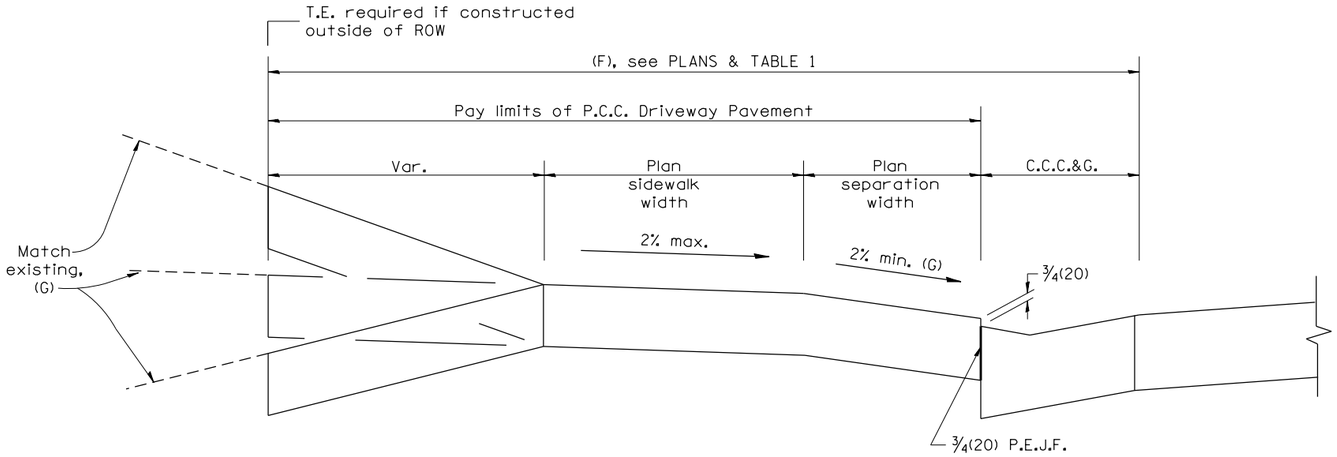
URBAN ENTRANCES, ACCESSIBLE TO THE DISABLED, FOR SEPARATED SIDEWALKS

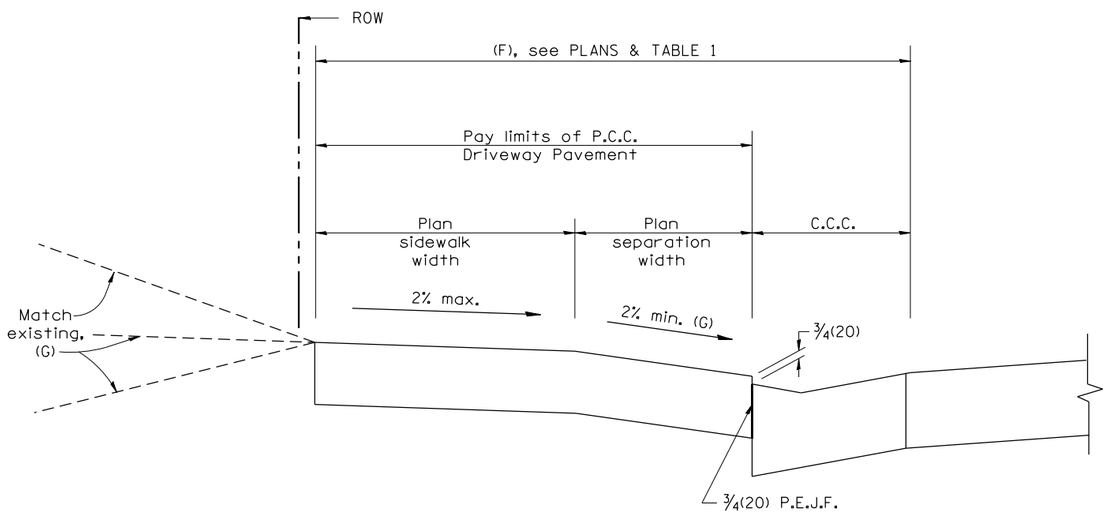
NOT TO SCALE

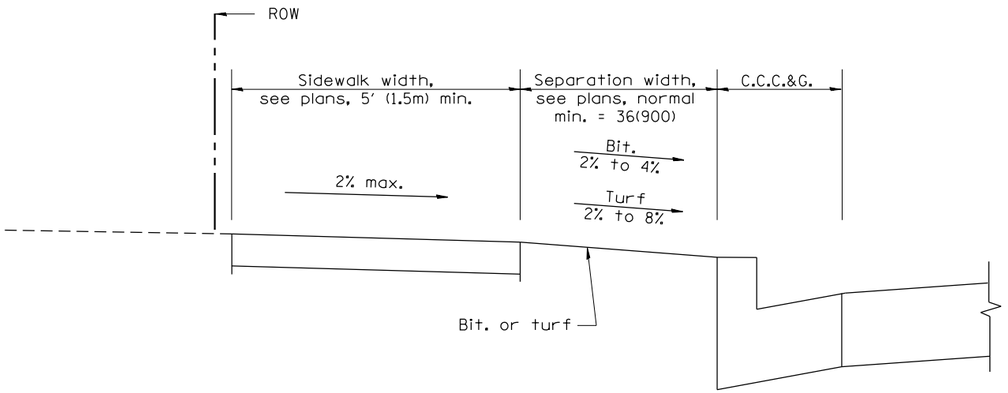
SHT. 1 OF 2
CADD STD. 423106-D4

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			487	388
		CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		









SECTION A-A

SECTION B-B

SECTION D-D

SECTION C-C

All dimensions are in inches (millimeters) unless otherwise noted.

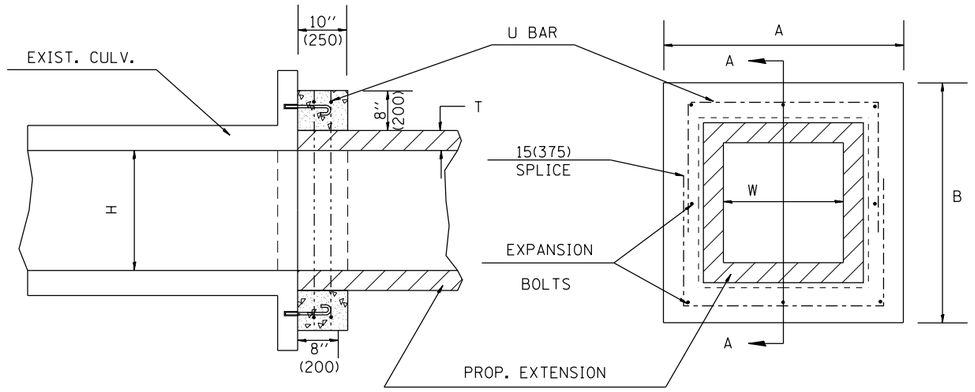
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

URBAN ENTRANCES, ACCESSIBLE TO THE DISABLED,
FOR SEPARATED SIDEWALKS

NOT TO SCALE
SHT. 2 OF 2
CADD STD. 423106-D4

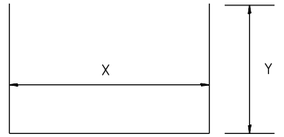
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			487	389
		CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

• MINIMUM 1' LAP ON U BARS



SECTION A - A

END VIEW



#4 U BAR
FOUR REQUIRED
PER COLLAR

GENERAL NOTES

1. The collar shall be constructed entirely of class SI concrete and in accordance with the applicable portions of section 503 of the Standard Specifications. Reinforcement bars shall conform to section 508.
2. Expansion bolts shall consist of approved expansions anchors, and ¾" (M20) hook bolts which conform to Section 1006.09. These bolts shall extend at least 8"(200) into the new concrete.
3. This work will be paid for by the cubic yard (cubic meter) for CONCRETE COLLAR, by the pound (kg) for REINFORCEMENT BARS, and by Each for EXPANSION BOLTS of the size indicated.

DIMENSIONS

EXISTING BOX		A	B	T	EACH COLLAR				
					CL SI	REINFORCEMENT BARS			EXPANSION BOLTS
W ft (mm)	H ft (mm)				CU YD (m^3)	X	Y	POUNDS (kg)	NO.
2 (600)	2 (600)	4'-0" (1.22m)	4'-0" (1.22m)	4(100)	0.27(0.21)	3'-4" (1.02m)	27.5(698)	21 (9.5)	8
3 (900)	2 (600)	5'-0" (1.52m)	4'-0" (1.22m)	4(100)	0.32(0.24)	4'-4" (1.32m)	27.5(698)	24 (11)	8
3 (900)	2.5 (750)	5'-0" (1.52m)	4'-6" (1.37m)	4(100)	0.34(0.26)	4'-4" (1.32m)	30.5(774)	25 (11.5)	8
3 (900)	3 (900)	5'-0" (1.52m)	5'-0" (1.52m)	4(100)	0.36(0.28)	4'-4" (1.32m)	33.5(850)	26.5 (12)	8
3 (900)	4 (1200)	5'-2" (1.57m)	6'-2" (1.88m)	5(125)	0.41(0.31)	4'-6" (1.37m)	40.5(1.03m)	30 (13.5)	10
4 (1200)	3 (900)	6'-2" (1.88m)	5'-2" (1.57m)	5(125)	0.41(0.31)	5'-6" (1.68m)	34.5(876)	30 (13.5)	10
4 (1200)	4 (1200)	6'-2" (1.88m)	6'-2" (1.88m)	5(125)	0.45(0.34)	5'-6" (1.68m)	40.5(1.03m)	33 (15)	12
4 (1200)	5 (1500)	6'-4" (1.93m)	7'-4" (2.24m)	6(150)	0.51(0.39)	5'-8" (1.73m)	3'-11.5"(1.21m)	36 (16.5)	14
5 (1500)	4 (1200)	7'-4" (2.24m)	6'-4" (1.93m)	6(150)	0.51(0.39)	6'-8" (2.03m)	3'-5.5"(1.05m)	36 (16.5)	14
5 (1500)	5 (1500)	7'-4" (2.24m)	7'-4" (2.24m)	6(150)	0.55(0.42)	6'-8" (2.03m)	3'-11.5"(1.21m)	39 (17.5)	16
5 (1500)	6 (1800)	7'-6" (2.29m)	8'-6" (2.59m)	7(175)	0.60(0.46)	6'-10" (2.08m)	4'-6.5"(1.38m)	42.5 (19)	16
6 (1800)	4 (1200)	8'-6" (2.59m)	6'-6" (1.98m)	7(175)	0.56(0.43)	7'-10" (2.39m)	3'-6.5"(1.08m)	40 (18)	14
6 (1800)	5 (1500)	8'-6" (2.59m)	7'-6" (2.29m)	7(175)	0.60(0.46)	7'-10" (2.39m)	4'-0.5"(1.23m)	42.5 (19)	16
6 (1800)	6 (1800)	8'-6" (2.59m)	8'-6" (2.59m)	7(175)	0.64(0.49)	7'-10" (2.39m)	4'-6.5"(1.38m)	45 (20.5)	16
6 (1800)	8 (2400)	8'-8" (2.64m)	10'-8" (3.25m)	8(200)	0.74(0.57)	8'-0" (2.44m)	5'-7.5"(1.71m)	51.5 (23)	18
8 (2400)	8 (2400)	10'-8" (3.25m)	10'-8" (3.25m)	8(200)	0.82(0.63)	10'-0" (3.05m)	5'-7.5"(1.71m)	57 (26)	20

QUANTITIES

CALC. BY: _____ DATE: _____

CHECKED BY: _____ DATE: _____

QUANTITY CALCULATIONS ARE ON FILE AT THE DISTRICT 4 OFFICE; BUREAU OF PROJECT IMPLEMENTATION; DOCUMENTATION SECTION

All dimensions are in inches (millimeters) unless otherwise noted.

01-01-97	RENUM. J-12.01, METRICS, NEW REVISION BOX, REVISED	T.P.
	TITLE BOX, ADDED QUANTITY CALCULATION BOX	
10-16-06	REV. TO 2007 SPEC., REINF. BARS COL.	M.A.
2-15-11	ADDED GENERAL NOTE #3 & REVISED BAR LAP LENGTH	R.D.

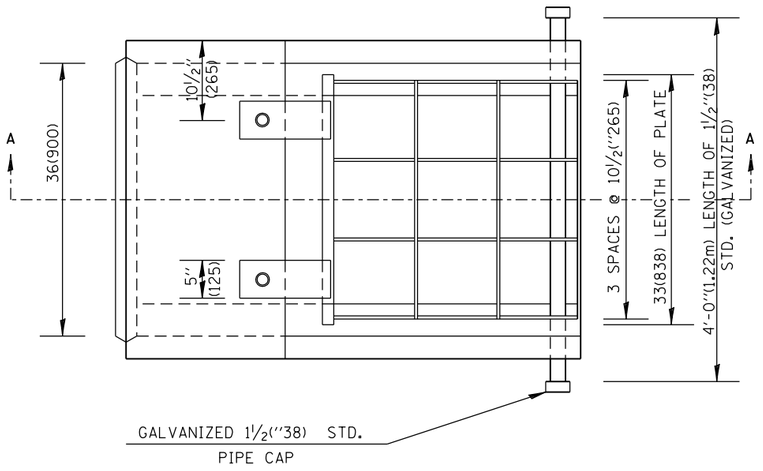
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

COLLAR FOR BOX CULVERT EXTENSIONS

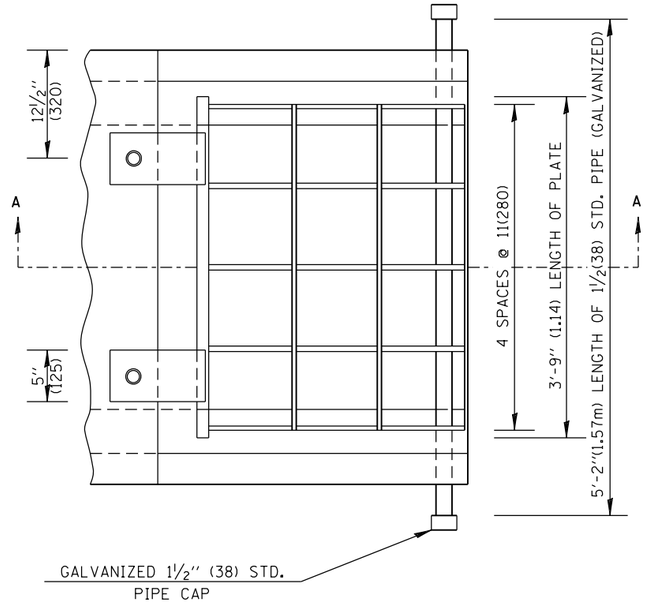
NOT TO SCALE

CADD STD. 540001-D4

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			487	390
		CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



PLAN 36 x 36(900 x 900)



PLAN 4' x 4' (1200 x 1200)

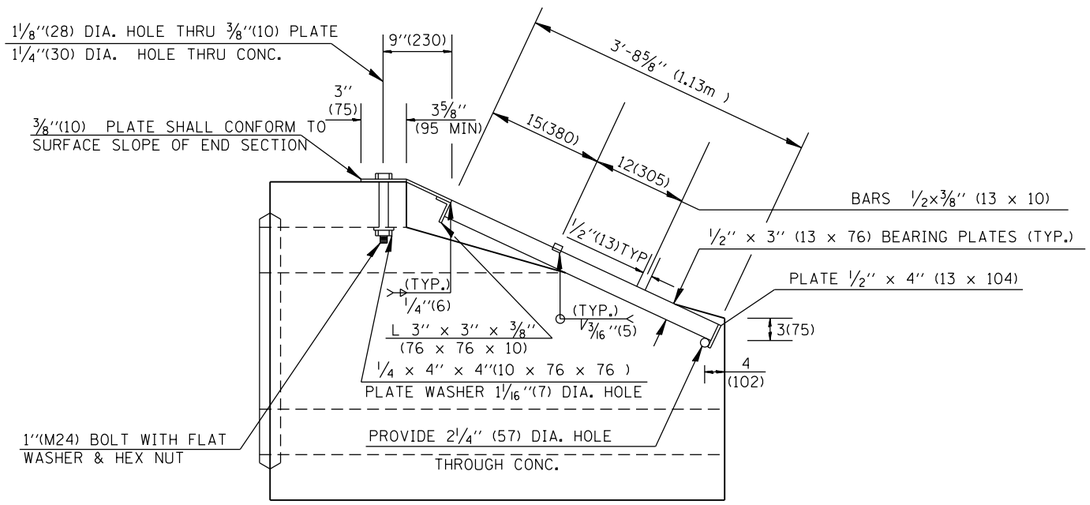
GENERAL NOTES:

1. Grating details shown are intended for use with particular sizes of Precast Concrete Box Culvert End Sectioons.

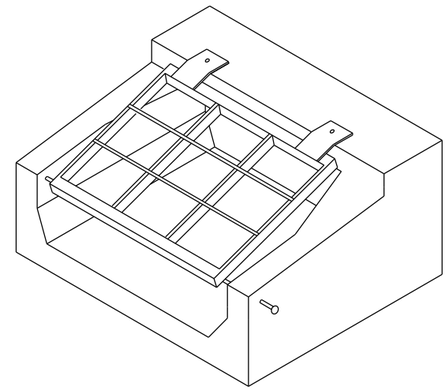
2. Structural Steel Shapes and Plates shall be in accordance with Article 1006.04 of the Standard Specifications. Galvanized Steel Pipe shall be in accordance with Article 1006.27 (b) of the Standard Specifications.

3. Bolts, Nuts, and Washers shall be in accordance with Article 1006.27 (f) of the Standard Specifications. All Fabrication shall be completed and ready for assembly before galvanizing.

4. Holes in the Precast Concrete Box Culvert End Section shall be cored to the diameter noted. If cone-out on the other end of the hole occurs, the hole shall be filled with Grout to correct the diameter of the hole.



SECTION A - A



ISOMETRIC VIEW

All dimensions are in inches (millimeters) unless otherwise noted.

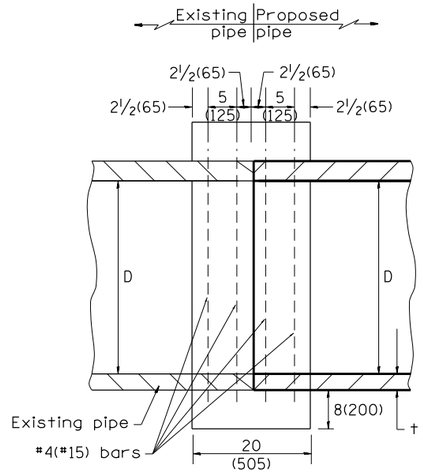
01-01-97	RENUM. J-12.05, METRICS, NEW REVISION BOX, REVISED	T.P.
	TITLE BOX, ADDED DESIGNER NOTE	
10-16-06	REVISED TO 2007 SPEC.	M.A.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

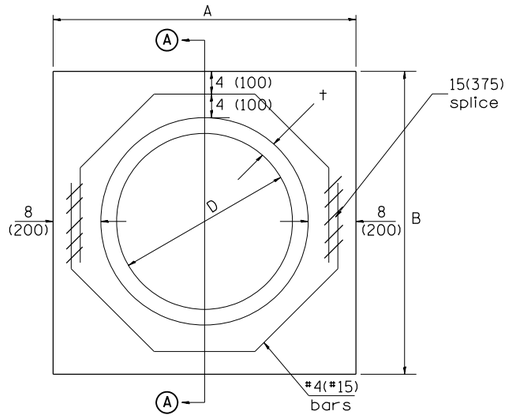
GRATING FOR PRECAST BOX CULVERT END SECTION FOR 36 X 36 (900 X 900) & 4' X 4' (1.2m X 1.2m) BOXES

NOT TO SCALE — CADD STD. 540301-D4

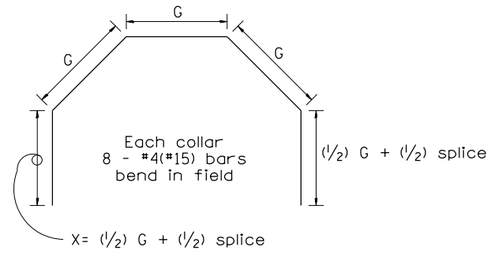
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			487	391
		CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



SECTION A - A



END VIEW



L= 3G + 2X

Each Collar								
					Reinforcement Bars			
D	t	A	B	CL. SI CONC.	G	X	L	Weight
in (mm)	in (mm)	ft (m)	ft (m)	cu. yd. (m^3)	in (mm)	in (mm)	ft (m)	lb (kg)
12 (300)	2.00 (51)	2.67 (0.814)	2.67 (0.814)	0.4 (0.270)	9 15/16 (253)	12 7/16 (317)	4.57 (1.393)	24 (11)
15 (375)	2.25 (57)	2.96 (0.902)	2.96 (0.902)	0.4 (0.315)	11 3/8 (290)	13 3/16 (335)	5.05 (1.541)	27 (12)
18 (450)	2.50 (64)	3.25 (0.991)	3.25 (0.991)	0.5 (0.362)	12 13/16 (327)	13 7/8 (354)	5.54 (1.689)	30 (14)
21 (525)	2.75 (70)	3.54 (1.079)	3.54 (1.079)	0.5 (0.411)	14 1/4 (364)	14 5/8 (372)	6.02 (1.836)	32 (15)
24 (600)	3.00 (76)	3.83 (1.167)	3.84 (1.167)	0.6 (0.460)	15 11/16 (401)	15 5/16 (391)	6.51 (1.984)	35 (16)
27 (675)	3.25 (83)	4.13 (1.259)	4.13 (1.259)	0.7 (0.516)	17 1/4 (438)	16 1/16 (409)	6.99 (2.131)	37 (17)
30 (750)	3.50 (89)	4.42 (1.347)	4.42 (1.347)	0.7 (0.570)	18 11/16 (475)	16 3/4 (428)	7.48 (2.279)	40 (18)
33 (825)	3.75 (95)	4.71 (1.436)	4.71 (1.436)	0.8 (0.624)	20 1/8 (512)	17 1/2 (446)	7.96 (2.426)	43 (19)
36 (900)	4.00 (102)	5.00 (1.524)	5.00 (1.524)	0.9 (0.682)	21 9/16 (549)	18 3/16 (465)	8.44 (2.574)	45 (20)
42 (1050)	4.50 (114)	5.58 (1.701)	5.58 (1.701)	1.0 (.800)	24 7/16 (622)	19 3/4 (501)	9.41 (2.869)	50 (23)
48 (1200)	5.00 (127)	6.17 (1.881)	6.17 (1.881)	1.2 (0.930)	27 5/16 (696)	21 3/16 (538)	10.38(3.164)	55 (25)

GENERAL NOTES

1. THE COLLAR SHALL BE CONSTRUCTED ENTIRELY OF CLASS SI CONCRETE IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF SECTION 503 OF THE STANDARD SPECIFICATIONS. REINFORCEMENT BARS SHALL CONFORM TO SECTION 508.

2. This work shall be paid for by the cubic yard (cubic meter) for CONCRETE COLLAR and by the pound (kg) for REINFORCEMET BARS.

QUANTITIES

CALC. BY: R. J. D. DATE: 2-2-98

CHECKED BY: R. D. H. DATE: 2-6-98

QUANTITY CALCULATIONS ARE ON FILE AT THE DISTRICT 4 OFFICE; BUREAU OF PROJECT IMPLEMENTATION; DOCUMENTATION SECTION

All dimensions are in inches (millimeters) unless otherwise noted.

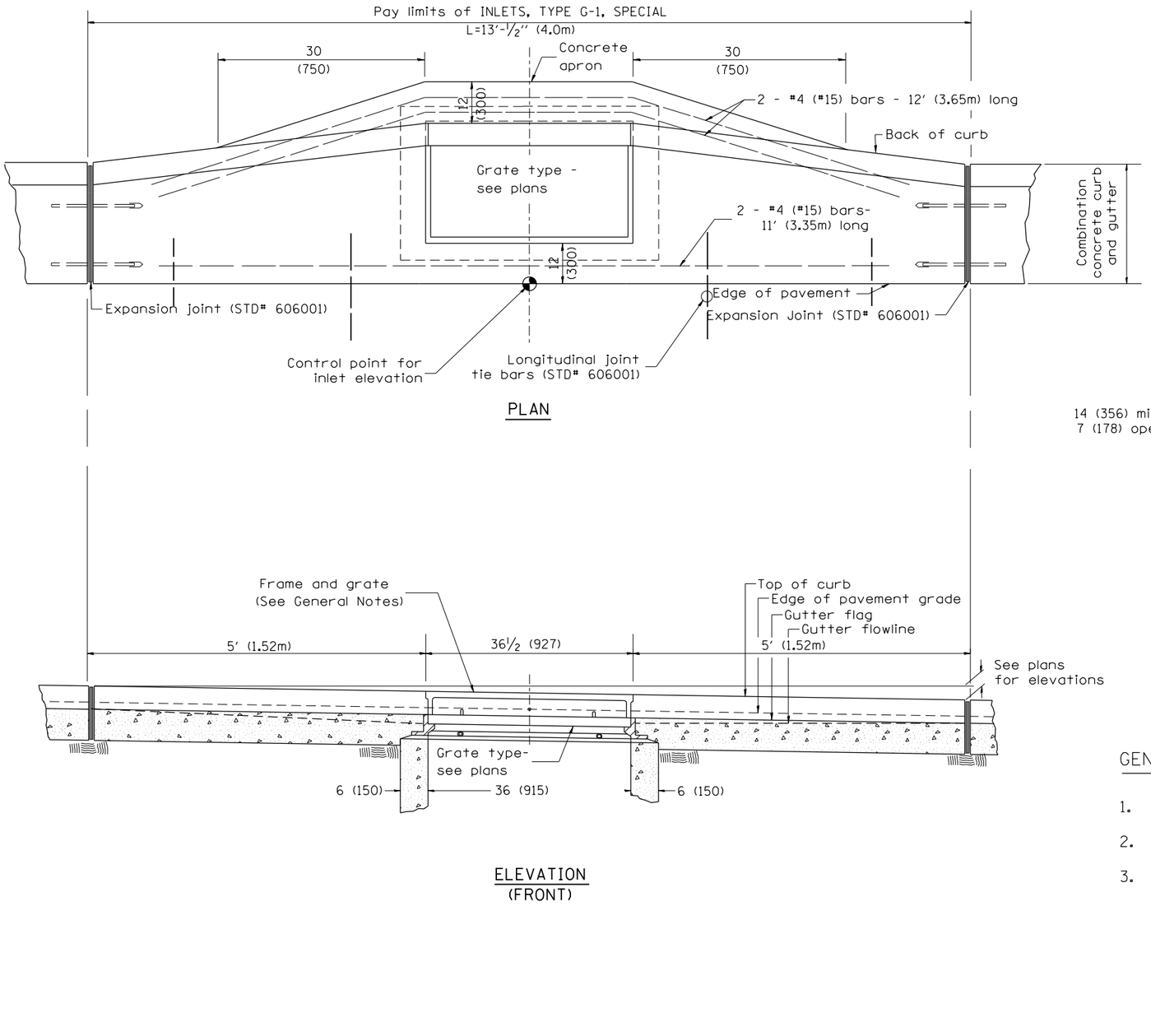
01-01-97	RENUM. B-8.03, NEW REVISION BOX, REVISED	T.P.	09-01-00	CORRECT WEIGHT	J.A.
	TITLE BOX, ADDED QUANTITY CALCULATION BOX		10-16-06	REV. TO 2007 SPEC., CORRECT mm UNITS	M.A.
04-01-97	CORRECT BAR	J.A.	2-15-11	ADDED GENERAL NOTE #2	R.D.
02-10-98	REVISE QUANTITIES	J.A.			

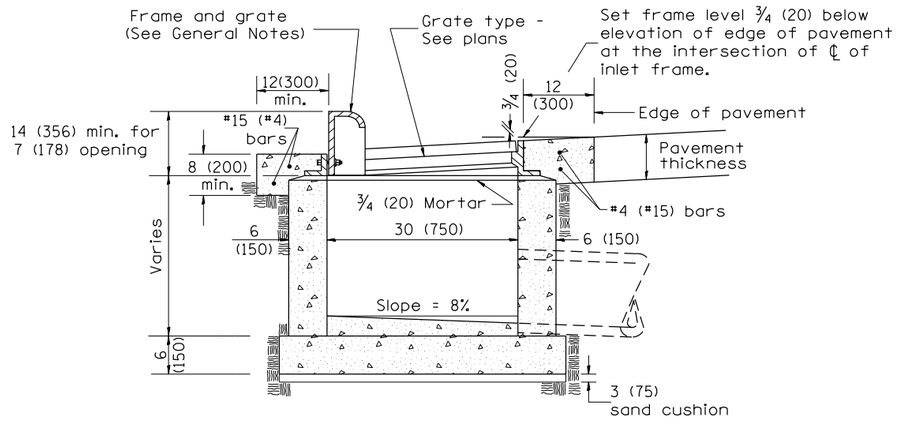
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIPE CULVERT EXTENSION COLLAR (WITHOUT END SECTION)

NOT TO SCALE — CADD STD. 542016-D4

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			487	392
			CONTRACT NO.	
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		





GENERAL NOTES

1. Inlet construction shall be in accordance with Section 602 of the Standard Specifications.
2. Combination Concrete Curb and Gutter shall be constructed in accordance with Section 606 of the Standard Specifications.
3. See District CADD Standard 604001-D4 for frame and grates.

All dimensions are in inches (millimeters) unless otherwise noted.

01-01-97	RENUM. B-4.02. NEW REVISION BOX	
12-01-98	CORRECT E.O.P. NOTE	J.A.
10-99	REVISION TO GENERAL NOTES	J.A.
10-16-06	REVISED TO 2007 SPEC.	M.A.

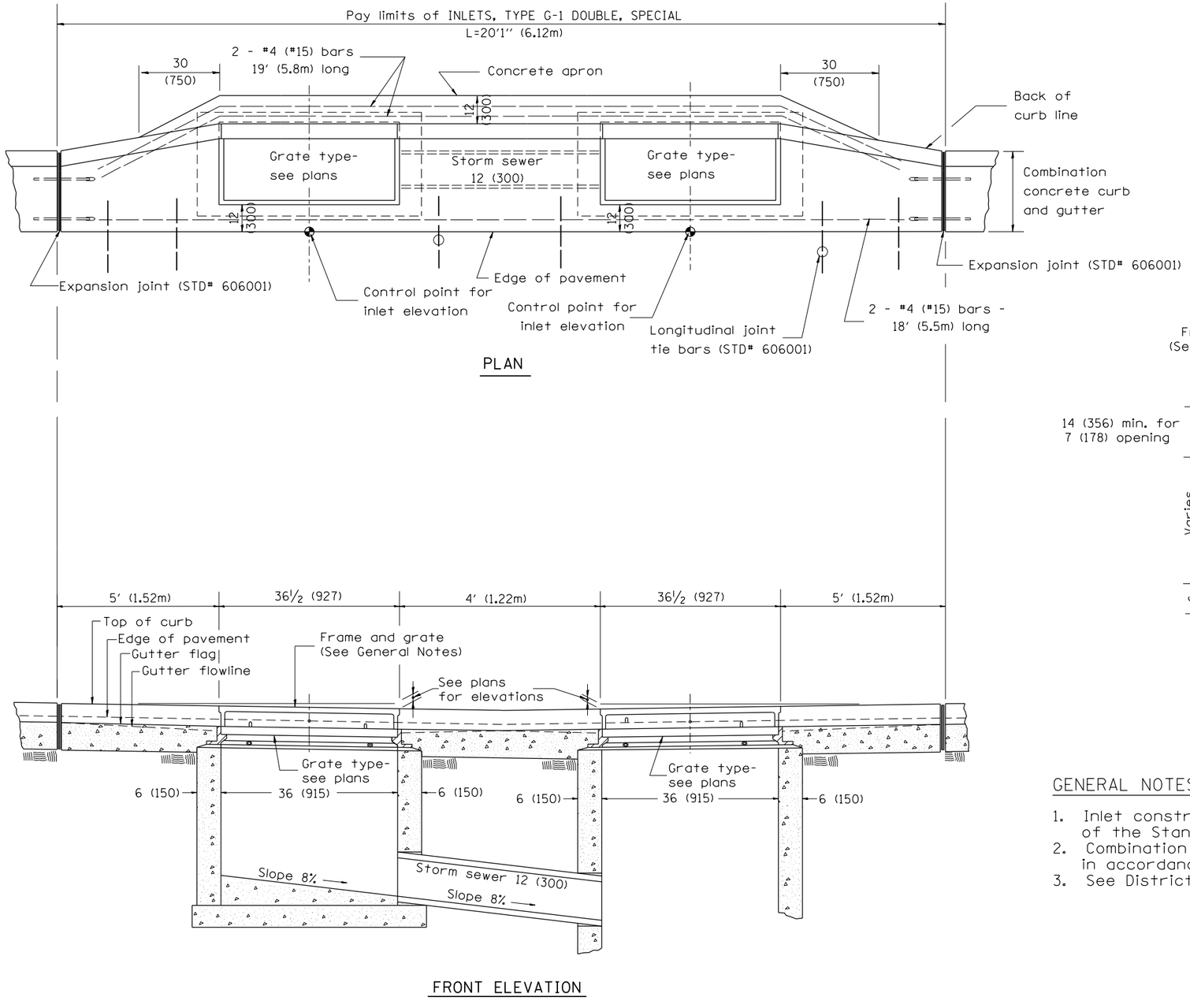
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INLETS, TYPE G-1, SPECIAL

NOT TO SCALE

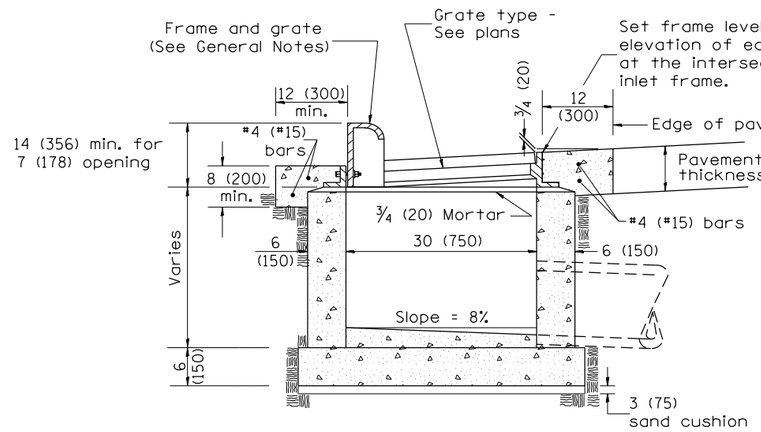
CADD STD. 602006-D4

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			487	393
		CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



PLAN

FRONT ELEVATION



ELEVATION
(SIDE)

GENERAL NOTES

1. Inlet construction shall be in accordance with Section 602 of the Standard Specifications.
2. Combination Concrete Curb & Gutter shall be constructed in accordance with Section 606 of the Standard Specifications.
3. See District CADD Standard 604001-D4 for frame and grates.

All dimensions are in inches (millimeters) unless otherwise noted.

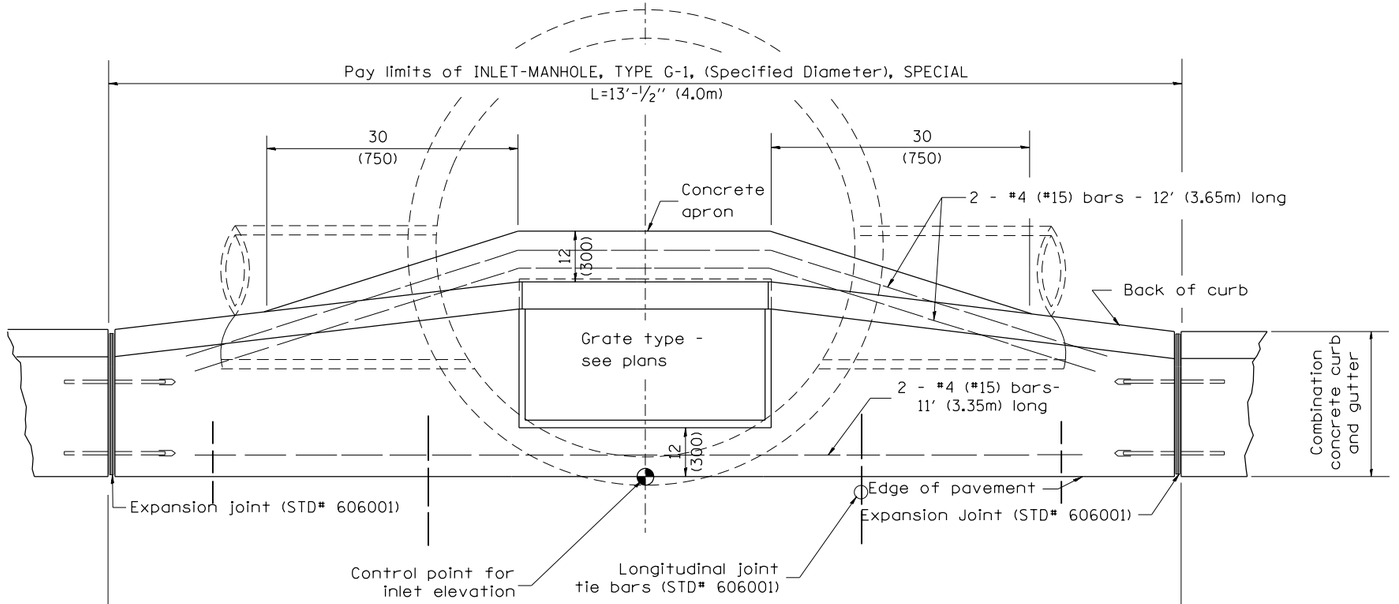
01-01-97	RENUM. B-4.04. NEW REVISION BOX	T.P.			
04-01-97	CORRECT DIMENSIONS	J.A.			
10-99	REVISION TO GENERAL NOTES	J.A.			
10-16-06	REVISED TO 2007 SPEC.	M.A.			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

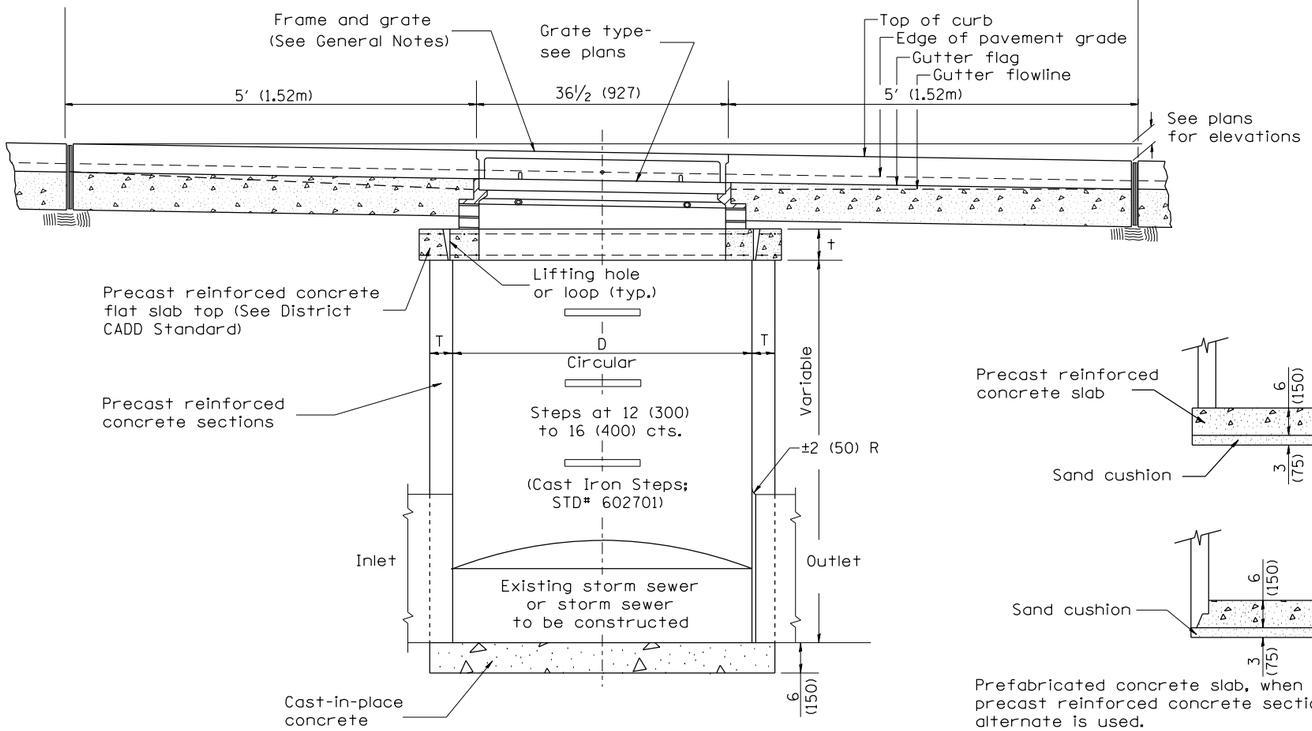
INLETS, TYPE G-1 DOUBLE, SPECIAL

NOT TO SCALE — CADD STD. 602016-D4

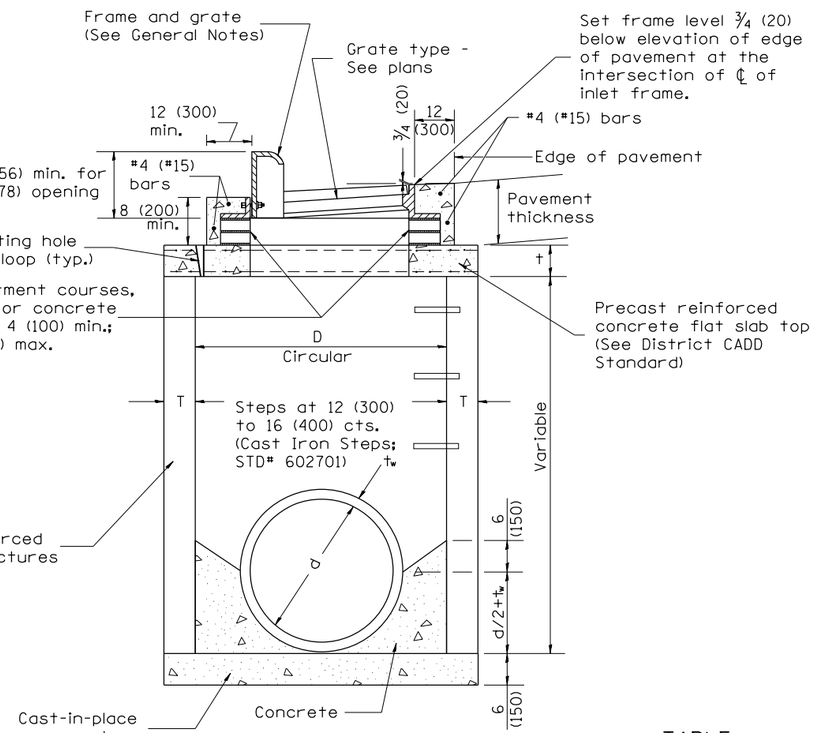
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			487	394
		CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



PLAN



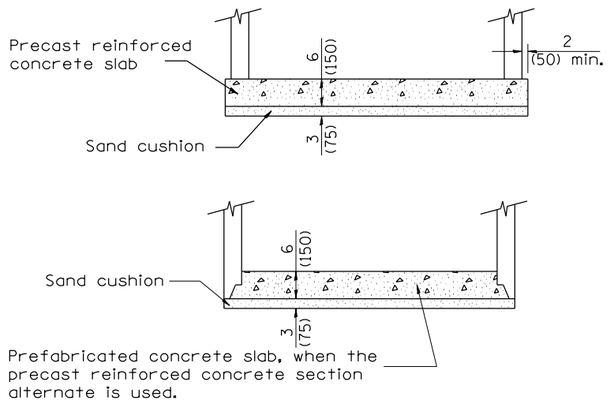
ELEVATION
(FRONT)



ELEVATION
(SIDE)

TABLE

D	T	t
4' (1.2m)	5 (125)	6 (150)
5' (1.5m)	6 (150)	8 (200)
6' (1.8m)	7¾ (195)	8 (200)
8' (2.4m)	9 (225)	10 (250)



ALTERNATE BOTTOM SLAB

GENERAL NOTES

1. Inlet-manhole construction shall be in accordance with Section 602 of the Standard Specifications.
2. Combination concrete curb and gutter shall be constructed in accordance with Section 606 of the Standard Specifications.
3. See District CADD Standard 604001-D4 for frame and grates.
4. See District CADD Standard for precast reinforced concrete flat slab top.

All dimensions are in inches (millimeters) unless otherwise noted.

01-01-97	RENUM. B-4.06, NEW REVISION BOX	T.P.
12-01-98	CORRECT E.O.P. NOTE	J.A.
10-99	REVISION TO GENERAL NOTES	J.A.
10-16-06	REVISED TO 2007 SPEC.	M.A.

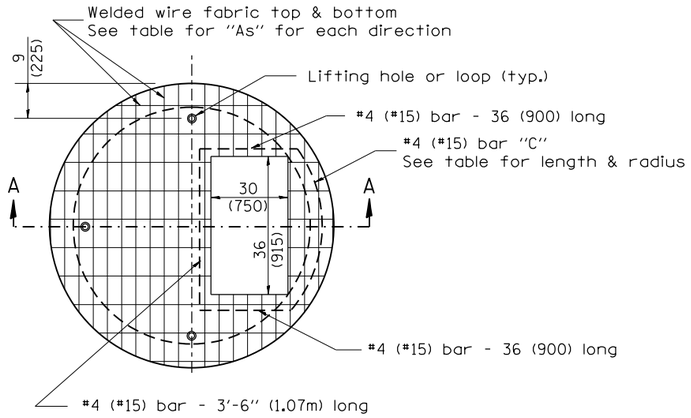
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INLET-MANHOLE, TYPE G-1, SPECIAL

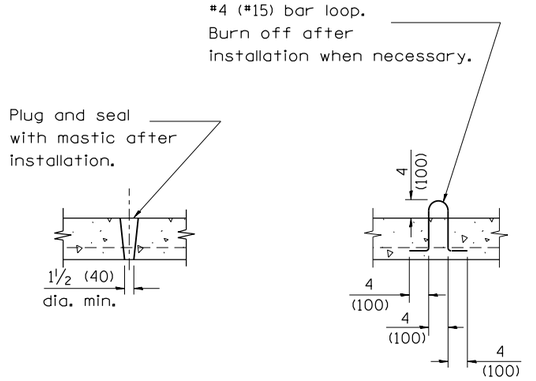
NOT TO SCALE

CADD STD. 602026-D4

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			487	395
		CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

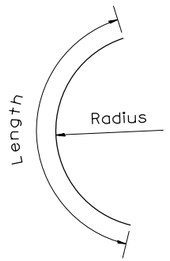


PLAN



LIFTING HOLE OR LIFTING LOOP TYPICAL

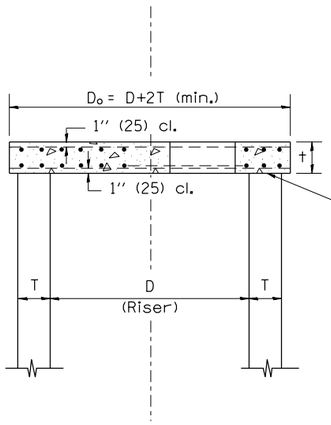
(3 required per slab)



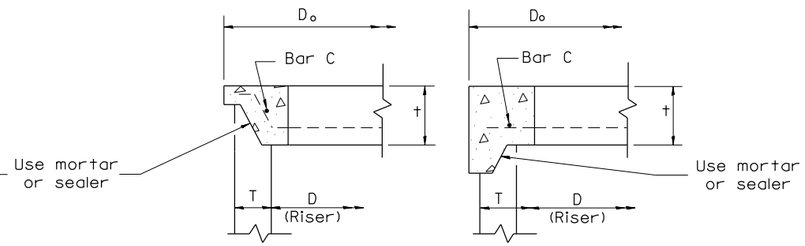
BAR "C"

TABLE

D	T	D_o (min.)	t	Reinforcement "As" W.W.F. each direction	Bar size	No. 15 (No. 4) Bar C Length	No. 15 (No. 4) Bar C Radius
4' (1.2m)	5 (125)	4'-10" (1.5m)	6 (150)	0.70 sq. inch/lin. ft. (1480mm ²/m)	No. 15 (No. 5)	1.35m (4'-6")	660 (26)
5' (1.5m)	6 (150)	6'-0" (1.8m)	8 (200)	0.70 sq. inch/lin. ft. (1480mm ²/m)	No. 15 (No. 5)	1.5m (5'-0")	810 (32)
6' (1.8m)	7¾ (195)	7'-3½" (2.2m)	8 (200)	0.88 sq. inch/lin. ft. (1860mm ²/m)	No. 20 (No. 6)	1.8m (6'-0")	965 (38)
8' (2.4m)	9 (225)	9'-6" (2.9m)	10 (250)	0.88 sq. inch/lin. ft. (1860mm ²/m)	No. 20 (No. 6)	2.3m (7'-6")	1.27m (4'-2")



SECTION A-A



ALTERNATE JOINT CONFIGURATIONS

GENERAL NOTES

1. The precast reinforced concrete flat slab top shall be used with INLET-MANHOLE, TYPE G-1 and INLET-MANHOLE, TYPE G-1, SPECIAL.
2. Joint configuration and dimensions of flat slab top shall match and fit the riser joint detail.
3. Lifting devices shall be approved by the Engineer.

All dimensions are in inches (millimeters) unless otherwise noted.

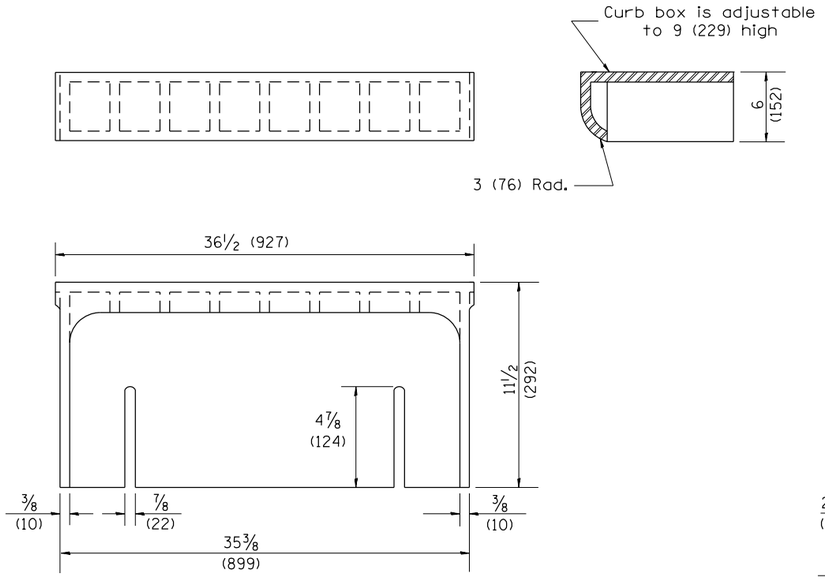
01-01-97	RENUM. B-4.07. NEW REVISION BOX	T.P.
10-16-06	REVISED TO 2007 SPEC.	M.A.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRECAST REINFORCED CONCRETE FLAT SLAB TOP FOR INLET–MANHOLE, TYPE G-1 AND TYPE G-1, SPECIAL

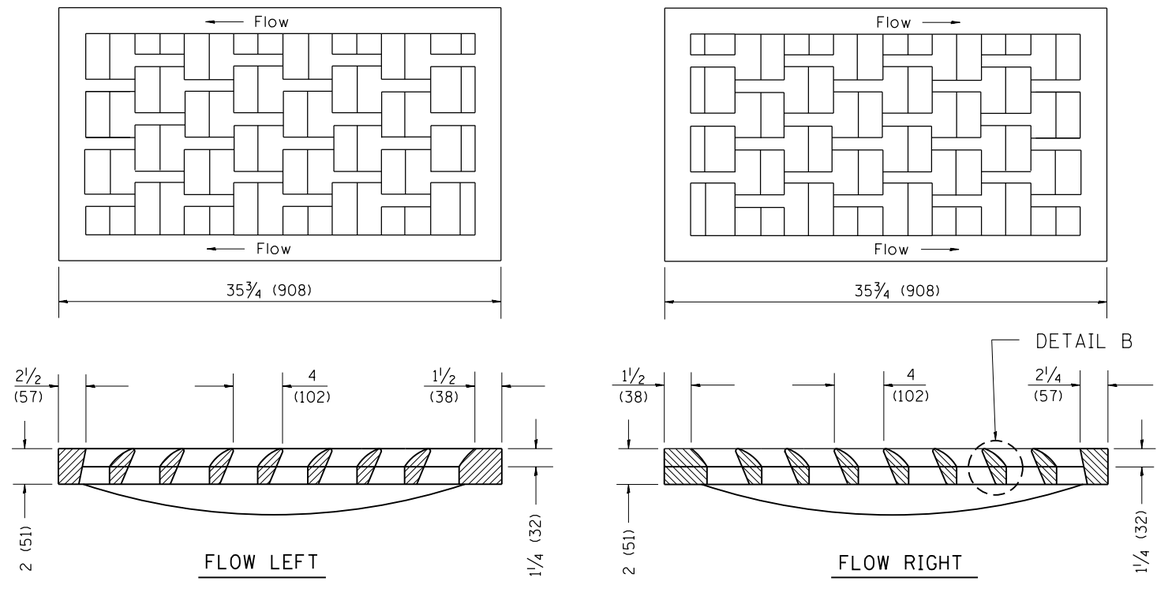
NOT TO SCALE — CADD STD. 602101-D4

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			487	396
		CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



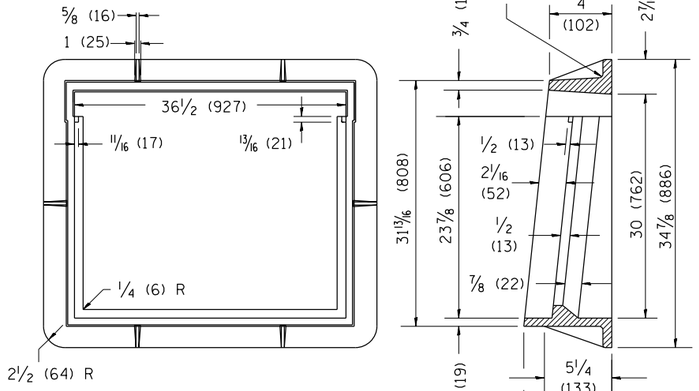
CAST CURB BOX

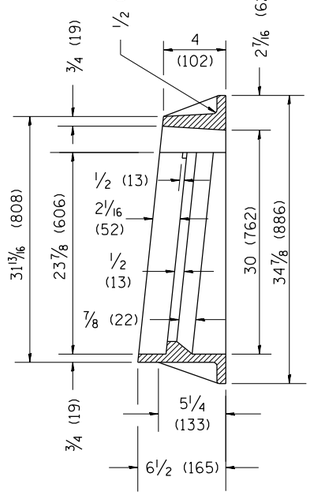
110 lbs. (50 kg)

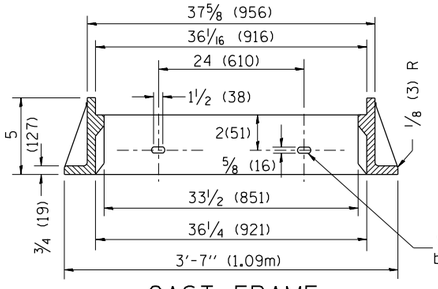


CAST VANE GRATES

(SPECIFY LEFT OR RIGHT FLOW)
230 lbs. (104 KG)



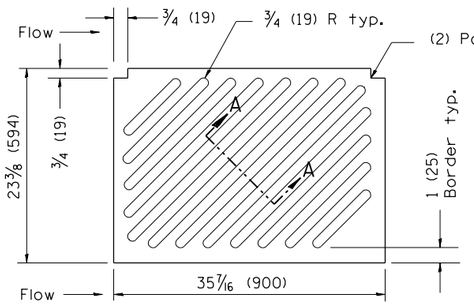




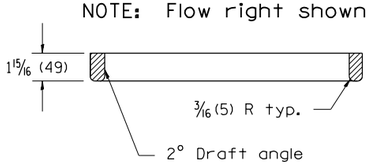
Slot for galvanized ½x 2½ (M12 x 64) bolt, nut and washer

CAST FRAME

271 lbs. (123 kg)

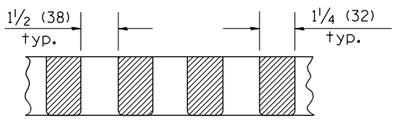


NOTE: Flow right shown

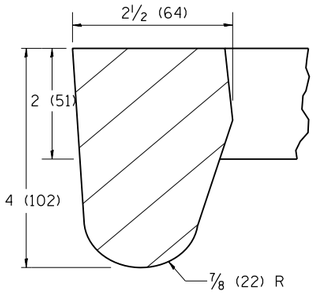


CAST DIAGONAL GRATE

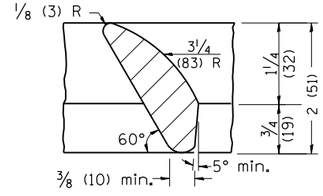
(Reversible for flow)
217 lbs. (98 kg)



SECTION A-A



DETAIL A



DETAIL B

GENERAL NOTES

1. The frame and grate shown on this drawing are for use with all TYPE G-1 and TYPE G-1, SPECIAL DRAINAGE STRUCTURES. See plans for grate type and flow direction.
2. Flow direction: As viewed from street side.
3. Material: cast gray iron.

All dimensions are in inches (millimeters) unless otherwise noted.

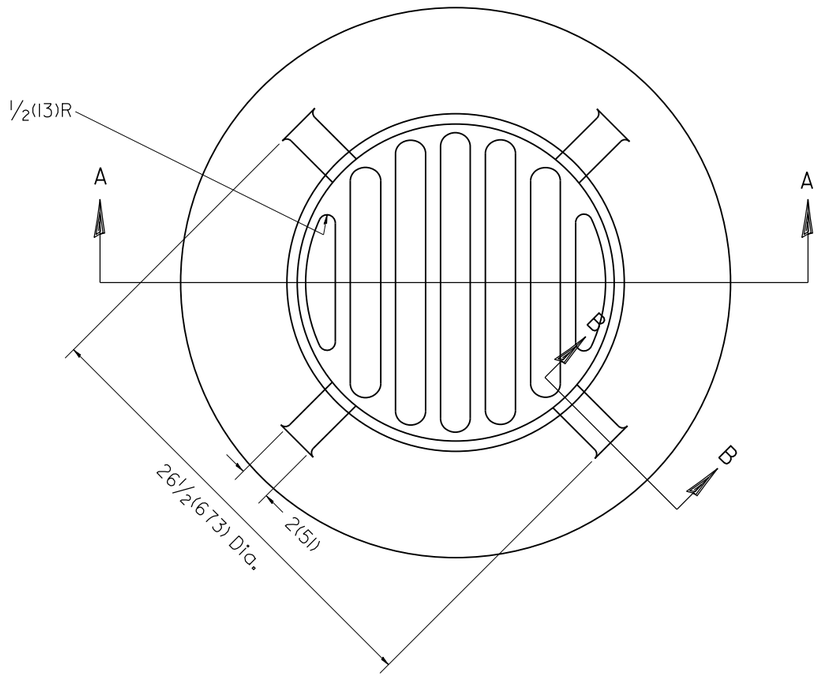
01-01-97	RENUM. B-10.01, NEW REVISION BOX	T.P.
10-16-06	REVISED TO 2007 SPEC.	M.A.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

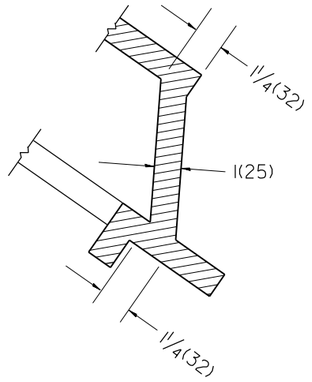
FRAME & GRATES FOR TYPE G-1 AND TYPE G-1, SPECIAL DRAINAGE STRUCTURES

NOT TO SCALE — CADD STD. 604001-D4

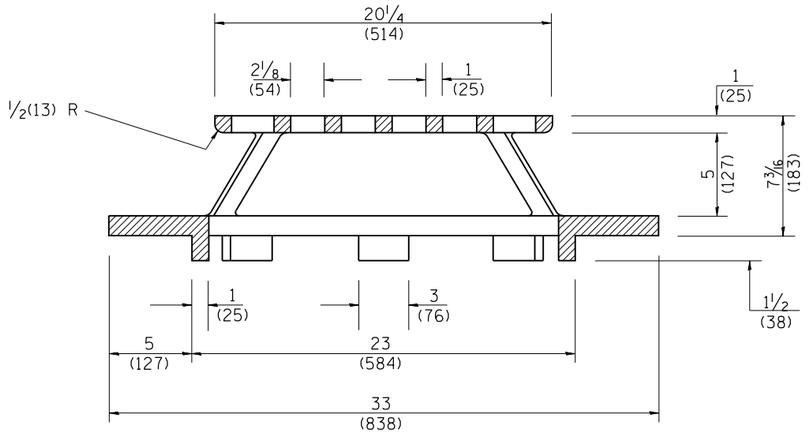
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			487	397
		CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



PLAN



SECTION B - B



SECTION A - A

GENERAL NOTES

1. MATERIAL - Cast Gray Iron
   Weight 209 lbs (95 kg)

All dimensions are in inches (millimeters) unless otherwise noted.

01-01-97	RENUM. B-10.02. NEW REVISION BOX	T.P.
10-16-06	REVISED TO 2007 SPEC.	M.A.

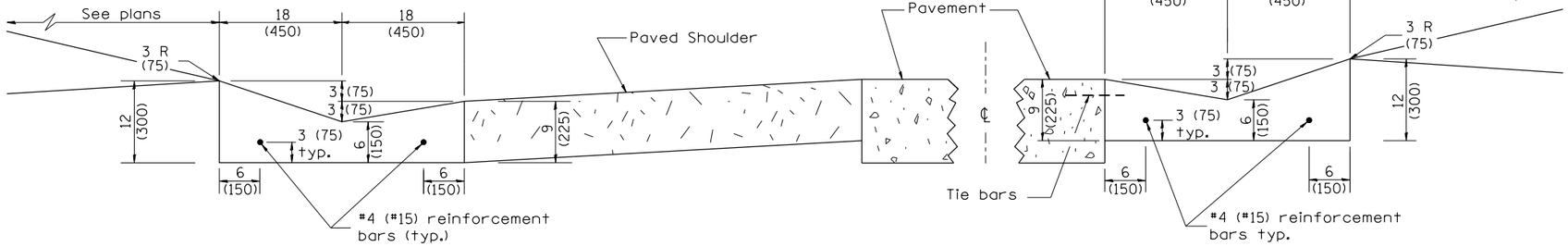
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPE 37 GRATE

NOT TO SCALE

CADD STD. 604301-D4

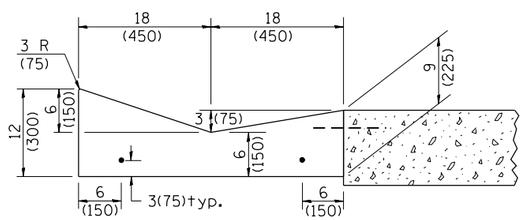
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			487	398
		CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



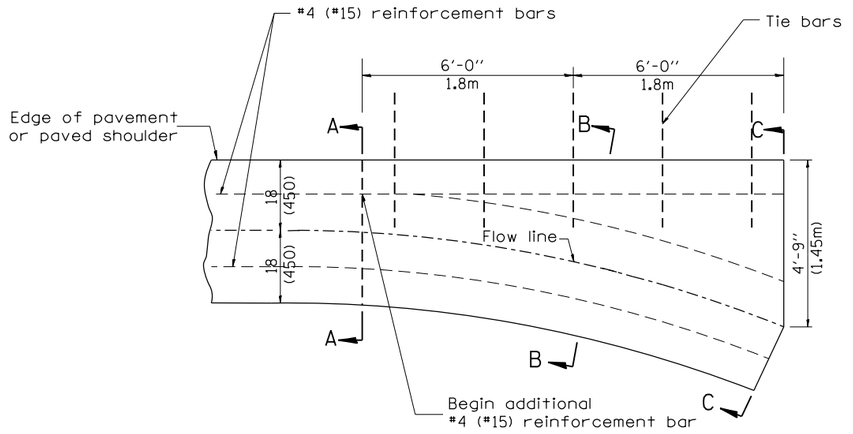
SHOULDER EDGE GUTTER

PAVEMENT EDGE GUTTER

CONCRETE GUTTER, TYPE A, (SPECIAL)



SECTION A-A



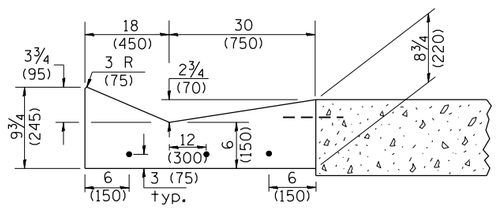
PLAN

QUANTITY

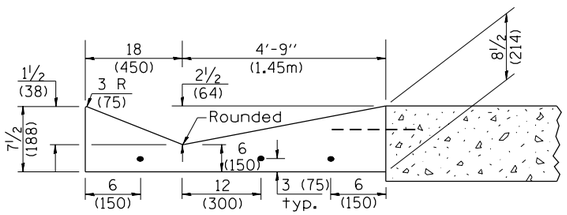
Section C-C to A-A= 1.2 cu. yd. (0.92 m^3) concrete.

GENERAL NOTES:

1. CONCRETE GUTTER, TYPE A, (SPECIAL) shall conform to the applicable portions of Section 606.
2. Tie bars shall be No. 6 (No. 20) at 24" (600mm) centers unless otherwise shown.
3. Gutter, gutter inlets, gutter outlets, and gutter entrances shall be tied to rigid pavement in accordance with details shown on Standard 420001.
4. Joints shall be constructed in accordance with Article 606.06.
5. Welded wire fabric shall conform to Article 1006.10(c)(1), and shall not be less than 58 lbs/100 sq.ft. (2.83 kg/m^2).



SECTION B-B



SECTION C-C

QUANTITIES
CALC. BY: _____ DATE:
CHECKED BY: _____ DATE:
QUANTITY CALCULATIONS ARE ON FILE AT THE DISTRICT 4 OFFICE; BUREAU OF PROJECT IMPLEMENTATION; DOCUMENTATION SECTION

INLET

All dimensions are in inches (millimeters) unless otherwise noted.

01-01-97	RENUM. A-1.02, NEW REVISION BOX, ELIMINATED	T.P.	01-10-07	REVISED QUANTITY	M.A.
	EXPANSION ANCHOR TIES		11-16-07	REVISED QUANTITY	M.A.
02-28-02	ENTRANCE TYPICALS REVISED	M.A.	02-15-11	CHANGED MODIFIED TO SPECIAL	R.D.
10-16-06	REVISED TO 2007 SPEC.	M.A.			

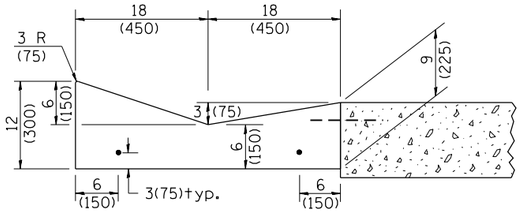
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONCRETE GUTTER, TYPE A, (SPECIAL)
(INLET, OUTLET & ENTRANCE)

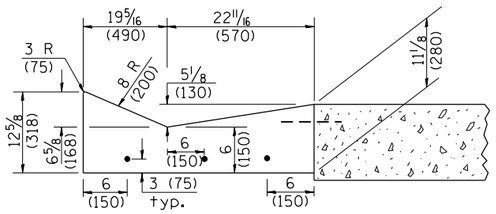
NOT TO SCALE

SHT. 1 OF 3
CADD STD. 606101-D4

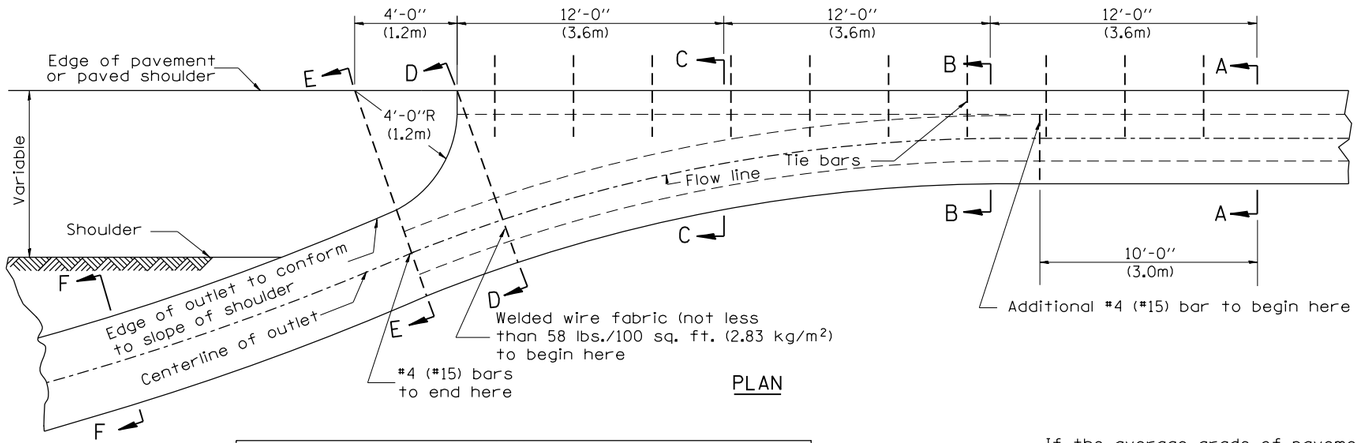
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			487	399
		CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



SECTION A-A



SECTION B-B

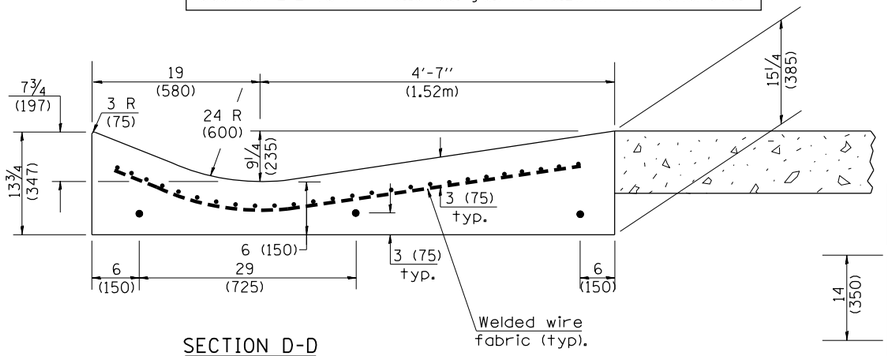


PLAN

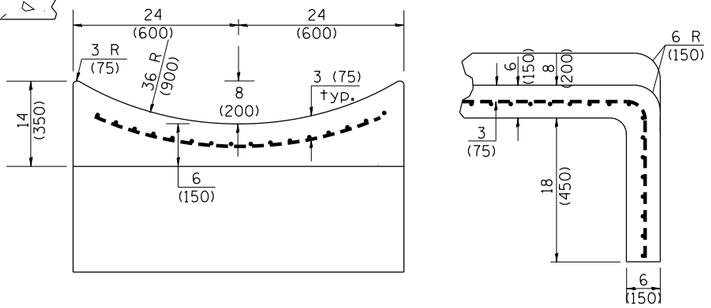
QUANTITY

Section A-A to E-E= 4.5 cu. yd. (3.36 m^3) concrete.
Section E-E to F-F= 0.10 cu. yd./ft. (0.26 m^3/m) concrete.

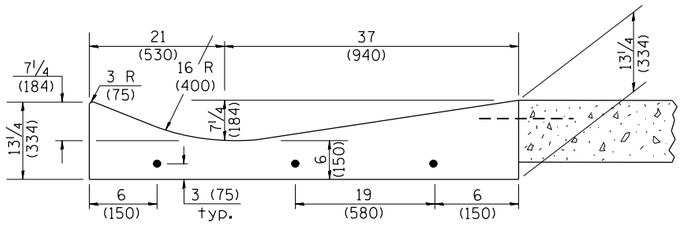
If the average grade of pavement for the distance from section A-A to section D-D exceeds 2%, this distance shall be increased 6 ft. (1.8 m) for each 1% increase in grade. A quantity adjustment is required.



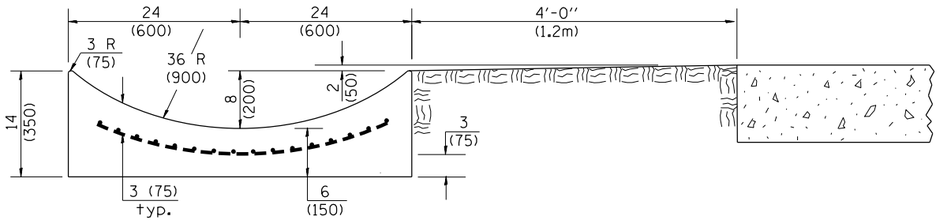
SECTION D-D



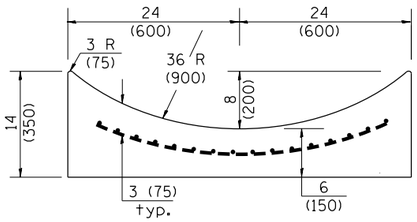
SECTIONS AT END OF OUTLET
(CURTAIN WALL)



SECTION C-C



SECTION E-E



SECTION F-F

QUANTITY

Curtain Wall = 0.1 cu. yd.
(0.08 m^3) concrete.

QUANTITIES

CALC. BY: _____ DATE:
CHECKED BY: _____ DATE:

QUANTITY CALCULATIONS ARE ON FILE AT THE DISTRICT 4 OFFICE; BUREAU OF PROJECT IMPLEMENTATION; DOCUMENTATION SECTION

OUTLET

All dimensions are in inches (millimeters) unless otherwise noted.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONCRETE GUTTER, TYPE A, (SPECIAL)
(INLET, OUTLET & ENTRANCE)

NOT TO SCALE

SHT. 2 OF 3
CADD STD. 606101-D4

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			487	400
		CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		