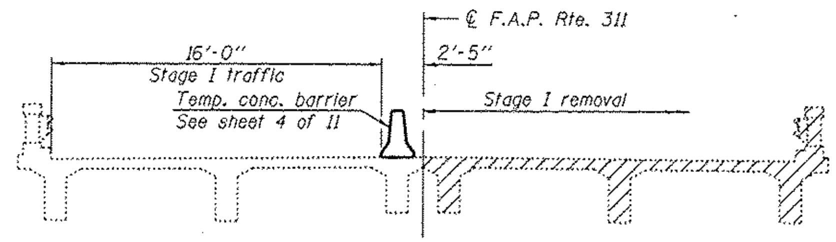
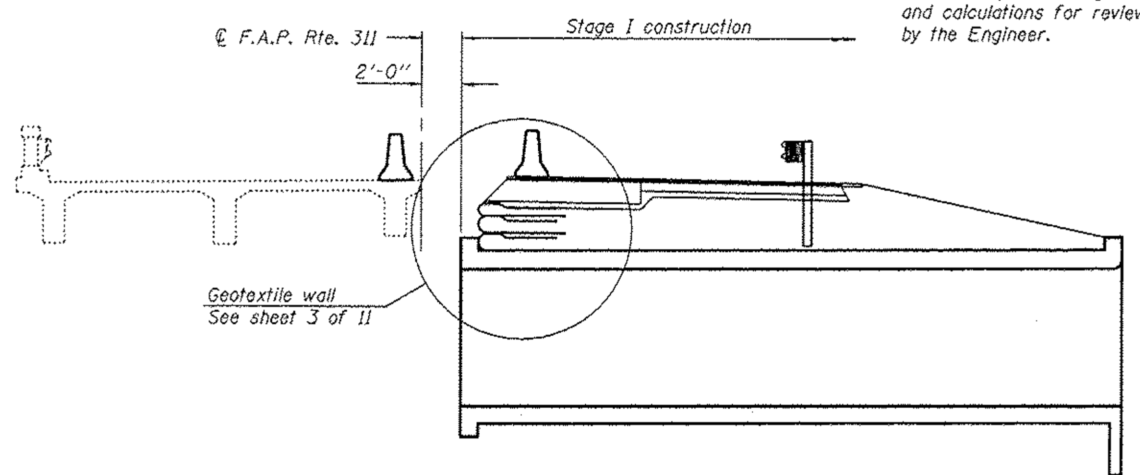
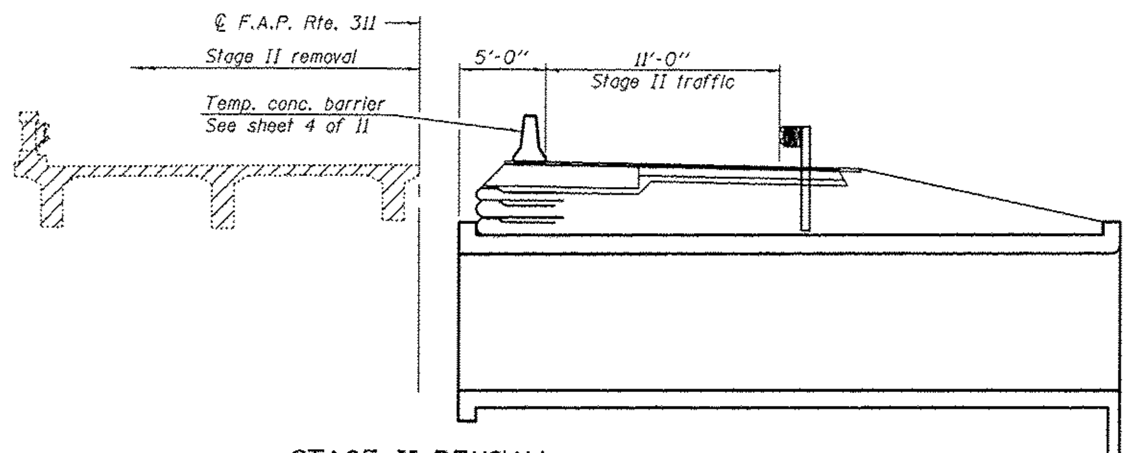


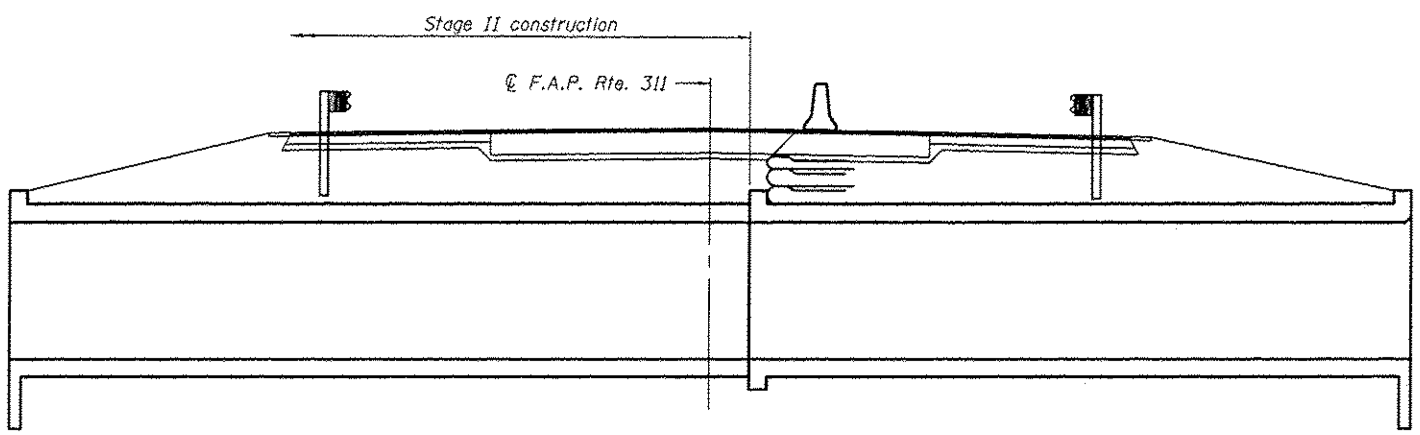
STAGE I REMOVAL



STAGE I CONSTRUCTION



STAGE II REMOVAL



STAGE II CONSTRUCTION

Notes:

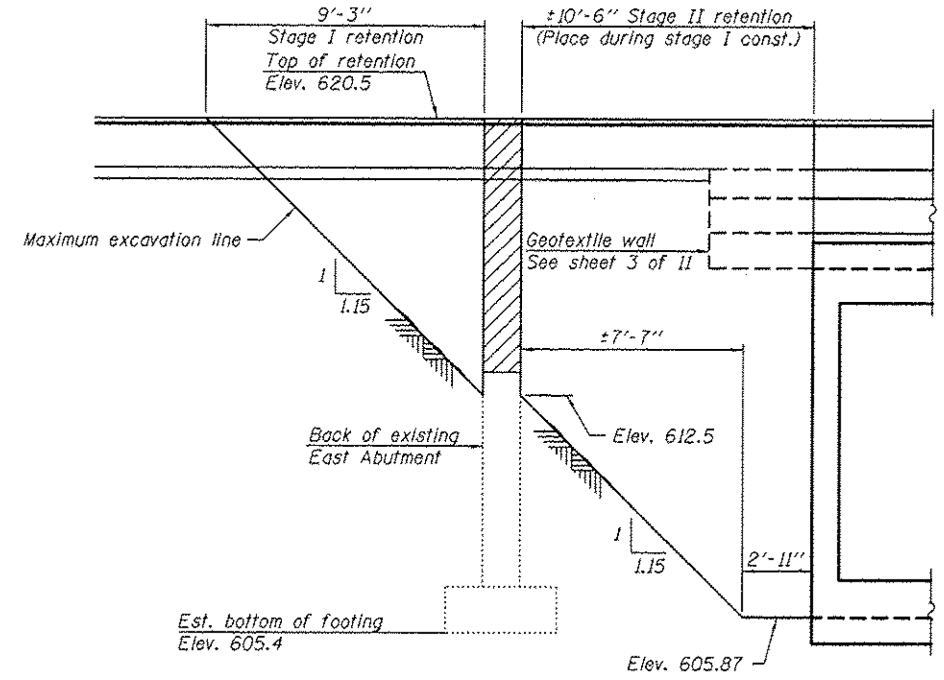
All staging cross sections are looking East.

Horizontal dimensions in staging cross sections are at right angles to ℄ F.A.P. Rte. 311.

For quantity of Temporary Concrete Barrier, see roadway plans.

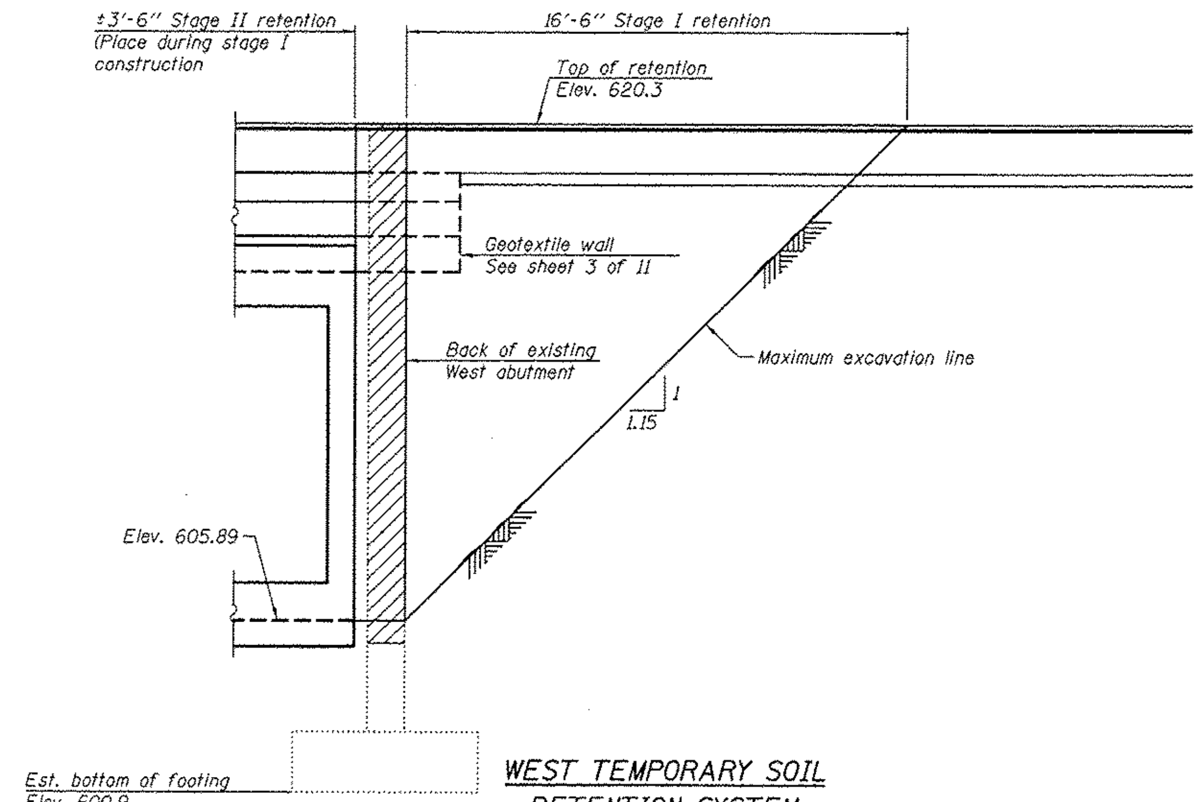
Hatched area indicates Removal of Existing Structures.

A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.



EAST TEMPORARY SOIL RETENTION SYSTEM

(Looking South) - Horizontal dimensions for Temporary Soil Retention System are given along ℄ F.A.P. Rte. 311.



WEST TEMPORARY SOIL RETENTION SYSTEM

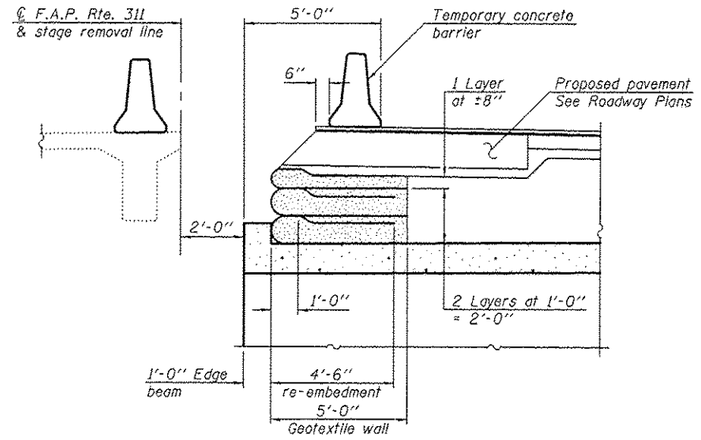
(Looking South) - Horizontal dimensions for Temporary Soil Retention System are given along ℄ F.A.P. Rte. 311.

⚠1 Added 10-29-13

DESIGNED - RAY AHANCHI	EXAMINED	ACTING ENGINEER OF BRIDGE DESIGN	DATE - OCTOBER 1, 2013
CHECKED - AL-BARRAE R. SHEBIB			
DRAWN - MICHAEL B. MOSSMAN	PASSED	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED
CHECKED - G.R.A. / A.R.S.			REVISED

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 050 - 2651
SHEET NO. 2 OF 11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(4)BR-1	LASALLE	38	19
		CONTRACT NO. 66B13		
	ILLINOIS FED. AID PROJECT			



SECTION A-A

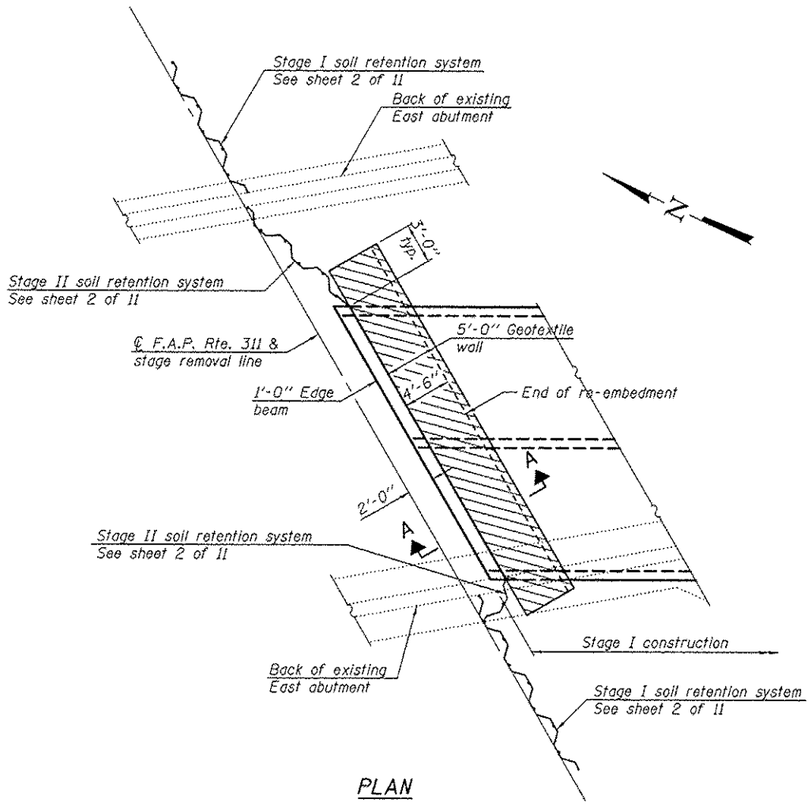
Horizontal dimensions are at Rt. L's to ℄ F.A.P. Rte. 311

Note:
The geotextile soil reinforcement shall have a minimum allowable tensile strength (T min.) of 25 lb./in. as determined by the procedure described in the Special Provision. The computations supporting the determination of (T min.) shall be submitted to the Engineer for approval.

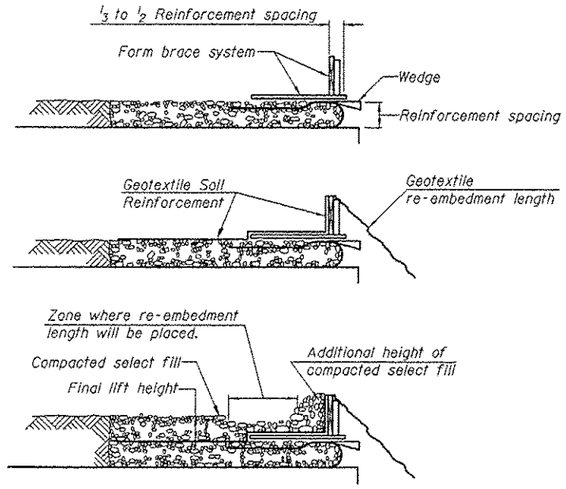
LEGEND

Indicates limits of geotextile wall

Indicates limits of select fill

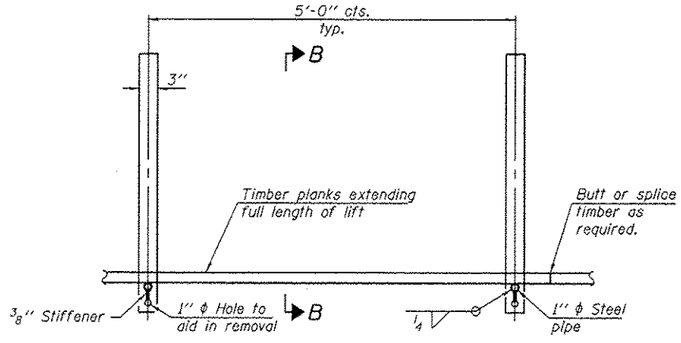


PLAN

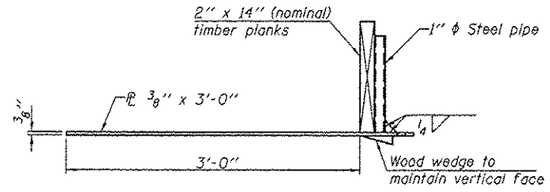


1. Place form brace system on completed reinforcement level; back from the finished fabric face a distance of 1/3 to 1/2 the geotextile reinforcement spacing.
2. Position fabric so that the required geotextile re-embedment length extends over the top of the form brace and the design reinforcement width is placed with no slack against the previous level.
3. Compact select fill material in lifts to final lift height, create (±3") depression in zone where re-embedment length will be located and place additional height of compacted select fill against form brace.
4. Fold geotextile re-embedment length back over form brace into zone where depression was made in select fill and place additional select fill (±3") to embed geotextile and bring to final lift height.
5. Pull form brace outward allowing geotextile face to slightly readjust to form tight round face level with plan reinforcement spacing.

GEOTEXTILE WALL CONSTRUCTION SEQUENCE



PLAN



SECTION B-B

GEOTEXTILE FORM BRACE DETAIL

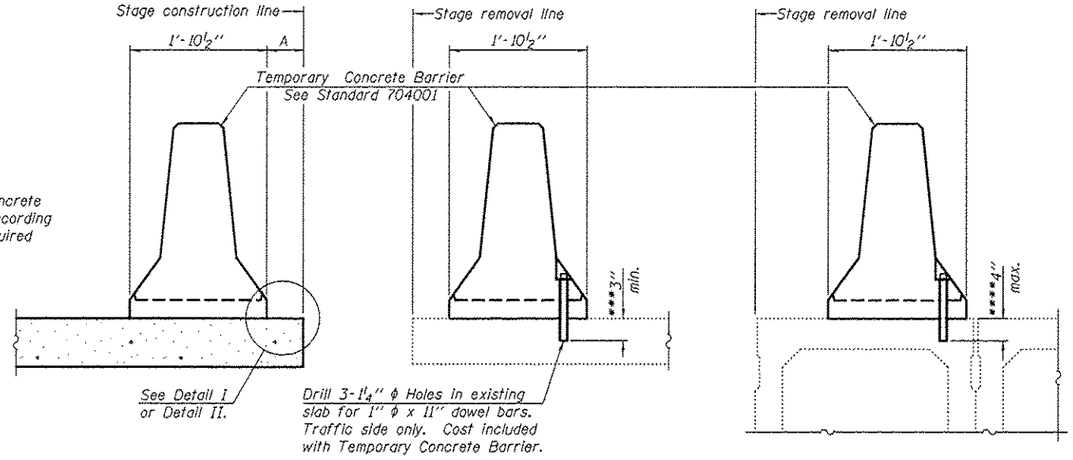
This is a suggested detail, the Contractor is responsible for the design of the form brace system to be used.

Added 10-29-13

DESIGNED - RAY AHANCHI	EXAMINED	DATE - OCTOBER 1, 2013	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**
CHECKED - AL-BARRAE R. SHEBIB	PASSED	REVISED	**GEOTEXTILE RETAINING WALL STRUCTURE NO. 050 – 2651**
DRAWN - MICHAEL B. MOSSMAN	ACTING ENGINEER OF BRIDGE DESIGN	REVISED	SHEET NO. 3 OF 11 SHEETS
CHECKED - G.R.A. / A.R.S.	ACTING ENGINEER OF BRIDGES AND STRUCTURES		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(4)BR-1	LASALLE	38	20
		CONTRACT NO. 66B13		
	ILLINOIS FED. AID PROJECT			

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



NEW SLAB | EXISTING SLAB | EXISTING DECK BEAM

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1" x 7' 'x "W" steel ℙ to the top layer of couplers with 2-⅝" ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1" x 7" x "W" steel ℙ to the concrete slab or concrete wearing surface with 2-⅝" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.

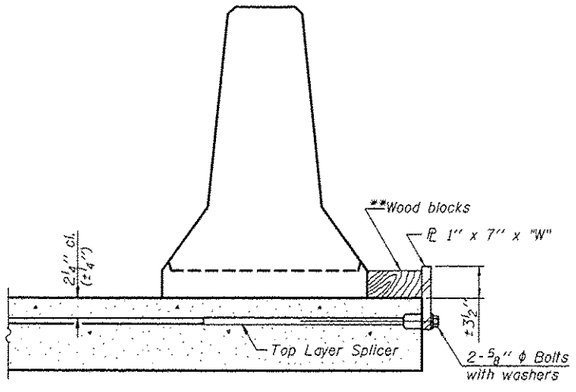
Cost of anchorage is included with Temporary Concrete Barrier.

The 1" x 7" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

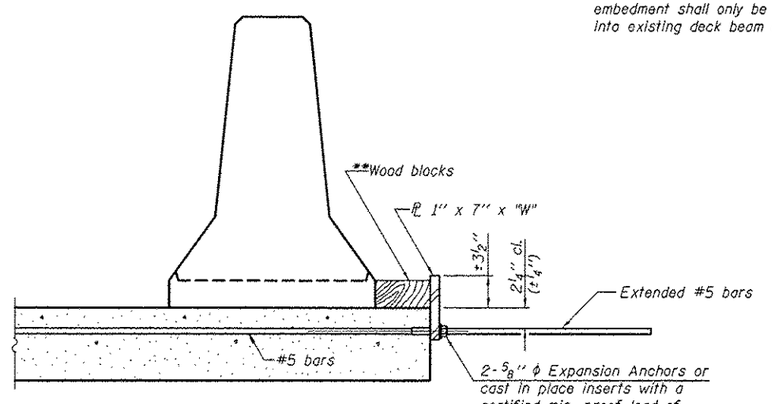
SECTIONS THRU SLAB OR DECK BEAM

*** Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



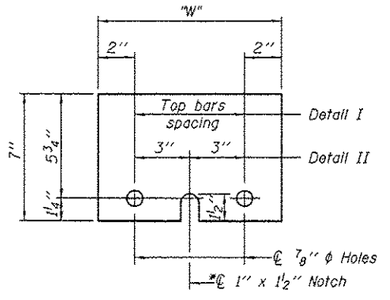
DETAIL I



DETAIL II

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

"W" = Top bars spacing + 4"



STEEL RETAINER ℙ 1" x 7" x "W"

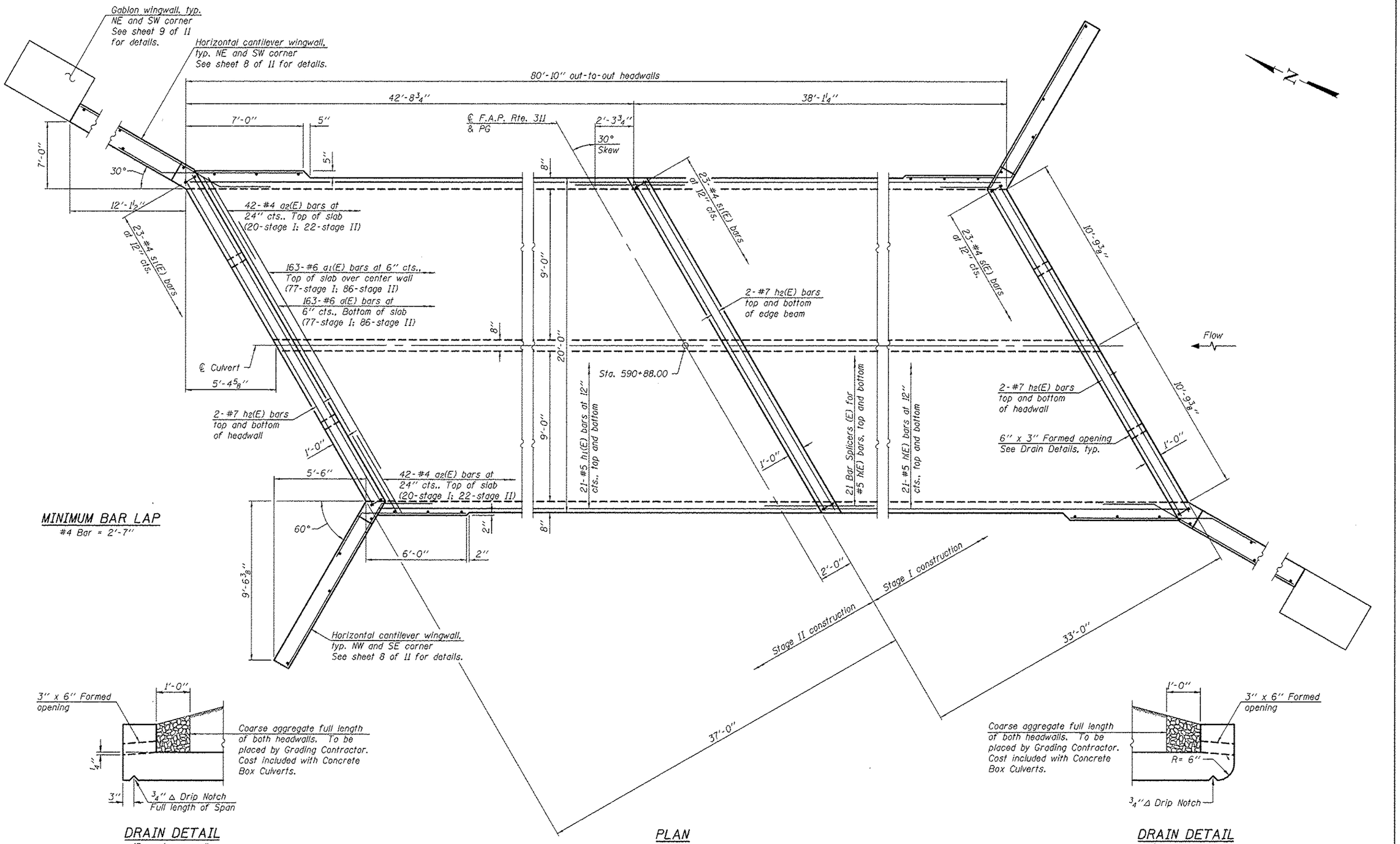
* Required only with Detail II

R-27 7-1-10

Δ Added 10-29-13

DESIGNED - RAY AHANCHI	EXAMINED	DATE - OCTOBER 1, 2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
CHECKED - AL-BARRAE R. SHEBIB	PASSED	REVISED ___	TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION STRUCTURE NO. 050 – 2651
DRAWN - MICHAEL B. MOSSMAN	ACTING ENGINEER OF BRIDGE DESIGN	REVISED ___	SHEET NO. 4 OF 11 SHEETS
CHECKED - C.R.A. / A.R.S.	ACTING ENGINEER OF BRIDGES AND STRUCTURES		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(4)BR-1	LASALLE	38	21
		CONTRACT NO. 66813		
	ILLINOIS FED. AID PROJECT			



MINIMUM BAR LAP
#4 Bar = 2'-7"

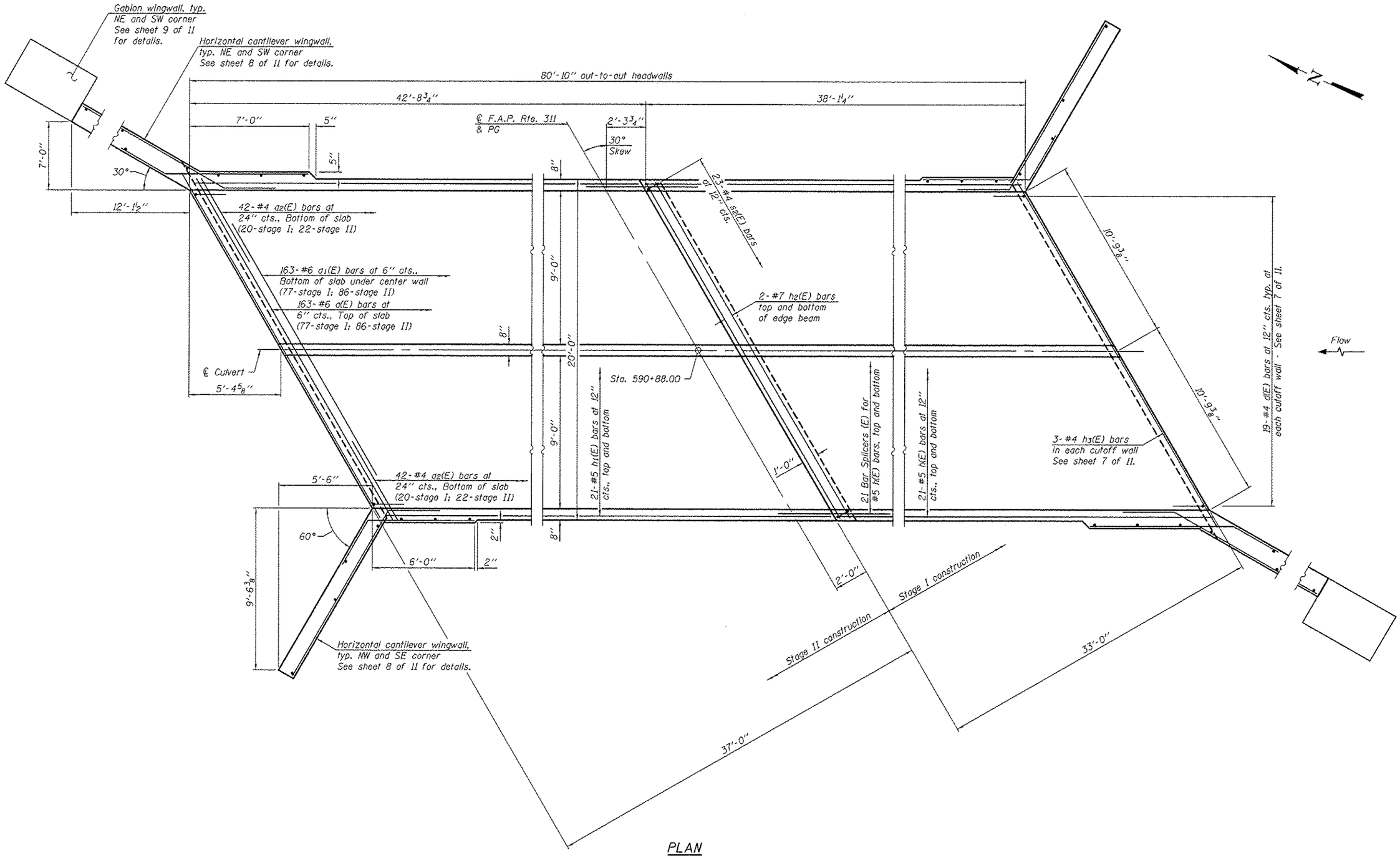
DRAIN DETAIL
(Downstream end)

PLAN

DRAIN DETAIL
(Upstream end)

Δ Added 10-29-13

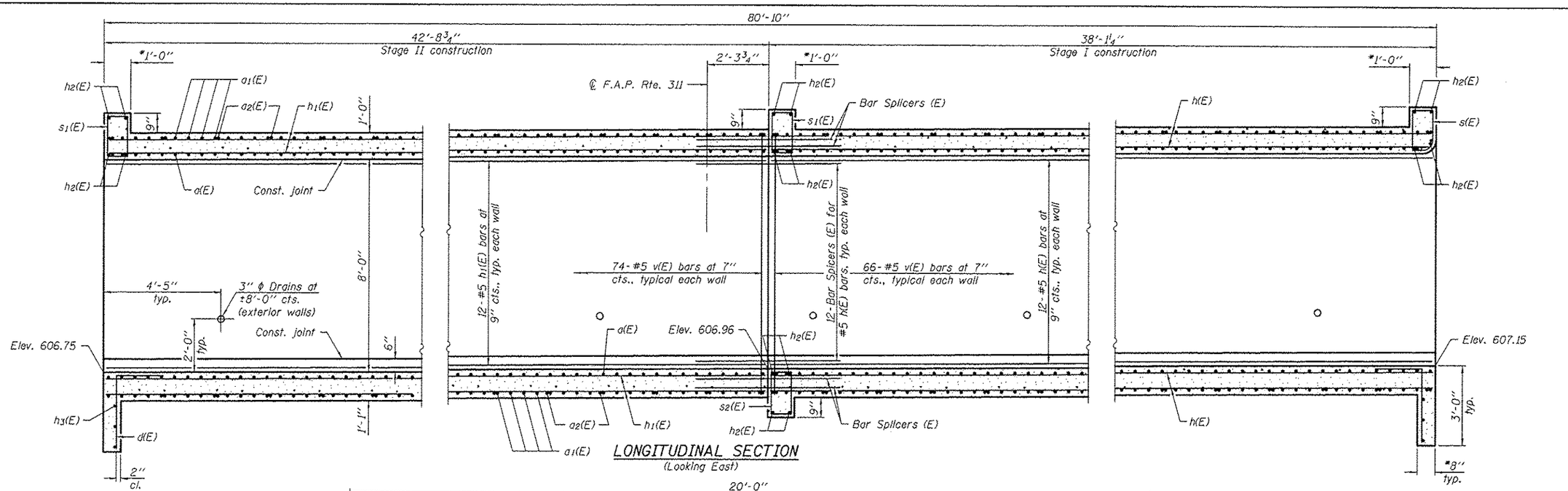
DESIGNED - RAY AHANCHI	EXAMINED	Wayne F. Anderson ACTING ENGINEER OF BRIDGE DESIGN	DATE - OCTOBER 1, 2013	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**CULVERT DETAILS – TOP SLAB STRUCTURE NO. 050 – 2651**	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED - AL-BARRAE R. SHEBIB	PASSED	A. Carl Kruger ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED —		SHEET NO. 5 OF 11 SHEETS	311	(4)BR-1	LASALLE	38	22
DRAWN - MICHAEL B. MOSSMAN			REVISED —					CONTRACT NO. 66B13		
CHECKED - C.R.A. / A.R.S.								ILLINOIS FED. AID PROJECT		



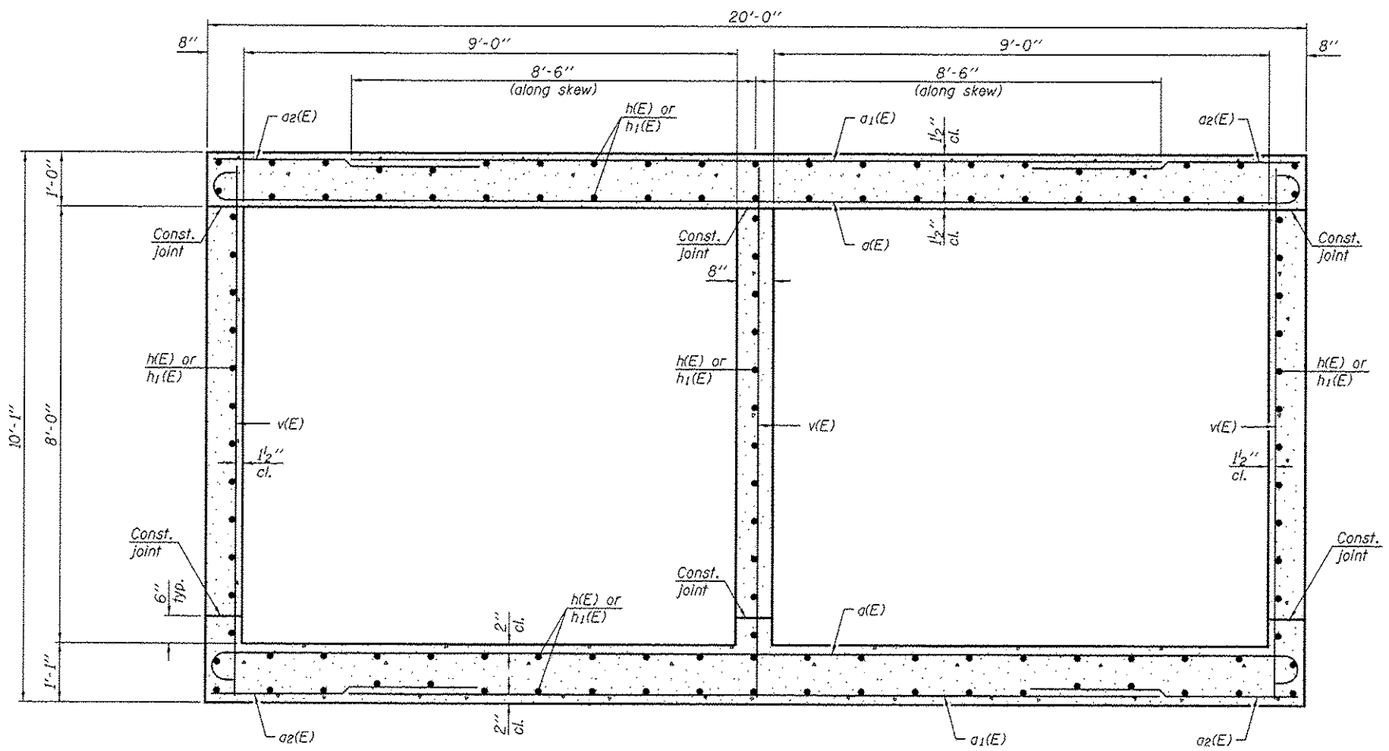
PLAN

Added 10-29-13

DESIGNED - RAY AHANCHI	EXAMINED	DATE - OCTOBER 1, 2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CULVERT DETAILS – BOTTOM SLAB STRUCTURE NO. 050 – 2651	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED - AL-BARRAE R. SHEBIB					311	(4)BR-1	LASALLE	38	23
DRAWN - MICHAEL B. MOSSMAN	PASSED	REVISED		SHEET NO. 6 OF 11 SHEETS			CONTRACT NO. 66813		
CHECKED - G.R.A. / A.R.S.	ACTING ENGINEER OF BRIDGE DESIGN ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED					ILLINOIS FED. AID PROJECT		



LONGITUDINAL SECTION
(Looking East)



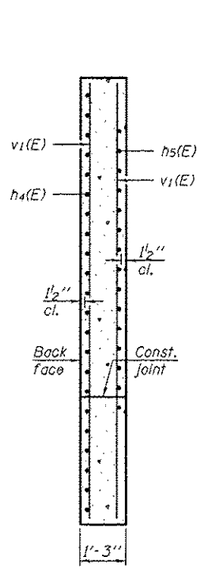
SECTION THRU BARREL
(Dimensions are at Rt. L's unless otherwise noted).

* Dimensions taken at Rt. L's to ℄ F.A.P. Rte. 311.

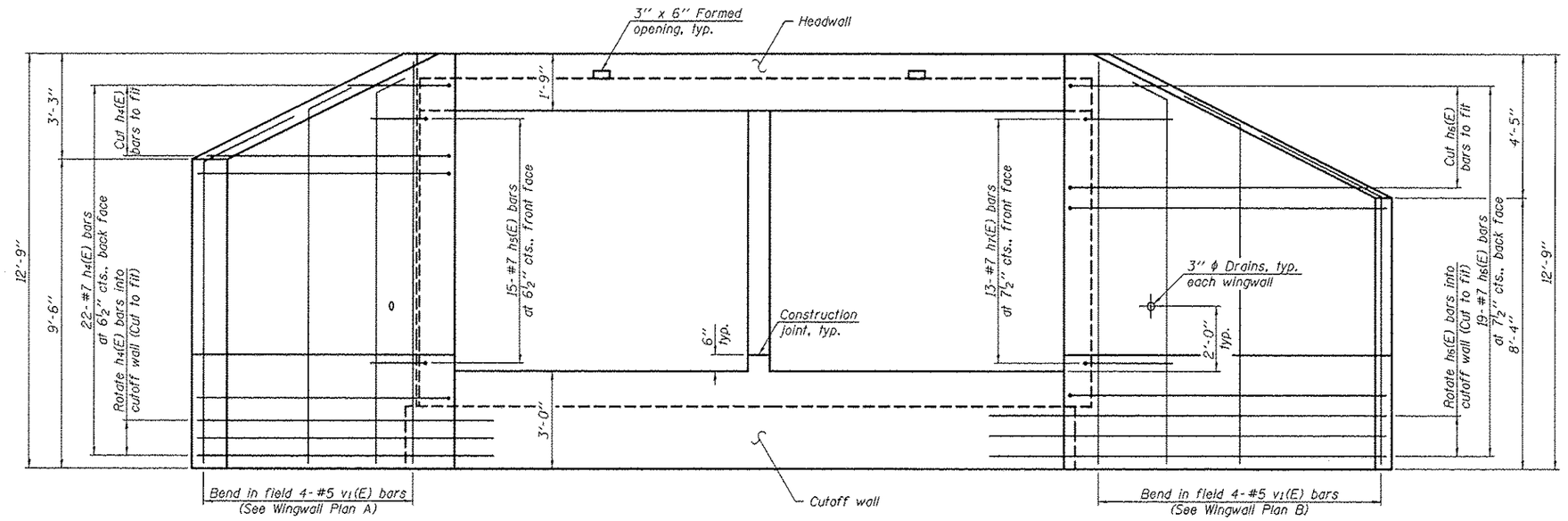
⚠ Added 10-29-13

DESIGNED - RAY AHANCHI	EXAMINED	DATE - OCTOBER 1, 2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
CHECKED - AL-BARRAE R. SHEBIB	PASSED	REVISED	CULVERT DETAILS STRUCTURE NO. 050 - 2651
DRAWN - MICHAEL B. MOSSMAN	ACTING ENGINEER OF BRIDGE DESIGN	REVISED	SHEET NO. 7 OF 11 SHEETS
CHECKED - G.R.A. / A.R.S.	ACTING ENGINEER OF BRIDGES AND STRUCTURES		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(4)BR-1	LASALLE	38	24
		CONTRACT NO. 66813		
	ILLINOIS FED. AID PROJECT			

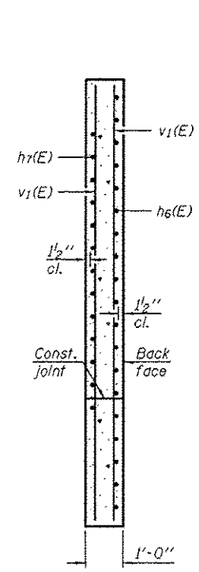


SECTION A-A



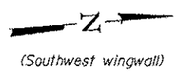
LONG WINGWALL

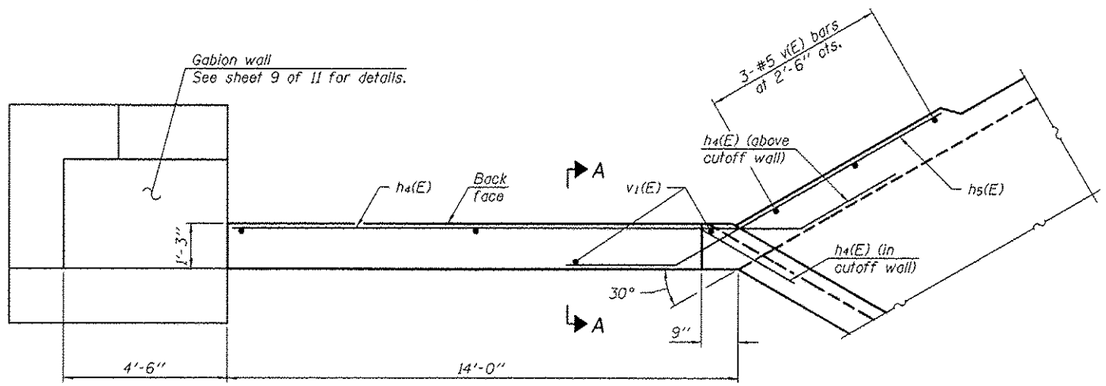
SHORT WINGWALL



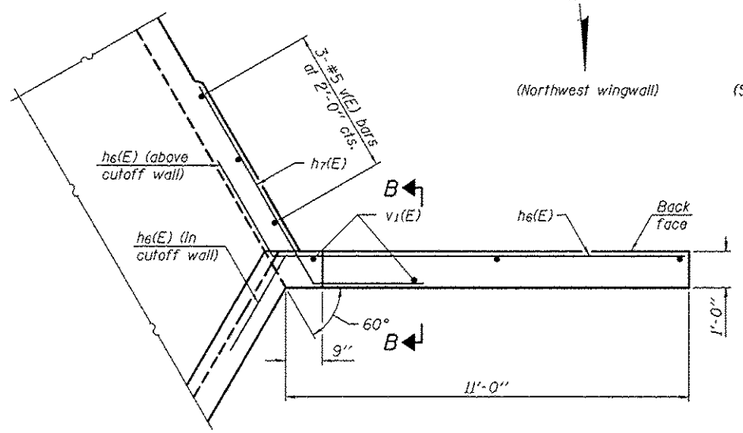
SECTION B-B

END ELEVATION





WINGWALL PLAN A
(NE and SW wingwalls)



WINGWALL PLAN B
(NW and SE wingwalls)

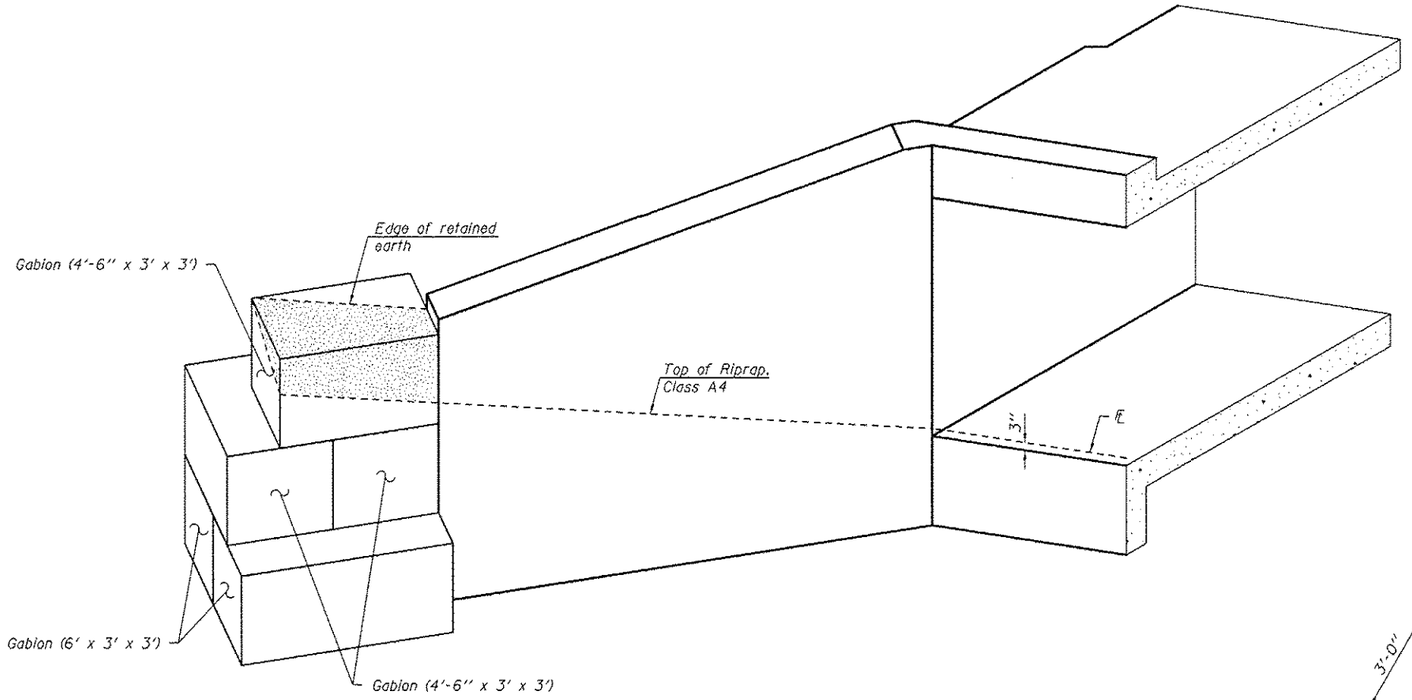
Note:
A distance of half the length of the wingwall, but not less than six feet of the barrel, shall be poured monolithically with the wingwalls.

Added 10-29-13

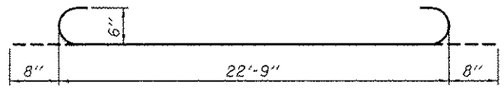
DESIGNED - RAY AHANCHI	EXAMINED	DATE - OCTOBER 1, 2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
CHECKED - AL-BARRAE R. SHEBIB	PASSED	REVISED	
DRAWN - MICHAEL B. MOSSMAN	ACTING ENGINEER OF BRIDGE DESIGN	REVISED	
CHECKED - G.R.A. / A.R.S.	ACTING ENGINEER OF BRIDGES AND STRUCTURES		

CULVERT DETAILS
STRUCTURE NO. 050 – 2651
SHEET NO. 8 OF 11 SHEETS

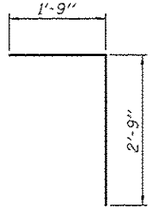
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(4)BR-1	LASALLE	38	25
		CONTRACT NO. 66B13		
		ILLINOIS FED. AID PROJECT		



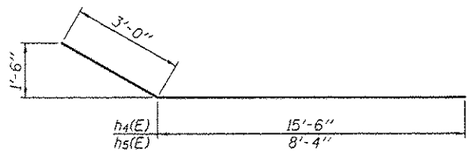
GABION WINGWALL
ISOMETRIC VIEW



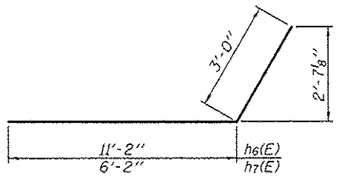
BAR d(E)



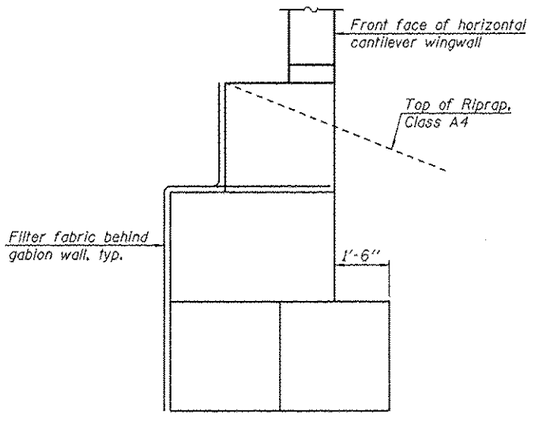
BAR d(E)



BARS h4(E) & h5(E)



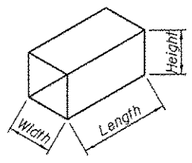
BARS h6(E) & h7(E)



GABION WINGWALL
END VIEW

LEGEND

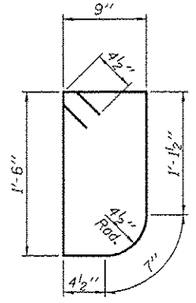
Indicates area of exposed gabion



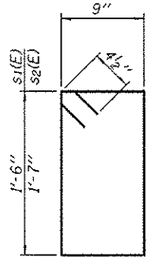
GABION SIZE

Dimensions are (Length x Width x Height).

Note:
Cost of Filter Fabric, excavation, and backfill behind gabions is included with Gabions.



BAR s(E)



BARS s1(E) & s2(E)

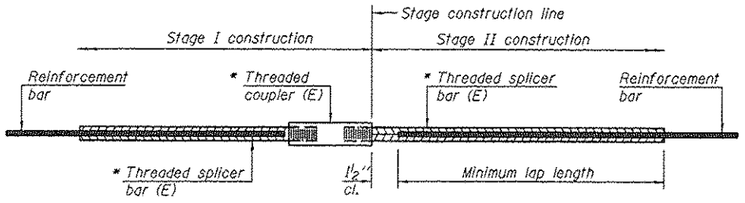
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	326	#6	24'-1"	
d1(E)	326	#6	17'-0"	
d2(E)	168	#4	5'-6"	
d(E)	38	#4	4'-6"	
h(E)	120	#5	37'-9"	
h1(E)	120	#5	42'-5"	
h2(E)	16	#7	22'-9"	
h3(E)	6	#4	23'-0"	
h4(E)	44	#7	18'-6"	
h5(E)	30	#7	11'-4"	
h6(E)	38	#7	14'-2"	
h7(E)	26	#7	9'-2"	
s(E)	23	#4	5'-1"	
s1(E)	46	#4	5'-3"	
s2(E)	23	#4	5'-5"	
v(E)	432	#5	9'-9"	
v1(E)	16	#5	12'-6"	
Concrete Box Culverts			Cu. Yd.	203.6
Reinforcement Bars, Epoxy Coated			Pound	40,590

⚠ Added 10-29-13

DESIGNED - RAY AHANCHI	EXAMINED	DATE - OCTOBER 1, 2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
CHECKED - AL-BARRAE R. SHEBIB	PASSED	REVISED —	CULVERT AND GABION WALL DETAILS STRUCTURE NO. 050 – 2651 SHEET NO. 9 OF 11 SHEETS
DRAWN - MICHAEL B. MOSSMAN	ACTING ENGINEER OF BRIDGE DESIGN ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED —	
CHECKED - G.R.A. / A.R.S.			

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(4)BR-1	LASALLE	38	26
		CONTRACT NO. 66B13		
		ILLINOIS FED. AID PROJECT		



STANDARD BAR SPLICER ASSEMBLY

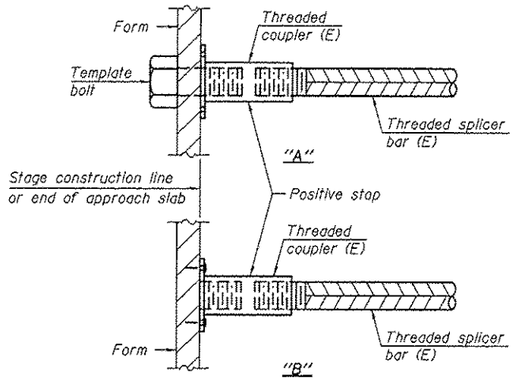
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"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

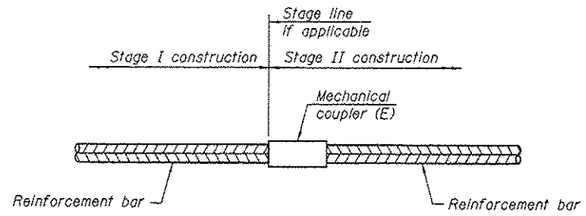
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Top slab	#5	42	5
Walls	#5	36	5
Bottom slab	#5	42	5



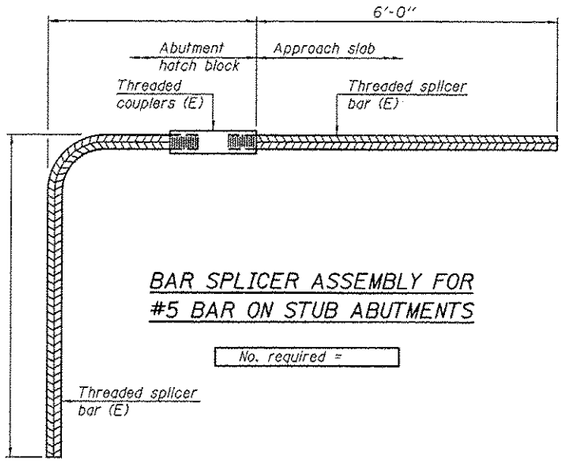
INSTALLATION AND SETTING METHODS

"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

Δ1 Added 10-29-13

DESIGNED - RAY AHANCHI	EXAMINED	DATE - OCTOBER 1, 2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
CHECKED - AL-BARRAE R. SHEBIB	PASSED	REVISED —	BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS STRUCTURE NO. 050 - 2651
DRAWN - MICHAEL B. MOSSMAN	ACTING ENGINEER OF BRIDGE DESIGN	REVISED —	SHEET NO. 10 OF 11 SHEETS
CHECKED - G.R.A. / A.R.S.	ACTING ENGINEER OF BRIDGES AND STRUCTURES		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(4)BR-1	LASALLE	38	27
		CONTRACT NO. 66B13		
	ILLINOIS FED. AID PROJECT			

Illinois Department of Transportation
Division of Highways
District – Materials

SOIL BORING LOG

Date 8912

ROUTE IL 71 (FAP 311) DESCRIPTION IL 71 over Tributary to the Fox River, 1.40 miles South of US 52 LOGGED BY Larry Myers

SECTION (4)BR-1 LONGITUDE LATITUDE

COUNTY LaSalle DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 050-0065 (Exist.)
Station 590+92

BORING NO. 1 (S.E. Quad.)
Station 590+47
Offset 16.00ft Rt.
Ground Surface Elev. 620.51 ft

Surface Water Elev. 607.87 ft
Stream Bed Elev. 606.27 ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion 596.6 ft
After ___ Hrs. ___ ft

DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)	Material
				Augered HMA Shoulder, Brown Sand & Gravel Fill, Brown Silty Clay Loam Fill
618.01				
	3			Very Stiff Brown Silty Clay Loam Till & Black Silty Clay Loam-Fill
	3	3.5	23.7	
	3	P		
-5				
	3			
	3	4.0	11.9	
614.01	5	P		
				Loose Brown Fine Fill Sand with Minor Clay Pieces
	2			
	2		14.2	
610.01 -10	2			
				Very Stiff Brown Clay with Minor Silt
	2	3.0	26.0	
	3	B		
608.01				
	3			Hard Brown Silty Loam Till
	8	4.3	9.5	
	10	S		
605.51 -15				
	4			Medium Brown Fine to Coarse Sand – Clean with Minor Fine to Medium Gravel
	5		4.6	
	7			
	4			
	5		12.9	
601.01	5			
-20				

DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)	Material
	2			Very Stiff Brown Sandy Clay Loam Till (continued)
	3	3.0	16.0	
	11	P		
598.51				
	5			Hard Grey Silty Clay Loam Till
	10	5.9	14.1	
	15	S		
-25				
	8			
	17	7.1	16.4	
593.51	26	S		
				Very Dense Buff & Gray Silt & Fine Sand Layers with Minor Clay Layers
	12			
	18		9.4	
-30	31			
	16			
	27		16.3	
	39			
-35	8			
	21		14.2	
584.01	27			
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 11-11)

Illinois Department of Transportation
Division of Highways
District – Materials

SOIL BORING LOG

Date 8912

ROUTE IL 71 (FAP 311) DESCRIPTION IL 71 over Tributary to the Fox River, 1.40 miles South of US 52 LOGGED BY Larry Myers

SECTION (4)BR-1 LONGITUDE LATITUDE

COUNTY LaSalle DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 050-0065 (Exist.)
Station 590+92

BORING NO. 2 (N.W. Quad.)
Station 591+46
Offset 16.00ft Lt.
Ground Surface Elev. 618.98 ft

Surface Water Elev. 607.87 ft
Stream Bed Elev. 607.79 ft

Groundwater Elev.:
First Encounter 593.0 ft
Upon Completion 589.0 ft
After ___ Hrs. ___ ft

DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)	Material
				Augered HMA Shoulder, Brown Sand & Gravel Fill, Black Silty Clay Loam Fill
610.48				
	3			Very Stiff Black Silty Clay Loam Fill with Layers of Gray & Brown Silty Clay Loam Till Fill
	4	3.5	28.9	
	6	P		
-5				
	3			
	4	3.5	24.3	
	5	P		
	3			
	2	3.0	24.6	
	4	P		
-10				
	3			
	5	2.5	18.3	
	7	P		
608.98				
	3			Medium Brown Fine to Medium Sand – Clean
	5		3.3	
	7			
-15				
	3			
	5		5.3	
601.48	6			
	5			Hard Brown Silty Loam Till with Layers of Fine Sand & Silt
	7	4.5	12.4	
	10	P		
598.98 -20				

DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)	Material
	8			Hard Brown Silty Clay Loam Till with Fine Sand Layers
	10	6.7	18.1	
	11	S		
596.98				
	5			Medium Brown Fine Sand & Silt with Silty Clay Loam Till Layers
	7		24.4	
	10			
-25				
	8			
	10		20.3	
	12			
591.98				
	27			Very Dense Brown Fine Sand & Silt
	31		17.5	
	38			
-30				
	18			
	27		21.0	
	36			
-35	21			
	29		17.6	
582.48	35			
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 11-11)

Δ Added 10-29-13

DESIGNED - RAY AHANCHI	EXAMINED	DATE - OCTOBER 1, 2013	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**
CHECKED - AL-BARRAE R. SHEBIB	PASSED	REVISED	
DRAWN - MICHAEL B. MOSSMAN	ACTING ENGINEER OF BRIDGE DESIGN	REVISED	
CHECKED - G.R.A. / A.R.S.	ACTING ENGINEER OF BRIDGES AND STRUCTURES		

SOIL BORING LOGS
STRUCTURE NO. 050 – 2651
SHEET NO. 11 OF 11 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
311	(4)BR-1	LASALLE	38	28
		CONTRACT NO. 66B13		
	ILLINOIS FED. AID PROJECT			